OFFICIAL GAZETTE UNITED STATES PATENT OFFICE

VOL 26 & 27

JAN THRU JUN

1884

MICRO PHOTO INC
CLEVELAND. OHIO

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME XXVI.

JANUARY 1 TO MARCH 25, INCLUSIVE,

1884.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1884.

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ERRATA.

291,141, page 31, second claim, line 1, strike out "electro-motive force or" and insert *electrical;* in same line, after "pressure," insert *or potential;* in same claim, line 4, after "feeders," insert a comma; in claim 4, line 5, after "apparatus," insert a comma.

291,179, page 103, in title, name of assignee, for "Thomas A. Knickenbacker" read *Thomas A. Knickerbacker.*

291,712, page 165, in title, name of inventor, for "William H. Gonne" read *William H. Gonne.*

291,995, page 238, in title, names of last assignees, for "Samuel R. Stratton and John T. Strutton" read *Samuel R. Strattan and John T. Strattan.*

292,037, page 246, in title, after "(Specimens,)" insert *Patented in Belgium Sept.* 24, 1883, *No.* 62,686, *and in Italy Sept.* 26, 1883, *XVII*, 15,904, *and XXXI*, 393.

292,063, page 252, in title, name of inventor, for "Nathan E. Shailer" read *Nathen E. Shailer.*

292,136, page 268, in title, after residence of inventor, insert *assignor to James M. Clark, Jersey City, N. J.*

292,630, page 396, in title, after residence of inventor, insert *assignor to the Duff Manufacturing Company, (Limited,) of Pittsburg, Pa.*

293,011, page 501, first claim, strike out last two lines and insert the same after "stud," at the end of first line in second claim.

293,120, page 518, fifth claim, line 4, for "permit" read *prevent.*

293,184, page 533, in title, after residence of inventor, insert *assignor to the Mechanical Orgunette Company, same place.*

293,255, page 556, first claim, line 1, strike out "the grain running radially" and insert the same after "having" in line 2.

293,477, page 608, in claim, line 3, for "shaft-bearing cam-shaped as described" read *shaft, bearing cam shaped as described.*

293,726, page 670, in title, name of inventor, for "Roman I. Fancher" read *Rosman I. Fancher.*

293,827, page 692, in title, for "Alloy for and Process of the Manufacture of Silicious Copper and Silicious Bronze" read *Alloys for and Process of the Manufacture of Silicious Copper and Silicious Bronze.*

293,838, page 696, in title, for "Process of and Apparatus for Extracting Crystallized Sugar from Ragasse" read *Process of and Apparatus for Extracting Juice and Crystallized Sugar from Bagasse.*

293,871, page 703, first claim, line 2, for "spindle or spring" read *spindle and spring.*

293,886, page 706, in title, after "(No specimens,)" insert *Patented in Canada Sept.* 1, 1883, *No.* 17,575.

294,038, page 749, in title, after "(No model,)" insert *Patented in England Apr.* 23, 1883, *No.* 2,058; *in France June* 12, 1883, *No.* 155,988, *and in Canada July* 26, 1883, *No.* 17,408.

294,039, page 750, in title, after "(No model,)" insert *Patented in England Apr.* 23, 1883, *No.* 2,058; *in France June* 12, 1883, *No.* 155,988, *and in Canada July* 26, 1883, *No.* 17,408.

294,040, page 750, in title, after "(No model,)" insert *Patented in England Apr.* 23, 1883, *No.* 2,058; *in France June* 12, 1883, *No.* 155,988, *and in Canada July* 26, 1883, *No.* 17,408.

294,042, page 751, in title, after "(No model,)" insert *Patented in England Apr.* 23, 1883, *No.* 2,057; *in France June* 7, 1883, *No.* 155,914, *and in Canada July* 26, 1883, *No.* 17,395.

294,043, page 752, in title, after "(No model,)" insert *Patented in England May* 29, 1883, *No.* 2,670.

294,098, page 764, in title, for "Wiring Blind Stiles" read *Wiring Blind-Rods.*

294,680, page 900, in title, name of assignee, for "Moses M. Lahne" read *Moses M. Lahue.*

294,864, page 946, in title, after residence of inventor, insert *assignor to Charles Downs, same place.*

295,016, page 986, in title, for "Reshipping Packing-Boxes" read *Reshipping Packing-Box.*

295,086, page 997, in title, after "(No model,)" insert *Patented in Germany Nov.* 28, 1882, *No.* 25,772; *in England Nov.* 29, 1882, *No.* 5,673; *in France Nov.* 29, 1882, *No.* 152,367; *in Belgium Nov.* 30, 1882, *No.* 59,707; *in Austria-Hungary Feb.* 13, 1883, *No.* 40,898, *and in Spain June* 8, 1883, *No.* 2,920.

295,101, page 1084, in title, after date of filing, for "(No model)" read *(Model.)*

295,107, page 1086, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

295,525, page 1119, in title, after residence of inventor, strike out "assignor of one-fourth to Joseph Chapman, Philadelphia, Pa."

295,677, page 1156, in title, name of last assignee, for "S. W. Couvin" read *S. W. Corwin.*

295,860, page 1198, in title, name of second assignee, for "John B. Fresey" read *John B. Fieser.*

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JANUARY–MARCH, 1884.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 26—No. 1. TUESDAY, JANUARY 1, 1884. PRICE—$5 per year

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Order No. 141.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., December 21, 1883.

The Examiner in charge of Division VI is hereby directed to abolish sub-class 7, "Incrustation-Preventives," of Class 23, "Chemicals," and to form a new subdivision in place thereof, and entitle the same "Sub-class 7, Purification of Water."

BENJ. BUTTERWORTH,
Commissioner.

Issue of January 1, 1884.

Patents	466—	No. 291,016 to No. 291,481, inclusive.
Designs	7—	No. 14,528 to No. 14,534, inclusive.
Trade-marks	11—	No. 10,822 to No. 10,832, inclusive.
Labels	16—	No. 3,791 to No. 3,806, inclusive.
Reissues of patents	2—	No. 10,432 to No. 10,433, inclusive.
Total issue	502	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Nebraska	.....	1
Arizona Territory	1	.....	Nevada	.....	1
Arkansas	3	.....	New Hampshire	6	.....
California	7	1	New Jersey	21	.....
Colorado	3	.....	New Mexico Territ'y	.....	.....
Connecticut	11	1	New York	87	12
Dakota Territory	1	.....	North Carolina	.....	.....
Delaware	2	.....	Ohio	29	.....
District of Columbia	5	1	Oregon	1	.....
Florida	2	.....	Pennsylvania	45	1
Georgia	5	.....	Rhode Island	5	.....
Idaho Territory	.....	.....	South Carolina	1	.....
Illinois	27	.....	Tennessee	4	.....
Indiana	21	3	Texas	3	.....
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	15	.....	Vermont	1	.....
Kansas	1	.....	Virginia	2	1
Kentucky	4	.....	Washington Territ'y	.....	.....
Louisiana	1	1	West Virginia	3	.....
Maine	3	.....	Wisconsin	16	1
Maryland	3	1	Wyoming Territory	.....	.....
Massachusetts	51	.....	United States Army	.....	.....
Michigan	18	.....	United States Navy	.....	.....
Minnesota	4	.....			
Mississippi	4	.....	Total to citizens of the United States	437	26
Missouri	16	1			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	6	.....
Austria	.....	.....	Hawaiian Islands	.....	.....
Barbadoes	.....	.....	Hayti	.....	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	Japan	.....	.....
Brazil	.....	.....	Mexico	1	.....
Canada	6	.....	Netherlands	.....	1
Chili	.....	.....	Russia	.....	.....
Colombia, U. S. of	.....	.....	Scotland	1	.....
Cuba	.....	.....	West Indies	2	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	36	1
England	15	.....			
France	5	.....			

DESIGNS.

14,528.—TABLE-WARE.—*James Barlow* and *Spencer M. Alpaugh*, Trenton, N. J. Application filed October 20, 1883. Term of patent 3½ years.

14,529 and 14,530.—CARPET.—*Andrew Cochran*, Philadelphia, Pa., assignor to *William E. Montague* and *Thomas E. White*, both of same place. Applications filed November 7, 1883. Term of patents 3½ years.

14,531.—CARPET.—*Etienne Fajon*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed November 6, 1883. Term of patent 3½ years.

14,532.—CLOCK-CASE.—*John Barclay McCarty*, New York, N. Y. Application filed October 17, 1883. Term of patent 3½ years.

14,533.—CARPET.—*David McNair*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed November 6, 1883. Term of patent 3½ years.

14,534.—LADY'S POLONAISE.—*Mary Turner*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed October 27, 1883. Term of patent 3½ years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

10,822.—FANCY ARTICLES MANUFACTURED FROM HARD RUBBER.—*The Butler Hard Rubber Company*, New York, N. Y. Application filed November 23, 1883.

"The word 'RUBELLITE.'"

10,823.—CIGARS.—*Fitzpatrick & Draper*, Troy, N. Y. Application filed November 14, 1883.

"The words 'PEG TOP' and an arbitrary symbol formed by two cigars with a peg in the top or smaller end of each."

10,824.—CIGARS.—*Follett & Schorn*, Norwich, N. Y. Application filed December 10, 1883.

"The word-symbol 'JAY-EYE-SEE.'"

10,825.—CERTAIN VETERINARY MEDICINES.—*Charles H. Hickman*, New York, N. Y. Application filed August 23, 1883.

"The word 'HIPPONA.'"

10,826.—CANNED FISH, OYSTERS, FRUITS, MEATS, AND VEGETABLES.—*H. J. Horn & Co.*, Baltimore, Md. Application filed August 23, 1883.

"The representation of a medal supported by two cupids, and bouquets of flowers on each side thereof."

10,827.—CERTAIN MEDICAL AND TOILET PREPARATIONS.—*Albert J. Kaercher*, Allegheny, Pa. Application filed October 31, 1883.

"A combination of mortar and pestle, scale, medicinal plants or stalks, and owl."

10,828.—GIN.—*John De Kuyper & Son*, Rotterdam, Netherlands. Application filed December 5, 1883.

"The firm-name 'JOHN DE KUYPER & SON,' which may be printed or stamped in any character, type, or letter."

10,829.—FLEXIBLE HIP-CORSETS.—*Elmer Leonard*, Bridgeport, Conn. Application filed December 11, 1883.

"The word 'ACQUIBASQUE.'"

10,830.—COOK-STOVES.—*Miami Stove Works*, Lawrenceburg, Ind. Application filed November 27, 1883.

"The word 'MAYFLOWER.'"

10,831.—A REMEDY FOR FEMALE WEAKNESSES.—*John A. McGill*, South Bend, Ind. Application filed November 22, 1883.

"The words 'ORANGE BLOSSOM' and a representation of the same."

10,832.—WHISKY.—*Siebe Bros. & Plagemann*, San Francisco, Cal. Application filed December 10, 1883.

"The word 'ROSEDALE.'"

LABELS.

3,791.—Title: "SYRUP OF FIGS" (FOR A MEDICAL COMPOUND.)—*California Fig Syrup Company*, Reno, Nev., and San Francisco, Cal. Application filed December 5, 1883.

3,792.—Title: "EVERY MAN HIS OWN TINKER." (FOR OUT-FITS FOR SOLDERING.)—*Ben S. Clarke*, Ashland, Nebr. Application filed December 10, 1883.

3,793.—Title: "EXCELSIOR ADVERTISING SIGN COMPANY." (FOR BANNERS, FLAGS AND SIGN BOARDS.)—*Joseph T. Commoss*, New York, N. Y. Application filed December 7, 1883.

3,794.—Title: "CAMPAIGN BANNER AND OUTFIT COMPANY." (FOR BANNERS, FLAGS AND SIGN BOARDS.)—*Joseph T. Commoss*, New York, N. Y. Application filed December 7, 1883.

3,795.—Title: "ORANGE DRIPS." (FOR CORDIALS.)—*G. W. Dunbar's Sons*, New Orleans, La. Application filed December 11, 1883.

3,796.—Title: "VELVET GREEN" (FOR CHEMICAL FERTILIZERS.)—*Farmers' Fertilizing Company*, Syracuse, N. Y. Application filed November 19, 1883.

3,797.—Title: "NUREMBERG CORN REMEDY."—*Georg Hecht*, New York, N. Y. Application filed December 5, 1883.

3,798.—Title: "THE OLD CELEBRATED NUREMBERG CORN REMEDY." *Georg Hecht*, New York, N. Y. Application filed December 5, 1883.

3,799.—Title: "HURLBURT'S TRACHEAL DROPS."—*Charles T. Hurlburt*, New York, N. Y. Application filed December 10, 1883.

3,800.—Title: "CHERRY-MALT PHOSPHITES."—*William C. Jacobs*, Brooklyn, N. Y. Application filed December 6, 1883.

3,801.—Title: "PROFESSOR HARRY ROBINSON'S SPECIFIC LOTION." (FOR THE HAIR.)—*Harry Robinson*, St. Joseph, Mo. Application filed October 20, 1883.

3,802.—Title: "THE WASHINGTON MARKET BRAND." (FOR CANNED TOMATOES.)—*Strang & Tucker*, Washington, D. C. Application filed December 11, 1883.

3,803.—Title: "HYDRARGYRUM SACCHARATUM." ("SUGAR OR SWEET POWDER.")—*Sutphen & Co.*, Noblesville, Ind. Application filed December 6, 1883.

3,804.—Title: "DR. L. E. TOWNE'S COUGH KING."—*L. E. Towne*, Brodhead, Wis. Application filed November 17, 1883.

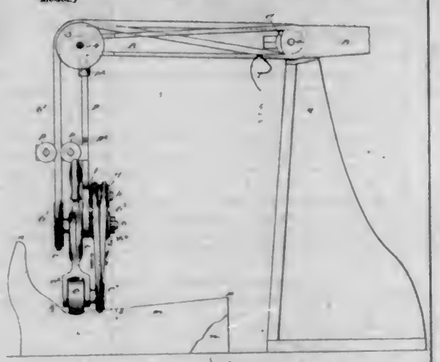
3,805.—Title: "VIRGINIA NINE." (FOR CIGARS.)—*William Walker*, Richmond, Va. Application filed December 6, 1883.

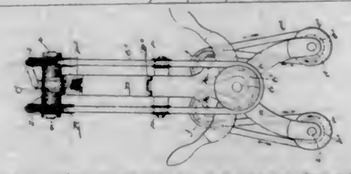
3,806.—Title: "DIAMOND BRAND MIXED PAINTS."—*Arthur E. Williams*, Belvidere, N. Y. Application filed December 5, 1883.

PATENTS

GRANTED JAN. 1, 1884.

291,016. APPARATUS FOR OPERATING UPON THE UPPERS OF BOOTS AND SHOES. HIRAM R. ADAMS, Boston, Mass., assignor to the Adams Manufacturing Company, Portland, Me. Filed May 7, 1883. (No model.)





Claim.—1. In a machine to act upon an upper on a form or holder, two rotating rubbers adapted to bear against the upper at opposite sides of the form or holder, and having rotary movement simultaneously in opposite directions, whereby the upper is simultaneously rubbed at both sides from its center line outward toward its edges, substantially as described.

2. The two simultaneously-rotatable rubbers and levers to sustain their shafts and regulate the pressure of the rubber against the article to be rubbed, combined with a movable pendant, and with means, substantially as described, to rotate the said rubbers.

3. The pendant and its driven shaft *b*, combined with the two shafts *d d*, the two pulleys *e'*, the pulley b^3, idler b^4, and the two idle pulleys or sheaves *f f g g*, combined with the endless belt e^3, arranged as described, to simultaneously turn the two shafts *d* and their attached rubbers in opposite directions, substantially as described.

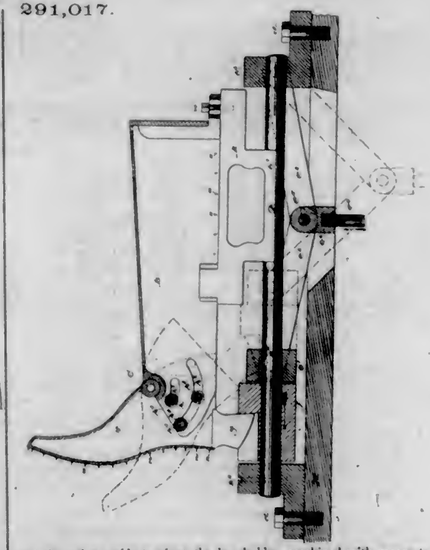
291,017. CRIMPING APPARATUS FOR BOOTS AND SHOES. HIRAM R. ADAMS, Boston, Mass., assignor to the Adams Manufacturing Company, Portland, Me. Filed May 7, 1883. (No model.)

Claim.—1. A boot-crimping form adapted to be turned laterally upon a longitudinal pivot and having its foot portion pivoted to the leg portion, combined with means, substantially as described, to gradually force the foot portion more and more nearly into a position at right angles to the leg portion to crimp the upper, as set forth.

2. In a crimping apparatus, a leg portion and a foot portion pivoted thereto, combined with a rod, b^2, on which said leg portion has a lateral rocking movement, and a block movable longitudinally of said rod and engaging the foot portion to force it into a position more or less at right angles to the leg portion, substantially as described.

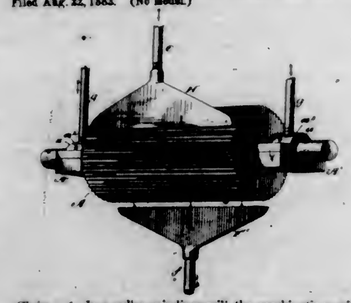
3. In a crimping apparatus, the leg and pivoted foot and leg-holder

291,017.



and the rod or guide to pivot the leg-holder, combined with means to automatically operate the foot, as described, while the crimping-form is free to be rocked or turned with the said rod, substantially as described.

291,018. ROLLER GRINDING-MILL. WILSON AGEE, New York, N. Y. Filed Aug. 22, 1883. (No model.)



Claim.—1. In a roller grinding-mill, the combination, with a pair of grinding-rolls arranged side by side to receive the grain between them, of an air-blast device arranged to deliver a blast of air upon the rolls between their adjoining surfaces at or near a point where they receive the grain, and means for delivering blasts of air to the respective journals of the rolls, substantially as described.

2. In a roller grinding-mill, the combination, with a pair of grinding-rolls, of means for delivering air upon the rolls at a point at or near

which they receive the grain, and means for delivering air beneath the rolls at or near the point or points where the chop leaves the rolls, substantially as described.

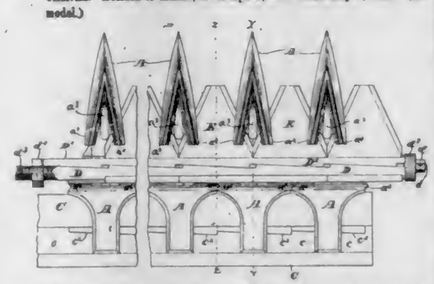
3. In a roller grinding-mill, the combination, with pairs of grinding-rolls, of blast mechanism, a pipe leading therefrom, and branches extending from said pipe and arranged to deliver blasts of air downward upon the rolls at or near a point where they receive the grain, upward upon the rolls at or near the point where the chop leaves the rolls, and upon the journals of the rolls, substantially as described.

4. The combination, with the rolls of a roller-mill, of a pipe delivering an air-blast downward between said rolls, and separate pipes arranged beneath each and throwing air upward against said rolls at or near the point where the chop leaves them, substantially as described.

5. In a roller grinding-mill, the combination of the grinding-rolls having end journals, the journal-boxes supporting the journals, the caps arranged over the journals and having air-escape perforations, and blast-pipes passing into the caps for delivering air upon the journals, substantially as described.

6. The combination, with the roll-shafts of a roller-mill, of journal-boxes having air-spaces formed in the caps, and air-openings at each end of said spaces, air-pipes tapped into said caps, and means for forcing a continuous blast through the same, substantially as described.

291,019. CUTTER-BAR, &c., FOR MOWING AND REAPING MACHINES. HORACE R. ALLEN, Indianapolis, Ind. Filed May 5, 1883. (No model.)



Claim.—1. The combination, with knives or sections for mowing or reaping machines, the rear portions of which are formed to receive and partly encircle the cutter-bar, of a cutter-bar having upon one edge a series of inclined faces, and a wedge-bar having a corresponding series of inclined faces, and means for operating the same, whereby said knives may be secured upon said bar, substantially as set forth.

2. In combination with the knives or sections for mowing or reaping machines, the cutter-bar D, having a series of inclined faces upon one edge, and the wedge-bar D′, with a corresponding series of inclined faces adapted to slide upon those of the bar D, said bar D having screw-threaded portions with nuts thereon as a means for operating the same, substantially as shown and described, and for the purposes specified.

3. The combination, in a guard-finger for mowers or reapers, of a ledger-plate, the rear portion of which is bent down and adapted to fit to the front wall of an opening, a^2, in said guard-finger, and a wedge, B′, adapted to fit in between said bent-down portion and the rear wall of said opening, whereby said ledger-plate is secured in position, substantially as set forth.

4. The combination, with a guard-finger, A, having an opening, a^2, and a recess, a^4, of a ledger-plate, the front end of which is adapted to fit into said recess, and the rear portion of which is bent down into said opening, and a wedge, B′, the rear end of which is adapted to slide in a groove, e, formed upon the rear wall of the opening a^2, and the front portion of which is adapted to bear against said bent-down portion of the ledger-plate B and securely hold it in position, substantially as shown and specified.

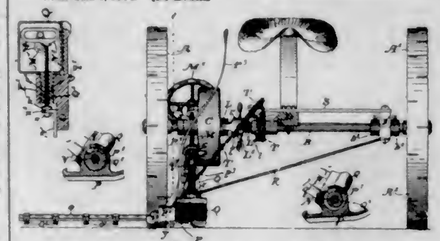
5. The combination of a guard-finger for mowers or reapers having upon its rear end a flange or projection, a, and upon its opposite side a dovetailed rib or hook, a', one being formed upon the top and the other upon the under side of said rear end of said finger, and a finger-bar, C, the front edge of which is adapted to slide between the flange a and the opposite portion of said finger, and having a groove, c, adapted to receive the dovetailed rib or hook a', whereby said finger is secured to said finger-bar, substantially as shown and described, and for the purposes specified.

6. The combination of the finger A, having an opening, a^2, the ledger-plate B, having a turned-down portion, b, the wedge B′, adapted to fit between the bent-down piece b and the rear wall of the opening a^2, and the finger-bar C, having a groove, c, formed so as to receive the rib or hook a' upon the finger, and the front portion adapted to slide between the flange a and the opposite portion of said finger, all substantially as shown and specified.

7. The combination of the finger-bar C, having a dovetailed groove therein, and the finger A, having a dovetailed rib formed to fit into said groove, said dovetailed formation serving to secure said finger-bar and finger together, substantially as specified.

8. The combination of the fingers A, having dovetailed ribs a' and projections a^3, the finger-bar C, having notches c' and the keys c^2, substantially as described, and for the purposes specified.

291,020. MOWING-MACHINE. HORACE R. ALLEN, Indianapolis, Ind. Filed Dec. 1, 1882. (No model.)



Claim.—1. The combination, with the shaft M of a mowing-machine, which connects the driving-gear and the cutter-bar, said shaft having the ratchet-faced hub m rigidly mounted thereon, of the fly-wheel M′, loosely mounted on said shaft, and having the ratchet-faced hub m', which is adapted to engage with the hub m, the teeth of said ratchets being inclined in the direction which permits the shaft to turn without turning the fly-wheel, substantially as and for the purposes set forth.

2. The combination of the gear-case C, the casting Q, and the shoe P, said casting Q being secured to said gear-case by being screwed directly into a portion of said gear-case and to said shoe by having a portion, Q′, thereof inserted in a suitable opening in a projection, P′, thereon, said parts being secured together by the formation thereof, substantially as set forth.

3. The combination of the casting Q and the shoe P, said casting being provided with the projection Q′, having a groove, and said shoe having a projection, P′, through which is an opening, in which is a suitable lag to engage with said groove, substantially as set forth.

4. The combination of the shoe P, having projection P′ and portion P^2, and casting Q, having projecting portion Q′, and a face fitting the portion P^2, said face and said portion being provided, respectively, with the groove q^2 and the rib p^2, substantially as shown and specified.

5. The combination of the casting Q and the shoe P, said casting having a segmental slide, q^2, and said shoe having a combined lever and brace, P^3, on which is a stem, p^3, which engages with said segmental slide, substantially as shown and specified.

6. The combination, in a mowing-machine, with the axle, tongue, and cutter-bar lifter, of the brace S, secured to said axle at one end by a bearing, B′, located between collars b' b', and to said tongue near the other end, and extending across said tongue and supporting said cutter-bar lifter upon its projecting end, substantially as shown and specified.

7. The combination, in a mowing-machine, of the axle B, wheel A, spokes a, turned out at the lower end where they enter the hub, the ratchet-wheels A^2, the pawls a', and springs a^2, substantially as described, and for the purposes specified.

291,021. STEAM-PUMP. MOSES F. BAGLEY and JOSEPH C. DAWSON, Mount Vernon, Ill. Filed June 21, 1883. (No model.)

Claim.—1. In a steam-pump, a cylinder provided with a steam-chest, a valve, and proper steamways, in combination with two pistons moving simultaneously, and an intermediate water-way valve operated by the pressure on the water by each piston alternately, substantially as set forth.

2. The cylinder provided with ports *l l′* and ingress-pipe I, in combination with valve H, provided with openings *k k*, and stationary abutment F, all constructed, arranged, and operated as set forth.

3. The cylinder provided with ports P P′ *l l′*, and steam-chest having a main valve and proper steam-connections, in combination with the piston-rod, carrying two pistons, L L′, intermediate valve, H, having heads with openings *k k*, abutment F, ingress-pipe I, chamber M, and discharge-pipe O, all constructed, combined, and operated substantially as set forth

291,022. COVER FOR CULINARY AND OTHER RECEPTACLES. JOS. BEAUPIED, San Juan, Porto Rico, West Indies. Filed June 14, 1883. (No model.)



Claim.—1. As an article of manufacture, a cover for a receptacle, provided with an inwardly and upwardly projecting free flap, secured to the inner surface of a depending flange at its rim, substantially as specified.

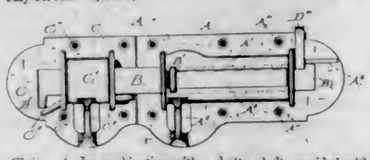
2. The combination of a free flap, B, an inner hoop, b, and concave cover A, having a depending flange, a', substantially as shown and described.

3. A cover for a receptacle having a free inclined flap or flaps, and adapted to fit vessels of various sizes, substantially as specified.

4. The combination of the cover A, having a concave inner surface, a, with a depending flange, a', at its rim, with an inclined annular free flap, B, and a retaining hoop or band, b, substantially as shown and described.

5. The method herein set forth of securing a rubber or textile flap to covers for receptacles, which consists in crimping the securing-hoop to reduce its circumference and expanding the same against the interposed flap and flange of the cover by straightening or smoothing the crimps, substantially as and for the purposes set forth.

291,023. SHUTTER-BOLT. GEORGE M. BRENTZ, Reading, Pa. Filed July 31, 1883. (Model.)



Claim.—1. In combination with a shutter-bolt provided with the usual bolt and keeper case, a series of notches, B^3, on the rear upper edge of the bolt, and a locking-bar, D, with a stop, D^2, adapted to seat therein, a ledge, A^3, to support the stop when not engaged with the bolt, the bar thickened at its forward end to lock the bolt downward, the keeper-case provided with an inclined plane, C^3, bowing seat C^5, and both keeper and bolt cases, and plates having shutter-pulls A^5 and C^6 cast integral therewith, substantially as shown, and for the purpose set forth.

2. A locking-bar, D, provided with a clip, D′, a thickened head, D^2, abutting-stop D^3, head D^4, and locking-stop D^5, in combination with bolt-case A′, keeper-case C′, and plates A C, provided with shutter-pulls A^5 C^6, cast integral therewith, bowing seat C^5, bolt B, and notches B^3, whereby, when the bolt B is in either a locked or bowed position and the bar D thrown forward, the bolt B is rigidly locked downward in the keeper-case C′ or upon the bowing seat C^5, the withdrawal of the bar D, with its foot D^6 placed upon the ledge A^3, releasing the bolt B and giving greater freedom of movement thereto, substantially as and for the purpose described.

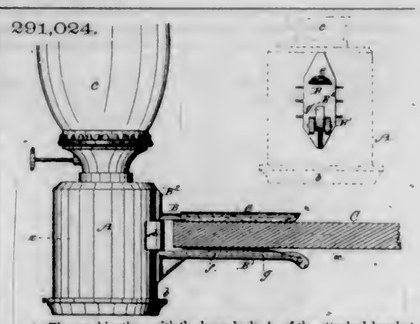
3. As an improved construction of shutter-bolts, the shutter-pulls A^5 and C^6, as shown and described, cast integral with the bolt and keeper cases and plates thereof, whereby the shutter-fittings are made more compact and accessible, substantially as and for the purpose set forth.

291,024. LAMP. CHARLES H. BENNETT, Bloomburg, Pa. Filed May 23, 1883. (No model.)

Claim.—1. The combination, with a lamp-body, of an attached clamp having upper and lower fixed jaws arranged to project parallel with one another, and at a suitable distance apart from the side of said body, and an interposed clamping-spring applied to one of the said jaws, substantially as specified.

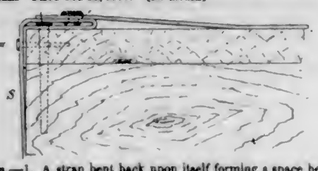
2. The holding bracket or clamp composed of a base or end piece, B′, constructed to fit on or against and be supported by the body of a lamp, fixed upper and lower parallel jaws, B B′, arranged to project from the face of said base, and a clamping-spring applied to the lower one of said jaws, essentially as specified.

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3. The combination, with the lamp-body A, of the attached bracket or clamp-base B′, the parallel upper and lower jaws, B B′, having a fixed relation to said base, and projecting therefrom at right angles to the body A, and constructed to form a handle for the lamp, and the longitudinal clamping-spring g, secured at its outer end to the lower jaw, but free at its opposite end, and arranged to work in and out of a longitudinal groove, f, in the face of the lower jaw, substantially as shown and described, and for the purposes herein set forth.

291,025. SEALED BINDING-STRAP. FRANCIS W. BLACKER, Worcester, Mass. Filed Oct. 18, 1883. (No model.)

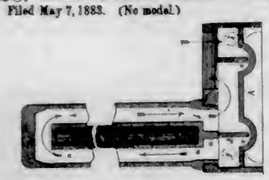


Claim.—1. A strap bent back upon itself forming a space between the two parts of the strap, in which space is inclosed the head of a nail or its equivalent, in combination with said nail and a rivet which fastens one end of said strap to the doubled end, the whole arranged substantially as and for the purpose specified.

2. The method of securing and sealing binding-straps by means of a nail or its equivalent, having its head inclosed in the space formed between two parts of the strap by bending said strap back upon itself, and a rivet by which one end of the strap is fastened to the doubled end, arranged substantially as and for the purpose specified.

3. The method of sealing binding-straps by means of a nail, having its head inclosed in the space formed between two parts of the strap by bending said strap back upon itself, and a rivet uniting the end with the doubled part of the said strap, which rivet is impressed with a sealing device, substantially as and for the purpose specified.

291,026. STEAM-RADIATOR. WILLIAM H. BROOKS, West Point, N.Y. Filed May 7, 1883. (No model.)



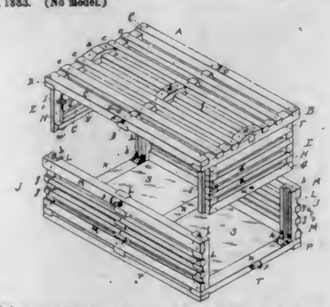
Claim.—1. In combination with the radiator-base, one or more division-plates running the entire length of said base and located beneath the centers of the tube-holes, and the traps or depressions in the base beneath the division-plates arranged to close the openings between the several compartments at the lower margins of said division-plates, substantially as shown and described, and for the purposes set forth.

2. In a radiator-base, the division-plates running the entire length thereof, located beneath the centers of the tube-holes, and the traps or depressions below said division-plates arranged to close the communication between the several compartments of the base, except through the medium of the superposed circulating-tubes, all combined and arranged substantially as and for the purposes set forth.

3. In a steam-radiator of the character herein set forth, the combination, with the base having the division-plates extending beneath the centers of the tube-holes, of the herein-described clusters of radiator-tubes arranged in pairs cast in a single piece with their cross-strips, and

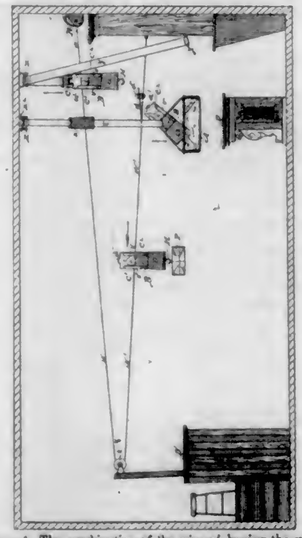
the traps or depressions beneath the plates in the base, all arranged to compel a circulation through the tubes, substantially as shown and described.

291,027. KNOCKDOWN COOP. JOHN BURNS, Chicago, Ill. Filed Oct. 12, 1883. (No model.)



Claim.—A knockdown coop consisting of two main parts or sections, the upper one of which comprises the top A, hinged to the ends E, the cross-pieces U U, tenons I I, and sliding slat *f*, and the lower section, comprising the bottom T, hinged to the sides J J, the two sections being combined by means of the tongues I I, grooves *g*, and hooks and screws *n*, and the said sections constructed, as shown, to be folded in knockdown shape, and be held in position by the bolts *w w*, substantially as shown and described.

291,028. CASH AND PARCEL CARRIER. JAMES BURNS, Chicago, Ill. Filed Nov. 9, 1883. (No model.)



Claim.—1. The combination of the wire *w'*, having the switch *d*, wire *w*, carrier B, having the cash-receptacle *a*, hooks *a'* and H, sheave-wheel *c'*, and spring-arms *v v*, as and for the purpose set forth.

2. The cash and parcel carrier B, having the cash-receptacle *a*, hooks *a'* and H, sheave *c'*, and spring-arms *v v*, adapted to operate as and for the purpose set forth.

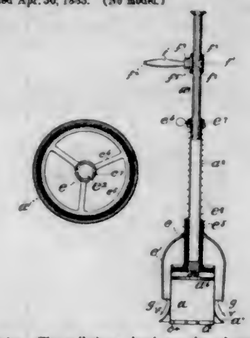
3. The combination of the carrier B, wires *w* and *w'*, strap *y*, plate *c*, having the perforation c^2, and roller *z'*, as and for the purpose set forth.

4. The combination of the carrier B, wire *w*, wire *w'*, having the switch *d* and bumper *d'*, and catch-basket A, and straps *t t*, having the stop-pins x^2 x^3 and weights *x x*, and pulley *z*, as and for the purpose set forth.

5. The combination of the basket A, straps *t t*, having the stop-pins x^2 x^3, rollers *z z*, and weights *x x*, as and for the purpose set forth.

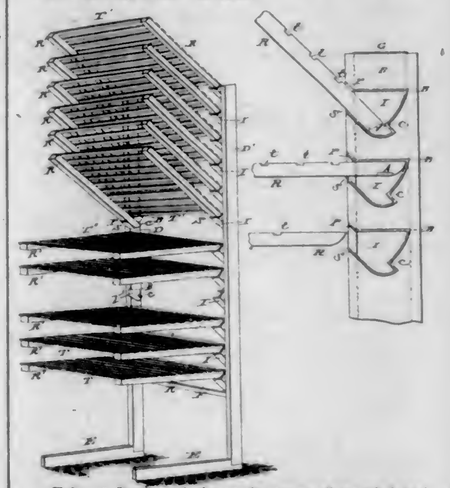
6. In a parcel and cash carrier, the track-wire *w w'*, having the switch *d* and bumper *d'*, and ratchet R and pulley *r*, as and for the purpose set forth.

291,029. CLOTHES-POUNDER. EDGAR S. BURNHAM, Buffalo, N. Y. Filed Apr. 30, 1883. (No model.)



Claim.—The cylinder *a*, having a rim, *a'*, commencing closely at the sides of the same and gradually curving outward, as specified, in combination with a piston-head, a^2, an open ring, c^1, at the bottom, a rod, a^3, and handle, a spring, c^3, adjustable collar c^2, and a detachable cover, c^4, projecting down over and slightly inclining inward toward the sides of the cylinder *a*, substantially as and for the purposes specified.

291,030. PRINTER'S DRY-RACK. GEORGE A. CLAFFEE, Wooster, Ohio. Filed Sept. 3, 1883. (No model.)



Claim.—1. In a dry-rack, the opposite corresponding notched standards, D D', opposite corresponding notches or supports, I I, having bearings B S, and one or more ratchet-stops, C, adjustable lattice-leaves T, having shafts R R', adapted to enter the supports I I', substantially as and for the purpose specified.

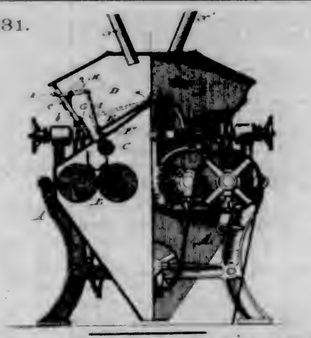
2. In a dry-rack, the combination of the standards D D', united to form a rack-frame with opposite notches or supports, I I', in or upon the inner side of the standards D D', each having opposite bearings, B S, and one or more ratchet-stops, C, substantially as and for the purpose specified.

3. In a dry-rack, the combination, with the perpendicular rack-frame D D, having shelf-supporting notches or supports I I, of adjustable leaves or shelves T, adapted to connect with and be supported by said notches or supports, so as to project from the rack-frame either horizontally or obliquely upward, and also to be detached from the supports and rack-frame at will, substantially as and for the purpose specified.

291,031. FEED MECHANISM FOR GRINDING-MILLS. ELIJAH CURTIS CLARK and ALVAH DEWEY, Cannelton, Ind. Filed Aug. 30, 1883. (No model.)

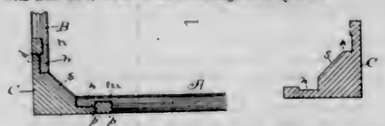
Claim.—In a feed-controlling mechanism, the hopper and the hinged board in its bottom, combined with the sliding gate, the lever, link, and sliding plate connecting the board and gate, the external spring, and the adjusting-screw combined with said spring.

291,031.



291,032. MANUFACTURE OF SOLID WOOD CORNERS. ISAAC G. S. CLELAND, New Hartford, N. Y. Filed Nov. 9, 1883. (No model.)

Brief.—A solid wood corner having extension-arms provided with longitudinal grooves and right-angle shoulders, and side pieces provided with cross-slots, which fit into said longitudinal grooves.



Claim.—1. In an article of manufacture, solid wood corner C, with extension-arms, as described, provided on the inner side of each arm with longitudinal slots or grooves *n n*, as described, as and for the purposes stated.

2. In an article of manufacture, solid wood corner C, with extension-arms, as described, with a right-angle shoulder on the inside of each arm, as described, as and for the purposes stated.

3. In an article of manufacture, side piece A, provided with cross slot or groove *m*, in combination with solid wood corner C, provided with longitudinal slot or groove *n n*, as described, as and for the purposes stated.

4. In an article of manufacture, solid wood corner C, provided with longitudinal grooves *n n*, in combination with side pieces A and B, provided with cross slots or grooves *m m*, with shoulders *p' p'*, as described, as and for the purposes stated.

291,033. FLEXIBLE MIRROR FOR HAT-TIPS AND OTHER PURPOSES. ALBERT CHARLES COUCH, Boston, Mass. Filed Nov. 23, 1883. (No model.)



Claim.—1, A flexible reflector consisting of a sheet of gelatine, with one face silvered or coated to afford a reflecting-surface, substantially as set forth.

2. A reflector consisting of a flexible sheet of insoluble gelatine having one face silvered or coated, substantially as specified.

3. A hat-tip composed of a sheet of flexible gelatine silvered or coated on one side to afford a reflecting-surface, substantially as set forth.

291,034. HAT-TIP. ALBERT CHARLES COUCH, Boston, Mass. Filed Nov. 22, 1883. (No model.)



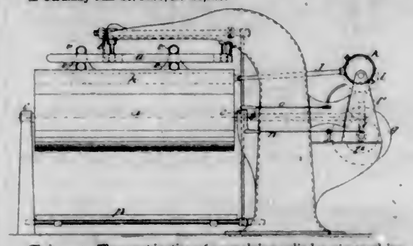
Claim.—1. A hat-tip consisting of a sheet of ornamented fabric and a separate flexible covering-sheet, formed of an artificial transparent or translucent material in one continuous piece, substantially as set forth.

2. The combination, in a hat-tip, of an ornamented fabric and a covering of colored gelatine formed into a separate continuous sheet, substantially as set forth.

3. The combination, in a hat-tip, of an ornamented or printed fabric, and a separate gelatine sheet connected together and adapted for application for hat or cap, substantially as specified.

4. A hat-tip composed in whole or in part of a continuous sheet of bichromatized or other insoluble gelatine, as set forth.

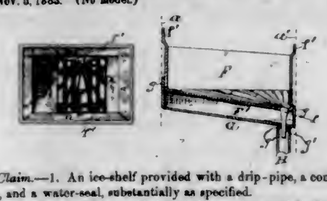
291,035. IRONING-MACHINE. WILLIAM H. DAVEY and HENRY FARMAN, London, England. Filed Jan. 20, 1883. (No model.) Patented in England May 20, 1881, No. 2,206; in France Jan. 25, 1883, No. 153,220, and in Germany Jan. 22, 1883, No. 23,961.



Claim.—1. The combination of a revolving cylinder, a curved ironing-bed, *h*, connecting and operating mechanism, substantially as described, the worm e, worm-shaft *f*, worm-wheel *d*, shaft *b* of the cylinder, the clutch *m* on said shaft *d*, and its actuating-lever for said clutch, as and for the purpose specified.

2. In combination with the cylinder *a*, ironing-bed *h*, and the described means for actuating them and for arresting the motion of the bed, as desired, the treadle *p*, its connections *q*, *r*, *s*, and *t*, and the rising and falling frame *u*, the combination being and operating as and for the purposes set forth.

291,036. REFRIGERATOR. WM. H. DAVIS, Syracuse, N. Y. Filed Nov. 5, 1883. (No model.)



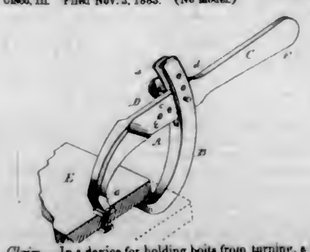
Claim.—1. An ice-shelf provided with a drip-pipe, a confined air-space, and a water-seal, substantially as specified.

2. The ice-shelf F, provided with the supplemental shelf G, secured thereto by the flanges *g*, and with the drip-pipe *f*, passing through a notched opening in the shelf G, substantially as shown and described.

3. The ice-shelf F, provided with the flanges *f'*, and the dead-air chamber F', constructed as described, whereby it may be secured in place in a refrigerator after completion, substantially as specified.

4. The ice-shelf F, provided with the flanges *f'* and with the dead-air chamber F', having a notched opening, *g'*, in combination with the drip-pipe *f* and drain-pipe H, substantially as shown and described.

291,037. DEVICE FOR HOLDING BOLTS. WILLIAM S. DAWSON, Cisco, Ill. Filed Nov. 3, 1883. (No model.)



Claim.—In a device for holding bolts from turning, a lever provided with a suitable handle, and having a downward extension provided with serrations on its end, in combination with a hook bifurcated or slotted at its upper end to receive the lever, openings *d e* in the hook and lever, respectively, and a thumb-screw, D, the hook being provided with an upward extension having serrations on its face, arranged and operating for the purpose set forth.

291,038. SPRING HARROW-TOOTH. BENJAMIN F. EATON, Coxsackie, N. Y. Filed Mar. 17, 1883. (No model.)

Claim.—A curved flat-faced spring harrow-tooth having one or

291,038.



both edges bent rearward to form longitudinal edge flanges on the rear side of the tooth, substantially as set forth.

291,039. NUT-LOCK. AARON EDGELL, Newport, Ohio. Filed May 24, 1883. (No model.)

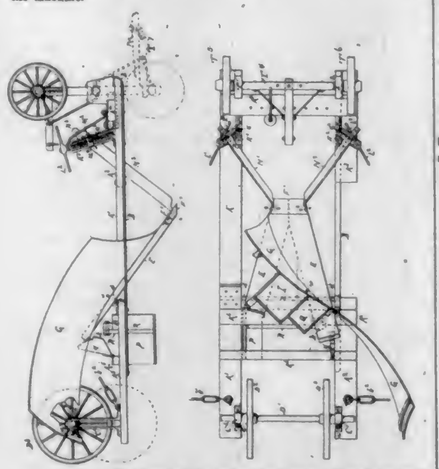


Claim.—1. The combination of the bolt A, having right and left handed screw-threads, the nut *f*, having screw-threaded recesses *i*, the set-screw *c*, and the nut *e*, having the screw-threaded cavity *d'*.

2. The combination of the bolt *h* with its right and left handed screws and screw-threaded cavity *n*, the nuts *e* and *f*, having screw-threaded cavities *d'* and *i*, and the screws *c* and *d*.

291,040. DITCHING-MACHINE. CHARLES DOUGLASS EDWARDS, Albert Lea, Minn. Filed Oct. 16, 1882. (No model.)

Brief.—A stepped block is hinged to the rear frame and employed to raise or lower the pitch of the excavator. The rear wheels are lowered in the guides and the forward wheels turn down for transporting the machine.



Claim.—1. The brace H, hinged to cross-piece A^3, and having a graduated notched upper end, in combination with the hinged frame E, substantially as and for the purpose set forth.

2. The combination of standard K', a nut, M', having three of its sides grooved and fitted between the two sides of the standard, a cutter, N', on one side of the standard, and a binding-plate, M^3, on the other side, and a yoke-bolt, A', fitting into the grooved sides of nut M', and through cutter N' and plate M^3, so as to hold them to the standard, substantially as and for the purpose set forth.

3. The combination of standard K', a cutter, N', a plate, M^3, provided with flanges fitting around the sides of standard K', a nut within the standard, and a screw for raising and lowering it, and a bolt connecting the cutter and plate to the nut within the standard, substantially as and for the purpose set forth.

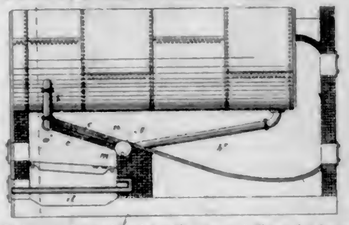
4. The standard K' and the cutter N' adjustable thereon, and having a hoe at its lower end, in combination with the shoe on the end of frame E, having an undercut slot in it to receive the hooked end of the cutter substantially as and for the purpose set forth.

5. The hinged plate P, in combination with the brace R, pivoted at one end to a cross-piece, A^3, whereby it is adapted to be raised edgewise, and supported by its lower edge resting upon the plate P, as set forth.

6. In a ditching-plow, the axle-frame T^3, hinged to the ditcher-frame, in combination with the axle T^4, pivotally connected to the axle-frame by bolster-plate T^7 and fifth-wheel *w*, substantially as and for the purpose set forth.

7. In a ditching-plow, the axle-frame T^3, of the form shown, and pivoted in standards T' T^2, in combination with axle T^4 and its wheels, whereby a wheeled truck is formed, which may be operated as shown and described, for the purpose set forth.

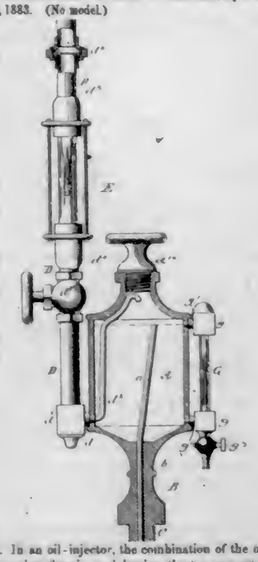
291,041. STEAM-BOILER AND FURNACE. WILLIAM U. FAIRBAIRN, Hyde Park, Mass. Filed Nov. 20, 1882. (No model.)



Claim.—1. In combination with a steam-boiler and a furnace, the arrangement of pipes herein described, consisting of the side pipes, *b b'*, connecting with the opposite sides of the boiler near the front, and communicating with the interior of the same, the cross-pipe *a'*, the parallel pipes *a*, protected with a suitable covering, *e*, the cross-pipe A, so placed in relation to the cross-pipe *a'* that the parallel pipes *a* will incline toward the front of the boiler, and a pipe, *b²*, communicating with the interior of the boiler at the bottom and near the back end thereof, all adapted to induce a circulation of water within the boiler and within the said pipes, and to aid in the deflection of the fire and heat in the combustion-chamber to and against the shell of the boiler from the front to the rear without obstructing the rear draft-passage under the boiler, substantially as and for the purposes set forth.

2. In the combustion-chamber of a furnace, the air-passage *d*, extending from the front to the back of the ash-pit, and adapted to deliver air at the back end of the grate-bars, and to induce a draft from the back toward the front of the combustion-chamber, and in combination with the pipes A *a'* and the parallel inclined deflecting-pipes *a*, suitably connected with a steam-boiler, substantially as and for the purposes set forth.

291,042. LUBRICATOR. WILLIAM U. FAIRBAIRN, Hyde Park, Mass. Filed Feb. 13, 1883. (No model.)



Claim.—1. In an oil-injector, the combination of the oil-reservoir A and pipe E opening therein, and having the transparent chamber or tube E partially filled with air under pressure, through which water passes in drops, all substantially as and for the purposes described.

2. The combination of the oil-chamber, the tube or pipe D, connected therewith, and the sight chamber or tube E, dividing the tube or pipe D into two parts above the oil-chamber, and the controlling-valve d^3, all substantially as and for the purposes described.

3. The combination of the reservoir or cup A, the pipe D connected therewith, the chamber E, the nozzle F, arranged above the oil-chamber, and the controlling-valve d^3, all substantially as and for the purposes described.

4. The combination, in an oil-injector, of the chamber or tube E, the nozzle or teat F, the tube or pipe D, and the gauze d^7, all substantially as and for the purposes described.

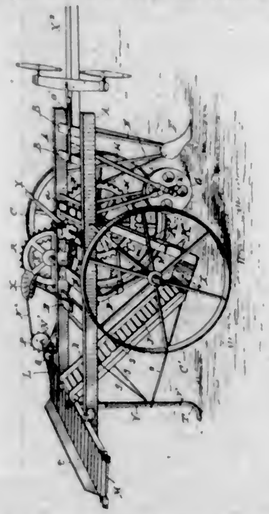
5. The combination, in an oil-injector, of the reservoir A, having the oil-gage G, with the pipe or tube D, having a sight-feed-indicating device above the height of the oil in the reservoir, all substantially as and for the purposes described.

6. In an oil-injector in which the oil is injected by the weight of a water column, a sight-feed, substantially as specified, arranged in an air-chamber in said column, and a valve for controlling the passage of water through said air-chamber, all substantially as and for the purposes described.

7. The combination of the tube D and gauze d^7, with the oil-cup A and screw-plug d^{10}, having the passage d^9, all substantially as and for the purposes described.

291,043. DITCHING-MACHINE. JOHN T. FITZPATRICK, Monticello, Ohio. Filed Sept. 5, 1883. (No model.)

Brief.—By a main frame are carried a plow by means of four downward-converging rods, a roller-wheel by similar means, with a series of holes for adjustment, and an adjustable shoe by means of a vertical standard braced to the excavating-scoop. A two-part crank-axle has projecting arms, (braced both to the spindle ends and the vertical portions of such axle,) having chains running to a shaft operated by lever and ratchet, with locking-pawl for adjusting the frame. The main horizontal portion of one axle part is extended to form a pintle for a sprocket and a gear-wheel engaging a gear-wheel on the riding-wheel spindle for driving endless belts.



Claim.—1. In a ditching-machine, the combination, with plow F and converging rods E, of wheel G, converging rods H, rear shoe, T, and standard V, substantially as set forth.

2. In a ditching-machine, the combination, with axle part D, having truck-wheel C' mounted thereon, of axle part D^2, having truck-wheel C mounted thereon, said axle part D^2 being provided with spindle *d*, having wheels R and S mounted thereon, substantially as set forth.

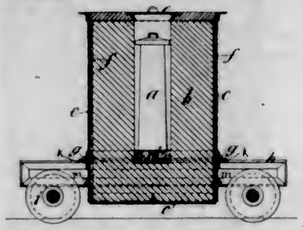
3. In a ditching-machine, the combination, with a crank-axle provided with arms *l*, of braces *m* and *m'*, substantially as set forth.

4. In a ditching-machine, the combination, with oscillating crank-axle D D^2, of hand-lever Y, revolving shaft *j*, cog-wheel *z*, chains *k*, arms *l*, pulleys *l'*, and braces *m m'*, substantially as set forth.

5. In a ditching-machine, the combination, with scoop I and brace *e*, of depending standard V, shoe T, and adjusting device *r'*, substantially as set forth.

6. In a ditching-machine, the combination, with axle part D^2, provided with spindle *d*, of wheels R and S, mounted on said spindle, substantially as set forth.

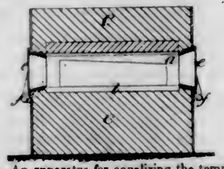
291,044. APPARATUS FOR EQUALIZING THE TEMPERATURE OF STEEL INGOTS. JOHN GJERS, Middlesbrough, in the North Riding, County of York, England. Filed Mar. 23, 1883. (No model.) Patented in France May 8, 1882, No. 143,829; in Germany May 9, 1882, No. 21,716; in Belgium May 12, 1882, No. 57,891; in England July 26, 1882, No. 3,545, and in Luxemburg Oct. 30, 1883, No. 317.



Claim.—1. A portable apparatus for equalizing the temperature of steel ingots, comprising a mass of brick-work or its equivalent, designed to act as an accumulator of heat, and having formed therein a vertical ingot-cell (or vertical ingot-cells) with cover, and a strong metal box or casing, *c*, mounted on wheels and inclosing said brick-work, the whole so constructed and arranged that ingots may be inserted and allowed to soak, (with exclusion of air,) so as to attain throughout a suitable temperature for rolling off successfully into blooms, or directly into a finished article, without reheating in a furnace, substantially as described.

2. In a portable apparatus for equalizing the temperature of steel ingots to enable them to be rolled into blooms or finished articles without recourse to a reheating-furnace, the combination of the mass of brick-work *b*, strong metal box or casing *c*, vertical chambers with sand bottoms *d* and covers, angle-pieces *g*, girders *h*, axles, and wheels *i*, all constructed, arranged, and operating substantially as described.

291,045. APPARATUS FOR EQUALIZING THE TEMPERATURE OF STEEL INGOTS. JOHN GJERS, Middlesbrough, in the North Riding, County of York, England. Filed Mar. 23, 1883. (No model.) Patented in Germany May 9, 1882, No. 21,716; in England July 26, 1882, No. 3,545; in Belgium Apr. 13, 1883, No. 61,080, and in Luxemburg Oct. 30, 1883, No. 317.



Claim.—1. An apparatus for equalizing the temperature of steel ingots, comprising a series of permanent horizontal chambers resembling pigeon-holes formed in a mass of brick-work constructed to act as an accumulator of heat, and each chamber being arranged to inclose an ingot (or ingots) and allow it (or them) to soak, (with exclusion of air,) so as to attain throughout a suitable temperature for rolling off successfully into blooms or directly into a finished article without reheating in a furnace, substantially as described.

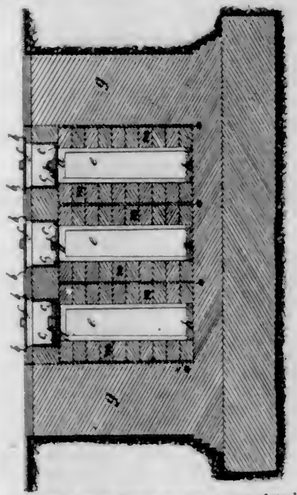
2. In an apparatus for equalizing the temperature of steel ingots, a series of horizontal chambers resembling pigeon-holes formed in and extending entirely through a mass of brick-work constructed to act as an accumulator of heat, each of said chambers being provided at each end with a removable cover, so that ingots may be inserted at one end, be inclosed in the chamber, (with exclusion of air,) so as to soak therein, and be afterward withdrawn at the other end of the chamber, substantially as described, for the purpose specified.

3. In an apparatus for equalizing the temperature of steel ingots, a cell or chamber constructed in the manner of a pigeon-hole in a mass of brick-work designed to act as an accumulator of heat, said chamber being provided with a ledge or projection, *b*, for the ingot to rest upon and to facilitate the charging, and also with a cover at each end, so arranged that an ingot may be fed in at one end, then inclosed within the chamber practically to the exclusion of air, and afterward may be withdrawn at the other end, substantially as described, for the purpose specified.

4. A horizontal chamber for equalizing the temperature of steel ingots, constructed to open at the end or ends, and not at the top, substantially as described.

291,046. APPARATUS FOR EQUALIZING THE TEMPERATURE OF STEEL INGOTS. JOHN GJERS, Middlesbrough, in the North Riding, County of York, England. Filed Mar. 23, 1883. (No model.) Patented in France May 3, 1882, No. 148,329; in Belgium May 12, 1882, No. 57,891; in England Feb. 15, 1883, No. 847, and in Luxemburg Oct. 30, 1883, No. 317.

Brief.—The wells of the several pits are separated by thick joints of fire-clay.

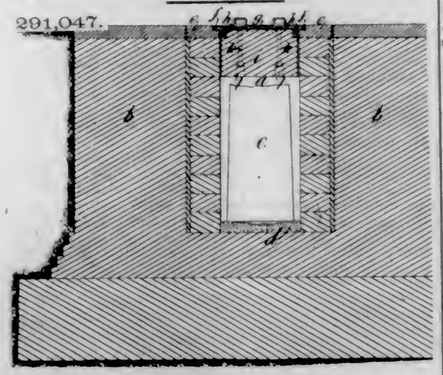


Claim.—1. In a pit for equalizing the temperature of steel ingots, an enlarged mouth, in combination with a cover capable of being let down and supported in said mouth just above the level of the top of the ingot, whereby a chamber is formed above said cover, which can be filled with some material that does not readily conduct heat, substantially as described.

2. In a pit for equalizing the temperature of steel ingots, an enlarged mouth, in combination with a lower cover capable of being let down and supported in said mouth just above the level of the top of the ingot, and an upper cover supported in said mouth above the lower cover, whereby a space is formed between said covers capable of being filled with some material that does not readily conduct heat, substantially as described.

3. In an apparatus for equalizing the temperature of steel ingots so as to enable them to be rolled into blooms or finished articles without treatment in a reheating-furnace, a mass of brick-work containing a series of vertical pits, each constructed of a cross-section somewhat exceeding that of the ingots to be treated and of a depth somewhat greater than the length of the longest ingot the pit is designed to receive, and with an enlarged upper end or mouth with metal lining, two ledges, shoulders, or seats, *b c*, and two covers, *d f*, inclosing a space or chamber between them, all substantially as described and illustrated, for the purpose set forth.

291,047.



291,047. APPARATUS FOR EQUALIZING THE TEMPERATURE OF STEEL INGOTS. JOHN GJERS, Middlesbrough, in the North Riding, County of York, England. Filed Mar. 23, 1883. (No model.) Patented in France May 3, 1882, No. 148,329; in Belgium May 12, 1882, No. 57,891; in England Feb. 15, 1883, No. 847, and in Luxemburg Oct. 30, 1883, No. 317.

Claim.—1. An apparatus for equalizing the temperature of steel ingots, comprising a vertical pit, *a*, formed in a mass of brick-work or its equivalent, and a cover comprising a metal plate, *g*, and a deep block of brick or its equivalent, *i*, suspended to said metal plate *g*, substantially as described.

2. A cover for a pit for equalizing the temperature of steel ingots, consisting of a metal plate, *g*, with fillet *h*, deep block of brick or its equivalent *i*, and eyebolts *k*, the whole constructed as described and illustrated.

291,048. APPARATUS FOR EQUALIZING THE TEMPERATURE OF STEEL INGOTS. JOHN GJERS, Middlesbrough, in the North Riding, County of York, England. Filed Mar. 23, 1883. (No model.) Patented in Germany May 9, 1882, No. 21,716; in England July 26, 1882, No. 3,545; in Belgium Apr. 13, 1883, No. 61,080, and in Luxemburg Oct. 30, 1883, No. 317.



Claim.—1. An apparatus for equalizing the temperature of steel ingots, comprising a long chamber resembling a flue, constructed in a mass of brick-work and provided with a traveling platform or support to carry the ingots along while under treatment, the arrangement being such that while the ingots are in the flue-like chamber their temperature will be caused to become throughout sufficiently uniform to enable them to be rolled without reheating in a furnace, substantially as described.

2. The improved apparatus for equalizing the temperature of steel ingots, comprising the flue-like chamber *c*, with inlet *e*, removable cover *e'*, outlet *f*, removable cover *f'*, rollers *g*, and mechanism for operating same, all substantially as described and illustrated.

291,049. APPARATUS FOR LAYING RAILROAD-TRACKS. CHAS. R. GOODMAN, Hammond, Ind. Filed May 9, 1883. (No model.)

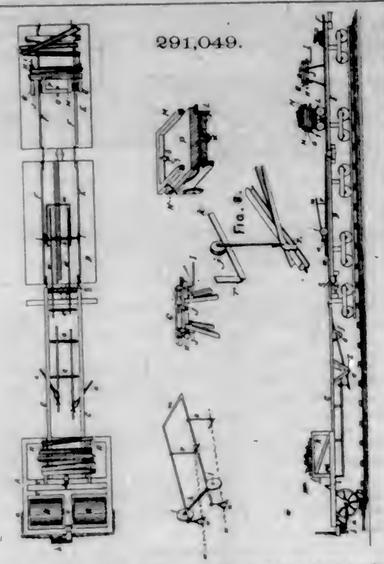
Brief.—A track-layer consisting of a traction-truck running on the graded road. In rear of the traction-truck is a platform for guiding the truck which carries the ties. A construction-car is also attached, provided with a track, thus making a continuous track from front to rear. On the track are placed adjustable horses. A clutch-truck is used to move the rails. Grappling-tongs are employed to draw the rails forward or back. These tongs are supported by rail-hangers which run on a track suspended below the platform.

Claim.—1. The traction-truck A, connected to the car D by means of platform C, for forming a continuous track from the car E to the traction-truck A, as and for the purpose specified.

2. The horses on the car E, constructed with adjustable bearers G G, in combination with the tie-carrying truck, substantially as described, and for the purpose specified.

3. The tie-carrying truck, provided with a pivoted bed or table, P, and the bed combined with the elevating and depressing frame M, lever O *g*, stop *d*, and horses R on traction-truck A, as specified.

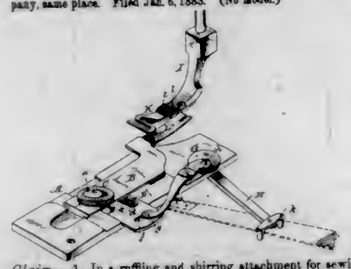
291,049.



4. The rail-truck *i A m*, combined with hooks *v v*, and tongs *n n* for moving rails from the car D to rollers S *e e*.

5. The tongs Z Z, provided with roll-hanger *j*, in combination with track *k*, attached to platform C, and rollers *e e* B, as specified and shown.

291,050. RUFFLING ATTACHMENT FOR SEWING-MACHINES. CHARLES GROTZ, Oskaloosa, Iowa, assignor to the Garretson Ruffler Company, same place. Filed Jan. 5, 1883. (No model.)



Claim.—1. In a ruffling and shirring attachment for sewing-machines, the combination of a blade-carrier and an arm or lever connected to the shuttle-bar of the machine with an intermediate means for connecting the arm or lever to the blade-carrier consisting, substantially, of a pivoted lever and transversely-sliding plate, substantially as and for the purpose described.

2. The carrier B, having connected thereto a suitable ruffler-blade and a transversely-sliding plate, E, in combination with the pivoted lever F and means for operating it, substantially as and for the purpose specified.

3. The blade-carrier B, having suitably connected thereto the slotted plate E, in combination with the lever F, eccentrically-pivoted plate G, and the arm H, connected thereto, substantially as and for the purpose set forth.

4. The blade-carrier B, having pivoted thereto the slotted plate D, in combination with the nut or disk C, having upon its under side groove *b*, to receive the pin *c*, substantially as and for the purpose set forth.

5. The slotted plate E, in combination with the pivoted lever F, slotted plate G, and arm H, substantially as and for the purpose specified.

6. The carrier B, and nut or disk C, having groove *b*, in combination with the slotted plates D E, substantially as and for the purpose set forth.

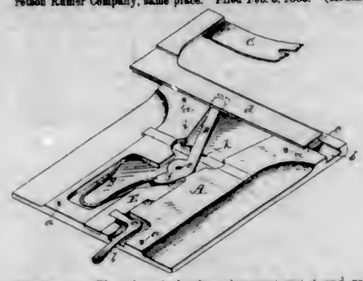
7. The carrier B, having pivoted thereto the slotted plate D, carrying pin *c*, in combination with the slotted plate E, nut or disk C, and lever F, substantially as described.

8. In a ruffling and shirring attachment for sewing-machines, the combination, with the pivoted lever F, having at its ends pins *g h*, of the slotted transversely-sliding plate E, and means for connecting it to the blade-carrier and the eccentrically-pivoted and slotted plate G, the pins upon the lever entering the slots in the plates, substantially as and for the purpose specified.

9. The carrier B, slotted plate D, and grooved nut or disk C, constructed substantially as shown, in combination with the plate E, lever F, plate G, and arm H, substantially as and for the purpose specified.

10. The longitudinally-sliding plate B, and the slotted transversely-sliding plate E, supported by the base-plate A, in combination with the regulating nut or disk C, slotted plate D, pivoted to the carrier or sliding plate B, the lever F, pivoted to the base-plate, the slotted eccentrically-pivoted plate or disk G, and arm H, substantially as and for the purpose set forth.

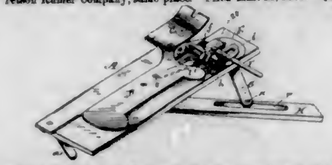
291,051. RUFFLING AND SHIRRING ATTACHMENT FOR SEWING-MACHINES. CHARLES GROTZ, Oskaloosa, Iowa, assignor to the Garretson Ruffler Company, same place. Filed Feb. 3, 1883. (Model.)



Claim.—1. The plate A, having elongated slot *k* and recessed bracket G, in combination with the L-shaped plate F, having an arm or shoulder, *i*, extending up through the slot in the plate A, the lever D, and the gatherer-blade and arm, with means for returning the lever D to its normal position, substantially as and for the purpose set forth.

2. The base-plate A, recessed, as shown, and having elongated slot *k*, in combination with the lever D, formed with extension *f*, the plate E, lever *l*, arm *d*, and plate F, having shoulder *i*, substantially as and for the purpose set forth.

291,052. RUFFLING AND SHIRRING ATTACHMENT FOR SEWING-MACHINES. CHARLES GROTZ, Oskaloosa, Iowa, assignor to the Garretson Ruffler Company, same place. Filed Mar. 16, 1883. (Model.)



Claim.—1. In a ruffling and shirring attachment, the plate A, adapted to serve the purpose of a shuttle-covering slide and be secured in the bed-plate, a blade, and a reciprocating blade-carrier connected with the said plate, combined with a vertical shaft extended through the plate A from bottom to top, a crank and crank-pin attached to the same above the plate A, a slotted throw-lever vibrated by the crank and crank-pin, and an adjustable connection between it and the blade-carrier, and with a lever or arm attached to the lower end of the said shaft, and adapted to be vibrated horizontally parallel with the surface of the bed-plate by means of the usual shuttle-mover, substantially as described.

2. In a ruffling and shirring attachment for sewing-machines, a base-plate adapted to be secured in horizontal position parallel with the cloth-plate and above the path of movement of the shuttle, and provided with a vertical bearing-passage extended through the said plate from its upper to its under side, a short shaft having projecting from its lower end below the said plate and the cloth-plate of the machine an arm which is extended horizontally backward under the said cloth-plate, to be engaged and vibrated by a shuttle-moving lever, and provided at its upper end with a crank and crank-pin, combined with a blade-carrier and blade, and with suitable means to connect the said crank-pin with the blade, whereby the oscillations of the said shaft impart reciprocating motion to the blade-carrier and blade, substantially as described.

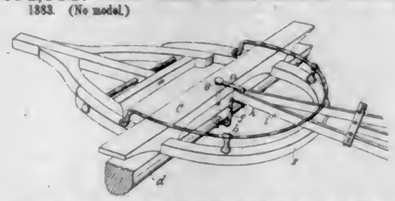
3. In a ruffling and gathering attachment for a sewing-machine, a plate, A, adapted to serve the purpose of a base-plate and shuttle-covering slide, and a blade-carrier and blade, and a vertical shaft having its bearings in the said plate, and provided at its lower end with a horizontal backwardly-extended arm adapted to be connected with and actuated by a shuttle-moving lever, and at its upper end with a crank and crank-pin, combined with a pivoted throw-lever slotted as described, and with

a link connecting the throw-lever with the blade-carrier, and with the regulating-lever or device to change the position or point of connection of the pin of the said link with the said throw-lever, substantially as described.

4. In a ruffling and gathering attachment for a sewing-machine, the plate A, adapted to serve as a base-plate for the attachment and as a shuttle-covering slide, and provided with a recess at its upper side, combined with the vertical shaft *m* therein, the horizontal arm extended backwardly from the under side of the said plate, and with the crank made as a disk fitted into the said recess, the said crank being provided with a crank-pin, by which to impart reciprocating motions to a blade-carrier and blade, with means for operating the horizontally-extended arm under the cloth-plate, substantially as described.

5. In a ruffling and gathering attachment for a sewing-machine, the plate A, adapted to serve as a base-plate for the attachment and as a shuttle-covering slide, and provided at its upper side with a recess, combined with a reciprocating ruffling-blade carrier loosely connected with the said plate, and with a link attached to the under side of the said blade-carrier, the said link moving both longitudinally and laterally in the said recess, with means for operating the horizontally-extended arm under the cloth-plate, substantially as described.

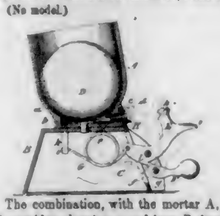
291,053. CLEVIS. ROBERT HAMILTON, Franklin, Ind. Filed Oct. 8 1883. (No model.)



Claim.—1. A clevis for the purpose specified, having arms of unequal length connected by an offset-bar adapted to receive and support a truck-tongue, and said arms provided with eyes to receive a king-bolt, all substantially as shown and described.

2. The combination, with the forward axle of a wagon and the sand-bar thereon, and the tongue of a truck, of a clevis adapted to embrace between its arms said axle and sand-bar, and to receive a king-bolt, and having the offset A, for the purpose specified.

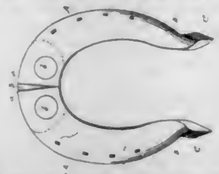
291,054. MORTAR. WILLIAM A. HARWOOD, Montclair, N. J. Filed Nov. 17, 1883. (No model.)



Claim.—1. The combination, with the mortar A, having an air-chamber, *b*, lateral cartridge-chamber *c*, and base B, formed of a hollow truncated pyramid, of a coiled-wire spring, G, hammer E, and weighted trigger F, substantially as set forth, the said trigger extending from the base at the back of the hammer, as described.

2. The combination, with the mortar A and hanging latch H, of the hammer E, provided with the nib *h*, the said latch and nib being so arranged relative to each other that the said nib *h* will strike over the said latch H, and act as a catch for preventing the swinging of the latch, as herein described.

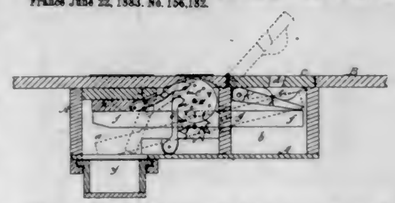
291,055. SHOE FOR HOOF-BOUND HORSES. WILLIAM H. HENDRICKS, Whitehall, Ind. Filed Nov. 3, 1883. (No model.)



Claim.—1. In a shoe for hoof-bound horses, the parts A, having joint *a* and rounded parts D, in combination with plate B, as shown and described, and for the purposes set forth.

2. In a shoe for hoof-bound horses, the plates A, having rounded parts D at the heel, and outwardly-flared calks *c* and the joint *a*, in combination with plate B, secured thereto by rivets *b*, as described, and for the purposes set forth.

291,056. APPARATUS FOR CHECKING AND REGISTERING THE NUMBER OF GAMES OR DEALS PLAYED AT CARDS, &c. GEO. F. HOWARD, London, England. Filed June 26, 1883. (No model.) Patented in England May 25, 1883, No. 2,612; in Germany June 21, 1883, and in France June 22, 1883, No. 156,182.



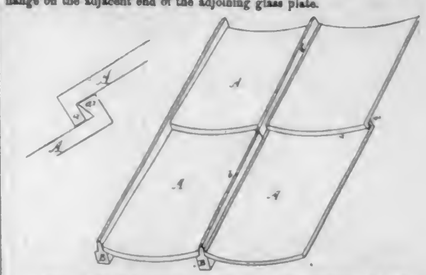
Claim.—1. A checking and registering apparatus having a lid or cover the opening of which serves to release a lever, and thereby to actuate a pawl which operates a registering counter or counters, all substantially as shown and described.

2. In combination with the box or receiver A, the lid *c*, levers *k* and *f*, flap *h*, pawl *l*, and counter-cylinder C, the combination being and operating all substantially as described.

3. In combination with the box or receiver A, the lid *c*, levers *k* and *f*, flap *h*, pawl *l*, cylinder C, ratchet *p*, shaft *q*, toothed wheel *z*, and cylinder D, the combination being and operating all substantially as described.

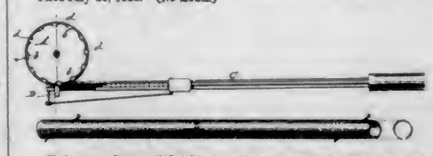
291,057. SKYLIGHT. OLIVER C. RUSSELL, Cleveland, Ohio. Filed Aug. 13, 1883. (No model.)

Brief.—Employs concavo-convex glass plates having on one of their adjacent ends a depending straight flange, which overlaps a beveled flange on the adjacent end of the adjoining glass plate.



Claim.—The glass plates A, formed with concavo-convex surfaces, and having a straight flange, *a*, and a beveled flange, *a'*, formed on their ends, in combination with sash-rails B, substantially as shown and described.

291,058. NAIL-MACHINE. JETHRO B. HORTON, Vergennes, Vt. Filed July 20, 1883. (No model.)



Claim.—1. In a nail-finishing machine, a revolving disk provided with peripheral recesses to receive the heads of the nails, and a slotted guide terminating adjacent to the periphery of said disk, in combination with a dog or carrier arranged to reciprocate past the end of the tube to and from the disk, and means, substantially as described, for imparting motion to said dog, whereby the nails are transferred positively and individually from the guide to the recesses of the disk.

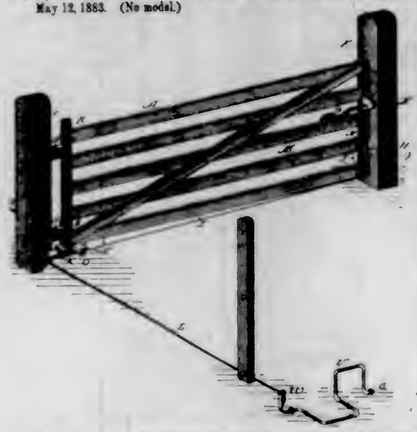
2. In combination with the peripherally-notched disk, the grooved or slotted guide terminating adjacent thereto, the dog or carrier arranged to reciprocate past the end of the guide, the toothed wheel to move said dog backward, and the spring applied to drive the same forward.

3. In combination with the notched disk and the slotted guide, the tube, the spring-supported dog at the end of said tube, and a toothed disk secured above and concentric with the notched disk, substantially as shown.

4. In combination with the slotted guide adapted to sustain the nails by their heads, the slotted tubular extension at the end of said guide, and the detachable slotted tube whereby the series of nails may be supported and transferred to the guide.

5. The improved device for transferring nails to the feed mechanism of the nail-machine, consisting of a longitudinally-slotted tube provided at its end with removable pins or stops to retain the nails therein.

291,059. FARM-GATE. WILLIAM C. KIEKER, Mequon, Wis. Filed May 12, 1883. (No model.)

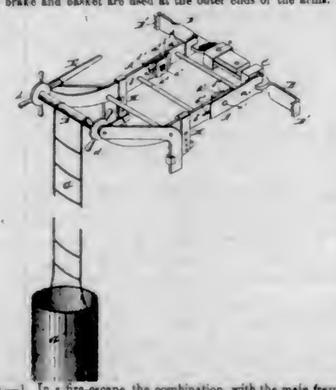


Claim.—1. In that class of gates which are opened and closed by an approaching and receding carriage, the devices herein described for transmitting motion from the tripping-arm to the latch, consisting in the combination, with the connecting-rods, of the tripping devices, of the bracket K, provided with arm O, bracket S, rod J, elbow-crank lever I, rod H, latch D, and catch E, said bracket K being loosely socketed upon the shoulder T of bracket S, substantially as and for the purpose specified.

2. The combination of bracket K, provided with arm O, with rods Q and L, tripping-rods G and P, rod J, lever I, rod H, spring D, and catch E, substantially as and for the purpose specified.

291,060. FIRE-ESCAPE. WILLIAM F. KRENTOFF and PHILIPP BERTRES, Englewood, Ill. Filed Feb. 19, 1883. (No model.)

Brief.—The cross-bar is made in two parts hinged together and provided with a slide and spring-catch to hold them together; also, the side bars are made in two parts, one part being corrugated to mesh with a corrugated nut moving on a bolt on the other part. A ladder and reel with a brake and basket are used at the outer ends of the arms.



Claim.—1. In a fire-escape, the combination, with the main frame, of a cross-bar for engagement with the inside of a window-frame, made in two parts, hinged together, and provided with means for locking them in position, substantially as and for the purpose set forth.

2. In a fire-escape, the frame A, in combination with the arms B B, hinged together, and provided with the spring-catch *c'* and slide C, whereby the arms may be thrown out of line with each other or secured firmly in their proper position, substantially as shown and described.

3. In a fire-escape, the side bars made in two parts, one of which is slotted and formed with a series of corrugations, and the other provided with a bolt or stud, a corrugated plate, and a set-nut, substantially as and for the purpose set forth.

4. A fire-escape consisting, essentially, of the frame A, having extension side bars, substantially as herein described, the hinged arms B B, secured by a spring-catch, *c'*, adjustable supports H, reel D, having a ladder, G, and receptacle G', and the lever E, adapted to act as a brake, all combined, constructed, and arranged to operate substantially as described and shown.

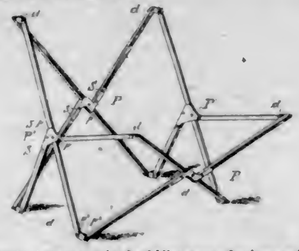
291,061. DEVICE FOR CUTTING OFF THE FLOW OF GAS, &c., IN CASE OF FIRE. JOSEPH A. LAEMLE, Stapleton, N. Y. Filed May 23, 1883. (No model.)



Claim.—1. In combination with the gas-pipe of a building, a valve held normally open, having a stem and lever outside of the pipe, a weight or spring tending to force said lever against the pressure of the gas to close the valve, and a combustible or fusible connection outside the pipe holding said lever till melted or consumed, substantially as described.

2. The combination of the valve in the gas-pipe, having its stem projecting through the pipe, a lever connected therewith, means, substantially as described, for forcing said lever to close the valve, and fusible or combustible devices for holding said lever to keep the valve open, said devices being adjustable, whereby the lever and valve may be set at an angle, substantially as set forth.

291,062. FOLDING-JOINT FOR CAMP-FURNITURE. PIERRE LATOUR, Ottawa, Ontario, Canada. Filed Aug. 10, 1882. (Model.) Patented in Canada Oct. 25, 1882, No. 15,694.



Claim.—1. A toning-joint for folding camp-furniture and similar articles, consisting of a pair of plates, P, following more or less closely the shape, angle, and relative position of the two short bars B' B^2, which are rigidly secured thereto by screws S, or equivalents, forming a straight or offset line, the through-piece B passing between the two ends of the pieces B' B^2, being secured to the joint-plates by a pivot, *p*.

2. A folding-joint for folding camp-furniture and similar articles, consisting of a pair of plates, P', following more or less closely the shape, angle, and relative position of the two short bars b' b^2, one being rigidly connected to one end of the plates by screws S, or equivalents, and the other being pivoted to the other end by a pivot, p', the pieces b' b^2 forming an offset elbow, the through-piece *b* passing between the two ends of the pieces b' b^2, and being secured to the joint-plates by a pivot, *p*.

3. The combination of the through-pieces B and cross-pieces B' B^2, connected by plates P, as described, through-pieces *b* and cross-pieces b' b^2, connected by the plates P', as described, and the corner joint, *d*, all substantially as shown and described, and for the purpose set forth.

291,063. ELECTRICAL ANNUNCIATOR. ALBERT E. LEITOR, Dayton, Ohio, assignor of one-half to Charles A. Phillips, same place. Filed Sept. 15, 1883. (No model.)

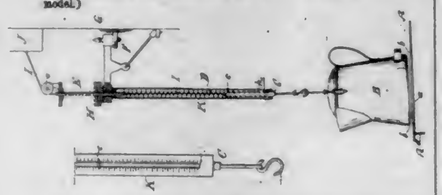


Claim.—1. The combination, in an electrical annunciator, of a series of electro-magnets with suitable electric connections and a series of

corresponding pivoted permanent magnets within the case, to which are attached a corresponding series of index-needles and a series of numbers upon the face of the annunciator, substantially in the manner and for the purpose specified.

2. The combination, in an electrical annunciator, of a series of magnets with suitabe electric connections, a series of corresponding pivoted permanent magnets within the case, to which are attached a corresponding series of index-needles upon the face of the annunciator, a series of numbers upon the face of the annunciator, and one or more diamagnetic gravitating tripping-rods, substantially as and for the purpose specified.

291,064. COMBINED BOILER, FIRE-REGULATOR, AND ALARM. CHARLES STEWART LOCKWOOD, Newburg, N. Y. Filed Feb. 21, 1883. (No model.)



Claim.—1. The combination, with a support arranged above a cook-stove or range, of a vessel suspended from said support by an elastic connection over the stove or range, substantially as herein shown and described, whereby the vessel will be raised by the evaporation of its contents, as set forth.

2. The combination, with a support, of a spring attached to the same, and a vessel adapted to be supported over a hole of a cooking-stove or range by said spring, substantially as herein shown and described, whereby the vessel will be raised by the evaporation of its contents and the fire correspondingly checked, as set forth.

3. The combination, with a support arranged above a cook-stove or range, of a spring attached to said support, a vessel attached to the lower end of the spring, and an alarm connected to said spring, substantially as herein shown and described, whereby the vessel will be raised by the evaporation of its contents and an alarm sounded, as set forth.

4. The combination, with the stove A, of the vessel B, rod C, spring D, screw-shaft E, nut H, and bracket-support F, substantially as and for the purposes set forth.

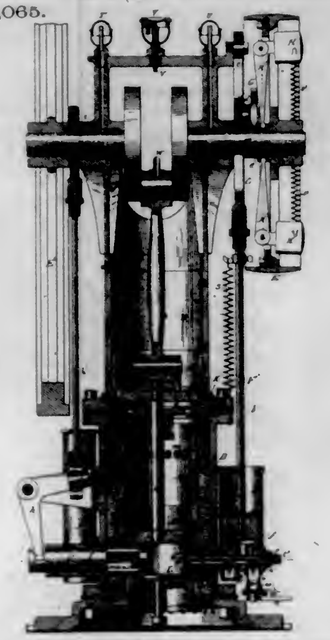
5. The combination, with the stove A, of the vessel B, rod C, spring D, shaft E, nut H, bracket F, cord I, and alarm J, substantially as shown and described.

6. The combination, with the stove and spring-supported vessel B, of the cord I, connecting the vessel with the alarm J, said cord passing through the hollow screw-shaft E, substantially as shown and described.

7. The combination, with the stove A, spring-supported vessel B, cord I, and alarm J, of the anti-friction-roller *e*, substantially as shown and described.

8. The combination, with a support arranged above a cook-stove or range, of the rod C, provided with the pointer *c*, the vessel B, the spring D, and the slotted tube K, surrounding the said rod and spring, substantially as herein shown and described, and for the purpose set forth.

291,065. GAS-MOTOR. HIRAM S. MAXIM, Paris, France. Filed Jan. 16, 1883. (No model.)



Claim.—1. An air or gas engine comprising, in combination, the following instrumentalities, to wit: a working-cylinder and means for exploding therein charges of gas and air, a piston impelled by such explosions, a vacuous chamber brought into communication with the working-cylinder by the movement of the piston, a valve for admitting air into the cylinder when connected with the vacuous chamber, and means for introducing explosive charges into the cylinder, these parts being constructed and combined for co-operative action in substantially the manner set forth.

2. In a gas-engine, the combination, with the working-cylinder and piston, of a vacuum-cylinder of greater capacity, a piston working therein, and an intermediate recess or chamber with which the working-cylinder is brought into communication by the withdrawal of its piston, whereby at the end of each stroke the gases are withdrawn from the working-cylinder, in the manner described.

3. The combination, with the working-cylinder of a gas-engine, of a pump for introducing explosive charges into said cylinder, means for positively raising the piston of the pump and then disengaging it, and a spring for forcing it downward, all as set forth.

4. The combination, in a gas-engine, of the working and vacuum cylinders connected in the manner described, the pistons working in said cylinders, and the intermediate chambers of communication at and around the ends of said cylinders, as described.

5. The combination, with the working and vacuum cylinders and pistons contained therein, of intermediate chambers of communication at or around the ends of the cylinders, the working-cylinder being perforated in substantially the manner described, whereby communication is established between the two cylinders through said intermediate chambers on the partial withdrawal of the pistons, as and for the purpose set forth.

6. The combination, with the working and vacuum cylinders and pistons contained therein, of chambers or vacuous spaces located around the ends of and between said cylinders, and exhaust connected with the said chambers, as and for the purposes set forth.

7. The combination, in a gas-engine, of a working cylinder and piston and a vacuum cylinder and piston, an automatic air-check valve opening into the working-cylinder, and an exhaust-valve opening outward, these parts being combined in substantially the manner described.

8. The combination, with the working-cylinder of a gas-engine, of a pump for introducing charges of air and gas into the cylinder, and a valve located between the cylinder and pump, and provided with a number of perforations, through which the air and gas are forced when the valve is open, as and for the purpose set forth.

9. The combination, with the working-cylinder, of the pump F, the perforated valve M, with air and gas inlet valves, and means for controlling the same, as and for the purpose specified.

10. The combination, with the pump F, piston-rod *f*, and plate G, of spring S and cam G', all as set forth.

11. The combination, with the working-cylinder, of the chambered piston, the flame-chimney, a bell-crank lever connected with the piston, and an eccentric for operating the bell-crank lever, all as set forth.

12. The combination of the bell-crank lever A, rod *k'*, eccentric *i*, piston I, containing a chamber at its inner end, and the flame-chimney J, these parts being constructed and arranged in such a manner that the piston I thrusts the flame directly into the interior of the working or explosion cylinder, in the manner described.

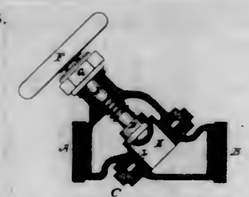
13. The combination, with the working-cylinder, of an induction-valve, L, perforated valve M, pump F, and valves connecting therewith, and exhaust-valve, these parts being constructed in the manner specified.

291,066. VALVE AND UNION. JAS R. MAXWELL, Cincinnati, Ohio. Filed Apr. 27, 1883. (No model.)

Claim.—1. A valve-body formed with two parts fitted to connect with pipes and united to swivel with reference to each other upon an axis disposed at an angle to the plane or planes occupied by the pipes, which may be connected by such valve-body.

2. A valve-body having its nose formed integral with one of its pipe-receivers and having its other pipe-receiver separably joined by a swiveling union.

291,066.

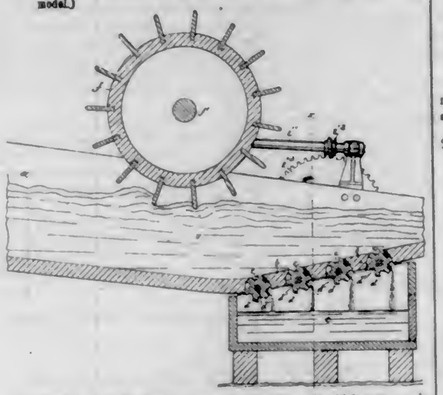


3. A valve-body having its nose formed integral with one of its pipe-receivers and having its other pipe-receiver separable in a plane at an angle to the axis of both pipe-receivers.

4. Two pipe-receivers, a means for uniting them, and a spherical ring seating against said receivers to pack the joint and give flexibility to the union, substantially as set forth.

5. A valve-body combined with a separable seat, having a spherical exterior, seating in said valve-body.

291,067. ORE-SEPARATOR. GORDON MCKAY, Newport, R. I., and HADLEY P. FAIRFIELD, West Medford, Mass. Filed Apr. 30, 1883. (No model.)



Claim.—1. The combination of a sluice through which a stream is kept continuously running, a series of riffles having pockets or receptacles to receive the heavier particles, and mechanism, substantially as described, operated by the running stream in the sluice, to automatically rotate said riffles periodically to discharge their contents and simultaneously present an empty pocket or receptacle for the reception of the material to be separated, substantially as and for the purpose specified.

2. The combination of a sluice through which a stream is kept continuously running, a series of riffles having pockets or receptacles to receive the heavier particles, mechanism, substantially as described, operated by the running stream in the sluice, to automatically rotate said riffles periodically to discharge their contents and simultaneously present an empty pocket or receptacle for the reception of the material to be separated, and the tight strong box *s* beneath said riffles, into which the riffles discharge, substantially as and for the purpose specified.

3. The sluice, the series of riffles, the sprocket-wheels on the shaft of said riffles, the connecting-chain, a pawl-and-ratchet mechanism on the shaft of one of said riffles, and gearing connecting said mechanism with a wheel in the sluiceway, combined and arranged substantially as described.

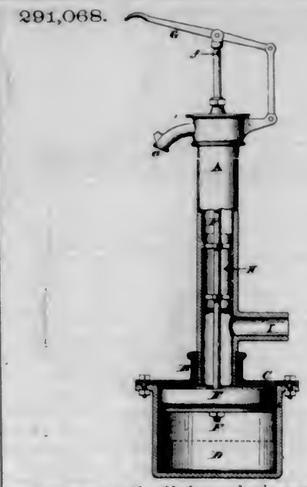
4. The sluice and series of rotary riffle-carriers and connecting-gearing therefor, combined with the actuating-ratchet and pawl-carrier, and mechanism actuated by the flow of the stream in the sluice for moving the said pawl-carrier intermittingly, as and for the purpose described.

291,068. HYDRANT. CARL MEYER and WILLIAM H. LAUFERSICK, Cincinnati, Ohio. Filed June 19, 1883. (No model.)

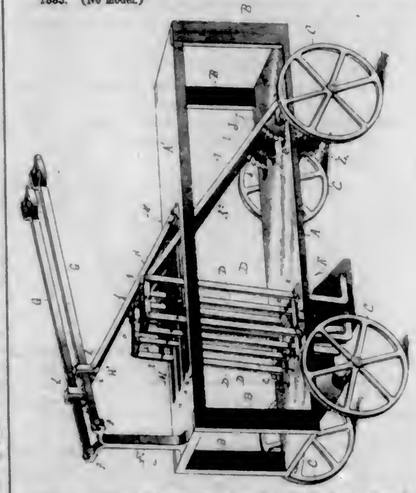
Claim.—1. In combination with the stock A I, chamber D, and piston E, of a non-wasting hydrant, the hollow piston-rod F, carrying the cut-off H, and having near its upper end a ventage, *f*, that permits the escape of air from chamber D when said piston is depressed, as herein described.

2. In combination with a non-wasting hydrant having a hollow piston-rod, F, provided with a plunger, E, cut-off H, and ventage *f*, which ventage permits escape of air from the chamber D, as herein described, the valved spout *a* K, pipe J, lever G, rope L, and sheave N, which lever, rope, and sheave enable said piston-rod to be operated from the upper stories of a house, substantially as explained.

291,068.



291,069. MOTOR. NIELS MIKKELSEN, Chicago, Ill. Filed Oct. 30, 1883. (No model.)



Claim.—1. In the apparatus described, the L-shaped bars D, arranged in groups of four, pivoted to base A, and carrying weights E, in combination with levers G H H' K K' and intermediate gearing for imparting motion to said vehicle, as described and shown.

2. In the apparatus described, the L-shaped bars D, pivoted to base A, and carrying weights E, in combination with levers G H H' K K', springs M, and intermediate gearing for imparting motion to said vehicle, as described and shown.

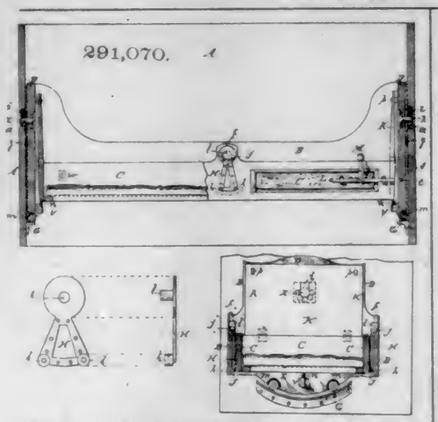
3. The L-shaped bars D, carrying weights E, and rollers *g g'*, in combination with levers H H', carrying rollers *i*, levers G and K K', springs M, and intermediate gearing for imparting motion to the vehicle, as described and shown.

291,070. SELF-LEVELING BERTH FOR SHIPS. JOSEPH H. MILLIGAN, Boston, Mass., assignor of one-half to William Newsome, same place. Filed Sept. 14, 1883. (No model.)

Claim.—1. In a self-leveling ship's berth, the guard-boards K, provided with the rollers *p*, in combination with the crib C, substantially as and for the purpose set forth.

2. In a self-leveling ship's berth, the elongated bearings *i*, provided

291,070.

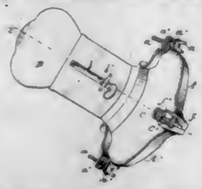


with the friction-rollers *a*, in combination with the bunk B, provided with the studs *x*, to enable said bunk to rise and fall as the rollers *m* approach and recede from the ends of the curved bearing G, substantially as specified.

3. In a self-leveling ship's berth, the elongated bearings *f*, provided with the friction-rollers *j*, in combination with the crib C, provided with the studs *l*, to enable said crib to rise and fall as the rollers *h* approach and recede from the ends of the curved bearing J, substantially as set forth.

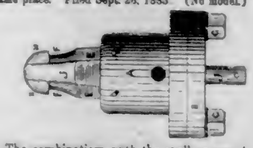
4. The improved self-leveling ship's berth herein described, the same consisting of the bunk B, provided with the studs *x*, bearings J, rollers *m*, springs *n*, and bearings *f*, and the crib C, provided with the studs *l*, rollers *h*, bar L, and guards K, in combination with the walls A, provided with the curved bearings G, and elongated bearings *i*, constructed, combined, and arranged to operate substantially as specified.

291,071. DEVICE FOR AID IN VOCAL CULTURE. CHAS. LEWIS MITCHELL, Boston, Mass. Filed June 30, 1883. (No model.)



Claim.—A device for aid in vocal culture, composed of the adjustable mouth-holder A, provided with the adjustable tooth-holder *c*, and combined with the adjustable detachable tongue-plate B, the whole constructed, arranged, and combined substantially as described and shown, and for the purposes set forth.

291,072. PRESS FOR MOLDING GLASS INSULATORS. EDWARD J. MURPHY, Boston, Mass., assignor to Lawrence B. Gray and Joseph Ham, both of same place. Filed Sept. 26, 1883. (No model.)



Claim.—The combination, with the shell or case A, of the pivoted side pieces, E, having incline faces, and the tapering center piece, J, adapted to be slid back and forth therein, whereby the end portion of the plunger may be expanded and contracted, as and for the purposes set forth.

291,073. STATION-INDICATOR. CHAS. W. MUSGROVE, Lock Haven, Pa. Filed Sept. 6, 1883. (No model.)

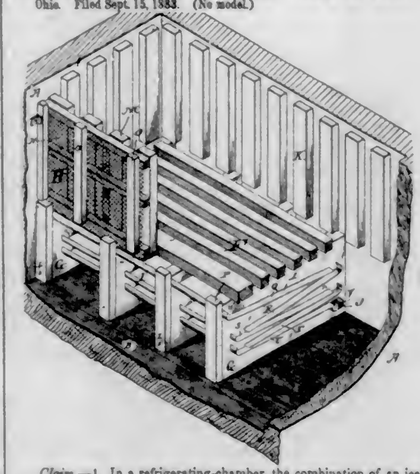
Claim.—1. In combination with rollers G G', to which the ends of the indicating cloth or strip are fastened, and which successively receive and deliver it, having square projections *g g'* extending therefrom, the plate M, which serves by rotation to afford access alternately to the projection *g* or *g'*, according to the direction pursued by the cloth, for which purpose it is suitably perforated, catch N serving to reciprocate its end *n*, and hence the spring *n'*, affixed thereto, when it is desired to rotate the plate M, and crank L, by which rotation is imparted either to the projection *g* or *g'* on the roller G or G', according as it becomes a receiver.

2. In combination with the receiving and delivery rollers G G', guide-rollers I I', serving to change the direction of the cloth, guide-frame F', located between and in front of such rollers to guide the cloth between them, glass E, whereby the information is exposed, frame F, in which the mechanism is mounted, and which is removable from the outer casing, and cloth K, which bears the indications and is attached to both rollers G and G', substantially as and for the purpose set forth.

3. In indicators, the rollers G G', having square projections *g g'*, plate M, affording access thereto, catch N, having end *n*, to which is attached the inner end of a spring, *n'*, which serves normally to hold the plate M stationary, and only permits its rotation when raised from its bed by the catch, and crank L, in combination with guide-rollers I I', guide-frame F', glass E, frame F, and cloth K.

4. In indicators, the frame A, being an outer casing for the entire device, having lid B, the removable frame F, glass E, slide D, serving to remove the glass E for cleaning and other purposes, the glass being mounted in the slide, rollers G G' I I', guide-frame F', plate M, catch N, having end *n* and spring *n'*, crank L, and cloth K.

291,074. REFRIGERATING-CHAMBER. AARON MYERS, Hamilton, Ohio. Filed Sept. 15, 1883. (No model.)



Claim.—1. In a refrigerating-chamber, the combination of an ice-crib with a floor formed of slats or other open-work, a series of shelves below the ice-crib arranged with decreasing slope, as set forth, and an outlet-pipe arranged to receive the water from the lower pan, substantially as and for the purpose set forth.

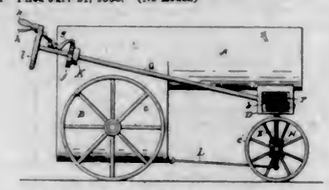
2. In a refrigerating-chamber, the combination of an ice-crib with a slatted or other open floor, and a slatted or other open front, and a series of draining-shelves arranged below the ice-crib and open at the front for the free admission of air between the shelves, substantially as and for the purpose set forth.

3. In a refrigerating-chamber, the combination, substantially as set forth, of an ice-crib with an open-work bottom and front, a series of draining-shelves arranged below the ice-crib in such manner that the air may circulate freely over them horizontally and past their edges vertically, substantially as and for the purpose set forth.

4. In a refrigerating-chamber, the combination, with the floor and walls of the ice-crib having open-work front to the ice-crib formed of interior slats, of a netting of wire-cloth exterior to said slats, substantially as and for the purpose set forth.

5. In a refrigerating-chamber, the base structure for the ice-crib, consisting of the slatted or open floor F, the legs G, and the shelves I, passing through said legs, combined substantially as and for the purpose set forth.

291,075. TRACTION-ENGINE. WILSON S. OWINGS, Collier's Station, W. Va. Filed July 21, 1883. (No model.)



Claim.—1. In a device for leveling boilers, a rod revolubly secured to the boiler, and provided on its forward end with a worm-screw, a threaded king-bolt having a spirally-toothed wheel fixed on the upper end thereof, said worm-screw and toothed wheel meshing, in combination with an axle provided with a threaded oscillating nut for the reception of said king-bolt, substantially as described, and for the purpose set forth.

2. In a device for leveling boilers, a rod revolubly secured to the boiler, and provided on its forward end with a worm-screw, a threaded king-bolt having a toothed wheel fixed on the upper end thereof, said worm-screw and toothed wheel meshing, in combination with an axle provided with a bevel-socket block, said block having an oscillating nut therein for the reception of the king-bolt, substantially as described, and for the purpose set forth.

3. In a device for leveling boilers, a rod revolubly secured to the boiler, and provided on its forward end with a worm-screw, the forward end of said rod being journaled in a box under the front end of the boiler, said box having a toothed wheel therein, said wheel being mounted upon the upper end of the threaded king-bolt, in combination with the forward axle of the machine provided with a socket-block having oscillating threaded nut therein, adapted to receive the threaded king-bolt, substantially as described, and for the purpose set forth.

4. In a device for leveling boilers, a rod revolubly mounted in a lug projecting from the side of the boiler, said lug having a spur-wheel fixed thereto, said rod being provided on its upper end with an actuating crank-wheel and a spring-actuated pawl adapted to engage the spur-wheel and prevent the revolution of said rod, the forward end of the rod being provided with a worm-screw, in combination with a spirally-toothed wheel rigidly mounted upon a threaded king-bolt, said king-bolt being mounted in a threaded oscillating nut in a socket-block on the forward axle, substantially as described, and for the purpose set forth.

5. The combination, with the crank-rod G, of the pawl *g*, ratchet-wheel *f*, and lever *h*, for releasing the same, substantially as and for the purpose set forth.

291,076. DUMMY FOR DISPLAYING CLOTHING. JOSEPH B. PALMERTREE, New York, N. Y. Filed Aug. 10, 1883. (No model.)



Claim.—1. The combination of shell *a* and its head-piece *a'*, with shell *b* and its head-piece *b'*, in separate pieces, adapted to be united, and with the annular disk *f*, shaft B, and base D, substantially as specified.

2. The combination of shell *a* and its head-piece *a'*, with shell *b* and its head-piece *b'*, in separate pieces, adapted to be united, and with disk *f*, strips *d e*, shaft B, and base D, substantially as specified.

3. The combination of shell *a* and its head-piece *a'*, with shell *b* and its head-piece *b'*, in separate pieces, adapted to be united, and with covering *h* folded over upper side of said head-pieces, and with thread *i* drawn through upper edge of said covering, substantially as specified.

4. The combination of shell *a* and its head-piece *a'*, with shell *b* and its head-piece *b'*, in separate pieces, adapted to be united, and with disk *f*, button *j*, shaft B, and base D, substantially as herein shown and described.

291,077. INSTEP-HOLDER FOR LASTING BOOTS AND SHOES. JAMES H. PARKER, Milford, Mass. Filed May 31, 1883. (No model.)



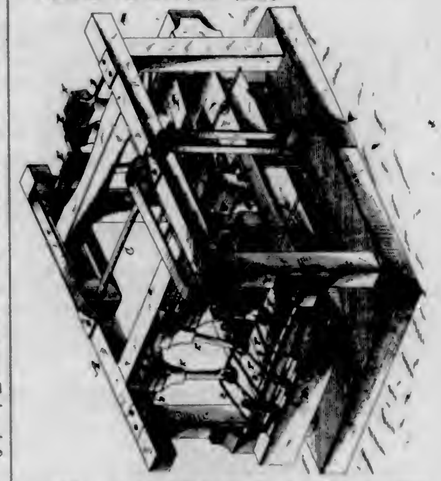
Claim.—1. The combination, with a last, of a double hook adapted to confine the two sides of a shoe-upper and prevent the lacing-slit from being strained apart in the operation of lasting, as set forth.

2. The combination, with a last, of a double hook adjustably attached to the instep thereof, and adapted to engage the eyelets or lacing-holes in a shoe-upper for retaining said upper in position during the operation of lasting, substantially as set forth.

3. The combination, with a last, of a double hook adapted to have free longitudinal movement toward or from the toe, while it is confined from lateral movement, substantially as and for the purpose set forth.

4. The combination, with the instep of a last, of the slotted plate E and double hook C, swiveled therein, substantially as and for the purpose set forth.

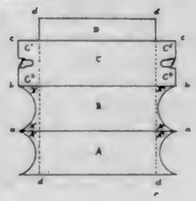
291,078. STONE-DRESSING MACHINE. WHEELER PERKINS, Methuen, Mass. Filed June 23, 1883. (Model.)



Claim.—1. In a stone-cutting machine, the bed B, having a central opening, G, and the sliding blocks *g*, operated by levers *h*, in combination with the pivoted spring cutter-arms F, provided with heads *d*, and carrying the cutters or chisels, and the springs *b*, located under said arms, the hammers E, connected to the bed by pivoted yokes *c*, and constructed to operate substantially as and for the purpose set forth.

2. The combination, with a stone-cutting machine, having secured thereto a bed, B, provided with a central opening, spring-arms F, hammers E, and sliding blocks *g*, of the tool-holder K, having springs *k*, and the cutters or chisels, having shoulders *i*, substantially as and for the purpose set forth.

291,079. ENVELOPE. GEORGE B. POST, New York, N. Y. Filed Feb. 9, 1883. (No model.)



Claim.—1. An envelope-blank in which the four flaps surrounding either one of the main faces B or C of the envelope are joined each to the adjacent flap by a corner-extension of the blank beyond the angle of the said main face, and in which the side flaps of the address-face C have apertures cut in their ends, through which, when the envelope is folded, can be seen both the flaps B and D, and in which the side flaps of the face B and of the extension-flap A are cut away at the parts falling below the said apertures in the side flaps of C, substantially as described.

2. An envelope provided with the top flap, D, the address-face C, having apertured flaps, and the back face, B, provided with flaps narrower at their center than the flaps of the face C, substantially as described.

3. An envelope-blank having the address-face C, back flap, B, top flap, D, and interior extension-flap, A, with side projections, A′ A′, B′ C², A^2 A^2, and B^2 C^2, and with the apertures *f f* in the ends of the address-face C, substantially as described.

4. An envelope-blank having the address face C, the flaps B and D, with apertures in the ends of the flap B, and with apertures in the ends of the flaps of the address-face C of less depth than the apertures in the flap B, and of such width that the edges *f c f b* of the address-face C may be folded over diagonally to come within the sides of the apertures *f f*, substantially as and for the purposes described.

291,080. BUTTON-FASTENER. GEORGE W. PRENTICE, Providence, R. I. Filed Nov. 2, 1883. (No model.)

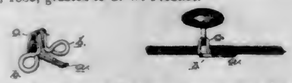
Brief.—Improvement on Letters Patent No. 284,978, dated September 11, 1883.



Claim.—As an improved article of manufacture, the herein-described button-fastener, consisting of the tongue *a*, provided with the spring-loop *b*, and side wings, *c*, all being formed from a short length of wire, and the ends of said tongue and side wings being curved upwardly, in the manner substantially as and for the purpose specified.

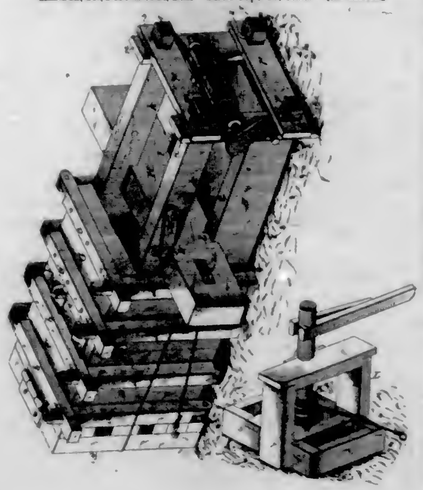
291,081. BUTTON-FASTENER. GEORGE W. PRENTICE, Providence, R. I. Filed Nov. 2, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 284,978, dated September 11, 1883, granted to G. W. Prentice.



Claim.—As an improved article of manufacture, the herein-described button-fastener, consisting of the side wings or loops, *b*, having the elongated tongue *a*, which is bent around over and beneath the central portion between the side wings to form a spring-loop, *c*, and projecting end, which serves, in connection with said side wings, to form a smooth base or table, substantially as and for the purpose specified.

291,082. COMBINED HAY-PRESS AND HORSE-POWER. WILLIAM RANDLE, Sr., Fort Worth, Tex. Filed Sept. 17, 1883. (No model.)



Claim.—1. In a baling-press, the combination, with the plunger C, of the box A, provided with hinged side doors, D E, and the several staple-arms *b c* and hasp-arms *a d* and keys *e*, and the hinged top doors, F G, the latter having the staple *j* and the former the metal hasps *f*, having downwardly-projecting flanges *g*, adapted to enter recesses *h* in the opposite hinged door, substantially as and for the purpose set forth.

2. The combination, with the press-box A, having its several hinged doors and means for fastening them closed, of the plunger C, beam H, formed with recesses *l*, and the extension B, having ways or tracks *i k*, the windlass I, and cord or rope *m*, substantially as and for the purpose specified.

3. The press-box A, having its hinged doors and fastenings, and the extension B, provided with ways or tracks *i k*, and notched weighted dogs M, in combination with the plunger C, cross-beam H, having recesses *l*, fitting over the ways or tracks, and provided with the pulleys *u*, the cord or ropes *t v*, and windlass K, substantially as and for the purpose described.

4. A baling-press consisting of the box A and hinged doors D E F G and its fastening devices, the extension B, having tracks or ways *i k*, notched weighted dogs M, windlass I, and cord or rope *m*, the plunger C, cross-beam H, having recesses *l* and pulleys *u*, cords or ropes *t v*, and the windlass K, provided with spiral seats *w*, all constructed and arranged to operate substantially as and for the purpose set forth.

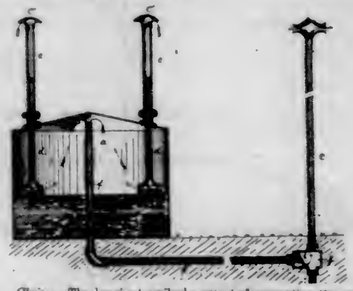
291,083. WATER-FILTER. JOHN REID, Wheeling, W. Va. Filed Apr. 9, 1883. (No model.)



Claim.—1. The combination, with the filtering apparatus, consisting of the case A, suitable inlet and outlet openings, and perforated diaphragms inclosing suitable filtering material, of the pipe D and cup B, said cup containing filtering material, and adapted to operate in connection with the filter, as set forth.

2. The combination, in a filtering apparatus, of the case A, having an inlet-pipe, F, at the bottom, outlet-pipe G at the top, perforated partition I, filtering material N N^1 N^2, removable perforated disk or head M, with central tube, *d*, spiral spring *e*, screw-cap E, central stud, *c*, secured to the under side, rubber pipe D, cup B, and sponge C, substantially as and for the purpose herein described.

291,084. METHOD OF PREVENTING THE ACCUMULATION OF INFLAMMABLE GASES IN OIL-TANKS. JOHN P. RENNEKE, Pittsburg, Pa. Filed Aug. 3, 1883. (No model.)



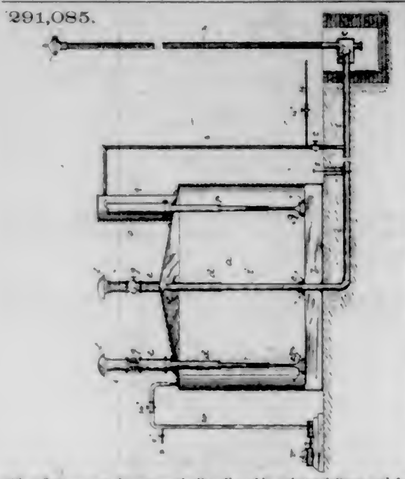
Claim.—The herein-described method of preventing the accumulation of inflammable gases in an oil-tank, by an induced current of air entering the tank and displacing the gases, substantially as and for the purposes specified.

291,085. SAFETY APPARATUS FOR OIL-TANKS. JOHN P. RENNEKE, Pittsburg, Pa. Filed Nov. 22, 1883. (No model.)

Claim.—1. The combination, with an oil-tank, of an air-induction pipe and a gas-eduction pipe, said pipes arranged with their open ends on different horizontal planes within the tank, substantially as and for the purpose specified.

2. The combination, with an oil-tank, of an air-induction pipe and a gas-eduction pipe, said pipes arranged with their open ends on different horizontal planes within the tank, one of said pipes being provided

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with a float, so as to be automatically adjustable, substantially as and for the purpose specified.

3. The combination, with an oil-tank, of an air-induction pipe, a gas-eduction pipe, and a pump for creating a draft through the tank above the surface of the oil, substantially as specified.

291,086. GLASS CASTER. DANIEL C. RIPLEY, Pittsburg, Pa. Filed Nov. 13, 1883. (No model.)



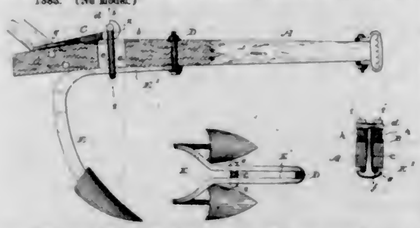
Claim.—1. A glass caster having a common receptacle for the bottles, divided into compartments by a central wing-piece provided with radially-projecting wings or arms, substantially as and for the purposes described.

2. A glass caster having a common receptacle for the bottles, and central stem secured thereto, and provided with radially-projecting wings or arms, substantially as and for the purposes described.

3. A glass caster having a common receptacle for the bottles, and a metallic central piece having radial arms or wings for dividing the receptacle into bottle-compartments, substantially as and for the purposes described.

4. A glass caster having a common receptacle for the bottles and internal ribs or projections on the sides, so as to extend between adjacent bottles, substantially as and for the purposes described.

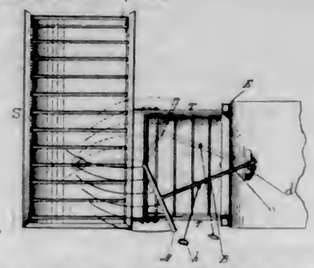
291,087. PLOW. AARON A. ROBERTS, Quitman, Ark. Filed Sept. 12, 1883. (No model.)



Claim.—1. The combination of the beam, the cam-lever C, pivoted thereon and forked at the end, and the clamping-bolt having the cross-head which engages with the forked end of the cam-lever, substantially as specified.

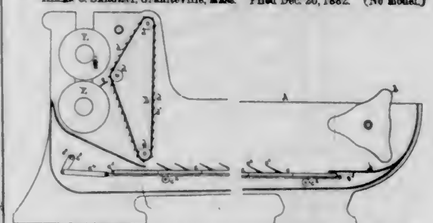
2. The combination of the beam, the cutting implement having the looped shank-extension E′, the cam-lever C, and the clamping device B, adapted to secure the extension to the beam, as set forth.

291,088. STRAW-STACKER. FRANCIS W. ROBINSON, Richmond, Ind. Filed June 14, 1883. (No model.)



Claim.—The combination, with a thrashing and separating machine and straw-stacker, of the guide or fork, consisting of the head A, tines or teeth 1 2 3 4 5 6, and the handle B, the guide-rod *h*, ring *d*, bolt *i*, and framing E, substantially as and for the purposes set forth.

291,089. WOOL-WASHING MACHINE. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Dec. 20, 1882. (No model.)



Claim.—1. In a wool-washing machine, the combination of the bowl A, squeeze-rolls E E, and the vertical feed-apron D, moving at an incline downward toward the nip of said rolls, substantially as described.

2. The combination of the vertical downward-delivery feed-apron D, the chute *c*, the squeeze-rolls E E, and the bowl A, substantially as described.

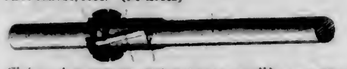
3. The combination, with the bowl A, of the reciprocating bottom C, provided with teeth *c*′, and the feed-apron D, substantially as described.

4. The combination of the reciprocating carrier C, provided with teeth *c*′, the feed-apron D, and the squeeze-rolls E E, substantially as described.

5. In combination with the bowl A, the reciprocating bottom C, formed of platforms *c c* and bars *c*′, substantially as described.

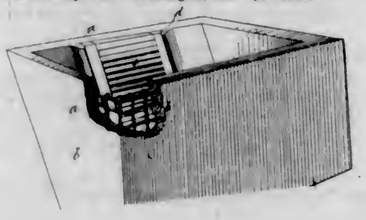
6. The combination of the feed-roll H, the reciprocating bottom C, provided with teeth *c*′, feed-apron D, and the squeeze-rolls E E, substantially as described.

291,090. UMBRELLA-CATCH. GEORGE G. SAYE, New York, N. Y. Filed Mar. 26, 1883. (No model.)



Claim.—A permanent catch and runner or slide so constructed and operated that in passing over the catch it shall be made to slightly rotate by the use of a groove or other means, and then so adjust itself as to be supported or held by said catch.

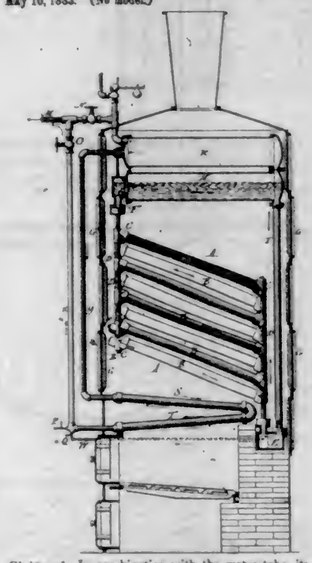
291,091. MANUFACTURE OF TUBS OR VESSELS OF HYDRAULIC CEMENT. GEORGE L. SCHMIDT, New York, N. Y., assignor to Andrew G. Myers and Fredericke M. H. Schmidt, same place, and Frederick W. Lawrence, Brooklyn, N. Y. Filed Aug. 13, 1881. (No model.)



Claim.—1. A tub or vessel of hydraulic cement constructed with a wire frame, made complete, of form corresponding to that of the tub when finished, the horizontal wires of said frame being continuous around the corners joining the sides to the ends and embedded in the cement walls, substantially as herein specified.

2. A laundry-tub provided with two guide and socket ribs on its front wall adapted to receive and retain a removable wash-board, substantially as herein set forth.

291,092. STEAM-BOILER. LOUIS SCHUTTE, Philadelphia, Pa. Filed May 10, 1883. (No model.)



Claim.—1. In combination with the water-tube, its cap or fitting C, provided with the opening *a*, and having the pocket or receptacle cast integral therewith, the valve *b*, plate *d*, and screw *c*.

2. The cap or fitting C, cast complete in one piece, with the opening *a*, to afford access to the tube, and with the external pocket to admit the valve and valve-supporting devices.

3. In combination with the tube B, the cap or fitting C, provided with an opening, *a*, having a diameter less than that of the tube, and arranged with its axis below that of the tube, and means, substantially as described, for closing said opening, whereby the introduction of a tool upon the lower surface of the tube is permitted.

4. In combination with the tubular boiler, having the mud-drum at the base and the steam-drum at the top, the superheater, the steam-discharge pipe from the steam drum, and provided with a closing-valve, a pipe connecting the steam-drum with the superheater, a second pipe provided with a closing-valve, connecting the superheater with the steam-discharge pipe, and a third pipe provided with a closing-valve, connecting the superheater with the mud-drum, whereby the superheater may be used as a portion of the generating apparatus at will.

5. The combinations of the tubes B, and the vertical connections at their ends communicating-drums H and K, pipe I, mud-drum E, the superheater-pipes *x y*, and W, and the valves Q, N, and O.

6. The improved plate for a boiler-casing, consisting of the flat body portion, having the ribs *g* formed on its two surfaces, combined with the anchors *h*, and the body of refractory or non-conducting material applied to one face of the plate within the flange.

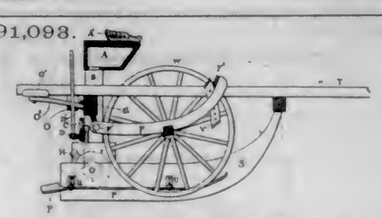
7. The combination of the plates flanged upon both faces, the body of refractory material applied to one surface within the flange, and the body of refractory material applied to one face outside of said flange.

291,093. CORN-PLANTER. WILLIAM G. SELBY, Princeville, Ill. Filed Feb. 5, 1883. (No model.)

Claim.—1. A frame F F² hinged or pivoted at one end to the frame-work of a corn-planter, in combination with supporting-wheels having bearings in said frame midway between its pivoted end F' and free end F², whereby, when the driver rests his weight upon said free end F², the said corn-planter is raised wholly or partially from the ground, substantially as and for the purpose specified.

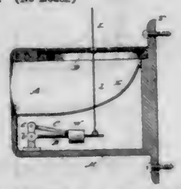
2. The seed-box A, spouts B B, shoes S S, having gage-plates and packers P P', recessed disks J J', brushes H H, disks O O, pawls E, bar

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D, and lever D', in combination with suitable frame-work, the pivoted frame F F², stop-plate V, and the wheels W W, substantially as and for the purpose set forth.

291,094. MECHANICAL TELEPHONE. CHAS. SELDEN, St. Louis, Mo. Filed Aug. 6, 1883. (No model.)



Claim.—1. The combination, in a mechanical telephone, with the diaphragm or other vibratory surface with which the line or cord is connected, of a counter-balance for counteracting the strain of the line or cord upon the diaphragm.

2. The combination, with the diaphragm or other vibratory surface for a mechanical telephone, of means for exerting a strain or pull counter to that of the line or cord upon the diaphragm, so as to oppose the tendency of the latter to bias under the strain of the line.

3. The combination, with the diaphragm or other vibratory surface for a mechanical telephone, of an adjustable counterbalancing weight or spring, arranged to exert a pull upon the diaphragm contrary to that of the line.

4. The combination, with the diaphragm or other vibratory surface for a mechanical telephone, of a self-adjusting counter-balance that acts on the diaphragm in contrary direction to the strain or pull of the line.

5. The combination, with the diaphragm, of a lever connected by a cord to the side of the diaphragm opposite the line, and a weight adjustable on said lever, as and for the purpose described.

291,095. RAILWAY-TRAIN SIGNAL APPARATUS. CHAS. SELDEN, St. Louis, Mo. Filed Apr. 2, 1883. (No model.)

Brief.—Normally-closed circuit through train returns by rails of track, the conductor being carried in the ordinary bell-rope. Pulling the rope breaks the circuit at P, (piston circuit-breaker,) thereby closing local circuit and sounding alarm on engine, or operates the alarm mechanically in the ordinary way. Key on engine enables engineer to test condition of electrical connections. Brace-rods of cars utilized as conductors.

Claim.—1. The combination, with the bell or other signal on the locomotive, of means for actuating the same mechanically, extending through the train, an operating electro-magnet connected to the same mechanism and in a normally-open local circuit, and a normally-closed circuit extending through the train and containing an electro-magnet which controls the local circuit.

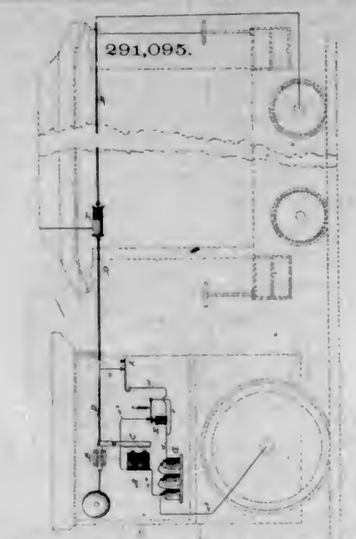
2. The combination, with the bell mechanism in the locomotive, of the operating-cord D, connected therewith, the magnet A, having an armature, C, connected also with said mechanism, battery or generator G, and electro-magnet E, the two latter being in a normally-closed circuit which includes a conductor in or on the bell-cord.

3. The combination, with the bell mechanism on the locomotive, of an operating-cord and an electro-magnet, both connected to the same, the said electro-magnet being in a normally-open circuit, a relay electro-magnet in a normally-closed circuit including a conductor in or on the bell-cord, and circuit-breaking devices interposed in said bell-cord, so that by subjecting said cord to tension the normally-closed circuit may be broken and the operating-magnet of the bell mechanism made to actuate the same.

4. The combination of the bell mechanism, bar B, the armature C, magnet A, in a normally-open local circuit from generator G, and relay-magnet E, in a normally-closed circuit extending through the train and including the battery G, conductor X², and the rails of the track.

5. The combination, with a cylinder or guideway, H, made in two parts, that are respectively conducting and non-conducting, of spindle or bar H³, having a conducting stud or head adapted to make electrical contact with the conducting portion of the cylinder or guide, and a spring

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for holding said stud or head against one end of the guide or cylinder, said guide or cylinder and said bar and cylinder being provided at opposite ends with means for the attachment of a conductor.

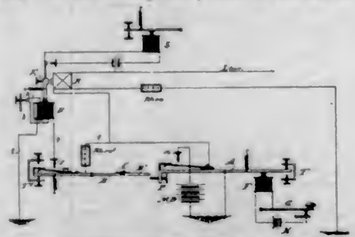
6. The combination, with the cylinder H, one portion of which has an interior surface of conducting and the other portion of non-conducting material, of the piston, the edges of which slide in contact with the interior surface, the spindle, and the spring H⁶, as and for the purpose described.

7. The combination, with the cylinder or tube made conducting at one end and non-conducting upon its interior at the other, of a piston or stud moving in said tube and normally held against the conducting-head of said tube, a spindle or bar for drawing said piston into the non-conducting portion of the cylinder, and means for electrically connecting conductors with the spindle and with the conducting-head at the opposite end of the tube.

8. The combination, with the bell-magnet A on normally-open local circuit from a suitable generator, of relay-magnet E, on a normally-closed circuit from the same generator, extending through the train, and a suitable normally-closed circuit-breaking device on the caboose or other car, as and for the purpose described.

291,096. STATIC NEUTRALIZER FOR TELEGRAPHS. CHAS. SELDEN, St. Louis, Mo. Filed Feb. 7, 1883. (No model.)

Brief.—The static discharge itself produces the neutralization.



Claim.—1. The combination with a relay, of an auxiliary electro-responsive device arranged to neutralize the effects of a static discharge-current flowing in the relay-coils, and means for connecting said auxiliary device with the line simultaneously with the flow of the static discharge-current in the relay-coils, so that the said discharge may flow in whole or in part through said auxiliary device.

2. The combination, with a relay, of auxiliary coils or helices for neutralizing the effects of the static discharge-current in the relay, and means for admitting the static discharge-current to said helices simultaneously with its flow in the coils of the relay.

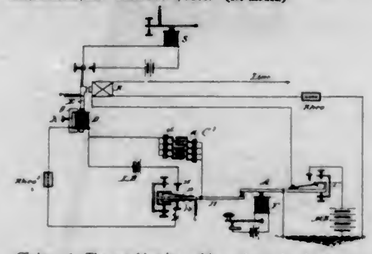
3. The combination, with a relay, of auxiliary coils D, branch connection 9, and means for closing the latter simultaneously with the flow of the static discharge-current in the relay, whereby a portion of said current may flow in branch 9 and neutralize the effects of such current in the relay-coils.

4. The combination of an auxiliary neutralizing device, a transmitter, and a circuit-closer for connecting the auxiliary device with the line simultaneously with the movement of the transmitter in removing the main battery from line, so as to admit a portion or all of the static discharge-current to the auxiliary neutralizing device, as and for the purpose described.

5. The combination of coils D, circuit 9, transmitter, and supplemental circuit-closer operated simultaneously with the transmitter, and serving to close circuit 9, connected to main line, so that when the circuit is closed the static discharge-current may flow into the same simultaneously with the movement of the transmitter in disconnecting the battery.

6. The combination of neutralizing-coil D, circuit 9, connected to main line, so as when closed to receive a current of static discharge, circuit-closer B B', and transmitter A.

291,097. STATIC NEUTRALIZER FOR TELEGRAPHS. CHAS. SELDEN, St. Louis, Mo. Filed Feb. 7, 1883. (No model.)



Claim.—1. The combination, with a relay, a local battery, a condenser, a local auxiliary neutralizing-coil normally out of circuit with said condenser, and a circuit-controller for switching the auxiliary coils into a discharge-circuit with the condenser simultaneously with the flow of the static discharge-current in the relay.

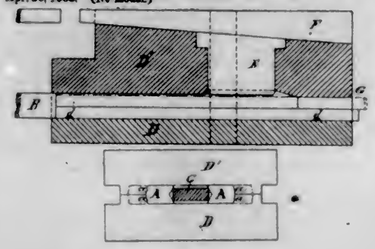
2. The combination, substantially as described, of a relay, an auxiliary local neutralizing-coil for neutralizing in the relay the effects of the static discharge-current, a local battery, a condenser in the local circuit, a circuit-controller for connecting a pole of the condenser alternately to the local battery and the auxiliary coils, and means for operating said controller, so as to allow the condenser to discharge through the auxiliary coils simultaneously with the withdrawl of the main-line battery and the connection of said line to earth.

3. The combination of a relay-armature, an auxiliary coil acting on said armature in opposition to the relay-coils when affected by static discharge-current, a local battery and condenser, and means for connecting a pole of the condenser alternately with the local battery and the auxiliary coil, the connection with the latter being effected simultaneously with the flow of the static discharge-current in the relay.

4. The combination of a relay, a local auxiliary coil acting inductively on said relay in opposition to the relay-coils when traversed by the static discharge-current, a local battery and condenser, and means for connecting a pole of the condenser alternately, first to the battery and then to the auxiliary coils, simultaneously with the flow of the static discharge-current in the relay-coil.

5. The combination of a relay, an auxiliary coil acting in opposition to the relay-coils when affected by the static discharge, a local battery and condenser, and a supplemental circuit-closer operated by the transmitter and connecting a pole of the condenser alternately to the battery and the auxiliary coils.

291,098. ART OF UPSETTING AND SHAPING METAL BARS. WILLIAM SELLERS, Philadelphia, and GEORGE H. SELLERS, Ridley Park, Pa., said Geo. H. Sellers assignor to John Sellers, Jr., Philadelphia, Pa. Filed Apr. 26, 1883. (No model.)



Claim.—1. The improvement in the art of upsetting metal bars without piling and without folding, which consists in sustaining so much of the bar as is to be upset by supports, one or more of which, when pushed by the upsetting-ram, will recede laterally without ceasing to act as supports, and thickening and spreading the bar simultaneously by upsetting it while so supported, substantially as described.

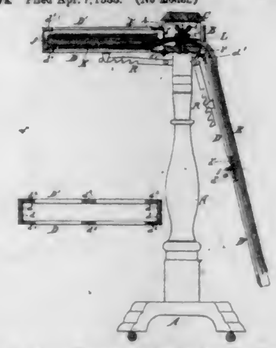
2. The combination, with an upsetting-die, of supports, one or more of which, without ceasing to act as such, will recede, substantially as and for the purposes set forth.

3. The combination, with an upsetting-die, of a guiding relieving-plunger, substantially as and for the purposes set forth.

4. The combination, with the upsetting-die, the guiding relieving-plunger, the wedge-block, and the upsetting-ram, of devices for changing the rate of movement of the guiding relieving-plunger relatively to that of the ram, substantially as and for the purposes described.

5. The combination, with an upsetting-die, of the movable piece *d d*, substantially as and for the purposes set forth.

291,099. WALL-PAPER EXHIBITOR. FRANCIS H. SHEPHERD, Davenport, Iowa. Filed Apr. 7, 1883. (No model.)



Claim.—1. In a wall-paper exhibitor, the box B, within which are confined the ends of the paper E, in combination with folding frames D and D′, and locking device *g*, substantially as and for the purpose described.

2. The frames D D′, provided with cross-slats *d′*, slats d^2, and side slats, *d*, hinged together at *e e*, and hinged at *d′ d′* to the bottom b^2 of the box B, in combination with the ratchets R R, adapted to hold the frames in a horizontal position on each side of the column A′, substantially as and for the purpose described.

3. The box B, provided with the bottom b^2 and end pieces, *b b′*, and open sides, whereby the wall-paper E may be secured in position on the screw-pin *h* by the clamp-nut H_1 and adapted to be turned over from right to left or left to right for exhibition, the cover C being removed, substantially as described.

4. The combination of the column A′, folding frames D D′, box B, screw-pin *h*, clamping-nut H, and holding-board *i*, substantially as and for the purpose described.

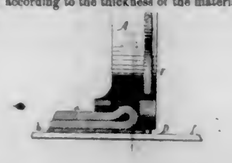
5. The folding frames D and D′, hinged together at *e e*, hinged to the box B, and provided with flexible supports *f*, for holding up the wall-paper E when the frames are folded up, substantially as described.

6. A wall-paper exhibitor having folding frames on both sides of its supporting-column, and with an open-sided box mounted on the column, wherein one end of sheets of wall-paper are confined in position, substantially as and for the purpose described.

7. The combination of the column A′, folding frames D D′, box B, means for holding the ends of the paper E within the box B, and border-holder L, substantially as and for the purpose described.

291,100. WHIPPING-GUIDE FOR SEWING-MACHINES. GEORGE SIMPSON, Moravia, N. Y., assignor of one-half to Stephen M. Titus, same place. Filed June 14, 1883. (No model.)

Brief.—The device is adapted to "whip" the linings to boot or shoe uppers in "blind stitching." The tapered pin acts by the resistance of the bed-plate, and through the downward pressure of the presser-foot, to adjust the movable guide-plate under the presser-foot with reference to the needle and according to the thickness of the material operated upon.

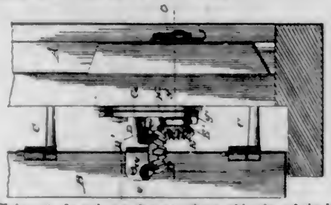


Claim.—1. The combination, with the presser-foot of a sewing-machine, of a whipping-guide and means whereby said guide is adapted to be automatically adjusted laterally under the presser-foot as the latter rises or falls, substantially as described.

2. The combination, with the presser-foot and bed-plate of a sewing-machine and the guide C, of the adjusting-pin D and intermediate means constructed and arranged to move the guide toward the needle as the foot descends, substantially as described.

3. The combination, with the presser-foot and bed-plate of a sewing-machine, of the spring-guide C, the tapering pin D, plug E, and spring F, substantially as and for the purpose specified.

291,101. SHUTTER WORKER AND FASTENER. ASA C. SESSON, Easton, Mass. Filed May 10, 1883. (Model.)

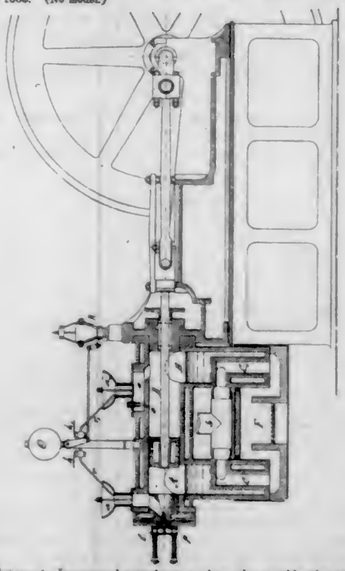


Claim.—1. In a shutter-fastener, the combination of the key-post, the cam and toothed segment thereon, the flanged vertically-movable plate having a locking-toe, and the toothed segment having notches to receive said toe, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination of a face-plate rigidly secured to the window-frame, a key-post having a single-throw cam and an oscillating toothed segment on one end, a vertically-sliding flanged plate having a locking-toe formed on this plate, and a toothed segment having a notched top, which is rigidly secured to the shutter, and adapted to engage with the said oscillating toothed segment and the toe of the sliding flanged plate, all constructed and adapted to operate substantially in the manner and for the purposes described.

3. A shutter-fastener composed of the following elements: toothed segments D E, a frame or plate having acute-edge locking-toe, flanges *g g′*, and slots through it, and means for raising and depressing said frame or plate, all constructed and adapted to operate substantially in the manner and for the purposes described.

291,102. GAS-MOTOR. JOHANNES SPIEL, Berlin, Germany. Filed Aug. 13, 1883. (No model.)



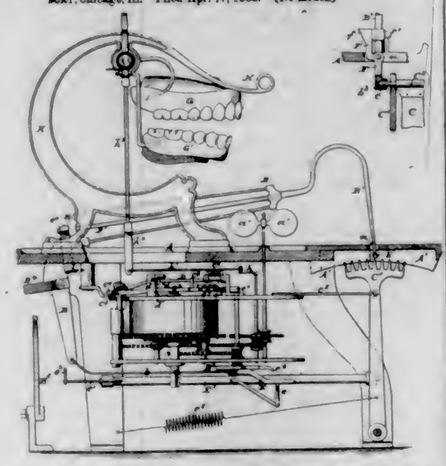
Claim.—1. In gas and petroleum engines, the combination of the power-cylinder with a water and steam chamber constantly communicating with the interior of the cylinder, and a separate fire-place and flue adapted to heat and evaporate the water in the said chamber from outside.

2. In gas-engines, the combination of the power-cylinder with a water-receptacle constantly communicating with the interior of the cylinder, and provided with an inlet for combustible gas mixture, as well as with an igniting mechanism, and a separate fire-place and flue adapted to heat and evaporate the water in the said chamber from the outside.

3. An igniting apparatus for gas-engines, comprising in its construction a hollow burner, *b*, situated in an intermediate chamber, *s*, having near the base of the burner an enlargement, to which the combustible mixture serving to feed the igniting-flame is admitted through a channel, *q*, for the purpose of heating the said mixture by its successive contact with the outer and inner surface of the burner before it is ignited, substantially as described.

4. In a gas-engine, the combination of a water-receptacle, communicating with the cylinder, with a fire-place, F, and flues C C′, leading the products of combustion from the latter through the water-receptacle, substantially as described.

291,103. AUTOMATIC ADVERTISING DEVICE. JOSEPH A. STANBURY, Chicago, Ill. Filed Apr. 17, 1883. (No model.)



Claim.—1. In an automatic advertising apparatus, a set of independent cards supported in an intermittingly-moving rack arranged within a suitable housing, in combination with vibrating lifting-arms that successively engage such cards and bring them into view, substantially as described, and for the purpose set forth.

2. In an automatic advertising apparatus, a series of independent detached cards supported in an intermittingly-moving rack, in combination with a pair of intermittingly-vibrating arms, substantially as described, and for the purpose set forth.

3. In an automatic advertising apparatus, the combination of the intermittingly-moving card-holding racks C′ C′ with the table A, having card-opening *a*, and projecting ribs A′, substantially as described, and for the purpose set forth.

4. In an automatic advertising apparatus, the combination of the card-lifting arms B B′, wiper E, lever e', and rock-shaft E′ with the cam-yoke B^3, having a spur projection, e^6, as described, and for the purpose set forth.

5. In an automatic advertising apparatus, as herein described, the combination of the card-holding rack C′ with the wiper e', ratchet-sector e^2 e^3 e^5, lever e^4, rod e^3, pawl e^6, arm D, spring e^8, and pin projections e^9 e^{10}, substantially as described, and for the purpose set forth.

6. In an automatic advertising apparatus, as herein described, the combination of the card-lifting arms B B′, heart-shaped cam B^3, cam-yoke B^2, and connecting-rod *b*, as described, and for the purpose set forth.

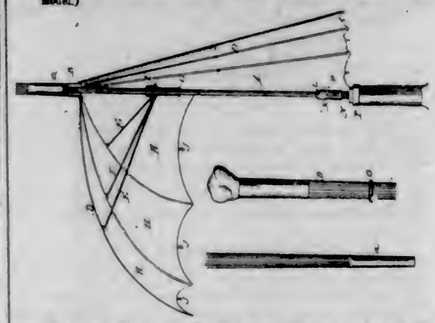
7. In an automatic advertising apparatus, as herein described, the combination of the card-lifting arms B B′ with the bell-crank levers e^4, connecting-rod e^3, lever e', rock-shaft E′, inclined-faced lever or arm *e*, and rotating arm or wiper E, as described, and for the purpose set forth.

8. In an automatic advertising apparatus, the combination of intermittingly-moving card-lifting arms and card-holding racks with the advertising-cards C, provided with pintle-rods *c*, as described, and for the purpose set forth.

9. In an automatic advertising apparatus, the combination of intermittently-moving card-lifting arms and card-holding racks with the advertising-cards C, having pintles *c*, and attaching-clips C^3, having beveled ends, as described, and for the purpose set forth.

10. In an automatic advertising apparatus, as herein described, the combination of the locking rock-arm B^5 with the connecting-bar B^4 of the lifting-arms B B′, as described, and for the purpose set forth.

291,104. UMBRELLA. MARVIN C. STONE, Washington, D. C., assignor of one-half to John McCormick, same place. Filed Dec. 22, 1882. (No model.)



Claim.—1. The combination, in an umbrella, of a series of cloth-sustaining ribs, the cloth or covering applied internally upon said ribs, and means, substantially as described, acting at the center to effect the winding or coiling of the cloth.

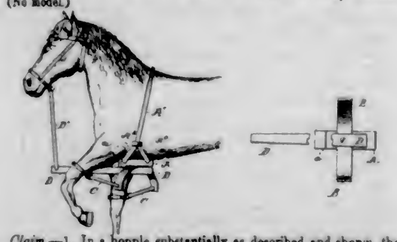
2. In combination with the handle, the ribs, the internally-applied cloth, the braces, and the brace-supporting collar F, arranged to slide upward toward the inner ends of the ribs as the latter are closed, substantially as shown.

3. In combination with the ribs, the internally-applied cloth, the braces, and the sleeve or collar to sustain said braces, the rotating handle, the sliding collar K, and means, substantially as described, for connecting said collar temporarily with the cloth or cover, whereby the winding of the cloth from the center outward is effected.

4. In combination with the external ribs, the cloth, and the handle, the sliding collar K, a spring, N, tending to urge said collar endwise, and means, substantially as shown, for connecting said collar temporarily to the edges of the cloth or covering, whereby the cloth is subjected to a yielding strain or pressure while being wound from the center.

5. In an umbrella, the combination of the cloth, the external supporting-ribs, and the internal strips or plates, I, applied as described and shown.

291,105. HOPPLE. LORENZO STOW, Rome, Tenn. Filed Sept. 24, 1883. (No model.)



Claim.—1. In a hopple substantially as described and shown, the combination of a yoke pivoted centrally on a suitable support in rear of the animal's fore legs, and straps connecting the outer ends of said yoke with the animal's legs, and means whereby the support may be attached to the animal's body, as and for the purposes specified.

2. In a hopple, the combination of a suitable support, means whereby said support is attached to the animal's body, a yoke pivoted centrally to said support, and having its outer ends arranged in a plane below that of the support, and straps secured to the ends of said yoke and adapted to connect the same with the animal's fore legs, substantially as set forth.

3. In a hopple, the arc-shaped yoke pivoted at its crown to a suitable support, and having its lower ends provided with straps whereby it may be connected with the animal's fore legs, in combination with said support and means whereby it may be attached to the animal's body, all substantially as and for the purposes specified.

4. In a hopple, the combination, with a suitable support held under the animal's breast in rear of and close to the fore legs, of the head-holding bar, having its rear end pivoted to the said support and extended forward between the animal's fore legs and connected at its forward end with the animal's head, and adapted to be swung laterally, substantially as set forth.

5. In a bopple, the combination of the supporting-block, having on its under side a shoulder or stop, *a*, the yoke pivoted centrally to the said block in rear of the said shoulder or stop, and straps secured to the ends of said yoke, and means whereby the said supporting-block is held to the animal's body, all substantially as and for the purposes specified.

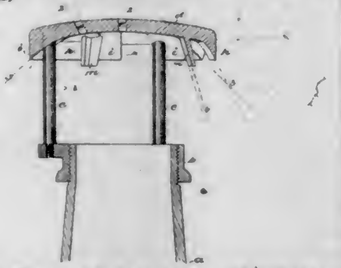
291,106. PICTURE-CASE FOR TOMBSTONES. WILLIAM STRONG, Kalamazoo, Mich. Filed June 26, 1883. (No model.)



Claim.—1. The combination, with a tombstone or equivalent grave-marking device having the securing-holes in the upper and lower beveled sides, of a picture-case containing a picture accessible to the sight and impervious to the weather, having studs on its upper side and holes through its lower side, and a hinged lid having studs adapted to enter said holes and extend into the holes in the mortise, all substantially as set forth.

2. A tombstone or other grave-marking device having a recess adapted to shield the picture from the weather, and provided with slanting holes in its upper and lower side, in combination with a picture-case containing a picture accessible to the sight, having the slanting studs on its upper side, and a lid having studs on its lower face adapted to enter the lower holes, said lid adapted to hide the mode of securing the case in the stone, and having its upper face polished to contain an inscription, all substantially as described.

291,107. HOSE-NOZZLE ATTACHMENT. RICHARD F. TOBIN, South Boston, assignor to Caleb C. Walworth, Boston, Mass. Filed Feb. 16, 1883. (No model.)

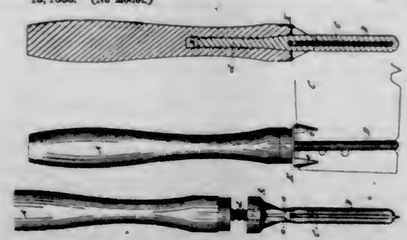


Claim.—1. The water-deflecting plate having cut therein on its under side the guiding-grooves *h i k*, of different depths and curvatures, extending to the periphery of the said plate, combined with the arm *c*, to support the said plate across the path of the stream issuing from a hose or pipe, whereby the said stream is thrown at different angles with relation to the direction of the issuance of the stream, as set forth.

2. A water-deflecting plate having cut therein the grooves *h i k*, of different depths and curvatures, combined with the projections *m* and arms *c*, to support the said deflecting-plate across the path of a stream from a hose or pipe, substantially as shown, and for the purpose described.

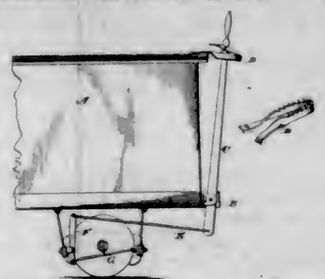
3. A water-deflecting plate having cut therein the grooves *h i k*, of different depths and curvatures, and the holes *s*, combined with the projection *m* and arms *c*, to support the said deflecting-plate across the path of the stream issuing from the hose or pipe, substantially as and for the purpose described.

291,108. SAW-HANDLE. MOSES E. TREE, Batavia, N. Y. Filed Apr 13, 1883. (No model.)



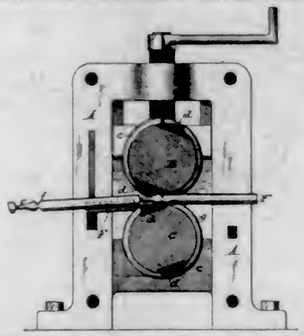
Claim.—In a handle for a crescent-saw, the combination of the longitudinally-slotted clamping-rod D, having the screw-threaded end *d*, the handle A, having the central threaded bore, B, and the ferrule E, having a smooth bore, and lips or braces *e*, engaging with the sides of the saw blade, substantially as shown and described.

291,109. CAR-BRAKE. MARSHALL TURLY and REUBEN T. BRYANT, Council Bluffs, Iowa. Filed Oct. 12, 1883. (No model.)



Claim.—The combination, with suitable brake mechanism, of a lever pivoted near its lower end to the car-body, and connected below said pivoted point to the brake mechanism, a U-shaped rack-bar secured to the car-body and embracing the lever near its upper end, and a dog pivoted to the lever, all of the above parts combined and adapted to operate as described.

291,110. MACHINE FOR ROLLING COUPLING-PINS. ROBERT REDARDSON TURNER, West Middlesex, Pa. Filed Mar. 10, 1883. (No model.)

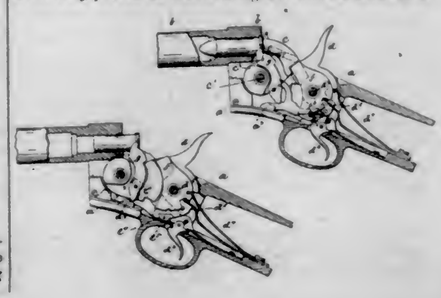


Claim.—1. In a machine for rolling car-coupling pins, the two co-operating rolls, each provided with a semicircular groove, rabbets or shoulders following the sides of the groove, and a heading and pointing die seated wholly within the periphery of the roll, as described and shown.

2. In a machine for rolling coupling-pins, the two rolls B C, each provided with a semicircular groove, *c*, the circumferential recess *g*, and the die *d*, as described, in combination with the guide having its end seated in the recesses, as described and shown.

291,111. BREECH-LOADING FIRE-ARM. HORACE UPDEGRAFF, Hampton, Kans. Filed Oct. 5, 1882. (Model.)

Claim.—1. In a breech-loading fire-arm, the combination of a breech-block, a firing-pin arranged within the breech-block, and having its rear end slightly projected therefrom, a pivoted breech-block support arranged to drop behind the breech-block and against the projected end of the firing-pin, and the hammer arranged to strike the breech-block



supports and force the latter downward against the end of the firing-pin and behind the breech-block, substantially as set forth.

2. In a breech-loading fire-arm, the combination, substantially as hereinbefore set forth, of the frame or casing, a stop, a^2, fixed upon the under plate of the frame, the breech block having a side mortise or recess, c^3, formed in rear of its pivotal center, and cam c^4, and the extractor placed within the mortise c^3 in the breech-block, and pivoted to the side plate of the frame, in position to be engaged by the cam c^4 and forced against the stop a^2, as set forth.

3. In a breech-loading fire-arm, the combination, substantially as hereinbefore set forth, of a breech-block having notch or shoulder c^2 on its rear sides, a firing-pin placed within the breech-block and having its rear end slightly projected therefrom, a breech-block support or cross-piece having head f^3, to receive the blow of the hammer, and provided with a recess, f^3, in its forward or upper end, to receive the projected end of the firing-pin, and pivoted and turning on the same pin with the hammer, and hammer arranged to fall upon the upper side of and force the breech-block support downward against the projected end of the firing-pin and behind the breech-block, as set forth.

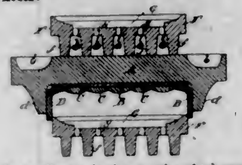
4. The combination of the breech-block, the intermediate hammer, having its lower end constructed with the projections f^3, the main hammer *d*, the sear *e*, and the lugs e^4, secured on the sear *e*, and arranged in position to engage the projections f^3 on the intermediate hammer, *f*, and lift the said hammer *f* when the hammer *d* is drawn back, substantially as and for the purposes set forth.

5. The combination, substantially as set forth, of the breech-block, the hammer *d*, the sear *e*, and a cam or inclined plate, *a'*, fixed on the framing *a*, and arranged in position to engage and lift the forward end of the sear in the operation of the device, substantially as and for the purposes set forth.

6. In a breech-loading fire-arm, the combination of the breech-block, the hammer *d*, the sear *e*, provided with the lug e^4, having pin e^5 projected therefrom, and the cam or inclined projection a^2, formed on the framing *a*, and arranged in position to be engaged by the pin e^5, and raise the lug e^4 clear of the trigger when the gun has been fired, substantially as set forth.

7. In a breech-loading fire-arm, the hammer *d*, constructed with full-cock notch d^2, and the sear *e*, constructed with the half-cock notch e^3, in combination with the breech-block *c* and trigger d^4, all supported in a suitable framing, substantially as specified.

291,112. OIL-PRESS. JOHN H. VAILE, Dayton, Ohio. Filed Sept. 21, 1883. (No model.)



Claim.—1. In an oil-press having a series of telescopic boxes, the combination, with each of said boxes, of removable supplemental ribs, forming the top walls thereof.

2. In an oil-press having a series of telescopic boxes, the combination, with each of said boxes, of supplemental ribs, forming the top walls thereof, and supplemental side walls extending up and bent in for some distance, so as to abut against the supplemental ribs and form smooth unbroken surfaces at the sides, as and for the purpose specified.

3. In an oil-press having a series of telescopic boxes, the combination, with each of said boxes, of removable supplemental ribs, side plates, D, and end plates, E, substantially as described.

4. In an oil-press having telescopic boxes and removable meal-supporting plates, the combination, with said boxes and plates, of transversely-corrugated front portions, whereby the meal is retained and prevented from being squeezed out, as set forth.

5. In an oil-press having a series of telescopic boxes, the box A, having a smooth, flat top, *a*, with a surrounding gutter, *b*, pendent side walls, *d*, supplemental ribs C, secured to a removable plate, B, angular side plates, D, and end plates, E, substantially as described.

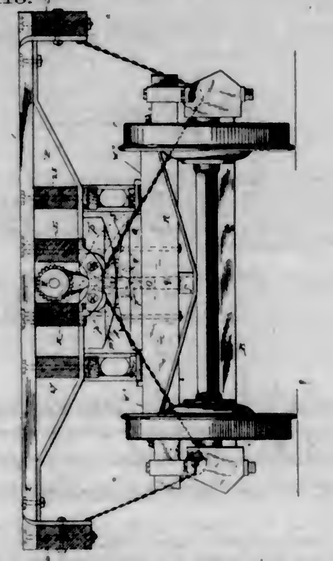
6. In an oil-press, the perforated division-plates, having on their under sides longitudinal or transverse ribs and on their upper surfaces supplemental transverse or longitudinal ribs, with interstices opening into the perforations in the plates.

7. In an oil-press, the combination and arrangement of the boxes A, division-plates F, and steam-pipes *i*, said steam-pipes occupying spaces between the division-plates and boxes, substantially as described.

291,113. DUMPING-CAR. MATTHEW VAN WORMER, Melrose, Mass. Filed Sept. 8, 1883. (No model.)

Claim.—1. The oil-box C for the incasing and oiling of the worm-wheel and its worm E, constructed, as set forth, with a removable end

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piece and removable cover, the concave bottom having flat parts *j* and *j'*, and the raised part *m*, the construction permitting the box to hold a large supply of fluid nearly up to the axis of the worm-wheel, as and for the purposes described.

2. In a dumping-car and in combination with the rocker *a*, the king-bolt O, made, as described, in two parts, jointed or hinged together, one part being provided with a head by which it is connected firmly to the rocker and the other part being lodged loosely in a socket in the rocker-bed, all as shown and set forth.

3. In combination, the downwardly-curved hangers *u*, made with the opening and bearings for the two small pulleys *w w*, the said pulleys supported therein in near proximity to each other, the hanger and its pulleys being applied relatively to the inside stringers and to the large pulley *z*, as set forth, and for the purposes described.

4. The transom 1, constructed of the series of solid iron bars 2, set edgewise, and of the wood pieces between such bars, all these parts being firmly bolted together, the upper surface being adapted to form a part of the car-floor, some of the bars resting on the outside sills and others being twisted and secured to the inside of said sills.

5. In combination with the oil-box C and the worm-wheel D and worm-gear E within the same, the gear-wheel 7 on the worm-wheel shaft and outside of the oil-box, and the gear-wheel 8 on the main shaft and also outside of the oil-box, the combination permitting the worm-wheel and its worm-gear to revolve freely in the oil while keeping the oil from the other gears, all substantially as set forth.

6. The side bearings, 10 10', each made in a single piece and with extended flat rollerless bottoms, and arranged to slide lengthwise of the car, in combination each with a pair of rollers, 11 11, on the bolster, these side bearings on each side of the car being connected by rods 15 16 and a chain, 17, and pulleys 18 18, and whereby, when the rod 16 is given an endwise movement, the side bearings shall move in opposite directions, as and for the purposes set forth.

7. In combination with the side bearings, 10 10', rollers 11 11 on the bolster, rods 15 16, chain 17, and its pulleys 18, the cross-lever 19 chain 20, and staff 21, the combination being and operating substantially as set forth.

291,114. BUILDING-BLOCK. JOSEPH WADLEIGH, Milks Grove, Ill. Filed Apr. 9, 1883. (No model.)

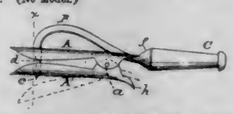


Claim.—1. A building-block composed chiefly, as to its bulk, of straw pressed flat, with so much concrete or clay intermixed as to cement the pressed straw together, and the blocks bound together by wire, as specified.

2. In apparatus for manufacturing building-blocks which are composed of pressed straw and concrete, the combination of the curved-bottomed mixing-trough, the clay or cement mixing trough connected there-

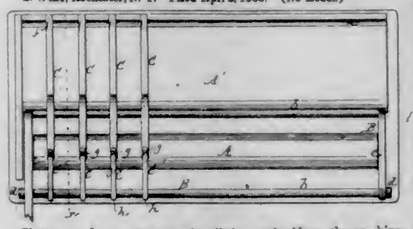
with, and the press connected with the curved mixing-trough, as specified.

291,115. CIGAR-HOLDER. ALBERT L. WEBB, Clinton, Iowa. Filed June 29, 1883. (No model.)



Claim.—A cigar-holder consisting of the hinged jaws A A', spring *b*, mouth-piece C, and the tube B, provided with the opening *d* near its pointed end, which is extended transversely through the jaws, the other end of the tube being connected with the mouth-piece, substantially as and for the purposes described.

291,116. APPARATUS FOR SLITTING EMBROIDERY. JONATHAN B. WEST, Rochester, N. Y. Filed Apr. 2, 1883. (No model.)



Claim.—1. In an apparatus for slitting embroidery, the combination of a bed upon which the embroidered sheet is laid, a friction device for holding the sheet in position as it is drawn forward, and one or more bars resting upon the bed and over the sheet and guided by the raised line of embroidery, and provided with a knife to do the slitting, as herein described.

2. The combination of a bed upon which the sheet is laid, one or more bars provided with knives resting over the bed and upon the sheet, and guided by the raised line of embroidery, and a frame to which the bar or bars are attached, serving as a friction device for controlling the sheet, and as an elevator to raise the bar or bars above the sheet, as specified.

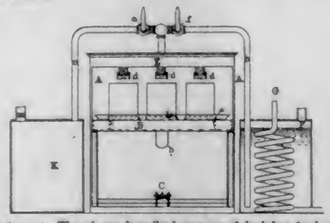
3. The combination of the bed A, provided with the raised portion A', the frame B, pivoted at its rear so as to be elevated at its front, and the bars C, resting on the frame and attached at the rear, and the knives *f*, attached to the front ends of the bars, as herein shown and described.

4. In an apparatus for slitting embroidery, the combination of the knife-bar adapted to rest upon the cloth, and the arm pivoted to its rear end and provided with means for attachment to a support behind, as set forth.

5. In an apparatus for slitting embroidery, a knife-bar adapted to rest upon the cloth, and provided at one lower edge with a guide of such length as to extend from point to point of the embroidery, as set forth.

6. In an apparatus for slitting embroidery, the combination of a bed upon which the embroidered sheet is laid, and two or more knife-bars resting thereon, capable of lateral adjustment on their supports, to be fitted to the lines of embroidery on the sheet, as set forth.

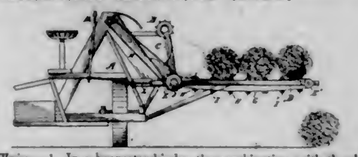
291,117. METHOD OF AND DEVICE FOR FILLING AND DRAINING FOOD-CANS. WILLIAM A. WILKS, Baltimore, Md. Filed Nov. 6, 1883. (No model.)



Claim.—1. The above-described process of draining food-cans and preparing them for sealing or closing by introducing air or gas under pressure into one of the vent-holes and blowing a portion of the liquid out of the other, substantially as described, and for the purposes set forth.

2. In an apparatus for filling food-cans with liquid, the tank K, containing compressed air or its equivalent, provided with means for transmitting and regulating the passage of compressed air from the tank through the vent-holes of the cans, substantially as and for the purposes described.

291,118. SHEAF-CARRIER FOR HARVESTERS. EDWIN S. WILLIAMS, Howard, and JAMES E. HARDER, Niles, assignors of one-third to A. V. Cleland, Niles, Mich. Filed Feb. 21, 1883. (No model.)

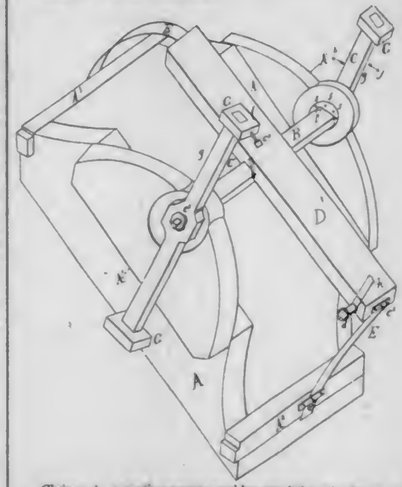


Claim.—1. In a harvester-binder, the combination, with the sheaf-discharging mechanism, of an endless apron mounted on rollers and arranged to receive at one end the bound sheaves from said discharging mechanism and deliver them at the other end, the said apron being adapted to be moved by the force of the discharging mechanism as each sheaf is discharged from the latter, the operating-gear of the harvester, and means for throwing the driving-roller of the said apron in and out of gear with the operating mechanism or gear of the harvester, substantially as specified, and for the purposes set forth.

2. In a harvester-binder, the combination of the discharge-arms C C, the endless apron G, mounted on rollers and arranged as specified with relation to the said arms, the said apron being adapted to be moved by the force of the discharging mechanism as each sheaf is discharged from the latter, the operating-gear of the harvester, and means for throwing the driving-roller of the said apron in and out of gear with the operating mechanism of the harvester, the said means consisting, essentially, of a clutch controlled by means of a lever adapted and arranged to be shifted by the driver, substantially as and for the purposes specified.

3. In a harvester-binder, the combination of the discharge-arms C C, the endless traveling apron G, arranged to receive at one end the bound sheaves from the said arms and deliver them at the other end, the said apron being adapted to be moved by the said arms while in contact with the bundle last deposited upon the apron, the loose sliding wheel J, provided with its notch *a*, the engaging-lug K, gearing for rotating the said wheel, and the levers for throwing the said wheel in and out of gear with the said lug, substantially as and for the purposes specified.

291,119. MOTIVE-POWER MACHINE. JOHN WINTER, Neosho, Mo. Filed Sept. 26, 1883. (No model.)



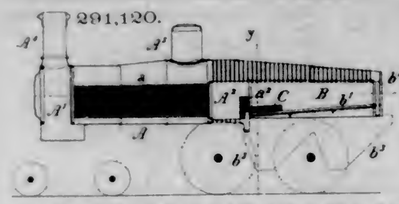
Claim.—1. A motive-power machine consisting of a frame, A, rod *a*, rocking shaft B, arms C, with scale *q* and adjustable governors G, treadle D, with piece *d*, to attach a pitman, A, and springs E, all substantially as shown and described, for the purpose set forth.

2. In a vibrating motive-power machine, a frame, A, supporting a rocking shaft, B, upon which are scaled arms C, with adjustable governors G, said rocking shaft having a treadle, D, with piece *d*, and spring E, in combination with non-frictional roller-bearings F, all substantially as shown and described, for the purpose set forth.

291,120. LOCOMOTIVE-BOILER. JOHN E. WOOTTEN, Philadelphia, Pa. Filed Aug. 23, 1883. (No model.)

Claim.—1. A table or repository located transversely to the fire-box of a locomotive-boiler at the front end, and covering the forward

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portion of the grate thereof, the rear end of said table being closed from its top to the surface of the grate, and its upper surface being located above the surface of the grate at or about the ordinary level of the bed of fuel thereon, substantially as set forth.

2. A table or repository located on and supported by the forward portion of the grate of a locomotive-boiler, its upper surface being located above the surface of the grate at or about the ordinary level of the bed of fuel thereon, substantially as set forth.

3. A table or repository constructed substantially as described, composed of one or a series of tiles, bricks, or sections of refractory material, built into the forward portion of the fire-box of a locomotive-boiler, and supported by the grate thereof, substantially as set forth.

4. The combination, in a locomotive-boiler, of a laterally-extended fire-box, a fire-bridge, and a table or repository extending rearwardly from said fire-bridge and across the fire-box, substantially as and for the purpose set forth.

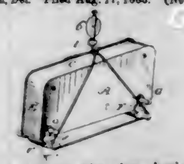
291,121. FORCE-PUMP. HENRY M. WYETH, Salt Lake City, Utah. Filed June 27, 1883. (No model.)



Claim.—1. The combination, with the cylinder A, constructed as described, of the block J, having the water-passages L and S, and valves, and provided with flanges M and the bolts N, as and for the purpose set forth.

2. As an improvement in pumps, the combination of the cylinder A, having openings G G H and plunger F, with the block J, having bore L, channel S, chambers O P T, and valves R Q U, all arranged and operating substantially as described, for the purpose set forth.

291,122. HOISTING MECHANISM FOR PIANOS, &c. WILLIAM H. YOUNG, Wilmington, Del. Filed Aug. 17, 1883. (No model.)



Claim.—1. A device for supporting pianos having a pad, a support for the pad, which holds it independently of the top or cover of the piano, and means for securing the pad-support to the bottom of the piano, substantially as set forth.

2. In a support for a piano during transportation, a slotted plate adapted to be secured to the bottom of the piano, a plate carried thereby parallel with the edge of the piano, offsets or arms projecting downwardly from said plate, and a roller mounted therein, substantially as set forth.

3. In a device for supporting a piano during transportation, a plate adapted to be secured to the bottom of a piano, a roller mounted in bearings carried by said plate, and a pad or cushion interposed between the piano and the roller, substantially as set forth.

4. The combination of the roller, the bearings therefor, the bearing-support arranged to be rocked or turned relatively to the piano, and the devices for clamping the bearing-supports to the edge of the piano, substantially as set forth.

5. The combination of the roller, the bearings therefor, the cushion-support, the support for the roller-bearings connected by a swivel or pivot to the cushion-support, and means for clamping the cushion-support against the edge of the piano, substantially as set forth.

6. The combination of the roller, the bearings for the roller situated outside of the ends thereof, and the handles projecting outwardly from said bearings, substantially as set forth.

7. The combination of the roller, the bearings therefor situated outside of the ends of the roller, means for securing the roller to the edge of the piano, and a detachable handle adapted to be secured to the roller, substantially as set forth.

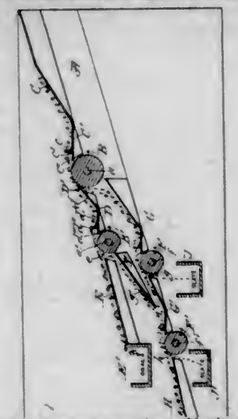
8. The combination of the wooden roller, the bearings therefor, the devices for securing the roller-bearings to the edge of the piano, and the metallic axle for the roller projecting therefrom at the ends sufficiently to form journals for the bearings, substantially as set forth.

9. The combination of the roller, the bearings therefor, devices for securing the roller-bearings to the piano, the aperture in the roller, and the detachable handle adapted to be connected with the roller by inserting it or a portion thereof into the aperture of the roller, substantially as set forth.

10. The combination of the roller, the tubular axle or journal-piece inserted into the roller, and a detachable handle having a spindle or arm adapted to be inserted into said tubular axle or journal-piece, substantially as set forth.

11. The combination of the roller-bearings, the support for said bearings, the means for clamping said bearing-support to the edge of the piano, and a detachable roller, substantially as set forth.

291,123. MACHINE FOR SEPARATING SLATE FROM COAL. CHARLES W. ZIEGLER, Scranton, Pa. Filed Oct. 13, 1883. (No model.)



Claim.—1. In a coal-separator, the combination of aprons or chutes C, D, G, and G', each having a descending incline, a level portion, an ascending part, a perpendicular offset, and a second horizontal part, and the cylinders, substantially as described.

2. The combination of the aprons or chutes C and D, constructed, as described, with the revolving cylinders B and B', forming, with said chutes, the spaces D' and *e*, and the incline E, as and for the purposes described.

3. In a coal-separator, the combination of the aprons or chutes C and D, cylinders B and B', the secondary aprons or chutes G and G', and cylinders F and F', forming with the said chutes G and G' openings *g* and A, as described.

291,124. MACHINE FOR MOLDING IN SAND. WILLIAM AIKIN and WILLIAM W. DRUMMOND, Louisville, Ky. Filed May 14, 1883. (No model.)

Claim.—1. In combination with the binder-plate, the hand-wheel B^3 and system of three spur-pinions, B^4, and traveling, threaded, and grooved bars B^2, the eyes of the exterior pinions being provided with splines to fit the grooves across the threads, so that the bars, while rotating with their respective pinions, shall also travel longitudinally through them, substantially as set forth.

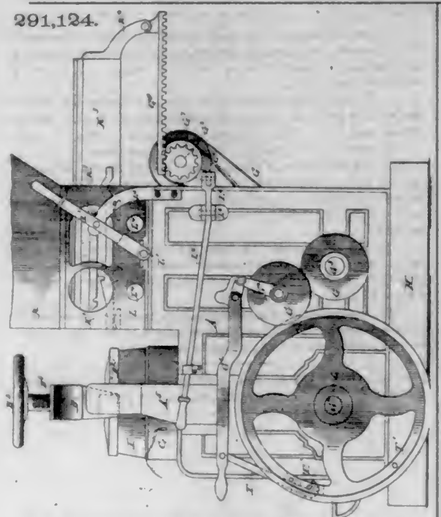
2. The combination, with the sand-box and flask, of swinging pins and sockets for confining in place either cope or drag, substantially as set forth.

3. In combination with the plunger-head and actuating-wheel and the driver-wheel, the intermediate wheel for communicating motion from the driver-wheel to the cams, and the detaching mechanism, substantially as shown, for throwing the wheels out of gear automatically.

4. In combination with the sand-box, the hopper, hopper-frame, and drawer, and raising and lowering mechanism for adjusting the level of the lower edge of the drawer to that of the top of a flask carried on the sand-box, whereby sand may be supplied in quantities proper for filling flasks of different depths, substantially as set forth.

5. The combination, with the sand-drawer and its bottom, of the vertically-adjustable hopper, and the cams and lever for raising and lowering the hopper, substantially as set forth.

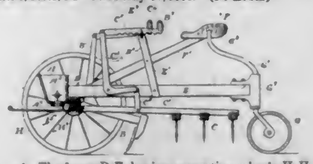
291,124.



6. In combination with the sand-box, hopper, and drawer, a rack attached to the drawer, and a pinion, having rotation in different directions, engaging the rack to project and retract the drawer, substantially as set forth.

7. The combination, with the sand-drawer, of the pinion G', engaging directly into the rack, and the pulleys, belts, and clutch for rotating the pinion in one direction or the other, substantially as set forth.

291,125. COMBINED SEEDER, PLOW, AND HARROW. PETER S. ARMSTRONG, Secor, Ill. Filed May 17, 1883. (No model.)



Claim.—1. The frame D E, having supporting-wheels H H and G, in combination with the harrow C C', pivoted to the frame-beam D, rod C^3, angle-iron C^2, notched bar C^4, and braces E', having collars C^5, substantially as and for the purpose set forth.

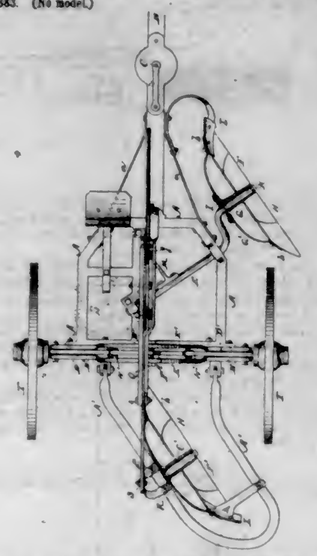
2. In a combined seeder, plow, and harrow, the frame D E, having supporting-wheels H H and G, in combination with the plow-frames B, pivoted independently to the beam D, vertical arms B', notched bars B^2, braces E', collars E^2 E^3, seat, and supporting-beam F', substantially as specified.

291,126. SAFETY-VALVE. HENRY G. ASHTON, Somerville, Mass. Filed Sept. 10, 1880. (No model.) Patented in England Sept. 22, 1880, No. 3,349; in Belgium Sept. 27, 1880, No. 52,656; in Canada Sept. 28, 1880, No. 11,739; in France Sept. 29, 1880, No. 138,867, and in Germany Oct. 3, 1880, No. 13,446.



Claim.—The combination of shell A, bushing B, and valve G with the ring *f*, the upper part of shell A serving, in connection with ring *f*, to form a casing for the spring D, and the lower part of shell A forming, in connection with ring *f*, the chamber *a*', as and for the purpose specified.

291,127. ROTARY PLOW. JOHN ARBUTHNOT, Chicago, Ill. Filed May 16, 1883. (No model.)

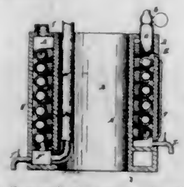


Claim.—1. The combination, substantially as specified, with the frame of a rotary plow having a diagonally-arranged plowing-disk, of the draft-wheels T T, the vertically-tilting sectional axles D' D', carrying the said wheels and pivoted to the said frame, and an adjusting-lever jointed to the said axles, for the purpose of thereby admitting of the said wheels being both inclined laterally in the same direction by means of the same lever.

2. The combination of the wheels T T, the vertically-tilting axles D' D', the bar B', the T-lever F^{w}, the links H' H', and means for temporarily locking the said lever, in connection with the plow-frame, carrying diagonally-arranged rotary plowing-disks, substantially as and for the purposes specified.

3. A rotary plow-disk consisting of the combination of the hub G and flange G', all made in one and the same piece, and having therein the pockets or depressions *c c*, and the blade H, made in sections, fastened to the rim of the said flange, the radial edges of the said sections having between them spaces opening into the said pockets, substantially as and for the purposes specified.

291,128. CARBURETOR. DELOS R. BAKER, Ludlow, Ky. Filed Dec. 27, 1882. (No model.)



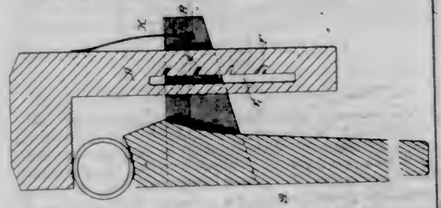
Claim.—1. For use in the process of enriching or impregnating gases, and in combination with the receptacle for liquid hydrocarbon, and with means for supplying air or gas, a tubular wall impervious to liquid except by osmosis, interposed between the volatile liquid hydrocarbon and the gas to be enriched or impregnated, whereby the hydrocarbon is prevented from mingling in a liquid state with said gas, but is enabled to be conveyed through said tubular wall to said gas in a state of vapor, substantially as and for the purposes specified.

2. The combination of receptacle A, tubing B, made of material impervious to liquids except by osmosis, and the chamber F, communicating with the interior of the lower portion of the tubing, and provided with a suitable discharge-orifice closed and opened by a suitable device, as *f'*, substantially as and for the purposes specified.

3. The combination of receptacle A, holding a volatile hydrocarbon liquid, the tubing B, impervious to liquid except by osmosis, and mechanism for enabling the operator to regulate the amount of exterior surface of the tubing which shall be in contact with the hydrocarbon, substantially as and for the purposes specified.

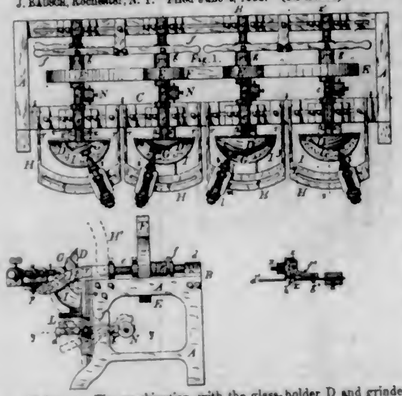
4. For use in the process of enriching and impregnating gases, and in combination with the receptacle for liquid hydrocarbon, and with means for supplying air or gas, a tubular wall made of pure rubber, caoutchouc, its allied gums, or the compounds thereof, or artificial rubbers, interposed between a volatile liquid hydrocarbon and the gas to be enriched or impregnated therewith, for enabling the hydrocarbon to enrich and impregnate the gas, substantially as and for the purposes specified.

291,129. WRENCH. WILLIAM C. BASKIN, Red Elephant, assignor of one-half to Frederick W. Best and Edgar N. Green, both of Denver, Colo. Filed June 11, 1883. (Model.)



Claim.—In a wrench, the combination of the lever A, the supports B, the jaw D, provided with the slot E and recesses F, the pivotal bolt C, and a spring, K, the parts being combined and arranged to operate substantially as shown.

291,130. MACHINE FOR GRINDING SPECTACLE-LENSES. JOHN J. RAUSCH, Rochester, N. Y. Filed June 4, 1883. (No model.)



Claim.—1. The combination, with the glass-holder D and grinder G, of the tank I, arranged to supply abrading material to the grinding-surfaces, substantially as and for the purposes set forth.

2. The combination with the glass-holder D and grinder G, of the adjustable tank I, and mechanism for varying its position relatively to the holder, substantially as and for the purposes set forth.

3. The combination, with a suitable supporting-frame, of the glass-holder D, grinder G, tank I, rack *w*, and dog *x*, substantially as and for the purposes set forth.

4. The combination, with the rotating glass-holder D, of the revolving friction-driven grinder G, provided with central recess, *l'*, substantially as described.

5. The combination, with a suitable supporting-frame, of the revolving glass-holder D, grinder G, and swinging frame H, substantially as described.

6. The combination, with the glass-holder D and grinder G, of the spindle *i*, collar *o*, spring *n*, and adjustable sleeve *t*, substantially as described.

7. The combination, with the revolving glass-holder D and grinder G, of the spindle *i*, and suitable mechanism for adjusting and supporting the spindle at any desired angle with the axis of rotation of the holder, substantially as described.

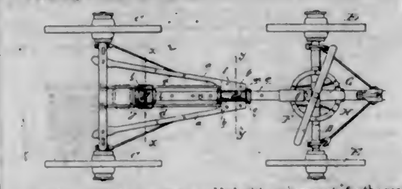
8. The combination, with the revolving glass-holder D and grinder G, of the spindle *i*, plate *m*, having bearings *l l* for the spindle, and supporting-frame H, provided with slot *q*, and bolt and nut *p*, substantially as described.

291,131. WAGON-POLE. ALEXANDER H. BEACH and RALPH H. BEACH, Flint, Mich. Filed Apr. 19, 1883. (No model.)



Claim.—As a new article of manufacture, a wagon-tongue formed of a continuous strip of sheet metal, bent into rectangular form in cross-section to give closed sides and top with open bottom, filled in with a wooden backing, and having longitudinal taper in opposite directions from the point *a*, substantially as described.

291,132. WAGON RUNNING-GEAR. ALLEN J. BEACH, Flint, Mich. Filed Aug. 8, 1883. (No model.)



Claim.—1. A farm-wagon provided with two supports for the reach, one secured at a fixed distance from the rear axle, and the other situated between the rear axle and the fixed support, and constructed to allow the reach to turn therein, and to move with the reach as the latter is adjusted, substantially as described.

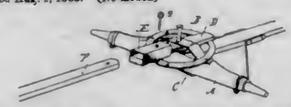
2. In a farm-wagon, a reach adapted to roll in quasi metal cylinders, one of which secures the forward end of the rear hounds together, while the other slides upon guide-rods, such cylinders being provided with slots, by means of which, and suitable pins engaging the parts together, the roll of the reach is limited, substantially as specified.

3. In a farm-wagon, the combination, with the reach *e* and filling-plates *f*, of the plates *b*, securing the hounds together, and forming, with the hounds, a hollow cylinder, in which the reach and filling-plates turn, substantially as described.

4. As a means of securing the rear end of a rolling reach and assisting in the extensibility thereof, the flat ring *j*, provided with circular ears *k*, in combination with the guide-rods, the rear ends of which are secured to the rear axle and the forward ends to the forward ends of the hounds, substantially as and for the purposes described.

5. In a farm-wagon, the combination therewith of the rear hounds, *a*, plates *b*, guide-rods *d*, reach *e*, filler-plates *f*, rings *g*, filler-bars *h*, rings *i*, flat rings *j*, such plates and flat rings being provided with slots *l*, and suitable pins and holes in the reach and filler-bars, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

291,133. WAGON RUNNING-GEAR. ALLEN J. BEACH, Flint, Mich. Filed Aug. 1, 1883. (No model.)

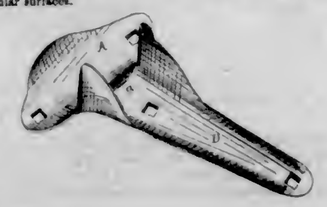


Claim.—1. The draw-bar D, made separate from the reach, and pivoted to the axle by the king-bolt, in combination with the clip E, constructed to embrace both draw-bar and reach, to hold the reach above the draw-bar, and to prevent the wear or splitting of said draw-bar and reach, substantially as described.

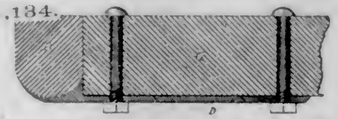
2. In a wagon, the combination, with the axle A, fifth-wheel B, and yoke C, of the draw-bar D, resting on the fifth-wheel below said yoke, and secured by the king-bolt, and provided with the bend-clip E, as and for the purpose set forth.

291,134. CLIP FOR SECURING IRREGULAR SURFACES TOGETHER. ALEXANDER H. BEACH, Flint, Mich. Filed Apr. 19, 1883. (No model.)

Brief.—A clip provided with an abutment at the point of conjunction of the two arms thereof, which fills the inequalities of surface of two irregular surfaces.

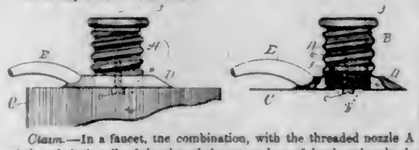


291,134.



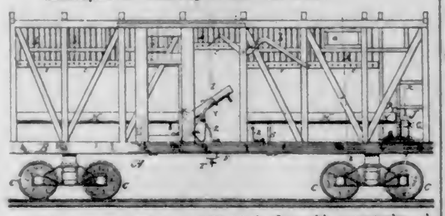
Claim.—A clip for the purposes described, provided with an abutment at the point of conjunction of the two arms of the clip, adapted to fill the inequalities of surface in two pieces of irregular surfaces which it is desired to secure together, substantially as specified.

291,135. FAUCET. ANTHONY A. BENNETT, West Stratford, Conn. Filed July 5, 1881. (No model.)



Claim.—In a faucet, the combination, with the threaded nozzle A and threaded plug B, of the threaded center piece, *f*, having the elastic packing-disk *a* secured to its lower end, substantially as described, and for the purpose as set forth.

291,136. STOCK-CAR. ANTHONY BERDANIER and ADAM F. BERDANIER, Philadelphia, Pa. Filed Aug. 16, 1883. (No model.)



Claim.—1. A stock-car provided in its floor with water-tanks and within the car with a watering-trough, overflow-pipes connecting the trough and tanks, and a pump, the pump being actuating by the movement of the car to draw the water from the tanks and discharge it into the trough, whereby and by means of the overflow-pipes a continuous current of the water is provided during the movement of the car, substantially as set forth.

2. The combination, in a car, of the tanks E, pump J, pipes Q R, trough H, and overflow-pipes S, connecting the trough and tanks, the whole being arranged and adapted to operate substantially as set forth.

3. In a stock-car, the trough H, provided with the section W, hinged at one end, and supplied with detachable connecting pipe or hose Z, and adapted to have one of its ends elevated, as specified, by the opening of the car-door, substantially as set forth.

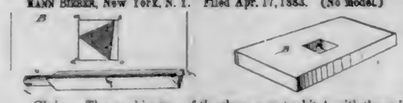
4. The trough H, provided with the section W, lever Y, and detachable pipes, substantially as set forth.

5. The combination, in a car, of the tanks E, pump J, pipes Q R, trough H, overflow-pipes S, the pump-operating rod N, and eccentric P, substantially as set forth.

6. In a stock-car having doors *e*, the grain-racks consisting of the bent rods *b*, connecting-bars *c*, and hangers *d*, those portions of the racks on each side of the car opposite to the car-doors being independently adjustable, substantially as specified.

7. The combination, in a car, of the tanks E, receptacles G, trough H, pump J, pipes Q R, and overflow-pipes S, connecting the trough and tanks, the pump being actuated by the movement of the car, substantially as set forth.

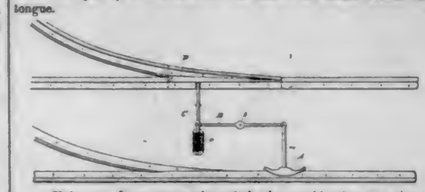
291,137. DEVICE FOR DRILLING SQUARE HOLES. ERNST HERRMANN BIERER, New York, N. Y. Filed Apr. 17, 1883. (No model.)



Claim.—The combination of the three-angular bit A with the guide-plate B, having a square hole, *h*, substantially as and for the purpose herein described.

291,138. AUTOMATIC STREET-RAILWAY SWITCH. EARL BILL, Cleveland, Ohio. Filed June 9, 1883. (No model.)

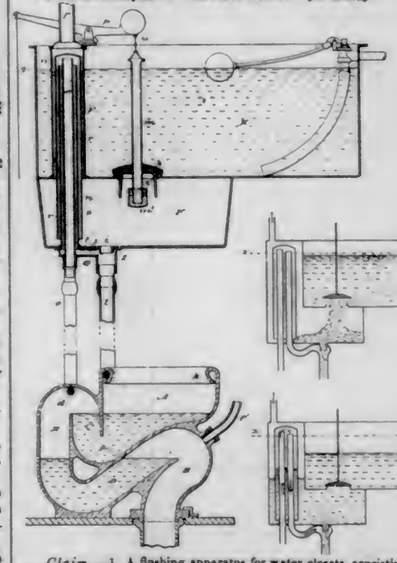
Brief.—The switch-bar yieldingly held to the main by a spring is pivotally attached to one end of a lever extended lengthwise of the track between the rails and centrally pivoted to the track, to the other end of which lever is pivoted the stem of a sliding block arranged near the rail opposite the switch-tongue, leaving room for passage of a train upon the main, and arranged to be struck and moved up to a stop by the wheel of a car facing and turned toward the switch and required to enter the turn-out, whereby the tongue is shifted and the wheel opposite the shifting-wheel guided upon the siding-rail. The tongue is of sufficient length to be held open by one wheel until the next wheel enters behind the tongue.



Claim.—1. In an automatic switch, the combination of a pivoted tongue, a sliding shifting-block situated in close proximity to the rail opposite the tongue, a lever situated between the rails, one end of the said lever being pivoted to the extension *a* of the sliding block, and a spring-actuated rod pivotally secured to the lever and to the sliding tongue, substantially as set forth.

2. The combination of the block A, the rod *a*, the lever B, the rod C, the spring *c*, and the tongue D, substantially as described, and for the purpose specified.

291,139. FLUSHING APPARATUS FOR WATER-CLOSETS. JAS. E. BOYLE, Brooklyn, N. Y. Filed Mar. 12, 1883. (No model.)



Claim.—1. A flushing apparatus for water-closets, consisting of a reservoir-tank, a flushing-chamber adapted to be filled therefrom, a valve controlling the admission of water from said tank to said chamber, a suction-injector arranged beneath the outlet from said chamber, a flushing-pipe leading from said injector, and a suction or air pipe communicating with said injector, all combined and arranged substantially as set forth, whereby the water in escaping from said chamber into the flushing-pipe traverses said injector, and sucks the air from said suction-pipe.

2. The combination of a reservoir-tank, a flushing-chamber, a valve controlling the admission of water from said tank to said chamber, a suction-pipe terminating at the upper part of said chamber, an injector beneath the outlet from said chamber, a flushing-pipe leading downward from said injector, and a suction-passage affording communication from said injector to said suction-pipe, substantially as and for the purposes set forth.

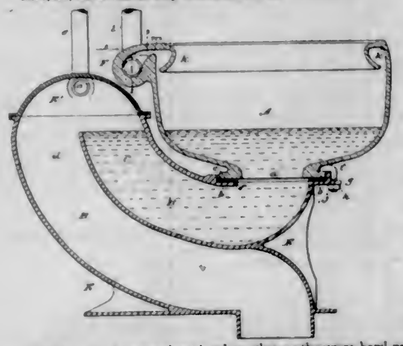
3. A flushing apparatus for water-closets, consisting of a reservoir-tank, a flushing-chamber, a valve controlling the admission of water from said tank to said chamber, a suction-injector beneath the outlet from said chamber, a flushing-pipe leading downward from said injector, a suction or air pipe opening into the upper part of said chamber, and a suction-passage extending from said pipe to said injector, whereby the passage of water through said injector into the flushing-pipe will develop a suction in said suction-passage and suction-pipe, in combination with means, substantially as described, for admitting air to said suction passage or pipe, and so breaking the vacuum therein before all the water has escaped from the chamber, whereby an after-wash is secured, all combined and arranged to operate substantially as set forth.

4. In combination, the tank E, the chamber F, provided with inlet-orifice A' and outlet-orifice *i*, the valve A, the suction-injector I, the flushing-pipe *l*, the air-pipe *e*, the suction-passage *t*, and the air-bell *n*, substantially as set forth.

5. A flushing apparatus for a water-closet, consisting of the combination of a reservoir-tank, a flushing-chamber provided with an inlet-orifice of large area communicating with said tank, and with an outlet-orifice of contracted area proportioned to the area of said inlet-orifice, substantially as specified, a valve adapted to close said inlet-orifice, an air-pipe opening into said flushing-chamber, and a flushing-pipe leading from said outlet-orifice, all arranged and adapted to operate substantially as set forth.

6. The combination, with tank E and chamber F, of the valve A thereof, its stem consisting of an overflow-tube, *m*, and a sealing-cup, *m'*, below the valve, in which cup the lower end of the overflow-tube is immersed, substantially as set forth.

291,140. WATER-CLOSET AND OTHER BOWLS AND PIPE-CONNECTION THEREFOR. JAS. E. BOYLE, Brooklyn, N. Y. Filed Mar. 12, 1883. (No model.) Patented in England Feb. 23, 1882, No. 882; in France Feb. 28, 1882, No. 147,614; in Germany Mar. 2, 1882, No. 20,286; in Belgium Mar. 13, 1882, No. 57,349; in Austria-Hungary May 8, 1882, No. 3,063, and in Canada July 3, 1882, No. 31,219.



Claim.—1. A water-closet bowl or other earthenware bowl used in plumbing, provided on its exterior with a hollow tubular barrel molded in one piece with it, having opposite open ends, and with a port or opening through the side of the bowl, affording communication between the cavity of the barrel and the interior of the bowl, substantially as set forth.

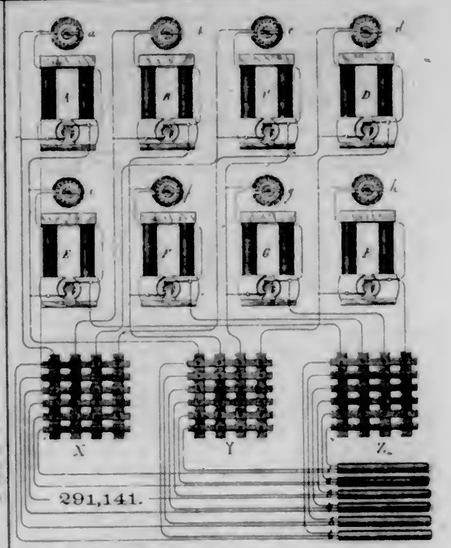
2. An earthenware bowl provided with an open-ended cylindrical barrel on its exterior, and an opening extending from its interior to the cavity of said barrel, in combination with a thimble entering one end of said barrel, a cap closing the other end thereof, and a clamp for pressing said thimble and cap forcibly toward each other, thereby embracing the barrel between them, substantially as set forth.

3. The combination, with bowl A, provided with barrel F, of thimble G, having tie-bars J J, screw J', and screw-cap H, engaging said screw, substantially as set forth.

4. The combination, with bowl A, provided with barrel F, of thimble G, having tie-bars J J, screw J', screw-cap H, union-nut K, and spud L, substantially as set forth.

5. A water-closet bowl formed with a tubular barrel for connecting with the flushing-pipe, and provided with a trap or water-seal at the connection between the pipe and the bowl, whereby the air in the pipe is normally isolated from the bowl, substantially as set forth.

291,141. SYSTEM OF ELECTRICAL DISTRIBUTION. CHARLES S. BRADLEY, New York, N. Y. Filed Aug. 18, 1883. (No model.)



291,141.

Claim.—1. The method of regulating the electrical pressure or potential in an electrical-supply system, which consists in feeding different points of the system from two or more independent sources of supply of electrical energy, and in separately regulating the electro-motive forces of these sources, according to the conditions of the load.

2. The method of regulating the electro-motive force or pressure in a multiple-arc system of current-supplying conductors or mains, consisting in conveying the current to different points of the mains by means of feeders, supplying the feeders with electric currents by independent sources of electrical energy, and separately regulating their electro-motive forces, so as to maintain different pressures in the various feeders, according to the conditions of the load, substantially as described.

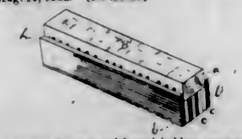
3. The method of regulating the electrical pressure or potential in a multiple-arc system of current-supplying conductors or mains from which the lamps or other converting devices are directly supplied, consisting in conveying the current from a generating-station to different points of the mains, by means of independent feeding-conductors, supplying these feeders with electric currents by independent dynamo-machines, and separately regulating their electro-motive forces according to the conditions of the load, substantially as described.

4. The combination, with a multiple-arc system of conductors or mains, and two or more conductors or feeders connecting it at different points with a central station, of two or more independent dynamo-machines, each of which is provided with an independent regulating apparatus and a set of switching contrivances, whereby any of the dynamo-machines may be separately connected to any of the feeders, substantially as and for the purpose described.

291,142. BASE FOR PAINTS. ATWATER E. BROCKETT, Branford, Conn., assignor to Lemira H. Brockett, same place. Filed Dec. 18, 1882. (No specimens.)

Claim.—The base for a paint made of pine-tar or Stockholm tar, caoutchouc gum, gutta-percha, gum-shellac, gum-copal or copal (oil) varnish, and linseed-oil, or their equivalents, made substantially as specified.

291,143. PIANO-FORTE BRIDGE. JOHN R. BROWN, Jamestown, N. Y. Filed Aug. 19, 1882. (No model.)



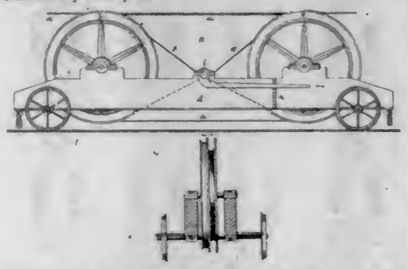
Claim.—1. A piano-forte sound-board bridge composed of veneers and end wood, the veneers forming the base and partly inclosing the sides of the end wood, substantially as shown and described, and for the purpose set forth.

2. A piano-forte sound-board bridge composed of veneers and end wood, the veneers forming the base and partly inclosing the sides of the end wood, which has holes or grooves for holding the strings and governing their bearing and position, substantially as shown and described, and for the purpose set forth.

291,144. CABLE-MOTOR. CHARLES R. BROWN, Imperial, assignor of one-half to William McCreery, Pittsburg, Pa. Filed Sept. 7, 1883. (No model.)

Brief.—A double-grooved wheel or wheels upon car receives the

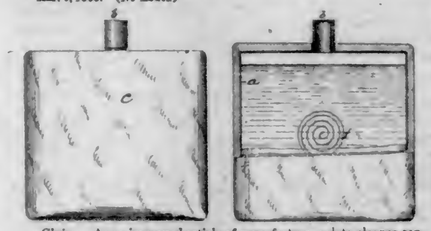
propelling-cable in one groove and a strap-brake in the other. The brake is controlled by a rotary shaft.



Claim.—1. In combination with an endless cable, a car having mounted thereon a revolving wheel provided with a cable-groove and a brake-band groove, a brake-band arranged in the brake-groove of the wheel, and mechanism for tightening and loosening the brake-band, substantially as and for the purposes specified.

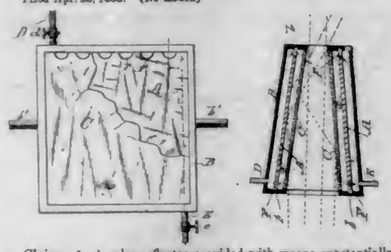
2. The combination, with a car or truck adapted to be driven by an endless band or cable, of two revolving wheels mounted on the car, each of said wheels having a cable-groove, two brake-bands, one arranged around each of said wheels, and a rotating shaft arranged between the wheels, and to which the brake-bands are secured, substantially as and for the purposes specified.

291,145. SLATE-CLEANER. JOHN BURLING, Millburn, N. J. Filed Mar. 9, 1883. (No model.)



Claim.—As an improved article of manufacture, a slate-cleaner consisting of a hollow, comparatively thin, and flat receptacle supplied with a water-exit and covered with a suitable soft water-absorbing material, all substantially as shown, for the purpose described.

291,146. SOLAR REFLECTOR. WILLIAM CALVER, Washington, D. C. Filed Apr. 25, 1883. (No model.)



Claim.—1. A solar reflector provided with means, substantially as specified, for maintaining a confined current of refrigerative substance in contact therewith, substantially as and for the purpose set forth.

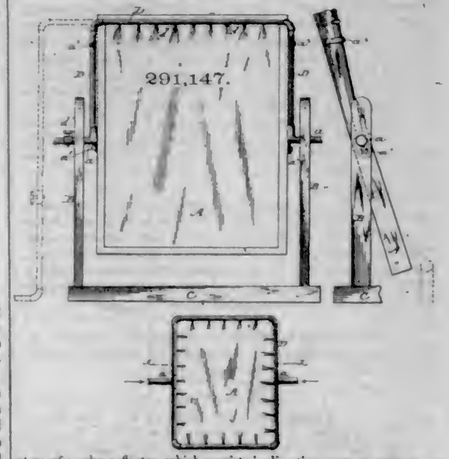
2. The combination of a reflector having apertures therein with a water and air tight inclosing-case having a transparent face and an inlet and outlet, substantially as specified.

3. The combination of the reflector A, frame B, transparent face C, inlet D *d*, and outlet E *e*, substantially as shown and described.

4. The combination of the frame B, grooved as at *b*, and provided with trunnions *b'*, and inlet D and outlet E, with the reflector A, provided with apertures F, substantially as shown and described.

291,147. METHOD OF AND MEANS FOR CONTROLLING THE TEMPERATURE OF SOLAR HEATERS. WILLIAM CALVER, Washington, D. C. Filed Apr. 25, 1883. (No model.)

Claim.—1. The method herein set forth of controlling the temperature of a solar reflector, which consists in directing upon an outer surface of the same a sheet, jet, or spray of water or other refrigerative substance.



2. A reflector in combination with means, substantially as specified, for directing upon an outer surface of the reflector a refrigerative substance, for the purpose set forth.

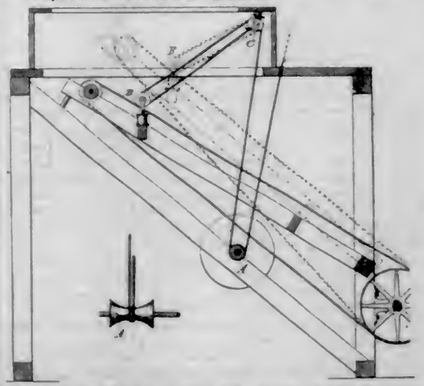
3. The combination of a reflector and a slitted or perforated pipe arranged to direct a refrigerant upon the reflector, substantially as shown and described.

4. The combination of a reflector and a slotted or perforated pipe having lateral arms forming trunnions, substantially as specified.

5. The combination of the reflector A and the pipe D, constituting a frame thereof, and slitted at *d d*, substantially as shown and described.

6. The combination of a reflector or a refractor and means for cooling its reflecting or refracting surface or medium, substantially as and for the purpose set forth.

291,148. MEANS FOR OPERATING BUTTING-SAWS. JOB CARDY, Tampa, Fla. Filed Oct. 6, 1883. (Model.)



Claim.—The simple mechanism as fully shown—the slowly-revolving concave pulley A, the tension-rope feed D, passing through pulley-block B, attached to saw-frame, and pulley-block C, attached to top of saw-box, from thence three times around concave drum A, the end of said friction-rope passing up through deck to hand of operator, all of which is adapted to the operating of butting-saws, as herein substantially set forth.

291,149. CAR-COUPLING. DANIEL CARLOUGH, Paterson, N. J. Filed Nov. 26, 1883. (No model.)

Claim.—The combination of the pawl B, having lugs B' B², pivoted in the coupling-box A, coupling-box A, having vertically-arranged slots R, slot L, opening P, catch or stop T, pivot-bolts S, having washer S', key S², coupling-links C, adapted to work on pivots S, the pivots adapted to work in slots R, link N', and stop H, substantially as set forth.

291,149.

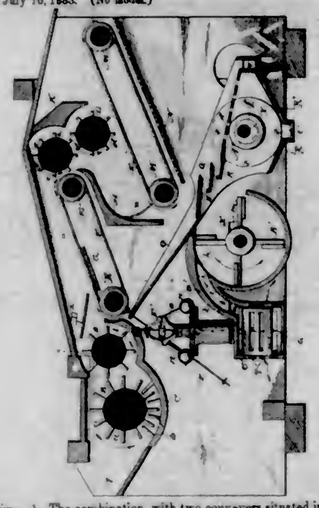


291,150. BRACELET-FASTENING. JOHN M. CHANDLER, Cleveland, Ohio. Filed Oct. 18, 1883. (No model.)



Claim.—The combination, with the band of a bracelet, of the box B, plate C, cam c, and lever D, substantially as and for the purposes specified.

291,151. THRASHER. ALEXANDER H. CLARK, Fond du Lac, Wis. Filed July 10, 1883. (No model.)



Claim.—1. The combination, with two conveyers situated in planes of different elevations and lapping each other in the direction of travel, of two oppositely-revolving pickers situated in the rear of the upper conveyer and above the lower conveyer, and adapted to receive the grain from one conveyer and transfer it to the other, and the deflector K, situated in the rear of both pickers, substantially as described.

2. The combination, with two endless conveyers situated in planes of different elevations and lapping each other in the direction of travel, of two pickers running in opposite directions at different rates of speed, and adapted to take the straw from one conveyer and transfer it to the other, and the deflector K, substantially as described.

3. The combination, with the two conveyers, the two pickers acting therewith, and the deflector K, of a table or chute, N, situated below the lower conveyer, and a shoe situated below the chute, substantially as described.

4. The combination, with the two conveyers, two pickers, a deflector situated behind the pickers, and a deflector situated in front of them, of the chute or table N, and a shoe situated below the table or chute, substantially as described.

5. In a thrashing-machine, the combination, with a fan and fan-cylinder, of an air-chest, and means for conveying air from the chest to the front and each end of the cylinder, substantially as set forth.

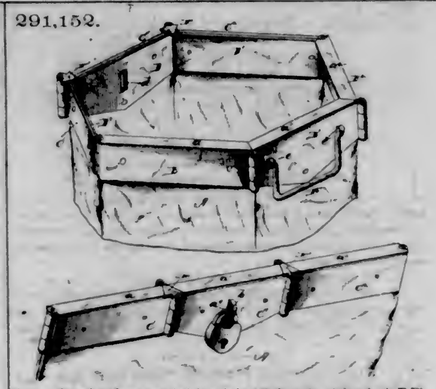
6. In a thrashing-machine, the combination, with a fan and casing, of an air-chest, a valve, a governor, the stem of which is secured to the valve, and means for conveying the air from the chest to the front and to each end of the fan-casing, substantially as set forth.

7. The combination, with the combined chute, sieve, and shoe of the fan X and cylinder B', of the chest C', valve G', governor F', and chamber D', the above parts combined and adapted to operate substantially as described.

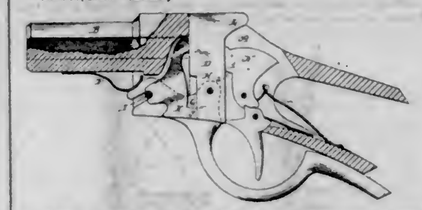
291,152. MAIL-BAG. HAMILTON CLIFF, Leipsic, and FRANCES MARION BROCK, New Providence, Ind. Filed Oct. 17, 1883. (No model.)

Claim.—The combination, with the bag A, having a mouth-piece comprising the hinged sections B B' B², and C C' C², the former having the overhanging flanges *a a' a²*, beveled at their ends, of the plates F F', pivotally secured upon the pintles of the hinges of the plates C C' C², and adapted to fit in the spaces formed by the beveled ends of the plates B B' B² when the bag is closed, as set forth.

291,152.



291,153. FIRE-ARM. DAVID S. COLE, Columbus Junction, Iowa. Filed Mar. 17, 1883. (Model.)

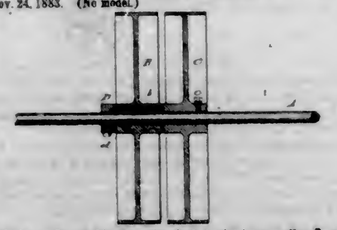


Claim.—1. In breech-loading fire-arms, the combination of a vertically-moving breech-block, D, provided with an extension, L, upon its upper rear corner, the operating-lever, which is connected directly to the breech-block, and the hammer N, having a straight surface, 1, and the recess 2, formed on its front edge, substantially as shown.

2. In a breech-loading fire-arm, the combination of a single pivotal pin, I, the cartridge-extractor, K, and the operating-lever having an open-ended slot in its front end, and the vertically-moving breech-block D, which is pivoted to the operating-lever, whereby when the pin which connects the lever and the breech-block together is removed the lever, the cartridge-extractor, and the breech-block can all be removed from the gun, substantially as specified.

3. The combination of a breech-block having the extension formed upon its rear side to operate the hammer, and provided with a shoulder, with a cartridge-extractor which has a shoulder formed upon its lower rear corner for the breech-block to strike against, substantially as described.

291,154. LUBRICATOR. CHARLES E. COLLINS, Baltimore, Md. Filed Nov. 24, 1883. (No model.)

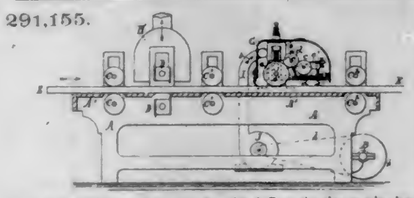


Claim.—In combination, the shaft A, the loose pulley B, mounted thereon, and having perforations *b*, communicating with the central bore, the fast pulley secured to the shaft and adjoining the loose pulley, and the collar D, secured to the shaft on the other side of the loose pulley, all as and for the purpose set forth.

291,155. MACHINE FOR PLANING AND PRINTING WOOD. WM. A. COMPTON, Liberty Corner, N. J. Filed Dec. 15, 1882. (No model.)

Claim.—1. The combination, in an organized machine, of a wood-

291,155.

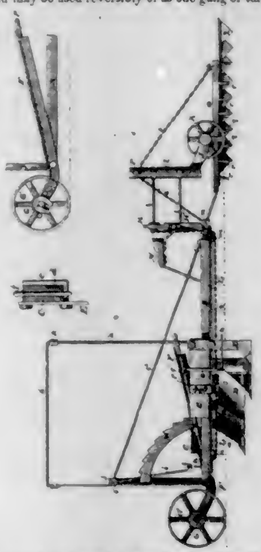


planing mechanism, as a rotary cutter-head, D, a cleaning mechanism, as the wiper A, and a printing mechanism, as the roller *e*, the whole being combined substantially as described, to plane, clean, and print the surface of the wood in a continuous operation, as and for the purpose set forth.

2. The combination, with the planing-machine having the cutter D and feed-roller for propelling the boards, of the impression-roller *e*, provided with inking devices, and rotated by a connection, as pulleys *p* and belt *q*, to the feed-roller of the planing-machine, as and for the purpose set forth.

291,156. GANG-PLOW. HAMILTON M. CORMACK, Malden, MASS. Filed Sept. 11, 1883. (No model.)

Brief.—A main frame has two plow-carrying frames resting upon it side by side, and hinged to it at the rear end. The plow-frames may be lifted at front by a lever with a right-angled hook-arm. To the rear end of the main frame is secured a vertical plate or slide arranged to slide in guides attached to the posts of a caster-wheel. By a system of chains, pulleys, and a lever-frame the whole may be raised or lowered. A series of swivel-plows are arranged to move to any point on the longitudinal bars, and may be used reversibly or as one gang of turn-plows.



Claim.—1. In a gang-plow, the combination of the frame A, the auxiliary frames B B, each pivoted thereto at one end, and provided with two or more plows, D D, and means for independently raising or lowering said frames about their axes, and holding the same in any required position, substantially as and for the purposes described.

2. In a gang-plow, the combination of the frame B, pivoted to the frame A, and provided with a set of plows, the ring *h*, secured thereto, the hooked rocker-arm *i*, the shaft *i'*, mounted in suitable bearings, the hand-lever i^3, the hook *k*, and the support *k'*, all arranged and adapted to operate substantially as and for the purposes described.

3. In a gang-plow, the combination of the frame A, the auxiliary frames B B, each provided with two or more swivel-plows, and means of adjusting said plows lengthwise of the frames B, whereby said two gangs of plows are adapted to be used independently of each other, and to turn their furrows in opposite directions, or to be used in conjunction, and to turn their furrows in the same direction, but toward either side of the frame A, substantially as and for the purposes described.

4. In a gang-plow, the combination of the frame A, the lever-frame F, pivoted thereto, and fulcrumed upon the axle G, the toothed segment M and the catch *o* for maintaining the frame F in any required position about its axis, substantially as and for the purposes described.

5. In a gang-plow, the combination of the frame A, the lever-frame F, pivoted thereto, and fulcrumed upon the axle G, the toothed segment M, the forked rod *p*, the catch *o*, the support H I J K, the chain L, and the sheaves or pulleys *m* and *n*, all arranged and adapted to operate substantially as and for the purposes described.

6. In a gang-plow, the combination of the frame A, two harrows, O O, arranged obliquely to said frame in opposite directions and pivoted thereto, the chain *s s*, the supporting swivel-head P, and the hooks *u u*, as a means for raising said harrows, and holding them from contact with the ground, substantially as and for the purposes described.

7. In a gang-plow, the combination of the slide H, adapted to move in suitable guides secured to the frame A, the bearing I, secured thereto and provided with the forked bearing J and wheel K, and means for vertically adjusting said slide H and holding it in a fixed position, substantially as and for the purposes described.

291,157. SWEAT-BAND FOR HATS. ALBERT CHARLES COUCH, Boston, MASS. Filed Nov. 22, 1883. (No model.)

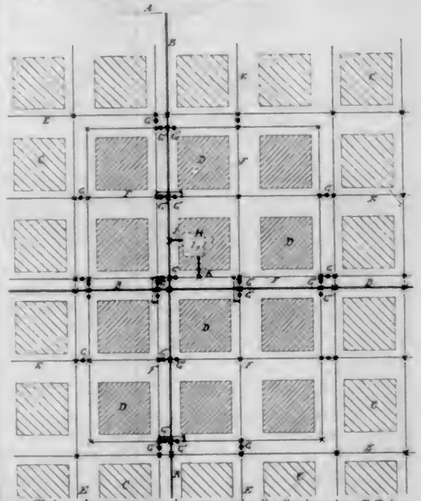


Claim.—1. A sweat-band for hats, consisting, in whole or in part, of a strip of insoluble gelatine, substantially as set forth.

2. The combination, in a sweat-band for hats, of a strip of insoluble gelatine and a connecting strip of fabric, substantially as specified.

3. The combination of a hat or cap and a sweat-band consisting of a strip of insoluble gelatine connected within the hat, substantially as specified.

291,158. WATER-SUPPLY FOR CITIES. DEWITT C. CREGIER, Chicago, Ill. Filed Apr. 15, 1882. (No model.)

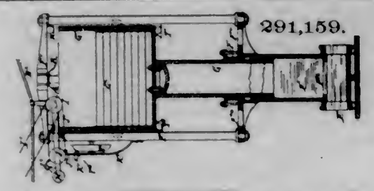


Claim.—In a water-supply system, the distributing-pipes E F, having valves G between them, in combination with the mains B, opening directly into the pipes E, and with a pump, I, as intermediate connection between the mains B and pipes F, substantially as herein specified, and for the purposes set forth.

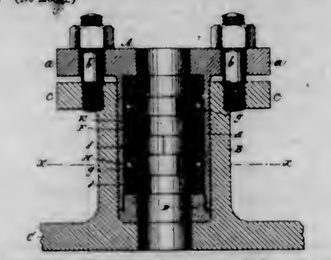
291,159. WATER-SUPPLY FOR CITIES AND TOWNS. DEWITT C. CREGIER, Chicago, Ill. Filed Mar. 9, 1882. (No model.)

Claim.—In a water-supply for cities and towns, wherein the water is supplied under separate high and low pressures, and in combination with the duplex series of pipes W and E and the pump D, the plunger G, carriage G', and adjustable weights G^2, for varying the pressure in high-pressure pipes, and the devices, substantially as described, for maintaining the pressure uniform after the proper degree has been attained, as set forth.

291,159.



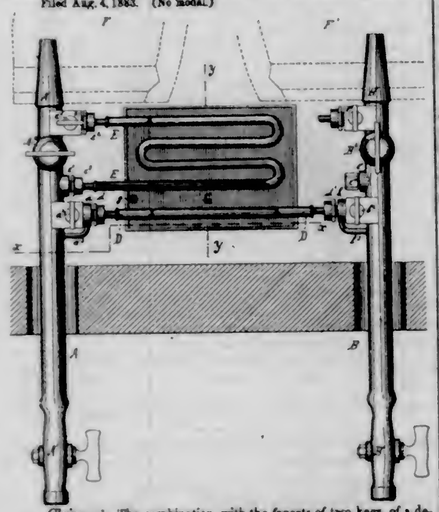
291,160. METALLIC PACKING FOR STUFFING-BOXES. JEREMIAH J. CROWLEY, Savannah, Ga., assignor of two-thirds to John D. Richardson, Brooklyn, and Francis L. Manchester, New York, N. Y. Filed Aug. 24, 1883. (No model.)



Claim.—1. A stuffing-box packing composed of one or more divided outer rings, E, having internal recesses, *g g*, divided inner rings, F, fitted to the recesses *g g* of said rings E, and a spring or springs applied to press externally upon the outer divided rings, E, substantially as herein described.

2. The combination, with a stuffing-box or gland, of outer divided packing-rings, E, of substantially T-shaped transverse section, inner divided packing-rings, F, fitted to the rabbeted recesses in the interiors of the said packing-rings E, and coiled springs G, encircling the said packing-rings E, and arranged within recesses in the exteriors thereof, substantially as herein described.

291,161. FAUCET ATTACHMENT. LOUIS DANKHOFF, Passaic, N. J. Filed Aug. 4, 1883. (No model.)

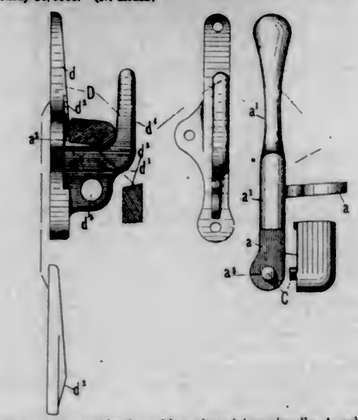


Claim.—1. The combination, with the faucets of two kegs, of a detachable connecting-pipe, means for coupling the same to the barrels of said faucets, and stop-cocks, by which the connection of said coupling-pipe with said faucets may be established or interrupted, substantially as set forth.

2. The combination, with the faucets of two kegs, of a connecting-pipe, means for coupling the same to the barrels of said faucets, auxiliary stop-cocks applied to the lateral nipples of the faucet-barrels, and auxiliary discharge-pipes that communicate directly with the connecting-pipe, and are provided with auxiliary stop-cocks at their delivery ends, substantially as set forth.

3. The combination, with the faucets of two kegs, of a connecting-pipe, means for coupling the same to the barrels of said faucets, and an ice-water receptacle located between said faucets, the coupling-pipe being bent to pass through said cooling-vessel, substantially as set forth.

291,162. DOOR-FASTENER. OSCAR DE MARIE, Alexandria, Va. Filed May 26, 1883. (No model.)



Claim.—1. In combination with a pivoted lever-handle, A, substantially as described, attached to the door-casing, a casting, D, substantially as described, having a supporting-bearing, d^2, and a bearing, d^3, with a double incline, substantially as and for the purpose described.

2. In combination with the casting D, having an inclined bearing-surface, the lever A, and the pivot-bolt C, the bearing-plate E, having the flange portion *e*, as described, the flange serving to take a portion of the strain exerted upon the pivot-bolt by the lever and inclined bearing-surface upon the casting.

3. The fastener described, having the lever A, with bearing a^2, right-angled projection a^3, with opening a^4, the bearing-plate B, the pivot-bolt C, and the casting D, with double incline and opening d^3, combined and arranged as and for the purpose described.

291,163. MANUFACTURE OF FERRO-CYANIDES. GEORGES DE VIGNE, Lille, France. Filed May 23, 1883. (No specimens.)

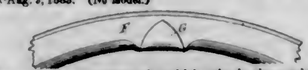
Claim.—The process of obtaining ferro-cyanides from coal-gas or other gas or smoke containing cyanogen or hydrocyanic acid, consisting in cooling the gas or smoke and depriving it of tarry products, in subjecting the gas or smoke in a cool state to the action of a mixture of iron in any of its various forms and an alkaline salt, and in subsequently washing the mixture and evaporating the solution so obtained, substantially as and for the purpose herein described.

291,164. VENEER. AUGUST DICKMAN and MICHEL HEINTZ, Detroit, Mich. Filed Mar. 10, 1883. (Specimens.)

Claim.—1. A veneering composition consisting of glue and wood-shavings built up in alternate layers of the same, substantially as described.

2. In a new article of manufacture, a composition veneer built up in alternate layers of wood-shavings and glue, substantially in the manner described.

291,165. VEHICLE-WHEEL. GREGORY M. DILLARD, Macon, Miss. Filed Aug. 9, 1883. (No model.)

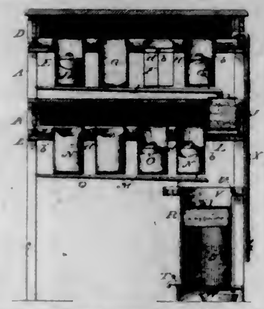


Claim.—As an improvement in vehicle-wheels, the combination of the spokes, the metallic thimbles B, secured to the outer ends of the spokes and formed with internal screw-threads, *b*, the separate bolt C, having the screw-threaded portion *c*, that is received by the threads *b*, and the smooth cylindrical end portion, the nut *d* on screw-threads *c*, the washer D, interposed between the end of the thimble and the nut, and the felly having the hole or perforation, all arranged and operating substantially as and for the purpose set forth.

291,166. REFRIGERATING APPARATUS. FRANCIS A. DODGE, Brady, Tex. Filed Sept. 19, 1883. (No model.)

Brief.—Water passes through porous fabric, cools by part evapo-

rating, is filtered, and further cooled by repeating the operation below; also cools contents of vessels set in depending bags of the wet fabric in wire cages.



Claim.—1. In a cooling apparatus, the combination of a water-pan provided with a walled opening in its bottom, a cage or frame suspended beneath said opening, a fibrous jacket curled over the wall of said opening and extending downward into the cage, and a vessel placed within said cage and jacket and adapted to receive the matter to be cooled.

2. In combination with pan D, having openings *b* and flanges *c*, cages F, suspended beneath the pan, jackets G, having their upper edge turned over the flanges *c* and into the pan, and vessels H within the jackets and cages, all substantially as shown and described.

3. In combination with the pan D and the jackets G, extending downward therefrom, vessels H within the jackets, and a trough or conductor, I, beneath the jackets, to catch the drip therefrom and conduct it to a suitable receptacle.

4. In combination with an upper water-pan, a fibrous jacket dipping therein and suspended therefrom, and a vessel arranged within said jacket, a second pan, jacket, and vessel below the first, said second pan being arranged to receive the water dripping from the jacket of the first, whereby the second vessel is supplied with water already partially cooled.

5. In combination with an upper water-pan, one or more jackets dipping into and suspended therefrom, and a vessel or vessels arranged within the jackets, a second water-pan, jacket or jackets, and vessel or vessels below the first, and an intermediate filter, substantially as and for the purpose set forth.

6. The herein-described cooling apparatus, consisting of frame A, pans D K U, cages F M, jackets G N, vessels H O, and filters J R, the latter provided with water-chamber S, and with porous jacket V, all substantially as shown and described.

7. In a cooling apparatus substantially such as described, the combination of a frame having its sides covered with gauze and provided with a door, a water-pan placed within the inclosed space and having openings through which to insert and remove vessels, a cage or support for the vessels beneath the pan, and a fibrous jacket encircling the vessel and dipping into the pan, all substantially as shown and described.

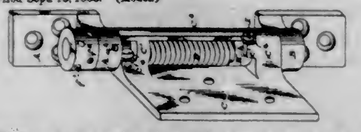
291,167. PROCESS OF PURIFYING WATER. CHARLES B. DUDLEY, Altoona, Pa. Filed Aug. 25, 1883. (No specimens.)

Claim.—The herein-described method of purifying water for boiler use, consisting in treating the water with caustic baryta in addition to the soda-lime, the whole process being in one operation, substantially as set forth.

291,168. METHOD OF PURIFYING WATER FOR BOILER USE. CHARLES B. DUDLEY, Altoona, Pa. Filed Aug. 25, 1883. (No specimens.)

Claim.—The herein-described method of purifying waters, consisting in treating the same first with caustic baryta and then with carbonate of soda, the whole process being in one operation, as set forth.

291,169. SPRING-HINGE. WALTER DUNCAN, Chicago, Ill., assignor of one-fourth to the Union Brass Manufacturing Company, same place. Filed Sept. 18, 1883. (Model.)



Claim.—1. In a spring-hinge of the class described, the hinge-pintle provided with a stop lug or spline, in combination with the movable member provided with an adjustable abutment-screw, as described, and for the purpose set forth.

2. In a spring-hinge of the class described, the combination of the movable and fixed members with a pintle or spindle composed of a tubular portion, E, provided with a stop-lug, *e*, and a stem portion, F, connected to the operating-spring, with means for adjusting the parts E F in relation to each other, substantially as described, and for the purpose set forth.

3. In a spring-hinge of the class described, the combination of the collar H, having lugs A A', stationary pintle G, having stop-lug *g*, and movable member C, having abutment-offset *c'*, as described, and for the purpose set forth.

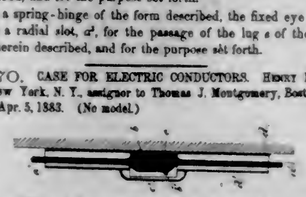
4. A spring-hinge consisting of fixed member A, having curved slot *a* in its pivot-eye, member B, having fixed pintle G, in combination with the movable member C, having adjustable abutment-screws I, and the pintle or spindle E, having stop-lug *e*, as described, and for the purpose set forth.

5. In a spring-hinge having its pintle formed of a tubular stem, E, having a limited movement in the fixed eye of the hinge, and a stem, F, attached to the spring, and adjustably secured to the stem E by a series of radial slots, *d' f'*, and locking-pin f^3, substantially as described, and for the purpose set forth.

6. In a spring-hinge of the form described, the fixed eye A, provided with a hole or opening, a^3, communicating with the curved recess *a*, as described, and for the purpose set forth.

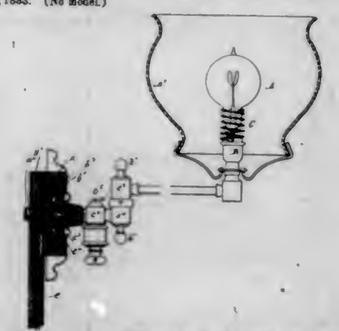
7. In a spring-hinge of the form described, the fixed eye A, provided with a radial slot, a^3, for the passage of the lug *s* of the hinge-pintle, as herein described, and for the purpose set forth.

291,170. CASE FOR ELECTRIC CONDUCTORS. HENRY EDMUNDS, Jr., New York, N. Y., assignor to Thomas J. Montgomery, Boston, Mass. Filed Apr. 5, 1883. (No model.)



Claim.—The metallic case *d*, adapted to be fastened to the wall or ceiling, and the metallic cover *d'*, resting upon the same, in combination with the grooved intersection-block or junction-box *c*, of insulating material, and the electric conductors introduced into such grooves, and the cap-piece c^2, secured at the intersection, substantially as set forth.

291,171. BRACKET FOR ELECTRIC LAMPS. HENRY EDMUNDS, Jr., New York, N. Y., assignor to Thomas J. Montgomery, Boston, Mass. Filed Apr. 5, 1883. (No model.)



Claim.—1. The wall-plate H' and the circuit-connections thereon, in combination with the contact-rings b^2 b^3, the secondary wall-plate K and its conductors, and the fixture for an electric lamp screwed upon the hub of the wall-plate, substantially as set forth.

2. In combination with the bracket-arm for an electric lamp, the joint-pivot, the concentrically-grooved plates of insulating material, the naked ends of the conductors in such grooves, and spring-contacts in the grooves between the respective conductors, substantially as set forth.

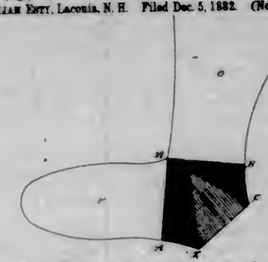
291,172. DEVICE FOR CLAMPING CORDS, &c. DIEDRICH WILHELM ERNSTING, Bremen, Germany. Filed Oct. 24, 1883. (No model.)



Claim.—1. A device for clamping cords, ropes, or chains, consisting of a flanged main plate, A, a U-shaped clasp-plate, B, pivoted to the main plate, and of a second U-shaped clasp-plate pivoted with its open side toward the clasp-plate B, substantially as set forth.

2. The combination of a supporting main plate, A, a U-shaped clasp-plate, B, pivoted to the main plate, a second U-shaped clasp, C, pivoted with its open side toward the clasp-plate to the same, and a cord, rope, or chain, T, that is passed through the space between the pivots of the clasp-plates and the closed middle portion of the clasp-plate C, and adapted to be clamped by the lower edges or jaws of the clasp-plates, substantially as specified.

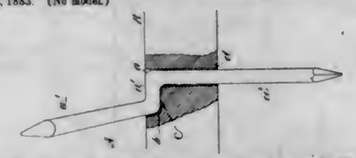
291,173. STOCKING AND THE ART OF KNITTING THE SAME. WILLIAM ESTY, Laconia, N. H. Filed Dec. 5, 1882. (No model.)



Claim.—1. The process herein described of knitting a heel and stocking, consisting in throwing out of action on top of the foot two of the needles upon each side at a time, and then forming the heel by first throwing two needles upon each side into action and then out of action, and then throwing two needles upon each side into action again, for the purpose of knitting the foot at right angles, substantially as set forth.

2. A stocking having that portion of its heel which is comprised between the lines C D E knit at an angle both to the foot and the leg, substantially as specified.

291,174. HARROW. AUSTIN C. EVANS, Springfield, Ohio. Filed Sept. 13, 1883. (No model.)



Claim.—1. In a reversible harrow, a tooth bent at opposite angles in the middle, and having one limb of the same extending in a slanting direction from the beam to the point of the same, as set forth.

2. In a harrow, a tooth pointed at each end and bent at two opposite angles in the middle, to form a straight tooth of one section and a slanting tooth of the other section, and to adapt it to be driven into the harrow-beam, as set forth.

3. The combination, in a reversible harrow, with the beam having a straight hole and a recess leading from said hole at right angles with the latter, of a tooth having two opposite angular bends, one section or limb of said tooth slanting from the beam to the end or point of the same.

4. The combination, with the tooth A, having the angles *a* and *b*, and the horizontal part *a'* between them, the angle *a* being a right angle, to form the straight section a^2 and the angle *b* about seventy to seventy-five degrees, to form the slanting section *a'*, of the beam B, having the straight hole *d*, adapted for the insertion of section a^2, and the slot *e*, extending therefrom at an angle with the central longitudinal line of the beam, as and for the purpose set forth.

5. A harrow-tooth combining in a single piece a straight and a slanting tooth, and bent in the middle of the same at two opposite angles away from and back toward the vertical line of the same, whereby the central part between said angles is formed at right angles to said vertical line, to allow the tooth to be driven into the harrow-beam, and to adapt it to engage with the slot formed in the latter, for the purpose set forth.

291,175. EXTRACTING NAPHTHA FROM OIL. JOHN W. EVANS, Cleveland, Ohio. Filed June 18, 1883. (No model.)

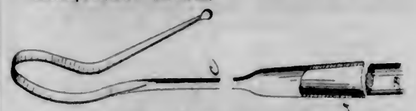


Claim.—The process herein described for extracting naphtha from oil, consisting in first heating the oil to the desired temperature, then admitting live steam in direct contact with the heated oil, and driving off the naphtha in the form of vapor, substantially as set forth.

291,176. FIRE-PROOF COMPOUND. LAWRENCE FELLOM, San Francisco, Cal. Filed June 18, 1883. (No specimens.)

Claim.—The herein-described composition of matter to be used as a fire-proof compound, and consisting of water, pulverized fire-clay, asbestos, green vitriol, sulphuric acid, sal-ammoniac, sulphur, silica, and crude sulphuret of antimony, in about the proportions specified.

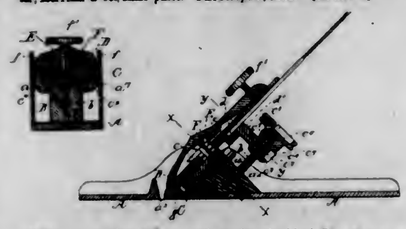
291,177. SHEPHERD'S CROOK. SUMNER D. FELT, Jackson, Mich. Filed Apr. 13, 1883. (No model.)



Claim.—1. The herein-described implement for catching and holding sheep, it having a shank, C, and a loop formed of a bent bar, which has the diameter or width transverse to the plane or loop greater than the thickness of the bar, whereby the crook may be made highly elastic.

2. The herein-described implement for catching and holding sheep, it having a loop for holding the leg of the animal made of elastic material rounded upon the inner side, whereby it prevents the harming of the animal, and flattened upon the outer side or face, whereby the elasticity is increased, substantially as set forth.

291,178. PLANE. WILLIAM B. FENN, Meriden, Conn., assignor to Foster, Merriam & Co., same place. Filed Sept. 3, 1883. (No model.)



Claim.—1. A plane bed or stock having the block B, cast upon or fastened to the inside thereof, of less width than the body of the plane, and provided with ways or guides for the support of a movable plane knife or iron supporting carriage formed thereon by means of the projections a^7, all substantially as and for the purposes described.

2. The combination of the plane bed or stop A, the block B, fastened or secured thereto, narrower than the plane-stock, and having the projecting guides a^7, with a movable or knife-supporting carriage, C, having the outwardly-projecting portions or wings c^2, which lap under the under surface of the guides, all substantially as and for the purposes described.

3. The combination, in a plane, of the stock or bed A, the block B, fastened thereto as described, and of less width than the body of the plane, provided with the ways or guides a^7, which project therefrom, as specified, the threaded spindle or screw *b*, the plane knife or iron supporting carriage C, having the projecting portions c^2, which lap upon the under surface of the guides or flanges a^7, and the nut c^4, secured to said carriage, as described, all substantially as and for the purposes set forth.

4. The combination, in a plane, of the threaded spindle or stem fixed in the body of the plane, the plane iron or knife supporting carriage C, having the projections c^2, which straddle the nut c^4, the said nut c^4, which works upon the threaded stem, all substantially as and for the purposes described.

5. The plane knife or iron supporting carriage C, having the bracket or projection c^3, whose projecting ends straddle the grooved or recessed nut c^4 between the shoulders c^2 c^2, all substantially as and for the purposes described.

6. The combination of the adjustable screw or lug E, having in the movable carriage C the plane iron or irons D, and the key F, having the undercut recess in its under surface, adapted to receive the head of the screw or lug, and the locking-screw *f'*, all substantially as and for the purposes described.

291,179. PRESS-PLATEN. JAMES FERGUSON, Bridgewater, Mass. Filed Sept. 29, 1883. (No model.)

Claim.—1. In combination with the press-platen A, the spring-hook *a*, adapted to bring a longitudinal tension upon the band, substantially as described.

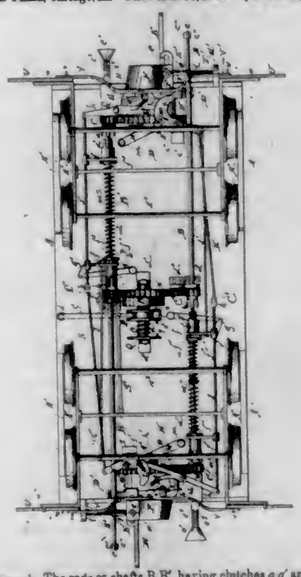
291,179.



2. In combination with the press-platen, the band-hook *a*, and the protecting-shield B, substantially as described.

3. In combination with the press-platen, the band-hook *a*, provided with a claw-shaped end, substantially as described.

291,180. APPARATUS FOR OPERATING RAILWAY-TRAINS. BERNARD FRESE, Chicago, Ill. Filed Mar. 31, 1882. (No model.)



Claim.—1. The rods or shafts B B', having clutches *a a'* and *b b'*, and provided with a head, *c*, at one end, and a socket or coupling, *c'*, at the other, for making a continuous line of shafting through a train of cars, substantially as and for the purposes specified.

2. The heads of shafts B B', each provided with couplings *a a' b b'*, head *c*, and socket or coupling *c'*, in combination with pinions C and cog-wheel D, for operating the wheel D, substantially as and for the purposes specified.

3. The rods or shafts B B', each having clutches *a a' b b'*, head *c*, and socket or coupling *c'*, in combination with the pinions C, wheel D, disk D', and a coupling-link, E, for locking the link when in position, substantially as and for the purposes specified.

4. The link E, in combination with the lever H, rod J, having forks *f*, rods or shafts B B', having clutches *a a' b b'*, for automatically setting the clutches by the contact of the link with the lever, substantially as and for the purposes specified.

5. The link E, in combination with the lever H, lever I, rods J, having forks *f*, rods K, rods or shafts B, provided with clutches *a a' b b'*, for operating the clutches, substantially as and for the purposes specified.

6. The link E, lever H, connecting-rod J, and forks *f*, in combination with the clutches *a a' b b'*, rods or shafts B B', pinions C, and wheel D, for giving the wheel D a rotary movement, substantially as and for the purposes specified.

7. The link E, lever H, rods J K, and forks *f*, in combination with the clutches *a a' b b'*, rods or shafts B B', pinions C, wheel D, and disk D', for operating the disk D', substantially as and for the purposes specified.

8. The link E, lever H, lever I, connecting-rod J, and forks *f*, in combination with the clutches *a a' b b'*, rods or shafts B B', pinions C, and wheel D, for giving the wheel D a rotary movement, substantially as and for the purposes specified.

9. The link E, lever H, lever I, rods J K, and forks *f*, in combination with the clutches *a a' b b'*, rods or shafts B B', pinions C, wheel D, and disk D', for operating the disk D', substantially as and for the purposes specified.

10. The shaft or rod B, having a head, *c*, and a socket, *c'*, in combination with a clutch, *b b'*, pinion C', wheel N, screw-shaft O, nut or spool P, and a connection between the nut or spool and the brakes of the car, for applying or releasing the brakes, substantially as specified.

11. The rods or shafts B B', each having a clutch, *b b'*, and a pinion, C', in combination with a pinion, C'', wheel N, screw-shaft O, traveling nut or spool P, and a connection between the nut or spool and the car-brake, for enabling the brakes to be applied and the connections to be made in case of a reverse of a car, substantially as specified.

12. The wheel N, actuated from the rod or shaft B or B' through the pinions C', in combination with the disk R', ring R'', screw-shaft O, traveling nut or spool P, and a connection between the nut or screw and the car-brakes, for preventing overwinding, substantially as described.

13. The wheel N, driving shafts or rods B or B', and pinions C', in combination with the screw-shaft O, traveling nut or spool P, having stops *o o'*, disk Q, having stop *q*, box R, having stops *o''*, disk R', ring R'', and a connection between the traveling spool and the brakes for preventing overwinding in either applying or releasing the brakes, substantially as specified.

14. The levers H and I, located at each end of the car and connected by suitable rods or links one with the other, in combination with rotating shafts B B', having clutches thereon, and provided with pinions C' C'' and link E, for actuating the clutches for coupling and braking purposes, substantially as specified.

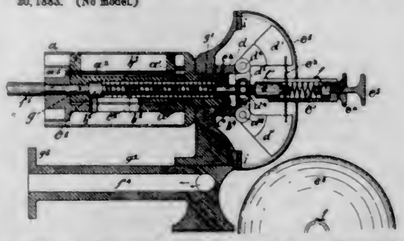
15. The lever M and cam or flange L, in combination with the rod J', clutches *b b'*, and rods or shafts B B', for throwing the clutches into engagement independently to operate a brake-actuating mechanism through the pinions C', substantially as described.

16. The signals U and arms or levers V V', in combination with a coupling-link and a coupling-disk, for raising and lowering the signals, substantially as and for the purposes specified.

17. The wheel W', provided with numerals on its face, in combination with a driving-pinion and a coupling-shaft, through which a coupling-disk is operated, for indicating the position of different cars when coupled in a train, substantially as specified.

18. The sliding head T, in combination with the link E E', head F, having slot F', and disk D, having slot *e²*, for holding the link in position to pass into the slots F' and *e²*, substantially as and for the purposes specified.

291,181. CUT-OFF-VALVE GEAR. FREDERICK A. GARDNER, Buffalo, N. Y., assignor of one-half to R. Dunbar & Son, same place. Filed Apr. 20, 1883. (No model.)



Claim.—1. The combination of the eccentric having a diagonal slot, and arranged on the center bar, *a²*, the reversing-bar provided with a friction-roller, a spring for operating it one way, and the governor-weights for operating it the other way, all connected for joint operation, substantially as specified.

2. The combination, substantially as described, of the bolt *e*, spring *e'*, and thumb-screw *e²*, for the purposes specified.

3. The case *a*, the pivoted eccentric having the diagonal slot, the reversing-bar provided with the friction-roller and the spring *b²*, the governor-weights connected thereto, substantially as specified, and the case *e²*, for the purposes described.

291,182. SNOW-PLOW. DAVID B. GARTON, Barrie, Ontario, Canada, assignor of one-half to Edmund C. Edmonds, Albany, N. Y. Filed Aug. 24, 1883. (No model.)

Brief.—Parting and slicing blades are secured to the oppositely-inclined sides of the supporting-shoe, and have their upper marginal portions gradually extended and curved outwardly.



Claim.—1. In snow-plows for railways, the combination, with the angular or inclined sides of shoe A, of the oppositely-located and vertically-arranged parting-blades B B, which have each their upper marginal portions inclined and made to curve outwardly with a gradually-increasing extension of lateral projection of said margin portions as they are made to run upwardly and rearwardly, substantially as and for the purpose set forth.

2. In snow-plows for railways, the combination, with the oppositely-inclined sides *a a* of shoe A, and the vertically-arranged parting-blades B B situated at the outer sides of said shoe, and made to have their upper marginal edge portions extended outwardly with a gradually-increasing curve as they run rearwardly and upwardly, of a series of one or more intermediate and vertically-arranged slicing-blades, which have a gradually-increasing vertical extension above blades B B, and outwardly-curved and laterally-projecting marginal portions, which gradually increase in the outward throw of curve as said curved portions run upwardly and rearwardly, substantially as and for the purpose set forth.

3. In a snow-plow for railways, the combination, with shoe A, having oppositely-inclined sides, of the vertically-arranged outer side parting-blades, B B, and the series of vertically-arranged slicing-blades situated intermediate between said parting-blades, and having a gradually-increasing vertical extension above the said parting-blades as they run rearwardly and upwardly, all substantially as and for the purpose set forth.

291,183. GRAIN-DRILL. THEODORE D. GERK, Owego, N. Y. Filed Sept. 17, 1883. (No model.)



Claim.—1. In a grain-drill, the combination, with a vertical distributing-wheel having a side groove or channel formed therein, of a laterally-swinging gate formed upon an arm pivoted outside of the distributing-wheel casing and adjustable transversely within and across said channel, for regulating the capacity of the channel, substantially as described.

2. In a grain-drill, the distributer-wheel casing provided with an orifice in its side, in combination with a laterally-swinging gate formed upon an arm pivoted outside of the distributing-wheel casing and adjustable through said orifice transversely of the distributer-wheel, and means for adjusting said gate, substantially as described.

3. In a grain-drill, a pivoted laterally-adjustable gate, in combination with a worm or screw for adjusting said gate, substantially as described.

4. The combination, with a vertically-rotating distributer-wheel, of a casing inclosing said wheel, provided with an opening in the form of an arc of a circle, a hinged and laterally-adjustable gate corresponding in form to the shape of the opening, and a worm or screw for adjusting said gate, substantially as specified.

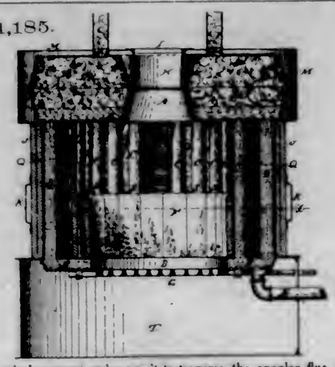
291,184. TIE FOR SECURING BAGS, BALES, &c. WILLIAM GIBSON, Adamsville, Quebec, Canada. Filed Mar. 29, 1883. (No model.)



Claim.—A tie for securing bags, bales, and other like receptacles, consisting of a plate or disk provided with a lug or projection on its flat inner surface to form a lock or catch, and a cord connected to said plate and forming a permanent loop, which encircles and closes in the mouth of the bag, substantially in the manner described.

291,185. STEAM-GENERATOR. EDWARD F. GORDON and HORATIO HOBBS, Concord, N. H. Filed Apr. 9, 1883. (No model.)

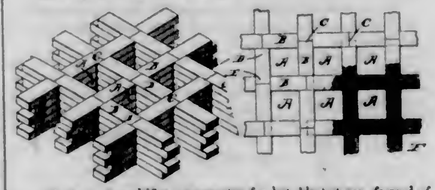
Claim.—1. A steam-generator having the water-ring and steam-chamber united by two concentric series of independent water-pipes surrounding the fire-pot, with an annular space between them, forming a horizontal flue, in combination with a deflector arranged to deflect the entire caloric-current and cause it to traverse the annular flue entirely around the fire-pot, substantially as and for the purpose set forth.



2. In a steam-generator having an annular water-ring and steam-chamber united by two concentric series of distinct water-pipes, and provided with a deflector adapted to direct the entire caloric-current into the annular flue, that it may pass horizontally around the fire-pot, as described, the vertical bars L, fitting the space between adjacent tubes of the inner row, for the purpose set forth.

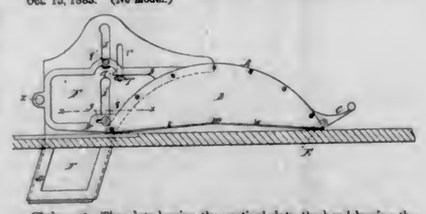
3. In a steam-generator, an annular water-ring and a water and steam space communicating therewith through a double row of vertical pipes, which stand at each side of a horizontal annular flue and present their convex surfaces transversely to the caloric-current through said flue, in combination with an exterior casing made in sections, so as to be removable, substantially as and for the purpose set forth.

291,186. HOT-BLAST STOVE. FRED. W. GORDON, Pittsburg, Pa. Filed Sept. 24, 1883. (No model.)



Claim.—A multiflue regenerator for hot-blast stoves, formed of closed-sided flues constructed of bricks of uniform size, each brick abutting with one end against the end of another brick, and with its other end against the side joint of two similarly-abutting bricks, as shown and described.

291,187. SAW-GUARD. JOSEPH G. GROFF, Connersville, Ind. Filed Oct. 15, 1883. (No model.)



Claim.—1. The plate having the vertical slots, the hood having the rearwardly-extended arms embracing the plate, the lower arms having the horizontal slots, in combination with the rollers carried by said arms and working in the slots of the plate, substantially as described.

2. The combination of the plate having the two vertical slots for the rollers and the third slot for the adjusting set-screw, with the hood having the rearwardly-extending arms provided with the horizontal slots, the rollers carried by said arms, and the adjusting set-screw, substantially as described.

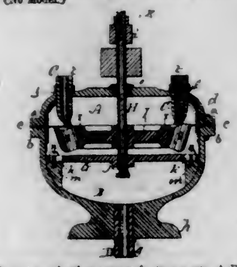
291,188. DEVICE FOR EXPANDING THE UPPERS OF BOOTS AND SHOES. CHARLES L. HIGGINS, Montreal, Quebec, Canada, assignor to John E. Wheeler, Trustee, Lynn, Mass. Filed Oct. 22, 1883. (Model.)

291,188.



Claim.—A device for giving form or shape to a boot or shoe upper or other flexible hollow article, having the general shape of the interior of such article, capable of inflation, and provided with an inward-extending fold, *a*, all substantially as and for the purpose described.

291,189. HYDRAULIC MOTOR. JAMES HENRY HINCH, Laconia, assignor of three-fourths to Walter Henry Philbrick, Belmont, N. H. Filed Sept. 1, 1883. (No model.)

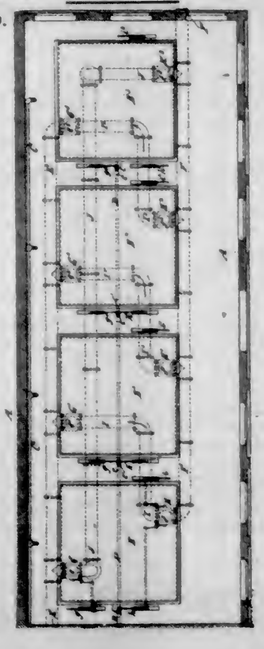


Claim.—1. A water-wheel case cast in two parts, A B, with water-inlet apertures in the top part and water-discharge aperture in the bottom part, provided with an outside yoke, E, for the upper bearing of the wheel-shaft, and an inside bridge-tree, G, for the lower bearing of the shaft, substantially as set forth.

2. The combination of the wheel-shaft H, having conical hollow journals at the ends, and screw-bearings *i j*, with the yoke E and bridge-tree G, substantially as set forth.

3. The combination of the water-wheel I, having the obliquely-set buckets *s s* secured around its periphery, with a nozzle, C, having a laterally-curved ajutage at its inner end, substantially as and for the purpose herein specified.

291,190.



291,190. GAS-PURIFYING BOX. CHARLES W. IRELL, New York, N. Y. Filed Mar. 17, 1883. (No model.)

Claim.—1. The combination of a number of purifying-boxes, B B' B² B², having inlets *c c' c² c²* and outlets *f f' f² f²*, the inlet-pipe E, the valve-casings G G' G² G², each containing a single valve, the outlet-pipe F, the valve-casings H H' H² H², each containing two valves, the pipes I I' I², and the pipe J, all arranged and adapted for operation substantially as described.

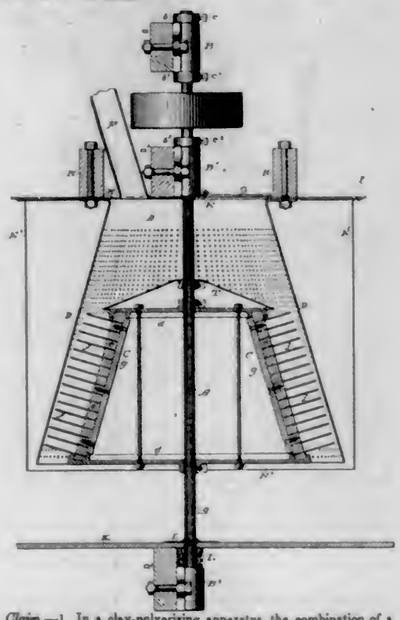
2. The combination, with a number of purifying-boxes, B B' B² B², the inlet and outlet pipes E F, the connecting-pipes I I' I² J, and the valves controlling the passage of gas through said pipes to and from said boxes, of the valve-operating levers projecting upward above the floor of the purifying-house, and arranged between the boxes and on the outer sides of the two end boxes, all constructed and adapted for operation substantially as described.

3. The combination, with a number or series of purifying-boxes, of a pipe having separate communications with said boxes, and also communicating with the exhauster of the retort whence the gas to be purified is obtained, whereby provision is afforded for exhausting the gas from any one box before its cover is removed, and for returning the gas so exhausted to be again passed through the purifying-boxes, substantially as described.

4. The combination, with a valve-casing, H, containing a seat, *j*, of a disk-valve, *k*, a rock-shaft, J', and an arm, *m*, pivoted to the valve, so that the valve will hang vertically or nearly vertically therefrom, all organized so that as the said arm approaches a horizontal position the valve will be caused to scrape or clean its seat, substantially as described.

5. The combination, with the valve-casing H, having oppositely-arranged seats *j*, of the disk-valves *k*, the divided rock-shaft J' J², and arms *m*, to which the valves are pivoted, all arranged and adapted to operate substantially as described, and for the purpose set forth.

291,191. CLAY-PULVERIZER. ANTHONY JITNER, St. Louis, Mo. Filed Nov. 2, 1883. (No model.)



Claim.—1. In a clay-pulverizing apparatus, the combination of a frustum-shaped adjustable rotating brush with a perforated metallic case, substantially as set forth.

2. In a clay-pulverizing apparatus, the combination of the adjustable shaft and brush, the perforated case, the cover E, and the hopper spout or inlet, substantially as set forth.

3. In a clay-pulverizing apparatus, the combination of a brush rotating on a vertical axis and inclosed by a perforated case, and a hopper-spout or equivalent means for permitting the feed of clay at the top, substantially as set forth.

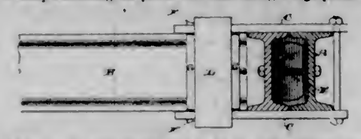
4. In a clay-pulverizing apparatus, the combination of a brush rotating on a vertical axis within a perforated case, and the whole inclosed within a covering, E', substantially as set forth.

5. In a clay-pulverizing apparatus, the combination of a brush rotating on a vertical axis within a perforated case, and a cap, T, substantially as set forth.

6. In a clay-pulverizing apparatus, the combination of a brush rotating on a vertical axis within a perforated case, a cap, T, and an inclined hopper-spout, F, substantially as and for the purpose set forth.

291,192. SUPPORT FOR BEAMS AND GIRDERS. PETER H. JACKSON, San Francisco, Cal. Filed Oct. 25, 1883. (No model.)

Brief.—A girder and abutting beam are secured together by plates extending across the girder and above and below the end of the beam, and a clamp embracing the plates with intervening wedge-pieces.

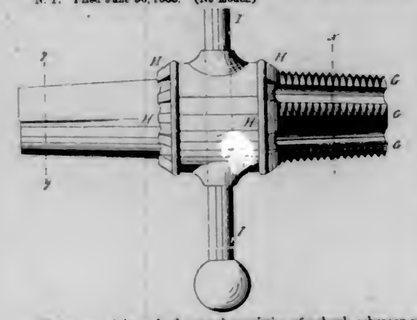


Claim.—1. In combination with girder A A and abutting beam B, the independent wrought-iron plates extending across the girder and above and below the beam, and a clamp, as means for securing the end of the abutting beam and the plates together, substantially as herein described.

2. The girder A A and abutting beam B, in combination with the plates C and flanges to secure them to the end of the abutting beam, substantially as herein described.

3. The girder A A and abutting beam B, in combination with the plates C, extending across the girder and upon the end of the beam above and below, with means for securing and clamping said plates, and cheek-pieces fitting between the end of the beam and the bolts or clamp, substantially as herein described.

291,193. BUNG-BUSH WRENCH. SAMUEL H. JENKINS, New York, N. Y. Filed June 30, 1883. (No model.)

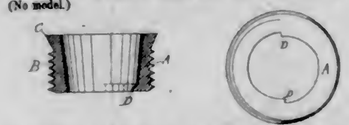


Claim.—1. A bung-bush wrench consisting of a shank, whereon are located one or more eccentric projections, substantially as shown and described.

2. A metal shank having one or more eccentric projections at one extremity, forming a wrench, and a screw-cutting tap at the other, a handle being secured to said shank, and adapted and arranged to operate either wrench or tap, substantially as shown and described.

3. In a bung-bush wrench of the character herein specified, shank E, bearing one or more eccentric projections, F, tap G, cutter or cutters H, and lever-handle I, the whole combined and arranged to operate substantially as shown and described.

291,194. BUSHING FOR BUNG-HOLES AND BUNG FOR USE THEREWITH. SAMUEL H. JENKINS, New York, N. Y. Filed Apr. 23, 1883. (No model.)



Claim.—1. A metallic bung-hole bush, the outer wall whereof is vertical, screw-threaded, and provided with a beveled shoulder, as set forth, and a tapering perforation passing through the bush, one or more inwardly-projecting shoulders being located at or near the small extremity of said perforation, the face of said shoulder or shoulders being radial to the body of the bush, and the inner surface of the bush eccentric in form, substantially as and for the uses and purposes shown and described.

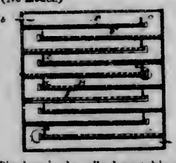
2. The combination, with a bung-bush having body A, vertical exterior screw-thread, B, and beveled flange C, of inwardly-projecting shoulders D, the bearing-faces of said shoulders being radial to the body of the bush and the inner surface of the metal eccentric in form where said shoulders are located, substantially as shown and described.

3. A wooden bung partially bored through its center, as set forth, and provided with a detachable cap-piece formed by a circumferential cut around the periphery of the bung near its smaller extremity, substantially as and for the uses and purposes shown and described.

4. A wooden bung having a hole partially cut or bored through its center, as set forth, and a bevel upon its smaller extremity, substantially as and for the uses and purposes shown and described.

5. Bung J, the center whereof is cut away at K, the extremity of the bung being beveled at L, and provided with a circumferential cut, *l*, forming a cap-piece, substantially as and for the uses and purposes shown and described.

291,195. FISH-PACKAGE. RALPH S. JENNINGS, Boston, Mass. Filed Feb. 23, 1883. (No model.)



Claim.—1. The herein-described portable package for transporting fish, it having a tight top and bottom and tight sides, except that one side has an air-aperture at or near the bottom and the other side has another air-aperture at or near the top, in combination with partitions or shelves formed of narrow cross-bars constructed to allow large air-spaces between them, and arranged, substantially as set forth, to compel the air which enters the lower aperture through the side of the package to move in a broken or circuitous passage to the upper aperture, substantially as set forth.

2. The herein-described portable package for transporting fish, it consisting of an outside casing and interior partitions or shelves constructed of strips or supporting-pieces arranged to allow a free passage of air between them, and each arranged to project part way across the side of the package opposite to the side from which the adjacent partitions or shelves project, and air-apertures through the sides of the casing, substantially as set forth.

3. In a portable package for transporting fish, the combination of the external casing and the interior partitions or supports, each having at one edge a cut-away portion or passage for air, and means, substantially as set forth, to prevent the fish from moving over said passage.

291,196. INHALER. WILLIAM A. JOHNSTON, Clifton, and ARTHUR W. BROWNE, Pleasant Plains, N. Y., assignors to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Apr. 2, 1883. (No model.)



Claim.—1. The combination of the draft-tube with the mouth-tube by means of a prismatic coupling or chamber-piece, substantially as described.

2. A prismatic chamber-piece for inhalers, having openings therein communicating with a mouth-tube, draft-tube, and an air-inlet, and provided with detachable connections for said tubes, substantially as described.

3. The combination, substantially as hereinbefore set forth, of the mouth and draft tubes with two valves and an operating mechanism for said valves, substantially as described, whereby said operating mechanism in one position permits said valves to act automatically and in another position closes one of said valves and opens the other.

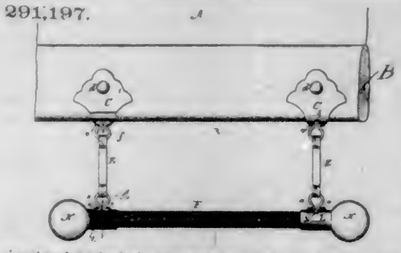
4. The combination of the draft and mouth tubes, the chamber-piece or coupling, the operating-valves, the rock-shaft carrying a cam or its equivalent to control said valves, and a handle to operate said rock-shaft.

5. The combination of the draft and mouth tubes, the chamber-piece or coupling, the valves, the rock-shaft carrying a cam or its equivalent to control said valves, the spring acting upon said rock-shaft, the handle or finger-piece to operate said shaft, and a detent to retain said shaft against the force of its spring.

291,197. WINDOW-SHADE BAR. HUBERT L. JUDD, Brooklyn, N. Y. Filed Aug. 24, 1883. (No model.)

Claim.—1. The combination, with the clip C, of the eye *f*, the clip

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being slotted at 3 for the insertion of the ends of the eye and recessed at 4, so that the eye is held in place when the clip is fastened in place, substantially as set forth.

2. The combination, with the bar F, of the sheet-metal end L and the suspending-eye *g*, the metal end L_1 being slotted for the ends of the eye to be passed in, and recessed to receive such ends, so that they will be firmly held by the insertion of the bar F, as set forth.

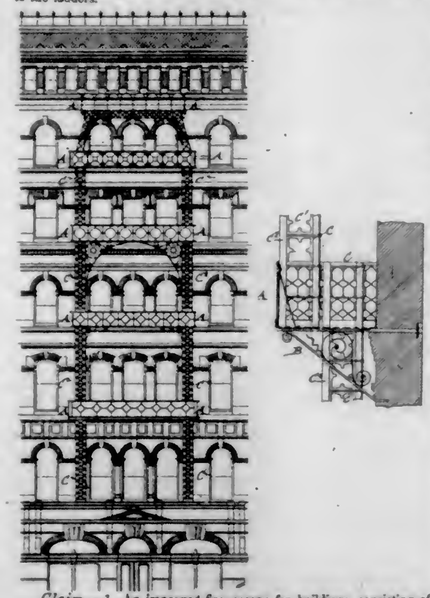
3. The window-shade bar formed of wood or similar material with braiding upon the surface thereof, in combination with metallic end pieces that are slipped on outside the braiding to secure the same, substantially as set forth.

4. The combination, with the window-shade slots, of clips to be attached to the same, the suspending-eyes *f* passing into openings in the clips and having their ends turned outwardly, links E, and bar F, substantially as set forth.

5. The combination, with the bar F, of the eyes *g*, having ends that are turned outwardly, the suspending-links E, and the clips C, substantially as set forth.

291,198. FIRE-ESCAPE. HUGO KAFKA, New York, N. Y. Filed July 30, 1883. (No model.)

Brief.—Vertical ladders connect the balconies of the several stories, and panels of lattice-work, the cross-ribs of which are substantially parallel with the ladder-rungs, are arranged in front of and also at an angle to the ladders.

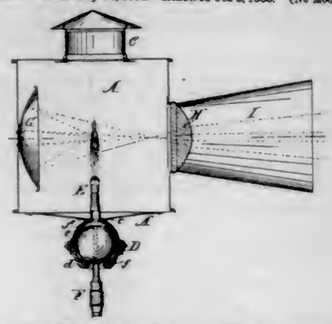


Claim.—1. An improved fire-escape for buildings, consisting of balconies for the several stories, ladders connecting the same, and panels of lattice-work arranged in front of and parallel to the ladders, the cross-ribs of the panels being arranged at a level, or nearly so, with the rungs of the ladder, substantially as set forth.

2. An improved fire-escape for buildings, consisting of balconies for the several stories, ladders connecting the balconies, and panels of lattice-work extending in front of and at suitable angles to the ladders, so as to form a screen and guard-rail for the same, substantially as set forth.

3. An improved fire-escape for buildings, consisting of balconies for the several stories, said balconies having an opening or openings alternately closer to or farther from the wall of the building, ladders made in sections and communicating alternately with said openings, and panels of lattice-work arranged in front of and at a suitable angle to the ladders, so as to form a screen and railing for the same, substantially as set forth.

291,199. REFLECTOR FOR GAS-BURNERS. JÜRGEN KASSCHAU, New York, N. Y. Filed July 20, 1882. Renewed Oct. 2, 1883. (No model.)



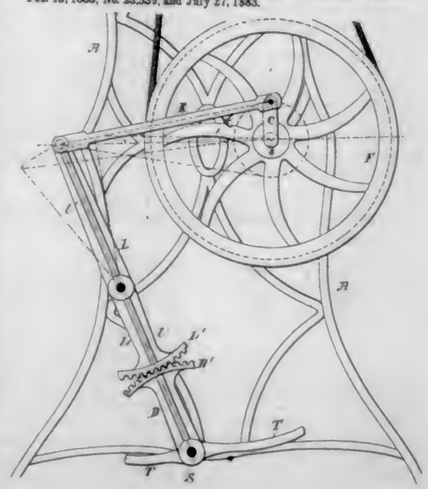
Claim.—1. A reflector for gas-burners, consisting of a camera having an interior reflector and a light-directing tube opposite the reflector, and a ball-and-socket joint having a gas-burner connected to one member thereof, and a tubular socket connected to the other member thereof substantially as set forth.

2. A reflector for gas-burners, consisting of a camera having an interior reflector and a lens opposite the reflector, and a ball-and-socket joint having a gas-burner connected to one member thereof, and a tubular socket connected to the other member thereof, substantially as set forth.

3. A reflector for gas-burners, composed of a camera having an interior reflector, a lens and light-emitting tube, and a ball-and-socket joint having a burner connected to the socket and a supporting-sleeve connected to the ball, substantially as and for the purpose set forth.

4. In a reflector for gas-burners, the combination of the camera with a ball-and-socket joint, the socket part of which carries a gas-burner, while the ball is provided with a sleeve, the socket being applied by a screw-clamping section and interior elastic rings to the ball, substantially as and for the purpose set forth.

291,200. TREADLE-MOTION. JOHN KAYSER, Kaiserslautern, Bavaria, Germany. Filed Aug. 13, 1883. (No model.) Patented in Germany Feb. 13, 1883, No. 23,339, and July 27, 1883.



Claim.—1. In a treadle-motion for sewing-machines, the combination, with the driven crank, a treadle-shaft, and a treadle carried by and oscillating on or with said shaft, of a connecting-rod, R, and intermediate mechanism to transmit the oscillations of the treadle or its shaft to the crank through the medium of the connecting-rod, as described.

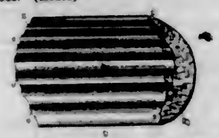
2. In a treadle-motion for sewing-machines, the combination, with the driven crank and a treadle carried by and oscillating on or with said shaft, of a connecting-rod, R, a two-armed rock-lever, and intermediate appliances to transmit the vibrations of the treadle to the lever, and through the latter to the connecting-rod and crank, as described.

3. In a treadle-motion for sewing-machines, the combination of the driven crank, a connecting-rod, and an intermediate two-armed lever connected to said rod, with a treadle-shaft, a treadle, and a lever carried by and vibrating on or with said shaft, through which lever the vibrations of the treadle or its shaft are transmitted to the rock-lever and connecting-rod to rotate the crank, as described.

4. The combination, with the crank C, connecting-rod R, and lever L, of the lever D and treadle T, and means, substantially such as shown and described, to transmit the movement of the lever D to the lever L, as described, for the purposes specified.

5. The combination, with the crank C, connecting-rod R, and lever L, terminating in a segment, the face of which is provided with teeth or their specified equivalent, of the lever D, terminating in a segment, the face of which is also provided with teeth or their specified equivalent, and the treadle T, all arranged for operation substantially as and for the purposes specified.

291,201. CIGARETTE-CASE. FRANCIS S. KINNEY, New Brighton, N. Y. Filed Mar. 3, 1883. (Model.)



Claim.—1. A cigarette-case consisting of a collapsible tubular body, as A, closed at one end by a piece of flexible material, as B, the edges of which are secured to the inside of the body and project inward, so as to be concealed within the case, substantially as described.

2. A cigarette-case having a flexible bottom and a collapsible tubular body provided with longitudinal corrugations extending around its entire circumference, whereby said body is made to conform to the shape of the cigarettes contained therein, substantially as described.

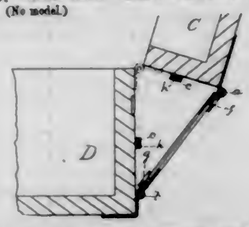
3. A cigarette-case consisting of a tubular body, as A, provided with a series of corrugations, as *c*, and having one end closed by a flexible bottom, as B, the edges of which are secured to the inside of the body and project inward, so as to be concealed within the case, substantially as described.

291,202. BELT-FASTENER. PHILIPPE KOCK, Neuss-on-the-Rhine, Germany, assignor to Nicholas Godes, Preston, Iowa. Filed Aug. 30, 1883. (No model.) Patented in Germany Mar. 24, 1878, No. 3,041, and July 25, 1880, No. 12,293.



Claim.—The belt-fastener herein described, consisting of an upper part, A, of concave shape, and a lower part, B, of convex shape, corresponding with the curve of the lower side of the upper part, and provided on their faces next to the belt ends with teeth or points, and the lower part with nipples having screw-threads to receive the screws, which hold the parts together and against the belt ends, all substantially as shown and specified.

291,203. TRUNK-STAY. JAMES E. LADD, Bristol, Conn. Filed Oct. 26, 1883. (No model.)



Claim.—1. The herein-described trunk-stay, consisting of the two connected and longitudinally-sliding straps, hinged respectively to the trunk cover and body at or near the rear corners thereof, substantially as described, and for the purpose specified.

2. The hinged straps connected so as to move longitudinally one upon the other, in combination with the engaging sockets or saddles at the back of the trunk, substantially as described, and for the purpose specified.

3. The combination of a trunk cover and body, the sliding stay applied to the outside thereof at the rear, and means, substantially as described, which limit the extent of the sliding movement of the stay and form a tie when the trunk is closed, substantially as described, and for the purpose specified.

4. The combination of the hinged straps, adapted to be applied to the outside and rear of the trunk, and the engaging sockets or saddles, also applied to the back of the trunk, substantially as described, and for the purpose specified.

291,204. COMBINED FOLDING CARRIAGE AND CRADLE. HERRMAN LADEWIG, Camden, N. J. Filed Aug. 9, 1883. (No model.)



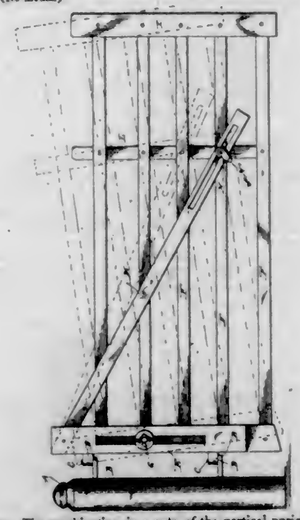
Claim.—1. In a carriage, a removable body having a fastening cross-head whose ends are attachable to the reaches of said body, substantially as and for the purpose set forth.

2. Running-gear, in combination with a carriage-body, having on its under side a cross-head and fastening-screw H, substantially as and for the purpose set forth.

3. In a folding carriage, the combination, with a body and reaches, of running-gear, consisting of front side pieces, rear side pieces pivoted thereto, and a cross-bar against which the rear side pieces abut, the reaches being connected at rear with said cross-bar, substantially as and for the purpose set forth.

4. A carriage, having a removable body, which is provided with rockers, forming a cradle, and means for fastening it to the running-gear, substantially as and for the purpose set forth.

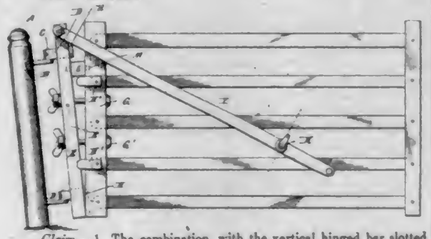
291,205. GATE. ISRAEL L. LANDIS, Lancaster, Pa. Filed May 15, 1883. (No model.)



Claim.—The combination, in a gate, of the vertical upright hinged to the gate-post and longitudinally slotted from side to side, the vertical

bars secured to one side of the same by means of the lateral bolt and nut, and the oblique bar and fastening devices, the whole arranged to operate substantially as specified.

291,206. GATE. ISRAEL L. LANDIS, Lancaster, Pa. Filed May 15, 1883. (No model.)

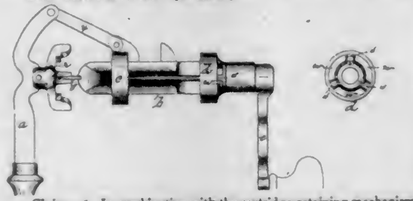


Claim.—1. The combination, with the vertical hinged bar slotted longitudinally and the rear vertical bars of the gate, of one or more screw-bolts, whereby the gate is secured to the hinged bar, substantially as and for the purposes set forth.

2. In combination with the vertical hinged bar and the rear bars of the gate and the connecting-bolt, the wedge provided with lugs or pins, and adapted to sit between the vertical hinged bar and the vertical supporting-bars of the gate, substantially as specified.

3. The combination, with the rear vertically-slotted bar, and the vertical bars to which the rear ends of the horizontal bars of the gate are secured, of the connecting bolt or bolts and the oblique bars, the latter being secured to the rear vertical bar and embracing the horizontal bars of the gate, and the clamping-bolt and crank arranged to hold the gate in any desired adjusted position, substantially as specified.

291,207. CARTRIDGE-CLOSING MACHINE. CHARLES S. LEET and WILLIAM H. NORTHALL, Bridgeport, Conn.; said Northall assignor to said Leet. Filed Jan. 2, 1883. (No model.)



Claim.—1. In combination with the cartridge-retaining mechanism of a cartridge-closing machine, a closer-cup having perforations or openings in the bottom thereof, substantially as described.

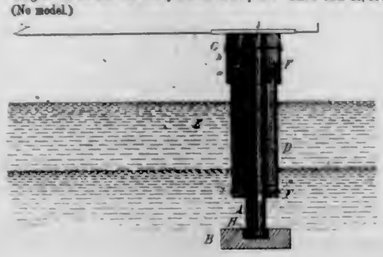
2. In combination with the cartridge-retaining mechanism of a cartridge-closing machine, a closer-cup provided with radial projections, as *z*, on its inner hub, substantially as stated.

3. In combination with the cartridge-retaining mechanism of a cartridge-closing machine, the closer-cup having openings through the bottom thereof between its shell-turning bosses, and having projections, as *z*, on its inner hub, substantially as described.

4. In combination with the head-plate of a cartridge implement, the clamping-lever pivoted to said plate, and arranged, as described, to bear upon the side of the head of the cartridge as the cartridge is forced against said plate, substantially as stated.

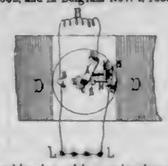
5. In a cartridge-closing machine, a closer-cup composed of Babbitt metal or similar material, substantially as described, and for the purpose stated.

291,208. SHIELD FOR POSTS. OSCAR S. LESLIE, Milwaukee, Wis., assignor of one-half to Henry Landt, same place. Filed Jan. 26, 1883. (No model.)



Claim.—The combination of post A, inclosing-shield D, upper and lower packing-rings F F, interposed between said post and said shield, supporting-base B, packing H, interposed between said base and said post, water-shed G, and supporting-rods *b b*, all substantially as and for the purpose specified.

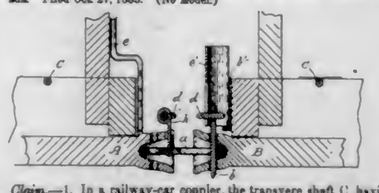
291,209. EXCITING-CIRCUIT FOR DYNAMO-ELECTRIC MACHINES. CHARLES LEVER, Bowdon, County of Chester, England. Filed Feb. 19, 1883. (No model.) Patented in England May 3, 1882, No. 2,093; in France Nov. 3, 1882, and in Belgium Nov. 4, 1882.



Claim.—1. In combination with a series dynamo-electric machine and with shunt electric-arc lamps arranged in series; a shunt or derived circuit having a resistance equal to said lamps, and through which the current passes for the purpose of exciting the dynamo, and a circuit-breaker for breaking the said shunt-circuit when the dynamo has excited itself, and causing the current to pass through the magnets of the lamps to form their arcs, substantially as specified.

2. In combination with a series dynamo-electric machine and with shunt electric-arc lamps arranged in series, the magnet E in a shunt-circuit from the dynamo D, and having a resistance about equal to the arcs, the pivoted armature A, spring J, contact-piece C, stud S, and wire connections, substantially as specified, whereby the armature will be moved when the dynamo has excited itself, thus breaking said shunt-circuit and causing the current to pass through the magnets of the lamps and to form their arcs, substantially as specified.

291,210. CAR-COUPLING. PIERRE MAYRAND, Montreal, Quebec, Canada. Filed Oct. 27, 1883. (No model.)



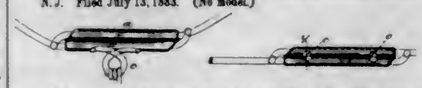
Claim.—1. In a railway-car coupler, the transvere shaft C, having the hand-wheels *c c*, the lifting-arm *d*, connected with the coupling-pin *b*, the lever D, fixed rigidly to the shaft C, the latch-lever E, spring *f*, and the bar *g*, substantially as shown and described.

2. In a railway-car coupler, the shaft C, on which is fixed the lifting-arm *d*, connected with the coupling-link *a* by the eyebolt *h*, so that the link may be raised by operating the hand-wheels *c c* or the lifting-rod *e*, as shown and described.

3. In a railway-car coupler, the combination of the lifting-rod *e* with the coupling-link *a*, lifting-arm *d*, and shaft C, substantially as described.

4. The combination of the lifting-rod *e* with the coupling-pin *b*, lifting-arm *d*, shaft C, lever D, latch-lever E, and spring *f*, substantially as shown and described.

291,211. TELEGRAPH-WIRE JOINT. CHARLES MCINTIRE, Newark, N. J. Filed July 13, 1883. (No model.)



Claim.—1. A telegraph-wire joint provided with a hook, loop, or device adapted to receive a holding-wire, substantially as and for the purposes set forth.

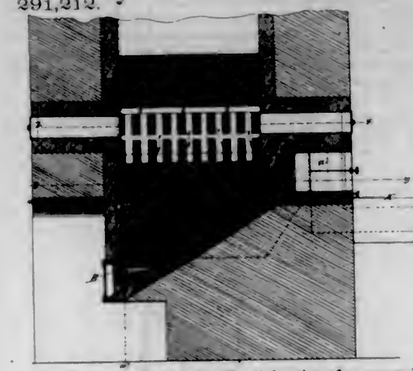
2. In a telegraph-wire joint, a partition adapted to separate the wires, and having soldering-openings *c*, adapted to allow the entrance of solder to both chambers at the same time, substantially as shown and described.

3. A telegraph-wire joint formed of two tubes, flattened, as shown, and secured together, and having soldering-openings *c* therein, as a new article of manufacture.

291,212. LIMEKILN. JOHN T. MEREDITH, Milwaukee, Wis. Filed June 25, 1883. (No model.)

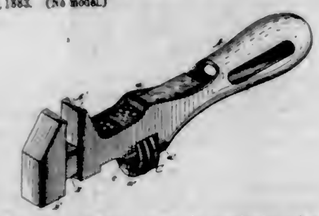
Claim.—1. The combination, in a limekiln, of air and gas flues arranged in series, and alternating with each other, and leading into a mixing-chamber, substantially as set forth.

291,212.



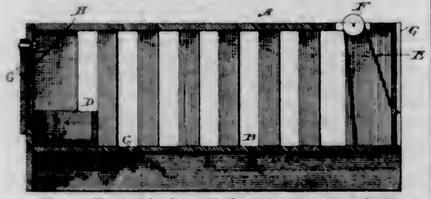
2. The combination, in a limekiln, of air and gas flues arranged in series, and a mixing-chamber containing a fire-bed, substantially as set forth.

291,213. MONKEY-WRENCH. CHAS. H. MILLER, Erie, Pa., assignor to the Lovell Manufacturing Company, (Limited,) same place. Filed June 9, 1883. (No model.)



Claim.—In a monkey-wrench, the combination, substantially as shown, of the following elements: a body or handle, A, having a longitudinal opening or cavity to receive the movable part, the fixed jaw A', and the worm-wheel supports *a' a'*, the movable part consisting of a bar or stem, B, with worm-wheel notches or teeth *b* on its back, and the movable jaw B', and finally the worm-wheel C, mounted between the supports or ears *a' a'* on the rivet *c*, and meshing with the teeth *b* on the said movable part.

291,214. HEN'S NEST. NATHANIEL MITCHELL, Sailor Springs, Ill. Filed July 21, 1883. (No model.)



Claim.—The combination, with the case or coop A, of the hinged bottom B, provided at its rear end with the nest D and at its forward end with the cords E, secured thereto, passing over the pulleys F, and thence attached to the sliding door G, the whole constructed and arranged substantially as and for the purposes set forth.

291,215. METHOD OF DECORATING WALLS, &c. MATTHEW MONTEMENT, Philadelphia, Pa. Filed Nov. 16, 1883. (No model.)

Brief.—Decorating walls, consisting of trees, shrubs, &c., disposed in the place of plastering, and having a transparent or other covering, and a trough for the reception of earth and water, in case living plants are used.

Claim.—1. A decoration for walls, &c., employed in lieu of plastering, consisting of trees, vines, &c., harmoniously disposed in the space occupied by the plastering, substantially as and for the purpose set forth.

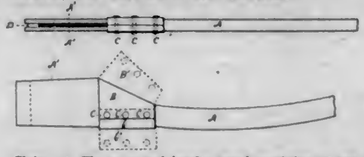
2. A decoration for walls, &c., employed in lieu of plastering, consisting of trees, vines, &c., occupying the space of the plastering, and having a transparent covering, substantially as and for the purpose set forth.

3. A decoration for walls, &c., employed in lieu of plastering, consisting of trees, vines, &c., occupying the space of plastering, and having a transparent covering, in combination with a bottom trough, substantially as and for the purpose set forth.

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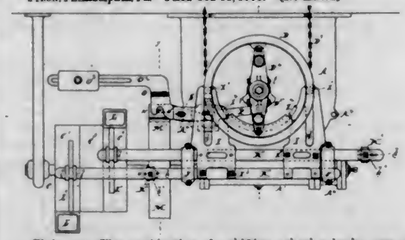
291,216. AX AND TOOL HANDLE GUARD. GEORGE P. MORRILL, Canterbury, N. H. Filed Mar. 12, 1883. (No model.)



Claim.—1. The ax or tool handle guard consisting of two metal plates inserted in a slot passing through the center of the handle, with the edges of each plate projecting from opposite sides of the handle, and being bent down upon the handle, so that the projecting edges of each plate will inclose the surface of one-half of the handle, the edges of each plate overlapping each other and being secured by means of nails or screws passing into the wood forming the handle, or by rivets passing through the handle, as shown and described, and for the purpose set forth.

2. The combination, with an ax or tool handle having the end slotted as described, and having a metallic guard consisting of plates inserted in the slot and bent around the handle, as described, of the tongue-pieces A' A', attached to the guard and extending forward beneath the ax or tool, for the purpose of partially filling the slot and holding the guard more firmly in place, as and for the purpose set forth.

291,217. HOISTING-MACHINE. STEPHEN A. MORSE and CHARLES TYSON, Philadelphia, Pa. Filed Oct. 11, 1883. (No model.)



Claim.—1. The combination of a shifting-wheel, a brake-cam secured thereto, mechanism actuated by said wheel to actuate the driving-belts, and gravity-brake mechanism arranged to be thrown out of action upon rotating said shifting-wheel in either direction, and into action when said wheel is in its normal position, or between said motions, substantially as and for the purpose specified.

2. The combination of a brake-cam and brake with the driving-shaft of a hoisting-machine, and means to vary the position of the brake-shoe with reference to its actuating-lever, substantially as set forth, to regulate or vary the time of the application of said brake, substantially as and for the purpose specified.

3. The combination of a brake-cam and brake with the driving-shaft of a hoisting-machine, a brake-wheel upon said driving-shaft, a driving-wheel, and two idler-wheels, belt-shifters, and shifting mechanism to actuate said belt-shifters, and means to vary the position of the brake-shoe with reference to its actuating-lever, substantially as set forth, to regulate or vary the time of the application of said brake to said brake-wheel, substantially as and for the purpose specified.

4. The combination of the casing A, frame N N^1, pivot *n'*, brake-shoe M^1, frame O, having arm O^2, weight O^3, arm P, screw Q, and cam mechanism to vibrate said arm P, substantially as and for the purpose specified.

5. The combination of the casing A, having apertures or holes A^2 on each end thereof, frame N, having two legs or arms, N^2, arranged to strad-

dle said case A, pivot s', brake-shoe M', frame O, pivoted to frame N, having arm O^2, and arms O^4, also arranged to straddle said case A, weight O^3, arm P, screw Q, and cam mechanism to vibrate said arm P, whereby said brake mechanism may be made right or left handed on the said case A, substantially as and for the purpose specified.

6. A belt-shifting device for hoisting-machines, which consists of a shifting-wheel provided with two pins arranged diametrically opposite to each other, in combination with shifting-bars and slotted plates secured thereto, within which the said pins work to move said bars, and suitable devices, substantially as set forth, to hold one of said bars stationary while the other is being moved, or vice versa, substantially as and for the purpose specified.

7. A belt-shifting device for hoisting-machines, which consists of a shifting-wheel provided with two pins arranged diametrically opposite to each other, and a circumferential slot or groove arranged between said pins, in combination with shifting-bars and slotted plates secured thereto, within which the said pins work to move said bars, and also lugs or projections which fit into the circumferential groove, and thereby prevent the said plates from moving, said circumferential groove and one of said pins on said shifting-wheel acting respectively upon the separate shifting-bars and their plates at the same time, whereby one is held stationary while the other is being moved, substantially as and for the purpose specified.

8. The combination of wheel D, having pins I' I' and circumferential groove H, shifting-bars K K, having plates I I, provided with slots *i i*, and lugs I^2 I^2, substantially as and for the purpose specified.

9. The combination of wheel D, having pins I' I' and circumferential groove H, shifting-bars K K, having plates I I, provided with slots *i i*, and lugs I^2 I^2, the said lugs I^2 and groove H limiting the throw of the bars K in one direction, and suitable buffers secured to said bars K, to limit the throw of same in the opposite directions, substantially as and for the purpose specified.

10. The combination of wheel D, having pins I' I' and circumferential groove H, shifting-bars K K, having plates I I, provided with slots *i i*, and lugs I^2 I^2, the said lugs I^2 and groove H limiting the throw of the bars K in one direction, and suitable adjustable buffers secured to said bars K, to regulate and limit the throw of same in the opposite directions, substantially as and for the purpose specified.

11. The combination of wheel D, having pins I' I' and circumferential groove H, shifting-bars K K, having plates I I, provided with slots *i i*, lugs I^2 I^2, and buffers K', consisting of plate L^2 and rubber or flexible cushion L^2, substantially as and for the purpose specified.

12. The combination of the pins I' I', arranged substantially opposite to each other, and adapted to move around a fixed point, with plates I, having slots *i*, there being a time when both of said pins are in said slots when the plates are held stationary, but when said pins are moved in either direction one of same passes out of the slot in one of said plates, while the other passes in and shifts the other of said plates, substantially as and for the purpose specified.

13. The combination of the pins I' I', arranged substantially opposite to each other, and adapted to move around a fixed point, with plates I, having working-slots *i*, there being a time when both of said pins are in said slots when the plates are held stationary, but when said pins are moved in either direction one of same passes out of the working-slot in one of said plates, while the other passes in and shifts the other of said plates, and mechanism, substantially as set forth, to hold one of said plates stationary while the other is being shifted, substantially as and for the purpose specified.

14. The combination of shaft C, worm B^3, worm-wheel B', shaft B, having a screw-thread, *b*, on its end, stationary but adjustable nuts F' F^3, clamped upon the screw-threaded end of shaft B by bolts *f f*, and traveling nut F, and suitable mechanism actuated, when the said nut F comes in contact with either of said nuts F' F^3, to automatically stop the rotation of shaft B, substantially as and for the purpose specified.

15. The combination of shaft C, worm B^3, worm-wheel B', shaft B, having a screw-thread, *b*, on its end, stationary nuts F' F^3, traveling nut F, arranged to slide longitudinally in a frame, D^3, shifting-wheel D, and shifting devices actuated upon said wheel being rotated in either direction, substantially as and for the purpose specified.

16. The shifting-bars K, in combination with the shifting-arms L' and clamping-plates *l*, having lugs l^2, and secured together by bolts *l'*, substantially as and for the purpose specified.

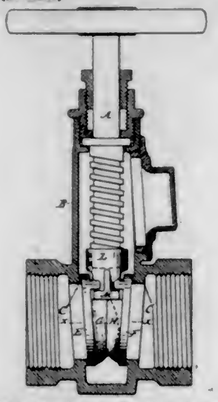
17. The shifting-arm for a belt-shifter, consisting of a wrought-iron rod or bar, L', having a cast-iron loop riveted to its end, substantially as and for the purpose specified.

18. The combination of brake-wheel M, a pivoted frame, N, having bearings N', a brake-shoe, M', secured to said frame N by flexible or universal joint frame O, supported on said bearings, and having arms P and O^2, weight O^3, and cam D^4, having projections D^5 D^5, and recess D^6, substantially as and for the purpose specified.

19. An adjustable shifting-arm for belts, in combination with a shifting-bar arranged to reciprocate in fixed guides, said arm being arranged at right angles to said bar, and an adjustable clamping device to secure said arm to said bar and allow it to be adjusted in the direction of its length, substantially as and for the purpose specified.

20. An adjustable shifting-arm for belts, in combination with a shifting-bar arranged to reciprocate in fixed guides, said arm being arranged at right angles to said bar, and an adjustable clamping device to secure said arm to said bar and allow it to be adjusted both in the direction of its length and that of the shifting-bar, substantially as and for the purpose specified.

291,218. STOP-VALVE. CHARLES F. MURDOCK, Detroit, Mich. Filed Apr. 6, 1883. (No model.)



Claim.—1. In a stop-valve, an adjustable valve-gate with inclined faces, made in two parts, which are disconnected from but abut against and support each other upon their rear surfaces, which in one part forms a spherical segment, with a semi-spherical stemway formed therein, and in the other a corresponding socket, substantially as and for the purposes described.

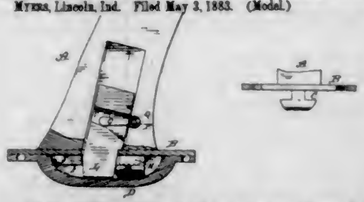
2. In a stop-valve, an adjustable valve-gate, the two parts of which have segmental ball-and-socket abutments upon their backs or meeting faces, central passage-way, I, and corresponding grooves K upon each part, in combination with the winged nut L, all combined and constructed substantially as and for the purposes described.

3. In a stop-valve, an adjustable valve-gate made in two disconnected parts, the abutting faces of which form a ball-and-socket joint, the center bearing portion of which is cut away, substantially as set forth.

4. In a stop-valve, an adjustable valve-gate made in two parts, the abutting faces of which form a ball-and-socket bearing, through the spherical segment of which bearing is a semi-spherical slotted stemway, in combination with the winged nut provided with means for connecting it to the gate, the parts being constructed to operate substantially as and for the purposes described.

5. In a stop-valve, a gate consisting of two valve-disks provided with a spherical joint, and forming a wedge-shaped gate when closed, in combination with a nut through which the stem is threaded, the body of said nut being outside the body of the valve-gate, said nut being provided with wings or flanged at the lower end thereof, which engage with the grooves in the valve-disks near the top thereof, said grooves being larger than the entering wings, so that in operating the gate the valve-disks are adapted to draw apart upon their lower ends when the gate is raised and adjust themselves to the valve-seats when closed, substantially as and for the purposes set forth.

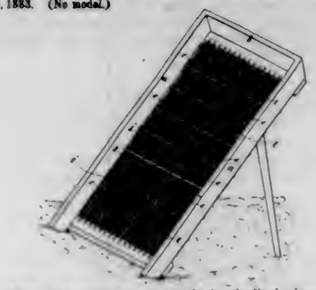
291,219. DEVICE FOR FASTENING SCHOOL-DESKS. JOHN WEST MYERS, Lincoln, Ind. Filed May 3, 1883. (Model.)



Claim.—1. The combination of the two recessed plates D D', one of which is provided with the projections H, the other with the projections H and stops J, with the legs of a desk or bench, both of which are provided with the lugs C, and the locking device L, secured to one pair of said legs, and which prevents any backward movement of the lugs C, substantially as shown and described.

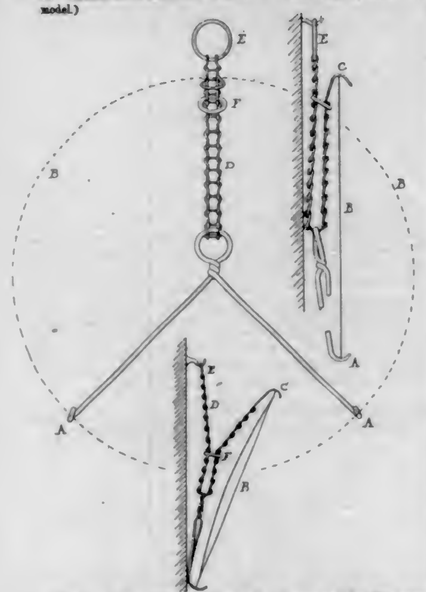
2. The combination of the leg of a desk, seat, or bench provided with the lug or projection C, and recessed to receive a bolt, L, and an operating mechanism, P O, with the recessed plate D, provided with lugs H and J, for catching over the lugs C, substantially as set forth.

291,220. SCREEN. JOSEPH NORWOOD, Brooklyn, N. Y. Filed Oct. 1, 1883. (No model.)



Claim.—The combination, with the longitudinal wires *c c* in a flat screen, of the transverse bars *e e*, grooved for the reception of the wires *c*, and placed at suitable distances apart, the clamping-bars *i*, and the screen-frame *a b*, substantially as set forth.

291,221. SUSPENDING ATTACHMENT FOR PLAQUES, FRAMES, &c. GEORGE R. OSBORN, New York, N. Y. Filed Aug. 11, 1883. (No model.)



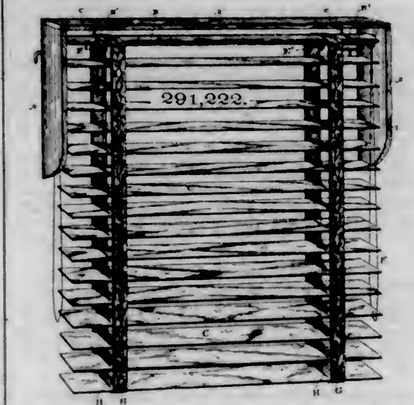
Claim.—1. The suspension device for plaques and the like, composed of a stiff bifurcated hanger, constructed substantially as described, and a chain provided with hooks or loops, as and for the purpose set forth.

2. The combination of the stiff bifurcated hanger, constructed substantially as described, the chain provided with hooks or loops, and the adjustable ring on the chain, substantially as and for the purpose set forth.

291,222. WINDOW-SHADE. JOB E. PHILLIPS, West Ashford, Conn. Filed Dec. 1, 1883. (No model.)

Claim.—1. In a window shade or blind, the broad pivotal upper or end slat, provided with journals removed from its ends, in combination with eyebolts or hooks forming bearings for said journals, substantially as described.

2. In a window-shade or Venetian blind, the broad pivotal upper slat provided with journals removed from its ends, in combination with eyebolts or hooks pendent from the upper horizontal bar, and a detachable frame applicable to the window-frame, for the purpose and substantially as described.

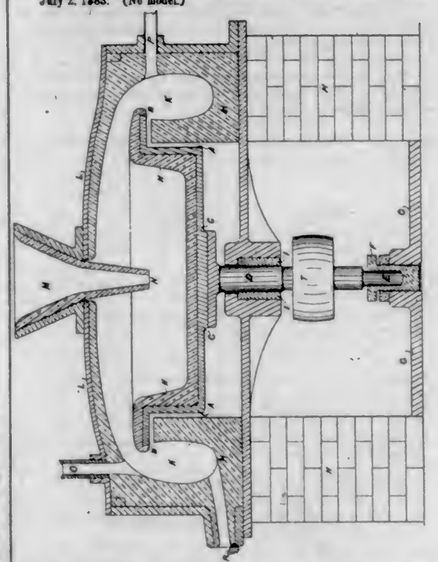


3. The combination, with the upper slat of a Venetian blind, of a journal at one end, and the swiveling-pulley mounted thereon, substantially as and for the purpose specified.

4. The upper broad pivotal slat provided with two journals removed from its ends, in combination with the journal at one end, having the swiveling-block thereon and the grooved pulley fast on its opposite end, and carrying a cord for adjusting the angles of the slats, substantially as described.

5. The upper broad pivotal slat, B, provided with the journals B', B^2, B^3, B^4, and B^5, in combination with the eyebolts *c c'*, swiveling-pulleys E, E', and E^2, fixed pulley D, and the cords D, F, and F", all substantially as and for the purpose set forth.

291,223. PROCESS OF AND APPARATUS FOR THE PRODUCTION OF DENSE METAL CASTINGS. CARL MARIA PIELSTICKER, London, England, and FRIEDRICH C. G. MÜLLER, Brandenburg, Prussia, Germany. Filed July 2, 1883. (No model.)



Claim.—1. The herein-described process of eliminating gases from molten metal, which consists in subjecting the same to centrifugal action in a substantially-closed chamber, and at sufficiently high speed to separate the particles and liberate the gases by throwing the molten metal against the walls thereof.

2. The herein-described process of eliminating gases from molten metal, which consists in subjecting the same to centrifugal action at sufficiently high speed to separate the particles and liberate the gases while

in a substantially-closed chamber by throwing the molten metal against the inner wall thereof, and at the same time maintaining a partial vacuum therein by the action of the centrifuge.

3. A device for atomizing molten metal by centrifugal action, which consists of a centrally-pivoted receiver provided with means for being mechanically rotated, and supported within an air-tight bearing, a chamber inclosing said receiver and formed with an annular circumferential trough having inlet and outlet passages, and a funnel extending from the exterior to the interior of the receiver, as set forth.

4. A device for atomizing molten metal by centrifugal action, which consists of a centrally-pivoted dish-shaped receiver provided with means for being mechanically rotated, and supported within an air-tight bearing, a chamber inclosing said receiver and formed with an annular circumferential trough having inlet and outlet passages, and a funnel extending from the exterior to below the edges of the dish-shaped receiver, as set forth.

5. The herein-described apparatus, consisting in the combination of a rotating shell, A, with the surrounding circular channel K, a cover, L, and the funnel M, resting in the center of said cover, by means of which funnel the molten metal introduced into the shell A is, by means of centrifugal action and under exclusion of air, thrown against the sides of the circular channel K, and thereby atomized and the gases set free, as described.

291,224. SAW-SET. ROBT. E. PONDEXTER, Indianapolis, Ind. Filed June 29, 1883. (No model.)



Claim.—1. A device for setting saws, cast in one piece, formed with sides B, a connecting-web, A, said web being provided in one end with a series of holes, *a'*, extending crosswise thereof, between the sides B, said holes varying in size, whereby they are adapted to be used on different-sized teeth, and the whole set is adapted to be used as a hand-set when desired, substantially as set forth.

2. A device for setting saws, provided with an anvil, A', having an inclined face, and spur projections *a b*, for holding the same in place, and a series of holes, *a'*, adapting it to be used also as a hand-set, substantially as set forth.

3. A device for setting saws, formed of a single casting, having sides B, a connecting-web, A, wherein are holes *a'*, and on the under side of which is a rib, a^2, an anvil-like portion, A', and projections *a* and *b* upon its lower side, substantially as shown and specified.

4. A device for setting saws, constructed in a single piece and embodying an anvil-set, a hand or wrench set, and a gage, said several parts being constructed and operating substantially as shown and described, and for the purposes specified.

291,225. BUCKLE. THOMAS O. POTTER, Boston, MASS. Filed Oct. 22, 1883. (No model.)



Claim.—1. In a buckle, the combination of the back or body having the ears a^2, from which the pivots a^2 are formed by striking or bending inward the portion of the body of the ear described, with the jaw *b*, having the ears b', through holes in which the pivots a^2 extend, all substantially as and for the purposes specified.

2. The combination, in a buckle, of the jaw *b*, having the ears b', provided with holes b^2, and the body *a*, having the ears a^2, provided with extensions or pivots a^2, formed therefrom, as described, and extended through said holes and then bent or curved downwardly to lock the jaw and back together, all substantially as and for the purposes described.

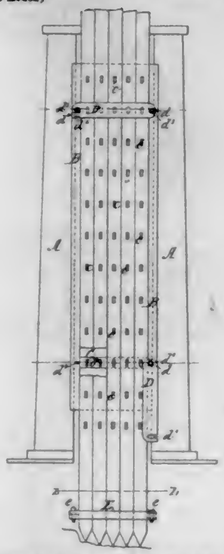
291,226. SNAP-HOOK. JESSE E. PUMPHREY, Columbus, Ohio. Filed Aug. 9, 1883. (No model.)



Claim.—1. A snap-hook provided with an opening or socket in its base to receive and retain a snap-spring, said socket being formed with an oblique upper side to act as an abutment for the spring, and also with a shoulder constituting a rest for the adjacent end of said spring, whereby the spring is held within the socket by virtue of its resilience alone when the outer end of said spring is in operative contact with the top of the hook.

2. The combination, with a straight snap-spring, of a snap-hook provided with an opening or socket in its base to receive the spring, said socket being formed with an oblique upper side and also with a downwardly-extending rib or base, substantially as and for the purposes described.

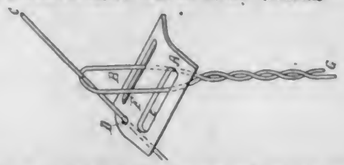
291,227. DEVICE FOR SECURING TOOLS IN STONE-CHANNELING MACHINES. ALBERT H. RAPP, Paris, France, assignor to Allston Gerry, (individually and as Trustee,) New York, N. Y. Filed Feb. 21, 1883. (No model.)



Claim.—1. The combination, with the tool slide or carrier of a stone-channeling machine having fixed pins or projections on its face, and tools having in them holes to receive the said pins, of a clamping-plate attached to the carriage opposite said pins, and a packing-piece which is applied between the carrier and clamping-plate, and through which the said pins or projections pass, substantially as herein described.

2. The combination of the tool slide or carrier B, provided with the fixed pins C, the screw-bolts *d d*, and the elastic or yielding facing-pieces $b\ b^2$, the tools provided at intervals with slots or holes c to receive the said pins C, and the hooked and pivoted clamping-plates D D, and the bolts $d^3\ d^3$ and nuts d^3, substantially as herein described.

291,228. BALE-TIE. ROBERT E. RIALL, Johnstown, Pa., assignor to the Cambria Iron Company. Filed Nov. 14, 1883. (No model.)



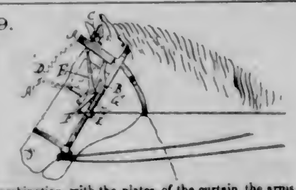
Claim.—1. A bale-tie buckle or fastening consisting of the plate A, provided with the slots *e e*, and hole D, substantially as described.

2. The combination, in a bale-tie, of the plate A, provided with the slots *e e*, and having the hole D, adapted to receive one end of the wire, with the wire link B, formed from the other end of the wire, substantially as described, and for the purpose set forth.

291,229. BLINDER FOR HORSES. BERNARD REIS, Brooklyn, N. Y. Filed May 17, 1883. (No model.)

Claim.—1. A horse-blinder consisting of a bowed plate, having means for securing it to the harness of a horse's head, of a curtain connected to said plate at one end to fold therein, unfolding lever-arms pivoted to the forked supporting-plates, having one end connected to said curtain, and the other end adapted to be connected with cords or reins, and the folding springs on said lever-arms with a tendency to throw the curtain-connected end thereof toward the plate, substantially as shown and described.

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2. The combination, with the plates, of the curtain, the arms, the levers, the folding-springs attached to the plate-supporting arm B, and the catches I, substantially as and for the purpose described.

291,230. TRUNK-ROLLER AND CORNER-PIECE. ANTHONY V. ROMANA, Wauwatosa, Wis. Filed July 23, 1883. (Model.)

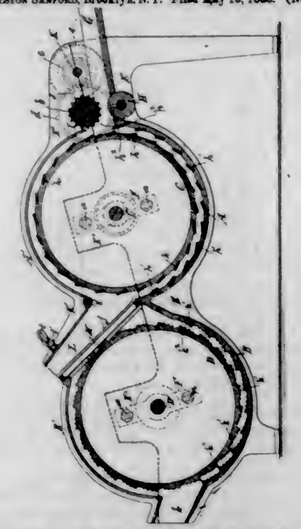


Claim.—1. In a trunk-roller, the plates A and A', the upper plate, A, being perforated to receive the neck or reduced portion of the hub B, while the lower plate, A', is perforated and provided with a shoulder to receive the enlarged lower portion of said hub, in combination with the hub B and roller C, the journal of which is directly below the said hub, which is hollowed out on the under side to receive the said roller, and the upper part of which hub is upset above the upper plate, and the vertical rollers *a a*, journaled in the plates A A', and in contact with the hub B, substantially as set forth.

2. In combination with a trunk-body, the plates A and A', and the hub B, hollowed out on its under side to receive the roller C, having its journals located directly under said hub, and secured in the depending portions thereof on each side of the hollowed-out portion, with the rollers *a a* and the corner-piece D, the lower horizontal flange of which extends under the lower plate, A', of the roller proper, and serves to secure it in place on the under side of the trunk-body, hollowed out to receive it, substantially as set forth.

3. In combination with a trunk-body having bottom rail and uprights on the outside of said body, the castings D D', adapted to clamp the bottom rail and uprights securely together, and having inwardly-projecting flanges *d*, that confine the said uprights in place against any tendency to spring laterally, substantially as set forth.

291,231. MACHINE FOR CUTTING AND GRINDING CORNSTALKS, &c. GILSTON SANFORD, Brooklyn, N. Y. Filed May 15, 1883. (No model.)



Claim.—1. The combination of a cylindrical casing and a cylinder capable of rotation therein, both provided with crushing or reducing blades having blunt or non-cutting edges, and a sharp-edged cutting-blade fixed in the casing adjacent to the feed-inlet, substantially as and for the purpose herein described.

2. The combination of the cylindrical casing A A' and rotating cylinder C, both provided with blades A A', having blunt or non-cutting edges, and consisting of bars of rectangular cross-section, secured to the casing and cylinder so that one edge projects from their surfaces, and the sharp-edged cutting-blade A^2, substantially as and for the purpose herein described.

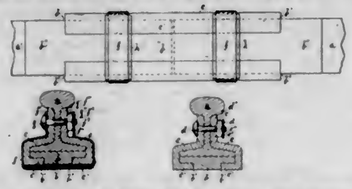
3. The combination, with the cylindrical casing and the rotary cylinder, of the feed trough or chute G, the feed-roller H, having a smooth surface and free to rotate by the passage of material over it, the roughened roller I, the driving-shaft K, the links or arms J, carrying the bearings of the roller I and fulcrumed on the shaft K, and the gear-wheels *c d*, for rotating said roller I from said shaft K, substantially as and for the purpose described.

4. The combination of the two casings A A' B B' and their cylinders C D, of the feed-inlet at the side of the casing A A', the delivery-outlet *k* at the side of the casing B B', and the chute L and grating M between adjacent sides of said casings, all being so organized that the rotation of the cylinder C will produce the passage of material through the chute L and onto the grating M, substantially as described.

5. The combination, with the two casings and their rotary cylinders, of the delivery nozzle or chute L, having a movable side or top, L', and the slideway *j*, and the grating M or shutter N, fitted to said slideway, substantially as described.

291,232. RAILROAD-JOINT AND FASTENING DEVICE. SUMNER SHAW, Boston, Mass. Filed Feb. 3, 1883. (No model.)

Brief.—A railroad-joint consisting of a base-plate having side recesses and headed ends, and fish-plates with angular flanges adapted to rest in the plate-recesses. An inclosing-strap is placed around the fish-plate and unrecessed portion of the base-plate. An elastic cushion is interposed between the sole and fish plate inclosing strap.

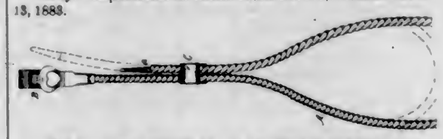


Claim.—1. The herein-described railroad-joint, consisting of the base-plate *b*, with its side recesses, $b'\ b'$, and headed ends $b''\ b'''$, in combination with the fish-plates *c c*, their angular flanges $c'\ c'$, and the fastening bolts and nuts $d\ d'$, as and for the purpose set forth.

2. In combination, the sole-plate *b*, fish-plates *c c*, bolt and nut *g g'*, inclosing-strap $f\ f'\ f''$, and the elastic packing or cushion *h* interposed between said sole and fish plates and the said inclosing-strap, in a manner and for the purpose as described.

291,233. STOCKING-SUPPORTER AND SLEEVE-ADJUSTER. CHRISTOPHER C. SHELBY, New York, N. Y. Filed Oct. 5, 1883. (No model.)

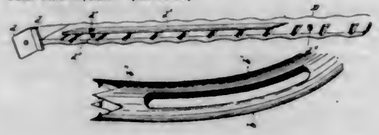
Brief.—Improvement on Letters Patent No. 273,770, dated March 13, 1883.



Claim.—1. The combination, with the single piece of cord or webbing having the pendent portion provided with the attaching-clasp, of means, substantially such as shown and described, for enlarging or reducing the size of the loop without varying the length of the pendent portion, substantially as described.

2. The combination, with the single piece of cord or webbing having the attaching-clasp at one end, of the other clasp for clamping both parts of the webbing, including the free ends, substantially as described.

291,234. SHOVEL AND SCOOP. LOUIS H. SHOLDER, Cleveland, Ohio. Filed June 16, 1883. (No model.)



291,234.



Claim.—1. The part B, consisting of a curved tubular socket terminating at its lower end in a skeleton plate, substantially as described, and for the purpose shown.

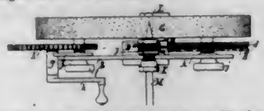
2. A shovel having a wire bottom and perforated metal sides C, substantially as set forth.

3. A shovel having a wire bottom, perforated metallic sides C, and metal piece D, secured at its opposite ends to the side piece, C.

4. The combination of the parts B, C, and D, constructed substantially as described, and for the purpose specified.

5. The combination, with a handle, of the pawl B, constructed substantially as described, and provided with the elongated socket, the upper end of which is formed with triangular or other suitable projections, each of which is provided with an inwardly-projecting teat to take into the wooden handle, substantially as set forth.

291,235. PENCIL-SHARPENER. WILLARD E. SIBLEY, Weston, Mass. Filed Aug. 1, 1883. (No model.)



Claim.—1. In a device for sharpening pencils, the combination of two pulleys, and a cutting or rasping band extending about the pulleys, with a pencil-holder located in such position as to hold the pencil against some part of the band between the pulleys, substantially as set forth.

2. In a pencil-sharpener, a pencil-holder having a cavity and a rubber or other elastic tube in said cavity, in combination with means for compressing said tube, substantially as set forth.

3. In combination with two pulleys and a cutting or rasping band extending around said pulleys, a plate, L, adapted to be adjusted, inclined, and secured in relation to the band, substantially as and for the purpose set forth.

4. In a pencil-sharpener, the combination of two pulleys, a cutting or rasping band about the pulleys, a pencil-holder, and means for adjusting said pulleys, whereby the required tension may be given to said band, substantially as set forth.

5. In a pencil-sharpener, a pencil-holder adapted to revolve in bearings, and having a pulley joined thereto, in combination with a driving belt and pulley, the latter pulley being adjustable to give the required tension to the belt, substantially as specified.

6. The combination, in a pencil-holder for a pencil-sharpening device, of parts *s* and *t*, one to screw on the other, and having a cavity and tapering shoulders, *q*, therein, with a tube, *r*, of rubber or of like elastic material, in said cavity, substantially as and for the purpose set forth.

7. In a pencil-sharpener, the combination of pulleys E and F, band G, and adjustable studs *b* and *c*, substantially as specified.

8. The combination of pulleys E and F, band G, and revolving pencil-holder K, substantially as specified.

9. The combination of pulleys E and F, band G, and plate L, elastic and adjustable, substantially as specified.

10. The combination of two pulleys, E and F, band G, elastic and adjustable plate L, and revolving pencil-holder K, substantially as set forth.

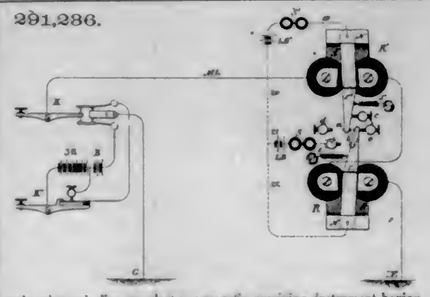
11. In a pencil-sharpener, a cutting or rasping band, the ends of the piece forming the same being butted together and held by means of a binding or re-enforcing piece on the inner surface of the band over the place of juncture of said ends, in combination with a pencil-holder located in such relation to said band that the pencil is held transverse to the band, substantially as and for the purpose set forth.

291,236. QUADRUPLEX TELEGRAPH. GERRITT SMITH, Astoria, N. Y. Filed May 22, 1883. (No model.)

Claim.—1. In a diplex telegraph, means for transmitting two strengths of current and for reversing either strength of current, in combination with a main line, a relay having two armatures adapted to come in contact with each other to form an electrical connection, a stationary electrical contact for one of said armatures, and two local sounders, one of said sounders being operated upon contact of the two armatures, and the other upon contact between one of said armatures and its stationary electrical contact.

2. In a diplex telegraph, the combination of means for transmitting two strengths of current and for reversing either strength of current, a

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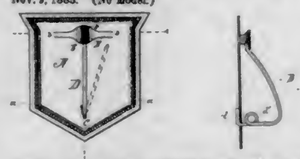
main telegraph-line, an electro-magnetic receiving-instrument having two polar magnets, two armatures adapted to come in contact, a stationary electrical connection to form contact with one of said armatures, and two local sounders, one of said sounders being operated by connection of the two armatures, and the other upon contact of one of the armatures and its stationary electrical contact.

3. In a diplex telegraph, the combination of means for transmitting two strengths of current and for reversing either strength of current, a main line, a relay having two polar electro-magnets, and two respective armatures capable of establishing electrical connection with each other, substantially as described.

4. In a relay for a diplex telegraph, the combination of two polar electro-magnets having two respective armatures capable of establishing electrical connection, a stationary electrical contact for one of said armatures, and two local sounders, substantially as described.

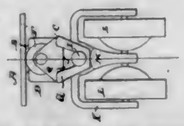
5. The combination, in a diplex relay, of two polar electro-magnets having armatures R R', capable of establishing electrical connection with each other, contact-stops *c d e*, electrical contact *f*, retracting-springs *s s'*, and local sounders S S'.

291,237. PAPER-FILE. MARGRET SMITH, New York, N. Y. Filed Nov. 9, 1883. (No model.)



Claim.—A paper-file constructed as described—that is to say, having a sheet, A, with stamped or bulged portion B, with points b' b^2, and leaving a hole, B', in which the nail upon which the file is suspended is received, and having secured to it a pin or spear, D, having coil d' and point d^2, all constructed, combined, and operating as set forth.

291,238. FURNITURE-CASTER. WM. H. SPONGL, Hamilton, Ohio. Filed Sept. 15, 1883. (Model.)



Claim.—1. In a furniture-caster, the combination of a piece to attach to furniture, a yoke-piece fitted to swivel thereon, and provided at its ends with downward-projecting lugs, a rivet or axle of oscillation carried in said lugs, and a housing fitted to oscillate upon said rivet, substantially as and for the purpose specified.

2. In a furniture-caster, the combination, with the attaching-piece, the oscillating housing, and the rivet or axle of oscillation, of the yoke-piece having bearing-lugs for the rivet recessed, as at Q, substantially as and for the purpose specified.

3. In a furniture-caster, the combination, with a piece to attach to furniture and an oscillating housing, of a yoke fitted to swivel upon the attaching-piece and having recessed lugs, as set forth, the rivet I, and the attaching screw or rivet E, bearing upon said rivet I, substantially as and for the purpose specified.

4. In a furniture-caster, the combination, with a piece to attach to furniture, a yoke-piece swiveled thereto, and a rivet or axle of oscillation held therein, of a housing provided with two bearings for said rivet open at the top and a bearing for said rivet open at the bottom, substantially as and for the purpose specified.

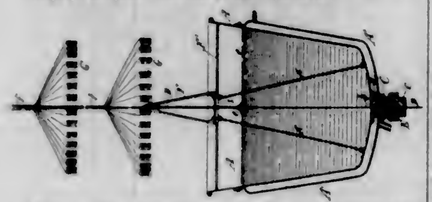
5. In a furniture-caster, the combination, substantially as set forth,

of a piece to attach to furniture, a yoke-piece to swivel thereon, and a housing fitted to oscillate with reference to said yoke, and having journals of oscillations broader than their axle, so as to permit side movement, substantially as and for the purpose specified.

6. In a furniture-caster, the combination, with a piece to attach to furniture, the yoke swiveling thereon, and the rivet or axle of oscillation, of the oscillating housing hung to said rivet, and provided with a convex shoulder, M, arranged to be borne upon by the yoke, substantially as and for the purpose specified.

7. In a furniture-caster, the combination of the piece A, provided with cylindrical stem B, the yoke C, fitting said stem, and provided with the anti-friction wheel F, the rivet I, and the housing K, substantially as and for the purpose specified.

291,239. APPARATUS FOR COVERING ELECTRIC CONDUCTORS. HENRY D. STANLEY, Bridgeport, Conn., assignor to the Bridgeport Brass Company, same place. Filed June 8, 1883. (No model.)



Claim.—1. The combination, with the vat or vessel containing paint or insulating compound, and provided at the bottom with a recess or cavity, of a plug of packing material in said recess or cavity having an aperture for the passage of a conductor, and means accessible from the exterior of the vat or vessel, and preferably consisting of a cap or gland for compressing said plug and causing it to fit tightly around the conductor, substantially as specified.

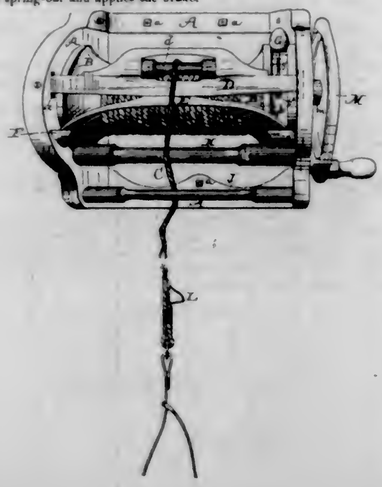
2. The combination, with a vat or vessel having an aperture in the bottom for the passage of a conductor, of a tube or nozzle at or near the top of the vat or vessel, through which the conductor may pass, and flexible or yielding connections between the said tube or nozzle and the vat or vessel, substantially as and for the purpose specified.

3. The combination, with a vat or vessel having an aperture in the bottom for the passage of a conductor, of a tube or nozzle at or near the top of the vat or vessel, through which the conductor may pass, flexible connections between said tube or nozzle and the vat or vessel, and a cross-bar above which said tube or nozzle is placed, and which prevents its falling into the vat or vessel when not in use, substantially as specified.

4. The combination, with the vat or vessel A, of the tube or nozzle F, the mouth or tip of which is adjustable in size, and flexible connections *d*, between said tube or nozzle and said vat or vessel, substantially as specified.

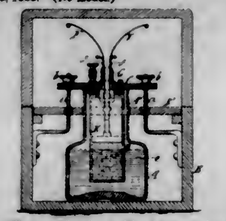
291,240. FIRE-ESCAPE. HENRY C. STOCKMAN and JOHN ADAMS, Germany, Ohio. Filed June 28, 1883. (No model.)

Brief.—A weight applied at the free end of the rope presses down the spring-bar and applies the brake.



Claim.—In friction fire-escapes, the combination of the frame, bolts *a*, slots, drum, groove, rope, stirrup, bolt, bar, roller *d*, spring, bearings, brake, bolt *g*, strap, nut, roller H, roller J, crank-wheel, and axle, substantially as above described, and for the purposes set forth.

291,241. ELECTRIC BATTERY. JAMES L. TOBIN, Newark, N. J. Filed Mar. 8, 1883. (No model.)



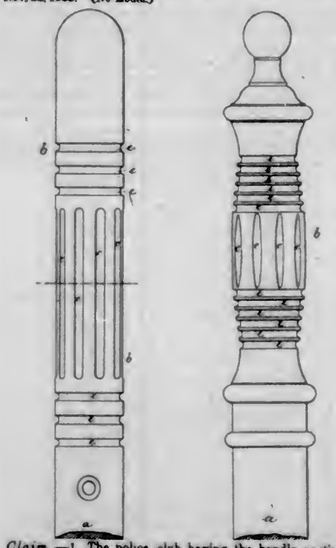
Claim.—1. The combination, with a battery plate or element, of an upwardly-extending resilient arm, and an abutment through which said arm moves, and with which it engages with sufficient friction to hold the plate or element in the position to which it is adjusted, substantially as specified.

2. The combination, with a battery plate or element, of an upwardly-projecting resilient arm provided with a shoulder or offset, and an abutment through which said arm may move, and with which the shoulder or offset of the arm may engage to hold the plate or element in position, substantially as described.

3. The combination, with a battery plate or element, of two resilient arms connected with said plate or element and diverging upwardly therefrom, and an abutment through which said arms may move, and with which they engage to hold the plate or element in position, substantially as specified.

4. The combination of the plate E, the resilient and diverging arms F, provided with offsets or shoulders *f*, and the abutment G, substantially as described.

291,242. POLICE-CLUB. JOHN J. TOWER, Brooklyn, N. Y. Filed Nov. 22, 1883. (No model.)



Claim.—1. The police-club having the handle portion grooved longitudinally, substantially as specified, the same forming a new article of manufacture.

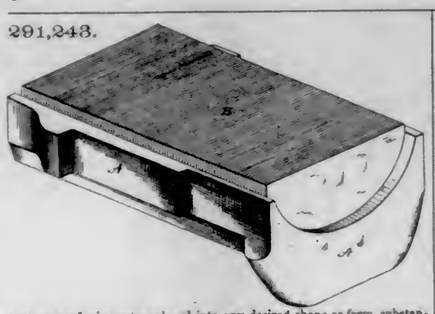
2. The police-club having the handle portion grooved longitudinally and peripherally, as and for the purposes set forth.

291,243. JOURNAL BOX AND BEARING. ROBERT W. TRAYLOR, Richmond, Va., assignor to the Journal Bearing Mica Company, New York, N. Y. Filed June 25, 1883. (No model.)

Claim.—1. The method herein described of making journal boxes or bearings by casting or molding a metallic shell or casing around a com-

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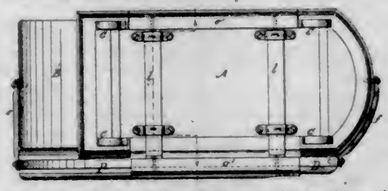


pact mass of mica cut or placed into any desired shape or form, substantially as described.

2. A journal box or bearing composed of mica, with a suitable metallic frame or casing cast or molded around it, except on the side for the journal, substantially as described.

3. A journal box or bearing composed of mica combined with plumbago or other suitable substance, with a suitable metallic frame or casing cast or molded around it, except on the side of the journal, substantially as described.

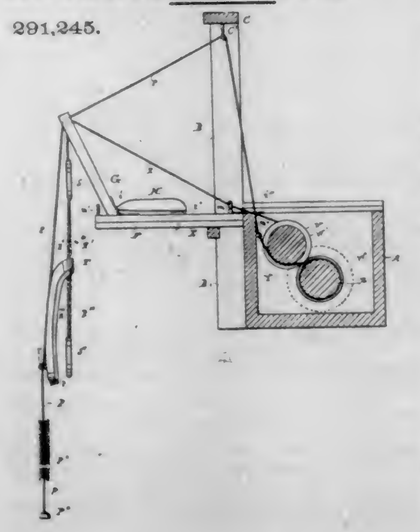
291,244. LOUNGE AND SOFA. LEWIS C. VAN NEST, Plainfield, N. J. Filed Feb. 24, 1883. (No model.)



Claim.—1. The combination, with the sofa or lounge, of a movable back upholstered or finished on both sides, the link *e*, pivoted at one end to the upper part of the arm in the middle of its width and at the other end to the back, the link *f*, pivoted at one end to the bottom part, A, of the lounge and at the other end to the back, the slides *l*, passing across the bottom part of the sofa, and the sections *o o'* upon the ends of such slides and forming supports for the back of the lounge, substantially as set forth.

2. The combination, with the sofa or lounge bottom and arm, of a reversible back, links for the ends of the same, transverse slides, and sections *o o'* on the ends of the same, substantially as set forth.

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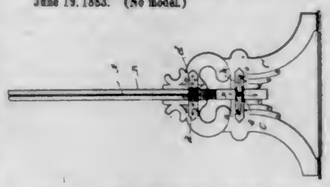
291,245. FIRE-ESCAPE. FREDERICK WILLIAM VOIGT, Hicksville, Ohio. Filed May 19, 1883. (No model.)

Brief.—The guide and lowering ropes are wound in opposite directions upon the reels incased in the box. A coiled spring is secured to the reel-shaft. The guide-rope passes through a ring on the belt, and rings for the limbs of the descending person are secured to the lowering-ropes.

Claim.—1. In a fire-escape, the combination of the box A, having rolls W W', adapted to carry ropes R R and P, with rings S S, belt T, and ring *t*, substantially as described, and for the purposes set forth.

2. In a fire-escape, the combination of box A, gallows-frame B C, cover F, frame G, and brace H, with ropes R R, rings S S, belt T, having ring *t*, and guide-rope P, adapted to be raised and lowered by windlass Z, as described, and for the purposes set forth.

291,246. SCREEN. JOHN E. WAKEFIELD, Worcester, Mass. Filed June 19, 1883. (No model.)



Claim.—1. The combination, with the screen having vertical end pieces, B, of the legs C C' at each side of each end-piece, and the three-part hinges *d e*, connected to said legs and end pieces, whereby the legs are attached to the vertical end piece and rendered capable of folding toward each other, substantially as set forth.

2. The combination, with the screen having vertical end pieces, of legs and three-part hinges, the outer leaves of the hinges being screwed to the legs and the central leaf being attached to the end pieces of the screen, and a turning button secured upon a pivot to the central leaf, substantially as set forth.

3. The combination, with the screen having vertical end pieces and legs, of hinges to connect the legs to the end piece of the screen and allow the legs to be folded toward each other, and a turning button to retain the legs in a distended position, substantially as set forth.

4. The combination, with the screen and legs, of a three-part hinge and a turning button to stiffen the hinge, such turning button being upon a pivot attached to the central part of the hinge, substantially as set forth.

291,247. OILER FOR CAR-AXLE BOXES. GEO. K. WATERHOUSE, Boston, Mass., assignor to himself and James Morse, same place. Filed June 11, 1883. (No model.)

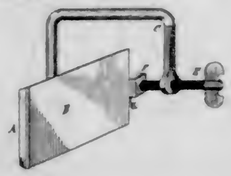


Claim.—1. The combination of a box adapted to contain oil, having bearings for the journal to be lubricated, a longitudinally-fluted roller composed of elastic material, the flutes being open at the ends, and means for retaining said roller in contact with the journal, substantially as described.

2. A roll for lubricators, composed in part of rubber fluted longitudinally and in part of brushes arranged between the rubber parts, substantially as described.

291,248. ROOFING-CLAMP. NATHANIEL W. WEST, Alna, Me. Filed Sept. 5, 1883. (No model.)

Brief.—Consists of a U-shaped clamp-frame, to one end of which is swiveled, by a washer on its outer side, a plate cushioned on its inner side, and having metallic-bound recesses on its outer side, the other end being provided with a thumb-screw, to the inner end of which is swiveled a washer, likewise cushioned.



Claim.—As an improvement in roofing-clamps, the combination of a binding-plate having a cushion or protecting-plate on its inner side, and provided on its outer side with metal-bound recesses, of a clamp swiveled centrally to the outer side of said plate, and having a tightening-screw provided at the end facing the cushioned side of the binding-plate with a swiveled washer, likewise covered with an elastic cushion, substantially as set forth.

291,249. CUT-OFF VALVE AND GEAR. JEROME WHEELOCK, Worcester, Mass. Filed Apr. 23, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a steam-engine cylinder having induction-passages extending to each end thereof, a steam chest or chamber communicating with both of said passages, an annular valve limited to a rotary movement within said steam-chest, and gearing for continuously revolving said valve at a speed corresponding with that of the engine.

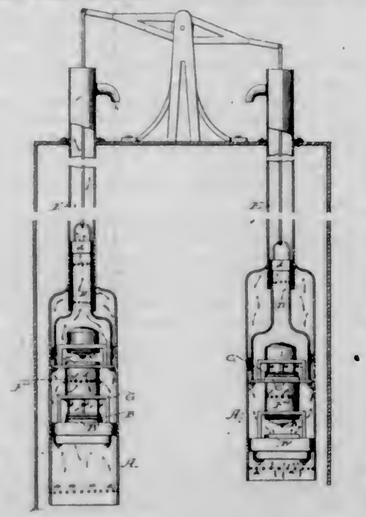
2. The combination, substantially as hereinbefore described, of a steam-engine cylinder, an annular valve for controlling the passage of steam thereto, gearing for revolving the valve, and a governor for advancing or retarding said valve during its rotation.

3. The combination, substantially as hereinbefore described, of a steam-engine cylinder, a valve or valves for directly controlling the induction and eduction of steam to and from the cylinder, an independent annular revolving steam-valve which controls the passage of steam on its way to the induction-valve, and a governor which advances or retards the annular valve and cuts off or varies the supply of steam to the induction-valve and cylinder.

4. The combination, in a steam-engine, of the cylinder having passages alternately serving for induction and eduction of steam, a single valve which operates with both passages for induction and eduction, and an independent annular cut-off valve revolved by gearing connected with the crank-shaft of the engine, substantially as described.

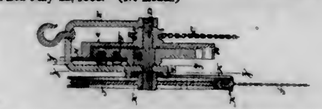
5. In a steam-engine, the combination, substantially as described, with the crank-shaft and cylinder, of an annular revolving valve, an oscillating induction and eduction valve, a revolving valve-shaft driven by the crank-shaft, and geared to both of said valves, for continuously revolving the one and for oscillating the other, and a governor mounted on said valve-shaft, for controlling the annular valve and cutting off or varying the supply of steam to the oscillating valve.

291,250. PUMP. ARCHIBALD WATSON WHITE, San José, Cal. Filed May 11, 1883. (No model.)



Claim.—In a double-acting pump, the supply-cylinders A and hollow pistons D, in combination with the plunger-valves B, provided with the guide-pins *b*, and located within the frames G, and the check-valves C, provided with the guide-pins *c*, and operating within the hollow pistons D, all constructed substantially as and for the purpose set forth.

291,251. HOISTING-MACHINE. JOSEPH J. WHITE, New Lisbon, N. J. Filed July 23, 1883. (No model.)



Claim.—1. A yoke, E, a shaft, D, mounted thereon, having an eccentric, G, a winding-wheel, A, with internal gear, a hoisting-chain, C, a swaying disk, F, with toothed periphery, a hand-wheel, J, and hand chain or rope J', and an arm, H, secured to said disk and engaging with said yoke, the winding-wheel, disk, and hand-wheel being fitted on said shaft D, and the limbs of the yoke supporting the shaft at opposite ends, said parts being constructed and combined as described, and forming an improvement in hoisting-machines.

2. A yoke-shaft with eccentric, winding-wheel with internal gear, a swaying disk with toothed periphery, a hand-wheel, an arm, and guides for the chain or rope of the hand-wheel, combined and operating substantially as and for the purpose set forth.

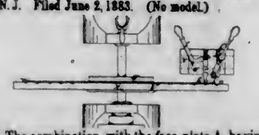
3. In a hoisting-machine, a driving-wheel, in combination with a yoke having a log or abutment, and two guiding-arms for the chain or rope, independent of each other, substantially as and for the purpose set forth.

291,252. GARMENT-SUPPORTER. THOMAS WHITE, Cleveland, Ohio, assignor of one-half to Edward H. Campbell, Chicago, Ill. Filed Sept. 26, 1883. (No model.)



Claim.—A metallic garment-supporter, made of any suitable shape, having the opening B and the projecting or depending nose N, bent or curved outwardly, as shown and described, to securely and firmly hold the garment after a small portion of it has been drawn up through the opening and looped over the nose.

291,253. MACHINE FOR SPINNING METALS. FREDK. C. WILLIAMS, Arlington, N. J. Filed June 2, 1883. (No model.)



Claim.—1. The combination, with the face-plate A, having a groove, *a*, and suitable chucking means, of the duck-bill *g*, and suitable means for guiding and presenting it to spin the metal into the groove, substantially as herein specified.

2. The lever J and roller *j*, capable of turning on a pivot, *k*, carried on a slide, H, in combination with the face-plate A, having the groove *a*, and with the duck-bill *g*, and means for operating it, as herein specified.

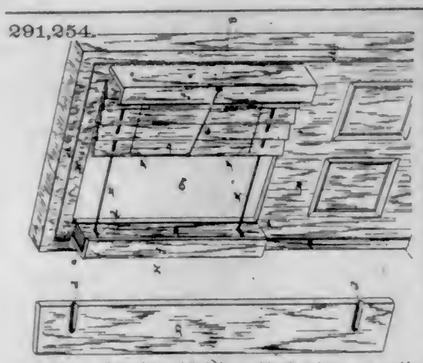
3. The dog K and its actuating-spring *e*, in combination with the slide D, having the two holes *d d'*, and with the duck-bill *g* and its operating means, face-plate A and chucking means, and the roller *j* and its operating means, arranged for joint operation, as herein specified.

4. The roller *j* and means for holding and operating it, in combination with a duck-bill, *g*, and means for holding and operating it, and with a face-plate, A, and means for operating it, combined and arranged to serve relatively to each other and to a circular sheet of metal having a previously-prepared edge, so as to form the bead and fold inward the corrugated edge and sink it into such bead, all substantially as and for the purpose herein specified.

291,254. WINDOW-BLIND. JOSEPH WILLIAMS, San José, Cal. Filed Sept. 18, 1883. (No model.)

Brief.—A shutter consisting of slats grooved or bored diagonally from edge to edge, through which passes a rod for holding or keeping them in place. The slats can turn from a position edgewise to a position very nearly flat, and a cord connects the slats with the frame. Rods secured to the innermost slats and engaging with a staple on the frame keep the blind-sections extended.

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Claim.—1. In a window-blind, the combination of transverse guides with a series of independent slats mounted thereon in such a manner as to turn from one position to a position at right angles, and a flexible connection between said slats, whereby they may act in unison as a blind, substantially as herein described.

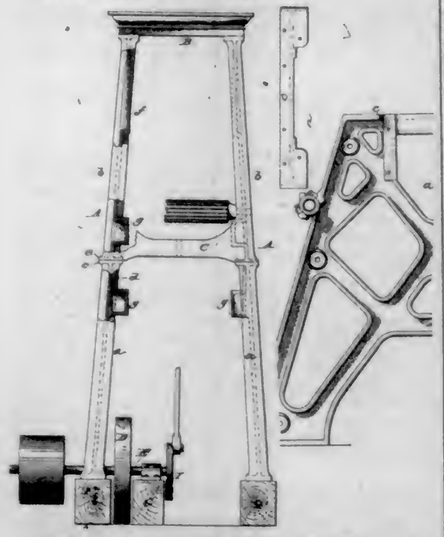
2. In a window-blind, the guide-rods E, in combination with the slats D, having inclined sockets and grooves *d*, through which said rods pass, whereby said slats may turn from one position to a position at right angles, substantially as herein described.

3. In a window-blind, the guide-rods E, in combination with the slats D, pivoted to slide thereon and to turn from one position to a position at right angles, as shown, and the cord or chain F, secured to the main frame and to each slat, whereby said slats are limited in their sliding movement and caused to act in unison as a blind, substantially as herein described.

4. In a window-blind, the guide-rods E, in combination with the pivoted sliding slats D thereon, as described, and the catch G, secured to the leading slat, and adapted to engage with an eye on the main frame, substantially as herein described.

5. In a window-blind, the casings H, formed on the frame, and the guide-rods E, in combination with the connected slats D, mounted on said rods and adapted to slide back and forth thereon, and turn from one position to a position at right angles, whereby they may, when drawn back, be fitted within said casings, substantially as herein described.

291,255. GANG-SAW-MILL FRAME. THEODORE S. WILKIN, Milwaukee, Wis. Filed Nov. 15, 1883. (No model.)



Claim.—1. A gang-saw frame consisting of two side frames, A A, connected by cross-ties or braces, and having a regular and continuous spread from top to bottom, substantially as shown, whereby strains are transmitted directly to the sills and lateral strains are avoided.

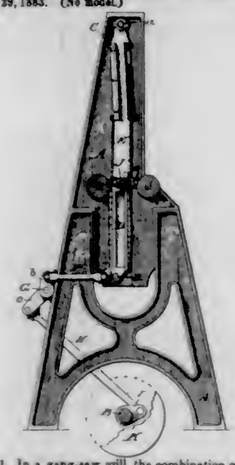
2. In a saw-mill frame, a side frame consisting of base-section *a*, having recessed upper end and continuous flange or bearing-face *c*, and upper section, *b*, formed with depending portion *d*, and bearing face or flange *e*, said parts being bolted or fastened together, substantially as shown and described.

3. In combination with a gang-saw frame, composed of inclined sides A A and cross-ties or braces, a driving-shaft having the crank-pin of its crank-wheel I exactly midway between the side frames, a pillow-block supporting the inner end of said shaft, sills supporting the sides A A, and fly-wheel D, mounted upon the shaft within the frame at a point between the pillow-block and sill, as shown and described.

4. A gang-saw frame having its side frames spread farther apart at the base than at the top, and extending in straight lines from top to bottom.

5. In a gang-saw-mill frame, side frames, A, inclined outward from top to bottom, and provided with vertical bearing-faces on their inner sides, for the purpose explained.

291,256. GANG-SAW MILL. THEODORE S. WILKIN, Milwaukee, Wis. Filed Aug. 29, 1883. (No model.)



Claim.—1. In a gang-saw mill, the combination of a frame and oscillating mechanism, consisting of a pendulous bar carrying the upper guide, a lower guide pivoted at its lower end to said bar, and supported at its upper end by a link pivoted to the frame, a driving-shaft, a crank upon said shaft, and intermediate mechanism, substantially such as described and shown, connecting the pendulous bar and the crank, and adapted to impart a swinging motion thereto.

2. In a gang-saw mill, the combination of a pendulous bar, an upper guide carried thereby, a lower guide pivoted to the pendulous bar, and connected by a link to the frame of the machine, and means, substantially such as shown and described, for imparting a swinging motion to the pendulous bar, for the purpose set forth.

3. In a gang-saw mill, oscillating mechanism consisting of pendulous bar E, carrying guide C, lower guide, D, pivoted to said bar, and connected by a link, J, with the main frame, pitman F, crank-arms *b c*, pitman H, and crank I, all constructed and arranged to operate substantially as shown and described.

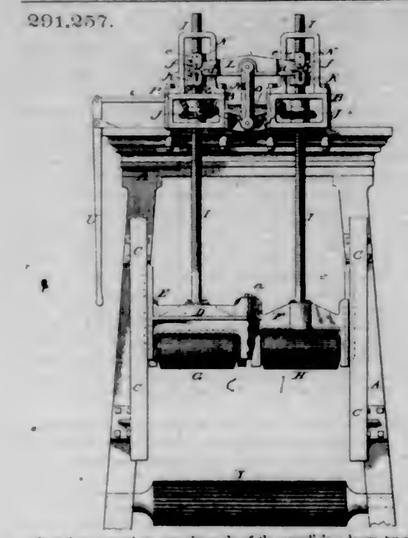
291,257. GANG-SAW MILL. THEODORE S. WILKIN, Milwaukee, Wis. Filed Aug. 29, 1883. (No model.)

Claim.—1. In a gang-saw mill, the combination of a main frame provided with guides C, a sliding frame, D, mounted in said guides, pressure-rolls G H, mounted in frames E F, arranged to slide independently in frame D, means, substantially such as shown and described, for raising and lowering frames E F, and cap-plate *a*, overhanging the proximate ends of frames E F, and secured to frame D, whereby said frame D is sustained by the uppermost of the frames E F.

2. The combination, in a gang-saw mill, of a main frame, vertically-moving frames E F, provided with independent pressure-rolls G H, screw-rods I I, for raising and lowering the pressure-roll frames, nuts K K, encircling the screw-rods, and springs *f*, above the nuts, adapted to hold said nuts normally in a fixed position, but to yield and allow the nuts and screw-rods to rise when the pressure-rolls are raised, substantially as set forth.

3. In a gang-saw mill, the combination of a main frame, two vertical screw-rods carrying independent pressure-rolls to bear upon the casts or logs, an equalizing-beam pivoted between said rods, collars attached to the arms of said beam and passing round the rods, nuts encircling the

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rods and connected to opposite ends of the equalizing-beam by slotted links, and springs interposed between the collars and the nuts, all substantially as shown and described, whereby the screw-rods are permitted to rise and fall through their rotation within the nuts, to simultaneously adjust themselves and their rollers to logs or casts of unequal thickness through the tipping of the equalizing-beam, and to independently rise and fall in passing over the irregularities of the said casts or logs.

4. In a gang-saw mill, the combination of two vertical screw-rods, I I, carrying independent pressure-rolls, and with means, substantially such as described and shown, for rotating them, equalizing-beam L, pivoted between said rods, collars N N, carried by opposite ends of said beam, nuts K K, connected with the beam on opposite sides of its pivot by slotted links *d d*, and encircling the screw-rods, and springs *f f*, interposed between the collars and nuts, for the purpose explained.

5. In a gang-saw mill, the combination of a main frame, a vertical longitudinally-grooved screw-rod, I, carrying a pressure-roll, pinion J, encircling said rod and having a lug fitting into its groove, driving-shaft X, provided with wheels V W, and swinging shaft Q, provided at opposite ends with pinions or wheels P and R, the former in constant engagement with pinion J, and the latter adapted to be thrown into engagement with either of the wheels V W, to effect the raising or lowering of the screw-rod and its roll.

6. In a saw-mill substantially such as described, the combination of a shaft, X, carrying wheels V W, screw-rod I, carrying a pressure-roll, pinion or friction-wheel J, adapted to impart rotation to the rod, and shaft Q, provided with pinions or friction-wheels P R, the latter arranged, substantially as shown and described, to be thrown into engagement with either of the pinions or wheels V W, whereby the screw-rods may be caused to turn in either direction at will, and to elevate or depress the pressure-roll.

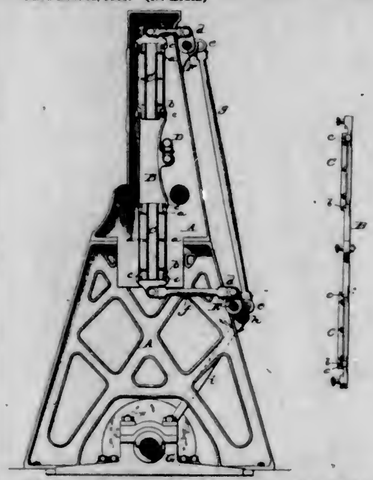
7. In combination with pressure-rolls G H and their carrying-frames E F supporting screw-rods I I, nuts K K, and equalizing-beam L, carrying said nuts at opposite ends, substantially as and for the purpose explained.

8. The combination, substantially as shown and described, of vertical screw-rods I I, carrying independent pressure-rolls, and wheels J J, at front and rear of the frame, adapted to rotate said rods, divided shaft Q, wheels P P, R, and S, shaft X, provided with wheels V and W, and means, substantially such as shown and described, for moving the sections of shaft Q, whereby either the front or rear set of pressure-rolls may be controlled and made to rise or fall at will.

9. In combination with screw-rods I I, carrying pressure-rolls G H, nuts K K, encircling the rods, and wheels J J, at front and rear of frame A, serving to rotate the screw-rods, shaft X, carrying wheels V W, divided shaft Q, having its two sections arranged, substantially as shown and described, to swing about the respective screw-rods I, and provided at their inner and outer ends with wheels to engage, respectively, with wheels J J, V, and W, and the levers U U, connected with the respective sections of shaft Q, substantially as and for the purpose explained.

10. In a saw-mill, the combination of two independent pressure-rolls adapted to act simultaneously upon casts or logs of unequal thickness, carrying-frames for said rolls, an intermediate equalizing-bar, and elastic or yielding connections, substantially as described between the equalizing-bar and the carrying-frames, whereby the rolls are permitted to yield independently and without movement of the equalizing-bar in passing over uneven places.

291,258. GANG-SAW MILL. THEODORE S. WILKIN, Milwaukee, Wis. Filed Nov. 22, 1883. (No model.)



Claim.—1. In combination with a supporting-frame of a gang-saw mill, upright beams carrying the sash-guides, and adapted to move bodily backward and forward equally at their upper and lower ends, and means, substantially such as shown and described, for imparting such motion to the beams.

2. In combination with a supporting-frame, beams B, each carrying upper and lower guides, C, supporting-links D, pivoted to the main frame, and to the beams at a point between the upper and lower ends of the latter, main shaft G, crank *j*, shafts E F, provided with arms *d e*, the former connected with the upper and lower ends of the beams and the latter connected with each other, and arm *h*, secured upon one of the shafts E F and connected with crank *j*, all substantially as shown and described.

3. The herein-described sash-oscillating mechanism for gang-saw mills, consisting of beams B, supporting-links D, pivoted to the main frame and to the beams between the upper and lower ends of the latter, horizontal shafts E F, arms *d*, secured upon said shafts and connected by pitmen *f* with the upper and lower ends of beams B, arms *e*, secured upon said shafts and connected by pitman *g* with each other, shaft G, provided with crank *j*, arm *h*, secured upon shaft E, and pitman *i*, connecting arm *h* and crank *j*, substantially as set forth.

4. In combination with guides C and beam B, one provided with elongated holes *a*, fastening-bolts passing through said holes and binding the parts together, and screw-stems C, bearing against one of said parts and screwing into the other, as shown, to adjust the guides upon the beams and to hold them where adjusted.

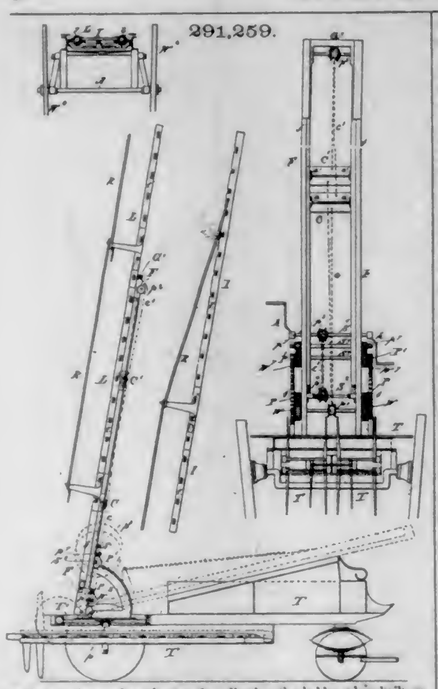
291,259. EXTENSION FIRE-LADDER. GUSTAV WITTE and OTTO GRIEBEL, Berlin, Germany. Filed July 14, 1882. (No model.) Patented in Germany Aug. 16, 1879, No. 9,906, and June 9, 1885, No. 21,092, and in Austria-Hungary Oct. 31, 1882.

Brief.—A folding frame is pivoted to the truck, upon which frame two reciprocating carriages are arranged. The ladder-section is laid upon the carriages and raised to the top of the frame and held until another section is connected thereto by a socket-joint. By a segmental rack and pinion, or by pivoted braces and their operating mechanism, the frame is raised and its angle of inclination adjusted.

Claim.—1. In an extension fire-ladder, the combination, with a series of ladder-sections constructed to be connected one with the other by socket-joints on their side bars, of a frame, F, two reciprocating carriages, C C', and means, substantially as described, for imparting motion to said carriages and holding the ladder-sections in position when raised, whereby a ladder-section is raised and held for connection with another section to build the ladder from top downward and raise the ladder as it is built up, substantially as described.

2. In an extension fire-ladder, the combination, with ladder-sections adapted to be connected by socket-joints, of a frame and two reciprocating carriages supported thereon, and constructed to serve as a guide for said carriages and for the ladder-sections when placed thereon, mechanism for moving the carriages in opposite directions to raise a ladder-section, devices to hold said section in position for connection from below with

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another section, and mechanism for adjusting the ladder when built up into proper position and giving it the proper inclination, substantially as described.

3. In an extension fire-ladder, the combination, with ladder-sections constructed to be connected by socket-joints, of a frame and mechanism for raising the ladder-sections one after another, appliances for rotating the frame and giving it the proper inclination, and mechanism for rigidly holding the ladder and frame in the position given thereto, substantially as set forth.

4. In an extension fire-ladder, the combination, with a two-wheel truck, of the hinged or folding frame F, supported at one end of its base by guide-wheels and at the opposite end from the truck-wheel axle, and mechanism for elevating the frame and adjusting the same to the desired inclination, as described, for the purpose specified.

5. The frame F, composed of side pieces, *f f*, brace-rods E E′, and cross-girts G G′, all constructed for operation in combination with a truck or carriage, substantially as shown and described, for the purpose specified.

6. In an extension fire-ladder, the frame F, composed of side pieces, *f f*, brace-rods E E′, cross-girts G G′, and the guide-wheels W², in combination with the axle of a truck, upon which said ladder is adapted to be folded, as described, for the purpose specified.

7. In an extension fire-ladder, the frame F, composed of side pieces, *f f*, brace-rods E E′, cross-girts G G′, and guide-wheels W², in combination with the carriage C², mechanism for moving the same along the side pieces, *f*, and the axle of a truck, upon which said frame is adapted to be folded, as described, for the purpose specified.

8. The combination, with two sections of tubing and the coupling O, constructed as shown and described, of a ring or sleeve carrying an operating-lever and constructed to be fitted upon the sleeve O, for rotating the same, substantially as and for the purpose specified.

9. The combination, with the sleeve O, having shoulder o^2 and a recess, o^3, of the ring *q*, its tubular arm *q′*, and the eyebolt q^2, all constructed for operation substantially as described.

291,260. PROCESS OF MANUFACTURING PLANISHED SHEET-IRON. W. DEWEES WOOD, Pittsburg, Pa. Filed June 2, 1883. (No specimens.)

Claim.—1. In the manufacture of planished sheet-iron, the improved method of preparing broken-down iron sheets for subsequent working, which consists in coating the same with a wash of red oxide of iron, carbon, and water, or other suitable liquid, substantially as set forth.

2. In the manufacture of planished sheet-iron, the improved method of preparing the broken-down iron sheets for subsequent working, which consists in rubbing up the red oxide formed on the sheets while being rolled and simultaneously applying and rubbing in an artificial wash of red oxide, carbon, and suitable liquid, substantially as set forth.

3. In the manufacture of planished sheet-iron, the improved method of preparing the sheets for treatment in a closed retort or chamber, which consists in coating the same with artificially-applied red oxide and pulverized carbon, substantially as set forth.

4. In the manufacture of planished sheet-iron, the improved method of treating the hot sheets as they come from the retort, which consists in quickly removing the waste material therein, reoxidizing the revived or nascent surface while still hot, and immediately cooling the sheet by artificial means, substantially as set forth.

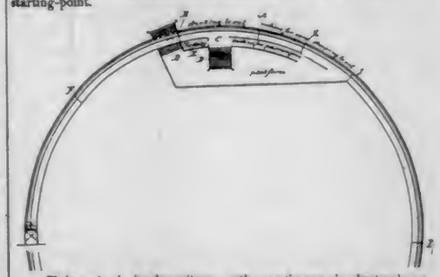
5. The improved method of cleaning and simultaneously reoxidizing the revived or nascent surface of a sheet previously coated with an oxide and deoxidized in a closed retort or chamber, which consists in causing a series of jets of superheated steam under high pressure to discharge or blow on and along the exposed surface of such sheet while still hot from the retort or chamber, substantially as set forth.

6. In the manufacture of planished sheet-iron, the improved method of treatment embracing the following steps: first, subjecting the unscaled sheets in packs, with intervening layers or coatings of carbon, to the action of a high heat in a close chamber or retort; second, causing a series of steam-jets to discharge or blow on and along the exposed surface of each sheet while still hot from the retort or chamber; and, third, arresting further chemical action by artificial means, substantially as set forth.

7. The improvement in the process of making planished sheet-iron, which consists in artificially promoting thereon, substantially as described, the formation of an oxide surface, reviving such oxide surface, reoxidizing such revived or nascent surface and fixing the oxide so formed, with intermediate heating and rolling and final heating and planishing, substantially as hereinbefore set forth.

291,261. CIRCULAR GRAVITY-RAILWAY. ALANSON WOOD, Toledo, Ohio, assignor of one-half to James A. Cohoon, same place. Filed Aug. 8, 1883. (No model.)

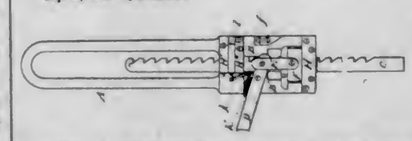
Brief.—A circular railway on which from the start the cars travel at an increasing rate of speed down the different inclines or grades of the track, acquiring sufficient momentum to carry them up a rise in the track to a stopping-level, from which level they are forced up an incline to the starting-point. A suitable platform and ticket-box are provided at the starting-point.



Claim.—1. A circular railway, with a continuous circular track provided with a rapid decline at the starting-point, for part of its way, and with a gradual decline for another part of the way, and then with a steep decline for another, so arranged that a car traveling on said track will acquire a great velocity to carry it up a rise in the track to a level, where it will stop, substantially as herein shown and described.

2. In combination with a circular track, provided with the grades herein described, the platforms C L, inclined way M, stairs D, and ticket-station, substantially as and for the purposes set forth.

291,262. STUMP-PULLER. PETER ZUBER, Ashburnham, Mass. Filed Sept. 8, 1883. (No model.)



Claim.—1. The combination of a ratchet-bar, C, sliding in the cheeks B of a frame, A, with the ways B′ and cross-head F, adapted to be automatically engaged with and disengaged from ratchet-bar C, substantially as described.

2. The combination of the reciprocating cross-head F with the transversely-acting spring-pawl G, adapted to automatically engage the notches of the ratchet-bar C, substantially as described.

3. The combination of the ratchet-bar C, cross-head F, reciprocated parallel to the longitudinal axis of the ratchet-bar C, and reversible spring-pawl G, substantially as described.

4. The combination of the ratchet-bar C, reciprocating cross-head F, spring-pawl G, adjusted to be disengaged by its spring, with the wedge-cam *f*, substantially as described.

5. The combination of the ratchet-bar C, reciprocating cross-head F, actuating-pawl G, and spring retaining-pawl I, substantially as described.

6. The combination of the ratchet-bar C, cross-head F, spring-pawl G, wedge-cam *f*, spring-pawl I, and displacing-linkage *k*, substantially as described.

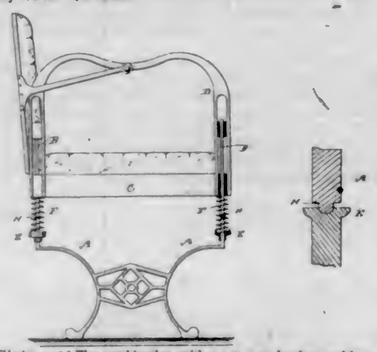
7. In combination with the pawl I, the two opposing springs *i* and *i′*, the spring *i* acting constantly, and the spring *i′* at intervals only, substantially as described.

8. The combination of pawl G, provided with reversing notches or bearings *e e′*, with the reversible spring *d*, substantially as and for the purpose described.

9. The combination of the frame A, provided with guiding-cheeks B and ways B′, the reciprocating ratchet-bar C, the retaining-pawl I in fixed vertical relation with the frame, the movable cross-head F, the spring-pawl G in fixed vertical relation with said cross-head F, and the lever D and link E, for actuating said cross-head, substantially as described.

10. As a machine for the raising and lowering of weights, the organization of a ratchet-bar capable of vertical intermittent reciprocation, a vertically-reciprocated cross-head provided with a spring-pawl capable of adjustment to engage with or disengage from the teeth of the ratchet-bar by the action of its spring, and means to positively engage said pawl with said teeth in opposition to its spring, and a spring retaining-pawl adapted to be automatically disengaged from the teeth of said ratchet-bar by the downward stroke of the actuating-lever in the lower half of its throw, substantially as described.

291,263. CAR-SEAT. WILLIAM A. ACKLEY, Hackettstown, N.J. Filed July 7, 1883. (No model.)



Claim.—1. The combination, with a car-seat having cavities or openings in the standards of the arm-rests, of the seat-legs, having extensions projecting into the said cavities in the standards of the arm-rests, and of spiral springs surrounding the upper parts of the legs and supporting the seat, substantially as herein shown and described, and for the purpose set forth.

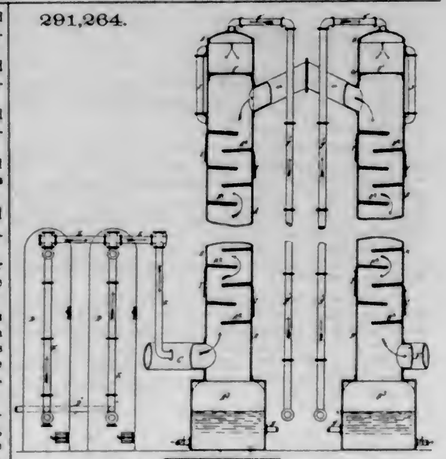
2. The combination, with the car-seat C and the legs A, having extensions B projecting into cavities in the standards of the arm-rests of the seat, of cup-shaped collars secured to the extensions B of the legs, and spiral springs F surrounding said extensions, substantially as herein shown and described.

3. The combination, with a car-seat having cavities or openings in the standards of the arm-rests, of the seat-legs having jointed extensions projecting into the said cavities in the standards of the arm-rests, and spiral springs surrounding the upper parts of the legs and supporting the seat, substantially as herein shown and described, and for the purpose set forth.

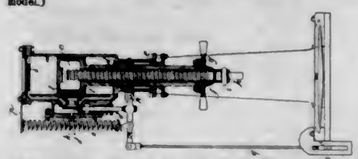
291,264. PROCESS OF OBTAINING AMMONIA FROM FURNACE-GASES. JOHN ADDIE and JAMES ADDIE, Glasgow, Scotland. Filed May 11, 1883. (No model.) Patented in England Oct. 6, 1882, No. 4,758; in France Apr. 3, 1883, No. 154,644, and in Belgium Apr. 6, 1883, No. 60,995.

Claim.—The mode herein described of utilizing the gases from blast and other furnaces to recover the ammonia therefrom, said mode consisting in first fixing the ammonia in such gases after they leave the furnace by mixing therewith sulphurous acid or sulphuric acid in the form of gas or vapor, and then condensing or dissolving and recovering the salts or compounds thereby formed, substantially as set forth.

291,264.



291,265. PRESS FOR MOLDING GLASS. ADRIEN ANTOINE APPERT and LEON ALFRED APPERT, Paris, France. Filed Oct. 13, 1883. (No model.)

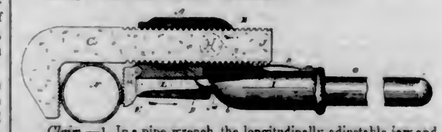


Claim.—1. In a press for molding glass, the combination, with an air-cylinder and its piston carrying a core or mold, of a valve for controlling admission of air to the cylinder, operated by a lever for moving it in one direction, and by the recoil of a spring for moving it in the other, substantially as herein shown and described.

2. In a press for molding glass, the combination, with a motor-cylinder, of a slide-valve provided with a retracting-spring, the movements of which the workmen can control by hand, and an adjusting arrangement for regulating by hand the variable distance between the core and the mold, an arrangement that includes a screw-threaded rod, *f*, moving longitudinally in the socket-piece or hollow rod *d* of the piston by means of a thumb-nut, *g*, that turns upon the end of the rod *d*, all substantially as above described, and represented in the annexed drawings, and for the purposes set forth.

3. In a press for molding glass, the combination, with an air-cylinder provided with ports *l*, and its piston carrying a core or mold, of the slide-valve *j*, the levers *m r*, the connecting-rod *q*, and the spring *o*, secured to the lever *m* and to a projection on the upper end of the cylinder, substantially as herein shown and described.

291,266. PIPE-WRENCH. FRANK ARMSTRONG and NATHANIEL W. VANDERGRIFT, Bridgeport, Conn.; said Vandegrift assignor to said Armstrong. Filed June 21, 1883. (No model.)



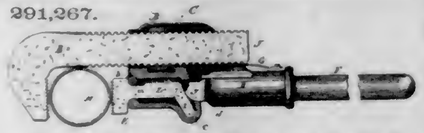
Claim.—1. In a pipe-wrench, the longitudinally-adjustable jaw and shank C J, arranged within the frame A, in combination with the pivoted lower jaw, E, having a tail or shank, L, beveled at the rear end, as described, and the vibratory handle-casting I, provided at the front end with the nose M, substantially as and for the purpose set forth.

2. The combination and arrangement of the frame A, jaws C E, and handle-casting I, pivotally connected to the frame A, and provided with nose M and curve *b*, substantially as shown and described.

3. The frame A, provided with shank-channels B and D and transverse nut-opening, and formed with circular trunnion-seats to receive the bearings H, substantially as hereinbefore set forth.

291,267. PIPE-WRENCH. FRANK ARMSTRONG and NATHANIEL W. VANDERGRIFT, Bridgeport, Conn.; said Vandegrift assignor to said Armstrong. Filed June 21, 1883. (No model.)

291,267.

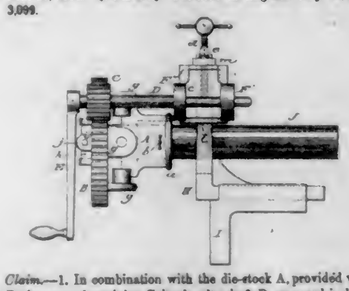


Claim.—1. In a pipe-wrench of the type herein shown, the lower jaw, E, provided with a shank, L, in combination with a toggle-arm, I, case A, provided with a seat, *c*, and a handle-socket, D, provided with a nose or projection, J, whereby the jaw is caused to move outwardly in a longitudinal direction by the action of the nose J upon the inclined toggle-arm I, as hereinbefore set forth.

2. The lower jaw, E, provided with a recess, *a*, in combination with the case A, pin *b*, and means for moving said jaw longitudinally, as hereinbefore set forth.

3. The case A, adapted to receive in operative relation the moving parts of the wrench, and provided with a seat, *c*, for the reception of one end of the toggle-arm E, substantially as shown and described.

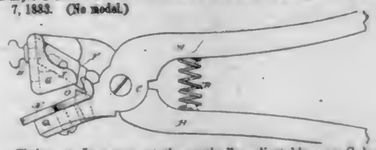
291,268. DIE-STOCK. FRANK ARMSTRONG, Bridgeport, Conn. Filed June 27, 1881. (No model.) Patented in England July 15, 1881, No. 3,099.



Claim.—1. In combination with the die-stock A, provided with the gear B, the operating-pinion C, having its shaft D arranged in bearings F F' upon a vertically-movable gate, *c*, and adapted to slide longitudinally therein, substantially as and for the purpose set forth.

2. The die-stock A, provided with a gear, B, adapted to be operated by a pinion, and also provided with handle-sockets *g*, substantially as and for the purpose set forth.

291,269. SAW-SET. FORTUNE L. BAILEY, Freeport, Ind. Filed Aug. 7, 1883. (No model.)



Claim.—1. In a saw-set, the vertically-adjustable gage G, having the wide flange J formed on one edge, and which extends inward toward the anvil, so as to catch upon the tops of narrow saws, the gage being secured directly upon the end of the jaw by means of a set-screw, H, substantially as shown.

2. The improved saw-set consisting of the pivoted parts A B, forming the handles and jaws, a reversible die, F, made adjustable upon one of said jaws by means of a slot and set-screw, an adjustable flanged gage, G, adapted to bear upon the side of a saw and limit the extent of set of the teeth, the adjustable plate N, provided with points V, for limiting the depth of set, and the anvil, substantially as set forth.

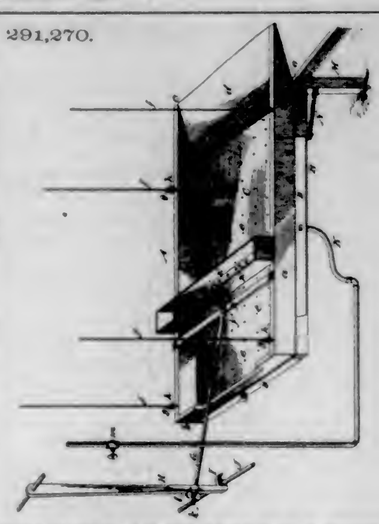
291,270. ORE-CONCENTRATING MACHINE. JOHN W. BAILEY, Denver, and SUMNER B. WARFIELD, Holy Cross, Colo. Filed Sept. 3, 1883. (No model.)

Claim.—1. The combination, in an ore-concentrator, of a box or receptacle containing a perforated diaphragm, a water-pipe communicating with the box below the diaphragm, and devices for imparting a concussive blow to the box, substantially as set forth.

2. The combination, in an ore-concentrator, of a pendent box or receptacle containing a perforated diaphragm, a water-pipe communicating with the box below the diaphragm, a feed-hopper having a perforated bottom, and devices for imparting a concussive blow to the said pendent box, substantially as set forth.

3. The combination, in an ore-concentrator, of a pendent box or receptacle containing a perforated diaphragm, a water-pipe communicating with the said box below said diaphragm, devices for imparting to the box a concussive blow, and means for regulating the violence of said blow, substantially as set forth.

291,270.

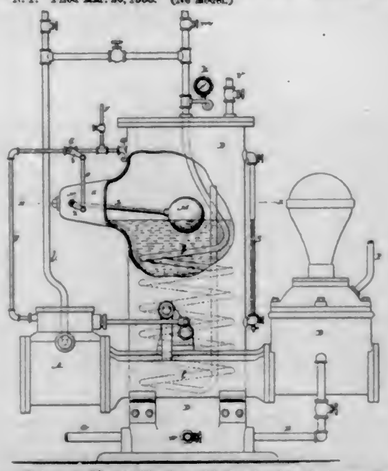


4. The combination, in an ore-concentrator, of a pendent box or receptacle containing a perforated diaphragm having one end inclined, a water-pipe communicating with the pendent box below the diaphragm, and devices for imparting a concussive blow to the said box or receptacle, substantially as set forth.

5. The combination, in an ore-concentrator, of a pendent box or receptacle containing a perforated diaphragm having one end inclined, a water-pipe communicating with the pendent box below the diaphragm, a removable drawer or tray, O, and devices for imparting a concussive blow to said pendent box, substantially as set forth.

6. The combination, in an ore-concentrator, of box A, having a diaphragm, C, pendent bar H, cam I, rod G, post M, and contracting-springs N, substantially as and for the purpose described.

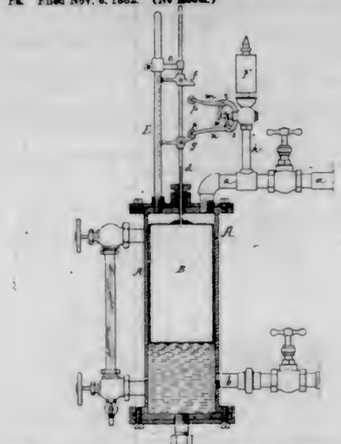
291,271. PUMP-REGULATING DEVICE. JAS. H. BAKER, New York, N. Y. Filed Mar. 26, 1883. (No model.)



Claim.—1. The combination, with the closed vertical vessel D and the pipe for supplying the water of condensation to the same, of a horizontal steam-pump, the frame of which is bolted to the side of the water-vessel, a pipe from the water-vessel to the pump, and a pipe from the pump to the boiler, a steam-pipe from the boiler to the engine, and a cock in the same, a float within the closed water-vessel D, a lever and a rock-shaft passing through a stuffing-box upon the water-vessel, and a lever and link from the rock-shaft to the steam-valve, substantially as set forth, whereby the water of condensation within the closed water-vessel is made to operate the steam-valve, substantially as set forth.

2. The combination, with the steam-pump and the closed water-vessel D, of the steam-valve G, a float and lever within the vessel, and a connection to the valve to open and close the same, the coil *t* within the water-space of the vessel D, and the exhaust-pipe and cocks, to cause the steam from the engine to pass into said coil or to escape to the atmosphere, substantially as set forth.

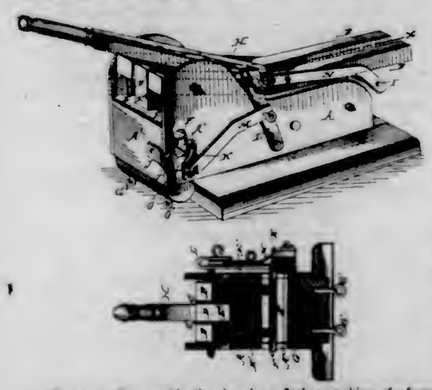
291,272. LOW-WATER ALARM. WILLIAM T. BATE, Conshohocken, Pa. Filed Nov. 6, 1882. (No model.)



Claim.—1. The combination of the vessel A, communicating with the steam and water spaces of the boiler, the float B, having a stem, *d*, with an adjustable tappet, *f*, and alarm-whistle and its valve, and a lever, *m*, adapted to act directly upon the stem of the valve, and projecting into the path of the tappet *f*, as set forth.

2. The combination of the whistle-valve having a stem, *w*, two levers, *m* and *n*, both adapted to act directly upon said stem, the vessel A, and a float, B, having a stem, *d*, with tappet or tappets for actuating the levers *m* and *n*, as set forth.

291,273. HOOP-FLARING MACHINE. JOHN BAUMLE, Milwaukee, Wis. Filed Oct. 26, 1883. (No model.)

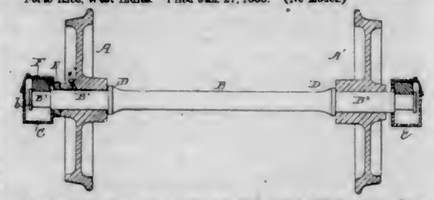


Claim.—1. The combination, in a hoop-flaring machine, of a frame provided at its head or forward end with a transverse slot or opening through which the hoops are passed, a bed-plate adjustably secured in the bottom of the said slot or opening, adjusting-screws by which the said plate is vertically adjusted, a flaring-block working in the upper part of the transverse slot or opening, and provided with flanges upon either edge of its lower curved face, and means or mechanism by which the said block is operated.

2. The combination, in a hoop-flaring machine, of a frame provided at its head or forward end with a transverse slot or opening through which the hoops are passed, a bed-plate adjustably secured in the bottom of the said opening, adjusting-screws by which the said plate is vertically adjusted, a flaring-block working in the upper part of the transverse slot or opening, and provided with flanges upon either edge of its lower curved face, two vertical sliding posts having their lower ends rigidly secured to the upper side of the flaring block at an equal distance from either end, and having their upper ends pivotally connected by means of a movable metal block to the forward end of two pivoted weighted arms, a metal block pivotally connecting the vertical posts and the forward ends of the two pivoted weighted arms, two pivoted weighted arms having their forward ends connected to the upper ends of the vertical sliding posts, and a pivoted operating-lever by which the free ends of the said arms are operated, all constructed and combined to operate substantially in the manner and for the purpose shown and set forth.

3. The combination, with a hoop-flaring machine of the described construction, of a metal block provided with a curved side, and rigidly secured upon one side of the frame of the machine immediately in advance of one end of the transverse slot or opening through which the hoops pass, a curved metal plate hinged at one end to the rear side of one end of the transverse slot or opening, and a pivoted lever and suitable pitmen for connecting the said hinged plate to the end of the main operating-lever, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

291,274. CAR WHEEL AND AXLE. JOSEPH BAUTIER, San Juan, Porto Rico, West Indies. Filed Jan. 27, 1883. (No model.)



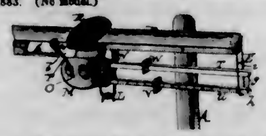
Claim.—The combination of the axle provided with the collar D at each end, a journal, B', for one of the wheels, of slightly less diameter than the bearing B^3 for the other wheel, and a collar, E, for retaining the loose wheel in position upon the axle, with journal-box C and wheels A A', constructed alike, substantially as and for the purpose described.

291,275. BUCKLE. FRANK S. BELCHER and JOHN B. BELCHER, Charlotte, Mich. Filed Aug. 2, 1883. (No model.)



Claim.—In a buckle, the combination of the end bars, F and G, frame-bar D, elevated cross-bars A and A', and half-bars B and B', substantially as shown, and for the purpose described.

291,276. PLATFORM-SCALE. ENOS BELL, Minneapolis, Minn. Filed Sept. 1, 1883. (No model.)

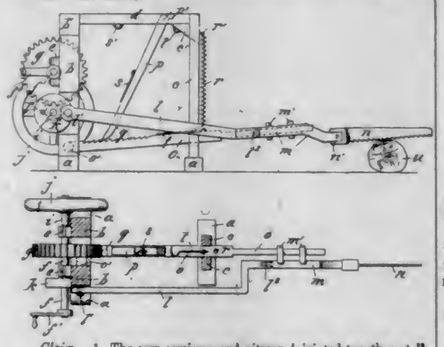


Claim.—1. The combination, in a platform-scale, of a platform, a scale-beam or steelyard having a heel or counter-balance, means, substantially as described, for connecting the beam and platform, a pin or trigger attached to said counter-balance, a gong or alarm, and a hammer or striker having a tail adapted to engage said pin or trigger, and upon the tilting of said beam to be released from the said trigger and cause the hammer to strike the gong, substantially as and for the purpose set forth.

2. In a platform-scale, the combination, with the platform, and a scale-beam having a pin or trigger projecting therefrom, of a pivotal striker having a tail adapted to engage with said trigger, a spring adapted to engage and actuate said striker, as explained, and a gong or other suitable alarm, substantially as and for the purpose set forth.

3. A platform-scale having a platform capable of vertical and swinging movement, a steelyard having scale and tare beams, permanent and removable weights, a spring-held tare-pea or weight, and a suitable pin or trigger, a pivoted spring-actuated striker adapted at its lower end to engage with said pin or trigger, and at its upper end to strike a gong or alarm, substantially as and for the purpose set forth.

291,277. DRAG-SAW. WM. A. BENNETT, Dallas, Tex. Filed Sept. 10, 1883. (No model.)



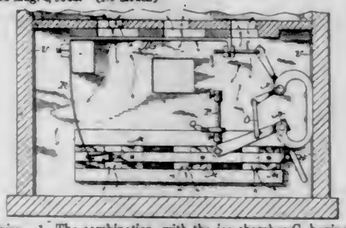
Claim.—1. The saw-carrier *m* and pitman *l*, jointed together at l^3, in combination with a rod, *o*, pivoted to rear posts, *b*, passing through yoke-plates *m'* on the saw-carrier, and laterally secured against posts *c c*, whereby the saw may be prevented from a lateral movement, but permitted a free downward movement, as described.

2. The combination, with the pivoted bar *o*, having a rack thereon and connected with the saw-carrier by yoke-plates *m'*, of the pawl *p*, pivoted at *p'*, whereby the saw may be held down to its work, as described.

3. The combination, with a pivoted saw-carrier, of the pivoted rack-bar *o*, connected therewith by yoke-plates *m'*, and the spiral spring *r*, the latter attached to said rack-bar and to the upper part of the frame, as shown and described.

4. The combination, in a sawing-machine, of the saw-frame, shafts *f i*, balance-wheel *j*, crank-disk *k*, pitman *l*, saw-rod *m*, having guide-eyes *m'*, pivoted bar *o*, having rack *q*, the gravity-pawl *p*, and the balancing-spring *r*, substantially as shown and described.

291,278. REFRIGERATOR. CHARLES J. BERENS, Washington, Ind. Filed Aug. 2, 1883. (No model.)



Claim.—1. The combination, with the ice-chamber C, having air-passages D in or about its bottom, of the slides E, pivoted arms F, and rod G, projecting outside the refrigerator, substantially as shown and described.

2. The combination, with the ice-chamber C, having air-passages D in or about its bottom, of the slides E, pivoted arms F, adjustable supports F', and the graduated rod G, arranged to project without the refrigerator, substantially as shown and described, whereby the quantity of cold air admitted to the refrigerating-chambers may be regulated, as specified.

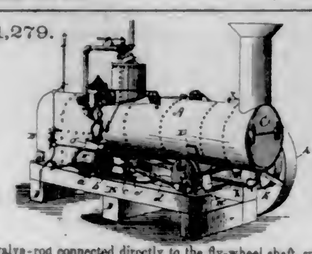
3. The removable walls K L, having openings therein, in combination with the weight or spring actuated slides M, having slotted arms V, and the rock shaft or shafts N, having arms with which said slotted arms engage when said walls are being placed in position, substantially as shown and described.

4. The combination of the weight or spring actuated slides M, the rock-shafts N, having arms engaged with said slides, the vertical arm P, pivoted to an arm on one of the rock-shafts, and the window-sash having an arm, Q, sliding on the arm P to adapt the window to set on the slides only at the beginning of its movement when being lifted and at the end of its movement when being let down.

291,279. PORTABLE STEAM-ENGINE. ROBERT M. RIGGS, Hughesville, Pa. Filed June 1, 1883. (No model.)

Claim.—1. The combination, in a portable engine, of a horizontal steam-cylinder mounted on a base-frame, a steam-boiler mounted on the same frame independently of the said cylinder, a transverse fly-wheel shaft below the boiler-shell, a steam-chest having an inclined valve-seat,

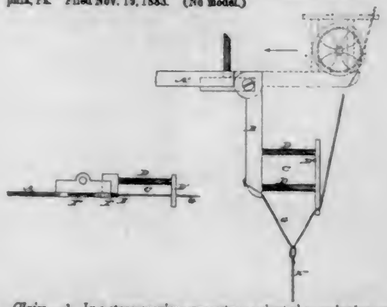
291,279.



and a valve-rod connected directly to the fly-wheel shaft, substantially as described.

2. The combination, in a portable engine, of a horizontal steam-cylinder, a fly-wheel shaft arranged in the same horizontal plane as the said cylinder, a steam-chest having an inclined valve-seat, and a valve-rod connected directly to the fly-wheel shaft, substantially as described.

291,280. STORE-SERVICE APPARATUS. ISIDORE BERGE, Philadelphia, Pa. Filed Nov. 19, 1883. (No model.)



Claim.—1. In a store-service apparatus, a pivoted or swinging arm, provided with a cord adapted to yield and form a loop for supporting the carrier to be raised or lowered, substantially as and for the purpose set forth.

2. An elevating device for store-service apparatus, consisting of a pivoted or swinging arm, a guard, and cord, substantially as and for the purpose set forth.

3. A lowering device for store-service apparatus, consisting of a pivoted or swinging arm, a guard and cord, and stops on said arm, substantially as and for the purpose set forth.

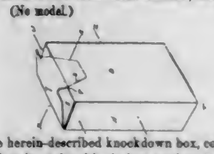
4. In store-service apparatus, a pivoted or swinging arm provided with a stop, F, for preventing descent of the carrier from the rail, and a pivoted stop, E, for preventing return of said carrier from said arm to the rail, substantially as and for the purpose set forth.

5. In store-service apparatus, a switch consisting of a frame connecting the ends of rails of different elevations, and a descending arm adapted for directing a carrier from a branch to the main rail, substantially as and for the purpose set forth.

6. A gravitating arm or switch-rail, an arched frame, the main rail, and branch rail, combined and operating substantially as and for the purpose set forth.

7. Main and branch rails and a switch-rail, in combination with a bridge supporting the main and branch rails at the switch ends, and permitting the passage of the carrier thereunder, as stated.

291,281. KNOCKDOWN BOX. JOHN BLAKELY, Brooklyn, N. Y. Filed Nov. 16, 1883. (No model.)

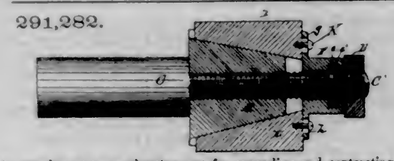


Claim.—The herein-described knockdown box, consisting of a tabular body provided at its ends with closing portions 5 6 7 8, one of said portions being provided with a locking-tongue, as 3, and the opposite portion with a cut, as *r*, located upon the fold-line between said portion and the body of the box, substantially as described.

291,282. LATHE-MANDREL. WILLIAM H. BLEE, Grafton, W. Va. Filed July 27, 1883. (No model.)

Claim.—1. In combination with the shank C, having a reduced screw-threaded portion, C', integral therewith, and the tapered head A with grooves *b* formed therein, the tapered jaws I, provided with means

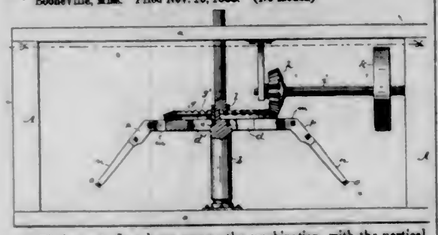
291,282.



for attachment to an adjusting-nut for expanding and contracting the jaws, substantially as set forth.

2. In combination with the shank C, provided with a reduced screw-threaded portion, C', forming an attaching means for the grooved head A, the jaws I, secured within said grooved head and connected to a slotted flange, *g*, having an outwardly-extended portion, F, adapted to embrace the flanged and grooved nut D, the parts being organized substantially as shown, and for the purpose set forth.

291,283. HORSE-POWER. CHARLES B. BOREN and JOHN S. BOREN, Booneville, Miss. Filed Nov. 10, 1883. (No model.)



Claim.—1. In a horse-power, the combination, with the vertical shaft *b*, provided with an elevated shoulder, *c*, and a reduced diameter above said shoulder, of the master cog-wheel *g*, having radial arms *g'*, ferrule *l*, ring *d*, and elbow-levers *m n*, substantially as shown and described.

2. In a horse-power, the combination, with the frame A and vertical shaft *b*, provided with an elevated shoulder, *c*, and a reduced diameter above said shoulder, of the horizontal master cog-wheel *g*, having radial arms *g'*, and ferrule *l*, ring *d*, elbow-levers *m n*, having straps *p*, secured to said ring, horizontal shaft *i*, carrying cog-wheel *h* on one end and band-pulley *k* on its opposite end, substantially as described, and for the purpose set forth.

291,284. COMPOSITION OF MATTER FOR MOLDING FRUITS, FANCY-TOPPED TABLES, BIRDS, &c. ELMINA BRADY, Portlandville, N. Y. Filed June 18, 1883. (No specimens.)

Claim.—The herein-described composition of matter from which to mold articles of ornament and utility, consisting of hard stone, common sand, slate stone, white sand, clam-shells, common brick, charcoal, blue clay, water, and linseed-oil in the proportions substantially as herein specified.

291,285. FLOATING FILTER. JOHN H. BREHM, Davenport, Iowa. Filed July 23, 1883. (No model.)

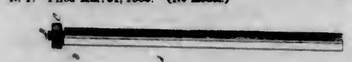


Claim.—1. The combination of a cistern, well, or reservoir, a pump, a suction-pipe connecting said reservoir and pump, a floating filter consisting of an air-chamber and two concentric cylinders of different diameters, the outer cylinder being perforated throughout its circumference, and the space between the cylinders containing filtering material, and a flexible pipe connecting said filter and suction-pipe, substantially as described.

2. A floating filter consisting of an air-chamber and two concentric cylinders of different diameters, the outer cylinder being perforated throughout its circumference, and the inner cylinder divided by a wire-gauze diaphragm into two chambers, one of which is perforated, the said chambers and the annular space between the cylinders being filled with filtering material of different kinds, substantially as described.

3. A filter-casing consisting of a cylinder of perforated metal having a lining of wire-gauze, the meeting edges of said cylinder being turned outward and overlapped by the wire-gauze lining, and united by means of solder, which enters the meshes of the outturned wire-gauze lining substantially as described.

291,286. ZINC FOR BATTERIES. HORATIO J. BREWER, New York, N. Y. Filed Mar. 31, 1883. (No model.)



Claim.—The combination of the zinc A, the thread B, permanently cast in the zinc A, and the zinc nut C, screwing upon the thread B, substantially as described.

291,287. FLYING TARGET. J. SMITH BRIGGS, Kankakee, Ill. Filed Nov. 5, 1883. (No model.)



Claim.—1. The combination, with a hollow perforable flying target containing dust, of means upon the target, constructed to give a rotary motion thereto during its passage through the air, substantially as described.

2. The combination, with a hollow perforable flying target containing dust, of wings upon said target, constructed to give a rotary motion thereto in its passage through the air, substantially as described.

3. The combination, with the hollow flying target, composed of paper or similar perforable material, containing dust, of wings upon said target, constructed to give a rotary motion thereto in its passage through the air, substantially as described.

4. A hollow perforable flying target containing dust and provided with spiral wings in front, and a tail, substantially as described.

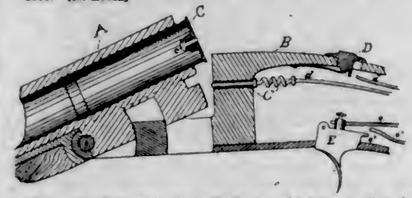
5. A hollow dust-filled flying target, composed of a paper tube flattened at its ends, so as to form deflecting-surfaces, constructed to give a rotary motion thereto in its passage through the air, substantially as described.

6. A flying target composed of a paper tube flattened at its ends in intersecting planes and containing dust, substantially as and for the purpose set forth.

7. A flying target composed of a paper tube flattened at its ends in transverse planes, and having its flattened portion at its front end bent to form wings a', and its flattened rear portion extended to form a tail, a^2, substantially as described.

8. A hollow perforable flying target containing dust, and provided with an inwardly-opening valve, a^4, in its front portion, substantially as and for the purpose set forth.

291,288. ELECTRIC FIRE-ARM. ALEXANDER T. BROWN, Syracuse, N. Y., assignor of one-half to Lyman C. Smith, same place. Filed Aug. 27, 1883. (No model.)



Claim.—1. The combination, with the breech of a gun, of an induction-coil, a trigger, and metallic connections from the primary circuit of the coil to the trigger, as set forth.

2. The combination, with the breech of a gun, of an induction-coil, a metallic connection from the primary circuit of the coil to the trigger, a metallic connection from said primary circuit to the neighborhood of the trigger, and a trigger pivoted as described, so that when pulled it may come in contact with said last-mentioned metallic connection.

3. The combination, with the breech of a gun, of the induction-coil, the wire *d*, passing through the breech-block, but insulated therefrom, the wire *d'*, connected to the frame of the gun, and the primary circuit-wires *e f* in electrical circuit with the coil by means of the trigger, all substantially as described.

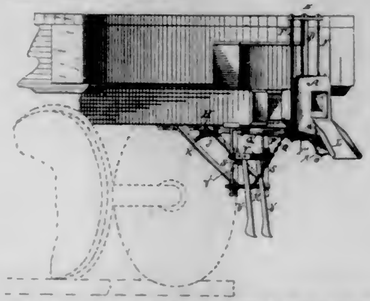
4. The combination, with the stock of a gun and with the conducting-wire, of an electrical firing device contained therein, and of a safety device, substantially such as described, whereby the connection may be broken, substantially as set forth.

5. The combination, with the stock of a gun, of wires, as *d d'*, connecting the frame with the battery or coil, a safety-button, as D, to break the connection or close the same, and a firing-trigger independent of said safety device, constructed to close the circuit, substantially as described.

6. The combination, with the stock of a gun, of an electric battery or coil, a wire or metallic connection insulated from the frame and leading to the cartridge-chamber from said battery or coil, a metallic connection from said battery or coil leading to the metallic frame of the arm,

and a push-button by which the continuity of the last-mentioned metallic connection may be broken, substantially as described.

291,289. CAR-COUPLING. JOHN C. BRYAN, Holly Springs, Ark. Filed Oct. 17, 1883. (No model.)

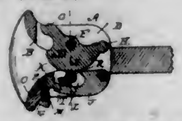


Claim.—1. The combination of the frame E, having cross-bar F, the apron L, having adjustable arms hinged on said bar, the spring or lever O, loosely mounted on said bar, and the chain Q, for holding one end of the spring or lever, substantially as shown and described.

2. The combination of the frame E, the apron L, the spring O, the chain Q, the hangers S, the forked and slotted bar G, and clip H, substantially as shown and described.

3. The combination of the frame E, carrying the pin D, the spring-actuated plate C, for supporting the pin, and the swinging arms U and hangers S, substantially as shown and described.

291,290. CAR-COUPLING. GEORGE W. BUTLER, Knoxville, Tenn. Filed Oct. 31, 1883. (No model.)



Claim.—1. In a car-coupling, the herein-described draw-head, having interiorly-located central longitudinal ribs on its upper and under sides, and provided with a central longitudinal slot extending through the said ribs, in combination with a coupling-hook pivoted in the said slot in the upper part of the draw-head, and a latch pivoted in the said slot in the lower part of the draw-head, substantially as set forth.

2. The combination of the longitudinally-slotted draw-head, the coupling-hook pivoted in the upper part of the same, and consisting of a plate having a downwardly-extending curved pin or hook, an upwardly-extending handle, and a rearward bulging extension overbalancing the front part of the plate, a latch pivoted in the lower part of the draw-head, adapted to engage the pin or hook of the coupling-plate, and means for operating the said latch, substantially as set forth.

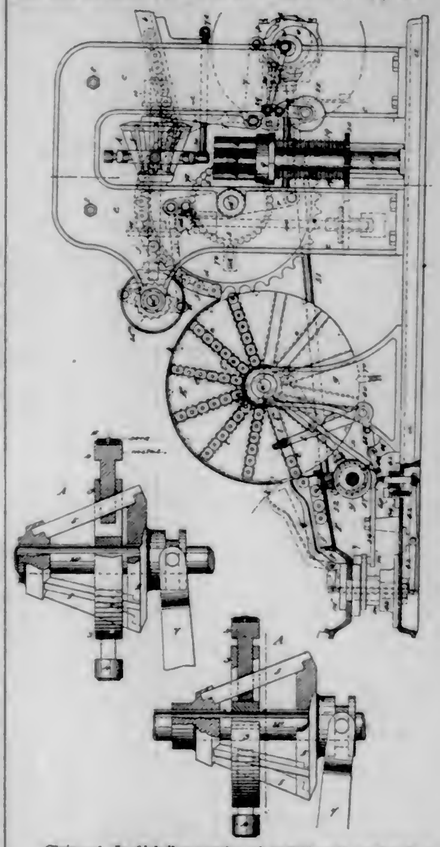
3. The combination of the longitudinally-slotted draw-head, the coupling-plate pivoted in the upper part of the same, the latch-plate J, having latch K, recess L, and stud M, the spring N, supported upon a lug, O, extending from the draw-head, and the transverse shaft R, having crank S and tongue T, substantially as set forth.

4. In a car-coupling, the combination, with the draw-head, of a transverse shaft having loosely-mounted arms provided with laterally-projecting shoulders and fixedly-secured disks adjoining the said arms, and provided with teeth adapted to engage the under sides of the shoulders of the latter, substantially as and for the purpose set forth.

5. As an improvement in car-couplings, the combination of the draw-head having the interior longitudinal ribs and a central longitudinal slot, the coupling-plate E, pivoted in the upper part of the draw-head, the latch J, pivoted in the lower part of the draw-head, the transverse shaft R, the tongue T, mounted upon the same in the central slot, the arms U, mounted loosely upon shaft R adjoining the central rib, and having laterally-projecting shoulders, disks mounted securely upon shaft R adjoining the arms U, and having teeth engaging the shoulders of the latter, and mechanism for operating the shaft R, substantially as set forth

291,291. MACHINE FOR LABELING SPOOLS. SØREN A. CALMAR and HENRY W. CARR, Arlington, N. J. Filed Dec. 1, 1882. (No model.)

Brief.—The spools are first fed into a hopper, which conveys them into the peripheral notches or recesses of a drum revolving step by step the extent of one such recess at each step. By this wheel they are carried between two of two radial series of stampers, which are by suitable mechanism rotated in steps synchronously with the drum, and also reciprocated radially at the end of each step, to remove the labels from an automatically-rising receptacle, moisten their gummed sides, and attach them to the spools, held as above stated. The spools are then carried forward to be dropped successively into two parallel chutes, a number of which are disposed radially in an intermittently-rotary drum, which is shifted laterally to enable both of its parallel series of chutes to be filled. The spools are finally delivered in a stated number into boxes located on a horizontally and intermittently rotating table, whence the filled boxes are removed by the operator and replaced by empty ones.



Claim.—1. In a labeling-machine substantially such as set forth, a rotary stamping device provided with a radial series of stampers, in combination with means for advancing the spools step by step and for revolving the series of stampers in coincident steps, and means, substantially as described, to diverge the series at the pause between the steps and to retract the same at the next step, substantially as herein set forth.

2. In a labeling-machine such as set forth, the combination, with means to advance the spools one by one with intervening pauses, of an intermittent rotary stamping device provided with a radial series of stampers operating in relation with the spools, together with a reservoir of labels and a moistening-pad arranged in relation with two of said stampers, so arranged that three of said stampers act at the same time—one picking up a label, another moistening the previous label, and a third sticking the label previously moistened onto the spool-head—substantially as herein shown and described.

3. In a labeling-machine of the kind set forth, the combination, with an intermittent rotary label-stamping device provided with a radial series of reciprocating plungers or pickers, of a label-holding tube or reservoir arranged in line with said stampers, with a feeding-piston to force the column of labels toward the stampers, and means, substantially as described, for propelling said piston to advance the labels in correspondence with the strokes of the stamper, substantially as herein set forth.

4. In a labeling-machine of the kind set forth, the combination, with a label picking and stamping device, of a series of label-holding tubes or

reservoirs mounted on a rotary or movable support arranged to present one of the reservoirs in line with the picker, with a retaining-catch to hold the same in said position, and with means tending to move said support so as to remove one reservoir from under the picker and present another one in its place, and with a tripping device arranged to release said catch and thus cause the change in the position of the reservoirs when the one in action becomes exhausted, substantially as herein shown and described.

5. The combination, in a labeling-machine of the described kind, with an intermittent rotary spool-wheel, *d*, of the intermediate rotary stamper or stampers, A, relatively arranged substantially as shown, with a ratchet-feeding device for revolving said wheel step by step, and a distinct ratchet-feed device for revolving said stamper or stampers step by step, and an operative connection between the two feeds and a single reciprocating motive device, substantially as described, actuating one of said ratchet-feeds, whereby both wheel and stampers are moved in coincident steps by the same motive impulses, substantially as herein set forth.

6. In a labeling-machine substantially such as set forth, the label-feeding mechanism, consisting of a label-reservoir, 8, propelling-piston 19, formed as a rack, a pinion engaging therewith and operated through connections, substantially as described, by the worm 25, and a ratchet-feeding device for revolving said gearing step by step and thus moving said piston in steps corresponding to the thickness of the labels, or nearly so, substantially as herein set forth.

7. In a labeling or branding machine, such as set forth, the stamping device A, consisting of an intermittently-rotary disk, 3, provided with a radially sliding series of projecting stampers, 4, with the axially-sliding cone 5, engaged with said stampers, whereby the latter are reciprocated as the cone is slid to and fro, substantially as and for the purpose set forth.

8. In a labeling-machine such as set forth, a label picking and applying device, faced with a solid or semi-solid adherent composition adapted to temporarily adhere to the label without giving off any appreciable amount of its substance thereon when subsequently detached, substantially as herein shown and described.

9. In a spool labeling and packing machine such as described, the combination, with a device for arranging and delivering the spools in regular groups, of the intermittently-movable packing-table F, adapted to hold a series of boxes for receiving said groups successively, with means, substantially as described, for moving said table in steps corresponding to its boxes and coincident with the delivery of each group of spools from the arranging device, substantially as herein shown and described.

10. The combination, in a labeling or branding machine substantially such as set forth, with means, substantially as described, for advancing the labeled spools one after the other, of the receiving and arranging drum E, having a series of radial chutes adapted to receive said spools in regular groups, an intermittently-movable table placed in conjunction with the delivery-point of said drum, and adapted to hold boxes for receiving said groups, and means for rotating said drum and table in steps corresponding to the receipt of each group of spools, and for depositing each group successively in the boxes of said table, substantially as herein set forth.

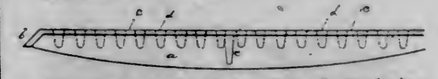
11. In a labeling and packing machine substantially such as set forth, the combination, with the rotary arranging-drum E, having a series of radial arranging-chutes, of the rotary packing-table F, provided with radial sockets for packing boxes, and revolving in a plane at right angles to the plane of the drum, or nearly so, with feed mechanism for rotating the drum in steps corresponding to its chutes, and a feed mechanism for rotating the table in steps corresponding to its boxes, together with operative connections between the two, whereby a box on the table and a chute in the drum are brought into coincidence at each step, all substantially as described, and for the purpose set forth.

12. In a labeling or branding machine substantially such as set forth, adapted to advance a single line of labeled spools, the arranging-drum E, provided with a radial series of chutes of twice the width of said spools, arranged to receive the labeled spools from the advancing device, with means for revolving said drum in intermittent steps corresponding to its chutes, and means for shifting said drum from side to side during the pause between each step, so as to receive a parallel group or line of spools in each side of its chute, all substantially as described, and for the purpose set forth.

13. In a spool labeling and packing machine such as described, the combination, with a device for arranging and delivering the spools in regular groups, with the packing-table F, adapted to support boxes to receive said groups in succession, and with the swinging lid *q*, arranged to cover said boxes and act to guide the spools therein at the moment of delivery, of means, substantially as described, for operating said lid in relation with the movements of its co-operating parts, as herein shown and described.

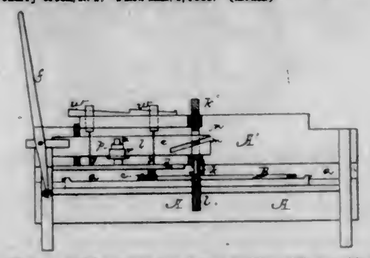
14. The combination, with the drum E and table F, formed and arranged relative to each other, substantially as described, of the discharging device *l l*, and means for operating the same in relation with the motions of said drum and table, substantially as and for the purpose set forth.

291,292. GRATE-BAR. WILLIAM H. CANBY, East Saginaw, Mich. Filed June 23, 1883. (No model.)



Claim.—As an improved article of manufacture, the grate-bar herein described, consisting of the vertical longitudinal side flanges, *a*, having convex lower edges and tapering toward each end, the transverse end connections having sloping portions *b*, extending from side flange to side flange, and to the lower edges of the side flanges, the series of oblique transverse bars *d*, alternating with oblique slots, and extending from side flange to side flange, and the vertical transverse central brace, *e*, connecting the side flanges and extending nearly to the convex edges thereof, the whole formed entire and without marginal projections or lugs, as shown and described.

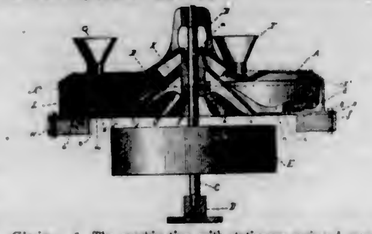
291,293. PAPER-PERFORATING MACHINE. ISRAEL C. CARPENTER, Cherry Creek, N. Y. Filed Mar. 5, 1883. (Model.)



Claim.—1. The combination, in one machine, of the punching devices *s k k' w n*, the carriage B, having the rack *c*, the ratchet-bar *d d'*, and the guide *p r s u*, all operated by the lever *f*, substantially as and for the purpose specified.

2. In combination with the punching devices *f e k k'* and carriage B, the ratchet-wheel *g*, grooved wheel *g'*, ratchet *i*, lever *j*, and rope *h h*, for drawing said carriage forward, all arranged and operating substantially as and for the purpose specified.

291,294. ORE-REDUCING APPARATUS. NELSON CLEMENT, Chicago, Ill. Filed July 24, 1883. (No model.)



Claim.—1. The combination, with stationary casing A, provided with an inlet-spout, F, and ribs *d*, of shaft C, and cone J, provided with ribs *m*, the parts constructed to bring two bodies of ore in contact and reduce the same by attrition, as described and shown.

2. The stationary casing A, provided with inlet-spout F, outlet-spout G, and ribs *d*, in combination with revolving cone J, provided with ribs *m*, and the fans K, as described and shown.

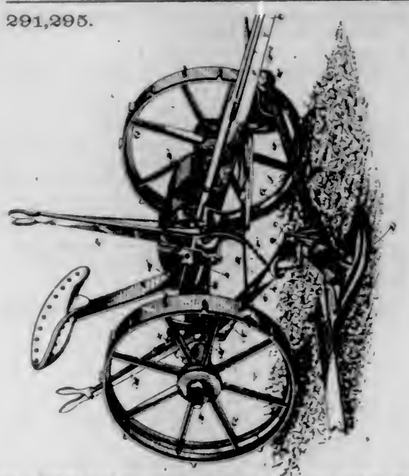
291,295. HARVESTER. SAMUEL C. COBB and NELSON A. WHEELER, Janesville, Wis., assignors to the Janesville Machine Company, same place. Filed July 9, 1883. (No model.)

Claim.—1. In a harvester, the combination, with the main axle, a cam or eccentric shaft, and pinions on said axle and eccentric-shaft, of a handle secured to the cam or eccentric shaft, a catch, *d'*, pivoted to the handle and provided with an arm, *f*, adapted to engage a projection on the frame and retain the pinions in engagement, substantially as set forth.

2. In a harvester, the combination, with the main axle, a cam or eccentric shaft, and pinions on said axle and cam-shaft, of a catch pivoted to the handle, said catch having an arm adapted to engage the under side of a projection on the shell or frame, and a spring interposed between the handle and catch for preventing the accidental displacement of the latter, substantially as set forth.

3. The combination, with the main frame having a hemispherical bearing formed in its outer end, of the connecting-bar having a spheroidal

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end, a hemispherical cap, and a bolt for securing the parts together, substantially as set forth.

4. The combination, with the main frame, a straight connecting-bar connected at one end to the main frame, substantially as described, so as to have a vertical and rocking movement, and a thrust-bar pivotally secured at one end to the main frame, and at its other end provided with a collar, in which is supported and allowed to rotate the free end of the connecting-bar, of a shoe hinged to the free end of the connecting-bar at a point in advance of the cutter-bar, and an arm, connecting-rod, and hand-lever for imparting rotary adjustment to the connecting-bar, substantially as set forth.

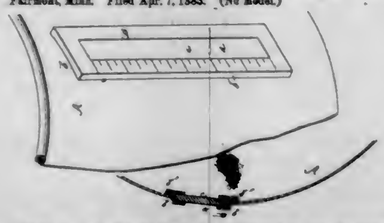
5. The combination, with the connecting-bar, hinged shoe, and thrust-bar provided with a collar at its forward end, in which is supported and allowed to rotate the outer end of the connecting-bar, of a gag-iron for tilting the shoe, a hand-lever, and a chain connecting the gag-iron and thrust-bar with said handle, substantially as set forth.

6. The combination, with the hinged shoe, of a combined rotary and reciprocating gag-iron, a hand-lever, and a chain connecting the hand-lever and gag-iron, substantially as set forth.

7. The combination, with a hinged shoe, an elongated bearing having a spiral slot connected with the hinge-section, and a gag-iron provided with a lug that engages said spiral slot, and with an arm at its upper end, of a hand-lever and a chain connecting the hand-lever and the arm on the gag-iron, substantially as set forth.

8. The combination, with the connecting-bar, the vertical box or bearing having a spiral slot therein, the shoe having a finger which rests under the box, and the thrust-bar, of an L-shaped bolt having a laterally-projecting lug which moves in the spiral slot of the box or bearing, and device for turning the bolt.

291,296. CREAM-GAGE FOR MILK-CANS. CLARENCE L. COLBY, Fairmont, Minn. Filed Apr. 7, 1883. (No model.)



Claim.—1. In a cream-gage, the combination of the can formed with an opening in its side, of the blank or frame B, stamped from a single piece of metal, with the usual gage-marks, the flange *b*, opening *a*, and wings *b'*, and glass panel *c*, the said wings being bent over backward upon themselves at a point so as to leave a narrow projecting double flange or wings *b'*, extending and overlapping the glass panel *c*, substantially as and for the purpose set forth.

2. In a cream-gage, the combination, with a transparent frame, of a sheet-metal frame formed with the opening *a* and flanges *b*, said flanges being bent outward and then back upon themselves, and overlapping the panel, thus forming wings *b'*, adapted to be secured to the sides of the can, substantially as and for the purpose set forth.

291,297. PENCIL. RICHARD M. COLLARD, New York, N. Y., assignor to Leroy W. Fairchild, same place. Filed July 2, 1883. (No model.)

Brief.—A holder and a presser tube, with a spring located in the former, are constructed and arranged in such relation to each other that a stub of lead may be conveniently ejected from its carrier.



Claim.—1. The combination, with the holder and presser tubes, movable with relation to one another for the purpose of clamping and releasing the pencil-lead, of an ejecting-spring located in the holder-tube in position to be compressed by the lead inserted in said tube, substantially as and for the purposes hereinbefore set forth.

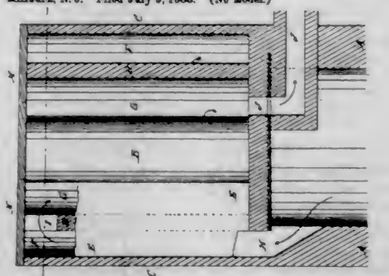
2. The combination, with the holder and presser tubes, movable relatively to one another for the purpose of clamping and releasing the pencil-lead, of an ejecting-spring located in the holder-tube in position to be compressed by the lead inserted in said tube, and a retracting-spring which normally holds said tubes in a position in which they clamp and hold the pencil-lead in place against the stress of the compressed ejecting-spring, substantially as hereinbefore set forth.

3. The combination, with a pencil-case or sheath, a lead-carrier longitudinally movable therein, having a lead-holding socket composed of holder and presser tubes longitudinally movable with respect to one another, and an ejecting-spring in the holder-tube, as described, and means for propelling said carrier in said case, of a stop by which the forward motion of the outer or presser tube is limited, substantially as and for the purposes hereinbefore set forth.

4. The lead-carrier consisting of the presser and holder tubes, combined with ejecting and retracting springs, substantially as hereinbefore described, in combination with the pencil-case, in which the carrier is movable longitudinally, means for propelling said carrier therein, and a stop to limit the forward movement of the presser-tube, these instrumentalities being combined and adapted to co-operate substantially in the manner and for the purposes hereinbefore set forth.

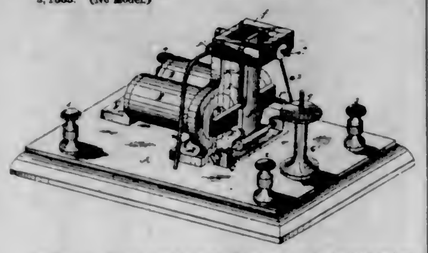
5. The straight-slotted guide-tube, the spirally-slotted rotary propelling-sleeve, and the lead-carrier longitudinally movable in said guide-tube, and composed of the presser and holder tubes, combined with ejecting and retracting springs, substantially in the manner hereinbefore described, in combination with a pin or projection on said holder-tube, which extends through the straight slot of the guide-tube into the spiral slot of the propelling-sleeve, and a stop arranged and operating to arrest the forward movement of the presser-tube at a predetermined point, substantially as and for the purposes hereinbefore set forth.

291,298. RETORT DEOXIDIZING-FURNACE. ISRAEL D. CONDIT, JR., Millburn, N. J. Filed July 5, 1883. (No model.)



Claim.—The deoxidizing-furnace having the inner and outer chambers, F G, the central retort, B, the inner wall, D, having the series of concentrically-arranged retorts B, and the partition E, extending from the central retort, B, through the outer chamber, F, the bottom of the latter having the inlet-opening H on one side of the partition E, while the inner wall, D, has an opening or passage, I, at its upper end on the opposite side of the partition, the bottom of the inner chamber having an outlet-opening, J, substantially as and for the purpose set forth.

291,299. PROTECTOR FOR TELEPHONIC AND TELEGRAPHIC INSTRUMENTS. ANTHONY A. CONNOLLY, Washington, D. C. Filed Apr. 3, 1883. (No model.)



Claim.—1. A protector of electrical instruments from abnormal currents, comprising an electro-magnet adjusted to respond only to abnormal currents, a normally-open earth-circuit, and suitable contacts and connections, whereby an abnormal current crossing either the incoming or outgoing line of the protected instrument will pass through said magnet and direct the current to ground, the abnormal current from either direction being made to follow the same path through the magnet to ground, substantially as described.

2. A protector for electrical instruments, comprising an electro-magnet adapted to respond to only abnormal currents, a normally-open earth-circuit, and suitable contacts and connections, whereby an abnormal current crossing the outgoing line will energize the magnet, and by the movement of its armature be provided with a circuit to the incoming line and thence through the magnet to ground, the instrument to be protected being by the movement of said armature cut out of the circuit, substantially as described.

3. In an electro-magnetic device for the protection of electrical instruments from abnormal currents, the combination, with an electro-magnet and its armature for short-circuiting or diverting the abnormal currents to earth, and a normally-open earth-circuit, of contact-points on either side of said armature, and diverted circuits leading therefrom, substantially as described, whereby an abnormal current crossing the main line on either side of the protected instrument will pass through the coils of the magnet in the one and the same direction and reach earth by the one path.

4. In an instrument for protecting electrical apparatus from abnormal currents, the combination, with an electro-magnet adapted to respond to only such abnormal currents, and wound in single continuous helical form, of a conducting-armature, a normally-open earth-circuit and back stop normally in circuit with the protected instrument, and suitable contacts and shunt or diverted circuits, substantially as described, whereby an abnormal current crossing the main line on either side of the protected instrument will be caused to energize said magnet, and through the same effect a diversion, short circuit, or shunt to earth.

5. In an automatic electrical protecting-switch, the combination, with the electro magnet or magnets B, conducting-armature F, and back stop, c^2, arranged and adapted to be in normal circuit with the main line, of the diverted line circuits or shunts *l m*, short earth-circuit *d''*, and contacts *d f f'*, substantially as and for the purpose described.

291,300. TRACTION-ENGINE. HAMILTON M. CORBACK, Malden, Mass. Filed Sept. 11, 1883. (No model.)

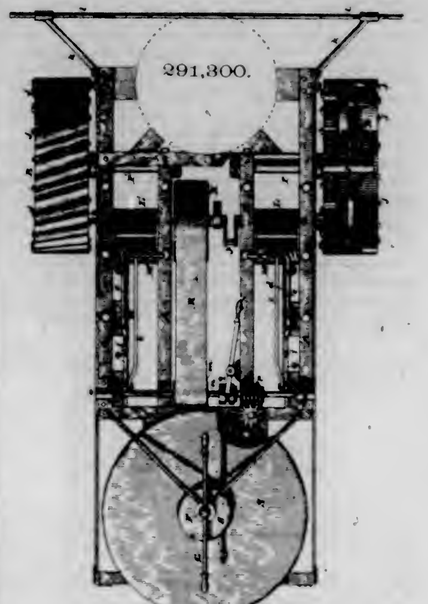
Claim.—1. In a traction-engine, a reversing-gear consisting of a wheel mounted upon a fixed axis, and provided with both an internal and an external gear, and a pinion mounted upon a movable axis, and provided with means for revolving the same, and adapted to be moved from one gear to the other without stopping the engine.

2. In a traction-engine, the combination of a wheel provided with both an internal gear and an external gear, a pinion adapted to engage with either of said gears, a pair of friction-gears for driving said pinion, and mechanism adapted to move said pinion from a position in contact with one of said gears to a position in contact with the other, and at the same time to throw the friction-gears out of and into contact with each other, substantially as and for the purposes described.

3. In a traction-engine, the combination of the wheel B, provided with the external gear, *h*, and internal gear, *i*, the pinion *g*, secured to the friction-gear O, and both mounted in the swinging frame M, the friction-gear L and means of imparting motion thereto, the connecting-rod *c*, and the lever *d*, provided with means for holding it in any required position, all substantially as and for the purposes described.

4. In a traction-engine, a traction-wheel provided with a tire made of thin corrugated sheet metal, secured to the rim of said wheel by any suitable means, substantially as and for the purposes described.

5. In a traction-engine, a traction-wheel provided with a tire made of thin diagonally-corrugated sheet metal, secured to the rim of said wheel by means of suitable rods, which pass through the corrugations, and are

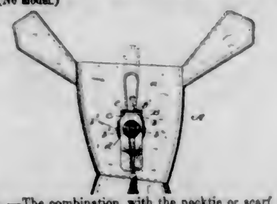


firmly secured at their ends to the opposite sides of the rim of the wheel, substantially as and for the purposes described.

6. In a traction-engine, the combination of the two-speeded drum S, provided with the gear *s*, the worm-gear *p*, shaft *n*, pulley *m*, belt R, pulley K, shaft *a*, and means of rotating the same, all substantially as and for the purposes described.

7. In a traction-engine, the combination of the geared drum S, mounted upon the steering-shaft of the carriage, and suitable means for revolving said drum, substantially as and for the purposes described.

291,301. NECKTIE. WILLIAM C. CROSS, Boston, Mass. Filed Oct. 20, 1883. (No model.)



Claim.—The combination, with the necktie or scarf, of a spring-closed nipper provided with guide grooves or slots, and a collar-button loop-cord, the ends of which pass each through one of said slots and thence out from the nipper, substantially as and for the purposes set forth.

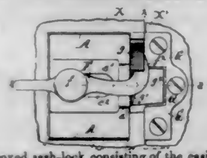
291,302. PREPARATION OF GLUE-STOCK FROM BONES, HORN-PITHS, &c. EDWARD F. CRUSE, Newark, N. J. Filed Nov. 1, 1883. (No specimens.)

Claim.—The process herein described of treating the mother-liquid resulting from the treatment of bones, &c., with hydrochloric acid in the manufacture of glue, the same consisting in adding to said liquid calcic carbonate until the liquid is neutralized; then adding calcic hydrate to precipitate organic matter; then separating the clear calcic chloride from the precipitated impurities; then decomposing the pure calcic chloride by means of sulphuric acid; and, finally, separating the precipitated calcic sulphate and the free hydrochloric acid, by filtration, for use, substantially as specified.

291,303. FASTENER FOR THE MEETING-RAILS OF SASHES. GEORGE W. CURRY, St. Louis, Mo. Filed Jan. 29, 1883. (Model.)

Claim.—1. The improved sash-lock consisting, essentially, of the casing A, having spindle *b*, the arm-connections D D' to bolt *c*, forming part of which is the bearing-plate *c'*, having slot c^2, the spring E, the catch G, having socket g^2, to operate as and for the purposes set forth.

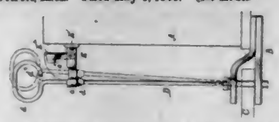
291,303.



2. The improved sash-lock consisting of the casing A, having spindle *b*, the arm-connections D D', the bolt *c*, its bearing-plate *c'*, having slot c^2, the spring E, thumb-lever F, having arm f^2, the catch G, having socket g^2, mortise at *g'*, and bevel-face at g_1 by means whereof both the bolt and the thumb-lever can be secured in the manner and for the purposes set forth.

3. In a sash-lock, the combination with a pivoted thumb-lever, F, having the arms *f''* f^2, the latter provided with lug f^3, the catch G, having mortise *g'* and shoulder at g^2, by means whereof the said lateral arm f^2, engaging the mortise of the catch at same time, brings in engagement the lug f^3 with the shoulder on the catch, substantially as and for the purposes set forth.

291,304. FASTENING DEVICE FOR DRAFT-PINS. JOSEPH W. DAILEY, Detroit, Mich. Filed May 3, 1883. (No model.)

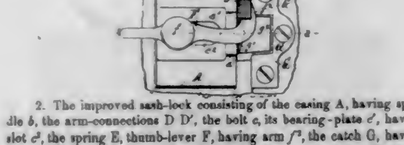


Claim.—1. A fastening for securing draft-pins firmly in place, consisting of suitable embracing-jaws adapted to be secured to the dash-board, and provided with the orifice c^2, communicating with the expanded orifice *c'*, and, in combination therewith, a latch pivoted between said jaws, and adapted, when closed, to hold the draft-pin firmly in the orifice c^2, substantially as described.

2. A fastening for holding a draft-pin firmly in place, consisting of suitable jaws provided with the orifice c^2, communicating with the expanded orifice *c'*, and, in combination therewith, a latch pivoted between said jaws, and provided with a stopper adapted to close into the orifice c^2, the construction being such that when the latch is closed the draft-pin will be held firmly in the orifice c^2, substantially as described.

3. The combination, with a dash-board and draft-pin provided with shoulders *b*, of a fastening consisting of embracing-jaws provided with the orifice c^2 and expanded orifice *c'*, and, in connection therewith, a latch suitably pivoted between said jaws, the construction being such that when the latch is closed the pin will be held firmly in the orifice c^2, and in that position be prevented from displacement by the shoulders *b* beneath the fastening, and by raising the latch the pin may be drawn upward through the orifice *c'*, substantially as described.

291,305. MACHINE FOR CUTTING VEGETABLES. PETER J. DANIS, St. Louis, Mo. Filed July 19, 1883. (No model.)



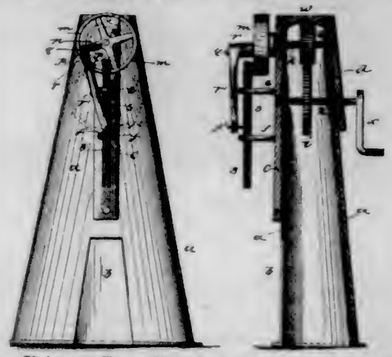
Claim.—1. In a vegetable-cutter, the knives having pintles extending from their rear corners, in combination with a frame having set-screws, the pintles having bearing in the frame to hinge the knives thereto, and the set-screws bearing against the upper and under sides of the knives, the upper set-screws working over the under set-screws.

2. In a vegetable-cutter, the J-bar formed at top with scoring-knives and at bottom with a flange, thumb-screws working through said flange, and a slotted plate for the knives to work through, and in which the thumb-screws work, in combination with a board through which the knife-bar is adjusted, to conceal, and also fully or partly expose, the knives, as set forth.

3. In a vegetable-cutter, the combination of the hinged and adjustable slicing-knives and the J-bar having vertical knives adjustable vertically in relation to the slicing-knives for scoring, or to cut strips, as set forth.

4. The combination, in a vegetable-cutter, of the slicing-knives F, having pintles at their rear corners hinged to the frame, set-screws G H, bearing against opposite sides of the knives, the bar L, having vertical scoring-knives *l*, and horizontal flange L', and the thumb-screws M, to adjust the scoring-knives in front of or beneath the slicing-knives, as set forth.

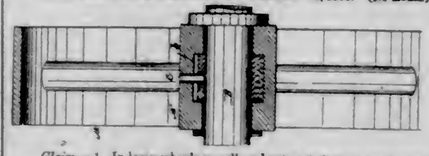
291,306. CHURN. JAMES HOPKINS DANIELL, Prescott, Ark. Filed July 12, 1883. (No model.)



Claim.—1. The combination, with the conical frame *a*, of sheet-iron, made flat on one side and cut away in said flat side near its base, as at *b*, to receive the churn, of the bearing-irons *c d* near its top, for the journals of the shafts *h* and *k*, the spur-gear *i*, pinion *l*, fly-wheel *m*, having the spoke *n*, provided with a plurality of perforations, and pitman *r'*, connected to the plunger-rod working in guide-arms extending from the bearing-iron *c*, and the said rod adapted to connect with the dasher-rod, substantially as specified.

2. In a churning-machine, the conical frame *a*, made of sheet-iron, and having one flat side cut out at *b* near its base to receive the body of a churn, to bring it centrally under the operating-plunger, substantially as specified.

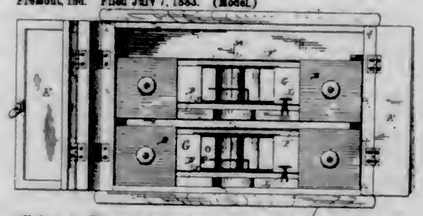
291,307. DEVICE FOR LUBRICATING WHEELS AND PULLEYS. WILLIAM P. DANIELL, Girardville, Pa. Filed Nov. 12, 1883. (No model.)



Claim.—1. In loose wheels or pulleys having their hubs constructed with an interior oil recess or chamber in open communication with the bore of the hub, the combination, with the hub, of an oiling-tube in open communication with the exterior of the hub and arranged to project within said chamber to the full extent of the depth thereof, or thereabout, substantially as specified.

2. The combination, with the hub A' of a loose wheel or pulley having an oil recess or chamber, *b*, arranged to extend around the interior of the hub, of the oiling-tube C, arranged to project within said chamber and so that its inner end is in line, or thereabout, with the bore of the hub, essentially as shown and described.

291,308. CABINET FOR WATCH-CRYSTALS. ORRY H. DAUGHERTY, Fremont, Ind. Filed July 7, 1883. (Model.)



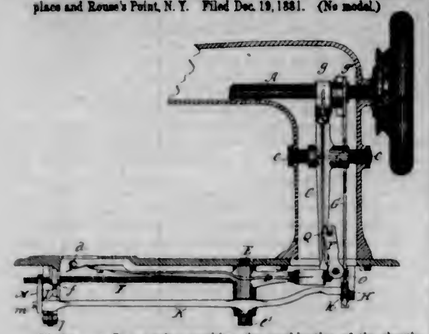
Claim.—1. The combination, in a cabinet, of a number of drawers, and each drawer provided with a wheel or revolving part which has recesses formed in its edge for the purpose of holding watch glasses or crystals, substantially as shown.

2. The combination of a drawer provided with cross-pieces with a revolving wheel having recesses in its edge to receive articles of different sizes, substantially as described.

3. The combination of a drawer provided with cross-pieces with a revolving wheel provided with recesses in its edge, and a spring-snap for holding the wheel in position, substantially as set forth.

4. The combination of a drawer with a revolving wheel having recesses of different sizes made in its edges, with a second smaller wheel which is placed in the middle of the larger wheel, the smaller wheel also having recesses formed in its edges, substantially as specified.

291,309. SEWING-MACHINE. CHARLES W. DAVIS, Montreal, Quebec, Canada, assignor to the C. W. Williams Manufacturing Company, same place and Rouse's Point, N. Y. Filed Dec. 19, 1881. (No model.)



Claim.—1. In a sewing-machine, the combination of the shuttle-lever and push-rod and the pivoted lever K, operated independently from the driving-shaft and connected to the push-rod.

2. The combination of the driving-shaft and the pendent lever G with the incline H and the sliding bar O.

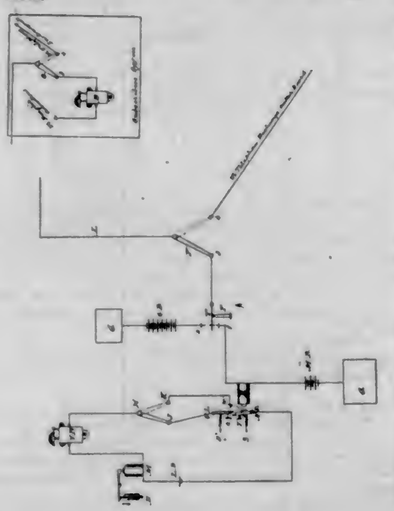
3. The combination of the pendent lever, the incline H, having the pin, the bar O, the arm P, and screw Q.

4. The combination, with the lever K, and with the pendent lever and connecting devices for giving said lever a horizontal oscillating movement, of the slotted link M, the set-screw, and the push-rod F.

5. The combination, in a sewing-machine, of the vertical reciprocating lever G, operated from the driving-shaft, and provided at its lower end with roller g^2, working on inclined plane H, with the horizontal vibrating lever K, mounted on the same axis as shuttle-lever D, provided with grooved roller *k*, impinging on vertical lever G at back end, and attached to link M, connected with feed devices at front end, said lever K being controlled by roller-support L, and acted upon by push-spring *n*, the whole being capable of adjustment to regulate the length of stitch by means of bar O, operated through arm P by regulating-screw Q, substantially as described.

6. The combination of the plate R', having the curved offset R', and the free end foot R^2, elevated above the face-plate, with the take-up lever S, substantially as described.

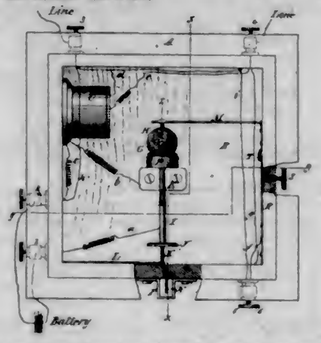
291,310. COMBINED BURGLAR-ALARM AND TELEPHONE SYSTEM. BENJAMIN F. DILLON, Savannah, Ga. Filed May 23, 1883. (No model.)



Claim.—1. A combined telephone system and burglar-alarm, consisting of a telephone-line, burglar-connections at the subscriber's office, a subscriber's telephone, a two-point switch connecting alternately with the subscriber's telephone-instrument or his burglar-connections, and a central office having a telephone switch-board and local battery with burglar-alarm circuit worked by relay, as described, and a two-point switch connecting the line alternately with the telephone switch-board and the relay of the burglar-alarm circuit, substantially as set forth.

2. The combination, with the relay R, operated by the main battery and adapted to be influenced by the surreptitious grounding or breaking of the main circuit in one of the subscribers' offices, of the vibrating bell and local-battery circuit, the electrically-connected contact-points V W K, the armature-lever A L, forming one of the terminals of the local-battery circuit, the switch-lever H, forming the other terminal, and the lever U L, electrically connected to point J, and provided with spring S', and arranged, as described, to be struck and deflected by the armature-lever A L, as and for the purpose described.

291,311. TELEPHONE-TRANSMITTER. DANI. DRAWBAUGH, Eberly's Mill, Pa., assignor to the People's Telephone Company, of New York. Filed Mar. 24, 1883. (No model.)



Claim.—1. In a telephone, the combination of two electrodes of low conducting material, respectively in the shape of an annular cup or socket, and of a ball adapted to be received in said cup or socket, and means for raising and holding said ball out of contact with said cup, substantially as described.

2. In a telephone, the combination of a diaphragm, an annular cup or socket of low conducting material, supported by or upon said diaphragm, a ball of low conducting material adapted to be received in said cup, and a metallic rod fastened to said ball and passing through the aperture in said cup, substantially as described.

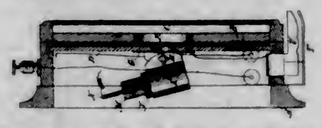
3. In a telephone, the combination of a non-conducting diaphragm, a conducting-support attached thereto, an annular cup or socket of low conducting material held in said support, a ball of low conducting material adapted to be received in said cup, and a metallic rod fastened to said ball and passing through the aperture in said cup, substantially as described.

4. In a telephone, the combination of a non-conducting diaphragm, a conducting-support attached thereto, an annular cup or socket of low conducting material, a ball of low conducting material adapted to be received in said cup, a rod attached to said ball and extending downward through the aperture in said cup, and a vertically-movable support arranged beneath the lower end of said rod and capable of being elevated to meet said rod and lift or sustain the same, substantially as described.

5. The combination, in a telephone, of the ball H, annular cup-shaped carbon G, the support E F, rod I, plate J, spring L, and hook or bracket P, connected in circuit, substantially as described.

6. The combination, in a telephone, of the rod I, support E F, spring M, button S, and spring R, connected in circuit, substantially as described.

291,312. TELEPHONE-TRANSMITTER. DANI. DRAWBAUGH, Eberly's Mill, Pa., assignor to the People's Telephone Company, of New York. Filed Mar. 24, 1883. (No model.)



Claim.—1. In a telephone-transmitter, the combination of two electrodes of low conducting material, one loose and the other annular in form, attached to and upon a movable support and surrounding the first

electrode, and means for varying the inclination of the second electrode and support, so that said second electrode may sustain more or less of the weight of the first electrode, substantially as described.

2. In a telephone-transmitter, the combination of an electrode of low conducting material in the form of a hollow cylinder, vertically disposed, having a piece of insulating material inserted in its lower end and sustained by a support, and a second electrode of low conducting material in the form of a solid cylinder, adapted to fit loosely in the first electrode and to rest on said inserted piece of insulating material, and means for adjusting said first electrode and support at a desired inclination, so as to vary the proportion of weight of the second electrode respectively sustained by the first electrode, substantially as described.

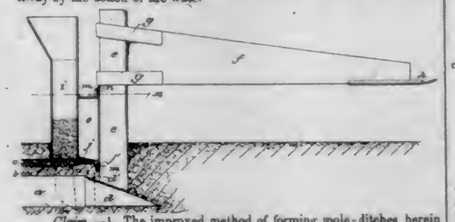
3. In a telephone-transmitter, the combination of a diaphragm, a hollow cylinder of low conducting material held in a support hinged or pivoted to said diaphragm, a solid cylinder of low conducting material loosely fitting in said hollow cylinder, and a means for turning said hollow cylinder on its pivot or hinge, substantially as described.

4. In a telephone-transmitter, a diaphragm of non-conducting material, a metal cup pivoted to said diaphragm, a hollow cylinder of low conducting material contained in said cup, a solid cylinder of low conducting material loosely fitting in said hollow cylinder, a piece of insulating material arranged between the lower end of said solid cylinder and the cup, and means for turning said cup on its pivot or hinge, substantially as described.

5. In a telephone-transmitter, the combination of a diaphragm of non-conducting material, bracket G, cup I, carbon J, carbon M, rod O, and lever P, substantially as described.

291,313. METHOD OF AND MEANS FOR MAKING MOLE-DITCHES. MILTON HERBERT EATON, Wilton Junction, Iowa. Filed Aug. 13, 1883. (No model.)

Brief.—The cement-tube connects to a second or crown cutter above the mole, the object being to leave a thin roof of packed earth to support the cement while hardening, and which will afterward be washed away by the action of the water



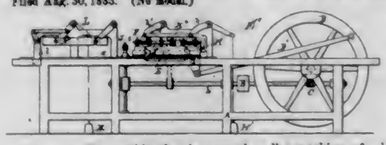
Claim.—1. The improved method of forming mole-ditches herein shown and described, consisting in lining the ditch proper, *a*, with a layer of cement, *c*, supported while hardening on the earth lining or shell *b* formed over the ditch *a*, substantially as specified.

2. The combination, with the mole-ditcher *d e*, of the cement-feed hopper or tube *i* and a cutter, *j*, for forming the cement-lining cavity, said cutter *j* being spaced from the ditcher-plow *d*, between the ditch proper and the cement-cavity, substantially as shown and described.

3. The combination, with the mole-ditcher *d e*, of the hopper *i* and cutter *j*, said cutter *j* overlapping the rear end of the ditcher-plow *d*, and the cutter *j* and plow *d* having reversely-inclined opposite faces *j' d'*, substantially as shown and described.

4. The combination, with the mole-ditch plow *d e*, of the cement-hopper *i* and cutter *j*, detachably connected to the ditcher-standard *e*, substantially as shown and described.

291,314. MATCH-SPLINT MACHINE. WILLIAM I. ELY, Detroit, Mich. Filed Aug. 30, 1883. (No model.)



Claim.—1. The combination, in a match-splint machine, of a bed for carrying the block to be cut, a rising and falling arbor, F, having cutters to form the block into lengths for the splints, a cutter, J, for cutting the block into suitable widths for the splints, a cutter, K, for shearing off the splints, and mechanism for operating all the cutters, substantially as described.

2. In a match-splint machine, the combination of a reciprocating bed, E, for carrying the block to be cut, an arbor, F, having cutters for forming the block into lengths for the splints, a cutter, J, for forming the block into suitable widths for the splints, a cutter, K, for shearing off the splints, and means for raising and lowering the arbor and operating all the cutters, substantially as described.

3. The combination, with the cutters J and K, arranged one in advance of the other, and means for operating the cutters, of a bed, E, for carrying the block to be cut, and mechanism for reciprocating the bed to present the block first to the cutter J to form the width of match-splints, and subsequently to the cutter K for shearing off the splints, substantially as described.

4. The combination, in a match-splint machine, of an arbor, F, carrying cutters, devices for supporting the arbor and permitting it to rise and fall, a reciprocating bed for carrying the block, means for lowering and raising the arbor to cut the block into lengths for the splints, a cutter, J, for cutting the block into the width for the splints, and a cutter, K, for shearing off the splints, substantially as described.

5. In a match-splint machine, the combination of a sliding bed, E, and arbor F, provided with a series of cutters, suspended levers A A', supporting the arbor, a bar, H^2, connecting said levers, a stop on the sliding bed, arranged to act on the bar connecting the levers to lower the arbor and bring the cutters into action on the material, and means for elevating the arbor away from the material, substantially as described.

6. The combination, in a match-splint machine, of the sliding bed and the cutters for forming the splints, with a slide, Q, on the bed, a rack, N, a retracting-spring, *n*, connected with the rack, an arm, O, having a cam, *o*, and a stationary stop, P, for acting on the arm and causing its cam to advance the rack and slide to feed the material to the cutters, substantially as described.

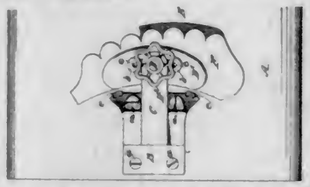
7. In a match-splint machine, the combination of a work-carrying bed, an arbor having a series of cutters to cut the material into lengths for the splints, cutters arranged to cut at right angles to those on the arbor, for cutting the material into widths for the splints, a cutter for shearing off the splints, and mechanism for operating all the cutters, substantially as described.

291,315. THILL-HOLDER. JOHN WESLEY EVANS and ALBERT H. VERMAY, Baltimore, Md. Filed Oct. 22, 1883. (No model.)



Claim.—The combination of a metallic thill-loop covered inside and outside with leather and suspended in the usual manner, a threaded bolt passing through the sides of the loop near its lower end, and provided with washers inside the sides of the loop, and a roller journaled upon the bolt and having a metallic covering upon its surface, as and for the purpose shown and set forth.

291,316. BUTTON-FLY CLAMP. ISIDOR FELBER, Nyack, N. Y. Filed Nov. 6, 1883. (No model.)



Claim.—1. In a button-fly clamp, the casting B, having the arm C, provided with the apertured side projections, *b c*, in combination with the screw D, working in said casting, and having the swiveled plate D', provided with the pins *d*, fitting into the apertures of the casting projections *b*, substantially as and for the purpose set forth.

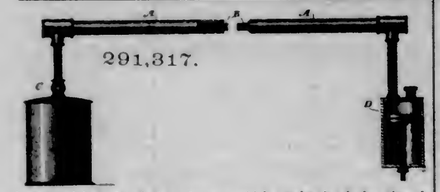
2. In a button-fly clamp, the plate D', swiveled to the operating-screw, and provided with pins *d* for guiding the plate, substantially as described.

3. The casting B of a button-fly clamp, provided at its forward edge with the cushions *e e* for protecting the pattern F, substantially as and for the purposes set forth.

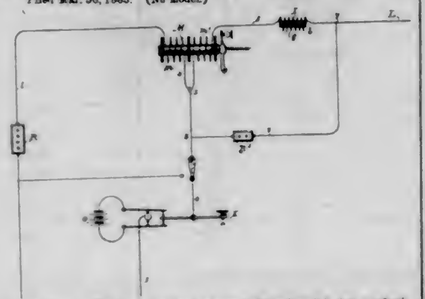
291,317. UNDERGROUND TELEGRAPH SYSTEM. STEPHEN D. FIELD, New York, N. Y. Filed May 5, 1883. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of the insulated electrical conductors, the sealed conduit, within which said conductors are disposed, and the dry carbonic-acid gas therein maintained.

2. The mode described of preventing the combustion of the insulating material of electrical conductors, which consists in placing them in conduits within which dry carbonic-acid gas is maintained.



291,318. DUPLEX TELEGRAPH. STEPHEN D. FIELD, New York, N. Y. Filed Mar. 30, 1883. (No model.)

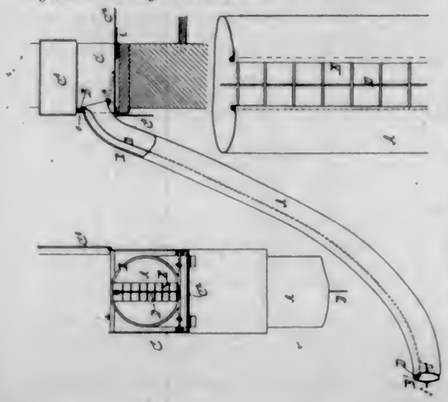


Claim.—1. The combination, substantially as hereinbefore set forth, with a main and an artificial line, a battery, and means for transmitting impulses therefrom upon said main and artificial line, of a differential electro-magnet having one of its coils included in the circuit of said artificial line and its remaining coil included in the circuit of said main line, an electro-magnetic inductor included in the last-named circuit, and a conductor constituting a permanent shunt-circuit around said inductor and the coil connected with said main line.

2. The combination, substantially as hereinbefore set forth, with a main and an artificial line, a battery, and a transmitting device for simultaneously sending currents or impulses therefrom to said main and artificial lines, of a differential electro-magnet having a corresponding terminal of each of its coils connected with said transmitting device, and the remaining terminals connected, respectively, with said main and artificial lines, an electro-magnetic inductor included in the circuit of said main line, a branch or shunt circuit connecting said transmitting device with said main line independently of said differential electro-magnet and electro-magnetic inductor, and an artificial resistance included in said branch or shunt circuit.

291,319. FIRE-ESCAPE. ADOLPH FISCHER, Ravenswood, assignor to himself, and Louis Franke, New York, N. Y. Filed Feb. 17, 1883. (No model.)

Brief.—The upper supporting-ring of the chute is provided with pivots which are journaled in the sides of the inclosing-casing, which casing is made with hinged sides and cover.

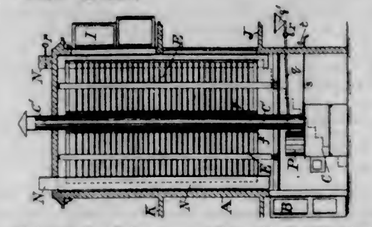


Claim.—1. The combination, in a fire-escape, of the inclosing-casing C, adapted to be secured to a building, with the chute A, having a ring at each end, one of the rings being secured within the casing, said chute being capable of folding into the inclosing-casing, substantially as described.

2. The combination, in a fire-escape, of an inclosing-casing, C, having hinged sides $C' C^2$ and hinged top C^3, with the chute A, having a ring at each end, one of the rings being secured within the casing, said chute being capable of folding into and being concealed by the casing, substantially as described.

3. The combination, in a fire-escape, of the casing C, provided with a cross-bar, *c*, with the chute A, having the ring B, provided with pivots *s*, supported within the casing, said ring being capable of swinging to rest against the cross-bar of the casing, substantially as described.

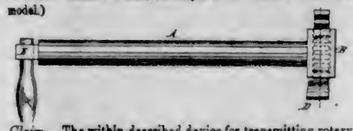
291,320. FRUIT-DRIER. HARRISON FITTS, Rollin, Mich. Filed May 28, 1881. (No model.)



Claim.—1. In a fruit-evaporator, the combination of an inclosure whose walls and roof are practically air-tight, fruit-trays, a furnace within the said air-tight inclosure, a smoke-flue, C', extending up through the inclosure and projecting from the roof, and one or more vertical vapor-flues, N, open only at the top and bottom, and having its lower open end below the fruit-trays and its upper end through the inclosure at the top, as set forth.

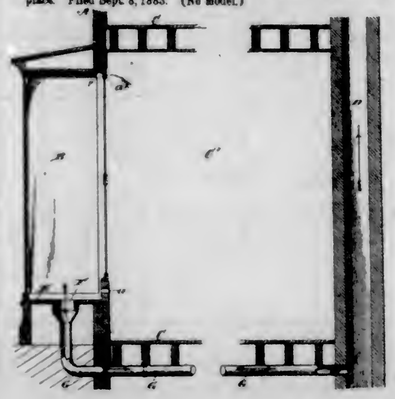
2. A fruit-evaporator having rotatable fruit-tray reels, a furnace below the reels, a smoke-flue, C', passing from the furnace to the roof between the reels, and a vapor-flue, N, open only at the ends, and having its lower end below the reels and its upper end above the reels, as set forth.

291,321. DEVICE FOR TRANSMITTING ROTARY MOTION AND POWER. GUSTAV FOCKE, Brooklyn, N. Y. Filed Oct. 11, 1883. (No model.)



Claim.—The within-described device for transmitting rotary motion and power, consisting of the combination of the socketed tube or sleeve A, operating-rod E, provided with the pinion or ratchet C at one end and handle H at the other, the pawl or tool D, secured in position and held adjustably by set-screw F, substantially as and for the purpose set forth.

291,322. MEANS FOR VENTILATING BOW-WINDOWS. CHAS S. POOS, Baltimore, Md., assignor of one-half to William H. Clifford, same place. Filed Sept. 8, 1883. (No model.)

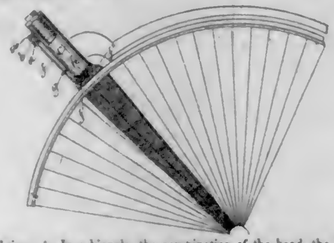


Claim.—1. The combination, with a show-window, of means for admitting thereto a warm stratum of air, and an exit in the lower portion of the window for the escape of air, a circulation being thus created through the window, substantially as and for the purpose set forth.

2. The combination, with a show-window, of an air-escape pipe entering the bottom or sill of said window and leading to a flue or air-escape, which communicates with the open air at or near the top of the building, substantially as described.

3. The combination, with the show-window A, of the ventilating-funnel F, entering the sill of the window, the air-pipe G, and an air-conduit, D, substantially as described.

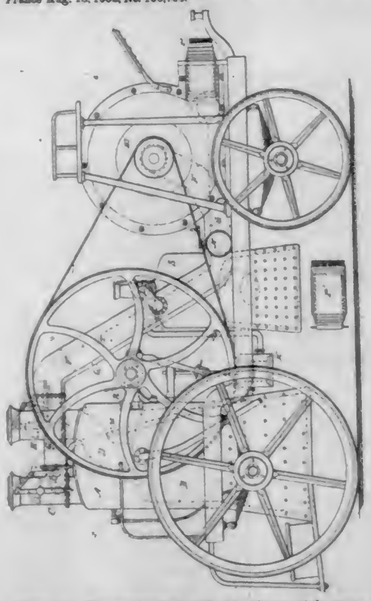
291,323. BICYCLE. GEORGE D. FOOTE, Pittsfield, Mass. Filed Nov. 13, 1883. (No model.)



Claim.—1. In a bicycle, the combination of the head, the handle-bar applied to the front side of the head, a locking device or bolt normally securing the handle to the head, and means for automatically retracting said bolt, as set forth.

2. The combination of the head having a projection, *b*, the handle-bar formed to bear only against the front side of said head, and slotted to receive the projection *b*, the locking-bolt *f*, normally connecting said handle-bar and projection, and the pivoted lever *f'* and dog *f²*, adapted to be operated by the wheel, or its equivalent, to retract the bolt *f*, as set forth.

291,324. APPARATUS FOR EXTINGUISHING FIRES. JOHN KERSACK JOSHUA FOSTER, Bolton, County of Lancaster, England. Filed Apr. 13, 1883. (No model.) Patented in England Feb. 13, 1882, No. 803, and in France Aug. 13, 1882, No. 150,706.



Claim.—1. The combination, with a fan-blower, of the steam-boiler S, pipe L, connected throttle-valves L' L², pipe F, throttle-valves H H', uptake D, and furnace B, as shown and described.

2. The combination of a fire-box and boiler provided with separate uptakes, pipes connected to said uptakes for the conveyance of vitiated air and steam, respectively, a fan-blower or pump connected to said pipes, throttle-valves to control the thoroughfare through the pipes, and a boiler and steam-engine for driving the fan-blower or pump, substantially as herein described, and shown in the drawings, for the purpose specified.

3. The combination of the boiler A, fire-box B, uptakes C and D, pipes F and G, fan-blower or pump E, coupled pairs of throttle-valves H H' I I', steam-engine K, and high-pressure steam-boiler S, substantially as shown and described, for the purpose specified.

291,325. HAME. FRED FRAZER, Syracuse, N. Y. Filed Nov. 14, 1883. (No model.)



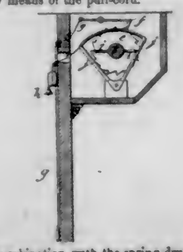
Claim.—1. A hollow metal hame composed of two sections fitted together by an overlapping joint and the auxiliary fastenings, substantially as shown and described.

2. The combination, with the hame-sections *a g*, of the lap-jointed edges *b h*, the rivet *j*, for securing their lower ends, and the knob or tip *f*, for securing their upper ends, substantially as shown and described.

3. The combination, with the hame-sections *a g*, having overlapped edges *b h* and end fastenings, of the terret and top strap loop fastenings, and tug-loop passed through both said sections and aiding in securing them together, substantially as shown and described.

291,326. FIRE-ESCAPE AND ALARM. WILLIAM S. FRENCH, Jackson, Mich. Filed Mar. 26, 1883. (No model.)

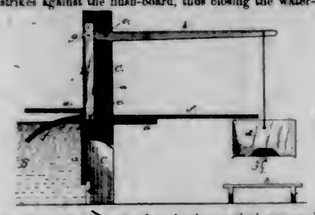
Brief.—Tappets on the shaft of the spring ladder-drum strike a pivoted yoke having attached to it a bell-cord and bell, as the reel turns, having been released by lifting the pawl-lever from the ratchet-wheel on the same shaft by means of the pull-cord.



Claim.—The combination, with the spring-drum *a*, carrying a flexible fire-escape ladder, tappets *i*, and ratchet-wheel *e*, of the pawl-lever *f*, provided with the pull-cord *g*, the pivoted yoke *j*, and a bell, *k*, connected by a cord, wire, or chain with the yoke, whereby on pulling the pawl-cord the drum will open out the escape-ladder and ring the alarm, as described.

291,327. FLOOD-GATE. JAMES ALEXANDER GALLOWAY, Spring Hill, assignor of one-half to Edward James Rambert, Rambert's, S. C. Filed Mar. 12, 1883. (No model.)

Brief.—At high water the bucket fills and, overbalancing the gate-carrying frame, descends, and the frame rises until the gate is disengaged from the flush-board, when the gate rotates, giving way to the water. When the water falls below the level of the spout, the bucket, which is self-discharging, empties, and the gate descends till, as it rotates, one of its arms strikes against the flush-board, thus closing the water-way.



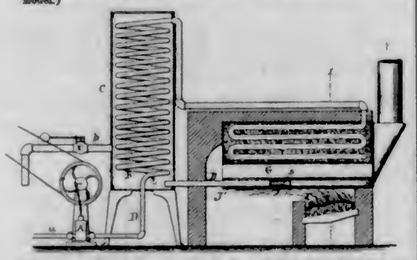
Claim.—The side posts of a dam, having vertical grooves in them, and a flush-board connecting the posts, in combination with a lever pivoted to said posts, a bucket hung to one arm of said lever below high-water level, and means, substantially as described, for permitting water to escape from the bucket, a frame hung to the other arm of said lever, to slide in said vertical grooves, a gate having arms like a water-wheel, pivoted to revolve in said frame, and a spout passing through the dam at high-water level, whereby water may be carried from the forebay into the bucket and the gate freed from the flush-board, as and for the purpose described.

291,328. LOCK-NUT. OWEN F. GARVEY, Pawtucket, R. I. Filed Apr. 7, 1883. (No model.)



Claim.—A nut provided with a screw-threaded opening set at an oblique angle to one or both faces of the nut, and having an enlargement, H, at the base of said screw-threaded opening, as set forth.

291,329. MANUFACTURE OF SOAP. WILLIAM E. GIBBS, Elizabeth, N. J., and CHARLES G. OTIS, Brooklyn, N. Y. Filed May 16, 1883. (No model.)



Claim.—1. As an improvement in the art of soap-making, passing the mixture of alkali and fat forcibly through a heated channel filled with small particles of iron or other substance, substantially as set forth.

2. Subjecting the material to the action of heat while passing through a mass of small particles and after being partially heated, substantially as set forth.

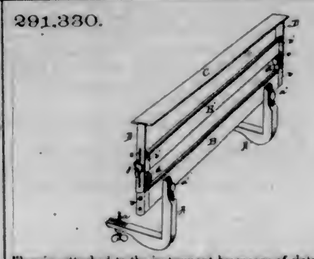
3. The combination, in a soap-machine, of a pipe or channel filled with scrap-iron or its equivalent, a heater, and a pump, whereby the material is forced through said channel between the particles of scrap, substantially as set forth.

4. The combination of the tube or channel in which the material is heated, with tubes and casings, substantially as set forth, whereby the hot material passing from said tube is caused to impart its heat to the new supply entering said tube, substantially as specified.

5. The combination of the boiler, tube, vessel C, coil B, heater, and pump, substantially as specified.

291,330. ARM AND FINGER GUIDE FOR PIANOS AND ORGANS. THOMAS GIDDINGS, Williamsport, Pa. Filed Apr. 11, 1883. (No model.)

Claim.—1. An arm and finger guide for pianos and organs, such guide having its constituent parts adjustably connected together, and



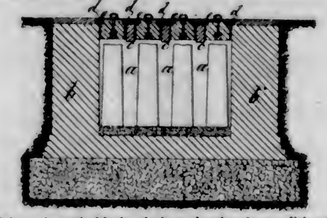
likewise attached to the instrument by means of slots and thumb-screws, with which the several parts are provided, substantially as described.

2. An arm-guide for pianos and organs, consisting of two rails, arranged one above the other and adjustably connected together, and likewise attached to and supported by a pair of brackets attached to the instrument, and adapted to be adjusted horizontally toward or away from the key-board by means of slots and thumb-screws, with which the several parts are provided, substantially as and for the purpose set forth.

3. The combination, with the arm-guide, as described, of a finger-guide adapted to be used simultaneously therewith, and consisting of a rail attached to the rails constituting the arm-guide, and adapted to be horizontally adjusted over the key-board and to be swung vertically above the arm-guide by means of slots and thumb-screws, with which the several parts are provided, substantially as and for the purpose set forth.

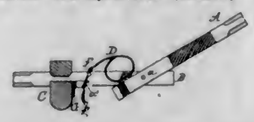
4. In a device of the character described, the combination, with the brackets A A and the arm-guide, constructed, arranged, and attached to the piano or organ as described, of the finger-guide consisting of the strip C and plates D D, constructed, attached, and made adjustable upon the arm-guide, substantially as described and shown.

291,331. APPARATUS FOR EQUALIZING THE TEMPERATURE OF STEEL INGOTS. JOHN GJERS, Middlesbrough, in the North Riding, County of York, England. Filed Mar. 23, 1883. Renewed Dec. 12, 1883. (No model.) Patented in Belgium Apr. 13, 1883, No. 61,080, and in Luxemburg Oct. 30, 1883, No. 317.



Claim.—A vertical inclosed pit or chamber for equalizing the temperature of steel ingots, constructed to contain several ingots at a time in a vertical position, and having in its top a number of openings corresponding to the number and positions of the ingots to be treated at a time, each of said openings being provided with a separate removable cover of non-conducting material, substantially as described, for the purpose specified.

291,332. WAGON-TONGUE SUPPORT. ALBERT HARVEY GILKASON, Wabash, Ind. Filed Sept. 27, 1883. (No model.)



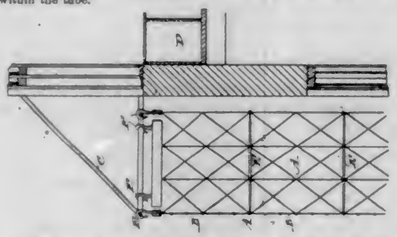
Claim.—1. In a wagon-tongue pivoted to swing vertically between the hounds, a spring secured upon the rear end of the tongue, and two hooks secured to said spring at different heights, in combination with a block secured to the axle, having one or more studs adapted to engage said hooks, as shown and described.

2. The combination, with a flat coiled spring having two pairs of hooks projecting from its sides, as described, secured to a wagon-tongue, of a block secured to the axle, having two forward projections farther apart than the width of a pair of hooks, carrying two inwardly-projecting studs far enough apart to permit said spring to pass between them, and adapted to engage the hooks at the sides of the spring, as shown and described.

3. The combination, with a block having the forward-projecting sides and inwardly-projecting studs described, secured to a wagon-axle, of a spring secured to the tongue, and two pairs of hooks secured to the spring, adapted to engage said studs, each pair of hooks being provided with noses adapted to guide the hooks past the studs, as described.

291,338. FIRE-ESCAPE. WILLIAM H. GLENN, Kirksville, Mo. Filed June 1, 1883. (No model.)

Brief.—A fire-escape consisting of a tube made of ropes tied at their points of intersection and suspended by hooks from a frame, and having a ladder secured thereto, so that persons descending pass down within the tube.

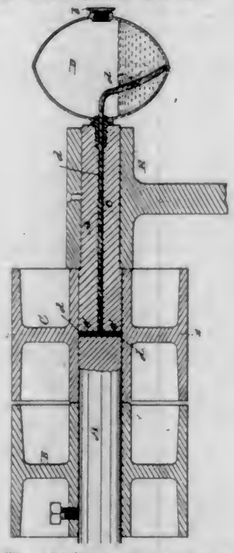


Claim.—1. A fire-escape sack formed of perpendicular ropes, and ropes crossing these obliquely, said ropes being tied together at their points of crossing, all substantially as shown and described.

2. The combination, with a fire-escape sack having hooks at the rim of the upper end, of a projecting frame, C, arranged to hold the sides of the sack perpendicularly, as shown and described.

3. The combination, with the sack or tube A, made of ropes, of the hooks F and the ladder B, secured in the sack, substantially as herein shown and described, and for the purposes set forth.

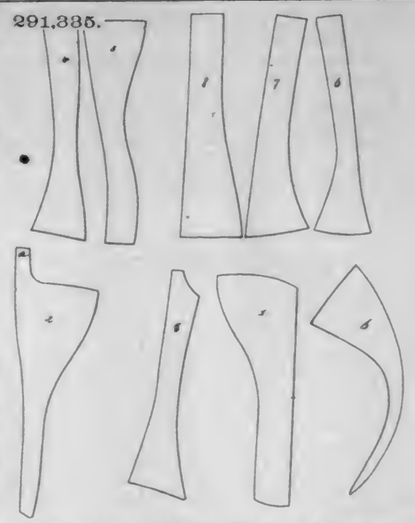
291,384. OILER FOR LOOSE PULLEYS. WILLIAM D. GRAVES, Jr., Presque Isle, Me. Filed Oct. 10, 1883. (No model.)



Claim.—In oiling or lubricating devices for loose pulleys, the combination, with the shaft A, constructed with a longitudinal aperture, *c*, extending from one end thereof to a transverse aperture, *c'*, arranged at about a point in a central plane with the pulley of said shaft, of an oil or lubricant cup or vessel, D, having a screw-threaded attaching tube and wicking, *d*, substantially as shown and described, and for the purpose set forth.

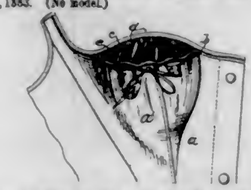
291,385. CORSET. CATHARINE A. GRISWOLD, New York, N. Y. Filed Mar. 21, 1883. (No model.)

291,385.



Claim.—A corset each half of which, having the configurations shown and described, is composed of the pieces 1 to 8, inclusive, having, respectively, the form shown in said figures.

291,386. CORSET. CATHARINE A. GRISWOLD, New York, N. Y. Filed Mar. 21, 1883. (No model.)



Claim.—A corset having breast-pockets adapted to hold pads in place by means of eyelets and lacings at the top, extending from the back to the front portions of the pockets, as shown and described.

291,387. CORSET-CLASP. CATHARINE A. GRISWOLD, New York, N. Y. Filed Mar. 23, 1883. (No model.)

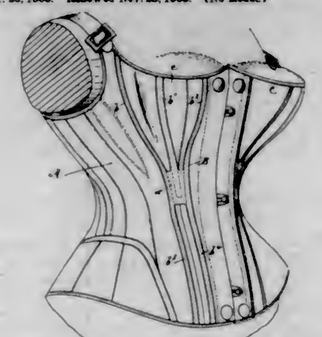


Claim.—1. The combination, in a corset, with a busk, *a*, inclosed in a pocket therein having the outer edge open, of the clamp-shield *b*, secured to the said busk and corset by a detachable stud that passes through both, as and for the purpose described.

2. In a corset, the combination, with the end of the busk *a*, inclosed in a pocket in the corset, of the clamp-shield *b'*, provided with the lip *e*, and secured to the corset by a stud or eyelet that passes through the sides of the pocket and the shield, as and for the purpose described.

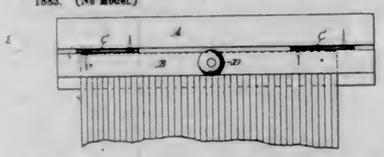
3. In a corset, the combination, with a busk, *a*, in the pocket therein, of a shield, *b'*, placed at the end of the busk, so that the end enters the shield, the latter being secured to the corset by a stud or eyelet that passes only through the sides of the pocket and the shield, as and for the purpose described.

291,338. CORSET. CATHARINE A. GRISWOLD, New York, N. Y. Filed Mar. 23, 1883. Renewed Nov. 23, 1883. (No model.)



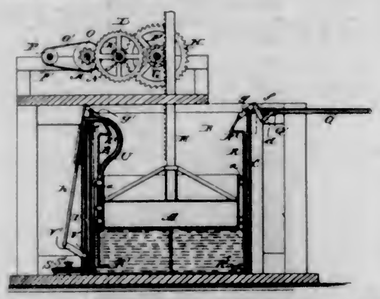
Claim.—The combination, with a corset, A, of the described stay-piece B, composed of the integral body *a* and the several described branches, and attached to the corset so that said body *a* is at the waist-line immediately below the breast-swell *c*, and so as to form pockets for steels or bones extending continuously from the top of the corset across the said integral body *a*, under said branches, for the purpose described.

291,339. BILL-HOLDER. PETER HAND, Glen, N. Y. Filed Nov. 5, 1883. (No model.)



Claim.—A bill-holder consisting of the rabbeted strip A, provided with the pins E and with the horizontally-moving links C, pivoted to the under side of the rabbet, and also pivoted at their outer ends to the apertured strip B, whereby the strip B may be folded back upon the strip A under its rabbet and the pins and apertures made to register, substantially as described.

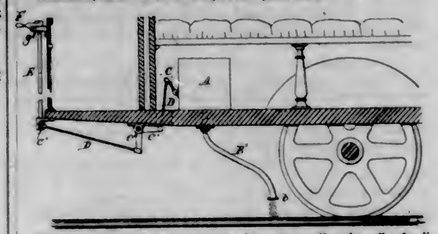
291,340. WATER-MOTOR. ALVET CURTIS HARVEY, Lone Pine, Cal. Filed Mar. 8, 1883. (No model.)



Claim.—1. The buoy A, carrying journals with rollers *a* and a rack, E, in its center, in combination with a cistern, B, having the vertical guide-tracks C, whereby said rack will rotate a pinion and operate a train of mechanism, as described.

2. The combination, with the buoy A and cistern B, of an inlet-pipe having cock Q', with arm *d*, the rod *f*, the lever *g*, the outlet-pipe V, with arm V', the rod A, the lever *g'*, and the rods R, bent at R' R², whereby the buoy will automatically open and close the inlet and outlet cocks, as described.

291,341. SAND-BOX FOR STREET-CARS. GEORGE H. HATHAWAY, Fairhaven, Mass. Filed Nov. 16, 1883. (No model.)



Claim.—The within-described sand-box for sanding the rails of railroads, constructed with gate, hopper, and tunnel, as herein shown, located under the seats, between or before the wheels, over the rails, with other devices for operating it, all combined and operating as and for the purpose set forth and described.

291,342. CROSS-CLIP FOR METALLIC SKYLIGHTS AND GLAZED ROOFS. GEO. HAYES, New York, N. Y. Filed Mar. 26, 1883. (No model.)

Brief.—Provides a sheet-metal cross-clip of one or more pieces for abutting panes of glass, bent to form a ledge for the lower edge of the upper sheet of glass, and a groove to receive and support the upper edge of the lower sheet of glass, and beneath said ledge and groove bent backward from the upper edge of the ledge, and then curved to form a gutter located entirely beneath the glass-supporting parts of the clip.



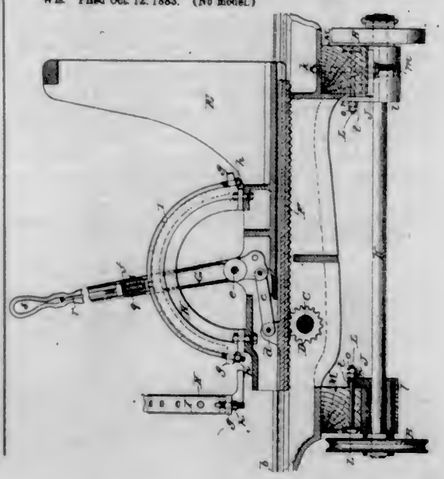
Claim.—The sheet-metal cross-clip C, for abutting panes of glass in skylight and glazed roofs, composed of one or more pieces, so bent that a rabbet or ledge, *a*, is formed to support the lower edge of the upper sheet of glass, and a groove, *b*, to receive and support the upper edge of the lower sheet of glass, and beneath the said ledge *a* and groove *b* the metal bent backward from the upper edge of the ledge *a*, and then curved to constitute a gutter, *d*, located entirely beneath the glass-supporting parts of the clip C, so as not to obstruct light entering through the glass panes, essentially as shown and described.

291,343. MINER'S SQUIB. GEORGE HAYES, Girardville, Pa. Filed Nov. 17, 1883. (No model.)



Claim.—An improved miner's squib, consisting of the tube A, having an inner integral match, *a*, coated or saturated with some rapidly-burning substance, and an outer match, B, secured to the tube over the match, substantially as herein shown and described.

291,344. SAW-MILL SET-WORKS. GEORGE M. HINKLEY, Milwaukee, Wis. Filed Oct. 12, 1883. (No model.)



Claim.—1. The combination, in a saw-mill carriage, of a head-block, a knee sliding therein, a rack-bar sliding in said knee, a pinion secured upon the feed-shaft and meshing with the rack, a lever fulcrumed in the sliding knee, and a link connecting the lever and the rack, substantially as shown.

2. In combination with a saw-mill head-block and a knee arranged to slide therein, a rack meshing with a feed-pinion and separate from the knee, a lever to move said knee independently of the rack, provided with a locking device, and a rack to receive said locking device, said rack being adjustable, substantially as described, to permit it to be brought into proper relation to the locking device.

3. In combination with a saw-mill head-block, a knee movable thereon, a lever connected with said knee and adapted to move the same, a locking-bolt to hold said lever at any desired adjustment, and a rack to receive the locking-bolt, said rack being adjustable, substantially in the manner and for the purpose explained.

4. In combination with a sliding knee, E, provided with arc H, adjusting-lever G, provided with a locking-bolt, F, and a recessed strap, I, applied to and adjustable upon the arc, substantially as and for the purpose explained.

5. The combination, substantially as shown and described, of a head-block, a knee, E, movable thereon, a rack, F, movable independently of the knee, a hand-lever, G, pivoted to the knee and provided with a locking-bolt, *f*, a link, *e*, connecting the hand-lever and the rack F, an arc, H, upon the knee provided with ears *g*, and a strap, I, adapted to receive the locking-bolt *f*, having its ends passed through the ears *g*, and provided with nuts *h*.

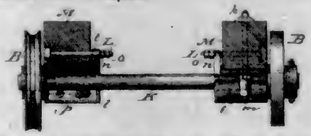
6. The herein-described method of aligning knees upon a saw-mill carriage and adjusting their locking devices to maintain such alignment, which consists in bringing one knee to a given line, then adjusting each succeeding knee to the same line, moving the rack with which its locking-bolt engages to proper position to receive said locking-bolt while the knee is in such adjusted position, and making the rack fast at such point.

7. In combination with a saw-mill carriage, a head-block mounted thereon and having the side faces of its forward end or nose beveled from the sides inward toward the center, the narrowest portion being at the extreme front end, substantially as and for the purpose explained.

8. In combination with a traveling saw-mill carriage, a head-block having its nose or forward end narrowed and provided with inclined faces connecting the narrow ends and the sides, as and for the purpose explained.

9. A saw-mill head-block narrower at its extreme forward end than in rear thereof, and having its narrow end and its sides connected by inclined faces, as shown, whereby it is adapted to deflect obstructions.

291,345. TRUCK-BOX FOR SAW-MILL CARRIAGES. GEORGE M. HINKLEY, Milwaukee, Wis., assignor to Edward P. Allis & Co., same place. Filed Nov. 19, 1883. (No model.)

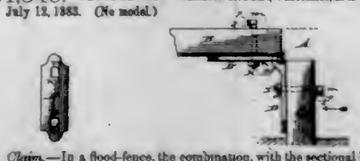


Claim.—1. In combination with a saw-mill carriage, its truck-wheels, and their shaft, a box for said shaft, longitudinally adjustable, substantially in the manner and for the purposes set forth.

2. In combination with a saw-mill carriage and its truck-axle K, a box for said axle, having plate J, provided with slots *j* and ear *t*, vertical bolts *k*, and horizontal bolt L, passing through the sill of the carriage and through ear *t*, and serving to draw the box outward against the hub of the truck, substantially as described and shown.

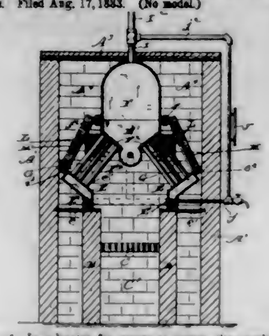
3. In combination with a saw-mill carriage, axle K, wheels B, secured thereon, and an adjustable block bearing against the hub of one of said wheels, substantially as and for the purpose explained.

291,346. FLOOD-FENCE. WILLIAM HODGIN, Vincennes, Ind. Filed July 12, 1883. (No model.)



Claim.—In a flood-fence, the combination, with the sectional hinged posts, of the key-bolts having eccentric enlargements next their heads, and the brace-plates F, on the sides of the post opposite the hinges, having key-slots *k* and *l*, adapted to engage the eccentric enlargements of the key-bolts, substantially as specified.

291,347. HEATER FOR STEAM AND WATER. ALDEN HOLT, Boston, Mass. Filed Aug. 17, 1883. (No model.)



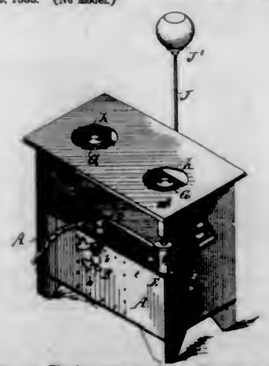
Claim.—1. In a heater for steam or water, the combination of an upper receptacle for water and steam, having the steam-dome portion F and the lower portion, F', cast with downwardly-converging plates or walls F², having longitudinal series of tube-apertures, said portions F and F' being cast separately and bolted together, the lower receptacles, E E, each having the tight lower portion, E', cast integrally with the part E, both extending from one end to the other of the heater, and each part E having a wall or plate, *e'*, parallel with one of the walls F², and the tubes G, having their ends secured in said parallel plates or walls, substantialy as set forth.

2. In a heater for steam or water, the combination of the upper receptacle, F F', two sets of inclined downwardly-converging steam-tubes, both sets communicating with said receptacle F F', the receptacles E E' at lower points, each connecting all of the tubes of one set, the outer masonry casing around the heater, the smoke-flue communicating with the heating-chamber at or near the upper horizontal plane of the heating-tubes, and the interior supplemental masonry walls, M, above the smoke-flue, and extending from the upper receptacle, F F', to the lower receptacles, respectively, whereby the products of combustion are prevented from rising above said tubes, and dead-air chambers are formed around the upper portion of the heater, substantially as set forth.

3. The combination of the lower receptacles, E E, having the flat upwardly-inclined plates *e'* extending from end to end of the heater, the inclined tubes G, fitting into the receptacles E, and the upper receptacle for water and steam, having the lower part, F', cast with the walls F², inclined to be parallel with the walls *e'*, and the steam-dome F, cast separately from and bolted to the lower part, F', substantially as described and shown, and the outer casing which surrounds the aforesaid parts, substantially as set forth.

4. The combination of the upper receptacle for steam and water, the lower receptacles, E E', each having an upwardly-extended flange, *e²*, inclined tubes arranged in two upwardly-converging sets, and the bricks or masonry M, resting at the bottom on the flanges *e²* and at the top against the upper receptacle, substantially as set forth.

291,348. GASOLINE-STOVE. CHARLES H. HUNTLEY, St. Louis, Mo., assignor of one-half to the Fay Gas Fixture Company, same place. Filed July 16, 1883. (No model.)

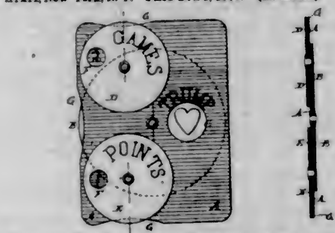


Claim.—1. The improvement in gasoline-stoves, &c., essentially consisting of an air-chamber, A, inclosing the reservoir B, to contain the gasoline, the latter reservoir being closed on all sides, as shown, the curved pipe *c*, the stand-pipe *f*, and distributing-pipes with burners, and the air-pump E, or its equivalent, by means whereof the gasoline by compressed air can be pumped or elevated to reach and be distributed to the burners, as and for the purposes set forth.

2. In combination with the air-chamber A, inclosing the gasoline-tank B, which is closed on all its sides, having inlet-cock *b'*, the air-pump or its equivalent, the pipe *c*, curved to have one end communicating with the air-chamber, the other end top of the gasoline-tank, the stand-pipe *f*, the distributing-pipes and their burners, as shown, the cock or faucet i, by means whereof a reflow of the unused gasoline to its reservoir is had, as and for the purposes set forth.

3. The improved gasoline-stove consisting of the main tank or air-chamber A, having within it the gasoline-reservoir B, closed on all its sides, the cup, cock, and inlet-pipe leading to said reservoir B, the curved pipe *c*, the air-pump to compress the air, the stand-pipe *f*, the main pipe and its branches carrying the burners, the top of the stove having pot-holes, all said parts combined to operate in the manner and for the purpose set forth.

291,349. GAME-REGISTER AND TRUMP-INDICATOR. GEORGE W. HYATT, New York, N. Y. Filed Dec. 1, 1883. (No model.)



Claim.—1. A game-register and trump-indicator constructed substantially as herein shown and described, and consisting of the central plate, A, having aperture C, and provided with recesses G in its edges and with two circles of numerals upon its face, the pivoted disk B, having the four card-characters upon its face, and the pivoted disks D E, having apertures F, as set forth.

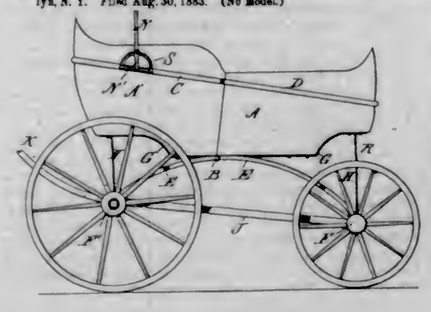
2. In a game-register and trump-indicator, the combination, with the central plate, A, having aperture C, edge recesses G, and two circles of numerals, of the pivoted disk B, carrying the card-characters, and the disks D E, having apertures F, substantially as herein shown and described, whereby the trump can be indicated and a registry made of the points made in a game and the number of games played, as set forth.

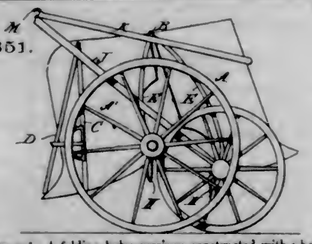
291,350. STRAW-STACKER CARRIAGE. JOHN W. IMLER and DANIEL W. SNOWDEN, Imlertown, Pa. Filed Oct. 30, 1883. (No model.)



Claim.—In a straw-stacker carriage, the combination of the bed-plate, the revolving frame pivoted thereon, a sliding top plate, guide-clamp connecting it to the bed-plate and formed with a shaft-bearing, a grooved sliding shaft, a bevel-pinion on said shaft, the bevel-gear wheel *m*, and pivot-shaft *t*, whereby the sliding top plate may be shifted to move the straw-carrier on said sliding top plate without disengaging the gearing, substantially as specified.

291,351. FOLDING BABY-CARRIAGE. HENRY A. JACKSON, Brooklyn, N. Y. Filed Aug. 30, 1883. (No model.)





Claim.—1. A folding baby-carriage constructed with a box formed of two sections hinged to each other at the bottom, and with springs secured to the bottoms of the sections, for swinging the bottoms of the said sections toward each other, substantially as herein shown and described.

2. A folding baby-carriage constructed with a box formed of two sections hinged to each other at the bottom, with hinged supporting-springs jointed at the joint of the box, and with reaches secured to the front axles, and adapted to fit against the rear axle, substantially as herein shown and described.

3. A folding baby-carriage constructed with a box formed of two sections hinged to each other at the bottom, with hinged supporting-springs jointed at the joint of the box, with reaches secured to the front axle and fitting against the rear axle, and with handles hinged to the free ends of the side bars, substantially as herein shown and described.

4. In a folding baby-carriage, the combination, with the hinged body A A', of the hinged supporting-springs E, the reaches J, secured to the front axle, F, and fitting against the rear axle, F', and the handles K, hinged to the free ends of the bars J, and provided with curved prongs M, substantially as herein shown and described.

5. In a folding baby-carriage, the combination, with the axles F F', of the hinged body or box A A', the springs E, jointed at the joint of the box, and the U-shaped frame D or bail hinged to the rear section, A', substantially as herein shown and described.

6. The combination, with a baby-carriage, of a bow having a longitudinal slot in its curved top, and of a canopy or parasol having its ferrule passed through the said slot, substantially as herein shown and described.

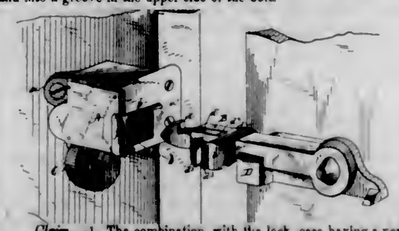
7. The combination, with a baby-carriage, of the slotted bow N, the canopy or parasol P, the rod Q, and the rod R, provided with an eye, R', mounted on one of the standards of the bow, substantially as herein shown and described.

8. The combination, with a baby-carriage, of the slotted and toothed bow N, the canopy or parasol P, the rod Q, and the rod R, provided with an eye, R', substantially as herein shown and described.

9. The combination, in a baby-carriage, of the pivoted bow N, having the end of one shank forked and provided with a slot, *g*, with the notched or toothed semicircular frame S and the pintle T, substantially as herein shown and described.

291,352. SEAL-LOCK. CHARLES A. JEWETT, Marshalltown, Iowa. Filed Sept. 19, 1883. (Model.)

Brief.—The neck of the seal is placed between the vertical jaws on the bolt, the perforated end bent over and held in place by a gravity-catch in the case, the end of said catch passing through the perforation and into a groove in the upper side of the bolt.



Claim.—1. The combination, with the lock-case having a vertical opening through its bottom and a horizontal hole through one end, of a hooked-nose bolt, B, and a gravitating latch, C, having a horizontal notch, a beveled nose, and a lower perforated extension, the upper portion of said latch being wholly inclosed in the lock-case, substantially as described.

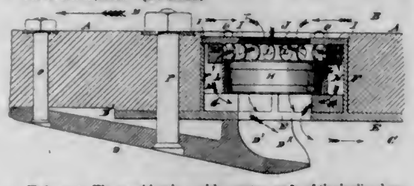
2. A bolt, B, grooved at *d'*, and having a hooked engaging end and jaws *d²*, the latter forming a vertical groove for the neck of the seal, in combination with the drop-catch E, substantially as described.

3. The combination of the box A, the latch C, the hasp-bolt B, having jaws *d³*, which form a groove to receive the neck of the seal, and the drop-catch E, substantially as described.

4. In a seal-lock case having a lip, *p*, undercut, a hooked bolt having a shoulder, d^3, a drop-catch, C, and a gravitating latch, E, substantially as described.

5. The combination of a lock-case, a beveled latch, E, a bolt grooved at *d'*, and provided with jaws d^3, forming a vertical groove, and a bent tag having a perforation through its head, substantially as described.

291,353. AUTOMATIC BILGE-PUMP. JOS. R. JOHN, St. Louis, Mo. Filed Mar. 12, 1883. (No model.)



Claim.—1. The combination, with a water-craft, of the inclined projection or bustle on the outside of the side or bottom of the hull, and an aperture at the rear of the salient rear end of the bustle, extending from outside to inside of the hull and provided with an inwardly-closing valve.

2. The combination of metal bustle D, secured to the bottom of a water-craft, with recess at the rear end of the bustle and orifice in the bottom of the craft in communication with said recess, and valve H, closing inwardly against its seat, to close the orifice against entering water.

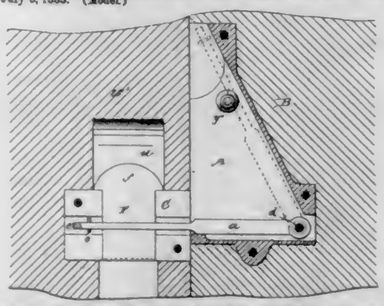
3. The combination, with the bottom of a water-craft, of bustle D, orifice through the bottom, in connection therewith inwardly-closing valve H, and screw-cap K, for the purpose set forth.

4. A bilge-pump consisting of a lower plate, E, having an orifice, E', a cylindrical outer shell, F, and radial wings G, an upper plate, I, having an orifice, J, a cylindrical inner shell beneath said upper plate, having suitable orifices, L', and concentric with the outer shell, and a float-valve within the inner shell and adapted to be supported by the wings, as set forth.

5. In combination with a bilge-pump having lower plate, E, and orifice E', the bustle D, gently inclined downwardly from its forward end to its rear end, D', having cup D^2, open at rear and at top, beneath the orifice of the plate, and corners D^2, to bear against the front edge of the plate, as set forth.

6. The combination of a suitable bustle to cause a vacuum, a lower plate, E, formed with orifice E', a cylindrical shell, F, surrounding the orifice, radial wings G between the orifice and shell, upper plate, I, formed with orifice J, a cylindrical shell, L, within the outer shell, having openings L', wings M between the shells, and a float, H, to rest on the radial wings when in operation, as set forth.

291,354. SEAL-LOCK. JESSE JORDAN and ABNER P. POWERS, Macon, Ga., assignors of one-fourth to Smith Murray Hillard, same place. Filed July 5, 1883. (Model.)



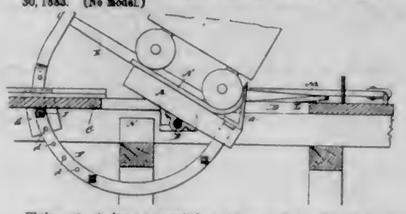
Claim.—1. In a car-door seal, the combination, with a spring-bolt carrying a knife on its free end, and pivoted to a car-door, of a card-carrying casing secured to another door or car-frame, and provided with guide-ridges for guiding the bolt into the casing away from the card and permitting it to drop down behind the said card, whereby the card will be cut on the withdrawal of the bolt, as set forth.

2. The combination, with the casing A, of the spring-bolt *a*, pivoted at its lower end in said casing, and the stud *y'*, projecting from the wall of the casing, substantially as herein shown and described, whereby provision is made for retaining the bolt in the casing when not in use, as set forth.

3. In a car-door seal, the combination, with the casing A, containing the pivoted spring-bolt *a*, carrying a knife, *c*, and a cross-pintle, *e*, of the casing C, provided with two grooves, *m n*, for guiding the spring-bolt, and with a device for holding a seal-card, substantially as herein shown and described.

4. In a car-door seal, the combination, with the casing A, containing a pivoted spring-bolt, *a*, carrying a knife, *c*, and a cross-pintle, *e*, of the casing C, provided with grooves *m* and *n*, separated by ridges *o*, having beveled ends, which casing C is provided with slots for receiving a seal-card, substantially as herein shown and described.

291,355. DUMPER. SAMUEL M. KEEBLER, Saltsburg, Pa. Filed Oct. 30, 1883. (No model.)



Claim.—1. A dumper consisting of a pivoted platform, to the bottom of which two curved bars or plates are fastened, between which a weight is held adjustably, substantially as herein shown and described.

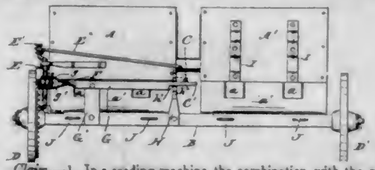
2. In a dumper, the combination, with the platform A, mounted at its middle on a shaft, B, of the bar E, projecting from the rear end of the platform, and of the curved bars or plates F, secured to the front end of the platform and to the end of the bar E, and of the weight G, held between the bars or plates F, substantially as herein shown and described.

3. In a dumper, the combination, with a platform rigidly mounted on a journaled shaft, of a brake-pulley rigidly mounted on the shaft, a brake-band passed around the pulley, and of a pivoted lever to which the ends of the band are secured, substantially as herein shown and described.

4. In a dumper, the combination, with the platform A, mounted rigidly on a journaled shaft, B, of the brake-pulley H, mounted on the shaft, the brake-band K, passed around the pulley and having its ends secured to a pivoted lever, L, and a pivoted lever, M, resting on the free end of the lever L, substantially as herein shown and described.

5. In a dumper, the combination, with platform mounted rigidly on a journaled shaft, of curved bars or plates secured to the bottom of the platform eccentrically in relation to the shaft, and of a weight held adjustably between the said bars or plates, substantially as herein shown and described.

291,356. OAT-DRILL. HENRY KEHL, Mason City, Ill. Filed Aug. 4, 1883. (No model.)

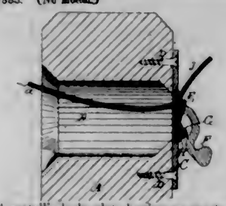


Claim.—1. In a seeding-machine, the combination, with the grain-boxes A A', set slightly apart, and the dropping-slides operating therein, and extended within the space between the boxes, of the drive-wheel provided with a rack-gear, the shaft meshed with said gear and provided with a crank and arranged in rear of the grain-boxes, and the pitman having one end connected with the crank and its opposite end bent at right angles and extended into the space between the grain-boxes and connected to the dropping-slides, substantially as set forth.

2. The combination, in a seeding-machine, of the grain-boxes A A', the loops I I, secured thereon, the dropping-slides, the axle B, the drive-wheel having a rack-gear, the shaft E, provided with a crank, E', the pitman E^2, connecting said crank and the dropping-slides, the pinion F, placed on shaft E, the lug G', and rack H, mounted on the axle, and the lever G, pivoted on lug G', and having one end bifurcated and embracing the pinion F, and its other end arranged in position to engage the rack H, substantially as described, and for the purposes specified.

3. The broadcast-seeder, substantially as specified, composed of the axle B, having wheels D D', the grain-boxes A A', mounted thereon and provided with suitable openings and dropping-slide, loops I, secured on the boxes, whereby to couple cultivators, harrow-connecting eyes J, secured on the axle B, a gear formed on the wheel D, vertical shaft E, having crank E', pitman E^2, connecting crank E' and the dropping-slide, pinion F, keyed on shaft E, rack-bar H, mounted on the axle, and the pivoted lever G, having one end bifurcated and embracing the pinion F, and its opposite end arranged to engage and be held by rack-bar H, all arranged and operating substantially as specified.

291,357. HITCHING DEVICE. JAMES L. KENNEDY, Sioux City, Iowa. Filed Sept. 29, 1883. (No model.)



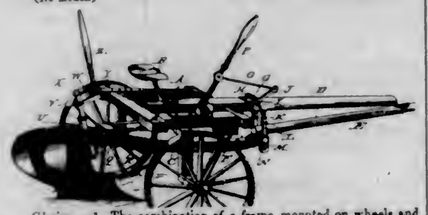
Claim.—1. A metallic body-plate having an aperture through it, in combination with another plate hinged to swing into said aperture freely past the edges thereof, a spring acting between the body and the hinged piece to close the latter, and a handle thereon, substantially as described, whereby a strap may be held between the adjacent edges of the two plates.

2. The combination, with a hitching-post having a hole through it, of a perforated metallic plate secured to the post over the hole therein, another plate hinged to swing on the first plate, a spring for closing the same, and a handle thereon, as shown and described.

291,358. PROCESS OF ANNEALING WIRE. HUGH KERR, New York, N. Y. Filed Oct. 8, 1883. (No specimens.)

Claim.—The herein-described process of annealing wire, consisting in first placing the wire in a bundle of wet hay or straw and leaving it therein for twenty-four hours or more, then removing the wire and passing it over a bass-wood fire until it attains a heat equal to 550° Fahrenheit, then in allowing it to cool quickly, the whole process being conducted in a dark room, all substantially as specified.

291,359. PLOW. JOHN A. KNEDLER, Grant, Pa. Filed Sept. 4, 1883. (No model.)



Claim.—1. The combination of a frame mounted on wheels and having a short rigid tongue at its forward end, a tongue hinged a distance from its rear end to the outer end of the rigid tongue, a plow supported from the frame and hinged with the forward end of its beam to the rear end of the hinged tongue, and means for raising and lowering the rear end of the hinged tongue, as and for the purpose shown and set forth.

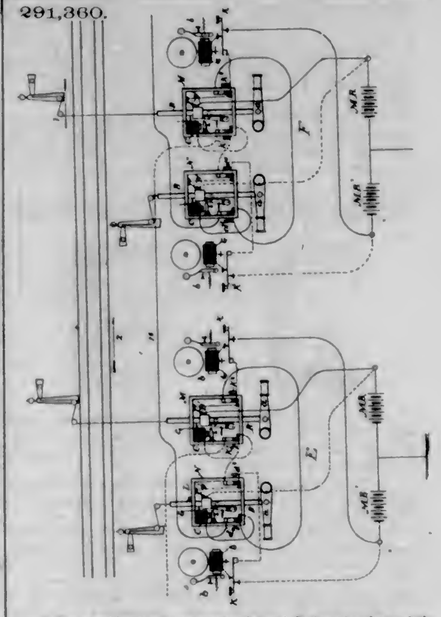
2. The combination of a wheel-supported frame having a rigid tongue at its forward end, a tongue hinged a distance from its rear end to the end of the rigid tongue, a plow supported adjustably from the frame and having the forward end of its beam hinged to the rear end of the hinged tongue, flat bars having longitudinal slots at their lower ends sliding upon bolts at the forward end of the plow-beam, and having perforations at their upper ends, a shaft rocking in bearings upon the rigid tongue forming cranks upon its ends pivoted in the said perforations, and having an arm at one end, a connecting-rod hinged to said arm, and a lever pivoted at one end upon the frame and having the connecting-rod hinged to it, as and for the purpose shown and set forth.

291,360. RAILWAY BLOCK SIGNAL. JOHN K. KNIGHT, New York, N. Y., assignor to William H. Baker. Filed July 24, 1882. (No model.)

Brief.—Manually-operated signals normally at "danger." Unlocking-magnets are in open circuit, which can only be closed by simultaneous co-operation of operators at two stations. Currents of two polarities used—one for signaling and the other for unlocking.

Claim.—1. The combination, with the operating-rod for a railroad-signal, switch, or draw-bridge lock, of a pivoted locking-catch engaging with said rod, a retractor tending to withdraw said catch, and a detaining-armature engaging directly with the catch.

2. The combination, with a reciprocating operating-rod for a signal, switch, or draw-bridge, of a locking-catch provided with a retractor and normally locking said rod from movement in one direction, a detaining-armature arranged, when operated, to release the catch, and means upon said reciprocating rod for engaging with said catch upon a movement of the rod in the opposite direction, and moving said catch into normal locking position with relation to the rod.



3. The combination, with a connecting-rod, B, for a signal or switch mechanism, of a collar or shoulder, B', a pivoted catch for engaging with the same, a retractor constantly tending to disengage the catch, and an armature, C, detaining the catch.

4. The combination of the connecting-rod B, having collar or shoulder B', of a pivoted catch, A, and its retractor, a spring, A'', mounted upon the catch, and a pin or projection carried by the rod for engaging with the spring A'' and restoring the catch to a locking position.

5. The combination of rod and collar B B', swinging catch A and its retractor, detaining-armature C', and mechanism upon the rod for engaging with the catch and restoring it to a locking position.

6. The combination of a semaphore biased to indicate "danger," mechanism for withdrawing the same against its biasing device, so as to cause it to indicate "safety," a lock or catch for locking said mechanism against such movement, an electro-magnet controlling the catch, two keys or switches in the same circuit with said electro-magnet, one at the home station and the other at the next station in advance, and at the latter station a circuit-closer in said controlled circuit, operated by the semaphore mechanism at said station, and arranged to be closed only when said semaphore is at "danger."

7. The combination, in a block signal apparatus, of a series of stations connected by a single line, semaphore mechanism at each station, an electro-magnet for controlling the same, polarized to respond to a current of one kind of polarity, a signal-bell or other receiving apparatus arranged to respond to currents of an opposite polarity or kind, and two manual signaling-keys and a battery at each station, for sending currents of the proper polarity to operate the semaphore-magnet or the signal-bell at the next station.

8. The combination, in a block signal apparatus, of a biased semaphore normally indicating "danger," mechanism for operating the same to cause it to show "safety," a catch for engaging with said mechanism, a retractor applied to the catch for causing its disengagement, a restraining electro-magnet, a switch for connecting said electro-magnet with the line running to the station in the rear, and at the latter station a key or switch and a battery, whereby the detaining electro-magnet at the station in advance may be operated only when both keys are actuated together.

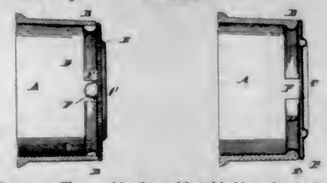
9. The combination, in a block signaling system, of a biased semaphore normally indicating "danger," an electro-magnet and locking device for controlling the position of the same, said magnet being constructed to respond to currents of one kind or polarity, a signal-bell at the same station constructed to respond to a current of the opposite kind or polarity, and two keys, one at the same station with the semaphore-magnet and the other at the next station in advance, with circuit-connections, as described, whereby the closing of both keys is necessary in order to complete the circuit of and energize the semaphore-magnet.

10. The combination, with two semaphore mechanisms at the same

station, one for the up and the other for the down track, of a releasing-key, *k'*, for one mechanism, and a battery-key, d^2, connected in the circuit to one side of the station, a corresponding releasing-key, *d'*, and battery-key connected in the circuit to the other side of the station, said battery-keys being suitably connected to batteries, so as to send a current of one kind or polarity, and signaling-keys—one in each circuit—connected so as to send a current of the opposite kind or polarity.

11. The combination of the biased semaphore, the operating-rod B, the circuit-closer D″, battery M B, the key controlling the common circuit of D″, and the battery-connections from the key to the station in the rear, and a releasing electro-magnet, C, at the latter station.

291,361. CAP FOR WHEEL-HUBS. FRIEDRICH KRAMER, St. Louis, Mo. Filed Aug. 22, 1883. (No model.)

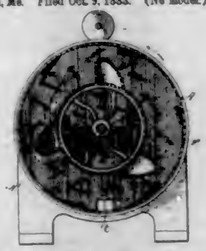


Claim.—1. The combination, with a thimble or band of a vehicle-wheel provided with one or more teats or lugs, of the dust-cap having a spring grooved flange in which the teats of the thimble fit, substantially as and for the purpose set forth.

2. The combination of thimble A, having teats B, and dust-cap C, having spring-flange D, with groove E and notches F, substantially as shown and described, for the purpose set forth.

3. The combination of thimble A, having teats B, and cap C, having spring-flange D, with groove E, notches F, and stops E′, substantially as shown and described, for the purpose set forth.

291,362. RICE HULLING AND CLEANING MACHINE. JOHN W. LANE, Portland, Me. Filed Oct. 9, 1883. (No model.)



Claim.—1. In a rice hulling and cleaning machine, the combination of the rotary imperforate cylinder A, having a discharge-passage, T, and internal beveled ribs, *a*, the perforate rotary cylinder B, provided with external wipers, *a'*, beveled and perforated, a feed-passage for the rice, and a suction-fan, communicating with the space between the two cylinders, substantially as described.

2. In a rice hulling and cleaning machine, the combination of the internal perforate rotating cylinder having the perforated and beveled wipers, the external imperforate rotating cylinder having internal beveled ribs, the stationary heads for both cylinders, provided with feed and discharge passages for the rice, and an air-exhausting device, substantially as described.

3. The combination of an exterior cylinder having a positive rotation, and an interior perforate cylinder geared thereto, and having perforated beveled wipers on the exterior thereof, substantially as described.

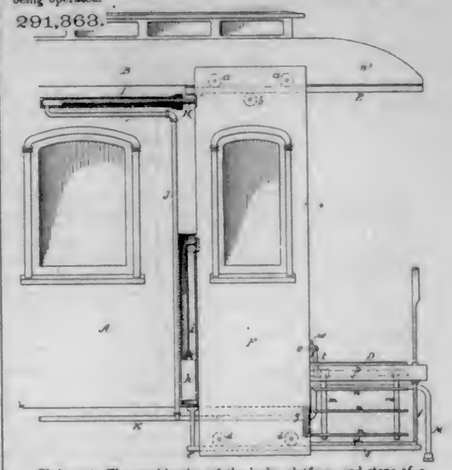
4. The combination of a rotary external imperforate cylinder having ribs on the interior thereof, a rotary perforate cylinder having perforated and beveled wipers on the exterior thereof, fixed heads A′ A², provided with air-inlets and feed and discharge passages for the rice, and means for inducing blasts of air through the cylinders, substantially as described.

5. The combination of the external rotary cylinder, A, provided with bands, the grooved wheels, and stationary heads, with the internal perforate cylinder, B, provided with perforate wipers *a'*, the spiders and main shaft, gears for driving both cylinders from said shaft, and means for inducing a blast of air through the cylinders, substantially as described.

291,363. SAFETY-DOOR FOR RAILROAD-CAR PLATFORMS. FRANK LAPPIN, Baltimore, Md., assignor of one-half to Virgil Walker, Philadelphia, Pa. Filed Nov. 7, 1883. (No model.)

Brief.—A counterweighted sliding door actuated from the engine through steam or air under pressure closes access to the car-steps. When the steps are being used, a bolt actuated thereby prevents the door being operated.

291,363.



Claim.—1. The combination of the body, platform, and steps of a car with a sliding door, F, constructed to be moved to a position in front of or away from the steps, substantially as set forth.

2. The combination of the body, platform, and steps of a car, and the counterbalanced sliding door F, with a plunger, H, and cylinder I, and with pipes through which air or water under pressure may be introduced into the cylinder, all substantially as specified.

3. The combination of the body and platform of a car, and the sliding door F and bolt *v*, with yielding steps G and mechanism whereby the movement of the steps is imparted to the bolt, substantially as described.

291,364. SYRINGE. PHILIP B. LASKEY, Marblehead, Mass. Filed Oct. 3, 1883. (Model.)



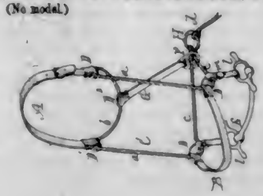
Claim.—1. In a syringe, a delivery-tube provided with a single opening, in combination with a sleeve or cap provided with two openings of different sizes, which are adapted to be brought alternately in conjunction with said opening in the delivery-tube, substantially as and for the purposes described.

2. In a syringe, the combination of a delivery-tube provided with a single opening, a sleeve or cap provided with two openings of different sizes, which are adapted to be brought alternately in conjunction with said opening in the delivery-tube, a screw set in said cap or sleeve, and two shoulders adapted to come in contact with said set-screw, to limit the movement of said cap or sleeve in either direction, substantially as and for the purposes described.

3. In a syringe, the combination of the tube A, to which is tightly fitted the thimble C, provided with the opening *a*, the cap B, provided with the openings *b* and *d*, and the set-screw *f*, the shoulders *g* and *h*, and the friction-surface *k*, all adapted to operate substantially as and for the purposes described.

4. In a syringe, the combination of a delivery-tube, A, provided with the flange *l* and a suitable screw-thread, upon which is mounted the thumb-nut *m*, and the ball or bulb D, all adapted to operate substantially as and for the purposes described.

291,365. HALTER. JOHN C. LIGHTHOUSE, Rochester, N. Y. Filed June 18, 1883. (No model.)

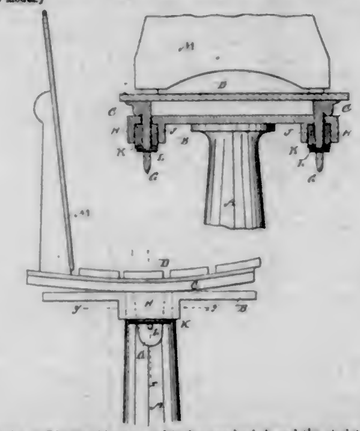


Claim.—1. In a halter, the clamp D, made in two parts, constructed with the two sockets *g h*, standing at right angles to each other for receiving the rope, and provided at the bottom with a loop, *k*, to receive the strap of the removable bit, as herein shown and described.

2. In a halter, the combination of the clamps D D, attached to the nose-piece, provided with sockets *g h*, to receive the rope, and with loops *k k*, to receive a bit, and the bit E, provided with buckle-straps *m m*, to buckle into the loops of the clamp, as herein shown and described.

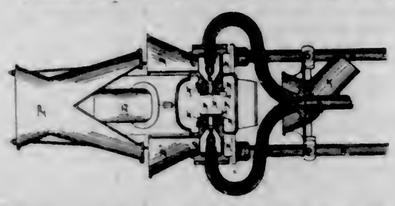
3. In a halter, the combination of the head-piece, A, the nose-piece B, the rope-body C, attached permanently to the nose-piece, passing thence up loosely through loops of the head-piece extending across, forming a throat-latch, which adjusts itself to the throat, the billet G, consisting of a single strap hanging from the throat-latch, having a ring, *p*, at its lower end, and two stale ends, *e e*, proceeding from the nose-strap, passing through the ring of the billet, and attached to a ring, H, outside, to which the hitch-strap *d* is also attached, as herein shown and described.

291,366. CHAIR. JAMES R. LINN, Toledo, Ohio. Filed May 5, 1883. (No model.)



Claim.—The combination, with the standard A and the skeleton frame B, having pockets H, of the rockers C, carrying seat D, and having downwardly-projecting lugs G, located within the pockets, and the rubber tube J, surrounding said lugs and in contact with the lugs and sides of said pockets, substantially as and for the purpose specified.

291,367. APPARATUS FOR PULVERIZING ORES, &c. FREDERIC A. LOCKENBACH, New York, N. Y. Filed June 15, 1883. (No model.)



Claim.—1. The combination, in a pulverizer, of the chamber D, nozzle O, and wearing-pipe E, having flange E′, constructed and arranged substantially as described.

2. The combination, in a pulverizer, of the chamber D, nozzle O, wearing-pipe E, and bushing H, substantially as described.

3. The combination, in a pulverizer, of the chamber F, chambers D, nozzles O, wearing-pipes E E, and bushings H H, substantially as described.

4. The combination, in a pulverizer, of the chamber F, wearing-pipes E E, having flanges E′, and chambers D D, substantially as described.

5. The combination, in a pulverizer, of the chamber F, wearing-tubes E E, chambers D D, and adjustable steam-nozzles O O, substantially as described.

6. The combination, in a pulverizer, of the chambers D and F, communicating with each other, and an adjustable steam-nozzle, O, substantially as described.

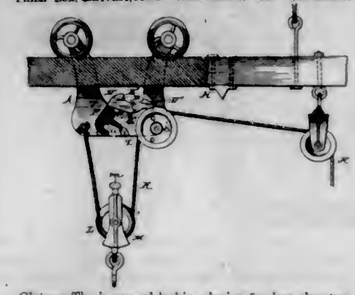
7. The combination, in a pulverizer, of the steam-nozzle O, with removable reduced opening G, the tapering chamber D, and pulverizing-chamber F, substantially as described.

8. The combination, in a pulverizer, of the chamber D, steam-pipe A, and adjustable steam-nozzle O, substantially as described.

9. In a pulverizer, and in combination with the pulverizing-chamber F, the chamber D, the steam-nozzle O, and the jet-exhaust apparatus constructed and arranged to draw the pulverized material, exhaust-steam, &c., from said chamber, substantially as described.

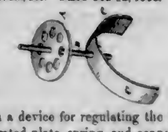
10. The combination, in a pulverizer, of the removable bushings H H and wearing-pipes E E, substantially as described.

291,368. HAY ELEVATOR AND CARRIER. JOHN H. LUX and PHILIP LUX, Earlville, Iowa. Filed Nov. 5, 1883. (No model.)



Claim.—The improved locking device for hay elevators and carriers of the described class herein shown and described, consisting of the pivoted catch F, having shoulder F′, and the pivoted lever D, having long arm D′, provided with a step or shoulder, E′, and having the upper side of its extremity beveled or partially rounded, and short arm D″, having the upper side of its extremity beveled or rounded, as and for the purpose shown and set forth.

291,369. DEVICE FOR CHECKING THE FLOW OF GAS. EMIL E. MALAM, St. Louis, Mo. Filed Oct. 12, 1883. (No model.)

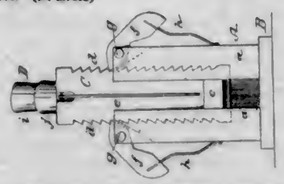


Claim.—1. In a device for regulating the flow of gas, the combination of the perforated plate, spring, and connecting rod or stem, made and operating substantially as set forth.

2. In a device for regulating the flow of gas, the combination of the perforated plate, spring, and connecting rod or stem, the spring consisting of a bent plate, as shown and described.

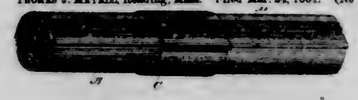
3. In a device for regulating the flow of gas, the combination of the perforated plate, spring, and rod or stem, the ends of the rod or stem extending beyond the plate and spring, substantially as and for the purpose set forth.

291,370. POWER-JACK. JOHN WASHINGTON MANSEY, Gholson, assignor of one-half to Madison Edwards, Noxubee County, Miss. Filed May 29, 1883. (No model.)



Claim.—The casing A, having side ways, *a a*, and formed with projections *m m*, having inclined slots *l l*, in combination with the rack-bar C, spring-pawls *f f*, and lever D, having the circular toothed head *f'*, substantially as and for the purposes set forth.

291,371. BOX FOR LAYING LINES OF TELEGRAPH-WIRE. THOMAS J. MAYALL, Reading, Mass. Filed Mar. 24, 1881. (No model.)

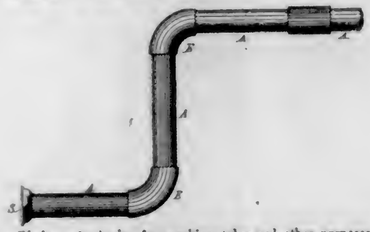


Claim.—1. A box for containing electrical conductors, formed of a composition of vulcanized rubber and graphite in the proportions substantially as described, the graphite being in excess of the rubber, as set forth.

2. A box of rubber and graphite composition, for containing electrical conductors, the same comprising a trough and cover, and having the joints cemented with rubber cement, substantially as described.

3. A box for containing electrical conductors, having the joints between the sections cemented and enveloped in a sheet of rubber composition, substantially as described.

291,372. PAPER PIPING. JOHN MCCAUSLAND, Providence, R. I. Filed Sept. 13, 1883. (No model.)



Claim.—1. A pipe for speaking-tubes and other purposes, constructed of paper tubes A, connected together by elbows E, of metal, rubber, or other suitable material, and paper couplings *c'*, as shown and described.

2. A pipe for speaking-tubes, and air and water conductors, constructed of alternated layers of paper *a* and textile fabric *b*, as shown and described.

291,373. FINGER-RING GAGE. FRANK D. MCDOWELL, Salem, Oreg. Filed June 20, 1883. (Model.)

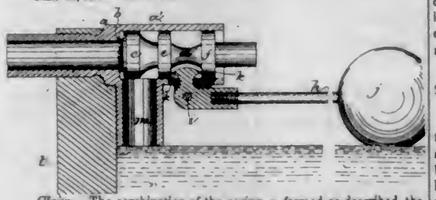
Brief.—Shows the difference in circumference of rings of different sizes.



Claim.—1. A ring-gage of tapering form provided with lines indicating the sizes, and with intersecting lines that indicate the differences in the circumferences of the different sizes, as shown and described.

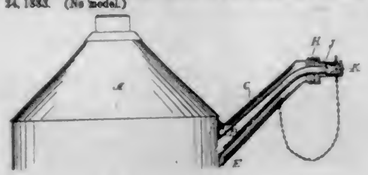
2. In ring-gages, the inclined or spiral lines *b*, combined with the transverse size-lines and the longitudinal marking-line *a*, as and for the purposes set forth.

291,374. BALL-COCK. TIMOTHY MCHUGH, Cambridge, Mass. Filed June 14, 1883. (No model.)



Claim.—The combination of the casing *a*, formed as described, the float-lever A, pivoted to said casing and having a shorter arm projecting into said casing, and the valve provided with the stem *d* and circular flanges *e f*, separated by an annular groove or space receiving the shorter arm of the lever A, whereby the valve is adapted to be rotated by the action of water flowing through the casing when the valve is opened, as set forth.

291,375. CAN-NOZZLE. ISAAC T. MEE, Cedartown, Ga. Filed Aug. 24, 1883. (No model.)



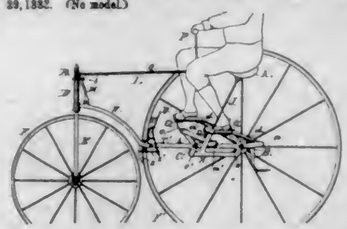
Claim.—1. A can-nozzle having a re-enforcing case or jacket surrounding it, the outer end or head provided with a thread, substantially as herein set forth.

2. In an oil-can, a case or jacket bent so as to conform to the shape of an ordinary can-nozzle, placed over and soldered to the nozzle, as shown, the exterior case having a thread, in combination with a screw-threaded cap, substantially as herein set forth.

3. In an oil-can, a case or jacket, the outer end provided with a thread, combined with the internally-threaded cap arranged to fit on the head of the case or jacket, the reduced external end provided on its inner side with packing, substantially as herein set forth.

4. The combination of the spout having a rigid case or jacket, also soldered to the can, said spout and jacket being attached together at their outer ends, with the spout-tip projecting beyond the end of the jacket screw-threaded, with the screw-threaded cap or head having a reduced portion to receive the packing, substantially as herein set forth.

291,376. TRICYCLE. NELSON MERRILL, New York, N. Y. Filed May 29, 1882. (No model.)



Claim.—1. In a velocipede or motor, the combination, with its axle or driving-shaft, a seat mounted to vibrate vertically over the same, and an idle-shaft rotating in line parallel with the axle or driving-shaft, of one or more cranks formed on said idle-shaft and coupled by pitman-rods with the vibrating seat or seat-lever, pedal-cranks also formed on said shaft at an angle of about one hundred and twenty degrees with each other and with the seat-cranks, and counterpart pedal-cranks formed on the axle or driving-shaft, and coupled by connecting-bars with the pedal-cranks on the idle-shaft, substantially in the manner and for the purpose herein set forth.

2. The combination, with the rotating fork or spindle carrying the steering-wheel of a velocipede, a vibrating lever pivoted to the standard supporting said fork and actuated by cranks upon the axle or a counterpart idle-shaft driven thereby, and a seat fitted upon the lever to partake of its movement, of a steering wheel or handle mounted upon said lever within reach of the rider upon the seat and geared to the fork or spindle of the driving-wheel, substantially in the manner and for the purpose herein set forth.

3. The combination, in a velocipede or motor, with the counterpart pedal-cranks upon its driving-axle and auxiliary idle-shaft, of a pedal bar or bars adapted to uphold the foot of the operator above the crank of the idle-shaft during its entire revolution, and to couple said crank with the corresponding crank upon the driving-axle, substantially in the manner and for the purpose herein set forth.

291,377. KNITTING-MACHINE. JOSEPH M. MERROW, Mattow, Conn. Filed Mar. 5, 1883. (No model.)

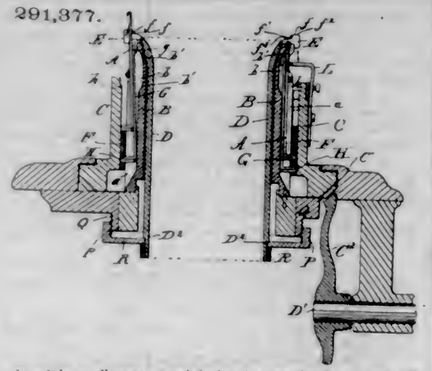
Brief.—The machine is provided with web-holders at its "knitting-edge," which web-holders obviate the necessity of weights or tension on the knitted fabric to keep it from rising or being carried forward by the needles as they are advanced to pass through the newly-formed loops or to receive yarn from the yarn-carrier. Devices are also provided for moving the needles laterally, so as to place the portion of the fabric between the stitches on the needles in the hooks of the web-holders as the needles are advanced, and to move said portion of the fabric out of said hooks as the needles are retracted. Means are also provided for adjusting the web-holders with respect to the needles, so as to lengthen or shorten the stitch.

Claim.—1. The combination, with a needle-support and a series of web-holders arranged at the knitting-edge of said needle-support, of a series of needles and means, substantially as described, for imparting a reciprocating and lateral movement to said needles, substantially as shown and described.

2. The combination, with a needle-support having fixed web-holders, of needles held in said support, devices for pressing the needles into the grooves in the support, and devices for pressing the needles outward at suitable times, substantially as set forth.

3. The combination, with a cam-cylinder, C, of the needle-support B, provided with needle-grooves *a*, having a bevel surface, the needles A, the blanks G, held in the needle-grooves, needle-operating cams, a cam or cams adapted to operate the blanks, web-holders E at the knitting-

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edge of the needle-support, and devices for operating the machine, substantially as shown and described.

4. The combination, with the needle-support and cam-cylinder C, provided with needle-operating cams, plate F, a cam-groove, H, having a lower and upper part on the inner surface of the cam-cylinder, of the needle-cylinder B, the needles A, the blanks G, web-holders E, and devices for operating the cam-cylinder, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with a needle-support provided with grooves having beveled surface *b'*, of blanks G, needles A, and means for reciprocating said blanks and needles, whereby a lateral movement is imparted to the hooked ends of the needles, and also a reciprocating movement to the same, substantially as shown and described.

6. The combination, with the cam-cylinder C, having an annular shoulder, A, at the upper edge of its inner surface, of the cam J, provided with arms *k* at its ends, the needle-cylinder B, needles A, blanks G, cams for operating the needles, and blanks and devices for operating the cam-cylinder, substantially as herein shown and described, and for the purpose set forth.

7. The combination, with the base of the machine, provided with a collar having a screw-threaded neck, Q, and the needle-cylinder B, of the cylinder D, contained in said cylinder B, and provided with a groove, D^2, on the lower part thereof, the web-holders E on the cylinder D, the ring P, screwed on said neck Q, and provided with a flange, R, projecting into said annular groove D^2, substantially as shown and described, whereby the cylinder D may be adjusted axially, independently of the needle-cylinder B, as set forth.

291,378. FIRE-ESCAPE. ABRAHAM S. MILLER, Republic, Ohio. Filed May 14, 1883. (No model.)

Brief.—The bifurcated claw secured to the top of the boom is made in one piece and embraces three sides of the upper section. C-shaped clips on the under side of one section embrace the edges of plates secured upon the upper face of the next lower section. The extension-boom is raised to a vertical position by a pivoted derrick and an arrangement of ropes and a windlass. A spring-support for the boom when down is a bow-shaped support connected to a guide-bar, around which a spiral spring is placed. A flexible ladder is secured to the top of the boom.

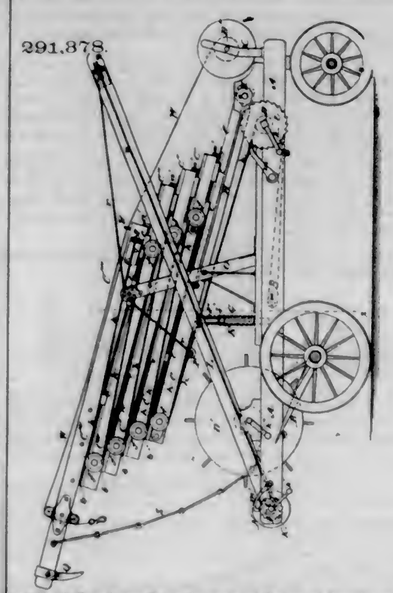
Claim.—1. The combination, with a fire-escape boom, of the bifurcated claw Q, made in one piece and embracing the upper end of the boom on three sides, substantially as described.

2. The combination, with a base or support, an extension-boom pivoted to said support, provided with means for raising and extending the same, and a hook at the upper or outer extremity for engaging some part of a building and taking from said boom strains otherwise due to leverage, as herein described, of a pendulous flexible extension-ladder attached to the upper part of said boom, and adapted to hang therefrom parallel with the wall of the building, or nearly so, substantially as and for the purpose specified.

3. A boom for fire-escapes, provided with plates *b* on one section and C-shaped clips *c* on another section, said clips having their ends turned around and under the edges of and embracing the facing-plates, and forming bearings for said plates, thus performing the double function of holding two sections of the boom together, and forming the bearing-surface of the upper section, substantially as described.

4. The combination, with a base or support, an extension-boom pivoted to said base, a derrick-boom also pivoted to said base, and adapted to raise said extension-boom by shortening a bight in a rope passing under the extension-boom, and operated by a windlass pertaining to the derrick-boom, of a support, G, attached to the base, and arranged to bend the branches of said bight and lessen the power required to be applied

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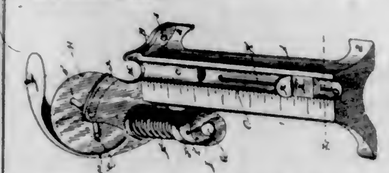


to said windlass during the early stages of the act of elevating said extension-boom, substantially as and for the purpose specified.

5. As a detail of construction in a portable fire-escape, the spring-support intermediate between the extension-boom and the frame of the truck, consisting of the uprights E, the bow F, having thereon the step *n*, the vertical guide-bar G, and the helical spring *s'*, all constructed, arranged, and operating substantially as described.

6. In a fire-escape comprising an extension-boom and a flexible ladder attached thereto, the flexible ladder herein described, formed of the ropes S, rings *t*, and rungs T, passed through bights in the ropes S and between the ropes and the rings, and bent or clinched on or around the rings, substantially as and for the purpose specified.

291,379. CIGAR-CUTTER. FREDRICK C. MILLER, Newport, Ky. Filed May 1, 1883. (Model.)



Claim.—1. In a cigar-cutter, the stationary shear-plate B and cutter-arm F, mounted on a shaft journaled in the shear-plate, in combination with a retractile spring coiled around said shaft, and one end of which rests loosely in a boss, J, attached to the shaft, and having a lug, *d'*, against which the end of the coil of the spring presses, and a similar boss and lug on the shear-plate for supporting the other end of the spring, substantially as described.

2. A cigar-cutter consisting of the shear-plate B, the cutter-arm F, the shaft G, and a coiled spring, E, secured at each end by spiral sockets, against which the ends of the spring thrust, one socket being attached to the shaft and the other to the shear-plate, for expanding the spring by the downward movement of the cutter-arms, substantially as described.

3. The combination of the shear-plate B, the cutter-arm F, carrying a cutter, and having an attached arm, G, provided at its end with a serrated collar, the sleeve C, arranged on the shaft of the cutter-arm and provided with a serrated socket, and the spring E, coiled on the sleeve, and having one end supported by the shear-plate and its other end by the serrated socket, substantially as described.

4. In combination with the cutter-arm F, shaft G, journaled in a sleeve, C, and coiled spring E, adjustably secured to shaft G by means of stationary serrated collar I and serrated adjustable socket J, whereby the tension of the spring is regulated, substantially as herein set forth.

5. In combination with the adjustable gage N and grooved base T, having a slot, the spring S and screw P, for holding said gage adjustably in position, substantially as herein set forth.

6. The shear-plate B, having the rigidly-attached sleeve C, provided with a serrated socket, in combination with the cutter-arm F, having the attached shaft G, arranged in said sleeve and provided with a serrated collar, and the spring E, coiled on the sleeve, and having one end resting in a groove in the shear-plate and its other end secured to the serrated collar, substantially as described.

7. The combination, with the cutter-arm F, shaft G, and sleeve C, within which the cutter-shaft G is journaled, of shear-plate B, and the spring E, coiled around sleeve C, and secured to shaft G in such a manner that the downward movement of arm F expands the spring, substantially as herein set forth.

291,380. DRAFTING IMPLEMENT. NEVIN MILLOY, Cincinnati, Ohio. Filed May 31, 1883. (No model.)



Claim.—1. A drafting-rule consisting of a flexible elastic strip, in combination with a series of pins for retaining said rule in contact with the drawing, and at any desired curvature, said pins being so constructed as to leave the bottom portion of one side of the rule unobstructed, substantially as and for the purposes described.

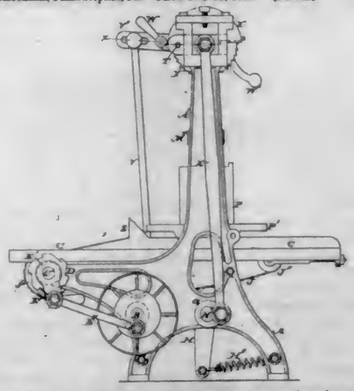
2. A ruler, A, consisting of a strip of flexible elastic material, in combination with a series of pins, B, consisting of two legs or branches, *b b'*, the leg *b* adapted to be driven into the drawing, the leg *b'* being shorter than the leg *b*, and adapted to engage with the face of the ruler at its upper portion only when the ruler is in position on the drawing, substantially as and for the purposes described.

3. The ruler A, consisting of a strip of flexible elastic material, and provided with the eyes *a*, in combination with the pins C and a series of pins located between said eyes *a*, and constructed so as to leave the bottom portion of one side of the rule unobstructed, substantially as and for the purposes described.

4. The ruler consisting of a strip of flexible elastic material, and provided with the eyes *a*, in combination with the pins C and a series of pins, B, substantially as and for the purposes described.

5. The combination, substantially as hereinbefore set forth, of the elastic flexible strip A, provided with eyes rigidly attached to said strip, and fastening-pins adapted to penetrate the substance upon which the drawing is to be made, and hold said strip in position.

291,381. CAKE AND CONFECTIONERY MACHINE. J. HENRY MITCHELL, Philadelphia, Pa. Filed Dec. 15, 1880. (Model.)



Claim.—1. In an organized cake or candy machine, the combination of a material-box, a pan-supporting table, an endless conveyer and its drums or pulleys, and a positively-operated ratchet-wheel having differential teeth, substantially as and for the purpose set forth.

2. In an organized cake and candy machine, the combination, with a dough or material box and the piston thereof, of a rising and falling head and advancing mechanism, substantially as described, whereby said piston is advanced into and returned from the material-box and additionally advanced on the return, and alternately ejects and stops the flow of the material, as stated.

3. The material-box with discharge nozzles or outlets at the bottom and open at top, in combination with a forcing-piston, N, having an air-vent, *d*, and valve S, substantially as and for the purpose set forth.

4. The material-box having at its bottom discharge-nozzles R and pendent stops *c*, which are longer than said nozzles, substantially as and for the purpose set forth.

5. The material-box provided with stops, and the pan-conveyer, in combination with a scrap-receiving box having a perforated lid which sustains the pan during the deposit of the material and permits scraps to fall into the box, substantially as set forth.

6. The piston in combination with the screw-shafts M, the rising and falling head L', gear-wheels *b'*, rotary shaft L, and gear-wheel *b*, substantially as and for the purpose set forth.

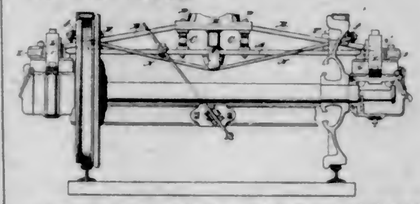
7. The combination, with the ratchet X and the sliding rod T, of the throw-off Y, fitted loosely on the shaft L and formed with a flange, Y', and notch *g*, substantially as and for the purpose set forth.

8. The threaded shaft L, traveler or nut U, and sliding rod T, in combination with the ratchet X and throw-off of the pawl W, substantially as and for the purpose set forth.

9. The cam G and arm H, in combination with the arms or rods K and the rising and falling head with the suspended piston, substantially as and for the purpose set forth.

10. The rising and falling table C, in combination with the shaft C', cam F, pan-carrier J, and pulleys J' J'', substantially as and for the purpose set forth.

291,382. CAR-TRUCK. WILLIAM H. MONTS, Lehighton, Pa. Filed Sept. 10, 1883. (No model.)

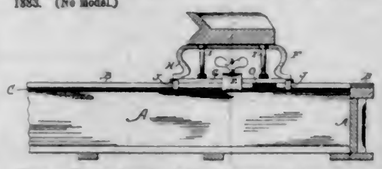


Claim.—1. As a means for connecting the bolster with the truck-frame, the cap I, having the form shown, and provided with the recess *i* and side flanges, *i'*, substantially as specified.

2. As an improvement in car-trucks, the hereinbefore-described bolster, composed of the bars A and B, connected together at their ends, and having their centers united and held in relative vertical positions by means of the posts C and bolts D, in combination with the truss-rods N, substantially as and for the purpose shown.

3. The hereinbefore-described car-truck, in which the trussed bolster, cap, and frame are constructed and combined in the manner and for the purpose substantially as set forth.

291,383. WAGON-SEAT. SETH MOORE, Salem, Ohio. Filed Sept. 8, 1883. (No model.)



Claim.—The combination, with the wagon-bed having grooves in its sides, of the seat-supporting plates G, having lugs J, the clamps E, having lips L M overlapping the sides of the bed, and screws N, passing through the said clamps and plates and bearing against the sides of the bed, substantially as shown and described.

291,384. MAIL-BAG FASTENER. JACOB MOORE, Albany, N.Y. Filed Dec. 18, 1882. (No model.)

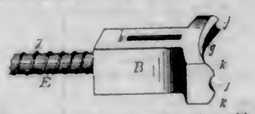


Claim.—1. In a bag-fastener, the locking-bar D, provided with eccentric holding-piece D', held in bearings secured to one side of the mouth of the bag, in combination with catch C, secured with the flap, and adapted to engage with said locking-bar when turned in one direction and be disengaged when turned in an opposite direction, substantially as set forth.

2. The combination, with a series of flexibly-connected locking-bars which are arranged to be simultaneously turned in bearings secured to one side of a bag for engagement with coacting catches attached to a closing-flap, of hasp F, attached to or made with one of said locking-bars, and staples *k*, adapted to receive the bow of a padlock, substantially as and for the purpose set forth.

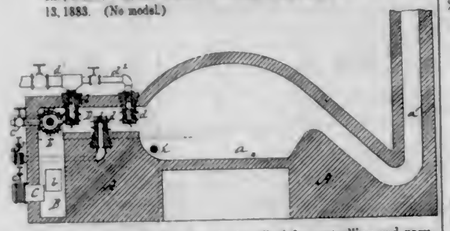
3. In a mail-bag fastener, the combination, with plate *g*, having aperture A, and locking bar D', provided with eccentric piece D, and rotated in bearings, of duplex catch C, provided with holding-lips *e* and *f*, for operation substantially as set forth.

291,385. CAR-COUPLING. DAVID E. MORGAN, Detroit, Mich., assignor of one-half to Adam G. Monroe, same place. Filed Oct. 22, 1883. (No model.)



Claim.—In a car-coupling, the combination, with the ordinary-shaped draw-head having an open socket with flaring entrance, of the spring-dog B, having a concave face on its horizontal plane, and a convex face with a groove across its center on its vertical plane, slot *b*, stop-pin *c*, cylindrical extension E, spiral spring *d*, block D, oval coupling-pin C, provided with a stop-pin, *f*, seat or recess A, coupling-pin guide *s*, and the ordinary coupling-link, all substantially as described, and for the purposes set forth.

291,386. GAS-FURNACE FOR METALLURGIC AND OTHER PURPOSES, AND METHOD OF OPERATING THE SAME. JOHN T. MORGAN, Selma, Ala., and HENRY F. HAYDEN, Washington, D.C. Filed Apr. 13, 1883. (No model.)



Claim.—1. The method herein described for controlling and varying the character of the flame in metallurgic and like furnaces, which consists in first bringing together the proper volumes of air and gas to produce complete combustion at the point of initial combustion, and then surcharging the flame with oxidizing or carburizing gases between the point of initial combustion and the working-chamber of the furnace, substantially as and for the purposes specified.

2. A burner for gas-furnaces, having a general C form in cross-section, and consisting of a longitudinally-slotted hollow cylinder having a reticulated or closely-perforated jacket, substantially as and for the purpose specified.

3. In a gas-furnace, the combination of a burner consisting of a hollow longitudinally-slotted cylinder having a perforated jacket, and a supply-pipe arranged to deliver into the hollow center of the longitudinally-slotted burner, substantially as and for the purpose specified.

4. In a gas-furnace, the combination of a burner consisting of a hollow longitudinally-slotted cylinder having a perforated or reticulated jacket, and a mixing-chamber having a series of pendent and projecting walls which divide the chamber into zigzag or irregular passages, substantially as and for the purpose specified.

5. In a gas-furnace, the combination, with a mixing-chamber divided into zigzag passages by a series of hollow perforated projecting walls, of a gas-burner arranged at the mouth of the mixing-chamber to deliver the flame thereto, substantially as and for the purpose specified.

6. In a mixing-chamber for metallurgic and similar gas-furnaces, the combination of a series of hollow, perforated, detachable cross-walls of less height than the mixing-chamber, and arranged alternately above and below to form zigzag or irregular flame-passages, substantially as and for the purpose specified.

291,387. MACHINE FOR FORMING EYEBOLTS. LAURIDS J. M. MORTENSON, Racine, Wis., assignor of one-half to Stephen Andersen, same place. Filed Mar. 29, 1883. (No model.)

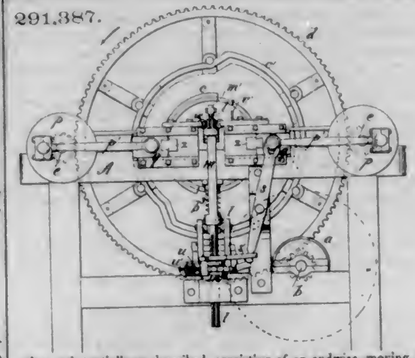
Claim.—1. The combination of the rod *l*, provided with the piece *l'*, having the projection or former l^3, the rod *m*, and the slides *q*, carrying welding-dies *r*, substantially as described, for operation in holding, bending, and welding a heated rod to form an eyebolt.

2. In machines for welding eyebolts, the combination of the mechanism, substantially as described, consisting of an endwise-moving rod and a former, between which the rod to be welded is clamped, supports for holding the rod while being bent, and reciprocating dies for welding the rod after being bent, so as to bend and weld an eyebolt at one heat.

3. The combination, with the rod *l*, having former l^3, of the supports *w w*, the gage *v'*, the cam *c'*, and the lever *k*, whereby the rod may be bent around the former, as described.

4. The combination, with the rod *l*, of the lever *s*, connection *s'*, and dog *u*, to give a quarter-turn to the rod, as described.

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291,388. CUPPING-GLASS. CHAS. L. MYERS, New Hamburg, N. Y. Filed Apr. 16, 1883. (No model.)



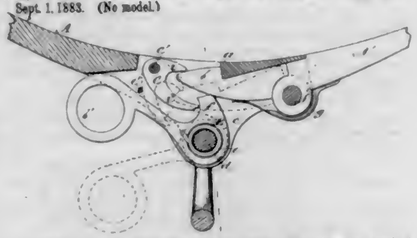
Claim.—The combination, with the cupping-glass, of the pivoted taper-holder E, adjustable to the varied positions in the application of the glass, constructed and operating substantially as and for the purpose described.

291,389. VEHICLE-SEAT LOCK. FRANK J. NEWACHECK, Green Spring, Ohio. Filed Nov. 6, 1883. (No model.)



Claim.—The combination, with the seat-rail, of the hinged detachable seat, connected to the rail by means of the slotted recessed strap C, the pivot-strap G, and the pivoted hook I, substantially as set forth.

291,390. HAME-FASTENER. MARSH NOE, Davenport, Iowa. Filed Sept. 1, 1883. (No model.)



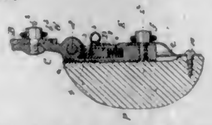
Claim.—1. The combination of the hame A', having the notched end *b*, the hame A, having the end notch, *a*, side plates, *c c*, and fixed cross-bolt *d*, the spring *e*, fastened at one end to and coiled about said bolt, the tumbler B, pivoted on the bolt and connected with one end of its spring, and the dog C, pivoted at *c'*, and having members *i i'*, as and for the purpose specified.

2. The hame-fastener A, formed with an offset, *a*, and provided with the tumbler B and dog C, in combination with the hame A', having the notched end *b*, substantially as and for the purpose set forth.

3. In a hame-fastener, the combination, with the hames provided at their lower ends with an offset and a hook end, respectively, for engagement with each other, of a spring-actuated tumbler for preventing the ends of the hames from being disengaged, substantially as herein shown and described.

4. In a hame-fastener, the combination, with the hame A, provided with the offset *a* and the side plates, *c*, and the hame A', provided with the hooked end, of the tumbler B, pivoted in the said side plates, the spring *d*, the latch C, and the stop-pin *c'*, substantially as herein shown and described.

291,391. TRUSS. JOSEPH F. NOONE, Peterborough, N. H. Filed Aug. 17, 1883. (Model.)

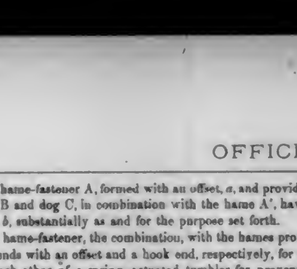


Claim.—1. The body-spring A, having the end piece, B, provided with recesses combined with the pad, its arm C, having cogs to engage the said recessed end piece in any of the several lateral adjustments of which the pad is thereby capable, a fastening device, *b'*, and a spring-bolt, D, to engage the lower end of the said pad-arm to hold the pad in any of the in and out adjustments thus permitted, substantially as shown and described.

2. The combination, substantially as shown and described, of the pad, the pad-carrier E, upon which the pad is movable longitudinally, the ring-bolt or the like, *f*, to hold the pad and its carrier in adjusted position, and the lever connecting the pad and body-spring, to which lever the pad is hinged and rendered movable toward and from the wearer, and held in such position by a spring-bolt in the carrier, all as set forth.

291,392. LOCKING-LATCH. ELIJAH NYSWONGER, Hanford, Cal. Filed Aug. 17, 1883. (Model.)

Brief.—A hinged section of the lock-case is adapted to be locked in position to prevent the rotation of the spindle by which the latch-bolt is operated. The hinged section serves as a weight, and takes the place of a spring to shoot the latch-bolt.



Claim.—1. In a lock, the combination, with a sliding bolt, of a hinged section of the casing for thrusting the bolt outward, and means for locking said hinged section in position, substantially as herein shown and described.

2. In a lock, the combination, with a casing having a hinged section, and means for locking the same in position, of a sliding bolt connected to an arm of a nut surrounding the knob-spindle, and a collar surrounding the nut, and provided with a downwardly-projecting arm, substantially as herein shown and described.

3. In a lock, the combination, with a casing provided with a hinged section having a loop at its free end, of a sliding latch-bolt for engagement with the loop of the hinged section, and means for operating said latch-bolt, substantially as herein shown.

4. In a lock, the combination, with a casing provided with a hinged section having a loop on its free end, of a sliding latch-bolt for engagement with the loop of the said hinged section, a tumbler pivoted to the latch-bolt, and means for operating the tumbler, substantially as herein shown and described.

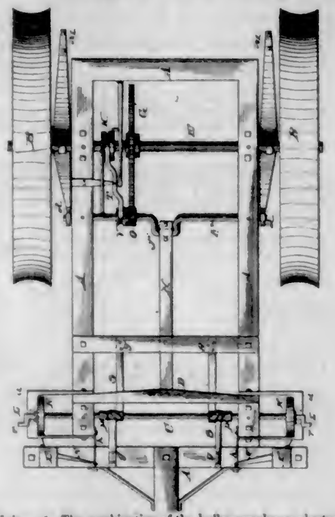
5. In a lock, the combination, with a lock-casing provided with the hinged part B, having loop L, the bolt C, connected to the arm of the nut E, surrounding the knob-spindle, and the armed collar G, surrounding the nut, of the latch-bolt *k*, provided with the lugs K', and the angular tumbler N, pivoted to the latch-lock, substantially as herein shown and described.

6. In a lock, the combination, with a lock-casing provided with the hinged part B, having loop L, the bolt C, connected to the arm of a nut, E, surrounding the knob-spindle, and an armed collar, G, surrounding the nut, of the latch-bolt K, provided with the lugs K' and the projection W, and the angular tumbler N, pivoted to the latch-bolt and provided with the offset *m*, substantially as herein shown and described.

7. The combination, with a lock-casing, of the hinged part B, the nut E, the collar G, provided with an arm, J, and the arm D, the latter connected with the sliding bolt C, substantially as herein shown and described, and for the purpose set forth.

8. The combination, with a lock-casing, of the hinged part B, having a recess, J', the nut E, provided with a tooth, I, the collar G, provided with a recess, H, and an arm, J, and the arm D, the latter connected with the sliding bolt C, substantially as herein shown and described, and for the purpose set forth.

291,393. CORN-PLANTER AND CHECK-ROW ATTACHMENT. CALVIN S. PAGE, Champaign, Ill. Filed Mar. 22, 1883. (No model.)



Claim.—1. The combination of the hollow spades or planters, having tubular or funnel-shaped attachments, the vertically-movable plunger *b*, and the movable frame D, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination of the movable frame D, the spades, a movable plunger, crank-pin *r*, wheel R, rotary shaft *c*, and check-rowing devices, all constructed and adapted to operate substantially in the manner and for the purposes described.

3. The combination of the movable frame D, the vertically-movable spades, the vertically-movable plunger, the arm H, the crank J, the gearing V G, the clutches *p*, and the straps S, all constructed and adapted to operate substantially in the manner and for the purposes described.

4. The combination of the cam-wheel K, lever T, and markers M, all constructed and adapted to operate substantially in the manner and for the purposes described.

5. The combination of the cam-wheel, the ratchet-teeth therein, the pivoted fingers or pawls *i*, the brakes *l j*, and the markers M, all constructed and adapted to operate substantially in the manner and for the purposes described.

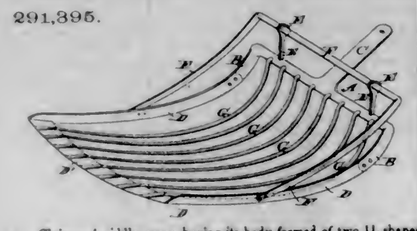
291,394. MUSTACHE-SPOON. ISAAC WARREN PARMENTER, New York, N. Y. Filed July 9, 1883. (No model.)



Claim.—In a table-spoon having a cover attached thereto, provided with an outlet and inlet, the cover having a vertically-projecting flange at the inlet, substantially as shown and described.

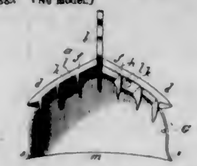
291,395. COMBINED POTATO-SCOOP AND RIDDLE. HENRY PEDEN, Windham, Ohio. Filed Oct. 20, 1883. (No model.)

291,395.



Claim.—A riddle-scoop having its body formed of two U-shaped frames, with prong ends riveted together, and opposite cross-bars connected by carved rods, said rods being welded flat at one end to cross-bar D', and at the other end passing into cross-bar A, as shown and described.

291,396. CORN-COVERER. WILLIAM H. PENNOCK, Wilmington, Del. Filed May 26, 1883. (No model.)

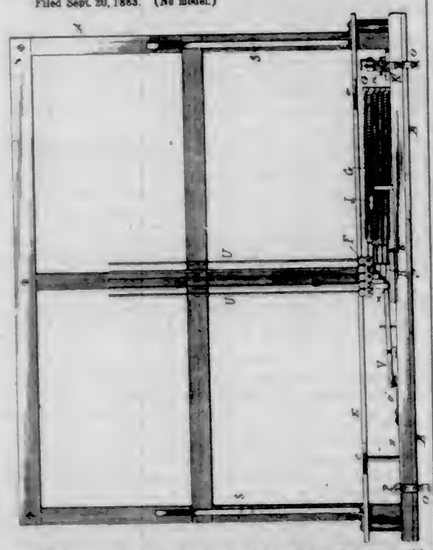


Claim.—1. A rake-head attachment for cultivators, consisting of a transversely-arched rake and a transversely-arched rearwardly-inclined covering and smoothing plate secured thereto in rear, substantially as specified.

2. The rake-head consisting of the rake *a*, having the outwardly and rearwardly inclined and downwardly-arched branches *d*, and the transversely-arched and downwardly and rearwardly inclined covering-plate G, having the angular front edge, *h*, and the rear smoothing-lip, *s*, substantially as specified.

3. An adjustable rake-head attachment consisting of the transversely-arched rake *a*, having the curved and perforated shank *b*, and the transversely-arched and rearwardly and downwardly inclined covering and smoothing plate G, secured to perforated lugs of the rake, substantially as specified.

291,397. MUSIC-LEAF TURNER. DEMETRIO PRIETO, Mexico, Mexico. Filed Sept. 20, 1883. (No model.)



Claim.—1. A music-leaf-turning rack provided on its bottom with plates beveled on their inner ends, as shown and described, in combination with a plate permanently attached to a musical instrument, and beveled, as shown and described, whereby said rack may be attached to and detached from said musical instrument, substantially as set forth.

2. The swinging leaf-turning levers F, pivoted to the rack below the music-rest, in combination with a guide, J, secured to the rack below said levers, whereby said levers are made to swing in a proper horizontal plane, substantially as set forth.

3. The combination of a pivoted releasing-lever, a spring adapted to hold said lever normally in proper position to prevent the leaf-turning levers from swinging, a holding-catch pivoted to said releasing-lever, and a spring adapted to hold said catch in proper position to hold the leaf-turning levers, substantially as set forth.

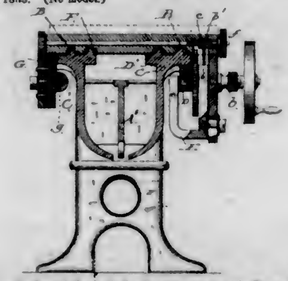
4. A pivoted retaining-catch, M N, and a spring for holding it normally in a position to not interfere with the swinging of the leaf-turning levers, in combination with a pivoted releasing-lever, K, provided with a holding-catch, L, and with a projection, *h*, extending back of the pivotal point, said projection being adapted to engage with the retaining-catch, whereby the said catch is raised simultaneously with the depression of the holding-catch, substantially as set forth.

5. The combination, with a music-turning lever, of a vertical rod, T, rigidly secured at or near the end thereof, a second rod, U, pivoted to said lever and adapted to turn in a vertical plane, and a spring, *m*, adapted to hold said rod U normally in a vertical position, substantially as and for the purpose set forth.

6. The combination of the swinging lever F and the bar V, provided with a catch, *n*, substantially as set forth.

7. The combination of the lever F, the bar V, provided with a catch, *n*, and the spring *o'*, substantially as and for the purpose set forth.

291,398. LATHE-BED. SALMON W. PUTNAM, Fitchburg, Mass. Filed July 21, 1883. (No model.)



Claim.—1. In a lathe-bed, the front way or track, B, made wider or at a more obtuse angle than the rear track, B', in combination with the track B' and the carriage, substantially as and for the purpose set forth.

2. The improvement in a lathe-bed, the rigid transverse rib C, the longitudinal rib A', and the projections *a a*, whereby the bed is stiffened and tremor is avoided, substantially as and for the purpose set forth.

3. In a lathe-bed, the rib A', secured longitudinally through the center of the table, substantially as and for the purpose set forth.

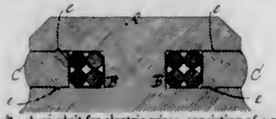
4. The rack-pinion D and gear, in combination with the carriage and the yoke E, arm-bearing *e*, and rack D', constructed to operate substantially as and for the purpose set forth.

5. The rod F and gear, in combination with the eccentric plate G and screw-nut *g*, whereby the nut may be opened or closed from the front side of the carriage, substantially as and for the purpose set forth

6. The rod F, provided with the hub *b'*, perforated at *c*, in combination with the yoke E, provided with the stop-pin *b*, substantially as and for the purpose set forth.

291,399. CONDUIT FOR ELECTRIC WIRES. NELSON RANDALL, Jersey City, N. J. Filed Oct. 10, 1883. (No model.)

Brief.—Consists of a wooden molding having longitudinal grooves and an assemblage of wires therein, and surrounded by a sheathing of lead or other water-proof material, and means for confining the wires and sheathing, consisting of detached tongues fitted into the mouths of the grooves, and provided with ribs which are embedded in the sides of the molding.

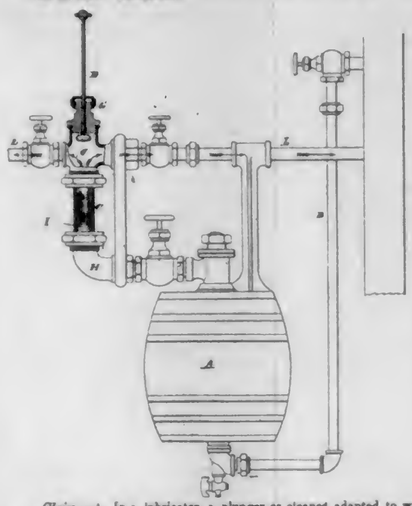


Claim.—A conduit for electric wires, consisting of a wooden strip or molding having longitudinal grooves, and of detached tongues fitted into the mouths of the grooves, and provided with a longitudinal rib or elevation on either or both sides, substantially as and for the purpose described.

2. The combination, with a conduit consisting of a wooden strip or molding having longitudinal grooves and of detached tongues fitted into the mouths of the grooves, of an assemblage of wires laid in each groove, and provided with a sheathing of sheet-lead or other water-proof material, substantially as and for the purpose described.

3. The combination, with a strip or molding having grooves, of electric wires arranged therein, a sheathing of sheet-lead or other water-proof material around the wires, and means for confining the wires and their sheathing in the grooves of the strip or molding, substantially as described.

291,400. LUBRICATOR. WILLIAM A. REID, St. Louis, Mo. Filed Oct. 31, 1883. (No model.)

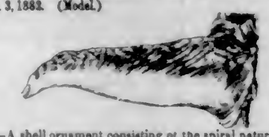


Claim.—1. In a lubricator, a plunger or cleaner adapted to wipe the interior of the sight-tube, as set forth.

2. In a lubricator, a plunger or cleaner working in a stuffing-box located above the sight-tube, for the purpose of wiping the interior of the tube and clearing the escape-pipe, substantially as and for the purpose set forth.

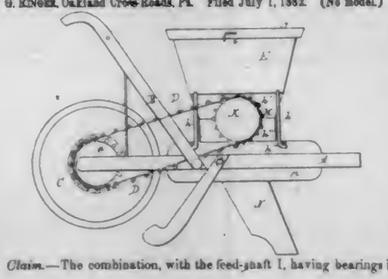
3. In combination with a lubricator having a single condenser and a single sight-tube, the duplex head provided with two supply-pipes, substantially as shown and described, for the purpose set forth.

291,401. SHELL ORNAMENT. JOHN M. REYNOLDS, Chicago, Ill. Filed Oct. 3, 1883. (Model.)



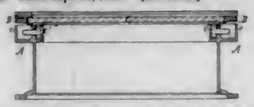
Claim.—A shell ornament consisting of the spiral naturally polished and tinted interior only of the *Strombus* species of shells, substantially as described.

291,402. SEED-PLANTER AND FERTILIZER-DISTRIBUTER. JOS. G. RINGER, Oakland Cross-Roads, Pa. Filed July 1, 1882. (No model.)



Claim.—The combination, with the feed-shaft I, having bearings in the meeting edges of the two parts of the seed and fertilizing box, of the removable feed-wheels having longitudinal recesses extending throughout the length of said wheels, and provided with beveled edges adapted to receive strips of wood for varying their depth to regulate the amount of material discharged, and the rubber block M, having its concave edge above the periphery of the seed-wheel, substantially as specified.

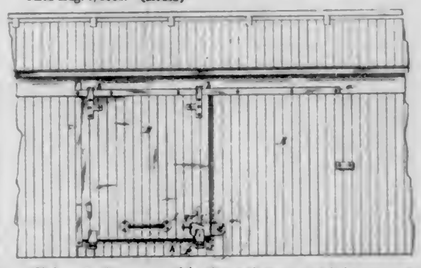
291,403. MARINER'S COMPASS. EDWARD SAMUEL RITCHIE, Brookline, Mass. Filed Sept. 25, 1883. (No model.)



Claim.—1. In a liquid-compass, the body of the bowl combined with the bottom thereof, or with the glass-pane holder, by means of a yielding annulus, or by two or more yielding annuli, substantially and arranged and applied as set forth.

2. The body of the bowl not only combined with the bottom thereof, or with the glass-pane holder, by means of a yielding annulus, or by two or more yielding annuli, arranged and adapted as described, but provided with one or more guards, as represented, arranged with the yielding annulus or annuli, and for the protection thereof, as set forth.

291,404. CAR-DOOR FASTENING. SALISBURY F. ROSSE, Sedalia, Mo. Filed Aug. 6, 1883. (Model.)



Claim.—1. As a new article of manufacture, a latch for cars, consisting of the portions *i j k*, the portion *i* being perforated for the pivotal attachment of the latch to the car-side, the portion *j* constituting a shoulder, and the portion *k* having a lip, *d*, at its lower edge, and a perforated ear, *e*, at or near its upper forward corner, substantially as set forth.

2. The combination, in a car, of a door having a staple on its outer side, a keeper projecting from the side of the car, a latch pivoted to the side of the car and provided with a lip and perforated ear, and adapted to be moved to a position to cause its lip to bear against the keeper, and thereby wedge the door in its closed position, and a seal-connection, *q*, for connecting the staple with the perforated ear of the latch, substantially as described.

3. The combination, in a car, of a sliding door, a keeper projecting from the side of the car, a latch pivoted to the side of the car, and having a portion, *i*, adapted, when the door is unlatched and moved, to pass between the door and the side of the car, and with a shoulder and lip, the former adapted, when the latch rests within the keeper, to be arranged transversely across the front edge of the door, and prevent its longitudinal movement, while the lip bears against the keeper and wedges or clamps the door against the side of the car, substantially as set forth.

4. The combination, in a car, of a sliding door, B, having a staple, *f*, keeper P, projecting from the side of the car, a shouldered latch, C, pivoted to the side of the car and consisting of the portions *i j k*, and having a lip, *d*, and perforated ear *e*, all arranged and operating substantially as herein set forth.

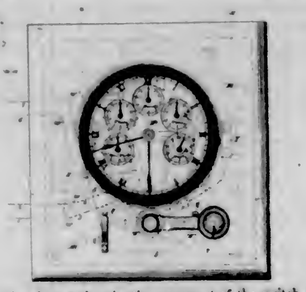
291,405. METER FOR ELECTRIC CIRCUITS. PHILIP G. RUSSELL, Washington, D.C. Filed July 2, 1883. (No model.)

Claim.—1. In a meter for measuring the length of time of the passage of an electric current over a circuit, the combination of the switch, the winding-arbor of the registering-clock, and suitable connecting mechanism, all so arranged that the movement of the switch to turn the current through the circuit will wind up the clock, substantially as shown and described.

2. In combination with the winding-gear, the switch-shaft, the clutch mechanism connecting the two, and means for throwing said clutch mechanism out of operation near the end of the movement of the switch, and before the current is turned on through the circuit, substantially as and for the purpose described.

3. The switch, in combination with means whereby the spring of

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the time mechanism is wound up by the movement of the switch, and means for preventing overwinding of the spring, substantially as shown and described.

4. In combination with the spring winding-arbor, the switch-shaft, and suitable connecting-gearing, all so arranged that the movement of the switch to turn on the current winds up the spring means for automatically disconnecting the gearing from the spring winding-arbor when the spring is wound up, substantially as and for the purpose shown and described.

5. The combination of the switch, the switch-shaft, the winding-gearing connected therewith and with the spring winding-arbor, means for disconnecting the switch-shaft from the winding-gearing when the switch-arm has nearly reached the limit of its movement, and means for disconnecting the winding-gearing from the arbor when the spring is wound up, substantially as and for the purpose set forth.

6. The combination of the switch-arm, the switch-shaft, the switch-disk fast thereon, the conducting-strip on the disk, the contact-springs and circuit-wires, the clutch mechanism connecting the shaft with the winding-gearing, and suitable means for disengaging this clutch mechanism near the end of the throw of the switch-arm, and just before, by the action of switch-disk and contact-springs, the current is turned through the meter-circuit, substantially as and for the purpose set forth.

7. In an electric meter, the combination of the switch, its shaft, and the backing-ratchet form of clutch connecting the shaft with the winding-gearing of the time-register, so that the switch-shaft can be turned back without turning the gearing, substantially as shown and described.

8. The combination of the switch, its shaft, the spring thereon, the clutch-disk sliding on the shaft, but turning therewith, and provided with diametrically-opposite cams, and the lugs acting in connection with the cams, and so relatively situated as to raise the clutch-disk out of engagement with the corresponding disk, fast on the arbor of the first wheel of the winding-gear, as the switch-arm approaches the limit of its throw, substantially as shown and described.

9. The combination of the switch-arm and switch-shaft, the clutch-disk sliding on the shaft, but turning therewith, and pressed down toward the end thereof by a spring, the flange on the disk, provided with diametrically-opposite cam-tongues, and the lugs acting in connection with the tongues to raise the disk up on the shaft against the stress of the spring, substantially as shown and described.

10. The combination of switch-arm T', switch-shaft T, disk U, conducting-strip W, contact-springs W' W² W³, clutch-disk V, flange V' thereon, cam-tongues V³ on the flange, lugs V² V³, spring S², clutch-disk O on the arbor of wheel N of the winding-gear, and suitable circuit and connecting wires, substantially as and for the purpose set forth.

11. The switch connected with and operating the winding-gearing, in combination with the single-toothed wheel and clutch-hub on the spring winding-arbor, the notched stop-wheel carrying a cam, the clutch-pinion sliding on the arbor and meshing with the winding-gearing, and the spring-arm adapted to normally press the pinion down into clutch with the hub, but to be struck by the cam and raised, so as to unclutch the pinion and hub when the spring has been sufficiently wound, substantially as shown and described.

12. The switch and connecting gearing, in combination with the wheel H and clutch-hub *h*, spring winding-arbor, grooved clutch-pinion K, sliding thereon, wheel I, cam *i*, and forked spring L, substantially as and for the purpose set forth.

13. The time-registering mechanism of the meter, in combination with means for automatically short-circuiting the current from the working back to the main circuit when the mechanism has nearly run down, substantially as set forth.

14. The combination of the toothed wheel on the winding-arbor, the stop-wheel gearing therewith, the cam on the stop-wheel, the contact-spring, the contact button or piece, and the connected wires, all so arranged that when the clock has nearly run down the cam is brought under the spring and forces it up against the contact-piece to short-circuit the current from the working-circuit, substantially as and for the purpose described.

15. In combination with the winding-arbor, the wheel H, wheel I, cam i^2, spring y^3, contact-piece y^4, and wires 10 and 11, connected with the wires from the main line or circuit, substantially as and for the purpose set forth.

16. In combination with the mechanism for measuring the time during which the electric current passes over a working-circuit, means adapted to cause the current from the main line to flow over the working-circuit when said circuit is connected with the main line, and to allow it to flow from one main-line wire to the other without passing over the working-circuit whenever undue resistance occurs in the latter, substantially as and for the purpose set forth.

17. In combination with the working-circuit, the meter adapted to measure the time of use of the working-circuit, and the resistance device suitably connected with the wires of the main or supply circuit and offering a resistance to the passage of the current greater than the normal resistance of the working-circuit, so that if any break occurs or any undue resistance is interposed in the working-circuit the current will not pass over said circuit, but from one main wire through the resistance device back to the other, substantially as set forth.

18. The combination of the time mechanism, a stop device adapted to arrest the movement of the escapement, so that the balance-spring shall always be put under stress when the stop device is in operation, means for holding said stop device in action, and means for throwing it out of action when an electric current passes over the circuit to which the meter is applied, substantially as and for the purpose set forth.

19. The combination of the balance or escape lever of the time-registering mechanism, a stop device applied thereto and adapted, when in engagement therewith, to force and hold the lever away from its dead-center, and means for disengaging the stop device from the lever when the current passes over the circuit to which the meter is applied, substantially as set forth.

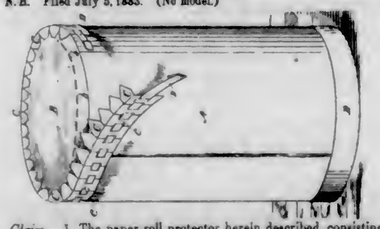
20. In combination with the time mechanism, the stop-lever adapted to engage the end of the escape-lever and force the same to either side of its dead-center, so as to stop the time mechanism and put the balance-spring under sufficient stress to make certain the starting of the movement when the levers are disengaged, and means for disengaging the stop-lever from the balance-lever when an electric current passes over the circuit to which the meter is applied, substantially as shown and described.

21. The combination of the escape-lever having a portion made V-shaped in cross-section with the armature-lever provided with a stop-pin adapted to engage said V-shaped portion of the escape-lever, and an electro-magnet to operate the armature-lever, substantially as and for the purpose set forth.

22. The combination of the balance or escape lever formed with the V-shaped portion, the stop-lever provided with a projection to engage such portion, and an armature, the spring, and the electro-magnet interposed in the meter-circuit, and adapted to attract the armature and disengage the projection and balance-lever when the current passes through the circuit, substantially as and for the purpose described.

23. The combination of the electro-magnet X, interposed in the meter-circuit, the lever E, armature e^2 thereon, conical pin f', spring f^3, attached to the frame and end of the lever, and the balance or escape lever D, having portion *d*, V-shaped in cross-section, substantially as and for the purpose set forth.

291,406. DEVICE FOR PROTECTING THE ENDS AND CORNERS OF ROLLS OF PAPER IN SHIPMENT. HERBERT SANGER, Franklin, N.H. Filed July 5, 1883. (No model.)



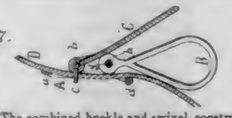
Claim.—1. The paper-roll protector herein described, consisting of a circular disk or head, and a flanged binding-strip formed of a series of connected metallic segments adapted to fit the sides of the roll and extend over its end to engage with the disk, for the purpose set forth.

2. The combination, with the roll A and slotted heads B *b*, of the series of segments C C and the band D, provided with suitable fastening devices, for the purposes set forth.

291,407. COMBINED BUCKLE AND SWIVEL. SAMUEL S. SARGEANT, Newark, N.J. Filed Oct. 31, 1883. (No model.)



291,407.

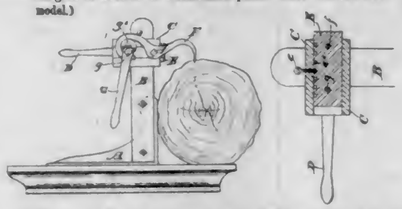


Claim.—The combined buckle and swivel, constructed substantially as herein specified, the buckle being provided with a cross-bar, *f*, having a downwardly-curved part, *g*, and the swivel being provided with an eye, *h*, hung on the said curved part of the cross-bar, for the purpose set forth.

291,408. PLASTERING COMPOUND. HANNAH E. SCALES, Newton, Mass. Filed Apr. 11, 1883. (No specimens.)

Claim.—The compound herein described for plaster or stucco work, consisting of rice-flour, sand, salt, and lime or plaster-of-paris mixed with weak glue, and compounded together in the proportions substantially as stated.

291,409. SAW-MILL DOG. WILLIAM F. SCHOWE, Indianapolis, Ind., assignor to Schowe & Thoms, same place. Filed Nov. 10, 1883. (No model.)

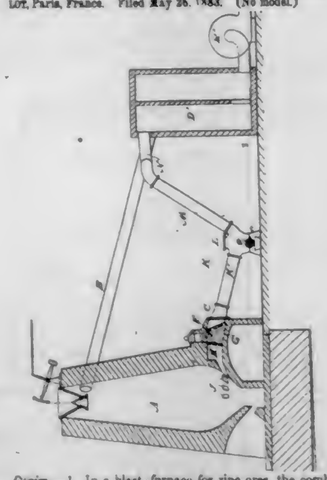


Claim.—1. The combination, in a saw-mill dog, of a vertical standard, a block, C, adapted to be moved along the same, two cams, *c*, having projecting pins *c'*, and a handle, D, having cam-slots which fit over and engage with said pins, whereby said cams may be operated to impinge on said standard, and thus secure said block in position thereon, substantially as set forth.

2. The combination, in a saw-mill dog, of a sustaining-block, a dog centrally secured by a pivot, and a cam-lever pivoted to the same block as the dog, the cam end whereof engages with one end of said dog, and thus as said lever is raised and lowered will withdraw the dog from the log or force it into the same, substantially as set forth.

3. The combination, in a saw-mill dog, of the standard B, the block C, movably mounted thereon, the cams *c*, having projecting pins *c'*, the handle D, provided with cam-slots, which fit over and engage with said pins, whereby said block is secured in position on the standard, the horizontal sliding block E, the dog F, mounted thereon, and the cam-lever G, for operating the same, substantially as described, and for the purposes specified.

291,410. BLAST-FURNACE FOR ZINC ORES. AMÉDÉE M. G. SÉBILLOT, Paris, France. Filed May 26, 1883. (No model.)



Claim.—1. In a blast-furnace for zinc ores, the combination, with the furnace-chamber, of the outlet-pipe leading directly from the latter to a condenser, and a second outlet-pipe communicating with a chamber containing pieces of charcoal, and with a condenser, said charcoal-chamber communicating with the furnace-chamber, substantially as and for the purpose set forth.

2. A blast-furnace for zinc ores, constructed with an upper and lower outlet-pipe, the latter being connected with a series of condensing-pipes, substantially as herein shown and described.

3. A blast-furnace for zinc ores, constructed with two outlet-pipes connected with independent chambers having exhaust-fans or analogous devices, substantially as herein shown and described.

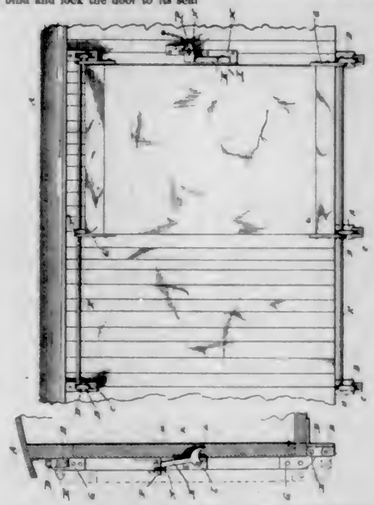
4. A blast-furnace for zinc ores, constructed with an upper and a lower outlet-pipe, the latter being provided with a chamber filled with pieces of charcoal or pieces of other material adapted to be heated to a high temperature, substantially as herein shown and described.

5. A blast-furnace combined with an upper and lower outlet-pipe, of which the former is connected with a condensing-chamber and the latter is connected with a condenser formed of pipes and a metal collecting-chamber, which pipe-condenser is connected with a condensing-chamber, substantially as herein shown and described.

6. The combination, with a blast-furnace having a cavity, H, having openings leading to the interior of the furnace, of the chamber F, containing pieces of charcoal, the outlet-pipe C, and the condenser K, substantially as herein shown and described, and for the purpose set forth.

291,411. CAR-DOOR. WM. W. SHALLIS, Lancaster, Pa., assignor of one-half to Henry H. Keen, same place. Filed Oct. 10, 1883. (No model.)

Brief.—Supported by brackets in which are pivoted arms carrying movable longitudinal guide-rods is a door having brackets adapted to slide thereon. A lock-lever is fulcrumed to a plate attached to the edge of the door, and is formed with a hooked end adapted to engage a slot and bind and lock the door to its seat



Claim.—1. The combination, with a freight-car, of the brackets secured thereto, having sockets in which are pivoted arms carrying longitudinal guide-rods, and the door having brackets adapted to slide thereon, substantially as specified.

2. In combination with the door mounted upon movable longitudinal guides E, the lock lever H, adapted to bind the door to its seat and lock it thereto, substantially as and for the purpose specified.

291,412. VEHICLE-SPRING. DENNIS P. SHARP, Ithaca, N. Y. Filed July 24, 1883. (No model.)

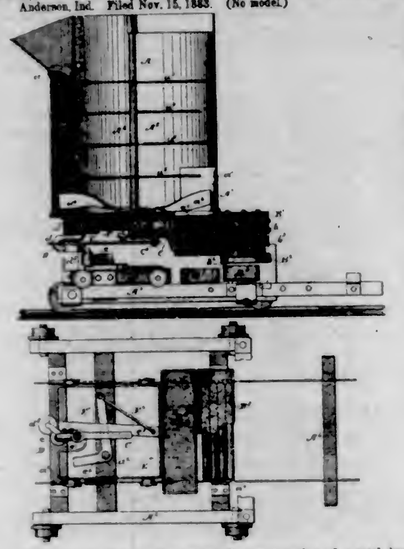


Claim.—1. The improved spring-coupling consisting of a ball-and-socket joint formed on the ends of the springs, and a coupling-bolt passing through the center of said joint, substantially as described and shown.

2. The combination, with the ball-and-socket joint, of the cushion *r*, interposed between the ball and socket, and the coupling-bolt *e*, passing

vertically through the joint, all substantially in the manner shown and set forth.

291,413. BRICK-MACHINE. FRANK W. SHELLEY and SAMUEL KISER, Anderson, Ind. Filed Nov. 15, 1883. (No model.)



Claim.—1. In a brick-machine, the combination of a mud-box having a front wall, *b'*, and a die pivoted at its rear end, and its front end free to move vertically and provided with a lip, which abuts against the wall *b'*, substantially as described.

2. In a brick-machine, the combination of a mud-box having recessed walls provided with adjustable side plates and a plunger, substantially as described.

3. In a brick-machine, the combination of a mud-box having recessed walls provided with adjustable side plates and a plunger having adjustable side walls, substantially as described.

4. In a brick-machine, the combination of a reciprocating carriage having a projection upon its top, a standard having a lever fulcrumed thereon, one end of said lever connected to the carriage by a link, and a revolving shaft having an arm which alternately strikes the projection of the carriage and the free end of the lever, substantially as described.

5. In a brick-machine, the combination of a mud-box and a plunger having adjustable side plates, substantially as described.

6. In a brick-machine, a drum having openings *a'* and *a²*, the latter in the bottom, and a substantially rectangular box closed top, and attached to the walls of the drum and closing the opening *a'*, substantially as described.

7. In a brick-machine, the combination, with a drum having openings *a'* and *a²* in the bottom, and a rectangular box closing the opening *a'*, of a mud-box attached to the bottom of the drum beneath the opening formed by the rectangular box, substantially as described.

8. In a brick-machine, a drum having its interior cylindrical, and provided with a rectangular opening in its bottom for the escape of the mud, substantially as described.

9. In a brick-machine, the combination of a drum having its interior cylindrical, and provided with rectangular opening in its bottom for the escape of mud, and a mud-box attached to the bottom of the drum below the rectangular opening, substantially as described.

10. In a brick-machine, the combination of a drum having a revolving agitator, a mud-box below the drum, a plunger within the mud-box and connected to a crank-shaft by a pitman, and said crank-shaft connected to the shaft of the agitator by gear-wheels, substantially as described.

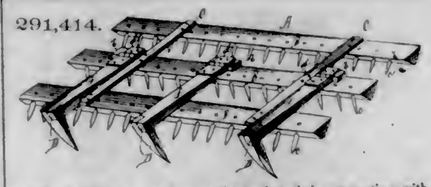
11. In a brick-machine, the combination of a groove and slide and a stepped stop held in place by ways, and adapted to be moved in front of the groove and slide, substantially as described.

12. In brick-machines, the combination of a mud-box and a die-plate pivoted at its rear end, and its front end in contact with the front wall of the box, but free to move vertically, as set forth.

291,414. HARROW. SAMUEL SHOEMAKER, Nokomis, Ill. Filed Mar. 15, 1883. (No model.)

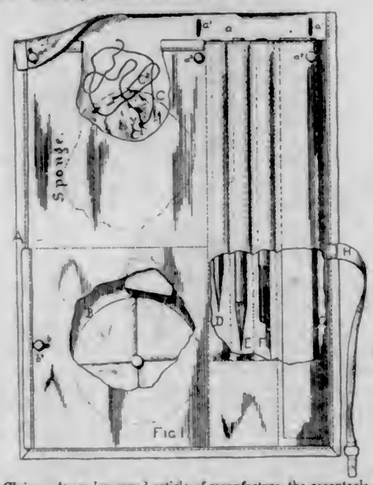
Claim.—The combination, in a harrow, of the triangular bars B B

291,414.



B, provided with a smooth front portion, and on their rear portions with teeth inclined rearwardly at the same angle, and laterally at different angles, the bars B B B being rigidly connected to each other by cross-bars C C, so as to provide a rigid frame, and markers D, hinged to the central portion of the harrow-frame, the parts being constructed and organized substantially as shown, and for the purpose set forth.

291,415. SCHOLAR'S COMPANION. MARY J. SPENCER, Brooklyn, N. Y. Filed May 14, 1883. (No model.)



Claim.—As an improved article of manufacture, the receptacle for school-children's implements herein described, the same consisting of the case A, composed of flexible material, provided with the flap *a* at one end, and provided with the water-proof sponge-pocket C, and with two or more parallel elongated pockets so arranged that the buttoning down of the flap *a* closes the mouth of the sponge-pocket and the mouths of the parallel elongated pockets, and prevents the contents of the said pockets from escaping.

291,416. PEN-HOLDER. ALBERT H. SPENCER, Boston, Mass. Filed Mar. 8, 1882. (No model.)



Claim.—1. As a new article of manufacture, a pen-holder formed of two paper tubes, one within the other, the space between them being about the thickness of a pen.

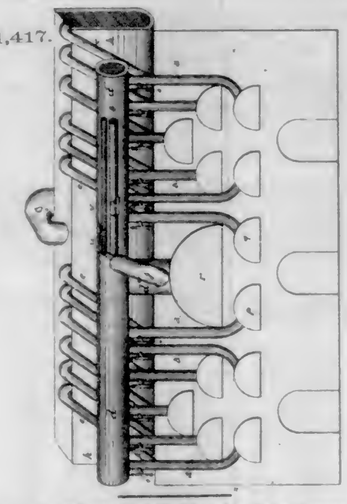
2. The pen-holder described, formed of two paper tubes of suitable size placed one within the other, the inner tube being slightly longer than the outer, as and for the purpose set forth.

291,417. PROCESS OF AND APPARATUS FOR MAKING COAL GAS. ANTON STAMM, Leadville, Colo. Filed Sept. 5, 1882. (No model.)

Claim.—1. The improvement in the process of manufacturing gas, which consists in converting the tarry vapors given off from fresh charges of bituminous coal in gas-retorts, during the early part of the distillation, into a fixed gas by injecting such vapors, by the combined action of a jet of gas under pressure and a small jet of steam, into and through a mass of incandescent coke in a separate retort, substantially as shown and described.

2. In a plant for manufacturing coal-gas, the combination, with the common distilling-retorts *p q*, the stand-pipes *a a*, and the hydraulic main *k*, of the connecting-pipes *d* and *d'* and *e e e e*, the gas and steam pipes *s* and *u*, the injector *j* for gas and steam, and the regenerating-retort *r*, all substantially as shown and described.

291,417.



291,418. HARNESS-ROSETTE, DOOR-PLATE, &c. ANDREW STEINER, Brooklyn, N. Y. Filed July 23, 1883. (Model.)



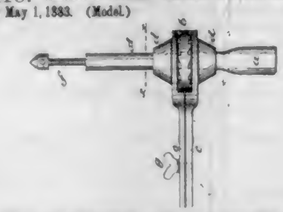
Claim.—1. The combination of a glass plate having a beveled edge and an etched back, covered with metallic leaf coated with asbestus composition, substantially as set forth.

2. The combination of a glass plate having an etched back covered with metallic leaf coated with a protecting composition, substantially as set forth.

3. The combination of a glass plate covered with metallic leaf coated with a protecting composition, substantially as set forth.

4. The combination of a glass plate covered with metallic leaf coated with a protecting composition, and a back plate having a flange to hold the glass plate, and a loop for attachment, substantially as set forth.

291,419. RATCHET-DRILL. RICHARD STEPHENS, Negaunee, Mich. Filed May 1, 1883. (Model.)



Claim.—The combination, with the brace-stem A and opposite washers, *d d*, made fast thereto, of the rigidly-keyed block *b*, having teeth in the same direction on its opposite edges, and the loose match-handles *c c*, carrying pawls *e e*, said handles being adapted to be clamped together and operate as a unit, or separated and operate alternately, as described.

291,420. BARBED FENCE-WIRE. AMASA W. STEVENS, East Brookfield, assignor to Frank P. Bullard, Palmer, Mass. Filed May 8, 1883. (No model.)

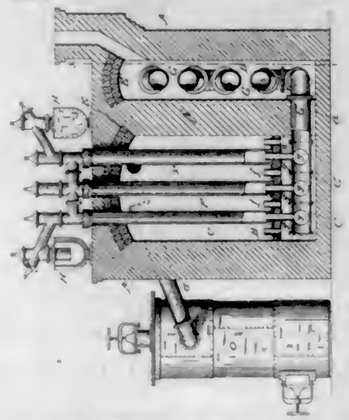


Claim.—1. A fence-wire having loops at any desired distance apart, and provided with transverse barb-wires interlocked with said loops by single-coil bends, the double or crossing point of each barb-wire being located within the coacting loop of the fence-wire, so as to be embraced by the latter and locked by this embrace when the fence-wire is stretched, substantially as herein set forth.

2. A fence-wire having loops at any desired distance apart, formed by single-coil bends, and provided with transverse barb-wires interlocked with said loops by similar coil-bends, the double or crossing point of each barb-wire being located within the coacting loop of the fence-wire, and the double or crossing point of the latter within the loop of the barb-wire, as herein described, for securing the loops of the fence-wire against opening or spreading under strain, in the manner set forth.

3. A fence-wire having loops at any desired distance apart, formed by single-coil bends in one and the same direction, and provided with transverse barb-wires interlocked with said loops by similar coil-bends, the double or crossing point of each coil-bend being located within and embraced by the coacting loop, as herein specified, thereby attaching the barbs by knots composed of uniform loops in the respective wires, as set forth.

291,421. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed May 2, 1883. (No model.)



Claim.—1. The process of producing illuminating-gas, which consists in first generating heating-gas, composed of hydrogen and carbonic oxide, forcing such gas, under pressure, into an injecting device, and thereby spraying hydrocarbon liquid into a vaporizing apparatus, conducting the commingled gases and vapor through the heated vaporizer, and then combining and fixing the mixture in heated retorts.

2. The improvement in the art of manufacturing gas, which consists in generating a mixture of hydrogen and carbonic oxide by decomposing steam in contact with incandescent fuel, cooling such mixed gases, and then forcing them by a pump into an injecting device, and thereby spraying a stream of hydrocarbon liquid into a heated vaporizer, and finally combining and fixing the resulting vapor and gases by passing them through heated retorts.

3. The combination of the generator for producing water-gas, the vaporizing and mixing conduits or retorts provided with an injecting and atomizing device, the combining and fixing retorts, and connecting-pipes, whereby hydrocarbon liquid may be conducted into and through the vaporizing-retorts by a current of water-gas, as described.

4. The combination of the generator for producing water-gas, an exhausting and forcing pump, an injector and atomizing apparatus connecting with the gas-pipe, and an oil-supply pipe and suitably connected conduits or retorts for combining and fixing the mixture of the gas and vapor.

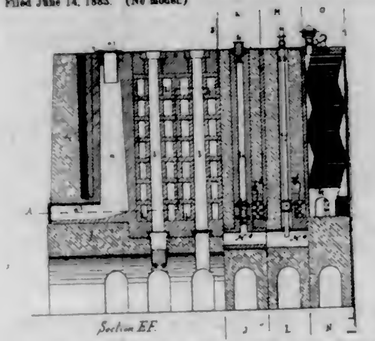
5. The two generators for producing water-gas, in combination with the vaporizing-conduits, the connected vertical fixing-retorts, pipes connecting the water-gas producers with the retort-ovens for supplying gas for heating the retorts, and a pipe connecting the water-gas producers with the vaporizing-conduits and an oil-supply pipe.

6. The injecting device having a connecting gas-supply pipe and a nozzle therefor projecting into the mouth-piece of the retort, and an adjustable threaded oil-supply pipe with a conical nozzle projecting into the gas-supply nozzle, in combination with the vaporizing conduits or retorts, all constructed and operated as described.

7. The vaporizing conduits or retorts having connected gas and oil supply pipes, in combination with the vertical fixing-retorts, a large connecting-pipe extending from the base of the vaporizer through a chamber below the fixing-retorts, and short stand-pipes uniting such pipe with the bases of the vertical retorts, in the manner shown and described.

8. The gas-retort oven having a horizontal division wall or diaphragm near the base thereof, provided with numerous outlet-passages between the retorts leading to the flue connecting with the chamber containing the vaporizing-conduits, in combination with the heating-gas producers, one or more, and a connecting-pipe conducting heating-gas into the top of the retort-oven, for the purpose described.

291,422. COKE-OVEN. HEINRICH STIER, Zwickau, Saxony, Germany. Filed June 14, 1883. (No model.)



Section EF.

Claim.—1. The combination, with a generator, *a*, and coke-shafts *b*, of channels a^2 and b^2, arranged in front of and surrounding said generator and coke-shafts, said channels being composed of layers of perforated stone, or its described equivalent, for heating the gas or air used for combustion, substantially as described.

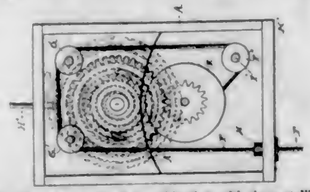
2. In an oven adapted for the production of coke or distillates, the combination, with a generator, *a*, and coke-shaft *b*, of perforated walls a^2 b^2, constructed and arranged substantially as and for the purpose set forth.

3. The combination of the movable slides or registers a^3, a^4, b^3, b^4, and b^5, with the entrance and exit channels of the coke-chambers, said slides being arranged substantially as shown, whereby, by their proper adjustment, each coke-chamber may be utilized as such, or by closing the passage for the outflowing products of distillation and connecting the coke-chamber with the main gas-channel, each coke-chamber may be utilized as a generator, as set forth.

4. The combination, with the escape-channel for the non-condensible products of distillation, of a heating apparatus, consisting of perforated walls or channels a^2 b^2 in the surrounding or inclosing walls of the generator and coke-shafts for the preliminary heating of the gases, substantially as set forth.

291,423. FIRE-ESCAPE. SAMUEL J. STOVER, North Liberty, Ind. Filed July 26, 1883. (No model.)

Brief.—A fire-escape in which the rope-reel is geared to the shaft of the coiled spring, and which is provided with a sliding guide-pulley for the rope.

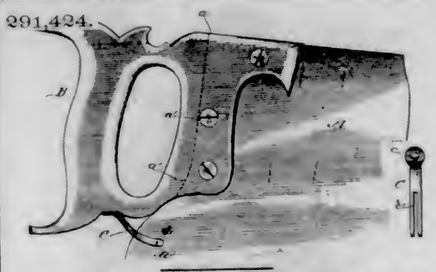


Claim.—In a fire-escape, the combination, with the metallic casing having partitions, and the shaft having the coil-spring secured thereto and to the casing, and the main cog-wheel, of the shaft having the meshing pinions and the flanged rope-drum, the traveling rope-guiding pulley, the non-sliding rope-guiding pulley, the rope-thimble, and the rope or chain, the said shafts being journaled in the casing and its partitions, substantially as described.

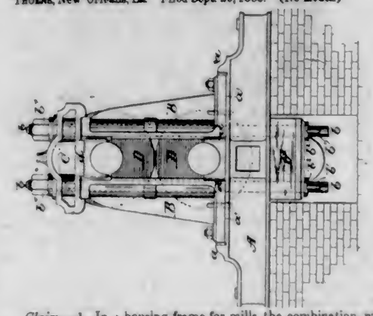
291,424. HANDSAW. CORNELIUS TENNEY, Brooklyn, N. Y. Filed Nov. 9, 1883. (No model.)

Claim.—In a handsaw, the combination of a blade and handle, constructed substantially as shown and described, with a brace secured to the handle about opposite the hand-opening, and having forwardly-projecting slotted arms firmly riveted or bolted to the blade, as and for the purpose set forth.

291,424.



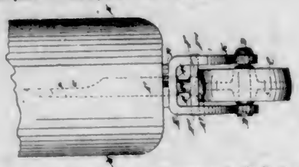
291,425. HOUSING FOR SUGAR AND OTHER MILLS. BURCHARD THOMS, New Orleans, La. Filed Sept. 29, 1883. (No model.)



Claim.—1. In a housing-frame for mills, the combination, with the bed-pieces A, having the recesses *a'*, of the brackets B, each having a hollow cylindric pillar, b^2, provided with a foot, b^1, caps C, and bolts or rods *b*, with securing devices, substantially as and for the purpose set forth.

2. In a housing-frame for mills, the combination, with the bed-pieces A, having the recesses *a'*, with shoulders *a*, of the brackets B, each consisting of a hollow cylindric pillar, b^2, having a rear web, b^4, and flanged foot b^1, caps C, and rods or bolts *b*, with securing devices, substantially as and for the purpose set forth.

291,426. CASTER. ARTHUR THOMPSON and GEORGE H. RICE, Brooklyn, N. Y., assignors to themselves, Isaac Mason, and Edward C. Barlow, all of same place. Filed Apr. 25, 1883. (Model.)



Claim.—1. A caster-swivel made in two parts, E F, the part F bridging across and connecting the two arms of the part E and strongly uniting them, as herein specified.

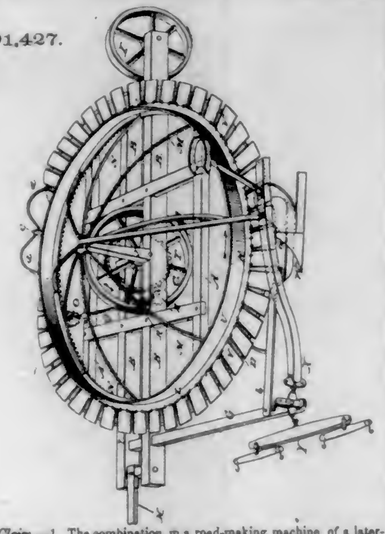
2. In a caster, the shank A, having a flattened portion, A^3, in combination with a swivel, E F, having one bearing above and the other below such flattened portion, adapted to serve as herein specified.

3. The shank A, having a flattened portion, A^3, and the caster-swivel E F, having a bearing above and below the said flattened portion, in combination with each other and with the pin D and wheel C, adapted to serve in the leg M, as herein specified.

291,427. ROAD-MAKING MACHINE. WILLIAM HENRY TIDLAND, Oakwood, Dak. Filed Sept. 11, 1883. (No model.)

Brief.—A plow adjustably attached to a cross-beam of the main frame delivers to a "shoe," from which the material is taken by a series of "cups" pivoted to a wheel revolving in an inclined plane, and having a vertical flange preventing material crowding up the cups and falling within its rim. Cups travel over, and their outer ends are supported by, a circular inclined track having at its highest point a fall or "shoulder," and an incline to drop and discharge and to raise the cups. The cogged rim of the wheel is geared through a shaft and cogged gears to the riding-wheel.

291,427.



Claim.—1. The combination, in a road-making machine, of a laterally-inclined circular track mounted upon a wheeled frame, and having the highest portion of the track forming a vertical shoulder and an inclined portion, an elevator-wheel journaled to travel in the same plane as the track, having means for rotating it, provided with a number of hinged elevator-cups hinged to its rim and traveling upon the surface of the track, and provided with an upright annular flange upon its upper surface at the inner end of the hinged cups, and a plow traveling at the side of the machine, throwing the soil upon the elevator-cups at the lowest point of the track, as and for the purpose shown and set forth.

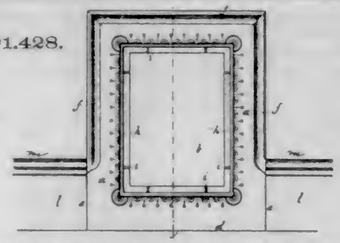
2. In a road-making machine, the combination of a laterally-inclined circular track mounted upon a wheeled frame, and having the highest portion of the track forming a vertical shoulder and an inclined portion, an elevator-wheel journaled to turn in the same plane as the track, rotated by means of connection with the drive-wheel, and provided with a number of elevator-cups hinged to its rim and traveling with their outer ends upon the track, and with an upright annular flange projecting from the upper surface of the rim at the inner ends of the cups, a plow traveling at the side of the machine, throwing the soil upon the elevator-cups at the lowest point of the track, and a shoe secured at the lowest point of the track, having the elevator-cups passing through it and serving to receive the dirt or soil from the plow, as and for the purpose shown and set forth.

3. The combination of a laterally-inclined frame having a cross-bar extending to one side, provided with a forwardly-projecting tongue at its inner end and a double-tree at its outer end, and provided with a caster or guide wheel at its rear end, a drive-wheel journaled in the frame supporting the same, and having a cogged rim engaging a pinion meshing with one of a number of other pinions, a circular track fastened upon the frame, and having its highest portion forming a vertical shoulder and an inclined portion, an elevator-wheel journaled upon an upright bar upon the frame, turning in the plane of the track, having a cogged rim upon its under side meshing with one of the pinions engaged by the rim upon the drive-wheel, provided with elevator-cups hinged to its rim, and with an upright annular flange, a spoon-shaped shoe secured to the rear end of a beam fastened at its forward end to near the outer end of the cross-bar at the forward end of the frame and secured to remain at the lowest point of the track, the elevator-buckets traveling through it, and a plow traveling at the side of the machine, having the forward end of its beam secured adjustably to the outer end of the transverse bar at the front of the frame, and throwing the soil into the shoe and upon the elevator-cups, all constructed to operate as and for the purpose shown and set forth.

291,428. FRAME FOR HOT-AIR REGISTERS. CHAS. W. TROTTER, Rochester, assignor to the Tuttle & Bailey Manufacturing Company, New York, N. Y. Filed Feb. 24, 1883. (Model.)

Claim.—1. A cast-metal hot-air-register frame consisting of front plate, *a*, having opening *b* for the register-box, and flanges *d e f*, which are flush with the outer edge of the frame and adapted to bear against the surface of the plaster wall and support the front plate flush with the front surface of the mop-board, substantially as described.

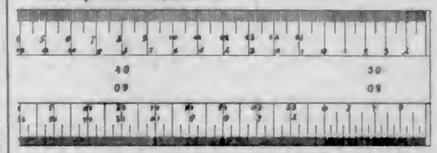
291,428.



2. A cast-metal hot-air-register frame consisting of front plate, *a*, having opening *b* for the register-box, and flanges *d e f*, to bear against the wall, the bottom flange, *d*, and the side flanges, *e*, being square to the face *a*, and the flange *f* being molded in conformity with the mop-board finish, or substantially so.

3. A cast-metal hot-air-register frame consisting of front plate, *a*, and flanges *d e f*, said front plate having opening *b* for the register-box, with surrounding depressed flange *h*, and bearing-ribs *i*, substantially as described.

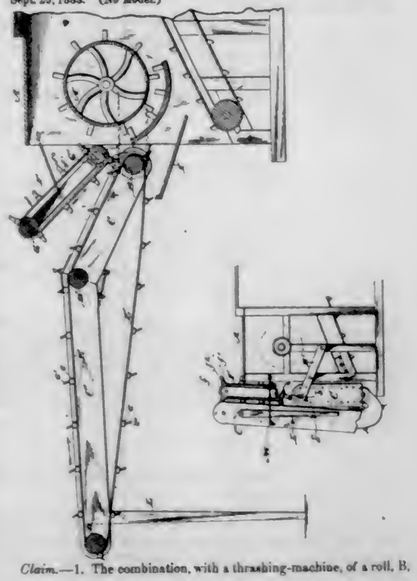
291,429. GRADUATED SCALE. GEORGE F. TUTTLE, Newark, N. J. Filed Sept. 18, 1883. (No model.)



Claim.—1. A graduated scale having a zero one linear unit or part thereof, of any standard measure, from each end, and having the space between the zeros, and also the end linear units, divided into different and independent subdivisions on one and the same edge of the scale, substantially as herein shown and described.

2. A graduated scale having a zero one lineal unit from each end of each graduated edge, the end units being divided into thirty, fifty, seventy-five, and eighty parts, respectively, and the units between the zeros being divided into forty and sixty parts, respectively, substantially as herein shown and described.

291,430. GRAIN-FEEDER AND BAND-CUTTER FOR THRASHING-MACHINES. ORRIN COLLIN VAN NESS, Pomme de Terre, Minn. Filed Sept. 29, 1883. (No model.)



Claim.—1. The combination, with a thrashing-machine, of a roll, B, journaled at the feed end of the machine, side pieces C, pivoted at one end adjacent to the roll, side pieces C', hinged to the other ends of the pivoted side pieces, a roll, D, journaled at the outer ends of the hinged side pieces, a traveling grain-carrier mounted on the rolls, a traveling band-cutter carrier arranged above the delivery end of the carrier, and a cutter secured to said cutter-carrier, substantially as described.

2. The combination, with a thrashing-machine, of a folding grain-carrier frame pivoted adjacent to the feed-opening of the machine, a band-cutter carrier pivoted above and adjacent to the said feed-opening, the grain-carrier and cutter-carrier being capable of folding up against the feed end of the machine, and means for holding the carriers in such position for transportation, substantially as described.

3. The combination, with a thrashing-machine, of an endless traveling grain-carrier and an endless traveling band-cutter carrier converging toward each other, and both pivoted at the feed end of the machine to fold up for transportation, and means for holding the carriers in such position, substantially as described.

4. The combination, with the thrashing-machine, of the carrier having a jointed extension-frame, and the bars supporting said frame having forked ends to receive the journals of the roll carrying the apron, substantially as described.

5. The combination, with the grain-carrier having inclined spikes, of the band-cutter and straw-spreader, said carrier and band-cutter converging toward each other, and the band-cutter traveling at a greater speed than the grain-carrier, substantially as described.

291,431. MANUFACTURE OF SMOOTH-FACED NAPLESS FELT BODIES. CHARLES VERO and JAMES EVERITT, Atherstone, County of Warwick, England. Filed Oct. 17, 1883. (No specimens.) Patented in France July 18, 1883, No. 156,596; in England Aug. 22, 1883, No. 4,072; in Belgium Aug. 25, 1883, No. 62,411, and in Germany Aug. 25, 1883.

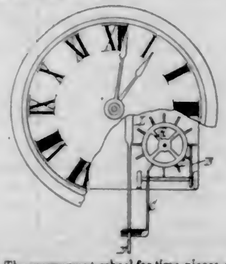
Brief.—Improvement on Letters Patent No. 284,924, dated September 11, 1883.

Claim.—1. The process of consolidating a covering of fur with a hardened and unfelted body, that is carried upon a perforated metal cone, or of consolidating a covering of fur that has been blown onto a perforated metal cone, the process consisting in wrapping wet flannels around the covering and placing over them another perforated metal cone, next admitting steam to the interior of the inner cone, and afterward working the outer cover to and fro.

2. The process of still further consolidating or combining a fur cover with a hardened and unfelted body, consisting in placing the previously hardened and unfelted body of wool or mixed wool and hair that has had a covering of fur partially secured to it onto a steam-heated perforated and canvas-covered cone, and over it placing a conical closely-fitting metal cover, to which an oscillatory revolving motion is then given to harden the bodies together.

3. The process of manufacturing napless fur-covered hat-bodies, consisting in mounting a previously-hardened body of wool, or mixed wool and hair, onto a steam-heated perforated and canvas-covered cone, and stretching over this a partially-hardened fur body, and over it placing a conical closely-fitting metal cover, to which an oscillatory revolving motion is then given to consolidate the two bodies together.

291,432. ESCAPEMENT-WHEEL. CARL VOTH, Philadelphia, Pa. Filed Aug. 4, 1883. (No model.)



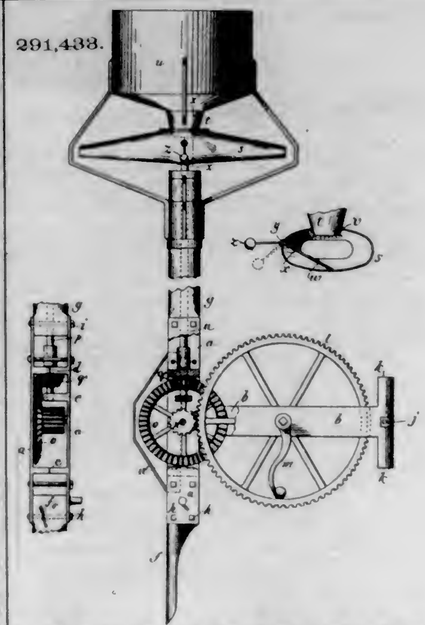
Claim.—1. The escapement-wheel for time-pieces, composed wholly of metal and formed integral with the cylindrical teeth L, substantially as described.

2. In a time-piece, the combination, with the pendulum and the anchor having flukes, of the escapement-wheel A, cut or stamped from sheet metal and formed integral with the cylindrical teeth L, whereby the flukes of the anchor glide easily out of and into contact with the teeth, and the latter are prevented from becoming loose, substantially as described.

291,433. BROADCAST SEED-SOWER. JOHN CALVIN WADDELL, Union City, Tenn. Filed May 16, 1883. (No model.)

Claim.—1. The gear-frame and staff of a broadcast sower, consisting of the T-plates *a b*, step *f*, and wood staff *g*, bolted together, the plates having stop-studs *c d k*, also stop-stud *e*, and having the pivot-bearings of the gear formed in them, substantially as described.

291,433.



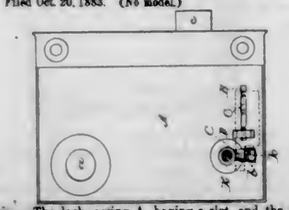
2. The stop-studs *k* of the parts *b* of the gear-frame plates, extended transversely to said parts *b* to form a handle for holding the machine when in use, substantially as described.

3. The combination, in the gear-frame and supporting-staff of a broadcast sower, of plates *a b*, handle *k*, and the guard *a'*, substantially as described.

4. The combination, in the supporting and driving gear of a broadcast seed-sower, of the T-plates *a b*, bearing studs *c d e*, step *f*, staff *g*, driving-wheel *l*, pinion *n*, bevel-wheel *o*, pinion *q*, and the shaft *p*, said shaft being arranged in the staff *g* and having the cross-spout attached to it, substantially as described.

5. The combination, with the revolving cross-spout *s* and nozzle *t*, of the valve *w* and bent lever *x*, pivoted to said spout, and having said valve and the counterpoise *z* secured directly thereto, the said lever extending through and to the outside of the said spout, essentially as shown and described, and for the purpose set forth.

291,434. KEY-FASTENER. EDWARD WILLIAM WAGNER, Cherokee, Cal. Filed Oct. 20, 1883. (No model.)

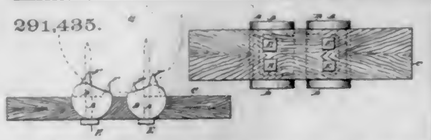


Claim.—The lock-casing A, having a slot, and the bolt C within said casing, and having a thumb-piece projecting through said slot to the outside, in combination with the key K, having bit *k*, with a notch, *m*, with which said bolt is adapted to engage to prevent the key from turning, substantially as herein described.

291,435. DEVICE FOR ATTACHING CROSS-BARS TO TELEGRAPH-POLES. CHRISTOPHER H. WAGNER, Elkhart, Ind., assignor of one-third to William Kline, Toledo, Ohio. Filed Apr. 19, 1883. (No model.)

Brief.—Cross-bars are attached to telegraph-poles by means of clamps consisting of wedge-shaped horizontally-slotted plates having rearwardly-projecting lugs and forwardly-extending flanges at their ends, the cross-arm being fitted between said flanges and fastened by bolts or spikes.

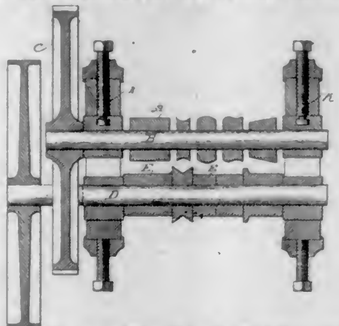
291,435.



Claim.—1. The herein-described clamps or holders for attaching cross-arms to telegraph-poles, the same consisting of wedge-shaped horizontally-slotted plates having rearwardly-projecting sharp-pointed lugs or barbs and forwardly-extending flanges at their upper and lower ends, substantially as set forth.

2. The combination, with a telegraph-pole, of a pair of clamps or holders consisting of wedge-shaped horizontally-slotted plates having rearwardly-projecting sharp-pointed lugs or barbs and forwardly-extending flanges at their upper and lower ends, a cross-arm fitted between said flanges, and fastening bolts or spikes, substantially as and for the purpose set forth.

291,436. METHOD OF AND MACHINE FOR ORNAMENTING WOOD. CARL WAGNER, Columbus, Ind. Filed June 13, 1883. (No model.)



Claim.—1. The method hereinbefore described of ornamenting wood, consisting of crushing in or depressing, without the removal of any part thereof, by means of roughened raised surfaces of a die, all the parts about the figures to be produced, whereby an imitation of carving is formed, substantially as described.

2. A die or tool for making wood-carving, consisting of sunken ornamental parts or figures and raised roughened parts, substantially as described.

3. A die or tool for making wood-carving, consisting of sunken ornamental parts or figures and raised roughened parts, said tool having ventilating-holes X X, all substantially as described.

291,437. CONSTRUCTION OF PACKING VESSELS OR CANS. FRANCIS A. WALSH, Milwaukee, Wis. Filed Nov. 6, 1883. (No model.)



Claim.—1. In a can or package, the combination of a support partially embedded in its body, with a cover suitably secured thereon, as set forth.

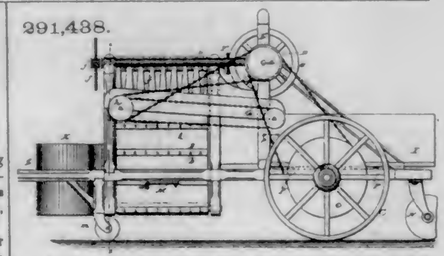
2. In a sheet-metal can, the wire *a*, in combination with the bead *b*, for supporting the cover *c*, substantially as described, and for the purpose set forth.

3. In a sheet-metal can, the body A, having outside bead, *b*, supporting the wire *a*, in combination with the cover c and the lip *d*, substantially as shown and described, and for the purpose set forth.

291,438. COTTON-HARVESTER. FERNANDO I. WARNER, Memphis, Tenn. Filed Mar. 6, 1883. (No model.)

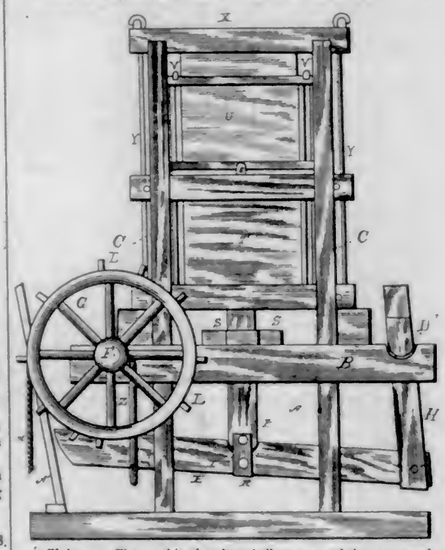
Claim.—1. The combination, with the toothed belts A, two pairs of rollers, *a a'*, and the pinions F on the upper rollers, *a*, of the gear-wheels *e*, the two independent shafts *d*, the wheels D thereon, the pulleys secured on the supporting-wheels C, and the driving-belts, as described, whereby each picker-belt is run by its own supporting-wheel independently of the other, as specified.

291,438.



2. The combination, with the frame E, of two toothed belts, A, their rollers *a'*, journaled in the swinging frames *k*, and means for adjusting said frames relative to a vertical plane, for the purpose specified.

291,439. BALING-PRESS. COLUMBUS C. WARREN and WILLIAM H. OLIVER, Beauregard, Miss. Filed June 22, 1883. (No model.)

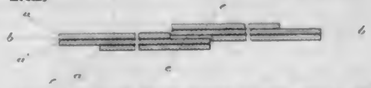


Claim.—1. The combination, in a baling-press, of the compound lever consisting of the beam I and arms H, the latter being provided with a transverse fulcrum-beam, D, which is seated in the longitudinal sills B, as shown, and the vertical beam P, attached to the follower and secured at its lower end in a bearing in the said lever I, with mechanism for operating the same, substantially as specified.

2. In a baling-press, the compound lever E, vertical beam P, and follower, constructed and arranged as described, in combination with the driving wheel and shaft and connecting rope or chain for operating the lever, substantially as specified.

3. The combination, in a baling-press having a hinged cap-block, of the beam attached to the upper face thereof, and slotted at its ends to receive the side rods, adapted to hold the said block and beam down, substantially as shown and described.

291,440. ROOFING FABRIC AND METHOD OF APPLYING THE SAME. CYRUS M. WARREN, Brookline, Mass. Filed Mar. 30, 1883. (No model.)



Claim.—1. A roofing fabric composed of three webs or layers of felt or other suitable material cemented together with layers of water-proof cement, the outer layers of which are so arranged or disposed as to make the fabric of two thicknesses of felt at the edges, as set forth.

2. A roofing fabric composed of a series of layers of felt or other material cemented together in the manner described, so as to leave a ledge or rabbeted portion at both edges, the rabbeted portions having cemented thereto a strip of Manila paper or other thin material.

3. A roof the covering of which is composed of roofing-felt, the layers of felt being overlapped at the edges and secured to the roof-boards by means of a wire or wires and staples or hooks, as set forth.

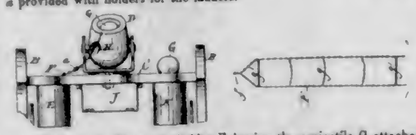
4. A fastening for the overlapping edges of a felt or fabric roofing, consisting of a thin strip of metal bent at its center, so that the lower end can be placed on or within the underlapping edge of the felt and the upper end placed over the overlapping edge of the felt, as set forth.

5. A roof-covering composed of overlapping layers of felt, substantially such as described, the overlapping edges of which are secured by metallic straps and wires, substantially as described.

6. In a machine for making roofing-felt, in which the edges are made thinner than the main portion, the rollers A B, the opposite ends of which are made larger or of a greater diameter than the other portions of the rolls, and mounted so as to leave a space between the enlarged portions and the opposite roll to admit of the passage of the thin edges of the felt therethrough, as set forth

291,441. FIRE-ESCAPE. GEORGE W. WATTS, Brooklyn, N. Y. Filed Feb. 10, 1883. (No model.)

Brief.—The projectile and anchor are connected to the ladder by a swiveled chain to prevent twisting of the ladder by the revolutions of the projectile. The mortar is secured to a cross-piece on the truck, which is provided with holders for the ladders.

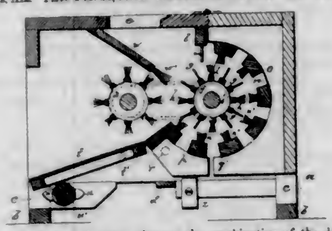


Claim.—1. The chain ladder F, having the projectile G attached to it by the swiveled chain *f*, in combination with the grapnel or anchor H, substantially as and for the purposes set forth.

2. The combination, with the projectile G, of the ladder F and swiveled chain *f*, connecting the ladder and projectile together, whereby any revolution that the projectile may have will not be communicated to the ladder, substantially as and for the purpose set forth.

3. The cross-piece C, provided with the holders E and box J, in combination with the mortar D, chain ladder F, and projectile G, substantially as and for the purposes set forth.

291,442. SEED-COTTON CLEANER. JOHN WESLEY WEBB, Union Springs, Ala. Filed Feb. 24, 1883. Renewed Oct. 16, 1883. (No model.)

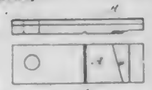


Claim.—1. In a seed-cotton cleaner, the combination of the drum *f*, having the teeth and brushes *g h*, the spreader *l* above the drum, the curved brush *n*, the fan-brush *s*, guide-board and brushes *w w'*, and the jolting-screen *t*, substantially as and for the purposes specified.

2. In a seed-cotton cleaner, the combination, with the sectional curved brush, of the drum *f*, having the brushes and teeth, the spreader *l*, and the brush-fan *s* and jolting-screen *t*, substantially as specified.

3. In a seed-cotton cleaner, the combination, with the brushes and spreader, as described, of the feed-board having a brush-strip at its lower end, substantially as specified.

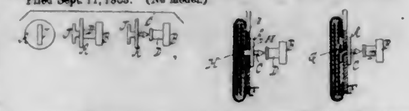
291,443. NAILING-MACHINE. HORACE WEBB, Boston, Mass. Filed Oct. 15, 1883. (No model.)



Claim.—1. The movable jaw A, provided with a cutting-edge cavity, *c*, and driving-recess *a'*, with the movable jaw B, having the cutter *e* and nail-holding recess *d'*, all substantially as and for the purposes described.

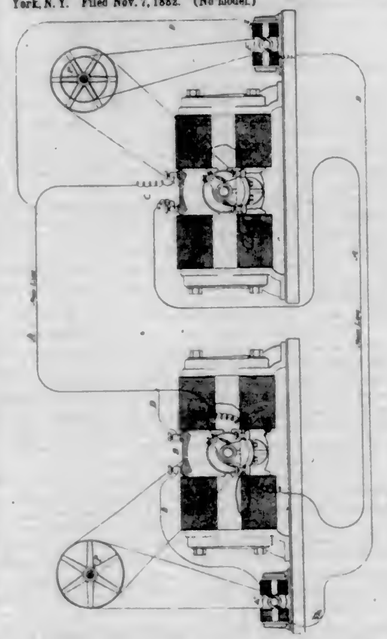
2. The combination of the cam D, the movable jaws A B, as described, and levers *d' d*^{4}, whereby the waste is cut from the wire by the movement of one jaw, and the nail then severed from the wire and fed under the driver by the movement of the other jaw, all substantially as and for the purposes described.

291,444. NECK-WEAR FASTENER. JOSEPH WEIL, New York, N. Y. Filed Sept. 11, 1883. (No model.)



Claim.—The combination, with a bow or scarf having a shield provided with an opening, as specified, of a fastener which is composed of the button-head and back, having posts for engagement with each other, and which is provided with means, substantially such as herein described, for detachably securing it to the shield in said opening thereof.

291,445. METHOD OF AND APPARATUS FOR REGULATING THE ELECTRICAL TRANSMISSION OF POWER. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Nov. 7, 1882. (No model.)



Claim.—1. In a system for the electrical transmission of power, the combination of a generator, a motor, a circuit connecting the generator and motor, and an independent regulating-circuit, and means included therein, for controlling at the motor the current generated or power transmitted.

2. In a system for electrical transmission of power, the method hereinbefore described of regulating the current generated, which consists in exciting the field of the generator by a circuit of normally constant electro-motive force, regulating the amount of current flowing in said circuit by a counter electro-motive force and varying the counter electro-motive force in proportion to the speed of the motor, as set forth.

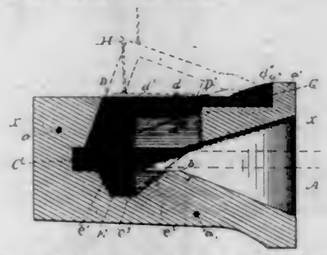
3. The combination, with a main line, a generator of electricity, and a motor included in the same, of an independent regulating-line parallel with the main and regulating devices included therein, the operation of said devices being made to depend upon the speed of rotation of the motor, substantially as and for the purpose set forth.

4. The combination, with an electric circuit, a generator driven at a constant rate of speed, and a motor, of an independent circuit, including the field-magnet coils of the said generator, a generator of relatively high electro-motive force included in said circuit and driven at a constant rate of speed, and an opposing generator of relatively low electro-motive force driven at a speed corresponding to that of the motor.

5. The combination, with a driving-engine, a generator, a motor, and a circuit including the motor and the armature of the generator, of

an independent circuit, including the field-magnet coils of the generator, a generator of relatively high electro-motive force included in said circuit and connected with the driving-engine, and an opposing generator of relatively low electro-motive force connected with or driven by the motor, substantially as set forth.

291,446. CAR-COUPLING. RANSOM S. WHEELER and JAMES WHEELER, Red Oak, Ma. Filed June 23, 1883. (No model.)



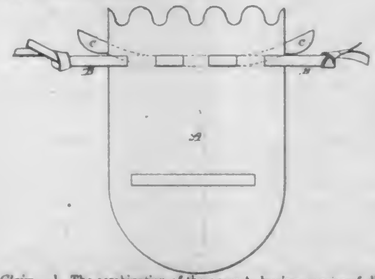
Claim.—1. The herein-described coupling device, having the draw-head formed with the outwardly-flaring mouth, the chamber C at the inner end of the mouth, the aperture D, extending from said chamber to the top, the slot D′, the recess d^4, the abutments d^3, in combination with the vertically-swinging link-fastener, having the engaging part F′, the web F^3, arranged to have the engaging part F′ bear against the said abutments d^3, the arm F, pivoted at its forward end to the top of the draw-head, and arranged to rest within the recess d^4, substantially as set forth.

2. The combination of the draw-head having the inwardly-contracting mouth, the chamber C at the inner end of the mouth, the aperture D, extending from said chamber to the top, and formed with an inner inclined wall, d', and with an abutment or shoulder, d^3, at its front side, and the vertically-swinging link-fastener, having the arm F pivoted at its forward end, and the pin portion or engaging part F′, which bears against the shoulders d^3, and which, when rising, strikes against the said inclined wall d', substantially as and for the purposes set forth.

3. The combination of the draw-head having the chamber C, the recess E in the bottom thereof, the shoulders e^2, the aperture D, extending from the chamber C to the top of the draw-head, the shoulders or abutments d^3 at the front of said aperture, and the link-fastener, having the arm F pivoted at its forward end, and the pin portion or engaging part F′, which is situated in the aperture, and which, when engaging with the link, is situated across the chamber C, and bears against the lower shoulders or abutments, e^2, and the upper shoulders or abutments, d^3, substantially as and for the purposes set forth.

4. The combination of the draw-head having the chamber C, the recess E in the bottom of said chamber, having the inclined wall e, the shoulders d^4, the aperture D, extending from the chamber C to the top of the draw-head, the shoulders or abutments d^3, the slot D′, the recess d^4, and the fastening device having the web F^3, with a front inclined edge, f, adapted to lie in proximity to the wall e, the arm F, pivoted at its forward end, and the pin portion or engaging part F″, wider than the web F^3, and adapted to bear against the shoulders or abutments d^3 and e^2, substantially as set forth.

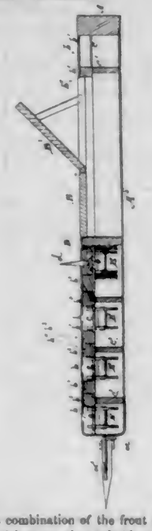
291,447. PURSE. NELLIE J. WHEELER, West Winfield, N. Y. Filed Aug. 27, 1883. (No model.)



Claim.—1. The combination of the purse A, having a series of slits or openings made through its top, with the divided strings B, which have their free ends passed through the slits in opposite directions and then fastened together, and which strings are provided with the ears C, substantially as shown.

2. The combination of the bag A, having a series of slits made through its upper end, with the divided strings B, provided with the ears C, the free ends of the strings being passed through the slits in opposite directions and then fastened together, the ends which are provided with the ears C being stitched in or to the purse A, so as to be held permanently in position, substantially as set forth.

291,448. HARVESTER-PLATFORM. CHARLES WHITNEY, Sycamore, Ill., assignor of three-fourths to C. W. Marsh and W. W. Marsh, both of same place, and Ralph Emerson and William A. Talcott, both of Rockford, Ill. Filed May 1, 1883. (No model.)



Claim.—1. The combination of the front platform-chain and the finger-beam, formed of iron or other suitable material, and having its upper edge turned inward over the chain to form a shield or covering for the front of the chain and enable the latter to work close to the sickle and on the butts of the grain, substantially as and for the purpose described.

2. A finger-beam having its upper edge turned inward to form a shield for a front platform-chain, and having its front face provided with an angle-iron, a, substantially as and for the purpose described.

3. A grain-receiving platform consisting of removable strips b', secured to strips b'' b^2 to form slots or openings b, for enabling access to be had to the interior of the platform for repairs and cleaning, substantially as specified.

4. A grain-receiving platform consisting of the front and rear section, having slots b, formed by strips b', secured to secondary strips, b'' b^2, trackway c, supports c', and bottom A^2, in combination with a chain, D, having teeth d, substantially as and for the purposes specified.

5. The frame F, adjustably mounted on the platform-frame, and having side pieces, between which is journaled the pulley E, in combination with means for securing the said frame in its adjusted position, and the carrier-chain supported by the pulley and guide by the side pieces of the frame, substantially as described.

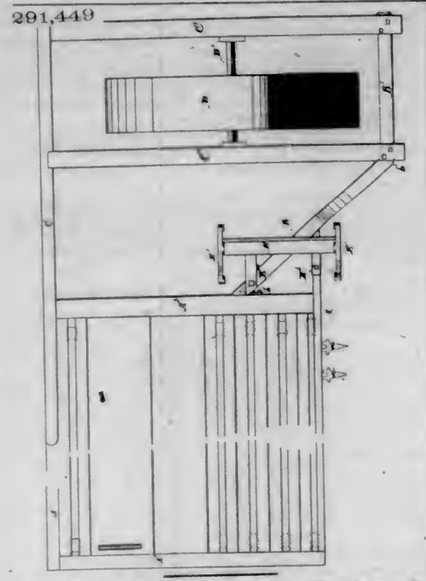
6. The frame F, having at one end a longitudinal slot, f'', and at its other end the side pieces, f, between which the pulley E is journaled, in combination with a bolt, g, passing through the slot of the frame, for adjusting and holding the frame, and the carrier-chain supported by the pulley and guided by the side pieces of the frame, substantially as described.

291,449. GRAIN-HARVESTER FRAME. CHARLES WHITNEY, Sycamore, Ill., assignor of three-fourths to Ralph Emerson and William A. Talcott, both of Rockford, and C. W. Marsh and W. W. Marsh, both of Sycamore, Ill. Filed May 1, 1883. (No model.)

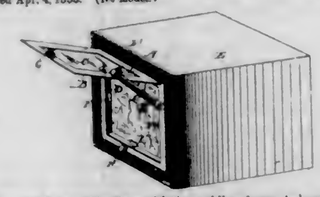
Claim.—1. The combination of the main drive-wheel frame, the platform-frame, the finger-bar, and a brace extending from the front sill of the main drive-wheel frame to the platform back of the finger-bar, the latter being secured thereto, whereby the finger-bar is supported at its inner end by said brace and the main drive-wheel frame, platform, and finger-bar are braced, substantially as described.

2. A front sill and bracing, B B′, of a single piece of material, bent or curved in shape to form a front sill to a main drive-wheel frame and a brace and connection for the grain-receiving platform and drive-wheel frame, and to furnish also a support for the inner end of the finger-beam and a binder-frame, substantially as specified.

291,449

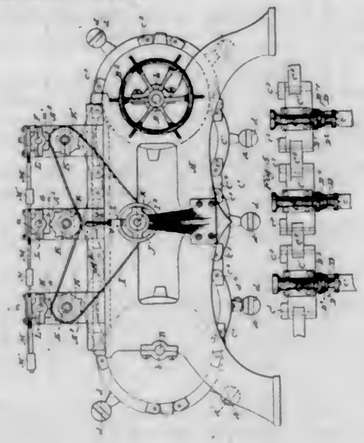


291,450. SHOW-BOX COVER. JOHN GEO. WHITE, Pensacola, Fla. Filed Apr. 4, 1883. (No model.)

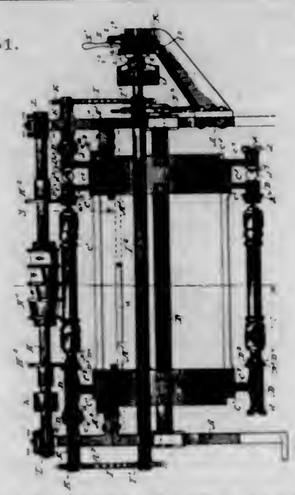


Claim.—The combination, with the molding-frame A, having strips D near the outer edges, of the frame B, hinged to fit within it, and having stud L projecting from a jaw, L′, on the frame B, the thumb-screws F, and the brace J, pivoted to frame A, and having the longitudinal slot K, terminating in a notch, a, whereby the cover may fit closely in the box and be held open, as described.

291,451. GEOMETRIC LATHE. SAML. K. WHITE, Chicago, Ill. Filed Mar. 29, 1883. (No model.)



291,451.



Claim.—1. In a geometric lathe, the combination, with a rotating movable cutter-arbor and relatively stationary blank-spindles, of independently-movable bearings for the several ends of the cutter-arbor, and a cam on each blank-spindle for controlling the distance between the several ends of the cutter-arbor and the ends of the blank, substantially as described.

2. In a geometric lathe, the combination, with the rotating movable cutter-arbor and with the blank-spindle, of a pattern-cam secured to the blank-spindle and a plate opposed to said cam, mounted on the said arbor, or a part belonging thereto, and having a curved surface for contact with the cam of practically equal radius with the cutters, substantially as described.

3. In a geometric lathe, the combination, with a movable cutter-arbor, a traveling support provided with spindles for the blank, and a stationary spindle constructed to engage the blank-spindle when the latter is in working position with reference to the cutter-arbor, of a disk or cam upon said stationary spindle, arranged to control the distance between the cutter-arbor and the blank, substantially as described.

4. In a geometric lathe, the combination, with two or more rotating and independently-movable cutter-arbors arranged in a practically horizontal plane, of a series of blank-spindles, a continuous chain-carrier for supporting said blank-spindles, means for guiding said chain-carrier in a plane parallel with that of the cutter-arbors, means for intermittently moving said chain-carrier so as to present each one of the blanks in succession to the said cutter-arbors, and means for rotating the said blank-spindles when opposite the cutter-arbors, substantially as described.

5. The combination, with two or more cutter-arbors, and with the series of connected plates C′, for supporting the blank-spindles at the same distance apart as the cutter-arbors, of mechanism for moving said plates, stationary guides for said plates, and means for rotating the spindles when opposite the cutters, substantially as described.

6. The combination, with the cutter-arbors and a chain-carrier for the blank-spindles, of wheels B′, guides A′, placed between said wheels, and means for rotating the blank-spindles when opposite the cutters, substantially as and for the purposes set forth.

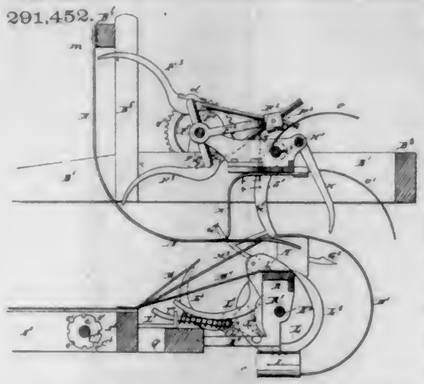
7. In a geometric lathe, the combination, with a rotating cutter-arbor and with spindles for supporting the blanks, of the blank-spindle carrier composed of a double series of plates, C′, oppositely arranged and rigidly connected in pairs, mechanism for moving the carrier, and stationary guides for said plates, substantially as described.

8. In a geometric lathe, the combination, with the slotted standards A^2, the independently-movable cutter-arbors mounted therein, and traveling carrier for the blank-spindles D, of the spindles E, mounted in the standards A^2, and driving mechanism applied thereto, substantially as described.

9. The combination, with the standards A^2, of the cutter-arbor journal-boxes mounted movably therein, and with driving-spindles E, also mounted in said standards, of pattern-cams secured to said spindles, and plates mounted on the boxes of the cutter-arbor in position to engage said cams, substantially as described, and for the purposes set forth.

291,452. GRAIN-BINDING HARVESTER. CHARLES WHITNEY and WILLIAM W. MARSH, Sycamore, Ill. Filed June 19, 1882. (No model.) Patented in England May 6, 1880, No. 530, Dec. 7, 1880, No. 5,088, and May 3, 1881, No. 1,920.

291,452.



Claim.—1. The combination of the crank on the binder-arm shaft, the wheel E″, the adjustable wrist-pin on said wheel, and the extensible pitman connecting the wrist-pin with the crank on the binder-arm shaft, the whole for adjusting the throw of the binder-arm.

2. The combination of a clutch, a clutch-dog adapted to engage and disengage the same, a clutch trip-lever carried by the tripping compressor-finger shaft for locking the clutch-dog, and means for adjusting the clutch trip-liver to vary its contact with the clutch-dog, substantially as described.

3. The tripping compressor-finger shaft H′ and frame H″, in combination with the clutch trip-lever H³, adjusting-screw A, clutch I, and clutch-dog I³, for automatically releasing the clutch by the pressure of the inflowing grain, and varying the size of the bundles, substantially as specified.

4. The clutch trip-lever H³, adapted to be operated from the pressure of the inflowing grain, and engaging a clutch, in combination with a guide arm or bar for holding the lever disengaged while the binding operation is being performed, substantially as specified.

5. The clutch trip-lever H³, engaging a clutch, and adapted to be operated from the inflowing grain, in combination with the guide arm or bar H⁴ on the pitman G and the pressure-spring h′, substantially as and for the purposes specified.

6. The metal plates M, located at the base of the slot M′, in combination with the discharging-fingers for preventing the point of the fingers engaging with the inflowing grain, substantially as and for the purposes specified.

7. The adjustable fender-bars N′, in combination with the binding-platform for increasing or decreasing the throatway or passage for the inflowing grain to the binder, substantially as specified.

8. The curved rods or bars N and the adjustable fender-bars N′, in combination with the binding-platform for the grain, for delivering the grain to the binder, substantially as specified.

9. A lever for operating the cord-holder, consisting of two angle-plates adjustably connected together for changing the throw of the dog and causing it to properly perform its work, substantially as described.

10. The folding finger located on the main or drive wheel and adapted to engage the bundle and move it backward, and means for operating the finger, substantially as specified.

11. The finger T, having an arm or extension, T′, in combination with a spring and devices for throwing the finger out, substantially as and for the purposes specified.

12. The finger T, having an arm or extension, T′, in combination with a spring r, rod or link T″, and arm or lever T², and operating mechanism for folding and projecting the finger, substantially as and for the purposes specified.

13. The finger T, in combination with the rod or link T″, arm or lever T², and cross-beam B², for projecting the finger to engage the butt-end of the bundle, substantially as and for the purpose specified.

14. A sprocket-wheel having two diameters, as described, in combination with a driving-chain, whereby the wheel is adapted for use either as a driver or driven wheel in operation, substantially as and for the purposes specified.

15. The sprocket-wheel U, having the faces s and notches or depressions t, forming together two diameters on the same wheel, in combination with a drive-chain, and operative mechanisms for adapting either the wheel or the chain to act as the driver, substantially as and for the purposes specified.

16. The brace-bars X′ X³, in combination with the front beam, B, cross-beam B², and front beam of the platform-frame, for forming a bracing and support for the finger-beam, substantially as specified.

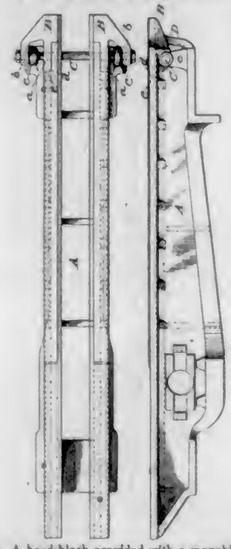
17. In a grain-adjusting mechanism, a longitudinally-adjustable shaft, a worm wheel or screw connected with the rear end thereof, and located on the binding-platform, and means for adjusting the angle at which the wheel operates on the platform, substantially as described.

18. In a grain-adjusting mechanism, a shaft and a worm wheel or screw located on the grain receiving and binding platform, and connected with the shaft by a universal joint, whereby its angle relative to the shaft can be varied, substantially as described.

19. The combination of packer-fingers and an adjustable connection between them and the binder-arm, for causing them to enter and leave the grain and varying the operative position of the fingers, substantially as described.

20. The combination of continuously-operating packer-fingers, a binder-arm, and an adjustable connection between the fingers and the arm, whereby the stroke of the fingers may be varied and they are carried out of the grain as the binder-arm descends, substantially as described.

291,453. SAW-MILL HEAD-BLOCK. THEODORE S. WILKIN, Milwaukee, Wis. Filed Nov. 15, 1883. (No model.)



Claim.—1. A head-block provided with a movable nose-section or fore end adapted to yield when encountering an obstruction, substantially as and for the purpose explained.

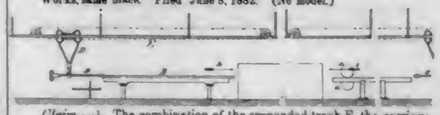
2. In combination with a saw-mill head-block, a separate nose or fore end connected therewith by a hinge or joint, substantially as shown and described.

3. In combination with a saw-mill head-block, substantially as shown, a fore end or nose-section pivoted thereto, and having its vertical faces beveled from the sides inward toward the middle, substantially as and for the purpose explained.

4. In combination with a head-block and a fore end or nose-section pivoted thereto, a fixed stop to limit the descent of the nose-section.

5. In combination with head-block A, having ears c, nose-section B, having ears a b, pivot-bolt C, and stop or rest to limit the descent of the nose-section, substantially as shown.

291,454. MECHANISM FOR INTRODUCING TUBES INTO FURNACES. EDWARD W. WOLFE, Reading, Pa., assignor to the Reading Iron Works, same place. Filed June 8, 1882. (No model.)



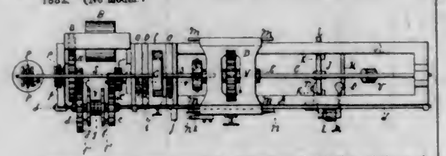
Claim.—1. The combination of the suspended track E, the carriage D, adapted thereto, the swiveling sleeve j and pusher-bar x, the chain P, connected at both ends to the carriage, the pulley L′, the shafts G J, bevel-wheels H H′ I, clutch R, and chain-pulley L on the shaft J, all substantially as set forth.

2. The combination of the suspended track, the carriage adapted thereto, the driving-shaft G, the bevel-wheels and clutch thereon, the shaft J, its chain-pulley L and bevel-wheel I, the sliding rod U, and

mechanism whereby the said sliding rod, actuated by the carriage, is caused to operate the clutch and throw the said shaft J out of gear, all substantially as set forth.

3. The combination of the carriage, the forked rod i, swiveled thereto, the sleeve j, and the push-rod x, adapted to the sleeve and connected thereto, substantially as set forth.

291,455. LATHE. AUBIN WOOD, Worcester, Mass. Filed Dec. 22, 1882. (No model.)



Claim.—1. The combination, in a shaft-turning lathe, of the tool-holders t, fixed tools t′, traversing puppet D, and supporting-pulleys p, as described, and for the purposes set forth.

2. The combination, in a shaft-turning lathe, of the tool-holders t, fixed tools t′, traversing puppet D, hollow spindle E, and supporting-pulleys p, as described, and for the purposes set forth.

3. The combination, in a shaft-turning lathe, of the stationary tool-holders t, fixed tools t′, and supporting-pulleys p, with means for rotating the shaft, as described, and for the purposes set forth.

4. The combination, in a lathe, of two or more cutting-tools, t′, separate tool-holders t, slides o o o, by means of which each tool-holder t and its cutting-tool t′ may be independently adjusted and without loosening the tools in the tool posts or holders, and the slide l carrying the slides o o o, and by means of which all the tool-holders and their tools may be adjusted conjointly, as and for the purpose set forth.

5. The combination, with the traversing puppet D, of the cam-plate k, bell-crank lever q, clutch y, gear-wheels d and e, and feed-screw S, all arranged and operating as set forth, and for the purpose specified.

6. The shaft-supports I and T, sliding plate J, rack R′, sector R″, and weighted lever V, in combination with the shafts C and S, as described, and for the purposes set forth.

7. The shaft-supports I and T, sliding plate J, arms N N, weighted lever V, operating as described, and the actuating cam-plates m m, attached to the puppet D, as and for the purposes set forth.

8. The combination, with the supports I and T, plate J, arms N N, and groove R, of the latching device consisting of the lever Q, spur W, and weighted lever O, all operating as described, and for the purposes set forth.

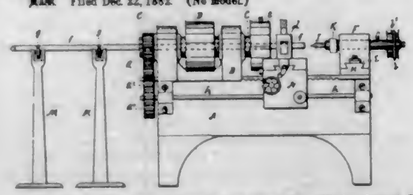
9. The combination, in a shaft-turning lathe, of the tool-holders t, fixed tools t′, traversing puppet D, substantially as described, and means for supporting the free end of the shaft in a horizontal and vertical plane coincident with its axis of rotation, as and for the purpose set forth.

10. In a shaft-turning lathe, the combination of the tool-holders t, cutting-tools t′, supporting-pulleys p, post P, capable of a lateral motion at the top, turning on the pivots 4 4 at the base, and suitable means for rotating the shaft, as and for the purpose set forth.

11. In a shaft-turning lathe, the combination, with a series of supporting-pulleys, of a series of posts, P, with pivots 4 4 at the bottom of each post, so as to allow a slight lateral motion to the top of the post, as and for the purpose set forth.

12. In a shaft-turning lathe, the posts P, flanges 7 7, and check-screws 5 5, as and for the purpose set forth.

291,456. SHAFT-CENTERING LATHE. AUBIN WOOD, Worcester, Mass. Filed Dec. 22, 1882. (No model.)



Claim.—1. The combination, in a turning lathe, with head-stock B, spindle C, tail-stock F, and spindle G, of the rotating drill-holding spindle G′, as described, and for the purposes set forth.

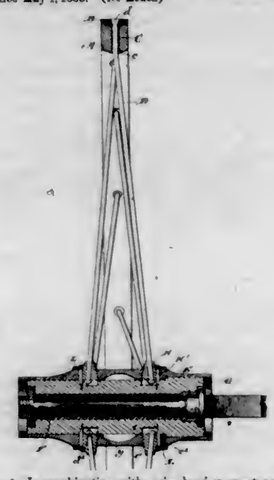
2. The combination, with the tail-stock of a turning-lathe, of a rotating drill-holding spindle and suitable connected means for operating the same, as and for the purposes set forth.

3. The combination, in a turning-lathe, of the tail-stock F, spindle G, rotating drill-spindle G′, and connecting yoke or bar K, as and for the purposes set forth.

4. The combination, in a turning-lathe, of the transversely-sliding tail-stock F, spindle G, rotating spindle G′, and the stops L and L′, as described, and for the purposes set forth.

5. The combination, with a shaft-centering lathe, of one or more pairs of anti-friction pulleys, the pulleys of each pair overlapping each other and being arranged in proper position with reference to the lathe, so as to allow the shaft while being centered to rotate upon the peripheries of the pulleys, as and for the purpose set forth.

291,457. VEHICLE WHEEL. ALONZO B. WOODARD, Hornellsville, N. Y. Filed May 1, 1883. (No model.)



Claim.—1. In combination with a rim having apertures, and bushings for said apertures having flanges and flaring outer ends, as shown, a series of metal spokes having enlarged ends, the outer ends being received in the bushings, and the inner ends held to the hub by movable locking-bearings, substantially as described.

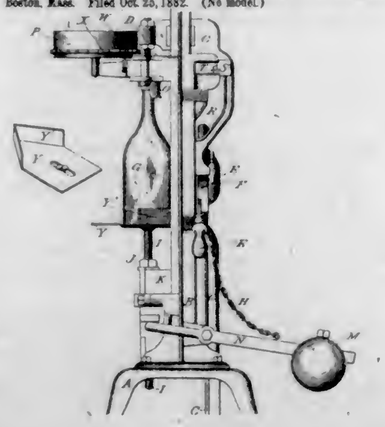
2. The combination, in a vehicle-wheel, of the spokes passing through the rim, the wedge-blocks secured to said spokes, the hub mortised for the reception of the wedge-blocks, and the keys for securing the wedge-blocks in position, substantially as described.

3. The combination of a spoke-locking block having a spoke-receiving groove with an apertured hub, a spoke having a straight face at its inner end, and a fastening-key, substantially as described.

4. The combination of a metallic hub having a wood filling and radial mortises with spokes having wedge-shaped locking-blocks, and keys driven into the wood filling, substantially as described.

5. The combination, with the spokes, the hub having recesses, and the wedge-shaped locking-blocks, of the locking-keys and the band L, for locking the entire series of keys in place, substantially as described.

291,458. MACHINE FOR CORKING BOTTLES. EDWIN E. WORDEN, Somerville, GEORGE TAYLOR, Everett, and JOHN POWER and EBEN D. COLBY, Boston, Mass. Filed Oct. 25, 1882. (No model.)

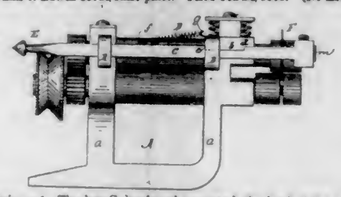


Claim.—1. In a machine for corking bottles, the combination of the independent removable cork-receiver bushing V, and corresponding plunger, D, and curved guide-plate O, constructed and arranged substantially as shown and described, as and for the purposes set forth.

2. In a machine for corking bottles, the combination of the adjustable bottle-guide holder Y, provided with the angle or incline vertical sides Y', whereby various sizes of bottles may be guided into proper position beneath the cork driver or plunger, as and for the purposes set forth.

3. In a machine for corking bottles, the combination, with the weighted lever N, having an adjustable weight, M, and operating-handle E, of the chain H, connecting said handle and lever direct, substantially as shown and described, as and for the purposes set forth.

291,459. DEVICE FOR SHARPENING THE BLADES OF FABRIC-SEAM TRIMMERS. AARON WRIGHT, Phœnix Mills, N. Y., assignor of one-half to Edwin Groat, same place. Filed Oct. 24, 1883. (No model.)



Claim.—1. The bar C, having the recess *b*, the hook *f*, the groove *i*, for holding the sharpening material, and perforation for receiving the set-screw, in combination with the loops B B, spring D, and hook *g* of a seam-trimmer frame, substantially as specified.

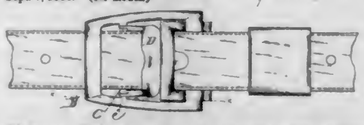
2. The combination, with the cutting-disk and frame A of a fabric-seam trimmer having the loops B, of the sharpening apparatus consisting of the bar C, having recess *b*, handle E, hook *f*, groove *i*, for receiving the sharpening material, the threaded perforation for receiving the set-screw, and spiral spring D, all adapted to operate substantially as specified.

291,460. PEG-CUTTER. SAMUEL YEATMAN, Marietta, Ga. Filed May 22, 1883. (No model.)



Claim.—A peg-float consisting of a suitable head provided with a dovetailed groove on its upper side, in combination with a handle provided with a dovetail shank adapted to fit in the groove in the head, substantially as described.

291,461. BUCKLE. MELANCTSON K. ZELLER, Bluffton, Ohio. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination, with the buckle-frame, substantially such as described, of the bail and tongue-plate, the latter having arms which extend down on either side of the trace, and are terminally pivoted to a cross-bar on the frame, as and for the purpose set forth.

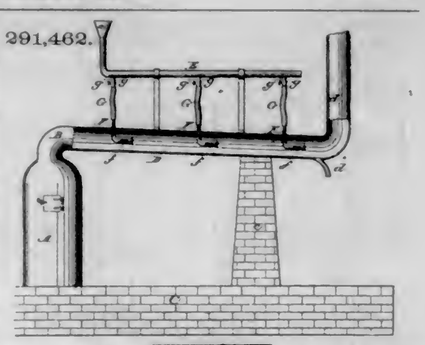
2. The combination, with the buckle-frame, substantially such as described, of the bail and tongue-plate, the latter having arms which extend down on either side of the trace, and are pivoted to a cross-bar on the frame and secured thereto by means of integral terminal fingers, as and for the purpose set forth.

291,462. FUME-CONDENSING ATTACHMENT FOR ORE-FURNACES. ELI M. ALDERMAN, Tucson, Ariz., assignor of two-thirds to E. J. Benedict and Paul Marvney, Sr., same place. Filed June 26, 1883. (No model.)

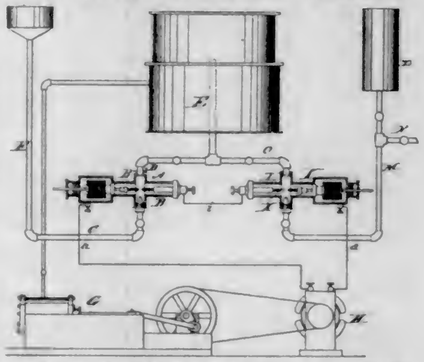
Claim.—1. The smoke-stack of an ore furnace or smelter and the pipe D, connected therewith, in combination with the elbow-pipes F, having perforated arms within pipe D, the water-distributing pipe E, adapted to receive water under pressure, the couplings *g*, stop-cock *g'*, and hose-connection G, all arranged and operating substantially as and for the purpose herein described.

2. In combination with the smoke-stack of an ore furnace or smelter, the pipe D, connected therewith and having the discharge *d*, continuation *d'*, and an inclination slightly below a horizontal to its discharge *d*, the spray-pipes F, the water-distributer E, and connections between said spray-pipes and water-distributer, substantially as and for the purpose herein described.

291,462.



291,463. ELECTRIC GAS-GENERATOR. CHARLES E. BALL, Philadelphia, and CHARLES S. BRADFORD, Jr., West Chester, Pa., assignors to said Ball. Filed Feb. 24, 1883. Renewed Nov. 12, 1883. (No model.)

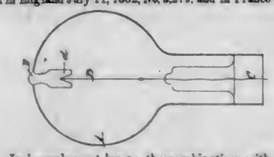


Claim.—1. The combination, with an apparatus or plant for electrically generating hydrocarbon gas, of means, substantially as described, for generating hydrogen gas for mixing or combining therewith, substantially as set forth.

2. The combination of chambers A I, electrodes B B, K K, supply-pipes F M, motor G, and electric generator H, substantially as shown and described.

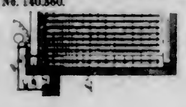
3. The process herein described of obtaining mixed or combined hydrocarbon gas and hydrogen, consisting in generating hydrocarbon gas in an electrical generator, and hydrogen gas in another electrical generator, and mingling said gases, substantially as set forth.

291,464. SUPPORT FOR FILAMENTS OF INCANDESCENT LAMPS. JOSEPH S. BEEMAN, London, England. Filed Apr. 23, 1883. (No model.) Patented in England July 11, 1882, No. 3,279, and in France Jan. 9, 1883.



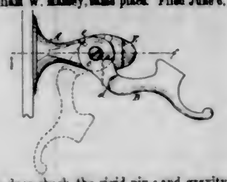
Claim.—In incandescent lamps, the combination, with the globe or bulb and the incandescent filament, of a projection or pendent piece fitted to or formed on the interior of the globe in a position to embrace and support the filament when the latter is inserted in place in the globe, as hereinbefore set forth.

291,465. SECONDARY-BATTERY REGULATOR. JOSEPH S. BEEMAN, WILLIAM TAYLOR, and FRANK KING, London, England. Filed Feb. 28, 1883. (No model.) Patented in England Aug. 10, 1882, No. 3,813, and in France Jan. 15, 1883, No. 140,860.



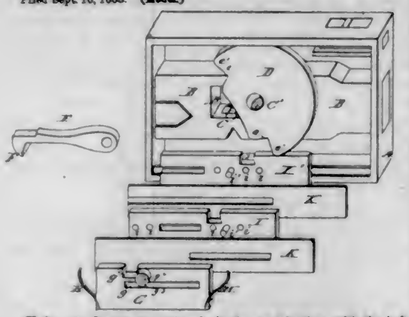
Claim.—The combination, in a secondary-battery cell, with the battery-plates proper, of a regulator-plate, A, of relatively less storage capacity, a gas-chamber, B, and the elastic diaphragm D, or its equivalent, for operating contact makers or breakers, substantially as and for the purposes hereinbefore set forth.

291,466. DOOR-CHECK. CHAS. R. BRADFORD, Elyria, Ohio, assignor of one-half to William W. Massey, same place. Filed June 6, 1883. (Model.)



Claim.—In a door-check, the rigid pin *e* and gravity-pin A, in combination with the spring arm or catch B, screw *c*, spring *a*, and stop A, for the purposes above set forth, and substantially as described.

291,467. PERMUTATION-LOCK. LOUIS BILAK, Iowa City, Iowa, assignor of one-half to F. J. Berak and J. K. Beranek, both of same place. Filed Sept. 10, 1883. (Model.)



Claim.—1. In a permutation-lock, the combination, with the bolt B and the pivotal dog F, carried thereby, of the straight slotted and notched slides or tumblers I I', lying alongside of and parallel with said bolt, the setting-slide G, the knob C, having a stem, C', and cam-disk D, substantially as described.

2. In a permutation-lock, the combination, with a knob through which the combination is worked, and the notched and slotted permutation-slides, of the cam-disk attached to the knob-stem and the setting-slide located below or beside said disk and at right angles to the knob-stem, substantially as described.

291,468. WAGON RUNNING-GEAR. RICHARD CHAPMAN BLACKWELL, Henderson, Ky., assignor of one-half to George Dulker, same place. Filed Apr. 23, 1883. (No model.)



Claim.—In combination with the tongue D, pivoted at *d* to the bounds E, the reach F, loosely connected to the rear end of said tongue by the parts A A' *f*, the flat plate *a*, and the bail-plate *a'*, for allowing play to the tongue, as set forth.

291,469. DEVICE FOR GRINDING ROLL-BARS. CHARLES JAMES BRADBURY, Boston, assignor of one-half to John H. Horne, Lawrence, Mass. Filed Mar. 15, 1883. Renewed Nov. 26, 1883. (No model.)



Claim.—The trough or box C, having lips *b* and cross-ribs *c*, and containing abrading material D, for the purpose set forth.

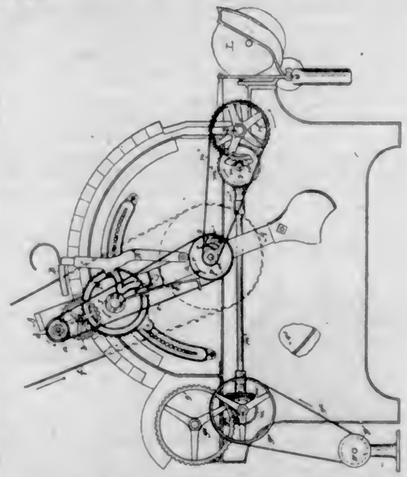
291,470. PROCESS OF MAKING WROUGHT-IRON. LUCIUS D. CHAPIN, Chicago, Ill., assignor to the Chapin Pneumatic Iron Company, same place. Filed June 23, 1883. (No specimens.)

Claim.—1. The process of making wrought-iron from crude or cast iron high in phosphorus, which consists in subjecting such molten iron, in a Bessemer converter having a refractory lining, to the action of an air-blast until the objectionable impurities which the air-blast is adapted to remove shall have been substantially eliminated, and then transferring the metal to a separate furnace or balling chamber having, essentially, an oxide-of-iron lining, and therein subjecting it to reverberatory flame and to puddling action until brought to a wrought condition to form a ball or loop, dolomite being added to the metal during its treatment, substantially as described.

2. The process of making wrought-iron from crude or cast iron containing phosphorus in injurious quantity, which consists in subjecting molten cast-iron, in a Bessemer converter having a refractory lining, to the action of an air-blast until the objectionable impurities which the air-blast is adapted to remove shall have been substantially eliminated, then transferring the metal to a ladle wherein dolomite is placed, and then transferring the metal to an iron-oxide lined balling or puddling chamber wherein dolomite is placed, and there subjecting it to a reverberatory flame and to a puddling action until it is reduced to a wrought condition to form a ball or loop, substantially as described.

291,471. MECHANISM FOR STRIPPING THE FLATS OF CARDING-ENGINES. EDWARD P. DENNIS, Lowell, Mass., assignor of one-half to J. S. Ladlam, same place. Filed Jan. 15, 1883. (No model.)

Brief.—To prevent strain to the belt of the stripping mechanism, when shifted from the high-speed pulley to the slow-speed pulley, in machines as heretofore constructed, the high or fast speed pulley is secured upon the main shaft nearest the cylinder, the slow-speed pulley is placed loosely upon said shaft, outside of the fast pulley, chambered at its outer side and provided with a toothed ratchet, with which engage pawls secured to a disk provided with an elongated hub, which revolves loosely upon the hub of the loose pulley, said elongated hub being engaged by a belt extended over a pulley on the shaft of one of the feed-rollers. Thus as the disk is driven its teeth or pawls engage the toothed ratchet fast on the loose slow-speed pulley and drive it at a slower speed than that of the fast-speed pulley. By this arrangement, as the belt is being shifted, the slow pulley will partake of the speed of the fast pulley as long as said belt is on them both, the ratchet-teeth running forward faster over the pawl secured to the slow pulley, thus avoiding all strain to the belt and parts.



Claim.—1. The combination, substantially as hereinbefore set forth, with the main shaft A^2, the cylinder A^3, stripping mechanism and frame A, which carries the same, of the high-speed pulley A fast on the shaft A^2, the slow-speed pulley *s* outside of it and loose on the said shaft, the ratchet-plate rotating with said slow pulley, the loose disk and its pawls, and means to rotate the said disk independently of the main shaft, as and for the purpose set forth.

2. The shaft n^2 of the feed-roller, belt-pulley thereon, belt n^4, actuated by it, and the pawl-carrying disk driven by the said belt, the shaft A^2,

and the slow-speed loose pulley and its ratchet, combined with the high-speed fast pulley, the belt c^3, belt-shipper, and means to actuate it, substantially as and for the purpose described.

3. The main shaft A^3 and high-speed fast pulley thereon, combined with a slow-speed loose pulley placed at the side of it, the ratchet-wheel attached to the said pulley, and the loose disk provided with a series of pawls, and means to rotate the said disk at a speed slower than that of the high-speed pulley, and a belt-shipper and belt whereby when the said belt is shifted from the high to the slow speed pulley the latter pulley is moved at a speed corresponding with that of the belt, and its ratchet-teeth are moved forward under the teeth of the said pawls irrespective of the movement of the said disk, substantially as and for the purpose set forth.

4. The shaft A^3, means to move it, the pulley h fast thereon, the pulley s loose thereon, the disk r, loose with relation to the said shaft and the said loose pulley, means between the said loose pulley and disk to permit the said disk to turn the said pulley with it in one direction only, and a belt to drive the said disk and means to drive the said belt, combined with a belt driving the said fast pulley, stripping mechanism driven by the said belt, and a shipper to move the said belt from the fast to the loose pulley, the combination being and operating substantially as described, whereby the belt shifted from the fast to the loose pulley moves the latter at a speed faster than the speed of the said loose pulley derived from the said disk.

291,472. TELEPHONE-TRANSMITTER. DANL. DRAWBAUGH, Eberly's Mill, Pa. Filed Dec. 27, 1882. (No model.) Patented in England Sept. 4, 1883, No. 4,247, and in Belgium Sept. 15, 1883, No. 62,503.



Claim.—1. In a telephone, the combination of two diaphragms covering opposite sides of the inclosing box or case of the instrument and rigidly secured to said box or case, a means of modifying an electric current so as to render it capable of transmitting articulate speech, arranged between said diaphragms and influenced by the vibrations of both of them, and a means of reflecting or concentrating sound-waves upon that one of the two diaphragms which does not face the source of sound, substantially as described.

2. In a telephone, in combination with an inclosing box or case containing two diaphragms on opposite sides thereof, and a means of modifying an electric current so as to render it capable of transmitting articulate speech, arranged between said diaphragms and influenced by the vibrations of both of them, two communicating sound-receiving chambers—one chamber being formed annularly, or substantially so, around the exterior of the inclosing-case, and the other being formed in rear of said case, substantially as described.

3. The combination of, first, a telephone containing an inclosing-case, two diaphragms, and means for modifying an electric current so as to render it capable of transmitting articulate speech; second, a back board or base; third, supports arranged between the rear side of said telephone and the back board; and, fourth, a sound-reflecting projection attached to said back board and surrounding the telephone-case, substantially as described.

291,473. PANTALOONS. HUGO F. ENGELS, Dorchester, assignor of one-half to George Fern, Boston, Mass. Filed July 19, 1883. (No model.)

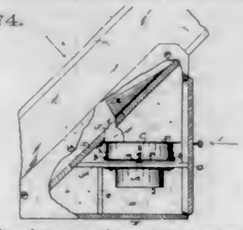


Claim.—As a new article of manufacture, the pantaloons described and shown, consisting of the body and leg portion A and the waistband B, attached thereto, said waistband being provided with the tabs or upward extensions C and C' C', made in one piece or integral therewith, substantially as and for the purpose specified.

291,474. AUTOMATIC GRAIN AND FLOUR SAMPLER. JOHN M. FINCH, Jackson, Mich., assignor of one-half to George S. Bennett, same place. Filed Mar. 21, 1883. (No model.)

Claim.—1. In an automatic grain and flour sampler, the combination of an inclosing-casing, a rotating vertical shaft, a horizontal carrying-plate mounted on the upper end of the shaft, a compartment-case

291,474.



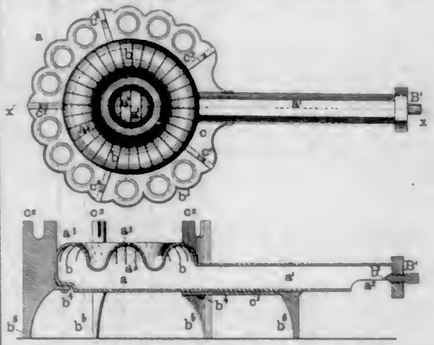
provided with pockets arranged around a common center and mounted on the upper surface of the carrying-plate, means for connecting the case with the horizontally-rotating carrying-plate and permitting its removal therefrom, and a stationary feeding-chute arranged eccentrically to the compartment-case, substantially as set forth.

2. In an automatic grain and flour sampler, the combination of a horizontally-rotating carrying-plate provided with upwardly-projecting fingers, and a compartment-case provided with a series of circularly-arranged pockets supported upon and carried by the rotating plate, substantially as set forth.

3. In an automatic grain and flour sampler, the combination of an inclosing-casing, a horizontally-rotating carrying-plate mounted upon the upper end of a driving-shaft, a removable compartment-case provided with pockets arranged around a common center, means for connecting the case with the rotating plate and permitting its removal therefrom, a feeding-chute arranged eccentrically to the compartment-case, and the cover adapted to close the open upper ends of the pockets, and provided with an opening for the feeding-chute, substantially as set forth.

4. In an automatic grain and flour sampler, the combination, with the horizontally-rotating removable compartment-case, the hinged cover provided with a slot for the feeding-chute, and the feeding-chute provided with a curved portion, j, formed on an arc of a circle described from the hinge of the cover, substantially as set forth.

291,475. GAS-BURNERS FOR HEATING PURPOSES. THOMAS FLETCHER, Warrington, County of Lancaster, England. Filed July 11, 1883. (No model.) Patented in England Apr. 28, 1882, No. 2,019, and in Canada Dec. 7, 1882, No. 15,919.



Claim.—1. A gas-burner for heating purposes, consisting of the inlet or supply tube a', having an air-opening, a^2, and gas-jet B', and a center burner, a^3, arranged within an annular burner, a^4, each being provided with a series of narrow cut openings or slits, a^4 and b, the whole mounted upon a suitable supporting-frame, substantially as specified.

2. A gas-heating burner consisting of the following parts, all cast or formed of one piece: the inlet or supply tube a', provided with the air-opening a^2, gas-jet B', and an annular burner, a^3, surrounding the burner a^3, substantially as described.

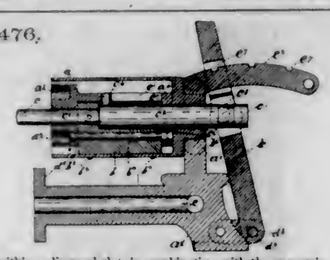
291,476. VALVE-GEAR. FREDK. A. GARDNER, Buffalo, N. Y. Filed Mar. 30, 1883. (No model.)

Claim.—1. The case a, the frame a^2, and frame a^3 a^4, provided with the diagonal slot a', the reversing-arm c^2 and its reversing-roller, and the reversing-gear, substantially as specified, in combination with the supporting device b and the joints upon which it swings, for the purposes described.

2. The casing a, jointed to the frame a^2, and the device b, secured with the casing, in combination with the eccentric jointed thereto and provided with a diagonal slot and with a reversing bar and lever, substantially as described.

3. The arm d^2 and reversing-bar c^2, provided with a roller, c^4, ar-

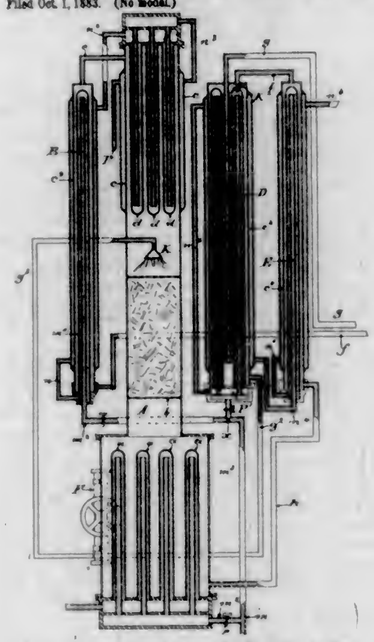
291,476.



ranged within a diagonal slot, in combination with the eccentric, set on journals in the part b, substantially as and for the purposes described.

4. A pivoted eccentric for engines, having the curved slot, through which the shaft c passes, placed to one side or slightly out of the center, or at a point between the center of the eccentric and the center of the journal b^2, or nearer the periphery at the point upon which it turns, and having the pivot b^2 arranged at a point on the line with the periphery of the eccentric, so that the eccentric may be moved from one position for reversing the direction of movement to the other without moving the valve-rod while the engine is on the dead-center, the crank being on the same side, whereby the lead of the valve is kept in its proper position at all times, substantially as specified.

291,477. ICE AND REFRIGERATING MACHINE. DANL. L. HOLDEN, Cincinnati, Ohio, assignor of two-thirds to P. T. Millar and T. E. Livesey. Filed Oct. 1, 1883. (No model.)



Claim.—1. In an absorption ice and refrigerating machine, a generator having cooling devices within and about its upper end, substantially as described.

2. In the generator of an absorption ice or refrigerating machine, the combination of a grating and pieces of tin or other substance not destroyed by heated ammonia resting on said grating, substantially as described.

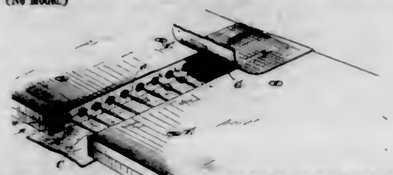
3. In an absorption ice or refrigerating machine, the combination of a generator, a condenser, an absorber, and a cooler securely attached to and supported by said generator, substantially as described.

4. In an absorption ice or refrigerating machine, the combination of a generator, a condenser, an absorber, a cooler, and a pump securely attached and supported by said generator, substantially as described.

5. In an absorption ice or refrigerating machine, the combination of a generating-chamber and steam-pipes of the internal-circulation type, substantially as described.

6. In an absorption ice or refrigerating machine, the combination of a generator having cooling devices about its upper end, and a condenser, a congealer, an absorber, and a cooler, substantially as described.

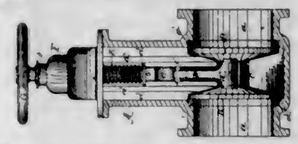
291,478. SECTIONAL COMPOUND TELEGRAPH-WIRE PROTECTOR. JOSEPH W. HORNER, New York, N. Y. Filed Nov. 2, 1883. (No model.)



Claim.—1. The two-part box having registering recesses formed in its meeting faces, in combination with the wires passing through said recesses, and an insulating material enveloping said wires and securing them within said recesses, substantially as described.

2. The within-described sectional compound conductor, composed of a series of two-part boxes set upon edge, and having registering recesses formed in their meeting faces, with wires passing through said recesses and held therein, and insulated from the boxes by an insulating material filling the recesses and enveloping the wires, the wires of one box being united with those of an adjoining box, and the joint between the boxes being made by a filling of insulating material covering the wires, and by a covering-strip, substantially as described.

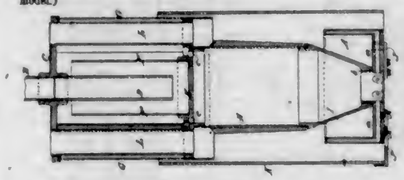
291,479. STRAIGHT-WAY VALVE. ROBERT HUGHES, Waterford, assignor to Thomas A. Knickenbacker, Troy, N. Y. Filed Sept. 1, 1883. (No model.)



Claim.—1. In a straight-way valve, the valves or gates B, having coniform backs, and provided with stems b, as herein described, a lifter, C, provided with a loop or stirrup, c, in which the stems b of said valves fit loosely, and the pendulous arms D, hinged to the lifter C and arranged to force the valves B into contact with the seats of the valve-casing A, as and for the purpose herein specified.

2. The combination, with a valve-casing, A, having cam-shaped projections a^4, and the valves B, provided with coniform backs, and stems b, as herein described, of the lifter C, adapted to carry the valve or valves B, as herein set forth, and having pendulous arms D hinged thereto, and means, substantially as described, for imparting a reciprocating motion to said lifter and its subsidiary parts, in the manner and for the purpose herein specified.

291,480. GAS-BURNER. ANDREW B. LEPSKY, West Hoboken, N. J., assignor to William Bell, New York, N. Y. Filed June 12, 1883. (No model.)



Claim.—1. The combination, with the upwardly-extending annular burner-tip A or a circular series of burner-tips, of the downwardly-extending gas-supply pipe D, and the pipe H I, communicating with the pipe D and extending downward to a central body piece, whence gas is supplied to the burner tip or tips, and made much larger than the pipe D, so as to form a chamber wherein the gas will be heated by the flame and ascending products of combustion, substantialy as specified.

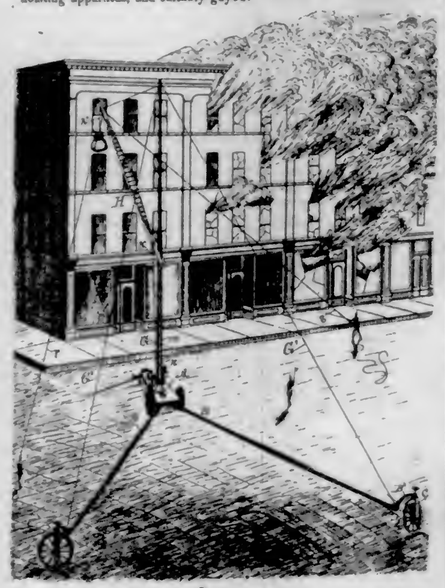
2. In a gas-burner, the combination of a gas-supply pipe by which the burner is to be suspended, and which is open at the lower end, a second pipe of larger size surrounding the gas-supply pipe, closed at the lower end and open at the upper end, a shell surrounding said second pipe and communicating with the open upper end thereof, a third pipe arranged below and communicating with said shell, and an annular burner-tip, or a circular series of burner-tips supported by the last-mentioned pipe, and to be supplied with gas therefrom, substantially as specified.

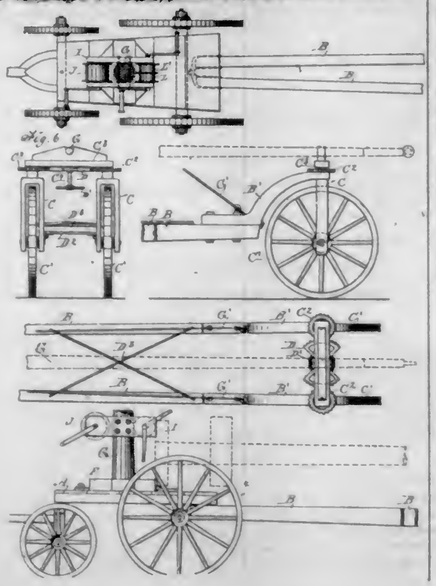
3. The combination, with an annular burner-tip, or a circular series of burner-tips, of the pipe B, the shell G, connected to the disks C E, a pipe establishing communication between the space inclosed by the said shell G and a central body-piece, whence gas is supplied to the burner tip or tips, a chimney, and the pipes L, arranged within the shell G, substantially as specified.

291,481. FIRE-ESCAPE AND HOOK-AND-LADDER CARRIAGE.

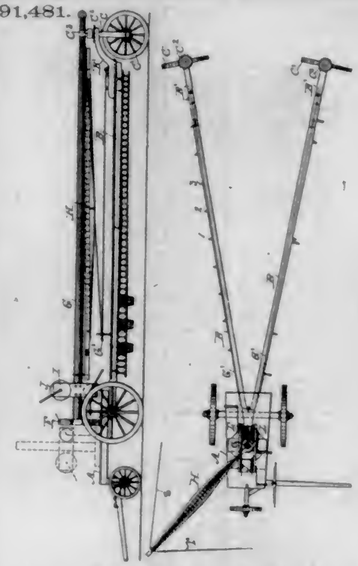
ISAAC G. MORGAN, Des Moines, Iowa. Filed Feb. 21, 1883. (No model.)

Brief.—Two adjustable reaches, each having a traction-wheel at the rear end, are connected, when to be transported, by a detachable cross-piece carrying two segmental gears which mesh with pinions on the reaches. Upon the truck is hinged a mast carrying a crane-arm and hoisting apparatus, and suitably guyed.





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Claim.—1. The combination of two adjustable reaches, each having a traction-wheel at its rear end, with the rear portion of a carriage or truck, for the purposes specified.

2. The combination of two reaches, B B', two wheel-bearers, C, and a detachable cross-piece, C^2, to produce a transformable rear carriage, substantially as and for the purposes set forth.

3. The cross-piece C^2, carrying a duplex segmental gear or gear-wheel, the wheel-bearers C, having gear-wheels fixed thereto, and journals at their top ends, the traction-wheels C', and the pivoted reaches B B', arranged and combined relative to each other, and a front carriage or truck, substantially as and for the purposes set forth.

4. The detachable brace, platform, or step D^2, in combination with the wheel-bearers C, the detachable cross-piece C^2, the shaft C^4, the gear-wheel D, the hand-wheel D', and the wheel-bearers C, having gear-wheels C^3 fixed thereto, substantially as shown and described, for the purposes specified.

5. The flexible or jointed guys G', in combination with the hinged adjustable post G, and the pivoted reaches B B' of a transformable rear carriage, substantially as shown and described, for the purposes specified.

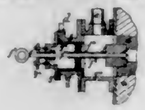
6. A post or post-base having a winch, J, and winches L L' attached thereto, a jib or crane-arm, H, adjustably connected with the post, and ropes *k*, *m*, *n*, *r*, and *s*, arranged and combined upon a truck or carriage, substantially as and for the purposes set forth.

7. The portable fire-escape and hook-and-ladder carriage composed of the following elements, to wit: a truck or carriage having a post-support and body, A, and hinged post-base or post-socket F, two pivoted reaches, B B', two wheel-bearers, C, each carrying a traction-wheel, and a gear-wheel, C^3, a detachable frame or cross-piece, C^2, carrying a shaft, C^4, gear-wheel or duplex segmental gear D, and a hand-wheel, D', a detachable brace, step, or platform, B^2, an adjustable post, G, flexible or jointed guys G', winches J, L, and L', a jib or crane-arm, H, and ropes *k*, *m*, *n*, *r*, and *s*, substantially as shown and described, to operate in the manner set forth.

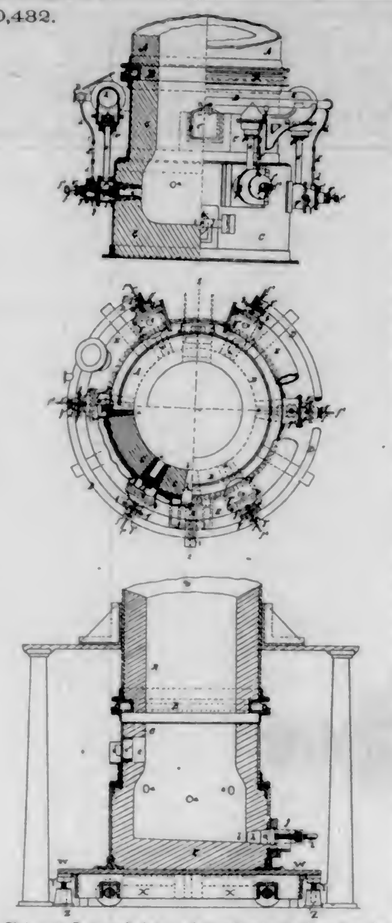
REISSUES.

10,432. CUPOLA-FURNACE.

WILLIAM J. CLAPP, Nantyglo, and THOMAS GRIFFITHS, Blaenavon, County of Monmouth, England, assignors to James Porter Witherow and Henry William Oliver, Jr., both of Pittsburg, Pa. Filed Oct. 25, 1883. Original No. 271,683, dated Feb. 6, 1883. Patented in England Mar. 28, 1881, No. 1,372; in France Sept. 27, 1881, No. 145,039; in Belgium Sept. 27, 1881, No. 55,846; in Germany Sept. 27, 1881, No. 18,250; in Austria Sept. 27, 1881, and in Spain Oct. 1, 1881.



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Claim.—1. In a cupola-furnace, the combination of a bottom section or vessel having a tuyere-opening and external blast and steam chambers, and a plug provided with a stem and a piston fitted in said chambers, with a pipe for admitting steam in rear of the piston for forcing the plug into the tuyere-opening, and an air-blast pipe leading into the chamber in front of said piston, for removing the plug from the tuyere-opening and admitting air through the latter into the bottom section of the furnace, substantially as and for the purpose set forth.

2. The combination of the vessel C, having the tuyeres *a*, external air-chamber, g^4, and vertical pipes *e*, leading into said chamber, and the stationary air-pipe E, having bottom openings for the reception of the pipes *e*, and valves for closing said openings, with the shaft of the furnace and means for elevating and transporting the vessel C, as and for the purpose set forth.

3. The combination of the vessel C, having tuyeres *a* through its sides, external air-chamber, g^4, attached to the vessel, stopper *f*, and hollow stem *f''*, communicating with both air-chamber and tuyere when the tuyere is closed by the stopper, substantially as and for the purposes described.

4. The combination of a fixed converter or cupola-furnace for treating molten metal, having all its tuyeres provided with plugs, stoppers, or valves seating at the outer end, to prevent the escape of the molten metal therethrough, with a blast-pipe and organized means for seating and unseating the said plugs, stoppers, or valves simultaneously during the operation of the converter, substantially as and for the purpose described.

5. A cupola-furnace or converter having a removable lower section or crucible, tuyeres in said lower section below the metal-line, a blast-pipe, detachable connections between said blast-pipe and tuyeres, and means for simultaneously closing the tuyeres against the passage of the metal therethrough, substantially as and for the purposes described.

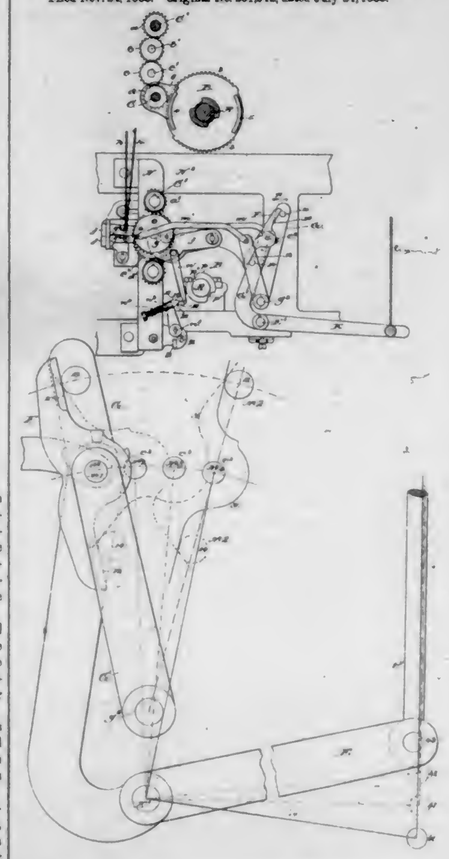
6. A cupola-furnace or converter having a removable lower section or crucible provided with tuyeres in its sides, a blast-pipe supported on the fixed section of the converter, detachable connections between said blast-pipe and tuyeres, and means for closing the openings of the blast-pipe when the connections are removed, substantially as and for the purposes described.

7. A cupola-furnace or converter having tuyeres fixed in its sides below the metal-line, a blast-pipe, and external air-chambers fixed to its sides, with which the tuyeres communicate and from which they receive the blast, in combination with plugs, stoppers, or valves situate in said chambers, and means for simultaneously operating the stoppers from the outside to open or close the tuyeres at pleasure, substantially as and for the purposes described.

8. A cupola-furnace or converter having a tuyere or tuyeres, and an external air chamber or chambers with which the tuyere communicates and from which it receives the blast, in combination with a plug, stopper, or valve to close the tuyere to prevent the escape of the molten metal therethrough, means for operating the stopper, and a passage for admitting a small stream of air through the tuyere when the stopper is closed, substantially as and for the purposes described.

10,433. MECHANICAL MOVEMENT.

GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass., assignors to George Crompton, same place. Filed Nov. 24, 1883. Original No. 281,842, dated July 24, 1883.



Claim.—1. The main lever, to be moved different distances, and a secondary lever pivoted thereon, and provided with two faces, 10 12, combined with movable carriers and studs or pins 13 14, to act upon the said faces and turn the secondary lever and its fulcrum and move the main lever, substantially as described.

2. The toothed cranks and means to move them, two connecting-rods, and two studs or pins held by carriers, combined with a main lever, and a secondary lever pivoted thereon and acted upon at each side of its fulcrum by studs or pins actuated by the carrier, substantially as described.

3. The yielding holder, combined with the latches and vibrators, and with the cam *p*, to operate substantially as described.

4. The vibrators, their attached toothed cranks and partial gear to move them, and latches *n*, combined with a holder, and with a cam to at times maintain the engagement of the latches and holder and at times permit their disengagement, substantially as described.

5. The vibrators *f*, toothed cranks carried by them, and the two partial gears *a' a'*, arranged, respectively, above and below them, a pattern-chain, levers moved by it, and connections *h*, joining the said levers with the said vibrators, whereby the vibrators are raised to engage the toothed cranks with the partial gear *a'*, substantially as described.

PHOTO-LITH. NORRIS PETERS WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of New York.

ROBERTS v. WALLEY.

Decided October, 1882.

1. INFRINGEMENT—COMPELLING DEFENDANT TO GIVE NAME OF CUSTOMER.

In a suit for the infringement of a patent, where the validity of the patent and the infringement are denied, the complainant cannot, as part of his preliminary proof, compel the defendant to disclose the names of his confidential customers to whom he has furnished articles alleged to be covered by the patent, but he may be required to give the name of one person to whom he has furnished such articles.

2. CONTEMPTS—POWER OF EXAMINER TO RULE ON EVIDENCE.

The examiner has no power to rule on the admissibility of evidence, and defendant, when a witness before him, has a right, upon a question not free from doubt, to take the opinion of the court; and when he refuses to answer under advice of counsel and apparently in good faith he should not be punished for contempt of court, even though he acted mistakenly.

[On motion to punish defendant for contempt of court in refusing under advice of counsel to answer certain questions in proceedings before the examiner in an action for the infringement of a patent for oil-well torpedoes. The complainant called the defendant as his witness, and after he had testified that he was engaged in the business of torpedoing oil-wells in this State, and that he owned the patents for the processes used by him, he was asked to give the names of the persons for whom he had put in torpedoes in oil-wells in this State prior to January 1st. Under advice of counsel he refused to answer.]

Mr. F. G. Finche for the motion.
Mr. H. Ward, contra.

COXE, J., in delivering the opinion of the court, said:

The question presented is simply this: Can the complainant in a patent suit, where the infringement and the validity of the patent are both denied, as part of his preliminary proof compel the defendant to disclose the names of confidential customers to whom he has furnished articles alleged to be covered by the patent? The complainants do not submit a brief, and the court is referred to no authority bearing directly upon the question. It appears, however, after a somewhat careful examination, that the books contain many cases where similar questions have been asked in proceedings before the master, and but few in which such proof has been allowed before the examiner, the patent and the infringement both being in dispute. (*Turrell* v. *Spaeth*, 2 Bann. & Ard., 185; *Storm* v. *United States*, 94 U. S., 76; *Burnett* v. *Phalon*, 19 How. Pr., 530; Greenleaf on Ev., 13th ed., 509, 510, 410; *Lord Melville's case*, 29 How. State Tr., 549; *Rex* v. *Woburn*, 10 East, 395; *Fenn* v. *Granger*, 3 Camp., 177; *Brady* v. *Atlantic Works*, 15 O. G., 965.)

Although the examination of the defendant was proper within certain limits, it was not proper to the extent insisted upon by the complainants. The necessary proof of infringement could, it seems, be obtained without requiring witness to disclose the names of all his customers in this State, as required by the second question. This knowledge might be of advantage to complainant in other prosecutions; but how it could materially aid the court upon the question of infringement it is not easy to discover. If the patent is sustained and the device of the defendant determined to be an infringement, his previous testimony that he had used his torpedoes in great numbers in this State is surely sufficient evidence of use to sustain an interlocutory decree. While it would seem that the complainants are not entitled to pursue this line of examination *ad libitum*, they are entitled to sufficient evidence to enable them to present to the court clearly and intelligently a complete description of the defendant's torpedo, the manner of its use, and the effect produced by its explosion. It follows, therefore, that the question calling for the name of one person or firm should have been answered. Should the complainants desire again to examine the witness he should be required to answer as suggested. It is very clear from these views that the motion to punish for contempt must be denied. The examiner had no power to rule on the admissibility of the evidence, and the defendant had the right upon a question which, to say the least, was not free from doubt, to take the opinion of the court. Had he answered, the mischief which he seeks to avoid would have been accomplished, and he would have been left remediless. He acted under the advice of counsel, apparently in good faith, and even though he acted mistakenly, it is not a case where he should be punished. (*In re Judson*, 3 Blatchf., 148; *Smith* v. *Stage Co.*, 18 Abb. Pr., 419; *Hilliker* v. *Hathorne*, 5 Bosw., 710; *Weeks* v. *Smith*, 3 Abb. Pr., 211.)

Motion denied.

U. S. Circuit Court—Northern District of New York.

KIMBALL v. HESS.

Decided February 26, 1883.

PROCESS—INFRINGEMENT.

Defendants treated tobacco in a method similar to the process patented by plaintiffs, except that defendants made use of an equivalent for the gum-arabic used by the plaintiffs to produce the same effect as that rendered by plaintiffs' process. *Held*, that this was infringement.

Bill in equity for the infringement of a patent. The facts appear in the opinion.

Mr. George B. Selden and *Mr. B. F. Thurston* for the complainant.

Mr. W. F. Cogswell and *Mr. H. McGuire* for the defendants.

WALLACE, J., in delivering the opinion of the court, said:

Infringement is alleged of letters patent granted to the complainants as assignees of William S. Kimball, bearing date June 30, 1874, for an improvement in preparing tobacco. The patent contains two claims—one for a process, the other for the product. The invention relates to a process of treating tobacco while being prepared for use by which the product known in the trade as "flake-cut tobacco" is made. Tobacco known by that name is readily distinguished by its appearance from other varieties of the manufactured article, but was unknown until it was introduced to the trade by the patentee about a year prior to obtaining his patent. When the process of its preparation is completed, the article as designed for use, instead of being fluffy like the long-cut, or fleecy like the fine-cut, or broke like the granulated, is in the form of thin flakes, the particles adhering closely together and being hard and dry. When crumbled for use, the flake-cut does not pack as closely in the pipe as the other preparations, and thereby facilitates a better draft, and the smoke is cooler and freer, and does not burn the tongue. Practically there is no difficulty in determining what is meant by the term "flaky" as descriptive of the characteristic of the product. The validity of the patent is contested upon the grounds that the specification is so ambiguous and obscure as to render the patent void, and that there is neither novelty nor utility in the invention. In view of the prior state of the art the gist of the invention described in the patent consists in treating the leaves of the tobacco while they are being prepared for the cutting-machine with a solution of gum-arabic or an equivalent adhesive material, so that the leaves will adhere together without other pressure than they are subjected to by the cutting-machine. A sufficient quantity of the gum-arabic or its equivalent must be employed, so that the fibers will adhere together after passing through the cutting-machine and remain in flakes or lamina after the product is dried and prepared for use. This broad construction is given because the patentee was the first, so far as the proof shows, to employ an adhesive material during the process of preparation for the purpose of producing the flaky characteristic, which not only serves to distinguish the product, but imparts to it its peculiar value. The proofs show that tobacco prepared for chewing has customarily been treated with a variety of materials for sweetening or flavoring it. Some of these, like licorice, contain sufficient gum to produce more or less adhesion between the leaves when they are moistened and pressed together in the cutting-machine. They were never applied with the object of producing adhesion, and the degree of adhesiveness which they contributed, when appreciable, was inconsiderable. Unless they are used in such proportions as to be not only an equivalent for gum-arabic, but to impart the flaky characteristic to the product after it is dried and fully prepared for use, the patented process is not infringed. The defendant for a time adopted the precise treatment described in the patent. Subsequently, however, they dispensed with the gum-arabic and saturated the leaves of their tobacco with adhesive substances by sweetening them with sirup and intermixing with the leaves what is known as "plug-scrap," which is highly charged with adhesive material. Their product, upon examination, is found to contain a greater quantity of adhesive material than the complainant's product as usually prepared according to the process of the patent. Whether the defendants have thus attempted a colorable evasion of the patented process, or whether, in good faith, they have believed themselves justified in adopting their substituted treatment, is not material. They have used an equivalent for the gum-arabic of sufficient adhesive properties to impart the flaky characteristic to the product when dried. This is infringement.

Decree for complainants.

FOREIGN PATENT LAWS.

SPANISH PATENT LAW.

Patent law dated July 30, 1878.

DON ALPHONSO XII by the Grace of God Constitutional King of Spain.

Let all to whom these presents shall come know that the Cortes have decreed and we have sanctioned the following:

SECTION I.

General Provisions.

Paragraph 1. Spaniards or foreigners who intend to establish or have established a new branch of industry shall have the exclusive right to work the same during a certain number of years, subject to the rules and conditions laid down by the present law.

Par. 2. The said right shall be acquired by obtaining a patent of invention from the government.

Par. 3. The following objects shall be patentable, viz: machinery, apparatus, instruments, processes, or mechanical or chemical operations, being entirely or partly a new and peculiar invention, or such works which, without these conditions, have not been established or executed in the same way or form in the Spanish dominions.

New industrial products or results obtained by new or known means, provided their working forms a new branch of industry in the country.

Par. 4. Patents relating to products or results mentioned in the second part of the previous paragraph shall not prevent others from using the objects mentioned in the first part of the paragraph for obtaining the same products or results.

Par. 5. The character of novelty as required by paragraph 3 of this law shall appertain to all such objects as have not been known, executed, or worked in the Spanish dominions nor abroad.

Par. 6. Patent-rights, or otherwise the right derived from the application, can be transferred entirely or partly by observing the usual provisions of our laws regulating private property.

Par. 7. Letters patent can be granted to one person or more, or to a society, whether at home or abroad.

Par. 8. The grant of patents shall not only apply to the Peninsula and adjacent islands, but also to the ultramarine provinces.

Par. 9. The following objects shall not be patentable:

First. The result or product of machinery, apparatus, instruments, processes, or operations mentioned in the first part of paragraph 3, provided they are not contained in the second part of the same paragraph.

Second. The use of natural products.

Third. Scientific principles or discoveries, so far as they are of a mere speculative nature and are not likely to be applicable to machinery, apparatus, instruments, processes, or mechanical or chemical operations.

Fourth. Pharmaceutical operations or medicines.

Fifth. Schemes or combinations of credit and finance.

Par. 10. Patents shall not be delivered for more than one single object of industry.

Par 11. Patents shall be delivered without previous examination as to novelty or utility. Thus they shall in no case be considered as a declaration or proof of the novelty or utility of the respective object. The onus of such proof lies with the interested and responsible party, according to the provisions of the present law.

SECTION II.

Of the Duration of Patents and Government Fees.

Par. 12. The duration of patents for new and peculiar inventions shall be twenty years, without prolongation. The duration of patents for all objects that are not peculiar inventions, or being so, yet are not new, shall only be five years, without prolongation.

Nevertheless patents for peculiar inventions shall be granted for ten years, even when the inventor has obtained a patent for the same object in one or more foreign countries, provided an application therefor is made in Spain before the expiration of two years from the date of the foreign patent.

Par. 13. The working of the patent is subject to an annual and progressive government fee in the following manner: 10 pesetas for the first year, 20 pesetas for the second year, 30 pesetas for the third year, and so on to the fifth, tenth, or twentieth year, the respective payments being then 50, 100, and 200 pesetas.

Par. 14. The annual payments mentioned in the previous paragraph shall be made in advance, and shall in no case be omitted.

SECTION III.

Formalities to be Observed in the Grant of Patents.

Par. 15. Applicants for patents shall deliver to the Secretary of the Civil Government of the province in which they are domiciled, or of any other province in which they elect to be domiciled—

First. A petition to the Minister of Public Works, Commerce, and Instruction,* indicating the sole object of the patent, and stating whether the said object is a new and peculiar invention or not, and the address of the applicant or his attorney. In the latter case this power of attorney must accompany the application, and it must contain neither conditions, restrictions, nor reservations.

Second. A specification in duplicate describing the machine, apparatus, instrument, process, or mechanical or chemical operation relating to the patent. The whole with the greatest possible distinctness, so as entirely to remove any doubt as to the object or property represented to be a new and peculiar invention, or as to not having been worked or executed in the same way or form in Spain. The description shall contain a final note expressing clearly, distinctly, and particularly which part, piece, movement, mechanism, operation, process, and substance is intended to be the object of the patent. This only shall be the content of the said note.

The specification must be written in Spanish, without abbreviations, corrections, or erasures of any kind, on sheets folded and numbered. Weights and measures must be given according to the metrical decimal system.

Specifications must not contain conditions, restrictions, or reservations.

Third. The drawings, patterns, or models which the interested party might think necessary for the better comprehension of the specification, all in duplicate.

The drawings must be made on cloth paper with india-ink, and according to the metrical decimal scale.

Fourth. The public paper money corresponding to the first annual payment.

Fifth. A signed list of all the documents and objects presented, which latter must also be signed by the applicant or his attorney.

Par. 16. The Secretary of the Civil Governor, upon receiving the documents and objects mentioned in the preceding paragraph, shall enter in a special register the day, hour, and minute of the presentation, sign the list jointly with the interested party or his attorney, and deliver a proper receipt. The same secretary shall close and seal the box or packet containing the two copies of the specification, drawings, patterns, or models, and write underneath the inscription of the box or packet "Presented on such a month, day, hour, and minute," signing the same and affixing the official seal.

The right of priority of the applicant shall be established by the entry in the register of presentation indicating the day, hour, and minute of presentation.

Par. 17. Within a term, not exceeding five days from the date of presentation of the application, and of the aforesaid documents and objects, the civil governors shall remit to the Director of the Conservatory of Arts at Madrid the application, together with the documents and objects and a certificate of registry, and the contents of the box or packet delivered by the secretary with the counter-signature of the governor. The cost of remittance must be borne by the interested party.

Par. 18. The Secretary of the Conservatory of Arts shall examine the contents of the box, and sign and seal, at the foot of the certificate mentioned in the preceding paragraph, a statement as to their completeness or defects.

Par. 19. The Secretary of the Conservatory of Arts shall at once compare the two copies of the specification and drawings or models for identification solely, and when found identical and provided with the note at the end of the specification mentioned in the second portion of paragraph 16, he shall draw up, sign, and seal a memorandum as a supplement to both copies.

In case of any defects in the documents, they must be pointed out in the proceedings, and it must be left to the interested parties themselves or their attorneys to amend them. For this end they shall be allowed a term of two months from the day of application made at the administration of the province, when it belongs to the Peninsula or the adjacent islands, of four months for the Canaries or Antilles, and of eight months for the Philippines.

These terms cannot be prolonged, and when once lapsed without the defects of the application being amended, such application remains without effect, and the petition shall be considered as null and void.

* Ministro de Fomento.

Par. 20. The requirements mentioned in the two preceding paragraphs having been observed, the Director of the Conservatory of Arts, in conformity with the provisions contained in paragraph 11 of this law, shall deliver the petition to the Minister of Public Works, &c., together with a report, stating—

First. Whether the form of petition is in conformity with the provision of paragraph 15.

Second. Whether the specification and the forementioned drawings, patterns, and models, all in duplicate, and the government fees for the first year have been delivered.

Third. Whether the duplicates of the specifications, drawings, patterns, or models are identical.

Fourth. Whether the object of the patent is comprised among one of the cases of paragraph 9.

Fifth. Whether, taking all circumstances into consideration, it is advisable to allow or disallow the petition.

Par. 21. Whenever the result is favorable, the Minister of Public Works, &c., shall inform thereof the Director of the Conservatory of Arts, who shall publish this decision in the *Madrid Gazette*, and within one month from the date of publication the interested party or his attorney shall appear at the Conservatory of Arts to pay the stamp duty for the delivery of the letters patent. Should this not be done within the given term, the petition and proceedings remain without effect, and are considered as null and void.

Par. 22. After the due payment mentioned in the preceding paragraph the Director of the Conservatory of Arts shall inform thereof the Minister of Public Works, &c., who will expedite at once the letters patent and deliver them to the Conservatory of Arts, whose Director shall communicate them to the governor of the respective province, for the purpose of having them duly entered in the register mentioned in paragraph 16, and who, moreover, shall have them copied by the Secretary of the Conservatory in a special register, after which they shall be delivered by him to the interested party or his attorney, against receipt attached to the document.

Par. 23. At the head of the letters patent there shall be printed, in letters of a larger type than any in the context, the following:

"Letters patent without guarantee of the government as to novelty, fitness, or utility of the object for which they are granted."

Par. 24. The Secretary of the Conservatory of Arts shall deliver at the same time with the patent one of the copies of the specification, and drawings, patterns, models accompanying the same, to the interested party or his attorney, taking a receipt for the same, and the whole shall be considered as an integral part of the patent and so designated therein.

Par. 25. The special register of patents at the office of the Conservatory of Arts remains at the disposition of the public during the hours fixed by the director. The entries in this register shall be considered as evidence in courts.

SECTION IV.

Of the Publication of Patents and Publicity of Specifications, Drawings, Patterns, or Models.

Par. 26. Within the second moiety of the months of January, April, July, and October the Director of the Conservatory of Arts shall deliver to the editor of the *Madrid Gazette*, for immediate publication in that official newspaper, a report on all patents granted during the preceding quarter, in which the object of the patent shall be clearly expressed.

The provincial governor shall have these reports published in the official provincial papers immediately after their publication in the *Gazette*.

Par. 27. The specifications, drawings, patterns, and models relating to the patents shall be kept at the office of the Conservatory of Arts for public inspection during certain hours fixed by the director.

Any person wishing to make a copy thereof may do so at his own expense, after previous consent of the Director of the Conservatory of Arts, who will fix the place, days, and hours for such purpose.

Par. 28. After the expiration of patents the specifications, drawings, patterns, and models shall belong to the Conservatory of Arts for eventual exhibition in its museum.

SECTION V.

Of Certificates of Addition.

Par. 29. During the term of the grant the owner of a patent or his assignee possesses the right of making any alterations, modifications in, or additions to, the object of his patent he may think proper, in preference to any other person applying at the same time for a patent for the same object to which the alterations, modifications, or additions relate.

Such alterations, modifications, or additions shall be legalized by certificates of addition, delivered in the same way and with the same formalities as the original patent, and after due application and the legal proceedings as prescribed by paragraph 15.

Par. 30. Certificates of addition are subject to a government fee of 25 pesetas in one single payment.

Par. 31. Certificates of addition shall form part of the original patent, and shall have the same effect from the respective dates of the application and grant. Their legal term expires at the end of the original patent.

SECTION VI.

Of the Cession and Transfer of Patent-Rights.

Par. 32. All entire or partial cessions of rights relating to patents or certificates of addition made either by gift or contract, and any other act involving a modification of the original right, must be established by a deed attesting a certificate of the Secretary of the Conservatory of Arts, signed by the Director, showing that the due legal payments have been made, and that the assignor

is the real owner of the patent or certificate of addition according to the entry in the records.

Par. 33. No assignment or other deed involving a modification of the patent-right can prejudice a third party, unless it be entered at the office of the provincial administration where the original addition took place.

Par. 34. The registration of cessions and of all deeds involving a modification in the patent-right is effected by the presentation and delivery of a legalized attestation of the deed or contract of cession or modification to the administration of the respective province.

On this attestation the secretary shall mark the day and page of the register.

Par. 35. The civil governor of the province where the assignment or any other deed or contract involving a modification in the patent-right is registered shall, within five days after the registration, transmit to the Director of the Conservatory of Arts a copy both of the deed of assignment or modification and of the protocol testifying that the registration took place at the office, all attested by the secretary and signed by the governor.

Par. 36. The Secretary of the Conservatory of Arts shall note in the patent records all occurring modifications in the patent-right, after having taken cognizance of the certified copy of the deed or assignment annexed to the application.

Par. 37. The Director of the Conservatory of Arts in transmitting the report mentioned in paragraph 26 to the editor of the *Madrid Gazette* shall inform him of all modifications that have taken place in the patent-right.

SECTION VII.

Liabilities of Patentees.

Par. 38. Owners of patents or certificates of addition shall be required to prove before the Director of the Conservatory of Arts, within two years of the date of the patent or the certificate of addition, that they have established a new industry on Spanish territory.

The term of two years within which such working has to be proved can only be prolonged by a law on equitable ground, and only for a term not exceeding six months.

Par. 39. The Director of the Conservatory of Arts shall ascertain the fact either by himself or through a practical engineer, or any competent person deputed for that purpose, by means of a least offensive yet effectual inquiry he deems expedient, and for this end he may demand the assistance of all authorities and corporations, who are bound to lend him their services.

Par. 40. When the Director of the Conservatory of Arts thinks that the report concerning the working of the patent is well founded, he shall transmit the same, together with a report, to the Minister of Public Works, &c., for final decision.

Par. 41. All costs caused by such an inquiry are to be borne by the interested party, who need only pay them when approved by the Director of the Conservatory of Arts.

Par. 42. The Director of the Conservatory of Arts shall cause the entry of the ministerial decision in the register of the copies of patents, and communicate the same to the governor of the respective provinces.

SECTION VIII.

Of the Annulment and Expiration of Patents.

Par. 43. Patents shall be annulled—

First. Whenever it is proved that the requirements of originality and novelty have not been observed, that the invention has not been worked in the Spanish dominions agreeably to the essential conditions or fundamental statements of the application of the patentee.

Second. Whenever it is found that the object of the patent is contrary to public order, or safety, morals, or to the laws of the country.

Third. Whenever the object of the patent applied for is different from the object or work obtained thereby.

Fourth. Whenever it is shown that the specification does not contain all that is required for the complete intelligence and working of the patent, or when it does not completely indicate the real means of manufacturing the same.

Par. 44. Actions for annulment can only be instituted by the interested party.

The public prosecutor, however, may demand the annulment when the patent comes under the second provision of paragraph 43.

Par. 45. The provisions mentioned in paragraph 43 apply likewise to all certificates of alterations, limitations, or additions relating to the orignal patent.

Par. 46. The expiration of patents takes place—

First. At the expiration of the term of the grant.

Second. By non-payment of the annual fee before the beginning of each year of the duration of the patent.

Third. When the object of the patent has not been worked in the Spanish dominions within the time mentioned in paragraph 38.

Fourth. When the working has been interrupted for one year and one day, unless the owner can show good cause for such interruption.

Par. 47. The declaration of expiry of patents coming under the first, second, and third provisions of paragraph 46 belongs to the Minister of Public Works, &c., on the previous advice of the Director of the Conservatory of Arts. Against the decision of the Minister of State there may be lodged an appeal to the council within thirty days. The declaration of expiry of a patent coming under the fourth provision of the same, paragraph 46, belongs to the courts of justice on the application of the interested party.

Par. 48. The Director of the Conservatory of Arts, after having caused the required entries to be made in the patent records, shall transmit to the editor of the *Madrid Gazette*, together with the report mentioned in paragraph 26, a further list of the patents that have become void by ministerial decision.

The civil governors shall cause such reports to be published in the official journals of their provinces and to have the due entries made at their offices.

SECTION IX.

Of the Infringements and Forgeries of Patents and of the Penalties to which they are Subject.

Par. 49. Infringers of patents are those who knowingly shall encroach on the rights of the legal owner by manufacturing or executing the object of the patent by identical means.

Accomplices are those who knowingly shall assist in the manufacture, execution, and sale or expedition of the counterfeit patent articles.

Par. 50. Infringements of patents are subject to a fine of from 200 to 2,000 pesetas.

In case of a second offense, the fine shall amount to from 2,001 to 4,000 pesetas.

A second offense is established by the infringer having been punished within five years preceding the same offense.

Complicity in infringements shall be subject to a fine of from 50 to 200 pesetas, and a second offense to a fine of from 201 to 2,000 pesetas.

All counterfeit products shall be delivered to the patentee, besides damages for the loss he may have sustained. Insolvents shall in both cases be subject to a subsidiary imprisonment corresponding to the provisions of paragraph 50 of the Criminal Code.

Par. 51. Infringers of patents are liable to the penalties mentioned in the first section of chapter 4, part ii, of the Criminal Code.

Par. 52. Actions for infringements made statutable and punishable by the present section can only be entered by the public prosecutor on the complaint of the injured party.

SECTION X.

Of the Jurisdiction of Patent Matters.

Par. 53. All civil and criminal actions concerning patent matters shall be instituted before special juries, (experts.) Until their organization such actions shall be brought before the common courts of justice.

Par. 54. Whenever the action is brought against the grantee, as well as against one or more co-grantees, the competent tribunal shall be determined by the domicile of the grantee.

Par. 55. Civil actions shall be instituted according to the provisions made for incidental causes in common pleadings, and criminal actions shall be regulated by the criminal procedure.

Par. 56. The public prosecutor shall take part in all actions intended for the annulment or extinction of a patent.

Par. 57. In that case all parties interested in the grant shall be summoned according to the register of the Conservatory of Arts.

Par. 58. As soon as a patent has been declared to be null and void or extinct, the tribunal shall communicate the judgment to the Conservatory of Arts for due entry, and the annulment or expiry shall be published in the *Madrid Gazette* within the same terms and at the proper time as prescribed by the present law for the publication of patents.

The civil governors shall republish such annulments or expiries in the provincial official papers and enter the same in the patent records of their offices.

SECTION XI.

Transitory Dispositions.

Par. 59. From the day the present law comes into force all anterior dispositions relating to patents for inventions, importations, and improvements shall be abrogated.

Par. 60. All existing patents for inventions, importations, and improvements, obtained under the old law, shall continue to be in force during the term previously granted.

Par. 61. All applications made before the publication of the present law shall be terminated in accordance with the old law; the applicants, however, may choose the term and mode of payment of the present law.

Par. 62. All actions for infringements, counterfeiting, annulment, or extinction of patents which were not begun before the execution of the present law shall be pursued according to the provisions of the same.

Therefore, we command all tribunals, justices, magistrates, governors, and other civil, military, and ecclesiastical authorities, of any class and rank whatever, to observe and cause to be observed, to fulfill and execute, the present law in all its parts.

Given in our palace on the 30th day of July, 1878.

I THE KING.

The Minister of Public Works, Commerce, and Instruction,

C. FRANCISCO QUEIPO DE LLANO.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 26—No. 2. TUESDAY, JANUARY 8, 1884. PRICE—$5 per year

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., December 28, 1883.

SIR: I am directed by the Secretary to inform you that he has ordered that Edwin H. Hall, of Boston, Massachusetts, be not recognized from and after this date as an attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

AMOS HADLEY,
Acting Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
Washington, January 4, 1884.

SIR: I am directed by the Secretary to inform you that the order of the Department, dated August 29, 1876, by which P. C. Hughes, of Eureka, Kansas, was disbarred from practice before this Department and its bureaus, has this day been rescinded.

Very respectfully,

AMOS HADLEY,
Acting Chief Clerk.

The Commissioner of Patents.

Issue of January 8, 1884.

Patents	378	No. 291,482 to No. 291,859, inclusive.
Designs	16	No. 14,535 to No. 14,544, inclusive.
Trade-marks	18	No. 10,833 to No. 10,850, inclusive.
Labels	23	No. 3,807 to No. 3,829, inclusive.
Reissue of patents	3	No. 10,434 to No. 10,436, inclusive.
Total issue	432	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	6	4
Austria			Holland		
Barbadoes			Ireland		
Belgium	1		Mexico		
Bermuda			New Zealand		
Brazil			Russia		
Canada	9		Scotland		
Chili			Sweden		
Colombia, U. S. of			Switzerland	1	
Cuba			Victoria	2	
Denmark					
Ecuador			Total to citizens of foreign countries	23	7
England	3				
France	1	3			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1		Nebraska	2	
Arizona Territory			Nevada	1	
Arkansas	1		New Hampshire	2	
California	9		New Jersey	24	2
Colorado	4		New Mexico Territ'y		
Connecticut	25	1	New York	54	13
Dakota Territory	1		North Carolina	2	
Delaware			Ohio	26	2
District of Columbia	4		Oregon		
Florida			Pennsylvania	34	5
Georgia	2		Rhode Island	4	2
Idaho Territory			South Carolina	3	
Illinois	28	5	Tennessee	2	
Indiana	20		Texas	3	
Indian Territory			Utah Territory	1	
Iowa	9		Vermont	1	
Kansas	6		Virginia	5	
Kentucky	5		Washington Territ'y		
Louisiana	1		West Virginia	2	
Maine	3		Wisconsin	4	
Maryland	4		Wyoming Territory		
Massachusetts	39	2	United States Army		
Michigan	16	2	United States Navy		
Minnesota	3				
Mississippi	1		Total to citizens of the United States	365	34
Missouri	12				
Montana Territory	1				

DESIGNS.

14,535.—CORSET.—*James Bowers*, Newark, N. J. Application filed October 1, 1883. Term of patent 7 years.

14,536.—ORNAMENTATION OF HARDWARE.—*John J. Kennedy*, Branford, Conn. Application filed November 10, 1883. Term of patent 7 years.

14,537 to 14,542, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed November 21, 1883. Terms of patents 3½ years.

14,543.—SEWING-MACHINE STAND.—*Isaac Newton Poe*, Toledo, Ohio. Application filed October 4, 1883. Term of patent 7 years.

14,544.—AGRICULTURAL FORK.—*John H. Smith*, Jackson, Mich., assignor to *Withington & Cooley Manufacturing Company*, same place. Application filed April 13, 1883. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

10,833.—WHISKY OR ITS COMPOUNDS.—*Cook & Bernheimer*, New York, N. Y. Application filed December 4, 1883.

"The representation of a lion."

10,834.—REMEDY FOR PILES.—*John E. Butler*, Golconda, Ill. Application filed December 1, 1883.

"The word 'HEMORRHOIDINE.'"

10,835.—COTTON YARNS AND BRAIDS.—*Dollfus-Mieg & Co.*, Mülhausen, Alsace-Lorraine, Germany. Application filed December 13, 1883.

"The representation of a bell."

10,836.—MIXTURES OF MEAT, IRON, AND QUINQUINLA.—*Jules Ferré*, Paris, France. Application filed November 2, 1883.

"The fanciful arrangement of the letter and word 'F. AROUD,' in Roman characters, superimposed on the script representation of the same letter and word."

10,837.—MIXTURE OF MEAT, IRON, AND QUINQUINLA.—*Jules Ferré*, Paris, France. Application filed November 2, 1883.

"The word 'AROUD.'"

10,838.—MIXTURE OF MEAT AND QUINQUINLA.—*Jules Ferré*, Paris, France. Application filed November 2, 1883.

"The fac-simile signature 'AROUD.'"

10,839.—EMBROIDERY-COTTON.—*Henry E. Frankenberg*, New York, N. Y. Application filed December 7, 1883.

"The word 'MOSAIC' and the letters 'J. O. C.'"

10,840.—DENTIFRICE.—*Frederick S. Hanf*, Jersey City, N. J. Application filed December 15, 1883.

"The word 'GLYCHODEN.'"

10,841.—BITTERS.—*William O. Hurd*, New York, N. Y. Application filed December 15, 1883.

"The arbitrarily-selected word-symbol 'BLUE GRASS.'"

10,842.—COMPOSITION AS A SUBSTITUTE FOR HARD RUBBER.—*The James D. Frary & Son Co.*, Bridgeport, Conn. Application filed November 26, 1883.

"The word 'RUBBEROID.'"

10,843.—HAIR-NETS AND RETICULATED FABRICS.—*A. G. Jennings & Sons*, Brooklyn, N. Y. Application filed December 12, 1883.

"The representation of a tapering shield having straight sides and rounded ends in or near the center of a larger piece of cardboard."

10,844.—CANNED RASPBERRIES, STRAWBERRIES, CHERRIES, AND OTHER FRUITS.—*Knowles & Anderson*, Camden, N. J. Application filed December 10, 1883.

"The representation of a woman's left hand and wrist, with the thumb and middle finger holding the stem of a fruit."

10,845.—BEER.—*Adolphe Kreiss*, Schiltigheim, Germany. Application filed August 9, 1883.

"A divided circle, a crown, and the words 'LES COURONNES.'"

10,846.—MAGNETIC BODY-WEAR, BEDDING, AND MEDICAL APPLIANCES GENERALLY.—*August P. Lighthill*, Boston, Mass. Application filed December 15, 1883.

"The word-symbol 'VOLTA MAGNETIC,' in connection with the representation of a hand holding a magnet."

10,847.—PREPARED TEA AND COFFEE.—*The New York Textile Filter Company*, New York, N. Y. Application filed November 26, 1883.

"The arbitrary word-symbol 'FILTRINA.'"

10,848.—MEN'S HEAVY BOOTS AND SHOES.—*Pingree & Smith*, Detroit, Mich. Application filed November 17, 1883.

"The arbitrarily-selected word or name 'BIJAH.'"

10,849.—BITTERS.—*Theodor Ripke*, Hamburg, Germany. Application filed October 19, 1883.

"The arbitrarily-selected word 'VENEZUELA.'"

10,850.—SPRING SHADE-ROLLERS.—*Saginaw Manufacturing Company*, Saginaw, Mich. Application filed November 19, 1883.

"The arbitrarily-selected word 'VICTOR.'"

LABELS.

3,807.—Title: "BAUM'S EVER-READY CASTORINE." (FOR AN AXLE OIL.)—*L. Frank Baum*, Syracuse, N. Y. Application filed December 10, 1883.

3,808.—Title: "C. & W." (FOR HYDROCARBON OIL.)—*Clark & Warren*, Corry, Pa. Application filed December 15, 1883.

3,809.—Title: "LUZ DIVINA" (FOR KEROSENE OIL.)—*Ilsley, Doubleday & Co.*, New York, N. Y. Application filed December 13, 1883.

3,810.—Title: "COMPOUND QUININE PLASTER."—*Charles F. Fish*, Saratoga Springs, N. Y. Application filed December 14, 1883.

3,811.—Title: "P. B. B." (FOR TIP-LININGS OF HATS.)—*Francis G. Hanson*, Brooklyn, N. Y. Application filed December 13, 1883.

3,812.—Title: "STANDARD TIME" (FOR TIP-LININGS OF HATS.)—*Francis G. Hanson*, Brooklyn, N. Y. Application filed December 13, 1883.

3,813.—Title: "HARRISON'S GOLDEN COLOGNE WATER."—*Apollos Wolcott Harrison*, Philadelphia, Pa. Application filed December 18, 1883.

3,814.—Title: "RED PILLS."—*William O. Hurd*, New York, N. Y. Application filed December 15, 1883.

3,815.—Title: "RIBBED HOSE."—*Lewis Jones*, Bristol, Pa. Application filed December 17, 1883.

3,816.—Title: "ZENITHIA TOILET SOAP."—*James S. Kirk & Co.*, Chicago, Ill. Application filed December 19, 1883.

3,817.—Title: "ZENITHIA COLOGNE."—*James S. Kirk & Co.*, Chicago, Ill. Application filed December 19, 1883.

3,818.—Title: "BERMUDA WATER." (FOR A TOILET PREPARATION.)—*James S. Kirk & Co.*, Chicago, Ill. Application filed December 19, 1883.

3,819.—Title: "JUVENILE" (FOR SOAP.)—*James S. Kirk & Co.*, Chicago, Ill. Application filed December 19, 1883.

3,820.—Title: "WILLIAM LASSON'S HAIR ELIXIR."—*Otto Knop*, Berlin, Germany. Application filed December 5, 1883.

3,821.—Title: "HOPE FOR THE INVALID." (FOR A MEDICAL COMPOUND.)—*Eben B. Merrill*, Wellston, Ohio. Application filed December 6, 1883.

3,822.—Title: "MICHAELIS & SON'S EXTRACT OF CREAM GINGER ALE."—*M. Michaelis & Son*, New York, N. Y. Application filed December 13, 1883.

3,823.—Title: "BAIT" (FOR A PERFUME FOR THE BREATH.)—*Frank Parker, Albertus L. Vandewater*, and *Thomas G. Talmage*, Islip, N. Y. Application filed December 3, 1883.

3,824.—Title: "PRATT'S AROMATIC GENEVA GIN."—*Samuel Pratt*, New York, N. Y. Application filed December 12, 1883.

3,825.—Title: "SNAPS FOR THE BREATH."—*A. J. Richards* and *W. E. Conner*, Marietta, Ohio. Application filed December 17, 1883.

3,826.—Title: "WHITE DROPS" (FOR A MEDICINAL PREPARATION.) *William Russell, Jr.*, Providence, R. I. Application filed December 6, 1883.

3,827.—Title: "RUSSELL'S WHITE DROPS" (FOR A MEDICINAL PREPARATION.)—*William Russell, Jr.*, Providence, R. I. Application filed December 6, 1883.

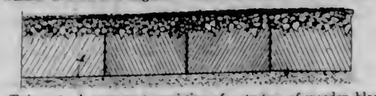
3,828.—Title: "DANDELION BITTERS."—*John Sutton*, Tower City, Pa. Application filed December 13, 1883.

3,829.—Title: "CADY'S ORIGINAL BAG-DAD CIGAR."—*The Westfield Cigar Company*, Westfield, Mass. Application filed December 17, 1883.

PATENTS

GRANTED JAN. 8, 1884.

291,482. COMBINED WOOD AND BROKEN-STONE PAVEMENT. WILLIAM A. ABBERS, Chicago, Ill. Filed Nov. 26, 1883. (No model.)

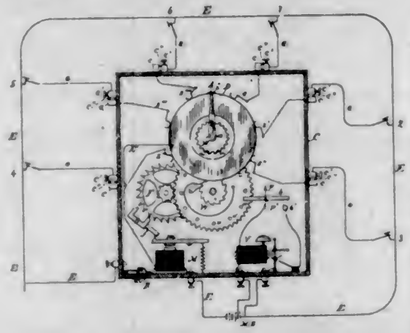


Claim.—1. A pavement consisting of a stratum of wooden blocks supported upon a suitable foundation, covered by a stratum of hard broken stone, and a surface stratum of hard finely-broken stone to compact and cover the same, substantially as specified.

2. The herein described method of forming street-pavement, by laying wooden blocks upon a suitable foundation, filling the spaces between them, placing over them a stratum of broken hard stones, rolling the broken stones with sufficient pressure to partly embed them in the blocks, and to compact them together, and then placing over said stratum a covering of the same, but finer material, and compacting the two upper coorses or strata together by a second rolling, substantially as described.

3. The herein-described method of restoring worn or partly-decayed wooden pavements, by filling the lower decayed or worn portions to the level of the sound blocks with broken hard stones, then applying a complete stratum of broken hard stones, heavily rolled to drive them into the blocks and compact them together, and then applying a covering stratum of finely-broken or pulverized hard stones and rerolling the same, substantially as specified.

291,483. ELECTRICAL INDICATOR AND ALARM. WILLIAM H. BAKER, Brooklyn, N. Y. Filed Apr. 28, 1883. (No model.)



Claim.—1. In an electrical indicator, the combination of an electro-magnet in a normally-open electrical circuit, having one or more normally-open branches connected to said electrical circuit through the medium of a metallic disk or ring, one or more circuit-closers located at various points in the electrical circuit, and a motor-driven radial arm for automatically breaking connection between said circuit and its branches.

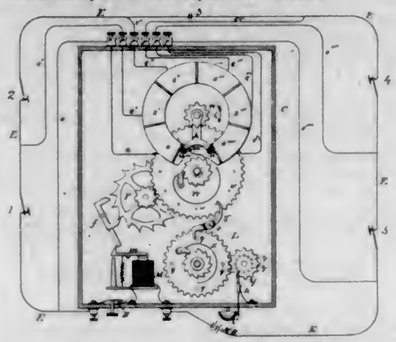
2. In an electrical indicator, the combination of an electro-magnet located in a normally-open electrical circuit, one or more normally-open branch circuits connected to the said electrical circuit through the medium of a metallic disk or ring, one or more circuit-closers located at various points in the said electrical circuit, and a motor-driven radial arm normally held in check by said electro-magnet for automatically breaking connection between said electrical circuit and each branch circuit in succession.

3. The combination, in an electrical indicator, of a normally-open circuit having a series of branches, a circuit-closer for each branch, located at various points in the said circuit, an electro-magnet the coils of which form part of the said circuit, a motor-driven arm held in check by the electro-magnet, and a dial and pointer.

4. The combination, in an electrical indicator, of a normally-open electrical circuit having a series of branches, a series of circuit-closers, one for each branch, located at various points in the said circuit, an electro-magnet located in said circuit, a conducting disk or ring having upon its periphery a series of springs, one for each branch, a motor-driven arm, and a dial and pointer.

5. In an electrical indicator, the combination of a normally-open circuit having a series of branches, a conducting ring or disk having a series of springs connecting said circuit and branches, a series of circuit-closers for completing the normally-open circuit, an electro-magnet in said circuit, a motor-driven arm, a dial and pointer, and an alarm-bell.

291,484. ELECTRICAL INDICATOR AND ALARM. WILLIAM H. BAKER, Brooklyn, N. Y. Filed May 18, 1883. (No model.)



Claim.—1. In an electrical indicator, the combination of a normally-closed electrical circuit containing the coils of an electro-magnet, two or more circuit-breakers located at different points in the circuit, and means for automatically short-circuiting each circuit-breaker in succession.

2. In an electrical indicator, the combination of a normally-closed electrical circuit having a series of normally-open branches, a series of circuit-breakers located at various points in the circuit, an electro-magnet located at the indicator, and means for automatically short-circuiting each of said circuit-breakers in succession.

3. The combination, in an electrical indicator, of a normally-closed circuit having a series of normally-open branches, a series of circuit-closers located at various points in said circuit, an electro-magnet in said circuit at the indicator, a conducting-ring composed of a series of insulated sections, and a motor-driven radial arm normally held in check by the said electro-magnet.

4. The combination, in an electrical indicator, of a normally-closed electrical circuit having a series of normally-open branches, a series of circuit-closers located at various points in the circuit, an electro-magnet at the indicator, means for short-circuiting each circuit-closer in succession, and an automatic alarm.

291,485. HAT-RANGING ATTACHMENT. WILLIAM H. BARRY, New York, N. Y. Filed Mar. 15, 1883. (Model.)

Claim.—1. In a hat attachment, the combination of a band or main stem, a spring-arm, a catch on end of arm, and a ring or loop on arm midway between the spring and end of arm, said catch to engage with the main stem to keep the arm and main stem close together when en-

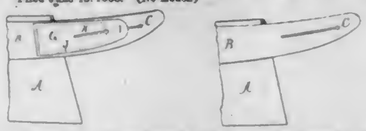
291,485.



gaged, a spring to force the spring-arm out, when said catch is released, to an angle of about forty-five degrees, forming a hook, and a spring-base on said main stem, secured by eyelets or pivots to a base-plate fastened to hat by rivets or other appropriate means, as and for the purposes set forth.

2. In a device to be attached to hats for the purpose of hanging them up under various conditions, the combination of the main stem L, spring C, spring-arm K, catch B, ring or loop A, spring-base E E' and D, and base-plate H, constructed substantially as herein shown and described, and for the purposes set forth.

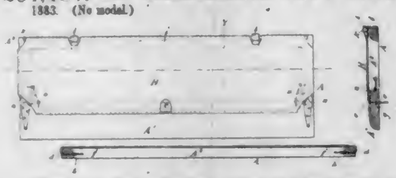
291,486. BUTTON-HOLE. FREDRICK BEERMEISTER, Jr., Troy, N. Y. Filed June 13, 1883. (No model.)



Claim.—1. An attachment for the button-hole end of a collar or other wearing article, consisting of a short stay-piece formed with a horizontal slit of a size to receive a collar-button, or the like, and of a length less than the collar-button hole, substantially as set forth.

2. The combination, with a collar or other wearing article formed with an elongated button-hole, of a short stay-piece formed with a horizontal slit of a size to receive a collar-button, or the like, and of a length less than the said button-hole, and fastened on opposite sides of the button-hole and at points lying between straight lines of the respective ends of the said button-hole, substantially as shown, and for the purposes set forth.

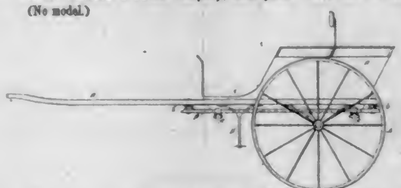
291,487. SEAT. MARSENA BENEDICT, New York, N. Y. Filed Feb. 24, 1883. (No model.)



Claim.—1. The combination, in a seat, of a frame having longitudinal slots in its front side and in both ends, a web of cloth passing through said slots on its front and end edges, and having pockets on such edges, key-rods inserted in said pockets, and means for attaching the web to the rear side of the frame, substantially as and for the purpose described.

2. The combination, in a seat, of a frame, a web of cloth having a longitudinal pocket on its rear edge, a key-rod inserted in such pocket, hasps attached to the rear side of the frame to engage said rods, as specified, and means for attaching the web to the front side and the ends of the frame, substantially as and for the purpose described.

291,488. ROAD-CART. JUDSON W. BREED, Cincinnati, Ohio, assignor to the Emerson & Fisher Company, same place. Filed Jan. 12, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, the body E, connected to the side bars, D, the latter being connected at their ends to a supporting frame or platform supported by the axle, substantially as and for the purposes specified.

2. In a two-wheeled vehicle, the body E, connected to the side bars, D, the latter being connected at their ends to the end bars, *b b'*, said end bars being supported by the platform C, connected to the axle, substantially as and for the purposes specified.

3. In a two-wheeled vehicle, the platform C, connected to the axle by means of brackets *a*, and having the thills B, connected to the front end of said platform, in combination with the body E and side bars, D, the latter being connected at their ends to the platform C, and the body being connected to the side bars by spring-connections *e*, substantially as and for the purposes specified.

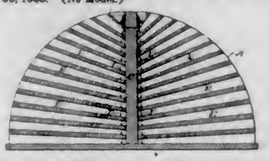
4. In a two-wheeled vehicle, the axle A and platform or frame C, formed by the rear ends of the thills, and secured to the axle by brackets *a*, in combination with the side bars, D, and end bars, *b b'*, the latter being connected to the platform C, and the side bars being connected to the end bars, substantially as and for the purposes specified.

5. In a two-wheeled vehicle, the axle A and platform C, the latter secured to the axle by brackets *a*, in combination with the end bars, *b b'*, secured rigidly to the platform, and the side bars, D, rigidly secured at their ends to the end bars, and the body E, suspended from the side bars by suitable springs, *e*, substantially as and for the purposes specified.

6. The combination of the end bars, *b b'*, and the side bars, D, secured to said end bars by means of the brackets or stirrups *d*, raised above or depressed below the end bars, substantially as and for the purposes specified.

7. The combination of the end bars, *b b'*, connected to the platform C, and the side bars, D, connected to the end bars by means of the brackets *d* and clips *d'*, the brackets being raised above or depressed below the end bars, and the body E, connected to the side bars by spring-connections *e*, substantially as and for the purposes specified.

291,489. PAPER-BAG HOLDER. ALBERT BROWN, Mendocino, Cal. Filed Oct. 30, 1883. (No model.)



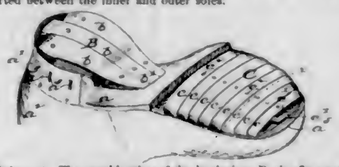
Claim.—1. As an improvement in paper-bag holders, the combination of a pair of semicircular sides having inclined grooves, a bottom and a vertical center piece connecting the said sides, and inclined shelves held detachably in the grooves of the said sides, substantially as set forth.

2. The combination, in a paper-bag holder, of the semicircular sides having inclined grooves, the bottom and a vertical center piece connecting the said sides, the shelves, and the top shelves connected so as to form a trough having partitions, as shown, forming separate compartments, the end compartments being provided with perforated cross-strips, as and for the purpose set forth.

3. In a paper-bag holder, the combination, with the sides, of detachable shelves, the inner ends of which are provided with upwardly-projecting points or prongs, substantially as and for the purpose set forth.

291,490. BOOT OR SHOE. GEORGE C. BUSH, Eureka, Mo. Filed Aug. 23, 1883. (No model.)

Brief.—The yielding heel is provided with longitudinal springs which extend forward under the shank, and transverse elliptical springs are inserted between the inner and outer soles.



Claim.—1. The combination of the heel-piece D, the flange *d*, having projections *d'*, the flange *a'*, attached to the heel, and having elongated openings, which receive said projections, and a heel-spring, substantially as described.

2. A boot or shoe having longitudinally-arranged springs for the heel and shank, in combination with a yielding heel-piece, D, substantially as described.

3. A boot or shoe having a transversely-arranged sole-spring, C, consisting of sections *c c c* between the inner sole, *a''*, and the outer sole, *a*, substantially as described.

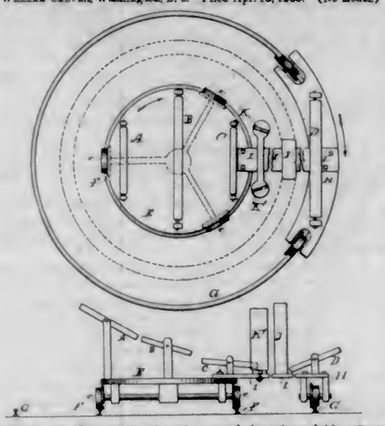
4. The combined heel and shank-spring B, consisting of sections *b b b*, as a new article of manufacture, substantially as described.

5. The combination, with a hollow boot or shoe heel, of a spring, B, which is partially inclosed in the yielding heel and extended forward thereof beneath the shank, thereby serving the double purpose of a heel-spring and a shank-spring, substantially as described.

6. The combination of the longitudinal springs *b b'*, curved as described, with a hollow yielding heel and a covering shank-piece, E, substantially as described.

7. In a boot or shoe, the combination of the yielding heel D, the longitudinal heel and shank-spring B, the covering E for the forward portion of spring B, and the transverse sole-springs C, all as described.

291,491. MEANS FOR UTILIZING THE RAYS OF THE SUN. WILLIAM CALVER, Washington, D. C. Filed Apr. 18, 1883. (No model.)



Claim.—1. The combination of a central pivoted revoluble reflector and a receiver adapted to receive the rays from the reflector during its entire revolution, substantially as specified.

2. The combination of a central pivoted revoluble reflector, laterally-located secondary reflectors, and a receiver, substantially as specified.

3. The combination of a central pivoted revoluble reflector, a concentrically-movable reflector, and an interposed receiver, substantially as specified.

4. The combination of a central reflector adapted to be revolved, with a receiver and an outer reflector, both of which are adapted to be revolved concentrically and simultaneously with said central reflector, substantially as specified.

5. The combination of two circular concentric tracks and cars adapted to move upon the same and carrying reflectors, with a connecting-bridge carrying a receiver, substantially as specified.

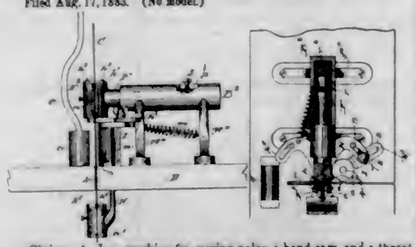
6. The combination of two cars connected by a bridge, and adapted to be revolved bodily about a center, with inner and outer reflectors, a receiver, and secondary reflectors, substantially as specified.

7. The car E, mounted upon the circular track F, in combination with the reflectors A B C, one of which is centrally located, substantially as shown and described.

8. The combination of the car E, reflectors A B C D, bridge I, receiver J, and car H, mounted upon the track G, substantially as shown and described.

9. The combination of the car H, carrying a reflector, D, with the bridge I, receiver J, and car E, carrying reflectors, substantially as shown and described.

291,492. BAND-SAW MILL. HENRY F. CAMPBELL, Concord, N. H. Filed Aug. 17, 1883. (No model.)



Claim.—1. In a machine for sawing poles, a band-saw, and a throat having a slotted hub adapted to guide the band-saw near the table of the machine, combined with a roller, *a*, connected with the said throat and adapted to serve as a support for the band-saw, whereby pressure of the pole being sawed against the said roller moves the throat and turns the band-saw in the proper direction, substantially as described.

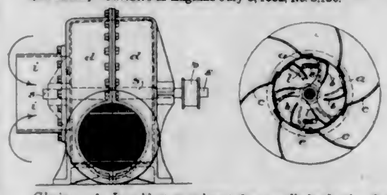
2. In a machine for sawing poles, the throat having two slotted hubs to receive the band-saw, and a box to receive one of the slotted hubs of and sustain the said throat and act as a bearing for it in its oscillations, combined with an adjustable roller, *a*, connected with the said throat and adapted to operate, substantially as described.

3. In a machine for sawing poles, the throat having a slotted hub, and a box to receive and sustain the said hub loosely, and the bracket and roller *a*, attached to the said yoke, combined with the anti-friction plates in the said hub to bear against the back edge and sides of the band-saw, substantially as described.

4. In a machine for sawing poles, the throat having a slotted hub, and a box to receive the said hub and permit it to oscillate, and a roller, *a*, adjustably connected with the said throat, combined with a spring and a stop to regulate the extent of oscillation or turning movement of the said throat, substantially as described.

5. The bed, standards, box, and adjustable arm, and the throat H, having a slotted hub to receive the band-saw, and supported loosely in the said box, combined with the roller *a*, adjustably connected with the said throat, substantially as described.

291,493. BLAST OR EXHAUST FAN. GEORGE MARIE CAPELL, Passenham, County of Northampton, and GEORGE SCOUGAL MACBEAN, The Grove Bishopstoke, County of Hants, England. Filed Apr. 14, 1883. (No model.) Patented in England July 3, 1882, No. 3,130.



Claim.—1. In a blast or exhaust fan, a cylinder having fastened thereto a series of internal and external blades, said cylinder being provided with port-holes between the points where said blades are fastened, for the purpose herein set forth.

2. In a blast or exhaust fan, in combination, substantially as shown and described, the cylinder *a*, having port-holes in the body thereof, internal curved blades, *b*, external blades, *c*, shafts *s*, and casing *d*.

3. In a blast or exhaust fan, in combination, substantially as shown and described, the adjustable internal blades, *b*, and the cylinder *a*, having slots *e e* made in the end thereof, and pins *l l*, made fast to the side plates supporting the external blades, *c*.

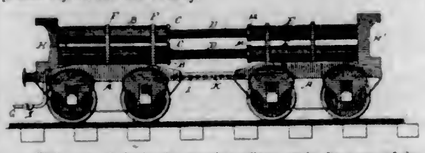
291,494. FURNITURE-CASTER. GEORGE DWIGHT CLARK, Plainville, Conn. Filed Mar. 13, 1883. (No model.)



Claim.—In a caster, a pintle having two swaged shoulders and a flat disk washer seated against one shoulder and retained in place by the upset metal of the other shoulder, substantially as set forth.

291,495. DEVICE FOR STOPPING RAILWAY-TRAINS. JOHN WILLS CLOUD, Altoona, Pa. Filed June 23, 1883. (No model.)

Brief.—A device to be attached to either end of a train of cars, or permanently fixed at the end of a track to serve as a bumper. It consists of an independent car or structure adapted to close together under violent pressure. Cylinders with pistons are attached to the car or structure. The piston-rods are made shorter than the cylinders, and have elastic washers, the object being that the air in the cylinder shall not be compressed beyond the limit of safety.



Claim.—1. A device for stopping railway-trains by means of the compression of elastic fluids, which consists of an independent car or structure adapted to close together under violent pressure, and in doing so to compress a volume of such elastic fluid, substantially as shown and described

2. The combination of the truck A, having cylinders B attached thereto, with a truck or structure having pistons C and rods D attached thereto, all substantially as shown and described.

3. In a device for stopping railway-trains, substantially as shown and described, the combination of the trucks A A' with the draft-chain K, substantially as shown and described.

4. In a device for stopping railway-trains, substantially as shown and described, the combination of the trucks A A' with a yielding brace, I, substantially as shown and described.

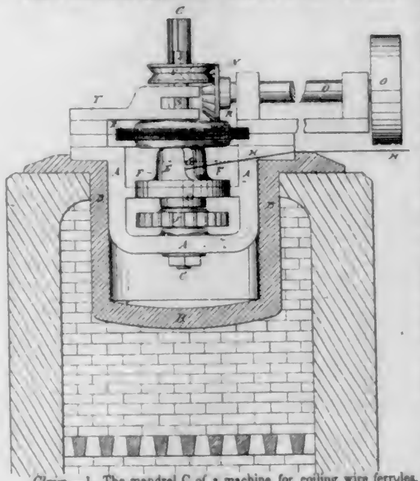
5. In a device for stopping railway-trains, substantially as shown and described, the combination of the cylinders B, the piston-rods D, made shorter than the cylinders, and the elastic washers M, all substantially as shown and described.

6. In combination with a device for stopping railway-trains, substantially as shown and described, the jaws or lips H H', adapted to keep the device in proper position, substantially as shown and described.

7. In a device for stopping railway-trains, substantially as shown and described, the combination of the compression-cylinders B with the air-hose G and valve *g*, all substantially as shown and described.

291,496. MACHINE FOR MAKING COILED-WIRE FERRULES

JOSEPH CROWFOOT, Bridgeport, Conn. Filed Feb. 23, 1883. (No model.)



Claim.—1. The mandrel C of a machine for coiling wire ferrules, made tubular and of elastic strips at the upper end, to admit of inward compression and a ready escape of the ferrule-tube, as described.

2. In a machine for coiling wire ferrules, the combination, with a rotary mandrel, of a fixed bearing, D, and a jacket, E, made fast to said bearing, whereby the jacket will surround the coils of wire while the solder is being applied thereto, as described.

3. In a machine for making coiled-wire ferrules, the combination, with the rotary mandrel C and the stationary band I, having inclined upper edge, of the jacket E, having apertures F to admit solder, and an inclined slot, H, to receive the wire, substantially as herein shown and described, whereby the coiled wire is kept in place as it is pushed up the mandrel, as set forth.

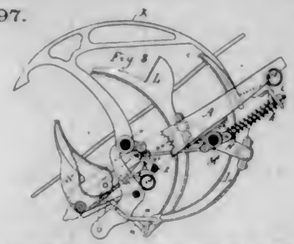
4. In a machine for making coiled-wire ferrules, the rotary mandrel C, made substantially as herein shown and described, with its upper part tubular and slitted longitudinally from its upper end, whereby the mandrel can be kept cool more readily, and will allow the coiled wire to move upward upon it more easily, as set forth.

5. In a machine for making coiled-wire ferrules, the combination, with the rotary mandrel C and its driving mechanism, of the rotary brush R and its driving mechanism, substantially as herein shown and described, whereby the uncombined solder is brushed off and the coiled wire is polished, as set forth.

6. In a machine for coiling wire ferrules, the combination, with the mandrel C, bearing D, and jacket E, of a stationary band, I, inclined at the upper edge to push the wire upwardly as fast as coiled, as described.

291,497. GRAIN-BINDER.

ERASTUS M. DEANE, St. Paul, Minn. Filed Mar. 24, 1883. (No model.)



Claim.—1. In a grain-binder, the combination, with the adjustably-yielding packer-shaft, of the adjustably-yielding trip-lever which controls the binder-clutch, said parts being so arranged that the movement of the packer-shaft shall be communicated to the trip-lever, substantially as described.

2. In a grain-binder, the combination, with the yielding packer-shaft, of the adjustable spring mechanism for controlling the movement of said shaft, substantially as described.

3. The combination, with the main drive-shaft and with the yielding packer-shaft connected to the inner end thereof, and sustained in movable bearings, of the trip mechanism which controls the binder-clutch, substantially as described.

4. The combination, with the main drive-shaft and with the revolving arm thereon having catches to engage the binder-pinion, of the movable packer-shaft connected to the inner end of said main shaft, and the trip-lever which controls the binder-clutch, substantially as described.

5. In a grain-binder, the combination, with the packers mounted upon cranks and adapted to work through the binder-table, of the movable packer-shaft, the spring for controlling the movement of said shaft, means for adjusting said spring, and suitable means for communicating the movement of the packer-shaft to the binder-clutch, substantially as described.

6. The combination, with the packer-shaft and its sliding boxes, of the connecting-rod, the rock-shaft, and the trip-lever that controls the binder-clutch, substantially as described.

7. The combination, with the trip-lever which controls the binder-clutch, of a movable packer-shaft and a movable gavel-support, both arranged to shift by impact of the accumulating gavel, thereby tripping said lever to start the binding mechanism, substantially as described.

8. A revolving shaft having packers set on the cranks thereof, in combination with sliding boxes for said shaft, and the trip-lever which controls the binder-clutch, the several parts being relatively arranged, substantially as described, so that the impact of the accumulating gavel shall act upon said crank-shaft, which moves the trip-lever that shifts and starts the binding mechanism, substantially as set forth.

9. A revolving shaft having packers set on the cranks thereof, in combination with yielding bearings or boxes for said shaft, a movable gavel-support, and the trip-lever which controls the binder-clutch, the several parts being relatively arranged, substantially as described, so that the impact of the accumulating gavel shall cause said lever to shift and start the binding mechanism, substantially as set fortn.

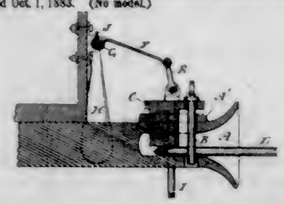
10. The combination, with the packer-shaft, its yielding supports and adjusting-springs, of the trip-lever to control the binder-clutch, an adjusting-spring for said lever, and suitable mechanism intermediate the supports and lever, whereby, in co-operation, the accumulating gavel will shift the shaft and cause it to act upon the trip-lever, substantially as described.

11. The combination, with the packer-shaft M', mounted in yielding boxes, of the tension-spring *h*, the connecting-rod o^4, the rock-shaft 2, and the trip-lever Q, controlling the binder-clutch, substantially as described.

12. The combination, with the packer-shaft M', mounted in yielding boxes, of the tension-spring *h*, the connecting-rod o^4, the rock-shaft 2, having arm R, the gavel-supporting fingers S, and the trip-lever Q, controlling the binder-clutch, substantially as described.

291,498. CAR-COUPLING.

CHARLES DEVLIN, Pembroke, Ontario, Canada. Filed Oct. 1, 1883. (No model.)



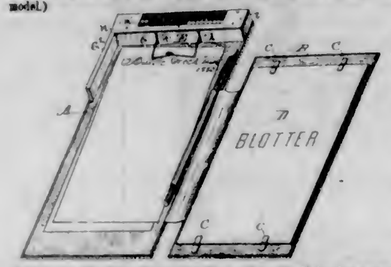
Claim.—1. The combination of a draw-head, A, having a slot in the top and pin-hole in the bottom, and a weight or bar, D, sliding in said slot, and carrying forwardly a draw-pin entering a hole in the bottom of the draw-head, whereby the lower end of the weight or bar is adapted to bear on the end of an inserted draw-link and keep it in position for coupling by pressure against the bottom of the draw-head, as set forth.

2. The combination of a draw-head, A, having a slot in the top and a pin-hole in the bottom, a bar or weight, D, sliding in said slot, and carrying a pin, B, entering a hole in the bottom of the draw-head, and a yoke, I, attached to the top of weight or bar D, whereby the under part of the yoke, by striking against the under side of the draw-head, will limit bar or weight D rising out of its slot.

3. The combination, with the weight or bar D, having pin B and head C, of the shackle E, arm F, staple J, and rock-shaft G, having weighted arms H, as set forth, for the purpose described.

291,499. COMBINED PAPER-HOLDER, CALENDAR AND BLOTTER.

CORNELIUS DE VOS, Battle Creek, Mich. Filed Mar. 24, 1883. (No model.)

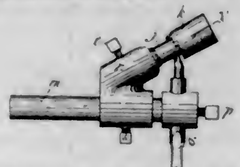


Claim.—1. The hinged blotter holder and carrier B, having paper-fastening devices C C, in combination with the base or tablet A, having a block, G, and spring-clasp E at its top end, and a bar, G^3, at its side, substantially as shown and described, for the purposes specified.

2. As an improved article of manufacture, the combined tablet, blotter, and calendar, composed of the base A, hinged blotter and carrier B C C, the spring-clasp E, the block G, having a channel in its top, side, and center, the adjustable slide *m*, and a cover, *n*, having a slot, *r*, substantially as shown and described, for the purposes specified.

291,500. WIRE-COILING MACHINE.

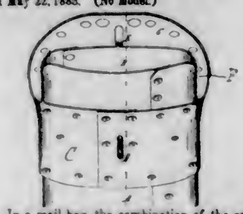
EDWARD W. DURKEE, Mason, Ill. Filed May 21, 1883. (No model.)



Claim.—In a wire-coiling machine, bar *m*, wire-guide *o*, casting *r*, mandrel *j*, and cylinder *k*, grooved as described, and all combined in the manner specified.

291,501. MAIL-BAG.

H. CLAY EVANS and GEORGE JONES, Chattanooga, Tenn. Filed May 22, 1883. (No model.)



Claim.—1. In a mail-bag, the combination of the extended top of the bag, adapted to be folded down backward into a pocket, and means for securing the same in position, substantially as set forth.

2. In a mail-bag, the combination of the extended top of the bag, adapted to be folded down backward into a pocket formed between the rear side of the bag and the flap, the flap being adapted to be folded down forward over the folded-down top, and means for securing the same in position, substantially as set forth.

3. In a mail-bag, the combination of the downwardly and backwardly folded top, the pocket formed by the flap and body of the bag, the back flap being provided with an eyelet, and the staple, substantially as described.

4. The herein-described mail-bag, constructed with an extended top, a pocket in the rear of the top, an eyeleted flap, and a staple, the extended top being adapted to fold down into the pocket, the flap being adapted to fold down over the folded-down top, the staple to pass through the eyelet to permit the bag to be locked, as herein described.

291,502. SPRING-ROLLER FOR CURTAIN-FIXTURES.

JAMES B. PINCH, Newark, N. J. Filed Apr. 23, 1883. (Model.)



Claim.—1. In combination, the spring-actuated curtain-roll, the compound detent having the incline *s*, the box *e*, having abutments for said detent, and an inwardly-projecting lug, *m*, the plate *t*, and projection *r*, all arranged and operating substantially as herein set forth and shown.

2. In combination, the spring-actuated curtain-roller, carrying the box *e*, having the slots *h i*, with inwardly-projecting lug *m*, the detent *m' n*, having the incline *s*, and lug or projection *r*, all being arranged and operating substantially as and for the purpose herein set forth and shown.

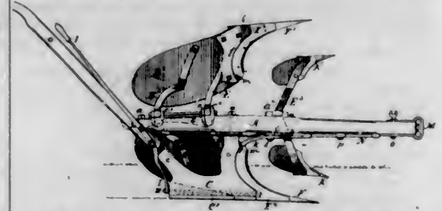
3. In combination, in a spring-actuated curtain-roll, the box having the lug *m*, adapted to throw the sliding detent into engagement with an abutment on said box, and having an abutment to receive said detent when said box is revolving at a slow rate of speed, and a sliding detent having its opposite extremities free to engage with said abutments and lug, substantially as set forth and shown.

4. In combination, the box having the slots *h i* and lug *m*, and the sliding detent, all arranged and operating substantially as and for the purposes set forth.

291,503. REVERSIBLE PLOW.

HORATIO GATES, Worcester, Mass. Filed Mar. 10, 1883. (No model.)

Brief.—The arms or standards carrying the mold-boards are curved to fit upon the front edge of the frame to take the strain. The connections to the lever lock and unlock the plow and the jointer. The clevis is automatically shifted by the plows coming in contact with the levers reaching back from the clevis.



Claim.—1. A swivel or reversible plow having two mold-boards, D D', connected together by rocking arm E' and rocking arm E, provided with triangular pieces E^2, in combination with the hubs or bearings e' on the top of the beam, and means for retaining either of said mold-boards at working position, substantially as set forth.

2. A swivel or reversible plow having two mold-boards, D and D', rigidly connected at diametrically-opposite positions by the rocking arms E and E', which are hinged to hubs or bearings on the top of the beam A, in combination with the fastening-rod H, which passes through the landside C into the triangular end of the arm E, and the lever I, adapted for simultaneously operating the fastening-rod H and the fastening-rod J, substantially as shown and described.

3. In combination with a swivel or reversible plow, the reversible jointer or sod-plow K, having two small mold-boards connected by the rocking arm E^2, which is hinged to the hubs or bearings G^2, in combination with the beam A, substantially as shown and described.

4. A swivel or reversible plow having two mold-boards, D D', connected together by rocking arms E E', hinged to hubs or bearings on the beam A, in combination with two jointers or sod-plows, K, connected by swinging arms E^2, hinged to hubs or bearings G^2 on the top of the beam, and devices for simultaneously fastening and releasing said mold-boards and sod-plows, substantially as described.

5. In combination with a swivel or reversible sod-plow or jointer, the fastening-rod J, hinged to the lever I and passing forward at the under side of the beam A, with its forward ends provided with hooks *n* for fastening the sod-plow or jointer firmly in working position at either side of the beam, substantially as shown and described.

6. In a swivel or reversible plow, the arm E, which connects the mold-boards D D' and shares F F', provided with the offset or lip *f*, in combination with the forward landside-standard *c*, as and for the purpose set forth.

7. In a swivel or reversible plow having two mold-boards connected

by rocking arms E E', the hinge-plate G, provided with side guards, *g*, and supporting lugs or ribs A, substantially as and for the purpose set forth.

8. In a swivel or reversible plow having two mold-boards connected by rocking arms hinged to the top of the beam, the plate carrying the ears or bearings *d'*, adapted for attachment to the wood beam A by the same bolts which secure the standards of the stationary landside C to said beam, as shown and described.

9. The combination, with the beam A and reversing sod-plow K, of the supporting-plate provided with projections L, and adapted to serve as a guide for the rod J and fulcrum-bearing for the lever R, substantially as shown and described.

10. The combination, with the clevis M, having an arm extending backward from its pivoting-bolt, of the levers N and R, fulcrumed on the beam A and arranged for operating in connection with the plow, in the manner shown and described.

291,504. WEEDING-HOE. HORATIO GATES, Worcester, MASS. Filed Apr. 2, 1883. (No model.)

Claim.—1. The combination, with a weeding-hoe, of a long thin projecting blade, A, extending forward and upward from the back of the hoe, and having a hook at its outer end adapted for inserting between growing plants for removing weeds from among them, as set forth.

2. A weed pulling or cutting attachment for hoes, consisting of the long narrow blade A, hooked and sharpened at its outer end, as described, and provided at its inner end with attaching-clamp, whereby it can be secured upon an ordinary weeding-hoe in the manner substantially as set forth.

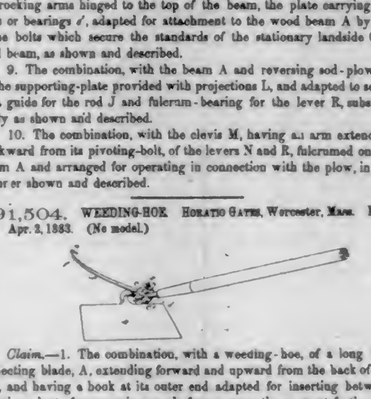
3. The combination, with a weeding-hoe, of a long thin blade or forwardly-projecting curved finger formed of sheet-steel, with sharp cutting-edges, as *f f*, at its outer end, said blade being arranged in relation to the main blade B of the hoe, in the manner substantially as described, for the purpose set forth.

4. The combination, with a weeding-hoe, of the long thin forwardly-projecting blade or weed-cutter A, detachably connected to the shank of the hoe by means of the clamping mechanism C C', adapted to embrace said shank and blade, substantially as set forth.

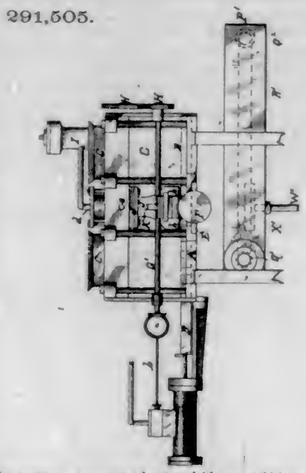
5. The combination of the weed-cutting blade A, the clamping-jaw C, rigidly fixed upon the end of said blade, the clamp-jaw C', grooved to embrace the shank, and connected to jaw C by a lock-hinge, *d*, and the clamping-screw E, as and for the purposes set forth.

291,505. MACHINE FOR MAKING PAVING-BLOCKS, BRICKS, &c. JOHN GAUNT, Gloucester, N. J., WILLIAM P. POTTS, Philadelphia, Pa., and WILLIAM CALHOUN and JACOB C. DAUBMANN, Camden, N. J. Filed Oct. 5, 1883. (No model.)

Claim.—1. The combination, in a brick-machine, of a mold-board, devices for reciprocating the same longitudinally, a vertically-moving compressor arranged above the mold-board, and reciprocated by hydraulic pressure to compress the material in the mold-board, a pressure-plate arranged as described, and devices for moving the same after the compressing operation, to permit the contents of the mold-board to pass or be forced therefrom, substantially as set forth.



291,505.

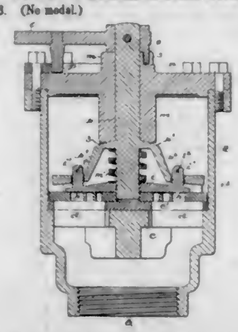


2. The combination, in a brick-machine, of a mold-board, devices for longitudinally reciprocating the same, a vertically-moving compressor arranged above the mold-board to compress the material in the same, a pressure-plate arranged as described, devices for moving the same after the compressing operation, to permit the contents of the mold-board to pass or be forced therefrom, and a balanced conveyer arranged to receive said contents, substantially as set forth.

3. The combination, in a brick-machine, of a longitudinally-moving mold-board, a compressor arranged above the same, a pressure-plate, devices for transversely moving said pressure-plate to permit the contents of the mold-board to move or be ejected therefrom, a balance-conveyer arranged, as described, to receive said contents, and a belt arranged in a water-trough, substantially as and for the purpose set forth.

4. The combination, in a brick-machine, of molding and compressing devices, arranged as described, a balance-conveyer for depositing the molded bricks on a carrying-off belt, and devices for effecting a partial movement of said belt to carry the deposited bricks from beneath the conveyer and mold without operating the belt upon a reverse movement of said devices, substantially as and for the purpose set forth.

291,506. VALVE. J. MORTIMER GOLDSMITH, Boston, MASS. Filed Feb. 26, 1883. (No model.)



Claim.—1. The valve-seat provided with ports, and the main valve controlling the said ports, and itself provided with relief-ports, combined with the secondary valve controlling the said relief-ports, and the actuating mechanism for the said main and secondary valves, whereby the latter is operated to relieve the pressure on the main valve prior to the movement of the said main valve, substantially as described.

2. The valve-seat, the main valve provided with relief-ports seated thereon, and the secondary valve combined with the valve-stem, having a shoulder seated at the end of its socket, the said valve-stem being connected with the secondary valve to move it positively, and the main valve being engaged after the secondary valve is moved over the relief-ports of the said main valve, substantially as and for the purpose described.

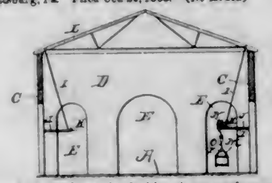
3. The valve-seat, and main valve thereon, provided with relief-ports and actuating projections, combined with the secondary valve seated on the main valve, and controlling the relief-ports thereof, and the valve-stem, provided with arms connected with the secondary valve, and adapted to engage the actuating projections of the main valve, substantially as and for the purpose described.

4. The valve-seat, the main valve thereon, and secondary valve seated on the main valve, combined with mechanism for actuating the said valves, as described, and a stopping device for the main valve, whereby it is positively stopped in a definite position relative to the ports controlled by it, substantially as described.

5. The valve-seat and main and secondary valves, combined with the valve-stem having a projection or shoulder seated upon its socket, and the spring whereby both the said valves and the said shoulder are pressed against their respective seats, substantially as described.

6. The valve-stem provided with a shoulder or projection seated at the end of its socket, and with valve-actuating arms, combined with the valve longitudinally movable on the said stem, and provided with lugs or projections engaged by the shoulder of the said arms, and operated thereby on a seat opposite to that of the valve-stem, substantially as described.

291,507. PIG-CARRIER FOR BLAST-FURNACES. FRED. W. GORDON, Pittsburg, Pa. Filed Oct. 29, 1883. (No model.)



Claim.—1. In a pig-carrier for blast-furnaces, the combination of a roof and side wall of a cast-house, an overhead track-rail, braces from said rail to the side wall, suspenders from said rail to the roof at a point at or near the top of the side wall, and a pig-cradle arranged to travel upon said track-rail, substantially as set forth.

2. In pig-carriers for blast-furnaces, the combination of a sloping cast-house floor, a railroad located below the level of the cast-house floor, as set forth, an overhead track-rail in the cast-house, having a prolongation from the cast-house over said railroad, and a pig-cradle fitted to travel upon said track-rail, substantially as set forth.

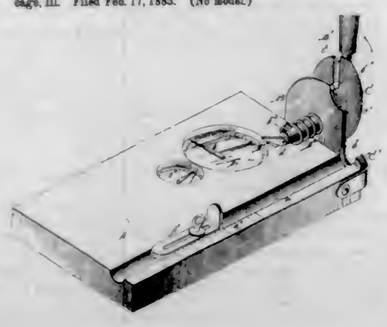
3. In pig-carriers for blast-furnaces, the combination of a cast-house, a blast-furnace located at one end of the same, two independent overhead track-rails located between the side walls of the cast-house and the transverse center of the cast-house, and pig-cradles arranged to travel upon said track-rails, substantially as set forth.

4. The improved pig-cradle consisting of the suspended bail, the two bell-crank arm structures pivoted therein, and the double-ended latch-piece fitted to engage the upper portion of the arm-pieces, substantially as set forth.

291,508. PLASTERING COMPOSITION. HENRY GRAF, Sebewaing, Mich. Filed May 5, 1883. (No specimens.)

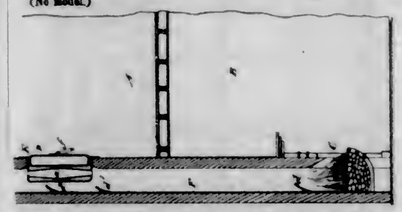
Claim.—A plastering composition composed of slaked lime, plaster-of-paris, sawdust, cow's hair, glue, and glycerine, prepared substantially as and for the purpose set forth.

291,509. CIGAR-CUTTER. JOHN GRATZ and PETER HAGEDORN, Chicago, Ill. Filed Feb. 17, 1883. (No model.)



Claim.—The combination, with the box or block A, containing a registering mechanism, and provided with a groove, *a*, and an adjustable gage, A', of the plate B, secured to one end of said box, and having a beveled semicircular opening, *b*, the knife C, pivoted to said plate and having a slot, *c*², the hand-lever B', having a pivot, *b*², passing through the plate B, and provided with a stud, *b'*, engaging the slotted knife C, the spring B³ on the pivot *b*², for returning the knife, and means for actuating the registering devices at each stroke of the knife, all substantially as shown and described.

291,510. APPARATUS FOR WARMING THE UPPER ROOMS OF BUILDINGS. JOHN SAMUEL HEISER, Rushville, Ind. Filed June 30, 1883. (No model.)

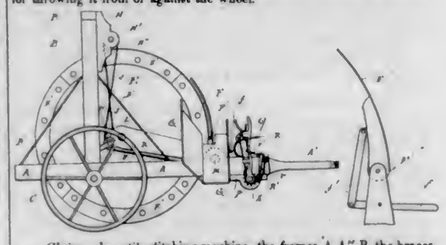


Claim.—1. A box having a front opening and provided with vertical flues or drums, substantially as shown, said box extending into and partially across the flue of a chimney, in combination with one or more deflecting-plates, *d'*, secured to the opposite side of the flue, substantially and for the purposes described.

2. In a room-heating device, the combination of the box E, having tubes or drums *a*, the closing cover or stopper D, the chimney or flue F, deflecting-plates *d'*, fire-place C, and deflecting-plate *d*, all constructed and arranged substantially as set forth.

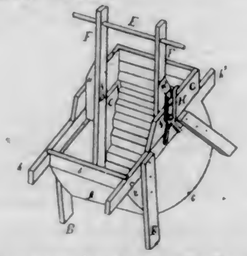
291,511. TILE-DITCHING MACHINE. GEORGE L. HOBEN and FRANK P. HILBURN, Mount Vernon, Ind. Filed Aug. 31, 1883. (No model.)

Brief.—A cutter-disk excavator-wheel is journaled in a bifurcated pivoted lever. Cords run from the free end of such lever over a roller on a braced upright frame, down under pulleys, and forward to a windlass. A pivoted lever is connected by a pitman to a pivoted hand-lever for throwing it from or against the wheel.



Claim.—In a tile-ditching machine, the frames A A'' B, the braces B', the roller H'', the ropes J, the pulleys N, the bifurcated lever K, the windlass P, and wheel E, having knives E', in combination with scraper F, having pitman *f''*, and lever F, substantially as described, and for the purposes set forth.

291,512. WASHING-MACHINE. CHARLES HOFFMAN, Republic, Mo. Filed Feb. 15, 1883. (No model.)

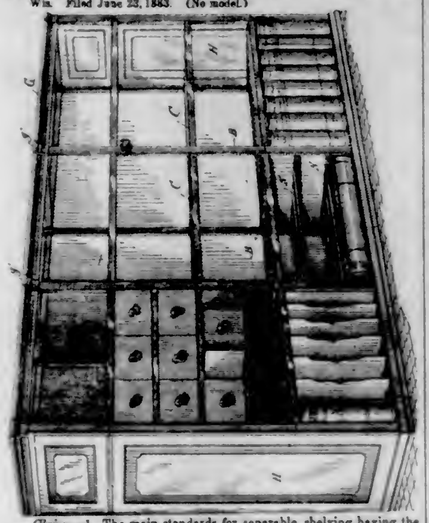


Claim.—1. In a washing-machine, the rubber D, having the cross-pieces a^3 a^3 and rollers b^3 b^3, the latter set below the face of the former, in combination with the board C, having the cross-pieces *a a* and the rollers *b b*, the latter set above the face of the former, whereby the clothes

will be operated on principally by the rollers, and danger of tearing lessened, as set forth.

2. In a washing-machine, the board C, having the rollers and cross-pieces provided with the grooves p^3, as set forth.

291,513. ADJUSTABLE SHELVING. HORACE J. HOFFMAN, Neillsville, Wis. Filed June 23, 1883. (No model.)



Claim.—1. The main standards for separable shelving having the projecting flanges, substantially as described.

2. The main standards for separable shelving having the oblique backwardly-projecting flanges, substantially as described.

3. The combination, with the main standards having projecting flanges, of the locking-wedges, or their equivalents, for connecting the abutting ends of said main standards, substantially as described.

4. The combination, with the main standards having flanges, of the shelf-plates having bent ends to clasp said flanges, substantially as described.

5. The combination, with the main standards, of the shelf-plates having flanges, and having bent ends to engage with the main standards, substantially as described.

6. The combination, with the main standards having flanges, of the wooden shelves having metal plates to engage with said flanges, substantially as described.

7. The combination, with the main standards having flanges, of the cross-plates having ends adapted to fit within said flanges, substantially as described.

8. The combination, with the main standards having flanges, of the end plates adapted to fit within the flanges of said main standards, substantially as described.

9. The combination, with the main standards having flanges, of the cornice having lugs adapted to clasp the flanges of the main standards, substantially as described.

10. The combination, with the main standards having flanges, of the cornice having lugs adapted to clasp said flanges, and the top plate adapted to rest upon said main standards, substantially as described.

11. The combination, with the main body of the shelving, of the cornice formed in sections having overlapping bracket-shaped ends, and having clips for holding said sections in position, substantially as described.

12. The combination, with the main standards and the shelf-plates having flanges, of the drawer-rests having ends adapted to fit between the flanges of the shelf-plates, substantially as described.

13. The combination, with the main standards and the shelf-plates, of the drawer-rests having the guide-ribs, substantially as described.

14. The combination, with the shelving, of the book-supporting rods, each of said rods being provided with a series of small rolls thereon, upon which the several books may rest and slide independently, substantially as described.

15. The combination, with shelving for books, of the rods carrying small rollers whereon the books may rest, and the movable plates for forming individual book-spaces, substantially as described.

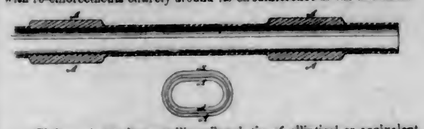
16. The combination, with the main standards, of the cross-plates, the upper and lower rods and small rollers, and the division-plates for forming individual book-spaces, substantially as described.

17. The combination, with the main standards having flanges, of the cross-plates having ends projecting within said flanges, and the long rollers journaled in said cross-plates, substantially as described.

18. The combination, with the metal parts of the shelving, of the wooden facing attached thereto, substantially as described.

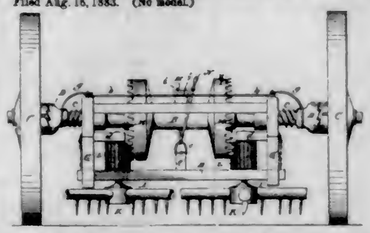
291,514. RAILROAD-TIE. HENRY R. HOLBROOK, Pueblo, Colo. Filed May 2, 1883. (No model.)

Brief.—A tubular elliptic or equivalent formed hollow tie provided with re-enforcements entirely around its circumference at the rail-seats.



Claim.—A tubular metallic railroad-tie of elliptical or equivalent form in cross-section, provided at the points over which it is designed to secure the rails with re-enforcements A A, extending uniformly around the circumference, whereby sufficient strength with the minimum degree of weight is secured, substantially as hereinbefore set forth.

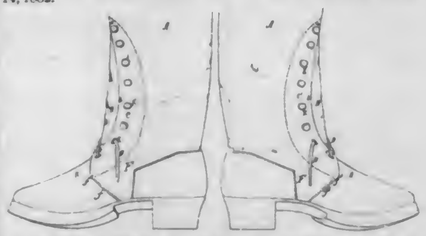
291,515. ROTARY HARROW. JULIUS HUGO HOOF, Quincy, Dak. Filed Aug. 16, 1883. (No model.)



Claim.—A harrow-frame having journaled therein a main shaft, upon which are mounted the usual drive-wheels and suitable gear-wheels, in combination with a vertically-sliding cross-beam, vertical shafts carrying horizontally-revolving harrows, and elongated pinions, said beam having connected thereto an elevating-lever, substantially as and for the purpose set forth.

291,516. BOOT. WILLIAM IRVIN, Anoka, Minn., assignor, by mesne assignments, to himself and George Cole Irvin, Boston, Mass. Filed Sept. 29, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 254,993, dated March 14, 1882.



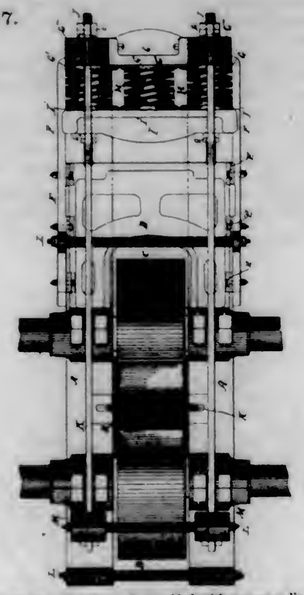
Claim.—A boot of the kind described, consisting of the leg A, having the slit in front, and the quarters F, the vamp B, running the entire length of the slit, secured to the leg A at the top of the slit, along the sides of the slit back of its edges, and partly to the lower edges, *f*, of the quarters F, the flies C, around the vamp B at the slit, and having their lower ends, *e'*, detached from the vamp, whereby when the flies are pulled together, they come over the vamp, as set forth.

291,517. ROLLER-MILL. JAMES W. JACKSON, Denver, Colo. Filed July 28, 1883. (No model.)

Claim.—1. In a roller-mill in which the movable roll is mounted in a sliding frame and constantly advanced parallel to the stationary roll, the combination of the sliding frame D, rolls B C, the head G, provided with recesses G', the cross-head I, having recesses I', springs H, and the threaded rods J, having nuts on each end, arranged as set forth, whereby the tension of the springs H is transmitted through threaded rods J to the sliding frame D, substantially as and for the purpose set forth.

2. The combination of the sliding bearing-frame D, having planed

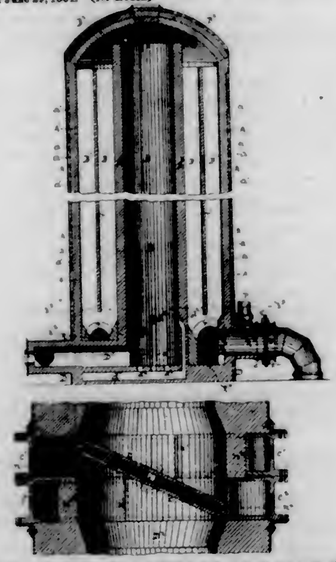
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surfaces *d*, with the side pieces, F, provided with corresponding planed surfaces, supports E', and removable gibs E, substantially as described.

3. The combination, with the sliding frame D, cross-head I, springs H, threaded bolts J, head G, and side pieces, F, of the bed-plates A, standards M, transverse brace-rods L, and the longitudinal brace-rods K, extending from the standards M to the sectional head G, all constructed and arranged substantially as shown and described.

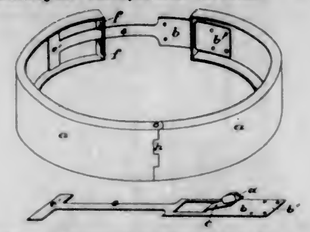
291,518. HOT-BLAST STOVE. DANIEL N. JONES, Johnstown, Pa. Filed June 29, 1881. (No model.)



Claim.—1. In a cylindrical hot-blast oven having a central combustion-chamber, B, and a surrounding regenerator-chamber, B', separated by a dividing-wall, A^3, the said wall A^3 extending up into proximity to the oven top or cover, and forming a throat, B^3, of about the same or less area than the combustion-chamber, whereby the flow or passage of the air or gas over the wall A^3 with practical uniformity on all sides is assured, substantially as set forth.

2. The water-bores c' c^2, having each a metallic water-backed face extending half or a little more than half way around its annular length and lined through the rest of its annular length, in combination with a hollow water-supplied butterfly-valve, substantially as set forth.

291,519. SAFETY APPLIANCE FOR BRACELETS. ERNEST JONES, London, England. Filed Apr. 3, 1883. (No model.)

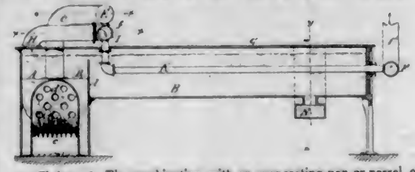


Claim.—1. The combination, substantially as shown and described, of the bracelet having one end of its central guard enlarged and riveted to the wall of the bracelet, with a portion of said enlargement projecting beyond the abutting end of the segment, the snap device riveted to said projecting enlargement, and the push-piece fastened to the end of the snap device.

2. In a safety appliance for bracelets and other similar articles, the combination, substantially as shown and described, of the protector *e*, guard *e'*, base-plate *b*, extension *b'*, snap-piece *c* being integral with said base-plate *b*, and the push-piece *d* on the end of said snap-piece *c*.

3. A bracelet having a double locking device, in combination with a central protector, *e*, and guard *e'*, said protector working independent of the locking device, substantially as shown and described.

291,520. EVAPORATOR. ADOLF KAYSER, Buffalo, N. Y., assignor of one-half to Albert B. Young, same place. Filed Apr. 23, 1883. (No model.)



Claim.—1. The combination, with an evaporating pan or vessel, of a heating apparatus whereby a portion of said pan is heated, while another portion thereof remains comparatively cool, a cover which extends over the cool as well as the hot portion of the pan, and whereby the steam or vapor rising from all portions of the pan is collected, and a conduit which conducts the collected steam or vapor through or under the cooler portion of the pan, and in which the steam or vapor is condensed and its heat transmitted to the surrounding liquid, substantially as set forth.

2. The combination, with the compartments A and B, separated by a partition, *l*, having an overflow, *l'*, of a heating apparatus whereby the compartment A is heated, a cover, G, and a vapor-conduit, K, substantially as set forth.

3. The combination, with the compartments A and B, of a conduit whereby the hot liquid is conducted from one compartment into the other, a heating apparatus whereby the compartment A is heated, and a conduit whereby the vapor rising from the liquid is conducted through or under the liquid contained in the compartment B, substantially as set forth.

4. The combination, with the compartment A, furnace *c*, and compartment B, of a cover, G, and smoke-pipes *f* and vapor-pipes K, arranged in the compartment B, substantially as set forth.

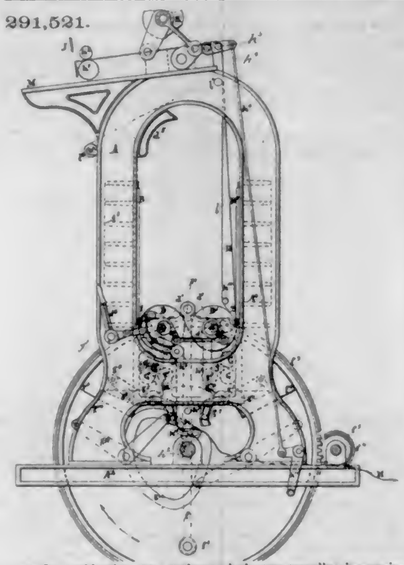
5. The combination, with the evaporating-pan, of a cover, G, vapor-pipes H, manifold head I, vapor-pipes K, manifold head F, and chimney *f'*, substantially as set forth.

6. The combination, with an evaporating-pan, of heating-pipes constructed with flat tops and receding sides, and immersed in the liquid in the pan, substantially as set forth.

291,521. PRINTING-MACHINE. WELLINGTON P. KIDDER, Malden, assignor to the Kidder Press Manufacturing Company, Boston, Mass. Filed Oct. 30, 1882. (No model.)

Claim.—1. In combination with a stationary bed and an impression-cylinder traveling over it, guides for the web, one at each side of the impression-cylinder, and a feeding device which feeds the proper length of web while the impression is thrown off, all substantially as described.

291,521.



2. In combination, two stationary beds, two traveling impression-cylinders, and a feeding mechanism, substantially as described, combined together and with suitable guides, substantially as described, and operating to print both sides of a web, as set forth.

3. In combination, two stationary beds, two traversing impression-cylinders, and a third printing mechanism, substantially as described, with an intermittent web-feeding mechanism, substantially as described, common to all three printing mechanisms, the first stationary form and its cylinder printing one side of a given length of web, the second printing the other side of that length of web, and the third printing mechanism printing on the same length of web already printed by the other two, all as set forth.

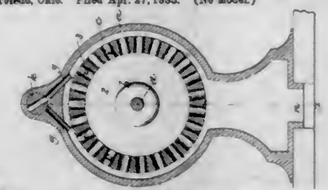
4. In combination, two beds, two impression-cylinders, a reciprocating carriage, and two sets of inking apparatus, both cylinders and both sets of inking apparatus being carried by the carriage, all substantially as described.

5. In combination, the two vertical stationary beds, their traversing impression-cylinders, and the carriage reciprocating vertically between the beds, arranged together so that the type-beds face each other and the carriage reciprocates vertically between them, as set forth.

6. In combination, two beds, two impression-cylinders, their carriage, and mechanism arranged and operating, substantially as described, to throw the cylinders each toward the other at the end of the impression-stroke of the carriage, and to throw each cylinder away from the other at the end of the back-stroke of the carriage.

7. The web-perfecting press above described, consisting of the two stationary beds, the two traversing impression-cylinders, the two sets of inking apparatus, the web-guiding mechanism, substantially as described, and the intermittently-operating web-feeding mechanism, substantially as described, all operating together substantially as described.

291,522. MOTOR. EPHRAIM M. KIMBALL and CHARLES M. KIMBALL, Toledo, Ohio. Filed Apr. 27, 1883. (No model.)

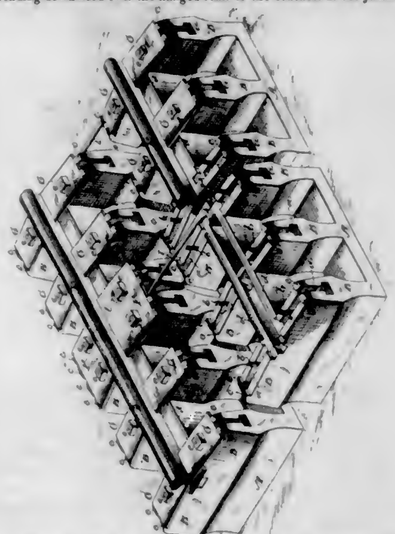


Claim.—1. A motor composed of an upright casing, two valved induction-ports at the top of said casing, leading in opposite directions, and arranged, as described, so that one shall be closed when the other is open, and a wheel substantially concentric with the casing, having open-ended and curved-faced buckets, as set forth.

2. In a motor or meter, a journaled wheel having a rim or flange concentric with its axis, and having radial orifices with curved bearing-faces passing through said rim and constituting open-ended radial buckets, as set forth.

291,523. RAILWAY-TRACK. JOHN GEORGE KRICHBAUM, Youngstown, Ohio, assignor of one-half to John C. Kloffenstein, same place. Filed Feb. 17, 1883. (No model.)

Brief.—Rail-supports consisting of castings having transverse brackets which have T-shaped slots, and shoulders on their top surfaces to keep the coupling-plates from sliding. The joint-coupling plates have lugs to fit in the flanges of the rails. The casting has a central rail-bed and side flanges to assist in keeping the rails from spreading. The castings are prevented from spreading by brace-rods having flanged arms extending downward over the flanged seats of the brackets at the joints.



Claim.—1. The brackets B, formed with T-shaped slots *a*, in combination with the screw-bolts and nuts and the plates F G, as a means for securing the rail-sections in position, substantially as and for the purpose set forth.

2. The castings A and brackets B, having T-shaped slots *a* and shoulders *c*, in combination with the screw-bolts and nuts, the plates G, and plates F, the latter having lugs *f* to fit in notches in the flange of the rail-sections, substantially as and for the purpose specified.

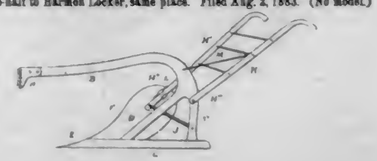
3. The castings A, formed with central rail-bed, C, having flanges *d* and slotted brackets B, in combination with the plates F G, and suitable screw-bolts and nuts for fastening them in place over the flange of the rail-sections, substantially as and for the purpose set forth.

4. The combination, with the castings A, formed with central flanged seat, C, and brackets B, arranged transversely and upon each side thereof, of the transverse brace-rods I, having flanged arms *k* extending downwardly and over the ends of the flanged seats of the four castings, substantially as and for the purpose set forth.

5. The castings A, having central flanged seat, C, and a series of brackets, B, arranged transversely and upon each side of the seat, and having between the brackets the blocks *i*, in combination with the stay-rods H, having suitably-formed heads *h*, substantially as and for the purpose set forth.

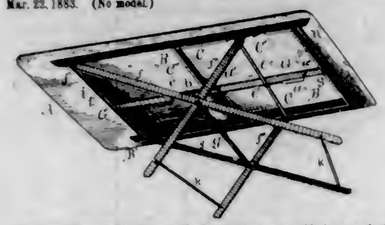
6. The castings A, having brackets B, and flanged seat C for the rail-sections, in combination with the brace-rods I, having flanged arms *k*, and the stay-rods H, having suitable heads, *h*, substantially as and for the purpose specified.

291,524. PLOW. THEODORE A. LANSCHA, Flanagan, Ill., assignor of one-half to Harmon Locker, same place. Filed Aug. 2, 1883. (No model.)



Claim.—In plows of that kind in which a shortened beam, B, has its standard C fastened to the rear extremity of the landside G and is stiffened by the forwardly-projecting brace D, the handles H H' and brace-rod M, in combination with the mold-board F, having dovetail lugs H^2, and a wedge, by means of which one of said arms, H', is rigidly secured to said mold-board, as set forth.

291,525. FOLDING TABLE. NATHAN H. LONG, Muncie, Ind. Filed Mar. 22, 1883. (No model.)



Claim.—The combination, with the table-top provided on each side of its under surface with notches, of pivoted legs *f f* and legs f^2 f^2, the latter being connected by a grooved round, *e*, and a rod secured to the table-top, said rod consisting of a rigid wire portion, and a spring-wire portion, and adapted to rest in the groove of the round *e*, substantially as set forth.

291,526. SECONDARY BATTERY. EUSEBIUS J. MOLERA and JOHN C. CEBRIAN, San Francisco, Cal.; said Molera assignor to said Cebrian. Filed Jan. 26, 1883. (No model.)



Claim.—1. A secondary-battery element consisting of a mixture of carbon and lead compressed or molded into any desired form, and having a layer of active material applied to its surface, substantially as set forth.

2. A box or receptacle for a secondary battery, made of wood or paper charred on the inside and boiled in paraffine, substantially as set forth.

291,527. ELASTIC FABRIC. GEORGE C. MOORE, East Hampton, Mass. Filed Feb. 10, 1883. (No model.)

Brief.—The fabric consists of face warps, back warps, and rubber warps, and face wefts, back wefts, and central wefts, arranged to form three plies. The outer plies are bound to the central ply, which contains the rubber warps, by face warps which extend between the back and central wefts, and by back warps which extend between the face and central wefts.



Claim.—1. The herein-described elastic fabric, consisting of face warps, back warps, and rubber warps, and face, back, and central wefts, all arranged to form three plies, the outer plies being bound to the central ply, which contains the rubber warps, by face warps extending between the back and central wefts, and back warps extending between the face and central wefts, substantially as described.

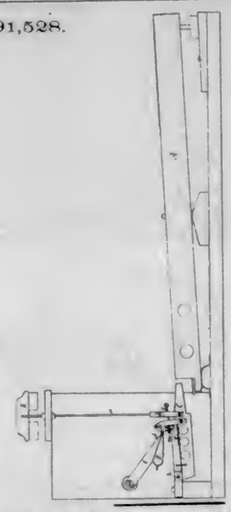
2. The herein-described elastic fabric, consisting of face and back warps of different colors, face and back wefts corresponding in color to the face and back warps, respectively, rubber warps, and a central weft, the latter being interwoven with said rubber warps and the face and back warps, substantially as described.

291,528. PIANO-PORTE DAMPER ACTION. GEORGE WASHINGTON NEILL, Boston, Mass. Filed June 5, 1883. (No model.)

Claim.—1. The combination, with the movable retainer to be elevated by a pedal, and with the damper and its operative lever, of the latch and its actuating-spring, and means for arresting the forward movement of the said latch, as explained.

2. The damper-lever provided with the abutment and the latch, its operative spring, and adjustable stop, in combination with the damper and also with the retainer to be moved by a pedal and to operate with the latch, substantially in manner and for the purpose as explained.

291,528.



291,529. PIANO-DAMPER ATTACHMENT. GEORGE WASHINGTON NEILL, Boston, Mass. Filed June 27, 1883. (No model.)



Claim.—The combination of one or more dampers, B, their levers C, rods *a*, and the projections E, placed on said rods *a*, with the transverse wedge-shaped bar or retainer D, and its supporting-arms *c* and stops *d* and *e*, as set forth.

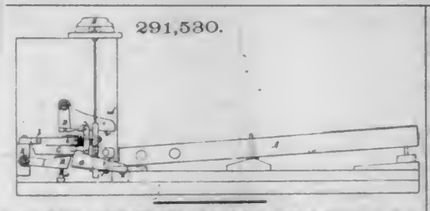
291,530. PIANO DAMPER ATTACHMENT. GEORGE WASHINGTON NEILL, Boston, Mass. Filed July 17, 1883. (No model.)

Claim.—1. The combination of the upper retainer and the damper-lever and its latch with the lower retainer and with the damper-rod joint-piece extended below the damper-lever, and provided with the pin to operate with the said lower retainer, all being substantially as set forth.

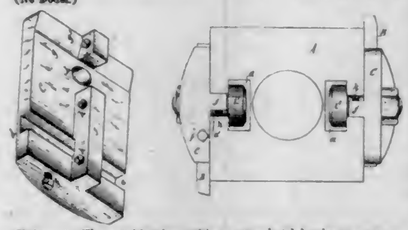
2. The damper-rod joint-piece extended below the damper-lever, and provided with the pin *s*, in combination with the retainer G, arranged below the said damper-lever and to operate with the said pin, substantially as represented.

3. The combination of the movable bar H, to be operated, essentially as described, by a pedal, with a damper-lever and joint-piece, their latch and pin, and with the upper and lower retainers arranged with the said damper-levers, and to operate with the latch and pin, substantially as set forth.

291,530.



291,531. TOOL-HOLDER. JOHN F. PARKER, North Tonawanda, N. Y., assignor of one-half to Caleb W. Watkins, same place. Filed Apr. 23, 1883. (No model.)



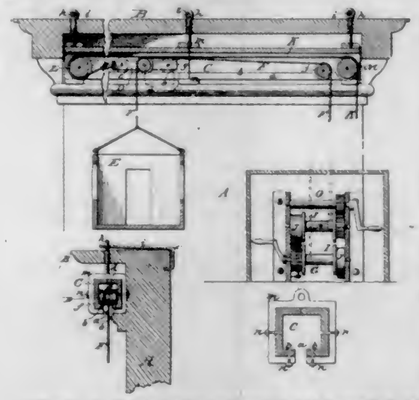
Claim.—1. The combination, with a cutter-head having a groove, *a'*, for securing a tool-holder thereto, of a tool-holder provided with a rib, *j*, projecting into said groove, and adjusting mechanism applied to the side of said rib, substantially as described, whereby the width of said rib can be adjusted to correspond with the width of said groove, substantially as set forth.

2. The combination, with a cutter-head having a groove, *a'*, for securing a tool-holder thereto, of a tool-holder provided with a rib, *j*, projecting into said groove, and adjusting-screws *k*, applied to the side of said rib in said groove, for adjusting the width of the rib to fit in the groove, substantially as set forth.

3. The combination, with a cutter-head provided with a longitudinal groove, of a tool-holder composed of a socket portion, *d*, having a groove, *e*, and an extension, *g*, having bolt-hole *h*, and a raised edge, *g'*, substantially as set forth.

291,532. FIRE-ESCAPE. DENISON C. PIERCE, Chicago, Ill. Filed Apr. 13, 1883. (No model.)

Brief.—The tube or way upon which the carriage runs is formed in sections united by an overlapping band, into which eyebolts are secured, which pass down through the top of the cornice to hold it thereto. The axles of the wheels of the carriage fit closely within the tube or way to prevent derailment. The hoisting and moving cables are wound on windlasses and are operated independently.



Claim.—1. In a fire-escape substantially such as described and shown, a shell or tube, C, formed in separate sections, the sections being united by an outside band overlapping the joint of the sections, substantially as and for the purpose set forth.

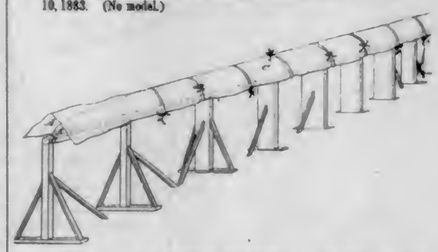
2. The herein-described fire-escape, consisting of tube or shell C, car D, provided with sheave *d*, pulleys L M, cable K, connected with car D, and passing around pulley L and over pulley M, cab E, pulley *j*, cable F, passing over pulley *j*, and sheave *d* and winding-drum G N, arranged to independently wind and hold said cables, substantially as set forth.

3. In combination with drum N, the brake-band J, normally pressed against pulley I, and the lever *l*, arranged, substantially as shown and described, to relieve the pulley from the pressure of said band.

4. In combination with cornice B, the tube or shell C, eyebolts *h*, and rods *i*, all arranged as shown.

5. The herein-described car for use in a fire-escape substantially such as shown and described, consisting of side bars, *c*, wheels *f*, and their axles *g*, sheave *d*, and axle *e*, said axles being made of a length slightly less than the interior width of the tube or sheath within which the car is to travel, substantially as and for the purpose set forth.

291,533. MANUFACTURE OF BOATS FROM CELLULOID, &c. CHARLES P. PITMAN, Freehold, and HAL ALLAIRE, Allaire, N. J. Filed Nov. 10, 1883. (No model.)



Claim.—1. As an article of manufacture, a boat made of sheet-celluloid formed into shape on a mold or model, A, by means of heated formers D D, substantially as shown and described.

2. The within-described process of forming the shell or hull of a boat out of a sheet of celluloid or similar substance by means of a mold, A, and heated formers D D, substantially as shown and described.

3. In the construction of boats from sheet-celluloid, the formers or jackets D D, in combination with a mold or model, A, upon which the sheet-celluloid is pressed into shape, substantially as shown and described.

4. In the construction of boats from sheet-celluloid, the combination of the concave mold D and mold A, having a loose gunwale, B, substantially as and for the purposes shown and described.

5. In the construction of boats from sheet-celluloid, the model A, made of metal, and false gunwale B, of wood, for the reception and retention of the sheet of celluloid when pressed into shape by formers D D, substantially as shown and described.

6. A boat or racing-shell with a hull composed of sheet-celluloid or similar substance, formed into shape over a paper or wooden boat already made, whereby the exact shape and proportions of such wooden or paper boat may be obtained in celluloid, substantially in the manner and by the means herein shown and described.

291,534. APPARATUS FOR SETTING BUTTONS. SAMUEL L. PRATT, Hingham, Mass. Filed June 11, 1883. (No model.)



Claim.—1. In a button-setting apparatus, spring-jaws to grasp the edges of the button-shank and hold the button, substantially as described.

2. In a button-setting apparatus, spring-jaws to grasp and hold the edges of the shank, and stop to arrest the end of the said button-shank, substantially as described.

3. The member *a*, combined with the spring-jaws to grasp the edges of the button-shank, and provided with lips to extend under the flat side of the said shank, substantially as described.

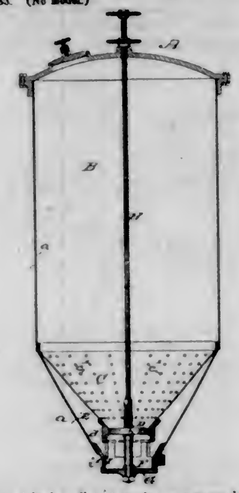
4. The member *a*, combined with the spring-jaws, and yielding connecting device, substantially as described, to permit the said jaws, with the button-shank between them, to move toward and from the said member, as set forth.

5. The member *a* and spring-jaws to grasp the edges of the button-shank, combined with the anvil, substantially as described.

6. The member *a* and anvil, combined with spring-jaws to grasp the edge of the button-shank, and provided with a stop for the end of the button-shank, substantially as described.

7. The member *a*, the spring *c*, and the anvil, in combination with the member *b*, provided with the spring-clasp *m*, substantially as described.

291,535. LARD AND OIL TANK. HENRY RALL, St. Louis, Mo. Filed Feb. 19, 1883. (No model.)



Claim.—1. A lard or oil tank having an inner and an outer bottom, each separate from the other, the inner bottom being perforated and the outer bottom being imperforated, and each bottom having for the discharge of the residue an opening in its lower end capable of being closed by a valve, and the valve in the outer bottom capable of being opened and closed independently of the valve in the inner bottom, for the purpose described.

2. A lard or oil tank having the perforated tapering bottom C, the valve D, the closed tapering bottom *a*, independent of the bottom C, and having the valve G and the rod H, substantially as described.

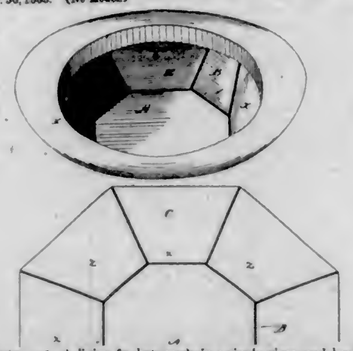
3. The combination of the bottom C, the valve D, having the lugs *d d*, the projections *i i*, the bottom *a*, the valve G, and the rod H, substantially as described.

4. The combination of the bottom C, the valve D, having the lugs *d d*, the part I, having the projections *i i*, and the seats *i' i'*, the valve G, and the rod H, substantially as described.

5. The combination of the bottom C, the valve D, the lugs *d d*, the projections *i i*, the valve G, and the rod H, said rod being squared to rotate said valve D, and having a shoulder, *h*, to lift said valve D, substantially as described.

6. A lard or oil tank having an inner perforated bottom above the outer bottom, said inner, as well as the outer, bottom also having an opening closed by a valve, for the discharge, when desired, of the residue downward from the tank.

291,536. HAT-LINING. CYRUS RAYMOND, 2d, Danbury, Conn. Filed Nov. 30, 1883. (No model.)

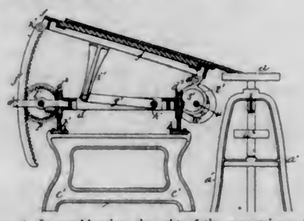


Claim.—1. A lining for hats made in a single piece, and having cuts running from the outer edge inward toward the crown portion, whereby the parts at the side may lap over each other and the lining is made adjustable to any sized hat.

2. A lining for hats made in a single piece, and having beads around the crown and from the crown to the outer edge, and cuts at one edge of the beads extending from the edge to the crown, as described, and for the purpose set forth.

3. The combination, with a hat, of a lining having beads around the crown and from the crown to the edge, and cuts from the outer edge inward, whereby the parts at the side are permitted to overlap, and the entire lining is made to consist of a series of planes.

291,537. GRINDING-MACHINE. JAMES H. REED, Brooklyn, N. Y. Filed May 10, 1883. (No model.)

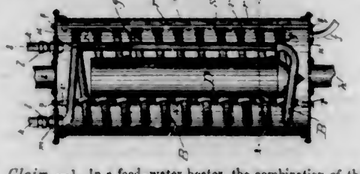


Claim.—1. In combination, the table *f*, the eccentrics *s s'*, straps *t t'*, hand-wheel *w* and clamp *y*, the racks *j j'*, pinions *l l'*, hand-wheel *p*, and clamp *q*, and levers *g g'*, and brackets *i i'*, substantially as and for the purpose set forth.

2. In combination, the table *f*, the eccentrics *s s'*, straps *t t'*, the racks *j j'*, and pinions *l l'*, and levers *g g'*, and brackets *i i'*, substantially as and for the purpose herein set forth.

3. In combination, table *f*, the eccentrics *s s'*, straps *t t'*, hand-wheel *w*, and clamp *y*, and racks *j j'*, with pinions *l l'*, hand-wheel *p*, and clamp *q*, substantially as and for the purpose set forth.

291,538. FEED-WATER HEATER. WILLIAM ROLLAR, Chicago, Ill.; Robert Tarrant Executor of said Rollar, deceased. Filed Nov. 24, 1882. (No model.)



Claim.—1. In a feed-water heater, the combination of the shell A, having an inlet and an outlet pipe for the passage of the exhaust-steam from the engine, worm B, supported within the shell, and provided with an inlet and an outlet through the shell for the passage of the water on its way to the boiler, and the cylinder D, suspended within the confines of the worm, and shorter than the interior of the shell A, substantially as described.

2. In a feed-water heater, the combination of the shell A, provided with an inlet and outlet for steam, worm B, inclosed within the shell, and provided with an inlet and outlet through the shell for water, bars *v*, extending longitudinally through the shell, and secured to the heads thereof, and the strips *s* and nut-bolts *r*, securing the worm to the bars *v*, substantially as described.

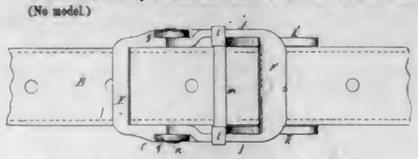
3. In a feed-water heater, the combination, with the shell A, having an inlet and an outlet pipe, worm B, provided with an inlet and an outlet through the shell, bars *v*, extending longitudinally through the shell, and secured to the heads thereof, and the metal strips *s* and nut-bolts *r*, securing the worm to the bars *v*, of the conical-ended cylinder D and braces *g*, substantially as described.

291,539. LATCH. WILLIAM SALLADE, Philadelphia, Pa. Filed Jan. 9, 1883. (No model.)



Claim.—In a door-latch, the combination of the latch D upon the inside of the door, provided with the spindle B, for connecting said latch with the hinged hasp A upon the outside of the door, and the staple E and suitable lock, F, substantially as and for the purpose set forth.

291,540. TRACE-BUCKLE. DANIEL SCHOENTHALER, AKRON, assignor of one-half to Harvey D. Blakeslee, Buffalo, N. Y. Filed May 18, 1883. (No model.)

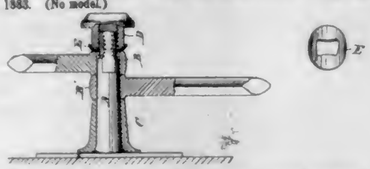


Claim.—1. The combination, in a buckle, of a buckle-frame having a front cross-bar D, and a rear cross-bar, E, a tongue-plate, F, arranged above the front cross-bar D, and having the rear ends of its side bars *f* pivoted to the buckle-frame, and a tug-bail having its side bars arranged between said bars of the tongue-frame, and provided with outwardly-projecting ears *l*, bearing upon the side bars of the tongue-frame, substantially as set forth.

2. The combination, in a buckle, of a buckle-frame having its front cross-bar provided with a recess or depression, a tongue-frame pivoted at its rear end to the buckle-frame, and a tongue secured to the tongue-frame and arranged to bear against the front cross-bar of the buckle-frame, in the recess thereof, substantially as set forth.

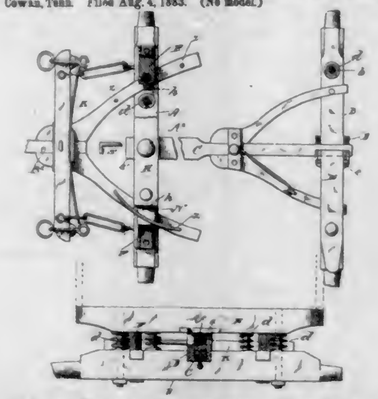
3. The combination, with a buckle-frame having a front cross-bar D, provided with a recess, *i*, of a tongue-frame pivoted at its rear end to the buckle-frame, and having its tongue A arranged to engage in the recess *i* of the buckle-frame, and a tug-bail having ears *l*, which bear upon the side bars of the tongue-frame, substantially as set forth.

291,541. NUT-LOCK. ANSON SEARLS, Newark, N. J. Filed Mar. 15, 1883. (No model.)



Claim.—The combination, with the screw-threaded standard A, or its equivalent, provided with a flattened surface at its screw end, and the nut D, of the spring-washer E, the central opening of which is of oblong form or its equivalent, as and for the purpose described.

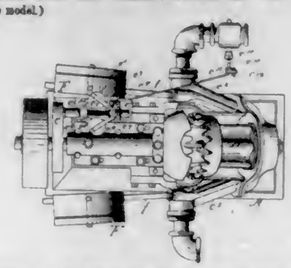
291,542. VEHICLE RUNNING-GEAR. BENJAMIN COPLIN SEATON, Cowan, Tenn. Filed Aug. 4, 1883. (No model.)



Claim.—1. The combination of the front axle having the castings secured on top at its ends and provided on their inner faces with a vertical tongue, the front bolster having the end plates provided with vertical grooves receiving said tongues, springs or cushions interposed between the axle and bolster, and the bounds passing under the castings on the axle and provided with the braces passing over said castings, substantially as and for the purpose set forth.

2. In running-gear, the combination, with the rear axle provided with a centrally-arranged casting formed with a longitudinal opening for the passage and reception of one end of a reach, and provided with a space and an elastic cushion for the reception of the bolster, substantially as and for the purpose set forth.

291,543. ENGINE. SAMUEL NORMAN SILVER, Auburn, assignor to the Chandler Water Motor Company, Lewiston, Me. Filed Mar. 12, 1883. (No model.)



Claim.—1. The combination of the compound cylinder B, pivoted to swing or move, as described, and having one or more counterbalancing-weights, its pistons b^2, the main shaft b^4, and devices connecting the pistons and cylinder with the main shaft, all substantially as described, and for the purposes set forth.

2. In combination with the revolving compound cylinder B, pivoted to swing as described, its pistons b^2, the weight or weights F, and means for adjusting their position in relation to the cylinder, the main shaft b^4, and devices, substantially as specified, for connecting the cylinder and pistons with the main shaft, all substantially as and for the purposes set forth.

3. The combination of the revolving compound counterbalanced pivoted cylinder B, its pistons b^2, the shaft b^4, and devices, substantially as specified, for connecting the cylinder and pistons with the shaft, with the governor c^3, and the supply-valve c^{10}, all substantially as and for the purposes described.

4. The combination of the revolving pivoted compound cylinder B, the supply and exhaust chambers c c', the tubular arms c^2 c^2, which provide supply and exhaust passages, and the couplings c^4 c^4, all substantially as and for the purposes described.

5. The combination of the revolving pivoted compound cylinder B, the supply and exhaust chambers c c', the tubular arms c^2 c^2, which provide supply and exhaust passages, the couplings c^4 c^4, and arms c^3, having pivots c^{10}, which enter the arms c^2 c^2, all substantially as and for the purposes described.

6. The combination of the revolving, swinging, or pivoted compound cylinder B and the frame or support C, containing the supply and exhaust passages, and having arms c^2 c^2, by which it is pivoted or swung, all substantially as and for the purposes described.

291,544. PROCESS OF COLORING PHOTOGRAPHS. IRVING B. SNELL, Philadelphia, Pa. Filed July 12, 1883. (Specimens.)

Claim.—1. The process of coloring photographs and other pictures upon paper, which consists of the following steps: first, coating the picture with a wash composed of gum-arabic, sugar, and water; second, applying colors composed of Diamond Package dyes dissolved in cold and hot water; and, third, coating the picture with a wash composed of gum-arabic, sugar, and water, substantially as set forth.

2. The process of coloring photographs and other pictures upon paper, which consists of the following steps: first, coating the picture with a wash composed of gum-arabic, sugar, and water; second, applying colors composed of Diamond Package dyes dissolved in cold water, to which is added a solution of gum-arabic and sugar in a mixture of hot water and alcohol, or its equivalent; and, third, coating the picture with a wash composed of gum-arabic, sugar, and water, substantially as set forth.

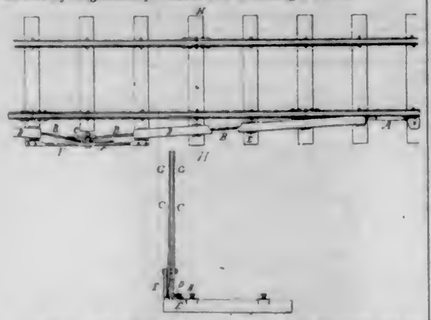
3. The process of coloring photographs and other pictures upon paper and pasting the same upon glass, which consists of the following steps: first, coating the picture with a wash composed of gum-arabic, sugar, and water; second, applying colors composed of Diamond Package dyes dissolved in cold and hot water; and, third, pasting the picture upon glass with a paste composed of corn-starch, transparent gelatine, and water, substantially as set forth.

4. The process of coloring photographs and other pictures upon paper and pasting the same upon glass, which consists of the following steps: first, coating the picture with a wash composed of gum-arabic, sugar, and water; second, applying colors composed of Diamond Package dyes dissolved in cold water, to which is added a solution of gum-arabic and sugar in a mixture of hot water and alcohol, or its equivalent; and, third, pasting the picture upon glass with a paste composed of corn-starch, transparent gelatine, and water, substantially as set forth.

5. The process of preparing colors to be used in coloring photographs and the like, which consists in first dissolving Diamond Package dyes in cold water, and then adding a solution of gum-arabic and sugar in a mixture of hot water and alcohol, or its equivalent, substantially as set forth.

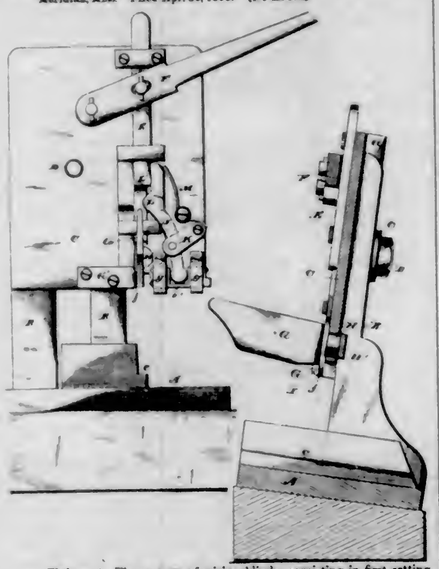
291,545. RAILWAY-SIGNAL. ABRAHAM B. SNYDER, Louisville, Ohio. Filed Aug. 27, 1883. (No model.)

Brief.—The rod connecting the signal with the spring is held in and covered by longitudinally-recessed boards forming a casing.



Claim.—The boards D, provided with longitudinal recess, and the blocks E, having recess, in combination with the rod B and spring A, substantially as and for the purpose specified.

291,546. DEVICE FOR WIRING BLIND-SLATS. GEO. W. SOULE, Meridian, Miss. Filed Apr. 26, 1883. (No model.)



Claim.—1. The process of wiring blinds, consisting in first setting the staple astride of the slat or rod, then simultaneously driving the staple downwardly, bending the ends or points of the staples inwardly, and forcing the said bent ends or points into the slat or rod

2. In a machine for wiring blinds, the combination, with a staple-driver, of devices for bending the points of the staples and forcing the bent ends into the blind slat or rod, substantially as set forth.

3. In a machine for wiring blinds, the combination, with a staple guide or feeder and a staple-driver, of a rigid jaw and movable jaw adapted to act in conjunction therewith for the purpose of bending the staples and forcing the points thereof transversely into the blind slat or rod, substantially as set forth.

4. In a machine for wiring blind-slats, the combination, with a staple guide or feeder, a staple-driver, and a yielding holder, of a rigid staple-bending jaw and an adjustable movable bending-jaw, substantially as set forth.

5. The combination, with the grooved bed-plate, standards, and adjustable face-plate provided with an open slot, of a staple-driver and devices for bending the ends of the staple and forcing the said bent ends into the opposite faces of the slat or rod, substantially as set forth.

6. The combination, with the grooved bed-plate, standards, and adjustable face-plate provided with an open slot, of a staple-driver, a rigid bending-jaw, and a movable bending-jaw, all of the above parts combined and adapted to operate as described.

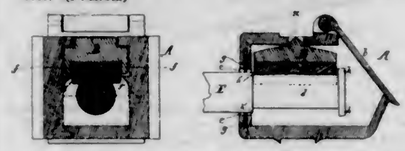
7. The combination, with the driver, a rigid bending-jaw, and a movable bending-jaw, of interposed mechanism for simultaneously moving the staple-driver and movable bending-jaw.

8. The combination, with the driver, a rigid bending-jaw, a yielding staple-holder, and a movable bending-jaw, of interposed mechanism for simultaneously moving the driver and movable jaw.

9. The combination, with the staple guide or feeder, the staple-driver, yielding holder, rigid bending-jaw, and movable bending-jaw, of interposed mechanism for moving the movable jaw simultaneously with the driver, substantially as set forth.

10. The combination, with the adjustable face-plate, staple-driver, yielding holder, rigid jaw, movable jaw, and staple guide or feeder, of the lever interposed between the staple-driver and movable jaw, and a fulcrum-pin adjustably secured to the face-plate, all of the above parts combined and adapted to operate as described.

291,547. BEARING FOR CAR-AXLE JOURNALS. GEO. W. STEWART, Atlanta, Ga., assignor, by direct and mesne assignments, to Edmund Holland, same place, Gustavus G. Lansing, New York, N. Y., Theophilus P. Brown, Toledo, Ohio, and Geo. W. Smith, Lafayette, Ind. Filed May 29, 1883. (No model.)



Claim.—1. The non-conducting condensed wood bearing for axle-journals, in combination with a metal journal bearing and sustaining box, substantially as and for the purpose described.

2. The combination of the wood bearing C with a metal bearing-box, B, provided with projections *f f*, substantially as and for the purpose described.

291,548. TOY WHISTLE. HENRY C. SWAN, Swanville, Pa. Filed June 4, 1883. (No model.)



Claim.—1. A whistle, or device to aid in whistling, provided with an aperture or apertures, such as described, and adapted to be held by or within the lips of the operator, the tones or musical sounds of varying pitch being produced as in the ordinary manner of whistling.

2. A whistle composed of a block, disk, plate, or other suitably-shaped piece of metal, glass, or other material having a hole through it, formed as described, so as to produce the proper vibrations in the air blown through it to make a whistling sound, which can be varied by the muscular action of the mouth, tongue, and throat, and by the breath, as in the ordinary manner of whistling, so as to produce all the notes of the musical scale, as set forth.

3. A block, disk, plate, or any suitably-shaped piece of metal or other material, having therein or therethrough one or more holes so formed that when the air or the breath is forced through it the proper vibrations of the air will be made to produce a whistling sound, which can be perfectly controlled by the muscles of the mouth, tongue, throat, and volume of air exhaled from the lungs to produce the notes of a musical scale, as set forth.

4. A whistle composed of a block, disk, plate, or any suitably-shaped piece of metal, glass, or other material having two or more holes in or through it of such shape as when adjusted to the mouth or lips and air being blown therethrough will produce two or more distinct or independent tones, each hole producing a tone differing in pitch from any one of the other holes, which can be varied by the muscular action of the mouth, tongue, and throat, and breath, and made to produce the notes of the musical scale, as set forth.

5. A whistle composed of a block, disk, plate, or any suitably-shaped piece of metal, glass, or other material, having a hole through it, one end of which is smaller than the other, with a smooth sharply-finished edge, through which the air or the breath being forced a whistling sound will be produced, which can be controlled by the mouth, tongue, throat, and breath, so as to produce the notes of the musical scale, as set forth.

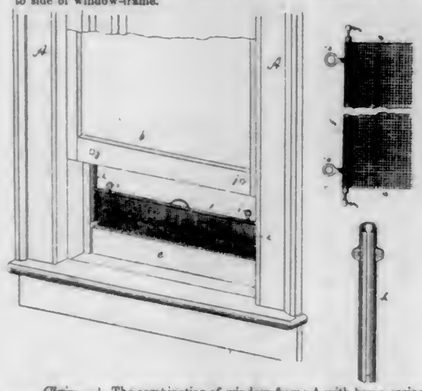
6. In a whistle composed of any suitably-shaped piece of metal, glass, or other material, the combination of the chambers *h* and *g* with the hole *c*, having at one end the flaring edge *d*, and the other end, *o*,

finished with a smooth square shoulder or edge, as and for the purpose set forth.

7. A whistle composed of a block or cylinder of metal or glass, having a diaphragm or partition, *a*, therein, said diaphragm being provided with a central perforation, *c*, which terminates in the cavities or chambers *g* and *h*, as and for the purpose set forth.

291,549. WINDOW-SCREEN. GEORGE A. THOMPSON, Brooklyn, N. Y. Filed June 23, 1883. (No model.)

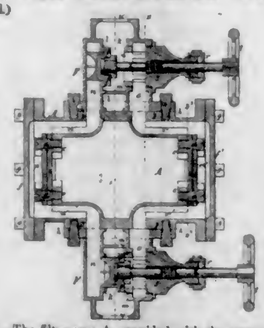
Brief.—A spring-roller screen attached to window-sash, and having a guide-rod with knobs on the ends, which run in split tubes fastened to side of window-frame.



Claim.—1. The combination of window-frame A with box *c*, spring-roller *d*, screen *e*, and rod *f*, having knobs *g*, and with the split guide-tubes *h*, which receive said knobs, substantially as herein shown and described.

2. The combination of window-frame A with box *c*, spring-roller *d*, screen *e*, rod *f*, having knobs *g* and eyes *i*, and with the guide-tubes *h*, and buttons *j* on the lower sash, substantially as specified.

291,550. FILTER. JOHN TOLAND, Boston, Mass. Filed Aug. 1, 1883. (No model.)



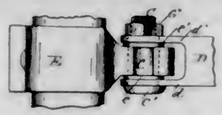
Claim.—The filter-case A, provided with the passages *u v u' v'*, the woven-wire partitions *a a'*, and the heads *f f'*, arranged as set forth, and the valve-chests F F, secured to the case A at opposite ends, and each having the two opposite seats *l m* at opposite sides of the chamber *k*, in combination with the solid reciprocating valves *p p* and their operating-stems *q q*, each valve *p* being arranged across the chamber *k* and adapted to alternately uncover or close one of the seats by being moved transversely across the chamber, as set forth.

291,551. ABDOMINAL SUPPORTER. HARRIET A. TRAVER, Toledo, Ohio. Filed Nov. 5, 1883. (No model.)



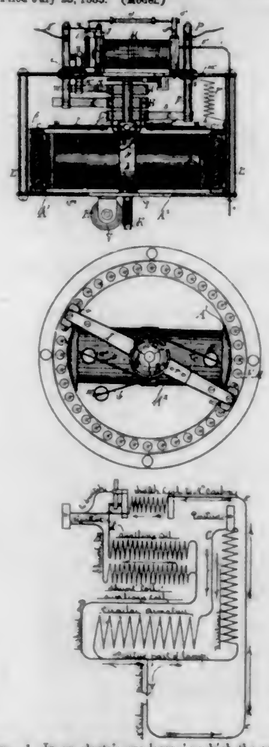
Claim.—In an abdominal supporter, the lever-springs provided with oval-shaped convexed padded plates, and affixed to suitable bearing-plates secured to the girdle-front, in combination with the girdle and straps for adjusting the same to the body, all constructed and arranged substantially as specified.

291,552. THILL-COUPLING. SAMUEL B. ULM, Ashville, Ohio, assignor of one-half to Charles Steward, same place. Filed June 28, 1883. (No model.)



Claim.—The combination of the clip-extension A, provided with a socket, *a*, and a thill-iron having parallel arms *d d'*, with a bolt having an elliptical body, and washers upon said bolt between the clip-extension and the arms of the thill-iron, substantially as and for the purposes described.

291,553. ELECTRIC-ARC LAMP. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed July 23, 1883. (Model.)



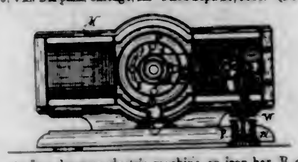
Claim.—1. In an electric-arc lamp in which the carbons are made to approach and recede from each other by the action of an electric motor, an auxiliary coil of comparatively low resistance placed on the revolving armature thereof, and so wound and connected that on starting the light it will receive a portion of the main circuit, and cause said armature to rotate until the carbons have met, and means for then automatically cutting said auxiliary coil or coils out of circuit, when the lamp will begin to work normally, substantially as described.

2. An electric lamp in which the carbons are made to approach and recede by the action of an electric motor provided with coils for magnetizing the rotating armature thereof, which are included in a shunt around the arc, in combination with the ordinary mechanism and circuits thereof, as described, and an auxiliary coil around the revolving armature in addition to the shunt-coil already wound thereon, connections whereby the auxiliary coil is placed in the main circuit whenever the carbons in said lamp do not meet at the starting of the light, which will cause said revolving armature to rotate in such direction as to make the carbons come together, and means for cutting the auxiliary coil out of circuit as soon as this has been effected, when the current will pass through and between the carbons, substantially as described.

3. In an electric-arc lamp, the combination, with the feed mechanism thereof and a rotating armature wound with a shunt-circuit of high resistance, of an auxiliary circuit of comparatively low resistance also wound upon said armature, and so connected as to give passage to the main current when the same cannot pass through the carbons, thereby operating the feed mechanism and bringing them together, and also, by reason of its greater conductivity, preventing injury to the shunt-circuit, substantially as set forth.

4. In an electric-arc lamp having positive or mechanically-operated carbon-feeding mechanism, and in which the carbons do not meet when the light is not in operation, an auxiliary magnetizing-helix placed upon or around such parts of the feed mechanism in said lamp as will, when the same are magnetized thereby, cause the carbons first to meet on establishing the current through the lamp or a series thereof, in combination with means, substantially as described, for cutting out the auxiliary circuit and allowing the lamp to work normally, as set forth.

291,554. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Sept. 10, 1883. (No model.)



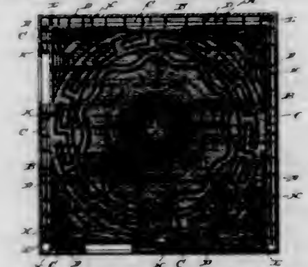
Claim.—1. In a dynamo-electric machine, an iron bar, B, centrally pivoted and adapted to oscillate parallel with one of the cores of and placed under the influence of the field-magnets of such machine, in combination with a brush-holding device, both mechanically connected to one another, so that one may follow the motion of the other, and suitable means for regulating and controlling the movements of the bar B, substantially as described.

2. In a dynamo-electric machine, the combination, with a magnetic bar pivoted in proximity to one of the field-magnet coils, of a commutator-brush-holding device mechanically connected thereto, and an adjustable weight for controlling the movements of the pivoted bar and commutator-brushes, as set forth.

3. In a dynamo-electric machine, the combination, with a magnetic bar pivoted in proximity to one of the field-magnet coils, of a movable commutator-brush holder mechanically connected thereto, and a dash-pot having its piston also connected to said pivoted bar, substantially as described.

4. In a dynamo-electric machine, the combination, with pivoted bar B, toothed sector C, rod R, provided with a rack meshing with the sector C, and also with the adjustable weights W, and piston *p'*, of the dash-pot P, movable brush-holder A, and connections between said pivoted bar and brush-holder, whereby the position of the brushes shall at all times be made to correspond to that of the pivoted bar, as set forth.

291,555. CARPET-STRETCHER. NELS AUGUST VELINE, Villisca, Iowa. Filed Nov. 13, 1883. (No model.)



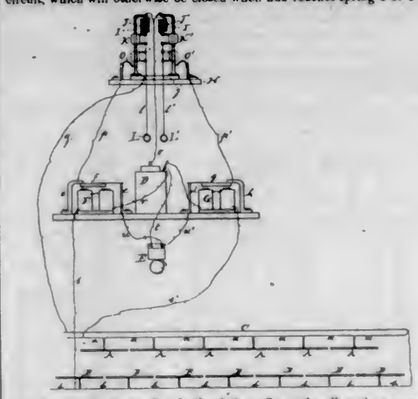
Claim.—1. The rollers C, provided with hooks D and ratchet-wheel L, and suitably journaled in bearings H, substantially as shown, and for the purpose described.

2. The combination of the rollers C, provided with ratchet-wheel L, the hooks D, and bearings H, substantially as shown, and for the purpose specified.

3. The combination of the rollers C, provided with the ratchet-wheel L, the hooks D, bearings H, and lever M, substantially as shown, and for the purpose mentioned.

291,556. ELECTRIC RAILWAY-SIGNAL. WILLIAM VOGEL, Chicago, Ill., assignor of one-half to William T. Underwood and Bernhard Schram, same place. Filed May 15, 1883. (No model.)

Brief.—Two track-testing circuits, one for each line of rails. Station-master draws down hub K or K', establishing a circuit through the uninsulated portion of the standard, wire *q*, one of the lines of rails, and magnet F or G, withdrawing the armature thereof and breaking the alarm-circuit, which will otherwise be closed when hub reaches spring O or O'.



Claim.—1. In an electric circuit for railway signaling, the connections from middle to middle of adjoining rails by sectional wires, substantially as and for the purpose set forth.

2. In an electric signaling system for railways, the combination of the two independent circuits for the two lines of rails, the electro-magnets F and G, one included in each of said circuits, and a secondary or local circuit in which is located an alarm, and of the armatures *f* and *g*, operated to form parts of the independent circuits, respectively, when the track-circuits are complete, or parts of the local circuit when the track-circuits, respectively, are interrupted, as set forth.

3. In an electric circuit for railway signaling, substantially as described, the metallic standards I, coated on their upper portion with insulating material, and each forming the guide for a metallic hub, K, suspended on a spring, J, to be pulled by a cord, *l*, and forming the electric switch for the track-rail circuit, and in combination with spring O for the bell-circuit, all substantially as set forth, to operate as specified.

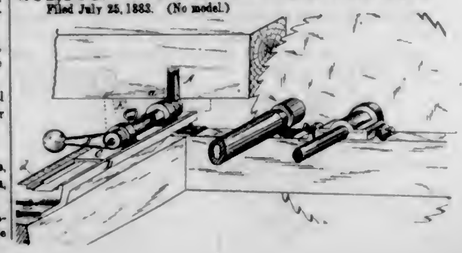
291,557. PACKING-CAN. JAMES T. WALKER, Baltimore, Md. Filed Mar. 14, 1883. (Model.)



Claim.—1. In the art of hermetically packing edibles or perishable substances in metallic vessels, the following method: consisting in, first, filling the vessel, then applying to same an imperforate flanged head, then interlocking the chines of the body and the flanges of the head, then inverting the vessel, and while inverted soldering the interlocked parts, substantially as and for the purpose set forth.

2. The within-described method of hermetically packing substances in metallic cans or vessels, namely: first filling the vessel, then applying an imperforate flanged head to same, then interlocking the chine and the flange of the head by bending one over the other, leaving the overlap apart from the plane of the head, and then dipping the interlocked portion of chine and flange in solder, substantially as and for the purpose set forth.

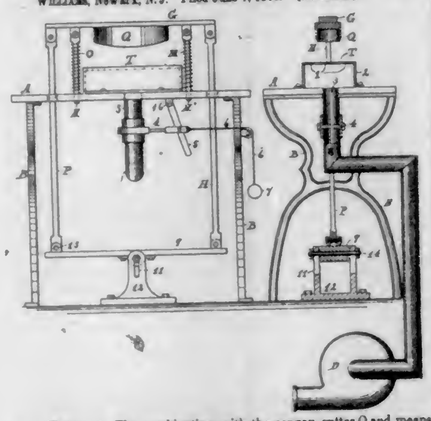
291,558. GAGE FOR SAW-MILLS. JESSE WALRATH, Racine, Wis. Filed July 25, 1883. (No model.)



Claim.—1. The combination, substantially as before set forth, of a saw-mill gage mounted on a journaled shaft at right angles to its face, and a weighted arm on the shaft, whereby the gage is held normally erect, but allowed to yield in the direction of the feed.

2. The combination, substantially as before set forth, of the gage, the journaled shaft on one end of which it is mounted, the combined stop and index-finger connected with the gage, the fixed scale, and the weighted arm on the shaft.

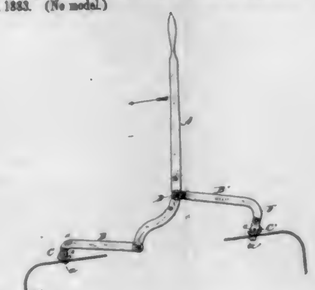
291,559. MACHINE FOR CUTTING CIGAR-WRAPPERS. JOHN R. WILLIAMS, Newark, N. J. Filed June 7, 1883. (No model.)



Claim.—1. The combination, with the convex cutter Q and means for operating it, substantially as set forth, of the perforated bed-plate T, mounted upon the chamber 2, the bed-plate being provided with an unperforated surface corresponding to the outline of the cutter, the chamber 2, and means for exhausting air therefrom, substantially as herein set forth.

2. The combination, with the convex cutter Q and means for operating it, substantially as set forth, of the bed-plate T, perforated as described, the chamber 2, air-outlet 3, and valve 4, arranged and operated substantially as and for the purpose set forth.

291,560. BALE-BAND TIGHTENER. ROBERT L. WILLIS, Sherman, Tex., assignor of one-half to James A. Trumbull, same place. Filed Sept. 17, 1883. (No model.)



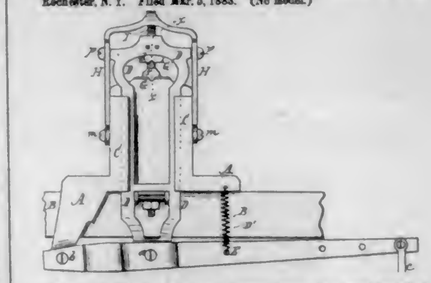
Claim.—The lever A, having the arms B B' pivoted thereto, the outer ends of said arms being provided, respectively, with lugs F *a* and pivoted cams C C', substantially as described, and for the purposes set forth.

291,561. TOBACCO-PIPE. ARTHUR J. WOLFF, Brooklyn, N. Y. Filed Apr. 30, 1883. (No model.)



Claim.—The combination, with the pipe bowl and stem, the latter being provided at its lower end with the combined metallic ferrule and lining and at its upper end with the metallic ferrule, of the removable plug and removable mouth-piece, all of the above parts being constructed, combined, and adapted to operate as described.

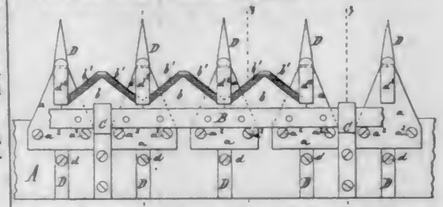
291,562. MEANS FOR ATTACHING BUTTONS. WILLIAM H. WOOD, Rochester, N. Y. Filed Mar. 5, 1883. (No model.)



Claim.—1. The combination, substantially as shown and described, of the jaws G G', movable with relation one to another, and provided with the thin edges *d d*, notched at *f f*, to properly clamp the button-fastening, and also provided with the cavities *l l*, adjacent to said edges, and at the front of said jaws to receive the button, as set forth.

2. In an apparatus for attaching buttons, the combination, with jaws which close together to compress the sides of the fastening, of a presser or gage, substantially as described, and mechanism to move the same automatically forward to press against the base of the fastening while the jaws are closing, as herein shown and set forth.

291,563. CUTTING APPARATUS FOR REAPERS AND MOWERS. JACOB WOODLEY, Hampton, Iowa, assignor of one-half to Thos. H. Cobie, same place. Filed Sept. 27, 1883. (No model.)

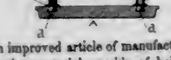


Claim.—1. The combination of the finger-bar A, provided with fingers D, and stationary removable cutters *a*, secured to it by screws *a'*, with projecting guide-heads a^2, and the bar B, having the upper cutters, *b*, fastened to it, substantially as and for the purpose described.

2. The combination of the finger-bar A, provided with fingers D and cutters *a*, secured by screws *a'*, having guide-heads a^2, the upper cutter-bar, B, having cutters *b*, and the clasps C, bearing on the back, top, and front of the cutter-bar B, substantially as and for the purpose described.

3. The combination of the finger-bar A, having guard-fingers D, with inclined open caps d^2 and beveled cutters *a*, secured by screws *a'*, having guiding-heads a^2, and the upper reciprocating cutter-bar, B, having beveled cutters *b*, with serrated cutting-edges, substantially as and for the purpose described.

291,564. BREASTPIN. DEWEY F. ADAMS, Providence, R. I. Filed Oct. 13, 1883. (No model.)



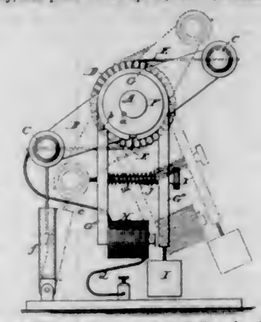
Claim.—As an improved article of manufacture, a breastpin having a front of glass or other material capable of being molded, and a back provided with one or more fastening plugs or dowels, *d*, shaped substantially as described, the said fastening-dowels being embedded in and incased by the material composing the front, and thereby holding the back in place, substantially as set forth.

291,565. PROCESS OF MAKING SIRUP AND SUGAR FROM SORGHUM-CANE. ANDREW J. ADAMSON, Sabetha, Kans. Filed Jan. 2, 1883. (No specimens.)

Claim.—1. The process of manufacturing sirup and sugar from sorghum-cane, which consists in first roasting the cane, and then expressing the juice and filtering and boiling the same, substantially as herein specified.

2. The process of separating native impurities from sorghum-juice, which consists in first roasting the cane and then expressing the juice, substantially as herein specified.

291,566. REGULATOR FOR DYNAMO OR MAGNETO ELECTRIC MACHINES. FORDE BAIN, Chicago, Ill., assignor to the Bain Electric Company, same place. Filed Sept. 21, 1883. (No model.)



Claim.—1. The combination, substantially as herein set forth, with the shaft of a revolving armature, of a brush operating and adjusting device mounted thereon and operated thereby, and means for controlling said operation depending upon the strength of the current generated.

2. The combination, substantially as herein set forth, with the shaft of a revolving armature, of a friction device mounted thereon and connected to the brush-holders, and means connected with the circuit of the machine for controlling the amount of friction in accordance with variations in the strength of the current generated.

3. The combination, substantially as herein set forth, with the shaft of a revolving armature, of a friction device mounted thereon and connected to the brush-holder, and a magnet-coil in the external circuit of the machine adapted to control the friction device in accordance with the strength of the current in said circuit.

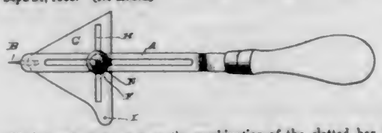
4. The combination, with an armature-shaft of an electric generator, having a friction-disk connected thereto, of a yoke embracing said disk and connected to the brush-holder, and a magnet-coil in the external circuit of the machine controlling the pressure of said yoke on the friction-disk.

5. The combination, substantially as herein set forth, with the shaft of a revolving armature, of a friction-disk mounted thereon, a yoke surrounding the disk, means for adjusting the initial pressure of the yoke upon the disk, and a magnet in the main circuit for varying the friction in accordance with the varying strength of the current in said circuit.

6. The combination, substantially as herein set forth, of an armature having a shaft, friction-disk secured thereto, a yoke embracing said disk and having prongs or extensions, and a magnet upon one of said prongs included in the circuit of the generator, the other prong serving as an armature to said magnet.

7. The combination, substantially as herein set forth, with the shaft of an armature, of a brush-holder upon the shaft, a disk secured to said shaft, a yoke embracing said disk and having prongs, or extensions, a magnet upon one of the prongs, the coil of which is included in the circuit of the generator, a screw for adjusting the initial pressure of the yoke upon the disk, and retarding devices, as set forth.

291,567. CAN-OPENER. HARRY BENTHAM, San Francisco, Cal. Filed Sept. 21, 1883. (No model.)



Claim.—In a can-opener, the combination of the slotted bar A, having a handle at one end, and provided at its opposite end with a prod or point, B, the adjustable knife C, and the triangular plate G, having an opening, G', slots H H', and point I, substantially as shown and described.

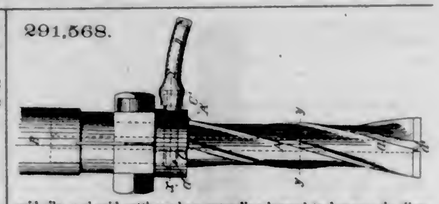
291,568. ROCK-DRILL. HUGO BORCHARDT, New York, N. Y., assignor to the Parsons Hand Rock Drill Company, same place. Filed June 20, 1881. Renewed July 20, 1883. (No model.)

Brief.—The drill-rod has a peculiar construction, and the water-feeding apparatus is adapted to such construction.

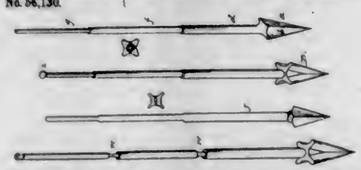
Claim.—1. A drilling-tool having spiral external ribs and a longitudinal central channel, the said channel terminating at the junction of cutting-edges formed on the face of said drill upon the continuation of said ribs, and said cutting-edges extending inward to decrease the diameter of the channel and outward to the extremities of said ribs to increase the seting parts of the tool, substantially as specified.

2. A drilling-tool having a central longitudinal channel, *a*, connecting with a transverse water-way, *a'*, and having external flanges or ribs extending lengthwise of the drill, forming bearing-shoulders, combined with a collar, C, resting on said ribs, having annular water-chamber c and pipe-connections thereto, as set forth.

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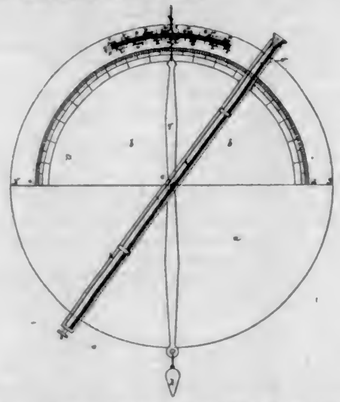


291,569. VINE AND FLOWER STAKE. FRANZ BÖRNER, Cologne, Germany. Filed Aug. 24, 1882. (No model.) Patented in France Oct. 20, 1879, No. 133,251; in Italy Apr. 30, 1880, No. 11,823; in Spain Apr. 30, 1880, No. 814; in Austria-Hungary, July 23, 1880, No. 13,859 and No. 2,031; in Germany Oct. 27, 1880, No. 14,206, and in Belgium Nov. 4, 1881, No. 56,130.



Claim.—As an article of manufacture, a gardener's stake consisting of an upwardly-diminishing series of sections, the lower section being provided with a spear-head point and the upper end of each section, except the top one, forming a shoulder for the attachment of vines and other plants, substantially as set forth.

291,570. LATITUDE-INDICATOR. PATRICK BOTHAN, New York, N. Y. Filed July 19, 1883. (No model.)



Claim.—A latitude-indicator consisting of a disk, *a*, on which is inscribed a semicircle divided into ninety degrees on each side of an equatorial line, also above said semicircle divisions extending twenty-three degrees twenty-eight minutes on each side of said equatorial line, said divisions representing the place of the sun during the days of the year, bars *k* and *t*, with clamp-screw *l*, pointer *g*, plumb *h*, tube *i*, cross-plate *s*, said bars, pointer, and tube being suitably pivoted to said disk *a*, as shown and described.

291,571. DENTAL-ENGINE HAND-PIECE. ARTHUR W. BROWNE, Pleasant Plains, N. Y., assignor to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Oct. 31, 1883. (No model.)

Claim.—1. In combination with the casing of a dental-engine hand-piece, a spindle fitted to rotate in said casing having a journal tapered at different angles, substantially as described.

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3. The combination of a spindle fitted to rotate in a hand-piece casing, a tool-locking device carried by said spindle, and connections between said tool-locking device and telescoping sections of said casing, substantially as described.

3. The combination of a spindle fitted to rotate in bearings, an endwise-movable tool-locking clamp carried by said spindle, and a rocking lever to operate said tool-locking clamp, substantially as described.

4. The combination of a spindle fitted to rotate in bearings in a casing, an endwise-movable tool-locking clamp carried by said spindle, a rocking lever to operate said tool-locking clamp, and movable sections of said casing to operate said lever, substantially as described.

5. The combination of a spindle fitted to rotate in bearings, a tool-locking device carried by said spindle, a rocking lever to operate said tool-locking device, and a wedge or incline to operate said lever, substantially as described.

6. The combination of the tool-lock-operating lever with the wedge or incline to operate said lever, having a notched or serrated surface, substantially as described.

7. The sectional split clamp tool-locking device, consisting of a front section having an externally-tapered or coned front end, and an internally-tapered mouth or socket at the opposite end, with a rear section having its front end coned or tapered to fit the coned mouth or socket of said front section, substantially as described.

8. In combination, with an endwise-movable clamp-locking device, a headed pin, fitted by its shank in said device and adapted to receive the pressure which closes the jaws of the clamp-lock, substantially as described.

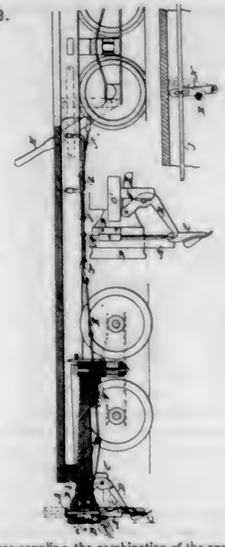
9. The combination of a spindle fitted to rotate in bearings in a casing, but locked from independent endwise movement therein, a tool-locking device carried by said spindle, a driving-shaft also fitted to rotate in said casing and locked from independent endwise movement therein, a telescoping connection between the respective sections of said casing in which the spindle and shaft are mounted, and a connection between said shaft and said tool-locking device, whereby the reciprocation or telescoping of the casing-sections operate said tool-lock, substantially as described.

10. The casing of a dental-engine hand-piece having telescoping sections, one provided with a spline or feather, and the other with a groove to receive said spline or feather, substantially as described, whereby the casing-sections may be telescoped in a right line, but cannot turn relatively to each other.

291,572. CAR-COUPLING. JOHN C. BRYAN, Holly Springs, Ark. Filed May 4, 1883. (No model.)

Claim.—1. In a car-coupling, the combination of the U-shaped frame carrying the coupling-pin, the trip-plate *i*, and spring *k* for acting thereon, the apron-guide, and levers for raising said pin, frame, and guide, substantially as specified.

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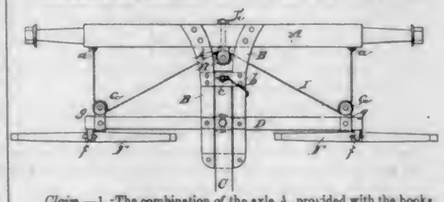


2. In a car-coupling, the combination of the apron C, having spring *c*, and the oscillating elbow-levers D, whereby the frame A and apron C may be raised by means of a system of levers, all as shown and described.

3. In a car-coupling, the combination, with the frame A and oscillating levers D, of the bifurcated spring-retained lever E and the rod J, adapted to hold said lever against the action of its spring, substantially as set forth.

4. The combination, with a draw-head, of a sliding frame carrying the coupling-pin, a link-guiding apron attached to the lower part of said frame, and a suitable device for lifting said frame to withdraw the pin and guide the link into the draw-head, substantially as shown and described.

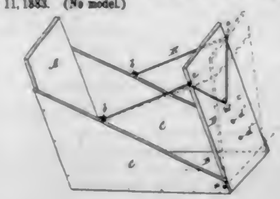
291,573. DRAFT ATTACHMENT FOR WAGONS. JOBST H. BUENING and HERMAN KLOE, Milwaukee, Wis. Filed Mar. 22, 1883. (No model.)



Claim.—1. The combination of the axle A, provided with the hooks or staples *a a*, and central sheave, H, with the evener D, having the sheaves G G—one near each end—and the chain I, the ends of which are secured at *a a* to the ends of the axle, the said chain passing around the sheaves G H G, free from attachment thereto, or to any part of the evener, substantially as set forth.

2. The combination of the axle A with bounds B B, supporting the tongue C between them, and the evener D, suspended from the bounds by slotted plate E *s* and bolt *d*, independent of the tongue, sheaves G G and H, and chain I, all substantially as set forth.

291,574. FILE-BOX. EDWARD W. BYRN, Washington, D.C. Filed June 11, 1883. (No model.)



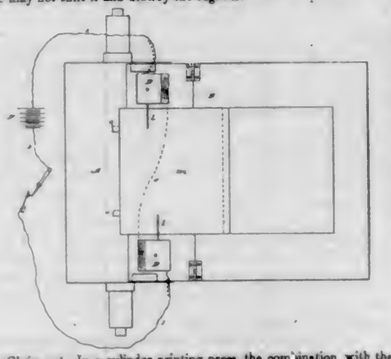
Claim.—1. The combination, with a file-box, of an end piece pivoted or hinged at its bottom, a cord-holding device fixed to one end of the box, and an adjusting-cord or its described equivalent passing through eyes in the side edges of the hinged end piece, and extending therefrom parallel with the sides of the box and connected with the box, as shown, the said cord being of such length as to adapt it to be deflected down to and around the holding device on the end of the box to close the latter, or be thrown up to allow the hinged end piece to fall back, as described.

2. The combination, with a file-box, of an end piece pivoted or hinged at the bottom to swing on either side of the vertical line, and a flexible adjusting-cord connecting the edges of the end piece to the box proper, the said end piece having a range or movement upon either side of the vertical, substantially as and for the purpose described.

3. The combination, with a file-box having a pivoted end piece, of a flexible cord or its equivalent, as described, connected at its ends to the sides of the box, and having its middle part looped around the end piece, and a fastening device for securing the cord when the end piece is drawn to a closed position, as set forth.

291,575. ELECTRICALLY-ACTUATED SHEET-STOP FOR PRINTING-PRESSES. ANDREW CAMPBELL, Brooklyn, assignor to John McLoughlin and Edmund McLoughlin, New York, N. Y. Filed June 13, 1883. (No model.)

Brief.—Provides an electrically-actuated means for holding down the sheet after it has been presented to the front guides and before it has been seized by the grippers, in order that the tremor or jar of the machine may not shift it and destroy the register.



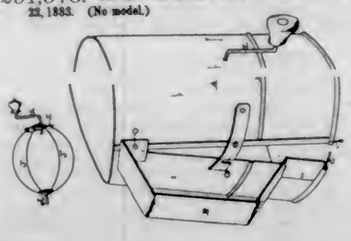
Claim.—1. In a cylinder printing-press, the combination, with the feed-board and front guides, of a sheet-holding finger or fingers, *l*, and electro-magnetic means, substantially as described, for operating said finger or fingers, whereby they are caused to press upon the sheet after it is placed against the front guides and to hold it in place until it is seized by the grippers, substantially as set forth.

2. The combination, with the feed-board and front guides of a printing-press, of the magnet E and its armature, the lever *e h*, link *i*, crank *j*, spring *n*, and finger *l*, all arranged to operate substantially as set forth.

3. The combination, in a printing-press having a feed-board and front guides, of two electro-magnets mounted on the sides of the feed-board, an electric generator to excite said magnets, circuit-wires, and a circuit breaking and closing device, substantially as described, whereby the moving parts of the press are made to break and close the circuit, stop-fingers *l*, and means, substantially as described, whereby the electro-magnets are caused to actuate said fingers, all arranged substantially as and for the purposes set forth.

4. A cylinder printing-press provided with a feed-board and front guides, and with two electrically-actuated fingers, *l*, arranged on opposite sides of the feed-board, and in planes substantially at right angles to the line of movement of the sheet in feeding, substantially as set forth.

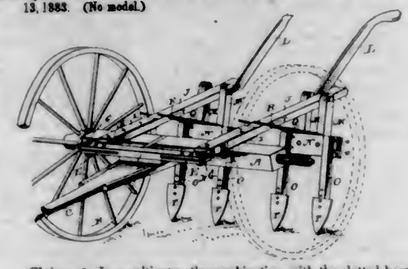
291,576. SIFTER. HERBERT CLAYTON, Cincinnati, Ohio. Filed Mar. 22, 1883. (No model.)



Claim.—1. A sifter-frame which has its ends pivoted together near their upper edges, and which is provided with the guiding-wire C and the socket *b* at its lower edges, and a pivoted locking-latch, G, in combination with the sieve F and revolving frame J, substantially as shown.

2. A revolving frame, J, provided with the pivot *d*, the short crank L, and a spring locking-pin, I, in combination with the frame A and sieve F, substantially as shown and described.

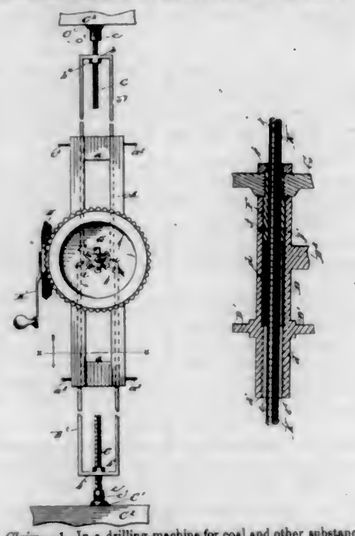
291,577. CULTIVATOR. NATHAN COLEMAN, Oneida, Kans. Filed Oct. 13, 1883. (No model.)



Claim.—1. In a cultivator, the combination, with the slotted beam D, provided with yokes or bails F, secured to the same in the manner shown, of the plow-beams J, provided with plates I at their front ends, said plates connecting a pair of blocks, K, between the same, the blocks being formed with grooves i, to receive the yokes or bails, said parts being arranged to permit the vertical and lateral movement of the plow-beams, as set forth.

2. In a cultivator, the plow-beams having standards M projecting downwardly therefrom, in combination with the rods Q, attached to the standards and provided with notches or recesses, a locking bar or bolt journaled in the beams and arranged to engage the recess to lock the rods Q, cross-pieces N, connecting the standards and slotted at the ends, and plow-feet adjustable in the slots of said cross-pieces, as and for the purposes set forth.

291,578. COAL-DRILLING MACHINE. JONATHAN M. DAVIES and JOHN W. DAVIES, Bryan, Ohio. Filed May 15, 1883. (No model.)



Claim.—1. In a drilling-machine for coal and other substances, the combination of the frame having sides provided upon their inner surfaces with grooves b^2, said sides held in parallel planes by blocks *a*, sliding frames B B', screws C, provided with head-blocks C', with the casting D, provided with trunnions D', whereby the said casting is journaled to the side pieces of the frame A, said casting further provided with curved bar D^2, whereby it is set at different angles, and offset D^3, bar K, and means, substantially as described, whereby said bar is operated, as herein set forth.

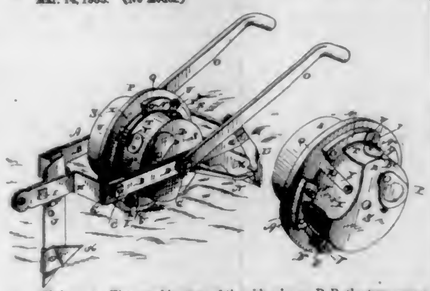
2. In a drilling-machine for coal and other substances, the combi-

nation of the frame A, having grooves b^2 upon the inner surfaces of its side frames, sliding frames B B', having apertures b^3, and held in place within the frame A by pins a^2, adjusting-screws C, with the casting D, provided with trunnions D', journaled in the side pieces of the frame A, and curved bar D^2, fixed screw-threaded sleeve E, rotating sleeve F, bevel-geared spur-wheels G and H, and screw-threaded bar K, substantially as described.

3. In a drilling-machine for coal and other substances, the sleeve E, divided longitudinally into two equal parts, e e', said parts having their inner surfaces screw-threaded, and further provided upon their outer surfaces with recesses or grooves e^2, in combination with the casting D, having chambered portion d, provided at the sides adjacent to said sleeve E with flanges d', and further having the upper and lower sides, d^2, adjacent to said sleeve chambered out, and provided with screw-threaded apertures, through which pass screw-threaded pins d^3, whereby the halves e e' are adjusted, sleeve F within casting D, screw-threaded bolt K, passing through sleeves E and F, bevel-geared spur-wheels G and H, and frame A, substantially as described.

4. In a drilling-machine for coal and other substances, the combination of the rotating sleeve F, having groove f'', into which projects a pin, f, and further provided with a pin, k', or its equivalent, a key or spline that engages with the longitudinal groove k in the screw-threaded bar K, with the screw-threaded bar K, having the longitudinal slot k, and provided with bit-holding heads K', casting D, frame A, and means, substantially as described, whereby said bar K is operated, as herein set forth.

291,579. SEED-PLANTER. JOSEPH W. DAWSON, Auburn, Ala. Filed Mar. 14, 1883. (No model.)



Claim.—1. The combination of the side pieces, B B, the transverse braces C D E, the vertical bars secured upon the ends of the rear brace and carrying the coverer, the diagonal braces connecting the lower ends of the vertical bars with the ends of the center brace, and the handles secured to the ends of the center brace and to the upper ends of the vertical bars, as set forth.

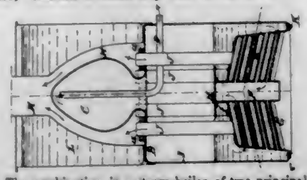
2. The combination of the side pieces, B B, the transverse connecting-braces C, D, and E, all of which are provided with spacing-nuts F and clamping-nuts G, and the revolving seed box or drum journaled upon the center brace, as set forth.

3. The combination of the central disk or ring, the cylindrical heads bolted to the sides of the same, the interposed washers, and a detachable partition-plate secured between the center disk and one of the heads, as set forth.

4. The combination of the central disk or ring having a diametrical brace journaled upon the axle D, the cylindrical heads, and the detachable partition-plate having a radial slot, as and for the purpose set forth.

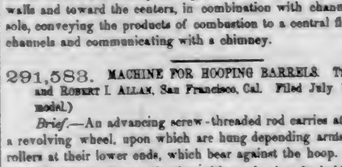
5. The combination of the center ring, the cylindrical heads having lugs at their inner ends, the transverse connecting-bolts, and the segmental feed-regulating plates pivoted upon said bolts adjoining one side of the center plate, and provided at their free ends with set-screws bearing against the said center plate, as set forth.

291,580. STEAM-BOILER. ALBERT COMTE DE DION, GEORGES TRADER BOUTON, and CHARLES TRÉPARDOUX, Paris, France. Filed Nov. 3, 1883. (No model.) Patented in France May 1, 1883, No. 155,206.



Claim.—The combination, in a steam-boiler, of two principal separable parts, one of which consists of an upright cylindrical external body, and the other of which consists of an internal conical shell, a central water-pocket depending from said shell, inclined water-tubes radiating between said shell and pocket, and fire-tubes attached to said shell, the said separable parts being united by nuts and screw-threads, connecting the said fire-tubes with the crown of the body, and the bases of the said body and shell being united by screw-bolts, substantially as herein described.

291,581. FRUIT-CANNING DEVICE. FARRIER DEPLANTY, Hastings, Mich. Filed Aug. 3, 1883. (No model.)



Claim.—In combination with a suitable boiler, a rack consisting of the bed-plate A, standards B, shafts C, pins D, and cap E, substantially as and for the purposes described.

291,582. MANUFACTURE OF BRICKS, TILES, &c. ANTON DEMPF, Munich, Bavaria, Germany, assignor to Michel Puletti, Hoboken, N.J. Filed Jan. 27, 1883. (No model.) Patented in France Sept. 20, 1875, No. 109,557; in Belgium Sept. 24, 1875, No. 37,923, and in England July 14, 1876, No. 2,537.



Claim.—1. The improved process of manufacturing bricks, tiles, and other similar articles, which consists in tempering, kneading, and compacting the clay, molding the same to a shape approximating that of the finished articles, covering these molded masses with powdered tiles, drying the same by heat, compressing the same in dies to the requisite shape and density, and finally firing them in a furnace at an intense heat, substantially as set forth.

2. The improved process of manufacturing bricks, tiles, and other similar articles, which consists in diluting or tempering the clay with heated water, crushing or grinding the diluted clay, kneading and compacting the same, molding the mass into a shape approximating that of the finished article, drying the molded products, pressing the same in a mold or die to the desired finished shape, and finally firing the articles, substantially as set forth.

3. In the manufacture of bricks, slabs, tiles, and other like articles, the combined processes of, first, diluting the loam or clay by heat; second, crushing and grinding the diluted clay by means of cylinders, crushers, or grinders; third, condensing the ground mass; fourth, subjecting the same to a primary compression into approximate shape; fifth, covering the products with brick, tile, or other similar powder; and, sixth, alternately drying and compressing the products before they are finally subjected to the process of burning, all substantially as herein set forth.

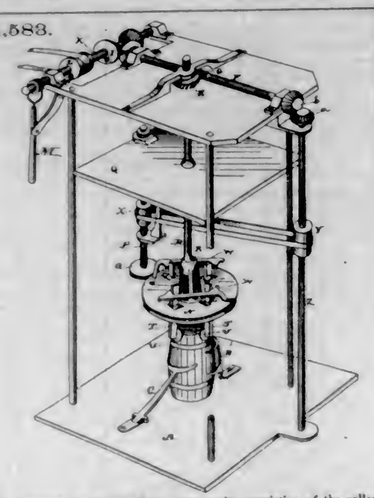
4. The combination, in a furnace composed of equidistant fire-places arranged at or near the arched roof and in relation to bridges and the sole of the furnace, as described, of openings in the sole arranged equidistantly from side to side, and so as to cause the products of combustion to descend uniformly through the mass by passing both against the walls and toward the centers, in combination with channels under the sole, conveying the products of combustion to a central flue below said channels and communicating with a chimney.

291,583. MACHINE FOR HOOPING BARRELS. THOMAS C. DUFF and ROBERT I. ALLAN, San Francisco, Cal. Filed July 10, 1883. (No model.)

Brief.—An advancing screw-threaded rod carries at its lower end a revolving wheel, upon which are hung depending arms, which carry rollers at their lower ends, which bear against the hoop.

Claim.—1. In combination with mechanism for holding a barrel in a vertical and stationary position, consisting of the base A, having the fixed adjustable supports B, as shown, and the hinged clamp C, of a device for pressing hoops thereon, consisting of a series of wheels, U, attached to the lower ends of the pivoted arms T, and adapted to rest upon the upper edge of the hook, means by which they are caused to roll around upon the edge of the hoop, and a means by which they are gradually moved downward, substantially as herein set forth and described.

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2. A means for forcing hoops upon casks, consisting of the rollers or wheels U, supported upon arms so as to rest upon the upper edge of the hoop to be placed, the driving-wheel N, to which the arms are attached and by which they are revolved around the cask, and a feed-screw shaft D, by which the wheels are moved downward, substantially as herein described.

3. In a machine for hooping barrels, the revolving wheel N, driven by the pinion O upon the shaft P, and provided with the pivoted hinged arm T, carrying the hoop-placing wheels U, the springs V, whereby the said arms are pressed toward each other, and the pivoted brackets W, adapted to press against the upper ends of the arms T, all substantially as shown, and for the purpose described.

4. In a barrel-hooping machine, the screw-threaded shaft D, provided with a gear, E, intermeshing with a screw, G, whereby the shaft is raised or lowered, the wheel N, and operating mechanism, in combination with the pivoted hoop-placing wheels U, supported at their lower ends, the pinion O, and shaft P, journaled to move up and down with the wheel N, the wheel being operated by the main driving-shaft and reversing-gear, all substantially as herein shown and described, and for the purpose set forth.

291,584. MACHINE FOR FORMING CHECK-ROWER WIRES. GEO. B. DURRIE, Chicago, assignor to the Joliet Wire Check-Rower Company, Joliet, Ill. Filed May 28, 1883. (No model.)

Brief.—The wire is fed to the machine through a guide and through straightening-rollers, and it passes over a mandrel carried upon the end of a horizontal rack-bar. The wire is cut back of the mandrel, and the severed end is fed forward under the mandrel by a reciprocating carriage carrying spring gripping-jaws. The mandrel is advanced, pushing the ends of the wires laterally from the line of feed. The ends are then bent into two connected eyes or loops by a rotary looper. The projecting ends of the loops are then coiled around the wire, back of the loops, by oppositely-rotating coilers, each mounted on a reciprocating carriage. A stripper strips the finished loops from the mandrel. A vibrating gage-bar located at the end of the machine draws the wire through the machine after the completion of each pair of loops.

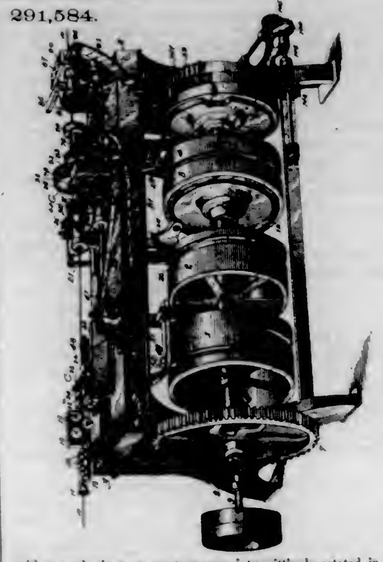
Claim.—1. In a machine for forming check-row wire, the combination of means for intermittingly feeding the wire, means for severing the wire into parts, means for feeding forward one part to cross the ends of the parts, means for bending said ends into connected loops, and means for coiling the terminals of the parts around the main line of the wire back of the links, to form a check or shoulder, substantially as shown and described.

2. The combination, in a machine for forming check-row wire, of mechanism for cutting and bending the wire at intervals into pairs of connected loops, with means for intermittingly actuating the cutting and bending or looping devices, substantially as described.

3. The combination, in a machine for forming check-row wire, of a mandrel upon which the wire rests preparatory to forming loops in the same, a cutting mechanism for severing the wire at one side of the mandrel, and a feed mechanism adapted to pass one end of the cut wire under the mandrel, while the opposing end of the wire is upheld by the latter, substantially as described.

4. In a machine for forming check-row wire, the cutting mechanism consisting of a pair of shears constructed with a jaw rigid upon an intermittingly-vibrating lever, and a pivoted jaw connected by a link

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with a crank-pin upon a rotary gear, intermittingly rotated in order to open and close the pivoted jaw, substantially as described.

5. The combination, in a machine for forming check-row wire, of a combined cam-grooved and mutilated gear-wheel, with the vibratory lever actuated by the cam-groove in said wheel, and carrying a fixed cutting-jaw, with the pivoted cutting-jaw connected by a link with a crank-pin upon a pinion that is actuated by said mutilated gear, substantially as described.

6. The combination, in a machine for forming check-row wire, of the mandrel upon which one end of the wire rests after it has been severed, and a feed-carriage provided with spring-jaws, by which the wire is grasped and the remaining end pushed forward under the mandrel, substantially as described.

7. The combination, in a machine for forming check-row wire, of a mechanism for cutting the wire at intervals along its length, with an intermittingly-reciprocating mandrel, by which the adjacent ends of the wire are pushed to one side and crossed after the wire has been severed, an intermittingly-rotating looper located and adapted to bend said crossed ends of the wire into connected loops or links upon the mandrel, substantially as described.

8. The combination, in a machine for forming check-row wire, of a mandrel with a rotary and reciprocating looper for bending the wire into connected loops upon the mandrel, and means for automatically and successively reciprocating and rotating the looper, substantially as described.

9. The combination, with the intermittingly-reciprocating mandrel, of the intermittingly-rotating looper, provided with a recess adapted to receive the mandrel, and means, substantially as described, for advancing the looper when the mandrel is retracted, for the purpose specified.

10. The combination, in a machine for forming check-row wire, of the looper F, fixed upon a rotary and slidable shaft, with a vertically-reciprocatory rack-bar engaging a gear upon said shaft for rotating the same, and a vibratory lever for imparting a longitudinal movement to the shaft, in order to advance or retract the looper, substantially as described.

11. The combination, with the intermittingly-rotating looper F, of the mandrel D, carried by a slidable bar, 27, and an intermittingly-vibrating lever for actuating said bar, whereby the mandrel shall be advanced and retracted, substantially as described.

12. The combination, in a machine for forming check-row wire, of means for bending the wire into a pair of connected loops upon a mandrel, with a pair of intermittingly-rotating coilers adapted to coil the ends of the wire around the main line of wire back of the loops, and mechanism for automatically operating the coilers after the loops have been formed, substantially as described.

13. The combination, in a machine for forming check-row wire, of a mandrel and looper adapted to bend the wire into connected loops upon the mandrel, a pair of rotating coilers adapted to rotate in planes at right angles to the plane of rotation of the looper that serves to form the loops, and mechanism, substantially as described, for automatically and intermittingly rotating the said pair of coilers in reverse directions, substantially as described.

14. The combination, in a machine for forming check-row wire, of a

mandrel upon which the wire is bent into connected loops, with a pair of coilers intermittingly rotating in reverse directions, and a mechanism for automatically and simultaneously advancing said coilers into position to coil the wire upon itself back of the loops, and for retracting said coilers after the coils have been perfected, substantially as described.

15. The combination, in a machine for forming check-row wire, of a pair of carriages, each carrying a rotary coiler, with means for causing said carriages to move simultaneously in reverse directions, and mechanism for automatically and simultaneously rotating the coilers in reverse directions, substantially as described.

16. The rotary coiler E, mounted in a slidable carriage, and connected by gearing with an intermittingly-rotating shaft, upon which the carriage moves, substantially as described.

17. In a machine for forming check-row wire, a rotary coiler having a pair of jaws adapted to open in order to allow the checks formed in the wire to pass through the coiler after the completion of the coiling operation, substantially as described.

18. The combination, with the sliding jaws of a rotary coiler, of a ring-gear provided with eccentric-grooves or slots, in which lugs upon the jaws are received, and devices for intermittingly rotating said ring-gear in reverse directions, and a device for holding the jaws against rotation during the action of the ring-gear, substantially as described, whereby said jaws shall be alternately opened and closed, for the purpose set forth.

19. The combination, with the rotary coiler-jaws, of an intermittingly-rotating disk, upon which the jaws slide, and means, substantially as described, for opening and closing the jaws between the intervals of rotation of the disk by which the jaws are carried, for the purposes set forth.

20. The rotary coiler provided with a pair of interlocking jaws, 62 63, one of which carries a pin for bending the wire, said jaws being formed with transverse grooves in their faces, which, when the jaws are closed, form a passage for the wire, substantially as described.

21. The combination, with the rotary coiler-jaws, of a disk, upon which said jaws slide, connected with a hollow hub provided with a gear, an eccentrically slotted or grooved ring-gear engaging the jaw and loosely mounted upon a hub of the said disk for opening and closing the jaws, and means for rotating all of said members in order to coil the wire, and means for solely rotating the ring-gear after such operation, in order to open and close the jaws, substantially as described.

22. The rotary coiler-jaws 62 63, provided upon their rear sides with ribs, which are received in dovetailed grooves in an intermittingly-rotating disk, and also provided with lugs, which are received in grooves eccentrically formed in a rotary ring-gear adapted to turn independently of the disk, substantially as described.

23. The combination of the rotary coiler, comprising jaws, with mechanism for successively opening and closing the jaws between the intervals of rotation of the coiler, and the stop G′, for locking the coiler while the jaws are being opened and closed, substantially as described.

24. The combination, in a machine for forming check-row wire, of a reciprocating carriage supporting a rotary hub provided with a gear and connected to a disk or head carrying a pair of slidable jaws, with means for opening and closing the jaws, and an intermittingly-rotating shaft, and a gear carried by the carriage and actuated by said shaft, for rotating the coiler, substantially as described.

25. The combination, in a machine for forming check-row wire, of means for forming connected pairs of loops along a continuous wire, with an intermittingly-rotating coiler provided with a pair of jaws that are opened after the loops have been formed in the wire, to admit of the latter being drawn through said coiler to the delivery end of the machine, with a rotary clutch, a mechanism adapted to actuate the jaws of the coiler, and means for rotating said clutch in reverse directions, whereby said jaws are successively opened and closed, substantially as described.

26. The combination, with the rotary coiler provided with a pair of jaws and carried by a reciprocating carriage, of the rotary clutch H, and mechanism connecting the clutch and jaws, the clutch H comprising two sections, one of which is carried by the reciprocating carriage and the other permanently located upon the machine, and mechanism timed to intermittingly rotate the permanently-located section of the clutch successively in reverse directions, when the two sections of the clutch are in engagement with each other, whereby the jaws of the coiler shall be successively opened and closed, substantially as described.

27. The combination, with the rotary coiler G, adapted to be moved up to the work and then retracted, of the intermittingly-rotating connecting mechanism, whereby the rotation of this part operates the jaws, clutch H, and the reciprocating rack-bar engaging a pinion connected with another part of said clutch, for rotating the clutch in reverse directions, substantially as described.

28. The combination, with the intermittingly-rotating shaft 52, of the reciprocating carriages, each provided with a wire-coiling mechanism actuated from said shaft, and the pitmen connecting said carriages with the arms of a rocker, whereby when the rocker is vibrated the carriages shall be moved in reverse directions, substantially as described.

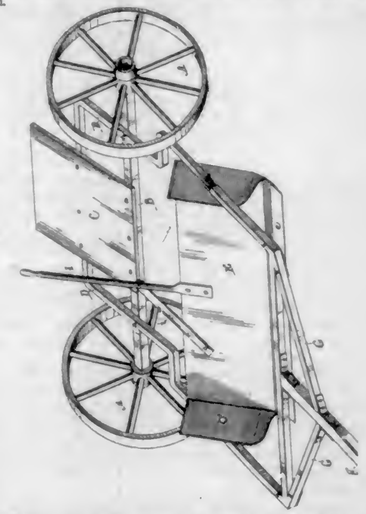
29. The combination, in a machine for forming check-row wire, of the mandrel upon which the wire is bent into loops, with a stripper, and means for advancing the stripper to push the completed loops off the mandrel, substantially as described.

30. The combination, with the mandrel upon which the wire is formed into loops, the retracting-bar, and means for actuating the same, of a stripper, which is advanced by said retraction-bar, substantially as described.

31. The combination, with the slidable rack-bar carrying a mandrel upon which the wire is bent into connected loops, of a rack-bar carrying the stripper, and a pinion intermediate of and engaging said rack-bars, substantially as described.

291,585. DIRT-SCRAPER. CHAS. ENDICOTT, Kingsburg, Cal. Filed Apr. 10, 1883. (No model.)

Brief.—A scraper-bowl pivoted in a frame secured to the axle. An operator's platform extending rearward from the axle assists in operating the scraper in connection with the arm secured to the scraper-bowl.



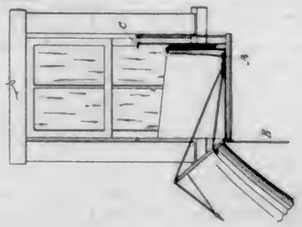
Claim.—1. In a dirt-scraper, the wheeled axle B and the platform C, in combination with the bowl E and the lever-arms D, secured to and forming a frame behind the axle for the support of the platform, and pivoted at their forward ends to the ends of the bowl, substantially as herein described.

2. In a dirt-scraper, the wheeled axle B and platform C, in combination with the bowl E, the lever-arms D, secured to the axle, their rear ends supporting the rear of the platform and their forward ends pivoted to the bowl, and the lever I, secured to the rear top center of the bowl, substantially as herein described.

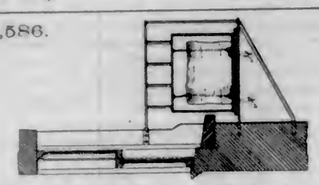
3. A dirt-scraper consisting of the wheels A, axle B, platform C, lever-arms D, pivoted bowl E, having lever I, and the pole F, having bars G, pivoted to the ends of the bowl, substantially as herein described.

291,586. PROTECTOR AND SUPPORTER FOR FIRE-ESCAPES. HARLAN FAIRBANKS, Boston, Mass., assignor to the New England Patent Fire Escape Company, same place. Filed July 12, 1883. (No model.)

Brief.—The storage-box for the chute, and to which it is secured by its upper end, is supported on brackets upon the outside of the building, and is provided with a knockdown part or section and a flanged removable cover.



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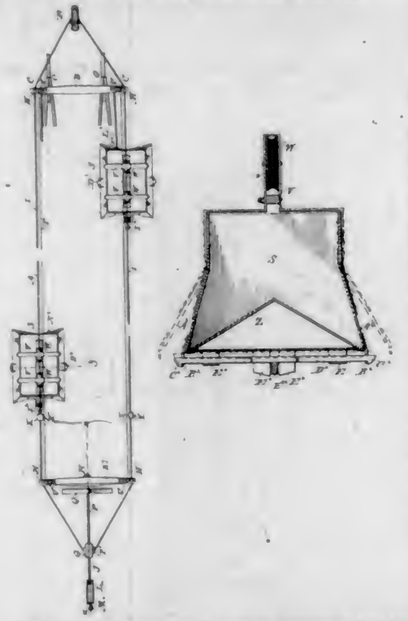


Claim.—1. The combination, with the fire-escape protector and supporter of the character described, of suitable brackets or braces, whereby it is attached to and supported in its proper position upon the outside of the building, all substantially as set forth.

2. The combination, in a fire-escape protector and supporter of the character described, of the bolts A, automatic knockdown part B, and flange-cover C, all substantially as herein shown and set forth.

291,587. APPARATUS FOR TRANSPORTING AND DUMPING EARTH, GRAVEL, &c. QUINCY A. FISK, Springfield, Ill. Filed May 26, 1883. (No model.)

Brief.—Two parallel lines of cable running from opposite ends of a fixed horizontal bar (past the other side of which they are secured to anchoring-post) are attached to a horizontal bar on a pivot-rod resting on suitable support and having a pulley around which the cable runs. Each pulley has a screw-thread connection with a fixed link. The section of loaded cars on one line to return dumped cars on the other is secured by an endless cord connecting such cars. The cars have inclined bottoms and hinged side doors locked by a transverse catch-bar engaging loops on said doors, but thrown out by a longitudinal bar operated by a cord and a bell-crank striking adjustable stop on the cable.

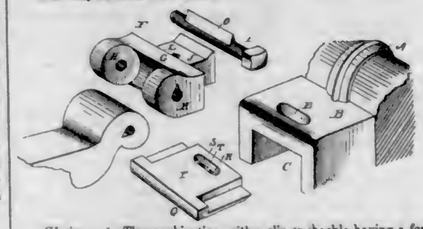


Claim.—1. The combination of an elevated stationary or fixed horizontal bar disposed transversely at one end of the way, a transverse horizontally-disposed bar arranged at the other end of the way, and pivoted or swiveled at its center, the elevated cable connected to the ends of these end bars, and extending longitudinally, suitable transporting-cars arranged to run back and forth on their cables and serve to alternately tilt the pivoted bar, and an endless connecting-cord extending around the cable-way, and secured to the cars, so that they will be at different ends of the way, as and for the purpose set forth.

2. An elevated cable-way comprising a transverse horizontal fixed bar at one end, a swiveled pulley-block anchored at the other end of the way, and provided with a projecting bar supported upon a suitable horse or frame, a horizontally-disposed transverse bar pivoted on the end of this projecting bar, the cable anchored at the end of the way having the stationary bar, and diverging from the anchoring point to the ends of the said bar, from which it extends down at both sides of the way, and is secured to the swiveled block, suitable transporting-cars arranged to run on the cables, and a connecting-rope secured to the cars, and having bearings around pulleys at each end of the cable-way, as and for the purpose set forth.

3. The combination, with the elevated cable having an adjustable collar, of the dumping-car hung from brackets carrying rollers by which it runs on the cable, and provided with an inclined bottom, hinged sides having the loops, the transverse latch-bar having ends that engage the said loops, and arranged to slide vertically in guides projecting from the under side of the car, the longitudinal operating bar pivoted at one end, and the bell-crank lever arranged to be operated by the adjustable collar, and connected with the longitudinal bar by a chain or rope, as and for the purpose set forth.

291,588. THILL-COUPLING. JOHN M. FULTON, Roanoke, Ind., assignor of two-thirds to James H. McCahon and Ervin E. Richards, same place. Filed May 24, 1883. (No model.)



Claim.—1. The combination, with a clip or shackle having a forwardly-projecting recessed box, of a coupling-box having a rearwardly-extending shank, secured laterally adjustably in the said recessed box, substantially as set forth.

2. The combination of the clip or shackle having a forwardly-extending box having a transverse groove in its inner rear end, with the coupling-box having a rearwardly-extending shank secured laterally adjustably in the said box, and having at its rear end an upwardly-extending flange fitting in the groove in the recessed box of the clip, substantially as set forth.

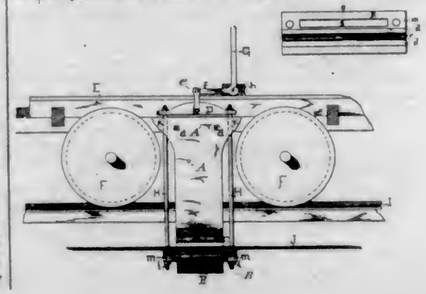
3. The combination of a clip or shackle having a forwardly-extending recessed box with a transversely-slotted bottom, a transversely-slotted cap for the said box, a coupling-box having a rearwardly-extending vertically-perforated shank capable of being adjusted transversely in the said recessed box, and a coupling-bolt and nut, substantially as set forth.

4. The combination of a clip or shackle having a forwardly-extending recessed box with a transversely-slotted bottom, a transversely-slotted cap for the said box, provided with a recess in its under side, a nut seated in the said recess, a covering-plate, a coupling-box having a rearwardly-extending vertically-perforated shank capable of being adjusted transversely in the said recessed box, and a coupling-bolt, all arranged and operating substantially as set forth.

5. The combination of the transversely-slotted box extending forward from the clip or shackle, the transversely-slotted cap for the said box, the coupling-box having a rearwardly-extending vertically-perforated shank, the coupling-bolt and nut, the latter seated in a transverse recess in the cap-plate, and a protecting plate or washer arranged upon the upper end of the bolt, adjoining the head of the same, as and for the purpose set forth.

291,589. TRACTION-ROPE RAILWAY. ELEAZER S. GARDNER, Philadelphia, Pa., assignor of two-thirds to John H. Gould, same place, and Oliver L. Gardner, New York, N. Y. Filed June 8, 1883. (No model.)

Brief.—The lower jaw is perforated to move upon the main grip-bar, and is raised and lowered through vertical rods secured to a yoke, which is operated from a main lever through a link-connection.



Claim.—1. In a traction-rope railway, in combination with a clutch-bar having a rigid clutch-jaw at its lower end, clutch-jaw B, rods H H, and yoke D, said jaw, rods, and yoke having a vertical movement and operated by means of a lever or its equivalent, substantially as set forth.

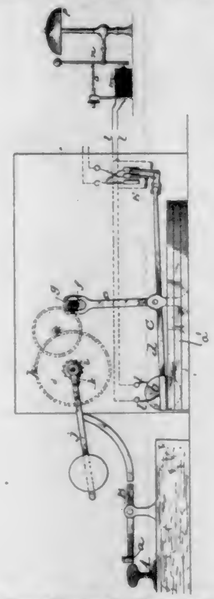
2. In a traction-rope-railway clutch, the clutch-jaw B, adapted to move upward and downward upon the lower end of the bar A, substantially as and for the purposes set forth.

3. The combination, in a traction-rope-railway clutch, of the clutch-jaw B and rods H H, to raise or lower a cable, substantially as and for the purposes set forth.

4. The combination, in a traction-rope railway, of the clutch-bar A, jaws C B, and rods H H, substantially as and for the purposes set forth.

5. In a traction-rope-railway clutch, the yoke D, rods H H, and clutch-jaws B C, in combination, substantially as described.

291,590. MAGNETO-ELECTRIC RAILWAY-SIGNAL. WESLEY WARD GARY, Boston, Mass. Filed Aug. 18, 1881. (No model.)



Claim.—1. The combination of a vibratory magneto-electric generator, a train of gear connected therewith, and an operating-lever connected at one end to the driving-gear, and arranged with its opposite end in position to be depressed by passing railway-trains.

2. In a railway signal system, the combination of a bell-signal, an electro-magnet, by means of which the signal is propelled or driven, a vibratory magneto-generator connected therewith, and actuating appliances, substantially such as shown, to be set for action by passing railway-trains.

3. The combination of the railway-signal having an electro-magnet, whereby it is propelled, a vibratory magneto-generator connected with said magnet, and appliances, substantially as shown, to be set for action by passing trains, and to drive the generator with a long-continuing action.

4. In combination with a vibratory magneto-generator, a gear-train for actuating the same, and track-connections, substantially as described, whereby the gear-train may be set in motion by passing railway-trains.

5. In combination with the magnets, the vibratory armature, the eccentric for actuating said armature, and the gear-train provided with an operating-weight, as described, whereby a rapid and long-continuing vibration of the armature may be secured.

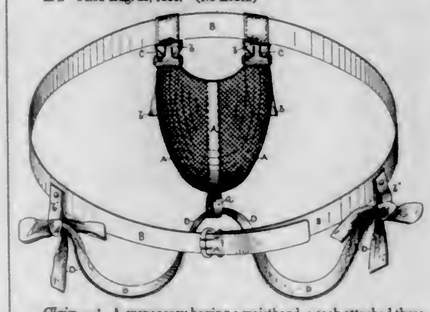
6. In combination with the vibratory magneto-generator, the gear-train, and the track-connections for operating said train, the electro-magnetic signal, and the commutator, arranged substantially as described.

291,591. SCISSORS FOR CUTTING FELT ON A BEVEL. JAMES S. GORTON, New York, N. Y., assignor to the Willcox & Gibbs Sewing Machine Company, same place. Filed Oct. 6, 1883. (No model.)



Claim.—In shears, scissors, or other cutting apparatus, the combination, with a cutter or blade, of a device substantially as herein described, arranged to project beyond the cutting-edge in close proximity thereto on the outside of said edge or side opposite from the co-operating cutter or blade for presenting or holding the fabric oblique to the cutting edge or edges, as set forth.

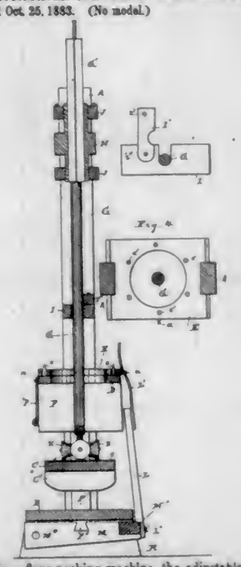
291,592. SUSPENSORY-BANDAGE. LOUIS P. GRIFFIN, Providence, R. I. Filed Aug. 23, 1883. (No model.)



Claim.—1. A suspensory having a waistband, a sack attached thereto, and provided at its lower edge with an elastic loop, *a*, and a tape adapted to pass loosely through said loop, and to be secured to the waistband, substantially as set forth.

2. A suspensory having its sack adjustably and detachably secured to its waistband, and provided with an elastic loop, *a*, adapted to receive loosely a holding-tape, substantially as set forth.

291,593. FLOUR-PACKING MACHINE. ABEL C. HARTSOOK, Lincolnton, N. C. Filed Oct. 25, 1883. (No model.)



Claim.—1. In a flour-packing machine, the adjustable changeable heads provided with means of holding the sack while being packed, substantially as described, and for the purposes set forth.

2. In a flour-packing machine, the frame A and wedge O, in combination with removable head E, as described, and for the purposes set forth.

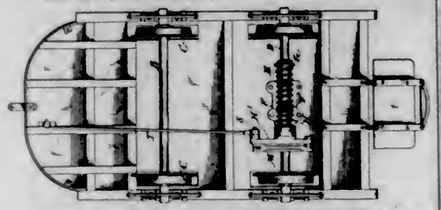
3. In a flour-packing machine, the head D, having spears *e*, adapted to penetrate holes *d'* in head E, in combination with hooks P and bolster F, as shown and described, and for the purposes set forth.

4. The head D, the bolster F, the hooks P, the pieces F', the levers M, having cross-piece M'', in combination with handle L and strap L', substantially as described, and for the purposes set forth.

5. The combination of vertical shaft G, having square part G', with pulley H, substantially as described, and for the purposes set forth.

6. The adjustable floor C, having metal plate *c*, adapted to enter notches *f* in frame A, as described, and for the purposes set forth.

291,594. CAR STARTER AND BRAKE. GEORGE M. HATHAWAY, New York, N. Y., assignor of one-half to Charles C. Kesler, same place. Filed June 7, 1883. (No model.)



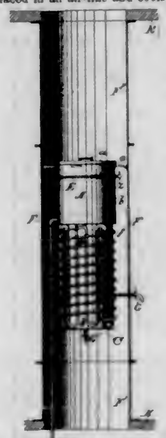
Claim.—1. In a car-starter, the combination, with the axle having enlarged portion and right and left hand screw-grooves, of the lever provided with the ratcheted boss containing a ratcheted sleeve having oblique internal lugs traveling in one of the grooves, a friction-wheel having oppositely-oblique lugs traveling in the other groove, the spiral mounted on the shaft, and mechanism for clamping the friction-wheel, substantially as and for the purposes specified.

2. The combination, with the enlarged right and left hand grooved axle, of the spiral spring, the lever provided with an internally-ratcheted boss, the ratcheted sleeve provided with internal oblique lugs, the friction-wheel provided with internal oblique lugs, the clamping-levers and their connecting-links, the crank-pin, and the rod and operating-lever, all arranged substantially as and for the purposes specified.

3. The combination, with the right and left hand threaded shaft, of the sliding lever having a projection provided with an anti-friction wheel, the transverse ways between which said wheel moves, and the mechanism for clamping and moving the lever, substantially as specified.

291,595. WATER-COOLER. WILLIAM ALEXANDER HAWTHORN, Hawthorn, Nev. Filed Sept. 18, 1883. (No model.)

Brief.—The cooler with upper and lower chambers connected by long coiled pipe, all parts of each covered with porous fabric kept wet by water-sprays, is placed in an air-flue and cools by evaporation.



Claim.—1. In a water-cooler, a double-compartment water-chamber, one compartment being provided with an inlet and the other with an outlet, and an outside pipe-connection between the two compartments, in combination with an inclosing-casing over said chamber forming an air-space or jacket surrounding the chamber and connecting-pipe, said air-space communicating with the outside atmosphere, whereby a draft or current of air is formed and circulates about the exterior of said chamber and connecting-pipe, substantially as herein described.

2. In a water-cooler, a double-compartment water-chamber, one compartment being provided with an inlet and the other with an outlet, and an outside pipe-connection between the two compartments, in combination with an outer casing covering said chamber and forming an air-space surrounding the chamber and connecting-pipe, and a spray-pipe connected with one water-compartment and discharging within the surrounding air-space, substantially as and for the purpose herein described.

3. In a water-cooler, a double-compartment water-chamber, one compartment being provided with an inlet and the other with an outlet, and an outside pipe-connection between the two compartments, in combination with an outer casing covering said chamber, forming an air-space surrounding the chamber and connecting-pipe, said air-space communicating with the outside atmosphere, whereby a draft or current of air is formed and circulates about the chamber and connecting-pipe, and a spray-pipe connected with one water-compartment and discharging within the surrounding air-space, substantially as and for the purpose herein described.

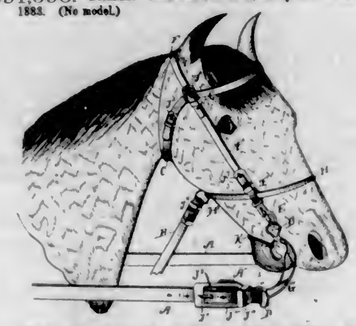
4. In a water-cooler, the chamber A, having a water connection or inlet, and the chamber C, having outlet G, in combination with the connecting-pipe D, opening from chamber A, and wound about, around, and upon the exterior of chamber C, and discharging therein, substantially as herein described.

5. In a water-cooler, the chamber A, having a water connection or inlet, the chamber C, having outlet G, and the connecting-pipe D, opening from chamber A, and wound about, around, and upon the exterior of chamber C, in combination with the outer casing, F, forming air-space *f*, the pipe F', through the floor, and the pipe F², through the roof, whereby said air-space is connected with the outside atmosphere, substantially as and for the purpose herein described.

6. In a water-cooler, the chamber A, having a water connection or inlet, the chamber C, having outlet G, and the tortuous pipe D on the exterior of chamber C, connecting the two chambers, in combination with the outer casing, F, forming air-space *f*, the pipe F', through the floor, and the pipe F², through the roof, and the annular perforated spray-pipe E, opening from chamber A and discharging within air-space *f*, substantially as and for the purpose herein described.

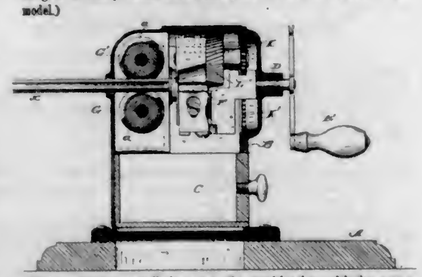
7. In a water-cooler, the chambers A C and tortuous connecting-pipe D, said chambers and pipe being wrapped with woolen or absorbent fabric *b d*, in combination with the outer casing, F, forming air-space *f*, said air-space communicating with the outside atmosphere, and the spray-pipe E, for keeping wet the wrappings of the chambers and pipe D, substantially as herein described.

291,596. BRIDLE. MARCELLUS M. HITT, Leray, Va. Filed Feb. 24, 1883. (No model.)



Claim.—In a bridle, the combination, with buckles J², J³, and J⁴, of the crown-piece and cheek-strap F, made of one piece, throat-latch C, and nose-band H, also of a single piece, for the purpose herein fully described.

291,597. PENCIL-SHARPENER. JOSEPH HOFFMAN, New York, N. Y., assignor to Henry Berolzheimer, same place. Filed Oct. 26, 1883. (No model.)



Claim.—1. In a pencil-sharpener, the combination, with the cutter, of automatic spring-controlled pencil-feed mechanism, substantially as hereinbefore set forth.

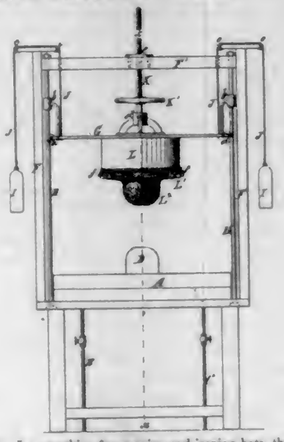
2. The combination of the pencil sharpening or cutting mechanism proper, the feed-rolls, and the spring, arranged and operating to rotate the same in the direction requisite to advance the pencil held between

them toward the cutting mechanism, substantially as hereinbefore set forth.

3. The combination of pencil-sharpening mechanism, pencil-feed rolls, held together with yielding pressure, and the roll-propelling spring, as and for the purposes hereinbefore set forth.

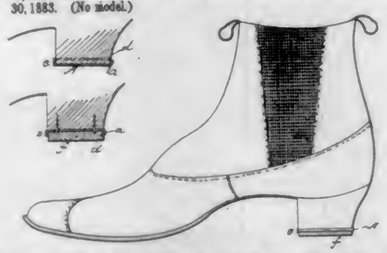
4. The combination of the pencil-sharpening mechanism, the feed-rolls, the crank or handle H, and the spring I, under the arrangement and for operation substantially as hereinbefore set forth.

291,598. MACHINE FOR IRONING HATS. NICHOLAS B. HOOPER, Brooklyn, N. Y. Filed Apr. 27, 1883. (No model.)



Claim.—In a machine for pressing and ironing hats, the combination of the following elements, namely: a fixed steam bed or table and a block supported on its upper surface, a platen movable upward and downward in guides upon the frame of the machine, and a sand-bag on the under side of the platen, moving upward and downward with the platen, and having in it a pocket of muslin, ticking, or other pervious fabric, which conforms exactly to the shape of the crown of the hat to be operated on, and through which moisture may pass from the hat operated on to the sand in said sand-bag, all organized for operation substantially as described.

291,599. HEEL-PLATE. ELIAS HOUSE, Red Creek, N. Y. Filed June 30, 1883. (No model.)

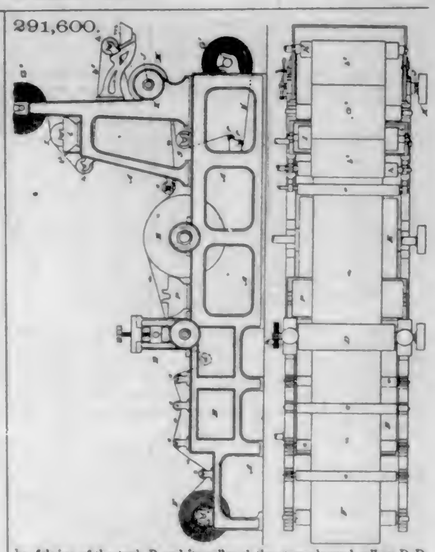


Claim.—As an improved article of manufacture, a heel-plate consisting of a solid piece of metal provided with the inwardly-turned flange *a*, extending around the heel, and adapted to engage a groove in the heel, and terminating at the points *b b*, and provided with the lip *c*, adapted to be bent at right angles to the body of the plate, whereby said plate is secured to the heel, as shown and described.

291,600. APPARATUS FOR MAKING ROOFING-FELT AND SIMILAR FABRICS. JOSIAH JOWITT, Stanley, N. J. Filed Apr. 3, 1883. (No model.)

Claim.—1. In a machine for making roofing-felt and similar fabrics, the combination, with the means for applying a coating of hot pitch or other cementing substance to a web or layer, and for partially drying the same, of a steam-heated roller or rollers, over which one or more other webs are passed before being rolled into contact with the coated web or layer, whereby the coating of pitch is rendered warm and adhesive, and the thorough cementation of the webs or layers is effected, substantially as set forth.

2. The combination, in a machine for making roofing-felt and similar fabrics, of the tank B and its roller *d*, the steam-heated rollers D D, the roller or drum E, for partially drying the coated web, and the steam-heated rollers *g* and *h*, for warming the exterior webs before they are brought into contact with the coated web, all arranged to operate substantially as set forth.



3. The combination, in a machine for making roofing-felt and similar fabrics, of the means described for applying pitch or other cementing material to one web, the steam-heated rollers for partially drying the said cement, the means described for applying paint to the exterior face of one web, the means described for applying sand to the painted surface of said web, and the steam-heated roller for heating or warming the other or non-coated web before it is brought into contact with the cement on the coated web, all arranged to operate substantially as set forth.

291,601. FIRE-ESCAPE. CYRUS EBER, Chicago, Ill. Filed Feb. 27, 1883. (No model.)

Brief.—A ladder which is folded against the building when not in use, and held by a counter-weight, but set at a distance from the same when to be used, and connected to it by links and folding platforms. By connecting a steam-supply pipe to one of the ladder-sides, steam is passed up through said side rail and across through a valved connecting pipe or rung down the other ladder-side, to free the same from ice and snow.

Claim.—1. In a fire-escape attached permanently to a building, a continuous upright ladder constructed to rest closely against such building when not in use, and to be shifted bodily to a material distance therefrom when it is to be used, substantially as herein set forth.

2. In a ladder fire-escape adapted to be set at a distance from or shifted against the building, the combination of the ladder A and links B, hinged to such ladder and building, and arranged to move with such ladder in a vertical plane, substantially as shown, and for the purposes specified.

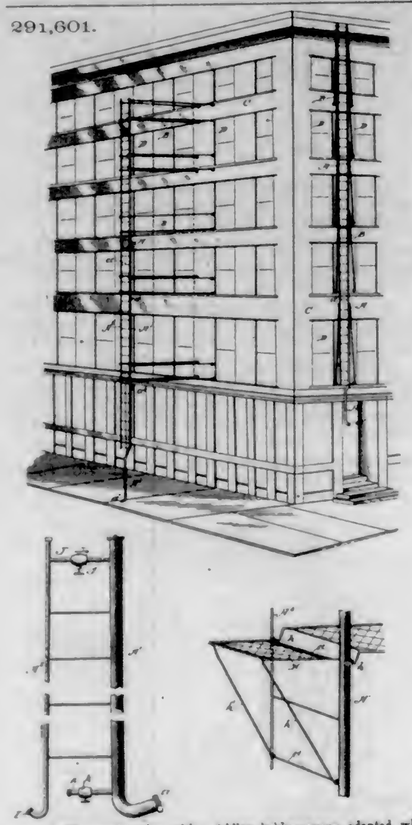
3. The combination, with a continuous vertical fire-escape ladder, A, adapted to be folded against or set at a distance from the building with which it is connected, substantially as herein described, of folding passage-ways leading from the building to the ladder, substantially as set forth.

4. In a fire-escape having a continuous shifting ladder, the combination, with said ladder, of broad links and pairs of rod-links B, arranged with reference to each other as described, and hinged to the ladder by their outer ends and to the building by their inner ends, substantially as described, and for the purposes set forth.

5. The arrangement of a balcony, D', folding bridge B, and ladder A in such relation to each other and to a window, D, as to form a continuous passage from the latter to the ground, substantially as shown and described.

6. The combination, with an escape-ladder adapted to be shifted to a distance from the building, and to be mounted from the windows when resting against the building, as herein described, of a counter-balance the force of which is sufficient to hold the ladder, when folded, against the building, but which is not sufficient to resist the weight of the ladder when moved from the wall or when a person mounts said ladder, thereby adapting said ladder to be set into position for use by being mounted by a person from the building, substantially as described.

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7. The combination, with a folding ladder-escape adapted, when folded, to be mounted from the building, as herein described, of the weight E, chain F', and pulley E', said weight E holding such relation to the weight of the ladder as to be overcome when a person mounts the ladder when the escape is folded, substantially as shown, and for the purposes specified.

8. In a folding fire-escape having a vertical ladder, A, and a shorter ladder-section, G, leading from the ladder A to the roof, the combination, with said ladders, of pipes A' and G', hinged together in any suitable manner at their meeting ends, substantially as and for the purposes set forth.

9. In a folding fire-escape having a jointed stand-pipe, a joint formed by bending the meeting ends of the sections of such pipe laterally and inserting them oppositely into a sleeve and securing them therein, substantially as herein shown and described.

10. The combination, with the ladder A, of a platform, H, and braces h', said braces being hinged by their ends to the ladder and the outer side of the platform H, and said platform H being adapted to slide through the ladder A and lie against the inner side of said ladder, substantially as shown and described.

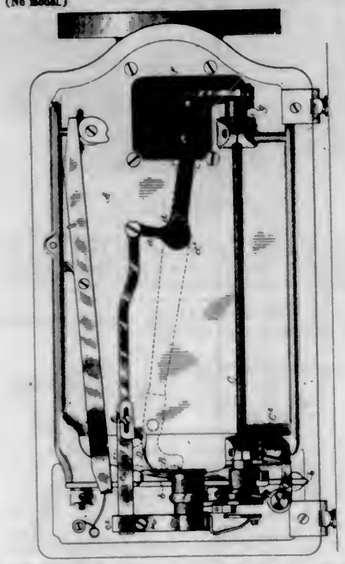
11. In a fire-escape having a non-collapsible ladder constructed wholly or in part of metallic piping, the combination, with said piping, of a coupling device or devices for connecting a supply-pipe from a steam-generator or its equivalent, substantially as and for the purpose set forth.

12. The method of freeing a ladder fire-escape of snow and ice, consisting of passing steam or its equivalent upward through one side rail of the ladder and downward through the other, substantially as herein set forth.

13. In a fire-escape ladder having hollow side rails, one of which is a stand-pipe, the combination, with said side rails, of a valved connecting-pipe, J, substantially as and for the purposes set forth.

14. In a ladder fire-escape having hollow side rails, one of which is a stand-pipe, and the two communicating at or near their upper ends by means of the pipe J, the combination, with said stand-pipe, of a valved outlet, K, substantially as and for the purposes set forth.

291,602. SEWING-MACHINE. JEREMIAH KEITH, Florence, Mass., assignor to the Florence Machine Company, same place. Filed June 9, 1883. (No model.)



Claim.—1. The combination, with the eye-pointed needle and looper, of the loop-controller mounted upon a sliding rod provided with a slide bearing or guide at its outer end and beyond the loop-controller, substantially as described.

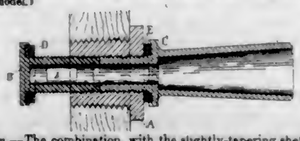
2. The combination, with the eye-pointed needle, looper, feed-bar, and reciprocating slide-bar which lifts the feed-bar, of the loop-controller mounted upon said slide-bar, substantially as described.

3. The combination of the oscillating looper and the loop-controller adjustably mounted upon a longitudinally-reciprocating rod or bar, substantially as described.

4. The combination of the oscillating looper operating within a shuttle-race, the feed rock-shaft for oscillating said looper when clutched thereto, the link, the pendent forked lever, the main shaft, and the cam thereon, engaging with the fork of said lever, substantially as described.

5. The combination, with the cam on the main shaft and the presser-foot bar, of the bell-crank lever for lifting said bar, the slide-plate on which said lever is pivoted, and the set-screw for confining said plate in position, substantially as described.

291,603. FAUCET-SOCKET. FRANK G. KINGAID, Somerville, and CLARENCE A. CHANDLER, East Bridgewater, Mass. Filed Feb. 15, 1883. (No model.)



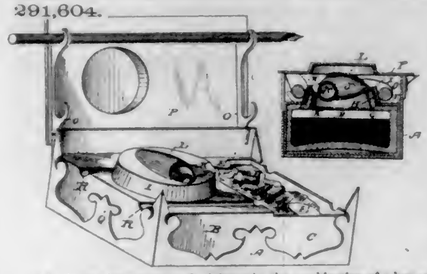
Claim.—The combination, with the slightly-tapering shell or bushing A, externally and internally screw-threaded, as described, and provided with a polygonal head, of externally-screw-threaded valve B, provided with a chambered head, and having holes or ports *g* and *b* and lateral teeth, washer D, the faucet C, provided with the shoulder *f*, integral therewith, and chambered, as described, and having teeth *e e'*, and washer E, all constructed and operating substantially as and for the purpose set forth.

291,604. INKSTAND. THOMAS B. KNOWLES, Toledo, assignor of one-third to Robert Moffett, Cleveland, Ohio. Filed Oct. 3, 1883. (No model.)

Claim.—1. An ink-well casing having the inward-turned lugs E, to retain in position a sponge or pen-wiper, as described.

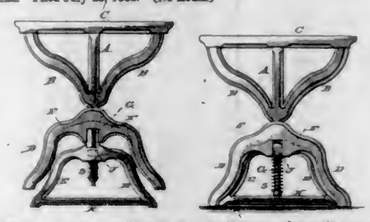
2. The combination, with an ink-well having an opening surrounded by a circumferential collar, of a cover having an inclined concave recess provided with an opening at its lower end, a convex plate or cover secured above the said recess and having an opening at its front end, and a ball arranged in the said recess, and adapted to automatically close the opening in the same, substantially as set forth.

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3. As an improvement in inkstands, the combination of a box or casing, the top of which is provided with recesses R, to receive the pen handles, with a hinged cover provided upon its under side with pen-racks O, substantially as and for the purpose set forth

291,605. BIER OR COFFIN STOOL. JOSIAH N. KNOX, Evansville, Ind. Filed July 23, 1883. (No model.)



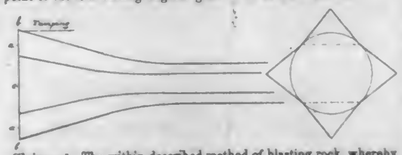
Claim.—1. The combination, in a stool-frame, of a main supporting-bracket, having its legs grooved on their inner side, with an auxiliary bracket constructed and arranged substantially as set forth, whereby it may be set and held at right angles to the main bracket or placed in the same plane and received in the grooves therein, all as and for the purposes set forth.

2. The combination, in a coffin bier or stool, of cross-bar C, legs B, shaft A, and legs D D, the latter being grooved out and notched, as shown at F and G, with legs E E, having cross-bar H, all constructed and arranged to operate as and for the purposes set forth.

3. A coffin bier or stool composed of cross-bar C, supports or legs B B, shaft A, spring S, adjustable legs E E, having cross-bar H, said parts being constructed and arranged to operate substantially as and for the purposes set forth.

291,606. METHOD OF AND TOOL FOR BLASTING ROCK. JOHN L. L. KNOX, Allegheny, Pa. Filed Feb. 10, 1883. (Model.)

Brief.—The blast-hole is made with two or four angles, which are formed by a flat-faced tool of proper outline driven into a circular hole, the point of the tool cutting angular grooves in the side thereof.



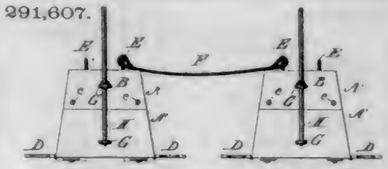
Claim.—1. The within-described method of blasting rock, whereby the alignment of the fractures upon the opposite sides of the bore is insured, which consists, essentially, in forming longitudinal grooves in the opposite sides of a cylindrical bore, said grooves having equal sides, and so situated as that a plane bisecting two opposite grooves will bisect the axis of the cylindrical bore, substantially as and for the purposes described.

2. The within-described instrument for cutting grooves in cylindrical blasting-bores, said instrument having a hexagonal flat cutting-face, two sides, *c*, parallel and of length and distance apart equal to the sides of a square inscribed within the circle of the cylindrical bore to be operated upon, and cutting-edges *a* of equal length, and so situated as that a line joining the points *b* will pass through a point equidistant from the ends of the sides *c*, substantially as and for the purposes described.

291,607. TRUNK. AUGUST KRONING, Berlin, Germany, assignor of one-half to E. Gustav Eschenhorn, same place. Filed July 21, 1883. (No model.)

Claim.—1. A water-proof trunk provided with buoyant wings for the purpose of increasing its stability and buoyancy, substantially as herein shown and described.

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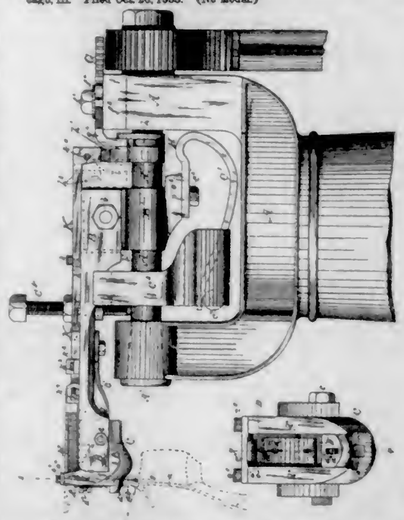
2. A water-proof trunk provided with buoyant wings hinged to the trunk and adapted to fold under the same or project from the same, substantially as herein shown and described.

3. A water-proof trunk having buoyant wings hinged thereto, and the eyes E, secured to its cover, substantially as herein shown and described, whereby provision is made for attachment of a life-preserver or connecting two or more trunks together, as set forth.

4. A water-proof trunk having buoyant wings hinged thereto, and eyes G, secured to the end of the trunk, substantially as herein shown and described, whereby provision is made for securing a signal-staff to the trunk, as set forth.

5. The combination, with a water-proof trunk formed of top and bottom sections, A A′, and having inclined sides, of packing-strips *a b*, placed in the joints, the angle-plates B, overlapping the top section, and secured to the bottom section by the screw *c*, substantially as herein shown and described.

291,608. HEEL BURNISHING AND MILLING MACHINE. PAUL JOSEPH LAPHAM, Louis, Mich., assignor to himself and Samuel M. Fargo, Chicago, Ill. Filed Oct. 20, 1883. (No model.)



Claim.—1. The combination, with a heel-burnishing tool, of a reciprocating slide mounted thereon, and provided with a heel-seat milling or other tool, and suitable actuating means, substantially as specified.

2. The combination, with a heel-burnishing tool, of a reciprocating jointed slide mounted thereon, and provided with a milling or other tool, substantially as specified.

3. The combination, with a heel-burnishing tool, of a reciprocating slide mounted thereon, and a reciprocating slide or tool-holder pivoted thereto and provided with a lip adapted to follow the crease or groove between the heel-seat and counter of the shoe, and a heel-seat milling or other tool, substantially as specified.

4. The combination, with a heel-burnishing tool, of a reciprocating slide mounted thereon, a reciprocating slide or tool-holder pivoted to said slide, and provided with a heel-seat beading-tool, a heel-seat milling-wheel, and a lip adapted to follow the groove between the heel-seat and counter of the shoe, substantially as specified.

5. The combination, with a heel-burnishing tool, of a reciprocating slide mounted thereon, a tool-holder pivoted to said slide and provided with a milling or other tool, and a device for reciprocating said slide, also mounted on said burnishing-tool, and suitable actuating means, substantially as specified.

6. The combination, with a heel-burnishing tool, of a reciprocating

slide mounted thereon, a tool-holder pivoted to said slide and provided with a heel-seat milling or other tool, and a reciprocating wedge mounted on said burnishing-tool for operating said slide, substantially as specified.

7. The combination of a swinging vibratory tool-carrier arm with a reciprocating slide mounted in a block pivoted to said arm, a tool-holder pivoted to said slide, and provided with a lip adapted to follow the groove between the heel-seat and counter of the shoe, and provided also with a heel-seat-ornamenting tool, and a device, substantially as described, for reciprocating said slide, also mounted on said pivoted block, substantially as specified.

8. The combination, with a swinging vibratory tool-carrier arm, of a reciprocating slide mounted in a block pivoted to said arm, and provided with a heel-seat milling or other tool, substantially as specified.

9. The combination of the slide D and tool-holder D′, pivoted thereto, and provided with a lip adapted to follow the groove between the heel-seat and counter of the shoe, and with a heel-seat-ornamenting tool and a spring-connection between said tool-holder and slide, substantially as specified.

10. The combination, with the slide D, of the tool-holder D′, pivoted thereto, and provided with lip d^4 and a heel-seat milling or other tool, and a spring secured to said slide, and provided with a slot which engages a pin secured to said tool-holder, substantially as specified.

11. The combination, with the slide D, of the tool-holder D′, pivoted thereto, and provided with lip d^4 and a heel-seat milling or other tool, and a reciprocating wedge E, provided with dovetails or grooves engaging with corresponding dovetails or grooves in the end of said slides, to reciprocate the same, substantially as specified.

12. The combination, with a heel-burnishing tool, of a swinging vibratory tool-carrier arm, a heel-seat-ornamenting tool mounted movably on said arm, and mechanism for operating the same, consisting of a connecting-bar reciprocating on said arm, and attached to a collar on the rock-shaft of the machine, said collar having a swivel-connection with the actuating lever or device, substantially as specified.

13. The combination, in a heel-burnishing and heel-seat milling or ornamenting machine, of the rock-shaft and the swinging vibratory tool-carrier arm with a sliding collar on the rock-shaft, connected with the mechanism for communicating motion to the heel-seat milling or ornamenting tool and with the operating lever or device, one of said connections being a swivel-connection, substantially as specified.

14. The combination, with swinging vibratory arm B and rock-shaft A′, of connecting-bar K, reciprocating on said arm B, collar H, provided with an arm, h', having slot h^3, for connecting the same with said bar K, rack-bar G, provided with yoke g^4, fitting in groove h of said collar, and segment-lever F, pivoted to the frame of the machine, substantially as specified.

15. The combination of the rack-bar G, provided with slot *g*, with the guide-block g', secured to the cap f^2, on which said rack-bar reciprocates, substantially as specified.

16. The combination of rack-bar G with lever F, provided with toothed segment *f*, bolt f^3, and bushing or collar f^4, surrounding said bolt, to form a bearing for said lever, substantially as specified.

17. The combination of shaft A′ with swinging vibratory tool-carrier arm B, a connecting-bar, K, reciprocating thereon, and a collar, H, adapted to slide on said shaft A, and having a slotted connection with said bar K, to permit of the vibratory movement of the carrier-arm B, substantially as specified.

18. A hollow heel-burnishing tool mounted on a swinging vibratory tool-carrier arm, and provided with a heel-seat milling or other tool having a reciprocating and pivotal or vibratory movement thereon, substantially as specified.

19. The combination, with a heel-burnishing tool pivoted to a swinging vibratory tool-carrier arm, of a reciprocating slide mounted on said burnishing-tool, and provided with a heel-seat-ornamenting tool, a device for reciprocating said slide, also mounted on said burnishing-tool, an operating-lever pivoted on the stationary frame of the machine, and connecting mechanism from said lever to said device, for reciprocating said slide, substantially as specified.

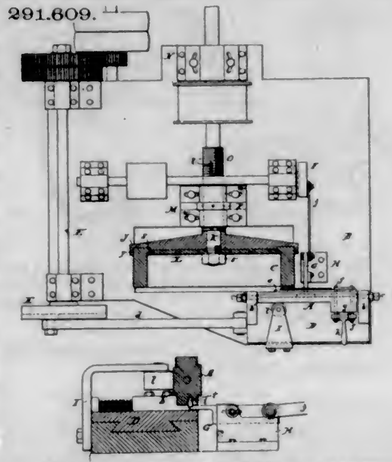
20. The combination of rock-shaft A′ with vibratory swinging tool-carrier arm B, burnishing-tool C, pivoted thereto, reciprocating slide D, mounted on said tool C, reciprocating wedge E, also mounted on said tool C, connecting-bar K, adapted to slide on said arm B, collar H, adapted to slide on said shaft A′, rack-bar G, adapted to slide on said frame A, and a lever, F, for operating the same, substantially as specified.

291,609. GRINDING-MACHINE. JOHN R. H. LEONARD, Nashua, Conn. Filed Feb. 13, 1883. (No model.)

Claim.—1. The combination, in a grinding-machine, of a revolving grindstone, a slide and appliances for reciprocating it past the stone at right angles to the shaft thereof, a carrier adapted to hold the article to be ground pivoted to the slide, and appliances, substantially as described, for rocking the carrier, as specified.

2. The combination of the revolving annular grindstone, the slide and the rocking carrier supported thereby, and means for rocking the

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same, a former secured to the outer face of the carrier, and a stationary bearing supported by the frame of the machine opposite to the former, the several parts being arranged to operate substantially as set forth.

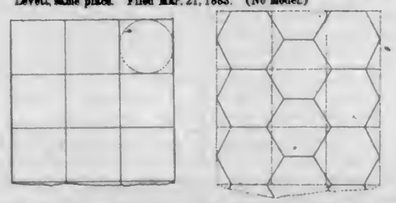
3. The combination of the slide, the carrier supported to rock thereon, the revolving crank-wheel F, and connections whereby the carrier is rocked by the crank-wheel, substantially as set forth.

4. In a grinding-machine, the combination of a revolving grindstone connected to a longitudinally-adjustable shaft supported in horizontally-adjustable bearings, in combination with a carrier adapted to hold the article to be ground pivoted to a reciprocating slide, and appliances for rocking the carrier, substantially as and for the purpose set forth.

5. The combination of the flanged annular grindstone, the flanged disk J, and plate L, clamped upon the flange of the grindstone, substantially as set forth.

6. In a grinding-machine, the combination of a revolving grindstone, a slide and appliances for reciprocating it past the stone, a carrier adapted to hold the article to be ground, having a former secured thereto and pivoted to the slide, a stationary bearing supported by the frame of the machine opposite to the former, and appliances for rocking the carrier, substantially as specified.

291,610. MANUFACTURE OF BUFFING AND POLISHING DEVICES. LOUIS LEVETT, New York, N. Y., assignor of one-half to Alexander Levett, same place. Filed Mar. 21, 1883. (No model.)



Claim.—1. The improvement in the art of making buffing and polishing devices, consisting of building up the wheel from sheets of material of hexagon shape, or of any multiple of such shape or similar shapes, by superposing such sheets on their centers, so that they will form a wheel, substantially as described.

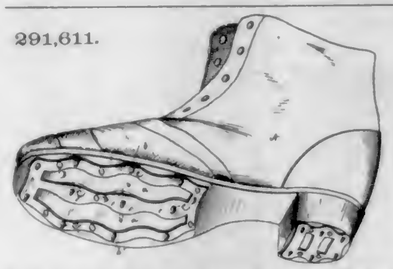
2. A buffing or polishing device consisting of sheets of material of hexagon shape, or of any multiple of such shape or similar shapes, superposed on their centers, substantially as described.

291,611. SOLE AND HEEL PLATE. SOLOMON LEVY, Ware, Mass. Filed Nov. 9, 1883. (No model.)

Claim.—1. The herein-described plate for shoes, formed of a single piece of metal having the longitudinal slots *a a′*, projecting portions *c c′*, provided at their ends with lugs *d*, adapted to enter the sole of the shoe to aid in retaining the plate thereon, and spuds or spurs C C, formed integral with said plate, substantially as set forth.

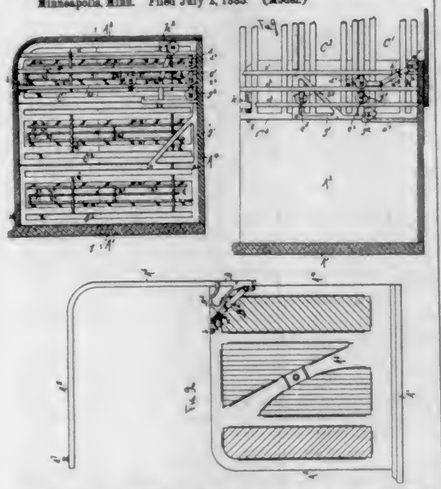
2. The combination, with a shoe, of a plate adapted to be secured

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thereto, formed of a single piece of metal having the longitudinal slots *a a'*, projecting portions *c c'*, provided at their ends with lugs *d*, adapted to enter the sole of the shoe to aid in retaining the plate thereon, and spuds C C, formed integral with said plate, substantially as set forth.

291,612. SHOW-CASE. DAVID C. LOEWENSTINE and JAMES E. FOX, Minneapolis, Minn. Filed July 2, 1883. (Model.)



Claim.—1. A show-case having goods-supporting frames C' C² C³ contained therein, and provided with a front, A^1, and top A^2, formed in fixed relation to each other, the top being hinged at the rear of the case to the same, the said front and top being adapted to be raised and held with the top in a vertical position, and the front in a horizontal position at some distance above the case, whereby the said frames may be raised to and held in a vertical position partly above the case and beneath the said front, substantially as herein specified.

2. A show-case having a bottom, back, and sides in fixed relation to each other, and provided with the slotted pivoted bars B^2, in combination with a front and top in fixed relation to each other, and provided with brackets B', adapting the top, when raised, to slide back and drop down behind the back A^4, substantially as described.

3. A show-case having a bottom, back, and sides in fixed relation to each other, and provided with slotted pivoted bars B^2 and anti-friction grooved rollers *b*, in combination with the front and top in fixed relation to each other, and provided with brackets B', having curved portions B^3, substantially as and for the purpose herein specified.

4. The combination, in a show-case, of a case bottom, sides, and back, A' A^2 A^3 A^4, tracks *c' c² c³ c⁴*, and goods-supporting frames C' C² C³, provided with rollers adapted to run upon the said tracks, arranged and operating substantially as herein shown and described.

5. In a show-case, a series of goods-supporting frames or holders contained within the case in a horizontal position, one above another, and adapted to be raised to and independently sustained in a vertical position, one in front of another, and substantially on the same plane, without removal from the case, for the purpose herein specified.

6. In a show-case, a series of goods-supporting frames or holders contained within the case in a horizontal position, one above another, and adapted to be raised to and sustained in a vertical position, one in front of another, on substantially the same plane, each frame being partially above the sides of the case, in combination with a case having a connected front and top adapted to be raised and held away from the said frames, substantially as and for the purpose herein specified.

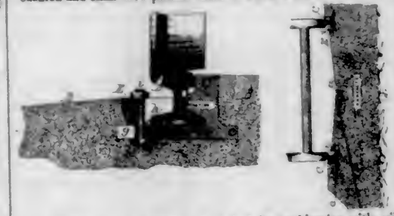
7. In a show-case, a goods-supporting frame adapted to be placed and held in both a horizontal and a vertical position, and provided with two sets of oppositely-located rods, D D, the respective sets of rods having pegs *u' u'*, adapted to be turned inward simultaneously toward each other and upward parallel with each other, substantially as herein specified, whereby each article is adapted to be held by two opposite pegs on opposite rods of the frame, the pegs being adapted to be thus turned inward toward each other to permit the full removal of the article, substantially as herein set forth.

8. The combination, in a show-case, of a frame having pivoted rods D and pegs *u'*, the connecting-arms *n'*, rods n^3, handle E^2, lever F', having a lug, *v'*, lever F^3, having a lug, v^3, catch *i*, lever *m*, and connecting cord or wire *t*, substantially as shown and described.

9. In a show-case, a bolding-peg, *u'*, formed of a flat plate of metal bent at one end around a rod, D, and held in place thereon by a portion of the metal cut in and bent from the plate into the rod, and having at the other end a lip, u^3, cut in and bent outward from the plate, in combination with the arms *n'* and n^3, straps n^2, and rod H, substantially as herein specified.

291,613. TRACK AND ROAD-BED FOR RAILWAYS. HARVEY C. LOWRIE, Denver, Colo. Filed Oct. 2, 1882. (No model.)

Brief.—The rails rest upon elastic cushions on chairs embedded in concrete, said chairs having an inward-projecting web which rests against the rail-web and upon top of the rail foot or flange. A locking-bar resting upon opposite rail-flange is secured to base of chair by vertical bolt. The cushion and chair-web permit vertical motion of rail.



Claim.—1. A concrete road-bed, in combination with rail-chairs embedded therein, the rails, cushions, locking-bars, and bolts, substantially as described.

2. The combination, with a concrete road-bed, of rails, rail-chairs which are embedded in the concrete beneath the rails, are engaged with a rail-head on one side, and overlie the adjacent rail-foot, and means for clamping the rail and chair, substantially as described.

3. The combination, with a T-rail, of a rail-chair having a web which overlies the foot of the rail, and a vertical surface for supporting the side of the head of the rail against lateral displacement, and a cushion interposed between the chair and rail, substantially as described.

291,614. ENVELOPE-MACHINE. HENRY A. MANN, Jr., Ballston Spa, N. Y. Filed Sept. 30, 1882. (No model.)

Claim.—1. In an envelope-machine, the combination, substantially as hereinbefore described, of the cam I, lifting-strap X, lifting-lever G, lifting-strap W, right-angled lever V, guides *b*, and weight D, all operating the gummer B, the gummer B and its parts, the plate C, platform C', gum-box and roller E, pushing-fingers F, operated by the oscillating device composed of the oscillating lever Y and its attachments, drop-lever H, carrying-rollers K, and creasing-rollers K', folder M, and fingers L, carrying-rollers N, and flat rollers N', platform O, with its guard *o*, lever P, actuated by oscillating lever Z and its attachments, creasing-rollers R, carrying-rollers S, folder T, and rollers U and U', all being constructed and organized for operation as set forth.

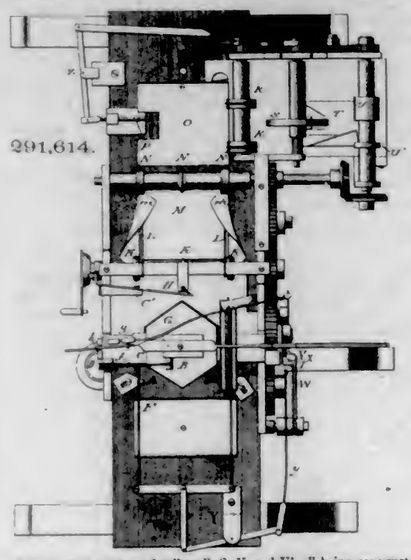
2. In an envelope-machine, the combination and arrangement, as hereinbefore described, of the gumming apparatus B, gum-box and roller E, operating mechanism I, X, G, W, V, *b*, and D, and their attachments, all being constructed and organized as hereinbefore specified.

3. In an envelope-machine, the pushing-fingers F, with their projecting pins *f*, operated by the oscillating device, consisting of the oscillating lever Y and its attachments, in combination with gummer B, all constructed, arranged, and operating as hereinbefore specified.

4. In an envelope-machine, the combination and arrangement of the creasing-rollers K' and R, folder M, with its curved sides *m*, guiding-fingers L, platform O, and the lever P, operated by the oscillating device Z, all constructed, arranged, and operating as set forth and described.

5. In an envelope-machine, the combination and arrangement of the carrying mechanism, consisting of the pushing-fingers F, with pins *f*, platform C', carrying-rollers K, creasing-rollers K', and carrying-rollers N, with folder M between them, platform O, with guard *o*, lever P, and oscillating attachments, and rollers R, S, U, and U', all being constructed and organized for operation as set forth and described.

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6. In an envelope-machine, the folder T, having curved or folded sides, as shown, and the rollers U and U', so that the lower flap is folded, pressed flat, and sealed, while the seal-flap is folded and its fold only is pressed without sealing the flap, all being constructed and arranged as hereinbefore specified.

7. In an envelope-machine, the combination and arrangement of the creasing-rollers R, the carrying-rollers S, the folder T, and the pressing-rollers U and U', so as to fold and press both flaps, and at the same time seal the lower flap of the envelopes, as set forth, and all constructed, arranged, and operating as hereinbefore shown and described.

291,615. PAPER BOX. THEODORE MARBURG, Baltimore, Md., assignor to Edward B. Munson and Harvey S. Munson, both of New Haven, Conn. Filed Nov. 22, 1883. (No model.)



Claim.—1. A slide-box consisting of a blank creased or scored upon the lines 2 4 6, whereby it may be folded to provide sides and ends, and upon the line 3, to provide said end or ends with a tucking-flap, H, and severed at *a*, to allow its end or ends to be turned down, substantially as described.

2. A slide-box consisting of a blank creased or scored upon the lines 2 4 6, whereby it may be folded to provide sides and ends, upon line 3, to provide said end or ends with a tucking-flap, which is severed at *a*, to allow said end or ends to be turned down, and creased on the line 5, to facilitate the latter movement, substantially as described.

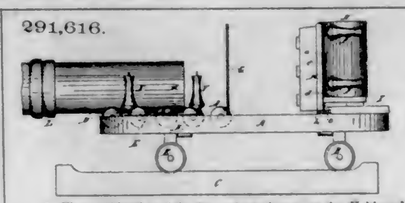
3. The means whereby a portion of the bottom of a trough-like slide-box is capacitated to be turned down to remove from it the contents of said slide-box, the same consisting of the severings *a*, dividing the sides of the slide from its bottom at one or both ends, substantially as described.

4. The combination, with a tubular cover, of a slide-box composed of upturned sides and ends, said ends having tucking-flaps, and said sides being severed near each end from the bottom, and all of said parts being unseited; so that the slide-box may be packed flat, substantially as described.

291,616. CUTTING-TABLE FOR TILE AND BRICK MACHINES. JOSEPH C. MCKENZIE, Adrian, Mich. Filed Dec. 11, 1882. (No model.)

Claim.—1. A cutting-table for a tile-machine, consisting, essentially, of a frame traveling upon a track, said frame being provided with a stationary section and a hinged section, all constructed and operating to the end that the table may be moved forward a limited distance, unloaded, and returned beneath the constantly-progressing column of clay.

2. In a cutting-table for a tile or brick machine, the combination of the frame A, stationary section K, hinged section H, wheels B, and track C, substantially as shown and described.



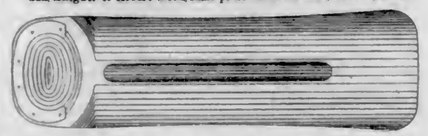
3. The combination of the frame A, stationary section K, hinged section H, pallet-board I, wheels B, and track C, substantially as shown and described.

4. In a cutting-table for a tile or brick machine, the combination of the vertical rollers or guides F, and adjustable supports E, with the frame A, whereby said side rollers or guides can be adjusted to suit any size of tile-pipe, substantially as shown and described.

5. The combination of the frame A, stationary section K, hinged section H, pallet-board I, horizontal rollers D, side rollers, F, and adjustable supports E, cutting-wire G, wheels B, and track C, substantially as and for the purpose shown and described.

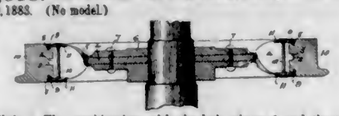
6. In a cutting-table for a tile-machine, the combination, with a frame traveling upon a track, and provided with a stationary and a hinged section, of a cutter arranged at one end of the hinged section, substantially as shown and described.

291,617. SURGICAL SPLINT. HENRY MCNAUGHTON, Erin, Ontario, Canada, assignor to Robert Wood, same place. Filed Oct. 12, 1883. (Model.)



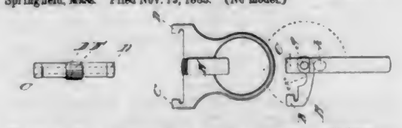
Claim.—In a splint for the forearm, wrist, and hand, constructed as shown and described, the combination, with the shell A B C D, of the longitudinal ridge E and the abrupt ridge E', for the purpose specified.

291,618. CAR-WHEEL. GEO. W. MILLMORE, Chicago, Ill. Filed Aug. 10, 1883. (No model.)



Claim.—The combination, with the hub-plates 6 and the twisted spokes 4, of the rim 10, provided with the grooves 8, the annular plates 11, provided with the flanges 9, and the bolts 12, passing through said plates 11 between the spokes, all substantially as described.

291,619. RING-EXTRACTOR FOR CARTRIDGES. JOHN MURPHY, Springfield, Mass. Filed Nov. 19, 1883. (No model.)



Claim.—The within-described cartridge-extractor, consisting of a convenient handle, two opposite rigidly-connected hooks, and a third hook hinged between the rigid ones, and adapted to swing between them from an operative position to a folded one, to leave an implement of no greater thickness approximately than the width of the face between the rigid hooks, as and for the purpose set forth.

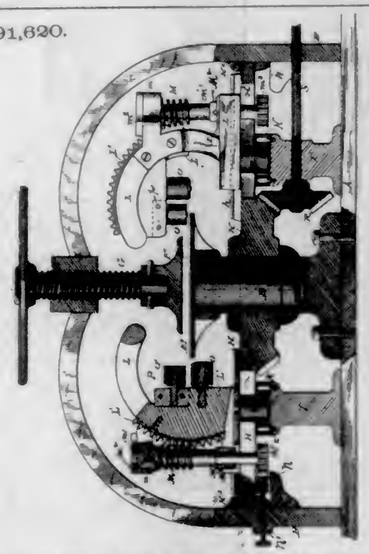
291,620. FLANGING-MACHINE. RICHARD C. NUGENT, Pittsburg, Pa., assignor of five-eighths to W. J. Armstrong, Thomas T. Wightman, John Farrell, and Jos. G. Walnwright, same place. Filed Feb. 5, 1883. (No model.)

Claim.—1. In a flanging-machine having revolving slotted arms, the combination of the guide-pattern K with the roller-bearing arms L, provided with pins *l*, substantially as described, whereby the rollers are made to describe the outline of the pattern, for the purposes set forth.

2. The combination, with the racks L', the arms L, and the shafts M', of the eccentrically-movable journal bearings with attached levers m^2, substantially as described, whereby the racks and worms are thrown out of gear, for the purposes set forth.

3. The combination, with the fixed rollers O and the racks L', of

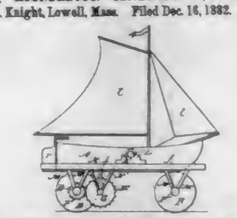
291,620.



the movable rollers O', pivoted plates P, and pins *p*, substantially as described, whereby the rollers O may be locked or swung out of place, for the purposes set forth.

4. The within-described machine for flanging metal plates of regular or irregular form, consisting, essentially, of housings B, pillar D, wheel H, having slotted arms H', pillars I, guide-pattern K, arms L, toothed racks L', rack N, and clamp F, all provided with operating mechanism, and arranged in the manner and for the purposes set forth.

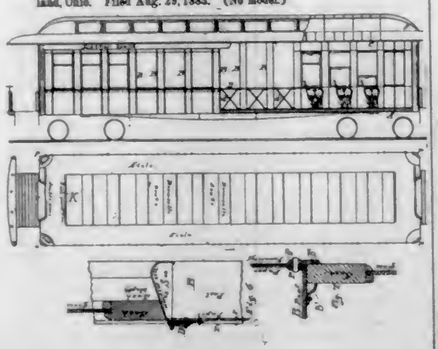
291,621. ROUNDABOUT. THOMAS OLDROYD, Tewksbury, assignor to William C. Knight, Lowell, Mass. Filed Dec. 16, 1882. (No model.)



Claim.—1. The combination of the frame *f*, axles F F' and wheels B B, pinion D, gear E, crank-shaft G, connecting-rod I, and the boat A, pivoted to said frame, as and for the purpose specified.

2. In combination with the frames *f f* and boats A A, the platform *g*, as and for the purpose specified.

291,622. RAILWAY PASSENGER-CAR. WILLIAM H. PAIGE, Cleveland, Ohio. Filed Aug. 29, 1883. (No model.)



Claim.—1. The combination, in a car constructed of iron and paper, of the wooden filling in the corners, and door-posts of a car, substantially as specified.

2. The arrangement of a central row of reversible back seats, and the partitions K, with side aisles in a car, as shown and described.

3. The T-iron posts B B, side rails, A, cap-rail C, bar D, and cross-braces *d*, substantially as described, and for the purposes set forth.

4. The T-iron posts B B, side rails, A, cap-rail C, bar D, and cross-braces *d*, the space below the window being filled with paper panels, all united and secured in the manner specified.

5. In a car, the seats placed transversely in the center thereof, whereby two side aisles are formed, in combination with the sash-partition K, as specified.

6. A railway-car the outer and inner paneling whereof are made of paper, substantially as set forth.

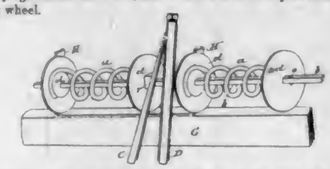
291,623. SCISSORS AND SHEARS. SALMON R. PLUMB, Cheshire, Conn., assignor of one-half to George J. Capewell, same place. Filed Aug. 1, 1883. (No model.)



Claim.—A pair of handles pivoted together at their inner ends, in combination with a pair of crossed blades or jaws, which are pivoted together, and have their rear ends pivotally connected to the middle parts of said handles, said handles being recessed, so that said blades may set flush in them, substantially as set forth.

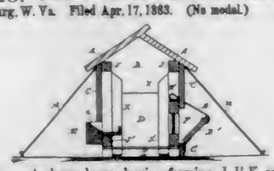
291,624. RAILWAY-SWITCH. BYRON RICE, West Schuyler, N. Y. Filed Aug. 29, 1883. (No model.)

Brief.—Through the bracket which is secured to the tie is passed a rod carrying thereon coiled springs and disks for holding the switch-point normally against one main rail, from which it is forced by the flange of a passing wheel.



Claim.—The combination, with sleeper G, the main rail, and the switch point rail, of the bracket H, the rod *b*, disks *d*, and springs *a*, substantially as set forth.

291,625. PORTABLE HOUSE FOR SHEEP. LEWIS ROBBINS, Parkersburg, W. Va. Filed Apr. 17, 1883. (No model.)



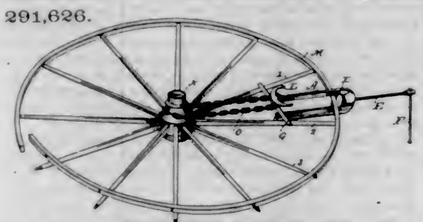
Claim.—A sheep-house having framing J J' K, roof A, ends B, sidings C, and slats F, and provided with hinged shutter D', to which is attached cord R, having loop R', substantially as described.

291,626. WHEEL OR FELLY SCREW. CHRISTOPH ROTHEN, Cuero, Tex. Filed Aug. 29, 1883. (No model.)

Claim.—1. The combination of an approximately U-shaped frame, a rest-bar extending across the end of one of the arms of the same, and adapted to rest on the spokes, a screw-bar exteoding longitudinally and working in the frame, and a follower on the end of said bar, substantially as and for the purpose set forth.

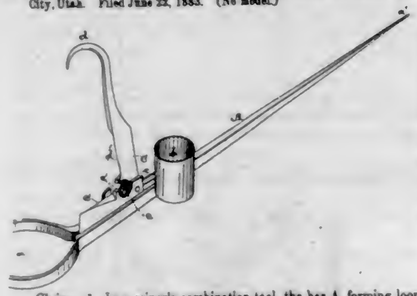
2. The combination of an approximately U-shaped frame, a hook at the end of one of the arms of the same, a screw-bar working through the frame and extending longitudinally, a follower on the end of said bar, and a chain engaged with the hook and adapted to encircle the hub of the wheel, substantially as and for the purpose set forth.

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3. The herein-described felly-screw, comprising an approximately U-shaped frame, having a screw-threaded perforation in its end portion, and having its sides formed with inner guide-edges, a transverse support-bar at the end of one of said sides, a double hook at the same end, a longitudinally-extending screw-bar working between said sides, and a follower journaled on the end of said bar, and having recesses in its sides, that receive the said guide-edges, substantially as and for the purpose set forth.

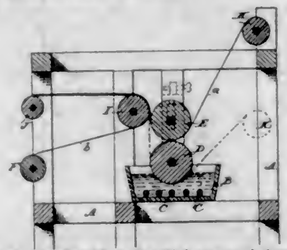
291,627. MINER'S COMBINATION-TOOL. JOHN RYAN, Salt Lake City, Utah. Filed June 22, 1883. (No model.)



Claim.—1. In a miner's combination-tool, the bar A, forming loop *a* and point *a'*, and having socket *b* formed with or secured thereto, the pivoted bar C, having hook *d*, and ground to form a knife or cutter, *d'*, and the knife or cutter *c'*, substantially as herein described.

2. In a miner's combination-tool, the bar A, forming loop *a* and point *a'*, and having socket *b* formed with or secured thereto, the pivoted bar C, having hook *d* and notch or groove *c'*, and having its edge ground down to form a knife or cutter, *d'*, and the bearing *c*, having a notch or groove, *e*, and a cutting-edge or knife, *c'*, substantially as herein described.

291,628. ROOFING-FELT AND MECHANISM FOR MAKING THE SAME. AUGUSTINE SACKETT, New York, N. Y. Filed May 11, 1883. (No model.)



Claim.—1. A roofing-felt or other fabric composed of two layers of felt or paper previously saturated with coal-tar, united by a layer of pitch or other suitable cement, which is confined to the interior of the fabric in such a manner as to leave the edges dry and uncemented, as set forth.

2. The method herein described of coating roofing felt or paper, the same consisting in bringing a traveling web or felt of fabric in contact with a partially-submerged roller or drum, which is somewhat shorter than the width of the felt, whereby a layer of pitch or cement is applied to the web on all portions of it, except in a narrow marginal line or space at each edge.

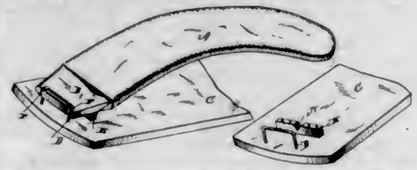
3. The method herein described of coating roofing felt or paper with pitch or cement, the same consisting in bringing a traveling web of felt or paper in contact with a rapidly-revolving and partially-submerged roller or drum, said drum being driven at a greater velocity than that at which the felt or paper is drawn through the machine, as set forth.

4. The method herein described of manufacturing roofing felt or paper or other material of like character, the same consisting in applying a layer of pitch or cement to a layer or web of paper or felt on all portions, except at the edges thereof, and then joining thereto by means of the cement thus applied another layer or web of felt or paper, as set forth, to form a completed fabric.

5. In a machine for coating paper or felt, the short power-driven roller D, mounted so as to be partially within the tank B, in combination with the adjustable roller E, roller H, and traveling web of felt or paper *a*, whereby a coating or layer of pitch somewhat narrower than the width of the web is applied thereto, as set forth.

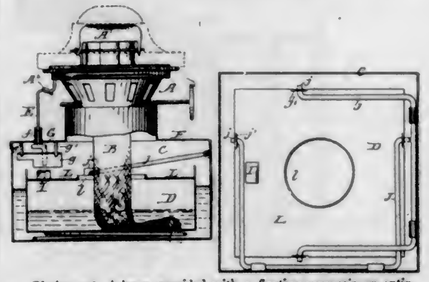
6. A machine for coating or saturating paper or felt for roofing and other purposes, consisting of the following elements in combination: a heating or melting tank, a roller for applying cement to a traveling web of felt or paper mounted within said tank, an adjustable roller for pressing the web against the cementing-roll, a roller or drum for uniting the coated with an uncoated layer or web of paper or felt, and a drum or roller for winding into rolls the completed fabric, as set forth.

291,629. REVERSIBLE SLEEVE-BOARD. NICHOLAS SCHOLL, Chillicothe, Ohio. Filed Mar. 31, 1883. (No model.)



Claim.—The combination, with an ironing-board, C, having loop or staple D and supporting-block E, of the herein-described sleeve-board A, having eccentrically-curved sides, and provided with a shank, B, having notches F F and grooves G G, as and for the purpose set forth.

291,630. SELF-EXTINGUISHING LAMP. WALTER SCOTT, Hoosic Falls, N. Y., and MOSES W. MANWARING, Bridgeport, Conn. Filed Apr. 25, 1883. (No model.)



Claim.—1. A lamp provided with a floating reservoir, an extinguisher, and intermediate motion-conveying devices, whereby the consumption of oil from the reservoir causes it to rise and extinguish the flame of the lamp, substantially as herein set forth.

2. In a lamp, the combination of a floating reservoir, an extinguisher, and intermediate extinguisher-operating devices, substantially as specified.

3. In a lamp, the combination of a floating reservoir, an extinguisher, and an intermediate spring-locked or equivalent extinguisher-device-operating lever, substantially as specified.

4. The combination of a lamp-body and an internal floating reservoir with pivoted connecting-bails, to maintain it in proper relation to the extinguishing mechanism, substantially as specified.

5. The combination, with a lamp, C, provided with extinguishing devices A' A^2, of a floating reservoir, D, and an intermediate push-bar and pivoted lever, G, substantially as specified.

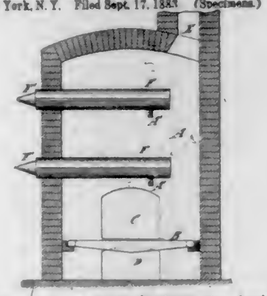
6. The combination of the push-bar E, lever G, plate *g*, brackets *g'*, stop g^2, and spring H, substantially as shown and described.

7. The combination of the lamp-body C, reservoir D, and bails J J, pivotally secured to the body and to the reservoir in slots *j'* therein, substantially as shown and described.

8. The combination of the lamp-body C, reservoir D, having a centrally-perforated cover, L, and bails J J, substantially as shown and described.

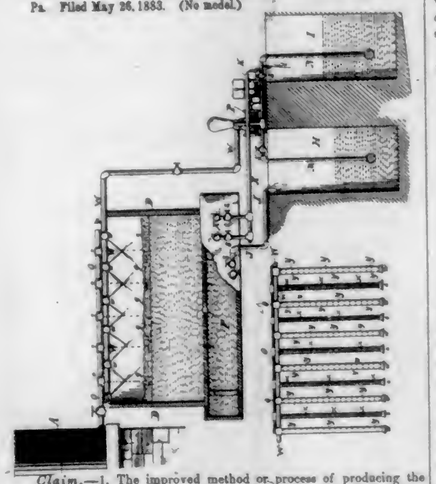
9. The combination of the lamp-body C, reservoir D, having step I, lever G, push-bar E, and burner A, and operating-rod A^2, substantially as shown and described.

291,631. PROCESS OF OBTAINING ALUMINIUM. FREDERICK J. SEYMOUR, Wolcottville, Conn., assignor of one-half to William Henry Brown, New York, N. Y. Filed Sept. 17, 1883. (Specimens.)



Claim.—The improvement in the art of extracting aluminium from aluminous earths and ores, consisting in mixing aluminous ore or earth and an ore of zinc with carbonaceous material and a flux, and subjecting the mixture to heat in a close retort, whereby the zinc liberated is caused to produce or assist in the casting down of the aluminium in a metallic state, and an alloy of zinc and aluminium is obtained, substantially as herein described.

291,632. METHOD OF AND APPARATUS FOR REFRIGERATING PARAFFINE AND OTHER OILS. BENJAMIN F. SHAKESPEARE, Chester, Pa. Filed May 26, 1883. (No model.)



Claim.—1. The improved method or process of producing the congelation or cooling of paraffine and other oils, which consists in bringing together the oil and a refrigerating liquid, both in a spray or comminuted condition, substantially as and for the purpose set forth.

2. The improved method or process of rapidly reducing the temperature of oils, which consists in forcing against a small body or bodies of oil in motion a series of streamlets of a refrigerating fluid, whereby the said fluids are caused to be broken up into small particles, or into a spray, substantially as and for the purposes set forth.

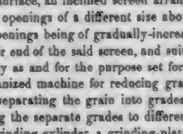
3. An apparatus for congealing paraffine and other oils, consisting of the following elements, combined, constructed, and operating substantially as and for the purposes set forth, viz: An oil-supply pipe or pipes having a series of small orifices therein, a cold-water-supply pipe or pipes, also with a series of small orifices therein, the said oil and water pipes and their orifices being relatively located, as shown and described, so as to cause the streams of oil and water issuing from said pipes, respectively, to impinge against each other, together with means, substantially as described, for forcibly directing the one series of streams against the other.

4. In an apparatus for quickly congealing or reducing the temperature of paraffine and other oils, the combination of a system of oil-supply pipes provided with series of small orifices, and cold-water-supply pipes with similar orifices, the respective pipes and orifices therein being relatively located, as shown and described, a force-pump for forcing the water out of the orifices in the said water-pipes, and a receiving-tank beneath the system of oil and water pipes, all constructed, combined, and operating substantially as and for the purposes set forth.

5. In an apparatus for congealing or reducing the temperature of paraffine and other oils, the combination of a system of perforated oil-pipes and cold-water pipes, the perforations of the said pipes being combined and arranged with relation to each other as shown and described, whereby the opposite streams of water are caused to bisect each other, and also the intermediate streams of oil, together with means for forcibly ejecting the water from said water-pipes, the combination, arrangement, and operation being substantially as shown and described.

6. The oil-conduit, with lateral horizontal pipes *o*, the cold-water pipe with lateral horizontal branches *w*, alternating with pipes *o*, as shown, and provided with the orifices *x* and *y*, respectively, the receiver D, the well or wells, with pipes for conveying the water from the receiver to the wells, the pump P, with pipes communicating with said wells, all combined, constructed, arranged, and adapted to operate substantially as and for the purposes set forth.

291,633. CLOTHES-POLE. FRANK E. SHAW, South Attleborough, Mass. Filed Apr. 7, 1883. (No model.)



Claim.—The combination, with the bifurcated clothes-pole A, of the wire spring D, having one or two staples, *d*, inclined plane *e*, and shoulder *f*, formed of one piece of bent wire, and the lever A, pivoted on the staple *g*, constructed to operate the wire spring, as described.

291,634. GRAIN-BREAKER AND GRINDING-MILL. JOHN M. SPEER, Jr., Fort Branch, Ind. Filed Oct. 6, 1883. (No model.)

Claim.—1. The combination of the frame, the grinding-roller, guide-flanges upon the inner sides of the sides of the frame, a supporting-beam sliding between said flanges, clips upon the rear side of said beam, screws mounted in the rear part of the frame and journaled in said clips, and set-screws mounted in the sides of the frame, and adapted to bear against the ends of the supporting-beam, substantially as set forth.

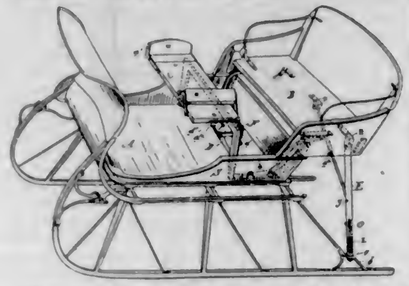
2. The combination, with the supporting-beam having an upwardly and rearwardly extending slotted plate, of the grinding-plate having screws on its under side that extend through the said slots, clamping-nuts, plates at the upper edge of the supporting-plate, lugs at the upper edge of the grinding-plate, and screws mounted in said lugs and journaled in said plates, whereby the grinding-plate may be adjusted, substantially as set forth.

3. The combination of the frame, the grinding-roller, the supporting-beam, mechanism for adjusting the ends of the latter independently with reference to the ends of the grinding-roller, an upwardly and rearwardly extending plate secured rigidly to the upper front edge of the supporting-beam, and the grinding-plate secured adjustably upon the said inclined plate, substantially as set forth.

4. In a machine for reducing grain, the combination of a frame, a grinding-cylinder, a grinding-plate, mechanism for adjusting the ends of the latter independently with reference to the grinding-cylinder, a hopper having several compartments arranged to discharge at various points of the grinding-surface, an inclined screen arranged above the said hopper, and having openings of a different size above each compartment of the latter, the openings being of gradually-increasing size from the upper toward the lower end of the said screen, and suitable operating mechanism, substantially as and for the purpose set forth.

5. An organized machine for reducing grain, the same comprising mechanism for separating the grain into grades of various sizes, mechanism for feeding the separate grades to different points of the reducing mechanism, a grinding-cylinder, a grinding-plate, mechanism for adjusting the ends of the latter independently with reference to the grinding-cylinder, an inclined delivery-plane, and vertical partitions upon the latter, whereby separate compartments are formed to receive the chop from various points of the reducing mechanism, substantially as and for the purpose set forth.

291,635. SHIFTING SEAT FOR SLEIGHS. WM. H. STEINBRECHER, Detroit, Mich. Filed Sept. 3, 1883. (No model.)



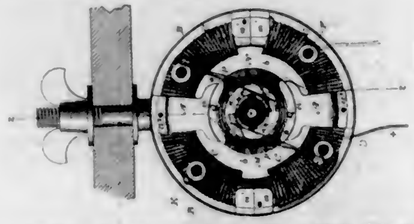
Claim.—1. In a sleigh-seat, the seat C, having hinged L-shaped end portions, said seat being secured to the frame F by hinges *d d*, said hinges having L-shaped extensions *d'*, with lugs d^3 and pintles *e'*, connecting bars P, reciprocating braces D, said braces pivoted to the frame F, the whole when arranged and combined substantially as specified.

2. The combination of the seat B, having jump-irons A pivoted thereto, the hollow braces E, pivoted to the lugs *n*, said braces containing pins O, coil-springs Z, internal bolts, and square openings *l*, said openings and internal bolts engaging with the offset and holes *e* of the runner-braces *b*, as and for the purposes set forth.

3. The combination of the seat B, having the rail R attached thereto, the hollow braces E, pivoted to the lugs *n n*, with jointed braces a^2, pivoted at Y, and to the lugs *r*, the lower portion of the braces a^2 adapted to fold within the longitudinal openings of the braces E, substantially as and for the purposes set forth.

4. In a sleigh, the seat B, having the jump-irons A attached thereto, the seat adapted to move backward over the sleigh-box, and supported by folding brace-irons attached thereto and to the runner-braces, as specified.

291,636. ELECTRIC MOTOR. LEVI W. STOCKWELL, Cleveland, Ohio. Filed Sept. 20, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of the opposite adjacent field-magnet poles, the armature-magnets arranged transversely to each other and rotating between said poles, the field on each side of the armature being of uniform polarity, the armature-coils wound parallel with the poles of the field-magnet and with their axis of rotation and at right angles to their plane of rotation, the commutator-contacts with which the armature-coils are connected, and the brushes bearing on said contacts and connected with the source of electric energy.

2. The combination, substantially as set forth, of the opposite adjacent poles of the field-magnet, the armature-magnets arranged transversely to each other and rotating between the opposite effective faces of said poles, the polarity of the field on each side of the armatures being uniform, the commutator-contacts with which the armature-coils are connected, the brushes bearing on said contacts, and an electric circuit common to said brushes.

3. The combination, substantially as set forth, of the field-magnet having elongated radially-projecting poles, the armature-magnets which rotate centrally between the poles and are arranged transversely to each other and have their coils wound with the greatest length parallel with the elongated poles of the field-magnet, the commutator-contacts, and the brushes bearing thereon and arranged to send the current successively first through one of the armature-coils, then through both of the coils, and then through the other armature-coil, according to their positions relatively to the field-magnets, as described.

4. The combination, substantially as set forth, of the field-magnet, the armature-coils, a single commutator-ring, the commutator-contacts with which the coils are connected, and the commutator-brushes arranged in pairs, one pair on each side of the commutator-ring, to give an extended or double point of contact on each side of the commutator-ring to make connection with one contact before connection with the adjacent one is broken.

5. The combination, substantially as set forth, of the field-magnet, the armature-coils, the commutator-ring, and the commutator-brushes arranged to make contact first with the contact-plates with which one armature-coil only is connected, and then with both sets of contact-plates, for the purpose described.

6. The combination, substantially as set forth, of the field-magnet poles, the transversely-arranged armature-magnets, and electrical connections and contacts by which each armature-magnet is cut out of the circuit during a portion of a revolution.

7. The combination, substantially as set forth, of the field-magnet, the armature, the commutator ring and brushes, the switch or controlling device, and the contact buttons and plates by which, when the switch is in one position, the current is shunted from the armature-coils, and when moved in one direction from the neutral line sends the current through the armature-coils in one direction, and when put over to the opposite side sends the current in the reverse direction.

8. The combination, substantially as set forth, of the field-magnet, the armature-coils, the commutator-ring, a switch-lever pivoted concentrically with the commutator-ring, the brushes carried by said lever, the contacts through which the battery is shunted from the armature-coils but still flows through the field-magnet coils, and the contacts by which the direction of the current through the armature-coils may be reversed by moving the switch-lever to change the direction of the motor.

9. The combination, substantially as set forth, of the field-magnet, the armature, the commutator-ring, the switch-lever, the brushes carried thereby, and electrical contacts through which by the movement of the lever the commutator-brushes are adjusted on the ring and the direction of the current through the armature-coil simultaneously reversed.

10. The combination, substantially as set forth, of the casing or magnet-supports, the field-magnet, and the supporting-extensions of the magnets projecting from the neutral part.

11. The combination, substantially as set forth, of the field-magnet, the supporting-projections extending from the neutral part, the supporting-casing, and supporting-bars, of non-magnetic material, extending from the poles of the magnets to the casing.

12. The combination, substantially as set forth, of an electric motor and a bolt or support, of non-magnetic material, connected with the pole or active part of the field-magnet for attaching the motor to its support.

291,637. GLASS BOTTLE-STOPPER. JOHN STORY, Castle Shannon, Pa. Filed July 9, 1883. (No model.)



Claim.—1. A glass bottle-stopper provided with the flange which extends out over the neck of the bottle, and which has a cavity or well formed in its top, and provided with conduits *b*, which communicate with the surface of the plug portion of the stopper, substantially as shown.

2. The combination of a bottle having the inner edge of the upper end of the neck cut away, so as to form a cavity, *i*, in combination with the stopper having a flange which projects outward over the neck of the bottle, and which stopper is provided with a cavity, *a*, and the conduits *b*, which communicate with the cavity *i*, which is formed by the cut-away edge of the bottle, substantially as specified.

291,638. BOTTLE AND STOPPER. JOHN STORY, Castle Shannon, Pa. Filed Mar. 5, 1883. (No model.)

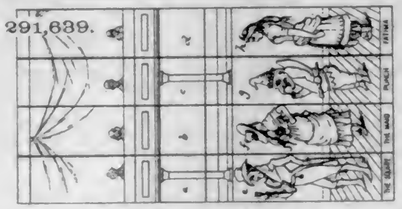


Claim.—The combination of a bottle having the lip of its neck inclined and flared upwardly and outwardly, with the stopper provided with the grooved flange, the shape of the groove being made to correspond to the shape of the lip and the different parts of the neck, and the stopper, being ground so as to form a tight joint, substantially as shown and described.

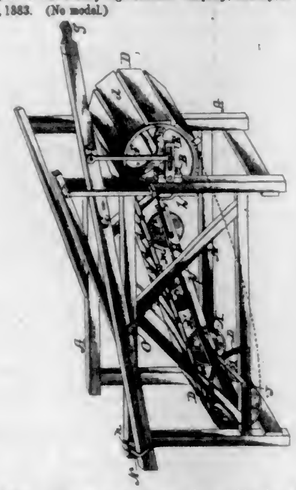
291,639. SLICED PICTURE. WALTER STRANDERS, New York, assignor to EDWARD I. HORSMAN, Brooklyn, N. Y. Filed Oct. 27, 1883. (No model.)

Claim.—A sliced picture composed of series of sections which are decorated on both sides, there being for each section a complementing section, which is adapted to take its place in either of the scenes which can be represented by the sections, all the sections being adapted to produce one picture, in which changes can be effected by interchanging the complementing sections, substantially as specified.

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291,640. ANIMAL-POWER. LEVI C. STRONG, Greenfield, Mass., assignor to the Albany Agricultural Company, Albany, N. Y. Filed Nov. 24, 1883. (No model.)



Claim.—1. In an animal-power, the combination of a main frame supporting a driving-pulley, a secondary frame supporting a following pulley, an endless tread, and a cam or cams journaled in the main frame and bearing directly upon or against said secondary frame, substantially as specified.

2. The vibrating bar of an animal-power, connected by suitable means to the crank of a driving-pulley, in combination with two links pivotally connected to said bar and to the main frame, one of said links being pivoted to said frame above and the other below said bar, substantially as specified.

3. The combination of a series of lags with a series of links alternately provided with webs having spurs and hinge-lugs, and with webs having similar hinge-lugs and a screw bole or recess, substantially as specified.

4. The combination of the bar G and the links N O, the frame A, pitman F, and a driving-pulley having a crank E, substantially as specified.

5. The combination of the endless tread D, pulley C, crank E, pitman F, bar G, supported by the hanging link N, and the link O, substantially as specified.

6. The combination of the main frame A, the secondary frame H, pivoted to the main frame, and carrying the following pulley C', with the shaft J, cam I, arm K, and sector L, substantially as specified.

7. A lag-link comprising the spurred or recessed web *m*, the stops m^2, jaws m^3, and hinge-lugs *m'*, substantially as specified.

8. The combination of a lag-link, as M, having spurs or points, as m^4, with a lag-link, as M', provided with a bored or recessed web, substantially as specified.

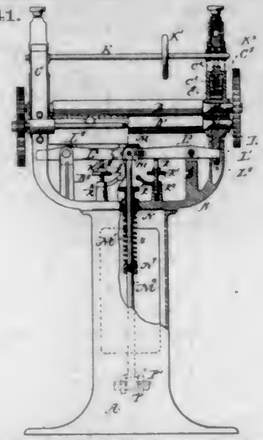
9. The combination of the lags *d d* with the links M M', having hinge-lugs *m'*, stops m^2, jaws m^3, and pintles m^4, substantially as specified.

291,641. LEATHER-SPLITTING MACHINE. FREDERICK S. STRONG, East Bridgewater, Mass., assignor to the Carver Cotton Gin Company, same place. Filed Nov. 15, 1883. (No model.)

Claim.—1. In a leather-splitting machine, the combination of the upper roll, D, the boxes C' C', springs C^3 C^3, cams K^3 K^3, and shaft K, with the adjustable boxes H H and screws H' H', all operating substantially as described, and for the purpose set forth.

2. In a leather-splitting machine, the combination of the lower roll,

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D', boxes L L, having projections L' L', levers L^2 L^2, and adjusting-screws R R, with the link M, rods M' M^2, spring S, and foot-lever P, all operating together substantially as described, and for the purpose set forth.

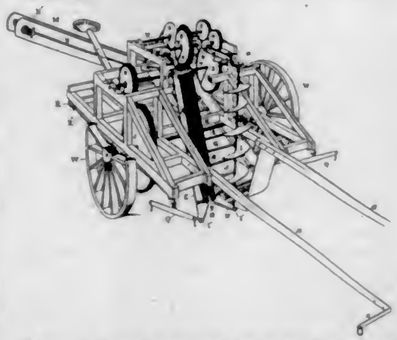
3. The combination of the sunk head knife-holding bolt T, having a fixed collar, *t*, with the spring T', arranged to operate substantially as described, and for the purpose set forth.

291,642. NUT-LOCK. JOHN B. SUTCH and WILLIAM C. MCELHENY, Pittsburg, Pa. Filed Sept. 22, 1883. (No model.)



Claim.—A device for locking nuts on bolts, consisting of a bar formed into an open ring or washer, of which one end overlaps the other, the ring to be placed upon the bolt between the nut and the underlying surface, and having at its under side two or more pointed projections that are forced into the underlying surface during and by the process of screwing down the nut, the overlapping end of the ring, when bent upward, locking the nut, substantially as shown and described.

291,643. CORN HARVESTER AND HUSKER. JAMES W. TERMAN, Peoria, Ill., assignor to Josiah Cratty, same place. Filed Dec. 1, 1882. (No model.)



Claim.—1. In corn harvester and husking machines, the eccentric rollers A and B, substantially as and for the purpose set forth.

2. In a corn-husker, the polygonal, eccentric, and unequal rollers A and B, substantially as and for the purpose specified.

3. In a corn harvester and husker, two unequal rollers having the smaller set back farther than the other, as and for the purpose described.

4. In a corn harvester and husker, two polygonal, eccentric, and unequal rollers, A and B, having the smaller of the two set back partially in the rear of the larger, substantially as and for the purpose specified.

5. Two rollers, A and B, and means to rotate them, in combination with the parallel supporting-beams E E', having bearings thereon for said

rollers, the adjusting-plate P, and suitable frame-work, substantially as and for the purpose set forth.

6. The rollers A and B, inclined laterally and rearwardly, in combination with the parallel beams E E', having bearings thereon for said rollers, the adjusting-plate P, rotating mechanism for said rollers, and suitable frame-work, substantially as described.

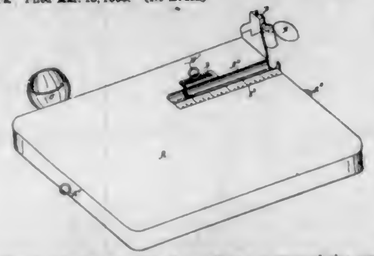
7. The rollers A and B, means to rotate them, supporting-beams E E', and ingatherers D D', in combination with the rods J J, having spiral webs I I, and rotating mechanism for the same, as set forth.

8. The rollers A and B, having tapering ends and spiral flanges F, the beams E E', and ingatherers D D', in combination with the rods J J, having lifters I I, substantially as set forth.

9. The shaft V, taking power from the drive-wheel shaft S, bevel-gears 5 and 6, and the parallel beams E E', having brace-rods L, in combination with the two inclined, eccentric, and unequal rollers A and B.

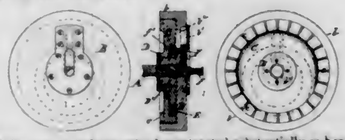
10. The shaft V, taking power from the drive-wheel shaft S, the bevel-gears 5 and 6, the rollers A and B, and beams E E', in combination with the adjusting-plate P, ingatherers D D', the lifters I I, bevel-gears 10, the shaft 14, and gears 9, as described.

291,644. CIGAR-MAKER'S BOARD. ALBERT THALHEIMER, Reading, Pa. Filed Mar. 13, 1883. (No model.)



Claim.—As a new article of manufacture, a stamped zinc metal facing for cigar-makers' boards, provided with the usual depressions and gage for the cigar, and, in combination therewith, a cigar-end cutter conveniently arranged thereon, said facing being filled out flush with the depth of the flanges with any suitable composition, whereby a surface preservative of the hand-knife edge is presented, and a light or heavy board produced, to adapt it to transportation or use, substantially as and for the purpose set forth.

291,645. CRANK ADJUSTMENT FOR BALANCE-WHEELS. JAMES B. THURSTON, Concord, N. H., assignor to John A. White, same place. Filed June 23, 1883. (No model.)



Claim.—1. A balance-wheel constructed substantially as hereinbefore described, provided with a hub projecting from its back side, a groove cut in its front side, of suitable dimensions to receive the sliding adjustable crank, and a cap-piece in which a slot is formed, through which the crank-pin passes, secured by screws to the outside of said balance-wheel, thereby holding said crank within said groove and partially concealing it from view, substantially as and for the purpose described.

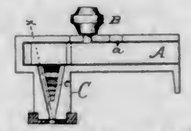
2. The independent revolving disk so fitted upon the hub of the balance-wheel as to be readily turned on said hub or held still while said balance-wheel is revolving, that side of the said disk which comes in contact with the balance-wheel being provided with an annular groove, the circle of said groove being eccentric with the circle of said disk, said disk being prevented from working off from the hub of balance-wheel by means of a collar secured to the hub of said wheel, substantially as and for the purpose hereinbefore described and set forth.

3. The combination of an eccentric ring revolving in a groove provided for its reception in one side of the independent revolving disk, and the sliding adjustable crank operating in groove upon the outside of the balance-wheel, connected together by means of a round pin, one end of which is permanently fixed in the side of said eccentric ring, the other end of which is turned so as to be a moderately loose fit for a hole in the outer end of said crank, substantially as described, and for the purpose set forth.

4. The combination of an eccentric ring revolving in a groove provided for its reception in one side of the independent revolving disk, and the sliding adjustable crank operating in groove upon the outside of the balance-wheel, connected together by means of a round pin, one end of which may be permanently fixed into and project from the back side of the outer end of said crank, the other end of which may be turned so as to be a moderately loose fit for a hole formed through the side of the eccentric ring, substantially as described, and for the purpose set forth.

5. The sliding and adjustable crank depressed and partially concealed in the front side of the balance-wheel by means of a groove and a suitable cap-piece, the independent circular disk fitted to the hub of said balance-wheel, and secured thereon by means of a collar, and the eccentric ring fitted to and revolving in a groove formed upon the inside of said disk, and connected with the adjustable crank by means of a pin, so combined and arranged as to render the crank capable of being set at any given stroke from naught to six inch, more or less, and operating substantially as described.

291,646. LOCK. ANDREW B. TODD, Cheshire, Conn. Filed July 16, 1883. (Model.)

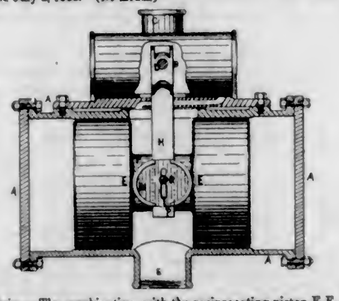


Claim.—1. A lock provided with a keyway for the insertion of a flat key, by the side of which keyway is a series of wards, in combination with a flat key notched at its edges, and adapted to throw the bolt or dog by a sidewise lever action, substantially as described, and for the purpose specified.

2. The combination of a longitudinally-moving bolt, the lock-case provided with a double keyway in V form, meeting each other at or near the outside, and the series of wards between said two keyways, substantially as described, and for the purpose specified.

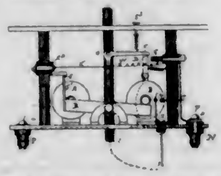
3. The combination of a longitudinally-moving lock-bolt having a drop-motion for locking it in its projected position, the double keyway having a single opening at the outer end, and the key having the beveled corner for raising the bolt preparatory to throwing it, substantially as described, and for the purpose specified.

291,647. WATER-METER. CHARLES W. VAN ALSTINE, Chelsea, Mass. Filed July 2, 1883. (No model.)



Claim.—The combination, with the reciprocating piston E F, of the actuating-arm H, having adjustable disk N, substantially as described, and for the purposes set forth.

291,648. ELECTRIC-CIRCUIT CLOSER. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Apr. 19, 1883. (No model.)

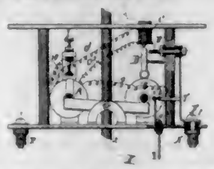


Claim.—1. In an electric-arc lamp, a circuit-closer formed of an expansible conductor normally out of circuit, in combination with the pivoted bell-crank C and detent D, each provided with tension-springs operating to liberate said detent upon the expansion or fusion of the expansible conductor, and thereby to short-circuit the lamp, as set forth.

2. In an electric-arc lamp, an expansible conductor normally keeping open a circuit-closer, D E, said conductor being out of circuit whenever the lamp is working normally, a shunt-magnet, and electrical connections between its armature and the circuit-closing device, whereby

the increased attraction of the shunt-magnet caused by abnormal conditions of the arc will operate to complete the main circuit through the said circuit-closer, substantially as described.

291,649. ELECTRIC SAFETY CUT-OUT. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Apr. 21, 1883. (No model.)



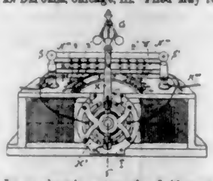
Claim.—1. In an electric-arc lamp, an electro-magnet located in a derivation between the carbons, and provided with a vibrating circuit-breaker operating to produce a pulsating current in the coils of said electro-magnet, in combination with a secondary helix wound thereon, but not electrically connected to the same, and connections, substantially such as described, whereby the induced current operates a safety cut-out for electric-arc lamps, as described and specified.

2. In an electric-arc lamp, a coil in which an induced current is produced by the pulsations or interruptions in an electro-magnet, the coils of which are in a derivation between the two carbons in the lamp and which is provided with vibrating circuit-breaking devices, said induced current being adapted to operate a circuit-closer in said lamp, as described and specified.

3. In an electric-arc lamp, an electro-magnet wound with two helices, one of said helices being in derived circuit, and provided with a rheotome adapted to produce therein a pulsating derived current, the other helix being well insulated from the former, and adapted to emit a secondary current under the influence of the pulsating derived current, and by means of devices, substantially such as described, to work a circuit-closer, as described, and for the purposes set forth.

4. In an electric-arc lamp, the contact-piece E, well insulated from the metallic parts of the lamp, and properly connected to the negative binding-post thereof, in combination with the detent D, held in place by catch C^3, the expanding wire C', and insulated eye G, all operated by the secondary current produced in a coil wound on the shunt electro-magnet of the lamp, as above described, and for the purpose set forth.

291,650. CURRENT-REGULATOR FOR ELECTRIC MOTORS. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed May 10, 1883. (No model.)



Claim.—1. In an electric motor, the field-magnets composed of a number of independent electro-magnets not magnetically connected together at their poles or active ends, while their opposite ends are all connected magnetically to one common cast-iron plate, a similar system of electro-magnets being placed at each side of the revolving armature, the active ends of the electro-magnets facing each other, their opposite end plates secured to a cast-iron base and top, substantially as described.

2. In an electric motor, the combination, with independent and separate field-circuits, of a centrifugal governor adapted to bring a larger or smaller number of said field-circuits in operation, so as to regulate the speed and power of the motor, as described and set forth.

3. In an electric motor, a number of independent field electro-magnets, in combination with an armature, each field electro-magnet coil of the motor having the same resistance as the armature-coils, substantially as described.

4. An electric motor having a number of electro-magnet cores provided with pole-pieces facing each other on opposite sides of an armature-core, said armature and field-magnets having equally resistant circuits around each of their cores, in combination with a source of electricity in which a constant potential is maintained to furnish current for said motor or motors, as described and set forth.

5. In an electric motor, and in combination with its revolving armature, a centrifugal governor receiving motion from said armature, and proper means connected to said governor to allow a larger or smaller number of electro-magnets to act upon the armature of the motor to regulate the power and speed of the same, substantially as described.

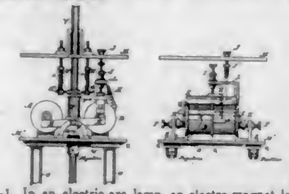
6. In an electric motor, a centrifugal governor driven by said motor, in combination with the bars N''' N''' and contacts n' n' n', &c., actuated by the centrifugal power of said governor, in order to regulate the power and speed of the motor, by allowing a larger or smaller amount of current to act upon the revolving armature of the motor, substantially as described.

7. In an electric motor, a face-plate of wood or other suitable non-conducting substance or material provided with two semicircular plates of conducting material connected with the poles P and N of a source of electricity, in combination with an oscillating hand-lever carrying brush-holders and brushes C' and C'', bearing upon the opposite side of a commutator so arranged and constructed that by the motion or oscillation of the lever from right to left, or vice versa, the brushes bearing upon said commutator can be made to be in contact either with the positive or negative poles of the source of electricity, and so to be able to reverse the motion of said motor or to stop the same when the brushes are placed between the opposite semicircular plates, as described, and for the purpose set forth.

8. In an electric motor, and in combination with the commutator of the same, two brushes placed diametrically opposite one another and in a straight line through the axis of rotation placed in a suitable holder coming very near the periphery of the revolving commutator, so as to be able to reverse the motion of the armature by changing said brushes from right to left without altering their inclination with respect to the axis of rotation of the commutator, substantially as described.

9. In an electric motor, the brush-holders C' and C'', placed diametrically opposite one another, and suitably secured to and insulated from the hand-lever H, and provided with contacts in the back of said hand-lever, so as to be able to place the opposite coils of the armature in circuit with the source of electricity necessary to run the motor by oscillating the handle H, so as to come in contact with the plates K and L.

291,651. ELECTRIC LAMP. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Apr. 3, 1883. (Model.)



Claim.—1. In an electric-arc lamp, an electro-magnet located in the main circuit, in combination with an electro-magnet having two independent coils wound in the same direction upon its core, both coils being in a derivation between the carbons, one of said coils having its circuit closed continuously, and the other having its current interrupted by a proper circuit-breaker or vibrator, both coils coacting upon said core to produce vibratory movements in the armature and feeding devices of the lamp, substantially as set forth.

2. In an electric-arc lamp, an electro-magnet in the main circuit and an electro-magnet having two independent coils wound in the same direction upon its core, both of said coils being located in a shunt around the arc, the circuit through one of said coils being closed continuously, and that through the other being continuously broken by a suitable circuit-breaker included therein, said electro-magnets acting upon a compound armature having a central shaft provided with pivots, upon which said armature will oscillate, actuating the carbon-feeding devices under the influence of the above-named electro-magnets, substantially as set forth.

3. In an electric-arc lamp, an electro-magnet located in a shunt around the arc, and having two independent coils upon its core, the circuit through one of said coils being closed continuously, and that through the other being continuously made and broken by a suitable circuit-breaker included therein, both said coils being wound in the same direction and coacting upon said core, substantially as set forth.

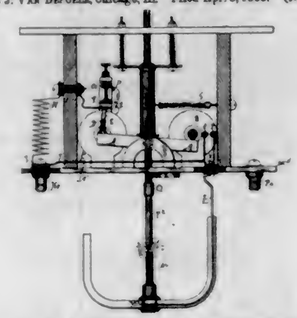
4. In an electric-arc lamp, a compound armature consisting of a central shaft of iron, D, having bars of soft iron, E, centrally attached to its extremities, and a seat provided upon its middle portion, upon which a sleeve rests, said sleeve supporting the carbon holding and feeding mechanism of the lamp, and operated by the oscillations of said shaft under the influence of the steady main electro-magnet A and pulsating shunt-magnet B upon the said bars E, the shaft D being provided with a circular opening in its center for the carbon rod, substantially as set forth.

5. In an electric-arc lamp, the compound armature E, in combination with the sleeve F, slipped loosely over the carbon rod V, the sleeve F, provided with a plate, F^3, and projecting studs supporting the lifter G G', and proper means for raising and lowering the sleeve F, so as to make the lifter either hold or release the carbon rods, substantially as described.

6. In an electric-arc lamp, the clutch or lifter G G', made of two parts, and united in its center by a flexible or elastic band of metal, adapted to hold the parts together, and provided with steel jaws *a b*, in combination with the trip-screws H, so disposed, in conjunction with the clutch, that when said clutch is raised from said screws the jaws *a b* will close upon the rod V, holding and raising the same during the upward movement of the sleeve F, when F moves downward the reverse taking place, the lifter striking the screws H, opening the clutch, and allowing the rod V to move downward, as above specified, and for the purposes described.

7. In an electric-arc lamp which is provided with a serrated carbon-carrying rod and devices for automatically feeding the same by means of the oscillations of a centrally-pivoted armature, actuated by the cores of a steady main and pulsating shunt magnet, a train of gear-wheels, and an escapement, substantially as and for the purposes set forth.

291,652. SAFETY CUT-OUT FOR SERIES OF ELECTRIC LAMPS. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Apr. 3, 1883. (No model.)



Claim.—1. An electric-arc lamp having three complete circuits—one through the carbons and electro-magnetic devices for separating the same, another through an auxiliary conductor, and a third through a shunt-magnet located in a derivation between the poles of the lamp—and means for cutting out of circuit the auxiliary conductor when the lamp at starting has its carbons in contact, as described, and for the purpose set forth.

2. In an electric-arc lamp, an auxiliary or by-pass circuit closed upon the main line when no current is passing through the carbons, suitable carbon-feeding devices, and connections whereby the auxiliary circuit is opened by the passage of the current through said carbons and their separating electro-magnets, as above described.

3. In an electric-arc lamp, a by-pass or auxiliary circuit of capacity equal to that of the main line, and always closed upon said main line when the lamp is started, and means, substantially as described, whereby the same is adapted to remain closed in case the carbons fail to feed, substantially as set forth.

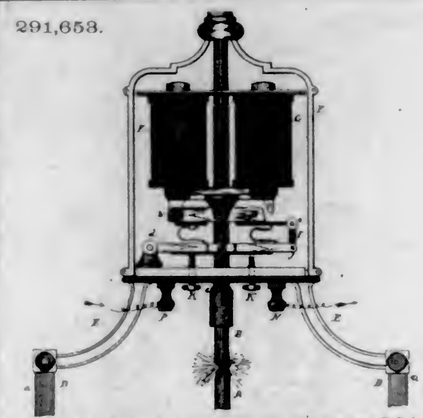
4. An electric-arc lamp having three channels for the current to pass, one being through the carbons and their electro-magnetic devices, another through a shunt of high resistance around the arc, and the other a by-pass or auxiliary circuit having a resistance somewhat higher than that of the carbons and working-circuit of said lamp when said carbons are in contact, and an arm or contact-point connected to the armature of said feeding devices, and adapted to complete the auxiliary circuit when no current is passing through the lamp, so that on completing the circuit through all the channels, if the carbons are in contact, the current will in preference pass through the electro-magnetic feeding devices of the lamp, and by moving the armature cut out the by-pass, and then separate the carbons to produce the arc, as and for the purpose set forth.

5. In an electric-arc lamp, and in combination with the armature operating the mechanism thereof, a contact-piece, D, rigidly attached to said armature, and adapted to follow the motion of the same, a spring, F, and an auxiliary resistance-coil, H, so arranged that when the lamp is not receiving current said contact-piece D will abut against the spring F and complete a short circuit between the positive and negative poles of the lamp through the conductor H, said conductor being of a resistance somewhat higher than the feeding mechanism and electro-magnets of the lamp when the latter circuits are completed through the carbons, whereby sufficient current is directed to said electro-magnets to operate the armature A A, thereby breaking contact between D and F before the carbons are separated, as set forth.

291,653. ELECTRIC-ARC LAMP. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Oct. 19, 1883. (No model.)

Claim.—1. In an electric-arc lamp, the electro-magnets F G, located in the main circuit, and provided with an armature, H, hinged at one end to one of the poles of said electro-magnet, the free end thereof coming in close proximity to the other pole, when it is free to move in a radius prescribed by the center of its articulation to the opposite pole of the said electro-magnet, in combination with the clamping mechanism carried and operated by said hinged armature, substantially as described.

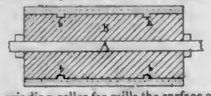
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2. In an electric-arc lamp, the combination of the magnets F G, located in the main circuit, the armature H, lifter J, and suitable carbon-holder, with the coil L, of relatively-high resistance, located in a shunt around said main magnets, the vibrating armatures R R', and adjusting devices and connections, substantially as described, between said main and shunt circuits, as set forth.

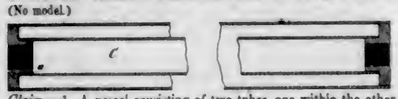
3. In an electric-arc lamp, the flexible lifter J, in combination with adjusting-screws K K', adapted to be set at different heights, and thereby to forcibly open the descending clutch, substantially as set forth.

291,654. ROLLER FOR GRINDING-MILLS. GEORGE VAN NAME, St. Louis, Mo. Filed Apr. 26, 1883. (No model.)



Claim.—A grinding-roller for mills the surface of which is composed of alternate series of thin steel blades and softer material, secured in the cylinder by dovetailed grooves in the surface of the cylinder, and keyed together by key-blades lengthwise of the roller, substantially as and for the purpose described.

291,655. VESSEL OR RESERVOIR FOR LIQUIDS OR OTHER MATERIALS. MAURICE J. WALSH, New York, N. Y. Filed Mar. 26, 1883. (No model.)



Claim.—1. A vessel consisting of two tubes, one within the other, and two heads at the ends, common to both tubes, and to which the tubes are welded, so as to form two compartments, which are separated from each other and from the surrounding atmosphere by hermetically-sealed joints, substantially as specified.

2. A vessel consisting of heads of metal, a tube welded upon the exterior of the heads, and a tube welded upon flanges extending from the heads, substantially as specified.

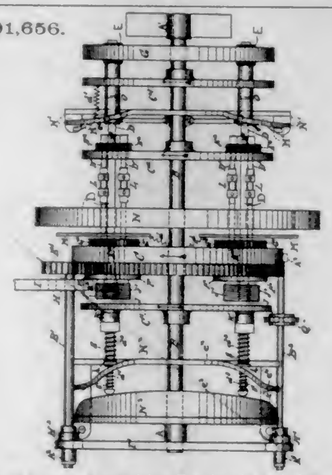
291,656. MACHINE FOR THREADING SHEET-METAL SCREWS. WILLIAM WERTS, Camden, N. J. Filed May 31, 1883. (No model.)

Brief.—The cap-blanks are placed in buckets on an endless carrier, are thence delivered to hoppers on a revolving disk, and are ejected from the hoppers onto the central threader—the two outside threaders having moved laterally away from the central threader—by a double plunger. The outer plunger holds, by spring-fingers, the blank by its periphery, and the inner plunger bears on its top. As soon as the blank is on the central threader, the outer plunger retracts and the outside threaders move toward the central threader and operate on the blank. When the operation is complete, the outside threaders again move away from the central threader and a spring-stripper removes the blank.

Claim.—1. The combination of the central revolving shaft, B, face-plate C, and disks C', C^2, and C^3, C' carrying the hoppers R', shafts D D D, and pairs of shafts D', having chocks J J' J', the said shaft B being revolved by means of the driving-shaft B', having a pinion, E', geared into teeth of the face-plate C, or by other suitable mechanism, substantially as described.

2. In a screw-threading machine having a central revolving shaft, B, provided with a face-plate, C, disks C' C^2 C^3, and shafts D, having

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chucks J at one end and pinions E at the other end, the combination therewith of stationary rim G, having internal gear-teeth for revolving the said shafts D, substantially in the manner and for the purpose set forth.

3. The combination of series of shafts D and D′, having threaded chucks J and J′ J′, respectively, the shafts being geared together by means of pinions E^3 and E^3, respectively, whereby the chucks J′ J′ are caused to revolve in opposite direction to the chuck J, for threading sheet-metal blanks, substantially as described.

4. In a screw-threading machine having pairs of shafts D′, provided with chucks J′ J′, and central shafts, D, having chucks J, the combination, with said shafts D′, of universal joints I, to admit of the shafts D′ being moved from and toward the shafts D, to produce a like movement of the chucks J′ toward and from the chucks J, substantially in the manner and for the purpose set forth.

5. The combination of eccentrics F F, having wheels G′ G′, with the shafts D′ D′, and with the shaft D, having a pinion, E^4, the wheels G′ G′ being pivoted to the face-plate C for moving the chucks J′ J′ toward and from the chuck J, substantially as described.

6. The hoppers R′, having fingers *g*, in combination with the revolving disk C, and endless chain P, having buckets R, with slots *f* in their bottoms, substantially in the manner and for the purpose set forth.

7. The combination of the stationary cam c^4 and spring d^3, for giving a reciprocating movement to the plunger S, substantially in the manner and for the purpose set forth.

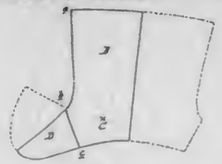
8. The plunger S′, in combination with the plunger S, for holding the blanks K on the chuck J as the plunger S is withdrawn, substantially as described.

291,657. HOBBY-HORSE. JOHN R. WHARRY, Moundsville, W. Va. Filed Nov. 19, 1883. (No model.)



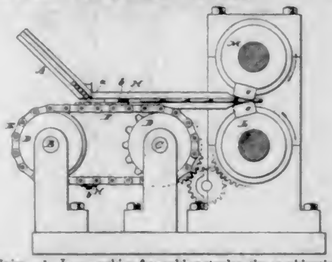
Claim.—The combination of the hobby-horse A, the ferrule B, applied to its lower end, the arms C, projecting therefrom, and the rollers D, substantially as shown and described.

291,658. BOOT. MELVILLE J. WOOD and WILLIAM H. BOND, Athens, Mich. Filed Aug. 1, 1883. (No model.)



Claim.—As an improved article of manufacture, a boot-upper made from a single piece of leather having a seam running straight down the center of the front of the leg to a point in the center of the instep, and thence substantially straight down one side of the foot to the sole, as set forth.

291,659. MACHINE FOR MAKING STAPLES. JOHN ADT, New Haven, Conn. Filed Sept. 10, 1883. (No model.)



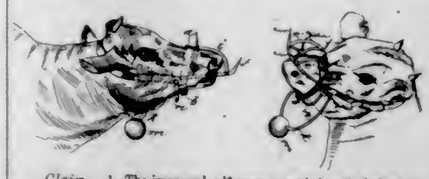
Claim.—1. In a machine for making staples, the combination of the endless band or bands E E, carrying the bending-stud *b*, stationary benders *d* at each side the path of the bending-stud, and mechanism, substantially such as described, to point the blank as it is delivered from between the benders, substantially as described.

2. In a machine for making staples, the combination of the endless band or bands E E, carrying the bending-stud *b*, stationary benders *d* at each side the path of the bending-stud, and between which the stud will bend the blank and force it forward, a pair of rolls carrying dies *e*, and arranged to receive each blank as it is presented by the bender, the dies constructed with cavities operating to point the blank as it passes between the dies, substantially as described.

3. In a machine for making staples, the combination of the endless band or bands E E, carrying the bending-stud *b*, stationary benders *d* at each side the path of the bending-stud, mechanism, substantially such as described, to point the blank as it is delivered from between the benders, and the chute A to receive the blanks and deliver them successively in advance of the bending-stud, substantially as described.

4. In a machine for making staples, the combination of the endless band or bands E E, carrying the bending-stud *b*, stationary benders *d* at each side the path of the bending-stud, and between which the stud will bend the blank and force it forward, a pair of rolls carrying dies *e* and arranged to receive each blank as it is presented by the bender, the dies constructed with cavities operating to point the blank as it passes between the dies, and the chute A, to receive the blanks and deliver them successively in advance of the bending-stud, substantially as described.

291,660. CALF-WEANER. MAX JOHN AHLGRIM, Rose Lawn, Ind. Filed Aug. 14, 1883. (Model.)



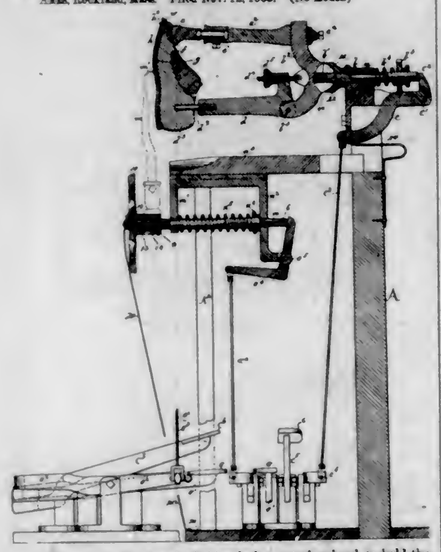
Claim.—1. The improved calf-weaner consisting of a half-muzzle, made of wire or other suitable material, armed with barbs and arranged over the nose on pivots *d* of a halter, located at the cheeks, and provided with a balance-weight, holding said muzzle above the nose, except when raised to suck, substantially as described.

2. The combination, in a calf-weaner, of the yoke *e*, nose-bow *g*, stays *i*, balance-yoke *k*, and weight *m*, with a halter having pivot-studs *d*, said yoke *e* and nose-bow *g* being provided with barbs, substantially as described.

3. The combination, in a calf-weaner, of the yoke *e*, nose-bow *g*, stays *i*, balance-yoke *k*, weight *m*, and the throat-yoke *n*, forming pivot-studs *d* and fastening to halter, said yoke *e* and bow *g* being provided with barbs, substantially as described.

4. In a calf-weaner, the combination, with the yokes *e k*, having eyes *l*, of the throat-yoke *n*, having studs *d* passing through said eyes from the inside, as shown and described.

291,661. STITCHING-JACK FOR BOOTS OR SHOES. JOSHUA F. AMES, Rockland, Mass. Filed Nov. 12, 1883. (No model.)



Claim.—1. In a hand stitching-jack, a rotating head to hold the upper and sole, combined with the sole-presser to enter the channel in the outer sole, substantially as described.

2. In a hand stitching-jack, a rotating and vibrating head and sole-presser to bear against the outer sole, combined with means, substantially as described, to force the head and sole-presser toward each other to clamp the sole and welt closely together at the point where the holes are opened for the reception of the thread, substantially as described.

3. In a hand stitching-jack, the rotating head to hold the last, with the upper and sole thereon, combined with the sole-presser, and means, substantially as described, to support the same, whereby its position may be changed with relation to the axis of rotation of the head to enable the said presser to bear upon the sole near its edge as the last and shoe are rotated, as set forth.

4. In a hand stitching-jack, the rotating and vibrating jack, and the loosely-pivoted sole-presser, combined with the slide-rod, a spring to move it in one direction, and means, substantially as described, to move it in the opposite direction to enable the said presser to be held in the channel of the outer sole or to be removed therefrom, substantially as described.

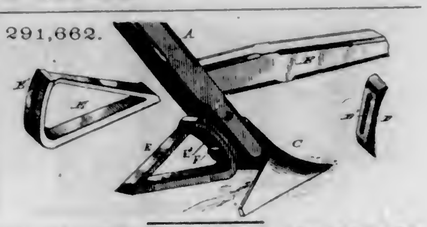
5. In a hand stitching-jack, the spindle *b*, its spring, the head pivoted upon the said spindle and adapted to hold the last with upper and soles thereon, and means, substantially as described, to move the said spindle longitudinally, combined with the slide-rod, the movable sole-presser supported thereon, and with means to move the said slide-rod, as and for the purposes set forth.

291,662. PLOW GAGE AND GUIDE. WILLIAM HENRY AMMONS, Little Rock, S. C. Filed Dec. 4, 1883. (No model.)

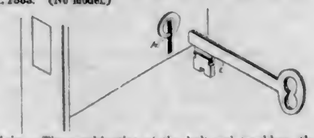
Claim.—1. As an improvement in plow gages and guides, a gage and guide provided with a slotted convex bearing side, and a slotted wedge-block having a concave side adapted to serve as a seat for the convex side of the gage and guide, as set forth.

2. The combination of the gage E, having a convex side provided with a longitudinal slot, E′, with the wedge-block D, provided with a longitudinal slot, D′, and having one of its sides made concave to form a seat for the gage and guide, the whole adapted to be secured to the plow-standard by the same bolt which secures the plowshare, as set forth.

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291,663. LOCK. WILLIAM H. ANDREWS and HENRY H. SPARKS, New Haven, Conn., assignors to Mallory, Wheeler & Co., same place. Filed June 11, 1883. (No model.)



Claim.—The combination of the bolt and tumblers, the barrel D, arranged in bearings in the opposite plates of the lock, the said barrel constructed with a longitudinal slot, *e*, corresponding to the key-hole in the lock-plates, a projection, *h*, in the key-hole in the lock-plates at the bearings of the barrel, and the flat key, the bit constructed with a longitudinal groove, *i*, at its junction with the spindle, substantially as and for the purpose described.

291,664. VEHICLE-SPRING. GEO. L. ARTZ, Columbus, Ohio. Filed Sept. 17, 1883. (No model.)

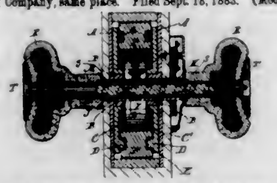


Claim.—1. The combination of the four separate and independent quarter-elliptic springs, A B, A′ B′, connected together in pairs, the upper spring of each pair having its foundation upon the inner end of the lower spring, with a bearing, C, to which each pair is secured, substantially as described, for the purpose specified.

2. The combination, with the body and side bars of a vehicle, of a spring composed of four separate and independent quarter-elliptic springs connected together in pairs A B, A′ B′, the upper spring of each pair having its foundation upon the inner end of the lower spring, the bearing-plate C, the clips I, and the bolts G, whereby each pair of superimposed springs is secured to allow for separate and independent adjustment of each spring of each pair, substantially as described.

3. As a new manufacture, a vehicle-spring composed of four separate and independent quarter-elliptic springs connected together in pairs, the upper spring of each pair having its foundation upon the inner end of the lower spring, a bearing-plate to which each pair of springs is separately secured in superimposed relation side by side, and suitable attachments, whereby said separate pairs of springs are connected to the body and to the running-gear, substantially as described.

291,665. PERMUTATION-LOCK. WILLIAM BROWNLOW ATKINSON and JOHN HOWE FOSTER, Franklin, Ky., assignors to the American Combination Door Lock Company, same place. Filed Sept. 18, 1883. (Model.)

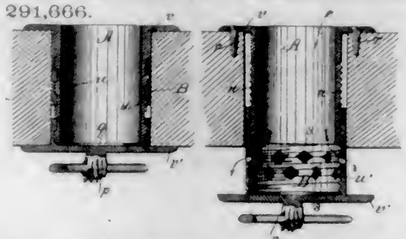


Claim.—The combination of the knobs, the slotted sleeve, the spindle having the spiral groove, the sleeve carrying the tumbler and having means for engaging with the said groove, and means for rotating the spindle to shift the tumbler, substantially as shown and described.

291,666. VENTILATOR. JOHN M. AYER, Chicago, Ill. Filed Sept. 29, 1883. (No model.)

Claim.—1. In a ventilator, the combination of two hollow cylinders, one open at both ends to serve as the air-passage and to fit within an opening in a window-sash, wall, or the like, and the other closed at

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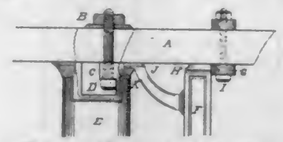
one end, and provided with side perforations, each being provided with screw-threads, and fitting one into the other, whereby the turning of the perforated cylinder carries it back and forth with relation to the other and opens and closes the perforations, substantially as described.

2. In a ventilator, the combination of a cylinder, A, screw-threaded on its outer surface and open at both ends, and a cylinder, B, closed at one end and screw-threaded on its interior surface, and adapted to fit upon the said cylinder A, and provided with apertures *s*, substantially as described.

3. In a ventilator, the combination, with a cylinder, A, screw-threaded on its outer surface, and provided with a flange, *v*, screen C, and lugs *t*, of the cap B, provided with apertures *s*, and adapted partly to inclose the cylinder A, and screw-threaded upon its interior surface, and closed at one end, and provided with a handle to permit it to be turned upon the cylinder A, substantially as described.

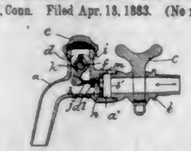
4. The combination, with a window-sash, of the cylinder A, provided with a flange, *v*, and screen C, and lugs *t*, for securing the cylinder in position, cylinder B, provided with apertures *s* and flanged over *v'*, and handle *p*, attached to the cap B and projecting outward from the sash, substantially as described, and for the purpose set forth.

291,667. PLOW. ALBERT BALL, Canton, Ohio. Filed Apr. 24, 1883. (No model.)



Claim.—The standard E, provided with the recess C, shoulders D, and semicircular recess K, in combination with the jointer-arm F, provided with a semicircular recess, J, and arm H, substantially as and for the purpose set forth.

291,668. SELF-CLOSING FAUCET. SILAS BARKER and SAMUEL L. BARKER, Hartford, Conn. Filed Apr. 18, 1883. (No model.)



Claim.—1. In combination, the faucet-body *a*, having the valve-chamber *a''* and the seat *n*, the disk-shaped loose valve *m*, and the valve-operating mechanism, all substantially as described.

2. In combination, in a self-closing faucet, the body *a*, loose valve *m*, rod *j*, with adjustable arm *l*, and valve-operating mechanism, all substantially as described, and for the purpose set forth.

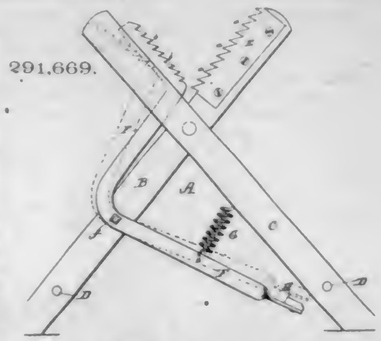
3. In a self-closing faucet of the kind herein described, in combination, the faucet-body *a*, provided with guide *a'*, spindle *f*, bearing crank *h*, and the rod *j*, having stop *k*, all substantially as described.

4. The loose valve *m*, having a mortised face, in which annular packing *m'* is secured by means of radial pins or the like, all substantially as described, and for the purpose set forth.

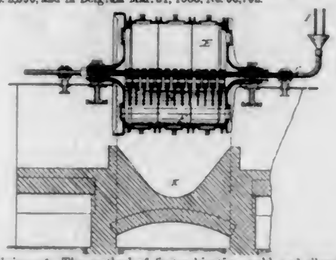
291,669. SAW-BUCK. THOMAS BEARD, Kokomo, Ind., assignor of one-half to Alfred B. Walker, same place. Filed Nov. 13, 1883. (No model.)

Claim.—The combination, with a metallic toothed plate fixed to the horn of one brace of a saw-buck, of a crooked lever pivoted to the same brace at a point below the juncture of two crossing braces, and having a toothed arm opposing said toothed plate, a treadle fixed to said lever, and a spring to act thereon, substantially as and for the purpose specified.

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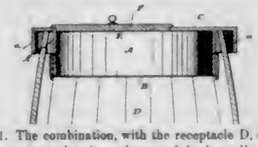
291,670. PROCESS OF AND APPARATUS FOR OBTAINING GOLD AND SILVER FROM THEIR ORES BY COMBINED ELECTROLYTIC AND AMALGAMATING PROCESSES. MICHEL BODY, Liége, Belgium. Filed June 26, 1883. (No model.) Patented in England May 10, 1883, No. 2,390, and in Belgium Mar. 31, 1883, No. 60,762.



Claim.—1. The method of first subjecting gold and silver ores to the action of ferric salts, in combination with the electrolytic process, and the subsequent amalgamation of the metals with mercury under the continued action of the electric current.

2. Apparatus for effecting the separation of gold and silver from their ores, and the amalgamation of the metal with mercury, consisting of the drum E, containing iron balls F, and connected to the negative pole of an electric machine, the hollow perforated shaft G, insulated from the drum and connected to the positive pole of the electric machine, which shaft serves for the introduction of the lye, and has suspended from it the carbon precipitating-plates H, arranged and operating substantially as herein described with reference to the accompanying drawing.

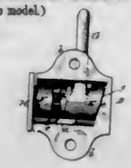
291,671. CINDER-SIFTER. HENRY W. BOOTH, Windsor, Ontario, Canada. Filed Oct. 1, 1883. (No model.) Patented in Canada Oct. 15, 1883, No. 17,872.



Claim.—1. The combination, with the receptacle D, of a cover, C, resting on and constructed to be reciprocated horizontally over said receptacle, and a sieve, A, having its rim A' made fast to and supported directly by the cover, substantially as described.

2. The combination, with the receptacle D, of a cover, C, resting on and constructed to be reciprocated horizontally over said receptacle, and having a flange, *a*, and the sieve A, having its rim A' made fast to and directly supported by the cover, substantially as described.

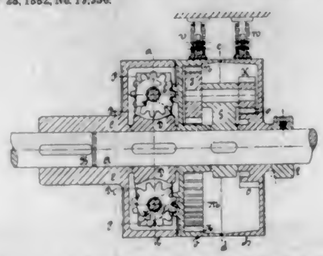
291,672. SASH-HOLDER. MARTIN BOURKE, Youngstown, Ohio. Filed Oct. 4, 1883. (No model.)



Claim.—1. The combination, in a sash-holder, of a bottomless diagonally-slotted casing and a bolt consisting of two sections, one of said sections being provided with a lever and a shank carrying a pin, and the other section being formed hollow, and having a T-shaped slot, by which means the two sections are detachably connected together, substantially as and for the purpose described.

2. A sash holder consisting of a bottomless diagonally-slotted housing containing a horizontal bolt formed in sections, having a handle, and a shank with pin upon one of said sections, and the other section having a T-shaped slot formed with an inclined shoulder to assist the pin in riding over and preventing it from falling in the straight or horizontal portion of the slot when the section is turned, substantially as and for the purpose specified.

291,673. FRICTION-COUPLING FOR SHAFTS. FRANZ BRAUN, Berlin, Germany. Filed June 7, 1883. (No model.) Patented in Germany July 28, 1882, No. 19,936.



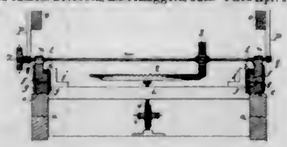
Claim.—1. A shaft-coupling made substantially as herein shown and described, and consisting of a flanged disk or cap mounted on the driven shaft, a collar rigidly mounted on the driving-shaft, and carrying brake-blocks located within the cap or flanged disk on the driven shaft, and of disks mounted loosely on the driving-shaft, and engaging with cog-wheels mounted on the end of an arm on the driving-shaft, one of which disks is provided with a spiral ridge adapted to engage with cog-wheels mounted on screw-threaded shafts journaled in the ends of arms of the collar on the driving-shaft, substantially as herein shown and described, and for the purpose set forth.

2. In a shaft-coupling, the combination, with a cap or flanged disk mounted on the driven shaft, of a collar mounted on the driving-shaft, and provided with brake-shoes contained in the cap or flanged disk on the driven shaft, and of disks loosely mounted on the driving-shaft, and adapted to force the brake-shoes against the flange of the cap on the driven shaft or withdraw the brake-shoes from the said flange, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the driven shaft B and the driving-shaft A, of the flanged disk or cap C, mounted on the driven shaft B, the collar D, mounted on the shaft A, the right and left hand threaded shafts X X', mounted in arms of the collar D, the cog-wheels E E', mounted on the shafts X X', the brake-shoes P P', held loosely on arms of the collar D, the disk F, provided with a spiral ridge, M, and with a toothed flange, the disk H, provided with a toothed boss, the arm G, rigidly mounted on the shaft A, and the cog-wheels J K, journaled on the arm G, and engaging with the toothed flange of the disk F and the toothed boss of the disk H, respectively, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the driven shaft B and the driving-shaft A, of the flanged disk or cap C, mounted on the driven shaft B, the collar D, mounted on the shaft A, the right and left hand threaded shafts X X', mounted in arms of the collar D, cog-wheels E E', mounted on the shafts X X', the brake-shoes P P', held loosely on the arms of the collar D, the disk F, provided with a spiral ridge, M, and with a toothed flange, the disk H, provided with a toothed boss, the arm G, rigidly mounted on the shaft A, the cog-wheels J K, journaled on the arm G, and engaging with the toothed flange of the disk F and the toothed boss of the disk H, respectively, and of the brakes *v w*, located above the flanges of the disks F H, respectively, substantially as herein shown and described, and for the purpose set forth.

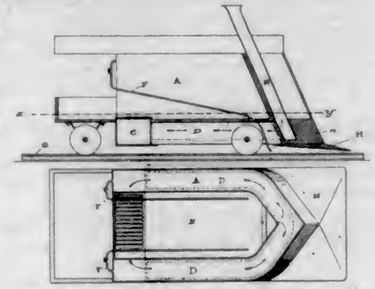
291,674. STRAW-STACKER. EMANUEL F. BROWN and SAMUEL M. MILLER, Nebraska, assignors of one-third to Wilson S. Dresbach, Frank P. Dresbach, and Charles Dresbach, East Ringgold, Ohio. Filed Apr. 13, 1883. (No model.)



Claim.—The combination of the turn-table *h*, having rim *f*, with flanges *l* and *g g*, the brackets *j*, the cross-beam *k*, and the rollers *i*, substantially as shown and described.

291,675. SNOW-PLOW. PIERRE BRUNET, Toronto, Ontario, Canada. Filed June 14, 1883. (No model.) Patented in Canada Aug. 20, 1883, No. 17,529.

Brief.—A melter consisting of a hollow bifurcated tank having longitudinal flues and a vertical flue, a furnace, and a shovel-faced front. From the steam-space of the tank pipes extend in front of the wheels over the rails.



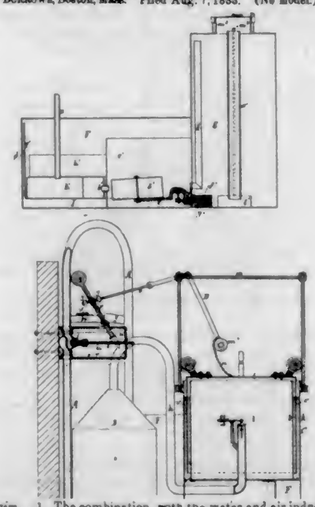
Claim.—1. A hollow bifurcated chamber or tank, A, shaped substantially as shown, and having flues D and E arranged within it, as described, in combination with the furnace C, substantially as and for the purpose specified.

2. In a snow-plow, and in combination with the furnace C and the bifurcated tank A thereof, having flues D and E arranged within it, as described, the pipes F, connected with and extending one from each side of the bifurcated tank through the plow to a point immediately above the rails, substantially as and for the purpose specified.

3. The combination of the bifurcated tank A, having pointed front *a*, flues D and E, furnace C, and shovel H, all constructed and arranged and operating substantially as and for the purpose specified.

4. In a snow-plow, the tank A, provided with a suitable furnace and flue, and having its sides constructed to act as a snow-plow, in combination with a pipe taking steam from the steam-space of said tank and directing it upon the rails, substantially as described.

291,676. APPARATUS FOR CARBURETING AIR. WILLIAM FREEMAN BURROWS, Boston, Mass. Filed Aug. 7, 1883. (No model.)



Claim.—1. The combination, with the water and air induction pipe, its stop-cock, the air-trap, and aerometer, as explained, of mechanism, substantially as described, for opening and closing the said cock through the action of the airometer-bell, as specified, such mechanism consisting of the knee-lever, sliding connection-rod and its stops, the bifurcated and weighted lever, and the pins, all being adapted to the valve-stem of the cock and to the guide-frame of the bell, essentially as set forth.

2. The combination of the shallow chamber I and vertical space *p'* with the carbureted-air receiver and the carburetor arranged therein, as set forth.

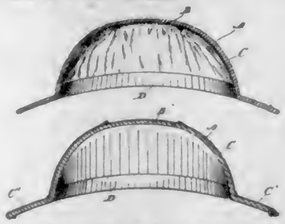
291,677. PAINT. ANTONIO BUDOLICH, North Carlton, and T. KING SMITH, Prahran, Victoria. Filed Sept. 18, 1882. (No specimens.) Patented in Victoria May 11, 1883, No. 3,220; in South Australia Aug. 24, 1883, No. 271; in Tasmania Aug. 30, 1882, No. 246; in India Sept. 6, 1883; in England Sept. 16, 1882, No. 4,423; in France Sept. 19, 1882; in New South Wales Sept. 25, 1883; in Italy Sept. 30, 1882; in Queensland Oct. 5, 1882; in Canada Oct. 16, 1882, No. 15,634; in Belgium Oct. 16, 1882; in Sweden Nov. 25, 1882; in New Zealand Dec. 27, 1882, No. 754; in Western Australia Feb. 2, 1883, and in Spain Mar. 15, 1883.

Claim.—The composition herein described for a varnish or vehicle for paint, consisting, substantially, of the following elements, viz: linseed or nut oil, hydrochloric acid, phosphoric acid, shellac, resin, chromate of potash, beeswax, and garlic, substantially in the proportions set forth.

291,678. PAINT. ANTONIO BUDOLICH, North Carlton, and T. KING SMITH, Prahran, Victoria. Filed Oct. 11, 1883. (No specimens.)

Claim.—A paint composition the basis whereof is linseed or nut oil combined with chrysophanic acid, sulphate of zinc, sulphate of copper, and chromate of potash, substantially as set forth.

291,679. HAT LINING AND COVER. JAMES H. CANNING, Danbury, Conn. Filed Nov. 5, 1883. (No model.)



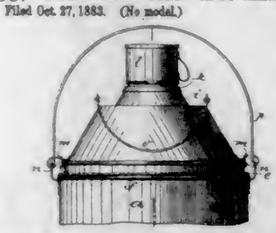
Claim.—1. A detachable hat-lining which is also adapted for use as a cover to the hat, substantially as described.

2. A detachable hat-lining constructed of water-proof material, for the purpose described.

3. A hat-lining the inner side of which is made ornamental, and serves the ordinary purposes of a hat-lining, and the outer side of which is water-proof to adapt it for use as a hat-cover in bad weather.

4. A hat lining and cover in which the ordinary crown and side lining are adapted to serve as a cover for the hat-body, and which has an additional piece made integral therewith or attached thereto in any suitable way, to serve as a cover for the brim, substantially as described.

291,680. DINNER-PAIL. WILLIAM HENRY CARRAUGH, Columbus, Ohio. Filed Oct. 27, 1883. (No model.)



Claim.—1. The combination, with the pail *a*, of the pan *b*, turned over on a line, *f*, having below *f* a rib, *e*, and below *e* provided with a downward extension or flange, *d*, whereby said pan may be secured in the pail, as described.

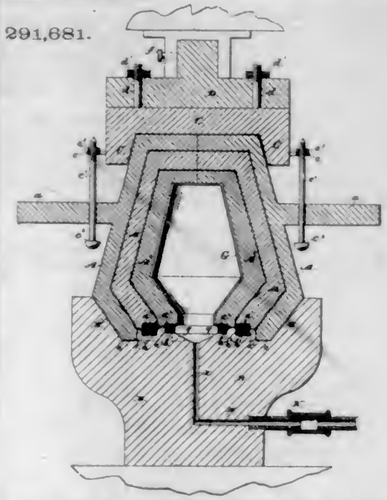
2. The pot *c*, having catches *m* above the rim *g*, in combination with the pan *b*, having links *n* at its top, whereby the pot and pan may be united to form a cover, as described.

291,681. APPARATUS FOR DIE-SHAPING. HENRY A. CHAMBERLAIN and WILLIAM L. MARTIN, Middletown, Conn. Filed Sept. 7, 1883. (No model.)

Claim.—1. The die or matrix casing, divided into sections vertically and made tapering at each end, in combination with the cap and base, both provided with depressions having flaring sides to fit closely upon the tapering ends of the casing, and means for pressing the cap upon the casing and holding it there, substantially as and for the purpose set forth.

2. The casing divided into sections longitudinally, adapted to receive

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and hold within it a matrix or an inner reducing-casing and matrix, and formed tapering at each end, in combination with a cap and base adapted to fit closely over and confine the ends of the casing, substantially as and for the purpose set forth.

3. The base formed with a bowl-shaped depression having flaring sides, and provided with a circular recess, in combination with a die-casing divided vertically into sections, and adapted at its lower end to fit within the depression and the circular recess, and the cap formed to fit the tapering upper end of the casing, substantially as and for the purpose set forth.

4. In combination with the base provided with a recess around its central portion, the matrix provided with a corresponding recess adapted to receive the flange of the blank or form to be shaped or ornamented, the elastic washer or gasket in the recess in the base, means for pressing and holding the matrix down upon the base, so that the flange of blank shall rest upon and compress the washer, and suitable connecting-passages opening into the center of the upper face of the base, so as to admit fluid to the interior of the blank, substantially as shown and described.

5. The matrix divided into sections longitudinally, and provided at its lower end to receive the flange of the contained form or blank, in combination with the base having a corresponding recess in its upper face, the elastic packing in this recess, suitable passages in the base opening upward within the line of the recess, and means for forcing and holding the matrix-sections together and down upon the base, so that the flange of the blank shall rest upon and compress the elastic washer or packing and form a tight joint, substantially as shown and described.

6. The base provided with a bowl-shaped depression having flaring sides, and a series of concentric recesses in its bottom, the outer one adapted to receive the lower end of the divided matrix-casing, made tapering at its lower end to fit in the base, and the others adapted to receive and hold elastic washers, the divided reducing-shell within the casing, having a recess in its lower end to receive the upper portion of the outer washer, the divided matrix fitting within the shell, and also provided with a recess corresponding with the inner recess in the base, and adapted to receive the flange of the blank, the passages in the base opening in the upper face thereof within the inner recess, and the cap fitting over the end of the casing, all combined and operating substantially as and for the purpose described.

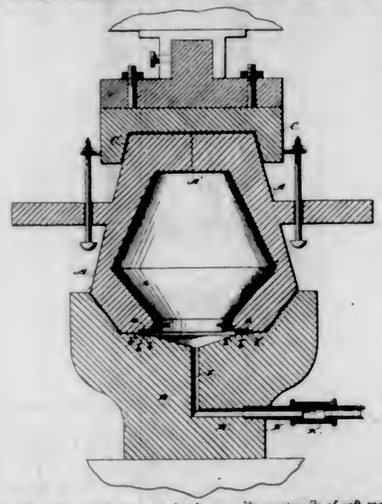
7. The die-casing divided into two sections vertically, the cap fitting upon the upper end thereof, the eyebolts on the cap, the arms attached to the casing-sections, and the headed rods provided with screw-nuts and passing through eyebolts and arms, all combined and operating substantially as and for the purpose set forth.

8. The press, the cap connected with the press head or plate, the die-casing, made in sections, and loose connections between the cap and sections, which will allow the cap to be raised clear of the sections before the latter are moved, and then will cause the sections to be raised by the further movement of the cap, all in combination, substantially as and for the purpose set forth.

9. The combination of pipe K, connected with a suitable source of supply of fluid under pressure, the base B, provided with passages H and I, and having the bowl-shaped depression with flaring sides, the divided casing having its lower end correspondingly shaped to fit within this depression, and being adapted to receive and hold a divided die or matrix

the cap fitting over the tapering top of the casing, and suitable means for pressing the cap downward upon the end of casing, substantially as and for the purpose described.

291,682. PROCESS OF DIE-SHAPING. HENRY A. CHAMBERLAIN and WILLIAM L. MARTIN, Middletown, Conn. Filed Nov. 26, 1883. (No model.)



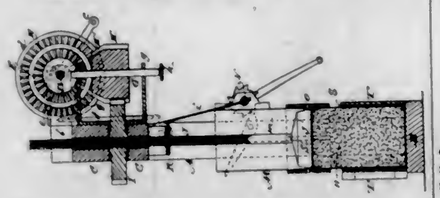
Claim.—1. The process of shaping vessels or utensils of soft metal or alloy, which consists in placing a blank or form for the same within a suitably-shaped matrix and forcing into the blank water heated and under pressure, whereby the material of the blank or form is softened, rendered more pliable, and forced to conform to the shape and size of the matrix, substantially as shown and described.

2. The process of shaping vessels or utensils of soft metal or alloy, which consists in placing within a suitably-shaped matrix a blank spun to conform as nearly as possible to the general shape of the matrix, and forcing into such blank water heated and under pressure, whereby the material of the blank is softened, made more pliable, and forced to conform to the shape and size of the matrix, substantially as set forth.

3. The process of shaping and ornamenting vessels or utensils of soft metal or alloy, which consists in placing within a suitably shaped and ornamented matrix a blank or form and forcing into such blank water heated and under pressure, whereby the material of said blank is softened, rendered more pliable, and forced to conform to the size, shape, and ornamentations of the matrix, substantially as and for the purpose set forth.

4. The process of shaping and ornamenting vessels or utensils of soft metal or alloy, which consists in placing within a suitably shaped and ornamented matrix a blank or form spun to conform as nearly as possible to the general shape of the matrix, and forcing into such blank or form water heated and under pressure, whereby the material of said blank is softened, rendered more pliable, and made to conform accurately to the size, shape, and ornamentations of the matrix, substantially as described.

291,683. COMPRESSOR FOR COMPRESSING BRAN AND OTHER SUBSTANCES INTO PACKAGES. GEORY A. CHAPMAN, Strawberry Point, Iowa. Filed June 5, 1883. (No model.)

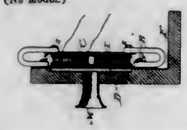


Claim.—1. In a compressor, the combination, with the sides A, base B, and reciprocating piston J', of the filler-tube M, receiving within it the piston, the sack S, receiving the tube extended to its bottom, a detachable cover, S', and the clamp T, substantially as shown and described.

2. In a compressor for compressing bran and other substances into or within packages, and in which the material to be compressed is supplied to and compressed within the package without coming in contact with or straining on its sides, the combination, with a raising and lowering filling-tube, and a piston arranged to work within and in and out of the charging end of the same, of different speeding-gearing for operating the piston at different velocities in either or both directions of its travel, essentially as described.

3. The combination of the sliding gears E E' F F', the rising and falling gear or gears H H', the wheel I, constructed to operate as a nut, the screw-threaded piston-rod J, the piston J', the filling-tube M, made capable of being raised and lowered, and the clamp T, substantially as and for the purposes herein set forth.

291,684. TELEPHONE. JOS. H. CHEEVER, Somerville, Mass. Filed Feb. 15, 1883. (No model.)



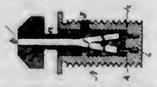
Claim.—In a telephone, the combination, with two diaphragms one of which constitutes a common north pole-piece and the other a common south pole-piece of a number of electro or permanent magnets, of a coil of insulated wire placed between said diaphragms or pole-pieces, and to be inclined in the line-circuit, substantially as and for the purpose described.

291,685. ICE-CREAM FREEZER. VALENTINE CLAD, Philadelphia, Pa. Filed Mar. 31, 1883. (No model.)



Claim.—An ice-cream freezing-vessel comprising a cylindrical body and a corresponding cap or lid, both of sheet metal, and having each a cast-metal rim, one of said rims being formed with a lug integral therewith and the other a corresponding notch adapted to receive said lug and to prevent the lid from turning on the body, substantially as described.

291,686. LOCK. FREEMAN P. CLARK, New Haven, Conn. Filed Oct. 1, 1883. (No model.)



Claim.—The combination of the socket A, the cylindrical body B, arranged in said socket free for rotation, but prevented from axial movement, the body constructed with a head, C, to engage the thing to be locked, the longitudial central hole, *b*, through the body divided within the body into two parts, *d e*, bolts *h h*, corresponding to the divisions of the hole *d e*, and arranged in the socket with springs the tendency of which is to force the bolts into the holes in the body, and a key constructed with two elastic legs, *l m*, together corresponding to the key-hole *b*, and which, when introduced into the hole, will be divided and pass, respectively, into the divisions *d e* of the hole and upon the bolts *h h*, substantially as described.

291,687. DOOR-KNOB. JOHN K. CLARK, Buffalo, N.Y. Filed Sept. 18, 1883. (Model.)

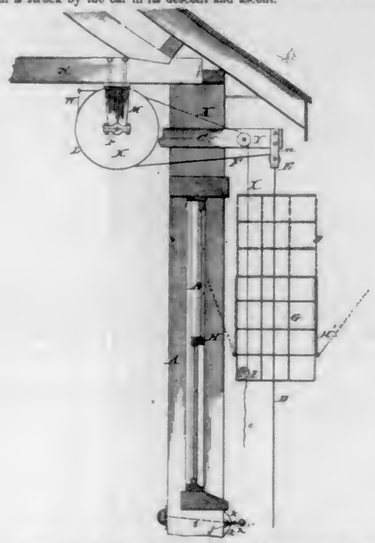


Claim.—1. The combination of a knob, a tubular shank, and a stud or post entering the shank from the face of the knob, and having its inner end bifurcated and the bifurcations spread laterally and engaged with the shank, substantially as described.

2. The combination, with a knob having a central opening countersunk upon its rear face, of a tubular shank entering said countersink, and having its body cut away to form recesses opening into the central aperture, and a stud or post entering said shank through the face of the knob, the end of said post being split and bent or spread into the said recesses in the shank, substantially as described.

291,688. PERMANENT FIRE-ESCAPE. THOMAS CLARKE, Truro, Nova Scotia, Canada. Filed Apr. 16, 1883. (No model.)

Brief.—A car with a collapsible top is fastened to a rope wound upon a spring-actuated reel-shaft. The brake-rope is connected to a spring-roller in the bottom of the car. An alarm having a projecting arm is struck by the car in its descent and ascent.



Claim.—1. The combination, with a building, of parallel ways or stays attached permanently thereto, a cage or car traveling upon said ways or stays, and provided with ropes for hoisting it up or down, a spring-actuated windlass adapted to hoist the car by the tension of the spring when wound, a brake mechanism actuated by a cord, the lower end of which is connected to a spring-roller inside of or attached to the outside of the traveling car or cage, and a rope or chain attached to the bottom of the same, by means of which it may be drawn down to the bottom of the building, the whole constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

2. The combination, with a building, of parallel ways or stays attached permanently thereto, a cage or car traveling upon said ways or stays, and provided with ropes for hoisting it up or down, a spring-actuated windlass adapted to hoist the car by the tension of the spring when wound, a brake mechanism actuated by a cord, the lower end of which is connected to a spring-roller removably attached to the traveling car or cage, a rope or chain attached to the bottom of the same, by means of which it may be drawn down to the bottom of the building, and an alarm adapted to be operated automatically by the car as it travels up or down, the whole constructed and arranged to operate substantially in the manner and for purpose shown and set forth.

3. The combination, in a permanent fire-escape, of a cage or car adapted to travel up or down in front of the windows of a building, with alarm devices located at the said windows, and having projecting arms engaging with the passing cage, operating the alarm, as and for the purpose shown and set forth.

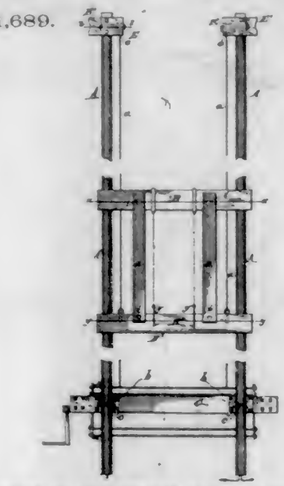
4. The car or cage G, provided with a collapsible top, *g*, eyes *i*, for guiding it upon the ways, and doors H, adapted to open in a vertical plane, so as to form a platform connecting the windows of the building with the car when the apparatus is in use, substantially as and for the purpose shown and set forth.

291,689. PORTABLE FIRE-ESCAPE. THOMAS CLARKE, Truro, Nova Scotia, Canada. Filed Apr. 16, 1883. (No model.)

Brief.—The car, which is moved upon the way formed by the poles by hoisting-ropes, pulleys, and a spring-windlass, is composed of top and bottom bars connected by upright bars, and arranged to hold thereon and carry a folding cab upon the bottom bar.

Claim.—1. In a portable fire-escape, the combination of the extensible poles A, having snatch-blocks E at their upper ends, hoisting-ropes *a*, car or tram B B' *d d*, adapted to travel upon the parallel poles A, and provided with ways *s'*, and friction-rollers *h*, a spring-actuated windlass fastened removably to the lower end of the poles A A, and connecting the same, and a cord or chain, T, attached to the lower part of the traveling tram or car, for drawing the same back to the lower end of

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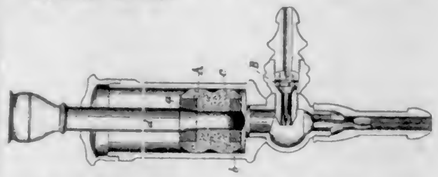


the apparatus, the whole constructed and arranged substantially as and for the purpose shown and set forth.

2. The traveling tram or car, consisting of two or more horizontal bars, B, and bottom bar, B', having the projecting stop or ledge B^3, said horizontal bars being connected by swiveled arms or bars *d d*, to admit of a limited play or motion of the top and bottom of the car, substantially as and for the purpose shown and set forth.

3. The combination, with the traveling tram or car composed of the parts B B' B^3 *d d*, of the removable folding cage D, having hooks *f*, bottom pins, H, and hinged door J, substantially as and for the purpose shown and set forth.

291,690. SYRINGE. JOSEPH H. CLARKE, Springfield, Ohio. Filed July 2, 1883. (No model.)

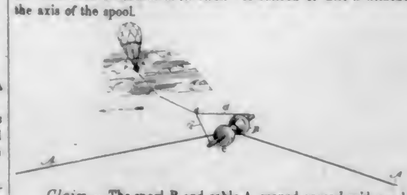


Claim.—1. In a syringe, a valve therefor provided with a projecting perforated part, *e*, to serve as a filter, substantially as described.

2. In a syringe, a piston for the cylinder thereof, composed of the elastic portion *c*, having its upper and lower edges beveled and its sides recessed, in combination with the washer *a* and nut *b*, set into opposite faces of the portion *c*, and the threaded and shouldered rod *d*, passed through the three parts, substantially as described.

291,691. SINGLE-CABLE-TRACK RAILWAY. JOSEPH J. CLEHAN, San Diego, Cal. Filed Feb. 28, 1882. (No model.)

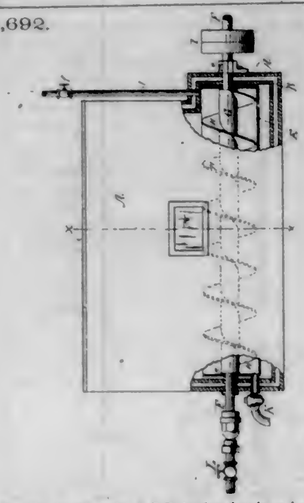
Brief.—A single cable having a spool with the cable wound around it. The cable is secured at its ends. A balloon or kite is attached to the axis of the spool.



Claim.—The spool B and cable A, wound around said spool, and secured at its ends, in combination with a balloon or kite attached to the axis of the spool, substantially as shown and described.

291,692. COOLER FOR UNITING OILS IN THE MANUFACTURE OF LARD, &c. SAMUEL H. COCHRAN, Everett, Mass. Filed June 30, 1883. (No model.)

291,692.

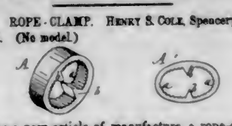


Claim.—1. In the cooler A B D, having therein an ice-box, C, the combination of the conveyer E, the hollow shaft F, the sleeve G, the screw H, the pipe J, and the cock K, substantially in the manner and for the purpose shown and described.

2. The combination of the cooler A B D, having therein an ice-box, C, the conveyer E, the shaft F, the sleeve G, the screw H, the pipe J, the cock K, the stuffing-boxes *e*, and the pulleys I, substantially in the manner and for the purpose shown and described.

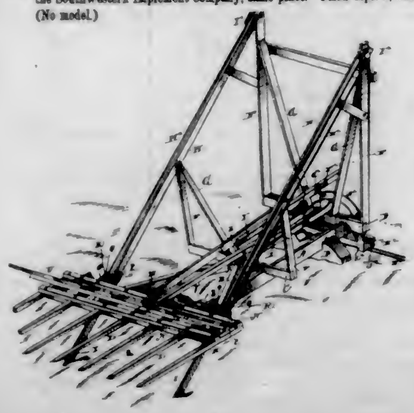
3. The method or process of tying and permanently uniting oils and fats by means of dry cold air, which consists of passing the oils and fats, drawn by a tube from the oil reservoir or tank, into a conveyer arranged in a cooler having therein an ice-box filled with ice, in which conveyer revolves a screw, which moves along and constantly agitates said oils and fats, while they are subjected to a current of dry cold air flowing from said ice-box over and around said oils and fats, until they are permanently set and tied, substantially as shown and described.

291,693. ROPE-CLAMP. HENRY S. COLE, Spencerport, N. Y. Filed Nov. 5, 1883. (No model.)



Claim.—As a new article of manufacture, a rope-clamp consisting of a metal ring corrugated or ribbed on its inner side, and provided with wedge-shaped spurs which serve as dividers or clamps to the rope when the ring is bent or crushed together, as herein shown and described.

291,694. HAY-STACKER. JOHN COOMBS, Springfield, Mo., assignor to the Southwestern Implement Company, same place. Filed Apr. 6, 1883. (No model.)



Claim.—1. The combination of suitable inclined track-rails, the carrier moving upon the same, an arm or lever extending rearwardly from said carrier, guides for said arm or lever, a compressor-frame hinged to the carrier, an arm pivoted to said frame, and suitable guides for said arm, as set forth.

2. In a hay-stacker, the combination of the guide-rail X, the trough-shaped guide secured to the side of the same, and the pivoted compressor-arm moving in said guide, as set forth.

3. The combination of the carrier, the hinged compressor-frame, the arm pivoted to the same, a stud or stop projecting laterally from the rear end of said arm, a trough-shaped guide, and a hook at the front end of the same, as set forth.

4. The combination of the carrier, the hinged compressor-frame, an arm pivoted to the same, a stud or stop projecting laterally from the rear end of said arm, a trough-shaped guide, a slot at the rear end of said guide, and a stop or bracket secured under the said slot, as set forth.

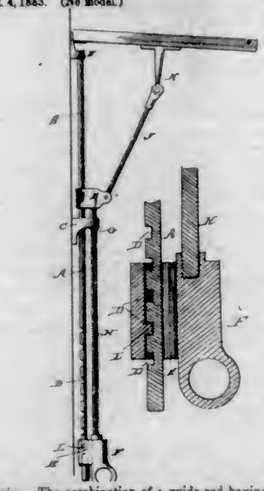
5. The combination of the carrier, the hinged compressor-frame, an arm pivoted to the same, a stud or stop projecting laterally from the rear end of said arm, the guide-rail Y, supported by suitable brackets, and the catch F^2 G^2, secured to said guide-rail, as set forth.

6. The combination of the carrier, the hinged compressor-frame, an arm pivoted to the same, a stud or stop projecting laterally from the rear end of said arm, a trough-shaped guide, a hook at the front end of the same, a slot at the rear end of the said trough, a stop or bracket secured under the said slot, the guide-rail Y, supported by suitable brackets, and the catch F^2 G^2, secured to said guide-rail, as set forth.

7. The combination of suitable inclined track-rails, the carrier, an arm or lever extending rearwardly from the same, a wheel or pulley at the rear end of said arm, the track or guide-rails X Y, the curved or segmentally-slotted guide A^2, the compressor-frame hinged to the carrier, the arm pivoted to the same, a stud or stop projecting laterally from the rear end of said arm, a trough-shaped guide, a hook at the front end of said guide, a slot at the rear end of said trough, a stop or bracket secured under said slot, and the catch F^2 G^2, secured to the guide-rail Y, as set forth.

8. The combination of the base-frame, the inclined tracks, the carrier, the hoisting-ropes, a frame extending downwardly from the rear end of the base-frame, and pulleys journaled at the lower corners of the said frame, and serving to guide the hoisting-ropes, the draft upon which is thereby lowered, as set forth.

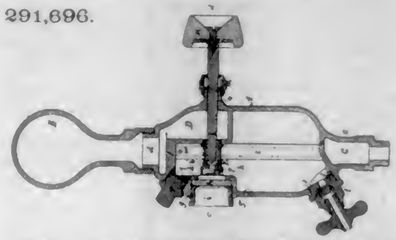
291,695. TRANSOM-LIFTER. FRANK A. CORTIS, Meriden, Conn. Filed Sept. 4, 1883. (No model.)



Claim.—The combination of a guide-rod having its lower free end notched, an upper bracket or socket-piece securing the upper end of the guide-rod, a bracket or socket-piece having two vertical perforations securing the guide-rod a distance from its upper end in the inner perforation, a sliding spring-rod having a vertically-perforated block at its upper end sliding upon the upper end of the guide-rod, a transom-operating rod hinged to the sliding block, and a handle secured to the lower end of the sliding spring-rod, having a perforation oblong in cross-section, and provided with a projection upon its inner side, and sliding upon the lower end of the guide-rod, as and for the purpose shown and set forth.

291,696. LUBRICATOR FOR STEAM ENGINES. WARREN HILLIARD CRAIG, Lawrence, Mass. Filed Oct. 24, 1883. (No model.)

291,696.



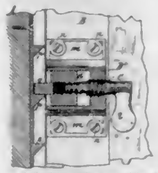
Claim.—1. The oil-reservoir having in and forming an integral part of it the projection *z*, provided with the passage *v*, leading from its upper part and down one side of it to its bottom and to open into the neck *s*, all being substantially as set forth.

2. The oil-reservoir provided with the steam-receiving chamber arranged in its lower neck and separate from the oil-receiving space of said reservoir, and also with a pipe leading up through the said reservoir into the condenser and opening out of or communicating with such chamber, all being substantially as set forth.

3. The oil-reservoir provided with the water-trap and observation-mouth, and its glass pane arranged, as represented, in the upper part of such oil-reservoir, in combination with the separate educt of the water-trap, arranged with the trap and pane, and having a valve-seat and plug, all substantially as specified.

4. The oil-reservoir provided with the steam-chamber in its lower neck, and with the oil-discharge passage leading into such from the upper part of such reservoir, and also with the pipe to extend up within the condenser and communicate with the said steam-chamber, all being substantially as described or represented.

291,697. SASH-HOLDER. HENRY CUTTING, Buffalo, N. Y., assignor of one-half to Thomas J. De Laney, same place. Filed Oct. 2, 1883. (No model.)



Claim.—1. In a sash-holder, the combination, with a screw-bolt having a right-hand and a left-hand screw-thread, of a fixed screw-nut receiving one of said screw-threads, and a movable bearing-piece working on the other screw-thread, substantially as set forth.

2. The combination, with a screw-bolt, C, provided with a right-hand and a left-hand screw-thread, of a screw-nut, D, provided with a screw-thread, *e*, and a cavity, *f*, and a bearing-piece, G, provided with a screw-thread, *h*, and guided in the cavity *f*, substantially as set forth.

3. The combination, with a screw-bolt, C, having right and left hand screw-threads *i* and *j*, of a fixed nut, D, having a screw-thread, *e*, a recess, *f*, and a longitudinal groove, *l*, and a bearing-piece, G, constructed with a screw-thread, *h*, and rib *k*, and arranged in the recess *f*, substantially as set forth.

291,698. ASTRONOMICAL APPARATUS. JOHN DAVIS, Allegheny, Pa. Filed May 14, 1883. (No model.)

Claim.—1. In an astronomical instrument, the combination, with the stand A, having revolving cover A^2, and provided with eccentric guide-channel A^4, of the earth-bearing arm C, provided with leg C', substantially as described, whereby the earth is made to describe an elliptical orbit, as set forth.

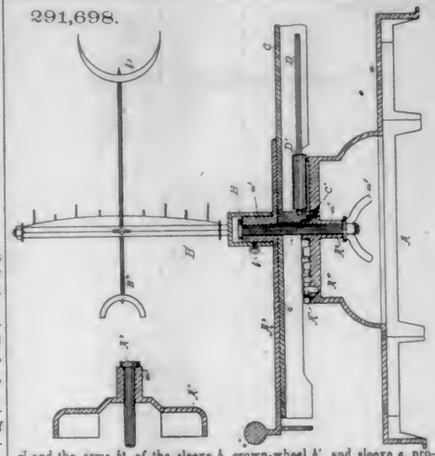
2. In an astronomical instrument, the combination, with the revolving shaft D and the shaft F, of the wheel *f*, pinion *f'*, worm f^3, and wheel f^4, substantially as described, whereby the change in the direction of the axial inclination of the earth is effected, as set forth.

3. In an astronomical instrument, the combination, with the globe F', of the bent revolving shaft F, said shaft forming two axes of revolution, intersecting each other outside of the globe at an angle of twenty-three degrees and thirty minutes, substantially as and for the purposes described.

4. In an astronomical instrument, the combination, with the revolving shaft D and the earth F', of the wheels *g g' g³*, sleeve g^4, provided with crown-wheel g^5, and sleeve g^7, provided with crown-wheel g^6, substantially as described, whereby the revolution of the earth upon its axis is effected, as set forth.

5. In an astronomical instrument, the combination, with the sleeve

291,698.



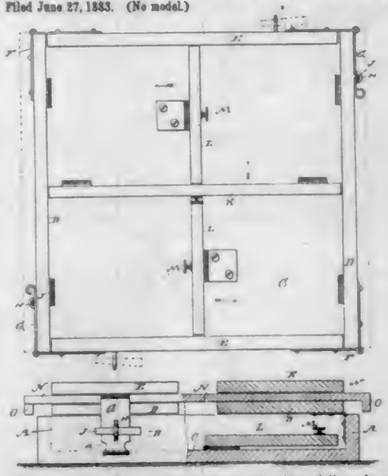
g^7 and the arms h^4, of the sleeve *h*, crown-wheel *h'*, and sleeve *a*, provided with crown-wheel *c'*, substantially as described, whereby the arms h^4 are prevented from revolving with the sleeve g^7, as set forth.

6. In an astronomical instrument, the combination, with the line of illumination H, provided with means for journaling it upon the plane of the ecliptic and the axis F, of the arm H', provided with bifurcated swivel H^3, substantially as and for the purposes described.

7. In an astronomical instrument, the combination, with shaft g^7, provided with means for revolving it, the moon K, and rod k^3, of the wheels *k k'*, substantially as described, whereby the moon is revolved about the earth, as set forth.

8. In an astronomical instrument, the combination, with the stand A, provided upon its top with a circular toothed rack, and having a revolving cover, A^2, the earth-bearing arm C, having means for reciprocating it, and the revolving shaft D, having bearings in said arm, of an elongated pinion carried by said shaft D, and adapted to gear with the cogs of the circular toothed rack while the arm C is being simultaneously revolved and reciprocated, substantially as and for the purposes set forth.

291,699. FOLDING EGG-CASE. JESSE D. DE JERRY, Smithville, Mo. Filed June 27, 1883. (No model.)



Claim.—1. A folding egg-case constructed, substantially as herein shown and described, with low side and end pieces secured to the bottom, side boards hinged to the upper edges of the side pieces, and end boards hinged to the ends of the side boards, as set forth.

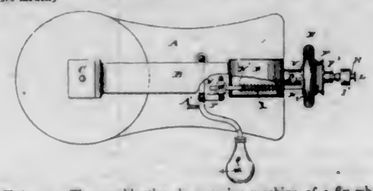
2. A folding egg-case constructed with low side and end pieces secured to the bottom, side boards hinged to the upper edges of the side pieces, end boards hinged to the ends of the side boards, and folding partitions hinged to the bottom of the case, substantially as herein shown and described, and for the purpose set forth.

3. In a folding egg-case, the combination, with the side and end pieces, A B, secured to the bottom C, of the side boards, D, hinged to the upper edges of the side pieces, the end boards, E, hinged to the ends of the side boards, the hinged hasps G, secured to the free ends of the end boards, and the staples H on the side boards, substantially as herein shown and described, and for the purpose set forth.

4. In a folding egg-case, the combination, with the side and end pieces, A B, secured to the bottom C, of the side boards, D, hinged to the upper edges of the side pieces, the end boards, E, hinged to the ends of the side boards, and the cover N, having the upper surface beveled at the end edges, substantially as herein shown and described, and for the purpose set forth.

5. In a folding egg-case, the combination, with side and end pieces, A B, secured to the bottom C, of the side boards, D, hinged to the side pieces, the end boards, E, hinged to the ends of the side boards, the partition K, hinged to the partition K', and extending from side to side, and the partitions L, hinged to the bottom and extending from the ends to the partition K, substantially as herein shown and described, and for the purpose set forth.

291,700. BRAKE MECHANISM FOR SEWING-MACHINES. JEROME B. DESNOYERS and CHARLES SINNING, St. Louis, Mo. Filed Oct. 31, 1883. (No model.)



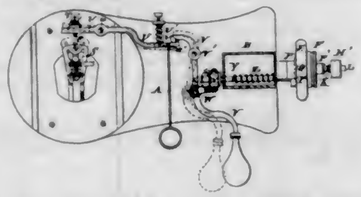
Claim.—1. The combination, in a sewing-machine, of a fly-wheel having a notch therein, and a brake constructed to enter said notch, substantially as and for the purpose set forth.

2. A sewing-machine brake having the following elements: a brake-lever with a spring-brake S T working therein, and a fly-wheel with inclined jaws U upon its face, substantially as and for the purpose set forth.

3. The combination, in a sewing-machine, of fly-wheel E, with jaws U, friction drive-wheel F, lever I, with arm I', with push-pin H, brake-arm I^2, with brake S T, arm I^2, rod N, spring R, hand-lever Q, connected to rod N, and catch A', substantially as set forth.

291,701. BUTTON-HOLE SEWING-MACHINE. JEROME B. DESNOYERS and CHARLES SINNING, St. Louis, Mo. Filed Aug. 7, 1883. (No model.)

Brief.—When the button-hole is finished, the projection on the clamp comes in contact with the end of the screw in the adjacent lever, thus causing the lever-catches to become disengaged, whereupon the springs act to release the friction drive-wheel and to brake the fly-wheel, thus stopping the machine.



Claim.—1. The combination, with a moving clamp, S, of a sewing-machine, of levers U and V, with engaging-catches, a spring connecting-rod Y Z, forked lever H, with pressure-arm H' and brake-arm H^2, and a friction-clutch actuated by the pressure-arm H' and a relieving-spring, R.

2. The combination, in a button-hole sewing-machine, of a work-clamp, S, levers U V, with catches *u' v*, springs U' Z, forked lever H, spring pressure-pin K L, friction-wheel F, relief-spring R, balance-wheel E, jaws P, and spring-brake N O, substantially as set forth.

291,702. ANIMAL-POKE. JOHN E. DEUPREE, Edinburg, Ind. Filed June 27, 1883. (No model.)



Claim.—The combination of a common halter, a flat T-shaped metallic bar forming a curved T-head secured upon the throat-strap, having a bail for the chin-strap, and a slotted eye at its lower end, and a bar provided with a flat eye having shoulders upon its edges, as described, upon its upper end hinged in the slotted eye, and having its lower end curved forward, as and for the purpose shown and set forth.

291,703. BILLIARD-CUE TIP. HENRY EARTHOPE and GEORGE C. SCHNEIDER, St. Louis, Mo. Filed Feb. 28, 1883. (No model.)



Claim.—The combination of cue C, having outwardly-flaring rear end, D, leaving shoulder E, and the rubber tip A, having sides B flush with the cue, and inwardly-flaring socket fitting the rear end of the cue, as set forth.

291,704. KNIFE HOLDER AND PACKAGE. GEO. E. FELCH, Ayer, Mass. Filed Nov. 12, 1883. (No model.)

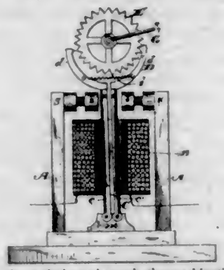


Claim.—1. The improved knife-holder composed of the radially-slotted plates united by a bar, as set forth.

2. The improved knife-holder composed of the plates *a*, connected by the bar *b*, and provided with alternating radial slots *c c'*, the slots *c* of the one plate corresponding with the slots *c'* of the other, as set forth.

3. In a knife-holder, the combination of the radially-slotted plates or disks *a a*, the connecting bar or rod *b*, and the cylindrical inclosing-box, as set forth.

291,705. ESCAPEMENT AND UNISON MECHANISM FOR PRINTING-TELEGRAPHS. STEPHEN D. FIELD, New York, N. Y., assignor to the Commercial Telegram Company, same place. Filed Oct. 3, 1883. (No model.)



Claim.—1. In a printing-telegraph, the combination of a permanent magnet, an electro-magnet, a core for the latter pivoted upon or at the neutral point of the permanent magnet, and with its free end playing between the poles of the permanent magnet, and an anchor-escapement and type-wheel, substantially as set forth.

2. The combination of a coil, a permanent magnet embracing the coil, and a core, movable therein, and pivoted at or near the neutral point of the permanent magnet, substantially as set forth.

3. The combination of a coil, a permanent magnet embracing the coil, a core for the coil, movable therein, and pivoted at or near the neutral point of the permanent magnet, and playing at its free end between the poles of the permanent magnet, and adjustable stops on the poles of the permanent magnet, for regulating the motion or vibration of the core, substantially as set forth.

4. The combination of a coil, a permanent magnet embracing the coil, a core for the coil, movable therein, and pivoted at one end at or near the neutral point of the permanent magnet, and playing at the free end between the poles of the permanent magnet, adjustable stops on the poles of the permanent magnet, for regulating the motion or vibration of the core, and an escapement, anchor, and type-wheel, substantially as set forth.

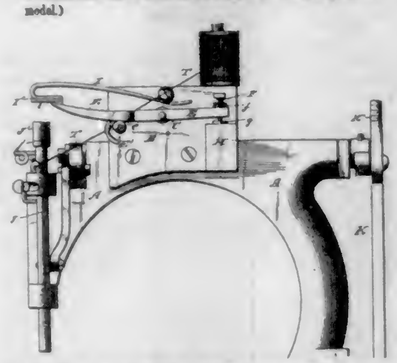
5. The combination, with a single coil and a permanent magnet, of a divided core for the coil, each division carrying one part of an anchor, and normally held together by a spring, substantially as set forth.

6. The combination of a divided anchor, a stop carried thereby, and

an arm on the type-wheel shaft, so arranged that the arm shall contact with the stop when the divided anchor is forced apart, substantially as set forth.

7. A combined escapement and unison device, consisting of a divided armature and an anchor normally held together, and a stop on the type-wheel shaft, arranged to contact when the divided anchor is forced apart, and stop the type-wheel shaft at a predetermined point, substantially as set forth.

291,706. AUTOMATIC TENSION FOR SEWING-MACHINES. DANL. P. FITZGERALD and WM. LYON, Newark, N. J. Filed Aug. 4, 1883. (No model.)



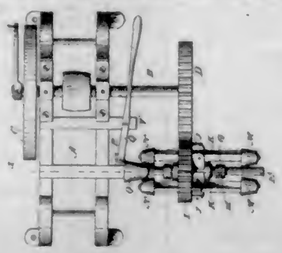
Claim.—1. In an automatic tension device for sewing-machines, a thread-clamping device composed of a stationary thread-rest or thread-bearing, a lever bearing with one of its arms against the thread-rest, a spring adapted to operate continuously with a gentle or moderate pressure against the lever, a spring adapted to operate with a strong pressure against the lever, and means for intermittently raising said spring, releasing its pressure, constructed and combined substantially as and for the purpose shown and set forth.

2. In an automatic tension device for sewing-machines, a thread-clamping device composed of a stationary thread-rest or thread-bearing, a lever bearing with one of its arms against the thread-rest, a spring adapted to operate continuously against the lever, means or mechanism for regulating the tension of said spring, a spring adapted to operate with a strong pressure against the lever, and means for intermittently raising said spring, releasing its pressure, constructed and combined substantially as and for the purpose shown and set forth.

3. The combination of a supporting-frame secured upon the machine-frame, a thread-bearing lug projecting from said supporting-frame, a lever of the first class, pivoted upon the supporting-frame and resting against the thread-bearing lug, a set-screw turning vertically in one end of the lever, a capped spring bearing against the lower end of said screw, a spring secured at one end to the supporting-frame and bearing with its other end against the other end of the lever, and means from the mechanism of the machine for intermittently raising said spring after the loop has been drawn up, as and for the purpose set forth.

4. In an automatic tension device for sewing-machines, the combination of a stationary thread rest or bearing, a lever bearing with one arm against the thread-rest, a spring bearing continually with a gentle pressure against the lever, means for adjusting said pressure, a spring bearing against the lever with a strong pressure, means from the mechanism of the machine for intermittently raising said spring after the loop has been drawn up, and means for adjusting the throw of said mechanism as and for the purpose shown and set forth.

291,707. FLUE AND PIPE WELDER AND FITTER. JOHN COALMAN FLECK and WILSON HERRING, Stewartsville, Ind. Filed June 20, 1883. (No model.)



Claim.—1. In a machine for fitting and welding boiler-tubes, the combination of a shaft or mandrel, a wheel mounted to revolve upon the same, arms or levers mounted in boxes upon the face of said wheel and extending rearwardly through slots in the same, welding-rollers upon the front ends of said levers, friction-rollers upon the rear ends of the same, a conical sleeve adjustable upon the shaft or mandrel beneath the friction-rollers, and suitable operating mechanism, substantially as set forth.

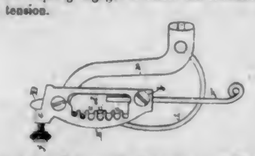
2. In a machine for fitting and welding boiler-tubes, the combination of a shaft or mandrel, a wheel mounted upon the same, and having arms or levers provided with welding-rollers at their front ends, mechanism for forcing the same against the mandrel, and a sleeve or collar adjustable upon the said mandrel, substantially as and for the purpose set forth.

3. The combination of the shaft or mandrel, the wheel journaled upon the same, and provided with arms or levers having friction-rollers at their inner ends, the conical sleeve having an arm or bracket at its inner end, and a lever connected pivotally with the said arm or bracket, and fulcrumed upon a bracket extending laterally from the frame, as set forth.

4. In a machine for fitting and welding boiler-tubes, the combination of a frame, a main shaft extending laterally from said frame and carrying a gear-wheel, a shaft or mandrel extending laterally from the frame, parallel to the main shaft, a pinion mounted upon the said mandrel and meshing with the gear-wheel upon the main shaft, arms or levers mounted in the said pinion, and having welding-rollers at their front ends and friction-rollers at their rear ends, a collar adjustable upon the mandrel in front of the pinion, a conical sleeve adjustable in rear of the pinion beneath and between the friction-rollers, and a lever arranged to operate the said sleeve, substantially as and for the purpose set forth.

291,708. TAKE-UP MECHANISM FOR SEWING-MACHINES. LOUISA FOSS, East Boston, Mass., Administratrix of George Fox Foss, deceased. Filed July 25, 1883. (Model.)

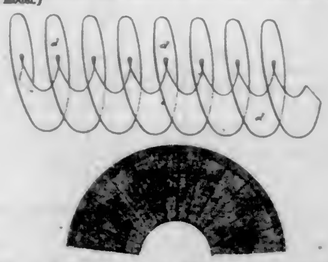
Brief.—The device is intended for use with a single wax-thread sewing-machine. The vibratory arm carries a thread-guide, which is adjustably secured to it. The arm is crowded away from the head of the machine by a spring, the tension of which is resisted by the thread. The upper end of the spring engages in either one of a series of notches for varying the tension.



Claim.—1. A bar, E, in combination with a rod, F, which is vertically adjustable therein, and provided with an eye for the wire, a bracket, to which said bar is pivoted, and a spring, which bears against said bar to cause it to apply tension to the thread, substantially as set forth.

2. A pivoted tension-arm provided with a series of notches at different distances from the pivotal point of said arm, in combination with a spring which engages with any one of said notches, and which may have its end or operative part shifted from one of them to any other, for the purpose of lessening or increasing the tension, substantially as set forth.

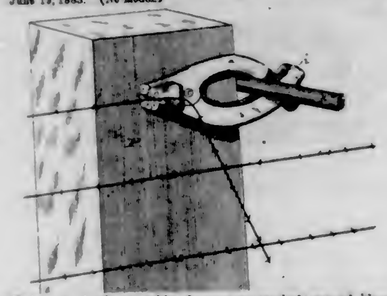
291,709. BUFFING-WHEEL. HERBERT E. FOWLER, New Haven, assignor to the Fibrous Buff Company, Hartford, Conn. Filed Sept. 26, 1883. (No model.)



Claim.—1. In combination with a mandrel and the clamping ends of a buffing-wheel, a fabric for the same having one edge longer than the other, so as to be coiled as a flat spiral around the mandrel, the threads of the warp following a circular direction, and the threads of the weft crossing the same in radial lines from the center or axis, substantially as set forth.

2. A fabric for buffing-wheels having one edge longer than the other, so as to be adapted to being coiled up into a flat circular form of numerous layers, substantially as set forth.

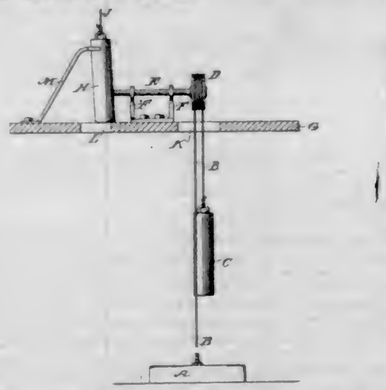
291,710. WIRE-STRETCHER. WALTER G. GARTH, Lodebar, Va. Filed June 19, 1883. (No model.)



Claim.—1. A wire-stretching forceps composed of parts *a b*, hinged together at *c*, and having their ends crossed, as shown, to constitute a loop, *g*, adapted to receive a lever, *h*, and provided with wire-gripping jaws *d e*, graduated to grip wires of different sizes, as set forth.

2. A wire-stretching forceps composed of parts *a b*, hinged together at *c*, and having their ends crossed, as shown, to constitute a loop, *g*, adapted to receive a lever, *h*, and provided with wire-gripping jaws *d e*, extending laterally, so that the wire may pass through said jaws and along the side of the forceps, as shown.

291,711. BILGE-WATER ALARM. GEORGE W. GILMORE, Webster, Pa. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a bilge-water alarm, the combination, with a drop-weight, of a screw supported in bearings and abutting against said weight, and provided with a pulley and a float and weight on the opposite ends of a rope passing around said pulley, substantially as herein shown and described.

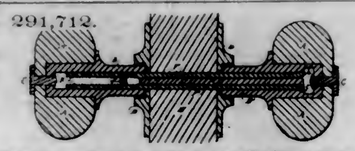
2. In a bilge-water alarm, the combination, with the drop-weight H, the screw E, supported in bearings and abutting against the same, and the pulley D on said screw, of the rope B, passing over said pulley, and provided with the float at one end and the weight C at the other, the float being heavier than the weight, substantially as herein shown and described.

3. In a bilge-water alarm, the platform G, provided with the holes K L, the drop-weight H, and the brace M, for supporting the weight upon said platform, in combination with the screw E, provided with the pulley D, the rope B, passing over said pulley, and the float A and weight C on opposite ends of the rope, substantially as herein shown and described.

291,712. KNOB ATTACHMENT. WILLIAM H. GOUIN, Chatham, Ontario, Canada, assignor of one-half to Charles H. Wood, same place. Filed Sept. 25, 1883. (No model.)

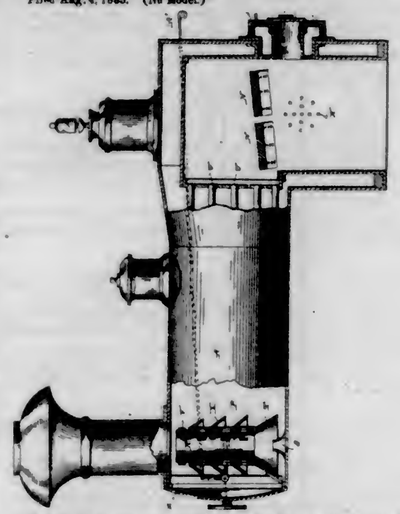
Claim.—In a door-knob attachment, a spindle consisting of two flat metal plates, each having one end bent slightly outward and the inner side of the other end serrated for a portion of its length, and a shorter similar straight plate adapted to separate the first-named plates, whereby

291,712.



a fastening-pin may be passed between said plates to engage with the serrated portion thereof, substantially as herein shown and described.

291,713. DRAFT-REGULATOR. WM. F. GRAESLER, Williamsport, Pa. Filed Aug. 4, 1883. (No model.)

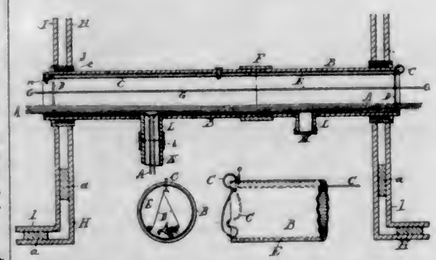


Claim.—The combination, with the boiler-furnace of a locomotive, of the slotted or perforated exhaust-flue or draft-regulating pipe located in the smoke-box thereof, the similarly slotted and skirted jacket surrounding said flue, its slots and skirts being in a plane with the series of horizontal flues of the boiler, and the mechanism for operating the skirted jacket from the cab, substantially as and for the purpose specified.

291,714. MEDICAL COMPOUND. DANIEL A. GREEN, Scott, N. Y. Filed Mar. 24, 1883. Renewed Oct. 10, 1883. (No specimens.)

Claim.—The medical compound for the purposes described, the same consisting of mutton-tallow, honey, pine-pitch, beeswax, linseed-oil, saltpeter, borax, alum, salt, hen's oil, skunk's oil, castile soap, laudanum, spirits of turpentine, oil of origanum, ether, and oil of sassafras, combined in about the proportions specified.

291,715. UNDERGROUND ELECTRICAL CONDUCTOR. JOHN GREEVES and JOHN H. BLEDO, Paterson, N. J. Filed May 11, 1883. (No model.)



Claim.—1. The means herein shown and described for discharging the induced electricity from the insulating-coating of a series of electrical conducting-wires, consisting of the naked wire C, laid parallel with the said series of conductors, and the connections D, united to the wire C at intervals and brought into contact with the several insulating-coat-

ings, the whole being closed in a metallic pipe, and the wire C being connected to the pipe at intervals, substantially as herein set forth.

2. The combination, with the well-hole lining H, of the wooden chamber I, insulated therein, substantially as shown and described.

3. The combination, with the well-hole lining H and wooden chamber I, of the sleeves J and the pipes B, secured therein, as and for the purpose set forth.

291,716. ELECTRICAL INSULATING MATERIAL. JOHN GREIVES, Paterson, N. J. Filed Apr. 30, 1883. (No specimens.)

Brief.—Improvement on Letters Patent No. 278,536, dated May 29, 1883.

Claim.—1. The electrical insulating material composed of caustic lime in powder, hydrated or otherwise, united with common rosin in a fused state, substantially in the manner and proportions specified herein.

2. The electrical insulating material composed of caustic lime in powder, common rosin, and a fixed oil, the whole combined substantially in the manner and proportions herein specified.

291,717. ELECTRICAL INSULATING MATERIAL. JOHN GREIVES, Paterson, N. J. Filed Aug. 2, 1883. (No specimens.)

Claim.—1. The composition herein described for an electrical insulating material, consisting in rosin and natural silicate of magnesia—as talc or soapstone—united or combined by fusion, substantially as and for the purpose set forth.

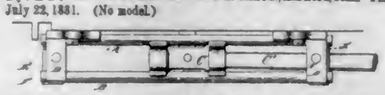
2. The electrical insulating material consisting in rosin and natural silicate of magnesia tempered by an admixture of fat or oil, substantially as and for the purposes set forth.

291,718. ELECTRICAL INSULATING MATERIAL. JOHN GREIVES, Paterson, N. J. Filed Aug. 15, 1883. (No specimens.)

Claim.—1. The insulating material composed of crystalline lime carbonate, as marble, spar, &c., reduced to powder, and combined with rosin, by fusion of the latter, substantially as herein set forth.

2. The composition of rosin and crystalline lime carbonate, prepared substantially as described, and modified by the addition of asbestus, substantially in the proportions set forth.

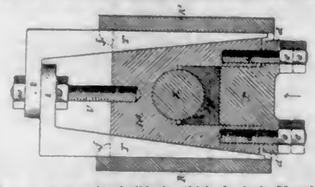
291,719. SEWING-MACHINE. JOHN H. GRIFFIN, Hartford, Conn. Filed July 22, 1881. (No model.)



Claim.—1. The combination, with the bed of a sewing-machine, of a fixed standard and a movable jaw and screw forming a clamp, and adjustable guide-bars forming the shuttle-race, said guide-bars being held in position by the clamp, substantially as stated.

2. The combination, with a sewing-machine bed, of the fixed standards or brackets, movable posts, and set-screws, the same forming clamping devices, the round guide-rods and adjusting-screws forming the shuttle-race, the shuttle-carrier having concave bearing-surfaces, and suitable driving mechanism, substantially as described.

291,720. CRANK-PIN SLIDE OF DIRECT-ACTING STEAM-PUMPS. JNO. P. GRISCOM, Pottsville, Pa. Filed Nov. 16, 1883. (No model.)



Claim.—1. A cross-head slide in which the body M and block N are combined with the follower P, and with bolts for confining the follower to the body and for adjusting the said block N, substantially as set forth.

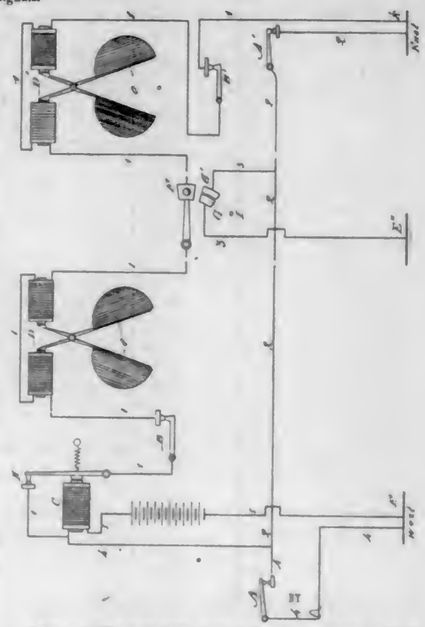
2. The combination of the body M, the plates R R', and taper keys T T' with devices for the adjustment of the said keys, substantially as specified.

3. The combination of the body M of the slide and the plates R R' with the taper keys T T', having heads *t*, that of one key overlapping the other, and with a stud-bolt, U, substantially as described.

4. The combination of the body M of the slide, the adjustable taper keys adapted to grooves in the edges of the body, and the plates R R', having lugs between which fit the said keys, substantially as set forth.

291,721. RAILWAY-SIGNAL SYSTEM. WILLIAM HADDEN, Brooklyn, N. Y. Filed Feb. 19, 1883. (No model.)

Brief.—Normally-closed circuit-signals at "safety." Train entering section from the left operates circuit-closer A, effecting nothing, but immediately thereafter opens B, breaking the signal-circuit at H by de-energizing C. As train leaves section, it opens B', effecting nothing, but on closing A' re-energizes C, closes signal-circuit at N, and returns signals to "safety." Manual key F, for use of station master, also controls signals.

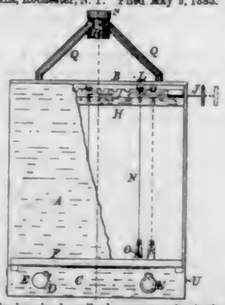


Claim.—1. The main signal-circuit and its signal-magnets, as herein specified, in combination with the switch F, contact-plates G G', circuit-wires 3 2 4, magnet C, battery, wires 5, and earth, as and for the purpose specified.

2. In an electric railroad-signal system, the circuit formed of the wire 4, circuit-closing track-instrument A, magnet C, and wire 5, including main-line battery, in combination with the circuit formed of the wire 1, contact-points H, circuit-breaking track-instruments B B', and signal-magnets D D', the said wire 5 and battery forming a part of the main-line circuit when the contact-points H are closed, as herein specified.

3. In an electric railway-signal system, the circuit formed by the earth-connection E', circuit-closing track-instrument A', wires 2 and 4, magnet C, battery, wire 5, and earth-connection E, the contact-points H, in combination with mechanism for operating the semaphores, as specified.

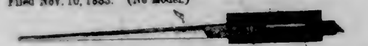
291,722. APPARATUS FOR DRYING PHOTOGRAPHIC PAPER. BENJAMIN F. HALE, Rochester, N. Y. Filed May 9, 1883. (No model.)



Claim.—1. The herein-described apparatus for drying photographic paper, consisting of the box A, provided with suitable air inlet and outlet passages, the reciprocating frame I, bars K, having paper-clips L L, and one or more heating devices, T T, substantially as and for the purposes set forth.

2. The combination, with the box A, provided with suitable air inlet and outlet passages, of the reciprocating frame I, adapted to support the paper during the drying operation, the removable screen G, and a suitable heating device, T, substantially as and for the purposes set forth.

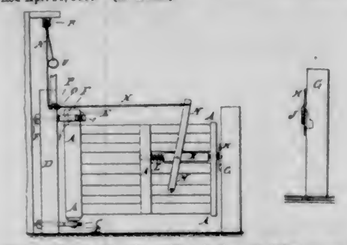
291,723. PEN-HOLDER. JOHN SMITH HALSEY, Buena Vista, Colo. Filed Nov. 10, 1883. (No model.)



Claim.—1. The combination of the holder, the finger-block having the central bore and the spring-recess, and the spring, substantially as set forth.

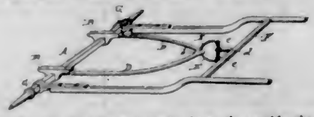
2. The combination of the holder having a serrated barrel, the finger-block having the central bore, and the spring-recess and the spring, substantially as set forth.

291,724. GATE. WILLIAM JAMES HAMILTON, New Boston, Iowa. Filed Apr. 11, 1883. (No model.)



Claim.—The combination, with a horizontal sliding spring-pressed gate-bolt, K, of the stationary post-plate H, having the slot I, and along its inner edge the flange J, adapted to receive, guide, and stop said bolt, as described.

291,725. TWO-WHEELED VEHICLE. WILLIAM M. HAMILTON, Euclid, Ohio, assignor of two-thirds to Frank E. Tracy and Fred H. Oviatt, both of same place. Filed Sept. 22, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, the combination, with a box, B, mounted loosely on the axle, and adapted to support the vehicle-body, of a rod rigidly secured thereto, and a spring device connecting the rod to the shafts, said spring device operating vertically, substantially as set forth.

2. In a two-wheeled vehicle, the combination, with the boxes loosely mounted on the axle, of the two rods respectively extending forward therefrom, and a spring device adapted to operate in a vertical plane connecting the forward extremities of said rods indirectly to the shafts, substantially as set forth.

3. In a two-wheeled vehicle, the combination, with the boxes loosely mounted on the axle, and the two rods having their rear extremities respectively secured to said boxes, and their forward extremities united in a joint, of a spring device adapted to operate in a vertical plane and connecting said joint to the cross-bar of the shafts, substantially as set forth.

4. In a two-wheeled vehicle, the combination, with boxes B, rods D, and arms E, of a bolt, *c*, springs *e*, and arm *d*, substantially as set forth.

291,726. BUCKLE. IGNATZ HARTMANN, St. Louis, Mo. Filed Oct. 22, 1883. (No model.)

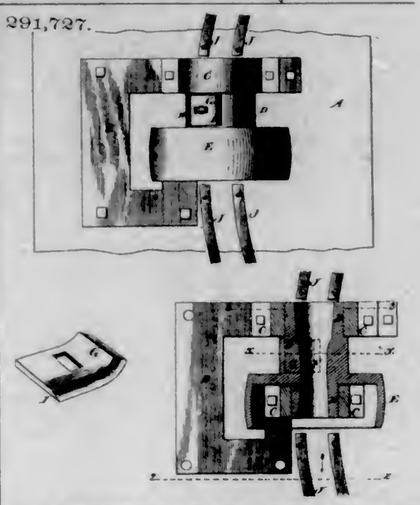


Claim.—A double loop hinged at its center to the tongue-bar of a buckle, and extending from the tongue-bar directly upward and downward, for the purpose of binding the strap directly opposite and against the tongue-bar, as described.

291,727. TUBULAR CUTTER-LATHE. LEWIS S. HAYES, Cortland, N. Y. Filed Nov. 21, 1882. (No model.)

Claim.—1. In a machine for turning curved pieces of wood, or straight pieces with curved portions, a revolving hollow knife-holder having a slit in which a curved knife is secured, said holder curving outwardly in both directions from the knife-bearings, combined with said curved knife and with curved and straight guides, as and for the purposes set forth.

291,727.



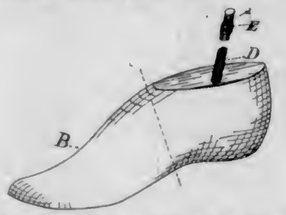
2. The combination, with the holder D, having knife-bearing F, and curved outwardly as shown, the knife G, adjusting-screw H, and interchangeable straight or curved guides J, as set forth.

291,728. JOINER'S MARKING-GAGE. EBENEZER HEWES, Unionville, Conn. Filed Nov. 26, 1883. (No model.)



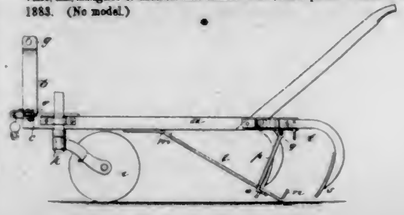
Claim.—The combination, in a marking-gage, of a block or fence having a transverse perforation and a vertical perforation intersecting the periphery of the transverse perforation, a rod sliding in the transverse perforation and having a marker at its end, a screw fitting in the vertical perforation having a concave or recess in its side, and a thumb-nut fitting upon the end of the screw, as and for the purpose shown and set forth.

291,729. METHOD OF EXHIBITING BOOTS AND SHOES. CHAS. L. HIGGINS, Montreal, Quebec, Canada, assignor to John E. Wheeler, Trustee, Lynn, Mass. Filed July 28, 1883. (No model.)



Claim.—The improvement in the art of exhibiting boots and shoes, consisting in distending and holding distended the uppers thereof by means substantially as described, whereby their symmetrical form and shape are exposed and maintained by elastic pressure, all substantially as and for the purpose set forth.

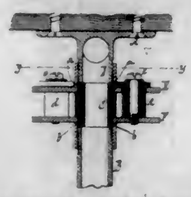
291,730. CULTIVATOR. FREDERICK LAWRANCE HILSABECK, Shelbyville, Ill., assignor to himself and James Ward, same place. Filed Oct. 6, 1883. (No model.)



Claim.—1. The combination, with the beam *a*, of the two bars *l p*, the former passing through a hole near the end *o* of the latter, as shown and described.

2. The supporting device having its bars *l p* hinged at *m q* to the beam, one passing through a slot at the angle end *o* of the other, to enable said bars to be swung up or down together, as described.

291,731. INSULATING-CONNECTION FOR ELECTRIC-LIGHT FIXTURES. CHARLES H. HINDS, New York, N. Y. Filed June 26, 1883. (No model.)



Claim.—1. In an electric-light chandelier-fixture, the combination of the suspending-bracket A, constructed to be attached to the ceiling, the chandelier-suspending pipe B, the screw-flanges E and F, the connecting-bolts *c*, and an insulating material interposed between the flanges, substantially as described.

2. In an electric-light chandelier-fixture, the combination of the suspending-bracket A, constructed to be attached to the ceiling, the chandelier-suspending pipe B, the screw-flanges E and F, the insulating-plug C, means for connecting the flanges, and an insulating material arranged between the flanges, substantially as described.

291,732. COMBINED SHOVEL AND SHIELD. JOHN J. HOLLAND, New Orleans, La. Filed May 23, 1883. (No model.)



Claim.—1. A combined shovel and shield constructed with a sectional handle and a removable blade secured in a slot of the handle, substantially as shown and described.

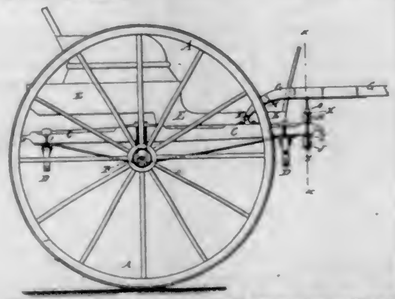
2. The combination, with the blade A and handle B, formed of hollow sections *b b'*, of the pouch C, for the handle-sections, and the pouch D D', for the blade, substantially as shown and described.

3. The combination, with the handle-section *b*, slotted to receive the blade A, of the fixed pin *c'* and the thumb-screw c^3 and nut c^3, substantially as shown and described.

4. The sectional tubular handle, constructed of section *b*, having bottom plug, *e*, slotted to receive the shovel-blade, and fitted with a removable stopper, *d*, and the section *b'*, having a rigid bottom, *e*, and a cap, *d'*, substantially as shown and described.

5. The pouch D D', combined with the strong strap *h*, having hook-connections *g* which pass through the apertures a^3 of the blade A when it is adjusted as a shield, substantially as shown and described.

291,733. ROAD-CART. HENRY HORTOP, Rutherford, Cal. Filed Sept. 25, 1883. (No model.)



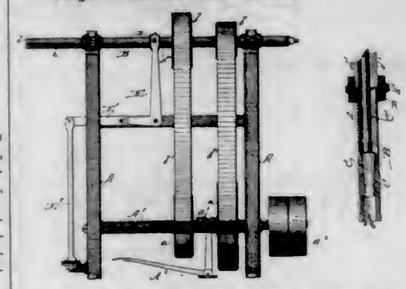
Claim.—1. A road-cart constructed with springs above and below the forward ends of the side bars, and kept in place by staples attached to the thills, as set forth.

2. In a road-cart, the combination, with the side bars, C, and the thills G, of the staples H, the yokes J M, the nuts K O, the guide-eyes I, and the springs L, substantially as herein shown and described, whereby a certain amount of play will be given to the thills, to prevent the unpleasant motion of the cart-body, and the cart can be readily adjusted for large and small horses, as set forth.

291,734. ARTIFICIAL STONE. WILLIAM HOWELL, Philadelphia, Pa. Filed Nov. 19, 1883. (No specimens.)

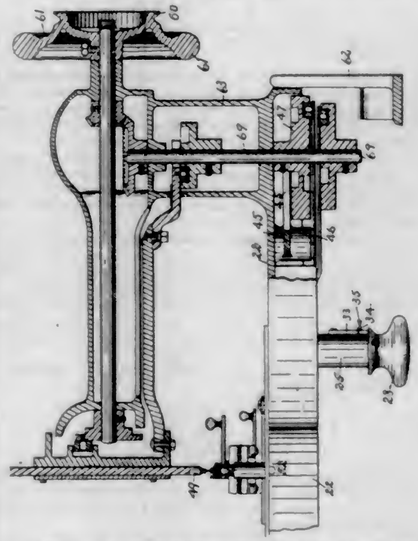
Claim.—The herein-described composition of matter to be used as artificial stone, consisting of muriatic acid, flour of sulphur, molasses, iron scale, sand, and cement, prepared and combined substantially as specified.

291,735. BROOM-MACHINE. FRANK S. HOTT and PETER L. STORCH, Chicago, Ill. Filed June 1, 1883. (No model.)



Claim.—In a broom-machine, the frame A, having a driving-shaft with suitable driving and belt pulleys, hollow mandrel B, formed with a slitted and notched end, having a conical interior surface, plug B', and grooved collar D, secured by pin *d*, passing through slots in the mandrel, in combination with the cone-headed follower C, with shank C', and spring C^2, yoke-lever E, lever E', and foot-lever E^2, all constructed and arranged to operate substantially as and for the purpose set forth.

291,736. BUTTON-HOLE STITCHING-MACHINE. DANIEL W. G. HUMPHREY, Chelsea, Mass., assignor to the Rapid Button-Hole Machine Company. Filed June 18, 1883. (No model.)



Claim.—1. In a button-hole stitching-machine, a slotted work-plate, a cloth holding and feeding clamp, and a feed-wheel having a double feeding-groove, a pivoted driver and two concentric sets of teeth, the outer set forming a complete circle and the inner set an arc of a circle only, combined with a recessed hub, around which said feed-wheel may rotate, and mechanism for imparting an intermittent rotary motion to said feed-wheel, substantially as described.

2. A slotted work-plate, a cloth holding and feeding clamp, and a feed-wheel having a feeding-groove and two concentric sets of teeth, as described, combined with two driving-pinions of unequal diameters, mounted on a common axis, the smaller pinion being connected with the larger pinion, but adapted to rotate independently thereof in one direction, and a driving mechanism constructed to operate the larger pinion directly and the smaller pinion indirectly through its connection with the larger pinion, substantially as described.

3. A slotted work-plate and a cloth holding and feeding clamp, combined with a feed-wheel adapted to operate said clamp, said feed-wheel being provided with two concentric sets of teeth, as described, the inner set forming an arc which is provided with yielding teeth at both ends, substantially as set forth.

4. Feed-wheel 16, having two sets of teeth, as described, in combination with two pinions of unequal diameters, having a common axis rotated at a uniform speed, and respectively engaging the teeth of the feed-wheel, as specified, and so arranged that the smaller pinion, when operative as the driver of the wheel, is actuated through a pawl mechanism carried by the larger pinion, substantially as specified.

5. In combination, feed-wheel 16, pinions 23 and 30, mounted upon a common axis, and having a capability of movement transverse to the plane of said wheel, and pinion 31, provided with two sets of teeth, and arranged to be driven at times by said wheel as an idler, and at times to serve as an intermediate between pinion 23 and wheel 16 to reverse said wheel, substantially as specified.

6. Pinions 23 and 30, mounted upon a spindle or arbor, 24, journaled in the machine-bed, spring 27, arranged to uphold said arbor and pinions, and knob 28, attached to the end of said arbor, whereby said pinions may be depressed by the hand of the operator to disengage them from the feed-wheel and engage them with the intermediate pinion, and be turned to reverse or move said wheel backward, as and for the purposes specified.

7. In a button-hole stitching-machine, a needle-bar and mechanism for reciprocating the same vertically and horizontally, combined with a traveling cloth-clamp and means for moving the said cloth-clamp continuously forward during a period of time greater than that occupied by the needle-bar in making one complete vertical reciprocation, substantially as described.

8. In a button-hole stitching-machine, a needle-bar and mechanism for reciprocating the same vertically and horizontally, combined with a traveling cloth-clamp and means for moving the said clamp continuously forward during a period of time approximately equal to three-fourths of the time occupied by the needle in making two complete vertical reciprocations, substantially as hereinbefore set forth.

9. The combination of the hub 25, pinion-arbor 24, spring 27, and hand-knob 28, with a gravitating latch adapted to fall into its operative position automatically when said knob is depressed, substantially set forth.

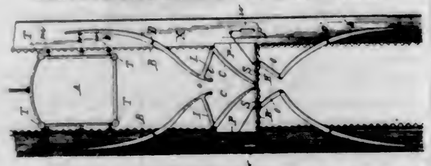
10. The combination of the hub 25, pinion-arbor 24, spring 27, and hand-knob 28, with a gravitating latch adapted to fall into its operative position automatically when said knob is depressed, and a stop for limiting the movement of the said latch, substantially as described.

11. The work-plate 70, formed with a recess, 71, and the spreaders 72 and 74, pivoted to said work-plate, and having their loop-spreading points arranged within said recess, in combination with an under needle and looper, substantially as described.

12. The work-plate 70, having the recess 71, the pivoted spreaders 72 and 74, having offset spreading-points arranged within said recess close against the under side of said work-plate, combined with an under needle and looper, substantially as described.

13. The work-plate 70, having the recess 71, the pivoted spreaders 72 and 74, having spreading-points arranged in the said recess, and the upholding-plates 78 and 79, for sustaining said spreaders, combined with an under needle and looper, substantially as described.

291,737. SELF-OPENING AND SELF-CLOSING HATCHWAY. DAVID HUMPHREYS, Norfolk, Va. Filed Nov. 7, 1883. (No model.)



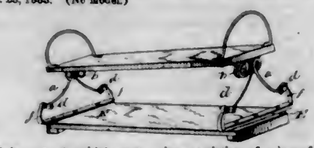
Claim.—1. In an elevator-way, the combination, with the uprights provided with sectional tracks, of the hinged doors provided with track-sections on their under faces adapted to join the track-sections on the uprights when the doors are opened, and levers connected with the doors and fulcrumed to the uprights, whereby the doors may be automatically closed by the ascent and descent of the car, substantially as specified.

2. In an elevator, the combination, with the uprights having the sectional notch-track and the hinged doors having track-sections on their under faces, of the upper levers fulcrumed to the uprights above the doors, provided at their lower ends with rigid outwardly-extending arms connected by inwardly-extending arms hinged to the rigid arms and to the upper faces of the hinged doors, substantially as specified.

3. In an elevator, the combination, with the uprights having the sectional notched tracks, and the hinged doors in the elevator-well, provided with the notched track-sections on their under faces, of the lower levers fulcrumed to the uprights and connected at their upper ends by hinged arms connected by hinges to the under faces of the hinged doors, substantially as specified.

4. In an elevator, the combination, with the uprights having the sectional notched tracks and the recesses for the reception of the hinged doors above the floor-levels, and the hinged doors having the track-sections on their under faces, of the upper levers fulcrumed to the uprights, provided at their lower ends with nibs or projections for engaging and holding the doors open, and with rigid arms connected by hinged arms to the upper faces of the doors, substantially as specified.

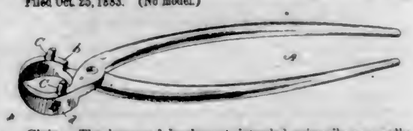
291,738. VEHICLE-SPRING. SAMUEL HUNT, Lockport, N. Y. Filed Oct. 23, 1883. (No model.)



Claim.—1. A vehicle-seat spring consisting of a loop for securing it to the vehicle-seat by means of metallic straps, and a double-coil spring articulated to a bracket by means of hinge-joints for securing it to the wagon-bed, and flaring supports terminating in eyes, substantially as shown and described.

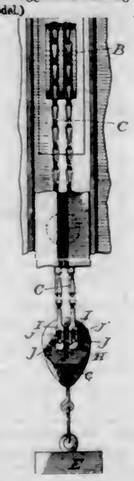
2. In a vehicle-seat spring, the combination of the double-coil spring A, having flaring supports *a*, and eyes *d*, loop B, metallic straps C, hinge-joints A, and bracket E, substantially as shown, and for the purpose described.

291,739. STAPLE-PULLER. JAMES C. IRVIN, Sand Spring, Iowa. Filed Oct. 25, 1883. (No model.)



Claim.—The improved implement, intended primarily as a puller for staples, consisting of the handles A A, pivoted to each other and provided in front of their pivoted portion with wedge-shaped jaws, the points of which abut against each other, said jaws being provided upon their plane surface with downwardly-projecting lugs, the parts being organized substantially as shown, and for the purpose set forth.

291,740. SASH-BALANCE. GEORGE M. JEWETT, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed Aug. 4, 1883. (Model.)



Claim.—1. In a device for hanging sashes, the double-chain attached to rotating side plates, in combination with the weight attached to the central plate, substantially as set forth.

2. The combination, with a pulley and two chains attached to the sash, of a weight and a device for equalizing the strain on the chains, constructed substantially as set forth.

3. In a device for hanging sashes, loops I and horizontally-slotted plates F, in combination with vertically-slotted plate G and pins J.

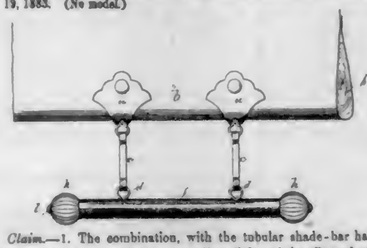
4. A sash-pulley having flanges B′ B′, for retaining and separating the chains, and ledges *b*, upon which the wide portion of the chain rests, and between which the thicker portion rests, as described, and for the purpose set forth.

5. In a device for hanging sashes, plug or thimble D, having lugs *d*, over which the chains are passed, in combination with bracket *d′*, having arms which pass through the ends of the chains, whereby each chain is given a double attachment to the sash.

6. A plate having vertical slots and plates riveted thereto, and having horizontal slots, in combination with two chains attached to loops, and pins passing through said loops and the plates, whereby unequal strain upon the chains is equalized, and they are always kept at an exact distance apart.

7. Loops I, having slots with an enlargement, as described, in combination with plates F and G and pins J, whereby the parts may be adjusted to different lengths of chains.

291,741. SHADE-BAR. HUBERT L. JUDD, Brooklyn, N. Y. Filed Nov. 19, 1883. (No model.)



Claim.—1. The combination, with the tubular shade-bar having mortises and the eyes for the suspending-links, of the slip end pieces slotted to retain the said eye, substantially as specified.

2. The combination, with the shade-bar, of the slip end pieces, the end ornaments, and the headed pins passing through said ornaments and connected to the slip end pieces, substantially as set forth.

3. The combination, with the tubular shade-bar, of the globular ornament, one side of which is in contact with the end of the shade-bar, and means for attaching the said globular ornament in place, substantially as set forth.

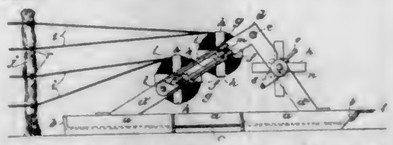
4. The combination, with the globular end ornament, of a pin passing through the same, and a tubular shade-bar, substantially as set forth.

5. The combination, with the end ornament, of a pin passing through the same, the slip end piece to which the pin is soldered, and the tubular shade-bar, substantially as set forth.

6. The combination, with a tubular shade-bar, of suspending-eyes, slip end pieces slotted to retain the suspending-eyes, the corrugated globular end ornaments, and the attaching-pins, substantially as set forth.

291,742. WITHDRAWN.

291,743. MACHINE FOR STRETCHING AND REMOVING FENCE-WIRES. JOHN N. KILLOUGH, Aurora, Tex. Filed July 25, 1883. (No model.)



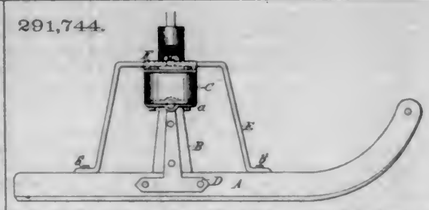
Claim.—1. In a machine for stretching and removing fence-wires, the combination of the sled *a b*, frame *d e*, spool-carrying shafts *g*, brake device *k l m*, windlass *n*, carrying lever-arms *o*, spool *h*, crank *s*, ratchet *p*, and pawl *q*, substantially as shown and described.

2. The combination, with the shaft *g*, spools *h*, and frame *d*, of the jaws *k*, pivoted together, pivoted to the frame at *l*, and provided with the screw *m* at their free ends, as and for the purpose specified.

291,744. SOB-SLED. PIRMIN KOEPPER and HERMAN KOEPPER, Fond du Lac, Wis. Filed Sept. 10, 1883. (No model.)

Claim.—1. In a sleigh-bob, the combination, with the runners A

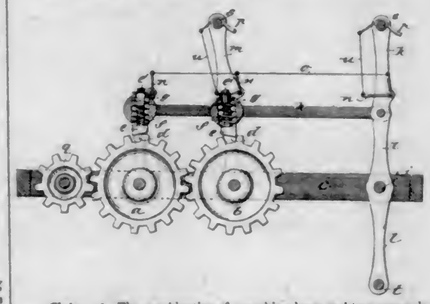
291,744.



and knees B, of the mortise cross-beam C, provided with the bearings *a* on the under side, and the metal braces D, securely bolted to the runners and to the knees, and having trunnioned ends fitted within said bearings, substantially as set forth.

2. In a sleigh-bob, the raves E, having long hole or slot in about their center, in combination with the cross-beam C, having flanged metal plates F, in center of which lug *c* is formed for said hole or slot in raves E, substantially as shown and described, and for the purpose set forth.

291,745. MECHANICAL MOVEMENT. FREDERICK KUBEL, Riverside, Iowa. Filed Nov. 6, 1883. (No model.)

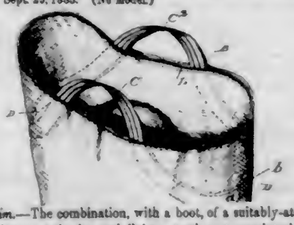


Claim.—1. The combination of a working-lever and two reversely-acting pawls and pawl-levers with a pair of toothed wheels, *a b*, geared together, said pawl-levers being connected to the working-lever, substantially as described.

2. The trip-levers *n* and a hand-lever, *p*, combined with the pawls *s*, pawl-levers *d*, and pair of toothed wheels *a b*, said wheels being geared together and the pawls being reversely arranged, substantially as described.

3. The pawl-stems *d′* and springs *g*, arranged in the sockets *f* of the pawl-levers *d*, in combination with wheels *a b* and trip-levers *n*, said pawl-stems being slotted for the connection of the trip-levers *n* with them, substantially as described.

291,746. BOOT-STRAP. CHARLES BURNHAM LANE, Plainwell, Mich. Filed Sept. 29, 1883. (No model.)

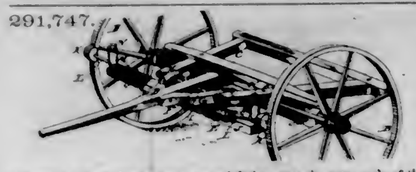


Claim.—The combination, with a boot, of a suitably-attached strap inserted between the leg and lining, starting at a point about midway between the sides, extending upwardly and above one side, forming a loop, C, thence down around the boot-leg and up at the other side, forming a loop, C^2, and thence down and terminating adjacent to the starting-point, substantially as set forth.

291,747. WAGON-BRAKE. SAMUEL W. LEE, Litchfield, Pa. Filed May 10, 1883. (No model.)

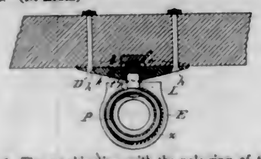
Claim.—In an automatic wagon-brake, the combination of the cross-bar fastened upon the tongue, having a slight longitudinal play, extending to near the periphery of the wheels, and having the bails upon its upper surface near its outer ends, the beat rods, having the brake-shoes upon their outer ends, and hinged with their inner bent ends in the bails upon the upper surface of the cross-piece, and the upright guides fastened upon

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the outer ends of the cross-piece, and fitting over the outer ends of the brake-arms inside the brake-shoes, as and for the purpose shown and set forth.

291,748. NECK-YOKE. MILTON V. LONGWORTH, Delphos, Ohio. Filed Jan. 4, 1883. (No model.)

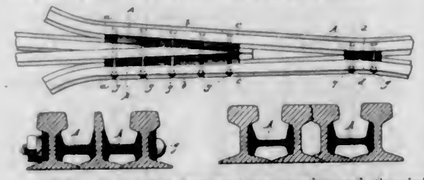


Claim.—1. The combination, with the pole-ring, of the D-shaped leather covering-pieces E and the filling *z*, of stouter leather, substantially as specified.

2. The combination, with the centrally-recessed yoke-bar, A, having the packing *c* in the recess, of the circular pole-ring P, covered with leather, the threaded eyebolt L, directly engaging the pole-ring by its eye, and extending into the recess of the yoke-bar through the aperture of the internally-shouldered yoke-plate D, the washer B, and securing-nut, all constructed and arranged as specified.

291,749. FILLING FOR RAILROAD-FROGS. GEORGE C. LUCAS and JOHN A. PATTERSON, Cleveland, Ohio. Filed May 3, 1883. (No model.)

Brief.—A filler for railroad-frogs, made of wrought iron or steel bars, consisting of two heads or flanges made to fit the sides of the rails, and connected by a web sufficiently thin to be slightly elastic.



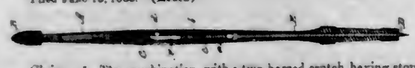
Claim.—1. As a filler for railroad frogs, crossings, and other similar purposes, wrought iron or steel bars rolled in the shape described, substantially as shown, and for the purpose set forth.

2. As a filler for railroad frogs, crossings, and other similar purposes, wrought iron or steel bars rolled in the desired shape, consisting of two heads or flanges adapted to fit the sides of the rails and connected by a web sufficiently thin to be slightly elastic under such pressure as would usually be brought to bear by passing trains, substantially as and for the purpose set forth.

3. As a filler for railroad frogs, crossings, and other similar purposes, wrought iron or steel bars rolled into the proper shape, consisting of two heads or flanges adapted to fit the sides of rails and connected by a thinner portion or web adapted to be heated and upset or compressed at any desired point when the rails should approach each other nearer than the ordinary width of the filling will admit, substantially as shown and described.

4. A filler for railroad frogs, crossings, and other similar purposes, of wrought iron or steel bars rolled in the proper shape, as described, and adapted to be heated, bent, and upset into the required shape and dimensions without planing, chipping, filing, or other similar fitting, substantially as and for the purpose set forth.

291,750. CRUTCH. WILLIAM H. D. LUDLOW, La Porte City, Iowa. Filed June 13, 1883. (Model.)



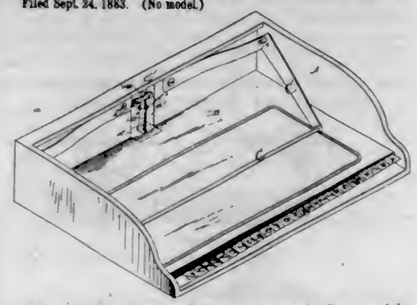
Claim.—1. The combination, with a two-barred crutch having stop projections *d d* thereon, of a rotary adjustable hand-hold and a bail or yoke, F, connected eccentrically to the ends of the hand-hold above, and connected at its lower end to an extensible prod, as and for the purpose described.

2. The combination of the two-barred crutch, the rotary adjustable hand-hold, the bail F, screw-stem *b*, jam-nut *c*, and prod-bar E, with screw-socket *a*, substantially as shown and described, and for the purpose set forth.

291,751. MEDICAL COMPOUND. NETTIE A. LUM, Carneiro, Kans. Filed June 4, 1883. (No specimens.)

Claim.—The herein-described compound, consisting of alcohol, oil of peppermint, oil of sassafras, oil of spearmint, oil of origanum, oil of hemlock, oil of turpentine, oil of capsicum, and gum-camphor, in substantially the proportions specified.

291,752. LETTER OR BILL FILE. OSCAR C. MACKENZIE, Chicago, Ill. Filed Sept. 24, 1883. (No model.)



Claim.—1. In a letter or bill file, a box or case having a retaining pin or stud recessed in its rear side, in combination with a series of index separating-sheets, each of which is provided with a projecting tag having an elongated hole, substantially as and for the purpose set forth.

2. In a letter or bill file, a box or case provided with a series of index separating-sheets, in combination with a hinged retaining pin or stud, and means, substantially as described, for confining the free end of said pin at will, substantially as and for the purpose set forth.

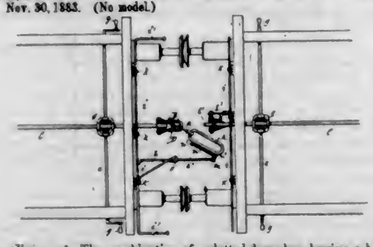
3. In a letter or bill file, a series of separating-sheets having index-letters upon their forward edges, and their rear edges provided with a projecting tab formed with an elongated opening, substantially as and for the purpose set forth.

4. In a letter or bill file, a box or case formed with a recess in its rear side, and having its retaining pin or stud hinged at its lower end in said recess, and its upper end confined in a slotted plate by means of a latch, substantially as and for the purpose set forth.

5. In a letter or bill file, the case A, having a pin, D, hinged in a recess in its rear side, and the index-sheets B, each provided with a projecting tab having an elongated hole, in combination with a guide-tube having a flange or projection on one end passed through the tabs and over the hinged pin, substantially as and for the purpose set forth.

6. In a letter or bill file, the box A, provided with spring-clamp C, and having a pin or stud, D, hinged at its lower end in a recess, *a*, in the back of the box, and its upper end confined in an open slotted plate, *b′*, by means of the latch C′, in combination with the separating index-sheets B, provided with the tabs *d*, having elongated holes *d′*, and the flanged guide-tube D′, all constructed and arranged to operate substantially as and for the purpose set forth.

291,753. CAR-COUPLING. PETER MADSEN, Berlin, Germany. Filed Nov. 30, 1883. (No model.)



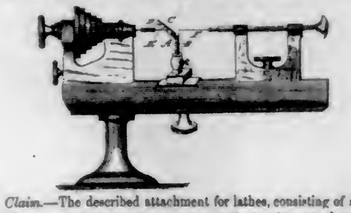
Claim.—1. The combination of a slotted draw-bar, having a hook-shaped end, a coupling-chain composed of several links, the rear link being pivoted to a slide-piece of the draw-bar, means connected to the slide-piece for adjusting the same in forward or backward direction on the draw-bar, and a lever mechanism connected to the outermost link, whereby the coupling-chain is raised or lowered and shifted laterally, substantially as and for the purpose set forth.

2. The combination of a slotted draw-bar, C, having a hook-shaped end, slide-piece *b*, coupling-chain B *a* A, pivoted by link B to the slide-piece *b*, screw-spindle *c*, turning on bearings of the draw-bar, a worm-wheel, *d*, transverse crank-shaft *e*, guided in slotted side straps, *d'*, and having a central worm, *f*, and cranks *g* at the ends, substantially as set forth.

3. The combination of a slotted draw-bar, C, having a hook-shaped end, and slide-piece *b*, a coupling-chain, B *a* A, pivoted to the slide-piece *b*, pivoted levers *h h'*, having connecting-piece *m m'* at the outer end, the latter being guided along the rod *n* of the main link A, and a laterally-sliding and auxiliary turning rod, *i*, having handles *i'*, substantially as set forth.

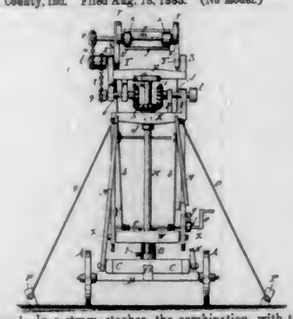
4. The combination of a slotted draw-bar having a fork-shaped end, a coupling-chain pivoted to the slide-piece of the draw-bar, a coupling-hook, also pivoted to the slide-piece, means to adjust the coupling-chain and coupling-hook forward or backward, and means whereby the same are raised or lowered for coupling or uncoupling, substantially as described.

291,754. ATTACHMENT FOR WATCH-MAKERS' LATHES. OSCAR F. MAIN, Marion, Iowa. Filed Aug. 7, 1883. (No model.)



Claim.—The described attachment for lathes, consisting of a shank adapted to be adjusted in or in proximity to the hand-rest, and provided with an arm extending at right angles and having a series of apertures countersunk on one side, substantially as shown, and for the purpose set forth.

291,755. STRAW-STACKER. THOMAS MAJOR, Jackson Township, Clinton County, Ind. Filed Aug. 18, 1883. (No model.)



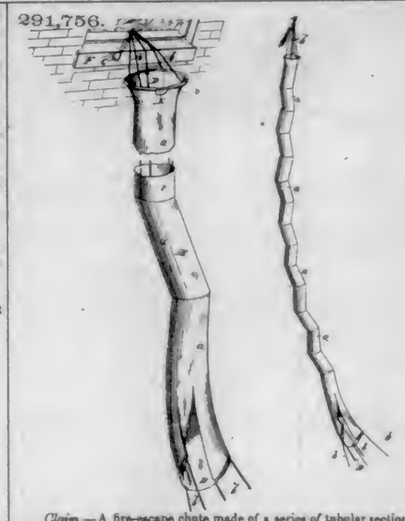
Claim.—1. In a straw-stacker, the combination, with the upright or vertical shaft and upper cross-bar, provided with two independent shafts, geared to the upright shaft, of the uppermost cross-bar, resting upon a collar or plate on the upper end of the vertical shaft, and connected to one of the independent shafts, the carrier, and its hangers, connected to the uppermost cross-bar, substantially as and for the purpose set forth.

2. In a straw-stacker, the combination, with the upright shaft and the lower cross-bar, of the carrier-frame superposed above the said shaft, the side brace-bars connected to the lower cross-bar, and having rolls at its upper end, upon which the carrier-frame rests, the pulleys *c d*, one set arranged on the carrier-frame and the other set on the brace-bars, the crank-shaft *e*, and the cords *b*, with their upper ends connected to the said brace-bars, thence passed over the pulleys on the carrier-frame and back over the pulleys on the brace-bars, and connected to the crank-shaft *e*, substantially as and for the purpose set forth.

3. In a straw-stacker, the combination, with the cross-bar K, having standards *k*, the cross-bar R, having hangers *p* and standards S, the carrier-frame V, having hangers U, and the hinging bolts T, of the gear-wheels *h i n*, the shafts *j o*, and the chain-wheels and chains *q s t u r v*, substantially as herein shown and described, whereby the carrier can be adjusted vertically and laterally without affecting the driving mechanism, as set forth.

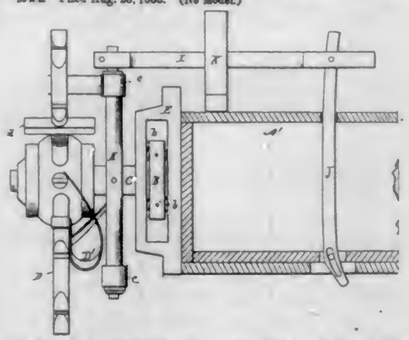
291,756. FIRE-ESCAPE. OTIS G. MOORE and MORRIS H. MARCUS, Edenburg, Pa. Filed Mar. 22, 1883. (No model.)

Brief.—The tubular sections are secured to each other in such manner as to incline to each other alternately in opposite directions.



Claim.—A fire-escape chute made of a series of tabular sections attached to each other in such manner as to be inclined to each other alternately in opposite directions, substantially as herein shown and described, and for the purpose set forth.

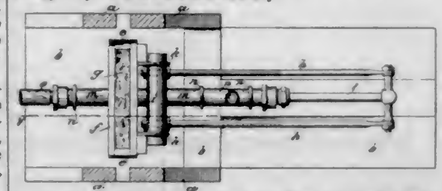
291,757. CORN-PLANTER. WILLIAM PARKS MARSHALL, Integ Grove, Iowa. Filed Aug. 28, 1883. (No model.)



Claim.—The combination, with a seed-planter, of a beam or bar pivotally connected at its forward end, and provided at its rear end with anti-friction rollers, the loop for supporting the rear end of the bar, the spoke-wheel, with the cams and markers, the pivoted lever, and connecting-bar and seed-slide, substantially as and for the purpose set forth.

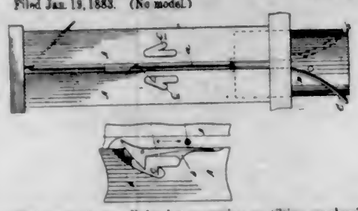
291,758. WAVE-POWER. THOMAS MAYER, Albany, N. Y. Filed Aug. 22, 1883. (No model.)

Brief.—A wave-power consisting of a triangular frame, to which is suspended a dash-board having a connecting-rod for giving motion directly or by crank to connected machinery.



Claim.—A wave-power consisting of a frame, *a b c*, and a dash-board, *f*, suspended from bar *c*, and having a connecting-rod, *h*, for imparting motion either directly or by a crank to connected machinery, substantially as shown and described.

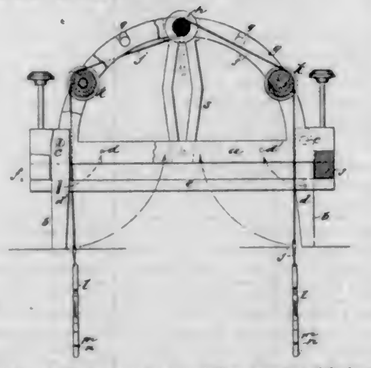
291,759. WATER-ELEVATOR. JAMES F. MCCALMONT, Wayne, Nebr. Filed Jan. 19, 1883. (No model.)



Claim.—1. In a well-bucket operating or tilting mechanism, the combination, with the bucket having studs or projections at its sides, of the cam-levers set in recesses in suitable supports, and adapted to guide the bucket to one side of its line of elevation when the hoisting-rope is slackened.

2. In a well-bucket-tilting device, the combination, with the bucket having opposite studs or projections at its sides, of the tilting cam-levers and uprights having recesses, substantially as and for the purpose set forth.

291,760. BURIAL-WINDLASS. JOHN P. MCDONALD, Litchfield, Ill., assignor to himself and Elijah Benjamin Jordan, same place. Filed Nov 13, 1883. (No model.)



Claim.—1. The improved burial-windlass, consisting of the bench *a b*, arch *g*, cranked drum *h*, cords *j*, guide-rollers *k*, and the grappling-tongs *l*, combined and arranged substantially as described.

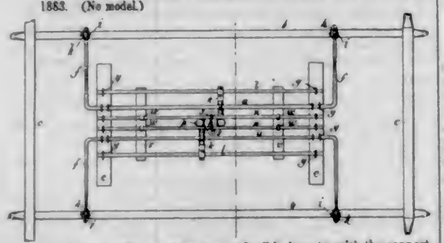
2. The combination of the tongs *l*, having detaching springs *n*, bar *m*, and pins *p*, with the suspending-cords *j*, drum *h*, arched supporting-frame *g*, and bench *a b*, substantially as described.

3. In a burial-windlass, the combination of arch *g*, bench *a*, legs *b*, skids *c*, and the thumb-screws *d*, said legs being pivoted to the bench, substantially as described.

4. The combination, in a burial-windlass, of the bench *a*, legs *b*, skids *c*, thumb-screws *d*, arch *g*, cranked drum *h*, cords *j*, guide-rollers *k*, and the grappling-tongs *l*, substantially as described.

5. The combination of the bar *m*, having pins *o*, springs *n*, pins *p*, and a series of holes for said pins *p*, with the grappling-tongs, substantially as described.

291,761. CARRIAGE-SPRING. BENJAMIN PIERCE MORRISON, Abingdon, assignor of one-third to Lock & Lincoln, Marion, Va. Filed May 12, 1883. (No model.)



Claim.—1. The combination of flexible bars *l n* with the supporting-bars *a*, having arms *f*, and being connected to the bed-frame *e* and side bars, *b*, substantially as described.

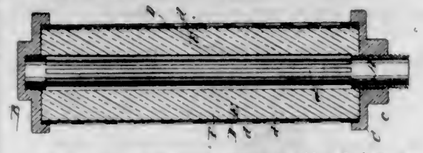
2. The combination, in a carriage or other spring, of supporting-bars *a*, having arms *f*, and being connected to the side bars, *b*, and bed-frame *e*, elastic bars *l n*, arranged on the opposite sides of the supporting-bars *a*, and the cross-arms *k*, rigidly connected to the supporting-bars *a*, and also connected to elastic bars *l n*, substantially as described.

3. The combination, in a carriage or other spring, of a pair of supporting-bars, *a*, having arms *f*, and being connected to the side bars, *b*, and the bed *e*, elastic bars *l n*, arranged with each of said supporting-bars *a*, and cross-arms *k*, connecting said supporting-bars *a* and elastic bars *l n* together, and said cross-arms being also connected together by the double shackle *o*, and thereby connecting the two supporting-bars and their elastic bars, and forming one compound equalizing-spring, substantially as described.

4. The combination of adjusting-bars *v* with the supporting-bars *a* and elastic bars *l n*, substantially as described.

5. The combination of the double shackle *o*, cross-arms *k*, and the elastic bars *l n* and supporting-bars *a*, the said arms *k* being connected to said shackle and said elastic bars, substantially as described.

291,762. NOISELESS STEAM-NOZZLE. CARLETON W. NASON, Montclair, N. J. Filed Oct. 2, 1883. (No model.)



Claim.—1. In a steam-nozzle, a filling or packing of asbestus, applied substantially as and for the purpose set forth.

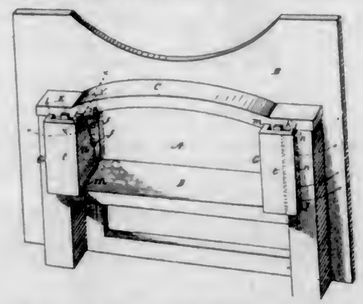
2. A steam-nozzle made substantially as herein shown and described, and consisting of a slotted tube surrounded by asbestus fiber, and a cylinder surrounding the latter, as set forth.

3. In a steam-nozzle, the combination, with the slotted tube A, of the asbestus fiber F, and the slotted cylinder D, substantially as herein shown and described.

4. In a steam-nozzle, the combination, with the slotted tube A, of the asbestus fiber F, a slotted cylinder, D, and a layer of asbestus cloth on the inner surface of the cylinder D, substantially as herein shown and described.

5. In a steam-nozzle, the combination, with a slotted tube, of a closed cap screwed on one end and closing the said end, a centrally-apertured cap screwed on the other end, a cylinder held between the caps, and asbestus fiber filled in between the slotted tube and the cylinders, substantially as herein shown and described.

291,763. FURNACE-MOUTH. TIMOTHY O'BRIEN, Boston, Mass. Filed June 11, 1883. (No model.)



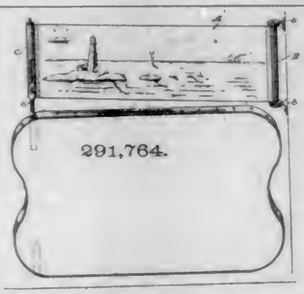
Claim.—1. In a furnace-mouth substantially such as described, the guards or jambs G, provided with the perforations *n*, in combination with the plate B, provided with the perforations *f*, constructed, combined, and arranged to operate substantially as set forth.

2. In a furnace-mouth substantially such as described, a guard for protecting the jamb, so constructed and arranged as to form a flue for conducting a current of air around said jamb on its outer side, and discharging the same into the corner of the furnace to produce more perfect combustion of the fuel in that locality, substantially as specified.

3. The guard G, consisting of the body *a*, end piece, *t*, and flange *l*, for protecting the jamb of a furnace, substantially as set forth.

291,764. RAILWAY PASSENGER-CAR. EDWIN P. OSGOOD, Malden, Mass. Filed Nov. 12, 1883. (No model.)

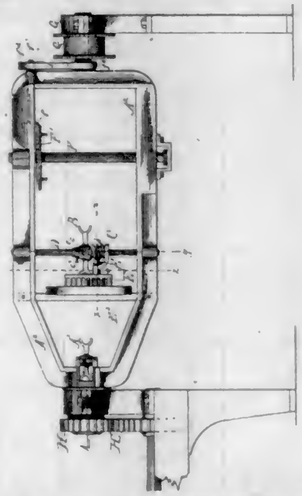
Claim.—1. A flexible and extensible partition adapted to be con-



nected to the car in line with the back of the seat, and to be held extended upon said back, whereby the occupants may be secluded or protected, substantially as described.

2. A curtain, A, in combination with the roller B, attached to the car, the rod C, and means, substantially as described, for connecting the rod C to the back of the car-seat, as set forth.

291,765. WIRE-TWISTING MACHINE. MARK A. PENNEY, Des Moines, Iowa, assignor to William L. Carpenter, same place. Filed Apr. 16, 1883. (No model.)



Claim.—1. The combination, with a distributing-wheel adapted to be actuated by the wire passing over it, and a plain shaft for supporting the same, of devices actuated from the distributing-wheel, for imparting a to-and-fro movement to said wheel, substantially as specified.

2. The combination, with the rotating distributing-wheel and a plain shaft for supporting the same, and upon which it slides to and fro, of the frame, the rack stationary therein, and a pinion traversing said rack, and connected to said wheel, so as to be actuated thereby, substantially as specified.

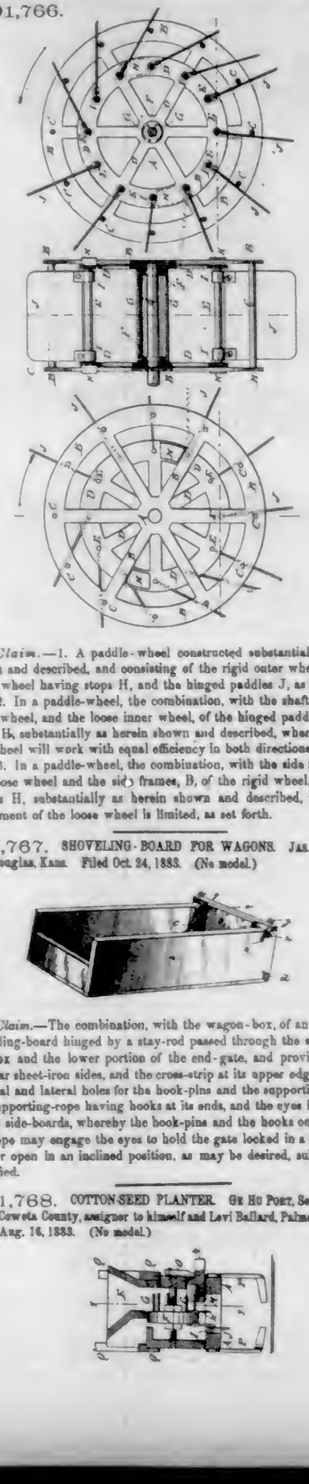
3. The combination, with the frame and distributer-wheel of a twister, of a device for imparting a traversing movement to said wheel, consisting of the rack, the pinion traveling around said rack in an endless path, and the intermediate devices connecting the wheel and pinion, substantially as specified.

4. The distributer-wheel, in combination with the rack, the surrounding guide, the pinion and collar traveling around said rack and guide, and the intermediate devices, whereby the motion of the wheel is communicated to said pinion and collar, substantially as specified.

5. The combination of the distributer-wheel, the worm on the hub thereof, the arm provided with the sleeve on which the wheel rotates, and said sleeve, with the shaft D, the worm-wheel, the pinion, the rack, the surrounding guide, and the collar, acting in conjunction with the guide, substantially as specified.

291,766. FEATHERING PADDLE-WHEEL. CHRISTIAN J. PETERSEN, Boston, Mass. Filed May 31, 1883. (No model.)

291,766.



Claim.—1. A paddle-wheel constructed substantially as herein shown and described, and consisting of the rigid outer wheel, the loose inner wheel having stops H, and the hinged paddles J, as set forth.

2. In a paddle-wheel, the combination, with the shaft A, the rigid outer wheel, and the loose inner wheel, of the hinged paddles J and the stops H, substantially as herein shown and described, whereby the paddle-wheel will work with equal efficiency in both directions, as set forth.

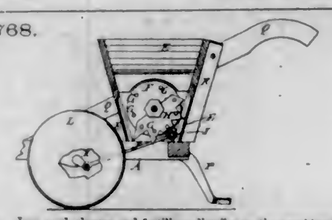
3. In a paddle-wheel, the combination, with the side frames, D, of the loose wheel and the side frames, B, of the rigid wheel, of the stop-blocks H, substantially as herein shown and described, whereby the movement of the loose wheel is limited, as set forth.

291,767. SHOVELING-BOARD FOR WAGONS. JAS. I. PLUMMER, Douglas, Kans. Filed Oct. 24, 1883. (No model.)

Claim.—The combination, with the wagon-box, of an end-gate or shoveling-board hinged by a stay-rod passed through the side-boards of the box and the lower portion of the end-gate, and provided with the angular sheet-iron sides, and the cross-strip at its upper edge, having the vertical and lateral holes for the hook-pins and the supporting-rope, and the supporting-rope having hooks at its ends, and the eyes in the outside of the side-boards, whereby the hook-pins and the hooks on the supporting-rope may engage the eyes to hold the gate locked in a vertical position or open in an inclined position, as may be desired, substantially as specified.

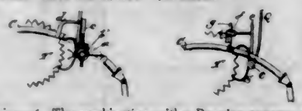
291,768. COTTON-SEED PLANTER. GE HU POST, Seventh District, Coweta County, assignor to himself and Levi Ballard, Palmetto, Ga. Filed Aug. 16, 1883. (No model.)

291,768.



Claim.—In a seed-planter and fertilizer-distributer, the combination, with the frame A and seed-box E, provided with a circular opening in one side to receive the feed-wheel, and having an adjustable concaved bottom, M, of the feed-wheel F, fitting in the opening in the seed-box and provided with horizontal pins G and serrated wheel H, drive-wheel L, having an axle provided with a crank, K, connecting-rod J, and crank I, substantially as and for the purpose set forth.

291,769. STEAM GAGE AND ALARM. AUGUSTUS PORTILLO, Lowell, Mass. Filed Oct. 18, 1883. (No model.)



Claim.—1. The combination, with a Bourdon pressure-gage and its primary index-hand, of a secondary index-hand adapted to be set at a predetermined pressure, an alarm, means for connecting both hands with the extensible steam-tube of the gage, and means for releasing the striking mechanism when the primary index-hand registers the pressure at which the secondary index-hand has been set, whereby the movement of the primary index-hand and the sounding of the alarm are controlled from the expansible steam-tube, substantially as described.

2. The combination, with a Bourdon pressure-gage and its primary index-hand, of the movable post provided with a secondary index-hand adapted to be set at a predetermined pressure, a pinion mounted loosely on said post and meshing with the sector-rack of the gage, a cam operated from the loose pinion, an alarm and mechanism for striking the same, a plate engaging with a portion of the alarm mechanism to prevent its movement, and a projection for the said cam to operate on to release the alarm mechanism and cause the alarm to be sounded when the predetermined pressure is reached, substantially as described.

3. The combination, with the primary index-hand, its pinion, steam-tube, and sector-rack of a pressure-gage, of a post, a projection extending laterally therefrom, a secondary index-hand mounted on the post over the said projection, a pinion fitted loosely on the said post, a cam between the pinion and projection of the post, adapted to vary the distance between the pinion and said projection, a spring-plate beneath the pinion, provided with a pin at one end, a post carrying a hammer, verge, and arm engaging with the pin on the spring-plate, the gong, and the train of clock-work mechanism, substantially as described.

4. The post provided with the lateral projection and secondary index-hand adapted to be set to a predetermined pressure, the pinion mounted loosely on the post and carrying the cam, and the spring-plate, in combination with the primary index-hand, an alarm, and mechanism for operating the several parts when the predetermined pressure is reached, substantially as described.

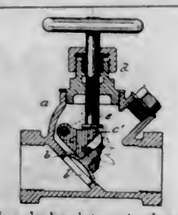
5. The combination of the sector-rack, the primary index-hand and its pinion meshing with the rack, the post carrying the secondary index-hand, the pinion mounted loosely on said post and meshing with the sector-rack, the cam operated from the pinion, and a projection for the cam to operate to slide the said pinion for the purpose of operating an alarm-striking mechanism, substantially as described.

6. The combination, with a Bourdon steam-gage, of the post provided with the hammer and tripping-arm, an alarm-gong, a scape-wheel operating the verge, a secondary index-hand adapted to be set at a predetermined pressure, a primary index-hand connected with the expansible tube of the gage, and means operated from the said expansible tube for tripping the arm to cause the alarm to be sounded at a predetermined pressure, indicated by said secondary index-hand, substantially as described.

7. The combination, with a Bourdon steam-gage, of an alarm, a primary index-hand to indicate the varying pressure of the steam, a secondary index-hand to designate the point at which the alarm shall be sounded, means for connecting the primary index-hand with the steam-gage tube, and means operated from said expansible tube for releasing the striking mechanism of the alarm, whereby the expansion and contraction of said tube will control the sounding of the alarm, substantially as described.

291,770. STEAM-VALVE. RUFUS N. PRATT, Hartford, Conn., assignor to the Pratt & Cady Company, same place. Filed Mar. 27, 1883. (No model.)

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Claim.—1. In a check and stop valve, in combination, body *a*, having valve-seat *b*, swinging flap *c*, having stop *c'*, with the curved surface, and the screw-spindle *e*, the said curved surface forming a bearing for the foot of the screw-spindle *e*, whereby the play of the flap is limited, all substantially as described.

2. In a check and stop valve, in combination, the screw-spindle and the swinging flap, bearing a curved stop, the surface of which at all points in the path of the flap in swinging bears on the spindle in line of its axis, all substantially as described.

291,771. COVER FOR OPENINGS IN STOVE-PIPES. GABRIEL RASCORAVEK, Plattsmouth, Nebr. Filed Aug. 24, 1883. (Model.)



Claim.—1. As a cover for an opening in a pipe or cylindrical vessel, the cap bent to fit the outside of the pipe or vessel and provided with a spring-pressed turn-button having its cross bar or head adapted to overlap the edges of the opening and bear against the inside of the pipe, substantially as shown and described.

2. As a cover for openings in pipes or cylindrical vessels, the cap bent to fit the pipe or vessel, in combination with a turn-button whose shank passes through a central aperture in the cap and is capable of sliding and turning therein, and which is provided at its inner end with a cross-bar adapted to overlap the edge of opening on both sides, and a spring adapted to force the button-shank outward, substantially as and for the purpose set forth.

3. The cover or cap for openings in stove-pipes, consisting of a plate curved to fit the pipe, overlapping the opening, provided with a flange fitting closely therein, and with a spring-pressed turn-button, the ends of whose cross-bar bear against the inside of the pipe and ride up the concave sides thereof as the button is turned at right angles to the pipe, substantially as and for the purpose described.

4. The combination of the curved plate adapted to fit the pipe or vessel, the turn-button consisting of the hand-piece, the shank sliding and turning in a central aperture in the plate, and the cross-bar on the shank adapted to overlap the edges of the opening in the pipe, and the spring surrounding the button-shank and adapted to force said shank and button outward, substantially as and for the purpose described.

5. The combination of the cap curved to fit the pipe and overlapping the opening therein, with the turn-button having its hand-piece and shank made of one piece of doubled and bent metal rod or wire passing through and adapted to slide and turn in an aperture in the plate, and its cross-bar attached to the two ends of the bar or wire forming the shank, and the spring surrounding the shank and bearing against the cap and thumb-piece, substantially as shown and described.

291,772. COMBINED PLOW AND CULTIVATOR. HUGH REA, Village Green, Pa. Filed Sept. 5, 1883. (No model.)

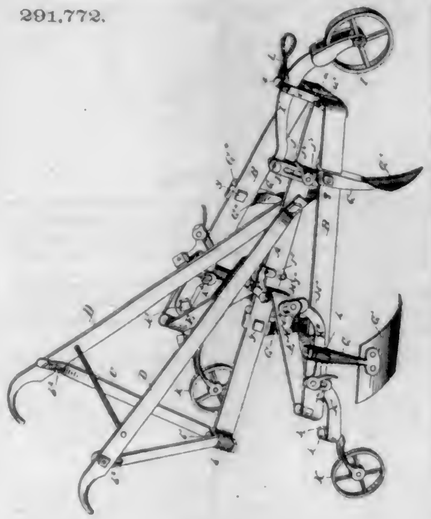
Claim.—1. In a cultivator, the combination of the saddle-plate F, having parallel plate *d*, partition or flange f^5, bolts f'' f', arms or plates E, having hooked bolt f^2, thumb-nut f^3, central beam, A, and lateral or swinging beam B, substantially as shown, and for the purpose described.

2. In a cultivator, the combination, with the central beam, the side hinged beams, and the hinged arms of the latter, of the saddle-plate composed of an upper and lower plate bolted together, and one having a depending flange and hooked bolt, substantially as and for the purpose set forth.

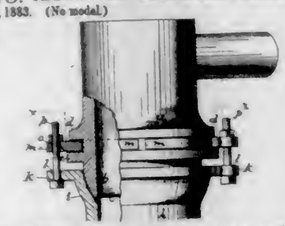
3. In a cultivator, the combination of the T-shaped plate-lever H'', having sleeve h' and cross-piece H^3, handled nut H^4, pivoted plate H, having slots h^2, screw-bolts h^3, having adjusting-nuts h^4, and plows G', substantially as shown, and for the purpose described.

4. In a cultivator, the combination, with its beam and plow-standard, of the plate-lever, with an eye or sleeve about its middle, a slot at one end and turned upward at its opposite end, the T-plate having an angular eye or apertare at one end, a middle diagonal portion, and a horizontal transverse slot at its other end, and adjusting or securing nuts, substantially as and for the purpose set forth.

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291,773. PIPE-COUPLING. ROBERT M. REILLY, Baltimore, Md. Filed May 5, 1883. (No model.)



Claim.—The combination, with the male pipe *a*, provided with the ball *b*, having an orifice, *c*, in its bottom, and flanges *d e*, and female pipe *h*, rounded out internally at its upper end, and provided with the flange *k*, having opening *l*, of the horseshoe-pieces *m*, each provided with a lug, *n*, having a hole, *o*, and pins *p*, substantially as described, and for the purpose set forth.

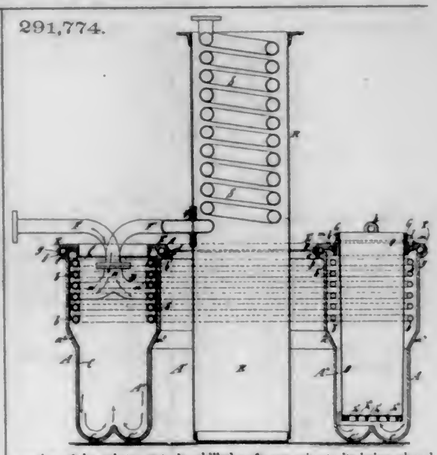
291,774. APPARATUS FOR ICE-MAKING AND REFRIGERATING. GEORGE H. REYNOLDS and LEICESTER ALLEN, New York, N. Y., assignors of one-half to Cornelius H. DeLamater, George H. Robinson, and William DeLamater, and the Allen Cycle Non-Chemical Refrigerating Company, all of same place. Filed Sept. 8, 1883. (No model.)

Claim.—1. The process involving, first, the placing of the substance to be chilled or frozen in a non-congealable liquid; second, the passage of the cooling medium through the non-congealable liquid for transferring the negative heat from the cooling medium to the substance to be chilled or frozen; and, third, the passage of the cooling medium through a secondary apparatus containing a portion of the substance to be subsequently chilled or frozen, substantially as and for the purpose described.

2. The process involving, first, the placing of the substance to be chilled or frozen in a non-congealable liquid; second, the passage of the cooling medium through the non-congealable liquid for transferring the negative heat from the cooling medium to the substance to be chilled or frozen in such a direction that the cooling medium enters the non-congealable liquid where it is coldest and leaves the non-congealable liquid where it is warmest; and, third, the passing of the cooling medium, after leaving the non-congealable liquid, through a secondary apparatus containing the substance which is to be subsequently chilled or frozen, substantially as and for the purpose described.

3. The process involving the passing of a cooling medium through pipes from a point of entrance to a point of exit, the said pipes being immersed in a non-congealable liquid, the placing of cans or molds containing a substance to be chilled or frozen in the non-congealable liquid, the movement of said cans or molds step by step from the point of exit of the cooling medium to the point of entrance thereof, and the subsequent passing of the cooling medium through an apparatus containing a

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portion of the substance to be chilled or frozen prior to its being placed in said cans or molds, substantially as and for the purpose described.

4. The combination, with a tank for non-congealable liquid and pipes extending through the same for the passage of a cooling medium, of a secondary tank and a pipe extending through the latter for the passage of the cooling medium, and connected with the pipes in the first-mentioned tank, whereby the cooling medium may be employed to chill the non-congealable liquid and then chill the contents of said secondary tank, substantially as described.

5. The combination, with a circular tank for non-congealable liquid and means for imparting cold to said liquid, of a turn-table placed above the tank, and upon which cans or molds containing water or other substance to be chilled or frozen may be supported, substantially as described.

6. The combination, with an annular tank for non-congealable liquid and pipes extending around the inner sides of the walls thereof for the passage of a cooling medium, the said pipes being interrupted or having a gap between their ends, of entrance and exit pipes for the cooling medium connected with the ends of said pipes, and a septum or partition dividing the tank between the point of entrance and point of exit, substantially as described.

7. The combination, with the tank having the annular space A^2 for non-congealable liquid, of the two series of pipes *b b'*, the supply and exhaust headers B B', connected, respectively, with the ends of said pipes, and a turn-table arranged above the tank, and on which cans or molds containing the substance to be chilled or frozen may be placed, substantially as described.

8. The combination, with an annular tank for non-congealable liquid made widest at the upper portion, and having the walls of the wider upper portion joined to the lower portion by inclines, of circular series of pipes for the passage of a cooling medium, arranged in the wider upper portion of the tank, near the walls thereof, substantially as described.

9. The combination, with the annular tank A^3, having in its bottom the channels *c c'*, of means for cooling the liquid in the tank adjacent to the sides thereof, whereby a downward circulation is produced adjacent to the walls of the tank, and an upward circulation at the center thereof, substantially as described.

10. The combination, with an annular tank for non-congealable liquid, and a secondary tank arranged in the space surrounded by the said annular tank, of circulating-pipes arranged in both said tanks for the passage of a cooling medium, and connected together, a supply-pipe connected with the pipes in the annular tank, and an escape-pipe connected with the pipe or pipes in said secondary tank, substantially as described.

11. The combination, with an annular tank for non-congealable liquid and means for cooling the same, of a turn-table supported and adapted to turn on the upper edges of the walls of said tank and to receive through it and support ice cans or molds, substantially as described.

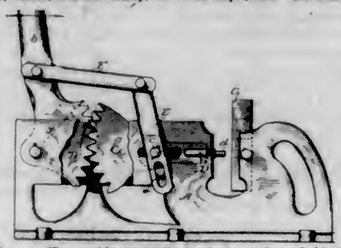
12. The combination, with an annular tank and means for cooling the same, of ice cans or molds, of segmental or wedge shape in horizontal section, adapted to be supported in said tank, and an annular turn-table placed above the tank for supporting said cans or molds, substantially as described.

13. The combination, with an annular tank for non-congealable liquid and means for cooling the same, of inner and outer turn-table rings supported independently of each other on the walls of said tank, and ice cans or molds constructed to interlock or engage with said rings, so that the rings and the circular series of cans or molds supported thereby may be turned together, substantially as described.

14. The combination, with an annular tank for non-congealable liquid and means for cooling the same, of ice cans or molds of segmental or wedge shape, arranged in the tank, and removable partitions fitted to the tank between the ice cans and molds, substantially as described.

15. The combination, with an annular tank for non-congealable liquid and means for cooling the same, of a turn-table placed above the tank, the frames G, provided with lugs or projections *l* for engaging with said turn-table, whereby said frames are caused to move with the turn-table, and two or more cans or molds secured in and depending from each of said frames, substantially as herein described.

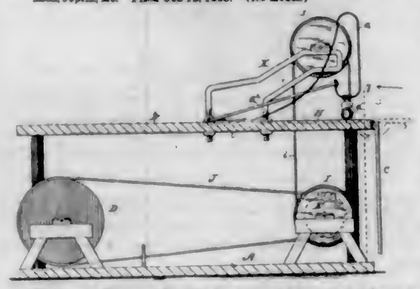
291,775. COMPOUND METAL-WORKING MACHINE. NICHOLAS J. RICK, Vernon, Crawford County, Pa. Filed May 9, 1883. (No model.)



Claim.—1. The combination, with the frame having suitable fixed die or tool, of the eccentric B, provided with a handle, the eccentric C, pivoted on sliding bolt, the tool-holder connected also to said bolt, and suitable connecting devices, whereby the holder and eccentric C are drawn back, all substantially as described.

2. The combination, with the frame having suitable die or tool, G, of the eccentric B, having handle, eccentric C, pivoted with holder D on sliding bolt, the levers E, and connecting-bar F, all substantially as described.

291,776. MACHINE FOR CUTTING OUT GARMENTS. SOLOMON RICE, Joplin, Mo. Filed Oct. 12, 1883. (No model.)



Claim.—1. The plate H, with slots *j j* and back-thrust roller *a*, in combination with the table, the flexible belt-knife *i*, having sharpened edge and the distending-polleys, as and for the purpose described.

2. The combination, with the table, the endless flexible knife *i*, and its distending-pulleys, of a press-roller bearing upon the table in front of the knife to smooth wrinkles and prevent the formation of plaits, as described.

3. The bent spring G, carrying roller G' at its lower end, in combination with the link-brace G^2 and the cutting-table, as and for the purpose described.

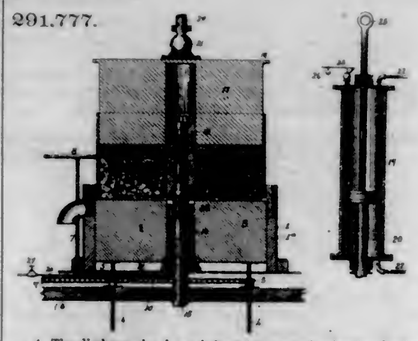
291,777. MACHINE FOR THE REDUCTION OF WOOD AND OTHER MATERIALS TO PAPER-PULP. FREDERIC G. RITCHIE, Wallingford, Vt. Filed Oct. 1, 1883. (No model.)

Claim.—1. In a machine for the reduction of wood or other material to paper-pulp, the combination, with a rotary wood box or hopper, of a grinding-stone fixed as to horizontal movement, a vertical driving-shaft fixed to said wood-box, and a stuffing-box within said grinding-stone, wherein the said shaft has bearing, substantially as and for the purpose set forth.

2. In combination with the grinding-stone and follower of a machine for the reduction of wood to paper-pulp, the water-supply pipe set in a groove in the stuffing-box of the driving-shaft and gland, and adapted to supply water to the grinding-surface from below, substantially as set forth.

3. The water-supply pipe having annular discharge-head adapted to supply a continuous sheet of water to the grinding-surface, substantially as set forth.

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4. The discharge-head consisting of a reservoir-chamber having apertures at top, and a concave annular plate above said chamber, adapted to receive the water and distribute it to the grinding-surface in a continuous stream, as set forth.

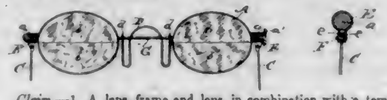
5. The combination, with the water discharge head and supply pipe, of the supporting-rods for said head, received into grooves in the gland and the stuffing-box of the driving-shaft, as set forth.

6. In combination with the core 12, having recessed or hollow portion 34, the water-supply head or nozzle covered by said core and protected from the wood in the feed-box, as set forth.

7. In combination with the rotary feed-box and the grinding-stone fixed as to horizontal movement, the adjusting screw or screws, sprocket-chain and pinions, and hand-wheel and shaft, arranged to act simultaneously to lift the stone for taking up wear, as set forth.

8. In a machine for the reduction of wood to paper-pulp, the combination, with the grinding-stone, feed-box, and follower, of the cylinder and piston above said follower, adapted to be operated by hydrostatic, steam, or other pressure, and provided with an automatic valve for regulating the force of pressure of the follower, as set forth.

291,778. SPECTACLES. FRANK K. ROBERTS, Philadelphia, Pa. Filed Nov. 26, 1883. (No model.)



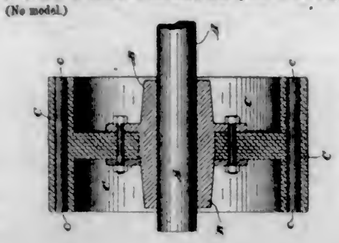
Claim.—1. A lens-frame and lens, in combination with a temple or arm, and a clamping device connecting said frame and said temple, said device being adapted to adjust said frame and hold it at different angles of inclination, substantially as set forth.

2. A lens-frame provided with a stem, *a*, in combination with a temple having an eye in its upper and forward end, a clamping collar or sleeve, which is divided and constructed with perforated lugs, and a screw which passes through said lugs and said eye, and causes said collar to clasp said stem tightly, said screw also serving as a pintle for attaching said temple, substantially as set forth.

3. A pair of spectacles having the lens-frames connected by a bar, arranged wholly between said frames and attached at its ends thereto, the bridge or bow being attached to said bar, but allowing the latter to turn with said frames while the bridge remains stationary.

4. A divided lens having the line of division coincident with its longitudinal central line, in combination with a frame inclosing said lens and devices arranged at its ends, but above or below the central line thereof, whereby said lens may be turned upon a longitudinal axis above or below said central line, substantially as set forth.

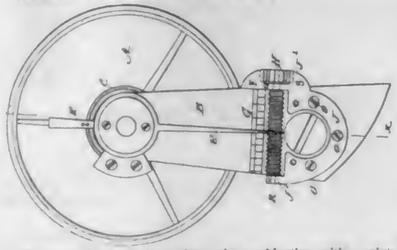
291,779. PULLEY. WM. E. ROCKWOOD, Indianapolis, Ind., assignor of one-half to Horatio C. Newcomb, same place. Filed Aug. 25, 1883. (No model.)



Claim.—1. In a pulley the web and rim of which are composed of layers of paper, pins *c*, extending through said rim from side to side, substantially as described, and for the purposes specified.

2. The combination of the hub B, the web and rim C, composed of layers of paper secured together by pasting and pressing, and wooden pins *c*, extending through the rim, substantially as set forth.

291,780. WATCH-REGULATOR. ERNEST JACQUES ROUX and LOUIS URIEL FATIO, Geneva, Switzerland, assignors to Vacheron & Constantin, same place. Filed Oct. 19, 1883. (No model.)



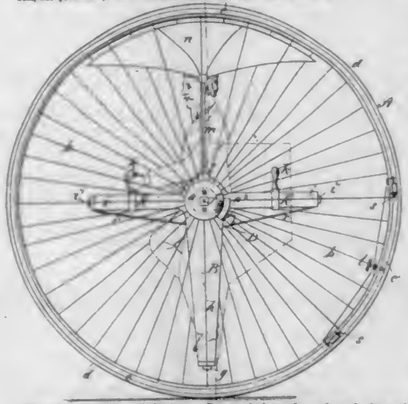
Claim.—1. In a watch-regulator, the combination, with a pointer-lever, of the screw-spindle, with its ends held between the semicircular plates, said spindle having a toothed head or wheel arranged in a recess of one of said plates, substantially as and for the purpose set forth.

2. In a watch-regulator, the combination, with a pointer-lever, of the plate J, the plate L, provided with hooks M M, and the screw-spindle R, having its ends held between the plate J and the hooks M, substantially as herein shown and described, and for the purpose set forth.

3. In a watch-regulator, the combination, with the plate J, having two prongs, J' J², of which the latter is provided with a recess, *a*, of the plate L, provided with the hooks M, the screw-spindle R, held between the plate J and the hooks M, and the toothed wheel or head H, mounted on the end of the screw-spindle, and fitting in the recess *a* in the plate J, substantially as herein shown and described, and for the purpose set forth.

4. In a watch-regulator, the combination, with the pointer-lever E, of the plate J, provided with the prongs J' J², of which the latter has a recess, *a*, the pins K, projecting from the plate J, the plate L, provided with hooks M, of the screw-spindle R, held between the plate J and the hooks M, and of the toothed wheel or head H on the end of the spindle R, substantially as herein shown and described, and for the purpose set forth.

291,781. VELOCIPEDE. CHARLES M. SCHAFFER, Louisville, Ky., assignor to himself, JAMES T. RITCHIE, Cornelius C. Allen, and George W. Allen, all of same place. Filed June 16, 1883. (No model.)



Claim.—1. The saddle-frame B, consisting of portions A, formed with flanges *h'*, and curved arms *i*, provided with adjustable handles, substantially as described.

2. The combination, with the wheel A, of the hinged hub-segment a^2, felly-segment c', and the connecting-spokes, substantially as shown and described.

3. In a unicycle-velocipede, the swinging or suspended saddle-frame B, having the curved horizontal arms *i*, extending backward and forward of the center axis of the machine, and carrying and adapted to permit the adjustment of the hand-holds *k* along the frame, in combination with the seat D, supported upon rods *r*, connected to the outer ends of the arms *i*, and extending inward about centrally of the machine, substantially as and for the purpose set forth.

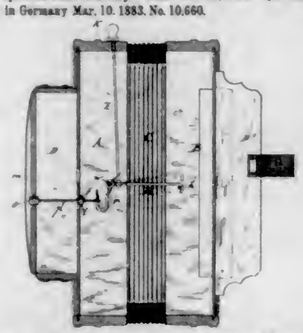
4. The combination, with wheel A, of the separable felly-section *c'* and the latches *s s*, capable of simultaneous operation by a common hand-wheel, *t*, substantially as and for the purpose set forth.

5. The combination, with wheel A, of the hinged hub-segment a^2, felly-segment, and latches *s s*, connected to and adapted to be operated by the hand-wheel *t*, substantially as and for the purpose set forth.

6. The combination, with the saddle-frame B, having flanged grooved bars *h h'*, of the treadle-bars *p*, provided with projections *p'*, adapted to slide in the flanged grooved bars *h h'*, said treadle-bars being connected by rods *q* to the disks *e* of the wheel-hubs *a*, substantially as and for the purpose set forth.

7. In a unicycle-velocipede, the combination, with wheel having the spokes connected to hubs *a*, secured to inner disks, *e*, by bolts *f*, of the saddle-frame B, with its upper ends hung on the bolts *f*, and having grooved flanges *h'*, and the treadle-bars *p*, having projections *p'*, adapted to slide in said grooved flanges of the swinging frame, said treadle-bars *p* being connected to the disks *e* of the wheel, substantially as and for the purpose set forth.

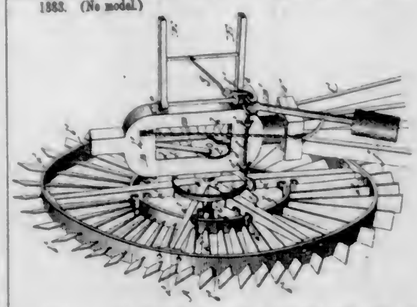
291,782. ACCORDION. ERNST SCHREYER, Hamburg, assignor to Wilhelm Spaethe, Gera, Germany. Filed Nov. 26, 1883. (No model.) Patented in GERMANY Mar. 10, 1883, No. 10,660.



Claim.—1. In an accordion, the combination of the ends and intermediate bellows with an interior locking device adapted to connect the ends, and means whereby the locking device is applied to or released from the ends from the outside of the instrument, substantially as set forth.

2. The combination of a bottom case having a fixed transverse rod, an intermediate bellows, a top case having a fixed transverse rod, a locking-hook applied to the transverse rod of the bottom case, and means whereby the locking-hook can be applied to or released from the rod of the top case from the outside of the instrument, substantially as specified.

291,783. WINDMILL. ELI J. SCHROCK, Goshen, Ind. Filed Feb. 3, 1883. (No model.)



Claim.—1. In a windmill, the wheel A, provided with a ring, *c*, and pivoted to the head or turn-table B, in combination with a crank-rod, *f*, journaled in lugs *c' c'*, and formed with a brake at one end, adapted to engage with the ring *c*, and leaving its extreme outer end bent up, as seen at f^3, and formed with an eye connected to the vane, whereby when the rod is turned the wheel is thrown out of the wind and the brake applied, substantially as shown and described.

2. In a windmill, the combination, with the wheel A, having a ring, *c*, and journaled on the swiveled head B, and connected by a pitman, c^3, with the pump-rod D, of the rod *f*, formed with a brake, *f'*, on one end, and connected by the link *g* with the vane E, the weighted arm F, rigidly secured to the brake-rod, and the operating-cord *h*, and pulley *h'*, all constructed and arranged to operate substantially as described and shown, and for the purpose set forth.

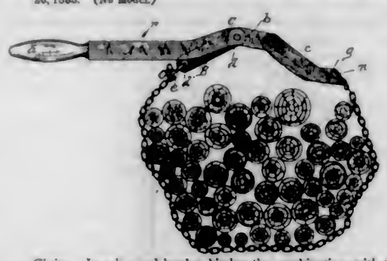
291,784. TAWING HIDES AND SKINS. AUGUSTUS SCHULTZ, New York, N. Y. Filed May 31, 1883. (No specimens.)

Claim.—The within-described process for tawing hides and skins, said process consisting in subjecting the hides or skins to the action of compounds of metallic salts—such as a solution of bichromate of potash—and then treating the same with a compound containing hyposulphurous acid, (or as it is otherwise called "thiosulphuric" acid,) such as a solution of hyposulphite of soda or of potash in the presence of hydrochloric acid.

291,785. TAWING HIDES AND SKINS. AUGUSTUS SCHULTZ, New York, N. Y. Filed July 18, 1883. (No specimens.)

Claim.—The within-described process for tawing hides and skins, said process consisting in subjecting the hides or skins to the action of a bath prepared from a metallic salt—such as bichromate of potash—and then to the action of a bath capable of evolving sulphurous acid—such as a solution of sulphite of soda—in presence of another acid—such as hydrochloric acid—substantially as described.

291,786. LUMBER-BINDER. JAS. SEALEY, Chase, Mich. Filed Sept. 26, 1883. (No model.)



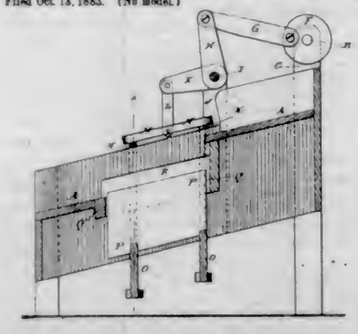
Claim.—In a log and lumber binder, the combination, with the lever A, having the concavo-convex portion *b*, of the arm C, of a similar contour and shape, provided with the groove *g*, to receive the upper edge of the lever, and a short perforated arm to receive a chain-link, the straight arm B, pivoted at its upper end to the said concavo-convex portion of the lever A, and provided at the opposite end with an eye to receive a chain-link, and the binding-chain, substantially as specified.

291,787. HORSE-DETACHER. NOAH R. SHEALY, Pine Ridge, S. C. Filed Oct. 10, 1883. (No model.)



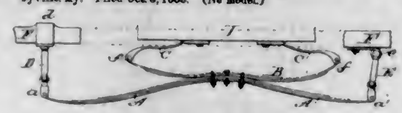
Claim.—The combination, with the ferrule B, having the spindle *b*, of the slide-cuff D, constructed as described, the stop-pin *f*, latch C, spring *d*, and spring E, substantially as specified.

291,788. COAL-CLEANER. WILLIAM HENRY SHEPHERD, Pittston, Pa. Filed Oct. 13, 1883. (No model.)



Claim.—The combination, with the chute A, having opening Q, of the stationary grate-bars R, the movable grate-bars P, the connecting-bars O, the sliding rods N, the connecting-bars M L G, the rock-shaft I, provided with crank-arms K H, and the revolving crank-shaft B, substantially as herein shown and described, whereby the pieces of slate will be made to pass out between the grate-bars, as set forth.

291,789. SIDE SPRING FOR VEHICLES. WILLIAM SHINNICK, Shelbyville, Ky. Filed Oct. 3, 1883. (No model.)

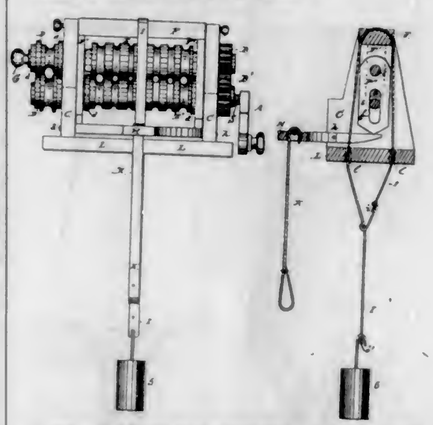


Claim.—1. The springs A, having the body connected to them by springs B and jacks C, and being connected to the side bars, F, by the rigidly-attached cranked bar D and the pivoted cranked bar E, substantially as described.

2. The vehicle side springs, A A, each having an upward convexity nearer to the rear than the front end thereof, in combination with superposed body-supporting springs made fast to said convexities, whereby the strain of the load may be equalized on the springs, where the greatest weight is rearwardly beyond the middle of the vehicle-body, as described.

3. The springs A, shackled to the front cranked bar, D, rigidly attached to the side bars, and also shackled to the cranked bar E, that is pivoted to the side bars, in combination with springs B, jacks C, and the body I, substantially as described.

291,790. MACHINE FOR ROUNDING STRAPS. ALBERT C. SIMS, Burlington, Kans. Filed Jan. 16, 1883. (Model.)



Claim.—In a machine for the manufacture of harness, the combination of roll E, having removable roll D, and thumb-nut G, and bearings in guides F'' F''', with roll E', having removable roll D', adapted to be held in position by roll D, and yoke H, with suitable operating mechanism, as shown and described.

291,791. SCREW-DRIVING MECHANISM FOR BALING-PRESSES AND OTHER USES. PATRICK SLATTERY, Charleston, S. C. Filed Aug. 23, 1883. (No model.)

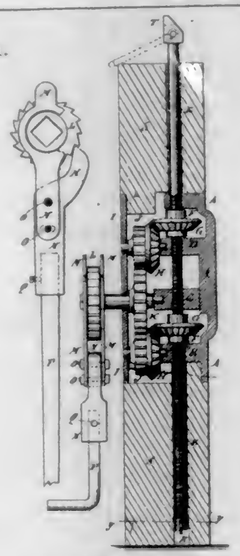
Claim.—1. A screw-driving mechanism constructed substantially as herein shown and described, and consisting of the box A, the screw E, the two nuts F, the two sets of gear-wheels G H J, the intermediate gear-wheel, K, and the ratchet-wheel and pawl-lever L M N P, as set forth.

2. In a screw-driving mechanism, the combination, with the box A and the screw E, of the two nuts F, the two sets of gear-wheels G H J, and the intermediate gear-wheel, K, substantially as herein shown and described, whereby power applied to the said intermediate gear-wheel will be applied to the said screw at two points, as set forth.

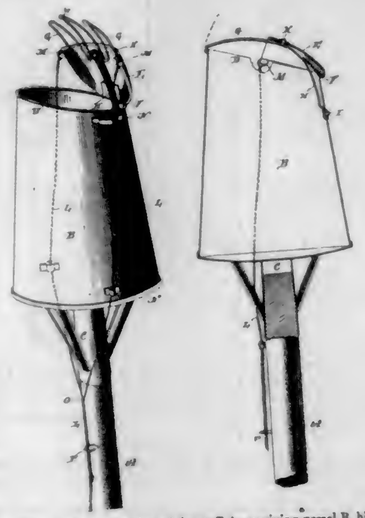
3. In a screw-driving mechanism, the combination, with the intermediate gear-wheel, K, of the ratchet-wheel L, the connecting-plates M, and the pawl-lever N P, substantially as herein shown and described, whereby power can be readily applied to the said gear-wheel, as set forth.

4. The ratchet pawl-lever constructed substantially as herein shown and described, and consisting of the ratchet-wheel L, the connecting-plates M, and the pawl-lever N P, as set forth.

291,791.



291,792. FRUIT-PICKER. GILBERT A. SMITH, Davenport Centre, N. Y. Filed Nov. 27, 1883. (No model.)



Claim.—The combination of the staff A, receiving-vessel B, hinged cover E, having the jaws G, spring H, and operating cord or wire L, all combined and arranged to operate substantially as shown and described.

291,793. TILE-MACHINE. JOHN S. SMITH, Jackson, Mich., assignor of one-half to Theodore G. Bennett, same place. Filed Nov. 30, 1883. (No model.)

Claim.—1. In combination with a tile-machine, a table the reciprocating portion of which is moved automatically from and toward the tile-forming dies by the power which actuates the tile-machine, and by means substantially such as is set forth.

2. In combination with the reciprocating portion of a tile-machine table, the threaded shaft B and connecting mechanism for giving the table motion toward the tile-forming dies automatically, substantially as set forth.

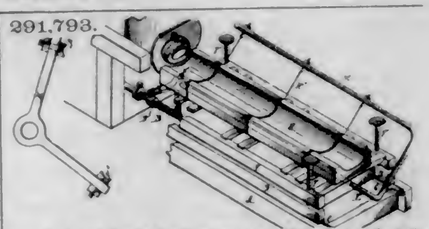
3. In combination with the reciprocating portion of a tile-machine table, the threaded shaft B and oscillating arm H, attached to the table and connected with the thread on the shaft B, substantially as set forth.

4. In combination with the reciprocating portion of a tile-machine table, the oscillating arm and threaded shaft B, constructed with a groove to receive the arm and stop the movement of the table automatically, substantially as set forth.

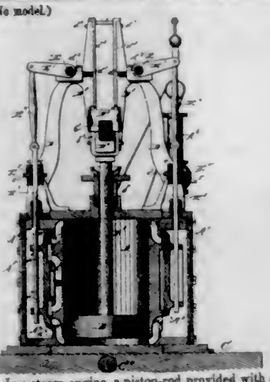
5. In combination with the reciprocating portion of a tile-machine table, the oscillating V-shaped arm H, with sectional threads H^2 at each end of the arm, so that the threaded shaft B may be engaged by shifting the cutter from one side to the other, passing once through the tile, substantially as set forth.

6. In combination with the reciprocating portion of a tile-machine table, which receives motion from the tile-forming dies by the forward thrust of the tile, a cutter moving with the table, a detent which disengages the table when the cutter is to be moved across the tile, and automatic mechanism for retracting the table when the cut is complete, substantially as set forth.

291,793.



291,794. STEAM-ENGINE. JOHN B. SMITH, Chicago, Ill. Filed June 18, 1883. (No model.)



Claim.—1. In a steam-engine, a piston-rod provided with a boxing upon its outer end, having a circular recess therein opening upon either side, in combination with a cross-head or equalizing-bar, having its center formed to fit the interior of the boxing, and tapered toward either end, substantially as shown and described.

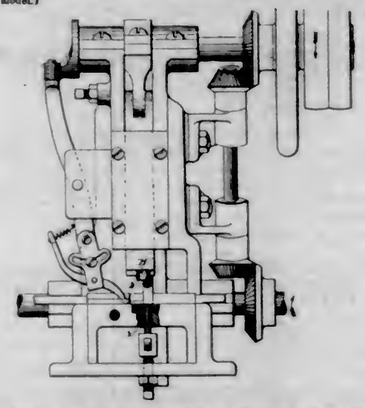
2. In a steam-engine, the piston-rod B', formed with the socketed head B^2, and provided with a removable cap, B^3, in combination with the cross-bar or equalizer G, having the semicircular enlargement g, and tapered toward each end, the slides G' and pitmen G^2 connecting it with the cranked driving-shaft, substantially as and for the purpose set forth.

3. In a steam-engine, the sliding blocks G', formed with a recess, g', in either end, connected to the outer edges by oil-leads g^2, substantially as and for the purpose set forth.

4. In a steam-engine, a steam-chest and valve, for admitting steam to the engine, located on one side of the cylinder, in combination with an exhaust-steam chest upon the opposite side, having small steam-leads connecting the ends of the cylinder, and provided with a slide-valve, adapted to open one of said leads when closing the corresponding exhaust-passage, whereby sufficient live steam is admitted behind the valve to keep it properly seated, substantially as shown and described.

5. A steam-engine consisting, essentially, of a cylinder, bed-plate, and two steam-chests, cast in one piece, and placed directly over the driving-shaft, two slide-valves, one for admitting and the other for exhausting the steam, a piston and rod provided with a swiveled equalizing-bar, having slides working in guides supported upon the main casting, and connected by pitmen with the cranked driving-shaft, and two rock-shafts journaled in boxes on the guides and provided with arms connected to the supply and exhaust valves, and operated by eccentrics on the main shaft, all combined, constructed, and arranged to operate substantially as and for the purpose set forth.

291,795. METHOD OF AND MACHINE FOR MAKING LACING-HOOKS. STEPHEN N. SMITH, Providence, R. I. Filed Aug. 4, 1883. (No model.)



Claim.—1. The hereinbefore-described method of forming lacing-hooks, consisting in first taking a strip of stock provided with tubular necks alternating with plain spaces, then cutting therefrom the blank for a hook, next indenting the end of the blank, and finally bending the blank into the form of a hook, all substantially as described.

2. The machine for forming lacing-hooks, having in combination the punch and the die adapted to cut out the blank from the strip, a die mechanism for forming the indentation on the end of the blank after it is severed from the strip, the carrier, the holder for moving the blank from the cutting-die, indenting and holding mechanism, and mechanism for bending the book, all substantially as described.

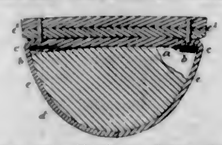
3. In combination, in a machine for making lacing-hooks, the die D, the carrier beneath said die, adapted to receive the blank upon its face with a part extending beyond the edge, and with the neck in a slot, the holder for the blank corresponding in shape thereto, dies for indenting the blank, the mechanism to operate them immediately after the blank is carried to their position, and the bending mechanism, all substantially as described.

4. In combination, in a machine for making lacing-hooks, the punch for cutting out the blank, the carrier A, the holding device M, indenting-die 2, indenting and bending die 1, and the former N, all constructed to operate substantially as described.

5. In a machine for making lacing-hooks, and in combination with the punch, carrier, holding devices, the former, the pair of indenting-dies 1 and 2, the die 2 being combined with mechanism, substantially as described, whereby it is moved away from the blank after indenting, and the die 1 being combined with mechanism, substantially as described, whereby it is moved upward to bend the blank and then returned to its original position, all as described.

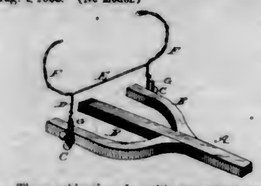
6. In a machine for making lacing-hooks, and in combination, the cutting-die, the carrier adapted to hold the blank with the neck in a slot, and the end projecting over its edge, the holder, and the former, indenting-dies 1 and 2, the die 1 being also combined with mechanism, substantially as described, whereby it is moved upward to bend the blank, and the slide d, the parts being combined with mechanism, all substantially as described, whereby they are returned after the slide d acts, as set forth.

291,796. MANUFACTURE OF BOOTS AND SHOES. EDWIN L. SPRAGUE, Boston, Mass. Filed Oct. 17, 1881. (No model.)



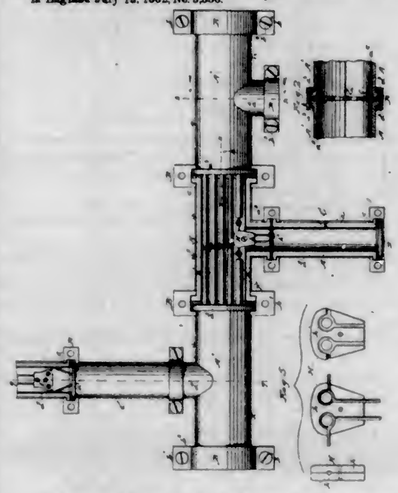
Claim.—In the art of making boots and shoes, the method of uniting the soles and upper and concealing the lasting-tacks and metal sole-fastenings, which consists in channeling the inner sole, placing a metallic clinching-surface in the said channel between the main part of the inner sole and the lip of its channel, applying the inner sole to the bottom of the last, drawing the upper over the inner sole, driving the lasting-tacks through the same and into the inner sole opposite the clinching-surface, applying a second or an outer sole to the lasted shoe, driving or inserting metal fastenings through the latter and the upper and into the inner sole against the clinching-surface, which stops or turns the points of the said fastenings, and after the clinching of the fastenings and the removal of the last removing the clinching-surface, substantially as described.

291,797. REIN-PROTECTOR. SAMUEL J. SPURGEON, Houstonia, Mo. Filed Aug. 4, 1883. (No model.)



Claim.—The combination of a cultivator-tongue, set screws or bolts forming in the sides of the same, and a rein-supporter consisting of one piece of metal rod having its ends doubled and twisted around the straight upright portions, forming slots for the reception of the securing-screws, having its central portion straight and horizontal, and having the ends of the said straight portion and of the upright portions doubled, twisted, and curved upward and inward, as and for the purpose shown and set forth.

291,798. CONDUIT FOR UNDERGROUND ELECTRIC CONDUCTORS. ELI T. STARR, Philadelphia, Pa., assignor of one-half to William J. Peyton, Washington, D. C. Filed May 25, 1882. (No model.) Patented in England July 13, 1882, No. 3,330.



Claim.—1. A longitudinally-divided conduit-section, the ends of which have coupling-flanges, and the edge of one of the divided conduit portions having a longitudinal interlocking flange or connection for the edge of the other portion thereof, which flange terminates before reaching the coupling-flanges at the ends of the conduit-section, in combination with a sectional internally-grooved or recessed clamp-coupling which receives the coupling-flange of the conduit-section and snugly fits around the end of said section to clamp the divided portions thereof together, substantially as described, whereby a tight joint between the edges of the divided portions of the conduit-section may be attained and a close fit between the coupling and conduit-section secured.

2. A longitudinally-divided two-part conduit-section, the edge of one portion of said section being provided with an external longitudinal flange and a seat to receive the edge of the other portion thereof, and said flange being terminated before reaching the ends of the section, so as to afford a plain surface for the fitting of the coupling-connection between the adjacent sections of the conduit, substantially as described, whereby a tight joint may be made between the longitudinal edges of the section, and a close fit between the coupling-connection and the surface of the conduit-section be insured.

3. The combination of a conduit for electric conductors, cast with a tubular union-piece having a plain coupling-flange, a removable stopper to close the opening of said union-piece, and a sectional clamp-coupling having a plain internal recess or groove embracing said coupling-flange

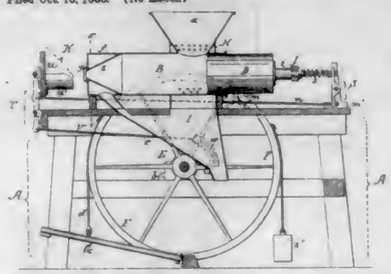
and said stopper, substantially as described, whereby the stopper is securely locked in place while readily removable in making a branch connection with the conduit, and whereby also the branch pipe may be coupled to the union-piece by the same device that secures the stopper in position when said stopper is removed.

4. The combination of an underground conduit having branch openings with one or more electric conductors inclosed and supported thereby, having insulating-couplings in their lengths opposite said branch openings to facilitate making branch circuit-connections, substantially as described.

5. The combination of an electric conductor divided, and having its ends connected by an insulating-coupling, substantially as described, which permits said conductor to be kept taut or suspended between its supports with a conducting-connection, substantially as set forth, between the insulated ends of said conductor, capable of being severed without mechanically separating the ends of the conductor, substantially as described.

6. A cast-metal longitudinally-divided pipe-section having interlocking edges and a vertical central division-plate supporting horizontal supports for the conductors, substantially as described.

291,799. CAN-FILLING MACHINE. JOHN STEVENS, Woodstown, N. J. Filed Oct. 18, 1883. (No model.)



Claim.—1. The combination of the cylinder B and its hopper a and plunger D with the movable can-holder K, and with mechanism, substantially as described, for moving the said plunger and can-holder longitudinally to and from each other, as set forth.

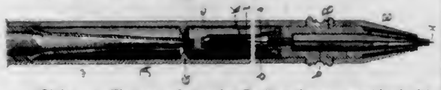
2. The combination of the cylinder, provided with a hopper, and having perforations below the hopper, with the plunger D and mechanism for operating the same, as set forth.

3. The combination of the cylinder B, plunger D, can-holder K, levers S and T, rods *n* and *p*, and springs *s*, as set forth.

4. The combination of the cylinder B, plunger D, wheels F, can-holder K, levers S and T, rods *n*, *p*, and *v*, springs *s*, and slotted segments *w*, as set forth.

5. The combination of the cylinder B with nozzle *e*, the casing *f*, and the perforations *h*, as set forth.

291,800. FOUNTAIN STYLUS-PEN. WILLIAM W. STEWART, Brooklyn, N. Y. Filed Feb. 27, 1882. (No model.)



Claim.—1. The pen-point section B of a stylus-pen, combined with the inclosing-jacket E, to provide a capillary space between, substantially as set forth.

2. In a reservoir-pen holder, an ink space or reservoir, combined with an agitator, S, of non-absorbent material and polished surface, inserted in said reservoir, and called by me an "irritant," for the purpose of preventing the accumulation of fluid in the center of the holder and the consequent division of the column of ink.

3. In a reservoir-pen, an ink space or reservoir, combined with an irritant composed of horse-hair, gold, or other non-absorbent material, the ends whereof are fixed, substantially as and for the purpose set forth.

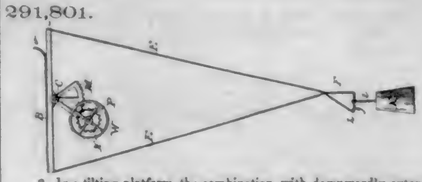
4. In a reservoir-pen, the reservoir or ink-space provided with one or more diaphragms or partitions, G, partly separating said ink-space into separated chambers, as and for the purpose set forth.

5. In a stylus fountain-pen, a stylus-point of horse-hair or other non-absorbent substance, substantially as set forth.

291,801. CAR-DUMPER. THOMAS S. STEWART, Saltsburg, Pa. Filed Nov. 26, 1883. (No model.)

Claim.—1. A tilting platform for coal wagons or cars, having the downwardly-extending brace-rods securely connected at their lower ends, and carrying a counterbalancing-weight which moves in an arc-shaped path, substantially as specified.

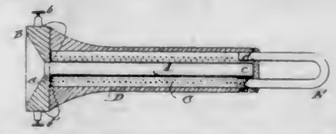
291,801.



2. In a tilting platform, the combination, with downwardly-extending braces E and the loop-connection F, having the adjusting-bearings *g*, of the weight K and its connection *l*, substantially as specified.

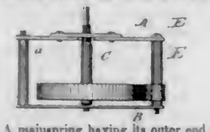
3. The tilting platform having a rock-shaft and downwardly-extending braces connected at their lower ends and carrying a weight, the segment-gear of the shaft, the gear-wheels engaging the same, and the operating-shaft, substantially as specified.

291,802. RECEIVING-TELEPHONE. LYMAN W. SUTTON, Jr., Newton, assignor to John F. Phillips, Jersey City, N. J. Filed Feb. 15, 1883. (No model.)



Claim.—A magneto-electric telephone consisting of the combination of a resonant magnetic tube, open at both ends, a magnet, and a helix, all in inductive relation to each other, substantially as described.

291,808. DEVICE FOR REMOVING MAINSPRINGS FROM CLOCKS. DAVID SWITZER, Mount Pleasant, Mich. Filed Aug. 28, 1883. (No model.)

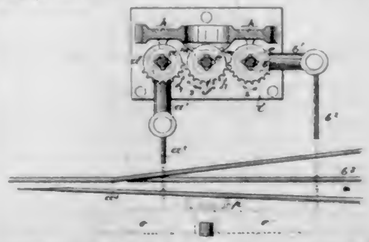


Claim.—1. A mainspring having its outer end secured to a sleeve adapted to be held between the upper and lower plates of a clock-mechanism frame by means of a bolt or rod, substantially as and for the purpose specified.

2. The combination, with the lower plate, B, provided with means to seat the arbor carrying the mainspring, of the upper plate, A, provided with means to receive and hold the upper end of the said arbor, and the spring having its outer end secured to the tube or sleeve, which is held between the upper and lower plates by a bolt or rod passing through its bore, substantially as specified.

291,804. RAILROAD SWITCH-STAND. CHARLES H. TALMAGE, Atchison, Kans. Filed Mar. 16, 1883. (No model.)

Brief.—The movable rails of a three-throw split switch are shiftable from a single lever by means of a wheel carried on the lever-shaft and mutilated to gear alternately with wheels—one on each of two shafts—which are provided with cranks for moving the switch-rods. Said cranks are set at right angles to each other, the lever-shaft is adapted to carry a semaphore, and a suitable frame for supporting the shafts and operating parts is provided.

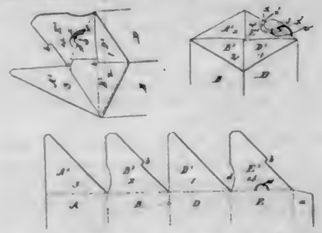


Claim.—1. The combination, with a pair of crank-shafts set at right angles to each other, and adapted to be connected to the switch-rails, and gear-wheels on said shafts, of a lever-shaft provided with a mutilated gear-wheel, substantially as herein shown and described.

2. The combination, with the rails a^2 b^2, of the crank-shafts *a* *b*, the wheels *d* *e*, the mutilated wheel *f*, and operating-lever *g*, substantially as herein shown and described.

3. The supporting-frame for a switch-stand, consisting of uprights *h*, base *i*, and top *j*, and being provided with sockets *k* and *l*, and the shaft-bearings *n*, substantially as described.

291,805. PAPER BOX. JOHN W. TATUM, Chester, Pa. Filed Dec. 8, 1883. (Model.)



Claim.—1. A paper box having a series of end flaps folded in succession around the box, the end of each flap being retained by the body of that on the side adjoining and at right angles thereto, as set forth.

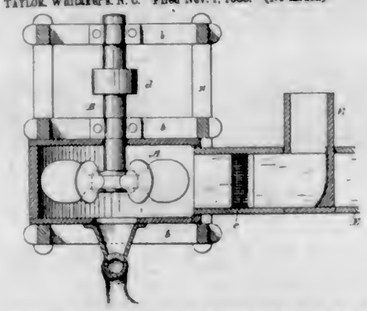
2. A paper box having interlocked end flaps folded in succession around the box, the end of each flap being retained by the body of that on the side adjoining and at right angles thereto, and one or more of the flaps having a locking-notch, *b*, as set forth.

3. A paper box having end flaps halved so as to form a double series of flaps, the flaps of each series being folded in succession, so that the end of each flap is overlaid by the base or body of that on the adjoining side, thereby forming a double locked end on the box, as set forth.

4. The combination of the handle-strip J, having enlarged ends *x*, with a paper box having segmental slots *w* in opposite end flaps, the strip being adapted to the slots and each enlarged end of the strip confined between two end flaps, as set forth.

5. The combination of the handle-strip J, having enlarged ends *x*, with abrupt shoulders *x'*, with a paper box having in opposite end flaps segmental slots *w*, the bases of which are on the line of fold of the flaps, as set forth.

291,806. SEED-COTTON ELEVATOR AND CLEANER. WILLIAM T. TAYLOR, Whitaker's, N. C. Filed Nov. 1, 1883. (No model.)



Claim.—1. A cotton elevator and cleaner consisting of an exhaust-chamber provided with inlet-opening and an outlet-tube, said outlet-tube being provided with cleaning devices, substantially as described.

2. A cotton elevator and cleaner consisting of an exhaust-chamber having inlet-opening and outlet-tube, said outlet-tube being provided with the grated opening *c*, as and for the purpose described.

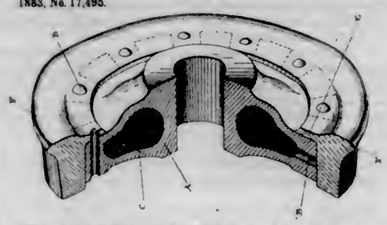
3. A cotton elevator and cleaner consisting of an exhaust-chamber provided with inlet-opening and an outlet-tube, said tube being provided with the perforated partition, for directing the course of the cotton and providing for the escape of the dust, substantially as described.

4. The combination, in a device for elevating and cleaning cotton, of the exhaust-chamber, provided with inclined floor and an inlet-opening, and the fan, substantially as described.

5. A cotton elevator and cleaner consisting of an exhaust-chamber having inlet and outlet tubes, the outlet-tube being provided with the grated opening *c* and openings in the sides of the tube, to admit of the discharge of the cotton at any desired point, substantially as described.

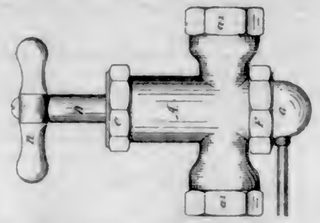
6. The combination, with the tube E, having openings, as described, of the tube G, adapted to be joined to the said tube E and form a continuous conduit for the cotton, the tube G being provided with the perforated extension G', for directing the course of the cotton and allowing the escape of the dust, substantially as described.

291,807. CAR-WHEEL. HARRISON G. TAYLOR, Toronto, Ontario, Canada. Filed July 18, 1883. (No model.) Patented in Canada Aug. 15, 1883, No. 17,495.



Claim.—As an improved article of manufacture, the truck or car wheel herein described, consisting of the cast-metal center A, having an inner circular hollow core, C, extending to near its outer edge, forming two solid disks extending from the hub to the tire, and having cored passages B, leading from said inner core to the periphery of said center A, at regular intervals, leaving solid spaces between each passage, as shown, and the tire having internally-projecting flange E, formed integral therewith and immediately below the inner edge of the outer flange, F, said tire being securely fastened to the center A by bolts passing horizontally through the flange E and center, substantially as set forth.

291,808. STOP-AND WASTE COCK. HENRY TAYLOR, RICHARD B. SHARP, and THOMAS J. CAIN, Cleveland, Ohio; said Cain assignor to said Sharp and Taylor. Filed Jan. 15, 1883. (No model.)



Claim.—1. The combination, with the valve B, having screw-stem E, and lugs *e*, playing in grooves e^2 of chamber *a*, of the hollow internally-screw-threaded stem D, provided with collar *d*, operating as and for the purpose specified.

2. In a stop and waste cock, the lower detachable chamber, G, provided with collar F for attaching it to the shell of the valve, and containing the flexible disk K, having the hollow stem N, in combination with and operated upon by the lower end of valve B, whereby the waste-outlet O is opened and closed, as and for the purpose specified.

291,809. GRAIN-DRILL. HANSON P. TEVANT, Dublin, Ind., assignor to the Dublin Agricultural Company, same place. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a grain-drill, the combination, with a frame carrying the hopper, of a spring-bar having one end attached to the frame and extending longitudinally beneath the hopper to a point in rear thereof, a seat secured to the rear end of the spring-bar, and a transverse support for the rear of said bar, substantially as described.

2. In a grain-drill composed, essentially, of a frame supporting the hopper, the combination therewith of a spring-bar secured at its forward end to the frame, and extending longitudinally below the hopper to the rear thereof, a seat rigid on the rear end of the bar, and a transverse spring-support connected with the frame and sustaining the spring-bar at a point between the seat and the hopper, substantially as described.

3. The combination, with the grain-drill frame carrying a hopper, of a bar, F, secured at its forward end to the frame, and extending longitudinally under the hopper to the rear thereof, a seat on the rear end of said bar, and an arched spring connected at its ends with the sides of the drill-frame, and sustaining the spring-bar between its forward end and the seat, substantially as described.

4. In a grain-drill composed, essentially, of a frame carrying a hop-

per, of a spring-bar having its forward end secured to the frame, and extending longitudinally under the hopper to the rear thereof, a seat mounted on the rear end of the bar, and a transverse spring having its ends connected with the frame and attached to the spring-bar between the seat thereon and the hopper, substantially as described.

5. The combination, with a grain-drill composed, essentially, of a frame and a hopper thereon, of a longitudinal spring-bar extending in rear of the hopper and carrying a seat at its rear end, and a transverse spring arched over the bar in rear of the hopper and in front of the seat, and a bolt suspending the rear portion of the bar beneath the arched spring, substantially as described.

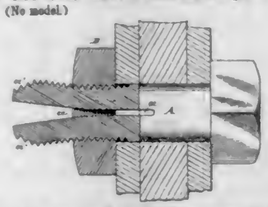
291,810. MANUFACTURE OF TURNED SHOES. ANDREW J. TEWKSBURY, Haverhill, Mass. Filed Aug. 1, 1883. (No model.)



Claim.—1. The method of securing steel shanks to turned boots, consisting, essentially, in first securing the shank at one or both ends to an inner sole, and then securing the inner sole to the boot, substantially in the manner described.

2. In a turned boot, the combination, with the outer sole and the insole thereof, of a spring-shank interposed between the two soles and having its ends attached to the insole, and nails located near the center of the instep, and arranged to secure the two soles together, and to prevent the lateral displacement of the spring, substantially as set forth.

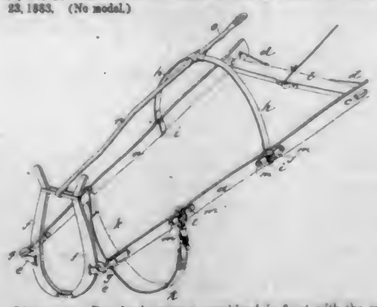
291,811. NUT-LOCK. LEWIS C. TRATCHER, Chicago, Ill. Filed Nov. 22, 1883. (No model.)



Claim.—1. As an improved article of manufacture, a bolt formed with a tapering screw-threaded point, *a'*, and longitudinal slit or slits *a*, essentially as described, and for the purpose set forth.

2. The combination, in a nut-locking device, of the nut B and bolt A, having longitudinal slit or slits *a* and a tapering screw-threaded point, *a'*, as described, and for the purpose set forth.

291,812. HARNESS. GREEN THOMPSON, New Salem, Ind. Filed Oct. 23, 1883. (No model.)



Claim.—1. The back-strap *n*, combined in front with the cross-strap which connects the upper ends of the hames, as shown and described.

2. The back-strap *n*, connected to the cross-strap of the hames, in combination with the hip-straps *A A* and bars *a a*, substantially as and for the purpose set forth.

291,813. TAG. EDWARD W. THOMPSON, Lowell, Mass. Filed Sept. 12, 1883. (No model.)

Claim.—The combination of a tag slotted longitudinally and transversely, and provided with longitudinal grooves and transverse holes, and one or more spring-wires, each of said wires being bent near one end into a hook, and near the other end bent at about right angles, and driven through one of said transverse holes and headed, as and for the purpose specified.



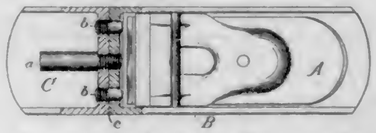
291,814. VEHICLE-SPRING. ILLIUS AUGUSTUS TIDDER, London, County of Middlesex, England. Filed Nov. 6, 1883. (No model.) Patented in England Mar. 1, 1879, No. 831.



Claim.—1. A spring for railway and other vehicles, consisting of a bar of metal of unequal cross-section, grooved in the direction of its length and reduced in diameter from the center toward the ends, said spring having its normal axis straight, substantially as and for the purpose set forth.

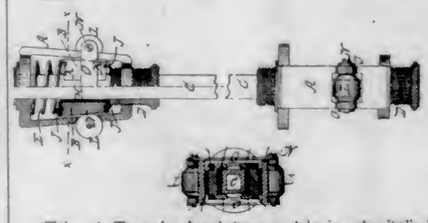
2. A spring for railway and other vehicles, consisting of a bar of metal of unequal cross-section, and grooved in the direction of its length, said spring having a straight axis, substantially as described.

291,815. BENCH-PLANE. JUSTUS A. TRAUT, New Britain, Conn. Filed Nov. 23, 1883. (No model.)



Claim.—The herein-described convertible plane, consisting of the stock B, adapted to receive and hold the cutting-bit, and provided with the attachable and detachable stock-extension C, substantially as described and for the purpose specified.

291,816. FRICTION-CLUTCH FOR DROP-LIGHTS. JAMES F. TRAVIS and WILLIAM H. FREANEY, New York, N. Y. Filed Aug. 25, 1883. (No model.)



Claim.—1. The wedge-shaped clamps, each having a longitudinal recess in the acting surface and longitudinal channels in the body thereof, and having a packing, of felt or other suitable material, in such recess, fastened by a cord or the like, passing through the channels, in combination with the supporting-frame and the adjusting-screw.

2. The wedge-shaped clamps, each having a longitudinal recess in the acting surface, longitudinal channels in the body, and grooves in the ends thereof, and having a packing, of felt or other suitable material, in the recess, fastened by cords which extend through the channels and together with the end portions of the packing sink into the grooves, in combination with the supporting-frame and the adjusting-screw.

3. The combination of the frame, the wedge-shaped clamps therein, the two cross-bars arranged outside the frame, and the friction-rollers journaled to the opposite ends of the cross-bars, and projecting into the frame to form the bearings for the clamps, substantially as described.

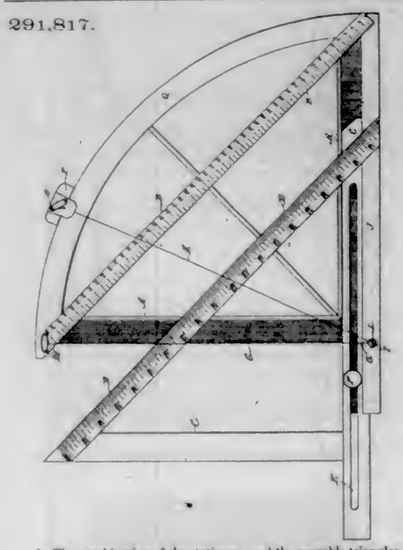
291,817. PERCENTAGE-CALCULATOR. SYLVESTER J. TUCKER, Richmond, Va. Filed Nov. 17, 1883. (No model.)

Brief.—As shown, the instrument indicates that seventy per cent. of 1,400 is 980.

Claim.—1. The combination of the stationary and the movable triangles having graduated scales and numbers, as described, and the movable marker, substantially as shown and described.

2. The combination of the stationary and the movable triangles having graduated scales and numbers, as described, and the movable marking-cord and segmental guide for the same, substantially as shown and described.

291,817.



3. The combination of the stationary and the movable triangles having graduated scales and numbers, as described, and the movable and the stationary markers, substantially as specified.

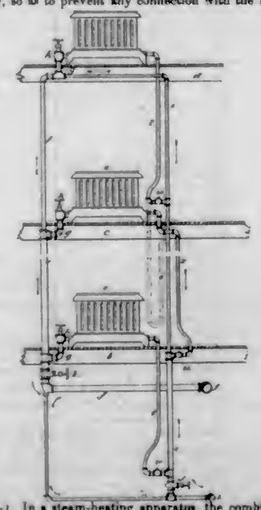
4. The combination, with the triangles, of the movable marking-cord, the loose collar and pin for securing it at one end, and the slide and segmental guide at the other end, substantially as shown and described.

5. The combination of the stationary triangle, the movable triangle having a longitudinal slot in its base, and the set-screw for adjusting and holding said triangles in any desired relation to each other, substantially as shown and described.

6. The combination of the stationary triangle having the percentage-scale B arranged along its hypotenuse, the movable triangle having the number-bearing scale D arranged along its hypotenuse, and the markers, substantially as specified.

291,818. STEAM-HEATING APPARATUS. FREDERIC TUDOR, Boston, Mass. Filed Dec. 16, 1882. (No model.)

Brief.—The spring-actuated valve opens under sufficient pressure and permits the steam to pass to the radiators. It may, however, be closed manually, so as to prevent any connection with the radiators.



Claim.—1. In a steam-heating apparatus, the combination, with two or more radiators placed at different levels, a steam-supply pipe, and a pipe to return the water of condensation, common to all the radiators and extending vertically downward, of a short seal or trap pipe connecting the radiators with the said return-pipe, constructed and arranged to accumulate a column of water of condensation to equal or nearly equal the steam-pressure used in the apparatus, substantially as and for the purpose set forth.

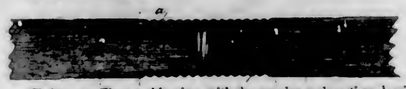
2. In a steam-heating apparatus, the combination, with a series of radiators and pipes and valves to supply steam thereto, of a common pipe to return the water of condensation therefrom, with short seal-pipes proceeding down from the radiators, and connecting with the main return-pipe at a distance below the radiator corresponding to the height of a water-column which will balance the steam-pressure, with check-valves at their connection opening in the direction of flow from the radiator into the return-pipe, and closing in the reverse direction, substantially as and for the purpose set forth.

3. In a steam-heating apparatus, the combination, with a series of radiators placed on different levels or stories, of a common steam-supply pipe, *f*, and controlling-valves *h*, connecting each radiator individually thereto, with a common return-pipe, *i*, and seal-pipes *l*, proceeding downward from the radiators near the floor of one story, and connecting with the return-pipe at or near the floor of the next story, with check-valves *u* at their connection, substantially as and for the purpose herein shown and described.

4. In a steam-heating apparatus, the combination, with one or more radiators, each connected with pipes to supply steam and return water of condensation, and provided with a manual valve or means for manually controlling the flow of steam thereto, with a yielding valve in the connection between the steam-pipe and the radiator, normally forced to its seat by a spring with a force equal to or exceeding the normal steam-pressure, but adapted to yield and permit the flow of steam into the radiator independently of the manual device when the steam-pressure is increased above the normal pressure, substantially as and for the purpose set forth.

5. In a steam-heating apparatus, the combination, with one or more radiators, each connected with pipes to supply steam and return water of condensation, of a valve normally forced to its seat by a yielding pressure with a force equal to or exceeding the normal steam-pressure, but adapted to yield and permit the flow of steam into the radiator when the steam is increased above its normal pressure, which valve is provided with means for manually controlling the flow of steam when desired, substantially as described.

291,819. COUPLING FOR RODS. GEORGE B. TORRELL, South Orange N. J., assignor to the Union Hardware Company, Torrington, Conn. Filed Oct. 18, 1883. (No model.)



Claim.—1. The combination, with the wooden rod-sections having screw-threads at their ends, of a tubular coupling of sheet metal, with the end portions cylindrical, or nearly so, and a screw-thread bent inwardly, so as to be of less diameter than the end portions, substantially as set forth.

2. The combination, with the wooden gun-rod sections, of a coupling-tube of sheet metal slightly smaller than the exterior of the wooden sections, and having a screw-thread bent inwardly, substantially as set forth.

3. The sheet-metal coupling-tube having the screw-thread bent inwardly, in combination with the wooden rod-sections fitting the interior of such couplings, and having screw-threads upon the wood, substantially as set forth.

4. The sheet-metal coupling-tube having a screw-thread bent inwardly in the middle portion, and plain portions at one or both ends of larger diameter than the threaded portion, in combination with the rod-sections, the ends of which slide into the plain portions of the coupling before the screw-threads engage, substantially as specified.

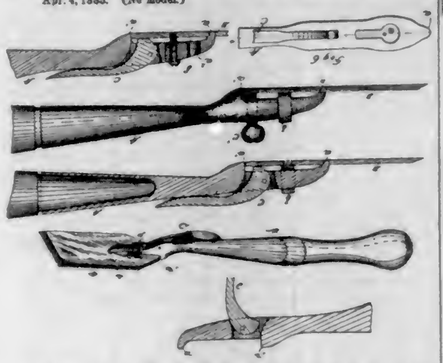
5. The combination, with the wooden gun-rod section, of a tubular coupling adapted to receive the wooden sections into its reepective ends, and having a screw-thread bent inwardly in such tubular coupling, the ends of the gun-rod sections not touching, so as to be tightened by screwing the sections into the coupling, substantially as set forth.

6. The combination, in a jointed rod, of a tubular coupling having an internal screw-thread in the middle portion, and wooden sections having screw-threaded ends and plain tapering portions between such ends and the plain portions of the rod, so that the tapering portions are drawn into the ends of the coupling by the action of the screw, substantially as set forth.

7. In a jointed rod, the combination, with a tubular coupling having an internal screw-thread, of the wooden rod-section of larger diameter than the exterior of the coupling, and having a bearing-surface that is brought forcibly against the coupling-tube, at or near the end, to prevent looseness from shrinkage, substantially as set forth.

8. The combination, with the wooden rod-sections, of a tubular coupling, into which the end portions of the wooden sections are directly received, such coupling having an internal screw-thread, so that, however closely screwed together, the sections may be separated by unscrewing one of the sections from the coupling, substantially as specified.

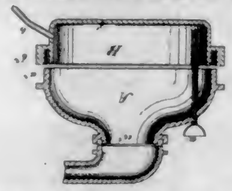
291,820. COMBINATION-TOOL. EDWIN WALKER, Erie, Pa. Filed APR. 4, 1883. (No model.)



Claim.—1. In a tool, the combination of a handle having a point and a cam-lever, and a tool having a bolding device between the point and cam-lever of the handle, substantially as described.

2. In a tool, the combination of a handle having a point, *a*, cam-lever C, and shoulder *a'*, and a tool, B, having a loop, *b*, and perforation for the point *a*, substantially as described.

291,821. PROCESS OF CONCENTRATING SULPHURIC ACID. MOSES A. WALSH, Camden, N. J. Filed JUNE 12, 1883. (No specimens.)



Claim.—The method of making monohydrated sulphuric acid by first concentrating in the usual way till the acid contains about ninety-three per cent. of monohydrated acid, and then transferring it to iron or steel vessels, in which the concentration is completed.

291,822. HAY-ELEVATOR. PHILIP WERUM, Stryker, Ohio. Filed Nov. 13, 1883. (No model.)



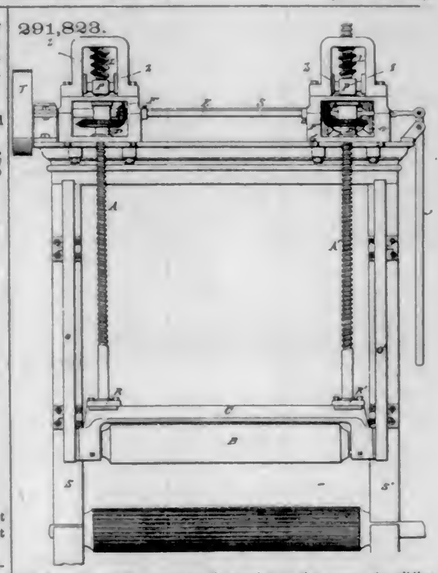
Claim.—1. In an elevator, the combination, with the car, of the pawl C, pivoted between the forward pulley-arms of or within the car, and having a slot, C', extending through its length, including that portion in the same plane and inside of its fulcrum, substantially as shown and described, and for the purpose set forth.

2. In an elevator, the combination, with the car having the lower forward edge of its bottom piece beveled, as at *b'*, of the angular or bent pawl C, pivoted between its pulley-arms, and having a slot, C', extending through its greater portion, including that in the same plane with and inside of the fulcrum of the pawl, substantially as shown and described, and for the purpose set forth.

291,823. PRESS-ROLLER MECHANISM FOR GANG-SAW MILLS. HENRY D. WEEKS and EDWARD N. WEEKS, East Saginaw, Mich. Filed Sept. 6, 1883. (No model.)

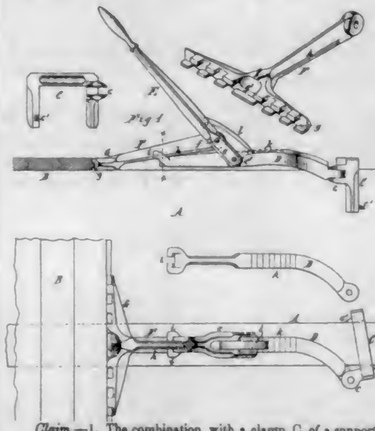
Claim.—In a gang-saw mill, the combination, with the frame carrying the pressure-roller B and its bail C, of the right-hand and left-hand screws A A', attached at their lower ends to said frame, the bevel-gears at their upper ends operated upon by bevel-gears and power-shaft.

291,823.



the friction-gear for reversing the motion of the screws, the sliding boxes I, levers J, for operating the same, spiral springs L L', and nuts P P', arranged upon the screws within the grooved bearings *z*, substantially as specified.

291,824. FLOOR-JACK. THOMAS L. WILKER, Scio, N. Y. Filed MAY 21, 1883. (No model.)



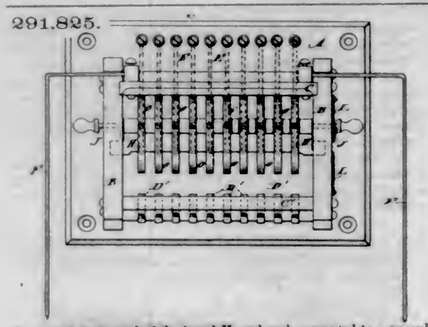
Claim.—1. The combination, with a clamp, C, of a supporting-bar, D, pivoted to said clamp, an actuating-lever, E, pivoted to the supporting-bar D, a pressure-bar, F, pivoted to the actuating-lever E, and resting on the supporting-bar, and a detent whereby the actuating-lever is held on the supporting-bar, substantially as set forth.

2. The combination, with a clamp, C, of a supporting-bar, D, pivoted to said clamp, and provided at its front end with guides *i*, an actuating-lever, E, pivoted to said supporting-bar between the clamp and the guides *i*, and a pressure-bar, F, pivoted to the actuating-lever and guided in the guides *i* of the supporting-bar, substantially as set forth.

291,825. CUT-OUT FOR TELEPHONES. AUSTIN WILLIAMS and JOSEPH M. GANNON, Negaunee, Mich. Filed Sept. 22, 1883. (No model.)

Claim.—1. In a telephone cut-out, the combination, with the side pieces, C C', having curved slots K, and the end pieces, B, having metal strip secured to them, and connected, respectively, to a ground and line wire, of the board H, pivoted to the side pieces, and provided with pintles working in the curved slots of the end pieces, and the curved strips

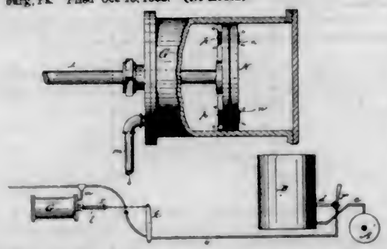
291,825.



O, secured to the end of the board H, and each connected to a ground-wire, substantially as herein shown and described.

2. In a telephone cut-out, the combination, with the sides C C', and the end pieces, B, of the plate D, strips D', the spring-clips G G', the line-wires E E', ground wires F, the swinging board H, the curved metal strips O thereon, the pintles J, passing through slots on the end piece, B, and of the latches L, substantially as herein shown and described.

291,826. FLUID-PRESSURE CAR-BRAKE. ROBERT J. WILSON, Pittsburg, Pa. Filed Oct. 13, 1883. (No model.)



Claim.—1. An automatic vacuum-brake having a steam vacuum-pump, a train-pipe, and a brake-cylinder provided with a brake-operating piston, said cylinder being connected to the train-pipe directly, and provided with means for equalizing the vacuum on both ends of said piston while in connection with said vacuum-chamber, and to become sealed at one end only upon admission of air to said train-pipe, substantially as described.

2. An automatic vacuum-brake having a steam vacuum-pump, a reservoir or vacuum-chamber, a train-pipe, and a brake-cylinder provided with a brake-operating piston, said cylinder being connected to the train-pipe directly, and provided with means for equalizing the vacuum on both ends of said piston while in connection with said vacuum-chamber, and to become sealed at one end only upon admission of air to said train-pipe, substantially as described.

3. In an automatic vacuum-brake, the combination, with the steam vacuum-pump A, reservoir B, and train-pipe *s*, of the brake-cylinder G, having piston H, adapted to operate the brakes, said cylinder being in communication directly with pipe *s*, and having one or more check-valves adapted to subject both ends of said cylinder to the influence of the reservoir B, and to subject one end only of said cylinder to atmospheric pressure when admitted to pipe *s*, substantially as described.

291,827. WASHING-SOAP. RICHARD HALL WITHINGTON, Sacramento City, Cal. Filed Aug. 18, 1883. (No specimens.)

Claim.—A washing-soap consisting of tallow, rosin, caustic soda, borax, beef-gall, spirits of turpentine, benzine, spirits of ammonia, alcohol, and oil mirbane, combined in the proportions substantially as specified.

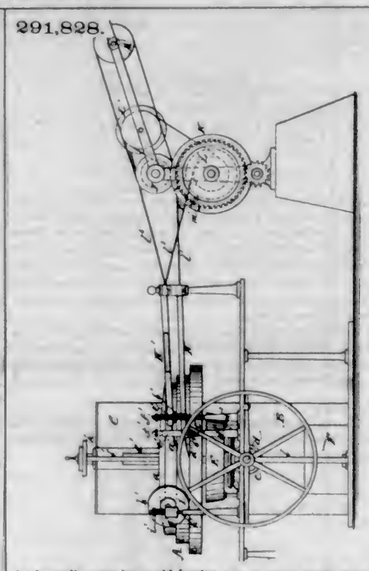
291,828. MACHINE FOR MAKING WIRE OR OTHER SOLDER. EDMUND L. YOUNG and LUCIUS DYER, Millbridge, Me. Filed Oct. 5, 1883. (Model.)

Claim.—1. In wire-solder machines, the combination, with a round melting-chamber, C, of a side chamber, C', tubes D D', and spout *g*, arranged as shown and described.

2. In apparatus for running solder, the regulating discharge-tubes D D' for the molten solder, or either of them, constructed of an outer straining-tube, *k*, receiving and discharge nozzle *l m*, and a hollow screw-valve, *n*, essentially as shown and described.

3. In apparatus for running solder wire, the combination, with a

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horizontally-rotating mold having one or more upper exposed grooves in or around its rim, of one or more knives, *a'*, and conductors H or H', for picking up and passing off the wire from the mold, and one or more spring-pressure rollers, I, for bearing down on the wire in the mold in proximity to the knife or knives, substantially as specified.

4. In combination with the horizontally-rotating mold or pan A, having one or more upper exposed grooves, *f*, in or around its rim, one or more conductors, H or H', each fitted with a knife or knives at its receiving end and constructed to rise and fall at said end, and spring-adjusting means for giving an easy contact of the knife or knives with the bottom of the groove or grooves in the mold, and for relieving the knife or knives from such contact when required, substantially as specified.

5. The combination of the posts *d'*, the springs *c'*, the sleeve-arms *b'*, and adjusting-nut *f'*, with the raising and lowering conductor H or H', having an attached knife or knives, *a'*, and the horizontally-rotating mold or pan A, having one or more upper exposed grooves in or around its rim, essentially as and for the purposes herein set forth.

6. In apparatus for running solder wire, the horizontally-rotating rim-flanged pan A, adapted to hold water, having a central upwardly-projecting boss on its bottom for reception of its shaft, an overflow-pipe, *q*, and a series of upper exposed grooves, *f*, in its flanges *s*, substantially as specified.

7. In apparatus for running solder wire, the combination, with a rotating mold and means for picking up and passing off the molded wire, of the rolls J K, having attached knives or cutters *m'*, and means for throwing said knives in and out of action during the rotation of the rolls for cutting the wire or wires into measured lengths, essentially as described.

8. The combination, with the wire-delivering rolls J K, of the lever-knives *m'*, arranged within recesses in the sides of the lower rolls, K, the springs *n'*, and the rollers or stops *o'*, substantially as specified.

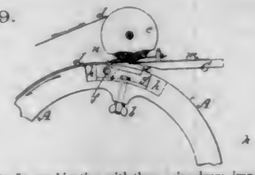
9. In apparatus for making solder wire, the combination, with the rotating grooved mold or pan A, and devices for passing off the wire therefrom, of one or more take-up reels, L or L', and means for driving the same by friction, with provision for slipping as the roll of wire increases in diameter on the reels, and whereby undue strain is taken off the solder wire, essentially as described.

10. In take-up devices of apparatus for casting solder wire, the combination, in a take-up reel, L or L', of the sectionally-constructed and concentrically-arranged body parts d^3 e^3, having the reel-heads respectively attached to them, and a fastening device for holding said sections in place, substantially as and for the purpose herein set forth.

11. The combination, in a take-up reel for the wire in an apparatus for making solder wire, of the concentric body parts d^3 e^3, having the reel-heads respectively attached to them, the spring-catch f^3, the friction-producing spring b^3, and adjusting-nut c^3, substantially as and for the purposes herein described.

291,829. PAPER-FEEDING DEVICE. JAMES ARKELL, Canajoharie, N. Y., assignor to Arkell & Smiths, same place. Filed July 21, 1883. (No model.)

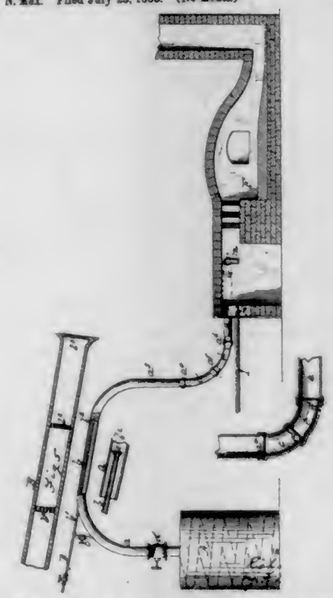
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Claim.—1. In combination with the carrier-drum, impression-cylinder, or equivalent device of a bag-bottoming machine, a paper-folder, printing-press, or other analogous machine, and the carrier-tapes coacting with said drum or its equivalent, one or more sets of adjustable spring fingers or feeders, *e*, or their described equivalents, adapted to press the leading end of the blank to be carried against the carrier-tapes, and to cause the said blanks to be carried along with the drum, tapes, and spring-feeders, substantially as set forth.

2. In combination with the carrier-drum and carrier-tapes of a machine similar or analogous in these parts to that shown, spring-feeder devices that are adapted to be set or adjusted so as to act at different points circumferentially in the periphery of the drum, as and for the purpose set forth.

291,830. HYDROCARBON-FURNACE. RICHARD B. AVERY, Washington, D. C., assignor of one-fourth to Dewitt Stearns, Albuquerque, N. Mex. Filed July 23, 1883. (No modal.)



Claim.—1. In devices for generating hydrocarbon vapors and gas, the combination, with a superheated-steam pipe, of an oil-pipe arranged therein and delivering thereinto, said oil-pipe provided with a series of perforated diaphragms, substantially as and for the purpose specified.

2. In a device for generating hydrocarbon vapors and gas, the combination, with a superheated-steam pipe, of an oil-pipe arranged therein and delivering thereinto, said oil-pipe having a series of perforated diaphragms of gradually-decreasing mesh, substantially as and for the purposes specified.

3. In a device for generating hydrocarbon vapors and gas, the combination of a superheated-steam pipe, having one or more perforated diaphragms, and an oil-pipe arranged within and delivering into the superheated-steam pipe, said oil-pipe also provided with one or more perforated diaphragms, substantially as and for the purposes specified.

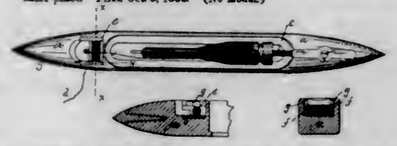
4. In a device for generating hydrocarbon vapors and gas, the combination, with a superheated-steam pipe having a series of perforated diaphragms of gradually-decreasing mesh, of an oil-pipe arranged therein and delivering thereinto, said oil-pipe also having a series of perforated diaphragms of gradually-decreasing mesh, substantially as and for the purposes specified.

5. In a device for generating hydrocarbon gas or vapors, the combination, with a superheated-steam pipe having one or more perforated diaphragms, of an oil-pipe arranged within and delivering into the superheated-steam pipe, substantially as and for the purposes specified.

6. In a device for generating hydrocarbon vapors and gas, the combination, with a superheated-steam pipe, of an oil-pipe arranged within and delivering into the superheated-steam pipe, and a branch pipe which connects the superheated-steam pipe with the oil-pipe, substantially as and for the purposes specified.

7. The combination, with a burner for hydrocarbon vapors and gas, of a fan-shaped or fish-tail air-blast nozzle having a series of perforations, or a gauze diaphragm, which divides the air-blast into a series of fine jets, substantially as and for the purposes specified.

291,831. TENSION-REGULATING DEVICE FOR LOOM-SHUTTLES. GEORGE BALDWIN, Buckland, Conn., assignor of one-half to Thomas Clark, same place. Filed Oct. 5, 1882. (No modal.)



Claim.—1. A hollow tension-roll provided with an opening for the insertion and removal of weights, in combination with a shuttle-body having sockets for the reception of the roll, substantially as and for the purposes set forth.

2. The hollow gravity tension-roll provided with a removable trunnion, substantially as described, and for the purpose set forth.

291,832. VEHICLE-SPRING. CHRISTIAN W. BARRINGER, Evansville, Ind., assignor of one-half to John H. Meeker, same place. Filed Nov. 3, 1882. (No modal.)



Claim.—The combination, with the side bar, A, its hangers or shackles *h*, and slide bearing-plate B, of the pair of double-curved oblique springs D D′, having the eccentric band-connections *k l*, engaging the plate B, and being connected to the shackles or hangers by their opposite upper ends, substantially as specified.

291,833. STILL. PETER N. BARDO, Newport, Ky., assignor to the Bourbon Copper and Brass Works, Cincinnati, Ohio. Filed July 9, 1883. (No model.)



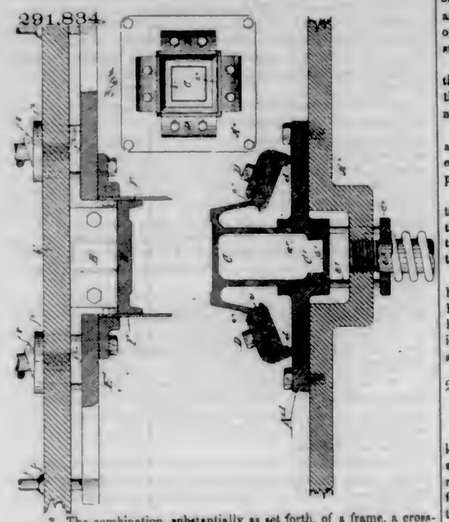
Claim.—The herein-described boiling or vapor pipe, consisting of the tube having the laterally-projecting flange at or near its middle, on which are arranged the projecting lugs, and having the screw-threaded portion, the bonnet or cap secured to the said projecting lugs and arranged over the upper end of the tube, and the clamping-nut working upon the screw-threaded portion of the tube, the whole applied to the bottoms or partitions of the still-chambers in the manner set forth.

291,834. MACHINE FOR WIRING SHEET-METAL PANS. CHAS. F. BEAMAN, Chicago, Ill., assignor to the Wellsville Plate and Sheet Iron Company, Wellsville, Ohio. Filed Oct. 29, 1883. (No model.)

Claim.—1. The combination, substantially as set forth, of a fixed table or bed, a supporting-die which is movable therein, said die having a longitudinal groove or recess on each of its lower edges, and a segmental bearing below and exterior thereto, and a series of swage-blocks or formers, each having a turning-edge on one of its sides, and a socket or segmental recess, fitting one of the bearings of the die, below and in advance of said turning-edge, and having on its opposite side a bearing or support adapted to rest upon the bed-plate.

2. The combination, substantially as set forth, of a reciprocating cross-head or platen, a fixed bed-plate, a supporting-die fitted to traverse in a guide in the bed-plate, and to be moved in one direction by the platen, a spring which imparts movement to the supporting-die in the opposite direction, and a series of swage-blocks or formers pivoted at one end to the supporting-die, the opposite end resting freely on the fixed table, said swage-blocks having turning-edges which are alternately advanced toward and retracted from the sides of the supporting-die by the movements thereof in opposite directions, respectively.

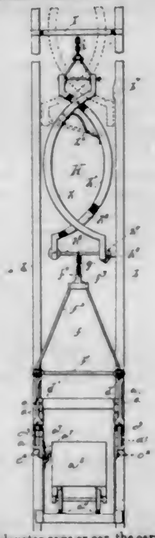
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3. The combination, substantially as set forth, of a frame, a cross-head or platen reciprocating therein, a series of holding plates or fingers connected to a plate having a limited degree of traverse upon said platen, a spring bearing at one end against an abutment fixed upon the platen, and at the other against the plate which carries the fingers, a rod which is secured to said plate and passes freely through a bearing on the platen, said rod having a collar or projection which limits its traverse in the direction induced by the spring, and a stop-arm fixed upon the frame and adapted to abut against a nut or projection on the rod.

4. The combination, substantially as set forth, of a swage-block or former having a turning-edge on one of its sides and a segmental recess below said edge, and a carrier-block having a recess adjoining and of similar curvature to that of the swage-block at one side, and a lower bearing or support at the other.

291,835. ELEVATOR. LOUIS BEROUD and EMMA WALSH, Elizabeth, N. J.; said Walsh assignor of one-half her right to Henry Ahrens, same place. Filed Apr. 30, 1883. (No model.)



Claim.—1. In an elevator cage or car, the carrying-frame and locking device, consisting of the hoisting-bail arranged above the cage, the series of depending rods having their upper ends pivoted to the hoisting-bail and their lower ends extended downward along the sides of cage, and pivoted to the arms of the safety-dogs, and the safety-dogs pivoted on gudgeons fixed to the cage and supporting the weight of the latter, substantially as and for the purposes set forth.

2. The combination of the elevator-car, the hoisting mechanism, the guy-rods, the pawls *c*, connecting-rods *e*, bail *f*, and pins *d′*, fixed on the side of the elevator-car in position to guide the descent of the connecting-rods *e*, substantially as and for the purposes set forth.

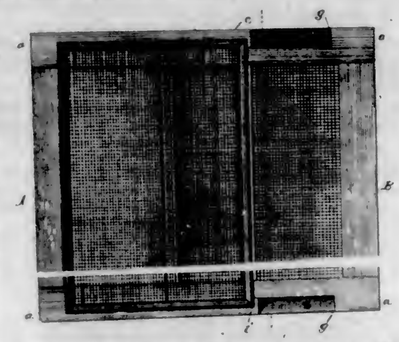
3. The combination of an open-ended elevator-car, a truck, a^2, and a rod, a^3, journaled in the sides of the car and provided on its opposite ends with cams a^4, adapted to operate substantially as and for the purposes set forth.

4. In an elevator, the combination of the elevator-car, the connection H, consisting of bars *h h′*, cross-bar h^3, and key h^4, and connecting the elevator-car and the hoisting mechanism, the guy-rod provided with trip b^2, and the compression-ring I, all arranged and operating substantially as set forth.

5. In an elevator, the combination, with the hoisting-chain and the bail supporting the elevator-car, of an interposed detaching mechanism, H, having the hoisting-chain secured to its upper end and the bail of the hoisting-car secured to its lower end, and means whereby the mechanism H may be operated and the car-bail detached therefrom, substantially as set forth.

291,836. WINDOW-SCREEN. GEO. W. BOYNTON, West Oakland, Cal., assignor of one-half to Joseph H. Baker, same place. Filed Oct. 10, 1883. (No modal.)

Brief.—A window-screen consisting of two frames, the upper and lower rails of which are rectangularly recessed in parts diagonally opposite in such a manner that the rail of one frame is the complement of the rail of the other, the two rails where they lap conforming in bulk and figure to the non-recessed part of either rail. The inner or free ends of the slide-rails are connected by a staple.



Claim.—The window-screen consisting of the sections A and B, having the upper and lower rails slotted and recessed, as shown, and provided with the shoulders *g*, the staples *e*, secured in the free ends of the recessed slide-rails to travel in the slots *d*, and the stop-rails E, with the wire connected to sections, substantially as specified.

291,837. WELL-DRILLING MACHINE. WM. E. BROWN, Elbridge, N. Y. Filed May 16, 1883. (No model.)

Claim.—1. In combination with the supporting-frame and the shears or mast hinged to the top of said frame and extended to the base thereof, as shown, a windlass pivoted on the frame, and a rope connecting the foot of the mast with the windlass for hoisting and lowering the mast, substantially as described and shown.

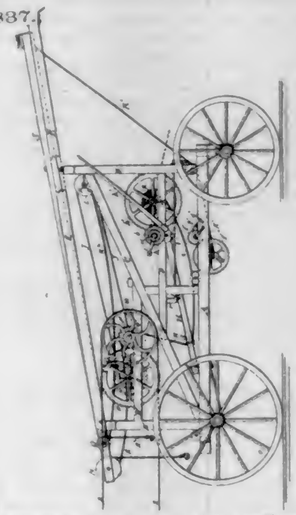
2. The combination of the base A, provided with the upright frames B B′, braces C C, and girders D D′, the shears S, hinged on the frame B, the braces E, hinged on the side of the shears, the shaft F, provided with the pinion *f* and crank *g*, the drum or shaft F′, provided with the gear *f′*, and the rope R′, wound on said drum and connected with the foot of the shears, substantially as described and shown.

3. In combination with the shears S, rope-drum *a′*, and cam G, the lever H, pivoted in proximity to and nearly in the same horizontal plane with the said rope-drum, substantially as described, and for the purpose set forth.

4. The lever H, formed with a longitudinal slot, the sheave *d*, arranged in said slot, and the roller *e*, pivoted on the end of the lever, in combination with the rope-drum *a′*, cam G, and shears S, substantially as described and shown.

5. In combination with the rope-drum *a′*, the gears *b′*, counter-shaft *a*, pinions *b*, crank *c*, brake-pulley A, and brake-lever *h′*, substantially as shown and set forth.

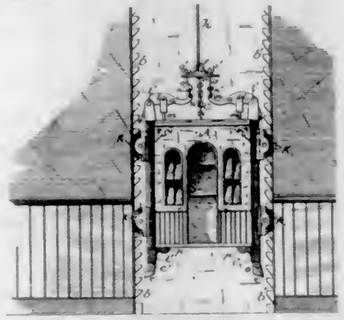
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6. In combination with the rope-drum a', the gears b', counter shaft a, pinions b, pulley i, ratchet k, dog k', brake-pulley h, and brake-lever h', all substantially as described and shown.

7 In combination with the driving-belt J, the slush-pump drum K, provided with the pulley L, the box M', having the elongated bearing l, and a lever for shifting the shaft of the drum K in said bearing, substantially as described and shown, for the purpose set forth.

291,838. SAFETY AUTOMATIC STOP ATTACHMENT FOR ELEVATORS. OSCAR BRODGER, Washington, D. C. Filed Nov. 13, 1883. (No model.)



Claim.—1. Automatic stop mechanism consisting of an upper and lower combined catch-dog and lever-arm arranged in and secured by suitable journal-bearings on each side of the elevator-car, connecting-rods and tension-springs, also secured by and operated in suitable bearings, as shown, and the whole attached to and held in abeyance by a common hoisting-cable, and so arranged that in event of being released, through accident or otherwise, the catch-dogs will severally and simultaneously be thrown automatically into position for arresting the descent of the elevator-car, substantially as shown and described.

2. Automatic stop mechanism for arresting the descent of elevator-cars, in the event of accident, comprising sets of combined upper and lower lever-arms and catch-dogs arranged in and secured by suitable journal-bearings on each side of the elevator-car, and united by connecting-rods, and actuated by tension-springs, as shown, the whole attached to and held in abeyance by the hoisting-cable and the catch-dogs, so constructed and arranged, on being set free, as to engage with toothed racks on each side, as indicated, substantially as shown and pointed out.

3. In an automatic safety stop mechanism for arresting the descent of elevator-cars, catch-dogs a and c and a' and c', connecting-rods m, spiral springs q, spring-rests m' and r, connecting-links n, toggle o, and cross-beam B, constructed and arranged substantially as shown and described.

4. In an automatic safety stop mechanism for arresting the descent of elevator-cars, catch-dogs a and c and a' and c', connecting-rods m, spiral springs q, spring-rests m' and r, connecting-links n, toggle o, and cross-beam B, in combination with the elevator-car and connecting-link cable C, the whole constructed and arranged substantially as shown and described.

5. In an automatic safety stop mechanism for arresting the descent of elevator-cars, catch-dogs a and c and a' and c', connecting-rods m, spiral springs q, spring-rests m' and r, connecting-links n, toggle o, and cross-beam B, in combination with toothed racks b b' and ways g, constructed and arranged substantially as shown and described.

6. In an automatic safety stop mechanism for arresting the descent of elevator-cars, in combination, catch-dogs c c' and bearings i' i' on the lower edges, catch-dogs a a' and bearings on the upper edge of an elevator-car, connecting-rods m, spiral springs q q, spring-seats m' r, links n, toggles o, adjusting-screws o' o', cross-beam B, suspending-cable A, link-cable C, and elevator-car, the whole constructed and arranged substantially as shown and described.

7. The method of suspending elevator-cars by a free-link cable or chain from a suspended cross-beam, substantially as shown and described.

8. The method of mounting, connecting, and operating the catch-dogs in a device for automatically arresting the descent of elevator-cars, substantially as shown and described.

9. The truncated catch-dog a, continued into a long curved arm, forming an obtuse angle therewith, and provided with suitable journal-bearings for making necessary connections, and so constructed as to receive the shock of a fall in a line nearly vertical to its axis, substantially as shown and described.

10. The catch-dog c, having a short lever-arm, and provided with suitable journal-bearings for making connections, and constructed to receive the shock of a fall at nearly a vertical line, substantially as shown and described.

11. The connecting-rod m, having a spring-seat, m', and provided with a screw, m^2, at one end, by and through which the relative position of the several sets of catch-dogs can be regulated, substantially as shown and described.

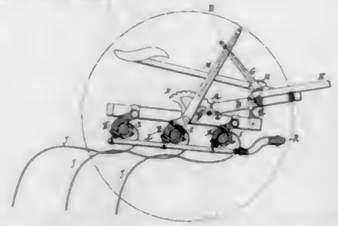
12. Cross-beam B, having toggle-connections f f', for suspending and hoisting elevator-cars, and with toggle-connections o, provided with adjusting-screws o', for engaging and holding neutral safety catch-dogs, as shown, substantially as and for the purpose set forth.

291,839. LEAD AND CRAYON HOLDER. WILLIAM L. BUTTERFIELD, Providence, R. I., assignor to Henry Berolzheimer, New York, N. Y. Filed Oct. 1, 1883. (No model.)



Claim.—The combination, in a lead and crayon holder, with the lead-grasping jaws, of a movable clamping-sleeve, a spring which normally holds the sleeve in a position where it will not clamp the jaws upon the lead, and a detent by which the sleeve can be locked in clamping position on said jaws against the stress of its controlling-spring, substantially as hereinbefore set forth.

291,840. SPRING-TOOTH HARROW. EBEN C. COMSTOCK, Springport, Mich., assignor to himself and Charles J. Comstock, same place. Filed June 9, 1883. (No model.)



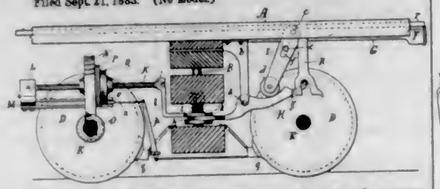
Claim.—1. In a spring-tooth harrow, and in combination with a main frame supported on a main shaft having stub-axles, a supplemental tilting frame carrying a series of pivoted brackets, having rolling heads provided with spring-teeth, and connected by rods, as L, having pivoted connections with the draft, means upon the supplemental frame for manipulating said roller-heads simultaneously, and means upon the main frame for tilting the supplemental frame to relieve the teeth from trash, as set forth.

2. The combination, with the main frame B and main shaft A, having stub-axles C, of the supplemental frame F, having rolling heads I, with spring-teeth J, the clips K, connecting-rods L, lever M, and toothed segment N, as and for the purposes set forth.

3. The combination, with the main frame B and supplemental frame F, having rolling heads I, with spring-teeth J, as shown, of the clips K, connecting-rods L, lever M, the lever G, link d, and toothed segments H and N, as and for the purposes set forth.

4. In combination with the supplemental frame F, rolling heads I, connecting-rods L, and lever M, the clips K, composed of the castings pivoted at one end to the frame and at the other to the said rods L, the U-shaped bolts g, nuts h, and semicircular bearing-plates i, as and for the purposes set forth.

291,841. CAR-BRAKE. SIMON FAIRMAN, Baltimore, Md., assignor of one-half to John G. Mitchell and William S. Taylor, both of same place. Filed Sept. 21, 1883. (No model.)

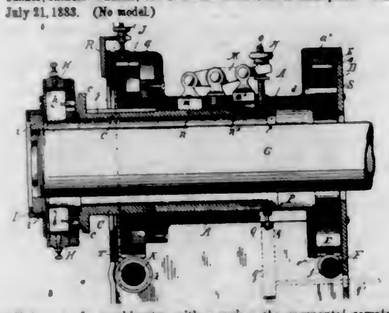


Claim.—1. In a car-brake, the combination of a car-axle, a worm secured to the said axle, an independent shaft carrying a worm-wheel and susceptible of being moved toward and from the worm, a sheave on the independent shaft, a chain to connect the said sheave with the ordinary brake mechanism, a longitudinally-moving draw-bar, and means to communicate movement from the said draw-bar to the said independent shaft and its attachments, substantially as specified.

2. In a car-brake, the combination of a car-axle, a worm secured to the said axle, an independent shaft carrying a worm-wheel with teeth on a portion only of its circumference, and adapted to have movement toward and from the said worm, a sheave on the said independent shaft, a chain to connect the said sheave with the ordinary brake mechanism, a longitudinally-moving draw-bar, and means to communicate movement from the said draw-bar to the said independent shaft and its attachments, substantially as specified.

3. The vibratory shaft K, carrying the worm-wheel N, pivoted to a part of the collar k on the swivel-bolt B, combined with mechanism which receives its movement from the longitudinal motion of the draw-bar, substantially as specified.

291,842. APPARATUS FOR SCREW-THREADING TUBES. HERMANN BERNHARD FELDMANN, Philadelphia, Pa., assignor to Stephen P. M. Tasker, Charles Wheeler, and T. Wistar Brown, all of same place. Filed July 21, 1883. (No model.)



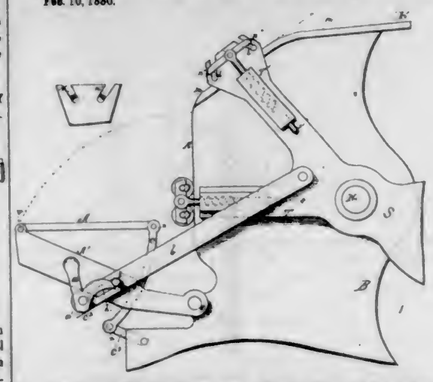
Claim.—1. In combination with a casing, the segmental serrated and toothed cams, the rack-provided annulus, and means for imparting a rotary movement to said annulus for the actuation of the cams, substantially as set forth.

2. In combination with the casing and with the die-carrying sleeve provided with circumferential threads on its exterior circumference, the segmental nuts, the pivoted balance-lever, and means for operating said pivoted balance-lever, whereby either of said nuts can be thrown into engagement with the threads on the sleeve, or both retained out of engagement, substantially as set forth.

3. In an apparatus for threading rods or tubes, the combination, with the casing, the die-carrying sleeve provided with circumferential threads on its exterior circumference, the segmental nuts, and means for throwing either of said nuts into engagement with the threads on the sleeve, or for retaining them both out of engagement, of the yoke and means for occasioning the longitudinal movement of said yoke, whereby through the instrumentality of the segmental nuts the die-carrying sleeve can be slowly moved, and through the instrumentality of the yoke rapidly moved, substantially as set forth.

4. As a device for operating the segmental nuts, the pivoted balance-lever, in combination with the thumb-nut and stem upon the casing.

291,843. PRINTING-PRESS. MERRITT GALLY, New York, N. Y. Filed Feb. 10, 1880.



Claim.—1. The combination, in a printing-press, of a distributing-table in a different plane from the plane of the bed, of ink-distributing rolls, arranged, substantially as described, to move over the table in lines oblique to the table and oblique to each other, and suitable operative mechanism, substantially as described.

2. The combination, with the distributing-table of a printing-press, of ink-distributing rolls which move over a part of the table in lines parallel to the edge thereof, and over part of the table in lines oblique to the edge thereof, and suitable operative mechanism, substantially as described.

3. The combination, with the distributing-table of a printing-press, having its surface in more than one plane, of ink-distributing rolls which move over said table in oblique lines, and suitable operative mechanism, substantially as described.

4. The combination, with the distributing-table of a printing-press made up of more than one plane, of ink-distributing rolls which move over the plane surfaces in an oblique direction, but which pass over the line of junction of said planes in a line parallel therewith, and suitable operative mechanism, substantially as set forth.

5. The combination, with an ink-distributing-table made in a plurality of planes, as described, of the rocking-frame carrying ink-distributing rolls, said rocking-frame being provided with inclined slots, the slots in one end of the frame being inclined in the opposite direction from those in the other end, substantially as set forth.

6. The combination, with the distributing-table in a plurality of planes, the rocking-frame, and the ink-distributing rolls carried by said frame in slots inclined as described, of the form-inking rolls connected with said frame so as to pass upon a portion of the distributing-table, substantially as described.

7. The combination, with the roller-frame, a movable part of the press, and mechanism substantially as described connecting said parts, of an adjustable connection, substantially such as described, whereby the roller-frame may be made to move a greater or lesser distance with each movement of the moving part, substantially as set forth.

8. The combination, with the roller-frame, of the draw-bar connecting said frame to the platen, a slot and stud connection between the bar and platen, and a stop to open or partially close the slot, as set forth.

9. The combination, with the pivoted or hinged platen, of a tympan hinged thereto at the front or upper edge thereof, and connected at the other edge by link mechanism to the frame of the press, as set forth.

10. The combination, with the hinged platen A', of the tympan A, pivoted thereto at v, the link c, pivoted to the tympan at x, and the link c^2, pivoted to link c and to the frame, all substantially as described.

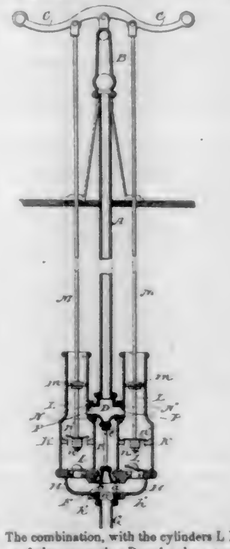
291,844. POSITIVE SHUTTLE-MOTION FOR LOOMS. HARVEY H. GREENMAN, Cortlandville, N. Y. Filed Feb. 14, 1882. (No model.)

Claim.—The shuttle-body A, having recesses a', and the reciprocating arms C C', having spring-catches D, provided with hooks d d^2, combined with the shifting trigger-frame B, as and for the purposes specified.

291,844.



291,845. FORCE-PUMP. FERDINAND GROTE, Evansville, Ind. Filed Sept. 24, 1883. (No model.)



Claim.—1. The combination, with the cylinders L L, having bosses N N, and ears o o, of the connection D and rods p, as and for the purpose set forth

2. The combination, with the standard A, connection D, and cylinders L L and K K, of the screw-threaded rod E, elbows H, and casting F, substantially as set forth.

3. The combination, with the cylinders K K, having lugs *t t*, of the elbows H H, having lugs *k k* and A' A', and the casting F and bolts V and A, and their nuts, as and for the purpose set forth.

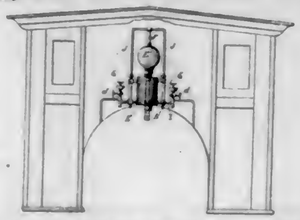
291,846. GUARD FOR HARNESS-BUCKLES. FRANK G. HARRISON, Newburyport, Mass., assignor of one-half to Richard S. Dodge and Paul Adams, both of same place. Filed Sept. 4, 1883. (No model.)



Claim.—1. A buckle-guard consisting of a bulged guard-plate having a loop at one end and a transverse slot at the other end, and a perforated tongue-securing plate having a loop at one end, perforated at the other end, and adapted to be inserted through the slot in the guard-plate, as and for the purpose shown and set forth.

2. The combination of two straps, a buckle, a bulged guard-plate having a loop at one end and a transverse slot at the other end, and a tongue-securing plate having a loop at one end, a perforation in the other end, and adapted to pass through the slot in the guard-plate and into the buckle, fitting with its perforation over the tongue of the buckle, as and for the purpose shown and set forth.

291,847. LUBRICATOR FOR LOCOMOTIVES. CLARENCE B. HODGES and CHARLES H. HODGES, Detroit, Mich., assignors of one-half to Henry C. Hodges and Charles C. Hodges, both of same place. Filed Nov. 7, 1883. (No model.)



Claim.—1. In a locomotive-lubricator, the combination, with the visible feed-chamber G and the condensing-chamber E', of an exterior steam-pipe connection between the upper portion of the condenser, the top of the visible feed-chamber, and the steam-space of the locomotive-boiler, substantially as described.

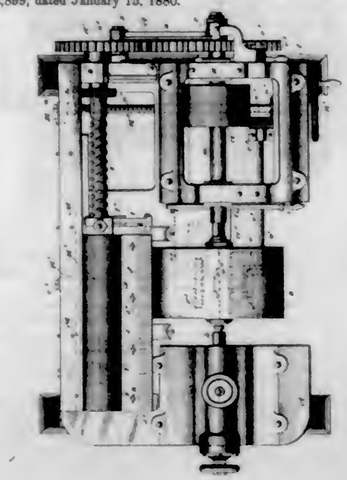
2. The combination, with a locomotive, of a lubricator having a steam-inlet pipe connected with the steam-space of the boiler, an oil-exit pipe leading from the top of the visible feed-chamber into the tallow-pipes, and a steam-conduit connecting the top of the visible feed-chamber with the steam-inlet pipe or steam-space above the water-level of the condenser, substantially as described.

3. A lubricator combining the following elements: first, an oil-reservoir, a condenser, a steam-inlet pipe, a visible feed-chamber, in which the oil rises through the water, a conduit connecting the top of this chamber with the steam-inlet or steam-space above the water-level of the condenser, an oil-exit pipe leading from the top of the feed-chamber, and a throttling-valve located in the said oil-exit pipe, substantially as described.

4. In a locomotive-lubricator, the combination, with the condenser E' and visible feed-chamber G, of an exterior steam-pipe connection between the upper end of the visible feed-chamber and the steam-space of the boiler, and a connection between the upper part of the condenser and the said steam-pipe connection, substantially as described.

291,848. MACHINE FOR MAKING WOOD FIBER. PHILIP H. HOLMES, Gardiner, Me. Filed Nov. 26, 1883. (No model.)

Brief.—Improvement on the invention in Letters Patent No. 228,899, dated January 15, 1880.



Claim.—1. In a machine for making wood fiber, the combination, with devices for supporting and rotating a block or pieces of wood, of a knife arranged to be moved and sever the fiber by a drawing cut, substantially as set forth.

2. In a machine for making wood fiber, the combination, with devices for supporting and rotating a block or pieces of wood, of a series of knives and suitable devices for reciprocating said knives and severing the fiber by a drawing cut, substantially as set forth.

3. In a machine for making wood fiber, the combination, with devices for supporting and rotating a block or pieces of wood, of a series of knives and devices for feeding the knives to their work and for reciprocating them and severing the fiber by a drawing cut, substantially as set forth.

4. In a machine for making wood fiber, the combination, with devices for supporting and rotating a block or pieces of wood, of a blade provided with grooves that subdivide the blade into a series of knives, substantially as set forth.

5. In a machine for making wood fiber, the combination, with devices for holding a block of wood, of a series of knives adapted to convert the wood into fiber, and means for sharpening the knives while the machine is in operation, substantially as set forth.

6. In a machine for making wood fiber, the combination, with devices for supporting and rotating a block or pieces of wood, of a series of knives, devices to feed and reciprocate said knives, and means for sharpening the knives while the machine is in operation, substantially as set forth.

7. In a machine for making wood fiber, the combination, with devices for rotating a block or pieces of wood, of reciprocating knives, a reciprocating knife-sharpener, and means for adjusting the angle of inclination of said sharpener, substantially as set forth.

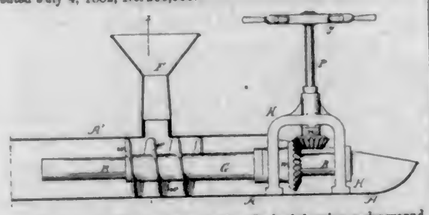
8. In a machine for making wood fiber, the combination, with devices for rotating a block or pieces of wood, of reciprocating knives, a reciprocating slide having a knife-sharpener removably secured thereto, and means for varying the angle of inclination of said slide, substantially as set forth.

9. In a machine for making wood fiber, the combination, with devices for rotating a block or pieces of wood, of reciprocating knives and reciprocating knife-sharpener, located at opposite sides of the transverse center of said knives, substantially as set forth.

10. In a machine for making wood fiber, the combination, with devices for rotating a block or pieces of wood, of reciprocating knives for severing the fiber by a drawing cut and a trough for conveying away said fibers, substantially as set forth.

291,849. MODE OF AND MECHANISM FOR FORMING UNDERGROUND CONDUITS. HENRY HOWSON, Philadelphia, Pa., assignor to Calvin Detrick, New York, N. Y., and Ephraim Ward Bond, Springfield, Mass. Filed Nov. 26, 1883. (No model.)

Brief.—Improvement on the invention of Wm. M. Campbell, patented July 4, 1882, No. 260,533.



Claim.—1. The mode herein described of forming underground conduits, the said mode consisting in the continuous packing of cement round a former within a tube, which retreats as the continuous packing proceeds, substantially as set forth.

2. A conduit-making machine in which the following elements are combined, namely: first, a base, A, tube A', and hopper communicating therewith; second, a shaft carried by the base, and having a spiral rib or screw-thread adapted to the interior of the tube; third, a former round which the cement is packed; and, fourth, mechanism for operating the said screw-shaft, all substantially as set forth.

291,850. STORAGE-BATTERY. EDWD. R. KNOWLES, Brooklyn, N. Y., assignor of one-half to Byron A. Brooks, same place. Filed June 2, 1882. (No model.)

Claim.—1. In a storage-battery, the combination of positive electrodes composed of alternate plates of metallic lead and compressed sponge-lead, and negative electrodes composed of alternate plates of metallic lead and compressed oxide of lead, the said plates being mechanically united by means of rivets, substantially as described.

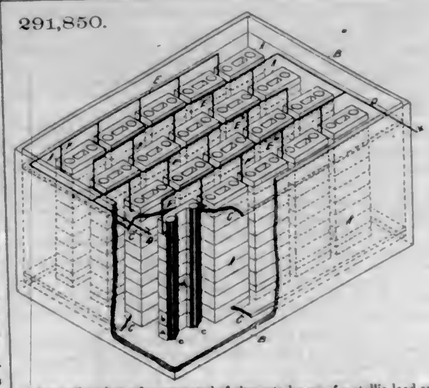
2. In a storage-battery, the combination of positive electrodes composed of alternate layers of metallic lead and compressed sponge-lead and negative electrodes composed of alternate layers of metallic lead and compressed oxide of lead, all of which, both metals and oxides, are perforated, substantially as described, for the purpose specified.

3. In a storage-battery composed of compound electrodes, the combination of rivets c c with the alternate layers of metallic lead and compressed sponge-lead, forming one electrode of the battery, and also with the alternate layers of metallic lead and compressed oxide of lead, forming the other electrode of the battery, substantially as described.

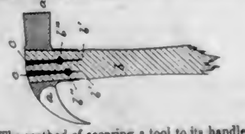
4. A storage-battery composed of compound electrodes, the positive electrodes being composed of alternate layers of metallic lead and compressed sponge-lead, and the negative electrodes being composed of alternate layers of metallic lead and compressed oxide of lead, all being immersed in the electrolytic liquid, and perforated, united, and electrically connected, substantially as described.

5. In a storage-battery consisting of a series of separate electrodes, the combination of a false bottom, C, and a cover, C', each of which is perforated to receive and support the electrodes, substantially as described.

291,850.



291,851. SECURING TOOLS TO HANDLES. DANIEL H. MURPHY, Hartford, Conn., assignor of one-half to John E. Smiledge, same place. Filed May 10, 1883. (No model.)

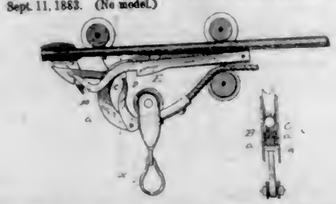


Claim.—1. The method of securing a tool to its handle, which consists in slitting the end of the handle, compressing in said slitted end a wedge of elastic material, as india-rubber, and then inserting the slitted end of the handle into the handle-socket in the tool, all substantially as described.

2. In combination, a tool having a handle-socket, a handle having a slitted end, and a wedge of elastic material compressed in said slitted end of the handle, whereby the handle is wedged in the socket in the tool, all substantially as described.

3. In combination, tool *a*, handle *b*, having the end slits, *b'*, with enlargement *b''*, and wedge *c*, of rubber or its equivalent, compressed in the slit, all substantially as described, and for the purpose set forth.

291,852. HAY-CARRIER. PHILIP A. MYERS, Ashland, Ohio. Filed Sept. 11, 1883. (No model.)



Claim.—1. A hay-carrier consisting of two bent side bars properly connected with hangers and supporting-sheaves, a bell-crank lever pivoted on the bent ends of the bars and connected to the hoisting-rope passing over a pulley on the carrier, a latch adapted to catch over a detent on the way, and a dog to hold the bell-crank lever, the latch and dog

being constructed to operate in connection with the detent, substantially as described.

2. The combination, in a hay-carrier, of a latch and dog pivoted within the carrier, a bell-crank lever connected to the hoisting-rope and having an arm adapted to operate a latch and dog and be held by the dog, and a pulley for the hoisting-rope adapted to throw the lever-arm against the dog and latch, all substantially as described.

3. The combination, in a hay-carrier, of a bell-crank lever connected to the hoisting-rope, which is arranged to run over an elevated pulley, 5, an arm of the bell-crank lever, and a dog, E, fitted to be lifted by the arm and by the detent on the way, all substantially as described.

4. The combination, in a hay-carrier, of hoisting devices and a dog, E, adapted to be lifted by the hoisting devices, and a detent adapted to raise the dog, all substantially as described.

5. In a hay-carrier, the latch and dog pivoted between the bars of the carrier, combined with a detent, D, and adapted to operate in connection with the detent, substantially as described.

6. The combination, with the described hay-carrier, of the latch B and dog E, both having inclines, whereby it is lifted by the hoisting devices and by the detent, all substantially as described.

7. The combination of the latch and dog with the hay-carrier supported by sheaves on a track, and the detent D, having semicircular bar, all substantially as described.

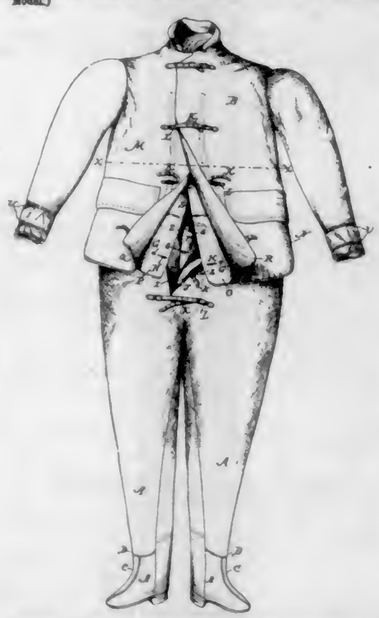
8. In combination with the latch and dog of the described carrier, the separating-strap F, substantially as described.

291,853. TORPEDO. CONRAD PILGRIM, East New York, N. Y. Filed Nov. 19, 1883. (No model.)



Claim.—A torpedo having the fulminate located between suitable wrappers separate from the sand or gravel filling, the whole being infolded and hermetically inclosed in a water-proof wrapper, substantially as and for the purpose specified.

291,854. RUBBER CLOTHING. GEO. PLATT, Butte, Mont., assignor of one-half to Patrick A. Largey, same place. Filed July 26, 1883. (No model.)

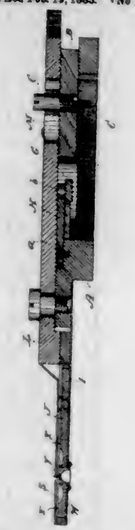


Claim.—1. The combination of the boots and trousers made in one, and having the inner and outer sets of flies, the inner set being secured to the inside of the trousers and the outer set being formed integral therewith, and the coat having two sets of flies constructed in like manner with those of the trousers, and the buckles and straps arranged, as described, for closing the flies and suspending the trousers from the coat.

2. The boots and trousers made in one garment, the trousers being provided with a double fly on each side, substantially as shown, and having buckles and straps for fastening the flies.

3. The coat having a double fly on each side, and buckles and straps for fastening the flies, substantially as shown and described.

291,855. MACHINE FOR STITCHING EYELETS. CARL J. A. SJOBERG, Bridgeport, Conn. Filed Feb. 19, 1883. (No model.)



Claim.—1. In an eyelet-hole attachment or similar machine, the combination, with a jog-link and two sliding devices loosely connected therewith for actuating the feeding and oscillating mechanisms, of an adjustable lever to which said jog-link is pivoted, whereby the connections of said sliding devices relative to the pivotal point of the jog-link may be varied, substantially as set forth.

2. In an eyelet-hole attachment or similar machine, the combination, with the bed-plate, of a lever pivoted thereto, a jog-link pivoted to said lever, mechanism for operating said jog-link, a carrier-wheel for rotating the fabric, and connecting mechanism for imparting intermittent rotary motion to said carrier-wheel from said jog-link, substantially as set forth.

3. The combination, in an eyelet-hole or similar attachment for sewing-machines, of a carrier-wheel for rotating the fabric, an oscillating plate by which said wheel is carried, a sliding plate adapted to be reciprocated from the driving-shaft of the sewing-machine, and mechanism for imparting a vibratory movement to said oscillating plate and an intermittent rotary movement to said carrier-wheel from said sliding plate, substantially as shown and described.

4. In a eyelet-hole attachment for sewing-machines, the combination, with a bed-plate of an oscillating plate pivoted thereto, a carrier-wheel arranged to rotate in said oscillating plate, a sliding device adapted to be reciprocated from the driving-shaft of the sewing-machine, mechanism for imparting vibratory movements to said oscillating plate and an intermittent rotary movement to said carrier-wheel from said sliding plate, and means for varying the movements of said oscillating plate and carrier-wheel, substantially as hereinbefore set forth and described.

5. The combination, with the oscillating plate L and slotted disk mounted therein, of means for adjusting the position of said slotted disk, substantially as set forth.

6. The combination, with the bed-plate A, of the lever H, pivoted to said bed-plate, a jog-link, G, pivoted to said lever, and thus adapted to be varied in its position thereby, the sliding bar or pawl-carrier D, loosely connected to said jog-link, the oscillating plate L, and mechanism for operating the said plate L and the jog-link, substantially as set forth.

7. In an eyelet or similar machine, the carrier-wheel S, having a raised central portion on its upper face, in combination with the presser-foot X, with its under surface beveled inward, whereby the fabric may be confined between the raised central portion and the inwardly-extending bevel, substantially as set forth and described.

8. The link G, pivoted, as shown, to the lever H, and adapted to slide at its extreme ends upon pins or projections attached to the lug F and bar D, substantially as set forth and described.

9. The sliding plate B, having lug F, in combination with the link G, lever H, and bar D, substantially as set forth.

10. The sliding plate B, in combination with the adjustable jog-link G and bar D, substantially as set forth.

11. The rotary disk M, having slot N, in combination with the lever O, having slot Q and set-screw R, substantially as described.

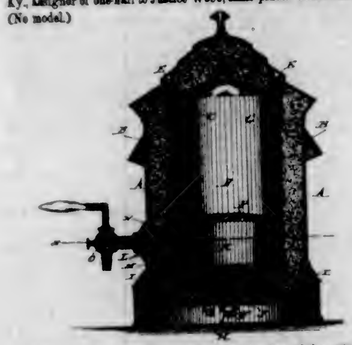
12. The combination, with the bed-plate A, the ratchet-wheel J, pivoted thereto, and the sliding pawl-carrier D, having the spring-pawl E, and adapted to reciprocate in suitable ways in said bed-plate, of the cap-plate I and the carrier-wheel S, adapted to rotate in said cap-plate, substantially as set forth.

291,856. WHIP-SOCKET. JAMES WEATHERS, Indianapolis, Ind., assignor of one-half to John A. Robbins, same place. Filed Nov. 8, 1883. (No model.)



Claim.—The combination, with a whip-socket, of a tubular extension having a threaded gland, and the threaded shank having a swiveled head and a squared or angular end to receive a key whereby it may be operated to lock and unlock the whip, substantially as specified.

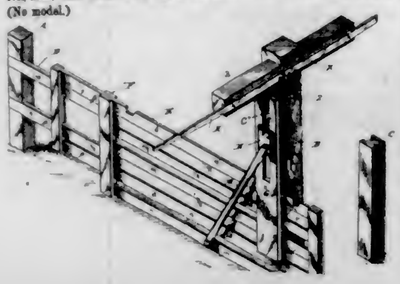
291,857. WATER-COOLER. JOHN EDWARD WELLING, Georgetown, Ky., assignor of one-half to Justice Webb, same place. Filed Oct. 31, 1883. (No model.)



Claim.—1. In a water-cooler, the combination of the outer shell or casing, A, having the downwardly-projecting inside flange, C, and annular shoulder I near its bottom, removable water-tank D, having flange E and central bottom screw, F, removable bottom G, having the central aperture, J, and nut H, constructed and combined substantially as and for the purpose shown and set forth.

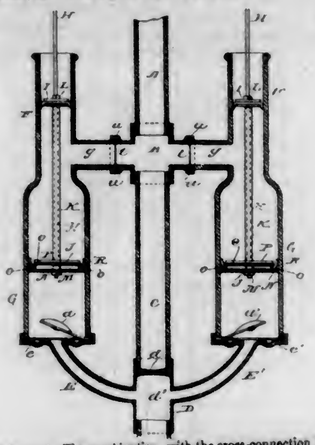
2. In a water-cooler, the combination of the outer shell or casing, A, having the downwardly-projecting inside flange, C, and annular shoulder I near its bottom, removable water-tank D, having flange E and central bottom screw, F, removable bottom G, having the central aperture, J, nut H, removable faucet-tube L, connecting tank D with the faucet in the outer shell, washers M and N, and removable nut K, all constructed and combined substantially as and for the purpose shown and set forth.

291,858. GATE. THOMAS WILLIAMS and WILLIAM A. PRESTON, Princeton, Ind.; said Williams assignor to said Preston. Filed June 5, 1883. (No model.)



Claim.—The combination of the parallel bars and their supporting-posts, the gate adapted to slide thereon, the slotted board and sliding block and bolt adapted to sit in notches in the gate, the levers connected to said block, and the pivoted rod connecting the block and gate, the whole arranged to operate substantially in the manner specified.

291,859. DOUBLE-ACTING FORCE-PUMP. ALEXANDER CRAWFORD, Evansville, Ind. Filed Sept. 20, 1883. (No model.)



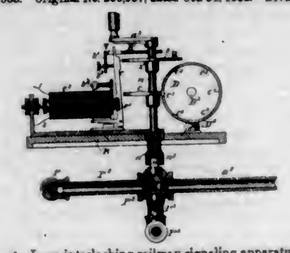
Claim.—1. The combination, with the cross-connection B, having ears T, of the cylinder F, having outlet *g*, provided with lugs S, and the taper key V, as and for the purpose set forth.

2. The combination, with the casting D, having partition *d*, and arms E E', provided with foot-pieces *e e'*, having ears e^2 e^2, of the cylinders G G, provided with ears *c c* and bolts *i i*, as and for the purpose set forth.

3. The combination, with the double cylinders F G, F G and means for operating the same, substantially as described, of the cross-connection B, the pipe C, and the casting D, having partition *d*, as and for the purposes set forth.

REISSUES.

10,434. HYDRAULIC AND ELECTRIC INTERLOCKING APPARATUS. OSCAR GARRETT, Boston, Mass., assignor, by mesne assignments, to Robert Pitcairn and George H. Christy, Trustees, Pittsburg, Pa. Filed Dec. 13, 1883. Original No. 266,957, dated Oct. 31, 1882. Division A.



Claim.—1. In an interlocking railway signaling apparatus, a rotary cylinder having in its periphery a series of two or more slots or recesses, arranged out of line with each other, both circumferentially and longitudinally, in combination with a corresponding number of rotary disks adapted to be rotated into and out of the cylinder-slots, substantially as set forth.

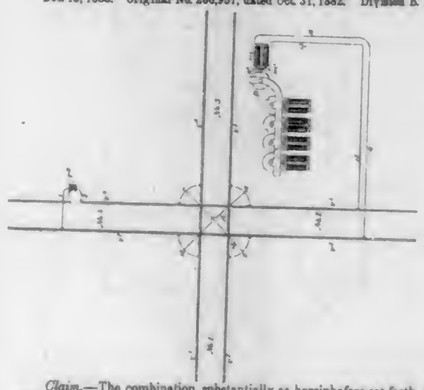
2. The combination of slotted cylinder D, two or more locking-disks, *c*, and two or more fluid-pressure cocks, P^2, substantially as set forth.

3. In combination with slotted cylinder, locking-disks, and fluid-pressure cocks, a fluid-pressure supply-pipe, P, a waste-pipe, P', and a series of two or more transmitting-pipes leading to the signals to be actuated, substantially as set forth.

4. In combination with a slotted rotating cylinder, two or more locking-disks, *c*, and cocks P^2, a notched disk, *z*, on the shaft of one or more of the disks *c*, and an armature-lever and electro-magnet for each disk *z*, the same being included in a train-actuated electric circuit, substantially as set forth.

5. A system of apparatus for railway-crossing signals, having in combination a slotted rotary cylinder, a series of two or more rotary disks to enter or clear the slots of the same, fluid-pressure cocks with pipe-connections to actuate the signals, and one or more electro-magnets, the circuit-wires of which are connected with an insulated track section or sections, substantially as set forth, whereby the short-circuiting of a track-section shall drop an armature-lever and lock the cylinder.

10,435. HYDRAULIC AND ELECTRIC INTERLOCKING APPARATUS. OSCAR GASSETT, Boston, Mass., assignor, by mesne assignments, to Robert Pitcairn and George H. Christy, Trustees, Pittsburg, Pa. Filed Dec. 13, 1883. Original No. 266,957, dated Oct. 31, 1882. Division B.



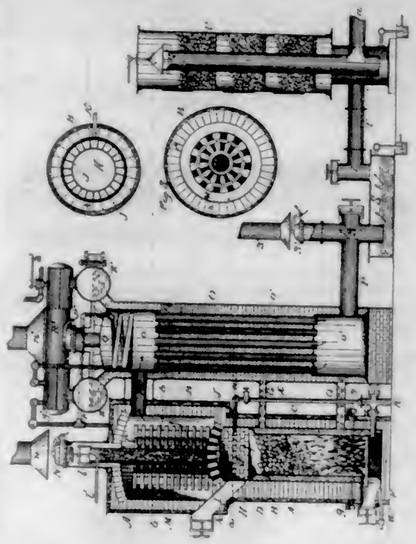
Claim.—The combination, substantially as hereinbefore set forth, of four independently-insulated sections of railway-track extending radially in different directions from a crossing or intersection, a battery having one of its poles connected with one insulated line of rails of each of said sections and its remaining pole with the other insulated line of rails of each section, and an electro-magnet having its opposite terminals connected with the respective lines of rails of each section in the same manner as the poles of the battery, whereby a continuous electric current from said battery will traverse said electro-magnet, except when diverted therefrom by the establishment of a direct electric connection between the opposite insulated lines of rails of one or more of said insulated sections.

10,436. APPARATUS FOR MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed Nov. 15, 1883. Original No. 282,399, dated July 31, 1883.

Brief.—The body of fuel in the decomposing-chamber is highly heated by combustion. The resulting gaseous products are burned and used to heat the superheating or fixing chamber and a steam-boiler. Steam is decomposed in the incandescent fuel, and the resulting water-gas is combined with oil-vapor from the oil-retort and the mixture is converted into a fixed gas in the superheater. The water-jacket of the generator is connected by circulating-pipes with the steam-boiler. Products of combustion from the generator and gas to be stored pass through the steam-boiler. A steam-superheating coil is placed in the smoke-box of the boiler in the path of the passing hot gas.

Claim.—1. In an apparatus for producing heating and illuminating gas, the generator provided with a water-jacket and supply-pipes, in combination with the superheating and fixing chamber having an eduction-pipe, and the vertical retort open at the bottom, having an oil-inlet pipe near the top, and containing suitably-disposed refractory material, whereby oil may be vaporized and the resulting vapors mixed with gas rising from the generator, and the mixture converted into a fixed gas in the fixing-chamber, substantially as set forth.

2. In an apparatus for manufacturing heating and illuminating gas, the combination of the generating-chamber, the water-jacket and the superheater or fixing-chamber, located as described, whereby the use of a



clinker-bar is avoided and the heat is economically utilized in the fixing-chamber.

3. In an apparatus for manufacturing heating and illuminating gas, the combination of the generator, the water-jacket therein, and the superheater or fixing-chamber, containing refractory material, located as described, and having an oil-vaporizer therein, for the purpose described.

4. In an apparatus for producing heating and illuminating gas, the generator provided with a water-jacket and supply-pipes for air and steam, in combination with the superheating and fixing chamber, the steam-boiler, and pipes connecting the water-space of the boiler with the water-jacket of the generator, as and for the purpose described.

5. In an apparatus for producing heating and illuminating gas, the generator provided with a water-jacket and supply-pipes for air and steam, in combination with the superheating-chamber, an oil-vaporizer, the steam-boiler, a pipe connecting the smoke-flue thereof with the superheater, and pipes connecting the water-space of the boiler with the water-jacket of the generator, as and for the purpose described.

6. In an apparatus for producing heating and illuminating gas, in combination, a gas-generating chamber provided with an inclosing water-jacket, and a steam-boiler, the smoke-flues of which at one extremity communicate with said generating-chamber and at the other extremity with a discharge-conduit, and the water-space of which communicates with said water-jacket, as and for the purpose specified.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES, &c.

DECISIONS OF THE CANADIAN PATENT OFFICE.

BARTER v. SMITH.

Decided February 15, 1877.

1. MANUFACTURE AND CONSTRUCTION WITHIN TWO YEARS.

The Canadian patent law requiring "construction or manufacture of the invention or discovery patented within two years of the date of the patent" does not contemplate forcing, on penalty of forfeiture, the patentee to actually fabricate his invention with his own capital within specific establishments, with his own tools, and to keep stock for every moment of the existence of his privilege throughout the Dominion.

2. SAME.

The real meaning of the law is that the patentee must be ready either to furnish the article himself or to give license of using on reasonable terms to any person desiring to use it. The words "carry on in Canada the construction or manufacture," with their context, mean that any citizen of the Dominion has a right to exact from the patentee a license for using the invention patented, or obtain the article patented for its use at the expiration of the two years' delay, on condition of applying to the owner for it and on payment of a fair royalty.

3. IMPORTATION.

The words "imports or causes to be imported into Canada," section 28 of the patent act of 1872, mean the importation of patented inventions to the injury of home labor, and do not cover the actual importation of a few machines as models or for the purpose of bringing the usefulness of the invention before the Canadian public.

Messrs. Edgar, Fenton & Ritchie, of Toronto, counsel for the disputant.

Messrs. Grahame, Howland & Ryerson, of Toronto, counsel for the respondent.

BEFORE the Deputy of the Minister of Agriculture.

This case is one in which a dispute is raised against the existence of three patents granted to the respondent in 1873, for alleged forfeiture on the ground of non-manufacturing, within two years of the date of each patent, and on the ground of importing after twelve months, in the terms of section 28 of the patent act of 1872.*

The petition addressed to the honorable the Minister of Agriculture (bearing date October 10, 1876) by the disputant represented that Patents No. 2,409, for a process of milling; No. 2,257, for a flour-dressing machine, and No. 2,258, also for a flour-dressing machine, granted to George Thomas Smith in 1873, are null and void, and should be so declared for non-compliance with the provisions of the twenty-eighth section of the patent act of 1872, requiring manufacturing within two years and forbidding importation after twelve months.

The petition asked that the patentee should be required, in case he should state that his inventions have been manufactured, to furnish the particulars. The petition, furthermore, alleged that importations of the said inventions had taken place on the 25th day and on the 29th day of April, 1876.

The following is a list and an analysis of the proof adduced:

DOCUMENTARY EVIDENCE.

1. The exemplification of Patent No. 2,257, granted to respondent, George Thomas Smith, for a flour-dressing machine, under date of April 18, 1873.

2. The exemplification of Patent No. 2,258, granted to respondent, for a flour-dressing machine, under date of April 18, 1873

3. The exemplification of Patent No. 2,409, granted to respondent, for a process of milling, under date of June 4, 1873.

These three patents have on their face the conditions of forfeiture prescribed by the twenty-eighth section of the patent act, hereinbefore quoted.

4, 5, 6. Three petitions, addressed to the Commissioner of Patents in the month of August, 1876, in relation to the three above-named patents, by the patentee, George Thomas Smith, representing, generally, that he has been unable to dispose of his inventions for want of demand or acceptance on the part of the public; that he believes he has fulfilled the spirit of the law, but as doubts and disputes have arisen, he prays for a further extension of delay, and for a declaration that the offering of his inventions for public use upon payment of a reasonable royalty is sufficient compliance with the statute.

(The office answer to the petition was that from the allegations of the patentee it did not appear that the said patents had been voided.)

7. A letter of Messrs. Grahame, Howland, & Ryerson, of Toronto, attorneys-at-law of the patentee, Smith, inquiring about the mode of obtaining a conclusive decision in the matter of the said disputes, and suggesting that parties questioning the existence of their client's patents should be cited to appear and prove their case, and in default that the decision be given on the showing of the patentee.

(The official answer was to the effect that the Patent Office could not undertake to initiate a case of dispute.)

8. A letter of Messrs. Edgar, Fenton, & Ritchie, of Toronto, attorneys-at-law of the disputant, Benjamin Barter, raising the present dispute against the three hereinabove-mentioned patents of the respondent.

(*) SECTION 28. Every patent granted under this act shall be subject and expressed to be subject to the condition that such patent and all the rights and privileges thereby granted shall cease and determine, and the patent shall be null and void at the end of two years from the date thereof, unless the patentee, or his assignee or assignees, shall within that period have commenced, and shall after such commencement continuously carry on in Canada the construction or manufacture of the invention or discovery patented, in such manner that any person desiring to use it may obtain it, or cause it to be made for him at a reasonable price, at some manufactory or establishment for making or constructing it in Canada; and that such patent shall be void if, after the expiration of twelve months from the granting thereof, the patentee, or his assignee or assignees, for the whole or part of his interest in the patent, imports or causes to be imported into Canada the invention for which the patent is granted; and provided, always, that in case disputes should arise as to whether a patent has or has not become null and void under the provisions of this section, such disputes shall be settled by the Minister of Agriculture or his deputy, whose decision shall be final.

2. Whenever a patentee has been unable to carry on the construction or manufacture of his invention within the two years hereinbefore mentioned, the Commissioner may, at any time not more than three months before the expiration of that period, grant to the patentee a further delay, on his adducing proof to the satisfaction of the Commissioner that he was, for reasons beyond his control, prevented from complying with the above-mentioned condition. (Patent act of 1872, as amended in 1875.)

9. A certified copy of an invoice, dated April 21, 1876, from Charles Rakes, of Lockport, in the United States, to Messrs. Howland & Spink, of Thorold, in the Province of Ontario, as attested by William Leggett, collector of customs.

10. A printed circular, addressed to millers, by Benjamin Barter, the disputant, not dated, but posterior to July 25, 1876, offering for sale the original middlings-purifier. This circular contains certificates of millers having made use of Mr. Barter's machines. Of these certificates ten indicate that they are from the Province of Ontario, the oldest of which is dated December 1, 1875, and four are dated July, 1876. The others are from the United States, the oldest being dated December 2, 1872.

11. An authenticated copy of a bill of complaint filed in chancery, in Toronto, on September 9, 1876, on behalf of George Thomas Smith, (the respondent in this case,) against James Lawson, (a witness in this case,) concerning an alleged infringement of his (Smith's) patent for a process of milling.

DECLARATORY EVIDENCE.

I. A statutory declaration made by the disputant, Benjamin Barter, of the city of Toronto, miller, dated October 30, 1876, stating that he (Barter) during the summer of the year 1876 visited the mill of Messrs. Howland & Spink, at Thorold, and saw machines branded G. T. Smith, patentee, and Rakes, of Lockport, manufacturer; that the said machines were imported machines, and covered the material portions of the inventions claimed by Patents No. 2,257 and No. 2,258; that these machines were ascertained to have been made in the State of New York, by Rakes, for the patentee, Smith, who caused the said machines to be imported during the month of April, 1876; that these machines were imported, two on April 25 aforesaid, as Smith's purifier-machines, on which $109 duties were paid, and two on the 29th, on which same amount of duties was also paid; that these machines are constructed and adapted for the performance of material and substantial portions of the process patented by Patent No. 2,409; that diligent inquiries have led him (Barter) to believe that Smith's inventions were not manufactured in Canada until about August, 1876, with the exception of one machine, manufactured during the winter months of the year 1876.

II. The statutory declaration of Thomas Laurie, of the city of Hamilton, mill-wright, dated November 22, 1876, accompanied with two exhibits, marked "*a*" and "*b*," the first being copy of specifications of Smith's patents, and the other a printed circular from Thomas Pringle, of Montreal, dated March 21, 1873, advertising middlings-purifiers, stating that on November 6, 1876, he called, in company with disputant, on Charles Rakes, at Lockport, State of New York, for the purpose of making inquiries; that the said Rakes informed them that he had manufactured for the patentee, Smith, the machines erected in Messrs. Howland & Spink's mill, at Thorold; that he (Rakes) had nothing to do with selling these machines to Howland & Spink; that the said Rakes told further that Smith was charging for his machines considerably more than the cost of manufacturing; that being asked to make an affidavit of these facts, Rakes refused to do so; that he (Laurie) had visited during the then current month of November, 1876, the mill of Howland & Spink at Thorold, and as a practical mill-wright of forty years standing says that these machines are the machines and the putting into operation of the process described in Smith's specification; that Smith's machines do not require a large expenditure, but could be readily manufactured at any mill with ordinary tools; that for at least three years past there has been a great demand among millers in Ontario for middlings-purifiers of the description patented by Smith; that he is aware that many machines as advertised in the annexed circular were sold in Ontario during the years 1873, 1874, and 1875; that he is not aware of any of Smith's machines having been manufactured, sold, or offered for sale in Canada for more than two years after the date of Smith's patents, and that if any active effort had been made to introduce them he (Laurie) should have become aware of it.

III. The statutory declaration of James Lawson, of the town of Thorold, miller, dated November 14, 1876, stating that he knows the respondent, Smith, who, in company with one Charles Rakes, of Lockport, New York, visited him at his (Lawson's) mill in May, 1876, to ask him (Lawson) to purchase the same machines as he (Smith) was putting up in Messrs. Howland & Spink's mill; Smith informed Lawson that Rakes was making these machines for him (Smith) at the price of $350, to which price Smith was adding $250 additional; that he (Lawson) asked to be furnished with the said machines at a lower price, to which proposal Smith's answer was that this was his lowest price; that before that interview Rakes had told about Smith coming to Thorold, and expressed his hopes that Lawson might purchase the machines from Smith to give Rakes the job of building them; that he (Lawson) is acquainted with Smith's machines and knows they are not of expensive manufacture, but could be built with ordinary tools and materials at any mill. He (Lawson) having been a miller for about twelve years on his own account, is aware that for at least four years past there has been an active demand among millers in Ontario for these middlings-purifiers. Mr. Spink had told him (Lawson) that he had been negotiating with Smith for the purchase of his machines, and afterward that he had purchased them from Smith; that in the early part of last summer he (Lawson) saw Smith, who was regulating the purifiers at Spink's mill, and, on having remarked about the workmanship, Smith told that he was not to have any more constructed by Rakes; that Mr. Spink told that he had a written contract with Smith for the purifiers, but being asked by Barter on November 14, 1876, in his (Lawson's) presence to give affidavit on the subject Spink declined to do so.

IV. A second statutory declaration of Benjamin Barter, dated November 16, 1876, accompanied with an exhibit marked "*a*," being letters exchanged between the said Barter and the firm of Howland & Spink, stating that he, in company with Thomas Laurie, visited Charles Rakes at his place of business, at Lockport, where they were informed by said Rakes that he (Rakes) had manufactured the machines at Messrs. Howland & Spink's mill for G. T. Smith, who made the bargain for them; that the said Rakes informed them that he (Rakes) "never saw the said Messrs. Howland & Spink, or any one on their behalf, until he went to Thorold, at the request of and for the said Smith, to make arrangements about putting the said machines into the said mill;" that Rakes told Laurie in Barter's presence that Smith charged considerably more than the cost of manufacturing; that Rakes refused to make affidavit of his said statements; that Smith admitted to him (Barter) that the machines put in Howland & Spink's mill are his (Smith's) purifiers; that Smith's machines do not require much expenditure, but can be built with ordinary tools and machinery at any mill; that for several years past there has been an active demand among millers in Ontario for machines of that description; that the letter annexed is in the handwriting of Mr. Spink, of the firm of Howland & Spink, and was received by him (Barter;) that he (Barter) was informed by Mr. Spink, on February 26, 1876, that Smith had been telegraphed to come over to close the bargain for the purchase of the said machines; that later Mr. Howland told him (Barter) that he was too late, their firm having bought from Smith, who had come to Toronto to sell his machines; that Messrs. Howland & Spink have declined to give evidence in the case.

The letter of the firm of Howland & Spink, dated February 9, 1876, annexed to the above declaration and referred to, is to the effect that Mr. Spink has just returned from the United States; that he has found Smith's process of milling the best he has ever yet seen; that Smith's purifiers are sold for less money than Barter's machines; that Smith's machines have such a reputation that American millers will have no other; that they expect Smith to come soon, and in the meantime should like to see Barter, as their machines will have to be ordered from some manufacturer in a few days, and that he (Barter) had better call on them at once.

The answer of Mr. Barter to this letter is dated Feb-

ruary 12, 1876, and is to the effect that he purposes soon going to Thorold; that the (so-called in the States) Smith's plan of milling is good, meaning the mode of milling at present adopted there; but that "as the means by which it is effected belong to myself, (Barter,) the mode of milling for which the means were invented must also of necessity belong to me," (Barter;) that he is anxious for the patronage of the firm and should be most sorry if they do not come to terms.

V. A third statutory declaration of Benjamin Barter, dated November 20, 1876, stating that he (Barter) had been informed, in February, 1876, by Mr. Spink, that G. T. Smith had had one of his machines manufactured at Dexter, in the county of Elgin; that he (Barter) went, in the month of May, 1876, at Dexter and St. Thomas, to inquire about the fact; that he, having inquired from millers around, he "could not find any one who knew of any such machine as a middlings purifier having been made or offered for sale in that neighborhood;" that he verily believes that no such machine as patented under No. 2,257 was ever constructed there previous to May, 1876.

VI. An affidavit (in the form and manner in practice in the United States) from the respondent, George Thomas Smith, made and signed in Jackson county, State of Michigan, and dated November 23, 1876, stating: That he (Smith) has never imported into Canada any of the machines manufactured under his Canadian patents; that he has offered to millers in Canada, personally and through agents, to sell the right to use his inventions for a reasonable compensation; that he never refused to furnish his machines manufactured in Canada; that he did not purchase nor import the machines placed in Messrs. Howland & Spink's mill at Thorold; that the sale of said machines and the payment thereof was a transaction between the millers and Rakes, in which he (Smith) had no interest; that he (Smith) sold to Messrs. Howland & Spink the right of using his process under Patent No. 2,409, and superintended the arrangements of the machinery for carrying the said process; that his (Smith's) royalty for the use of his process and machine No. 2,257 was the only profit and emolument which he received in connection with the said Howland & Spink's mill at Thorold.

VII. The statutory declaration made in Toronto on November 22, 1876, by Charles Rakes, machinist, of Lockport, in the State of New York, stating: That he has constructed at Lockport the machines put up in Messrs. Howland & Spink's mill at Thorold; that such machines are after American patents of which G. T. Smith is the patentee, and are nearly equivalent to the Canadian Patent No. 2,257, and that the distinguishing feature of No. 2,258—namely, the grading-reel—does not appear in the machines set at Thorold; that the first opening in connection with this transaction was the meeting of Mr. Spink, in December, 1875, at the North Buffalo Mills; that the said Mr. Spink told there to him (Rakes) that he had been visiting that part of the State of New York to inquire into the relative merits of the various middlings-purifiers, and that he (Rakes) had been recommended to him (Spink) by M. A. Chester, of the firm of Thornton & Chester, millers, of Buffalo; that previous to that interview with Mr. Spink he had not had any communication with G. T. Smith, nor with any person on his behalf, in regard of putting purifiers in the said mill of Messrs. Howland & Spink, and that he (Rakes) never said that he had had such previous communication with G. T. Smith, "the assertion contained in Benjamin Barter's declaration to that effect is false;" that on the occasion of the said first interview Mr. Spink visited Rakes's factory at Lockport; that he (Rakes) visited Thorold on or about February 11, 1876, and met there George T. Smith and Mr. Spink, arranging for the sale of the right to use Smith's inventions. They all three went to Toronto to meet the other member of the firm, and it was when returning to Thorold that he (Rakes) finally bargained with Mr. Spink to build the said machines for him at the price of $350 apiece, free on board at Lockport; that he was to be paid by Messrs. Howland & Spink; was paid $1,100 by them, and looks to them for the balance still due; that he (Rakes) has had for about two years an agreement with Smith to furnish millers with Smith's inventions in the United States at stated prices, but not for use in Canada; that at the time that he (Rakes) was putting up the machines in Messrs. Howland & Spink's mill at Thorold the said Smith proposed to him (Rakes) to undertake the manufacture in Thorold of machines to be used in mills in Canada; that it was expressly proposed by the said Smith that if Mr. James Lawson should purchase the right of using his inventions, that he (Rakes) should manufacture the necessary machines at Thorold, in Canada; that the said Lawson did not purchase the said right; that he (Rakes) does not recollect having told Barter, in the terms of Barter's declaration, that the bargain for the machines had been made by Smith. If anything were said on the subject, it must have been that Smith had concluded an agreement for the sale of the right to use his inventions; that to the best of his (Rakes's) knowledge Smith has had no interest or commission or profit on the sale of machines manufactured by him (Rakes) in any case; that he had traveled a good deal in Canada during the last four or five years for the purpose of selling mill machinery, and that until within the last year or two he saw very little use of and heard of very little demand for middlings-purifiers; that the connecting machinery to apply Smith's process at Messrs. Howland & Spink's mill at Thorold were made by the mill-wrights at the said mill at Thorold, under direction of said Smith; that he (Rakes) declined to give an *ex parte* affidavit, but expressed his willingness to Barter to appear before any judicial authority to be examined on oath; that he (Rakes) has made the present declaration on account of having been informed by Messrs. Grahame, Howland, & Ryerson that the conversation he (Rakes) had with Barter was to be made use of to influence the decision of the Commissioner of Patents, and because the statements reported as contained in Barter's declaration "were misrepresentations and tended to give a false impression of the facts of this case."

FACTS ADMITTED OR ASCERTAINED.

a. The disputant admits that nothing is proved as regards the alleged importation of the invention patented under No. 2,258.

b. The disputant admits that he has never made any request to George Thomas Smith for the use of Smith's patented machines and process.

c. It is ascertained by the records of the Patent Office that the disputant, Benjamin Barter, has obtained a patent for a "flour-dressing machine" on January 20, 1874, numbered 3,014; another patent for "the original middlings-purifier" on April 8, 1876, numbered 5,942, and another patent for "middlings-purifier" on July 17, 1876, numbered 6,325. These three patents are for the same object as respondent's inventions, and therefore competing with them.

DECISION.

TACHÉ, *Deputy Minister of Agriculture.*

The importance of this case, serious in itself, is enhanced by the circumstance that it is the first of its kind in Canada, and that the legal interpretation and the appreciation of facts which it involves apply to very many patents granted, and eventually to all patents to be in future granted. For these reasons ample time has been devoted to the study of the question, and it has been thought not only desirable, but almost necessary, to enter at some length into the explanation of the principles and construction of facts upon which the present decision is based.

It seems proper to take up first the preliminary points raised in the case, which were at once decided, as stated in the report of the proceedings hereinbefore given. It was asked that it be ruled that the *onus probandi* lies with the respondent, inasmuch as this tribunal, being an exceptional one, not restrained by any form of proceedings or subjected to any special kind of evidence,

and having no power to compel witnesses to appear, is bound to exact from the respondent proof that he has complied with the requirements of the law, and, furthermore, inasmuch as to rule otherwise would be imposing upon the disputant the duty of proving a negative. The constitution of this tribunal is not of an unknown character. Such jurisdiction is given to the administration in many countries, and in some, in the Austro-Hungarian Empire, for instance, that jurisdiction extends so far as to vest in the executive officer the exclusive power of deciding all cases concerning invalidity or lapsing of patents. The tribunal is not devoid of all means of getting at the truth, the fact of not being restrained by fixed rules of procedure and stringent modes of evidence being a compensation for the want of power to compel witnesses. It is self-evident that it was the intention of the law-makers to exact only one condition in the judge's mind in delivering his decision—that he be convinced of the substantial justice of such decision on sufficient information, no matter how obtained. Notwithstanding that this tribunal is not restricted by fixed rules of practice, it is nevertheless bound to abide by the rules of common justice, by the dictation of common reason, and to be enlightened by such decisions as may be held to embody the common consent of mankind.

It is apparent that this case, being one in which the disputant urges the forfeiture of an acquired right, which the respondent is presumed not to have lost nor alienated, the burden of proof cannot be admitted to lie on him who holds a public title, which must be taken as good so long as nothing to the contrary is established, even if the evidence involved the proof of a negative. In this case the evidence does not rest on establishing a negative, but on ascertaining the existence of positive facts. It would not be right, however, to say, and this ought not to be taken as meaning, that in no case should the respondent be forced to make discovery. There might be cases in which, from the position of the parties and the aspect of affairs, this tribunal might be compelled to make use of all the latitude left to it by the statute in order to attain the ends of justice. The nature of the twenty-eighth section of the patent act, both in providing against certain mischiefs with certain remedy and in establishing a special tribunal to mete out the remedy, involves a policy which goes, on public grounds, beyond the limits of any particular case to be adjudicated upon. This is evidently the reason why the legislature has selected the Minister of Agriculture to constitute the tribunal to decide such questions in which it will avail of the practical knowledge of and acquaintances with the nature and bearings of such matters acquired in the daily working and dealings of the Patent Office.

It has been hinted in the arguments that should a decision intervene declaring a patent null and void, it ought to specify that the patent was voided at the date of the expiration of the delay mentioned in the law, and has stood null since to all intents and purposes. As this incidental question touches rights which do not come within this jurisdiction, it appears clear that, in duty and through respect for the higher courts, this tribunal is forbidden from entering such domain, even by expressing an opinion, being bound to restrict its investigations and decisions within the narrowest possible limits. The law orders that the Minister of Agriculture should say "whether a patent has or has not become null and void;" consequently the judgment is simply to decide it has or it has not, as the case may be. All the consequences that may follow are to be adjudicated upon by the ordinary judges of such disputes between citizens.

There is a view of the subject-matter of patents for inventions invoked in this case which it is of great importance to examine as bearing in a marked manner on the interpretation and construction to put upon both law and facts connected with the working of patents. The question comes to whether a patent should be held as an embarrassing privilege, a kind of onerous monopoly which constitutes the patentee as a sort of adversary to the liberty of the subject, and as opposed to public interest, by the very fact of his holding a position which then, it is argued, should be jealously watched, and which ought to be made to terminate at the first opportunity. It is universally admitted in practice, and it is certainly undeniable in principle, that the granting of letters patent to inventors is not the creation of an unjust or undesirable monopoly nor the concession of a privilege by mere gratuitous favor, but a contract between the State and the discoverer. In England, where letters patent for inventions are still in a way treated as the granting of a privilege, more in words, however, than in fact, they, from their beginning, have been clearly distinguished from the gratuitous concession of exclusive favors, and, therefore, were specially exempted from the operation of the statute of monopolies. Invention being recognized as a property, and a contract having intervened between society and the proprietor for a settlement of rights between them, it follows that, unless very serious reasons, deduced from the liberal interpretation of the terms of the contract, have happened the patentee's rights ought to be held as things which are not to be trifled with, as things sacred, in fact, confided to the guardianship and to the honor of the State and of the courts. As it is the duty of society not to destroy on insufficient grounds a contract thus entered upon, so it is the interest of the public to encourage and protect inventors in the enjoyment of rights legitimately and sometimes painfully and dearly acquired. The patentee is not to be looked upon as having interests in direct opposition to the public interest—an enemy of all, in fact.

"The gain made by the inventor when his invention is known will be," says Agnew, "proportionate to the amount of benefit which the public derive from the use of it."[a]

"It is almost self-evident," says an able American author, "or at any rate readily susceptible of proof, that the magnificent material prosperity of the United States of America is directly traceable to wise patent laws and their kindly construction by the courts."[1]

"The increasing development," says Armengaux, "which inventive genius undergoes is principally due to the protection, very insufficient as yet, which is granted by most governments to those who are the real promoters of arts and industry."[2]

[a] Agnew. The Law and Practice Relating to Letters Patent for Inventions. London, 1874. Page 4.
[1] Simonds. Manual of Patent Law. Hartford and New York, 1874. Page 10.
[2] Armengaux. Guide Manuel de l'Inventeur et du Fabricant. Paris, 1853. (Preface.)

These short quotations, which might be easily multiplied almost *ad infinitum*, are to show what view is taken of the matter by writers who have devoted a great deal of their life to the study and practice of the laws relating to the very important subject of inventions and in the consideration of the influence on public prosperity of patents granted to inventors as the price paid for their discoveries. The manner in which this tribunal should construe the law was argued in the sense of a strict literal interpretation of words, and quotations were made in support of this view. The soundness of the doctrine propounded in those quotations is undeniable and undenied. In order that no doubt should exist on the rules of interpretation adopted in the present decision, it is well to express them in terms of its own. It is held that the words of the law constitute the body of the law in which dwells the spirit of the law, and that to separate one from the other would be the death of the law. The legislature cannot adequately provide for the administration of the statutes; it cannot see into the details necessary to attain the object in view; it cannot foresee the combination of circumstances appertaining to each case; it does not go into the technicality of specific subjects, and it cannot prophesy what uses might be made of the language of the law. Hence the necessity of legislation being followed step by step by jurisprudence. The very words which may be invoked in a certain sense as applicable to certain points in one case might serve to defeat the object of the legislature in another case. This tribunal, like all others, has to make sure of the intention of the legislature. A certain public advantage is sought for and a mischief provided against by the patent act as applied to this case. The duty of the tribunal is therefore to see whether the advantage has been virtually and effectually denied, and whether the mischief has been actually committed, and to apply the remedy, if need be to attain the object in view, without undue and inadequate detriment to acquired and vested rights.

The dispositions of the twenty-eighth section (hereinbefore quoted at length) of the patent act of 1872, were introduced into Canadian legislation *pari passu* with the extension of the privilege of obtaining patents for inventions, first, to all residents, and, second, to all comers. Such provisions as to manufacture and importation do not exist in the patent laws of England or in the present patent laws of the United States, but they do exist in the patent laws of other nations. The patent act of 1869, removing other disabilities, extended the right of obtaining patents to every resident of one year in Canada, and subjected all patented inventions to the condition of manufacturing within three years and of not importing after eighteen months. The decision of the question as to whether or not a patent had lapsed for reason of non-compliance was left to be pleaded and to the ordinary courts to adjudicate. The law of 1872 extended the right of obtaining patents to all comers, and provided a special tribunal to apply the law in the manner mentioned in the twenty-eighth section, hereinbefore quoted. So far the intention of the legislature, as shown by the history of the legislation, is evidently to guard against the danger of Canadian patents granted to aliens being made instrumental to secure the Canadian market in favor of foreign patents to the detriment of Canadian industry, for, in the measure that the right of taking patents was extended, the remedy against the dreaded danger was made more ample, but at the same time the jurisdiction over such cases of disputes as might arise was transferred from the judicial tribunals to the administrative tribunals, evidently for the purpose of avoiding an overstrict application of the provision made against the possible evil of a patent being taken for the sole purpose of depriving Canada from the use of a useful invention. The twenty-eighth section is also intended as a sort of protective policy in favor of Canadian labor. The legislature has, certainly not without intention, provided for a kind of paternal tribunal, formed by the Commissioner of Patents, the natural protector of patentees, which intention can be no other than that every case should be adjudicated upon in a liberal manner. The duty of this tribunal is therefore, on one hand, after having satisfied itself of the facts, to apply the remedy if the mischiefs provided against by the statute have been really committed in intent or effect, and, on the other hand, to guard against the cruel injustice of inflicting such a punishment as the total destruction of an acquired and vested right when no real damage was either intended or done. The common principle of justice which says that when there is no injury inflicted no damages are to be granted, and that when no offense has been committed no penalty is to be imposed, must govern this matter as well as the principle that no offender should be sheltered from the punishment for offense or injury perpetrated by him.

In order to arrive at a correct interpretation of the words "construction or manufacture of the invention," it is necessary to well understand and carefully consider the nature of the obligation thereby imposed. As to patents, it applies to every patent granted; as to subjects, it applies to every conceivable object which may be invented or improved; as to persons who have the right to exact it, it applies to all inhabitants of the Canadian confederacy; as to extent of territory, it applies to the whole dominion from ocean to ocean and to every province and locality therein; as to time, it applies to thirteen out of fifteen years of the longest patent and to three out of five years of the shortest. This simple enunciation of the nature of things to which the law refers is sufficient to demonstrate that the law-makers could not have had in contemplation to force, on penalty of forfeiture, the patentee to actually fabricate his invention with his own capital, within specific establishments, with his own tools, and to keep stock for every moment of the existence of his privilege; and where? All over the Dominion, and whether he has purchasers or not. The patent might be for a process, for an object to be used in conjunction with something else, or for an improvement on another patent still in existence; it might be for a railway bridge, switch, or spike; it might be for a mailbag; and in all these cases it does lie within the power of others than the patentee to say whether the invention shall or shall not be used at a given time or at any time. Therefore, the real meaning of the law is that the patentee must be ready either to furnish the article himself, or to license the right of using on reasonable terms to any person desiring to use it. But, again, that desire on the part of such a person is not intended by the law to mean a mere operation or mo-

tion of the mind or of the tongue, but, in effect, a *bona fide* serious and substantial proposal—the offer of a fair bargain, accompanied with payment. As long as the patentee has been in a position to hear and acquiesce to such demand, and has not refused such a fair bargain proposed to him, he has not forfeited his rights.

If it were necessary to furnish a collateral proof of this intention of the legislature, within the law itself, of requiring on the part of the customers an actual substantial demand or request, accompanied with a settlement of royalty, it would be found in section 21,* in which an exception to that obligation of demanding is made in favor of the government, which is, by way of derogation to the general rule, allowed to make use of all inventions without going to the patentee, even during the two years' delay, free of any blame for infringement, by resorting to a special and an exceptional mode of settling upon the price to be paid to the patentee. The same rules of interpretation apply to the provision of the act as regards importation. The law says that the patent shall be void if, after twelve months of its being granted, "the patentee or his assignee or assignees, for the whole or a part, imports or causes to be imported into Canada the invention."

The evil aimed at by the legislature in ordering the penalty of forfeiture is the importation of patented inventions being made to the detriment of their being manufactured in Canada. If that was done even by other persons than the patentee or his assignees, but with his consent, that would call for the application of the remedy, although the mere wording of the law might be pleaded as exonerating the patentee from the responsibility of having actually imported or caused to be imported. On the other hand, the actual importation of a few machines as models, or for the purpose of bringing the usefulness of the invention before the eyes of the Canadian public, and thereby hastening the working of the patent in Canada, could not be reasonably taken as being the commission of the evil of injuring the manufacturing interests of the country. It may be, on the contrary, in some given cases, the best and promptest way of benefitting Canada with a new and yet unappreciated invention, and the importation of few models, then, would be fostering the object of the law, which is that Canadian industry and Canadian labor should, in the shortest possible time, be made to profit by new inventions. The words "carry on in Canada the construction or manufacture," with their context, cannot, therefore, mean anything else than that any citizen of the Dominion, whether residing in Prince Edward Island, in British Columbia, in Ontario, Quebec, or elsewhere on federal soil, has a right to exact from the patentee a license of using the invention patented, or obtain the article patented for its use at the expiration of the two years' delay, on condition of applying to the owner for it, and on payment of a fair royalty. The words "imports or causes to be imported into Canada" cannot mean anything else than injury to home labor, which injury, if actually done by or with the connivance of the patentee, most decidedly entail forfeiture of his patent.

It has been argued, in view of meeting the above-mentioned interpretation of the words "construction or manufacture," that the statute has foreseen the difficulties of special cases and has provided for them by sub-section 2 of section 28, in giving to the commissioner the power to extend indefinitely the delay in such cases—as, for instance, would be illustrated by a patent granted for a graving-dock.

The purport and effect of sub-section 2 is totally different from and even at variance with the meaning given to it in this argument. A delay does not at all remedy the condition of impossibility in which a patentee is to establish at any time manufactories accessible to a population scattered over a territory which extends from ocean to ocean, with an area amounting to millions of miles. It does not do away with the impossibility at any time of keeping articles in stock without purchasers, &c. But this is not all. Sub-section 2, construed as is proposed by the said argument, would lead to a positive defeat of the intention of the legislature, which clearly is that the patentee must supply Canadian citizens with the invention, when requested to do so by any one, on payment of a reasonable price or royalty. The effect of the delay of two years and the effect of any further extension thereof means that during that time the patentee is permitted to withdraw entirely (the government excepted) the use of his invention from the Canadian public—that he can refuse the use of it to all and everyone under any and every circumstance. It follows that the granting of a long delay would amount to depriving during such time Canadian industry of the use of such invention, which could not be imported, and which the inventor would not be bound to furnish on any condition. As it is logically necessary to carry the argument to the extent that there are many cases in which the difficulty being of all times, the delay, of necessity, should be carried to the whole duration of the patent, it amounts to saying that the Commissioner of Patents is empowered to grant, and, in fact, forced to grant, that Canada should remain for a long period of time, or the whole period of the duration of patents, *quoad* the utility of certain inventions, in a state of industrial inferiority as compared with all other countries. Another proof of the total error of the argument is that the whole of the twenty-eighth section applies to "every patent granted," precluding in the very terms of the law the idea that it intended to deal with cases; nay, expressly enacting that the same provisions are to apply equally to all patents, as a matter of course, in the legitimate sense which is naturally and equitably suggested by the nature of things in matters of inventions and patents of inventions.

The views taken here on the question at issue are fully sustained by the construction and interpretation put on similar or identical legal enactments in other countries. The jurisprudence established and the doctrine laid down by jurists and patent experts in countries where the patent laws contain the same dispositions as ours about manufacturing and importing appear, from extensive reading on the subject, unanimous. It will be sufficient to enter into a short exploration of this ground to prove the assertion of such common consent of nations in the matter.

In England the patent laws do not contain the same prescription as our statute presents, and no specific provision is made to secure to the public the use of the invention or to home labor the benefit of its working; but

*SECTION 21. The government of Canada may always use any patented invention, paying to the patentee such sum as the commissioner may report to be a reasonable compensation for the use thereof.—The patent act of 1872.

there exists in the present letters patent issued in England a proviso which shows by analogy what doctrine prevails on the general question of the obligations of the patentee when he is bound to furnish his invention under pain of forfeiture. Among the circumstances that cause English letters patent to "cease, determine, and become void" is the following: If he (the patentee)—

Shall not supply or cause to be supplied for our service all such articles of the said invention as he shall be required to supply by the officers or commissioners administering the department of our service for the use of which the same shall be required, in such manner, at such times, and at and upon such reasonable prices and terms as shall be settled for that purpose by the said officers, &c.

This shows that it is not supposed that the legitimate obligation of the patentee toward the customer is to keep open shops, to keep stock, but to supply the invention only when requested to do so by a formal demand accompanied with a settlement of the royalty. Similarly to the laws of England, the present patent laws of the United States do not contain the condition of lapsing for reason of non-manufacturing or of importing. The absence of such dispositions from the patent acts of those two prominent manufacturing countries is, it must be conceded, antagonistic to the idea of Draconian interpretation of the said conditions where they do exist. The obligation of manufacturing in the United States did exist for a certain time. It was introduced by a short act in 1832. This act was repealed by the patent act of 1836, but a provision of the kind was maintained in the last-mentioned statute. By the fifteenth section the defendant, in an action of damages, was permitted to plead the general issue. At the end of the enumeration of defects we read—

* * * Or that the patentee, if an alien at the time the patent was granted, has failed and neglected for the space of eighteen months from the date of the patent, to put and continue on sale to the public, on reasonable terms, the invention or discovery for which the patent issued in either of which cases judgment shall be rendered for the defendant, with costs.

The provisions of this clause were invoked in one case of an assigned alien's rights (*Tatham* v. *Lowber**) Messrs. Justices Nelson and Betts, State of New York, decided—

That even if the plaintiffs took their right with the condition attached to alien patentees, yet they had satisfied the statute; that they need not prove that they hawked the patented improvement to obtain a market for it, or that they endeavored to sell it to any person, but that it rested upon those who sought to defeat the patent to prove that the plaintiffs neglected or refused to sell the patented invention for reasonable prices when application was made to them to purchase.

The French legislation, as does the legislation of most countries, contains conditions similar to those of the twenty-eighth section of our "patent act of 1872."

The doctrine and jurisprudence adopted on the subject is amply summed up in the quotations of two eminent writers on patents and patent laws, which will follow, after citing the text of the law. The French law reads thus, Article 32:

Shall be deprived of all his rights. * * * 2. The patentee who shall not have worked his invention in France within a delay of two years from the date of the signature, or who shall suspend his operations for two consecutive years, unless he show cause for such inactivity. 3. The patentee who will have introduced in France articles manufactured in foreign countries similar to those guaranteed by his patent.

It must be remarked that the last proviso at the end of paragraph 2 of the French law is similar in effect to the means adopted by our statute for making the non-manufacturing a condition of nullity, to take effect only when rendered applicable by an administrative decision. The nullity enacted by the French law can be pleaded in courts. The nullity enacted by our act is conditional upon the decision of the Minister of Agriculture, who alone is to say whether the condition is to be enforced or not.

Renouard, after quoting Arago's speech in the Chambre des Deputés (1844) against the stringency of the then proposed legislation, goes on to explain how it is to be understood:

The tribunals will appreciate [he says] according to circumstances whether it has been worked or not, whether or not the working has been interrupted, if the reasons of not working are sufficiently justified.[1]

This was said by a magistrate of the highest order, and a specialist, in anticipation of the judicial decisions which afterward confirmed his views of the matter. Many years after, Bédarride, reviewing the jurisprudence established on the subject, recapitulates it, and exposes the doctrine in the following sentences:

The spirit of the law is therefore indubitable. It intends to punish only voluntary, premeditated, and calculated inactivity.[1]

It is to be remarked that Bédarride is not a loose, but rather a strict, interpreter of laws. He holds that the laws of France do not admit of pretorian interpretation, and are not to be mitigated by the courts, no matter how severe and hard they may be. Bédarride again says:

The voidance of paragraph 2 of Article 32 touches only voluntary inactivity. The law wishes to punish for inaction the only one who has willingly remained idle. It would have been really too unjust to extend the penalty to the one who has abstained on account of circumstances independent of his will.[2]

As regards the importation, Bédarride says:

The prohibition having for its unique object the protection of national labor, it would have been unreasonable to extend it to cases in which such protection could not be injured.[1] The judicial authority, exclusively inspired by this spirit, refused to apply the penalty of forfeiture when the importation, although non-authorized, was not in its nature susceptible of damaging national labor.[2] It is proper to decide to-day as it was decided by the courts of Douai and Paris in 1846 and in 1855. Should not be considered as violation of the prohibition of the law the importation of a few specimens of the articles or the importation of machines, having no other object in view than to find either associates or licensees for the invention.[2]

It would only be a matter of time and labor to extract similar authorities and decisions from the records of other countries where the laws are either identical or similar to our statute in this respect. All this shows, to borrow the very words of Renouard, "how the practice of nations solves by common sense and experience the questions raised by necessity."

The question of doctrine having been thus established, it remains to examine the facts of the case to confront them with the meaning of the statute. The evidence adduced is ample to give any one a clear and unmistakable knowledge of the state of affairs.

As to manufacturing, it is proved that none of the respondent's inventions were put up in Canada within the time prescribed; but no proof is given that he has refused to furnish them to any one at any time. On the contrary, it is shown in the clearest manner that he has not been requested by any one to be supplied with them during the time of inactivity.

As to importation, it is proved that the machines imported at Thorold by Messrs. Howland & Spink, more than twelve months after the date of the patent are of Smith's invention, No. 2,257; that Smith was neither the consignor nor the consignee, nor the owner thereof; that he did not actually import them, but that he consented to the importation, which action amounts to

*Blatchford, C. C., Vol. II, pages 49 to 51.

*Renouard. Traité des Brevets d'Invention, Paris, 1844, page 243.
[1] Bédarride. Commentaires des lois sur les Brevets d'Invention, Marques de Fabrique et de Commerce, &c., Paris, 1869, Vol. I, page 448.
[2] Bédarride. Vol. I, page 450.
[1] [2] Bédarride. Vol. I, pages 455, 457, 463.

causing them to be imported. It is clear that Smith's consent in this instance was not intended to defy the law; that it did not cause any appreciable injury to Canadian industry, but had for its object to bring the merits of his patents and process before the Canadian public, with the honest intention of manufacturing in Canada, as his efforts to introduce his process in Lawson's mill proves.

The disputant, aiming at the process of milling patented under No. 2,409, has tried to connect Patent No. 2,257 with Patent No. 2,409, as being necessarily dependent on each other in the way of cause and effect, or rather object and means, but has failed in that, and by his evidence has in fact proved the contrary of his proposition in establishing that Smith's process does not require any special plant or machinery, but can be added to any mill by ordinary tools and workmanship and with ordinary materials, which is besides made plain by a careful study of the patents.

The disputant has also tried to prove unwillingness on the part of the patentee to furnish the Canadian market at the same time that an active demand is alleged to have existed in Ontario for several years for such processes of milling as Smith's, an assertion which is poorly sustained by Barter's third declaration and his own trade-circular, (hereinbefore analyzed,) and by the fact that one of the witnesses who makes this assertion (Mr. Lawson) had no middlings-purifiers of the sort in his own mill at Thorold in May, 1876, when he refused the offer made by Smith to himself (Lawson) to have one put up for him, he having objected to the ordinary price charged for royalty.

The disputant insisted on the point that the three petitions of the respondent (documents 4, 5, and 6, hereinbefore analyzed) are a virtual admission of his having failed to comply with the exigencies of the statute. It would be hardly fair to take even an unconditional admission of the sort, made under the circumstances and in error, as carrying with it the necessary destruction of the patent. The petitions referred to are not, however, an admission of that kind. The patentee, after a statement of facts, says he "submits that his acts, as aforesaid, are a sufficient compliance with the terms of the said twenty-eighth section of the patent act of 1872." * * * He has been unable, "for reasons aforesaid, to comply literally with the terms of the said section," and he concludes by asking for a "declaration that the said patent has not become forfeited," and also for "an extension of time to commence the manufacture."

It is clear that the patentee was conscious of having complied with the spirit of the law, but was apprehensive of the interpretation given to the words on account of threats. He asked for an extension of delay a long time after the expiration of the statutory delay, which extension can, of course, be granted by the Commissioner only as a continuation (without interruption) of the respite, of which it is the mere prolongation. When the statutory delay has expired, a patent then is either voided or in operation, according to the spirit of the law, and no other proceeding on the point in question can intervene unless a dispute is raised.

These few remarks seem sufficient to show the real meaning of this incident, and to prove that the fact of the patentee having presented the said petitions and the terms of these petitions cannot in the least affect his position.

The counsel of the disputant has argued in favor of the conclusions of his dispute from an official answer given to a letter written to the Patent Office at his (the counsel's) advice *pendente lite*. As this is a matter of constant occurrence, and as it gives the occasion of showing how different is necessarily an answer to a question put in the abstract from the decision of a case presented with all its bearings and particulars, it is of importance for the Patent Office and for the public to dispose of the argument.

The letter written contained the following question:

Is it considered as "construction" sufficient to hold the patent if an article composed of various parts is imported in parts and put together and constructed in a Canadian manufactory?

The letter in answer was as follows:

You ask if the manufacturing clause of the patent act would be complied with by importing the whole of the parts of a machinery to be only put together in Canada. Evidently this would not be in compliance with the requirements of the law.

To such an interrogation no other than an answer based on the supposition of a breach of the law could be safely given; but if, departing from the abstraction of the above-given question, the investigation were made as regards a certain patent under specific circumstances, the conclusion might be widely different from the general answer. In fact, it is not difficult to imagine a case in which the importation of all and every one of the component parts of an invention, to be simply put together in Canada, would not be an importation in the meaning of section 28 of the patent act, but, on the contrary, would be the only means of obeying the statute as to manufacturing, and therefore, to all intents and purposes, in full compliance with the spirit of the law and the nature of the contract. Such would be, for example, the case of a patent granted for a composition of matter all the ingredients of which would be products not to be found in the country—a compound of exotic gums and extracts, for instance, or a medicine composed of portions of tropical plants. This is sufficient to illustrate the difference of cases, every one of which must stand on its own merits, viewed in the light of the facts confronted with the spirit of the law. The conclusion is, that the respondent having refused no one the use of his inventions, and that the importation assented to by him to be made, being inconsiderable, having inflicted no injury on Canadian manufactures, and having been so countenanced, not in defiance of the law, but evidently as a means to create a demand for the said inventions, which the patentee intended to manufacture and did, in fact, offer to manufacture in Canada, he has not forfeited his patents.

Therefore, George Thomas Smith's Patents No. 2,257, for a "flour-dressing machine," No. 2,258, for a "flour-dressing machine," and No. 2,409, for a "process of milling," have not become null and void under the provisions of section 28 of the patent act of 1872.

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The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Issue of January 15, 1884.

Patents	291—	No. 291,860 to No. 292,150, inclusive.
Designs	6—	No. 14,545 to No. 14,550, inclusive.
Trade-marks	7—	No. 10,851 to No. 10,857, inclusive.
Labels	8—	No. 3,630 to No. 3,837, inclusive.
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Kentucky	3		Washington Territ'y		
Louisiana	1		West Virginia	1	
Maine	1		Wisconsin	5	
Maryland	6	1	Wyoming Territory	2	
Massachusetts	26		United States Army		
Michigan	9		United States Navy		
Minnesota	6				
Mississippi			Total to citizens of the United States	285	15
Missouri	6	1			
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	2	
Austria	1		Hawaiian Islands		
Barbadoes			Hayti		
Belgium	2		Italy		
Bermuda			Mexico		
Brazil			Netherlands		
Canada	1		Russia		
Chili			Scotland		
Colombia, U. S. of			Sweden	1	
Cuba			West Indies		
Denmark					
Ecuador			Total to citizens of foreign countries	12	
England	5				
France					

DESIGNS.

14,545.—SALT AND PEPPER BOX.—*Charles Casper*, Meriden, Conn. Application filed October 23, 1883. Term of patent 3½ years.

14,546.—GATE.—*John McLean*, Brooklyn, N. Y. Application filed November 20, 1883. Term of patent 7 years.

14,547.—CARPET.—*Julius S. Meyer*, New York, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed July 28, 1883. Term of patent 3½ years.

14,548.—GIRL'S COSTUME.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed November 19, 1883. Term of patent 3½ years.

14,549.—CHARM.—*Charles S. Pine*, Providence, R. I. Application filed June 29, 1883. Term of patent 3½ years.

14,550.—CENTER-PIECE.—*Vincenzo Dini*, Brooklyn, N. Y. Application filed August 7, 1883. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

10,851.—WHOLE WINTER-WHEAT.—*David Brainard*, New York, N. Y. Application filed November 28, 1883.
"The word 'GRAINLET.'"

10,852.—WHISKY OR BEVERAGES COMPOUNDED OF WHISKY.—*Cook & Bernheimer*, New York, N. Y. Application filed December 4, 1883.
"The word 'LION.'"

10,853.—WHISKY OR BEVERAGES COMPOUNDED OF WHISKY.—*Cook & Bernheimer*, New York, N. Y. Application filed December 4, 1883.
"The word 'GOLD.'"

10,854.—ARTICLES USUALLY SOLD UNDER THE GENERAL NAME OF JEWELRY.—*T. B. Hagstoz & Co.*, Philadelphia, Pa. Application filed December 18, 1883.
"The representation of a diamond emitting a blaze of light in an upward slanting direction, and of a crescent set with brilliants from which rays proceed."

10,855.—PERIODICAL PUBLICATIONS.—*Henry C. Meyer*, New York, N. Y. Application filed December 12, 1883.
"The words 'SANITARY ENGINEER,' the peculiar style of type or letter in which the same are displayed, representing joints of water, gas, or steam pipe, the contrast of said letters with the background, the recumbent figure of a female, and scrolls."

10,856.—BURNING-FLUID.—*Johnston S. Parkison*, Ossian, Ind. Application filed December 21, 1883.
"The cut, figure, or representation of a German student-lamp."

10,857.—OYSTERS PUT UP IN CANS OR OTHER PACKAGES.—*Platt & Co.*, Baltimore, Md. Application filed December 14, 1883.
"The word 'UNION.'"

LABELS.

3,830.—Title: "HAILE'S ELIXIR MANDRAKE AND BUCHU AND M B." *Haile & Mower*, Atlanta, Ga. Application filed December 24, 1883.

3,831.—Title: "BELFAST LAWNS."—*John A. Lawrence*, Islip, and *William E. Thorn*, Cohoes, N. Y., executors of *William T. Garner*, deceased. Application filed December 21, 1883.

3,832.—Title: "STAR" (FOR PLUG TOBACCO.)—*Liggett & Myers Tobacco Company*, St. Louis, Mo. Application filed December 22, 1883.

3,833.—Title: "SENTINEL" (FOR CIGARS.)—*H. Westcott Son & Co.*, Binghamton, N. Y. Application filed December 22, 1883.

3,834.—Title: "OUR BOB" (FOR CIGARS.)—*H. Westcott Son & Co.*, Binghamton, N. Y. Application filed December 22, 1883.

3,835.—Title: "THE WINNER." (FOR CIGARS.)—*Sackett, Wilhelms & Betzig*, New York, N. Y. Application filed December 24, 1883.

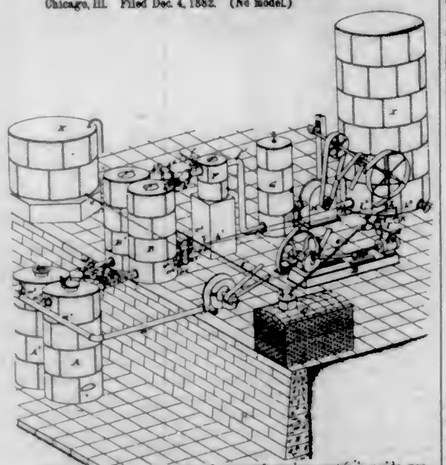
3,836.—Title: "STEWART'S GIPSY PILE OINTMENT."—*Fred W. Stewart*, Oswego, N. Y. Application filed December 24, 1883.

3,837.—Title: "THE JACKSON VENTILATING GRATE."—*Edwin A. Jackson* and *William M. Jackson*, New York, N. Y. Application filed December 21, 1883.

PATENTS

GRANTED JAN. 15, 1884.

291,860. APPARATUS FOR THE MANUFACTURE AND DELIVERY OF HEATING AND ILLUMINATING GAS. WILLIAM H. ADAMS, Chicago, Ill. Filed Dec. 4, 1882. (No model.)



Claim.—1. In an apparatus for manufacturing carbonic-oxide gas, with or without the addition of steam and hydrocarbon, and consisting of a system of air-tight continuously-communicating chambers and pipes extending from the air-forcing apparatus to and through the producers, and thence to the service-mains, the combination of the producers, the pipe for supplying a controllable quantity of air under pressure to the producers, the fan or air-pump for forcing the air-supply through said pipe to the producers, the pipe or pipes for delivering away the produced gas, the regulator operated automatically by the variable pressure of the produced gas, substantially as described, and operating mechanism connecting the air pump and regulator, whereby the quantity and pressure of the air forced to the producers is automatically regulated and controlled by the varying fluid-pressure of the produced gas, as herein set forth.

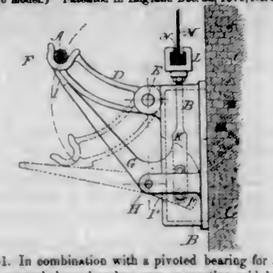
2. In an apparatus for manufacturing carbonic-oxide gas, with or without the addition of steam and hydrocarbon, and consisting of a system of air-tight continuously-communicating chambers and pipes including the producers and the pipe or pipes for delivering away the produced gas, the combination of the producers, the air-duct through which air is admitted to the producers for the manufacture of gas, and the regulator operated automatically by the variable pressure of the produced gas and connecting mechanism, whereby the admission of air into the producers is regulated and controlled automatically by the fluid-pressure of the produced gas, as herein set forth.

3. In an apparatus for manufacturing carbonic-oxide gas and enriching it by steam and hydrocarbon, and consisting of a system of air-tight continuously-communicating chambers and pipes including the producers, the gasogenes, and the gas-delivery pipes, the combination of the producers, the gasogenes, the air-duct for admitting air to the producers, the ducts for admitting steam and hydrocarbon to the gasogenes, and the regulator, substantially as described, and connecting mechanism, as described, whereby the variable pressure of the produced gas automatically regulates and controls the admission of air to the producers and the admission of steam and hydrocarbon to the gasogenes, as herein set forth.

4. In an apparatus for the manufacture of gas, the combination of a regulator actuated by the varying fluid-pressure within the system, the exhauster, the valves controlling the admission of steam and hydrocarbons to the gasogenes, and the fan creating the blast of air to the producers, all connected by suitable mechanism, whereby the production of the gas is automatically regulated and controlled by said fluid-pressure, substantially as described.

5. In an apparatus for the manufacture of gas, the combination of an exhauster, a pressure-box, a regulator automatically controlling the production of the gas, and a regulator controlling the delivery of the gas into the mains, substantially as described.

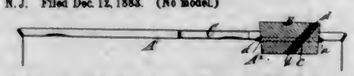
291,861. SHAFT-BEARING FOR TRAVELING CRANES. CHAS. JAMES APPLEBY, Southwark, County of Surrey, England. Filed Oct. 22, 1883. (No model.) Patented in England Dec. 22, 1879, No. 5,226.



Claim.—1. In combination with a pivoted bearing for a rotary or other shaft, a counterbalanced rocker-arm supporting said bearing, and a rod or bar connected to said rocker-arm for actuating the same, substantially as and for the purposes set forth.

2. The combination of a pivoted bearing for a rotary or other shaft, a rocker-arm supporting said bearing, a rod or bar connected to said rocker-arm, and a moving or traveling cam operating said rod, whereby said bearing is automatically depressed and elevated, substantially as and for the purposes set forth.

291,862. CAN FOR KEROSENE, &c. PAUL BABCOCK, Jr., Montclair, N. J. Filed Dec. 12, 1883. (No model.)

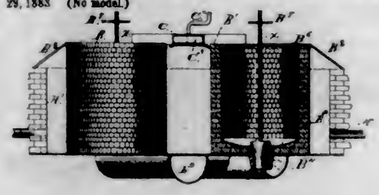


Claim.—1. A tin can having in its top a filling hole or opening, the edge of which is re-enforced by a wire, over which the metal is turned outward and closed, substantially as and for the purpose described.

2. The combination, with a can having a filling-hole in its top, of a wood bung fitting said filling-hole, and having the hole *c* extending through it and filled with a plastic substance, *d*, and a pouring-spout adapted to be inserted into the said hole *c*, and to force the plastic substance *d* therefrom, substantially as and for the purpose described.

3. The combination, with the bung B, formed with the hole *c*, and a plastic filling, *d*, for said hole, of the pouring-spout C, adapted to be inserted in said hole *c*, and to force the plastic filling therefrom, substantially as described.

291,863. FILTER. WILLIAM BALL, Lynchburg, Ohio. Filed Sept. 29, 1883. (No model.)

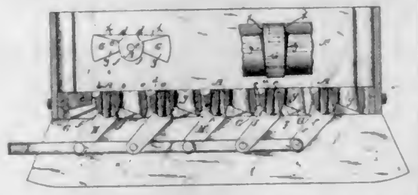


Claim.—1. The combination, with the reservoir, of a filtering receiving-tank arranged therein, and having its upper end projected above the high-water mark, the said tank being constructed with porous walls and adapted to receive the supply of inflowing water in its upper end, substantially as described, and for the purposes specified.

2. The combination, with the reservoir and the filtering receiving-tanks arranged therein, of the feed-pipe having branches leading into said tanks, and provided with a valve at the juncture of said branches, whereby the inflowing water may be directed into one or both of the tanks, substantially as set forth.

3. In a reservoir, the combination of the filtering receiving tank or chamber, having porous sides and imporous base, and having a tapered discharge-opening formed through its said base, the cross-bar having threaded opening arranged above the discharge-opening, and the tapered plug turning in said discharge-opening and having its stem threaded, as described, and provided with a suitable lever or handle, substantially as set forth.

291,864. GRATE. LEMUEL BANNISTER, Philadelphia, Pa. Filed Sept. 8, 1883. (Model.)



Claim.—1. A grate-bar constructed, as described, with a flat top, and the upper part of its sides concave.

2. A grate-bar constructed, as described, with a flat top, vertical perforations therein, and the upper parts of its sides concave.

3. A grate-bar constructed, as described, with a flat top, longitudinal grooves and vertical perforations therein, and the upper parts of its sides concave.

4. A grate-bar constructed, as described, with a flat top, the upper parts of its sides concave, and downwardly-tapering convex lower sides.

5. A grate-bar constructed, as described, with a flat top, laterally-projecting lugs or teeth, the upper parts of its sides concave between the teeth, and downwardly-tapering convex lower sides.

6. A grate-bar constructed, as described, with a flat top, vertical perforations, laterally-projecting lugs or teeth, the upper parts of its sides concave between the teeth, and downwardly-tapering convex lower sides.

7. A grate-bar constructed, as described, with a flat top, vertical perforations, laterally-projecting vertically-perforated lugs or teeth, the upper parts of its sides concave between the teeth, and downwardly-tapering convex lower sides, and a rounded bottom.

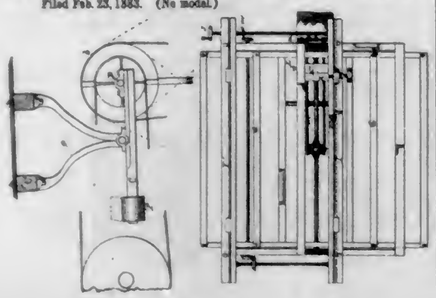
8. The combination, substantially as herein set forth, of a series of grate-bars constructed, as described, with flat tops, vertical perforations, laterally-projecting interlapping lugs or teeth, the upper parts of its sides concave between the teeth, and downwardly-tapering lower sides.

9. The combination, substantially as set forth, of the bar and the laterally-projecting teeth formed with a double bevel on each side.

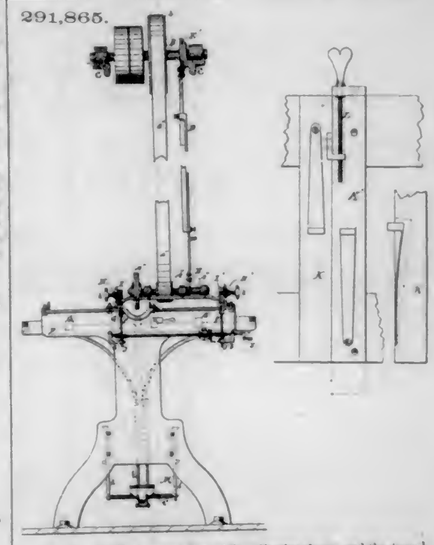
10. The combination, substantially as set forth, of the bar and the laterally-projecting teeth formed on each side with a bevel, *y*, and a concave bevel, *z*.

11. The combination of the bar formed with the upper parts of its sides concave, and the laterally-projecting teeth formed with concave bevels *z*, substantially as and for the purpose specified.

291,865. DADOING-MACHINE. JAMES K. BENWAY, Albany, N. Y. Filed Feb. 23, 1883. (No model.)



291,865.



Claim.—1. The combination of the adjusting-frame and the traveling frame having means of adjustment, as described, the said traveling frame being provided with a central shaft, connected by means of a driving-belt and adjustable rod or rods to a tilting frame having a shaft and balancing-weight, the whole adapted to operate substantially as set forth.

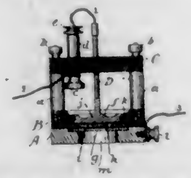
2. In a dadoing or other molding machine, the combination, with a weighted driving-pulley, of a laterally-traveling frame carrying the cutter-head and adapted to be guided in its path by suitable tongues engaging in horizontal grooves in a frame having means for vertical adjustment, substantially as described, and for the purposes set forth.

3. In a dadoing or other molding machine, the combination, with a traveling frame carrying the cutter-head, of a vertically-moving work-table operated by a foot-lever having pivotal bearings in the stationary frame and a set-screw for regulating its movement, as set forth.

4. In combination with the dadoing-machine, the spacing, detaining, and duplicating mechanism, consisting of stops arranged as described, one of said stops being provided with an adjusting-screw, as and for the purposes set forth.

5. In combination with a dadoing or other molding machine, the cutter-head consisting of removable blades having detachable chisel-edges and cutting-teeth and suitably-interposed washers, as described.

291,866. TELEPHONE-TRANSMITTER. EMILE BERLINER, Boston, Mass. Filed Oct. 5, 1883. (No model.)



Claim.—1. In a telephone-transmitter, a variable resistance, consisting of a mechanical mixture of small conducting particles—such as lamp-black or granulated coke—with water or other liquid of low conductivity.

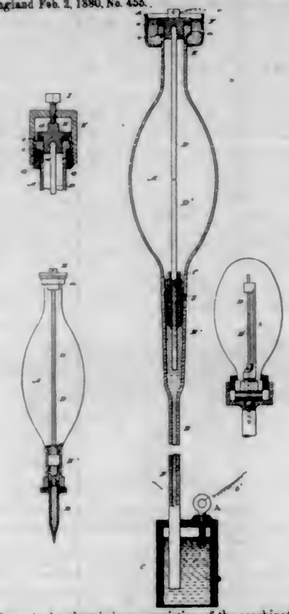
2. The combination, in a telephone-transmitter, of a vibrating diaphragm, a weight, and a non-conducting ring, the whole constituting a chamber of which the diaphragm forms one side, the weight the other, and the inner surfaces of the ring the walls thereof, with a variable resistance placed in the chamber thus formed, and consisting of a damp conducting mass produced by mixing granulated carbon particles with water or some other semi-conducting liquid.

3. The combination, in a transmitting telephone, of the containing-cavity, the moist carbon mass formed by adding a partially-conducting liquid to granulated carbon, the conducting-weight peripherally grooved, and the soft and flexible packing for the said groove, all substantially as hereinbefore described.

4. In a telephone-transmitter, the combination of a sliding weight

adapted to be acted upon by sound-waves, and a packing of felt or similar soft material around said weight.

291,867. ELECTRIC LAMP. THOMAS H. BLAMIRE, Huddersfield, County of York, England. Filed Sept. 12, 1882. (No model.) Patented in England Feb. 2, 1880, No. 455.



Claim.—1. An electric lamp consisting of the combination of a glass globe containing mercury and formed with an aperture or neck, a metallic stopper closing said neck hermetically, the luminous carbon or carbons or equivalent electric lighting elements in said globe, an electrical connection between one terminal of said carbons and said metallic stopper, and electrical connection between the other terminal of said carbons and said mercury, substantially as set forth.

2. An electric lamp consisting of the combination of a glass globe formed with an aperture or neck, a metallic stopper closing said neck hermetically, a carbon or equivalent electric lighting element fixed to said stopper, a column or body of mercury in said globe, and electrical connection between the other carbon and said mercury, substantially as set forth.

3. An electric lamp consisting of the combination of a glass globe, a tube extending downward from the bottom thereof, a carbon or equivalent electric lighting element fixed in place in said globe, a body of mercury in said tube, and the other carbon floating in said mercury, and thereby pressed buoyantly against the fixed carbon, substantially as set forth.

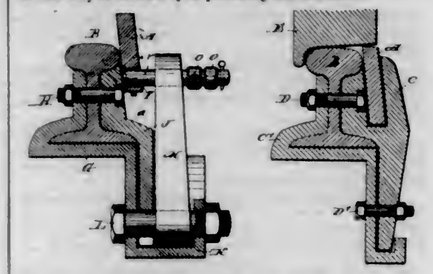
4. In an electric lamp, the combination of a glass globe, A, formed with a neck having a shoulder, *c*, a metallic stopper, E, and its packing, *s*, a divided sleeve, G, screw-threaded on its exterior, a ring or cap screwing onto said sleeve and thereby holding its halves together, and a screw-coupling, substantially as shown, whereby the stopper is pressed to its seat by drawing against said sleeve.

5. An electric lamp consisting of a glass globe, a long tube or stem extending downwardly from the lower end thereof, the carbon or carbons or other electric lighting elements in said globe, a column of mercury in said tube, and a tight mercury-cup inclosing the lower end of said tube, substantially as set forth, whereby the variations in atmospheric pressure are prevented from affecting the height of the column of mercury.

6. In an electric lamp, the combination of a glass globe having a neck, a stopper closing said neck hermetically, and a vessel or receptacle surrounding the neck and containing a liquid whereby the stopper-joint is immersed, substantially as set forth.

291,868. DETECTING-BAR FOR RAILWAY-SWITCHES. JAMES A. BONNELL, New York, N. Y., assignor to the National Interlocking Switch and Signal Company, same place. Filed Feb. 9, 1883. (No model.)

Brief.—A bar held to the side of a rail in the path of the wheel and supported at an inclination to the vertical plane of the rail in inclined recesses in blocks bolted to the rail and chair, as described, the bar being provided with a series of longitudinal slots, each slot being adapted to receive a pintle carried by the free end of a swinging arm arranged as described, the pintles being connected by a rod extending to an operating-lever, whereby the bar is adapted to be raised and lowered by a movement of said connecting-rod longitudinally, and the presence of a train on the rails may be detected by its preventing such movement.



Claim.—1. The combination, with a railroad-rail, of a detecting-bar held to the side of the same at an inclination to the vertical plane of the rail, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with a railroad-rail, of blocks held to the rail, which blocks are each provided in its top with a groove parallel with the rail, and a detecting-bar held in the grooves of said blocks, substantially as described, and for the purpose set forth.

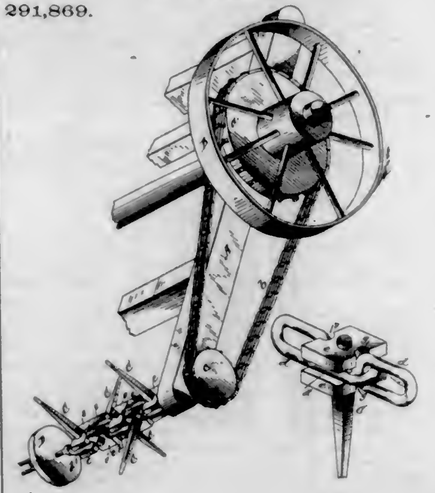
3. The combination, with a railroad-rail, of a bar held to the side of the rail, swinging arms pivoted to chairs held to the rail, pintles passing through the free ends of the said arms and through slots in the bar, and of rods for swinging the arms, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with a railroad-rail, of the bar A, provided with longitudinal slots F, the swinging arms M, pivoted to chairs held to the rails, the pintles N, passing through the arms M and through the slots F in the bar A, and the connecting-rods O, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with a railroad-rail, B, of a bar, A, provided with slots F, of the slotted blocks C, the chairs G, provided with pockets K, having beveled inner sides, the arms M, pivoted in the said pockets, and the pintles N, passing through arms M and through the slots in the bar A, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with a railroad-rail, B, of a bar, A, provided with slots F, of the recessed blocks C, the blocks J, the chairs G, the arms M, pivoted in the chairs G, the pintles N, passing through the arms M and through the slots F in the bar A, and of the rods O, substantially as herein shown and described, and for the purpose set forth.

291,869.



291,869. HARROW. EDWARD E. BOSTWICK, Union City, Mich. Filed Oct. 25, 1883. (No model.)

Claim.—1. A flexible shaft for harrows, consisting of a series of links connected together and having harrow-teeth attached, in combination with means for imparting to said shaft a rotary motion, substantially as and for the purpose set forth.

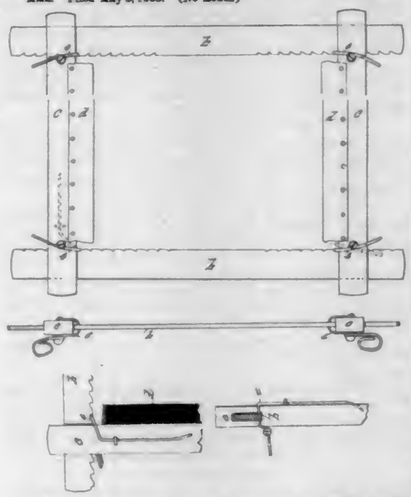
2. A revolving flexible shaft consisting of a series of links connected together, and provided with blocks, nuts, or other like devices, and harrow-teeth detachably connected thereto, substantially as and for the purpose specified.

3. A revolving flexible shaft for harrows, consisting of a series of links connected together, and held between suitable clamping-blocks, to which the harrow-teeth are secured, substantially as and for the purpose set forth.

4. The combination, with a flexible harrow-shaft composed of a series of links connected together, of notched and grooved clamping-blocks provided with means for attaching thereto the harrow-teeth, substantially as and for the purpose specified.

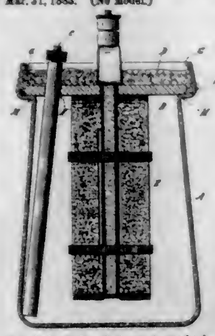
5. A revolving flexible shaft for harrows, consisting of suitable clamping-blocks, to which the harrow-teeth are connected, a series of links, and a series of gage-wheels arranged between the links at intervals along the shaft, substantially as and for the purpose set forth.

291,870. EMBROIDERY-FRAME. GILBERT A. BLACKETT, Springfield, Mass. Filed May 3, 1883. (No model.)



Claim.—In an embroidery-frame, the combination, with the bars *b b*, provided with ratchet-teeth, of the bars *c c*, mortised to receive the ends of the bars *b*, and the springs *a*, pivoted on bars *c c*, and adapted to engage with said ratchet-teeth, substantially as set forth.

291,871. GALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Filed Mar. 31, 1883. (No model.)



Claim.—1. A cell for galvanic batteries, which consists of a vessel decreasing in size from the bottom upward, and then increasing in size, forming a lip for the cover to rest on, and then again decreasing in size, thereby enabling the cover to be locked in position by a seal, substantially as described.

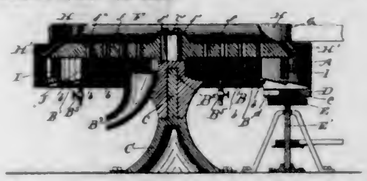
2. The battery-cell A, decreasing in size from the bottom upward, and provided with the shoulder M, and with cup-shaped recess F for holding a paraffine seal, in combination with said paraffine seal and with a cover locked in such recess thereby, substantially as described.

3. A galvanic cell consisting of the cup A, provided with shoulder M, cover B, in which the elements E C of the battery are suspended, and the paraffine seal D, surrounding said elements and sealing them in position, substantially as described.

4. The combination of the cell A, cover B, provided with perforation N, cut at an angle to the axis of the cell, and zinc C, held away from the electro-negative element by reason of said hole or perforation, thereby preventing accidental contact between the zinc and the carbon by reason of the proximity of the free end of the zinc to the carbon, substantially as described.

5. A cell for galvanic batteries, which consists of a vessel provided at its upper extremity with a shoulder formed of the material of the cell, and projecting inward to support the battery-cover and to permit the same to be sealed by a paraffine or equivalent seal set above the cover, substantially as described.

291,872. ORE-SEPARATOR. FRANCIS R. BROWN, Boulder, Colo. Filed Oct. 19, 1883. (No model.)



Claim.—1. A separator-pan provided with a convex bottom constructed in successive inclines, and having a central discharge-opening substantially as set forth.

2. A separator-pan provided with a convex bottom constructed in successive inclines, each incline being provided with one or more pockets adapted to arrest the heavier particles of ore as they are moved circularly or spirally over said bottom, substantially as set forth.

3. In combination with a separator-pan, a rotating diaphragm which has a coiled or spiral flange attached to its under side, and operating as set forth.

4. In combination with a separator-pan, a rotating diaphragm which has a coiled or spiral flange attached to its under side, the coils of said flange being of increasing height or width from the center outward, as set forth.

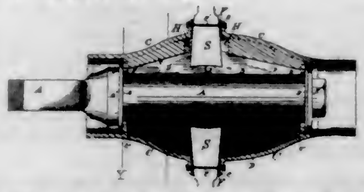
5. In combination with a separator-pan, a rotating diaphragm which has a coiled or spiral flange attached to its under side, and devices for adjusting the coils of said flange toward or from each other, substantially as set forth.

6. In combination with a separator-pan, a rotating diaphragm which is provided with devices whereby it may be secured in a concentric position with respect to said pan, or adjusted to different degrees of eccentricity, substantially as set forth.

7. In combination with a separator-pan and an axial stud or post, a diaphragm arranged to rotate, and having its hub or center slotted, so that it may be arranged concentrically or eccentrically with respect to said pan, and bolts for securing the same.

8. In combination with a pan for separating ores, a sliding block moving in guides attached to said pan, and certain devices whereby said block is operated to cause oscillation, substantially as set forth.

291,878. VEHICLE-WHEEL HUB. JAMES T. BROWN, Indianapolis, Ind. Filed Sept. 22, 1883. (No model.)



Claim.—1. A vehicle-wheel hub provided with internal longitudinal ribs, in combination with an elastic filler, substantially as and for the purposes specified.

2. The combination of a vehicle-wheel hub provided with internal

longitudinal ribs and an elastic filler, a portion of which lies between said ribs and a portion extends beneath the bottom of the spokes, and a journal-box, substantially as and for the purposes specified.

3. The combination of the shells C, provided with the ribs *c*, stopping a distance short of the spokes, and the elastic filler D and elastic layers or disk H, substantially as and for the purposes specified.

4. The combination of the shells C, provided with the ribs *c*, stopping a distance short of the spokes, and the elastic filler D, the layers H being integral with the elastic filler D, substantially as and for the purposes specified.

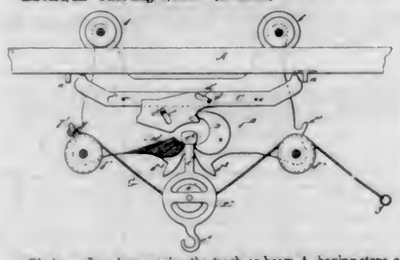
5. The combination of the shells C, provided with the ribs *c*, disks F, lying between the spokes and flange *s* of the shells, and elastic filler D and elastic layers or disk H, substantially as and for the purposes specified.

6. A vehicle-wheel hub consisting of an external shell provided with partitions or lugs fitting in notches in the flanges of the journal-box, and having the intermediate space filled with an elastic material, substantially as and for the purposes specified.

7. The combination of the shells C C, provided with partitions *c* and lugs *d'*, journal-box B, having notches *b'* in flange *b*, the fillers D, and washers *a*, substantially as and for the purposes specified.

8. A hub consisting of the shells C, having an elastic filling, and provided with flanges *s*, in combination with the spokes S and elastic washers F, placed between said flanges and spokes, substantially as and for the purposes specified.

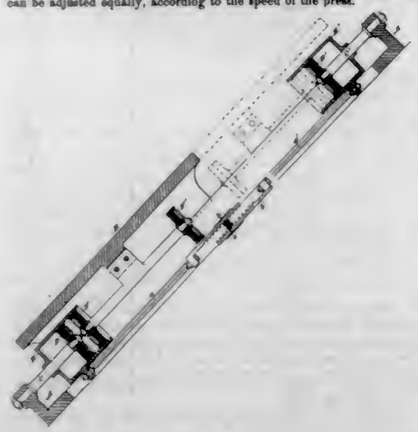
291,874. HAY-CARRIER. ABNER J. BURRAMS and HENRY D. PAGE, Harvard, Ill. Filed Aug. 6, 1883. (No model.)



Claim.—In a hay-carrier, the track or beam A, having stops *a a* upon opposite sides, in combination with the frame B, formed with the lips B' and hooks *b'*, the hooked and weighted lever C, lever C', connected thereto, dog D, guide-pulleys *b²*, fork-pulley E, and the rope G, having a ring, *g*, at each end, all constructed and arranged to operate substantially as and for the purpose set forth.

291,875. AIR CUSHION FOR THE RECIPROCATING BEDS OF PRINTING-PRESSES. ANDREW CAMPBELL, Brooklyn, assignor to John and Edmund McLoughlin, New York, N. Y. Filed June 19, 1883. (No model.)

Brief.—The two opposite air-bells are connected together, so that they can be made to approach or recede from each other simultaneously while the bed is running. By this means the depth of the air cushions can be adjusted equally, according to the speed of the press.



Claim.—1. As a means for checking the momentum of the reciprocating bed of a printing-press, the combination, with said bed and pistons borne thereby, of air-bells arranged at opposite ends of the machine, mounted upon the fixed frame thereof and adjustable axially toward and from each other, and mechanism, substantially as set forth, connected with said air-bells for moving them simultaneously toward or from each other.

2. As a means for checking the momentum of the reciprocating bed of a printing-press, the combination, with said bed and pistons borne thereby, of axially-movable air-bells arranged at opposite ends of the machine, where they will be entered by said pistons at the extreme stroke of the bed, and mechanism, substantially as set forth, connected with said bells, the operation of which causes the bells to move toward or from each other simultaneously and to the same extent, and which is capable of operation while the press is running, as described.

3. As a means for checking the momentum of the bed of a printing-press, the combination, with the bed, of a piston borne thereby, a fixed piston, and a movable bell adapted to be shifted in the direction of its axis over said fixed piston, all arranged to operate substantially as set forth.

4. The combination, with the reciprocating bed, the pistons F F' borne thereby, the pistons D D', fixedly mounted on the frame, and the movable bells E E', of the means, substantially as described, for shifting said bells simultaneously and equally, as set forth.

5. The combination, with the reciprocating bed and the pistons borne thereby, of the fixed pistons, the movable bells, the rods *a a'*, the racks *b b'*, and the pinion *c*, all arranged substantially as set forth.

291,876. DRILLING-MACHINE. ROBERT K. CARPENTER, Medford, Mass. Filed Aug. 6, 1883. (No model.)



Claim.—1. In a drilling-machine substantially such as described, the shaft C, consisting of the tubes H J, screw *p*, and flexible shafts K L, in combination with means for connecting said shaft with a driving-shaft, and with the mandrel of a drill or other tool, substantially as set forth.

2. In a drilling-machine substantially such as described, the coupling N, provided with the flaring socket *n* and set-screws *r*, in combination with the flexible shaft K, and means for connecting said flexible shaft with the tool-carrying mandrel *a*, substantially as specified.

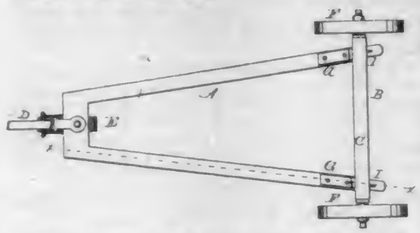
3. The improved drilling-machine herein described, the same consisting of the shaft K, provided with the coupling-thimble N, having the screws *r* and flaring socket *n*, the pipes J H, provided with the screw *p*, the shaft L, provided with the thimble M, having the screw *b* and recess *h*, the shaft *f*, provided with the gear *x*, spline *i*, and groove *z*, the sleeve E, having an interior groove to receive the spline *i*, and provided with the screw *g* and lever G, the mandrel *a*, provided with the gear *v*, drill *d*, and a feed-screw, *j*, the shaft B, and frame A, all constructed, combined, and arranged to operate substantially as set forth.

291,877. GLOVE-FASTENING. JOSIAH B. CRANE, Newton, MASS. Filed Apr. 16, 1883. (No model.)



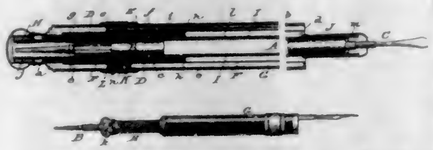
Claim.—The herein-described glove-fastening composed of the ball *a*, and neck *b*, to support it, and the loop *c*, adapted to be sprung over the ball to fasten the glove, the said loop at its free end being turned up or provided with a knob, substantially as shown.

291,878. HARVESTER-TRUCK. HENRY CLAYTON, Dayton, Ohio. Filed Nov. 12, 1883. (No model.)



Claim.—In a three-wheeled harvester-truck, the straps G G' of the side rails, and pin I for attachment to the axle B, substantially as set forth.

291,879. COMBINED PEN-HOLDER, PENCIL, AND TOOTH-PICK. RICHARD M. COLLARD, New York, N. Y., assignor to Le Roy W. Fairchild, same place. Filed Sept. 25, 1883. (No model.)



Claim.—1. In combination with a shell or case, a pencil-point provided with a magic movement and adapted to be projected from one end of the shell or case, a tooth-pick point furnished with a simple screw movement and adapted to be projected from the opposite end, and a pen-slide encircling the screw movement and adapted to be protruded from the same end of the case as the tooth-pick.

2. In a combined pencil and tooth-pick, the combination of a central guide-tube, slotted longitudinally, a pencil-point, and a tooth-pick arranged to slide within and guided by said tube, and means, substantially such as shown and described, for independently moving said points within the tube and causing them to project therefrom.

3. In combination, slotted tube A, pencil-point B, and spirally-slotted tubes D E, adapted and arranged to move said point, as explained, tooth-pick slide C, and spirally-slotted tube I, adapted and arranged to move said point, substantially as set forth.

4. In a combined pen-holder, pencil, and tooth-pick, the combination of an outer shell or case, a pen-slide adapted to be protruded from one end of the case, and a central tube carrying at opposite ends, respectively a pencil-point and tooth-pick, said tube being arranged, substantially as shown and described, to move longitudinally, and to have its tooth-pick end drawn within the case when the pencil-point is projected, for the purpose explained.

5. The herein-described implement, consisting of shell G, having inner tube, F, slotted central guide-tube, A, pencil-point B, and its operating-spirals D E, sheath H, and head K, tooth-pick C, and its operating-spiral I, and the pen-slide K L, all combined and arranged substantially as shown and described.

6. In combination with tube F, central guide-tube, A, provided with pencil-point B, and tooth-pick C, spirally-slotted tubes D E, for operating the pencil-point, and spirally-slotted tube I, provided with tip J, by which to rotate tube I, and serving also to support said tube and the central guide-tube laterally.

291,880. ICE-CREEPER. HERBERT COTTRELL, Newark, N. J. Filed Oct. 18, 1883. (No model.)

Claim.—1. The combination, with a base-plate adapted to be permanently secured to the front of a boot or shoe heel, and constructed with dovetailed slideways, of heads or stocks dovetailed to fit said slideways,



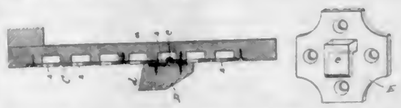
a rod or spindle supported by said heads or stocks and serving to tighten them in said slideways, and an ice dog or calk upon said rod or spindle, substantially as and for the purpose described.

2. The combination of the base-plate B, constructed with slideways *c*, and adapted to be permanently secured to the front of a heel, the heads or stocks E E', fitted to the slideways *c*, the rod or spindle C, screw-threaded and provided with the nut *e*, the dog or calk D, adapted to lock into the head or stock E', and the spring *f*, all substantially as described.

3. The combination, in an ice-creeper, of a spindle on which is fitted a reversible dog, two heads for supporting the said spindle, locking devices on one of said heads and upon the said dog for locking the said dog in either its operative or reversed position, a spring on said spindle for forcing the dog into engagement with the locking devices on the head, and a nut and screw-thread on said spindle for varying the tension of said spring independently of the spindle-head, substantially as herein described.

4. The combination of the base-plate B with slideways *c*, the heads or stocks E E', the rod or spindle C, serving to tighten said heads or stocks and supported by them, the dog or calk D, locking into the head or stock E', the nut *i*, screwed on said rod or spindle inside the head or stock E, and the spring *f*, arranged between the dog or calk and said nut *i*, all substantially as described.

291,881. WORK-BENCH. MILLARD CREIGHTON, Marblehead, MASS. Filed Nov. 23, 1883. (No model.)

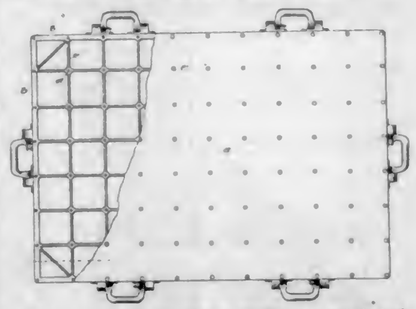


Claim.—1. The improved bench attachment, consisting of two plates, C, provided with a number of perforations, 2, and of two locking-plates, E, having rigidly-attached hooks *e*, to enter the perforations of the said plates C, the locking-plates being adapted to be attached to the rear side of the strip D and support the same at the side of the bench to which the plates C are attached, substantially as and for the purpose set forth.

2. The bench A, having the perforated plates C, said bench being recessed or cut away at the rear sides of the said plates, the board-supporter or strip D, having locking-plates E *e*, to engage with the perforated or recessed plates C, and suitable means for preventing endwise movement of the board to be operated upon, in combination, substantially as described.

3. The bench A, having the perforated plates C, said bench being recessed or cut away at or near the perforations 2 of the plates, and the supporter or strip D, having the locking-plates E, and having its top or upper surface, *d*, beveled, substantially as and for the purposes set forth.

291,882. TABLE FOR LEATHER-SCOURING MACHINES. THOS. L. DARDENT, Boston, MASS. Filed May 12, 1883. (No model.)

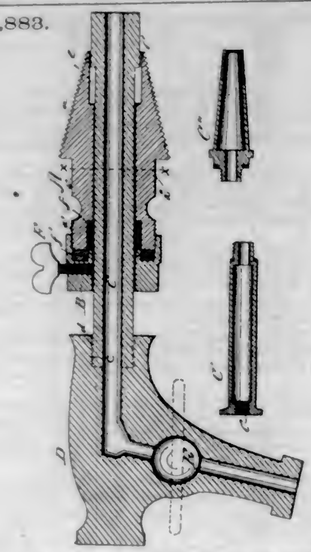


Claim.—As an improved article of manufacture, a table for leather-scouring machines, composed of two metal plates and intermediate strengthening frame-work connected with the said plates to support them at various points between their surfaces, substantially as described.

291,883. FAUCET. JOSEPH H. DORGAN, Plattsburg, N. Y. Filed Feb. 7, 1883. (No model.)

Claim.—1. In a faucet, the combination, with the tube C, of the

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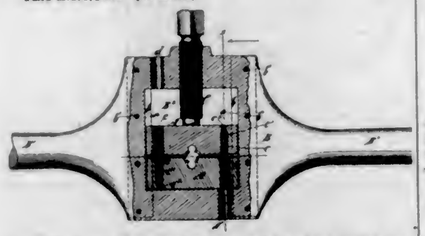
sliding conical plug A and the collar B, provided with the set-screw F, substantially as and for the purposes set forth.

2. The head D, in combination with the tube C, sliding conical plug A, and collar B, substantially as and for the purposes set forth.

3. In a faucet, the tube C, adapted to be screwed into the head D, and formed with the offset *c'*, and the sliding conical plug A, formed with the chamber *e*, and having the packing *f*, in combination with the sliding collar B, having the set-screw F and packing *f'*, and adapted to be screwed upon the outer end of the conical plug A, substantially as shown and described.

4. The combination, with the tube C, sliding conical plug A, collar B, and main head D, of the extension-tube C', substantially as and for the purposes set forth.

291,884. DIE AND DIE-STOCK. GEAR ELTERICH, New York, N. Y. Filed Mar. 2, 1883. (No model.)



Claim.—1. A screw-threading die, consisting of two sections provided with guide-pins and with holes or recesses for receiving said pins and holding the sections in proper relation to each other, each pin being secured in one section and adapted to slide freely into a hole in the other section, and thereby affording provision for the ready separation of the sections when desired, substantially as described.

2. A screw-threading die, consisting of two sections provided with guide-pins and with holes for receiving said pins, serving both to hold the sections in proper relation to each other, and also as stops to limit the closing movement of said sections, each pin being secured in one section and adapted to slide freely into a hole in the other section, and thereby affording provision for the ready separation of the sections when desired, substantially as herein described.

3. A screw-threading die, consisting of sections provided with guide pins and holes, each pin consisting of a screw screwed into one section and having beyond its thread a smooth portion adapted to slide freely into a guide-hole in the other section, said guide-pins serving both to hold the sections in proper relation to each other and to form stops for adjustably limiting the movement of said sections toward each other, substantially as described.

4. The combination of the die-sections A A, provided with screw-threaded guide-pins c, each having a smooth portion beyond the thread, and with holes or recesses *c'*, in which said smooth portions are free to slide, and the stock B, provided with holes *d* opposite the said guide-pins and through which a screw-driver may be inserted to turn said pins without removing the die from the stock, substantially as described.

291,885. MECHANICAL MOVEMENT. HENRY ERRIC, Philadelphia, PA. Filed Dec. 11, 1882. (No model.)



Claim.—1. In a mechanical movement, the combination of a load-wheel rotated by an internal gear, which is actuated by two eccentrics.

2. The arm B, connecting from one eccentric to the pinion-wheel P.

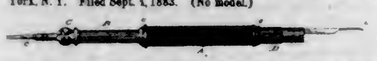
3. The eccentric or crank, in combination with an arm connecting with pinion P.

4. The pulley or gear G', used to drive the eccentric E' and driven by the wheel W.

5. The wheel W, when used to drive two eccentrics for controlling the motion of pinion P.

6. The combination of wheel L, pinion P, arm B, eccentrics E and E', gear G and G', together with wheel W, all substantially as set forth.

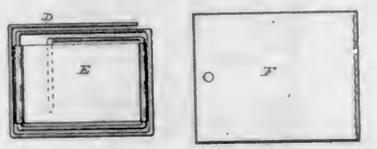
291,886. PEN AND PENCIL CASE. LE ROY W. FAIRCHILD, New York, N. Y. Filed Sept. 4, 1883. (No model.)



Claim.—1. The combined pen and pencil case consisting of an outer tube or shell, A, a pencil-tube, I, secured at one end to the shell A and extending centrally through the same, and the reversible pen-holder D, open at both ends, all substantially as shown and described.

2. In combination with the shell or tube A, having the pencil-tube I, arranged to project centrally at one end, the reversible open-ended pen-holder D, arranged substantially as shown and described, whereby the end of tube I shall close the opening in the end of the pen-holder when the pen is inserted within the shell, as set forth.

291,887. HARNESS-PAD. WILLIAM H. FELKER, Dayton, Ohio. Filed Aug. 27, 1883. (No model.)



Claim.—In a detachable pad for harness-saddles, the wire spring D, of the form of a parallelogram, with a thin metallic plate, E, attached to the top end sections, the same inclosed in a leathern sack, F, with perforations, as described, which is covered by a cloth attached to the leathern body H, substantially as set forth.

291,888. BED-BOTTOM. EDWIN SCOTT FIELD, Springfield, MASS. Filed Sept. 18, 1882. (No model.)

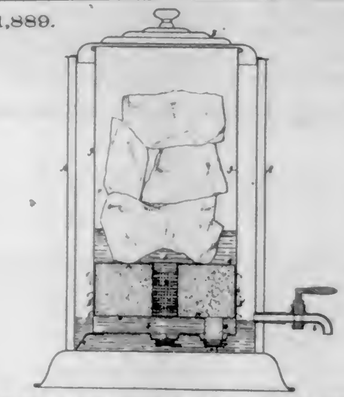


Claim.—In combination, the side rails, *a*, the end rails, *b*, the flexible metallic strips *c*, having the broadened and re-enforced ends, and the spiral springs *d*, the strips connected at each end to the end rails of the frame by two or more spiral springs, all substantially as described.

291,889. FILTER FOR WATER-COOLERS. ALLEN FISKE, Boston, MASS. Filed Apr. 3, 1883. (No model.)

Claim.—1. The filter B, constructed substantially as described—viz., with its filtering-chamber foraminous in its periphery, and provided with a foraminous tube extending down through it, and opening at its

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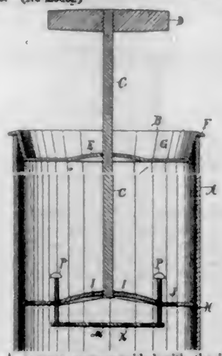


lower end into a sediment-chamber and at its upper end into a chamber for the reception of ice and water, such filtering-chamber and ice-and-water chamber being within or surrounded by a tank, A, provided with a cock, *b*, as set forth.

2. The combination of the tank *g*, provided at its bottom with the educt *l*, with the filtering-chamber arranged in such tank and opening through the sides thereof, and having a filling-induct, *o*, opening through the bottom of the tank, as set forth, and also with the foraminous tube *h*, extending through such chamber from top to bottom thereof, and opening at top and bottom into the tank, all being substantially as set forth.

3. The combination of the tank A, provided with the discharge-cock *b*, with the water-and-ice-receiving chamber *r*, sediment-chamber *k*, and the filtering-chamber and its tube, foraminous in their peripheries, as described, all being arranged substantially as set forth, and the said sediment and filtering chamber being provided with the ducts *o* and *l*, as explained.

291,890. EGG-BEATER. WILLIAM G. FLANDERS, Troy, N. Y. Filed June 13, 1883. (No model.)



Claim.—1. A concave cover provided with the inwardly-inclined surface G, stamped from a single piece of sheet metal, and provided with a central stem-opening, in combination with a stem and plunger and inclosing-case, substantially as described, and for the purposes set forth.

2. In an egg-beater, a perforated plunger having a central opening, in combination with a suitably-coanected valve or disk, to close said opening when the plunger moves in one direction and open it again when it moves in the opposite direction, substantially as described, and for the purposes set forth.

3. In an egg-beater, the combination, with a stem and plunger having a suitable inclosing-case, of a perforated disk attached to said plunger by suitable sliding supports, substantially as described, and for the purposes set forth.

4. The combination of stem C, perforated plunger H, perforated disk K, pins P, and case A, substantially as described, and for the purposes set forth.

291,891. METALLIC PATCH FOR BULLETS. GEORGE VINCENT FOSBERY and HENRY PIEPER, Liege, Belgium. Filed May 31, 1883. (No model.)

291,891.



Claim.—1. A metallic envelope for projectiles of rifled small-arms, the sides of which envelope are formed by sections with their upper edges inclined outward, for the purpose of detaching the envelope from the projectile when the latter leaves the muzzle of the rifle, substantially as described.

2. A metallic envelope for projectiles of rifled small-arms, open at the front end, and provided with circumferential ridges or teeth of sufficient diameter to project into the grooves of the rifle while the projectile passes through the bore, substantially as and for the purposes described.

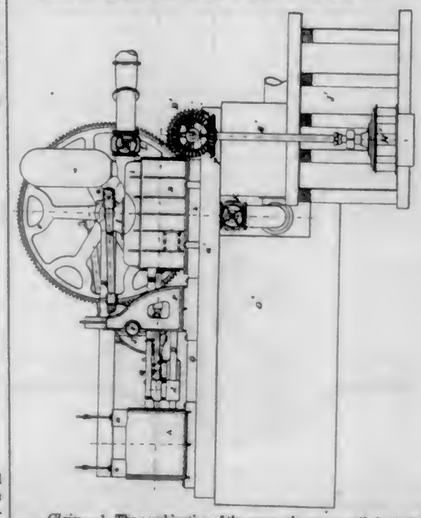
3. A metallic envelope for projectiles of rifled small-arms, open at the front end, and provided with circumferential ridges or teeth the interstices between which are filled with lubricant, and which are made of sufficient diameter to project into the grooves of the rifle, substantially as and for the purposes described.

4. A metallic envelope for projectiles of rifled small-arms, open at the front end, and having the front edge turned outward, while the bottom of the envelope is dished, substantially as and for the purposes described.

5. A metallic envelope for projectiles of rifled small-arms, open at the front end, the front edge being turned outward, while the bottom is dished, and the sides are provided with circumferential ridges or teeth of sufficient diameter to project into the grooves of the rifle, substantially as and for the purposes described.

6. A metallic envelope for projectiles of rifled small-arms, open at the front end, and provided near its open end with projecting circumferential ridges or teeth and near its base with indentations, substantially as and for the purposes described.

291,892. STEAM AND HYDRAULIC PUMPING-ENGINE. HARVEY F. GASKILL, Lockport, N. Y. Filed Dec. 26, 1882. (No model.)



Claim.—1. The combination of the pump, the steam-cylinder in line with the pump, the water-motor, the crank-shaft having a bearing on the pump, the gear and fly wheel on the crank-shaft, and the beam, substantially as described.

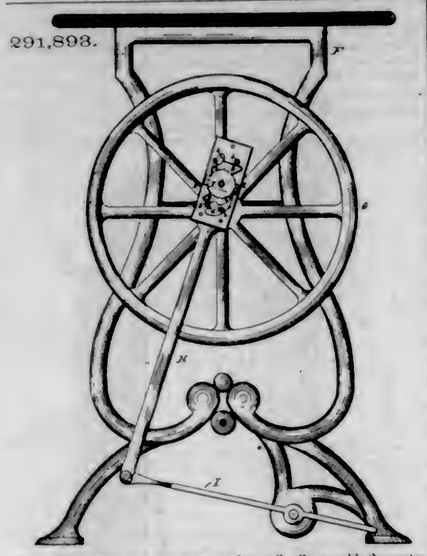
2. The combination of the pump, the steam-cylinder in line with the pump, the crank-shaft having a bearing on the pump, the fly-wheel on the crank-shaft, and the beam connected to the pump and piston-rods and the crank-shaft, substantially as described.

3. The combination of the steam-motor, the water-motor, the pump, the crank-shaft having a bearing on the pump, the gear and fly wheel on the shaft, the beam, the pinion, and the pinion-shaft having a bearing on the backward extension of the frame.

291,893. MECHANICAL MOVEMENT. EMANUEL M. GEORGE, Three Rivers, Mich. Filed Oct. 1, 1883. (No model.)

Claim.—1. The combination, with a crank or its equivalent and its operating device, of mechanism, substantially as described, connected to

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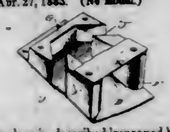


and carried by the operating means and traveling in an orbit the center of which is the center of the crank's motion, and constructed to overcome the dead-center of said crank, as set forth.

2. In a device for the purposes described, and in combination with the case A and crank-pin B, moving in a circular orbit, the slide C and springs D, constructed to hold the slide centrally, the parts being arranged and operating substantially as and for the purposes set forth.

3. In a device for the purposes described, and in combination with the case A, crank-pin B, slide C, and springs D, the ratchet E, pins *b b'*, and pawls *c d*, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

291,894. JET WATER-WHEEL. ALDREW JACKSON GOULD, Quincy, Cal. Filed Apr. 27, 1883. (No model.)



Claim.—The herein-described improved bucket for jet water-wheels, comprising the bottom D, the top plate, E, a straight back wall, G, against which the force or impact of the water comes through the opening or mouth at the front of the bucket, and the perpendicular side walls, F F, having openings J J extending through said side walls, so that a sharp angle is formed by the straight back wall, G, and the rear wall of the openings J, the direction of said openings J J being straight and toward the mouth end of the bucket and terminating some distance in the rear of the mouth, whereby the water, as it exhausts from the openings J J, will be against the wheel the entire length of openings J J, and the exhaust will be completed at the side of the bucket in rear of the mouth, substantially as set forth.

291,895. CASH AND PARCEL CARRIER. CHARLES GRANT, Jr., and DAVID LAWRENCE, Boston, Mass., assignors to said Grant. Filed Dec. 3, 1883. (No model.)



Claim.—1. As a means of alternately inclining tracks of the class described, a pair of pivoted levers or segments, B, in combination with a means of vibrating them and a means of holding them when adjusted, substantially as set forth.

2. The pivoted devices B, the wire track, or track supported by wire, &c., extending between the lower ends of said devices, a wire or similar connection, *c*, extending between their upper ends, a means of vibrating the devices B, and a means of retaining them when adjusted, combined to operate as and for the purpose described.

3. The track H, composed of two strips, *l m*, bent and united together, in combination with a wire tube or cord extending longitudinally from end to end of the same, as specified.

4. A pair of spiral springs, G, for arresting the downward motion of the carrier D in either direction, and a pair of inclined stops, *g g*, in combination with a weighted or spring-actuated hooked lever, I, adapted to retain and release the carrier, as set forth.

5. The carrier D, with its springs G, rod E, guides *k*, slot *h*, plate *i*, and inclined stops *g*, in combination with a track having a hooked lever, I, pivoted thereto, a spring, *q*, under the outer end of said lever, and a stop, *r*, under the end of the track, and a stop, *s*, located on the post A, for tripping the lever and releasing the carrier, all arranged to operate as described.

6. In combination with the carrier D and a track for it to travel thereon, the cash and parcel receptacle P, having at its bottom a pair of tubular rollers, R, each provided at its extremities with elastic frictional disks S, a helical spring, *u*, inclosed within each roller, and the operating cords or bands *e*, as and for the purpose set forth.

7. A track, H, supported by a wire, cord, or tube, *p*, extending from end to end thereof, in combination with a wire or other connection, *c*, above the same, and one or more vertical wires, M, extending down from the wire *c* to the track H, as set forth.

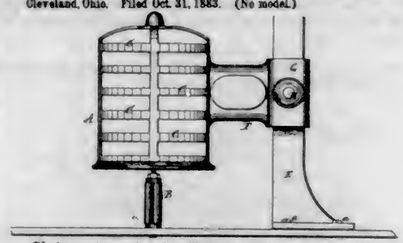
8. The levers or segments B, in combination with the sliding rods T, to the inner ends of which they are pivoted, substantially as set forth.

291,896. TRACE-FASTENER. NICHOLAS MARTIN HANSENSTAD, St. Paul, Minn. Filed May 7, 1883. (No model.)



Claim.—In combination with a whiffletree, a loop, B, adapted to swing laterally upon said whiffletree, a snap, D, having oppositely-pointing and backwardly-bent hooked forward ends, *d' d²*, and a trace, C, substantially as and for the purpose set forth.

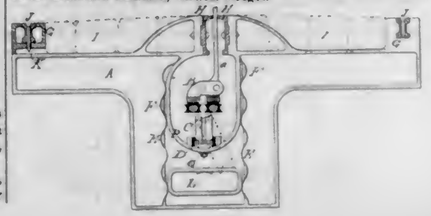
291,897. SAFETY-GUARD FOR MOLDING-MACHINES. GEORGE H. HANSCOM, Brooklyn Village, and HENRY P. BROOKS and HERBERT E. BROOKS, Cleveland, Ohio. Filed Oct. 31, 1883. (No model.)



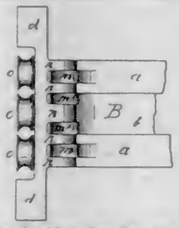
Claim.—A guard and guide for vertical cutters of molding and other machines, formed of a hollow cylinder having horizontal openings for the passage of chips, the upper end with braces and the lower end open, in combination with a rectangular standard and the adjustable arm and set-screw, substantially as and for the purpose described.

291,898. CABLE-RAILWAY PROPULSION. WILLIAM WALLACE HANSCOM, San Francisco, Cal. Filed Sept. 19, 1883. (No model.) Patented in England Aug. 16, 1882, No. 3,927, and Nov. 29, 1882, No. 5,590.

Brief.—Between the transverse frames the tube or tunnel is formed by sheet-metal plates, the ends of which are secured by lugs upon the frames. The bottom of the cable-opening in the frames is curved and perforated for the angular adjustment of the cable-pulley frames. The grip opens at the bottom, to receive and discharge the cable, one jaw being movable and having lugs which are pivoted upon a fixed shank, and a lug secured to a movable slide. A two-part rail is held in chairs on the transverse frames by vertical wedges.



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Claim.—1. The frame A, with the lugs F, opening L, and the extensions, with the chairs G and rails J J and wedges K K, in combination with the grip B, carrying-sheave C, and frame D, substantially as described, and for the purpose set forth.

2. In a cable-railway, the frame A, having the opening L and the curved surface P, with bolt-holes in the flanges, and adapted for receiving the end of an angularly-adjustable frame, D, containing a carrier-sheave, C, substantially as and for the purpose set forth.

3. The frame A, having the opening L and the curved surface P with bolt-holes in the flanges adapted to receive the end of an adjustable frame, in combination with the angularly-adjustable frame D, bolt Q, and carrier-sheave C, for the purpose of inclining the carrier-sheave where the road is curved, substantially as shown and described.

4. The frame A, carrying the adjustable sheave C, in combination with the grip B, substantially as and for the purpose specified.

5. The grip B, with its rollers O O O, jaws *d d*, and lugs *n n n n*, having a bottom opening of the jaws, substantially as described.

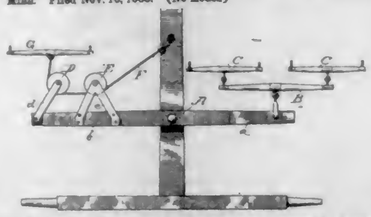
6. In a cable-railway having an underground slotted tube, the grip B, having its opening for the reception and discharge of the rope at the bottom, and having its jaws operated by a vertically-moving slide, *e*, through the slot of the tube, in combination with one or more adjustable inclined sheaves, C, and one or more traveling endless ropes, substantially as described and set forth.

7. The grip B, in combination with the angular adjustable sheave C and frame D, substantially as described, and for the purpose set forth.

8. The frame A, having the lugs F F, in combination with the corrugated-iron plates E E, substantially as described.

9. The construction and arrangement of the rails J J, in combination with the chairs G G and wedges K K, substantially as and for the purpose set forth.

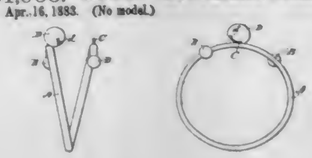
291,899. DRAFT-EQUALIZER. GEORGE W. HARRINGTON, Plainview, Minn. Filed Nov. 10, 1883. (No model.)



Claim.—1. The means for equalizing at one arm, *b*, double the amount of draft applied to the arm *a* of triple-tree A, consisting of the pulley D, oscillatingly connected to the extremity of said arm *b*, a pulley, E, connected to the same between the end and fulcrum, and a draft rope or chain, F, secured at one end to the pole of the vehicle or machine and passing thence around said pulley, substantially as set forth.

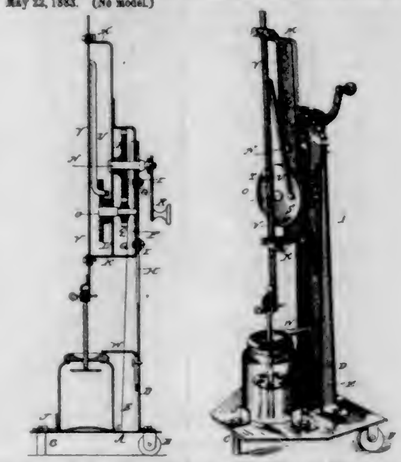
2. In a draft-equalizer for three horses, the pulleys D and E, fixed to the longer arm of the triple-tree, said pulley D being oscillatingly connected thereto, and a draft rope or chain, F, fastened at one end to the tongue of the vehicle or machine, and after passing around said pulleys, as shown, having attached to its other end a single-tree, G, in combination with the double-tree B, connected to the shorter arm of said triple-tree, substantially as and for the purpose set forth.

291,900. BRACELET. JOHN C. HARRINGTON, Providence, R. I. Filed Apr. 16, 1883. (No model.)



Claim.—The combination of the stationary hollow ornament having a rounded under surface provided with a slot, substantially as described, and attached to one of the lapped arms of a spirally-wound wire bracelet, with the catch-stud attached to the opposite lapped arm of the bracelet, the catch-stud being adapted to pass under the elevated front end of the slot and to the rear lower end of the same under the inwardly-resilient action of the arms of the bracelet, substantially as described.

291,901. CHURN. ROBERT T. HENDERSON, Shawneetown, Mo. Filed May 22, 1883. (No model.)



Claim.—1. The combination of the base having the flanged vertically-slotted upright, the vertically-adjustable frame having forwardly-projecting brackets, a vertically-sliding rod mounted in the said brackets, a shaft mounted transversely in the vertically-adjustable frame, extending through the slot in the upright, and having at its front end a wheel or disk, a pitman connecting the latter with the vertically-sliding rod, and mechanism for operating the said shaft, substantially as set forth.

2. The combination of the base mounted upon rollers or casters, and having horizontally-adjustable clamps, the flanged vertically-slotted upright, the vertically-adjustable frame carrying the operating mechanism, constructed substantially as described, and a clamp vertically adjustable upon the front side of the upright, to hold the churn from vertical displacement, substantially as set forth.

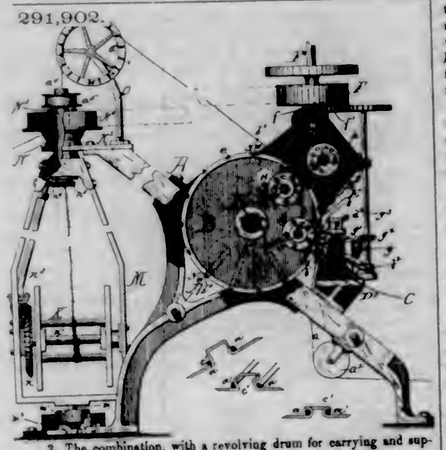
291,902. BARB-FENCE MACHINE. CHRISTIAN C. HILL, Chicago, Ill. Filed June 18, 1883. (No model.)

Brief.—The main wires pass partially around a large continuously-rotating drum, on the periphery of which are mounted blocks, each provided with a projection and a transverse groove. The barb-wire passes into these grooves under the main wires. Then the severed barb is carried by these grooves under two cheek-pieces, which hold the barb, near its ends, in the grooves, while under the cheek-pieces a tool, mounted on a revolving wheel passing through a slot in the drum, forces the middle of the barb up between the main wires, the barb assuming the shape shown in Fig. 9. By a further rotation of the drum and tool-wheel, the tool is partially withdrawn from the staple, and the middle of the staple is brought into contact with a stationary tool, which bends it into the shape shown in Fig. 10. By the further rotation of the drum and tool-wheel, the tool is entirely withdrawn from the bent barb, and the barb is carried out from the cheek-pieces to between two bending-rollers which force the two main wires toward each other, causing the barb to assume the shape shown in Fig. 11. The drum continuing to rotate, the main wires and barb are brought between two pressing-tools, which force the parts of the barb firmly against the main wires, which are then led to a twisting and spooling device, whereby they are twisted and spooled.

Claim.—1. The combination, with mechanism for feeding the fence-wires continuously, of mechanism for feeding the barb-wire continuously, a continuously-revolving drum or wheel provided with a series of slots through its rim, mechanism for severing the barb-wire, and rotary devices, operating through slots in the drum, for applying and forming the barb journaled on the frame of the machine and projecting inside of the revolving drum, and conjointly operating stationary barb-forming devices secured to the frame outside of said drum, substantially as specified.

2. The combination, with a continuously-revolving drum provided with slots through its rim, of barb-forming tools or devices located inside said drum, and barb-forming devices located outside said drum, substantially as specified.

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3. The combination, with a revolving drum for carrying and supporting the fence-wires, provided with grooves or devices for carrying and supporting the barbs while they are being applied, and with slots or openings through which the barb may be operated upon by tools inside or outside of the drum, and barb forming and applying tools located inside and outside of said drum, substantially as specified.

4. The combination, with the revolving drum provided with slots or openings through its rim, of a series of knives fixed in its periphery, an opposing-knife mounted on the frame of the machine, concave flanges or cheeks secured to the frame of the machine, revolving tools journaled on the frame of the machine and projecting inside said drum to force the middle portion of the barb between said cheeks, a tool projecting from between said cheeks to again bend the barb, a pair of rolls set tangentially to said drum to force the fence-wires together and further form the barb, opposing revolving tools journaled on the frame of the machine inside and outside said drum to press the bent or loop portion of the barb flat upon the wires, and a device for twisting the fence-wires together, to fix the same securely in the opposite notches or shoulders formed by the loop and the ends of the barb, substantially as specified.

5. The combination, with mechanism for continuously feeding the fence-wires and barb-wire, of mechanism for severing the barb-wire, and a revolving wheel or drum provided with devices for carrying the barbs along with the fence-wires while the barbs are being formed and applied, and barb-applying devices mounted on the frame of the machine, adapted to operate upon the barb as the revolving drum brings the barb in contact therewith, substantially as specified.

6. The combination of a revolving drum or wheel carrying the fence-wire and the severed barbs, and of devices mounted on the frame of the machine for applying the barbs to the fence-wire as the drum revolves, substantially as specified.

7. The combination of a revolving drum or wheel carrying the fence-wires and barbs, of a stationary knife and a series of knives fixed in said drum or wheel for cutting off the barbs from the barb-wire as the drum or wheel revolves, and of devices mounted on the frame of the machine for applying the barbs to the fence-wire as the drum or wheel revolves, substantially as specified.

8. The combination, with a slotted wheel rotating continuously in the direction of the feed of the fence-wires and carrying said wires continuously forward, of a series of knives secured at the rim of said wheel, and an opposing-knife on the frame of the machine for cutting off the barb-wire, and a revolving tool journaled on the frame of the machine and projecting into said wheel, and opposing-cheeks fixed to the frame of the machine outside said wheel, said revolving tool operating on the barb through openings in the rim of said wheel, substantially as specified.

9. The combination, with a wheel having a slotted rim rotating continuously in the direction of the feed of the fence-wires and carrying said wires, of devices for forming or applying the barb to the fence-wires located inside and outside of said rim and conjointly operating upon the barbs through the slots or openings in said rim, substantially as specified.

10. The combination, with a wheel having openings in its rim and carrying the fence-wires, of a pair of revolving barb forming or applying tools journaled on the frame of the machine, one inside and one outside the peripheral line of said rim, substantially as specified.

11. The combination of a slotted wheel or drum for carrying the fence-wires, and provided with transverse grooves or devices on its periphery for carrying the barbs along with the fence-wires, opposing-knives mounted in the revolving wheel, and the stationary frame for cutting off the barbs, revolving tools or devices journaled on the frame of the machine and projecting inside said rim, and stationary devices outside said rim for bending and forming the barbs, tangential rollers or devices for crowding the fence-wires together and further forming the barbs, and revolving tools journaled inside and outside said rim to further form and secure the barbs, and mechanism for continuously driving said revolving wheel and revolving tools, substantially as specified.

12. The combination, with the revolving wheel or drum carrying the fence wires and barbs, of devices for crowding the fence-wires together on the periphery of the rim as the wheel or drum revolves, and thus applying or partly applying the barbs to the fence-wires, substantially as specified.

13. The combination, with a wheel or drum carrying the fence-wire thereon continuously forward, continuously-revolving knives, and an opposing-knife for severing the barb in equal barb-lengths as said barb-wire is fed continuously thereto, and barb applying and forming devices consisting of continuously-revolving and stationary parts, so that all the moving parts of the machine may have a simple continuous rotary motion and be adapted to run at high speed, substantially as specified.

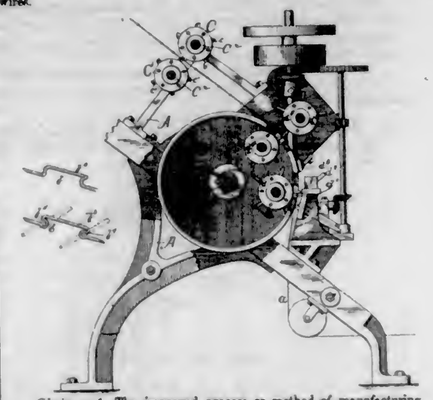
14. The combination, with a slotted wheel or drum having transverse grooves across said slots, and provided with a series of knives fixed in its rim, of a stationary knife for cutting off the barbs, concave cheeks or guards for forcing or guiding the barbs into said transverse grooves, and barb forming and applying mechanism located part inside and part outside said drum and conjointly operating to bend and form the barb, substantially as specified.

15. The combination of the revolving wheel carrying the fence-wires on its periphery, of grooved rollers journaled on the frame of the machine tangentially to said wheel for forcing the fence-wires together, and projecting guides to support the barbs and to regulate the action of said rollers in forming the barb, substantially as specified.

16. In a barb-fence machine, the continuous revolving wheel for carrying the fence-wires and barbs while the barbs are being applied, in combination with mechanism for forming and applying the barbs mounted on the frame of the machine, substantially as specified.

291,903. MANUFACTURING BARBED FENCE-WIRE. CHRISTIAN C. HILL, Chicago, Ill. Filed June 18, 1883. (No model.)

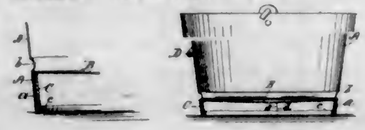
Brief.—The barbs are applied to the wires by the machine here shown, which forms the subject-matter of an application of even date herewith, or by any other machine capable of applying a barb to two separated wires, and then the barb is severed diagonally between the wires.



Claim.—1. The improved process or method of manufacturing barbed fence-wire, consisting in first securing a barb-piece of suitable length to form two barbs to each of two fence-wires, and then severing the barb-piece diagonally at its middle between the two fence-wires, thus barbing both wires, substantially as specified.

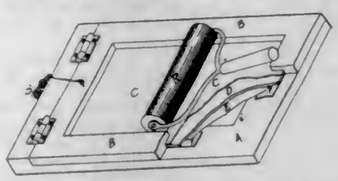
2. The combination, with mechanism for securing a barb-piece to each of two fence-wires, of mechanism for severing the barb-piece diagonally near its middle between the fence-wires, substantially as specified.

291,904. GALVANIZED OR METAL-COATED BUCKET. JAS. HILL, Providence, R. I. Filed Nov. 30, 1883. (No model.)



Claim.—In a galvanized or metal-coated bucket, the combination of the body A, provided with the inwardly-turned bead *b*, the bottom plate, B, provided with the rim *a*, and the strengthening-ring C, secured to the bucket by means of the inwardly-turned edge *c*, substantially as described.

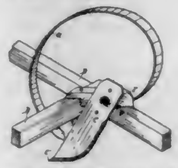
291,905. PRESS FOR STENCIL-PRINTING. JOHN C. HILL, Fayetteville, N. Y. Filed Sept. 21, 1882. (No model.)



Claim.—1. The impervious or enameled cloth C C, in combination with the press-frame B B, provided with link and staple, the base A, having spring S, inked felt D, stencil E, frame F F, pad *d'*, and the roller R, to render cleanly the multiplication of copies from stencil, as shown, and for the purposes specified.

2. The combination of the press-frame B B, base A, pad *d'*, frame F F, stencil E, inked felt D, enameled cloth C C, and roller R, to multiply copies from stencil, as shown, and for the purposes specified.

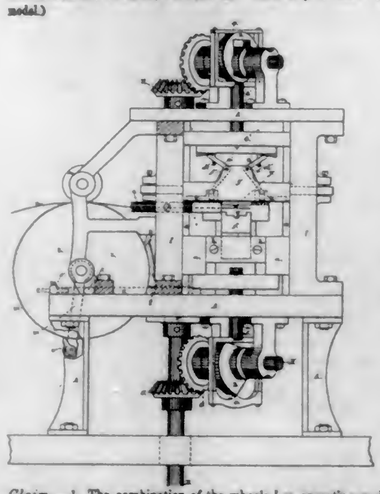
291,906. RUDDER FOR HARROWS. WARREN W. HILL, Texas, Mich. Filed Aug. 23, 1883. (No model.)



Claim.—1. The combination, with the harrow-frame, of the rudders in the angles of said frame, and the single securing-bolt, whereby the rudders cant back to a proper angle, and are held in said angle by the harrow-beams, substantially as set forth.

2. The combination, with the harrow-frame, of the rudder-holders in the angles of the beams, the adjustable rudders, and pivotal bolts, substantially as described.

291,907. MACHINE FOR MAKING BUTTONS. FREDERICK J. RILEY and AUGUSTINE S. FERNALD, Portland, Me. Filed May 7, 1883. (No model.)



Claim.—1. The combination of the wheels *l m*, operating as described, the projections *s' s''*, arm *t*, pawl *u*, conductor *o*, plate *f*, and bar *y*, operating as herein set forth, to bend the wire in the manner described.

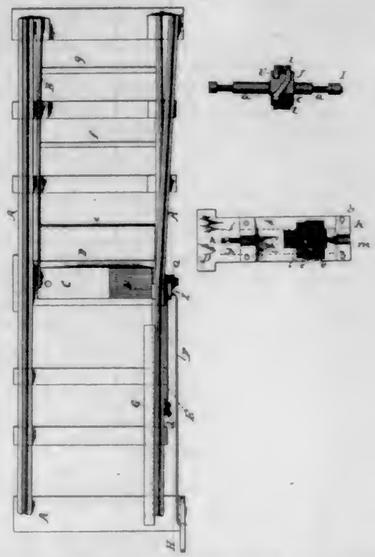
2. The combination of the shaft B, eccentric *a'*, frame *p'*, arm *q'*, screw *r'*, crank *s*, slide *k*, and bar *y*, as herein set forth.

3. In combination with the carriage *a*, the horizontally-moving slides *i'' i'*, bell-crank levers *e' e'*, carriage *c'*, eccentric *z*, frame *a'*, and the arm or rod *b'*, as set forth.

4. The plate *f*, provided with upwardly-projecting ears for bending the wire near its ends, and having also a groove at the middle of the surface between said ears, which groove co-operates with a correspondingly-shaped bar to form the eye.

291,908. RAILROAD-SWITCH. ROBERT H. ISBELL, New York, N. Y. Filed Feb. 14, 1883. (No model.)

Brief.—A rock-shaft to be operated by the switch-lever is arranged in bearings in blocks depending from a plate supporting and connecting the switch-rails, and is provided with a cam-rib, as shown, adapted to engage with projections upon the under side of the plate, whereby the plate and attached switch-rails are shifted as the shaft is oscillated, and are locked against lateral movement at the end of either oscillation. When a train is passing, shifting of the switch is prevented by means of a horizontal bar arranged beside one of the rails, mounted on pivoted parallel arms, so as to rise and fall, adapted to be depressed by the flanges of the wheels of the train, and connected with the switch-shifting rock-shaft by means of a connecting-rod and cranks.



Claim.—1. The combination, in a switch, of the movable switch-rails and the plate C, provided with projections *i' i''*, with the rocking cam-rib *l*, having a return end, *l'*, adapted to hold a projection on said plate between the rib *l* and its return end *l'*, substantially as described.

2. The combination, in a switch, of the rails B B, plate D, connected with the fixed rails, and carrying the bearing-block *k*, the plate C, connected with the movable rails, the shaft *a*, carrying a cam working in a groove formed in said plate C, and means for rocking said shaft and cam, substantially as described.

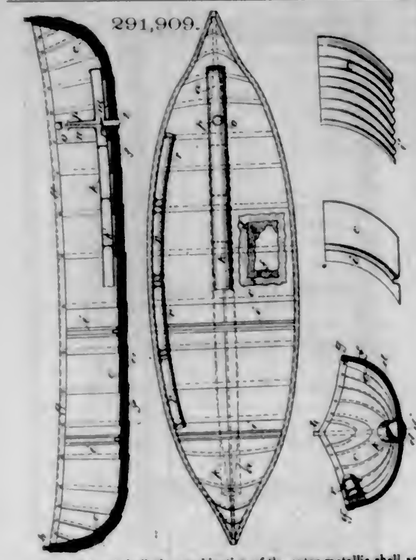
3. The combination, with the shaft *a*, and means, substantially as described, for moving the switch-rails, of the plate G, supported on the links *p p*, the arm *o*, connected to said plate, the rock-shaft *n*, link E, and arm I, attached to the shaft *a*, as and for the purposes set forth.

291,909. BOAT. NATHAN C. JESSUP, Southampton, N. Y. Filed Feb. 9, 1883. (No model.)

Claim.—1. A boat having its hull constructed with an inner and an outer shell of sheet metal and an intermediate shell of non-metallic fibrous and swellable material, the said metallic sheets being made with water-tight joints closely embracing the intermediate shell and extending over the same up to the gunwale, and secured together at numerous points, substantially as herein shown and described.

2. A boat having its hull constructed with an inner and an outer shell of sheet metal and an intermediate shell of paper, said shells closely overlying each other, and secured together at numerous points, substantially as set forth.

291,909.



3. In a boat's hull, the combination of the outer metallic shell and an intermediate shell of paper with an inverted-U-shaped gunwale-strip, *g*, of sheet metal, secured to and covering the edges of the metallic shells, substantially as and for the purposes set forth.

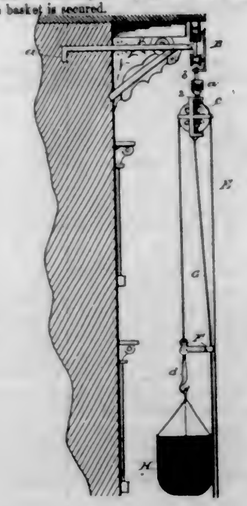
4. In a boat substantially as described, and in combination with the central ballast-tube, *k*, having perforated partitions *k'*, the well or tube *p*, and the spring-valve *m*, the cap *o*, fitting the said well as a plug, and the chain *n*, securing the caps and valve together, as and for the purposes set forth.

5. In combination with a boat's hull, the inner ribs, *i*, formed of sheet metal, with a flanged U-section, and secured in inverted position on the inside of the hull, substantially as herein shown and described.

6. The combination, in a boat with a weighted keel, of air chambers or floats *r r*, affixed on but one side of the interior of the boat, at or near the gunwale, substantially as and for the purpose set forth.

291,910. FIRE-ESCAPE. JOHN A. JOHNSON, Chicago, Ill. Filed Jan. 27, 1883. (No model.)

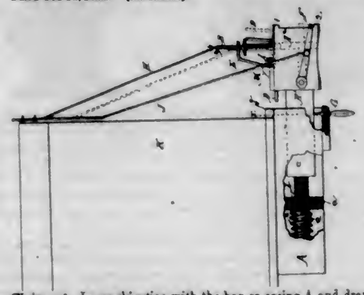
Brief.—Connected to one end of the hoist-rope, which runs over a pulley suspended from the traveling hanger, is a projecting arm, through an eye in the end of which a guide-rope passes, and to which a hook for connecting the basket is secured.



Claim.—1. In a fire-escape, the combination of a horizontal arm having an eye at one end acting as a guide for a rope passing vertically through said eye, a supporting hook or arm hinged to and dependent from the opposite end of said horizontal arm, a hoisting-rope connected with said horizontal arm above and in a line with the supporting-hook, and a basket or cage supported from said hook, substantially as set forth and described.

2. In combination with the bracket, rail, and traversing hanger of a fire-escape, a guide-rope passing through a guide-ring and secured to the base of a pulley-frame, a pulley connected by a chain to the base of the hanger, a hoisting-rope supporting a basket by means of a horizontal arm with guide-ring in end, and a supporting-hook hinged to said arm, substantially as set forth and described.

291,911. CAR-COUPLING. WILLIAM H. JONES, Martinsburg, Iowa. Filed Oct. 12, 1882. (No model.)

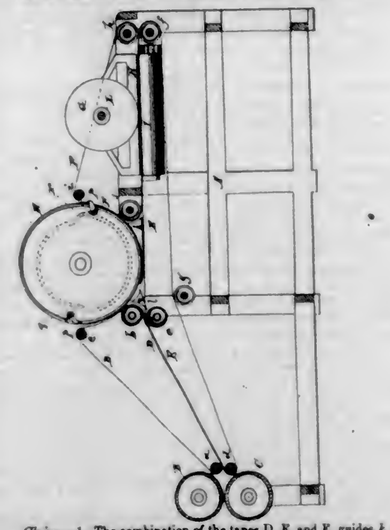


Claim.—1. In combination with the box or casing A and draw-bar A', arranged in said box so as to admit of vertical movement, the cam-lever G, pivotally secured in the end of said box, substantially as and for the purpose set forth.

2. In combination with the draw-bar A', having the draw-head A^2, formed with upper and lower transverse ribs, 1 2, the stirrup F, pivotally secured to the draw-head, and suitable lifting means, substantially as described.

3. In combination with the box A, draw-bar, and head, and coupling-pin having a suitable guiding-brace and lifting means, the sliding coupling-pin support D, having spring I, and so arranged and secured to the upper face of the draw-head that its engagement with and release-ment from the pin-head shall be effected substantially as described.

291,912. DELIVERY APPARATUS FOR PRINTING-MACHINES. CONRAD KAHLER, Chicago, Ill. Filed Nov. 6, 1882. (No model.)



Claim.—1. The combination of the tapes D, E, and F, guides *k*, the switch *l*, arranged to alternately deflect the sheets to the grippers and under the cylinder, and the gripper-cylinder M, mounted between the tapes

D and F, and provided with one or more sets of grippers, *p*, adapted to grip and release the alternate sheets fed to the machine, substantially as described.

2. The combination of the tapes D E, adapted to deliver the sheets to the cylinder, the switch *l*, arranged to alternately deflect the sheets to the grippers and under the cylinder, the cylinder M, mounted between the tapes D and F, and provided with grippers *p*, actuated by the cam-disk N, guides *k*, tapes F, and folding mechanism I, all constructed and operating substantially as described.

291,913. NUT-LOCK. SAMUEL P. KIMBALL, Woodstock, Ohio. Filed Dec. 7, 1883. (No model.)



Claim.—1. As an improved article of manufacture, the herein-described washer-plate, formed with an eye to receive the bolt, and having locking-points cut within the plate and at the sides of a square or angular space thus formed around said eye, substantially as set forth.

2. As an improved article of manufacture, the herein-described washer-plate, having locking-points cut at the sides of a square or angular space, and having auxiliary locking-points cut within this angular space, substantially as set forth.

3. As an improved article of manufacture, the herein-described washer-plate, formed with an eye to receive the bolt, having locking-points cut within the plate and at the sides of a square or angular space thus formed around said eye, and having auxiliary locking-points cut within this angular space, substantially as set forth.

4. As an improved article of manufacture, the herein-described washer-plate, having locking-points cut at the sides of a square or angular space and bent up forwardly and from the face of the plate, and having auxiliary locking-points cut within this angular space and bent up rearwardly and from the face of the plate, substantially as set forth.

5. As an improved article of manufacture, the herein-described washer-plate, having an eye for the bolt, points cut within the plate and at the sides of a square or angular space thus formed around the eye and bent forwardly from the face of the plate, and auxiliary >-shaped points cut through the plate within this angular space, and on diametrically-opposite sides of the eye, and bent rearwardly from the face of the plate, substantially as set forth.

6. The combination of the bolt, the contact-surface E, the washer-plate arranged on the bolt and having points *c'* cut at the sides of a square or angular portion extending around the bolt, said points being bent forwardly from the plate, and also having auxiliary >-shaped points *c²* cut within the angular space and entering the surface E, and the nut inclosed by points *c'*, and covering the angular space and auxiliary points, substantially as set forth.

291,914. METHOD OF AND APPARATUS FOR PRESERVING AND TRANSPORTING FOOD. SAMUEL HENRY LINN, New York, N. Y. Filed Sept. 13, 1883. (No model.)

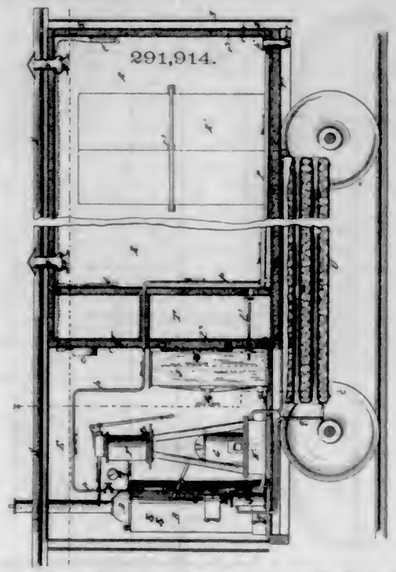
Claim.—1. In the art of preserving articles of food during transportation, the improvement consisting in cooling the air to be supplied to the provision-chamber by a circulation of water or similar liquid from a tank or reservoir on the outside of the vehicle, having walls which permit a portion of said liquid to percolate through, so as to be evaporated by the current of air to which the said reservoir is exposed when the vehicle is in motion, substantially as and for the purpose described.

2. The combination of the air-cooling chamber, the air expansion and compression cylinders, their pistons and means for operating the same, the coil of pipe in said chamber, connected at both ends with a tank or reservoir containing a cooling-liquid, and mechanism for maintaining a constant circulation of said liquid from said reservoir through said coil, substantially as described.

3. The combination, in a refrigerator-car, of the air-cooling chamber, the air expansion and compression mechanism, the coil of pipe in said chamber, the reservoir for the cooling-liquid, supported on the outside of said car, and means for maintaining a circulation of the cooling-liquid from said reservoir through said coil, substantially as described.

4. In a refrigerator-car, the combination of the air-chamber, the air compression and expansion cylinders, their pistons, the coil of pipe in said chamber, communicating with a reservoir containing a cooled liquid, the pump, and connections for operating said pump and said pistons from the car-axle, substantially as described.

5. In a vehicle for transporting perishable articles of food, the tank for the cooling-liquid, supported outside the car, and having air-tubes extending through it in the direction of motion of said vehicle, substantially as described.



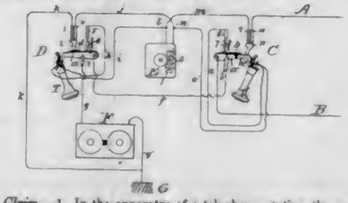
6. In a refrigerator-car or other vehicle, the tank for the cooling-liquid, supported outside the vehicle, and having its walls formed wholly or in part of porous earthenware, substantially as described.

7. In a refrigerator-car or other vehicle, the tank for the cooling-liquid, supported outside the car or vehicle, and air-flues of porous material extending through it in the direction of motion of said vehicle, substantially as described.

8. The combination, with the air-cooling chamber of a refrigerator-car, of the tank or reservoir containing cooling-liquid, supported outside the car, and provided with longitudinal air-tubes of porous earthenware or similar material, a coil of pipe in said chamber, connected with said tank or reservoir, and a pump for maintaining a circulation of the liquid in said coil, substantially as described.

9. In a refrigerator car or chamber, the following devices in combination: a condenser or cooling-chamber, a coil or system of pipes therein, a reservoir or tank connected with said pipes and having air-tubes of porous material, air compressing and expanding cylinders communicating by valves with said condenser or cooling-chamber, pistons working in said cylinders, means for operating the same, and a pipe leading from said condenser to the provision-chamber through vessels containing moisture-absorbing, purifying, and preservative substances, substantially as described.

291,915. TELEPHONE CIRCUIT AND APPARATUS. THOMAS D. LOCKWOOD, Malden, Mass. Filed Apr. 26, 1883. (No model.)



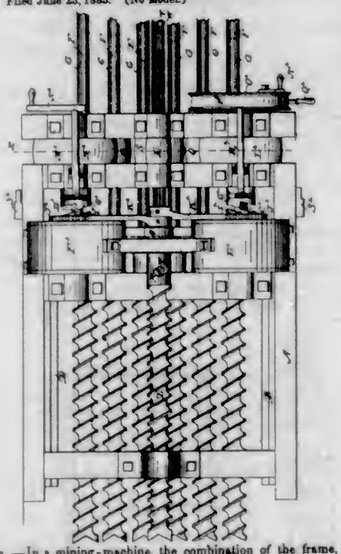
Claim.—1. In the apparatus of a telephone-station, the combination, with the direct circuit, having a normal earth-terminal and a receiving-telephone for use therein, of a normally-open return-wire and an automatic switch supporting a second receiving-telephone, for transferring said direct-circuit line from its normal earth-terminal to the normally-open return-wire, substantially as described.

2. The combination, substantially as hereinbefore described, of a direct circuit, a normal ground-terminal including a signal-bell, a normally-open telephone ground-terminal, a normally-open return-circuit, and two automatic switches, each constituting the support of a receiving-telephone, one of the said switches being interposed between the main line of the direct circuit and the second switch, and adapted to disconnect

the said direct circuit from the said second switch, and to connect it with the return-wire, including in the new circuit one of the receiving-telephones, and the other switch being interposed between the first switch and the normal ground-terminal, and adapted to transfer the direct circuit from the normal ground-terminal to the normally-open ground-terminal, including in the circuit thus formed the other receiving-telephone, whereby the removal of one of the telephones from its support includes the said telephone in an earth-circuit extending to the distant station, and the removal of the other telephones cuts off the earth-terminal and completes a metallic loop to the distant station, and includes the removed telephone in the said loop, for the purposes specified.

3. The combination, in a telephone system, of a direct line-wire, a normal earth-terminal therefor, including a signal-bell, a normally-open telephone earth-terminal, a normally-open return-wire, a transmitting-telephone, two receiving-telephones, and two automatic switches placed in the normal circuit of the said direct line-wire, each constituting a support for one of the said telephones when not in use, one of the said switches being adapted upon the removal of its telephone to transfer the direct circuit from the bell branch to the normally-open earth-terminal, and to include in the said circuit the transmitter and the removed receiving-telephone, and the other being adapted upon the removal of its telephone to transfer the said direct circuit from its normal earth-terminal to th normally-open return-wire, and include its own telephone and the transmitter in the loop-circuit thus formed, whereby the removal of one of the telephones connects the same in an earth-circuit with the distant station, and the removal of the other telephone connects the same in metallic circuit with the distant station, the transmitter being common to both, substantially as described.

291,916. COAL-MINING MACHINE. JOHN LUCAS, Hawk's Nest, W. Va. Filed June 23, 1883. (No model.)



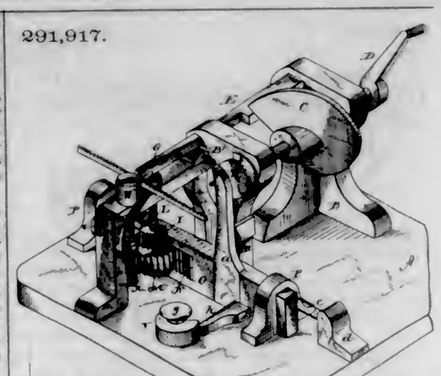
Claim.—In a mining-machine, the combination of the frame, a longitudinally-movable carriage, a feed-screw attached to the said carriage, a revolving nut mounted upon the said feed-screw, drills or augers journaled in the said carriage, and having rearwardly-extending longitudinally-grooved shanks, revolving bushings feathered upon said shanks, and mechanism for operating the said bushings and the feed-nut, substantially as set forth.

291,917. SAW-SETTING MACHINE. HERMANN MARSTALL, Evansville, Ind. Filed July 16, 1883. (Model.)

Claim.—1. A machine for setting band-saws, consisting of a suitable base having secured thereto standards B, a cam-wheel, C, having its shaft journaled in said standards and operated by a crank, D, a punch, E, actuated by the cam-wheel, friction-rollers G H, and pivoted lever T, to propel and support the saw, a cam, V, for regulating the feed of said saw, and suitable mechanism for operating the friction-rollers at each revolution of the cam-wheel, all combined substantially as described, and for the purpose set forth.

2. The combination of the gear-wheels I, arranged upon parallel vertical shafts K L, to mesh with one another, and a ratchet-wheel, M, upon the shaft L, with a rack-plate, N, pivotally secured in a sliding bar,

291,917.



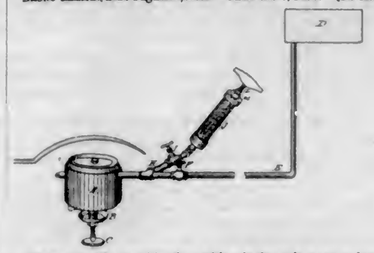
O, having an upwardly-extending arm, *a*, the eccentric R, secured to the end of the main shaft, and provided with a cam, *b*, and suitable spring mechanism for operating said rack-plate, substantially as and for the purpose specified.

3. The punch E, adapted to slide in slots in the standards B, and actuated by the cam-wheel C, in combination with the spring F and the friction-rollers G H, substantially as and for the purpose described.

4. The friction-rollers G H, arranged upon the upper ends of parallel vertical shafts K L, the roller H, beveled upon its upper portion to form an anvil, in combination with the punch E, cam-wheel C, gear-wheels I, and means, substantially as described, for operating said gear-wheels, as and for the purpose set forth.

5. The sliding bar O, adapted to work in guides P upon the base A, and provided with an arm, *a*, in combination with the rack-plate N, pivoted therein, the spring S, and the mechanism, substantially as described, for operating said rack-plate, as and for the purpose specified.

291,918. ATTACHMENT TO HYDROCARBON-VAPOR BURNERS. BRUNO MARTIN, East Saginaw, Mich. Filed Oct. 1, 1883. (No model.)



Claim.—1. The combination, with a hydrocarbon-vapor burner, of an exhausting device adapted to extinguish the flame of said burner by withdrawing from it any unconsumed vapor within it, substantially as described.

2. The combination, with a hydrocarbon-vapor burner, of a pump adapted to extinguish the flame of said burner by withdrawing from it any unconsumed vapor within it, and to return said unconsumed vapor to said burner when desired, substantially as specified.

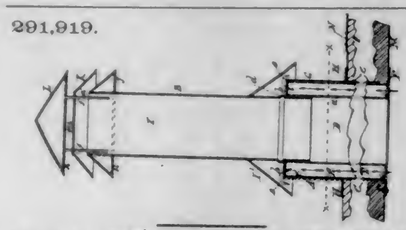
3. The combination, with a hydrocarbon-vapor burner and its feed-pipe, of the exhaust-cylinder J, provided with a piston constructed to withdraw the unconsumed vapor from the burner, substantially as and for the purposes set forth.

4. The combination, with a hydrocarbon-vapor burner and its feed-pipe, of the branch H, valves F I, and cylinder J, provided with a piston and rod, constructed to withdraw the unconsumed vapor from the burner, substantially as and for the purposes described.

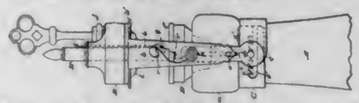
291,919. COMBINED VENTILATOR AND CHIMNEY. WILLIAM F. MATTHEWS, Dallas, Tex. Filed June 25, 1883. (No model.)

Claim.—A combined ventilator and chimney, consisting of section A, composed of a central flue surrounded by an annular air-chamber, in the top and bottom of which are openings, flange F, and case G, provided with a water-shed or apron, in combination with section B, consisting of a flue or chimney, I, having its lower end inserted in the flue of the ventilator and extending therefrom above the roof, and covered with a cap or caps, and its juncture with the ventilator protected by a downward-projecting hood, I', substantially as described, and for the purpose specified.

291,919.



291,920. STOPPER-LOCK FOR BOTTLES. JAMES D. MATTESON, New York, N. Y. Filed June 13, 1883. (No model.)



Claim.—1. A stopper-lock for bottles, &c., comprising a collar to clasp the neck of the bottle and take under the fillet thereon, a lock-case connected with said collar, a stopper provided with a stem arranged to play through the lock case, and means, substantially as described, located in the lock-case, for locking the said stem fast in the case, substantially as set forth.

2. A stopper-lock for bottles, &c., comprising a lock-case capable of being secured to the bottle, a stopper for closing the bottle, a stem secured to said stopper and arranged to play through the said lock-case, and means located in the lock-case for locking the stem in the said case when the stopper is seated, substantially as set forth.

3. A stopper-lock comprising a lock-case, substantially as shown and described, means, substantially as shown and described, for securing said case to the bottle or other receptacle, a stopper provided with a stem arranged to play through the lock-case, and means located in said case, substantially as described and shown, for locking the said stem fast in the case, substantially as set forth.

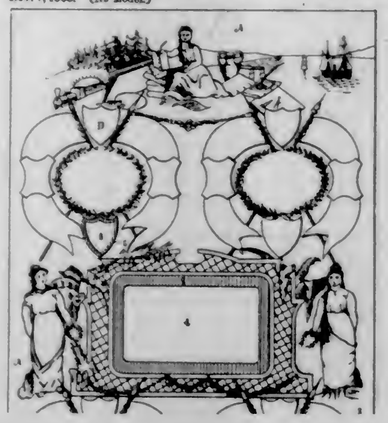
4. The combination, to form a stopper-lock, of a lock-case, B, provided with a screw, F, adapted to be rotated by a key, a collar to embrace the neck of the bottle or other receptacle, branches to connect the collar and the lock-case, and a stopper, D, provided with a stem, E, having teeth *i*, to engage the screw F, substantially as set forth.

5. The combination, with the lock-case and its screw F and branches *b*, of the adjustable collar C, constructed substantially as shown and described, and the stopper and its stem, all constructed and arranged to operate substantially as set forth.

6. The collar C of a stopper-lock, comprising a thin metal band with a slot, *e*, at its middle, and a slot, *e'*, with lateral recesses *e²*, in combination with the branches *b b*, provided with pins or rivets *d* and *d'*, substantially as set forth.

7. The means for lengthening the branches *b*, which comprise the lower portion of *b*, provided with a slot, *n*, and rivet *p*, and the upper portion of *b*, provided with a slot, *q q*, with recessed bearings *r* and a rivet, *o*, substantially as set forth.

291,921. FRAME FOR DIPLOMAS AND CREDIT-CARDS. ALEXANDER W. MCARTHUR, Arroyo Grande, Cal. Filed Mar. 6, 1883. Renewed Nov. 7, 1883. (No model.)

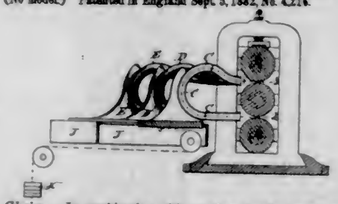


Claim.—In a frame or mount, a sheet of paper or other suitable material, having perforations, and a second sheet adhering to the back of the first, said second sheet having perforations smaller than the first, so that a portion or rim of said second sheet shows through the larger perforations, in combination with a slip of paper or other suitable material of the size and shape of the larger perforation and adhering to the exposed rim of the second sheet, and a second slip of paper the size and shape of the smaller perforation and adhering to the back of the larger slip, substantially as and for the purpose herein described.

291,922. PROCESS OF PREPARING MEDICATED COURT-PLASTER. CHAS. L. MOREY, Combe, N. Y. Filed June 26, 1883. (Specimens.)

Claim.—The method of preparing court-plaster, which consists in removing from old gold-beaters' skins by rubbing all particles of gold adhering thereto, then beating the skins between paper, then subjecting the skins to pressure between sheets of paper moistened with a medicinal preparation to coat the skins upon both sides, then drying, and finally flattening the same by pressure, as set forth.

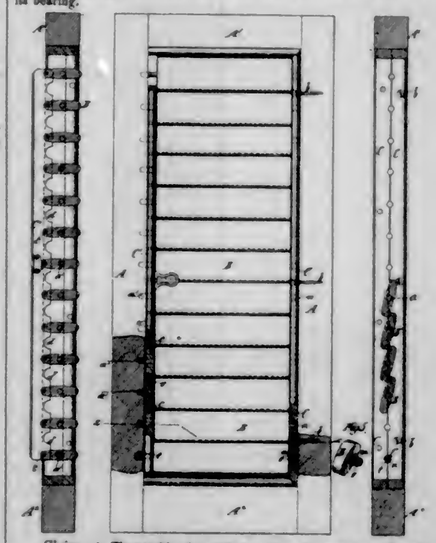
291,923. APPARATUS FOR ROLLING WIRE RODS. WILLIAM MORRIS, Oakengates, County of Salop, England. Filed July 17, 1883. (No model.) Patented in England Sept. 5, 1882, No. 4,216.



Claim.—In combination with a series of rolls, a series of guide-tubes, a series of movable carriages on which said tubes are mounted, and a series of weights, cords, and pulleys which operate to automatically restore the respective carriages and tubes to their respective positions in proximity to the rolls, substantially as set forth.

291,924. BLIND. GEORGE WM. MORSTATT, New York, N. Y. Filed Dec. 12, 1882. (No model.)

Brief.—The bead-pieces on the inner sides of the stiles are formed in two sections, one bead-piece being detachable. Bearings for the tenons at one end of the slats are formed in the meeting edges of the bead-sections. One section of the other bead-piece is fixed to the stile, while the other section is movable and receives auxiliary pivots of the slats. One of the tenons is provided with a split collar between the tenon and its bearing.

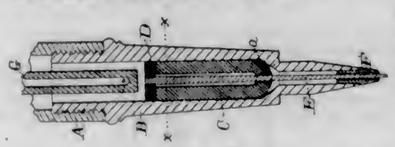


Claim.—1. The combination, with the blind-stiles and slats, of bead-pieces on the inner sides of the stiles, and each composed of two sections, the two sections of one bead-piece having bearings for the tenons at one end of the slats formed in their meeting or abutting edges, substantially as and for the purpose herein described.

2. The combination, with the stiles A and slats B, provided with main pivots or tenons *a a'* and auxiliary pivots *c*, of the bead-piece C C, detachably secured to the inner side of one stile, and the bead-piece C C' on the inner side of the other stile, the portion C thereof being secured to the stile and the portion C' receiving the auxiliary pivots *c*, substantially as and for the purpose herein described.

3. The combination, with a blind-slat tenon and its bearing, of a collar fitting between said tenon and bearing, and split axially or lengthwise of the tenon, substantially as and for the purpose herein described.

291,925. STYLOGRAPHIC FOUNTAIN-PEN. EDWIN W. MORTON, White Plains, N. Y. Filed Jan. 22, 1883. (No model.)

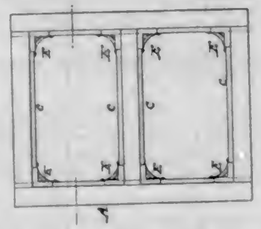


Claim.—1. In a fountain-pen using ink, the combination of a needle carrying an armature with a permanent magnet, substantially as shown and described, and for the purpose set forth.

2. In a fountain-pen, the combination, with the ink-reservoir A, of point-section B, magnet C, needle E, having armature D, and air-tube G, arranged to act as a stop for the armature, substantially as specified.

291,926. WINDOW-SCREEN. WILLIAM H. MUNN, Milwaukee, Wis. Filed Oct. 22, 1883. (No model.)

Brief.—A window-screen having its side and cross pieces tongued and its corners united by a tongued-and-grooved joint, and secured by a flanged metallic bracket-piece.



Claim.—A window or door screen frame having its side and end rails provided on their inner sides with a tongue, and its corners united with a tongue-and-groove joint, in combination with a metallic bracket or corner-piece provided with flanges, arranged substantially as shown and described.

291,927. POST-BASE. JOHN NEWTON, Clifford, Ind. Filed May 17, 1883. (No model.)

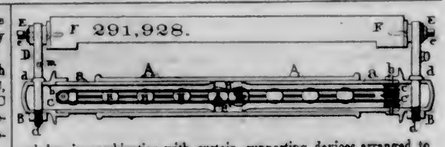


Claim.—1. In a post-base, a central plate provided with a top plate having an opening immediately over said central plate, in combination with a post provided with a cross-slot in its under side, substantially as described, and for the purpose set forth.

2. In a base for posts, a central plate provided with two lateral tapering wings formed integral therewith, said wings projecting in opposite directions at right angles from said central plate, and a top plate provided with a central opening and an upwardly-projecting collar, in combination with a post having a cross-slot in the lower end thereof, whereby said post may be seated in the opening astride the upper end of the central plate, as specified.

291,928. CURTAIN-FIXTURE. LOUIS PAGE and LOUIS WEBER, Brooklyn, N. Y. Filed Feb. 1, 1883. (No model.)

Claim.—1. A curtain-bar formed of two or more sections telescoping into or sliding upon each other, so as to admit a change of length of



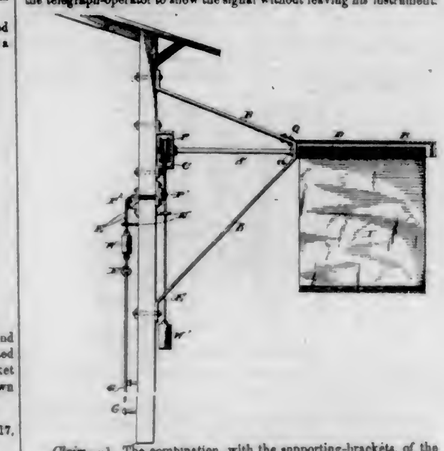
such bar, in combination with curtain-supporting devices arranged to travel along or within such extension-bar endwise of the bar in the act of withdrawing or replacing curtains suspended therefrom, substantially as set forth.

2. A curtain-bar formed of two or more sections telescoping into or sliding upon each other, in combination with curtain-supporting devices arranged to travel endwise along such bar, such curtain-supporting devices being operated through cords, substantially as set forth.

3. The combination, with a curtain and its supporting-bar, of curtain-grasping clamps formed of two jaws hinged together and closing automatically at their lower edges through the action of a spring tending to separate their upper ends, substantially as set forth.

291,929. RAILROAD-SIGNAL. JAMES R. PARK, La Vergne, Tenn. Filed July 6, 1883. (No model.)

Brief.—A horizontal shaft has its bearings in brackets or braces fixed to the outside of the operator's house, the shaft carrying beyond the brackets a roller carrying a weighted signal-flag shielded by a roof supported by one of the brackets. Upon the shaft between the other bracket and the building, or upon the shaft extended within the building, is a pulley provided with a cord and heavy weight, to keep the flag wound upon the roller, and also a flag-unwinding cord leading, either directly or over pulleys and through an aperture in the wall, to the operator's table, and having a light tightening-weight and rings adapted to holding pins in the wall, the whole being arranged for the purpose of enabling the telegraph-operator to show the signal without leaving his instrument.



Claim.—1. The combination, with the supporting-brackets, of the shaft extending outside of said brackets, said extension provided with a drum or roller to which is secured a flag, and a shield located over the drum and secured at one end to the brackets, substantially as set forth.

2. The combination, with the shaft, supporting-brackets, the drum, and flag, of the pulleys, cords, and weights, substantially as set forth.

3. The combination, with the shaft, drum, and flag, of the braces and bracket and cords for winding and unwinding the flag, substantially as set forth.

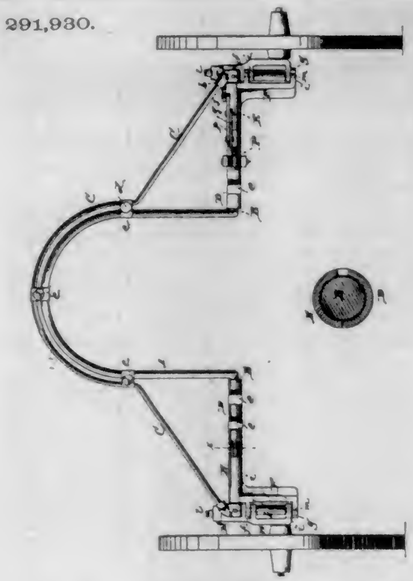
291,930. CULTIVATOR. WILLIAM H. PARLIN, Canton, Ill. Filed Sept. 7, 1883. (No model.)

Claim.—1. In a cultivator, two sleeves, D E, upon the axle, one carrying a plow-beam, the other connected with a draft-bar and combined with each other, substantially as described, whereby either sleeve can have a limited rotary movement without affecting the other, for the purpose of providing for regulating the running depth of the shovels, and at the same time leaving the plow-beam free to be raised at its rear end without affecting the draft.

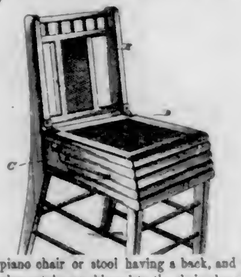
2. The irons *a*, provided with sockets *b*, in combination with the main arch A and secondary arch and brace-rod C, substantially as and for the purpose specified.

3. In a cultivator, a drag-bar, M, in combination with the plate K, provided with the projections and stops *r r'*, the plate L, and a plow-beam, substantially as and for the purpose specified.

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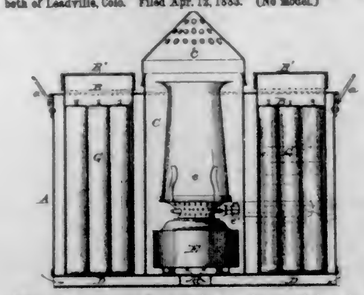
291,931. PIANO-STOOL. MAX PEITH, AURORA, N. Y. Filed Oct. 13, 1883. (No model.)



Claim.—1. A piano chair or stool having a back, and provided with one or more supplemental seats hinged to the chair above the seat proper, substantially as set forth.

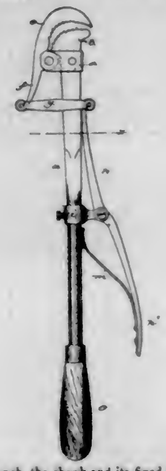
2. The combination, with a chair, of stepped blocks secured thereto, and supplemental seats hinged to the said blocks, one above the other, substantially as and for the purpose set forth.

291,932. POWDER-WARMING APPARATUS. SAMUEL POOLE, Denver, assignor of three-fourths to Barzillai S. Morgan and Thomas H. Baker, both of Leadville, Colo. Filed Apr. 12, 1883. (No model.)



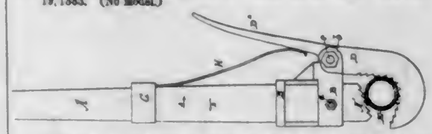
Claim.—An apparatus for warming powder, consisting of an air-tight case, A, having separate compartments or chambers B, opening at the top of said air-tight case, and provided with removable covers, and a central chamber, C, provided with a lamp, E, for heating the chambers of the said air-tight case, the said chambers B being insulated from said heating-chamber C by an air-space, substantially as described.

291,933. WRENCH. DANIEL R. PORTER, Randolph, Mass. Filed June 25, 1883. (No model.)



Claim.—In a wrench, the shank and its fixed jaw *b*, having a convex face, combined with the movable jaw, pivoted on a strap connected with the shank and in the described relation to the fixed jaw, and provided with an extension, *f*, and the jaw-operating lever, pivoted with relation to the shank and connected by the link with the extension of the pivoted jaw, to operate substantially as described.

291,934. WRENCH. DANIEL R. PORTER, Revere, Mass. Filed Nov. 19, 1883. (No model.)



Claim.—As an improved article of manufacture, the herein-described pipe-wrench, composed of the shank A, inclined at one end and toothed to form a fixed jaw, A', the attached metal strap or block B, the movable concaved toothed jaw D, provided with the hand-piece D^2, and mounted upon the fulcrum-pin *c*, supported by an ear of the strap B, beyond the edge of the shank A, and the spring H, connected with or supported by the shank A, the spring acting against the hand-piece, substantially as shown and described.

291,935. BUTTON-FASTENER. GEORGE W. PRENTICE, Providence, R. I. Filed Nov. 22, 1883. (No model.)

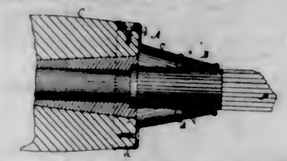


Claim.—1. A metallic button-fastener, composed of a table and three or more prongs projecting in substantially the same direction from one side or edge of the table, bent at right angles thereto, and adapted to receive the shank-eye of a button on one of said prongs, and to enter or be forced into the fabric or article to which the fastener is to be secured in line with one another, for the purpose set forth.

2. An improved metallic button-fastener, composed of a table and three integral substantially-parallel prongs, with intervening spaces, the said prongs projecting from only one side or edge of the table and bent at right angles thereto, and the heel of the middle or button-carrying prong disposed in a different plane to that of the heels of the outer prongs, all of the said prongs being adapted to enter or be forced into a fabric or article of apparel in one and the same plane, substantially as and for the purpose set forth.

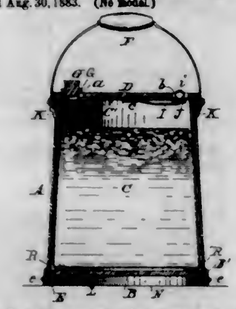
3. The one-piece metallic button-fastener, consisting of the table *a* and the parallel prongs *b* b' b^2, projecting from only the lower edge, *c*, of the said table, with the heel of the middle or button-carrying prong, b^2, above or out of line with the heels of the prongs *b* b', the said prongs *b* b' b^2 being bent in a given plane at right angles to the table *a*, all as shown and described, and for the purpose set forth.

291,936. SAND-BAND FOR VEHICLE-WHEELS. REUBEN RAPHAEL, Wadsworth, Nev. Filed Apr. 19, 1883. (No model.)



Claim.—As a new article of manufacture, a sand-guard consisting of two sections, A and B, said section A having the band *a*, adapted to fit the outside of the hub, the flange *b*, and tapering portion *c*, terminating in an opening provided with a screw-thread, and the tapering section B, screw-threaded at its larger end to fit the screw-thread of section A, all constructed and arranged substantially as and for the purpose specified.

291,937. JACKETED SHIPPING-CAN. GEORGE J. RECORD, Concord, Ohio. Filed Aug. 30, 1883. (No model.)



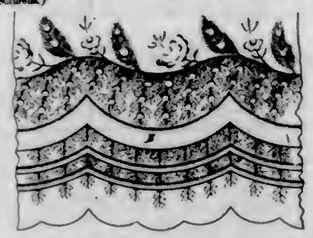
Claim.—1. In a shipping-can, a jacket provided with an opening, *a*, in combination with a can having a nozzle, G, and with ring R, whereby a space is formed between the bottoms of the can and jacket, and an annular space formed between the outer sides of the can and the inner sides of the casing, substantially as described, and for the purposes set forth.

2. The combination, with the can C, of the vent H, consisting of an L-shaped spring-bar, I, secured to the head of said can at *c*, said bar I being provided with a valve-disk, J, adapted to close against the inner side of said head and terminating in an eye, *i*, substantially in the manner as and for the object stated.

291,938. COATING FOR WIRE PREPARATORY TO DRAWING. WILLIAM F REED, Worcester, Mass. Filed June 1, 1883. (No specimens.)

Claim.—A bath or coating for wire preparatory to drawing, composed of glucose in combination with a fine body substance—as lime—in solution with water, substantially as hereinbefore set forth.

291,939. SHELF OIL-CLOTH. EDWARD R. RIESENFELD, New York, N. Y., assignor to Charles H. Wight, same place. Filed Oct. 2, 1882. (Specimens.)

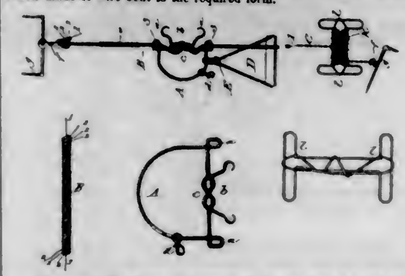


Claim.—1. As a new article of manufacture, the shelf-covering described, consisting of a strip of enameled or water-proof cloth or other fabric, having a plain portion to cover the top of the shelf, and a printed decorative border on one side to overhang the edge of the shelf, as specified.

2. A shelf-cover consisting of a strip of enameled or water-proof fabric, having the border or margin designed to overhang the edge of the shelf ornamented by a complete and independent decorative pattern or design, as specified.

291,940. FIRE-ESCAPE AND SELF-PRESERVER. JAMES B. ROBERTSON, Kingston, N. Y. Filed Sept. 19, 1883. (No model.)

Brief.—A twisted wire friction device through which the rope is rove, said rope being formed of a core and worming of wire. The reel is also made of wire bent to the required form.

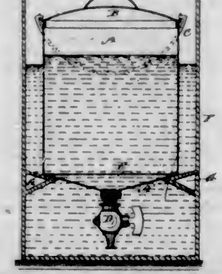


Claim.—1. The frame or descender A, having loops *a a*, and twists or knots *c*, cleat *b*, and hook *d* attached.

2. The wire-reel *l*, Fig. 3.

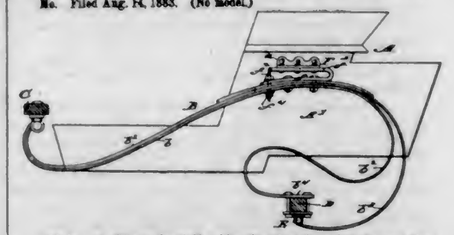
3. The combination, in a fire-escape and self-preserver, of the wire core 1, wire worming 2 2 2, and the Manila rope B with the iron frame or descender A and braided rope-sling D, braided lashing, and wire loops E, all substantially as set forth.

291,941. COFFEE AND TEA POT. FRANK ROCKBROOK, Elmira, N. Y. Filed Apr. 13, 1883. (No model.)



Claim.—The combination, with the vessel F, having projections G or a ring on its inner surface, of the vessel A, provided on its bottom with a faucet or cock, D, and with a strainer, E, above the bottom, substantially as herein shown and described, and for the purpose set forth.

291,942. TWO-WHEELED VEHICLE. FRED. SCHELP, Jr., Ballwin, Mo. Filed Aug. 14, 1883. (No model.)



Claim.—1. The spring *b* b^2, said spring, from its point of connection at its forward end with the vehicle, extending backward and upward to above the vehicle-axle, thence curving downward and backward, and terminating at the rear axle and under the seat in the S form, substantially as described.

2. The combination of the part *b* b^2 and the part b' b^2, the cross-bar C, the vehicle-body A', and the axle D, the part b^2 being bent in S form, and secured to the upper side of said axle, and the part b^2 bent and secured under it, all in the manner and substantially as described.

3. The combination of the body A', the spring B, the cross-bar C, and the axle D, said spring being made in two parts, which are separated between the forward end of the spring and the point where it is connected with the vehicle-body, and also separated into two parts in the rear of the point of connection with the vehicle-body, the part b^2 of the spring terminating in the S form shown, and the part b^3 of the spring being connected with the axle, substantially as shown.

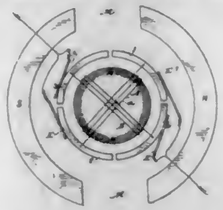
4. The combination of the body A', the spring B, and the coupling F, whereby the vehicle-body can be adjusted at any desired inclination, substantially as described.

291,943. COMBINED HEEL-PLATE AND COUNTER-SUPPORT. HENRY SCHNARR, Nora Springs, Iowa. Filed June 5, 1883. (No model.)



Claim.—The herein-described improved combined adjustable heel-plate and counter-stiffener, the same consisting of a heel-plate composed of a pair of plates or leaves connected by a narrow stem having an upwardly-projecting vertically-slotted shank, in combination with a counter-stiffener consisting of a plate having a semicircular slot, and provided with a downwardly-projecting flanged stem vertically adjustable upon the shank of the heel-plate, substantially as and for the purpose set forth.

291,944. DYNAMO-ELECTRIC MACHINE. DANIEL A. SCHUYLER and ADDISON G. WATERHOUSE, New York, N. Y., assignors to the Schuyler Electric Light Company, same place. Filed Apr. 5, 1883. (No model.)



Claim.—1. The combination, in a dynamo-electric machine, of two curved field-of-force pole-pieces, a cylindrical armature arranged to rotate on its longitudinal axis between said pole-pieces, and two armature-coils wound upon the exterior of the armature at right angles to one another and connected at their middle portions, the two ends of one coil being connected to two diametrically-opposite segments of a commutator, while the two ends of the other coils are connected to two other diametrically-opposite segments.

2. The combination, in a dynamo-electric machine, of a cylindrical armature or carrier arranged to rotate between two curved field-of-force poles, two independent sets of coils wound longitudinally upon the exterior thereof, each set consisting of two coils wound at right angles to one another and connected at their middle portions, while the two ends of each coil are connected to diametrically-opposite segments of a commutator, and connections from the commutator of one set to the commutator of another, whereby the currents generated in the one set may be combined with the currents generated in the other, substantially as and for the purpose described.

3. The combination, in a dynamo-electric machine, of a cylindrical armature or carrier rotating on its longitudinal axis between two curved field-of-force poles, two sets of armature-coils wound longitudinally upon the exterior of said cylinder, each set consisting of two coils wound at right angles to one another and connected at their middle portion, two commutator-cylinders, each having four segments, to which the four ends of the two coils in one set are connected, and a connection from the positive brush of one commutator to the negative brush of the other, so that the current from one set may be combined for tension with the current of the other.

4. The herein-described improvement in winding the cylindrical armature-coil, consisting in winding from the center of the coil alternately with the two free ends, so as to bring the two halves in alternate layers.

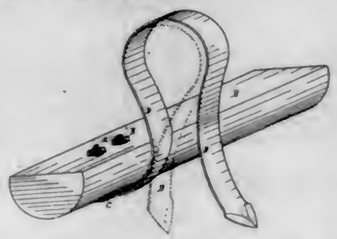
291,945. NUT-LOCK. HENRY SCHWARZWALDER, New York, N. Y. Filed Dec. 7, 1883. (Model.)

Claim.—1. The nut B, frame, yoke, or cap C, and the pin D, connected directly to each other, as specified, in combination with the slotted bolt A, substantially as herein shown and described.



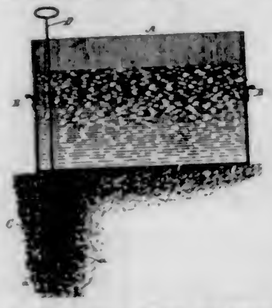
2. The nut B, frame, yoke, or cap C, and conical pin D, all rigidly united together, in combination with the slotted bolt A, substantially as herein shown and described.

291,946. SPRING-TOOTH. ABRAHAM SHELLMAN, Charleston, Mich. Filed Oct. 19, 1883. (No model.)



Claim.—A spring harrow-tooth consisting of a bell-bow located between the tooth-beams, provided with two downwardly-extending ends on a like but oppositely-turned curve, one of said ends forming the working and the other the secured portion, substantially as set forth.

291,947. IRRIGATING APPARATUS. CHARLES MOSA SKILLEN, Pasadena, Cal. Filed Aug. 29, 1883. (No model.)



Claim.—1. The reservoir A, provided with suitable means for handling the same, and provided at some point in its base with a downwardly-projecting rigid tube or nozzle, C, adapted to be inserted into the earth, perforated, as described, to permit the egress of fluid, substantially as and for the purpose set forth.

2. The nozzle C, perforated laterally, as described, and provided at its lowest extremity with a vertical orifice, in combination with the rod or bar D, whereby the earth may be opened in advance of the tube or nozzle, substantially as hereinbefore set forth.

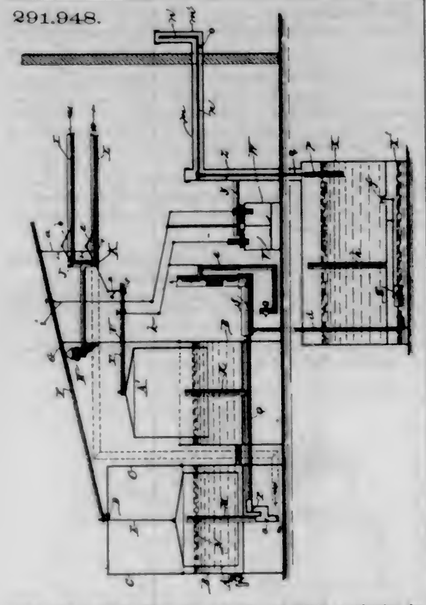
3. The combination and arrangement of the reservoir A, nozzle C, and rod D, substantially as and for the purpose set forth.

291,948. GAS-GENERATOR. DEXTER M. SMALL, Providence, R. I. Filed Mar. 19, 1883. (No model.)

Claim.—1. The combination, in a device for generating or enriching combustible gas from or with liquid hydrocarbon, of the following elements: a tank or reservoir for the liquid, a vaporizing-chamber, a device for supplying at a uniform pressure the air or the gas to be enriched, a device for automatically compressing air within the reservoir for the purpose set forth, a device for rendering uniform the power required to raise the liquid therefrom, a magnetic device for indicating the amount of liquid therein, and a crooked or angular-jointed pipe, as represented, for filling it, with a device therein for indicating at the orifice thereof when the reservoir is sufficiently full.

2. The combination, with a device for generating or enriching combustible gas from or with liquid hydrocarbon, of an underground reservoir for holding a supply thereof, having a compartment with a device for maintaining therein a uniform level of the liquid, there being a communicating air pipe or passage between the two compartments, and an outlet-pipe connecting the lower one with the vaporizing-chamber, together with a pipe for filling the reservoir, and suitable mechanism for automatically raising the liquid as required for consumption.

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3. The air-cylinders A A', tanks B B', pipes M, Q, and R, and valves O and P, all combined, arranged, and operating substantially as described, together with a suitable motive power, a vaporizing-chamber, and means for supplying oil thereto.

4. The combination, with a device for generating or enriching combustible gas from or with liquid hydrocarbon, of a tank for holding a supply thereof, having a compartment with a device for maintaining therein a uniform level of liquid, there being a communicating air pipe or passage between the two compartments, and an outlet-pipe connecting the lower one with the vaporizing-chamber, together with suitable mechanism for automatically raising the liquid as required for consumption.

5. The combination, with a hydrocarbon tank or reservoir, of a device for automatically introducing air therein, to expel the liquid therefrom and convey it, as required, to a vaporizing-chamber or point of consumption.

6. Pipe Z, having a branch, *m m'*, with a device therein, connected with, so as to be operated by, the liquid in the tank X, for the purpose set forth.

7. The combination, with a hydrocarbon tank or reservoir, of a magnet connected with, so as to be actuated by, the liquid therein, for the purpose set forth.

8. The combination, in a device for generating or enriching combustible gas from or with liquid hydrocarbon, of two cylinders, A A', each operating to maintain a uniform pressure within the vaporizing-chamber, of the air or gas to be enriched, and each, independently of the other, actuating a device for conveying the hydrocarbon to a vaporizing-chamber as required, together with a suitable motive power.

291,949. CHILD'S CARRIAGE. HORACE SPOONER, New York, N. Y. Filed Oct. 3, 1883. (No model.)

Claim.—1. In a child's carriage, a flexible hammock or body, front and rear wheels supporting posts, and a horizontally-hinged reach, these parts being combined and arranged substantially as shown and described.

2. A rectangular flexible hammock or body, in combination with rear wheels supporting posts, front wheels supporting posts, a hinged reach, and braces extending from the hinge to the posts, substantially as shown and described.

3. The combination of the flexible hammock A, provided with the loops or rings *a*, the posts E F, the wheels B C, the handle D, the reach J J, hinge L, and fastening device L^2, substantially as shown and described.

4. In a foldable carriage, wheels supporting posts, a jointed reach pivoted to the posts, and braces pivotally connected at their inner ends to each other, and at their outer ends to tie-rods between the posts, substantially as specified.

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5. In a foldable carriage, a jointed reach pivotally secured to posts and extended beyond their pivots, in combination with stops secured to the posts, substantially as specified.

6. In a foldable carriage, a shade-rod clamp mounted upon a block or frame adapted to swing away from the body, substantially as and for the purpose set forth.

7. In a foldable carriage, a flexible body, in combination with a jointed reach and an intermediate pivotally-connected upwardly-folding jointed bracing device, substantially as specified.

8. In a foldable carriage, the combination of a jointed reach formed of two U-shaped sections pivotally connected with front and rear posts, the former provided with inwardly-extending journals, and the latter with outwardly-extending journals, whereby, when folded, the wheels may be placed in substantially a straight line.

9. The combination of the flexible body A, the posts E F, the jointed reach J, pivotally secured to the posts, a fastening device, as L^2, and means for separating the posts, substantially as shown and described.

10. The combination of the flexible body A, the jointed reach J, and the jointed brace M, and posts E and F, substantially as shown and described.

11. The combination of the body A, posts E F, pivotally-connected jointed reach J, pivotally-connected jointed brace M, strap *d*, and handles D, substantially as shown and described.

12. The combination, with the post E, journal G G', reach J, stop K, and bolts *g g'*, substantially as shown and described.

13. The combination of the post F, the journal G G', reach J, bolts *g g'*, binding-piece G^2, and handle D, substantially as shown and described.

14. The combination of the shade-clamp I', the block or frame H', the block H, and the fastening device A A', substantially as shown and described.

15. The combination of the posts F, the tie-rods *s*, braces *e'*, blocks H H', fastening devices A A', and shade-rod clamp I', substantially as shown and described.

291,950. VETERINARY MEDICINE-SPOON. JACQUES R. STEFFENHEIMER and THEODORE LEIB, Rochester, N. Y. Filed Nov. 6, 1883. (No model.)



Claim.—1. The combination, with the bowl A, having a continuous straight upper margin or edge, and provided with the handle B on same plane therewith, of the cover C, arranged to slide along the upper sides of the bowl and the handle near the bowl, and adapted to close the bowl by direct sliding contact between its lower surface and the margin of the

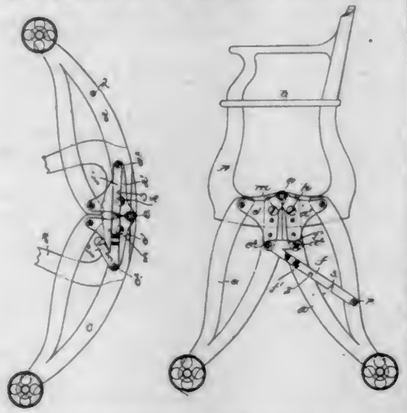
bowl, the sliding rod D, attached to the cover and parallel with the handle, and a suitable guide or guides arranged to cause the cover and the rod to slide in the proper path, substantially as and for the purposes set forth.

2. The combination, with the bowl A, having a continuous straight upper margin or edge and provided with the handle B on same plane therewith, of the cover C, arranged to slide along the upper sides of the bowl and handle, sliding rod D, attached to the cover and parallel with the handle, and means for forcing the cover against the margin of the bowl when closed, substantially as described.

3. The combination, with the bowl A, provided with beveled lug *f*, of the handle B, sliding cover C, having guides *h h'*, substantially as described.

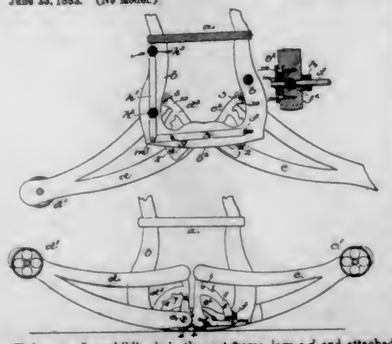
4. The combination, with the bowl A, having a continuous straight upper margin or edge and provided with the handle B on the same plane therewith, having a longitudinal groove adapted to receive the sliding rod D, of the sliding cover C, having rod D attached thereto and parallel to the handle, and a suitable guide or guides to insure the motion of the cover in the proper path, substantially as described.

291,951. CONVERTIBLE NURSERY-CHAIR. ASHER B. STEVENS, Stapleton, N. Y., assignor to Thompson, Parley & Waite, Baldwinsville, Mass. Filed June 23, 1882. (No model.)



Claim.—The combination, substantially as shown and described, of the seat-frame, the leg *c*, pivoted by a movable bolt, *m*, in a slot, *n*, in said frame, the leg *d*, having a pivot, *h*, fixed in said frame, the leg-hinging plates c' d', jointed at *e*, and the two-armed locking-lever *f*, fulcrumed at c^2 to the movably-pivoted leg, and notched to engage pins d^2 and *p* on leg *d*, as and for the purpose set forth.

291,952. CONVERTIBLE CHAIR. ASHER B. STEVENS, Stapleton, N. Y., assignor to Thompson, Parley & Waite, Baldwinsville, Mass. Filed June 23, 1882. (No model.)



Claim.—1. In a child's chair, the seat-frame, legs *c d*, and attached metal plates c^2 d^2, geared together and provided with the notched members, as shown, combined with a locking device to engage the notches 6 6 7 7 8 8 in said members to hold the legs in position, substantially as described.

2. The seat-frame, pivoted legs, and connected metal plates, provided with gear-teeth and holding-notches, combined with the rods *f* and bar *m*, and lever and handle to move bar *m* in one direction and a spring to move the said bar in the opposite direction.

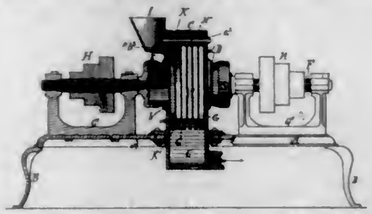
3. The quadrantal metal plates c^2 d^2, provided with gear-teeth 4 and notches 6 7 8, combined with the legs *c d*, to which said plates are secured, and the seat-frame, to which the legs are pivoted through said plates, and means to engage the notches to hold said legs as they are adjusted upon their pivots, substantially as shown and described.

4. The combination, in a child's chair, of the seat-frame, legs pivoted thereto, notched quadrantal plates geared together to connect the legs to each other, and brace each individual leg, and rods or pins to enter the notches of said plates to hold the legs in position, substantially as shown and described.

291,953. DEPILATING HIDES AND SKINS. ALBERT H. STOWE, New York, N. Y. Filed Nov. 2, 1883. (No specimens.)

Claim.—The improved depilatory, consisting of sulphide of sodium in combination with pure sulphur and carbon, substantially as described.

291,954. ATTRITION-MILL. THOS. LEGGETT STURTEVANT, Framingham, Mass. Filed May 12, 1883. (No model.)



Claim.—1. A case and a series of rings contained therein, which act as a screen, in combination with a rotary hollow head adapted to communicate with said case within the space inclosed by the screen, and means for supplying said case and head with grain or other material within the space or chamber inclosed by said rings, in order that the material may grind itself, substantially as set forth.

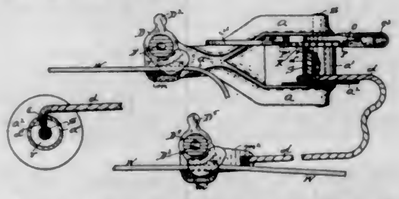
2. The rings G, in combination with head or heads D, case C, and suitable means for supporting said rings independently of each other, substantially as described.

3. In an attrition-mill, the rings G, constituting a screen therefor, each ring being provided with a recess, J, under its point of suspension, substantially as set forth.

4. The rotary grate L, in combination with the rings G and case C, substantially as explained.

5. In attrition-mills, a grate composed of a series of rings, in combination with a vertical shaft, on which said grate is mounted, and means for rotating said shaft and grate, substantially as set forth.

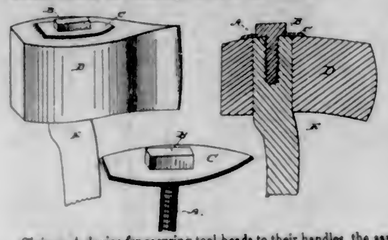
291,955. WIRE-STRETCHER. LELIX E. SUNDERLAND, Joliet, Ill. Filed May 21, 1883. (No model.)



Claim.—1. In the wire-stretcher described, the combination of the body or frame *a*, provided with a suitable clutch at one end to grasp and hold the wire W, slotted lever C, having the pawl P, and journaled by its slot on the shaft S, drum-ratchet R, drum *a'*, having an annular inner chamber between its ends surrounding the removable shaft S, for the reception of the end of the rope *d* through a hole in the side of said drum, removable shaft S, adapted to be withdrawn and driven through said drum *a'*, to retain the end of said rope within said drum between its inner walls and said shaft S, detent-pawl P', having the extended handle C', and rope *d*, provided with a suitable clutch or hook, *q*, at its outer end, all arranged to operate as and for the purpose set forth.

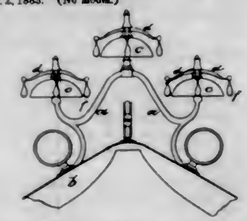
2. In a wire-stretcher, the removable shaft S, in combination with the drum *a'*, having an inner chamber larger than said shaft and surrounding said shaft, for the reception of the rope *d* between said shaft and the inner walls of said drum, as and for the purpose set forth.

291,956. FASTENING FOR TOOL-HANDLES. THOMAS ALBERT SWIFT, Cambria, Cal. Filed Apr. 11, 1883. (No model.)



Claim.—A device for securing tool-heads to their handles, the same consisting in the combination, with a handle having a screw-threaded socket at its outer end, of the screw-threaded shank A, having an integral, flat, annularly-extending top plate, C, from the outer face of which extends a rectangular projection, B, substantially as and for the purpose set forth.

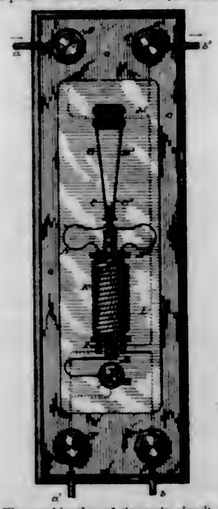
291,957. SLEIGH-BELL. CHARLES M. THEBERATH, Newark, N. J. Filed Nov. 2, 1883. (No model.)



Claim.—1. In sleigh-chimes for harness, &c., the combination, with the bell, of the arms *d*, arranged thereover, and having slots *e* therein, and the hammers *f*, working in said slots, all substantially as and for the purposes set forth and shown.

2. In combination, a bell, *c*, arms *d*, arranged thereover, having capped and slotted extremities, and the hammer having the enlarged extremity *g*, resting above the slot, all substantially as set forth.

291,958. ELECTRIC CUT-OUT. WILLIAM M. THOMAS, Grand Rapids, Mich., assignor of one-half to the Grand Rapids Electric Light and Power Company, same place. Filed Oct. 12, 1883. (No model.)



Claim.—1. The combination of the main circuit, the loop-circuit, and means brought into operation by the diversion of the current from the loop to automatically cut out the loop-circuit, substantially as set forth.

2. The combination of the main circuit, the loop-circuit, and means brought into operation by the diversion of the circuit from the loop to automatically short-circuit the loop-circuit, substantially as set forth.

3. The combination of the main circuit, the loop-circuit, and means brought into operation by the diversion of the current from the loop to automatically both short-circuit and cut out the loop-circuit, substantially as set forth.

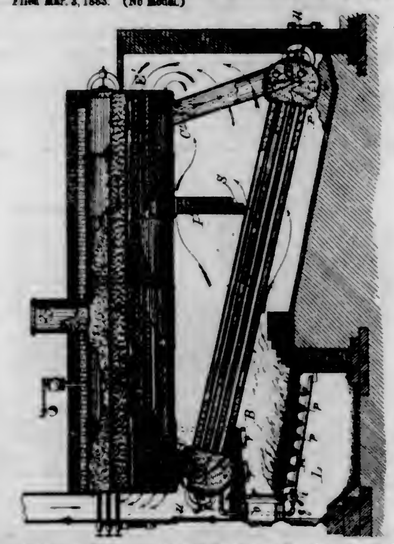
4. The combination of the main circuit, the loop-circuit, the terminals of the two circuits, which are normally electrically connected, and means, substantially such as described, brought into operation by the diversion of the current from the loop, for automatically breaking the connection between the two circuits whenever the current is grounded or otherwise diverted in the loop, thereby cutting out the loop, and at the same time permitting the terminals of the main line to come together, so as to continue the main circuit, substantially as set forth.

5. The combination of the main circuit, the loop-circuit, the terminals of the two circuits, which are normally electrically connected, the electro-magnet, the coils of which are included in the loop-circuit, and which are so disposed that the current which passes through the coils does not normally energize the magnet, but which does energize the magnet whenever the current in the loop is grounded or otherwise diverted, and the armature of the magnet to which the terminals of the loop-circuit are attached, so that when the magnet is energized by reason of a short circuit or ground-connection in the loop it will attract its armature, thereby breaking the connection between the terminals of the two circuits and cutting out the loop, substantially as set forth.

6. The herein-described electrical cut-out apparatus, consisting of the combination of the bed-plate, the terminal springs, the terminal plates normally clamped between the terminal springs, the electro-magnet, the coils of which are wound as described, the armature, the flexible conductors which connect the coils of the electro-magnet with the terminal plates, the binding-posts, and the conductors which lead from one set of binding-posts to the terminal springs and from another set of binding-posts to the coils of the electro-magnet, substantially as set forth.

7. The herein-described electrical cut-out and short-circuiting apparatus, consisting of the combination of the bed-plate, the terminal springs, the terminal plates normally clamped between the terminal springs, the electro-magnet, the cores of which are wound as described, the armature, the flexible conductors that connect the coils of the electro-magnet with the terminal plates, the fixed core of the magnet, its armature, the binding-posts, and the conductors for electrically connecting the terminal springs with one set of binding-posts and the coils of the electro-magnet with another set of binding-posts, the conductor for connecting one of the binding-posts with the fixed core of the magnet, and the conductor for connecting the armature of the fixed core to another of the binding-posts, substantially as set forth.

291,959. STEAM-GENERATOR. THOMAS E. THOMPSON, Chicago, Ill. Filed Mar. 2, 1883. (No model.)



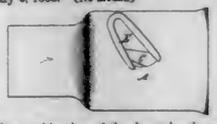
Claim.—1. In combination with the furnace B and tubular boiler A, the stand-pipes C and C', mud-drums D and D', water-tubes E, feed-

water pipes R *f f*, and partitions P P', the whole being constructed and arranged to operate substantially as described.

2. In combination with the tubular boiler A and furnace B, provided with the bridge-walls I and I' and doors *a a'*, the stand-pipes C and C', mud-drums D and D', having man-holes *t t'*, and tubes E, the whole being constructed and arranged to operate substantially as described.

3. The combination of the tubular boiler A, furnace B, stand-pipes C and C', mud-drums D and D', tubes E, pipes *r*, O, and M, three-way cock *i*, and perforated branch pipes *p*, the whole being constructed and arranged to operate substantially as described.

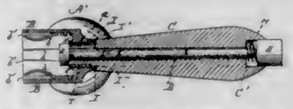
291,960. CAR-COUPLING. MILTON R. THURBER, Scranton, Pa., assignor of two-thirds to Alfred Harvey and Horatio Patrick, both of same place. Filed July 6, 1883. (No model.)



Claim.—1. The combination of the draw-head provided with the incline, the wedge-shaped block sliding on said incline and having the notch in its forward end, with the aperture in the side of the head for the insertion and withdrawal of the sliding block, substantially as described.

2. The combination of the draw-head, entirely inclosing the operating parts of the coupling, the inclines, the wedge-shaped block, having the notch in its forward edge, and the aperture in the side of the draw-head corresponding to the shape of the sliding block and placed at an angle to the plane of the incline, substantially as described.

291,961. CARRIAGE-WRENCH. DAVID TEUE, Salisbury, Mass. Filed July 13, 1883. (No model.)



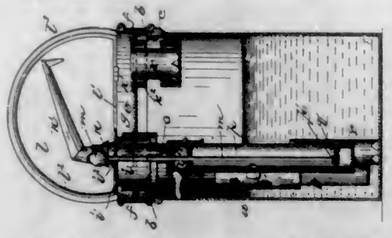
Claim.—1. In a carriage-wrench, the combination, with the bars A and socket B, of the handle C, provided with the ferrule I, substantially as and for the purpose set forth.

2. In a carriage-wrench, the combination, with the socket for grasping the nut, said socket being provided with suitable means for rotating it, of the handle C, provided with the ferrule I, said ferrule constituting a bearing for said socket or bar, substantially as and for the purpose described.

3. In a carriage-wrench, the combination, with the socket B and handle C, of the ferrule I, provided with the annular flange I', substantially as and for the purpose set forth.

4. In a carriage-wrench, the combination of the socket B, bars A, handle C, provided with the ferrule I and ring K, plunger F, and spring H, all substantially as and for the purpose specified.

291,962. OIL-CAN. EDWARD MCG. TURNER, Knoxville, Tenn. Filed Sept. 17, 1883. (Model.)

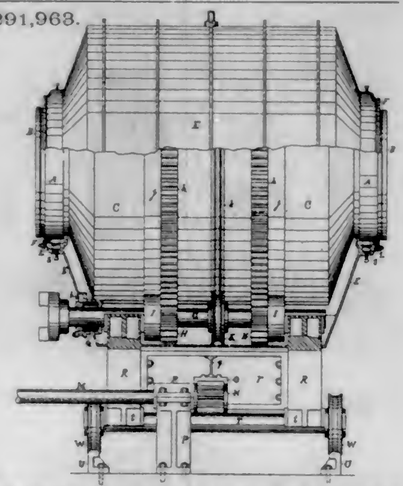


Claim.—In an oil-can, the combination, with the can-body having internal spring-fastenings projecting above its mouth, and the slotted removable tray having a collar provided with a spring, a trap-cap, and the rim-belt, of a removable pump connected to the spring-collar in the tray and provided with a filling-spout, substantially as specified.

291,963. PUDDLING-MACHINE. HENRY R. VAN BENTHUYSEN, Phœnixville, Pa. Filed Aug. 23, 1883. (No model.)

Claim.—1. A revolving puddling-chamber having annular collared necks around the openings, the collars forming wearing-surfaces for the annular packing that is contained in the recessed ends of the stationary casing, said collars terminating within the space inclosed between the chamber and casing, thereby securing an unobstructed circulation of water against the external surface of the puddling-chamber, substantially as shown and described.

291,963.



2. A stationary casing or water-jacket surrounding and inclosing the body of a revolving puddling-chamber, substantially as shown and described.

3. A stationary casing or water-jacket having annular packing-spaces and packing appliances at the ends adapted to the expansion and contraction of a revolving puddling-chamber, and in combination therewith, substantially as shown and described.

4. The water-jacket E, with the shafts G *g*, rollers I I, pinions H H, and bearings *x x* placed therein, and the stuffing-box Q and gland *f*, in combination with a revolving puddling-chamber, substantially as shown and described.

5. The circular flanged ring or gland F, segments L L, springs S S, sectional rings D D, and packing *d*, in combination with a stationary casing and revolving puddling-chamber, substantially as shown and described.

291,964. FOUNTAIN-PEN. WALTER H. WALES, Providence, R. I. Filed Aug. 2, 1883. (No model.)



Claim.—1. The combination of the barrel A, air-tube B, ink-delivering tube C, provided with an aperture, *c*, pen-holding tube F, provided with the tongue *f*, pen E, provided with the perforation *e*, soft-rubber pad *g*, and the lip G, all constructed and arranged substantially as described.

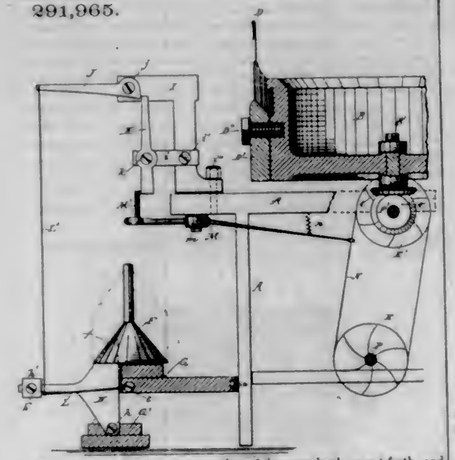
2. In a fountain-pen, the combination of the ink-delivering tube C, provided with the apertare *c*, writing-pen E, provided with the perforation *e*, tube F, provided with the flexible tongue *f*, and the soft-rubber pad *g*, whereby the ink is kept moist and guided freely to the point of the pen at the upper side of the same, substantially as described.

291,965. STOP-MOTION FOR KNITTING-MACHINES. MICHAEL J. WALSH, Amsterdam, N. Y., assignor of one-half to Francis Morris, same place. Filed May 14, 1883. (No model.)

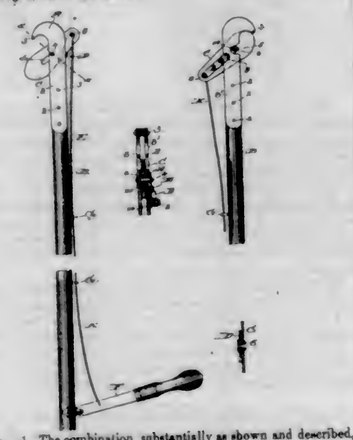
Claim.—1. The combination of the frame A, projecting standard I, carrying bracket *i*, lever K, loosely pivoted to said bracket, lever J, connecting-rod L', and bail L, with the bracket G, slotted bobbin F, the yarn-hook H, provided with an adjustable weight, *h'*, the belt-shipper M, having stamp M', and the coiled spring N, substantially as shown and described.

2. In combination with the cylinder provided with barbed needles, the standard I, having attached thereto the bracket *i*, and levers J and K, of the belt-shipper M, provided with the stamp M', of the yarn-hook H, having an adjustable weight attached thereto, of a movable bail, L, and connection L', and of a bobbin, F, provided with a slot, *f*, constructed to receive the upper portion of the yarn-hook, as set forth, and operating as described.

291,965.



291,966. PRUNING IMPLEMENT. GEO. F. WATERS, Boston, Mass. Filed Aug. 6, 1883. (No model.)



Claim.—1. The combination, substantially as shown and described, of the hook-plates *b b'*, riveted together with an intervening space, the cutting-blade C, having the longitudinal slot 5 and arranged in said space, the screw 4 and its roller *a*, forming an anti-friction fulcrum for said blade, the recesses 10 in the plates to receive the roller, the link D, connecting said blade and one of the plates, the anti-friction device 6, and the operating-rod E and handle F, all constructed and arranged to operate as set forth.

2. The pruning-instrument, the two plates *b b'*, shaped as described and recessed at their inner sides, as at 10, and the fulcrum-screw 4, combined with an anti-friction roller thereon, having its ends located in the recesses 10 of the said side plates, and with the slotted blade mounted to turn thereon, as shown and described.

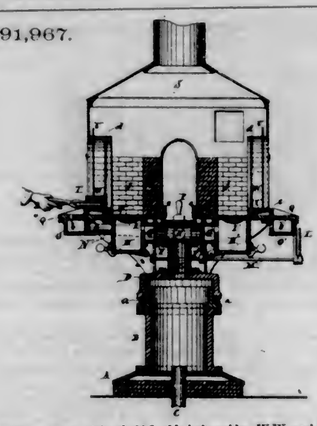
291,967. FURNACE FOR HEATING BLANKS. GEORGE H. WEBB, Pawtucket, R. I. Filed Apr. 21, 1883. (No model.)

Claim.—1. In a piling-furnace, the combination of a fire-box, J, shelf Q, and the side bolt-guides, W, having inclined edges, substantially as described.

2. In a piling-furnace, the bolt-guides W, having vertical grooves *d d*, in combination with the feeder U and shelf Q, substantially as described.

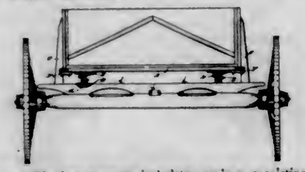
3. In a piling-furnace, the combination, with the air-chamber B, pipes E F F', fire-boxes J J', having grates I I', the ash-boxes H H', wind-boxes G G' and O O', and connecting-pipes N N', having means for

291,967.



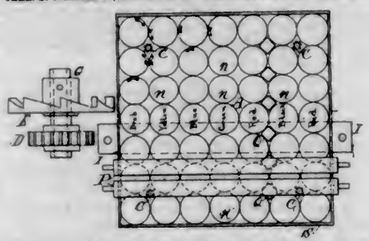
controlling a blast, of the shelf Q, side bolt-guides, W W, and fenders U U, substantially as described.

291,968. VEHICLE-SPRING. JEROME W. WETMORE, Erie, Pa. Filed Apr. 19, 1883. (No model.)



Claim.—The improvement in bolster-springs, consisting of a combination of the cross piece or plate A, the guide-slots C', the supporting-cleats F, and the inverted steel spiral springs B, the apices of the latter resting on the upper face of the bolster or bolster-plates, the whole detachable and readily removable, substantially as described.

291,969. INKING ATTACHMENT FOR PRINTING-PRESSES. BENJAMIN S. WHITEHEAD, Newark, N. J. Filed June 30, 1883. (No model.)



Claim.—1. An inking attachment for a printing-press, consisting, substantially, of a collection of revolving inking-disks arranged in parallel rows above the frame-work in or on which they revolve, the peripheries of the disks of adjacent rows engaging with one another, all substantially as and for the purposes herein set forth and shown.

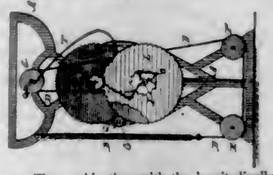
2. The disks N, having the shoulders N', the shanks M, and feathers O, in combination with cogs D and a frame-work, substantially as and for the purpose set forth and shown.

3. The inking attachment consisting of a collection of disks arranged in parallel rows to form the entire table-surface, each disk having a shoulder resting on its driving-cog, in combination with said cogs, adapted, substantially as described, to be intermittingly operated.

4. In combination with the frame-work A B of an inking attachment for a printing-press, the collection of inking-disks arranged in parallel rows, the line of contact of the peripheries thereof being straight lines, said disks being arranged and adapted to be withdrawn individually without disturbing the adjacent mechanism, substantially as herein set forth.

5. The collection of disks arranged in parallel rows, and removably mounted on rotating cogs, in combination with the stationary disks removably fixed between the rotating disks, as and for the purpose specified.

291,970. SPRING-MOTOR. JAMES A. WRIGHT, Rockingham, N. C. Filed June 16, 1883. (No model.)

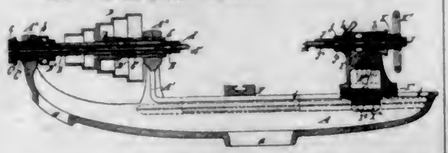


Claim.—1. The combination, with the longitudinally-extensible spring B and the cord D, attached to it, equal in length to the spring extended, of the loosely-mounted pulleys E F G, serving as receptacles for said cord, the winding-pulley H, and means for winding the same, and means for communicating rotary motion therefrom, substantially as described.

2. The combination, with the longitudinally-extensible spring B, the cord D, attached to it, the cord receiving and transmitting pulleys E F G, the cord-winding pulley H, secured to shaft I, and having ratchet-teeth J, the spur-wheel L, having a pawl, K, to engage ratchet-teeth J, the pinion M, and spur N, of spur-wheel P, the pinion O, and shaft C, for communicating the motion received by wheel L from the springto other machinery, as described.

3. The combination, with the shaft I, carrying the winding-wheel H, of the ratchet-wheel R, secured on said shaft, the crooked hand-lever T, and pawl S on said lever, adapted to engage wheel R, and to disengage therefrom by its own weight in different positions of the lever, as shown and described.

291,971. METAL-TURNING LATHE. JOHN E. ATWOOD, Stonington, Conn. Filed June 9, 1882. (No model.)



Claim.—1. A lathe-bed of dish shape, closed at the bottom throughout the greater portion of its length, but having an opening toward which all parts of the interior have a downward inclination for the delivery of oil, dirt, and chips, substantially as described.

2. A lathe-bed of dish shape, closed at the bottom throughout the greater portion of its length, but provided at its lowest part with an opening for the delivery of oil, dirt, and chips, and having bearings or posts for the head-spindle projecting separately therefrom and made integral therewith, substantially as described.

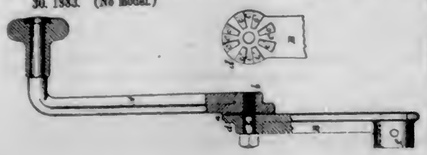
3. The combination, with a head-spindle and its bearings, of a bushing for the front bearing, a bushing for the back bearing provided with a shoulder abutting against said bearing, a cone on the spindle abutting against the end of the front bushing, and a nut screwed upon the outer end of the back bushing, and against which the end of said spindle bears, substantially as and for the purpose described.

4. The combination of the hollow or tubular spindle B, the bearings A' A^2, the bushings C C', the latter provided with the shoulder *b*, the cap-nut C^2, having a bole through it, the cone D, the feed-cone D^2, and the bushing *d* and center *d'*, substantially as described.

5. The combination, with a slide-rest and a tool-post rest provided with nuts of opposite pitch, of a hand-screw provided with right and left hand threads engaging with said nuts, substantially as described.

6. The combination of a tail-spindle having a screw-thread, a tail-stock with which the said spindle engages by a spline and groove, and which is internally screw-threaded, and a sleeve having external and internal threads of opposite pitch, the former thread engaging with the thread in said stock, and the latter thread engaging with said screw-threaded spindle, substantially as and for the purpose described.

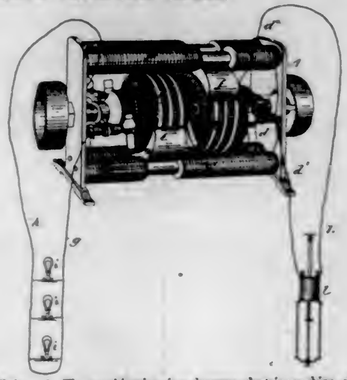
291,972. CRANK. JOHN E. ATWOOD, Stonington, Conn. Filed June 30, 1883. (No model.)



Claim.—1. A crank composed of two members or arms, A B, having heads *b d*, which are secured in face-to-face contact and held one on the other by a bolt passing through them, whereby provision is afforded, by slackening the bolt and turning the arm or member A on said bolt, for adjusting it into different positions relatively to the arm or member B, substantially as herein described.

2. A crank composed of two members or arms, A B, having heads *b d*, which are secured in face-to-face contact and held one on the other by a bolt passing through them, and which are provided with projections and notches on their contact-faces, so as to interlock with each other, whereby provision is afforded, by slackening the bolt and turning the arm or member A thereon, for securing said arm or member in different positions relatively to the arm or member B, substantially as described.

291,973. DYNAMO-ELECTRIC MACHINE. CHARLES E. BALL, Philadelphia, Pa. Filed Oct. 9, 1883. (No model.)



Claim.—1. The combination, in a dynamo-electric machine, of two armatures, one of which is wound for quantity and the other for intensity, the quantity-armature being in circuit with the field, the intensity-armature not being in circuit with such field, though designed and adapted to be energized inductively thereby, substantially as set forth.

2. The combination, with a dynamo-electric machine having two armatures, one of which is wound for quantity and the other for intensity, the former being in circuit with the field and the latter not in such circuit, of two external circuits, which include, respectively, incandescent lamps and arc-lights, the former embracing the quantity-armature and the latter the intensity-armature, substantially as set forth.

3. A dynamo-electric machine having two field-poles and two armatures, each of which is located and adapted to be rotated in the field of force of only one of said poles, one of said armatures being wound for quantity and the other for intensity, the quantity-armature being in circuit with the field and having connections for an external incandescent circuit, and the intensity-armature not being in circuit with the field, but having connections for an external arc-circuit, substantially as set forth.

291,974. PRIMER. THOMAS G. BENNETT, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Aug. 13, 1883. (No model.)



Claim.—1. The herein-described primer, consisting in the combination of the principal cup A, the auxiliary cup C, of less diameter than the principal cup and containing the fulminate, with the anvil B, of inverted conical shape, the said auxiliary cup arranged in the principal cup, with its open mouth toward the anvil, and in a concentric position between the anvil and the bottom of the principal cup, and whereby the fulminate is concentrated about the center of the anvil, substantially as described.

2. The herein-described primer, consisting in the combination of the principal cup A, the auxiliary cup C, and the fulminate in the said auxiliary cup, with the anvil B, of inverted conical shape, with a flange around its edge, said auxiliary cup arranged with its open mouth toward the anvil, the said anvil serving to hold said auxiliary cup C in its proper relation to the principal cup, and said auxiliary cup serving to concentrate the fulminate at the center, substantially as described.

291,975. SULKY-PLOW. BENJAMIN S. BENSON, Baltimore, Md. Filed May 8, 1883. (No model.)

Brief.—A colter attached to a wheel by brackets and arranged to

cut the next furrow. Plow-frame raised by crank-screws. A lever with a wheel is journaled on the land end of the axle. It also has a push-bar, which, by a pawl, may be thrust downward, bringing a brake upon the wheel and the push-bar in contact with the ground. The draft elevates the colter and plow out of the ground. The horizontal wheel is lifted or held down by the lever engaging the foot-board.



Claim.—1. The plow-beam having its front end bent first up and then down, in combination with the vertical shaft C, arranged in bearings on the beam, and having a horizontal draft-arm, C', and an arm, C^3, at right angles to both the shaft C and its draft-arm, and provided with the wheel D, as and for the purpose described.

2. The combination of the plow-beam, the offsetting brackets E E, the vertical tubes F G, cross-bar H, the screw-threaded wheel-standards F' and G', the adjusting screw-rods F^4 G^4, the said standards and screw-rods being contained in the tubes F and G, as and for the purpose described.

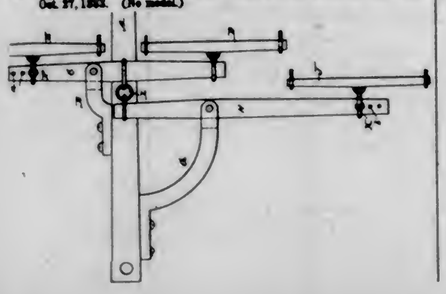
3. The combination, with the adjusting-rod G^4 and of the crank G^3, pivoted detent *b*, locking-projection *b'*, the hand-hold b^2, and spring b^3, as and for the purpose described.

4. The combination, with the rear crank-axles and the plow-beam, of the drag-bars L L, having a downwardly-projecting arm, M, bearing a horizontal rotating wheel adapted to bear against the wall of the preceding furrow, and made vertically adjustable, substantially as shown and described.

5. The combination of the platform, the adjusting-bar O, the lever N, the drag-bars L L, and the arm and wheel M M', substantially as shown and described.

6. The combination, with the colter-wheel axle, of the lever Q, bearing-wheel R, and the push-bar S, adapted to be projected into the earth, to cause the draft of the team to throw the plow and colter out of the ground, substantially as described.

291,976. DRAFT-EQUALIZER. JOHN BOWMAN, Brookville, Ill. Filed Oct. 27, 1883. (No model.)

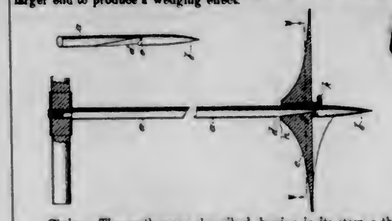


Claim.—1. In a three-horse equalizer, the combination, with the tongue A, of the double-tree C H, fulcrumed at opposite sides of the tongue, and connected in line therewith, as shown and described.

2. The combination, with the tongue A and the arms B and G, of the double-trees C and H, pivoted to the arms B and G, respectively, the single-tree D, held on the inner end of the double-tree C, the single-tree E, held adjustably on the outer end of the double-tree C, the single-tree J, held adjustably on the outer end of the double-tree H, and the links or loops L, connecting the inner end of the double-tree H with the middle of the double-tree C, substantially as herein shown and described.

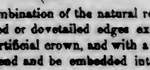
291,977. EARTH-AUGER. FRANK BROWN, Chagrin Falls, Ohio. Filed July 29, 1882. (No model.)

Brief.—A bevel-recess in the auger-shaft is held in contact with an inward projection in the eye of the cutting-disk to secure such shaft to the disk by a semi-cylindrical key tapering from a lip or flange at its larger end to produce a wedging effect.



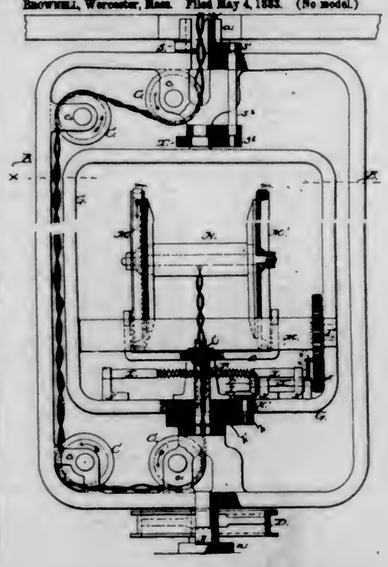
Claim.—The earth-auger described, having in its stem *a* the elongated bevel-wall recess *d*, to receive the hub of the blade *c*, and in the eye A of the blade the inwardly-projecting inclined bearing, having its greatest projection at the lower end of the said eye, and designed to be wedged against the bevel-wall recess of the stem by means of the semi-cylindrical key *k*, which tapers at a wedging angle from the lip *l*, all constructed and adapted to operate substantially as specified.

291,978. ARTIFICIAL TOOTH. E. PARMLY BROWN, Flushing, N. Y. Filed Feb. 16, 1883. (No model.)



Claim.—The combination of the natural root, with the metal band and shell with serrated or dovetailed edges extending into or baked in the porcelain of the artificial crown, and with a central opening and depending edges to extend and be embedded into the amalgam to be inserted and placed around a central pin, all as and for the purposes set forth.

291,979. MACHINE FOR MAKING WIRE CORDAGE. GEORGE L. BROWNELL, Worcester, Mass. Filed May 4, 1883. (No model.)

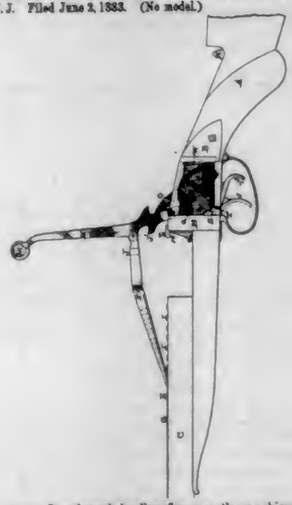


Claim.—1. The combination, with the flier B and frame G, of the return-screw I, cradle O, provided with the reversible dog P, rollers M, the spool N, having disks M', with bands *m*, and means for operating said flier and frame, and from the said flier the screw I and rollers M, as shown and described.

2. The combination, with the flier B and frame G, of the cradle O, provided with the reversible dog P, screw I, the rollers M, spool N, having friction-disks M', the shaft K', having friction-rollers *k* and the gear-wheel L, shaft J', provided with gear-wheels L' and J, and means for operating said rollers M and screw I from said gear J, as shown and described.

3. The combination, with the flier B and frame G, with the connections between said flier and frame, of the rollers M, screw I, and means for operating said rollers and screw from the flier, cradle O, provided with dog P, the spool M, having disks M', with friction-bands *m*, as shown and described.

291,980. BREECH-LOADING FIRE-ARM. William E. Budd, Chatham, N. J. Filed June 2, 1883. (No model.)



Claim.—1. In a breech-loading fire-arm, the combination of the operating-lever, which is pivoted in the top of the main frame and extends backward over the grip of the stock, the endwise-moving barrels, and the connecting rod or arm which connects the lever and the barrels together, and which rod or arm is placed above the rear end of the barrels, substantially as shown.

2. In a breech-loading fire-arm, the combination of the operating-lever, which is pivoted in the top of the main frame, and which extends back over the grip of the stock, the endwise-moving barrels, the connecting rod or arm, which is placed above the rear end of the barrels, and which serves to connect the operating-lever and barrels together, the pivoted fastening device, and a means for fastening the device to the barrels, substantially as described.

3. In a breech-loading fire-arm, the combination of the operating-lever pivoted upon the top of the main frame and extending back over the grip of the stock, the endwise-moving barrels, the connecting rod or arm which connects the lever and barrels together, and which is placed above the rear end of the barrels, a means of connection for the connecting-rod with the barrels, and a guide or way placed upon the forearm for the barrels to slide upon, substantially as set forth.

4. In a breech-loading fire-arm, the combination of the operating-lever, pivoted in the main frame and extending back over the grip of the stock, the spring-snap N, for locking the lever down in place, the endwise-moving barrels, the connecting-rod placed above the rear end of the barrels and connecting the barrels together, a means of connection between the rod and the barrels, and a guide or way placed upon the forearm for the barrels to slide upon, substantially as specified.

5. In a breech-loading fire-arm, the combination of the operating-lever, the endwise-moving barrels, and the rib F, which is loosely connected to both the lever and barrels, the rib being grooved upon its top, so as to aid in directing the aim, substantially as shown.

6. In a breech-loading fire-arm, the combination of the endwise-moving barrels provided with the projections I, with the perforated connecting rod or arm placed above the rear end of the barrels, and adapted to close down upon them, and the operating-lever H, substantially as described.

7. In a breech-loading fire-arm, the combination of the lever H, pivoted upon the top of the main frame, the rod O, provided with the projections for engaging with the cocking-plates, and pivoted to the lower edge of the lever H, the slotted main frame, the cocking-plates, and the hammers, substantially as set forth.

8. In a breech-loading fire-arm, the combination of the main frame, having a recess formed in its side or sides to receive the hammer and spring, with a mainspring, which is formed from a single piece of metal, which is bent double and then bent at right angles, the side of the recess against which the bent portion of the spring rests being inclined forward, so as to hold the spring in place, substantially as specified.

9. In a fire-arm, the combination of a hammer, the plate S, to which the hammer is pivoted, the main frame provided with slots through which the plates are passed, set-screws for holding the plates in place, and a spring, which has one end to catch against the plate and the other against the hammer, substantially as specified.

10. In a fire-arm, the combination of the operating-lever H, connecting rod or arm F, and the vertically-moving spring-actuated cartridge-extractors, which are depressed upon the cartridge by the rod or arm when the gun is closed, substantially as shown.

11. In a fire-arm, the combination of a hammer, a connecting-rod attached thereto, a sliding block attached to the front end of the connecting-rod and provided with a safety-notch, and notches in which the sear catches, and the vertically-moving spring-actuated cartridge-extractor, which engages with the safety-notch to prevent premature explosions, substantially as shown.

12. In a fire-arm, the combination of the trigger provided with a projection on its front end, the sear having an extension on its rear end, the spring 6, which engages with both the sear and trigger, and the notched sliding block, which is moved by the hammer, and with which the sear engages, substantially as described.

13. In a fire-arm, a vertically-moving cartridge-extractor, in combination with the spring 9, which presses the extractor upward when the extractor is left free to move, the sliding block, and trigger, whereby the extractor serves as an indicator to show whether the barrel has been fired, substantially as set forth.

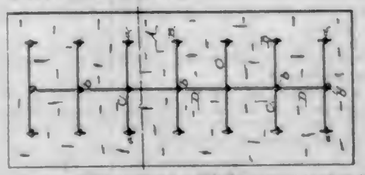
291,981. PRIMER. Henry S. Burns, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Nov. 3, 1883. (No model.)



Claim.—1. The combination of the principal cup A, the internal cup, B, of less diameter than the internal diameter of the principal cup, and constructed with an outwardly-projecting flange around its open end, said cup having the fulminate within it and arranged within the principal cup, opening outward, substantially as described.

2. The combination of the principal cup A, the internal cup, B, having an outwardly-projecting annular flange around its edge, by which flange the internal cup is secured, said cup having a central recess to receive the fulminate, and an anvil within said principal cup, substantially as described.

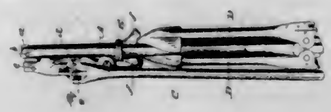
291,982. BUTTON-CARD. Henry A. Buttner, San Quentin, Cal. Filed Nov. 1, 1883. (No model.)



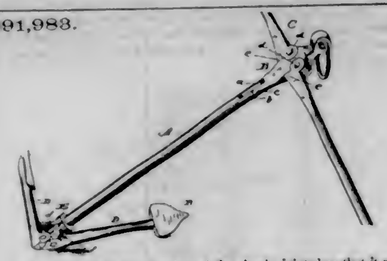
Claim.—1. The combination, with the cross-wires adapted to be looped in the eyes of buttons in opposite rows, of the central wire having loop-connection with the said cross-wires, substantially as described.

2. The combination, with the series of cross-wires adapted for loop-connection to button-eyes, of the central wire passing through loops of said cross-wires, and looped in the loops of the end cross-wires of the series, substantially as described.

291,983. ANCHOR. Hubbard C. Chester, Noank, Conn. Filed Dec. 3, 1883. (No model.)



291,983.

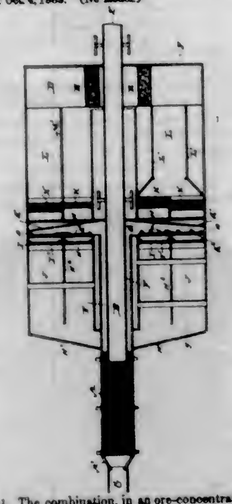


Claim.—1. The combination of the shank, jointed so that it may fold upon itself, with an upwardly-folding stock jointed to the upper section of the shank, substantially as hereinbefore set forth.

2. The combination of the shank, jointed so that it may fold upon itself, with an upwardly-folding stock jointed to the upper shank-section, and folding arms hinged to the lower shank-section, substantially as hereinbefore set forth.

3 The combination, substantially as hereinbefore set forth, of the two-part folding shank, the upwardly-folding stock, jointed to the upper shank-section, the folding arms hinged to the lower shank-section, and the slide.

291,984. ORE-CONCENTRATOR. Alexander D. Clarke, New York, N. Y. Filed Oct. 4, 1883. (No model.)



Claim.—1. The combination, in an ore-concentrator, of an inclined chute for conducting the water containing the sand, ore, &c., the screen for receiving the same, an additional chute inclined downward in the inverse or opposite direction of the first-mentioned chute, and settling tanks or boxes, substantially as herein shown and described, and for the purpose set forth.

2. In an ore-concentrator, the combination, with an inclined chute, of a screen arranged at the lower end of the same, a chute inclined from the bottom of the screen in the inverse or opposite direction of the chute through which the water is conducted upon the screen, a transverse gutter arranged at the lower end of the latter chute, and a settling-tank into which the water is conducted that flows from the gutter, substantially as herein shown and described, and for the purpose set forth.

3. In an ore-concentrator, the combination, with an inclined chute, B, of a screen, A, upon which the water, stones, and sand are conducted by the said chute B, a chute, F, inclined from the screen A in the inverse or opposite direction of the chute B, and a transverse gutter, G, at the lower end of the chute F, the chute C, inclined about in the same direction as the said chute B, into which chute C the water is conducted which has passed into the transverse gutter G, substantially as herein shown and described, and for the purpose set forth.

4. In an ore-concentrator, the combination, with the inclined chute B, of the screen A at the lower end of the same, the chute F, inclined from the screen in the inverse direction of the chute B, a transverse gutter, G, at the base of the chute F, a settling-tank below the chute F, inclined platforms at the front and rear of the said settling tank or pocket, and a chute, C, inclined in the same direction as the chute B, into which chute C water from the settling tank or pocket is conducted, substantially as herein shown and described, and for the purpose set forth.

5. In an ore-concentrator, the combination, with a chute, B, of a screen, A, arranged at the lower end of the same, a chute, F, inclined from the screen in the inverse direction of the chute B, a transverse gutter, G, at the lower end of the chute F, a settling tank or pocket, H, a tank, D, and the chute C, substantially as herein shown and described, and for the purpose set forth.

6. In an ore-concentrator, the combination, with the chute F, of the transverse gutter G, into which water is conducted, the gates G^2, for closing the apertures *b* in the front of the gutter, and the inclined riffles *a* on the floor of the gutter, substantially as herein shown and described, and for the purpose set forth.

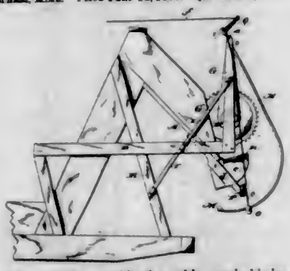
7. In an ore-concentrator, the combination, with the chute F, of the transverse gutter G, provided with apertures *b*, gates G^2, the pocket or settling-tank H, the partition I, and the gates I', substantially as herein shown and described, and for the purpose set forth.

8. In an ore-concentrator, the combination, with the chute F, of the transverse gutter G, the settling tank or pocket H, into which the water flows from the gutter G, and a filter arranged in the settling tank or pocket H in front of or behind the gutter G, substantially as herein shown and described, and for the purpose set forth.

9. In an ore-concentrator, the combination, with an inclined chute, B, of a screen, A, at the lower end of the same, a chute, F, inclined from the screen A in the inverse direction of the chute B, a transverse gutter, G, at the base of the chute F, tanks or pockets H, the chute C, inclined about in the same direction as the chute B, and means for connecting the water that flows from the gutter G into settling tanks or pockets and into the chute C, substantially as herein shown and described, and for the purpose set forth.

10. The combination, with an inclined chute, B, of the screen A, the chute F, the transverse gutter G, the settling tank or pocket H, the partitions I, having gates I', the inclined platform J in front of the settling tank or pocket H, and one or more partitions, H^2, extending longitudinally over the said inclined platform, substantially as herein shown and described, and for the purpose set forth.

291,985. BUNDLE-CARRIER FOR GRAIN-BINDERS. Wm. Collins, Perham, Minn. Filed June 12, 1883. (No model.)



Claim.—1. The combination, with a grain-binder, of a rock-shaft, curved depending fingers secured to said shaft, and an abutment situated below the table and above the points of the fingers, and adapted to limit the inward swing of the carrier and hold the grain on said carrier, substantially as set forth.

2. The combination, with a grain-binder, of a rock-shaft, curved fingers secured to the rock-shaft and adapted to receive the bundles of grain, a strengthening-brace secured to the curved fingers, rods connecting said brace to the rock-shaft, and an abutment against which the grain rests.

3. The combination, with a grain-binder the grain-table of which is provided with a gate, and guards secured to the lower face of said gate, of a rock-shaft, curved fingers secured to the rock-shaft, and an abutment secured to the binder-table below the gate, substantially as set forth.

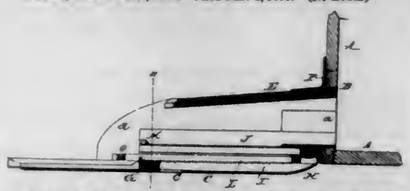
4. The combination, with a grain-binder, of a rock-shaft, an arm secured thereto, a suitable rope or equivalent secured to the arm, curved fingers depending from the rock-shaft, a strengthening-brace connecting the fingers, rods connecting the strengthening-brace and rock-shaft, and an abutment against which the grain rests.

5. The combination, with a grain-binder provided with a gate, and guards secured to the gate, of the rock-shaft, curved fingers, brace, rods connecting the brace and rock-shaft, and an abutment, all of the above parts combined, constructed, and adapted to operate as described.

6. The combination, with the binder-table, gate, and sleeve surrounding the binder-shaft, of a standard secured to the frame of the machine, a standard secured to the sleeve, and a bundle-carrier the rock-shaft of which is provided with suitable bearings, substantially as set forth.

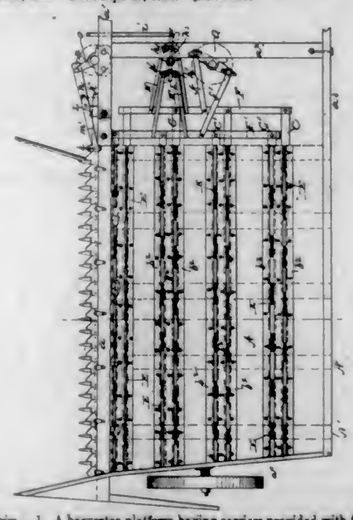
7. The combination, with a binder-table and upright standards, of the rock-shaft having the curved fingers secured thereto, and the depending bearings, one of which is elongated, substantially as set forth.

291,986. GRAIN-SPOUT FOR THRASHING-MACHINES. LESLEY H. CONKLIN, Willow Creek, Minn. Filed June 2, 1883. (No model.)



Claim.—The herein-described spout attachment for thrashing-machines, composed of the casing C D E, having aperture c, bracket P, fixed screen J, parallel ways K K, located in chamber I, between the fixed screen J and bottom C, removable screen L, having cross-bar O at its front end, pin or bolt M, inserted through the apertures *l* and N, to hold the removable screen in its fixed position, the whole constructed to adapt it to be attached removably to the spout-opening B of a thrashing-machine, substantially as and for the purpose shown and specified.

291,987. HARVESTING-MACHINE. WALTER ELPHALET CRANE, Wasoca, Minn. Filed Sept. 27, 1882. (No model.)



Claim.—1. A harvester-platform having carriers provided with fingers E, pivoted in castings D, and operating as described, combined with the bars F F', and pitmen connecting with a double crank on a vertical shaft, whereby alternately-reciprocating motion can be imparted to said carriers, substantially as set forth.

2. In a harvester-platform having sets of fingers alternately reciprocated and jointed to the bars F F', the braces H H', having rollers A A', in connection with a movable controlling-guide, I, substantially as and for the purposes set forth.

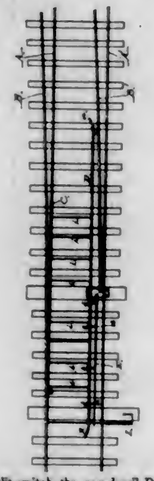
3. In a harvester-platform having sets of fingers alternately reciprocated, as described, and provided with braces H H', having rollers A A', a pivoted swinging steadying-guide, I, on which the braces H H', having rollers A A', move, substantially as set forth.

4. In a harvester-platform having carriers C C', provided with castings D, the fingers E, increasing in length according to their position, those at the outer end of the platform being shorter and those near the binder or elevator being longer than those in the middle portions, as and for the purpose set forth.

5. In a harvester, reciprocating or longitudinally-moving carriers connected to cross-bars F F', combined with a swinging guide, whereby said bars may be caused to change their relative length of stroke at front and rear ends, substantially as described.

291,988. RAILROAD-SWITCH. JOHN H. CROWLEY and BERNARD M. TEMPLE, Galveston, Tex. Filed July 13, 1883. (No model.)

Brief.—One of the points consists of a short switch-rail bolted to a spring guard-rail to move therewith, and held at a fixed distance therefrom by interposed blocks. A hand-lever is employed for setting the points for the siding.



Claim.—In a split switch, the guard-rail D, secured to the track at one end, c, and carrying on its loose end the short split rail E, rigidly secured thereto with intervening bolsters, *d d*, in combination with the long pivoted switch-rail C and lever L, all constructed, arranged, and operated substantially as set forth.

291,989. CLOCK-DIAL. HENRY J. DAVIES, Brooklyn, assignor to the Ansonia Rubber Company, New York, N. Y. Filed Feb. 6, 1883. (Model.)



Claim.—As a new article of manufacture, a hard-rubber clock-dial having smooth and glossy face, letters flush with the surface, depressions surrounding the letters to present them in relief, and minute depressions, as set forth.

291,990. BALLOON-PROPELLER. KANSAS D. DAVIS, Cole City, Ga. Filed Jan. 5, 1883. (No model.)

Claim.—1. In a balloon-propeller, the combination, with the frame, posts *b*, and wings *f*, of the arms *i*, extending through the posts, and provided with supporting-sleeves *j*, projecting outwardly from the posts, as shown and described.

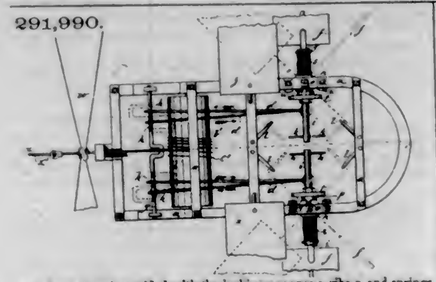
2. In a balloon-propeller, the reversing-wings *f* and sailing-wings *e*, combined with means for operating them, for the purpose specified.

3. The combination of the driving-shaft *g*, having the reverse-cranks A and connecting-rods *d*, with the two wings *f* and wing-posts *b*, located on the respective sides of the machine, as described.

4. The wings *f*, arranged to turn in the wing-posts, by which they are vibrated, and having a turning-finger, *k*, in combination with the reversing-studs *l*, substantially as described.

5. The wings *f*, arranged to turn in the wing-posts, by which they

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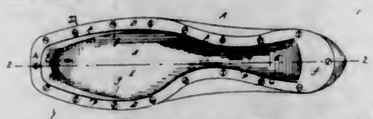


are vibrated, and provided with the locking-grooves *o*, ribs *q*, and springs *s*, substantially as described.

6. The combination of the unlocking-arms *t* and studs *u* with the wings *f*, arranged to turn in the posts by which they are vibrated, and having the locking-grooves *o*, ribs *q*, and springs *s*, substantially as described.

7. The combination, in a balloon-motor, of the vibrating wings *f*, posts *b*, turning-fingers *k*, reversing-studs *l*, locking-ribs *q*, and grooves *o*, and the unlocking-arms *t*, and studs *u*, substantially as described.

291,991. LAST. GEORGE W. DAY, Haverhill, Mass. Filed Aug. 6, 1883. (No model.)



Claim.—1. A boot or shoe last having the center portion of the bottom surface recessed or depressed, as shown, and the outer edge provided with a metallic rib, D, all substantially as and for the purpose set forth.

2. A boot or shoe last having the center portion of the bottom surface recessed or depressed, as shown, and the outer edge provided with a metallic rib, D, having the shallow groove *p*, all substantially as and for the purpose set forth.

3. A boot or shoe last having a rib, D, surrounding its recessed bottom surface, and having its toe portion widened and inwardly beveled thereat, substantially as and for the purpose specified.

291,992. MANUFACTURE OF BOOTS OR SHOES. GEORGE W. DAY, Haverhill, Mass. Filed Aug. 6, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 266,018, dated October 17, 1882.



Claim.—1. That improvement in the manufacture of boots and shoes which consists in first channeling the inner sole to form a flap or lip around its edges, then turning in the sides and folding back the toe portion of said flap or lip, and then securing said toe portion to the sole by cement or its equivalent, then securing the inner sole to the upper and outer sole by stitches, &c., and then turning back said flap and securing it to the channeled portion of the inner sole, substantially as and for the purpose specified.

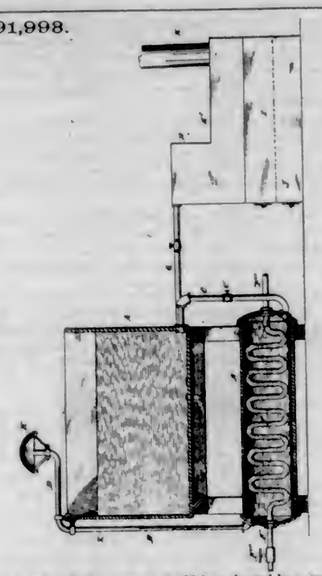
2. That improvement in the manufacture of boots and shoes which consists in channeling the inner sole to form a flap or lip around its edge, which shall be of increased width at its toe portion, then turning back such flap at the toe and folding it upon itself, and then securing it to the bottom of the sole by cement or its equivalent, for the purpose specified.

291,993. APPARATUS FOR RECOVERING SODA USED IN MANUFACTURE OF PAPER-PULP. JOHN W. DIXON, Philadelphia, Pa. Filed Nov. 30, 1883. (No model.)

Claim.—1. In combination with a concentrating-tank, A, an additional heating-chamber, B, the contents of which are heated by contact with the walls of a steam or hot-water chamber, F, tube C, to conduct the contents of tank A to chamber B, and exit-pipe D, to return the heated contents of chamber B to the concentrating-tank A, whereby the liquor is heated and an automatic circulation of the same is sustained, substantially as described.

2. In combination with a concentrating-tank, A, an additional heat-

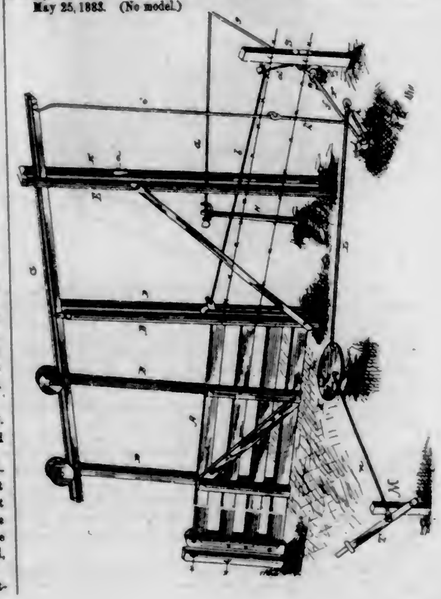
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ing-chamber, B, the contents of which are heated by a steam-heated surface, tube C, to conduct the contents of tank A to chamber B, and exit-pipe D, to return the heated contents of chamber B to the concentrating-tank A, whereby the liquor is heated and an automatic circulation of the same is sustained, substantially as described.

3. In combination with a concentrating-tank, A, an additional heating-chamber, B, the contents of which are separated by a shell from a steam or hot-water chamber, whereby said contents are heated, tube C, to conduct the contents of tank A to chamber B, and exit-pipe D, to return the heated contents of chamber B to the concentrating-tank A, whereby the liquor is heated and an automatic circulation of the same is sustained, substantially as described.

291,994. FARM-GATE. CHARLES J. DOANE, Old Gilroy, Cal. Filed May 25, 1883. (No model.)

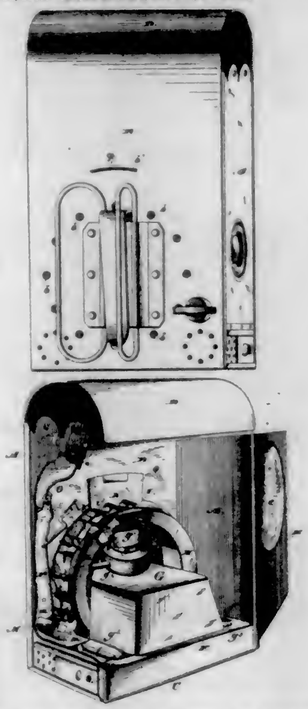


Claim.—1. The gate A, provided with the vertical beams B B, carrying rollers at their upper ends, in combination with the vertical post D, the track-beams C, the spring *a'*, secured to the rear adjacent post of the fence, and the rope or chain *b*, for preventing jar or injury to the gate and frame in its closing movement, all constructed and adapted to operate substantially as specified.

2. In a rolling-gate substantially as described, the compound lever F, journaled in short vertical posts at the rear of the gate, in combination with the rod *i*, pivoted vibrating track-beams, connecting-rods L and N, the eccentrically-pivoted disk K, posts M and H, and the operating-levers G and T, all constructed and adapted to operate substantially as and for the purposes specified.

3. The disk K, eccentrically-pivoted upon the post M, and provided with a plurality of perforations, in combination with the gate A, posts B, carrying rollers, as shown, the lateral posts D and E, track C, compound lever F, and operating rods and levers, substantially as specified.

291,995. APPARATUS FOR LIGHTING AND EXTINGUISHING LAMPS. WILLARD D. DORRIUS, Washington, D. C., assignor, by direct and mesne assignments, to himself, and Theodore F. Swayze, same place, and Samuel R. Stratton and John T. Stratton, both of Strattonville, Pa. Filed Apr. 11, 1883. Renewed Dec. 4, 1883. (No model.)



Claim.—1. A lantern in which are combined the following elements, to wit: a lamp provided with a wick or other flame-producing equivalent, a carrier adapted to receive and contain friction-matches, means whereby said carrier may be moved to bring each match successively into contact with or position near to said wick, means whereby each match is ignited as it moves to position near said wick, and means whereby each burned match is automatically expelled from said carrier as the succeeding match is ignited and moved into position for lighting said wick, substantially as and for the purpose specified.

2. A lantern in which are combined with the lamp means whereby the burner-wick may be automatically ignited and extinguished by one rotation of the operating-shaft, substantially as and for the purpose shown.

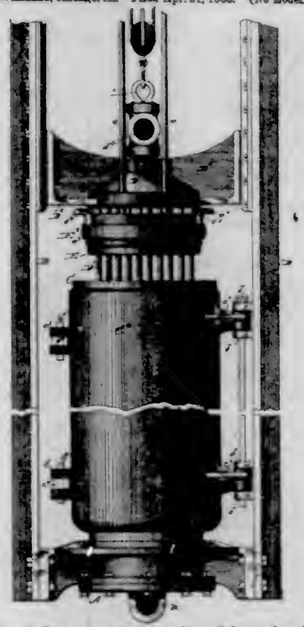
3. In combination with the wick *g'*, the carrier or holder I, contained within the housing H, and provided with the grooves *i*, teeth *i'*, and concavities *i²*, the spring L, having the serrated end *l*, and the cam M, provided with the spur *m'*, substantially as and for the purpose set forth.

4. The combination of the housing H, provided with the opening *h'*, the carrier I, having the transverse grooves *i* and peripheral intersecting groove *i²*, and the spring N, with mechanism, substantially as described, whereby said carrier may be rotated, substantially as and for the purpose described.

5. In combination with a lantern, a match holder or carrier adapted to be filled through the back of the casing of said lantern without opening the same, substantially as and for the purpose specified.

6. The hereinbefore-described lantern, in which are combined with the casing and lamp the annular rotating match-holder, the friction-spring, the expelling-spring, the carrier-housing, the extinguisher, and means whereby said match holder and extinguisher may be operated, said parts being constructed to operate substantially as and for the purpose shown.

291,996. APPARATUS FOR MOLDING THE SECTIONS OF ELECTRICAL CONDUITS. DANIEL H. DORSETT, JOSEPH E. MORRIS, and BENNETTE WILLIAMS, Chicago, Ill. Filed Apr. 21, 1883. (No model.)



Claim.—1. In an apparatus for casting cellular sections for underground electrical conduits, a vertically-sliding hollow or chambered head having an opening for the admission of steam or water, and provided with hollow cell-cores depending from its lower side, in combination with a perforated base-plate through which the cores are passed, substantially as shown and described.

2. In an apparatus for casting sections for underground electrical conduits, a base-plate upon which the section is cast, formed or provided with projections around its periphery, adapted to form longitudinal depressions in the end of the casting, substantially as and for the purpose set forth.

3. In an apparatus for casting cellular sections for underground electrical conduits, a hollow or chambered base having an escape-opening for water or steam, and a series of openings provided with stuffing-boxes, in combination with a series of hollow core-tubes adapted to pass through the stuffing-boxes and open into the hollow base, substantially as shown and described.

4. In an apparatus for casting sections for underground electrical conduits, the hollow base A, having its upper side chambered out, and provided with holes *a²*, having nipples A' in them, and provided with an outlet, *a*, for steam and water, in combination with the base-plate A³, recessed within the base, but projecting somewhat above it, and having openings corresponding to the nipples in the base and projections *a²* around its periphery, substantially as and for the purpose set forth.

5. In an apparatus for casting sections for underground electrical conduits, an outer mold formed in two parts, hinged to the main frame, and each part provided with a jacket or casing having inlet and outlet passages for steam or water, substantially as described and shown.

6. In an apparatus for casting sections for underground electrical conduits, an outer mold provided with a jacket or casing having inlet and outlet passages for steam or water, and a series of diversions between the mold and its jacket, having openings in alternate ends, whereby the steam or water is caused to circulate around the mold in its passage, substantially as shown and described.

7. In an apparatus for casting cellular sections for underground electrical conduits, the combination, with a mold and its base, and a series of cell-cores, of a bell-former through which the said cores are passed, and adapted to be dropped to the bottom of the mold when desired to clean or center the cores, substantially as described and shown.

8. In an apparatus for casting cellular sections for electrical conduits, a bell-former constructed in two independent parts, one within the other, the outer of which is adapted to form two annular shoulders upon the inner side of the cast section, substantially as shown and described.

9. In an apparatus for forming cellular sections for underground electrical conduits, the bell-former E, having holes or tubes E', adapted to slide upon the cell-cores, and supported by the rods *e e*, in combination with the shouldered ring E², having the arms *e'* and shoulders *e³*, and the handle or bar E³, substantially as and for the purpose set forth.

10. In an apparatus for casting cellular sections for underground electrical conduits, the combination, with a base having uprights upon each side, and a two-part mold hinged thereto, of a head adapted to slide vertically in said uprights, and having cell-cores depending therefrom, and provided with means for raising and lowering it, substantially as shown and described.

11. In an apparatus for forming cellular sections for underground electrical conduits, a casing for the cell-cores, formed of sheet metal, and adapted to fit closely around said cores when they are in the mold, but capable of being sprung together for removal, substantially as described and shown.

12. In an apparatus for forming cellular sections for underground electrical conduits, the combination of a series of open sheet-metal casings adapted to fit around the cell-cores, with a base-plate formed with a series of socketed or shouldered openings, and a centering device composed of two racks or frames adapted to hold the casings in position while the cores are being lowered, substantially as described and shown.

13. An apparatus for casting cellular sections for underground electrical conduits, consisting, essentially, of the hollow base A, having the nipples A', packing-boxes *a²*, and exhaust-opening *a*, and provided with the perforated base-plate A³, having projections *a³*, and the uprights B, in combination with the hollow head D, adapted to slide vertically in the uprights, and provided with the inlet *d²* and cell cores or tubes D', and the two-part bell-former E E², having tubes E', and jacketed two-part mold C, hinged to the uprights and having locking devices, all constructed and arranged to operate substantially as and for the purpose set forth.

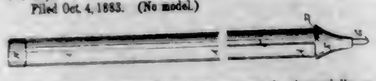
291,997. CONCENTRATOR AND AMALGAMATOR. GEO. R. EVANS, San Francisco, Cal., assignor to John P. Couch and William T. Oneale, both of same place. Filed Sept. 7, 1883. (No model.)



Claim.—1. A riffle or sluice having the sides A and the amalgamated metallic bottom or floor, consisting of the alternate plane, concave, and convex surfaces *a b c*, succeeding each other, substantially as herein described.

2. In a sluice, the sides A and the bottom B, having an amalgamated metallic floor or surface, consisting of the alternate plane, concave, and convex surfaces *a b c*, succeeding each other, the edges of which project, so as to enter grooves in the sides and form a tight joint, substantially as herein described.

291,998. PENCIL-HOLDER. BERNHARD EYBEL, New York, N. Y. Filed Oct. 4, 1883. (No model.)



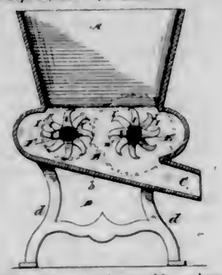
Claim.—1. A pencil-holder constructed substantially as herein shown and described, and consisting of the case A, having its lower end slitted and its end edge bent inward, the die E, having exterior groove, D, and interior screw-thread, F, and the pencil-tube H, having angular interior, as set forth.

2. In a pencil-holder, the case A, made substantially as herein shown and described, with its lower end slitted, and the slitted ends turned inward, to adapt it to receive a die and hold it by friction, as set forth.

3. In a pencil-holder, the die E, made substantially as herein shown and described, with exterior groove, D, and interior screw-thread, F, to adapt it to be held in place by friction and to cut a screw-thread upon an angular lead, in combination with a suitable case or holder, as set forth.

4. In a pencil-holder, the combination, with the die E, having interior screw-thread, of the pencil-tube H, having angular interior, substantially as herein shown and described, and a case or holder, whereby the lead will be held from turning while being moved in and out by the said die, as set forth.

291,999. ICE-CRUSHING MACHINE. J. YALE FAIRMAN, Middletown, Conn. Filed Sept. 22, 1883. (No model.)



Claim.—1. In an ice-crushing machine, a hopper, ice-chamber, and chute, all cast in a single piece, part of the end walls of the ice-chamber being formed integral therewith, and having half-bearings for the shafts of the crushing mechanism, substantially as described.

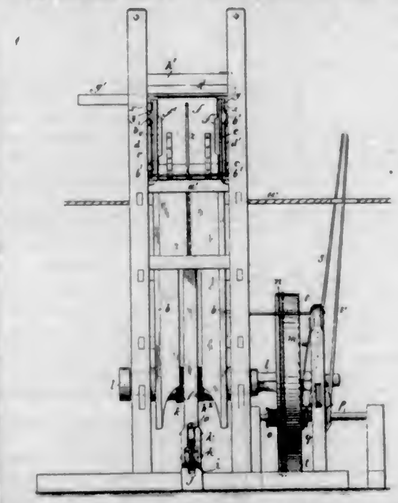
2. In an ice-crushing machine, the combination, with the hopper, the ice-chamber, and chute, cast in a single piece, and having part of the end walls of the ice-chamber formed therewith, of a supporting-frame having a plate which closes the end of said chamber, half-bearings being formed in the upper and lower portions to receive the journals of the crushing mechanism, substantially as described.

3. In an ice-crushing machine, the combination, with the rectangular arbors, of cutting-teeth arranged thereon in the manner described, said teeth being formed in pairs projecting in opposite directions, with a central disk having a rectangular opening to receive the arbor, said openings being arranged in adjacent pairs to give alternate arrangement of the teeth, substantially as described.

4. The combination, with the hopper A and ice-chamber B, of the arbors E and F, having cutters I, arranged thereon as described, and the chute C, opening in front of the machine, substantially as described.

5. The combination, with the hopper A, ice-chamber B, and chute C, cast in a single piece, with a portion of the end walls, *a'*, formed therewith, and having half-bearings *a a* and lugs *b'*, of the supporting-frame D, having plate *d'*, with half-bearings *d²* and lugs *d³*, registering with the like parts upon the upper portion of the structure, substantially as described.

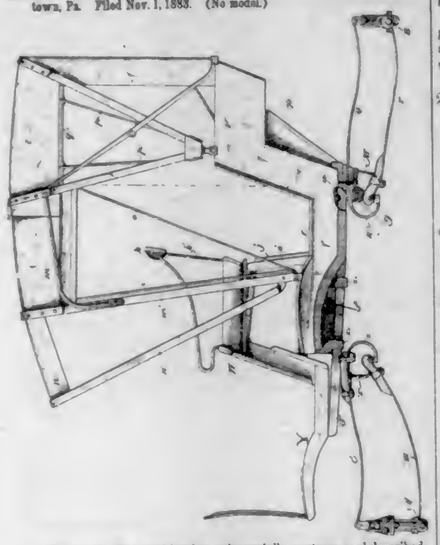
292,000. COTTON-PRESS. F. LEONIDAS FAISON and GEORGE M. NEWELL, Wake Forest College, N. C. Filed Nov. 2, 1883. (No model.)



Claim.—1. The combination of grooved rail *i*, flanged and grooved rollers *h*, endless rope *k*, thrust-bars *f²*, follower *a*, and the drum *m* and axle *l*, substantially as described.

2. The combination of lever *z*, rock-shaft *a'*, elbow-levers *b'*, slide-bolts *c'*, and connecting-rods *d'*, with the side doors, *e*, substantially as described.

292,001. CONVERTIBLE CARRIAGE. ANTHONY K. FELTON, Stoystown, Pa. Filed Nov. 1, 1883. (No model.)



Claim.—1. The combination, substantially as shown and described, of the front springs connected more or less immediately with the front axle, longitudinally-movable timbers connected to a fixed carriage-body and carrying the said springs, fixed rear springs, and means to lock the parts in position, as and for the purpose set forth.

2. The springs C C, clipped more or less directly over the front axle, and the springs E E, attached beneath the fifth-wheel, the transverse braces F G, connecting springs C C, the braces H K, connecting springs E E, the irons I, connecting springs C C and E E, and the movable timbers J J, to which said irons are attached, combined with fixed rear springs, and a convertible or extension body, substantially as described.

3. The combination, with longitudinally-moving timbers borne by and supporting a fixed extensible body, of the fixed rear springs, the independent front springs connected and moving with the timbers and front axle, and locking-rods to engage and hold the springs and body in proper relative position, substantially as shown and described.

4. The combination, with an extension-body and longitudinally-moving timbers borne by and supporting such body, the fixed rear springs, the independent front springs connected and moving with the timbers and front axle, a cross-bar connecting the rear ends of the timbers, and resting upon the lowermost of the rear springs when the carriage is extended, and means, substantially as described, to lock the springs and body in proper relative position, as and for the purpose set forth.

5. The combination, with an extension-body, fixed rear springs, movable front springs, and a longitudinally-moving coupling member, to which the front springs are attached, of pulleys bearing upon the upper and lower faces of such coupling member, and eccentric or cranked rods for holding the body and coupling member in proper relative position to each other and to the springs, substantially as described.

6. The combination, with an extension running-gear, of an extension-body composed of a fixed body and seat, and a movable body and seat hinged within the fixed body, and movable bodily into and from the fixed body, substantially as described, and for the purpose specified.

7. The combination, with the fixed body, of the angle-irons *i j*, hinged to the said body and to a seat and body, made movable thereby in said body to cover or uncover the body and seat of said fixed body, to convert the carriage into a single or double seat vehicle, substantially as described.

8. The upholstered rear seat provided with depressions in its back to receive the irons of the front seat, substantially as described.

9. The combination, with the fixed seat and body, of a seat and body in one, hinged to and movable within the fixed seat and body, to make of the carriage a single-seat vehicle, and movable forwardly from the same to bring the seat and body into the horizontal planes of the fixed seat and body, respectively, to make a two-seat vehicle, substantially as described.

10. The combination, with an extension running-gear and extension-body, of a falling top composed of telescoping sections, substantially as shown and described.

11. The combination, with the top sections, of the movable curtain-guards *o p q*, substantially as shown and described.

12. The combination, with the top sections, of the movable curtain-guards *o p q* and weather-curtains arranged inside the carriage-top, and arranged to pass down the guards to cover the sides of the carriage, substantially as described.

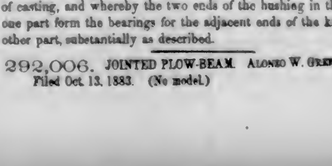
292,002. POCKET-KNIFE. JAMES D. FRARY, Bridgeport, Conn. Filed Nov. 26, 1883. (No model.)



Claim.—The herein-described improvement in pocket-cutlery, consisting of the composition covers A, having a plate, *a*, applied upon the outer surface of the cover at the bolster end and independent of the lining, substantially as described.

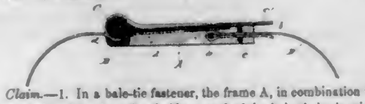
292,003. CORNER-BRACE. WILLIAM CULLEN GARRETSON, Oskaloosa, Iowa. Filed June 2, 1883. (No model.)

Brief.—A metallic corner-brace with a brace connecting the wings, bent or doubled upon itself on the inner side, forming a re-enforcing rib.



Claim.—The metallic corner-brace herein shown and described, composed of a sheet-metal plate cut into the shape shown, having lips H H and G G, set up at right angles to the plate, and the brace I, connecting the wings E E, between their respective lips H and G, and bent or doubled upon itself on the inner side to form a re-enforcing rib or web, I', substantially as and for the purpose shown and set forth.

292,004. BALE-TIE FASTENER. CULBERSON S. GARRISON, Tiffin, Ohio, assignor of one-half to J. H. Pittenger, same place. Filed July 3, 1883. (No model.)

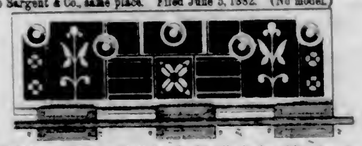


Claim.—1. In a bale-tie fastener, the frame A, in combination with the rods *a*, *b*, and *c*, adapted to hold one end of the bale-tie by looping it around and passing it between the rods, substantially as shown and described.

2. In a bale-tie fastener, the frame A, provided with the concave corrugated cross-bar B, in combination with the corrugated cam-lever C, substantially as described, and for the purpose specified.

3. In a bale-tie fastener, the frame A, provided with the cross-rods *a*, *b*, and *c*, and the concave and corrugated cross-bar B, in combination with the corrugated cam-lever C, substantially as shown and described.

292,005. HINGE. WILLIAM GILFILLAN, New Haven, Conn., assignor to Sargent & Co., same place. Filed June 5, 1882. (No model.)

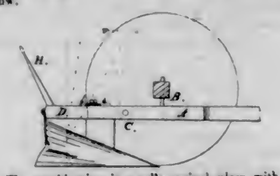


Claim.—1. The method herein described of making bronze and similar metal hinges, consisting in the arrangement of hard-metal bushings upon a spindle in a position relative to each other corresponding to the knuckles on the hinge to be cast, said spindle and bushings placed in the mold preparatory to casting, and so that metal poured into the mold will flow around said bushings in the formation of the knuckles, substantially as described.

2. A bronze-metal hinge constructed with a hard-metal bushing extending through the knuckle and inclosed in the knuckle in the process of casting, and whereby the two ends of the bushing in the knuckles of one part form the bearings for the adjacent ends of the knuckles of the other part, substantially as described.

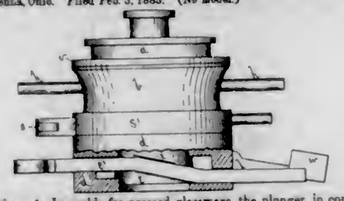
292,006. JOINTED PLOW-BEAM. ALONZO W. GREEN, Spencer, Mass. Filed Oct. 13, 1883. (No model.)

Brief.—The plow-beam is jointed, the front end being fixed to the axle or frame. It is designed to be lifted when it is desired to reverse the swivel-plow.



Claim.—The combination, in a sulky swivel-plow, with the frame and axle, of the vertically-jointed plow-beam consisting of the fixed forward part, A, the hinged rear part, D, carrying the reversible plow, and a locking device for holding down or releasing the plow, substantially as shown and described.

292,007. MOLD FOR PRESSED GLASSWARE. WILLIAM HALEY, Ravenna, Ohio. Filed Feb. 3, 1883. (No model.)



Claim.—1. In molds for pressed glassware, the plunger, in combination with a sliding plug to form an opening through the glass, having its upper end above the molten glass to be pressed and closely fitting the plunger while the latter is forcing down the plug and molding the glass, substantially as described.

2. In molds for pressing glassware, the plunger *a* and sliding plug *c*, having their ends closely fitted to each other, and a sliding sleeve, *e*, surrounding and closely fitting the plug, and each having vertical movement independent of the other, in combination with bottom plate, *d*, connected with and supporting both the plug and sleeve, substantially as described.

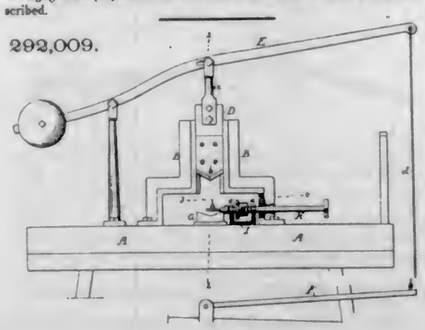
3. In molds for pressing glassware, the plug *c* and its sleeve *e*, each having vertical movement independent of the other, in combination with the weighted lever *l*, sliding bar *e'*, bottom plate, *d*, hinged half-rings *s s'*, and plunger *a*, the sliding plug *c* extending above the molten glass to be pressed, and its upper end closely fitting the bottom of plunger *a*, substantially as described.

292,008. HAME-FASTENER. CHARLES N. HART, Pittsford, Vt., assignor of one-half to Charles S. Smith, same place. Filed Nov. 27, 1883. (No model.)



Claim.—In a hame-fastener, the fastener A, consisting of the portion *a*, having the hook end a^2, the link a^3, interposed, and hinged at its ends to the parts *a' a*, the portion *a'* having the hooked end a^4, provided with the spring-pin *c*, and pivoted bail, with its thumb-piece adapted to engage the projection *b* on the end of the link, as shown and described.

292,009.



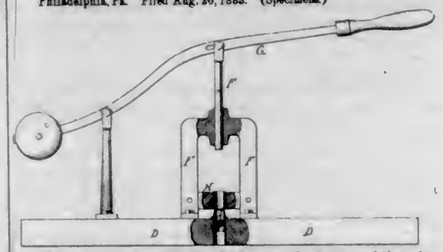
292,009. MACHINE FOR MAKING TASSEL-BLANKS, &c. DAVID HEER, Philadelphia, Pa. Filed Aug. 20, 1883. (No model.)

Claim.—1. The combination, in a tassel-blank cutter, of the guided slide D, its blade or blades, and mechanism for operating the said slide, with the bed G and a rotating spindle, H, carrying the blank, and having its axis at right angles, or thereabout, to the plane of movement of the slide D, as set forth.

2. The combination, in a tassel-blank cutter, of the slide and its blade or blades, with a bed, G, and with a spindle, H, and with bearings constructed to permit both the turning and tilting of the said spindle.

3. The combination, in a tassel-blank cutter, of the slide and its blade or blades, and the bed G, with the spindle H, its notched collar, and spring-retainer.

292,010. MACHINE FOR MAKING TASSEL-BLANKS. DAVID HEER, Philadelphia, Pa. Filed Aug. 20, 1883. (Specimens.)

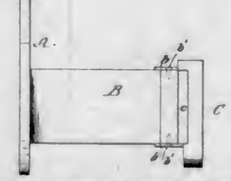


Claim.—1. The within-described cutter, the same consisting of a tube having internal spiral grooves, and terminating at one end in a cutting-edge coinciding with the bore of the tube, substantially as set forth.

2. The combination of the internally and spirally grooved cutter, with the guide H, the guided plunger E, and mechanism for operating the said plunger, substantially as specified.

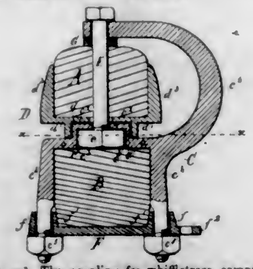
3. As a new article of manufacture, the within-described block or strip, having throughout a uniform polygonal cross-section, and having flat sides with a longitudinal twist, as set forth.

292,011. BRACKET. JONAS HERRMANN, Columbus, Ohio. Filed July 26, 1883. (Model.)



Claim.—The combination of the board A, the bracket-arm B, secured at right angles thereto, the hinged plates *b b* at the outer end of said arm, the screws *b' b'*, the leaf C, recessed at *c*, and the cross-bar D, all arranged substantially as shown and described.

292,012. WHIFFLETREE-COUPLING. WILLIS T. HINE, West Meredith, N. Y. Filed Oct. 2, 1883. (No model.)



Claim.—1. The coupling for whiffletrees, comprising the perforated plate D, having horizontal portion c^2, stay and binding projections d^3, arms d^2, and an annular rim, *d'*, the perforated clip-plate C, having horizontal portion *c*, cylindrical socketed bearing $c' c^2$, screw-threaded clip-extensions c^4, with nuts c^5, extension or guard c^6, yoke F, and bolt E, with nut *e*, substantially as and for the purpose described.

2. A whiffletree coupling-plate, D, having the front and rear staying and binding projections, d^3, arms d^3, and an annular socket-rim, d', in combination with a whiffletree, A, having a passage through it, through which the coupling-bolt E can be passed, substantially as and for the purpose described.

3. The clip coupling-plate C, formed with front and rear clip-extensions, c^2, socketed bearing c' c^3, horizontal portion c, extension bolt staying strap or guard c^4, evener or cross-bar B, and yoke F, in combination with whiffletree A and the center bolt, E, with nut s on its end, said bolt being passed through the whiffletree and fastened by the single nut s in the socket of plate C above the cross-bar B, substantially as and for the purpose described.

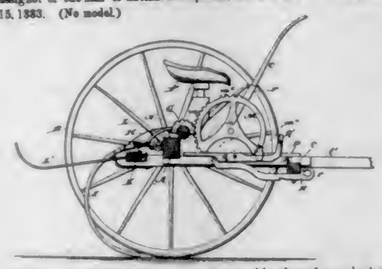
4. The combination of a center bolt, E, having a single fastening-nut, s, on its end above the evener or cross-bar B, and the bearing c' d' of the clip coupling-plate C, and the clip whiffletree coupling-plate D, having nut-socket c^3, substantially as and for the purpose described.

5. The clip coupling-plate C of the evener or cross-bar, having horizontal portion c, screw-threaded front and rear binding-extensions, c^2, nut-socket c^3, and a perforated extension or guard, c^4, substantially as and for the purpose described.

6. In a whiffletree-coupling, the combination of the center bolt, E, above the evener or cross-bar, the clip coupling-plate C, having a bearing, c, and nut-socket c^3, and the coupling-plate D, having the bearing portions d d', substantially as and for the purpose described.

7. The clip coupling-plate C, having a socket, c^3, provided with a nut s, and extension or guard c^4, in combination with the coupling-plate D and the bolt E, passed through the extension or guard c^4, and entered into the nut s above the evener or cross-bar, substantially as and for the purpose described.

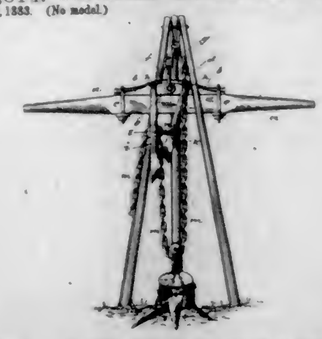
292,013. HORSE HAY-RAKE. CHARLES T. HOLMAN, Lincoville, Pa., assignor of one-half to Alexis C. Carpenter, Rochester, N. Y. Filed June 15, 1883. (No model.)



Claim.—1. In a horse hay-rake, the combination of a rock-shaft having spring-presses and rigid arms, the teeth supporting and elevating bar having clearer-fingers, and pivoted to said rigid arms with the wheeled frame or axle, and the curved rake-teeth pivoted thereto, substantially as described.

2. In a horse hay-rake, the combination of a sliding draft-bar, a centrally-pivoted lever having a treadle at its front end, and connected with the draft-bar, the oscillating disk engaging with said lever, and the hand-lever applied to the oscillating disk, with the wheeled axle, the pivoted rake-teeth, and suitable devices for raising the rake-teeth connected with or actuated by the aforesaid devices, substantially as described.

292,014. STUMP-MACHINE. ASA A. HOWE, Ulysses, Pa. Filed Aug. 14, 1883. (No model.)



Claim.—1. In a stump-puller, the hook i, having the pulley l in its loop and the depressions s and u near its point, for the reception of the adjacent links of the chain, substantially as specified.

2. In a stump-puller, the combination, with the long hook i, having pulley l and link depressions s u, of the short link k, having link depressions s u, and supported upon the same lever as the hook i, and working above, substantially as specified.

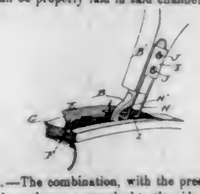
3. In a stump-puller, the combination, with the wooden lever a, having the cap-plate b, secured thereto by the clips c c, and provided with the journals d d, bail f, notches h h, and ring g, of the long grappling-hook i, having pulley l, the short grappling-hook k, the springs n n, connecting said hook, and the chain m, substantially as specified.

292,015. INSECTICIDE MIXTURE. JOHN M. JAQUES, Sr., Thorntown, Ind. Filed Sept. 4, 1883. (No specimens.)

Claim.—A seed-protecting compound consisting of coal-oil, turpentine, tobacco, and indigo, in the proportions substantially as set forth.

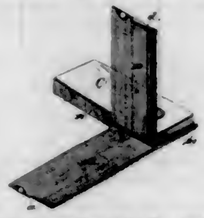
292,016. CHANNEL-OPENER FOR SOLE-SEWING MACHINES. EDEN OTIS JAQUITH, Weymouth, Mass. Filed Feb. 1, 1883. (No model.)

Brief.—This device is designed for attachment to a McKay or other boot and shoe sole sewing machine, to serve in raising the flap that covers the channel and holding it away from the needle-point, so that the stitches can be properly laid in said channel.



Claim.—The combination, with the presser-foot of a sewing-machine, of a channel-opener attached to the side of said presser by means substantially as described, said channel-opener consisting of a spring-wire having an offset at 2, and extending backward from a point a little distance from the offset, substantially as shown.

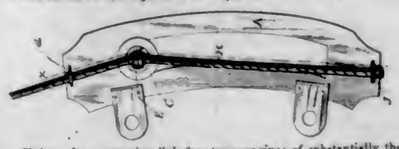
292,017. CARPENTER'S SQUARE. WILLIAM R. JONES and SAMUEL E. JONES, Toccoa, Ga. Filed Apr. 14, 1883. Renewed Dec. 5, 1883. (No model.)



Claim.—1. A square provided with a supplemental blade hinged to the long blade or arm, so as to be capable of being turned down against it or outward to stand at a right angle to said arm and in a plane with the inner edge of the short arm, substantially as and for the purpose set forth.

2. In combination with the blade A of the square, the supplemental blade D, hinged thereto and formed with a lip on its end to engage the end of blade A and lock the two together to form one arm or blade, substantially as shown and described.

292,018. REVERSING-LINK FOR ENGINES. WILLIAM ELLIOTT KARNS, Parker's Landing, Pa. Filed Sept. 28, 1883. (No model.)

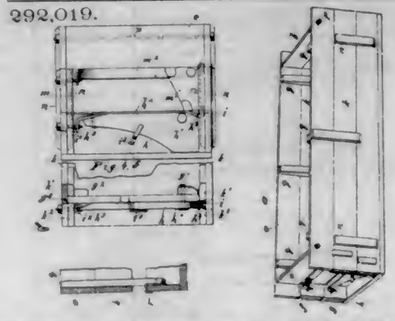


Claim.—In a reversing-link for steam-engines of substantially the described construction, the combination of the link A, having the countersunk recess F, and eyebolts G J, link-pin B, having apertare I and collar B', adapted to fit within the countersunk recess F, and provided with the sliding sleeve C, having flange C', spiral spring D, and washer E, with the operating-cord H, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

292,019. WAGON-BOX. FRED LANE MORTON, Wis. Filed Nov. 10, 1883. (No model.)

Claim.—1. In a wagon-box, a tail-gate consisting of a tail-board

292,019.



shorter than the inside width of the wagon-box, provided with a pivoted lever having one end of the same or nearly the same width as the tail-board, and projecting beyond one end of the tail-board when the lever and tail-board are in place, said lever having engaging-hooks at its ends upon its upper edge, in combination with the side-boards and cleats, and engaging-eyes for holding the tail-gate in place in the ways, and permitting its ready removal therefrom, substantially as specified.

2. In a wagon-box, a reversible removable head-gate provided with a hinged foot-rest, having bracing hook-arms with eyes and tightening-nuts, in combination with the side-boards and cleats forming the ways, whereby the head-gate may be used to form a foot-rest, and also to close the head of the box when an extension is placed thereon, substantially as specified.

3. In a wagon-box, the top box having inside stakes provided with hooks for forming an open or stock box, in combination with the main box and the intermediate box-section, substantially as specified.

4. In a wagon-box, an intermediate section having a tail-gate provided with a pivoted lever extending at one end beyond the board to which it is pivoted, and provided with engaging-hooks, in combination with the side-boards and cleats of said intermediate section, substantially as specified.

292,020. MODE OF UTILIZING DISCARDED RUBBER BELTING. FRANK A. MAGOWAN, Trenton, N. J. Filed Nov. 22, 1883. (No model.)



Claim.—1. The mode herein described of utilizing worn rubber belting, the said mode consisting in first ripping strips of the belting; second, folding out the ripped strips; and, third, subjecting the same to pressure and to the process of vulcanizing, all substantially as set forth.

2. The mode herein described of first ripping strips of rubber belting; second, folding out the strips; third, applying to the same a layer or layers of rubber; and, fourth, subjecting the whole to pressure and to the process of vulcanizing, substantially as specified.

292,021. MODE OF UTILIZING DISCARDED RUBBER HOSE. FRANK A. MAGOWAN, Trenton, N. J. Filed Nov. 22, 1883. (No model.)



Claim.—The mode herein described of utilizing discarded rubber hose, the said mode consisting in first folding out severed sections of the hose, and then subjecting the sections to pressure and the process of vulcanizing, substantially as set forth.

292,022. SOUND-MUFFLER FOR TELEPHONES. HIRAM MAINE, Chicago, Ill. Filed May 31, 1882. (No model.)

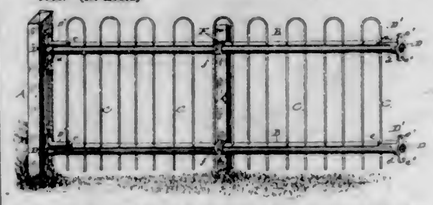
Claim.—1. A transmitting and receiving telephone, combined with the elastic muffling-cap D, permanently mounted in position to cover one ear of the operator while standing in proper speaking position before said transmitter, for the purpose set forth.

292,022.



2. The elastic extension C, provided with internal movable muffling-diaphragms, which may be adjusted to muffle the sounds more or less, as set forth.

292,023. FENCE. JOSEPH L. MAMLOVE, Milton, Ind. Filed July 27, 1883. (No model.)

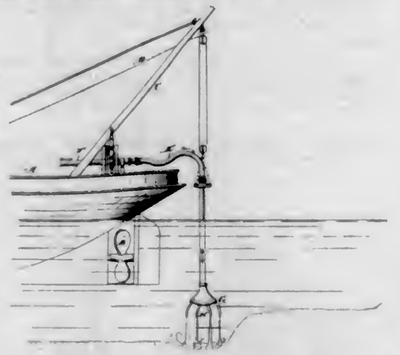


Claim.—1. As a means for attaching rails to corner-posts, the casting D, having an interior configuration corresponding to the exterior configuration of the rail, outwardly-projecting side flanges, d, perforated horizontally-extending flange D', and vertically-extending flanges d' d^2, with perforations and attaching means, substantially as shown, and for the purpose set forth.

2. The casting E, with grooved exterior surface and perforation f, and an interior configuration conforming to the shape of the rail B, in combination with the post A', horizontal rail B, and attaching-bolts, substantially as shown, and for the purpose set forth.

292,024. HYDRAULIC EXCAVATING-MACHINE. SAML. M. MANSFIELD, Galveston, Tex. Filed July 9, 1883. (No model.)

Brief.—An eroding jet-tube has a flexible connection permitting lateral and longitudinal adjustment with relation to the vessel, its position relative to the screw-propeller of which is such that the agitation produced by the propeller supplements that of the jet.



Claim.—1. The combination, with a propeller-wheel, of a water-jet tube and a flexible coupling for connecting said tube with a support and permitting its longitudinal and lateral adjustment, substantially as described.

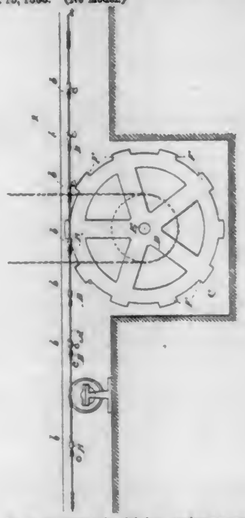
2. The combination, with the submerged propeller-wheel, of a water-jet tube having a flexible connection with a support permitting its longitudinal adjustment, and suspended vertically in such proximity to the propeller-wheel that the current induced by the said propeller will hold in suspension till carried off by the natural current the material disengaged by the jet, substantially as described.

3. The combination of a submerged propeller-wheel, a water-jet tube adjustable longitudinally and laterally, and located in such proximity to said propeller that the currents induced by the propeller will hold in suspension till carried off by the natural currents the material disengaged by the jet, and means for elevating and lowering said tubes, substantially as described.

4. The combination of a submerged propeller-wheel, a water-jet tube connected with a support by a flexible coupling, permitting its longitudinal and lateral adjustment, and suspended in such proximity to the propeller-wheel that the currents induced by the said propeller will hold in

suspension till carried off by the natural current the material disengaged by the jet, and means for elevating and lowering said tube, substantially as described.

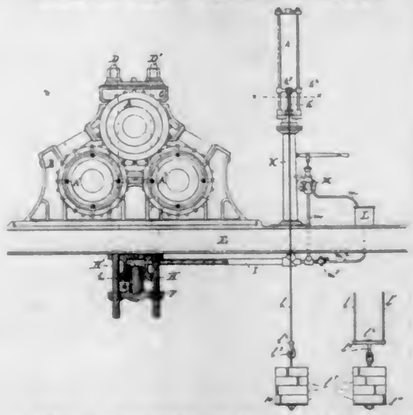
292,025. DEVICE FOR TRANSMITTING POWER FROM A CENTRAL STATION. WILLIAM MCCALL and J. VITAL DE VRY, San Francisco, Cal. Filed Oct. 15, 1883. (No model.)



Claim.—1. In an apparatus for driving stationary machinery by means of an endless traveling belt composed of wire ropes or strands, the central plates having side arms through which the ropes are interwoven at regular intervals, in combination with a wheel mounted upon a shaft, and having projections or teeth adapted to engage with the belt, whereby motion is imparted, substantially as set forth, and for the purposes described.

2. An endless traveling belt composed of wire ropes or strands arranged in groups upon each side of a central opening, in combination with central plates having side arms through which the ropes are interwoven at regular intervals, substantially as herein described.

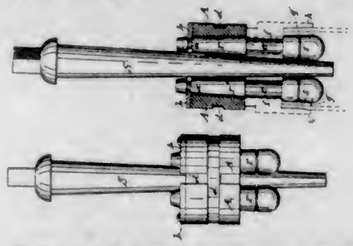
292,026. HYDRAULIC-PRESSURE REGULATOR. JOHN SHEPHERD MCDONALD, New Orleans, La. Filed July 16, 1883. (No model.)



Claim.—1. The accumulator-head provided with the perpendicular guide-rods, the vertically-moving piston, and the cross-head, in combination with the rods *l l* and the removable weights for regulating the pressure of the piston, substantially as described.

2. The hydraulic-pressure regulator herein described, consisting of the liquid-pressure cylinder and accumulator, in combination with a reservoir, L, pump M, and pipes connecting said reservoir with the pressure-cylinder and accumulator, said parts being arranged substantially as described, and for the purpose set forth.

292,027. TUBE-EXPANDER. JOHN H. MCGRAW, Oswego, N. Y. Filed Aug. 4, 1883. (No model.)



Claim.—1. A flue-expander comprising a tapering spindle, conversely tapered rollers, and an expansible collar or body holding the rollers around the spindle, as specified.

2. A flue-expander consisting of a tapering spindle, an expansible body surrounding the spindle, and rollers interposed between said spindle and body and projecting with their ends at the face of the body, substantially as set forth.

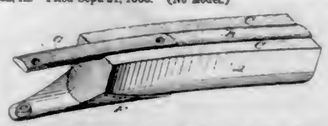
3. A flue-expander consisting of a longitudinally-divided collar or body, rollers partly embedded in the inner surface of the collar-sections and projecting at the end thereof, a yielding clamp applied to the collar, and a tapering spindle passing through the collar between the inclosed rollers, substantially as described and shown.

4. In combination with the tapering spindle, the longitudinally-divided collar provided internally with longitudinal channels, tapering rollers arranged in said channels and projecting at the end of the collar, and provided at one end with a circumferential groove, plates removably secured to the end of the collar-sections and engaging the groove of the rollers, and a yielding clamp applied to the exterior of the collar, all as described and shown.

5. In combination with the tapering spindle and tube-expanding rollers, the roller-carrying body, divided longitudinally, a yielding clamp applied to the exterior of the body, and gibs or compensating-blocks inserted between the body-sections, substantially as and for the purpose specified.

6. In combination with the tapering spindle and expansible body, the interposed rollers projecting at the end of said body, and provided between the same and the tube-rolling portion of the roller with a circumferential rabbet, substantially in the manner described and shown, and for the purpose set forth.

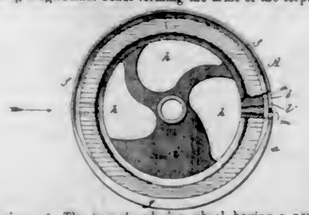
292,028. TIRE AND FELLY FOR WHEELS. PATRICK W. MCGUIRE, Lacon, Ill. Filed Sept. 21, 1883. (No model.)



Claim.—The combination, with the felly A, having the curved rib B, of the countersunken portion G, adapted to form a continuation of the rib, as described, and the tire D, provided with a groove adapted to receive the rib B of the felly.

292,029. RAILWAY TORPEDO-PLACER. GIBSON WARNER METCALFE, Baltimore, Md. Filed Sept. 27, 1883. (No model.)

Brief.—A portion of the tread of the torpedo-placing wheel is wider between the flanges than the normal width of the tread, has radial openings, and is weighted. The torpedo is provided with a metal strip having longitudinal beads forming the arms of the torpedo.

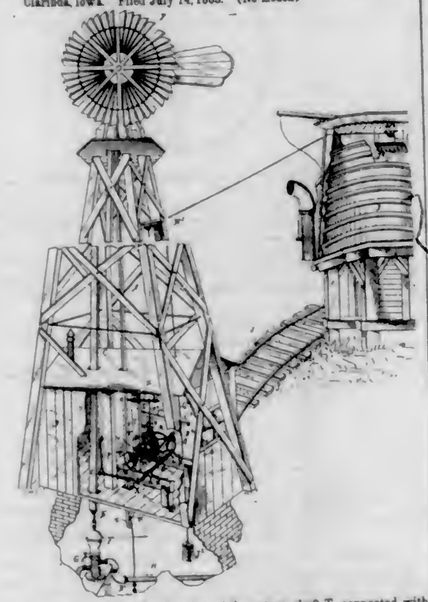


Claim.—1. The torpedo-placing wheel, having a portion of its tread between the flanges made wider than the normal width of the tread, and weighted, to cause said portion to assume the lowest position when the wheel is suspended by an axle, substantially as shown and described.

2. The torpedo-placing wheel, having a tread between two annular flanges and radial openings through the tread, and provided with recesses in the flanges for holding a torpedo in line with each of said openings, substantially as shown and described.

3. As an article of manufacture, the metal strip for securing a torpedo-signal to a rail, having longitudinal beads or folds *n*, substantially as shown and described, whereby the arms formed by the strip may be firmly held by the wheel when the former is made of soft metal, as specified.

292,030. ATTACHMENT TO WINDMILLS. GEORGE W. MILLER, Clarinda, Iowa. Filed July 14, 1883. (No model.)



Claim.—1. The combination of the rotary shaft T, connected with the stop mechanism and carrying the ratchet-wheel, the pawl to hold the latter, the pitman, the rock-shaft having the crank end carrying the pivoted loop that engages the ratchet-wheel, the lever connected with the pawl and loop, the tank, the float in the tank, and the line connecting the float with the said lever, substantially as and for the purpose set forth.

2. The combination of the pitman of the wind-wheel mechanism, the rock-shaft having the crank ends and operated by the pitman, the loop arranged on the end of the rock-shaft, the rotary shaft carrying the ratchet-wheel and drum, the stop-rod having the chain arranged to wind on the drum, the pawl, the lever connected with the pawl and loop, the float, and the line connecting the float with the latter lever, substantially as and for the purpose set forth.

292,031. ADJUSTABLE CENTER-BOARD FOR VESSELS. GEORGE L. MILLS and UPTON M. GORDON, San Rafael, Cal. Filed Nov. 17, 1883. (No model.)

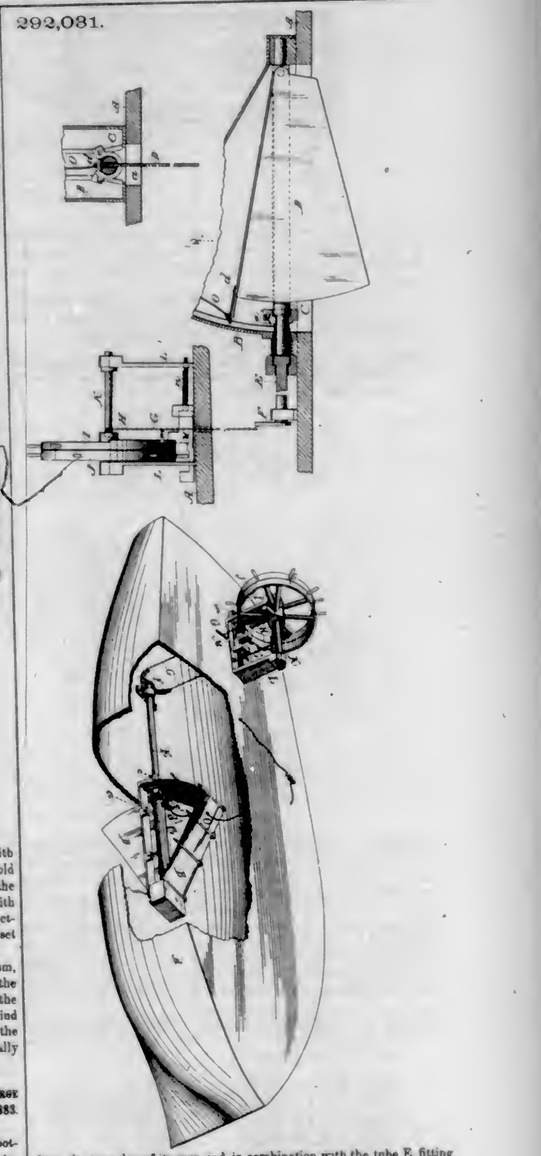
Claim.—1. In a boat, a center-board within the opening in the bottom thereof, and pivoted at one end and hinged longitudinally therein, in combination with means for rocking or inclining said center-board from side to side, substantially as and for the purpose set forth.

2. The slotted shaft C, mounted to oscillate over the opening in the bottom of the boat, and the center-board D, fitted in said shaft and pivoted by one end, in combination with means for rocking or oscillating said shaft to incline the center-board, substantially as herein described.

3. The slotted shaft C, mounted to oscillate over the opening in the bottom of the boat, and the pivoted center-board D, fitted in said slotted shaft, in combination with the rod or tube E, connected with the shaft, and having arms F, the chains G, and the hand-wheel I, to which they are secured, substantially as herein described.

4. The slotted shaft C, mounted to oscillate in a suitable casing over the opening in the bottom of the boat, and the center-board D, pivoted by one end in said slotted shaft, and having a flange or lip, *d*, projecting

292,031.

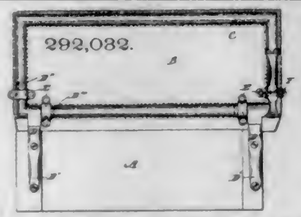


from the top edge of its rear end, in combination with the tube E, fitting loosely the rear end of shaft, and having a slot, *e*, and side wings, *e'*, on its end to receive and confine the lip *d* of the center-board, the arms F on said tube, chains G, and hand-wheel I, all arranged and operating substantially as herein described.

5. In a boat, the pivoted and laterally-swinging center-board D, as described, in combination with the rocking tube or rod E, connected with the center-board, the arms F, chains G, and wheel I, and the means for holding said wheel, consisting of the spring pawl-bar M and the teeth *m* on the wheel, substantially as herein described.

292,032. DASH-BOARD. WILLIAM ELLIS MINSHALL, Mineola, Ill. Filed Aug. 25, 1883. (No model.)

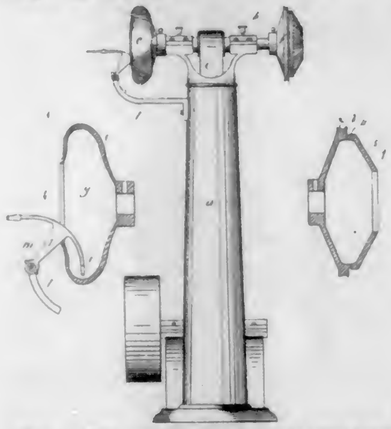
Claim.—1. The combination, with an imperforate and footless dasher-frame, of a foot having angular tangs and an angular groove in



their faces, and means, substantially as specified, for clamping said frame to said foot, whereby the vertical and horizontal bars of said dasher-frame may be held at the same time in vertical and horizontal grooves of said clamp.

2. The combination, with a dasher-frame, of a foot adapted to secure one end of the same to a carriage, said foot containing a whip-socket in one and the same piece, as shown and described.

292,033. SOLE AND HEEL BURNISHING MACHINE. ALBION L. F. MITCHELL, Lawrence, and JAMES R. MITCHELL, Danvers, Mass. Filed Aug 21, 1883. (No model.)



Claim.—1. The combination, in an organized burnishing-machine, of the rotating hollow burnisher open at the front, and a swinging gas-burner mounted on a bracket, as described, so as to swing into the open end of the burnisher, substantially as and for the purposes set forth.

2. In an organized burnishing-machine, and in combination with a rotary shaft therein, driven by suitable mechanism, substantially as described, the burnisher described, having plane beveled surface 5, provided with radial ribs or corrugations, and adapted to burnish the tread of the heel, and having the molded surfaces 2 4, adapted to fit the contour and burnish the edge of the sole or heel, substantially as described.

292,034. SECONDARY BATTERY. EUSEBIUS J. MOLERA and JOHN C. CEBRIAN, San Francisco, Cal.; said Molera assignor to said Cebrian. Filed Feb. 23, 1883. (No model.)



Claim.—The combination, with the electrodes of a secondary battery, each electrode being provided with a copper strip, as described, of a revolving commutator made of non-conducting material, and having metallic pins and strips disposed longitudinally upon its periphery, and respectively arranged to connect part of the electrodes for tension and part for quantity, substantially as set forth.

292,035. TILE, PIPE, AND SEWER PROTECTOR. ROBERT R. MORRISON, Vincennes, Ind. Filed Mar. 19, 1883. (No model.)

Brief.—Consists of a cylinder having a longitudinal slit, and a series of strips fastened by one end to the shell of the cylinder and their other end inclining toward the axis thereof.

Claim.—1. In a sewer, tile, or pipe protector, a cylinder having



292,035.

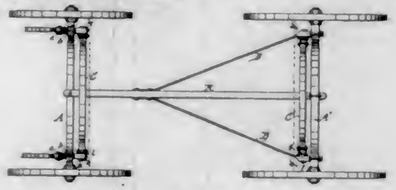


a longitudinal slit, and means therein for preventing animals from passing through, substantially as described.

2. In a sewer, tile, or pipe protector, a cylinder having a series of stripe fastened by one end to the shell of the cylinder and their other end inclining toward the axis thereof, substantially as described.

3. In a sewer, tile, or pipe protector, a cylinder having a longitudinal slit, and a series of strips fastened by one end to the shell of the cylinder and their other end inclining toward the axis thereof, substantially as described.

292,036. SPRING-VEHICLE. HARVEY A. MOYER, Syracuse, N. Y. Filed Oct. 3, 1883. (No model.)



Claim.—1. The combination, with the axle, of a clip-bar attached thereto and formed at one end with a thill-coupling and at the opposite end with a spring-coupling, and a cross-spring hung on the latter.

2. The combination, with the axle, of a clip-bar attached thereto and formed at one end with a thill-coupling and at the opposite end with a sleeve standing with its axes horizontally at right angles to the axle, a link hung in said sleeve, and a cross-spring connected with the link, substantially as described and shown.

3. In combination with the front and rear running-gears, two reach-braces connected to the hind axle and formed at the side of said axle with a sleeve standing with its axes at a right angle to the axle, a link hung in said sleeve, and a cross-spring connected to the link, substantially as described and shown.

4. The combination of two axles formed with a depressed central portion, a reach connected to the center of said axles, reach-braces attached to the hind axle near the wheels thereof, and cross-springs coupled to the side of the axles, substantially as specified and shown.

292,037. FIRE-PROOF SHEET. JUNIUS NAGEL, Vienna, Austria-Hungary. Filed June 16, 1883. (Specimens.)

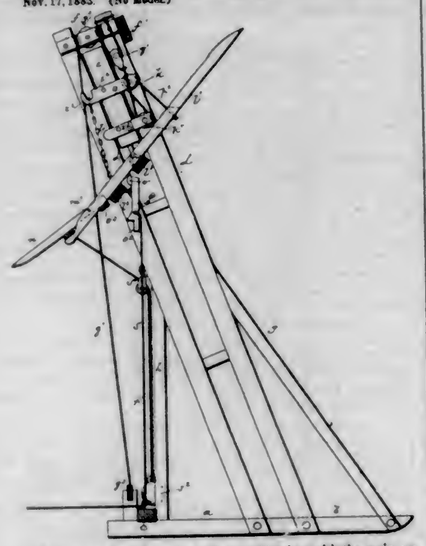


Claim.—1. As an improved article of manufacture, fire-proof plates or sheets made substantially as herein shown and described, and consisting of wire cloth or netting or other fabric on which a mixture of asbestus and oxide of zinc, magnesia, lime, or analogous substances is applied,

which mixture is saturated with a solution of sulphate of alumina or metal chloride, as set forth.

2. The herein-described method of making fire-proof sheets or plates, consisting of applying a mixture of asbestus and oxide of zinc, magnesia, or lime on wire netting or cloth, then pressing the said mixture into the meshes of the netting or fabric, and then saturating the fabric with a solution of sulphate of alumina or a metal-chloride solution, substantially as set forth.

292,038. HAY-RICKER. D. FRANKLIN OLIVER, Huntsville, Mo. Filed Nov. 17, 1883. (No model.)



Claim.—1. In a hay-stacker, the combination, with the main carriage and frame and mechanism for tilting, raising, and lowering it in said frame, of a hinged folding auxiliary carriage connected thereto, and mechanism for holding and tripping it, substantially as specified.

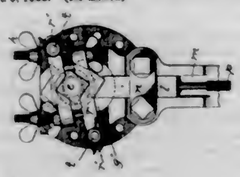
2. In a hay-stacker, the combination, with the frame having rearwardly-inclined parallel uprights secured together in pairs, and having ways or spaces between them, of the carriage-heads, inner and outer guide-plates therefor, upper and lower pulleys mounted upon the inner plates, the stay-chains and tilting-ropes connecting the front and rear of the main carriage to the guide-plates, their pulleys, and the loose pulley-block, the folding carriage, and mechanism for operating them, substantially as specified.

3. In a hay-stacker, the combination, with the main carriage, its heads, operating-pulleys, ropes, and stay-chains, of the folding or auxiliary carriage, the pivoted weighted latch, and ropes for tripping and setting the auxiliary carriage, substantially as specified.

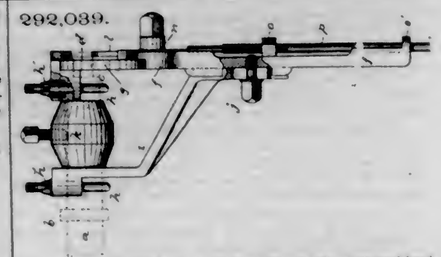
4. In a hay-stacker, the combination, with inclined ways, carriage-heads working therein, and a tilting and folding carriage hinged to the lower ends of the carriage-heads, of mechanism for tilting, elevating, tripping, and lowering the same, substantially as specified.

5. In a hay-stacker, the combination, with the supporting-frame and the tilting and folding carriage, of the carriage-heads connected at their lower ends to said carriage, guide-plates on both sides thereof, upper and lower fixed pulleys, the loose pulley-block, ropes passing from the tilting-bars of the main carriage to the loose pulley-block, the stay-chains connected to the inner upper guide-plates, and to the rear ends of the main carriage, and mechanism for operating them, as set forth.

292,039. AXLE-REPAIRING TOOL. FRANK S. PACKARD, Rockville, Conn. Filed Sept. 3, 1883. (No model.)



292,039.

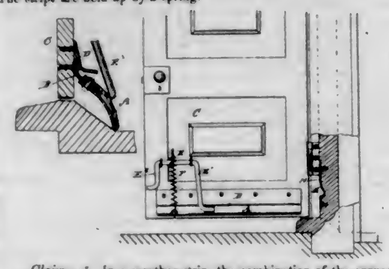


Claim.—1. In combination, the lever *f*, having the perforated head, the auxiliary arm *i*, and the collar bearing the set-screw and adapted to rotate between the lever and arm, all substantially as described.

2. In a tool of the within-described class, in combination, the lever *f*, with the head *g*, provided with a number of bolt-holes, and bearing a cutting-tool, *l*, the nut *e*, the dog *r*, consisting of the arms having slots *r'*, and the bolts *t* and nuts, whereby the dog may be secured to the nut and lever-head, all substantially as described.

292,040. WEATHER-STRIP. IRA PADDOCK, Greeley, Kans. Filed Nov. 25, 1882. (No model.)

Brief.—A curved flexible strip is secured at one edge to a door, and has its other edge clamped within a curved doubled metallic strip. The strips are held up by a spring.

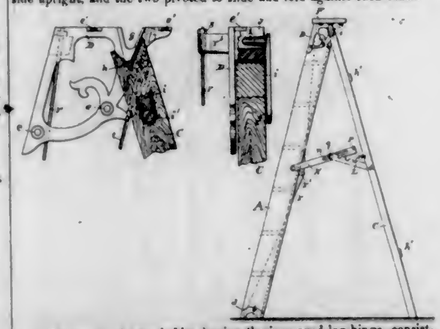


Claim.—1. In a weather-strip, the combination of the curved metallic strip A and curved flexible strip B, the former doubled and the latter clamped within its fold, and secured to the bottom of the door, as shown and described.

2. The combination, with the strips A B, of the spring F, attached to the door and said strip A, and adapted to hold up said strips as the door opens and closes, as described.

292,041. STEP-LADDER. DUDLEY PAGE, Frederick, Md. Filed Oct. 4, 1883. (No model.)

Brief.—The hinge is formed by notching the upper ends of the legs to receive lugs from the top irons, the legs being provided with pins which bear in the recessed portions of said lugs. The side rails are braced or trussed by steel wires, the upper ends of which are secured in the top irons and the lower ends in irons at the bottom of the rails. A brace composed of two arms, one pivoted to the leg and the other to the side upright, and the two pivoted to slide and fold against each other.



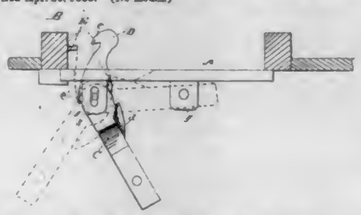
Claim.—1. A step-ladder having the improved leg-hinge, consisting of a lug at the top of the side upright, having a depression on its upper side constituting one part, a notch at the upper end of the leg in

which the lug has bearing, and which constitutes the other part, and means to bind the said two parts together, as set forth.

2. A step-ladder having a brace to limit the spread of the legs from the side uprights, consisting of two arms, one of which is pivoted to the leg and the other to the side upright, and the said arms hinged or jointed together to permit them to fold against each other, and adapted for the hinged ends to slide or extend on each other, as set forth.

3. A step-ladder having attached to the lower end of each side upright a metal shoe provided with a lug having a hole, and at the upper end a top iron provided with a lug having a hole, and a wire truss, one end of which is passed into the hole of the shoe-lug and the other end into the hole of the top iron lug, as set forth.

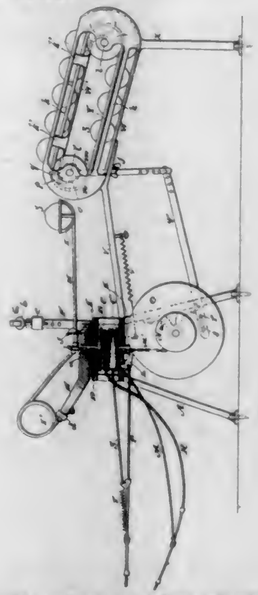
292,042. DOOR-LATCH. MELVIN HARRY PALMER, St. Louis, Mo. Filed Apr. 26, 1883. (No model.)



Claim.—1. In a locking device for car-doors, the combination of the door and frame with the slotted plate having arranged thereto the lever and latch, as described, said plate being provided with the lugs by which the lever and latch are pivotally held, and corresponding lugs at its opposite end, between which it is turned and secured, by which movement of the lever the latch is made to engage a keeper on the frame, as set forth.

2. In car-door locks, the combination of the slotted plate *a*, provided with lugs *f*, having holes for the passage of a pin, and the slotted lugs *b*, with the forked lever C, having on its inner edge the shoulder *d*, and the latch having projection *d'*, said latch and lever being held between the slotted lugs by a pin, as shown, and the whole adapted substantially for the purpose described.

292,043. BALL-TRAP. JAMES C. PARMERLEE, Sedalia, Mo. Filed July 5, 1883. (No model.)



Claim.—1. The combination, in a ball-trap, of a spring-lever for impelling the ball, a revolving lever-supporting arm, a trigger pivoted to the latter and having a heel-piece, a vertically-movable trigger-tripping device having an arm at its upper end connected with the heel of the trigger to move the latter both into and out of engagement with the ball-impelling lever, said trigger-tripping device revolving with the lever-supporting arm, and means for lifting the trigger-tripping device to swing the trigger on its pivot and release the ball-impelling arm, substantially as described.

2. The combination, in a ball-trap, of a spring-lever for impelling the ball, an arm supporting said lever and provided with a vertical shaft, two pulleys secured to said shaft, two ropes respectively connected with said pulleys for revolving the lever-supporting arm and restoring it to its normal position, a trigger for holding the ball-impelling lever, and means for operating the trigger to release said lever, substantially as described.

3. The combination, in a ball-trap, of a spring-lever for impelling the ball, an arm supporting said lever and provided with a vertical hollow shaft, a trigger secured to the lever-supporting arm, a trigger-tripping tube extending through the hollow shaft and connecting at its upper end with the trigger, means for vertically moving the trigger-tripping tube, a chain extending through the said tube and connected with the ball-impelling lever, and means for drawing the chain downward to engage the ball-impelling lever with the trigger, substantially as described.

4. The combination, in a ball-trap, of a spring-lever for impelling the ball, an arm supporting said lever, and having a vertical hollow shaft, a trigger for holding the ball-impelling lever, a trigger-tripping tube projecting through the hollow shaft and connected at its upper end with the trigger, a pivoted angle-lever, on one end of which the trigger-tripping tube bears, a rope for operating the lever to lift the tube, a chain extending through said tube and connected with the ball-impelling lever, and means for drawing the rope downward to engage the ball-impelling lever with the trigger, substantially as described.

5. The combination of the ball-impelling lever, the lever-holding trigger, the trigger-tripping device, a chain connected with the ball-impelling lever, a pulley with which said chain is connected, a shaft supporting the pulley, an additional pulley on said shaft, and a rope for rotating the latter pulley to draw the impelling-lever downward to engage the trigger, substantially as described.

6. The combination, in a ball-trap, of the spring-lever for impelling the ball, the arm supporting the lever, and having a shaft, the two pulleys secured to said shaft, and the positioning and the rotating ropes passing around the pulleys in opposite directions, substantially as described.

7. The combination, in a ball-trap, of the lever for impelling the ball, a chain connected with the lever, a pulley for winding and unwinding the chain, a traveling carrier for carrying the balls and delivering them to the ball-impelling lever, and connecting mechanism between the chain-pulley and the carrier for moving the latter when the ball-impelling lever is set, substantially as described.

8. The combination, in a ball-trap, of the lever for impelling the ball, a chain connected with the lever, a pulley for winding and unwinding the chain, an endless traveling belt for carrying the balls arranged in line with the lever, and connecting mechanism between the belt and the chain-pulley for driving the belt when the lever is set, substantially as described.

9. The combination, in a ball-trap, of the spring-lever for impelling the ball, the arm supporting said lever and carrying a vertical post having a series of perforations, and the cushioned stop-bracket having a pin adapted to enter any one of the perforations to adjust the bracket vertically, substantially as described.

10. The combination, in a ball-trap, of the spring-lever for impelling the ball, the arm supporting said lever and carrying a vertical post, the cushioned bracket adjustably connected with said post, and means for vertically adjusting and holding the bracket on the post, substantially as described.

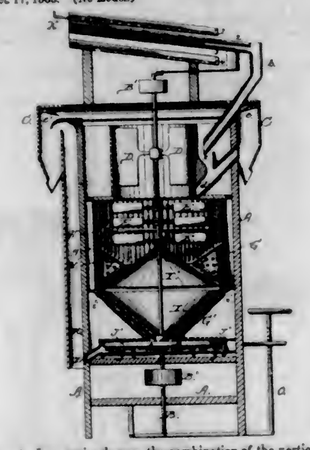
11. The combination, in a ball-trap, of the ball-impelling lever, a chain connecting therewith, and a pulley for actuating the chain to set the lever, the ball-feeding mechanism composed, substantially, of a traveling apron, and pawl and ratchet for moving it forward, and devices connecting the chain-pulley with the pawl and ratchet, substantially as described.

12. The combination, in a ball-trap, of the revolving arm and its hollow shaft, the ball-impelling lever supported thereon, the tripping-tube passed through the hollow shaft, the trigger pivoted to the arm and entering a slot in the extension of the tripping-tube, a lever for operating the tripping-tube, a rod, string, or chain passing through the tube and connecting the impelling-lever and a pulley, the rope connecting with the chain-pulley, the two pulleys on the hollow shaft, the rotating-rope connecting with one of said pulleys, and the positioning-rope connecting with the other, the setting-rope connecting with the positioning-rope and passing around the main operating-pulley, and the trigger-cord connecting with the rotating-rope and tripping-lever, substantially as described.

13. The combination, in a ball-trap, of the revolving arm having the shaft, the pulleys on the shaft, the trigger, the tripping-tube, the lever for operating the tube, the main pulley, the positioning and the rotating ropes connected to the pulleys on the shaft of the arm, the setting-rope connecting the positioning-rope and main pulley, the trigger-rod connecting the tripping-lever and rotating-cord, and the spring for reversing the main pulley, substantially as described.

14. The combination, in a ball-trap, of the revolving arm, the ball-impelling lever thereon, the pulley for revolving the arm, the pulley for operating the chain which draws down the arm, the setting-rope, and the positioning-rope joined to the pulley connected with the arm, and having a spring or elastic connection with the setting-rope, substantially as described.

292,044. GRAIN-CLEANER. ELNATHAN PHELPS, Hartford, Mich. Filed Oct. 17, 1883. (No model.)

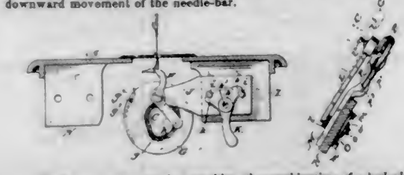


Claim.—1. In a grain-cleaner, the combination of the vertical shaft B, suction-fan D, distributing beater-blades E, vertical rods F, inclined shelves H H', and brush-frames J, I, and J' with the spout *b*, chamber C, casing G, and frame A, substantially as described.

2. In a grain-cleaner, the inclined distributing beater-blades E, arranged one above the other, in combination with the vertical rods F, inclined shelves H H', and perforated casing G, as shown and described.

292,045. SEWING-MACHINE. JOHN W. POST, New York, N. Y. Filed Nov. 16, 1883. (No model.)

Brief.—Improvement upon the machine shown in Letters Patent No. 287,576, granted same party October 30, 1883, the object being to render the interchangeable parts for forming different stitches quickly and easily attachable to and detachable from the machine in making the change from one form of stitch to another. A take-up consists of two eyes on the face-plate, serving as guides for the thread, and a projection in the needle-bar to engage the thread between the said eyes on the downward movement of the needle-bar.



Claim.—1. In a sewing-machine, the combination of a bed-plate, a fixed bracket, a removable bracket, a plurality of recessed pins, and a single pivoted latch adapted to engage said pins, and thereby secure the removable bracket to the fixed bracket, substantially as described.

2. In a sewing-machine, the combination of a bed-plate, a fixed bracket provided with recessed pins, a removable bracket having holes for the passage of said pins, and a single pivoted latch adapted to engage said pins, and thus secure said brackets together, substantially as described.

3. In a sewing-machine, the combination of a bed-plate, a fixed bracket, a removable bracket, a plurality of recessed pins, a single pivoted latch adapted to engage said pins, and a friction device for holding said latch in any position to which it may be adjusted, substantially as set forth.

4. In a sewing-machine, the combination of a bed-plate, a fixed bracket, a removable bracket, a plurality of recessed pins, a single pivoted latch adapted to engage said pins, and a looper carried by said removable bracket, substantially as described.

5. In a sewing-machine, the combination, with a bracket adapted to be removably secured to a bracket on the bed-plate thereof, of a bobbin-supporter and a looper, both carried by the removable bracket, and thus adapted to be simultaneously attached to or removed from the machine, substantially as described.

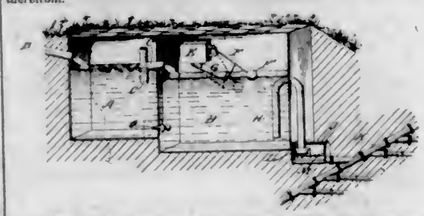
6. The combination, with a looper having a recessed pin fixed thereto, of a crank-disk having a hole in which said pin fits, and a spring-catch for removably securing said pin in said hole, substantially as described.

7. The combination, with a bracket adapted to be removably attached to the bed-plate of a sewing-machine, of a bobbin-supporter consisting of two arms, one of said arms being fixed with relation to said bracket, and the other arm hinged to the fixed arm, substantially as described.

8. The combination of the bed-plate A, fixed bracket N, and removable bracket M, with the bobbin-supporter P, consisting of the fixed arm *p*, hinged arm *p'*, and the spring p^3, for holding said hinged arm in its operative position, substantially as described.

292,046. DISINFECTING-TANK FOR THE DISPOSAL OF SEWAGE. JAMES J. POWERS, Brooklyn, N. Y. Filed Oct. 1, 1883. (No model.)

Brief.—Employs a settling-tank connecting with a disinfecting-tank, which connects by a siphon with a tank receiving the end of the siphon, the latter having an automatically-closing valve. The last tank connects with a series of drain-tiles. The disinfecting-tank has within it a tank containing a disinfecting-liquid, which is automatically discharged therefrom.



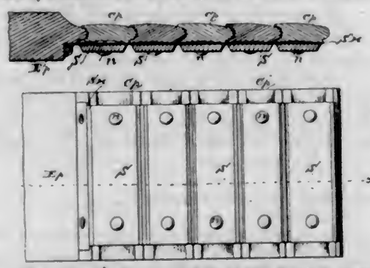
Claim.—1. The combination, with a settling-tank, of a disinfecting-tank, a tank for containing a disinfecting-liquid, and a series of absorption or drain tiles for carrying off the liquid sewage from the disinfecting-tank, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with a settling-tank and a disinfecting-tank, of a tank for receiving disinfecting-liquid, and provided with means for automatically discharging the disinfecting-liquid, a siphon for conducting the liquids from the disinfecting-tank, a tank into which the free end of the siphon discharges, and tiles connected with the last-mentioned tank, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with a settling-tank and a disinfecting-tank, of a tank containing a disinfecting-liquid, and provided with devices for automatically discharging the disinfecting-liquid, a siphon for conducting the liquid out of the disinfecting-tank, an automatically-closing valve at the lower end of the outer shank of the siphon, and a tank into which the outer end of the siphon projects, substantially as herein shown and described, and for the purpose set forth.

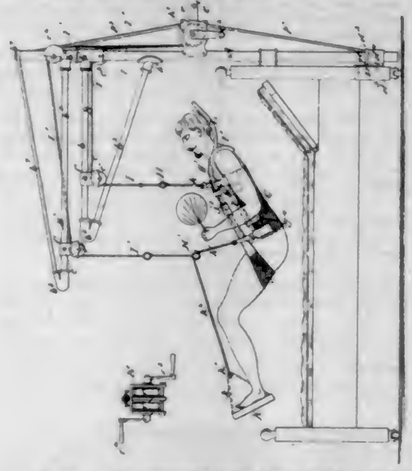
292,047. FLEXIBLE SHUTTER. JOHN P. RECKER, Indianapolis, Ind., assignor to the Indianapolis Cabinet Company of Indiana. Filed July 5, 1883. (No model.)

Brief.—A flexible-jointed shutter having its several slats joined together by a continuous metal tie-strip and individual rear strips.



Claim.—The flexible-jointed shutter herein described, composed of the shutter-slats *Cp*, slats S, and continuous metallic strip *Sm*, all combined substantially as described.

292,048. APPARATUS FOR HOLDING AND MOVING INVALIDS. CHARLES F. REED, Brooklyn, N. Y. Filed Sept. 14, 1883. (No model.)



Claim.—1. The combination of the pivotal upright A, the horizontal arm B, fixed on said upright, and the longer horizontal arm B', revoluble independently on the upright, together with the adjustable runners C, carrying the pulleys c' and c^2 on said arms, respectively, the pulleys c^3 of the fixed arm, the pulley c^4 of movable arm, the cords I and I', and the reels e and e', and means attached to said cords, for holding and sustaining the human body, as described, and for the purpose specified.

2. The combination of the upright of piping A, the piping b, T b', piping b^2, elbow b^3, union b^4, and the piping b^5, T b^6, rod b^7, elbow b^8, and pin b^9, constituting, respectively, the fixed horizontal arms B and the movable arm B' of the said upright, together with pulleys c', c^3, c^4, and c^5, reels e and e', and cords I and I', and a jacket or straps for holding and sustaining a human body, all constructed and arranged to operate as and for the purpose specified.

3. The combination, with the upright A, having the fixed arm B and movable arm B', and the hoisting-tackle described, together with means for holding and sustaining a human body, as set forth, of the angle-plates D, mounted upon the leg of a bedstead, as specified, and having the face-plate d, recessed at d', and carrying the flanges d^4, together with the sleeves d^4, having shanks d^5, and lock-flanges d^3, all constructed and arranged to operate as and for the purpose set forth.

4. The combination, with the pivotal upright A, having the fixed arm B and movable arm B', and the hoisting-tackle described, of the jacket G, provided with the side-edge corner-loops g g' and g^2 g^3, the cords A and A', the eveners H and H', attached to the tackle-ropes I and I', respectively, and the thigh-strap J, composed of the central supporting part, j, and the fastening-straps j', the latter being secured to the loops g g' of the jacket, as described, and for the purpose specified.

5. The combination, with the supporting-jacket G, which is attached to the lifting-tackle, and devices described, of the head-rest L, carried by rods l, seated in loops g^4, on the edge of the jacket, and the curved shoulder-pieces l', together with the thigh-strap J and its fastenings j', attached to loops g g' of the jacket, all as set forth, and for the purpose specified.

6. The combination, with the supporting-jacket G and the thigh-strap J, as described, attached to the hoisting-tackle set forth, by the eveners, of the foot-rest K, its cords k, evener k', and adjustable cord k^2, extending to the evener H', as and for the purpose specified.

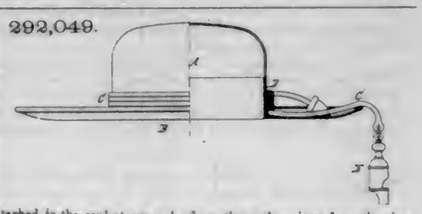
7. The combination, with the supporting-jacket G and thigh-strap J, as described, carried by the lifting-tackle set forth, of the leg-brace composed of the sections M N, hinged at m by set-screw n, the upper ends of sections M being seated in sockets g^2 on the jacket, and said section having cross-piece m^1, and section N, having cross-piece n^1, and the sections being adjustable as to length, all as and for the purpose specified.

292,049. HAT. WILLIAM RETTENTER, Brooklyn, N. Y. Filed Dec. 22, 1883. (No model.)

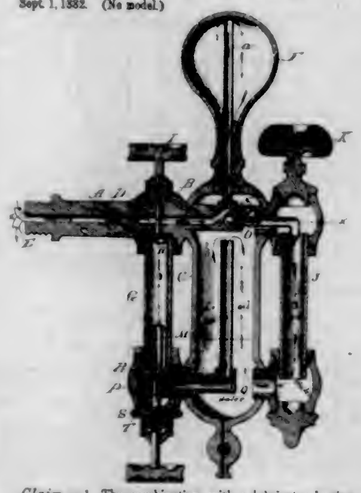
Claim.—1. The combination of the clasp, the hat-cord drawn through the clasp in coils, and the whistle attached to the cord at one end, where the cord projects from the clasp, substantially as shown and described, for the purpose set forth.

2. The combination, with a hat, of the clasp, the cord drawn through the clasp in coils to embrace the crown of the hat, and the whistle attached to the cord at one end, where the cord projects from the clasp, substantially as shown and described, for the purpose set forth.

292,049.



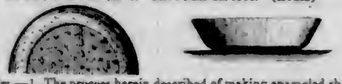
292,050. LUBRICATOR. JOHN J. REINHARD, Detroit, Mich. Filed Sept. 1, 1882. (No model.)



Claim.—1. The combination, with a lubricator having separate steam and oil chambers arranged in a vertical line one above the other, and a supporting-trunk provided with separate steam and oil passages, of two glass sight feed-tubes, through which both the descent of water and ascent of oil may be observed, as set forth.

2. The combination, with a lubricator having separate steam and oil chambers, and a supporting-trunk having separate steam and oil passages, of the two separate water and oil sight feed-tubes, the upper ends of which tubes communicate, respectively, one with the steam-chamber, from which water is received, and the other with the separate oil-passage in said trunk, through which oil is conducted from the oil-chamber to the boiler, as set forth.

292,051. MANUFACTURE OF ENAMELED SHEET-METAL WARE. CARL REUSCH, New York, N. Y. Filed June 22, 1883. (Model.)



Claim.—1. The process herein described of making enameled sheet-metal ware, which consists, first, in uniting a layer of sheet-iron with a layer of copper or other suitable metal; secondly, stamping or forming said sheets into various hollow forms, with the copper or other metal at the outside; and, lastly, lining the interior surface of said sheet-iron body with a suitable glaze or enamel, substantially as and for the purpose set forth.

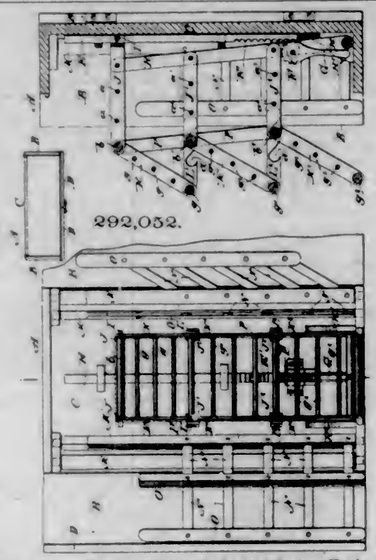
2. As a new article of manufacture, an enameled sheet-metal vessel formed of a body of sheet-iron having an exterior covering-layer of copper or other suitable metal united thereto by rolling, and an interior protecting coating of enamel or glaze, substantially as set forth.

292,052. CLOTHES-DRIER. ROBERT RUSSELL RICHARDSON, Laramie City, Wyo. Filed Aug. 9, 1883. (Model.)

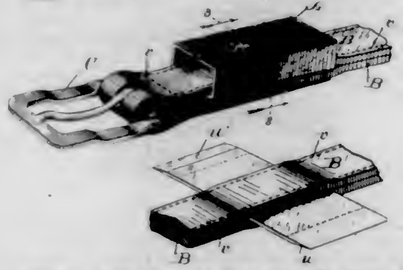
Claim.—1. The combination, with a closet having the back C, a vertical slide-rack on the middle thereof, a supporting-frame, and a pinion-lever, of frames pivoted to the standard and connected with the rack, substantially as shown and described.

2. The combination, with the closet having a vertical slide, E, carrying the cross-rod I on the middle of its back, of the bars H, pivoted at their lower ends to plates H', the connected arms J, pivoted to cross-rod I and bars H, the arms J' J^2, united by rods a' b' a^2 b^2, and pivoted to bars H, the bars K K' K^2, pivoted, respectively, to arms J J' J^2, the notched bars L L' L^2, pivoted to and united with bars K K' K^2 by rods g g' g^2, and the bars P, pivoted to the outer ends of the bars J J' J^2, as and for the purpose specified.

3. The combination, with a closet, of the sliding rack-bar E, the bars H and P, the bars J J' J^2, united by suitable rods, the bars K K' K^2, pivoted to the bars J J' J^2, and united by suitable rods, and the bars L' L^2, pivoted to the bars K K', and provided with notches d, and united by rods, substantially as herein shown and described.



292,053. HARNESS-LOOP. FRANK RICHESON, Chicago, Ill., assignor of one-half to Charles Stafford, same place. Filed Oct. 31, 1883. (No model.)



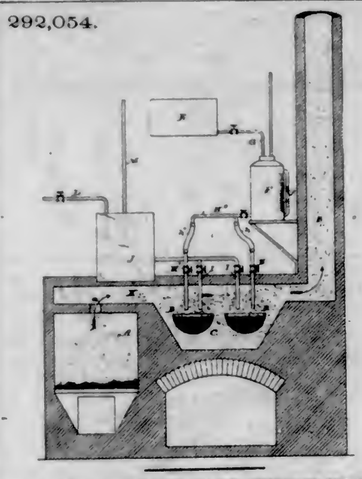
Claim.—1. A loop for harnesses, straps, and the like, formed of a strip of suitable material secured transversely to the harness or strap, and having its ends brought together away from the strap-bearing and secured one to the other, substantially as described.

2. A loop for harnesses, straps, and the like, formed of a strip of suitable material secured transversely to the harness or strap, and having its ends correspondingly chamfered—the one on the upper the other on the lower surface—and brought together away from the strap-bearing and cemented one to the other, substantially as described.

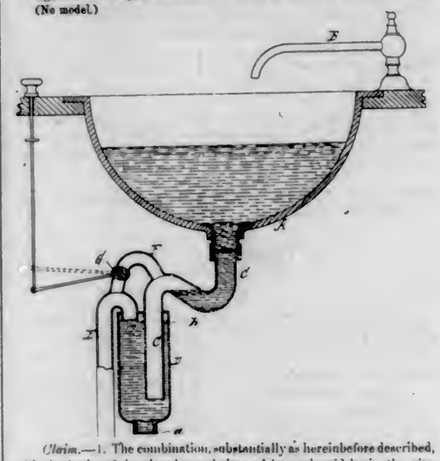
292,054. APPARATUS FOR MAKING SULPHURIC ACID. JOHN SAMUEL RIGBY, Beaufort, assignor of one-half to Fred Brotherhood, Charleston, S. C. Filed Nov. 1, 1883. (No model.)

Claim.—The combination of the kiln or burner, the niter-oven, its pans, the sulphuric-acid-beating cistern, the vessel provided with the indicator and serving to contain nitrate of soda in solution, the pipes provided with stop-cocks for supplying the solution to the pans, and the pipes for supplying the pans with sulphuric acid, substantially as and for the purpose hereinbefore set forth.

292,054.



292,055. COMBINED TRAP AND OVERFLOW FOR WASH-BASINS, WATER-CLOSETS, SINKS, &c. CARROLL L. RIKER, Brooklyn, assignor to Christopher Gullmann, New York, N. Y. Filed July 18, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with the basin, of the closed vessel situated beneath said basin, the pipe bent to form the trap, and extending from the bottom of the basin into and near to the bottom of the closed vessel, the discharge-pipe, extending from the top of the closed vessel and turning downward, the connecting-pipe, which extends from the highest point of the trap into the discharge-pipe, and the stop-cock fitted into the connecting-pipe.

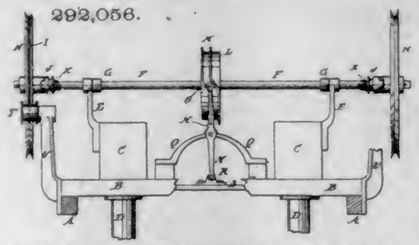
2. The combination, substantially as hereinbefore described, with the basin, of the closed vessel situated beneath said basin, and constructed so as to provide an air cushion in the top thereof, the pipe bent to form the trap, and extending from the bottom of the basin into and near to the bottom of the closed vessel, the discharge-pipe, extending from the top of the closed vessel and turning downward, the air cushion formed in the top of the closed vessel, the connecting-pipe, which extends from the highest point of the trap into the discharge-pipe, and the stop-cock fitted into the connecting-pipe.

3. The combination, substantially as hereinbefore described, with the basin, of the closed vessel situated beneath said basin, the pipe bent to form the trap, and extending from the bottom of the basin into and near to the bottom of the closed vessel, and the discharge-pipe, extending from the top of the closed vessel and turning downward.

292,056. CHECK-ROW ATTACHMENT FOR CORN-PLANTERS. WM. W. ROBINSON, Ida Grove, Iowa. Filed Aug. 14, 1883. (No model.)

Claim.—The combination, with the seed-boxes C and the seed-dropping slide S, of the brackets E, the shaft F, the wheels H, grooved

292,056.



to receive the check-line, the wheel L, having cam-groove M, the lever N, having roller P, and the bracket Q, substantially as herein shown and described, whereby the said seed-dropping slide will be operated by the advance of the machine, as set forth.

292,057. WIND-WHEEL. ROBERT N. ROCKWELL, Peabody, Kans. Filed June 29, 1883. (No model.)



Claim.—1. The combination of the hub having the spiral mortises in its periphery, the longer vanes fitting with their inner ends into the said mortises, the shorter vanes fitting with their inner ends into the spaces between the ends of the longer vanes, and means for holding the said vanes in position, as and for the purpose shown and set forth.

2. The herein-described wind-wheel, consisting of the shaft having the outer square portion and the outer screw-threaded end provided with a fastening-nut, the hub having the spiral mortises in its rim, and having the square central perforation, the longer vanes, the shorter vanes, the inner smooth disk, the outer disk having the annular sharp inwardly-projecting flange upon its inner face, the bolts passing through the edges of the disks and through the vanes, and the outer flat ring or annular rim fastened to the outer ends of the vanes, all constructed and combined as and for the purpose shown and set forth.

292,058. SHIRT-STUD. BERNHARD ROEDE, Jersey City, N. J. Filed June 8, 1883. (No model.)



Claim.—As an improved article of manufacture, a stud or button having its spiral screw-shank gradually diminishing in diameter from its inner to its outer end, substantially as shown and described.

292,059. NEEDLE-CASE. JOSEPH S. SACKETT, New Haven, Conn., assignor of one-half to Jane Halliwell, same place. Filed May 31, 1883. (No model.)



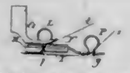
Claim.—1. The combination of the base A, the case B, pivoted thereto, the sliding plate D, within said case, the said plate and base constructed, the one with a transverse slot and the other with a corresponding stud, whereby the turning of the said case upon its pivot imparts to said plate a longitudinal movement, substantially as described.

2. The combination of the base A, constructed with the flange *a* at one end, the case B, pivoted to said plate at its opposite end, the sliding plate D, within said case, the said plate and base constructed, the one with a transverse slot and the other with a corresponding stud, whereby the turning of said case upon its pivot imparts a longitudinal movement to said plate, said flange *a* forming a cap for the open end of the case in its closed position, substantially as described.

3. The combination of the base A, the case B, pivoted thereto, the sliding plate D, within said case, the said plate and base constructed, the one with a transverse slot and the other with a corresponding stud, whereby the turning of the said case upon its pivot imparts to said plate a longitudinal movement, the inner side of said plate D provided with a cushion, E, substantially as and for the purpose described.

292,060. HEMSTITCH ATTACHMENT FOR SEWING-MACHINES. JOSEPH S. SACKETT, New Haven, Conn., assignor of one-half to Jane Halliwell, same place. Filed Oct. 31, 1883. (No model.)

292,060.

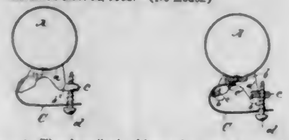


Claim.—1. A guide for sewing-machine work, consisting of an arm having a slot in line across the path of the needle, combined with the spring-guide P, of horseshoe shape, the opening in the spring-guide parallel with the slot, the two ends extending through the slot and turned at right angles to the slot, and whereby the elasticity of the horseshoe-shaped guide P holds it in position in said slot, yet admits of its adjustment, substantially as described.

2. The combination of the two connected arms D E, the arm E divided by a slot in line across the path of the needle, the two divisions provided the one with a removable sleeve, H, and the other with a removable sleeve, I, the one I constructed with a needle-hole, *o*, and slot, *r*, leading forward therefrom, substantially as and for the purpose described.

3. The combination of the two connected arms D E, each constructed with a slot diagonal to the path of the needle, the forward part of the arm E provided with a bearing to stand between the presser-foot and work-table, the other part provided with a separator, and so as to leave a slot, *l*, forward of the separator, substantially as described.

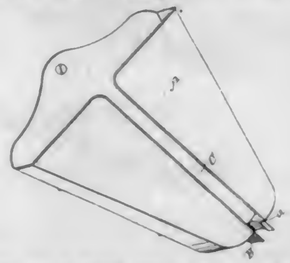
292,061. WHIP-SOCKET. ANSON SEARLS, Newark, N. J. Filed Jan. 2, 1883. Renewed Nov. 14, 1883. (No model.)



Claim.—1. The described whip-socket fastener, consisting of the described buckle-frame rigidly attached to the socket and composed of the sides *a a'* and the cross-bars *b b'*, and b^2, said bars *b* and *b'*—one or both—being provided with spurs, as specified, and the bar b^2 being provided with the perforated screw-threaded lug *c*, together with the flexible looped perforated metallic strap C, one end of which is inserted between the said sides *a a'* under the said cross-bar *b'* and over upon the cross-bar *b* and in engagement with the spurs on said bars—one or both—the opposite end being secured to the said lug *c* by a screw, *d*, all constructed and arranged to operate as and for the purpose described.

2. The combination, in a whip-socket fastener, of the described buckle-frame, composed of the sides *a a'* and the cross-bars *b b'* b^2, the bars *b* and *b'*—one or both—being provided with spurs, as specified, and the bar b^2 being provided with the perforated screw-threaded lug *c*, and screw *d*, with the flexible looped perforated metallic strap C, having the slotted opening *f*, all as and for the purpose described.

292,062. BROOM-SUPPORT. WILLIAM T. SHAFFER, Evanston, Wyo. Filed June 28, 1883. (No model.)



Claim.—As an improved article of manufacture, the broom-pocket A, made similar in shape to the brush of a broom, and provided with a closed bottom, having a central aperture, *a*, neck B around said aperture, and the slot C, extending from the top down to and through the neck, the said slot being of a uniform width throughout, and of a width greater than the diameter of a broom-handle, as set forth.

292,063. LOCK-NUT. NATHAN E. SHALLER, Pullman, Ill., assignor of two-thirds to Simeon W. Shaller and W. W. Shaller, both of Ivoryton, Conn. Filed Nov. 26, 1883. (No model.)

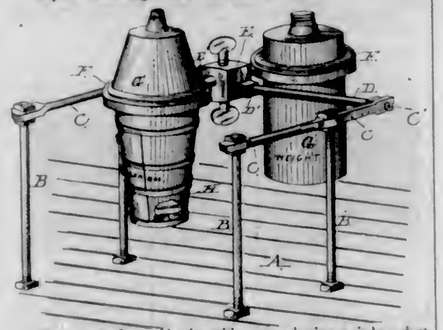


Claim.—1. The combination of the washer A, constructed with its central bearing surface, *a*, the concentric channel B, spring C in said channel, and ring D in said channel and upon the spring, and having its upper surface radially serrated, with the nut E, having its under face, *i*, constructed to bear upon the surface *a* of the washer, and its surrounding surface serrated corresponding to the serrations in the ring, and so as to work therein, substantially as described.

2. The combination of the washer A, constructed with a bearing-surface, *a*, for the nut, and with a concentric channel, B, the spring C in said channel, and serrated ring D upon said spring, said ring and washer constructed the one with a projection, *d*, and the other with a corresponding notch, *b*, whereby said ring is engaged with said washer, and the nut E, constructed with its bearing-surface *i* corresponding to the surface *a* of the washer, and with a serrated surface surrounding said bearing-surface corresponding to the serrated surface of the ring, substantially as described.

3. The combination of the washer A, constructed with a bearing-surface, *a*, for the nut, and with a concentric channel, B, the spring C in said channel, and serrated ring D upon said spring, the said ring constructed with one or more recesses upon its face, and the washer with corresponding tongues, *f*, substantially as and for the purpose described.

292,064. SELF-ADJUSTING STOVE. WILLIAM G. SHOWERS, Ridgway, Ill. Filed Aug. 9, 1883. (No model.)



Claim.—1. In combination with a stove having an independent weight-receptacle, H, a counter-weight receptacle, G, the stove and weight being supported within frames F F, and by a block, E, pivoted upon the rod D, the parts being organized substantially as shown, and for the purpose set forth.

2. The improved self-adjusting stove herein described, secured within a frame which supports the counter-weight, said stove and frame being attached to a block having right-angled perforations and set-screw, said block being supported upon a bar provided with offset, as shown, and supporting means, for the purpose set forth.

292,065. CANISTER-SHOT. ALLEN G. SINCLAIR, Brooklyn, N. Y. Filed Dec. 1, 1879.



Claim.—1. A holder for the bullets of canister-shot, consisting of a single wire wound in a spiral, with its coils laid closely together, whereby the small balls are normally confined in place, and are gradually dispersed during the flight of the projectile by the gradual spreading of said spirals.

2. The combination of a spirally-wound wire holder, a suitable head and base, and connecting means constituting the envelope for canister-shot, substantially as described.

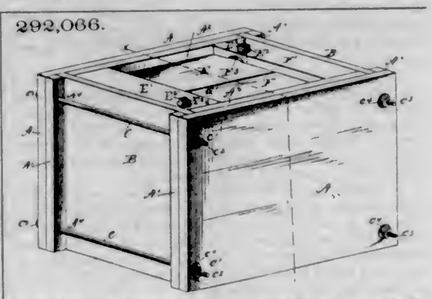
3. The combination of a spirally-wound wire holder, a sheet-metal case, a metal base, and metal head, all substantially as described.

292,066. SHIPPER'S DRY-GOODS BOX. LEWIS SMITH, Wallace, Ill. Filed Nov. 30, 1883. (Model.)

Claim.—1. In a shipper's dry-goods box, the sides, ends, top, and bottom composed of separate removable parts, and provided with cleats to aid in securing the parts in position, the top made in two parts, with right-angled lapping arms, as specified, and cross tie-rods through the sides, whereby the parts are rigidly united, leaving the top removable at pleasure, in the manner specified.

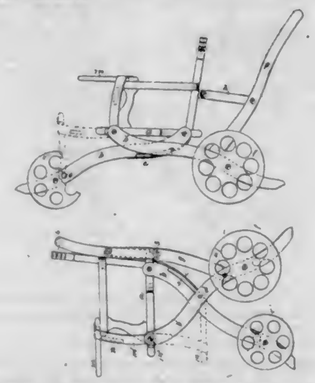
2. In a shipper's dry-goods box, the sides, ends, top, and bottom composed of separate parts, means for removably securing together, and provided with cleats to aid in securing the parts in position, the top made

292,066.



in two parts, with right-angled lapping arms and bolts for securing the two parts rigidly together, substantially as described, and for the purpose set forth.

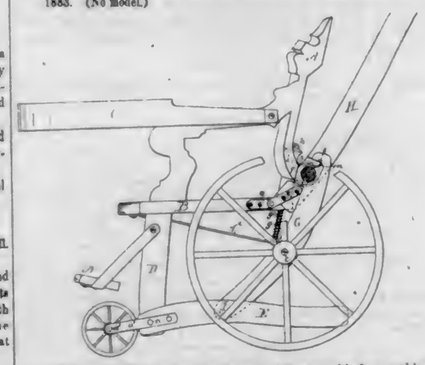
292,067. CHILD'S CHAIR. ASHER B. STEVENS, Stapleton, N. Y., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Filed Dec. 22, 1882. (No model.)



Claim.—1. The seat combined with the crossed legs *b b'*, their connecting-rod *d*, and guideways *e*, the wheels *e' f* on said legs, and the handle *g*, pivoted to the rear legs and connected with the chair-seat by links *h* and a locking device, substantially as shown and described.

2. The seat and its supporting adjusting-legs and their cross-bar *o*, substantially as set forth, combined with the foot-rest having the arms *m'*, pivoted or hinged to the seat, the board *m*, and leg-rest secured between them, substantially as shown and described.

292,068. CHILD'S CHAIR. ASHER B. STEVENS, Stapleton, N. Y., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Filed Jan. 15, 1883. (No model.)



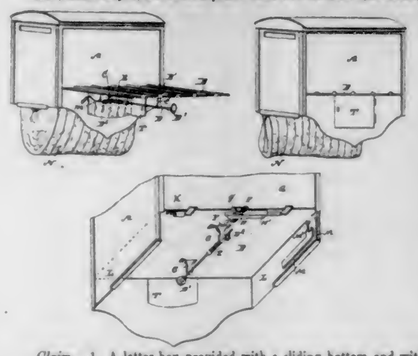
Claim.—1. The chair seat or frame and the movable front and back legs, and braces connecting them together by fixed pivots 5 and 6, respectively, combined with the large wheels carried by the braces connect-

ing the said front and back legs, and having a portion of their peripheries always beyond the outer edges of the front legs, as and for the purposes described.

2. The chair seat or frame and the movable front legs provided at their upper ends with the wheels F, and the back legs, and braces connecting them together by fixed pivots 5 and 6, respectively, combined with the large wheels carried by the braces connecting the said back and front legs, the said wheels being located substantially as described, whereby a portion of their peripheries is always beyond the outer edges of the front legs, as and for the purposes described.

3. The combination, substantially as shown and described, of the chair seat or frame, the jointed front legs, the pivoted rear legs, braces fixed to the front and rear legs by fixed pivots 5 and 6, and connecting and moving with the said front and rear legs, the large wheels secured to and moving with the said braces and projecting beyond the front legs at all times, and a locking device for engaging the rear legs to hold the chair in either of its two positions, as set forth.

292,069. COMBINED LETTER-BOX AND MAIL-BAG. CARL FRIEDRICH TELLER, Offenbach-on-the-Main, Germany, assignor to Carl Otto Weber and Theodor Mayrx, both of same place. Filed Nov. 13, 1883. (No model.)



Claim.—1. A letter-box provided with a sliding bottom and with a door, T, in the front and below the sliding bottom, substantially as herein shown and described.

2. A letter-box provided with a sliding bottom, on the under side of which a key-rod is hu'd, substantially as herein shown and described.

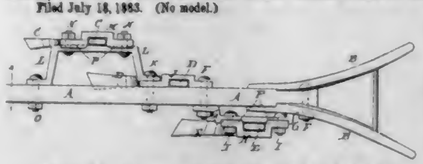
3. In a letter-box, the combination, with the sliding bottom B, of the ears or jaws C, on the under side of the same, the rod D, held in the said jaws, the knob D' on the front end of the rod, the key D^2 on its rear end, and of the spring E, for pressing the rod in the direction toward the front, substantially as herein shown and described.

4. In a letter-box, the combination, with the sliding bottom B, of the latch F, the pin J, connected with the same, the loop K, and the casing H', substantially as herein shown and described.

5. A bag having a frame, O, provided with a sliding bolt, R, having upwardly-projecting hooks S, substantially as herein shown and described.

6. The combination, with a letter-box provided with a sliding bottom and grooves M, terminating in pockets M', of a bag provided with a frame, P, with pins Q on its ends, and a frame, O, provided with a sliding bolt, R, having upwardly-projecting hooks S, substantially as shown and described.

292,070. CULTIVATOR. HENRY DENTON TERRELL, Stantsville, Ga. Filed July 18, 1883. (No model.)



Claim.—In a cultivator, the combination, with the bracket G, connected to the beam, of an approximately U-shaped clamp, H, with its arms or wings provided with upper and lower inwardly-projecting flanges, P, and bolts I, substantially as shown and described, and for the purpose set forth.

292,071. SEAT FOR PUBLIC BUILDINGS. GEORGE H. THOMPSON, Plattsmouth, Nebr. Filed Aug. 21, 1882. (Model.)

Claim.—1. As a means for providing a level floor with graded seats, a series of chairs having from front to rear regularly-increasing

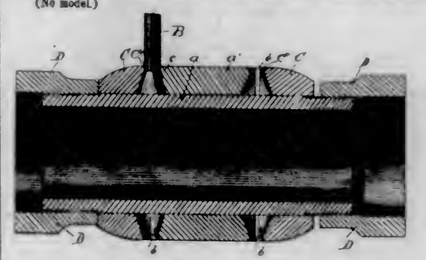
292,071.



elevations, and platforms pivoted to each rear chair and extending from the same to the one in front at elevations corresponding to the elevation of the chairs, whereby a raised stepped floor is formed, substantially as and for the purpose specified.

2. In combination with two or more series of graded chairs and pivoted platforms, constructed, substantially as described, and grouped in sections, with aisles or passages between the sections, platforms placed in such aisles or passages at heights which correspond to the elevation of the contiguous pivoted platforms, whereby a stepped floor is formed for such aisles, substantially as and for the purpose set forth.

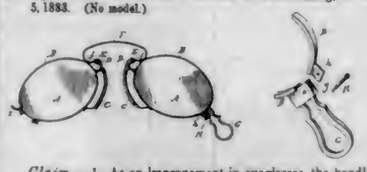
292,072. WHEEL. DAVID TICE, Lockport, N. Y. Filed Oct. 25, 1883. (No model.)



Claim.—1. In a vehicle-wheel, the combination of the sleeve *a*, shoulder *a'*, having sockets *b b*, collars or rings C C, having half-sockets C', capped nuts D, sleeves E, for reception of spokes B, and curved plates *e*, substantially as shown and described.

2. The combination of the cast integral sleeve E and plate *e*, the sleeve being inserted in an orificed plug corresponding to recess F, and spokes B and hub A, substantially as shown, and for the purpose described.

292,073. EYEGLASSES. DUDLEY L. TICE, Reading, Pa. Filed Dec. 5, 1883. (No model.)



Claim.—1. As an improvement in eyeglasses, the handle, slotted or bifurcated at its upper end, in combination with the eyeglass-frames formed with an extension fitting in the slotted end of the handle, and an upwardly-projecting pin or stop connecting the parts, as and for the purpose set forth.

2. In eyeglasses, the combination, with the nose-pieces and eyeglass-frames, of plates secured to the upper ends of the nose-pieces, and the bow pivoted at its ends to the said plates, as set forth.

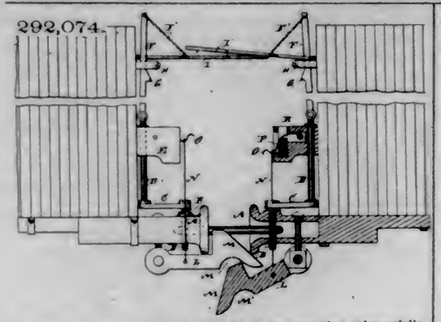
3. In eyeglasses, the combination, with the nose-pieces and eyeglass-frames, of plates secured to the upper ends of the nose-pieces, a rod extending across and within the plates, and the bow pivoted at its ends to said rod, as and for the purpose set forth.

4. As an improvement in eyeglasses, the combination, with the nose-pieces and eyeglass-frames, of plates secured to the upper ends of the nose-pieces and formed with lugs *a*, a rod extending across and connecting the lugs, and the bow pivoted at its ends to said rod, as and for the purpose set forth.

292,074. CAR-COUPLING. CHAS. UHRINGER, St. James, Ind. Filed Oct. 20, 1883. (No model.)

Claim.—1. In a car-coupling, the combination, with the draw-head and the inclined apron, with its rear end pivoted to the under side of the draw-head, of the stirrup-frame with its lower ends connected to the apron and its upper end contracted, and the arm O, entering the upper contracted end of the said frame, and acted upwardly upon by the spring

292,074.



P, whereby the aprons are rendered self adjusting or acting, substantially as and for the purpose set forth.

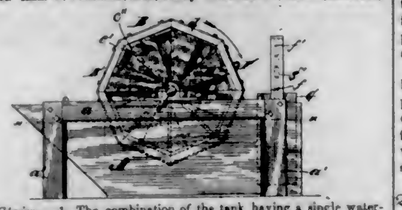
2. In a car-coupling, the combination, with the draw-head having the inclined pivoted apron on its under side, of the coupling-pin, the rod D, the arm C, the rod F, having the tooth G, the jaws H, and the lever I, having the bend I', substantially as and for the purpose set forth.

3. In a car-coupling, the combination, with the draw-head having the inclined pivoted apron on its under side, of the coupling-pin, the rod D, the arm C, the rods D F, the latter having a tooth, G, the jaws H, united by a cross-bar, H', the lever I, having a bend, I', and the chain F', connected to the lever I and arm F, substantially as and for the purpose set forth.

4. The combination, with the draw-head A, of the rod D, the arm C, the coupling-pin B, the rod F, having the tooth G, the jaws H on the end of the car, and the lever I, pivoted to the car and provided with the bend F, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the draw-head A, of the rod D, the arm C, the coupling-pin B, the pivoted arm F, provided with a tooth, G, the jaws H, united by a cross-piece, H', the lever I, having a bend, I', and the chain F', secured to the lever I and to the upper end of the pivoted arm F, substantially as herein shown and described, and for the purpose set forth.

292,075. RUMBLE FOR SCOURING CASTINGS, WASHING ORES, &c. EZRA W. VANDUZEN, Newport, Ky. Filed Mar. 17, 1883. (No model.)



Claim.—1. The combination of the tank having a single water-compartment, the shaft journaled on the tank, and the rotating cylinder constructed with an imperforate periphery and contracted open ends, and provided at one end with water-supply buckets for lifting the water from the tank into the cylinder through one end thereof, and discharging such water at the opposite end of the cylinder directly into the tank, substantially as described.

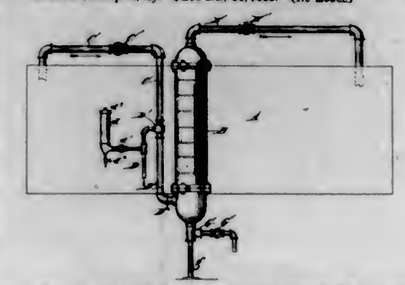
2. In a machine for cleaning and treating castings, ores, and other articles, the combination of a tank, a rotating cylinder journaled above the tank and extending down into the same, and a water-displacer or level-regulator moving in ways within the tank, and means for sustaining the regulator at any desired point, substantially as described.

3. In an ore washer or pulverizer, the combination of a water-tank, A, a cylinder, B, mounted above the tank and extending down into the same, and having an imperforate periphery and contracted open ends, the water-supply buckets at one end of the cylinder, and inclined amalgam-plates P beneath the cylinder, and extending beyond the end thereof to gather such particles of metal as may escape in the overflow of water from the end of the cylinder, substantially as described.

4. In an ore washer and pulverizer, the combination of the tank A, the rotating cylinder journaled above the same and extending down into it, the water-supply buckets communicating with the interior of the cylinder through one end, and a feed-spout, E, and apron *e* for feeding the cylinder while in motion, substantially as described.

5. The combination of the tank, the revolving cylinder supported on a shaft above the tank and provided with bucket-supply openings at one end and a discharge-opening at the other end, and a water-displacer or level-regulator within the tank, substantially as described.

292,076. WATER-PURIFIER FOR STEAM-BOILERS. EZRA W VANDUZEN, Newport, Ky. Filed May 31, 1883. (No model.)



Claim.—1. In a boiler feed-water circulator and purifier, the combination of a purifier, a boiler, a pipe connecting the delivery end of the purifier with the boiler, a water-supply pipe connecting with the receiving end of the purifier, a pipe connecting the supply-pipe and boiler, and valves, the several parts being arranged to maintain a circulation of water from the supply-pipe and boiler through the purifier to the boiler, substantially as described.

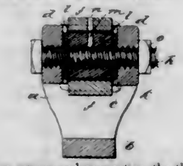
2. In a boiler feed-water circulator and purifier, the combination of a purifier provided with a series of diaphragms having openings at alternate ends, a boiler, a pipe connecting the delivery end of the purifier with the boiler, a water-supply pipe connecting with the receiving end of the purifier, a pipe connecting the supply-pipe and boiler, an ejector connected with the pipe between the boiler and purifier, and valves, the several parts being arranged to maintain a circulation of water from the supply and boiler through the purifier to the boiler, substantially as described.

3. In a boiler circulating and purifying attachment for steam-boilers, the purifier B, having heads B' B^3, and provided with a series of diaphragms, *b*, perforated or partially open at alternate ends, and having dividing-edges *f*, substantially as described.

4. In a boiler feed-water circulator and purifier, the combination of the boiler, a purifier, a pipe connecting the delivery end of the purifier with the boiler, a water-supply pipe connecting with the receiving end of the purifier, a pipe connecting the supply-pipe and boiler, whereby a circulation is maintained from the boiler through the purifier and back to the boiler, and a device for supplying a purifying material to the purifier, whereby the warm water and purifying material will mingle in the purifier, and the resulting sediment deposited in the purifier, substantially as described.

5. In a boiler feed-water circulator and purifier, the combination of boiler A, purifier B, pipe E, connecting the boiler and purifier, supply-pipes D D^4, pipe C, connecting the boiler and pipe D^2, and the vessel *d*, connecting with pipe D, and the valves, whereby water is circulated from the boiler through the purifier and back to the boiler, and a purifying water is drawn from vessel *d*, to mingle with warm water in the purifier, substantially as described.

292,077. PITMAN-ROD CONNECTION. GEORGE E. WAGGONER, New Hampton, Mo. Filed Nov. 15, 1883. (No model.)



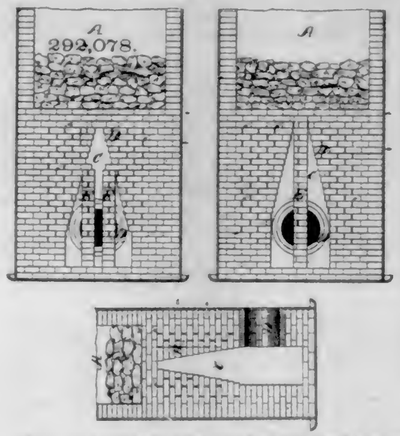
Claim.—1. In a pitman-rod connection, the thimble *i*, for the solid eye *f* of the pitman, secured between the jaws of the head by a screw-bolt, *h*, and having means to prevent it from turning when the bolt is screwed in and out, substantially as described.

2. In a pitman-rod connection, the thimble *i*, for the solid eye *f* of the pitman, secured between the jaws *a* of the head by a screw-bolt, *h*, and jam-nut *o*, said thimble having ribs *k*, and the jaws *a* having grooves *l*, to prevent the thimble from turning when the bolt is screwed in and out, substantially as described.

3. The combination of the presser-bearing *e*, adjusting-screw *e*, and jam-nut *p* with the solid eye *f* of the connecting-rod *g*, and the bolt *h* and thimble *i*, by which said rod is connected to the jaws of the sickle-bar head, substantially as described.

292,078. GLOVER TOWER. MOSES A. WALSH, Camden, N. J. Filed June 12, 1883. (No model.)

292,078.



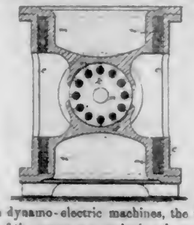
Claim.—1. A tower formed with an arch the sides of which are corbeled out by overhanging courses of blocks or bricks, having passages between them for the descent of acid and ascent of gases, and having a lateral opening for the admission of such gases, substantially as and for the purpose specified.

2. A tower the walls and arch of which are composed of blocks of cut or shaped quartz, said tower having an upper chamber for the reception of acid and a lateral opening near its base for the introduction of gases, substantially as and for the purposes set forth.

3. A Glover tower the walls and arch of which are composed of courses of cut quartz, said arch being corbeled out by overhanging arches, and formed with openings for the descent of acid from an upper chamber and the ascent of gases admitted through a lateral opening near the base of the tower, substantially as shown and described.

4. A Glover tower having an arch with supporting column or columns, said arch having its sides corbeled out by overhanging courses, substantially as shown and described.

292,079. DYNAMO-ELECTRIC MACHINE. JONAS WENSTRÖM, Örebro, Sweden. Filed Dec. 7, 1882. (No model.) Patented in England Oct. 10, 1882, No. 4,819; in France Nov. 9, 1882, No. 151,999; in Sweden Nov. 25, 1882, No. 409; in Belgium Nov. 27, 1882, No. 59,676; in Austria-Hungary Mar. 23, 1883, No. 11,903 and No. 21,432, and in Norway May 23, 1883.



Claim.—1. In dynamo-electric machines, the field-magnets arranged on both sides of the armature, enveloping the two energizing-helices *w w* by iron housings, whereby all the excited magnetism may be collected and transmitted, the magnetic field confined within the machine, and a firm connection obtained between the pole-pieces and bearings.

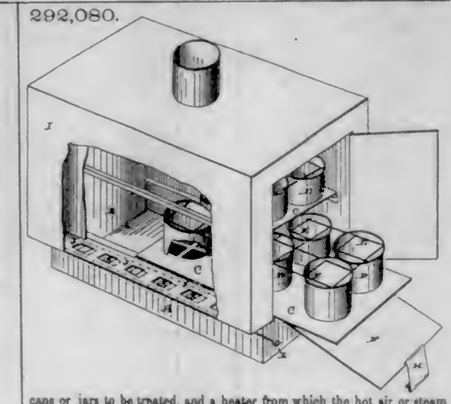
2. The field-magnets of a dynamo-electric machine, composed of one or more annular energizing-helices *w w*, arranged concentrically about shaft *a*, and inclosed in iron shells *m c*, from which project alternate pole-pieces, and which serve at the same time as a riged frame for the machine, as described.

3. In dynamo-electric machines, an armature provided with grooves in the core of the armature, for receiving the electrical conductors, which grooves are arranged in such a manner that narrow slits are formed in the surface of the core, which slits are filled with diamagnetic material, substantially as herein shown and described, and for the purpose set forth.

292,080. CANNING APPARATUS. RICHARD WEEKLER, San Francisco, Cal. Filed June 16, 1883. (No model.)

Claim.—1. In a canning apparatus, a containing-case having perforated floors or trays with independent chambers adapted to contain the

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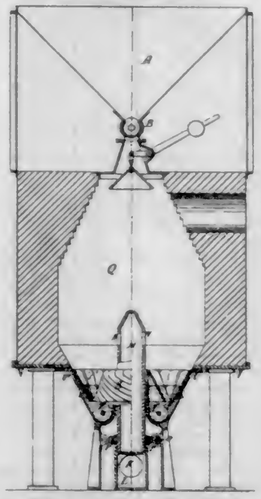
cans or jars to be treated, and a heater from which the hot air or steam may be introduced to the chambers, in combination with a secondary sliding door, which may serve also as a bottom, substantially as herein described.

2. In a canning apparatus, a containing-case with perforated floors or trays having independent chambers for the cans or jars to be treated, adapted to receive steam or hot air from a heater below, and a main door, in combination with a secondary sliding door having leaves or flaps hinged to its opposite ends, substantially as herein described.

3. In a canning apparatus, a containing-case with perforated floors or trays having independent chambers for the cans or jars to be treated, and a heater from which hot air or steam may be introduced to the chambers, in combination with wires or elastic guards E, crossing the chambers outside the jars, substantially as herein described.

4. In a canning apparatus, a containing-case having perforated floors or trays with chambers adapted to receive the cans or jars to be treated, and a heater from which hot air or steam may be introduced to the chambers, in combination with an exterior case forming a space between itself and the interior one, and a series of openings with dampers, through which hot air from the furnace may be allowed to circulate around the interior case, substantially as herein described.

292,081. APPARATUS FOR MAKING GAS. ALFRED WILSON, Handsworth, County of Stafford, England. Filed May 4, 1883. (No model.) Patented in England Oct. 3, 1882, No. 4,697



Claim.—1. In a gas-producer, the combination, with a solid hearth, of a central tuyere and means for imparting rotary motion to said tuyere, substantially as described.

2. In a gas-producer, a solid hearth with walls, forming a box or

chamber adapted to receive incombustible refuse and to contain liquid, forming a trap or seal that will prevent escape of gas, in combination with rotating screws F F, adapted to automatically remove the refuse which collects in said hearth, substantially as described.

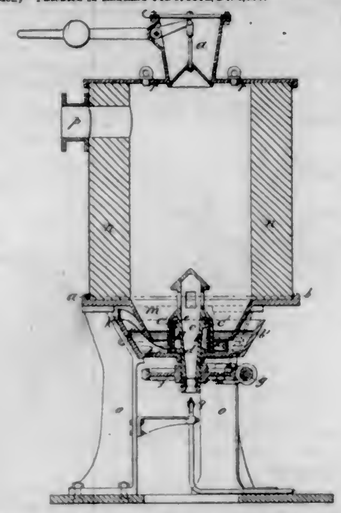
3. In a gas-producer, the combination of a central tuyere, a solid hearth, and means for automatically removing incombustible refuse from the apparatus, substantially as described.

4. In a gas-producer, the combination of a central tuyere, a solid hearth, means for automatically removing incombustible refuse, and means for reducing residue to a suitable condition for removal from the apparatus, substantially as described.

5. A gas-producer comprising a self-acting fuel-feeder, a central tuyere, a solid hearth, and means for automatically removing incombustible refuse from the apparatus, substantially as described.

6. A gas-producer comprising a self-acting fuel-feeder, a central tuyere, a solid hearth, means for automatically removing incombustible refuse, and means for reducing residue to a suitable condition for removal from the apparatus, substantially as described.

292,082. APPARATUS FOR MAKING GAS. ALFRED WILSON, Handsworth, County of Stafford, England. Filed May 4, 1883. (No model.) Patented in England Oct. 3, 1882, No. 4,697.



Claim.—1. In a gas-producer, the combination, with a solid hearth, of a central tuyere, means for imparting rotary motion thereto, and a curved arm or blade for automatically removing incombustible refuse from the apparatus, substantially as described.

2. In a gas-producer, the combination of a solid hearth, with walls forming an annular box or chamber to receive incombustible refuse from the fuel, a central tuyere with curtain or cap overlapping the inner wall of said box or chamber, a curved arm or blade attached to said tuyere, means for imparting rotary movement thereto, and a conical case dipping into said box or chamber, so as, when the latter is charged with liquid, to form a trap or seal for preventing escape of gas, substantially as described.

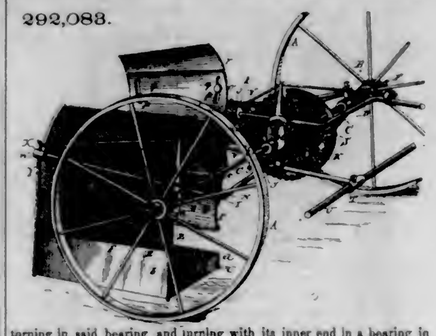
3. The improved gas-producer comprising the hopper *a*, solid hearth *h*, annular box or chamber *b' b²*, tuyere *c*, worm-wheel *f* and worm *g*, shaft *k*, hand-wheel *j'*, curtain or cap *c'*, curved arm *k*, with blade *k' k²*, cone *m*, fire-brick lining *n*, columns *o*, outlet *p*, steam-jet *q*, and holes *r r*, the whole constructed, combined, arranged, and operating substantially as described and illustrated.

292,083. MACHINE FOR GATHERING INSECTS FROM PLANTS. FERDINAND WERLOCH, Prairie du Sac, Wis. Filed Oct. 22, 1883. (No model.)

Claim.—1. The combination of the insect-receiving box having hinge-eyes at the inner edge of its bottom, the inner side of said box having hinge-eyes at its lower edge, and the rod or pintle connecting the hinge-eyes and forming a fender at its forward end, as and for the purpose shown and set forth.

2. The combination of the block H, having a bearing at its upper end, block P, pivoted in said bearing and having a longitudinal perforation, rod S, having perforated block *k*, rod *i*, having bearing *h*, and shaft *g*,

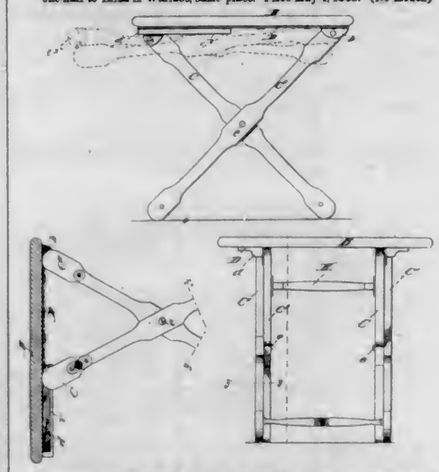
292,083.



turning in said bearing, and turning with its inner end in a bearing in block H, as and for the purpose shown and set forth.

3. The combination of the frame having bearings, the drive-axle turning in said bearings and having drive-wheels and the crown-wheel, the fan-shaft having the pinion meshing with said crown-wheel, and the curved fans provided with the adjustable curved extensions, and the insect-receiving box having a screen at its outer side curving inward at its upper end, a hinged inner side, and a fender, all constructed as and for the purpose shown and set forth.

292,084. TABLE. CHARLES N. WITT, Springfield, Mass., assignor of one-half to Eliza L. Wallace, same place. Filed May 4, 1883. (No model.)



Claim.—The combination, with the top B, having the sockets *d d*, provided with the bearing-edges *v v*, of the legs C C', pivoted at *c*, hinged to the top at *b b*, provided with the pins *f f*, and having the round H to rotate to clamp the ends of legs C against surfaces *v v*, all arranged and operating substantially as shown and described.

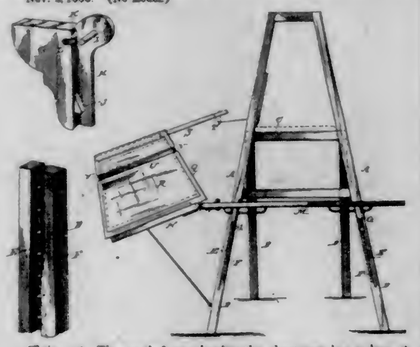
292,085. BELLOWS ATTACHMENT FOR INSECT-POWDER, &c. THOMAS WOODASON, Chicago, Ill. Filed June 20, 1883. (No model.)



Claim.—1. In a bellows attachment, the combination of the bellows-pipe B, an outlet-pipe, E, the chamber D, having an opening through its top, and which serves to connect the two pipes B E together, and a pipe, G, which is connected to the outlet-pipe E, and which extends upward from the outlet-pipe into the top of the chamber D, substantially as shown.

2. In the combination of a bellows-pipe, B, provided with a series of perforations near its closed end, the powder-receptacle, the outlet-pipe E, which is supported in position by means of the receptacle, and the small pipe connected with the outlet-pipe, substantially as set forth.

292,086. EASEL. DELBERT K. WOODWARD, Lordstown, Ohio. Filed Nov. 2, 1883. (No model.)



Claim.—1. The easel-frame having the short rear leg or legs attached to the cross-bar C near the center of the easel, and the back formed of the canvas or other suitably-covered frame, substantially as shown and described.

2. The canvas-covered frame Q, having the pivoted rod or bar S and notches V, and tape U, substantially as shown and described.

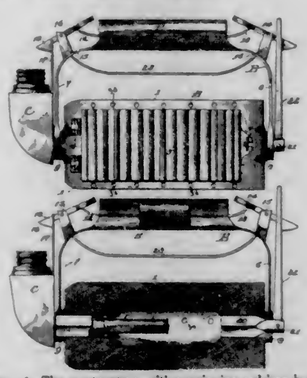
3. The combination of the frame A, the inclined section of shelf N, the canvas frame Q, having bar S, and the hook T, for grasping said bar, substantially as shown and described.

4. The easel-bracket G, having rib or flange H, pin I, lug J, and rounded shoulder K, substantially as shown and described.

5. The combination of bracket G, having rib H, pin I, and lug J, the easel-leg D, having slot E, and the notched surface or rack-bar F, all arranged and adapted to operate substantially as described.

6. The easel-shelf having extension N and hooked extension O, substantially as shown and described.

292,087. REVERSIBLE SAD-IRON. JOHN A. YARGER, New Hampton, Iowa. Filed Nov. 10, 1882. (No model.)



Claim.—1. The combination, with a swinging sad-iron having two oppositely-placed fluting-surfaces and two oppositely-placed polishing-surfaces, of a bail or handle in which such iron is journaled, the square locking-block inserted within corresponding openings in the ends of the iron, and means, substantially as described, for withdrawing such blocks to permit the iron to be rotated.

2. The combination, with the handle B and the sad-iron A, journaled therein, and having the square hole at one end, of the removable locking-block 20, the lever 22, the pivoted latch 14, and the spring 13, all substantially as described.

292,088. ALARM-LOCK. ROBERT ZINSMAIER, Galion, Ohio. Filed Feb. 24, 1883. (No model.)

Claim.—1. In a lock, the combination, with a vertically-reciprocating angular locking-bolt, of a key-shaft connected to said bolt and to the spring of an alarm, whereby when the shaft is turned to raise the locking-bolt the alarm is wound up, substantially as specified.

2. The combination, with the slotted base-plate E of the keeper-

292,088.

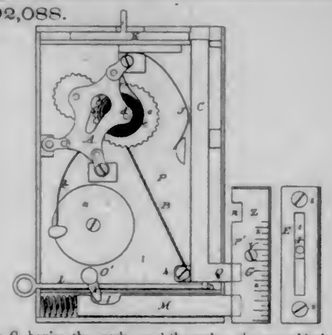
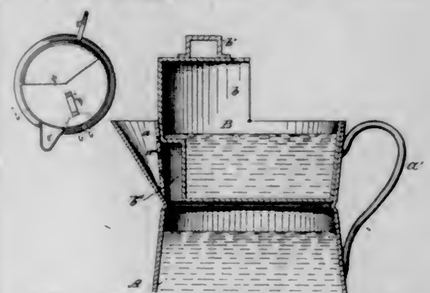


plate G, having the notch *a* and the scale *z*, the screw-block in the slot of the base-plate, the fastening-screw V, the winding-drum on the shaft, and the angular vertically-reciprocating bolt connected by a chain to the said drum, substantially as specified.

3. The combination, with the vertically-reciprocating angular locking-bolt, of the winding-shaft and alarm, the chain-connection, guide-spring, eight-latch, and notched keeper, substantially as specified.

292,089. COFFEE-POT. JAMES A. ASHLEY, Washington, D. C. Filed July 14, 1883. (No model.)



Claim.—1. The combination, with a coffee-pot, of a condensing-vessel having a channel through which the contents of the coffee-pot may be discharged.

2. The combination, with a coffee-pot, of a condensing-vessel in which the entire upper surface of the contents of the same is directly exposed to the air, and which is provided with a channel or conduit for the passage of the contents of the coffee-pot.

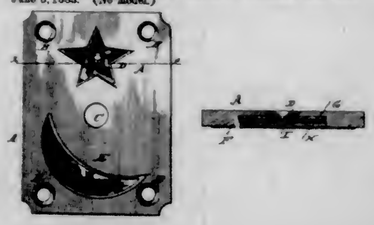
3. The combination, with a coffee-pot, of a condensing-vessel which is provided with a hood of a capacity adapting it to receive one-half or about one-half of the contents of such condensing-vessel when filled, whereby such contents will be retained whether the condensing-vessel be placed in a vertical or in a horizontal position.

4. In a coffee-pot, a condensing-vessel which has a hood and a pouring-channel.

5. The combination, with a coffee-pot, of a condensing-vessel which, by a slight horizontal movement, is adapted either to permit or to prevent the discharge of the contents of such coffee-pot.

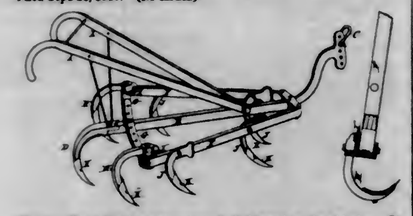
6. The combination of a coffee-pot having a spout or pouring-lip, and a condensing-vessel provided with a conduit for the passage of the contents of the coffee-pot.

292,090. LUMINOUS GUIDE-PLATE. SAXTON TICE AYRES, Philadelphia, Pa., assignor of one-half to Charles D. Williamson, same place. Filed June 8, 1883. (No model.)



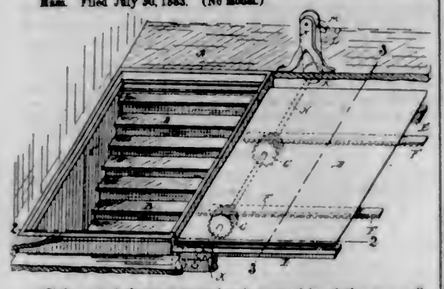
Claim.—The luminous guide-plate herein shown and described, adapted for the purposes specified, consisting of the plate or body A, having screw-holes B, a central aperture, C, and irregular-shaped apertures D and E, located on opposite sides of the central aperture, and rabbeted to form boxes or recesses F, into which are inserted glass disks G, coated on the inside with a luminous paint or composition, and held in place by the cement lining H and fastening-strips I, substantially as and for the purpose shown and set forth

292,091. CULTIVATOR. PERSLEY BERLER, Jefferson County, Ky. Filed Sept. 21, 1883. (No model.)



Claim.—The adjusting cross-bars G G, hinged to the side bars, F, by means of flanges above and below, with the corrugated projection I and tooth-hook H, as above described, in combination with the side bars, F, tooth-hooks J J, and teeth K K, substantially as described, and for the purpose set forth.

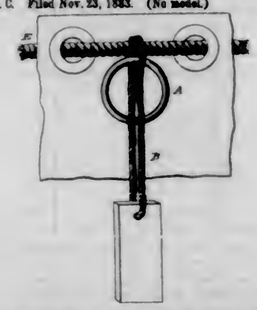
292,092. GUARD TO HATCHWAYS. HENRY J. BLEULER, Boston, Mass. Filed July 30, 1883. (No model.)



Claim.—1. A door constructed and arranged in relation to a well-opening, C, in the floors of a building, to close and open the same, in combination with mechanism connected with said door, and extending through the several floors of the building, to be operated at any one of said floors, and so as to slide said door either to close or open said well-opening, as the case may be, substantially as and for the purpose specified.

2. The combination, with a well-opening in the floor of a building, of a door constructed and arranged to slide across said opening, rack-bars F, a shaft, H, gear-wheels G, pulley-wheels K, and ropes L and pulley M, for operation of said door, substantially as and for the purpose specified.

292,093. TAG-ATTACHING DEVICE. LORENZO DAVIS BOND, Washington, D. C. Filed Nov. 23, 1883. (No model.)



Claim.—An attaching-tag or similar device consisting of a suitable tag proper, a cord, and rigid ring or loop, all connected and adapted for use substantially as shown and described.

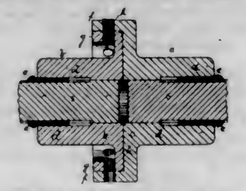
292,094. COCK AND TANK FOR DRAWING FLUIDS OF VARYING TEMPERATURES. JOHN BYRNE, Cleveland, Ohio. Filed Jan. 22, 1883. (No model.)



Claim.—1. The combination, with a faucet-body having one outlet and two inlet passages, and a tubular stop-cock constructed to connect or to stop all of said passages, of a stopper fitted within said stop-cock, said stopper having a reduced body and oppositely-inclined spiral shoulders at the ends of said reduced body, substantially as and for the purpose specified.

2. The combination, with a faucet-body having one outlet and two inlet passages, and a tubular stop-cock constructed to connect or to stop all of said passages, of a stopper fitted into said stop-cock, and constructed to increase the aperture of one inlet and to decrease the aperture of the other inlet by the same act of rotating in one direction within said stop-cock, and a graduated dial and index on said cock and stopper, substantially as and for the purpose specified.

292,095. COUPLING FOR SHAFTS OR ROLLS. CHAS. P. CARLSON, McKeesport, Pa., assignor to himself and the National Tube Works Company, Boston, Mass. Filed May 2, 1883. (No model.)

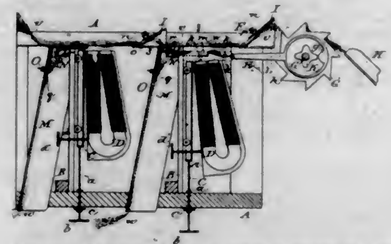


Claim.—1. A shaft or roll coupling formed of two parts held together against rotary strain by means of one or more wooden pins extending through the parts thereof, substantially as and for the purposes set forth.

2. A shaft or roll coupling formed of a female part, a male part adapted to fit therein, and one or more pins extending radially through said parts to hold them against rotary strain, substantially as and for the purposes set forth.

3. In a shaft or roll coupling, the combination of the part *b*, having the flange *g*, part *c*, having the flange *f*, and series of holes *h*, extending radially through said flanges, and wood pins *k*, fitting within each holes, substantially as and for the purposes set forth.

292,096. MAGNETIC ORE-SEPARATING MACHINE. GEORGE W. L. CARTER, New York, N. Y. Filed Apr. 1, 1882. Renewed Mar. 5, 1883. (No model.)



Claim.—1. The combination, with a magnet or magnets and a hopper arranged to deliver the material in a stream past said magnet or magnets, of a septum or shield separated from the magnet or magnets and arranged between the same and the path of the falling material, and at one side of said path, so that the non-magnetic material will fall clear of the septum or shield, while the magnetic particles, being attracted, will diverge and come against said septum or shield, substantially as described.

2. The combination, with a magnet or magnets and a hopper ar-

ranged to deliver the material in a stream past said magnet or magnets, of a reciprocating shield or septum arranged between the magnetic poles and the path of said stream, so that the non-magnetic material is carried past the septum or shield, while the magnetic particles are attracted to and collected on it, substantially as described.

3. The combination, with the magnet or magnets, of a reciprocating septum or shield provided with an offset or recess, substantially as described, for collecting and discharging the magnetic particles, as set forth.

4. The combination, with a hopper and a magnet or magnets arranged below and at one side of the hopper-outlet, not directly beneath the same, of means, substantially as described, for adjusting the angle of the magnet or magnets with respect to the stream of material falling from the hopper, as set forth.

5. The combination, with the magnet or magnets of a magnetic separating-machine, and a hopper arranged to deliver the stream of material in front of said magnet or magnets, of means, substantially as described, for adjusting the angle of the magnet or magnets to the falling stream, substantially as described.

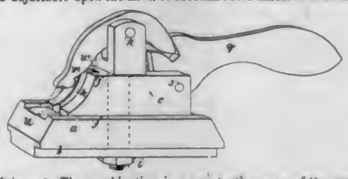
6. A magnetic ore-separator constructed substantially as herein shown and described, containing the following elements: adjustable magnets, adjustable hoppers, and adjustable division or ore-separating plates, said magnets being arranged below and at one side of the hopper-outlets, not directly beneath the same, and the said plates below the magnets between the poles thereof and the direct path of the falling material, as set forth.

7. In a magnetic ore-separator, the combination, with the adjustable magnets D, of the car O and adjusting-screws *a d*, substantially as and for the purpose described.

8. In a magnetic ore-separator, as a means for dividing or separating the falling streams of the magnetic from the non-magnetic ore particles, the combination, with the magnets and their support, of a division-plate, N, constructed, substantially as herein shown and described, of rectangular slotted plate *q*, vertical slotted plate *r*, set-screw *r'*, and hinged plate *s*, arranged and operated as set forth.

292,097. SAW-TOOTH SWAGE. SAMUEL JESSE CHALFANT, Albion, Cal. Filed June 2, 1883. (No model.)

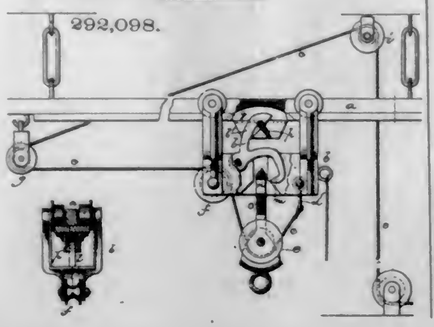
Brief.—A removable saw-tooth is clamped by lever *m* upon die *k*, with its point *o*, which is to be sharpened by being drawn out with a light hammer, resting upon the flat upper surface of anvil *a*. The die-holder is adjustable upon the anvil to accommodate different sized teeth.



Claim.—1. The combination, in a saw-tooth swage, of the anvil *a*, die-block *e*, bed-die *k*, clamping-die *m*, and the cam-lever *q*, substantially as described.

2. The combination, in a saw-tooth swage, of the anvil-block *a*, having rabbet-grooves *b*, grooved upper surface or marginal ribs, *f*, and slotted hole *h*, the die-block *e*, fitting in and adjustable along the groove of the anvil, the clamping-bolt *g*, dies *k m*, and the operating-lever *q*, substantially as described.

3. The combination of the anvil-block *a*, having beveled end *u* and grooved upper surface, die-block *e*, clamping-bolt *g*, dies *k* and *m*, and the lever *q*, substantially as described.

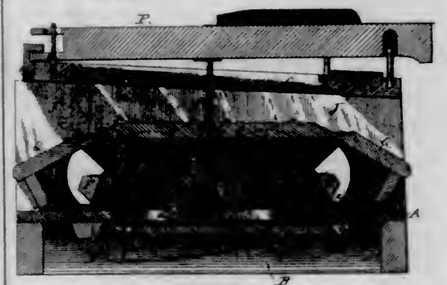


292,098. HAY-CARRIER. LEWIS C. CRASE, Waupun, Wis. Filed Sept. 22, 1883. (No model.)

Claim.—1. In a hay-carrier, a reversible latch, pivoted in a recess in the track, and adapted to engage or pass the trip-latch in the car when set, substantially as specified.

2. In a hay-carrier, the combination, with a track having a reversible latch pivoted in a recess in its under face, of a car having a trip-catch with a hook for engaging the pulley-frame, substantially as specified.

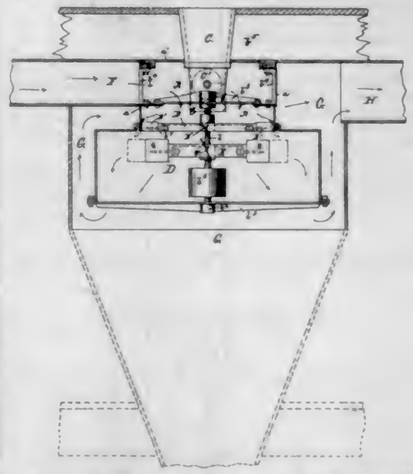
292,099. REED-ORGAN. MELVILLE CLARK, Chicago, Ill. Filed Feb. 5, 1883. (No model.)



Claim.—1. In a reed-organ, the boards E E', provided with an opening, *g*, for each reed-cell, in combination with mutes G, for closing said openings, and a chamber, K, said chamber having no other inlet or outlet than through said openings *g*, as and for the purpose set forth.

2. In a reed-organ, the boards E E', that form the reed-cells and have openings *g*, one for each reed-cell, communicating with vacuum-chambers K above such reed-cells, and provided with mutes G, the ends of which are passed through openings *m* in end boards, J, and have disks or washers *n*, for closing the ends of such chambers K, all constructed and arranged substantially as and for the purpose set forth.

292,100. PROCESS OF AND APPARATUS FOR MIXING AND COOLING SUGAR. MORTIMER C. COGSWELL, Brooklyn, N. Y. Filed Nov. 14, 1883. (No model.)



Claim.—1. The herein-described process for mixing and cooling sugar, which consists in first feeding the sugar upon a horizontal disk in an inclosing-chamber, and by the rapid revolution of said disk throwing the sugar to the periphery of the disk and against the wall of said chamber, then by means of beaters on the periphery of said disk throwing or whirling the sugar around said chamber and between the extremities of said beaters and the wall of said chamber, then allowing said sugar to fall into a lower and communicating chamber, and by means of revolving blades to finely distribute the sugar in said chamber, either by the air-currents created by said blades or by contact with said blades themselves, and causing a current of cooling-air to pass downward through the chambers and be intimately mingled with the distributed sugar in said lower chamber, all as described.

2. The combination of the chamber A, having the closed circumferential sides *a*, top *a'*, and an open bottom, the feed-hopper C, and the horizontal disk B, carrying the beaters B', all constructed to operate as specified, whereby the sugar is broken and mixed, as set forth.

3. The combination of the chamber A, open at its bottom, the feed-hopper C, the horizontal disk B, carrying the beaters B', the chamber D, with its open bottom, and the disk E, carrying the blades *e*, all constructed substantially as described, and for the purpose specified.

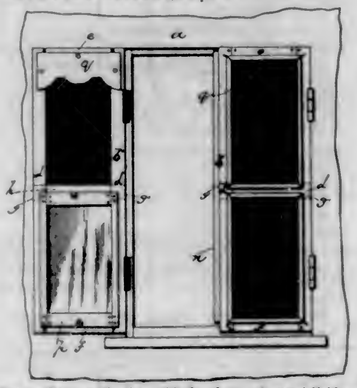
4. The combination of the chamber A, having an open bottom, the feed-hopper C, the horizontal disk B, carrying the beaters B', and the air-conduit F, leading into said chamber, together with the communicating chamber D, having an open bottom, and the horizontal disk E therein, carrying the blades *e*, all constructed substantially as described, and for the purpose specified.

5. The combination of the chamber A, having an open bottom, the feed-hopper C, the horizontal disk B, carrying the beaters B', and the air-conduit F, leading into said chamber, together with the chamber D, having an open bottom, and the horizontal disk E therein, carrying the blades *e*, and the outer inclosing-chamber, G, with the air-exhaust H leading therefrom, all constructed as described, and for the purpose specified.

6. The combination of the chamber A, having sides *a* and top *a'* and an open bottom, the feed-hopper C, and the horizontal disk B, carrying the beaters B', together with the air-inlet F, entering said chamber above said disk, all as and for the purpose specified.

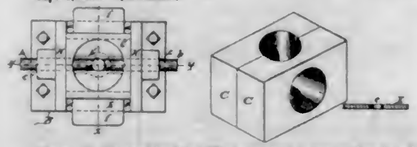
292,101. SHUTTER. MELVIN COTTLE, Scipio, Kans. Filed Oct. 16, 1883. (No model.)

Brief.—A combined shutter and window-sash consisting of shutters provided with permanent outside screens, in lieu of the ordinary shutter-slats, and removable inside glass panes.



Claim.—The combination, with the shutter-frames *b b'*, hinged to the window-frame, and provided with the wire screen permanently secured to their outer sides, of the frames *p*, containing the glass removably secured to the inside of the shutters, so as to be covered and protected by the permanent screens when the frames *p* are in place, substantially as specified.

292,102. CORE-BOX. PHILO COWING, Seneca Falls, N. Y., assignor to Cowing & Gleason Manufacturing Company, (Limited,) same place. Filed Sept. 1, 1883. (No model.)



Claim.—1. In combination with a core-box, a case embracing the same, arbors in the cavities of the core-box, and means, substantially as described, for sustaining the arbors, as set forth.

2. In combination with a core-box, a case embracing the same, bolts projecting from the case to the axes of the core-box, and an arbor or arbors sustained in the core-box by the bolts, and removable from the bolts to allow the core-box to be removed from its embracing-case, substantially as and for the purpose set forth.

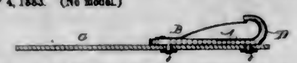
3. In combination with a core-box, a case embracing the same, and a tubular arbor sustained in the axes of the core-box by bolts sliding through the walls of the case and entering the central cavity of the arbor, substantially as described and shown.

4. In combination with a core-box, a sustaining-case consisting of a bed-plate, and cheek-pieces attached to the bed-plate, adapted to receive between them the core-box, channels through the cheek-pieces in range with the axes of the core-box, bolts sliding in said channels, and an arbor sustained in the core-box by the sliding bolts, substantially as described and shown.

5. In combination with a core-box, a case embracing the sides and bottom of said box, a stud-pin or bolt projecting from the bed of the case into the vertical axes of the core-box, a removable plate extended across the bed of the case, and provided with a passage for the aforesaid bolt, bolts sliding through the sides of the case in range with the horizontal or lateral axes of the core-box, and tubular arbors sustained in the core-box by the bolts entering the same, substantially as specified and shown.

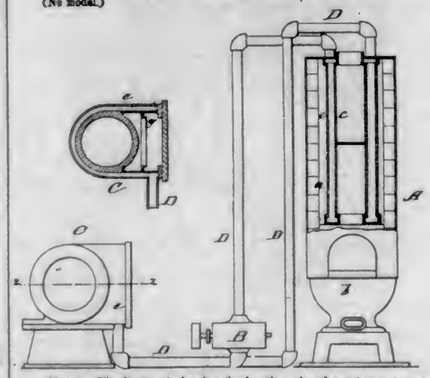
6. In combination with a core-box, the bed B, fixed bolt *b'*, cheeks H, provided with guides *a* and channels *c*, plate E, provided with the eye *e* and with the shoulders *d* and extensions *f*, bolts *b b*, sliding in channels *c c*, and the tubular arbors A, adapted to receive in them the aforesaid bolts, all constructed, combined, and operating substantially in the manner shown and set forth.

292,103. SNAP-HOOK. ROBERT B. CRAIGHEAD, Milton, Ohio. Filed May 4, 1883. (No model.)



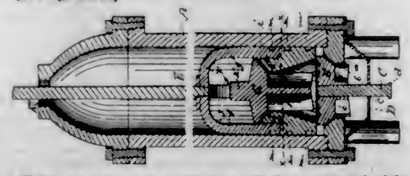
Claim.—The improved snap-hook, consisting of the flat base A, with the upwardly-curved hook D at one extremity thereof, and having studs or rivets on the back, all of said parts being formed integral, and the flat spring B, riveted to the top of said base-plate at the end opposite the hook, and having its free end adjacent to the under portion of the hook, as set forth.

292,104. MEANS FOR PREVENTING CONDENSATION IN STEAM CYLINDERS. CHARLES W. CRAWFORD, Brazil, Ind. Filed Apr. 4, 1883. (No model.)



Claim.—The heater A, having the heating-chamber *a* between concentric cylinders *c c* around a central smoke-flue, in combination with pipes D D, blower B, and cylinder C, having jacket *e*, whereby the air will be drawn from the cylinder, forced through the heater, and back to the cylinder continuously, as and for the purpose specified.

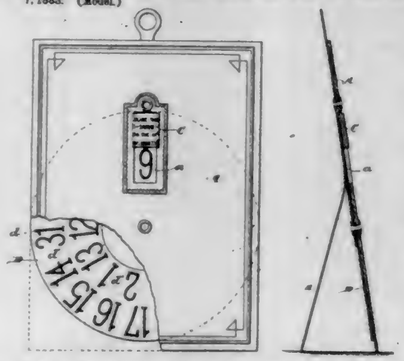
292,105. LIFTING-PUMP. CYRUS JEROME CURTIS and JAMES E. CAINE, Logan City, Utah; said Caine assignor to said Curtis. Filed Mar. 31, 1883. (No model.)



Claim.—In a pump, the combination, with the pump-barrel, of the plunger F, formed in two parts, *f f'*, the upper part, *f*, being formed of a series of arms, *g*, secured to a ring or annulus, *h'*, and the lower part, *f'*, being screw-threaded to receive the ring or annulus, and having an

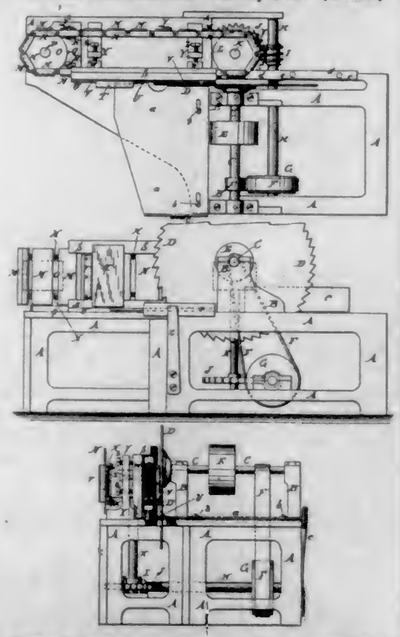
opening, *i*, in which a valve, G, works, said valve being provided with guide plates or rods *j*, which are connected together at their inner ends and project downward through the passage *i*, and an extension, K, of said valve, which serves to limit the upward movements of the valve, substantially as shown and described.

292,106. CALENDAR. JOHN COSSONS, Glen Allan, Va. Filed July 7, 1883. (Model.)



Claim.—In combination with the face-plate A, having aperture *a* and the dial D, having concentric circular rows *d'* of characters *d*, the slide C, moving in guides in the aperture *a*, and adapted to disclose either row of characters at will, substantially as described.

292,107. SHINGLE-SAWING MACHINE. WILLIAM F. DAKE and JAMES H. SEEX, Grand Haven, Mich. Filed July 3, 1883. (No model.)



Claim.—1. In a shingle-sawing machine, the combination, with the saw-mandrel and its saw, of the shaft having a pulley belted to a pulley on the saw-mandrel, said shaft having also a worm, the vertical shaft having the sprocket-wheels carrying the endless belt of bars, one of said shafts also having a toothed wheel, and the said belt of bars being provided with a dog, and the frame having the flanged guard-plate S V, substantially as and for the purpose set forth.

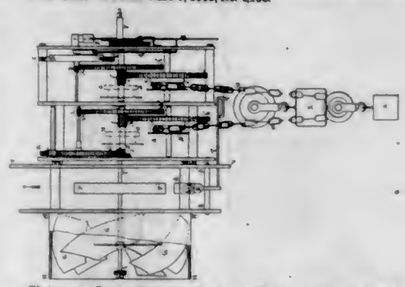
2. In a shingle-machine, the endless belt of upright cross-bars provided with dogs, in combination with the vertical guard-plate S, having a narrow horizontal flange at its front edge, the table *a*, and the spring adapted to hold the table inward toward the saw, substantially as and for the purpose set forth.

3. In a shingle-sawing machine, the endless belt of upright cross-bars provided with dogs, in combination with the vertical plate S, having its upper and lower portions forming guideways or guards for the belt of cross-bars, and its rear side connected to movable uprights W, and the fixed uprights Y, connected to the latter by bolts X, and having the adjusting-screws Z Z, adapted to act upon the guard-plate uprights W, substantially as and for the purpose set forth.

4. In a shingle-sawing machine, the endless belt of bars M, provided with dogs, in combination with the guard-plate S, with its upper and lower ends adapted to receive and permit the passage through them of the endless belt of bars, its lower end also having a narrow horizontal flange, U, at its forward edge, substantially as and for the purpose set forth.

5. In a shingle-sawing machine, the endless belt of bars M, having dogs V, in combination with the guard or guide plate S, having the narrow horizontal flange U and the rear plate, *d*, forming a continuation of flange U, and having a vertical flange, *e*, with the forward end inclined toward and terminating close to the side of the rear part of the saw, substantially as and for the purpose set forth.

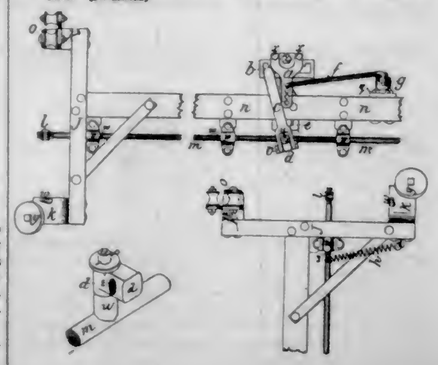
292,108. SELF-WINDING CLOCK. AUGUSTE DARDENNE, Marienburg, Belgium. Filed Oct. 19, 1881. (Model.) Patented in Belgium Aug. 3, 1881, No. 55,353, and Aug. 31, 1881, No. 55,616; in France Aug. 5, 1881, No. 144,256; in England Aug. 3, 1881, No. 3,425; in Austria Nov. 23, 1881, No. 323,908; in Canada Nov. 11, 1882, No. 15,310; in Sweden Dec. 23, 1882; in Italy Dec. 31, 1882, No. 265 and No. 14,736; in Norway May 1, 1883, and in Russia June 9, 1883, No. 4,183.



Claim.—1. In combination with a propelling-screw for winding the weight of a clock by the force of an air-current, an automatic click to prevent backward motion of the winding mechanism, and a friction-brake operated by the rise of the weight to prevent overwinding, all substantially as described.

2. The combination, with a friction-wheel, P, fixed on the axle of the driving-screw, of a brake consisting of rod T T', lever R, and shoe Q, the said brake being adapted to act upon the rim of the wheel P when the rod T T' is moved upward by the pulley of the weight X, substantially as described, and for the purpose set forth.

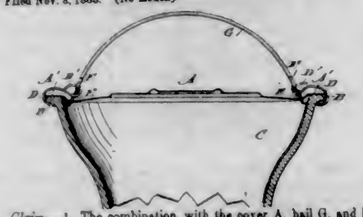
292,109. CHECK-ROWER. WILLIAM EDWINS and JOHN EDWINS, Compromise, assignors to C. B. Smith, Champaign City, Ill. Filed Aug. 28, 1883. (No model.)



Claim.—1. The combination, in a check-rower, of the within-described intermittent mover, having a vertical pivot, *z*, and composed of rigidly-united parts *a b*, constructed, the former with elevating-heels and a rearwardly-projecting transmitting-arm, and said part *b* with a straight or substantially straight slot at right angles to the line of said arm, and having rearward extensions or notches at its respective extremities, and the push-finger *c*, adapted to engage with said part *b* within its respective notches alternately, substantially as herein specified, for the purposes set forth.

2. In the within-described check-rower, the combination of the horizontal rock-shaft *m*, constructed with an upright pivotal lever-arm, *u*, the knuckle *d*, swiveled on said arm, the horizontal cross-pivot *v*, passing through said knuckle, and the loosely swinging and gravitating push-finger *c*, bifurcated and drilled to embrace said knuckle and receive said cross-pivot, with a slotted intermittent mover, *b a*, adapted to be actuated by said push-finger, substantially as shown, for the purposes set forth.

292,110. CROCK-COVER. DANIEL WEBSTER PROCT, Keokuk, Iowa. Filed Nov. 8, 1883. (No model.)

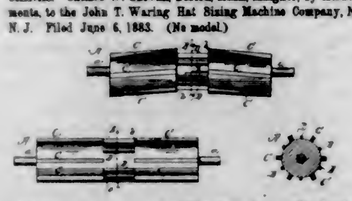


Claim.—1. The combination, with the cover A, bail G, and hooks D, of the staples E, connecting the hooks and cover, as and for the purpose specified.

2. The combination, with a cover, A, of the bail G, the loops or staples E in the cover, and of the hooks D, having hook ends D', passed through the loops E and through the loops on the ends of the bail, substantially as herein shown and described.

3. The combination, with a cover, of loops fastened on the same, hooks passed through the loops and through loops on the end of the bail, whereby the cover will be secured to the bail by means of the loops or staples and the hooks, substantially as herein shown and described.

292,111. ROLLER FOR HAT-BODY FELTING AND SIZING MACHINES. CARLOS W. GLOVER, Boston, Mass., assignor, by mesne assignments, to the John T. Waring Hat Sizing Machine Company, Newark, N. J. Filed June 6, 1883. (No model.)



Claim.—1. In a machine for felting hats, &c., a roller having a circumferential cavity of equal depth throughout its length, and at or near the longitudinal central portion of said roller, substantially as and for the purpose specified.

2. In a machine for felting hats, &c., a roller having a circumferential cavity of less depth at its middle portion than at its ends, and at or near the longitudinal central portion of said roller, substantially as for the purpose specified.

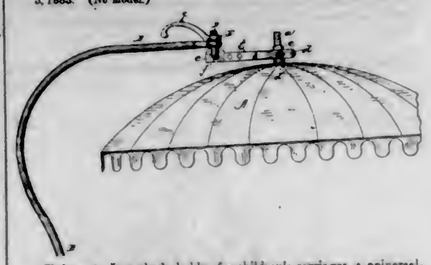
3. In a machine for felting hats, &c., a roller having a circumferential cavity, substantially as described, with shoulders or abutments *b* at its ends, substantially as and for the purpose specified.

4. In a machine for felting hats, &c., a roller having lags or projections on its surface extending from each end near to its central portion, and intermediate lags or projections at said central portion of less height radially than the end lags, for the purpose specified.

5. In a machine for felting hats, &c., a roller having a circumferential cavity, substantially as described, lags or projections extending from each end of said roller to said cavity, and intermediate and independent lags or projections in said cavity of less height radially than the end lags, for the purpose specified.

6. In a machine for felting hats, &c., a roller having a circumferential cavity, substantially as described, lags or projections extending from each end of said roller to said cavity, and intermediate lags or projections in said cavity of less height radially than the end lags, and said end lags being in a line slightly angular circumferentially, substantially as and for the purpose specified.

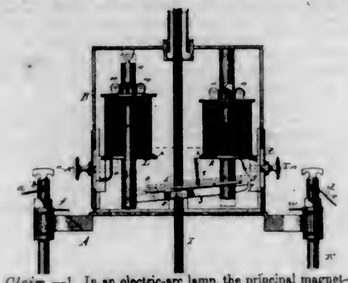
292,112. CARRIAGE-SHADE HOLDER. NICOLA M. GUILLOW, Chicago, Ill., assignor of one-half to Jehiel D. Guillow, Boston, Mass. Filed Nov. 5, 1883. (No model.)



Claim.—1. In a shade-holder for children's carriages, a universal-jointed clasp, consisting of the curvilinear and pivoted plate *c*, in combination with the screw-pin D, arm B, nut E, and clasp C, substantially as and for the purposes specified.

2. In a shade-holder for children's carriages, a universal-jointed clasp, consisting of the curvilinear and pivoted plate *c*, in combination with the screw-pin D, arm B, and nut E, said plate *c* being provided with the bifurcated spring-clasp C, whereby said shade may be detachably suspended therefrom, substantially as and for the purposes specified.

292,113. ELECTRIC-ARC LAMP. CHARLES H. HAYES, Ansonia, Conn., assignor to Wallace & Sons, same place. Filed Nov. 10, 1883. (No model.)



Claim.—1. In an electric-arc lamp, the principal magnet-coil arranged upon a bracket adjustable within the inclosing-case with relation to its core, in connection with the clutch mechanism, said bracket in electric connection with the case, one end of the coil of the magnet in connection with the bracket, the other end in connection with a metallic surface movable with the bracket, but insulated therefrom, said movable metallic surface in connection with a fixed metallic surface insulated from the case, but in connection with the positive wire, substantially as described.

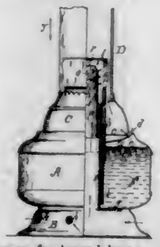
2. In an electric-arc lamp, the principal magnet-coil arranged upon a bracket adjustable within its inclosing-case with relation to its core, in connection with the clutch mechanism, said bracket in electric connection with the case, one end of the coil of the magnet in connection with the bracket, the other end in connection with a metallic surface movable with the bracket, but insulated therefrom, said metallic movable surface in connection with a fixed metallic surface insulated from the case, but in connection with the positive wire, the case constructed with a slot parallel with the axis of the magnet, and a clamping device through said slot and in connection with the bracket, whereby the bracket and the magnet-coil it carries may be adjusted from outside the case, substantially as described.

3. In an electric-arc lamp, the shunt-magnet coil arranged upon a bracket adjustable within its inclosing-case with relation to its core, in connection with the clutch mechanism, said bracket in electrical connection with the case, one end of the coil of the magnet in connection with the bracket, the other end in connection with a metallic surface movable with the bracket, but insulated therefrom, said movable metallic surface in connection with a fixed metallic surface insulated from the case, but in connection with the negative wire, substantially as described.

4. In an electric-arc lamp, the shunt-magnet coil arranged upon a bracket adjustable within its inclosing-case with relation to its core, in connection with the clutch mechanism, said bracket in electric connection with the case, one end of the coil of the magnet in connection with the bracket, the other end in connection with a metallic surface movable with the bracket, but insulated therefrom, said metallic movable surface in connection with a fixed metallic surface insulated from the case, but in

connection with the negative wire, the case constructed with a slot parallel with the axis of the magnet, and a clamping device through said slot and in connection with the bracket, whereby the bracket and the magnet-coil it carries may be adjusted from outside the case, substantially as described.

292,114. LAMP. LEONARD HENKLE, Rochester, N. Y. Filed June 16, 1883. (No model.)

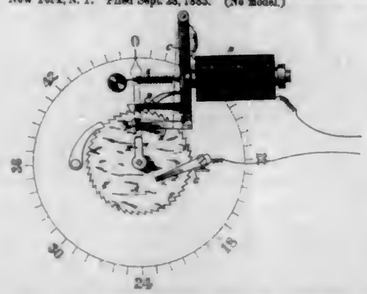


Claim.—1. In a burner for Argand lamps, a wick-tube provided at its upper end with a thimble, forming, with the wick-tube, a passage for the inner upward-moving current of air, said thimble being vertically adjustable in the wick-tube and made conical at its upper end, with perforations through its straight and conical parts, so that some of the jets of air flowing outward through the perforations shall impinge horizontally and others obliquely against the inner surface of the flame, substantially as set forth.

2. In a burner for Argand lamps, the inner wick-tube provided internally at its upper end with a circular part or thimble, forming, with said wick-tube, a passage for the central upward-moving air for the flame, said thimble being reduced in diameter at its upper end, or made conical thereat, and perforated in such a manner that some of the jets of air flowing outward through the perforations move horizontally and others obliquely against the flame, substantially as set forth.

3. In a burner for Argand lamps, a wick-tube provided at its upper end with an internal thimble, forming, with said wick-tube, a passage for the inner upward-moving current of air for the flame, said thimble being perforated to turn the air in jets against the flame and made adjustable within the tube, substantially as described.

292,115. TELEPHONE-EXCHANGE SYSTEM. F. BENEDICT HERRON, New York, N. Y. Filed Sept. 28, 1883. (No model.)



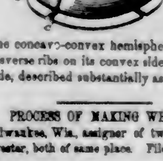
Claim.—1. The combination, in a telephone or telegraph exchange system, with two or more subscribers' circuits connected with the central office thereof, and telephonic or telegraphic apparatus whereby the subscribers may communicate with the central office, of indicators located at or near the offices of one or more subscribers, for indicating specified times of day or other information according to the positions at which they are set, and mechanism whereby the said indicators may be set by the operator from the central office, substantially as described.

2. The combination, in a telephone or telegraph exchange system, with two or more subscribers' circuits connected with the central office thereof, and telephonic or telegraphic apparatus whereby the subscribers may communicate with the central office, of indicators located at or near the offices of one or more subscribers, for indicating specified times of day or other information according to the positions at which they are set, means whereby the said indicators may be set by the subscribers at their offices, and mechanism whereby they may be set by the operator from the central office, substantially as described.

3. The combination, in a telephone or telegraph exchange system, with two or more subscribers' circuits connected with the central office thereof, and telephonic or telegraphic apparatus whereby the subscribers may communicate with the central office, of indicators located at or near the offices of one or more subscribers, for indicating specified times of day or other information according to the positions at which they are set, means whereby the said indicators may be set by the subscribers at their offices, mechanism whereby they may be set by the operator from the central office, and devices to enable the central operator to tell at what positions the said indicators have been respectively set by the subscribers, substantially as described.

4. The combination, with the metal ratchet-disk A, electro-magnet B, and lever C, for actuating the said disk step by step, of the insulating-strip F in the said disk, and the connecting-spring E carried by the lever C and bearing upon the disk A, so constructed that on the back stroke of the lever C, when the said disk is at a particular point of its revolution, the spring E slides over the strip F, first breaking the circuit and then closing it again before the lever reaches its back stop, substantially as described.

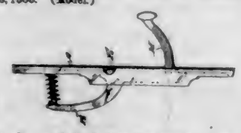
292,116. MUCILAGE-BOTTLE AND HOLDER. NATHAN B. HUBBARD, Chicago, Ill., assignor of one-half to John Gray, same place. Filed July 30, 1883. (No model.)



Claim.—1. In combination with a bottle having lateral orifices *a*, a base having arms *b*, provided with projections *b'* at their upper ends, constructed to enter the orifices *a*, for the purpose of pivotally supporting the bottle, substantially as described.

2. In combination with a bottle having lateral orifices *a*, a base-frame constructed of wire bent to form a ring, B', and arms *b*, the latter being bent inwardly at their upper ends to form projections *b'*, constructed to enter the orifices *a*, substantially as described.

292,117. SASH-FASTENER. ROBERT B. HUGUNIN, Hartford, Conn. Filed Oct. 3, 1883. (Model.)



Claim.—1. In a sash-lock, the plate having a longitudinal slot, L, a pivot-bearing at the upper portion of the slot, and a lateral slot, K, connecting with the lower portion thereof, in combination with the bar B, having a pivot or journal at its upper end and an upwardly-extending arm, B''', and at its lower end provided with the extended arm H, having a lateral locking-tongue, G, to enter a notch of the sash, said bar being arranged in the longitudinal slot, and normally held there by the action of a spring, substantially as described.

2. The plate provided with a slot for the passage of the locking-lever and bearings for the journals or pivots of the lever, and having flanges on opposite sides of the said slot, in combination with the locking-lever journaled in the bearings in the plate, and having at opposite ends arms extending laterally from the face and back of the plate, and an elastic spring interposed between the arm and back of the plate, substantially as described.

292,118. FLYING TARGET. JAMES JOPLING, Oskaloosa, Iowa. Filed Aug. 16, 1883. (No model.)



Claim.—The concave-convex hemispherical flanged target, having the radially-transverse ribs on its convex side and corresponding grooves in its concave side, described substantially as and for the purpose specified.

292,119. PROCESS OF MAKING WHITE LEAD. JOHANN KARL KINDLER, Milwaukee, Wis., assignor of two-thirds to Morris Roth and George Sylvester, both of same place. Filed July 16, 1883. (No specimens.)

Claim.—The process of making white lead, which consists in passing an electric current through an electrolyte composed of the acetate of an alkali in solution, using lead for both the anode and cathode, whereby a solution of acetate of the oxide of lead is formed at the positive pole and a caustic solution of the alkali is formed at the negative pole, keeping the products forming at the opposite poles separate from each other, then mixing the said products together, whereby hydrated oxide of lead is precipitated and the original solution of the acetate of an alkali regenerated, and then introducing carbonic-acid gas into the last-named solution, whereby the suspended precipitate is converted into white lead, substantially as described.

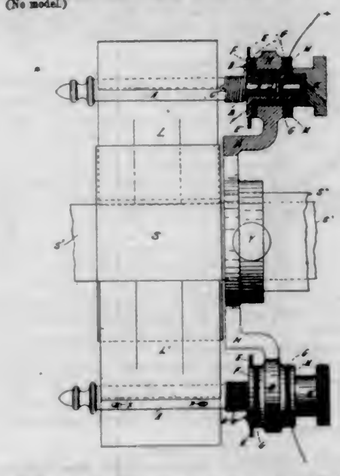
292,120. WEATHER-STRIP. WM. R. KIMER, Hammond, Ill. Filed Nov. 8, 1883. (No model.)

Brief.—A weather-strip consisting of two hinged sections and a pivoted adjustable stop or block.



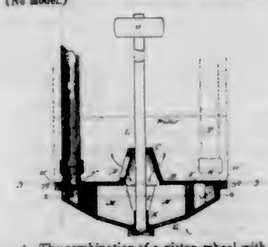
Claim.—The combination, with a weather-strip of the described class, of the pivoted adjustable stop D, whereby the weather-strip can be employed to exclude air, or not, at pleasure, as set forth.

292,121. DYNAMO-ELECTRIC MACHINE. EDWARD R. KNOWLES, Brooklyn, N. Y., and FRANK E. IDELL, Hoboken, N. J., assignors to the Consolidated Electric Light Company, of New York. Filed Sept. 6, 1882. (No model.)



Claim.—In a dynamo-electric machine, the combination, with the brushes and commutator, of an arm, A, a spring, B, an adjusting-sleeve, F, a contact-ring, M, and a tightening-nut, K, the whole being supported upon a yoke, H, substantially as described, for the purpose specified.

292,122. ROTARY PUMP. JOSEPH LEE, Cleveland, Ohio. Filed May 3, 1883. (No model.)

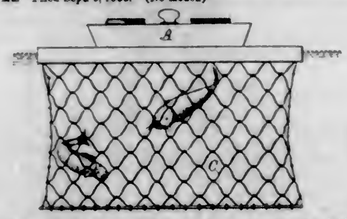


Claim.—1. The combination of a piston-wheel with an inclosing-case, the said case having central inlet-ports and outlet-ports located near its outer edge, substantially as set forth.

2. The combination of the piston-wheel and the casing A, said casing consisting of the sections B G, section B having centrally-located inlet-ports D, and outlet-ports E near its outer edge, section G having central chamber, I, connecting with the inlet-ports, and ways N, connecting said chamber I with the outlet-ports, substantially as shown.

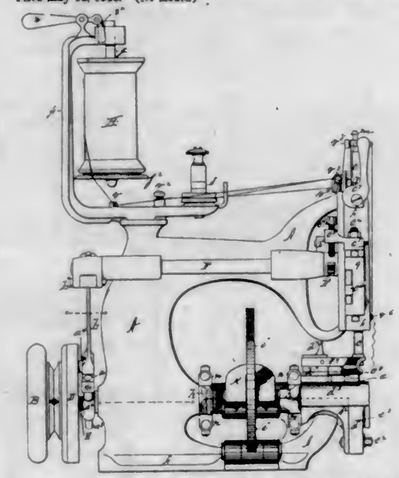
3. The combination of the piston-wheel with the casing A, said casing consisting of the sections B G, section B having cone C, inlet-ports D, outlet-ports E, and ways F, section G having chamber I, groove H, and ways N, registering with ways F, all combined to operate substantially as shown and described.

292,123. LIVE-BOX FOR FISH. RICHARD A. LINDSAY, Baltimore, Md. Filed Sept. 6, 1883. (No model.)



Claim.—In a fisherman's live-box, the combination of a rigid buoyant top having an opening for the introduction of fish and a hinged door to close the said opening, a rigid non-buoyant bottom, and cord-netting sides, substantially as and for the purpose specified.

292,124. STRAW-BRAID-SEWING MACHINE. MEHEL MARCH, Amherst, Mass., assignor of one-half to the Hills Company, same place. Filed May 12, 1883. (No model.)



Claim.—1. In combination, the needle-bar *m*, the presser foot-bar *c*, the rock-shaft F, having the pitman-arm b^2 thereon, extending in an opposite direction from the arm thereon, connecting said shaft with the needle-bar, the pitman *b*, provided with the yoke *a*, having arms a^2 thereon, the yoke-box a^3, the ring x^2, having the stud x^3 thereon, the wheel B, having the eccentric plate *x* thereon, and the shaft E, substantially as set forth.

2. The combination, with the driving-shaft of a sewing-machine, of an eccentric fixed on said shaft, of two perforated yoke-boxes fitted on said eccentric, of a feed-frame, substantially as described, having yoke-arms fitting the perforations in said boxes, and a feed-dog arm thereon, substantially as described, and having its outer end supported upon a vibratory lever pivoted to the base of the machine, of means, substantially as described, for giving to said feed-frame reciprocating horizontal movements, substantially as described.

3. The combination, with the driving-shaft of a sewing-machine, of an eccentric fixed on said shaft, of two perforated yoke-boxes fitted on said eccentric, of a feed-frame having yoke-arms fitting the perforations in said boxes, and a feed-dog arm thereon, substantially as described, and having its outer end supported upon a slotted vibratory lever pivoted to the base of the machine, and the eccentric-rod K, connected by one end to said eccentric, and having its opposite end adjustably connected to said slotted vibratory lever, substantially as set forth.

292,125. PROCESS OF MANUFACTURING VINEGAR. VICTOR MEHARLE, Luxemburg, Germany. Filed July 27, 1882. (No model.) Patented in France Sept. 26, 1878, No. 126,556; in Belgium Jan. 23, 1879, No. 47,255; in Germany Feb. 11, 1879, No. 6,620, and Oct. 16, 1879, No. 9,231; in Luxemburg Feb. 15, 1879, No. 2; in Italy June 30, 1879, No. 93; in Spain Aug. 1, 1879, and in England Oct. 6, 1879, No. 4,033.



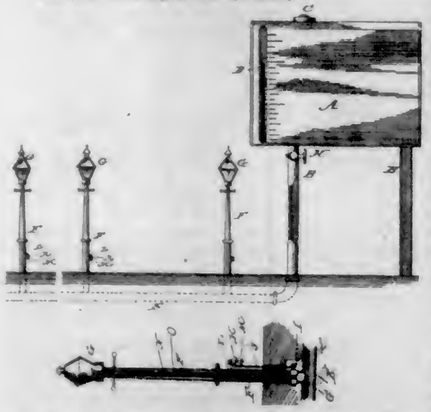
Claim.—The process of manufacturing vinegar, which consists of the following successive steps: First, saturating the acetifying material with a portion of the liquor to be acetified; secondly, removing the saturated acetifying material from the main body of liquor to be acetified; thirdly, permitting the liquor in said saturated acetifying material to be oxidized for a given period, as described; fourthly, passing the acetifying material quickly through the main body of the liquor to be acetified, and periodically repeating the foregoing steps until the whole charge of liquor is acetified, substantially as described.

292,126. CAR-COUPLING. THOMAS JEFFERSON MILLER, North Manchester, Ind., assignor of one-half to Marcus L. Hartar, same place. Filed Nov. 3, 1883. (No model.)



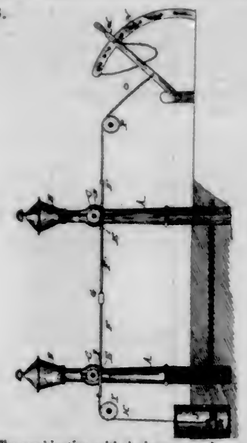
Claim.—In a car-coupling, the combination, with the draw-head having a coupling-bar receptacle, of the clamping-hooks within the draw-head on the transverse rod near the rear end of the receptacle, the coil-spring between their rear ends, and the key having the rectangular enlargement working between the clamping-hooks, substantially as specified.

292,127. APPARATUS FOR LIGHTING STREETS, &c. BARNARD W. MITCHELL, Hubbard, Ohio, assignor of one-third to Adam Holtzbaugh, same place. Filed Aug. 25, 1883. (No model.)



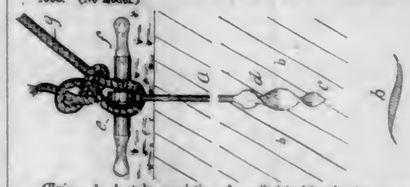
Claim.—The combination of the tubular lamp-posts, the perforated wick-tubes extending from the burner down to the stop-cock, the stop-cock inserted transversely through the tubular post at the lower end of the perforated wick-tube, with its opening registering with said tube, means for opening and closing said stop-cock, and the main feeding the oil to the posts from a common reservoir.

292,128. APPARATUS FOR LIGHTING STREETS. BARNARD W. MITCHELL, Hubbard, Ohio, assignor of one-third to Adam Holtzbaugh, same place. Filed Oct. 16, 1883. (No model.)



Claim.—The combination, with the lamp-posts, lamps, and their regulating mechanism, of the sliding racks E, connecting-rods F, chain H, weight K, or its equivalent, and suitable means or mechanism for actuating the rack-bars and their connecting-rods, substantially as and for the purpose shown and set forth.

292,129. STAKE FOR GUY-ROPES. JONATHAN J. MOORE, Thorntown, Ind., assignor of one-half to James A. Ball, same place. Filed June 29, 1883. (No model.)



Claim.—1. A stake consisting of a cylindrical bar having a screw-blade thereon, with thin edges, and terminating in a tapered point and adapted to enter the earth without raising it, substantially as shown and described, and for the purpose specified.

2. A stake consisting of a cylindrical bar having a screw-blade formed thereon, with thin edges, and terminating in a taper point, and adapted to enter the earth without raising it, an eye formed on said bar, and a handle inserted in said eye, all combined, substantially as and for the purpose specified.

292,130. MACHINE FOR TESTING FABRICS. EBENEZER MORRISON and JAMES P. HERRON, Washington, D. C. Filed Aug. 25, 1883. (No model.)

Claim.—1. In the art of testing fabrics where the force applied is measured, the step herein set forth, which consists in confining an area wholly within the edges of the fabric, substantially as and for the purpose set forth.

2. The method herein set forth of testing fabrics, which consists in confining an area located wholly within the edges of the fabric, and applying pressure within said area, substantially as specified.

3. The method of testing fabrics which consists in confining a circular area of the fabric, applying pressure at the center of said area, breaking or rupturing the fabric, and indicating the amount of pressure, substantially as specified.

4. The method of testing fabrics which consists in rupturing or breaking the same at a confined portion only, and measuring the force employed, substantially as specified.

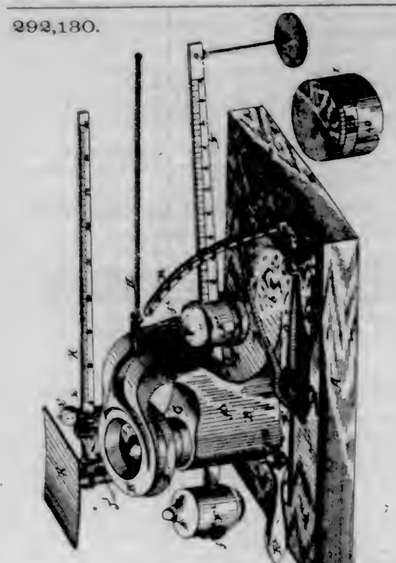
5. The combination of a rigidly clamping or confining mechanism, a plunger, and means for measuring the force applied to the plunger, substantially as specified, and for the purpose set forth.

6. In a machine for testing fabrics, an annular clamp, a concentric plunger, and a weighing apparatus connected with the plunger, substantially as and for the purpose set forth.

7. In a machine for testing fabrics, an annular clamp, comprising a head, as B', and a collar, as D, a cylinder, as C, and means for operating the cylinder, substantially as specified.

8. The combination of the annular collar D, having the rib *d*, and the annular head B', having the groove b^3, substantially as specified.

292,130.



9. The combination of the annular head B', the annular collar D, the cylinder C, and the plunger G, arranged concentric with each other, substantially as specified.

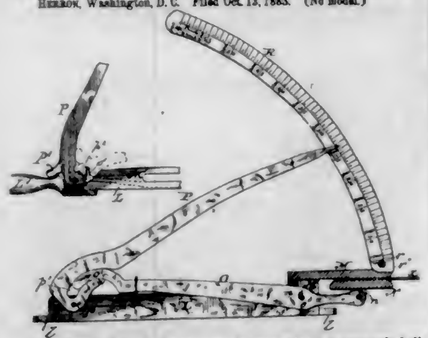
10. The combination of the plunger G, cylinder C, collar D, shaft E, cam E', and lever E^2, with the standard B, provided with the annular head B', substantially as shown and described.

11. The combination of the standard B, bored and slotted as described, with the plunger G and scale F F^1 F^2, substantially as shown and described.

12. The standard B, bored and slotted as described, and provided with the pivot-standards J, substantially as shown and described.

13. The testing apparatus herein shown and described, comprising the pressure weighing scale F F^1 F^2, the scale K K', and the thickness-gage L, substantially as shown, and for the purpose specified.

292,131. THICKNESS-GAGE. EBENEZER MORRISON and JAMES P. HERRON, Washington, D. C. Filed Oct. 13, 1883. (No model.)



Claim.—1. In a thickness-gage for measuring paper, a scale indicating degrees and sheets to the inch, substantially as specified.

2. In a thickness-gage, a fixed jaw having a degree-scale mounted thereon and a movable jaw mounted upon a lever, the free end of which is curved and directly connected to a pointer between its pivot and the said scale, the whole being constructed and operating substantially as specified.

3. In a thickness-gage, the combination of a lever supporting one of the jaws, and connected with a pointer having a thumb-piece, and a base provided with a handle, substantially as specified.

4. In a thickness-gage, the combination of a base provided with a handle, and a pointer provided with a thumb-piece, substantially as specified.

5. The combination of a base provided with a fixed jaw and with a handle of a lever carrying a movable jaw and provided with a toothed curved free end, with a pointer provided with meshing teeth and a thumb-piece, substantially as specified.

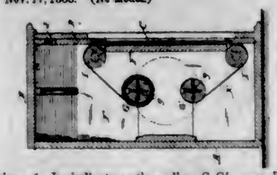
6. In a thickness-gage, the combination of the fixed jaw M, the movable jaw N, and the lever O, pivoted to a step or extension, M', of the fixed jaw, substantially as shown and described.

7. The combination of the lever O, having the curved portion *o'*, with the pointer P, having a similarly-curved slot, *p'*, and the base L, having the pivots *o p* and the extensions *l*, substantially as shown and described.

8. In a thickness-gage, the combination of the fixed jaw M, provided with the lug *m*, and the sector scale-beam R, provided with the stop *r'*, substantially as shown and described.

9. The combination of the pivoted scale-beam R, the pivoted and curved slotted pointer P, the curved lever O, the base L, and the jaws M N, substantially as shown and described.

292,132. INDICATOR. CHARLES W. MUSGROVE, Lock Haven, Pa. Filed Nov. 17, 1883. (No model.)



Claim.—1. In indicators, the rollers G G', reversibly mounted in the casing F, to expose both sides of the sheet successively, longitudinally divided both to insert round tubes *g g'* concentrically therewith, and to permit of grasping the cloth so that it will lie true thereon.

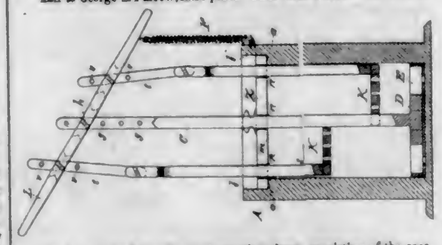
2. In indicators, the combination, with the rollers G G', containing round tubes *g g'*, having square ends, which pass on one side through the casing A of plate M, attached at that side to the casing, and suitably perforated to permit by its rotation access successively to the ends of the tubes *g g'*, a catch whereby such rotation is effected, and operating-crank L.

3. In indicators, the combination, with the receiver and delivery rollers G G', of guide-rollers I I', also mounted in the frame F, serving to change the direction of the cloth K, guide-frame F, located between said guide-rollers, to guide the indicator belt or cloth, being immediately behind it, glass E, mounted in the slide D, which exposes the information, frame F, in which the mechanism is removably mounted, and cloth K, attached to both rollers G G', and bearing the information.

4. In indicators, the rollers G G', longitudinally divisible, containing tubes *g g'*, concentric therewith, plate M, suitably perforated to permit access to the square end of the tube contained in the receiving-roller, catch N, having end *n* and spring *n'*, and crank L, in combination with guide-rollers I I', guide-frame F', glass E, frame F, and cloth K.

5. In indicators, the casing A, having lid B, the removable frame F, the glass E, mounted in slide D in the front of the casing, whereby the glass is removable for cleaning and other purposes, the rollers G G' I I', guide-frame F', plate M, perforated to expose the square end of the tube contained in the receiver and rotary for this purpose, as the same roller is alternately a receiver and deliverer, catch N, having end *n*, attached to spring *n'*, serving normally to hold the plate stationary and permitting rotation of the plate M by pulling the spring from its bed, crank L, cloth K, removable slide J, to permit of reversing the roller, and retaining-hooks H H.

292,133. CHURN. HENRY C. NEER, Brecksuridge, Ill., assignor of one-half to George L. Farrow, same place. Filed June 4, 1883. (No model.)

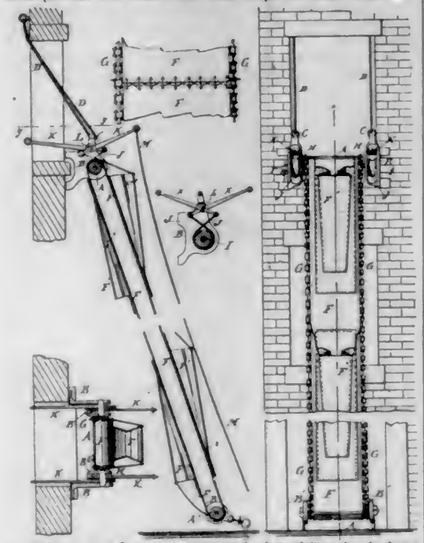


Claim.—A double-acting reciprocating churn, consisting of the case A, having the interior ledges, *a*, the sectional cover Z, the removable central stem, C, secured by its rigid base-piece to the butter-pan E, the adjustable lever L, the dasher-stems *s s*, and their connections *t t*, secured to the lever L, and the perforated dashers K K, one of which is recessed in

its inner edge to receive the stem C, all combined and operating substantially as specified.

292,134. FIRE-ESCAPE. SAMUEL NORRIS, Halifax, Nova Scotia, Canada. Filed Sept. 12, 1883. (No model.)

Brief.—An endless belt having pockets and strengthening-chains, and passing over rollers journaled in suspended bearing-blocks, said rollers provided with brake-levers, brake-straps, and brake-cords.



Claim.—1. A fire-escape constructed substantially as herein shown and described, and consisting of a roller provided with chain-wheels and brake-wheels, an endless belt provided with pockets and strengthening-chains, suspended bearing-blocks to carry the endless-belt roller, and brake-straps, brake-levers, and brake-cords for controlling the escape, as set forth.

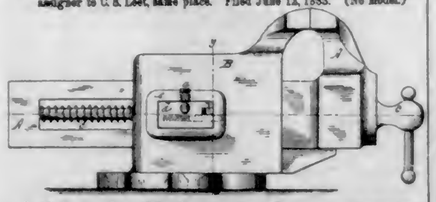
2. In a fire-escape, the endless belt F, made substantially as herein shown and described, with pockets F' and strengthening-chains G, as set forth.

3. In a fire-escape, the combination, with the roller A, provided with chain-wheel H and the suspended bearing-blocks B, of the endless belt F, provided with pockets F' and strengthening-chains G, substantially as herein shown and described, whereby people and property can be lowered by their own weight, as set forth.

4. In a fire-escape, the combination, with the roller A, carrying the endless belt F, and the suspended bearing-blocks B, of the brake-wheels I, the crossing brake-straps J, the pairs of crossing brake-levers K, having a common fulcrum and their shorter arms connected to the brake-straps, and the brake-cords M, substantially as herein shown and described, whereby the rapidity of descent can be readily controlled, as set forth.

5. In a fire-escape, the combination, with the suspended bearing-blocks B, the roller A, and the endless belt F, having pockets F', of a second set of bearing-blocks, B', and a second roller, A', substantially as herein shown and described.

292,135. SLIDING-JAW VISE. WM. H. NORTHALL, Bridgeport, Conn., assignor to C. S. Lee, same place. Filed June 13, 1883. (No model.)



Claim.—1. In a sliding-jaw vise, the combination, with the body, the movable jaw, and the clamping-screw thereof, of one or more sectional nuts, substantially as described, attached to said body, and mechanism, substantially as described, for operating said nut or nuts by and under the control of the said screw, to move them toward and from the latter, substantially as set forth.

2. The combination, with the body and the movable jaw of a sliding-jaw vise, of a longitudinally-grooved clamping-screw, of a cam fitted on said screw and having a splined connection therewith, of one or more sectional nuts attached to said body, each of which is provided with a cam-lever, a wedge, and a locking-bolt, substantially as described, and springs *c* and 3, all as set forth.

3. The combination, with the body B, the sliding jaw A, the screw *a*, and the cam *c*, of the nut *d*, the springs *c* and 3, the lever *z*, the wedge *x*, and the bolt *n*, substantially as set forth

292,136. LEAD AND CRAYON HOLDER. BENJAMIN G. PLATT, Bayonne, N. J. Filed Oct. 4, 1883. (No model.)



Claim.—1. In a lead and crayon holder, the sheath A, the inner surface of which is oval in cross-section, provided on opposite sides, from end to end, with ratchet-teeth a^2, and having between said ratchet-teeth an intermediate smooth surface, *m*, in combination with a propellible traveler, D, provided with a collar, E, having on opposite sides spring-pawls *e*, all arranged as described, whereby said traveler D may be propelled step by step within a suitable case or sheath, substantially as described.

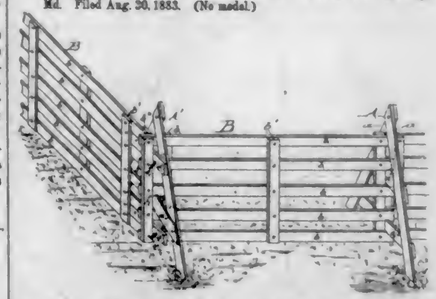
2. In a lead or crayon holder, the combination of the sheath A, provided with nozzle *a*, said sheath provided with a bore, oval in cross-section, and having on opposite sides of said bore ratchet-teeth a^2, and the concentric tube B, having longitudinal slot *b*, with traveler D, having collar E and side spring-pawls *e*, and means, substantially as described, whereby a writing-core can be propelled a predetermined distance longitudinally within and without said sheath A and retracted, substantially as described.

292,137. FOUNTAIN ATTACHMENT FOR PENS. GEO. W. PRICE, Baltimore, Md., assignor to Bernard N. Baker, same place. Filed Nov. 3, 1883. (No model.)



Claim.—A fountain attachment for pens, consisting of a spiral wire and a holder for the same, having a back piece, *c*, to shield the spiral coils, and a stiff piece, *b*, extending through the spiral coils, as shown, and adapted for connection with a pen-holder on top of the pen, as set forth.

292,138. PORTABLE FENCE. FRANCIS C. REDNER, New Midway, Md. Filed Aug. 30, 1883. (No model.)

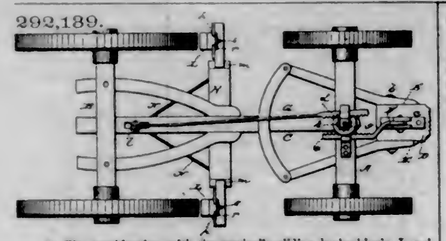


Claim.—In a portable fence, the combination of the corner-post A', composed of the inclined bars *a a*, connected together at their upper ends, and the connecting cross-bar a^2, with the adjacent panels B B, one of said panels provided with end upright, b^2, and one or more projecting short bars, *d*, and the other panel provided with an end upright, b^2, cut away, as shown, and means for locking the parts together, substantially in the manner as and for the purpose described.

292,139. WAGON-BRAKE. JAMES D. RUSSELL, North Hamden, N. Y. Filed May 26, 1883. (No model.)

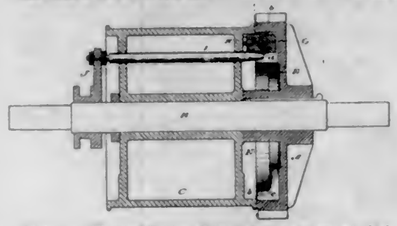
Claim.—1. In a wagon-brake, the combination, with a sliding tongue and brake-bar, of the rack-and-pinion connection under the front axle, substantially as specified.

292,139.



2. The combination, with the vertically-sliding brake-blocks L and the parallel moving brake-bar K, of the lever *l*, the rack-connection F and G, and the double pinion *g*, substantially as specified.

292,140. FRICTION-CLUTCH. THEODORE SCHEYTLER, Paterson, N. J., assignor, by direct and mesne assignments, to Otto Fiehr, Newark, N. J., and Francis M. Pierce, Brooklyn, N. Y. Filed Oct. 31, 1883. (No model.)



Claim.—1. The combination of two rotary parts, one of which is adapted to drive the other in one direction through the medium of a friction-clutch, with a clutch consisting of an annular flange on one of said parts, a pin on the other, a divided expansive ring within said flange, and an expanding-lever fulcrumed to said ring on one side of a division therein, bearing against the same on the opposite side of said division, and adapted to be actuated to expand the ring by the pressure of said pin, substantially as set forth.

2. In a friction-clutch, the combination of annular flange *b*, expansive divided ring E, lever G, fulcrumed to said ring on one side of a division therein, and bearing against it on the opposite side of said division, and pins F and H, acting against said lever, substantially as set forth.

3. In a friction-clutch, the combination of annular flange *b*, expansive divided ring E, expanding-lever G, fulcrumed to and extending against said ring, clutching-pin F, and releasing-pin I, all arranged and adapted to operate substantially as set forth.

292,141. FENCE-POST. FANNIE S. SMITH, Topeka, Kans., assignor, by direct and mesne assignments, to H. Thomas and W. F. Thomas, same place, and L. C. Laurent, Shawnee County, Kans. Filed July 23, 1883. (No model.)



Claim.—A metallic fence-post consisting of the standard formed by the parts A and A' in one piece, disposed at right angles to each other, and having holes K E I, and notches D, connecting-brace B, and wire ties O G H, all constructed and combined substantially as and for the purpose shown and described.

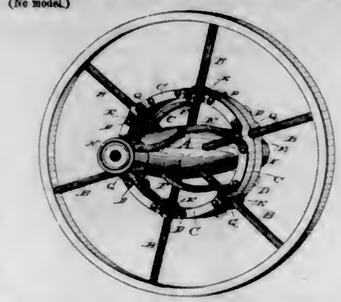
292,142. SECONDARY BATTERY. CHARLES A. SMITH, Hoopeston, Ill., assignor of one-half to Hamer T. Brown, same place. Filed Mar. 7, 1883. (No model.)



Claim.—1. In a secondary or storage battery, the combination of the vessel A, having the corrugated sheet-lead lining *a*, the boxes B, having slits *b'*, and shot D, having perforations *d* previously oxidized in a bath of nitric acid, the whole arranged as and for the purposes set forth.

2. In a secondary or storage battery, the combination of the vessel A, having the corrugated sheet-lead lining *a*, the boxes B, having slits *b'*, and shot D, having perforations *d* previously oxidized in a bath of nitric acid, the balls being filled with white lead mixed with sulphuric acid and water, the whole arranged as and for the purposes set forth.

292,143. VEHICLE-WHEEL. PHILIP HARRIS STERN, Austin, Tex., assignor of one-half to James W. Shepard, same place. Filed Aug. 18, 1883. (No model.)



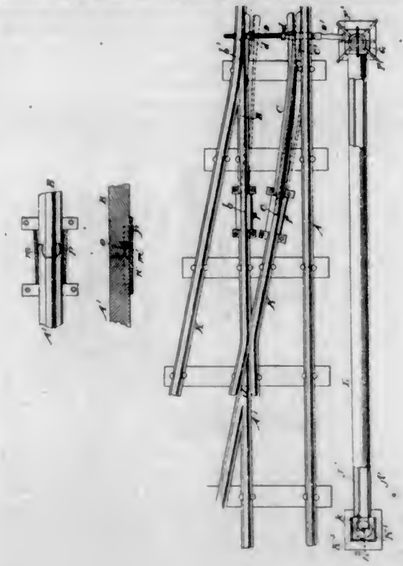
Claim.—1. A device for bracing the spokes of vehicle-wheels, consisting of two recessed spoke-clamping rings having braces extending to fastenings upon the hub, as and for the purpose shown and set forth.

2. The combination of two spoke-clamping disks having recesses in their meeting sides for the reception of the spokes, rings fastened upon the ends of the hub, and brace-rods extending between the spoke-clamping and the hub-clamping rings, as and for the purpose shown and set forth.

3. The combination of a hub of a vehicle-wheel, the spokes, two spoke-clamping rings secured together, and bulged to form recesses for the reception of the spokes, hub-clamping rings fastened around the ends of the hub, and brace-rods extending from the spoke-clamping to the hub-clamping rings, as and for the purpose shown and set forth.

292,144. RAILWAY-SWITCH. EDWARD STONE, Cortland, N. Y., assignor of one-half to John Hodgson, same place. Filed July 18, 1883. (No model.)

Brief.—The ends of the fixed rails to which the switch-rails are to be pivoted are socketed, in which sockets the cut-away convex bearing portion of the ends of the switch-rails is placed, a sleeve surrounding the joint. A switch-stand constructed with a box containing a spiral spring is connected to the points by hinged bars, one of which is screw-threaded.

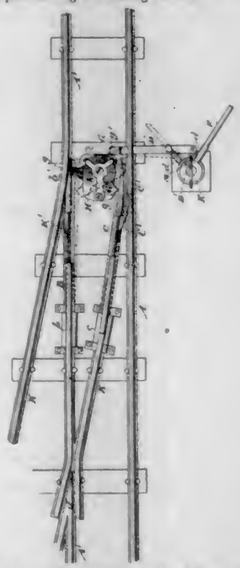


Claim.—1. In combination with the rails having projections *m* with sockets *n*, the switch-rails B and C, having cut-away portions and convex bearings *o*, and the chair P, having flaring mouth, as set forth, for the purposes specified.

2. In combination with the switch-rails B and C, pivoted, as shown, to the rails A' K, the standard F, box G, spring H, and connections E, D, and D', as set forth.

292,145. RAILROAD-SWITCH. EDWARD STONE, Cortland, N. Y., assignor of one-half to John Hodgson, same place. Filed July 18, 1883. (No model.)

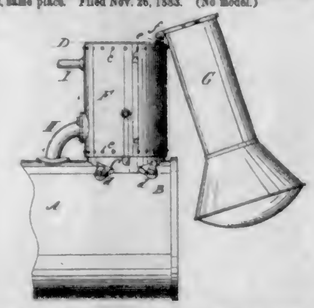
Brief.—The switch-point rails are pushed inwardly by springs and outwardly by a cam-plate having flat bearing-surfaces.



Claim.—1. In combination with the rails B and C and the cam-plate G, whereby they are both forced outwardly, the springs B' and C', adapted to serve substantially as herein specified.

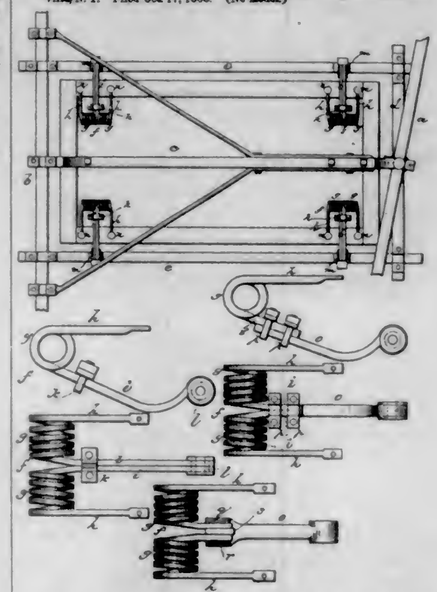
2. In combination with the rails B and C, main rails, and springs B' and C', as shown, the cam-plate G, having arms G', with inclined bearings *g*, the pivot *h*, rod D, standard D', lever F, box E, having slot g^3, and the locking-pins *x*, as and for the purposes set forth.

292,146. SUPERHEATING ATTACHMENT FOR STEAM-BOILERS. JAMES ANDREW STOUT, Belleville, Ill., assignor to the Harrison Machine Works, same place. Filed Nov. 26, 1883. (No model.)



Claim.—The combination, with the boiler over the smoke-box end thereof, of the superheating steam-dome consisting of the lower and upper cast-metal rings, C D, the lower one of which is made to fit the boiler as a saddle, and is provided with the securing lugs or ears *d*, and of inner and outer wrought-metal shells, E F, united with each other and with the rings C D by rivets passing through the shells and rings, and the inlet and outlet pipes, substantially as set forth.

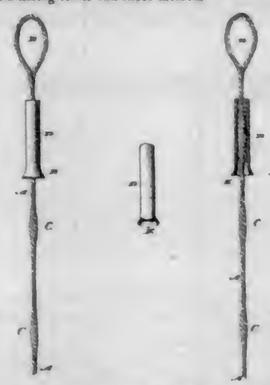
292,147. SPRING FOR VEHICLES. CHARLES L. THOMAS, Hernellsville, N. Y. Filed Oct. 17, 1883. (No model.)



Claim.—A coil-spring for vehicles, formed of two separate pieces of steel, each provided with an upper outer arm extending to and connected with the body of the vehicle, a spiral coil running inwardly from said outer arm and terminating in an inner lower arm extending nearly straight forward from the inner coil, in combination with a rigid fastening device connecting the inner arms in front of their inner coils, and secured to the side bars, substantially as specified.

292,148. FIRE-ESCAPE. CHARLES M. TRAVIS and CASPER H. STIBOLT, Crawfordsville, Ind., assignors of one-third to J. Roach Johnson, same place. Filed Mar. 26, 1883. (No model.)

Brief.—The fibrous and wire rope is provided with enlargements at intervals along its length, and a pliable sleeve having a roughened inner surface and a flaring lower end slides thereon.



Claim.—1. In combination with the rope provided with a series of enlarged portions at intervals of its length, the sleeve formed of pliable material surrounding and adapted to slide upon the rope, substantially as and for the purpose set forth.

2. In combination with the rope provided with a series of enlarged portions or swells, the sleeve adapted to slide upon said rope, and formed of pliable material with a rigid enlarged portion at its lower end, substantially as and for the purpose set forth.

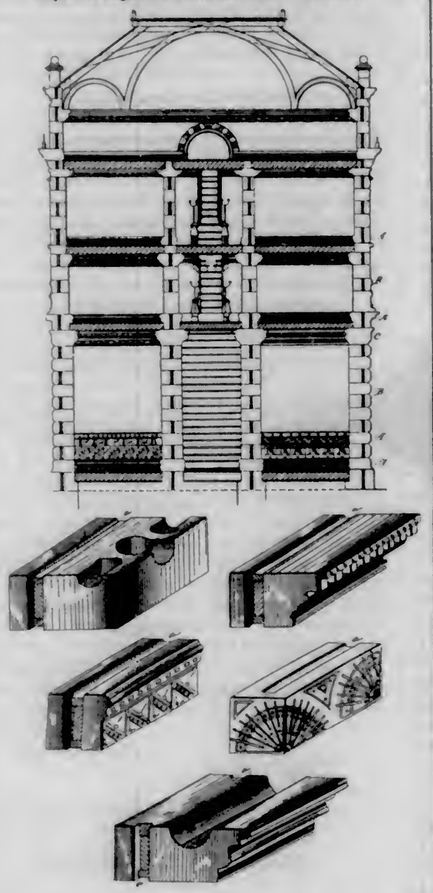
3. In combination with the rope formed of a series of enlarged portions or swells, the pliable sleeve with interior roughened surface, substantially as shown and described.

4. In combination with the rope formed with a series of enlarged portions or swells, the pliable sleeve formed with interior roughened surface, and provided at its lower end with a bard ring flaring outward and downward from the sleeve, substantially as shown and described.

5. The rope formed with a series of enlarged portions or swells, in combination with the soft-rubber sleeve roughened on its interior surface, and provided with a bard flaring lower end, substantially as and for the purpose set forth.

6. The fire-escape rope for use with a frictional sleeve, made of suitable fibers interwoven or twisted with finer metal wires, and formed with a series of enlargements or swellings along its length, substantially as shown and described.

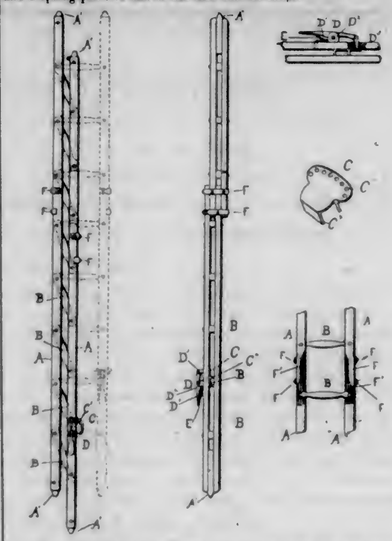
292,149. METHOD OF CONSTRUCTING BUILDINGS OF ARTIFICIAL STONE. THEODORE W. TYRER, Stillwater, Minn., assignor to Sarah P. Tyrer, Los Angeles, Cal. Filed June 14, 1883. (No model.)



Claim.—In a building, the walls consisting of blocks of artificial stone provided with interior and exterior decorations, and being united to each other by horizontal and vertical grooves filled with cement, said stones being ornamented on the interior so as to form base-boards, wainscoting, cornices, and other desired ornamentation, as described, and on the exterior portion to form cornices, brackets, friezes, capitals, and other ornamentation, the parts being arranged and organized substantially as shown, and for the purpose set forth.

292,150. LADDER. CHARLES G. WORK, Lancaster, Ohio. Filed Dec. 6, 1883. (No model.)

Brief.—Where the sections of the folding ladder are united one strip of each section is cut away, to allow of the folding in of the adjacent round, and is secured between the two strips of the other section. The ladder is adjusted through a perforated rack on one of the rounds and a spring-pawl on one of the side bars or strips.

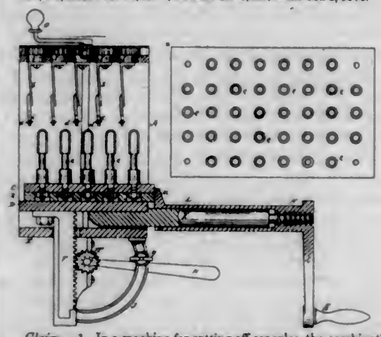


Claim.—1. In a ladder, the combination, with the side bars, and the rounds pivoted thereto, of a rack secured on one of the rounds, and a pawl supported on one of the side bars, and arranged in position to engage the rack, whereby the several parts of the ladder may be locked in any desired position, substantially as set forth.

2. The combination, in a ladder, of the bars composed of two strips and made in sections, one strip of each section having the inner edge of one end cut away or beveled and secured between the two strips of the other section, and the rounds pivoted between the strips of the side bars adjacent the meeting ends of the sections, all arranged and operating substantially as and for the purposes specified.

REISSUES.

10,437. MACHINE FOR CUTTING OFF GELATINE CAPSULES. FREDERICK A. HUBEL, Detroit, Mich. Filed Nov. 16, 1883. Original No. 187,279, dated Feb. 13, 1877; Reissue No. 8,440, dated Oct. 1, 1878.



Claim.—1. In a machine for cutting off capsules, the combination of the series of molds *e*, and the rack, pinion, and lever, F T H, or their equivalents, substantially as and for the purposes described.

2. In a machine for cutting off capsules, the combination of the mold-plate, adapted to and holding a series of molds, and the screw mechanism L K N, substantially as and for the purposes described.

3. In a capsule-cutting machine, a series of knives operated by a crank and pinion acting upon a series of pinions, one of which operates each of said knives, substantially as described.

4. In a capsule-cutting machine, the knives operated by gearing, substantially as described, and supported upon spring-arms, substantially as and for the purposes set forth.

5. In a capsule-cutting machine, the combination with the mold-plates provided with molds, rack, pinion, and lever, F T H, and the screw mechanism L K N, substantially as and for the purposes described.

6. In a capsule-cutting machine, the combination, with the supporting-frame, of a mold-plate bearing a series of capsule-molds substantially such as described, secured thereto at regular intervals, and a series of knives arranged at like regular intervals as said molds, and adapted to cut the capsules formed therein, substantially as described.

PHOTO-LITH. NORRIS PETERS WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISION OF SECRETARY OF THE INTERIOR.

DISCLAIMER UNDER RULE 42—SPECIFIC REFERENCES REQUIRED.

Rule 42 contemplates such specific reference as will clearly identify the particular application referred to, and this would seem to be best accomplished by stating the date of filing and the serial number of the application.

DEPARTMENT OF THE INTERIOR,
Washington, January 4, 1884.

SIR: I have considered the question involved in the appeal from the action of your predecessor in the case of John M. Finch, *ex parte*. It appears that Mr. Finch has filed two applications for patents for improvements in dust-collectors. In one the specific device is shown and described, but not claimed, and in the other the device is shown, described, and claimed. The drawings accompanying the applications are identical.

Rule 42 of the Rules of Practice is as follows:

When an applicant makes two or more applications relating to the same subject-matter of invention, all showing but only one claiming the same thing, those not claiming it must contain disclaimers thereof with references to the application claiming it.

The applicant filed a disclaimer in the words:

I do not in this case claim any invention except those specifically set forth in the claims hereof, preferring to claim any other patentable feature shown or described in another application, which I have filed as a division of this case.

This general reference to another application, &c., was not regarded by your Office as sufficient to meet the requirement of the rule, and the applicant was called upon to specify the particular application by stating the date it was filed and its serial number. From this requirement the appeal is taken.

I concur in the opinion of the Commissioner that the rule contemplates such specific reference as will clearly identify the particular application referred to, and this would seem to be best accomplished by stating the date of filing and the serial number of the application.

The decision of the Commissioner is affirmed. The papers belonging to the files of your Office are herewith returned.

Very respectfully,

H. M. TELLER,
Secretary.

The Commissioner of Patents.

COMMISSIONER'S DECISIONS.

EX PARTE FINCH.

Decided April 6, 1883.

DISCLAIMER UNDER RULE 42—SPECIFIC REFERENCES REQUIRED.

Rule 42 contemplates such specific reference as will clearly identify the particular application referred to, and this should be effected by stating the serial number and date of filing of the application.

13

DUST-COLLECTORS.

INTERLOCUTORY APPEAL.

Application of John M. Finch filed December 11, 1882.

Messrs. Doubleday & Bliss for the applicant.

MARBLE, *Commissioner:*

Applicant has filed two applications for patents for improvements in dust-collectors. The drawings accompanying the applications are identical. In one the specific device is shown and described but not claimed, and in the other the device is shown, described, and claimed. The Examiner requires the applicant, if he desires to take out his patent for the specific device, to make a reference to his application in which the device was shown and described but not claimed, the claim in the latter application being broader than in the former. This requirement was made under Rule 42 of the Rules of Practice, which reads as follows:

When an applicant makes two or more applications relating to the same subject-matter of invention, all showing but only one claiming the same thing, those not claiming it must contain disclaimers thereof, with references to the application claiming it.

Under this rule the applicant claims that it is sufficient for him to refer to another pending application, in which the device is shown but not claimed, without giving the date of its filing or serial number.

It will be observed that the rule above quoted requires that where two or more applications are filed by the same inventor, all showing the same subject-matter of invention, but claiming it in distinct parts, that the applications not claiming a particular part must contain disclaimers thereof, "with reference to *the* application claiming it." There is no way of specifying the particular application in which the invention is claimed except by stating in the other applications filed its date of filing or serial number. If such statement be given, any person interested in any particular patent which may issue, or, in case one application is passed to issue before the others, can ascertain by inquiry where such application is, and what it contains and claims. This, I think, is the object and purpose of the rule. In requiring that such reference should be made in the present case the Examiner did not exceed his duty; on the contrary, he would have been remiss in his duty had he failed to make such requirement. Purchasers of rights under patents granted are entitled to be notified, so far as possible, of any application or patent which subordinates the patent under which they obtain their rights. If an application is pending which, when it ripens into a patent, will subordinate the patent which they desire to purchase, or under which they are operating, they have the right to be notified of such application, in order that they may protect their rights.

The decision is affirmed.

EX PARTES GRUSON AND SCHUMANN.

Decided January 5, 1884.

1. OATH—SECTION 4892 REVISED STATUTES CONSTRUED.

Section 4892 Revised Statutes does not authorize an applicant who is a resident of a foreign country to make oath to his application before any officer other than those designated in said section. They are "any minister, *chargé d'affaires*, consul, or commercial agent holding commission under the Government of the United States, or any notary public of the foreign country in which the applicant may be."

2. SAME—AUTHORITY TO ADMINISTER OATHS DERIVED FROM UNITED STATES STATUTE ALONE.

Such designated officials in administering the oath act by virtue of the authority conferred by the statute of the United States, and not by virtue of any power or authority conferred by the foreign government.

3. SAME—OFFICER NOT AUTHORIZED.

An oath taken before a judge of the royal Prussian court is not sufficient.

APPEAL from Primary Examiner.

ARMOR-PLATED GUN-CARRIAGES.

Application of Hermann Gruson and Max Schumann, filed April 19, 1883.

Messrs. Knight Brothers for the applicants.

BUTTERWORTH, *Commissioner:*

The question raised on this appeal is as to the sufficiency of the oath accompanying the application. Applicants are residents of Germany, and took and subscribed the oath to their application before a judge of the royal Prussian court at Buckau. The Examiner rejected the application as not being in compliance with the requirements of the Revised Statutes, section 4892, which provides that the—

> * * * Oath may be made before any person within the United States authorized by law to administer oaths, or, when the applicant resides in a foreign country, before any minister, *chargé d'affaires*, consul, or commercial agent holding commission under the Government of the United States, or before any notary public of the foreign country in which the applicant may be.

The section just quoted is so clear and distinct that there is no necessity for resorting to rules of construction. That it is perfectly competent for Congress to designate the officers in this country or elsewhere before whom the oath shall be taken cannot be doubted. It has pleased Congress in the present instance to do precisely that thing. If the applicant resides in the United States, the oath may be administered by any officer authorized to administer an oath, the evidence of his authority being attested by the seal of his office, or a certificate from some competent authority declaratory of the fact. The statute does not say that when the applicant is a resident of some other country he may make and subscribe the oath before any officer authorized to administer an oath, but states with particularity before *what* officer the oath shall be taken; and those mentioned are ministers, *chargé d'affaires*, consuls, and commercial agents holding commissions under the Government of the United States, or any notary public of the foreign country in which the applicant may be. It is urged that this is merely directory, and that the oath may be administered by any officer in the foreign country who has authority under the laws of such country to administer oaths. The statute does not admit of any such construction.

It is further urged that "the German government does not permit consuls or other American officers to administer oaths to German subjects." This may be true, but if so, it could not change or modify the construction of a statute of the United States which is clear and explicit in its terms, even though such strict construction might greatly embarrass German subjects in the matter of procuring patents in the United States.

It is urged also that a notary in Germany is not authorized to administer an oath—that he acts merely as a conveyancer. That may be so, but whether it is or not the statute has designated notaries, American consuls, ministers, commercial agents, and *chargé d'affaires* as persons who may administer oaths to applicants for patents in this country. It has mentioned no others, either specifically or by implication. Such designated officials in administering the oath act by virtue of the authority conferred by the statute of the United States, and not by virtue of any power or authority conferred by the foreign government. It might, therefore, well be doubted whether the German government has by law forbidden citizens or residents of that empire from taking the oath required before the officials authorized by the law of the United States to administer the same.

It is also urged that the judge of the royal Prussian court performs, in part at least, many of the functions which appertain to a notary public in the United States. If counsel is correct in this, that fact could not change or modify my ruling in this case. If the German government for any reason declines to permit the officers mentioned in the statute of the United States to administer oaths to applicants who are citizens or residents of Germany, and thereby makes it difficult for them to comply with the requirements of our laws regulating applications for patents, such fact would offer no valid reason for a departure from the plain requirements of an act of Congress prescribing the mode of procedure in the matter of framing applications for patents by citizens or residents of foreign countries.

The provisions of our law are liberal. If, however, hardship results from an observance of them, as is claimed in this case, relief must be sought by a modification of the law, and not by disregarding it. I am of opinion, however, that it is very exceptional for a foreign applicant to hesitate in the matter of taking the required oath before some one of the officials designated. If, as suggested, the government of Germany forbids it, the remedy might very properly be sought in an appeal to that government to modify the law or regulation to the extent of doing away with such prohibition.

The Examiner's action is approved and affirmed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Oregon.

CHAPMAN *v.* FERRY *et al.*

Decided December 3, 1883.

1. PRINTED COPY OF TITLE OF BOOK, &c.

The "printed" copy of the title of a book or other article required by section 4956 of the Revised Statutes to be delivered or mailed to the Librarian of Congress, may be "printed" with a pen as well as type, with or without the aid of tracing-paper.

2. DEPOSIT OF COPIES OF WORK WITH LIBRARIAN.

The copies of a copyright work required by section 4959 of the Revised Statutes to be deposited with the Librarian of Congress within ten days after publication, may be so deposited after the printing of the work and before its formal publication.

3. COPYRIGHT OF MAP—INFRINGEMENT OF.

It is difficult to say in some cases what constitutes an infringement of the copyright of a map; but where the subsequent map appears to have been substantially copied from the prior one, without alteration or revision except in scale and color, there is clearly an infringement, which authorizes a court of equity to enjoin the sale of such infringing map, and to require the publisher to account for the profits arising from the sale thereof.

SUIT in equity for an injunction and an account.

Mr. H. Y. Thompson for the plaintiff.
Mr. Frederick V. Holman for the defendants.

DEADY, *J.:*

This suit is brought against the defendants to obtain an injunction and an account, because of an alleged infringement by them of the plaintiff's copyright of a "Map of the Cities of Portland, East Portland, and the Town of Albina," obtained by him in 1874. The suit was commenced on May 13, 1881. A demurrer to the original bill was sustained, on the ground that the title of the map could not be copyrighted, and because it did not appear that the plaintiff had performed the several acts necessary to obtain a copyright. (*Parkinson v. Laselle*, 3 Sawy. 330.) On March 18, 1882, an amended bill was filed, to which a demurrer was sustained, so far as it prayed for a discovery of the number of copies of the defendants' map that had been disposed of and were still on hand, and for a surrender of the latter and the plates on which they were printed. (8 Sawy., 191; S. C., 12 Fed. Rep., 693.)

It appears from the amended bill that at and before the commencement of this suit the plaintiff was the author and proprietor of a map of the cities and towns aforesaid, entitled as aforesaid, drawn upon a scale of about eight hundred feet to the inch, for which he duly obtained a copyright in the year 1874; that on May 10, 1881, the defendants published five hundred copies of a certain map with the same title as the plaintiff's, and then and thereafter sold three hundred copies of the same at five dollars a copy; and that in the preparation of said map the defendants copied the map of the plaintiff without alteration, except to enlarge the scale to five hundred feet to the inch, and change the colors of the lines of the land-claims upon which these towns are located, and thereby wrongfully appropriated the skill and labor of the plaintiff. On September 15, 1882, the defendants answered so much of the amended bill as was not included in the demurrer thereto, by which they deny any knowledge or information as to the plaintiff's alleged copyright, and admit the publication and sale of a map by them, as stated in the bill, but allege that their map includes many additions, improvements, and changes, not in the plaintiff's, and deny that in the preparation of their map they copied the whole of the plaintiff's map, but admit that they made use of said map for comparison, and, in small part, for compiling their map, and allege that by reason of the imperfections in the same, and the changes and additions to the towns aforesaid since the publication thereof, and prior to the publication of the defendants', the former had "become of little value and unsalable."

It satisfactorily appears that the plaintiff duly complied with the law in obtaining his copyright. The plaintiff testifies that he filed a tracing of the printed title of his map with the Librarian of Congress; but it is contended that this is not a "printed" copy of such title as is required by section 4956 of the Revised Statutes. The "copy" of such title furnished the plaintiff by said librarian in pursuance of section 4957 of the Revised Statutes does not indicate what was the character in this respect of the title deposited with him. It is described in the certificate of the librarian simply as "the title of a map." A tracing is a mechanical copy or fac-simile of an original, produced by following its lines, with a pen or pencil, through a transparent medium, called "tracing-paper." The map, together with the title in Roman letters, was engraved on stone and then printed, and a copy of this printed title thus made was filed with the librarian. This, I think, was a substantial compliance with the statute. A "printed" copy can only be required for convenience of reading as compared with ordinary script or writing. But a copy of the title which has the form and appearance of a printed one, whether made by an impression upon type or with a pen, with or without the aid of tracing-paper, is so far a printed copy. The result and not the means by which the printing is accomplished is the thing to be considered. As legible a copy of the title may be printed or produced with a pen as with type.

The defendants also object that it does not appear from the evidence that the plaintiff deposited two copies of his map in the mail, addressed to the librarian, within ten days *after* its publication, as provided in section 4959 of the Revised Statutes; but, as they contend, it appears such copies were deposited in the mail some time after the map was printed, but *before* it was published or offered for sale. It appears that the copies of the map were deposited in the library of Congress on January 23d—just one month after the copy of the title was. At that time the mail from here to Washington was from twelve to fourteen days in transit, so that it is quite certain that the copies were mailed here near about January 10, 1874. The map was then printed, of course, but how long before is not clear or material. Probably it had not then been formally published or offered for sale to the public. The plaintiff says in his testimony:

> I sent them [the maps] on before I offered any copies for sale.

The objection then comes to this, that it is not sufficient to mail the copies after printing and before formal publication, but that the same must be sent to the librarian after publication. The purpose of the statute is to secure a collection in the library of Congress of all the works copyrighted under the laws of the United States, and so two copies of each are required to be delivered or mailed to the librarian at an early period after publication—not less than ten days. But if the proprietor of the work will take the pains to send the copies on the very day of publication, I see no reason why he may not; and if a day or two, or ten, should intervene between the printing and formal publication of a work, what purpose of the statute is not as well served if the proprietor should be diligent enough to mail or deliver the copies before such publication? None that I can conceive of. The statute must have a reasonable construction in this respect, having in view the purpose for which it was made, and this is, that the copies cannot be delivered or mailed later than ten days after publication, but may be before.

From the evidence it appears that the defendants employed a civil engineer and draftsman to compile or prepare the original of their map, and that in so doing he used the map of the plaintiff and three other

older uncopyrighted maps, one of which was in manuscript, together with the public records and common observation, but no actual surveys. The city of Portland and its suburbs, which are the subject of these maps, having been improved and increased in population during the seven years that elapsed between their publication, that of the defendants contains some matter that is not found on the plaintiff's.

Questions of infringement of copyright are often very difficult to decide. The distinctions between the lawful and unlawful use of a prior publication are sometimes very fine and almost inappreciable. They have been called the "metaphysics of the law." (*Folsom* v. *Marsh*, 2 Story, 105.) A person who bestows his skill and time in the surveys, research, and observation necessary to the making of a correct map of any place or locality does not thereby prevent any other person from using the same means to accomplish the same end. The natural objects, public records, and surveys from which a map is made are open to the examination of any one; but it is clear that no person has a right to sit down and copy the map of another, and thereby defraud the latter of the profit of his labor and skill. (*Gray* v. *Russel*, 1 Story, 18; *Blunt* v. *Patten*, 2 Paine, 397; *Cary* v. *Longman*, 1 East, 358; High, Inj., sec. 647.) At the same time, it is not every use of a prior publication that is considered an unlawful infringement. *Bona fide* quotations from a book do not constitute such an infringement. But as absolute originality is not possible in the case of a map, a person may take material from prior publications, provided he bestows on it such skill and labor, in revision or otherwise, as to produce an original result. But the appropriations must not be denied, and the alterations must not be merely colorable, nor the result a servile imitation of the original. (Cop. Law Copyr., 181, 183; High, Inj., sec. 647.)

It is not very clear from the evidence what use was made of the plaintiff's map in the compilation of the defendants', unless it was substantially copied. It is admitted by the defendants, and their draftsman so testifies, that it was used for comparison and correction. But this may mean more or less. The defendants' map may have been so far compared with and corrected by the plaintiff's as to make the former not only like the latter, but practically a copy of it. So far as the defendants' map was corrected by the plaintiff's it was in effect a copy of it. Save the additions on the defendants' map, indicating the changes and improvements that had taken place since the publication of the plaintiff's map, there is no difference between them, except that the former is on a larger scale than the other, and has some lines printed in colors; and yet it is possible, although they are both so far alike, that one was not copied from the other, but only compiled from the same sources, but the probabilities are otherwise. There is a singular coincidence in the two maps that tends strongly to prove that one was copied from the other. On the plaintiff's map, block 106, in Caruthers' addition to Caruthers' addition, appears with a square piece out of the northwest corner, caused by a re-entering angle. This is the first time that said block appears in that form on any map. The plaintiff testifies that he entered it on his map in that form as the result of a survey made by himself that he has since demonstrated to be incorrect. The defendants must have copied it from the plaintiff's map, and the fact that they copied such a singular error, which appears on no other map, indicates strongly that they copied the plaintiff's map indiscriminately and generally.

Another coincidence is quite as convincing in the same direction. The plaintiff's map shows that South First street, in Caruthers' addition to Caruthers' addition, does not conform in line and width to the same street in Caruthers' addition to Portland, and it is the only one except the defendants' on which the fact appears; while from the testimony of the plaintiff it is shown they do conform on the county records, and that he ascertained the want of conformity from actual survey. Now, as the defendants' map is not made from actual surveys, but from other maps and public records, they must have copied this feature of their work from the plaintiff's; and if the plaintiff was mistaken, either as to the error in the form of block 106 or the conformity of South First street on the county records, the defendants might easily have shown it. But they have not attempted to do so, and the facts thereabout must be taken as stated by the witness. Add to this the admission made in the testimony of the defendants' draftsman to the effect that he got all he could out of the plaintiff's map, and "never thought of its being copyrighted," and the only reasonable inference from the premises is that in the compilation of the defendants' map they substantially copied the plaintiff's, and are therefore so far guilty of an infringement upon his copyright.

The plaintiff is entitled to a perpetual injunction against the defendants, as prayed for in his bill, and to an account of the profits realized by them on the sale of the infringing map, for which purpose the cause will be referred to the master.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISION OF SECRETARY OF THE INTERIOR.

DISCLAIMER UNDER RULE 42—SPECIFIC REFERENCES REQUIRED.

Rule 42 contemplates such specific reference as will clearly identify the particular application referred to, and this would seem to be best accomplished by stating the date of filing and the serial number of the application.

DEPARTMENT OF THE INTERIOR,
Washington, January 4, 1884.

SIR: I have considered the question involved in the appeal from the action of your predecessor in the case of John M. Finch, *ex parte*. It appears that Mr. Finch has filed two applications for patents for improvements in dust-collectors. In one the specific device is shown and described, but not claimed, and in the other the device is shown, described, and claimed. The drawings accompanying the applications are identical.

Rule 42 of the Rules of Practice is as follows:

When an applicant makes two or more applications relating to the same subject-matter of invention, all showing but only one claiming the same thing, those not claiming it must contain disclaimers thereof with references to the application claiming it.

The applicant filed a disclaimer in the words:

I do not in this case claim any invention except those specifically set forth in the claims hereof, preferring to claim any other patentable feature shown or described in another application, which I have filed as a division of this case.

This general reference to another application, &c., was not regarded by your Office as sufficient to meet the requirement of the rule, and the applicant was called upon to specify the particular application by stating the date it was filed and its serial number. From this requirement the appeal is taken.

I concur in the opinion of the Commissioner that the rule contemplates such specific reference as will clearly identify the particular application referred to, and this would seem to be best accomplished by stating the date of filing and the serial number of the application.

The decision of the Commissioner is affirmed. The papers belonging to the files of your Office are herewith returned.

Very respectfully,

H. M. TELLER,
Secretary.

The Commissioner of Patents.

COMMISSIONER'S DECISIONS.

EX PARTE FINCH.

Decided April 6, 1883.

DISCLAIMER UNDER RULE 42—SPECIFIC REFERENCES REQUIRED.

Rule 42 contemplates such specific reference as will clearly identify the particular application referred to, and this should be effected by stating the serial number and date of filing of the application.

DUST-COLLECTORS.

INTERLOCUTORY APPEAL.

Application of John M. Finch filed December 11, 1882.

Messrs. Doubleday & Bliss for the applicant.

MARBLE, *Commissioner:*

Applicant has filed two applications for patents for improvements in dust-collectors. The drawings accompanying the applications are identical. In one the specific device is shown and described but not claimed, and in the other the device is shown, described, and claimed. The Examiner requires the applicant, if he desires to take out his patent for the specific device, to make a reference to his application in which the device was shown and described but not claimed, the claim in the latter application being broader than in the former. This requirement was made under Rule 42 of the Rules of Practice, which reads as follows:

When an applicant makes two or more applications relating to the same subject-matter of invention, all showing but only one claiming the same thing, those not claiming it must contain disclaimers thereof, with references to the application claiming it.

Under this rule the applicant claims that it is sufficient for him to refer to another pending application, in which the device is shown but not claimed, without giving the date of its filing or serial number.

It will be observed that the rule above quoted requires that where two or more applications are filed by the same inventor, all showing the same subject-matter of invention, but claiming it in distinct parts, that the applications not claiming a particular part must contain disclaimers thereof, "with reference to *the* application claiming it." There is no way of specifying the particular application in which the invention is claimed except by stating in the other applications filed its date of filing or serial number. If such statement be given, any person interested in any particular patent which may issue, or, in case one application is passed to issue before the others, can ascertain by inquiry where such application is, and what it contains and claims. This, I think, is the object and purpose of the rule. In requiring that such reference should be made in the present case the Examiner did not exceed his duty; on the contrary, he would have been remiss in his duty had he failed to make such requirement. Purchasers of rights under patents granted are entitled to be notified, so far as possible, of any application or patent which subordinates the patent under which they obtain their rights. If an application is pending which, when it ripens into a patent, will subordinate the patent which they desire to purchase, or under which they are operating, they have the right to be notified of such application, in order that they may protect their rights.

The decision is affirmed.

EX PARTES GRUSON AND SCHUMANN.

Decided January 5, 1884.

1. OATH—SECTION 4892 REVISED STATUTES CONSTRUED.

Section 4892 Revised Statutes does not authorize an applicant who is a resident of a foreign country to make oath to his application before any officer other than those designated in said section. They are "any minister, *chargé d'affaires*, consul, or commercial agent holding commission under the Government of the United States, or any notary public of the foreign country in which the applicant may be."

2. SAME—AUTHORITY TO ADMINISTER OATHS DERIVED FROM UNITED STATES STATUTE ALONE.

Such designated officials in administering the oath act by virtue of the authority conferred by the statute of the United States, and not by virtue of any power or authority conferred by the foreign government.

3. SAME—OFFICER NOT AUTHORIZED.

An oath taken before a judge of the royal Prussian court is not sufficient.

APPEAL from Primary Examiner.

ARMOR-PLATED GUN-CARRIAGES.

Application of Hermann Gruson and Max Schumann, filed April 19, 1883.

Messrs. Knight Brothers for the applicants.

BUTTERWORTH, *Commissioner:*

The question raised on this appeal is as to the sufficiency of the oath accompanying the application. Applicants are residents of Germany, and took and subscribed the oath to their application before a judge of the royal Prussian court at Buckau. The Examiner rejected the application as not being in compliance with the requirements of the Revised Statutes, section 4892, which provides that the—

> * * * Oath may be made before any person within the United States authorized by law to administer oaths, or, when the applicant resides in a foreign country, before any minister, *chargé d'affaires*, consul, or commercial agent holding commission under the Government of the United States, or before any notary public of the foreign country in which the applicant may be.

The section just quoted is so clear and distinct that there is no necessity for resorting to rules of construction. That it is perfectly competent for Congress to designate the officers in this country or elsewhere before whom the oath shall be taken cannot be doubted. It has pleased Congress in the present instance to do precisely that thing. If the applicant resides in the United States, the oath may be administered by any officer authorized to administer an oath, the evidence of his authority being attested by the seal of his office, or a certificate from some competent authority declaratory of the fact. The statute does not say that when the applicant is a resident of some other country he may make and subscribe the oath before any officer authorized to administer an oath, but states with particularity before *what* officer the oath shall be taken; and those mentioned are ministers, *chargé d'affaires*, consuls, and commercial agents holding commissions under the Government of the United States, or any notary public of the foreign country in which the applicant may be. It is urged that this is merely directory, and that the oath may be administered by any officer in the foreign country who has authority under the laws of such country to administer oaths. The statute does not admit of any such construction.

It is further urged that "the German government does not permit consuls or other American officers to administer oaths to German subjects." This may be true, but if so, it could not change or modify the construction of a statute of the United States which is clear and explicit in its terms, even though such strict construction might greatly embarrass German subjects in the matter of procuring patents in the United States.

It is urged also that a notary in Germany is not authorized to administer an oath—that he acts merely as a conveyancer. That may be so, but whether it is or not the statute has designated notaries, American consuls, ministers, commercial agents, and *chargé d'affaires* as persons who may administer oaths to applicants for patents in this country. It has mentioned no others, either specifically or by implication. Such designated officials in administering the oath act by virtue of the authority conferred by the statute of the United States, and not by virtue of any power or authority conferred by the foreign government. It might, therefore, well be doubted whether the German government has by law forbidden citizens or residents of that empire from taking the oath required before the officials authorized by the law of the United States to administer the same.

It is also urged that the judge of the royal Prussian court performs, in part at least, many of the functions which appertain to a notary public in the United States. If counsel is correct in this, that fact could not change or modify my ruling in this case. If the German government for any reason declines to permit the officers mentioned in the statute of the United States to administer oaths to applicants who are citizens or residents of Germany, and thereby makes it difficult for them to comply with the requirements of our laws regulating applications for patents, such fact would offer no valid reason for a departure from the plain requirements of an act of Congress prescribing the mode of procedure in the matter of framing applications for patents by citizens or residents of foreign countries.

The provisions of our law are liberal. If, however, hardship results from an observance of them, as is claimed in this case, relief must be sought by a modification of the law, and not by disregarding it. I am of opinion, however, that it is very exceptional for a foreign applicant to hesitate in the matter of taking the required oath before some one of the officials designated. If, as suggested, the government of Germany forbids it, the remedy might very properly be sought in an appeal to that government to modify the law or regulation to the extent of doing away with such prohibition.

The Examiner's action is approved and affirmed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Oregon.

CHAPMAN *v.* FERRY *et al.*

Decided December 3, 1883.

1. PRINTED COPY OF TITLE OF BOOK, &c.

The "printed" copy of the title of a book or other article required by section 4956 of the Revised Statutes to be delivered or mailed to the Librarian of Congress, may be "printed" with a pen as well as type, with or without the aid of tracing-paper.

2. DEPOSIT OF COPIES OF WORK WITH LIBRARIAN.

The copies of a copyright work required by section 4959 of the Revised Statutes to be deposited with the Librarian of Congress within ten days after publication, may be so deposited after the printing of the work and before its formal publication.

3. COPYRIGHT OF MAP—INFRINGEMENT OF.

It is difficult to say in some cases what constitutes an infringement of the copyright of a map; but where the subsequent map appears to have been substantially copied from the prior one, without alteration or revision except in scale and color, there is clearly an infringement, which authorizes a court of equity to enjoin the sale of such infringing map, and to require the publisher to account for the profits arising from the sale thereof.

SUIT in equity for an injunction and an account.

Mr. H. Y. Thompson for the plaintiff.
Mr. Frederick V. Holman for the defendants.

DEADY, *J.:*

This suit is brought against the defendants to obtain an injunction and an account, because of an alleged infringement by them of the plaintiff's copyright of a "Map of the Cities of Portland, East Portland, and the Town of Albina," obtained by him in 1874. The suit was commenced on May 13, 1881. A demurrer to the original bill was sustained, on the ground that the title of the map could not be copyrighted, and because it did not appear that the plaintiff had performed the several acts necessary to obtain a copyright. (*Parkinson* v. *Laselle*, 3 Sawy. 330.) On March 18, 1882, an amended bill was filed, to which a demurrer was sustained, so far as it prayed for a discovery of the number of copies of the defendants' map that had been disposed of and were still on hand, and for a surrender of the latter and the plates on which they were printed. (8 Sawy., 191; S. C., 12 Fed. Rep., 693.)

It appears from the amended bill that at and before the commencement of this suit the plaintiff was the author and proprietor of a map of the cities and towns aforesaid, entitled as aforesaid, drawn upon a scale of about eight hundred feet to the inch, for which he duly obtained a copyright in the year 1874; that on May 10, 1881, the defendants published five hundred copies of a certain map with the same title as the plaintiff's, and then and thereafter sold three hundred copies of the same at five dollars a copy; and that in the preparation of said map the defendants copied the map of the plaintiff without alteration, except to enlarge the scale to five hundred feet to the inch, and change the colors of the lines of the land-claims upon which these towns are located, and thereby wrongfully appropriated the skill and labor of the plaintiff. On September 15, 1882, the defendants answered so much of the amended bill as was not included in the demurrer thereto, by which they deny any knowledge or information as to the plaintiff's alleged copyright, and admit the publication and sale of a map by them, as stated in the bill, but allege that their map includes many additions, improvements, and changes, not in the plaintiff's, and deny that in the preparation of their map they copied the whole of the plaintiff's map, but admit that they made use of said map for comparison, and, in small part, for compiling their map, and allege that by reason of the imperfections in the same, and the changes and additions to the towns aforesaid since the publication thereof, and prior to the publication of the defendants', the former had "become of little value and unsalable."

It satisfactorily appears that the plaintiff duly complied with the law in obtaining his copyright. The plaintiff testifies that he filed a tracing of the printed title of his map with the Librarian of Congress; but it is contended that this is not a "printed" copy of such title as is required by section 4956 of the Revised Statutes. The "copy" of such title furnished the plaintiff by said librarian in pursuance of section 4957 of the Revised Statutes does not indicate what was the character in this respect of the title deposited with him. It is described in the certificate of the librarian simply as "the title of a map." A tracing is a mechanical copy or fac-simile of an original, produced by following its lines, with a pen or pencil, through a transparent medium, called "tracing-paper." The map, together with the title in Roman letters, was engraved on stone and then printed, and a copy of this printed title thus made was filed with the librarian. This, I think, was a substantial compliance with the statute. A "printed" copy can only be required for convenience of reading as compared with ordinary script or writing. But a copy of the title which has the form and appearance of a printed one, whether made by an impression upon type or with a pen, with or without the aid of tracing-paper, is so far a printed copy. The result and not the means by which the printing is accomplished is the thing to be considered. As legible a copy of the title may be printed or produced with a pen as with type.

The defendants also object that it does not appear from the evidence that the plaintiff deposited two copies of his map in the mail, addressed to the librarian, within ten days *after* its publication, as provided in section 4959 of the Revised Statutes; but, as they contend, it appears such copies were deposited in the mail some time after the map was printed, but *before* it was published or offered for sale. It appears that the copies of the map were deposited in the library of Congress on January 23d—just one month after the copy of the title was. At that time the mail from here to Washington was from twelve to fourteen days in transit, so that it is quite certain that the copies were mailed here near about January 10, 1874. The map was then printed, of course, but how long before is not clear or material. Probably it had not then been formally published or offered for sale to the public. The plaintiff says in his testimony:

> I sent them [the maps] on before I offered any copies for sale.

The objection then comes to this, that it is not sufficient to mail the copies after printing and before formal publication, but that the same must be sent to the librarian after publication. The purpose of the statute is to secure a collection in the library of Congress of all the works copyrighted under the laws of the United States, and so two copies of each are required to be delivered or mailed to the librarian at an early period after publication—not less than ten days. But if the proprietor of the work will take the pains to send the copies on the very day of publication, I see no reason why he may not; and if a day or two, or ten, should intervene between the printing and formal publication of a work, what purpose of the statute is not as well served if the proprietor should be diligent enough to mail or deliver the copies before such publication? None that I can conceive of. The statute must have a reasonable construction in this respect, having in view the purpose for which it was made, and this is, that the copies cannot be delivered or mailed later than ten days after publication, but may be before.

From the evidence it appears that the defendants employed a civil engineer and draftsman to compile or prepare the original of their map, and that in so doing he used the map of the plaintiff and three other

older uncopyrighted maps, one of which was in manuscript, together with the public records and common observation, but no actual surveys. The city of Portland and its suburbs, which are the subject of these maps, having been improved and increased in population during the seven years that elapsed between their publication, that of the defendants contains some matter that is not found on the plaintiff's.

Questions of infringement of copyright are often very difficult to decide. The distinctions between the lawful and unlawful use of a prior publication are sometimes very fine and almost inappreciable. They have been called the "metaphysics of the law." (*Folsom* v. *Marsh*, 2 Story, 105.) A person who bestows his skill and time in the surveys, research, and observation necessary to the making of a correct map of any place or locality does not thereby provent any other person from using the same means to accomplish the same end. The natural objects, public records, and surveys from which a map is made are open to the examination of any one; but it is clear that no person has a right to sit down and copy the map of another, and thereby defraud the latter of the profit of his labor and skill. (*Gray* v. *Russel*, 1 Story, 18; *Blunt* v. *Patten*, 2 Paine, 397; *Cary* v. *Longman*, 1 East, 358; High, Inj., sec. 647.) At the same time, it is not every use of a prior publication that is considered an unlawful infringement. *Bona fide* quotations from a book do not constitute such an infringement. But as absolute originality is not possible in the case of a map, a person may take material from prior publications, provided he bestows on it such skill and labor, in revision or otherwise, as to produce an original result. But the appropriations must not be denied, and the alterations must not be merely colorable, nor the result a servile imitation of the original. (Cop. Law Copyr., 181, 183; High, Inj., sec. 647.)

It is not very clear from the evidence what use was made of the plaintiff's map in the compilation of the defendants', unless it was substantially copied. It is admitted by the defendants, and their draftsman so testifies, that it was used for comparison and correction. But this may mean more or less. The defendants' map may have been so far compared with and corrected by the plaintiff's as to make the former not only like the latter, but practically a copy of it. So far as the defendants' map was corrected by the plaintiff's it was in effect a copy of it. Save the additions on the defendants' map, indicating the changes and improvements that had taken place since the publication of the plaintiff's map, there is no difference between them, except that the former is on a larger scale than the other, and has some lines printed in colors; and yet it is possible, although they are both so far alike, that one was not copied from the other, but only compiled from the same sources, but the probabilities are otherwise. There is a singular coincidence in the two maps that tends strongly to prove that one was copied from the other. On the plaintiff's map, block 106, in Carnthers' addition to Caruthers' addition, appears with a square piece out of the northwest corner, caused by a re-entering angle. This is the first time that said block appears in that form on any map. The plaintiff testifies that he entered it on his map in that form as the result of a survey made by himself that he has since demonstrated to be incorrect. The defendants must have copied it from the plaintiff's map, and the fact that they copied such a singular error, which appears on no other map, indicates strongly that they copied the plaintiff's map indiscriminately and generally.

Another coincidence is quite as convincing in the same direction. The plaintiff's map shows that South First street, in Carnthers' addition to Carnthers' addition, does not conform in line and width to the same street in Carnthers' addition to Portland, and it is the only one except the defendants' on which the fact appears; while from the testimony of the plaintiff it is shown they do conform on the county records, and that he ascertained the want of conformity from actual survey. Now, as the defendants' map is not made from actual surveys, but from other maps and public records, they must have copied this feature of their work from the plaintiff's; and if the plaintiff was mistaken, either as to the error in the form of block 106 or the conformity of South First street on the county records, the defendants might easily have shown it. But they have not attempted to do so, and the facts thereabout must be taken as stated by the witness. Add to this the admission made in the testimony of the defendants' draftsman to the effect that he got all he could ont of the plaintiff's map, and "never thought of its being copyrighted," and the only reasonable inference from the premises is that in the compilation of the defendants' map they substantially copied the plaintiff's, and are therefore so far guilty of an infringement upon his copyright.

The plaintiff is entitled to a perpetual injunction against the defendants, as prayed for in his bill, and to an accounnt of the profits realized by them on the sale of the infringing map, for which purpose the cause will be referred to the master.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
Washington, January 15, 1884.

SIR: I am directed by the Secretary to inform you that the order of this Department, dated November 14, 1883, by which Walter H. Wills and Norma W. Wills, (W. H. Wills & Co.,) of this city, were disbarred from practice before the Department and its bureaus, has this day been rescinded.

Very respectfully,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of January 22, 1884.

Patents	309	No. 292,151 to No. 292,459, inclusive.
Designs	13	No. 14,551 to No. 14,563, inclusive.
Trade-marks	21	No. 10,858 to No. 10,878, inclusive.
Labels	15	No. 3,838 to No. 3,852, inclusive.
Reissue of patents	1	No. 10,438.
Total issue	359	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany		
Austria			Hawaiian Islands	1	
Barbadoes			Ireland	1	
Belgium	1		Mexico		
Bermuda			New Zealand		
Brazil			Russia		
Canada	2		Scotland		5
Chili			Spain		2
Colombia, U. S. of			Sweden		
Cuba			Switzerland		
Denmark					
Ecuador			Total to citizens of foreign countries	20	7
England	12				
France	3				

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	1	
Arizona Territory	1		Nevada		
Arkansas	1		New Hampshire		
California	7		New Jersey	8	1
Colorado	1		New Mexico Territ'y		
Connecticut	14	1	New York	58	18
Dakota Territory			North Carolina	3	
Delaware			Ohio	22	3
District of Columbia	4		Oregon	1	
Florida			Pennsylvania	34	1
Georgia	4		Rhode Island	3	
Idaho Territory			South Carolina	1	
Illinois	33		Tennessee	1	
Indiana	8		Texas	2	
Indian Territory			Utah Territory	1	
Iowa	8		Vermont	1	
Kansas	5	1	Virginia	2	
Kentucky	1		Washington Territ'y		
Louisiana	1		West Virginia		
Maine	4		Wisconsin	9	
Maryland	4	1	Wyoming Territory		
Massachusetts	31		United States Army		
Michigan	18	1	United States Navy		
Minnesota	3	1			
Mississippi			Total to citizens of the United States	302	29
Missouri	7	1			
Montana Territory					

DESIGNS.

14,551 to 14,554, inclusive.—CARPET.—*Albert Beaumont*, Philadelphia, Pa. Applications filed November 21, 1883. Term of patents 3½ years.

14,555.—STOVE.—*James Dwyer*, Detroit, Mich., assignor to *The Peninsular Stove Company*, same place. Application filed October 1, 1883. Term of patent 7 years.

14,556 and 14,557.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed November 30, 1883. Term of patents 3½ years.

14,558.—SPOKE-SOCKET.—*George Minchin*, Shakespeare, Ontario, Canada. Application filed November 3, 1883. Term of patent 14 years.

14,559.—LADY'S POLONAISE.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed November 19, 1884. Term of patent 3½ years.

14,560.—FIRE-ESCAPE CLAMP.—*Edward H. Reynolds*, Cadillac, Mich., assignor to himself and *William Cassler*, same place. Application filed May 5, 1883. Term of patent 14 years.

14,561.—LADY'S WRAP.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed November 19,.1883. Term of patent 3½ years.

14,562.—LADY'S WALKING-SKIRT.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed November 19, 1883. Term of patent 3½ years.

14,563.—BURIAL-CASKET.—*Levi K. Smedes*, Mount Vernon, assignor to *Taylor & Co.* New York, N. Y. Application filed November 8, 1883. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

10,858.—COMPOUND OIL OF GAULTHERIA.—*Elizabeth H. Bell*, Philadelphia, Pa. Application filed November 23, 1883.

"The representation of a stalk of gaultheria or winter-green."

10,859.—BOTTLED MALT LIQUORS.—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed December 29, 1883.

"A crest representing a sitting animal upon a wreath above a monogram."

10,860.—LINEN THREAD.—*Finlayson, Bousfield & Co.*, Johnstone, county of Renfrew, Scotland. Application filed December 19, 1883.

"The representation of a stag on a circular red ground."

10,861.—LINEN THREAD.—*Finlayson, Bousfield & Co.*, Johnstone, county of Renfrew, Scotland. Application filed December 19, 1883.

"The representation of the Saint Andrews cross."

10,862.—LINEN THREAD.—*Finlayson, Bousfield & Co.*, Johnstone, county of Renfrew, Scotland. Application filed December 19, 1883.

"The representation of a shield."

10,863.—LINEN THREAD.—*Finlayson, Bousfield & Co.*, Johnstone, county of Renfrew, Scotland. Application filed December 19, 1883.

"A representation of a stag, which is preferably placed standing, with a hill in the background."

10,864.—SUMAC AND OTHER LEAVES, TREE-BARKS, AND EXTRACTS THEREOF.—*Rothe & Lips*, New York, N. Y. Application filed December 26, 1883.

"The letters and characters 'R. & L.' and the representation of an anchor."

10,865.—FLUID PREPARATION FOR USE EITHER INTERNALLY AS A MEDICINE OR EXTERNALLY AS A LINIMENT.—*The Charles A. Vogeler Company*, Baltimore, Md. Application filed December 22, 1883.

"The representation of an aged man with a long beard, and clothed in a loose flowing gown, with sandals on his feet and a hood on his head, and holding in his right hand a bottle, at which he seems to be gazing, his left arm extended, and the hand grasping a staff. He appears to be sitting on the ground, his back partly resting on the trunk of a tree, his left knee drawn up, and his right foot extended."

10,866.—CERTAIN PROPRIETARY REMEDIES AND COMPOUNDS.—*Ephraim S. Wells*, Jersey City, N. J. Application filed December 1, 1883.

"The words or term 'ROUGH ON.'"

10,867.—LAGER-BEER.—*Williamsburgh Brewing Company, (Limited,)* Brooklyn, N. Y. Application filed December 19, 1883.

"The representation of a red ball upon a black ground."

10,868.—SHERRY-WINE.—*Ysasi & Co.*, Jerez de la Frontera, Spain. Application filed December 26, 1883.

"The word 'YSASI'"

10,869.—SHERRY-WINE.—*Ysasi & Co.*, Jerez de la Frontera, Spain. Application filed December 26, 1883.

"The letters 'Y. L.'"

10,870.—CONDUCTING-WIRES FOR ELECTRICAL PURPOSES.—*The Ansonia Brass and Copper Company*, Ansonia, Conn. Application filed December 29, 1883.

"The word 'ACME.'"

10,871.—CARPETS, RUGS, OIL-CLOTHS, AND MATTINGS.—*Bates, Reed & Cooley*, New York, N. Y. Application filed December 29, 1883.

"The representation of a horseshoe."

10,872.—LINEN THREAD.—*Finlayson, Bousfield & Co.*, Johnstone, county of Renfrew, Scotland. Application filed December 19, 1883.

"The representation of a stag and tartan."

10,873.—BISCUIT, WAFERS, AND CRACKERS.—*Holmes & Coutts*, New York, N. Y. Application filed December 26, 1883.

"The representation of the statue of Liberty."

10,874.—CERTAIN PROPRIETARY MEDICINES.—*Astley C. Jennings*, New York, N. Y. Application filed December 27, 1883.

"The word 'ROYALINE.'"

10,875.—CERTAIN PROPRIETARY MEDICINES.—*Astley C. Jennings*, New York, N. Y. Application filed December 27, 1883.

"In the center of a circle is the figure of a crown, below which, in the foreground, is a body of water between two bluffs having trees growing upon their tops. In the background is seen the sun rising from behind low hills. The middle and upper parts of the circle are filled with rays of light radiating from the sun."

10,876.—VELVETEENS.—*Emil S. Levi*, New York, N. Y. Application filed December 28, 1883.

"The word 'CRITERION.'"

10,877.—BITTERS.—*William C. Oesting*, New York, N. Y. Application filed December 26, 1883.

"The arbitrarily-selected word symbol 'GERMANIA.'"

10,878.—SHEEP-DIP.—*Joseph O. Richardson*, St. Louis, Mo. Application filed December 27, 1883.

"The letters, or word, or word-symbol 'NICOTOL.'"

LABELS.

3,838.—Title: "FLINT PEBBLES."—*Johan Robert Haing*, New York, N. Y. Application filed December 27, 1883.

3,839.—Title: "BURKE'S LIGHT SPARKLING PALE ALE."—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed December 29, 1883.

3,840.—Title: "EXTRA FOREIGN STOUT."—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed December 29, 1883.

3,841.—Title: "ALLSOPP'S INDIA PALE ALE."—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed December 29, 1883.

3,842.—Title: "NONPAREIL OLD TOM GIN."—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed December 31, 1883.

3,843.—Title: "BURKE'S FINE OLD IRISH WHISKY."—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed December 31, 1883.

3,844.—Title: "GARNKIRK FINEST SCOTCH MALT."—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed December 31, 1883.

3,845.—Title: "BURKE'S FINEST OLD JAMAICA RUM."—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed December 31, 1883.

3,846.—Title: "DR. J. W. CHILES' LIGHTNING LINIMENT."—*John W. Chiles*, Dayton, Ohio. Application filed December 28, 1883.

3,847.—Title: "DR. J. W. CHILES' WONDERFUL SPASMODIC COLIC AND WATER CURE."—*John W. Chiles*, Dayton, Ohio. Application filed December 28, 1883.

3,848.—Title: "DR. GOODWIN'S FACIEI-LOTIO (FACE LOTION.)"—*Goodwin & Thurston*, Minneapolis, Minn. Application filed December 29, 1883.

3,849.—Title: "GRINNELL'S UNIVERSAL BALSAM."—*Marcus Grinnell*, Mount Pleasant, Mich. Application filed December 27, 1883.

3,850.—Title: "GENERAL CROOK" (FOR CIGARS.)—*Albert F. Rothfuss*, Fort Scott, Kans. Application filed December 31, 1883.

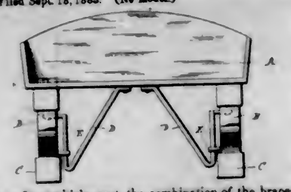
3,851.—Title: "GREAT VEGETABLE PAIN CONQUEROR."—*Charles A. Thomas*, Rushville, Ohio. Application filed December 27, 1883.

3,852.—Title: "THE SHAKER" (FOR A CURATIVE SIRUP.)—*A. J. White*, New York, N. Y. Application filed December 28, 1883.

PATENTS

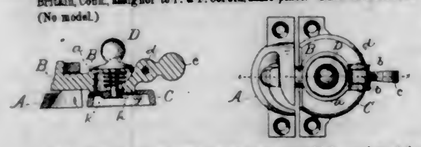
GRANTED JAN. 22, 1884.

292,151. VEHICLE-SEAT SPRING. WILLIS R. D. ALLEN, Hardman, Oreg. Filed Sept. 18, 1883. (No model.)



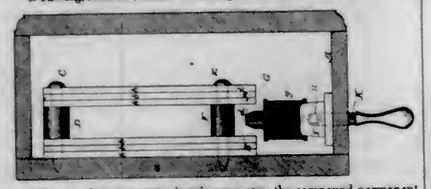
Claim.—In a vehicle-seat, the combination of the braces secured thereto at one end, extending obliquely and downwardly, and then vertically, with the springs having clips which receive said braces, and having their upper portions rigidly secured thereto, substantially as described.

292,152. WINDOW AND DOOR BUTTON. AUGUST AHLENS, New Britain, Conn., assignor to P. & F. Corbin, same place. Filed Oct. 15, 1883. (No model.)



Claim.—The herein-described sash-fastener, which consists of the sweep B, having chambered hub *a*, ears *b b*, the latch-lever *c*, pivoted at *d*, and provided with the lug *h* and forked rear end, the base-plate C, having mortises *e g g*, the pivotal post D, and the spring *k*, substantially as described, and for the purpose specified.

292,153. MAGNETO-ELECTRIC GENERATOR. WILLIAM J. BOWEN, Norwalk, Ohio, assignor to himself, T. T. Kockaler, Cincinnati, Ohio, and Z. C. Thwing, Marshall, Mich. Filed Aug. 20, 1883. (No model.)



Claim.—In a magneto-electric generator, the compound permanent magnet B, consisting, essentially, of steel bars *b*, collar D, of magnetic material, collar F, of non-magnetic material, and screws C and E, entering the back *a* of case A, as and for the purpose herein shown and described.

292,154. STEAM-BOILER. GEORGE B. BRAYTON, Boston, Mass. Filed Dec. 29, 1882. (No model.)



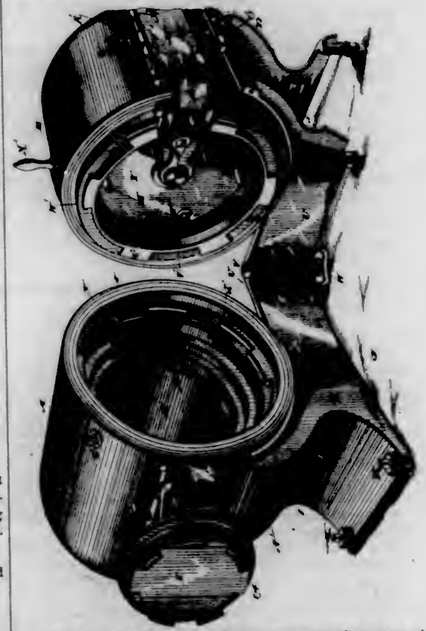
Claim.—1. The combination, within a suitable casing, of a central fire-pot, an annular falling flue, and a boiler-coil overlying the fire-pot surrounding the same, and having its base located in said falling flue, substantially as described.

2. The combination, within a suitable casing, of a central fire-pot and a boiler-coil surrounding said fire-pot, and composed of a series of connected flat or helical coils connected alternately at their inner and outer convolutions, substantially as described.

3. The combination, within a suitable casing, of a central fire-pot, an annular falling flue, and a boiler-coil composed of a series of connected flat or helical coils surrounding said fire-pot, and a flat coil above said series of coils and overhanging the fire-pot, substantially as described.

4. The combination, with the coil-boiler, of the central fire-pot or furnace, a falling flue, a main stack communicating with said flue, a branch flue connecting the furnace at its top with the main stack, and a damper in said branch flue, substantially as described.

292,155. SAFE. THOMAS M. BRIDTWALL, Kansas City, Mo. Filed Jan. 19, 1883. (No model.)



Claim.—1. A safe consisting of two or more parts whose open ends are constructed similarly in cross-section, and provided with interlocking means, one of said parts being adapted to partially rotate, whereby said ends are fitted together and securely locked, substantially as set forth.

2. A safe consisting of two parts, each having a chamber to receive valuables, said parts being constructed to closely fit together and be securely interlocked by a partial rotation of one of said parts, substantially as set forth.

3. The combination, with a safe consisting of two parts, each having a chamber to receive valuables, of segments arranged within and without the respective parts, and adapted to be interlocked by the partial rotation of one of said parts to lock the parts together, substantially as set forth.

4. A safe consisting of two parts mounted upon independent standards, one of which is stationary and adjustable, while the other standard is adapted to be moved when the parts of the safe are joined, substantially as set forth.

5. The combination, in a safe, of two parts adapted to be interlocked with independent hinged standards, one of said standards having rollers upon which it moves, and each carrying the respective parts, substantially as set forth.

6. The combination, with a safe consisting of two parts, of independent standards connected by a hinge whose pintle projects into a slot formed in a supporting-bed, substantially as set forth.

7. The combination, with a safe consisting of two parts, closed at one end and open at the other, adapted to have their open ends secured together, and respectively provided with a chamber to receive valuables, of doors located within the said parts and arranged to close their respective chambers, substantially as set forth.

8. In a safe, the combination, with a removable door, of a hinged carrier supported upon the safe and adapted to be attached to and detached from the door, substantially as described.

9. The combination, with a safe consisting of two parts, the ends of which are adapted to be secured together, each part having a chamber to receive valuables, of circular doors for said chambers, and carriers supported upon the safe and adapted to be attached to the doors when the safe is open and to be detached from them when the same is closed, substantially as set forth.

10. The combination, with a safe consisting of two parts, the open ends of which are adapted to be secured together, each part having a chamber to receive valuables, of circular doors for said chambers, carriers supported upon the outside of each part, adapted to be attached to the doors when the safe is open and to be detached from them when the same is closed, and means for adjusting the carriers, substantially as set forth.

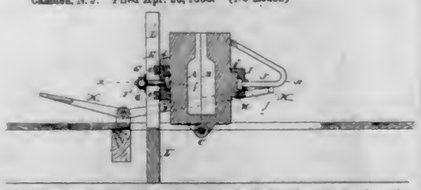
11. A safe-body composed of a series of rings, each made in a single piece, and provided with interlocking contiguous surfaces, and bolts for securing the rings together, substantially as set forth.

12. A safe composed, essentially, of a series of united rings, the outer edges of the opposite faces of which are corrugated, the inner edges of the rings being provided with transverse holes, which receive the bolts by which the rings are united, substantially as set forth.

13. The combination, with a safe-body consisting of a series of rings, of a disk or disks secured to said body to form one end of the safe, and a suitable door, substantially as set forth.

14. The combination, with a series of united rings, the opposite faces of which are corrugated and interlocked, the inner periphery of the endmost ring being provided with a dovetail, of a disk having the edge of the inner face arranged to interlock with the corrugated outer surface of the endmost ring, and two disks secured to the inner face of the disk aforesaid, their peripheries being mortised to receive the dovetail of the endmost ring, substantially as set forth.

292,156. GLASS-MOLD. ANDREW J. CHRISTIE and JAMES J. CHRISTIE, Camden, N. J. Filed Apr. 20, 1883. (No model.)



Claim.—1. A mold-body, in combination with a block adapted to carry a replaceable handle, the said block being detachably connected to said mold-body, substantially as and for the purpose specified.

2. A mold-body provided with a dovetailed lug or its equivalent, in combination with a block having a dovetailed slot and adapted to fit upon said lug, and a bolt or handle supported and carried by said block, substantially as and for the purpose specified.

3. A mold-body and a supporting-standard, in combination with a dovetailed connection between said body and standard, substantially as and for the purpose specified.

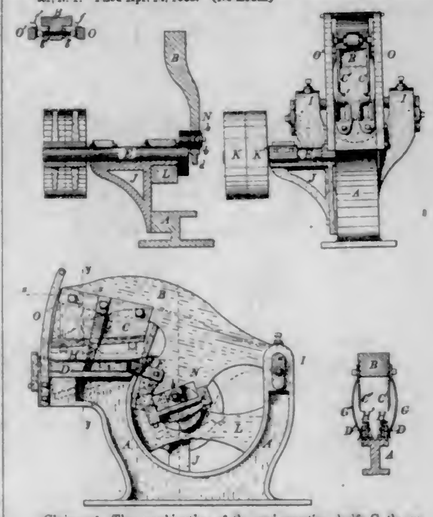
4. A mold-body having a dovetailed groove and a supporting-standard also having a dovetailed groove, in combination with a dovetailed connection between said body and standard, which consists of a double dovetailed block, substantially as and for the purpose specified.

5. A mold-body having a dovetailed groove and a supporting-standard, in combination with a dovetailed block and means to secure said block to the standard, substantially as and for the purpose specified.

6. The combination of a mold-body, a supporting-block, and a standard, the said block being secured to the body by means of a dovetailed connection, substantially as and for the purpose specified.

7. The combination of a mold-body, a supporting-block, a standard, and detachable handles, the said block being secured to the body by means of a dovetailed connection, substantially as and for the purpose specified.

292,157. MACHINE FOR LAPPING HOOPS. JOHN CONNELL, Rochester, N. Y. Filed Apr. 14, 1883. (No model.)



Claim.—1. The combination of the reciprocating knife C, the recessed shear-block D, provided with the stop *l*, and the guide F, and suitable connecting mechanism adapted to support the shear-block and to impart reciprocating motion to the knife, substantially as described.

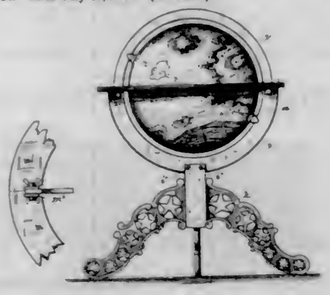
2. The combination of the reciprocating knife C, the recessed shear-block D, provided with stop *l*, and the guard G, and suitable connecting mechanism adapted to support the shear-block and to impart reciprocating motion to the knife, substantially as described.

3. The combination of the reciprocating knife C, the recessed shear-block D, provided with stop *l*, guide F, and guard G, and suitable connecting mechanism adapted to support the shear-block and to impart reciprocating motion to the knife, substantially as described.

4. The combination of the reciprocating knife C, the recessed shear-block D, provided with stop *l*, guide F, and the stripper H, and suitable connecting mechanism adapted to support the shear-block and to impart reciprocating motion to the knife, substantially as described.

5. In combination with a single reciprocating knife-head, the knives C C′, recessed shear-blocks D D′, provided with stops *l l*′, and the guides F F′, adapted and arranged to produce the proper bevel on each end of the hoop, and suitable connecting mechanism adapted to support the shear-block and to impart reciprocating motion to the knife, substantially as and for the purposes described.

292,158. GLOBE AND GLOBE-SUPPORT. JOHN DAVIS, Allegheny, Pa. Filed July 19, 1883. (No model.)



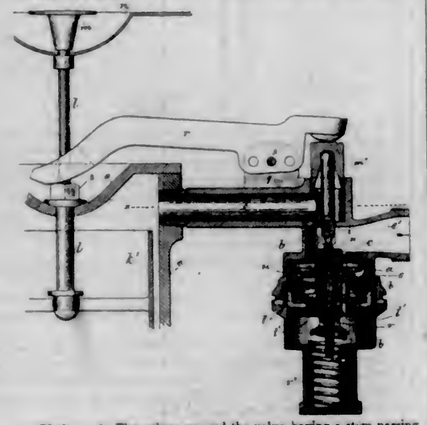
Claim.—1. A globe consisting of two hemispherical shells, each shell constructed of an inner layer of stretched textile fabric, a middle stiffening-layer of leather or similar suitable material, and an outer layer of stretched textile fabric, all of said layers cemented together, substantially as and for the purposes described.

2. The globe-axle *a*, provided upon one extremity with a shoulder, *c*, spring *d*, and fingers *f g*, and upon the other extremity with fingers *f*′, substantially as described, whereby the inclination of the axis of the globe may be changed, as set forth.

3. The combination, with the meridian-plate *i*, of the semicircular horizon-plates *m*, provided with recesses *m*′ and flanges *m*², substantially as described, whereby the said horizon-plates are secured to said meridian-plate, as set forth.

4. As an article of manufacture, the within-described globe and globe-support, consisting of the globe provided with axle-bearings, the axle *a*, provided upon one extremity with spring *d*, guide *e*, fixed finger *f*, and movable finger *g*, and upon the other end with fingers *f*′, the horizon-plates *m*, having recesses *m*′ and flanges *m*², meridian-plate *i*, and base *k*, all arranged and operated in the manner and for the purposes set forth.

292,159. WATER-CLOSET VALVE. JOHN DEMAREST, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed Mar. 21, 1883. (No model.)



Claim.—1. The valve-case and the valve having a stem passing through a septum in the case, a tubular arm, *g*, above the septum, extending to the closet, and a deflecting-thimble upon the upper end of the valve-stem, substantially as set forth.

2. In a water-closet valve, the combination, with the valve-case, of the arm *g*, the lever above said arm for actuating the valve, flanges, and holes in the flanges and lever, and a movable pin by which the position of the fulcrum and the movement of the valve may be varied, substantially as set forth.

3. In combination, with the stand-pipe in a water-closet and the poll thereof, a valve and valve-case, a tubular arm between the stand-pipe and valve-case, and a lever pivoted upon the tubular arm and actuated by the poll, substantially as set forth.

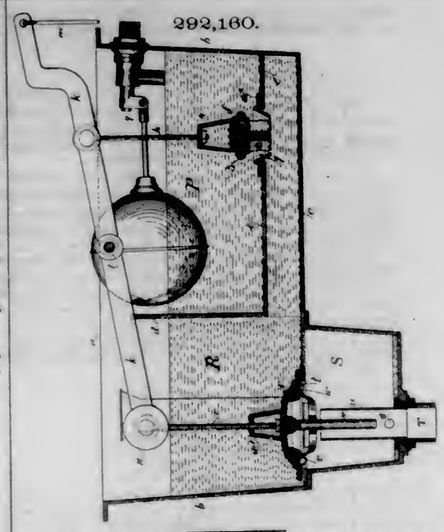
4. In a water-closet valve, a case having three branches, one for the inlet-water, another for the pipe leading to the closet-basin, and a third for leakage from the hole through which the valve-stem passes, substantially as set forth.

292,160. CISTERN FOR WATER-CLOSETS. JOHN DEMAREST, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed Apr. 28, 1883. (No model.)

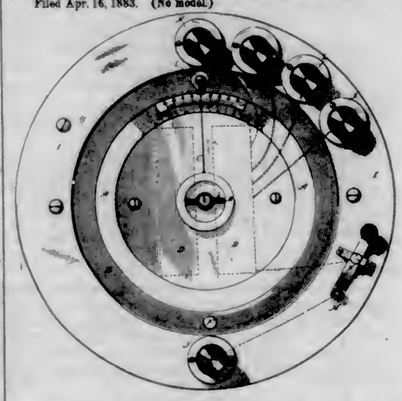
Claim.—1. The lever *k*, having studs cast upon the sides thereof, in combination with the lifter-rods *h* and *x*, terminating at their upper end as eyes, and the screws retaining the eyes of the lifter-rods upon the studs, substantially as specified.

2. The lever *k*, having studs cast upon the sides thereof, in combination with the lifter-rods *h* and *x*, terminating at their upper ends as eyes, the screws retaining the eyes upon the studs, the conical valve-seats, and the valves having rubber rings around them, and each provided with a bail through which the rod passes freely, and provided with a nut or head whereby the valves may be lifted, but are free to rest tightly within the conical seats when dropped, substantially as specified.

292,160.



292,161. GALVANOMETER. ASAHEL K. EATON, Brooklyn, N. Y. Filed Apr. 16, 1883. (No model.)



Claim.—1. A galvanometer consisting of a graduated scale, in combination with a coil or coils, a magnetic needle, and a magnetized ring producing a field symmetrical with respect to the center of motion of the needle, as set forth.

2. A galvanometer consisting of a graduated scale, in combination with a coil or coils, a magnetized ring, and a magnetic needle mounted in the center of said ring, substantially as herein set forth.

3. The combination, in a galvanometer, of a graduated scale, an annular magnet or magnetized ring, and an annular magnetic needle mounted in the center of said ring, substantially as described.

4. The combination, in a galvanometer, with an annular magnetic needle and a coil or coils, substantially as described, of an annular magnet or magnetized ring movable around the needle, as above set forth.

5. The combination, in a galvanometer, of an annular magnetic needle, a coil or coils with convolutions parallel to a line passing through the poles of said needle and the zero-point of the scale, and a removable annular magnet or magnetized ring, as and for the purpose set forth.

6. The combination, with a fixed circular scale, a movable annular magnet or magnetized ring, and a vernier attached thereto, of an annular magnetic needle, a pointer carried thereby, and a coil or coils, all as set forth.

7. The combination, with a magnetized annular galvanometer-needle, of a cross-bar of non-magnetic material, a pivotal support, and a pointer, all as described.

292,162. PENCIL-SHARPENER HOLDER. WALTER KITTREDGE FOSTER, Stoneham, Mass. Filed Nov. 1, 1883. (No model.)

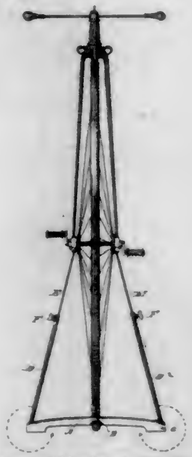


Claim.—1. The pencil-sharpener holder substantially as described, composed of the handle and of the two yokes extending therefrom, consisting of two wires bowed or arched at their middles, and bent toward and lapped on each other, essentially as represented.

2. The combination of the handle, provided, as described, with the notch for receiving the handle of a pencil-sharpener, with the two yokes extending from the handle, and having the said notch between them, consisting of two wires bowed or arched at their middles, and bent toward and lapped on each other, substantially as represented.

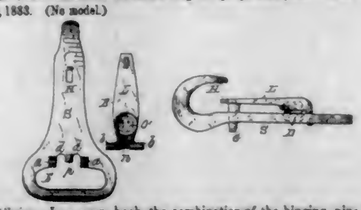
3. The combination of the handle with the two yokes, substantially as described, extending from it, and consisting of two wires bowed or arched at their middles, and bent toward and lapped on each other, and provided with the recesses or beads to receive the base-flange of a pencil-sharpener, all being essentially as represented.

292,163. BICYCLE-SUPPORT. JOHN W. FRY, New York, N. Y. Filed Nov. 13, 1883. (No model.)



Claim.—The improved bicycle-support, constructed of a base-piece transversely notched or curved in the middle to embrace or span the felly of the wheel, and provided with extension-rods pivoted to each end of the base-piece to swing inward into line parallel therewith, and outward to converge toward each other above the base-piece, and engage the hub of the wheel, substantially in the manner and for the purpose herein set forth.

292,164. SNAP-HOOK. JOHN GIBBONS, West Troy, N. Y., assignor to the Union Hardware Manufacturing Company, same place. Filed Oct. 9, 1883. (No model.)

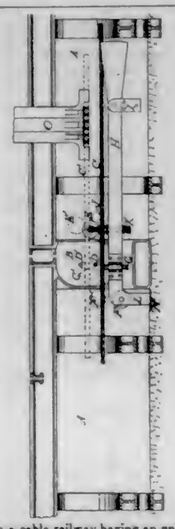


Claim.—In a snap-hook, the combination of the hinging-pins *b b* and the intermediate recess, *N*, on the hinging end of the latch, the bearings *a a*, and the intermediate pin, *p*, on the hook-shank, constructed to connect and operate as and for the purposes herein set forth.

292,165. CABLE-RAILWAY PROPULSION. WILLIAM WALLACE HANSCOM, San Francisco, Cal. Filed Oct. 3, 1883. (No model.)

Brief.—Cables, where they cross each other, are prevented from contacting when the lower one is elevated through an approaching grip by means of a tilting bar which carries a pulley upon which runs the upper cable.

292,165.



Claim.—1. In a cable-railway having an underground slotted-tube mechanism, substantially as described, whereby the upper of two or more crossing cables may be raised and lowered and operated by the under cable or cables, so that a proper distance may be maintained between the upper and under of the crossing cables, for the purposes set forth.

2. The swinging bar H, in combination with the sheaves E and G and two or more crossing cables of a cable-railway, substantially as described and set forth.

3. The swinging bar H and swinging sheave E, in combination with the under sheave, F, and the cable C, substantially as described.

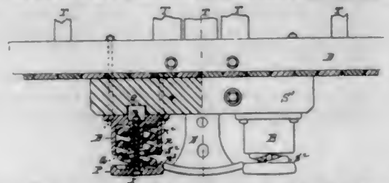
4. The swinging bar H, in combination with the sheaves E F G and the crossing cables C and D, substantially as and for the purpose described.

5. The combination, in a cable-railway where cables cross each other, of a grip for attaching the under cable to the moving car or train, two or more cables crossing each other, and suitable mechanism adapted and arranged to be operated by the under cable for raising the upper cable or cables, for the purposes set forth.

6. The swinging sheave E, in combination with a grip and crossing cables of a cable-railway, substantially as described.

7. In a cable-railway where two or more cables cross, a stop, substantially as described, for limiting the movement of the mechanism which raises and lowers the upper of the crossing cables, for the purposes set forth.

292,166. SPRING-BUFFER. DAVID HOTT, West Albany, assignor of one-half to Charles R. Hicks, Troy, N. Y. Filed June 4, 1883. (No model.)

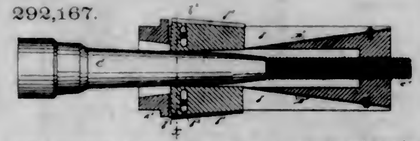


Claim.—In a rail-car buffer, the combination, with the buffer-sill formed with a chamber, *c*, as shown, of the spring-buffers arranged as stated, and consisting of the spring-box B, having its rear face chambered, as shown, and formed with the guideway *a* projected outwardly and adapted to admit the passage of a bolt, the buffer-plate P, the bolt I, and interposed spring or springs, the whole arranged and combined to operate substantially as described.

292,167. EXPANDING MANDREL. ALBERT E. LITTLE, Des Plaines, assignor of one-half to George H. Eten, Chicago, Ill. Filed May 7, 1883. (No model.)

Claim.—1. In an expanding wrench or mandrel, a shell or hollow cylinder formed with longitudinal openings or slots in its sides, and provided with two or more dogs having serrated faces, and formed with one or more guide-slots and pins passing through the same to secure them

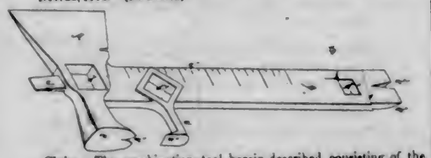
292,167.



from displacement, in combination with an expander formed tapering, and provided with a screw-shank, and means for the engagement of a wrench or spanner, substantially as shown and described.

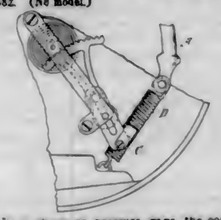
2. In an expanding wrench or mandrel, the hollow cylinder A, open at one end and closed at the other, where it is provided with a screw-threaded hole, *a*, the longitudinal slots *b*, and a series of dogs, B, placed in these slots and secured by pins b^2, passing through slots b^3 in the dogs, in combination with the expander C, formed tapering for a suitable distance, and provided with a screw-shank, *c'*, and means for engagement with a wrench, all constructed and arranged to operate substantially as and for the purpose set forth.

292,168. COMBINATION-TOOL. ALBERT E. LITTLE, Chicago, Ill. Filed Nov. 23, 1883. (No model.)



Claim.—The combination-tool herein described, consisting of the hatchet A, hammer *a*, nail-claws *a' f*, screw-driver *c*, nut-wrenches *b b'* b^2, scale or measure *c'*, hoop-lifter *e e'*, box-opener *d*, and tack-puller *d'*, all constructed, combined, and arranged for operation substantially as shown and described.

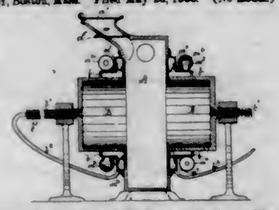
292,169. PRESSURE-GAGE. WILLIAM H. MACGREGOR, East Braintree, assignor to the Ashcroft Manufacturing Company, Boston, Mass. Filed Dec. 13, 1882. (No model.)



Claim.—1. In a steam or pressure gage, the combination of a Bourdon tube with a short-range preponderating direct-action spring attached to the free end of the said tube, and adapted to resist by its tension the movement of the free end thereof, and thereby weighing the pressure therein, all substantially as described.

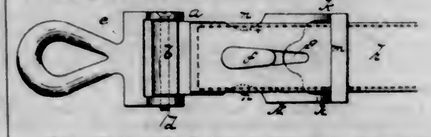
2. In a steam or pressure gage, the combination of a Bourdon tube, a short-range direct-acting spring attached to the free end of said tube, of sufficient strength to counteract its tendency to set under pressure, all substantially as described.

292,170. ATTRITION-MILL. GUSTAVUS R. MAYMADIER and WILLIAM H. CHILEY, Boston, Mass. Filed May 23, 1883. (No model.)



Claim.—In an attrition-mill, the combination, with a perforated receptacle or hopper and the revoluble recessed heads communicating with the receptacle, of an air-chamber communicating with the interior of the receptacle through the perforations and the joints around the heads, and means for forcing air into the air-chamber, substantially as and for the purpose set forth.

292,171. TRACE-COCKEYE ATTACHMENT. GEORGE H. MCDOLE, Jackson, Mich., assignor of one-half to Howard L. Merriman, same place. Filed Aug. 31, 1883. (No model.)



Claim.—The herein-described trace-cockeye attachment, consisting of the plate A, having the loop *m* at one end and the solid projection *b* at its opposite end, and transversely perforated to receive the bolt *d* of the cockeye, said plate provided with the tongue *f*, centrally arranged thereon to receive the eye in the trace A, and having in its sides notches *n n*, in combination with a cockeye, all arranged and operating substantially as shown and described.

292,172. FRICTION-CLUTCH. DANIEL MILLS, Philadelphia, Pa., assignor to the United States Automatic Buttonhole Sewing Machine Company, of New Jersey. Filed June 11, 1883. (No model.)



Claim.—1. The combination of a shaft, a flanged wheel, and a split ring adapted thereto, with a lever to press the ring into frictional contact with the flange of the wheel, and a yoke, D', carrying said ring, and guided on the shaft or a portion of the wheel, substantially as described.

2. The combination of a shaft, a flanged wheel, and a split ring, with an operating-lever, and an inclosing-cap, C, cut away at one point for the passage of a portion of said lever.

3. The combination of a shaft, flanged wheel, and split ring, with an operating-lever, an inclosing-cap adapted to bear on said lever, and a retracting-spring acting on said cap, substantially as specified.

292,173. BELT-FASTENER. JOHN B. NORTON, Philadelphia, Pa. Filed June 5, 1883. (No model.)

Claim.—In a belt-fastening device, the flexible plate B, in combination with two independent plates, C C', provided with teeth *a a*, all constructed and arranged substantially as described.

292,174. CHILD'S CARRIAGE. GEO. R. PEARL, Lynn, Mass. Filed Feb. 12, 1883. (No model.)



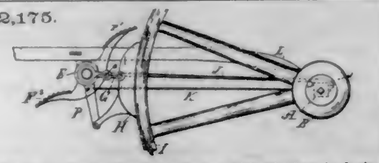
Claim.—1. The combination, with the wheels and their supporting-axle, of non-rotating locking-collars mounted and adapted to slide on said axle, a spring or springs for holding them in engagement with said wheels, and a sliding and rotating unlocking-shaft connected to the propeller-handle on the one hand and to said locking-collars on the other hand, and arranged and adapted to be operated from the propeller-handle to move said collars against the stress of their controlling spring or springs, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the propeller handle and axle and its wheels, of the bearings, one on the propeller-handle and one on the axle, the rotatable unlocking-shaft carried thereby, and arranged so as to be capable of not only rotating but also sliding in its lower bearing, and spring-controlled wheel-locking mechanism connected to and adapted to be operated by said shaft, substantially as hereinbefore set forth.

3. The combination, with the propeller-handle, the axle, and the wheels, of the pivoted unlocking lever-handle, the unlocking-shaft capable of sliding movement, and arranged and adapted to be rotated by said lever-handle, and automatic spring-controlled wheel-locking mechanism connected to and operated by said rotary shaft, substantially in the manner set forth, so that a movement of the lever-handle in either direction from its central position will cause the release of the wheels from the control of the locking mechanism.

292,175. WAGON-LOCK. GEO. R. PEARL, Lynn, Mass. Filed June 9, 1883. (No model.)

292,175.



Claim.—1. The combination, with the vehicle-wheels and a brake or lock therefor, of a movable double step actuated to move in one direction by the foot of the occupant on leaving the vehicle, and in the other direction by the foot of the occupant on getting into the vehicle, and mechanism connecting said double step with the brake or lock, whereby the latter is caused to engage or release the wheels, according to the direction in which the double step is moved, substantially as and for the purposes hereinbefore set forth.

2. The vibratory double step F' F² and rocking shaft or sleeve on which the same is mounted, in combination with the vehicle-wheels, the brake or lock, and intermediate mechanism connecting said brake or lock with the double step, the combination being and acting substantially as hereinbefore set forth.

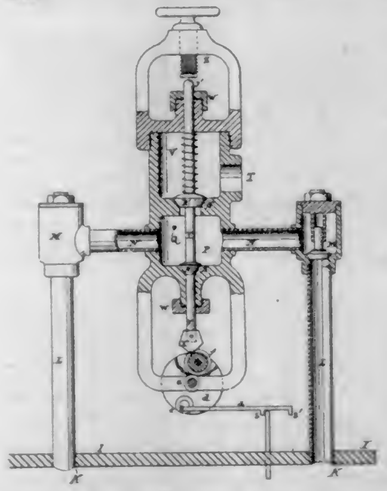
3. The vibratory double step, its rocking sleeve, and rod extending through said sleeve and centrally fixed thereto, in combination with the vehicle-wheels, the brake-shoes, and the system of toggles connecting the same with said step, under the arrangement and for joint operation substantially as hereinbefore set forth.

292,176. SAW FASTENING AND FRAME. HENRY L. PRATT, Brooklyn, N. Y. Filed Nov. 9, 1883. (Model.)



Claim.—The bent pin C, headed at one end and pointed at the other, for holding a saw in its frame, in combination with the bolt D and d'', or their equivalents, substantially as and for the purposes specified.

292,177. VAPOR AND ATMOSPHERIC VALVE FOR STEAM-PUMPS. HENRY S. PUSHLEY, Brooklyn, N. Y. Filed Mar. 21, 1883. (No model.)

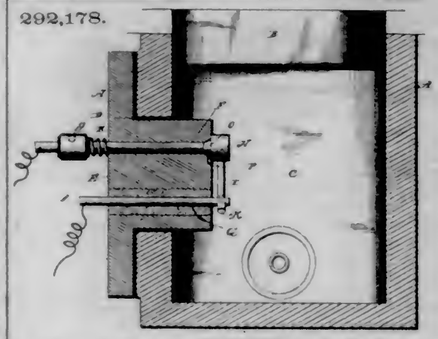


Claim.—1. In combination with a vapor pipe or chamber of a steam-pump, substantially as described, the air-chamber P, balance-valve with its seats, and the lifting mechanism X, *f*, *d*, and *a*, operated in connection with the plunger C, substantially as and for the purposes described.

2. The combination, in a steam-pump, of a reciprocating plunger, C, the induction-spaces A, valves F, clearance-spaces D, eduction-valves G, diaphragm I, discharge-space E, vapor-passage L N, check-valve M, balance-valve with its seats S S', and the tripping mechanism *a b d f*, substantially as and for the purposes described.

292,178. EXPLOSIVE-GAS ENGINE. ALEXANDER KIRK RIDER, Walden, N. Y. Filed June 7, 1883. (No model.)

292,178.



Claim.—1. In an explosive-gas engine, the combination, with a bonnet inserted through the cylinder, of an electric circuit-breaker supported by said bonnet, the terminals being located within the motive cylinder, substantially as set forth.

2. In an explosive-gas engine, terminals located within the motive cylinder, one being movable, a spring-arm connected with the movable terminal, and means for laying the said arm under tension and allowing it to suddenly recoil to move the movable terminal and interrupt the circuit, substantially as set forth.

3. In an explosive-gas engine, an igniting-bonnet, arbors extending through said bonnet, terminals respectively secured to the inner ends of said arbors, and means to move one arbor and separate the terminals, substantially as set forth.

4. In an explosive-gas engine, an igniting-bonnet, arbors extending through said bonnet, terminals secured to the inner ends of the arbors, and means to rotate one of the arbors on its longitudinal axis for the purpose of separating the terminals, substantially as set forth.

5. In an explosive-gas engine, an igniting-bonnet, arbors extending through the bonnet, means to insulate one of the arbors therein, terminals attached to the inner ends of the arbors, and means to move one of the arbors to separate the terminals, substantially as set forth.

6. In an explosive-gas engine, an igniting-bonnet, arbors extending through the same, means to connect the outer ends of the arbors with a generator of electricity, terminals associated with the inner ends of the arbors, and devices to move one arbor or both to separate the terminals, substantially as set forth.

7. In an explosive-gas engine, an igniting-bonnet, arbors extending through the same, terminals associated with the inner ends of the arbors, which are provided, one or both, with valve-face bearings fitting in suitable recesses located in the inner face of the bonnet, substantially as set forth.

8. In an explosive-gas engine, an igniting-bonnet, arbors extending through the same, terminals associated with the inner ends of the arbors, which are provided, one or both, with valve-face bearings fitting in recesses located on the inner face of the bonnet, and means to maintain the said bearings in the recesses, substantially as set forth.

9. In an explosive-gas engine, an igniting-bonnet, arbors extending through the same, terminals associated with the inner ends of the arbors, one of which is arranged to be rotated on its longitudinal axis, a vibratory arm having one end rigidly secured to the movable arbor, and means for laying the arm under tension and suddenly releasing it, substantially as set forth.

10. In an explosive-gas engine, an igniting-bonnet, arbors extending through the same, terminals associated with the inner ends of the arbors, one of which is movable, a vibratory arm secured to the movable arbor, a momentum-block attached to the outer end of the arm, and means for laying the arm under tension and suddenly releasing it, substantially as set forth.

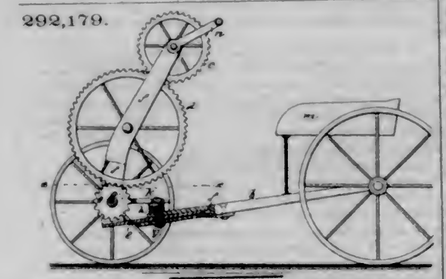
11. In an explosive-gas engine, an igniting-bonnet, arbors extending through the same, terminals associated with the inner ends of the arbors, one of which is movable, a vibratory arm secured to the movable arbor, and means for laying the arm under tension and suddenly releasing it, and a spring to absorb the vibrations of the arm after its recoil, substantially as set forth.

292,179. VELOCIPEDE. CHRISTIAN F. RILEY, Philadelphia, Pa. Filed June 15, 1883. (Model.)

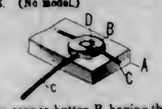
Claim.—1. The combination, with the reach *b* and the axle *a*, of the fifth-wheel *e*, having uprights *f* for the support of the driving-gear, and being arranged in the slot *f'* of the reach *b*, and pivoted to the end of the reach at *g*, substantially as described.

2. The combination of the arms *h*, foot-levers *j*, connecting-rods *k*, and collars *l* with the reach *b*, fifth-wheel *e*, axle *a*, and the driving-gears for applying the power to the axle, substantially as described.

292,179.



292,180. ELECTRICAL CONNECTOR. STEPHEN RYDER, North Attleborough, Mass., assignor of one-half to Joseph Lewis Blaine, same place. Filed Nov. 2, 1883. (No model.)



Claim.—1. The copper button B, having the peripheral rim *b*, with openings for the wires and screw D in combination therewith, for moving it in a downward direction in such manner as to clamp the wires, as described.

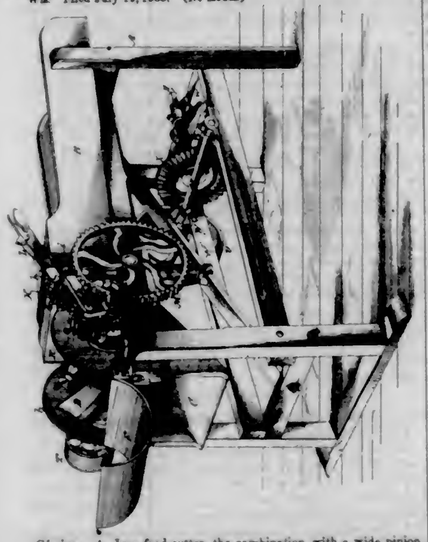
2. The connector described, having the copper button with flange *b*, and rim *b'*, having openings and teeth, in combination with a base-block and securing-screw, as described.

292,181. PROCESS OF MAKING RELIEF PRINTING PLATES OR BLOCKS. PROCTOR R. SUTTON and GEORGE BOYLE, New York, N. Y. Filed Mar. 19, 1883. (No specimens.)

Claim.—1. The sensitive plate composed of gelatine, albumen, glycerine, resin, and bichromate of ammonia, substantially as set forth.

2. The method herein specified of hardening relief gelatine plates, consisting in treating such gelatine plates successively to baths of solutions of bichromate of ammonia, nitrate of silver, sulphate of iron, and ammonium hydrosulphite, substantially as set forth.

292,182. FEED-CUTTER. CLARENCE CHRISTIAN SMALLEY, Manitowoc, Wis. Filed July 19, 1883. (No model.)



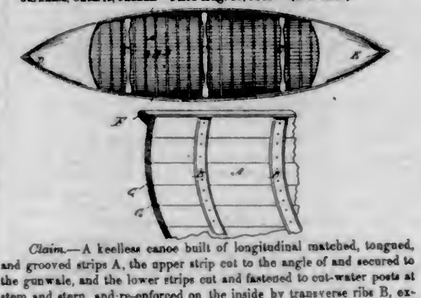
Claim.—1. In a feed-cutter, the combination, with a wide pinion adapted to be rotated upon a fixed stud, and a spur-wheel secured to the shaft of the lower feed-roller, of a removable and reversible double pinion mounted upon a stud, said stud being twice the length of the hub of the double pinion, and having a removable collar thereon, and also having removably connected to its outer end a suitable brace to retain the double pinion and collar in position upon the shaft, substantially as and for the purpose set forth.

2. In a feed-cutter, a rotary shaft, carrying the cutter-knives and a pinion, and having loosely mounted thereon a supporting-brace and a wide pinion adapted to revolve upon a stud attached to said brace and one of the side plates of the machine, in combination with a removable and reversible double pinion mounted upon a stud projecting from a hand-lever, said stud having a bearing-surface twice the length of the double pinion, and provided with a removable collar adapted to slip over the stud to hold said pinion in a reversed position upon either end thereof, for the purpose specified.

3. In a feed-cutter, a notched quadrant, a pivoted hand-lever, and means for holding it in an adjusted position, in combination with a removable and reversible double pinion supported upon a stud projecting from the side of the lever, said stud being twice the length of the hub of the double pinion, and having thereon a removable collar, and connected at its outer end by a suitable brace to a similar stud, upon which is adapted to revolve a wide pinion, substantially as and for the purpose set forth.

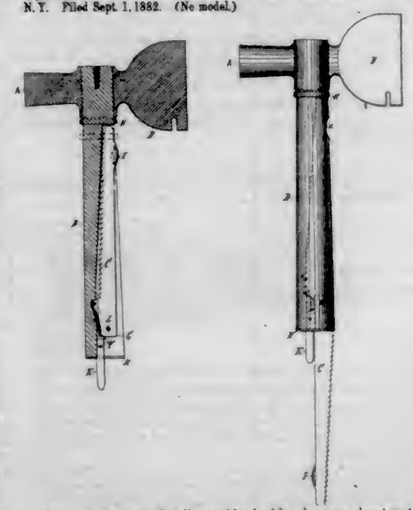
4. In a feed-cutter, an upright throat-plate, substantially of the form shown, having at its lower edge a longitudinal support, and cast with upright flanges arranged in pairs at each end thereof, in combination with a cutting-plate having elongated slots, and clamping-bolts passing through the same and through the longitudinal support, and upright wedges or tapering keys located between the flanges of each pair as a means for adjusting and holding the cutter-plate in the position desired, substantially as and for the purpose described.

292,183. CONSTRUCTION OF CANOES. JOHN S. STEPHENSON, Ashburnham, Ontario, Canada. Filed Aug. 13, 1883. (No model.)



Claim.—A keelless canoe built of longitudinal matched, tongued, and grooved strips A, the upper strip cut to the angle of and secured to the gunwale, and the lower strips cut and fastened to cut-water posts at stem and stern, and re-enforced on the inside by transverse ribs B, extending from gunwale to gunwale, substantially as set forth.

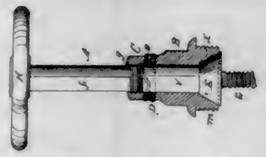
292,184. COMBINATION-TOOL. WILLIAM G. THOMPSON, Brooklyn, N. Y. Filed Sept. 1, 1882. (No model.)



Claim.—A hammer-handle combined with a hammer-head and a saw-blade, said saw-blade being pivoted to the handle and made to swing

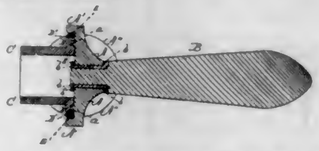
into the same when not in use in such a manner as to then bring the free end of the saw-blade nearest to the hammer-head, a sliding ring being provided for confining said saw-blade in such position, substantially as set forth.

292,185. STEAM-VALVE. DAVID H. THORPE, Somerville, assignor to himself, and John P. Howard, Boston, Mass. Filed June 21, 1883. (No model.)



Claim.—The combination, in a valve, of a neck, B, provided with a valve-seat, *x*, and screw-thread, *m*, a stem, A, passing through said neck and provided at its lower end with a valve, E, and above said neck with a short screw-thread, *g*, the said stem being smaller in diameter above than below said short screw-thread, an adjusting-nut adapted to fit said short screw-thread, and a spring interposed between said nut and the top of said neck, substantially as described.

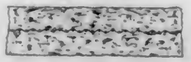
292,186. CARRIAGE-WRENCH. DAVID TRUE, Salisbury, Mass. Filed July 23, 1883. (No model.)



Claim.—1. In a wrench, the combination, with the bar A, or portion adapted to be rotated by the user, provided with the flange A', of the socket or portion applied to the nut, said socket being provided with the back or base D, which is provided with the groove D', and the elastic ring E, resting in said groove and compressed against the inner surface of said flange, substantially as and for the purpose set forth.

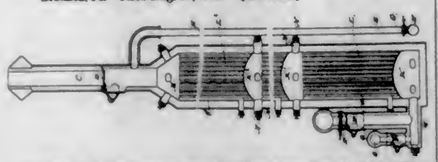
2. In a wrench, the combination of the following elements, viz: the socket or portion adapted to be applied to the nut, the bar or portion adapted to rotate the socket, and an intermediate elastic substance arranged and applied to hold the said socket and bar together by its own elasticity and friction, substantially as and for the purpose hereinbefore set forth.

292,187. COTTON-BATTING. CHARLES G. TYLER, New York, N. Y. Filed Apr. 23, 1883. (No model.)



Claim.—The cotton-batting composed of two sheets of carded cotton and an intermediate open woven fabric, united by adhesive material, substantially as set forth.

292,188. REGENERATIVE HOT-BLAST STOVE. PETER L. WEIMER, Lebanon, Pa. Filed Aug. 27, 1883. (No model.)



Claim.—1. In a regenerative hot-blast stove, two or more regenerative chambers arranged vertically one above the other, and a combustion-chamber at the lower end of each regenerative chamber, in combination with an air-inlet pipe communicating with the upper regenerator, and a hot-air-exit pipe connecting with the lower regenerator, substantially as set forth.

2. In a regenerative hot-blast stove, two or more regenerative chambers arranged vertically one above the other, and a combustion-chamber at the lower end of each regenerative chamber, in combination with an air-inlet pipe communicating with the upper portion of the upper regenerator, and a hot-air-exit pipe and gas-supply pipe communicating with the combustion-chamber of the lower regenerator, substantially as set forth.

3. In a regenerative hot-blast stove, two or more regenerative chambers arranged vertically one above the other, and a combustion-chamber at the lower end of each regenerative chamber, in combination with an air-inlet pipe communicating with the upper regenerative chamber, a hot-air-exit pipe and gas-supply pipe communicating with the combustion-chamber of the lower regenerator, and air-valves for supplying air to the combustion-chambers, substantially as set forth.

4. In a regenerative hot-blast stove, two or more regenerative chambers arranged vertically one above the other, and a combustion-chamber at the lower end of each regenerative chamber, in combination with an air-inlet pipe communicating with the upper regenerative chamber, the hot-air-exit pipe and supply-pipe communicating with the combustion-chamber of the lower regenerator, and valves for closing the hot-air and gas pipes, and for opening and closing the stove at a point above the air-inlet pipe, substantially as set forth.

5. In a regenerative hot-blast stove, the combination, with two or more regenerative chambers arranged vertically one above the other, a combustion-chamber at the lower end of each regenerative chamber, and a stack located over the upper regenerative chamber, of an air-inlet pipe communicating with the stack, and a valve located in the stack at a point above said air-inlet pipe, substantially as set forth.

6. In a regenerative hot-blast stove, the combination, with two or more regenerative chambers arranged vertically one over the other, of combustion-chambers at the lower end of each regenerative chamber, said combustion-chambers gradually decreasing in size from the bottom upward, substantially as set forth.

7. The combination, with a casing and a series of combustion-chambers and regenerators situated in the same vertical plane, of air-flues U', passing upwardly through the regenerators, for the purpose of heating the air admitted through these flues before it reaches the combustion-chamber.

8. In a regenerative hot-blast stove, a regenerator formed from brick of Greek-cross shape, substantially as set forth.

9. In a regenerative hot-blast stove, a regenerator formed of alternate layers composed of Greek-cross brick and straight brick with beveled ends, the brick of said alternate layers being arranged to break joints with each other.

10. In a regenerator hot-blast stove, a regenerator formed of alternate courses of the Greek-cross bricks I and the straight blocks or bricks J, the said bricks being provided with grooves or gutters on one surface, and corresponding projections on the opposite surface, substantially as set forth.

11. In a regenerative hot-blast stove, the combustion-chamber formed by projecting each successive course of brick inwardly until they meet in the center, forming a dome-shaped roof, substantially as set forth.

12. The combination, with a metallic casing, adapted to be lined with fire-brick and provided with a recess or space, and a hollow valve-seat situated within said casing, of a hollow valve pivoted within said casing, the spindles of the said valve being hollow and projecting beyond said casing, and water supply and exhaust pipes communicating with the said valve and seat, substantially as set forth.

13. The combination, with the casing Q, provided with the recess T', the hollow valve-seat R, and the pinions T, secured to a shaft, the latter being journaled in arms secured to the casing, of the hollow valve, the segment rack-bars, and water supply and waste pipes, substantially as set forth.

14. In a regenerative hot-blast stove, the combination, with a casing lined with fire-brick and containing two or more regenerative chambers arranged vertically one above the other and provided with a stack, and a water-cooled valve located within the stack, of an air-inlet pipe communicating with the upper regenerator, a gas-inlet pipe and hot-air-exit pipe communicating with the lower regenerator, and water-cooled valves situated in the hot-air and gas pipes, substantially as set forth.

15. The combination, with the casing, the series of regenerators and combustion-chambers and the valve D, of the pipe E, valve G, and pipes P and O, substantially as set forth.

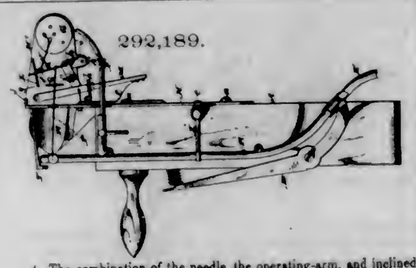
292,189. PAINT-DISTRIBUTER. JOHN P. WHIPPLE, Milwaukee, Wis. Filed Nov. 20, 1883. (Model.)

Claim.—1. The combination of the wind-wheel, the needle-operating arm provided with the eye, the pitman connected to the eye of the operating-arm at one end, and provided at the other end with an eye, and a pin with an enlarged end for securing the pitman through its eye to the wind-wheel, substantially as set forth.

2. The combination of the wind-wheel, the tapering needle provided with an eye at one end, the operating-arm passed through the eye of the needle, and the pitman for connecting the needle-arm with the wind-wheel, substantially as and for the purpose set forth.

3. The combination of the wind-wheel, the needle-operating arm provided with the eye, and the pitman connected with the wind-wheel and joined to the eye of the operating-arm, substantially as described.

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4. The combination of the needle, the operating-arm, and inclined rest for the said arm, substantially as described.

5. The combination of the needle-operating arm, and the needle having an eye and connected with the operating-arm thereby, substantially as described.

6. The combination of the needle-operating arm, the spring-actuated lever, and means for connecting the said lever and arm, substantially as described.

7. The combination of the needle-operating arm, the spring-actuated lever, and the link-connection between the said arm and lever, substantially as described.

8. The combination of the needle-operating arm, the spring-actuated lever, means for connecting said lever and arm, and the guide-rod for the lever, substantially as described.

9. The combination of the band-piece, the air-jet tube and pipe for supplying air through said tube to the needle, an adjustable plate carrying the needle, and the lever passing down from the upper part of the band-piece and connected with the plate carrying the needle, so as to adjust the same, substantially as described.

10. The combination of the pigment-receptacle, the tapering needle, the pipe for supplying an air-jet to the needle, and means for projecting and guiding the needle in a straight line, substantially as and for the purpose set forth.

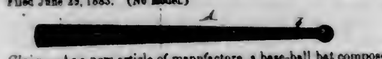
11. The combination of the pigment-receptacle, the bow-needle, a support for holding the pigment-carrying portion of said needle from contact with the pigment-receptacle, a pipe supplying an air-jet to the needle, and means for projecting the needle, substantially as described.

12. The combination of the wind-wheel, the needle-operating arm, the pitman connecting the said arm and wind-wheel, the needle having an eye-connection with said operating-arm, an inclined rest for said arm, and the lever for varying the stroke and throw of the needle, substantially as described.

13. The combination of the wind-wheel, the needle-operating arm, the pitman-connection between said arm and wheel, the needle connected to said arm, and the support for the needle extending beyond the pipe for supplying an air-jet to the needle, substantially as described.

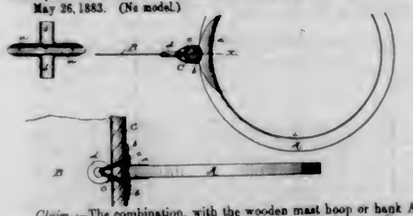
14. In a paint-distributer, the bow-needle having its shank flattened at an angle to the bow, substantially as described.

292,190. BASE-BALL BAT. WILLIAM WILLIAMS, Huntingdon, Pa. Filed June 29, 1883. (No model.)



Claim.—As a new article of manufacture, a base-ball bat composed wholly or in part of pulp molded and condensed, substantially as described.

292,191. MAST-HOOP. JOHN H. WYGANT, Hackensack, N. J. Filed May 26, 1883. (No model.)

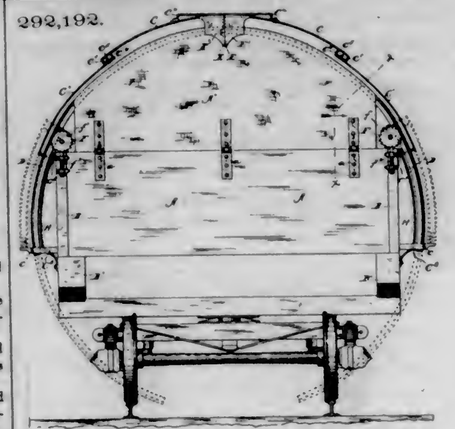


Claim.—The combination, with the wooden mast hoop or hank A, of the plate *a*, permanently secured to the inside of said hoop in position to cover its splice, and provided with arms *b*, by which the hoop may be lashed to the leech-rope, all substantially as described.

292,192. RAILWAY-CAR. RICHARD H. WYMAN, Evanston, Ill. Filed Nov. 23, 1883. (No model.)

Claim.—1. A movable cover for railway freight or coal cars, consisting of the plates C C C' C', having segmental racks D D attached

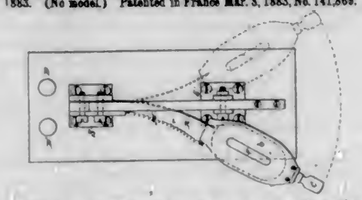
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thereto, shafts F, pinions *f*, ratchets *f'*, guide-bars H, eyebolts C⁶, and brackets C⁸, whereby the car may be wholly uncovered while loading and unloading, substantially as and for the purpose set forth.

2. A movable sectional cover for railway freight or coal cars, consisting of the plates C C C' C', having segmental racks D D attached thereto, shafts F, pinions *f*, ratchets *f'*, guide-bars H, eyebolts C⁶, brackets C⁸, and plates for aprons E, substantially as and for the purpose set forth.

292,193. APPARATUS FOR TRANSMITTING ELECTRIC SIGNALS. BRUNO ARDANT-ABAKANOWICZ, Paris, France. Filed May 26, 1883. (No model.) Patented in France Mar. 3, 1883, No. 141,869.



Claim.—1. A transmitting device for generating alternating electric currents, consisting, essentially, of a magnetic pole or poles, and a relatively vibratory coil or helix adapted to move back and forth through and beyond the magnetic field, when said pole or poles is or are arranged midway of the normal limit of vibration of said coil, whereby when the latter is at mid-vibration and at maximum velocity it shall be in closest proximity to said pole or poles, and when at either extremity of its vibration it shall be most remote therefrom, all combined and operating substantially as and to the effect set forth.

2. The combination of a spring-mounted coil or helix adapted to vibrate back and forth through and beyond the magnetic field of a fixed magnet, with said magnet arranged with its pole or poles midway of the normal limit of vibration of said coil, so that the latter shall be in closest proximity to said pole or poles when at mid-vibration and at maximum speed, and with a commutator vibrating with said coil or helix, and adapted to reverse the polarity of the terminal connections of the latter at each extremity of the vibration, substantially as and for the purposes set forth.

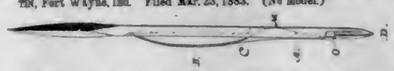
292,194. CROSSCUT-SAW. ELIAS C. ATKINS, Indianapolis, Ind. Filed June 25, 1883. (No model.)



Claim.—A saw-blade having a convex cutting-edge, a concave back

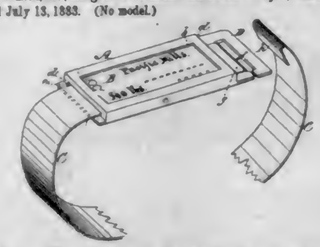
edge, and having both ends wider than the center, substantially as and for the purpose set forth.

292,195. SHOE-MAKER'S SEWING-NEEDLE. ALEXANDER W. ABBOTT, Fort Wayne, Ind. Filed Mar. 23, 1883. (No model.)



Claim.—The combination, with the needle having an open eye and a longitudinal groove, of a spring, C, having a tenon, I, and pivoted in said groove, all substantially as set forth.

292,196. TAG-HOLDER FOR COTTON-BALES. HENRY L. AYER, East Wilton, Me., assignor to himself and Alton E. Ayer, Boston, Mass. Filed July 13, 1883. (No model.)



Claim.—1. The within-described metallic holder for tags, cards, &c., consisting of a plate, A, having an opening, *b*, and provided on its under surface with downwardly-projecting side flanges, *c c*, and end flanges, *d d*, the latter having slots *e e* for the passage of the bale-hoop, which is adapted to pass beneath the tag or card and confine it within the recess formed by the flanges *c c d d*, substantially as set forth.

2. The plate or holder A, having an opening, *b*, and provided on its under side with downwardly-projecting side flanges, *c c*, and end flanges, *d d*, having slots *e e*, in combination with the bale-hoop C, adapted to pass through the slots *e e* and extend from one end of the holder to the other beneath the tag or card, to confine the latter within the recess in the under side of the plate A, formed by the flanges *c c d d*, all constructed to operate substantially in the manner and for the purpose set forth.

3. The plate or holder A, having an opening, *b*, and downwardly-projecting side flanges, *c c*, and end flanges, *d d*, having slots *e e*, and provided with an extension, D, having a transverse slot, *f*, substantially as and for the purpose described.

292,197. EXTENSION FRUIT-DISH HOLDER. CHAS. S. BARBOUR, New Haven, Conn. Filed July 17, 1883. (No model.)



Claim.—1. A dish or plate holder having horizontally-adjustable arms to adapt the same to hold dishes and similar receptacles of different sizes, substantially as set forth.

2. A dish or plate holder having horizontally-adjustable legs A and arms B, substantially as and for the purpose set forth.

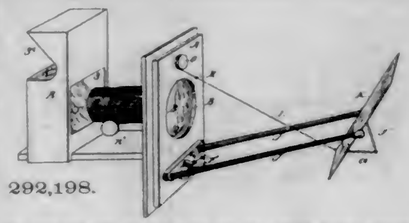
3. In a dish or plate holder, the combination of the legs A and arms B of the disk C, adapted to receive and form a bearing for the inner ends of said legs and arms, and means, substantially as described, for clamping said disk, arms, and legs together.

4. A dish or plate holder having rotatable dish-grasping arms, substantially as and for the purpose set forth.

5. A dish or plate holder having horizontally-adjustable and rotatable dish-grasping arms, as and for the purpose set forth.

292,198. HELIOSTAT OR PORTE LUMIERE. WILLIAM S. BARSTOW, Brooklyn, N. Y. Filed Oct. 31, 1883. (No model.)

Claim.—1. The combination, in a window-heliostat, with a vertical supporting-board provided with a lens-opening and suitable lens-tubes, of a detachable bar pivoted centrally against the board upon the outer end of a pivotal pin or shaft led through the board, to be operated from the inside, a spring-catch for securing the bar to the pivot-pin, parallel



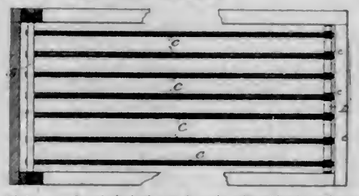
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rods extending from each end of said bar, and a mirror pivoted between the ends of said rods, all substantially in the manner and for the purpose herein set forth.

2. The combination, in a window-heliostat, with a vertical supporting-board provided with a lens-opening and fitted with suitable lens-tubes secured thereon, of parallel rods adapted to revolve upon a common pivotal axis at a right angle to the board, a mirror pivoted between said arms, a spring actuating said mirror to force its lower end outward, and a cord leading from the lower end of the mirror to a pulley rotating in bearings in the board, to provide for the vertical adjustment of the mirror, substantially in the manner and for the purpose herein set forth.

3. The combination, with a board or frame, A, adapted for insertion in the window or other opening, and provided with an opening, B, to receive a lens and tube, and a mirror, K, supported outside of said board upon pivotal supports admitting of its adjustment both in line parallel with the board and about an axis at right angles thereto, a case, R, fitted upon a supporting-base projecting from the board on the side opposite the mirror, and provided with an opening in line with the lens-opening on the board, a mirror, T, fixed within the case opposite said opening at an angle therewith, a second mirror, T', fixed in the top of the case parallel with the first, to deflect the rays therefrom through an opening, S', in the front of the case, and a transparent plate, S', interposed between the mirrors, all substantially in the manner and for the purpose herein set forth.

292,199. FRUIT-DRYING RACK. ROBERT M. BELLINGER, Blissfield, Mich. Filed Aug. 10, 1883. (No model.)



Claim.—1. In a fruit-drying rack, a plurality of horizontal rails connected at one end to a vertical post or bar and the other end adapted to fit into notches, whereby the movement of one of the vertical posts will permit of the passage of or removal of fruit upon the rails, substantially as described.

2. As an improved article of manufacture, the fruit-drying rack, consisting of a vertical post or bar provided with a plurality of horizontal rails, upon which fruit may be strung, and a vertical post or bar provided with a corresponding plurality of notches adapted to receive the free ends of the horizontal rails, substantially as described.

292,200. CARRIAGE-SPRING. THOS. R. BEVANS, Kalamazoo, Mich. Filed May 1, 1883. (No model.)

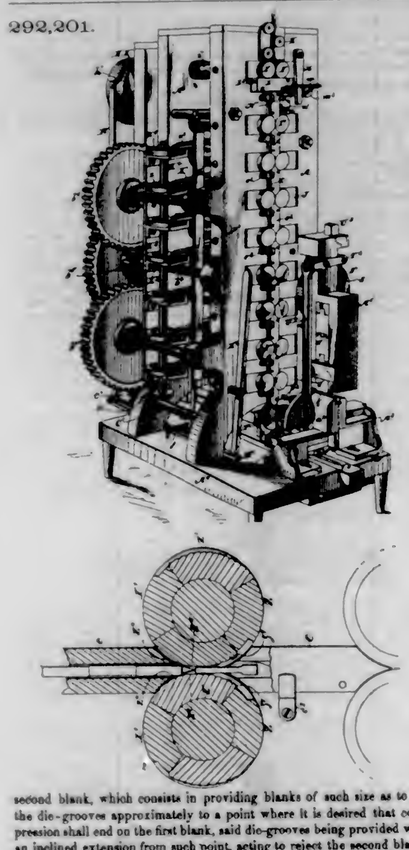


Claim.—The combination, with a pair of springs which are loosely supported at each outer end and located end to end in the same horizontal line beneath a bolster, of a bolster having a bearing-surface at each end loosely resting on the springs, and centrally and loosely connecting with the inner end of each spring between the bearing-points of said bolster, substantially as set forth.

292,201. HORSESHOE-NAIL MACHINE. GEORGE JOSEPH CAPEWELL, Cheshire, Conn. Filed Apr. 30, 1883. (Model.)

Claim.—1. As an improvement in the art of manufacturing horseshoe-nails, the particular adaptation, herein described, of the nail-blank and dies to one another for the purpose of enabling the latter to expel a

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second blank, which consists in providing blanks of such size as to fill the die-grooves approximately to a point where it is desired that compression shall end on the first blank, said die-grooves being provided with an inclined extension from such point, acting to reject the second blank, substantially as described.

2. In a machine for making horseshoe-nails, a set of rolls for compressing the blanks, each of these rolls having dies set into its periphery or fastened thereon, these dies having die-grooves in their faces, the line of junction or contact of the dies passing through the point in the groove where the pressure or pinch begins or at any point between it and the large end of the pocket which receives the head of the blank.

3. A pair of compressing-rolls provided with die-grooves having at their large ends pockets which are deeper than the remaining parts of said grooves and larger than the heads of the blanks.

4. In a machine for making horseshoe-nails, a clutch for engaging the driving-wheel, and thereby turning the driving-shaft, in combination with a device for disengaging said clutch from said wheel, a dog or detent which normally prevents this disengagement, and devices which automatically remove said dog or detent when the blanks become clogged in the guideway.

5. In combination with a series of compressing die-grooved rolls and a guideway which conducts the blanks to and from each pair of said rolls, a series of slides working into and out of the said guideway between each pair of said rolls, and a series of cams and levers actuating said slides, each one of these levers being made in two sections, which are adapted to yield on encountering a blank or other obstacle, substantially as set forth.

6. In combination with a series of compressing die-grooved rolls and a guideway which conducts the blanks to and from each pair of said rolls, a series of slides working into and out of the said guideway between each pair of said rolls, a series of sectional yielding levers for operating said slides, and devices which permit the automatic unshipping of the clutch which drives the machine when a shaft or bar forming part of said devices is engaged by a shoulder on any one of said levers in the act of yielding, as aforesaid.

7. In combination with the driving-wheel, driving-shaft, and the clutch for connecting and disconnecting them, the shipping-levers and notched connecting rod or bar for operating said clutch, the retracting-spring for unshipping the same, the spring-pressed dog, which engages with said notch to lock said clutch against the action of said unshipping-spring, and a lever and a shaft and arm operated by said lever for removing said dog from said notch, substantially as set forth.

8. In combination with the feeding-rolls and compressing-rolls, an interposed cutting-blade and sliding plunger, a pendent arm carrying a piece arranged to be forced against the outer end of said plunger, and a shaft carrying two horns or cams, which act on said pendent arm, substantially as set forth.

9. The combination of a pair of feed-rolls with a set of compressing devices, a cutting blade or blades, and an adjustable finger, which supports the end of the wire or bar and regulates the length of the blanks, substantially as set forth.

10. A circular plate or wheel provided with cross-passages having four equidistant openings in its periphery, in combination with compressing-rolls and a guideway discharging into said passages as they successively assume a vertical position, and devices which give said wheel a step-by-step motion of one-fourth of a circle at each step, for the purposes set forth.

11. A rotary wheel and devices for giving it a step-by-step motion of one-fourth of a circle at each step, said devices consisting of a ratchet or notched collar on a shaft whereby said wheel is rotated, driving and retaining pawls, and the necessary operating and freeing devices, whereby said shaft is given its step-by-step motion, in combination with devices for beveling, pointing, and heading the blanks carried by said wheel as they successively reach the points where said devices are respectively located.

12. A wheel rotating with a step-by-step motion and adapted to carry the blanks with their ends protruding, as stated, in combination with a beveling-anvil and punch or plunger which bevel the end of the blank, substantially as set forth, and the notched and toothed collar Q' on the shaft of said wheel, a loose collar carrying the driving-dog Q⁴, means for alternately advancing and withdrawing this dog to rotate the former collar step by step, and the two retaining-pawls, and means for automatically freeing the same, as stated.

13. A wheel rotating with a step-by-step motion and adapted to carry the blanks with their ends protruding, as stated, in combination with a stationary blade and a plunger, whereby the surplus metal is trimmed from the point after the latter has been beveled, as set forth, and the notched and toothed collar, driving-dog, retaining-pawls, and actuating and freeing devices, substantially as described.

14. A wheel provided with heading-dies arranged transversely to the periphery of the wheel which receives the blanks of metal and carries them round in a step-by-step motion, in combination with a heading-die and a clamping-die, which are carried against said blanks, substantially as set forth.

15. A wheel provided with heading-dies which receive the blanks of metal, in combination with a slide carrying a heading-die, and a clamping-die, and devices which give to said slide a compound, lengthwise, and upward and downward motion, in order that the same slide may apply to and remove from the blank both the vertically-operating clamping-die and the horizontally-operating heading-die, substantially as set forth.

16. In combination with a vertical wheel arranged to receive the blanks from the guideway, rotating with a step-by-step motion, and provided with passages extending through it, as stated, and a second wheel arranged horizontally and having corresponding rotation, a plunger and operating devices whereby said plunger is caused to pass through said passages as they are successively presented, and force the blanks therefrom into the dies or receptacles of the horizontal wheel, for the purpose set forth.

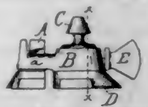
17. A feeding-plunger which operates on the blanks after they have left the compressing-rolls, in combination with unclutching mechanism for stopping the machine, a detent which prevents the operation of said unclutching mechanism, and a device connected to said feeding-plunger which removes said detent when said plunger meets with an obstruction, substantially as set forth.

18. A feeding-plunger and its operating-lever, the latter being in two normally-rigid sections, which are adapted to yield and separate at the upper end of the lower section when said plunger meets with resistance, in combination with a clutch and its unshipping-spring, and devices for allowing said spring to operate, the latter devices being operated by the engagement of the lower section of said lever therewith when its upper end separates from the upper section, substantially as set forth.

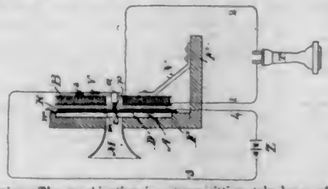
292,202. FASTENING FOR MEETING-RAILS OF SASHES. JAS. CRAMBERS, New Britain, Conn., assignor to the Kompshall Manufacturing Company, same place. Filed Oct. 15, 1883. (Model.)

Claim.—The improved sash-fastener herein described, consisting of the base-plate having the lug *d*, the chambered sweep having the stop-lugs *b b*, and the latch-lever E, extending into the chambered sweep, said lever constructed to act upon one side of the lug *d*, while one of lugs *b* engages the opposite side of *d*, substantially as described, and for the purpose specified.

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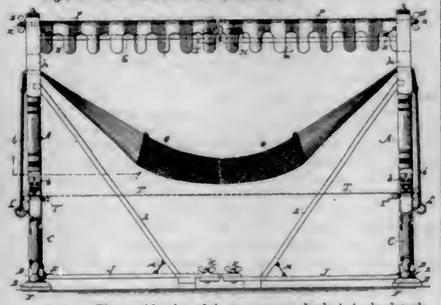


292,203. TELEPHONE-TRANSMITTER. JOSEPH H. CHEEVER, Somerville, Mass. Filed June 25, 1883. (No model.)



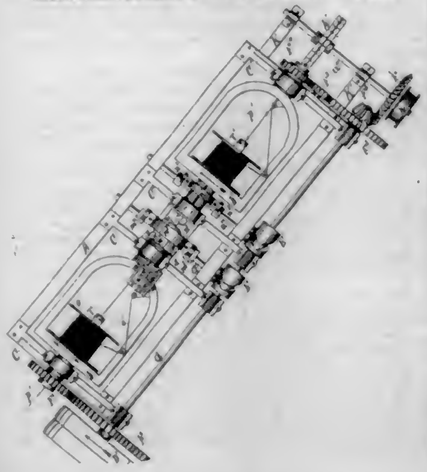
Claim.—The combination, in a transmitting-telephone, of a diaphragm, a vibrating primary helix in a battery-circuit, and a variable resistance consisting of two points or buttons in loose contact with one another, also included in the battery-circuit with a secondary helix adapted to form part of a closed telephone-circuit supported in inductive proximity to the primary helix, substantially as described.

292,204. PORTABLE HAMMOCK-SUPPORT. ROBERT C. COOK, Chicago, Ill. Filed June 23, 1883. (No model.)



Claim.—The combination of the posts or standards A A, the detachable feet or base-pieces B B, the folding legs or braces C C, hinged at their upper ends to the said posts, the folding and extensible bars J J, hinged to the said posts and detachably connected to each other, the detachable extensibly-connected bars G G', the detachable braces L L, the hammock, and the tilting awning, substantially as and for the purposes specified.

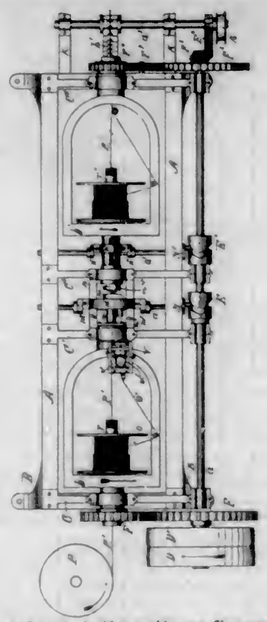
292,205. METHOD OF APPLYING BARBS TO FENCE-WIRE. JAMES H. COON, Des Moines, Iowa. Filed Nov. 22, 1883. (No model.)



Claim.—The process of manufacturing barbed fence-wire, which consists in rotating the barb-wire around the main fence-wire in one direction and simultaneously coiling the free end of the barb-wire around said main wire in the opposite direction and afterward severing the barb-wire, substantially as described.

292,206. WIRE-BARBING MACHINE. JAMES H. COON, Des Moines, Iowa. Filed Aug. 24, 1883. (No model.)

Brief.—The main wire is pulled continuously through the machine by a sprocket-wheel. The barb-wire is fed across the main wire and between a head and a barb-former, which together move forward. During the forward movement the head rotates and winds the reel end of the barb-wire around the main wire in one direction, and while so doing overtakes the barb-former, which at the same time is winding the free end of the barb-wire around the main wire in the opposite direction. The wound portion of the barb-wire is then severed from the reel portion by cutters—one mounted on and advancing with the head, the other rotating with the winder, but not moving longitudinally. Then another barbless wire is intertwisted with the barbed wire and spooled in any known way.



Claim.—1. In a wire-barbing machine, two fliers rotating in opposite directions, with means for supporting and advancing the main wire continuously, and means for supporting the barb-wire, in combination with reciprocating mechanism for applying barbs, substantially as described.

2. In a wire-barbing machine, the flier *b*, reciprocating dogs *v* and *v'*, curved guide *d*, and reciprocating head *m*, in combination with the rotating and reciprocating tube *n* and barb-former n^4, substantially as and for the purpose set forth.

3. In a wire-barbing machine, the rotating and reciprocating head *m* and cutter *r*, in combination with the continuously-rotating cutter r^2, substantially as and for the purpose set forth.

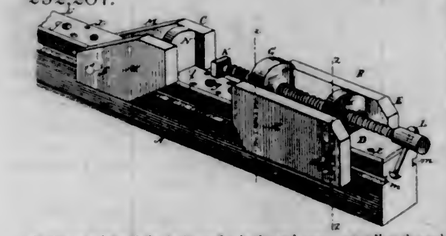
4. In a wire-barbing machine, the rotating and reciprocating head *m* and cutter *r*, in combination with the rotating and reciprocating barb-former n^4 and the continuously-rotating cutter r^2, substantially as and for the purpose set forth.

5. In a wire-barbing machine, mechanism for rotating the barb-wire around the main fence-wire in one direction, in combination with mechanism for simultaneously coiling the free end of the barb-wire around the main fence-wire in the opposite direction, substantially as described.

292,207. CLAMP. PHILIP F. CORBETT, Boston, Mass. Filed Apr. 6, 1883. (No model.)

Claim.—1. In a clamping-vise, a head-stock composed of downwardly-projecting cheeks or side pieces provided with inwardly-projecting studs that slide in side grooves of the body, the uprights G and H, connecting the side pieces, a pin or dog adapted to enter a series of holes

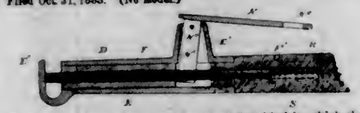
292,207.



in the top plate of the body, and a horizontal screw extending through and engaging both uprights, in combination with the body provided with a longitudinal groove on each side, and with a tail-stock, substantially as described.

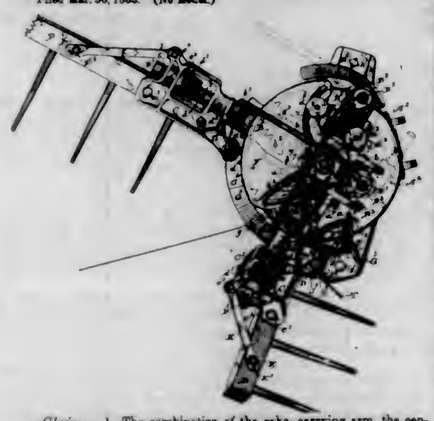
2. In a clamping-vise, a tail-stock composed of downwardly-projecting cheeks or side pieces provided with inwardly-projecting studs that slide in side grooves of the body, the cross-bar N, between the cheeks, and a pin adapted to enter a series of holes in the top plate of the body, in combination with the body provided with a longitudinal groove on each side, and a head-stock provided with uprights G and H, and a screw which engages both of said uprights, substantially as described.

292,208. HORSE-DETACHER. CHAUNCY L. CROWELL, Peoria, Ill. Filed Oct. 31, 1883. (No model.)



Claim.—In a horse-detaching device of that kind in which there is a cylindrical opening, F', ferrule E, having hook E', and a rod, F, at each end of the single-tree thereof, as shown, the combination, with such a single-tree, ferrule, and hook, of hollow boss E^2, formed as a part of said ferrule, the angle-iron N N', pivoted to and in the same, and the rod F, having a slot therein, as and for the purpose set forth.

292,209. HARVESTER. GEORGE G. CROWLEY, Little Falls, N. Y. Filed Mar. 30, 1883. (No model.)



Claim.—1. The combination of the rake-carrying arm, the centrally-open oscillating bracket having the bearing-perforations at its opposite ends, the rod of the rake-carrying arm about which the bracket oscillates, the conical coiled spring having connection at one end with the rod and bearing against the bracket at its opposite end, and the conical hub of the bracket projecting into said spring, substantially as and for the purpose hereinbefore set forth.

2. The combination of the rake-post head, and the front section of the cam provided with the feet by which it is connected with the rake-post head, and recessed between its feet, substantially as and for the purpose hereinbefore set forth.

3. The combination of the rake-post head, the forwardly-extending arm thereof, the front section of the cam, its foot secured to said arm, and its foot underlapping the rake-post head and secured thereto, substantially as and for the purpose hereinbefore set forth.

4. The combination of the rake-post head, its rearwardly-projecting arm, the steeply-inclined rear cam-section secured thereto, the front cam-section, and the switch pivoted to it, as and for the purpose described.

5. The combination of the inside cam-section, the steeply-inclined rear cam-section, the front cam-section with its wedge-like rail, the rake-carrying arms linked in pairs, and the rotary rake-carrier, substantially as and for the purpose hereinbefore set forth.

6. The combination, substantially as hereinbefore set forth, of the rake-post, the inside cam-section, the front cam-section, the switch, the side cam-section, and the rear cam-section having the space between it and the side section, for the purpose described.

7. The combination, substantially as hereinbefore set forth, of the rake-post, the rotary rake-carrier, the rake-carrying arms, the spring-actuated oscillating brackets, their inwardly-inclined roller-carrying arms, the rake-arms linked in pairs and to which the brackets are secured, the inside cam-section, the front cam-section having the cam-track and wedge-like cam-rail, the switch, means for locking and releasing it, the side cam-section, and the rear cam-section having a space between it and the side section, for the purpose described.

8. The combination of the cam-casting or front section having the recess, and the rake-controlling mechanism secured in said recess, substantially as hereinbefore set forth.

9. The combination of the cam-switch, mechanism connected therewith for automatically controlling the rakes, the supporting and protecting casing, and the removable face-plate of the casing, substantially as hereinbefore set forth.

10. The combination, substantially as hereinbefore set forth, of the series of rake-arms acting either simply to reel or both to reel and rake, the movable cam-switch actuated by the non-raking arms, the tripping-lever for dogging and releasing the switch, automatically-operating adjustable rake-controlling mechanism actuating the tripping-lever, mechanism connected with and actuated by the movements of the switch for operating the controlling mechanism to adjust the tripping-lever to its dogging position, and mechanism connected with the controlling mechanism and actuated by the raking-arms for resetting the controlling mechanism at each raking action.

11. The combination, substantially as hereinbefore set forth, of the series of rake-arms acting either simply to reel or both to reel and rake, the cam-switch to which movement is imparted by the non-raking arms, the tripping-lever for dogging and releasing the switch, automatically-operating rake-controlling mechanism actuating the tripping-lever, mechanism connected with and actuated by the movements of the switch for operating the controlling mechanism to adjust the tripping-lever to its dogging position, mechanism connected with the controlling mechanism and actuated by the raking-arms for resetting the controlling mechanism at each raking action, and means by which to hasten or retard the raking action by throwing in a rake out of turn.

12. The combination, substantially as hereinbefore set forth, of the combined rake and reel arms, their oscillating brackets, the bracket-rollers, the cam-switch moved by the passage of said rollers when the rake-arms act merely to reel, the tripping-lever, automatically-operating rake-controlling mechanism actuating the tripping-lever, mechanism connected with and actuated by the movements of the switch for operating the controlling mechanism to adjust the tripping-lever for locking the switch and causing the raking action of the rake-arms by the travel of their bracket-rollers beneath the switch, mechanism connected with the controlling mechanism and actuated by the bracket-rollers of the raking-arms for resetting the controlling mechanism at each raking action, and the rod for actuating the tripping-lever by either thrusting or pulling strains to hasten or retard the raking action.

13. The combination, substantially as hereinbefore set forth, of the cam-switch, the tripping-lever, the ratchet of the rake-controlling mechanism, the ratchet-spring, means by which to limit the movement imparted to the ratchet by the action of its spring, means for actuating the ratchet by the rake-arms when acting simply to reel, the pivoted arm actuated by the ratchet for lifting the tripping-lever to dog the cam-switch, and means actuated by the rake-arms when raking to release the ratchet for actuation by its spring, for the purpose described.

14. The combination of the cam-switch, the tripping-lever, the ratchet, its spring, the ratchet-actuating pawl, means connected with the switch for operating the pawl, the dog acting on the ratchet, the lug on the outer face of the ratchet, the arm actuated by the lug for lifting the tripping-lever, and tripping mechanism actuated by a raking-arm for freeing the ratchet from the dog and pawl, substantially as and for the purpose hereinbefore set forth.

15. The combination, substantially as hereinbefore set forth, of the spring-connected pinion and ratchet provided with the inner lugs, the rocking dog, the reciprocating pawl, the tripping-lever, the vibrating arm to which the dog is secured, means for actuating said arm at each raking action to trip the dog, and the trip-connection between the dog and pawl, for the purpose described.

16. The combination of the reciprocating pawl-carrying bar, the cam-switch with which it is connected, the pawl, and the ratchet of the rake-controlling mechanism, substantially as and for the purpose hereinbefore set forth.

17. The combination of the ratchet of the rake-controlling mechanism, the rocking dog, the vibrating arm with which the dog is connected, and the trip-lug connected with said arm and actuated at each raking action to cause the dog to release the ratchet, substantially as and for the purpose hereinbefore set forth.

18. The combination of the ratchet, the dog, the pawl, its arm provided with the lug overhanging the dog, the trip-lug actuating at each raking action, and means connecting it with the dog, substantially as and for the purpose hereinbefore set forth.

19. The combination, substantially as hereinbefore set forth, of the recessed ratchet-disk, the pinion, the fixed stud upon which the ratchet and pinion are mounted, the lug on the inner face of the ratchet, the lug on the corresponding face of the pinion, the spring connecting the ratchet and pinion, means for adjusting the ratchet and pinion and for locking the latter in position, with the inner lugs of the ratchet and pinion in contact, the cam-switch, means actuated thereby for turning the ratchet against the pressure of its spring, and by which the ratchet-lug is separated from that of the pinion, the tripping-lever, its pivot, the spring-actuated arm for lifting and yieldingly supporting the lever, and the lug on the ratchet for elevating the arm, for the purpose described.

20. The combination of the tripping-lever, its heel-pivot, the lifting-arm yieldingly supporting the tripping-lever, and means connecting the lever and arm for preventing undue downward movement of the latter, substantially as and for the purpose hereinbefore set forth.

21. The combination of the tripping-lever, the lifting-arm, the spring between the lever and arm, and the lug of the arm overlapping the side rib of the lever, substantially as and for the purpose hereinbefore set forth.

22. The combination of the casing of the rake-controlling mechanism, the reciprocating pawl-carrying bar, the pawl pivoted thereto, the dog, the ratchet, the arm of the pawl provided with the lug overhanging the dog, and means for tripping the dog and pawl to free the ratchet, substantially as and for the purpose hereinbefore set forth.

23. The combination, substantially as hereinbefore set forth, of the cam-switch, the tripping-lever for dogging and releasing the switch, the adjustable rake-controlling mechanism actuating the tripping-lever, means for setting said controlling mechanism, means for indicating its adjustment, mechanism actuated by the rake-arms when simply reeling for operating the controlling mechanism to adjust the tripping-lever to its dogging position, and mechanism actuated by the rake-arms when raking for resetting the controlling mechanism.

24. The combination of the casing, the rake-controlling mechanism, the tripping-lever actuated thereby, and the adjusting-rack and indicator, substantially as and for the purpose hereinbefore set forth.

25. The combination of the rake-controlling mechanism, the rack-bar engaging the pinion of said mechanism, and provided with the recesses, the guideway for the rack provided with lugs for engagement with the recesses of the rack-bar, and the spring-actuated rod acting upon the rack-bar, substantially as and for the purpose hereinbefore set forth.

26. The combination of the series of combined rake and reel arms, the cam, the cam-switch, the rake-actuated trip-lug, its rock-shaft, the ratchet of the rake-controlling mechanism, and the ratchet-actuating pawl and dog having connection with said rock-shaft, substantially as and for the purpose hereinbefore set forth.

27. The combination of the rake-post head, the pendent bearing attached thereto, the rock-shaft mounted in said bearing, the trip-lug at one end of the rock-shaft, the crank at the opposite end thereof, the link-rod, the vibrating rod connected by the link-rod with the crank of the rock-shaft, and the dog, substantially as and for the purpose hereinbefore set forth.

28. The combination of the rake-controlling mechanism, the tripping-lever and the setting and indicating rack-bar engaging the pinion of the controlling mechanism for adjusting said mechanism to act upon the tripping-lever either constantly or at intervals, or not to act at all thereon, substantially as and for the purpose hereinbefore set forth.

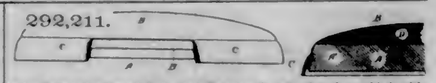
292,210. SPRING-HINGE. HENRY B. DODGE, East Somerville, MASS. Filed Oct. 6, 1883. (No model.)



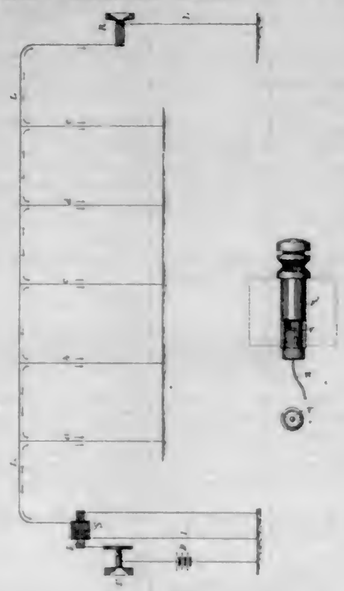
Claim.—A hinge composed of the stationary member, which consists of the fastening-plate *a*, having the lugs *a'* and supports a^2 and a^3, and the spring *c*, supported upon the said supports a^2 and a^3, combined with the pivoted member *b*, having the fastening-plate *b'* and plane surfaces 2, 3, and 4, to be acted upon by the spring, whereby the blind, door, or other movable part is held in different positions, substantially as described.

292,211. STOOL-SEAT. JOHN S. DUNLAP, Peoria, Ill. Filed Sept. 29, 1883. (No model.)

Claim.—As a seat for a stool or similar article of furniture, the circular foundation-board A, having its edge chamfered and provided with the groove A', as shown and described, in combination with a covering, B, of fabric or similar material, and the thin metal ring C, contracted in diameter at its upper edge, substantially as and for the purpose specified.



292,212. TELEPHONIC TRANSMISSION. WILLIAM H. ECKERT, New York, N. Y. Filed Dec. 4, 1882. (No model.)



Claim.—1. The combination of a telephonic transmitter, a telephonic receiver, a main line forming that part of a telephonic circuit over which telephonic communication is effected, as distinguished from the return portion of the circuit, and a series of earth-branches distributed along the length of the direct portion of the circuit, substantially as specified.

2. The method of preventing inductive effects upon telephonic lines from interfering with the transmission of articulate speech or sound, which consists in establishing an approximately uniform leakage along the line, which shall not be sufficiently great that it will materially weaken, divert, or dissipate the main-line signaling-impulses, substantially as specified.

3. The combination of a telephonic main line, a series of main-line supports insulated from the telegraph-poles, and an occasional support, as specified, electrically connecting the line with a telegraph-pole or its cross-arm, substantially as described.

4. The combination of a telegraph-pole or pole and cross-arm of wood or other partial insulating material, an iron or other conducting pin set directly in the pole or cross-arm, and a main telephonic line supported by said pin without the intervention of insulating material, as specified.

5. The combination of an iron or other conducting pin to which a main line is immediately attached, set in the pole or the cross-arm of the pole of wood or other partial insulating material, and a lightning-arrester connecting said conducting pin or support to earth.

6. The combination of line-wire L, hollow pin F, a pole or pole and cross-arm forming a partial insulator, metal piece V, plug K, and ground-wire W.

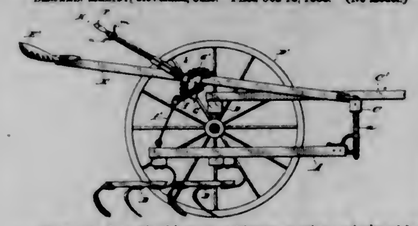
292,213. DUST-PAN. SARAH T. FISHER, Springfield, Ohio. Filed Nov. 13, 1883. (No model.)

Claim.—As an improved article of manufacture, the herein-described dust-pan, consisting of base *a*, top *b*, sides *c*, and lips *f*, the whole adapted to be bent in the form described, and provided with the vertical tube *g*, to receive a handle, as and for the purpose set forth.

292,213.



292,214. WHEEL-HARROW. THEODORE D. GERE, Owego, N. Y., and BENJAMIN MALTBY, Cleveland, Ohio. Filed Oct. 18, 1883. (No model.)

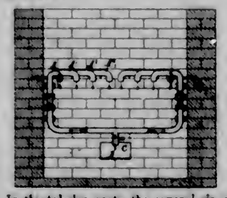


Claim.—1. In a wheel-harrow, cultivator, or other agricultural implement, the combination of a hinged frame provided with plows or teeth, a hinged frame carrying the driver's seat, an axle interposed between the two frames, and mechanism connected with the frame carrying the driver's seat, whereby the plow or other frame can be held above the ground by the seat-frame resting on the axle, or the seat-frame held above the axle by the plow resting on the ground, substantially as set forth.

2. In a wheel-harrow, cultivator, or other agricultural implement, the combination of a wheeled frame, a plow, or toothed frame, pivotally secured to the wheeled frame in front of the axle, a frame carrying the driver's seat, pivotally secured to the wheeled frame in front of the axle, and mechanism connecting the seat and plow frames, whereby the weight of the seat-frame and driver can be thrown on the plow-frame, or the weight of the seat-frame and driver be supported by the axle while the plows or diggers are in the ground, substantially as set forth.

3. The combination, with the axle and seat and plow frames, of the shaft, the segment secured to the seat-frame, the segment rigidly secured to the shaft, the lever loosely secured on the shaft between the segments and provided with spring-actuated catches, and the links *f'*, connecting the shaft and plow-frame, substantially as set forth.

292,215. GRATE. DANIEL MCBRIDE GRAHAM, Chicago, Ill. Filed May 1, 1883. (No model.)



Claim.—1. In the tubular grate, the several air-conducting bars thereof, formed or constructed at their upper ends to discharge air downward into the grate, and having the ends of each of such bars arranged to extend inward a distance greater than those of the bar next in advance.

2. A grate having tubular bars bent or constructed at their upper ends, so as to discharge air downward into it, (the said grate,) and each provided with an air-induct at its middle or lower part.

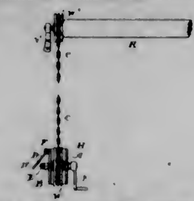
3. A grate having tubular side and bottom bars, A A', &c., constructed or bent at their upper ends, so as to discharge air downward into it, and also having front bars, B, arranged and combined with the tubular bars, or the front one of the set thereof, substantially as set forth, the said tubular bars being provided with air-inlets, whereby air, when fuel may be in combustion in the grate, may be drawn into the said tubular grate-bars and discharged from them upon the top of such fuel, as set forth.

4. The combination of the air-box C and its register D with the series of tubular grate-bars A A', &c., communicating with said box, and at their upper ends bent downward, or having educts to discharge air into the grate or upon the fuel when therein and on fire, as set forth.

5. The combination of the air-box C and its register D, the series of tubular grate-bars A A', &c., and the series of front grate-bars, B, arranged and adapted substantially as set forth.

292,216. DEVICE FOR RAISING AND LOWERING AWNINGS. JACOB GEMMERICH and EMIL E. LUCAS, Peoria, Ill. Filed June 5, 1883. (No model.)

292,216.



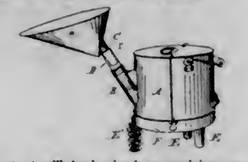
Claim.—1. In a device for raising and lowering awnings, the axle A, having polygonal head B, wheel W, and suitable bearings, in combination with the latch D, having opening D' to fit said head B, and means for preventing said latch from slipping off from said head, substantially as and for the purpose specified.

2. The wheel W and axle A, having head B and eye F, in combination with suitable frame, and the latch D, swiveled thereto and having the opening D', for the purpose set forth.

3. An awning-roller, R, having wheel W', and the axle A, having wheel W, whereby to transmit its motion of rotation to said roller-wheel W, through a suitable chain, in combination with frame or box H, staple F, and the latch D, having opening D', for receiving a polygonal or prismatic head formed at the end of said axle, substantially as and for the purpose herein described.

4. The axle A, having head B, with eye E therein, and the crank-arm K, in combination with the box H, staple F, latch D, having opening D', wheels W W', and chain C, substantially as and for the purpose specified.

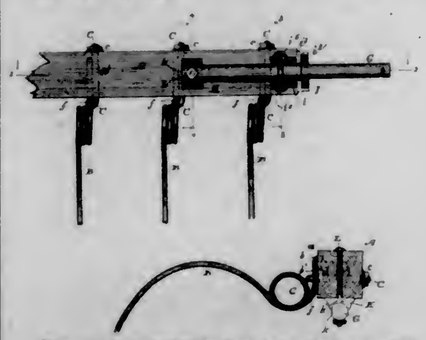
292,217. MILK-BUCKET. JOHN F. GUILLOZ and JUDSON D. PERRY, Detroit, Mich. Filed July 31, 1883. (No model.)



Claim.—1. A milk-bucket having a receiving-cup, as *a*, and adapted to be used as a stool, said bucket being provided with two rigid supporting-legs and one or more yielding ones, whereby the cup may be raised or lowered at will, substantially as described.

2. The combination of the milk-bucket A, inlet-pipe B, rubber tube D, strainer C, rigid legs E E, and yielding leg E', substantially as and for the purposes described.

292,218. HORSE HAY-RAKE. WILLIAM H. HALL, Tiffin, Ohio. Filed Aug. 1, 1882. (No model.)



Claim.—1. A rake-tooth of the form shown—that is, having the inwardly-bent upper end or tang to enter a socket in the rear face of the rake-head, the perpendicular shank to lie vertically along said rear face beneath the socket, the coil, and the body part or tine.

2. A rake-tooth formed with a straight shank to lie against the rear face of the rake-head, and with the first bend of its coil elongated to overset the return and succeeding bends.

3. The wooden rake-head having sockets in its rear face near its top, to receive the tang of the tooth, and perforations lower down and to one side of a perpendicular line from the corresponding sockets to receive a hook-bolt, whereby the shank of the tooth is firmly clamped.

4. The wooden rake-head having sockets in its rear face near its top, to receive the bent upper end or tang of the tooth, perpendicular grooves beneath these sockets to receive the shank of the tooth, and perforations to one side of the grooves to receive a hook-bolt, whereby the fastening is rendered complete.

5. The combination of the wooden rake-head having sockets and perforations along its rear face, in the relative arrangement set forth, the rake-tooth having the bent upper end or tang, perpendicular shank and coil, and the hook-bolt, substantially as described.

6. The combination of the rake-head or wooden axle, grooved at its ends, as described, the castings having ribs to take into said grooves, and seats for the body or shank of the stub-axle, the eyebolt fitting over the stub-axle and passing through the end casting and wooden head, and the straight bolt passing through the inner end of the axle, the second casting, and the head.

7. The combination of the rake-head or wooden axle longitudinally grooved near its end, the castings having ribs which enter said grooves, and also seats to receive the metallic stub-axle, the eyebolt fitting over said axle and passing through the transverse slot in the end casting and through the wooden head, its neck being drawn into a transverse groove in said head, and the straight bolt passing through the inner end of the axle, the underlying casting, and the wooden head, substantially as described.

8. The end casting having a seat for the reception of the stub-axle, a bore or slot for the passage of a bolt attaching stub-axle and casting to the wooden head, and a sand-band for the protection of the inner end of the wheel-hub.

9. The end casting formed, substantially as described, with a seat for the stub-axle, a rib to take into a longitudinal groove in the wooden head, and a sand-band to cover and protect the inner end of the wheel-hub.

10. The end casting formed, substantially as described, with a seat for the metallic stub-axle, a rib or flange to take into a longitudinal groove in the wooden head, and a shoulder to abut against the end of said head.

11. The end casting formed, substantially as described, with a semi-cylindrical seat for the reception of the metallic stub-axle, a rib or flange to take into a longitudinal groove in the wooden head, a shoulder to abut against the end of said head, a sand-band to cover and protect the inner end of the wheel-hub, and a bore or transverse slot for the reception of a bolt to secure it and the stub-axle to the head.

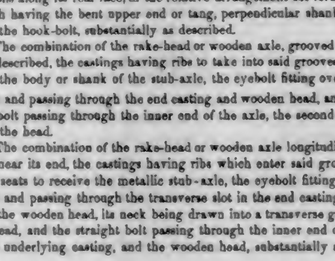
292,219. HARVESTER-TRUCK. ROBERT HAMILTON, Franklin, Ind. Filed Nov. 26, 1883. (No model.)



Claim.—1. A truck consisting of an axle, a pair of wheels on said axle, center-pole *b*, bounds *c c*, draft-pole *e*, and means for adjustably securing said draft-pole to said center-pole, all combined substantially as and for the purpose set forth.

2. In a harvester-truck, the combination, with a harvester, of a truck consisting of an axle, a pair of wheels on said axle, and an adjustable sliding draft-pole secured to said axle and adapted to pass through the grain-wheel of said harvester, for the purpose specified.

292,220. APPARATUS FOR PRODUCING COLORS OR DESIGNS ON SURFACES. GEORGE HAND SMITH, Chelsea, County of Middlesex, England. Filed Aug. 20, 1883. (No model.)

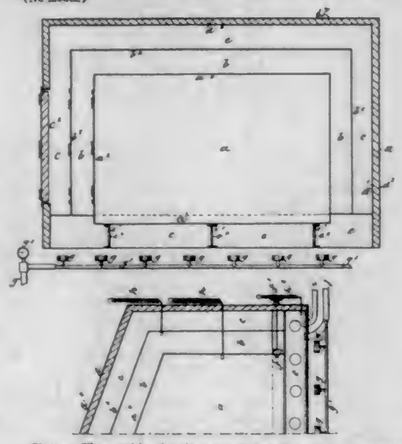


Claim.—1. The combination, in apparatus for use in the process of coloring or producing color or designs in or upon animal, vegetable, or mineral substances, according to the process described, consisting of a removable operating holder or chamber, *a*, for containing the articles treated, provided with valves, a heat-retaining chamber, *b*, with one or more surrounding air cells or chambers, *c*, and packed non-conducting shell or casing *d*, said air-chambers containing liquid for generating vapor, and a water bath, with heating appliances and regulating means thereto, constructed or arranged and operated substantially as described and shown.

2. In combination, a removable holder, *a*, air cells or chambers, and the shell *d*, surrounding said holder, as shown and described, and means for maintaining the desired differential temperature between the article under treatment and the vapor surrounding it, all substantially as set forth.

3. In an apparatus for use in the process of coloring or producing color or designs in or upon animal, vegetable, or mineral substances, the combination of two or more inclosing-walls surrounding a removable holder or operating-chamber, provided with a valve composed of a perforated plate, a^2, arranged to be slid and adjusted to any desired position on a correspondingly-perforated bottom of holder *a*, to control the supply of vapor admitted to such holder, all substantially as set forth.

292,221. APPARATUS FOR STAINING AND COLORING. GEORGE HAND SMITH, Chelsea, County of Middlesex, England. Filed Aug. 20, 1883. (No model.)



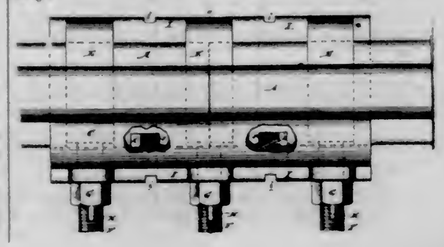
Claim.—The combination, in apparatus employed in coloring, printing, or producing colors or shades of colors or designs in or upon animal, vegetable, and mineral substances, of an inner operating-chamber, *a*, with doors a^2, liquid-tray a', water bath *e*, with outlet and supply thereto, the surrounding heat-retaining air cells or chambers *b* and *c*, with doors b^2 and c^2, and walls b^3 c^3, water-cock *f*, gas-burners *g*, or their equivalents, and means for regulating heat applied, all substantially as and for the purpose described.

292,222. PRODUCING AND FIXING COLORS AND DESIGNS ON SURFACES. GEORGE HAND SMITH, Chelsea, County of Middlesex, England. Filed Aug. 31, 1883. (No specimens.)

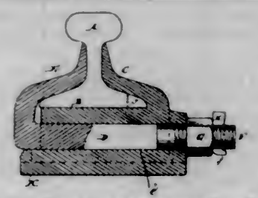
Claim.—The process herein described of treating marble, stone, or other materials to which have been applied colors or color-producing matters with heat in a chamber, so as to raise the temperature of the atmosphere of the chamber to the desired maximum temperature, and then progressively, or by stages with intermissions during which the temperature is sustained at certain points, lowering such temperature, so as to produce and maintain a state of the atmosphere or vapor around the articles treated productive of penetration of such colors, marks, or devices into the solid, substantially as described.

292,223. RAIL-JOINT. CHARLES F. HARTMAN, Keller's Church, Pa. Filed Apr. 26, 1883. (No model.)

Brief.—The rails have slots near their ends to receive lugs on the chair, and the bolts have threaded and curved ends, the latter of which extend up to the head of the rail on the opposite side from the chair-flange.



292,223.



Claim.—1. In a rail-joint, a chair upon which the adjacent ends of two rails rest, provided with a clamping-flange shaped to conform to the rail, as shown, in combination with clamps or clamping-bolts, which are held and guided by said chair, and having their ends curved, to conform also to the shape of the rail, the rail ends being firmly clamped between said flange and clamping-bolts, substantially as shown, and means to prevent said rail ends being drawn out of the chair, substantially as and for the purpose specified.

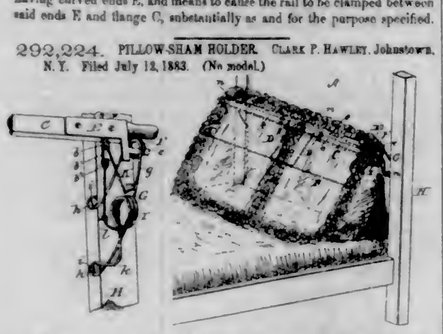
2. In a rail-joint, a chair upon which the adjacent ends of two rails rest, provided with a clamping-flange and retaining-lugs, in combination with the rails having slots near their ends, and clamping-bolts, the ends of said bolts and flange being shaped to conform to the sides of the rail, as shown, one of said clamping-bolts being arranged over the juncture of the two rail ends, substantially as and for the purpose specified.

3. In a rail-joint, the chair B, provided with lugs J J, flange C, extending up to the head of the rail, and transverse apertures C', in combination with rail ends A, having slots A' near their ends, bolts D, having curved ends E, and nuts G, substantially as and for the purpose specified.

4. In a rail-joint, the chair B, provided with lugs J J, clamping-flange C, extending up to the rail-head, and fitting the side of the rail, and transverse apertures or holes C', in combination with rail ends A, having slots A' near their ends, clamping-bolts D, having threaded ends F and curved ends E, to fit the side of the rails, a nut, G, and means to lock said nut in position when the rails are clamped, substantially as and for the purpose specified.

5. In a rail-joint, the chair B, provided with clamping-flange C, reënforcing band K, lugs J J, and transverse holes C', in combination with rails A, having slots A' in their bottom flanges near their ends, bolts D, having curved ends E, and means to cause the rail to be clamped between said ends E and flange C, substantially as and for the purpose specified.

292,224. PILLOW-SHAM HOLDER. CLARK P. HAWLEY, Johnstown, N.Y. Filed July 12, 1883. (No model.)



Claim.—1. In a holder for pillow-shams and the like, the bar C, having staples or eyes *n*, secured to the same, and a tape, *o*, passed through the staples, the shams being suitably attached to the tape, as and for the purpose set forth.

2. In a pillow-sham holder, the brackets G, having spiral spring I, which is extended inward and formed with a hook, *l*, in combination with the adjustable bar C, pivoted in the brackets, and frame B, having extension *b'*, connected with the loop *l*, as set forth.

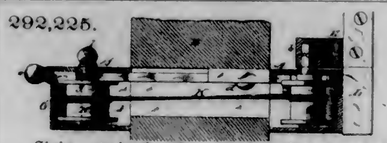
3. The brackets G, having coil I and eye *k*, in combination with the bar C, journaled in said brackets, a rod, K, attached to the bar C and provided with a hook and operating as described, and frame B, the latter being provided with loop *b* to receive the rod, and extension *b'*, connected to the coil, as set forth.

4. The brackets G, having coil I, formed with a hook, *l*, in combination with the adjustable bar C, provided with plates or castings E, having L-shaped extensions *e*, journaled in the brackets, and the frame B, the latter having extension *b'*, connected with the loop *l*, as set forth.

5. The brackets G, having loop F, coil I, and eyes *k*, in combination with the bar C, having plates or castings E, L-shaped extensions *e*, frame B, formed with extensions *b'*, loops *b*, and eyes b^2, connecting with coil I, and the rod K, all arranged and operating for the purpose set forth.

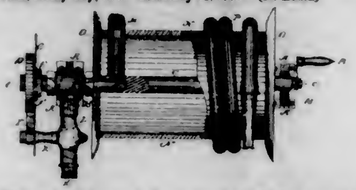
292,225. SHUTTER-WORKER. WILLIAM HAWN, Knoxville, Tenn. Filed Nov. 24, 1883. (No model.)

292,226.



Claim.—An interior pulley or sprocket-wheel arranged within a shell or casing and kept in position by a spring or stop, and provided with a crank or lever, in combination with an exterior pulley or sprocket-wheel similarly arranged and provided with an extended axle and notched rim, said pulleys being connected by a suitable band, a slotted sliding bolt provided at its inner end with a handle or knob, and secured at its outer end to the under side of the cover of the exterior shell or casing, and a suitable socketed connecting device adapted to be secured to a shutter, all arranged to operate substantially as and for the purpose specified.

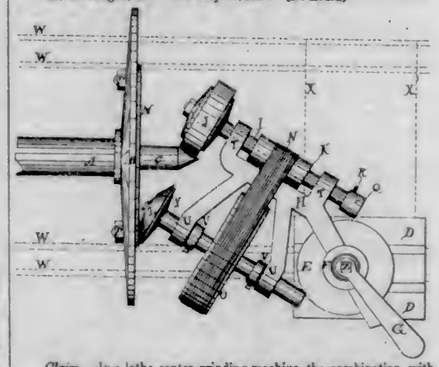
292,226. HOSE-REEL. BENJAMIN HEYWOOD, Brooklyn, N.Y., and JOHN JONES, Jersey City, N.J. Filed May 22, 1883. (No model.)



Claim.—1. In hose-reels, the combination, with the headed toothed segment I, having a yoke, G, pivoted thereto, of a disk, E, having a projection, F, on its circumference, a cog-wheel, D, mounted on the same axis, partially-hollowed shaft C, and valve K, substantially as and for the purpose specified.

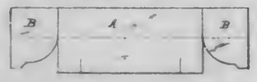
2. In hose-reels, the combination, with the headed toothed segment I, having an elliptical yoke, G, pivoted thereto, disk E, having a projection, F, on its circumference, and cog-wheel D, of valve K, operated as described, pipe L, tube M, and shaft C, partially hollowed, substantially as shown.

292,227. LATHE-CENTER-GRINDING MACHINE. DARIUS HOOGHTON, Skowhegan, Me. Filed May 31, 1883. (No model.)



Claim.—In a lathe-center-grinding machine, the combination, with the face-plate of the lathe, of the plane-faced friction-wheel M, secured thereto, and the friction-wheel L and its shaft, with means for transmitting the motion therefrom to the grinding-wheel, as and for the purpose set forth.

292,228. PAPER BOX. JAMES C. HURD, Springfield, Mass. Filed Aug. 11, 1883. (No model.)



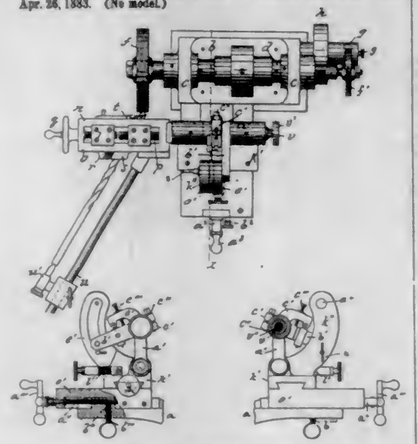
Claim.—1. A paper box the bottom and sides of which consist of a slitted rectangular portion, A, and the ends of portions B, having the flaps *e* and locking-extension *g*.

2. A knockdown paper box consisting of the slitted body portion A, having the end pieces B secured to the sides of the body, and provided with locking-extensions, and having the longitudinal folding lines or creases *c i* through the middle of the body and end pieces, whereby the box may be folded flat for storage, as described.

3. A paper box consisting of a body portion, A, having slits *b*, and the end pieces B, secured to the sides by flaps *e*, and having extensions *g*, provided with tongues *h*, for locking the box, as set forth.

4. A folding box consisting of the body portion A, having the folding lines or creases *a c*, and slits *b*, and the end pieces B secured to the sides by flaps *e*, and having extensions *g*, provided with tongues *h*, and folding-lines *i*, as set forth.

292,229. MACHINE FOR SHARPENING DRILLS. MOSES C. JOHNSON, Hartford, Conn., assignor to William N. Woodruff, same place. Filed Apr. 26, 1883. (No model.)



Claim.—1. In combination, chuck-frame *o*, male jaw *s*, with projecting face, female jaw *z*, with re-entrant angular face, and feed-screw *p*, having at opposite ends right and left hand threads, respectively, the thread feeding the female jaw having one and one-half time the pitch of the other, whereby the center of drills of various diameters as held by said jaws will be parallel to and equidistant from the axis of the gage-rod *u*, all substantially as described.

2. In a drill-grinder, the combination of the chuck *n*, the rock-shaft *v*, bearing the connected arms *b' c'*, frame *a'*, and upright arm *k''*, bearing the cam *c'*, all substantially as described.

3. In combination, the slide *k'*, bearing arm *k''*, the cam *c'*, pivoted to said arm and having at its lower end the segment of a worm-gear, the worm *l'*, and the connected drill-grinding mechanism, all substantially as described.

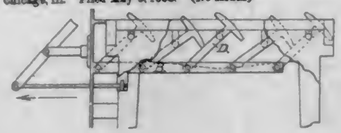
4. In a drill-grinder, in combination, the frame *a'*, the chuck *n*, the shaft *v*, bearing the adjustable arm *c'*, connected with movable arm *b'*, adjustable cam *d'*, pivoted to arm *k''* and slide *k'*, all substantially as described.

5. In a drill-sharpener, the swinging frame *a'*, adjustable cam *d'* with the connecting-arms *b'* and *c'*, in combination with the connected drill-grinding mechanism, all substantially as described.

6. In a drill-grinder, a chuck pivoted to a swinging frame and adapted to hold a drill with its axis below the line of the axis of the pivot, in combination with the drill-grinding mechanism, all substantially as described.

7. In a drill-grinder, a chuck pivoted to a swinging frame and adapted to hold a drill with its axis out of line with the axis of the pivot, in combination with the drill-grinding mechanism, for the purpose set forth.

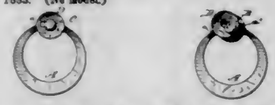
292,230. SELF-CLEARING FURNACE-GRATE. JAMES C. JONES, Chicago, Ill. Filed May 3, 1883. (No model.)



Claim.—1. A grate composed of a series of rocking bars, a portion of which shall be pivoted in a horizontal plane, while the remaining portion shall be pivoted in another and different plane parallel with the first, substantially as shown and described.

2. A grate composed of a series of bars, a portion of which shall have a differential movement in relation to the other bars of the series, substantially as and for the purpose set forth, whereby some of the bars shall be made to move in the arc of a larger circle than the others.

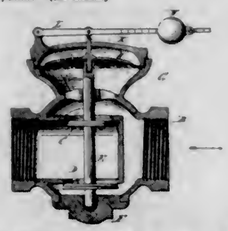
292,231. KEY-RING. GEORGE W. JOPSON, Meriden, Conn. Filed June 2, 1883. (No model.)



Claim.—1. The improved key-ring formed by a combination of an open ring, A, having at one end a projecting portion or washer, B, attached by a pin having an enlarged oblong portion under its head, and a washer with a key-hole slot, the parts being organized substantially as described.

2. In combination with the open ring hereinbefore described, having an enlarged end which overlaps the adjacent portion of the ring, the pin C, having enlarged portion *e*, and stem *c'*, and washer D, having a key-hole slot, the parts being organized substantially as shown, and for the purpose set forth.

292,232. REGULATOR-VALVE. TIMOTHY J. KELLY, New York, N. Y. Filed Feb. 17, 1883. (No model.)



Claim.—The combination, in a regulator-valve, of the diaphragm G, provided with a continuous pressure-plate upon its upper surface, the said plate being connected with a weighted lever by the anti-friction-roller journal M, the valves C and D, the valve D and its valve-seat being greater in diameter than the valve C, the cap F, serving as a guide for the lower end of the stem E, and itself being greater in diameter than either the valve C or D, and the spider-guide located between the valve C and the diaphragm G, thereby insuring the accurate seating of the valves and preventing the lateral movement of the diaphragm, substantially as described.

292,233. FAUCET. JUDSON N. KNAPP, Syracuse, N. Y. Filed Jan. 13, 1883. (No model.)



Claim.—1. The combination, with the faucet A, of the ferrule B and tubular screw C, retaining the ferrule upon the faucet, constructed substantially as described, for the purposes set forth.

2. In a faucet, the combination of the ferrule B, screw C, strainer D, and spring E, when constructed and operating together substantially as described, for the purposes set forth.

3. In a faucet, the combination of the detachable superimposed metallic head-protector L with the body A of a wooden faucet, attached to each other substantially as and for the purposes set forth.

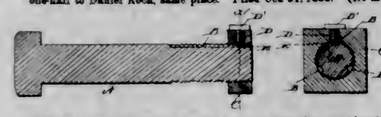
4. In a faucet, the combination of the band F, encircling the body A, and perforated to receive the key *a*, with the body of the faucet, constructed and operating together substantially as and for the purposes specified.

5. In a faucet, the combination of the band F, bushing H, and key *a* with the body of the faucet, constructed and operating together substantially as and for the purposes specified.

6. In combination with a faucet, the tubular strainer D, provided with means for regulating its protrusion from the faucet-barrel and for maintaining it in an extended position, substantially as and for the purpose set forth.

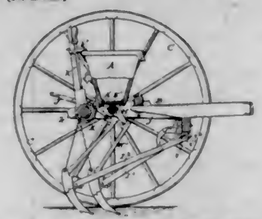
7. In combination with a faucet, the tubular strainer D, provided with a collar on its inner end, and the spring E, substantially as and for the purpose set forth.

292,234. NUT-LOCK. AMBROSE R. KOCH, Fleetwood, Pa., assignor of one-half to Daniel Koch, same place. Filed Oct. 31, 1883. (No model.)



Claim.—As an improvement in nut-locks, the combination of a bolt having one or more shallow longitudinal grooves extending throughout its threaded portion, a nut having a radial screw-threaded opening, and a set-screw seated in the said opening and terminating in a nipple at its inner end, substantially as herein set forth, and for the purpose stated.

292,235. GRAIN-DRILL. HERMANN H. KOELLER, St. Louis, Mo. Filed Jan. 3, 1882. (No model.)



Claim.—1. In a grain-drill, the seed-box bottom proper, made laterally adjustable, and provided with a series of feed-openings, in combination with a series of feed-cups and cylinders, stationary in a lateral direction, for the purpose set forth.

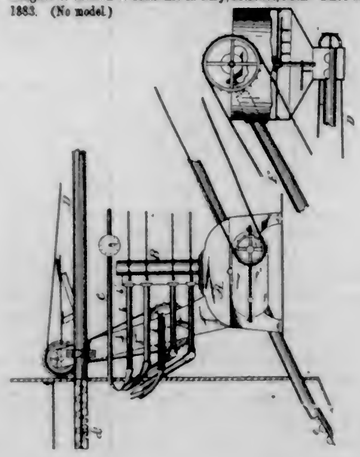
2. In a grain-drill, the combination of the laterally-adjustable seed-box bottom A', feed-cylinders E', and cups or housings E, stationary in a lateral direction, and provided with a projecting rim, *e'*, for the purpose set forth.

3. In a grain-drill, the combination of the adjustable plate B, provided with a cam-slot, *d*, pin or stud *d'* on the seed-box bottom, and locking-nut *d²*, as described, and for the purpose set forth.

4. In a grain-drill, the combination of the fluke-raising drum K, on which is secured a notched ratchet-wheel, *k*, with the lever K', turning loosely around said drum, and provided with a spring locking dog or bar for locking it to said drum, all constructed and arranged as herein described, and for the purpose set forth.

5. In a grain-drill, the combination of the drag-bars I³, curved lever J', engaging pin-projections on said bars, link *j*, and hand-lever J, as described, and for the purpose set forth.

292,236. PROCESS OF MIXING AND CONSUMING HYDROCARBON WITH PULVERIZED EARTH. JULIUS LEEDE, Washington, D. C., assignor of one-half to Granville H. Oury, Florence, Ariz. Filed Aug. 30, 1883. (No model.)

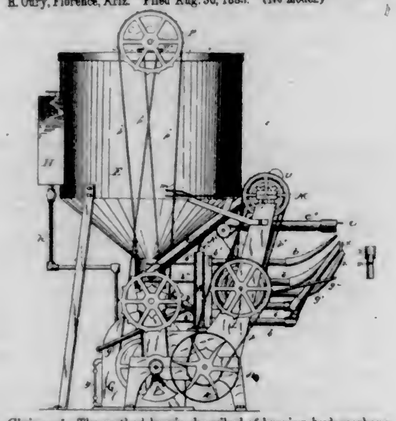


Claim.—1. The process of mixing fine material and liquid carbon for the production of fuel, consisting in conducting a stream of fine material and a stream of hydrocarbon and discharging said materials from their conduits in juxtaposition, and while suspended intermixing the particles of both streams by a separate stream or blast of air, as hereinbefore set forth.

2. The process herein described of mixing fine material and liquid carbon, and simultaneously igniting and consuming the carbon, consisting in conducting a stream of fine material and a stream of hydrocarbon and discharging said materials from their conduits in juxtaposition, and while suspended intermixing the particles of both streams by a separate stream or blast of air, and simultaneously igniting the fuel by a jet-flame, as hereinbefore set forth.

3. In an apparatus for mixing earthy matter and hydrocarbons, and for consuming the carbon therein, the combination of means for feeding the earthy matter, a separate conduit for the liquid carbon, means for producing and separately conducting a blast, and jet for ignition, substantially as set forth.

292,237. APPARATUS FOR FEEDING AND CONSUMING FINE FUEL. JULIUS LEEDE, Washington, D. C., assignor of one-half to Granville H. Oury, Florence, Ariz. Filed Aug. 30, 1883. (No model.)



Claim.—1. The method herein described of burning hydrocarbons, consisting in mixing the same with granular or pulverized material, feeding it to a furnace, and then simultaneously scattering and igniting the same, and thereby consuming it while in suspension, as set forth.

2. The combination, substantially as described, of a carburetor and a blower having a blast through the carburetor to the furnace, to provide gas and pressure for a jet-flame, and a separate blast to the furnace, substantially as and for the purpose described.

3. The combination of the automatic fuel-feeding conveyers working the fuel through conduits into the furnace, the separate blast-pipe for projecting the fuel through the furnace, and the jet-flame adjacent to the nozzle of the conduit and blast, substantially as specified.

4. In a furnace for burning pulverulent fuel, the combination of a series of blast-pipes and means for producing a jet-flame adjacent thereto for igniting the fuel as it issues from the feed-pipe into the fire-chamber, substantially as specified.

5. The combination of a series of adjustable blast-pipes and a series of gates or valves and levers for controlling the direction, quantity, and force of the blast without changing the speed of the blower, substantially as specified.

6. The combination, in a fuel-feeding apparatus, of the inversely-graduated gearing and their connecting chain belts, the serrated clutches, and their operating-levers, whereby the speed of the conveyers and the feed are adjusted with relation to the blower, substantially as specified.

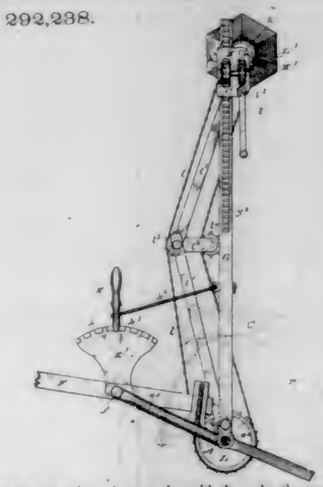
7. The combination of means for changing and regulating the speed of the conveyers with means for regulating the force of the blast without changing the speed of the blower, substantially as specified.

8. The apparatus constructed and operating substantially as described, consisting of the combination of automatic fuel-feeding conveyer, the separate blast-pipes, means for producing a jet-flame, a locomotive having a conceived fire-box, and an automatic conveyer for removing the residuum of the fuel to a reservoir-bin, substantially as specified.

292,238. HARVESTER-REEL. SYLVANUS D. LOCKE, Hoosic Falls, N. Y. Filed Apr. 3, 1883. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of the two-armed reel-support, the equal racks on said arms, the carriers on each arm, the reel-shaft journaled in said carriers, the equal

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pinions in each carrier engaging with the racks, the worm-wheels fixed to said pinions, so as to move therewith as integral, the crank-shaft extending transversely across the supporting-frame and journaled in ears from the carriers, and the worms upon said crank-shaft engaging with the worm-wheels, whereby the reel-shaft will be adjusted co-ordinately at each end along the frame by revolving the crank-shaft.

2. The combination, substantially as hereinbefore set forth, of the two-armed reel-supporting frame, the equal racks upon said arms, the carriers traveling upon said arms, the reel-shaft extending transversely across the frame and journaled in said carriers, the equal pinions pivoted in said carriers and engaging with the racks, the rollers or trucks opposing said pinions and holding the racks in engagement therewith, the worm-wheels fixed to said pinions, the crank-shaft journaled in ears from each carrier, and the worms upon said crank-shaft engaging with the worm-wheels.

3. The combination, substantially as hereinbefore set forth, of the two-armed reel-supporting frame, the equal racks upon said arms, the carriers traveling upon said arms, the reel-shaft extending transversely across the frame and journaled in said carriers, the equal pinions pivoted in the carriers and engaging with the racks, the worm-wheels fast to said pinions, the crank-shaft journaled in ears from the carriers, and the worms fixed to said shaft between the ears of each carrier.

4. The combination, substantially as hereinbefore set forth, of the two-armed reel-supporting frame, the equal racks upon the outer sides or edges of said arms, back to back, the carriers traveling upon said arms, the reel-shaft extending transversely across the frame and journaled in said carriers, the equal pinions pivoted in said carriers and engaging with the racks, the worm-wheels fixed to said pinions, the worm-shaft extending across the reel-frame and supported in ears from each carrier, the worms fixed to said shaft and each engaging with a section of the corresponding worm-wheel exposed by said ears, and the rollers or trucks pivoted in the carriers to bear against the inner sides or edges of the frame-bars in opposition to the pinions and hold the racks up against said pinions.

5. The combination, substantially as hereinbefore set forth, of the main axle, the single carrying-wheel mounted thereon, the main frame sleeved to said axle prolonged inside of the carrying-wheel, the two-armed reel-support pivoted to said main frame immediately above its bearing upon the axle, the reel-shaft and mechanism for adjusting it in and out along said arms, the sprocket-wheel fixed to the end of the axle outside of the frame, the chain connecting said sprocket-wheel with an opposing sprocket-wheel on the reel-shaft, and the radius-bars pivoted, respectively, to the axle and to the reel-shaft, and pin-jointed to each other at their meeting ends, provided with idle sprocket-pinions or guides for said chain at or in proximity to the pin-joint.

6. The combination, substantially as hereinbefore set forth, of the main axle, the single carrying-wheel mounted thereon, the seat supported from the axle outside of the carrying-wheel, the wide main frame sleeved to the axle prolonged inside of the carrying-wheel, the two-armed reel-support pivoted to said main frame immediately above its bearing upon the axle, the racks upon said arms, the carriers traveling along the arms, and their pinions taken into the racks, the worm-wheels fast to said pinions, the crank-shaft and its worms engaging with said worm-wheels, and the reel-shaft journaled in said carriers, whereby the driver in his seat may adjust the reel up and down by turning the crank-shaft.

7. The combination, substantially as hereinbefore set forth, of the main axle, the single carrying-wheel mounted thereon, the driver's seat supported from the axle outside of the carrying-wheel, the wide main frame sleeved to the extended axle within the carrying-wheel, the two-armed reel-supporting frame pivoted to said main frame immediately above its bearing upon the axle, the racks upon said arms, the carriers and their equal pinions engaging with said racks, the worm-wheel fast to said pinions, the crank-shaft and its worms engaging with said worm-wheels, the reel-shaft journaled in the carriers to be adjusted as they travel along the racks, the sprocket-wheel on the outer end of the axle, and the opposing sprocket-wheel on the reel-shaft, the radius-bars pivoted, respectively, to the main axle and to the reel-shaft and pin-jointed at their meeting ends, and the idle sprocket-pinions or guide-wheels carried by them at said joint or in close proximity thereto, whereby the slack of the chain will be taken up or let out as the reel-shaft is adjusted.

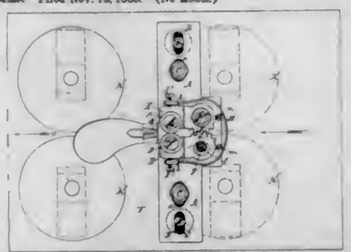
8. The combination, substantially as hereinbefore set forth, of the main axl , the single carrying-wheel mounted thereon, the driver's seat supported from the axle outside of the carrying-wheel, the main frame having two sleeve-connections with said axle prolonged, the two-armed reel-supporting frame pivoted to said main frame immediately above the sleeve-bearing thereof upon the axle, the draft-tongue pivoted in forwardly-extending arms from said frame, the lever pivoted to the draft-tongue at or near its pivotal attachment to the frame, the segment into which such lever latches, and the link-connection with the reel-frame.

9. The combination, substantially as hereinbefore set forth, of the main axle, the carrying-wheel mounted thereon, the driver's seat supported upon the axle outside of the carrying-wheel, the wide main frame having two sleeve-bearings upon the axle prolonged inside of the carrying-wheel, the draft-tongue pivoted in forwardly-extending arms or bars on said frame, the lever pivoted to said draft-tongue, the two-armed reel-supporting frame pivoted to the main frame immediately above the sleeve-bearings of the latter upon the axle, and the forked link connecting the lever on the draft-tongue with each arm of the reel-frame.

10. The combination, substantially as hereinbefore set forth, of the main axle, the carrying-wheel mounted thereon, the driver's seat supported from the axle outside of the carrying-wheel, the wide main frame sleeved upon said axle, the two-armed reel-supporting frame pivoted to said main frame immediately above its bearing upon the axle, the draft-tongue pivoted between forwardly-extending arms from said main frame, the lever pivoted to the draft-tongue by the same pivot-bolt securing the latter, the segment and its rack rising from the front end of one of the frame-bars above said pivot, a dog upon the lever taking into said rack, and a link-connection between the lever and the reel-frame.

11. The combination, substantially as hereinbefore set forth, of the main axle, the carrying-wheel mounted thereon, the driver's seat supported from the axle outside of the carrying-wheel, the wide main frame sleeved to said axle, the two-armed reel-supporting frame pivoted to said main frame immediately above its bearing upon the axle, the equal racks upon said arms, the carriers and their equal pinions engaging with said racks, the worm-wheels, crank-shaft, and worms driving said pinions, the reel-shaft journaled in said carriers, the draft-tongue pivoted between forwardly-extending arms from the main frame, the lever pivoted to the draft-tongue at its joint with the main frame, and the link-connection between said lever and the reel-frame.

292,239. WORKING RATTAN. GEORGE W. LOMBARD, Westminster, Mass. Filed Nov. 12, 1883. (No model.)



Claim.—1. In a rattan-splitting machine, the combination, with rolls which guide the material to the splitting-cutter, of the guide-supporting arms pivoted for swinging action and connected with each other by intermeshing gear-teeth *e*, formed on arcs of circles coincident with the pivot-centers of said arms, and means for adjusting the relative distance between their axes of motion, substantially as shown and described.

2. The combination, with the swinging arms or blocks geared to each other, and provided with devices for guiding the rattan to the splitting-cutter, of a flat pressure-spring extending around the pivot-heads in C form, with its ends pressing against the outer sides of the blocks, in the manner set forth.

3. The combination, with the swinging blocks or arms, pivoted as at *f*, and toothed together for simultaneous action, and provided with means for guiding a rattan to the splitting-cutter, of the flat metal spring arranged as shown, and provided with adjusting-screws, the points of which enter depressions on the exterior of said arms for retaining and regulating the parts, substantially as set forth.

4. The combination, with the swinging arms E, geared together, and carrying devices for guiding the rattan to the splitting-cutter, of the support-bar A, adapted for vertical and lateral adjustment, upon which said arms are pivoted and supported, as hereinbefore set forth.

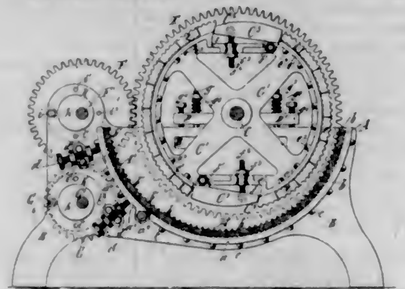
5. In a machine for splitting rattan, the combination, with the support-bar A, having the guiding devices mounted thereon, of the screw-threaded studs B, fitted to the bed or frame for upholding said bar, and the clamp-bolts C, substantially as shown and described.

6. The combination of the guide-blocks pivoted for swinging action, and connected with each other for uniform operation by intermeshing gear-teeth, and means for adjusting the axis of their swing movement to compensate for wear in the said gear-teeth.

7. In a guiding device for rattan-splitting machines, an eccentric bushing, F, in combination with the pivot-studs *f*, and guide-blocks E, provided with intermeshing gear-teeth *e*, as and for the purpose set forth.

8. The combination, with the studs *f* and guide-blocks E, of an eccentric bushing, F, of slightly greater height than the thickness of the block, whereby said bushing is adapted to be clamped in position by said stud while the block is free to swing thereon, as set forth.

292,240. MACHINE FOR OBTAINING FIBERS FROM FIBER-BEARING SUBSTANCES. E. LOUIS LOWE, Jr., Brooklyn, N. Y. Filed Nov. 17, 1883. (No model.)



Claim.—1. In a machine for obtaining fibers, a rotary cylinder composed of heads or supports and reversible staves secured to said heads or supports, and having opposite sides or faces grooved or roughened, so that either side or face may be presented for use, substantially as described.

2. In a machine for obtaining fibers, a bed or concave composed of supports and reversible staves secured to said supports, and having opposite sides or faces grooved or roughened, so that either side or face may be presented for use, substantially as described.

3. In a machine for obtaining fibers, a rotary cylinder composed of heads or supports and reversible staves secured to said heads or supports, and having in their opposite sides grooves or projections of different pitch, whereby provision is afforded, by reversing the staves, for operating upon different materials more effectively, substantially as described.

4. In a machine for obtaining fibers, a bed or concave composed of supports and reversible staves secured to said supports, and having in their opposite sides grooves or projections of different pitch, whereby provision is afforded, by reversing the staves, for operating upon different materials more effectively, substantially as described.

5. In a machine for obtaining fibers, the combination of a rotary cylinder and a bed or concave, both having their working-surfaces composed of reversible staves, which are grooved or roughened on opposite sides or faces, so that either side may be presented for use, substantially as described.

6. In a machine for obtaining fibers, the combination, with a bed or concave, of a rotary cylinder consisting of heads or circular supports having formed in their peripheries depressions or recesses, and staves secured to said heads or supports, a movable section or stave arranged in the depressions or recesses of the heads or supports, and forming a pocket or cavity in the cylinder, and devices whereby said section or stave may be adjusted toward and from the center of the cylinder to vary the size of the said pocket or cavity, substantially as described.

7. In a machine for obtaining fibers, the combination, with a rotary cylinder, of a bed or concave wherein the said cylinder works, extending beneath and upward on each side of the cylinder, and comprising a principal portion, which is fixed and extends beneath the cylinder and upward on the delivery side of the machine, and a hinged portion at the entrance side of the machine, and devices for adjusting said hinged portion toward and from the cylinder, whereby provision is afforded for varying the distance between the cylinder and bed or concave at the entrance, and without moving the principal working portion of the bed or concave, substantially as described.

8. In a machine for obtaining fibers, the combination, with a bed or concave approximately semicircular in form, of a cylinder which is approximately circular in form, working within the bed or concave, and bearings for said cylinder, which are movable horizontally to vary the distance between the bed or concave and cylinder at the entrance and delivery sides of the machine, substantially as described.

9. In a machine for obtaining fibers, the combination of a bed or concave, a cylinder working within the bed or concave, bearings or boxes for the cylinder, which are movable to vary the distance between the bed or concave and the cylinder at the entrance and delivery sides of the machine, a shaft geared to the cylinder and serving to impart motion thereto, and bearings or boxes for said shaft, which are movable, whereby provision is afforded for adjusting said shaft correspondingly to the cylinder, substantially as described.

10. The combination of the bed or concave A, the cylinder, the bearings D, supported by the frame of the machine, and provided with the slotted arms D^2, and bolts g^2, passing through the slotted arms, for securing said boxes in different positions on the frame of the machine, substantially as described.

11. The combination, with the bed or concave A, the cylinder, and the frame B, of the boxes D, provided with the lateral extensions D' and with the arms D^2, the bolts g', having a slotted connection with the frame, the springs g^3, applied to said bolts, the screws g^4, for limiting the downward movement of said boxes, and the bolts g^2, all substantially as described.

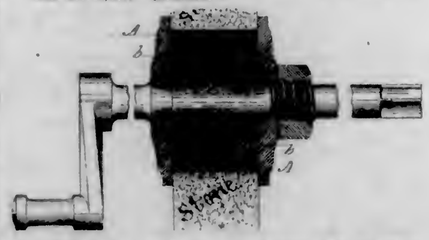
12. The combination of the frame B, the bed or concave A, the cylinder, the boxes D, movable as described, the shaft F', and wheels F E, connecting it with the cylinder, and the eccentric-boxes A, fitted to the frame B, and adapted to be turned therein, substantially as described.

292,241. FLUID-PRESSURE GOVERNOR. WILLIAM LYON, Sheffield, County of York, England. Filed Sept. 15, 1883. (No model.) Patented in England Mar. 27, 1882, No. 1,472.



Claim.—The combination, in a governor for regulating the pressure and flow of gas, of a chamber closed at top and supplied with a suitable liquid, a communication between this chamber and the gas-outlet or consumer's pipe by which the pressure of the gas in the latter is brought to bear on a large area of liquid surface within this chamber, a second chamber, open at top, communicating with the first below the lowest level of the liquid, and a float in said second chamber connected with the gas-inlet valve, substantially as hereinbefore described, for the purposes set forth.

292,242. GRINDSTONE. EDWARD R. MASON, Des Moines, Iowa. Filed Nov. 12, 1883. (No model.)



Claim.—1. As a new article of manufacture, a disk for bushing grindstones, having loops or hook-shaped fastening devices projecting from its inside face, that are adapted to be embedded and fastened in cement, for the purpose set forth.

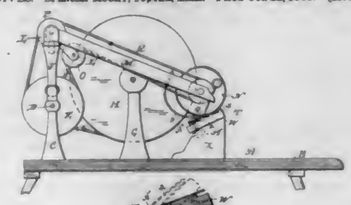
2. The combination of two disks, having loops or hook-shaped fastening devices projecting from their inside faces, with a grindstone by means of cement, in the manner set forth, for the purposes specified.

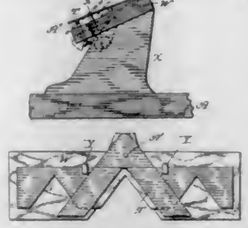
292,243. CLOTHES-CLAMP. FRANCIS J. MCBRIEN, Brooklyn, N. Y. Filed May 2, 1883. (No model.)



Claim.—As a new article of manufacture, a clamping device consisting of a frame, *a*, having prongs or lips *b b*, and an adjustable screw, *i*, a stationary jaw, *c*, and a movable jaw, *e*, fulcrumed or pivotally connected to said stationary jaw and provided with the cam *f*, by means of which said jaw may be moved toward the clothing and hold the same in place at will, substantially as set forth.

292,244. MACHINE FOR SHARPENING MOWING-MACHINE KNIVES. SPENCER MCCAY, Topeka, Kans. Filed Oct. 22, 1883. (Model.)





Claim.—1. In a machine for grinding mowing-machine knives, the combination of the support C, the part J which is pivoted thereon, and which supports the two guiding-pulleys, with the pivoted part M, which carries the grinding-stone in its outer end, whereby the stone has both a horizontal and vertical movement, substantially as shown.

2. The combination, with the emery-wheel, of an elastic forked guide, which extends upon both sides of the wheel, substantially as described.

3. In a machine for grinding mowing-machine knives, the combination of the movable frame, having the grinding-wheel journaled on its outer end, with the forked guide, which extends upon both sides of the wheel, and the set-screws S, substantially as set forth.

4. The combination of the pivoted table with the guide T, the set-screws A′ A″, and the projections *a* on the under side of the guide, substantially as specified.

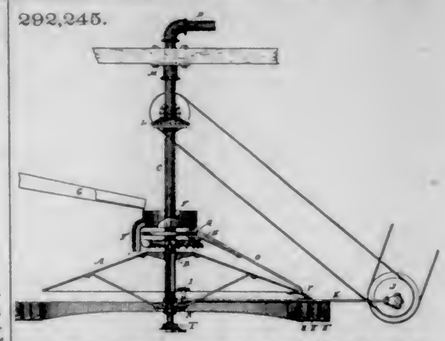
5. The combination of the table, the V-shaped guide, provided with a clamping device, and a set-screw for changing the angle at which the V-shaped guide is held in relation to the knife, substantially as described.

292,245. ORE-CONCENTRATOR. WALTER MCDERMOTT, Orange, N. J. Filed Feb. 26, 1883. (No model.)

Claim.—1. The combination, with a conical table flaring outwardly and downwardly, of the pulp and water distributers, a deflector adjustable as to length, the launders arranged around the outer edge of the table, and mechanism whereby the pulp and water distributers and the deflector are moved in unison, substantially as described.

2. The combination of a conical table, the pulp and water distributers, and the launders with an adjustable deflector revolving around the outer edge of and moving independently of the table, substantially as described.

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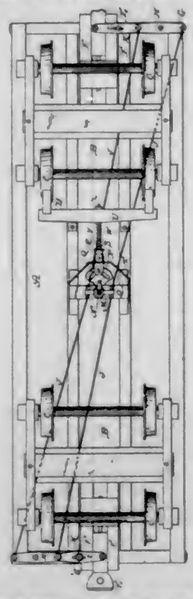
3. The combination, with a central shaft, a feed-box, and water-distributer, of a conical table loosely fitted to move independently of and be supported by said shaft, and mechanism, substantially as described, for revolving the shaft and giving the table a shaking motion independently of the motion of the shaft supporting it, as and for the purposes set forth.

4. The combination, with a central shaft, of the feed-box, water-distributer, deflector, and the conical table, all supported on said central shaft, and the table constructed to be moved independently of said shaft, and mechanism, substantially as described, for giving said shaft, feed-box, water-distributers, and deflector a continuous rotary motion, and the table a shaking motion, substantially as and for the purpose specified.

5. The combination, with the shaft C, of a conical table provided with collars B B′, loosely encircling said shaft, one of said collars having the upper part of the conical table attached thereto, and the other receiving the stays supporting the table, substantially as described.

6. The combination, with the oscillating table A, the shaft C, revolving independently of the table, and constructed and arranged to support and guide it, and mechanism, substantially as described, for revolving the shaft and giving the table a shaking motion independently of the shaft supporting it, as set forth.

292,246. AUTOMATIC CAR-BRAKE. JOHN D. MILLER, Big Sandy, assignor of one-third to Thos. M. Miers, Dallas, Tex. Filed June 11, 1883. (No model.)



Claim.—1. In an automatic car-brake, the combination of the endwise-moving draw-heads, the levers connected thereto, the connecting-rods attached to the levers, a partially-rotating shaft provided with cams, the connecting-rods, springs, and brake-beams, substantially as shown.

2. The combination of the endwise-moving draw-head, the levers H I, the connecting-rods, and the intermediate mechanism for operating the brake-beams, the lever I being slotted, so that its pivot can be adjusted endwise, substantially as described.

3. The combination, with the partially-rotating shaft provided with cams, and an operating mechanism, of the rods, the springs, and the sleeve, substantially as set forth.

292,247. WALL-PROTECTOR. DANIEL CALDWELL MILLETT, Milwaukee, Wis. Filed Oct. 1, 1883. (No model.)



Claim.—1. A wall-protector having a handle for convenience of manipulation, and provided with drip cups or troughs upon three sides of its surface, as and for the purpose described.

2. A wall-protector having a handle oblique to its surface, and provided with drip cups or troughs arranged, as shown, to catch and retain the drippings from the flat surface.

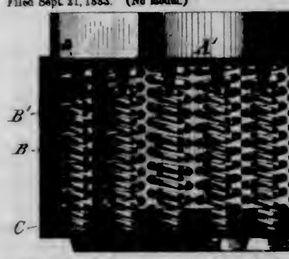
3. A wall-protector having a suitable handle, sharpened edge E, and rounded under edges at the other three sides, as and for the purpose shown.

4. The combination, in a wall-protector, of surface A, sharpened edge E, handle G, oblique to surface A, and drip cups or troughs B C D.

5. The combination, in a wall-protector, of surface A, sharpened edge E, and the edges F F of troughs B D, inclined back from the edge E, so that the wall-protector may be operated close to or under the edges of moldings, &c.

6. The combination, in a wall-protector, of surface A, with opposite curved ends inclined away from each other and toward trough C, so as to make inclined edges F F and inclined gutters or drip-cups B and D, as and for the purposes set forth.

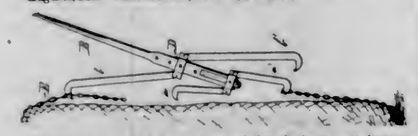
292,248. CAR-SPRING. HARVEY J. MITCHELL, Philadelphia, Pa. Filed Sept. 21, 1883. (No model.)



Claim.—1. A perforated seat-plate adapted to fit and be maintained in position horizontally within a box or casing, said seat-plate having a series of openings each adapted to admit a coiled spring, substantially as set forth.

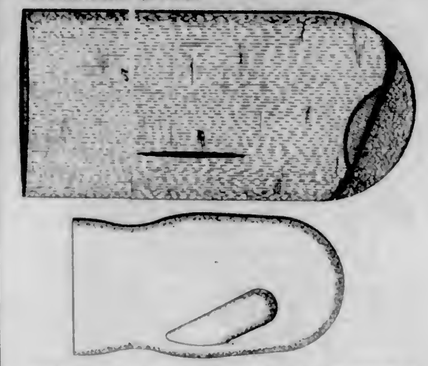
2. The combination of a box or casing, a perforated seat-plate fitting therein, a series of inner coils fitting in the openings of the seat-plate, a series of outer coils resting upon the seat-plate, and a cap-plate resting on said outer coils, substantially as set forth.

292,249. BALE-BAND TIGHTENER. CHARLES CARTER MONTAGUE, Augusta, Ark. Filed June 22, 1883. (No model.)



Claim.—A lever, A, having journaled on its lower end, between arms *f*, securely riveted, one on the lower and the other on the upper side of said lever, roller F, hooks *a a′*, pivoted in the ends *b b* of plates C, and hooks *b b′*, pivoted in the ends of plates D, which plates embrace the lever, and capable of being secured at any one of the holes d^3 in the lever by pin *d*, in combination with link-chain E, substantially as shown and described, and for the purposes set forth.

292,250. MANUFACTURING FELTED MITTENS FROM WOVEN OR KNITTED FABRIC. DEVILLO WASHINGTON NORTHRUP, Utica, N. Y. Filed Mar. 3, 1883. (No model.)

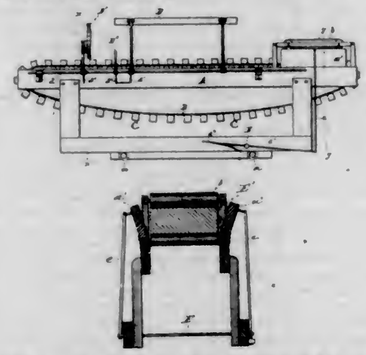


Claim.—1. As a new article of manufacture, a mitten composed of knitted or woven fabric felted or fulled, substantially as set forth.

2. A process of making mittens, consisting, essentially, in constructing an exaggerated article from knitted or woven fabric, then fulling the article so constructed, and finally blocking it, if need be, substantially as set forth.

3. A process of making mittens, consisting, essentially, in constructing an exaggerated article from woven or knitted fabric by appropriately cutting and seaming the same, then fulling the article so constructed, and finally blocking it, if need be, substantially as set forth.

292,251. TILE-MACHINE. JAMES W. PENFIELD, Willoughby, Ohio. Filed Feb. 6, 1883. (No model.)



Claim.—1. In a tile-machine, the combination, with the cutter and an endless carrier, of a pivoted gravity-dog adapted to engage the cross-bars of the endless carrier and cause the cutter to be carried along with the endless carrier, substantially as set forth.

2. In a tile-machine, the combination, with the cutter and an endless carrier, of a pivoted gravity-dog adapted to engage the cross-bars of the carrier, and devices connecting the cutter and-dog, whereby the cutter when moved forward will release the dog and cause it to engage the endless carrier and cause the cutter to be carried along with the endless carrier, substantially as set forth.

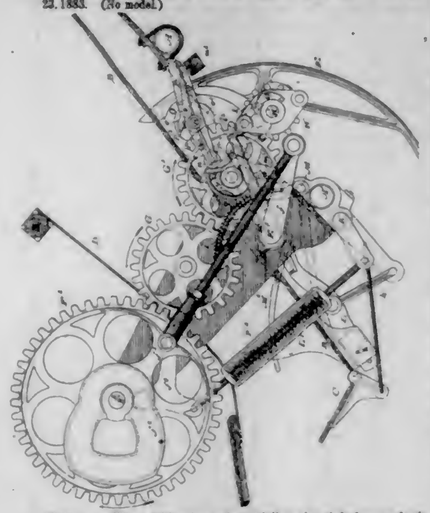
3. In a tile-machine, the combination, with an endless carrier, of a stop constructed and arranged independent of the carrier and adapted to be adjusted to allow the end of the cut product to come in contact therewith and to carry the cutting device along with the carrier, substantially as set forth.

4. In a tile-machine, the combination, with the endless carriers, of an endless belt for sanding one face, and hinged side pieces for sanding the edges, substantially as set forth.

5. In a tile-machine, metal strips, by means of which the cross-bars are fastened to the endless belt, substantially as shown and described.

6. The combination, with the cut-off table, of rubber belting with one surface made of canton-flannel or its equivalent with the rough side out, substantially as and for the purpose shown and described.

292,252. GRAIN-BINDER. HENRY E. PRIDMORE, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed May 23, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with the binder-arm, and knotter, and cord-holder, of a slack device actuated twice to each binding operation, once to prepare and furnish to the knotter slack cord from the spool-strand, and the second time to prepare and yield slack to the binder-arm as it recedes from the holder.

2. The combination, substantially as hereinbefore set forth, with the binder-arm, knotter, and cord-holder, of a slack device intermediate between said arm and the cord box or spool, and a tension device brought into effective action upon the cord at the moment said slack device is actuated to gather in or store up a slack length.

3. The combination, substantially as hereinbefore set forth, with the slack-lever, of a tension device lying or pressing upon the cord as it passes through said lever, and arranged in such manner that its pressure is increased as the lever rises.

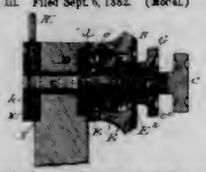
4. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever, the ears formed at the effective end, the cam acting upon its heel end, the independently-pivoted tension-arm resting upon the cord between said ears, and the spring acting upon said tension-arm.

5. The combination, substantially as hereinbefore set forth, of the pivoted slack-lever having perforated ears at its free end, the cam acting upon its heel end, the independently-pivoted tension-arm resting upon the slack-lever between said ears, the spring pressing upon said tension-arm, and means whereby the force of said spring may be adjusted.

6. The combination, substantially as hereinbefore set forth, of the plate bolted to the frame-work, the pivot-pin formed upon said plate, the slack-lever journaled upon said pivot-pin and formed with perforated ears at its effective end, the tension-arm resting upon the slack-lever between said ears, the spring coiled about the pivot-pin and pressing at one end against a shoulder on the tension-arm, and the series of adjusting-pins arranged upon the plate, with any one of which the second end of the spring is adapted to engage to determine its stress.

7. The combination, substantially as hereinbefore set forth, with the pivoted slack-lever, of the cam having the outline shown and described.

292,253. COMBINATION-LOCK. JAMES N. RICE, Chicago, and JOSEPH HUMPHREYS, Austin, Ill. Filed Sept. 6, 1882. (Model.)



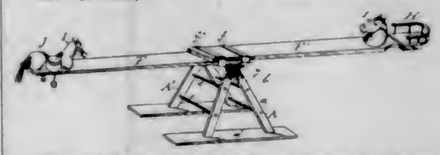
Claim.—1. In a lock, the combination of a shell having means for attaching it to a door or other object, tumblers within said shell, having slots and pins which strike each other when the tumblers are turned, a locking-plate to be attached to the object, and having a slot, *d*, a bolt having a bit which may be forced into the slot *d* or drawn into the slot formed by the tumblers, a set-screw for turning the tumblers, and a catch upon the opposite end of the bolt, and adapted to be turned with the latter, substantially as described.

2. In a lock, the combination of a shell having means for attaching it to an object, and having a movable dial on its face, tumblers within said case having pins and slots, and one having a screw-threaded extension, which extends outside of the shell, a nut or screw on said extension for clamping the dial in place and turning the tumblers by means of the screw-threaded tumbler, a locking-plate to be attached to the object, and having a bit-slot, a bolt passing through the tumblers, and having a bit which may be drawn in the tumblers' slots or forced into the slot in the locking-plate, and a catch upon the opposite end of the bolt, and adapted to be turned when the bit is in the tumblers' slots, substantially as described.

3. In a lock, the combination of a shell having means for attaching it to an object, a bolt passing through the shell and having a bit and catch, a series of tumblers, one journaled in the bolt, and having a screw-threaded extension at one end, a slot at the other, and an intermediate pin, and the others journaled upon an extension of the first tumbler, and having slots at one end adapted to register with the slot in the first tumbler, and pins attached to and between the tumblers, and a screw, G, for revolving the thimbles, substantially as described.

4. In a combination-lock, the combination of a tumbler having a screw-threaded extension, c^2, an extension, c^3, a slot, c^1, and a pin, c^5, a second tumbler journaled upon the extension c^3, and having a slot, c^1, and pins c' and c^{10}, a third tumbler journaled upon extension c^2, and having pin c^5 and slot c^1, a screw-nut, G, upon extension c^2, a bolt, C, having a bit, c, which may be drawn into the slots when the latter are made to register, and a catch which may be turned when the bit is in said slots, substantially as and for the purpose set forth.

292,254. TEETER. GEORGE W. RICH, Chicago, Ill. Filed June 6, 1883. (No model.)



Claim.—1. In a teeter, the stands A, having inclined posts *a*, that are connected on top by the socketed pivot-castings *b*, substantially as and for the purpose set forth.

2. In a teeter, the planks F F', adjustably coupled by straps or bands *f f'*, secured to the ends of such planks, substantially as and for the purpose set forth.

3. In a teeter, the planks F F', adjustably coupled by straps or bands *f f'*, and one of the planks, F, having secured pivot-plates *g* for bolt *c*, substantially as and for the purpose set forth.

4. A teeter provided with pivotal or reversible seats H, substantially in the manner and for the purpose set forth.

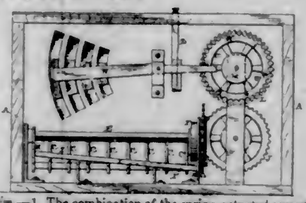
5. In a teeter, the seats H, pivotally secured upon the ends of planks F, each by a pivot-bolt, *h*, substantially as and for the purpose set forth.

6. In a teeter, the combination, with seats H, of handles I, secured upon planks F, substantially as and for the purpose described and shown.

292,255. SALVE. WILLIAM RICHARDSON, Buffalo, Mo. Filed May 21, 1883. (No specimens.)

Claim.—In a salve for the cure of piles, a compound formed of ooze of mullein-leaves, four ounces, (4 oz.;) hog's lard, four ounces, (4 oz.;) gum-camphor, one-half of one ounce, (½ oz.;) laudanum, eighty drops, (80 drops,) substantially as described, and for the purposes set forth.

292,256. ADDING-MACHINE. DAVID MARION RUSH, Louisburg, Mo. Filed July 25, 1883. (Model.)

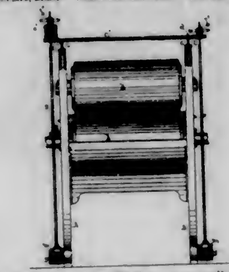


Claim.—1. The combination of the spring-actuated operating-levers C, pivoted at B, the operating-shaft E, and the rod I, set at an angle to the shaft, the lever C being made to bear upon the rod I, in the manner and for the purpose shown.

2. The combination, with the shaft M, having series of wheels provided with studs or projections, of the spring-actuated levers having numbered blocks secured to their ends, the frame having suitable slots through its side to display the figures, and the notched rod Z, for locking the levers in place, substantially as described.

3. The combination, with the shaft M, having a series of wheels which are provided with studs or projections, the spring-actuated levers having the numbered blocks secured to their inner ends, and the frame having suitable slots through its front side to display the figures, substantially as set forth.

292,257. SQUEEZE-ROLL. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Oct. 14, 1882. (No model.)

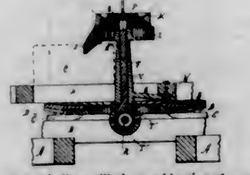


Claim.—1. In combination with the squeeze-rolls B and levers *c c*, the bar *a'*, rods *s e*, and levers *g*, substantially as described.

2. In combination with the roll B, the bar *a'*, provided with depressions *c' c'*, and the levers *c c*, provided with projections *d d*, fitting said depressions, substantially as described.

3. In combination with the levers *c c*, the bar *a'*, the roll B, the conical or egg shaped nuts *b'*, rods *s*, and levers *g*, substantially as described.

292,258. GRINDING-MILL. SILAS C. SCHOFIELD, Freeport, Ill. Filed May 18, 1883. (No model.)



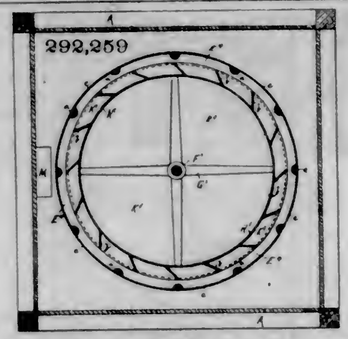
Claim.—1. In a grinding-mill, the combination of a sweep-actuated master-wheel, a hollow central vertical standard above said master-wheel and rigidly attached to it, a grinding-shell rigidly attached to the upper end of said standard, a vertical shaft rotating freely within said standard, a grinding-cone connected with said shaft at its upper end and rotated by and with it, and gearing connecting said master-wheel and vertical shaft, whereby the rotation of the master-wheel rotates the vertical shaft in an opposite direction, substantially as shown and described, and for the purpose set forth.

2. The combination of the master-wheel E, hollow vertical standard F, rigidly attached thereto, shell M, rigidly attached to said standard, shaft V, rotating freely in said standard, cone P, means connecting said cone P and shaft V, and adapted to impart the rotary motion of the shaft to the cone, and at the same time permit rocking motion of the cone, and gearing connecting the master-wheel and vertical shaft, whereby the rotation of the master-wheel produces reverse rotary motion of the shaft, substantially as shown and described, and for the purpose set forth.

3. The combination of the standard F, shell M, rigidly attached thereto, shaft V, rotating freely within said standard, and squared at its upper end, the cone P, provided with a central opening fitting loosely over said squared shaft, and the set-screw W sustaining the weight of said cone, and balancing the same on its point to permit adjustment of the grinding-faces of the cone and shell, substantially as shown and described.

292,259. FLOUR-DRESSING MACHINE. JOSEPH M. SCHUTT, Minneapolis, Minn. Filed May 25, 1883. (No model.)

Claim.—1. In a perpendicular flour-dressing machine, the combination of a slowly-revolving bolting-reel provided with inwardly-inclined rings E' E² E⁴ and vertical internal ribs, *a a*, and a rapidly-revolving beater moving in the same direction as the bolting-reel, and provided with ring-sections H' H² H³, beater-blades *b b*, and horizontal disks K' K² K³, substantially as and for the purpose herein specified.



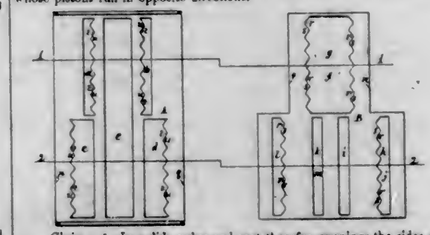
2. In a perpendicular flour-dressing machine, the combination of the revolving bolting-reel, constructed with the inwardly-inclined rings E' E² E⁴ and vertical ribs *a a*, the beater-shaft, the beater-rings H' H² H³, inclined beater-blades *b b*, and horizontal disks K' K² K³, substantially as and for the purpose herein specified.

292,260. UTILIZING WASTE CALCIUM CHLORIDE AND SULPHATE. CONRAD SEMPER, Philadelphia, Pa. Filed Apr. 23, 1883. (No specimens.)

Claim.—The method of utilizing waste sulphate of calcium produced in the manufacture of acetic acid from acetate of lime, which consists in subjecting said product to a high temperature, as and for the purpose described.

292,261. SLIDE-VALVE. HENRY F. SHAW, Boston, Mass. Filed June 14, 1883. (No model.)

Brief.—The valve supplies and exhausts steam from two cylinders whose pistons run in opposite directions.



Claim.—1. In a slide-valve and seat therefor, openings the sides of which have projections and grooves in their edges or edge faces, whereby one or more passages across the plane of contact of valve and valve-seat are irregular or zigzag in shape, substantially as specified.

2. In combination with the chambers *j* and *m*, openings *h i* and *k l* in the valve, and ports *c*, *d*, and *e* in the seat, said openings and ports being so located with reference to each other that either of the openings *i* and *k* is well over the port *e* when that one of the openings *h* and *l* leading to the same chamber is about to enter upon the corresponding one of the ports *c* and *d*, substantially as shown and specified.

3. A valve consisting of two parts, one of said parts corresponding to a D-valve, and the other of said parts corresponding to a B-valve, the edges of passages and ports presenting projections and grooves, to provide one or more passages across the plane of contact of valve and valve-seat of an irregular or zigzag shape, as set forth.

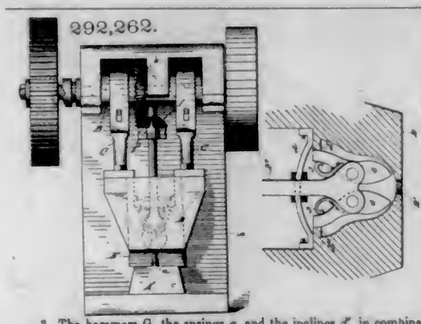
4. A valve, being a combination of a D-valve and a B-valve, the openings in that part of which that corresponds to a B-valve and the ports in the seat therefor are located in such relation to each other that when the opening leading from either of the two chambers is well over the common exhaust-port in the seat the port leading from the seat to the same chamber in the valve is about to be opened, substantially as and for the purpose set forth.

292,262. COMBINED PUNCHING AND FORGING MACHINE. JOHN P. SHEPHERD, Toledo, Ohio. Filed July 3, 1883. (No model.)

Claim.—1. In a combined punching and forging machine, the combination, with a punch and a reciprocating die, of forging mechanism contained within the die, and adapted to forge the surplus metal taken from the opening formed by the punch and die into a thimble around the said opening and integral with the plate, substantially as set forth.

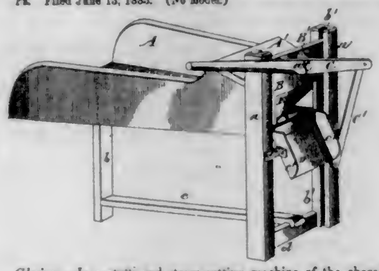
2. The combination, with the reciprocating die D, of the inclosed forging mechanism, substantially as and for the purpose set forth.

292,262.



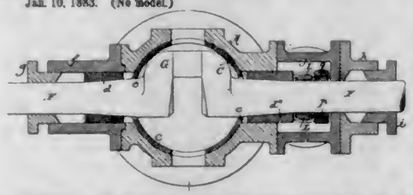
3. The hammers G, the springs *g*, and the inclines *d'*, in combination with the revolving and reciprocating shaft F, substantially as shown and described.

292,263. STRAW-CUTTER. JOHN N. SLAUGHENHAUP, Chambersburg, Pa. Filed June 13, 1883. (No model.)



Claim.—In a stalk and straw cutting machine of the character hereinbefore described, the combination, with the cutting devices, of the inclined spout D, provided with vertical rest D' and sides *c'*, said spout being secured to the posts *a* in the manner shown.

292,264. STEAM-ENGINE. GEO. SMITH, Jr., New York, N. Y. Filed Jan. 10, 1883. (No model.)



Claim.—1. In combination with the inclosed crank-shaft, the piston, and pitman-connection between said shaft and piston, apertures in the upper ends of the piston and the cylinder-head, provided, respectively, with removable lugs or caps *c* and *b*, all substantially as and for the purposes described.

2. In combination with the inclosed crank, the trunk-like extension D, provided with the stud I, and the apertures in said trunk-like extension and in the cylinder-head, provided, as described, with removable plugs *b* and *c*, the hollow pitman H, provided with an oil cup or pouch, *a*, and provided with oil-holes at *l* and *m*, for the purpose of keeping the bearings on crank G and stud I lubricated, all substantially as set forth.

3. In an engine having an inclosed driving-crank, G, a piston, C, the cylindrical shell-like portion of which is all made in one piece, and with two longitudinal slots to permit the movement of the piston about the crank-shaft, and with a lateral slot or opening to permit the insertion of the crank G, all substantially as set forth.

292,265. FIRE-ESCAPE. JOSHUA C. STODDARD, Springfield, Mass. Filed Apr. 26, 1883. (No model.)

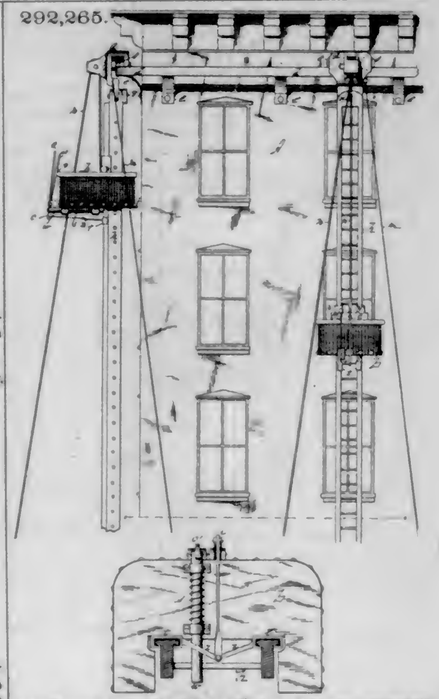
Brief.—The hoist is moved up and down up the T side bars of the ladder, and is provided with a bolt operated by a lever, to move it in between the rungs to hold it stationary, and brake-shoes bearing upon the said side bars and operated by a toggle-lever and a connected hand-lever.

Claim.—1. In combination with the projecting track *d*, the roller-head *a*, the ladder *h*, pivoted to said roller-head and having T-shaped bars, the car *b*, having the guides *y y* thereon, and means, substantially as described, for moving said car up and down, substantially as set forth.

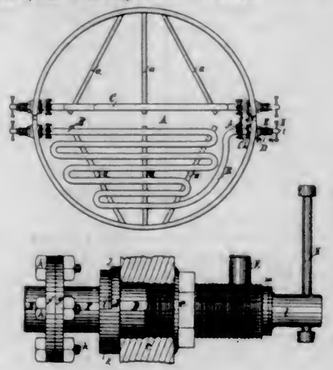
2. The combination, with the ladder *h*, of the car *b*, having the guides *y y* thereon, the lever *c'*, the bolt *w*, and the spring *s*, substantially as set forth.

3. The combination, with the ladder *h*, having T-shaped bars, of the car *b*, having the guides *y y* thereon, the lever *c*, the angle-braces *z z*, and the brake-shoes *l l*, substantially as set forth.

292,265.



292,266. PIPE-COUPLING FOR BEER-KETTLES. HERMAN STRATER, Jr., Boston, Mass. Filed Aug. 20, 1883. (No model.)



Claim.—1. The combination of a pipe secured in the side of a kettle, a coil in said kettle, a piece, F, joined to said coil and forming a nut at the end thereof, and a rod and screw, G, within said pipe, and adapted to screw into said piece F, substantially as and for the purpose set forth.

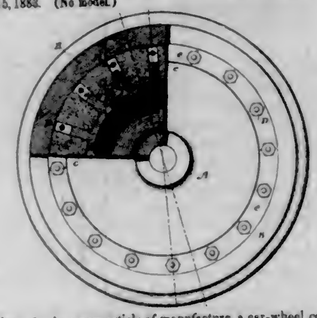
2. The combination of a coil, B, a pipe, D, an intermediate piece, F, a rod and screw, G, and a pipe, E, with a kettle, substantially as and for the purpose set forth.

3. The combination of a coil, B, a kettle, a pipe, D, fixed in the side of the kettle, a flange, *d*, on said pipe, and having extension *k*, an intermediate piece between said coil and said pipe, having a flange, *i*, and forming a nut, as specified, and a screw, G, substantially as and for the purpose set forth.

4. The combination of coil B, intermediate piece, F, packing *j*, pipe D, pipe E, and rod and screw G, with a kettle, substantially as and for the purpose set forth.

5. The combination, in and with a kettle, of a coil, B, an intermediate piece, F, packing *j*, pipe D, rod and screw G, and packing *m*, substantially as specified.

292,267. CAR-WHEEL. THEODORE THOMAS, New York, N. Y. Filed June 15, 1883. (No model.)

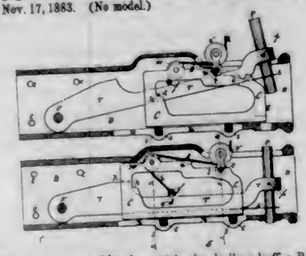


Claim.—1. As a new article of manufacture, a car-wheel consisting of a central portion having a series of wedge-shaped peripheral recesses, formed by side plates and by numerous radial cross-arms converging but slightly toward the center, as shown, in combination with a tire portion, and between the two a series of separated and independent blocks of wood, paper, or similar material, seated in the wedge-shaped recesses, as shown, to carry the entire load, substantially as and for the purposes set forth.

2. As a new article of manufacture, a car-wheel consisting of the center portion, A, having side plates, *b* and *c*, and numerous radial arms, *a a*, a series of blocks, C C, of wood, paper, or other suitable material, and a tire portion, B, all suitably connected, substantially as and for the purposes set forth.

3. As a new article of manufacture, a car-wheel consisting of a center portion, A, having side plates, *b* and *c*, and radial arms *a a*, a series of blocks, C C, of wood, paper, or other suitable material, a tire portion, B, having a flange, *e*, and securing-bolts D D, passing through metallic portions of the wheel only, substantially as and for the purposes set forth.

292,268. CAR-COUPLING. WALTER TURNBULL, New Orleans, La. Filed Nov. 17, 1883. (No model.)



Claim.—1. The combination, with the hollow buffer B, provided with the opening N, the bolts *i i*, with sleeves *e e*, the slots *o o*, and the carriage C, having the shoulders A and *u*, the slot *l*, and carrying the sheave M, and the tongue or lever T, pivoted to buffer B, and provided with the pin *d*, the coupling-pin P, the spring *s*, and the eyebolt *f*, all substantially as described, and for the purpose specified.

2. The combination, with the buffer B and the carriage C, of the bolt *t*, working in slot *o o*, and carrying the sheave *v*, all substantially as set forth.

3. The combination, with the carriage C and the tongue T, of the chain *g*, attached to the eyebolt *f*, passing over sheave M, and under sheave *v*, and up and over sheave *x* to the lever R, and the lever R, pivoted at *y*, and having a handle at each end of same, all substantially as shown.

292,269. COMPOSITION FOR SIZING YARN. JOSEPH WARREN WATTLES, Canton, Mass. Filed June 30, 1883. (No specimens.)

Brief.—The invention relates especially to those described in the United States Letters Patent Nos. 186,435 and 172,216, granted to inventor, one of such patents covering a liquid and the other a dry composition of starch and acetic acid.

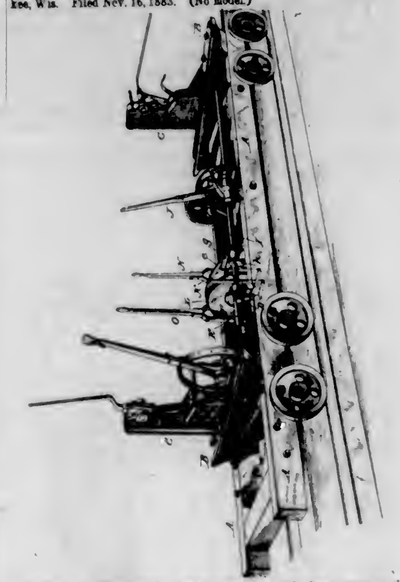
Claim.—A yarn sizing or dressing, substantially as described, composed of acetic acid, starch, and grease or oil, mixed or combined essentially as set forth.

292,270. CASE FOR HOLDING PENCILS, &c. HELLMUTH F. WERNER, Milwaukee, Wis. Filed June 18, 1883. (No model.)



Claim.—A device for holding pens, pencils, or other articles or instruments, consisting of the rigid, straight, box-like case A, having the wedge-shaped block D, grooved and fixed in the same, the bands E and F, and pad L, and sliding cover B, with flexible end *b b*, combined and arranged as set forth and described in this specification.

292,271. SAW-MILL SET-WORKS. THEODORE S. WILKIN, Milwaukee, Wis. Filed Nov. 16, 1883. (No model.)



Claim.—1. In a ratchet mechanism for producing rotary motion, the combination of a wheel having ratchet-teeth on its side face, and an oscillatory disk adapted to be moved to and from said side face, and provided with a series of ratchet-teeth to engage with those of the wheel.

2. In a ratchet mechanism for imparting rotary motion, the combination of a wheel having ratchet-teeth on its side face, an oscillatory disk adapted to move to and from said side face, and provided with ratchet-teeth to engage with those of the wheel, and a spring bearing against the disk and serving to hold it in contact with the wheel, whereby the two are caused to lock and move together when the disk is moved in a forward direction, and the disk is permitted to disengage itself from and move back independently of the wheel when operated in a backward direction.

3. In a ratchet mechanism for imparting rotary motion, the combination of a wheel having ratchet-teeth on its side face, a disk adapted and arranged to move to and from said face, and provided with similar teeth, a spring bearing against the disk and serving to urge it into contact with the ratchet-wheel, and a beveled or wedge-shaped bar, arranged, substantially as shown, to enter between the disk and wheel to separate their faces.

4. The herein-described ratchet mechanism for producing rotary motion, consisting of wheel D, having ratchet-teeth on its side faces, disks F F, likewise provided with teeth on their inner faces, springs G, rock-shaft I, having arms *g h*, and links *e f*, connecting the disks with said arms, substantially as shown and described.

5. In combination with shaft E, ratchet-wheel D, having teeth on its side faces, disks F F, mounted loosely upon said shaft and furnished with teeth to engage with those of the ratchet-wheel, means, substan-

tially such as shown and described, for simultaneously moving the disks in reverse directions, springs G, bearing against the disks and serving to press them toward the wheel D, links K, having elongated openings *i* and beveled faces *j*, and encircling the shaft E between the wheel D and disks F, and a hand-lever, N, connected with the links, substantially as set forth.

6. The combination, substantially as shown and described, of shaft E, ratchet-wheel D, secured rigidly upon said shaft, ratchet-disk F, mounted loosely upon the shaft, a hand-lever connected with said disk, collar H, and spring G, bearing at one end against the disk and at the other end against the collar, as and for the purpose explained.

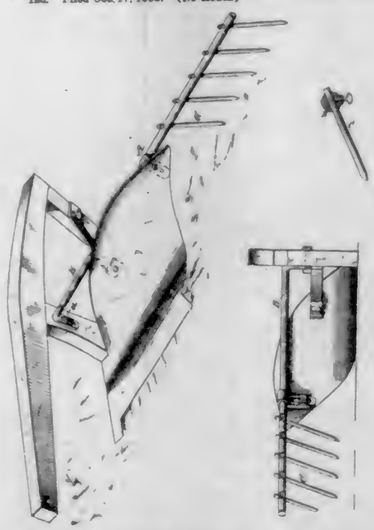
7. The combination, substantially as set forth, of shaft E, ratchet-wheel D, firmly secured thereon, and provided with a hub having a beveled end face, ratchet-disk F, spring G, serving to press the disk against the wheel, and slotted link K, having beveled face *j*, arranged, substantially as shown, to ride upon the beveled end of the hub of the wheel and to separate the disk and wheel.

8. In combination with ratchet-wheel D, having teeth on its side face, and with link or bar K, having beveled face *j*, arranged, substantially as shown, to bear against the hub of the ratchet-wheel, disk F, provided with teeth to engage with those of the wheel, and cut away, substantially as described and shown, to give room for the link or bar K.

9. In combination with a ratchet-wheel having teeth on its side face, and an oscillatory toothed disk adapted to impart rotary motion to said wheel, a brake-band applied to the circumference of the wheel and provided with an operating-lever, substantially as shown and described.

10. In combination with shaft E and ratchet-wheel D, secured thereon, disks F F, springs G G, and collars H, rock-shaft I, provided with arms *g h*, and hand-lever J, links *e f*, connecting the arms *g h* with the disks, brake-band L, and brake-lever O, all substantially as shown.

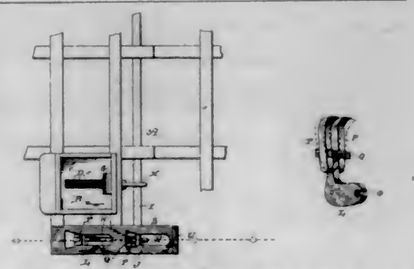
292,272. ATTACHMENT FOR PLOWS. VALENTINE WOOD, Peru, Ind. Filed Oct. 17, 1883. (No model.)



Claim.—In combination with a plow, the harrow attachment constructed substantially as shown and described, and consisting of the rod having oblique tooth sockets or perforations, and bent slotted portion or extremity attached to the plow-standard, the slotted eye-piece, arranged midway upon the rod and adjustably attached to the mold-board, and the harrow-teeth, adjustably secured in the oblique sockets or perforations, whereby the rod and the teeth may be elevated together, or the teeth receive independent vertical adjustment, the latter having both an outward and a backward inclination, as and for the purpose specified.

292,273. CHECK-ROW CORN-PLANTER. ANDERSON WOODWARD, Cameron, assignor of one-half to O. V. Porter, Monmouth, Ill. Filed Oct. 26, 1883. (No model.)

Claim.—1. In a corn-planter, the combination of the operating-shaft, the arms or levers connected thereto, a vertically-moving slide, a pivoted cut-off, the spring for forcing the lower end of the cut-off against the slide, and the seed-conductor, which is connected by a slot with the seed-box, substantially as shown.

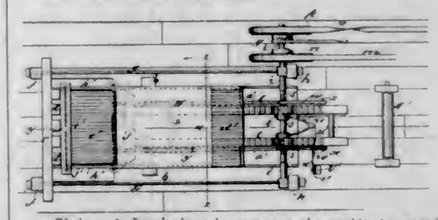


2. The combination of the operating-shaft, provided with means for moving the slides, with the levers J L, provided with fingers, and and the slotted slide through which the upper ends of the fingers pass, substantially as described.

3. In a check-row corn-planter, the combination of the operating-levers, provided with fingers for the balls or stops upon the operating rope or chain to catch against, the fingers being adapted to open and let the balls or stops pass freely through after the levers have been moved far enough, substantially as set forth.

4. The combination of the guide, provided with slots which are widest at their rear ends, with the operating-levers provided with fingers, and guides to keep the fingers in a line with each other, the fingers being adapted to open outward, to let the balls or stops pass through when the fingers reach the wide ends of the slots, substantially as specified.

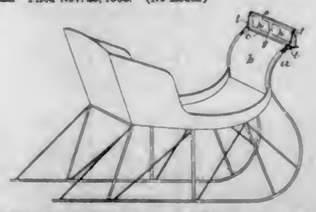
292,274. COTTON-PRESS. JOHN CHAPMAN ALLEN, South Sulphur, Tex. Filed Oct. 10, 1883. (No model.)



Claim.—1. In a horizontal cotton-press, the combination of the staffs *l*, having their upper and lower edges toothed for engaging the driving and withdrawing pinions *t k*, mounted, respectively, on transverse shafts *s i*, provided with driving-pulleys, with the shifting-arms *u*, connecting-rods *u'*, connected with pinions *t k*, and lever *v*, mounted on standard *v'*, equidistant from rods *u'*, whereby the pinions *t k* may be shifted in opposite directions to run the follower backward or forward, as may be desired, substantially as set forth.

2. The books *w*, mounted on shaft *s*, and adapted to automatically engage projections near the outer ends of the staffs *l*, and resist rearward pressure of the cotton, substantially as set forth.

292,275. SLEIGH-DASHER SCREEN. SAML. R. BAILEY, Amesbury, Mass. Filed Nov. 23, 1883. (No model.)

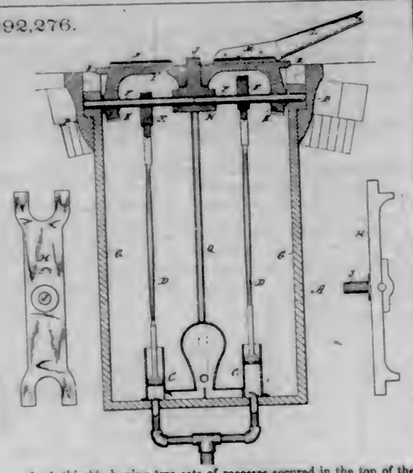


Claim.—The combination, with a sleigh, of a screen formed of thick glass, either transparent of reflective, mounted in a supporting-frame, and secured upon the dasher, substantially as specified.

292,276. FIRE-ENGINE. WILLIAM F. BALDWIN, Grayville, Ill. Filed Aug. 28, 1883. (No model.)

Claim.—1. A thimble secured in the top of a cistern and a pump removably hung in said thimble, in combination with a horizontal cover journaled to rotate over the mouth of said thimble, having means for attaching handles to its upper side and means for communicating motion to said pump, as shown and described.

292,276.



2. A thimble having two sets of recesses secured in the top of the cistern, a pump adapted to hang in one set of said recesses, and a cross-bar adapted to rest in the other set of said recesses, in combination with a cover journaled to rotate upon said cross-bar, having sockets on its upper face to receive handles, and gear-teeth on its lower face to communicate with said pump, as shown and described.

3. The thimble B, having recesses *a*, secured in the top of a cistern, in combination with a pump having a frame, G, provided with lugs adapted to rest in said recesses, as shown and described.

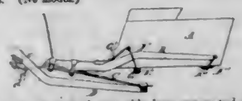
4. The combination, with a thimble permanently fixed in the top of a cistern, said thimble having shouldered recesses in it, of a pump having a frame provided with shoulders or tenons to rest in said recesses, substantially as described, whereby said pump may be suspended in the cistern, or the same pump may be removed intact from the cistern and from the thimble without loosening any binding devices.

5. The combination, with a thimble adapted to rest in the top of a cistern, having recesses *b* in it and a pump suspended by it, of a support, H, adapted to rest in said recesses, said support having the stud J, and a bearing for shafts F, as described.

6. The thimble B, having recesses *a* and *b*, the frame G, supported thereby, a pump supported in said frame, the eccentrics E, operating said pump, the pinions K, the master-wheel I, engaging them, the support H, provided with the stud J and bearings for a shaft, in combination with the two shafts F, journaled in said bearings and in frame G, each of said shafts carrying one of the eccentrics E and one pinion-wheel, K, as shown and described.

7. The thimble B, having recesses *b* and the bearing R, and the support H, adapted to rest in said recesses, having a stud, J, in combination with the master-wheel I, journaled on said stud, and provided with a peripheral edge adapted to rotate in bearing R, as described.

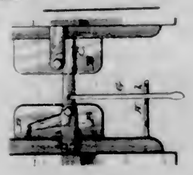
292,277. ROAD-CART. CHARLES S. BEEBE, Racine, Wis. Filed Aug. 15, 1883. (No model.)



Claim.—1. In a road-cart, side bars supported at their front ends by springs, in combination with the body suspended therefrom by arms that point toward the center of the axle from opposite sides thereof, and rods passing transversely under the body, as set forth.

2. The side bars, supported as described, in combination with the body, arms F F', depending from the side bars on opposite sides of the axle, and pointing toward the center thereof, rods E E', shafts D, and the axle, as set forth.

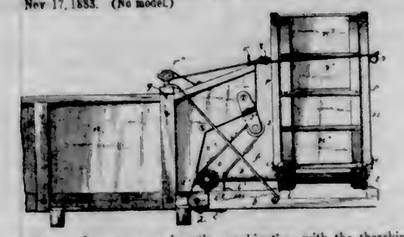
292,278.



292,278. CAR-COUPLING. CHARLES W. BOND, Toledo, Ohio. Filed Sept. 13, 1883. (No model.)

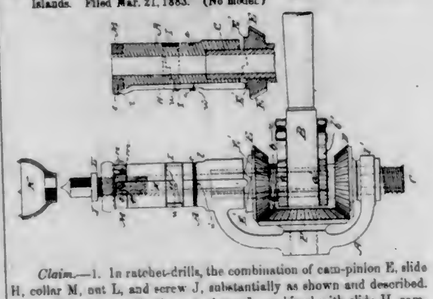
Claim.—The pivoted hook or coupling-link C, provided with the spring D, in combination with the draft-pin E upon the opposite car, substantially as and for the purposes set forth.

292,279. STRAW-STACKER. LEVI BOWERS, Martinsburg, Pa. Filed Nov. 17, 1883. (No model.)



Claim.—In a straw-stacker, the combination, with the thrashing-machine sill, of the removable stacker-sill, the carrier-shaft mounted on the stacker-sill, the miter-gear on its inner end, the transverse shaft at the rear of the machine, a miter-gear mounted thereon near each end, the carrier-frame, and endless slatted carrier, substantially as specified.

292,280. RATCHET-DRILL. WILLIAM BREDE, Honolulu, Hawaiian Islands. Filed Mar. 21, 1883. (No model.)

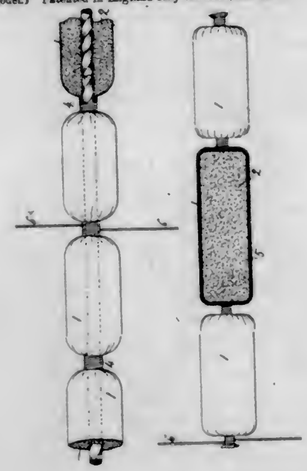


Claim.—1. In ratchet-drills, the combination of cam-pinion E, slide H, collar M, nut L, and screw J, substantially as shown and described.

2. In ratchet-drills, the cam-sleeve I, combined with slide H, cam-pinion E, and collar M, substantially as and for the purpose specified.

3. In ratchet-drills, the spring *e*, combined with feed-slide H, having a pin thereon, and cam-pinion E, as and for the purpose specified.

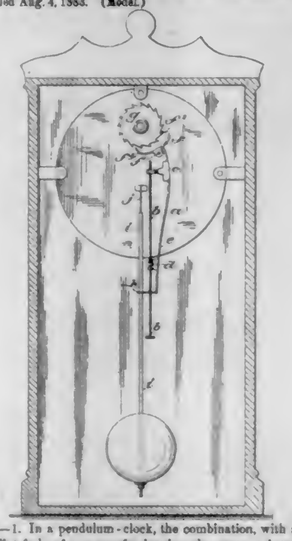
292,281. BUOYANT LIFE-LINE. FRANCIS WENTWORTH BREWSTER, Bloomsbury, County of Middlesex, England. Filed Oct. 15, 1883. (No model.) Patented in England May 10, 1883, No. 2,381.



Claim.—1. A flexible buoyant life-line device, consisting of a series of buoyant sections composed of or filled with any suitable buoyant material, in combination with a flexible center or core about which such sections are flexibly connected, end to end, into a continuous life-line of any desired length.

2. A flexible buoyant life-line device, consisting of a series of buoyant sections composed of or filled with suitable buoyant material and flexibly connected, end to end, in the form of a line or rope capable of being grasped in the hand, substantially as described.

292,282. APPARATUS FOR ADJUSTING THE BEAT OF PENDULUM-CLOCKS. GEORGE H. BROWN and HENRY J. WELTEROTH, Blossburg, Pa. Filed Aug. 4, 1883. (Model.)



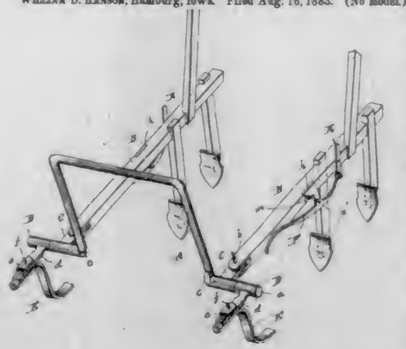
Claim.—1. In a pendulum-clock, the combination, with an elastic verge or pallet fork, of a screw for bowing the same, substantially as and for the purpose set forth.

2. A pendulum-clock constructed with a verge or pallet fork, *a*, fitted with bearings *c d* and screw-rod *b*, the verge or pallet being pivoted at *f'* to be engaged by the escapement-wheel *g*, and the verge-arm being connected at *h* with the pendulum-rod *i*, substantially as shown and described.

3. In pendulum-clocks, the verge or pallet fork *a*, constructed with bearings *c d*, a screw-rod, *b*, and an eye, *h*, substantially as shown and described.

4. In pendulum-clocks, the verge or pallet fork *a*, having a bearing *c*, formed of part *c'*, fixed to arm *e*, and a pivoted nut, *c²*, a bearing, *d*, fixed to arm *e*, and the adjusting screw-rod *b*, held rigidly lengthwise in the bearing *d*, and adjustable in the bearing *c* for deflecting the verge or pallet fork, substantially as shown and described.

292,283. TONGUELESS CULTIVATOR. JOHN B. CHRISTIAN and WILLIAM D. HANSON, Hamburg, Iowa. Filed Aug. 16, 1883. (No model.)

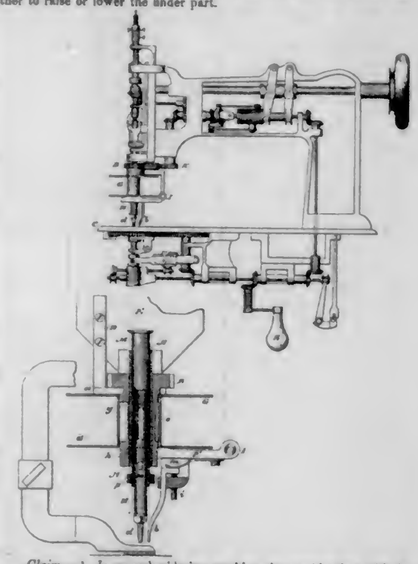


Claim.—1. The combination, in a cultivator, of the arched axle A, of the couplings C, pivoted to the spindles of the axle, and provided with stops *e*, adapted to abut against the vertical portions of the axle, the plow-beams pivoted to said couplings, and the sleeves D, fastened to the spindles of the axle, and serving to hold the couplings in place and as attachments for the shoes E, substantially as specified.

2. The combination, with the plow-beams and plows, of the fulcrum-plate *h*, its stop *m*, the pivoted shoe F, and the catch *k*, the whole arranged to operate substantially as specified.

292,284. EMBROIDERING-MACHINE. EMIL CORNELY, Paris, France. Filed June 30, 1883. (No model.)

Brief.—The two machines shown in patents of same party, dated August 15, 1882, Nos. 262,742 and 262,743, are combined in this device to produce a machine to wind a thread around groups of threads consisting of the several threads brought into position simultaneously in producing the stitches in the several rows of chain-stitches. The nipple-tube is composed of two or more parts adapted to slide one within the other to raise or lower the under part.



Claim.—1. In an embroidering-machine, the combination, with devices for forming several parallel rows of stitches, of mechanism, as indicated, for winding a thread around the group of threads composing the several rows of stitches, substantially as described.

2. In an embroidering-machine, the combination, with devices for forming several rows of stitches, of a spool encircling the nipple-tube, a thread-carrier, and means for rotating the spool and thread-carrier around the needles, substantially as described.

3. The combination, with the operative elements of an organized sewing and embroidering machine, as set forth, of the nipple-tube, composed of detachable parts, which slide one within the other, and fastening means for securing the parts in their working position, substantially as described.

4. The combination, with the nipple-tube, formed in two parts, detachably connected together, of a spool surrounding said nipple-tube and carrying the thread to be wound around the needle-thread, substantially as described.

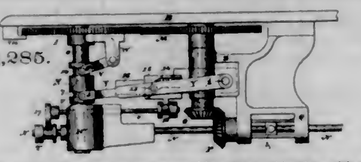
5. The combination of the two-part nipple-tube, the wheel B, turning freely around said tube, the spool encircling the hub of said wheel, and the thread-carrier and thread-guides connected and turning with said wheel, substantially as described.

6. In the art of sewing and embroidering fabric, the improvement consisting in forming several parallel rows of stitches and simultaneously with such formation winding an embroidering-thread around the group of sewing-threads, substantially as described.

292,285. EMBROIDERING-MACHINE. EMIL CORNELY, Paris, France. Filed June 30, 1883. (No model.) Patented in France May 23, 1882, No. 149,127, and in England May 25, 1882.

Brief.—Improvement upon the construction embraced in Letters Patent No. 262,743, dated August 15, 1882, granted to same party.

292,285.

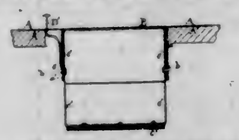


Claim.—1. In an embroidering-machine, the combination, with the sleeve for operating the blades that supply thread to the needles, of the lever connected with said sleeve and reciprocating the same, the sliding block having a cam-groove, the stud on said lever entering said groove, and mechanism, as specified, for reciprocating said sliding block, substantially as described.

2. In an embroidering-machine, the combination of the blades, the sleeve connected therewith, as set forth, the lever for operating said sleeve, the sliding block having a cam-groove, the stud on said lever entering said groove, and the rod *v*, having a groove which receives a tooth of said block, and provided with a projection which engages collars on the horizontal rod N, substantially as described.

3. The combination of the lever and connections as specified, for communicating motion to the blades, the sliding block having a cam-groove, and the eccentric pin or roller carried by said lever and entering said groove, with means for operating said pin, whereby the stroke of said blades, and consequently the amount of thread supplied, may be regulated, substantially as described.

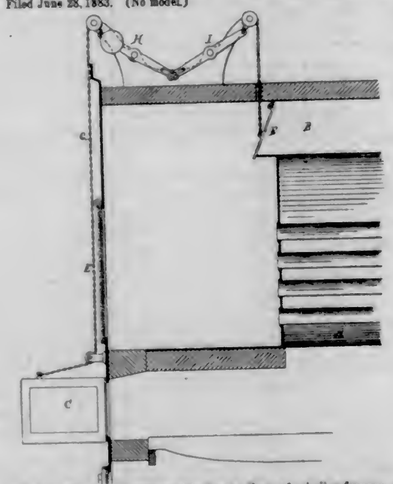
292,286. SPITTOON. JOSIAH J. DEAL, Wilmot, Ohio, assignor of two-thirds to William M. Johnston, same place. Filed Sept. 15, 1883. (No model.)



Claim.—1. A spittoon having a counter-weight attached to one edge, whereby the bowl, after having been tilted up by its lever for use, is automatically turned down again to be emptied, and the covering-plate made to cover the orifice in the floor, substantially as and for the purpose described.

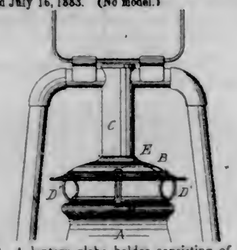
2. The combination of the lever D, connecting-rod *d*, and revolving bowl C, having a covering-plate, B, and frame A, having ears *a' a'*, substantially as and for the purpose described.

292,287. DRAFT-REGULATOR. JAMES DEMPSEY, Lewiston, Me. Filed June 28, 1883. (No model.)



Claim.—The combination, with the fire-door of a boiler-furnace, of a chain attached to the fire-door, weighted lever H, mounted above the furnace, lever I, connected to lever H, as described, a chain leading to the damper, and the inclined damper, the chains being connected to the levers in the manner and for the purpose set forth.

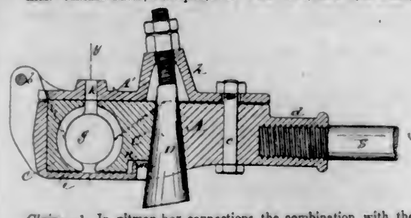
292,288. LANTERN-GLOBE HOLDER. FREDERICK DIETZ, New York, N. Y. Filed July 16, 1883. (No model.)



Claim.—1. A lantern-globe holder consisting of a ring provided with coils at each side, as set forth, said coils being attached to the cap or bell above the globe, substantially as shown and described.

2. In a lantern-globe holder of the character herein specified, ring D, having coils D' at each side thereof, attached to the under side of cap or bell B, located above the globe, a thumb-piece, E, projecting from the ring, substantially as shown and described.

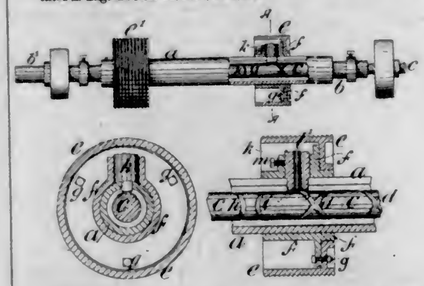
292,289. PITMAN-BOX CONNECTION FOR MOWERS AND REAPERS. CHARLES DIXON, Woodsport, N. Y. Filed Oct. 5, 1883. (No model.)



Claim.—1. In pitman-box connections, the combination, with the frame or head part A, having its chamber *e* constructed with interior tapering sides, the half-boxes C C' of which have sloping sides *i i*, and are constructed to stop short of the bottom of said chamber, the connection B, the adjusting or tightening-up key D, and the hinged lid A', provided with a tightening bolt or fastening, and arranged to bear down on the half box or boxes, to hold it or them in place, essentially as described.

2. In pitman-box connections, the combination, with the pin or ball B and its half-boxes C C', the one C' of which is constructed with a step, *n*, of the adjusting-key D, for the one half-box C', and the frame or head part A, constructed to form a chamber, *e*, having an opening in one of its sides and at its forward end, and formed with raised lips *l m* at such parts, whereby the base portion of said chamber is made to form a receptacle for oil to lubricate the pin or ball, substantially as specified.

292,290. GRINDING APPARATUS. JOSEPH S. DRONSFIELD, Oldham, County of Lancaster, England. Filed Sept. 18, 1883. (No model.) Patented in England June 22, 1883, No. 3,108.

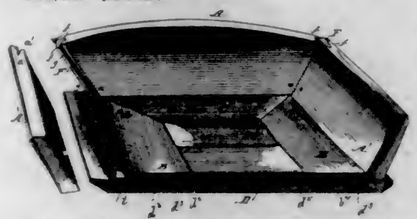


Claim.—1. In a card-grinding device, the combination of a hollow shaft and a screw-shaft having two separate sets of screw-threads, with shunting-grooves near the center and near the opposite ends, and two grinders each having a fork adapted to traverse one of said sets of screw-threads, all substantially as set forth.

2. In a card-grinding device, the combination of two or more grinders and forks therefor with a rotating screw-shaft, having a corresponding number of sets of right and left hand screw-threads, and shunting-grooves at the ends of each set, substantially as described.

3. The combination of the screw-shaft and block *f* with the fork-holder *k*, adapted to an opening in said block large enough for the withdrawal of the fork the latter having its shank adapted to swivel in the said holder, substantially as specified.

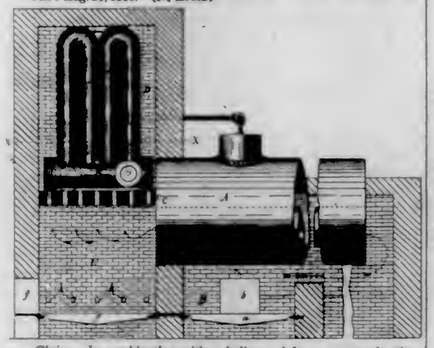
292,291. CARRIAGE-SEAT. WALTON A. EDDY, Randolph, N.Y. Filed Oct. 9, 1883. (No model.)



Claim.—1. A vehicle-seat in which the joining edges of the back and side pieces are grooved and channeled to receive the flanges and ribs of an angle-iron for securing said side and back pieces together, substantially in the manner and for the purpose set forth.

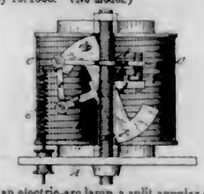
2. An angle-iron, F, having the flanges *f* and rib *f'*, adapted to enter suitable grooves in the joining edges of the back and side pieces of a vehicle-seat, whereby said pieces are held securely together, substantially in the manner and for the purpose set forth.

292,292. SUPERHEATER. H. WILLIAM ELLICOTT, Baltimore, Md. Filed Aug. 21, 1883. (No model.)



Claim.—In combination with a boiler and furnace, a combustion-chamber to which the products of imperfect combustion are introduced, and in which they are combined with other elements to assist in their thorough consumption, a heating-chamber separated from the combustion-chamber by a perforate partition, and a steam-receptacle located in the said heating-chamber and connected by a steam-pipe to the steam-space of the boiler, substantially as specified.

292,293. ELECTRIC-ARC LAMP. FREDERICK K. FITCH, New York, N.Y. Filed May 16, 1883. (No model.)



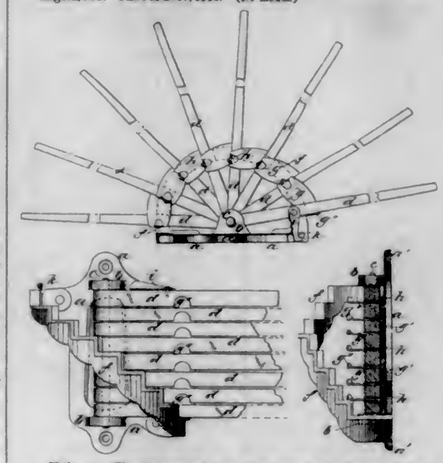
Claim.—1. In an electric-arc lamp, a split annular clutch, *f*, adapted to normally grip and lift the carbon rod when tilted, in combination with suitable means adapted to spread the split clutch and release said rod, substantially as described.

2. In an electric-arc lamp, the combination, with a split annular clutch, adapted by tilting to grip and lift the carbon rod, of an electro-magnetic device in the arc-circuit operating to elevate said clutch, and an electro-magnetic device in a derived circuit around the arc operating to spread the clutch and release the carbon rod, substantially as described.

3. In an electric-arc lamp, the combination of the rod B, clutch *f*, link *e*, arm *d*, oscillating armature D, and spring *c*, substantially as described.

4. In an electric-arc lamp, the combination, with the clutch *f*, adapted to grip and lift the carbon rod, and having forks *i*, of the derivation-magnet K, armature L, shaft *m*, finger *n*, having forks *o*, cam *p*, having lever *q*, and spring *r*, substantially as described.

292,294. TOWEL-RACK AND CLOTHES-BAR. JOHN T. FOSTER, Arlington, N.J. Filed MAR. 17, 1883. (No model.)



Claim.—1. The combination, with a base-plate, *a*, of the bars *d*, pivoted thereon, the semicircular stepped rim *f*, and the chain of links *g g*, constructed and applied to the bars *d* substantially as described, whereby they perform the double function of moving the bars and protecting them from wear, as and for the purpose set forth.

2. In a towel-rack, substantially as shown, and in combination with the base-plate *a*, the pivot-pin *c*, step part *f*, and overlying bars *d*, the series of links *g*, secured to the bars *d* and having the projections g^2, *h*, and *g'*, the said links being attached to the bars, as described, so as to intervene between the bars and the steps, the hook *i*, and stud *k*, all arranged and adapted to serve as and for the purposes set forth.

292,295. MACHINE FOR CLEANING WOOL. AUGUSTE FRATEUR, Antwerp, Belgium. Filed Jan. 29, 1883. (No model.) Patented in Belgium July 21, 1882, No. 58,538, Nov. 24, 1882, No. 59,653, and Mar. 28, 1883, No. 60,892; in France July 24, 1882, No. 150,219; in England Aug. 2, 1882, No. 3,675; in Germany Sept. 6, 1882, No. 21,582; in Austria-Hungary Sept. 18, 1882, No. 41,904 and No. 19,122; in Italy Nov. 30, 1882, No. 14,349; in Victoria Jan. 11, 1883, No. 3,478; in Spain Apr. 13, 1883; in Cape of Good Hope May 22, 1883, No. 243; in South Australia May 26, 1883, No. 360; in Natal May 29, 1883, No. 5,024; in Queensland Aug. 13, 1883, No. 526, and in New South Wales Aug. 14, 1883.

Brief.—The wool is presented to the action of the first toothed cylinder, and by a jet of water forced down between the teeth thereof, the burrs, &c., being impaled thereon, from which they are knocked by a doffer. After being acted upon by other cylinders, the wool is thrown into a tank of water and floated off onto a spiked frame, and by water-jets forced down among the spikes and carried off by drawing-rollers.

Claim.—1. Two toothed cylinders and mechanism for rotating the same with their teeth in contact, in combination with a water-pipe adjacent to the point of junction of the two cylinders, and adapted to project a stream of water at that point to assist in the transfer of the fibers from the teeth of one cylinder to those of the other, all substantially as set forth.

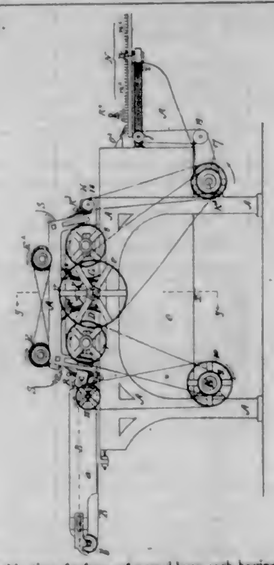
2. The combination of a frame having projecting teeth, and devices for feeding wool or other fibers thereto, with a pipe adapted to project a stream of water onto the teeth in a direction opposite to that in which they point, whereby the lumps in the wool will be spiked on the teeth and the fibers forced down between the teeth, all substantially as described.

3. The combination of feed-rolls and a toothed cylinder, D, with a pipe, R, adapted to force a stream of water onto the cylinder D against the points of its teeth, a doffer-cylinder, and mechanism for operating the cylinders and rolls, substantially as specified.

4. The combination of feed-rolls and a toothed cylinder, D, with a slotted pipe, R, a doffer-cylinder, E, a pipe, R', a roll or drum to take off the fibers from the cylinder D, and mechanism for operating the cylinders and rolls, substantially as described.

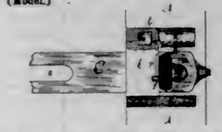
5. The combination of a frame of spaced bars, each having projecting teeth, with a pipe adapted to throw streams of water against the points of said teeth, as set forth.

292,295.



6. The combination of a frame of spaced bars, each having projecting teeth, and a pipe adapted to throw streams of water against the points of said teeth, with devices for feeding wool or other fibers onto said frame, and rollers *i*, and mechanism for operating the same, to withdraw the fibers from between the bars, substantially as described.

292,296. SEAL-LOCK. ROBERT FREW, Pittsburg, Pa. Filed Aug. 11, 1883. (Model.)



Claim.—1. In combination with a hasp and front plate, the latter having a T-head or equivalent device engaging with the hasp and guides for holding the seal, a concealed catch in said plate, and a frangible seal fitting in said guides and held by said concealed catch, substantially as and for the purposes set forth.

2. In seal-locks, the combination, with the hasp, of the lock-plate having the rotating T-head *e*, engaging with the hasp, guides *h h'*, extending from the edge of the plate to the T-head, and suitable catch, *l*, and the frangible seal *k*, sliding within said guides, fitting against said T-head and held by said catch, substantially as and for the purposes set forth.

3. In seal-locks, the combination, with the hasp, of the lock-plate having the rotating T-head *e*, engaging with the hasp, and provided with the guides *h h'*, extending from the edge of the plate to the T-head, stop *f*, and suitable catch, *l*, and the frangible seal *k*, sliding within said guides, fitting against said T-head, and held by said catch, substantially as and for the purposes set forth.

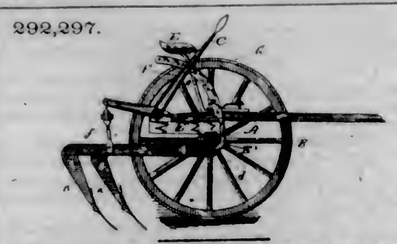
4. In combination with the hasp having the elongated slot *c*, the lock-plate provided with a suitable catch and having the boss or staple *d* corresponding thereto, and provided with the stop *f* on the face thereof, the rotating T-head *e*, working through said plate, and the frangible seal *k*, adapted to engage with said catch and fit against said T-head, substantially as and for the purposes set forth.

292,297. GRAPE AND ORCHARD CULTIVATOR. WM. FROHLING, Sr., San Jose, Cal. Filed Sept. 22, 1883. (No model.)

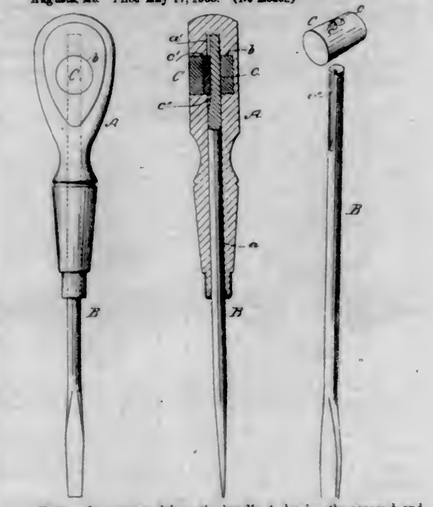
Claim.—1. In a grape and orchard cultivator, the beams D, brackets E^2, cross-bar C', and rod or cylindrical bar *d*, in combination with the shovel-beams D^2, jointed to hub-sleeves D^3, and frame E', substantially as shown, and for the purpose described.

2. The combination of the shovel-beams D^2, jointed to the hub-sleeves D^3, with the shovel-beams D, secured to frame E' by brackets E^2, connecting-bars C', and rod *d*, substantially as shown, and for the purpose described.

292,297.

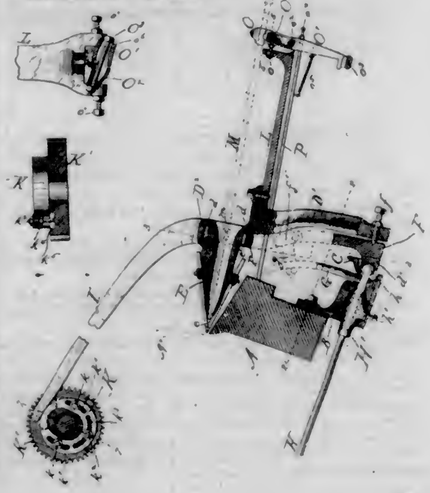


292,298. SCREW-DRIVER. GEORGE E. GAY and JOHN H. PARSONS, Augusta, Me. Filed May 17, 1883. (No model.)



Claim.—In a screw-driver, the handle A, having the recess *b* and axial hole *a*, reaching past its recess, as at *a'*, said extended portion *a'* being made smaller than the hole *a*, in combination with the blade B, having the longitudinal groove *c''* in its shank, plug C, having an aperture, *c*, and key *c'*, substantially as and for the purpose set forth.

292,299. NAIL-PLATE FEEDER. JOHN C. GOULD, Chicago, Ill. Filed Mar. 23, 1883. (No model.)



Claim.—1. In a nail-plate feeder, the combination, with the gripping-levers, one of which is provided with the wedging-surface a^3, of the diagonal bolt O^2, substantially as specified.

2. In a nail-plate feeder, the plate-feeding devices, consisting of the levers united at their lower ends, one of them being pivoted and the other being secured to a stationary point, the diagonal bolt, the wedging-surface a^3, and the stop-rod P, substantially as specified.

3. The combination, with the gripping-levers, of the gripping-surfaced thimbles O, secured thereon by friction, substantially as specified.

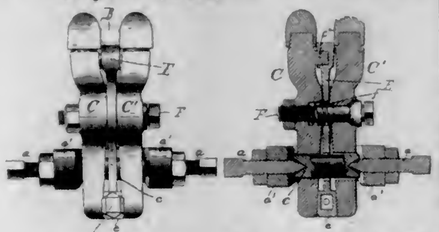
4. The combination of the eccentric, the lever resting thereon without being attached thereto, and the pivoted barrel-support to which said lever is attached, substantially as specified.

5. The combination of the eccentric, the lever resting thereon without being attached thereto, and the pivoted barrel-support, to which said lever is attached by an adjustable attachment, substantially as specified.

6. The combination, with the vibrating segment and its operating devices, of the oscillating rod by which said devices are actuated when said rod is provided with a detachable head, substantially as set forth.

7. The combination, with the lever whereby the feeder is oscillated to and from the knives, of the adjustable eccentric whereby said lever is operated, substantially as specified.

292,300. NAIL-PLATE FEEDER. JOHN C. GOULD, Chicago, Ill. Filed Aug. 3, 1883. (No model.)

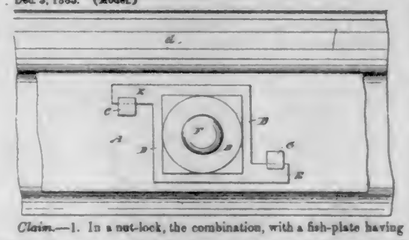


Claim.—1. The combination, with the grippers, of the intermediate wedge-piece and the stop-rod actuating said wedge-piece, substantially as specified.

2. The combination, with the grippers, of the intermediate piece having a wedge for spreading the lower ends of the grippers, and a spring, *f* for spreading the upper ends of the grippers, substantially as specified.

3. The combination, with the grippers, of the intermediate piece, E, for opening and closing the grippers and forming a support for the plate-rod, substantially as specified.

292,301. NUT-LOCK. JOHN W. HALEY, North Hartland, Vt. Filed Dec. 3, 1883. (Model.)



Claim.—1. In a nut-lock, the combination, with a fish-plate having lugs C on its outer surface, of the frame or nut-check D, having lugs E at opposite corners, the said lugs being adapted to catch on the lugs C, substantially as herein shown and described.

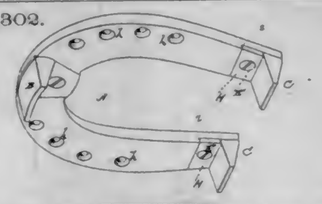
2. In a nut-lock, the combination, with the fish-plate A, having hook-lugs C, of the frame or nut-check D, having diagonally-opposite lugs E, substantially as herein shown and described.

3. In a nut-lock, the frame or nut-check D, provided with lugs E at diagonally-opposite points, substantially as herein shown and described.

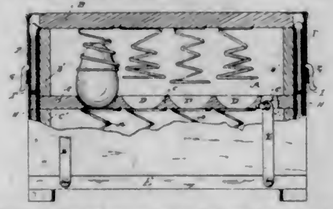
292,302. HORSESHOE. ALBERT E. HALL, Quincy, Minn. Filed June 28, 1883. (No model.)

Claim.—A horseshoe having its under face recessed at its end and toe portions, and provided at each portion with two threaded perforations, in combination with the calks having threaded studs to engage the outer perforation of each recessed portion, the perforated locking-plates adapted to fit, respectively, the interspaces of the recesses, one end engaging the shoulders *x* of the shoe and the other the inner sides of the calks, and securing-screws, substantially as specified.

292,302.



292,303. EGG-CARRIER. RICHARD HUNTER HARRIS, Petersburg, Va. Filed Aug. 2, 1883. (Model.)



Claim.—1. In egg-carriers, a rigid hollowed base, in combination with a yielding egg-encircling surface projecting from the roof of each tier, for the purpose specified.

2. In egg-carriers, the combination, with a perforated rigid hollowed base, of a spiral yielding surface concentric with the axis of the former, substantially as herein described.

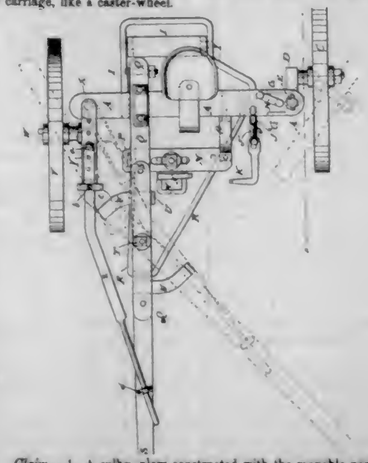
3. In egg-carriers, the combination, with rigid hollowed bases D D, having perforations D′ D′, of spiral springs A A, projecting from roof B, concentric with the axis of the base and that of the egg inserted between them, for the purpose herein set forth.

4. In egg-carriers, the combination, with the roof B, floor C, and the walls B′ B′ C′ C′, composing the respective tiers, of the rods H H, adapted to guide and sustain them in position, pins I I, and pivoted braces K K, substantially as shown and described.

5. In egg-carriers, the combination, with the roof B, from which project springs A A, and perforated hollowed bases D D, forming an unyielding support for the eggs, of rods H H, adapted to guide and connect the independent tiers, having buttons G G inserted therein, and hasps F F, projecting from the roof of the upper tier, whereby a secure fastening is obtained and the independent tiers virtually made a unit, for the purpose herein fully set forth.

292,304. SULKY-PLOW. THOMAS TROUNDALE HARRISON, Aubrey, Kans. Filed Oct. 22, 1883. (No model.)

Brief.—A jointed tongue connected by a lever with the swiveled post of the furrow-wheel. Turning the tongue turns the wheel. The land-wheel is also swiveled and left free to adapt itself to the motion of the carriage, like a caster-wheel.

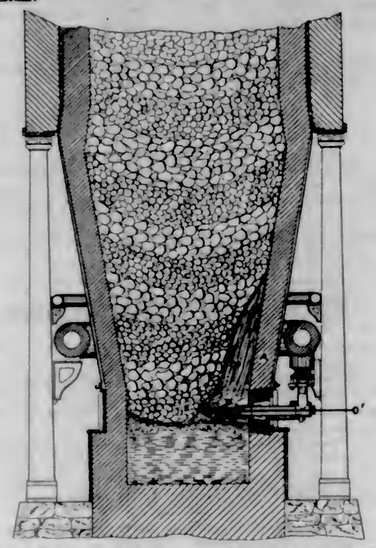


Claim.—1. A sulky-plow constructed with the movable part S of the tongue connected with the furrow-wheel by a lever, Z, adjustably secured to a crank-arm, Y, which is attached to or forms part of the swiveled rod X, in combination with the furrow-wheel V, directly operated by said rod X, substantially as set forth.

2. In a sulky-plow, the combination, with the movable part S of the tongue, and the crank-arm Y of the rod carrying the crank-axle of the furrow-wheel, of the lever Z and the eyebolt *d*, substantially as herein shown and described, whereby the lateral movement of the said movable part of the tongue is made to turn the said furrow-wheel laterally, as set forth.

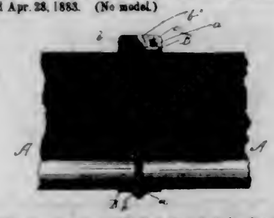
3. The movable portion S of the tongue, in combination with the stop-bars U, attached to the stationary part Q of the tongue, whereby lateral movement of the part S is prevented in one direction and limited in the opposite direction, substantially as set forth.

292,305. METHOD OF PREVENTING CHILLING OF BLAST-FURNACES. JOHN M. HARTMAN, Philadelphia, Pa. Filed Oct. 17, 1883. (No model.)



Claim.—The hereinbefore-described method of preventing the chilling of blast-furnaces through the formation of cinder shells, and of restoring the blast-circulation therein by exploding a torpedo at a point opposite to the tuyere and in juxtaposition to the cinder shell, and immediately forcing the blast through the fissures formed by such explosion.

292,306. JOINT FOR AIR-PIPES. BENJAMIN R. HAWLEY, Chicago, Ill. Filed Apr. 28, 1883. (No model.)

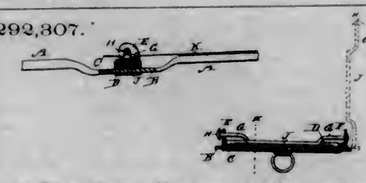


Claim.—The combination, with the pipes A A, having the diagonal flanges *a*, meeting at their outer edges, of the rigid clamping-ring provided with a tightening device, room being left between the base of the ring and the pipe to permit tightening of the ring and lengthening of the pipe, substantially as and for the purpose set forth.

292,307. CLAMP FOR SHEET-HOLDERS. ALFRED P. HAYDEN and FRANKIE PICKUP, Brooklyn, N. Y. Filed Mar. 16, 1883. (No model.)

Claim.—1. A sheet-holding clamp consisting of a longitudinally-grooved plate or strip provided at one end with a hinged jaw, and a hook at the other end, combined with a wire, G, having a bent part, J, fitting in the groove of the plate or strip, substantially as described, and for the purpose set forth.

292,307.



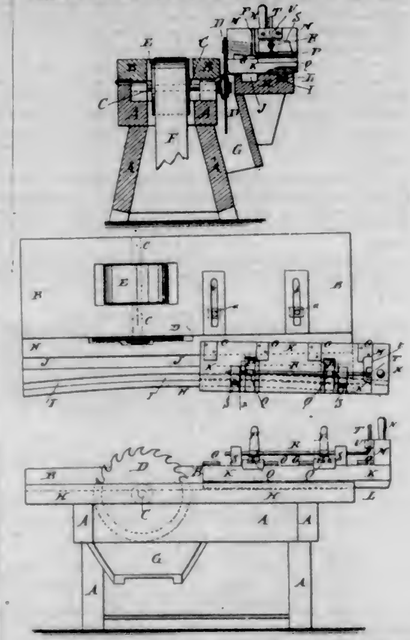
2. The combination, with two covers, united by a back, of the longitudinally-grooved strip or plate C, attached to the inner surface of the back, the hook E at one end of the strip, the hinged jaw F at the other end of the strip, and the wire G, attached to the hinged jaw F, substantially as herein shown and described, and for the purpose set forth.

292,308. RETAINER FOR NECKTIES. HENRY HEATH, New York, N. Y., assignor to Fisk, Clark & Flagg, same place. Filed Nov. 12, 1883. (No model.)



Claim.—A necktie-retainer constructed substantially as herein described, and consisting of a stiffening-piece, as A, a bit of wire, as B, doubled upon itself in the middle and formed into an eye, a device, as E, led through the eye to secure the wire upon one side of the stiffening-piece, and projecting ends, as *e e*, extending from the eye to the edge of the stiffening-piece on the one side thereof, and bent over said edge to constitute diverging arms upon the opposite side, adapted to embrace a collar-button, substantially as set forth.

292,309. STAVE AND SHINGLE SAWING MACHINE. WILLIAM JACKSON HENDERSON, Naylor, Ga. Filed May 5, 1883. (No model.)



Claim.—1. A stave and shingle machine constructed substantially as herein shown and described, and consisting of the frame, the table and the saw, the carriage-table provided with a curved groove and a straight groove, and the carriage provided with the inclined supporting-blocks, the adjustable knees, and the rod having rigid arms, as set forth.

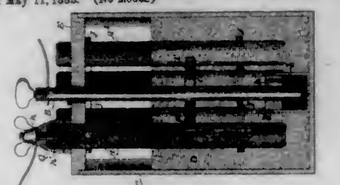
2. In a stave and shingle machine, the combination, with the frame A, of the carriage-table H, provided with a curved groove, I, and a straight groove, J, substantially as herein shown and described, to adapt the said table to receive and guide the carriage, as set forth.

3. In a stave and shingle machine, the combination, with the frame

A and the carriage-table H, having curved groove I, of the carriage K, having head-block M and handle N, the inclined supporting-blocks O, the adjustable knees P, and the rod R, having rigid arms Q and T, substantially as herein shown and described, whereby the staves will be supported and carried to and past the saw in proper position, as set forth.

4. In a stave and shingle machine, the combination, with the table B, having grooves *b*, of the gage-bar Z, the bolts *a*, and the gage-screw *c*, substantially as herein shown and described, whereby the shingle-block can be adjusted upon the carriage to give shingles of any desired thickness and taper, as set forth.

292,310. ELECTRIC BATTERY. IDA C. HEMMER, New York, N. Y. Filed May 11, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a series of separate carbon plates or rods, of a carbon ring or plate in contact with each of said rods, and a zinc electrode extending through said ring or plate.

2. The combination, substantially as hereinbefore set forth, of a series of carbon rods or plates constituting a battery element, a separate ring or plate of the same material electrically connecting said rods or plates at a point below the surface of the exciting-fluid, and a non-conducting jar-cover forming a support for said rods or plates.

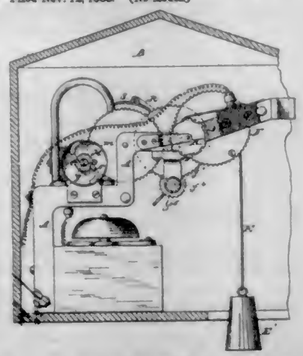
3. The combination, substantially as hereinbefore set forth, of an annular series of carbon rods constituting a battery element, a carbon ring supported within said series and in electrical contact with each of said rods, a zinc electrode extending through said carbon ring, and a mercury-reservoir attached to the extremity of said zinc electrode.

4. The combination, substantially as hereinbefore set forth, of an annular series of carbon rods constituting a battery element, a jar-cover forming a support for said rods, a carbon ring beneath the surface of the exciting-fluid, electrically connecting said rods, a conducting thimble or cap united with the upper extremity of one of said rods, and means, substantially such as described, for securing an electric conductor to said thimble.

5. The combination, substantially as hereinbefore set forth, of a zinc electrode, a non-conducting mercury-reservoir having a perforated cover, which serves both to connect said reservoir with the lower extremity of said electrode and to permit a gradual escape of the mercury contained therein.

6. The combination, substantially as hereinbefore set forth, of the carbon rods A' A^2, &c., the carbon plate or ring *a*, the electrode B, the cup *b*, and the cover *b'*.

292,311. MAGNETO-ELECTRICAL ALARM. JOSEPH R. H. HINTON, Baltimore, Md., assignor to the Viaduct Manufacturing Company of Maryland. Filed Nov. 12, 1883. (No model.)



Claim.—1. The combination, with the train of gearing operating the signaling device, of a brake arranged for application to one of the wheels of such train, and adapted to be thrown into frictional contact therewith by the insertion of the winding-key, substantially as shown and described.

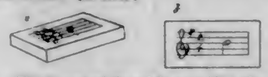
2. The combination, with the train having the barrel-shaft projecting and adapted to receive a key, of the pivoted bent lever having an arm, R, carrying a brake arranged for application to one of the wheels of the train, and an arm, R', arranged adjacent to the projecting key-receiving portion of the winding-shaft, and in such position as to be moved by the key for applying the brake, substantially as shown.

3. The combination, with the winding-barrel and its shaft, of the auxiliary ratchet-wheel *u* and the pivoted pawl *u'*, provided with a thumb-piece, substantially as described, and for the purpose set forth.

4. The combination, with the actuating-weight and the train, of the shaft f^5, carrying the pinion f^9, meshing with one of the wheels of said train, and provided with a thumb-piece by which it may be turned, whereby an initial movement is given to the train, overcoming its inertia, and supplementing the action of the weight, substantially as described.

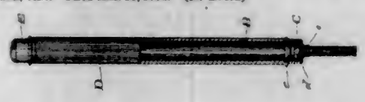
5. The combination, with the train of gearing, the key-winding shaft, and the brake-lever arranged with respect thereto, as described, of the key-supporting device affixed to the box-door in juxtaposition to the winding-shaft, whereby the brake is automatically released upon opening the door, substantially as shown and described.

292,312. MUSICAL GAME. WILLIAM L. HOFER, Manhattan, Kans. Filed Dec. 15, 1883. (No model.)



Claim.—The game consisting of the movable cards or pieces *a b c*, printed or marked with notes and rests of music, varying in quantity, and adapted to serve as implements of play, substantially as specified.

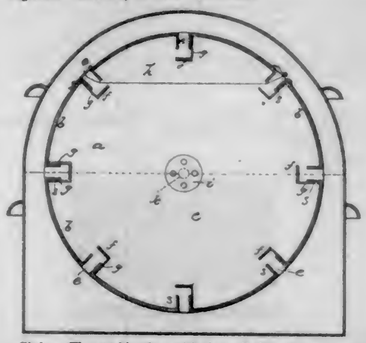
292,313. LEAD-HOLDER FOR PENCILS. JOHN HOLLAND, Cincinnati, Ohio. Filed Mar. 18, 1882. (No model.)



Claim.—1. As a new article of manufacture, a lead-tube for pencils consisting, substantially, as before set forth, of a tube provided at one end with internal or female threads and two or more longitudinal slots to form threaded fingers.

2. The combination, with the lead-tube provided at one end with internal threads and two or more longitudinal slots, of a clamping-sleeve adapted to be adjusted upon the slotted end of the tube to press the threaded fingers upon a lead, substantially as described.

292,314. WASHING-MACHINE. JOSEPH HOLLINGSWORTH, Jonesborough, Ind. Filed July 12, 1883. (No model.)

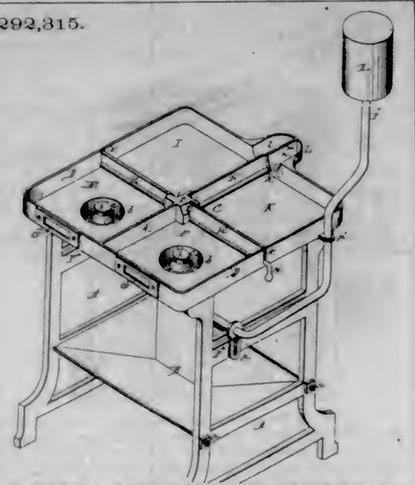


Claim.—The combination, with the cylinder of a washing-machine constructed as described, and provided with the transverse openings *e*, the walls *s* of which extend within the cylinder, of the bars *f*, connected at each end to the cylinder-heads, and with the said extensions by means of the brace-arms *g*, to hold the bars at a distance from the inner edges of the extensions, whereby a free passage is allowed for the water and steam, and the clothes prevented from closing the said openings during operation.

292,315. VAPOR-STOVE. EGBERT C. HOPKINS, Rockford, Ill. Filed Aug. 25, 1883. (No model.)

Claim.—1. In a two-plate vapor-stove, the combination, with the plates, of a division-wall for separating the burners, and movable dampers arranged substantially as set forth, whereby each half of the stove may be heated by a separate burner, and the heat conveyed from said burner to the rear compartment of the other half of the stove.

292,315.

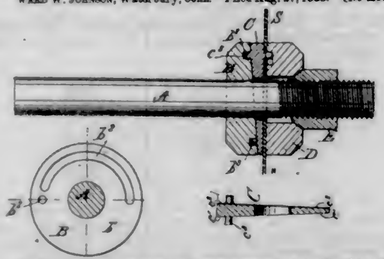


2. The combination, in a two-plate vapor-stove, of a center fitted with journal-bearings, and a radial vertical division connecting the center with the outer rim separating the burners, substantially as and for the purpose set forth.

3. The combination, in a vapor-stove fitted with dampers or valves capable of use to separate the openings into separate and independent chambers, of a top plate provided with a pipe-collar fitted with valves or dampers communicating with the independent burner-chambers, substantially as set forth.

4. The combination, with the supply-pipe and with the supporting-frame, of adjustable bearings supporting said supply-pipe on the supporting-frame, and made adjustable thereon, substantially as and for the purpose set forth.

292,316. MANDREL ATTACHMENT FOR CIRCULAR SAWS. EDWARD W. JOHNSON, Waterbury, Conn. Filed Aug. 27, 1883. (No model.)



Claim.—1. In a saw-mandrel attachment, the combination of the fixed oblique-faced collar having the semicircular recess in its face, with the washer, having one face at an oblique angle, and its other face at a right angle, to its axis, said washer also having a pin to engage with the said recess, substantially as and for the purpose set forth.

2. In a saw-mandrel attachment, the combination of the fixed oblique-faced collar having the same circular and round recesses in its face, with the washer having one face at a right angle, and its other face at an oblique angle, to its axis, said washer having a pin, substantially as and for the purpose set forth.

3. In a saw-mandrel attachment, the combination of the fixed oblique-faced collar having the same circular and round recesses in its face, with the washer having one face at a right angle, and its other face at an oblique angle, to its axis, said washer having a pin, the countersunk washer D, and the convexed nut E, substantially as and for the purpose set forth.

292,317. ELECTRIC DISTRESS-SIGNAL. THOMAS B. JOSEPH, Alpena, Mich., assignor of one-third to William H. Patten, Philadelphia, Pa. Filed July 19, 1883. (No model.)

Claim.—1. In a distress-signaling apparatus, the combination of the balloon A, having guy-rope H, the lamps C, supported on said rope, and adapted to be adjusted thereon, and the battery G, located and held in the bottom of the balloon, and connected with said lamps by conductors, substantially as described.

292,317.



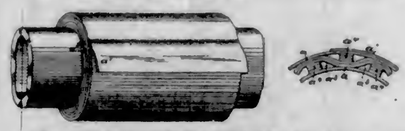
2. In a distress-signaling apparatus, the combination of the balloon having guy-rope, the lamps adjustably supported on said rope and connected with battery G, and the octagonal reflector B, located exteriorly to said battery at the bottom of the balloon, substantially as set forth.

3. In a distress-signaling device, the combination of the balloon A, having guy-rope, the lamps C thereon, clamps E, for adjusting the same, and sleeve D, adapted to be adjusted on said rope, which rope is designed to be paid out from below, substantially as and for the purpose described.

4. In a distress-signaling apparatus, the balloon A, having guy-rope H, and provided with a reflector, B, at its bottom or lower end, substantially as described.

5. In a marine distress-signaling apparatus, the combination of the balloon A, the battery G, located beneath said balloon, the guy-rope H, having lamps C, retained thereon by clamps E, and sleeve D, substantially as and for the purpose described.

292,318. NON-CONDUCTING COVERING. GEORGE KELLY, Chicago, Ill., assignor to the Kelly Scroll Section Manufacturing Company, same place. Filed May 22, 1883. (No model.)



Claim.—1. A non-conducting covering for pipes, &c., composed of layers of paper, &c., folded upon themselves in the flat, and then bent to the required shape, substantially as described.

2. A non-conducting covering for pipes, &c., composed of layers of paper, &c., folded upon themselves in the flat, then bent to the required shape, and provided with an over-lap, *a'*, as described, and for the purpose set forth.

3. A non-conducting covering composed of layers of paper, &c., in combination with longitudinal strips *a'*, arranged, as described, to form dead-air spaces.

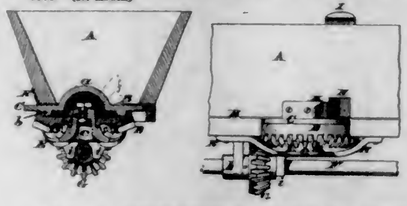
292,319. BURIAL-CASKET. WORTH KILPATRICK, Connellsville, and OSMOND M. JOHNSTON, Brownsville, Pa. Filed Feb. 17, 1883. (No model.)



Claim.—1. A burial-casket made of terra-cotta, having secured thereto a wooden bottom provided with suitable lifting or carrying means, substantially as described.

2. A burial-casket made of terra-cotta and formed with a series of vertical ribs, and having attached thereto a wooden bottom provided with suitable handles or lifting means, substantially as described.

292,320. FERTILIZER-SOWER. EMANUEL M. KISSELL, Springfield, Ohio, assignor of one-half to P. P. Mast & Co., same place. Filed Jan. 6, 1883. (No model.)



Claim.—1. In the feed mechanism of fertilizers, the combination, with the hopper, of horizontally-rotating feed-disks made of glass, substantially as described.

2. In the feed mechanism of fertilizers, the combination, with the hopper, of horizontally-rotating glass feed-disks projecting through openings in the hopper, substantially as described.

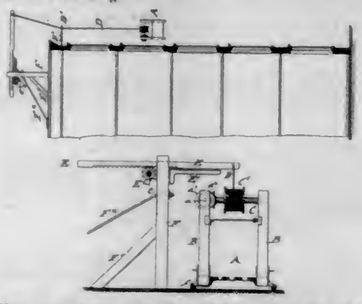
3. In the feed mechanism of fertilizers, the combination, with the horizontally-rotating glass feed-disks projecting through openings in the hopper, of discharge-openings regulated by vertically-moving gates or slides, and stationary scrapers for removing and directing the flow of the fertilizer from the disks, substantially as described.

4. In the feed mechanism of fertilizers, the combination, with the horizontally-rotating glass feed-disks, of immediately subjacent supporting and actuating gears, said disks and gears being locked together by means of lugs or dowels, substantially as and for the purpose specified.

5. The bracket E, provided with a bearing for the gear D, and with a journal for the through-shaft or axle, in combination with the rotating glass feed-disk, the gear D, pinion G, and through-shaft F, the parts being constructed and relatively arranged in the manner and for the purpose specified.

292,321. SCAFFOLD AND FIRE-ESCAPE. JOSEF KLEIN, New York, N. Y. Filed Nov. 9, 1883. (No model.)

Brief.—The cage or scaffold is provided with winding-drums at its ends, actuated by shaft and gears, and is suspended from the ends of rack-bars moved and guided forward and backward in standards secured to the roof of the building.

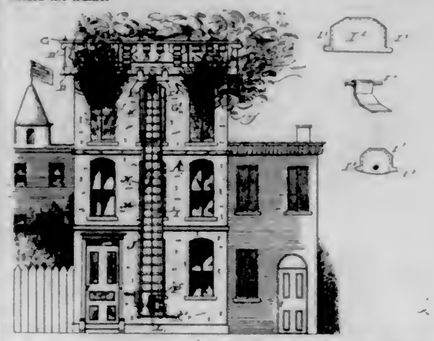


Claim.—1. The combination of a scaffold provided with winding-drums at its ends, means for actuating the same, suspension-ropes applied to said drums, horizontal rack-bars to which the upper ends of the suspension-ropes are attached, standards secured to the roof of the building for supporting and guiding the rack-bars, and means for moving the rack-bars and scaffold forward and backward, substantially as and for the purpose set forth.

2. The combination of a scaffold provided with winding-drums at its ends, means for operating said drums, suspension-ropes applied to said drums, hook-eyes for the ropes, applied by guide-sleeves to fixed rods below the cornice, horizontal rack-bars to which the upper ends of the suspension-ropes are attached, upright posts secured rigidly to the roof, for supporting and guiding the rack-bars, and means for moving the rack-bars and scaffold forward or back, substantially as specified.

292,322. FIRE-ESCAPE. CYRUS A. KNAUER, Pottstown, Pa. Filed May 23, 1883. (No model.)

Brief.—The traveler, which is moved upon the reverse T-rail track, is provided with two wheels on one side of the track and one central one on the other side. A trough-shaped metal frame, re-enforced at its edges and provided with ladder-rungs, is suspended from the traveler. An endless rope runs over a sheave at the top and a drum at the bottom of and within the frame.



Claim.—1. The combination of the reverse T-rail track, suitably suspended and supported, with the three-wheeled truck and its dependent ladder, said ladder provided with a top sheave and bottom drum, friction-brake, and wheel, with an endless rope provided with a loop, all arranged, constructed, and operated as and for the purpose described.

2. A fire-escape traversing ladder-truck constructed, as shown, with two wheels on one side of the frame and one intermediate wheel on the opposite side, having a central suspension ladder bolt, G, provided with a forked end, G^2, and sheave H, in combination with the reverse T-rail track D and the ladder I, and with drum L and brake P by rope M, substantially as and for the purpose set forth.

3. A fire-escape ladder, I, of metal, of a dish form in section, as shown in Fig. 6, having an iron-rod re-enforce, I^2, and provided with non-conducting rungs J, secured in place by rods J', with a drum, L, at its lower end, and brake and wheel P on shaft K, cranks K', and endless rope M N, in combination with suspension-bolt G, truck E, wheels F, and track D, substantially as shown, and for the purpose specified.

4. In combination with a fire-escape ladder transferable by truck upon a track, as described, a drum and brake-wheel with brake-shaft and cranks, endless rope and loop within reach of an operator upon the ground, whereby a weight may be drawn from the interior of the building and let down upon the level of the street, substantially as and for the purpose set forth.

292,323. HASP-LOCK. EDGAR KNIGHT, Bridgeport, Conn., assignor to Solomon P. Stoddard, Trustee, New York, N. Y. Filed Aug. 30, 1883. (Model.)

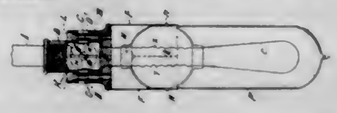


Claim.—1. In a hasp-lock, the hasp A, carrying the lock-case B, and rearwardly recessed at C to receive the head of the screw or bolt D, and provided with a plate, E, having orifice *e*, to retain the head of said screw or bolt in said recess, as and for the purpose specified.

2. In a hasp-lock, the hasp A, rearwardly recessed at B to receive the lock mechanism, rearwardly recessed at C to receive the head of the screw or bolt D, and provided with a plate, E, having orifice *e* to retain the bolt-head in said recess, and also rearwardly recessed at F to receive and inclose the staple G, all as and for the purpose specified.

3. In a hasp-lock, the hasp A, rearwardly recessed at C to receive the head of screw D, and provided with a plate, E, having orifice *e* to retain said screw-head in said recess, and the slot *c* in the forward wall of said recess, as and for the purpose specified.

292,324. INCANDESCENT ELECTRIC LAMP. EDWD. R. KNOWLES, Brooklyn, N. Y., and FRANK E. IDELL, Hoboken, N. J., assignors to the Consolidated Electric Light Company, of New York. Filed Sept. 6, 1882. (No model.)

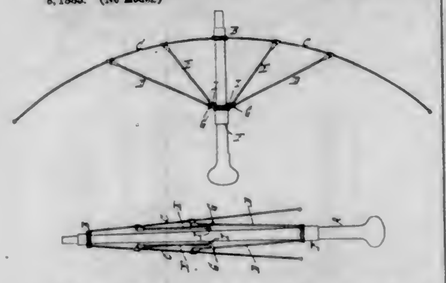


Claim.—1. In an incandescent electric lamp, the combination of the illuminating-chamber P, provided with projections or teats, the socket F, having perforations N N, an insulating base, E, and pins C C', connected to the electrodes of said lamp, substantially as described, for the purpose specified.

2. In an incandescent electric lamp, the combination of an illuminating-chamber, P, a socket, F, provided with screw-pins C C', having notches V and V', and a support, B, containing a switch, H G, and provided with clamps D and D', substantially as described, for the purpose specified.

3. In the circuit of an incandescent electric lamp, the combination of a switch-piece, S, and lamp-clamps R, the two coacting to prevent the lamp from being removed until the circuit is turned off.

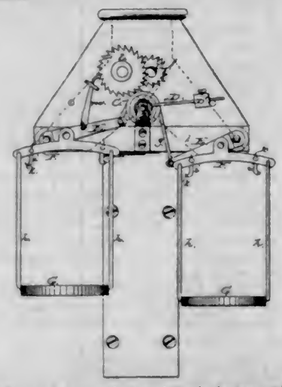
292,325. UMBRELLA-FRAME. CHARLES D. LATHROP, Newark, N. J., assignor to himself and Sarah Binsland, Mount Vernon, N. Y. Filed Nov. 8, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the ribs, the runner, the main stretchers, having the ends jointed to the ribs and runner, respectively, and the supplemental stretchers, having one end jointed to the ribs at a point above the main stretchers, and the other end constructed to engage the main stretchers.

2. The combination, substantially as hereinbefore described, of the ribs, the runner, the main stretchers having the ends jointed to the ribs and runner, respectively, and the supplemental stretchers, having one end jointed to the ribs and the other end constructed with an eye or loop to engage the main stretchers, and with a shoulder to support the supplemental stretchers on the runner.

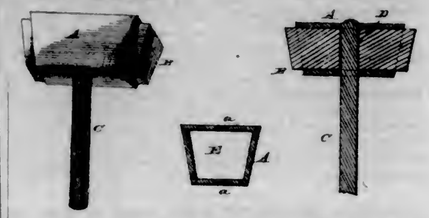
292,326. COMBINED GRAIN SCALE, BAGGER, AND REGISTER. CHARLES J. LEACH and ALLEN OLDS, Hartford, Mich. Filed June 13, 1883. (No model.)



Claim.—1. In a combined grain scale, bagger, and register, the hopper A, divided into two conducting-chutes by the central partition, *a*, and provided with the transverse rod *b*, carrying the valve or cut-off *c*, platforms G, attached to the frame F, arms E, pulley C, provided with arm D and weight D', and the registering devices *l* and *m*, all arranged and combined substantially as and for the purpose specified.

2. The hopper A, constructed as described, and provided with the registering-wheels *l*, transverse rod *b*, valve *c*, and pulley C, having arm D and weight D', in combination with the arms E, cord *g*, frame F, provided with the bag-holding rods *i*, and platforms G, substantially as and for the purpose specified.

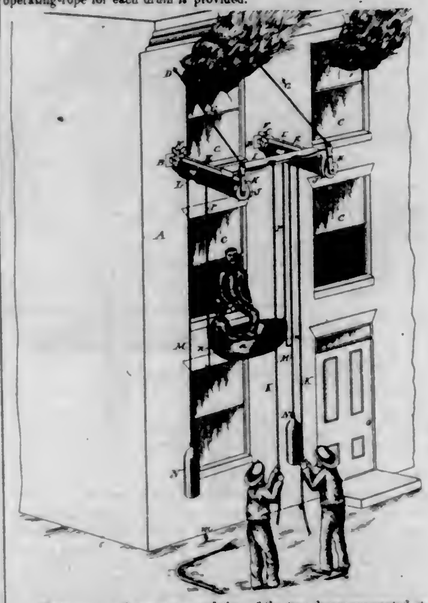
292,327. MALLET. EDWARD LEMERY, Plattsburg, N. Y. Filed May 18, 1883. (No model.)



Claim.—The combination, in a wooden and metallic mallet, of a wrought or cast metallic case or shell with a close fitting wooden block projecting in and through such case or shell, the inserted handle of which forms the key, substantially as described and set forth.

292,328. FIRE-ESCAPE. NICHOLAS LEONARDS, Harvard, Ill. Filed May 24, 1883. (No model.)

Brief.—A fire-escape in which two drums are journaled in brackets and at right angles to the wall of the building, each drum having two ropes wound thereon in opposite directions, one having a counterbalance-weight, and the other the car secured to their free ends. A brake and operating-rope for each drum is provided.



Claim.—1. A fire-escape consisting of the two drums supported at right angles to the wall of a building, as set forth, the two ropes wound upon each of said drums in opposite directions, the free end of one rope upon each drum bearing a counterbalancing-weight, and the ends of the other ropes engaging with a basket or car, the movements of said cars being regulated by two independent brakes, substantially as shown and described.

2. In a fire-escape of the character herein specified, the arms E, secured to eyes B and bearing pieces H at their outer extremities, rods G, passing from pieces H to eyes D, and cross-bar I, the whole arranged substantially as shown and described.

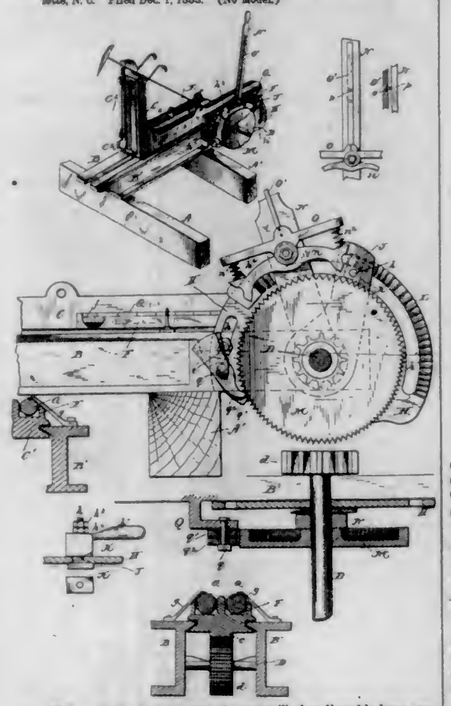
3. In a fire-escape, the two drums L, supported at right angles to the wall of a building, ropes M and P, car *a*, and the two brakes J, operated by means of ropes K, the whole combined and arranged to operate substantially as shown and described.

292,329. MANUFACTURE OF PORTLAND CEMENT. ROBERT W. LESLEY and JAMES M. WILLCOX, Philadelphia, Pa. Filed Dec. 21, 1883. (No specimens.)

Claim.—1. The hereinbefore-described improvement in the art of manufacturing Portland cement, consisting in dampening only the pulverulent cement-making material, so that it shall still remain essentially powder, as contradistinguished from paste, and then molding said dampened powder into balls or lumps by hard pressure between rotating surfaces, substantially as and for the purposes hereinbefore set forth.

2. The process of manufacturing Portland cement, consisting in reducing the cement-making material to powdered condition, dampening the same to such an extent only that it shall remain essentially powder, as contradistinguished from paste, molding said dampened powder into balls or lumps by hard pressure, and subsequently calcining said balls or lumps and reducing them to powder, substantially as and for the purposes hereinbefore set forth.

292,330. SAW-MILL SET-WORKS. WALTER J. F. LIDDELL, Charlotte, N. C. Filed Dec. 1, 1883. (No model.)



Claim.—1. In the set-works of a saw-mill, the adjustable knee provided with the grooved extension of its flange or base, in combination with the supplemental knee secured to and adjustable in said grooved flange, and means for adjusting the same, substantially as described.

2. The adjustable knee provided with a receptacle for an indicator-rule, in combination with an indicator secured to and moving with said knee, and a stationary pointer, arranged and operating substantially as described.

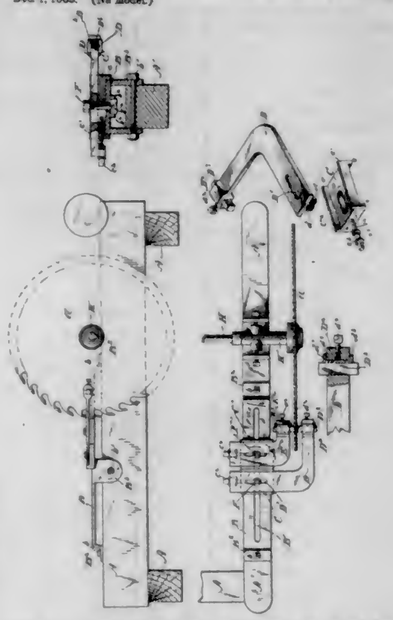
3. The adjustable knee provided upon each side of its longitudinal rib with a pocket for the reception of indicator-rules, in combination with the interchangeable polygonal indicator-rules, substantially as described.

4. The slotted segment-plate H, adjustable around the pinion-shaft as a center, and provided with the fixed stop, in combination with the adjustable stop, also pivoted upon and adjustable around the pinion-shaft as a center, and the cam-faced block or lever for clamping said adjustable stop to the slotted segment H, substantially as described.

5. The plate or segment H, provided with the fixed stops h^3, slot h', and toothed segment-rack I, in combination with the adjustable stop J, pivoted upon the pinion-shaft, and having teeth engaging said rack, and means for clamping said stop to said plate or segment, substantially as described.

6. The combination, with the lever for effecting the adjustment of the head-block or knee, of the centrally-pivoted double pawl and the cross-head supporting said pawl in operative position, both pivoted to said lever, the socketed spring-arm rigidly secured to said cross-head for adjusting it, and the pin or spur on the lever for gaging the throw of said spring-arm and holding it at the desired adjustment, all substantially as described.

292,331. SAW-GUIDE. WALTER J. F. LIDDELL, Charlotte, N. C. Filed Dec. 1, 1883. (No model.)



Claim.—1. In a saw-guide, the slotted guide plate or rail B, secured to the frame in which the saw is mounted, upon one side thereof, and provided with the sliding independently-adjustable seat-blocks C and C′, in combination with the slotted arms D and E, adjustably secured to said seat-blocks, for the purpose and substantially as described.

2. In a saw-guide, the flanged seat-blocks C and C′, sliding and adjustable independently of each other upon the slotted guide plate or rail B, upon one side of the saw, in combination with the angular guide-arms D and E, adjustably secured upon said independently-adjustable seat-blocks, and means, substantially as described, for adjusting said guide-arms upon said flanged seats, substantially as described.

3. In a saw-guide, the guide-arms D and E, adjustable upon and in combination with the seat-blocks C and C′, independently adjustable upon the guide-plate B, secured to the frame, upon one side of the saw, whereby one of said arms, D, may be removed beyond the cut of the saw by sliding the seat-block C upon rail B, and the saw detached without adjustment of arm E, substantially as described.

4. In a saw-guide, the angular arms D and E, adjustable in the manner and by the means substantially as shown and described, and provided at their outer ends with slotted enlargements D^2 E^2, in combination with bearing-blocks D^2 E^2, located in said slotted enlargements, and held in place by the flanged plates d^2 and screws d^3, whereby the said blocks D^2 may be adjusted laterally in their slots to accommodate the saw, substantially as described.

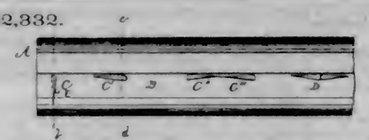
5. In a saw-guide, the angular guide-arms D E, provided with pendent ears *d d* and slots D′, in combination with the adjustable flanged seat C and C′, slotted at C^2, and provided with the screw c^3, having the collars c^2 c^2, and the bolts F F′, all arranged and operating in the manner and for the purpose substantially as described.

6. In a saw-guide, the slotted elevated guide-plate B, secured to the frame, and provided with the pendent flanges b^2 b^2, in combination with the slotted seat-blocks C and C′, provided with flanges *c c′ c′*, the slotted guide-arms D and E, and through-bolts F and F′, passing through the slots in the said arms, seat-blocks, and guide-rail, all for the purpose and substantially as described.

292,332. CURTAIN-STICK. HENRY LOSDELL, Troy, N. Y. Filed Oct. 23, 1883. (No model.)

Claim.—1. A curtain-stick provided with a row of projecting fasteners ranged longitudinally of said stick, and bent to project tangentially from said stick, substantially as and for the purposes set forth.

292,332.



2. A curtain-stick provided with a row of fasteners ranged longitudinally of said stick, and having angular projections adapted to swing from a right angular into a parallel line of direction relatively to the general line of direction of the stick, substantially as described, and for the purposes set forth.

3. A curtain-stick provided with a row of double-pointed fasteners ranged longitudinally of said stick, having the points projecting therefrom, and the double points adapted to pierce a curtain together and afterward be separated and bent down upon the curtain, substantially as and for the purposes set forth.

292,333. CURTAIN-STICK. HENRY LOSDELL, Troy, N. Y. Filed Oct. 23, 1883. (No model.)

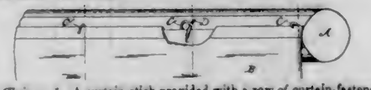


Claim.—1. A curtain-stick provided with a row of curtain-fasteners extending longitudinally of said stick, said fasteners having pointed ends concealed within said stick, and adapted to be driven through said stick into a position to project therefrom, substantially as described, and for the purposes set forth.

2. A sectional curtain-stick, one of the sections or parts of which is provided with a row of curtain-fasteners extending longitudinally of said stick, said fasteners having pointed ends concealed within said section or part, and adapted to be driven through said part into a position to project therefrom, substantially as described, and for the purposes set forth.

3. A curtain-stick composed of two or more sections, and provided in one section with pointed curtain-fasteners, in combination with a curtain, and with a plurality of rings adapted to fit upon said stick, and provided with an opening on one side of each ring to contain the curtain, substantially as described, and for the purposes set forth.

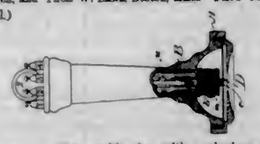
292,334. CURTAIN-STICK. HENRY LOSDELL, Troy, N. Y. Filed Nov. 22, 1883. (No model.)



Claim.—1. A curtain-stick provided with a row of curtain-fasteners ranged longitudinally of the stick, said fasteners having pointed hooks adapted to pierce and secure the curtain upon the stick, substantially as described, and for the purposes set forth.

2. A hook-headed tack, in combination with a transversely-slotted curtain-stick and curtain, substantially as described, and for the purposes set forth.

292,335. MAGNETO-ELECTRIC TELEPHONE. THOS. D. LOCKWOOD, Malden, and THOS. W. LANE, Boston, Mass. Filed July 28, 1883. (No model.)



Claim.—1. The combination, with a telephone comprising a permanent magnet and two coils or bobbins placed on the same pole of the magnet, of a battery included in circuit with one of said coils or bobbins, so as to increase the magnetism of said magnet, the other coil or bobbin being included in the telephone circuit or line, substantially as described.

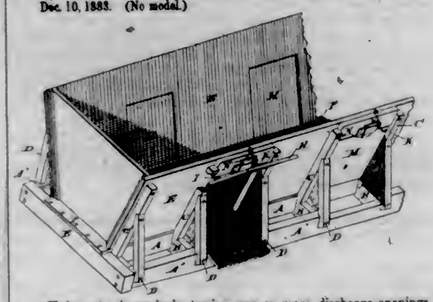
2. The telephone having the two coils or bobbins, or two sets of coils or bobbins, placed on the same pole-piece or pole-pieces of the permanent magnet, in combination with an exciting-circuit including a battery and one coil or bobbin, or one set of coils or bobbins, so that the current intensifies and maintains the magnetism of the magnet, and the telephone circuit or line including the other coil or set of coils, substantially as described.

3. A telephone comprising, in combination with the diaphragm, permanent magnet with one or more pole-pieces, and a bobbin at the end of each pole-piece, a second bobbin placed on each pole-piece inside the first-named bobbin, between it and the end of the body of the magnet, substantially as described.

4. The combination, with a telephone having a magnet and two bobbins or coils, one included in circuit with a battery, so as to intensify and maintain the magnetism, and the other in the telephone-circuit, of a key for opening said battery-circuit when the telephone is not in use, and closing it when the instrument is to be used, substantially as described.

5. The combination, with a transmitter and its battery, of a telephone comprising a magnet with two coils or sets of coils, one included in the circuit of said battery, and the other in the telephone-circuit, and a switch for opening the battery-circuit when the instruments are not in use, substantially as described.

292,336. COAL-CAR. JOHN D. MADEIRA, Chillicothe, Ohio. Filed Dec. 10, 1883. (No model.)



Claim.—1. A car-body having one or more discharge-openings, each of which has hinged, respectively, to its upper and under edges, two overlapping shutters, of which the inner shutter is held by the outer one when closed, and of which the outer shutter becomes, when open, the floor of a discharge-chute, substantially as set forth.

2. In a railway-car for transporting coal and like materials, and having one or more discharge-openings, two overlapping shutters at each opening, of which the inner shutter is hinged by its upper edge to the top of the opening, so as to be capable of closing it, and of which the outer shutter is hinged to the bottom of the opening, and is combined with external side wings to form an extension-platform or discharge-chute, substantially as set forth.

292,337. GRATE-BAR. JOHN MAHLER, San Francisco, Cal. Filed Mar. 29, 1883. (No model.)

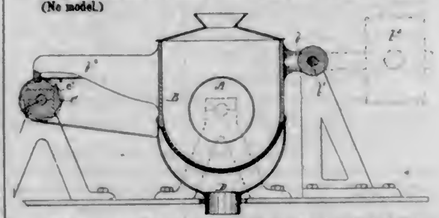


Claim.—1. The fixed grate-bar composed of the parallel plates a^3, provided with tongues c^3 on their opposite sides, beveled downward and inward to the plates, and arranged in staggered position, substantially as shown and described.

2. The combination, in a fixed grate-bar, of the plates a^3, tongues c^3, beveled downward and inward to the plates, and arranged in staggered position at opposite sides of the plates a^3, and the parallel-edged spacing-blocks b^3, substantially as shown and described.

3. The combination, in a fixed grate-bar, of the tapering plates a^3, each having a recess along its upper edge, tongues c^3, beveled downward and inward to the plates, and arranged in staggered position at opposite sides of the plates, and parallel-edged spacing-blocks b^3, substantially as shown and described.

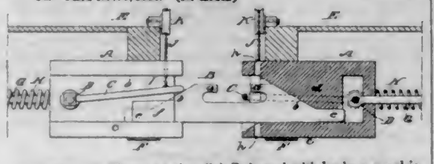
292,338. ATTRITION-MILL. GUSTAVUS B. MAYNADIER, Bolton, Mass., assignor of one-half to William H. Cilley, same place. Filed June 14, 1883. (No model.)



Claim.—In a mill of the character hereinbefore described, the combination of the rotary chambered heads with a hopper communicating with the chambers of the heads, having its bottom reticulated or sieve-

like and arranged to receive a shaking or vibratory motion, and means for imparting such motion, substantially as and for the purpose set forth.

292,339. CAR-COUPLING. CASSIUS MCARTHUR, South Shenango, Pa. Filed Nov. 3, 1883. (No model.)



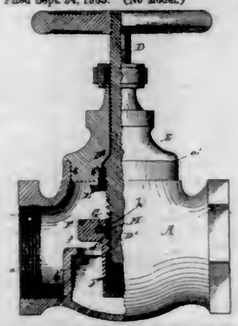
Claim.—1. The connecting-link B, formed with hooks *a a* and inclined portions *b b*, in combination with the draw-heads A A, provided with the bails C C, substantially as and for the purposes set forth.

2. The connecting-link B, formed with the flat ends *c*, in combination with the draw-heads A, formed with the stops *d*, under which the ends *c* are adapted to pass, substantially as and for the purposes set forth.

3. The connecting-link B, formed with the flat ends *c*, in combination with the draw-heads A, formed with the stops *d* and with the blocks *f*, and the bail C, substantially as and for the purpose set forth.

4. The combination of the connecting-link B, having the oppositely-projecting hooks *a a*, the inclines *b b*, and the flat ends *c c*, with the draw-heads A, having the inclined stops *d*, and the bails C, pivoted to said draw-heads, substantially as and for the purpose set forth.

292,340. GLOBE-VALVE. ELMER ELLSWORTH MCCANNON, Barnhart's Mills, Pa. Filed Sept. 24, 1883. (No model.)



Claim.—1. The shell A, having outlet and inlet openings, and guides C C, located above the valve-seat, in combination with a screw-spindle attached to the shell, and a valve, F, provided with a transverse slot, in which is placed a guide-plate, H, which is recessed at its ends, so as to embrace the guides C C, substantially as shown, and for the purpose set forth.

2. The shell A, having a central valve-seat, and side guides, C C, formed thereon, and means for holding the stem, said stem being provided with a screw-threaded end, in combination with a valve, F, having a screw-threaded portion, *f'*, and transverse slot G, for the reception of a guide-plate, H, with recessed end, the parts being organized substantially as shown, and for the purpose set forth.

292,341. PURIFICATION OF COAL-GAS. JAMES T. MCDOUGALL, No. 32 Granville Park, Blackheath, County of Kent, England. Filed Mar. 21, 1883. (No specimens.) Patented in England Feb. 23, 1883, No. 995.

Claim.—1. The improvement in gas purification, consisting in precipitating hydrated oxide of iron from a salt of iron with lime or the carbonate thereof, exposing to air and drying the precipitate, and so converting it into a light and porous dry red powder of hydrated peroxide of iron, and subjecting the gas to be purified to the action of such powder, substantially as described.

2. The improvement in gas purification, consisting in subjecting the gas to be purified to the action of precipitated hydrated peroxide of iron in the form of light and porous dry red powder obtained in the manner and by the means described.

3. The method of preparing a material for use in gas purification by saturating or impregnating sawdust, tanners' refuse, or other light porous organic material with a soluble salt of iron, and then decomposing the said salt with an alkaline reagent, so as to deposit iron oxide in the pores thereof, substantially as described.

4. The mixture of sawdust, tanners' refuse, or other light porous organic material impregnated with iron oxide deposited in the pores thereof, with a purifying agent—such as hydrated peroxide of iron—substantially as described.

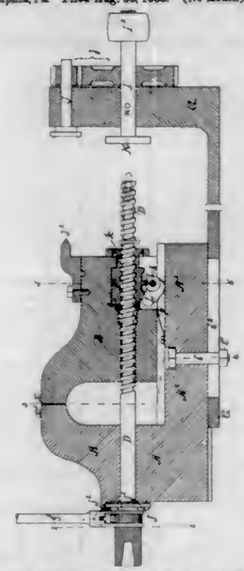
5. The mixture of sawdust, tanners' refuse, or other light porous organic material impregnated with iron oxide, and in a dry state, with the light and porous dry powder of hydrated peroxide of iron, hereinbefore described, as a new material or composition.

6. The method of preparing burned spent oxide or analogous burned spent composition of iron and sulphur for gas purification, by neutralizing the acidity thereof with lime, excess of the latter being avoided, substantially as described.

7. The mixture of the neutralized burned spent oxide with freshly-prepared hydrated peroxide of iron, substantially as described.

8. The mixture of the burned spent oxide neutralized with lime, the sawdust, or its equivalent, impregnated with iron oxide, and the light and porous dry powder of hydrated peroxide of iron, substantially as described.

292,342. COMPOUND VISE AND LATHE. JAMES R. MCMILLAN, Philadelphia, Pa. Filed Aug. 20, 1883. (No model.)



Claim.—1. The combination of the stocks A and B of a vise, the nut F, and means for locking and releasing the same, and the screw-spindle D, adapted to the nut, and constructed at the end for the reception of a tool, as set forth.

2. The combination of the stocks of the vise, the screw-spindle D, constructed for the reception of a tool, the nut F, means for retaining and releasing the same, and the adjustable frame G, having a spindle, I, as set forth.

3. The combination of the stocks A and B of the vise, the screw-spindle D, constructed for the reception of a tool, the nut F, and means for locking and releasing the same, said nut having a projecting portion, *k*, through which retaining friction may be applied to the nut, as set forth.

4. The combination of the stock B of the vise and its stud J' with the adjustable frame G, having a spindle, J, and means for rotating the same, as set forth.

5. The combination of the stock B of the vise, its nut F, and means for locking and releasing the same, the stock A, the spindle D, and means for locking said spindle longitudinally to or releasing it from the stock A, as set forth.

6. The combination of the spindle D and its ratchet-wheel *g* with the lever *g'*, the pawl *g²*, and the shaft *h*, with its locking-cam *h'*, as set forth.

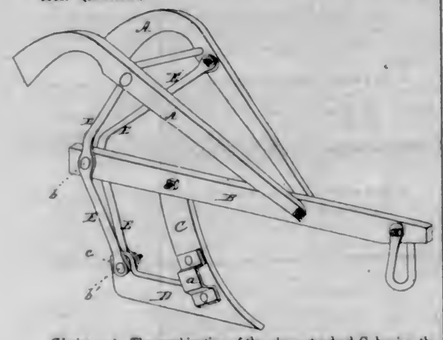
7. The combination of the stock A and its arm A', the sliding stock B, the screw-spindle D, the cam-lever L, hung to the stock B and bearing on the arm A', and the nut F, having a slight play in the stock B, and arranged to act upon the lever L, as set forth.

8. The combination of the stock A and its arm A', the sliding stock B, the screw-spindle D, the cam-lever L, the nut F, and the spring-ring *s*, as set forth.

9. The combination of the stock A and its arm A', the sliding stock B, the screw-spindle D, the cam-lever L, the nut F, and the set-screws *t*, as set forth.

10. The combination of the screw-spindle D, having a slot therein, the sleeve P, having a spline, *w*, and the clamping-nut S, as set forth.

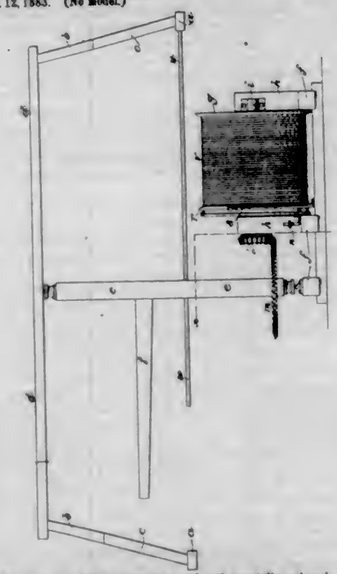
292,343. PLOW. JAMES T. MILLER, Thomasville, Ga. Filed Dec. 12, 1883. (No model.)



Claim.—1. The combination of the plow-standard C, having the heel D, with the bent braces E E, the beam B, and the handles A, the said braces being bolted to the plow-heel, the beam, and to the handles, in the manner shown and described.

2. The combination, with the beam and the handles, of the plow-standard having its heel D terminating in an upward extension, *c*, and the bent braces E E, bolted to the opposite sides of said heel-extension, the opposite sides of the beam, and to the handles, as shown and described.

292,344. HOISTING APPARATUS. PRETHROE J. MITCHELL, Dragoon Summit, Ariz., assignor of one-half to Samuel H. Ecklen, same place. Filed Nov. 12, 1883. (No model.)



Claim.—1. A hoisting apparatus made substantially as herein shown and described, consisting of a rope-drum and horse-power, combined and operated as set forth.

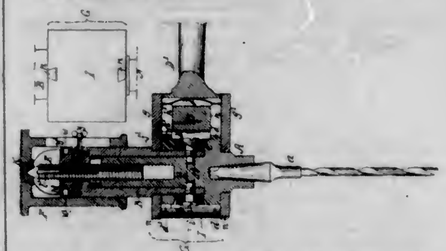
2. The arrangement of the geared end of the drum-shaft within a movable journal-box, substantially as herein shown and described, whereby the geared pinion of the drum is adapted to be thrown in or out of gear with the horse-power driving-wheel, as set forth.

3. In a hoisting apparatus, the combination, with the rope-drum, of a foot-lever for moving the drum-pinion out of gear, and a hand-brake for controlling the motion of the drum, substantially as shown and described.

4. The combination, with the main shaft and gear *l m* and the vertically-adjustable drum-shaft bearing *k*, of the lever *n*, substantially as shown and described.

5. The combination, with the drum *g*, its shaft *j*, movable bearing *k*, and lever *n*, of the friction-brake *r s*, substantially as shown and described.

292,345. RATCHET-DRILL. WM. MORTS, Philadelphia, Pa. Filed Aug. 13, 1883. (No model.)



Claim.—1. The combination of the drill-spindle having a groove, *i'*, and bevel-wheel *e*, the loose bevel-wheel *f*, the pinions *b*, and the sleeve B, having pins *i*, adapted to the groove *i'*, and carrying the pinions *b*, as set forth.

2. The combination of the drill-spindle and driving-gear therefor, as described, with a pawl-carrying frame, G, comprising the block D, plates *g g'*, and casing I, as set forth.

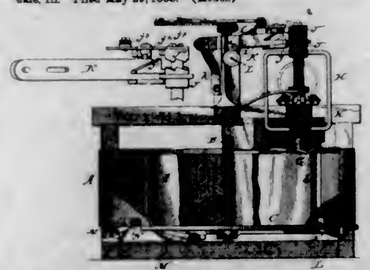
3. The combination of the drill-spindle and means for rotating the same, the sleeve B, longitudinally confined to said spindle, the cap F, circumferentially confined to the sleeve, the feed-screw E, and the ring M, connected to the feed-screw so as to turn therewith, and longitudinally confined to the sleeve B, as set forth.

4. The combination of the drill-spindle A, the sleeve B, means for preventing the latter from turning with the spindle, the feed-screw E, and the ring M, turning with the screw confined longitudinally to the sleeve and held thereto circumferentially by a friction-clamp, as set forth.

5. The combination of the drill-spindle A, the sleeve B, having a slot, *v'*, the feed-screw E, ring M, and the cap F, having a set-screw, *v*, adapted to the slot *v'*, as set forth.

6. The combination of the drill-spindle A, the sleeve B, the feed-screw E, and the cap F, having a bearing-plug, K, as set forth.

292,346. GRAIN-MEASURING MACHINE. JOSEPH NAFZIGER, Hopedale, Ill. Filed May 29, 1883. (Model.)



Claim.—1. In a measuring-machine, the compartment-measure A and board C, in combination with means, substantially as described, for intermittently revolving the measure and intermittently reciprocating the board, as and for the purposes described.

2. The wheel G and clutch J, adapted to be raised on the shaft F by the grain in the measure, in combination with the clutch-lever D', connecting-rod E, arm D, shaft B, measure A, and board or disk C, substantially as and for the purposes set forth.

3. The clutch-lever D', formed with the cams *j'* and *j⁴*, in combination with the lever K, clutch J, the bar K, and wheel G, the lever being notched and provided with cams, and the clutch formed with the rim *j*, substantially as and for the purposes set forth.

4. The continuously-revolving shaft F, in combination with the wheel G and clutch J, adapted to slide on the shaft, for imparting intermittent rotary motion to the clutch-arm D' for operating the measure A and board C, substantially as described.

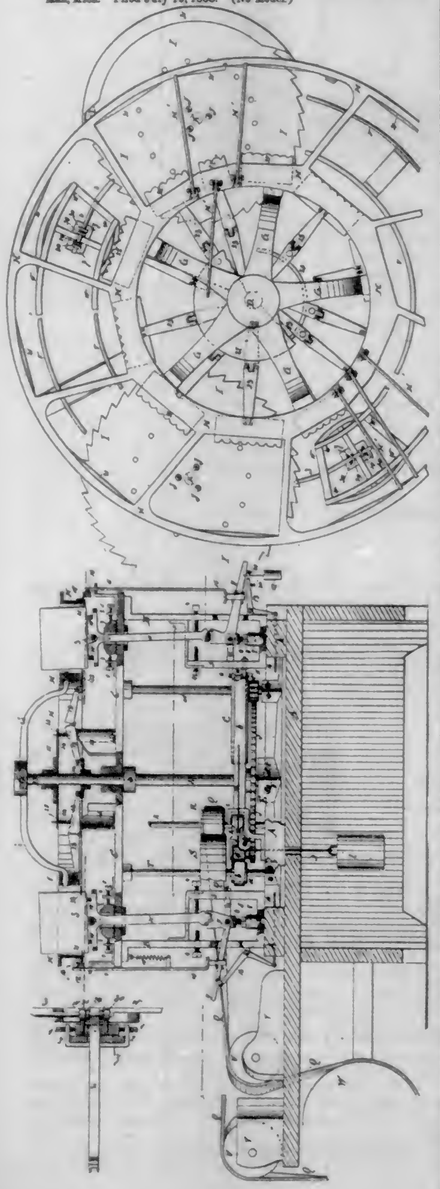
5. The combination, with the intermittently-revolving arm D',

formed with the cams j^3 and j^4, of the lever K and register I, substantially as and for the purposes set forth.

6. The intermittently-revolving measure A, formed with the studs N N, in combination with the stops M M' and rotary reciprocating board C, provided with the pawl L, substantially as and for the purposes set forth.

7. The rotary reciprocating board C, provided with the pawl L, and placed under the measure A, in combination with the said measure and the stops M M', substantially as and for the purposes set forth.

292,347. SHINGLE-SAWING MACHINE. PATRICK O'CONNOR, Tallman, Mich. Filed July 19, 1883. (No model.)



Claim.—1. In a rotary shingle-machine, the rotary frame H, formed of two annular rings connected by inclined bars dividing the same into block-compartments, substantially as herein shown and described, whereby provision is made for presenting the blocks squarely to saws, as set forth.

2. In a rotary shingle-machine, the combination, with the rotary frame H, divided into compartments by inclined bars, of the hinged bars H', for subdividing said compartments, substantially as herein shown and described.

3. In a rotary shingle-machine, the combination, with the frame C, the shaft D, the block-holding frame H, provided with the stationary dogs 21, and attached to said shaft, and means for operating the said shaft, of the jointed and spring-pressed bars 23, hinged to supports attached to the shaft, the dogs 22, on the free ends of the said bars, and the cam-plates 25, secured to the frame, substantially as herein shown and described.

4. In a rotary shingle-machine, the combination, with the frame C, shaft D, the block-holding frame H, the hinged and jointed bars 23, carrying dogs 22 on their free ends, and the cam-plates 25, of the plate 27, secured to the shaft D, the pins 28, secured to jointed bars and passing through apertures in the said plate, and the springs 26, surrounding the pins, substantially as herein shown and described.

5. In a rotary shingle-machind, the combination, with the frame C, the track *v*, and the rotary frame H, of the tables *w*, having their top bars curved to form a continuation of the track *v*, the standards *x*, to which the tables are attached, and the elbow-levers *y*, pivoted to adjustable supports, substantially as herein shown and described.

6. In a rotary shingle-machine, the combination, with the frame C, the track *v*, and the tilting tables *w*, having their top bars curved to form a continuation of the track, of the arms 3, projecting from the front parts of the tables, and having their upper surfaces flush with the tables, substantially as herein shown and described.

7. In a rotary shingle-machine, the combination, with the standard *x*, carrying a table at its upper ends, of the foot 7, resting on the base-frame, the screw 6, entering the foot and provided with the jam-nut 8, and the elbow-lever *y*, pivoted to the head of the said screw and supporting the standard *x*, substantially as herein shown and described.

8. In a rotary shingle-machine, the combination, with the upright 5, the screw 6, and the elbow-lever *y*, pivoted to said screw and carrying a table-standard, of the bar 9, pivoted to the screw, the screw-bolt 10, pivoted to the outer end of the bar 9, and the eyebolt 11, connected to the screw-bolt 10 and adjustably secured to the upright 5, substantially as herein shown and described.

9. In a rotary shingle-machine, the combination, with the post B, the upright 5, the table-standard *x*, and the elbow-lever *y*, supporting said standard, of the set-screws 4, the bar 9, pivoted to the support of the said elbow-lever, the screw-bolt 10, pivoted to the end of the bar 9, and the eyebolt 11, adjustably secured to the upright 5, substantially as herein shown and described.

10. In a rotary shingle-machine, the combination, with the standard *x* and the table *w*, having its central bar recessed, of the apertured adjustable bearing-block *z*, the arm 3, provided with collars 29, and the eyebolts 30, projecting into the apertures of the bearing-blocks, substantially as herein shown and described.

11. In a rotary shingle-machine, the combination, with the standards *x*, carrying the tables *w* at their upper ends, and the elbow-lever *y*, in which the said standards are stepped, of the elbow-levers 13, connecting-rod 14, and treadle, substantially as herein shown and described.

12. In a rotary shingle-machine, the combination, with the block-carrying frame H, provided with the sectional flange 17, and the elbow-levers *y*, carrying the table-supporting standards *x*, of the bars 15, connected with the elbow-levers *y*, and provided with the rollers 16 at their upper ends, the weight 12, and spring 18, substantially as herein shown and described.

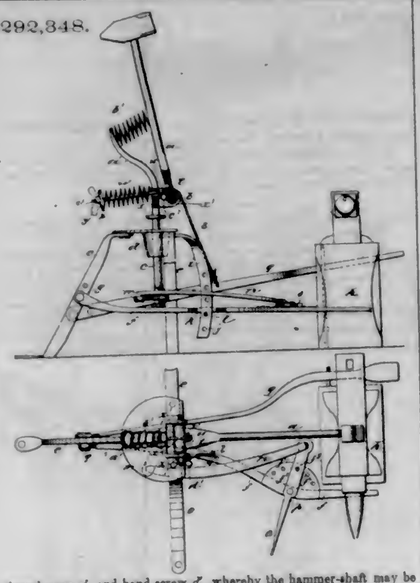
13. In a rotary shingle-machine, the combination, with the block-carrying frame H, provided with the sectional flange 17, and the elbow-levers *y*, carrying the table-supports *x*, of the bars 15, secured to the elbow-levers and carrying rollers 16 at their upper ends, the weight 12, spring 18, elbow-levers 13, and the treadles 20 20', substantially as herein shown and described.

14. In a rotary shingle-machine, the combination, with the saws I, means for operating them, and the block-holding frame H, operated from the saw-driving mechanism by the belt *b* and intermediate mechanism, of the elbow-lever A, provided with the roller *g*, the cord *j*, attached to the end of lever A and provided with the weight *l*, the connecting-rod *m*, and shaft *o*, provided with arms *n p*, substantially as herein shown and described, whereby provision is made for stopping and starting the block-holding frame without affecting the movement of the saws, as set forth.

292,348. FOOT-POWER HAMMER. JOEL L. PAINTER, Bellevue, Ohio. Filed Aug. 3, 1883. (Model.)

Claim.—1. The combination, with the hammer-staff *a*, having pivot *b*, of a hammer-shaft, *c*, carrying a head, *x*, provided with horizontally-

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slotted arms *x'*, and hand-screw *d'*, whereby the hammer-shaft may be brought forward more or less, as described.

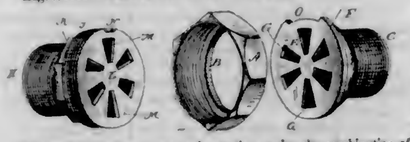
2. The combination of the hammer-shaft *c* with the lever *f*, provided with a step for said hammer-shaft, and pivoted at its rear end to stand *e*, and a perforated arm, *i*, passing through said lever in front of its step, and a connecting-pin, *l*, whereby the hammer-shaft may be adjusted vertically, substantially as set forth.

3. In a foot-power-hammer mechanism for vertically and horizontally adjusting the hammer-shaft, consisting of a lever, *f*, pivoted to the rear under side of the frame, and provided with a step for the hammer-shaft *c*, and having at its forward end a pivoted adjustable lever, *o*, to which is pivoted a connecting-rod, *n*, extending rearward, and pivoted to an arm, *m*, rigidly secured to the lower part of the hammer-shaft above its step, a perforated arm passing through said lever *f*, and a pin, *l*, substantially as set forth.

4. The combination, with the hammer-shaft *c*, having arm *m*, of the connecting-rod *n*, lever *o*, pin f^2, and plate *f'*, having holes f^3, whereby the hammer may be adjusted in the arc of a circle, as described.

5. The combination of the treadle *q*, strap *s*, hammer-staff having slot *t*, the rod *v*, the shaft *c*, having slotted extension *c'*, and the spring *w*, whereby the hammer may be actuated on its downward and upward movement, as described.

292,349. SERVICE-COCK. WALTER S. PAYNE, Titusville, Pa. Filed Aug. 9, 1882. Renewed Dec. 20, 1883. (No model.)



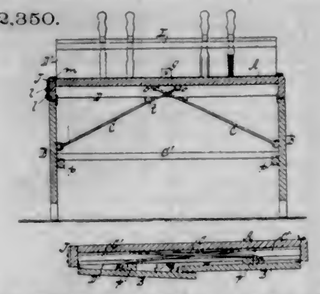
Claim.—As an improvement in service-cocks, the combination of the ring A, having flange B, pipe C, having bulb D, closed by a radially-slotted plate, E, having flange F, provided with notch O, and the pipe H, having exteriorly-threaded enlarged portion or chamber I, seat K, and radially-slotted plate L, having stud N, all arranged and operating substantially as described, for the purpose set forth.

292,350. TOY WORK-BENCH. ADOLF PFAENDLER, Brooklyn, N. Y. Filed July 26, 1883. (No model.)

Claim.—1. A work-bench consisting of a top, A, having along its rear edge a sunken tool-chest, D, provided with a movable lid, D', the hinged end legs, B, and a brace for holding the legs in position for use, substantially as described.

2. A work-bench, A, having hinged legs B, a sunken tool-chest, D, along the rear edge, a recess, *m*, at one end, an adjustable stop, J, having a bent end adapted to said recess, and a brace for holding the legs in position for use, substantially as described.

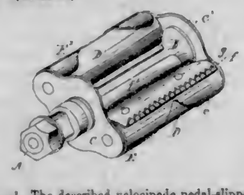
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3. A work-bench consisting of the top A, having legs B, and provided along its rear edge with a sunken tool-chest, D, a hinged lid, D', having openings *f* to receive tools, and a pivoted foot, *g*, adapted to rest on the bottom of the tool-chest, substantially as described.

4. A work-bench consisting of the top A, having along one edge the sunken tool-chest D, provided with a hinged lid, D', the legs B, pivotally connected with the top beneath the bottom of the sunken tool-chest, and a brace for maintaining the legs in position for use, substantially as described.

292,351. VELOCIPEDE-PEDAL. ANDREW J. PHILBRICK, Salem, Mass., assignor to the Pope Manufacturing Company, Hartford, Conn. Filed Nov. 19, 1883. (No model.)



Claim.—1. The described velocipede pedal-slipper, consisting of a curved metallic plate with one or more branches, *e*, and a stop, *e'*, and combined with a stop, *f'*, and a raised toothed edge, *f*, essentially as herein set forth.

2. As an improvement in velocipede pedal-slippers adapted for attachment to a single bar, and having a curved plate bearing a toothed edge for the sole and a stop to rest against the barrel, a secondary stop, *f'*, combined therewith, and adapted to operate essentially as set forth

3. Constructed and adapted to operate as a pedal-slipper, the combination of two plates, E and F, one formed to hold a pedal-bar and the other formed to receive the sole of the rider's shoe, and both conformed so as to form a holding device between the rubber bar and the barrel of the pedal to prevent the slipper from turning, essentially as set forth.

292,352. COMBINED EXTENSION SAW-HORSE AND SCAFFOLD. JOHN W. PHILLIPS, Oakdale, Nebr. Filed Dec. 20, 1882. (No model.)

Brief.—An extensible top piece is provided with a saddle at each end, to which is hinged a head-block having diverging hinged extension-legs. The latter are held apart by a folding brace hinged at the center and pivoted at the ends. The legs are held extended by a spring-catch on one section engaging a rack on the other. The top piece is provided with intermediate extensible supports hinged thereto.

Claim.—1. In a saw-horse, the combination, with an extensible top piece, of a hinged head-block and extensible legs hinged to said head-block, substantially as herein shown and described.

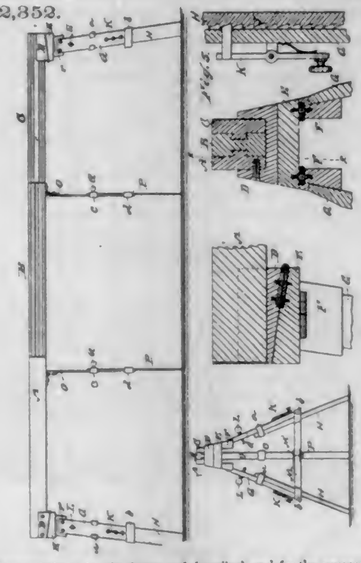
2. In a saw-horse, the combination, with the saddles adapted to receive the top piece, of head-blocks hinged to said saddles and legs hinged to the head-blocks, substantially as herein shown and described.

3. In a saw-horse, the combination, with the top piece consisting of the strips A C, provided with dovetailed tongues, and the strip B, provided with grooves, of the recessed and beveled saddles D, the beveled and hinged head-block E, and the hinged legs G, substantially as herein shown and described.

4. In saw-horses, the combination, with an extensible top piece, of the saddle D, attached to the ends of the same, the head-block E, pivoted to the saddle D, and the legs G, attached to socket-blocks F, pivoted to the saddle D, substantially as herein shown and described, and for the purpose set forth.

5. In saw-horses, the combination, with an extensible top piece, of the saddle D, attached to the ends of the same, the head-block E, pivoted to the saddle D, the legs G, attached to the socket-blocks F, pivoted to the saddle D, and of the folding braces M, pivoted to the legs

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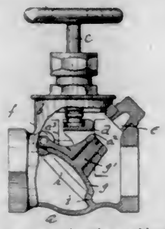
G, substantially as herein shown and described, and for the purpose set forth.

6. In a saw-horse, the combination, with the top piece, of the hinged legs G, the extension-legs H, provided with the racks J, the latches K on the legs G, and of the screws L, substantially as herein shown and described, and for the purpose set forth.

7. In saw-horses, the combination, with an extensible top piece, of extensible legs attached to head-blocks at the ends of the top piece, and of extensible legs between the ends of the top piece, substantially as herein shown and described, and for the purpose set forth.

8. In saw-horses, the combination, with an extensible top piece, of extensible legs hinged to head-blocks at the ends of the same, and of intermediate extensible legs hinged to the extensible top piece, substantially as herein shown and described, and for the purpose set forth.

292,353. STEAM-VALVE. RUFUS N. PRATT, Hartford, Conn., assignor to the Pratt & Cady Company, same place. Filed Nov. 30, 1882. (No model.)



Claim.—1. In a steam-valve, in combination, body *a*, having branches *b* and *c* and inclined valve-seat *i*, hinged flap *f*, bearing a rotary disk, *g*, and a carrier-block, *d*, provided with front and rear bearings, and reciprocated between guides by means of spindle *e*, all substantially as described.

2. In a steam-valve, a carrier-block having bearing-surfaces adapted to work between guides within the valve-body, and also an inclined bearing, forming with the front bearing a wedge between the valve-body and the hinged flap, all substantially as described.

292,354. SHUTTER-WORKER. RONELLO F. PRATT, Everett, Mass. Filed Aug. 31, 1883. (No model.)

Claim.—1. A device for operating outside blinds or shutters from the inside of a room, the same consisting of a sleeve and inclosed spindle passing through the wall or frame of a house, said sleeve and spindle being each provided with a toothed segment at their outer ends, in combination with two separate toothed bars, each operating a pinion and bar

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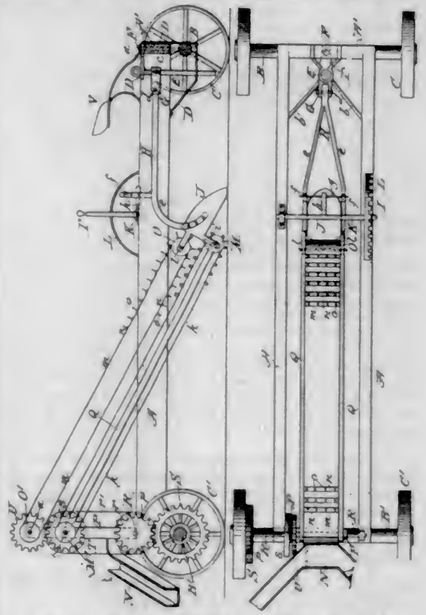


in connection with the blinds, whereby one or both blinds may be separately operated, as desired, substantially as set forth.

2. The combination, with the handles D' E', of the locking device consisting of the slotted plate *a*, the screw *d*, and thumb-nut *a*, substantially as and for the purpose set forth.

292,355. DITCHING-MACHINE. GEORGE W. RAYMOND, Seneca, Ill. Filed Sept. 18, 1883. (No model.)

Brief.—A shaft for gear and belt wheels transmitting motion from riding-wheels to carrier-belt and adjunctive scraper-belt forms a pivot for a frame supporting the upper ends of such belts and their side beams. The plow or scoop carrying the lower belt-rollers has a bifurcated beam with rods connected by a cross-rod to an arm on a rock-shaft with hand-lever and locking-arc. Such beam is connected at front to a "knuckle" adjustable on a draft-pin passing through a metal frame on the front axle.



Claim.—1. In a ditching-machine, the combination, with the adjustable plow J, having bifurcated beam H, of the conveyers *k m*, adjustable knuckle G, and draft-pin E, substantially as described.

2. In a ditching-machine, the combination, with the adjustable plow J, of the conveyers *m k*, side bars, Q Q, pulley-frame P, swiveled on the shaft R, and suitable connecting and operating mechanism, substantially as described.

3. In a ditching-machine, the combination, with the frame A A' and frame-work D, of the draft-pin E, knuckle-piece G, plow-beam H, having arms *e e* and uprights *f f*, rod *g*, arm *h*, secured to said rod and to rock-shaft K, lever I, ratchet-arc L, plow J, conveyers *k m*, pulleys O O' and M M', pulley-frame P, dump N, gears U T, pulleys *s r*, belt *r'*, pinion *p*, and driving-gear S, substantially as shown and described.

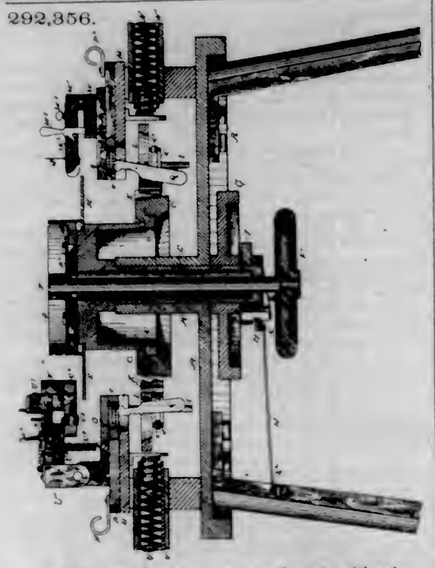
292,356. HAT-MANUFACTURING MACHINE. CHARLES H. REID, Danbury, Conn. Filed May 1, 1883. (No model.)

Claim.—1. In a hat-machine, the rotating clamp and former, constructed as described, in combination with the clutch, as set forth.

2. The driving-shaft carrying the former, in combination with the collar and spring-actuated clutch-pin.

3. A driving-pulley capable of rotating loosely on the driving-shaft, a rigid collar forming a guideway for a clutch-pin, and an enlargement on the driving-shaft in which the clutch-pin slides, in combination with

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a wedge which, when moved forward, rides on the surface of the enlargement until the clutch-pin comes round, when it engages a shoulder thereon and forces it down out of engagement with the driving-pulley, so that the machine can only be stopped in the position in which the clutch-pin is engaged by the wedge.

4. In a hat-machine, the driving-shaft carrying the former, pulley, and the collar, in combination with the clutch-pin and the wedge.

5. In a hat-machine, the collar, clutch-pin, and the wedge, in combination with the bell-crank lever and the connecting-rod.

6. The bracket and the wedge pivoted thereto, in combination with the central shaft and spring pivoted thereto, the clutch-pin, collar, and the wedge.

7. The rotating clamp and former, in combination with the trimmer, substantially as described.

8. The rotating clamp and the former, in combination with the driving-pulley, clutch, and the trimmer.

9. The rotating clamp and former, constructed as described, in combination with an ironer.

10. The rotating clamp and the former, in combination with the driving-pulley, clutch, and the ironer.

11. The iron, in combination with standards having beveled edges, which serve as stops or rests when the iron is turned back out of use.

12. The iron-supporting standards and tool-carrier, in combination with adjusting-plate, sliding block, steerer, and adjustable head.

13. The rotating clamp and former, in combination with the ironer and the ironing-cloth.

14. In a hat-machine, the ironing-cloth having its edge supported by a wire, and attached to a metallic yoke which covers the body of the hat.

15. The yoke and ironing-cloth, in combination with the adjusting-plate and jointed standard, whereby the ironing-cloth may be thrown back out of the way when not in use.

16. The rotating clamp and the former, in combination with the curler, substantially as described.

17. The rotating clamp and the former, in combination with the driving-pulley, clutch, and the curler, substantially as described.

18. The adjusting-plate and tool-carrier, in combination with the supporting-plate and the curling-block.

19. The adjusting-plate and tool-carrier, in combination with the supporting-plate, the curling-block, and the turner secured thereto by a spring.

20. The supporting-plate having a central slot, the sliding cap-plate, and the block secured thereto, in combination with the curling-block.

21. The slotted supporting-plate, cap-plate, and block, in combination with the curling-block, the turner, and the guard.

22. The adjustable guard, curling-block, and supporting-plate, in combination with a holding-spring, for the purpose set forth.

23. The curling-block and supporting-plate, in combination with pivoted standards and the tool-carrier, whereby the operative parts may be thrown out of the way when not in use.

24. The supporting-plate and the operating parts carried thereby, in combination with the tool-carrier, the adjusting-plate, and the sliding block.

25. The supporting-plate and the operating parts carried thereby, in combination with the tool-carrier, the adjusting-plate, the sliding block, the steerer, and the head.

26. The curler, as described, in combination with the tool-carrier, the adjusting-plate, the sliding block, the steerer, the adjustable head carrying the shoe, and the former.

27. The curler, as described, in combination with the tool-carrier, the adjusting-plate, the sliding block, the steerer, the adjustable head, and bearing-points, for the purposes set forth.

28. The tool-carrier, constructed as described, in combination with the supporting-plate, and a curling-block provided with a heating-chamber, for the purpose set forth.

29. The supporting-plate, in combination with the sliding plate, the link, and the lever, for the purpose set forth.

30. The operating-lever pivoted to the supporting-plate, in combination with the sliding plate, and a link connecting the sliding plate with the lever, and pivoted thereto at one side of its center of motion, so that when the lever is turned to its forward position the sliding plate is carried with it and is locked in such forward position.

31. The rotating clamp and the former, in combination with the planer, substantially as described.

32. The rotating clamp and the former, in combination with the driving-pulley, clutch, and the planer, substantially as described.

33. The tool-carrier, in combination with the standard and the planer-arm, substantially as described.

34. The planer-arm, in combination with the finger and the knife, for the purpose set forth.

35. The knife and adjustable finger, in combination with the hinged planer-arm and the latch.

36. In a planer for trimming hat-brims, the adjustable curved finger, adapted to pass under the curl of the brim and to act as a guard to the knife.

37. The planer, constructed as described, in combination with the tool-carrier, the adjusting-plate, and the sliding block.

38. The planer-arm and operating parts carried thereby, in combination with the tool-carrier, the adjusting-plate, the sliding block, the steerer, and the head.

39. The planer, as described, in combination with the tool-carrier, the adjusting-plate, the sliding block, the steerer, the adjustable head carrying the shoe, and the former.

40. The planer, as described, in combination with the tool-carrier, the adjusting-plate, the sliding block, the steerer, the adjustable head, and bearing-points.

41. In a hat-machine, the combination, with a rotating clamp and former, of a non-rotating curler and a planer, for the purposes set forth.

42. In a hat-machine, the combination, with a rotating clamp and former, of a non-rotating ironer and a curler, for the purposes set forth.

43. In a hat-machine, the combination of an ironer, a curler, and a planer with a rotating clamp and former, for the purposes set forth.

44. In a hat-machine, the combination, with a rotating clamp and a former, of a series of non-rotating tools adapted to act upon the hat.

45. In a hat-machine, the combination, with a clamp and former, of a trimmer, an ironer, a curler, and a planer, whereby the hat, after blocking, is made ready for shaping and finishing.

46. The circular bed-plate and supporting-sleeve, in combination with the clamp and former, and a series of tools placed around the former and adapted to act upon a hat-brim.

47. The process of trimming and curling hats, which consists in imparting to the hat a rotary motion, and then subjecting it to the successive action of trimming and curling tools.

48. The process of trimming and curling hats, which consists in imparting to the hat a rotary motion, and then subjecting it to the successive action of trimming, ironing, and curling tools.

49. The process of trimming, curling, and planing hats, which consists in imparting to the hat a rotary motion and subjecting it to the action of a series of non-rotating tools.

292,357. HAT TRIMMING AND CURLING MACHINE. CHARLES H. REID, Danbury, Conn. Filed Sept. 19, 1883. (No model.)

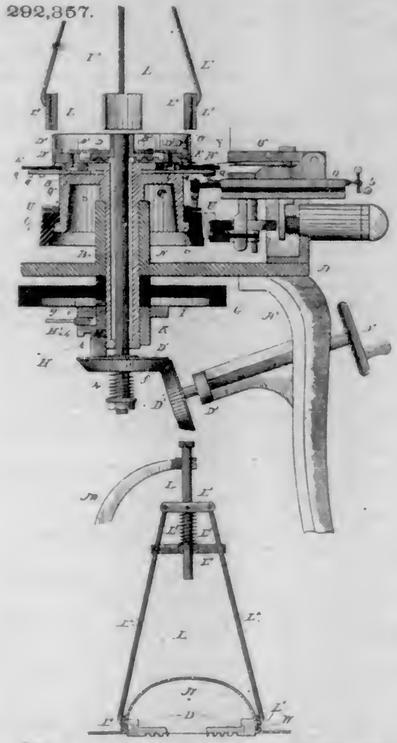
Brief.—Improvement on Application No. 93,604, filed May 1, 1883.

Claim.—1. The central shaft, a gear capable of vertical movement on said shaft, and a spring acting to force the gear upward, in combination with the clutch-pin and driving-pulley, whereby motion is imparted to the hollow shaft and parts carried thereby.

2. The central shaft, a gear moving thereon, and a spring, in combination with the driving-pulley, the clutch-pin, and a wedge which acts when in operative position to withdraw the clutch-pin and stop the rotation of the hollow shaft.

3. The combination, with the clutch, the driving-pulley, and the central shaft, of a spring-actuated operating-wheel, which slides on said shaft.

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4. The hollow shaft, the driving-pulley loosely mounted thereon, and a spring-operated clutch-pin acting to connect said pulley and shaft, in combination with a wedge adapted to act on a shoulder on the clutch-pin, and having a lug or stop which engages the clutch-pin and stops the machine.

5. Gear D^2, journaled in bearings attached to the frame-work, in combination with a sliding gear upon the central shaft, and means for forcing said gear down into engagement with gear D^2, whereby the central shaft may be rotated to operate the clutch.

6. The central shaft, sliding gear, spring A, and gear D^2, having hand-wheel D^4, for convenience in operating, in combination with the clutch-pin and the wedge, substantially as described.

7. In a hat-machine, clamp D, operated as described, in combination with clamp L, acting upon the outside of the hat.

8. In a hat-machine, clamp D, in combination with a supplemental clamp carried by a swinging standard, substantially as described, and for the purpose set forth.

9. In a hat-machine, rod L' and arms L^2, in combination with band L^4, having a cross-piece, and spring L^3, all combined and operating as described.

10. The spring-operated arms having curved pieces L^5, in combination with a standard and clamp, D.

11. The carrier-plate, a sliding bar connected to one of the clamp-arms, and means for connecting the sliding bar with the carrier-plate, whereby movement of the clamp-arm is imparted to the carrier-plate, for the purpose set forth.

12. Bar Q, connected to one of the clamp-arms, and having beveled lugs Q^1, which engage screw-threaded rod R, in combination with an internally-screw-threaded sleeve engaging rod R, said sleeve being held against longitudinal movement in the carrier-plate, whereby rotation of the sleeve adjusts said plate to the desired position.

13. The carrier-plate having recess P^1, groove P^2, and shoulder P^3, and rod S, having sleeve S^1 and collar S^2, in combination with rod R, having spline R^2, and means for connecting said rod to one of the clamp-arms.

14. Rod T, having a spring-arm, in combination with the sliding plate, the tool-carrier, and a key, for the purpose set forth.

15. The sliding plate having recess O^2 and slot O^4, and rod T, having spring-arm T' and groove T^2, in combination with recess U' and key T^3.

16. The sliding plate, rod T, and spring-arm T', in combination with the carrier-plate, parts Q, R, and S, and key T^3.

17. The carrier-plate, an internally-threaded rotating sleeve held against longitudinal movement, and a threaded rod engaging said sleeve and connected to the clamp, whereby the carrier-plate may be adjusted by rotating the sleeve, and when adjusted conforms to the movements of the clamp.

18. The clamp and the carrier-plate, in combination with means for adjusting the carrier-plate and for connecting it with the clamp.

19. Clamp D, the carrier-plate, and means for adjusting the carrier-plate and connecting it with the clamp, in combination with rod T, having a spring-arm, and a key, substantially as described.

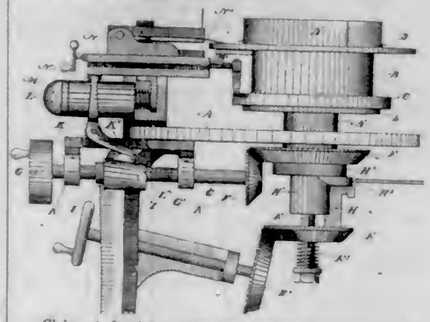
20. In a hat-machine, the combination, with a rotating platform upon which the hat-brim rests, of a spring-plate for holding the brim out flat.

21. The combination, with the platform and clamp D, of a plate secured to the knife-carrier, said plate being widest at its outer edge and curved to conform to the hat, and having straight sides inclined backward toward the knife-carrier, and bent down to press on the brim, whereby the brim is constantly pressed outward, and doubling is prevented.

22. In a hat-machine, a shaft carrying a loose pulley and a clutch, in combination with a wedge adapted to act upon the clutch, and having a lug which stops the machine instantly, substantially as described.

292,358. MACHINE FOR CURLING AND FINISHING HAT-BRIMS. CHARLES H. REED, Danbury, Conn. Filed Nov. 30, 1883. (No model.)

Brief.—Improvement on Application, Serial No. 106,778, of September 19, 1883, by same inventor.



Claim.—1. In a hat-machine, the clamp and mechanism for imparting rotation thereto, in combination with the sliding plate, a pivoted lever engaging therewith, and a cam adapted to actuate said lever, whereby the desired shape is given to the hat-brim.

2. The sliding plate, the clamp, and the clutch, in combination with a pivoted lever for actuating the sliding plate, a driving-shaft carrying a cam which moves the lever, and gears through which rotation is imparted to the clamp.

3. In a hat-machine of the class described, shaft G, carrying a belt-pulley, a cam, and a beveled gear, and a pivoted lever bearing on the cam, in combination with a sliding plate which carries the tool and is actuated by the lever, and a rotating clamp to which motion is imparted by the beveled gear.

4. In a hat-machine driving-shaft, cam I, and lever L, in combination with the sliding plate having grooved projection N', and adapted to carry the operating-tools.

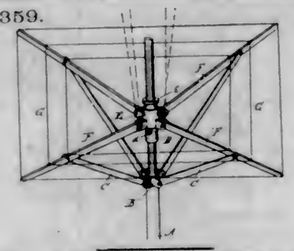
5. The sliding plate, lever L, gears E', E^2, F, and F', in combination with the clamp-collars H' H^2, spring E^3, and clutch-pin H, as described, and for the purpose set forth.

6. In a hat-machine, the driving-shaft carrying a cam of suitable contour to give form to the hat-brim, a pivoted lever bearing on said cam and imparting the necessary reciprocatory motion to the tool-carrying plate, in combination with a rotating clamp which carries the hat, and mechanism for connecting it with the driving-shaft.

292,359. CLOTHES-REEL. WILLIAM H. RICHMOND, Mount Pleasant, Mich. Filed Aug. 3, 1883. (No model.)

Claim.—In a clothes-drying reel, the combination of the post A, provided with a shoulder, the hubs B E, provided with ears, braces C, sleeve D, provided with set-screw *d*, and the flange *c*, and arms F, the parts being constructed, combined, and arranged and operating as and for the purposes set forth.

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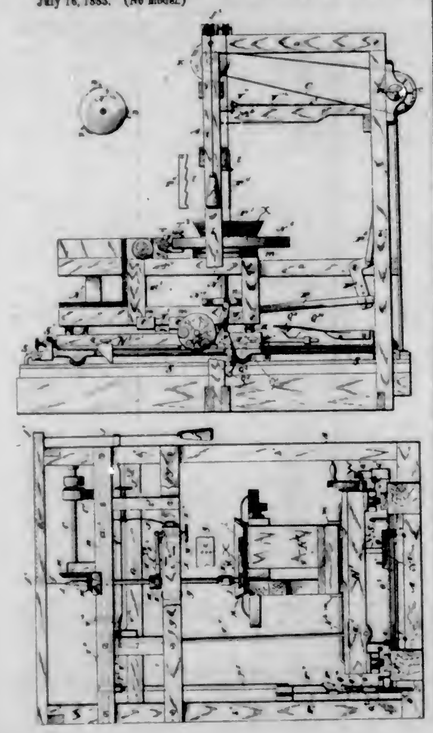
292,360. HARNESS-SADDLE. ALONZO C. RICKEY, Boone, Iowa, and EDWIN D. MYERS, Wooster, Ohio. Filed Apr. 30, 1883. (No model.)



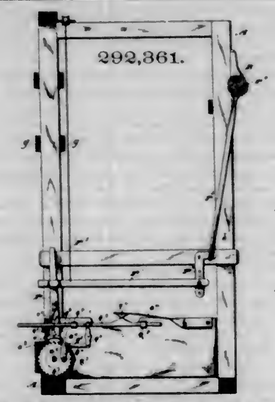
Claim.—1. The yoke A, formed at its ends with eyes *a* and cross-bars *b*, in combination with the bottom plate, D, having a recess for the reception of the cross-bar *b* and upwardly-projecting lugs *d*, and the top plate, F, provided with the locking-tongue *f*, and adapted to be secured in place, substantially as and for the purpose set forth.

2. The bottom plates, D, provided at their upper ends with recesses *c* and lugs *d*, whereby the yoke may be held in place and secured against lateral or sidewise motion, substantially as hereinbefore set forth.

292,361. MACHINE FOR DRESSING STONE. HENRY A. RIPE, Tim berville, Va., assignor of one-half to Peter S. Fahrney, same place. Filed July 16, 1883. (No model.)



292,361.



Claim.—1. In a machine for dressing stone, the combination, with a grinding-disk and a supporting-table, of a trough for holding abrading material mounted upon said table, and arranged to receive the slab or stone to be operated upon by the grinding-disk.

2. The combination, with an adjustable shaft, a grinding-disk removably secured to the lower end thereof, and connections for adjusting said shaft, substantially as described, of a carriage arranged to move under said disk, and a table arranged to move laterally upon said carriage, and carrying a trough to receive abrading material and to receive the grinding-disk, substantially as and for the purpose set forth.

3. The combination, with devices for cutting or dressing stone, of a table consisting of a step for large blocks of stone, a clamp for holding small pieces, and a rotary or supplemental table.

4. The combination, with a grinding-disk, of a carriage, a table arranged to move laterally upon said carriage, a supplementary rotary carriage, mechanism for moving the carriage and for moving the table, and mechanism for reversing the movement of the carriage and of the table.

5. The combination of a stone-supporting table, a vertical shaft carrying a grinding-disk, devices mounted upon a movable bearing for adjusting said shaft, and a weight and cord for holding said shaft and disk elevated above the table, substantially as set forth.

6. The combination, with a stone-supporting table, a vertical rotary shaft carrying a grinding-disk, an adjustable collar, secured to said shaft above the disk, and connections mounted upon a movable bearing and arranged to engage with the collar for the purpose of adjusting the shaft, substantially as described.

7. The combination, with a stone-supporting table and a vertical shaft carrying a grinding-disk, of a movable bearing for supporting said shaft, and attachments for limiting the movements of said bearing.

8. The combination, with a vertical shaft, having a fixed and a movable bearing, of a spring bearing at one end against the movable bearing and secured at its opposite end to the machine-frame, a pin or bolt for limiting the movement of said bearing, a grinding-disk secured to said vertical shaft, and a table for supporting the stone to be acted upon by said disk, substantially as herein specified.

9. The combination, with a lever carrying a double pawl, a ratchet-wheel acted upon by said pawl, a spring for holding the pawl into engagement with the ratchet-wheel, and a shaft carrying a pinion, of a carriage provided with a rack arranged to engage with said pinion, and mechanism for reversing the position of the pawl.

10. The combination, with a shaft, a pinion and a ratchet-wheel secured on said shaft, and a carriage having a rack-bar with which the pinion engages, of a lever pivoted to the shaft, a pawl secured to said lever, and mechanism for regulating the speed of the carriage.

11. The combination, with a shaft, a pinion and a ratchet-wheel secured to said shaft, and a carriage having a rack-bar with which the pinion engages, of a lever pivoted to the shaft, a pawl pivoted to the lever, a pitman one end of which is adjustably secured to said lever, devices for imparting motion to the pitman, and a cord and notched plate for holding the adjustable end of the pitman in position.

12. The combination, with a shaft, a pinion and ratchet-wheel secured to said shaft, and a carriage having a rack-bar engaged by said pinion, of a lever pivoted to the shaft, a spring-actuated pawl secured to the lever, a bell-crank, a driving-shaft carrying an eccentric, a pitman connecting said bell-crank with said eccentric, an adjustable pitman connecting the pivoted lever with the bell-crank, and a cord and notched plate for adjusting the said adjustable pitman.

13. The combination, with a lever carrying a double pawl, a ratchet-wheel, a spring for holding the pawl in engagement with said ratchet-wheel, and a shaft carrying a pinion, of a carriage provided with a rack

4.

arranged to engage with said pinion, and a trip-bar carrying adjustable stops, an arm mounted upon said shaft and arranged to engage with said stops, and mechanism connected with said bar for reversing the movements of said carriage.

14. The combination, with a carriage provided with adjustable stops and a rack-bar secured to said carriage, of a shaft, a pinion and a ratchet-wheel secured to said shaft, a lever pivoted to the shaft, the double pawl pivoted to the lever, the spring secured to the lever for holding the pawl in engagement with the ratchet-wheel, the trip-bar, and the sliding rod indirectly connected to the trip-bar, and provided with depending fingers adapted to engage the pawl for the purpose of changing the direction of movement of the carriage.

15. The combination, with the carriage, shaft, pinion, ratchet-wheel, lever, and pawl, of the trip-bar, the sliding rod having depending fingers for engagement with the pawl, and the spring for steadying the sliding rod, substantially as set forth.

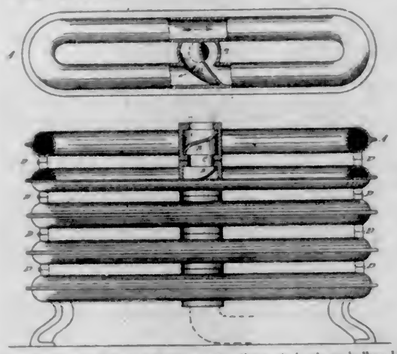
16. The combination, with a rotary grinding-disk, and an angular shaft carrying two wheels movably arranged thereon, of a main carriage carrying a rack-bar arranged to be engaged by one of said wheels, a carriage arranged to rest movably upon said main carriage and carrying a rotary table, and a shaft depending from said table and carrying a wheel arranged to engage with the other wheel upon the said angular shaft, substantially as and for the purpose set forth.

17. The combination, with the carriage, of the table movable laterally on the carriage, the supplementary table, and the clamp having a screw-bolt by which it is secured to the supplementary table, and also a screw-bolt to engage the table proper, substantially as set forth.

18. The combination, with the rotary table, connections for operating the same, and a vertical shaft depending therefrom, of the trip mechanism, the lever U, and the lever U', all of said parts being combined and arranged to operate as described.

19. The combination with the carriage and table, of the screw-shaft, a movable spur-wheel thereon, a worm-wheel journaled to the carriage, and arranged to engage the spur-wheel and turn the screw-shaft, a shaft constructed, as described, for operating the worm-wheel, a vertical shaft having a bevel-wheel thereon, the drive-shaft having two bevel-wheels thereon, and a lever for moving the upper end of the vertical shaft, whereby the wheel thereon is caused to mesh with one of the wheels on the drive-shaft, substantially as set forth.

292,362. RADIATOR. LOUIS C. RODIER, Detroit, Mich. Filed Oct. 1, 1883. (No model.)



Claim.—1. A hollow link-shaped radiator, A, having a hollow hub at its longitudinal and transverse center, within which and one leg of the radiator is placed a diaphragm, dividing them into two compartments, substantially as described.

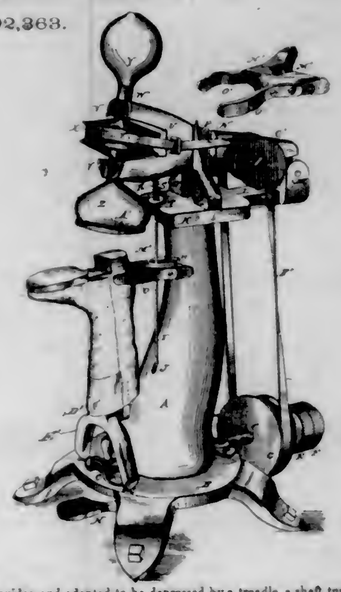
2. Two or more radiators, A, having hollow hubs at their longitudinal and transverse centers, constructed substantially as described, each of which is provided with a central hub and a diaphragm, and adapted to be secured together by a nipple, C, entirely inclosed by said hubs, substantially as specified.

292,363. MACHINE FOR FILING SHOE-HEELS. HENRY F. ROONEY, Randolph, Mass. Filed Nov. 14, 1883. (No model.)

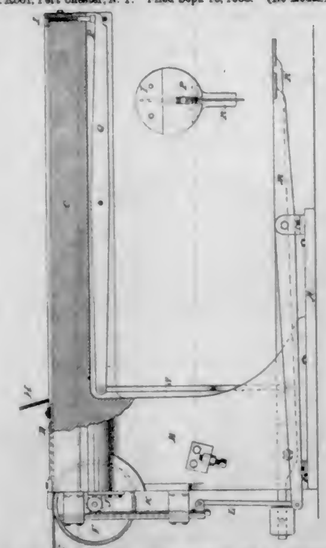
Claim.—1. The combination of an adjustable hinged shoe-jack, a clamp consisting of an inner block and two forwardly-projecting inwardly-curved springs, and a grinding-disk adapted to be brought down to turn in a horizontal plane, as and for the purpose shown and set forth.

2. The combination of an upright frame, a shoe-jack hinged at its lower end to the lower end of the frame, a clamp secured near the upper end of the frame, an arm hinged at one end upon the upper end of the frame, forming a bifurcated arbor at its outer end, swinging between vertical guides, and adapted to be depressed by a treadle, a shaft turning in vertical bearings in the arbor, having a bell-shaped grinding-block at its lower end, a weight at its upper end, and a pulley at its middle, and a belt passing over said pulley, over suitable guide-pulleys, and over a drive-pulley, as and for the purpose shown and set forth.

292,363.



292,364. MACHINE FOR RIVETING SHEET-METAL PIPE. JOHN B. ROOT, Port Chester, N. Y. Filed Sept. 10, 1883. (No model.)



Claim.—1. In a pipe-riveting machine, the combination of a riveting-mandrel with a sliding rivet-carrier contained therein, and adapted to reciprocate from one end thereof to the other or riveting end, for the purpose set forth.

2. In a pipe-riveting machine, the combination of a riveting-mandrel with a sliding rivet-carrying rack contained therein, and gearing for reciprocating such rack, as and for the purpose set forth.

3. In a pipe-riveting machine, the combination of a riveting-mandrel, a longitudinally-moving rivet-carrier contained therein, and a yielding catch arranged to retain the rivets as the carrier returns from its forward movement, for the purpose set forth.

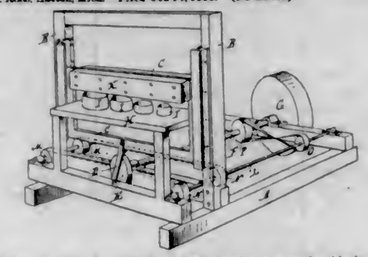
4. In a pipe-riveting machine, the combination of a riveting-mandrel, a rivet-carrier arranged to convey the rivets to the riveting end of the mandrel, and a reciprocating plunger arranged to insert the rivets in the blank, as set forth.

5. The combination, in a pipe-riveting machine, of a riveting-mandrel, a rivet-feeding device located without the position of the blank operated upon, and a rivet-carrier reciprocating in the mandrel, and adapted to carry the rivets from the rivet-feeding device to the riveting end of the mandrel, substantially as set forth.

6. The combination, in the machine herein described, of the mandrel, the rivet-carrier and its reciprocating gear, the connecting-rack and pitman, and the operating-treadle, substantially as set forth.

7. The combination, in the machine herein described, of the mandrel, the rivet-inserting plunger, its reciprocating levers, and the operating-treadle, substantially as and for the purpose set forth.

292,365. MACHINE FOR FORMING PAVING-BLOCKS. DONALD G. RAES, Hatton, Mich. Filed Oct. 16, 1883. (No model.)



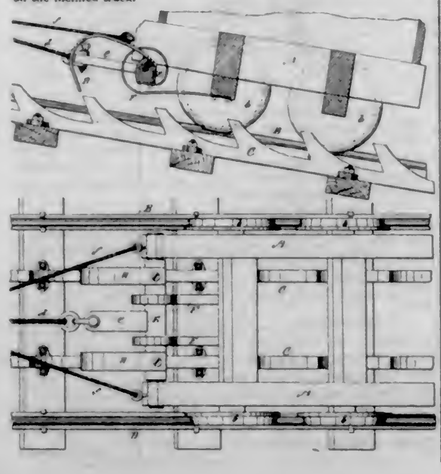
Claim.—1. In a machine for sizing and trimming paving-blocks, a series of dies or circular cutters having an opening at the bottom as large as at the cutting-edge, stationarily secured in a bed-plate, in combination with a reciprocating gate or plunger, substantially as and for the purposes described.

2. In a machine for sizing or trimming paving-blocks, the combination of the following parts: a series of dies or ring-cutters, a gate or plunger reciprocating in the axis of the ring-cutters, and suitable belts for carrying off the finished paving-blocks and the débris, all arranged and combined substantially as and for the purposes described.

3. The combination of the frame A, standards B B, gate C, provided with a re-enforced head, K, ring-cutters I, bed-plate H, crank E, pitman D, main drive-shaft F, and driver G, all combined and operating substantially as described.

292,366. CAR FOR INCLINES IN MINES. JOHN ROSQUIST, Park City, Utah. Filed Aug. 31, 1883. (No model.)

Brief.—A spring-actuated rotating shaft on the car connected with the draft device has one or more pawls adapted to engage a rack on the inclined track.



Claim.—1. In cars for ascending and descending inclines in mines, the combination, with the car, its inclined track, and one or more locking-racks on said track, of an automatic pawl attachment to the car, connected with and controlled by the rope or appliance by which the car is raised or lowered, substantially as specified, and whereby in case of said rope or appliance giving way the car will be stopped at any portion of or different points in the length of the track, as herein set forth.

2. In cars for ascending and descending inclines in mines, the combination, with the draft devices or connections between the car and the rope or appliance by which the car is raised or lowered, and with one or more locking-racks on the car-track, of a rocking beam or shaft carried by the car, and connected with the draft devices, one or more pawls controlled by said beam, and means for throwing the pawl or pawls into engagement with the rack or racks upon the car being liberated from the rope or appliance by which it is raised or lowered, essentially as described.

3. The combination of the car A, the rails B B of the inclined track, one or more locking-racks, C, on said track, the rocking beam or shaft E, one or more pawls, D, carried by said shaft, a spring or springs, F, for rocking the shaft to throw the pawl or pawls into engagement with the rack or racks, and the tongue e and draft-connection d, for holding the pawl or pawls out of lock with the rack or racks, essentially as and for the purposes herein set forth.

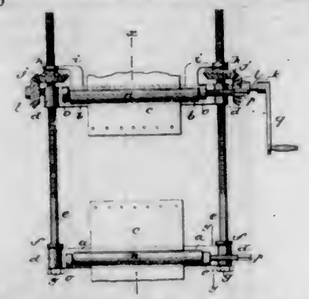
292,367. CAP FOR BOTTLE-STOPPERS. EDWARD SACHS, Dayton, Ohio, assignor to Sachs, Prudon & Co., same place. Filed Dec. 14, 1883. (No model.)



Claim.—1. A cap for bottle-stoppers, made of metal or other suitable material, provided with a central perforation, for the purposes hereinbefore described.

2. The combination of the bottle with the centrally-perforated metallic cap *a*, stopper, and holding-wires, substantially as and for the purposes hereinbefore set forth.

292,368. BELT-TIGHTENER. FRANK SAGER, Pittsburg, Pa., assignor of one-third to Charles Holmes, same place. Filed June 15, 1883. (No model.)



Claim.—In a belt-tightener of that class employing screw-threaded shafts and clamping-rolls, the combination therewith of a fixed and a movable cross-bar having eyes, one at each end, forming bearings for the said shafts, the latter having collars and nuts at the ends of said eyes, and working in screw-threaded bevel-toothed nuts, operated by beveled cog-wheels, a shaft, and a crank or handle, essentially as shown and described, and for purpose set forth.

292,369. SAW-ENVELOPE. FREDERICK SCHLICHTNER, East New York, N. Y. Filed Nov. 13, 1883. (No model.)

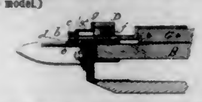


Claim.—1. A saw-envelope made, substantially as herein shown and described, with a fastening-strap detachable at one or both ends, for securing the envelope in place upon the saw, and provided with an aperture to display the figure indicating the number of teeth to the inch in the saw, as set forth.

2. The combination, with a saw-envelope, A, of the fastening-strap C, provided at one or both ends with a cross-head, E, to engage with slits F in the said envelope, substantially as herein shown and described, whereby the said envelope will be held securely in place and can be readily detached, as set forth.

3. A saw-envelope provided with an aperture, G, for displaying the figure indicating the number of teeth to an inch in the saw, as set forth.

292,370. CUTTING APPARATUS FOR HARVESTERS. GEORGE H. SCHULTE and CHARLES MARTINCOURT, Milwaukee, Wis., assignors to the Deering Harvesting Machine Company, (Limited,) same place. Filed Oct. 4, 1883. (No model.)



Claim.—1. In a harvester, the combination of the platform, the apron stretcher-bar provided with a horizontal slot, the cutter-bar, the angle-iron shield secured to said cutter-bar, the keeper, also secured to said cutter-bar, the central sway-bar passing through the slot in the stretcher-bar and engaging said keeper, and the flanged shield overlapping said angle-iron shield and covering said slot, as and for the purpose set forth.

2. In a harvester, the cutter-bar *e*, having the angle-iron shield *d* and keeper *c*, in combination with the bar B, sway-bar C, and pivot *a*, substantially as and for the purpose set forth.

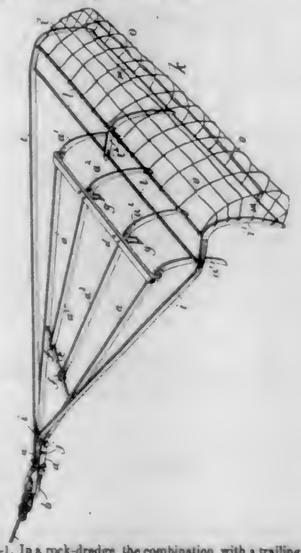
3. In a harvester, the cutter-bar *e*, having the angle-iron shield *d* and keeper *c*, in combination with the sway-bar C, the front stretcher-bar, D, having the slot *f*, and the upper shield, *g*, substantially as and for the purpose set forth.

4. In a harvester, the combination of the finger-bar, the sickle, the removable clamps having slots, and the bolts passing through said slots for securing said clamps in place, substantially as set forth.

5. In a harvester, the sickle-clamps I, having slots *i*, in combination with the bolts I' and nuts *i'*, substantially as and for the purpose set forth.

292,371. ROCK-DREDGE. ISAAC DU BOSE SEABROOK, St. Helena Island, S. C. Filed May 23, 1883. (No model.)

Brief.—Two forwardly-connected diverging bars with ends curved to form teeth are also connected by cross-bars, on one of which are pivoted other curved-end bars, which may play in loops on the other cross-bar. Pivoted between the bars is a triangular frame (formed of two curved-end bars connected by cross-bars, which also carry a connecting and curved-end bar,) carrying a wire-net basket.



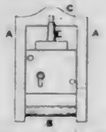
Claim.—1. In a rock-dredge, the combination, with a trailing basket or gatherer and drag rope or chain, of the breaker having shackled side toothed bars and intermediate independently-movable toothed bars, adapted to have vertical movement, substantially as and for the purpose set forth.

2. The breaker, made with diverging tooth-bars *a a'*, connected suitably to a draft-clevis or shackle at the front, and by a rear transverse bar, *d*, having clips or loops *g*, through which pass the intermediate teeth, a^2, which connect pivotally with cross-bar *a* of bar *a*, substantially as shown and described.

3. The gatherer, constructed with frame-bars *i* i^2 i^3, cross-rods *l*, flexible wire rope *m*, and intermeshing cords or wires *o*, substantially as shown and described.

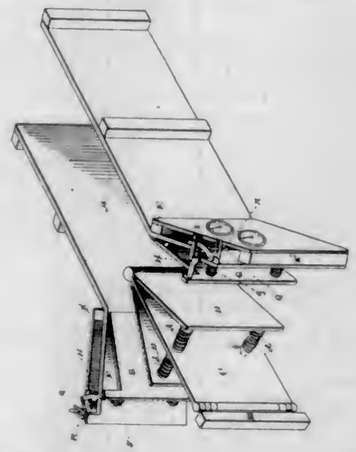
4. The combination, in a rock-dredge, of the breaker consisting of toothed bars *a a'*, connected to draft-shackle *b* and to each other by bars *d e*, as *d* bars *e* carrying pivotally and between collars *f* the forward ends of the intermediate tooth-bars, a^2 a^3, which work in loops *g*, and a trailing basket or gatherer, pivoted to bars *a* at *j*, and formed of end-curved bars *i*, bars i^2, top cross bar or bars, *l*, and flexible wire rope *m*, and the intermeshing cords or chains *o*, said breaker and gatherer being connected to the drag-rope *c* and to each other, to afford free vertical and lateral play of the breaker and gatherer, substantially as shown and described.

292,372. LOCKING BUCKLE. WILLIAM ARTHUR SHAW, Nottingham, England. Filed Oct. 16, 1883. (Model.) Patented in England Jan. 6, 1883, No. 81.



Claim.—The combination, with the buckle-frame, of the lock-case D, swiveled to swing within the frame, and having at its outer end a longitudinally-sliding rigid bolt, E, capable of being advanced to constitute the tongue of the buckle, and also serve to immovably secure the lock-case in the frame, substantially as described.

292,373. SHEEP-ENUMERATOR. HENRY A. SHIPP, Fresno City, assignor of one-half to William Perkins Hall, Dublin, Cal. Filed June 5, 1882. (Model.)

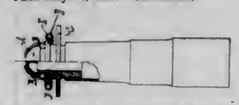


Claim.—1. The corral-chute A and the dodge-gate C, swinging to close said chute upon each side, in combination with the swinging spring-flaps G G, hinged upon each side of the chute, indicating devices, and means for transmitting the yielding of the said flaps to said indicating devices to record the number of passing animals, all arranged and operating substantially as herein described.

2. The corral-chute A and the dodge-gate C, swinging to close said chute upon each side, in combination with the swinging jamb-flaps D D, with strong springs *d d*, the swinging lever-flaps G G, with their lighter springs *g g*, indicating devices, and means for transmitting the yielding of the lever-flaps G G to said indicating devices to record the number of passing animals, all arranged and operating substantially as herein described.

3. The corral-chute A and the dodge-gate C, operating as shown, in combination with the swinging spring jamb-flaps D D, the swinging spring lever-flaps G G, the indicating devices, consisting of the boxes I, with their ratchets *j*, pinions *k*, gears L and N, hands *m* and *o*, dials M and O, and the means for transmitting the motion of the lever-flaps G G to said indicators, consisting of the forked pins H, with their spring-buffers A, elbow-levers R, with their forked ends, levers Q, and their pawls, consisting of the legs *q'*, said pawls engaging with the ratchets *j*, all arranged and operating substantially as and for the purpose herein described.

292,374. TIP FOR ELECTRIC GAS-BURNERS. ADOLPH T. SMITH, New York, N. Y. Filed July 26, 1883. (No model.)



Claim.—A tip for electric gas-burners, made of a non-conducting material, provided with an electrode or electrodes, and also provided with a guard-flange at a point below the electrodes, substantially as and for the purpose described.

292,375. ROAD-SCRAPER. LYMAN SMITH, Malta, Ill. Filed July 2, 1883. (No model.)

Brief.—Bars secured to the scraper and converging forwardly are flexibly secured to the tongue forward of its attachment to the axle. Lifting-chains run from these bars over pulleys in standards on the axle to pivoted levers with locking-arcs. To limit the tilt up of the tongue under the weight of the scraper, which lies behind the axle, a bar carrying a caster-wheel is pivoted to the axle at back and has side braces thereto, permitting the tongue to tilt until a rearward-projecting beam carrying the seat rests on the upper face of the caster-wheel beam.



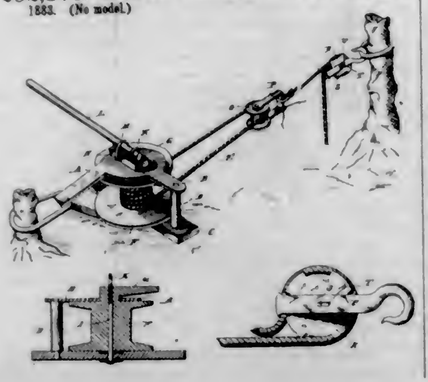
Claim.—1. The combination, with a supporting-frame mounted upon two wheels and projecting forward of the same, a scraper, D, located at the rear of the supporting-wheels, and means for lifting said scraper, of a rearwardly-projecting bar, H, flexibly secured to the frame, a caster-wheel, J, mounted upon said bar, and means (as G) upon the frame constructed to engage the said bar, whereby the upward movement of the front end of the frame is limited, substantially as and for the purposes set forth.

2. The combination, with a supporting-frame mounted upon two wheels, a scraper, D, located at the rear of said wheels, and means for lifting said scraper, of a rearwardly-projecting pivoted bar, H, a caster-wheel, J, upon said bar, a seat, F, and a rearwardly-projecting seat-arm, G, secured at its front end to the said frame, substantially as described.

3. The combination, with the beam A, the tongue C, rigidly attached thereto, and the supporting-wheels B, of the pivoted caster-beam H and braces A', attached to said bar, and pivotally connected to the beam A, substantially as and for the purpose set forth.

4. The combination, with the beam A, the tongue C, rigidly attached thereto, and with the supporting-wheels B, of a scraper, D, beams E, rigidly attached to the scraper and flexibly connected to the tongue, standards K upon the beam A, provided with pulleys *k*, levers L, pivoted to the tongue and provided with detents constructed to engage notched segments upon said standards, and chains *l*, attached to said beams and levers and passing over the said pulleys, substantially as and for the purpose set forth.

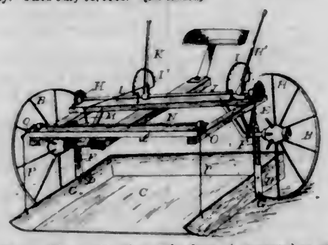
292,376. WINDLASS. WILLIAM SMITH, Tomah, Wis. Filed June 26, 1883. (No model.)



Claim.—1. The combination, in a windlass, of the frame and its base, a drum having an upward and outward extension, a bolt which turns and passes through said drum, having an eye in which fits the end of the operating-lever, and a link or strap that slides on the lever, as and for the purposes herein set forth.

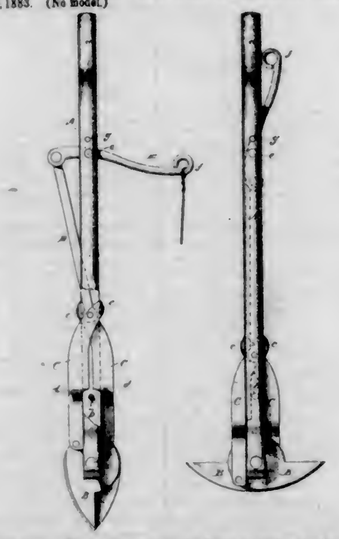
2. In combination with the windlass, as constructed and described, and attachments, a slack pulley, substantially as and for the purposes set forth.

292,377. CLOVER-SEED HARVESTER. HENRY H. SPEARS, Paris, Ky. Filed July 13, 1883. (No model.)



Claim.—The combination of the frame A, mounted on wheels, the cross-shaft J, provided with a sprocket-wheel on each end, the suspension-chains, the slotted guides, the body C, the lever H', rigid on shaft J, the lever K, loose on said shaft, rock-shaft N, its rod-connection with loose lever K, and the suspension-rods P, all constructed and adapted to operate substantially as described.

292,378. HAY-FORK. HENRY STAHL, Cherry Mills, Pa. Filed Aug. 16, 1883. (No model.)



Claim.—1. The combination of the frame or casing A, the prongs B, pivoted thereto, the lever E, also pivoted thereto, the side bars, C, provided with ears *c*, and the center bar, D, pivotally connected to said lever and said side bars, substantially as and for the purpose set forth.

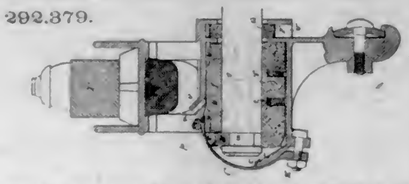
2. The combination of the casing A, rivet *b*, stop *g*, lever E, prongs B, the laterally-bent side bars, C, pivoted to said prongs, and having the narrow lower portions, and the inwardly-curved upper portions terminating in ears *c*, and the center bar, D, pivoted to said lever and said side bars, all arranged and operating substantially as and for the purpose described.

292,379. CAR-AXLE BOX. JOHN STEPHENSON, New York, N. Y. Filed Apr. 21, 1883. (No model.)

Claim.—1. A car-axle-box shell having its front wall bulged outward from each side, and with a front opening provided with a cap curved or bent inward at each side, substantially as set forth.

2. A car-axle-box shell with grooves in its side walls to receive the key check-plate of the necked axle, and with the box-cap to over-

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shoot the check-plate and bearing-block at an angle relative to the said plate and block, substantially as set forth.

3. An axle-box shell having a curved front end, and provided with a cover plate or cap hinged at the upper end to the box and curved so as to bend its bearing under the action of the clamping-bolt, substantially as described.

4. An axle-box provided with grooves for a key check-plate adapted to a grooved axle, adapted to receive a bearing having a basin at the upper side, and a curved cap arranged to deflect the oil into the basin, substantially as set forth.

5. A car-axle box provided with a cap, the upper part of which extends over the check-plate, and the lower part of the cap passes down outside of front wall, the cap having a ledge or lip at its inner side covering the upper edge of the front wall, as and for the purposes described.

6. The combination of the box and cap extended at an angle over the end of the axle, and provided with a curved lip, *p*, and a flange, *e*, substantially as set forth.

292,380. CONNECTING-ROD. GEO. B. STEVENSON, Upper Sandusky, Ohio. Filed June 11, 1883. (No model.)



Claim.—The combination, with the strap of a pitman or connecting rod, of the adjustable nut N, having the inclined bearing and vertical cylindriform offset R, strengthening the nut in its narrow portion, the wedge-form slide K, having the vertical cylindriform recess *t* and inclined bearing-face, and the adjusting-screw passing through the nut, wedge-form slide, and strap, all adapted to operate substantially as specified.

292,381. SYRINGE. GEORGE ABNER STILES, West Gardner, assignor to Warren Hill, Boston, Mass. Filed Sept. 13, 1883. (Model.)

Brief.—A distending cage of open bars fits over any ordinary syringe-tube and is clamped thereto by a spring.



Claim.—1. An attachment for syringes, consisting of a skeleton frame for distending the vagina, provided with a suitable seat for the nozzle of the syringe, and a spring for clamping it thereto.

2. An attachment for syringes, consisting of a skeleton frame formed in two or more longitudinal sections, and having its base end or extremity formed of a series of segmental bars which are arranged in circular form and in such manner as to form an open channel for discharged fluid.

3. An attachment for syringes, consisting of a skeleton frame formed of two or more longitudinal sections, a series of cross bars or stays connecting or uniting said sections, and a suitable spring, the said stays forming bearings or seats for the syringe-nozzle, and the spring acting as a locking or securing device for the nozzle.

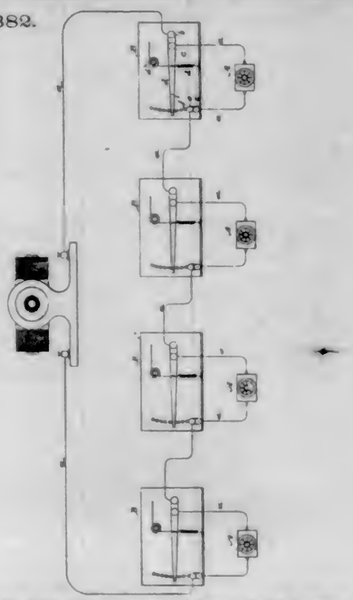
292,382. REGULATOR FOR ELECTRIC MOTORS. LEVI W. STOCKWELL, Cleveland, Ohio. Filed Sept. 21, 1883. (No model.)

Claim.—1. The combination, substantially as set forth, of an electric circuit, a series of electric motors placed therein, a variable resistance placed in a shunt around each motor, and consisting of a series of resistances and a switch connected with the main line on one side of the motor which traverses them, and a contact, also, in the path of said switch connected with the line on the other side of the motor, for short-circuiting the motor out of the line.

2. The combination, substantially as set forth, of an electric circuit, a series of electrically-connected resistance-bars gradually decreasing in cross-section, their contacts, a switch-finger connected with the line, which sweeps all of said contacts, so as to include one or all in the circuit, and a contact also in the path of the switch-finger, through which the circuit may be completed to cut out all of the resistances.

3. The combination, substantially as set forth, of the face-plate or

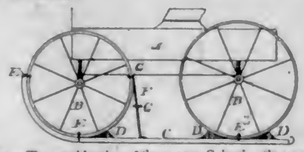
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supporting-board of the adjustable resistance, the resistance-bar, supporting-brackets mounted on the under face thereof, the carbon resistance-bars mounted in said brackets, the circuit-connections, the contacts of the resistance-bars which project through the face-plate, and the switch-finger which sweeps said contacts, so as to include one or all in the circuit.

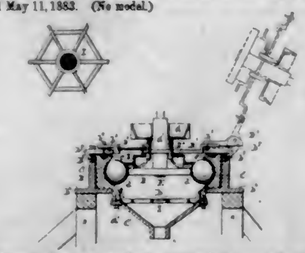
4. The combination, substantially as set forth, of an electric circuit, an electric motor placed therein, an adjustable resistance placed in a shunt around said motor, the switch-finger of said adjustable resistance, which is automatically normally held into position to short-circuit the motor out of the main circuit, and means for moving said switch-finger to throw the resistance into the shunt-circuit and cause more or less of the current to pass through the motor.

292,383. VEHICLE-RUNNER. WILLIAM HENRY STRAYER, North Manchester, and WILLIAM HENRY PLANCK, Logansport, Ind. Filed Apr. 20, 1883. (No model.)



Claim.—The combination of the runner C, having the curved shoes D, the clips E E', and the brace-rod F, having thereon the step G, with the vehicle-wheels, substantially as herein set forth.

292,384. ORE-PULVERIZER. JEROME B. SWEETLAND, Pontiac, Mich. Filed May 11, 1883. (No model.)



Claim.—1. In an ore-pulverizer, a casing provided with upright beveled projections on its inner face, in combination with a detachable

concave ring fitted within the casing, and provided with upright beveled strips on its outer surface, and adapted to engage with the beveled strips on the inner face of the casing, whereby the connection between the two parts may be tightened and loosened, substantially as described.

2. In an ore-pulverizer, the combination, with a casing, of detachable concave ring resting on the bottom of the casing, and provided with a downwardly-projecting base extending through an opening in the bottom of the casing, and a hopper attached to the lower edge of the ring below the bottom of the casing, substantially as described.

3. In an ore-pulverizer, the combination of the casing, the concave ring having a base extended through the casing, the hopper attached to the bottom of the concave ring, and the screen fitted against the inner face of the extended base of the ring and provided with an upwardly-extending beveled circumferential rim, substantially as described.

4. In an ore-pulverizer, the combination of a casing provided with beveled projections on its inner face, a concave ring provided with a groove in its top face to receive a packing, and with beveled strips on its outer surface to engage with the projections on the casing, as described, and a removable top fitting over the ring and casing and against the packing in the ring to hold the latter in place, substantially as described.

5. In an ore-pulverizer, the combination of a casing, a rotary web provided with loose balls at its periphery, and a casing, D', fitted over the web and adapted to direct the ore through suitable channels to the periphery of the web, substantially as described.

6. In an ore-pulverizer, the combination of a casing, an interior concave ring, an annular plate secured upon the upper surface of said casing and ring, and a hinged cover secured upon said plate, substantially as described.

7. In an ore-pulverizer, the combination of the casing, the annular plate fitting over the same, the cover hinged to the plate, and the packing between the plate and cover, substantially as described.

8. In an ore-pulverizer, the combination of the casing, a hinged cover thereto, a shaft passing through the cover, and the web secured to the lower end of the shaft, substantially as described.

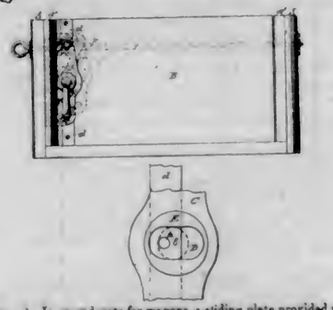
9. In an ore-pulverizer, the combination of a casing, a distributing-hopper divided into compartments and provided with channels communicating with the casing, a feed-hopper, a vibrating apron divided into compartments communicating with said hopper and the compartments of the distributing-hopper, and a cam-shaft for vibrating the hopper, substantially as described.

10. In an ore-pulverizer, the combination of a casing having a concave face with a shorter curve at the upper portion than at the lower portion thereof, and a rotating web carrying loose balls at its periphery next to the concavity of the ring, substantially as described.

11. In an ore-pulverizer, an interior concave ring provided with upright beveled strips on its outer surface, and grooves for packing on its edges, substantially as described.

12. In an ore-pulverizer, the combination of a casing, a ring within the same, having a concave face with a shorter curve at the upper portion than at the lower portion thereof, a rotating web carrying loose balls at its periphery, and adjusting-pins set in the web opposite to the balls, substantially as described.

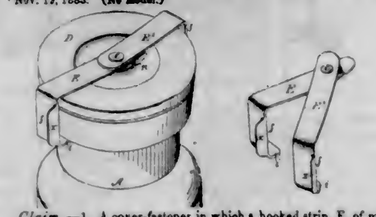
292,385. WAGON END-GATE. HANS P. SWENSEN, Racine, Wis., assignor to Mitchell, Lewis & Co., same place. Filed Oct. 22, 1883. (No model.)



Claim.—1. In an end-gate for wagons, a sliding plate provided with two inclined slots, through which project bolts from said gate, and having between same a horizontal slot, in which works the circular base of a handle that is eccentrically pivoted in said gate, whereby as said gate is inserted between the posts it is maintained therein by said sliding plate, as set forth.

2. In an end-gate for wagons, the sliding plate C, having inclined slots *c c*, intermediate slot, D, in combination with the bolts *c' c'* and handle-plate E, having circular base *e* and eccentric pivoting-leg A, substantially as shown and described, and for the purpose set forth.

292,386. FASTENING FOR FRUIT-JAR CAPS, &c. C. ALBERT TATUM, New York, N. Y., assignor to himself and Francis M. Underhill, same place, James Whitall, Robert P. Smith, Charles Roberts, and William H. Nicholson, Philadelphia, Pa., and John Mickle, Millville, N. J. Filed Nov. 19, 1883. (No model.)

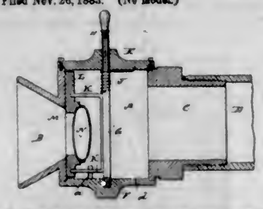


Claim.—1. A cover-fastener in which a hooked strip, E, of metal, having an arm, *s*, is combined with and loosely pivoted to a hooked strip, E', the arm *s* and strip E' being constructed to act on each other, as described, when the strips are turned outward on the pivot-pin, all substantially as set forth.

2. The combination of the upper end of the jar having a shoulder, *m*, and the cover D, having a central recess, with the strips E E', each having a hooked end to underlap the shoulder, and loosely connected together by a pivot-pin, the head of which is adapted to the recess of the cover, substantially as specified.

3. The combination of the top of the jar and cover with the two hooked strips loosely pivoted together and having lips *x*, as described.

292,387. SPEAKING-TUBE MOUTH-PIECE. WILLIAM THOMAS, Pittston, Pa. Filed Nov. 26, 1883. (No model.)



Claim.—1. A speaking-tube mouth-piece consisting of a cylindrical casing provided with a central shaft or spindle carrying a swinging piece, in which the whistle is fastened, substantially as herein shown and described.

2. In a speaking-tube mouth-piece, the combination, with a cylindrical casing, of a central spindle provided with arms, a piece held loosely on the arms, and of a whistle held in the said piece, substantially as herein shown and described.

3. In a speaking-tube mouth-piece, the combination, with a cylindrical casing, of a swinging piece loosely secured to a central shaft, and carrying a whistle, which swinging piece has its outer surface rounded to fit closely against the inner surface of the casing, substantially as herein shown and described.

4. In a speaking-tube mouth-piece, the combination, with a cylindrical casing, A, of the shaft or spindle G, journaled in the top and bottom plates, and having arms K at right angles to it, the spring J, the piece L, held on the arms, and the whistle N, held in the piece L, substantially as herein shown and described.

5. In a speaking-tube mouth-piece, the combination, with the cylindrical casing A, of the shaft G, journaled in the top and bottom plates, the spring J, the arms K on shaft G, and at right angles thereto, the whistle N, held in the piece L, and of the check-studs *a b*, substantially as herein shown and described.

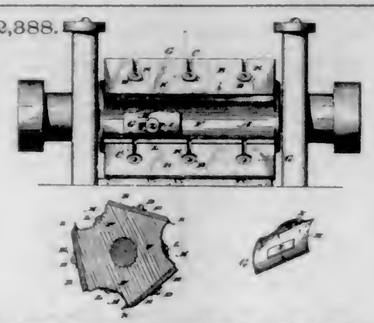
292,388. CUTTER-HEAD. WILTON TRUEG, Cairo, Ill. Filed Dec. 12, 1883. (Model.)

Claim.—1. In combination with the planer, the beading or molding attachment attached to said planer in front of a cutter thereof, and supported near its operative end, which projects beyond the edge of the cutter, by the under face of said cutter, substantially as shown and described.

2. In combination with the cutter of a planer, a beading or molding attachment fastened upon the surface of the planer in front of the cutter, and at its operative end bent up, so as to rest against the under face of the latter and be supported thereby, substantially as and for the purpose described.

3. In combination with a planer, a beading attachment adjustably fastened upon the planer in front of a knife, and at its operative end supported by the under face of the knife, substantially as and for the purpose set forth.

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4. In combination with the planer-cylinder, the beading attachment adjustably fastened to the cylinder in front of one of the knives by means of a set-screw passing through a slot in its attaching portion, and supported at or near its operative end by the knife, substantially as shown and described.

5. In combination with the cylinder, concaved or provided with longitudinal grooves between the knives, the beading attachment adjustably fastened within one of said grooves, and at its operative end bent up, so as to bear against and be supported by the under face of the knife on the rear side of the groove, substantially as and for the purpose set forth.

6. In combination with the grooved cylinder carrying the cutter-knives, the beading or molding attachment having its main or attaching portion bent to fit the concavity of the groove, and provided with the slot extending parallel to the axis of the cylinder, and the set-screw extending through such slot into the cylinder-body, substantially as and for the purpose set forth.

292,389. COMBINED CANE AND BURGLAR-ALARM. JOHN B. VAN ZANDT, New York, N. Y. Filed Nov. 19, 1883. (No model.)

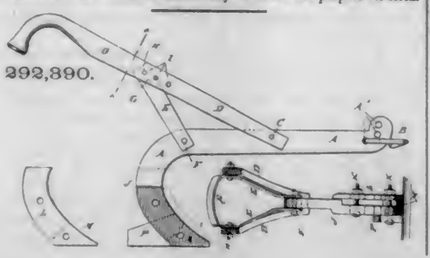
Claim.—1. In a combined cane and burglar-alarm, the combination of the cane with the collar C, thimble *c*, and screw *d*, all substantially as described.

2. The combination of the cane having collar, as described, and the screw-nut located in said collar, with the thimble *c* and screw *d*, said thimble being formed at its upper end for the reception of the screw-head, substantially as set forth.

3. In a combined cane and burglar-alarm, the cane having handle constructed substantially as described, and having ferrule provided with holes in its side, in combination with the means whereby the cane is suspended, as set forth.

4. An attachment for canes, umbrellas, and the like, composed of the collar, the screw-nut located therein, the thimble *c*, and screw *d*, all constructed and combined substantially as and for the purpose set forth.

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292,390. PLOW. SIMEON ASBERRY WARE, Danburg, Ga. Filed Oct. 12, 1883. (No model.)

Claim.—In a plow, the beam A, having the offset J cast in one piece therewith, and the plate L, having the projection M cast therewith, the projection M resting against one side of the beam A, and the plate L resting against the offset J and bolted to the beam A, in combination with the plow G and bolt N, fastened between the plate L and beam A, substantially as shown and described, and for the purpose set forth.

292,391. CLAMP FOR CABINET-MAKERS. JOHN WILLIAM WEBER, Chicago, Ill. Filed Oct. 4, 1883. (No model.)



Claim.—1. The combination, with the beam of a clamp, of a stationary bracket secured to one end thereof, an opposing movable bracket upon the beam, a block connected loosely with the beam so as to have free vertical and lateral movement, and a cam pivotally mounted in the stationary bracket and constructed to bear upon the said movable block, substantially as described.

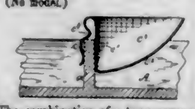
2. The combination, with the clamp-beam A, provided with a stationary bracket at one end and a metal plate having a series of notches, *a*, of a movable bracket, C, opposed to the stationary bracket, a movable pawl-plate, C^3, provided with teeth adapted to engage with the said notches, and links pivotally connected at their ends with the said bracket and pawl-plate, substantially as described.

3. The combination, with the beam A of a clamp provided with a stationary bracket at one end, of a notched metal plate, A', secured to the beam, a movable bracket, C, opposed to the stationary bracket, a pawl-block, C^3, constructed to engage the notched plate, said pawl-block and bracket being arranged upon opposite sides of the beam, and links C', connected with the pawl-block and bracket, substantially as described.

4. The combination, with the beam of a clamp, a stationary bracket secured to one end thereof, and an opposing movable bracket, of a cam mounted in said stationary bracket provided with a suitable ratchet and lever, a pawl constructed to engage the ratchet, and means for releasing the pawl constructed to operate from the top of the beam, substantially as described.

5. The combination, with the beam A of a clamp provided with a stationary slotted bracket, B, at one end, and an opposing movable bracket, of the lever D, having a head, D^2, pivotally connected with the stationary bracket and constructed with an eccentric portion, D', and a notched concentric portion, *d'*, a self-acting pawl, E, constructed to engage the notches *d'*, and means for releasing the pawl from engagement with the notches, substantially as described.

292,392. SUPPLEMENTARY CELL FOR TYPE-CASES. PHILIP W. WILEY, Raleigh, N. C., assignor to Golding & Co., Boston, Mass. Filed Sept. 5, 1883. (No model.)



Claim.—1. The combination of a type-case and a supplementary cell provided with a spring, substantially as shown and described.

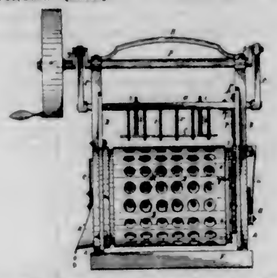
2. A supplementary cell for type-cases, consisting of a removable compartment provided with means, substantially as shown and described, for attaching the same to a single compartment of a case, substantially as and for the purpose set forth.

3. A supplementary cell provided with an integral spring bent below the upper edge of the cell, to form a stop, substantially as shown and described.

4. A supplementary cell provided with the curved bottom, upright back, and integral spring, substantially as shown and described.

5. The blank for type-cells, comprising the integral bottom c^2, sides c^3, back *c'*, and spring *c*, substantially as shown and described.

292,393. CHERRY-PITTER. JOHN WILLIAMS, Kalamazoo, Mich. Filed Sept. 19, 1882. (Model.)

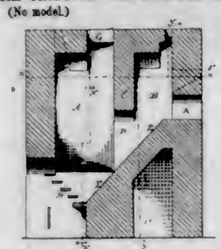


Claim.—1. The combination of the frame having the flanged disk, the revoluble cylinder having the notches and ratchet-wheel at one end, the other end having bearings in said disk, the cylinder-revolving pawl, the spring-metal locking-pawl provided with the studs, and the slotted spring-metal unlocking-bar, substantially as described and shown.

2. In a cherry-pitter, the combination of the frame, the revoluble shaft, punch-supporting bar, the pivoted arms connecting said shaft and bar, the revoluble cylinder having the notches and ratchet at one end, the flanged disk forming bearings to said cylinder at the other end, the slotted unlocking spring-bar, secured at its upper end to the punch-supporting bar, the spring locking-pawl having the studs, and the pawl for revolving the cylinder, all adapted to operate substantially as set forth.

3. The combination, with a revoluble cylinder provided with fruit-pockets having the beveled sides, of a fruit-spout located at the side of said cylinder, whereby the pockets act as scoops in filling them with fruit, substantially as described.

292,394. GAS-PRODUCER. JOHN ZELLWEGER, Chicago, Ill. Filed Dec. 28, 1882. (No model.)



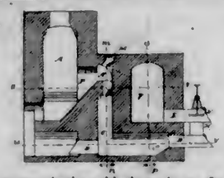
Claim.—1. In a gas-producer, the combination of a front fuel-chamber, a rear gas-chamber of the same or nearly the same width as the fuel-chamber, an inclined floor common to both chambers, and a partition-wall depending from the cap of the producer and terminating above said floor, so as to form a wide gas-outlet between the floor and the partition-wall, and the front wall of the fuel-chamber having its air-inlet openings located on a lower plane than the top of the gas-port between the fuel and gas chambers, substantially as and for the purpose herein set forth.

2. In a gas-producer having a front fuel-chamber, rear gas-chamber, inclined floor common to both chambers, and depending partition-wall provided with a bottom gas-port, the rear or outer wall of the gas-chamber having a stoke-hole arranged above the inclined floor of the fuel and gas chambers, substantially as and for the purpose set forth.

292,395. GAS-PRODUCER. JOHN ZELLWEGER, Chicago, Ill. Filed July 31, 1883. (No model.)

Claim.—1. In a gas-producer, the combination, with the producer-chamber and main gas-flue, of an intermediate soot-chamber arranged in rear of the producer-chamber and below the gas-discharge flue or flues of the latter, and made larger in cross-section than said flue or flues, and provided with an opening or openings for cleaning the same, and with

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a bottom outlet communicating with the main gas-flue, substantially as herein set forth.

2. In a gas-producer, the combination, with the producer-chamber A, discharge-flues B, and main gas-flue F, of the intermediate soot-chamber, C, made larger in cross-section than said discharge-flues B, and located below the latter and provided with a horizontal bottom extension, C', communicating with the main gas-flue, substantially as and for the purpose set forth.

3. A gas-producer having a soot-chamber, C, below and in the rear of the producer-chamber A, with opening D and horizontal extension C', substantially as and for the purpose set forth.

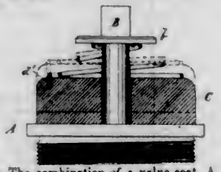
4. A gas-producer having a producer-chamber and a soot-chamber, with proper flue connecting the same, and an opening, D, into the soot-chamber beneath the hearth or grate of the producer-chamber, substantially as and for the purpose set forth.

5. In a gas-producer, the combination, with the soot-chamber and main gas-flue, of a connecting-chamber, H, extending outside of the brick-work of the producer and containing a gas-valve, substantially as and for the purpose set forth.

6. A gas-producer having a producer-chamber, and a soot-chamber in the rear of the producer-chamber, and one or more openings, G, through which access can be had both to the producer-chamber and soot-chamber, substantially as and for the purpose set forth.

7. The combination of the inverted-funnel-shaped cap I, having a central opening and a loosely-seated ball-valve, K, with a gas-producer, having an opening for receiving said cap, and a flue located thereunder, as and for the purpose stated.

292,396. PUMP-VALVE. CHRISTOPHER AHRENS, Cincinnati, Ohio, assignor to the Ahrens Manufacturing Company, same place. Filed June 2, 1883. (No model.)



Claim.—The combination of a valve-seat, A, having the central spindle, B, provided with the stationary collar *b*, and the valve C, arranged to rise and fall on the spindle, with the spring D, composed of the successive coils *d*, of uniformly-diminishing diameter from the base, the extremity of the lower coil having the projection *d'* entering an aperture in the valve, and the two upper coils wound one within the other around the spindle, to occupy the same horizontal plane and bear against the collar, substantially as described.

292,397. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. EDWARD H. AMET, La Grange, assignor of one-half to Herbert A. Streeter, Chicago, Ill. Filed Apr. 14, 1883. (No model.)

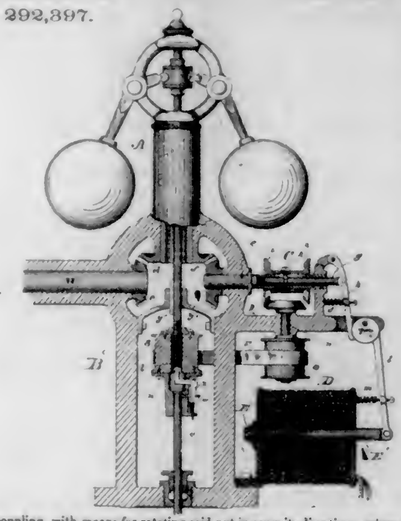
Claim.—1. In a system for generating and applying an electric current, the combination of a motor for driving a dynamo-electric machine, a solenoid actuated by the current produced, a shaft adapted to be constantly rotated, and having a sliding double-cone gear mounted thereon, a second shaft having a traveling nut thereon, which is connected with said motor, and means, substantially as shown and described, whereby the motion of the core of the solenoid is conveyed to the double-cone gear, and its motion is conveyed to the said nut to rotate it in either direction, substantially as and for the purposes set forth.

2. In an electric current-regulating system, a screw-threaded shaft connected with a motor by suitable means, including a traveling nut on said shaft, in combination with a solenoid the core of which is connected with means for moving said nut in opposite directions, substantially as specified.

3. In mechanism for controlling a motor for a dynamo-electric machine, a motor-governor comprising a screw-threaded shaft and a nut fitted thereon, in combination with a sliding double-cone gear suitably connected with means for rotating said nut in opposite directions and with a solenoid, substantially as and for the purpose set forth.

4. The combination of a solenoid with a centrifugal governor having a screw-threaded stem, a nut carrying a pulley, and a valve-stem

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coupling, with means for rotating said nut in opposite directions, substantially as specified.

5. The combination of a solenoid with a centrifugal governor having a screw-threaded stem, a nut carrying a pulley, and a valve-stem coupling, with means for automatically uncoupling the valve-stem, substantially as specified.

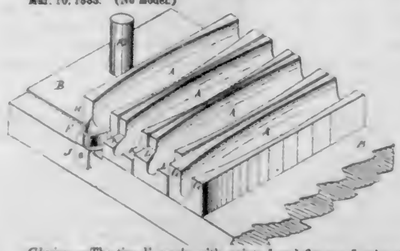
6. The combination of a centrifugal governor, a positively-driven shaft continuously connected therewith, and carrying a sliding double-cone gear connected with the core of a solenoid, with a second shaft carrying a single-cone gear and connected with a climbing nut connecting the governor-stem to the valve-stem of a motor, substantially as specified.

7. The combination of the solenoid D, cam *i*, lever *h*, rod *g*, shaft *e*, and gear C, with shaft *n*, cone-gear *p*, pulleys *o o*, screw-threaded governor-stem *t*, coupling *u*, and valve-stem *v*, substantially as shown and described.

8. The combination of the solenoid D, gears C *p*, pulleys *o o*, stems *t v*, coupling *u*, wedge *x*, and key *w*, substantially as shown and described.

9. The combination of the solenoid D, having the adjustable ping E, with the lever *l*, spring *m*, cam *i*, lever *h*, spring *j*, and rod *g*, substantially as shown and described.

292,398. CIGAR-MOLD. RENSEN APPLEBY, New York, N. Y. Filed Mar. 10, 1883. (No model.)

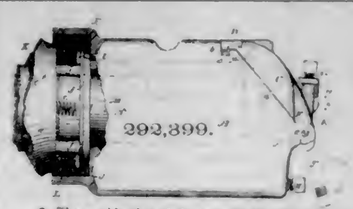


Claim.—The tips F, made with points I and flanges J, whereby they may be rigidly secured to the molds, as and for the purpose specified.

292,399. CAR-AXLE BOX. WILLIAM S. G. BAKER, Baltimore, Md. Filed Sept. 21, 1883. (No model.)

Claim.—1. The combination, substantially as set forth, of the box, the hinged lid, the locking-shoulder thereon, the hinge-pin carried by the box, the slotted bearings in the lid through which the pin extends, and means carried by the box for holding the lid in its locked position.

2. The combination of the box, the lid hinged thereto, the locking-shoulder on the lid, the hinge-pin carried by the box, and the slotted bearings in the lid through which the pin extends, and which permit the lid to have a slight vertical movement to disengage the locking-shoulder, and then an outwardly-swinging movement to open the box, substantially as set forth.



3. The combination of the box, the lid hinged thereto, the slotted bearings in the lid, the swinging frame mounted on the box, and means carried by the frame for holding the lid in position, substantially as specified.

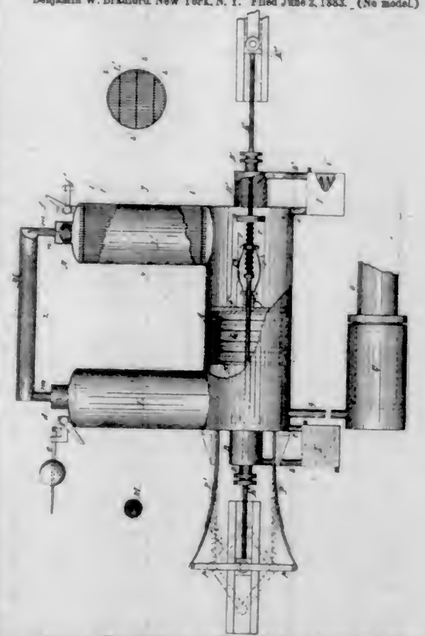
4. The combination of the box, the vertically-sliding lid, the locking-shoulder thereon, the frame mounted on the box, and means carried by the frame for holding the lid in its locked position, substantially as described.

5. The combination, substantially as set forth, of the box, the lid hinged thereto, the set-screw, and its frame mounted on the box for holding the lid in position.

6. The combination of the box, the wheel, the dowel-sockets therein, the washer interposed between the wheel and the box, and the dowels formed on the washer, which fit into the sockets in the wheel, substantially as and for the purpose specified.

7. The combination of the box, the wheel, the dowel-sockets therein, the washer, the dowels formed thereon, which fit into the sockets in the wheel, and the springs which are attached to the washer and bear against the face of the wheel to hold the washer in position, substantially as set forth.

292,400. HOT-AIR ENGINE. JAMES S. BALDWIN, Newark, N. J., assignor of twenty-one twenty-fifths to Samuel A. Farrand, same place, and Benjamin W. Bradford, New York, N. Y. Filed June 2, 1883. (No model.)



Claim.—1. The cylinder for holding a fluid, and means for heating the fluid in one end of the cylinder and cooling it in the other, in combination with the vertical chambers, connected by the regenerator, and a bellows separating the hot from the cold fluid, and means for operating said bellows, whereby the fluid can be alternately raised and lowered in the vertical chambers, and the air or gas caused to rise or fall in tension as it comes in contact with a hot or cold surface, substantially as shown and described.

2. The cylinder A, for holding a liquid, provided with means for heating the liquid in one end of the cylinder and cooling it in the other, in combination with the vertical chambers L L', filled with metal plates

l, and connected by the regenerator, said cylinder A having the bellows G, and means for operating the same, substantially as and for the purpose shown and described.

3. The vertical chambers L L', having the plates *l*, and connected by the regenerator M, filled with metal plates, and having the float-valves N, in combination with the cylinder A, having the bellows G, and means for operating the same, substantially as and for the purpose shown and described.

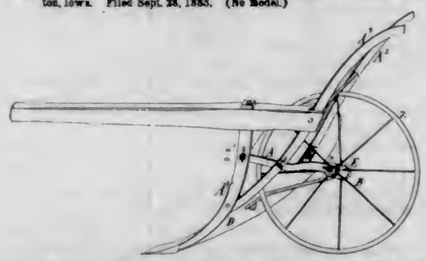
4. The vertical chambers L L', opening into the cylinder A, said cylinder A having the extensions B B' and hot and cold coil boxes I I', connected with the extensions and cylinder, in combination with the piston-rod E, carrying the disks or piston-heads *a a'*, and the plate F', attached to the bellows, and means for operating said piston-rod, substantially as shown and described.

5. The cylinder A and piston-rod E, carrying the plate F', and means for operating said piston-rod, in combination with the springs P P' and rods *p*, substantially as and for the purpose shown and described.

6. The cylinder A and piston-rod E, carrying the sliding collar F and plate F', and disks *a a'*, in combination with the sliding collar *r*, springs *r' r²*, and stationary collar *r³*, substantially as and for the purpose shown and described.

7. The vertical chambers L L', connected by the regenerator M, the cylinder A, having extensions B B', bellows G, piston-rod E, carrying the plate F' and disks *a a'*, and means for operating the piston-rod, in combination with the cylinder O, having the plunger O', and means for forcing the plunger back when the pressure of the air or gas is reduced or removed, substantially as and for the purpose shown and described.

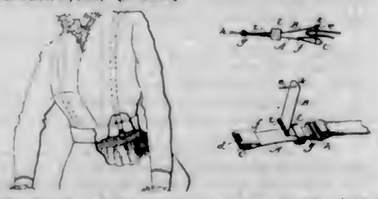
292,401. WHEEL-LANDSIDE PLOW. NATHANIEL S. BARGER, Hampton, Iowa. Filed Sept. 28, 1883. (No model.)



Claim.—1. The combination, with a walking-plow provided with handles A^2 A^3 and a standard, A', of the large oblique wheel-landside B, forming a rolling landside-support, the axle of which is in rear of the mold-board, and is supported at one end by the described attachment-arm A, fastened adjustably to the plow standard or beam and handle A^2, and at the other end by the described attachment-arm C, adjustably fastened to the mold-board and handle A^3, substantially as and for the purpose described.

2. The combination, with a plow, of an oblique wheel-landside having a rim which in cross-section is circular instead of beveled, substantially as and for the purpose described.

292,402. SKIRT-SUPPORTER. GEORGE M. BARRY, Boston, Mass. Filed Nov. 23, 1883. (No model.)

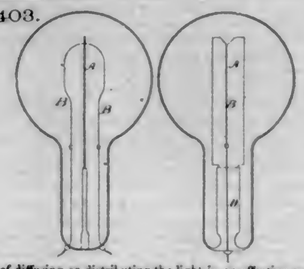


Claim.—A clasp or garment-supporter comprising two jaws attached to a loop or analogous device, one of said jaws being provided with the hinged portion and bearing the penetrating-point, and the other having its end doubled upon itself and provided with an aperture to receive the point, the jaws adapted to be locked by a slide.

292,403. REFLECTOR FOR INCANDESCENT LAMPS. JOSEPH S. BERNAN, London, England. Filed Apr. 23, 1883. (No model.) Patented in England July 11, 1882, No. 3,279, and in France Jan. 9, 1883.

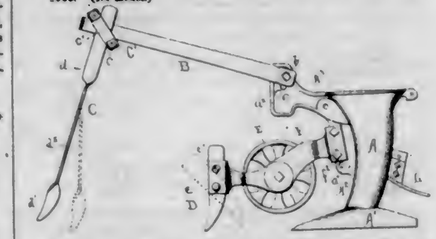
Claim.—In incandescent electric lamps, the combination, with the incandescing filament or filaments, of a reflector situated inside the lamp-bulb and between the limbs of the carbon filament or filaments, for the

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purpose of diffusing or distributing the light in an effective manner, substantially as hereinbefore described, and illustrated in the accompanying drawings.

292,404. CULTIVATOR-TOOTH. JOS. P. BRADFORD, Weston, Mich., assignor of one-half to Andrew J. Walters, same place. Filed July 9, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the tooth having a rib, A^2, projected forward therefrom and perforated with a series of holes, *a*, the bracket having its rear end provided with slot *f'*, slipped over the rib A^2, and suitable fastening-bolts, the said bracket having a suitable colter secured to its forward end, and a gage-wheel journaled in rear of said colter, as and for the purposes set forth.

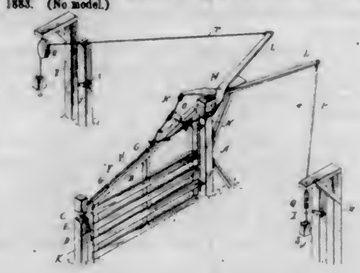
2. The combination, with the tooth A and gage-wheel E, arranged in advance of and supported on bracket F, projected forward from said tooth, of a gage or depth-regulating device, arranged and operating in rear of the tooth, substantially as and for the purposes set forth.

3. The combination of the tooth, the bracket projected forward therefrom in approximately a horizontal position, and provided with a suitable gage-wheel midway its ends, and the colter D, pivotally secured to the bracket by bolt *e*, and held to the bracket above said pivot by a fragile pin, *e'*, all arranged and operating substantially as and for the purposes set forth.

4. The combination, substantially as hereinbefore described, of the tooth A, having forward rib or flange, A^2, the bracket F, having colter D and wheel E, the bar B, extended forward from said tooth, and the spring-colter C, held adjustably to the bar B, with the lower end of its point *d'* working in a plane above the point of colter D, as and for the purposes specified.

5. The combination, substantially as hereinbefore described and shown, of the drill-tooth, the spreader-plate arranged within and at the base of same, the bracket F, removably secured to and projected forward from the tooth, the colter D, and gage-wheel E, supported on said bracket, and the coverer and gage-plate G, arranged in rear of the tooth, as and for the purposes specified.

292,405. GATE. WALLACE BRUCE, Elk Grove, Cal. Filed July 19, 1883. (No model.)

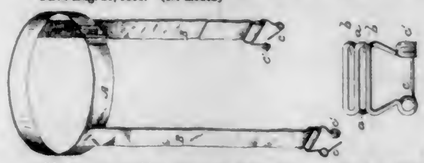


Claim.—1. The combination of the hinge-post, a gate hinged thereto so as to swing in either direction, an evener pivoted on top of the gate, the cross-levers pivoted on the top of the hinge-post by the single pivot-pin, pull-cords connected to the operating ends of the cross-levers, and chains extending from the other ends of the levers to the ends of the evener, substantially as and for the purpose set forth.

2. The combination of the hinge-post, the gate hinged thereto so as to swing in either direction, the spring-latch secured to the free end of the gate, the evener centrally pivoted on top the gate, a sliding rod connected with the end of the latch, chains connecting the other end of this rod with the ends of the evener, the cross-levers fulcrumed on top of the hinge-post and connected each with one end of the evener, and means for operating the levers, substantially as and for the purpose set forth.

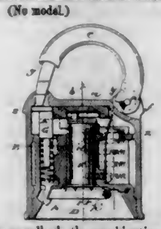
3. The combination of the hinge-post, the latch-posts arranged at the sides and in front of the latter, the gate hinged to the hinge-post, the spring latch-rod secured on the free end of the gate, the evener centrally pivoted on top of the gate, the sliding rod connected to the free end of the latch-rod, chains connecting the operating-rod with the ends of the evener, the cross-levers pivoted on top of the hinge-post by the single pivot-pin, the chains connecting the end of these levers with the ends of the evener, and the weighted pull-cords extending from the long ends of the cross-levers, substantially as and for the purpose set forth.

292,406. STOCKING-SUPPORTER. GEORGE N. BUCK, Mattoon, Ill. Filed Aug. 23, 1883. (No model.)



Claim.—A stocking-supporter attachment consisting of a single wire bent back and forth upon itself to form a series of separate parallel loops, as an elastic strap-adjuster, and terminating in a spring-pin and eye or keeper, by which to attach it to a stocking, substantially as shown and described.

292,407. SEAL-PADLOCK. SAMUEL G. CABELL, Washington, D. C., assignor to Charles Pelham and Flora B. Cabell, both of same place. Filed May 22, 1882. (No model.)



Claim.—1. In a padlock, the combination of a recessed case or body and a seal-holding device, the case or body extending below and embracing said device, as and for the purpose described.

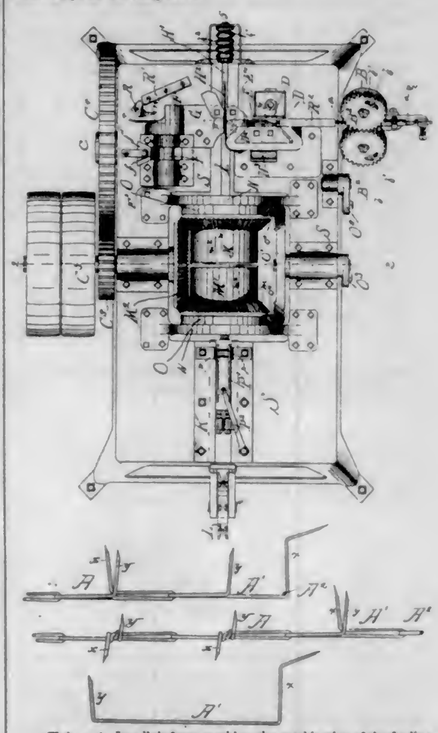
2. In combination with the hasp and the sliding bolt E, provided with the hook or dog *a*, the hub or barrel F, provided with locking pins or tumblers, and a stud, *b*, adapted to co-operate with the hook *a*, as shown and described, whereby the bolt is permitted to remain in its unlocked position until the hasp has been closed, but locked rigidly after being moved forward.

3. In a padlock, the combination of the swinging hasp, the main locking-bolt E, a seal-holder, means for holding said seal-holder in a closed position, and a sliding bolt, G, adapted to serve the twofold purpose of preventing the unlocking of the seal-holder and of holding the main bolt in an unlocked position, said bolt G arranged to be operated by the hasp of the lock.

4. In a padlock having the locking mechanism in one compartment and an alarm mechanism in another compartment of the lock-case, the combination of the hasp-locking bolt provided with an alarm-operating arm extending through the separating-diaphragm, with the alarm mechanism, substantially as specified.

292,408. MACHINE FOR MAKING BARB-LINK FENCING. FRANK P. CADY, Chicago, Ill., assignor, by mesne assignments, to the Cambria Iron Company, of Pennsylvania. Filed July 18, 1883. (Model.)

Brief.—A single wire is fed to the machine. A link-blank is severed and its ends bent to the form shown in Fig. 15. This link is then doubled on itself near the center by a hook reciprocating at right angles to the line in which the wire is fed in. The same movement of the hook bends down the rear end of the preceding link. Another link-blank is fed in across the last blank in the angle formed by the bent end of the last blank, and the operations repeated. The link-blank, with its ends in close proximity, is fed forward through two coiling-heads revolving in opposite directions, which coil each barb-point about the body of the link. Clamps arranged in the coiling-mandrels clamp the link close to the points while the points are being coiled.



Claim.—1. In a link-fence machine, the combination of the feeding and severing mechanisms with bending devices for bending the ends of the blank to form the barbs and for forming the link, substantially as specified.

2. In a barb-fence machine, the combination of wire feeding and severing devices and blank-bending devices, substantially such as described, with devices for coiling the ends of the link, essentially as set forth.

3. In a barb-fence machine, the combination of wire feeding and severing devices and blank-bending devices with devices for coiling the ends of the link and devices for clamping the link at each side of the coiling devices, substantially as specified.

4. In a barb-fence machine, the combination of two coiling-heads revolving in different directions, in combination with mandrels supporting the same and slotted longitudinally to permit the passage of the outstanding link-points, substantially as specified.

5. In a barb-fence machine, the combination, with coiling devices, of the clamping devices for holding the link at each side of the coiling-point, substantially as specified.

6. The combination, with the coiling devices, of feeding devices engaging with the cable at the rear of said coilers, and other feeding devices engaging with the cable in front of said coilers, said feeding devices being connected together so as to move unitedly, substantially as specified.

7. The combination, in a barb-chain-cable machine, of a feed device in advance of the coiling devices, the hook H, in the rear of the coiling devices, and the yoke-slide carrying both the feed device and the hook, substantially as specified.

8. In a barb-fence machine, the combination of devices for feeding and severing the wire and for bending the ends of the blank with a bending device moving at right angles to the line of the blank, substantially as specified.

9. In a machine for making link-fence, the combination of the following instrumentalities, viz: wire-feeding devices, wire-severing devices, benders for bending both ends of the severed blank, guides or holders for holding the blank while said benders are operating, a bending device moving at right angles to said feeding devices, and guides at the side of the line of motion of the last-mentioned bender, substantially as specified.

10. The combination of wire-feeding devices, a support for the wire, a feeding device moving at right angles to the line of said first-mentioned feed devices, and a groove in said support under and in line with said last-mentioned feeding device, whereby the incoming wire is caused to pass over the link already partly formed, substantially as specified.

11. The combination of the moving bender F, the guide and plate G, and the reciprocating hook H, whereby one-half of the blank is bent into form ready for coiling, substantially as specified.

12. The combination of the moving bender E, the guide E', the reciprocating hook H, and resisting-points at each side of said hook, whereby one of the halves of the link is shaped ready for the coiling, substantially as specified.

13. In a machine for making link-fence, the combination of moving benders E and F with guides E' and G, substantially as specified.

14. The reciprocating hook H, in combination with the yielding guides J J, substantially as set forth.

15. In a barb-fence machine, the guide G, having the beveled overhanging vertical surface, in combination with the moving bender F, substantially as specified.

16. The guide G, constructed, as shown, to impart a double bend to the link, in combination with a moving bender, substantially as shown.

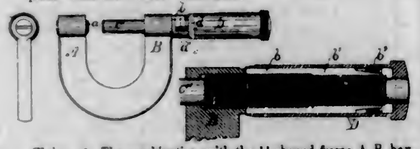
17. In a barb-fence machine, the combination, with the spooler and mechanism for feeding the cable thereto, of an intermittently-acting stop engaging with the cable, substantially as specified.

18. The combination, with the clamping-hooks at the sides of the coiling-point, of the adjustable lever and the intervening devices, whereby the amount of throw of said hooks is permitted to be regulated, substantially as specified.

19. In a barb-chain-cable machine, the combination, with the hook H, reciprocating and pivoted as specified, of a trip device for raising said hook at the end of its return movement, substantially as and for the purpose set forth.

20. In a machine for making link-fencing, the combination, with the devices for bending the blank into link shape for coiling, and the coiling devices, of the guide H^2, for keeping the points of the link from crossing, substantially as specified.

292,409. MICROMETER-CALIPERS. CYRIS CARLETON, Providence, R. I., assignor to the Brown & Sharpe Manufacturing Company, same place. Filed Dec. 17, 1883. (No model.)



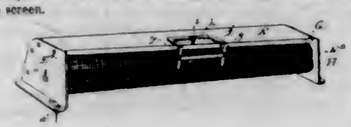
Claim.—1. The combination, with the U-shaped frame A B, having extension *b* integral therewith, longitudinally slitted and tapered at the end, as described, of the compressing-thimble b^2 on the tapered end of said extension, and the micrometer-screw C, passing longitudinally through said extension, substantially as described.

2. A micrometer-calipers consisting of a U-shaped frame and a slitted extension, provided with a nut at its end, formed in one piece, a micrometer-screw provided with a plain cylindrical arbor, and a clamping-ring constructed to regulate the bearing of the nut on the screw, as described.

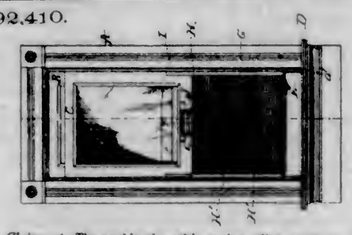
3. The combination, with the U-shaped frame A B, having extension *b* integral therewith, said extension longitudinally slitted and tapered at the end, as described, of the compressing-thimble b^2 on the end of said extension, the micrometer-screw passing through the extension, and the sleeve D, attached to the micrometer-screw and extending over the extension, substantially as described.

292,410. WINDOW-SCREEN. ALFRED L. CLARK, Dubuque, Iowa. Filed June 12, 1883. (No model.)

Brief.—A spring-roller window-screen placed in a box upon a window-sill. The screen is provided with an automatic attachment for attaching it to the window-sash. Metallic rods or strips placed at intervals, extending from side to side and running in guides, prevent any sagging in the screen.



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Claim.—1. The combination, with a spring-roller, of a window-screen adapted to be automatically attached to the window-sash by means of a catch secured to the free end of said screen, and engaging with projections upon the lower bar of said sash when the latter is raised or lowered, substantially as and for the purpose set forth.

2. The combination, with the catch constructed and attached to the window-screen and its casing, as described, of the lower window-sash, C, provided with the pins *k k* and inclines *k' k'*, substantially as and for the purpose set forth.

3. The combination, with a spring-roller and a window-screen wound thereon, of a box for inclosing and supporting the same, said box consisting of the top and front pieces, E E', and end pieces, E^3, bent at their lower ends to form flanges *a*, substantially as described, whereby, with the aid of pins or other suitable means, said box, with its inclosures, is adapted to be removably attached to the window-sill, as set forth.

4. The combination of spring-roller F, window-screen G, wound on said roller, window-sash C, and bars H H', as and for the purpose set forth.

5. The combination of spring-roller F, window-screen G, window-sash C, bars H H', and metal guides I, consisting each of the strips *f f'*, arranged as described and shown.

292,411. FIRE-ESCAPE. ALFRED L. CLARK, Dubuque, Iowa. Filed June 12, 1883. (No model.)

Brief.—Grooved end eyes are arranged at both ends of the device to guide the rope and produce additional friction.



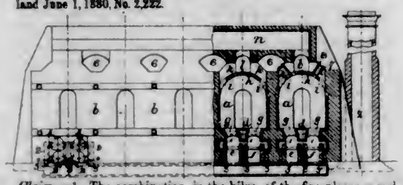
Claim.—In a friction fire-escape, and in combination with the rope D, the block A, having grooved end eyes, and consisting of two plates, *a a*, provided with an intermediate central and cylindrical stud, C, and two intermediate end studs, B B, semicircular in form, and having grooved peripheries, whereby an even tension is given that portion of the rope passing through the block, substantially as set forth.

292,412. BOOK-MARK AND PENCIL-HOLDER. EDWARD T. COWELL, New Bedford, Mass. Filed Nov. 13, 1883. (No model.)



Claim.—A book-mark and pencil-holder consisting of two spring-impelled jaws hinged or pivoted together, and each provided with a finger-piece at one side of their hinge or pivot to swing said jaws on such hinge or pivot, one of the finger-pieces being bent into a tubular pencil-holder having a longitudinal free edge, substantially as described.

292,413. KILN. JACOB PEARSON CRAMP, Finedon, County of Northampton, England. Filed May 1, 1883. (No model.) Patented in England June 1, 1880, No. 2,222.



Claim.—1. The combination, in the kiln, of the fire-places *e* and *f* and the openings *g* in the floor *d* with the openings *i* in the roof *h*, the passages *k k*, the longitudinal flue *l* above the roof, and the transverse

flue *n* above the flue *l*, communicating with all the kilns, substantially as set forth and shown.

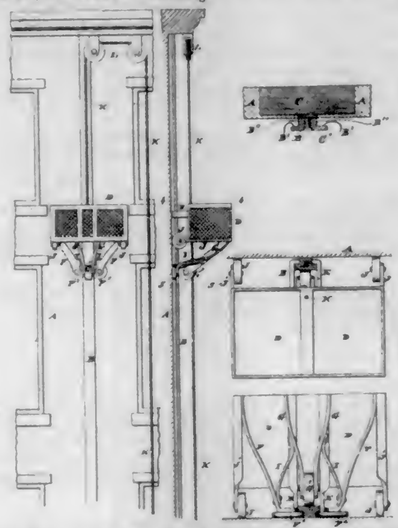
2. The combination of the passages *k k* and the longitudinal flue *l* above the roof with the openings 6, the covers 7, and the stops or plates 8, by which the communication between the kiln *a* and the flues *l* and *n* can be cut off and regulated, substantially as set forth and shown.

3. The combination, in the kilns, of the openings 1 1 1 1 in the sides of the fire-places *e* and *f*, the longitudinal chambers 2 2 2 2, the descending passages 3 3 3 3, the dampers 4, the transverse lower flue, 5, and the doors A B, substantially as set forth and shown, and for the purposes specified.

4. In combination with the kilns *a* and the fire-places *e* and *f*, the openings *o*, transverse flue *p*, dampers *r*, openings *s*, dampers *t*, and flue *v*, by which communication with the chimney *z* may be made directly from each fire-place, or through any or all of the other fire-places and kilns, substantially as set forth and specified.

292,414. FIRE-ESCAPE. AUGUSTUS S. CURRIER, Hillsborough, Ill., assignor of two-thirds to John T. Maddux and George W. Paisley, same place. Filed Apr. 19, 1883. (No model.)

Brief.—The T-rail is made fast to the building by plates placed in the wall and having projections inserted in openings in the rail and riveted therein. The car is provided with arms which embrace the flanges, and arms carrying rollers which run on the face of the rail, the web of the rail, and the face of the building.



Claim.—1. In a fire-escape, the combination of T-rail B, secured to the structure, box D, having arms E, engaging the rear sides, B', of the rail, lower arms, G, having roller G', running on the head of the rail, arms F, having rollers F', running on the web B'' of the rail behind the head, and a suitable hoisting-rope, as set forth.

2. In a fire-escape, the single rail or track B, made fast to the building by plates C, having necks or projections C', which are inserted in openings of the rail and riveted therein, in combination with the box D, connected to the rail so as to be moved vertically thereon, substantially as set forth.

292,415. COMPARATOR. SAMUEL DARLING, Providence, R. I. Filed Mar. 1, 1883. (No model.)

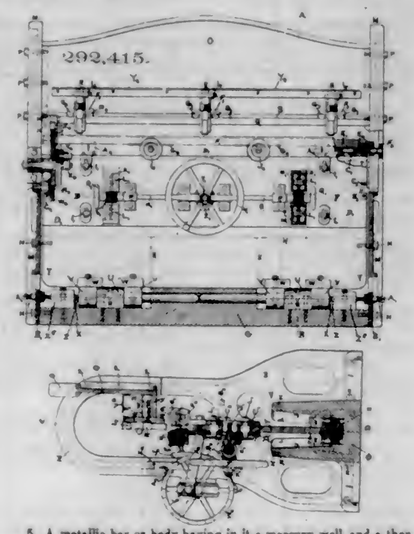
Claim.—1. For testing measures of length, a comparator having, in combination with microscopes, separate tables or supports for said measures fixed to a swinging frame, substantially as described.

2. A comparator having, in combination with a table or tables, microscopes and a beam supporting the microscopes, a tracer, and head-rest, said beam being held by its ends and elevated above the tables, leaving the space under it open for the moving back and forth of the tables under said beam and the admission of light, substantially as described.

3. A comparator having, in combination, a table adjustable longitudinally, a metal bar, M_1, stops O_1 and Q_1 to limit its motion, and two or more microscopes, substantially as described.

4. A comparator having, in combination, microscopes, table F_1, and means for adjusting said table longitudinally, including lever L_1 and stop-rest M_1, substantially as described.

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5. A metallic bar or body having in it a mercury-well, and a thermometer embedded in said well, substantially as described, and for the purpose set forth.

6. For comparing measures of length, a comparator having a table or support for the articles to be compared, said table having in it a mercury-well, and a thermometer embedded in the well, substantially as described, and for the purpose set forth.

7. For comparing measures of length, a comparator having, in combination, a table or support for the measures, one or more microscopes, a guide or slide, S, running nearly parallel with the table, a vertical guide, 8, and a transverse guide or slide, 7, by means of which the microscopes can be moved parallel, transversely, and vertically to the table, for the purpose of adjusting the cross-hairs of the microscopes to the lines of the measures.

8. The method of comparing lineal end-measure with lineal line-measure, which is as follows: first, bringing into end contact with a fixed bar a movable bar having traced thereon a fine line; second, adjusting the cross-hairs of a microscope to this line; third, substituting for the movable bar a line-measure, and adjusting one of the lines thereon, to coincide with the microscope cross-hairs; fourth, adjusting the cross-hairs of a second microscope to the other line of the line-measure; fifth, substituting for the line-measure an end-measure, abutting it against the fixed bar; sixth, abutting the movable bar against the end of the end-measure; seventh, observing the line on the movable bar through the second microscope, and noting the amount of divergence, if any, of the line from the cross-hairs of the microscope.

9. The following method of comparing lineal end-measure with lineal line-measure: first, abutting the line-measure against a fixed bar; second, adjusting a microscope to that line of the line-measure which is farthest from the fixed bar; third, inserting between the fixed bar and the line-measure an end-measure; fourth, observing through the microscope that line on the line-measure which is nearest to the fixed-bar, and noting the divergence, if any, of the line from the cross-hairs of the microscope.

10. For comparing end-measure with line-measure, a comparator having, in combination, a table or support for the measures, two or more microscopes, and two abutting bars, substantially as described.

11. For comparing end-measure with line-measure, a comparator having, in combination, a table or support for the articles to be compared, one or more microscopes, and two abutting bars, one of the abutting bars to be provided with the line-measure, substantially as described.

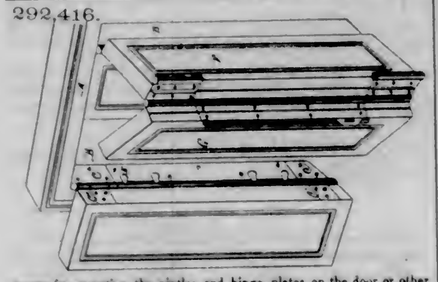
12. For comparing end-measure with line-measure, a comparator having a table or support for the measures, two abutting bars and one or more detective microscopes, substantially as described, and for the purpose set forth.

13. A comparator having, in combination, one or more tables or supports for the articles to be compared, one or more microscopes, and a head-rest, substantially as described, and for the purpose set forth.

292,416. HINGE. JOSEPH DRUMM, San Francisco, Cal. Filed Dec. 30, 1881. (Model.)

Claim.—1. A hinge consisting of a center-plate, H, having cylindrical tubes I I' on its sides, provided with vertically-sliding pintles, and

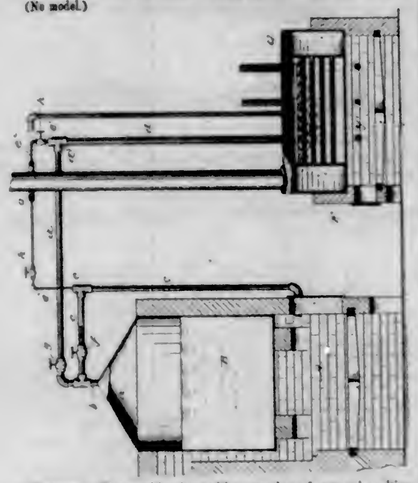
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means for operating the pintles and hinge-plates on the door or other part, provided with engaging means for the pintles, whereby the pintles may be caused to engage or disengage the hinge-plates on the door or other part with the tubes I or I', as set forth.

2. In a hinge, the combination of the two parts thereof, each having a hollow cylinder and a sliding pintle in the cylinder of one part, adapted to be engaged with the cylinder of the other part, said pintle having a spring, *a*, to keep the pintle in the position in which it is set, and a projection, J, extending outside of the cylinder, for operating the pintle, substantially as set forth.

292,417. APPARATUS FOR REFINING ASPHALTUM FOR PAVING, &c. EDWARD J. DE SMEDT, Washington, D. C. Filed Dec. 28, 1883. (No model.)



Claim.—1. The combination, with a number of covered melting-kettles and furnaces for heating the same, of the separate special furnace F, the steam-boiler G, heated by the same, conduit *d*, leading from each kettle to the furnace F, and the ejector *d'*, drawing its supply of steam from said boiler and acting to exhaust the fumes and gases from the kettle through said pipe *d* into furnace F, as and for the purposes hereinbefore set forth.

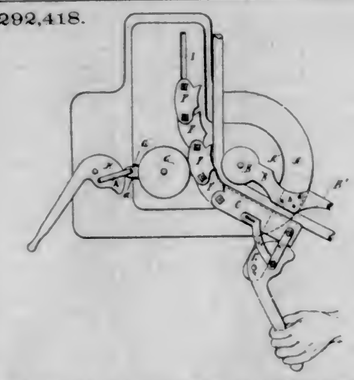
2. The combination of the covered kettles B, furnaces A, special furnace F, boiler G, pipes *d c*, ejectors *d' e*, connected with and taking their steam from boiler G, and valves or cocks for controlling the steam-supply, and for directing the abducted fumes or gas into either pipes *d* or *c* at will, the whole arranged and adapted to operate as and for the purposes hereinbefore set forth.

292,418. PIPE-BENDING MACHINE. EDWD. DEVINE, Detroit, Mich. Filed Aug. 3, 1883. (No model.)

Claim.—1. The combination of a frame or table, the annular former-head B', constructed with a grooved edge, a clamp, C, provided with means whereby it may be reciprocated, a series of links secured to said clamp, and a disk, G, provided with means whereby it may be reciprocated, the construction being such that the clamp may be forced against the annular former-head, and carried with said former-head as it is rotated, substantially as described.

2. In a pipe-bending machine, the clamp C, provided with a series of links, F, the inner edges of which are constructed on the arc of a circle, and grooved for the reception of the pipe, said links pivotally connected to each other and with the clamp, substantially as described.

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3. A pipe-bending machine, consisting in the combination of a frame or table, the former-head B', constructed with an annular grooved edge and pivoted to the table, said head provided with a lever-arm, a suitable clamp, a track rigidly secured at one end to the lever-arm, mechanism for reciprocating said clamp upon said track, a series of links pivotally connected with each other and with the clamp, the inner edges of said links constructed on the arc of a circle, and grooved for the reception of the pipe, and a pivoted disk, said disk provided with mechanism whereby it may be reciprocated, substantially as described.

4. A pipe-bending machine, consisting of a suitable frame or table, provided with a raised bed, A', a former-head, B', pivotally connected thereto and constructed with an annular grooved edge, and adapted to be rotated, a clamp, C, adapted to hold the pipe against the former-head, mechanism for reciprocating said clamp and for holding it firmly against the former-head, said clamp provided with a series of links pivotally connected with each other and with the clamp, the inner edges of said links constructed upon the arc of a circle, the construction being such that as the former-head is rotated the clamp with the series of links pivoted thereto will be carried with the former-head and be successively engaged with the pipe to bend it over the former-head, substantially as described.

5. A pipe-bending machine, consisting of a suitable table or frame, a former-head pivoted thereto, and having a lever-arm, a track firmly secured at one end to said arm, a clamp provided with a cam-lever connected therewith, and adapted to be reciprocated upon said track, said clamp provided with a series of links pivotally connected together and to said clamp, and in connection therewith a rotary disk provided with a cam-lever suitably connected thereto and adapted to be reciprocated upon the bed of the table, substantially as described.

6. A pipe-bending machine, consisting of a suitable bed or table, a former-head, B', pivotally connected thereto, and provided with a lever-arm, a clamp provided with a series of links pivotally connected together and to said clamp, mechanism for reciprocating said clamp, a disk, means for reciprocating the disk upon the bed of the frame or table, said bed provided with a groove, I, the links having one or more guide-pins, *f*, adapted to travel in said groove, the construction being such that when the former-head is rotated the clamp and the links connected thereto will be carried with said former-head, and when the latter is retracted the guide-pins in said groove will throw said links out of engagement with the former-head, substantially as described.

7. The combination of an annular former-head, a clamp disconnected from the former-head but adapted to receive between it and the former the article to be bent, a pliable former, composed of pivoted links having a pivotal connection with the clamp, and means for reciprocating the clamp and revolving the same, to carry the pliable former around the article being bent, substantially as described.

292,419. CARRIAGE-SPRING. GEORGE E. DOLTON, St. Louis, Mo., assignor to Caroline C. Nitzsche, same place. Filed Aug. 7, 1883. (No model.)

Claim.—1. A frame or body support consisting of sills F and side springs, L_1, connected to the adjustable sills and to the body.

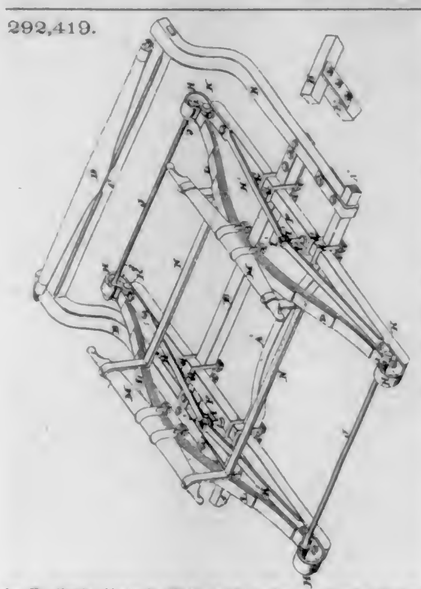
2. The combination of sills F, goose-necks H, and springs L_1, connected to the body.

3. The combination, in a body-supporting frame for vehicles, of springs L_1, connected to the body at or near their middle, and connected at the ends to sills F, substantially as set forth.

4. A body-supporting frame composed of sills F and springs connected together and made longitudinally adjustable upon the axle and shaft or pole frame.

5. The combination, in a two-wheeled vehicle, of the axle A', cross-

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bar E, adjusting-blocks Q, sills F, and side springs connected to the sills and to the body.

6. The sills F, connected with the springs by goose-necks at the ends, and having truss or brace H', substantially as described and shown.

7. The combination of sills F and truss or brace H', adjusting post and nuts I I', goose-necks H, and springs connected to the goose-necks and to the body.

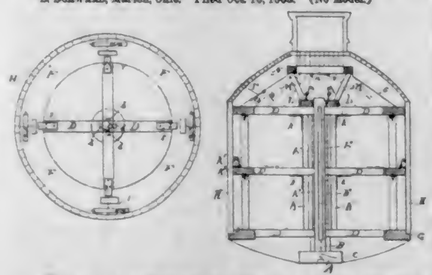
8. The combination of sills F, goose-necks H, equalizers J, and springs L, forming a body-supporting frame for vehicles.

9. The combination, in a two-wheeled vehicle, of the side bars or shafts, B, cross-bar E, axle A', sills F, goose-necks H, and springs L, connected to the goose-necks and to the body of the vehicle.

10. The combination of the side bars or shafts, B, cross-bar E, axle A', sills F, secured to said cross-bar and axle, trusses H' I I', goose-necks H, equalizers J, springs L, secured to the body in any suitable manner.

11. The combination of side bars or shafts, B, cross-bar E, axle A', sills F, secured to said cross-bar and axle, goose-necks H, trusses H I I', equalizers J, springs L, spring-bars M, and hangers N, extending transversely from one spring-bar to the other.

292,420. CONSTRUCTION OF CISTERNS FROM CONCRETE. WM. B. DORWARD, Marion, Ohio. Filed Oct. 10, 1883. (No model.)



Claim.—1. A combination, in a cistern, of a concrete composed of cement, sand, and broken stone with an adjustable curb and adjustable braces, substantially as shown and described, and for the purpose set forth.

2. The central post, B, resting upon and mortised in the circular block, and provided with the ribs upon each side thereof, in combination with the curb-braces and curbs, substantially as described.

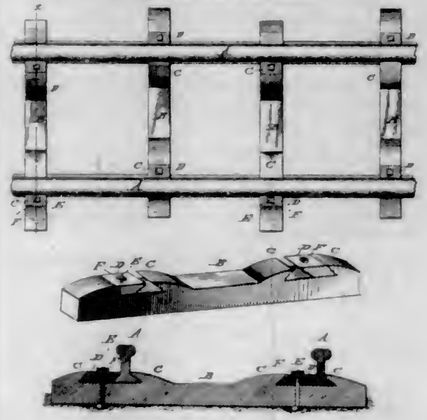
3. The circular block surrounding the upper part of the post and resting upon the curb-braces, and connected with the larger ring at the sewer-neck by means of short arms, as shown, and arched ribs connected with the larger ring at the mouth of the sewer-neck and curb-braces, all arranged as specified.

4. The outer or circular arranged arch, connected to the upper ends of the series of staves, in combination with the flanged curbs connected to the braces, substantially as herein shown and described.

5. A cistern constructed of a concrete composed of cement, sand, and broken stone, the said concrete being held in position until hardened by movable curbs and braces having suitable adjusting means, substantially as shown and described, and for the purpose set forth.

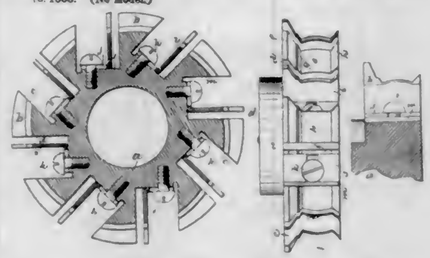
292,421. RAILWAY-TIE. JAS. J. DU BOIS, Springtown, N. Y. Filed Aug. 28, 1883. (No model.)

Brief.—The locking-blocks are made reversible.



Claim.—The combination of the tie B, provided with the rail-chairs C, the reversible rhomboidal locking-blocks D, and means by which the said blocks are secured in their operative position, as set forth.

292,422. CUTTER-HEAD. JOHN R. EMERY, Lynn, Mass. Filed Nov. 10, 1883. (No model.)



Claim.—1. In combination with a rotary cutter, *a*, subdivided into teeth *b*, a removable guard secured between the respective teeth and projecting outward, so as to gage the depth and extent of cut of the teeth, substantially as specified.

2. In combination with cutter *a*, subdivided into teeth *b*, a guard, *i*, formed to be secured to the base of the slot between the teeth, and extending outward to serve as a peripheral guard to control the cut of said teeth, substantially as specified.

3. In combination with rotary cutter *a*, subdivided by teeth *b*, molded upon their periphery, the counterpart of the desired form of the sole-edge, a guard, *i*, secured between the teeth and projecting outward to form a peripheral guard, to determine the cut of the respective teeth, and formed at such projecting end to correspond with the peripheral form of the teeth, substantially as specified.

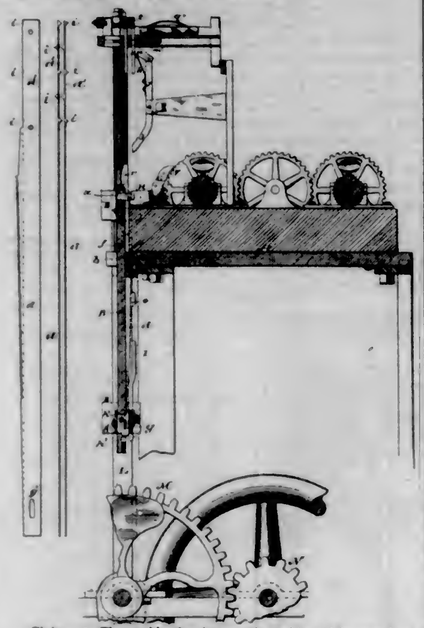
4. In combination with cutter *a*, subdivided by teeth *b*, a guard, *i*, secured by screws *k*, and having a slotted base whereby said guard may be adjusted relatively to the front and rear faces of the adjacent teeth, substantially as specified.

5. In a rotary cutter, and in combination with a removable guard, *i*, the front line, *c*, and rear line, *d*, of the teeth, formed at right angles, or nearly so, with the base *l* of the slots between the teeth.

6. In a rotary cutter subdivided into teeth, a peripheral guard, *i*, formed of brass or an analogous alloy, and arranged between the teeth, to control the cut thereof, substantially as specified.

292,423. MACHINE FOR MAKING AND STICKING MATCH-SPLINTS. GUSTAV A. FAAS, Lawrence, Kans., assignor of one-fourth to Arthur P. Usher, same place. Filed Aug. 22, 1883. (No model.)

Brief.—The match-splints are cut from the block by saws which have laterally-projecting spurs on their sides. The saws are set in a frame which is closed against their backs, forming channels within which each match-stick is supported by a support of its own size during the downstroke of the cutter. Upon the upstroke the match-stick is lifted, being held between a spring and the lateral cutter-spurs, and it is inserted between the bars of a spring-tray which is automatically and intermittently fed over the top of the cutter-frame.



Claim.—1. The combination, in a match-machine, of the cross-head B, having a gang of vertical saws, and plates arranged in line above them, having lateral spur-cutters *i* projecting from each side thereof, with a table-bed, *a*, having face divisions *b* and a cross-slit, *c*, and means, substantially such as described, carried at the top of said cross-head, for holding the produced splints against the said spur-cutters in position to be delivered, as described.

2. The combination, in a match-machine, of the cross-head B, having a gang of saws, and vertical plates arranged above them, having lateral spur-cutters, with a table-bed, *a*, having face divisions *b* and a cross-slit, *c*, substantially as described, for the purpose specified.

3. The combination, in a machine for producing match-splints, of a cross-head, B, having a gang of vertical saws, and plates arranged in line above them, having spur-cutters *i* projecting from each side thereof, a table-bed, *a*, having face divisions *b* and a cross-slit, *c*, and means, substantially such as described, carried by said cross-head, for holding the produced splints in position between the cutter-plates to be delivered, with a removable horizontally-moving dipping-frame adapted to seize and hold the splints, and a guideway open at both ends, adapted to receive, guide, and deliver the filled dipping-frame, substantially as set forth.

4. In a match-machine, the vertically-reciprocating cross-head B, constructed with a recessed face having vertical parallel grooves *e*, and provided with splint-cutting mechanism consisting of a gang of saws, *d*, suitably stretched and supported in said grooves, and plates forming a continuation of the saw-blades, having laterally-projecting spur-cutters *i* arranged within the spaces between the plates, above said saws, combined with a table-bed, *a*, having face divisions *b* and a cross-slit, *c*, substantially as described, for the purpose specified.

5. The combination, in a machine for producing match-splints, of a dipping-frame composed of an open rectangular frame having slotted side bars, *k*, a series of shouldered clamping-bars, *l*, fitted within the slotted side bars, and the springs *m'*, with the vertically-operating cross-head having a gang of saws, and plates arranged in line above them, having spur-cutters projecting from each side thereof, with means, substantially such as described, carried by said cross-head, for holding the splints in position to be delivered to said dipping-frame, and means, substantially such as described, for operating said clamping-bars and for feeding said dipping-frame in position to receive the splints.

6. The combination, with mechanism, substantially such as described, for feeding the wood, of the vertically-reciprocating cross-head B, having the gang of saws, and lateral spur-cutters arranged above them, and the table-bed *a*, having divisions *b*, corresponding with the spaces between the saws, and a cross-slit, *c*, substantially as described, for the purpose specified.

7. The combination, with mechanism, substantially such as described, for feeding the wood, the vertically-reciprocating cross-head B, having the gang of saws, and the lateral spur-cutters arranged above them, and the divided table-bed *a*, having the cross-slit *c*, of a dipping-frame of seizing-bars arranged above the cross-head, means, substantially as described, for opening and closing said bars to receive and hold the splints, and means, substantially as described, for advancing the dipping-frame to receive the splints from the cross-head.

8. In combination with the vertically-reciprocating cross-head B, having the saws *d*, and the lateral spur-cutters *i*, arranged as described, and the divided table-bed *a*, of the horizontal removable dipping-frame having clamping-bars *l*, adapted to be opened for receiving and holding the match-splints, the slotted guideway l^4, the feeding-bar J, having a spring-actuated pawl, *n*, adapted to engage with the toothed ends *m* of said bars *l*, and means, substantially such as described, carried by said cross-head, for actuating said feeding-bar, whereby the said dipping-frame is moved over said cross-head, for the purpose described.

9. The combination, in a machine for producing match-splints, of the cross-head B, having the splint cutting and holding mechanism, substantially as described, of a removable horizontally-moving dipping-frame having seizing and clamping bars *l* arranged therein, and an open guideway for said dipping-frame, with the pivoted feeding-bar J, having a spring-actuated pawl, *n*, adapted to feed said frame, the spring-pawl *q*, adapted to engage with the seizing and clamping bars *l* for holding said frame, and means carried by said cross-head for operating the feeding-bar to move the dipping-frame, substantially as described, for the purpose specified.

10. The combination, in a match-machine, of the cross-head B, having the splint cutting and holding mechanism, substantially as described, with a seizing dipping-frame composed of separate toothed bars *l*, arranged to be fed over said cross-head, and means, substantially such as described, for operating the toothed seizing-bars of said dipping-frame, and for feeding it, consisting of the pivoted bar J, having the spring-actuated pawl *n*, the spring-actuated holding-pawl *q*, both said pawls acting upon the seizing parts, the tappet-arms *o p*, pivoted cams *r r*, and catches *u u*, carried by the cross-head, and the fixed inclined or curved projections *t t*, and trip-arms *w*, all constructed and arranged for operation substantially as described, for the purpose specified.

11. The combination, in a match-machine, of a horizontally-moving dipping-frame adapted to seize or grasp the splints in vertical position on its under side, with a vertically-reciprocating cross-head provided with saws, laterally-projecting spur-cutters, holding-plates for the splints, arranged on the face of the cross-head, and a spring or springs, *x*, arranged at the top of the cross-head, adapted to bear upon the projecting ends of the splints and press them against the inner sides of the spur-cutters *i*, to hold the splints in position for presentation to the seizing or grasping parts of the dipping-frame, substantially as described.

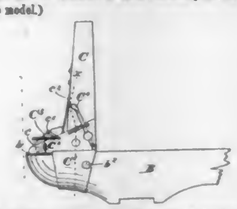
12. The combination, with intermittent feed mechanism for the splint-wood, and a table-bed, *a*, having face divisions *b* and cross-slit *c*, of a vertically-reciprocating cross-head, B, provided with saws *d*, arranged with their cutting-edges oblique to a vertical line, and having plates arranged above the saw-blades in lines coincident with them, formed with spur-cutters *i*, arranged to project laterally within the spaces between said plates in a vertical plane back of the cutting-edges of the saw-blades, substantially as described, for the purpose specified.

13. The cutting mechanism of a match-machine, consisting of a vertically-reciprocating cross-head or saw-frame, B, having a recessed back formed with parallel slits or grooves *e*, a gang of saws, *d*, secured within said grooves, spur-cutters *i*, arranged to project laterally within the spaces between the saw-blades, above the teeth thereof, and in a vertical plane back of the cutting-edges of said teeth, and means, substantially such as described, whereby the said saw-blades are removably secured within said grooves to the closed back of the cross-head, the said spaces between the saw-blades being open at the top and at the bottom, and the splints held between said cutter-plates in positions to be drawn out at their upper ends.

14. For operation in a match-machine constructed substantially as herein set forth, a reciprocating cutter consisting of two or more saw-blades having saw-teeth standing obliquely to a vertical line, and having one or more spur-cutters projecting from the opposite sides of each blade in vertical planes back of the vertical plane of the cutting-edges of the saw-teeth, and their points lapping in their vertical path between the blades, in combination with a suitable bed or support for the wood, having openings adapted to receive the saw-blades and the said spur-cutters after severing the splints, substantially as described.

15. The machine substantially hereinbefore set forth for making match-splints, comprising an intermittently-operating feed mechanism, a vertically-reciprocating cross-head, B, having a gang of saws, *d*, lateral sper-cutters *i*, and holding-plates for the splints, arranged above the saws, a horizontally-moving dipping-frame provided with means for seizing the splints, and a table-bed, *a*, having face divisions *b* and a cross-slit, *c*, and the holding-springs *z* for the splints, the several parts being constructed and arranged for operation substantially as described, for the purpose specified.

292,424. WAGON-BOLSTER. NELSON FAUSET, Pittsburgh, assignor of one-half to Richard R. Miles, Indianapolis, Ind. Filed Nov. 5, 1883. (No model.)



Claim.—1. The combination, with a wagon-bolster, of a standard, provided on its lower end with a clip, said clip adapted to encircle the end of the bolster, and provided with bearings on its top side for a latch, said latch pivoted in said bearings, and adapted to engage with a notch in the top face of the bolster, whereby the standard is secured in position, substantially as set forth.

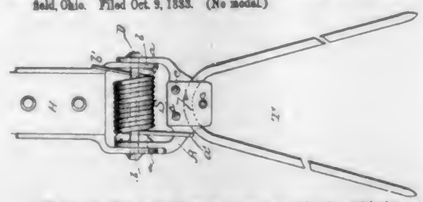
2. The combination, in a wagon, of the bolster B, the standard C, said standard being provided with a clip, C′, the top ends of which extend back and form stays C^2 for said standard, and a latch, C^3, pivoted between the ends of said stays, and adapted to engage with a notch in the top of said bolster, and hold said standard in position, substantially as set forth.

3. In a wagon, the combination of the bolster B, having a notch, *b′*, in its top face near the end, standard C, clip C′, secured to the lower end of said standard, and adapted to encircle said bolster, its top ends being formed into stays C^2, a latch, C^3, pivoted between the ends of said stays, and adapted to engage with the notch *b′* in the bolster, and a locking device, *c′*, hinged or pivoted in the sides of said stays, and adapted to turn down over the end of said latch and lock it in position, substantially as set forth.

4. The combination, in a wagon, of the bolster B, the standard C, provided with a clip, C′, the top ends of which are extended out and formed into stays C^2, a latch, C^3, pivoted between said stays, and adapted to engage with a notch in the end of the bolster, a locking device, *c′*, adapted to lock said latch in position, and a spring, c^2, adapted to bear against the end of said latch, thereby holding it tightly in place, substantially as set forth.

5. The combination in a wagon, of the bolster B, standard C, provided on its lower end with a clip, C′, which is adapted to encircle the end of said bolster, and a lever, C^4, pivoted to the side of said standard, its lower end adapted to bear against the wagon-body, whereby said standard may be easily started from its position on said bolster, substantially as set forth.

292,425. FORK FOR HAY-TEDDERS. JACOB R. FRY, Jr., Springfield, Ohio. Filed Oct. 9, 1883. (No model.)

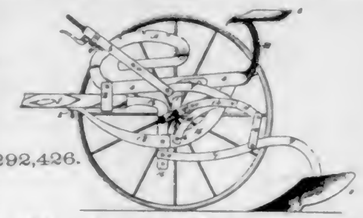


Claim.—1. In a fork for hay-tedders, the combination, with the arm provided with the hinge portion B, having lugs *b*, and the hinge portion A, having lugs *a*, alternating with the lugs *b*, of the spiral spring S, having oppositely-extended ends *a′ b′*, and the bolt D, passed through the aligned lugs and the spring S, substantially as specified.

2. In a fork for hay-tedders, the combination, with the tines T, made of a single piece of material bent as shown and described, of the recessed hinge portion A, the clamping-plate *p*, and the three bolts *c c c*, arranged in triangular form, two above and one below the bend of the tine-piece, substantially as specified.

292,426. SULKY-PLOW. JESSE L. FORBY, Nashville, Ill., assignor of one-half to John Y. Nelson, same place. Filed Nov. 2, 1883. (No model.)

Brief.—The system of lever-connections raises the plow and lowers the wheel-crank at one movement of the lever.



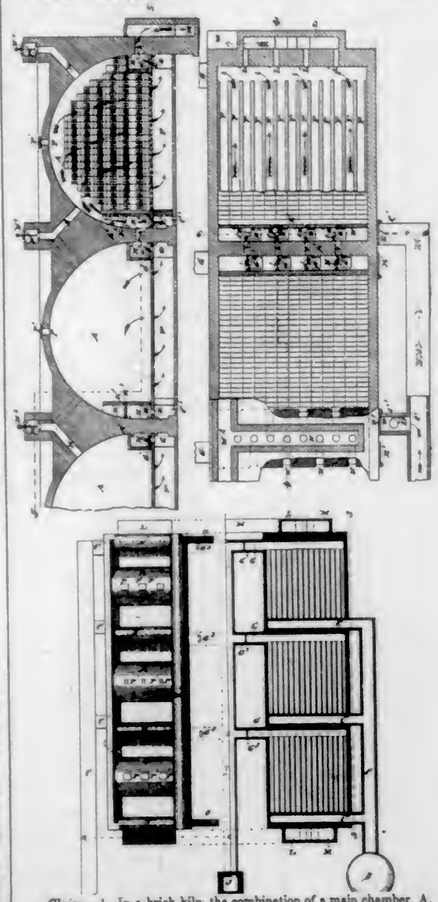
292,426.

Claim.—1. In combination with the plow-beam of a sulky-plow, frame 4, catch-bar A, seat-standard B, lever-bar 5, link-levers 7 11 10 12 14, and crank-axle arm 13, substantially as set forth.

2. In a sulky-plow, in combination with a lever fulcrumed to a catch-bar frame, link-levers 7 11 10 12 14, crank-axle arm 13, plow-beam 9, and pole-shank 16, whereby the crank-axle is shifted and the plow raised or lowered, substantially as set forth and described.

3. In a sulky-plow, the combination of frame 4, consisting of catch-bar A and seat-standard B, lever-bar 5, link-levers 7 11 10 12 14, crank-axle arm 13, braces 15 18, tongue-socket 3, and pole-shank 16, arranged and combined substantially as and for the purposes set forth.

292,427. BRICK-KILN. WILLIS N. GRAVES, St. Louis, Mo., assignor of one-half to the Hydraulic Press Brick Company, same place. Filed Jan. 30, 1883. (No model.)



Claim.—1. In a brick-kiln, the combination of a main chamber, A, having side walls and a perforated floor, a gas-flue on one side of the chamber, beneath the floor, a bridge-wall on one side of the chamber, above the floor, forming a combustion-chamber, E, in communication with the flue and directing the products of combustion to the top of the main chamber, and valves to control the supply of gas to the combustion-chamber, as set forth.

2. In a brick-kiln, the combination of a main chamber, A, having side walls and a perforated floor, a main gas-flue, C, branch flue C′ on one side of the chamber, beneath the floor, diaphragm D between the flues, having opening D′ and valve D^2, and bridge-wall K on one side of the main chamber, above the floor, forming combustion-chamber E over the branch flue, as set forth.

3. In a brick-kiln, the combination, with the main chamber having open floor, of the distributing-flues F and the lower flue, G, beneath the floor, upper flue, H, above the floor, having openings to the lower flue beneath, and the pier-walls, having openings A^2 to connect another main chamber with the upper flue, as set forth.

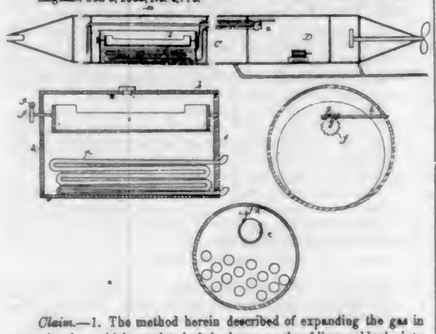
4. In a brick-kiln, the combination, with a main chamber having an open floor in communication with distributing-flues, of the gas-flue on one side, beneath the floor, a combustion-chamber above the gas-flue and floor, a lower flue on the other side in communication with the distributing-flues, and an upper flue above the floor, and lower flue, having suitable outlet, as set forth.

5. In a brick-kiln, the combination, with two main chambers, A A, of the pier-wall A′, formed with longitudinal flue N′ at top, connected with the main chambers by passages N, controlled by suitable valves, as set forth.

6. In a brick-kiln, the combination, with a series of main chambers divided by pier-walls A′, each having a flue, N′, at top, and passages N, connecting the adjoining main chambers with the flue, of the main flue connecting the top flues, as set forth.

7. In a brick-kiln, the flues O, connecting the main flues, in combination with the top flues of series of main chambers, as set forth.

292,428. MEANS FOR HEATING AND CONTROLLING GASES FOR MOTORS. GEORGE E. HAIGHT, Milford, and WILLIAM H. WOOD, Hartford, Conn., and WILLIAM E. WINSOR, New York, N. Y., assignors to John N. H. Patrick, New York, N. Y. Filed Aug. 31, 1883. (No model.) Patented in France Sept. 25, 1883; in Belgium Sept. 25, 1883; in Germany Sept. 26, 1883; in Spain Sept. 28, 1883; in Italy Sept. 29, 1883, No. 15,925, and in England Oct. 3, 1883, No. 4,776.



Claim.—1. The method herein described of expanding the gas in a supply-pipe, which consists in bringing a supply of lime suddenly into contact with a body of chemicals of the character described, said chemicals being in contact with the feed-pipe leading to the engine, as set forth.

2. The combination of the expansion-chamber, the pipes therein, and the lime-chamber, arranged as described, so that the lime-chamber may suddenly dump its contents into the expansion-chamber, as set forth.

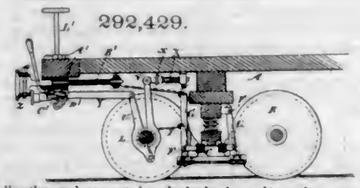
3. The combination of the flask, a pipe leading to the engine, an expansion-cylinder, through which said pipe passes, and a throttle-valve arranged between the flask or reservoir and the expansion-cylinder.

4. The combination, with the reversible lime-chamber, of the cover secured thereto, and devices, substantially as described, for tearing off the cover when the chamber is reversed.

5. The combination of the cylinder *b*, having pipes therein, as described, the lime-chamber *c*, having a cover, devices for removing said cover, and the worm-gear and shaft leading to the exterior of the boat, for reversing the lime-chamber, as set forth.

292,429. CAR-BRAKE. GEORGE M. HATHAWAY, New York, N. Y., assignor of one-half to Charles C. Keeler, same place. Filed Aug. 9, 1883. (No model.)

Claim.—1. The combination, with the axle of a car, of a loose head mounted thereon, and provided with pivoted jaws or clamps adapted to embrace a fixed wheel on the axle, and suitable mechanism for operating said clamps, the head being provided with a collar movable in only one direction, and connected to the brake-beam levers by means of a chain, whereby the brakes may be automatically operated, substantially as specified.



292,429.

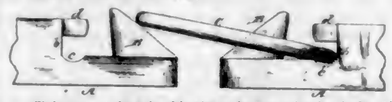
2. The combination, with the axle of a car, of the loose head, the loose collar mounted thereon, the chain and brake-levers, the pivoted levers embracing the clamps, forwardly-extending slotted lever, and the operating-lever and sliding draw-head, arranged to operate substantially in the manner specified.

3. The combination, with the axle of the car and the fixed wheel thereon, of the loose head and the pivoted clamps, the springs by which they are pressed apart normally, and the clamping-levers and their operating mechanism, the whole arranged and adapted to operate substantially as set forth.

4. The combination, with the clamp pivoted to the loose head mounted on the axle of the car, of the pivoted embracing-levers, the spring-bar to which one of said levers is secured, the slotted lever pivoted to one of said levers, the operating-lever working in a slot in the same, and the sliding draw-head adapted to operate the levers to automatically brake the wheels, substantially as specified.

5. The combination, with the bar to which one of the clamping-levers is attached, and the clamping-levers, of the spiral spring and adjusting-nut, whereby the tension of the spring is regulated, substantially as specified.

292,430. CAR-COUPLING. MARSHALL HAYDEN, New Milford, Pa. Filed Dec. 4, 1883. (No model.)

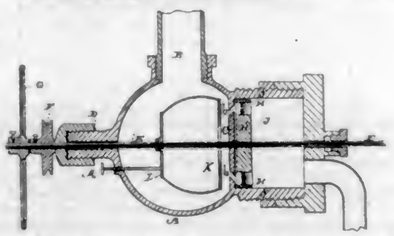


Claim.—1. A draw-head having at its forward end an inclined hook or horn with horizontal edges on each side for supporting the link in a horizontal position before or after coupling, and provided at the rear with a vertical abutment having a forward-projecting lug, *d*, rigid therewith, said lug being adapted to hold the link from vertical displacement when the link is in a horizontal position, and from lateral displacement when it is in a raised position, substantially as described.

2. A draw-head having at its forward end a rearwardly-inclined hook or horn with horizontal ledges on each side, and provided at the rear with a vertical abutment carrying a forward-projecting lug that overhangs a transverse groove at the base of said abutment, in combination with a coupling-link, substantially as described.

3. The draw-head A, provided at its end with a rearwardly-inclined hook or horn, B, the rear face of which is rounded and inclined back slightly from a vertical line, with horizontal ledges *a a* on each side, the rear portion of said draw-head being formed with a vertical abutment, *b*, having at the top a forward-projecting lug, *d*, that overhangs a transverse groove, *c*, at the base of said abutment, substantially as described.

292,431. WATER-WHEEL. ROBERT HEWSON, San Francisco, Cal., assignor to the Globe Manufacturing Company, same place. Filed Apr. 30, 1883. (No model.)



Claim.—1. The case A, with its inlet-pipe B, and having the flat diaphragm C, with the inclined water-discharge tubes or openings *b* made through it, in combination with a wheel consisting of the outer and inner rims, H H′, having a single series of buckets between them, with front parts, *a*, and rear parts, *d*, substantially as herein described.

2. In a water-wheel, a case having an inlet-pipe, through which water is admitted under pressure, and the inclined discharge tubes or openings *b*, in combination with a wheel mounted upon a horizontal shaft, so as to revolve within the case, and having the portion *a* of the buckets constructed so as to be driven by the impact or momentum of the water, while the portion *d* is inclined or reactionary, substantially as herein described.

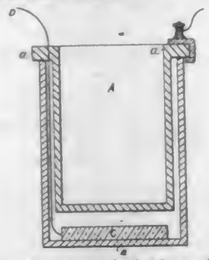
3. The combination, in a water-wheel, of a case adapted to receive water under pressure, a flat diaphragm upon one side, with inclined or angular discharge-openings around its periphery, a water-wheel having buckets corresponding with these openings formed of front and rear plates, and revolving in close proximity to the outside of the diaphragm, and a gate within the case, with mechanism to move it to or from the diaphragm and discharge-openings, substantially as herein described.

292,432. AUTOMATIC FIRE-EXTINGUISHER. CARL L. HORACK, Brooklyn, N. Y., assignor to the Providence Steam and Gas-Pipe Company, Providence, R. I. Filed May 9, 1881. (Model.)



Claim.—A distributer for fire-extinguishers, consisting, substantially as before set forth, of a bent section of pipe perforated upon its outer curved side, in combination with a cap constructed to closely fit the perforated portion of the distributer and be secured thereon by fusible solder.

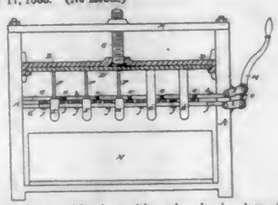
292,433. GALVANIC BATTERY. THOMAS JAMES HOWELL, London, County of Surrey, England. Filed Oct. 2, 1883. (No model.) Patented in England Dec. 30, 1882, No. 6,226.



Claim.—1. A galvanic battery having for one element a carbon pot suspended within an inclosing-vessel, and containing dilute nitrohuoric acid, and for the other element a zinc plate adapted to be laid below the carbon pot, within said vessel, and in a solution of dilute sulphuric acid.

2. A galvanic battery having for one element a carbon pot, A, supported from the top of the inclosing-jar B by an annular flange or lip, *a*, and containing dilute nitrofluoric acid, and for the other element a zinc plate, C, adapted to be laid below the carbon pot, within said inclosing-jar, and in a solution of dilute sulphuric acid, as set forth.

292,434. CAPSULE-MACHINE. FREDERICK A. HUBEL, Detroit, Mich. Filed July 17, 1883. (No model.)



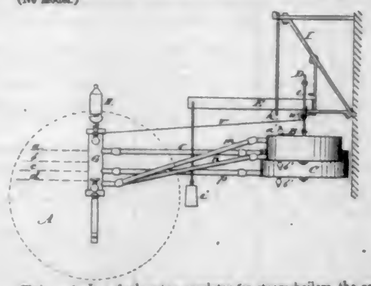
Claim.—1. The combination, with a plate having laterally-movable capsule-mold pins secured thereto, of a rigid inelastic clamp or jaw adapted to strip a capsule from a pin, and means for opening and closing the same, substantially as described.

2. A plate for carrying capsule-mold pins, having said pins fastened thereto by spring-wires, substantially as shown and described.

3. In a capsule-pulling machine, the inelastic jaws J H, adapted to strip a capsule from a pin, and means for moving the said jaws, substantially as described.

4. In a capsule-pulling machine, the combination of a plate carrying one or more yielding mold-pins, having thereon an annular groove and rigid inelastic jaws having recesses therein adapted to be closed upon said pin or pins, substantially as shown and described.

292,435. FEED-WATER REGULATOR AND ALARM. PATRICK BROWN and CHARLES W. JOHNSTON, Philadelphia, Pa. Filed July 3, 1883. (No model.)



Claim.—1. In a feed-water regulator for steam-boilers, the combination, with mechanism for opening and shutting off the supply of feed-water to the boiler, of unequally-preponderating water cylinders or vessels on opposite ends or arms of a rocking beam, and flexibly-jointed pipes connecting the upper and lower portions of said cylinders or vessels with the steam and water space of the boiler at different altitudes, substantially as specified.

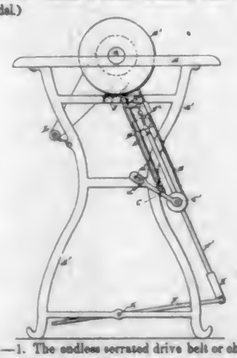
2. In a combined feed-water regulator and low-water alarm for steam-boilers, the combination, with mechanism for opening and shutting off the supply of feed-water to the boiler, and with a steam whistle or alarm and connections for operating it, of unequally-preponderating water cylinders or vessels on opposite sides or arms of a rocking beam, flexibly-jointed pipes connecting the upper and lower portions of said cylinders or vessels with the steam and water space of the boiler at different altitudes, and a weighted rocking beam, on the one arm of which the beam carrying said cylinders or vessels has its fulcrum, essentially as and for the purposes herein set forth.

3. The combination, with the steam and water receptacle G, arranged to connect with the steam and water spaces of a boiler, of the flexibly-jointed pipes *m n o p*, the unequally-preponderating water cylinders or vessels B C, the beam D, with connections on opposite sides of its fulcrum for carrying said cylinders or vessels, the weighted beam E, having a fixed fulcrum, A, and supporting on its lighter end or arm the beam D, and mechanism or devices connected with said beams D and E, for opening and shutting off the supply of feed-water to the boiler and for operating a whistle or alarm, substantially as specified.

4. The bracket I and attached fulcrum *h*, in combination with the weighted beam E, the beam D, arranged to rock on said beam E, and the unequally-preponderating water cylinders or vessels B C, attached to the beam D, for operation in connection with a steam-boiler, essentially as and for the purposes described.

5. The rest *g* on the weighted beam E, having a fixed fulcrum, in combination with the rocking beam D, mounted on said beam E, and the unequally-preponderating water cylinders or vessels B C, essentially as and for the purposes herein described.

292,436. OPERATING MECHANISM FOR SEWING-MACHINES, LATHES, &c. PIERRE F. JOSTE, Cincinnati, Ohio. Filed Feb. 6, 1883. (No model.)



Claim.—1. The endless serrated drive belt or chain, in combination with the pitman provided with clutch mechanism, substantially as hereinbefore set forth, for engaging said serrated drive-chain, and for causing the upward and downward movements of the pitman to move the chain in one direction, substantially as and for the purposes described.

2. The endless serrated drive belt or chain, engaging the projections of a wheel, as *b*, and at the other end against a bearing, as C', in combination with the pitman provided with clutch mechanism, substantially as hereinbefore set forth, for engaging said serrated drive-chain, and for causing the upward and downward movements of the pitman to move the chain in one direction, substantially as and for the purposes described.

3. The herein-described mechanism for operating foot-power machinery, consisting of a drive-chain composed of serrated links, said chain passing around an appropriate chain-gear on the driving-shaft of the machine, and a pawl-carrier connected by a pitman to the treadle of the machine, and provided with serrated pawls adapted to engage the drive-chain, substantially as and for the purposes described.

4. The pawl-carrier F², consisting of a base, *g*, provided at opposite corners with the flanges *g'* and *g²*, and the pawls G G', pivoted to the base *g* and opposing the flanges *g'* and *g²*, substantially as and for the purposes specified.

5. The pawl-carrier F², having the flanges *g'* and *g²*, and the pawls G G', having serrated edges to engage with the chain E, said pawls being provided with the weighted portions *h h'*, to keep the points of said pawls in contact with the chain, substantially as and for the purposes specified.

6. The pawl-carrier F², having the flanges *g'* and *g²*, and flanges *t t'*, and the pawls G G', pivoted to the carrier, and respectively opposing the flanges *g'* and *g²*, substantially as and for the purposes specified.

7. The combination of the pawl-carrier F², pawls G G', driving-chain E, pitman F', and treadle, substantially as and for the purposes specified.

8. The combination of the pitman F' and the treadle F, the pitman being connected to the treadle by the plate H and spring H', to permit a slight amount of variation in length of said pitman, substantially as and for the purposes specified.

9. The combination of the treadle F, spring H', and pitman F', substantially as and for the purposes specified.

10. The combination of the treadle F, spring H', and pitman F', the pitman being connected to the treadle by a spring, substantially as and for the purposes specified.

11. The combination of drive-belt, pawl-carrier, pawls, pitman, spring, as H', and treadle, substantially as and for the purposes specified.

12. The combination of drive-chain, pawl-carrier, pitman, spring, as H', treadle, and spring N, substantially as and for the purposes specified.

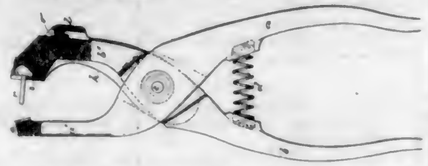
13. The combination of the wheel B, brake J, having shoe *j*, and pitman provided with pin *k*, and drive-belt and pawl-carrier and pawls, substantially as and for the purposes specified.

14. The combination of the pitman F', provided with a pin, *k*, and the brake J, having a shoe, *j*, and the wheel B', said brake being adapted to be raised and brought into contact with the wheel J by said pitman, substantially as and for the purposes specified.

15. The drive-chain, serrated on inside of links *e*, and smooth on outside, in combination with the pawl-carrier and gear-wheel and bearing C', substantially as and for the purposes specified.

16. In combination with a drive-chain composed of alternate single links *d'* and double links *e*, serrated on the inside, the gear-wheel provided with depressions *f* and slots or depressions *f'*, substantially as and for the purposes specified.

292,437. INSTRUMENT FOR ATTACHING BUTTONS. CONRAD A. KOECHLER, Brooklyn, N. Y., and CHARLES VOGEL, Fort Lee, N. J. Filed May 31, 1883. (No model.)

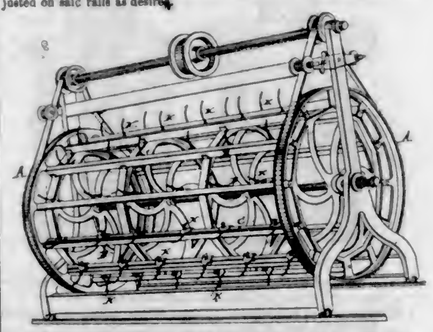


Claim.—1. The combination, in a button-attaching implement, of two handles pivoted together, two jaws, one of which is recessed for the reception of the button-head, and the other is provided with ridge for spreading the penetrating-points, and a slotted plate for receiving the button-shank, and a pivot upon which such slotted plate swings, substantially as specified.

2. The plate *h*, pivoted at *c*, and having the slotted holder *i* and the lip *l*, in combination with the jaw *b'*, having a recess for the button-head, the spring *o*, acting upon the lip *l*, and the spreading-block *e*, and jaw *a'*, substantially as set forth.

292,438. YARN-REEL. GEORGE LAING, Worcester, Mass., assignor to Silas W. Goddard, same place. Filed Mar. 26, 1883. (No model.)

Brief.—To each of the longitudinal bars of the reel is secured a metallic bar or rail upon which are placed adjustable slides, which are provided at their outer ends with sockets for the reception of the hank-separating pins, whereby said pins are adapted to be longitudinally adjusted on said rails as desired.



Claim.—1. The combination of a longitudinal reel-bar with a metallic bar secured upon the side of the reel-bar, blocks fastened upon the side of the reel-bar and raising the metallic bar from the same, and slides having inwardly-bent clamping-edges, securing thumb-screws, and hank-separating pins, as and for the purpose shown and set forth.

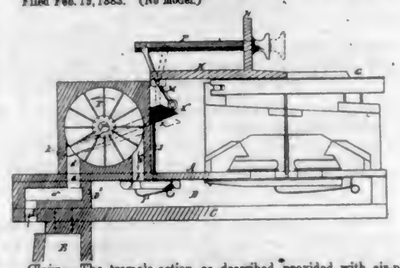
2. The combination of a longitudinal reel-bar with a metallic bar fastened to and raised from the side of the reel-bar, slides having sockets in their outer ends, and clamping-edges, securing thumb-screws, and hank-separating pins, as and for the purpose shown and set forth.

3. The combination of a longitudinal reel-bar with a metallic bar secured to the side of the same, adjustable slides having sockets at their outer ends, and bent hank-separating pins having inner split and spread ends, as and for the purpose shown and set forth.

4. The combination of a longitudinal reel-bar with a metallic bar secured to the side of said bar, slides having sockets in their outer ends, and bent clamping-edges, securing thumb-screws, and bent hank-separating pins having split and spread ends, as and for the purpose shown and set forth.

5. The combination of a longitudinal reel-bar with a metallic bar fastened upon its side and having a gage marked upon it, blocks secured between the reel-bar and the metallic bar, slides having sockets at their ends, and bent clamping-edges, securing thumb-screws, and hank-separating pins having split and spread ends, as and for the purpose shown and set forth.

292,439. TREMOLO FOR REED-ORGANS. ELMER H. LORING, Worcester, Mass., assignor to the Loring & Blake Organ Company, same place. Filed Feb. 19, 1883. (No model.)

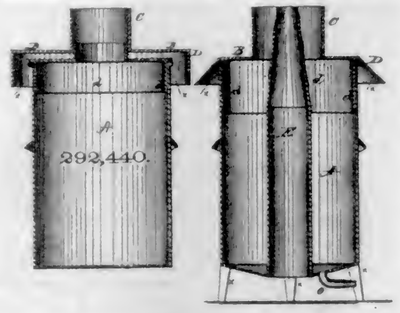


Claim.—The tremolo-action, as described, provided with air-passages *a a' a² a³* and *b b'*, arranged and located relatively to the reed-board A and bellows-board C, in the manner shown, in combination with the valve I, located within the wind-chest D, as and for the purpose set forth.

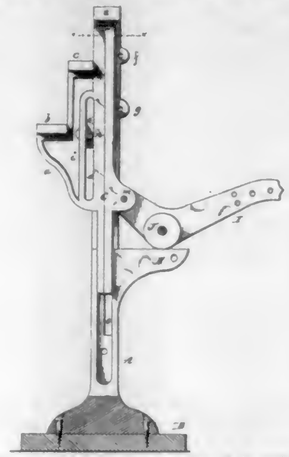
292,440. MILK-CAN. WILLIAM P. MANN and CHARLES H. SWAB, Cedar Rapids, Iowa. Filed Apr. 13, 1880. (No model.)

Claim.—1. The milk-can cover B, provided with an inner flange or rim, *d*, extending down within the can, and another flange or rim extending downwardly outside and about the can at its top, as shown, and having a central and unobstructed aperture surrounded by an upwardly-extending flue or tube, C, substantially as shown and described.

2. A milk-can combined with a cover having a central and unobstructed opening and an inner and an outer flange, whereby when the can is placed in water a water-seal is obtained around the upper edge of the can and a ventilating-opening provided for its upper parts, substantially as described.

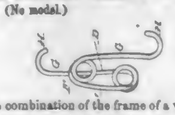


292,441. WAGON-JACK. THOMAS MAXON, Dayton, Ohio, assignor of one-half to James W. Carpenter, same place. Filed Nov. 8, 1883. (No model.)



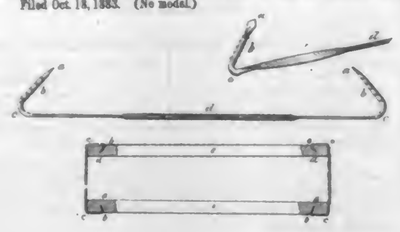
Claim.—The divided frame A, with its bracket H, in combination with the vertically-playing bar C, having its bracket with steps and guide-opening *d*, and the operating-lever I, with wheel J, the several parts being constructed and operating as and for the purpose set forth.

292,442. SASH-HOLDER. CHARLES E. MURRAY, Brandt, Ohio. Filed Oct. 31, 1883. (No model.)



Claim.—The combination of the frame of a window, the sash having a recess in its edge, and a spring consisting of a straight portion, having its ends coiled in opposite directions, the ends of which coils are passed back in opposite directions and secured in the bottom of the recess, as and for the purpose shown and set forth.

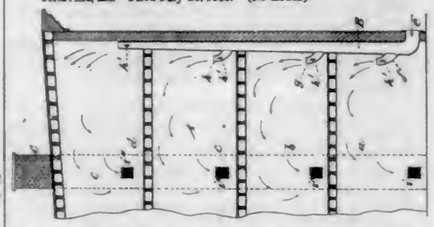
292,443. SHINGLE-BAND. WILLIAM S. NEWSON, Manistee, Mich. Filed Oct. 18, 1883. (No model.)



Claim.—1. A shingle-band composed of a round wire having two inwardly-bent, barbed, and chisel-pointed ends, and a flattened surface next to said ends, substantially as and for the purpose set forth.

2. The combination, with the two wooden strips or bands *a a*, of the wires *d d*, provided each with the flattened surfaces *c c*, and the barbed hooks *b b*, having chisel-points *a*, substantially as and for the purpose set forth.

292,444. VENTILATING BUILDINGS. FRANKLIN ALBERT PILLING, Colesville, Md. Filed July 20, 1883. (No model.)



Claim.—1. The combination, with a building, of a main inlet pipe or duct opening into the outer air near the base of said building, decreasing in cross-sectional area toward the top, and provided with branch or delivery pipes opening into the several apartments of the building, situated in its various stories, substantially as set forth.

2. The combination, with a building, of a main inlet pipe or duct opening to the outer air near the base of said building, decreasing in cross-sectional area toward the top, and provided with branch or delivery pipes and dampers for discharging and regulating the admission of air to the various apartments of said building, situated in its various stories, substantially as set forth.

3. A main inlet pipe or duct opening to the outer air near the base of a building, decreasing in cross-sectional area toward the top, and provided with branch or delivery pipes for discharging air into the several apartments situated in the several stories of the building, combined with a flue having openings located near the floors of the several apartments, substantially as set forth.

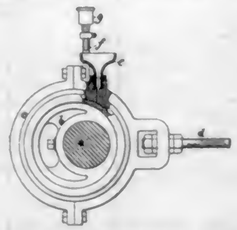
292,445. PISTON. WILLIAM ROWAN, Belfast, County of Antrim, Ireland. Filed Sept. 18, 1883. (No model.) Patented in England Feb. 6, 1883, No. 649.



Claim.—1. The combination, with a piston having packing-rings A, of the inner ring or spring-hoop, C, and the helical springs B, which expand the packing and press the rings A against the sides of the cylinder, substantially as and for the purpose set forth.

2. The combination, with a piston having packing-rings A, of the inner ring or spring-hoop, C, and the helical springs B, which press the packing-rings A against the sides of the cylinder, and the wave-shaped spring F, placed between the packing-rings and serving to press them apart from each other and against the junk-ring or cover and the piston-flange, substantially as and for the purposes set forth.

292,446. LUBRICATOR. GARDNER C. SIMS, Providence, R. I., assignor to the Armington & Sims Engine Company, same place. Filed Aug. 25, 1883. (No model.)



Claim.—1. An improved lubricator for steam-engines, consisting of a fixed reservoir for the bulk of lubricant, and an attachment secured to a moving part of the machine, for conveying the lubricant from the reservoir to the bearing-surfaces of said moving part, the said attachment being at its receiving end of greater length than the throw of said moving part, whereby the lubricant is at all times received from the reservoir.

2. The combination, with an engine-eccentric, of a funnel secured to the eccentric, and a reservoir fixed upon a rigid portion of the engine, the mouth of said funnel being of greater length than the throw of the eccentric, for the purposes set forth.

3. In a steam-engine, the combination, with the eccentric *b* and ring *c*, of the funnel *e*, the oil-cup *g*, and the bracket *f*, constructed to lubricate the eccentric from a fixed reservoir, as described.

292,447. HOLDER FOR INCANDESCENT ELECTRIC LAMPS. ALFRED SWAN, Gateshead, County of Durham, England. Filed July 23, 1883. (No model.) Patented in England May 21, 1883, No. 2,526; in France June 19, 1883, No. 154,137; in Belgium June 21, 1883, No. 61,778; in Canada Aug. 10, 1883, No. 17,468, and in Austria-Hungary Oct. 8, 1883, No. 27,360 and No. 43,386.



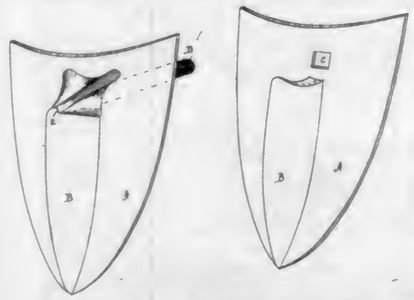
Claim.—1. The holder for incandescent electric lamps, consisting of the part A, which directly holds the bulb, and a part, B, united to part A by spring fastening devices, so that the bulb can be readily removed from the part A, or the part A and bulb removed together from part B, substantially as described.

2. In a holder for incandescent lamps, the combination of the recessed part B, the part A, detachably connected with the bulb and having shoulders or ledges on opposite sides, and springs on said part B, for engaging with said shoulders or ledges when the part A is turned in the proper position, substantially as described.

3. The combination, with the part B and springs *b*, connected with the line-wires, of the part A, shoulders or ledges extending partly around said part A, for engagement with said springs, and conducting-pins carried by said part A, and arranged so that the said part can be turned to break contact between said clamping-springs and conducting-pins without releasing said shoulders or ledges from engagement with said springs, substantially as described.

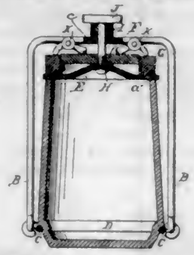
4. The combination, with the bulb and looped terminal wires thereof, of the holder and the spring-jaws, carrying pins upon which the loops of said terminal wires are hung, being held thereon by the closing of said jaws, substantially as described.

292,448. PLOW-POINT. GEORGE P. SWIFT, Columbus, Ga. Filed June 11, 1883. (No model.)



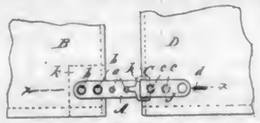
Claim.—A plow-point having its forward portion provided with a vertical cutting-blade, in combination with a fastening-bolt having a longitudinally-grooved head adapted to fit over the upper edge of the blade, substantially as and for the purpose specified.

292,449. BOTTLE-STOPPER. STEPHEN P. M. TASKER, Philadelphia, Pa., assignor to Joseph R. Tasker, same place. Filed July 16, 1883. (No model.)



Claim.—As an improvement in stoppers or covers for bottles, jars, and other vessels, the combination, with a bail secured to the vessel, of a cover composed of a flexible diaphragm, a ring resting thereon, a disk or rest for the inner arms of the levers, a stem connected with the disk and provided with a head or pressure-knob, a spring or cushion interposed between the bail and the pressure-knob of the stem, and bell-crank levers or cams pivoted to the bail, and resting as to their inner extremities upon the disk, and as to their outer extremities upon the ring, the construction being such that the cover as an entirety is seated externally upon the neck of a bottle or vessel, and is held in place thereon by the expansion of the spring and the pressure of the bottle's contents, substantially as set forth.

292,450. GLOVE-FASTENER. AMEDEE TROUTTET, New York, N. Y., assignor to Mary Ann Trouttet, same place. Filed July 28, 1883. (No model.)



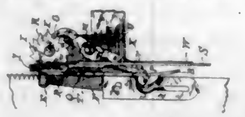
Claim.—1. In a glove-fastener, the sliding buckle or fastener C, provided with the hooks *i* and *g*, and placed upon the fastening-strap A, and arranged to operate substantially as described.

2. The strap A, attached to the flap B of the glove, and having suitable holes or eyelets, in combination with the buckle or fastener C, having hook *i* and hook *g*, and the flap D, having suitable holes or eyelets for receiving the hook *g*, substantially as described.

3. The fastening-strap A and sliding buckle C, in combination with the button *f*, attached to the free end of the strap A, for holding the buckle in place upon the strap, and for fastening the strap down to the wrist, substantially as described.

4. The flap D of the glove, provided with suitable holes or eyelets, *e*, and button-hole *d*, in combination with the strap A, sliding buckle C, and button *f*, substantially as and for the purposes set forth.

292,451. OVERSEAMING ATTACHMENT FOR SEWING-MACHINES. WILLIAM F. VEBER, Bowling Green, Ohio, assignor of one-half to Allan W. Radulph, same place. Filed June 22, 1883. (No model.)



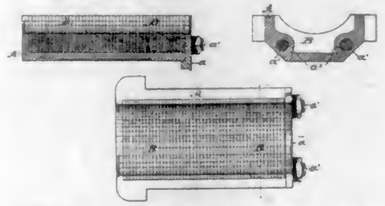
Claim.—1. An over-seamer for sewing-machines, consisting of the combination of the bed-plate, the vertically-reciprocating needle, means for holding the goods to be operated upon on both sides of the needle, means for feeding forward the goods, and the pushing-lever for moving that part of the edges of the goods opposite the needle out of the path of the needle at every alternate stroke of the needle-bar, so that a stitch is alternately made in the goods and outside the edges of the goods, thereby forming an overseam, substantially as set forth.

2. The combination, with the bed-plate of a sewing-machine, of the vertically-reciprocating needle, means for holding the goods to be operated upon on both sides of the needle, means for feeding forward the goods, the guide-plate mounted on the bed-plate, the ratchet-wheel pivoted thereto, the pins carried by the wheel, which are equal to half the number of its teeth, and the pushing-lever mounted on the guide-plate, which is operated by the pins in the ratchet-wheel, whereby that part of the edges of the goods opposite the needle is moved out of the path

of the needle at every alternate stroke of the needle-bar, so that a stitch is alternately made in the goods and outside the edges of the goods, thereby forming an overseam, substantially as set forth.

3. An overseaming attachment for sewing-machines, consisting of the combination of the guide-plate, the ratchet-wheel mounted thereon, the pins carried by the ratchet-wheel, (equal to half the number of teeth in the ratchet-wheel,) the lever Q, for operating the ratchet-wheel, the pusher-lever, which engages with the pins on the ratchet-wheel, and the recessed presser-foot mounted on the guide-plate, the several parts being adapted and arranged substantially as set forth.

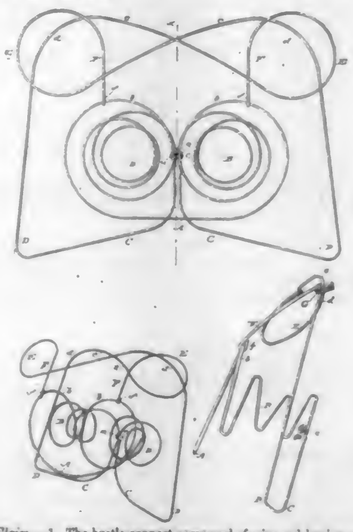
292,452. BRASS FOR CAR-AXLE BEARINGS. JOHN WALLACE, Albany, N. Y., assignor of one-half to Geo. T. Weaver, same place. Filed Mar. 6, 1883. (No model.)



Claim.—1. As an improvement in brasses for car-axles and other bearings, the chambered shell A, containing a filling of compressed paper or paper-board, the said paper or paper-board being cut into shape, substantially as described, to form the filling-pieces B, which are then fixed edgewise in the chamber of the shell A, as and for the purpose herein specified.

2. The combination, with the chambered shell A, provided with a detachable plate, *a*, as herein described, of the filling-pieces B, composed of compressed paper or paper-board, as and for the purpose herein specified.

292,453. BUSTLE. EUGENE J. WEEKS and GEORGE M. CADY, Jackson, Mich., assignors to the Corvuet Corset Company, same place. Filed Feb. 24, 1883. (No model.)



Claim.—1. The bustle-support composed of wire and having a substantially rectangular base, in combination with spiral springs arranged within the bounding-lines of the base, the axes of the springs being substantially at right angles to the plane of the base, substantially as set forth.

2. The bustle-support formed of wire and having a substantially rectangular base, in combination with spiral springs arranged within the bounding-lines of the base, and having their axes at substantially right angles to the plane of the base, and the supplemental coils E E, substantially as set forth.

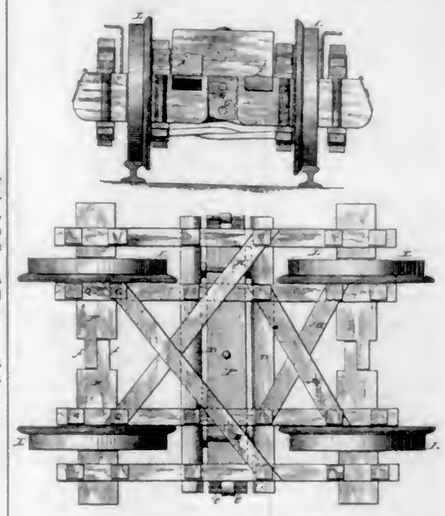
3. The bustle-support formed of wire, and having two spiral springs formed of a continuous piece of wire and connected together at their upper and lower ends, substantially as set forth.

4. A bustle-support formed of a continuous piece of wire, bent to form spiral springs, and also bent to constitute a substantially rectangular frame having its plane at right angles to the axes of the springs, substantially as set forth.

5. A bustle-support formed of wire and having spiral springs arranged side by side, and coils E E, adjustably connected to convolutions of the spiral springs, substantially as set forth.

6. A bustle-support formed of wire and having a substantially rectangular base, in combination with spiral springs having their axes at substantially right angles to the plane of the base, one convolution of each spring being connected by a continuous wire and other convolutions of the springs being connected to each other, and the coils E, attached to the convolutions of the springs, substantially as set forth.

292,454. CAR-TRUCK. ANDREW WESTLAKE, Leadville, Colo. Filed July 3, 1882. (No model.)



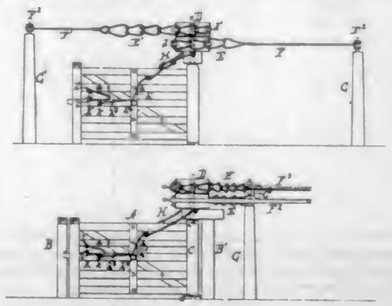
Claim.—1. In a car-truck, the combination, with a double line of arch-bars, A, on each side of the truck, of connecting arch and tie bars B C, transverse connecting channel-bars D, and the diagonal long and short braces H and M, arranged substantially as herein shown and described.

2. In a car-truck, a series of independent axles, in combination with the oil-boxes having chilled ends, and chilled washers K, substantially as and for the purpose herein shown and described.

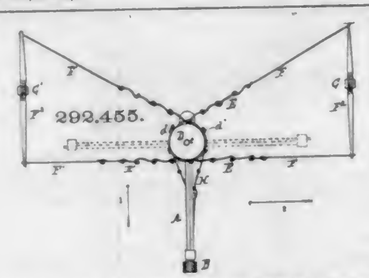
3. In a car-truck, the long oil-boxes F F, having flanges *f f* bolted together to stiffen the truck, substantially as herein shown and described.

4. Oil-boxes F F, provided with flanges *f f*, riveted together, with back ends of said boxes chilled, and having side openings, *i*, and covers therefor, substantially as herein shown and described.

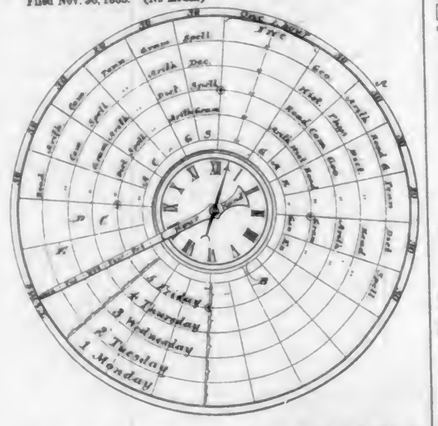
292,455. GATE. JAMES WHEELER, Red Oak, Mo., assignor of two-thirds to Thomas Hagler and James T. Williams, both of same place. Filed July 13, 1883. (No model.)



Claim.—1. The combination, with the post B, the turning-stile C, having the reduced end *c*, the double sprocket-wheel D, secured on such end *c*, the chains E E', cords F F', operating-levers F² F³, cords H H, elbow-lever A', latch K, pivoted to the gate, and spring L, all constructed, combined, and arranged as and for the purpose set forth.



292,456. PROGRAMME-CLOCK. THEODORE WILKES, Millhousen, Ind. Filed Nov. 30, 1883. (No model.)



Claim.—1. The combination of a dial plate or chart divided into a series of columns, and a series of concentric divisions adapted to be marked with one or more days of the week, with the recitations for one or more days in their sequence, and with the time allotted for each, a pointer marked with the days of the week corresponding to those that may be marked on the dial-chart, and any suitable mechanism for moving the pointer over the dial-plate, so as to pass it from one column to the other, to indicate when the time for one recitation has ended and that for the next arrived, substantially as described.

2. The combination, with a clock to indicate the hours of the day, of a dial chart or plate divided into a series of columns and a series of concentric divisions, adapted to be marked with one or more days in their sequence, and with the time allotted for each, a pointer marked with the days of the week corresponding to those that may be marked on the dial-chart, and mechanism for moving the hour-indicating hands of the clock to indicate the hour of the day, and in unison therewith the pointer over the dial-plate, so as to pass it from one column to the other, to indicate when the time for one recitation is ended and that for the next arrived, substantially as described.

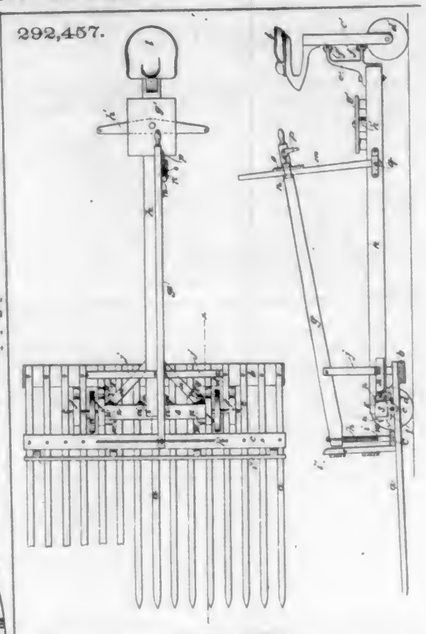
292,457. HORSE HAY-RAKE. JAMES M. WEHART, Topeka, Kans. Filed Sept. 1, 1883. (No model.)

Claim.—1. The combination of the wheel *d*, axle *e*, the rake pivoted on said axle, and having bars *b c*, one in rear and the other in front of said wheels, the regulating-lever *g*, the braces *j*, tension-rod A and strut *i*, connecting said lever to said bars, the standard *m*, ratchet *o*, and pawl *p*, substantially as and for the purpose set forth.

2. The combination of the wheels *d*, axle *e*, the rake pivoted on said axle, and having bars *b c*, one in rear and the other in front of said wheels, the regulating-lever *g*, the braces *j*, tension-rod A, and strut *i*, connecting said lever to said bars, substantially as and for the purpose set forth.

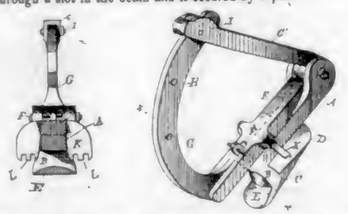
3. The boxes *t*, having flanges *y* and *v*, in combination with the beam *s*, diagonal braces *x*, and push-bar *k*, substantially as described.

292,457.



292,458. SHINGLING-BRACKET. STEPHEN WOODARD, Delano, Minn., assignor of one-half to Albert P. Woodard, same place. Filed Nov. 2, 1882. Renewed Dec. 27, 1883. (No model.)

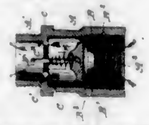
Brief.—A horizontal beam with a curved arm and an inclined supporting-beam are pivoted in the end of a horizontal arm of an upright of a base-piece. The pivoted horizontal beam has lateral toothed projections straddling the horizontal arm, and a standard projects from said arm through a slot in the beam and is secured by a pin.



Claim.—1. In combination with the standard B, mounted on a suitable base, and the arm A, formed thereon, the beam M, pivoted to said arm and having lateral prodded projections adapted to straddle the arm, and the standard projecting from said arm through a slot in the beam, and provided with an aperture for a pin or bolt, substantially as set forth.

2. In combination with the arm A, secured to the standard B on the base and slotted at its end, the beam M, carrying the carved arm G, and the supporting-arm G', both pivoted in the slot, substantially as and for the purposes specified.

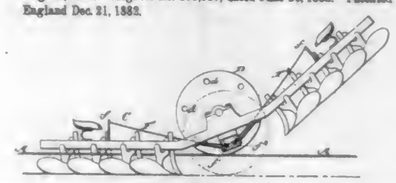
292,459. GAS-REGULATOR. PETER KELLER, Philadelphia, Pa. Filed June 11, 1883. (No model.)

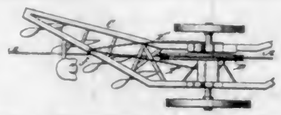


Claim.—The combination of the casing A, valve-seat B, having the rounded corners B' and vents B'', plates C, provided with perforations, valve D, provided with a stem, D', which extends through the plate C, and spring E, all combined and arranged to operate substantially in the manner described.

REISSUES.

10,438. STEAM-PLOW. GEORGE GREIG, Edinburgh, Scotland. Filed Aug. 20, 1883. Original No. 279,937, dated June 26, 1883. Patented in England Dec. 21, 1882.





Claim.—1. The combination of two or more plowing-machines, C C, with a single operating rope or chain, A, and impelling means B for the latter, the said plowing-machines being adapted to operate simultaneously, substantially as and for the purpose herein set forth.

2. In steam plowing-machines adapted to operate in pairs or sets, moving one behind another, as specified, the wheel or pulley D, and controlling means adapted to hold and release the rope A, so as to increase or diminish the distance of the machines apart, substantially as and for the purposes herein specified.

PHOTO-LITH. WASHINGTON, D.C. NORRIS PETERS

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

WHITE *et al.* v. DUNBAR *et al.*

Decided December 17, 1883.

UNITED STATES SUPREME COURT RULES.

Rule 30 of Supreme Court rules applies only to cases appealed before its adoption, and is practically obsolete.

APPEAL from the Circuit Court of the Eastern District of Louisiana.

Mr. Joseph P. Hornor, *Mr. F. W. Baker*, and *Messrs. Joyce & Spear* for the appellants.

Mr. Melville Church for the appellees.

STATEMENT OF THE CASE.

This was a motion made by appellants under Rule 30 to suspend or dissolve the injunction granted by the court below. From the statement of facts agreed to by counsel and adopted by the court below it appeared—

1. That appellees were owners of Letters Patent No. 178,916, issued June 20, 1876, for a method of preserving shrimps and other shell fish.

2. That on the 6th of December, 1881, they surrendered said original patent and obtained therefor Reissue Letters Patent No. 9,957, dated said 6th day of December, 1881.

3. That appellants were sued for infringement of the said reissued patent and defended.

4. That upon a preliminary hearing the court ordered an injunction, but subsequently modified its order by allowing the appellants to continue their business upon condition that they filed in court a monthly account of their manufactures and sales.

5. That upon final hearing the court found against the appellants on all the points presented by them, and found that the said original and reissued patents were valid; that they covered a novel invention; that the reissued patent claimed the same invention as that claimed in the original patent; that the reissue was legal and legally issued, and that the appellants infringed the reissued patent by practicing the process patented thereby.

6. That the court issued the perpetual injunction restraining the appellants from further continuing their business in packing shrimps in accordance with appellees' patented invention, and referred the case to a master.

7. That the master reported in favor of the appellees for $1,205.98, and judgment was entered against appellants for that amount, and they appealed.

Appellants, in support of the motion, attacked the validity of appellees' patent, contending, first, that the reissue was illegal, and, secondly, that it did not cover a patentable invention, citing on the first point *Miller* v. *Brass Co.*, (104 U. S., 350;) *James* v. *Campbell*, (104 U. S., 356;) *Heald* v. *Rice*, (104 U. S., 748;) *Russel* v. *Dodge*, (93 U. S., 464,) and other cases, and on the second point *Rubber Tip Pencil Co.* v. *Howard*, (20 Wall., 498;) *Brown* v. *Piper*, (91 U. S., 37;) *Terhune* v. *Philips*, (99 U. S., 593;) *Button* v. *Taggart*, (17 How., 34,) and other cases.

Appellees, in opposition to the motion, contended (1) that the statute (section 4921) gave the court below express power to grant the injunction, and unless it plainly appeared that it erred in matter of law its decision should not be disturbed, citing High on Injunction, volume 2, page 1069; Walker on Patents, page 478; (2) that the statement of facts showed no error or doubt on the part of the court below; (3) that Rule 30 had only been applied in cases where the court below appeared in doubt on a point going directly to the validity of the patent; (4) that the reissue was valid, because it claimed the same invention as that claimed by the original, citing *Powder Co.* v. *Powder Works*, (8 Otto, 138;) *Gage* v. *Herring*, (23 O. G., 2119;) *Cote* v. *Moffat*, (15 Fed. Rep., 345,) and other cases; (5) that the patented invention was novel, but that on the motion the question of novelty could not be inquired into.

Mr. Chief Justice WAITE:

This motion is denied. Under Rule 93 in equity the judge who allowed the appeal had authority to modify the injunction. He did not do so. Rule 30 of this Court, under which this motion purports to have been filed, applies only to cases appealed before its adoption, and is now practically obsolete.

Supreme Court of the United States.

CLEMENTS, APPELLANT, v. THE ODORLESS EXCAVATING APPARATUS COMPANY.

Decided January 7, 1884.

REISSUES—CLAIMS 1 AND 3 OF BULL'S REISSUED PATENT FOR APPARATUS FOR CLEANING PRIVIES DECLARED INVALID FOR ENLARGEMENT.

Claims 1 and 3 of Reissue Letters Patent No. 6,962, granted to Lewis R. Keizer, February 29, 1876, for an improvement in apparatus for cleaning privies, the original Patent No. 115,565 having been granted June 6, 1871, to Henry C. Bull and Joseph M. Lowenstein, on the invention of said Bull, and the application for the reissue having been filed January 11, 1876—namely, "1. A privy-vault-cleaning apparatus consisting of an air-pump, a deodorizer, and suitable tubular connections, in combination with an independently-movable receiving-cask having an induction passage or opening, and also an air-opening for connection with the air-pump, and provided with screw-necks at each opening for receiving sealing caps or covers, substantially as described, whereby the movable cask may be located in any desired position with relation to the vault and privy, and the pump and deodorizer located in any desired position with relation to the vault, privy, and cask, and also whereby the casks, when filled, may be handled as is usual with filled casks, as set forth; 3. The combination, with a portable night-soil cask, of a float-valve located at the air-passage substantially as described, whereby the fluid matter is prevented from entering the air-passage and clogging the suction air-pipe and pump, as set forth"—are invalid, because they are for inventions not indicated in the original patent as inventions, being for sub-combinations in combinations claimed in the original, and were made for the purpose of covering features described in patents issued to others during the interval between the granting of the original and the application for the reissue. Those features are contained in the defendant's apparatus, and that apparatus does not infringe any claim in the original patent.

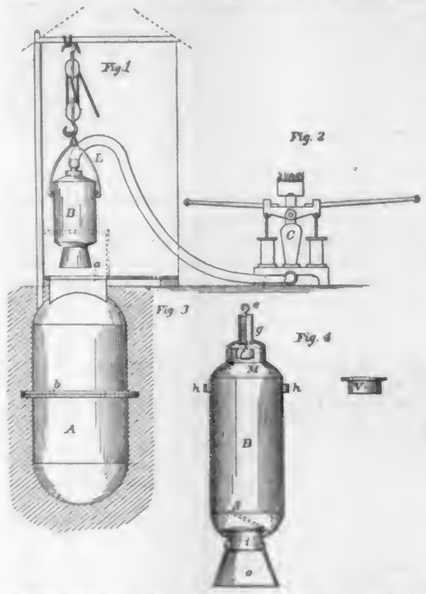
APPEAL from the Circuit Court of the United States for the District of Maryland.

Mr. H. T. Fenton for the appellant.
Mr. Benj. Price for the appellee.

Mr. Justice BLATCHFORD delivered the opinion of the Court.

This is a suit in equity, brought for the infringement of Reissue Letters Patent No. 6,962, granted to Lewis R. Keizer, February 29, 1876, for an improvement in apparatus for cleaning privies, the original Patent No. 115,565 having been granted June 6, 1871, to Henry C. Bull and Joseph M. Lowenstein, on the invention of said Bull, and the application for the reissue having been filed January 11, 1876. The specification says:

My invention consists, mainly, in a sink-cleaning apparatus, consisting of an air-pump, a deodorizer, and suitable tubular connections, in combination with an independent or movable receiving-cask, having an induction passage or opening, and also an air-passage for connecting with the air-pump, and provided with stench and water tight covers for both passages, whereby the movable cask may be located in any desired position with relation to the vault, and the air-pump and the deodorizer properly located with reference to the vault and cask, and also whereby the cask, when filled, may be trundled on its bilge or end, after the usual manner of handling casks or barrels.



My invention consists, further, in the combination, with the cask, of a flanged opening, a detachable suction pipe or funnel connected with the flange of the opening, and a check-valve located within the cask for retaining the offensive matter after passing through the valve.

My invention still further consists in the combination, with the air-passage of a night-soil cask, of a float-valve, whereby, when the cask is filled with fluid matters, the valve will be floated and closed, thereby indicating that the cask is filled, and preventing the fluid matter from entering the conducting-pipe and passing through the air-passage to the air-pump, which otherwise would be liable to have its valves clogged thereby and rendered inoperative.

To more particularly describe my invention, I will refer to the accompanying drawings, in which—

Figure 1 represents, in side view, a cask embodying several features of my invention located within a privy. Fig. 2 represents, in side view, an air-pump connected with the cask by a flexible tube or suction-hose, and provided with a deodorizer. Fig. 3 represents a privy-vault. Fig. 4 represents, on an enlarged scale and in detail, in vertical central section, the cask shown in Fig. 1.

A vault is indicated at A. It is provided with the usual entrance or opening, as at *a*. B denotes one of several casks or receptacles which are employed in connection with an air-pump, as at C, for removing the offensive matter from the vault. The cask B has at one end a screw-neck, *i*, and the check-valve *d*, which opens inwardly. Said cask also has another screw-neck, as at M, to which is attached the suction-hose, which communicates with the air-pump. Attached to this neck is also a float-valve, as at *f*, which guards the entrance to the suction tube or hose. The spindle of the valve *f* is provided, in a well-known manner, with guiding devices. The lower portion of the float-valve is provided with cork or other light material, whereby, when the cask is filled with fluid matter, the valve will be floated and effectually close the entrance to the suction air-pipe, preventing the latter, as well as the pump, from being clogged by said matter. The cask is shown to be provided with shoulders A *h*, whereby the hoisting-clamps L may readily be made to engage with the cask. The induction-pipe O is secured to the proper screw-neck on the cask, and it constitutes a tubular connection with the cask, through which the offensive matter is conducted from the vault into the cask.

In operation I proceed as follows: After removing the seat or floor of a privy, uncovering the entrance to the vault, the cask B is suspended by a block and tackle over the vault, connected by the suction-pipe to the air-pump, and then lowered until the funnel-pipe connection O (which is temporarily screwed to the neck *i* of the cask) is at its lower end immersed in the contents to be removed. The air is then exhausted in the cask by means of the pump, and deodorized by the furnace on the pump. The vacuum thus induced causes the matter to be sucked through the funnel-pipe into the cask until the float-valve is lifted and the air-passage closed. The pump is then stopped and the valve *d* closes. The cask, being wholly free from exterior contact with filth, is then lifted, the funnel and suction pipe removed, and the screw-caps V applied to the necks *i* and M, after which the cask is handled like any filled cask and rolled on its bilge or end.

The reissue has three claims, as follows:

1. A privy-vault-cleaning apparatus consisting of an air-pump, a deodorizer, and suitable tubular connections, in combination with an independently-movable receiving-cask, having an induction passage or opening, and also an air-opening for connection with the air-pump, and provided with screw-necks at each opening, for receiving sealing caps or covers, substantially as described, whereby the movable cask may be located in any desired position with relation to the vault and privy, and the pump and deodorizer located in any desired position with relation to the vault, privy, and cask, and also whereby the casks, when filled, may be handled as is usual with filled casks, as set forth.

2. The combination, with a portable cask, having an induction-aperture at one end, of a check-valve, a screw-neck surrounding the aperture, a funnel-shaped pipe connected with the neck, and an air-eduction passage provided with a screw-neck, substantially as described.

3. The combination, with a portable night-soil cask, of a float-valve located at the air-passage, substantially as described, whereby the fluid matter is prevented from entering the air-passage and clogging the suction air-pipe and pump, as set forth.

The specification of the original patent was in these words, the drawings attached to the original and the reissue being alike:

Figure 1 is a view in perspective of the cask or package A, showing the method of suspending and operating the same. Fig. 2 is a side elevation of the suction-pump and furnace. Fig. 3 is a plan view of the vault. Fig. 4 is a vertical transverse section of the cask or receptacle shown in Fig. 1.

My invention relates to an improvement in devices for cleaning or emptying privy-vaults, whereby the night-soil therein contained may be removed and utilized and the disagreeable odors arising therefrom prevented. It consists of the vault A, receptacles or casks B, and the suction-pump with furnace C, constructed and operated as shown and described.

A, a cylindrical privy-vault, constructed of metal or other suitable water-tight material, and provided with the neck *a* and the flange *b*, which latter is designed as an auxiliary for holding it in a vertical position, as also for strengthening the same. B represents one of several casks or receptacles which are employed as adjuncts of the suction-pump C for removing the fecal matter from the vault. It has located at its lower extremity the funnel O, which fits air-tight upon the neck *i*, and the valve *d*, which opens upwardly; and at its apex the float-valve *f* is provided, which screws upon or is otherwise caused to fit air-tight upon the neck M. The float-valve *f* consists of the rod *e*, located vertically in the tube *g*, the said rod being guided by orifices provided in transverse bars in the upper and lower ends thereof. The lower part of the float-valve is made of cork or other light material, in order that when the cask or receptacle becomes filled by the action of the suction-pump it may press against the orifice of the tube and thereby prevent the contents of the vault A from overflowing or extending beyond the cask B. *h h* are shoulders rigidly attached to the cask B, and are designed for clutching with the clamps L. V represents one of a series of caps, which are screwed upon the neck or necks of casks A when filled by the action of the suction-pump.

The method of operating my device is as follows: After removing the seat or floor the receptacle B is suspended from a block and tackle over the opening, and the cask or receptacle A is then lowered into the vault until the funnel O enters the fecal matter about ten inches, whereupon, by operating the suction-pump, the receptacle or cask becomes filled with the feces until it reaches the float-valve *f*, which presses against and closes the orifice of the tube leading to the pump. The valve *d* then falls and prevents the escape of the contents of the cask. In the meantime the air that is pumped out of the receptacle B is forced into a furnace located over the suction-pump, whereby the odor arising therefrom is destroyed. When one receptacle is thus filled the valve *f* is removed and the cap V screwed thereon, whereupon the operation

is repeated by the employment of another cask until the vault is emptied of its contents.

The claims of the original patent are two in number, as follows:

1. The combination and arrangement of the funnel O, neck *i*, and valve *d* with cask B, neck M, and float-valve *f*, substantially as shown and described.

2. The combination and arrangement of the vault A, cask B, and suction-pump C, substantially in the manner and for the purpose described.

Infringement of only claims 1 and 3 of the reissue is insisted on. It is set up as a defense in the answer that the reissue is not for the same invention as that described in the original patent. The apparatus used by the defendant is constructed in accordance with the description contained in two letters patent—one, No. 158,743, granted to Samuel R. Scharf, January 12, 1875, for an improvement in machines for cleaning privy-vaults, the other, No. 179,993, granted to Jerome Bradley and Samuel R. Scharf, July 18, 1876, for a machine for cleaning privy-vaults and like places. In that apparatus there is an independently-movable cask having two necks in its upper head as it stands. The suction-pipe from the vault is screwed to one neck, and the air-pipe which leads to the pump is screwed to the other neck. There is an air-pump, by means of which a vacuum can be formed and maintained in the cask, and a deodorizer, through which the air drawn into the pump is expelled by the working of the pump. The suction-pipe and the air-pipe are both of them tubular flexible connections. There are caps for closing the necks after the barrel is filled. There is inside of the cask no check-valve, but there is a float-valve, so arranged with reference to the opening of the air-pipe that the fecal matter lifts the valve and closes the passage when the barrel is sufficiently full.

It is quite apparent that the defendant's apparatus did not infringe either one of the two claims of the original patent. Claim 1 made the valve *d* in the bottom of the cask, opening to admit the entrance of material, and shutting when the orifice to the pump was closed by the float-valve, a necessary element in the combination covered by that claim. Without the valve *d* the peculiarly-constructed cask of the patent could not be operated. So as to claim 2, there could be no operative combination of vault, cask, and pump unless the cask should have the valve *d*, and that valve was a part of the combination covered by claim 2. The valve *d* is not found in the defendant's apparatus, nor is there any substitute or equivalent for it. The material is taken into the barrel through its head as it stands on its bottom, and hence there is no need of a check-valve.

There is not in the specification of the original patent any suggestion or indication of any invention other than the two combinations severally claimed in the two claims. In the reissue there are material enlargements of the scope of the invention described and claimed in the original patent, and, apparently, with a studied view to include and cover by descriptive words and by broader claims an apparatus like that used by the defendant. If claim 1 of the reissue be construed so as to exclude the check-valve from the combination covered by that claim, no warrant is found in the original specification for such a construction. It is apparent that the inventor contemplated the use of no other description of cask than one having such a check-valve as the original specification describes. If claim 1 of the reissue be construed so as to include only such a cask as is described, that is—one with a check-valve—there is no infringement of that claim.

Claim 3 of the reissue is for the combination of a float-valve with a cask of same kind. Whether it be a cask with a check-valve or one without a check-valve, the claim is an expansion of the invention beyond anything indicated in the original specification as the invention. In claim 1 of the original patent four other elements are made necessary, with the cask and float-valve, to constitute the combination claimed. In claim 2 of the original the cask and the pump cannot be combined so as to practically co-operate in working unless the float-valve is used. The original specification states that unless the float-valve is used the contents of the vault will overflow or extend beyond the cask. The specification of the reissue states that, in the absence of the float-valve, the fluid matter will enter the air-pipe and pass through it to the air-pump, and tend to clog the air-pipe and the valves of the pump and render the latter inoperative. It is, moreover, as true of claim 3 of the reissue as it is of claim 1 that, if the cask of claim 3 be construed to be a cask without a check-valve, there is no ground in the original patent for such a construction, and that if claim 3 includes no cask except one with a check-valve, it is not infringed.

The original specification indicates nothing but a cask having the entrance-opening in its bottom, furnished with a check-valve to open and shut such entrance automatically, the cask suspended vertically over the vault and lowered into it until the funnel at the bottom is sufficiently immersed, the filling of the cask in that position, and the raising it and emptying it. The cask in the defendant's apparatus has the entrance-opening in its top, has no check-valve, is not suspended over or lowered into the vault, is placed at a distance from the vault, and is connected with the vault by a flexible pipe. The patent to Scharf, No. 158,743, granted January 12, 1875, a year before Reissue No. 6,962 was applied for, shows an apparatus substantially the same as that used by the defendant. There is a barrel or tank, in the head of which, as it stands on its bottom, there are two short metallic pipes. A flexible pipe extends from one into the vault, and another flexible pipe extends from the other to an air-pump. There is a deodorizer connected with the air-pump by a third flexible pipe. The cask is filled by the action of the air-pump in creating a vacuum in it. The foul air passes through the cask and the pump into the deodorizer. The barrel and the air-pump are described as "independently movable about the vault" by reason of the flexibility of the pipes. The attempted expansion of the original Bull patent to cover what is shown in the Scharf patent is manifest. The funnel O of the original patent is called in the reissue "an induction passage or opening." It is said in the reissue that "the movable cask may be located in any desired position with relation to the vault," and that the operation may be performed "within or near the privy." In claim 1 of the reissue it is stated that "the movable cask may be located in any desired position with relation to the vault and privy." The effort was to obtain a reissue which should cover an apparatus having the cask located at a distance from the vault, with a flexible pipe from it to the vault, and a receiving-opening in the top of the cask, and no check-valve—all of them features not indicated in the original patent, but all of

them features existing in the Scharf patent, granted after the original Bull patent and before the application for its reissue. The same observations apply to the patent to Frazier, No. 168,473, granted October 5, 1875, more than three months before Reissue No. 6,962 was applied for. That patent shows a portable receiving-cask connected from its top by a flexible pipe with the vault, and by another flexible pipe with an air-pump which has secured to it a deodorizing-vessel. The air is exhausted from the cask and passes through the air-pump into the deodorizer, and the contents of the vault rise into the cask. The cask has no check-valve, and is described as placed suitably near the vault.

The foregoing state of facts brings this case within the principles laid down in *Miller* v. *Brass Co.* (104 U. S., 350) and *James* v. *Campbell*, (*Id.*, 357.) The suggested mistake in the original patent that its two claims were not as broad as they might have been made, and that the combinations claimed were too narrow and contained too many elements, and that subcombinations such as are found in claims 1 and 3 of the reissue might have been claimed in the original patent, in view of the state of the art and of the description and drawings of that patent, was, if a mistake at all, one apparent on the first inspection of that patent. The expansions in claims 1 and 3 of the reissue were afterthoughts, developed by the subsequent course of improvement in the Scharf and Frazier patents, and intended to cover matters appearing in those patents and not claimed in the original Patent No. 115,565. No excuse is given for the delay in applying for the reissue, nor is any actual inadvertence, accident, or mistake shown. The omission to claim subcombinations in the combinations claimed, the existence of such sub-combinations being apparent on the face of the original patent, was, in law on the facts in this case, such a dedication of them, if new, to the public that a reissue to cover such sub combinations in revocation of such dedication cannot be availed of to the prejudice of rights acquired by the public to what is shown in the Scharf and Frazier patents, issued before the reissue was applied for. The reissued patent must for these reasons be held to be invalid as to claims 1 and 3.

The circuit court made an interlocutory decree, declaring the validity of the reissue and its infringement, and awarding a perpetual injunction and an account of profits and damages. By a final decree a sum of money was awarded as damages. From that decree the defendant has appealed. The result of our consideration is that the decree must be reversed, and the case be remanded to the circuit court, with direction to dismiss the bill.

U. S. Circuit Court—Southern District of New York.

UNITED STATES *v.* GUNNING *et al.*

Decided November, 1883.

1. PATENTS OBTAINED THROUGH FRAUD—RIGHT OF GOVERNMENT TO VACATE.

There is no distinction between letters patent for an invention and for land as regards the rights and remedies for vacating them when obtained by fraud. The right is the same as that which a State has to annul the charter of a corporation created by its legislature if obtained by fraud.

2. SAME—PROPER REMEDY.

The appropriate remedy in behalf of the United States when a patent for an invention has been obtained by fraud is by a bill in equity.

Mr. Chas. W. Seymour for Gunning.

Mr. A. J. Todd, of counsel.

Mr. Louis C. Raegener, special assistant attorney for the United States.

WALLACE, *J.*:

This bill is filed to vacate letters patent for an invention granted to the defendants September 26, 1882, upon the ground of fraud and false suggestion, the allegations being that the applicant induced the grant by his statements in his application that he believed himself to be the inventor of the patented subject, and did not know or believe it had been in public use or on sale in the United States for more than two years prior to his application, whereas both of these statements were false to his knowledge. The defendants have demurred, and in support of the demurrer urge that the United States cannot maintain a suit in equity to vacate letters patent for an invention, although the grant was obtained by fraud. It is insisted in their behalf that there is no statutory provision which permits such a suit, and in the absence of statutory authority no such suit can be maintained.

Notwithstanding the expression of opinion of Judge Shepley in *Attorney-General* v. *Rumford Chemical Works* (2 Bann. & A., 298) in favor of the defendants' position, it is believed there is no sound reason why a bill will not lie in such a case as well as where the subject of the grant is land, or is a franchise or right of a different kind. The learned judge laid much stress upon the consideration that in issuing letters patent for inventions nothing is granted which belonged before to the United States, and the rights and remedies of the parties to such grants are dependent solely on the statute enactments, and do not grow out of any previous ownership of the subject of the grant: and it was his view that in such a case express authority for proceedings to annul the grant must be conferred in order to sanction them. The same reasoning would preclude a State from proceedings to annul the charter of a corporation created by its legislature if obtained through fraud. Yet it is a familiar principle that grants of corporate franchises obtained through fraud practiced upon the legislature are void when the State elects to set them aside by a judicial rescission. (Mor. Priv. Corp., 148.) He also refers to the provisions of the patent acts of 1790 and 1793, which authorized proceedings for the repeal of patents obtained surreptitiously or by false suggestion, as indicating that Congress deemed it necessary that authority for proceedings to repeal letters patent obtained through fraud should be conferred by statute. These provisions, however, permitted such proceedings to be taken by any person who chose to complain—a right which did not and does not exist unless expressly conferred. A bill in equity lies to set aside letters patent obtained by fraud, but only between the sovereignty making the grant and the grantee. (*Field* v. *Seabury*, 19 How., 323.) No inference can be justly drawn, therefore, from these provisions that Congress deemed it requisite to confer express authority upon the United States to maintain such a suit, nor from the absence of such provisions in the existing laws that Congress intended to withhold such authority.

In *Mowry* v. *Whitney* (14 Wall., 434) Mr. Justice Miller, in delivering the opinion of the court, assumed without question that there is no distinction between letters patent for an invention and for land as regards the rights and remedies for vacating them when obtained by fraud, and that a bill in equity is an appropriate remedy in behalf of the United States when a patent for an invention has been obtained by fraud. Although the precise point decided was that the owner of a conflicting patent could not maintain a suit in his own name to vacate an interfering patent obtained fraudulently, that conclusion was influenced mainly by the consideration that the Government was the appropriate party to assert the remedy and seek the relief.

The demurrer is overruled.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 26—No. 5. TUESDAY, JANUARY 29, 1884. PRICE—$5 per year

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Patents on Electricity.

The Patent Office has prepared, and has now for sale, an Index (arranged alphabetically, numerically, and by classes) of all patents relating to Electricity granted by the United States prior to June 30, 1882, comprising about four thousand patents, and making a volume of two hundred and fifty pages.

The price, in paper cover, is $3 per volume; bound, $5 per volume.

Issue of January 29, 1884.

Patents	319	No. 292 460 to No. 292 778, inclusive.
Designs	38	No. 14,564 to No. 14,601, inclusive.
Trade-marks	30	No. 10,879 to No. 10,908, inclusive.
Labels	15	No. 3,853 to No. 3,867, inclusive.
Reissues of patents	5	No. 10,439 to No. 10,443, inclusive.
Total issue	407	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	1	.....
Arkansas	1	.....	New Hampshire	4	.....
California	8	.....	New Jersey	25	1
Colorado	4	.....	New Mexico Territ'y	.....	.....
Connecticut	10	.....	New York	73	16
Dakota Territory	.....	.....	North Carolina	2	.....
Delaware	1	.....	Ohio	23	5
District of Columbia	5	1	Oregon	2	.....
Florida	.....	.....	Pennsylvania	46	2
Georgia	1	1	Rhode Island	3	.....
Idaho Territory	.....	.....	South Carolina	1	.....
Illinois	22	2	Tennessee	1	.....
Indiana	14	.....	Texas	3	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	2	.....	Vermont	1	.....
Kansas	2	.....	Virginia	1	.....
Kentucky	3	.....	Washington Territ'y	.....	.....
Louisiana	3	.....	West Virginia	5	.....
Maine	1	.....	Wisconsin	5	1
Maryland	3	5	Wyoming Territory	.....	.....
Massachusetts	36	4	United States Army	.....	.....
Michigan	9	.....	United States Navy	.....	.....
Minnesota	3	.....			
Mississippi	1	.....	Total to citizens of the United States	332	38
Missouri	4	.....			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	8	1
Austria	.....	.....	Hawaiian Islands	.....	.....
Barbadoes	.....	.....	Hayti	.....	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	.....	.....	New Zealand	1	.....
Canada	2	.....	Russia	.....	.....
Chili	.....	.....	Scotland	.....	.....
Colombia, U. S. of	.....	.....	Sweden	.....	.....
Cuba	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	25	7
England	9	3			
France	5	3			

DESIGNS.

14,564.—FONT OF PRINTING-TYPE.—*Charles H. Beeler, Jr.*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed November 24, 1883. Term of patent 7 years.

14,565.—SALT AND PEPPER BOX.—*Louis Casper*, Meriden, Conn. Application filed October 23, 1883. Term of patent 3½ years.

14,566.—BRACELET.—*James A. Charnley*, Providence, R. I. Application filed November 14, 1883. Term of patent 14 years.

14,567.—PENDANT.—*Bernhard Dreyfus*, New York, N. Y. Application filed November 22, 1883. Term of patent 14 years.

14,568.—CLOTH.—*Henry L. Einstein*, Bound Brook, N. J., assignor to *The Bound Brook Woolen Mills*, same place. Application filed November 3, 1883. Term of patent 7 years.

14,569.—CARPET.—*Walter J. Gadsby*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed December 11, 1883. Term of patent 3½ years.

14,570.—FONT OF TYPE-ORNAMENTS.—*Geo. E. F. Giesecke*, Leipsic, Saxony, Germany. Application filed November 28, 1883. Term of patent 7 years.

14,571.—FONT OF PRINTING-TYPE.—*George F. Giesecke*, Leipsic, Saxony, Germany. Application filed November 28, 1883. Term of patent 7 years.

14,572.—CURRY-COMB.—*John W. Gridley*, Southington, Conn., assignor to *The Southington Cutlery Company*, same place. Application filed March 5, 1883. Term of patent 14 years.

14,573 and 14,574.—CARPET.—*Arthur L. Halliday*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Applications filed December 8, 1883. Term of patents 3½ years.

14,575.—COVER FOR A HARVESTER.—*William Henry Hill*, Chicago, Ill. Application filed October 29, 1883. Term of patent 14 years.

14,576 and 14,577.—FONT OF PRINTING-TYPE.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Applications filed November 24, 1883. Term of patents 14 years.

14,578.—FONT OF PRINTING-TYPE.—*William W. Jackson*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed November 24, 1883. Term of patent 14 years.

14,579.—MITT.—*Abraham O. Jennings*, Brooklyn, N. Y. Application filed November 26, 1883. Term of patent 7 years.

14,580 and 14,581.—MITT.—*Warren P. Jennings*, Brooklyn, N. Y. Applications filed November 26, 1883. Term of patents 7 years.

14,582.—CALENDAR.—*Romaine Mace*, New York, N. Y. Application filed July 16, 1883. Term of patent 7 years.

14,583.—LACE-PIN.—*Herman Marcus*, Brooklyn, N. Y. Application filed November 8, 1883. Term of patent 7 years.

14,584.—HARNESS-BREECHING RING.—*Henry C. Maxwell*, Rome, N. Y. Application filed November 30, 1883. Term of patent 14 years.

14,585.—CARPET.—*David O. Melville*, Medford, assignor to *The Roxbury Carpet Company*, Boston, Mass. Application filed December 11, 1883. Term of patent 3½ years.

14,586.—CHILD'S COSTUME.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited.)* same place. Application filed November 19, 1883. Term of patent 3½ years.

14,587.—LAMP CHIMNEY.—*William J. Patterson*, Beaver, Pa. Application filed November 26, 1883. Term of patent 7 years.

14,588.—GLOVE.—*Emile Reussner*, New York, N. Y., and *Charles G. Gottschalk*, Jersey City, N. J. Application filed November 27, 1883. Term of patent 3½ years.

14,589 to 14,593, inclusive.—CARPET.—*Oscar Righter*, Philadelphia, Pa., assignor to *Dornan Bros. & Co.*, same place. Applications filed December 18, 1883. Term of patents 3½ years.

14,594.—GROUP OF STATUARY.—*John Rogers*, New Canaan, Conn. Application filed November 24, 1884. Term of patent 14 years.

14,595.—BLIND HINGE.—*Charles G. Shepard* and *Peter Adams, Jr.*, Buffalo, N. Y. Application filed November 23, 1883. Term of patent 7 years.

14,596 and 14,597.—CARPET.—*Thomas J. Stearns*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Applications filed December 11, 1883. Term of patents 3½ years.

14,598.—ATOMIZER.—*Daniel Tellow*, Philadelphia, Pa., assignor to *Henry Tellow & Brother*, same place. Application filed November 6, 1883. Term of patent 14 years.

14,599 to 14,601, inclusive.—CARPET.—*George Curtis Wright*, Worcester, Mass., assignor to *William James Hogg*, same place. Applications filed December 14, 1883. Term of patents 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

10,879.—DISTILLED LIQUORS.—*Cook & Bernheimer*, New York, N. Y. Application filed December 4, 1883.
"The representation of a barrel-head containing the representation of a lion and the words 'GOLD LION.'"

10,880.—WHISKY OR BEVERAGES COMPOUNDED OF WHISKY.—*Cook & Bernheimer*, New York, N. Y. Application filed December 4, 1883.
"The words 'GOLD LION.'"

10,881.—BITTERS.—*Cook & Bernheimer*, New York, N. Y. Application filed September 1, 1883.
"The symbol of a golden lion and a shield."

10,882.—HAIR-GROWER.—*The Benton Hair Grower Company*, Cleveland, Ohio. Application filed December 15, 1883.
"Two portraits, accompanied by the words 'BENTON'S HAIR GROWER.'"

10,883.—FAMILY FLOUR.—*David Brainard*, New York, N. Y. Application filed December 20, 1883.
"The word 'OMNIA,' with the monogram composed of the letters 'G C O.'"

10,884.—RYE WHISKY.—*Edw. R. Bruce & Co.*, Baltimore, Md. Application filed December 27, 1883.
"The words 'SOMERSET CLUB,' with a monogram of the initials of the firm-name, 'E B B & Co.' within a garter surmounted by a crown placed upon a circular background representing the head or end of a barrel."

10,885.—HAIR-NETS AND OTHER RETICULATED FABRICS.—*A. G. Jennings & Sons*, Brooklyn and New York, N. Y. Application filed January 4, 1884.
"The arbitrary word 'HUB.'"

10,886.—SAUER-KRAUT.—*William M. Johnston & Co.*, Chicago, Ill. Application filed January 3, 1884.
"The words 'SILVER THREAD.'"

10,887.—COMPOUND EXTRACT OF STILLINGIA AND SARSAPARILLA.—*Susan Imperator Johnston*, Brooklyn, N. Y. Application filed December 11, 1883.
"The figure of a lion and a tablet."

10,888.—CANNED PROVISIONS.—*Platt & Co.*, Baltimore, Md. Application filed December 31, 1883.
"The word 'FAVORITE.'"

10,889.—PERFUMERY AND PERFUMED SOAPS.—*Friedrich A. Richter*, Rudolstadt, Germany. Application filed January 9, 1883.
"An anchor in an oval field."

10,890.—CANNED PROVISIONS.—*Scullay Meat Packing Company*, New York, N. Y. Application filed December 5, 1883.
"The capital letters 'S A S H' arranged in a monogram."

10,891.—YARN AND THREAD COMPOSED OF AN ADMIXTURE OF WOOL AND SILK.—*Paul Schulze*, Manchester, county of Lancaster, England. Application filed October 23, 1883.
"A bear's paw holding an ax."

10,892.—LUNG-MEDICINE.—*Aaron Penn Wirt*, Lebanon, Pa. Application filed December 28, 1883.
"A man digging or hoeing the ground."

10,893.—RUM, WHISKY, AND GIN.—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed January 7, 1884.
"The representation of a sitting animal, a wreath, and a monogram."

10,894.—COCOA.—*James Collier & Sons*, Spitalfields, London, county of Middlesex, England. Application filed November 10, 1883.
"A tin box open with the words 'COLLIER & SON'S' on it."

10,895.—CHOCOLATE.—*James Collier & Sons*, Spitalfields, London, county of Middlesex, England. Application filed November 10, 1883.
"The monogram 'C & S' within a circle."

10,896.—WINE AND LIQUORS.—*Violet Frères*, Thuir, (Pyrénées, Orientales,) France. Application filed December 17, 1883.
"The word 'BYRRH' and two lions on a platform."

10,897.—LIQUEUR OR CORDIAL.—*Frère Marcel Marie Grézier*, Grande Chartreuse, France. Application filed January 2, 1884.
"The word 'CHARTREUSE,' accompanied by the fac-simile signature of L. Garnier."

10,898.—LIQUEUR OR CORDIAL.—*Frère Marcel Marie Grézier*, Grande Chartreuse, France. Application filed January 2, 1884.
"The word-symbol 'CHARTREUSE.'"

10,899.—SMOKING AND CHEWING TOBACCO.—*Joel H. Harris' Sons*, Quincy, Ill. Application filed December 13, 1883.
"The words 'MAY DAY.'"

10,900.—SMOKING AND CHEWING TOBACCO, SNUFF, CIGARS, AND CIGARETTES.—*Marburg Brothers*, Baltimore, Md. Application filed January 4, 1884.
"The word-symbol 'COLUMBIA,' in any form, style, or color of lettering."

10,901.—SMOKING AND CHEWING TOBACCO, SNUFF, CIGARS, AND CIGARETTES.—*Marburg Brothers*, Baltimore, Md. Application filed January 4, 1884.
"The word-symbol 'YALE,' in any form, style, or color of lettering."

10,902.—SMOKING AND CHEWING TOBACCO, SNUFF, CIGARS, AND CIGARETTES.—*Marburg Brothers*, Baltimore, Md. Application filed January 4, 1884.
"The word-symbol 'CAMBRIDGE,' in any form, style, or color of lettering."

10,903.—GREASE-TRAPS.—*The Meyer Sniffen Company, (Limited,)* New York, N. Y. Application filed December 22, 1883.
"The word 'TUCKER.'"

10,904.—WATER-CLOSET.—*The Meyer Sniffen Company, (Limited,)* New York, N. Y. Application filed December 22, 1883.
"The word 'BRIGHTON.'"

10,905.—WATER-CLOSETS, WATER-CLOSET CISTERNS, AND THEIR FITTINGS AND APPLIANCES.—*The Meyer Sniffen Company, (Limited.)* New York, N. Y. Application filed December 22, 1883.
"The words 'EM ESS.'"

10,906.—SELF-CLOSING FAUCETS, BIBS, COCKS, STOPS, &c.—*The Meyer Sniffen Company, (Limited,)* New York, N. Y. Application filed December 22, 1883.
"The word 'DOHERTY.'"

10,907.—LOCK GAS-COCKS.—*The Meyer Sniffen Company, (Limited.)* New York, N. Y. Application filed December 22, 1883.
"The word 'HALL-.'"

10,908.—SMOKING-TOBACCO.—*B. Frank Weyman*, Pittsburg, Pa. Application filed December 31, 1883.
"The word-symbol 'HUBBLE BUBBLE.'"

LABELS.

3,853.—Title: "BENTON'S HAIR GROWER. SINGLE STRENGTH."—*The Benton Hair Grower Company*, Cleveland, Ohio. Application filed September 15, 1883.

3,854.—Title: "BENTON'S HAIR GROWER. DOUBLE STRENGTH."—*The Benton Hair Grower Company*, Cleveland, Ohio. Application filed September 15, 1883.

3,855.—Title: "BENTON'S HAIR GROWER. TRIPLE STRENGTH."—*The Benton Hair Grower Company*, Cleveland, Ohio. Application filed September 15, 1883.

3,856.—Title: "MASSACHUSETTS STANDARD." (FOR PAPER.)—*George J. Carney*, Lowell, Mass. Application filed December 24 1883.

3,857.—Title: "MAGIC CLEANER AND POLISH."—*Henry R. Gillingham*, Washington, D. C. Application filed January 4, 1884.

3,858.—Title: "DR. VON BREHMER'S'S LOCAL AND CONSTITUTIONAL ZYMOTIC CATARRH ANTIDOTE."—*Edwin W. Higbee*, Northampton, Mass. Application filed January 3, 1884.

3,859.—Title: "SWAN SOAP."—*Lovell H. Hedgley*, Binghamton, N. Y. Application filed December 15, 1883.

3,860.—Title: "GENEVA RUBBER TOP ENAMEL." (FOR CARRIAGE TOPS, &c.)—*A. J. Mowery & Co.*, Milan, Ohio. Application filed January 5, 1884.

3,861.—Title: "MASTER MASON," (FOR CIGARS.)—*W. D. Newton*, Victor, N. Y. Application filed December 12, 1883.

3,862.—Title: "THE NEW YORK CRAYON CO'S ENAMELED SCHOOL CRAYON."—*New York Crayon Company*, New York, N. Y. Application filed November 14, 1883.

3,863.—Title: "DR. PEMBERTON'S INDIAN QUERY MAGIC HAIR DYE."—*John S. Pemberton*, Atlanta, Ga. Application filed January 3, 1884.

3,864.—Title: "BAKER'S VANILLA CHOCOLATE."—*Henry L. Pierce*, Boston, Mass. Application filed December 31, 1883.

3,865.—Title: "BRILLIANT ILLUMINATOR" (FOR CARBON OIL.)—*Straw & Murphy*, Watertown, Wis. Application filed January 2, 1884.

3,866.—Title: "BAY STATE PAINTS."—*Wadsworth, Howland & Co.*, Boston, Mass. Application filed January 7, 1884.

3,867.—Title: "YANKEE POLISH."—*J. H. Whittaker, Jr.*, Jersey City, N. J. Application filed January 4, 1884.

DISCLAIMER.

9,173. (Reissue.)—*Richard A. Bryson*, St. Louis, Mo. Reissue patent dated April 27, 1880. IMPROVEMENT IN PANNIERS. Disclaimer filed January 19, 1884, by the patentee.

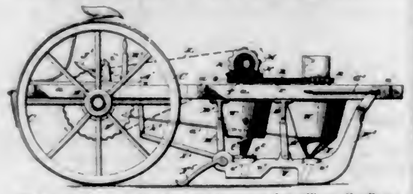
Enters his disclaimer "to that portion of the claim and said specification which is in the following words, to wit:

"2. A crinoline skirt or pannier composed of any suitable fabric, made up with a series of circumferential tubes or pipings stuffed or filled with animal or vegetable fiber, and provided with an elastic diaphragm, E, substantially as described, whereby its circumferential shape is maintained and rendered collapsible, as set forth.'"

PATENTS

GRANTED JAN. 29, 1884.

292,460. COMBINED SEED-PLANTER AND FERTILIZER-DISTRIBUTER. W. HARRISON ALBACH, Mansfield, Ohio, assignor of one-half to John F. Stine, same place. Filed Feb. 6, 1883. (No model.)



Claim.—1. In a combined seed-planter and fertilizer-distributer, the combination, with the machine-frame, the rear axle carrying a shiftable sprocket-wheel, the transverse shaft carrying a fixed sprocket-wheel, and provided at each end with a beveled-gear pinion, a drive-chain connecting said sprocket-wheels, and the gear-disks mounted upon the frame, of the double-shoe runners pivoted beneath each side of the frame, the seed-distributers connected each by a beveled gear with the transverse shaft, and the fertilizer-distributers connected each by a beveled gear to the said gear-disks upon the frame, said gear-disks being each placed between the corresponding seed and fertilizer distributers, and said distributers being arranged in pairs at each side of the frame, as set forth.

2. The machine-frame, the rear axle carrying a shiftable sprocket-wheel, the transverse shaft carrying a fixed sprocket-wheel, and provided at its extremities with beveled-gear wheels, the drive-chain connecting said sprocket-wheels, and the seed and fertilizer distributers arranged in pairs at each side of the machine, in combination with the double-shoe single runners, each of which is pivotally secured beneath the frame, and the coverers secured to the rear extremities of said runners, substantially as set forth.

3. The combination, with the machine-frame, the axle, the transverse shaft, the fixed and shiftable sprocket-wheels of said shafts, the drive-chain, and the seed and fertilizer distributers, of the double-shoe single runners, each provided at its forward and deeper portion with a fertilizer-spout and at its rear and shallow portion with a seed-spout, the coverer F^3, and hangers D^2 E^2, for attaching the shoes to the frame, and the coverers F^3, secured to the rear ends of said shoes, as set forth.

4. The combination, with the seed-cylinder, of the ejector-brush secured thereto, and composed of resilient metal and bristles, substantially as and for the purpose set forth.

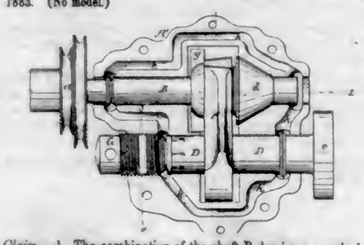
5. The combination, with the axle and sprocket-wheel, of devices for throwing said wheel into and out of rigid connection with said axle, a transverse shaft supported upon the frame in front of the axle, and provided with a sprocket-wheel and a chain connecting it with the sprocket-wheel on the axle, and at its ends with beveled-gear pinions, the intermediate gears, and the fertilizer and seed cylinders provided with vertical feed-shafts, and dropping devices, and the double shoe pivotally secured to the frame, and provided with receptacles to receive and deliver the seed, and with means for raising and lowering it, substantially as set forth.

6. The combination, with the hangers secured to the under sides of the forward side bars of the machine, and the double shoes having forward portions longer than the rear portions, which latter are provided with coverers and pivotally connected to said hangers by links, and having forward extensions guided by elongated staples secured to the said side bars, of the rock-shaft supported in bearings on the machine, and provided with forwardly-projecting arms connected by links to the rear ends of the shoe, and the phosphate and seed cylinders having dropping devices, substantially as described.

7. The combination, with the phosphate-cylinders, of boxes supported upon the frame, and provided, respectively, with spouts emptying each into one of the said cylinders, and provided with a common shaft carrying sets of spiral right and left handed conveyers, and means for operating said shaft, substantially as set forth.

8. The combination, with a phosphate-cylinder provided with a perforated bottom and an inclined discharge-chute, of the shaft located therein, and a wedge-shaped sweep secured thereto, and provided with a series of fine metal pins, whereby the phosphate in the bottom of the cylinder is agitated, substantially as set forth.

292,461. MECHANISM FOR CONVERTING ROTARY INTO VIBRATING MOTION. JAMES BARKER, Philadelphia, Pa. Filed June 25, 1883. (No model.)



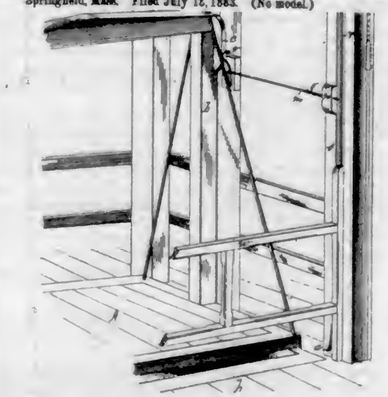
Claim.—1. The combination of the shaft B, having a crank, *b*, and conical collar *d*, with the adjustable shaft D, having a forked arm, F, beveled as described, and a box, *f*, tapered in a direction the reverse of the collar *d*, and adapted to the crank *b* and to the forked and beveled arm F, as set forth.

2. The combination of the cranked shaft B, the shaft D, having a forked arm, F, and the adjusting-screw G, bearing against the end of the shaft D, and adapted to a threaded opening in the casing, as set forth.

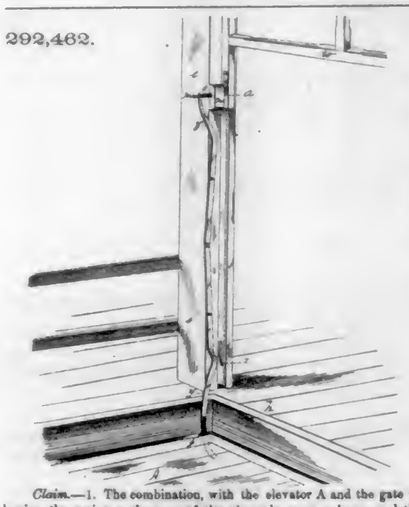
3. The combination of the casing A A', having a chamber, H, with the shaft D and its forked arm F, and the shaft B with its crank and counter-weight *g*, as set forth.

4. The combination of the casing A A', parted horizontally through the shaft-bearings, with the shafts B and D, the latter having the forked arm F cast therewith, as set forth.

292,462. SAFETY-GATE FOR ELEVATORS. FRANK K. BARTLETT, Springfield, Mass. Filed July 18, 1883. (No model.)



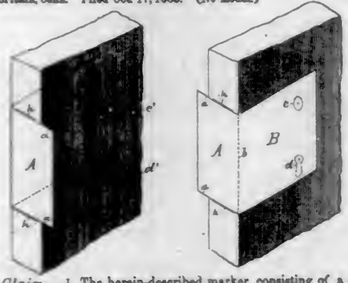
292,462.



Claim.—1. The combination, with the elevator A and the gate *w*, having the spring *a* thereon, of the pin *m* lever *v*, spring *o*, and the cam-block *c*, substantially as set forth.

2. In combination, the gate *w*, having the spring *a* thereon, the elevator A, the pin *m* and spring *o*, and mechanism, substantially as described, for moving pin *m*, to carry its end beyond the side of block *n* when the elevator approaches the landing-floor *h*, substantially as set forth.

292,463. GAGE FOR ADJUSTING LOCKS. MILTON H. BASSETT, New Britain, Conn. Filed Oct. 17, 1883. (No model.)

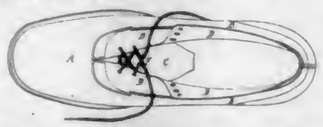


Claim.—1. The herein-described marker, consisting of a double-faced blade or sheet having suitable indices for laying out the borings and cuttings to be made in fitting articles to doors, &c., said indices being definitely located with reference to gaging from a given working-edge, substantially as described, and for the purpose specified.

2. The herein-described marker, consisting of the blade A, having suitable indices for laying out the two edges of the mortise at the edge of a stile, and the blade B, connected to the blade A, and provided with suitable indices for laying out upon the side of a stile the borings and cuttings to be made in fitting articles to doors, &c., substantially as described, and for the purpose specified.

3. The herein-described marker, consisting of the blades B and the folding blade A, attached thereto, said marker having suitable indices for laying out the borings and cuttings to be made in fitting articles to doors, &c., substantially as described, and for the purpose specified.

292,464. UPPER FOR SHOES. JOHN MOULTON BERRY, Farmington, N. H. Filed Nov. 26, 1883. (No model.)



Claim.—1. In the shoe-upper, each of its two ankle and instep parts D D, notched at its lower edge near its front end, and arranged with and applied to the vamp A and one of the quarters B B, so that the said quarter shall extend into the notch, the leg-part portion in advance of such notch overlap the vamp, and the leg-part portion in rear of the notch underlap the quarter, all being substantially and connected as set forth.

2. The vamp A, quarters B B, and tongue C, in one piece of material, cut so that the tongue shall extend between and be detached from the quarters, in combination with each of the two ankle and instep parts D D, notched at its lower edge near its front end, and arranged with and applied to the vamp and one of the quarters, so that the said quarters shall extend into the notch, the leg-part portion in advance of the notch overlap the vamp, and the leg-part portion in rear of the notch underlap the quarter, all being substantially and connected as represented.

292,465. SAWYER'S GAGE. GEORGE S. BLACK, Indianapolis, Ind., assignor of one-half to Elias C. Atkins, same place. Filed Oct. 2, 1883. (No model.)

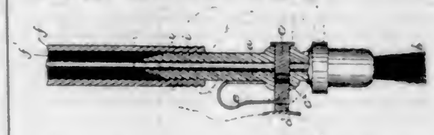


Claim.—1. A right-angle gage having the notch *c*, for the purpose specified.

2. A right-angle gage having a series of depressed steps, *d*, substantially as and for the purpose specified.

3. A sawyer's gage, consisting of a right-angle gage having notch *c*, depressed steps *d*, graduations *e*, and notches *f*, all combined substantially as specified.

292,466. BRUSH-HOLDER AND TUBE FOR CEMENTING SHOE-SOLES. CHARLES K. BRADFORD, Lynnfield, assignor to George H. P. Flagg, Boston, Mass. Filed Nov. 22, 1883. (No model.)



Claim.—1. In a sole-cementing apparatus, the combination of flexible tube adapted to conduct rubber cement from a reservoir, the tubular metal shank *a*, forming a metallic continuation of said tube, and having a brush, *b*, at its outer end, and a transverse orifice intersecting the conduit through which the cement passes, a plug-valve, *c*, adapted to move in said orifice, and provided with an orifice, c^3, adapted to coincide with the conduit of the shank when pressed inwardly, and a spring, *e*, whereby the plug-valve is caused to close said conduit when pressure is removed from the plug-valve, as set forth.

2. In a sole-cementing apparatus, the tubular brush-holding metal shank or handle having a tapered or conical end, combined with a rubber tube having a naphtha-proof lining terminating within the tube and molded at its end to receive and closely fit the tapered end of the shank, whereby an extended bearing of the lining on the metal shank is afforded and the cement is prevented from reaching the rubber tube, the end of the rubber tube projecting beyond the molded end of the lining, for attachment to the body of the shank, as set forth.

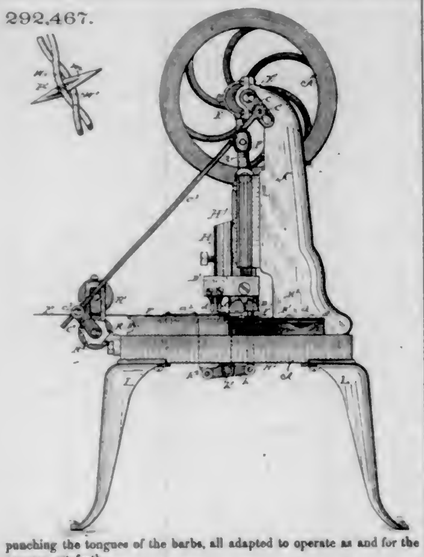
3. In a sole-cementing apparatus, the combination of a rubber tube having a naphtha-proof lining molded at its outer end, as described, and an inclined portion extending beyond the molded end of the lining, combined with a metallic tubular shank formed to fit the molded end of the lining and the unlined end of the tube, and provided with a brush at its outer end and a valve, whereby the cement may be shut off from the brush, as set forth.

4. The tubular brush-holding metal shank or handle having a tapered end, and peripheral serrations *i i* on a portion adjacent to the tapered end, combined with a rubber tube having a naphtha-proof lining terminating within the tube and molded to fit said tapered end, and an unlined portion extended beyond said molded end and adapted to be secured to the serrated portion of the shank, as set forth.

292,467. WIRE-BARBING MACHINE. CURTIS B. BRAINARD, Joliet, Ill. Filed Oct. 25, 1883. (No model.)

Claim.—1. In the wire-barbing machine described, the combination of the bed A, standard A', shaft E', slotted crank *e*, pitman *e'*, eccentric E, two-part connecting-rod *r*, nut P, reciprocating head H, ways H', punch D, chuck D', barb-strip guide B, having the plate a^2 and channels *g* and *g'*, barbed-wire guide B', having the concave channel *a*, follower A^2, walking-beam A, vertical shaft H^2, feed mechanism consisting of the milled rollers R and R', ratchet R^2, and crank e^2, and means for

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punching the tongues of the barbs, all adapted to operate as and for the purpose set forth.

2. In the barbing-machine described, the combination of the punch D, channeled guides B and B', follower A^2, walking-beam A, shaft H^2, and means for punching the tongues of the barbs, as and for the purpose set forth.

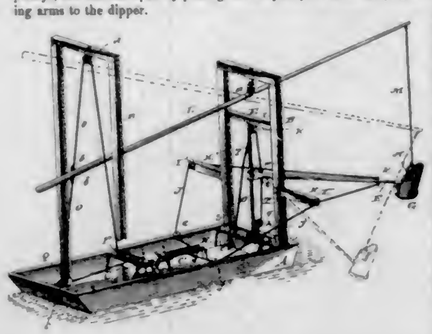
3. In the wire-barbing machine described, the combination of the bed A, reciprocating head H, shaft H^2, walking-beam *k*, follower A^2, punch D, chuck D', barb-strip guide B, having the plate a^2, and channels *g* and *g'*, barbed-wire guide-strip B', having the concave channel *a*, and means for punching the tongues of the barbs, as and for the purpose set forth.

4. In the barbing-machine described, the combination of the tongue-punches *d d*, chuck D', reciprocating head or slide H, connecting-rod *r*, eccentric E, follower A^2, walking-beam A, guide B, and bed A, as and for the purpose set forth.

5. In the wire-barbing machine described, the combination, with the bed of the machine, punch D, to sever the barb from the end of the barb-strip F and press the barb on the strand-wire W and force the tongues F' under to clasp the strand-wire W to attach said barb thereto, guides B and B', follower A^2, plate a^2, the feed mechanism described, and means for punching the tongues of the barbs, as and for the purpose set forth.

292,468. EXCAVATING-MACHINE. HENRY CLAY CARTER, Fairfield, N. C. Filed Sept. 19, 1883. (No model.)

Brief.—Ropes wound reversely in pairs on windlasses operate the dipper, one pair through a lever connected by rope to the dipper-handle and pivoted to one upright frame and a pulley on a second frame and one below on the boat; another pair through connections to the dipper-handle, which slides on a vertical "mast," and by passing around suitable pulleys, and the third pair by passing around pulleys in laterally-projecting arms to the dipper.



Claim.—1. In a ditching or excavating machine, the combination, with the bucket G, of a mast, D, arm F, adapted to slide vertically thereon at its rear end, and having suitable connection at its front end with the bucket rope or chain M, attached at one end to the bucket-bail, and boom or arm adapted to support said rope M, and windlass P, for operating said rope, substantially as and for the purpose set forth.

2. The combination, with arm F, of the ropes T T', pulleys *k g*, and windlass S, substantially as and for the purpose set forth.

3. The combination of uprights B B', mast D, pivoted boom L, ropes O O', windlass P, and pulley Q, with arm F, bucket G, rope M, arms H H', pulleys I I', ropes T T', pulleys *k* and *g*, and windlasses R and S, substantially as and for the purpose set forth.

292,469. SECONDARY-BATTERY ELEMENT. WILLARD E. CASE, Auburn, N. Y. Filed Feb. 10, 1883. (No specimens.)

Claim.—1. An element or electrode for a secondary or storage battery, composed of an amalgam of lead and mercury, any substance capable of being acted upon in said battery to store electrical potential, and any substance inert in said battery and capable of occluding gases, substantially as described.

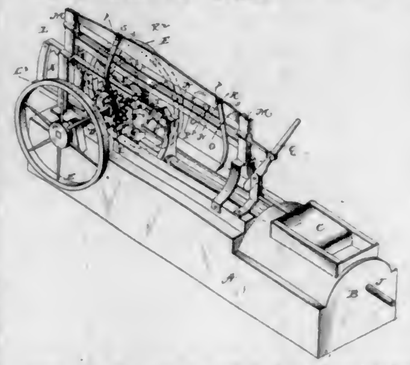
2. An element or electrode for a secondary or storage battery, composed of an amalgam of lead and mercury, any substance capable of being acted upon in said battery to store electrical potential, and carbon in pulverized or comminuted form, substantially as described.

3. The process of making electrodes for a secondary or storage battery, consisting in, first, preparing an amalgam of lead and mercury; second, then adding any substance capable of being acted upon in a secondary battery to store electrical potential; third, then adding any substance inert in said battery and capable of occluding gases; and, fourth, forming the electrode in suitable shape, substantially as described.

292,470. FERTILIZER. DAVID R. CASTLEMAN, Louisville, Ky. Filed June 18, 1883. (No specimens.)

Claim.—The herein-described composition of matter, to be used as a fertilizer for the soil, to assist the growth of plants and other agricultural products, consisting of pulverized or ground tobacco-stems and any of the ordinary phosphates now in use, in the proportions above specified.

292,471. DEVICE FOR CONVERTING MOTION. ELI CATLIN, Post Oak, Tex. Filed Nov. 19, 1883. (No model.)



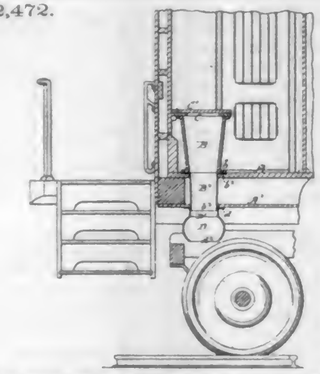
Claim.—1. The combination, with the piston of an engine and mechanism for converting its reciprocating motion into rotary, of a lever, Q, connected pivotally with the valve-stem, a slide-rod, P, attached to said lever, and a series of levers pivoted to the slide-rod and adapted to operate the valve-gear, substantially as set forth.

2. The combination of the piston-rod having the toothed frame K, the main shaft, the pinions mounted loosely upon the latter, the ratchet-wheels adjoining the said pinions, the spring-pawls pivoted to the latter, the valve, the lever Q, connected pivotally with the valve-stem, the frame-bars N O, the slide-rod P, the levers R R^2 S S^2, the pin T, projecting laterally from the frame K, and the spring-latches U U, mounted on top of the latter and facing in opposite directions, all arranged and operating substantially as and for the purpose herein shown and specified.

292,472. WATER-CLOSET FUNNEL OF RAILWAY-CARS. ISAAC E. CONGDON, Omaha, Nebr. Filed July 20, 1883. (No model.)

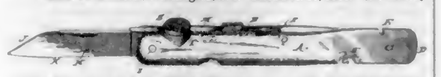
Claim.—1. In combination with the floor of a railroad-car and water-closet funnel passing therethrough, the hollow globular body D, having spherical sides tapering toward the opening in the bottom thereof, substantially as and for the purpose described.

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2. In combination with the floor of a railroad-car and the water-closet funnel passing therethrough, the hollow globular body D, open at the bottom, and provided with a cylindrical upper portion, D', substantially as and for the purpose described.

292,473. CIGAR-DEALER'S KNIFE. FRED G. DIETERICH and EDGAR CHARLES WALFORD, Washington, D. C. Filed Feb. 20, 1883. (No model.)



Claim.—1. A knife-handle having a slot or recess to receive a folding blade, and having a tapering lower end forming a flat blade integral with the said handle, and having in one side a tack-drawing notch, and at the other side a notch the edge of which is provided with a curved steel blade, substantially as and for the purpose set forth.

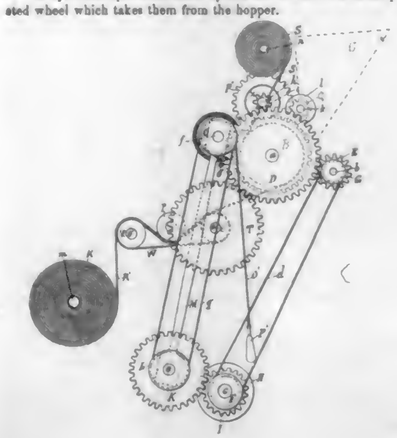
2. In a folding knife, a lock-catch formed of steel, and having a serrated plate or disk adapted to serve for driving tacks, substantially as set forth.

3. In a folding knife, the combination, with the handle formed with shoulders upon its back near the upper end, of the folding blade and a lock-catch formed with a serrated plate or disk adapted to rest upon and be supported by the said shoulders, substantially as set forth.

4. In a folding knife, a cast-metal handle formed with a slot to receive the folding blade, and having shoulders upon the back near the upper end, in combination with the folding blade, a lock-catch formed with a plate or disk adapted to rest upon and be supported by the shoulders of the handle, said lock-catch being pivoted upon a transverse pin in the back of the handle, and an operating-spring mounted upon a transverse pin below the lock-catch, and bearing at its lower end against a shoulder at the lower end of the slot in the handle, substantially as set forth.

292,474. MATCH-MAKING MACHINE. CHARLES J. DONNELLY and JOHN M. DONNELLY, Philadelphia, Pa. Filed Apr. 4, 1883. (No model.)

Brief.—The splints are taken by two bands directly from the pocketed wheel which takes them from the hopper.

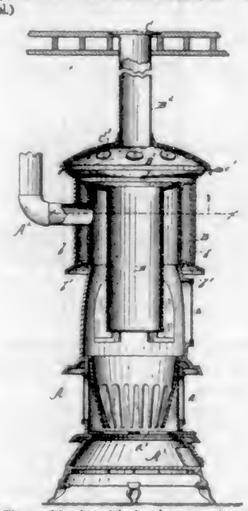


Claim.—1. In a match-making machine, the combination of a hopper for the splints, a pocketed drum adapted to revolve partially within the said hopper and to remove the splints separately from the same, plain tapes which pass under and remove the splints from the said pocketed drum, other plain tapes to press the said splints in contact with the first-named tapes, and mechanism to roll the clamped splints into a coil or coils, substantially as specified.

2. In a match-making machine, the combination of a hopper for the splints, a pocketed drum adapted to revolve partially within the said hopper and to remove the splints separately or one by one from the same, and tapes to remove the splints from the said pocketed drum and at the same time clamp them so that they may be wound into a coil, substantially as specified.

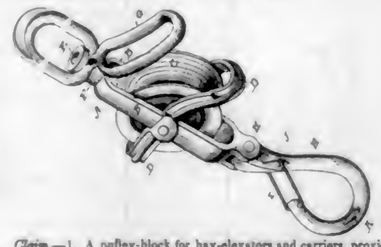
3. In a match-making machine, the combination of a hopper for the splints, a pocketed drum adapted to revolve partially within the said hopper and to remove the splints separately therefrom, a pair of plain tapes which pass under and remove the splints from the said pocketed drum, a second pair of plain tapes to press the said splints in contact with the first-named tapes and hold them so that they may be wound into a coil, and a rotary knife to cut the said splints into two parts, and thereby produce two independent coils of splints, which may be dipped separately, substantially as specified.

292,475. STOVE. JOHN EckERT, Madison, Ind. Filed May 8, 1883. (No model.)



Claim.—The combination of the heating-stove A, provided with pipe A^2, the jacket B, covers B' C', provided with openings c c, adapted to register with each other and be operated by a handle, c', the air-space b, having supply-openings b' b', air-chamber D, open at top and closed at bottom, air-space d, and pipe B^2, all constructed, arranged, and operating substantially as described and shown.

292,476. PULLEY-BLOCK FOR HAY-ELEVATORS. HENRY L. FISHER, Alden, Ill. Filed Oct. 27, 1883. (No model.)

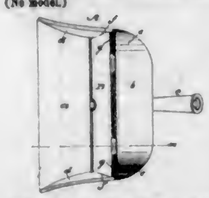


Claim.—1. A pulley-block for hay-elevators and carriers, provided at its upper end with a swiveled eye, having a laterally-extending loop, serving as a guide for the hoisting-rope, substantially as and for the purpose set forth.

2. In a pulley-block, the combination of the frame A, having pulley C and shank E, with the swiveled eye F, having laterally-projecting loop G, substantially as and for the purpose set forth.

3. The combination, with a pulley-block, of a hook hinged at the lower end of the frame of the same, beveled catches upon the shank and body of the said hook, and a spring-ball mounted transversely in the point of the said hook, substantially as and for the purpose set forth.

292,477. DUST-PAN. JAMES I. FLANAGEN, Philadelphia, Pa. Filed Oct. 6, 1883. (No model.)

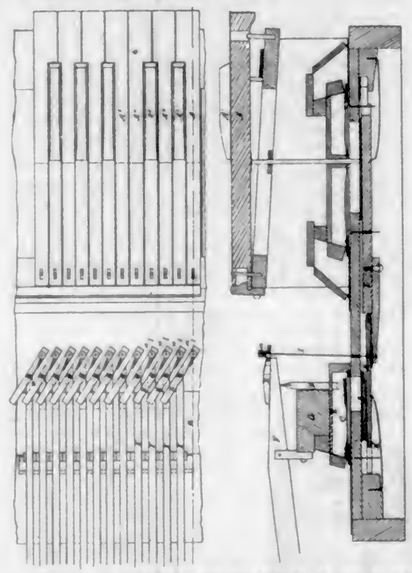


Claim.—1. A dust-pan having a hood of arched form and a lid hinged thereto, substantially as and for the purpose set forth.

2. A dust-pan having an arched hood and a lid hinged to the front of said hood, cut away and rounded, as at g, substantially as and for the purpose set forth.

3. A dust-pan having an arched hood and a lid hinged to said hood cut away and rounded, as at g, and cut away at the outer sides, as at f, substantially as and for the purpose set forth.

292,478. ORGAN-ACTION. CHARLES RUFUS FORD, Boston, Mass. Filed June 18, 1883. (No model.)



Claim.—1. In combination with the reeds and the keys for operating the valves thereof, the series of mutes and their levers and oblique fingers, arranged and adapted to operate substantially as described, and provided with mechanism for effecting depression of the said levers by means of the keys, as explained.

2. The combination of the mutes, the operative levers, and the series of oblique fingers and their depressing-wires, all being arranged and adapted to operate as set forth.

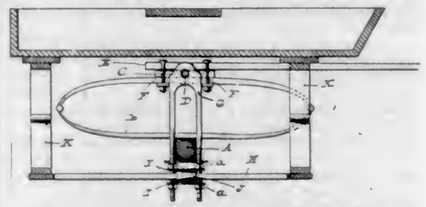
292,479. EYEGLASSES. IVAN FOX, Philadelphia, Pa. Filed May 6, 1882. (Model.)



Claim.—1. The combination, with a pair of eyeglasses, of the nose-pieces N N', each consisting of the inclined bar a, having the arm b integral therewith, and projecting from a ponit near its middle, substantially as and for the purpose specified.

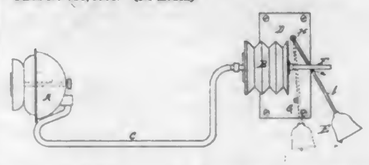
2. The combination, with a pair of eyeglasses, of the nose-pieces N N', formed of comparatively soft metal, each having the inclined bar a and curved arm b integral therewith, and projecting from a point near its middle, substantially as and for the purpose specified.

292,480. TWO-WHEELED VEHICLE. HOWARD P. GARLAND, San Quentin, Cal. Filed Oct. 22, 1883. (No model.)



Claim.—In a two-wheeled vehicle, the side springs, B B, carrying the pintles D D, and to which the shafts are connected, in combination with the king-clips G G, supporting the swinging frame H, to which are connected the end or bed-supporting springs, K K, substantially as shown and set forth.

292,481. PNEUMATIC SIGNAL. ROBERT P. GARSED, Norristown, Pa. Filed Nov. 23, 1883. (No model.)



Claim.—1. In a pneumatic signal, in combination with pump A, pipe C, and bellows B, the bracket D, having a bellows-support, J, and suspended bell E, with push-rod adapted to actuate and allow a swinging motion of bell, the whole substantially as and for the purposes set forth.

2. In a pneumatic signal, the combination, with pump A, pipe C, and bellows B, the latter with actuating-rod F, of the bracket D, with bellows-support J, and a free vibrating bell, E, with abutting pin I, said pin also serving for a support for actuating-rod F, substantially as described.

3. In combination, the pump, pipe, and bellows, and a signaling device, the bellows-support J, and flanged and threaded connecting device T, with washer U, said device adapted to hold bellows in place, as well as to form a coupling for air-supplying pipe, the flange, connecting-piece, and coupling end being integral, the whole operating substantially as and for the purposes set forth.

4. In combination, the operative pump, with pipe and bellows, the latter having attached to it a bifurcated arm, F, adapted to surround bell-rod and actuate the same, and pin I, or its equivalent, supporting said arm, in combination with suspended bell, the whole operating substantially as and for the purposes set forth.

5. The pump with rod passing through its center, and the cap k, connected to the base of pump, and adapted to form an air-tight passage for said rod, in combination with the connected pipe and bellows, with support for the latter, substantially as shown and described.

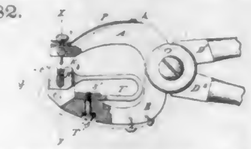
6. In combination with the tracks of a railroad, the lever L, and pump A, with socket-connection for supplying air, the ball X, adapted to engage with and roll upon the lever L upon its operation, and stop the orifice r in said pump, connected pipe, and supported bellows, the whole operating substantially as shown and described.

7. In combination, the lever L, pump A, supporting-frame N, adapted to suspend said pump and allow the free motion of lever L between its supporting-links, the anti-friction ball X, and socket W, the connected pipe, operative bellows, and bracket D, with bell-ringing device, substantially as described.

292,482. IMPLEMENT FOR SETTING BUTTON-FASTENERS. JOHN H. GOODFELLOW, Troy, N. Y. Filed June 11, 1883. (No model.)

Claim.—1. An implement for attaching buttons, having jaws A and B, the latter being provided with a movable anvil, R, having arms k k pivoted thereto, and spring T, combined to operate substantially as described.

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2. In an implement for attaching buttons, the spring T, secured to the jaw thereof, carrying the anvil-head R at its free end, the anvil having the arms *k k* pivoted therein, as described, and adapted to operate in connection with the lower jaw, substantially as and for the purpose set forth.

3. In an implement for attaching buttons, the combination of the upper jaw, having means for holding a button and staple, as described, and the lower jaw, B, having the spring T attached thereto, and carrying the anvil R, provided with the pivoted arms *k k*, which are adapted to spread apart and force the legs of a staple up against the fabric in a line with each other, all substantially as described and set forth.

4. In an implement for attaching buttons, the combination of an upper jaw provided with means for holding a button and staple, with the lower jaw provided with a movable anvil having pivoted arms, which are adapted to move in the grooves *a' a²* in the lower jaw, for the purpose of spreading the legs of a staple, all substantially as described.

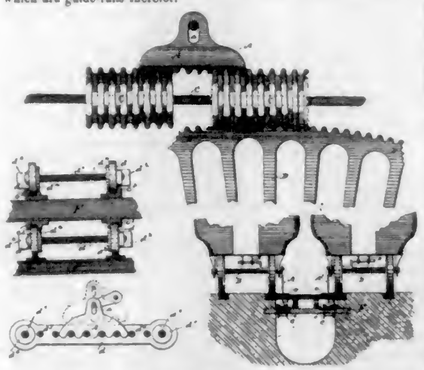
5. In an implement for attaching buttons by staples, the jaw B, furnished with the movable anvil R, and the arms *k k*, pivoted to the anvil and extending outward beyond the anvil and over the jaw, substantially as set forth.

6. In an implement for attaching buttons by staples, the jaw B, furnished with the movable anvil R, and arms *k k*, pivoted to the anvil, and having the guide-grooves *b b*, substantially as shown and described.

7. In an implement for attaching buttons by staples, the jaw A, having the raised platform F and slot J in the platform, and furnished with a forked spring extending along the sides of the platform, substantially as shown and described.

292,483. PROPULSION OF STREET-CARS AND OTHER VEHICLES. NEIL F. GRAHAM, Falls Church, and HOWARD H. YOUNG, Carlins Springs, Va. Filed May 29, 1883. (No model.)

Brief.—An endless traveling corrugated chain or conveyer driven by corrugated driving-drum, the car carrying a corrugated shoe for contact with said conveyer. The conveyer traverses a sewer-excavation in which are guide-rails therefor.



Claim.—1. The corrugated adjustable shoe A, for the propulsion of vehicles, substantially as described.

2. The corrugated shoe A, in combination with an endless corrugated conveyer, C, traveling in a sewerage-excavation, for the propulsion of vehicles, substantially as described.

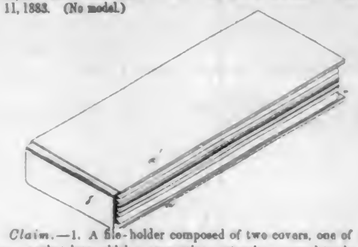
3. The corrugated motor-drums D, in combination with the corrugated shoe A and corrugated endless conveyer C, substantially as described.

4. In the endless conveyer C, the combination of the pivoted links *d*, pivot-bolts *d'*, lugs *d²*, rounds or bolts *d³*, and friction-rollers *d⁴*, adapted to the said conveyer, substantially as described.

5. The endless conveyer C, in combination with the shoe-arm A', plates *c'*, *c²*, and *c³*, friction-rollers *c⁴*, and tramway E, substantially as set forth.

6. The combination, with the corrugated endless conveyer C, of a device upon the car to engage therewith, having a correspondingly-corrugated engaging surface or face, as and for the purpose set forth.

292,484. EXTENSION-FILE. JOHN GROSS, Ottawa, Ill. Filed Oct. 11, 1883. (No model.)



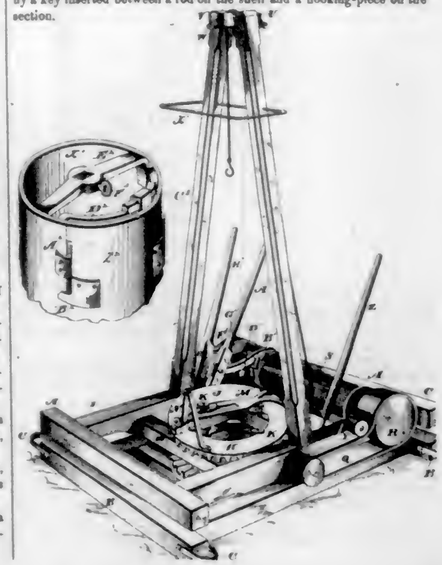
Claim.—1. A file-holder composed of two covers, one of which forms a pocket into which a connecting-extension secured to the other cover may be pushed, or from which it may be partially withdrawn at will, substantially as and for the purpose set forth.

2. A file-holder made in two parts, one of which forms a pocket containing a slotted intermediate piece, and the other has secured to it an extension formed with a T-head or tongue upon its end, substantially as and for the purpose set forth.

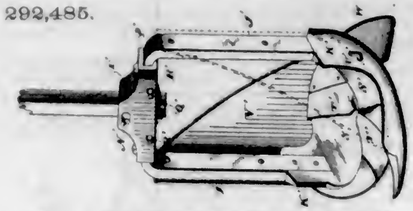
3. In a file-holder, the cover *a*, provided with the extension *b*, having the tongue *c*, in combination with the cover *a'*, forming a pocket in which is secured the intermediate part, *d*, formed with slot *d'*, substantially as and for the purpose set forth.

292,485. APPARATUS FOR BORING WELLS. JAMES W. HAMMETT, Grant, W. Va. Filed Nov. 7, 1882. (No model.)

Brief.—An annular bevel-face gear with projecting arm for attachment of a motor turns on rollers and engages a bevel-pinion having an extended pulley-shaft, and carried by a frame supported from within the gear-wheel. Through the pinion the gear drives an upper and similar gear having means for holding and rotating the auger-shaft interiorly of the gears. Through a belt-tightener a windlass for the auger-lifting cord is driven at will by a belt from the above pulley-shaft. For hand operation in either direction of this windlass it is provided with three ratchet-wheels, the middle one turned reversely from the others, and engaged by a pawl pivoted on a hand-lever, the others being engaged by a pin inserted, when desirable, transversely through the pawl. The auger consists of two cutter-arms with detachable blades, extensions, and valves. The upper ends of the arms are fitted loosely into openings in a head, and secured therein by bolts adjustable to enable the spreading of such arms by a spring pressing the ends within the head. Hooks on the exterior of the cutter-arms may be used for attaching either triangular-curved "wings" or an entirely-closing casing with lower cutting-edge having a detachable section with sleeves sliding onto pins projecting downward from bearings on the edges of the main shell. The section is locked by a key inserted between a rod on the shell and a hooking-piece on the section.



292,485.



Claim.—1. In a boring apparatus, the combination, with a frame, and an annular face-wheel which has bearing upon it, of a frame supported above the frame aforesaid by a structure rising within said face-wheel, an annular face-wheel mounted upon the upper frame, and a bevel-pinion meshing with both wheels, substantially as set forth.

2. In a boring apparatus, the combination, with a frame, an annular face-wheel, and a sweep attached to said wheel, of a frame supported above the frame aforesaid by a structure rising within said wheel, an annular face-wheel mounted upon the upper frame, a pinion meshing with both wheels and rollers, located within the wheels, substantially as set forth.

3. In a boring apparatus, the combination, with power mechanism, of a drum on which the drill-cord is wound, a loose belt uniting the power mechanism and said drum, and a hand-operator stress-pulley to impart to the belt the tension required to actuate the drum, substantially as set forth.

4. In a boring apparatus, the combination, with a power mechanism, of a drum on which the drill-cord is wound, three ratchets grouped together on said drum, the outer ratchets being cut oppositely from the ratchet between them, a hand-lever, and a gravity-pawl having a removable pin in its outer end, and adapted to engage with said ratchets, substantially as set forth.

5. In a boring apparatus, an auger consisting in the combination, with a centrally-perforated auger-head having open ends, of two depending arms, the curved upper ends of which are secured in the open ends of the auger-head, and cutters curved in general contour, having convex outer and concave inner faces provided with detachable extensions and valves, and adapted to be removably secured to the lower ends of said depending arms, substantially as set forth.

6. In a boring apparatus, the combination, with an auger-head, arms depending therefrom, and cutters removably secured to the lower ends of the arms, of wings detachably attached to the arms and the cutters, substantially as set forth.

7. In a boring apparatus, the combination, with an auger-head having open ends, of depending arms the upper ends of which are secured in the open ends of the said auger-head, and a spring located in the auger-head, and arranged to impinge on the ends of the said arms, substantially as set forth.

8. In a boring apparatus, the combination, with an auger-head having open ends, of two depending arms the upper ends of which are secured in said head, of a spring located in the auger-head, and arranged to impinge on the ends of said arms, and spiral lifters detachably secured to the lower ends of the arms, substantially as set forth.

9. In a boring apparatus, the combination, with a shell having a bail and a rod attached to its upper end, of a removable door provided with a hook, to engage with the rod attached to the shell, and a key to be interposed between the hook and rod, to lock the door to the shell, the lower end of the door and shell being shaped to form cutters, substantially as set forth.

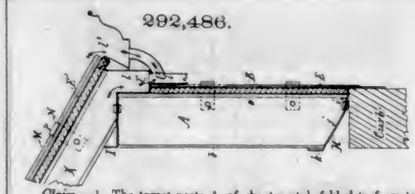
10. In a boring apparatus, the combination, with a shell having one side cut away, of pins mounted in bearings projecting beyond both edges of the cut-away portion of the shell, a door, and sleeves secured to the opposite edges thereof, and arranged to be engaged with the pins aforesaid by adjusting the door on the shell and sliding it longitudinally to its true position, substantially as set forth.

292,486. SKYLIGHT. GEORGE HAYES, New York, N. Y. Filed May 12, 1883. (No model.)

Brief.—Consisting of turret-posts formed with two sides, having inside and outside lateral flanges and cut at intervals to receive removable louver-slats. The base-plate is so constructed as to fit the curb, and also forms the lower louver-slat. The corner-posts are formed of one piece of sheet metal with diverging plates or faces. The inside gutter in base-frame and the outside gutter form a molded cornice and discharge through the same leader.



292,486.



Claim.—1. The turret-posts A, of sheet metal, folded to form two sides, *a a*, inside lateral flanges, *b b*, and outside lateral flanges, *c c*, the flanges *c c* cut in at intervals for reception and support of louver-slats, essentially as shown and described.

2. In combination with posts A and strips B, constructed essentially as set forth, louver-slats C, set in and secured substantially as shown and described.

3. In combination with posts A and strips or caps B, constructed and combined essentially as set forth, the reticulated screen or perforated sheet-metal plate D, secured thereto, substantially as shown and described.

4. The combination of posts A, caps B, louver-slats C, and screen D, substantially as shown and described.

5. The corner-posts F, constructed of one piece of sheet metal, formed with diverging portions *e e*, inside flanges, *f f*, and outside flanges, *g g*, the outer flanges cut in at intervals for the reception and support of louver-slats, essentially as shown and described.

6. In combination with the corner or angle posts F, the caps or angle-pieces G, secured thereto by strips N, substantially as shown and described.

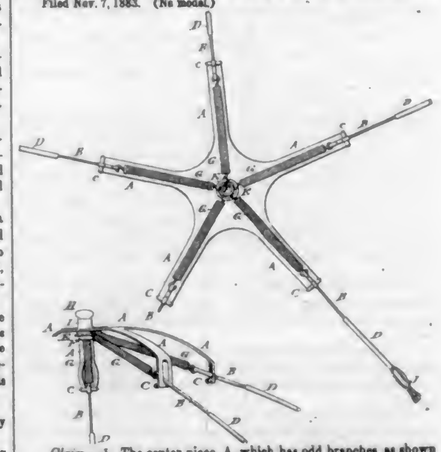
7. The base-plate H, having apron *h*, flat portion *i*, slope *j*, and "set-back" or curve *k*, substantially as shown and described.

8. In combination with the posts A F and rafters or bars K, constructed as set forth, the transom I, provided with gutter *l* and clip *m*, substantially as shown and described.

9. The vertical walls of a turret, consisting of posts A F, base H, transom I, louver-slats C, all constructed, arranged, and combined essentially as shown and described.

10. The combination of outside gutter, P, with inside gutter, *l*, substantially as shown and described.

292,487. HAT-PROTECTOR. CHARLES A. HELSEL, Indianapolis, Ind. Filed Nov. 7, 1883. (No model.)



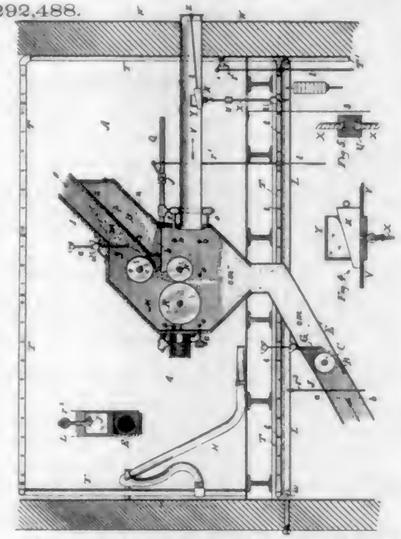
Claim.—1. The center piece, A, which has odd branches, as shown in Fig. 1, so as to prevent an opposite contact of frame when folded, as specified fully heretofore.

2. Sliding tubes D, applied to rod B, as duly described, so as to enable universal use of my invention, and decrease the size when the whole is folded, so that it may be placed in the smallest crown of a hat when not using.

3. The springs G, attached as clearly specified, acting as a support of the frame, as shown in Fig. 2, and, furthermore, is a factor to facilitate immediate unfolding, the spring being in a strained condition, as shown in Fig. 3, all substantially as set forth.

292,488. CONSTRUCTION OF MALT AND GRAIN MILLS. CHAS. JOHN HELANDER, Philadelphia, Pa. Filed Feb. 27, 1883. (No model.)

292,488.



Claim.—1. The method of preventing fires resulting from explosions of grain-dust within the mill-boxes of malt or other grain crushing or grinding mills from extending from the mill-box to the elevator-boots and other parts of the building, which consists in maintaining a continual plenum of the ground or crushed grain in the outlet-pipe from the mill-box, in conjunction with a suitable vent leading from the latter into the open air, substantially as set forth.

2. In combination with the mill-box having the grinding or crushing rolls therein and the efflux-pipe leading therefrom, an adjustable discharger for regulating the flow of the ground grain from the efflux-pipe, so as to maintain the plenum in said pipe above the discharger, substantially as and for the purposes set forth.

3. The mill-box having the grinding-rolls therein, and its bottom conical or hopper shaped, the efflux-pipe leading therefrom, and the adjustable discharger, all combined, constructed, arranged, and operating substantially as and for the purposes described.

4. The combination, with the mill-box having the grinding-rolls therein, and the influx and efflux pipes communicating therewith, a feeder in the former pipe and a discharger in the latter, said feeder and discharger being adapted to be relatively adjusted and regulated, so as to preserve a continual plenum of the ground grain within the efflux-pipe, substantially as and for the purposes set forth.

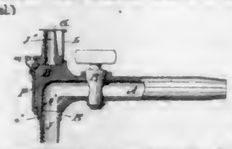
5. The combination, with the mill-box having the grinding-rolls therein, and the influx and efflux pipes, of means for preserving the described plenum within the efflux-pipe, and the vent-pipe V, communicating with the interior of the mill-box, substantially as and for the purpose set forth.

6. In combination with the mill-box, efflux-pipe, and the gate J, means for automatically causing said gate to close said pipe from the result of an explosion within the mill-box, substantially as and for the purpose set forth.

7. In combination with the mill-box, efflux-pipe, gate J, and means for automatically causing the said gate to close the said pipe from the effect of an explosion within the mill-box, the vent-pipe V, substantially as described.

8. The combination of the mill-box, the efflux-pipe, the gate J, and the drop-lever L, connected with said gate, all constructed, combined, and adapted to operate substantially as and for the purpose specified.

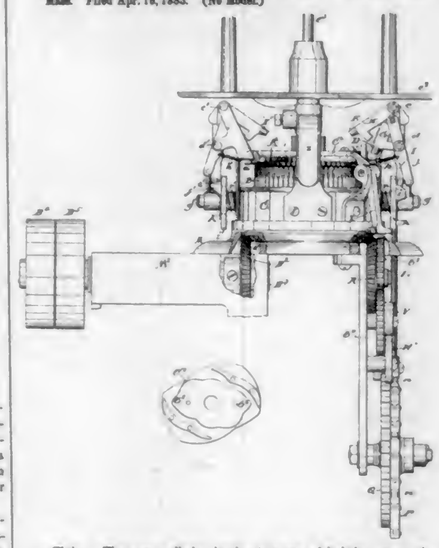
292,489. FAUCET. PETER HUFF, New York, N. Y. Filed Sept. 20, 1883. (No model.)



Claim.—1. In combination with a revolving ring, E, arranged at the end of a faucet, and provided with a series of branch pipes, the plate or shield G, closing the ends or mouths of all the branches, except the one in communication with the mouth A′ of the faucet, as and for the purpose specified.

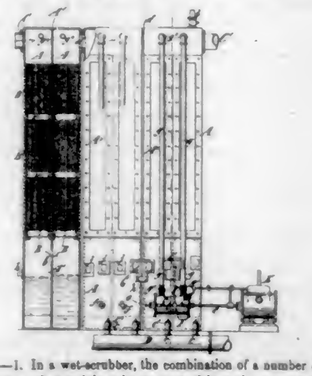
2. In a faucet, the pin *m*, in combination with the movable ring E, having holes *n*, *n′*, *n″*, and *n‴*, for the purpose substantially as set forth.

292,490. KNITTING-MACHINE. WARREN D. HUSE, Laconia, N. H., assignor to O. Twombley, Lake Village, N. H., and T. S. Newell, Boston, Mass. Filed Apr. 16, 1883. (No model.)



Claim.—The cam-cylinder having two sets of knitting-cams, the cylinder-needles, needle-bed, the bed or plate for the dial-needles, the cam-plate, the dial-needles, and two sets of knitting-cams on the cam-plate, and two sets of yarn-guides composed each of two separate yarn-guides, combined with two yarn-changing patterns, a pattern-chain, and means actuated thereby to permit the two yarn-changing patterns to be moved at each revolution of the cam-cylinder, and with means to rotate the said cam-cylinder and to move the pattern-chain two steps at each revolution of the cam-cylinder, substantially as described.

292,491. GAS-SCRUBBER. CHARLES W. IRBELL, New York, N. Y. Filed Nov. 29, 1882. (No model.)



Claim.—1. In a wet-scrubber, the combination of a number of upright chambers, each containing plates arranged in stationary groups, and provided with openings through which they communicate with each other directly, alternately above and below said groups of plates, whereby the gas is caused to pass upward through the plates of one chamber and downward through the plates of the next chamber throughout the series, overflow boxes or openings for maintaining the desired level of liquor in the several chambers, and means for raising liquor from the bottom to the top of said chambers, so as to obtain a highly-concentrated ammoniacal liquor, substantially as and for the purpose herein described.

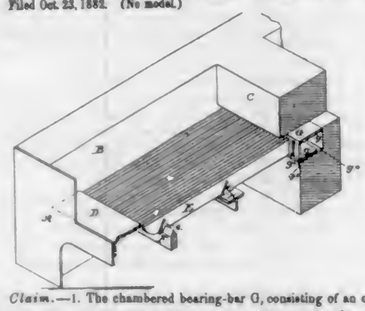
2. In a scrubber, the combination of a number of upright chambers, each containing plates arranged in stationary groups, and provided with openings through which they communicate with each other alternately above and below said groups of plates, overflow openings or apertures in the outer sides of said chambers, and overflow-boxes connecting the openings or apertures of adjacent chambers on the exterior of the scrubber, substantially as and for the purpose herein described.

3. In a scrubber, the combination of chambers containing groups of plates and arranged in pairs, the several pairs forming separate and distinct structures, which are connected together by communicating openings or nozzles above said plates, and the chambers of each pair being in communication below said plates, overflow-boxes connecting the chambers below said plates, and means for raising liquor from the bottom to the top of said chambers, substantially as and for the purpose herein described.

4. In a gas-scrubber, the combination, with two upright chambers containing groups of plates, and provided with overflow-boxes for controlling the level of ammoniacal liquor in them, of a double-acting circulating-pump having the chambers connected below said plates by suction-pipes with the opposite ends of the pump-cylinder, and connected above said plates by discharge-pipes with opposite ends of the pump-cylinder, whereby one pump is made to serve for both chambers, substantially as and for the purpose herein described.

5. In a scrubber, the combination of pairs of upright chambers containing groups of plates, and provided with overflow-boxes for controlling the level of ammoniacal liquor in them, and a double-acting circulating-pump for each pair of chambers, having the suction and discharge of the two ends of the cylinder communicating with the said two chambers, and having pipes leading from the gas-space of the scrubber to the ends of the pump-cylinder, substantially as and for the purpose herein described.

292,492. FURNACE-GRATE. MILTON C. JONES, Green Island, N. Y. Filed Oct. 23, 1882. (No model.)



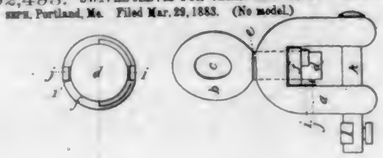
Claim.—1. The chambered bearing-bar G, consisting of an open-sided box, composed of the upper flange, *g*, lower flange, *g′*, and vertical front plate, g^3, the latter containing a series of openings, g^3, which conform to the shape and number of the grate-bars E, and which will permit said grate-bars to expand endwise therein, but will prevent the ashes from entering the chamber g^4, as herein specified.

2. The combination, with the grate-bars E, having their forward ends locked in a fixed position, as herein decribed, of the chambered bearing-bar G, consisting of an open-sided box, constructed as herein described, and having its vertical front plate, g^3, provided with a series of openings, g^3, for containing the movable ends of said grate-bars, and adapted to exclude the ashes from the chamber g^4, as herein specified.

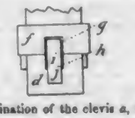
3. The combination, with a grate-bar, E, adapted to be locked in a fixed position at one end, and provided in its under edge with a slotted recess, e^2, as herein described, of a bearing-bar, H, having on its upper face a series of cars, *i*, adapted to engage in the recesses e^2 of said grate-bars, in the manner and for the purpose herein specified.

4. The combination, with the chambered bearing-bar G, as herein described, of the bridge-wall C, erected directly upon the upper flange, *g*, so as to overhang the forward face, g^3, of said bearing-bar, as and for the purpose specified.

292,493. SWIVEL-CLEVIS FOR CHAIN-CABLES, &c. FRANK JOSEPH, Portland, Me. Filed Mar. 29, 1883. (No model.)



292,493.



Claim.—The combination of the clevis *a*, of the swivel *b*, with its eye *c* and stock *d*, with the hole *e* in the bend of the clevis, washer *f* in the lower end of the stock *d*, slots *g g′* in the washer *f*, slot *h* in the stock *d*, and the pin *i*, as herein set forth.

292,494. ROD FOR SAW-FRAMES. JOHN M. KOEBERLE, Philadelphia, Pa. Filed Aug. 31, 1883. (No model.)



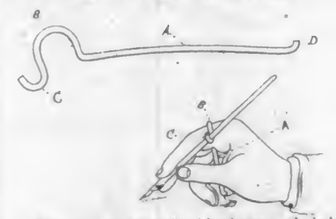
Claim.—1. A rod for a saw-frame, consisting of a swivel, a yoke, the ends whereof are formed with journals, and a piece having a recessed head forming the bearings of said journals, the end of the piece being connected with the swivel, substantially as and for the purpose set forth.

2. In a saw-frame rod, a headed piece receiving the journals of the yoke, formed with lips which are bent over the journals, substantially as and for the purpose set forth.

3. In a saw-frame rod, a headed piece receiving the journals of the yoke, formed with a central lip which limits the inward motions of the limbs of the yoke, substantially as and for the purpose set forth.

4. In a saw-frame rod, a headed piece receiving the journals of the yoke and engaging with a screw-swivel, said piece having lips which cover said journals, and a central lip projecting between the ends of the yoke adjacent to said journals, substantially as and for the purpose set forth.

292,495. PEN-STAFF AND HAND-SUPPORT. WARREN H. LAMSON, Lynn, Mass. Filed Sept. 3, 1883. (No model.)



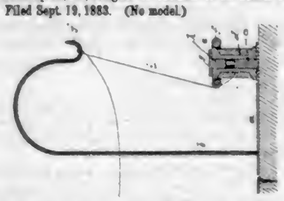
Claim.—1. In a pen-staff and hand-support, the body A, provided on one end with the finger-loop B and reverse staff-loop C, substantially as described, and for the purposes set forth.

2. In a pen-staff and hand-support, the body A, provided on one end with the finger-loop B and staff-loop C, as specified, the opposite end of said body being provided with the curved end D, substantially as set forth.

3. In a pen-staff and hand-support, the body A, provided on one end with staff-loop C and finger-loop B, said staff-loop C having its point bent forward, as set forth, whereby the pen holder or staff is held in close relation with the finger, substantially as set forth.

4. In a pen-staff and hand-support, the combination of the body A, bent end D, finger-loop B, and staff-loop C, the point of said staff-loop being bent slightly forward, substantially as described, and for the purposes set forth.

292,496. THREAD-GUIDE FOR SEWING-MACHINES. THOMAS LA TOUR, Philadelphia, Pa., assignor of one-half to M. Luther Finckel, same place. Filed Sept. 19, 1883. (No model.)

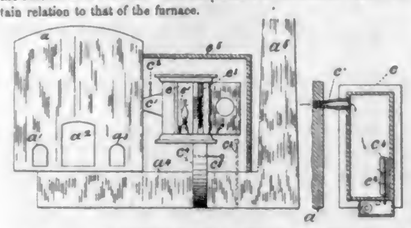


Claim.—1. The cap *e*, provided with the ring, rim, or edge *f*, round in cross-section, and adapted to encompass the head of a spool and project below its under surface, and made with a centering-pin, *h*, combined with a guide-arm, substantially as shown and described.

2. The cap *a*, composed of the ring, rim, or edge *f*, round in cross-section, and adapted to encompass the head of a spool and project below its under surface, the plate *g*, and the attached, fixed centering-pin *h*, substantially as shown and described.

292,497. DEVICE FOR INDICATING THE TEMPERATURE IN ANNEALING-FURNACES. MICHEL A. LAUBSCHER, Buffalo, N. Y. Filed May 5, 1883. (No model.)

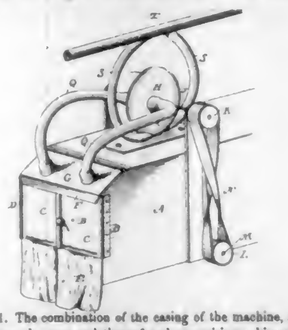
Brief.—A small quantity of hot air from the furnace is mixed with the cool air in the reducer. The temperature of the mixture bears a certain relation to that of the furnace.



Claim.—1. The combination, with a furnace, of a reducer connected thereto by a tube, and to the main flue of the furnace by a flue, c^4, and a thermometer, substantially as and for the purposes described.

2. The reducer *c*, connected to the furnace by a tube, c', provided with a damper or valve, c^3, in combination with a thermometer and an outlet-tube, c^4, connected with the furnace outlet-flue a^4, the flue a^4 having a damper or valve, c^5; as and for the purposes described.

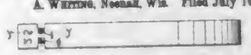
292,498. DUST EXHAUSTER AND CONVEYER FOR THRASHING MACHINES. DAVID LOGAN, Hartstown, Pa. Filed June 7, 1883. (No model.)



Claim.—1. The combination of the casing of the machine, a closet arranged to close the rear end thereof and comprising a hinged lid or cover, a fan-chamber having a rotary fan, and elastic exhaust-pipes extending from the fan-chamber to openings in the said cover, as and for the purpose set forth.

2. The combination of the closet adapted to close the end of the casing to which it is applied, and comprising the hinged doors, the cap or cover of the closet hinged and formed with the flange that engages the doors to retain the same closed, a fan-chamber secured near the closet, and provided with a rotary fan, the elastic exhaust-tubes extending from openings in the sides of the fan-chamber to openings in the hinged cover, and the conveyer-tubes extending from different ends of the fan-chamber up and in different directions, as and for the purpose set forth.

292,499. CAR-SEAL. THOMAS H. MALONE, Milwaukee, and GEORGE A. WHITING, Neenah, Wis. Filed July 16, 1883. (No model.)



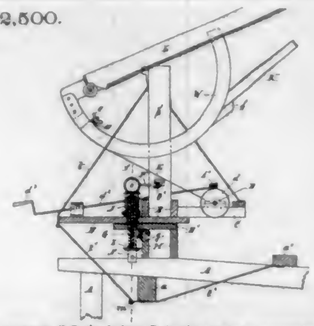
Claim.—1. A seal formed of a sheet-metal band having its ends doubled together and secured by transverse tongues upset from the sides thereof, and having identifying symbols, numbers, or letters impressed upon the metal, substantially as described.

2. A seal formed of a sheet-metal band having its ends doubled together and secured by tongues upset thereon, said tongues being provided with grooves or depressions therein, substantially as described.

292,500. STRAW-STACKING MACHINE. CHARLES F. MERRIFIELD, Indianapolis, Ind. Filed Oct. 30, 1883. (No model.)

Claim.—1. The combination, in a straw-stacking machine, of the

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carrier-supports S S, the bolster B, having a tongue-extension, the iron brace-rods *t t*, bolted to the carrier-supports S S near the top of the same and to the bolster-extension at a point right in front of the pivot-point of the bolster, and the iron rods t' t^3 and t^3, the connection of said rods being made by an eye, *m*, formed by the rods t^3 t^3 right under the pivot-point of the bolster B, all as described, and for the purpose specified.

2. In a straw-stacking machine, the combination of the standards S S, the carrier-frame L, pivoted to the standards S S, the bolster or turntable B, the bolster-plate B', the boxing G, located in front of the standards S S, and forming a pivot for the bolster B, the cross-beams H H, the carrier-truck A, the cross-beams *a* and *a'*, and the iron brace-rods *t t*, t', and t^2 t^2, all constructed and adapted to operate substantially in the manner and for the purpose specified.

3. In a straw-stacking machine, the combination of the standards S S, the carrier-frame L, pivoted to the standards S S, the bolster B, the frame-work C, the shaft D, mounted on the frame-work C, the spirally-toothed wheel *d*, firmly secured to the shaft D, the shaft d^2, the endless screw d', secured to the end of the shaft d^2 and operating the wheel *d*, the crank d^3 at the end of the shaft d^2, the ropes E E, and the hoisting-wheels W W, all as described, and for the purpose specified.

4. In a straw-stacking machine, the combination of the standards S S, the carrier-frame L, pivoted to the standards S S, the bolster B, the frame-work C, the shaft D, the wheel *d*, the endless screw d', the shaft d^2, the crank d^3, the ropes E E, wound and unwound on the shaft D by the operation of the crank d^3, the hoisting-wheels W W, and the set-screws *s s*, securing the ropes E E to the hoisting-wheels W W, substantially as described, and for the purpose specified.

5. In a straw-stacking machine, the combination of the standards S S, the carrier-frame L, pivoted to the standards S S, the hoisting-wheels W W, secured to the sides of the carrier-frame L, the braces K K, the sockets *k k*, secured to the wheels W W, and the sockets *l l*, secured to the carrier-frame L, substantially as described, and for the purpose specified.

6. In a straw-stacking machine, the combination of the horizontal shaft P, the gimbal-joint O in said shaft P, the boxing G, the spindle I, operating in said boxing G, the horizontal shaft P', the gimbal-joint O' in said shaft P', and the bevel-gear at each end of the spindle I, substantially as described, and for the purpose specified.

7. In a straw-stacking machine, the combination of the carrier-truck A, the cross-beams H H, the bolster-plate B', the bolster B, the carrier-supports S S, the boxing G, forming a pivot for the bolster B in front of the carrier-supports S S, and the shoulders *g g*, securing the boxing to the front one of the beams H H, substantially as described, and for the purpose specified.

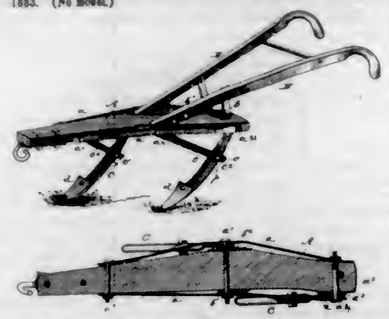
8. In a straw-stacking machine, the combination of the carrier-truck A, the cross-beams H H, the bolster-plate B', the bolster B, the carrier-supports S S, the boxing G in front of the carrier-supports S S, the shoulders *g g*, securing the boxing G to the front one of the beams H H, the brackets N N at the lower end of the boxing G, the sleeve J, and the bracket *j*, operating around the upper end of the boxing G, the gear-shafting P, P', and I, and the gimbal-joints O and O' in said shafting P and P', all constructed and arranged to operate substantially as described, and for the purpose specified.

9. In a straw-stacking machine, the combination of the carrier-frame L, the standards S S, the bolster B, the bolster-plate B', the gear-shafting P, I, and P', the boxing G, forming a pivot for the bolster B, the brackets N N, the sleeve J, the bracket *j*, the shoulders *g g*, the cross-beams H H, the carrier-truck A, the cross-timbers *a* and *a'*, the iron braces *t t t' t² t²*, and the eye *m* under the pivot-point of the bolster B, all arranged and adapted to operate substantially as described, and for the purpose specified.

10. In a straw-stacking machine, the combination of the truck-axle A, the clevises or sockets *r r*, secured to the axle A, the braces R R, shoved through the wheels of the truck up into said clevises or sockets *r r*,

and the blocks *r' r'*, driven between the braces R R and the truck-axle, substantially as described, and for the purpose specified.

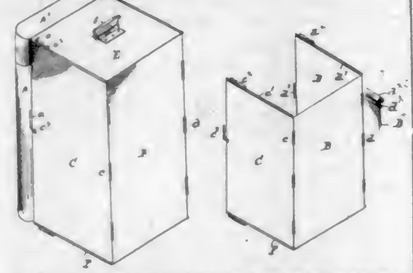
292,501. PLOW. HENRY L. MOORE, near Dawson, Ga. Filed Oct. 26, 1883. (No model.)



Claim.—1. A plow having a stock, A, or beam, the central part enlarged, the handle, braces, or securing-plates *b'*, the adjustable standards and the plates or strips *a* being secured together at said central part of the beam by a single bolt, substantially as shown and described, and for the purpose set forth.

2. In a plow, the combination, with a beam beveled from the center toward the ends thereof, of the adjustable standards, the outwardly-sprung strips *a*, and the handles, the ends of which rest on the top of the beam, the securing-plates of which are bolted to the stock by a single central bolt, which also secures the bars *c'* and strips *a*, substantially as shown and described, and for the purpose set forth.

292,502. COMBINED LUNCH-BOX AND DRINKING-FLASK. JOS. F. MORAN, Detroit, Mich. Filed June 12, 1883. (No model.)



Claim.—1. A combined lunch-box and drinking-flask consisting of a box with three sides, a top, and a bottom, the construction being such that said sides, top, and bottom may be packed together, and in connection therewith a flask having a removable top, said flask forming the fourth side of the box, and means for connecting the box to the flask, the flask being of a size adapted to receive within it the parts constituting the box, substantially as described.

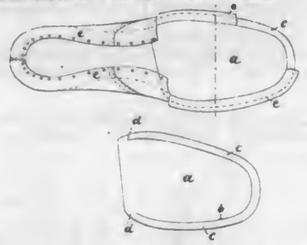
2. The combination, with the three sides of a box, of top and bottom pieces adapted to engage with and hold the sides in place, and be packed together with said sides, and a flask adapted to engage the box and constitute a side for its open face, substantially as described.

3. A combined lunch-box and flask consisting of a flask with a removable top, a box with three hinged sides and removable top and bottom, the flask forming the fourth side, and means for connecting the box to the flask, the flask being of a size adapted to receive within it the parts constituting the box, substantially as described.

4. The combination, with the three sides of the box, of top and bottom pieces adapted to be slid into place from the open side to engage and hold the sides in place, and a flask adapted to engage the box and constitute a side for its open face, and at the same time serving to hold the sliding top and bottom pieces in place, substantially as described.

5. The combination, with a flask, of a box consisting of three hinged leaves and sliding top and bottom pieces, and means for engaging the box to the flask, so the latter will constitute the fourth face of the box, and in combination therewith a removable top for the flask, said top, when in place, adapted to secure the top plate of the box, the construction being such that when removed the top of the box may be slid out over the flask, substantially as described.

292,503. MANUFACTURE OF BOOTS AND SHOES. LAWRENCE F. NORMAN, Boston, Mass. Filed Feb. 17, 1883. (No model.)

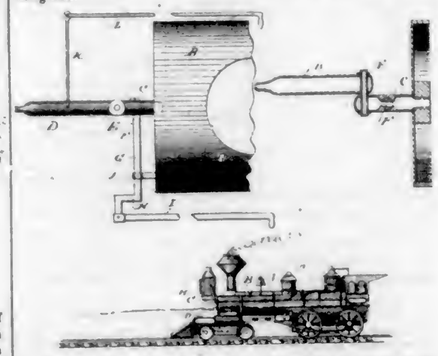


Claim.—1. In a boot or shoe, a sole or half-sole, *a*, circumferentially cut or slit from or near the shank entirely around its sides and toe portion, thus leaving a separated welt or margin, an upper having the edges of the fore part passed down at the inner side of the said welt, or through such cut or slit, and having its edge turned outward underneath such welt, and an outer sole united to the welt and out-turned upper by suitable fastenings, the said sole *a* being disconnected from the outer sole and upper, as described, and for the purposes set forth.

2. In a boot or shoe having an outer sole and out-turned upper, as described, a welt cut from leather, substantially in the form which the welt is to ultimately assume in the completed boot or shoe, the upper crossing the inner edge of and being extended outward under the said welt, and the welt, upper, and outer sole being united by fastenings outside the body portion of the upper, substantially as described.

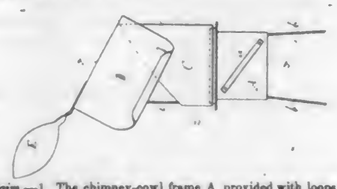
292,504. ATTACHMENT FOR LOCOMOTIVES. LA FAYETTE WILSON PAGE, Shreveport, La. Filed Mar. 26, 1883. (No model.)

Brief.—The supply of water to the horizontally-adjustable tube and the adjustment of the tube are controlled from the engine-cab by operating-rods.



Claim.—The combination, with a locomotive-boiler, of a tube, C, extending in front of the same, a nozzle, D, connected to said tube by a hinge-joint, E, the stop-cock F in tube C, the arm K, extending laterally from nozzle D, and operating-rods extending to the engineer's cab, for operating the said stop-cock and nozzle, as set forth.

292,505. CHIMNEY-TOP. NICOLAI PETERSEN, Chicago, Ill. Filed July 27, 1883. (No model.)



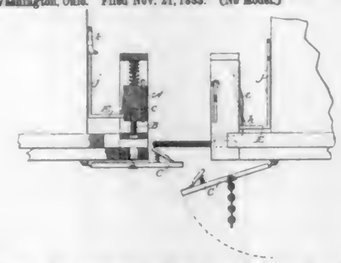
Claim.—1. The chimney-cowl frame A, provided with loops *a* and depending spring-arms *b*, substantially as described and shown.

2. The chimney-cowl frame A, provided with loops *a* and depending spring-arms *b*, in combination with revolving pipe C, carrying cover D, as described and shown.

3. The chimney-cowl frame A, provided with loops *a* and depending spring-arms *b*, and having stripe *c c* and ring *h*, in combination with pipe C, having cover D and strips *k l*, the two held together by rod B, as described and shown.

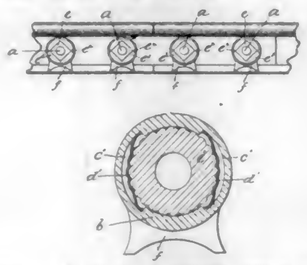
4. The rod B, screw-threaded on its upper end, and provided with pin *f* and nut *m*, in combination with frame A, provided with stripe *c c* and ring *h*, and pipe C, provided with strips *k l*, as and for the purpose set forth.

292,506. CAR-COUPLING ADJUSTER. JOHN P. PIRE, near New Washington, Ohio. Filed Nov. 21, 1883. (No model.)



Claim.—The combination of block A, pin B, bridge C, and bolt and shoulder D *h*, all constructed and arranged substantially as set forth.

292,507. NUT-LOCK. JOHN F. PLUMMER and HENRY P. CHAPMAN, Essex, Conn. Filed Dec. 13, 1883. (No model.)



Claim.—1. In a nut-lock, the chambered washer *b*, with projections *f f'*, and bearing within the chamber the frictional clamp *d*, and the nut *e*, with the tapered and roughened body part *e'*, all substantially as described.

2. In combination, as a nut-lock, the washer *b*, having feet *f*, and chamber *c*, with sockets *c'*, bearing the frictional clamp *d*, and the nut *e*, having the tapered and corrugated body part *e'*, all substantially as described.

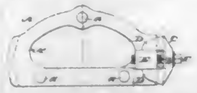
3. In combination, the chambered washer *b*, with projections *f f'* and tags *e²*, and bearing within the chamber the frictional clamp *d*, and the nut *e*, with the tapered and roughened body part *e'*, all substantially as described.

292,508. MANUFACTURE OF NON-CALCAREOUS LININGS FOR METALLURGICAL FURNACES. JACOB REESE, Pittsburg, Pa. Filed Aug. 23, 1883. (No specimens.)

Claim.—1. The method herein described of forming and repairing non-calcareous basic linings of Bessemer converters, which consists in melting non-calcareous metallic oxides in a suitable vessel or refining-chamber, and then casting the fluid oxide into the converter and around a suitable core, substantially as and for the purpose specified.

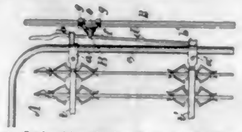
2. As a new article of manufacture, a non-calcareous basic lining consisting of a single mass of hard, close, dense non-calcareous metallic oxides, substantially as described.

292,509. ICE-CREEPER. JOHN REIST, Philadelphia, Pa. Filed Oct. 31, 1883. (No model.)



Claim.—An improved ice-creeper consisting of a plate with a fixed clip at one side and a fixed perforated lug at the other side, a movable slotted clip fitted to said lug, and a screw which passes through the movable clip and engages with the perforated lug, substantially as described.

292,510. LATCHING DEVICE FOR GATES FOR IRON FENCES. TIMOTHY ROGERS, Springfield, Ohio, assignor to the Rogers Fence Company, same place. Filed Mar. 24, 1883. (No model.)



Claim.—1. In latching devices for gates for iron fences, a thin bifurcated socket-clamp for securing the lower end of the latch-rod, the upright of the frame, and the rail end together, said clamp being formed with internal shoulders and a square socket for the latch-rod, and having its sides diverging toward the end where the bolt is inserted, so that when compressed inwardly the fastening-bolt and its nut secure the latch-rod frame and ends of the rails together, as shown and specified.

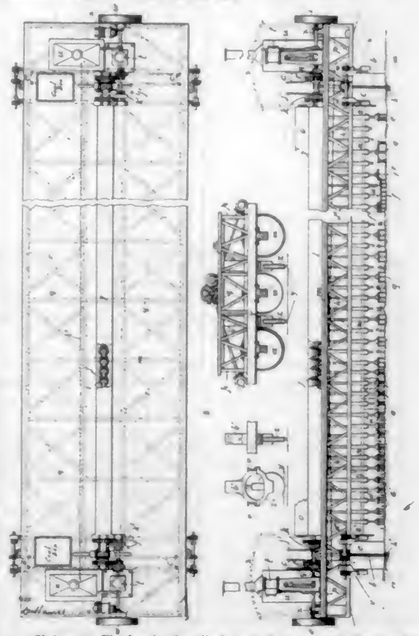
2. In latching devices for gates for iron fences, a socket-clamp having a loop for the operation of the latch-rod therein, interior shoulders, and thin compressible sides, in combination with the frame and rails of the gate, as and for the purpose set forth.

3. A catch-plate for gate-latches, having its engaging-notch encircled by a frame-work of guard-bars, substantially as described, for the purpose of protecting the clothing of persons passing through from being torn thereon, as set forth.

4. A catch-plate for engaging with the latch of a gate for iron fences, constructed with a frame-work or guard encircling the same, and with a section of the clamp plate or plates for securing it to the post integral therewith, the whole being cast in a single piece, as and for the purpose hereinbefore set forth.

292,511. SYSTEM AND APPARATUS FOR FARM CULTIVATION AND HARVESTING. ROBERT ROMAINE, Ottawa, Ontario, Canada. Filed Nov. 6, 1882. (No model.)

Brief.—A frame intended to span an entire field or section of land. The ends of the frame project beyond the broad bearing-wheels and have a locomotive-engine mounted at each end.



Claim.—1. The herein-described method or system of farm cultivation, which consists in dividing the land into sections of uniform width, with compacted dirt roads on both sides of each section, and carrying over such section a bridge or frame supported near its ends by road-locomotives traveling upon said roads, the frame or bridge being provided with implements to act upon the soil or crop over the entire width of the span or section.

2. The system or method of farm cultivation, which consists in suspending the implements from a frame or bridge-like structure extending entirely across the section to be cultivated, and carried at its ends outside of said section upon road-locomotives, causing said structure to travel from end to end of the section, and then transferring it laterally to the adjoining section and repeating the operation.

3. A locomotive-bridge for carrying cultivating or farming implements, consisting of an elevated horizontal frame or structure supported at opposite ends by road-engines, substantially as shown, and for the purposes set forth.

4. In a locomotive bridge or structure for carrying or suspending farm machinery for use in the field, an elevated horizontal trussed platform carried near its ends upon traction-wheels, and projecting beyond the latter at each end, and an engine mounted upon the projecting portion at each end, substantially as shown, whereby it is adapted to counterbalance the central portion of the structure.

5. In combination with an elevated frame or platform carried at its ends by traction-wheels, and driven by engines mounted upon said platform, a horizontal shaft extending from one side or end of the platform to the other, and provided at short intervals with wheels or gearing, whereby it is adapted to impart motion to independent implements of machinery at different points on the platform, as shown and described.

6. In a locomotive-bridge, substantially such as described, for use in farm cultivation, the combination of a platform, traction-wheels at opposite ends thereof supporting the same, engines mounted upon said platform, and friction-clutches connecting the separate engines, each with traction-wheels at the end of the platform on which the particular engine is mounted, and connected by rods with hand-levers at each end of the platform, whereby the steersman at either end of the said platform may retard either set of bearing-wheels by momentarily holding the clutch at that end out of action, as shown and described.

7. In combination with the platform-bridge k^2, traction-wheels *c c*, engines *l*, and boilers *a*, steam-pipe *i*, connecting the steam-chambers of the two boilers, whereby both engines are caused to act with like power, substantially as shown and described.

8. In combination with a locomotive-bridge arranged to do farm-work, traveling on compacted dirt roadways, substantially as shown and described, the small pilot-wheels *w'*, two on each side of said bridge, having projecting flanges or rims to travel and form indented channels upon and in the said compacted dirt roadways, for the purpose of indicating to the steersman the proper line of movement, substantially as described and shown.

9. The combination, with the locomotive-bridge herein described, of a reel having hooks h^4, and bolts, whereby it may be readily attached to or detached from the bridge, for the purpose explained.

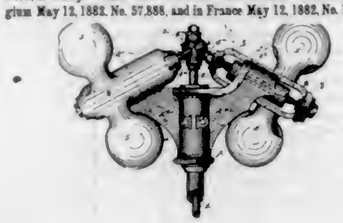
10. A locomotive-bridge for farm cultivation, provided with main carrying-wheels, and supplemental carrying-wheels permanently set at right angles to the first, and means, substantially such as described and shown, whereby the weight of the bridge may be thrown entirely upon the transverse wheels, and the main wheels raised from the ground to permit the lateral movement of the bridge from one section to the other, as shown and described.

11. In a locomotive bridge or frame, substantially such as shown and described, the combination of the main carrying-wheels and secondary wheels, and pressure-cylinders adapted to guide the spindles of the secondary wheels and to receive the fluid by which the said bridge is raised upon said spindles, as shown and described.

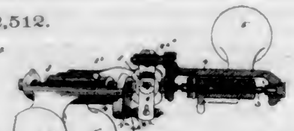
12. In combination with a locomotive-bridge substantially such as described, adjustable frame-works s^4, one attached to each side of the locomotive-bridge, and each provided with independent shafts u^4, adapted to be raised and lowered, as explained, and for the purpose set forth.

13. In combination with a locomotive-bridge substantially such as shown and described, a series of self-adjusting vertical spindles armed with tools or implements at their lower ends to operate in or upon the soil or crops over which the bridge passes.

292,512. CENTRIFUGAL GOVERNOR. JOHANNES SELWIG, Brunswick, Germany. Filed June 29, 1882. (No model.) Patented in Belgium May 12, 1882, No. 57,888, and in France May 12, 1882, No. 148,913.



292,512.



Claim.—1. An astatic centrifugal governor consisting of two or more oscillatory pendulums revolving with the regulator-shaft, said pendulums consisting of a pair of balls mounted in different horizontal planes on an oscillatory axis, having suitable connections with the said regulator-shaft, whereby said shaft will be operated upon by the oscillation of the pendulums, substantially as set forth.

2. In an astatic centrifugal governor, a pendulum consisting of a pair of balls mounted in different horizontal planes on an oscillatory axis, whereby their centrifugal force will cause said axis to oscillate, substantially as and for the purposes set forth.

3. The combination, with the regulator-shaft 1 and the sleeve 2, carrying brackets 2^a, of the pendulums mounted upon axes secured in adjustable bearings in the said brackets, and having bearings in the said regulator-shaft, substantially as described.

4. The combination, with the regulator-shaft 1, having a cap, 6, provided with bearings 6^a, and the sleeve 2, carrying supporting-brackets 2^a, of the pendulum 5, secured laterally upon hollow semi-cylindrical castings 4, said semi-cylindrical castings having shafts 3, journaled in suitable bearings in semi-cylindrical bracket-arms and loose connection with the cap 6, substantially as and for the purpose set forth.

5. In a centrifugal governor, the combination of an oscillatory pendulum mounted on suitable axis, substantially as herein described, and a supporting-bracket having adjustable bearings for said axis, as set forth.

6. In an astatic centrifugal governor, the combination, with an oscillatory pendulum substantially as herein described, of a lug or stop to arrest its oscillation, as and for the purpose set forth.

292,513. LOCK-NUT. N. EMORY SHAILER, Pullman, Ill. Filed June 27, 1883. (Model.)



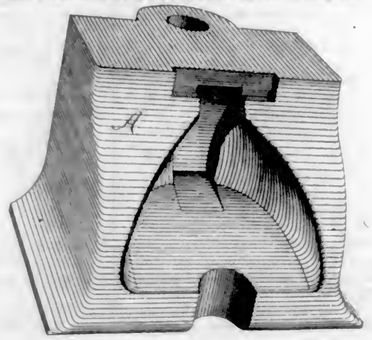
Claim.—1. The combination of the cup, the spring, and the follower having one or more recesses on its under side.

2. The combination of the cup, the spring, and the follower having a ratchet on the upper side, the ratchet-teeth having an equal angle, or such angle as will permit the nut to be screwed closely and unscrewed by the use of an ordinary wrench.

3. The combination, with a bolt, of the cup, the spring, and the follower having on its upper side serrations or teeth of equal angle on each side, combined with a nut having on its under side serrations or teeth of equal angle on each side, or of such angle as to permit the nut to be screwed and unscrewed with the use of an ordinary wrench, the serrations or teeth of each follower or nut in use reciprocally closely fitting together.

4. The combination, with a bolt, of the cup, the spring, and the follower having corrugations on its upper side, with a nut having corrugations on its under side, or each such side having some reciprocal depression or elevation of such character as will permit the operation of the same by the use of an ordinary wrench.

292,514. MOLDING STIFFENERS FOR BOOTS OR SHOES. NATHAN J. SIMONDS, Woburn, Mass. Filed Feb. 2, 1883. (No model.)



Claim.—1. The herein-described method of molding stiffeners, the same consisting in first subjecting them to pressure in molds adapted to act upon and compress the forward portion thereof, and then repeating such molding in dies adapted to mold the rear portion, and to set the stiffener in form with converging front ends, substantially as specified.

2. The combination of molds A and B, adapted to mold the forward portion of the stiffener, and provided with means for holding the stiffener in position, and the molds F G, adapted to mold the rear portion of such partially-molded stiffener, and to set the same with converging ends when held upon said male mold G, substantially as specified.

3. The combination of molds A and B, adapted to mold the forward portion of a stiffener, and means connected with mold B for holding the stiffener in position thereon, and mold A formed with a rear recess to receive such holding devices of mold B, substantially as specified.

4. In combination with mold B, the pivotal lever *h*, its stiffener-holding spring *i*, compression-screws *j j*, dislodging-pin *m*, with elastic buffers between the said screws and said lever-dislodging pin, and means for automatically actuating said pin and lever, substantially as specified.

5. The combination of molds F and G, adapted to mold and set the rear portion of the stiffener, and means connected with mold G for holding the stiffener in position thereon, mold F being formed with side recesses to receive such holding devices of mold G, substantially as specified.

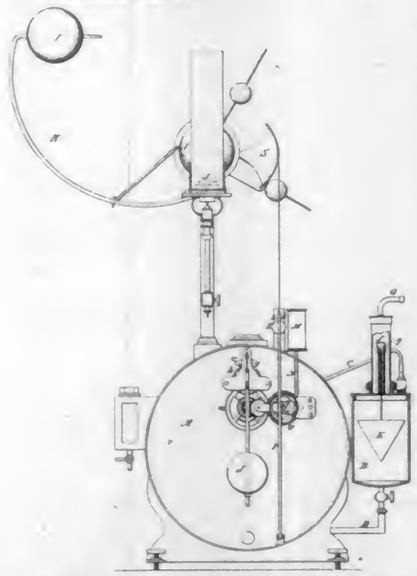
6. In combination with mold G, the vibrating gripping-jaws *b*, with springs to enforce their contact with the stiffener, opening-pins *h'*, sliding pin *g'*, formed with inclines, to actuate pins *h'*, and means to automatically actuate said inclined pins *g'*, substantially as specified.

7. In combination with mold A and its supporting-pin *a*, the screw-nut *c*, threaded in head *b*, and interlocked with said pin by spline *d*, for raising and lowering said nut, substantially as specified.

8. A male and female mold shaped and adapted to mold the forward part of a heel-stiffener, and cut away or recessed at the rear part to form a break in the contour of the mold, whereby when said molds are brought together a space will exist between the male and female mold at the rear portion thereof, substantially as specified.

9. A male and female mold shaped and adapted to mold the rear part of a heel-stiffener, and cut away or recessed at the front part to form a break in the contour of the mold, whereby when said molds are brought together a space will exist between the male and female mold at the front portion thereof, substantially as specified.

292,515. PHOTOMETER. THOMAS O'CONOR SLOANE, Brooklyn, N. Y. Filed Jan. 31, 1881. (No model.)



Claim.—1. In an apparatus for determining the illuminating-power of gas, a differential thermometer constructed as described, and balanced and arranged in combination with a gas-meter, substantially as shown and described.

2. In an apparatus for determining the illuminating-power of gas, a differential thermometer contracted as described, and balanced and arranged so as to indicate changes in the relative quantity of radiant heat developed by a flame of gas, and transmit such changes to a recording mechanism, substantially as shown and described.

3. In an apparatus for determining the illuminating-power of gas, a differential thermometer balanced and arranged as described, in combination with an Argand burner, as and for the purposes shown and described.

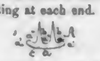
4. In an apparatus for determining the illuminating-power of gas, a differential thermometer balanced and arranged to indicate the changes in the heat of the flame, and operated in combination with an Argand burner receiving gas from a meter provided with a governor which regulates the pressure and maintains an even flow of gas, substantially as shown and described.

5. In an apparatus for determining the illuminating-power of gas, the combination of a differential thermometer, balanced and arranged as shown, with the sliding nut *k*, carrying a needle arranged to receive the stroke of the spring-rod P, actuated by the cam O, all working together substantially as and for the purposes shown and described.

6. In combination with an Argand burner and a differential thermometer arranged in the manner shown, and a gas-meter provided with a regulating-escapement and pendulum, an auxiliary chamber connected with the water-space in a wet-meter by a pipe, D, at a point below the water-line, and also with the inlet of the meter by pipe C, or to the inlet and outlet of a dry-meter by tubes corresponding to C and D, such chamber containing a float adapted to open and close the inlet by its rise and fall, substantially as shown and described.

292,516. STAPLE OR FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Nov. 21, 1883. (No model.)

Brief.—The fastener is stamped out of sheet metal, with a curved shoulder projecting at each end.



Claim.—1. An improved sheet-metal staple or fastener consisting, essentially, of a base and two or more prongs integral therewith, and projecting from the base in substantially the same direction from the edge and in the plane of the said base, both of the said prongs being adapted to enter the material while they are in the plane of the said base, and to be subsequently bent or clinched, the metal composing said staple or fastener being of the strength and condition in which it existed in the sheet from which it was cut, and being without bends, all substantially as and for the purpose set forth.

2. The herein-described improved metallic staple or fastener, consisting of the base *a*, with two prongs, *b*, integral therewith, projecting from one edge thereof at points between the center and ends of the said base, to thereby provide the shoulders *a'* and afford three bearing-surfaces, a^2, the metal composing said staple or fastener being of the same strength and condition in which it existed in the sheet from which it was cut, all as shown, and for the purpose set forth.

292,517. COMBINED COLLAR-STUD AND CRAVAT-HOLDER. E SMITH STRAIT, Troy, N. Y. Filed June 30, 1883. (No model.)



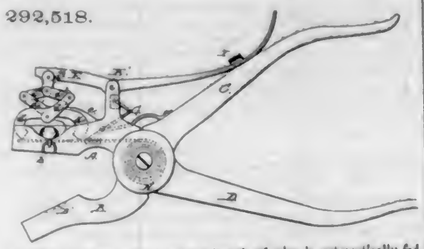
Claim.—In a collar-stud, the combination, with the shoe, shank, and a hinged head formed or provided with a perforation, of a spur or prong attached to the shank and adapted to enter the perforation in the head, substantially as and for the purpose set forth.

292,518. INSTRUMENT FOR ATTACHING BUTTONS TO FABRICS, &c. PARKER H. SWEET, Jr., Washington, D. C. Filed Feb. 2, 1883. (No model.)

Claim.—1. As an improved article of manufacture, the herein-described setting-instrument for attaching buttons to fabrics, consisting of the jaws A B, adapted to be operated by the handles C D, and the upper jaw, A, of which is provided with a receptacle for receiving the button, a mechanism for feeding a length of wire through the shank of each button, and a mechanism for cutting off the length of wire and forming a fastener or connection therefrom, and the lower jaw, B, of the instrument being provided with a suitable die for bending or deflecting the prongs of said fastener into or upon the lower surface of the fabric, after passing through the same, all substantially as and for the purpose specified.

2. In a setting-instrument for attaching buttons to fabrics, the upper jaw, A, provided with the central recess, *a*, anvil *b*, curved openings *c*, feed mechanism G, and cutting and forming dies *d*, having arms *d' d'* and d^2 d^2, adapted to be operated by the lever E, pivoted to the arm F,

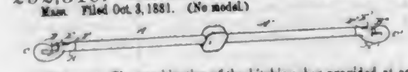
292,518.



of said upper jaw, and whereby a length of wire is automatically fed through the shank of the button, cut off, and formed into a fastener or connection during the operation of opening and closing the jaws of said setting-instrument, substantially as and for the purpose specified.

3. In a setting-instrument for attaching buttons to fabrics, the upper jaw, A, formed as described, and provided with mechanism whereby a length of wire is automatically fed through the shank of a button, cut off, and formed into a fastener or connection during the operation of opening and closing the jaws of said instrument, substantially as and for the purpose specified.

292,519. HORSE-HITCHING BAR. FREDERICK TAYLOR, Lowell, Mass. Filed Oct. 3, 1881. (No model.)

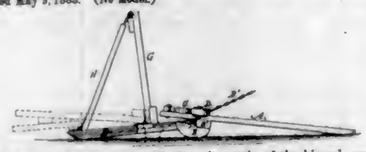


Claim.—1. The combination of the hitching-bar provided at each end with a snap-hook, and means, substantially as described, for simultaneously locking both of said snap-hooks by a single operation, as and for the purpose specified.

2. The combination, in a hitching-bar provided at each end with a hook, of two oppositely-sliding bolts and a locking mechanism adapted to be simultaneously engaged with or disengaged from both of said bolts, as and for the purpose specified.

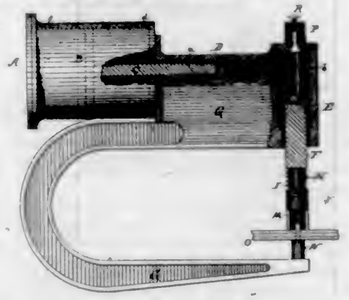
3. The combination of the hitching-bar, provided with sliding bolts, with the bolts and springs of a lock, as and for the purpose specified.

292,520. HORSE HAY-RAKE. SOLOMON F. WEAVER, Portis, Kans. Filed May 9, 1883. (No model.)



Claim.—The combination, with the rake-teeth, of the hinged rear runners, the folding or hinged frame G, and the braces H H, all arranged for operation together substantially as and for the purposes set forth.

292,521. HYDRAULIC RIVETING-MACHINE. WM. R. WEBSTER, Athens, Pa. Filed Aug. 29, 1883. (No model.)



Claim.—1. The herein-described direct-acting riveting-machine, consisting of the cylinders A, D, and E, plungers C and F, and snap H, all arranged and operating substantially as and for the purposes set forth.

2. The herein-described device for holding the work firmly while being riveted, consisting of the spring I and sleeve M, substantially as set forth.

292,522. RATCHET-DRILL. PARDON A. WHITNEY, Cleveland, Ohio. Filed Jan. 29, 1883. (No model.)



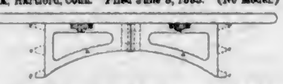
Claim.—1. The combination of the double screw-spindle J, having the intermediate head, J^4, with the threaded sleeve K and the head B, provided with a threaded socket for the lower end of the screw-spindle, all substantially as described.

2. Jointly with the head B, having the threaded socket, the interchangeable parts, screw M and double screw-spindle J, all substantially as described, and for the purpose set forth.

3. The combination of the revolving head B, provided with the wheel C, the handle *A*, socketed for the reception of said head and wheel, the ring D, and the pin E, substantially as described.

4. The combination of the handle A, provided with sockets for the ratchet C and pawl F, the head B, provided with the ratchet C, the pawl F, provided with a cylindrical bearing, and the ring and pin D E, by which the parts are secured in place, substantially as described.

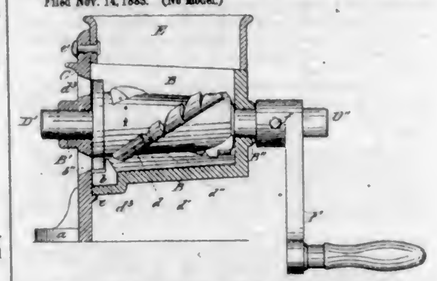
292,523. BRACKET, SHELF, OR PICTURE SUPPORT. JAMES E. WEEKAM, Hartford, Conn. Filed June 8, 1883. (No model.)



Claim.—1. The within-described corner-shelf and picture-frame support, consisting of the two sections *a a*, the teeth *e* on the ends of the latter, and the hinge *b*, combined and operating substantially as set forth.

2. The combination, with a corner-shelf, of the sections *a a*, hinged together and provided with teeth on their ends and with the projections *c a*, substantially as set forth.

292,524. GRINDING-MILL. FRANK WILSON, Easton, Pa., assignor of two-thirds to John L. Wilson and James E. Wilson, both of same place. Filed Nov. 14, 1883. (No model.)



Claim.—1. The combination, with the shells of a grinding-mill, of a central crushing-tooth placed in the lower portion of the shell and projecting upwardly to a considerable distance above the plane of the upper extremities of the serrations upon the contiguous inner surface of the lower portion of the shell.

2. The combination, with the shell of a grinding-mill, the inner surface of which is provided with a series of serrations, of a central crushing-tooth located at the bottom of the discharging end of the shell and projecting upwardly above the general surface of the interior bottom portion of the same.

3. The combination, with the shell of a grinding-mill, of a crushing-tooth which is centrally located in the bottom of the shell, at one end thereof, and a revoluble cone which is provided with crushing arms or teeth which are adapted to move unground material against the centrally-located crushing-tooth.

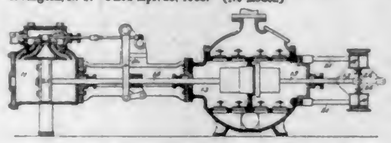
4. The combination of a grinding-shell which has interior serrations, and an upwardly-projecting tooth, with a revoluble cone which has spiral grinding-ridges and end crushing arms or teeth.

5. The combination, in a grinding-mill, of a shell the interior surface of which is provided with a series of serrations and an end crushing-tooth, and the larger end of which is provided with a disk which has a series of discharge-openings, with a revoluble grinding-cone, which has upon its sides spiral ridges and upon its larger end crushing arms or teeth, substantially as described.

6. The combination, with the shaft or journal of a grinding-mill, of a detachable disk, such disk being provided with cutting-surfaces and with outwardly-enlarging orifices, through which the ground material is ejected when the mill is in operation.

7. The combination, in a grinding-mill, of a shell the interior surface of which has a series of serrations, a revolable cone which has spirally-arranged ridges and end crushing arms or teeth, and a disk which has outwardly-enlarging discharge-orifices.

292,525. DUPLEX PUMPING-ENGINE. CHARLES C. WORTHINGTON, Irvington, N. Y. Filed Apr. 28, 1883. (No model.)



Claim.—1. The combination, with a duplex pumping-engine provided with means whereby the inlet and exhaust valve or valves of one side thereof is or are operated by the other side, of means, substantially as described, whereby power is stored up at one and utilized at another period of the stroke of each side of said engine without preventing the variable pause at the end of each stroke peculiar to this engine.

2. The combination, with the main cylinders and pistons forming the two sides of a duplex pumping-engine, provided with means whereby the inlet and exhaust valve or valves of one side thereof is or are operated by the other side, of a compensating cylinder or cylinders at each side of said engine, each provided with a piston and rod and supplied with a suitable motor-fluid, and acting in opposition to the main cylinder and pistons to which they are connected during the first part of the stroke of said main pistons and in conjunction therewith during the last part of their stroke, substantially as described.

3. The combination, with the main cylinders and pistons forming the two sides of a duplex pumping-engine, provided with means whereby the inlet and exhaust valve or valves of one side thereof is or are operated by the other side, of a compensating cylinder or cylinders at each side of said engine, each provided with a piston and rod and supplied with a suitable motor-fluid, and acting in opposition to the main cylinders and pistons to which they are connected during the first part of the stroke of said main pistons and in conjunction therewith during the last part of their stroke, and a cut-off mechanism, substantially as described.

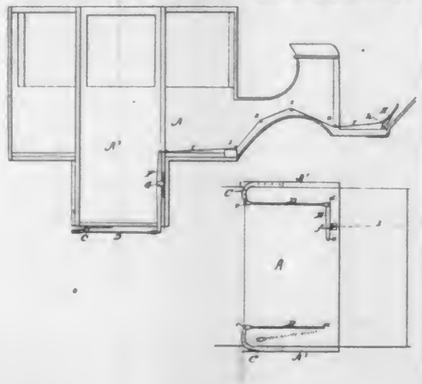
4. The combination, with a main cylinder and piston, of one or more compensating cylinders and pistons and means for regulating the pressure of the fluid admitted to said compensating cylinder or cylinders, substantially as described.

5. The combination, with a main cylinder and piston, of one or more compensating cylinders and pistons, a tank, as 4, means for regulating the pressure of the fluid in said tank, and connections, substantially as described.

6. The combination, with a cylinder, as 18, provided with a piston, and means for maintaining a constant pressure upon one side of said piston, of means for permitting the ingress and egress of a fluid from the opposite side of said piston in such manner as to cushion said piston when it exceeds its normal speed, substantially as described.

292,526. DEVICE FOR CLOSING CARRIAGE-DOORS. HARVEY W. YONLEY, Denver, Colo. Filed Sept. 3, 1883. (No model.)

Brief.—Carriage-doors have arms attached thereto. At the ends of the arms are pivoted bars which are coupled to a lever pivoted to the bottom of the carriage-body. To said lever is coupled another lever, which is pivoted to said body, and to which is attached a cord which passes forward, resting on rollers, and is attached to a foot-lever at the driver's seat.

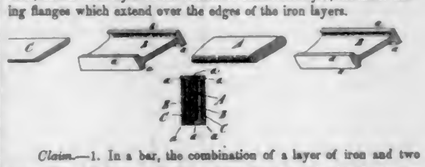


Claim.—1. In devices for closing carriage-doors, the combination, with the carriage-doors A', having the arm C attached thereto, of the bar D, lever E, the lever F, hinged to the carriage-body, and the cord I, extending from the lever F to and attaching with the foot-lever H, substantially as set forth and described.

2. The herein-before-described device for closing carriage-doors, consisting of the arm C, the bar D, the levers E and F, the cord I, the rollers 1, 2, 3, and 4, and foot-lever H, all arranged as described, and for the purpose specified.

292,527. JAIL-BAR. LEVI D. YORK, Portsmouth, Ohio. Filed Apr. 18, 1883. (No model.)

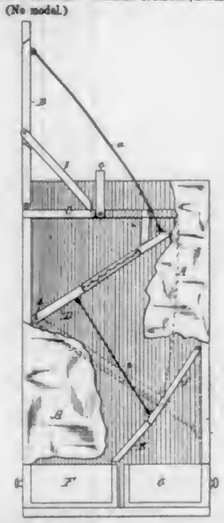
Brief.—Consists of a layer of iron inclosed between two layers of steel, and an iron layer on the outside of each steel layer, the latter having flanges which extend over the edges of the iron layers.



Claim.—1. In a bar, the combination of a layer of iron and two layers of steel fitting outside the said iron layer, and having flanges extending over the edges of the iron layer, substantially as specified.

2. In a bar, the combination of a layer of iron, two layers of steel fitting against the said iron layer, and two iron layers fitting against the outer sides of the steel layers, the said steel layers having flanges which extend over the edges of the said iron layers, substantially as specified.

292,528. ASH-SIFTER. WILLIAM T. ADAMS, Baltimore, Md. Filed June 1, 1883. (No model.)



Claim.—1. A box having a lid hinged to one edge of its top and a brace to hold said lid up, in combination with a sieve hinged at one edge within the box, a rod connecting the free edge of the sieve with the free edge of the box-lid, and two drawers in the lower portion of the box, one drawer beneath the sieve to receive ashes falling through it, and the other drawer in position to receive coal sliding from the sieve, as and for the purpose specified.

2. A box having a stationary top, a hole therein, and a lid covering the hole, in combination with a lid hinged at one edge of the box to close upon the said box-top, a brace to hold said lid raised, a sieve within the box, hinged at one edge thereto, a rod connecting the free edge of the sieve with the free edge of the lid, to hold the front edge of the sieve raised when the lid is raised, and to lower the sieve by lowering the lid, a drawer in the bottom of the box, beneath the sieve, to receive ashes falling through it, and another drawer in the bottom of the box to receive the coal sliding from the edge of the sieve when the same is lowered, as specified.

3. A box provided with a hinged lid, a sieve hinged at one edge within the box, and a rod connecting the free edge of the sieve with the free edge of the lid, in combination with a slanting shelf or spout beneath

the sieve, a portion of the bottom of said spout hinged at its upper edge, and a rod connecting the free edge of said hinged portion of the spout with the sieve, whereby raising the lid will raise the sieve and the hinged portion of the spout in position to receive coal and ashes upon the sieve, and to turn in one direction the ashes falling through, and lowering or closing the lid will lower the sieve and the hinged portion of the spout and discharge the coal from the sieve in a place separated from the ashes, as specified.

292,529. ELECTRICAL TRACTION-MOTOR. WILLIAM E. AYRTON and JOHN PERRY, London, England. Filed Apr. 18, 1883. (No model.) Patented in England July 17, 1882, No. 3,380.

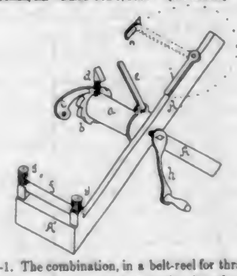
Brief.—The pull of the load is made to tighten the grip of the traction-wheels by means of toggle and scissor levers.



Claim.—1. In an electrical traction-motor, the combination of a known rotary electrical motor and suitable gearing and gripping traction wheels with levers or links and a hauling bar or bars, so that the traction-grip is proportional to the hauling-load, substantially as herein described.

2. In an electrical traction-motor, the combination of a known rotary electrical motor, suitable gearing and gripping wheels, and a pair of inclined spring-pressed tail-levers automatically gripping fast the rail, rod, or rope when the travel of the motor is forcibly reversed, substantially as herein described.

292,530. BELT-REEL FOR THRASHING-MACHINES. LEANDER P. BARNES, Orsana, Ill. Filed Oct. 8, 1883. (No model.)



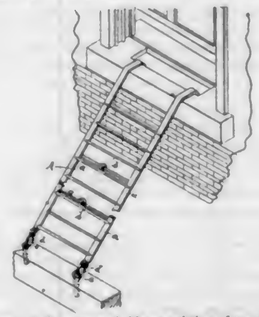
Claim.—1. The combination, in a belt-reel for thrashing-machines, of frame A, drum *a*, clamp *e*, catch *d*, ratchet *b*, and pawl *c*, as and for the purpose set forth.

2. The combination of frame A, reel *a*, clamp *e*, and rollers *f* and *g g*, as and for the purpose set forth.

3. The combination with frame A, reel *a*, clamp *e*, and ratchet and pawl *b c*, of lock-bar *i*, as and for the purposes set forth.

292,531. FIRE-ESCAPE LADDER. ANDREW J. BARTLETT, Elk Flat, Oreg. Filed Oct. 2, 1883. (No model.)

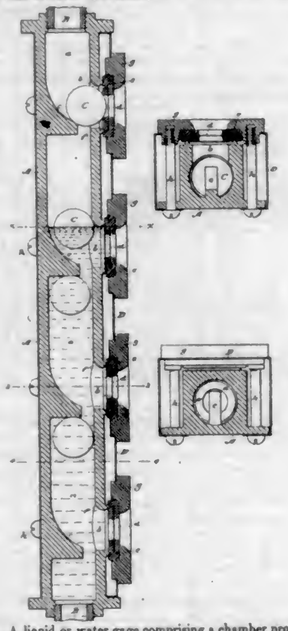
Brief.—A ladder made of flat metallic side pieces and double wire rungs, and having hooks at its lower end for fastening it to the street-curbing.



Claim.—1. A fire-escape ladder consisting of two flat leather or metallic side pieces, *a a*, attached to and rolled around the shaft or roller *f*, which is secured in a receptacle opening through the window-sill, said side pieces being connected by a series of double wire rungs, and the lower end of each side piece having attached a snap-hook arranged to fasten in a ring secured to the curbing of the street, all as described.

2. The combination of the shaft or roller *f*, secured in a receptacle opening through the window-sill, said shaft being provided with a removable crank, with the side pieces, *a a*, the double wire rungs or steps *b*, the snap-hooks *d*, and the attaching-rings *e*, the latter secured in the street-curbing, all substantially as described.

292,532. LIQUID OR WATER GAGE. EUGENE BIDDS, Paterson, N. J. Filed June 16, 1883. (No model.)



Claim.—1. A liquid or water gage comprising a chamber provided with sight-holes in its face covered with some transparent material, floats arranged in said chamber, one for each sight-hole, and means, substantially as described, for confining these floats each to its proper section of said chamber, substantially as set forth.

2. A liquid or water gage comprising a chamber, A, provided with a bore, *a*, sight-holes *b*, and deflectors *c*, the transparent plates or disks *d*, arranged over said sight-holes, and floats C, all constructed and arranged to operate substantially as set forth.

3. The combination, in a liquid-gage, of the chamber A, provided with sight-holes, deflectors, and sharp-edged seats *f*, the floats, the transparent plates *d* and their soft-metal frames, the annular frames *g*, and the securing-screws, all constructed and arranged substantially as described.

4. The chamber A of the gage, provided with deflectors *c*, having curved or inclined upper faces to deflect or guide the float up to the transparent plate over the sight-hole, substantially as set forth.

5. The chamber A of the gage, provided with means, substantially as described and shown, for confining the floats each to its proper section of said chamber, and for guiding each float, when acted on by gravity, up to the transparent plate which covers the sight-hole, substantially as set forth.

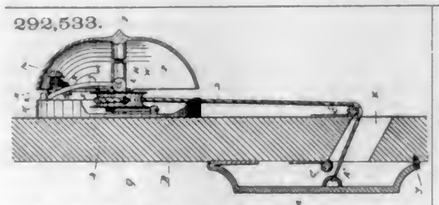
6. A liquid-gage provided with a sight-hole covered with a transparent material, a spherical float, and a frame or margin around said sight-hole, constructed as a valve-seat, to receive the float in case the transparent plate is accidentally broken, substantially as set forth.

292,533. LETTER-BOX. JOSEPH B. BROOKS, Oswego, N. Y. Filed May 17, 1883. (No model.)

Claim.—1. In combination with a door, B, having slot E, the hinged plate A, having eye A', cord D, and friction-pulleys C C', and wheel W, adapted to operate the striking devices, as shown and described.

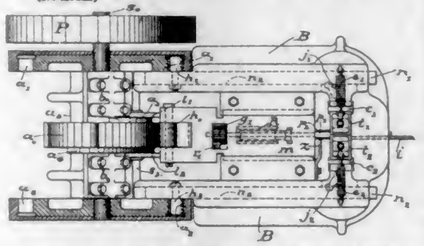
2. In a letter-box, the door B, having slot E, the hinged plate A, having eye A', the cord D, attached at one end to eye A' and at the other to wheel W, having pin *w*, adapted to engage with pivoted arm S and operate the hammer G, the whole in combination, as described, and for the purposes set forth.

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3. In a letter-box, the door B, having slot E, provided with friction-rollers C C', hinged door-plate A, having eye A', in combination with cord D, wheel W, pin *w*, spring Q, and stud P, as described, and for the purposes set forth.

292,534. BOLT-HEADING MACHINE. JOHN BRUDERER, New York, N. Y., assignor to George W. Fowkes, Harrisburg, Pa. Filed Apr. 25, 1883. (No model.)



Claim.—1. The combination, substantially as shown and described, of the mechanism for forming, with a single stroke, a conical-shaped head and enlarged round shank for bolts, and the mechanism for changing the planes of elevation of said matrices, to enable them to act successfully in upsetting and squaring the enlarged round shank, the whole combined with the mechanism for giving a quarter-turn to the plunger carrying the bolts preparatory to the second squaring thereof.

2. In a bolt-heading machine, the combination, substantially as shown and described, of the shaft a_5, cams a_6, a_7, and a_8, cushion-roller h_5, slide m, plunger p_1 p_2, gear-wheel g_2, rack-bars r, r_2, levers l, l_5, roller l_6, pulley R, and weight W.

3. In a bolt-heading machine, shaft a_5, cams a_6, a_7, rollers h, h_5, slide-bars n, n_2, toggle-joints j_1 j_2, intermediate pieces, c_1 c_2, springs c, c_3, and supports B B.

4. The combination, substantially as shown and described, of shaft a_5, pulley P, cams a_6 a_7, rollers h, h_5, slide-bars n, n_2, toggle-joints j, j_2, intermediate pieces, c_1 c_2, springs c, c_3, cams a_6 a_7 a_8, roller h_5, slide m, plungers p_1 p_2, gear-wheel g_2, shaft a_5, levers l, l_5, and bed-plate B of a bolt-heading machine.

5. The combination, substantially as shown and described, of pulley P, shaft a_5, cams a_6 a_7, rollers h, h_5, slide-bars n, n_2, toggle-joints i, i_2, matrices or dies d, d_2, springs c, c_3, cam-shafts s_1, and bed-plate B of a bolt-heading machine.

6. The combination, substantially as shown and described, of the pulley P, shaft a_5, bearings b, b_5, cams a, a_2, rollers h, h_5, slide-bars n, n_2, toggle-joints j, j_2, push-pieces c_1 c_2, springs c, c_3, matrices or dies d, d_2, tongue t, t_2, cam-shaft s_1, gear-wheel g_2, rack-bars r, r_2, gear-wheel g_2, levers l, l_5, shafts a, roller l_6, cams a_6 a_7 a_8, roller h_5, slide m, plunger p_1 p_2, stop s, pulley R, weight W, and bed-plate B, all forming a complete machine.

292,535. SEWER-PIPE MACHINE. JOHN ROLAND BURDICK and WILLIAM H. DAVIS, Minneapolis, Minn. Filed Feb. 21, 1883. (No model.)

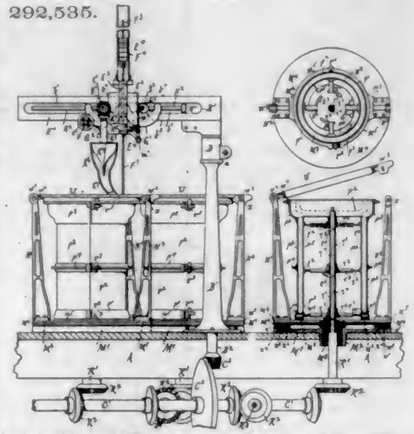
Claim.—1. The combination of a rotary mold adapted to receive plastic material for forming pipe, means for rotating the mold on its axis, and a tamping-bar having a rising and falling movement and radial and circular adjustments, substantially as and for the purpose herein specified.

2. The combination of a rotary mold for receiving plastic pipe-forming material, means for rotating the mold on its axis, means for automatically feeding the plastic material into the mold, and a tamping-bar having a rising and falling movement and radial and circular adjustments, substantially as and for the purpose specified.

3. The combination of a rotary mold for receiving plastic pipe-forming material, means for rotating the mold on its axis, a rising and falling tamping-bar, and revolving segmental cams G' G², adapted to alternately lift the tamping-bar and to let it drop upon the pipe-forming material in the mold, substantially as specified.

4. The combination of a rotary mold for receiving plastic pipe-forming material, means for rotating the mold on its axis, a tamping-bar

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having a rising and falling movement, a feeding spout or case, K³, adjustable in position over the mold, a screw-feeder, K⁴, and means for rotating the said feeder, substantially as herein specified.

5. The combination of two or more rotary molds adapted to receive plastic pipe-forming material, means for rotating each mold, a standard equidistant from the several molds, a frame revolving on the standard and carrying the tamping-bar, and a rising and falling tamping-bar having an adjustment upon the carrying-frame toward and from the supporting-standard, for the purpose specified.

6. The combination, with two or more molds adapted to receive plastic pipe-forming material, means for revolving said molds, an upright standard, B', equidistant from all of said molds, a horizontal frame, E', adapted to revolve upon said standard as a center, a plate, E², adapted to slide upon said horizontal frame, segmental cams G' G², means for revolving said cams, and a tamping-bar, F', held loosely upon said plate E², and adapted to be raised upward by said cams and allowed to fall of its own weight, substantially as described.

7. The combination, with two or more molds adapted to receive plastic pipe-forming material, means for revolving said molds, an upright standard, B', equidistant from all of said molds, a horizontal frame, E', adapted to revolve upon said standard as a center, a plate, E², adapted to slide upon said horizontal frame, segmental cams G' G², means for revolving said cams, a tamping-bar, F', held loosely upon said plate E², and adapted to be raised upward by said cams and allowed to fall of its own weight, and a brake adapted to be applied to said tamping-bar at the end of its upward stroke, substantially as and for the purpose set forth.

8. The combination, with two or more molds adapted to receive plastic pipe-forming material, means for revolving said molds, an upright standard, B', equidistant from all of said molds, a horizontal frame, E', adapted to revolve upon said standard as a center, a plate, E², adapted to slide upon said horizontal frame, segmental cams G' G², means for revolving said cams, and a tamping-bar, F', held loosely upon said plate E², and adapted to be raised upward by said cams and allowed to fall of its own weight, and a screw-feeder, K⁴, substantially as and for the purpose set forth.

9. The combination, with two or more molds adapted to receive plastic pipe-forming material, means for revolving said molds, an upright standard, B', equidistant from all of said molds, a horizontal frame, E', adapted to revolve upon said standard as a center, a plate, E², adapted to slide upon said horizontal frame, segmental cams G' G², means for revolving said cams, and a tamping-bar, F', held loosely upon said plate E², and adapted to be raised upward by said cams and allowed to fall of its own weight, a guide-tube, E⁴, and weights F⁴, substantially as and for the purpose specified.

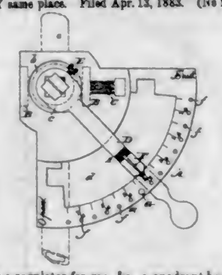
10. The combination, with the mold adapted to receive plastic pipe-forming material, of a central sheet-metal core, I², adapted to be expanded or contracted, fixed tube T', having slots t^5, stationary disks T², provided with grooves t', and disks T³, having cam-slots t^3, and spurs t^4, substantially as set forth.

11. The combination of the stationary base-plate M', provided with a lubricating-channel at its outer edge and a sleeve, M², at its center, a revolving plate, M⁴, having a hub, M³, fitting into said sleeve, a mold adapted to receive plastic pipe-forming material, standards N' N², and ring U, substantially as specified.

12. The combination of a mold adapted to receive plastic pipe-forming material, a tamping-bar, F', and removable shoe F², substantially as and for the purpose set forth.

13. The combination of a revolving mold for forming oval and irregular shaped pipe, a rising and falling tamping-bar, and means, substantially as described, for giving the mold a rotary movement accurately beneath the tamping-bar in every part of the revolution, for the purpose specified.

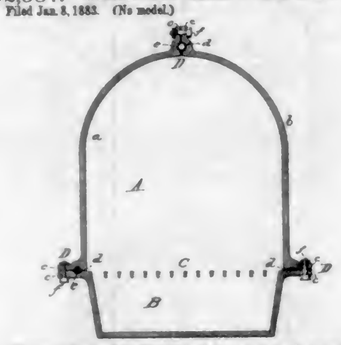
292,536. REGULATOR FOR GAS AND WATER. ABRAHAM E. COHN, Philadelphia, Pa., assignor of one-third to Levi Simon and Edwin S. Simon, both of same place. Filed Apr. 12, 1883. (No model.)



Claim.—1. In a regulator for gas, &c., a quadrant having a circular row of openings and the key or lever operating the plug of the cock, in combination with a removable pin, G, substantially as and for the purpose set forth.

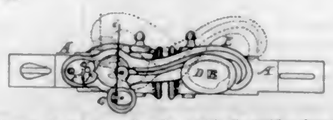
2. A regulator for gas, &c., consisting of a quadrant with a graduated rim and attaching-lugs, a securing-screw, a lever or key, an index, and a removable pin, said lever having its handle end and the connected index on opposite sides of the rim of the quadrant, and said rim having a circular row of openings for said pin, substantially as and for the purpose set forth.

292,537. FURNACE-JOINT. EZEKIEL C. CONDIT, Kansas City, Mo. Filed Jan. 8, 1883. (No model.)



Claim.—In combination with the parts *c*, each formed with a groove, *e*, a rod, *d*, of impressible material of a thickness greater than the joint depth of said grooves, and seated therein, and the bolts *f*, arranged as shown, to draw the parts firmly against the interposed rod, said rod being formed of a material more expansible under heat than the bolts *f*.

292,538. CAR-COUPLING. JOHN COUP and DAVID MCCURDY, Cleveland, Ohio, and WILLIAM B. REES, New York, N. Y. Filed Oct. 1, 1883. (Model.)



Claim.—1. In a car-coupling, the combination, with a draw-head adapted to be coupled with the ordinary link and pin, of a rotating shaft provided with eccentrics C C', and a pallet, D, for operating a coupling-hook, substantially in the manner and for the purposes specified.

2. In a car-coupling having a draw-head adapted to be coupled with the ordinary link and pin, and provided with a rotating shaft having the eccentrics and pallet placed in the manner shown, of a coupling-hook arranged to be operated by said shaft and eccentrics, and to engage with a pallet on an opposite draw-head, substantially as and for the purpose specified.

3. In car-couplings, a coupling-hook having rear projection provided with crom-pin *e* and latch or pawl F, said pin engaging with inclined guide A inside of draw-head, for holding or retaining the hook in an elevated or depressed position, as and for the purpose specified.

4. The guide A in the side of the draw-head, for adapting same for operating in conjunction with coupling-hooks in making coupling in cars varying in height, as specified.

5. In car-couplings, the combination, with the rotating shaft, of a pear-shaped crank having pivoted wheel or ellipse carrying a vertical rod for operating the coupler from top of car, as described.

6. The combination, with the rotating shaft, of the ring *j*, having lips or socket for adapting the said shaft to manipulate a link in making a coupling with an ordinary link-and-pin coupling, or car not having car-coupler attached.

292,539. ELECTRIC CONDUCTOR. ALFRED A. COWLES, New York, N. Y., assignor to the Ansonia Brass and Copper Company, Ansonia, Conn. Filed Oct. 22, 1883. (No model.)



Claim.—1. The combination, in a cable, of two or more electric conductors, each having a wrapping of adhesive water-proof tape, and a braiding or winding outside the same, and a wrapping of adhesive water-proof tape around the covered conductors to bind them together, substantially as set forth.

2. The combination, with two or more electric conductors, each having a wrapping of adhesive water-proof tapes, of cords or strings laid at each side of the line of contact between the coverings of the conductors, and a wrapping or winding outside of and around the covered conductors and strings, substantially as set forth.

3. The combination, with two metallic wires, each having a fire and water proof insulating covering, of a wrapping of water-proof insulating material to bind the two conductors together, as set forth.

4. The combination, in a cable, of two conductors, insulating fire and water proof material for the same, an external covering of adhesive tape, a winding of threads around the same, and adhesive material to unite the parts, substantially as set forth.

5. The combination, in a cable, of two conductors, insulating material for the same, filling-cords, a covering of adhesive tape around the same, an exterior covering of thread and adhesive water-proof material applied to the covering, as set forth.

6. The combination of a conducting-wire, a wrapping of adhesive water-proof tape upon the same, and a winding or braiding upon such wrapping, whereby the wrapping is pressed into intimate contact with the wire, and the winding or braiding adheres to the adhesive wrapping, substantially as set forth.

7. The combination, in an electric conductor, of a winding or braiding of threads, a wrapping upon the same of adhesive water-proof tape, and a winding or braiding of threads outside the tape, substantially as set forth.

8. The combination, in an electric conductor, of a winding or wrapping of adhesive water-proof material, a winding or braiding of threads upon the same, and a second wrapping of adhesive water-proof strips or tapes, substantially as set forth.

9. The combination, in an electric conductor, of a winding or wrapping of adhesive water-proof material, a winding or braiding of threads upon the same, a wrapping of adhesive water-proof tape, and an exterior braiding or winding of threads, substantially as set forth.

292,540. PROCESS OF TINNING SHEET-COPPER. ALFRED A. COWLES, New York, N. Y., assignor to the Ansonia Brass and Copper Company, Ansonia, Conn. Filed Nov. 9, 1883. (No specimens.)

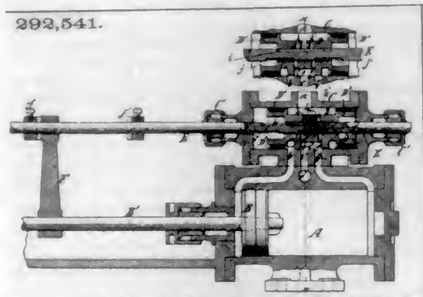
Brief.—Protects side not intended to be tinned with silicate of soda.

Claim.—The process herein specified of tinning sheet-copper, consisting in coating one surface of such copper sheet with a material that will not be materially injured by the action of the heat made use of, and which will exclude the air, pouring melted tin or other metal over the sheet, allowing the surplus to run off, and spreading the tin or coating metal and rendering the same uniform by a rubbing operation, and then removing the protecting-coating from the untinned side of the copper, substantially as specified.

292,541. STEAM-ACTUATED VALVE. WILLIAM CRAIG, Brooklyn, N. Y. Filed May 9, 1883. (No model.)

Claim.—1. The combination, with the auxiliary cylinder C, the aux-

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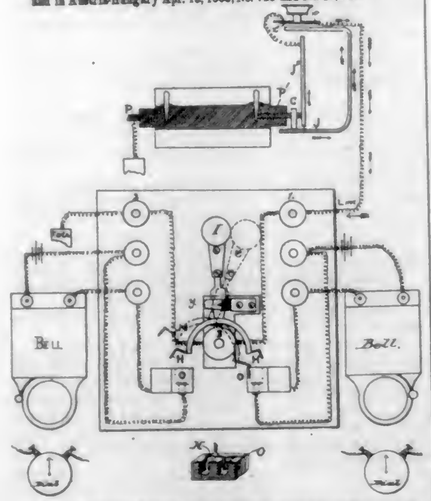


illiary pistons D' D², fitting the bore of said cylinder, and the main valve D, interposed between said pistons, said pistons and valve being constructed with a central bore or aperture, and with a port, *k*, or ports *k k'*, leading from the induction-space of the chest, and ports *l l'*, leading from the exhaust-cavity of the valve to said aperture or bore, of the auxiliary valve working through said main valve and pistons, and constructed with grooves which form ports, for establishing communication between the ends of the auxiliary cylinder and the said ports in the main valve, substantially as and for the purpose herein described.

2. The combination of the auxiliary cylinder C, the main valve and auxiliary pistons D D' D², constructed with a port, *k*, or ports *k k'*, and ports *l l'*, and the auxiliary valve E, constructed with the long port *i* and the two shorter ports *j j'*, all substantially as and for the purpose described, whereby communication is afforded between the ends of the auxiliary cylinder, the live-steam space, and the exhaust-cavity of the main valve through the said ports in the main valve and auxiliary pistons and the said ports in the auxiliary valve, and without the necessity of ports or passages through the auxiliary cylinder C.

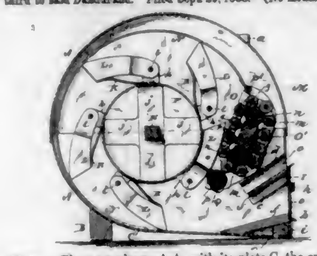
3. The combination, with an auxiliary cylinder and a main valve and auxiliary pistons working therein, of an auxiliary valve working through the main valve and said pistons, to control the admission of a motive agent to the ends of said auxiliary cylinder and its exhaust therefrom, the portions of the auxiliary valve which work through the ends of said cylinder being of smaller diameter than the portion within the cylinder, so as to form the shoulders *o o'*, substantially as and for the purpose described.

292,542. ELECTRIC SIGNALING APPARATUS. LOUIS JOHN CROMLEY and WALTER EMMOTT, Halifax, and JOHN FREDERIC HARRISON, Bradford, County of York, England. Filed Nov. 6, 1882. (No model.) Patented in England Apr. 27, 1882, No. 1,328; in France Sept. 16, 1882, No. 151,123; in Italy Sept. 30, 1882, XVI, 14,664, XXIX, 192; in Belgium Oct. 9, 1882, No. 59,224; in Victoria Nov. 29, 1882, No. 3,356; in New South Wales Jan. 19, 1883, No. 1,133; in Spain Apr. 11, 1883, No. 3,743, and in Austria-Hungary Apr. 13, 1883, No. 725 and No. 15,120.



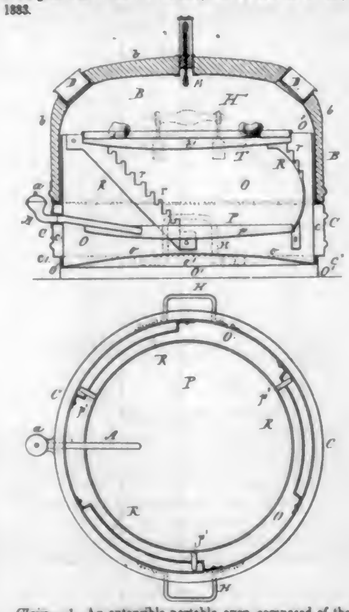
Claim.—The combination, in a telephonic-exchange system, with the axis or spindle of the revolving coil or coils of a magneto-electric call-bell apparatus, of one or more cams, pins, or the like, key K, and its springs J and J'', whereby, in addition to the ordinary call-signal, a distinct and separate signal may be transmitted to advise the exchange-operator that the wires are free, substantially as hereinbefore described.

292,543. QUARTZ-CRUSHING MACHINE. CYPRIEN DANDURAND and LOUIS M. LAFRANCE, Virginia City, Nev.; said Lafrance assignor of one-third to said Dandurand. Filed Sept. 29, 1883. (No model.)



Claim.—The outer drum, A A, with its plate C, the cylinder F, the rotary arms L L L, and the springs K K, in combination with the endless chains of rollers O O, the rollers *m m*, the rollers Q Q, and the frame M, as hereinbefore described, and for the purposes set forth.

292,544. PORTABLE OVEN. LÉON DAUBE, Paris, France. Filed Jan. 10, 1883. (No model.) Patented in France Jan. 31, 1882, No. 147,130; in Belgium Feb. 5, 1883; in Germany Jan. 5, 1883, and in Italy Jan. 5, 1883.



Claim.—1. An extensible portable oven composed of the body of the oven, a cover for the same, and one or more sections adapted to be interposed between the cover and body of the oven and form an air-tight structure, substantially as and for the purposes specified.

2. An extensible portable oven composed of the body of the oven, a cover therefor, and one or more sections adapted to be interposed between the body and cover and form an air-tight and non-radiating structure, substantially as described, for the purposes specified.

3. In a portable oven, the combination, with the body of the oven, provided with an exterior flange or seat for a cover, racks to support the material treated, and a cover, of one or more removable sections adapted to be interposed between said oven and its cover, said parts having their walls provided with a suitable non-conductor of heat, and constructed to form a practically air-tight structure, substantially as and for the purposes specified.

4. In a portable oven, the combination, with the oven proper, provided with racks R, of a pan for supporting the material treated, and a heat-deflecting plate, both adjustable vertically upon the racks of a cover, and one or more removable sections adapted to be interposed between said cover and the oven, substantially as and for the purposes specified.

5. In a portable oven, the combination, with the oven proper, a removable cover therefor, and the support for the material treated, of a heat-deflecting plate adjustable toward and from said support between it and the source of heat, substantially as and for the purposes specified.

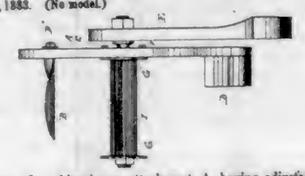
6. In a portable oven, the combination of a cover provided on its surface with a coating of a non-conducting material, with the oven O, provided with an exterior dead-air chamber constructed to form a seat for said cover, substantially as described.

7. In a portable oven, the oven-body O and the removable cover B thereof, said oven-body having an exterior dead-air chamber constituting the seat for said cover, in combination with a deflecting-plate, P, arranged within the oven, a steam-pipe to inject steam upon said plate, and a pan, T, said parts being arranged for co-operation, substantially as and for the purposes specified.

8. In a portable oven, the combination of the oven proper, O, having a dead-air chamber constructed to form the seat for the cover, a double-walled cover, B, filled with a non-conducting material, having peep-holes D, and a thermometer, E, and means, substantially such as described, for supporting a pan or pans, all arranged for co-operation substantially as described, for the purposes specified.

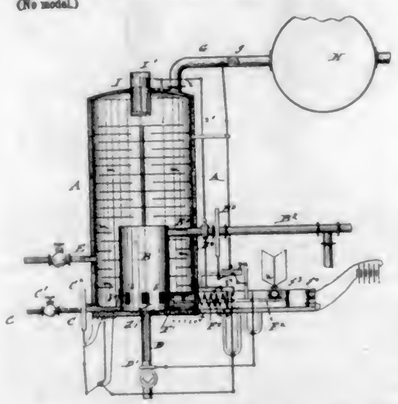
9. The combination, with the oven O B, provided with supporting-racks, of a pan and a heat-deflecting plate adjustable vertically within the oven, and having flanges projecting beyond their bottoms to form heat-collecting recesses, substantially as described, for the purposes set forth.

292,545. BICYCLE. WILLIAM H. DAVIS, Glens Falls, N. Y. Filed July 9, 1883. (No model.)



Claim.—In a bicycle, an attachment, A, having adjustable toplift B and balance-weight D, substantially as described, and for the purposes set forth.

292,546. METHOD OF AND APPARATUS FOR GENERATING STEAM. GEORGE DIECKMANN, New York, N. Y. Filed Apr. 12, 1883. (No model.)



Claim.—1. The method herein described of generating steam, which consists, first, in subjecting a body of water to the action of successive explosions of a suitable air and gas mixture, raising the temperature and transforming the water into steam by the heat generated by said explosions and their products of combustion, and conducting then the steam so generated, at intervals between the explosions, to a separate accumulating or storage vessel and from the same to the engine or other place of use, substantially as and for the purpose specified.

2. The combination of a generator, a valved explosion-chamber at the interior of said generator, means for supplying gas and air in proper quantities to said explosion-chamber, means to ignite said gas and air mixture, means to discharge the products of combustion from the explosion-chamber, means to regulate the pressure in the generator, a steam accumulating or storage vessel, and means by which the steam is conducted at intervals between the explosions to said accumulator, substantially as set forth.

3. The combination of a generator, A, having a water-supply pipe, E, a valved interior explosion-chamber, B, a valved gas-supply pipe, C, leading into the explosion-chamber, a valved air-pipe, D, also leading into the explosion-chamber, a valved eduction-pipe, B² B³, leading from the explosion-chamber to a feed-water heater or other apparatus, a pressure-regulating gravity-valve, I, a valved steam-conducting pipe, G, an accumulator, H, and devices whereby the valves of the different supply and eduction pipes are actuated to secure the proper working of the apparatus, substantially as set forth.

292,547. BILLIARD-TABLE ATTACHMENT. JAMES DOCKSTADER, Syracuse, N. Y. Filed Sept. 24, 1883. (Model.)



Claim.—1. In a billiard-table attachment, the combination of a bar adapted to cross the entrance of a pocket, a bolt seated below the top of the bar, and a hook adapted to embrace the bolt and the hoop of the pocket, substantially as specified.

2. In a billiard-table attachment, the combination of a bar, a bolt having wings, and a hook bent or arched to give space for the rotation of the wings, substantially as specified.

3. In a billiard-table attachment, a bar provided with flanges at its top and bottom for receiving a cushion or cushion-sections, the bar being formed in one piece, substantially as specified.

4. The bar A, consisting of the back *a*, bottom *a'*, ribs *a²*, top *a³*, and extensions *a⁴*, the whole formed in a single casting, substantially as specified.

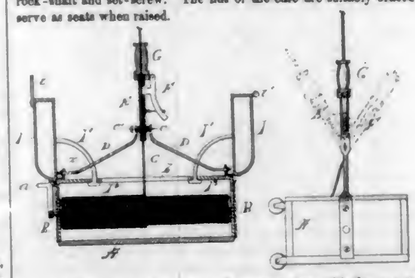
5. The combination of the bar A, formed in one piece, and slotted, as at *a²*, with the cushion-sections D and screws *d*, substantially as specified.

6. The combination of the bar A, bolt B, and the arched hook C, substantially as shown and described.

7. The combination of the bar A, having the ribs *a²*, the extensions *a⁴*, slotted, as described, the cushions F D, the bolt B, having wings *b*, the hook C, having the bend *c*, and the hoop E, substantially as shown and described.

292,548. FIRE-ESCAPE. HENRY E. DORER, Grand Rapids, Mich. Filed Apr. 27, 1883. (No model.)

Brief.—The friction-sleeve is provided with a pressure-clamp and a fastening-loop, and is adjustably connected to the arms by a collar or rock-shaft and set-screw. The lids of the case are suitably braced to serve as seats when raised.



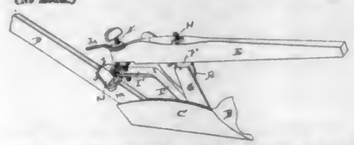
Claim.—1. In a fire-escape, the combination, with the receptacle and rope or cable, of the sleeve and its collar or rock-shaft adapted to move independently of the bail of the receptacle, substantially as and for the purpose set forth.

2. In a fire-escape, the combination, with the rope or cable sleeve, of the pressure-brake having a notched lever pivoted to the said sleeve and provided with a detent or projection passing through a slot or aperture in the sleeve, and the articulated bail or loop connected to the sleeve and embracing the lever, substantially as and for the purpose set forth.

3. The fire-escape, substantially as described and shown, consisting of the receptacle A, the windlass B, having crank *a*, the rope or cable,

the bail D, constructed as described, the collar c, sleeve E, hand-hold G, and the lids I, having curved brace-bars I', hinged to the opposite ends of the receptacle, and adapted to provide seats for the operators when turned up, and a cover for the box when turned down, as set forth.

292,549. PLOW. OMA A. EMRY, Canton, Ohio. Filed Nov. 23, 1883. (No model.)

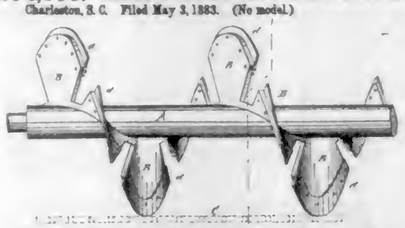


Claim.—1. The combination, with the standard and the beam pivoted thereto, of the brace I I', pivoted to the plow at its forward end, (whereby it may swing horizontally,) and connected to the rear end of the beam, and means for securing the brace and beam in the various horizontal positions into which they may be swung, to cause the plow to take more or less land, substantially as set forth.

2. The combination, with the standard and beam pivoted thereto, of the brace I I', pivotally seated in a plate, *g*, at its lower forward end, and connected with a slotted plate at its rear end, and a bolt connecting the rear end of the beam and the part I' of the brace, whereby the beam may be adjusted both vertically and laterally, substantially as set forth.

3. The combination of the standard and the beam pivoted thereto, the brace I I', pivotally seated at its lower forward end in a plate, *g*, the screw-rod K, passing through the beam and engaging with the said brace, the lock-nut L, the slotted plate M, and the nut and bolt N N', substantially as set forth.

292,550. SEPARATOR AND CONVEYER. JOHN SPENCER FAIRLY, Charleston, S. C. Filed May 3, 1883. (No model.)



Claim.—In a separator and conveyer, the combination, with the shaft A and perforated trough C, of a spiral conveyer formed of the flights B, each cut out on both sides to within a short distance of the shaft, as and for the purpose specified.

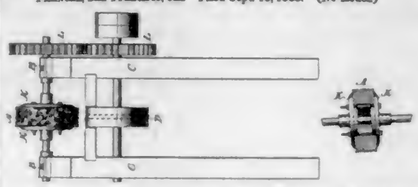
292,551. GAGE. JOHN H. FENERTY, Boston, Mass. Filed Oct. 5, 1883. (No model.)



Claim.—1. The combination of a slotted plate or body having graduated scales at its upper and lower edges, two arms, both attached at their inner ends to said plate and relatively adjustable at different inclines to each other, their edges passing both scales, said arms being free and disconnected at their outer ends, whereby they are adapted to enter a tapered tube or recess or to receive a tapered body between them, and means for adjusting or fastening said arms on said plate, the width of the plate and the length of the arms being of certain relative proportions, substantially as described.

2. The combination of a slotted plate or body provided with an arm and with two graduated scales at its upper and lower edges, and a second arm, also attached to said plate and adjustable at an incline to the first arm, its inner edge passing both scales, the outer ends of said arms being disconnected and adapted to receive a tapered spindle lengthwise between them, substantially as described.

292,552. ORNAMENTATION OF FRAME-MOLDINGS. PHILIP E. FRANCKE, San Francisco, Cal. Filed Sept. 13, 1883. (No model.)

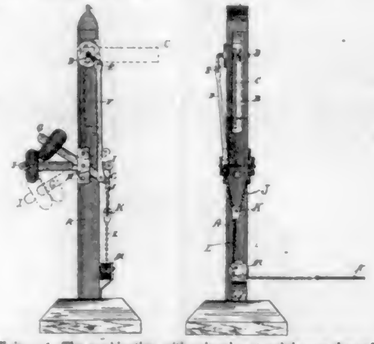


Claim.—1. In an apparatus for forming ornamental designs in plastic materials and applying them to molding in continuous strips, the revolving pattern-cylinder A, the material being compressed in said cylinder, in combination with the adjustable feed-cylinder D, adapted to advance the molding, the driving-gears L L, secured to their shafts and meshing with each other, and the adjustable cutter G, by which means the material is trimmed after it is applied to the frame, all substantially as described, and for the purposes set forth.

2. In an apparatus for forming ornamental designs in plastic materials and applying them to moldings in continuous strips, the revolving cylinder A, in which the material is compressed, in combination with the adjustable feed-cylinder D and the gears L L, secured to their shafts and meshing with each other, whereby they are revolved toward each other, substantially as shown and described.

292,553. COMPENSATING DEVICE FOR SIGNALS. DAVID S. GARDINER, Hudson, N. Y. Filed Sept. 26, 1883. (No model.)

Brief.—Two unequally-weighted levers connected by a short cable passing through a pulley-block, to which is secured the signal-cable. When the signal-arm is housed, if the signal-cable be lengthened by expansion, the longer heavier lever will fall and take up the slack. If the cable be contracted, the heavier lever will rise by the pull, because the lighter lever is at its highest point.



Claim.—1. The combination, with a signal-post and the arm thereof, provided with means for raising said arm, of a weighted lever, as I, and a chain or equivalent device having one end connected to the weighted lever and the other with the arm C, and running through a pulley connected to the operating wire or cable, substantially as described.

2. The combination, with the signal-post and its arm, of two unequally-weighted levers, one of which is connected with the arm, and a chain or equivalent device running from one lever to the other and through a pulley connected to the operating wire or cable, substantially as described.

3. The combination, with the signal-post A, of the pivoted arm C, crank E, pitman F, weighted levers G I, chains J L, pulleys K M, and operating wire or cable N, substantially as described.

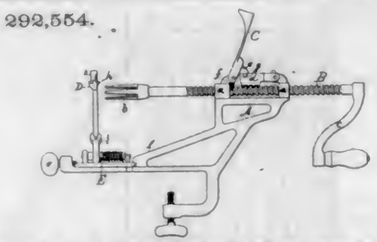
4. The combination, with the signal-post A, of the pivoted arm C, crank E, pitman F, weighted levers G I, chains J L, pulley K, operating wire or cable N, passing loosely around the eccentric pulley M, running on a stationary support, all constructed and arranged substantially as and for the purposes specified.

292,554. POTATO-PARER. GEORGE GEER, Peterborough, N. H. Filed June 24, 1882. (Model.)

Claim.—1. The combination of the screw-shaft, fitted to slide longitudinally, with the hinged rack and the hinged knock-off, all operating together substantially as described, and for the purpose specified.

2. The combination of the shaft, fitted to slide longitudinally and

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bearing the fork *b*, with the hinged knock-off hung over one of the bearings of the shaft, and adapted to swing over the shaft from the position represented in Fig. 1 to that represented in Figs. 2 and 3, substantially as described, and for the purpose specified.

3. The combination of the hinged rack, the hinged knock-off, the screw-shaft, and the crank adapted to drive the screw-shaft, and also to throw over said hinged knock-off, substantially as described, and for the purpose specified.

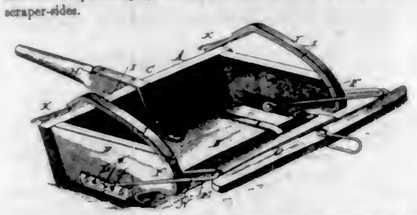
4. In a potato-parer, the combination of the knife-arm, the U-shaped paring-knife, and the guard having the rounded lower end of a contour corresponding to the cutting-edge of the said knife but smaller, said guard being formed of sheet metal, and having that portion which is above its rounded and hardened end free to be bent while secured to said knife-arm, in order to properly adjust the hardened point of said guard with reference to the paring-knife, substantially as described.

5. In a paring-machine, the sheet-metal guard formed with a broad body by which to secure it to one side of the knife-arm, the rounded end which forms the guard proper, *k*, and a narrow neck with the angular bend therein between said body and guard proper, substantially as described, and for the purpose specified.

6. In a paring-machine, the combination of the main frame, a supplemental frame having the paring-knife and its appurtenances mounted thereon, and mechanism for securing and releasing said supplemental frame and its appurtenances to and from the main frame, substantially as described, and for the purpose specified.

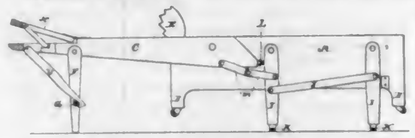
292,555. EXCAVATOR AND LAND-LEVELER. BENJAMIN MURRELL HAGUE, Wild Flower, Cal. Filed June 19, 1883. (No model.)

Brief.—Scraper has forward-projecting sides having runners above and carried around the ends. Adjustable cross-pieces on such runners limit the scraper-dump by striking draft-links pivoted adjustably to the scraper-sides.



Claim.—The combination of the bowl A, the sides D of which extend in front of the blade, so as to form horns F, the runners I, attached to and arched above the sides D, the cross-pieces K, attached adjustably to said runners, and the bails F, pivoted adjustably to the sides D, for the attachment of the draft, as herein set forth.

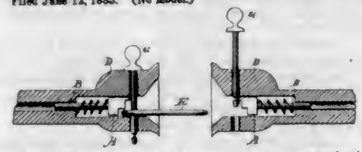
292,556. BED-LOUNGE. AUGUST HANSEN, San Francisco, Cal. Filed May 17, 1883. (No model.)



Claim.—1. The seat-frame A, having supplemental legs I, and the links J connecting them, in combination with the pivoted back C and links *m*, for the purpose set forth.

2. In a bed-lounge, the seat-frame A, having stationary legs B and adjustable pivoted legs I, and the connecting-links J, in combination with the pivoted back C, rollers L, connecting-links *m*, pawls F, and the serrated standards E, substantially as and for the purposes herein shown and described.

292,557. CAR-COUPLING. FRANCIS A. HOYT, West Cleveland, Ohio, assignor of two-thirds to L. H. Ware and J. W. Moore, both of same place. Filed June 12, 1883. (No model.)



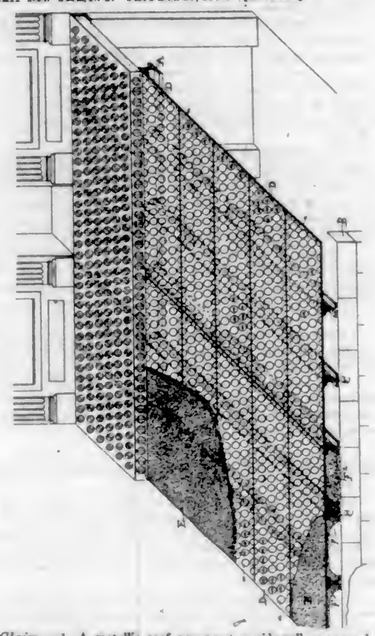
Claim.—The arrangement of a cam, A, having two projections, as shown, working in combination with a slotted pin, C, in the draw-head D, in the manner set forth.

292,558. CARRIAGE. RALPH C. HUSE, Georgetown, Mass. Filed Jan. 31, 1883. (No model.)



Claim.—In a carriage constructed and adapted as and for the purpose set forth, an opening in the inclined foot-board and a door or trap therefor, said door or trap being pivoted to swing in said opening, and having the beveled edge-faces *a* and *b*, which meet corresponding edge-faces at the sides of the opening, whereby, in closing the door or trap, it is readily brought to coincide with the balance of the foot-board, substantially as specified.

292,559. CONCRETE AND CONCRETED PAVEMENT AND ROOF-PAVEMENT, AND SUBSTRUCTURE FOR THE SAME. THADDEUS HYATT New York, N. Y. Filed Dec. 27, 1883. (No model.)



Claim.—1. A metallic roof-pavement or sidewalk composed of metal beams and metal plates, in combination with a trottoir or foot-surface made of Portland cement or of hydraulic concrete combined in plastic condition with the plates, substantially as and for the purposes herein described.

2. A metallic roof-pavement or sidewalk composed of perforated or grating metal plates and metal beams, in combination with a trottoir or foot-surface made of Portland cement or of hydraulic concrete combined, when in a plastic state, with the metal plates, substantially as and for the purposes herein set forth and illustrated.

3. A metallic roof-pavement or sidewalk composed of perforated or grating metal plates and metal beams, in combination with a trottoir or foot-surface made of Portland cement or of hydraulic concrete combined with a protecting under face of like material, substantially as and for the purposes herein set forth and illustrated.

4. A metallic roof-pavement or sidewalk composed of perforated or grating metal plates and metal beams, in combination with a trottoir or foot-surface made of Portland cement or of hydraulic concrete combined with a protecting under face of like material brought down in cantalever fashion upon the bottom flanges of the beams, substantially as and for the purposes herein set forth and illustrated.

5. A metallic roof-pavement or sidewalk composed of perforated or grating metal plates and metal beams, in combination with a trottoir or foot-surface made of Portland cement or of hydraulic concrete combined with an under face of like material brought down between the beams under the plates in mass sufficient to weight the structure and produce the necessary *vis inertiæ* to enable it to resist impact and concussions, substantially as and for the purposes herein set forth and illustrated.

6. A metallic roof-pavement or sidewalk frame or skeleton composed of metal plates and metal beams combined to form the foundation for a concrete metallic structure, substantially as and for the purpose herein set forth and illustrated.

7. A metallic roof-pavement or sidewalk frame or skeleton composed of metal plates and metal beams (wherein the plates are perforated or grating plates) combined to form the foundation for a concreted metallic structure, substantially as and for the purposes herein set forth and illustrated.

8. A safety-surface metallic roof-pavement or sidewalk composed of metal beams and perforated or grating metal plates cast with gutters between rows of perforations, in combination with a concrete trottoir or foot-surface laid between the gutters in strips, substantially as and for the purposes herein set forth and illustrated.

9. A safety-surface metallic roof-pavement or sidewalk composed of metal beams and perforated or grating metal plates cast with gutters between the rows of perforations, in combination with a concrete trottoir or foot-surface set with glasses between the gutters, substantially as and for the purposes herein set forth and illustrated.

10. A safety and dry sidewalk or pavement for the purposes of a public footway, wherein the safety and the dryness of the trottoir or foot-surface are obtained by a combination of metal gutters with concrete.

11. A safety and dry sidewalk or pavement for the purposes of a public footway, wherein the safety and the dryness of the trottoir or foot-surface are obtained by combining concrete with metal gutters laid or made to run in a diagonal direction to the sidewalk or line of travel over it.

12. A safety-surface metallic roof-pavement or sidewalk composed of metal beams and perforated or grating metal plates cast with gutters between rows or lines of perforations, in combination with concrete in strips put in between the gutters, wherein the gutters and strips run or lie in a diagonal direction to the sidewalk or course of travel over it, substantially as and for the purposes herein set forth and illustrated.

13. A safety-surface metallic roof-pavement or sidewalk composed of metal beams and plates cast with gutters, in combination with concrete in strips laid in between the gutters, the same lying or running diagonally (or otherwise) across the face of the pavement.

14. As a manufacture or article, a cast-metal pavement-plate formed with safety-channels, in combination with non-slipping or foot-holding material put between the channels, substantially as and for the purposes herein set forth and illustrated.

15. A cast-metal pavement-plate formed with safety-channels, in combination with non-slipping or foot-holding material between the channels combined with glasses to give light, substantially as and for the purposes herein set forth and illustrated.

292,560. COAL-SCREEN. JOHN JONES, Portsmouth, Ohio. Filed Aug. 4, 1883. (No model.)

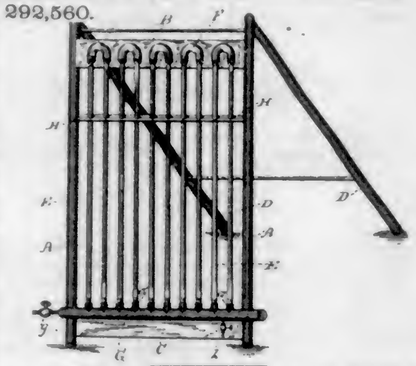
Claim.—1. In combination with a screen having chambers or passage-ways formed in its screening-surface, a pipe adapted to convey steam or hot air to said chambers, and means for withdrawing the steam or hot air after it has performed its work, whereby the screening-surface may be kept warm and free from an accumulation of frozen material, substantially as set forth.

2. A screen having its frame provided with interior chambers or passage-ways for the reception of steam or hot-air, and having, also, interior chambers or passage-ways in its screening-surface connected with the interior chambers of the frame, substantially as set forth.

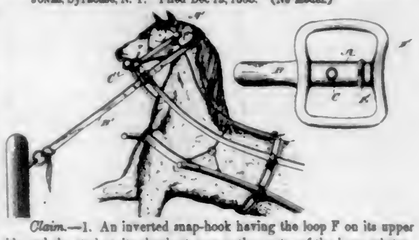
3. A screen having its screening-surface formed of hollow bars or pipes, in combination with a hollow supporting frame-piece, and screw-threaded connections between the frame-piece and the longitudinal bars, substantially as set forth.

4. A screen having its screening-surface formed of the hollow bars or pipes E, in combination with a transverse steam-pipe, G, to which the pipes E are at one end connected, and the U-shaped couplings F, connecting the opposite ends of adjacent pipes E, substantially as set forth.

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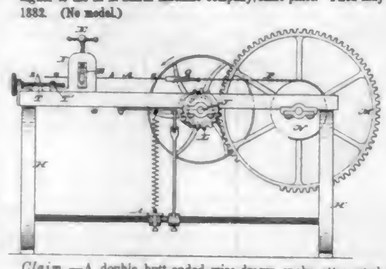
292,561. SAFETY HITCHING LOOP AND STRAP. RICHARD W. JONES, Syracuse, N. Y. Filed Dec 13, 1883. (No model.)



Claim.—1. An inverted snap-hook having the loop F on its upper side and the stud on its shank at or near the center of the loop, substantially as and for the purpose set forth.

2. The combination of the inverted snap having the loop F on its upper or outer side and the stud C on its shank, with the perforated hitching-strap and bridle-ring, substantially as and for the purpose set forth.

292,562. WIRE SPOKE. WILLIAM S. KELLEY, Smithville, N. J., assignor to the H. B. Smith Machine Company, same place. Filed May 13, 1882. (No model.)



Claim.—A double butt-ended wire-drawn spoke attenuated between the butts by supplementary die-drawing, in contradistinction to a spoke butt-ended by upsetting the ends or by making the butt-ends of separate pieces, and presenting continuously throughout the fiber unbroken found in the wire from which it has been made.

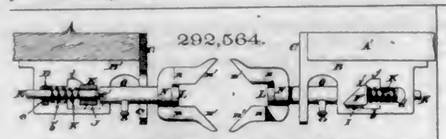
292,563. GAME APPARATUS. GUSTAVUS A. LILLIENDAHL, Greenville, assignor to Henry T. Lilliendahl, Jersey City, N. J. Filed July 24, 1883. (No model.)



Claim.—Blocks having a geometric form, either plain or inscribed on the facets thereof, provided with knobs or points at the apices, and adapted to be used as a game, substantially as set forth and shown.

292,564. CAR-COUPLING. CHARLES G. MCCORMICK, Cincinnati, Ohio, assignor of one-half to George L. McCormick and John N. McCormick, both of same place. Filed Jan. 27, 1883. (No model.)

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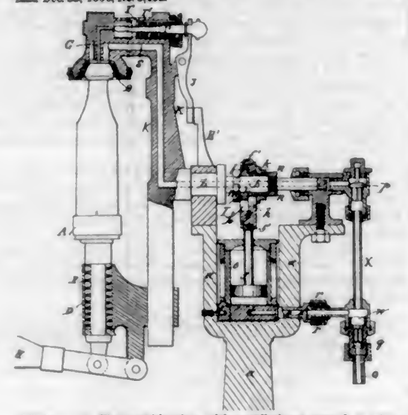
Claim.—1. In combination with the housings B B' of a car-coupling, having reversely-inclined bearings I I' J J', the self-leveling block F *f*, provided with reversely-inclined guides G G' H H', and traversed by the draw-bar E, as and for the purpose herein described.

2. The combination, in a car-coupling, of housings B B', reversely-inclined bearings I I' J J', self-leveling block F *f* G' G H H', slots *b b'*, fulcrum-block D *d d'*, draw-bar E, and spring K, which spring preserves both of said blocks in their proper positions, as herein described.

3. The combination, in a car-coupling, of draw-bar E and the fulcrum-block D, which latter is provided with journals *d d'*, that play in the slots *b b'* of the housings B B', as herein described.

4. The combination of rod P *p*, fixed collar *p'*, disks R *s*, web S, hanger T *t t'*, washer U, and spring V, which rod P is attached to the draw-head *n n*, as and for the purpose specified.

292,565. APPARATUS FOR BOTTLING AND SIRUPING AERATED BEVERAGES. JAMES MCEWEN and SIMEON SPENCER, Manchester, County of Lancaster, England. Filed Dec. 15, 1882. (Model.) Patented in England Dec. 23, 1880, No. 5,402.



Claim.—1. The combination, with a cylinder mounted on pivots near its lower end and provided with a piston, of an adjustable eccentric for oscillating said cylinder and operating said piston, substantially as described.

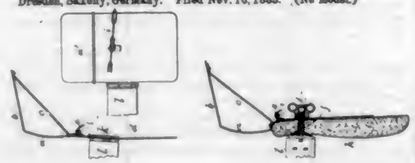
2. The combination, with the shaft *b*, of the eccentric *g*, provided with a slot, *h*, enlarged at *h'*, the sleeve *i*, having head I, and the nut *k*, substantially as described, and for the purpose set forth.

3. The combination, with the shaft *b*, provided with the catch *m*, of the eccentric *g*, provided with a slot, *h*, enlarged at *h'*, sleeve *i*, provided with head I, having lug *l*, and the nut *k*, substantially as described, and for the purpose set forth.

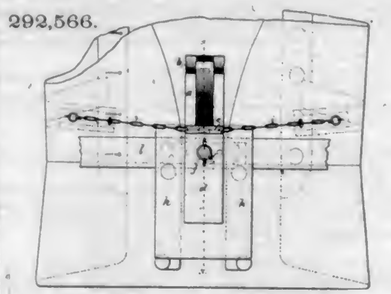
4. The combination, with the bottle-carriers A B and shaft *b*, provided with the catch *m*, of an adjustable eccentric, *g*, sleeve *i*, having lug *l*, piston-rod *f*, and cylinder *c*, mounted on pivots near its lower end, substantially as described.

5. The combination, with the aerated-water valve C and the shaft *b*, carrying the eccentric *g*, which operates the piston and cylinder, of the cam *o* on the end of the said shaft, whereby the aerated water and sirup are alternately admitted into the bottle, substantially as described.

292,566. MEANS FOR CARRYING KNAPSACKS. ALFRED MENDEL, Dresden, Saxony, Germany. Filed Nov. 10, 1883. (No model.)



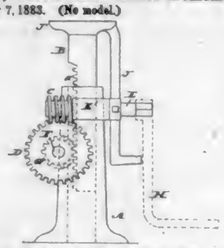
292,566.



Claim.—1. The combination, with the knapsack-bearer, of attaching devices for connecting such bearer to the coat at the sides thereof, substantially as specified.

2. The combination, with the knapsack-bearer, of the attaching devices for connecting such bearer to the coat at the sides thereof and the device for connecting the bearer to the waist-belt, substantially as specified.

292,567. SCREW-JACK. EDWARD H. MIDDLETON, Philadelphia, Pa. Filed May 7, 1883. (No model.)

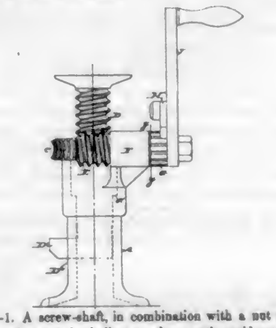


Claim.—1. The stand, in combination with a rack-bar, B, pinion G, a worm, C, a worm-wheel, D, and shafts E F, said stand having cast with it a horizontal boss, E', and bearing F', and provided with a removable bearing, F'', the pinion and worm-wheel being fixed to the same shaft, F, and both shafts E F being mounted outside of the stand, substantially as and for the purpose set forth.

2. A screw-jack consisting of the stand A, with boss E', and bearing F', cast therewith, the removable bearing F'', the lifting rack-bar B', the pinion G, the worm C, the worm-wheel D, the shafts E F, and a foot-lift connected with said bar, substantially as and for the purpose set forth.

3. In a screw-jack, a swiveled collar on the lifting-bar, in combination with a foot-lift depending from and secured to said collar, and adapted to be moved around the stand, substantially as and for the purpose set forth.

292,568. SCREW-JACK. EDWARD H. MIDDLETON, Philadelphia, Pa. Filed Nov. 6, 1883. (No model.)



Claim.—1. A screw-shaft, in combination with a nut and worm-wheel, connected as stated, a hollow stand supporting said nut and wheel, on its inner shoulder and top edge, as described, a worm mounted on the stand engaging with the worm-wheel, and an operating-handle, substantially as and for the purpose set forth.

2. A stand, a nut and worm-wheel, a non-rotating screw-shaft, a

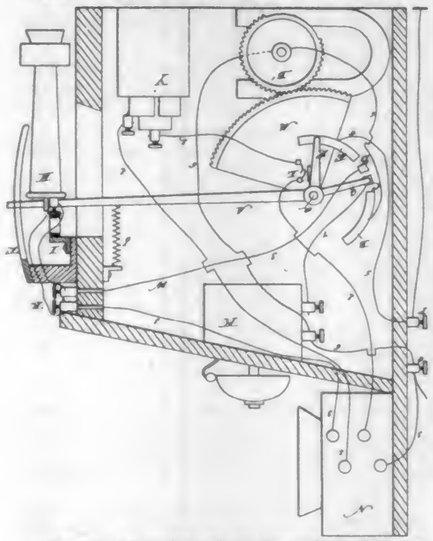
worm, and a handle, said worm being connected with a shaft which carries a toothed wheel, with which engages a reversible dog attached to said handle, the parts being combined and operating substantially as and for the purpose set forth.

3. A screw-shaft with a foot, D', a stand with a slot, D'', a nut and worm-wheel, B C, a worm, E, a toothed wheel, G, a dog, H, and operating-handle J, combined and operating substantially as and for the purpose set forth.

292,569. ARTIFICIAL SLATE. ANDREW M. MURRAY, Richmond, Ind. Filed Oct. 29, 1883. (No specimens.)

Claim.—A composition composed of two (2) parts of lamp-black or drop-black, one (1) part of rotten-stone, one (1) part flour of emery, one (1) part mineral-brown, one part ultramarine-blue, mixed with oil-shellac to consistency of stiff paste.

292,570. TELEPHONE CALL-BOX. JOHN M. ORAM, HENRY M. SUTTON, and HENRY GARRETT, Dallas, Tex. Filed Feb. 3, 1883. (No model.)



Claim.—1. In a telephone call-box, the combination of the lever A, formed with arms F G, the anvils B, C, D, and E, a generator operated by the movement of the lever, and the circuit-connections, substantially as shown and described.

2. The combination, with the switch-anvils, of a switch, a movable support for the telephone-receiver attached to the switch, and a guard for preventing the receiver from being removed from its support until the switch has been adjusted to the magneto-call terminals, the said telephone-support having a range of movement from its normal position for receiving calls, first, down below the guard, to send a call and permit the dislodgment of the telephone, and then a movement to the opposite side of its normal position, to make connection with the battery telephone and transmitter, substantially as described.

3. The combination, with the switch-anvils, of a switch, a telphone-receiver support attached thereto for movement in unison therewith, a guard for preventing dislodgment of the receiver until its support is moved, and a magneto-generator connected to and arranged to be operated by the movement of the telephone-receiver support when said receiver is dislodged from its support, substantially as shown and described.

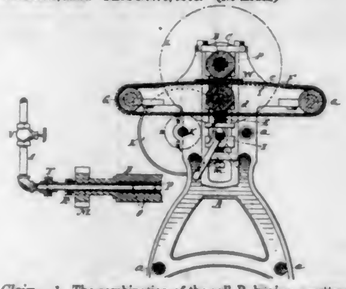
4. The slotted piece I, in combination with the lever A and receiver H of the circuit-connections, substantially as shown and described.

292,571. CLAMP-FASTENING FOR CARRIAGE-CURTAINS. ASHAEL S. PARKER, Cincinnati, Ohio. Filed Dec. 9, 1882. (No model.)



Claim.—The herein-described clamp-fastening, consisting of a base-plate, B, box-loop G, spring D, loop E, and stud C, the parts being united and relatively arranged in the manner and for the purpose specified.

292,572. MACHINE FOR PEBBLING OR EMBOSSING BOOT OR SHOE UPPERS. JAMES H. PARKER, Milford, assignor to John L. Parker, Worcester, Mass. Filed Nov. 5, 1883. (No model.)



Claim.—1. The combination of the roll B, having a patterned surface, the lower roll having plain surface, and an endless traveling belt or apron passing between said rolls and supported on guiding-rolls at either side, and means for imparting uniform rotative movement to said pattern and bed rolls, for the purpose set forth.

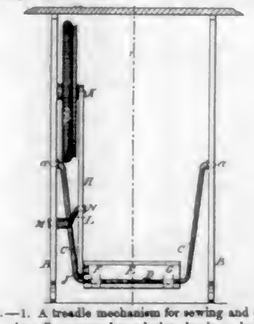
2. The combination of the pattern-roll B, the bed-supporting roll D, the endless traveling bed-belt F, the guide-rolls G, the springs E, support-plates H, and means for elevating and depressing said plates and bed-rolls, substantially as and for the purpose set forth.

3. The combination of the pattern-roll B, mounted in fixed bearings, the roll D, mounted in movable bearings, and geared to said roll B, for uniform action therewith, the endless traveling bed-belt F, passing between said rolls and around guiding-rolls G, the springs E, the support-plates H, the cam-shaft I, having cams i for elevating said plates, the adjustable bearings J, and the adjusting-screws m, substantially as and for the purposes set forth.

4. The combination, with the pattern-roll and bed-roll in a machine for pebbling or embossing leather pieces, of a belt-apron or traveling bed for passing the work between said rolls, composed of a comparatively firm backing-ply and a soft face-ply or cushion-surface, substantially as set forth.

5. The belt or apron F, formed of a ply or backing, *f*, of leather, and a ply or facing, *e*, of thick felt, secured together, in combination with the pattern-impressing rolls in an embossing-machine, substantially as and for the purpose set forth.

292,573. TREADLE MECHANISM. JOHN PARFIELD, Sedgley, County of Stafford, England. Filed Nov. 15, 1883. (No model.) Patented in England Sept. 7, 1883, No. 4,308.



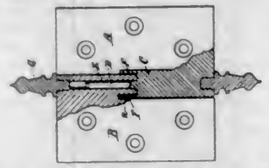
Claim.—1. A treadle mechanism for sewing and other machines, comprising a pivotally-mounted tread-plate having a horizontal reciprocating movement, and means, substantially as described, for communicating to the crank the movement imparted to the tread-plate by the foot, substantially as set forth.

2. A treadle mechanism comprising a swinging bar or frame, a tread-plate pivotally mounted on said frame, and means, substantially as described, for connecting said tread-plate to the crank, all arranged to operate substantially as set forth.

3. A treadle mechanism comprising the horizontally-reciprocating tread-plate, the rod which connects said plate with the crank, and the radius or guide rod, all constructed and arranged to operate substantially as set forth.

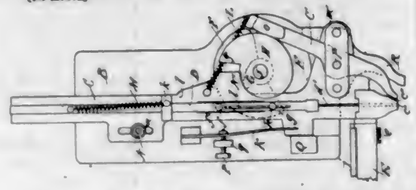
4. A treadle mechanism comprising the swinging frame C C, the tread-plate pivotally mounted thereon, the connecting-rod H, and the guide or radius bar L, all constructed and arranged to operate substantially as set forth.

292,574. HINGE. WILLIAM PATTERSON, San Francisco, Cal. Filed Oct. 25, 1883. (No model.)



Claim.—In a hinge composed of two leaves, one of which carries a single fixed pintle and the other a socket to fit over the said pintle, an extension or cup surrounding the pintle, in combination with the socket E, in which is fitted into the top a removable tip, G, said socket being provided with a slot, *a*, formed between its lower end and the leaf, whereby the socket is allowed to enter the cup and turn therein, substantially as herein described, and for the purpose set forth.

292,575. LASTING-MACHINE. AUGUSTUS W. PEARSON, Nyack, assignor to James Cavanaugh, Trustee, Brooklyn, N. Y. Filed Oct. 6, 1882. (No model.)



Claim.—1. In a lasting-machine, the combination, with the last-rest, of the jaw-plate and jaw and their operating mechanism, said jaw-plate and jaw being adapted to grasp the edge of the upper and carry it straight upward from the inner sole, whereby the tendency to crowd the inner sole and to cause the upper to bind, as is the case when it is drawn directly over and in contact with the sole, is obviated, substantially as set forth.

2. In a lasting-machine, the combination, with the last-rest, of the gripping-jaw and jaw-plate and their operating mechanism, said jaw-plate and jaw being adapted to grasp the edge of the upper and carry it straight upward from the inner sole, and then in a curvature over and down upon the inner sole, whereby slack in the upper, which would take place were the upper released at the upper end of the straight movement of the jaw and plate, is overcome, substantially as set forth.

3. The combination, with the jaw-plate C, jaw C', and nail-feeding device E, of the hammer D, and operating-cams F, G, and H, substantially as and for the purposes set forth.

4. The jaw C', attached to the jaw-plate C, in combination with the spring K and cams G and H, whereby the jaw-plate is moved vertically and laterally and the jaw C' opened and closed, substantially as described.

5. The jaw C', attached to the jaw-plate C, in combination with the springs K L and cams G H, the spring K being stronger than the spring L, substantially as and for the purposes set forth.

6. The face B, provided with the rest R, in combination with the jaw-plate C, jaw C', hammer D, and cams F, G, and H, substantially as and for the purposes set forth.

7. The jaw-plate C, adapted to have lateral movement, in combination with the feeding device E, pawl *b*, ratchet *c*, and suitable feed-wheels, whereby the lateral movement of the plate C will feed the nails under the hammer, as set forth.

8. The jaw-plate C, provided with the jaw C', and pivoted to the face B, in combination with means, substantially as described, for giving the plate C direct upward and curved lateral movement, as and for the purposes set forth.

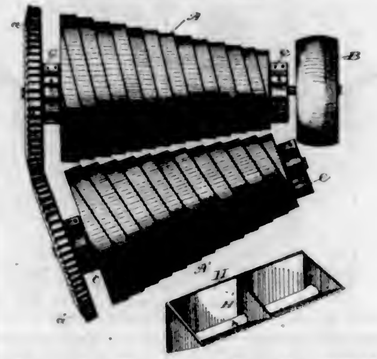
9. The spring K, made adjustable by the screw P, in combination with the upward and laterally-moving plate C, substantially as and for the purposes set forth.

10. The combination, with the feeding device E, of the adjustable tongued plate *j*, whereby nails of different lengths may be held in the device, as set forth.

11. In a lasting-machine, the combination of the shaft J, the fixed beveled friction-disk A', fixed clutch-piece *a'*, loose driving-pulley B', and sliding clutch-piece *a*, with the shifting-lever E', with one arm adapted to move the loose pulley B', and the other arm held under the action of the spring T, and the treadle S, connected to the lever E', substantially as and for the purpose set forth.

12. The face B of the frame, formed with the recess A, in combination with the jaw-plate C, provided with the angle-arm O, and attached to the plate by the headed bolt N, passing through the slot *m* in the plate, as and for the purposes set forth.

292,576. CLAY-CRUSHING ROLLER. JAMES W. PENFIELD, Willoughby, Ohio. Filed Dec. 21, 1883. (No model.)

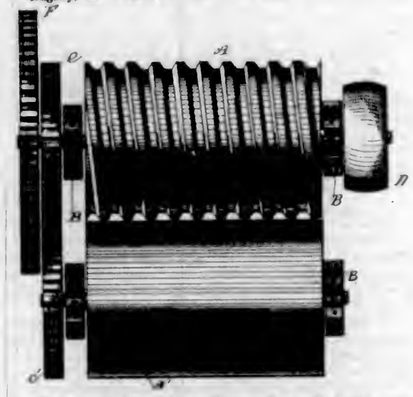


Claim.—1. Conical corrugated clay-crushing rollers, substantially as set forth.

2. Conical clay-crushing rollers, one or more of which are provided with a spiral corrugation extending from end to end of the roller, substantially as set forth.

3. In clay-crushing rollers, a partition or end piece so arranged as to leave an opening at the bottom for the passage of stone, and set at some distance from the end of the roller where the stones are discharged, so that the clay that passes through the said opening with the stone may be crushed by the roller before reaching the end thereof.

292,577. CLAY-CRUSHING ROLLER. JAMES W. PENFIELD, Willoughby, Ohio. Filed Dec. 21, 1883. (No model.)



Claim.—1. In clay-crushing rollers, a roller provided with a corrugation, rib, projection, groove, or depression on the periphery thereof, and extending spirally around the roller from end to end, in combination with a roller that is without a spiral corrugation, substantially as set forth.

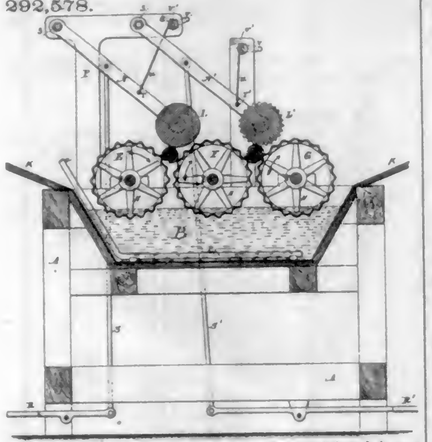
2. In a clay-crushing machine, a roller provided with a spiral corrugation extending around the roller from end to end thereof, in combination with a roller, plate, bar, or other device for holding the clay in contact with the said roller in the process of crushing the said clay, but such roller, plate, bar, or other device being without corrugations, substantially as set forth.

3. In a clay-crushing machine, the combination, with one or more rollers provided with a spiral corrugation extending from end to end of the roller, of a clay-breaker located above the said roller or rollers, and provided with projections or teeth adapted to break large lumps of clay, substantially as set forth.

292,578. MACHINE FOR FELTING AND SIZING HAT-BODIES. JOHN J. PERINE, Plainfield, N. J. Filed Apr. 25, 1883. (No model.)

Claim.—1. The cylinders, in a hat-felting machine, made with cast

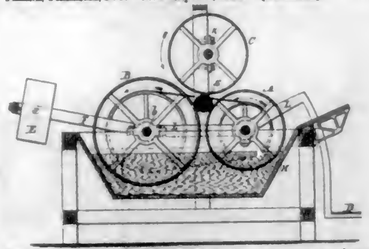
292,578.



metal shells, with corrugations in their surfaces parallel to their axes, said shells being attached to heads upon shafts, so as to revolve in and be heated by the water and not be injured by the acid, substantially as set forth.

2. In a hat-body-felting machine, the combination, with two cylinders revolving in hot water, of a roller arranged to move sufficiently close to the cylinder that tends to raise the roll of hat-bodies to prevent such hat-bodies escaping from beneath such roller, substantially as set forth.

292,579. MACHINE FOR SIZING OR FELTING HATS. JOHN J. PERRIN, Plainfield, N.J. Filed Sept. 17, 1883. (No model.)



Claim.—1. The combination, with the hot-water vat in a hat felting or sizing machine, of two cylinders, B and C, in fixed bearings, and a cylinder, A, in the water-vat, below the cylinder C and in front of the cylinder B, and a pivoted frame and bearings for such cylinder A, whereby access is given for inserting or removing the roll of hats by depressing the pivoted frame, substantially as set forth.

2. The combination of the cylinders B C and the fixed bearings for the shafts of the same with the vat H, the cylinder A, the pivoted frame L, and bearings for the axis of the cylinder A, the foot-piece D, and the counterpoise for raising the cylinder A, substantially as set forth.

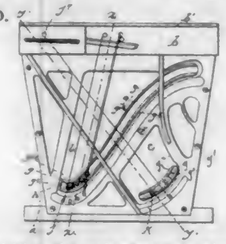
3. The cylinders A and B, means for rotating the same in one direction, and the frames L, pivoted upon the shaft of the cylinder B, and provided with bearings for the shaft of the cylinder A, in combination with the cylinder C, in stationary bearings above the cylinders A and B, the treadle D, and counterpoise F, substantially as set forth.

4. The combination, in a hat-sizing machine, of a water-vat, a rear cylinder in that vat in fixed bearings, a front cylinder also in the vat, and movable bearings for the same, and a cylinder in fixed bearings above the lower cylinders, the lower rear cylinder being larger than the front cylinder, for the purposes and substantially as specified.

292,580. PIANO. JOSEPH R. PERRY, Wilkes-Barré, Pa. Filed Jan. 15, 1883. (Model.)

Claim.—1. In a piano having the strain exerted on the opposite ends of the wrest-plank, substantially as described and shown, the combination, with the wooden frame, the iron frame mounted thereon, and the wrest-plank placed on the wooden frame, with its upper side flush with the upper side of the wooden frame, and its lower side abutted against the upper side of the iron frame, of a metallic brace-plate placed down against the upper side of the wrest-plank and the wooden frame,

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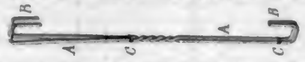
and secured rigidly to the wooden frame and against the wrest-plank, whereby the said wrest-plank is clamped firmly between the iron frame and the brace-plate, substantially as described, and for the purposes specified.

2. The agraffe made of wood and provided with string-openings, and a transverse re-enforcing pin passed through the body of said agraffe, in close proximity to the string-openings, substantially as and for the purposes set forth.

3. In an upright piano, a removable frame for carrying the strings, composed of a wooden frame having its upper end fitting into the outer casing and its edges tapered or drawn inward, whereby the main body of said frame, sounding-board, and iron frame are separated from the said casing, a wrest-plank fixed to the upper end of the frame, a sounding-board, an iron frame abutted against the wrest-plank and made to coincide with the form of the main frame, and a base, sill, or supporting-bar fixed to the lower end of the frame, and having its ends extended to rest on supports in the outer casing, as set forth.

4. In an upright piano, a string-frame having its upper end fitting snugly within the outer casing, and having its lower end made narrow, and having the ends of its base or sill piece extended outward to provide supports, as set forth.

292,581. PAPER OR PAMPHLET HOLDER. JOHN O. POOR and RUFUS E. BEAN, Franklin, N. H. Filed Dec. 3, 1883. (No model.)

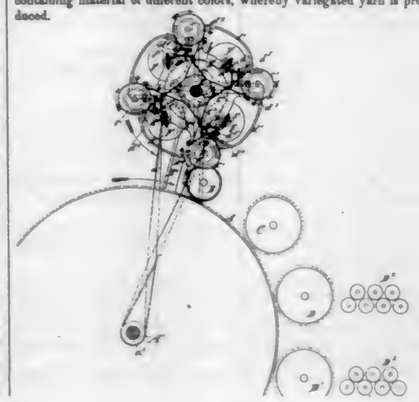


Claim.—1. A paper or pamphlet holder composed of two wires or springs, A A, connected together at their centers and formed with hooks B B, or their equivalent, at both ends, extending outward at substantially right angles from the said wires, whereby they are adapted to clasp the book or pamphlet, in combination with clips or clasps C C, closely surrounding the wires or springs at both ends, and adapted to be moved along said wires, substantially as set forth.

2. A paper or pamphlet holder composed of two wires or springs connected together at one side at the center, each wire being bent and joined so as to form two parallel wires, substantially as set forth.

292,582. APPARATUS FOR PRODUCING ROPING FOR MAKING VARIEGATED OR CLOUDED YARN. WILLARD F. PROSSER, Mystic Bridge, Conn., assignor of one-half to Williams Rogers Wells, Hopkinton, R. I. Filed Feb. 14, 1883. (No model.)

Brief.—In connection with the main cylinder and worker is arranged a rotary carrier sustaining a circular series of spools, said spools containing material of different colors, whereby variegated yarn is produced.



Claim.—1. The combination, with the main cylinder and the worker of a carding-engine, of a rotary carrier, mechanism for rotating it, and a circular series of spools carried by it, and devices for drawing or feeding roping from said spools and presenting it to the action of the worker, substantially as and for the purpose herein described.

2. The combination, with a main cylinder and a worker of a carding-engine, of a rotary carrier, mechanism for operating it, a circular series of spools carried by said carrier, feed-rolls for drawing ropings from said spools, also carried by said carrier, and mechanism for rotating said feed-rolls and causing them to present the ropings to the action of the worker, substantially as and for the purpose herein described.

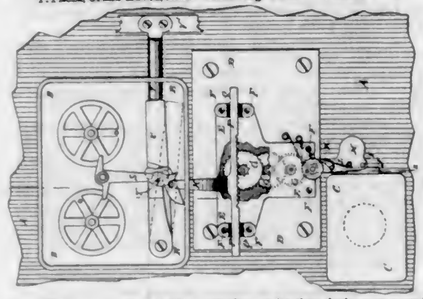
3. The combination, with a main cylinder and a worker of a carding-engine, of a rotary carrier, mechanism for operating it, a circular series of spools, and feed-rolls for drawing or feeding ropings therefrom, all carried by said carrier, and variable operating mechanism for imparting rotary motion to said feed-rollers on their own axes, substantially as and for the purpose herein described.

4. The attachment for a card, comprising a carrier and a circular series of spools carried thereby, feed-rollers for drawing or feeding ropings, also carried by said carrier and provided with pulleys, a sleeve on the shaft of the carrier, provided with pulleys, and belts extending from the sleeve-pulleys to the roll-pulleys, all combined and adapted to operate substantially as herein described.

5. The combination of the shaft E, heads or flanges E', spools F, feed-rollers G, jaws *d*, and devices for supporting them, sleeve H, pulleys *c* and *c'*, and belts c^2, all substantially as described.

6. The combination of the shaft E, heads or flanges E', spools F, feed-rolls G, jaws *d*, and adjustable devices for supporting them at different distances from the faces of the rolls, the sleeve H, the pulleys *c c'*, and belts c^2, all substantially as described.

292,583. UNLOCKING ATTACHMENT FOR TIME-LOCKS. HIRAM P. PRIME, Grand Haven, Mich. Filed Aug. 7, 1883. (Model.)



Claim.—1. An unlocking attachment for time-locks constructed substantially as herein shown and described, and consisting of a weighted lever connected by a pawl and ratchet-wheel with a train of gear-wheels operating a rack-bar provided with a trip-arm, to adapt the attachment to be interposed between a combination-lock and a time-lock, as set forth.

2. In an unlocking attachment for time-locks, the combination, with the bolt of a combination-lock and the trip-latch of a time-lock, of the weighted lever H, the pawl and ratchet-wheel K M, the train G of gear-wheels, and the rack-bar P, having trip-arm R, substantially as herein shown and described, whereby the said latch will be tripped by the continued movement of the said bolt, as set forth.

3. In an unlocking attachment for time-locks, the combination, with the bolt of a combination-lock and the trip-latch of a time-lock, of a weighted lever connected by a pawl and ratchet with a train of gear-wheels, and means, substantially as herein shown and described, for communicating the motion given to the train of gear-wheels by the bolt of the combination-lock to the trip-latch of the time-lock, as and for the purpose set forth.

292,584. COIN-COUNTER FOR MONEY-DRAWERS. CHARLES GOTTLIEB RABER, Washington, Ind. Filed Sept. 15, 1883. (No model.)

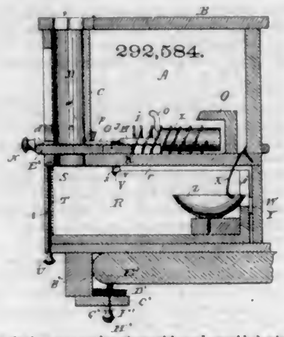
Claim.—1. In a money-drawer, the combination of strip B^2 and piece C^2, secured to the bottom of the drawer, with a series of springs attached to the piece, and a plate or rod connecting the upper ends of the springs, said plate having a wire, F^2, connected thereto and passing outward through the piece, arranged and operating for the purpose set forth.

2. In a money-drawer, the coin-receiving chambers provided with slots *e* at the upper portion, crossing each other, and a sliding false bottom, for the purposes set forth.

3. In a money-drawer, the coin-receiving chambers provided with a sliding false bottom formed of three separate pieces sliding in suitable slots in the casing, arranged and operating for the purpose set forth.

4. The drawer provided with a spring-plate, in combination with

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a series of wires connecting therewith, and provided with a suitable operating-handle, the spring-plate engaging with a notch in the casing, and a rod or bar, V, engaging with the slot *s* in the sides of the drawer, as and for the purpose set forth.

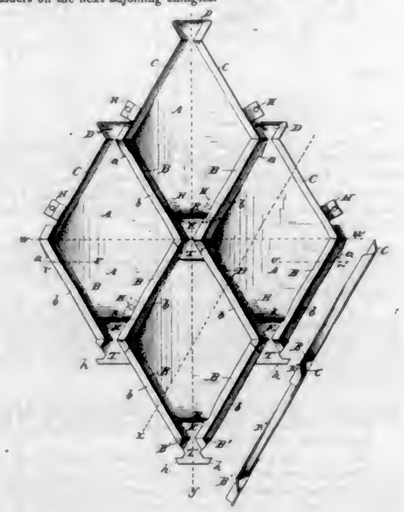
5. In a money-drawer, the combination, with the coin-receiving chambers, of shanks provided with necks, which carry shoes communicating with the chambers, springs secured to the shanks at one end, and coiled around the shanks and necks, the forward end of the springs being free and arranged to form a bearing as the shanks are moved forward, and a rod attached to the rear end of the shanks, and adapted to operate the same, as and for the purpose set forth.

6. In a money-drawer, the combination, with the coin-receiving chambers, of shanks provided with necks having shoes attached thereto, said shoes communicating with the coin-chambers, springs secured at one end to the shanks and free at the other end, so as to form a bearing, said springs encircling the shanks and necks, as shown, a bar adapted to engage with the shanks at their junction with the necks, and a rod attached at the rear end of the shanks, arranged and operating for the purpose set forth.

7. In a money-drawer, the combination, with the coin-receiving chambers, of spring-pressed shanks carrying shoes which communicate with the chambers, means for operating the same, a bar having a suitable handle for engaging with the ends of the shanks and holding the latter inoperative, and a strip, J, and cover O, arranged in the manner and for the purpose set forth.

292,585. METALLIC ROOFING-SHINGLE. EPHRAIM B. REPP, New Windsor, Md., assignor to the Anglo-American Roofing Company, New York, N. Y. Filed Nov. 16, 1881. Renewed Feb. 28, 1883. (No model.)

Brief.—The sides are struck up to form inclined walls entirely around the shingle, and a projection on the lower end fits into a pan-shaped projection on the upper end of the next lower shingle and interlocks with shoulders on the next adjoining shingles.



Claim.—1. A metallic shingle, substantially as shown and described, having its sides struck up to form inclined walls around the body of the shingle, for the purposes specified.

2. A metallic shingle, substantially as shown and described, having the flanges B, *b*, C, and B′, for the purposes specified.

3. In a metallic shingle, the hooks or projections adapted to be drawn under the obtuse corners of the two adjoining underlying shingles to hold the point of the overlapping shingles in place, as herein set forth.

4. The metallic shingle A, having the tongue T, provided with projections *h*, adapted to interlock with the shoulders *a a* on adjoining shingles, substantially as shown and described, for the purposes specified.

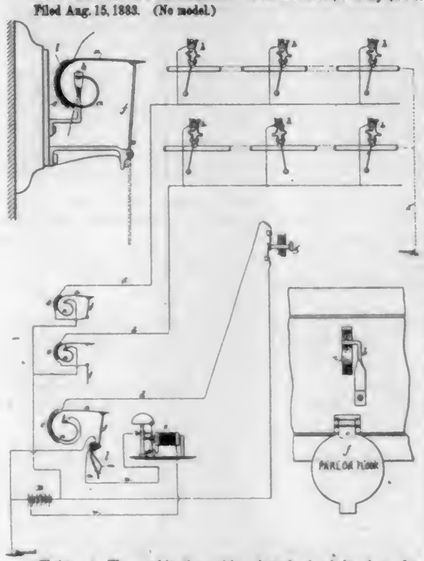
5. The metallic shingle A, having the depression E and rib R, adapted to be combined with the pan D of an underlying shingle, substantially as shown and described, for the purposes specified.

6. The metallic shingle A, having the water receptacle or pan D, substantially as shown and described, for the purposes specified.

7. The metallic shingle A, having the flanges B, *b*, C, and B′, hooks H, shoulders *a*, and tongue T, having the projections *h*, adapted to be combined with shingles similarly constructed, substantially as shown and described, and for the purposes specified.

8. The metallic shingle A, having the flanges B, *b*, C, and B′, hooks H, shoulders *a*, tongue T, its projections *h*, the depression E, rib R, and the pan D, and adapted to be combined with shingles similarly constructed, substantially as shown and described, for the purposes specified.

292,586. ELECTRICAL CIRCUIT-BREAKER FOR ANNUNCIATORS AND GAS-LIGHTING APPARATUS. THOS. H. REDDIE, Brooklyn, N. Y. Filed Aug. 15, 1883. (No model.)



Claim.—1. The combination, with a thermic circuit-breaker, of an electric circuit, and a heating resistance in such circuit, adjacent and parallel to the thermic circuit-breaker and intervening layer of insulating material, whereby the heat developed by the resistance when the circuit is closed acts upon the thermic device to break the electric circuit, substantially as set forth.

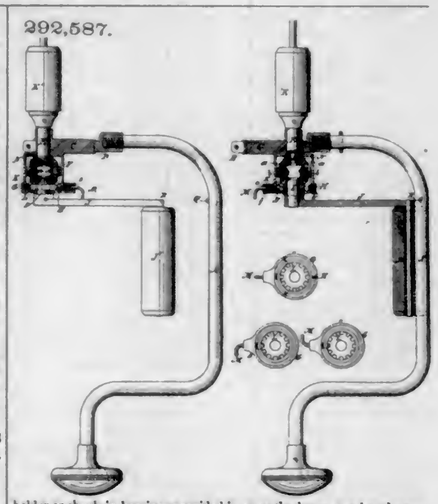
2. The combination, with a thermic circuit-breaker, of an electric circuit, a resistance in such circuit to develop heat and operate the thermic circuit-breaker, and a drop that is disengaged and forms an annunciator, substantially as set forth.

3. The combination, with a thermic circuit-breaker, of an electric circuit, a resistance in such circuit to develop heat and operate the thermic circuit-breaker, a drop disengaged by the circuit-breaker, a local circuit and alarm, and a spring circuit-closer operated upon by the drop, substantially as set forth.

292,587. BIT AND DRILL BRACE. JOHN D. RICHARDSON, Brooklyn, assignor of one-half to Francis L. Manchester, New York, N. Y. Filed June 15, 1883. (No model.)

Claim.—1. The combination, with an ordinary bit or drill brace and a tool-holder or chuck fitted to rotate independently therein, of the bevel-gear N, fast on the shank of the holder or chuck, an independent hand-crank, J, a spindle, I, for said crank, arranged in line with the tool-

292,587.



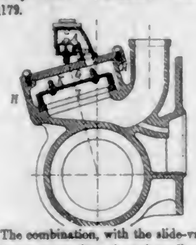
holder or chuck in bearings provided in or on the brace, two bevel-gears, *a a*, carried by the spindle and gearing with N, a bevel-gear, K, and a ratchet-wheel, L, secured together and placed loosely on said spindle, and a pawl attached to the brace and engaging with said ratchet-wheel, substantially as herein described.

2. The combination, with an ordinary bit or drill brace, of an eccentric-yoke firmly secured thereto, an eccentric fitted to said yoke and having the bit-holder or chuck fitted to rotate therein, and a stop to lock the said eccentric in either of two positions in the brace, substantially as and for the purpose herein described.

3. The combination of the brace or stock A, provided with a yoke, B, the eccentric C, fitted to said yoke and carrying the box F, the drill-holder or chuck E′, having its shank E fitted to rotate in said eccentric, the hand-crank J, having its spindle I fitted to rotate in said box, the bevel-gears *a a* N K, gearing the said crank with the drill-shank E, the ratchet-wheel L, fast on the bevel-gear K, which is loose on the crank-spindle I, and the sliding pawl M, fitted to said box F, and capable of engaging with said ratchet-wheel L, all substantially as and for the purpose herein described.

4. The combination, with the stock A and the independent hand-crank J, for operating the bit or drill, of the crank-sleeve J′, having a recess, P, to fit the said brace, substantially as herein described.

292,588. LOCOMOTIVE STEAM-ENGINE. THEOPHILE RECOUR, Tours, France. Filed Apr. 3, 1883. (No model.) Patented in France July 20, 1882, No. 150,179.

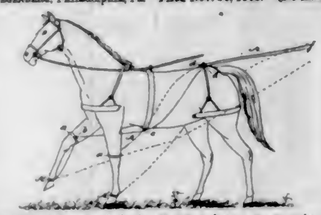


Claim.—1. The combination, with the slide-valve casing or steam-pipe of a locomotive steam-engine, of a valve adjusted and balanced for the admission of air during the time that the engine is running with the steam shut off, and arranged to open upwardly, substantially as hereinbefore described.

2. In a locomotive steam-engine, the combination, with the air-valve applied to the steam-pipe or slide-valve casing, and operating as hereinbefore set forth, of a coiled spring applied to said valve for the purpose of opening it and holding it open when the engine is running with the steam shut off, substantially as hereinbefore described.

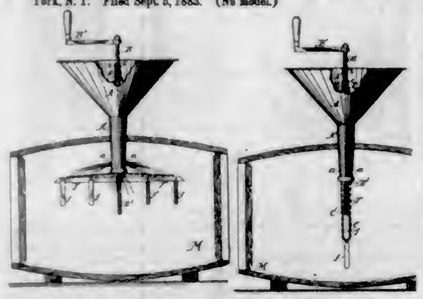
3. The combination, with the flat slide-valves of a locomotive steam-engine and its driving-yoke, of one or more blade-springs bearing against the said yoke and tending to constantly hold the valve off its seat when not pressed forcibly thereon by the steam-pressure, substantially as hereinbefore described and illustrated in Figs. 6, 7, and 7ᵇᵉˢ of the accompanying drawings.

292,589. DEVICE FOR STOPPING RUNAWAY HORSES. ALOYS RUDGENBERG, Philadelphia, Pa. Filed Nov. 30, 1883. (No model.)



Claim.—An improved device for stopping a runaway horse, consisting of lines A, attachments A′, and connections *b c d*, the latter being automatically detachable by the draft on said lines, and when detached the lines are entirely disconnected from the harness, substantially as described.

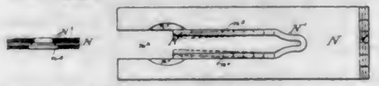
292,590. BEER-FININGS SPREADER. JEAN SCHAFHAUS, New York, N. Y. Filed Sept. 5, 1883. (No model.)



Claim.—1. In a finings-spreader, the funnel A, having the main body, the neck A′, said neck having the lateral holes *a a*, and the bridge D, said bridge being provided with the cylindrical threaded portion D′.

2. In a finings-spreader, the combination of the funnel A, having the neck A′, with lateral holes *a a*, the bridge D, having the cylindrical threaded portion D′, with the shaft B, said shaft being provided with the crank B′, the flange B², the lower flattened portion, B³, and having affixed the arms or spreaders F F′, said arms having the pendants *f f f f*, the chains C C, the ring *c*, and the follower E, constructed and operated substantially as described.

292,591. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. WILLIAM SCHOTT, New York, N. Y., assignor, by mesne assignments, to the Schott Button Hole Attachment Company, same place. Filed June 21, 1883. (Model.)



Claim.—1. A button-hole attachment to sewing-machines, containing the following elements: a fixed carrier-plate for supporting a reciprocating foot; a reciprocating foot supporting the mechanism for moving the button-hole form-plate and cloth-clamp; a device for reciprocating the reciprocating foot and regulating the bite of the stitches, comprising an adjustable oscillating frame and a dog connected with the reciprocating foot; a lever having a terminal cross-head operated by the needle-bar and operating the oscillating frame; a clamping device for adjusting or regulating the distance between the stitches; a combined cloth-clamp and button-hole form-plate; a worm for transmitting motion to the same; means, substantially as described, for communicating motion from the needle-bar lever to said worm, and a cloth-stretcher, all combined and operating as herein shown and described.

2. In a button-hole attachment to a sewing-machine, the combination, with the reciprocating foot and the lever operated by the needle-bar, of an oscillating frame provided with oppositely-inclined planes, a dog pivoted on a standard that is rigidly fixed on the reciprocating foot, means, substantially as described, for connecting said lever and dog and said dog and frame, all arranged and operated substantially as herein shown and described, whereby said foot is reciprocated, as set forth.

3. In a button-hole attachment to a sewing-machine, as a means for transmitting motion from the lever operated by the needle-bar to the reciprocating foot, for reciprocating the latter and regulating the bite of the stitches, an adjustable oscillating frame consisting of two sections hinged together, and provided with two vertical oppositely-inclined planes and an adjusting-screw, and pivoted on the rigid reciprocating foot-post, a pivoted dog, and means for communicating motion from the said dog to the said two-part frame Q, substantially as herein shown and described.

4. In a button-hole attachment to a sewing-machine, the combination, with the reciprocating foot O, post O′, dog P, having lugs *p p′*, lever I, provided with cross-headed stud R, having cross-head *r*, and hinged sectional oscillating frame Q, having inclines *s s′*, of the screw q^4, substantially as herein shown and described, whereby said frame may be contracted or expanded, its inclined planes adjusted relatively to each other, and the length of the reciprocation of the foot O and consequent bite of the stitches be adjusted or controlled, as set forth.

5. In a button-hole attachment to a sewing-machine, provided with a reciprocating foot and a form-plate, as a means for turning the form-plate, the combination, with said form-plate and a cloth-clamp, of a worm supported on the reciprocating foot, and actuated by suitable mechanism connected with said worm, substantially as herein shown and described.

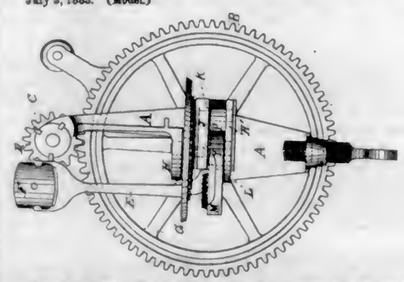
6. In a button-hole attachment to a sewing-machine, of the character herein described, the combination, with the lever I, operated by the needle-bar, and pivoted upon the carrier-plate C, and the lever F^2, operating through suitable mechanism to revolve the form-plate, of an adjustable clamping device connecting the two levers, and adapted to transmit the motion of the one to the other, substantially as herein shown and described.

7. In a button-hole attachment to a sewing-machine, provided with a cloth-clamp, an elastic spring cloth-stretcher provided with downward-projecting pins, substantially as herein shown and described, said stretcher being attached to said clamp, and adapted to be compressed and to return to its normal position, as and for the purposes set forth.

8. The combination, with the grooved carrier-plate C, and reciprocating foot O, and connected mechanism for transmitting motion from the needle-bar-operated lever I to the form-plate M, of the lever I, supported by the carrier-plate, lever-stud R, provided with cross-head *r*, sectional oscillating frame Q, provided with studs q^4 q^4, screws Q^7 q^6, pivoted dog P, provided with lugs *p p′*, and post O′, substantially as herein shown and described, whereby the said foot O may be reciprocated and its length of throw adjusted, as set forth.

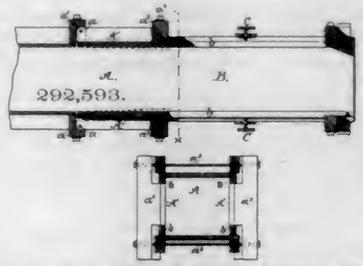
9. In a button-hole attachment to a sewing-machine, as a means for determining the throw of the ratchet-lever F^2, and the consequent rapidity of the movements of the worm G, and of the mechanism for transmitting motion from the said lever to the worm and thereby determining the rate of movement of the form-plate M and cloth-clamp N, and consequently the distance between the stitches, the combination, with the lever I, having slot *i*, and ratchet-lever F^2, having slot *i′*, of the clamping device I′, the sleeve *k*, and screw k^4, having shoulder k^5 with two flat sides, constructed and operated substantially as set forth.

292,592. APPLE-PARER. LANPHEAR H. SCOTT, Newark, N. J. Filed July 3, 1883. (Model.)



Claim.—In an apple-parer, the standard A, provided with the feet or arms H H′, the latter of which is provided with a fixed cogged segment, P, into which meshes the cogged knife-carriage M Y, said knife-carriage being pivoted to the slotted lever J by means of a stud or pivot, L, on the under side thereof, which lever is pivoted by a stud, K, on its under side to the arm H′, in combination with the cam-shaped table-wheel G, which is provided with a pin, I, on its under side for operating in the slot in lever J, whereby the said slotted lever and the knife-carriage are given a forward and reverse motion, and the knife is carried around the fruit, and its motion rapidly reversed, and at the same time it is thrown clear of the fruit, and the necessary operating mechanism, substantially as set forth and described.

292,593. BALING-PRESS. DAVID W. SEELEY, Albany, and ALEXANDER BUCKMAN, Schodack, N. Y.; said Buckman assignor to said Seeley. Filed Oct. 29, 1881. (No model.)



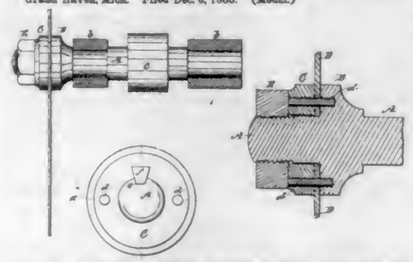
Claim.—1. In a baling-press, the pressing-chamber A, provided with adjustable walls A', hinged, as at *a*, at their forward ends to a contiguous stationary part of the press, and arranged in relation to the baling-chamber B as herein described, for the purpose of completing the compression of the material before the bale is passed into the baling-chamber, as herein specified.

2. In a baling-press, the baling-chamber B, provided at two of its oppositely-located vertical sides with a single opening, B', and guiding-strips *b*, for the purpose of facilitating the operation of tying-off the bale before it is ejected from the press, as herein specified.

3. In a baling-press, the combination, with the pressing-chamber A, of the baling-chamber B, arranged in relation to the pressing-chamber as herein described, and provided at each of its vertical sides with a single opening, B', and top and bottom guiding-strips, *b*, as and for the purpose herein specified.

4. In a baling-press, the combination, with the baling-chamber B, provided with a single opening, B', in two of its oppositely-located vertical sides, of the guiding-strips *b*, secured at both ends, and adjusting-screws C, adapted to press against the middle portions of the said strips *b*, all constructed and arranged to operate as herein specified.

292,594. HANGING CIRCULAR SAWS. WALLACE D. SHERMAN, Grand Haven, Mich. Filed Dec. 6, 1883. (Model.)



Claim.—1. In means for holding and fastening the loose or clamping collar on the arbor of a circular saw, the loose collar C, fitted with a key, *f*, in combination with the arbor A, having a keyway, *e*, and fast collar B, the saw-driving pins *d d*, arranged to engage with the loose collar, and the nut E, substantially as and for the purposes specified.

2. The combination, with the loose collar C, of the key *f*, of dovetail construction where it fits or enters within said collar, the saw-arbor A, having a keyway, *e*, along its outer end portion, the saw-driving pins *d d*, and the fast collar B, on or forming part of the arbor, essentially as shown and described.

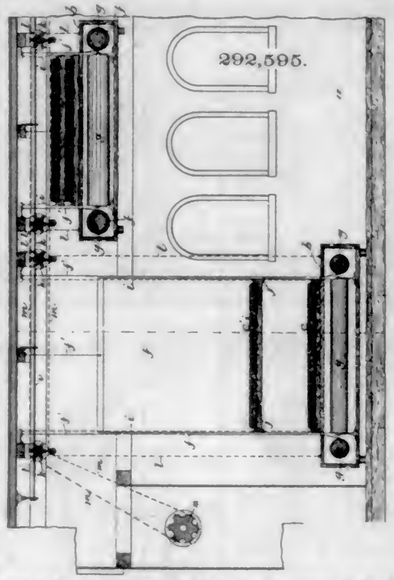
292,595. SLEEPING-CAR. JOHN SHOREY, Lowell, assignor of two-thirds to Phineas E. Merrithew, Fairhaven, Mass. Filed May 17, 1883. (No model.)

Claim.—1. The combination, with the berth-supporting platform *b*, of the curtains *f*, secured to spring-rollers journaled in bearings attached to said platform, and secured to the top of the car, one curtain of each berth being provided with an opening, f^2, as set forth.

2. The combination of the suspended platform *b*, having berths *a c*, the upper berths, *c' c'*, supported by flexible devices *i* over the berths *c*, and braces or steadying devices for detachably connecting said upper berths to said platform, as set forth.

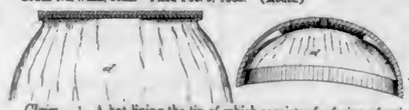
3. In a car, the vertically-movable berth-supporting platform having rollers secured therein, in combination with curtains secured to said rolls and to the top of the car, and adapted to wind upon the rollers, said curtains forming partitions and supports for the lower platform, as set forth.

4. The berth-supporting platform having four spring-rollers arranged at the sides, as shown, in combination with the four curtains secured to the top of the car and to the rolls, and arranged, as described, to be wound on the rolls so as to form partitions and supports, as shown.



5. The combination, in a car, of the lower-berth platform, having spring-rolls at each side, as set forth, the curtains secured at one end to the rolls and at the other to the top of the car, so as to form partitions and supports for the platform, and the upper berths supported by independent flexible cords extending to the top of the car, directly over the lower berth, so as to be lifted thereby, all substantially as set forth.

292,596. MANUFACTURE OF HAT-LININGS. ALDEN SOLMANS, South Norwalk, Conn. Filed Feb. 9, 1883. (Model.)



Claim.—1. A hat-lining the tip of which consists of a facing of satin or other suitable material pasted smoothly to a stiff backing, whereby the entire tip is made smooth and free from folds or wrinkles.

2. The combination, with a hat, of a lining the tip of which consists of a stiff backing having a facing pasted smoothly thereto and a side lining stitched or otherwise secured to the tip, substantially as described.

292,597. HEEL-BURNISHING TOOL. ALBERT E. STRICKLER, Worcester, Mass. Filed Nov. 12, 1883. (No model.)



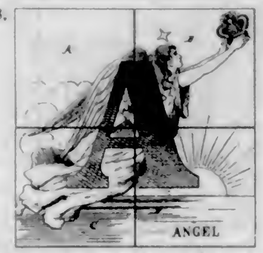
Claim.—1. A rotary burnishing-tool having a perimeter composed of a number of surfaces, *s*, which are straight in a plane at right angles to the axis of the tool, and intermediate salient curves or convex surfaces, *s'*, connecting said surfaces *s*, substantially as shown and described.

2. A rotary burnishing-tool having its working perimeter composed of surfaces *s*, which are straight in planes in the direction of the circumference of the tool, said planes being connected by curved surfaces *s'*, and having lips, as *r* or *r'*, at the edge of the tool, substantially as set forth.

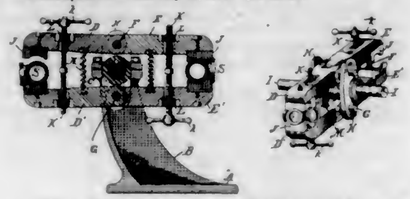
292,598. SLICED PICTURE. WALTER STRANDERS, New York, assignor to Edward I. Horsman, Brooklyn, N. Y. Filed Dec. 19, 1883. (No model.)

Claim.—The combination of the blocks A, B, C, and D with each other, said blocks bearing the representation of a figure and of a sectional initial letter, all arranged so that the figure, together with the letter, will only be produced complete when the four blocks are placed together, substantially as shown and described.

292,598.

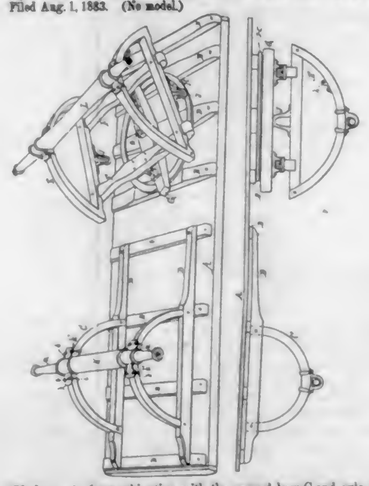


292,599. CHUCK FOR HOLDING FITTINGS. STEPHEN P. M. TASKER, Philadelphia, Pa. Filed July 16, 1883. (No model.)



Claim.—The combination, to form a duplex reversible coupling-holding frame, of two pairs of oppositely-placed hinged jaws, respectively provided with coupling socket-pieces to contain couplings, duplex screws applied to the jaws and adapted to be manually operated to cause the jaws of the respective pairs to interdependently approach or recede, springs interposed between the jaws of the respective pairs, a shaft or axis common to both pairs of jaws, and a suitable housing or supporting-frame for said shaft, the arrangement being such that the frame can be rotated upon the shaft with respect to the housing, substantially as hereinbefore set forth.

292,600. WAGON RUNNING-GEAR. A. HENRY TODT, Lapeer, Mich. Filed Aug. 1, 1883. (No model.)



Claim.—1. In combination with the curved bars C and axle K, a thimble-skein provided with outwardly-projecting flanges *b*, having ears *b'*, and cast integral therewith, forming a bearing, and clips for adjustably securing the axle to said curved bars, substantially as described.

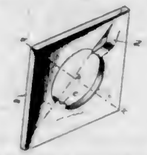
2. In combination with the bed A, transverse bars B, longitudinal bars D, and axle K, the curved bars C, adjustably secured to said axle by clips *c*, passing over the thimble-skeins M, said skein being provided with flanges *b*, both skein and flanges being curved, substantially as and for the purpose specified.

3. The combination, with the bed A, of the circle H, attached thereto, the longitudinal bolster G, pivoted to the bed and supporting the circle H, and a rectangularly-framed platform formed of the transverse bars F, pivoted to both the front and rear ends of the bolster, and the side pieces, E, attached to the bars F and connected with the axle, all substantially as described.

4. The combination, with the bed A, of the circle H, attached thereto, the longitudinal bolster G, pivoted to the bed and supporting the circle H, and a rectangularly-framed platform formed of the transverse bars F, pivoted to both the front and rear ends of the bolster, the side pieces, E, attached to the bars F and connected with the axle, and provided with standards J, all substantially as described.

5. In a wagon, the combination of the bed A, frame E F, bolster G, circle H, and standards J with the axle L, provided with thimble-skeins M, which have cast upon them outwardly-projecting flanges *b*, as a base and support to the side frames of the running-gear, when constructed, arranged, and operating substantially in the manner and for the purposes set forth.

292,601. NUT-LOCK. CHARLES VAN DUSEN, New Albany, Ind., assignor of one-half to William L. Breyfogle, Louisville, Ky. Filed June 30, 1883. (No model.)



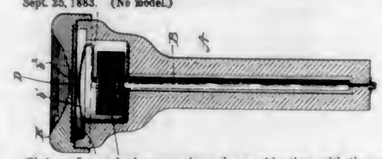
Claim.—1. A nut-locking washer provided with a bolt-hole having a spur or spurs extending therein, and a lever member movable to draw said spurs into the threads of the bolt to lock the washer, substantially as shown and described.

2. The combination, with the plate *a*, of beveled spurs *c*, projecting into its bolt-hole, and means, substantially as described, to draw said spurs into engagement with the bolt to which it is applied to lock the nut, as set forth.

3. The combination, with the plate *b*, having a bolt-hole, *b*, and spurs *c*, projecting into said bolt-hole, of the tongue or lever member *d*, struck up from said plate opposite said spurs, substantially as and for the purpose described.

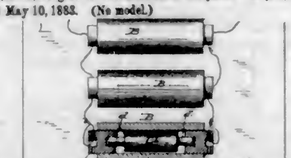
4. The combination, with the plate *a*, having a bolt-hole, *b*, of spurs *c*, projecting into the said hole, and the tongue or lever member *d*, the said spurs and lever member being arranged in the line of diagonal corners of the plate, substantially as shown and described.

292,602. TELEPHONE-RECEIVER. HENRY E. WAITE, New York, N. Y., assignor to the Molecular Telephone Company, same place. Filed Sept. 25, 1883. (No model.)



Claim.—In a telephone-receiver, the combination, with the sounding-board and the coil, of the magnet provided with the recurved arm or spring, having its free end extended to overhang and slide upon a support at one side of the coil-chamber, said arm being provided at or near the center of its length with a point resting in contact with the sounding-board, substantially as described.

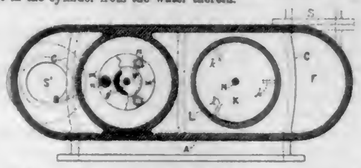
292,603. TELEPHONE-TRANSMITTER. HENRY E. WAITE, New York, N. Y., assignor to the Molecular Telephone Company, same place. Filed May 10, 1883. (No model.)



Claim.—In a telephone-transmitter, the carbon pencil O', provided with tenons upon its ends, in combination with the blocks C and C', of similar material, socketed to receive the tenons upon said pencil, all inclosed within a protecting-cylinder of wood or cork, substantially as described.

292,604. BALANCE PUPPET-VALVE. ALEXANDER WANNER, Philadelphia, Pa. Filed Apr. 10, 1883. (No model.)

Brief.—The table is so constructed and arranged that it and the valve will rise and relieve any excessive back-pressure that may take place in the cylinder from the water therein.



Claim.—1. The combination, with the cup-shaped valve L and its pilot-valve, of a table arranged within said valve L, substantially in the manner set forth.

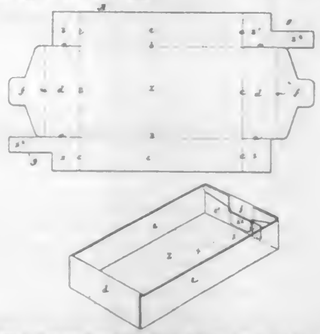
2. The combination, with the valve L, of the table K, provided with the stem Q, and the standard I, provided with a socket, whereby the table is permitted to move vertically, substantially as and for the purposes set forth.

292,605. ART OF EXTRACTING GOLD BY MEANS OF ALKALINE SULPHITES. CHAS P. WILLIAMS, Philadelphia, Pa. Filed Mar. 17, 1882. (No specimens.)

Claim.—1. In the art of extracting gold from ores and artificial gold-bearing products by means of alkaline sulphides, the herein-described process, which consists in mixing the gold-bearing material with carbon and an alkaline sulphate (or the equivalents of such carbon and alkaline sulphate) in proportions substantially as described, calcining said mixture in a non-oxidizing atmosphere at a temperature, substantially as described, below the point of fusion of the charge, cooling the mass out of contact with the air, and leaching the cooled mass with water to dissolve out the soluble sulphides, and recovering the gold therefrom by precipitation, as described.

2. In the art of extracting gold from ores and artificial gold-bearing products by means of alkaline sulphides, the herein-described process, which consists in mixing the gold-bearing material with carbon and an alkaline sulphate (or the equivalent of such carbon and alkaline sulphate) in proportions substantially as described, in a non-oxidizing atmosphere at a temperature, substantially as described, below the point of fusion of the charge, leaching the mass with water to dissolve out the soluble sulphides, and recovering the gold therefrom by precipitation, substantially as described.

292,606. PAPER BOX. ARTHUR G. WILSON, New York, N. Y. Filed Dec. 24, 1883. (No model.)

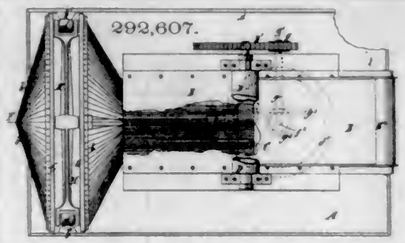


Claim.—A paper box or lid of a box having two turned-in portions, a part of one overlapping a part of the other, and forming a single space or opening between the two, and an end piece provided with a tongue folded over the upper edges of the turned-in portions down through the opening described, and in rear of the lower lip-like portion, i^2, substantially as and for the purpose set forth.

292,607. AUTOGRAPHIC TELEGRAPH. MICHAEL HOFFMAN WILSON, Brooklyn, N. Y., assignor of one-fourth to Clara Louise Wilson, same place, and Henry McCobb, New York, N. Y. Filed June 11, 1883. (No model.)

Brief.—Single line-wire, a large number of severed branch wires at each station, and synchronously-revolving commutators completing the circuit through said severed branch wires successively. Receiving and transmitting instruments identical.

Claim.—1. The combination, with means for producing the travel of the form, of a single line-wire and a number of divided or severed



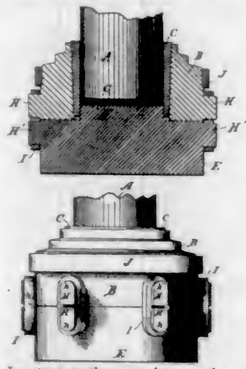
branch wires connected with said line-wire and having their terminals arranged in the path traversed by the form, and a commutator placed between the separated ends of the said branch wires and serving to close the circuit through the several branch wires in succession, substantially as and for the purpose described.

2. The combination, with means for producing the travel of the form, of a single line-wire and a number of divided or severed branch wires connected with said line-wire, having their terminals arranged in the path traversed by the form, and having their separated ends arranged in arc-shaped or circular series, and a rotary commutator adapted to make contact with said ends and to successively close the circuit through the several branch wires, substantially as and for the purpose herein described.

3. The combination, with a rotary cylinder for producing the travel of the form, of a single line-wire and a number of divided or severed branch wires connected with said line-wire and having their terminals arranged in the path traversed by the form, and a commutator geared with said cylinder and moving between the separated ends of the divided branch wires to successively close the circuit through them, substantially as and for the purpose herein described.

4. The combination of the cylinder D, the divided branch wires *b*, the bar C, with which the terminals of said branch wires are connected, the support G for the interrupted adjacent ends of said wires, the rotary commutator H *d*, and means for rotating said cylinder and commutator, substantially as herein described.

292,608. HAMMER-DIE. JAMES WITHINGTON, Chambersburg, assignor to the Trenton Iron Company, Trenton, N. J. Filed July 13, 1883. (No model.)



Claim.—1. In a steam or other power hammer, the combination of a striking-die provided with a series of lugs or projections, a piston-rod plunger or handle provided, substantially as hereinbefore set forth, with a corresponding series of lugs or projections, and bands encircling opposing lugs, substantially as set forth.

2. In a steam or other power hammer, the combination of a piston-rod, a circumscribing cap or head having a series of lugs, means for securing the cap or head rigidly to the piston-rod, a hammer-die having a corresponding series of lugs, and bands fitted to opposing lugs, substantially as set forth.

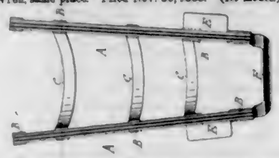
3. In a steam or other power hammer, the combination of a piston-rod, a circumscribing cap or head having a series of lugs, means for securing the cap or head rigidly to the piston-rod in such manner as to create a cavity at the base of said piston-rod, a hammer-die provided with a boss conformed to said cavity, and having a corresponding series of lugs, and bands fitted to opposing lugs, substantially as set forth.

4. In a steam or other power hammer, in which both the die portion and the piston-rod portion are provided with corresponding series of lugs or projections, and are united by means of bands fitted around

opposing pairs of lugs, faced-off portions or bevels upon the opposing faces of the lugs, substantially as and for the purposes set forth.

5. The combination of the cap or head, the tapering sleeve, the piston-rod, and the circumscribing-band, substantially as set forth.

292,609. HAND-TRUCK. WM. C. WREN, Brooklyn, N. Y., assignor to George Wren, same place. Filed Nov. 30, 1883. (No model.)

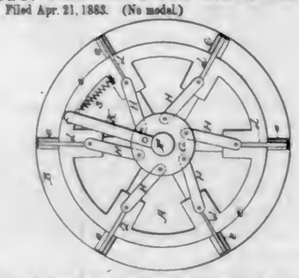


Claim.—1. A truck-frame composed of the sides A, having sockets B for the insertion of handles, the cross-bars C, nose F, and wheel or pillow blocks D, all formed of one piece of metal, substantially as shown and described.

2. In a hand-truck, the combination, with a frame, A, having the thimbles B, nose F, and wheel-block D, all of one piece of metal, of the tubular handles M, held in place by shrinkage of the thimbles, substantially as shown and described.

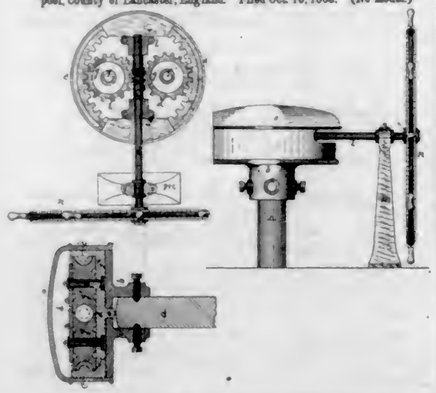
3. In a hand-truck, the leg L, in combination with a frame consisting of the sides A, nose F, cross-bars C, wheel-block D, and sockets B, all substantially as shown and described.

292,610. REEL-SPOOL FOR WIRE. JOSEPH M. YOUNG, Johnstown, Pa. Filed Apr. 21, 1883. (No model.)



Claim.—A wire-reeling spool or block having a flangeless side provided with radial guides or ways *d*, and arms or fingers *e* sliding in connection therewith, a disk-head, G, loose on the shaft, connections H, pivoted to the disk-head, and sliding arms or fingers, the handle K, and spring *s*, all constructed, combined, and adapted to operate substantially as specified.

292,611. STEERING-GEAR FOR VESSELS. WILLIAM ADAIR, Liverpool, County of Lancaster, England. Filed Oct. 10, 1883. (No model.)



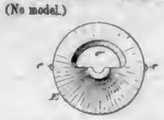
Claim.—1. The combination of the bed-plate *b*, having the quadrants C C', sole-plate *d*, pivoted on said bed-plate and carrying the horizontal worm-shaft *i*, and gearing connecting the worm-shaft and quadrants, substantially as and for the purposes set forth.

2. The combination of the bed-plate *b*, having the quadrants C C', sole-plate *d*, pivoted on said bed-plate and carrying the horizontal worm-shaft *i*, combined worm and spur gear wheels *g g'*, pivoted on said sole-plate and connecting said shaft and quadrants, substantially as and for the purposes set forth.

3. The combination of the bed-plate *b*, having the quadrants C C', sole-plate *d*, pivoted on said bed-plate and carrying the horizontal worm-shaft *i*, combined worm and spur gear wheels *g g'*, connecting said shaft and quadrants, standard *m*, and steering-wheel *n*, substantially as and for the purposes set forth.

4. The combination of the fixed standard *p*, bed-plate *b*, having the sleeve *q*, fitting over said standard, sole-plate *d*, pivoted on said bed-plate, and gearing connecting the horizontal shaft *i* and bed-plate, substantially as and for the purposes set forth.

292,612. GRINDING-MILL. JOHN Q. ADAMS, Marseilles, Ill. Filed Feb. 8, 1882. (No model.)



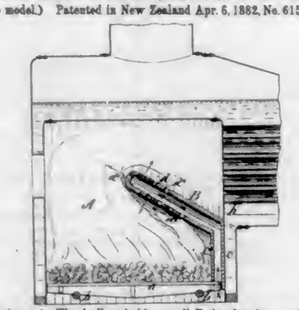
Claim.—1. In a grinding-mill composed of a shell and loose concave burr, and a conical revolving burr fitted within the said shell, the ribs *c' e*, arranged, respectively, upon the shell and concave burr, whereby the said concave burr is permitted to rock, but prevented from revolving.

2. The casing C, having its inner face concave, in combination with the concave burr E, the outer convex face of which is inclined at an angle less than that of the casing, and set loosely within the casing, substantially as and for the purpose set forth.

3. The casing C, having its inner face concave and provided with ribs *c'*, in combination with the concave burr E, having its outer convex surface inclined at an angle less than that of the casing, and provided with ribs *e*, whereby the burr is free to rock within the casing, but is held from rotating with the revolving burr, substantially as described.

4. Combined with the driving-shaft of a grinding-mill, the pinions *b' k*, the ratchet-wheel on the shaft *k*, the yokes M, the rods O O, and bell-crank P, and the pawls N, pivoted in the yokes, and having weights N', substantially as described.

292,613. STEAM-BOILER. JOHN ALVES, Dunedin, New Zealand, assignor of one-half to Caroline Naef, New York, N. Y. Filed June 30, 1883. (No model.) Patented in New Zealand Apr. 6, 1882, No. 615.



Claim.—1. The hollow bridge-wall B, having its vertical portion c provided with the perforated sides c^2 and the imperforated central portion, c', substantially as herein shown and described.

2. The hollow bridge-wall B for furnaces, consisting of the vertical portion c, having the perforated sides c^2 and the imperforated central portion, c', and the inclined arched portion *d*, provided with the perforations d^2 on its upper and lower sides and at its end, substantially as herein shown and described.

292,614. WELL-DIGGER. ROBERT ANDERSON, Memphis, Tenn. Filed Sept. 15, 1883. (No model.)

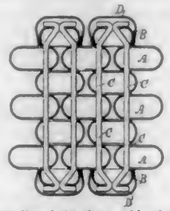


Claim.—In a well-sinking device, the combination of the outer and inner conical cutting-tubes, substantially as and for the purpose described.

292,615. ORNAMENTAL CHAIN. WALTER BALLOU, North Attleborough, Mass. Filed Oct. 19, 1883. (No model.)



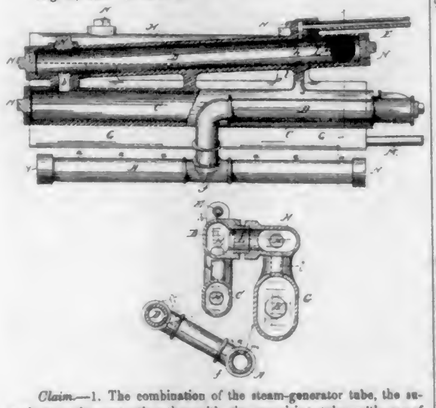
292,615.



Claim.—1. In a roller-chain, the combination, with the units A A of the end caps, B B, of wires or staples constructed to pass through the central holes of the end caps and the covering-caps D D.

2. A roller-chain consisting of a number of the units A A and the end caps, B B, secured together by means of the bent binding-wires C C, as described, the ends of which being protected by the covering-caps D D, as described.

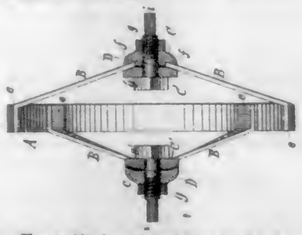
292,616. VAPOR-BURNER. DAVID R. BANGS, Medford, Mass. Filed Aug. 24, 1883. (No model.)



Claim.—1. The combination of the steam-generator tube, the superheater-tube connecting therewith, the vaporizing-tubes with one of which the steam-generator communicates, means for introducing hydrocarbons into said vaporizing-tubes, and the burner-tube communicating with the vaporizing-tubes, and located below the steam and vaporizing tubes, and provided with jet-openings for directing the flame-jets directly against the steam and vaporizing tubes, substantially as described.

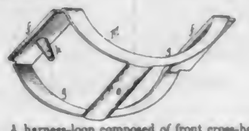
2. The combination of the steam-generator tube, the vaporizing-tubes, means for supplying hydrocarbons to said tubes, the superheater-tube communicating with the steam-generator tube and with the vaporizing-tubes at a point where the superheated steam will strike and spray the hydrocarbon as it enters the vaporizing-tube, and the burner-tube communicating with the vaporizing-tubes, and located at a point to direct the flame against both the steam and vaporizing tubes, substantially as described.

292,617. VEHICLE-WHEEL. WILLIAM C. BARR, Jersey City, N. J. Filed Oct. 13, 1883. (No model.)



Claim.—The combination, substantially as hereinbefore set forth, with the rim A and arms B, of the washers C C', one recessed to receive the inner ends of the arms, and both beveled on their opposed surfaces in planes corresponding to the position of the arms, and the screw-bolts D, arranged to act on the washers for clamping the arms, the outer ends of the bolts forming journals.

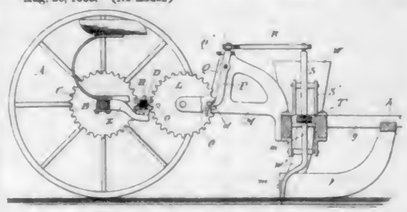
292,618. HARNESS-LOOP. JAMES M. BASINGER, Buffalo, N. Y., assignor of one-fourth to Pratt & Letchworth, same place. Filed June 16, 1883. (No model.)



Claim.—1. A harness-loop composed of front cross-bars, *f f*, a depressed rear cross-bar, *e*, curved side bars, *g g*, connecting the front cross-bars with the rear cross-bar, and formed in one piece therewith, and a tongue, A, formed on the under side of one of the front cross-bars, substantially as set forth.

2. The combination, with a fixed strap, A, and a loose strap, D, of a loose loop, E, constructed substantially as described, surrounding both straps, and made lengthwise adjustable on both straps, whereby the loop can be placed in any desired position on the fixed strap for supporting the loose strap, substantially as set forth.

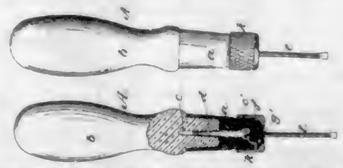
292,619. CORN-PLANTER. THOMAS BELL, Shelby City, Ky. Filed Aug. 20, 1883. (No model.)



Claim.—1. In a corn-planter, the combination, with the reciprocating bar T, with its ends entering the seed-boxes, of the marking-lever *m*, with its upper end connected directly to the bar T, and having its lower portion curved rearwardly, the centrally-pivoted lever S, the horizontally-vibrating T-shaped lever R, the rocking levers P, with their lower ends provided with rearwardly-curved arms *d d*, the cog-wheel L, having on opposite sides studs O, and shifting-pinion D, adapted to engage with the latter cog-wheel, and the cog-wheel C, substantially as and for the purpose set forth.

2. In a corn-planter, the combination, with the seed-boxes, of the reciprocating bar T, for opening and closing the apertures in the bottoms of the boxes, the lever S, connected with the bar T, the T-shaped lever R, adapted to swing in the horizontal plane and connected with the lever S, two pivoted levers, P, having their upper ends held in the ends of the cross-piece of the T-shaped lever R, the cog-wheel L, provided with studs O, diametrically opposite each other and on opposite sides of the said wheel, the cog-wheel C on one of the driving-wheels of the planter, and the pinion D, engaging with the cog-wheel C and L, and connected with mechanism for withdrawing it from between the said cog-wheels, substantially as herein shown and described, and for the purpose set forth.

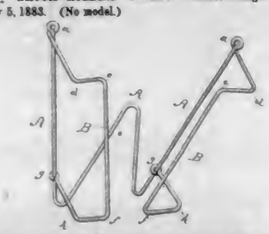
292,620. TOOL-HANDLE. CHARLES L. BELLAMY, Arlington, N. J. Filed May 21, 1883. (No model.)



Claim.—1. The combination of the body of a tool handle or stock having a funnel-shaped or conical tool-socket adapted to receive the tang or shank and shoulder of the tool to be held, or the shoulder of such tool in the wider part of said socket, a clamping-collar adapted to clamp said shoulder in said socket, and a screw-threaded ferrule adapted to a screw on the socket end of the tool-holder, for forcing the clamping-collar down upon the shoulder of the tool, all constructed and operating substantially as specified.

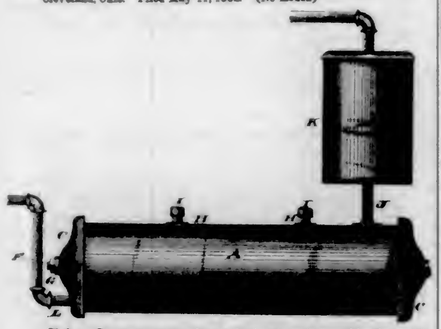
2. The combination, with the body of a tool-holder having a funnel-shaped tool-socket, the wider part of which is non-circular in cross-section, and also having a screw-thread on its socket end, of a clamping-collar made in a form corresponding with the non-circular part of said socket, and a screw-ferrule adapted both to the thread on the socket and of said body and to the clamping-collar, for forcing said collar down upon the shoulder of the tool to be held, and holding the same rigidly in the wider part of said socket, substantially as and for the purpose set forth.

292,621. BROOM-HOLDER. HERMAN C. BERG, College Point, N. Y. Filed July 5, 1883. (No model.)



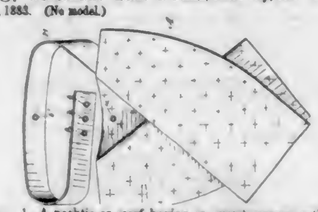
Claim.—As a new article of manufacture, a broom-holder made of a single piece of wire bent, as shown and described, to form the back A, the side divergent wings, B B, and the eyes *a a*, as set forth.

292,622. APPARATUS FOR PRODUCING GAS. GEO. W. BILLINGS, Cleveland, Ohio. Filed May 11, 1882. (No model.)



Claim.—In an apparatus for producing gas, the combination, with the described atomizing-cylinder, of removable heads therefor, a rod extending through the cylinder to hold the heads in place, a homogeneous body of compressed fibrous material filling the cylinder, pipes for the introduction of oil thereinto, and ports for the ingress of air and the egress of gas, respectively located on opposite sides and ends of the cylinder, substantially as and for the purpose set forth.

292,623. NECKSCARF. HENRY T. BLAKE, Cañon City, Colo. Filed Sept. 14, 1883. (No model.)



Claim.—1. A necktie or scarf having an eyelet passing entirely through the same near its upper edge, about midway of its breadth, in combination with a neckband secured at one end to the tie or scarf, and having one or more eyelets near its free end, substantially as described.

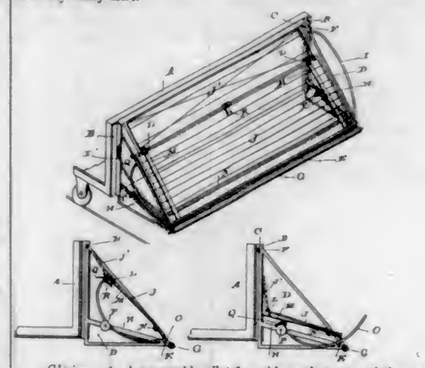
2. A necktie or scarf having an eyelet passing entirely through the same near its upper edge, about midway of its breadth, in combination with a neckband secured at one end to the tie or scarf, and having one or more eyelets near its free end and one or more eyelets near its center, substantially as described.

3. A necktie or scarf having an eyelet passing entirely through the same near its upper edge, about midway of its breadth, and an auxiliary fastening device on its rear side, in combination with a neckband secured at one end to the tie or scarf, and having one or more eyelets near its free end, substantially as described.

4. The combination, with the scarf A, having the eyelet *a* and hook C, of the neckband B, secured to said scarf at one end and having one or more eyelets, *b*, near its free end and one or more eyelets, *b'*, near its center, substantially as described.

292,624. PILOT OR GUARD FOR CARS OF CABLE-ROADS. WM. U. BOHN, San Francisco, Cal. Filed May 4, 1883. (No model.)

Brief.—An adjustable safety-pilot normally held in a retracted position, but which is so arranged as to trip a person and automatically form a cradle to allow his body to fall thereon, and from which the person may easily arise.

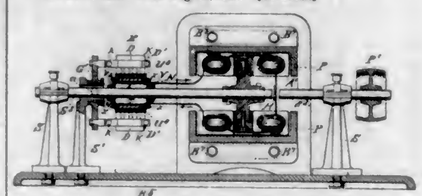


Claim.—1. A removable pilot for cable-road cars, consisting, essentially, of a supporting frame-work, a hinged cradle, and a sliding foot-tripping device, combined and arranged to operate substantially in the manner and for the purpose set forth.

2. In a pilot for cable-road cars, the supporting-frames D D, connected by transverse rails, and having a rubber-covered rod, G, and friction-rollers P P, substantially as shown, and for the purpose set forth.

3. In a pilot for cable-roads, the supporting-frames D D, lower and upper hinged cradles, J J', having flat springs M M, legs L L, and spring-clip R, in combination with the tripper O, having curved end pieces and legs or clips Q Q, substantially as shown, and for the purpose specified.

292,625. DYNAMO-ELECTRIC MACHINE. WILLIAM F. BUCKLEY, Cleveland, Ohio. Filed Aug. 14, 1883. (No model.)

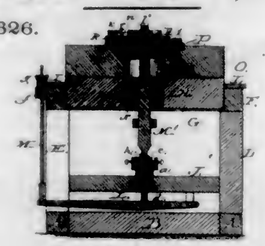


Claim.—1. An armature composed of the armature-sections, having the neck portion *o'* and spaces *o² o²* at its sides, to receive the bobbins, which are removably secured therein by screws, the neck portion of each armature-section being planed away in its lower side to fit astride of the hub H, and secured thereto by bolts B², spaces being left between the sections, and grooves *g* provided in their faces, for the bobbin-connecting wires, substantially as specified.

2. An armature-section having the neck portion *o'*, the spaces *o²*, and the removable bobbins B, secured in place by screws, substantially as specified.

3. A commutator for dynamo-electric machines, having two brass or iron heads, V V, secured to the hard-rubber tube T by screws, and provided with holes N, for the passage of the wires from the armature to the commutator-segments, substantially as specified

292,626.

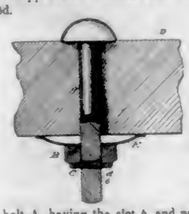


292,626. MILLSTONE-ADJUSTING MECHANISM. GEO. H. CORMACK, Rockford, Ill. Filed Mar. 6, 1880. (Model.)

Claim.—The combination, with a tapered spindle, the tapered portion of which projects above the face of the bed-stone, of the runner provided with a fixed eye-plate, and the adjustable tapered rynd having an elongated spindle-aperture, projecting radial arms, binding-screws to secure it to the eye-plate, set-screws which pass through said arms, bear against the eye-plate, and serve to adjust the position of the rynd to the plate, whereby the faces of the stones are relatively adjusted one to the other, substantially as described.

292,627. NUT-LOCK. SAMUEL B. CRAGIN, Ada, Minn., assignor of one-third to Ida L. Cragin, same place. Filed Dec. 4, 1883. (Model.)

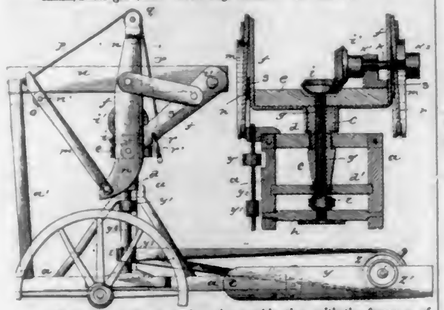
Brief.—Screw the nut down sufficiently to put the key into the slot in the bolt and to permit the key to drop in the slot onto the nut and with its tooth in the tap-hole of the nut. Then screw the nut back, jamming the key against the upper side of the slot in the bolt. The spring-washer may be omitted.



Claim.—1. The bolt A, having the slot *b*, and nut B, in combination with the pin C, having notch *d*, substantially as described.

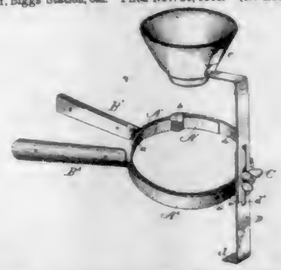
2. In a nut-lock, the combination of bolt A, having slot *b*, nut B, pin C, having notch *d*, and spring E, substantially as described.

292,628. STRAW-STACKER. WILLIAM DECKER and JOSEPH A. MARSHALL, Darlington, Ind. Filed Aug. 18, 1883. (No model.)



Claim.—In a straw-stacker, the combination, with the frame *a*, of the arms *s s*, pulleys *q q* at their upper ends, the arms *s s*, the shaft *c*, pulleys *r r*, the carrier *u*, hinged between the upper ends of the arms *s s*, the arms *m m*, hinged at their lower ends to the arms *n n*, the friction-rollers *o o* near their upper ends, and the ropes *p p*, connecting the arms *m m* and the pulleys *r r*, substantially as specified.

292,629. COMBINED CAN-HOLDER AND FUNNEL. W. MARK DOTY, Biggs' Station, Cal. Filed Nov. 23, 1883. (No model.)



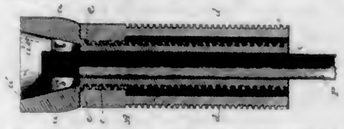
Claim.—1. In combination with a fruit-jar holder, a vertical adjustable arm, D, having a bent portion, *d*, adapted to extend under the base of the jar, substantially as shown.

2. A fruit-jar holder consisting of the spring-bands A' A², provided with perforations *a a'*, and handles B' B², one of said bands being provided with a loop, *b*, and connected to each other by a set-screw, for the purpose set forth.

3. In combination with the fruit-jar holder herein described, a funnel-support and a downwardly-projecting arm with bent portion, as shown, for the purposes set forth.

4. In combination with an adjustable jar-holder, a vertically-adjustable arm for supporting a funnel, and an adjustable downwardly-projecting arm, bent at its lower end, as shown, the parts being united to each other by a single set-screw, substantially as shown, and for the purpose set forth.

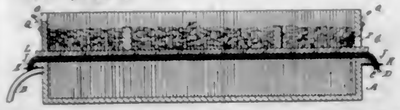
292,630. PIPE-LIFTER FOR OIL-WELLS. SAMUEL K. DUFF, Allegheny, and JAMES B. DUFF, Pittsburg, Pa. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a device for lifting pipes, the combination of a hollow lifting-screw, provided with a hollow cylinder upon its upper end, with an operating jack or mechanism for raising the hollow screw upward, substantially as shown.

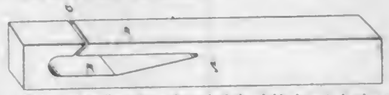
2. In a device for lifting pipes, the combination of a hollow screw having a cylinder formed upon its top, the jack A, and the nut B, which is applied to the upper end of the pipe inside of the cylinder, substantially as set forth.

292,631. FILTER. JUSTIN DUREL, New Orleans, La. Filed July 25, 1883. (No model.)



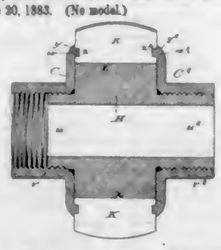
Claim.—The combination, with the tank A, having flanges G, and provided with pins K, and the tank F, having similar flanges G and a perforated bottom, of the cloths C and D, provided with eyelets J to engage pins K, and the bolts H, as and for the purpose specified.

292,632. MAIL-SACK TAG. GEORGE W. DWINGER, Brooklyn, N. Y. Filed Oct. 26, 1883. (No model.)



Claim.—A mail-sack tag formed of the rigid piece A, having the longitudinal beveled slot B, the transverse slot C, and the spring-tongue D, all substantially as shown and described.

292,633. HEEL-TRIMMER. CHRISTOPHER S. DWYER, Spencer, Mass. Filed June 20, 1883. (No model.)

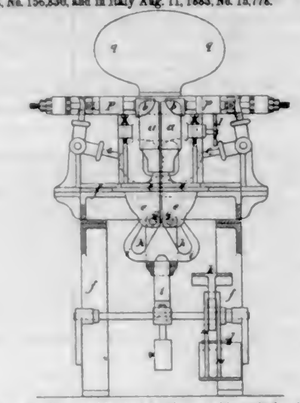


Claim.—1. The combination, in a heel-trimmer, of the hub H, having oblique peripheral grooves *z*, annular grooves *y y²* in its respective faces, and externally screw-threaded ends *u u²*, knives K, having notches *z z²* in their ends, coinciding with said annular grooves, and clamping-collars C C², constructed with annular locking-ribs *w w²* on their inner faces, matching said annular grooves and notches, and with internally screw-threaded ends *v v²*, matching said hub ends *u u²*, substantially as herein specified, for the purposes set forth.

2. In a heel-trimmer, knives K of thin steel, held solidly in oblique

peripheral grooves in a suitable hub, and secured in said grooves by means of annular ribs coacting with corresponding grooves and notches in said hub and knives, substantially as herein described, for the purposes set forth.

292,634. APPARATUS FOR STRETCHING HAT-BODIES. JOHN EATON, Stockport, County of Chester, England. Filed Aug. 6, 1883. (No model.) Patented in England Apr. 19, 1883, No. 1,976; in France Aug. 1, 1883, No. 156,330, and in Italy Aug. 11, 1883, No. 15,778.



Claim.—1. The combination, in a hat-machine, of a hat-block made in two or more parts, and corresponding cups adapted to be held to the said separate parts to retain the hat thereon, and devices, substantially as set forth, for moving the parts of the block away from each other, as set forth.

2. The combination of the frame of a hat-machine, a hat-block made in two or more parts, and standards adapted to guides in said frame, and carrying the parts of the block, with corresponding cups adapted to be held to the said parts to retain the hat thereon, and devices, substantially as described, for moving said standards to separate the parts of the block.

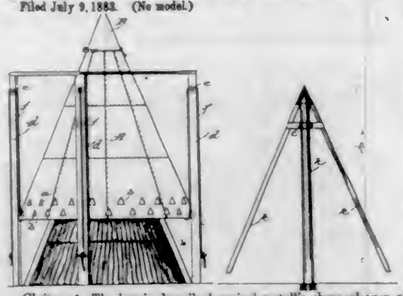
3. The combination of the frame of a hat-machine, and a hat-block made in two or more parts, with a movable frame carrying yielding cups corresponding with the parts of the said block and applied thereto, with devices, substantially as set forth, for separating the parts of the block with their corresponding cups.

4. The combination of the main frame of a hat-machine, a hat-block made in two or more parts, and devices for withdrawing said parts from each other, with a pivoted frame, *p*, carrying cups *b b*, and yielding devices pressing the cups into contact with the parts of the block, substantially as specified.

5. The combination of the main frame of a hat-machine, a hat-block made in two or more parts, and devices for withdrawing said parts from each other, with a movable pivoted frame, *p*, carrying yielding cups adapted to bear on the parts of the block, and a catch, *d*, substantially as set forth.

6. The combination of the frame of a hat-machine, a hat-block made in two or more parts, and yielding cups held to said parts, with sliding standards *e*, carrying the latter, and a plunger, *i*, under the control of the operator to separate said standards, substantially as described.

292,635. CHARCOAL-OVEN. JOHN A. EDWARDS, Columbiana, Ala. Filed July 9, 1883. (No model.)

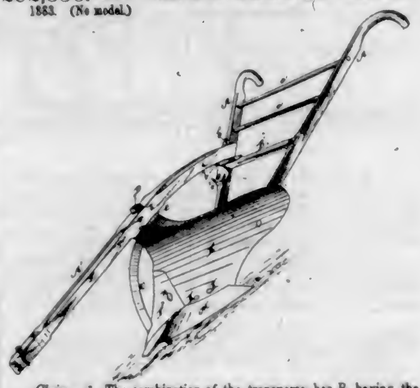


Claim.—1. The herein-described conical metallic charcoal-oven of the described construction, and adapted to rest on the ground, in combination with the corner-posts and hoisting-ropes.

2. The guide having inclined pivoted arms, in combination with a conical charcoal-oven.

3. The combination of the center post, *h*, cross-beam *i*, and arms *k k*.

292,636. PLOW. JOSEPH ELDOCK, Mechanicsburg, Pa. Filed Jan. 11, 1883. (No model.)



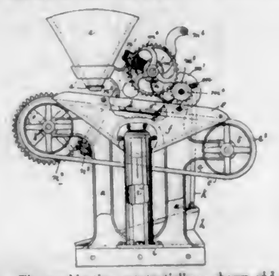
Claim.—1. The combination of the transverse bar B, having the slotted seat *b* and extension or lug *b²*, the handles A, the mold-board E, provided with seat *e*, flange *f'*, and intermediate lug, *e'*, beam A', and bolt D, passing through beam-seat *e* and lug *e'*, substantially as described.

2. The landside G, having the sole I at its front end, the inclined chamber I², arranged above said sole, and the enlargement P and V-shaped socket *p*, substantially as described.

3. The combination of the mold-board having the flanged portion *f'*, the inclined channel *f²*, formed in the lower portion of the latter, and the flat upper bearing-surface, E², located above a portion of said inclined channel, with the reversible plow-point and the landside having the beveled sole I, substantially as described.

4. The combination of the reversible share M, having the curved shoulder *m'* formed upon its opposite sides, and having the inclined perforated and cut-away inner portion, *m²*, with the mold-board having the perforated and recessed portion L, substantially as described.

292,637. ORE-SEPARATOR. HADLEY P. FAIRFIELD, West Medford, Mass. Filed Apr. 16, 1883. (No model.)



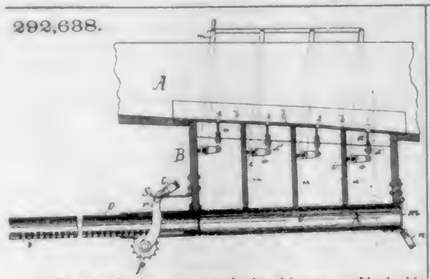
Claim.—The combination, substantially as shown and described, of the hopper, an endless traveling belt provided with transverse riffles and longitudinal deckels, drums to support such belt, with its end next the hopper higher than the other, gearing to drive such belt, an air-chamber through which the upper part of the belt passes, an air-forcing apparatus, a chamber into which the air is forced thereby, and a conduit or pipe connecting the two air-chambers, all and severally as set forth.

292,638. ORE-SEPARATOR. HADLEY P. FAIRFIELD, West Medford, Mass. Filed May 22, 1883. (No model.)

Claim.—1. In an ore-separator, the sluice having narrow transverse slits in its bottom and a substantially water-tight tank or receptacle beneath the said slits, adapted to remain full of water, combined with clearing devices consisting of plates or bars vertically movable into said slits, and supports for said plates or bars, which, together with their supports, are arranged wholly below the said slits, substantially as described.

2. A sluice having a transverse slit through its bottom, combined with a clearing device consisting of a plate or bar and means to move it into the said slit, substantially as described.

292,688.

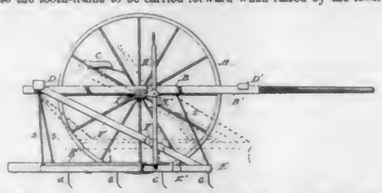


3. The sluice having a transversely-slotted bottom, combined with a clearing plate or bar movable in guides beneath each slit, and actuating mechanism therefor, whereby the said bar is movable upward into the said slit to lift particles therefrom and force them out in the direction from which they entered, as and for the purpose described.

4. The sluice and receiving-chamber beneath it, having a discharge-passage, combined with the ejecting-plunger and actuating mechanism therefor, whereby it may be forced longitudinally through the said passage to eject the contents thereof, substantially as described.

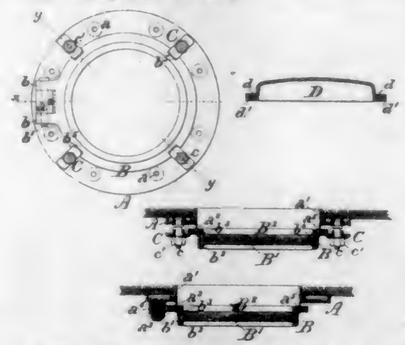
292,689. CULTIVATOR. HARVEY W. FERGUSON, North's Mills, assignor of one-half to William M. Dight, Mercer, Pa. Filed Mar. 15, 1883. (No model.)

Brief.—The angular braces are bolted in front to the cultivator-bars, and at the rear are notched to bear against the frame. The hangers cause the tooth-frame to be carried forward when raised by the lever.



Claim.—The combination, with the main frame and axle, of cultivator-frame E E' E'', the suspending rods S, the lever H, and the inclined braces F F', rigidly screwed to the front end of the cultivator-frame, and arranged to bear against the rear cross-bar and take the strain off the shovels when at work, substantially as shown and described.

292,640. AIR-PORT FOR VESSELS. JOHN F. FOLMER, Philadelphia, Pa. Filed May 1, 1883. (No model.)



Claim.—1. The combination of a plate or frame having a central opening and adapted to be secured to the side of a vessel, a flange surrounding and continuous with or of less diameter than the inner surface of said opening, and a movable sash having a packing-ring which abuts against the inner flange of the frame, said sash being coupled to the frame by a hinge pin or bolt, and secured thereto by a series of circumferential clamps, these members being combined for joint operation, to admit of the swinging aside of the sash by the slackening of the clamps without removing the same, and the insertion of a dead-plate which is adapted to be similarly secured and packed at its joint with the inner flange of the frame, substantially as set forth.

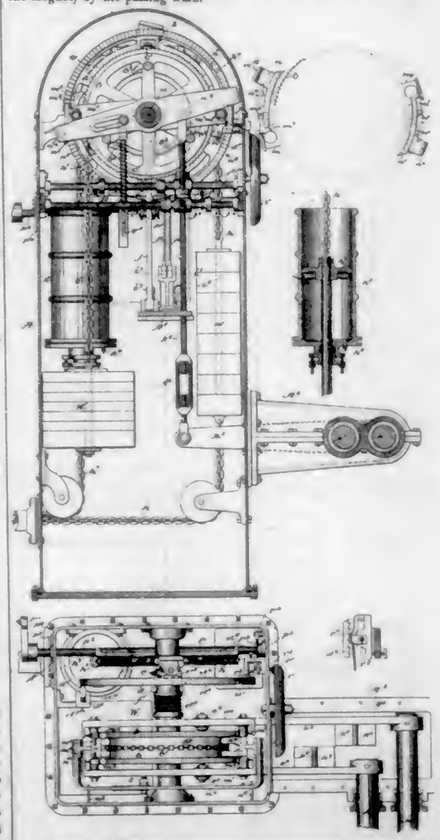
2. The combination, substantially as set forth, of a plate or frame having a central opening and adapted to be secured to the side of a vessel, a movable sash or dead-plate closing said opening, and a series of clamps, each secured by a nut upon a stud in the frame and entering a circumferential recess in the sash or dead-plate.

3. The combination, substantially as set forth, of a plate or frame having a central opening and adapted to be secured to the side of a vessel, a swinging sash or glass-support having a series of circumferential recesses, and hinged to said plate or frame by a pin or bolt passing through an oblong or slotted hole in a standard thereon, and a series of clamps, each entering one of the recesses of the sash, and secured against the same by a nut engaging a stud upon the frame.

4. A balanced clamp for securing an air-port, sash, or shutter, having a central hub or boss and an opening therein for the passage of a supporting-stud and two clamping-arms, projecting one upon each side of the central hub, substantially as set forth.

292,641. AUTOMATIC RAILWAY-GATE. GEORGE F. FORBES, Hyde Park, Mass. Filed Apr. 16, 1883. (No model.)

Brief.—A single gate-actuating mechanism is inclosed in an independent case, from which the power is transmitted to any desired number of gates that are to be operated simultaneously, and weights are employed to both close and open the gates. The devices are duplicated, so that a single apparatus inclosed in a single case is sufficient to operate any desired number of gates. The operating mechanism comprises a drum actuated by a weight, a clutch to connect the same with the gate, detents to hold the weight from action until it is desired to close the gate, detents and triggers with electro-magnet to engage the clutch and liberate the weight, and a winding mechanism operated (as is also the magnet) by the passing train.



Claim.—1. The combination of the main actuating-weight with the clutch for applying the said weight, and the duplicate clutch-controlling devices, substantially as and for the purpose described.

2. In an automatic gate-actuating apparatus, the main actuating-weight and clutch for applying the same, combined with duplicate winding mechanism for the said weight, whereby the said weight may be wound by trains passing on different tracks, substantially as described.

3. The main actuating-weight and its duplicate sets of winding mechanism for winding the said weight by the action of trains passing over different tracks, combined with a disengaging device common to both sets of winding mechanism, whereby the winding operation ceases when the weight is sufficiently raised, substantially as described.

4. The main shaft and main actuating-weight applied thereto, combined with the pulley loose on the said shaft, and clutch for connecting it therewith, and the restoring-weight and regulating device, substantially as described.

5. The clutch-wheel and its shipper, combined with a lever connected with the said shipper, and means, substantially as described, to move either end of the said lever independently, as and for the purpose set forth.

6. The clutch and its shipper, combined with a detent-arm, *f*, provided with a series of engaging projections or teeth, a detent-lever, *i*, having a projection, *i*, for engaging the said teeth, and an electro-magnet and its armature, controlling the said detent-lever, substantially as described.

7. The clutch and its shipper, and detent-arm therefor, provided with a series of teeth combined with the detent-lever having a yielding projection to engage the said teeth, an electro-magnet controlling the said lever, and restoring mechanism actuated by the said detent-arm, whereby the detent-lever is placed in proper position to engage the teeth of the detent-arm, substantially as described.

8. The clutch, its shipper, and lever connected therewith, combined with the independent clutch-disengaging devices connected with the said lever, and independent mechanism actuated by the trains passing over the different tracks, for actuating the said disengaging devices, respectively, substantially as described.

9. The main shaft and main actuating-weight applied thereto, combined with the pulley loose on the said shaft, having a secondary or restoring weight applied to it, and the clutch for connecting the said shaft and pulley, and duplicate winding and clutch-shipping mechanism corresponding to the different tracks, whereby the said main weight is wound when a train passes over either track and the clutch is shipped, substantially as and for the purpose described.

10. The weight W, its winding-drum having ratchet-wheels at either side, and the independent pawl-carriers and pawls, combined with the pawl-raising devices and actuating device therefor, operated by the weight when wound, whereby the winding-pawls are disengaged from the ratchets when at rest in their normal position, and are also retained disengaged during their entire movement after the weight is raised sufficiently high, substantially as described.

11. The main shaft and pulley loose thereon, connected with the gates, combined with the hand-operated shaft *p'* and means to throw it into engagement with the said pulley to operate the gates, substantially as described.

12. The main shaft and pulley loose thereon, connected with the gates and with a restoring-weight, as described, and provided with a worm-gear, combined with the hand-operated shaft, provided with a worm, and the movable bearing-piece for the said shaft, substantially as set forth.

13. The loose chain-pulley, connected with the gates and with a restoring-weight, combined with the hand-operated shaft adapted to be thrown into engagement with or disengaged from the said pulley, and its ratchet and pawl, whereby the said shaft is permitted to turn the pulley in one direction only to raise the said weight, substantially as and for the purpose described.

14. The combination, with the main shaft and weight applied thereto, of the chain-pulley loose on the said shaft and connected with the gate, and provided with a laterally-projecting pawl, and the clutch-wheel longitudinally movable on the said shaft, provided with ratchet-teeth on both faces, and the fixed pawl for engaging the said clutch-wheel when disengaged from the chain-pulley, substantially as described.

15. The main shaft and clutch-wheel longitudinally movable thereon, provided with ratchet-teeth, combined with the alarm-bell and its hammer, adapted to be operated by the teeth of the said clutch-wheel, substantially as described.

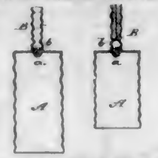
16. The shaft, winding-drum thereon, and pawl-carrier and pawls for winding it, combined with the yoke pivoted on the said shaft, provided with pawl-raising surfaces, its lifting-rod, and movable foot-piece actuated by the weight in rising, and the spring interposed between the said rod and foot-piece, substantially as described.

17. The rock-shaft adapted to be operated by a passing train, and the crank connected therewith, combined with the spring F, acting on the said arm, as described, and the weight-winding and clutch-shipping mechanism actuated by the said arm, substantially as set forth.

18. The main shaft, winding-drum thereon, actuated by passing trains, and the yoke fixed on the said shaft, and provided with friction-rollers, combined with the clutch-wheel longitudinally movable on the said shaft, in engagement with the said rollers, and the chain-pulley loose on the said shaft, connected with the gate, and adapted to be engaged and disengaged by the said clutch-wheel, substantially as described.

19. The gate-shaft and eccentric or cam-shaped sprocket-wheel, combined with the gate-actuating mechanism comprising a chain-pulley and actuating-weights, and the chain connecting the said pulley and sprocket-wheel, substantially as described.

292,642. SAFETY-SHELL FOR BLASTING. GEORGE FREUND, Durango, Colo. Filed June 23, 1883. (No model.)



Claim.—1. A screw-threaded blasting-shell having a screw-threaded nozzle or tube, substantially as herein shown and described.

2. In safety-shells, the tube or nozzle B, for receiving a fuse, formed with an annular inwardly-projecting shoulder or neck, *b*, for separating the fuse from the fulminate or fulminate-cap, substantially as herein shown and described.

3. A screw-threaded blasting-shell having a screw-threaded nozzle, in combination with a threaded firing-cap, substantially as herein shown and described.

4. A screw-threaded blasting-shell formed with a screw-threaded nozzle or tube at one side, substantially as herein shown and described.

5. A double screw-threaded shell for blasting, formed with a screw-threaded tube or nozzle at its mid-length to receive a fuse for firing charges in both ends of the shell, substantially as shown and described.

6. The combination, in a blasting-shell, of the screw-threaded sections A A', provided with a screw-threaded nozzle or tube, B, substantially as shown and described.

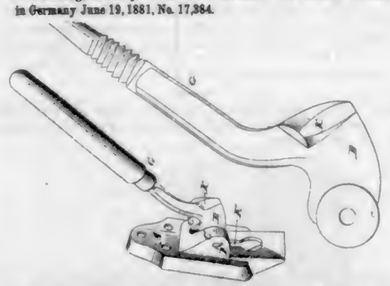
292,643. SKEWER-PULLER. AUGUSTUS F. FRIEND, Gravesend, N. Y. Filed Dec. 12, 1883. (No model.)



Claim.—1. A skewer-puller constructed substantially as herein shown and described, and consisting of the handles A B, pivoted to each other at their forward ends, and provided at their said forward ends with jaws C D, having their faces concaved longitudinally, as set forth.

2. In a skewer-puller, the jaws C D, concaved longitudinally, substantially as herein shown and described, to adapt them to take a firm hold upon a skewer, as set forth.

292,644. WOOD-SPLITTING MACHINE. AUGUST FUCHS, Cannstadt, Würtemberg, Germany. Filed June 25, 1883. (No model.) Patented in Germany June 19, 1881, No. 17,384.

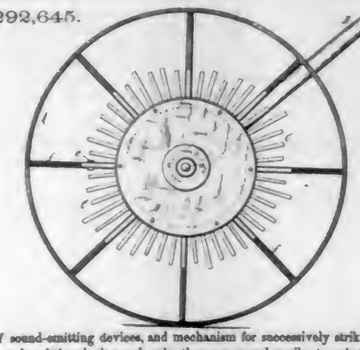


Claim.—A wood-splitting tool consisting of a frame or base adapted to be secured to a fixed support, and having lugs and an opening or slot, E, a blade pivoted at one end to the lugs, and having an extended handle, the said blade being narrow at one edge and having wedge-shaped enlargements, substantially as described.

292,645. MUSICAL TOY. WILLIAM ALFRED GAY, Tonawanda, N. Y. Filed Sept. 28, 1883. (No model.)

Claim.—1. In a musical toy, the combination of a circular series

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of sound-emitting devices, and mechanism for successively striking said sound-emitting devices, whereby they are caused to vibrate, substantially as set forth.

2. In a musical toy, the combination of a circular series of sound-emitting devices, an axle arranged centrally within said series, and mechanism mounted on said axle and adapted to come in contact successively with said sound-emitting devices, whereby they are caused to vibrate, substantially as set forth.

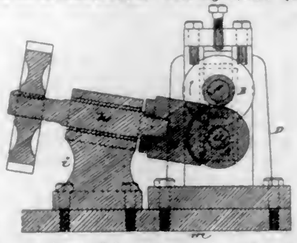
3. The combination, with a toy hoop, of a series of sound-emitting bars or tongues and mechanism whereby the same are vibrated, substantially as set forth.

4. The combination, with a toy hoop, of a handle, a circular series of sound-emitting devices, and a striking-finger, substantially as set forth.

5. The combination of a toy hoop, an axle on which the hoop turns loosely, a handle rigidly secured to the axle, a circular series of sound-emitting devices attached to the axle, and a striking-finger attached to the hoop, substantially as set forth.

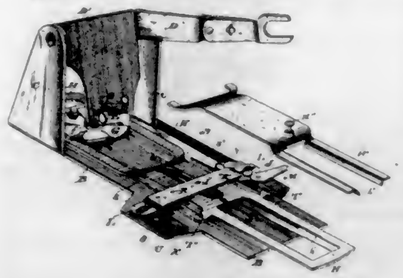
6. In a musical toy, the combination, with a disk, D, of sound-emitting bars or tongues C, secured to said disk, substantially as set forth.

292,646. MACHINE FOR BENDING BOOT AND SHOE COUNTERS. ROBERT GLOVER, Leominster, Mass. Filed Aug. 20, 1883. (No model.)



Claim.—The improved shoe-counter-shaping machine, substantially as described, consisting of the revolvable sphere, cup, and concave roll, arranged and having mechanism for operating them essentially as set forth, the axes of revolution of the sphere and roll being parallel and that of the cup being at right angles to that of the sphere.

292,647. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. HENRY C. HARTLEY and JAMES L. RODGERS, Springfield, Ohio. Filed Mar. 29, 1883. (Model.)



Claim.—1. In a button-hole attachment for sewing-machines, the combination of a rotary cam pivoted to the bed-plate, and provided with a circular rack adapted to receive motion from the needle-bar, as described, with a cloth-clamp surrounding and bearing at all times on diametrically-opposite points of the cam, whereby said cam imparts an oscillating motion to the clamp and is adapted to hold said clamp firmly in the extreme positions to which it is carried, substantially as set forth.

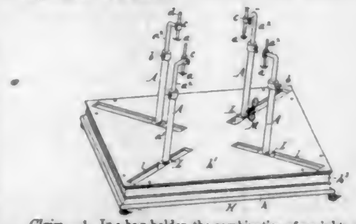
2. In a button-hole attachment for sewing-machines, the combination of the cloth-clamp having means of oscillation, as described, and the eccentrically-pivoted cams having two bearing-points, of which one or the other may be brought into engagement with the cloth-clamp, according to the desired direction of feed.

3. The combination of the oscillating cloth-clamp, having rods S S' hinged thereto, and the transverse slide, having pins R R' and pivoted blocks Q Q', between which the rods S S' are alternately clamped and released, substantially as described.

4. In a button-hole attachment for sewing-machines, means for adjusting the center of oscillation of the cloth-clamp, and thereby controlling the length of stitch, in combination with intermediate means whereby the same adjustment regulates the distance between the stitches, as set forth.

5. The combination of the transversely-adjustable slide carrying the pivot on which the cloth-clamp oscillates, and the longitudinally-adjustable slide mechanically connected thereto, for shifting the center of oscillation of said cloth-clamp relatively to the point where said oscillation is produced, as and for the purpose set forth.

292,648. BAG-HOLDER. MICHAEL HAYMAN, Buffalo, N. Y. Filed Sept. 4, 1883. (No model.)



Claim.—1. In a bag-holder, the combination of uprights and standards adapted to support the bag, sliding supports to which said standards are attached, a base-frame, and mechanism whereby the sliding supports are connected and caused to move simultaneously toward or from each other, substantially as described.

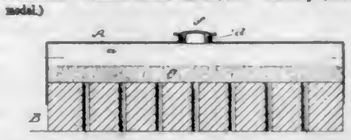
2. The combination, with the standards A, of the rack-bars *f f'* and *g g'*, and a central pinion, I, meshing with said rack-bars, substantially as set forth.

3. The combination, with the standards A, of the rack-bars *f f'* and *g g'*, guides J J' and K K', and a central pinion, I, meshing with said rack-bars, substantially as set forth.

4. The combination, with the standards A, of the rack-bars *f f'* and *g g'*, guides J J' and K K', base H, provided with slots *l*, and a central pinion, I, substantially as set forth.

5. The combination, with the base H and standards A, of mechanism whereby the lower ends of the standards are connected to move simultaneously toward or from each other, and a locking device, M, whereby the standards can be secured in position on the base H, substantially as set forth.

292,649. POLISHER AND CLEANER FOR METAL AND OTHER SURFACES. WILLIAM HEARD, Paterson, N. J. Filed July 5, 1883. (No model.)

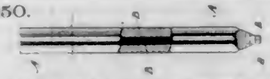


Claim.—The reservoir A, having opening *d* and cap *f*, in combination with the percolator B, held in the reservoir A, so as to form the space *a* for holding the polishing or cleaning material, substantially as described.

292,650. SHADING-PENCIL. GEO. BAPTISTE HECKLINGER, Streator, Ill., assignor of one-half to Charles Hecklinger, New York, N. Y. Filed Aug. 15, 1883. (No model.)

Claim.—1. A shading-pencil made substantially as herein shown and described, and consisting of a handle inclosing leads of different colors, placed side by side, as set forth.

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2. In a shading-pencil, the combination, with the handle A, of two or more leads, B, of different colors, placed side by side, substantially as herein shown and described, whereby a mark shaded in different colors can be made at a single stroke, as set forth.

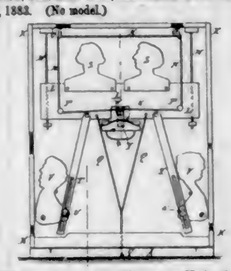
292,651. REFUSE ATTACHMENT FOR TABLE-PLATES. ALBERT HEYDECKER, Philadelphia, Pa. Filed Dec. 7, 1883. (No model.)



Claim.—1. A refuse-holder designed and adapted to form an attachment to table-plates, the same consisting of a pan or tray having means for securing it to a plate, substantially as and for the purpose set forth.

2. The device herein described, consisting of a shallow pan or tray, B, having legs *b b* and lip *b'*, constructed and adapted for attachment to a plate, substantially as shown and described.

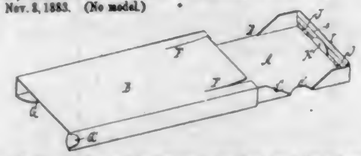
292,652. TOY TARGET. ARTHUR HENRY HOFFMAN and WILLIAM FREDERICK LLOYD, East New York, and JOSEPH H. BLOCK, Brooklyn, N. Y. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination, with a box, K, having rods M suspended from its top, and between them the hooks O O, of the cross-bar L, arranged to slide vertically on said rods, having pins P P, and carrying the target-plates S, the spring-band N, connecting with hooks O and pins P, and the cord Q, attached to said cross-bar and passing through the base-board, as shown and described.

2. The combination, with a sliding cross-bar, L, movable down by a cord and up by a spring, of the slotted rods T and the pivoted target-plates V, screw-clamped in said slots, said plates being pivoted at the outer lower corners to the box, as and for the purpose specified.

292,653. PAPER BOX. GUSTAV L. JAEGER, New York, N. Y. Filed Nov. 8, 1883. (No model.)



Claim.—1. A paper box having a thumb-opening formed partly in the side and partly in the bottom and intermediate the ends of the box-sides, substantially as described.

2. A paper box having a thumb-opening formed partly in the side and partly in the bottom and intermediate the ends of the box-sides, in combination with a tubular cover, through which the box is capable of sliding longitudinally, substantially as described.

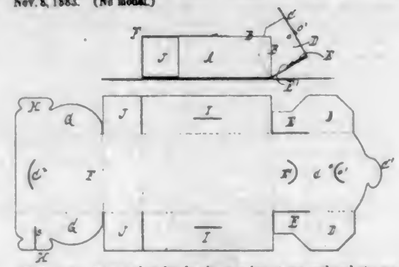
3. The combination, with a paper box, of a tubular cover having slits formed in the end or ends thereof opposite to the top of the box, substantially as shown and described.

4. A paper box having an end piece bent inward upon itself, side ears turned into the fold of the end piece, and a vertically-projecting tongue fixed in position along its horizontal base portion, the upper free end of the tongue lapping over the free edge of the end piece, substantially as described.

5. A paper box having an end piece bent inward upon itself, a tongue in such end piece to receive the free edge thereof, and side ears turned inward into the fold of the end piece, substantially as shown and described.

6. A paper box having an end piece bent inward upon itself and scored lengthwise on its inner part, side ears turned inward into the fold of the end piece, and a tongue or tongues to engage the free edge of the end piece, substantially as shown and described.

292,654. PAPER BOX. GUSTAV L. JAEGER, New York, N. Y. Filed Nov. 8, 1883. (No model.)



Claim.—1. A paper box having its opening at one end and at a portion of the top adjacent to that end, and provided with a closing-flap constructed at its free edge to engage the box top, and having a tongue-piece at or near its central line, a cheek-piece attached to each of its sides, and an ear-piece forming part of each cheek-piece and lying back on the closing-flap, and both ear-pieces engaged by the tongue-piece, said cheek-pieces of the closing-flap embracing the sides of the box, substantially as described.

2. A paper box having its opening at one end and at a portion of the top adjacent to that end, and provided with a closing-flap, C, constructed at its free edge to engage the box top, and having slots at or near its central line, forming, respectively, the tongue-piece E' and thumb-piece *c'*, said closing-flap also having at each side a cheek-piece, D, joined to an ear-piece, E, turned back on the closing-flap, and both ear-pieces engaged by the tongue-piece, the cheek-pieces moving with the re-enforced flap to embrace the sides of the box, substantially as described.

3. A paper box having its opening at one end and at a portion of the top adjacent to that end and the slit C² in its top, and provided with the closing-flap C, having hook C' on its free edge and a thumb-piece, *c'*, back of such hook, substantially as described.

4. A paper box having its opening at one end and slots I in its opposite sides, and provided at one end with a flap, F, having at each side a cheek-piece, G, provided with a hook, H, respectively engaging the side slots, and at the other end with a closing-flap, C, having its free edge constructed to engage the flap F, substantially as described.

5. A paper box having its opening at one end and slots I in its opposite sides, and provided at one end with a flap F, having the slot C², and a cheek-piece, G, at each side, provided with a hook, H, respectively engaging the side slots, and at the other end with a closing-flap, C, having its free edge provided with the hook C' to engage the slot in the flap F, substantially as described.

6. A paper box having slots I at its opposite sides and at one end provided with ears J, resting against the slotted sides, and the flap F, having a slot, C², and cheek-pieces G, each having a double hook, H, engaging one of the side slots, and at its other end provided with a closing-flap, C, having cheek-pieces D, a thumb-piece, *c'*, and a hook, C', at its free edge to engage the slot in the flap F, substantially as described.

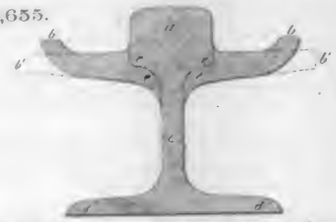
7. A paper box made from a single blank, having slots I in its sides, the flap F, constructed with cheek-pieces G, provided with hooks H, and the closing-flap C, provided with cheek-pieces D, and with means to engage the said flap F, substantially as described.

292,655. RAILROAD T-RAIL. TOM L. JOHNSON, Indianapolis, Ind. Filed Feb. 20, 1883. (No model.)

Brief.—A T-rail having integral with the head side flanges for vehicle-wheels, said flanges having their outer ends upturned to facilitate the inflow of ballast.

Claim.—1. As a new article of manufacture, a rail whose head, web, and foot are substantially of the form and proportion of the ordinary T-rail, provided with two side flanges integral with the body of said head and formed therefrom into side tracks for ordinary wheels of street-vehicles, as and for the purposes set forth.

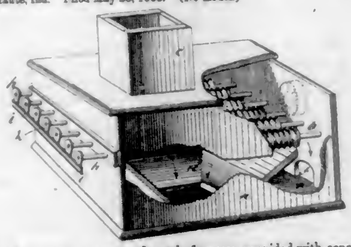
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2. A T-rail having a central head provided with side flanges integral with the body of said head, and adapted for use as tracks for the wheels of ordinary street-vehicles, the extremities of said flanges being curved, so as to facilitate the inflow of street-ballast on either side into pockets sufficiently capacious to bond said rail with the adjacent street material, substantially as set forth.

3. A T-rail having a flange on each side of its head integral with the body of said head, and formed into two side tracks whose extremities are curved upward for street-vehicles, as described, whereby great facility is secured for the passage of such vehicles across such rails at any angle thereto, when laid in track, and wear of street adjacent to said rails largely prevented, substantially as set forth.

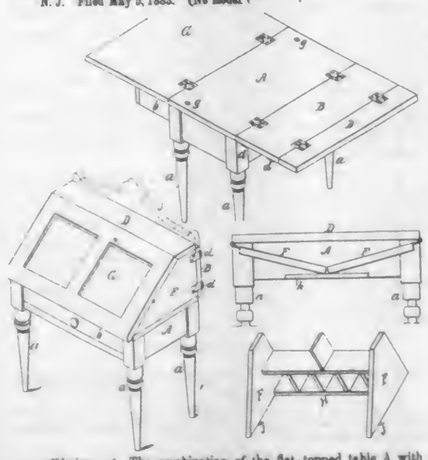
292,656. SEPARATOR FOR GRAIN, &c. FRANK L. KIDDER, Terre Haute, Ind. Filed May 28, 1883. (No model.)



Claim.—1. A separator formed of screws, provided with connected threads intermeshing but not in contact with each other, and mechanism adapted to rotate the adjacent surfaces of each pair of screws in opposite directions, as described.

2. The combination of the box *a*, supply-tube *c*, intermeshing screws *b*, and outlet-hopper *d*, as shown and described.

292,657. FOLDING TABLE. EDWARD C. D. KIRKPATRICK, Camden, N. J. Filed May 5, 1883. (No model.)



Claim.—1. The combination of the flat-topped table A with a structure, as described, for inclosing a space above the top of the table, the back B and flap G of this structure being hinged to the table, as set forth, whereby they can be turned down, and thus form opposite projecting leaves of the table, as set forth.

2. The combination of the flat-topped table A with a structure, as described, for inclosing a space above the table, and comprising the back B, top D, ends F, and flap G, the back and flap being hinged to the table, as described, so as to form projecting leaves thereof, and the top D being hinged to the back B, as set forth, so as to form a continuation of the same when it is turned down to form a leaf, as specified.

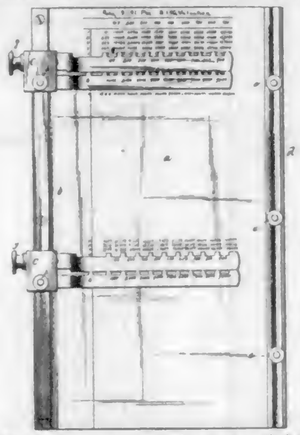
3. The combination of a detachable pigeon-hole frame, H, with a flat-topped table, A, and with an inclosing structure, as described, the back B and flap G of which are hinged to the table, as set forth, whereby they can be turned down, so as to form opposite projecting leaves of the table, as specified.

4. The combination of the table A, having openings *g*, with the hinged flap G and hinged back B, and the ends F, having pins *f*, adapted to the openings *g*, as set forth.

5. The combination of the table A, having a cleat, *h*, at the back, with the hinged back piece, B, and the ends F, hinged thereto, as described, whereby they can be adjusted so as to rest upon the cleat when the back is turned down, as set forth.

6. The combination of the table A, having rear openings, *m*, with the hinged back B, and the ends F, hinged thereto, as described, and having pins *f* near their outer ends, as set forth, whereby said pins may be caused to enter the openings *m* when the back is turned down, as specified.

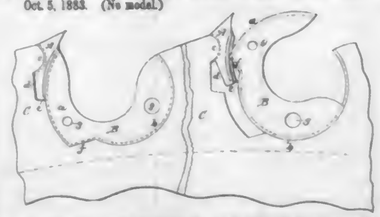
292,658. TAX, INTEREST, AND PERCENTAGE CALCULATOR. WILLIAM S. KISER, Albion, Ind. Filed Nov. 14, 1883. (Model.)



Claim.—1. In a tax, interest, and percentage calculator, the combination, with a tablet having a guide-strip at its left-hand edge, of a triple sliding indicator and a tabulated sheet, on which the per centam for one to one thousand has been calculated and arranged in columns of one hundred resultants, whereby the sliding indicator may be removed to expose the amount of tax, interest, or percentage on a given principal, substantially as specified.

2. In a tax, interest, or percentage calculator, the combination, with a tablet having a guide-strip at one edge and a securing-strip at the other edge, of a tabular calculation and a triple indicator connected adjustably to a grooved slide upon the guide-strip, substantially as specified.

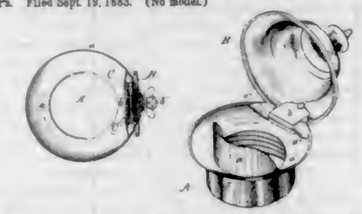
292,659. SAW-TOOTH. ANDREW KRINGER, Columbus, Ohio. Filed Oct. 5, 1883. (No model.)



Claim.—1. The combination of the saw-plate, a removable saw-tooth, and a clamping plate or device, the upper end of the tooth being rigidly clamped between the saw-plate and clamp, while its lower end remains free, substantially as shown.

2. The combination of the saw-plate C, having the projection *c*, and a recess formed by the lines *d e* just below it, the removable tooth A, having a recess in its rear edge to receive the projection *c*, and the clamping-plate B, the upper end of the tooth alone being clamped between the saw and clamping plates, while its lower end is separated from the saw-plate, substantially as set forth.

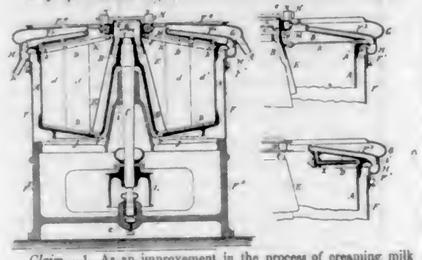
292,660. JUG-TOP. GEORGE PH. LANG and PETER LAUSTER, Allegheny, Pa. Filed Sept. 19, 1883. (No model.)



Claim.—1. A jug-top cover having a hinge-piece projecting downwardly from the inner portion of its rim, said hinge-piece having a single transverse opening adapted to receive a hinge-pin and a closing-spring surrounding said pin, substantially as set forth.

2. The combination of a peripherally-recessed cap-piece having sockets at the ends of its recess, a cover provided with a hinge-piece fitting within said recess, a hinge-pin passing through a transverse opening in said hinge-piece and fitting the sockets of the cap-piece, and a closing-spring within the opening of the hinge-piece, said spring surrounding the hinge-piece and bearing at its ends against the cover and cap-piece, substantially as set forth.

292,661. CENTRIFUGAL CREAMER. WILHELM C. L. LEFELDT and CARL G. C. LENTSCH, Schöningen, Brunswick, Germany, assignors to Theodore Bergner, Philadelphia, Pa. Filed July 28, 1879. Patented in France June 6, 1879, No. 131,257; in England Dec. 24, 1879, No. 5,271, and in Germany Apr. 6, 1880, No. 12,728.



Claim.—1. As an improvement in the process of creaming milk mechanically, driving off the cream mechanically, and removing the skimmed milk mechanically by centrifugal force, the hereinbefore-described method of regulating and adjusting the discharge of skimmed milk while the drum is rotating, substantially as and for the purposes described.

2. As an improvement in the process of creaming milk mechanically, driving off the cream mechanically, and removing the skimmed milk mechanically by centrifugal force, the hereinbefore-described method of supplementing the constant minimum discharge of skimmed milk by a variable discharge regulated while the drum is rotating, substantially as and for the purposes described.

3. The combination, in a centrifugal machine, of a revolving drum, vertical escape-openings therein, and cocks for regulating the escape through said openings, substantially as described.

4. The combination, in a centrifugal machine, of a revolving drum, vertical or lateral escape-openings therefrom, regulating-valves, and regulated cocks, substantially as and for the purposes set forth.

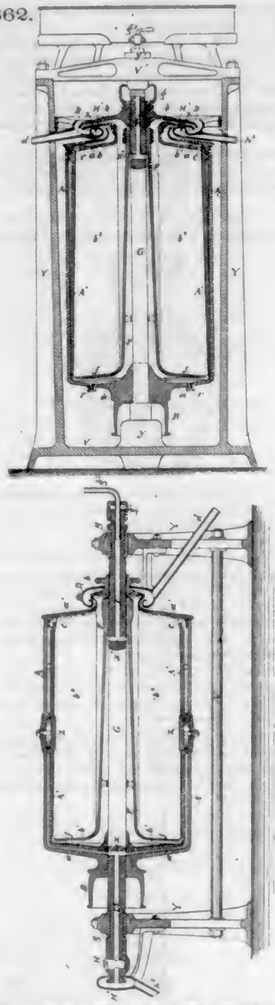
5. The combination, in a centrifugal machine, of a revolving drum, escape-openings therefrom, and regulated escape-cocks leading to said escape-openings, substantially as set forth.

292,662. CENTRIFUGAL CREAMER. WILHELM C. L. LEFELDT and CARL G. C. LENTSCH, Schöningen, Brunswick, Germany, assignors to Theodore Bergner, Philadelphia, Pa. Filed July 28, 1879. Patented in France Jan. 7, 1879, No. 128,351, and in Germany Jan. 28, 1879, No. 9,241.

Claim.—1. The combination of the cylinder A with the drum A′, revolving together, substantially as and for the purposes described.

2. The combination of the drum, the cylinder, the channel *c′*, the cross-hole *x′*, and the closed sleeve, substantially as and for the purposes described.

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3. The combination of the cylinder A, the drum A′, the inlet *c′*, and the outlet c^3, substantially as and for the purposes described.

4. The combination of the cylinder A, the drum A′, and the screw-cap *b*, substantially as and for the purposes described.

5. The combination of the cylinder, the drum, the screw-cap, the chamber or trough D, and the outlet c^3 with the chamber or trough H′, substantially as and for the purposes described.

6. The combination of the cylinder, the supply g^2, and the discharge H, substantially as and for the purposes described.

7. That improvement in the method or process of creaming milk which consists in separating the cream therefrom by centrifugal action, discharging a portion of the skim-milk while the drum is in rapid rotation, then feeding the drum while in rapid rotation, so that the fresh milk is introduced next the inner wall of the drum into the skim-milk in the drum, and between the drum and the cream-wall previously formed and then established within the drum.

8. That improvement in the art of feeding or introducing milk into a centrifugal machine, to separate the milk from the cream and keep the cream-wall unbroken during the creaming operation, which consists in feeding the milk into the machine next the inner wall of the then revolving drum.

9. A closed centrifugal drum mounted upon a vertical tubular axle,

and provided with interior radial flanges, and with a series of peripherical discharge-tubes located above the drum.

10. A closed centrifugal drum mounted upon a vertical tubular axle, and provided with interior radial flanges, and with a discharge-tube concentric with the axle, opening from the upper center of the drum.

11. A closed centrifugal drum provided with a double set of central discharge-pipes adjustable in relation to each other, one of said pipes communicating with the periphery and the other with the center of the drum.

12. A closed centrifugal drum provided with radial interior flanges, and a double set of vertical discharge-tubes, in combination with a central vertical tubular axle, and a distributing-shield attached thereto.

292,663. MANUFACTURE OF SPANGLED GLASSWARE. WM. LIBERTON, Jr., Wheeling, W. Va. Filed Sept. 26, 1883. (Specimens.)

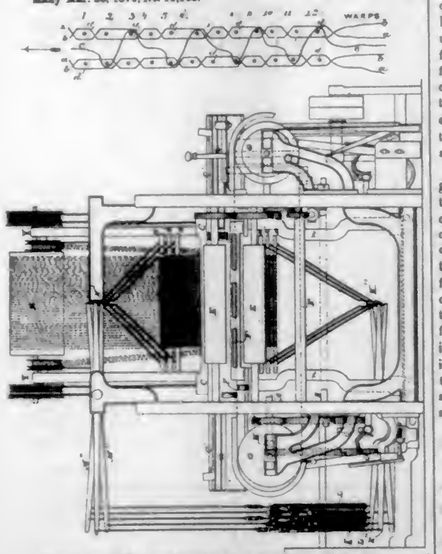


Claim.—1. The improvement in the art of manufacturing ornamented glassware, which consists in incorporating spangles, flakes, or fragments of infusible crystalline material into the substance and between the layers of glass after fusion and while in a plastic condition, and thereafter blowing the same into any desired shape, substantially as set forth.

2. The improvement in the art of manufacturing ornamented glassware, which consists in gathering a ball from a melting-pot, rolling said ball on a marver, on which is spread infusible crystalline material in flakes or fragments, gathering an additional layer of glass upon said ball by returning it to the melting-pot, and finally blowing the ball into any desired shape, substantially as set forth.

3. As a new article of manufacture, a piece of glassware having spangles or flakes of infusible crystalline material embedded between upper and lower layers or strata of its mass, substantially as set forth.

292,664. LOOM FOR WEAVING DOUBLE PILE FABRICS. SAMUEL C. LISTER and JOSE REYACH, Manningham, near Bradford, County of York, England. Filed Nov. 23, 1881. (No model.) Patented in England Aug. 23, 1878, No 3,327; in France Mar. 13, 1879, No. 129,564, and in Germany Mar. 25, 1879, No. 10,163.



Claim.—1. The combination of means for supplying two sets of ground-warps, one above the other, for forming a top fabric and a bottom fabric; mechanism for passing a weft-thread between the warps of top fabric when crossed, and for simultaneously passing a weft-thread between the warps of bottom fabric when they are likewise crossed; mechanism for causing the crossing of the ground-warps of the top fabric alternately after one pick of weft has been passed into that fabric, and then after two consecutive picks of weft have been put into it, and then, again, after a single pick of weft has been put into it, and so on; mechanism for causing the ground-warps of the bottom fabric to make corresponding crossings, but to make them either one pick before or one pick after the like crossing of the warps of the top fabric; means for supplying a set of pile-warps; mechanism for raising and lowering these warps, arranged to first (when a pick of weft is simultaneously thrown into both fabrics) cause the pile-warps to be caught into one fabric by the second of the two consecutive picks of weft that have to be put into that fabric, then at the next pick of weft to cause the pile-warps to be caught into the other fabric, (similarly by the second of the two consecutive picks of weft that have to be put into that fabric,) and afterward at the next pick of weft, to cause the pile-warps to be held centrally between the two fabrics, so as not to be caught into either of them, and so on in succession; a batten for beating up the weft-threads, and take-up mechanism for taking up the cloth as it is woven, substantially as hereinbefore set forth.

2. The combination of the batten, the two shuttle-boxes, one above the other, at each end of the batten, shuttle-actuating mechanism, two healds operating upon the ground-warps of the top fabric, their two actuating-cams, two healds operating upon the ground-warps of the bottom fabric, the two cams for actuating them similar in construction to the cams for working the ground-warps of the top fabric, a heald operating upon the pile-warp, the single cam for actuating this heald, and the levers and connecting-rods interposed between the respective cams and healds, the several cams being shaped and set upon the cam-shaft, as described, to cause the ground-warps of the top fabric to be crossed alternately after one pick of weft has been put into that fabric and after two consecutive picks of weft have been put into it, and to cause the ground-warps of the bottom fabric to make corresponding crossings, but to make them either one pick in advance of or one pick after the like crossings of the top warps, and to cause the pile-warp to be caught into each fabric by the second only of the two consecutive picks of weft put into that fabric, substantially as hereinbefore described.

3. The combination of the batten, the two shuttle-boxes, one above the other, at each end of the batten, shuttle-actuating mechanism, the two healds and their two actuating-cams for operating the ground-warps of the top fabric, said cams being formed so as to cross these warps alternately after one pick of weft has been put into that fabric and after two consecutive picks of weft have been put into it, the two healds and their pair of actuating-cams for operating the ground-warps of the bottom fabric, the said cams corresponding with those for operating the ground-warps of the top fabric, but so set upon the cam-shaft as to produce the corresponding crossings of the warps either one pick in advance of or one pick after the like crossings of the warps of the top fabric, the single heald and its cam for operating upon the pile-warp, so formed and set upon the cam-shaft as to cause the pile-warp first to be caught into one fabric by the second of the two consecutive picks of weft put into that fabric, then to be caught into the other fabric by the second of the two consecutive picks of weft put into that fabric, and next to be held centrally between the warps of the two fabrics, so as not to be caught into either of the fabrics when a pick of weft is put into each of them, and the levers and connecting-rods interposed between the respective cams and healds, substantially as and for the purpose hereinbefore set forth.

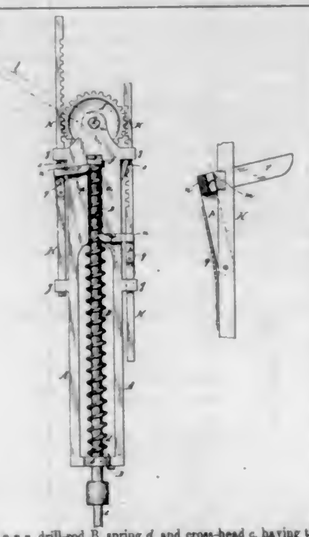
4. The combination of the two healds for raising and lowering the ground-warps of the top fabric, the two healds for raising and lowering the ground-warps of the bottom fabric, the two corresponding pairs of cams, L L', one pair for each two healds, each pair formed so as to raise one heald and lower the other during one-twelfth of a revolution, then during the next one-twelfth of a revolution to retain the healds at rest, then during the next one-twelfth of a revolution to reverse the movement formerly given to the healds, and so on in succession, and with one pair of cams set one-twelfth of a revolution in advance of the other pair upon the cam-shaft, the heald for raising and lowering the pile-warp, its cam formed to raise the heald during one-twelfth of a revolution, lower it during the next twelfth of a revolution, and hold it in a central position during the next twelfth of a revolution, the connecting-rods and levers interposed between the cams and the healds, the shaft upon which the cams are mounted, the driving-shaft, and the gearing connecting said shafts, substantially as and for the purpose hereinbefore set forth.

292,665. HAND ROCK-DRILLING MACHINE. ROBERT MAGILL, Pittsburg, Pa. Filed May 29, 1883. (No model.)

Claim.—1. In a drilling apparatus, the combination of the oscillatory pinion I, lever *l* on the shaft thereof, rack-bars H, engaging with said pinion, and spring-actuated drill-rod B, said bars H being provided with means for engaging the rod B and automatically releasing the same, substantially as described.

2. The combination of oscillatory pinion I, reciprocating rack-bars H, engaging therewith, frame A, having guides *g* for said rack-bars,

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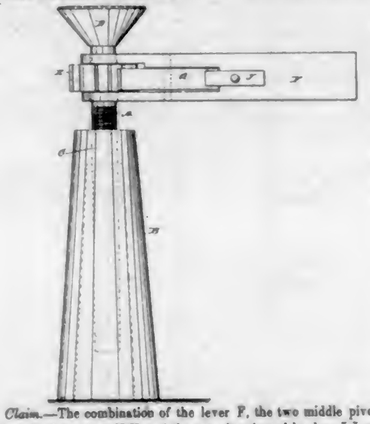


spring-triggers *p u r*, drill-rod B, spring *d*, and cross-head *c*, having toes *f*, said triggers adapted to engage the cross-head in their upward movement and yield in the downward movement, substantially as described.

3. The reciprocating bar H, having recess *m*, in combination with the cross-bar *n*, having notch *o*, lugs *p*, and arms *r*, and spring *q*, and the drill-rod B, having cross-head *c*, and toes *f* in the path of said arms *r*, substantially as described.

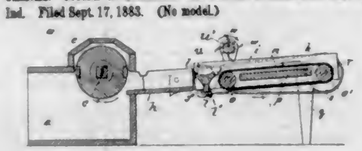
4. The combination, with drill-rod B, having toes *f*, of reciprocating bars H, having spring trigger-arms *r*, and frame A, provided with inclines *z*, substantially as described.

292,666. LIFTING-JACK. BENJAMIN F. MANSFIELD, Centerville, Oreg. Filed Oct. 12, 1883. (No model.)



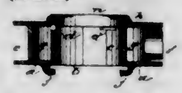
Claim.—The combination of the lever F, the two middle pivoted pawls, G G, the springs H H, and the opposite pivoted latches, J J, with a toothed wheel, E, on the screw-spindle, as shown and described.

292,667. BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES. JOSEPH A. MARSHALL and FLAVIUS H. MARSHALL, Darlington, Ind. Filed Sept. 17, 1883. (No model.)



Claim.—In a band-cutter and feeder for thrashing-machines, the combination, with the hinged carrier-frame, the rotary band-cutter *u*, the endless apron, the rotary feeder or shaker *f*, having its bearings in the projecting ends of the side rails of the carrier-frame, the short arms *g*, the inclined chute, and operating mechanism, substantially as specified.

292,668. TUYERE. ENOCH P. H. MARTIN, Wilmington, Del. Filed May 1, 1883. (No model.)



Claim.—1. A tuyere having its bottom plate provided with an inner flange, *c*, notched at *d*, an outer flange, *e*, and a pipe-connection, *f*, made integral therewith to support the cover and form a wind-chest, as described.

2. The combination, in a tuyere, of the top plate, *h*, having a central hole through it, and the bottom plate, *a*, having the flanges *e c*, pipe-connection *f*, gateways *j*, and the hand-hole *k*, said hand-hole being located with relation to the gate *i* for being closed by it, substantially as described.

292,669. PROCESS OF SOLIDIFYING LIQUID OR SEMI-LIQUID FATTY ACIDS. WILLIAM FITZ CHARLES MASON MCCARTY, Aix-la-Chapelle, Germany. Filed Aug. 7, 1883. (No specimens.)

Brief.—Improvement on Letters Patent to same inventor, dated August 7, 1883, No. 282,547, and August 14, 1883, No. 283,003.

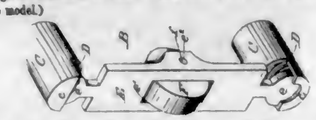
Claim.—1. The transformation of oleine into a solid fatty acid with high melting-point, so that the same can be employed to like purposes as stearic acid of first quality, substantially as set forth in the foregoing specification.

2. The transformation of mineral, vegetable, and animal oils into a solid fatty acid by first saponifying or otherwise treating the same until they obtain a gelatinous-like consistency, and then treating them according to my said process, so that the same are converted into solid fatty acids, substantially as set forth in the foregoing specification.

3. The improved process for solidifying and transforming liquid or semi-liquid fatty acids into solid fatty acids, consisting of (*a*) heating the fatty acids by means of free steam under continuous agitation of the mass by means of air; (*b*) successively adding about eight to ten per cent. common or five per cent. concentrated nitric acid during the agitation of the mass; (*c*) maintaining a temperature of about 100° centigrade for the space of about one hour under a continuous agitation of the material; (*d*) successively adding about one per cent. of starch or other similar product and continuing the aforementioned agitation; (*e*) continuing the agitation for about two hours, raising the temperature to about 120° centigrade, and then reducing the same to about 70° centigrade; (*f*) washing the product so obtained until all trace of acid is eliminated; (*g*) treating the material with a like quantity, in weight, of water strongly saturated with lime, caustic potash, ammoniac, or other equivalent material; (*h*) heating the product; (*i*) washing the product so obtained, then allowing the water and chemical products to settle or subside out of the same; (*j*) treating this product with about one per cent. of sulphuric acid and energetically agitating the same; (*k*) distilling the product in a continuous vacuum, thus obtaining a pure white mass with very high melting-point, substantially as described.

4. The application and employment of the transformed and solidified oleine and the solidified and transformed mineral, vegetable, or animal oils for themselves alone or suitable admixtures of the same for the manufacture of candles and other industrial purposes, substantially as set forth in the foregoing specification.

292,670. SASH-HOLDER. WILLIAM A. MCDONALD, Minneapolis, Minn., assignor of one-half to Frank J. Cross, same place. Filed Sept. 29, 1883. (No model.)

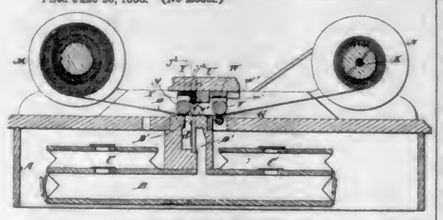


Claim.—1. The combination, with the springs D D, of cups C C, open at one side and having the lip *c*, and a roller face-plate, having ends *e*, fitting under said lips, to receive the pressure of the springs, as shown and described.

2. The spring-cup C, constructed, substantially as described, with the lip *c*, and adapted to receive the spring D and face-plate E, as set forth.

3. The face-plate E, constructed, substantially as described, with the opposite ends, *e*, and slot *e'*, and adapted to fit the cup C and to receive the roller F, as set forth.

292,671. AUTOMATIC MUSICAL INSTRUMENT. JOHN MCTAMMANY, Jr., Worcester, Mass., assignor to Alexander McTammany, same place. Filed June 20, 1883. (No model.)



Claim.—1. In combination with the bellows of an automatic musical instrument, a spring bearing against an attachment thereof, and a push-button and stem bearing directly against said spring, whereby the resistance of said spring may be varied and the tone correspondingly affected.

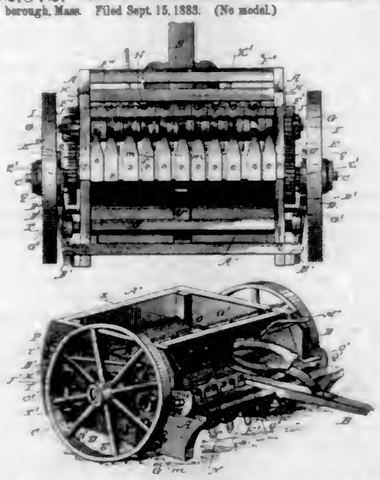
2. A pivoted rack carrying a spring-pressed upper feed-roll or idler, and a pressure-roll for holding the music-sheet against a fixed part of the instrument, in combination with the lower feed-roll of a musical instrument, the axes of the upper and the lower feed-roll being in the same transverse vertical plane with that of the rack when said pressure-roll is in its normal position for operation.

3. An upper feed-roll or idler, in combination with a spring-plate, in the ends of which said roll is journaled, a pivoted rack, to which said spring-plate is attached, and a lower or inner feed-roll, against which said upper feed-roll normally bears, substantially as set forth.

4. A pressure-roll, a pivoted rack, and an upper feed-roll, the latter having its axis vertically under the axis of said rack, in combination with a plate-spring attached to said rack, the ends of said spring forming bearings for said feed-roll, substantially as set forth.

5. A pressure-roll, in combination with a plate or bar having downwardly-extended ends, which form bearings for said roll, a perforated lug extending upward from its middle portion, a pivoted rack recessed to receive said lug, and a pivot-screw which extends through the front of said rack and through said lug, leaving the latter free to rock thereon in said recess, substantially as set forth.

292,672. FERTILIZER-DISTRIBUTER. ALBINO MERRIMAN, Middleborough, Mass. Filed Sept. 15, 1883. (No model.)

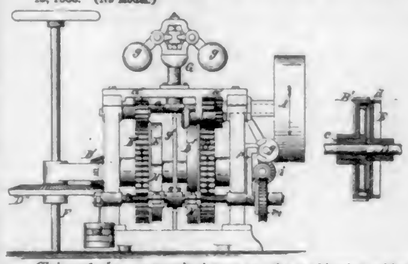


Claim.—1. In a fertilizer-distributer of substantially the described construction, the combination of the frame A, having the transverse opening A', downwardly-projecting spring-teeth N N, rotary feeder F, having teeth F' and annular grooves F'', teeth or plates *m*, having upwardly-curved reduced ends fitting within the annular grooves F'', means or mechanism by which the rotary feeder F may be rotated in the same direction as the drive-wheels D D, attachment O, adapted to serve as an agitator, and means by which the same may be vibrated, as and for the purpose shown and set forth.

2. In a fertilizer-distributer of substantially the described construction, the combination of the frame A, having the transverse opening A', downwardly-projecting spring-teeth N N, rotary feeder F, having teeth F' and annular grooves F'', teeth or plates *m*, having upwardly-curved reduced ends fitting within the annular grooves F'', means or mechanism by which the rotary feeder F may be rotated in the same direction as the drive-wheels D D, attachment O, adapted to serve as an agitator, and means by which the same may be vibrated, movable bottom A'', shaft S, having a central cam, U, and means or mechanism by which the shaft S may be rotated, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

3. In a fertilizer-distributer of substantially the described construction, the combination of the movable bottom A'', shaft S, having a central cam, U, and end pinions, T, constructed as described, levers B', adapted to be operated by cams D' on the hubs of the drive-wheels D, and provided with pawls C', and suitable mechanism for throwing the pawls C' out of engagement with the pinions T, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

292,673. GOVERNOR FOR WATER-WHEELS. JAMES MORTON, Norwich, assignor to James Buckley, Grosvenor Dale, Conn. Filed July 12, 1883. (No model.)



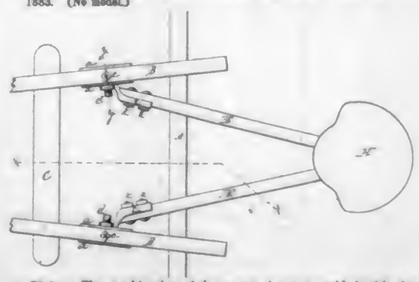
Claim.—1. In a water-wheel governor, the combination, with the main driving-shaft *a* and pinions *a' a''*, of the gears B and B', mounted loose on the driving-heads C C, the friction-disks E and E', and the strap-brakes *d*, constructed to be operated through the governor, and the brake-shoes H to regulate the gate, as described.

2. The combination, with the main driving-shaft and its pinions, of the gears B B', the driving-heads C, friction-disks E and E', straps *d d*, the governor G, rod *g'*, and shoes H H, constructed to move the shaft D and regulate the water-supply, as described.

3. In a water-wheel governor, the combination, with the shaft D, of the driving-heads C C, the gears loosely mounted on the driving-heads, the disks E E', and band-brakes *d d*, constructed to connect and disconnect the gears, as described.

4. The combination, with the gears B B', driving-heads C C, disks E E', and band-brakes *d d*, and the brake-shoes H H, mounted on the shaft *a* and controlled by the governor, of the beveled gear I, pinion *i*, worm *l*, and worm-gear *m*, provided with the slots *o o*, constructed to release the brake-shoes, as described.

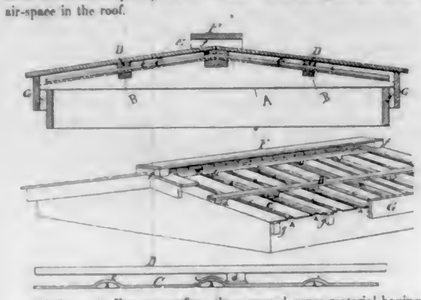
292,674. CULTIVATOR. REUBEN C. NORTON, Rockford, Ill., assignor to Union Foundry and Machine Company, same place. Filed July 14, 1883. (No model.)



Claim.—The combination of the tongue-beams provided with the slotted adjustable flanged bed-plates, the seat-frame beams provided with the brackets F, having a series of adjusting holes, and stud-journals connecting said parts together, substantially as and for the purpose set forth.

292,675. CAR-ROOFING. WILLIAM H. PAINE, Cleveland, Ohio. Filed Oct. 1, 1883. (No model.)

Brief.—Provides sheets of prepared paper having corrugated overlapping edges resting upon semicircular strips, the parts being placed on the rafters. Purlines extend above the sheets and have spacing-blocks, as also the ridge-piece and running-board. A molding at the eaves is secured to spacing-blocks. The several spacing-blocks form an air-space in the roof.



Claim.—1. For car-roofing, the prepared paper material having corrugations, as and for the purpose specified.

2. In car-roofing, the combination of ridge-piece E, having supporting-blocks *e*, with the prepared paper and outer roofing, as and for the purpose specified.

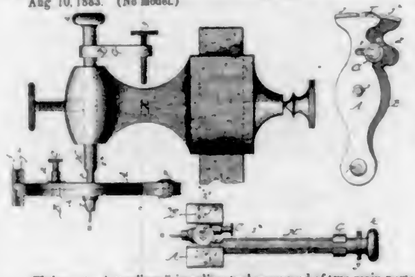
3. In combination with the corrugated paper roofing-sheets, the corrugation-supporting strips *h*, as and for the purpose specified.

4. In a car-roof, the combination, with the rafters A and purlines B, and the semicircular strips *h*, of the sheets of paper C, corrugated at *c* by means of said strips *h*, and the purlines D, having blocks *d* at suitable intervals apart, whereby said paper is held firmly, as shown and described.

5. In a car-roof, the combination, with the rafters A, purlines B, semicircular strips *h*, sheets of paper C, corrugated at *c* by means of said strips, and the purlines D, having blocks *d* at suitable intervals apart, of the ridge-piece E, having corresponding blocks, *e*, to those of the purlines D, and the run-board F, resting over said ridge-piece by means of the end blocks, *f*, as set forth.

6. The combination, with the car-roof having the sheets of paper C, the purlines D, having blocks *d*, and the ridge-piece E, having corresponding blocks to those of the purlines D, of the spaced block *g*, secured to the eaves, and the molding G, secured to the blocks *g*, whereby air-spaces are formed, as set forth.

292,676. JEWELING-TOOL. JAS. R. PARSONS, La Porte, Ind. Filed Aug 10, 1883. (No model.)



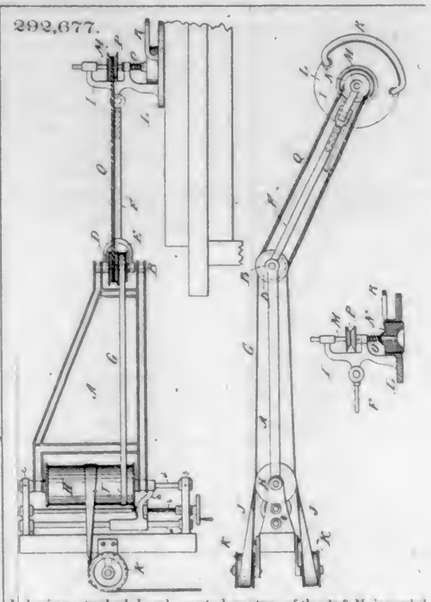
Claim.—1. A "caliper" jeweling-tool composed of two main parts, united by a pivotal connection and an adjusting device, and provided, respectively, parallel with and equidistant from the axis of said pivotal connection, with a cutting-bit or cutter and a holding-tang projecting in opposite directions, said tang forming the fixed axis of the tool and adapted to be inserted in an ordinary back-center, as a substitute for a removable center-point, or in a handle inserted as a substitute for the ordinary back-center, substantially as herein specified, for the purpose set forth.

2. In a caliper jeweling-tool constructed and operating substantially as herein described, a pair of jaw-plates at one extremity of the tool, one of said jaw-plates having elongated screw-holes to provide for adjusting the tool, so as to render it perfectly accurate as applied to a given lathe, as specified.

3. The handle H, constructed with a knob, *k*, and a socket, *s'*, at its respective extremities, and provided with a gage-bar, G, traversed by a gage-screw, *g*, substantially as shown, in combination with a caliper jeweling-tool, substantially as herein described, having a tang, *t*, fitted to said socket *s'*, for the purpose set forth.

292,677. POLISHING-MACHINE. JEAN PIERRON, Elizabethport, N. J. Filed Oct. 25, 1883. (No model.)

Claim.—1. In a polishing-machine, the combination, with the plate L, having a standard, I, and a central aperture, of the shaft M, journaled in arms of the standard I, the abrading-disk N, mounted on the lower end of the shaft M, and adapted to revolve in the aperture of the plate L, the spring O, and of means for revolving the shaft M, substantially as herein shown and described.

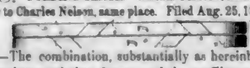


2. In a polishing-machine, the combination, with the plate L, having a standard, I, of the shaft M, journaled in arms of the standard I, the abrading-disk N, mounted on the lower end of the shaft M, and adapted to revolve in an aperture of the plate L, the spring O, the handle R, and means for revolving the shaft M, substantially as herein shown and described.

3. In a polishing-machine, the combination, with the plate L, provided with a standard, I, of a laterally-swinging rod, F, to which the standard I is pivoted, the shaft M, the disk N, and of means for revolving the shaft M, substantially as herein shown and described.

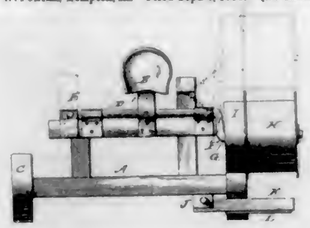
4. The combination, in a polishing-machine, of the attaching-arms supporting two guide-rods, upon which moves the adjusting bracket, with the frame A and drum H, mounted upon one of the guide-arms above the adjusting-bracket, and a screw-rod for reciprocating said adjusting-bracket, substantially as set forth.

292,678. FOLDING SLATE. CONRAD PILGRIM, East New York, N. Y., assignor to Charles Nelson, same place. Filed Aug. 25, 1883. (No model.)



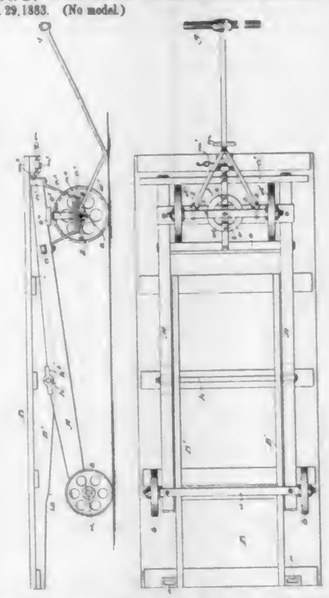
Claim.—The combination, substantially as hereinbefore described, with the two slates and slate-frames and the muffling-strips forming the edges of the frames, of the flexible band or bands extending from an aperture under the muffling-strip of one frame, over such strip, thence through an aperture under the muffling-strip of the second frame, over this strip, and finally into a second aperture under the muffling-strip of the first-named frame, the ends of the bands being fastened in the proper apertures.

292,679. WIRE-STRETCHER FOR CHECK-ROWERS. WHEELOCK W. PORTER, Kempton, Ill. Filed Sept. 4, 1883. (No model.)



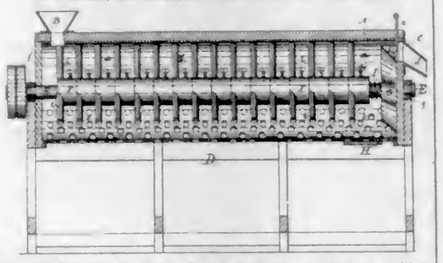
Claim.—The combination of a corn-planter frame mounted upon wheels, a transverse shaft journaled upon the said frame, and having a treadle upon its straight portion and forming a crank at one end, a reel journaled upon the horizontal portion of said crank, and having a narrow friction-rim at its inner end, and a transversely-rocking hand-lever pivoted at its lower end upon the planter-frame, forming a handle at its upper end, and having a laterally-extending arm provided with a downwardly-projecting plate having a longitudinal slot with inwardly-beveled edges, all constructed to operate as and for the purpose shown and set forth.

292,680. HAND-TRUCK. GEORGE H. RAUB II, Boston, Mass. Filed Sept. 29, 1883. (No model.)



Claim.—A hand or warehouse truck consisting of the platform B and the parallel sills A, upon which the said platform is pivoted a little in rear of the middle of the sills, the front wheels, and the rear wheels of smaller diameter than the front wheels, and axles for both front and rear wheels, and on which rear wheels the sills A are directly supported, the front axle supporting the sills by the usual fifth-wheel, all substantially as shown and described.

292,681. MACHINE FOR CLEANING COFFEE AND OTHER GRAIN. JOHN REANEY, New Orleans, La. Filed Oct. 27, 1883. (No model.)



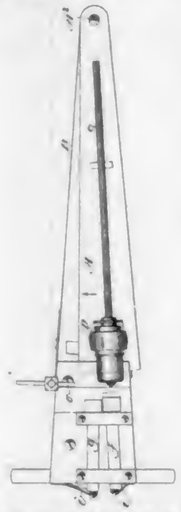
Claim.—The herein-described grain-cleaning machine, comprising a horizontal cylinder, A, provided with closed ends, one of which is formed with a discharge-opening, C, a central shaft provided with hubs or disks F, having agitating-arms, a discharge-wheel, G, and a spring, I, substantially as described, and for the purpose set forth.

292,682. SHOE-FORM. ANDREW W. ROGERS, Salem, Mass. Filed May 28, 1883. (No model.)



Claims.—As an improved article of manufacture, the within-described device for expanding the upper of a boot or shoe, consisting of a hollow bottomless body portion arched and shaped to the contour of the front top portion of a last, and terminating in side pieces extending rearwardly and curved at their extremities to pass around the heel end of the last, and serve to prevent the withdrawal of the former in removing the last, substantially as described.

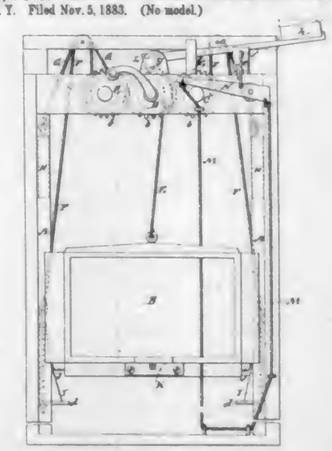
292,683. METAL-SCREW MACHINE. CHARLES F. ROPER, Boston, Mass. Filed Apr. 6, 1882. (No model.)



Claim.—1. A pivoted vibrating radius-bar and revolving rod-rotating chuck carried thereby, combined with one or more tool-holders made movable in lines radiating from the center of motion of the said radius-bar, to operate substantially as described.

2. The pivoted vibrating radius-bar, its revolving rod-rotating chuck, and two or more tool-carrying slides made movable in lines radiating from the center of motion of the radius-bar, combined with a fixed cutting-off or parting tool, substantially as and for the purpose described.

292,684. ELEVATOR. GEORGE ALEXANDER SAXER, New Brighton, N. Y. Filed Nov. 5, 1883. (No model.)



Claim.—1. The combination, with the car and its hoistway, of the geared drums C, C', and D, the hoisting-rope E, and the ropes F F, having attached safety appliances which move with the car, though independently of it, substantially as specified.

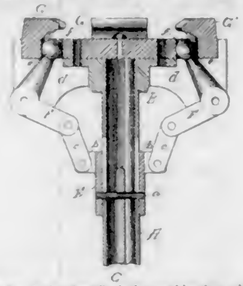
2. The combination, with the car and its hoistway, of the geared drums C, C', and D, the hoisting-rope E, the safety device, operating-ropes F F, and the counterbalance-weight ropes G G, arranged to work on and off the same drums as the ropes F F, but in reverse direction thereto, essentially as described.

3. The safety-wedges I I, in combination with the hoistway-uprights A A, the car B, the ropes E F F, and the geared drums C C' D, substantially as and for the purposes specified.

4. The sliding pawls or bolts J J and their adjusting wedge or slide K, in combination with the car B and its hoistway, the safety-wedges I I, the ropes E F F, and the geared drums C C' D, essentially as described.

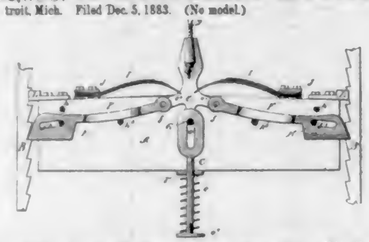
5. The automatic brake L, in combination with its releasing mechanism N *e f*, the hand-rope M, the car B, the geared drums C C' D, the hoisting-rope E, the ropes F F, and the safety-wedges I I, having attached car supports or plates *d d*, substantially as specified.

292,685. SNAP FOR HOLDING GLASS ARTICLES. HENRY C. SCHRADER, Wheeling, W. Va. Filed May 5, 1883. (No model.)



Claim.—In the device described, the combination, with the hollow slotted handle A, provided with the spring-actuated rod C, pin *a*, and sliding collar E, of the arms *c c*, bell-crank levers F, and beveled-edged jaws G, sliding horizontally and radially in dovetail grooves *f' f'* of the top or bed plate, B, substantially as described and shown.

292,686. ELEVATOR STOP MECHANISM. FRANK SCOONRAD, Detroit, Mich. Filed Dec. 5, 1883. (No model.)



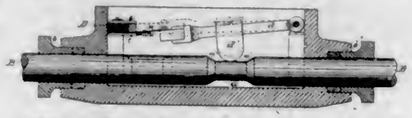
Claim.—1. The combination, with an elevator, of a slide, C, provided with a longitudinal orifice, and a stem, C', extending through a suitable bearing, and in connection therewith lever-arms having a hinged connection with said slide, said levers provided toward their free extremities with orifices *f'* and *f''*, substantially as described.

2. In an elevator, a slide, C, provided with a longitudinal orifice and a depending stem, and in combination therewith levers having a hinged connection with said slide, and provided with suitable guiding mechanism at the opposite ends, and in addition thereto suitable springs bearing on said guide, substantially as described.

3. In an elevator, the slide C, provided with a longitudinal orifice and a depending stem, levers having a hinged connection with said slide, said levers provided with suitable guiding mechanism, springs bearing upon said slide, suitable stops adapted to prevent the bending of the levers, and in combination therewith rack-bars adjacent to the outer ends of said levers, the construction being such that the levers may be engaged with the rack-bars and disengaged therefrom by opposite movements of the slide, substantially as described.

4. The combination, with suitable cross-beams of an elevator-frame, of a slide, C, adapted to be engaged with a hoisting-cable, and provided with a longitudinal orifice, through which said slide is mounted upon a suitable bearing, levers having a hinged connection with said slide and extending in opposite directions therefrom, mechanism for guiding the motion of said levers, springs bearing upon said slide, the construction being such that the outer ends of said levers may be forced in and out by opposite movements of the slide, substantially as described.

292,687. RAILWAY-SWITCH CIRCUIT-CLOSER. CHAS. A. SCOTT, Boston, Mass. Filed Apr. 16, 1883. (No model.)



Claim.—1. The cylindrical rod B, having a groove, *a*, extending around it, such groove terminating in inclines *a'*, in combination with a pivoted arm, *d*, a circuit make-and-break contact-piece on said arm, and one or more pairs of circuit-terminals, substantially as set forth.

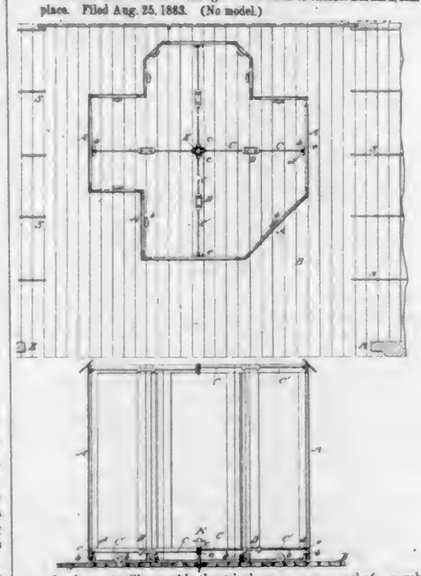
2. An incline, *a'*, arranged on rod B with relation to the rails R, from which the rod B takes its motion, and with relation to the circuit make-and-break mechanism, to which its motion is transmitted, substantially as described, with reference to breaking the circuit at the beginning of the rail movement from main line to siding, and restoring such circuit only at the end of the reverse movement, in the manner set forth.

292,688. STRAND-WIRE FOR BARBED FENCES. HIRAM B. SCOTT, Joliet, Ill. Filed Aug. 9, 1883. (No model.)



Claim.—The combination of the two strand-wires W W, each having a fin, *a*, the two strand-wires being twisted together in such manner that their backs opposite the fins are in contact, and so that the fins project in opposite directions from each other and outward from the coiled strand-wires, as and for the purpose set forth.

292,689. CHANGEABLE SCENERY FOR THEATERS. LAFAYETTE W. SEAVEY, New York, N. Y., assignor of one-half to Charles Barnard, same place. Filed Aug. 25, 1883. (No model.)



Claim.—1. Changeable theatrical scenery composed of a number of separate scenes or part scenes, arranged and combined so as to form a complete set scene or structure, capable of standing alone or independent of any other scene or outside support, also capable of ready dismemberment, as described, to facilitate transportation, and provided with attached rollers under the scenes or part scenes, to admit of the rotation in different directions about a common center of the set-scene when put together, and of rolling it from one part of the stage to another, for the purpose of exposing different sides of the structure and for varying its position relatively to the other scenes on the stage, substantially as specified.

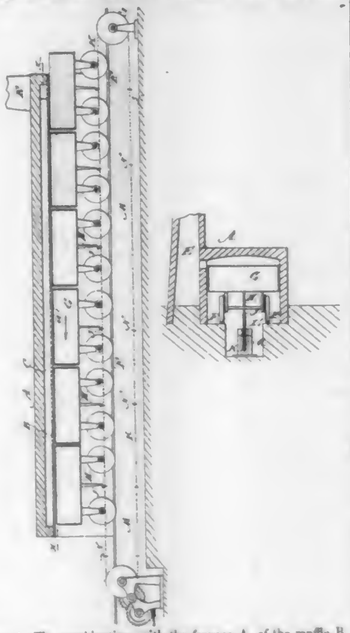
2. In changeable theatrical scenery composed of a number of separate scenes or part scenes, combined to form a complete set scene or structure, the combination, with a center hand-screw and rollers on the

bottoms of the part scenes, of adjustable tie-rods arranged to connect the part scenes or certain of them with the hand-screw, and constructed to provide both for the binding of the set-scene together, and to admit of its rotation around the center hand-screw which screws into the stage, essentially as specified.

3. The combination, with the scenes or part scenes A of a set scene or structure, of the rollers *b* on the bottoms of said scenes or part scenes, the center hand-screw, E, the sectionally-constructed tie-bolts C C', formed with a loop, *c*, at their one end and a hook, *d*, for engagement with the scene or part scene at their opposite end, and the screw or turn-buckles D, uniting the sections of said rods, essentially as shown and described, and for the purposes herein set forth.

292,690. FURNACE FOR TREATING ORES CONTINUOUSLY.

ANTOINE M. G. SEBILLOT, Paris, France, assignor to the United States Ore Separating Company, New York, N. Y. Filed Apr. 27, 1883. (No model.)



Claim.—1. The combination, with the furnace A, of the muffle B, arranged within the furnace, the inverted-U-shaped flue arranged between the sides and tops of the furnace and muffle, and the flue P, extending from the flue C and to the receiver Q, substantially as and for the purpose set forth.

2. The combination, with an ore-furnace, A, having a trough or gutter, M, formed in its bottom, of the endless chain K, provided with catches N, the pulleys L L' at the ends of the furnace, the arms H, projecting from cars running through the furnace, and the hooks or catches J at the lower ends of the arms H, substantially as herein shown and described, and for the purpose set forth.

292,691. DYNAMO-ELECTRIC MACHINE.

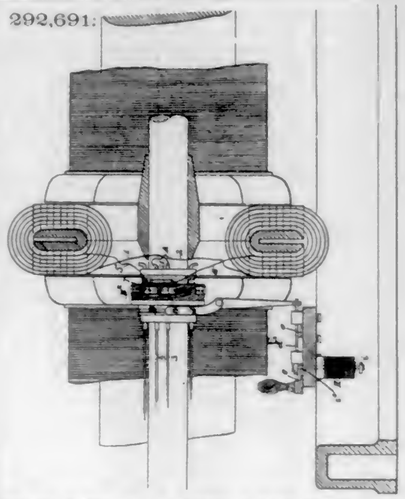
JOHN S. SELLON, Hatton Garden, County of Middlesex, England. Filed July 14, 1883. (No model.) Patented in England Jan. 13, 1883, No. 217; in Germany June 17, 1883, and in France June 20, 1883.

Claim.—1. The combination, with a dynamo-electric machine excited by current from its own circuit, of switch mechanism for connecting both the armature-coils and field-coils in parallel circuits or in series, substantially as described.

2. In an electrical machine provided with a switch between the armature-coils and commutator for connecting the armature-coils in tension or in series, according to the position of the contact-pieces of said switch, and in combination with the said armature-coils, commutator, and contact-pieces, an insulating-support common to one set of contact-pieces and movable with respect to the other contact-pieces, so as to change simultaneously, by the same movement of said support, the electrical connection of the armature-coils, substantially as described.

3. In combination with the armature of an electrical machine, a switch carried by and revolving with said armature, and mechanism for

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operating the same while the armature is turning, substantially as described.

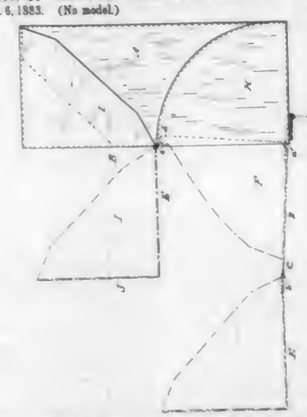
4. The combination, with the armature and field coils of a dynamo-electrical machine, of switch mechanism comprising contact-makers for changing the connection of the armature-coils and contact-makers connected with the former, to be operated simultaneously therewith for altering the connection of the field-coils, substantially as described.

5. The combination, with the coils of an electrical machine and a switch for altering the connection of the said coils, of an automatic lock for obstructing or permitting the movement of said switch, substantially as described.

6. In combination with a dynamo-electrical machine, a rotating and a non-rotating switch connected with each other for simultaneously altering the connection of the armature-coils and field-coils, substantially as described.

292,692. FILE-BOX.

FERNANDO M. SEMPER, Columbus, Ohio. Filed Dec. 6, 1883. (No model.)



Claim.—1. A file-box composed of the main body A, and section C, hinged thereto, which forms the inclosure for one side and one end of the box, said hinged section being composed of the sections E and D, hinged together and adapted to fall back separately or together from the main section A, as set forth.

2. In a file-box, the hinged and folding section C, composed of the sections E and D, each being provided with wings or side pieces, F I, as set forth.

3. A file-box having a hinged and folding section provided with wings or sides adapted to enter pockets or cavities formed on or in the main section of the box, as set forth.

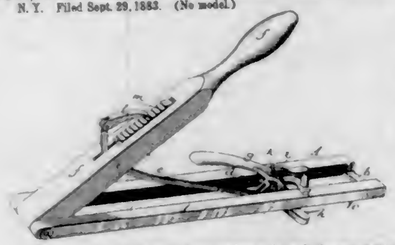
4. A file-box having a hinged and folding section, E, provided with

wings or sides I, and also an end extension, J, which forms the cover for the top of the main section, said sides or wings being adapted to slide over the sides of the main portion of the box, as set forth.

5. In a file-box, the combination of section D, having the wings or sides F, provided with the lugs or extensions *d*, with the pockets or cavities G, and lugs or stops *e*, as and for the purpose set forth.

292,693. CARPET-STRETCHER.

EDWARD P. SHAFFER, Rochester, N. Y. Filed Sept. 29, 1883. (No model.)



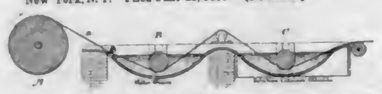
Claim.—1. The base-frame having the stud or pin for engagement with the floor, in combination with the sliding plate, the toothed lever mounted on said plate, means for locking said lever and the plate, the hand-lever mounted on the frame and connected with the sliding plate, and a locking device for said lever, substantially as described and shown.

2. The longitudinally-slotted frame having the dependent stud or tooth, in combination with the sliding plate, the curved toothed lever *g*, mounted upon said plate, the dog *i*, and the lever *f*, with its locking devices, substantially as shown.

3. In combination with the longitudinally-slotted frame having the stud or tooth on its under side, the reciprocating plate *d*, the lever *g*, carrying teeth to engage the carpet, the hand-lever provided with a ratchet-plate, *m*, and the bar or rod *e*, pivoted to the sliding plate and hand-lever and extended through the latter, and the pawl *l*, pivoted to the rear end of said bar, as described and shown.

292,694. INSULATED CONDUCTOR OF ELECTRICITY.

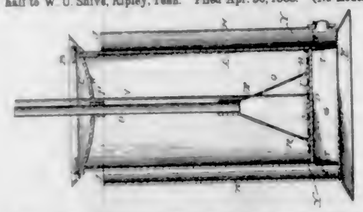
WILLIAM ANTHONY SHAW, Pittsburg, Pa., assignor of one-half to Lebbeus H. Rogers, New York, N. Y. Filed June 25, 1883. (No model.)



Claim.—The method of covering wire with fire-proof insulating material by coating the same with soluble glass, then subjecting it to the action of a decomposing agent—such as calcium chloride—so as to render the same insoluble, substantially as described.

292,695. CHURN.

ROBERT R. SHIVE, Oxford, Miss., assignor of one-half to W. U. Shive, Ripley, Tenn. Filed Apr. 30, 1883. (No model.)



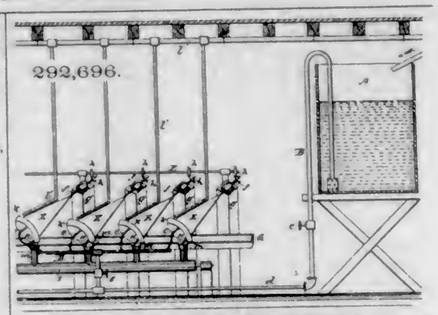
Claim.—The combination of the cylindrical churn-body, the cap or cover therefor, having the two openings, the dasher having its staff passing through one of these openings, and formed conical and with perforations, the butter-lifter comprising the perforated disk, adapted to rest upon the bottom of the churn-body, and having its lifting-rod passing up through one of the perforations in the dasher and out through the perforation in the cover, as set forth.

292,696. APPARATUS FOR THE MANUFACTURE OF CARBON-BLACK.

GEORGE G. SHOEMAKER, Edenburg, Pa. Filed Nov. 6, 1883. (No model.)

Claim.—1. In apparatus for the manufacture of lamp or carbon black, the combination, with one or more rotating devices for the collection of the black upon the surface or surfaces thereof, of one or more cup-shaped burners packed with asbestus, mineral wool, or other like incombustible material, and devices for supplying the fuel under pressure to the burner or burners, substantially as specified.

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2. In an apparatus for manufacturing carbon-black, the combination of the rotating hollow cones E, made open at their bases, and arranged for operation as described, and of burners within said cones, arranged to project their flames against the upper sides of the cones, with ducts or pipes arranged to distribute cold or cooling water over the upper sides of the cones, on the exterior thereof, and in relation with the burners, essentially as and for the purposes herein set forth.

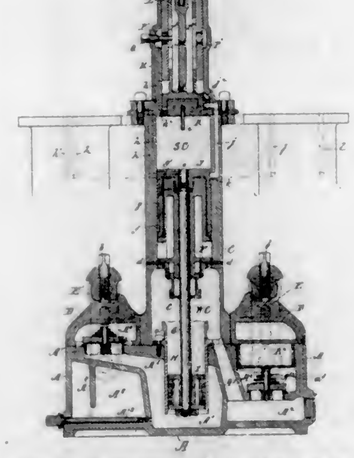
3. In an apparatus for manufacturing carbon-black, the combination of the rotating hollow cones E, arranged for operation as described, and having deflecting flanges or curbs *k* around their open bases, the perforated cold-water-distributing pipes *l'*, and the burners C, substantially as shown and described.

4. In an apparatus for manufacturing carbon-black, the combination of the stationary scrapers H with the rotating hollow cones E and the burners C, arranged for operation in relation with each other essentially as and for the purposes specified.

5. In an apparatus for manufacturing carbon-black, the combination of the elevated tank A, the siphon B, the pipes *d* D, the burners C, and the rotating hollow cones E, substantially as described.

292,697. STEAM PUMPING-ENGINE.

EDWD. G. SHORTT, Carthage, N. Y. Filed July 17, 1883. (No model.)



Claim.—1. The combination, with the cylinder C and partition F, and a suitable steam-valve, of the piston J, rod G, plunger I, and smaller open-end cylinder H, protruding into the lower end of cylinder C, substantially as shown and described.

2. The combination, with the cylinder C, having hand-hole with detachable head-plate H P, and a suitable steam-valve, of the partition F, and piston J, arranged above the hand-hole, the rod G, the plunger I, and the smaller open-end cylinder H, arranged below the hand-hole and projecting into the lower end of cylinder C, substantially as shown and described.

3. The combination of the steam-piston, its cylinder having the in-

duction-ports *n* and *m*, opening into the extreme ends thereof, and the exhaust-ports *n'* and *m'*, opening at some distance from the ends to cushion the steam, the valve M, having live-steam openings *o' o²* and exhaust-channel *o*, and the shell L, having live-steam openings S S' and exhaust-openings E E' E², substantially as and for the purpose described.

4. In a direct-acting engine, the combination of the steam-pistop and the main steam-valve, arranged in alignment and inclosed by a case having ports therein, the piston having the primary function of transmitting working-power and the secondary function of a slide-valve to operate the main steam-valve, and the main steam-valve having the primary function of regulating steam to the main steam-piston, and the secondary function of a piston operated in turn by the working-piston, the two being disconnected, as described.

5. The combination, with the valve M, having piston M', of the casing K, having port *h*, leading from the steam-supply, plate R, having passage-way *h²*, cylinder C, having two ports, *h h'*, side by side, and the piston having recess *f*, for admitting steam to the lower end of the valve, as set forth.

6. The combination, with the valve M, having piston M', of the casing and cylinder having ports *j* and *l*, and the piston J, having passage-way *k* for exhausting the steam from beneath the valve, as described.

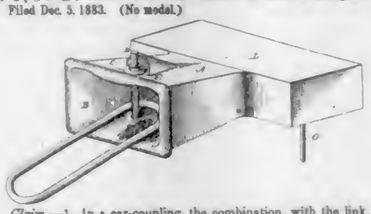
7. The combination of the piston with hole *e*, port *g'*, and elongated recess *g*, the cylinder having port *h'*, and the plate R, having passage-way *h²*, whereby the pressure of steam below the valve-piston M' is maintained by open communication with the steam-chamber S C after steam from port *h* has been cut off, as set forth.

8. The inverted-cup-shaped piston constructed as a slide-valve, with recesses combined with the boss F, of less diameter, and having a feather-and-groove connection therewith to prevent turning axially, as described.

9. The steam-valve M, combined with the case having ports at each end to form a steam-cushion at each end, and with the main steam cylinder and piston arranged in alignment with the valve, said piston being disconnected from the said valve and arranged to operate the same through live steam admitted to the valve through ports controlled by the piston, substantially as described.

10. The valve M, having its side M², which is opposite the orifices E S, made separate and held in close contact with the metal forming said orifices by the live steam, as described.

292,698. CAR-COUPLING. MILTON M. SHUR, Washington, D. C. Filed Dec. 5, 1883. (No model.)



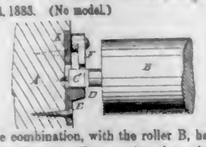
Claim.—1. In a car-coupling, the combination, with the link, of a lever, I, pivoted in the draw-head and formed with two arms, *i i'*, and a rock-shaft, also journaled in the draw-head in the rear of the lever and formed with a stirrup, P, for operating upon one of the arms, as set forth.

2. In a car-coupling, the combination of the lever pivoted in the draw-head, and provided with means for operating the same, with a pin adapted to rest at its lower end upon said lever, as and for the purposes set forth.

3. In a car-coupling, the combination of a lever pivoted in the draw-head, and provided with means for operating the same, with a pin resting upon said lever, and an inclined-passage, as set forth.

4. In a car-coupling, the combination, with the draw-head provided with an opening, C, and a pin having a circular head near the top and fitting in said opening, of an inclined passage in rear of the opening, and a conical-shaped hood, G, extending over the opening partly around the pin, as set forth.

292,699. ROLLER-FIXTURE. JAMES H. SKIDMORE, New York, N. Y. Filed Nov. 24, 1883. (No model.)



Claim.—The combination, with the roller B, having the end of its pivot C flattened, of the plate E, secured to the casing of a window, and provided with the bearing D and rectangular slot *a*, and swinging button F, substantially as shown and described.

292,700. BUTTON. HENRY SMITH, Newark, N. J. Filed Nov. 13, 1883. (No model.)



Claim.—In a button, the perforated front and back plates, A B, the latter being provided also with a transverse recess, in combination with the tubular rivet C, for securing the plates together, said rivet being provided with a transverse cross-bar, D, passing through its sides, and whose ends rest in the transverse recess in plate B, substantially as set forth.

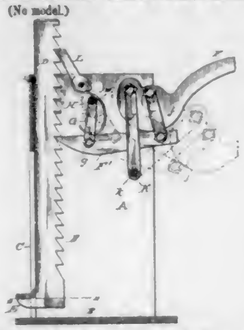
292,701. CHIMNEY-PROTECTOR. IRA A. SMITH, East Barkshire, Vt. Filed Sept. 3, 1883. (No model.)



Claim.—1. A metallic chimney protector and roof consisting of the band B, connected to the roof E by the molding D, the roof having hooded openings F, provided with bottom inclined flanges, H, and projecting eaves *e*, substantially as described, and for the purpose set forth.

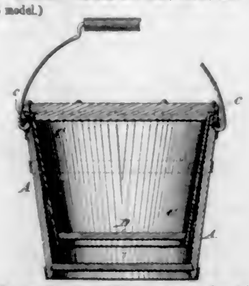
2. In a metallic chimney-protector, the combination of a roof provided with hooded openings F and flanges H with a molding, D, and band B, substantially as set forth.

292,702. RAILWAY-JACK. MORTON B. SOWER, Feanville, Mich. Filed Dec. 1, 1883. (No model.)



Claim.—In a railway-jack, the combination of the rack-bar having a shoe or projection at its lower end adapted to support the rail to be lifted, the retaining-pawl, lever F', having bolt *g*, yoke or hangers G, lever F, having head or cam *f*, yoke or hangers I, connecting the head of lever F to the outer end of lever F', and swinging arms J, having their fulcrum upon the bolt K, the whole constructed and combined substantially as and for the purpose shown and set forth.

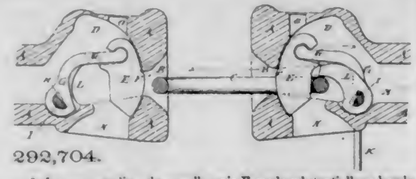
292,703. BUCKET. GEORGE A. STROUD, Toledo, Ohio. Filed Nov. 17, 1883. (No model.)



Claim.—The combination, with a wooden bucket, of a sheet-metal vessel adapted to snugly fit within said bucket, and provided with a removable wooden bottom and an annular top flange resting upon the top edge of the bucket and secured by the cover of the latter, substantially as set forth.

292,704. CAR-COUPLING. WILLIAM STAMP, Susquehanna Depot, Pa. Filed Sept. 15, 1883. (No model.)

Claim.—1. A car-coupling constructed substantially as herein shown and described, and consisting of the draw-head A, having large interior space, the coupling-pin E, having shoulder F and curved arm G, and the semi-cylindrical shaft I, as set forth.



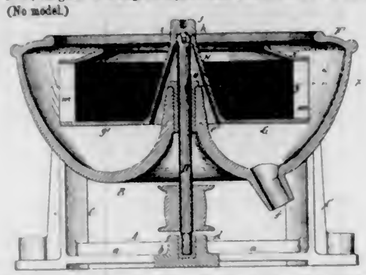
292,704.

2. In a car-coupling, the coupling-pin E, made substantially as herein shown and described, with a shoulder, F, to prevent accidental uncoupling, and an arm, G, to connect with an uncoupling-shaft, as set forth.

3. In a car-coupling, the combination, of the semi-cylindrical shaft I and the coupling-pin arm G, having a semicircular hole, H, larger than the said shaft of the arm L, substantially as herein shown and described, whereby the said arm can be operated by the said shaft to guide the coupling-link without moving the coupling-pin, as set forth.

4. In a car-coupling, the combination, with the semi-cylindrical shaft I, carrying the arm G of the coupling-pin, of the crank K, substantially as herein shown and described, whereby the cars can be uncoupled from the side of the track, as set forth.

292,705. CENTRIFUGAL MACHINE. HENRY B. STEVENS, Buffalo, N. Y., assignor to George L. Squier, same place. Filed June 28, 1883. (No model.)



Claim.—1. The combination, with a vertical spindle, of a basket supported loosely upon the upper end of the spindle and adapted to balance itself upon the same, substantially as set forth.

2. The combination, with a vertical spindle, of a basket constructed with a central hollow cone or chamber, H, supported loosely upon the upper end of the spindle, substantially as set forth.

3. The combination, with a vertical spindle, of a basket and a ball-and-socket joint whereby the basket is supported on the upper end of the spindle, substantially as set forth.

4. The combination, with a vertical spindle having a slotted spherical knuckle, *h*, of a basket constructed with a spherical socket, *i*, and a bolt, *k*, extending through said socket, substantially as set forth.

5. The combination, with a vertical spindle having a spherical knuckle, *h*, of a basket constructed with a central hollow cone, H, a spherical socket, *i*, formed in the upper end of the cone, and means whereby the basket is rotated from the spindle, substantially as set forth.

6. A basket constructed with a perforated or foraminous cylindrical wall, and supporting wings or blades arranged on the outer side of said wall, substantially as set forth.

7. In a basket, the combination of a bottom plate, *g'*, and upright wings or blades *m*, cast on said bottom plate, with a perforated or foraminous cylindrical wall resting against the inner edges of said wings, substantially as set forth.

8. The combination, in a basket, of upright wings or blades *m*, and a cylindrical perforated or foraminous wall composed of sections having oblique edges each secured to a number of said wings or blades, substantially as set forth.

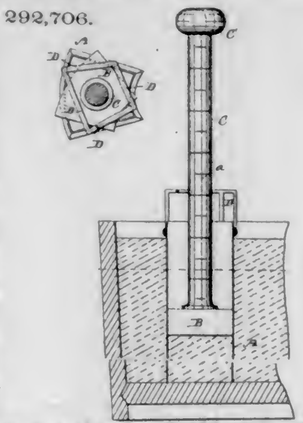
9. The combination, with a basket having a top ring, *n*, provided with elongated openings *o*, of a detachable rim, N, constructed with hooks *p*, substantially as set forth.

10. The combination, with a revolving basket, of a casing, B, having a raised inner wall surrounding the spindle, and a raised outer wall surrounding the basket, standards C, and a base frame, A, provided with a central step for the spindle, all cast in one piece, substantially as described.

11. In a centrifugal machine, a basket having the joint in its perforated wall formed diagonally or obliquely, substantially as and for the purpose set forth.

292,706. BUTTER-CUTTER. NEWTON H. SWEET, Stephentown Centre, N. Y. Filed June 22, 1883. (No model.)

Claim.—1. The combination, with the tube A, open at both ends,

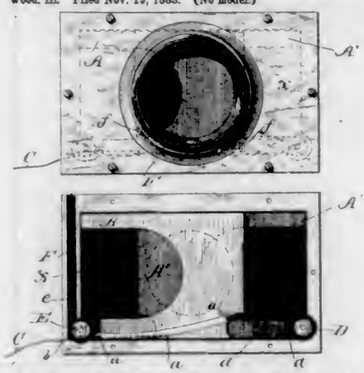


292,706.

and the piston B, having handle-rod C, of the frame D, secured to the upper end of the tube, with its sides diagonal to those of the tube and at a distance above the top of the tube equal to or greater than the thickness of the piston, substantially as herein shown and described, and for the purpose set forth.

2. The tube A, open at both ends, and having a cross-section in the shape of a wedge, with its ends curved from the same center, and the frame D, secured to the upper end of the tube, with its sides diagonal to those of the tube, in combination with the correspondingly-shaped piston B, having the graduated handle C, substantially as herein shown and described.

292,707. PHOTOGRAPHIC SHUTTER. DEXTER B. SWEET, Englewood, Ill. Filed Nov. 19, 1883. (No model.)



Claim.—1. In a photographic shutter, the combination of frame X, having aperture B, slides A A', spring F, studs *f f*, cord C, cord *d*, and wheel or pulley D, all arranged, operated, and controlled substantially as described, and for the purpose specified.

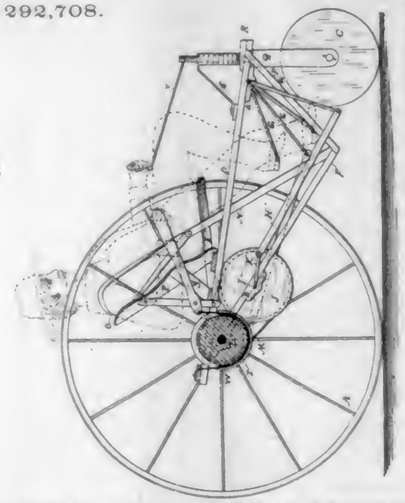
2. In a photographic shutter, frame X, having aperture B, and slides A A', in combination with spring F, cord *e*, pulley or wheel E, cord *d*, pulley or wheel D, and cord C, all substantially as described, and for the purpose specified.

292,708. VELOCIPEDE. JOHN COURTON TENNENT, Glyndon, Md. Filed May 28, 1883. (No model.)

Claim.—1. A motor for velocipedes, tricycles, and for driving all kinds of mechanism, consisting of one or more treadles to be operated by the feet, said treadles being connected to the intermediate mechanism in substantially the manner described, and straps, yokes, or braces placed around the shoulders or connected to the body of the operator and to the body of the machine in a line direct through shoulders and feet, whereby a resistance to the power exerted by the feet and legs on the treadles is obtained in a direct line of the body and feet, as set forth.

2. The combination, in a motor for velocipedes and other purposes, of one or more treadle-levers connected to the pitmen and to the intermediate and driving mechanism, as set forth, with the bars N and straps

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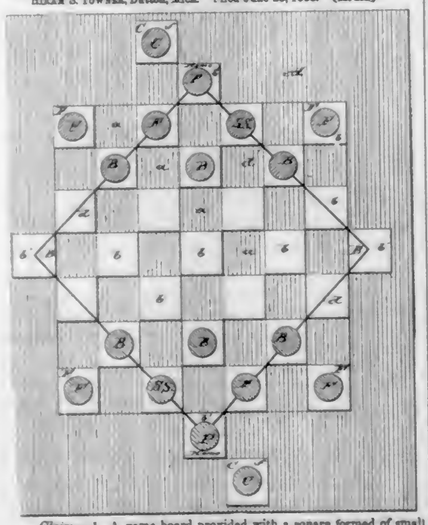


or yokes O, all arranged to operate in direct line of body through shoulders and feet in the manner set forth.

3. The combination, with the frame of a velocipede or other motor, of a shoulder brace or yoke attached to the frame, and adapted to be placed over the shoulders of the operator and to lie in a line parallel with the length of the body of the operator and in a direct line through the shoulders, hips, and feet, substantially as and for the purpose set forth.

4. The combination of the bent treadle-levers mounted in the reaches D, and adapted to be oscillated by the feet of the operator, with the pitmen H and H', shaft I, belt M, and axle B, as and for the purpose set forth.

292,709. CHECKER AND BASE-BALL COMBINATION GAME. HIRAM S. TOWNER, Dutton, Mich. Filed June 28, 1883. (Model.)



Claim.—1. A game-board provided with a square formed of small squares, and having a small square outside of the main square at the middle of each side of the large square, substantially as herein shown and described.

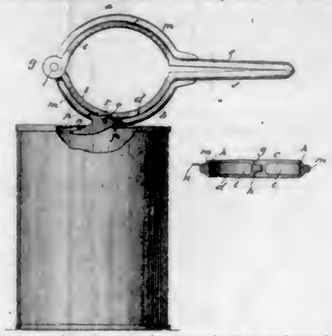
2. A game-board provided with a square formed of small squares, having a small square outside of the inner square at the middle of each side of the main square, and a square diagonally from the additional squares at the head and bottom of the board, substantially as herein shown and described.

3. A game-board provided with a square formed of small squares, and with additional squares outside of the main square, substantially as set forth.

4. A game-board provided with a square formed of small squares, with additional squares outside of the main square at the middle of each side of the same, and with lines uniting the centers of the outside squares, and forming a large square figure, substantially as herein shown and described.

5. The combination, with the game-board A, provided with a large square formed of smaller squares, *a b*, and the additional squares, *b' f*, of two sets of men or stones of nine each, of which stones one in each set is marked C or "catcher," one P or "pitcher," three B or "base-men," three F or "fielders," and one S S or "short-stop," substantially as herein shown and described.

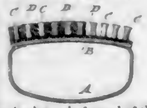
292,710. COMBINED JAR-WRENCH AND CAN-OPENER. ALEXANDER VAN SLYKE, Fort Plain, N. Y. Filed July 19, 1883. (No model.)



Claim.—1. A jar-cover wrench composed of the two jaws *a b*, having semicircular members *c d*, recessed interiorly and lined with frictional material, the handles *e f*, and the hinging members, substantially as shown and described.

2. The combination, with the jar-wrench, of the can cutting or opening blade *n*, arranged thereupon, substantially as set forth, to admit of the use of the wrench as an operating handle or lever for such blade, as set forth.

292,711. SOLE FOR RUBBER BOOTS AND SHOES. HENRY A. WATTSON, Granite, Colo. Filed June 4, 1883. (No model.)



Claim.—A rubber heel or sole formed of the inner part, B, the concave studs C, and the molded rubber D, substantially as shown and described.

292,712. BELL-RINGING ATTACHMENT FOR LOCOMOTIVES. PENNOCK M. WAY, Thurlow, Pa. Filed June 12, 1883. (No model.)

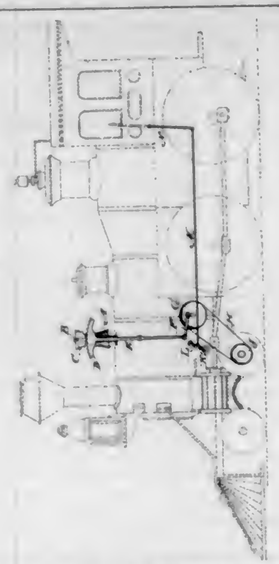
Claim.—1. The combination, with a locomotive and its bell, of a rocking lever acting on the bell, a belt-pulley on one locomotive axle or wheel, a belt-pulley connected by a connecting-rod with the rocking lever, and a belt or analogous device for transmitting motion from the pulley on the wheel or axle to the pulley connected with the rocking lever, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with a locomotive and its bell, of the semicircular rack C on the bell-yoke or bell-shaft, the working-lever E, the segmental rack D on the same, the connecting-rod F, the pulley G, the belt H, and the pulley J, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with an axle, an upper roller, and a locomotive-bell, of a rocking lever adapted to swing the bell, a belt for operating the rocking lever from one of the locomotive wheels or axles, the belt-supporting mechanism, and a device for tightening the belt, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with an axle, an upper roller, and a locomotive-bell, of a rocking lever adapted to swing the bell, a belt, H, for operating the rocking lever from one of the locomotive wheels or axles, the belt-supporting mechanism, the arm L, carrying the pulley or roller K, the connecting-rod M, and the lever N, substantially as herein shown and described, and for the purpose set forth.

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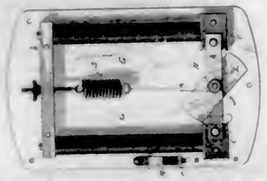
292,713. FUSIBLE SAFETY-STRIP FOR ELECTRIC CIRCUITS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Sept. 12, 1883. (No model.)



Claim.—1. A safety-strip for electric circuits, having electro-deposited caps or jackets of harder metal on its ends, as and for the purpose set forth.

2. The combination, with a fusible safety-strip, of protecting caps or jackets of harder metal, surrounding or inclosing its ends, substantially in the manner described.

292,714. ELECTRICAL INDICATOR. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Sept. 12, 1883. (No model.)



Claim.—1. In an apparatus of the kind described, the combination, with magnets having pole-pieces with curved faces, of an armature consisting of a magnetic plate mounted to turn between the poles, a retractile spring, and a pointer or index arm, all substantially as set forth.

2. The combination, with the magnet having long parallel cores and pole-pieces with curved faces, of an armature mounted to turn between the pole-pieces, and consisting of a thin magnetic plate with rounded ends, a retractile spring, and an index-arm.

3. The combination, with the magnet having parallel cores and pole-pieces with curved faces, of an armature mounted to turn between said poles, a retractile spring, a flexible contact-arm in the path of the armature, and an alarm-circuit adapted to be closed by the contact of the armature and the flexible arm, all as set forth.

4. The combination, with opposing magnetic poles, of an armature whereby the retractile force of the spring is applied tangentially to the axis of the armature, as specified.

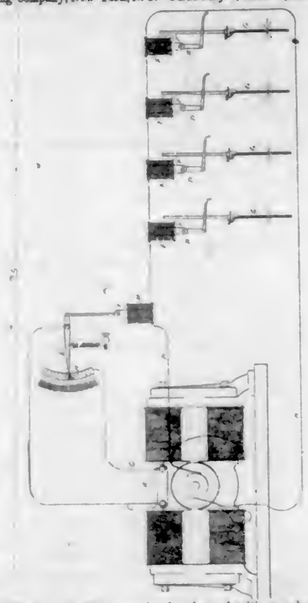
5. The combination, with the movable armature of a current-indicator, of an adjustable plate or bar, a flexible contact-arm attached thereto and extending into the path of the armature or a projection therefrom, an electric alarm, and circuit-connections, substantially as described.

6. The combination of the base A, the raised and insulated plate F, the magnets and movable armature secured to the back of said plate, the pin *v*, carried by the armature, the adjustable and flexible contact-arm O, secured to the face of the plate, and alarm mechanism arranged to be brought into operation by the contact of the pin *v* and arm O, as set forth.

7. The combination of the magnets G G, having poles with curved faces, the armature L, spindle H, pointer M, and retractile spring S, connected to the spindle by a cord running over a grooved wheel, N, all as set forth.

8. The combination, with the dial-plate, the magnets G G, and armature L, having a pin or part, *v*, projecting through a slot in the plate, of the adjustable plate or bar T, arm O, formed of a spiral spring, and provided with prongs *o* in the path of the pin *v*, and alarm mechanism adapted to be brought into operation by the contact of the arm and pin, as and for the purpose set forth.

292,715. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed July 2, 1883. (No model.)



Claim.—1. The combination in and with an electric circuit of electro-magnetic devices for utilizing and for regulating the current flowing, the electro-magnets of the said devices being of like construction or capacity, whereby all are equally and similarly affected by the current, as and for the purpose specified.

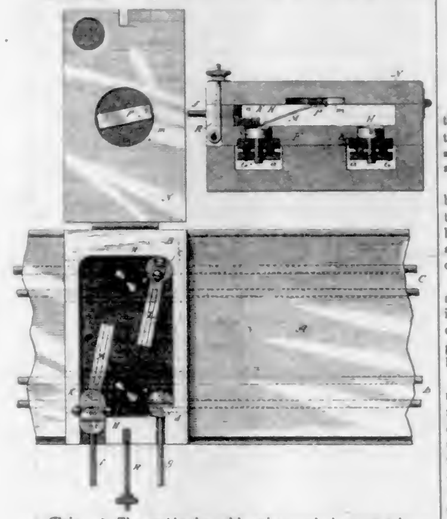
2. The combination of a generator, a circuit from the same, an electro-magnetic regulator, and electro-magnetic translating devices included in and operated by said circuit, the magnet or magnets of the regulator, and those of the translating devices being of like construction or capacity, whereby all are equally and similarly affected by the current, as and for the purpose specified.

3. The combination of a generator, a main circuit, electro-magnetic devices included therein in series, a derived field-circuit, devices for varying the current flowing through the derived field-circuit, and an electro-magnet in the main circuit for controlling the said devices, the magnet being of the same construction or capacity as those of the other devices in the circuit, whereby all are equally and similarly affected by the current, for the purpose specified.

4. The combination of a generator, a main circuit, electro-magnetic devices included therein in series, a derived field-circuit, a variable resistance therein, and an electro-magnet in the main circuit for varying

the resistance of the field-circuit, the said magnet being of the same construction or capacity as those of the other devices in the circuit, whereby all are equally and similarly affected by the current, as and for the purpose set forth.

292,716. DEVICE FOR CONNECTING SAFETY-STRIPS IN ELECTRIC CIRCUITS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 4, 1883. (No model.)



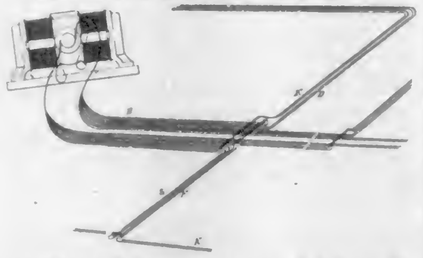
Claim.—1. The combination, with spring terminal contact strips or plates, of a fusible safety-strip and a holder or support for the same, the contacts and holder being movable with reference to one another, and so arranged that when brought together for use the safety-strips will be connected with the circuit by spring-pressure, as and for the purpose specified.

2. The combination, with a box or case and spring and terminal strips or plates therein, of a fusible safety-strip for bridging the said terminals, and a movable lid or cover for holding the strip in contact with the springs, substantially as set forth.

3. The combination, with a box or case and spring terminal plates or strips therein, of a fusible safety-strip for bridging the terminals, a movable lid or cover for holding the strips in contact with the springs, and a catch for securing the cover, all substantially as set forth.

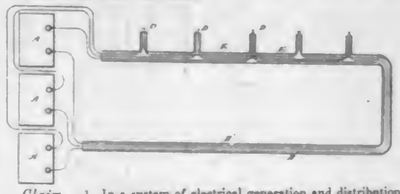
4. The combination, with the connection-box B and spring-terminals E F, of the hinged or movable lid N and the safety-strip secured thereon in position to bridge the terminals E F when the lid is closed.

292,717. CONDUCTOR FOR ELECTRIC CIRCUITS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 10, 1883. (No model.)



Claim.—An electric circuit for multiple-arc distribution, consisting of mains composed of a number of assembled conductors or wires in electrical contact with one another, and which in the aggregate are capable of conveying the total current generated, and branches or divisions composed of portions of said wires bent and led off from the mains, the number of wires in the said branches or divisions being proportionate to the current to be used therein, as set forth.

292,718. ELECTRIC CIRCUIT. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 31, 1883. (No model.)



Claim.—1. In a system of electrical generation and distribution, the combination, with the conductors of round wire circuits, connecting the generator or generators with the devices for utilizing the current, of separate underground tubes or inclosing-conduits for both the leading and the return conductors, as and for the purpose set forth.

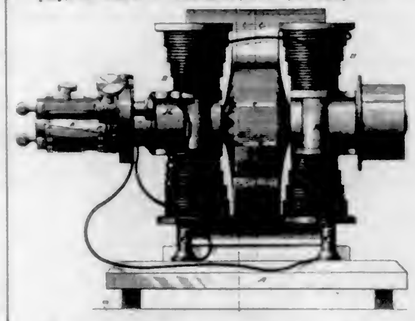
2. In a system of electrical generation and distribution, the combination, with underground tubes or conduits, of conductors composing the leading or the return main conductors of separate round wire circuits, branch or surface conduits containing one or more of the conductors, and aerial loop-circuits made from the said conductors, and including lamps or similar devices, as set forth.

3. In a system of electrical generation and distribution, the combination, with the generator or generators, of a group of conductors extending to a given point in the district to be lighted, and then branched and carried back to the generators, a single tube or conduit inclosing the group of conductors, and independent tubes or conduits inclosing the branched or return conductors, as and for the purpose set forth.

4. In a system of electrical generation and distribution, the combination, with the generator or generators and devices for utilizing the current, of underground round wire circuit conductors connecting the generators with such devices, separate tubes or inclosing-conduits for both the leading and return conductors, and separate branch tubes or conduits for inclosing those portions of the conductors that are led up to and back from the surface of the ground, as and for the purpose set forth.

5. In systems for the electric illumination of cities and towns, the combination, with underground tubes or conduits and conductors, all of separate round wire circuits contained therein, of junction-boxes located at one or more given points on the blocks or squares, and aerial loop or connecting circuits made from the junction-boxes and including lamps or other devices, as described.

292,719. ELECTRICAL GENERATOR OR MOTOR. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 31, 1883. (No model.)



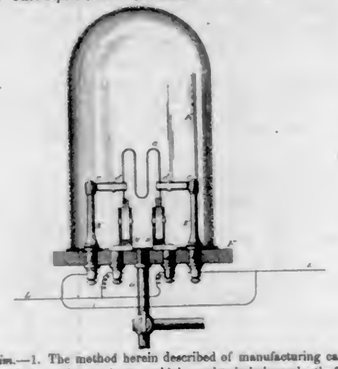
Claim.—1. In a dynamo-electric machine or motor, an armature-core in the form of a disk, as described, in combination with coils wound thereon in a direction parallel with the axis of rotation of the core, substantially as set forth.

2. In a dynamo-electric machine or motor, an armature-core in the form of a disk, having peripheral recesses or grooves, in combination with coils wound thereon in a direction parallel to the axis of rotation, as set forth.

3. The combination, in a dynamo-electric machine or motor, with field-magnets, substantially as described, of a flat or disk-shaped armature mounted between the said magnets in bearings formed or set in the cores of the same, as set forth.

4. In a dynamo-electric machine or motor, the combination, with parallel field-magnets and pole-pieces bridging the cores of the same, of a flat or disk-shaped armature mounted in bearings formed or set in the cores of the magnets, as and for the purpose set forth.

292,720. INCANDESCENT LAMP. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Sept. 15, 1883. (No model.)



Claim.—1. The method herein described of manufacturing carbon conductors for incandescent lamps, which consists in independently forming and carbonizing the stripe or filaments and the stubs or enlarged clamping ends, and then uniting them by the deposition of carbon, substantially as set forth.

2. The method herein described of manufacturing carbon conductors for incandescent lamps, which consists in independently forming and carbonizing the stripe and the stubs, placing the same in contact in a receiver containing an atmosphere of hydrocarbon, and passing a current through them, whereby carbon is deposited, and a permanent union effected in the manner described.

3. A carbon conductor for incandescent lamps, consisting of a strip or filament, enlarged clamping ends, and connections of deposited carbon uniting the clamping ends to the strip, as herein set forth.

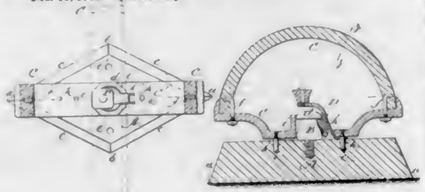
292,721. SYSTEM FOR THE ELECTRICAL TRANSMISSION OF POWER. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed July 31, 1883. (No model.)

Claim.—1. In a system for the electrical transmission of power, the combination of a prime motor, a dynamo-electrical generator, a working-circuit, a single motor included therein at a distance from the generator, and adapted to perform work, as in driving machinery or the like, and devices for varying the speed or effect of the prime motor in driving the generator in proportion to variations in the load imposed upon the motor, said devices being controllable at or by the motor, as and for the purpose specified.

2. In a system for the electrical transmission of power, the combination of a steam-engine, a dynamo-electric generator driven thereby, a working-circuit, a motor included therein, an independent regulating-circuit, and means included therein for varying the speed of the engine, in substantially the manner set forth.

3. The combination, with a main line, a generator of electricity, and a motor included in the same, of an independent regulating-line parallel to the main line, devices therein for regulating the current produced by the generator, and a variable resistance at or near the motor for controlling the action or effect of such devices, as set forth.

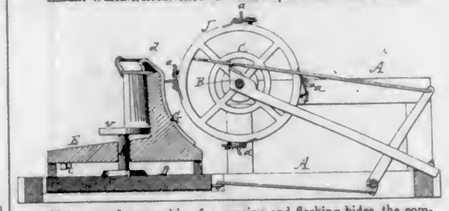
292,722. SAD-IRON. ALFRED R. WHITE, Stevens Point, Wis. Filed Feb. 19, 1883. (No model.)



Claim.—1. The base A, provided with post B and holes *e e e' e'* at equidistance from the post, in combination with the handle having a base-plate provided with a hub to receive the post and dowel-pins *h h*, as described, and means for fastening the hub to the post, substantially as set forth.

2. The combination, with the ironing-block having post B, head *d*, and holes *e e e' e'*, of the face-piece C', having socket *i*, and dowel-pins, as described, and the spring-pressed catch D, hinged to said face-piece, as and for the purpose specified.

292,723. APPARATUS FOR SCOURING AND FLESHING HIDES. ALBERT WHITING, Rochester, N. Y. Filed Apr. 2, 1883. (No model.)

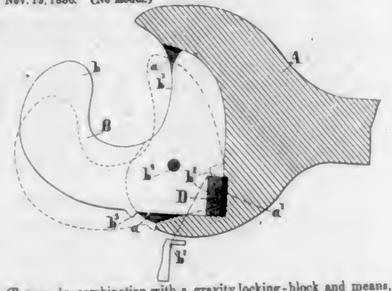


Claim.—1. In a machine for scouring and fleshing hides, the combination, with the vertically-revolving scouring-wheel J, of the platform E, and bed G, mounted on a pivot, *b*, to turn horizontally, the bed being circular in plan, presenting all parts of its face to the wheel as it is turned, and concave in vertical section, corresponding with the curve of the wheel, so that as the wheel revolves it sweeps over the whole vertical width of the bed to scour the hide, as herein shown and described.

2. The combination, with the revolving platform provided with the segment-gear *n*, of the pinion *z*, the shaft *k*, the pulleys *g h i*, one fast and the others loose, the bands *l m*, connecting with the main pulley *f*, the shifter *w*, the rock-lever *o*, the arm *r*, and the studs *t t*, all arranged to operate in the manner and for the purpose specified.

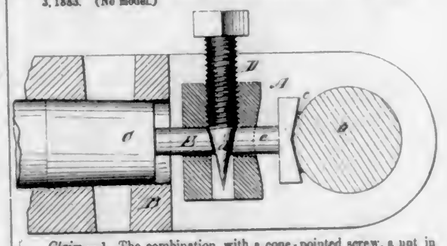
3. The combination, with the turning platform E, of a stationary foot-rest, *v*, extending up from the pivot on which the platform turns, as herein shown and described.

292,724. CAR-COUPLING. PARKER WINEMAN, Chicago, Ill. Filed Nov. 19, 1880. (No model.)



Claim.—In combination with a gravity locking-block and means, substantially as described, for supporting the same, a pivoted hook, having its heel adapted, substantially as described, to swing in beneath the block and remove it from its support.

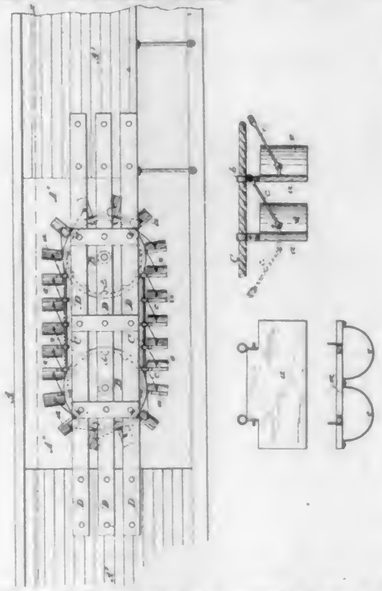
292,725. JACK. SAMUEL J. WISDOM, Montgomery, Ala. Filed Oct. 3, 1883. (No model.)



Claim.—1. The combination, with a cone-pointed screw, a nut in which it works, and means to take the wedge-strain, substantially as described.

7. The combination of the screw D, having the conical point *d*, the internally-threaded metallic block A, having a hole in one side, and the movable plug E, fitting in said hole, whereby the whole device may be arranged between the cross-head pin and piston-rod of a steam-engine, to operate as described.

292,726. PROPULSION OF VESSELS. CHRISTIAN WORCH, Washington, D. C. Filed June 5, 1883. (No model.)



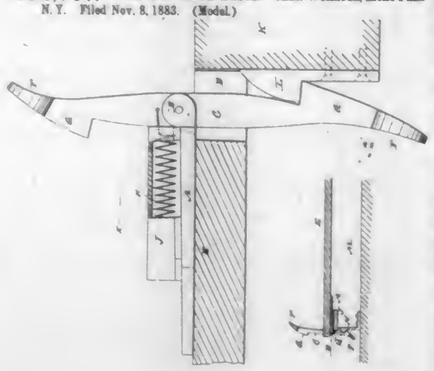
Claim.—1. A double oblong wheel consisting of double set of wheels B, two endless wire ropes, C, and a series of paddles, *a*, arranged substantially as set forth.

2. A double oblong wheel consisting of double set of wheels B, two endless wire ropes, C, and a series of paddles, *a*, provided with corrugated pieces *c* and braces *c*, arranged substantially as specified.

3. A double oblong wheel consisting of double set of wheels B, two endless wire ropes, C, a series of paddles, *a*, secured to said ropes by clamps *b*, and provided with corrugated pieces *c* and braces *c*, in combination with wheels B, having depressions *d*, as and for the purpose specified.

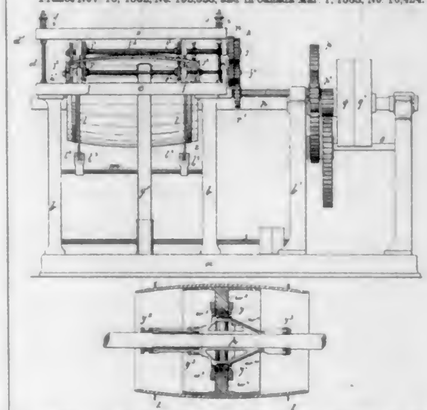
4. In a vessel, the combination of the double set of wheels B, endless wire ropes C, provided with a series of paddles, *a*, secured to said ropes by clamps *b*, with the protecting-bars D, arranged over the sides of the space A'', substantially as and for the purpose set forth.

292,727. DOOR AND GATE LATCH. CHAS. WORMUTH, Little Falls, N. Y. Filed Nov. 8, 1883. (Model.)



Claim.—In a latch, the attaching-plate A, provided with lugs B, between which and at right angles to said plate A is pivoted the reversely-hooked latch C, the said plate A being further provided with a removable spring-containing case, to one end of which the spring is secured, said spring being secured at its other end to the latch, in combination with the catches L N on the door-post and wall, respectively.

292,728. BARREL-MAKING MACHINE. SAML. WRIGHT, Egremont, County of Chester, England. Filed Feb. 24, 1883. (No model.) Patented in England May 12, 1882, No. 2,250, and July 23, 1882, No. 3,589; in France Nov. 10, 1882, No. 152,023, and in Canada Mar. 1, 1883, No. 16,424.



Claim.—1. The frame *e*, provided with hanging brackets for supporting the upper feed-rollers, f^3 f^3, and upper guide-bars, *h h*, in combination with the standards *d d*, provided with springs *i i*, adjusting-bolts *j j*, and regulating-nuts d^2 d^2, substantially as and for the purpose set forth.

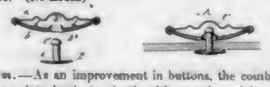
2. The upper feed-rolls and guide-bars supported by brackets depending from the frame *e*, which has a free vertical movement on the standards *d d*, in combination with the lower feed-rolls and guide-bars, substantially as and for the purpose set forth.

3. In a barrel-making machine, the combination, with a collapsible barrel form or drum, of guide-hoops, each made in two parts, one jointed to the other and to the horizontal guide or table, along which the staves are fed to the barrel form or drum, said hoops being operated by cranks and levers to open them, as and when required, substantially as described.

4. In a barrel-making machine, the combination of guides, adjustable feed-rollers, means for cutting the staves to length, grooving, and beveling, a collapsible barrel-form and jointed guide-hoops encircling same, the whole constructed, arranged, and operating substantially as described.

5. In a barrel-making machine, a collapsible form or drum composed of segments, mounted on suitable brackets and friction-rollers, in combination with a sleeve or collar, having a sliding horizontal movement on the barrel-drum shaft, and formed with inclined and horizontal sides, upon which the segments comprising the collapsible drum rest when the drum is expanded, adjacent horizontal sides being of different lengths, all arranged and operated so that the segments resting on the shorter horizontal sides may travel in advance of the segments resting on the longer horizontal sides, and the drum thereby be collapsed without interference of adjacent segments, substantially as described.

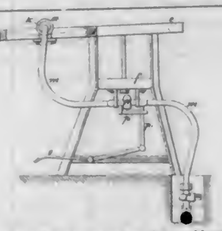
292,729. BUTTON. ERNEST WUERPEL, Brooklyn, N. Y. Filed May 7, 1883. (No model.)



Claim.—As an improvement in buttons, the combination, with a shoe or base-plate having a shank with an enlarged head, of a button-head composed of a cap or face-plate, a bottom plate having a central aperture and an inwardly-bent rim around said aperture, and an intermediate recessed or slitted spring-plate having radial spring-teeth with upwardly-bent inner ends, substantially as set forth.

292,730. APPARATUS FOR THE APPLICATION OF COMPRESSED AIR TO THE MANUFACTURE OF GLASS. ADRIEN ANTOINE APPERT and LÉON ALFRED APPERT, Paris, France. Filed Oct. 13, 1883. (No model.) Patented in France June 3, 1882, No. 149,370, and in Belgium June 24, 1882, No. 58,294.

292,730.



Claim.—1. In a glass-blowing apparatus, the combination, with a glass-maker's chair and a compressed-air reservoir, of a blowing-sleeve mounted on a carriage having a horizontal movement on the arm of said chair, a pipe connecting said sleeve with the reservoir, and a valve in said pipe for regulating the supply of air to the blowing-sleeve, substantially as herein shown and described.

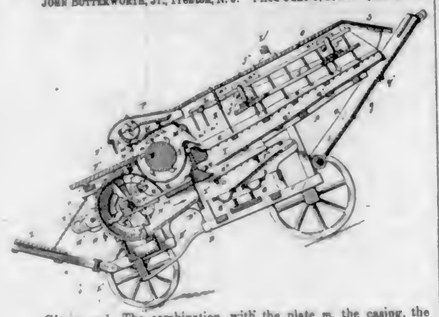
2. In a glass-blowing apparatus, the combination, with the blowing-sleeve, of the yielding tube *b*, secured within said sleeve, substantially as herein shown and described.

3. In a glass-blowing apparatus, the combination, with the blowing-sleeve *a*, having the yielding tube *b* secured therein, of a hollow tube connected to said sleeve, and a carriage upon which said tube is supported, having a horizontal to-and-fro movement, substantially as herein shown and described.

4. In a glass-blowing apparatus, the combination, with the sleeve *a*, having the yielding tube *b* secured therein, of the tube *i*, the carriage *k*, and the vertical axis *l*, to which the carriage is connected, substantially as herein shown and described.

5. In a glass-blowing apparatus, the combination, with a blowing-sleeve and a compressed-air reservoir, of a pipe connecting said sleeve and reservoir, the tap *n* in said pipe, the levers *p*, and treadle *o*, substantially as herein shown and described.

292,731. THRASHING-MACHINE. WILLIAM H. BUTTERWORTH and JOHN BUTTERWORTH, Jr., Trenton, N. J. Filed June 5, 1883. (No model.)



Claim.—1. The combination, with the plate *m*, the casing, the thrashing-cylinder, and the concave, of the beveled dust-deflecting tongue *s* on the feed-table, and the dust-deflector *n*, hinged to the plate in front of the toothed concave E, substantially as and for the purposes specified.

2. The combination of the side rake-bars, J^3, the rake-bar L, secured to the side rake-heads by narrow strips, the straight and hooked teeth secured to said bar L, the thrashing-cylinder, and the hinged slotted deflector M at the rear of the thrashing-cylinder, substantially in the manner and for the purposes described.

3. The combination, with the flue-duster F, arranged over the concave of the thrashing-cylinder, of the fan, the lipped deflector p', and the hinged dust-deflectors *n g'*, substantially as described.

4. The combination of the hinged dust-deflector, the lipped deflector, and the fan with the flue-duster P and the thrashing mechanism, substantially as described.

5. In a thrashing-machine, the combination, with the shouldered shaft and the thrashing-cylinder, of the journal-boxes therefor, adjustable in a direction with the length of said cylinder, and the retaining bolts and nuts, whereby the thrashing-cylinder is endwise but not vertically adjustable, substantially as and for the purpose described.

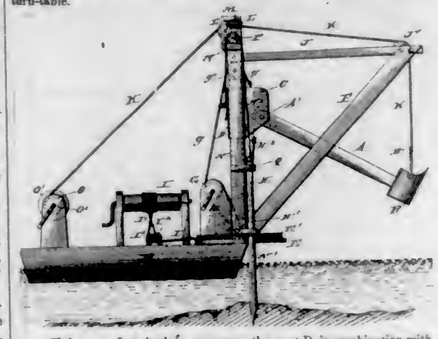
6. The combination, with the front ends of the sills of a thrashing-machine, of a hinged platform, X, provided with suspension-chains, and constructed with a pocket, *z*, substantially as and for the purpose described.

7. The combination of the stacker-frame made in sections, the slotted hinge-connections *h'*, and the pivot-bolts or set-screws, substantially as described.

8. In combination with the removable section T^2 of the divided fan-drum, the movable slides T', provided with loop-racks W', the hand-wheel shaft W, having its journal-bearings attached to said sections T^2 of the fan-drum, and provided with pinions of a diameter to work snugly in said loop-racks, for the purpose of holding the slides parallel with their guides, and moving them in a straight line thereby, substantially as specified.

292,732. DREDGING-MACHINE. HENRY CLAY CARTER, Fairfield, N. C. Filed Dec. 14, 1883. (No model.)

Brief.—A turn-table rotated by chains reversely wound on a windlass carries a mast on which slides a block, to which is pivoted a dipper-handle having a strap embracing the mast, and adjusted by means of cords run up and down around pulleys on the mast to a windlass on the turn-table.



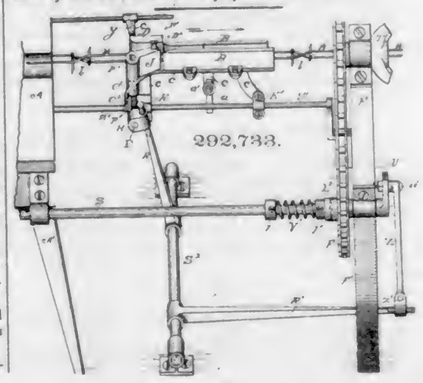
Claim.—1. In a dredging-machine, the mast D, in combination with the sliding block C, and the dipper-handle A, pivoted to said block, said block being secured to the mast by means of the strip D', whereby said block and strip and the rear end of the dipper-handle may be raised and lowered, substantially as described, and for the purposes set forth.

2. In a dredging-machine, the mast D, provided with top and bottom pulleys, *g'* and H', in combination with the windlass G, chains *g* and H, and the block C, having the guide-strip D', whereby said block may be elevated and lowered to suit the convenience of the operator, substantially as described, and for the purposes specified.

3. The mast D, mounted on the rotary table E, said mast being provided with the top pulley, *g'*, and bottom pulley, H', in combination with the windlass G, having chains *g* and H, the block C, and guide-strip D', said block having the rear end of the dipper-handle A pivoted thereto, substantially as described, and for the purposes specified.

4. In a dredging-machine, the rotary table E, provided with the circumferential groove E', mast D, and windlass G, said mast being provided with top and bottom pulleys, the chains *g* and H, secured to the windlass G, and the sliding block C, in combination with the windlass I and chain I', said chain being secured to the table E, whereby said table and its mast and the block may be rotated, substantially as described, and for the purposes set forth.

5. In a dredging-machine, the mast and windlass G, said mast having top and bottom pulleys, as specified, and the chains *g* and H, the block C, and guide-strip D', in combination with the dipper B, handle A, pivoted in the block C, and the chain K, suitably secured to the dipper, said chain passing over suitable pulleys and the windlass O, substantially as described, and for the purposes set forth.



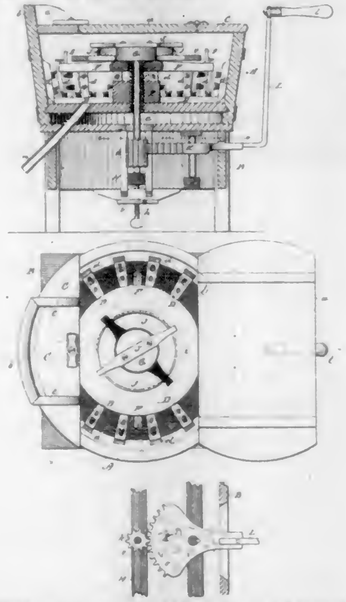
292,733. TAKE-UP FOR WIRE-BARBING MACHINES. GEORGE CARR, Joliet, Ill., assignor to Andrew Dillman and Edward R. Knowlton, both of same place. Filed Dec. 15, 1883. (No model.)

Brief.—A device put between the barber and the twister to intermittingly feed forward the cable. A rocking arm actuated indirectly from the power-shaft operates first to close the movable jaw upon the wires and then to move forward the sliding carriage. A reverse movement first opens the jaw and then moves back the carriage.

Claim.—1. The combination of the shaft S, slotted crank V, stud-bolt *d*, pitman Z, knuckle Z', arms R and R', rock-shaft S², knuckle H, bent shaft P, jaws D and J, carriage C, having the guide-plates B B, and tension-plate *a* and screw *a'*, and shaft S', and boxes K and K', arm *y*, and stem *r*, as and for the purpose set forth.

2. In the barbed-wire take-up described, the combination of the arms R and R', crank V, pitman Z, shaft S, knuckle-joints Z' and H, and bent shaft P, for the purpose of opening and closing the jaws D and J, and to reciprocate the carriage C, for the purpose set forth.

292,734. WASHING-MACHINE. LARS CHRISTIANSEN, Council Bluffs, Iowa. Filed Mar. 27, 1883. (No model.)



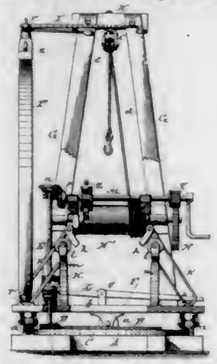
Claim.—1. A suds box or tub having a series of brushes whose bodies are secured radially to the tub-bottom and whose bristles stand vertically, another series of brushes whose bodies are secured vertically to the sides of the tub and whose bristles stand radially, toward center, a hub fixed permanently to stand in the center of the tub, having a series of brushes secured to its circumference, whose bristles stand radially therefrom, in combination with a vertical shaft revolving in the center of the tub, radial arms secured to said shaft within the tub, a cover and means for holding it upon said arms, whereby portions of clothes may be held between said cover and arms, and the remaining portions of the clothes rubbed against the stationary brushes described, by rotating the arms, as specified.

2. The combination, with the tub, the shaft *e* therein, the hub G on said shaft, and the arms F and J, attached to said hub, of the perforated cover *i*, provided with the annular wedges *j*, as described, whereby clothes may be held and rotated, as described.

3. The combination, with the tub and rotary arms described, of the shaft *e*, carrying said arms, the step H, for shaft *e*, and means for adjusting the same vertically, the pinion *k*, on shaft *e*, of a thickness greater than the range of vertical adjustability of said shaft, and the toothed gear-segment K, having the upward-bent arm L secured to it, and the handle I on said arm, as and for the purpose specified.

292,735. WELL-BORING MACHINE. WM. W. CURTIS, Stanberry, Mo. Filed Feb. 15, 1883. (No model.)

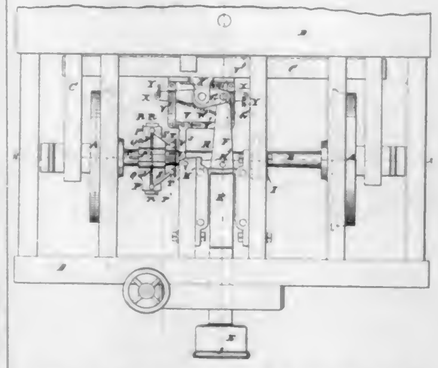
Brief.—A centrally-open "derrick-frame" running on a circular track has a vertical sectional shaft with section-coupling clutch, and pinions at each end gearing, respectively, with a circular rack on the bed, and a horizontal shaft driving a drum, and carries two auger-driving arms slotted to run on rollers, and with hinged forked heads.



Claim.—1. A machine for turning and raising earth augers and drills, consisting of a bed carrying a circular track and centrally open-toothed circle, a rotary derrick thereon, having an opening in the center of its platform, the vertical sectional shaft carrying pinions at its upper and lower ends, the horizontal shaft, its pinions and drum, and the clutch-lever operating to connect the upper and lower sections of the vertical shaft, substantially as specified.

2. The combination, with the rotary derrick-frame, of the slide-arms having the hinged fork-heads designed to engage the square stem or shank of an earth auger or drill, substantially as specified.

292,736. AUTOMATIC CAR-BRAKE. JOSEPH C. DANE, La Crosse, Wis., assignor of two-thirds to Lucinda S. Card and Forrest J. Smith, both of same place. Filed Apr. 13, 1883. (No model.)



Claim.—1. The combination, with the draw-head of a car, of a push-bar held in contact with the rear end or an abutment of the draw-head by a spring, and connected to a crank upon a shaft carrying a cross-bar, whose ends are connected by any suitable means to the brake-bars at the opposite ends of the truck.

2. The combination of draw-head E, push-bar F, crank G, with clutch tooth or teeth thereon, clutch-collar L, feather-keyed to shaft J and sliding thereon, any suitable means for raising the clutch-collar, cross-bar X, rods or chains Y, and brake-bars Z, all constructed and connected substantially as set forth.

3. The combination, with the clutch-collar L, of the lever M, having a pin M', entering a groove, L', in the collar L, the swing-frame V, with arm V⁴, actuating lever M, and itself actuated by a spring, W, and by a governor and shield upon the axle, substantially as set forth.

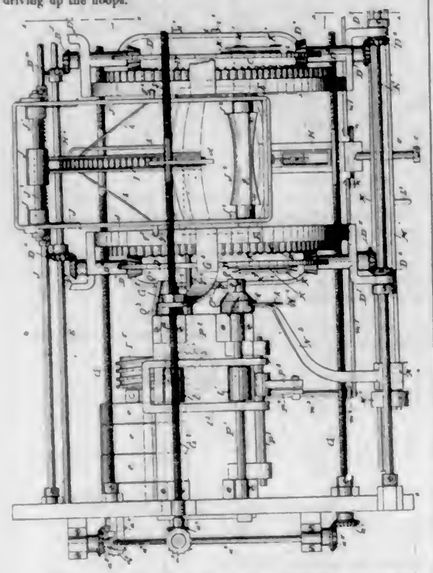
4. The combination, with the governor upon the car-axle, swinging frame V, lever M, and clutch-collar, of the spring-latch N, substantially as and for the purpose set forth.

5. The combination of a car-brake mechanism, a governor having slotted wings P', constructed to form guides for the weights R, the links S, hinged to said weights and to the shield T, and the springs U, constructed to draw the weights toward the axle.

6. The combination of draw-head E, push-bar F, spring-lever H, crank G, with clutch-tooth thereon, clutch-collar L, with tooth thereon, shaft J, cross-bar X upon shaft J, connected to the brake-bars, frame V, and a governor upon the axle actuating the frame, all constructed and operating substantially as set forth.

292,737. BARREL-FINISHING MACHINE. ROBERT O. DOBBIN, Waterloo, Ontario, Canada. Filed Sept. 28, 1882. (No model.)

Brief.—The barrel skeleton is held interchangeably in a non-rotating chuck with radially-moving dogs at its center, or in two rotating end chucks having similar dogs. Mechanism is provided for operating the chucks and dogs, for planing the outer surface of the barrel, for beveling and chamfering and crozing the staves, for inserting the heads, and for driving up the hoops.



Claim.—1. Two chucks having radially-adjustable jaws, means for rotating said chucks, and means for setting said jaws, substantially as described, in combination with a stationary chuck and radially-adjustable jaws therein, whereby a barrel may be centrally compressed and held until the end chucks are secured, and then the jaws of the central chuck radially withdrawn, so that the barrel may revolve within said central chuck, as described.

2. A stationary chuck having radially-adjustable dogs to hold a barrel by its center, and mechanical means for advancing and withdrawing said dogs, in combination with two end chucks having radially-adjustable dogs, substantially as described, for holding the barrel by the circumference of its ends, and means, substantially as described, for advancing the end chucks upon the barrel while the same is held in the stationary chuck, as specified.

3. In a barrel-machine, a head-holding plate and means, substantially as described, for moving the same longitudinally to engage a barrel-head out of line of the axis of the barrel, in combination with means, substantially as described, for moving said holder into said axial line and along the same to thrust the head into the barrel, as specified.

4. The combination of a chuck adapted to compress and hold a barrel at its middle with two revolable end chucks concentric with the axis of the middle chuck, and means, substantially as specified, for removing the middle chuck, whereby the barrel will be compressed and held by the middle chuck while closing the end chucks on it, and may then be freed from the middle chuck, to revolve concentric with the line which was the axis of the middle chuck when closed for turning or planing the barrel, as set forth.

5. The combination, with the fixed chuck-section H', the section H², hinged thereto, and the shaft G, located above section H², of the hook *d*, pivoted to section H², and adapted to hook over shaft G when said section H² is raised to hold the same suspended, as shown and described.

6. In a barrel-machine, the combination, with the chucks for holding barrels, of rocking frames carrying cutter-heads for acting on the inner surfaces of the ends of the staves, and cutter-heads for acting on the outer surfaces of the ends of the staves, substantially as herein shown and described, and for the purpose set forth.

7. The combination, with the revoluble barrel-holding chucks B, the planer described, pivoted to swing between said chucks, and adapted to plane the body of a barrel held and revolved thereby, of the planer raising and lowering device, consisting of the foot-treadle A⁵, the shaft A³, rocked thereby, the beveled-gear wheel A⁴ on said shaft, engaging a similar wheel, A², the shaft A², carrying said wheel A², the arm A' on shaft A², and the connecting-rod A, communicating motion from arm A' to the planer, as shown and described.

8. The arms N², provided with means, substantially as described, for holding barrel-heads, the rock-shaft L, supporting said arms, the bars M and M', provided with toothed racks, the pinion L', mounted on a stud projecting from shaft L and engaging said racks, the crank L² on pinion L', and the blocks N' and N², connecting the arms N² with the rack-bars, as shown and described.

9. In combination with the barrel-rotating chucks described, the rocking plate I², the shafts P and P', journaled therein, and carrying cutters adapted, respectively, to shape the outer and inner faces of the ends of the staves at the same time, the rocking of the plate bringing both sets of cutters into action at once, as shown and described.

10. The combination, with the barrel-rotating chucks described and the rocking plate I², carrying cutters for crozing and planing the barrel, of the foot-treadle I⁴, the shaft I³, supporting the same and rocked thereby, the arm I⁴ on said shaft, and the rod I⁵, connecting said arms with plate I², whereby said plate may be rocked by the foot of the operator to bring said cutters into action, and to so hold them as long as may be required, for the purpose specified.

11. The combination, with chucks for holding and revolving barrels, of means for revolving said chucks, dogs in said chucks moved radially upon the barrel, a toothed ring to move said dogs, gearing to rotate said ring, and means, substantially as described, for disconnecting said gearing when the chucks are to be revolved, for the purpose specified.

12. The combination, with the stationary ring E, of the radially-grooved plates B' and B², the screw-threaded non-rotating spindles B³ in said radial grooves, the internally-threaded cog-wheels B⁴, mounted to rotate thereon, the ring D, provided with teeth on both its flat faces and engaging the cog-wheels B², and the cog-wheels D⁴, engaging the ring D, as shown and described.

13. The combination, with the main frame A, the rings E, the chucks B, revolving therein, and the planer-frame J', pivoted to frame A to swing vertically between chucks B, of the spring *j*, secured on shaft J, and engaging the planer-frame to lift it, substantially as specified.

14. In a barrel-machine, the combination, with the chucks for holding barrels, of frames adapted to be moved toward and from the chucks, and carrying separate shafts provided with cutter-heads for acting on the inner surfaces of the ends of the staves, and cutter-heads for acting on the outer surfaces of the ends of the staves, substantially as herein shown and described, and for the purpose set forth.

15. In a chuck for holding barrels, the combination, with a fixed outer ring, of rotating inner plates, radial screw-spindles held in the said plates and provided with cog-wheels, and of a loose cog-ring acting on the said cog-wheels on the screw-spindles, substantially as herein shown and described, and for the purpose set forth.

16. In a barrel-machine, the combination, with an outer ring, of rotating plates within the same, radial screw-spindles in the said plates, cog-wheels mounted on the said spindles, dogs on the inner ends of the said spindles, a cog-ring engaging with the cog-wheels on the spindles, and of devices for rotating the said cog-ring, substantially as herein shown and described, and for the purpose set forth.

17. In a chuck for holding barrels, the combination, with the outer ring, E, of the plates B' and B², provided with radial grooves *b* and apertures B³, of the screw-spindles B³, the cog-wheels B⁴ thereon, the dogs B⁵, and devices for rotating the cog-wheels B⁴, whereby the dogs and the spindles on which they are mounted will be moved toward and from the middle of the chuck, substantially as herein shown and described, and for the purpose set forth.

18. In a chuck for holding barrels, the combination, with the ring E, of the plates B' B², the screw-spindles B³, the cog-wheels B⁴, mounted thereon, the ring D, provided with teeth on both the inner and outer flat surfaces, and engaging with the cog-wheels B⁴, the cog-wheels D⁴, engaging with the ring D, of longitudinal shafts on the front and rear of the machine-frame, of longitudinally-movable cog-wheels on the said shafts, and engaging with the cog-wheels D⁴, and of devices for rotating the said shafts, substantially as herein shown and described, and for the purpose of permitting the movement of the dogs B⁵ in all the positions of the chuck, as set forth.

19. In a chuck for holding barrels, the combination, with the ring E, of the plates B' B², the screw-spindles B³, the cog-wheels B⁴, mounted thereon, the ring D, provided with teeth on both the inner and outer flat surfaces and engaging with the cog-wheels B⁴, the cog-wheels D⁴ and D², the shafts E', on which the sliding cog-wheels D² are mounted, the cog-wheels E² on the shafts E', the cog-wheels E³, the inclined shafts

E^4, the worm-wheel E^5, and the worm E^6, mounted on the same shaft with the driving-pulleys, substantially as herein shown and described, and for the purpose set forth.

20. In a barrel-machine, the combination, with the worm E^6, mounted on the same shaft with the belt-pulleys, of the worm-wheels E^5, engaging therewith, and mounted on shafts which are connected in such a manner as to operate the barrel-holding dogs, the pivoted arms F, in which the shafts E^4 are journaled, and of devices for raising the upper ends of the arms F to disengage the worm-wheels E^5 from the worm E^6, substantially as herein shown and described, and for the purpose set forth.

21. In a barrel-machine, the combination, with the worm E^6, mounted on the same shaft with the belt-pulleys, of the worm-wheels E^5, engaging therewith, and mounted on shafts which are connected in such a manner as to operate the barrel-holding dogs, the pivoted arms F, in which the shafts E^4 are journaled, the box F', in which the upper ends of the arms F are held, the lever F^3, connected with the box F' by the stirrup F^2, and the locking-lever F^4, substantially as herein shown and described, and for the purpose set forth.

22. In a barrel-machine, the combination, with the separable chuck-sections H' and H^2, of the circular rack I, extending along the periphery, of the cog-wheels within the chuck, engaging with the rack, and of dogs connected with the said cog-wheels, substantially as herein shown and described, and for the purpose set forth.

23. In a barrel-machine, the combination, with the chuck-sections H' and H^2, of the rack I along the periphery of the same, the cog-wheels H^3, the connecting-bars H^6, the radially-movable rods H^5, and the dogs H^4 on the said rods, substantially as herein shown and described, and for the purpose set forth.

24. In a barrel-machine, the combination, with the separable chuck-sections H' and H^2, of the circumferential rack I, acting upon the dogs of the chucks, the cog-wheel I', engaging with the rack I, and of devices for rotating the said cog-wheel, substantially as herein shown and described, and for the purpose set forth.

25. In a barrel-machine, the combination, with the rocking shaft I_1, of the rack-bars M and M', the head-holding arms N^2, attached to the said rack-bars, the guide-stud k' on the bar M, and the plate O, provided with slots for guiding the stud k', substantially as herein shown and described, and for the purpose set forth.

26. In a barrel-machine, the combination, with the rocking shaft I_1, of the rack-bars M and M', the pinion L', the head-holding arms N^2, the plates K, attached to the rings D', and the clamping-springs K' on the plates K, substantially as herein shown and described, and for the purpose set forth.

27. In a barrel-machine, the combination, with the chuck B, having radially-movable screw-spindles B^2, on the outer ends of which beveled plates b^2 are secured, the rack R^3, provided with a fork, R^4, and the pinion R^2 on the same shaft, R, with the cog-wheel S, which acts on a rack for releasing the automatic belt-shifting device, substantially as herein shown and described, and for the purpose set forth.

28. In a barrel-machine, the combination, with a series of pulleys and a sliding box carrying elongated loops, through which the belts pass, of springs for moving the bar in such a manner that the belts will be on the loose pulleys, of a latch for holding the bar in such a manner that the belts will be on the fixed pulleys, of a vertically-movable bar provided with a series of beveled projections for acting on the lower end of the angle-lever which locks the bar carrying the belt-shifters in the desired position, and of a cog-wheel acting on the said bar and mounted on the same shaft with a pinion which is acted upon by a rack, which in turn is acted upon by the radially-movable spindles of a barrel-holding chuck, substantially as herein shown and described, and for the purpose set forth.

29. In a barrel-machine, the combination, with the rod S', of devices for automatically shifting the belts, the beveled projections r on the rod S', the nuts r', for locking the projections r in the desired positions, and of devices for transmitting motion to the rod S' from the barrel-holding chuck, substantially as herein shown and described, and for the purpose set forth.

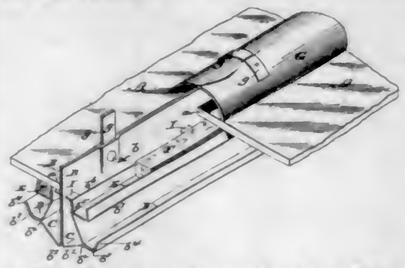
30. In a barrel-machine, the combination, with a series of pulleys, of the sliding bar U', provided with the apertures t and t', the beveled angle-lever, T, provided at its upper end with a projection, s', and at its lower end with a spur, s, the vertically-movable rod S', provided with beveled projections r, and of devices for transmitting motion to the said rod S' from the barrel-holding chuck, substantially as herein shown and described, and for the purpose set forth.

31. In a barrel-machine, the combination, with the pulleys e' e^2 e^3, of a sliding bar provided with belt-shifters, an angle-lever adapted to catch in apertures in the said bar, and of a sliding bar connected with one of the laterally-movable barrel-holding chucks, and provided with beveled projections which act on the lower end of the lever for holding the said sliding bar in position, substantially as herein shown and described, and for the purpose set forth.

32. In a barrel-machine, the combination, with a chuck, B, of a cross-piece, i, having a chuck-lug, i', against which the end of the sliding plate P^3 strikes, substantially as herein shown and described, and for the purpose set forth.

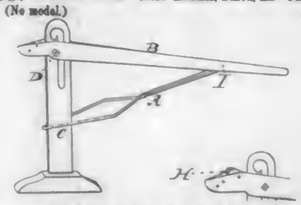
292,738. SKYLIGHT. JOHN EHRHARDT, St. Louis, Mo., assignor of two-thirds to Herman Hopmann, Sr., and Charles Hopmann, same place. Filed Aug. 7, 1883. (No model.)

Brief.—A skylight consisting of plates bent to form supports and gutters for carrying off the drip from the panes. In gutters separated from the vertical rib by tie-strips are placed continuous rubber strips, upon which the panes rest.



Claim.—The combination of the panes A A, the plates B B, bent to form the gutters C C and D D and the grooves E E, the packing-strips F F, and the cap G, the strips g g, secured to the plates B B, and the ties I I, whereby double gutters are afforded, as well as a free space for the descent of the moisture between the packing and the skylight-bar plates, substantially as described.

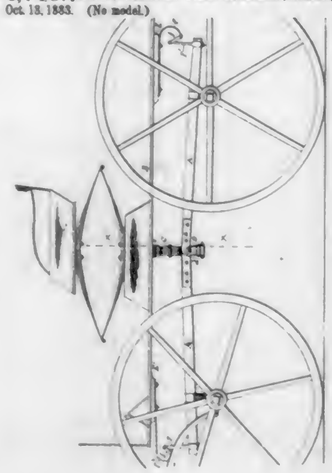
292,739. LIFTING-JACK. EZRA EMMERT, Dixon, Ill. Filed Oct. 2, 1882. (No model.)



Claim.—1. In a wagon and carriage jack, link A, placed on the under side of lever B, V-shaped at the front end, and so that it will catch at any point on standard C, said link having an extension the end of which is pivoted at or near the handle of lever B, in combination with lever B and standard C, substantially as shown and described.

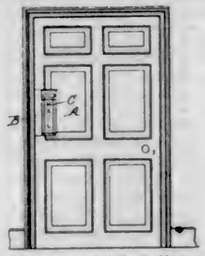
2. Standard C, lever B, pipe F, bolt D, and opening J, substantially as shown and described.

292,740. SPRING-VEHICLE. PHILIP ENGLEHART, Modesto, Cal. Filed Oct. 13, 1883. (No model.)



Claim.—In a road-vehicle, the combination of the side reach-sections, A A, hinged together by irons a a, as shown, yoke D, attached at its lower ends to jaws d, hung to pins of hinge-irons a a, and having block D', attached to and resting upon it, and attached to spring C, and spring C, attached to block c beneath body-bottom B, substantially as and for the purposes shown and described.

292,741. MAIL-BOX. FRANCIS E. FREY, Springfield, Ohio, assignor of one-half to James W. McRoberts, same place. Filed Nov. 6, 1883. (No model.)



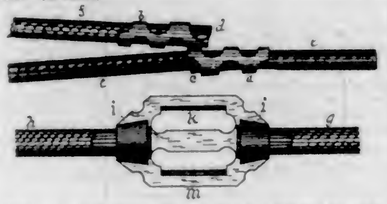
Claim.—1. A mail-box composed of front, sides, and ends, extended past the sides in a pointed form forming open sides of the box, as set forth.

2. A mail-box formed with an open back and extended pointed ends, and adapted to be secured to the jamb or frame in an angle made by a door or other moving part and its jamb or frame, so that the open back of the box shall be closed by the jamb and door when the door is closed, and one part of the back of the box be opened when the door is opened, as set forth.

3. A mail-box having open back and pointed ends, provided with ribs having screw-holes formed therein, substantially as set forth.

4. A mail-box consisting of a slotted front, C^2, sides c' c', ends D D, having extended inclined edges d' d', and ribs d d, provided with openings as described, and for the purpose set forth.

292,742. HARNESS. SAMUEL FUNT, Decatur, Ill. Filed Nov. 26, 1883. (No model.)



Claim.—1. In combination with two parts of a harness, the tubular receptacles and the locking-wedge, all arranged to operate substantially as shown and described.

2. The combination of receptacles i i, bars k m, tags g h, and wedges d d, as and for the purpose set forth.

292,743. INTERLOCKING-SWITCH APPARATUS. OSCAR GASSETT, Boston, Mass., assignor to the Union Switch and Signal Company, Pittsburg, Pa. Filed Dec. 4, 1882. (No model.)

Brief.—The switch-throwing engines are controlled by electric circuits, and are arranged in sets as needed. A circuit completing and selecting device and a pole-changer for operating the engines interlock with each other, so that no two sets of switches can be simultaneously thrown from normal position. The entire apparatus is placed under the control of an approaching train by means of track-circuits.

Claim.—1. An interlocking-switch apparatus consisting of a series of railway-switches, actuating mechanism for each switch, and electro-magnetic controlling device for the said actuating mechanism, and a series of circuits, each including the controlling-magnets of a series or group of switches that have to be operated simultaneously to direct a train as desired, substantially as described.

2. In an interlocking-switch apparatus, the following elements, namely: a series of switches, actuating mechanism therefor, controlling electro-magnets for the said actuating mechanism, a series of circuits, each including the controlling-magnets of a group of switches that are to be operated simultaneously, and a circuit-selecting and circuit-controlling device, whereby the flow of an electric current through the desired circuit is insured, substantially as described.

3. The combination, with a series of railway-switches, their actuating mechanism, electro-magnetic controlling device, and circuits therefor, of the circuit-selecting and circuit-controlling devices, and interlocking mechanism, whereby the movements of one are dependent on the condition of the other, substantially as described.

4. The combination of a railway-switch, its actuating mechanism, and electro-magnetic controlling device therefor, with a circuit-controlling instrument in circuit with the controlling electro-magnet and itself controlled by the block-section of track leading to the said switch, whereby a change in condition of the said switch is prevented after a train has entered the section leading to it, substantially as described.

5. The railway-switches, their electro-magnetic controlling mechanism, and series of circuits, each including the controlling-magnets of a group of switches that are to be operated simultaneously, combined with the circuit-selecting device consisting of a drum having a series of studs connected with one pole of the battery, and a series of springs, one connected with each circuit, and means to force any one of the said springs into contact with its corresponding stud when in the proper position, substantially as described.

6. The switch-actuating apparatus, electro-magnet, and polarized armature controlling it, and series of circuits, each including the controlling-magnets of a group of switches, combined with a circuit-selecting device for closing any desired one of the said circuits, and a pole-changing device common to all the said circuits, and interlocking mechanism for the said pole-changing and circuits-electing device, whereby a new circuit can be selected only when the pole-changing device is in normal position, and the said pole-changer can be moved only after a circuit is completed, substantially as described.

7. The combination of the drum having notched flanges and a series of studs all connected with the battery, and of a series of springs, one co-operating with each stud, and the spring-actuating lever controlled by the notched flanges of the drums, substantially as described.

8. The cylinder b and its main valve, and valve-actuating pistons e e', working in open-ended cylinders f f'', and each operating a valve, d^2, in combination with exhaust-passages g g', valves h h', alternately opening and closing the same, and electro-magnetic apparatus for operating said last-named valves, substantially as set forth.

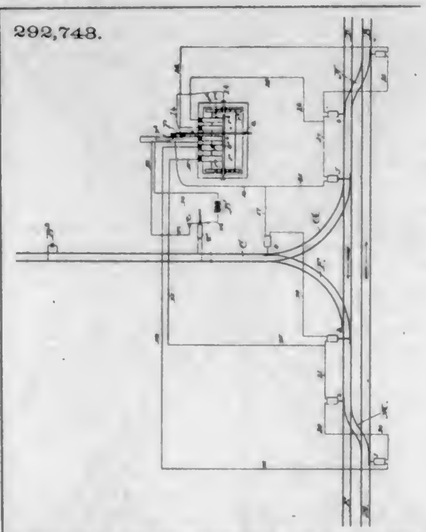
9. The polarized vibratory magnet m and electro-magnet n n', in combination, by rod k and levers i i', with valves h h', as a means of alternately opening and closing the exhaust-ports of a valve-moving piston, substantially as described.

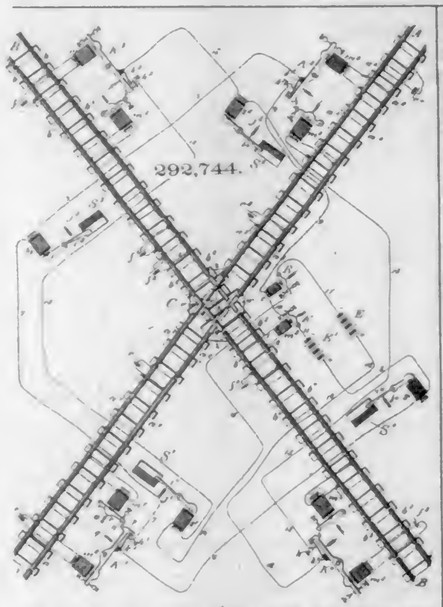
10. A circuit-controlling or pole-changing mechanism consisting of connected levers p p', provided with a stud, p^3, in combination with recessed or notched disks r^2, substantially as set forth.

292,744. ELECTRIC SIGNALING APPARATUS FOR RAILWAY-CROSSINGS. OSCAR GASSETT, Boston, Mass., assignor to the Union Switch and Signal Company, Pittsburg, Pa. Filed Mar. 26, 1883. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of four insulated sections of railway-track extending radially in different directions from a crossing-point and forming parts of two intersecting or crossing lines of railway, and electrical connections uniting the insulated sections of the respective lines of railway, whereby the presence of a lo-

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comotive, car, or train upon an insulated section of either line will cause signals to be given in both directions upon the intersecting line.

2. The combination, substantially as hereinbefore set forth, of four independently-insulated sections of railway-track extending radially in different directions from a crossing or intersection, a battery having one of its poles connected with one insulated line of rails of each of said sections, and its remaining pole with the other insulated line of rails of each section, an electro-magnet having its opposite terminals connected with the respective lines of rails of each section in the same manner as the poles of the battery, and signaling apparatus guarding each one of said radial sections of track at a suitable distance from the common point of crossing or intersection and controlled by such electro-magnet, whereby the establishment of a direct electric connection between the opposite insulated lines of rails of one or more of said insulated sections will cause said electro-magnet to actuate said signaling apparatus.

3. The combination, substantially as hereinbefore set forth, of four insulated sections of railway-track extending radially in different directions from a crossing or intersection, an electro-magnet circuit-controller, which is actuated by the establishment of an electric connection between the opposite ends of rails of either of said insulated sections, signaling apparatus guarding each one of said radial sections of track, an electro-magnet for controlling each of said signal apparatuses, and one or more electric circuits traversing said electro-magnets and under control of said circuit-controller, whereby the presence of a locomotive, car, or train upon either of said insulated sections will actuate said circuit-controller, and thereby operate said signaling apparatuses.

4. The combination, substantially as hereinbefore set forth, of two intersecting or crossing railway-tracks, signaling-points upon each track guarding the approach to the crossing from each direction, an electro-magnet-controlling signaling apparatus at each of said signaling-points, two independent electric circuits, one of which circuits includes the electro-magnets controlling the signaling apparatuses of one of the intersecting tracks, and the other the electro-magnets controlling the signaling apparatuses of the other intersecting track, and a circuit-controller actuated by locomotives, cars, or trains passing over either or both said tracks at or near their common point of intersection, whereby both sets of signaling apparatus may be simultaneously actuated through their respective circuits by a locomotive, car, or train approaching the crossing upon either track and from any direction.

5. The combination, substantially as hereinbefore set forth, of two intersecting or crossing railway-tracks, signaling-points upon one of said intersecting tracks, guarding the approach to the crossing from each direction, an electro-magnet-controlling signaling apparatus at each of said signaling-points, an electric circuit including both of said electro-magnets, and two circuit-controllers, which are themselves controlled by locomotives, cars, or trains passing over the other intersecting track, respectively placed at a suitable distance from the crossing in opposite directions, each of which independently controls said electric circuit, whereby a locomotive, car, or train approaching the crossing in either direction upon one intersecting track will actuate or cause to be actuated signaling apparatus at the signaling-points upon the other intersecting track, guarding the approach to the crossing in both directions.

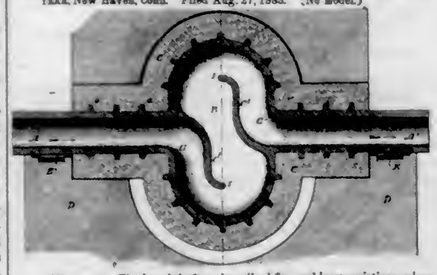
6. The combination, substantially as hereinbefore set forth, two of intersecting or crossing railway-tracks, signaling-points upon one of said intersecting tracks, guarding the approach to the crossing from each direction, an electro-magnet-controlling signaling apparatus at each of said signaling-points, an electric circuit including said electro-magnets, two circuit-controllers actuated by locomotives, cars, or trains passing over the other intersecting track, respectively placed at a suitable distance from the crossing in opposite directions, each of which circuit-changers independently controls said electric circuit, and locking devices whereby the action of either of said circuit-changers is continued after the locomotive, car, or train has passed by it in the direction of the crossing.

7. The combination, substantially as hereinbefore set forth, of two intersecting or crossing railway-tracks, signaling-points upon one of said intersecting tracks, guarding the approach to the crossing from each direction, an electro-magnet-controlling signaling apparatus at each of said signaling-points, an electric circuit including said electro-magnets, two circuit-controllers actuated by locomotives, cars, or trains passing over the other intersecting track, and respectively placed at a suitable distance from the crossing in each direction, each of which independently controls said electric circuit, locking devices whereby the action of either of said circuit-changers is continued after the train has passed by it in the direction of the crossing, and means for releasing said locking devices after the train has reached or passed the crossing.

8. The combination, substantially as hereinbefore set forth, of two intersecting or crossing railway-tracks, signaling-points upon one of said intersecting tracks, guarding the approach to the crossing from each direction, an electro-magnet-controlling signaling apparatus at each of said signaling-points, an electric circuit including said elector-magnets, two keys, each independently controlling said circuit, and two independent electro-magnets controlling the position of each of said keys according to the order in which they are respectively acted upon by circuit-controllers, according to the direction of movement of a train, whereby the electric current which actuates the signaling apparatus upon one intersecting track will be interrupted when a train on the other intersecting track is approaching the crossing, but not when the train is receding from the crossing.

9. The combination, substantially as hereinbefore set forth, of signaling apparatus, an electro-magnet for actuating or controlling said signaling apparatus, an electric circuit in which said electro-magnet is included, a key for controlling said circuit, a second electro-magnet, whereby said key is normally kept closed, a spring for opening said key when the second electro-magnet ceases to act, a locking-lever, which, when thrown into the path of said key, acts to retain it either in its open or its closed position, a third electro-magnet which normally holds said locking-lever out of engagement with said key, and a spring which acts to throw said locking-lever into the path of said key when released by its own actuating electro-magnet, whereby said key is locked in an open or a closed position, to display or conceal the signal, according to the order of time in which the second and third electro-magnets are respectively actuated.

292,745. HEAT AND FIRE RESISTING VALVE. WATSON A. GOODYEAR, New Haven, Conn. Filed Aug. 27, 1883. (No model.)



Claim.—1. The hereinbefore-described fire and heat resisting valve, consisting of a cast or wrought iron or other metal shell, coated with fire-clay or other fire and heat resisting material, constructed to rotate upon a hollow axis through which a continuous stream of water may be forced, substantially as hereinbefore shown and described.

2. In a fire and heat resisting valve, a hollow valve-shell, the shape and size of which are determined by the shape and size of the flue or conduit-pipe in which the valve is to be placed, and constructed to rotate upon a hollow axis through which a stream of water may be forced, substantially as herein shown and described, for the purposes specified.

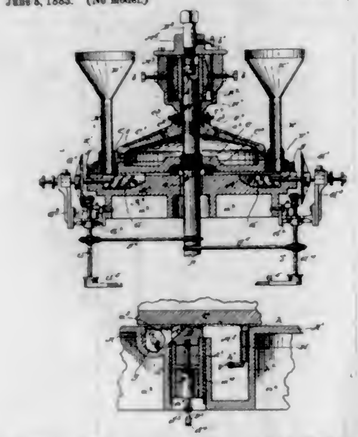
3. A heat or fire resisting valve consisting of a hollow valve-shell constructed to rotate upon its axis, with a coating of fire-clay.

4. In a heat or fire resisting valve, the combination, with the hollow valve-shell, of a diaphragm of metal forming a part of the same, substantially as herein shown and described, and for the purposes specified.

5. In a heat and fire resisting valve, the combination, with the hollow rotating valve-shell, of the projections *e*, forming a part of the same, and the coating of fire-clay, substantially as described.

6. In a heat and fire resisting valve consisting of a cast or wrought iron or other metal shell coated with fire-clay or other fire and heat resisting material constructed to rotate upon an axis, the combination, with the valve, of friction-rollers, substantially as shown and described, and for the purposes specified.

292,746. GRINDING-MILL. WILLIAM E. GORTON, Chicago, Ill. Filed June 8, 1883. (No model.)



Claim.—1. The combination, with a runner of a grinding-mill, of a series of separate stationary grinding-plates opposed to a grinding-surface of the runner, a corresponding series of feed passages or devices for delivering materials to be ground to the several grinding-plates, and means for separately discharging the product of each of the grinding-plates from the mill, substantially as described.

2. The combination, with a runner of a grinding-mill, of a series of separately-adjustable stationary grinding-plates opposed to a grinding-surface of the runner, means for feeding the materials to be ground separately to the several grinding-plates, and means for discharging the products of the several grinding-plates from the mill, substantially as described.

3. The combination, with a runner of a grinding-mill, of a series of separate dissimilarly-dressed grinding-plates opposed to a grinding-surface of said runner, means for feeding material or materials to be ground from separate sources to the several plates, and means for separately discharging the products of the several grinding-plates from the mill, substantially as described.

4. The combination, with a runner of a grinding-mill, arranged with its working-face downward, of a series of separate stationary grinding-plates opposed to said runner, a corresponding series of feed-spouts exterior to the periphery of the runner, ducts constructed to convey the material to be ground from the spouts to the several grinding-plates, and means for discharging the products of the several plates separately, substantially as described.

5. The combination, with a runner of a grinding-mill and a series of separate stationary grinding-plates opposed to the runner, of a series of feed-spouts located exterior to the periphery of the runner, a part or parts provided with a passage extending from each feed-spout to the space between the runner and a grinding-plate, and means constructed to force material through said passage into position to be ground, substantially as described.

6. The combination, with a runner of a grinding-mill, the stationary grinding-plates, and the feed-spouts exterior to the periphery of the runner, of the stationary plate A', provided with upwardly-opening recesses anterior and adjacent to the grinding-plates, and in communication with the feed-spouts, and with recesses following the grinding-plates for the discharge of the ground products, substantially as described.

7. The combination, with a runner of a grinding-mill, a series of separate grinding-plates opposed thereto, and feed-passages leading inward from the periphery of the runner to the grinding-surfaces, of feed-worms located in the feed-passages, and suitable means for operating said worms, substantially as described.

8. The combination, with the friction-disk G' on the feed worm-shaft and the pulley G^4 and its shaft, of the post G^5 and movable arm G^7, constructed to engage with the pulley, substantially as described.

9. The combination, with the feed worm-shaft and the disk G' thereon, of the splined shaft G^4, the pulley G^4, movably fitted to said shaft, the post G^5, the movable arm G^7, engaged with the pulley, and means for securing said arm at a desired elevation, substantially as described.

10. The combination, with the adjustable frictional drive-pulley G^6 and its shaft, of the feed worm-shaft *g*, the disk G' thereon, and devices for adjusting the pressure of the friction-surfaces, substantially as described.

11. The combination, with the stationary plate A', provided with the recess *a'*, and the runner C, parallel with said plate, of the grinding-plate D, and means for adjusting said plate, constructed to yield automatically when a hard substance enters the space between the grinding-faces, substantially as described.

12. The combination, with a runner of a grinding-mill, of a series of separate grinding-plates opposed to the runner, and means for holding said grinding-plates in proper relation to the runner, constructed to allow said grinding-plates to separately and automatically yield when a hard substance enters the space between either of the grinding-plates and the opposing runner, substantially as described.

13. The combination, with a runner of a grinding-mill and a plate, A', opposed to said runner, and provided with the recess *a'*, of a grinding-plate fitted to said recess so as to move vertically therein, a lever, D^2, pivoted to the frame, and constructed to support the grinding-plate, a threaded rod, D^3, stop-nut D^4, and adjusting-nut D^5 thereon, and a spring, D^6, interposed between the plate A' and nut D^5, substantially as described, and for the purpose set forth.

14. The combination, with the plate A', provided with a recess, *a'*, and an opposing grinding disk or runner, of a grinding-plate consisting of a working-plate, D, a casting, D', and means for securing the parts D and D' to each other, said casting being fitted to and constructed to slide freely in the said recess *a'*, substantially as described.

15. The combination, with the working-plate D, of the chambered casting D', provided with the cross-plate *d'* and bolt or bolts d^2, the plate D and the casting D' being constructed to preserve their relation laterally, substantially as shown and described.

16. The combination, with a runner of a grinding-mill and a series of separate grinding-plates opposed to the runner, of a part or parts forming feed-passages which have their side walls adjacent to the working-faces of the grinding-plates inclined, and means constructed to force the material to be ground through the said passages, substantially as described.

17. The combination, with a runner of a grinding-mill and a plate, A', provided with feed-passages, of a series of separate grinding-plates located contiguous to said passages, and having their upper faces adjacent to the passages inclined, and means constructed to force the material to be ground inwardly through said passages, substantially as described.

18. The combination, with a runner of a grinding-mill and a series of grinding-plates opposed to the runner, of a plate, A', constructed to retain said grinding-plates, and provided with feed-passages whose inner ends are curved toward the grinding-plates, and devices for forcing the feed radially inward toward said curved ends of the passages, substantially as described.

19. The combination, with a runner of a grinding-mill and with a grinding-plate opposed to said runner, of a plate, A', constructed with a feed-passage leading to the grinding-surfaces, and a plate, a^3, cutting off a portion of the feed-passage from the runner, substantially as and for the purpose set forth.

20. The combination, with the runner, of the opposing stationary plate A', provided with radial pockets extending from points beneath the runner outward beyond the runner, a part or parts covering the part of the pockets exterior to the runner, feed-spouts communicating with the outer ends of the pockets, grinding-plates whose working-faces communicate with the pockets, and means for separately discharging the products from the several grinding-plates, substantially as described.

21. The combination, with a runner and a series of separate grinding-plates opposed to said runner, of means for supporting said grinding-plates, constructed to afford feed and discharge passages leading to and from the several grinding-plates, and means for removing substances adhering to the runner after passing the several grinding-plates, and delivering the substances so removed into the next adjacent discharge-opening, substantially as described.

22. The combination, with the runner, the grinding-plates, and the discharge-openings, of brushes set in the discharge-openings, constructed to operate on the face of the runner, substantially as and for the purpose set forth.

23. The combination, with the runner, the separate grinding-plates, and the discharge-openings, of movable brushes H, set in the discharge-openings, and automatic devices for causing them to bear against the opposing disk, substantially as described.

24. The combination, with a sectional grinding-plate and an opposing disk, of a brush, H, hinged or pivoted outside a plane at right angles with the opposing disk at the line of its bearing upon said disk, and a spring operating to throw the brush against said disk, substantially as described.

25. The combination, with the runner and with a series of detached and separately movable grinding-plates, of a plate, A', provided with recesses *a'* for the grinding-plates, and constructed to afford feed and discharge passages leading to and from the grinding-surfaces, substantially as described.

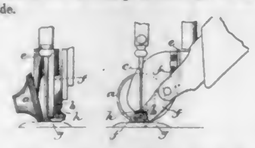
26. The combination, with the shaft B, provided with the screw-thread *b*, of the runner-disk C, centrally apertured and fitted to said thread, the plate C', secured to the shaft B, and means for holding the plate C' in opposition to the runner, substantially as described.

27. The combination, with the disk-runner and the plate A', provided with recesses or feed-passages *a'*, extending beyond the periphery of the runner, of a ring, F, arranged exterior to the runner, substantially as and for the purpose set forth.

28. The combination, with the runner and the opposing stationary plate A', of the ring F, exterior and adjacent to the runner, and the packing F', interposed between the vertical faces of the runner and ring, substantially as described.

292,747. PRESSER FOOT AND GUIDE FOR USE WITH SEWING-MACHINE TRIMMERS. JOHN H. GRIFFIN, Brockton, Mass., assignor to the Standard Trimmer Company, Portland, Me. Filed May 14, 1883. (No model.)

Brief.—The small roll bears on the scrap to prevent its flying. It is attached to the bent end of the central bearing-piece, which latter is fastened by screws to the main shank of the presser-foot. This auxiliary presser-foot bears on the work between the needle and the trimming-knife, the small roll thereof bearing on the scrap or waste edge near the trimming-blade.

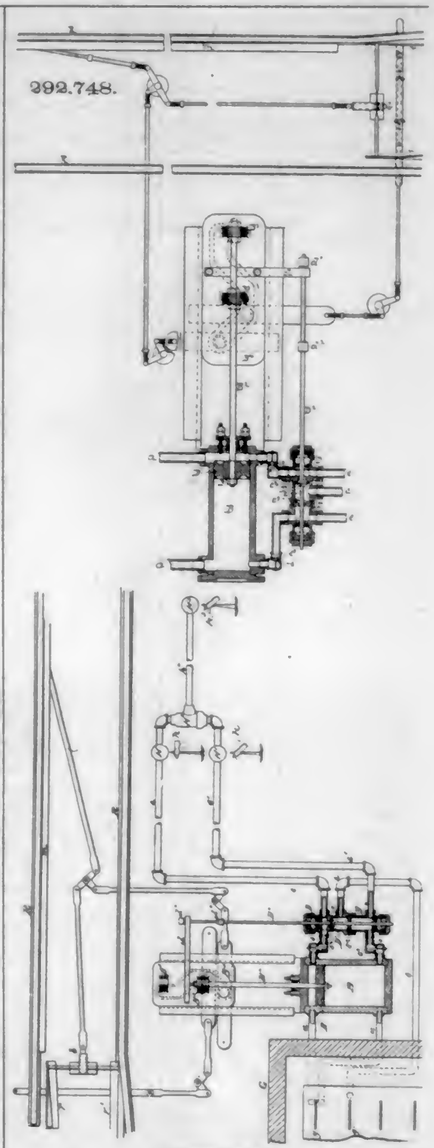


Claim.—1. The combination, with the presser, as *a*, of a separate detachable presser secured thereto, substantially as described, said presser having a bearing, as *f*, between the knife and needle-aperture, and a roll, A, adapted, as described, to bear on the scrap cut from the work, the same being adapted for use in the prescribed relation to the needle and knife, substantially as set forth.

2. As a new article of manufacture, a presser-foot attachment having a shank adapted for attachment to the main presser-foot, substantially as described, and having a bearing-surface, *f*, arranged at an angle with said shank, as shown, and having a roll, A, at the extremity of a curved arm, which is a continuation of the plate forming said bearing-surface *f*, there being a space between the surface *f* and roll A, substantially as described.

292,748. FLUID-PRESSURE SIGNALING APPARATUS. FREDK. S. GUERNER, Pittsburg, Pa., assignor to the Union Switch and Signal Company, same place. Filed June 24, 1882. (No model.)

Brief.—A fluid-pressure apparatus designed for operating railway switches and signals. Said pressure is so employed by proper mechanism that all signals remain at "danger" until the movable rails of the switch are fully in position, or so nearly so that a train may safely proceed, and the operator in the cabin will know at once if there is any obstruction.



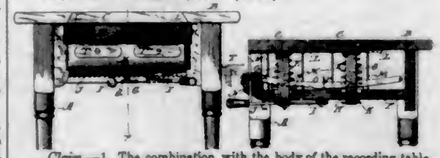
Claim.—1. In an apparatus of the class referred to, the signal-pipes *e e'*, connected with the opposite ends of the main operating-cylinder B, in combination with check-valves arranged in such connection, substantially as set forth.

2. The valve D', seating in either direction at and only at the completion of the piston-stroke, in combination with a valve-governed escape-port, *e*² or *e*³, leading through the main cylinder to the waste, substantially as set forth.

3. The valve-case D, having in combination a valve, D', a pipe-connection, *c*, for alternately supplying and discharging fluid-pressure, a signal-pipe connection, through which to operate a signal or signals, and a connection from such signal-pipe through the port of a check-valve and through the main cylinder to the waste, substantially as set forth.

4. The valve-case D, having in combination a pipe-connection, *c*, for alternately supplying and discharging fluid-pressure, two signal-pipe connections, *e e'*, through which to operate the signal or signals of different track-lines, and valve-governed connections from such signal-pipes to the main cylinder, substantially as set forth.

292,749. RECORDING TABLE OR DESK. MATHEW S. HOLT, Weston, W. Va. Filed Mar. 24, 1883. (Model.)

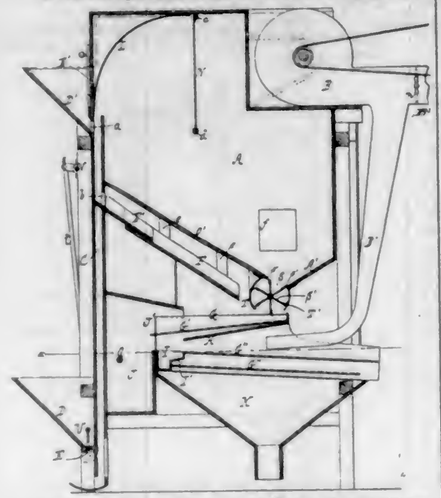


Claim.—1. The combination, with the body of the recording-table, of the leaves C C, the spiral springs E, supporting said leaves independently of each other, the straps G, attached to the leaves and passed

through openings in the bottom of the table, the friction-rollers K, the levers I, connected to said straps, and the rack-bar J for retaining the levers in any desired position, substantially as shown and described.

2. The combination, with the table having slots Q and plates S, of the supplemental leaf N, the curved bars O, provided with notches R, and carrying said leaf, and the guides P, located in the table, substantially as shown and described, and for the purpose set forth.

292,750. MACHINE FOR CLEANING AND GRADING COFFEE, &c. GEO. S. HUNGERFORD, New York, N. Y., assignor, by mesne assignments, to Helen E. Hungerford, same place. Filed July 5, 1883. (No model.)



Claim.—1. A machine for cleaning coffee and other material, constructed with a suction-chamber, A, having an inclined bottom, A', provided with a discharge-opening, S, a vertical flue, C, communicating with the suction-chamber at its upper end, and provided with an intermediate opening, *b*, two hoppers connecting, respectively, with the upper and lower ends of the vertical flue, and an inclined chute having a sliding section adapted to move into and out of the flue at a point between the two hoppers, substantially as described.

2. The combination of the suction-chamber A, having an inclined bottom, A', the vertical flue C, communicating with the suction-chamber at its upper end, and provided with the intermediate opening, *b*, a hopper connecting with the upper end of the flue, a gate for opening and closing the connection between the hopper and flue, an inclined chute arranged below the inclined bottom of the suction-chamber, and a sliding section at the upper end of the chute, capable of moving into and out from the flue, substantially as described.

3. The combination of the suction-chamber, having an inclined bottom, A', provided with a discharge-opening, S, the bucket-wheel S', arranged to project into said opening, the vibrating shoe G, located below the wheel, and provided with screens, the vertical flue C, the inclined chute F, arranged between the shoe and the inclined bottom of the suction-chamber, a hopper for delivering the material into the flue, and a device for directing the material from the flue to the chute, substantially as described.

4. The combination of the suction-chamber A, having a bottom provided with a discharge-opening, S, the bucket-wheel S', having flexible flaps *s'*, and a shaking-screen beneath the wheel, substantially as described.

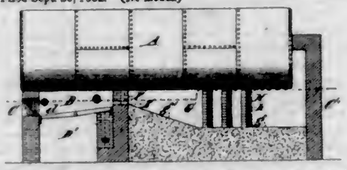
5. The combination, substantially as hereinbefore set forth, with the suction-chamber and the vertical flue communicating with such chamber at the upper end, of the deflector in the suction-chamber, extending upward and inward from the upper end of the vertical flue, and the pendent cloth apron at the inner end of such deflector, said apron being in the suction-chamber, and weighted at its lower edge to keep it taut.

6. The combination, substantially as hereinbefore set forth, with the shaking screen-shoe, of the inclined feed-board, the stone-trap, arranged at a point below the delivery end of the feed-board, and the screens extending outward from the stone-trap, one at the level of the mouth of such trap and the other below that level.

7. The combination, substantially as hereinbefore set forth, with the shaking screen-shoe, of the inclined feed-board, the stone-trap, arranged at a point below the delivery end of the feed-board, and constructed with a transversely-inclined sill and longitudinally-inclined bottom, and the screens, one arranged at the level of the mouth of the stone-trap.

8. The combination, substantially as hereinbefore set forth, with the suction-chamber, and with the shaking screen-shoe and its screens, of the dust-box, arranged at one end of such shoe, and constructed with an inlet-opening opposite to the screens, the fan connecting with the suction-chamber, the air-blast pipe extending from the fan into the screen-shoe at a point opposite to said opening of the dust-box, the air-exhaust pipe extending from the dust-box to the exit-pipe at a point outward from the blast-pipe, and the damper arranged in the exit-pipe intermediate of the blast-pipe and exhaust-pipe.

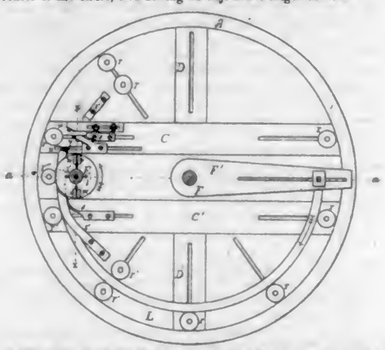
292,751. BOILER-FURNACE. THOMAS E. JONES, Cincinnati, Ohio. Filed Sept. 29, 1882. (No model.)



Claim.—In a boiler-furnace having a fire-place and a combustion-chamber separated from each other by a transversely-arranged bridge-wall, and having an expanding-chamber having an inclined bottom and located between the bridge-walls and the pillars H, the herein-described set up upright refractory pillars H, unconnected at their upper ends, and placed in a cluster under the boiler at or about the center of the combustion-chamber, between the rear end of said chamber and the bridge-wall, these pillars being arranged in zigzag lines, and the boiler being exposed to the tortuous passages formed through the cluster of pillars, whereby the products of combustion are retarded, and at the same time the boiler subjected to the direct action of the heat in the passages, substantially as described.

292,752. MACHINE FOR PLANING FELLIES. SIDNEY T. KENNAN, Menasha, Wis. Filed July 17, 1883. (No model.)

Brief.—The felly is fed between guide-rollers in a circle-past rotary and fixed cutters and pressure-springs by means of an arm rotated from the center of the circle, and having an adjustable finger thereon.



Claim.—1. A planer feeding device for fellies of wagons and material of similar form, consisting of an arm and means for revolving it in a plane parallel with the fixed table of the planer, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, substantially as described.

2. The combination of an arm and means for revolving it in a plane parallel with the fixed table of a planer, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, and non-yielding anti-friction guiding-rolls secured to the table in a circular form, with means for their adjustment for different diameters of material, said material being kept firmly in contact with the table and with the rolls upon its convex side by means of springs, substantially as described.

3. The combination of a cutter head or heads with cutters acting upon the concave and two adjacent sides of the material, and an arm revolving in a plane parallel with the fixed table, upon which is sup-

ported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, and non-yielding anti-friction guiding-rolls secured to the table in a circular form, with means for their adjustment for different diameters of material, said material being kept firmly in contact with the table, and with the rolls upon its convex side by means of springs, substantially as shown and set forth.

4. The combination of the cutter head or heads with cutters acting upon the concave and two adjacent sides of the material, and an arm and means for their revolution, the arm revolving in a plane parallel with the fixed table, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, and non-yielding guiding-rolls secured to the table in a circular form, with means for their adjustment for different diameters of material, said material being kept firmly in contact with the table and with the rolls upon its convex side by means of springs, and the scraping-knives *u*, *v*, and *w*, so located and adjusted as to lightly scrape the material upon its concave surface and the sides adjacent thereto after action thereon by the knives of the cutter-head, substantially as set forth.

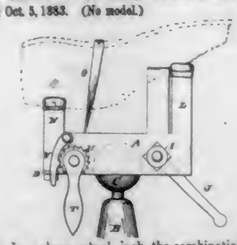
5. The combination of a cutter head or heads with cutters acting upon the concave and two adjacent sides of the material, and an arm and means for their revolution, the arm revolving in a plane parallel with the fixed table, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, and non-yielding guiding-rolls secured to the table in a circular form, with means for their adjustment for different diameters of material, said material being kept firmly in contact with the table and with the rolls upon its convex side by means of springs, and also mechanism, substantially as described, for producing to the cutter-head a reciprocating motion in a transverse direction to the line of travel of the material at the cutting-point thereon for the production of fellies, with spoke-seats of the desired form, and rounded or beveled intermediate spaces, substantially as described.

6. The combination of a cutter head or heads with cutters acting upon the concave and two adjacent sides of the material, and an arm and means for their revolution, the arm revolving in a plane parallel with the fixed table, upon which is supported the material to be planed, said arm extending nearly at right angles from a shaft which is supported in suitable bearings, and having a projecting finger adjustable for different diameters, for engagement with and presentation of the material to the action of cutters, and non-yielding anti-friction rolls secured to the table in a circular form, with means for their adjustment for different diameters of material, said material being kept firmly in contact with the table and with the rolls upon its convex side by means of springs, and also mechanism, substantially as described, for producing to the cutter-head a reciprocating motion in a transverse direction to the line of travel of the material at the cutting-point thereon, for the production of fellies with spoke-seats of the desired form, and rounded or beveled intermediate spaces, and with the scraping-knives *u* and *w*, so located and adjusted as to lightly scrape the material upon the surface in contact with the table and its opposite side after action thereon by the knives of the cutter head or heads, substantially as described.

292,753. PROCESS OF MAKING SPONGE-LEAD. JOHANN KARL KESSLER, Milwaukee, Wis., assignor to himself, Morris Roth, and George Sylvester, all of same place. Filed Mar. 17, 1883. Renewed Jan. 7, 1884. (No specimens.)

Claim.—In the manufacture of white lead or other commercial salts of lead, the process of making sponge-lead which consists in passing an electric current, by means of a lead anode, through a solution of the acetate of an alkali, substantially as described.

292,754. SHOE-MAKER'S JACK. GEORGE KUHN, Eureka Springs, Ark. Filed Oct. 3, 1883. (No model.)

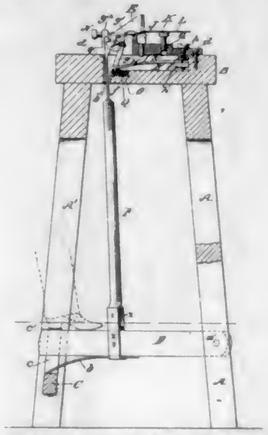


Claim.—1. In a shoe-maker's jack, the combination of the body in two parts hinged together, a nut secured in one of the parts, and a bolt provided with a crank, the bolt to work through the parts and engage the nut to draw the parts together, the body having suitable toe and heel supports.

2. The combination of a body having toe and heel supports, a windlass to turn in an opening in the body, having a handle, a strap secured to the windlass through the opening, a ratchet-wheel at one end of the windlass, and a pawl to engage the ratchet.

3. The combination of the body in two parts, hinge to connect the parts together at one end, a bolt to connect the parts together at the other end, a post having a ball to which the parts are clamped, means to support the shoe on the body, and a strap to hold the shoe thereto.

292,755. SAW-SET. JOHN SHANNON LOWE, Murphysborough, Ill., assignor to himself and Joseph Bastien, same place. Filed Sept. 4, 1883. (Model.)



Claim.—1. The combination, in a saw-set, of the hammer E, spring H, cushion Q, and connecting-link *g*, substantially as and for the purposes set forth.

2. The combination, with the hammer E, spring H, cushion Q, and link *g*, of the treadle D, rod F, and spring-hook *f*, substantially as and for the purposes set forth.

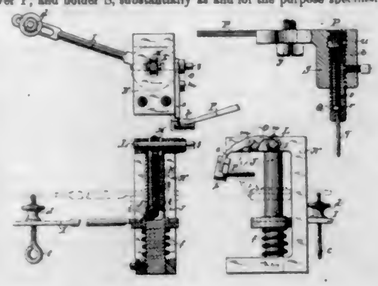
3. The combination, with the spring-hammer E *e*, of the rod F, provided at its upper end with the hooked spring-plate *f*, and at its lower end with a loop through which passes the lever D, provided with a spring, *b*, extending from within the loop to the bottom of the covered slot *c c'* in cross-piece C, in which the lever D works, said lever being pivoted at its other end to an upright, A', of the frame, substantially as set forth.

4. The combination of the hammer E, pivoted in a vertical recess, with plate G, the link *g*, and spring H, pivotally connected to said link at its inner end, and secured at its outer end, within guides *i i*, on the under side of plate G, by an adjusting-screw and nut, A A', and the table B, recessed, as at B', for the reception of said spring and its connections, substantially as set forth.

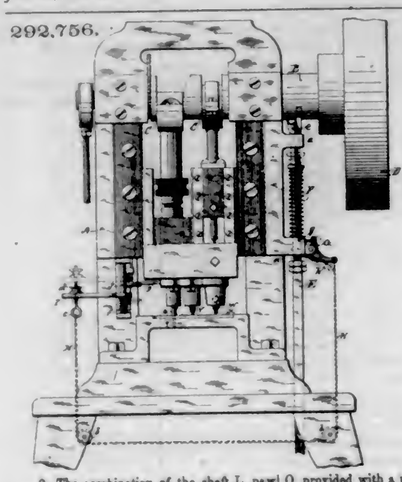
292,756. AUTOMATIC STOP-MOTION FOR PUNCHING AND FORMING PRESSES. WILLIAM I. MACOMBER, Providence, R. I., assignor to George L. Voss, same place. Filed Aug. 31, 1883. (No model.)

Brief.—The sticking of the article being formed upon spindle *q* causes the latter to raise the end of the lever P and set the stop mechanism in operation.

Claim.—1. The combination of the tool Q, spindle *q*, spring *s*, pivoted lever P, and holder S, substantially as and for the purpose specified.

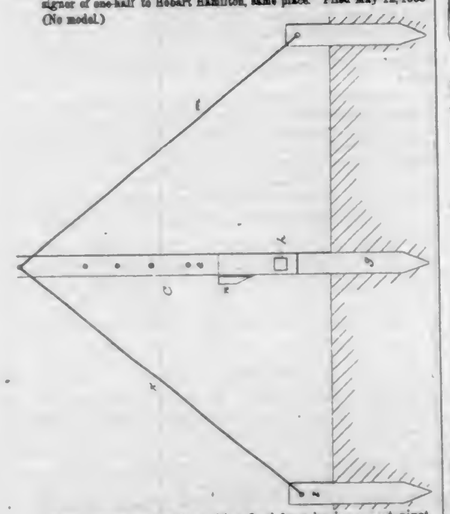


292,756.



2. The combination of the shaft L, pawl O, provided with a projecting lip, *p*, eccentric M, bar K, spring *k*, bolt *i*, and spring *j*, with a sliding arm, I, spring *f*, connecting-chain H, pivoted pawl G, and spring-operated clutch-shipper E, substantially as described.

292,757. FLOOD-FENCE. ISAAC MCDOUGALL, Petersburg, Ill., assignor of one-half to Hobart Hamilton, same place. Filed May 12, 1883. (No model.)



Claim.—The combination, with a flood-fence having a post pivotally connected to a stub which is driven into the ground, of the stop-lug *n*, secured to one side of the said stub, as shown, to prevent the fence from going in one direction, the brace *m*, secured to a stub on the opposite side of the fence, and the brace *k*, secured to the stub *l*, which is driven in the ground and adapted to be drawn out when a great pressure is applied to the fence, substantially as specified.

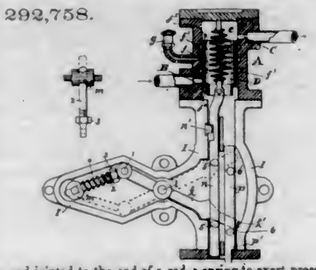
292,758. AUTOMATIC SPRING-VALVE CUT-OFF. JONAS L. MITCHELL, Logan, Ohio. Filed Aug. 2, 1883. (No model.)

Claim.—1. Cut-off mechanism for valves, consisting of a pivoted trip-lever, a rod jointed to one end of the trip-lever and adapted to play endwise, and a spring whereby the trip-lever may throw each side of the dead-center point, substantially as set forth.

2. Cut-off mechanism for valves, consisting of a pivoted trip-lever, a tumbler or rock-shaft, a rod jointed to one end of the lever and passing freely through the tambler, and a spring, substantially as set forth.

3. The combination, with a valve, of a pivoted trip-lever having

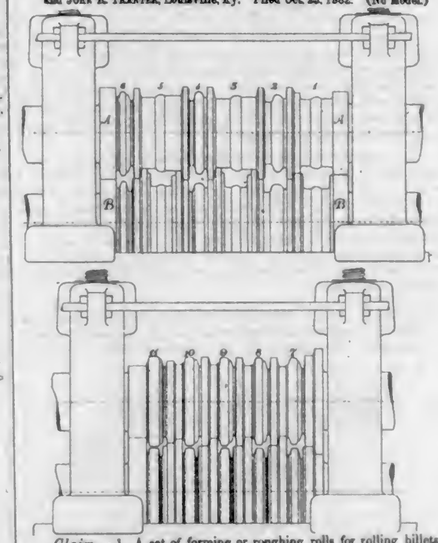
292,758.



one end jointed to the end of a rod, a spring to exert pressure on the rod toward the lever, and means to connect the other end of the trip-lever with the valve, as set forth.

4. The combination of a water-chamber having an inlet and outlet, each guarded by a valve, a compressed-air supply-pipe, an inlet and outlet port for the air, a valve adapted to alternately open and close the said air inlet and outlet ports, a float in the water-chamber, a trip-lever jointed to a spring-rod and adapted to throw both ways, and rods to connect the valve and float with the trip-lever, substantially as set forth.

292,759. ROLL FOR ROLLING CAR-RAILS. ARTHUR J. MOXHAM and JOHN R. TRANTER, Louisville, Ky. Filed Oct. 23, 1882. (No model.)



Claim.—1. A set of forming or roughing rolls for rolling billets or ingots into bars for flanged girder-rails, provided with three edging-passes and three flattening passes or dummies of the respective forms described, whereby the billet is transformed into the desired form of bar, with the flange of the proposed rail thrown below its head, ready for the finishing-rolls, so that all necessity of flat-rolling in the finishing operation is avoided, substantially as set forth.

2. A set of rolls for rolling flanged girder-rails, having flattening-passes of unequal draft laterally, in which passes the tendency of the metal being rolled to curve sidewise, due to said unequal draft, is obviated by tongues in the upper grooves of said passes and straight delivery thereby secured, substantially as set forth.

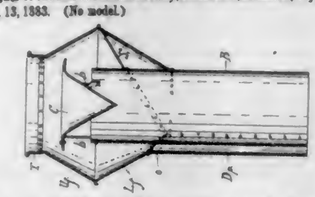
3. A set of rolls for rolling flanged girder-rails, provided with a flattening-pass of unequal draft laterally, in which straight delivery is secured by a tongue in the upper groove of said pass, and also with an edging-pass, in which straight delivery is secured by means of the rolls' difference in diameter in said edging-pass, substantially as set forth.

4. A set of finishing-rolls for edge-rolling flanged girder-rails, (without flat-rolling the same,) having parting-lines located at their respective passes, as described and shown, and a series of grooves of differential diameter each, whereby the draft in said passes is caused to vary at each of said diameters in inverse ratio to said diameters, so that the rail is delivered from said passes without tearing or overstraining its metal, substantially as set forth.

5. A set of finishing-rolls for edge-rolling iron or steel bars of irregular forms of cross-section into flanged girder-rails, (without flat-rolling the same,) said rolls having parting-lines located at their respective passes relatively to the difference in diameters of the several grooves in said passes, as described and shown, by means of which locations and differences in diameter a long and deep flange of rail can be passed out of the bottom grooves, free from the bottom roll, substantially as set forth.

6. A set of finishing-rolls for rolling iron or steel bars of irregular forms of cross-section into flanged girder-rails, said rolls having equal diameters in their last pass, and their parting-lines at said pass located as described and shown, whereby the finished rail is delivered straight or uncurved and free from tendency to curve toward either roll, thereby dispensing with the usual straightening operation after rolling, substantially as set forth.

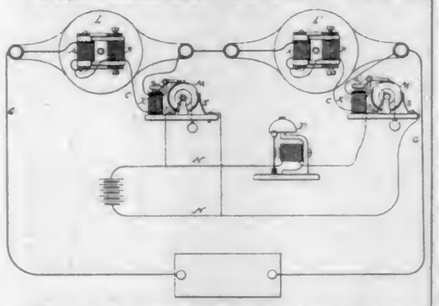
292,760. SPARK-ARRESTER. PETER MURRAY, Indianapolis, Ind., assignor of one-half to Patrick Murray, Alma Mine, Evanston, Wyo. Filed Aug. 13, 1883. (No model.)



Claim.—1. A smoke-stack for locomotive-engines, having a double-flaring head, wherein the barrel extends slightly above the line of union of the upper and lower flares, and is provided with a cone-cover of greater diameter, so arranged and sustained by braces at such a point above the mouth of the barrel that the upgoing draft diverted by the cone will strike the upper flare at a point about midway between the junction of the flares and the top, substantially as described.

2. In a smoke-stack for locomotives, a barrel extending above the line of union of the flares, an inverted cone of greater diameter, sustained by braces at such a point above the mouth of the barrel that the draft diverted by the cone will strike about middle of the upper flare, a top composed of two flaring parts connected at their widest bases, an inclined shelf surrounding the barrel and connected to the sides of the lower flare, and a discharge-pipe outside the barrel and opening above into the bottom of the lower flare and below into the smoke-arch, all combined substantially as described.

292,761. ALARM FOR ELECTRIC LAMPS. JOSEPH OLMSTED, New York, N. Y., assignor to the Olmsted Electric Light and Power Company, same place. Filed June 22, 1882. Renewed Nov. 27, 1883. (No model.)



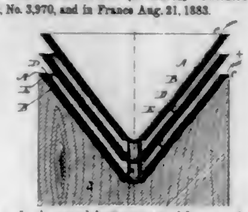
Claim.—1. The combination, with an electric lamp having a shunt or derived circuit, as described, of an electrical device included in said derived circuit, and adapted to give, directly or indirectly, an audible signal, substantially as and for the purpose set forth.

2. The combination, with an electric lamp having a shunt or derived circuit, as described, of a signaling device included in said derived circuit, adapted to operate on a predetermined increase in the flow of current in the derived circuit, as set forth.

3. The combination, with an electric lamp having a shunt or derived circuit, as described, of a signaling device included in said derived circuit, and adapted on a predetermined increase of the flow of current in said circuit to operate without breaking the circuit, as set forth.

4. The combination of a main circuit containing electric lamps, shunt-circuits around each lamp, a local circuit containing an alarm or indicating mechanism, and means, substantially as described, included in or connected with the shunt-circuits, and adapted to operate on a predetermined increase of the current flowing therein, and thereby bring into action the alarm or indicator, as and for the purpose set forth.

292,762. ELECTRIC ACCUMULATOR. GUSTAVE PHILIPPART, Paris, France. Filed Oct. 30, 1883. (No model.) Patented in England Aug. 16, 1883, No. 3,970, and in France Aug. 31, 1883.



Claim.—1. A second battery comprising tapering hollow vessels set one within another and held apart, so as to form a series of cells, each vessel having closely-set peroxidized lead projections on the inside and an applied coating of reduced lead on the outside, substantially as described.

2. An element of secondary battery provided with a series of symmetrical projections of cast metal in one piece with their support, and set so close together that they by their juxtaposition constitute, when peroxidized, substantially a layer of active material on said support, substantially as described.

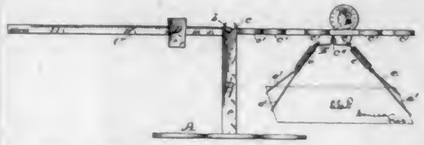
3. The improvement in the manufacture of secondary batteries, consisting in casting the body of an element with a series of symmetrical closely-set projections in one piece with their support, and peroxidizing the same, the said projections forming in virtue of their juxtaposition substantially a layer of active material, as set forth.

4. An element of a secondary-battery cell in the form of a cup or vase, provided with projections and active material applied thereto between said projections, substantially as described.

5. An element of a secondary cell in the form of a cup or vase, provided with a series of symmetrical projections set close together and adapted to form the active material of the element, substantially as described.

6. A cup or vase provided on one surface with projections and active material applied between the same, and on the other with a series of symmetrical projections set close together, substantially as described, whereby it is adapted to form the positive element of one cell and the negative element of an adjacent cell, as set forth.

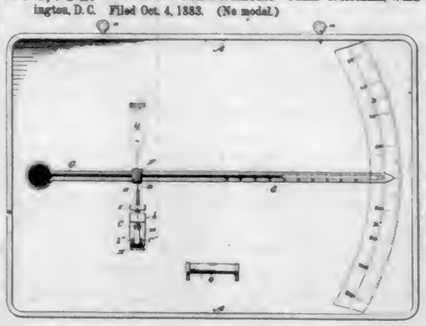
292,763. COMBINED LETTER-SCALE AND COIN-TESTER. EDWARD C. PURNELLE, Seneca, Kans. Filed July 18, 1883. (No model.)



Claim.—1. The combination of the beam C, provided with silver-coin weight-graduations and gold-coin receptacles, spaced as described, and the weight D, substantially as specified.

2. The combination of the beam C, provided with the hook c^4, the yoke E, coiled springs e, and grapples d', substantially as specified.

292,764. BALANCED THERMOMETER. PHILIP G. RUSSELL, Washington, D. C. Filed Oct. 4, 1883. (No model.)



Claim.—1. In a balanced thermometer, the holder adapted to receive and hold a thermometer tube or bar, and supported upon a spring-fulcrum suitably supported from the thermometer box or casing, substantially as and for the purpose set forth.

2. In combination with the clamp or holder adapted to receive and hold a thermometer tube or bar, a flat spring-fulcrum suitably supported at one end from the thermometer box or casing, and at the other fastened to the clamp, substantially as and for the purpose set forth.

3. In combination with the thermometer-tube, the spring-fulcrum supporting it and tending to keep it normally horizontal, and a suitably-graduated scale for measuring the deviation of the tube from its normal position, substantially as and for the purpose set forth.

4. In combination with a thermometer-tube supported by and rocking on a spring-fulcrum tending to resist such rocking, a scale suitably placed and graduated to indicate the different points at which the end of the tube will come to rest as such tube is caused to rock against the stress of its spring-fulcrum by the expansion and contraction of the contents of the tube under the influence of different degrees of temperature, substantially as shown and described.

5. In combination with the thermometer-tube, the spring-fulcrum therefor supported in a suitable bracket, substantially as and for the purpose described.

6. In combination with the spring-fulcrum provided at one end with means for receiving and holding a thermometer tube or bar, and supported at or near the other in a suitable bracket, means for adjusting the stress of said spring-fulcrum against bending, substantially as and for the purpose described.

7. In combination with the spring-fulcrum for a balanced thermometer, the bracket supporting the fulcrum, the supporting-screw passing through the vertical portion of the bracket and attaching it to the thermometer-inclosing box, and means for adjusting the bracket upon this screw as a pivot, substantially as shown and described.

8. In combination with the spring-fulcrum for the thermometer tube or bar, the bracket to which the fulcrum is fastened, the screw passing through the upright portion of the bracket and serving to attach it to the thermometer-inclosing box, the curved slot in this upright portion, and the screw passing through this slot and into the support for the bracket, substantially as and for the purpose set forth.

9. In combination with the spring-fulcrum for a balanced thermometer, automatic means for compensating for the expansion and contraction of such fulcrum under the influence of heat and cold, whereby the length of the effective portion of the spring or springs forming the fulcrum, and consequently the stress of such spring or springs, against the tilting of the thermometer tube or bar will be maintained substantially unchanged by any change in temperature, substantially as shown and described.

10. In combination with the spring-fulcrum for a balanced thermometer, means for adjusting the stress of such fulcrum against the tilting of the thermometer tube or bar, and for automatically compensating for changes in the length of the spring or springs forming such fulcrum under the influence of changes in temperature, whereby the stress of the spring-fulcrum will be maintained constantly at substantially the point to which it is adjusted, substantially as and for the purpose set forth.

11. In a balanced thermometer, the supporting-bracket, the flat springs fastened to and extending from the horizontal arm of the bracket, and attached at their other ends to a clamp or holder for the thermometer-tube, in combination with the screw working through the horizontal arm of the bracket, and carrying on its end a follower guided on suitable guide-pins and embracing the springs in slots provided therefor, substantially as and for the purpose set forth.

292,765. MANUFACTURE OF ORNAMENTAL GLASSWARE. WM. F. RUSSELL, Wheeling, W. Va., assignor to Hobbs, Brockunier & Co., same place. Filed Feb. 26, 1883. (No model.)



Claim.—1. The method herein described of ornamenting the exterior surface of glassware in the operation of forming the same, consisting of pressing the hot plastic glass of which the article is to be formed upon a ribbed or corrugated surface, twisting or bending the ribs or flutes thus formed in inclined or circumferential directions around the body of glass, and again pressing the glass upon a ribbed or corrugated surface, to impart a second set of ribs or flutes upon and across the first, substantially as set forth.

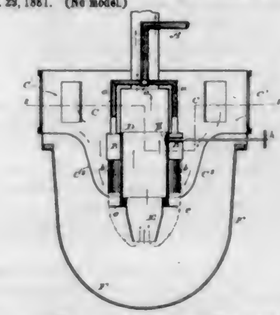
2. The method herein described of forming ornamented articles of glassware, consisting in first gathering the glass upon a blower's pipe; second, pressing such glass while attached to the pipe upon a corrugated wall or surface; third, bending or twisting the ribs thus made on the body of glass; fourth, again pressing the glass upon a corrugated wall or surface forming a second set of ribs crossing the former ones, and then blowing and shaping the glass thus ribbed into the desired article, substantially as set forth.

3. The method herein described of ornamenting articles of glassware, consisting in forming upon the exterior surface of the partially-formed article inclined ribs, flutes, or corrugations, then pressing or imprinting upon such ribbed surface a second set of ribs, flutes, or corrugations, crossing those first formed, and finally shaping the glass thus impressed into the desired article, substantially as set forth.

4. The method herein described of ornamenting articles of glassware, consisting in forming upon the exterior surface of the glass one or more sets of ribs, flutes, or corrugations, the different sets being impressed or formed one upon another and inclined around the body of glass in different directions, then impressing another and larger set of corrugations upon and across those previously made, and finally shaping the glass thus impressed into the desired article, substantially as set forth.

5. The method herein described of ornamenting glassware, consisting in forming two or more sets of ribs or corrugations on the exterior surface of the glass article, one set being impressed upon and across another, substantially as set forth.

292,766. GAS-BURNER. J. GARDNER SANDERSON, Scranton, Pa. Filed Sept. 29, 1881. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the suspended air-heating chamber or conduit, the gas-heating chamber through which the gas descends to the jets or burners, the draft tube, chimney, or conduit, the combustion-thimble depending therefrom, and the conical dependent shield for deflecting a current of air downward from said air-heating chamber to the combustion-thimble and flame.

2. The combination, substantially as hereinbefore set forth, of the air-heating chamber or conduit, its inclosing regulating-valve and dependent shield, the inclosed gas-heating chamber, the draft tube, chimney, or conduit, and the combustion-thimble depending therefrom.

3. The combination, substantially as hereinbefore set forth, of the draft tube, chimney, or conduit, the gas-heating chamber, the downwardly-directed jets or burners, the air-heating chamber or conduit, the regulating-valve, and the vertically-adjustable combustion-thimble.

4. The suspension gas-lamp hereinbefore described, consisting of the combination of the air-heating chamber or conduit, its inclosing regulating-valve, the conical depending shield for deflecting a current of air downward from said chamber and toward the flame, the inclosed gas-heating chamber, and the downwardly-directed jets or burners, the draft tube, chimney, or conduit, the combustion-thimble depending therefrom, and the shade depending from the air-heating chamber or conduit.

5. The combination, substantially as hereinbefore set forth, of the gas-heating conduit, the jets or burners, the air-heating conduit, the regulating-valve, and the conical dependent shield for deflecting a current of air downward from said air-heating conduit to the flame.

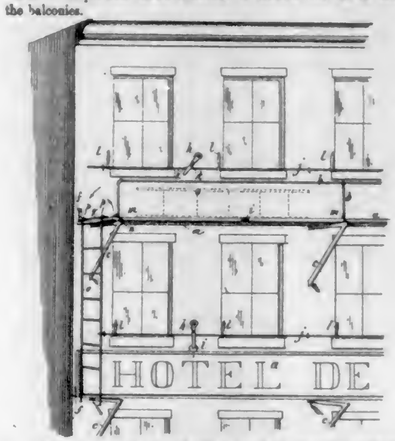
6. The combination, substantially as hereinbefore set forth, of the gas-heating chamber or conduit, the jets or burners, the air-heating chamber, the regulating-valve, the conical dependent shield for deflecting a current of air downward from said air-heating chamber to the flame, and the conduit for conveying away the hot products of combustion.

7. The air-heating chamber or conduit, substantially as hereinbefore described, consisting in the combination of the draft-tube, the perforated cylindrical adjustable valve, and the conical dependent shield for deflecting a current of air downward to the flame.

292,767. FIRE-ESCAPE. ROBERT STEVENSON, Perrysburg, Mich., assignor of part to Charles Stroebe, same place, and Abel Peck, Newburg, N. Y. Filed Mar. 16, 1883. (No model.)

Brief.—The balconies are provided with folding spring-balusters, and are themselves folded up against the building when not in use and secured by catches connected by a rod which extends substantially the width of the building, so that the balconies may be released from any

window. A portable ladder is hooked to suitable rods on the ends of the balconies.



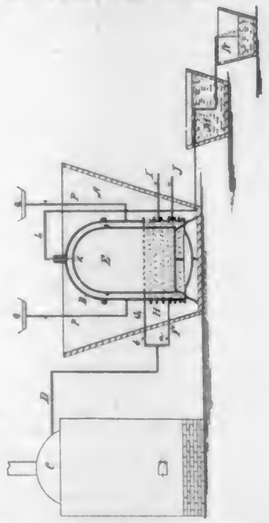
Claim.—1. The combination of a folding balcony, consisting of floor *a*, hinged to the wall of the building, and balustrade *b*, hinged to the floor, with supporting-brackets *c*, permanently attached to the building, substantially as described.

2. A folding balcony, *a b*, one or more latches, *h*, and a rod, *j*, extending along the windows for working the latches, in combination with the side wall of a building, substantially as described.

3. The folding balcony *a b*, having rod *q*, and the portable ladder *o*, having hooks *p*, in combination with the side wall of a building, substantially as described.

4. A folding balcony-floor, *a*, and balustrade *b*, hinged to the side of a building, and having springs *m*, and eye-clips *n*, or equivalent means, for automatically raising the balustrade, substantially as described.

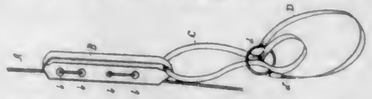
292,768. STEAM-HEATED EVAPORATOR. ROBERT W. TURNER, Thornton, TEX. Filed June 12, 1883. (No model.)



Claim.—The combination of the receptacle E, the chest B, inclosing the receptacle, the coil H, surrounding the chest, the vat A, containing the chest and coil, the pipe D, having branches F G, communicating, respectively, with chest B and coil H, and cocks *a b*, for controlling the passage of steam to the chest and coil, and the pipe L, for condensing the vapor from the receptacle, substantially as shown and described.

292,769. FIRE-ESCAPE. FLAVIUS J. UNDERWOOD, North Springfield, Mo. Filed May 21, 1883. (No model.)

Brief.—The body-harness attached to the perforated friction-block consists of an endless body-strap passed through a ring on the seat-strap in such manner as to become self-tightening when adjusted.



Claim.—1. In a fire-escape, an adjustable self-tightening harness, C D, substantially as and for the purpose set forth.

2. In a fire-escape, the combination of a tension with holes *b* upon a rope, A, having the piece B, and an adjustable self-tightening harness, C D, all substantially as shown and described.

292,770. MANUFACTURING A ROT-PROOF COVERING FOR UNDERGROUND TELEGRAPH-CABLES. PETER H. VANDER WEYDE, New York, N. Y. Filed Apr. 29, 1882. (No specimens.)

Claim.—1. As a new article of manufacture, an electrical conductor consisting of a metallic thread inclosed within an envelope of fibrous material permeated or saturated with elaterite or other equivalent pliable inorganic material, substantially as described.

2. The combination, with an envelope of fibrous material inclosing a metallic conducting-wire, of a compound of elaterite or mineral wax and bitumen, made to permeate and saturate the fibrous envelope, substantially in the manner and for the purpose herein set forth.

292,771. CHECK-ROW ATTACHMENT FOR SEED-PLANTERS. ALFRED VAN FLEET, Joliet, Ill., assignor to Andrew H. Shreffler, same place. Filed Nov. 13, 1883. (No model.)



Claim.—1. In the check-row attachment described, the combination of the forked lever *a*, jointed connecting-rods R and R′, frame J, having a slot in its upper face to guide said levers, and slotted oscillating plate P′, as and for the purpose set forth.

2. In the check-row attachment described, the bed-plate D, having the raised guide-sides *z z* formed thereon, as shown in Fig. 7.

3. In the check-row attachment described, the combination of the latch *r*, frame H′, barrel F, plunger *t*, and coil-spring *t′*, as and for the purpose set forth.

4. The combination of the frame B, having the cross-heads B′ B′, forked lever *a a′*, track *a²*, crank *c*, coil-spring S, connecting-rods R R′, slotted guide-frame J, slotted plate P′, bed-plate D, having the elevated guide-sides *z*, and covering-plate P, as and for the purpose set forth.

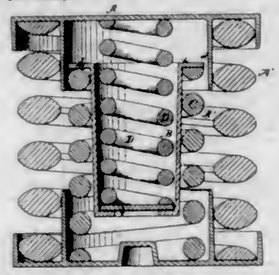
292,772. COMPOUND ELECTRIC CABLE. HENRY VAN HOEVENBERGH, Elizabeth, N. J., assignor to Richard S. Waring, Pittsburg, Pa. Filed Feb. 21, 1883. (No model.)



Claim.—1. A compound electric cable having, in combination, a central core or body, A, formed of radially-divergent metal plates or blades *a*, with intermediate channels, *a′*, insulated conducting-wire *c* within such channels, a yielding packing, *e*, filling the channels around the wires, and an exterior wrapping or case, *i*, substantially as and for the purposes set forth.

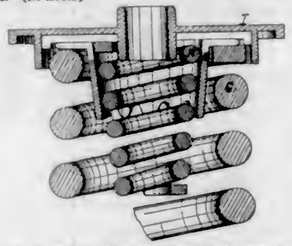
2. In a compound electric cable, the central body or core, A, of metal, having an axial passage, *r*, radially-divergent plates or blades *a*, and intermediate channels, *a′*, in combination with core-wire *r′*, insulated conductors *c* in the channels *a′*, packing *e*, and exterior case or wrapping, *i*, substantially as and for the purposes set forth.

292,773. CAR-SPRING. REMD. VOSS, New York, N. Y. Filed May 24, 1883. (No model.)



Claim.—The combination, in a spiral spring composed of three or more spirals, with the cap A, having projections *d*, of cup B, having movable bottom *b* and rim A, the said spirals of unequal length, or of equal length resting on uneven bases, substantially as described, and for the purpose specified.

292,774. CAR-SPRING. REMD. VOSS, New York, N. Y. Filed Sept. 14, 1883. (No model.)



Claim.—1. A cup for holding inner spiral springs, constructed with a rim divided into sections by means of cutting away part of the metal in the rim and sides of said cup, substantially as shown, and for the purpose specified.

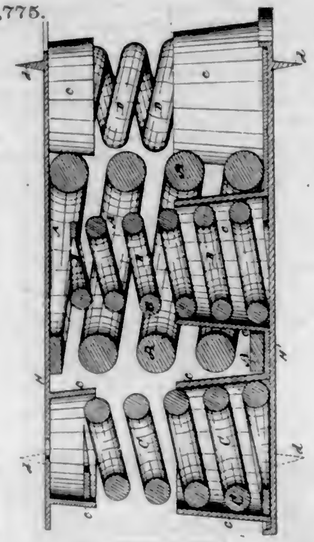
2. A cup for holding springs, having the rim B divided into sections F, cut-aways E E′, and scallops F F, or serrated lower edge on end of side C, substantially as described, and for the purpose specified.

292,775. CAR-SPRING. REMD. VOSS, New York, N. Y. Filed Oct. 22, 1883. (No model.)

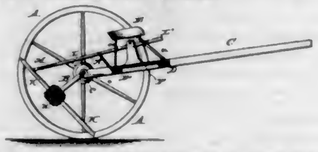
Claim.—1. A spring for railroad-cars, composed of a spiral coil-bar having in its interior a conical-shaped spiral coil, in combination with two or more conical spiral coils which act as collateral springs, and which singly are weaker than said spiral coil A, all so arranged that the spiral coil having the greatest bearing capacity is first acted on, and then action is brought to bear upon the weaker spiral conical coils, substantially as described, and for the purpose specified.

2. A group of spiral coiled springs for railroad-cars, composed of two or more spiral coils conically shaped, of less bearing capacity than the center spiral coil, A, all graduated as described, whereby the heavier spiral coil first receives the weight, and the weight being increased, said spiral is assisted by the differently-graduated conically-shaped spirals, which singly have less bearing capacity than the spiral coil, substantially as described, and for the purpose specified.

292,775.



292,776. HORSE HAY-RAKE. JOHN N. WALLIS, Fleming, and THEODORE WALLIS, Scipio, assignors of one-half to Washington S. Chamberlain, Auburn, N. Y. Filed Aug. 4, 1883. (No model.)



Claim.—1. In a two-wheel horse hay-rake, the combination of a revolving rake, the cranked axles on which the rake-head is journaled, thills connected by eye-bearings to said axles, and devices for holding the rake to its work and tripping it, all constructed and adapted to operate substantially in the manner, and for the purposes described.

2. The combination of a revolving rake, cranked axles affording bearings therefor, the feathers formed on the said axles, and grooves formed in the eyes of the thill-irons to limit the vertical vibration of the axles, all constructed and adapted to operate substantially in the manner, and for the purposes described.

292,777. BUCKLE. CHAS. S. WELLS, Boston, Mass., assignor to himself and Alvin M. Cushing, same place. Filed May 19, 1883. (No model.)



Claim.—1. A suspender-buckle consisting of two parts, a body and a clamping-lever, jointed or hinged together substantially as described—that is to say, one of the parts is provided with projections clinched between double flanges formed on the other part, the hooks prevent the ears or flanges from spreading, and the outer thickness of the flange covers or incloses the bent ends, as specified.

2. The improved suspender-buckle herein described, the same consisting of the body A, provided with the inwardly-curved flanges *x*, having the holes *i*, and the lever B, provided with the studs *f*, said studs being inserted in said holes and bent down within the flanges, to prevent their withdrawal therefrom, substantially as specified.

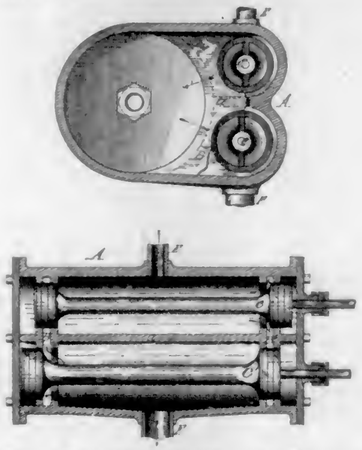
3. In a suspender-buckle, the body A, provided with the inwardly-curved flanges *x*, in which the lever B is journaled, said flanges having their ends closed to house the bent ends of the studs *f* and prevent the flanges from interfering with the clothing of the wearer, substantially as described.

4. In a buckle, the frame provided with side ears or bearings con-

sisting of double flanges, in combination with the tongue or lever having studs the ends of which are inclosed and protected within the folds, substantially as described.

5. In a suspender-buckle, the combination of a body and lever, one of which is provided with side ears or flanges, and the other with inwardly-bent studs upset or clinched inside the ears to secure the body and lever together, and prevent the withdrawal of the studs from their bearings, substantially as described.

292,778. PISTON-VALVE. HENRY WHITING, Cedar Rapids, Iowa. Filed July 30, 1883. (No model.)



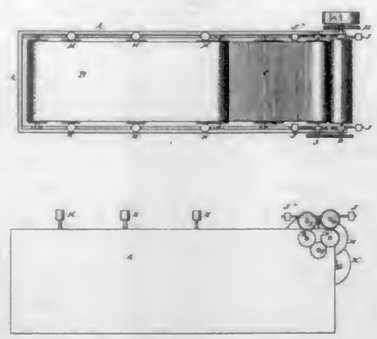
Claim.—1. The combination of a steam-engine cylinder, a steam-chest having two chambers communicating with a common port at each end, and balanced double-headed valves C C', applied in said chambers, and adapted to operate substantially as described.

2. A steam-chest provided with chambers separated by an intermediate diaphragm and opening into a common induction and eduction port communicating with the cylinder of the engine, in combination with balanced piston-valves operating alternately in said chambers, substantially in the manner and for the purposes described.

3. The steam-engine cylinder provided with a steam-chest having two chambers separated by a diaphragm, and also provided with end passages and balanced piston-valves, in combination with the double-inclined bottom of the lower chambers and the exhaust-pipe E, substantially as described.

REISSUES.

10,439. MACHINE FOR SCOURING AND CLEANSING WOOLEN YARN. LYMAN A. UPSON, Thompsonville, Conn. Filed Oct. 12, 1883. Original No. 241,571, dated May 17, 1881.



Claim.—1. In a dye-vat, the combination of the wringing-rolls G, with the aprons B and C, the guiding-rolls D, and pressure-rolls E, substantially as set forth.

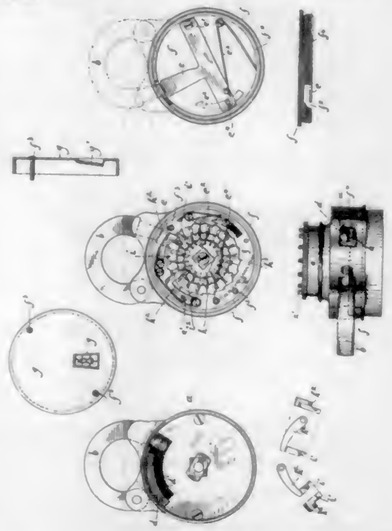
2. The combination of tank A and wringing-rolls G, with guiding-rolls E' and two endless aprons, guided by suitable rolls to carry said aprons from rolls E' below the liquid-line, substantially as set forth.

3. The combination of a tank and wringing-rolls with two endless aprons and guide-rolls, to guide said aprons from above the liquid, then below the same, and finally up to but not around the wringing-rolls, substantially as set forth.

4. The combination of a tank and wringing-rolls with two endless aprons, one of which is longer than the other, and guide-rolls for said aprons to guide the longer of said aprons above the liquid, to receive the yarns, &c., and then cause it to pass between said aprons below the liquid, and finally raised by said aprons and led to the wringing-rolls, substantially as set forth.

5. The combination of the tank A, wringing-rolls G, with aprons B and C, guide-rolls E', the guiding-rolls, and suitable devices to create a pressure between said aprons, substantially as set forth.

10,440. INDICATOR-PADLOCK. ANDREW JACKSON, San Francisco, Cal., assignor of two-thirds to Albert B. Pullman and Morris E. Ward, both of Chicago, Ill. Filed Jan. 4, 1884. Original No. 287,028, dated Oct. 23, 1883.



Claim.—1. In an indicator-padlock, the combination, with the ordinary lock mechanism, of the indicator mechanism distinct therefrom, but detachably connected to the casing of the lock, and means, substantially as described, for operating the indicator mechanism, projecting within the path of the lock-shackle, whereby movement is imparted to the indicator mechanism from the lock-shackle, substantially as set forth.

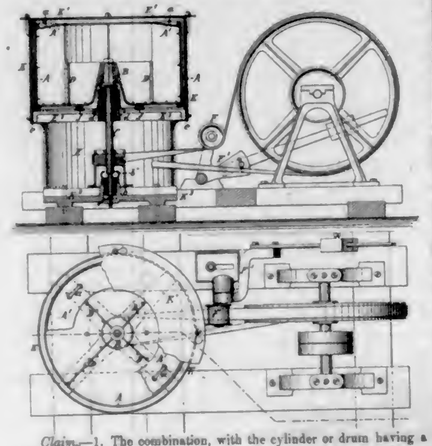
2. In an indicator-padlock, the combination, with the lock-shackle, of the indicator mechanism, having means, substantially as described, for operating the same, lying in the path of the end of the lock-shackle, and arranged to be operated thereby to move the indicator mechanism, substantially as set forth.

3. In an indicator-padlock, the lock-casing having mounted thereon indicator mechanism provided on its outer side with a series of wheels, and upon its inner side with a lever for operating said wheels, located in the path of the shackle, and so arranged with relation thereto that the action of closing the shackle will move the indicator mechanism, substantially as described.

4. In a padlock, an indicator mechanism consisting of a series of superposed wheels having detent edges and suitable designating-characters on the faces thereof, in combination with mechanism, substantially as set forth, for operating the wheels of the series each time the lock is closed, substantially as described.

5. The combination, with the shackle-bar *b*, of the indicator mechanism having the spring-lever *e*, the pawl e^3, and the indicator-wheel, substantially as described.

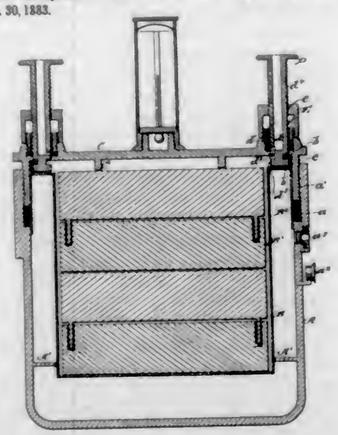
10,441. CENTRIFUGAL MACHINE FOR CREAMING MILK. WILHELM C. L. LEFELDT and CARL G. O. LENTSCH, Schöningen, Germany, assignors to Theodore Bergner, Philadelphia, Pa. Filed May 18, 1879. Original No. 195,515, dated Sept. 25, 1877. Patented in France Mar. 13, 1877, No. 117,499; in England Mar. 16, 1877, No. 1,074; in Italy May 25, 1877, No. 9,246; in Germany July 4, 1877, No. 3,212; in Denmark Aug. 13, 1877, and in Austria Aug. 21, 1877, No. 24,486.



Claim.—1. The combination, with the cylinder or drum having a conical center bearer, solid bottom and sides, and a top ring or flange, of removable radial partitions extending from the center to the circumference, but higher toward and at the circumference than at the center, substantially as and for the purposes described.

2. The combination of the revolving drum, the cushioned driving-spindle, the surrounding safety-jacket, having cushioned arms with center bearing, and a base-plate with supporting base-step, substantially as described.

10,442. VULCANIZING AND CELLULOID APPARATUS. GEORGE P. RIMMEL, Hornellsville, N. Y., assignor of one-half to Thomas B. Welch & Son, Philadelphia, Pa. Filed Dec. 11, 1883. Original No. 287,723, dated Oct. 30, 1883.



Claim.—1. In a vulcanizing and celluloid apparatus, two concentric cylinders, and a cap secured to the outer cylinder to form a steam-tight joint, the space between the two cylinders being formed into a boiler, and the inner cylinder being adapted to serve as a piston to press the material between its closed bottom and the cap as it is impelled by the steam generated in the boiler, combined with means for automatically allowing egress of gas, &c., from the inner chamber, substantially as described.

2. In a vulcanizing apparatus, the combination, with an inner chamber or piston-cylinder for pressing the flasks or molds, of a suitable steam-escape for the steam in the inner chamber or piston-cylinder, for relieving the pressure and obtaining the full stroke of the piston to insure closed flasks.

3. In a vulcanizing apparatus having an inner movable chamber or piston-cylinder for containing and pressing the flasks or molds, a passage or exit permitting the escape of steam to relieve the steam-pressure and obtain the full stroke of the chamber or piston cylinder, thereby insuring closed flasks.

4. A vulcanizing apparatus having a steam-escape from the inner chamber or piston-cylinder, for relieving pressure, obtaining the full stroke of the piston-cylinder, and insuring closed flasks.

5. In a vulcanizing apparatus such as described, means whereby steam escapes from the inner chamber or piston-cylinder as the latter moves to press the flasks, for obtaining the full stroke of the chamber or piston cylinder and insuring closed flasks.

6. The combination, in a vulcanizing apparatus, of an outer cylinder, an inner piston-cylinder moved by generated steam to press the flasks, and means for permitting the escape of steam as the piston-cylinder moves to press the flasks, for obtaining the full stroke of the piston-cylinder and insuring closed flasks.

7. In a vulcanizing and celluloid apparatus, and in combination with the cylinder A, having guide-flange A', and the cap C, the piston-cylinder B, composed of the portions B' and B², and the web *b'*, as and for the purpose set forth.

8. In a vulcanizing apparatus as described, a hollow locking-bolt connecting the interior of the piston-cylinder with the outer air, combined with such piston-cylinder, and adapted to serve substantially as set forth.

9. In combination with the cylinder B, having flange *b*, the bolt D, having passages *d d'* and plate d^4, and the cap C, as set forth.

10. In combination with the piston-cylinder, the cap, and the bolt D, the nut E, adapted to lock the cap and piston together, as set forth.

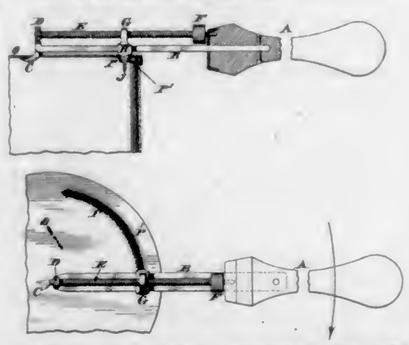
11. In a vulcanizing and celluloid apparatus substantially as described, the cap C, having projections C', whereby the stroke of the piston may exceed the height of the flasks, as set forth, for the purposes described.

12. The combination of the boiler-cylinder A, having blow-off a^2, located as described, and the piston having cylindrical portion B², as set forth.

13. In combination with the boiler A, having packing-chamber *a* and guide-ring A', the piston-cylinder B, as shown, the cap C, having projection C' and flange *c*, and blow-off a^2, as set forth.

14. In combination with the boiler-cylinder, piston-cylinder, and cap, as described, the bolt D, and locking-nut E, as shown, all adapted to serve as and for the purpose set forth.

10,443. CAN-OPENER. FRANK SHARP, Los Angeles, Cal. Filed Dec. 1, 1883. Original No. 253,432, dated Feb. 7, 1882.



Claim.—1. The combination, with a can-opener of the class specified, of a screw that engages with and passes through the female-threaded shank of the cutter, whereby said screw serves not only to advance and retract said cutter, but to hold the latter to any desired adjustment with-

out employing a special retaining device, substantially as herein described.

2. A can-opener constructed substantially as herein shown and described, consisting of the handle A, the bar B, having a curved point, C, and a perforated lug, D, upon its forward end, the swiveled screw E, having thumb-wheel F upon its inner end, and the cutter H, having in its shank G a screw-hole to receive the screw E and a perforation to receive the bar B, as set forth.

3. A can-opener knife having an arrow-shaped point, J, whose shoulders K K' merge into the cutting-edges L L' at the front and rear of said knife, respectively, as and for the purpose specified.

4. A can-opener knife whose sides N N' are rounded or concaved for the purpose of bending inwardly the opposite edges of the slit made in the vessel, as at P P', herein described.

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DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE BUELL.

Decided January 11, 1884.

1. PRACTICE IN PATENT OFFICE—DUTY OF EXAMINER IN DIVISIONAL APPLICATIONS.

When an application is filed as a division of a former application, the first duty of the Examiner is to determine whether the one is a continuation of the other application under the law.

2. PRACTICE—FAVORABLE JUDGMENT OF EXAMINER EXPRESSED BY FORWARDING CASE TO ISSUE DIVISION.

It is not until the Examiner signs the file-wrapper and forwards the application to the Issue Division that he can be considered as having rendered a favorable judgment upon it. He may have formed an opinion in its favor, or expressed an oral or even a written suggestion in the same direction; but these do not constitute his formal favorable judgment.

3. PRACTICE—EXAMINER NOT BOUND BY CONCLUSIONS OF HIS PREDECESSOR.

An Examiner is not obliged to adhere to a favorable conclusion which his predecessor formed or expressed in regard to the admission of certain matter into a particular application, unless such expression took the form of a favorable judgment.

4. PRACTICE—DIVISIONAL APPLICATION CANNOT BE BASED ON NEW MATTER.

An application based upon matter unwarrantably introduced into a former application cannot be considered as a division of the prior application.

APPEAL from the Primary Examiner.

TRANSMITTING AND SIGNAL TELEGRAPHS.

Application of Charles E. Buell, filed June 26, 1883.

Messrs. Church & Church for the applicant.

BUTTERWORTH, *Commissioner:*

In 1876 Buell filed an application for transmitting and signal telegraphs, in which he showed and described a certain system. In the same year the Examiner called upon him to amend the drawings so as to show "the system as applied to the uses to which it is particularly adapted." Thereafter Figure 5 was added to the drawings, which illustrated a clock-dial, and a simultaneous amendment was made to the specification, which gave a brief description of such figure. No claim was made to the invention shown in the added figure until 1882 or 1883, when not only claims were made thereto, but a separate application was filed, claiming to be a division of the 1876 application, and therefore to relate back to it, so as to get the benefit of the earlier date of filing.

The 1883 application belongs to a different division of the Office from the 1876 application, and is within the jurisdiction of another Examiner. The first duty of the latter officer was to determine whether the 1883 application was a proper division of the old application, and was entitled to be regarded as a continuation thereof. In the performance of this duty he found that the new application was based upon matter introduced into the old application after the latter was filed, and held that this could not be done under the practice of the Office and decisions of the courts, and consequently the new application must stand alone, and could derive no aid from the old application. To this holding the applicant takes exception, because he thinks the admission of the matter into the old application had been decided to be proper by another Examiner, and was therefore *res adjudicata*.

Under the rules of the Office now and at the time of the filing of the 1876 application, an Examiner had jurisdiction of a case until it was passed and allowed. It is not until the Examiner signs the file-wrapper and forwards the case to the Issue Division that he can be considered as having rendered a favorable judgment upon it. He may have formed an opinion in its favor, or expressed an oral or even a written suggestion in the same direction; but these do not constitute his formal favorable decision. (See *ex parte* Starr, C. D., 1879, page 91.) If the case shall at any time be transferred to another Examiner, the latter must be regarded as standing in the shoes of his predecessor in respect to that particular case, and entitled to pass upon and determine the question absolutely. So it must be held that the present Examiner is not obliged to adhere to the favorable conclusion which the former Examiner formed or expressed in respect to the propriety of admitting Fig. 5 and the description thereof. In reality, the former Examiner's attention was not drawn to the precise point now under discussion, for the amendment was called for and admitted by way of illustration and explanation, and no claim was then founded thereon. Amendments explanatory in their nature are not viewed with the same strictness as those the purpose of which is to serve as a basis for a new claim. (See *ex parte* Snyder, 22 O. G., 1975, and *ex parte* Howe, 25 O. G., 1189.)

I think the Examiner is correct in holding that Fig. 5 and the descriptive matter referring thereto is new matter, and should not have been introduced in the old application. This being so, then a patent granted claiming such matter and based upon said old application would be invalid, in view of the doctrine announced in *Sayles* v. *Chicago & North Western Railroad Company* (16 O. G., 349) and *Eagleton Manufacturing Company* v. *The West Bradley & Carey Manufacturing Company*, (18 Blatch., 218.)

The Examiner is sustained.

EX PARTE HENTZ.

Decided January 23, 1884.

JOINDER OF INVENTION—SEVERAL CLAIMS TO A "COMPOSITION" PERMISSIBLE.

If several claims to a "composition of matter," though distinct, cover associations of elements which contribute to the

production of a single beneficial result, and do not fall under different classes, they, properly speaking, cover but a single invention, and hence may be included in the same application.

APPEAL from the Primary Examiner.

COMPOUND FOR REMOVING CORNS AND WARTS.

Application of Albert Hentz filed September 14, 1881.

Mr. A. M. Tanner for the applicant.

BUTTERWORTH, *Commissioner:*

The application presents three claims for a compound for removing corns and other callosities. The first claim enumerates two elements, the purpose of which is to effect a cure of the disease. The second claim enumerates the elements embraced in the first claim and a third element, the office of which is to alleviate the pain incident to the application of the curative agent, and the third claim includes the same elements as the second, but is somewhat more specific in its terms.

The question to be determined is, whether these claims may all be included in one, or shall each form the subject-matter of a separate application.

The statute provides that—

> Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, * * * may obtain a patent th refor.

It will be observed that the statute does not in terms prescribe nor in anywise limit the number of claims that may be included in a single patent. But it has been urged that, as only the singular number is used, the statute by implication prohibits the inclusion of more than one invention in a patent. The courts hold that the matter is left largely to the discretion of the Commissioner. In view, therefore, of the ruling and practice of the Office, I will consider the proposition that a patent should include only a single invention. On that hypothesis a patent may not contain two or more "arts," two or more "machines," two or more "manufactures," or two or more "compositions of matter." But does it follow that an "art," or a "machine," or a "manufacture," or a "composition of matter" which requires more than one claim in order to effectually cover the whole invention may not be included in one patent?

In regard to an "article of manufacture," this precise question was under discussion in the cases of *E. R. Sumner* (C. D. 1869, p. 180) and *Augustus Adams*, (*ibid.*, 1873, p. 18,) and in deciding the question in the former case the language of the Commissioner is:

> While in the present case the various improvements are not so related to each other that the functions of the one cannot be brought into full play without the co-operation of the other, yet there is no such classification of inventions in the Office as would bring the several improvements under different sub-classes. Inasmuch, therefore, as their union in a single application does not impose upon the Office any extra labor of examination, this course may properly be permitted, and the application now pending will be proceeded with.

In one sense each claim in the Sumner case covered a distinct invention, (and, indeed, every claim must do so in order to be patentable,) for the function of each of the several combinations could be brought into full play without the co-operation of its fellows, but they united in contributing to a single result, and did not fall under different classes in the Office. The case of Adams is of the same tenor and effect, and since these decisions the practice of the Office has on this point been uniformly in accord with them.

In regard to an "art," in the cases of *Smith* (16 O. G., 630) and *McDougall* (18 O. G., 530) the following doctrine is announced:

> Although each of the several "acts" or the "series of acts" constituting a process may be capable of performing separately its own peculiar function, and may be used independently of the others, yet if they all contribute in producing the final result they may be joined in a single application, and a claim may be made to the entire process, and separate claims can also be made to the sub-processes which go to make up the same.

With reference to a "machine," the propriety of presenting several claims covering a general combination and various sub-combinations is too well established and recognized to require the citation of authority in its support.

It is manifest from the above that a single invention, whether it be an "art," "manufacture," or a "machine," may be covered by divers claims, even though each claim embraces, in a sense, a distinct thing capable of performing separately its own peculiar function, and is susceptible of a practical use independently of the others, provided the several things covered by said claims all contribute to produce the ultimate result, and do not, as suggested above, fall under different classes in the Office. When several claims cover inventions having different purposes or effecting the same end by different means they can no longer be considered as embracing a single invention.

No good reason is seen why the doctrine as to joinder of invention which is announced as governing the other classes is not equally applicable to "compositions of matter." A party may make a "composition" containing a certain number of ingredients, all of which enter into and form part of the complete compound, and aid in making its operation perfect for the purpose intended, and yet a substance containing a less number of ingredients may constitute the essence of the invention and contribute most largely in producing the desired result. It is manifest that to fully protect the interests of the inventor several claims would be required, and it would be a hardship to compel him to file separate applications to cover each claim of what is in reality a single complete invention. The statute does not require it, the decisions of the courts do not require it, the practice of the Office in regard to the other classes of invention does not afford a precedent for, nor does the convenience of the Office require it, so long as the several distinct things are not differently classified. It is true that in several decisions of the Office (notably *Loeser and Lippincott*) it was held that a "composition of matter" needs but a single claim. But the course of reasoning in those cases does not justify the conclusions reached. If they are correct, it is difficult to see why the principle announced would not include and apply to other classes of inventions, such as machines. But the cases last cited have not been approved and followed in all cases. On the contrary, in the case of *Hugh Burgess*, (MS. vol 21, p. 462,) my predecessor, in a well-considered opinion, held that several claims on a compound might be included in the same application.

It is said that the introduction of each additional ingredient forms a *new* composition. This is in a sense true, but palpably no more so with reference to a composition of matter than a machine. The addition of a feed or guide to a sewing-machine to that extent changes the character of the machine, but it is still a sewing-machine. So with the addition of the anodyne in the composition of matter under consideration. It

is still a medicine for the cure or removal of callosities, and, as in the case of the sewing-machine, it is rendered more complete by the addition of the element mentioned; and as under the sub-classification of the bureau there exists no obligation to divide, the composition with all the claims presented must be covered in one and the same application and be included in one Letters Patent.

It has been urged that the applicant might go on adding ingredients until he included the whole range of drugs. In the case of a machine, it may with equal force be urged that new devices might be added *ad libitum*, and so they might so long as the *character* of the machine remains unchanged, and so with the composition of matter under consideration. After the addition of each new ingredient the Examiner will determine whether the compound is in character the same, to wit, a medicine for removing or curing callosities. It will not be assumed that ingredients will be added without reference to their use or utility as a part of the curative agency employed. Certainly, devices will not be added to machines or ingredients to compounds simply because such addition can do no harm. If the claims, though distinct, cover associations of elements which contribute to the production of a single beneficial result, and do not fall under different classes, they, properly speaking, cover but a single invention, and hence may be included in the same application.

Viewed in the light of these suggestions, the case at bar does not require division. The third claim covers the compound in its perfect form, the others embrace combinations tending toward the same end, and not falling under different classes. All three of the claims are necessary in order to fully protect the invention.

The decision of the Examiner is reversed.

EX PARTE BORDEN.

Decided January 17, 1884.

1. PRIOR PUBLICATION—A DRAWING OF A PATENT A PUBLICATION.

   Even without any description, if a published drawing fully and clearly exhibits and discloses an invention sought to be patented, it is an adequate and complete reference of itself alone. It is to be considered as a publication.

2. ABANDONMENT BY PUBLICATION INURES TO THE BENEFIT OF THE PUBLIC.

   A novel thing, the invention of a patentee, fully shown and published in the drawing of his patent, even though not belonging exclusively to him as not being included in his claims, and even if estopped from being set up in a claim upon reissue, may not be donated to an individual. If the patentee has lost it—if it is abandoned—it has gone to the public, and is the property of the public.

3. APPEALS—PERTINENCY OF A REFERENCE APPEALABLE TO EXAMINERS-IN-CHIEF.

   Whether or not a reference cited by the Examiner is entirely different from the invention claimed by an applicant is a question affecting the merits of the case, and as such is appealable in the first instance to the Examiners-in-Chief, and not to the Commissioner direct.

APPEAL from the Primary Examiner.

MECHANICAL MUSICAL INSTRUMENTS.

Application of George E. Borden filed April 21, 1882.

Mr. J. McC. Perkins attorney for the applicant.

BUTTERWORTH, *Commissioner:*

This case comes up on objection of the attorney to the citation by the Examiner of certain matter in reference—that is, as constituting a bar to the grant of a patent. In refusing the applicant's claim, the Examiner directed attention to a certain United States patent, citing one figure of the drawing thereof as exhibiting precisely the invention for which a patent is now sought. Attention was also directed to another United States patent, but the question is not connected with the latter, this patent having been put into the record merely to show how the devices to which the improvement of the applicant is to be attached act, the applicant not having shown the device with full relation of the parts with which it is to operate.

The objection appears to be in the nature of a demurrer, it being admitted, it seems, that the figure of the drawing cited *does* show the invention of the applicant, but contended that the citation is not legal or proper, upon the ground that inasmuch as the description of what is illustrated by this figure of the drawing was erased from the specification as originally written and filed, the printed specification of the patent not containing it, the matter cited must be treated as if exhibited in a rejected and abandoned application.

The objection is bad, and the reasoning, or rather the ground, is manifestly fallacious. Because the Examiner alludes to language which was in the original specification, the attorney insists that the rejection is on the erased description. This is not so. The rejection is on the graphic representation of the invention as exhibited by the drawing, and if language which was originally in the specification describes the drawing as the Examiner sees it, it is only the more certain that his eye is not deceived. But even without any description, if a published drawing fully and clearly exhibits and discloses an invention sought to be patented, it is an adequate and complete reference of itself alone. It is to be considered a publication. A good, clear, and distinct drawing of an invention is a higher order of evidence of the existence of the invention than any mere description thereof in words. Language is elastic and may mislead. The most carefully-considered language, in the light of subsequent experience, is often found to be ambiguous. But the graphic representation or embodiment of a thing, whether as a drawing or picture, or in tangible form, is unmistakable. As to the attorney's reasoning, it is not perceived how the Examiner's citation can be likened to the citation of a rejected and abandoned application. It is true that in the Supreme Court case of *Brown* v. *Guild*, (6 O. G., 392,) as interpreted by the Commissioner's decision in *Rouse* v. *Stoddard*, (7 O. G., 169,) which may be the cases to which the attorney refers, it is held that a mere application of one party, as a rejected and abandoned application for a patent, is not a bar to the grant of a patent to another, and some allusion is made in the case of *Brown* v. *Guild* to a certain rejected and withdrawn application being merely part of an abandoned experiment; but there is great difference between the abandonment of a mere application (both as regards the inventor himself and as regards others) and the abandonment of something in a patent—between a mere abandoned experiment and the abandonment of an invention. An abandoned application is hidden in the secret archives of the Patent Office, and another application for the

same thing may at any time be made by the same inventor or by another inventor. Something abandoned in a patent is published, (a patent in all its parts being open to public inspection,) and hence goes to the public. An *experiment* when abandoned may be picked up and carried to completion and to the reward of a patent by any individual. The public cannot be said to have acquired anything, for there was no certain achievement, no result, or production to take. An *invention* when published and abandoned is abandoned to the public, and becomes the property of the public, and no individual has the right to monopolize it.

The attorney argues that because in the patent the description of the figure of the drawing cited in reference is erased, and, under existing interpretations of the law in numerous decisions of the courts, the patentee would be estopped from claiming on reissue the matter erased, his client should be allowed his claim to the invention. It need not be considered whether the patentee would or would not be entitled to a reissue describing and claiming the matter shown. A novel thing, the invention of a patentee fully shown and published in the drawing of his patent, even though not belonging exclusively to him as not being included in his claims, and even if estopped from being set up in a claim upon reissue, may not be donated to an individual. If the patentee has lost it—if it is abandoned—it has gone to the public, and is the property of the public. It is not easy to understand how it can be seriously argued that although an invention is shown in a patent, because a description thereof has been canceled and the patentee is estopped from reissue, it should be presented to some one else.

I have refrained from considering the question whether or not the figure of the drawing cited (although, as said above, it seems to be admitted that it does) really does or does not fully show the invention of the applicant, or show it at all, since this is a question going to the merits of the case, and as such is properly appealable in the first instance to the Examiners-in-Chief, and not directly to the Commissioner. I only decide that whether there be or be not language in the specification descriptive of the figure; whether there has been such language and it has been canceled, or there has never been any language bearing upon the figure, if the figure of the drawing cited adequately discloses the applicant's invention, it is a good and sufficient reference in and of itself alone. Upon this point the decision of the Examiner is affirmed.

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THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Erratum.

OFFICIAL GAZETTE, February 5, 1884, volume 26, page 333, in title, after residence of inventor insert *assignor to the Mechanical Organette Company, same place.*

Quarterly Volumes of the Official Gazette.

The great increase in the number of patents issued annually has so enlarged the illustrated portion of the OFFICIAL GAZETTE that the numbers covering a period of six months make a volume too unwieldy for convenient use. To remedy this the GAZETTE, from July 1, 1883, will be published and bound in *quarterly* instead of *semi-annual* volumes. Title pages, digests of decisions, &c., will be prepared *quarterly* for each volume. The subscription price will remain the same—$5 per annum to all subscribers in the United States and Canada, and $7 to foreign subscribers other than Canadian. The price of the *bound* quarterly volumes will be duly announced.

Issue of February 5, 1884

Patents	432	No. 292,779 to No. 293,210, inclusive.
Designs	38	No. 14,602 to No. 14,639, inclusive.
Trade-marks	15	No. 10,909 to No. 10,923, inclusive.
Labels	15	No. 3,868 to No. 3,882, inclusive.
Reissue of patents	5	No. 10,444 to No. 10,448, inclusive.
Total issue	505	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	5	1
Austria-Hungary	1	.....	Hawaiian Islands	.....	.....
Barbadoes	.....	.....	Holland	.....	1
Belgium	1	.....	Mexico	.....	.....
Bermuda	.....	.....	New Zealand	.....	.....
Brazil	.....	.....	Russia	1	.....
Canada	5	.....	Scotland	.....	.....
Chili	.....	.....	Spain	.....	.....
Colombia, U. S. of	.....	.....	Sweden	.....	.....
Cuba	.....	.....	Switzerland	2	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	24	4
England	8	2			
France	1	.....			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	5	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	1	.....	New Hampshire	2	.....
California	9	.....	New Jersey	27	2
Colorado	3	.....	New Mexico Territ'y	.....	.....
Connecticut	26	3	New York	92	13
Dakota Territory	1	.....	North Carolina	1	.....
Delaware	2	.....	Ohio	38	1
District of Columbia	6	1	Oregon	2	.....
Florida	.....	.....	Pennsylvania	43	1
Georgia	2	.....	Rhode Island	3	1
Idaho Territory	.....	.....	South Carolina	1	.....
Illinois	46	1	Tennessee	2	.....
Indiana	16	.....	Texas	6	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	12	.....	Vermont	2	.....
Kansas	1	.....	Virginia	1	.....
Kentucky	5	.....	Washington Territ'y	1	.....
Louisiana	3	.....	West Virginia	1	.....
Maine	5	.....	Wisconsin	11	.....
Maryland	5	.....	Wyoming Territory	.....	.....
Massachusetts	39	3	United States Army	1	.....
Michigan	10	.....	United States Navy	.....	.....
Minnesota	5	.....			
Mississippi	1	.....	Total to citizens of the United States	446	26
Missouri	7	.....			
Montana Territory	1	.....			

DESIGNS.

14,602.—SEWING-MACHINE COVER.—*Peter L. Donato*, Newark, N. J. Application filed December 5, 1883. Term of patent 7 years.

14,603.—SPOONS AND TABLE-WARE.—*Henry Ghee*, Syracuse, N. Y. Application filed October 12, 1883. Term of patent 14 years.

14,604.—COVERED DISH.—*Joseph Heap*, Burslem, county of Stafford, England, assignor to *Mellor Taylor & Co.*, same place. Application filed December 1, 1883. Term of patent 3½ years.

14,605.—SLIPPER-UPPER.—*Michael L. Hiller*, New York, N. Y. Application filed December 26, 1883. Term of patent 7 years.

14,606.—BUCKLE.—*Mortimer N. Judd*, New Britain, Conn., assignor to *The North & Judd Manufacturing Company*, same place. Application filed October 3, 1883. Term of patent 7 years.

14,607.—CAKE OF SOAP.—*John Henry Keller*, New Orleans, La. Application filed December 10, 1883. Term of patent 14 years.

14,608.—SPOON OR FORK HANDLE.—*Myron H. Kinsley*, Niagara Falls, N. Y. Application filed November 26, 1883. Term of patent 7 years.

14,609.—DISH.—*Carl F. Lauber*, Philadelphia, Pa. Application filed October 12, 1883. Term of patent 14 years.

14,610.—CARPET.—*Milton R. Loudon*, Jersey City, N. J., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed December 21, 1883. Term of patent 3½ years.

14,611 and 14,612.—CARPET.—*William McCallum*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Applications filed December 21, 1883. Term of patents 3½ years.

14,613 to 14,616, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed December 26, 1883. Term of patents 3½ years.

14,617.—LADY'S WALKING-SKIRT.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited,*) same place. Application filed December 26, 1883. Term of patent 3½ years.

14,618.—CHILD'S COAT.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited,*) same place. Application filed December 26, 1883. Term of patent 3½ years.

14,619.—SCONCE-FRAME.—*Albert Patitz*, Meriden, Conn., assignor to *The Bradley & Hubbard Manufacturing Company*, same place. Application filed July 16, 1883. Term of patent 7 years.

14,620.—FOUNDATION-FRAME FOR A FLORAL ORNAMENT.—*Henry F. Reed*, New York, N. Y. Application filed December 10, 1883. Term of patent 7 years.

14,621.—LAMBREQUIN.—*John Quincy Reed*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited,*) same place. Application filed December 26, 1883. Term of patent 3½ years.

14,622.—LADY'S COSTUME.—*John Quincy Reed*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited,*) same place. Application filed December 26, 1883. Term of patent 3½ years.

14,623 to 14,629, inclusive.—CARPET.—*Fred F. Ricker*, Philadelphia, Pa., assignor to *Bromley Brothers*, (*Limited,*) same place. Applications filed January 2, 1884. Term of patents 3½ years.

14,630 to 14,634, inclusive.—CARPET.—*Oscar Righter*, Philadelphia, Pa., assignor to *Dornan Bros. & Co.*, same place. Applications filed December 18, 1883. Term of patents 3½ years.

14,635.—GIRL'S CLOAK.—*Catherine Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited,*) same place. Application filed December 26, 1883. Term of patent 3½ years.

14,636 and 14,637.—CARPET.—*Frank E. Smith*, New York, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Applications filed December 21, 1883. Term of patents 3½ years.

14,638.—SHADE-HOLDER.—*William B. Stewartson*, Pittsburg, Pa. Application filed November 22, 1883. Term of patent 14 years.

14,639.—LADY'S OVERSKIRT.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited,*) same place. Application filed December 26, 1883. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

10,909.—CUTLERY AND CUTTING IMPLEMENTS FOR MANUAL USE.—*Friedrich Wilhelm Beckmann*, Solingen, Prussia, Germany. Application filed December 1, 1883.

"The arbitrary representation of two men, the arms and legs of which are united."

10,910.—MUSTARD.—*James Collier & Sons*, Spitalfields, London, county of Middlesex, England. Application filed November 10, 1883.

"A mustard pot and spoon, with a calf's head on the left and a pig's head on the right."

10,911.—FEATHERS IN A CLEAN AND ODORLESS CONDITION.—*Louis H. Feerts*, Philadelphia, Pa., and Chicago, Ill. Application filed December 21, 1883.

"The words 'COLD BLAST.'"

10,912.—PRUNE-JUICE EXTRACT OR PRUNE-JUICE.—*Martin M. Goldsmith & Co.*, New York, N. Y. Application filed December 27, 1883.

"The word 'IMPERIAL,' in connection with a device consisting of a shield or coat of arms divided into two parts or sections by a vertical line, and showing in one section the representation of a Greek cross resting on or arising from a base of rocks, and in the lower portion of the other section an inverted triangle or V-shaped figure, and above the same a bunch of fruit."

10,913.—CIGARETTES AND SMOKING-TOBACCO.—*Kinney Tobacco Company*, New York, N. Y. Application filed December 12, 1883.

"A jockey upon a horse, a radiance of light, and the word 'SPORT.'"

10,914.—CIGARETTES.—*Kinney Tobacco Company*, New York, N. Y. Application filed December 12, 1883.

"A figure of a cupid, a Turkish fez, a radiance of light, and the words 'EXTRE NOUS.'"

10,915.—CIGARETTES.—*Kinney Tobacco Company*, New York, N. Y. Application filed December 12, 1883.

"The word 'SOLITAIRE,' a radiance of light, and a Turkish fez."

10,916.—ALL HATS OR HEAD-COVERINGS FOR MALES.—*Daniel D. Youmans*, New York, N. Y. Application filed December 31, 1883.

"A design with scrolls and inscriptions thereon, and the monogram 'Y D D.'"

10,917.—GIN.—*John De Kuyper & Son*, Rotterdam, Netherlands. Application filed January 12, 1884.

"An outline representation of a heart on a label of corresponding shape."

10,918.—JEWELRY.—*Fowler Brothers*, Providence, R. I. Application filed January 12, 1884.

"A shield having a diagonal band of crape, an urn on top of the same, and two burning torches."

10,919.—TOILET-PINS.—*Thomas Porter*, New York, N. Y. Application filed January 14, 1884.

"A representation of a lion with a cupid at its side holding a pin as if in the act of thrusting it into the lion's head."

10,920.—WATCHES AND CLOCKS.—*The Waterbury Watch Company*, Waterbury, Conn. Application filed July 21, 1883.

"A watch or clock dial from which a section of the outer graduated portion has been removed."

10,921.—WATCHES AND CLOCKS.—*The Waterbury Watch Company*, Waterbury, Conn. Application filed July 21, 1883.

"A monogram composed of the letters 'W W C o.'"

10,922.—WATCHES AND CLOCKS.—*The Waterbury Watch Company*, Waterbury, Conn. Application filed July 21, 1883.

"A representation of a ribbon having a portion curved upward into horseshoe shape and graduated to represent a portion of a clock or watch dial."

10,923.—PURE RYE AND BOURBON WHISKIES.—*H. Webster & Co.*, New York, N. Y. Application filed January 9, 1884.

"The word 'CONSOLATION.'"

LABELS.

3,868.—Title: "E. & J. B. DUBLIN," (FOR GUINNESS' EXTRA FOREIGN STOUT.)—*Edward & John Burke*, New York, N. Y., Dublin, Ireland, and Liverpool, England. Application filed January 7, 1884.

3,869.—Title: "COMPOUND QUININE LINIMENT."—*Charles F. Fish*, Saratoga Springs, N. Y. Application filed January 12, 1884.

3,870.—Title: "SAENGERBUND" (FOR CIGARS.)—*J. Heimann & Co.*, New York, N. Y. Application filed January 4, 1884.

3,871.—[Withdrawn.]

3,872.—Title: "JACK ROSE" (FOR CIGARS.)—*Fred Kronsbein*, Rochester, N. Y. Application filed January 7, 1884.

3,873.—Title: "PINOCLE" (FOR PLAYING CARDS.)—*Ferdinand Luthin*, Hoboken, N. J. Application filed January 11, 1884.

3,874.—Title: "SEPTINE." (FOR A MEDICAL REMEDY.)—*John J. Murphy*, New York, N. Y. Application filed January 14, 1884.

3,875.—Title: "LALOR'S ANTIDOTE FOR INTOXICATION OR ALCOHOLIC POISONING."—*David R. O'Lalor*, Boston, Mass. Application filed January 5, 1884.

3,876.—Title: "OLD MOTHER HUBBARD'S THROAT AND LUNG BALSAM."—*Benjamin F. Raymond*, Essex, Mass. Application filed January 14, 1884.

3,877.—Title: "NOURSE'S ELIXIR OF YERBA SANTA COMPOUND."—*Harry Standiford*, Washington, D. C. Application filed January 16, 1884.

3,878.—Title: "J. M. WALKER'S ANDERSON COUNTY HAND MADE SOUR MASH. DISTILLED SPRING 1869."—*Strauss, Fritz & Co.*, Cincinnati, Ohio. Application filed January 11, 1884.

3,879.—Title: "GLASSBORO' IMPROVED" (FOR PRESERVE JARS.)—*Thomas W. Synnott*, Wenonah, N. J. Application filed January 9, 1884.

3,880.—Title: "DAIRY BUTTER LABEL."—*The United States Dairy Butter Label Company*, Boston, Mass. Application filed January 14, 1884.

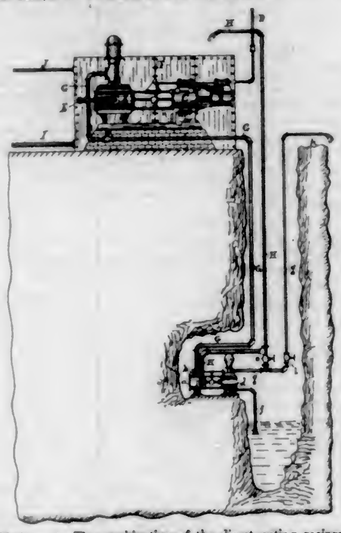
3,881.—Title: "THE WHITE'S TAR MEDICATED TOILET PAPERS."—*Charles C. White*, Brooklyn, N. Y. Application filed January 11, 1884.

3,882.—Title: "BI-METALLIC." (FOR MEN'S FURNISHING GOODS.)—*Wilson Brothers*, Chicago, Ill. Application filed December 29, 1883.

PATENTS

GRANTED FEB. 5, 1884.

292,779. RECIPROCATING HYDRO-TRANSMITTER. WM. BAXTER, Jersey City, N. J., assignor to the Hydrodynamic Transmitter Company, New York, N. Y. Filed Mar. 20, 1883. (No model.)



Claim.—1. The combination of the direct-acting reciprocating steam-pump A with the pipe E, tank F, and reciprocating pump consisting of the cylinders *a* and *d*, the motor-cylinder *a* being supplied with water by automatic valves contained in valve-chest *b*, and the pump A being connected with said valve-chest by a pipe, G, and the motor *a* discharging its spent water into the tank F by pipe H, as and for the purpose set forth.

2. The combination, with the discharge-pipes H and *g* from the motor and drainage-cylinders *a* and *d*, of the connecting-cock *s* and stop-cock *i*, arranged and operated as and for the purpose set forth.

292,780. BUTTON. WILLIAM W. BEACH, New York, assignor of one-half to Charles V. Goddard, Brooklyn, N. Y. Filed June 8, 1883. (No model.)

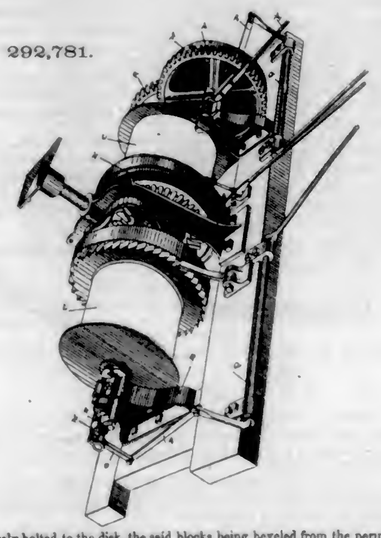


Claim.—A button whose shank is provided with a head at one end, a suitable attaching device at the other, and an intermediate opening, as and for the purpose specified.

292,781. HOISTING-MACHINE. WILLIAM L. BEATTY, HARVEY L. BEATTY, and ALVIN O. BEATTY, Welland, Ontario, Canada. Filed Nov. 7, 1883. (No model.)

Claim.—1. In a hoisting-machine in which the motion of the axle is conveyed to the rope-drum by a friction-clutch, a disk, E, having a flange, *e*, extending at right angles from its surface a short distance below its periphery, in combination with a series of wooden blocks, *f*, wedge-shaped in cross-section, arranged endwise around the flange *e* and securely bolted to the disk, the said blocks being beveled from the periphery of the disk E toward the outer edge of the flange *e*, and touching each other to form an unbroken periphery, substantially as and for the purpose specified.

292,781.



2. In a hoisting-machine in which the motion of the axle is conveyed to the rope-drum by a friction-clutch, a disk, E, having an octagonal flange extending at right angles to its surface a short distance from its periphery, in combination with a series of wooden blocks, *f*, arranged endwise around the flange, one block for each octagonal side, the said blocks being securely bolted to the disk and beveled off from the periphery of the disk toward the outer edge of the flange, substantially as and for the purpose specified.

3. In a hoisting-machine in which the drums are journaled on the driving-axle, a disk or disks, E, keyed to the said axle, and having an octagonal flange, *e*, extending outwardly from its periphery, with blocks of wood arranged around the disk and bolted to the octagonal sides, the said blocks being beveled, as shown, in combination with the drum C, journaled on the axle A, and having a conically-recessed head to fit over the beveled flange *e*, with mechanism for adjusting the drum longitudinally on its axle, substantially as and for the purpose specified.

4. In a hoisting-machine, a disk, E, keyed to the axle A, and having an octagonal flange, *e*, extending outwardly from its periphery, with blocks of wood arranged around the disk and bolted to the octagonal sides, the said blocks being beveled, as described, to fit into the conically-recessed head D of the drum C, which is journaled on the axle A, in combination with a key fitting into an elongated keyway made in the axle A at the outer end of the drum C, and actuated by a screw arranged to butt against a spindle fitting into a hole extending from the end of the axle to the keyway, substantially as and for the purpose specified.

5. In a hoisting-machine in which the rope-drum is adjustably connected to its axle by a friction-clutch formed by the end of the drum being brought in contact with a disk keyed to the axle, the said adjustment of the drum being effected by a spindle and screw through a nut in the frame and acting against the end of the drum, an arm, O, fastened

to the outer end of the screw, in combination with a rock-shaft, Q, journaled in the frame of the machine and connected to the arm O, substantially as and for the purpose specified.

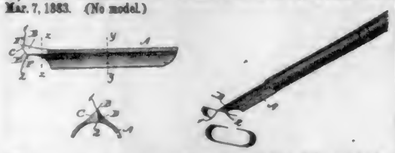
6. In a hoisting-machine in which the rope-drum is journaled on its axle and derives motion through a friction-clutch adjustably connecting it to a disk keyed to the axle, a pinion fastened to the drum and gearing with a wheel journaled on a counter-shaft, the face of the disk being conically recessed to fit over an inversely-shaped flange on a disk keyed to the counter-shaft, in combination with a pinion, also fastened to the counter-shaft, and gearing with a wheel keyed to the axle, the connection between the loose and tight disks on the counter-shaft being adjustable, so that the rope-drum may be driven or not by the gearing specified, substantially as and for the purpose specified.

7. In a hoisting machine in which the rope-drum is adjustably connected to its shaft by a friction-clutch, a counter-shaft having a pinion keyed to it, which pinion gears with a larger wheel keyed to the rope-drum's axle, so that the counter-shaft shall revolve at a higher speed than the axle, a gear-wheel, F, journaled on the counter-shaft and engaging with a pinion fastened to the rope-drum, in combination with a friction-connection formed between the gear-wheel F and counter-shaft, and operated by a cam, substantially as and for the purpose specified.

8. In a hoisting-machine, a friction-clutch formed by a conically-recessed disk having a paper lining pressed into it, in combination with a metal disk having a conical flange formed on it to fit into the paper-lined disk, as specified.

9. In a hoisting-machine in which the rope-drum is so connected to its shaft that it may revolve freely on it, the combination of speeded gearing arranged to connect the rope-drum to its shaft, so that the speed of the drum shall be greater than its shaft, the said gearing being provided with clutches, so that the connection between the drum and shaft may be disconnected at pleasure.

292,782. SHADING-PEN. ROBERT H. BRADLEY, Fayetta, Mo. Filed Mar. 7, 1883. (No model.)



Claim.—1. An improved shading-pen consisting of the herein-described semi-cylindrical body, having nibs thickened at their outer ends between the points 1 and 2, and cut off diagonally, so as to form a writing-edge, E, as set forth.

2. The improved shading-pen having the herein-described semi-cylindrical body, provided with nibs of unequal length, thickened vertically between the points 1 and 2, as set forth.

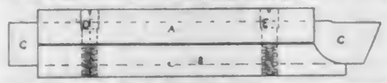
3. The improved shading-pen comprising the herein-described body A, having slit B, and nibs C D, of unequal length, thickened vertically between the points 1 and 2, the ends of said nibs being cut off diagonally, so as to form the writing-edges, and rounded, as and for the purpose set forth.

292,783. PACKING FOR STUFFING-BOXES. ASPLAN BELDAM, London, County of Middlesex, England. Filed Sept. 13, 1883. (No model.) Patented in England May 29, 1876, No. 2,254.



Claim.—In a packing for stuffing-boxes of steam engines and pumps, and for other joints required to be made steam, air, or water tight, the combination of a thin sheet of corrugated, plaited, or folded metal with a layer of canvas, felt, or other fibrous material and interlayered with lubricating-grease, the whole being rolled up in a lateral direction across the corrugations or plaits until the packing attains the requisite thickness, substantially as herein set forth.

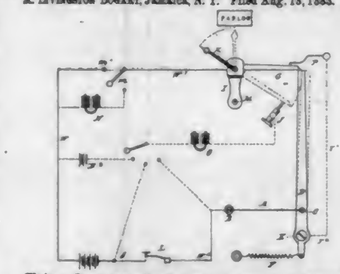
292,784. HOLDER FOR CUTTING-OFF TOOLS. CHAS. E. BULLENS, Hartford, Conn. Filed June 30, 1883. (No model.)



Claim.—1. The combination of the cutter plate or blade C with the stock or holder, consisting of two segments, A and B, connected together by the screws or pins D and E, substantially as shown, and for the purpose specified, and operating substantially as set forth.

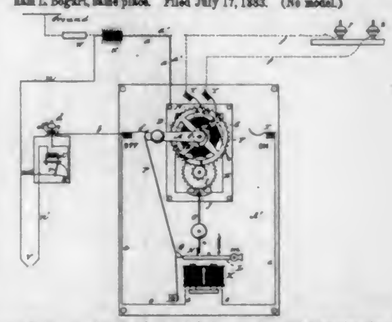
2. The improved tool-holder consisting of the two separable segments A and B, provided with the two screws or pins D and E, for holding said segments in their proper relative positions of contact or juxtaposition, as the case may be, said screws having their heads countersunk in A and their points within the body of B, in combination with the blade or cutter-plate C, all constituting a combined cutting-off tool and holder thereof having a uniform cross-section and a convenient external form for insertion in and withdrawal from the tool-post of a lathe.

292,785. APPARATUS FOR OPERATING ELECTRICAL DEVICES. A. LIVINGSTON BOGART, Jamaica, N. Y. Filed Aug. 18, 1883. (No model.)



Claim.—In an open-circuit electrical apparatus, a circuit-conducting resistance, A, consisting of a thin ribbon or wire, in combination with a drop-lever or equivalent device, as described, for permanently breaking the circuit, said resistance A and said circuit-breaking devices constructed and operating conjointly as described, to break the circuit at and not before the expiration of a prescribed and adjustable interval of time after the closure of the circuit by the expansion of said resistance A, resulting from the passage of the normal current through the same, as and for the purposes set forth.

292,786. ELECTRIC GAS-LIGHTING ATTACHMENT FOR BURGLAR-ALARMS. A. LIVINGSTON BOGART, Jamaica, N. Y., assignor to Abraham L. Bogart, same place. Filed July 17, 1883. (No model.)



Claim.—1. An electric gas-lighting attachment for burglar-alarms, consisting of an automatic switch, A, constructed as described, and operated by a clock-work mechanism, which is set in motion and stopped by the armature of an electro-magnet, K, in the manner set forth, and is provided with a series of circuit-closers adapted, as described, to turn the battery-current upon each burner separately to ignite the same, in combination with electrical connections consisting of a separate circuit for each burner, and another separate circuit including an ordinary burglar-alarm instrument, the whole being constructed to operate as described, so that no one of said circuits interferes with the action of any other of said circuits, and each burner is ignited separately, and immediately thereafter is cut out of circuit, as set forth.

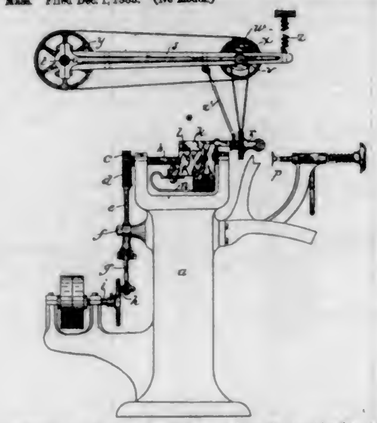
2. An electric burglar-alarm and gas-lighting apparatus composed of the following parts in combination—namely, the automatic switch A, constructed and operated by clock-work mechanism, as described, the escapement I, and pendulum O, the armature L, provided with the stop-pin N, a burglar-alarm instrument, the springs S and T, and the burglar-alarm circuit and separate gas-burner circuits, including the circuit-closers H and X Y, the whole constructed and operating, as described, to first sound the alarm, then to divert the current to each burner successively, and then to divert the current again to the burglar-alarm for the purpose of effecting a continuous alarm after the last burner-circuit has been made and broken.

3. The combination, with the magnet K and its armature L, lever A, spring D, and train of clock-work, of the catch Q, mounted upon the spring P, as shown and described, for the purpose set forth.

4. The burglar-alarm and switch-circuit, composed of the battery U, wire *a*, clock-work frame E, lever A, spring T, wire *s*, magnet K, wire c, spring S, and burglar-alarm instrument, as shown and described.

5. The combination, as shown and described, of the burglar-alarm circuit, magnet K, gas-lighting circuit, indicated by dotted lines, and the clock-work movement.

292,787. HEEL-BURNISHING MACHINE. HIRAM BOND, Haverhill, Mass. Filed Dec. 1, 1883. (No model.)



Claim.—1. In a heel-burnishing machine, the combination, with the oscillating tool-carrying mechanism shown, adapted to conform in its oscillating movements to the shape of a boot or shoe heel, of a rotary tool supported by said carrier and an arbor, and means for rotating the tool while the carrier is oscillating, as set forth.

2. The combination of the block *j*, secured to an oscillating shaft, the tool-carrying arm *k*, pivoted to said block, means for exerting an inward pressure on said arm, a rotary tool pivoted or journaled on said arm, and provided with a pulley, 4, swinging frame *s*, pivoted upon a driving-shaft, and provided with a pulley, 10, belted to a pulley on the driving-shaft, and with a pulley, *x*, belted to the pulley on the rotary tool, and a link connecting said frame with the tool-carrying arm *k*, and caneing the latter to follow the upward and downward movements of said arm, as set forth.

3. The improved tool composed of the burnishing portion 2, shank 3, and pulley 4, formed in one piece, and relatively arranged as shown, and provided with the longitudinal cavity 5 and vent 8, combined with the non-rotating stud or arbor 6, on which said tool is rotated, and a gas-pipe extending through said arbor into the burnishing portion of the tool, as set forth.

292,788. APPARATUS FOR DEOXIDIZING IRON ORES. JOHN BRIDGFORD, Albany, N. Y. Filed Mar. 6, 1883. (No model.)

Claim.—1. A deoxidizing-furnace containing a series of vertical retorts provided with means for separately controlling the discharge of ores from any one of said retorts, and having a series of communicating horizontal heat-chambers arranged one above another and surrounding said retorts, in the manner and for the purpose specified.

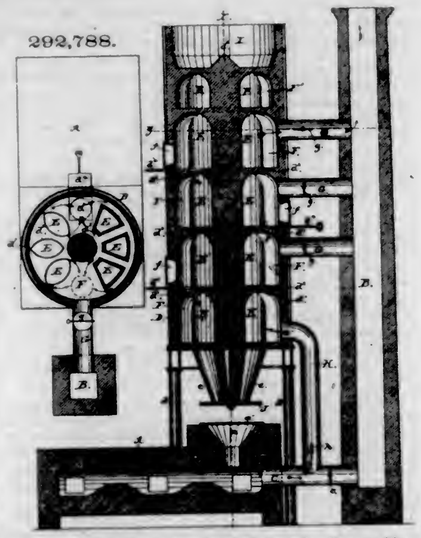
2. In a deoxidizing-furnace containing a series of vertical retorts provided with means for separately discharging part or all of the contents of any one of said retorts, and a series of horizontal heat-chambers arranged one above another, and provided with connecting openings for the passage of heat from one chamber to the one next above it, the said openings being placed alternately at opposite sides of the furnace, as and for the purpose specified.

3. In a deoxidizing-furnace containing a series of vertical retorts, and a charging-hopper that is common to all of said retorts, as herein set forth, a dead-air chamber or other heat-retarding device surrounding the upper part of said retorts for the purpose of preventing the ignition of carbonaceous matter contained in the upper part of the retorts and the charging-hopper, as herein specified.

4. In a deoxidizing furnace, the combination, with a series of vertical retorts provided with means for controlling the discharge of ore from any one of said retorts, as herein set forth, of a series of horizontal heat-chambers arranged one above another, and adapted to cause a circulation of the heat-currents around all of said retorts, the said chambers being provided with communicating openings placed alternately at opposite sides of said furnace, for forcing the heat-currents in a zigzag direction, and cut-offs for optionally throwing the uppermost chamber or chambers out of service, as herein specified.

5. In a deoxidizing-furnace provided with a series of horizontal heat-chambers, F, having openings d^3 from one chamber to the next above, cut-offs d^4, substantially as described, for optionally controlling said openings, and means, substantially as specified, for conducting the spent heat from each chamber into the smoke-stack B, as herein described.

292,788.

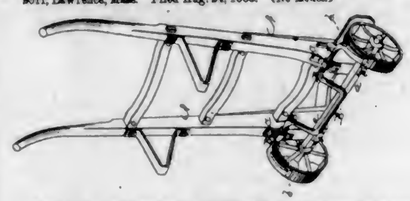


292,789. TICKET-CASE. ALVIN R. BURDICK, Aurora, Ill. Filed June 8, 1883. (No model.)



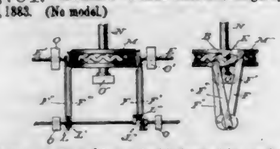
Claim.—A ticket or card case composed of solid ends, bottom, and sides, and a hinged cover, one end of the box being made narrower for withdrawing the cards, and the middle portions of the tops of the sides provided with narrow inwardly-turned flanges F, with spaces between the flanges and the hinged end of the cover, whereby cards placed on the under side of the cover will at their ends pass between the sides of the box, and be forced past the flanges, and lie flat in the box, by the shutting of the cover, as specified.

292,790. HAND-TRUCK. JOHN BURLEIGH and JAMES GARDNER ABBOTT, Lawrence, Mass. Filed Aug. 24, 1883. (No model.)



Claim.—In a hand-truck, the combination, with the frame thereof, of the bent bar B, swung at C from said frame, and provided with the dropped portion B', and brake-shoes *b*, constructed and arranged substantially as and for the purpose set forth.

292,791. GEARING. ROBERT CAMPBELL, Allegheny, Pa. Filed Apr. 12, 1883. (No model.)



Claim.—1. In gearing, a double lever, fulcrumed, connected, combined, and engaged in the form, manner, and for the purpose set forth.

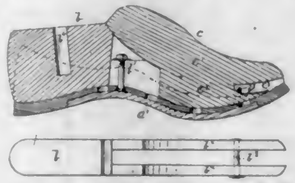
2. In gearing, grooves or slots engaging a double lever, in combination with a connecting-rod or piston-rod when the grooves or slots and lever are engaged and of construction and bearing as described and set forth.

3. In gearing, a driving-head, substantially as shown and connected.

4. In gearing, the combination of a pitman or connecting-rod with a crank and with a double lever, substantially for the purposes set forth.

5. In gearing, an apparatus employing hypocycloidal curves, engaged and operated for the purposes substantially as set forth.

292,792. LAST. ARTHUR W. COX, Auburn, Me., assignor of one-half to John T. Sullivant, Newark, N. J. Filed Sept. 15, 1881. (Model.)

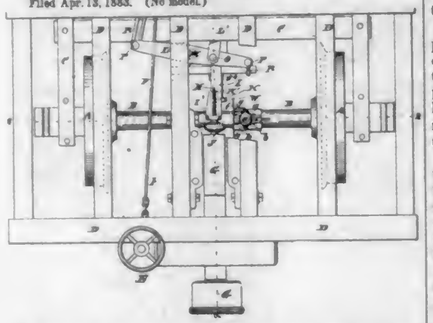


Claim.—1. In a shoe-last, the combination of a metallic base or sole having side flanges rounded on their outer sides, and extended from the toe nearly to the heel, leaving a vertical opening between their rear ends, and a wooden upper or instep-block forked at its forward end, and having its rear end projected through the vertical opening between the rear ends of the side flanges of the sole, and secured in place by a suitable bolt, substantially as set forth.

2. The combination, in a shoe-last, of the rib or center piece, *b*, having its forward end slotted, and forming the parallel arms b^2 b^2, connected by the bolt b^3, and an instep-block, *c*, having the lip or flange c^2, with its extension c^3, adapted to pass down into the slot of the rib or center piece, *b*, and be held by its extension catching under the bolt b^3, substantially as set forth.

3. The combination, with the metallic base or sole having upwardly-projecting flanges formed along its sides, and extended from the toe nearly to the heel, leaving an opening between the rear ends of said flanges, of a narrow forked instep-block, the tines whereof are connected by cross-bolt, and a top removable instep-block provided with a downwardly-projecting hooked lip adapted to engage the cross-bolt on the lower block and lie between the tines of said block, substantially as described, and for the purposes set forth.

292,793. CAR-BRAKE. JOSEPH C. DANE, La Crosse, Wis., assignor of two-thirds to Lucinda S. Card and Forrest J. Smith, both of same place. Filed Apr. 13, 1883. (No model.)



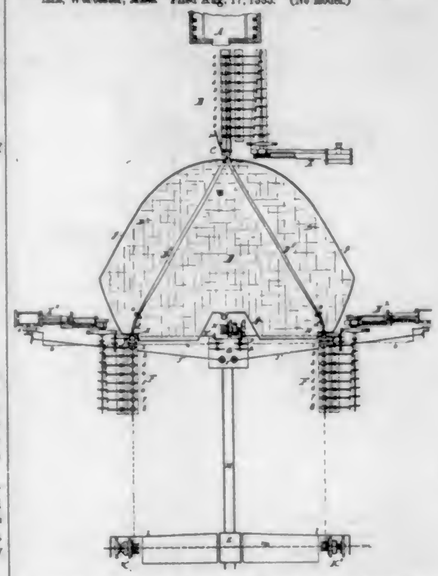
Claim.—1. The combination of the draw-head, push-bar I, connected to its inner end, horizontal lever L, fulcrumed upon one of the draft-timbers and connected to the brake-beams by the top rods, governor upon the axle, and a lever-frame having bearing on the vertical lazy-bar V, movably connected to the car body and truck.

2. The combination of a draw-head, rod H, springs J and K, push-bar I, lever L, fulcrumed to the car-body, lazy-bar connected to the car body and truck, lever-frame W, connected to the lazy-bar, and a governor with movable shield *f*, acting on the frame W, substantially as and for the purpose set forth.

3. The combination of a brake mechanism and a brake-governor consisting of the sleeve *a*, toggle-arms *c* and *d*, weights *e*, disk *f*, and spring or springs *g*, substantially as set forth.

4. The frame W, secured to the lazy-bar V, and having an arm, W^3, with elongated fork W^7, engaging the push-bar I, substantially as set forth.

292,794. APPARATUS FOR MAKING WIRE RODS. FRED H. DANIELS, Worcester, Mass. Filed Aug. 17, 1883. (No model.)



Claim.—1. The distributing-table D, constructed, as shown, with divergent guiding-channels D′, terminating in the curved funnels or tubes *d*, and provided with laterally-extended wings or platform-surfaces D^2, and the standing border or guard flange *g*, substantially as and for the purposes set forth.

2. In a rolling-mill for making wire rods, the combination of a single primary train or series of pairs of rolls arranged for operating in continuous order, and two secondary trains or series of pairs of rolls likewise arranged for operating on the continuous system, for alternately completing the rods partially formed in said primary train, and an intermediately-located platform or table for receiving and permitting the distribution of the over-feed of the rod between the said trains, as set forth.

3. In a rolling-mill comprising a primary series or train of rolls supplemented by double series or trains of rolls arranged for alternately receiving the partially-reduced rods from said primary train, a distributing-table located between said primary train and the following rolls, and provided with means for automatically guiding the ends of the rod to the leading-rolls of the secondary or supplemental series of rolls, and for permitting the over-feed to distribute itself upon the table-surface, substantially as hereinbefore set forth.

4. The combination, in a rolling-mill, of a primary series or train of rolls, as B, arranged for operating in continuous order, a distributing-table provided with divergent guide-channels, an adjusting-switch for deflecting the rod into either channel, and two or more secondary series or trains of rolls arranged for operating in continuous order, adapted for receiving the rods from the respective guide-channels of said distributing-table, substantially as hereinbefore set forth.

5. In a rolling-mill, the combination, with a primary train of rolls arranged to operate in continuous order, a distributing-table with divergent guide-channels, and two secondary trains of rolls, as F F′, provided with independent motors or engines E′ E^2, of a mechanism, substantially such as described, for varying the speed of said engines, operating from a stand, G, at a position overlooking said distributing-table and roll-trains, as set forth.

6. In a rolling-mill mechanism, the combination, with an intermediately-located distributing-table having guiding-channels terminating in funnels or tubes, as *d*, of guiding or friction rolls, as *a*, arranged at the entrance of said tube, for the purpose set forth.

7. In a wire-rod-rolling mill having intermediate distributing-table, a rod-shearing mechanism, I, located between the delivery-guides of said table and the leading-rolls of the secondary train F or F′, for the purpose set forth.

8. In a rolling-mill having two or more series of rolls and an intermediately-located distributing-table, the combination, with the secondary series of rolls, of a pair of feeding-rolls, as H, adapted to be brought into action for forcing the end of the rods into the leading-bite of the reduction-rolls in said second train, substantially as set forth.

9. The combination, with the table D, guides *d*, and train of rolls F F′, of the feeding-rolls H, one of which is mounted for vertical action, as described, and the operating-cams and shaft H′, substantially as and for the purpose set forth.

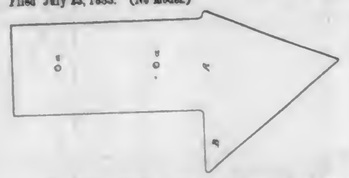
10. The combination, in a rolling-mill, of the primary train of rolls B, the two completing-trains F and F′, the table D, with guides D′ *d*, the feed-rolls H, engines F F′, the stand G, and the controlling-connections O and H′, and actuating-levers P and R, substantially as and for the purposes set forth.

11. In a rolling-mill having a primary train of rolls and a distributing-table and second trains of rolls, as described, a reeling apparatus, N, located adjacent to said distributing-table for reeling waste pieces, partially reduced or damaged rods directly from said intermediate table, as set forth.

12. In a rolling-mill plant for making wire rods, the combination and arrangement, as herein shown and described, of the furnace A, the primary train B, the switching-guide C, the distributing-table D, the feed-rolls H, the secondary trains of rolls F and F′, the reeling devices K and K′, the motors E E′ E^2, and operator's stand G, with connections for controlling the mechanism, as set forth.

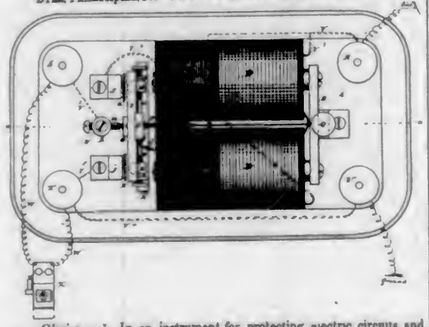
13. The guide-tube *d*, provided with the longitudinal flanged slot *f*, in combination with a distributing-table and pair of rolls in a rod-rolling mill, for permitting the rod to be entered in the rolls and then drawn into the tube, as set forth.

292,795. CULTIVATOR-SHOVEL. WILLIAM F. DICKSON, Mossville, Ill. Filed July 23, 1883. (No model.)



Claim.—The shovel-blade A, with a point formed with unequal sides, as shown, having the spur B, the upper side of which is approximately horizontal, and a shorter extension on the opposite side, and extending from each corner in a straight line to a central point, forming working-edges of different angles, to the upper portion of the shovel, substantially as shown and described.

292,796. PROTECTOR FOR ELECTRIC CIRCUITS. JOSIAH W. DYER, Philadelphia, Pa. Filed Oct. 8, 1883. (No model.)



Claim.—1. In an instrument for protecting electric circuits and their receiving-instruments from damage by lightning or excessive electrical charges generally, two coils of wire of different resistances carried upon the same core, and acting upon an armature, in combination with a line-wire in circuit with the coil of highest resistance, and having receiving-instruments thereon, and mechanism controlled by the armature to first shunt said receiving-instrument and throw the low-resistance coils into circuit, and then break the original line-circuit close to the receiving-instruments when the said line becomes overcharged with electricity, substantially as and for the purpose specified.

2. The combination of a line-circuit, coils C and D, of different resistances, located upon the same core, with armature E and its lever, contact-springs, and circuit-closing devices actuated by said armature to first make contact with said springs to complete the line-circuit through the low-resistance coil, and simultaneously therewith shunt the coil of high resistance, and then make a solid contact to insure the grounding of the line through said low-resistance coil, substantially as and for the purpose specified.

3. The combination of a line-circuit, coils C and D, of different resistances, located upon the same core, with an armature, E, and its lever, contact-springs, and circuit-closing devices actuated by said armature to first make contact with said springs to complete the line-circuit through the low-resistance coil and simultaneously shunt said coil of high resistance, and also said receiving-instruments, to ground, and then make a solid contact to insure the grounding of the line through said low-resistance coil, substantially as and for the purpose specified.

4. The combination of a line-circuit having receiving-instruments located therein, coils C and D, of different resistances, located upon the same core, with an armature, E, and its lever, contact-springs, circuit-closing devices actuated by said armature to first make contact with said springs to complete the line-circuit through the low-resistance coil and shunt said receiving-instruments to ground, and then make a solid contact to insure the grounding of the line through said low-resistance coil, and means to finally break said original line-circuit close to the receiving-instruments, and devices to regulate the time of said break, substantially as and for the purpose specified.

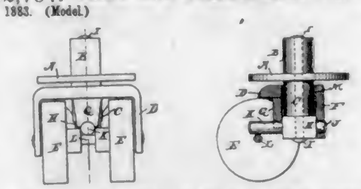
5. In an instrument for protecting electric circuits and their receiving-instruments from damage by lightning or excessive electrical charges generally, two coils of wire of different resistances carried upon the same core and acting upon an armature, in combination with a line-wire in circuit with the coil of highest resistance, and having receiving-instruments thereon, mechanism controlled by the armature to first shunt said receiving-instruments and throw the low-resistance coils into circuit, and then break the original line-circuit close to the receiving-instruments when the said line becomes overcharged with electricity, and means to regulate the time of said break in the line close to said receiving-instruments, substantially as and for the purpose specified.

6. The combination of electro-magnet B, having coils C and D, of different resistances, armature-lever F, armature E, contact-spring O, contact-screw M, means to put said coil D in circuit upon moving said armature, receiving-instruments X, and connecting-circuits, substantially as shown.

7. The combination of electro-magnet B, having coils C and D, of different resistances, armature-lever F, armature E, contact-spring O, contact-screw M, means to put said coil D in circuit, contact-bar I, contact-standards J J′, receiving-instruments X, and connecting-circuits, substantially as shown.

8. The combination of electro-magnet B, having coils C and D, of different resistances, armature-lever F, armature E, contact-spring O, contact-screw M, means to put said coil D in circuit, contact-bar I, contact-standards J J′, springs K, receiving-instruments X, and connecting-circuits, substantially as shown.

292,797. CASTER. AUGUST EWERT, Hamilton, Ohio. Filed July 5, 1883. (Model.)



Claim.—1. The housing D, having the two curtains pendent from its roof, and the vertical pin I, provided with means for connection to furniture, and joined to the foot of the curtains by a horizontal axle of oscillation, combined substantially as and for the purpose specified.

2. The housing D, having curtain F and curtain G, with a half-bearing, the block H, with its journals, and the pin I, combined substantially as and for the purpose specified.

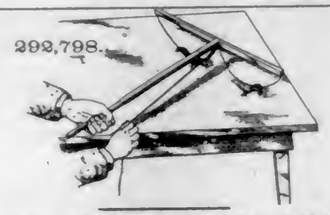
3. The housing D, with its curtains F G and slot M, the block H, with its journals, the pin I, provided with means for attachment to furniture, and the boss C, resting on the block, combined substantially as and for the purpose specified.

4. The housing D, the wheel-axle L, the two wheels E, the pin I, provided with means for connection to furniture, the curtains F G, pendent from the roof of the housing, and the axle of oscillation prolonged to the rear between the wheel-hubs and over the wheel-axle, combined substantially as and for the purpose specified.

5. The flange A, having bosses B and C, the housing D, having curtains F and G, the block H, having journals J and K, and the riveted pin I, combined substantially as and for the purpose specified.

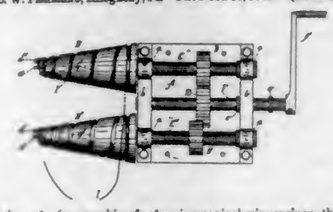
292,798. TOY. LOUIS F. FALLON, St. Louis, Mo. Filed Nov. 8, 1883 (No model.)

Claim.—The combination of two sticks transversely joined in the shape of the letter T, with strings and loosely-depending roosters, substantially as and for the purpose hereinbefore set forth.



292,798.

292,799. MACHINE FOR FORMING CONICAL WIRE SPRINGS. GEO. W. FERRING, Allegheny, Pa. Filed Oct. 10, 1883. (No model.)

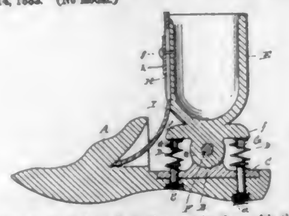


Claim.—1. In a machine for forming conical wire springs, the combination, with the conical grooved mandrels B B′ and shafts C C′, having pinions, respectively, D D′, of the shaft F, having spur-pinion E and guards c c, and arranged to slide backward and forward longitudinally, whereby one or each of said mandrels may be rotated independently of the other to form both coils of a conical spiral twin spring from one drive-shaft, substantially as described, and for the purpose specified.

2. In a machine for forming conical wire springs, the combination, with the conical grooved mandrels B B′ and shafts C C′, having pinions respectively, D D′, and sliding shaft F, of the hinged bar G, having upright tooth *f*, secured thereto, adapted to enter between the teeth of the pinion D, substantially as described, and for the purpose specified.

3. In a machine for forming conical wire springs, the combination, with the conical grooved mandrels B B′ and shafts C C′, having pinions, respectively, D D′, and sliding shaft F, of the bar G, having a press-block, *g*, secured to the end, adapted to press the wire in the groove of the mandrel D, substantially as described, and for the purpose specified.

292,800. ARTIFICIAL LEG. JOSEPH FURBER, Toledo, Ohio. Filed July 14, 1883. (No model.)



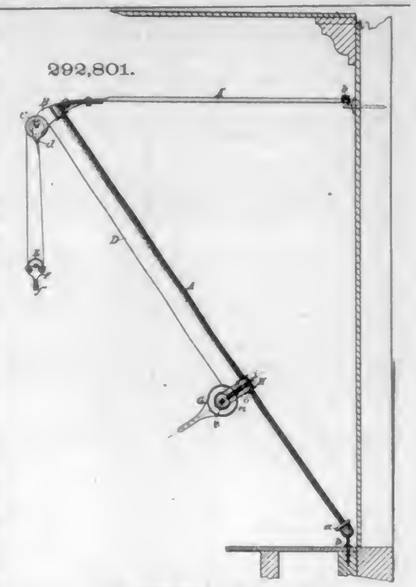
Claim.—In an artificial limb, the combination, with the foot provided with the fixed base-piece and journal-blocks, and the cushion-spring, of the socket journaled to the blocks, the springs interposed and secured between and to the foot and socket, and the curved slotted spring fastened to the foot and working and held in the way in the socket, substantially as described.

292,801. INVALID-LIFT. GEORGE J. GOODHUE, Jr., Stevens Point, Wis. Filed Sept. 3, 1883. (No model.)

Claim.—1. A lift for invalids, mounted with universal joint on its floor attachment, and having its head connected to wall of room by a long hinge, whereby the elevating mechanism can be operated so as to safely and quickly move a patient from one bed to another or to a chair, or vice versa, as set forth.

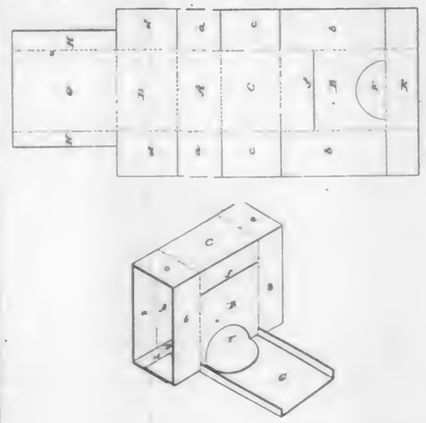
2. In a lift for invalids, the combination, with jib A, having union *a*, with recess for head of screw *b*, and head-hanger B, with tail end *a′*, of the band-iron hinge A′ and hook *b′*, substantially as shown and described, and for the purpose set forth.

3. In a lift for invalids, the combination, with the crank-reel G, belt D and attachments, flanged roller C, and flanged pulley E of block F, of the stretcher J, band or belt K, and suspender L and attachments substantially as shown and described, and for the purpose set forth.



292,801.

292,802. PAPER BOX. EDSON GOWDY and CHARLES B. RUSSELL, Birmingham, Conn. Filed Dec. 17, 1883. (No model.)



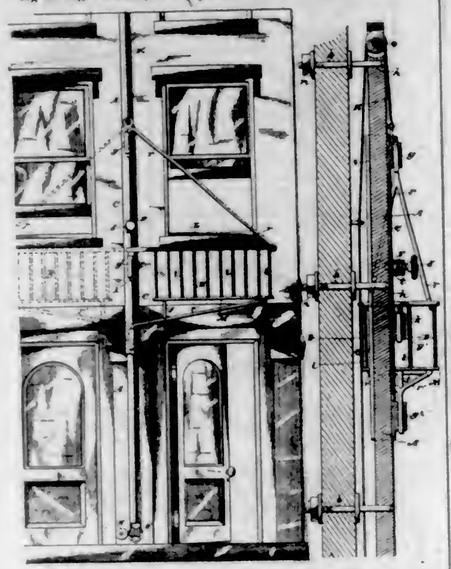
Claim.—1. The herein-described paper box, made from a blank cut to be folded to form the several sides, one of said sides having an opening, F, cut therein, and the flap G cut as an integral part of the blank, and so as to form a flap to be turned over and cover the said opening, or turned down therefrom to form a receptacle for the contents of the box, substantially as described.

2. A paper box, substantially such as described, constructed with an opening, F, upon one side, combined with a flap, G, hinged to the box below the opening, and so as to be turned upon that side of the box and cover the opening, and fitted, substantially as described, to be secured in its closed position, substantially as specified.

3. A paper box, substantially such as described, constructed with the opening F in one side, combined with the flap G, hinged to the box below the opening, its edges constructed with guards H H, its free end constructed, substantially as described, to be secured, when turned upon the side of the box, to close the opening, substantially as specified.

292,803. FIRE-ESCAPE. JAMES T. GUTHRIE, Leesburg, Ohio. Filed Oct. 30, 1883. (No model.)

Brief.—An elongated sleeve embraces the rod, which is permanently secured to the building. A cage or basket is secured to said sleeve, so as to be swung laterally in a horizontal plane, and is provided with a boss having a set-screw therein, for forcing it against the rod and holding the cage stationary at any point.



Claim.—1. In a fire-escape, the combination, with a rod permanently secured to a building, of an elongated sleeve partly embracing the rod and provided with a basket, and a set-screw passing through the sleeve and adapted to be forced against the rod, substantially as set forth.

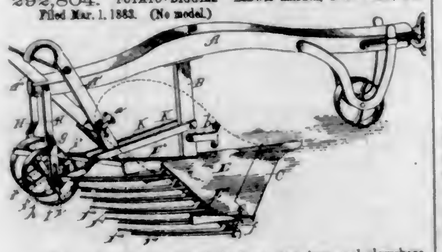
2. In a fire-escape, the combination, with a rod permanently secured to a building, of a sleeve having a basket secured thereto, the said sleeve partly embracing the rod and provided with a boss and a set-screw secured in the boss, and adapted to be forced against the rod, substantially as set forth.

3. In a fire-escape, the combination, with a rod attached to a building, of a vertically-movable sleeve embracing the rod, and a basket pivotally secured to the sleeve, the said basket adapted to be moved laterally in a horizontal plane, substantially as set forth.

4. In a fire-escape, the combination, with a rod permanently attached to a building, of an elongated sleeve partly embracing said rod and adapted to slide thereon, a basket hinged to said sleeve and adapted to move laterally in a horizontal plane, and braces rigidly secured at their outer ends to the basket and pivotally secured at their inner ends to the sleeve, substantially as set forth.

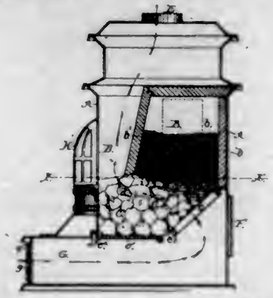
5. In a fire-escape, the combination, with a rod attached to a building, of a sleeve fitted to slide on said rod, and a basket connected with the sleeve by braces connecting the outer end of the basket with the sleeve at points above and below the basket, substantially as set forth.

292,804. POTATO-DIGGER. LUDWIG HAMEK, Town Lake, Wis. Filed Mar. 1, 1883. (No model.)



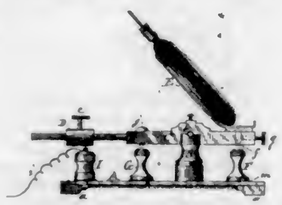
Claim.—In combination with the beam, post, base, and plowshare, the wheel I, with sleeves *f*², braces H and K, platform E, shaking-bar F, with prongs F′ F², and rod G, with notch *g*, all substantially as set forth.

292,805. STOVE. CHARLES A. HAMLIN, Greenbush, assignor to the Ransom Stove Company, Albany, N. Y. Filed May 1, 1883. (No model.)



Claim.—The combination, with a retorting-chamber, B, a combustion-chamber, C, lying directly underneath said retorting-chamber, and a flame-chamber, D, separated from said retorting-chamber by means of the bridge-wall *b′*, whereby the egress-draft opening *d* is formed, as herein described, of the inclined rear grate, *c*, fixed under the retorting-chamber B, and the imperforate fire-bed *c′*, arranged to form a close joint with the combustion-chamber C at the ends and one side of said chamber, as and for the purpose herein specified.

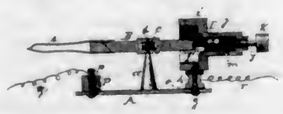
292,806. ELECTRIC BURGLAR-ALARM. JAMES P. HANSON and JAMES P. CHRISTENSEN, Chicago, Ill. Filed May 10, 1883. (No model.)



Claim.—1. In a burglar-alarm, the balance-beam C, carrying shelf E, and having counter-weight D, in combination with contact-posts F and G, both connected with one of the poles of an incomplete electric circuit, all substantially as described, to operate as specified.

2. In a burglar-alarm, the balance-beam C, with shelf E and counter-weight D, and mounted upon shaft *b*, pivoted on posts B B′ of plate A, in combination with contact-posts F and G and circuit-wire connecting posts H and I, all constructed and arranged to operate substantially as and for the purpose set forth.

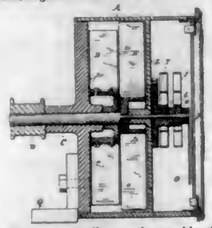
292,807. ELECTRIC BURGLAR-ALARM. JAMES P. HANSON and JAMES P. CHRISTENSEN, Chicago, Ill. Filed May 10, 1883. (No model.)



Claim.—1. In an electric burglar-alarm provided with suitable circuit-connections, the bar B, universally pivoted between posts *a a′* of plate A, and having insulating-cup *f*, in combination with tube I, insulated from plate A, and having expanded rim *i* and spring-stem J, all substantially as described, to operate as specified.

2. In an electric burglar-alarm provided with suitable circuit-connections, the bar B, universally pivoted between posts *a a′* of plate A, having spring-jaws *e* and insulating-cup *f*, in combination with tube I, insulated from plate A, and having expanded rim *i* and spring-stem J, all substantially as and for the purpose described, to operate as specified.

292,808. SPEED-INDICATOR. THOMAS WALTER HARDING, Leeds, County of York, England. Filed Dec. 16, 1882. (No model.)



Claim.—1. In a speed-indicator, the combination, with the spindle having a pointer and a cam connected therewith, of a spring or springs arranged to engage the cam and equalize the sensitiveness of the pointer in its operation, and a lever for regulating the adjustment of the spring, substantially as set forth.

2. In a speed-indicator, the combination of two cam-shaped bosses, each provided with a spiral spring, and each also provided with projections for engaging each other, and so constructed that the second boss will not move except by engagement with the first boss, and so adjusted that such engagement will not occur until the pointer has advanced some distance from the zero-point and has reached a desired point on the said scale, substantially as shown and described.

3. In an air-friction speed-indicator, the combination, with a circular scale, of two series of figures, the one series of greater value than the other series, and made preferably of different colors, substantially as and for the purpose set forth.

4. In an air-friction speed-indicator, the combination, with a circular scale provided with two series of figures of different values, of two driving-pulleys whose respective diameters are to each other as the respective values of the two figures at any given point of the said scale, substantially as and for the purpose shown and described.

5. In a speed-indicator, the combination, with the spindle F, the pointer O, and the spring J, of the cam-shaped boss H, substantially as and for the purpose set forth.

6. In a speed-indicator, the combination, with the cam-shaped boss H and the attached spring J, of the cam-shaped boss G and the attached spring I, engaging each other only at a desired point, substantially as shown and described.

7. In a speed-indicator, the combination, with the spring J and the spring I, of the lever K, extending through the casing, and provided with a pointer and scale outside of the said casing for adjusting the said springs, substantially as and for the purpose shown and described.

8. In a speed-indicator, the combination, with the spindle F, the pointer O, the cam-shaped bosses H and G, and the springs I and J, of the cam L and the spring M, substantially as set forth.

292,809. SAW-TOOTH. ENOCH HARRER, Quincy, Ill. Filed Dec. 20, 1883. (No model.)



Claim.—1. In a saw, the blade A, having the solid teeth B, formed with the dovetailed projection *a*, in combination with the insertible teeth C, formed with a dovetailed slot, *c*, the projection *a* gradually decreasing in size in an outward direction, and the slot *c* corresponding with the projection, as set forth.

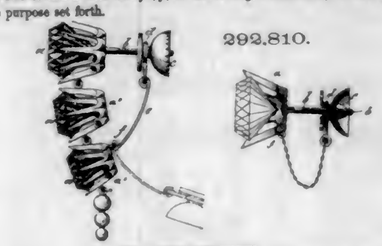
2. In a saw, the blade A, having the solid teeth B and the depressions *f*, said teeth being formed with a dovetailed projection, *a*, having a recess, *b*, in combination with the insertible teeth C, formed with the dovetailed slot *c*, and the ears or lugs *d*, as set forth.

292,810. EAR-RING. BERNHARD HARTMANN, New York, N. Y. Filed Sept. 26, 1883. (No model.)

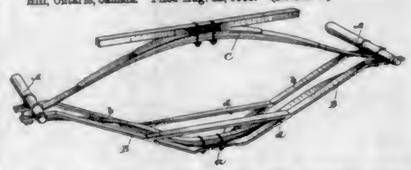
Claim.—1. The combination, with one or more settings, *a a*, suspended one below the other, the uppermost setting having a fixed screw-threaded shank or puncture-bar, *b*, of a screw-nut *c*, adjustable on said shank, and of an intermediate link or chain, *e*, that is swiveled at one end to said screw-nut and pivoted at the other end to one of the settings, substantially as set forth.

2. The combination of a setting, *a*, having a fixed and screw-threaded puncture-bar, *b*, a screw-nut, *c*, having a contracted portion, a link, *d*, swiveled to the contracted portion, and a link or chain, *e*, that connects the swivel-link *d* with an eye, *f*, of the setting, substantially as and for the purpose set forth.

292,810.

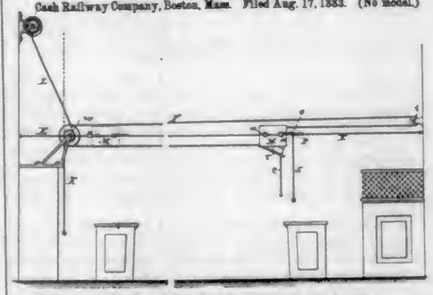


292,811. SPRING-GEAR FOR BUGGIES. JOHN R. HAWLEY, Park Hill, Ontario, Canada. Filed Aug. 22, 1883. (No model.)



Claim.—The plate *a*, having bifurcated arms *b* extending obliquely from either side of it, in combination with the braces *d*, substantially as and for the purpose specified.

292,812. STORE-SERVICE APPARATUS. HARRY H. HAYDEN, New York, N. Y., and EDWIN L. GILES, Lowell, Mass., assignors to the Lamson Cash Railway Company, Boston, Mass. Filed Aug. 17, 1883. (No model.)



Claim.—1. In a store-service apparatus provided with ways extending between the several counters or stations and the main desk, a carrier traveling upon each way, and a cord extending to the terminal station and to the main desk, and serving as a means for propelling the carrier to or from either the station or desk, substantially as set forth.

2. The combination, with the stations or counters and desks of a store, of the several ways, one extending from the desk to each counter or station, and a carrier traveling upon each way, and a cord extending in opposite directions from each carrier, whereby to move it in opposite directions, substantially as described.

3. The combination of a carrier traveling between the stations of a store, terminal drums, a cord extending from each end of the carrier and round one of said drums, and a cord wound upon the drum-shaft and extending to the desk or counter, substantially as set forth.

4. A carrier of a store-service apparatus provided with a cord for drawing it in one direction, and with means whereby power is thus stored up to move the carrier in the opposite direction, substantially as set forth.

5. A store-service apparatus in which the carrier is combined with means whereby to propel it in one direction by the attendant, and for returning it automatically by power created by the force first applied to propel the carrier, substantially as set forth.

6. The combination, with a carrier, of a traction-cord, drum upon or round which the said cord is wound, and a spring or weight arranged to operate on said drum, whereby power is stored upon moving the carrier in one direction to automatically move it in the opposite direction, substantially as specified.

7. The combination, in a store-service apparatus, of a fixed way, a carrier moving thereon, and a draft-cord extending from opposite ends of the carrier and round pulleys, substantially as set forth.

8. The combination of the carrier, draft-cord, drums H *I* W, and cord K, substantially as set forth.

9. The combination of the carrier, draft-cord, winding-drum H, and spring or weight connected to operate said drum after the carrier has been moved in a direction to store up the power of the spring, as specified.

10. The combination of the carrier, draft-rope, device for storing up power to retract the carrier on the outward movement of the carrier, and a catch whereby the carrier is retained against the action of the power thus stored up, substantially as specified.

11. The combination of the carrier, draft-cord, spring, or its equivalent, catch, and one or more cords, S, substantially as described.

12. The combination, with the main desk and counters of a store, of a series of permanent ways, each provided with a carrier, and draft-cords extending to the terminal stations, whereby said carriers may be moved back and forth between the stations, substantially as set forth.

13. A traveling carrier upon the way of a store-service apparatus, provided with a pendent cord or rod, whereby it may be opened while supported by the way, substantially as specified.

292,813. SEWING-MACHINE RUFFLER. JOHN HEBERLING, Mount Pleasant, Ohio. Filed Oct. 13, 1883. (Model.)



Claim.—1. The combination, with the pivoted ruffling-blade lever, of two cams pivoted independently to the said lever, and means, substantially as described, whereby they may be simultaneously and correspondingly adjusted on their pivots to any suitable angle relative to the blade-lever, substantially as and for the purposes specified.

2. In a ruffler or gatherer, the combination of the pivoted ruffling-blade lever, the cams C D, pivoted to said lever, both said cams being adjustable independently of the lever, and means for adjusting the cams, substantially as specified.

3. The combination, in a ruffler or gatherer, of a pivoted lever and cams pivoted to the said lever, and connected substantially as described, whereby the adjustment of one accomplishes a corresponding adjustment of the other cam, as set forth.

4. In a ruffler or gatherer, the combination, as set forth, of the pivoted ruffling-blade lever provided with a suitable rack, the cams pivotally held thereto and connected as described, and the adjusting arm or lever extended from one of the cams, and adapted to engage the rack, all as and for the purposes set forth.

5. In a ruffler or gatherer, the pivoted ruffling-blade supporter provided with a suitable rack, *b'*, in combination with the cams C D, pivoted to the supporter, and having lip c^2 and notch d^2, and the extension C', forming an adjusting-lever, and suitably arranged to engage rack *b'*, for the purpose specified.

6. The ruffler or gatherer, substantially as described and shown, composed of the standard A, base A', the shield *a'*, the pivoted ruffler-blade supporter, having extension B', the pivoted cam C, having extension or arm C' and lip c^2, and the cam D, having extension D', provided with notch d^2, engaging with lip c^2, all as and for the purposes specified.

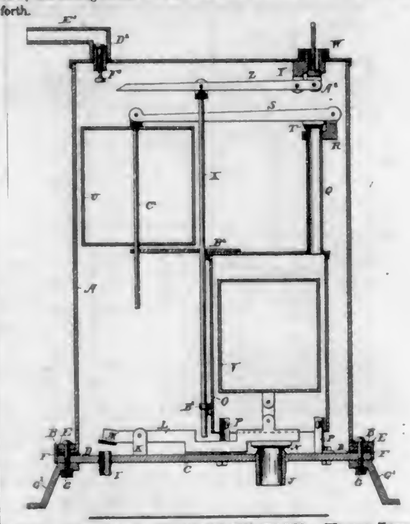
7. In a ruffler or gatherer, the combination, with the pivoted ruffling-blade lever, of two cams, each secured directly to and adjustable independently of said lever, and arranged the bearing-surface of the one above and the bearing-surface of the other below the pivotal center thereof, substantially as and for the purposes set forth.

292,814. HYDRAULIC AIR-COMPRESSOR. CHARLES HORACE HILL, Scranton, Pa. Filed July 16, 1883. (No model.)

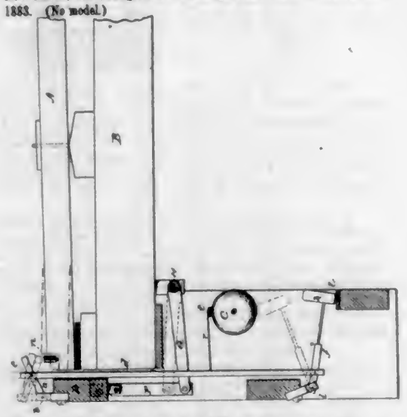
Claim.—1. In a hydraulic air-compressor, the combination of a closed cylinder or tank provided in its bottom with a water-inlet and a waste-pipe, a lever provided at its respective ends with valves adapted to close the said inlet and waste pipe, a closed inverted tank placed within the said main cylinder, a float located within the said tank, and connected with and adapted to operate the lever controlling the inlet and waste openings, means for automatically establishing communication between the inverted tank and the main tank when the water rises in the latter, and means for automatically opening an air-inlet valve at the top of the main tank, substantially as set forth.

2. The combination of the closed main tank, provided at its bottom with inlet and waste pipes, an inverted tank arranged within the said main tank, with the bottom of which it is securely connected by means of suitable supporting-legs, a float located within the said inverted tank, a lever connected with and operated by the said float, and provided at its ends with valves adapted to close the inlet and waste openings, and tank U, with connected valve T, substantially as set forth.

3. In a hydraulic air-compressor, the combination of the closed main tank, provided in its bottom with inlet and waste pipes, an inverted tank placed within the main tank, and having a pipe extending nearly to the top of said main tank, a lever provided at its ends with valves adapted to close the inlet and waste pipes, a float located within the inverted tank and connected with and operating the said lever, a lever fulcrumed at the upper end of the pipe, extending upwardly from the inverted tank, and having a valve adapted to close the said pipe, a float at the end of the said lever, an air-inlet in the upper part of the main tank, a lever having a valve adapted to close the said air-inlet, and provided with a rod extending downwardly to within a short distance of the lever controlling the water-inlet and waste-pipe, said air-inlet-controlling lever being extended over and adapted to be operated by the lever fulcrumed at the top of the pipe, extending upwardly from the inverted tank, and an air-outlet arranged in the upper part of the main tank, and having a check-valve, substantially as and for the purpose set forth.



292,815. BELL ATTACHMENT FOR PIANOS. WILLIAM HOPER, New Haven, Conn., assignor to B. Shoninger, same place. Filed Aug. 13, 1883. (No model.)

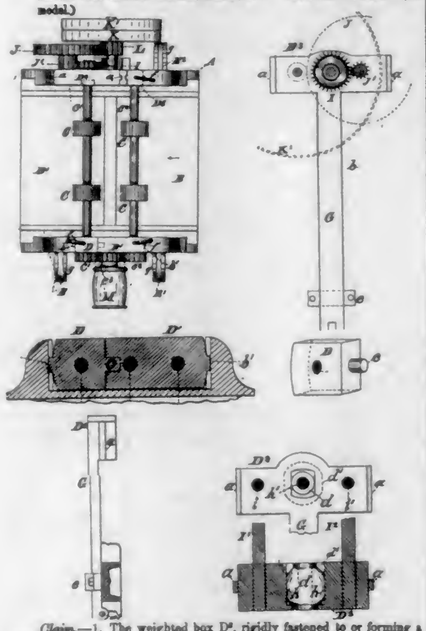


Claim.—1. The herein-described bell attachment for pianos, consisting of the vertically-sliding bar D, arranged for connection with the pedal of the instrument, levers *a* hung to said bar, each corresponding to one of the keys of the instrument, and extending forward to a position over the respective keys, a series of bells, C, their hammers A, and rods *d*, extending from said levers *a* into connection with the respective hammers, said parts being combined and arranged so that said hammers may be brought into engagement or action with the keys or not, at the pleasure of the player, substantially as described.

2. In a bell attachment for pianos, the combination of the vertically-sliding bar D, levers *a*, rods *d*, hammer-levers *f*, series of bells C, and the rock-shaft H, in connection with the pedal of the instrument, and with the sliding bar D, substantially as and for the purpose described.

3. The herein-described bell attachment for pianos, consisting of the vertically-sliding bar D, arranged for connection with the pedal of the instrument, levers *a*, hang to said bar, each corresponding to one of the keys of the instrument and extending forward to a position over the respective keys, a series of bells, C, their hammers A, and rods *d*, extending from said levers *a* into connection with the respective hammers, said parts being combined and arranged so that said hammers may be brought into engagement or action with the keys or not, at the pleasure of the player, and with the adjusting-screw *s* in the rear end of the key, substantially as described.

292,816. MACHINE FOR PLANING BARREL-HEADS. EDWARD HOLMES and BRITAIN HOLMES, Buffalo, N. Y. Filed Feb. 11, 1881. (No model.)



Claim.—1. The weighted box D^2, rigidly fastened to or forming a part of a vertical bar, G, and arranged to slide in grooves in the frame of the machine, the bar G being secured in a box near the bottom, and provided with the gearing I J J' L K K', for operating the feeding mechanism, in combination with the shaft C', its feeding-rollers, rocking box *d*, and the weighted box D, for supporting the opposite end of the shaft C', and its connecting-gearing for operating the shaft C' and its feeding-rollers.

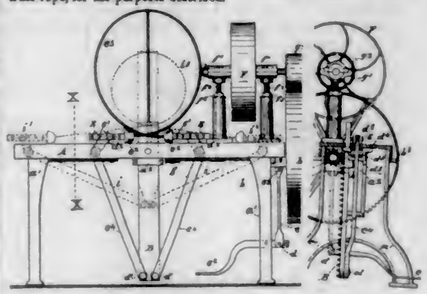
2. The feeding-roller shaft C', its operating mechanism, and weighted movable box D^2, in combination with the connected movable boxes D D', having an independent oscillating movement one way and a connected movement the other way, substantially as specified, and the pinions c', c^2, and c^3, for giving the necessary feeding movement to the shafts C' C^2 and their feeding-rollers without interfering with the upward or downward movements of the said pressure and feeding rollers by reason of the action of the gear-wheels upon each other, substantially as described.

292,817. WINDLASS FOR COMPRESSING BARRELS. EDWARD HOLMES and BRITAIN HOLMES, Buffalo, N. Y. Filed Jan. 29, 1883. (No model.)

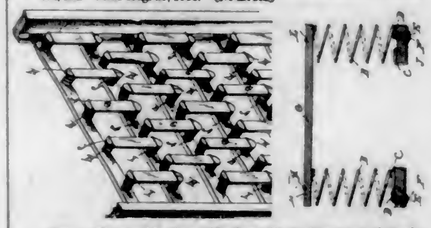
Claim.—1. The pulley b^2, secured to a shaft, *b*, having a pinion, a^2, in combination with the rack B, toggle-joint c^4, and cable c^5, substantially as and for the purposes described.

2. The pulley b^2, secured to a shaft, *b*, having a pinion, a^2, in combination with the rack B, arms c^4, adjustable perforated bars E, and truss cable or rope c^5, substantially as set forth.

3. A windlass for barrels, consisting of the frame, the pulleys F *g'*, and the pulley b^2, arranged in a shaft having a pinion, a^2, and capable of a vertical movement, substantially as specified, in combination with the movable rack B, toggle-joint, arms c^4, holding-bars E, and the cable or truss-rope, for the purposes described.



292,818. SPRING BED-BOTTOM. WILLIAM A. HORRALL, Washington, Ind. Filed Aug. 25, 1883. (No model.)



Claim.—The combination, with the ordinary transverse slats of a bed, of a series of coiled springs, having their lower ends, C, bent around and under the slats, staples driven through the slats and having their projecting points or nibs bent over the ends C, in opposite directions and curved around each other, and the short auxiliary strips or slats disposed transversely in relation to the slats, and on top the pairs of springs, and provided in their under side with a groove corresponding to and receiving the top coil of the springs, substantially as set forth.

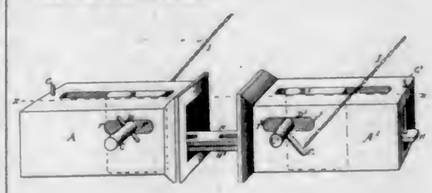
292,819. LEGGIN. JOHN H. HOWARTH, Jr., New Haven, Conn. Filed Sept. 24, 1883. (No model.)



Claim.—1. The herein-described spring for leggins, consisting of the divided ring-shaped spring B, with the stays D C, extending, respectively, from the ends of the spring, the ends of said stays free or disconnected, substantially as described.

2. A leggin open at the side, having a divided ring-shaped spring, B, introduced at its upper end, and with stays D C, extending from the respective ends of the spring down the edges of the leggin, the ends of said stays disconnected except by the material of the leggin itself, combined with lacing devices on the two sides extending from the bottom upward to near the ends of the stays, substantially as described.

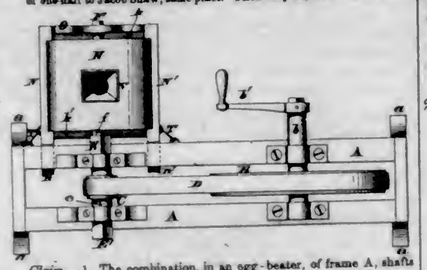
292,820. CAR-COUPLING. WILLIAM HUNTER, Grindstone City, Mich. Filed Oct. 16, 1883. (No model.)



Claim.—A double-link car-coupler consisting of the combination of coupling-pins B B', arms C C', sockets D D', having elongated openings

partially filled with rubber packing F F', short levers E, controlling-pins G G', and double links H H', all arranged and operating substantially as shown and specified.

292,821. EGG-BEATER. WILLIE JOHNSON, Cincinnati, Ohio, assignor of one-half to Jacob Shaw, same place. Filed July 20, 1883. (No model.)



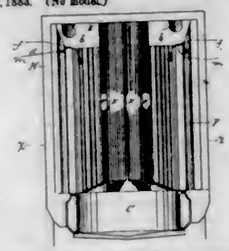
Claim.—1. The combination, in an egg-beater, of frame A, shafts *b c*, power-transmitters B C D, clutch E, and detachable rack N N' L, which latter carries the cylinder H H' J J' K K', having journaled within it the beater-shaft F G, as set forth.

2. The combination, in an egg-beater, of frame A, shafts *b c*, power-transmitters B C D, clutches E E', detachable racks N N' L P P' L, and cylinders H H' J J' K K' I I', said cylinders having journaled in them, respectively, the beater-shafts F F', for the purpose specified.

3. A mixing-machine consisting of the shells H H' A, attached to the semicircular heads J J' K K', and having journaled in it the beater-shaft F G, as herein described.

4. The combination of detachable tray N *s* N' *s'* L O *o* and cylinder H H' J J' K K' *k k'*, the latter having journaled within it the beater-shaft F G, for the purpose stated.

292,822. STEAM-GENERATOR. THADDEUS C. JOY, Titusville, Pa. Filed Jan. 26, 1883. (No model.)

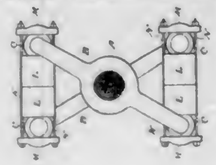


Claim.—1. In a circular segmental steam-generator, the inward projections K from the segments B, constructed as described, and with free water communication with the water-chamber D, and the steam-drum E, the inner ends of said projections forming the walls of the central fuel-reservoir, L, substantially as described, and for the purposes herein set forth.

2. In a segmental steam-generator, the hollow segment having guttered sides and provided with a radial steam-drum at its top, and hollow projections forming a part of the wall of the fuel-reservoir, having corrugated sides, substantially as shown and described.

3. In a circular steam-generator, the combination, with the outer casing having a smoke-pipe leading therefrom, and an annular water-chamber located above the grate-bars, of a series of hollow segments having guttered sides which form return-flues, radial steam-drums at the upper ends, and the corrugated projections which rest upon said annular chamber, forming the wall of the fuel-reservoir and direct flues between their opposite sides, substantially as described.

292,823. COUPLING FOR PROPELLER AND OTHER SHAFTS. JOHN KELLY, Peoria, Ill. Filed Nov. 26, 1883. (No model.)

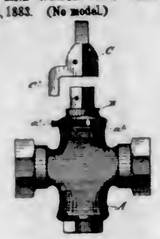


Claim.—1. In a shaft-coupling, arms fast on the contiguous ends of sections of shafting, and provided with spherical knobs at their extremities, in combination with sockets clasping said knobs, and means for connecting the sockets of one set of knobs to the sockets of the other set, substantially as shown, and for the purpose described.

2. In combination with the sections of shafting A A', the arms B B, having spheres C C at their ends, the blocks L L, caps M M, and bolts N N, substantially as and for the purpose specified.

3. In combination with the sections of shafting A A', the arms B B, having spheres C, spherical socket D, ring E, blocks L, caps M, and bolts N, substantially as and for the purpose set forth.

292,824. STOP AND WASTE COCK. JOHN H. KENNEDY, Cleveland, Ohio. Filed Aug. 2, 1883. (No model.)



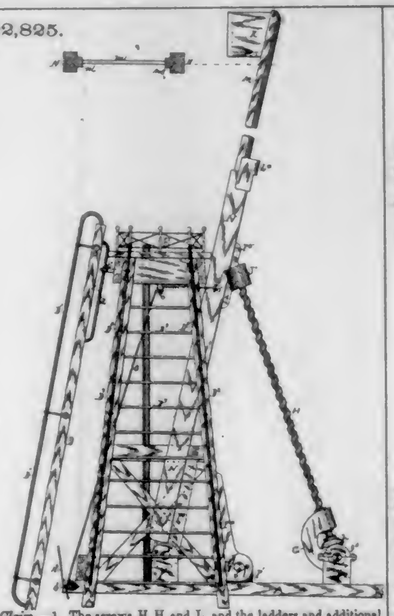
Claim.—The combination, with the valve-body constructed as described, and provided with the laterally-projecting stops and a plug-valve, of the cap adapted to be removably secured to the projecting end of the plug-valve, and provided with an angular upper end for the attachment of a removable key or other suitable device, and with an arm, C', all of the above parts combined and adapted to operate as described.

292,825. FIRE-ESCAPE. GEO. M. KIN, Allegheny, Pa. Filed Mar. 1, 1883. (No model.)

Brief.—The structure is elevated to a vertical position by screws set in adjustable housings and operated by an arrangement of shafts, bevel-gear, and pulleys and belts. The upper section of the ladder, which has the box on its upper end, is extended by a screw having a head upon its upper end. A ladder having sliding bearings and side rails is secured upon one side of the main structure.



292,825.



Claim.—1. The screws H H and L, and the ladders and additional extension-ladder M, operated thereby, in combination with bevel-wheels mounted on shafts turning on bearings on the carriage and gearing with bevel-wheels on said screws, substantially as set forth.

2. In a fire-escape apparatus, the extension-ladder M, and box K, operated by the screw L in the V-slides m' m', substantially as described and shown.

3. In a fire-escape apparatus, the sliding ladder D D, having the railings D′ D′, and slides *d d*, fixed to the tower, substantially as shown and set forth.

4. In a fire-escape apparatus, the tower B B, the fixed ladder D^2 D^2, sliding ladder D D, and guides attached to said fixed ladder for the said sliding ladder, in combination substantially as described and set forth.

5. In a fire-escape apparatus, the combination of the shaft f^2, wheels *f f*, screws H H, wheels *h h*, shaft J, screw-head L^2, with wheels *l l*, the head L, and ladder M, substantially as described and shown.

6. In a fire-escape apparatus, the combination of the pulleys T T′, clutch-pulleys *t t*′, belts T^2 T^3, and crank T^4, operated by hand-power or by steam, with the bevel-gear wheels on shafts that turn in bearings on the floor of the carriage, screws H H and L, operated by said bevel-gear wheels, and the extension-ladders operated by said screws, substantially as described and shown.

292,826. BUNG. JOSIAH KIRBY, Cincinnati, Ohio. Filed Nov. 5, 1883. (No model.)

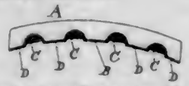


Claim.—1. A bung having a circular recess or incision, or both, in its top face, and two incisions in its bottom face, the wood between the incisions in the bottom face of the bung remaining intact, the incisions in the opposite faces not penetrating to a common plane, substantially as and for the purposes specified.

2. A bung having a circular recess or incision, or both, in its top face, and two semicircular incisions in its bottom face, the wood between the incisions in the bottom face of the bung remaining intact, the incisions in the opposite faces not penetrating to a common plane, substantially as and for the purposes specified.

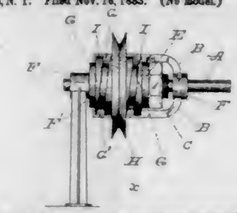
3. In combination, a bung having a circular recess or incision, or both, in its top face, and two incisions in its bottom face, the wood between the incisions in the bottom face remaining intact, and a disk of uncut wood, of the diameter of the bung and parallel to the faces of the bung, remaining intact between the inner ends of incisions in the opposite faces of the bung, substantially as and for the purposes specified.

292,827. BRAKE-SHOE. JOHN JOSEPH LAPPIN, Toronto, Ontario, Canada. Filed May 25, 1883. (No model.)



Claim.—A brake-shoe with chilled portions C in the face thereof, and soft projecting portions D between the chilled portions, which soft portions will wear and bring the shoe to an exact bed on the rim of the wheel before the chilled portions come in contact therewith, and thereby protecting the shoe, substantially as described, as a new manufacture.

292,828. MECHANICAL MOVEMENT. MICHAEL J. LAWLOR, Poughkeepsie, N. Y. Filed Nov. 16, 1883. (No model.)



Claim.—1. The mechanical movement, as described, comprising an automatic brake to hold the pinion-wheel, pulley, or drum, or an equivalent part, which give motion to the load on any lift, hoist, elevator, dumb-waiter, and all other lifting, hauling, and winding machinery at rest, whenever motion ceases to be communicated to the driving-shaft, and only then, substantially as described.

2. The described mechanical movement, consisting of the driving-shaft A, carrying a fixed dog or stud, B B, or their equivalents, stationary frame, tube, or sleeve F, a pinion-wheel, pulley, or drum, H, the annulars G G, and the intermediate rings, I I, and the connecting-rods G′ G′, substantially as described.

3. The described mechanical movement, consisting of the driving-shaft A, carrying a fixed dog or stud, B B, or their equivalents, stationary frame, tube, or sleeve F, a pinion-wheel, pulley, or drum, H, the annulars G G, and intermediate rings, I I, substantially as described.

4. The described mechanical movement, consisting of the driving-shaft A, carrying the dog or stud B B, or their equivalents, stationary frame, tube, or sleeve F, pinion-wheel, pulley, or drum H, the annular G, and wabbling ring I, substantially as described.

5. The retained non-revolving wabbling ring I, fixed to the stationary frame, tube, or sleeve by socket and stud resting between revolving surfaces inclined to the axis of motion of the shaft, substantially as shown and described.

6. The two retained non-revolving wabbling rings I I, fixed, as described, to the frame, tube, or sleeve by socket and stud resting between two revolving surfaces inclined to the axis of motion of the shaft, substantially as shown and described.

7. The loosely-mounted pinion-wheel, pulley, or drum, constructed with beveled side or sides, as described, so arranged as to clutch the non-revolving rings whenever said pinion-wheel, pulley, or drum revolves independently of the annulars G G.

8. The loosely-mounted annular G or annulars G G, provided with slots J J, corresponding with the slots J J in the pinion-wheel, pulley, or drum H, the said parts made as shown and described, and for the purposes set forth.

9. The combination of the shaft A and its dog or stud B B with the stationary frame, tube, or sleeve F, pinion-wheel, pulley, or drum H, annulars G G, wabbling rings I I, with the heads F′, E, and C, substantially as shown and described, and for the purposes set forth.

10. The combination of the dog or studs B B on the driving-shaft A with the sides of the slots J J in the pinion-wheel, pulley, or drum H, and the annular G or annulars G G, as described and shown, and for the purpose set forth.

11. The combination of the loosely-mounted pinion-wheel, pulley, or drum H with the annular G or annulars G G and the non-revolving wabbling ring or rings I I, substantially as shown and described, and for the purposes set forth.

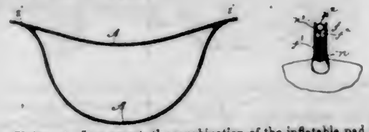
12. The combination of the wabbling ring I or rings I I with the stationary frame, tube, or sleeve F by the studs or bolts I′ and sockets, as shown and described, and for the purposes set forth.

13. The described non-revolving wabbling ring I or rings I I, for the purpose of locking the pinion-wheel, pulley, or drum H to the stationary frame, tube, or sleeve F, to which the wabbling ring I or rings I I are fixed, as shown and described, and for the purposes set forth.

14. An automatic brake or clutch mechanism for lifts, hoists, elevators, and all other lifting, hauling, and winding machinery operated by the resistance of the load upon the pinion-wheel, pulley, or drum, and liberated only by the action of the driving-shaft through its dog or studs B, substantially as herein shown and described.

15. The pinion-wheel, pulley, or drum H, the stationary frame, tube, or sleeve F, the annular G or annulars G G, wabbling ring I or rings I I, retained from revolving by socket and stud I′, operated by the resistance of the load, combined, substantially as shown and described, to hold the load from ascending or descending, as hereinbefore set forth.

292,829. CORSET-PAD. ZENOWE LEDOCHOWSKI, La Salle, Ill. Filed Feb. 19, 1883. (No model.)

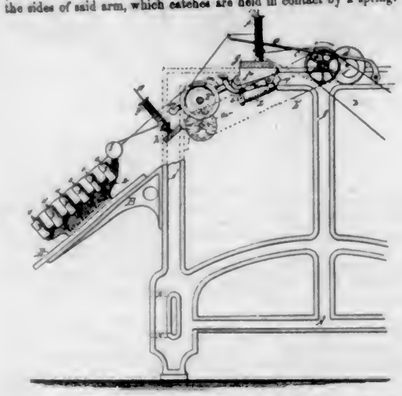


Claim.—1. In a corset, the combination of the inflatable pad having tube *f*, constructed with the inner valve-seat *f′*, and the outer socket, f^3, and the valve *n*, movable to and from the seat *f′*, and having its stem *n′* extended through the tube *f*, with its outer end or hand-hold, n^3, incased in socket f^3, substantially as described and shown, and for the purposes specified.

2. In a corset, the inflatable pad, substantially as described and shown, molded in one piece, and provided with the lateral flange *i* and the tube *f*, formed with valve-seat *f′* at its inner end, and socket f^3, incasing the hand-hold n^3 of the stem *n′* at its outer end, as and for the purposes specified.

292,830. SILK-CLEANING MACHINE. JOHN N. LEONARD, Northampton, Mass. Filed June 7, 1883. (No model.)

Brief.—The thread passes from the supply-bobbin between a tension-regulating shaft and arm, is thence coiled around a series of spindles placed in parallel rows upon an inclined frame, where it is cleaned of projections by the rubbing of the coils upon each other, thence around the drawing-roller and onto the take-up bobbin. The drawing-roller is supported in an arm pivoted to the front of the frame supporting the take-up bobbin, and may be held out of contact with its driving means by an arm pivoted to the back of said frame, the arms being engaged by catches on the sides of said arm, which catches are held in contact by a spring.

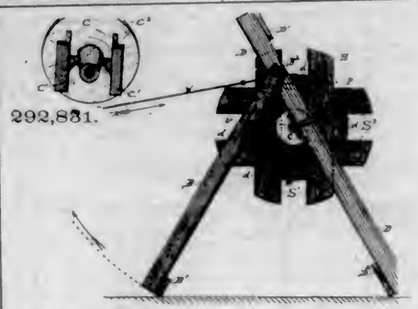


Claim.—1. The combination of drum *c*, pulley *w*, shaft w^2, spindles 17 and 18, and means for driving said shaft and for rotating spindle 17 from said drum *c*, with the drawing-roller *v*, having pulley 6 thereon, and means for supporting the latter over pulley *w*, the series of spindles 4, and the rotatable tension-regulating device, consisting of shaft 9 and arm 10, supported side by side, substantially as set forth.

2. The combination, with mechanism, substantially as described, for drawing a line of silk over a series of cleaning-spindles, of a series of spindles arranged in two parallel rows, a guide-roller, 12, located between said rows, and a rotatable tension-regulating device consisting of the shaft 9 and hand-wheel 5, having an arm, 10, said shaft and arm supported side by side, substantially as set forth.

3. The combination of the pulley *w*, frame *n*, drawing-roller *v*, and the pulley 6, with the arms *m* and *x*, having the catches *z* and 14 thereon, and the spring *z*, connecting said arms, substantially as set forth.

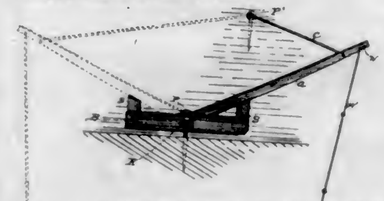
292,831. REEL FOR CHECK-ROW WIRES. CHARLES S. LOCKE, Joliet, Ill. Filed Oct. 20, 1883. (No model.)



Claim.—1. The reel S for check-row wires described, having the heads *c*, hubs c^2, and hooked lugs *c′ c′*, in combination with a supporting-frame, as and for the purpose set forth.

2. In a reel for check-row wires, the head *c*, having the hub c^2 and hooked lugs *c′ c′*, in combination with the reel S, as and for the purpose set forth.

292,832. ANCHOR FOR CHECK-ROW WIRES. CHARLES S. LOCKE, Joliet, Ill. Filed Oct. 20, 1883. (No model.)



Claim.—In the anchor for check-row wires described, a beam, B, having a tongue, *a*, pivoted thereto, and a pin, P, for securing it in a horizontal position in the earth, and provided with an upturned arm or rest, S, secured to its outer end or ends, forming a support for said pivoted tongue, for the purpose set forth.

292,833. FOLDING BOX. GEORGE LUETY, Brooklyn, N. Y. Filed Mar. 1, 1883. (No model.)



Claim.—1. A folding box consisting of a bottom having a narrow piece attached to it at two sides, to which are hinged side pieces, and with a cover or covers hinged to one or more of the side pieces, and with two end pieces hinged to the bottom and rising up a short distance above the side pieces, the said end pieces being cut partly through at the top to make a binding-seat for the cover and end of the box, substantially as shown and described.

2. In a folding box, the combination of the following parts: the bottom and pieces B B, base F, the side pieces, C C, and end pieces, E E, both arranged to fold inward, the stops G, bars or hooks and eyes H, and cover D, substantially as and for the purpose set forth.

292,834. SAFETY-GUARD FOR RAILROAD-FROGS. JOHN LYNCH, New Haven, Mich. Filed June 27, 1883. (No model.)

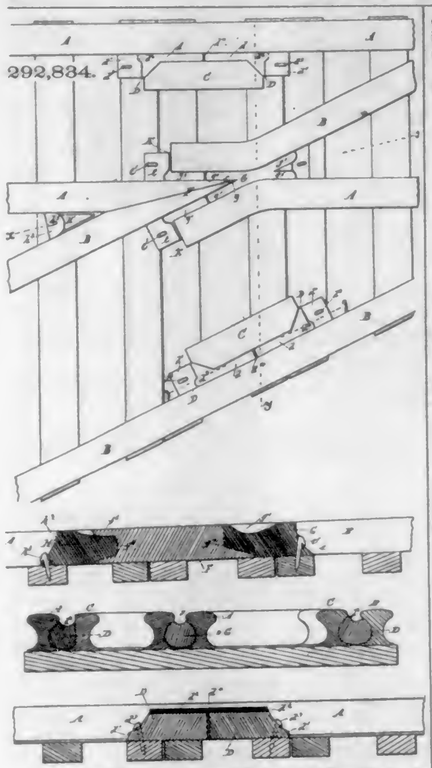
Brief.—A railroad-frog consisting of a divided flanged guard placed between the check-rails of the main and side rail. Flanged blocks, together with a flanged guard-block, are placed between the toe of the frog and the main and side track rails. A V-shaped guard is also placed at the heel of the frog. All the guards have grooves for the flanges of the wheels.

Claim.—1. The combination of the divided flanged guard D with a main rail, A, and check-rail C, substantially as and for the purpose described.

2. The combination of the divided flanged guard D with a branch or side track rail, B, and a check-rail, C, substantially as described.

3. The combination of the flanged guard-blocks E and the doubly-flared guard-block G with the frog F, and the rails A and B, substantially as and for the purpose described.

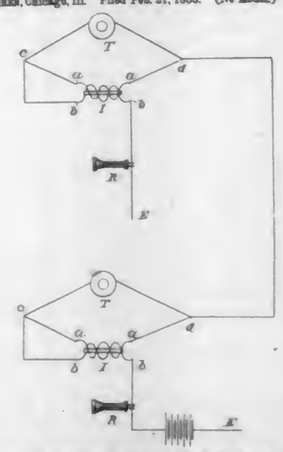
292,834.



4. The solid rigid V-shaped guard H, beveled at h^2, provided with a spike-hole at h^2, and formed with a point, f^9, in combination with the frog F and rails A and B, substantially as and for the purpose described.

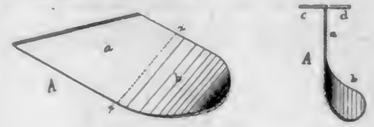
5. The frog-section of a railroad-track, provided with the rigid divided guards D D G E, and the rigid guard H, all constructed, combined, and arranged substantially as described.

292,835. APPARATUS FOR TELEPHONIC TRANSMISSION. JACOB F. MILLER, Chicago, Ill. Filed Feb. 21, 1883. (No model.)



Claim.—The combination, substantially as described, of a telephone-transmitter, an inductorium, a receiver, and a charged main line, one coil of the inductorium and the receiver being in the main line and the other in one branch of said main line, the other branch of which includes the transmitter, substantially as set forth.

292,836. HARROW-TOOTH. FREEMAN C. MERRILL, South Paris, Me. Filed July 30, 1883. (No model.)



Claim.—A harrow-tooth formed of sheet metal, having the colter part inclined backward edgewise, and the working part *b* turned or bent laterally in the form of a section of a cylinder starting from the colter part at a forward inclination of approximately forty degrees and extending one-sixth of a circle, or thereabout, substantially as and for the purpose herein specified.

292,837. NECKTIE HOLDER AND FASTENER. HENRY F. MILLER, New York, N. Y. Filed Nov. 19, 1883. (No model.)



Claim.—1. An improved necktie holder and fastener consisting of the elastic bar B, provided with end arms, U, the latter terminating in a projecting point, F, all arranged substantially as shown, and for the purpose described.

2. An improved necktie holder and fastener consisting of the elastic bar B, having a central depression, C, and provided with end arms, U, the latter terminating in a projecting point, F, all arranged substantially as shown, and for the purpose described.

292,838. WATCH-WINDING MECHANISM. ROBERT F. MITCHELL, New Haven, Conn. Filed Oct. 22, 1883. (No model.)

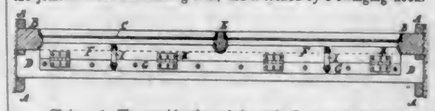


Claim.—1. A stem-winding device for watches, consisting of the case-stem D and case-ring C, being adapted to move upon the case in an arc concentric with the watch-case, said case-ring C being provided with a projection, *b*, to which are attached the pawl *c* and spring *d*, which operate upon the ratchet E, gear *e*, and mainspring barrel or post *g*, the case B being provided with the opening *k* in the flange *a*, substantially as described and shown, all being arranged to operate as and for the purpose set forth.

2. In a stem-winding device for watches, the combination of the case-stem D and movable case-ring C, pawl *c*, spring *d*, ratchet E, gear *e*, plate *h*, mainspring barrel or post *g*, and journal *i*, all arranged to operate substantially as and for the purpose set forth.

292,839. COMBINED DUST-EXCLUDER AND WINDOW-FASTENER. FREDERIC H. MOORE, Boston, Mass. Filed Oct. 6, 1883. (No model.)

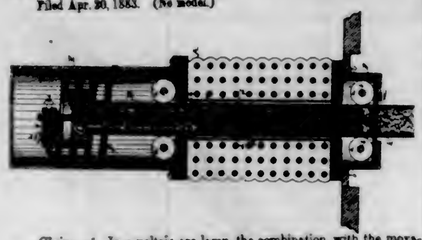
Brief.—Combined dust-exceleder and window-fastener, consisting of a piece hinged to the top rail of lower sash, which falls and covers the joint between the meeting-rails, and is locked by a swinging hook.



Claim.—1. The combination of the strip G, secured to the top of the meeting-rail of the lower sash, D, of a window, with the hinged flap F, as shown and described.

2. The combination, with the meeting-rails D D′ in a window-sash, of a hinged cover, F, and hooks I I, the latter pivoted to the strip G, and engaging with pins on the hinged flap F, substantially as and for the purpose set forth.

292,840. VOLTAIC-ARC LAMP. OTTO A. MOSES, New York, N. Y. Filed Apr. 20, 1883. (No model.)



Claim.—1. In a voltaic-arc lamp, the combination, with the movable carbon-carrier and the regulating magnet or solenoid, of a magnetic clamp consisting of oppositely-attracted parts, and operating to lift said carbon-carrier by contracting and shortening upon it, substantially as set forth.

2. In a voltaic-arc lamp, the combination, with the movable carbon-carrying tube and the divided core or armature within said tube, of two oppositely-attracted intensifiers, substantially as set forth.

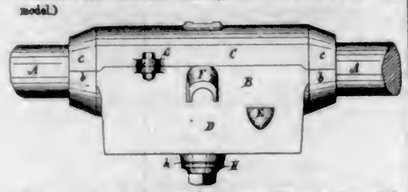
3. In a voltaic-arc lamp, the divided core or armature having a body tapering from one end to the other, substantially as set forth.

4. In a voltaic-arc lamp, the divided core or armature having a tapered body and straight springs or wires in contact with the carbon-carrying tube near their lower ends only, substantially as set forth.

5. In a voltaic-arc lamp, the combination, with the divided core or armature within the tube, of the disk attached below said core or armature, substantially as set forth.

6. In a voltaic-arc lamp, the combination, with the cage holding the intensifier, of the loose ring or washer placed therein, substantially as set forth.

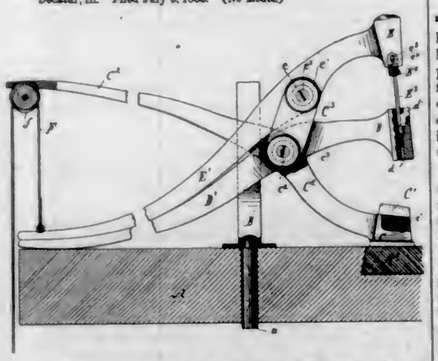
292,841. COMBINED SHAFTING-BOX AND OIL-RESERVOIR. CLAUDIUS B. MOULTON, North Cambridge, Mass. Filed Oct. 5, 1883. (No model.)



Claim.—1. In a shafting-box, the upper and lower portions, C B, constructed with conically-shaped converging ends *c b*, substantially as and for the purpose set forth.

2. In a shafting-box, the lower portion, B, constructed with the inclined ends *b b*, in combination with the guides J J, converging at their lower ends, the passage *d*, and the reservoir D, substantially as and for the purpose set forth.

292,842. TOOL FOR DRIVING STAPLES. FRANKLIN W. NEVIUS, Decatur, Ill. Filed July 5, 1883. (No model.)



Claim.—1. In a staple-fastening instrument, the combination of a driving-jaw, a clinching-jaw, a compressing-jaw, and means for forcibly depressing said compressing-jaw, substantially as described.

2. In a staple-fastening instrument, the combination of a driving-jaw, a clinching-jaw, and a compressing-jaw having guide-channel therein, and having means for forcibly depressing said compressing-jaw, substantially as described.

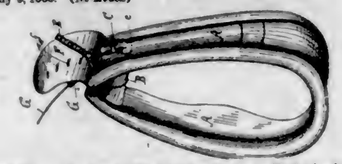
3. In a staple-fastening instrument, the combination, with the clinching-jaw and the driving-jaw having the driving-plate, of the compressing-jaw having a feed-channel extending through the same, and a delivery-channel for staples leading into said feed-channel, substantially as described.

4. The combination, with a clinching-jaw and a compressing-jaw, of a driving-jaw having a driving-plate swiveled thereto, substantially as described.

5. The combination, with the clinching-jaw, the compressing-jaw, and the driving-jaw and handles for operating said jaws, of the strap F and pulley *f*, substantially as described.

6. The combination, with the several jaws of the instrument, of the swiveled guide for sustaining said jaws in position, substantially as described.

292,843. HORSE-COLLAR. FRANKLIN W. NEVIUS, Decatur, Ill. Filed July 5, 1883. (No model.)

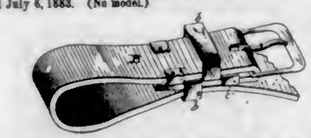


Claim.—1. In a horse-collar, the combination, with the hook C and chain E, of the staples holding said hook and chain, and passing through the ends of the collar, substantially as described.

2. In a horse-collar, the combination of the hook, the hook-chain, and the housing having openings for the hook, substantially as described.

3. In a horse-collar, the combination of the broad hook C, the flat hook-chain E, the housing F, the strip G, and guard-wire G′, the several parts being connected with the collar by means of staples passing through the ends of the collar and clinched upon its under side, substantially as described.

292,844. HARNESS-LOOP. EDMOND R. NORTHCUTT, Columbus, Ohio. Filed July 6, 1883. (No model.)



Claim.—The combination of the plate A, side lugs, *c* and *c′*, adjoining the ends of said plate, a loop above and a loop under said plate, and made integral therewith, substantially as and for the purpose described.

292,845. METHOD OF AUTOMATICALLY OPERATING DOORS AND GATES. LEWIS C. NORTON and JOHN A. SHERMAN, Boston, Mass.; said Sherman assignor to said Norton. Filed Jan. 5, 1883. (No model.)

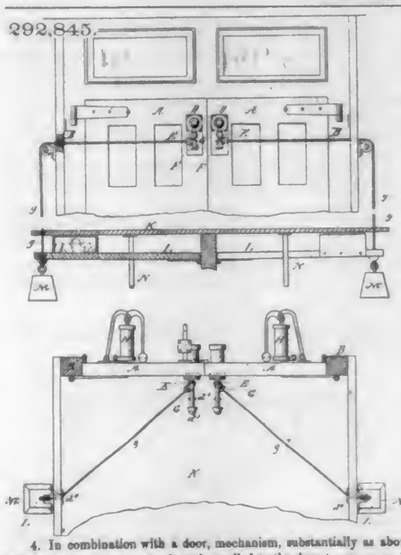
Brief.—The doors are fastened by an automatic spring-catch. They are opened, when unfastened, by a cord and weight, the end of the cord having a ring slipped over a pivoted latch on the door. The pivoted latch engages a pivoted spring-catch, through an arm of which slides the piston-rod of an air-cushioning buffer. The cord and weight are released from the door by an arm on the piston-rod striking the arm of the pivoted spring-catch, which releases the pivoted latch from the ring on the cord. The doors are each closed by a spring-buffer. The initial opening of the doors is accelerated by a weighted arm acting upon the counter-weight, and limited in its movement by a stop.

Claim.—1. In a door-operating device, the combination, with a door and a suitable stop or wall, of a weight suitably attached to the door, whereby it may be opened, and a releasing mechanism substantially like that above described, whereby the said weight at the proper time will be detached from the door, all as and for the purposes set forth.

2. In a door-operating device, the combination of suitable mechanism for opening the door, means whereby such mechanism may be attached to the door, and a buffer adapted to yield slowly to any pressure brought to bear upon it, and at the proper time to operate the attaching mechanism and disconnect the door and opening mechanism, substantially as set forth.

3. The releasing mechanism above described, consisting of a buffer provided with a suitable stop, d^3, adapted to engage with and operate the latch E, as and for the purposes set forth.

292,845.

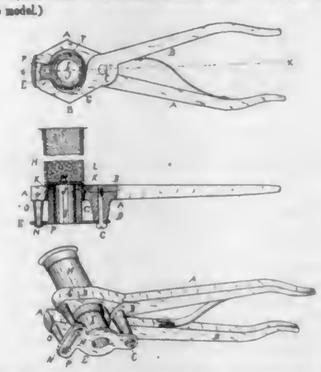


4. In combination with a door, mechanism, substantially as above described, whereby an extra force is applied to the door to overcome its first inertia, for the purposes set forth.

5. In a door-operating device, the hinged weighted arm L and its stop N, in combination with the weight M and suitable means for attachment to the door, substantially as described.

6. In a door-operating device, the combination of a suitable weight for opening the door, the buffer D and its releasing-latch, and a suitable weight or spring for closing the door, substantially as set forth.

292,846. CARTRIDGE-SHELL CREASER. FRED. E. NYE, WILLIAM E. NYE, and JOHN W. MATTHEWS, Monmouth, Ill. Filed Aug. 29, 1883. (No model.)

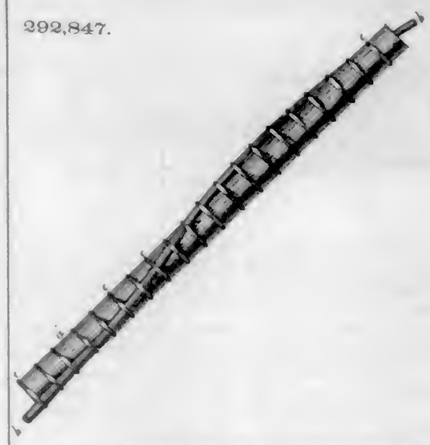


Claim.—In cartridge-shell creasers which are composed of lever-jaws and a gage-post, the frame E, extending past the post and over the jaws, and provided with a segment-slot, P, in combination with studs O O, which are attached to the ends of the jaws and project through the slot to serve as a guide automatically to center the post between the jaws by the opening of them, as specified.

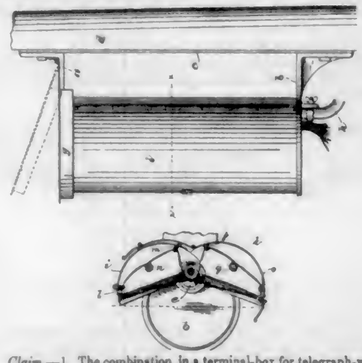
292,847. AERIAL CABLE. WILLIAM R. PATTERSON, Chicago, Ill., assignor, by mesne assignments, to the Western Electric Company, same place. Filed Dec. 5, 1881. (No model.)

Claim.—The combination, with the flexible lead pipe of a telegraph-cable, of the spirally-wound suspending-wire and the exterior spirally-wound tie-wire, whereby the suspending-wire is held in place and the lead pipe of the cable protected from external injury, substantially as and for the purpose specified.

292,847.



292,848. TERMINAL-BOX FOR TELEGRAPH-CABLES. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed July 9, 1883. (No model.)



Claim.—1. The combination, in a terminal-box for telegraph-wires, of one or more pairs of strips provided with corresponding binding-posts, and a lightning-arrester rod between the strips of each pair, said strips and rod being substantially parallel, whereby the wires may be distributed, substantially as set forth.

2. The combination, with the brackets, of the semi-cylindrical pieces, the pivots or hubs, one of said hubs being hollow, and the flap hinged to one of said cylindrical pieces, whereby the binding-posts and lightning-arresters are protected, substantially as and for the purpose specified.

3. The cable extending toward the top of the case, in combination with the lightning-arresters and distributing-wires and the eccentrically-pivoted segmental semi-cylindrical pieces, as and for the purpose specified.

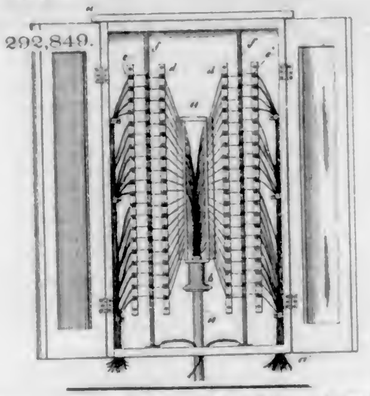
4. The disks attached to the support, in combination with the parts of the case pivoted eccentrically, the pipe of the cable and distributing-wires passing through the hollow hub, and the pairs of strips for the binding-posts and the lightning-arresters, as described.

292,849. TELEPHONE-CABLE TERMINAL. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Oct. 22, 1883. (No model.)

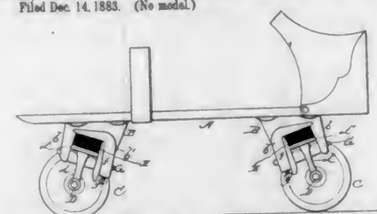
Claim.—1. The combination, with an electric cable, of a stuffing-box placed about the end of the pipe, a box provided with perforations for the different wires, and binding-posts exterior to the perforated box, whereby the wires of the cable may be carried out singly, and moisture prevented from penetrating the fibrous covering between the wires at the end of the pipe, substantially as and for the purpose specified.

2. The box provided with perforated sides of non-conducting material, placed at the end of a telegraph-cable, in combination with the conductors of said cable drawn through said perforated sides, whereby said conductors are carried out singly toward the binding-posts, while moisture is prevented from being drawn by capillary attraction to the contiguous conductors at the end of the cable, substantially as and for the purpose specified

292,849.



292,850. ROLLER-SKATE. ELWOOD C. PHILLIPS, Richmond, Ind. Filed Dec. 14, 1883. (No model.)



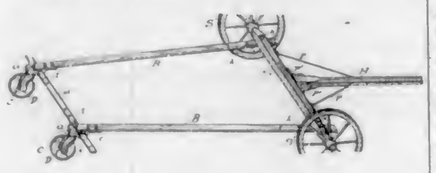
Claim.—1. In a roller-skate, the combination of the plate B, having downwardly-projecting hangers *b b'*, the plate F, having slotted flange *f*, the seat *d'*, elastic cushion E, and pin G, constructed and arranged substantially as described, and for the purpose set forth.

2. In a roller-skate, the combination of the plate B, having downwardly-projecting hangers *b b'*, the plate F, having slotted flange *f*, the seat *d'*, elastic cushion E, pin G, and screw *g*, substantially as and for the purpose described.

3. In a roller-skate, the combination of the plate B, having downwardly-projecting hangers *b b'*, the plate F, having slotted flange *f*, and provided upon its under side with a spur, *f'*, the elastic cushion E, having a depression to receive said spur, the seat *d'*, the pin G, having a recess near one end, and the screw *g*, all constructed and arranged in the manner described, and for the purpose set forth.

4. In a roller-skate, the combination of the plate B, having downwardly-projecting hangers *b b'*, the plate F, having side wings, F', and slotted flange *f*, the seat *d'*, elastic cushion E, and pin G, constructed and arranged substantially as described, and for the purpose set forth.

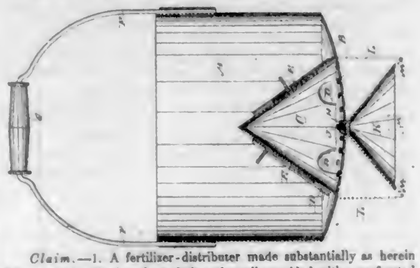
292,851. HARVESTER-TRUCK. ARTHUR E. POTTER, Joliet, Ill. Filed Sept. 22, 1883. (No model.)



Claim.—1. The combination of the reaches B B, having the row of holes *h h*, axle S, cross-bar *a'*, having the row of holes *i i*, casting *a*, having the eye *a''* and lug *i*, provided with the hole *i'*, wheels S' S', and casters D D, all adapted to operate as and for the purpose set forth.

2. In an independent harvester-truck, the reaches B B, pivoted to the front axle, S, so their rear ends may have horizontal motion, in combination with the perforated cross-bar *a'*, as and for the purpose set forth.

292,852. FERTILIZER-DISTRIBUTER. AUGUSTINE REGER, Somerville, N. J. Filed Feb. 27, 1883. (No model.)



Claim.—1. A fertilizer-distributer made substantially as herein shown and described, and consisting of a pail provided with a perforated bottom, over which perforations a cone is fastened, which is provided with apertures in its lower edge, as set forth.

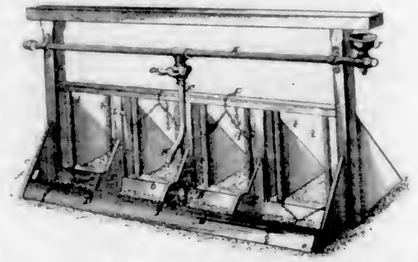
2. In a fertilizer-distributer, the combination, with the pail A, having a concave bottom, B, provided with perforations in the middle, of the cone C, secured on the bottom and provided with apertures D at its lower edge, substantially as herein shown and described, and for the purpose set forth.

3. In a fertilizer-distributer, the combination, with the pail A, having a perforated bottom, of the cone C, having apertures D in its lower edge, and of the slides E, substantially as herein shown and described, and for the purpose set forth.

4. In a fertilizer-distributer, the combination, with the pail A, having a perforated bottom, B, of the cone C, having apertures D at its lower edge, and the cone K, having a screw, J, at its apex, which screw is adapted to be screwed into the bottom of the pail from below, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the vessel A, having a perforated bottom, of the cone K and the band L, surrounding it, substantially as herein shown and described, and for the purpose set forth.

292,853. ANIMAL-TROUGH. CARVER REMINGTON, Hion, N. Y. Filed June 21, 1883. (No model.)



Claim.—1. The water-trough D, pivoted by links *f* at its ends, in combination with the notched or shouldered supports P, said parts being arranged to operate substantially as described, whereby said trough, when elevated, can be used for supplying cattle with water, and when swung down and turned over is made to form the outer side of the manger, as set forth.

2. In combination with the trough D, pivoted to links which are in turn pivoted at their opposite ends to the manger or frame-work, supports P, for retaining the trough with its open side up when elevated, and the water-pipe E, arranged to deliver water to the trough, substantially as described.

3. The pivoted and swinging trough D, provided with a spout or opening, I, in combination with a drain-pipe, H, the said parts being arranged substantially as shown, whereby when said trough is elevated it shall be in position to deliver its surplus water to the drain-pipe, as set forth.

4. The combination and arrangement, in connection with animal-stalls, of the pivoted and swinging trough D, the pipe F, for delivering water to the trough, and the drain-pipe H, for receiving and conducting the surplus water from the trough, as and for the purpose set forth.

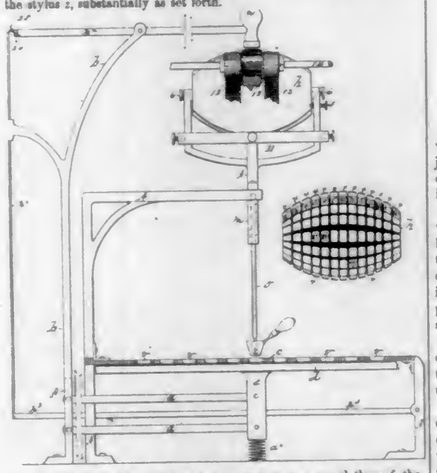
292,854. TYPE WRITING MACHINE. HENRY B. RICHARDSON, Amherst, Mass. Filed July 17, 1882. (No model.)

Claim.—1. In a type-writing machine, a gimbal-frame pivotally supported therein, a letter-block hung in said frame and bearing a series

of printing-characters upon one or more surfaces thereof, and adapted to be rotated on its bearings, a hammer to strike upon said block, and operating mechanism, a movable letter-plate bearing a series of letters and characters upon its surface, the stylus *z*, and appliances, substantially as described, connecting said gimbal-frame and stylus, whereby the latter is permitted to be moved to different positions over the surface of said letter-plate and to be pressed thereupon and moved downward with the latter, combined and operating substantially as set forth.

2. The stylus *z*, of conical form, a movable letter-plate, and a stylus-plate located over said letter-plate and provided with dissimilar perforations, combined and operating substantially as set forth.

3. In combination, the movable letter-plate *d*, the perforated stylus-plate *c*, the gimbal-frame D, having the tube *m* thereon, the rod *o*, and the stylus *z*, substantially as set forth.



4. The pivoted bar n^3, bearing hammer *n* on one end thereof, the movable letter-plate *d*, lever n^2, rod n^1, and the stylus *z*, capable, by means substantially as described, of lateral and vertical movements, and adapted to be pressed upon various parts of said letter-plate, combined and operating substantially as set forth.

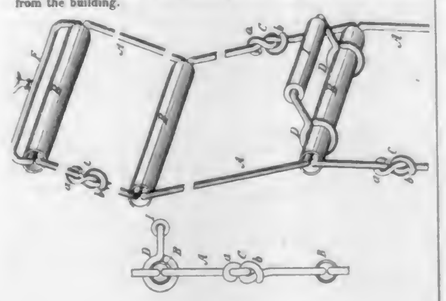
5. In combination, the letter-plate *d*, having the slotted posts *e e* thereon, the parallel bars *a*, and the springs a^2, substantially as set forth.

6. The combination, in a type-writing machine, of a paper-carriage provided with the rack *s*, having two serrated edges, of the stylus *z*, the stylus-plate *c*, provided with dissimilar perforations, the movable letter-plate *d*, and mechanism, substantially as described, interposed between said letter-plate and rack *s*, whereby the latter is allowed to move along to a degree proportionate to the deflective movement of said letter-plate, substantially as set forth.

7. The combination, with the movable table *d* and lever n^2, and with the rack *s*, of the lever 26, the lever 15, the sliding bar 16, provided with pin 19, the dog 20, adapted to engage with said bar, and springs 18, 22, and 30, substantially as set forth.

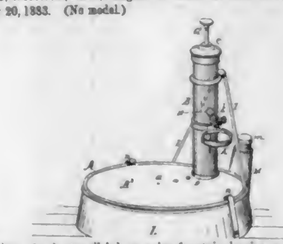
292,855. FIRE-ESCAPE. JOHN C. RICHBERG and DAN BROBSTON, Chicago, Ill. Filed Mar. 26, 1883. (No model.)

Brief.—The bail attached to the rungs may be loose on the rung and hang in front of the ladder for a hand-hold, or turned to the back side of the ladder and rigidly fastened to the rung for spacing the ladder from the building.



Claim.—In a metallic flexible ladder, the combination, with the rungs thereof, of the handles consisting of the horizontal portion I and the portion D, embracing the said rungs, substantially as set forth.

292,856. STENCIL INK OR COLOR FOUNTAIN. LEVI R. ROCKWOOD, Worcester, Mass., assignor to Mason M. Flint, same place. Filed July 20, 1883. (No model.)



Claim.—1. A stencil ink or color fountain having a reservoir provided with a flexible top plate, in combination with a tube or column projecting therefrom and adapted to be used as a lever for depressing the central portion of said top plate, substantially as and for the purpose hereinbefore set forth.

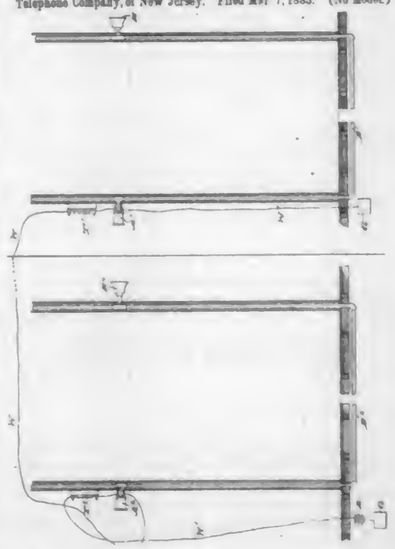
2. A stencil ink or color fountain having a flexible top plate provided with a delivery-orifice communicating through a tube with the lower part of the reservoir, and a column or tube projecting above said top plate, in combination with a re-enforce piece rigidly attached to said column, and provided with an arm extended along the top plate, to which it is attached, to act in connection with said column as a lever for depressing said top plate, substantially as and for the purpose hereinbefore set forth.

3. In a stencil ink or color fountain, the combination, with the reservoir having the flexible top plate, A', and the tube or column B, of the re-enforce lever D, attached to and connecting said plate and column, substantially as and for the purpose set forth.

4. In a stencil ink or color fountain, the combination, with the reservoir having depressible top plate, A', internal tube, E, and tubular column B, adapted for depressing said top plate, as set forth, of the air-valve G, adapted for automatically admitting air to the interior and for preserving the air-pressure therein, substantially as hereinbefore set forth.

5. The stencil ink or color fountain constructed with the palette-surface A', reservoir A, and tubular column B, arranged as described, and provided with the detachable bath-reservoir L, and means for securing the same to the reservoir A, in the manner shown and for the purpose set forth.

292,857. GAS AND MAGNETIC TELEPHONE SYSTEM. JAMES HARRIS ROGERS, Washington, D. C., assignor to the American Electro-Gas Telephone Company, of New Jersey. Filed Mar 7, 1883. (No model.)



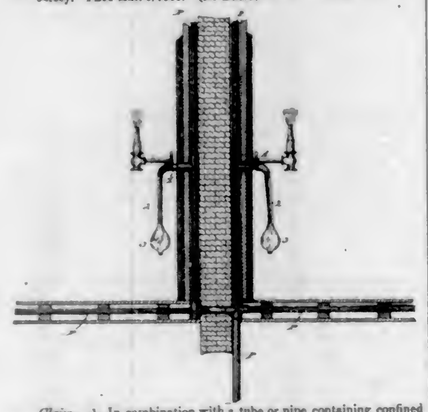
Claim.—1. The combination, with two or more electro-magnetic telephones connected in circuit, of a gas or other pipe and gas-telephones, consisting of diaphragms stretched or placed over suitable apertures in said pipe or in pipes connected therewith, so as to confine the gas or aeriform fluid in the pipe or pipes, while permitting the passage of sound-waves, and causing said sound-waves to act upon the diaphragm of the electro-magnetic-telephone instrument, substantially as herein set forth.

2. The combination, with a gas or other pipe or pipes provided with gas-telephone receiving and transmitting instruments, as described, of a diaphragm acted on by vibrations in the gas or aeriform fluid confined in said pipes, and an electric circuit closed and broken by the vibrations of said diaphragm, and serving to actuate an electric or other call signal, substantially as set forth.

3. The combination of a pipe or pipes containing gas or aeriform fluid, an electro-magnetic receiving and transmitting instrument having a hollow magnet, through which sound-waves in the fluid of the pipes will act on the telephone-diaphragm, and a second electro-magnetic receiving-instrument connected in circuit with the first substantially as and for the purposes set forth.

4. The combination of a system of pipes containing gas or aeriform fluid and provided with gas-telephone receiving and transmitting instruments, with a system of electro-magnetic-telephone receiving and transmitting instruments connected in circuit and adapted to receive sound-vibrations from the pipes, as and for the purposes set forth.

292,858. PIPE-TELEPHONE. JAMES HARRIS ROGERS, Washington, D.C., assignor to the American Electro-Gas Telephone Company, of New Jersey. Filed Mar. 6, 1883. (No model.)

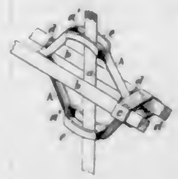


Claim.—1. In combination with a tube or pipe containing confined air or gas, a projecting elastic tube closed at its outer end to confine the fluid, and provided with a sensitive diaphragm consisting of a stretched portion of the elastic tube, whereby the said diaphragm is adapted to receive and transmit sound vibrations, as described.

2. In combination with a system of pipes containing confined air or gas, a projecting tube closed at its outer end to confine the aeriform fluid, and provided with a sensitive diaphragm consisting of a stretched portion of the said elastic tube, and adapted to receive and transmit audible sounds, as described, and a second tube and diaphragm for reproducing the sounds, as set forth.

3. In combination with a system of pipes containing confined air or gas, projecting elastic tubes closed at their outer ends, and provided with sensitive diaphragms consisting of stretched portions of the said elastic tubes, as described, whereby audible sound may be transmitted and reproduced by means of the diaphragms and the aeriform fluid confined between them.

292,859. IRON FENCE. TIMOTHY ROGERS, Springfield, Ohio, assignor to the Rogers Fence Company, same place. Filed Mar. 24, 1883. (No model.)



Claim.—1. The combination, with the double or parallel rails lying in the same horizontal plane, of the ornament having the ends of its sections adapted to engage with the inner surfaces of said rails, and the transverse clip-band adapted to slip over the ends of said sections and secure the whole together.

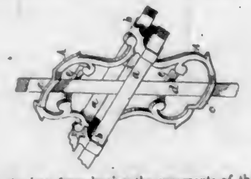
2. In an iron fence having double rails, an ornament having a vertical longitudinal opening or slot in each of its two opposite arch-bars, said slot or opening being for the purpose of allowing the picket-rod to extend therethrough and to admit of the adjustment of the ornament and rails without disturbing the relative position of the picket-rod.

3. In a double-rail iron fence, an ornament in two opposite sections, having its ends shaped to conform to the space between the rails upon either side of the same, and confined therein by an encircling band, as hereinbefore set forth.

4. The combination, with the double parallel rails and the picket, of the ornament and the clip-band, the former having the vertical oblong slot through the middle of its bars extending in the central longitudinal line of the fence, whereby said ornament is adapted for the insertion of the picket, and the necessary adjustment of said rails and ornament to the latter allowed, as set forth.

5. The combination, with the square parallel rails *b*, the intermediate pickets, *a*, and the band *c*, of the ornament-sections A, having the angular ends *d*, said ornament-sections being vertically slotted to admit the picket and permit of the adjustment of the rails and ornament thereto, as specified.

292,860. IRON FENCE. TIMOTHY ROGERS, Springfield, Ohio, assignor to the Rogers Fence Company, same place. Filed Mar. 24, 1883. (No model.)



Claim.—1. An iron fence having the ornaments of the pickets secured to the clips, which connect the rails by notches engaging with said clips upon either side of the same, whereby they are made independent in their adjustment of the picket-rod, as set forth.

2. In a double-rail iron fence having the ornaments and rails made to adjust to the picket, the ornament A, composed of an upper and lower section, each provided with bent bars extending around the picket-rod above and below the rail in separate horizontal planes, and having their ends provided with means for securing them in position to the clip or band which connects the rails together, substantially as and for the purpose set forth.

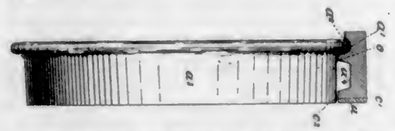
3. An ornament for the picket of an iron fence, which is adjustable independently of the rod, and having an outer arched frame and a cross-bar between the arch and its engaging ends, both the arch and the cross-bar being bent outward in opposite directions, to allow of the adjustment of the ornament and rails irrespective of the line of the picket-rod, as set forth.

4. The ornament-sections A, formed with the alternate opposite bends, e and *c*, in its frame-bars, to adapt it for adjustment over the picket-rod *d*, and having the slots *i* in its ends, to secure it to the clip *b* midway between the rails *a*, substantially as set forth.

5. An ornament for a picket-rod, having alternate frame-bars, bent outward around said rod in opposite directions, to form space for the adjustment of the same across the line of the picket, substantially as set forth.

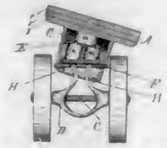
6. A clip-band for a double-rail fence, having notches upon its edges to adapt it for engagement with the ends of the frame-bars of the ornament, in combination with the ornament-sections A, having the slots *i* in the ends of its lower limbs, the rails *a*, and the picket-rod *d*, all arranged as and for the purpose hereinbefore set forth.

292,861. BRAKE-SHOE. GEORGE B. ROSS, Buffalo, N. Y. Filed Sept. 12, 1883. (No model.)



Claim.—A brake-shoe provided with the grooves a' a^4 and the wearing portions c c', the portion or rib c projecting down to the wheel, substantially as and for the purposes specified.

292,862. ROLLER-SKATE. JACOB V ROWLETT, Richmond, Ind. Filed Aug. 24, 1883. (No model.)



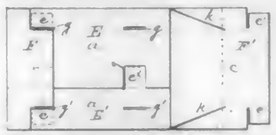
Claim.—1. The housing G, composed of vertical walls open at top and bottom, and provided with a semicircular projection, *x*, in the manner and for the purposes set forth.

2. The truck-hanger D, provided with plate E', shaft F, and carrying-axle C, in the manner and for the purpose set forth.

3. The springs *m n n'*, in combination with plates E E' and shaft F, as herein set forth.

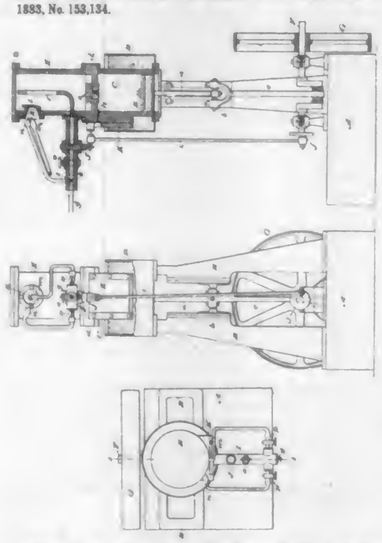
4. The combination of the housing G, the springs *m n n'*, the frame H, the shaft F, with the truck-hanger D, all arranged and operating as described.

292,863. PACKAGE-BOX. THEODORE SCHMIDT, Dayton, Ohio. Filed Sept. 15, 1883. (No model.)



Claim.—A package-box creased for folding, as specified, having side laps, E, with tucks e^2 e^2 and slots *g g*, lap E', with slots *g' g'* and *i i*, and laps F F', with each two tucks *e e* and *e' e'*, and four end laps, *k*, substantially as set forth.

292,864. GAS-MOTOR ENGINE. JAKOB SCHWEIZER, Solcure, Switzerland. Filed Mar. 2, 1883. (No model.) Patented in France Jan. 16, 1883, No. 153,134.

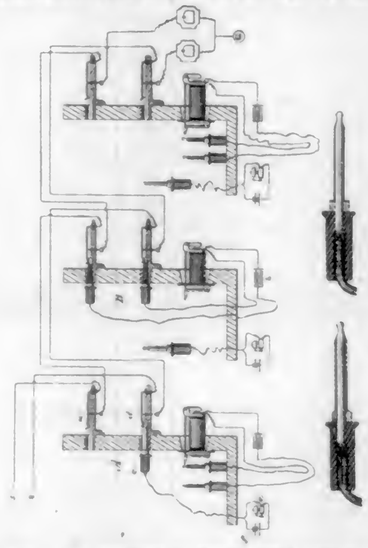


Claim.—1. In a gas-motor engine, the combination, with the vertically-arranged cylinder of the engine and the piston of the same, of a chamber, H, arranged on the top of the engine-cylinder, means for admitting a charge of a mixture of explosive gases to the upper part of said chamber, a valve, *l*, arranged to open into the upper part of said chamber to permit air to enter the latter, an automatic valve, *q*, in the partition separating the chamber H from the engine-cylinder, and arranged to open into said cylinder, a jet, *m*, arranged opposite to the valve *l*, and adapted to be drawn into chamber H by the rarefaction of the gases in the latter, and means, substantially as shown, for admitting the explosive charge to the chamber H, whereby, when the charge explodes in the upper part of the chamber, the heavier products of combustion in the lower part of same will be compressed and forced into the engine-cylinder, substantially as set forth.

2. The combination, in a gas motor or engine, of the engine-cylinder, piston-rod, piston, cross-head, connecting-rod, cranked shaft, and fly-wheel, with the vessel H, provided with the valved air-inlet *k*, the valved aperture between it and the engine-cylinder, and the pipe *f*, the valve J, arranged to control the ingress of gas, the valve K, arranged to control the exhaust-port of the engine-cylinder, means, substantially as described, for actuating said valves J and K, and the jet *m*, for igniting the gaseous mixture in the vessel H, all arranged to operate substantially as set forth.

3. The combination, with the cylinder and piston of a gas-motor engine, of a closed chamber to receive an explosive mixture of air and inflammable gas at its upper part, provided with an aperture or passage in its lower part leading into the engine-cylinder above the piston, a check-valve opening downward into the engine-cylinder to control said passage, an aperture at the upper part of said explosion-chamber, and a check-valve to control said aperture, arranged to open into said chamber, whereby when the charge is exploded it may force the heavier gases in the lower part of said chamber down into the engine-cylinder, and whereby the rarefaction produced by the first portion of the downward stroke of the piston, prior to the explosion, may draw in the flame of the igniting-jet, substantially as set forth.

292,865. CONDENSER AND TEST-CIRCUIT FOR MULTIPLE SWITCH-BOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed June 11, 1883. (No model.)



Claim.—1. The combination, in a multiple system of switch-boards, of pairs of conducting-cords and condensers, a condenser being in the circuit of each pair of cords, and testing apparatus at the different boards, substantially as specified.

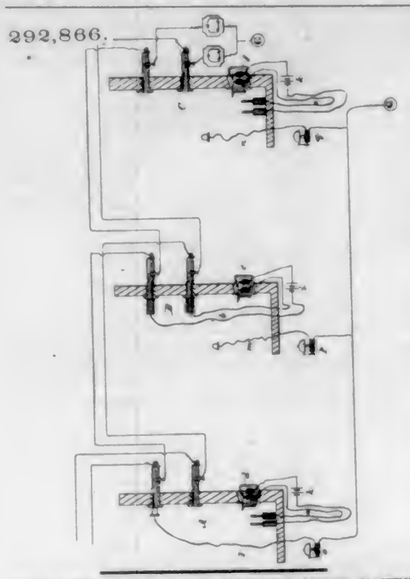
2. A switch provided with a frame and spring, said spring being insulated from the frame, a contact-point or lug upon said frame, upon which said spring normally rests, and a connecting-plug provided with insulating material, said plug being adapted to be inserted in said switch, whereby said spring is lifted from said lug or contact-point and connected to the point of the plug, substantially as and for the purpose specified.

3. The combination, with two connected telephone-lines, with a condenser in circuit at the central office, of a testing-circuit containing a battery and signaling device adapted to be looped into the circuit of the connected telephone-lines, substantially as and for the purpose specified.

292,866. TESTING APPARATUS FOR MULTIPLE SWITCH-BOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed June 11, 1883. (No model.)

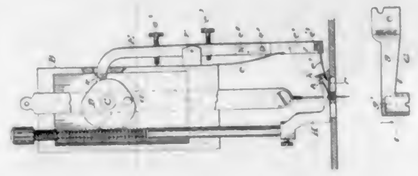
Claim.—The combination, with multiple switch-boards, of pairs of conducting-cords, each pair including a polarized annunciator and battery, and a normally-open earth-circuit at different boards, whereby current may be directed through a signal-instrument from the battery in the pair of cords connecting two lines, substantially as specified.

292,866.



292,867. RUFFLING ATTACHMENT FOR SEWING-MACHINES. CHARLES C. SEEBOLD, Middleburg, Pa. Filed Nov. 13, 1883. (No model.)

Brief.—A cam on the end of the main shaft in the head of the machine operates the ruffler-lever. The lower portion of the said lever may be detached, and then the upper part fixedly secured to the head of the machine by set-screws, whereupon said upper part may serve as an attachment-holder. The separator-plate is recessed to avoid friction tion and wear on the teeth of the feed-dog.



Claim.—1. The combination, with the needle-operating shaft arranged above the bed-plate of the machine, of a cam on the forward end of said shaft, within the head of the machine, a ruffler bar or lever having a pivotal support on the said head, a ruffling-blade carried by said bar or lever, and a spring for forcing the latter toward said cam, substantially as described.

2. The combination, with the head B, shaft C, and disk-cam D, of the bracket F, screw *f*, ruffler bar or lever E, having a ruffling-blade at its lower end and an anti-friction roller at its upper end, regulating-screw e^3, and spring *e'*, substantially as described.

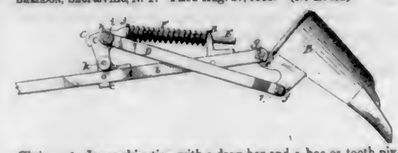
3. A ruffler bar or lever having a detachable portion carrying the ruffling-blade, combined with means for rigidly holding said bar or lever in a fixed position away from its operating-cam, whereby said bar or lever is adapted to serve as a support for other attachments, substantially as described.

4. The combination, with the head B, of the bracket F, means for securing said bracket to said head, the lever E, pivoted to said bracket, and the screws e^2 and e^3, arranged on opposite sides of the pivotal point of said lever, substantially as described.

5. A separator-plate provided with a recess for the feed-dog, whereby the latter will be prevented from coming in contact with the under surface of the said plate, combined with a ruffling-blade and means for operating the same, substantially as described.

6. The combination, with the ruffler bar or lever and the ruffling-blade, of a separator-plate provided with a recess for the feed-dog, whereby the latter will be prevented from coming in contact with the under surface of the said plate, substantially as described.

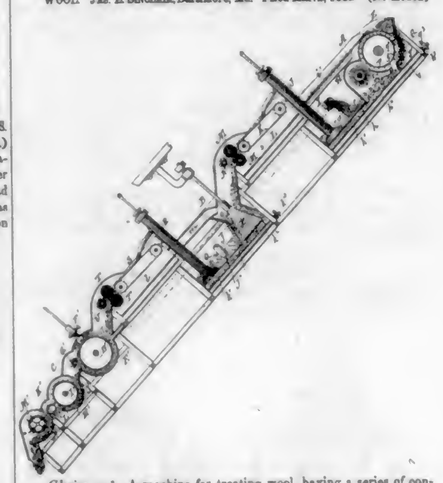
292,868. SPRING-HOE FOR SEEDING MACHINES. RICHARD B. SHELDON, Shortsville, N. Y. Filed Aug. 27, 1883. (No model.)



Claim.—1. In combination with a drag-bar and a hoe or tooth pivoted thereto, a block pivoted to the upper side of the drag-bar and extending forward in advance of its pivot, a draw-bar connecting the forward end of said block and the hoe or tooth, a rod bearing against or jointed to the block and extending backward through a guide, and a spring encircling the rod, all combined and arranged to operate substantially as set forth.

2. In combination with a drag-bar and a hoe or tooth pivoted thereto, a block pivoted to the upper side of the drag-bar at its rear end, and connected by a draw-bar with the tooth below the pivot of the latter, a sliding rod connected to the forward upper end of the block, and extending thence backward through a fixed guide on the drag-bar, and a spring encircling the rod, all substantially as and for the purpose set forth.

292,869. MACHINE FOR WASHING, SCOURING, AND BURRING WOOL. JAS. E. SINCLAIR, Baltimore, Md. Filed Mar. 2, 1883. (No model.)



Claim.—1. A machine for treating wool, having a series of connected receptacles in which the wool is successively treated, and which receptacles are combined with one or more pumps for elevating the wool and water from one receptacle to another, and aprons and troughs for returning the elevated water to the receptacle from which it was drawn, whereby a circulation of the water in said receptacle will be produced to assist in carrying the wool through the machine, substantially as specified.

2. A machine for treating wool, having a series of receptacles in which the wool is successively treated, which receptacles are combined with pumps adapted to elevate the wool, traveling aprons, wringers, and brushes, the latter delivering the wool from the wringers, and pipes or troughs for returning the elevated water for repeated use, substantially as specified.

3. The machine herein described, consisting of the washing apparatus comprising a receptacle and revolving toothed drum and elevating-pumps, the scouring apparatus connected to the washing apparatus by a traveling apron and wringers, and comprising a corrugated conical drum and corresponding receptacle and elevating-pumps, and the burring and picking apparatus connected to the scouring apparatus by a traveling apron and wringers, and comprising a receptacle and a series of toothed drums, all arranged and adapted to operate substantially as shown and described.

4. The apparatus consisting of the toothed drum, the wool and water receptacle, the concave apron formed of movable toothed bars, and the rotary brush, all combined and adapted to operate substantially as shown and described.

5. The combination of a pump adapted for elevating the wool and

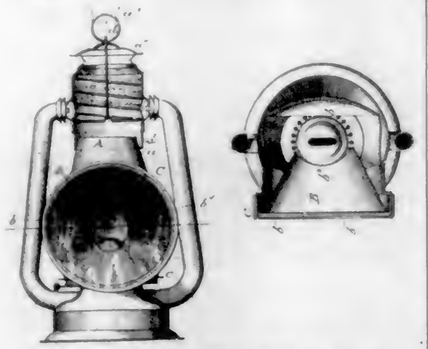
water with the wool and water receptacle, a trough for returning the water, and a wringer for separating the water from the wool, substantially as shown and described, whereby a circulation of the water shall be obtained, for the purpose specified.

292,870. ESCAPEMENT FOR TORSION-PENDULUMS. CHARLES STAHLBERG, Cornicana, Tex. Filed June 12, 1883. (No model.)



Claim.—In combination with the torsion-pendulum of a clock, the levers F and F', the escape-wheel H, and the spindle G, consisting of a cross-piece *d*, arms *k*, and the repose-plate *i*, substantially as and for the purpose set forth.

292,871. COMBINED REFLECTOR AND GLOBE FOR LAMPS AND LANTERNS. BENJAMIN D. STEVENS, Burlington, Vt. Filed Jan. 4, 1883. (Model.)

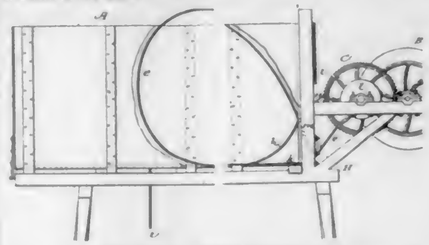


Claim.—1. In an organized lamp or lantern, the metal globe A, provided with side reflectors, B *b*, and the glass *b*', all adapted to be removably attached to the lamp or lantern frame, substantially as and for the purposes set forth.

2. As a new article of manufacture, a metallic reflecting-globe consisting of the body A, provided with the reflectors B *b*, and the glass *b*', all as described, and adapted to be used with a lamp or lantern frame, substantially as and for the purposes set forth.

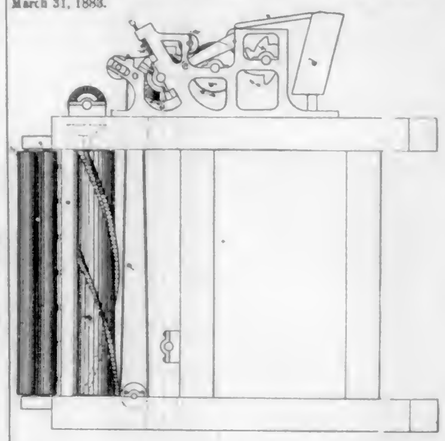
292,872. BALING-MACHINE. DANIEL TARR, Wellsville, Ohio. Filed June 7, 1883. (No model.)

Claim.—In baling-machines, a box, A, in the front end and at the bottom of which are attached, as described and shown, the end of ropes or straps *o o o*, from where the ropes or straps extend back along the bottom of the box, up over the rear end of the box, then, when the box is filled with the material to be baled, to be brought forward and over the material baled down through the opening described in the front end of the box, under the roller H, then up and attached to the axle, to be used as described and shown.



292,873. METHOD OF AND MACHINERY FOR TREATING RAGS FOR PAPER-STOCK. CHARLES F. TAYLOR, Springfield, Mass. Filed Mar. 23, 1883. (No model.)

Brief.—Improvement on applicant's application No. 89,872, filed March 31, 1883.



Claim.—1. The method of treating rags for paper-stock, consisting of stripping the same by machinery and depositing the strip on a feed, which presents the strips to the cross-cutting device in such manner that they are cut into small pieces, substantially as shown.

2. In a rag-dressing machine, two cutting devices having a means of conveying the material from the first to the second, substantially as shown.

3. In a rag-cutting machine, the combination of feed *a*, cutters *b o*, feed *p*, and cutters *c x*, constructed and operating substantially as shown.

4. In a rag-dressing machine, the combination of a stripping device and a cross-cutting device with a feed-apron adapted to move in a direction parallel with the axis of the stripping-knife, substantially as shown.

5. The combination, in a rag-cutting machine, of a stripping device and cross-cutting device, each consisting of a rotary and fixed blade, a means to feed the material to the cutting devices, a means to hold the material while being cut, and a means to separate foreign matter from the material, all constructed and operating substantially as shown.

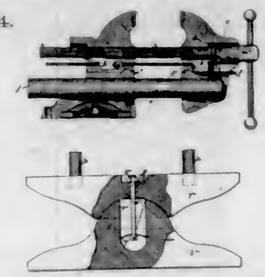
292,874. BENCH-VISE. JOHN THOMSON, Brooklyn, N.Y. Filed July 25, 1883. (No model.)

Claim.—1. In a quick-adjusting parallel bench-vise, the combination, with the ratchet-shaft having a flattened portion and a cylindrical portion, of the flattened pin *d*, adapted to engage with the flattened portion of said shaft, and thus prevent the rotation thereof, and to impinge against the end of the cylindrical portion of said shaft, and thus limit its longitudinal movement, substantially as described.

2. The nut *m*, having the interiorly-arranged threaded bushing *k*, substantially as described.

3. In a vise, the combination, with the stationary and movable jaws thereof, of the ratchet-shaft *h*, pawl *b*, and disengaging-rod *s*, substantially as described.

292,874.



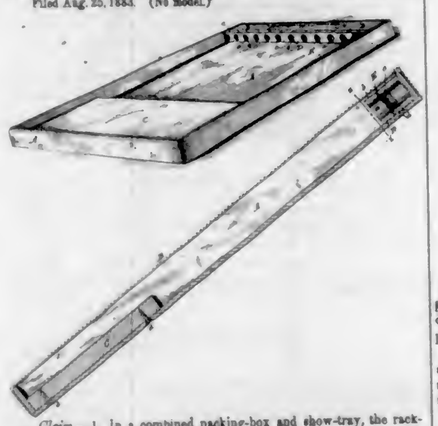
4. In a vise, the combination, with the stationary and movable jaws and means for operating the latter, of the ratchet-shaft A, pawl *b*, disengaging-rod *s*, and spring *i*, substantially as described.

5. In a quick-adjusting parallel bench-vise having a tail-piece rigidly attached to the front jaw and sliding in the back jaw, and a ratchet-shaft, as A, having a sliding bearing in both jaws, and means for operating the same, the relieved or tapered bearing *t*, for the purpose of throwing the weight of the front jaw mainly upon the ratchet-shaft, thereby cramping said ratchet-shaft and holding it in position against the back-thrust of the screw.

6. The combination, with the piece *r*, having a concave socket, and the swiveling jaw *v*, having a ball or rounded projection adapted to said socket, of the retaining-bolt *x'* and the keeper *y'*, substantially as described.

7. The combination, with the socket-piece *r* and swiveling jaw *v*, having a ball-and-socket connection, of the retaining-bolt *x'*, the keeper *y'* for said bolt, the dowel-pins *p p*, secured to said socket-piece, and a jaw of a vise, having holes or bearings *p' p'*, adapted to receive said pins, substantially as described.

292,875. SHOW BOX AND TRAY. EDWARD TODD, Madison, N. J. Filed Aug. 25, 1883. (No model.)



Claim.—1. In a combined packing-box and show-tray, the rack-block D, constructed with holes *a*, in combination with rubber strip E, provided with holes *e*, as and for the purposes set forth.

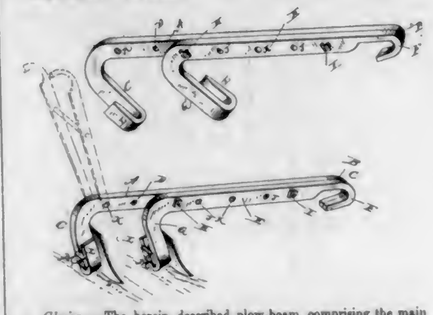
2. In a combined packing-box and show-tray, the combination of the rack-block D, constructed with holes *a*, the strip E, provided with holes *e*, and the supplemental strip E', provided with holes *e'*, the holes *a*, *e*, and *e'* registering with each other throughout the length of the rack-block, as and for the purposes set forth.

3. In a combined packing-box and show-tray, the rack-block D, constructed with holes *a*, and provided with perforated rubber strips E E', as hereinbefore described, in combination with the wood-veneer or other polished strip *b*, as and for the purposes set forth.

4. In a combined packing-box and show-tray, the rack-block D, constructed substantially as described, in combination with the silicate, ground-glass, or porcelain strip *c*, as and for the purposes set forth.

5. As a new article of manufacture, the wooden box and card or other top, in combination with the velvet or other covered wooden rest-block C, the wooden rack-block D, constructed substantially as described, and secured in place by the screws *d d*, whereby the blocks may be readily removed and others substituted, as set forth.

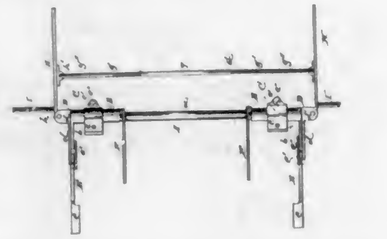
292,876. PLOW. WILLIAM ESTEEL VENABLE, Nicholson, Ga. Filed Sept. 15, 1883. (No model.)



Claim.—The herein-described plow-beam, comprising the main beam formed of a metallic rod having its rear end turned down and forming a plow-standard, in combination with the corresponding short beam secured against one side of the main beam, and having its rear end also turned down to form a plow-standard, the lower ends of these standards being bent up at one side of their main portions to form integral hooks adapted to receive the heel-bolts of a plow-blade, which hooks project at opposite sides of the standards, so as to be in the same longitudinal plane, substantially as set forth.

292,877. CULTIVATOR. FRANK T. VERHAREN, Spencer, Iowa. Filed May 28, 1883. (No model.)

Brief.—By means of connections between the plow-beam couplings and the supports or runners, the lifting of the plow-beams lowers the runners, and vice versa. By similar connections the lifting of the beams automatically lowers the suspension-bars to receive them.



Claim.—1. A drag-bar or runner and a connection therefor with a plow-beam, by which movements of the plow-beam vertically will produce a reverse movement to the drag-bar, substantially as and for the purposes specified.

2. A drag-bar, E, pivoted at its upper end and provided with an arm, *d'*, in combination with a link, *c''*, and arm *b*, actuated by the movements of the plow-beam for raising and lowering the drag-bar, substantially as specified.

3. A drag-bar, E, pivoted at its upper end and provided with an arm, *d'*, in combination with the link *c''*, arm *b*, pipe-box B, and a plow-beam attached to the pipe-box, for automatically raising and lowering the drag-bar, substantially as specified.

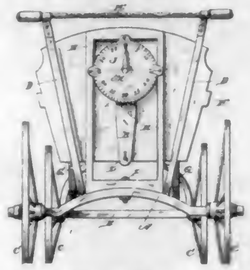
4. An arm or support, F, and a connection with a plow-beam and devices connecting the beam with the arm or support, for automatically operating the arm or support as the beam is raised or lowered, substantially as and for the purpose specified.

5. An arm or support, F, link *f''*, and arm *b'*, operated from the plow-beam, for automatically raising and lowering the arm or support F, substantially as and for the purposes specified.

6. An arm or support, F, and link *f''*, in combination with the arm *b'* and pipe-box B, having a plow-beam attached thereto, for automatically operating the arm or support by the movements of the plow-beam, substantially as and for the purposes specified.

7. An arm or support, F, link *f''*, arm *b'*, pipe-box B, arm *b*, link *c''*, arm *d'*, and drag-bar E, in combination with a plow-beam attached to the pipe-box, for automatically operating the arm or support and the drag-bar by the movements of the plow-beam, substantially as and for the purposes specified.

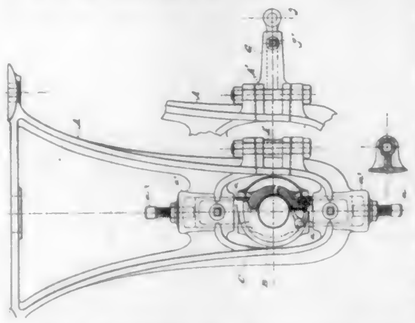
292,878. WEIGHING ATTACHMENT FOR BABY-CARRIAGES, &c. JOHN J. VINTON, Youngstown, Ohio. Filed Nov. 23, 1883. (No model.)



Claim.—1. The combination, with a baby-cab or other vehicle, of a frame extending up from the rear axle in rear of the body, a scale secured to said frame, and a strap or other suitable means connecting the scale to the body of the vehicle, whereby the weight of the body will draw the strap downward, so as to cause the scale to indicate the proper weight, as set forth.

2. The combination, with a baby-cab or other vehicle, of a frame supported upon the rear axle of said vehicle, a spring-scale secured to said frame, a strap or chain secured to the said spring-scale, and a button or stud secured to the vehicle-body and adapted to be engaged by the said strap or chain, substantially as and for the purpose set forth.

292,879. SHAFT-HANGER. JOHN WALKER, Cleveland, Ohio. Filed Feb. 21, 1883. Renewed Jan. 2, 1884. (No model.)



Claim.—1. The combination, with a shaft-hanger having one of its sides divided, of the block secured in the opening thus formed by a bolt, and provided with an extension-arm for supporting the belt-shifting or other device, and capable of being adjusted lengthwise, substantially as shown and described.

2. The combination, with a shaft-hanger having one of its sides divided, of the block secured in the opening thus formed by a bolt, and provided with a hollow outer arm, and the inner arm fitting therein and adapted to be longitudinally adjusted, substantially as and for the purpose described.

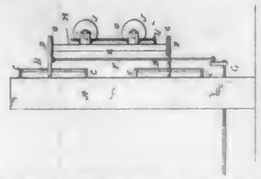
3. In a shaft-hanger, the oil-pan having a boss resting on a vertically-adjustable tubular seat below, the oil-box having a ring-like projection on its under side, adapted to rest upon the inner side of said boss, the upper side of the box being provided with a support, and the pan adapted to fit around said support, whereby the box and the pan may adjust themselves to the line of the shaft, substantially as described.

4. The combination, in a shaft-hanger, of the oil-pan, constructed, substantially as described, with the journal-box located within the same, having a ring-like projection adapted to be supported by the pan, and the pan constructed in a cylindrical form, whereby the box is inclosed, substantially as described.

5. The combination, in a shaft-hanger, of a cylindrical-like oil-pan, and an inclosed journal-box having a ring-like projection adapted to be supported by the pan, with a scraper constructed to normally bear against the shaft and scrape the oil therefrom, substantially as described.

6. The combination, with the weighted handle D, terminating in a bent rod, of the arm *d*, so arranged that either end of the said arm or its attached scraper may be applied to the shaft substantially as described, and for the purpose set forth.

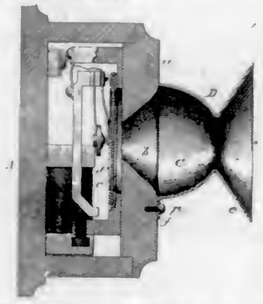
292,880. STONE-DRESSING MACHINE. HOWARD DOUGLAS WALLACE, St. George, New Brunswick, Canada. Filed Apr. 26, 1883. (No model.)



Claim.—1. In a stone-cutting machine, the combination of suitable guides secured to suitable uprights or supports, a reciprocating frame attached to the guides, a rotating standard to which the cutting-disks are connected, and a screw placed in the frame for regulating the distance between the cutting-disks, substantially as shown.

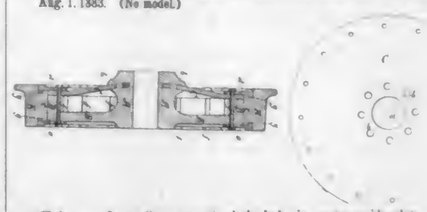
2. In a stone-cutting machine, the combination of the posts A, having suitable guides secured to them, the vertically-reciprocating frame attached to the guides, the end pieces, D, of the reciprocating frame, having suitable recesses in their inner sides, the partially-rotating rod H, having the disks G secured to its ends, and fitting in the recesses in the parts D, the cutting-disks, and a screw for regulating the distance between them, substantially as described.

292,881. SPEAKING-TELEPHONE. FRANCIS WARE, Boston, Mass. Filed Aug. 23, 1883. (No model.)



Claim.—The combination, with the diaphragm of a telephone and a box or casing therefor, so applied as to leave a thin inclosure or chamber between the face of the said diaphragm and the said box or casing, of a substantially oval or globular chamber communicating with said thin inclosure or chamber, substantially as described.

292,882. CAR-WHEEL. NATHAN WASHBURN, Allston, Mass. Filed Aug. 1, 1883. (No model.)

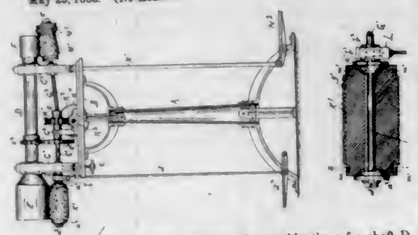


Claim.—1. In a railway-car wheel, the hub, rim, and one side plate of cast iron or metal founded in one piece, and upon and with the other side plate of wrought-iron extended around and into the hub and resting against one edge of the rim.

2. The hub, rim, and one side plate of cast iron or metal founded in one piece, and upon and within the other side plate of wrought-iron extended around and into the hub, and provided with holes for the metal of the hub to pass through, all being substantially as represented.

3. The improved railway-car wheel, constructed substantially as described, viz: with the hub, rim, and one side plate of cast-iron and founded in one piece, and upon and with the other side plate of wrought-iron extended around and into the hub and resting against one edge of the rim, in combination with the dovetailed tire and its connecting flanged ring, and the series of bolts arranged with and applied to the said rim and side plates, as set forth.

292,883. IRONING-MACHINE. CLARENCE OTIS WHITE, Minneapolis, Minn., assignor of one-half to Hastings H. Johnson, same place. Filed May 25, 1883. (No model.)



Claim.—1. In an ironing-machine, the combination of a shaft, D, having an internally-heated ironing-roll, E, thereon, a shaft, G', permanently geared to the shaft D, a padded roll, K', loose on the shaft G' and in frictional contact with the ironing-roll E, and a clutch, whereby the roll K' is made to revolve with the roll E or with the shaft G', substantially as and for the purpose specified.

2. The combination of a shaft, D, having two internally-heated ironing-rolls, E F, thereon, shafts G' G^2, having a cylindrical padded roll, K', on one, and a conical padded roll, M', on the other, and the supporting-frame, substantially as and for the purpose herein specified.

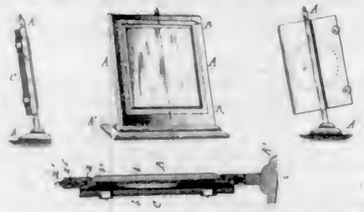
3. In an ironing-machine, a roll having channels around its ends, and spring-rings m', having spurs m^2, and suitable padding covering said rolls, substantially as shown.

4. The combination of the supporting-frame, the shaft D, having an ironing-roll, E, thereon, shaft G', gears H^1 H^2, padded roll K', conical collars a' a^2, wedge-surfaced collars b' b^2, frame L, having wedge-ribs *g g*, and means for moving the said frame, substantially as and for the purpose herein specified.

5. The combination of the hollow shaft D, having ironing-rolls E F thereon, shaft G', shaft G^2, having padded rolls K' M' thereon, connecting-gear H^3 H^6, damping-rolls K' R^2, the shaft H^4 at right angles to the shaft G', and worm-gear H' H^5 connecting the shafts G' and H^4, substantially as and for the purpose herein specified.

6. The roll E, provided with channels encircling its ends, and a longitudinal groove in the surface of the roll connecting said channels, in combination with a strip to fit into said longitudinal groove, spring-rings to fit into said channels, and the padding fabric, substantially as and for the purpose specified.

292,884. COMBINED TOILET-MIRROR AND PHOTOGRAPHIC ALBUM. LEOPOLD WOLF, New York, N.Y. Filed May 31, 1883. (No model.)



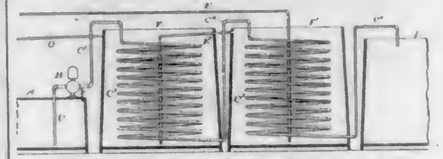
Claim.—1. The combination, with an upright supporting-frame, of a centrally-pivoted and reversible panel having a mirror at one side and a photograph-album attached at the other side, the album being centrally-pivoted to the back of the mirror-panel, substantially as and for the purpose set forth.

2. The combination, with an upright supporting-frame, A, of a centrally-pivoted and reversible panel, B, having a mirror at one side and a photograph-album, C, at the other side, the rear cover of said album being connected by a fixed disk, *b*, having a circular flange, *b'*, to an annular guide-groove of the mirror-frame, substantially as set forth.

3. The combination of the upright supporting-frame A and a centrally-pivoted and reversible mirror-panel, B, with a locking device applied to one of the pivots, said pivot being provided with a laterally-extending locking-bar, d^4, button d', and interposed spiral spring, d^3, the locking-bar being guided in recesses d^1 and d^5 of the supporting-frame and mirror-panel, substantially as described.

4. The combination, with an upright supporting-frame, A, of a reversible mirror-panel, B, turning on center pivots, *d* and *e*, the upper pivot, *d*, being provided with a spring-pressed locking device, while the lower pivot, *e*, is provided with a torsion-spring, e^2, by which the turning of the mirror in the supporting-frame is facilitated when the locking device of the upper pivot, *d*, is released, substantially as and for the purpose set forth.

292,885. APPARATUS FOR COOLING MASH. JACOB WOOLNER, Peoria, Ill. Filed Nov. 23, 1883. (No model.)



Claim.—1. In a mash-cooling apparatus, two or more tubs, only one of which is adapted to receive fresh supplies of cold water, each of the others being filled from the overflow of the tub before it, in combination with a coil of pipe in each tub, and connections whereby a continuous stream of mash may be pumped through them all, substantially as shown and described.

2. The tub F', having water-supply pipe E and overflow E^2, terminating at the bottom of the tub F, in combination with said tub F and the coils C^2 C^3, continuous from one to the other, and having suitable supply-pump, substantially as and for the purpose specified.

3. The pump B, having suction-pipe C, coils C^2 C^3, having connecting-pipes C' C^3, and exit-pipe C^4, in combination with the tubs F F', supply-pipe E, having a T-shaped discharge end, E', at the bottom of the said tub F', overflow-pipe E^2, having a T discharge end, E^2, and the overflow-pipe O, substantially as and for the purpose set forth.

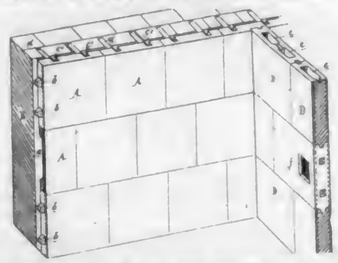
292,886. NECK-YOKE. COLUMBUS D. ZELLNER, Delta, Ohio. Filed Oct. 23, 1883. (No model.)



Claim.—1. In a neck-yoke ring, the combination, with a body-plate made of metal and having annular flanges on its front and rear sides, of a leather packing-ring seated in an opening in the said body-plate, and having flanges fitting within the flanges of the latter, as set forth.

2. In a neck-yoke ring, the combination of a metallic body-plate having a securing flange or band, and provided with an opening surrounded by annular flanges on its front and rear sides, a packing-ring seated in the said opening, and having flanges fitting within the flanges of the body-plate, and transverse fastening bolts or rivets, as set forth.

292,887. TILE OR BLOCK FOR FINISHING INSIDE WALLS. JAMES AUSTIN, Detroit, Mich. Filed Aug. 1, 1883. (No model.)



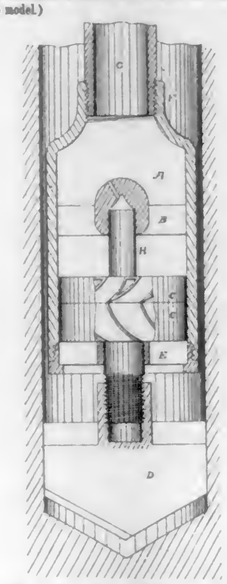
Claim.—1. A block for inside walls, formed of cheap plastic material, with an outer facing of calcined plaster, substantially as herein described.

2. A block for inside walls, formed of cheap plastic material faced with calcined plaster, and provided with projecting lugs and recesses, substantially as and for the purpose specified.

3. The block A, formed of plastic material, provided with lugs *b b* and recesses *c c* and *c' c'*, the latter opening into the rear face of the blocks to receive the binding-stripe *d* in addition to the lug on the adjacent tile, substantially as described.

4. The block D, formed of cheap plastic material faced on both sides with calcined plaster, with vertical channels *e*, lugs *b*, and recesses *c*, substantially as and for the purposes specified.

292,888. MACHINE FOR OPERATING DRILLS. MORRIS CUTLER BAKER and CLARENCE EDWARD BAKER, Mitchell, Dak. Filed July 12, 1883. (No model.)



Claim.—1. The rotating of the drill D by means of the wheel C C, or its equivalent, by the use of water, steam, compressed air, or gas, without imparting motion to the drill-rod G or casing A, for the purposes herein set forth.

2. The casing A, containing spider and water bearing B, the wheel C C, shaft H, and screw-section E, all combined and connected to drill D, to operate substantially as herein described.

3. The screw-section E E, containing web arranged vertically, to allow free egress of fluid, substantially as described.

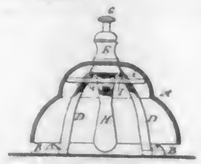
4. The spider B, with water bearing for shaft H, for purpose as before described.

5. The combination of the casing A, the spider B, wheel C C, drill D, screw-section E E, drill-rod connection F, drill-rod G, and shaft H, all combined to operate for the purposes herein set forth and described.

6. The constant rotation of the drill D by the means herein described, regardless of any motion otherwise imparted to drill-rod G.

7. The use of the escaping motor-fluid for removing the drillings from around the drill D.

292,889. CALL-BELL. ABNER W. BARTON, East Hampton, Conn. Filed June 15, 1883. (Model.)

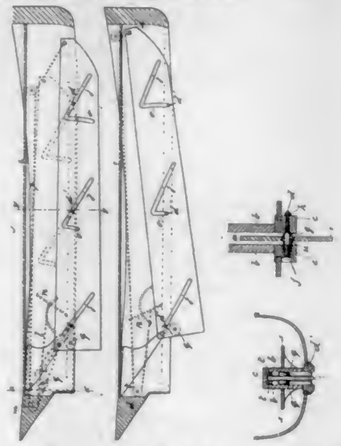


Claim.—1. The combination, with a call-bell and its push-pin and hammer, of a frame having a base or feet within the bell and extending but slightly below its lower edge, whereby the support for the bell is not exposed to view and the ordinary projecting base is dispensed with.

2. The combination, with the call-bell and its push-pin and hammer, of a frame having jaws with openings cast in them, a pivot-pin passing through the said openings, and a base or feet to the frame within the bell, substantially as set forth.

292,890. CENTER-BOARD FOR VESSELS. JOHN S. BIRCH, New York, N. Y. Filed Dec. 29, 1882. (No model.)

Claim.—1. A center-board arranged, substantially as hereinbefore set forth, on two or more inclined ways, for being raised and lowered thereon, said ways being arranged in the center-board trunk, and ranging fore and aft of the ship on about forty-five degrees of inclination, for supporting about half the weight of the center-board while being raised and lowered, in combination with a cord or chain connected to said center-board and stretched upward in about the same inclination as said ways, for raising and lowering said center-board by pulling about half the weight of the board, substantially as described.



2. A center-board arranged, substantially as hereinbefore set forth, on two or more inclined ways, for being raised and lowered, said ways being suitably inclined for supporting about half the weight of the board throughout the range of its travel, the aft ways having greater inclination than the forward ways, and being varied with relation to said forward ways, to cause the center-board to extend more aft than forward, and also to cause the said greater extension to be proportionately the same for any extension of said center-board, substantially as described.

3. A center-board arranged on two or more inclined ways of about forty-five degrees, whereon about half its weight is supported, and being provided with curved ways or slots *o*, intersecting the inclined ways that are forward of the sternmost way, to allow the center-board to be swung up at the forward end on the sternmost way, whereon it rests as a pivot, substantially as described.

4. In a center-board arranged on two or more inclined ways of about forty-five degrees, whereon about half its weight is supported, the rollers *q* and ways *t*, in combination with the center-board, and located at one end of the center-board, to resist the thrust of the overbalance of the other end when the board shifts along said inclined ways, substantially as described.

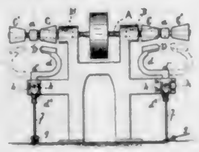
292,891. PROCESS OF TREATING FIBROUS RUBBER WASTE. AUGUSTUS O. BOURN, Bristol, R. I. Filed May 4, 1881. (No specimens.)

Claim.—1. The process of treating rubber waste containing cotton fiber for the recovery of rubber from said waste by boiling the waste in a solution containing about three or four per cent. of sulphuric acid, substantially as described, whereby the fibrous matter is rendered soluble in water, and is readily removed from the waste with said solution, as set forth.

2. The process of treating rubber waste containing cotton fiber for the recovery of the rubber by chopping or grinding said waste and boiling the same in solutions containing about three or four per cent. of sulphuric acid, substantially as described, whereby the fiber is well exposed to the action of said solution, is rendered soluble in water, and is readily separated from the rubber, as set forth.

3. The process of treating rubber waste containing cotton fiber, substantially as hereinbefore described, by subjecting said waste to the action of sulphuric-acid solutions of sufficient strength to operate as a solvent of the fiber, and enable its removal from the waste with said solvent.

292,892. HAT-POUNCING MACHINE. FREDERICK F. CAMPBELL, Newark, N. J. Filed Dec. 10, 1883. (No model.)



Claim.—1. A hat-pouncing machine provided with a shaft or shafts, having attached thereto one or more pairs of pouncing-blocks placed approximately together.

2. A hat-pouncing machine provided with a shaft, having attached at or near each end thereof pouncing-blocks arranged in pairs.

3. A hat-pouncing machine provided with a shaft, having secured at or near each end thereof conical pouncing-blocks arranged in pairs.

4. A hat-pouncing machine provided with a shaft, having secured at or near each end thereof conical pouncing-blocks arranged in pairs, placed with their truncated portions facing each other or more nearly adjacent.

5. A hat-pouncing machine provided with shafting, having attached thereto pouncing-blocks arranged in pairs, with the driving mechanism placed between said pairs.

6. A hat-pouncing machine provided with shafting, having attached thereto pouncing-blocks arranged in pairs, with the driving mechanism and bearings placed between said pairs.

7. A hat-pouncing machine provided with shafting, having attached thereto pouncing-blocks arranged in pairs, with the driving mechanism and bearings placed between said pairs, and also having a supplemental bearing, as *a*, between the pouncing-blocks of each pair.

8. A hat-pouncing machine provided with mechanism adapted to press the hat-body against the pouncing-surfaces, and to reverse the position of the hat-body with relation to said pouncing-surface.

9. In combination, in a hat-pouncing machine, pouncing-blocks arranged in pairs, driving mechanism placed between said pairs, and means adapted to press the hat-bodies against said pouncing-blocks.

10. In combination, in a hat-pouncing machine, pouncing-blocks arranged in pairs, and mechanism adapted to press the hat-bodies against said pouncing-blocks.

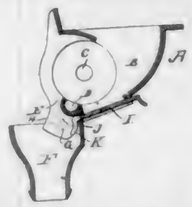
11. A hat-pouncing machine provided with pouncing-blocks arranged in pairs, and mechanism adapted to press the hat-body against both of said blocks at different times without removing said hat-body.

12. In combination, in a hat-pouncing machine, pouncing-blocks arranged in pairs, a single presser-block adapted to press the hat-bodies against said pouncing-blocks, and mechanism whereby said presser-block may be changed from one pouncing-block to the other.

13. In combination, in a hat-pouncing machine, pouncing-blocks arranged in pairs, an arm, *d*, guide-piece *e*, and mechanism adapted to raise said block and arm.

14. In combination, in a hat-pouncing machine, pouncing-blocks arranged in pairs, a presser-block, arm *d*, provided with a pin, d^3, slotted guide-piece *e*, treadle-bar *f*, and treadle *g*.

292,893. CUP FOR SEEDING-MACHINES. ROBERT S. CARR, Hamilton, Ohio, assignor to John W. Sohn, same place. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a force-feed seed-cup arranged to carry a body of grain below the seed-wheel, and having an opening in its bottom, the combination of side walls of the cup, provided with grooves at the bottom, and a bottom gate fitted to slide in said grooves and close the opening in the bottom of the cup, substantially as and for the purpose set forth.

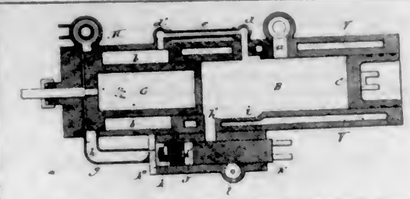
2. The combination of a seed-cup provided with open slots for supporting the pivoted mouth-piece, hung by pivots to the seed-cup, and a sliding piece fitted to the bottom of the seed-cup, and having a latch-piece projecting into the mouth-piece to prevent the accidental disengagement of the mouth-piece, substantially as set forth.

3. In a seed-cup arranged to carry a body of grain below the seed-wheel, the combination of a bottom opening for draining the cup, a mouth-piece hung to the nose of the cup, and a sliding gate at said opening, provided with a latch-piece projecting downward into the mouth-piece, substantially as and for the purpose set forth.

292,894. GAS-ENGINE. JOHN CHARTER, Starling, Ill. Filed Apr. 19, 1883. (No model.)

Claim.—1. In a gas-engine, the combination of the cylinder B, transferrer G, and piston C, arranged and operating substantially as shown, and for the purpose described.

2. The cylinder B, provided with the annular recess *b*, the tube *e*, tube *g*, transferrer G, and piston C, arranged and operating in combination, substantially as shown, and for the purpose specified.



3. The transferrer G, in combination with the cylinder B, piston C, tube *e*, ignitor K, and tube *g*, substantially as shown, and for the purpose named.

4. The cylinder B, having the recess *b*, and the tube *e*, provided with valves *d* and *d'*, and communicating at each end with the interior of such cylinder, in combination with the transferrer G, whereby outer air is drawn in at the sides of the transferrer G at one stroke of such transferrer, and transmitted to the face of the latter on the opposite stroke thereof, substantially as shown, and for the purpose specified.

5. The combination of the rod I, lever L, toggle M, shaft O, having crank P, rod S, and transferrer G, substantially as shown, and for the purpose herein named.

6. The cylinder B, having inlet-port H, tube *g*, having communications *h* and *h'* with such cylinder, and the transferrer G, in combination, substantially as shown, and for the purpose described.

7. The cylinder B, having the recess *i* and inlet-port H, the tube *g*, having communications *h* and *h'* with such cylinder, and the transferrer G, in combination, substantially as shown, and for the purpose specified.

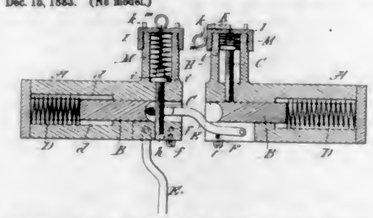
8. The tube *g*, having ports *h* and *h'*, ignitor K, having hole *k*, and transverse hole *j*, arranged to register with the port *h'* and cylinder B, in combination, substantially as shown, and for the purpose herein described.

9. In a gas-engine, the rod I, lever L, toggle M, shaft O, and rod S, substantially as shown, by means of which the transferrer G is operated in the same cylinder with the piston C, and such transferrer is caused to make a full motion during the inward stroke of said piston C, whereby such transferrer alternately expels the residuum of explosion and charges the working-cylinder.

10. In a gas-engine, shaft D, rod I, lever L, toggle M, shaft O, rod S, and transferrer G, in combination, substantially as shown, whereby a full motion of such transferrer, alternated with intermittent rests, is produced at each revolution of the shaft D, for the purpose hereinbefore described.

11. In a gas-engine, the cylinder B, piston C, shaft D, piston-rod D', rod I, lever L, toggle M, shaft O, rod S, and transferrer G, substantially as shown, whereby such transferrer, coincidently with expelling the residuum of combustion, draws into the cylinder the charge for the next explosion, for the purpose specified.

292,895. CAR-COUPLING. JAMES W. CHILDS, Cedar Run, Pa. Filed Dec. 15, 1883. (No model.)



Claim.—1. In a car-coupling, the combination of a recessed and slotted draw-head, an adjustable open-ended link pivoted in the slotted end of said draw-head, a spring-actuated coupling-pin, and a sliding block for supporting said pin, substantially as described.

2. The combination of the recessed draw-head A, having open-ended slots *e e*, the adjustable open-ended link E, pivoted in said slots, the sliding block B, having spring D, and the pin C, having collar *i*, spring M, and chain K, substantially as described.

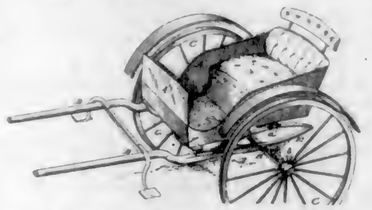
3. The combination of the recessed draw-head A, having open-ended slots *e e*, the sliding block B, the spring-actuated coupling-pin C, the adjustable link E, pivoted in the slotted end of the draw-head, and means for supporting said link, substantially as described.

4. The combination of the draw-heads A, having recesses *a*, slots *e e*, and tubular bosses H, provided with detachable caps I, the shouldered coupling-pins C, and springs M, inclosed in said bosses, the pins being provided with operating chains or cords K, the sliding blocks B, and springs D, inclosed in the draw-heads, the open-ended links E, pivoted in the slotted ends of the draw-heads, and means for supporting the links, substantially as described.

5. The combination, with the draw-head A, having slots *e e* and openings *f*, and the link E, pivoted in said slots, and provided with an arc or extension, *g*, of thumb-screws G G, for supporting said link at any desired height, substantially as described.

6. The combination, with a draw-head, of a backing of timber of suitable thickness interposed above said draw-head between it and the car-body for the purpose of securing the draw-heads of different cars at a uniform height above the track, substantially as described.

292,896. TWO-WHEELED VEHICLE. FREDRIK COLEMAN, Ilion, N. Y. Filed Sept. 14, 1883. (No model.)



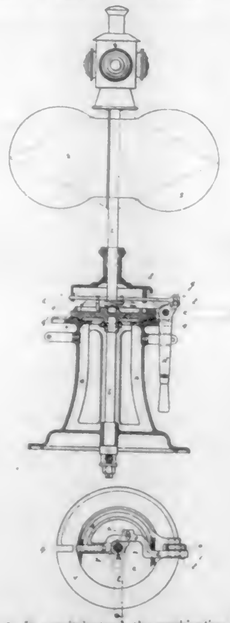
Claim.—1. The herein-described vehicle, consisting of body A, axle B, wheels C, shafts D, connected to the axle, side springs, E, supporting the body and connected with the axle by hinge-joints, springs F, secured to the shafts, and cross-spring G, attached to the body, and having its ends connected with the springs F, all substantially as shown and described.

2. In combination with the body and shafts of a vehicle, intermediate connecting-springs, F G, applied substantially as shown and described.

3. In a two-wheeled vehicle, the combination of two supporting-wheels, an axle therefor, a body above and supported by said axle, shafts for drawing the vehicle, a cross-spring secured to the fore part of the body, and springs running lengthwise of the shafts and having their forward ends connected with the ends of the cross-spring and their rear ends attached to the shafts, substantially as shown and described.

292,897. SWITCH-STAND. PRESSLEY COLEMAN, Haysville, Pa. Filed Oct. 15, 1883. (No model.)

Brief.—The signal-target is mounted upon a shaft that rotates independently of the signal-shaft. The switch-lever shifts the signal by its first movement and before it turns the switch.

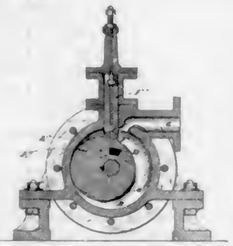


Claim.—1. In a switch-stand, the combination of a rotating stem or shaft for operating the switch, an independently rotating or oscillating target or signal, a lever for operating the switch-stem, and devices for actuating the independently-rotating target from the switch-lever, whereby the movement of the lever causes the shifting of the signal before the switch is turned, substantially as and for the purpose specified.

2. In a switch-stand, the combination of a rotating stem or shaft for operating the switch, an independent rotating or oscillating target or signal, a lever for operating the switch-stem, devices for actuating the independently-rotating target from the switch-lever, whereby the movement of the lever causes the shifting of the signal before the switch is turned, and the locking mechanism, whereby the signal mechanism remains locked until the lever is returned to its original position, substantially as and for the purpose specified.

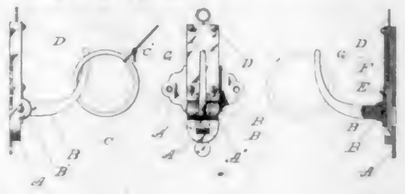
3. In a combined switch and signal-setting mechanism, the combination of a rotating stem for actuating the switch, an independent rotating stem for actuating the signal, a lever for actuating the switch-stem, a slide-bar actuated by the switch-lever, and adapted to actuate the signal mechanism, and locking mechanism adapted to lock the slide during the rotation of the switch-stem, substantially as and for the purposes specified.

292,898. ROTARY STEAM-ENGINE. LOUIS D'ANDRÉE, Riga, Russia, assignor to himself and Ludwig Loewe & Co., Berlin, Germany. Filed June 22, 1883. (No model.)



Claim.—In a rotary steam-engine, the combination of the eccentric-piston B, having the radial slot D, leading from the side face of the piston, and the channel E, extending from said slot to the periphery of the piston, with the cylinder A, the cut-off slide F, fitted in the latter, the steam-inlet port H, and steam-outlet port G, all constructed and relatively arranged as herein set forth, for the purpose specified.

292,899. GAME APPARATUS. THOS. DAVIES, Poughkeepsie, N. Y. Filed Dec. 13, 1883. (No model.)



Claim.—1. The game apparatus consisting of the hook B, wedge E, frame A, spring F, rod D, cord D′, ring C, and cord C′, substantially as described and shown, and for the purposes set forth.

2. The combination of the wedge E, frame A, and hook B, with the ring C and cords C′ D′, and spring F, substantially as described and shown.

3. The combination of the adjustable hook B with the wedge E, spring F, and rod D and cord D′, substantially as described and shown.

4. The adjustable hook B, in combination with the wedge E, substantially as described and shown.

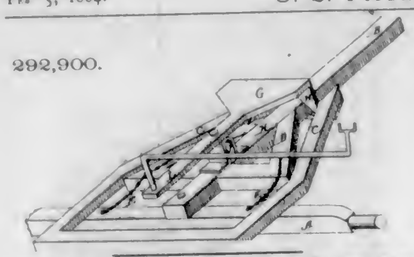
5. The combination of the frame A, hook B, ring C, wedge E, rod D, spring F, and cords C′ and D′, substantially as described and shown.

292,900. RUNNING-GEAR FOR VEHICLES. WILLIAM A. DAWSON, Stony Point, Cal., assignor of one-fourth to E. K. EVANS, same place. Filed May 3, 1883. (No model.)

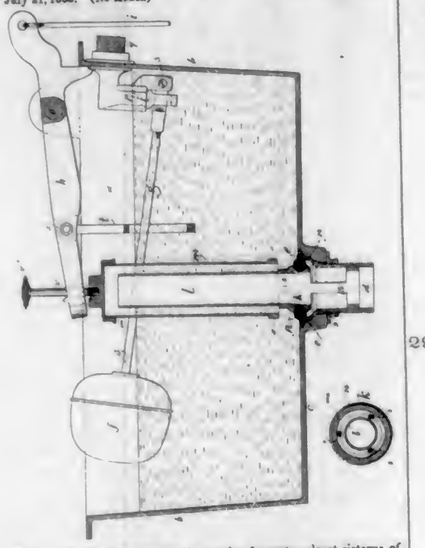
Claim.—1. In a vehicle having a front and rear axle, the tongue B, loosely pivoted to the front axle, A, in combination with the hounds C and D and chains E, all constructed to operate substantially as and for the purpose set forth.

2. In a vehicle having a front and rear axle, the tongue B, loosely pivoted to the front axle, A, in combination with hounds C and D, chains E, plate G, provided with the lugs H, and lever-arm I, all constructed to operate as and for the purpose set forth.

292,900.



292,901. CISTERN FOR WATER-CLOSETS. JOHN DEMAREST, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed July 21, 1883. (No model.)



Claim.—1. The combination, in a valve for water-closet cisterns, of the tube *l*, a ring, of rubber or other elastic material, at the lower end of said tube, and the tube *m*, supported by and surrounding the tube *l*, and made with an open lower end and closed top, substantially as and for the purposes specified.

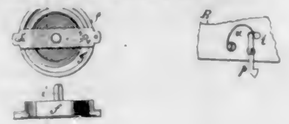
2. The combination, in a valve for water-closet cisterns, of the tube *l*, a ring, of rubber or other elastic material, at the lower end of said tube, the tube *m*, supported by and surrounding the tube *l*, and having an open lower end and closed top, and the slotted tubular guide below the lower end of tube *l*, substantially as and for the purposes set forth.

3. In a water-closet cistern, the valve *k*, open tube *l*, tube *m*, closed at the top, and valve-seat *s*, in combination with the lever *h*, slotted arm *i*, float *f*, and rod *g*, the latter within the slot of the arm *i*, and the valve *p*, operated by said float, substantially as and for the purposes set forth.

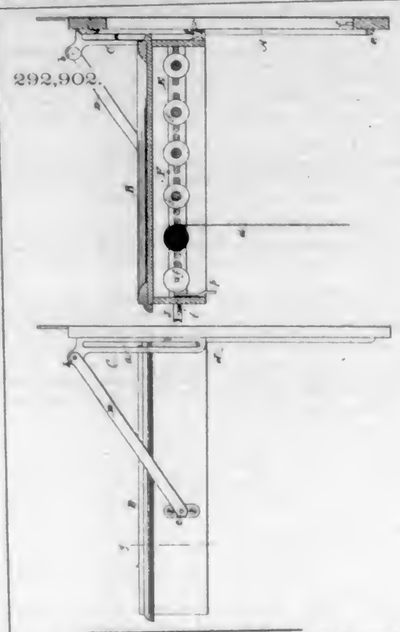
292,902. MAP-HOLDER. JOHN W. H. DOUBLER, Rockford, assignor to A. H. Andrews & Co., Chicago, Ill. Filed Apr. 24, 1882. (Model.)

Claim.—1. In a map-holder, a swinging case, B, open on one side only, adapted to receive and hold a series of maps, and supported by hinged bars D, pivoted at one end to the ends of the case a little forward of the center of gravity, substantially as and for the purposes specified.

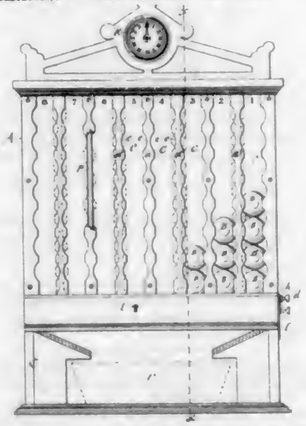
2. In a map-holder, a case, B, adapted to receive and hold a series of maps, and provided with projecting irons, *d*, in combination with irons C, provided with a slot, *a*, and bars D, pivoted at one end to the irons C and at the other end to the ends of the case B a little forward of the center of gravity, substantially as and for the purposes set forth.



292,902.



292,903. POOL-RACK. PATRICK W. FARLEY and A. LUCAS TROWBRIDGE, Canenovia, N. Y. Filed Oct. 16, 1883. (No model.)



Claim.—1. A pool-rack having the ball-receiving channels arranged vertically therein, and a movable gate at the bottom of said channels, substantially as set forth.

2. A pool-rack having the ball-receiving channels arranged vertically therein, guards on the front of the channels for retaining the balls therein, and a movable gate at the foot of the respective channels, substantially as set forth and shown.

3. A pool-rack having the ball-receiving channels arranged vertically therein, guards on the front of the channels, having excisions for the introduction of the balls, and intervening barriers for retaining the balls, and adapted to be moved longitudinally, and a movable gate at the foot of the respective channels, substantially as described and shown.

4. In combination with the vertical channels, a movable gate at the foot of the channels, and movable guards on the front of said channels, arranged to move automatically with the movement of the gate, substantially as set forth and shown.

5. In combination with the vertical channels, vertical strips projecting at opposite edges of the channels and having excisions to form ports for the introduction of the balls, and a gate arranged at the base

of the channels and adapted to support the balls in the channels below the ports thereof, substantially as specified and shown.

6. In combination with the vertical channels C C, the guard-strips *a*, fixed in position and provided with the excisions *a a*, the strips *a'*, arranged movable longitudinally and provided with corresponding excisions, *a a*, steps *b*, attached to the strips *a'*, and the gate *c*, adapted to encounter said steps, substantially as described and shown, for the purpose set forth.

7. The combination of channels C C, arranged vertically, guard-strips *a*, fixed to one edge of the channels, strips *a'*, arranged movable longitudinally on the other edge of the channels, and a lock for retaining the movable strip in its desired position, substantially as set forth and shown.

8. In combination with the channels C, the movable guard-strips *a'*, steps *b b* on said strips, the gate *c*, adapted to engage with said steps, and a lock for confining the strip *a'* in its position, substantially as described and shown.

9. In combination with the channels C C and gate *c*, the movable guard-strip *a'*, provided with the step *b*, adapted to engage with the gate, and the registering apparatus R, actuated by said guard-strip, all constructed and combined to operate substantially as specified and shown.

292,904. IRONING-BOARD. ROBERT W. FERGUSON, Decatur, Ill., assignor to William B. Clark and Frazier W. Nevius, both of same place. Filed Apr. 9, 1883. (No model.)



Claim.—1. The combination, with the body of the board, of the flap hinged thereto, and having a grooved front edge and a pivoted clamp-wire, substantially as described.

2. The combination, with the body of the board, of the flap hinged thereto, and a wire having its ends pivotally connected to the body of the board, said wire forming a clamp for the flap, substantially as described.

3. The combination, with the body of the board, of the flap hinged thereto, and a clamp-wire having its ends driven obliquely into the board, said board being cut away near the ends of said wire, substantially as and for the purposes set forth.

4. The combination, with the board and the eyes or sockets, of the wires B, bent substantially as shown, and having their inner ends embedded in the board and their outer ends upturned and movably held in the eyes, substantially as described.

292,905. PLAITING-MACHINE. ROBERT W. FERGUSON, Decatur, Ill., assignor to William B. Clark and Frazier W. Nevius, both of same place. Filed July 25, 1883. (No model.)

Claim.—1. The combination, with the board, of a frame provided with tapes and adapted to be removably fitted to said board, substantially as described.

2. The combination, with the board having pivot-pins, of the tape-frame having sockets to fit over said pins, substantially as described.

3. The combination, with the board having pivot-pins and having a groove in each of its side edges, of a tape-frame, substantially as described.

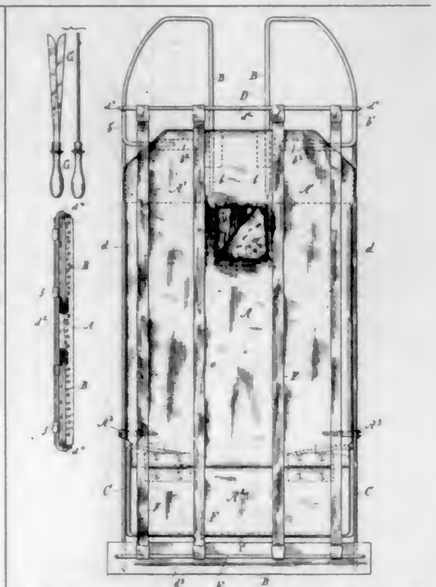
4. The combination, with the board, of the tape-frame having end bars to sustain the tapes, and having side bars adapted to fit over the board and act as springs to tighten the tapes, substantially as described.

5. The combination, with a board having pivot-pins placed centrally of its side edges, and having double grooves in its side edges, of a tape-frame, constructed substantially as described.

6. The combination, with the board having springs B, of the tape-frame bent, as at d^4, to clasp said springs, substantially as described.

7. The combination, with the board having expanded portions A' with grooved side edges, of the pivoted tape-frame adapted to enter the grooves, substantially as described.

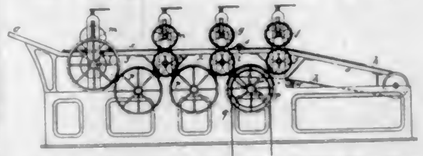
8. The combination, with the side-bars and end bar of the tape-frame, of the strip d^3 and the tapes E, substantially as described.



9. The combination, with the board having narrow flap A^3 and clamp-wire C, of the pivoted tape-frame D, adapted to fit over said board and flap, substantially as described.

10. In a plaiting-machine, a plaiting-knife having two blades, the ends of which are cut away in reverse directions, substantially as described.

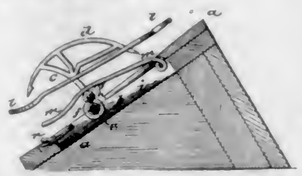
292,906. CAKE AND CRACKER MACHINE. ISAAC GOODMAN and LOUIS F. WOTTER, New York, N. Y. Filed Nov. 27, 1882. (No model.)



Claim.—1. The combination, in a cracker and cake machine, substantially as hereinbefore set forth, of a pair of kneading-rolls, *l m*, a pair of kneading, drawing, and delivering rolls, *n n*, having greater speed than rolls *l m*, a pair of printing rolls, *g i*, a pair of cutting-rolls, *f j*, having endless cutters, substantially as described, the stationary plates *y z* between the kneading and printing rolls, respectively, the endless carrier *h* between the printing and cutting rolls, and connecting and actuating mechanism, substantially as described.

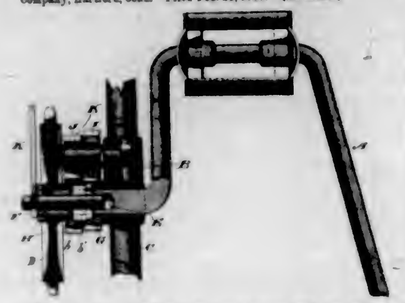
2. In a cracker-machine, the combination of the printing-rolls *g i*, endless carrier *h*, stripping-rod *s*, the cutting-rolls *f j*, and connecting and operating mechanism, substantially as described.

292,907. GRAIN-BINDER. HENRY GUYER and LUKANUS F. KING, Pole, Ill. Filed Feb. 24, 1883. (No model.)



Claim.—In a grain-binder of the character described, the combination of the binder-arm carrying the friction-rollers with the pivoted compressor-arms *m m*, adapted to operate substantially as and for the purposes specified.

292,908. VELOCIPEDE. CHARLES F. HADLEY, Chicopee, Mass., and ALBERT H. OVERMAN, Hartford, Conn., assignors to the Overman Wheel Company, Hartford, Conn. Filed Feb. 28, 1883. (No model.)



Claim.—1. In a velocipede, the combination, with the pedal-shaft and a chain-wheel loosely secured thereon, having an interiorly-slotted pinion rigidly secured to it, of the independent sliding locking device adapted to engage the slotted pinion, and means for actuating said device, whereby the said chain-wheel is thrown out of and into connection with the shaft.

2. In a velocipede, the combination, with a slotted pedal-shaft and a chain-wheel loosely mounted thereon, of a locking-pin arranged within said shaft, a pinion loosely mounted on said shaft, and gearing interposed between said chain-wheel and the bearing of the shaft, substantially as set forth.

3. In a velocipede, the combination, with the pedal-shaft and a chain-wheel loosely mounted thereon, of the gearing, the locking-pin, and the means for actuating the said pin, whereby the said wheel may be directly connected with said shaft to turn therewith or indirectly connected with the shaft, substantially as set forth.

4. The combination, with the pedal-shaft provided with a hollowed or socketed end, a pin resting in said socketed end and provided with a feather, and means for moving the pin longitudinally, of a chain-wheel loosely journaled on the shaft, a pinion rigidly secured to the chain-wheel, a pinion loosely journaled on the shaft, and intermediate gears connecting the wheel on the shaft and the wheel on the chain-wheel.

5. The combination, with the pedal-shaft having a hollowed or socketed end, a feathered pin working in said slot, and a lever for moving the pin, of a chain-wheel loosely secured on the shaft, a slotted pinion rigidly secured to the chain-wheel and surrounding the shaft, a slotted pinion loosely journaled on the shaft, and two gear-wheels rigidly secured together and adapted to mesh, respectively, with the loose pinion on the shaft and the rigid pinion on the chain-wheel, substantially as set forth.

6. The combination, with the shaft A and bearing B, of the chain-wheel D, feathered pin F, and the pinions G I J H, all of the above parts combined and adapted to operate as described.

7. The combination, with the pedal-shaft having holes and the pedals fitted thereon, of collars having corresponding holes and pins or equivalent devices for connecting them with the shaft for securing the pedals, said collars being adapted to be adjusted to compensate for the wear, substantially as set forth.

292,909. CASE FOR PENCILS. JOHN C. HARING, Jersey City, N. J. Filed Dec. 5, 1883. (No model.)

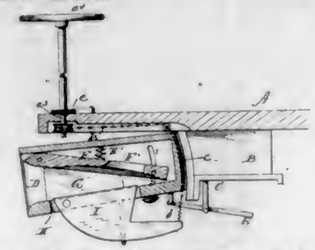


Claim.—1. The combination, with the receiver and a carrier furnished with a pin or lateral projection, of a fixed guide within the receiver and a movable guide between the receiver and carrier, the two said guides having between them a passage for the said pin or projection on the carrier, and a spring and pressure-cap for operating said movable guide for opening and closing said passage, substantially as herein described.

2. The combination, with the receiver and a carrier furnished with a pin or lateral projection, of a fixed guide within the receiver, a movable guide between the receiver and carrier, and a spring and pressure-cap applied to the said movable guide, the said guides comprising straight and inclined portions, and being notched for the passage and stoppage of the said pin or projection, substantially as herein described.

3. The combination of the receiver A, the carrier B, having a projection, *a*, the stationary and movable notched guides E D^2, having a passage, *c c c*, between them for the said projection, the pressure-cap, and the spiral spring, substantially as herein described.

292,910. CAR-COUPLING. JOHN McD. HARPER, Colfax, Wash. Filed Nov. 8, 1883. (No model.)



Claim.—1. In a car-coupling, the combination, with the car or platform having a block secured to its under side, the front end of which is provided with a dovetailed flange, of a draw-head having a corresponding dovetailed groove to receive the dovetailed flange of said block, and a lever pivoted to the under side of the said block, its end being secured to the under side of the draw-head, whereby the said draw-head is rendered vertically adjustable, substantially as set forth.

2. The combination, with the draw-head slotted on its under side, of a coupling-hook pivotally secured in the forward end of said slot, a coiled spring secured to the rear end of said hook, a chain secured to said spring, a pulley journaled to the under side of the car, and a shaft having a drum and hand-wheel and mounted in the forward end of the platform, said chain being secured to said drum and adapted to be wound thereon, substantially as set forth.

3. The combination, with the draw-head having blocks or stripe secured on its inner sides, of a latch pivoted in the forward end of said draw-head and slotted at its rear end, and a coupling-hook pivoted in a slot in the draw-head, substantially as set forth.

4. The combination, with the draw-head having blocks or stripe secured on its sides, of a latch pivoted in the forward end of said draw-head and slotted at its rear end, an angular rod secured to the side of said latch, and extending through an opening in the side of the draw-head, an alarm secured to the under side of the draw-head, and a coupling-latch, substantially as set forth.

5. The combination, with the draw-head slotted on its under side, of a coupling-latch pivoted in the forward end of said draw-head, and having a spring secured to its rear end, a chain connecting said spring and the shaft *e*, and a U-shaped bracket secured to the under side of the draw-head to limit the downward movement of the coupling-hook, substantially as set forth.

292,911. POSTAL-BAG RACK. CHARLES R. HARRISON, Fond du Lac, Wis. Filed Dec. 5, 1883. (No model.)



Claim.—1. In a postal-bag rack, the combination of a movable section or sections opening either way, with the fixed rack-sections *x x*, substantially as and for the purposes set forth.

2. The combination, in a movable rack-section, of the platform A, casters *a a*, elliptic hinge-eye *d*, pivot *e*, cam *f*, and block *g*, substantially as shown, for the purpose specified.

3. The combination, in a postal-bag rack, of the hook B, having a mortise, *b*, in its shank, and ring, with the pins or pegs C in the rack-rod *y*, substantially as shown, for the purpose specified.

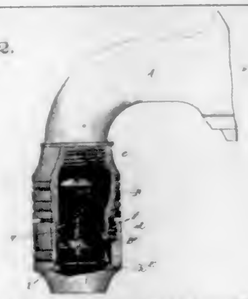
4. The hook B, having in its ring and shank the transverse mortise *b*, substantially as shown, for the purpose specified.

292,912. WATER-FILTER. JOHN E. HEATH, Albany, N. Y., assignor of one-half to Henry L. Smith, same place. Filed Aug. 16, 1883. (No model.)

Claim.—1. In a water-filter, the shell composed of the upper section and lower section, constructed substantially as shown and described, and containing within its uppermost section a vertically-arranged filtering-hood attached to a valve adapted to close and open annular opening *e* between the lower portion of said section and the base of the hood, and containing within its lowermost section the valve which supports the hood, the said valve being centrally perforated, and supported from the lower section by a base, which is perforated in its sides and lower end for communication from both the interior of the hood and upper chamber to the interior of the lower chamber, accordingly as said valve is raised or lowered, for operations as set forth.

2. In a water-filter, the combination, with hood-stand E, supported in a seat made in lower section, B', provided with a coupling screw-thread, of upper section, B, containing a water-pressure chamber, and

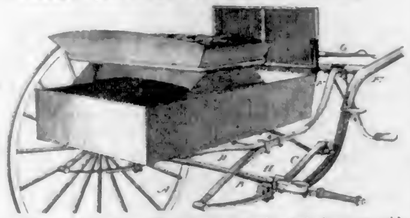
292,912.



having centrally-perforated diaphragm *d* and screw-threaded nib, and inclosing a water-filtering hood attached to the perforated platform of said hood-stand, for operations substantially as set forth.

3. In a water-filter, the combination, with upper section, B, containing a pressure-chamber, and provided with a centrally-perforated diaphragm, *d*, and screw-threaded nib *f*, of the lower section, B', containing a wash-chamber, and having seat *k* and screw-thread *g*, the said sections being unitedly adapted to clamp the perforated stand which supports the filtering-hood and the valve which closes the central perforation in diaphragm *d*, and release said perforated stand and lower the valve carried by the same, for alternately changing the direction of the passage of the water from the pressure-chamber to the wash-chamber, accordingly as the lower section is raised or lowered, substantially as and for the purposes set forth.

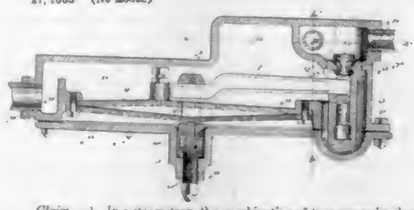
292,913. TWO-WHEELED VEHICLE. HENRY H. HEER and JOHN F. SCHONERT, Fayettaville, Ind. Filed Oct. 10, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle having its body supported by a set of regular platform-springs, the combination of the jointed connections of springs to cross-bar of shafts, with the journal-connections to the axle, and with the journal-boxes, the upper half of which are constructed with beveled projections, all as described and shown.

2. In a two-wheeled vehicle, the combination of a journaled axle with a journal-box having a flanged projection, substantially as described, and for the purpose specified.

292,914. STEAM-TRAP. JOHN C. HENDRY, Boston, Mass. Filed Aug. 27, 1883. (No model.)



Claim.—1. In a steam-trap, the combination of two expansion-bars with a valve-actuating lever having its fulcrum and one arm connected with the said bars, and the valve connected with the other arm of the said lever, substantially as described.

2. In a steam-trap, the expansion-bars and valve-actuating lever connected therewith, combined with the fulcrum-adjusting device, substantially as and for the purpose described.

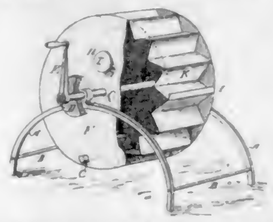
3. In a steam-trap, the main chamber or casing provided with inlet and outlet openings, and a partition separating the said openings, having two independent passages, combined with an automatically-operated valve controlling the flow of fluid through one of the said passages, and a hand-operated valve controlling the flow of fluid through the other of the said openings, and affording an independent discharge of the fluid to the outlet of the main casing, substantially as described.

4. In a steam-trap, the main casing provided with inlet and outlet openings, and a partition separating them, combined with the tubular slotted valve-holder provided with an annular groove, and the valve and valve-stem provided with cup-shaped recesses, to operate substantially as described.

5. In a steam-trap, the case provided with inlet and outlet openings, and a valve to control the flow of fluid therethrough, combined with a bent expansion-bar, abutments supporting it at its ends, and the valve-actuating lever having one arm connected with the before-mentioned valve and its other arm connected with and actuated by the lateral movement of the expansion-bar between its ends, substantially as described.

6. In a steam-trap, the main chamber or casing provided with inlet and outlet openings, and a partition separating the said openings, having two independent passages, one above the level of the other, the said casing on the inlet side of the said partition having a depressed portion constituting a sediment-chamber, combined with an automatically-operated valve controlling the flow of fluid through the higher of the said passages, and the hand-operated valve controlling the flow of fluid through the lower of the said passages, whereby the sediment may be blown from the sediment-chamber into the outlet-passage of the main chamber, substantially as described.

292,915. CHURN. ORRIN HENRY, Port Andrew, Wis. Filed July 2, 1883. (No model.)



Claim.—In a churn, the rotating body composed of the disks or ends F, provided with suitable openings at one end, as shown, in combination with the step-like or corrugated periphery K, having the turned-up blades L, to form buckets, whereby water-power may be applied to rotate the same, substantially as herein set forth.

292,916. SUBMARINE BOAT. JESSE JOPLING, near Longwood, Mo.; Monroe Jopling Executor of said Jopling, deceased. Filed June 6, 1883. (No model.)

Claim.—1. In combination with a cylindrical portion of a boat of the form described, and having tapering or conical ends, the straight metallic keel-rail B, bolted externally to said cylindrical portion, having each end tapered, as described, so as to furnish a broad and stable bearing for the boat when resting on the ground, and also a support for lower end of guide-rod D, as set forth.

2. In combination with the bottom of a boat, a tube extending through a ball in the bottom of the boat, and having out-and-in movement, said ball being mounted in a ring, so as to have universal movement and permit the ready manipulation of the tool, substantially as described.

3. In combination with a submarine boat, the improved level-indicator, consisting of the bar and semicircle suspended in forked arms, and the pendulum suspended from said bar, substantially as and for the purposes hereinbefore described.

4. In combination with a submarine boat, an air-pump with mouth-piece and tubes to withdraw the air immediately as it is exhaled from the lungs of the crew, and force it through a receptacle of lime-water or similar substance, substantially in the manner stated.

5. In combination with a submarine boat provided with an air-pump, and means, such as described, for purifying air, a face cap or cup to cover the nose, mouth, and chin of a person, said cap or cup divided into two parts by a partition, the part next the face having valves opening inward, and the partition having a valve opening toward the air-pump, as set forth.

6. In combination with a submarine boat, a tube leading to the outside of such boat, connections, substantially as described, for operating the indicator, and a clock-work indicator having hands to indicate in feet the depth of submersion, and a rotating hand to indicate the water-log and running-level of the boat, and the direction and rapidity of vertical motion, substantially as described.

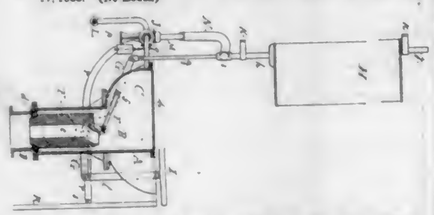
292,917. POCKET-KNIFE. FRIEDRICH WILHELM KALDENBACH, Solingen, Prussia, Germany, assignor to Alexander Coppel, same place. Filed Aug. 6, 1883. (No model.)



Claim.—1. The herein-described pocket-knife, consisting of the sheath or handle A, having a slot, *h*, in its back, the sliding blade B, having a vertical opening and horizontal opening intersecting therewith, the spring *f*, seated in the latter, and the push-pin having the body *a*, neck *b*, head *d*, and bottom projections, *c*, as and for the purpose set forth.

2. The combination of the sheath or handle A, having a slot, *h*, in its back, provided with one or more enlargements, *i*, with the sliding knife-blade B, having a locking-pin consisting of the body *a*, neck *b*, head *d*, and bottom lugs, *c*, and the spring *f*, bearing upon said pin, as and for the purpose set forth.

292,918. WATER-CLOSET. JOHN KELLY, Chicago, Ill. Filed Mar. 17, 1883. (No model.)



Claim.—1. In a water-closet, a vertically-movable service-tank arranged to operate the soil-valve by its differential gravity, in combination with said soil-valve and connections thereto, substantially as set forth.

2. In a water-closet, the vertically-movable service-tank automatically filled and emptied through a valve controlled by the seat, and operating the soil-valve by its differential gravity, in combination with said valves and connections thereto, substantially in the manner set forth.

3. In a water-closet, the combination of the vertically-movable service-tank H, the water-supply valve, and a flexible pipe by means of which the tank and valve are made to communicate, and the soil-valve, all connected together, in a manner substantially as described, so as to open such valve by the overbalance of water in the tank, as set forth.

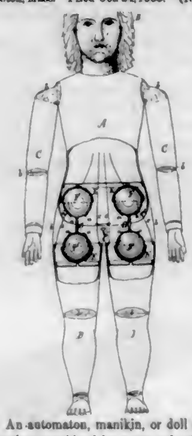
4. In a water-closet, the soil-valve plunger E, arranged within a cylinder, B, that is hermetically closed on top, in combination with said cylinder B, an arm F, shaft *f*, stuffing-box *c*, and operating-lever G, all substantially as set forth.

5. In a water-closet, the lever G and arm F, both secured upon a rocker-shaft, *f*, the tank H, supported on lever G, and the soil-valve plunger E, coupled to arm F, and arranged so that such empty tank H is lifted by the greater gravity of the plunger, but when filled such tank will overbalance and lift the plunger, all constructed and combined substantially as set forth.

6. In a water-closet, the combination of the cylinder B, provided with the transverse shaft *f*, with the plunger E, arm F, connected to plunger and pivoted on shaft *f*, lever G, tank H, supported thereby, and swinging seat I, said lever being provided with standard *l*, which is in contact with the swinging seat I, substantially as set forth.

7. In a water-closet, the stop-cock J, as described, communicating with the vertically-moving service-tank H through flexible pipe N, and with bowl A through pipe M, in combination with said parts and with the beam *o*, weight *p*, arm *r*, shaft *s*, standard *u*, and seat I, all constructed and arranged to operate as herein set forth.

292,919. MANIKIN, AUTOMATON, OR JOINTED DOLL. CARL AXEL KIELGREN, Boston, Mass. Filed Oct. 24, 1883. (No model.)

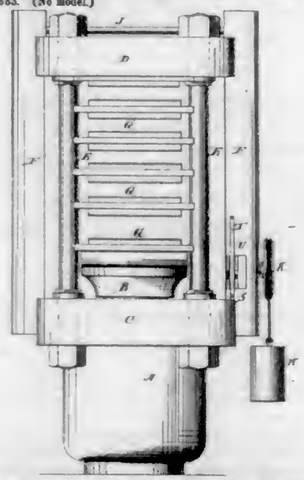


Claim.—1. An automaton, manikin, or doll having any two of its parts jointed together, combined by means of a duplex ball-joint, substantially, and arranged with them, as described.

2. The described duplex ball-joint, essentially as set forth, consisting of the two balls, their connecting-shank, and the two cups, arranged with the balls and having prongs to lap on them, as explained.

3. The combination, in a manikin or doll, of two members or parts thereof connected by a duplex ball-joint, as set forth, with a cloth or flexile covering extended from one to the other of such members or parts, and inclosing the space between them, and with one or more flexile wires projecting from the edge of one of such members or parts through a guide or guides in the other and arranged with the said covering, substantially as set forth.

292,920. PRESS. CORNELIUS KEPPLER, Chicago, Ill., assignor to himself and the North Western Fertilizing Company, same place. Filed Nov. 26, 1883. (No model.)



Claim.—1. The combination of the casings or hollow columns F F', having the movable slides within them, with the base and cap plates C D of a press, substantially as and for the purpose described.

2. The combination of two or more slides, P, with the casings F F' and plates G, substantially as described.

3. The combination of the sprocket-wheels N, mounted upon suitable shafts, with the chains O, movable heads or blocks *m*, having pins *n*, and the slides P, having inclined grooves *o*, substantially as set forth.

4. The combination of the shaft K, the gear-wheels L M, shaft I, sprocket-wheels N, and shafts J and I', substantially as specified.

5. The combination of the ratchet-wheel *a* with the broken-gear wheel *c*, spring-dog *h*, segment-lever T S, and a spring or weight, substantially as described.

6. The combination of the segment-lever T S, the broken-gear wheel *c*, ratchet-wheel *a*, dog *h*, and wheels L M for rotating the shaft I, substantially as set forth.

7. The combination of the ratchet-wheel *a* with the pawl or dog *b*, sliding bar R, having the notch *i* with the latch *j*, and lever or projection *l*, substantially as specified.

8. The combination and arrangement of the shaft K and spring or weight with the segment and lever T S, broken gear *c*, ratchet-wheel *a*, pawls *h b*, gear-wheels L M, shaft I, sprocket-wheels N, chains O, shafts J I', movable heads or blocks *m*, having pins *n*, and slides *p*, having cams or inclines *o*, all constructed and operating substantially as and for the purposes described.

9. The slide P, having the rear support, *q*, incline or cam groove *o*, and projections *p*, substantially as specified.

292,921. COTTON-LAP. RICHD. KITSON, Lowell, Mass., assignor to the Kitson Machine Company, same place. Filed May 2, 1882. (No model.)

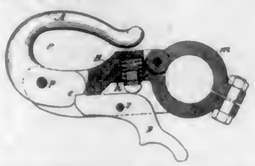
Brief.—A lap of substantially equal thickness and straight edge throughout.



Claim.—1. A cotton-lap in proper form to feed to a carding-machine, having a substantially straight edge and equal thickness in all its parts, substantially as described.

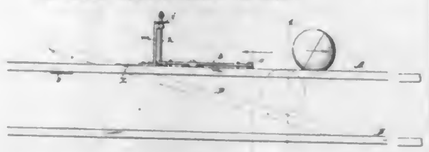
2. A cotton-lap of substantially equal thickness in all its parts, having a straight edge formed upon it without cutting any of its fibers, substantially as described

292,922. TRACE-HOOK. OTTO LAMPE, Hamburg, Germany. Filed Nov. 10, 1883. (No model.)



Claim.—The combination of the body or stock B, provided with a recess in its under side, the nose or beak A, pivoted in the body or stock, and provided at its rear end with the notch *a*, the double-armed catch-lever D, arranged longitudinally of the body or stock, pivoted in the recess in the under side thereof, and at its forward end engaging with the notch *a*, and the spring *h*, arranged between the under side of the body or stock and the upper side of said lever, all substantially as herein described.

292,923. STORE-SERVICE APPARATUS. WILLIAM S. LAMSON, Lowell, Mass. Filed Dec. 10, 1883. (No model.)

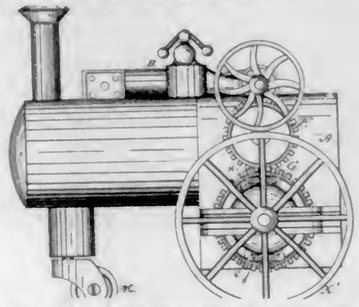


Claim.—1. In a cash-service apparatus having graduated carriers, the combination of a main track, branch track extending to stations of the store, switch devices for locking the same in one position, and appliances arranged to be moved by the carriers to be switched and to thereby cause the switch to assume a position to direct the carriers onto the other track, substantially as set forth.

2. The combination of the main track, side track, switch pivoted that it may be brought to coincide with either track, lock, and appliances whereby to unlock and change the position of the switch by the action of some of the carriers, while others are permitted to pass onward upon the main line.

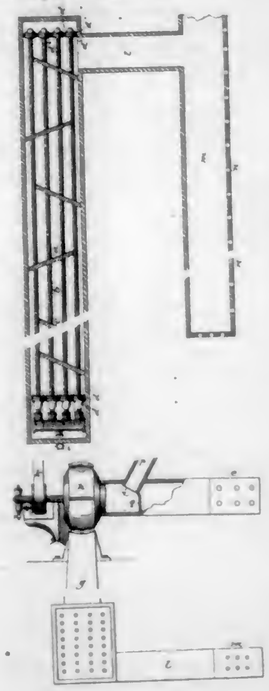
3. The combination, with the track of a store-service apparatus, of a pivoted switch-section, and locking device constructed to be operated by the momentum of special carriers to unlock said section and permit the same to move under the weight of the carrier, substantially as specified.

292,924. TRACTION-ENGINE. CHARLES J. LEACH and ALLEN OLDS, Hartford, Mich. Filed Apr. 17, 1883. (No model.)



Claim.—The road-engine herein described, consisting of the boiler A, having the bearing-plates A' A^2, and the sleeve L, passing through the boiler and engaging the bearing A^2, and provided with the rigid gear-wheel I and drive-wheel L', the axle K, journaled in the sleeve and bearing A', and having the rigid gear-wheel J and drive-wheel K', the gear-wheel G, provided with pinions H H, mounted loosely on the axle between wheels I J, and the nut *x* on the end of the axle, to secure the mechanism together, as shown and described.

292,925. REFRIGERATING-MACHINE. CHARLES B. LEE, Galveston, Tex. Filed Oct. 22, 1883. (No model.)



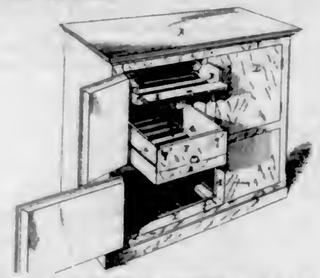
Claim.—1. A refrigerating-box having a detachable top and hinged sides, a series of pipes for containing the refrigerant, arranged within said box, and a series of partitions extending alternately from opposite sides nearly across the box, for causing the air to be cooled to make a long circuit in passing through the box, substantially as and for the purposes described.

2. A refrigerator-box having a series of refrigerant-pipes extending longitudinally through it, each pipe being connected at each end with a connecting-pipe by means of separate flanges, and the end pipes connected by flanges with supply and discharge pipes, whereby any one or more of the pipes may be taken out or replaced without interfering with the operation of the machine, substantially as and for the purposes described.

3. In combination with a refrigerator, a perforated cold-air-distributing box in the lower part of the room, a perforated air-box in the upper part of the room, and suction-fan for withdrawing the warm air from the room and forcing it through the refrigerator and the cold-air box and out into the room, substantially as and for the purposes described.

4. The suction-fan having a valve, and arranged in connection with a fresh-air pipe, and a pipe leading from the upper part of the room, in combination with a refrigerator and an air-distributing box, whereby the air may be drawn from the outside or from the room at will, substantially as and for the purposes described.

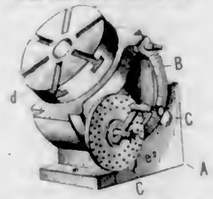
292,926. REFRIGERATOR. JOEL LINSLEY, Burlington, Vt. Filed Dec. 6, 1883. (No model.)



Claim.—1. In a refrigerator, the combination of a sliding provision-section with suitable spring-stops to limit its outward movement, a wide bottom bar to close the opening between its interior and the provision-room when the section is drawn out as far as the stop will permit, and suitable elastic packing to prevent the escape of air around it, substantially as described.

2. A sliding provision-section in a refrigerator, in combination with suitable flush-rollers, *f*, on which it rests, a hinged end, F, in front controlled by suitable fastenings, *g*, suitable spring-stops, G, to prevent its being entirely drawn out, a rear bottom bar, H, of sufficient width, and suitable elastic packing, I, substantially as specified, and for the purpose described.

292,927. INDEX-HEAD FOR MILLING-MACHINES. CHARLES E. LEPE, Syracuse, N. Y. Filed June 8, 1883. (No model.)



Claim.—1. The combination of a head, substantially as described, capable of movement in the arc of a circle, and carrying the spindle of a work-holding table, with worm-gear mechanism, substantially as described, for revolving the table, and mechanism, substantially as described, for moving the worm in and out of gear.

2. In combination with base-piece A, the gear-wheel d^3, the worm-shaft E, the bushing *e'*, for adjusting the worm-shaft relatively to the gear-wheel d^3, and the set-screw H, for securing the shaft when adjusted, as described.

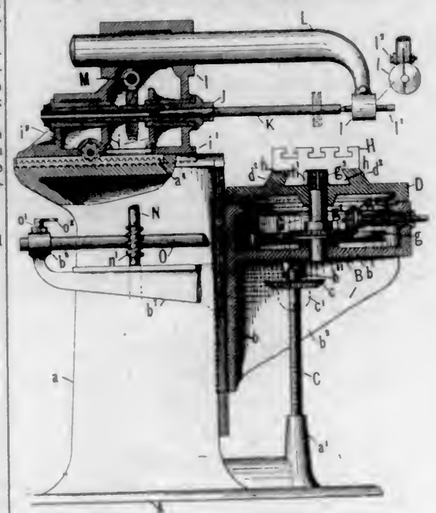
3. In combination with the base-piece A, the worm-shaft E, the cylindrical plug F, having the nut *f*, and the set-screw G, as described.

4. The base A, having the projections *a a*, in combination with the head B, having the recesses *b b*, and the securing-screw C, as described.

5. The machine described, consisting of the base-piece A, the swing-ing head B, with screws C C, for clamping the head to the base, the spindle D, with face-plate *d* and gear-wheel d^3, and the worm-shaft E, eccentric-bushing *e'*, with set-screw H, as set forth.

6. The combination of the following elements: the concave base-piece A, adapted to rest upon the bed of the machine, the convex head B, adapted to move in the arc of a circle upon the base-piece, and the spindle D and face *d*, adapted to revolve in the head B, as described.

292,928. UNIVERSAL MILLING-MACHINE. CHARLES E. LEPE, Syracuse, N. Y. Filed June 15, 1883. (No model.)



Claim.—1. In combination with the fixed box b' b^{rs} of the vertically-moving bracket, the cap D, adapted to revolve upon the box, and an expansible ring, substantially as described, adapted to clamp the cap to the box.

2. In combination with the fixed box and moving cap, the expanding ring E, adjusting-screw F, and nuts f f^2, adapted to clamp the cap to the box, as described.

3. In combination with the clutch-shaft Q, having the worm *q'*, and mechanism, substantially as described, for moving the shaft out of gear, the wheel *g*, vertical shaft G, pinion g^3, rack-bar *h'*, and the table H, as described.

4. In combination with the rack-bar *h'* of the work-table H, the shaft G, having the wheels *g*, *g'*, and g^3, as and for the purpose described.

5. In combination with the wheel *g* and shaft Q, with clutch *q* and worm *q'*, the movable journal-box, as and for the purpose described.

6. In combination with the shaft Q, with clutch *q* and worm *q'*, the movable journal-box q^2, and the actuating-spring q^3, the shaft, by the action of the spring, being moved upon the clutch-point as a pivot, as described.

7. In combination with the shaft Q, the movable journal-box q^2, the actuating-spring q^3, the lever q^6, and stud q^7, as and for the purpose set forth.

8. In combination with the horizontally-moving head I, the independently-adjustable arm L, as and for the purpose described.

9. The head I, having the chambers for oil, as described.

10. In combination with the vertical shaft N, having the worm *n'*, and mechanism, substantially as described, for actuating the same, the horizontal shaft O, having the wheel o^3, and the connecting-box P, for uniting the two together.

11. In combination with the horizontal clutch-shaft O, having the clutch mechanism *o* *o'* o^2 o^3 o^4 o^5 o^6, and receiving movement from a vertical shaft, the horizontal clutch-shaft Q, having the worm *q'*, as described.

12. In combination with a horizontal moving head and a vertically-moving bracket, a vertical shaft capable of lateral movement, a horizontal shaft capable of vertical movement, and a connection-box with contained gearing for uniting the shafts together, substantially as described.

13. In combination with the horizontal shaft O, capable of a longitudinal movement, and having the groove o^8, the vertical shaft *o'*, with handle o^9 and pin o^8, as described.

14. In combination with the mechanism, substantially as described, upon the main driving-shaft, for communicating movement, the vertical shaft N, the horizontal shaft O, and connection-box containing connect

ing-gearing, the shaft N being capable of lateral movement relatively to shaft O, and the shaft O being capable of vertical movement relatively to the shaft N, as described.

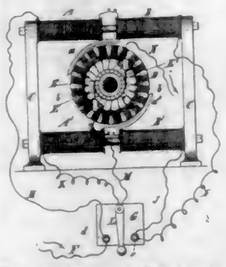
15. In a machine of the class described, a supporting-column provided with suitable sliding ways, combined with a vertically-adjustable knee or slide for holding work, a horizontally-adjustable head supporting the cutter-spindle, driving mechanism, substantially as described, and an automatically-adjustable connection, as described.

292,929. NECKTIE-FASTENER. JULIUS LOCHMAN, New York, N. Y. Filed Dec. 12, 1883. (No model.)



Claim.—The wedge-shaped fastening C, closed at its upper end and sides and provided with the button-slot D, as described, on its face, the lower end of the fastening being open, and said fastening being applied to the shield of a neck tie or scarf by lips cut thereon and penetrating the shield, substantially as set forth.

292,930. ELECTRIC MOTOR. ADOLPH E. G. LUBKE, New York, N. Y., assignor of one-half to Otto Heikel, Jersey City, N. J. Filed July 31, 1882. (No model.)



Claim.—1. The method herein specified of varying the speed of magnetic motors, in which the magnet-coils and armature-helices are connected in series by short-circuiting portions of the field-helices, to lessen the resistance and increase the speed of the armature, and lessen the power and the reverse, substantially as set forth.

2. In a magnetic motor, four helices wound, substantially as specified, to produce central N and S poles, and pole-pieces connected to the cores, in combination with the revolving armature and the switches, substantially as specified, for cutting out or short-circuiting the whole or portions of the field-helices, for the purposes set forth.

3. The combination, with the revolving armature and field-magnets, of the pole-pieces *a a'* at opposite sides of the armature, attached at one end to the field-magnet cores, and curved, and the outer ends nearest to the armature, substantially as specified.

4. In an electric motor, the combination of the field electro-magnets A A', the wires F H I, the contact-piece *c*, the switch-lever L, the wire M, armature D, commutator and brushes E E' E², and the wire N, substantially as specified.

5. In an electric motor, the combination of the field electro-magnets A A', the wire F, and contact-piece *d*, the wires H and I, the contact-piece *c*, the wires J K M, the switch-lever L, the armature D, the commutator and brushes E E' E², and the wire N, substantially as specified.

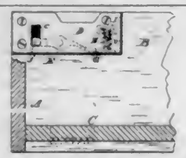
6. In an electric motor, the combination, with field electro-magnets, of the wires Q Q' and switches whereby their adjacent ends may be united, substantially as specified.

7. In an electric motor, the combination, with field electro-magnets, of the wires O O' P P' and switches whereby the same may be connected, substantially as specified.

8. The combination, in an electric motor, of a circular revolving armature, a surrounding frame, and the pole-pieces *a a'*, that are magnetized by induction, and which act with the pole-pieces of the armature, substantially as described.

292,931. END-GATE FOR WAGONS. JOHAN D. MACK, Salem, assignor of one-half to George H. Redway, Albany, N. Y. Filed Aug. 30 1883. (No model.)

Claim.—1. A fastener adapted to be secured to an end-gate of a wagon, consisting of a plate, D, having a slot or opening, *c*, for the passage of the catch-lip on the side of the wagon, and having pivoted thereto a vibratory or rocking lever, E, the end *f* adapted to enter a gate or channel in the catch-lip, and the opposite end, G, extended laterally to receive pressure from the fingers of the operator, substantially as hereinbefore set forth.



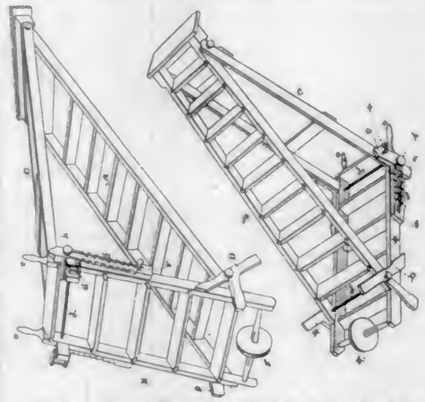
2. The plate D, provided with the pivoted lever E, formed as described, and having the slot or opening *c*, with the raised projection *d*, whereby the upward movement of the end *f* of the lever is limited, substantially as and for the purpose set forth.

3. In combination with the plate D and lever E, constructed and arranged as described, the box or keeper I, seat *o*, and spring H, whereby the lever is positively operated, substantially as hereinbefore set forth.

4. In combination with the end-gate of a wagon provided with the plates D and latch-levers E, as described, the catch-lips F, secured to the sides of the wagon, and formed with beveled sides and securing-channel, substantially as and for the purposes set forth.

292,932. ADJUSTABLE STEP-LADDER. EDWIN MARKWICK, Pinckney, Cal. Filed Oct. 30, 1883. (No model.)

Brief.—Consists of a two-part ladder hinged together and mounted upon a single wheel, and having a common back leg-brace connected with slotted extension-legs having ratchet-faces which are engaged by pawls.



Claim.—1. In an adjustable step-ladder, the ladder A and the hinged leg-braces C, forming two sides of a triangle, in combination with a ladder, B, hinged to the ladder A, and adapted to be secured to leg-braces C by means of the leg F and pins H, to form the third side of the triangle, substantially as herein described.

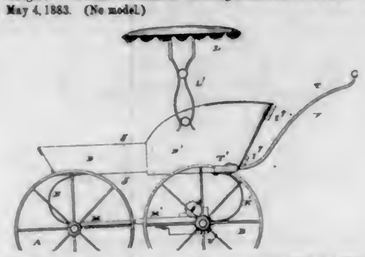
2. In an adjustable step-ladder, the ladder A and hinged leg-braces C, forming two sides of a triangle, in combination with the ladder B, hinged to the ladder A, and adapted to be secured to the leg-braces C by means of the leg F and pins H, to form the third side of the triangle, and a single-wheeled truck, upon which said ladder B is mounted, whereby the device may be transported and reversed to throw either ladder in position, substantially as herein described.

3. In an adjustable step-ladder, the longer ladder, A, and hinged leg-braces C, forming two sides of a triangle, in combination with the shorter ladder, B, hinged to the longer ladder, and adapted to be secured to the leg-braces to form the third side of triangle, the single wheel E on its forward end, the leg-frames D on its sides, and the handles *e* at its rear, substantially as herein described.

4. In an adjustable step-ladder, the ladder A, leg-braces C, and a base connecting the two to form a triangle, as shown, in combination with the independent sliding and swinging ratcheted extension-legs F on the base, and the pawls I, engaging therewith, substantially as herein described.

5. In an adjustable step-ladder, the ladders A B and leg-braces C, forming a triangle, as shown, in combination with the slotted extension-legs F, having ratchet-faces *f*, and cross-heads G, the pins H, the studs k, and the swinging ball-pawls I, all arranged and operating substantially as herein described.

292,933. CHILD'S CARRIAGE. THOMAS MCKNIGHT, Denver, Colo., assignor of one-half to James A. McGonigle, Leavenworth, Kans. Filed May 4, 1883. (No model.)



Claim.—1. A longitudinally and transversely divided child's carriage, hinged to fold together sidewise, the forward part telescoping into the rear part, as set forth.

2. In a child's carriage, the combination of the top, body, handle, and axles, all divided longitudinally and hinged together, as shown, the body, reach, and side bars all divided transversely, and the forward parts telescoping into the rear parts, as shown, and means for drawing the parts together simultaneously, as set forth.

3. A longitudinally and transversely divided child's carriage, the rear part of the body folding outward, the front part of the body folding inward, the top folding upward, the handle folding downward, the bottom of the rear part of the body folding upward, the axles folding rearwardly, and the front portions of the body, reach, and side bars telescoping into their rear portions, as set forth.

4. In a child's carriage, the body divided transversely and longitudinally, the divided ends being hinged together and to the sides, and the front part telescoping with the rear part, as set forth.

5. In a child's carriage, the body longitudinally and transversely divided, the transversely-divided parts sliding one in the other, and the bottom of the rear part being hinged to the sides of the body, and the bottom of the front part removable, as set forth.

6. A child's carriage having a folding top secured to its supporting-braces by spring-catches, substantially as and for the purpose set forth.

7. A child's carriage having its reach made in two parts, one of which is adapted to telescope the other, in combination with sectional axles, as and for the purpose set forth.

8. A child's carriage having is reach made in two parts, the front part adapted to telescope the other, which has a pivoted bottom with which the front part comes in contact and moves it back, substantially as and for the purpose set forth, in combination with the sectional axles, as described.

9. A child's carriage having its reach made in two parts, one secured to the front and the other to the rear axle, the former adapted to telescope the latter, and the latter having a hinged bottom adapted to have end movement, and to be moved endwise by the forward part of the reach, for the purpose set forth, in combination with the sectional axles, the rear axle having a pin adapted to come in contact with and raise the rear end of the pivoted bottom of the rear part of the reach, substantially as shown and described, for the purpose mentioned.

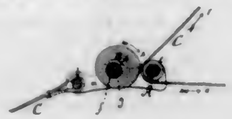
10. A child's carriage having a two-part reach, one of which is adapted to telescope the other, in combination with the spring secured to one part and adapted to engage in a hole in the other part to hold the two parts in their shipping position, substantially as set forth.

11. In a child's carriage, the combination of a sectional reach and sectional side bars, and the side bars having racks secured thereto, which are engaged by gearing connecting them with the rear wheels of the carriage, for the purpose set forth.

12. In a child's carriage, the combination of sectional reach and sectional side bars, the side bars having flexible racks secured thereto, which are engaged by gearing connecting them with the rear wheels of the carriage, for the purpose set forth.

13. In a child's carriage, the combination, with the sectional side bars and reach, and racks secured to the side bars, of the gearing engaging with the racks, and adapted to be held in or out of engagement with the rear wheels of the carriage by suitable pivoted dogs, substantially as and for the purpose set forth.

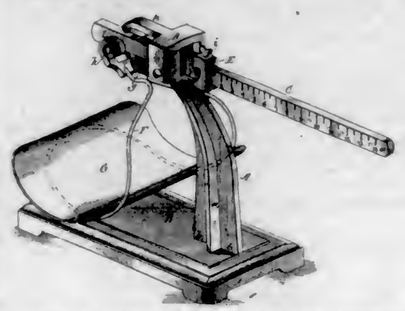
292,934. STRAP-CLAMP. EDMUND R. MENZEL, Jersey City, N. J. Filed May 10, 1883. (No model.)



Claim.—1. In a clamp having eccentrically-journaled roller B, the combination thereof with the spring *g* and with the rod *e*, substantially as specified.

2. The combination of the frame A, having rods *b d* and cheeks *a a*, with the eccentrically-journaled roller B and strap C, substantially as herein shown and described.

292,935. BALANCE. FREDRICK MEYER, Jr., Newark, N. J. Filed Dec. 13, 1883. (No model.)



Claim.—1. A suitable base provided with a slot, in combination with a column or standard, constructed substantially as described, and keyed to said base, a balance-beam provided with knife-edge projections having their bearing in said column or standard, and similar projections, forming a bearing for a pendulum cradle or pan, and a removable cap for the column or standard, having an extension forming a stop for the beam, as and for the purpose specified.

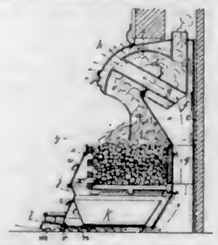
2. A pendulum cradle or pan formed, preferably, from a single piece, and provided with hooks, also preferably formed in one piece, in combination with a scale-beam having knife-edge projections forming bearings for the hooks of the cradle or pan, and similar projections at its center of gravity, a curved right-angularly-webbed column or standard keyed to the base, and provided with beam-bearings and stop at its upper end, and a cap removably secured to said column or standard, and having an extension forming an over-stop for said beam, substantially as shown, and for the purpose described.

292,936. FRUIT-PICKER. FRANK A. MOORE, Louisville, Ky. Filed Oct. 15, 1883. (No model.)



Claim.—In a fruit-picker, a bifurcated shank, one of the arms thereof being a spring-bar and the other curved, as described, in combination with two hoops, one being rigidly secured to each of said arms, a blade secured to one of said hoops, and a cord secured to one hoop, and passing through both hoops and over the curved shank, substantially as and for the purpose specified.

292,937. OPEN-FIRE STOVE AND HEATER. ALONZO R. MORGAN, New York, N. Y. Filed Dec. 5, 1882. (No model.)



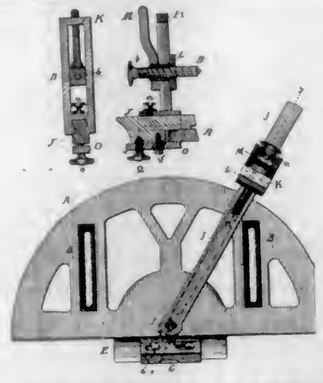
Claim.—1. In an open-fire stove having a distinctive reverberatory or expansion chamber, *d*, communicating with the top of the fire-box by the throat *e*, and having a downward extension from said throat, in which the products of combustion are received and materially retarded and ex-

panded before escaping into the chimney, the said expanding chamber having a tube or tubes arranged for conducting the air from the lower back part to the upper front part, in combination with an air-jacket surrounding the fire-box and expansion-chamber, and having a perforated jacket, through the openings of which the air is directly discharged from said tube or tubes, substantially as described.

2. In an open-fire stove or furnace, a removable guard-plate, *i*, for closing the lower portion of the front opening and supporting the blower for the upper portion of said front opening, the said guard-plate resting directly on the base-plate *n* of the stove, said plate having a groove in its upper surface for lodgment of said guard-plate therein, to securely maintain it in its proper relations with the fire-box front, substantially as described.

3. In an open-front stove or furnace having the guard-plate *i* resting on the low-down base-plate *n*, and having the air-passages *m* to the heating-jacket arranged in the front plate at the sides of the front opening, the said guard-plate *i*, for closing the lower part of the open front, having the outwardly-projecting top flange, *j*, to catch the droppings from the fire when the blower is removed, said outwardly-projecting top flange being extended upward and along the sides of the front opening to the front plate, said front plate having the said passages *m* below said projecting flange *j*, substantially as described.

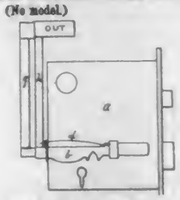
292,938. TOOL-HOLDER. ERASTUS D. MOSS, Defiance, Ohio. Filed Aug. 8, 1883. (Model.)



Claim.—1. In combination with the table A, the adjustable radial arm J, post K, and center D, adjustable on said post, substantially as and for the purposes set forth.

2. In combination with the table A, the radial arm J, slotted post K, center D, adjustable vertically on said post, and rest H, when constructed, arranged, and operating substantially in the manner and for the purposes specified.

292,939. INDICATING-LOCK. EUGENE C. NICHOLS, Bangor, Me. Filed July 10, 1883. (No model.)

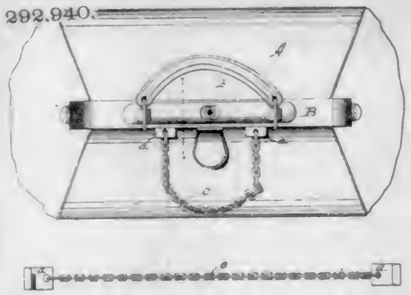


Claim.—1. A door-lock the bolt of which is provided with an arm or standard carrying an indicator-plate, in combination with a door provided with an opening which coincides with said plate when the bolt is in its locking position.

2. A door-lock having two locking-bolts, adapted to be operated from opposite sides of the door, each of said bolts being provided with an arm or standard carrying an indicator-plate, said plates arranged in the same line, in combination with a door having an opening which coincides with said plates, whereby either of said plates may be exposed according as the door is locked from the inside or the outside.

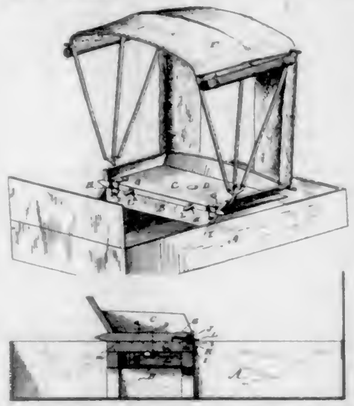
292,940. SAFETY ATTACHMENT FOR TRAVELING-BAGS. FRED. A. NICKERSON, Springfield, Mass., assignor of two-thirds to Charles M. Shedd and Henry A. Chapin, both of same place. Filed Mar. 10, 1883. (No model.)

292,940.



Claim.—As a new article of manufacture, a device for securing traveling-bags, consisting of a chain, *c*, having at each end a hook adapted to embrace one of the jaws of a traveling-bag, and to be secured between them when the jaws are locked, substantially as described.

292,941. BUGGY-TOP. DUDLEY NUNNELLEY, Keene, Ky. Filed Nov. 10, 1883. (No model.)

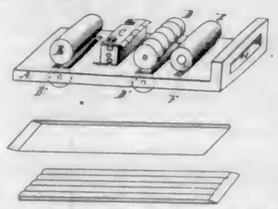


Claim.—1. In a vehicle, the seat-supporting frame, in combination with the seat pivoted thereon, and spring-plates secured to the seat and engaging with the upper face of the said frame, so as to automatically hold the said seat at any portion of its revolution, as set forth.

2. In a vehicle, the seat-supporting frame, in combination with the seat pivoted thereon and carrying a top, a link connected to the seat at each end, and hooking over projections or studs secured to the front face of the seat-supporting frame, as and for the purpose set forth.

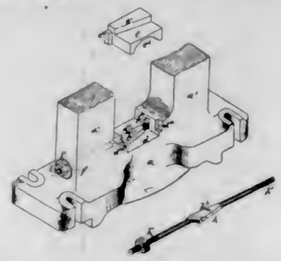
3. In a vehicle, the seat-supporting frame, in combination with the seat pivoted thereon and carrying a top, and plates provided with pointed projections, and adapted by spring-pressure to engage with the upper face of the seat-supporting frame, as and for the purpose set forth.

292,942. BASKET-SPLINT MACHINE. SAMUEL OAKMAN, Melrose, Mass. Filed Nov. 19, 1883. (No model.)



Claim.—In a machine for making wicker-work splints, the combination of the feed-rolls B B', the cutter-head C, whereby the riven wood is formed into a sheet, flat on one side and cut nearly through by corrugations on the other side, with the corrugated feed-roll D, smooth-roll D', pressure-roll E, and series of knives F, all arranged to operate substantially as described, and for the purpose set forth.

292,943. ROLLING-MILL. DAVID B. OLIVER, Allegheny, Pa. Filed Sept. 3, 1883. (No model.)



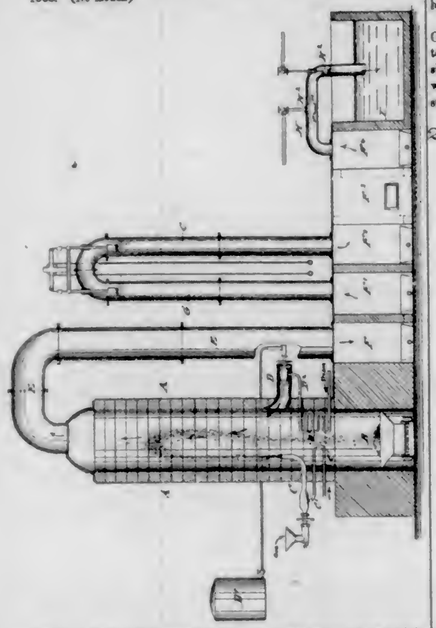
Claim.—1. The combination, in a rolling-mill, of a roll and its bearings with an adjustable wedge placed horizontally back of the bearing at right angles to the axis of the roll, to take up the wear of the bearings and prevent end motion of the rolls, substantially as and for the purposes described.

2. The combination, in a rolling-mill, of a roll having adjustable bearings provided with inclined end surfaces, in combination with adjusting-wedges arranged back of the bearings and at right angles to the axis of the rolls, to operate in conjunction with the inclined end surfaces of the bearings, substantially as and for the purposes described.

3. The combination, in a rolling-mill, of the roll and its bearing *a* with the seat *d*, lateral wedge A, arranged back of the bearing, stems A', and standards *a'*, substantially as and for the purposes described.

4. The combination, in a rolling-mill, of a roll and its bearing with an adjusting-wedge arranged back of the bearing, and a bearing-seat having a shoulder or vertical side for supporting the wedge, substantially as and for the purposes described.

292,944. DESULPHURIZING-FURNACE. HENRY E. PARSON and GEORGE V. NORTHEY, New York, N. Y., assignors, by mesne assignments, to Thomas J. Powers, Trustee. Filed Mar. 19, 1882. Renewed July 12, 1883. (No model.)



Claim.—The combination, in a desulphurizing-furnace, of an upright shaft, an ore-injector near the bottom of the shaft, consisting of an ore-pipe provided with an upwardly-directed nozzle, and an air-blast pipe connected with said ore-pipe, a hydrocarbon-injector having an upwardly-directed discharge opposite the ore-injector, a receptacle at the bottom of the shaft for the coarse ores, a series of settling-chambers for the finer ores, a pipe connecting the top of the shaft with said settling-chambers, and an exhausting device, substantially as described.

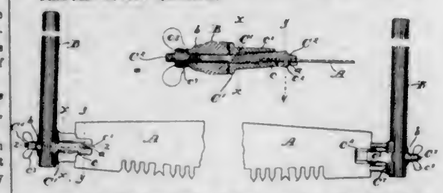
292,945. VEHICLE-SEAT. ALBERT M. PLIMPTON, Horsellsville, N. Y. Filed Dec. 8, 1883. (No model.)



Claim.—1. The combination of the bottom-board A, beveled as desired, the back-board B and end-boards C, miter-jointed to each other, the dowel-pins *b*, projecting at right angles to said joint, and the corner-irons D, having the flanges *d* embedded in the upper edges of said back and end boards, substantially as shown and described.

2. The combination of the back-board B and an end-board, C, with a corner-iron, D, having downwardly extending and diagonally-disposed flanges *d*, substantially as shown and described.

292,946. SAW-HANDLE. ROBERT E. POINDEXTER, Indianapolis, Ind. Filed June 29, 1883. (No model.)

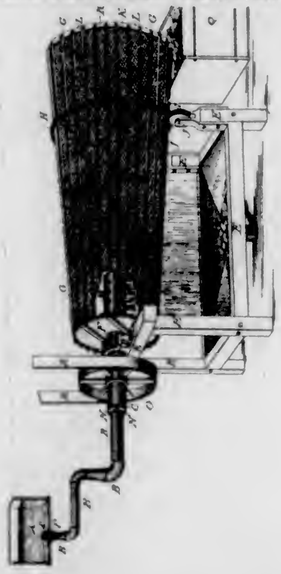


Claim.—1. The combination, with the saw A and handle B, of the fastening composed of the combined hook and wedge bolt C^2 and the device C', which, together with said bolt, is adapted to clamp and hold the saw-blade, substantially as set forth.

2. The combination of the saw A, handle B, device C', and hook-bolt C^2, provided with thumb-nut c^2, substantially as set forth.

3. The combination, with the saw A and handle B, of the device C', having portion *c* extending out on one side of the saw, and bifurcated to pass the projection c^3 and the portion *c'* extending out on the other side of the saw, to form a bearing for the wedge-bolt, and the combined wedge and hook-bolt C^2, having projection c^3 and thumb-nut c^2, substantially as shown and specified.

292,947. PAPER-PULP-SAVING MACHINE. JAMES T. PORTER and HORATIO A. PORTER, Holyoke, Mass. Filed Oct. 27, 1883. (No model.)



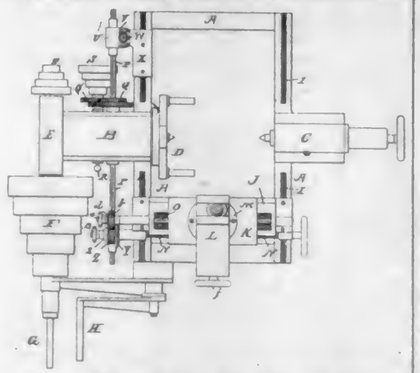
Claim.—1. The combination, with the revolving screen or save-all and the stuff-box, of a pipe projecting above the bottom of the said box, and connecting the same with the save-all, and a perforated screen, into which said pipe discharges, and which is connected with the head of the said revolving screen or save-all, so as to rotate therewith, substantially as set forth.

2. The combination, with the frame E and the rotary screen or save-all, of the encircling band H and one or more grooved pulleys, I, supported by said frame, and adapted to receive said band, substantially as set forth.

3. The combination, with the rotary screen or save-all, of the hollow shaft C, connected with the head thereof, the pipe B, entering said shaft, and the securing-nut N, substantially as set forth.

4. The combination, with the stuff-box A, of the pipe B, projecting above the bottom of the said box, and the check-nuts P P, for adjustably securing said pipe in place, substantially as described.

292,948. PULLEY-LATHE. GEO. T. REISS, Hamilton, Ohio, assignor to the Niles Tool Works, same place. Filed May 29, 1883. (No model.)



Claim.—1. The combination, in a pulley-lathe having its main driving-shaft arranged at right angles to its spindle, of a pair of shifting-rails provided with longitudinally-arranged feed-screws, a splined feed-shaft arranged parallel to the main driving-shaft, mechanism for transmitting motion from the main driving to the splined feed shaft, and suitable gearing adapted to transmit motion from the splined feed-shaft to said feed-screws, substantially as and for the purpose set forth.

2. The combination, in a pulley-lathe having its main driving-shaft arranged at right angles to its spindle, and a pair of shifting-rails provided with feed-screws, of the splined shaft P, provided with gearing suited to transmit motion to the said feed-screws, the gears Q on the splined shaft, the clutch-gears Q', the clutch-mover R, and the belt-cones S and T, substantially as and for the purpose set forth.

3. The combination, in a pulley-lathe, of a pair of shifting-rails provided with longitudinally-arranged feed-screws, bevel-gears loose on said screws, friction-clamps for said bevel-gears, a splined feed-shaft arranged at right angles to the rails, and mechanism for transmitting motion from said splined shaft to said bevel-gears, substantially as and for the purpose set forth.

4. The combination, in a pulley-lathe having a pair of shifting-rails and a splined feed-shaft, of feed-screws on the rails, a bevel-gear on each of the said feed-screws, a bevel-pinion for each of said bevel-gears, mechism for transmitting motion from said splined shaft to the bevel-pinions, and a bracket fitted to support each pinion and to shift along the splined shaft as the rails are shifted, substantially as and for the purpose set forth.

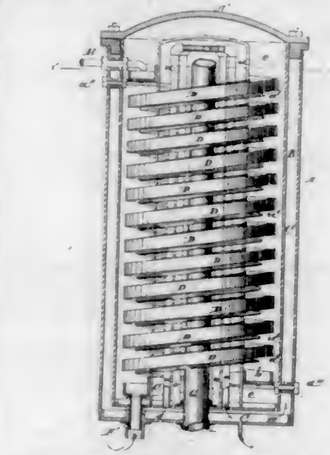
5. The combination, in a pulley-lathe having shifting-rails with feed-screws driven through bevel-gearing by a splined shaft arranged at right angles to the rails, of the extension W of the shaft carrying the bevel-pinion V, and the rail provided with the bearing-hole *r* for said extension, substantially as and for the purpose set forth.

6. The combination, in a pulley-lathe having shifting-rails with feed-screws driven through the medium of gearing by a splined feed-shaft arranged at right angles to the rails, of the bracket U, fitted to slide on the splined shaft and provided with flange X, adapted to be clamped between rail and the frame of the lathe, substantially as and for the purpose as set forth.

7. The rail-screw N, bevel-gear Y, friction-clamp *a*, and thrust-collar *p* within the friction-clamp, combined substantially as specified.

8. The rail-screw and rail-rod, the intermeshing gears thereon, the friction-clamps thereon, and the hand-nuts to the friction-clamps arranged with the rim of one nut located in the neck of the other nut, combined substantially as specified.

292,949. APPARATUS FOR CONDENSING OR DRYING LIQUIDS. NATHANIEL B. RICE, Chicago, Ill., assignor to Christian Wahl, same place. Filed July 26, 1883. (No model.)



Claim.—1. In a liquid condensing or drying apparatus, the removable continuously-descending channel D, substantially as and for the purpose specified.

2. The combination of the removable channel D with the steam-pipes *a*, substantially as described.

3. The combination of the removable channel D with the casing A B, cover A', and steam-pipes *a*, constructed and operating substantially as described.

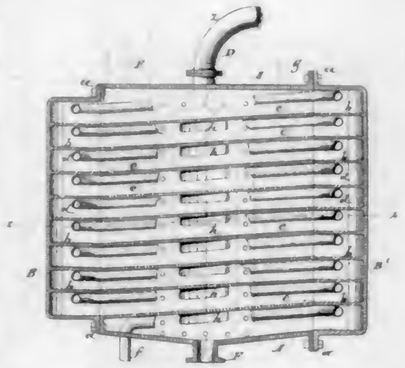
4. The combination of the exhaust-pipe G with the steam-pipes *a*, casings A B, and the removable channel D, substantially as specified.

5. The combination of the removable channel D and the removable coil *a'* with the outer case, A B, substantially as described.

6. The combination of the removable channel and pipe D *a'* with the outer case and the vertical pipes *a*, substantially as specified.

292,950. APPARATUS FOR CONDENSING OR DRYING LIQUIDS. NATHANIEL B. RICE, Chicago, Ill., assignor to Christian Wahl, same place. Filed July 26, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 250,694, dated December 13, 1881.



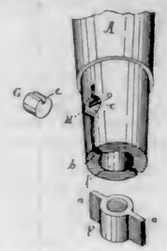
Claim.—1. The casing A B B', in combination with the channel-bottoms *b c* and the division-plate G, whereby the continuous channel is brought into a compact space and the channel is formed without risers or flanges attached to the channel-bottoms, substantially as specified.

2. In an evaporating apparatus, the steam-pipes *d e*, located beneath the bottom of a channel and out of contact with the contents of the channel beneath, whereby the channels and contents are heated without the contact of the steam pipes or passages with the liquid, substantially as described.

3. The combination of the vertical passage C with the casing A, having the side openings, A, and the exhaust-passage D, substantially as specified.

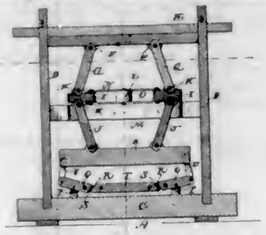
4. The central section, A, having the steam-pipes attached to it, in combination with the removable end sections, whereby the device may be opened without detaching the pipes, substantially as described.

292,951. SAW-HANDLE. CHRISTOPHER RICHARDSON, Newark, N. J. Filed Nov. 24, 1883. (No model.)



Claim.—The combination, with the handle A, having the hole I and radial slots *b*, of the nut F, constructed with wings *a*, and the stops inserted in the handle beneath the wings to retain them in place, substantially as set forth.

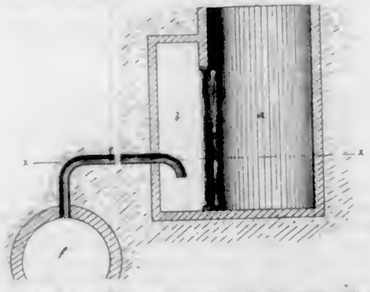
292,952. BALING-PRESS. GEORGE W. ROBBERTS, Elmo, Tex., assignor of two-thirds to John E. Polk and Henry K. Hart, both of same place. Filed Apr. 4, 1883. Renewed Jan. 9, 1884. (No model.)



Claim.—1. In a baling-press, the combination of the sill having uprights or fulcrums, levers mounted upon the latter, a follow-block connected to the inner ends of said levers by loose joints, a vertically-sliding follower, rods connecting the outer ends of said follower with the outer ends of the levers, and mechanism for operating the follower, substantially as described.

2. In a baling-press, the combination of the follower moving vertically above the sill, levers pivoted to uprights or fulcrums upon the sill, and having inner beveled ends, a follow-block loosely jointed between the inner ends of said levers, and having beveled ends registering with the beveled ends of the levers, whereby close joints are formed, rods connecting the outer ends of the levers with the follower, and suitable operating mechanism, substantially as described.

292,953. CESSPOOL-WELL. WILLIAM ROWBOTTOM and JOHN M. ROWBOTTOM, Allegheny, Pa. Filed June 22, 1883. (No model.)



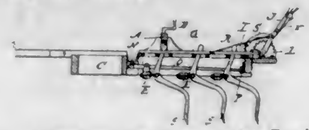
Claim.—The combination of the well *a* with the auxiliary chamber *b*, grating *d*, discharge-pipe *e*, and sewer *f*, substantially as and for the purposes described.

292,954. KEY-TAG. JOHN C. RUSSELL, Boston, Mass., assignor to Tobias New, New York, N. Y. Filed July 13, 1882. (No model.)



Claim.—As a new article of manufacture, a key-tag bearing an imprint of a central point of delivery, a statement of a reward to be paid, and a serial number indicating ownership, substantially as set forth.

292,955. WHEEL-HARROW. ANDREW SCHAFFER, Detroit, Mich. Filed Aug. 1, 1883. (No model.)



Claim.—1. The frame C, having transverse bars E, and the teeth F, pivoted to such bars E, and having their upper ends projecting between the bars of the sliding frame G, the spring locking device M N, the said sliding frame G, and means, substantially as described, for manipulating all the teeth simultaneously, and for locking the frame G in its rearward position with the teeth in operation, as set forth.

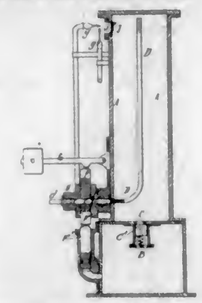
2. In combination with the frame C, harrow-teeth F, and sliding frame G, constructed substantially as described, the locking device M N, adapted to be elevated and depressed simultaneously with the movements of the sliding frame by means of the levers O and P and connections with the lever operating the sliding frame, substantially as specified.

3. In combination with the frame C, teeth F, frame G, rod I, lever J, and quadrant L, the levers O P, link R, arm S, and springs N, substantially as described.

292,956. COMPOUND FOR PRESERVING THE SOLES OF BOOTS AND SHOES. MAX SCHÜTZ, Fort Lee, N. J. Filed Aug. 21, 1883. (No specimens.)

Claim.—A compound for preserving the soles of boots and shoes, which consists of twenty-five parts of shellac and twenty-five parts of alcohol, mixed with fifty parts of boiled linseed-oil.

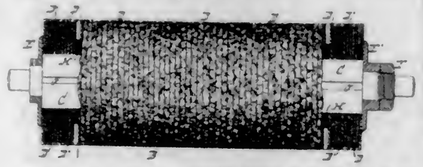
292,957. APPARATUS FOR PRODUCING COMPRESSED AIR. JAKOB SCHWEIKER, Soleure, Switzerland. Filed Mar. 5, 1883. (No model.) Patented in France Jan. 12, 1883, No. 153,068.



Claim.—1. In an apparatus for compressing aeriform fluids, the combination of the explosion-chamber, provided with a valved aperture to admit air at its upper part, the gas-supply pipe, arranged as shown, and the valve aperture opening into the reservoir for the compressed fluids, the said reservoir provided with the piston F', the valve F, the weighted lever G, the valve E, the jet *g*, and means, substantially as described, for actuating the valve E and for causing the flame *g* to enter the explosion-chamber and ignite the gases therein, all arranged to operate substantially as set forth.

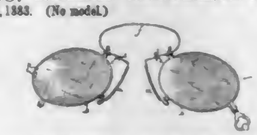
2. The combination, in an apparatus for compressing aeriform fluids, of the upright explosion-chamber A, provided with a valved aperture, I, at its upper part, for the admission of air, and a valved aperture, C, at its lower part, for the passage of the compressed fluids to the reservoir B, the gas-supply pipe D, with its upper end perforated and arranged in the upper part of the explosion-chamber A, the reservoir B, the jet *g*, and means, substantially as described, for regulating the influx of gas and air to the explosion-chamber, whereby the explosion in the upper part of chamber A effects the compression of the fluids in the lower part of said chamber without the intermediation of the piston, substantially as set forth.

292,958. ROLLER FOR IRONING-MACHINES. HAMILTON E. SMITH, New York, N. Y. Filed Feb. 17, 1883. (No model.)



Claim.—The combination, substantially as herein set forth, of the axial shaft, the two alternating series of fibrous disks on the shaft having different diameters, and the larger disks having the edges napped or carded, and the end heads of the shaft.

292,959. EYEGLASSES. JOHN S. SPENCER, New York, N. Y. Filed May 16, 1883. (No model.)



Claim.—The nose-pieces A, having their lower parts bowed and secured in place, and their upper parts bent toward the glasses and to form the shoulders, said bent part and shoulder being of equal width and strength throughout, in combination with the bridge-piece, the ends of which are of equal proportions, and have applied thereon the sockets *d*, in which the unreduced upper ends of the nose-pieces are retained and have free play, substantially as set forth.

292,960. BUTTON-FASTENER. EDWARD D. STEELE, Waterbury, Conn. Filed Dec. 13, 1883. (No model.)



Claim.—As an improved article of manufacture, the herein-described button-fastener, consisting of the plate or table *a*, having two or more sharp prongs, *b*, and a curved neck or loop, *d*, provided with a half-circular head, *c*, having recesses *f*, substantially as and for the purpose specified.

292,961. BICYCLE. HIRAM STRAIT, Troy, N. Y. Filed Oct. 26, 1883. (No model.)



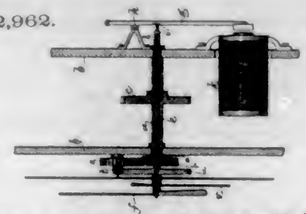
Claim.—1. In a bicycle, the fork prolonged or extended below the axle, the lower end of the extension of the fork being extended upward, so as to connect with the axle, as and for the purpose set forth.

2. In a bicycle, the fork prolonged or extended below the axle, and upwardly-extending arms connecting with the lower end of the fork, as set forth.

3. In a bicycle, the fork prolonged or extended below the axle, and upwardly-extending arms connecting with the lower end of the fork, the axle passing through openings or slots formed in the arms and the fork, as set forth.

4. In a bicycle, the fork prolonged or extended below the axle, upwardly-extending arms connecting with the axle, and a link, chain, or equivalent device connecting the arms to the fork, as set forth.

292,962. DEVICE FOR SYNCHRONIZING CLOCKS. CHARLES N. TALBOT, Flushing, N. Y. Filed Nov. 26, 1883. (No model.)



Claim.—1. The combination, with the clock and its hands, of a frictional connection between the minute-hand arbor and the clock-work, and an electro-magnet to liberate the frictional connection and allow the hand to assume its true position by gravity, substantially as set forth.

2. The combination, in a clock, of an arbor, a minute-hand upon the same, a frictional connection between the arbor and the clock-work, and an electro-magnet, and armature-lever to give end motion to the arbor and liberate the frictional connection, substantially as set forth.

292,963. FINGER-RING. OTTO THIE, Union, N. J. Filed Nov. 19, 1883. (No model.)

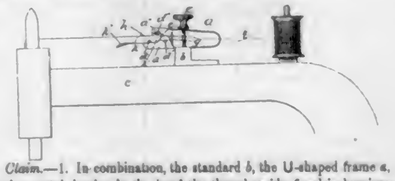


Claim.—1. As a new article of manufacture, the ring A, having cavity *a*, adapted to receive perfume, and the cover *b*, and means for permitting the diffusion of said perfume from out of said cavity, substantially as specified.

2. The combination of ring A, having cavity *a*, with cover *b*, perforated at *d*, substantially as specified.

3. The combination of ring A, having cavity *a*, with cover *b*, perforated at *d* and carrying stone *c*, substantially as specified.

292,964. TENSION DEVICE FOR SEWING-MACHINES. JOHN THOMSON, Hartford, Conn. Filed Nov. 1, 1883. (No model.)



Claim.—1. In combination, the standard *b*, the U-shaped frame *a*, of spring metal, having in the bend the thread-guide *f* and in bearings between its free ends the rolls *d d' d''*, the tension-adjusting screw *e*, and the thread-guides *g* and *h*, located on opposite sides of the tension-rolls, all substantially as described.

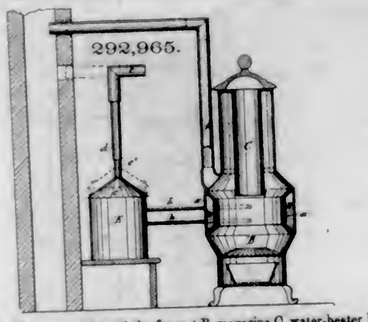
2. In a tension device, the combination of the U-shaped spring-frame *a*, bearing between its free ends the tension-rolls *d d' d''* and in its bend the thread-guide *f*, with the lever *k*, having its fulcrum on the trunnions of one of the rolls and an arm bearing against the trunnions of the opposite roll, whereby the upper and lower rolls may be held out of contact, and the adjusting-screw *e*, all substantially as described.

3. In combination, the bent spring-frame *a*, with the thread-guide *f* in the bend, the tension-rolls *d d' d''*, supported in bearings on the free ends of the frame, the adjusting-screw *e*, the thread-guide *g*, secured back of the rolls, and the lever *k*, bearing the thread-guide *h* in front of the rolls, all substantially as described.

4. In combination with the spring-compressed tension-rolls *d d' d''*, arranged as shown, the lever *k*, having its fulcrum on the extended shaft of one of the nests of rolls, and an arm bearing against the shaft of the opposite roll, whereby the upper and lower rolls may be held out of contact, all substantially as described.

292,965. APPARATUS FOR HEATING AND MOISTENING TOBACCO-HOUSES. MICHAEL TOBIN, Baldwinsville, N. Y. Filed Mar. 31, 1883. (No model.)

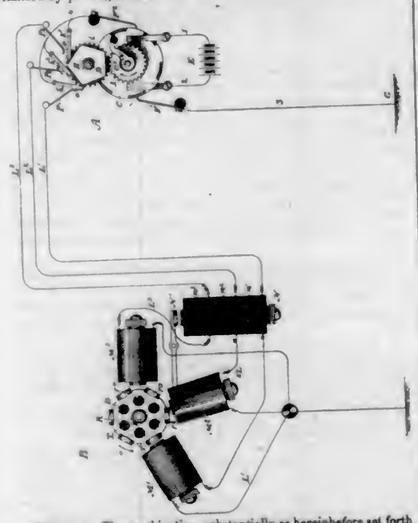
Claim.—1. In a tobacco-assorting room, the combination of a stove or furnace, a water-heater connected therewith, a tank communicating with the water-heater by water-pipe and steam-pipe, and a steam-distributing pipe extended from the tank and having its discharge end adapted to be turned to throw the steam either into or out of the sampling-room, substantially as described and shown.



2. The combination of the fire-pot B, magazine C, water-heater D, steam-receiver E, removable cover *c*, steam-duct *d*, provided with the telescopic joint *d'*, and having its discharge end adapted to be turned into or out of the assorting-room, substantially as described and shown, for the purpose set forth.

292,966. PRINTING-TELEGRAPH. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Apr. 30, 1883. (No model.)

Brief.—Static discharge neutralized by making the successive currents to each motor-magnet of opposite polarity. Printing-magnet N vitalized by prolonged current.



Claim.—1. The combination, substantially as hereinbefore set forth, of a battery, a motor-armature, a series of electro-magnets for actuating said armature, a series of electric conductors respectively including the coils of said electro-magnets, and means, substantially such as described, for transmitting electric currents from said battery upon each of the conductors in succession, and for reversing the polarity of each succeeding current thus transmitted.

2. The combination, substantially as hereinbefore set forth, of a battery, a series of electro-magnets, a series of electric conductors in which the coils of said electro-magnets are respectively included, and means, substantially such as described, for transmitting electric impulses from said battery upon each of the said conductors in succession, and for causing the impulses transmitted upon each conductor to be of the opposite polarity or direction from that of the preceding impulse transmitted upon the same conductor.

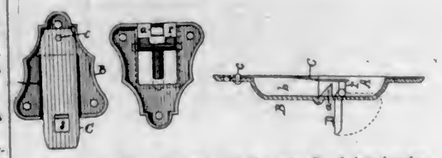
3. The combination, substantially as hereinbefore set forth, of a battery, a series of line-conductors, means for transmitting electric impulses of alternate positive and negative polarity upon said conductors in recurring succession, an electro-magnet constructed with a series of independent coils, which coils are respectively included in the circuits of said line-conductors, and an armature applied to said electro-magnet, and responding only to a prolonged impulse transmitted through one or more of said coils.

4. The combination, substantially as hereinbefore set forth, of a battery, a pole-changing device, a series of electric conductors, a series of circuit-closers respectively applied thereto, and means, substantially such as described, operated by the movement of said pole-changing device to actuate one of said circuit-closing devices at each reversal of said battery through the action of said pole-changing device.

5. The combination, substantially as hereinbefore set forth, of a revolving pole-changer, a revolving polygonal cam mechanically connected therewith, a series of contact-springs, and a series of contact-arms successively caused to impinge each against one of said contact-springs by the action of said cam.

6. The combination, substantially as hereinbefore set forth, of a revolving pole-changer, a polygonal cam, three contact-arms respectively impinging upon the peripheries of said cam, and three contact-springs, against which said contact-arms are successively caused to impinge by the action of said cam.

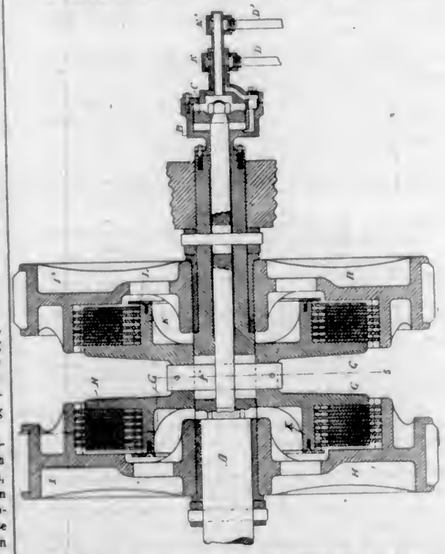
292,967. TRUNK-CATCH. JAMES WATLAND, Newark, N. J. Filed June 21, 1883. (No model.)



Claim.—1. The combination, with the casing B and slotted spring-tongue C, of the casing A, formed with hook *a*, slot *t*, and sockets *n n*, and provided with the lever D, having pivots *d* and bit or bits *r*, the lever being constructed to detach the spring from the book when elevated, and being held in its elevated position by the pressure of the spring only until the tongue C is withdrawn, substantially as herein shown and described.

2. The construction for the bearings of the lever D in the casing A, consisting in the combination, with the sockets *n n*, of the malleable lugs *s*, cast at one side of the socket and bent over the same to inclose the pivots of the lever, as herein shown and described.

292,968. REVERSING MECHANISM FOR ROLLING-MILLS. THOS. A. WESTON, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed Nov. 24, 1883. (No model.)



Claim.—1. In combination with the rolls, clutch-shaft A, and loose reversing clutch-wheels I of a rolling-mill, two Weston friction-disk clutches, pressure-plates, piston-rod, and operating fluid-pressure cylinder, substantially as and for the purpose described.

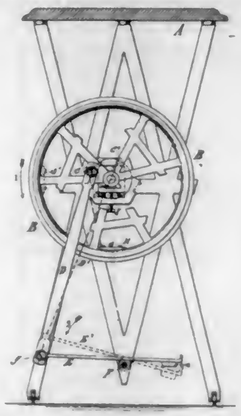
2. The combination, with shaft A, of a clutch-wheel, I, a Weston friction-disk clutch, and a single pressure-plate, G, piston rod and cylinder for operating the same, substantially as described.

3. The combination of a clutch-wheel, I, a Weston friction-disk

clutch, and a pressure-plate, G, provided with nub K and guard-ring L, substantially as described.

4. The combination of a clutch-wheel, I, a Weston friction-disk clutch provided with notches or cut-away portions N and O, for the circulation of air and water, substantially as described.

292,969. DEVICE FOR POISING TREADLE-AND-CRANK MOVEMENTS. JAMES H. WHITNEY, Brooklyn, N. Y. Filed July 6, 1883. (No model.)



Claim.—1. The mode herein shown and described of balancing the crank-motion for sewing-machines, which consists in equipoising the weights acting on opposite sides of the treadle-fulcrum by weighting the forward end of the treadle, and then applying to the fly-wheel a preponderating weight, G, for the purpose set forth.

2. In a crank-movement for sewing-machines, a treadle, E, provided beneath its forward end with a weight, *e*, in combination with the pitman D and with a fly-wheel, B, having a counter-weight, G, substantially as and for the purpose set forth.

3. The combination of the treadle E, provided at its forward end with a weight, *e*, the pitman D, and the fly-wheel B, having a counter-weight, G, said weight being adjustable in position.

4. In combination with the fly-wheel of a sewing-machine, the weight G, provided with slots *g*, and the screws H, passing through the said slots into the rim of said wheel, for securing and adjusting the position of the said weight, for the purpose set forth.

5. In combination with the frame A of a sewing-machine stand, and with the fly-wheel bearing *a*, having elastic support *i*, an adjustable stop, I, limiting the downward movement of the said bearing.

292,970. SPRING-MOTOR. HENRY B. WHITTAKER and GEORGE F. GODLEY, Philadelphia, Pa. Filed Nov. 28, 1883. (No model.)

Claim.—1. A spring-motor having an attachment, substantially as shown and described, for connecting it to the operating-shaft of the driven machine, as set forth.

2. The combination, with an operating-shaft of a driven machine, of a spring-motor and interposed detachable connecting mechanism, substantially as shown and described.

3. The combination, with a driven shaft having an end eccentric pin or stud, of a spring-motor shaft carrying a star or recessed wheel for engagement with said pin, substantially as shown and described.

4. A spring-motor provided with a detachable eccentric device for engagement with the operating or other shaft of the driven machine, substantially as shown and described.

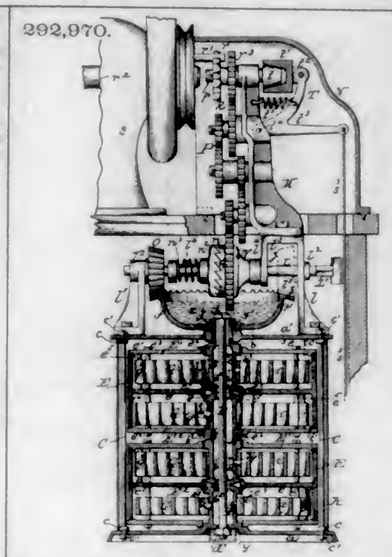
5. A spring-motor shaft, *p*, provided with a brake composed of a cone and correspondingly-recessed bearing-block and mechanism for controlling its action, substantially as shown and described.

6. In a spring-motor, the shaft *p*, having a brake composed of a cone and a block fitting thereon, and secured to a pivoted lever having mechanism which acts to normally engage the parts of the brake, substantially as shown and described.

7. A spring-motor brake, T, composed of a friction-wheel, *t*, recessed block t', lever t^2, spring t^3, and a treadle mechanism for controlling the action of the brake, substantially as shown and described.

8. A spring-motor having a brake attachment with operating-lever, and a treadle mechanism composed of a pivoted foot-piece, *s*, and bar s', having adjusting apertures or points of connection s^2, as and for the purpose set forth.

292,970.



9. In combination with a spring-motor having bracket attachment M, the removable casing V, substantially as shown and described.

10. In a spring-motor, the end or last shaft, *p*, carrying a brake attachment and an engaging device for the driven shaft of the device to be operated by the motor, substantially as shown and described.

11. A spring-motor having a shaft, *p*, with end brake, T, and recessed or star wheel R, substantially as shown and described.

12. A spring-motor having a driving-shaft, L, arranged to serve as a winding-shaft, substantially as shown and described.

13. In a spring-motor, the shaft L, carrying loose wheel N, clutch *n*, pinion *o*, and having a winding end, L', substantially as shown and described.

14. A spring-motor shaft, L, arranged substantially as shown and described, and provided with a transferable pinion, O, whereby said shaft may be rotated in reverse directions, and the motor adapted for right-and-left operating or driven machines, substantially as shown and described.

15. In combination with a spring-motor, the shaft L, supported in standards *l l'*, the latter having a seat, l^3, of a bracket, M, carrying multiplying-wheels, a brake attachment, and connecting devices, substantially as shown and described.

16. In a spring-motor, the standard *l*, having seat l^3, lug l^4, and space l^5, substantially as shown, and for the purpose set forth.

17. In a spring-motor, the combination of a shaft or arbor having projecting studs, a cage having rods or posts, and springs having in one end a recess or depression terminating in an opening, and the other end being bent or made hook shape, whereby the springs may be loosely secured to the arbor and cage, substantially as shown and described.

18. A spring-motor composed of a sectional arbor, revolving cages, and interposed springs, each of which has its ends connected to its respective arbor-section and cage on opposite sides of the same, substantially as shown and described.

19. A spring for motors, having an opening in one end and an opposite bent or hooked end, substantially as and for the purpose set forth.

20. A spring for motors, having a depression terminating in an opening at one end and an opposite hooked or bent end, substantially as shown and described.

21. The spring G, having hooked end g^2 and depression *g*, with opening g', as shown and described.

22. A spring-motor having a hollow sectional mandrel with a central stationary supporting-rod, substantially as shown and described.

23. In a spring-motor, an arbor composed of tubular sections having rounded ends, as and for the purpose set forth.

24. A spring-motor having an arbor composed of tubular sections having rounded ends, and a central supporting-rod, substantially as shown and described.

25. In a spring-motor, the arbor B, having shoulder *b*, and the arbors B' B^2, having bearings b^2 b^3 for cages E E, substantially as shown and described.

26. In a spring-motor, a spring-shaft composed of a series of hollow arbors having collars b' b^1 and bearings b^4, substantially as shown and described.

27. In a spring-motor, the hollow sections B, B', and B^2, having oil cups or spaces at their junctions and a surrounding bearing for cages E, substantially as shown and described.

28. In a spring-motor, the hollow sectional mandrel B', having inner flanged ends with central opening or play space, b^7, and exterior bearing-collars, b^2, b^4, and b^5, with shoulder b^4, substantially as shown and described.

29. In a spring-motor, a hollow sectional arbor, a central support therefor, and means for lubricating the bearings of the arbors or sections and the cages, substantially as shown and described.

30. In a spring-motor, the sectional shaft A, carrying a lubricant-reservoir, and means for conveying the lubricant to the inside of shaft A, substantially as shown and described.

31. The combination of spring-shaft A, carrying wheel F, and lubricant *x*, the loose supporting-rod D, and retaining-nut d'', substantially as shown and described.

32. The cage E, having removable top and bottom plates or arms and screw-connections therefor, substantially as shown and described.

33. The cage E, having removable top and bottom plates, and central plate, *e*, having oppositely-located spring-connections e^2, substantially as set forth.

34. In a spring-motor, the mode of inserting the springs in the barrels or cages and securing the ends of the springs to the cages and arbors, which consists in first coiling or winding the spring, then temporarily locking it in its wound or nearly wound-up condition, then inserting it in the cage, then securing its ends to the arbor and cage, and then releasing or unlocking the spring, as set forth.

35. A spring-motor provided with springs of varying capacity, substantially as shown and described.

36. A spring-motor having sectional spring-shaft made cam or eccentric shape in cross-section, as and for the purpose set forth.

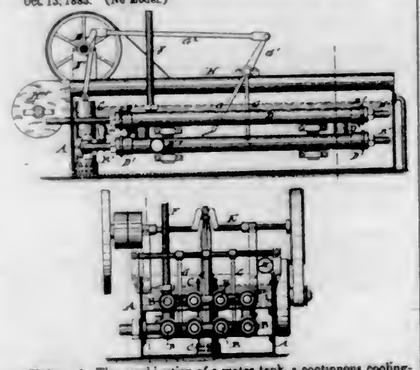
37. A flexible case or covering, K, for spring-motors, having interlocking or hooked ends *k k'*, substantially as shown and described.

38. In a spring-motor, the combination of a hollow shaft or arbor, a barrel, and an intervening spring or springs having detachable end connection with said shaft and barrel, substantially as shown and described.

39. A spring-motor having a sectional spring-shaft carrying springs of different capacity, and cages for the springs, substantially as shown and described.

40. In a spring-motor, the combination of a sectional shaft, revolving cages, springs connected to said shaft and cages, a driving and winding shaft, and a train of multiplying-wheels terminating in a shaft carrying a brake and an engaging attachment, as set forth.

292,971. BEER-COOLER. VALENTIN WILHELMI, Paterson, N. J. Filed Oct. 13, 1883. (No model.)

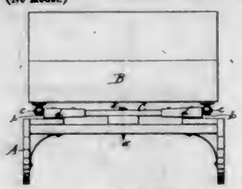


Claim.—1. The combination of a water-tank, a continuous cooling-pipe, a circulating-pump located in the tank and connected to one end of said cooling-pipe, exterior inclosing-pipes submerged in the water-tank, and supply and discharge pipes to conduct the fermented liquor to and from the exterior pipes, substantially as set forth.

2. The combination of a water-tank, cooling-pipes connected by semicircular end sections, a circulating-pump connected to said cooling-pipes, exterior pipes inclosing the cooling-pipes, and an oscillating agitator, substantially as specified.

3. The combination of a water-tank, cooling-pipes connected by semicircular end pipes, a circulating-pump connected to said cooling-pipes, exterior pipes inclosing the cooling-pipes, a perforated air-distributing pipe extending along the side wall of the tank, and an air-forcing apparatus connected to said air-pipe, substantially as set forth.

292,972. SLEIGH. WILLIAM H. WIDNEY, Meridian, N. Y. Filed Nov. 19, 1883. (No model.)

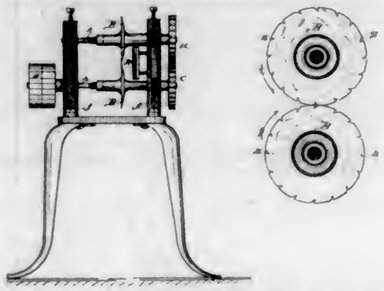


Claim.—1. In a sleigh, the body connected with the bolster by an oscillatory bearing, substantially as set forth.

2. In a sleigh, the combination of the bolster mounted on the bob, and provided with trunnions on its ends and supports secured to the body, and provided with bearings for the trunnions of the bolster, substantially as shown and set forth.

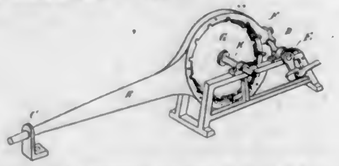
3. In a sleigh, the combination, with the bolster mounted on the bob, of a shoe or sleeve attached to the ends of the bolster, and provided with trunnions standing parallel with the bolster, and brackets secured to the body, and provided with bearings for the aforesaid trunnions, substantially as described and shown.

292,973. HOOP-POLE-SPLITTING MACHINE. JOB WINTERBOTHAM, Joliet, Ill. Filed Nov. 15, 1883. (No model.)



Claim.—In the hoop cutting and splitting machine described, the rotary knives B B, arranged to stand, as shown, with their cutting-peripheries nearly or quite in contact with each other, and having their cutting-peripheries provided with a series of notches, S, forming teeth or hooks set far enough apart to leave cutting-edges between them, and adapted to feed or propel the hoop-pole through between said rotary knives by means of said teeth or hooks, as and for the purpose set forth.

292,974. MECHANICAL MOVEMENT. GEORGE YEOMANS, Wayne, Mich. Filed Nov. 3, 1883. (No model.)

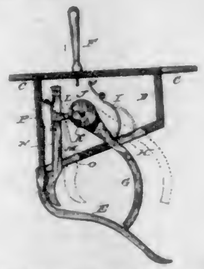


Claim.—1. In a mechanical movement, the shaft H, having secured thereto the gear-wheel G, in combination with an internally-geared ring, A, surrounding the same and supported on and deriving its motion from the rotation of a crank-shaft, D E, passing through the outer circumference of said ring A, whereby a continuous rotary motion is imparted to said shaft H, substantially as described.

2. In a mechanical movement, the shaft H and wheel G, in combination with an internally-geared ring, A, surrounding the same and supported by and deriving its motion from the crank-shafts D E D E, passing through the outer circumference of said ring A, as and for the purpose set forth.

3. In a mechanical movement, a gear-wheel eccentrically journaled within an internal gear which is actuated by a circular motion similar to the strap of an eccentric, and produces thereby a continuous rotary motion of the inclosed gear-wheel, the external gear being inclosed oil-tight upon its sides, whereby a casing is formed which serves to protect the gearing, and forms an oil-cup for lubricating the same, substantially as described.

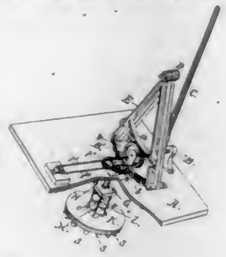
292,975. MAIL-BAG CATCHER. WILLIAM ANGLE, Welsh Run, Pa. Filed Nov. 26, 1883. (No model.)



Claim.—1. A mail-bag catcher consisting of a catcher-arm, a curved clasping-arm having means for forcing it rearward, clasping the bag from the front, and a trigger at the inner corner of the catcher-arm, releasing the curved clasping-arm when struck, as and for the purpose shown and set forth.

2. The combination of a casing having trunnions at its inner corners and an inwardly-projecting arm upon its inner side, an outwardly and forwardly projecting catcher-arm attached to the outer rear corner of the casing, a rearwardly-curved clasping-arm pivoted at its inner end inside the casing, projecting through its outer side, and forming a disk upon its inner end, having a notch, a spring bearing against the back of the clasping-arm and forcing it rearward, a trigger projecting with its outer end through the outer side of the casing in the fork formed by the catcher-arm and the casing, and having a lug engaging the notch in the disk upon the end of the clasping-arm, and a spring forcing the trigger forward, all constructed to operate as and for the purpose shown and set forth.

292,976. MECHANICAL MOVEMENT. CHARLES A. BENTLEY, New York, N. Y. Filed July 30, 1883. (No model.)



Claim.—1. The combination, with a reciprocally-rotating gear-wheel upon the end of a rock-shaft, a swinging double segmental gear engaging the same and actuating a gear-wheel upon the end of a tubular shaft at right angles to the rock-shaft, a disk or plate connected to said tubular shaft to partake of its movement, but left free to vibrate longitudinally thereon, and a longitudinally-reciprocating rod attached to said disk to rotate with it, and extending thence loosely through the tubular shaft, of double rods P P, or their equivalent, as described, hinged at one end to vibrate to and from the end of the tubular shaft, and whose free ends, loosely jointed to the upper end of its longitudinally-reciprocating rod to lift the same without interfering with its rotation, are extended to engage the web of the gear-wheel upon the rock-shaft, so as to be lifted by its reciprocating movement, substantially in the manner and for the purpose herein set forth.

2. The combination, with the rock-shaft B and its gear-wheel B', the double segment-gear E, actuated thereby, the stationary frame D, supporting it, and the hinged rods P, whose free ends engage said wheel B and are lifted thereby, of the stops R R, adapted to engage the frame and to limit the movements of the wheel, segment-gear, and rock-shaft, and protect the rods P against undue strain, substantially in the manner herein set forth.

292,977. WHIP-SOCKET. FREDERICK A. BRADLEY, New Haven, Conn. Filed Nov. 26, 1883. (No model.)



Claim.—The combination of the socket A, the metal base B, constructed to receive the lower end of the socket, and the bolt C through the bottom of the socket and base, whereby the base and socket are secured together, substantially as and for the purpose described.

292,978. SHAFT-COUPLING. JOHN BRAUN, Philadelphia, Pa. Filed May 15, 1882. (No model.)



Claim.—1. A coupling having an internal clamp and a screw fitted thereto, and an exterior shell formed with an opening, whereby said screw is accessible and movable from the outside of the shell, substantially as and for the purpose set forth.

2. In a coupling, an internal clamp having a differential screw and nuts, in combination with an exterior shell, which, connected with said clamp, is formed of one piece of metal, substantially as and for the purpose set forth.

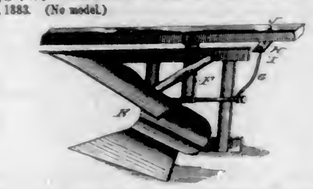
3. In a coupling, an internal clamp having a differential screw and nuts, and exterior shell formed at its ends with heads, which are connected with said clamp, substantially as described.

4. In a coupling, an internal clamp having studs J, in combination with the exterior body or shell, having openings a, which receive said studs, substantially as and for the purpose set forth.

5. A clamp having legs F', in combination with the heads of the exterior body or shell, having openings L coincident with the space between said legs, substantially as and for the purpose set forth.

6. In a coupling, a hollow body or shell, in combination with a clamp having means for attaching it with the heads of said body, one or both of said heads being removably connected with said body, substantially as and for the purpose set forth.

292,979. CULTIVATOR. DOMINICUS BELZ, Geneseo, Ill. Filed Nov. 23, 1883. (No model.)



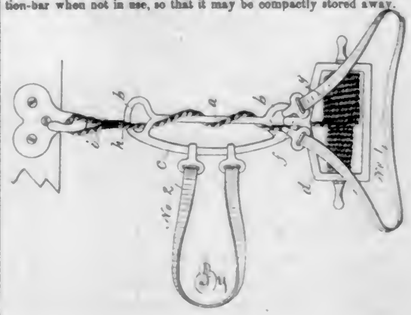
Claim.—In a reversible plow, the combination of the forward standard or hanger, F, pivoted at its upper end to turn on the under side of the plow-beam, the rearmost standard or hanger, G, having a laterally-projecting flat perforated bar upon its upper end, and the plow-beam having means for engaging the perforations in the flat laterally-projecting bar, whereby the point of the plow may be adjusted to or from land, as and for the purpose shown and set forth.

292,980. SOAP. CHARLES F. BROADBENT, Baltimore, Md. Filed Dec. 11, 1883. (No specimens.)

Claim.—An improved soap, which consists of ordinary soap, water, hyposulphite of soda, borax, and spirits of ammonia, all combined substantially as specified.

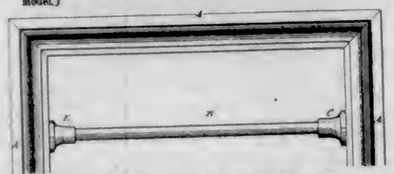
292,981. FIRE-ESCAPE. THOMAS BROOKS, Des Moines, Iowa. Filed Nov. 3, 1883. (No model.)

Brief.—A reel-frame for the lowering-rope is hooked to the friction-bar when not in use, so that it may be compactly stored away.



Claim.—The improved fire-escape consisting of the sliding frame a b c, the spool-frame d f, carrying a spool, a rope, and two belts, substantially as shown and described, to operate in the manner set forth.

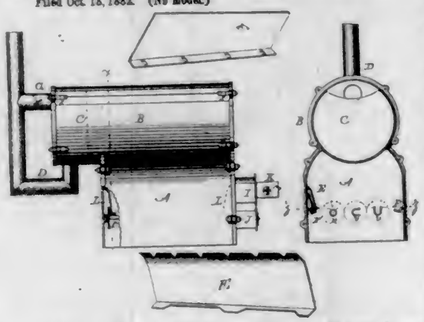
292,982. SUPPORTING-ROD FOR WINDOW AND DOOR CURTAINS. JOHN A. BROWNE, Philadelphia, Pa. Filed Dec. 5, 1883. (No model.)



Claim.—1. A supporting-rod for window and door curtains, constructed substantially as herein shown and described, and consisting of the rod B, the socket C, the socket-nut E, and the screw-plug F, as set forth.

2. In a supporting-rod for window and door curtains, the combination, with the casing A, of the rod B, the socket and screw C D, and the socket-nut E, screw-plug F, and screw G, substantially as herein shown and described, whereby the said rod can be readily connected with and disconnected from the said casing, as set forth.

292,983. FIRE-POT AND LINING. STEPHEN T. BEYCK, Dayton, Ohio. Filed Oct. 18, 1882. (No model.)



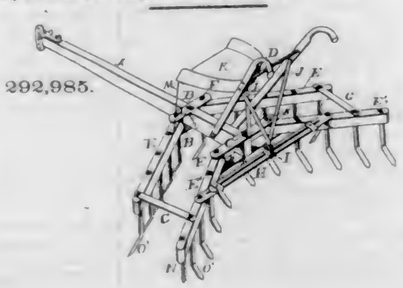
Claim.—In the fire-pot of a furnace, an intermediate plate, F, with flange at bottom having numerous orifices, and which supports the fire-plate E, which is notched at its top to admit of the circulation of air between said plates, these in combination with the end plates of said fire-pot, and arranged with reference to the side walls of same, substantially as and for the purpose set forth.

292,984. GAS-PURIFIER SCREEN OR GRID. JOHN CABOT, Lawrence, Mass. Filed Nov. 9, 1883. (No model.)



Claim.—As an improved manufacture, the gas-purifier screen or grid constructed with each of its wooden bars A having linear or very narrow bearings, substantially as described, in each of its supporting-holes of its holders B, without contact between such bearings with the boundary of the hole, all being substantially as set forth.

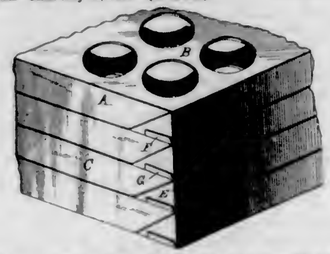
292,985.



292,985. HARROW. EDWIN V. CALDWELL, Harpersville, Ala. Filed May 5, 1883. (No model.)

Claim.—The combination of the draft-beam A, having at the rear end the two sets of transverse arms B B, with the removable tooth-beams E E', hinged to said arms, provided with teeth on the front beams forwardly inclined, and the teeth on the rear beams rearwardly inclined, and with the adjusting-rod H and clamp I, substantially as herein set forth.

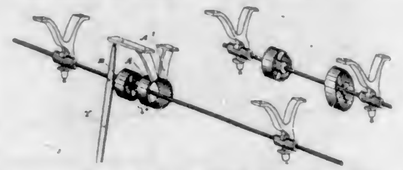
292,986. EGG-CARRIER. GENRY A. CHAPMAN, Strawberry Point, Iowa. Filed July 14, 1883. (No model.)



Claim.—1. The combination, in a tray for egg-carriers, of the top plate having downwardly-bent flanges, the ends of which flanges are soldered one over the other, and having perforations for the reception of the eggs, with the triangular flanged re-enforcing corner pieces soldered upon the edges of the flanges at the corners of the tray, as and for the purpose shown and set forth.

2. A tray for egg-carriers, consisting of a top plate having perforations for the reception of the eggs, and downwardly-bent flanges cut off at the ends, as described, to form overlapping ends, soldered together, and triangular plates having bent flanges upon their catheti, and soldered by these flanges upon the outside of the edges of the flanges upon the top plate at the corners, as and for the purpose shown and set forth.

292,987. SELF-SHIPPING BELT-PULLEY. HENRY PITHIE CHRISTIE, San Francisco, Cal. Filed Nov. 27, 1883. (No model.)

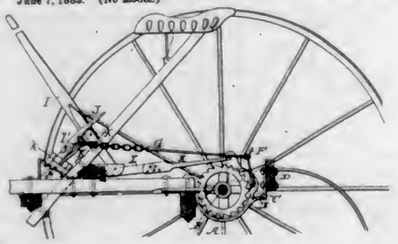


Claim.—1. A self-shipping belt-pulley consisting of the pulley part B, fixed to, but capable of longitudinal movement upon, its driving-shaft, a stationary belt receiving and holding part A independent of the driving shaft and pulley, but capable of entering or telescoping within the pulley-rim from one side thereof, and a means for shifting the pulley, substantially as hereinbefore described.

2. The combination together of the fixed belt-holding surface, composed of the tapering rim A and the laterally-movable pulley B, with beveled edge, and of suitable diameter internally to slip over and telescope with the fixed rim, substantially as hereinbefore described.

3. The combination, with the fixed rim A, tapered externally, of the movable pulley B, having its rim tapered internally, and with sufficient clearance inside to allow the two parts to telescope, substantially as hereinbefore described.

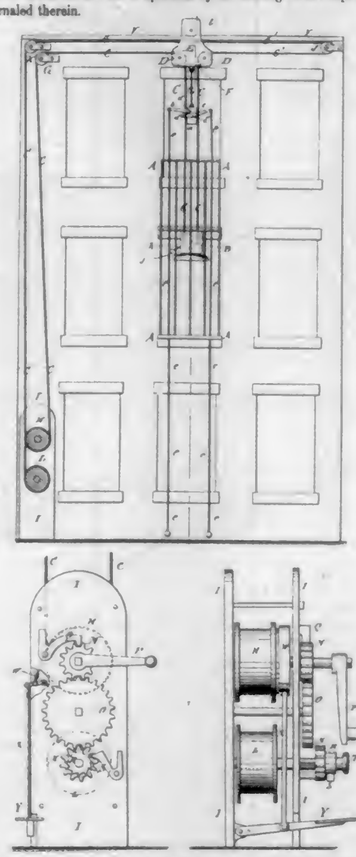
292,988. HORSE HAY-RAKE. JAMES M. CLARK, Greeley, Colo. Filed June 7, 1883. (No model.)



Claim.—The combination, with the lever I and chain or rod G, connected to a forward-moving pawl, of the spring-catch J and bell-crank lever or treadle K, connected to the catch and to the chain or rod G, and adapted to move in an oblique plane, substantially as shown and described, and for the purpose set forth.

292,989. FIRE-ESCAPE. ROBERT P. CLARK, Philadelphia, Pa. Filed Apr. 16, 1883. (No model.)

Brief.—The ropes which move the cage both laterally and vertically are wound upon and operated by drums geared together. The gear-wheel of the lower drum is connected to its journal-shaft by tongue and groove, and has a ratchet and pawl to hold it from rotating when disconnected from the other gear-wheels. The drums are connected to move the cage vertically and disconnected to move the cage horizontally. A friction-clamp is suspended from the traveler over the cab, and an alarm on the cab is operated by the turning of the rope-pulley journaled therein.

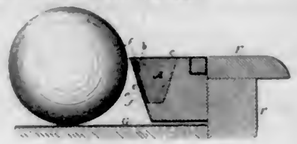


Claim.—1. In a fire-escape, the combination, with the cage A, of the ropes C C', the carriage E, the drums H L, the gear-wheels M N O, the ratchet-wheel and pawl R S, and the crank P, substantially as herein shown and described, whereby the said cage can be moved laterally and vertically, as set forth.

2. In a fire-escape, the combination, with the carriage E and the cage-operating rope C, of the suspended support *a*, the levers *b c*, and the cords *e*, said levers having rollers *d* arranged on opposite sides of one of the cords *e*, substantially as herein shown and described, whereby the descent of the cage can be stopped, as set forth.

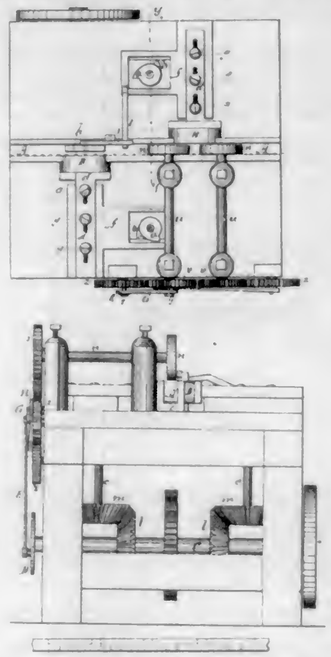
3. In a fire-escape, the combination, with the cage A and the operating-rope pulley B, of the pins *f*, the spring-held hammer-lever *h*, the two-armed trip-block *g*, pivoted to the latter and adapted to engage the aforesaid pins, and the gong *k*, substantially as herein shown and described, whereby the movement of the cage will sound an alarm, as set forth.

292,990. BILLIARD-TABLE CUSHION. HUGH W. COLLENDER, New York, N. Y. Filed Jan. 2, 1884. (No model.)



Claim.—A cushion-strip composed of a soft-rubber body provided with a face-hardening strip or strips of hard-rubber compound, and provided with means for holding down (against any upwardly-stretching tendency) such strip or strips, all substantially in the manner set forth.

292,991. MACHINE FOR CUTTING HEADS OF BOXES. MORTON E. CONVERSE, Winchendon, Mass. Filed Mar. 23, 1883. (No model.)



Claim.—1. The method of forming and cutting out box-heads and other articles in wood, which consists in passing strips of wood, previously made of proper width and thickness, equal to double the thickness of the heads or articles to be formed, or thereabout, between two cutting-dies, thereby cutting forms on both sides thereof, and then cutting the strips in two edgewise to sever the articles from the strip, substantially as and for the purpose herein specified.

2. In a machine for forming and cutting out box-heads and other articles in wood, the combination of a feed-trough, A, holding the strips of wood and reciprocating cutting-dies B B, having their movements at right angles to the trough and through the sides thereof, substantially as and for the purpose herein specified.

3. The combination of the two cams *a b*, placed one above the other on the same shaft *c*, the cam-yoke *f*, having cam-spaces for the reception of the respective cams, one above the other, and the die-stock *d*, secured adjustably to the cam-yoke, substantially as and for the purpose herein specified.

4. The combination of a cutting-die, B, cam *i*, secured to the cam-yoke *f*, or equivalent projection on the cam-stock *d*, and pressure-lever *j*, pivoted on one side of the feed-trough or way A, substantially as and for the purpose herein specified.

5. The combination of the intermittently-reciprocating dies B B, intermittently-turning feed disks or rollers *n n o o*, driving-shaft C, adapted to operate both the dies and the rollers, intermediate mechanism, as described, between the driving-shaft and dies, crank-disk D, connecting-rod E, pawl-arm G, and ratchet-wheel H, operating the gear-wheels for turning the said feed disks or rollers, whereby the intermittent movement of the dies alternate with the intermittent movements of the feed disks or rollers, substantially as herein specified.

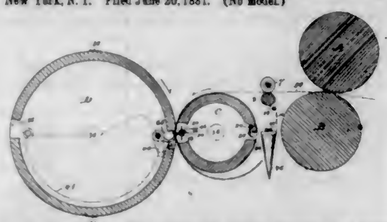
292,992. ALARM-SIGNAL FOR HOT JOURNALS. OLIVER H. P. CORNELIUS and GEORGE H. TURNER, Turner, Oreg. Filed July 6, 1883. (No model.)



Claim.—1. The combination of the adjusting-block *m* and wire *n* with a thermometer, and with the wires of an electric battery arranged for closing the circuit by the effect of increased temperature on the thermometer, substantially as described.

2. The combination, with the bulb *d*, provided with the tube *b*, having the enlargement *b'*, of the block *m*, provided with the wire *n* and spring *o*, and arranged in the enlargement of the tube, substantially as herein shown and described.

292,993. SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed June 20, 1881. (No model.)



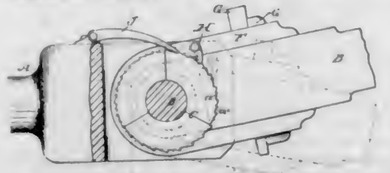
Claim.—1. A cylinder or revolving carrier provided with means for gathering or collecting sheets, and with pins for securing a proper register of the sheets, substantially as described.

2. The combination, with a rotating carrier provided with nipping-jaws, of a carrier provided with means for gathering or collecting sheets, and with a folding-blade co-operating with said jaws, all substantially as described.

3. The combination, with the pins 25, their shaft, and connecting-rod 28, of a rotating cam, as 34, to cause said pins to recede within the cylinder C, substantially as described.

4. The combination, with a revolving carrier, a shaft supported thereby and carrying a multiplicity of folding-blades and a corresponding number of lever-arms, and with a companion carrier provided with nipping-jaws co-operating with said folding-blades, of means for bringing one of said blades into position to coact with said jaws at each revolution of the folding-blade carrier, all substantially as described.

292,994. PITMAN-BOX. FENNER DARLING, Franklin, Mass. Filed Sept. 14, 1883. (No model.)



Claim.—1. In a pitman-box, the sleeve C, adapted to be placed upon the wrist-pin, and adapted to have imparted to it an intermittent rotary motion, substantially as and for the purposes set forth.

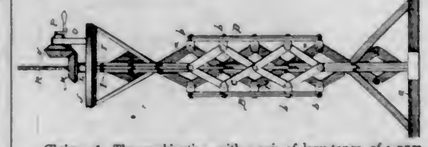
2. In a pitman box, the rotary sleeve C, formed with the ratchet a^2, in combination with the stop-pawl J, and pawl H, pivoted to pitman B, substantially as and for the purposes set forth.

3. The pitman-box herein shown and described, consisting of the rotary sleeve C and outer box, E, placed around said sleeve, substantially as and for the purposes described.

4. The sleeve C, formed with the oil-groove *b* and oil-holes *c*, in combination with the box E and strap F, having oil-holes *e f*, respectively, substantially as and for the purposes set forth.

5. The sleeve C, placed upon the wrist-pin D and formed with the ratchet a^2, in combination with the box E, strap F, and pawls H J, arranged to operate substantially in the manner and for the purposes set forth.

292,995. ELEVATOR. RILEY L. DAVIS, Mooresville, N. C. Filed Nov. 20, 1883. (No model.)



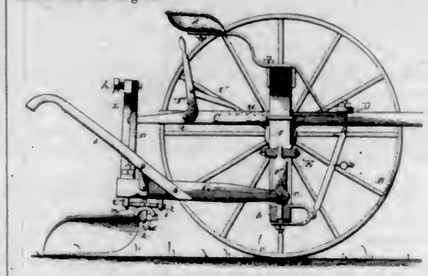
Claim.—1. The combination, with a pair of lazy-tongs, of a number of additional pairs of lazy-tongs having their knees connected in a flexible manner to the knees of the former, or to the knees of the former and to each other, substantially as shown and described.

2. The combination, with a pair of lazy-tongs, of four additional pairs of lazy-tongs arranged in the form of a quadrilateral prism around the former, and having their pivotal points connected in a flexible manner to the pivotal points of the former and to each other, and the two series of continuous toggle-braces connected to the longitudinally-central pivots of the main or central and two of the side lazy-tongs, substantially as shown and described.

3. The combination, with the series of flexibly-connected lazy-tongs, of a platform supported on top of the central pair of lazy-tongs, and having slotted pendant-guides, a cross-rod connecting opposite joints of the said central pair and adapted to slide in said slotted guides, a screw-rod connected to said cross-rod and extending up through the platform, a nut screwing on said screw-rod and supported by the platform, and means for rotating the nut, substantially as shown and described.

292,996. CULTIVATOR. JOSEPH DIVORA, Peru, Ill. Filed July 28, 1883. (No model.)

Brief.—The clod-crushers or other implements have a rocking connection with the drag-bar.



Claim.—1. The combination, with the arched axle and braces connecting the sides of the end arches of the axle, of standards swiveled to the braces and axle, drag-bars pivotally secured to the standards, and clod-crushers or other suitable implements secured to the drag-bars in such a manner whereby they are allowed to tilt or change their relative positions to the drag-bar, substantially as set forth.

2. The combination, with an arched axle and wheels mounted thereon, of braces connecting the sides of the end arches of the axle, standards connecting the braces and axle, drag-bars secured to the standards, and a sectional adjustable yoke connecting the rear ends of the latter, substantially as described.

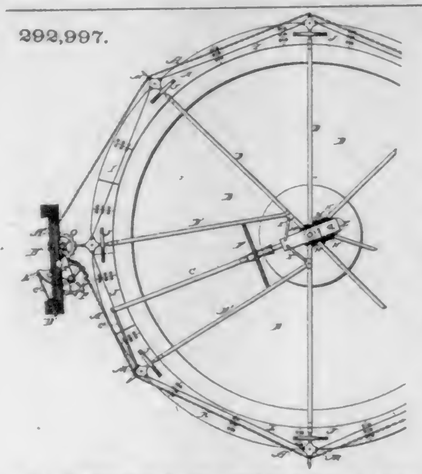
3. The combination, with an arched axle and wheels mounted thereon, of braces connecting the sides of the end arches of the axle, standards connecting the braces and axle, drag-bars, a yoke, a bell-crank, and a dog adapted to raise and sustain in place the drag-bars, substantially as described.

292,997. CLAY-TEMPERING MACHINE. JOHN F. DORNFELD, Watertown, Wis. Filed Dec. 10, 1883. (No model.)

Claim.—1. The combination, in a clay-tempering machine, of a central revolving support, a series of radial sweeps, an endless sprocket-chain, an axle-shaft provided with a clay-tempering wheel, and a sprocket-wheel adapted to communicate motion to said chain, said radial sweeps being provided at their diverging ends with brackets for the reception of said chain, whereby said chain is supported and carried with the sweeps as it communicates motion to them all, substantially as and for the purpose specified

2. In a clay-tempering machine, the combination of the central support, R, platform E, series of radial arms D and D', brace-rods I, rollers P, endless chain A, circular track K, and sprocket-wheel O, said wheels P being adapted to roll upon the circular track K and support the outer ends of the sweeps, as set forth.

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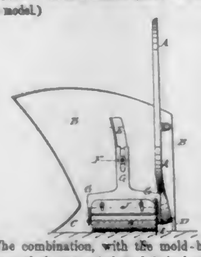
3. The combination, in a clay-tempering machine, of the central platform, E, block G, secured in said platform by horizontal bolt H, radial sweeps D, attached to said platform, sweeps D' D', attached at their inner ends to the next succeeding sweeps, D, axle-shaft C, clay-tempering wheel F, and rod or chain S, said rod S and block G being adapted to communicate a circular motion to said axle-shaft and wheel around the pit, while it permits them to rise and fall, conforming to the height of the clay in the pit, substantially as set forth.

4. In a clay-tempering machine, the combination, with the diverging ends of a series of sweeps centrally supported upon a revolving platform, of the brackets M, axles P, supporting-wheels J, brace-rods I, and sprocket-chain A, said sprocket-chain being adapted to be operated by a sprocket-wheel around which it passes, and from which it communicates motion to said radial sweeps, said brackets being adapted to support and carry said sprocket-chain, while said brace-rods co-operate to strengthen and sustain said sweeps and communicate motion simultaneously to all, substantially as set forth.

5. The combination, with the endless sprocket-chain A, of the sprocket-wheel O, bracket T, tightening-wheel P, cord or chain C', and sheave D', said cord being provided with a weight adapted to retain said tightening-wheel P in contact with said sprocket-chain, as and for the purpose specified.

6. In a clay-tempering machine, the circular track K, having an arc of its circle next opposite the sprocket drive-wheel depressed or curved downwardly, in combination with the diverging ends of the radial sweeps and their supporting-wheels, said depression being adapted to permit the outward ends of said sweeps with their supporting-wheels to successively drop below said sprocket drive-wheel as they pass it, substantially as and for the purpose specified.

292,998. PLOW. JOHN T. ELLYSON, Pleasant Plain, Iowa. Filed Dec. 6, 1883. (No model.)

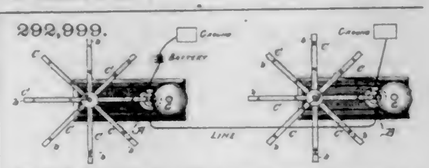


Claim.—The combination, with the mold-board B, having the flanged bar E secured thereto, of slotted forked plate G, carrying the roller, disk, and scraper at its forked end, and a bolt on the flanged bar E, for adjustably securing the slotted upper end of the plate G, substantially as set forth.

292,999. SIGNALING APPARATUS FOR TELEPHONIC AND TELEGRAPHIC CIRCUITS. LORENZO S. FAIRBANKS, Boston, Mass. Filed June 4, 1883. (No model.)

Claim.—1. In an electric signaling-circuit, and at each station in

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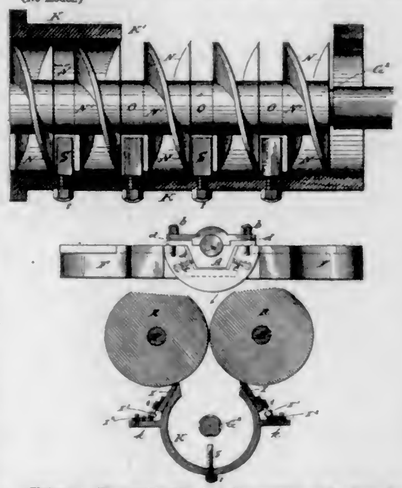
said circuit, the combination, with an electro-magnet, of a series of vibrating armatures having different rates of vibration, each of which armatures is adapted to be brought or moved to and over said magnet, for the purpose specified.

2. In an electric signaling-circuit, and at each station in said circuit, the combination, with an electro-magnet, of a series of vibrating armatures and an alarm-bell, said armatures having different rates of vibration, and each adapted to be brought or moved to and over said magnet, for the purpose specified.

3. In an electric signaling-circuit, and at each station in said circuit, the combination, with an electro-magnet, of a series of vibrating armatures having different rates of vibration, and adapted to be severally rotated about a center, for the purpose specified.

4. In an electric signaling-circuit, and at each station in said circuit, the combination, with an electro-magnet, of a series of vibrating armatures and an alarm-bell, said armatures having different rates of vibration, and adapted to be severally rotated about a center, for the purpose specified.

293,000. COMBINED CLAY-CRUSHER AND TILE-MACHINE. JOHN D. FATE and EGBERT M. FREESE, Plymouth, Ohio. Filed Nov. 12, 1883. (No model.)



Claim.—1. The combination, in a tile-machine, of the frame having the fixed shaft-bearing A' and a recess, *a*, near the feed-chamber, the adjustable box A, having slots c in its wings or extensions and inclined sides, bolts *b*, sliding in said slots, set-screws *e*, bearing with their ends against the inclined sides of box A, and the feeder-shaft G' G², as and for the purpose shown and set forth.

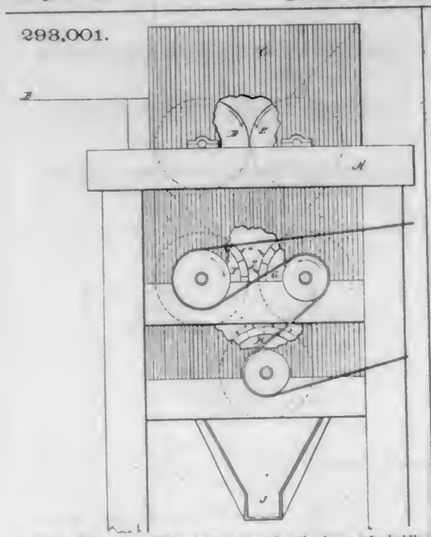
2. The combination of the feed-chamber having a longitudinal opening at its upper side and laterally-projecting extensions *k*, the crusher-rollers, the beveled blocks I' upon the extensions, the scrapers having female-threaded perforated lugs *i*, and the set-screws I', as and for the purpose shown and set forth.

3. In a tile-machine having a cylindrical feed-chamber, the combination of a revolving shaft, collars secured upon the shaft and provided each with two spiral flanges having a twist of one-half revolution in opposite directions, and having the ends cut off perpendicular to the shaft, spacing-collars inserted between the flanged collars, and knives or studs inserted in the bottom of the feed-chamber and projecting up in and nearly filling the spaces between the perpendicular ends of the flanges, as and for the purpose shown and set forth.

293,001. CLAY-PULVERIZER. LORENZO D. FERGUSON, Nashville, TENN. Filed Nov. 16, 1883. (No model.)

Claim.—1. The combination, with a pair of rollers and means for

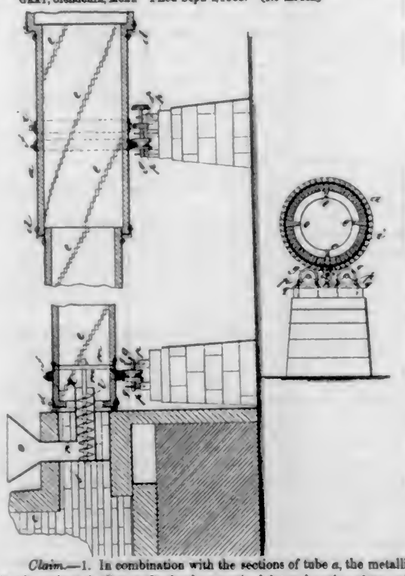
293,001.



revolving the same at different rates of speed, and a hopper for holding clay on said rollers, of a pair of toothed drums beneath said rollers, and means for rotating said drums at different rates of speed, as described, for the purpose set forth.

2. The combination of a hopper for receiving clay, a pair of rollers therein and means for revolving the same at different rates of speed, a pair of toothed drums beneath said rollers and means for revolving said drums at different rates of speed, and a third drum beneath the space between the first-named drums, and means for rotating the latter drum, all substantially as shown and described, for the purpose specified.

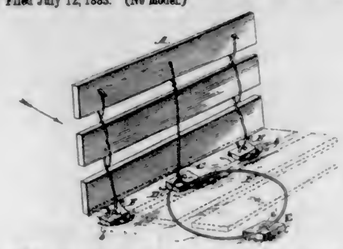
293,002. ROASTING-FURNACE. NEWMAN A. FOSS and JOHN M. GRAY, Clendenin, Mont. Filed Sept. 4, 1883. (No model.)



Claim.—1. In combination with the sections of tube *a*, the metallic bands or rings *d*, offset to fit closely over the joint or junction of two adjacent sections, as shown and described.

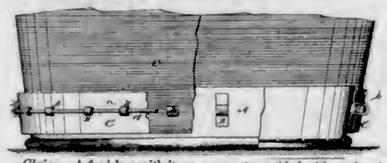
2. The combination, with tube *a*, lined on the inside with refractory material, of spiral ribs formed of brick laid to make a succession of steps, as and for the purpose specified.

293,003. FLOOD-FENCE. ELISABETH S. GARRETT, Downeyville, Ind. Filed July 12, 1883. (No model.)



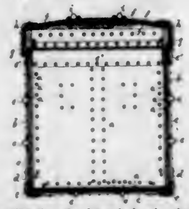
Claim.—In a flood-gate of the described construction, the combination of the hinged panel A, anchors B B and D, spring C, bent to form the loop F, and anchor E, having staple *e'*, for holding the loop F in position, constructed and arranged to operate substantially in the manner and for the purpose shown and described.

293,004. FEED-BAG. JAMES W. GIDNEY, New York, N. Y. Filed Nov. 17, 1883. (No model.)



Claim.—A feed-bag with its canvas part provided with perforations, as described, in combination with a metal bottom, A, with eyes B fixed to it, a perforated strip, *c*, and a binding-wire, *d*, as and for the purpose described.

293,005. TRUNK. HENRY E. GILSON, Somerville, MASS. Filed Oct. 18, 1883. (No model.)



Claim.—The within-described trunk, having its top and body composed of several veneers of wood, with the grain of one veneer crossing the grain of the other, and a sheet of suitable textile or fibrous material interposed between the veneers and glued thereto, substantially as described.

293,006. IRON WHEEL. LEVI H. GOODWIN, Cincinnati, Ohio. Filed Sept. 22, 1883. (No model.)

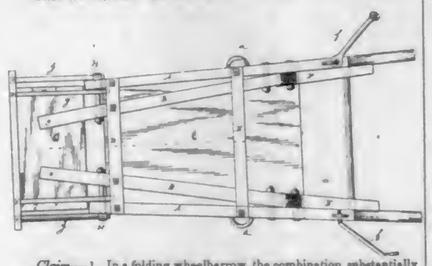


Claim.—1. In an iron wheel, the combination of the mortised tire, the spokes tenoned at their outer ends and provided at their inner ends with notches forming outwardly-inclined shoulders, the disk A, notched radially from its periphery to receive the inner notched ends of the spokes, side clamping-plates having annular flanges to bear against the inclined shoulders of the spokes, and means for drawing said disks together to force the spokes outward against the tire, substantially as specified.

2. The combination, substantially as specified, of the central notched disk, A, the spokes B having notched edges at their inner ends, which ends fit into the notches in disk A, with the plates C, having annular flanges *c* to bear against the inclined shoulders formed by the notches in spokes B, and the screw-threaded sleeve D, for drawing the said plates firmly upon the disk A and edges of the spokes.

3. In a wheel of the character described, the combination, substantially as specified, of the plates C, centrally bored and screw-tapped, with the sleeve D, screw-threaded to engage the threads in the parts C, for the purpose of drawing the plates firmly upon the spokes.

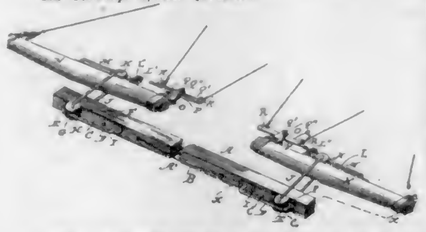
293,007. FOLDING WHEELBARROW. LEVI H. GOODWIN, Cincinnati, Ohio, assignor to the Mosler Manufacturing Company, same place. Filed Oct. 16, 1883. (No model.)



Claim.—1. In a folding wheelbarrow, the combination, substantially as specified, of the wheel-bars B, beveled at their forward ends, with the pivoted legs F, having their upper ends beveled, and having offsets, as shown, and the braces *f*, whereby the legs are adapted to fold for shipment, and when set up for use to be firmly braced by the ends of the bars B and swinging braces *f*.

2. In a folding wheelbarrow, the combination, substantially as specified, of the side bars, A, wheel-bars B, with the folding back G, and eye-bolts H, the outer bar, *g*, of said back passing through the eyebolt H, and the bolt passing through bars A, upright *g'*, and bar B, and adapted to turn therein to permit the back to be folded down for shipment or turned up for use.

293,008. DRAFT-EQUALIZER. WILLIAM P. GRAINER, Walcottville, Ind. Filed Sept. 19, 1883. (No model.)



Claim.—1. In a draft-equalizer of substantially the described construction, the combination of the double-tree A, having brace A', chafing-plates C C, provided with apertures I and guide-rods D D, single-trees N N, having chafing-plates L L, provided with apertures I and guide-rods M M, and movable blocks E E and K K, connected together by links J, and having grooves F G, and spring-catches H, adapted to engage with the apertures I of the chafing-plates, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

2. In a draft-equalizer of substantially the described construction, the combination of the single-trees N N, provided with the slotted clips O O, secured to the single-trees on their inner ends, with the bars Q Q, adapted to be adjustably secured within the slotted clips O O by means of keys Q'' Q'', and having their inner ends extended to adapt them to enter apertures L' in the upwardly-curved ends of the chafing-plates L L, as and for the purpose shown and set forth.

293,009. FASTENER FOR FENCE WIRES AND BOARDS. CHAS. K. GRIFFITH, Storm Lake, Iowa. Filed Aug. 17, 1883. (No model.)

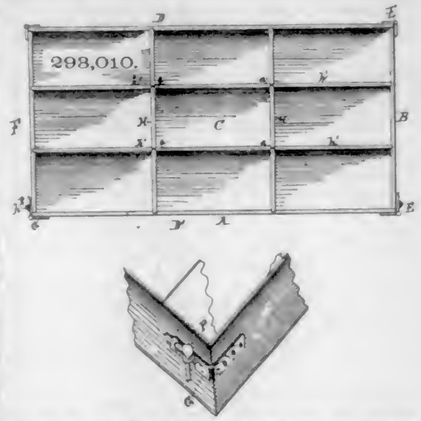


Claim.—1. The combination of the slotted plate D, and the screw-bolt C with head *c* and bit *d*, for holding the members of the fence at a distance from the posts or trees, substantially as shown and described.

2. The combination, with a wire cable, of the slotted plate D, bent to form tube *a*, and the screw-bolt C, having head *c* and bit or shoulder *d*, for holding the wire at a distance from the post or tree, as described.

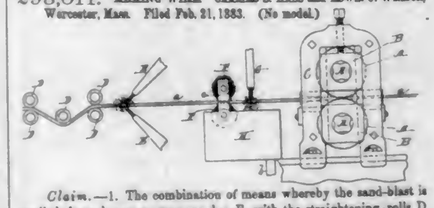
293,010. BUILDING-WALL COMPOUND. LEVI HAAS, Chester, Pa. Filed Mar. 2, 1883. (No model.)

Claim.—1. A building material composed of three parts of furnace-slag and one part of mortar made of lime, sand, and water, and combined in suitable proportions with an additional cementing-mortar made of powdered flint, alkaline solution of flint, sand, and clay, substantially as described.



2. The combination of the mold-bottom C, partitions H and A', walls B, D, D', and F, and hinged hasp G, substantially as shown, and for the purpose described.

293,011. MAKING WIRE. CHARLES S. HALL and EDWIN J. WATSON, Worcester, Mass. Filed Feb. 21, 1883. (No model.)



Claim.—1. The combination of means whereby the sand-blast is applied through one or more nozzles, E, with the straightening-rolls D and reducing-rolls A, substantially as and for the purpose set forth.

2. The combination of means whereby the sand-blast is applied through one or more nozzles, E, with the straightening-rolls D, substantially as and for the purpose set forth.

3. The combination of means whereby the sand-blast is applied through one or more nozzles, E, with the reducing-rolls A, substantially as and for the purpose set forth.

293,012. CASH-CONVEYER. OSBORN B. HALL, Malden, Mass. Filed Nov. 30, 1883. (No model.)

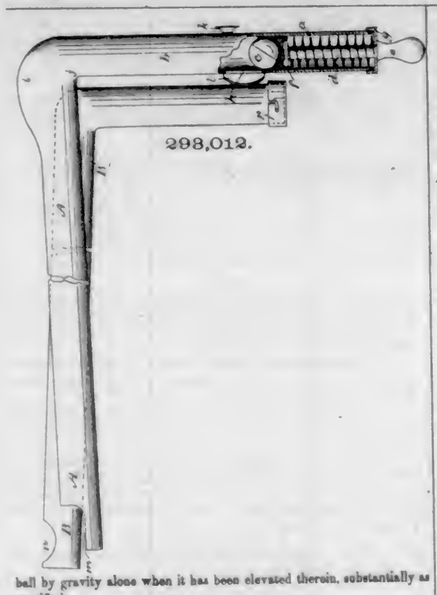
Claim.—1. In a cash-conveyer, the combination of an inclined guiding-way terminating in a depending section provided with an opening for the insertion of the cash-ball, a plunger arranged in said depending section, and provided with a head to receive said ball, a spring arranged to be depressed by the drawing down of said plunger, and adapted to elevate the same when released, and to thereby impel the ball into said inclined way, substantially as specified.

2. In a cash-conveyer, the combination of inclined conduit A, terminating in a depending section, *b*, having an aperture, *k*, for the insertion of the cash-ball, plunger *d*, provided with head *f*, to receive said ball, and also with a handle by which to depress it, and helical spring *a*, arranged to be depressed by the drawing down of said plunger, and when liberated to actuate the same, and thereby impel the ball into the inclined conduit, substantially as specified.

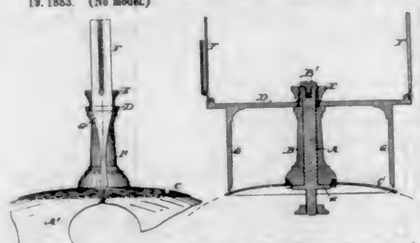
3. In a cash-conveyer embodying the inclined way A, terminating in depending section *b*, provided with devices whereby the cash-ball may be impelled from said depending section into the inclined way, an enlargement, *i*, in the outer angle or line of said way, at the intersection of the inclined and depending sections, whereby an enlarged radius of the curve is obtained, to facilitate the change of direction of the ball, substantially as specified.

4. In a cash-conveyer, the combination, with a tubular conduit for the cash-ball, of a whistle and speaking devices, whereby said tube may be utilized for transmitting oral messages, substantially as specified.

5. In a cash-conveyer, the combination, with suitable devices whereby the cash-ball may be elevated to the requisite height, of a tubular conduit arranged at an inclination to insure the traversing thereof by said ball by gravity alone when it has been elevated therein, substantially as specified.



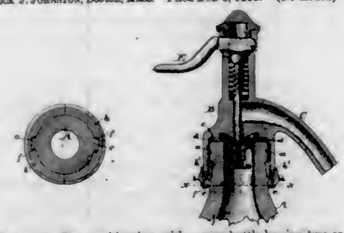
293,013. ALIDADE. JOHN E. HAND, Philadelphia, Pa. Filed Jan. 19, 1883. (No model.)



Claim.—1. A central post, a sleeve fitted thereon, a graduated plate rigidly connected with said sleeve, and a sight-carrying arm fitted on said sleeve, in combination with a screw and nut, said screw being adapted to connect said post and sleeve, and said nut to clamp said sleeve and arm, substantially as and for the purpose set forth.

2. A central post, a sleeve, a graduated plate, a sight-carrying arm, a securing-nut for said post and sleeve, and a clamping-nut for said sleeve and arm, in combination with a binnacle, substantially as and for the purpose set forth.

293,014. SIPHON-BOTTLE. HERMAN L. HANSON, Medford, and FREDERICK J. JOHNSTON, Boston, Mass. Filed Dec. 5, 1883. (No model.)

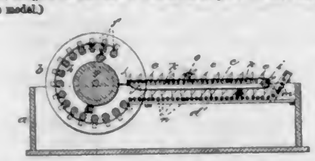


Claim.—1. The combination, with a glass bottle having two or more rectangular lugs or ears molded upon and projecting from its neck, and provided with an annular flange or collar at its top end, of a threaded metallic coupling-ring made in two parts, and provided with a radial shoulder or shoulders to engage with said lugs or ears, and a head or cap provided with a female thread to engage with the thread on said divided coupling-ring, substantially as and for the purposes described.

2. In a siphon-bottle, the combination of the head B, the coupling-ring *b b*, each half of which is provided with a recess or notch, *f*, and the lugs *e e*, molded upon and projecting from the neck of the bottle A, substantially as and for the purposes described.

3. In a siphon-bottle, a divided coupling-ring provided with a means of securing thereto the metallic head of said bottle, and also provided with an upwardly-extending annular lip adapted to inclose the lower end of said head, substantially as and for the purposes described.

293,015. HAT-SIZING APPARATUS. NATHAN HARPER, Newark, N. J., assignor to Marcus W. Adams, same place. Filed June 29, 1883. (No model.)



Claim.—1. In hat-sizing apparatus, dipping mechanism constructed and adapted to automatically dip or immerse the hat-rolls in the felting-liquid outside of the felting-chamber, substantially as set forth.

2. In a hat-sizing apparatus, dipping mechanism constructed and adapted to automatically dip or immerse the hat-rolls or hat-bodies in the felting-liquid outside of the felting-chamber, and thence convey them toward or into said chamber, substantially as set forth.

3. In a hat-sizing apparatus, dipping mechanism consisting of a traveling belt or apron submerged, or in part submerged, beneath the felting-liquid, and provided with slats, ribs, bosses, or other projections adapted to receive a roll of hats between them, and to automatically dip or immerse said hats in said liquid outside of the felting-chamber, substantially as set forth.

4. In a hat-sizing apparatus, dipping mechanism consisting of a traveling belt or apron submerged, or in part submerged, beneath the felting-liquid, and provided with slats, ribs, bosses, or other projections adapted to receive a roll of hats between them, and to automatically dip or immerse said hats in said liquid outside of the felting-chamber and thence convey them toward or into said chamber, substantially as set forth.

5. In hat-sizing apparatus, a belt or apron adapted to convey the hat-rolls from the folders to the felting-chamber, or to return them from the felting-chamber to the folders, said belt or apron being provided with slats, substantially as and for the purpose set forth.

6. In a hat-sizing apparatus, a feeding belt or apron provided with slats, ribs, bosses, or other projections adapted to receive a roll of hats between them, and convey or impel said hats toward or into the felting-chamber, substantially as set forth.

7. In a hat-sizing apparatus, a feeding belt or apron provided with slats, ribs, bosses, or other projections adapted to receive a roll of hats between them, and to convey said hats from the felting-chamber.

8. In a hat-sizing apparatus, a feeding and a discharging mechanism having but a single carrying belt or apron, said belt or apron being provided with slats, ribs, bosses, or other projections adapted to receive a roll of hats between them, and to convey or impel said hats to and from the felting-chamber, substantially as set forth.

9. In a hat-sizing apparatus, a feeding belt or apron arranged and adapted to convey the hat-rolls from the folders toward or into the felting-chamber, said feeding belt or apron being submerged, or in part submerged, within the felting-liquid to dip or immerse said hats therein while conveying them toward said felting-chamber, substantially as set forth.

10. In a hat-sizing apparatus, the combination of a feeding belt or apron adapted to convey the hat-rolls toward or into the felting-chamber, and a discharging belt or apron adapted to convey said hat-rolls from the felting-chamber, one or both of said aprons being submerged, or in part submerged, within the felting-liquid to dip or immerse said hats therein while conveying them toward said felting-chamber, substantially as set forth.

11. In a hat-sizing mechanism, the combination of a felting-chamber with a feeding apparatus containing a stationary table, platform, or bed adapted to receive the hat-rolls, and along which said rolls are impelled or drawn by a belt or other suitable mechanism toward or into the felting-chamber, substantially as set forth.

12. In a hat-sizing apparatus, a feeding mechanism containing a stationary platform of rollers adapted to receive the hat-rolls, and along which said hat-rolls are drawn or impelled by a belt or other suitable mechanism toward or into the felting-chamber, substantially as set forth.

13. In a hat-sizing apparatus, a feeding and discharging mechanism consisting of a traveling belt or apron provided with slats, ribs, bosses, or other projections adapted to receive a roll between them, and to convey said hats from the felting-chamber, in combination with a stationary

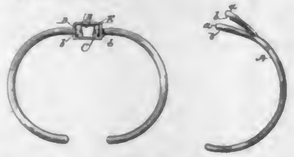
table, platform, or bed, along which said hats may be drawn or impelled by said belt or projections toward or into said chamber.

14. In a hat-sizing apparatus, a feeding and dipping mechanism containing a stationary table, platform, or bed adapted to receive the hat-rolls, and along which said rolls may travel or be impelled or drawn by a belt or other suitable mechanism toward or into the felting-chamber, said table, platform, or bed being submerged, or in part submerged, in the felting-liquid outside of the felting-chamber to dip or immerse said hats in said liquid while being conveyed toward said chamber, substantially as set forth.

15. In a hat-sizing apparatus containing feeding and discharging mechanism, a guide or connecting device provided with a series of rollers and adapted to guide or convey the hat-rolls from one mechanism to the other, substantially as set forth.

16. In a hat-sizing mechanism, the combination of belt *c*, slats or projections *e*, platform *d'*, and tank *a*, substantially as and for the purpose set forth.

293,016. BRACELET. JOHN C. HARRINGTON, Providence, R. I. Filed Nov. 20, 1883. (No model.)

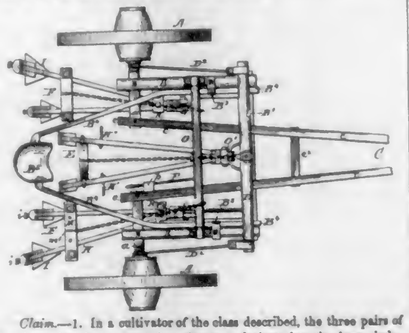


Claim.—1. In a bracelet, the combination of arms A A, provided with the transverse groove *b*, perforated piece C, holding-piece D, and spring B, substantially as described.

2. The improved joint for bracelets, formed by a groove at the inner side of the bracelet-arm, the perforated piece adapted to enter the groove, and the holding-piece, all arranged substantially as described.

293,017. CULTIVATOR. WILLARD M. HARRIS, Wyoming, Del. Filed Nov. 17, 1883. (No model.)

Brief.—A straddle-row cultivator with three independent pairs of shovels, the central pair arranged to be vibrated laterally, and the side pairs to be set and secured at any desired width.



Claim.—1. In a cultivator of the class described, the three pairs of shovels, each pair constructed as shown, and pivoted to the frame independently of the others, substantially as specified.

2. In a cultivator of the class described, the three separate pairs of shovels independently and pivotally connected to the frame, substantially as specified.

3. In a cultivator of the class described, the combination, with the frame, of two independent outside brakes, each carrying a pair of shovels, and a central independent pivotally-connected brake carrying a pair of shovels, substantially as specified.

4. In a cultivator, the combination of a brake comprising two beams and a uniting band or strap, a bracket with a sliding clevis, provided with a link horizontally pivoted thereto and vertically pivoted to said beams, substantially as specified.

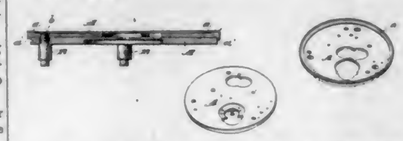
5. The combination of the beams H H, link L, having vertical pivots *k* and horizontal pivots *l*, and the clevis K, substantially as shown and described.

6. The combination of the brakes F F, the central brake, E, links L, clevises K, brackets J, chains N, shaft O, pulley O', and lever P, substantially as shown and described.

7. The combination of the side brakes, F, straps R, links S, and brackets T, substantially as shown and described.

8. The combination of the central pivotally-connected brake, E, provided with stirrups H', with the independent side brakes, F, on each side thereof, provided with the chain N, strap R, and with the link S and means for adjusting the same as to its length, substantially as shown and described.

293,018. WATCH PLATE. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed Nov. 3, 1883. (Model.)



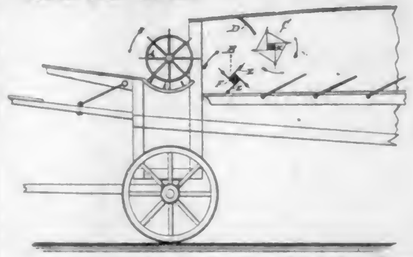
Claim.—1. As an article of manufacture, the watch-plate constructed of two sections separately formed, pierced, and recessed, and then secured together by screw end pillars, substantially as and for the purpose described.

2. A watch-plate composed of two separate full plates superimposed one upon the other, and united together so as to form one plate, substantially as shown and described.

3. A watch-plate composed of two separately-formed full sections, which are united by means of the pillars, substantially as and for the purpose set forth.

4. As an improvement in the setting of jewels, a watch-plate composed of two separately-formed full plates, which are superimposed one upon the other and fastened together, and have their contiguous faces recessed to receive and contain the jewels, substantially as and for the purpose shown and described.

293,019. THRASHING-MACHINE. ANDREW T. HAWLEY, Alton, Ill. Filed Nov. 1, 1883. (No model.)



Claim.—1. A thrashing-machine constructed with a heavy beater adjoining the thrashing-cylinder and revolving in an opposite direction thereto, and a light beater adjoining the heavy beater above and in rear of it, and revolving in an opposite direction thereto, whereby the straw will be received from the cylinder by the heavy beater and thrown upward, and as it falls be subjected to the action of the light beater, substantially as herein shown and described.

2. In a thrashing-machine, the combination, with the thrashing-cylinder A, of the heavy beater B, adjoining the cylinder and revolving in a direction opposite thereto, the light beater C adjoining the heavy beater B above and in rear of it, and revolving in an opposite direction thereto, and of the downwardly-inclined guard or deflector D between the beaters B C, whereby the heavy beater B will receive the straw from the cylinder and throw it upward against the deflector, and as it falls be subjected to the action of the light beater, substantially as herein shown and described.

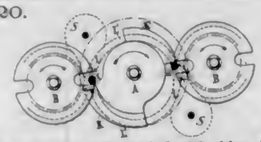
3. In a thrashing-machine, the beater B, consisting of a central shaft, wings covered with sheet-iron, and a casting, G, having spikes H upon the outer edge of each wing, substantially as herein shown and described.

4. In a thrashing-machine, the combination, with the cylinder A, of the beater B, constructed with four wings covered with sheet-iron, and provided on the edge with castings having spikes, and of the beater C, provided with four wings suitably braced, substantially as herein shown and described.

293,020. BRAIDING-MACHINE. WILHELM HEITMANN, ERNST HENKELS, and AUGUST SCHMEDEL, Langerfeld, near Barmen, and MAX FISCHER, Berlin, Prussia, Germany, assignors to Albert Henkels, Langerfeld, near Barmen, Prussia, Germany. Filed Feb. 20, 1882. (No model.) Patented in Germany July 30, 1881, No. 20,712, and Nov. 1, 1881, No. 18,809.

Claim.—1. The combination, with a circular or nearly circular spool-track, L, of the drivers K K', rotating eccentrically to the said track, substantially as and for the purpose described.

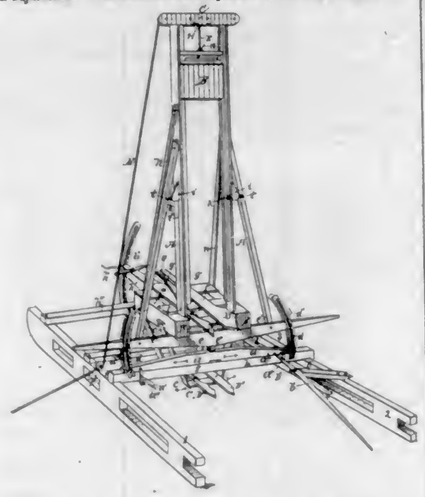
293,020.



2. The combination, with a track, L, of the drivers K K', eccentrics C C', pins E E', and driving-head A, substantially as described.

293,021. POST-DRIVER. EDWIN HIATT, New Castle, Ind. Filed Sept. 28, 1883. (No model.)

Brief.—A post-driver consisting of means for adjusting laterally the base of the machine, and a device for securing or holding the same in adjustment. The hammer-rest is operated by a spring and cord.

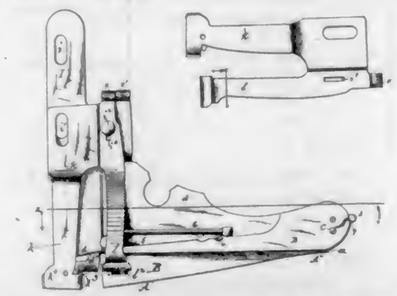


Claim.—1. In a post-driver, the sliding bar *a*, adjustably secured to the axle *b* by clamps *a'*, and made to slide sidewise by the lever *b'*, working in holes *a''*, and resting on the arm *b'''*, and pin *b''*, all for the purpose set forth.

2. In a post-driver, the uprights A, having hammer-rests *i*, bearings *k' k''*, rest *k*, spring *i'''*, rod *i''*, and cord *i'*, all for the purpose set forth.

293,022. BINDING ATTACHMENT FOR SEWING-MACHINES. ROBERT HUGHES, New Orleans, La. Filed Apr. 28, 1883. (Model.)

Brief.—An upper and a lower scroll-plate having folded front edges for forming passages for the binding material and goods are secured together at the feeding end, and are adjustably arranged and combined with guides at the other end for properly delivering the material and goods to the stitching mechanism.



Claim.—1. The plate A, adapted to be attached to a sewing-machine, substantially as described, in combination with the plate B, secured at its outer end to plate A, springing its inner end thereon, each plate being folded back nearly upon itself at one edge, each of said folded portions being twisted from a horizontal position at its inner end to a vertical position at its outer end, the original outer edges of the two folded portions being contiguous when folded and twisted as described, forming a passage whose inlet is a vertical plane and whose outlet is two parallel horizontal planes joined at one edge, as and for the purpose specified.

2. The plate B, folded and twisted as described, in combination with the plate A, folded and twisted as described, and having the point *a'* lying across the line of the opening between the adjacent edges of said plates.

3. The combination, with the plate A, having the notches *p* therein, of the guide *q s*, having an elastic body attached to said plate, adapted to spring into the aforesaid notches, as shown and described.

4. The plate A, having the notches *p* and rib *s'*, in combination with the guide *q*, having the hook *q'*, adapted to hook loosely over the rib *s'*, as shown and described.

5. The plate A, having a hole, *f'*, in it, and the plate B, having the inclined-edged projection *f*, adapted to pass through said hole *f'*, in combination with the slide G, provided with a plate, *f''*, adapted to slide between plate A and projection *f* to raise the plate B, as shown and described.

6. The combination, with the plate A, having two slots in it, of the slide G, having two studs, *g g'*, and the spring k^3, held by said studs, impinging upon one side of plate A to hold slide G in frictional contact with the other side, as described.

7. The folded and twisted plate A, having the extension c^4, in combination with the folded and twisted plate B, having the extension c^5, adjacent to each other, as shown and described.

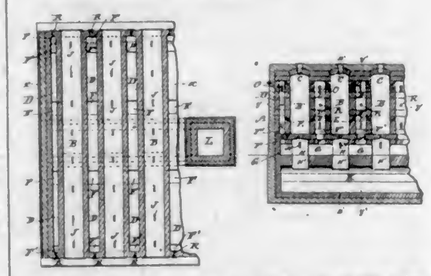
8. The combination, with the guide *l*, having the flexible arm *k*, each provided with guiding-edges in line with the other, of the guide *l'*, having the flexible arm *k'*, each provided with guiding-edges in line with the other, substantially as described.

9. The flexible arm *k*, having the projecting lip k^2, and a hole, k^4, for the machine-needle to enter, and shaped to be secured to a sewing-machine beneath the presser-foot, in combination with means for feeding work thereto, substantially as shown and described.

10. The folded and twisted plate A, having the diagonal serrations *n'* at its delivery end, in combination with the folded and twisted plate B, having similar serrations, *n*, adjacent thereto, as shown and described.

11. The folded and twisted plate A, having the diagonal bar *m'*, secured on its upper face, in combination with the folded and twisted plate B, having the bar *m*, secured on its lower face adjacent to and practically parallel with said bar *m'*, as shown and described.

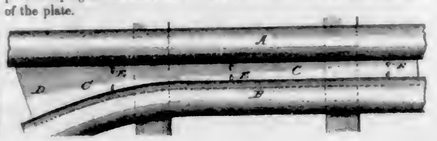
293,023. COKING-FURNACE. ARTHUR RICHARD BALDWIN HILTAWSKI, Zaborze, Upper Silesia, Germany. Filed Nov. 15, 1883. (No model.) Patented in Germany Nov. 24, 1882, No. 21,455.



Claim.—A coking-furnace constructed with a series of coking-chambers, B, gas-chambers D between them, longitudinal channels H below the coking-chambers, transverse channels G, connecting the channels H, and a channel, K, communicating with the channels H by the flues H', and leading to the smoke-stack, and slots J, communicating with the channels H and the coking-chamber B, substantially as herein shown and described, and for the purpose set forth.

293,024. LIFE-PROTECTOR FOR RAILROAD-RAILS. EDWARD J. HOFFMAN, Sioux City, Iowa. Filed May 1, 1883. (No model.)

Brief.—A safety-plate resting upon elastic cushions secured by staples clamping the cushions and riveted with their free ends upon the top of the plate.

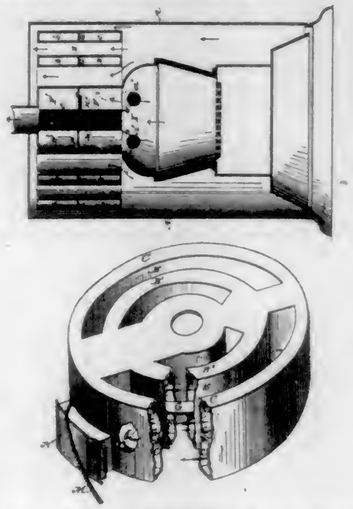


293,024.



Claim.—The life-protector for railroad-rails, consisting of the steel plate C D, elastic cushions F F, and staples E, constructed and combined substantially in the manner and for the purpose herein shown and set forth.

293,025. RADIATOR FOR HOT-AIR FURNACES. CYRUS S. HOOD, Corning, N. Y. Filed Sept. 25, 1883. (No model.)



Claim.—1. The radiator or heater embracing two or more concentric fire-flues divided horizontally, the vertical central chamber, a damper for dividing said chamber, a cross-flue opening into the lower part of said chamber, communicating with the lower concentric fire-flues at the rear side of said heater, a cross-flue opening into the upper exit part of said central chamber, communicating with the upper concentric fire-flues, and open air-spaces between the said concentric fire-flues, substantially as described, for the purpose set forth.

2. A heating-drum or radiator having a central rising chamber, F, two or more concentric flues, each divided into an upper and a lower communicating passage by a horizontal partition, a top exit-chamber, F', and a damper dividing said central rising chamber from the exit-chamber, such division being coincident with the horizontal division of the concentric flues, for the purpose stated.

3. The combination, with a heater composed of concentric fire-flues, intervening open air-spaces, and a vertical central chamber communicating with the combustion-chamber and with the said fire-flues, substantially as described, of a self-closing damper arranged to divide said vertical flue, having an outside bent or curved handle, and the feed-door in the casing of the outer concentric flue, arranged to press against and turn said handle to open the damper in opening said door, substantially as herein set forth.

4. The combination, with the fire-pot and the dome, of a heater composed of concentric fire-flues divided horizontally, and a vertical central chamber divided by a damper, and open air-spaces between the said fire-flues, the pipes or collars *b b*, connecting the inner of said fire-flues with the combustion-chamber, the lower cross-flue connecting the outer of said fire-flues with the lower part of the central chamber and with the combustion-chamber, and the upper cross-flue connecting the said fire-flues with the upper part of said central chamber, substantially as herein set forth.

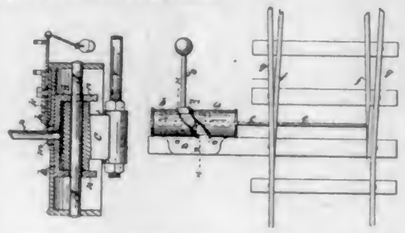
5. The combination, with the rising chamber F, of one or more separate concentric fire-flues divided horizontally into separate lower and upper communicating flues, the lower and upper cross-flues, J J', the central top exit-chamber, F', the damper H, and one or more open concentric air-heating spaces, the said concentric fire-flues opening into the said cross-flues and into the said central rising and exit chambers at points directly over each other, substantially as described.

6. The combination, in a radiator, of the central rising and exit chambers, F F', one or more separate concentric fire-flues divided horizontally, and communicating by openings in said divisions, the cross-flues J J', communicating with said separate concentric flues and the said central chambers, and the open air-heating spaces, with a damper dividing the said central chambers, adapted to be opened by the pressure of the gas in the combustion-chamber, and to close automatically upon the relief of said pressure, substantially as described.

7. An air-heater for stoves and furnaces, having one or more separate concentric fire-flues divided horizontally, a central rising and exit chamber, a damper dividing said central chamber in line horizontally with the fire-flue divisions, and one or more open air-heating spaces between the said fire-flues, the latter receiving the products of combustion through an opening in said central rising chamber beneath its dividing-damper and discharging them through an opening in said central exit-chamber above said damper, both the receiving and discharging openings being on the same side of said central chamber, and communicating with the said fire-flues by openings in their division-plates, substantially as herein set forth.

293,026. RAILROAD-SWITCH MOVER. GEORGE W. HORNE, New York, N. Y., assignor of one-fourth to Benjamin A. Dare, same place. Filed Aug. 7, 1883. (No model.)

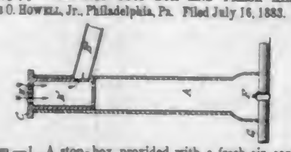
Brief.—A projection on the traveling nut which holds the moving arm travels in the spiral channel in the stationary case. The traveling nut is secured, either directly or through a movable sleeve interposed, to the switch-bar, which moves therewith



Claim.—1. In a switch-mover with a spiral slot or grooved channel, the rotating and traveling nut or hub *b*, with projecting lug *m* and protruding lugs or ears *n*, embracing the sleeve *c*, and moving the same in either direction, substantially as and for the purpose described.

2. In a switch-mover, the case *a*, with spiral guide, nut, or hub *b*, with lugs *m*, protruding ears *n*, the adjustable sleeve *c*, and guide-rod *d*, the whole combined and operated in the manner described, for the purpose specified.

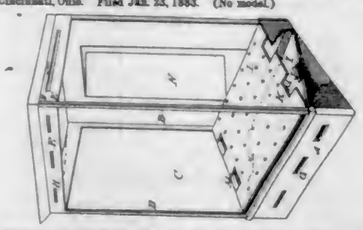
293,027. COMBINED STOP-BOX AND FRESH-AIR CONDUIT. LEWIS C. HOWELL, Jr., Philadelphia, Pa. Filed July 16, 1883. (No model.)



Claim.—1. A stop-box provided with a fresh-air conduit or pipe adapted and arranged to supply air to the main drain of a building, substantially as shown and described.

2. In a device of the character herein specified, stop-box A, provided with fresh-air conduit B and a cover, C, perforated at E, substantially as and for the uses and purposes shown and described.

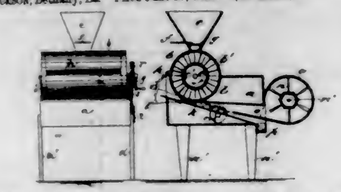
293,028. VENTILATED SHOW-WINDOW. SAMUEL E. HYNDMAN, Cincinnati, Ohio. Filed Jan. 23, 1883. (No model.)



Claim.—1. In show-windows, the lower and upper casings provided with openings G and H, in combination with the inclined plane or floor I, extending nearly to the rear of floor B, with side and front openings, J, and perforated floor K, with openings M, and the incline O at the top, substantially as and for the purpose herein set forth.

2. In a show-window, the upper and lower casings provided with openings G and H, perforated floor K, and the inclined plane I below said floor K, extending nearly to the rear, and having side and front openings, J, substantially as described.

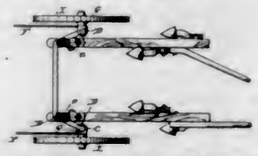
293,029. HULLER, CLEANER, AND SEPARATOR. WM. WORTH JACKSON, Bethany, La. Filed June 16, 1883. (No model.)



Claim.—In a pea or bean huller, the combination of the fan, the inclined sieve, the rotary toothed hulling-cylinder, and the stationary toothed case, the latter provided with an opening near the bottom to intercept the smaller matters and discharge them on the sieve, and an opening at the side for discharging the vines beyond the end of the sieve, substantially as shown and described.

293,030. TONGUELESS WHEEL-CULTIVATOR. THOS. B. JEWETT, Steubenville, Ohio. Filed Oct. 29, 1883. (No model.)

Brief.—Axle-arch turned rearward, and the ends thence upward to receive the plate carrying the wheels and draft-rods. The beam-connection is carried forward to render the machine compact and to prevent it from falling down when the draft is slackened.

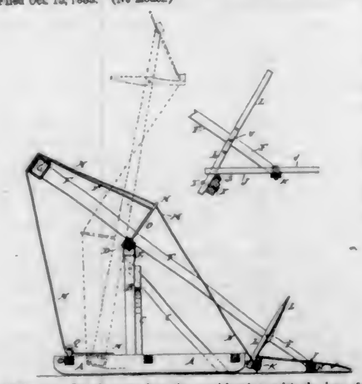


Claim.—1. In a wheel-cultivator, an axle having its ends turned backward at an angle, so as to bring the points of draft to the rear of the front ends of the beams, substantially as shown.

2. In a tongueless wheel-cultivator, the combination of the axle, having its ends turned backward at angle and then upward, with draft-bars carrying the spindles for the wheels, the draft-bars being applied to the vertical portions of the turned-up ends, substantially as described.

3. In a wheel-cultivator, the combination of the axle, having its ends turned backward and then upward, with the wheels applied to the upturned ends, substantially as set forth.

293,031. HAY-STACKER. JAMES HENRY JOHNSON, Greencastle, Mo. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a hay-stacker, the combination, with the base-frame A and standards B, of the pivoted handle F, with its axis supported upon the standard, the prongs J and L, loosely connected together, the prongs L having adjusting-apertures, and the hoisting-rope M, substantially as and for the purpose set forth.

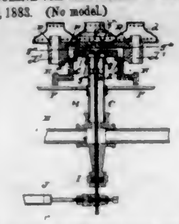
2. The combination, with the pivoted handle F of a hay-stacker, of the prongs J and L, the said prongs J and L being loosely connected, and the prongs L being provided with adjusting-apertures, whereby the prongs L may be adjusted relatively to the handle, substantially as shown and described.

3. In a hay-stacker, the combination, with the base-frame A and the standards B, of the fork-handle F, the shaft D, the prongs J L, loosely connected together, the prongs J and the cross-bar H of the handle F, the V-shaped standard O, the brace P, and rope M, substantially as and for the purpose set forth.

4. In a hay-stacker, the combination of the handle F, the end cross-bar, H, provided with staples or eyes I, the head K, and the prongs J L, the prongs J being connected loosely to the head K, and the prongs L being connected to the side bars of the handle F, substantially as and for the purpose set forth.

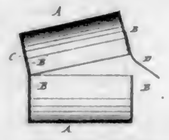
5. In a hay-stacker, the head K and cross-bar H of the handle F, in combination with the prongs J L, the intermediate or middle ones of the delivery-prongs L being pivoted to the head K, to allow them to be moved wider apart, and the intermediate or middle ones of the receiving-prongs J being disposed sufficently far apart for the passage of the horse, substantially as set forth.

293,032. GASOLINE-VAPOR BURNER. THOMAS JOHNSON, St. Louis, Mo. Filed Aug. 9, 1883. (No model.)



Claim.—In a gasoline-vapor-burner head, the combination of the head-block G, formed with valve-seat *g* at bottom, neck *g'''*, vertical passage *g×*, radial passages *g'*, hollow threaded projections *g''*, forming extensions to the radial passages, the supports D, secured to the projections and having central openings, *d'*, and passages *d'''*, in communication with the radial passages, extensions, and the L-shaped jets E, secured in the passages in the supports, as set forth.

293,033. COIN-HOLDER. CHARLES CARROLL JOHNSTON, Jackson, Miss. Filed Dec. 15, 1883. (Model.)



Claim.—1. A coin-holder made substantially as herein shown and described, and consisting of semi-cylindrical sections held together by a hinge-joint at one end, as set forth.

2. In a coin-holder, the combination, with two semi-cylindrical sections, of a flexible strip secured to the adjoining ends of two sections, substantially as herein shown and described.

3. In a coin-holder, the combination, with the two semi-cylindrical sections A, having heads B, of the flexible strip C, secured to two adjoining heads, and of the strip D, secured to one of the opposite heads, substantially as herein shown and described.

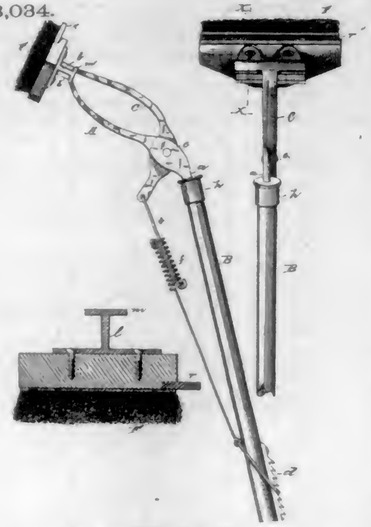
293,034. HOUSE-CLEANING IMPLEMENT. LARKIN F. JOHNSTON, Springdale, Ark. Filed Aug. 9, 1883. (No model.)

Claim.—1. A pair of tongs arranged obliquely to the handle, and adapted to grasp and retain between them a brush, mop, or other article for cleaning purposes, one of said tongs being connected to the handle, and the other being movable and pivoted to the fixed tong, and a spring-connection secured to the end of said pivoted tong, and adapted to engage a ratchet on the handle, substantially as and for the purpose set forth.

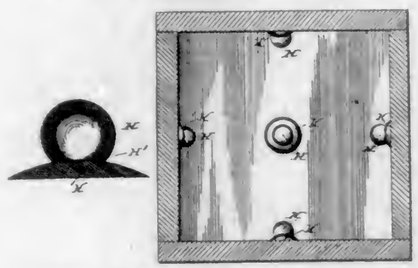
2. The improved brush and mop holder, consisting of the arms A C, pivoted to each other, and provided with jaws, as shown, one of the arms being secured to a handle, and the other having a perforated end and a spring connecting means adjustably secured to the handle, the parts being combined and organized substantially as shown, and for the purpose set forth.

3. In a house-cleaning implement, a brush having a longitudinal flanged rib on its rear side, and a rubber, *r*, at or near its edge, substantially as set forth.

293,034.



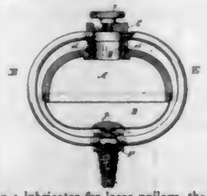
293,035. BUTTER-PACKAGE. DANIEL S. JOHNS, Kortright, N. Y. Filed Dec. 10, 1883. (No model.)



Claim.—1. A transportation-case for butter-jars or similar articles, consisting of a casing, C, having elastic cushions which consist of base-pieces K and hollow rubber balls or spheres H, cut away or recessed upon one of their sides, and secured upon the base-pieces K, as and for the purpose shown and set forth.

2. A transportation-package consisting of a casing, C, having elastic cushions consisting of hollow rubber balls or spheres H, secured upon suitable base-pieces, K, upon its sides and bottom, and a glass jar, A, constructed as described.

293,036. LOOSE-PULLEY LUBRICATOR. LOUIS E. KANE, Cincinnati, Ohio, assignor of one-half to George J. Murray, same place. Filed Aug. 6, 1883. (No model.)



Claim.—1. In a lubricator for loose pulleys, the combination, substantially as specified, of the stem F and a reservoir having its discharge-orifice inverted with relation to the stem, with suitable means, such as shown, to connect the discharge-orifice with said stem.

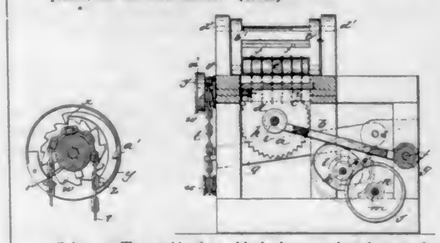
2. In a loose-pulley lubricator, the combination of the stem F, tubes E, and cap C, with the inverted reservoir A B D, substantially as specified.

3. An oil-reservoir for loose-pulley lubricators, consisting, substantially as before set forth, of a rigid part, A, at one end, and terminating at its other end in a tubular neck, B, and a flexible part, D, the open end of which is secured to the open end of the rigid part A, to form a single vessel.

4. The combination, substantially as specified, of the stem F, cap C, and tubes E, with the rigid part A, neck B, the flexible part D, and weight *g*.

5 The combination, substantially as specified, of stem F, the curved tubes E, and cap C, with a reservoir suspended from said cap, between the tubes, said reservoir having a weighted flexible part, D.

293,037. CIRCULAR SAWING MACHINE. GEORGE J. KAUFT, Emporium, Pa. Filed Dec. 14, 1883. (Model.)



Claim.—1. The combination, with the lever *q*, pivoted at *s* to the frame, and connected at its free end to the chain *t*, which passes under an idler below the lever, and over a chain-pulley on the shaft of the feed-roller *d* above the lever *q*, of the cam *p*, mounted on shaft *k*, for operating lever *q* and devices connected therewith, substantially as described.

2. The combination of the feed-roller *d*, on the shaft of which is mounted loosely a chain-pulley, *v*, having secured thereto a ratchet-disk, *w*, and also a disk rigidly secured to said shaft *d*, and carrying a spring-pawl, with the chain *t*, idler *u*, and pivoted cam-operated lever *q* below the table, substantially as set forth.

3. The combination of the shaft *k*, provided with the cams *l p*, the former for operating the swinging saw-frame and the latter for operating the pivoted lever *q*, connected with the chain *t*, passing under idler *u* and over loose chain-pulley *v*, on the shaft of the feed-roller *d*, with the fixed disk on said shaft carrying the fixed ratchet *w* and its spring-pawl, and suitable gearing for operating the shaft *k* and the saw, substantially as set forth.

4. The combination of the shaft *k*, carrying the cams *l p*, mounted, respectively, below the swinging saw-frame and pivoted lever *q*, and said shaft *k*, also provided with cog-wheel *o*, with the shaft *m*, provided with pinion *n*, gearing with wheel *o*, and with a driving-pulley for operating said shaft *m*, and the pulleys *g h* on the saw-frame shaft and saw-arbor, respectively, by belts passing over the same, substantially as set forth.

293,038. ELEVATOR. AUGUST KIRCHHEFER, Milwaukee, Wis. Filed Nov. 6, 1883. (No model.)

Claim.—1. In an elevator, a counterbalancing-bucket, C, adapted to rise and fall in vertical ways, properly connected to the car or platform, and adapted to raise or lower the same respectively as the proper weight is emptied in said bucket from a valve-controlled hopper in the top of the building or emptied from said bucket through a valve in its bottom, as set forth.

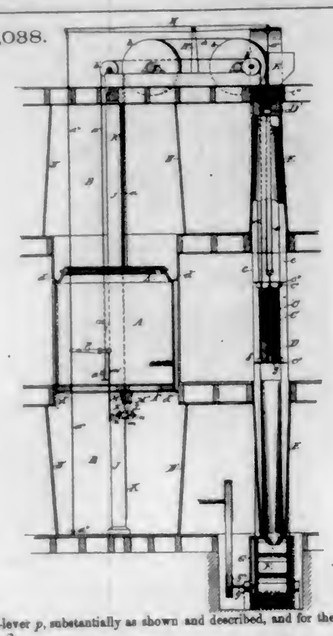
2. In an elevator, a well-room having the sides of its top story inclined inward toward the ceiling, wherein a sufficient volume of air may be compressed by means of elastic strips fitted on the corresponding sides of the car-top to gradually arrest the sudden rise of the car, due to a breakage of some part of the hoisting mechanism or to some other accident, in combination with the similarly-inclined sides of the well-room basement and the elastic strips fitted on the sides of the car-bottom, as set forth.

3. In an elevator, the counterbalancing-bucket C, having notched bearings *c'* in its top and bottom, and the automatic valve D, in combination with the bucket-belt elevator F, having the boot G and the valve-controlled hopper E', substantially as shown and described, and for the purpose set forth.

4. In an elevator, the bucket C, filled with shot C', in combination with the wire cables *a*, the sheaves *b b*, and the car A, substantially as shown and described, and for the purpose set forth.

5. In an elevator, the clutch-brake L, consisting of right-and-left-threaded crank-shaft *m* of articulated levers N, having threaded sleeves *n n*, slotted fulcrum *o*, and clutching-arms *n' n'*, both supported by bracket-hanger M', and fulcrum-hinging bolt P on cross-bar M, in combination with flat iron bar K of post J, connecting rod or link *m'*, and

293,038.



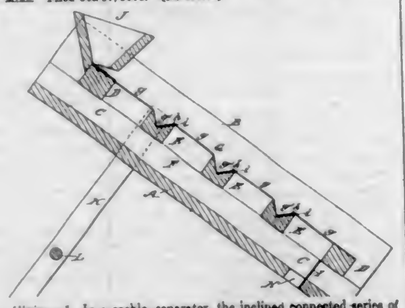
hand-lever *p*, substantially as shown and described, and for the purpose set forth.

6. In an elevator, the inclined sides B' of the well-room top story and the elastic strips *d'* along the sides of car-top A', in combination with the inclined sides B' of the well-room basement story, and the elastic strips *d'* along the sides of the car-bottom A^3, substantially as shown and described, and for the purpose set forth.

7. In an elevator, the inclined sides B' of the well-room top story, and the elastic strips *d'* on sides of car-top A', in combination with the wires *a*, sheaves *b b*, the funnel-shaped pipes E, fitted in the basement story on the path of counterbalancing-bucket C, having elastic strips *c'* around its bottom, substantially as shown and described, and for the purpose set forth.

8. In an elevator, the funnel-shaped pipe E, fitted in the top story on the path of the counterbalancing-bucket C, having the elastic strip *c'* around its top, in combination with the inclined sides B' of well-room basement, and the elastic strips *d'* on the sides of the car-bottom, substantially as shown and described, and for the purpose set forth.

293,039. COCKLE-SEPARATOR. JAMES MADISON KING, Rochester, Minn. Filed Oct. 17, 1883. (No model.)



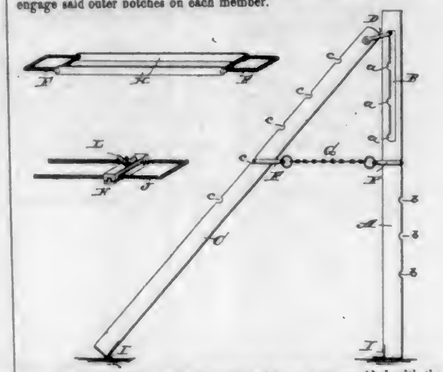
Claim.—1. In a cockle-separator, the inclined connected series of screens *g*, having the detents *g'*, in combination with the series of transversely-arranged V-shaped-guttered bars E, within which the said detents are located, substantially as and for the purpose set forth.

2. In a cockle-separator, the inclined series of screens *g*, provided with detents *g'*, having the imperforate smooth-faced plates A, secured to the lower or forward sides of the detents, in combination with the series of transversely-arranged V-shaped-guttered bars E, substantially as and for the purpose set forth.

3. The cockle-separator herein shown and described, comprising a suitable inclined bottom and side boards and the cross-bars D D and guttered cross-bars E E, and the screen G, held in the gutters of the cross-bars E and provided with the plates A, substantially as and for the purposes set forth.

293,040. SCAFFOLDING-BRACKET. MARK N. ENIGHT, Skowhegan, Me. Filed Apr. 23, 1883. (No model.)

Brief.—An upright piece of timber provided with a longitudinal slot, and in one edge with a series of notches, and below said slot, in its outer edge, with a series of notches, the other piece also notched in its outer edge and provided with a pivoted U-shaped link which passes through the slot and engages the notches, also links united by bars which engage said outer notches on each member.



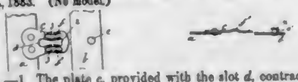
Claim.—1. The combination, with the piece A, provided with the notches *a b*, of the piece C, provided with notches *c*, and of the U-shaped link D, pivoted to the upper end of the piece C, substantially as herein shown and described, and for the purposes set forth.

2. The combination, with the piece A, provided with the slot B and with the notches *a b*, of the piece C, provided with notches *c*, and of the link D, pivoted to the upper end of the piece C and passed through the slot B, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the notched pieces A C, adjustably hinged together, of a brace having links or loops engaging the notches of the said pieces, substantially as herein shown and described.

4. The combination, with the piece A, provided with the notches *b*, and the piece C, provided with the notches *c*, of the link D, the links F, and the bars H, uniting them, substantially as herein shown and described, and for the purpose set forth.

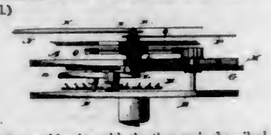
293,041. FASTENING FOR WEARING-APPAREL. PERLEY LAFLIN, Warren, assignor to Theodore C. Bates, North Brookfield, Mass. Filed Apr. 14, 1883. (No model.)



Claim.—1. The plate *c*, provided with the slot *d*, contracted near the middle of its length, and wholly surrounded by the metal of the plate, and having the spring-arms *f f'* and cut-away portions 3 3 between said arms and the edges of the plate, substantially as shown and described. and the single plate *c*, having the slot *d*, contracted between its ends, and wholly surrounded by and contained within the metal of the plate,

2. A fastening device for wearing-apparel, comprising a headed stud and provided between its ends with a stop bent or struck up from the body of the plate, to arrest the accidental escape of the headed stod from the said slot, for the purposes set forth.

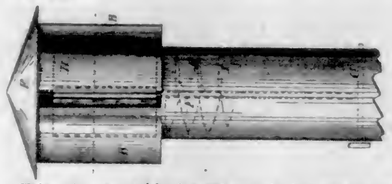
293,042. WATCH. CLAUDIUS D. LEGER, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed Sept. 12, 1883. (No model.)



Claim.—In combination with the time-train described, the arbor I, journaled within the hollow arbor H, provided with the pinion *i*, and carrying the seconds-hand K, and the wheel M, secured to and rotated

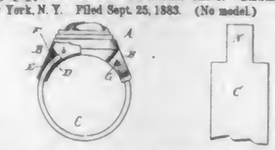
by the arbor of the second wheel G, and meshing with said pinion, substantially as and for the purpose specified.

293,043. DRAFT-REGULATOR FOR PIPES, FLUES, AND VENTILATORS. LEWIS YOUNG LENHART, Red Wing, Minn. Filed Dec. 24, 1881. (No model.)



Claim.—As a new article of manufacture, the draft-regulator consisting of a pipe, A, the tangential wings B, formed by cutting the end of said pipe vertically and horizontally, the cone-cap E, secured directly to the top edges of said wings, the central rotary shaft, F, the flat radial blades H, arranged on this shaft in the plane of the openings between the wings B, the spiral vane I, and the cross-step G, all constructed and adapted to operate as shown and described.

293,044. ADJUSTABLE FINGER-RING. BENJAMIN LEWKOWITZ, New York, N. Y. Filed Sept. 25, 1883. (No model.)



Claim.—1. In a finger-ring, the combination, with a frame having inclined pockets projecting from the sides, of a removable shank having its ends passed into the pockets, and of a screw passed through the edge of each pocket and adapted to bind on the edge of the shank, substantially as herein shown and described.

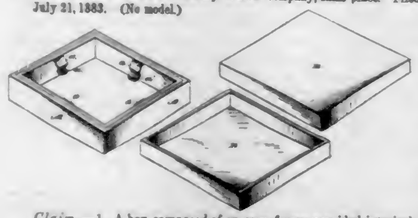
2. In a finger-ring, the combination, with a frame, A, having inclined pockets B on the sides, of the shank C, having recesses or notches a in the edges at the ends, and of the screw G, passed through an edge of each pocket, substantially as herein shown and described.

3. In a finger-ring, the combination, with the frame A, having inclined pockets B on the sides, of the plates D, each having groove E and cross-piece F, and of the screws G, adapted to pass through the edges of the plates D, and to bind on the edges of the shank, substantially as herein shown and described.

293,045. MIXED PAINT. HOWARD LITTLE, Deckertown, N. J. Filed Aug. 18, 1883. (No specimens.)

Claim.—The improved paint herein described, consisting of the ingredients named in the proportions stated, to wit: to five gallons of coal-tar thinned by a light oil four quarts of finely-sifted wood-ashes, the ingredients being thoroughly incorporated with each other, and adapted for use substantially as specified.

293,046. WATCH-MOVEMENT BOX. EDWARD A. LOCKE, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 21, 1883. (No model.)

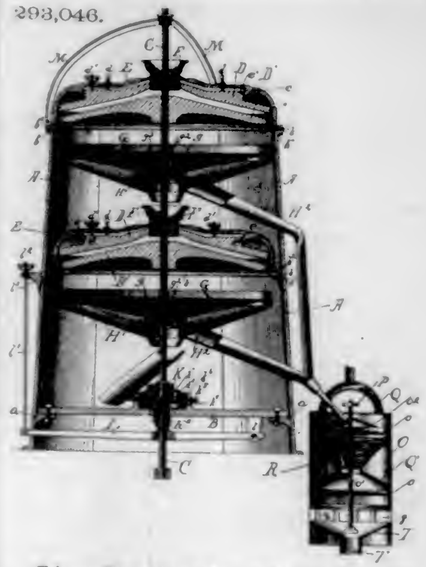


Claim.—1. A box composed of an open frame provided interiorly with spring-clasps for engagement with either or both plates of a watch-movement, substantially as and for the purpose specified.

2. An open frame provided interiorly with spring-clasps, for engagement with the plate or plates of a watch-movement, in combination with covers which are adapted to be passed over and to inclose the sides of said frame, substantially as and for the purpose shown.

293,047. MILLING APPARATUS. FRANK M. MACKEY, La Porte, Ind., assignor to himself, and Edward Morf and Gustav B. Morf, both of Chicago, Ill. Filed Apr. 9, 1883. (No model.)

293,046.



Claim.—1. The combination, with a series of lower revolving conical disks or reducers provided with smooth-surfaced spiral dress and secured to a vertical shaft, of a series of upper stationary opposing conical disks or reducers having a smooth-surfaced radial dress, and a series of dished sieves having a circular vibrating motion, substantially as specified.

2. The combination of chamber or frame A, bridge-tree B, shaft C, lower revolving conical reducers, D', secured thereto, and provided with smooth-surfaced spiral dress, stationary upper opposing conical reducers, D, provided with smooth-surfaced radial dress, hoppers F, copings E, dished screens G, and eccentrics g^3, for giving to said screens a circular vibrating motion, substantially as specified.

3. The combination, with the bridge-tree B, of the shaft C, collar K, secured to said shaft, and provided with flange k', and sleeve k^4, provided with an annular groove or recess, k^2, in its upper end, to receive the downwardly-projecting flange k' of the collar K, and thus form also an oil-receptacle, substantially as specified.

4. The combination of sieve G, spring H, secured to said sieve and to the stationary frame, and a shaft and eccentric for communicating to the sieve a circular vibratory motion, substantially as specified.

5. The combination of under revolving conical reducer, D', stationary opposing conical reducer D, coping E, set-screws d and hand-screws d', hopper F, provided with screw-threads, whereby it is secured to reducer D, and chamber A, substantially as specified.

6. The combination, with the chamber A, provided with interior flanges, b', of ring b, provided with projection b^2 on its upper surface, coping E, provided with grooved foot secured to said ring, upper stationary adjustable conical reducer, D, hopper F, secured to said reducer, and under revolving conical reducer, D', and shaft C, to which said reducer D' is secured, substantially as specified.

7. The combination of chamber A, coping E, secured to said chamber, upper stationary adjustable conical reducer, D, supported from said coping, and provided with smooth-surfaced radial dress, shaft C, and revolving conical reducer D', secured to said shaft, and provided with smooth spiral dress extending from center to periphery, substantially as specified.

8. The combination of chamber A, coping E, upper stationary conical reducer, D, supported from said coping, shaft C, under revolving conical reducer, D', secured to said shaft, cam-sleeve g^3, secured to said shaft, and circularly-vibratory sieve G, supported and operated by eccentric on shaft C, substantially as specified.

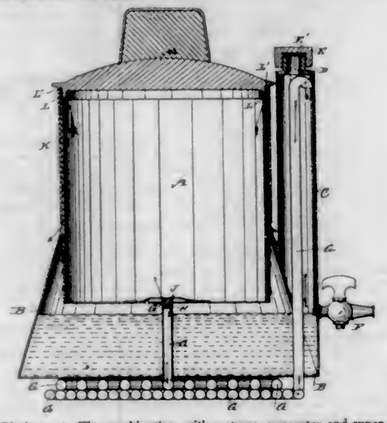
9. The combination of dished sieve G, provided with open collar g, shaft C, provided with cam-sleeve g^3, by which said sieve is supported and operated, spring H, and dished bottom H', provided with discharge-spout, substantially as specified.

10. The combination of chamber A, bridge-tree B, shaft C, collar K, rigidly secured to said shaft, and provided with flange or shoulder k', sleeve k^3, loosely mounted on said shaft, and provided with grooves k^2, adapted to receive shoulder k^3 and leave an oil-receptacle, adjusting-ring k^4, brackets k^5, and adjusting-screws k^6, substantially as specified.

11. The combination, with the shaft C, of the cam-sleeve g^3, secured to said shaft, and provided with a horizontally-projecting flange or shoulder, of the dished sieve G, and collar g, rigidly secured to the sieve, and provided with an interior shoulder or flange fitting over the flange on the cam-sleeve g^3, whereby the sieve is supported and operated by the cam-sleeve, substantially as specified.

12. The combination, with the shaft C, of the cam-sleeve g^3, secured to said shaft, and provided with a horizontal projecting flange or shoulder, of the dished sieve G, collar g, rigidly secured to the sieve, and provided with an interior shoulder or flange fitting over the flange on the cam-sleeve g^3, and dished bottom H', provided with discharge-spout H^3, secured to the frame of the sieve, so as to vibrate therewith, substantially as specified.

293,048. STEAM-COOKER. HUDSON MAXIM, Pittsfield, Mass. Filed June 21, 1883. (No model.)



Claim.—1. The combination, with a steam-generator and superposed cooking-vessel, of a pipe having a valved end in the bottom of the cooking-vessel, and an open end in the steam-space of the generator, carried down from the steam-space through the bottom, bent alternately in opposite directions under said bottom, and passing through the generator into the cooking-vessel, as shown and described.

2. In a steam-cooker, the combination, with the vessel A, of the steam-generating vessel B below it, the tube C, extending upward from the vessel B, and the pipe G, extending from the top of the tube C to the bottom of the vessel B, under which it is coiled or passed alternately in opposite directions, and is then passed through the bottom of the vessel B to the bottom of the vessel A, substantially as herein shown and described.

3. In a steam-cooker, the combination, with the vessel A, of the steam-generating vessel B, the tube C, extending upward from the bottom of the same, the pipe G, extending from the top of the tube C to and under the bottom of the vessel B, and up to the bottom of the vessel A, and the valve H in the end of the pipe G, substantially as herein shown and described.

4. In a steam-cooker, the combination, with the vessel A, of the vessel B, the tube C, the pipe G, the valve H, and the cross-strips J on the upper surface of the bottom of the vessel A, substantially as herein shown and described.

5. In a steam-cooker, the combination, with the vessels A and B, of the cover K, provided with a groove, L, and a packing-strip, L', and of the weight M in the top of the cover, substantially as herein shown and described.

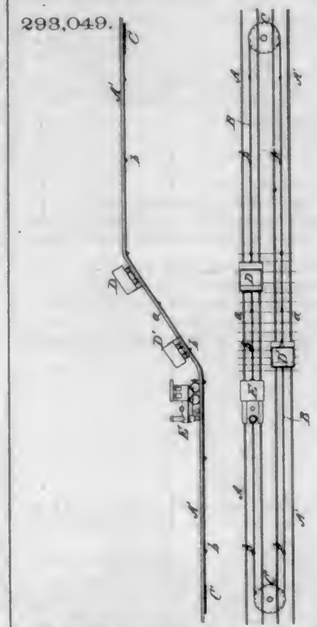
293,049. METHOD OF OPERATING TRAINS ON CABLE RAILROADS. PAUL H. MATOR, Oswego, N. Y. Filed Sept. 15, 1883. (No model.)

Brief.—Trains on endless-cable railways which have inclines are operated through a locomotive attached to one or both trains.

Claim.—1. The method of operating trains on inclines of double-track cable railroads, in which, through the intervention of the cable, arranged to pass down the one track and up the other, the gravity of a descending train on the one track is used to haul up an ascending train on the adjacent track, the same consisting in connecting with the one train a locomotive-engine for controlling the movements of the cable and its attached trains traveling in opposite directions, substantially as specified.

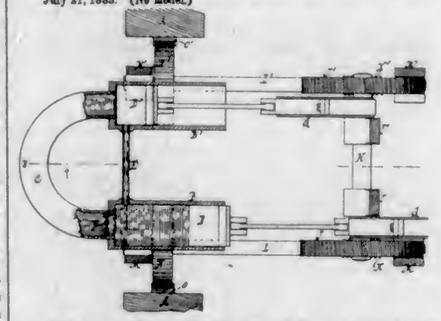
2. In the operation of trains on inclines of double-track cable railroads, in which, through the intervention of the cable, arranged to connect trains moving on both tracks in reverse directions, the gravity of the descending train is used to haul up the ascending train, the method

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of controlling the movement of the cable and its attached reversely-traveling trains, which consists in connecting a locomotive-engine with each of said trains, substantially as described.

293,050. ELEVATOR. THOMAS MCADOO, New York, N. Y. Filed July 21, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with an elevator-car, of two cylinders fastened to the car, the pipe C, and the tube E, connecting said cylinders, the check-valve in the pipe C, the pistons moving in the two cylinders, and suitable mechanism for imparting to the pistons a reciprocating motion in opposite directions.

2. The combination, substantially as hereinbefore described, with an elevator-car, of two cylinders fastened to the bottom of the car, the pipe C, and tube E, connecting said cylinders, the check-valve in the pipe C, the pistons moving in the two cylinders, the toothed racks secured to the posts A A', the cog-wheels N N', shafts L L', worms K K', worm-wheels J J', shaft H, and suitable means for transmitting motion from the shaft H to the pistons D D'.

293,051. DEVICE FOR LOCKING WHEELS. WM. L. MCDOUGALL, New York, N. Y. Filed June 30, 1883. (No model.)

Claim.—1. A device for coupling the wheels of a vehicle, consisting of a coupling-rod provided at its extremities with yokes having pivoted spring locking-keepers, substantially as and for the purposes specified.

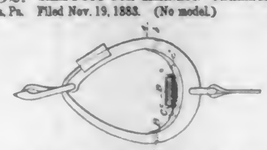
298,051.



2. A device for coupling the wheels of vehicles, consisting of an extensible sectional coupling-rod provided at its extremities with yokes having pivoted spring locking-keepers, substantially as and for the purposes specified.

3. The combination, with a wheel-coupling rod provided at its extremities with felly-yokes, of protective sleeves arranged on the arms and keeper of the yoke, substantially as and for the purposes specified.

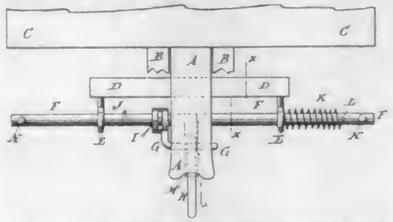
298,052. SHAFT-TUG FOR HARNESS. PATRICK MCFADDEN, Philadelphia, Pa. Filed Nov. 19, 1883. (No model.)



Claim.—1. In combination with recessed or slotted stirrup B, the plate C, having lugs c c and slots c', and the roller D, journaled in said lugs, substantially as described.

2. The combination, with tug A, of slotted or recessed stirrup B, secured inside said tug by rivets b, and slotted plate C, having lugs c c, supporting an anti-friction roller, D, substantially as shown and described.

298,053. CAR-COUPLING. FRANK L. MCQUISTON, Greencastle, Iowa. Filed May 4, 1883. (No model.)



Claim.—1. A car-coupling constructed substantially as herein shown and described, and consisting of the draw-head A, the cross-bar D, having bearings E, the rod F, having stop-pins I J L, the spring K, the elbow M, and the bent coupling-pin G, as set forth.

2. In a car-coupling, the combination, with the draw-head A, of the sliding rod F, having stop-pins I J L, the spring K, the elbow M, and the bent coupling-pin G, substantially as herein shown and described, whereby the cars can be coupled by operating the said rod, as set forth.

3. In a car-coupling, the combination, with the draw-head A, having a recess in its lower side, and the sliding rod F, carrying the bent coupling-pin G, of the elbow M, substantially as herein shown and described, whereby the link can be guided into the draw-head of an adjacent car, as set forth.

4. In a car-coupling, the combination, with the slide-rod F, having pin I, and the coupling-pin G, having slotted sleeve, of the link-lifter M, whereby the link may be lifted without moving the pin, as described.

298,054. ALBUM. STEPHEN MEEKS, Brooklyn, N. Y. Filed July 26, 1883. (No model.)

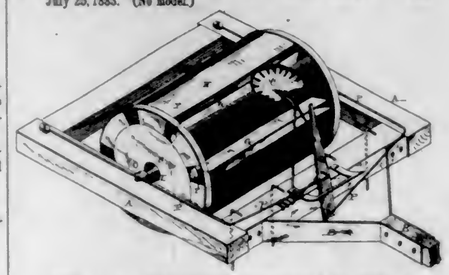


Claim.—1. An album the leaves of which are each composed of two sheets of paper having openings, the edges of which openings are embossed and thereby raised to create a pocket for receiving the picture, substantially as described.

2. An album the leaves of which are composed of the two sheets of paper having openings provided with embossed edges, in combination with the folded strip united to the inner edges of the sheets, and the filling-piece arranged in such strip, as shown and described, for the purpose set forth.

3. An album the leaves of which are composed of the two sheets of paper having openings provided with embossed edges, in combination with the filling-piece arranged between the sheets at the base of the embossed edges, substantially as and for the purpose described.

298,055. STALK-CHOPPER. WM. H. MERCER, Mercer, S. C. Filed July 25, 1883. (No model.)

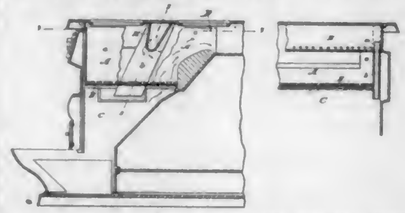


Claim.—1. In a stalk-cutter, the combination of the slotted outer cylinder, H, having the openings I through its ends, and which is made to roll along upon the ground independently of the shaft which passes through it, the cylinder F, provided with cutters and secured rigidly to the shaft E, the single shaft E, which passes through both of the cylinders H F, and the frame A, the shaft being smaller than the openings I, so as not to control the movement of the cylinder H, substantially as shown.

2. In a stalk-cutter, the combination of the frame, a shaft journaled therein, the cylinder provided with cutters and secured rigidly to the shaft, the slotted inclosing-cylinder provided with openings through its ends larger than the shaft, the sliding plugs placed on the ends of the shaft, and rods connected to the plugs for forcing them into the openings in the end of the cylinder, substantially as described.

3. The combination of the frame, the shaft, the cylinder provided with knives, the outer slotted inclosing-cylinder, the plugs for connecting this cylinder to the shaft, the rods connected to the shaft, and the operating-lever, the parts being combined and arranged to operate substantially as set forth.

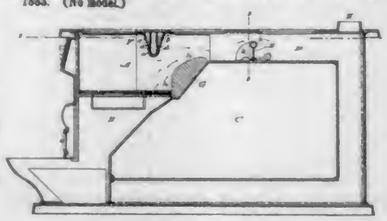
298,056. COOKING OR HEATING STOVE. JOHN A. MILLER, Newark, N. J. Filed Apr. 20, 1883. (No model.)



Claim.—1. In a stove wherein a hollow perforated pendent partition is employed to partially divide the furnace or fire-pot into two chambers, the combination, with this partition, of a flue arranged to connect the hollow of this partition with the ash-pit of the stove, substantially as set forth, and for the purposes specified.

2. The combination, with the hollow perforated pendent partition E, arranged to partially divide the fire-pot into two chambers, of the flue or flues b, arranged at the side of the stove and to extend down into the ash-pit C, whereby air from the ash-pit is supplied to said partition by the natural draft of the stove, as set forth.

298,057. STOVE. JOHN A. MILLER, Newark, N. J. Filed Apr. 20, 1883. (No model.)

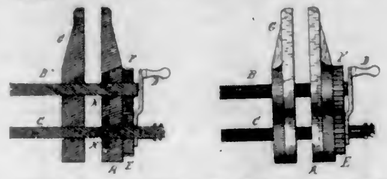


Claim.—1. The pendent partition F of a stove, arranged to divide the fire-box into two chambers, and provided with a longitudinal chamber with a perforated bottom, and passages arranged parallel to said chamber within said partition F, adapted to receive air at the side or sides of the stove, the said parallel passages having communication with the said chamber at its end or ends, whereby a zigzag passage is formed in said partition F, within which the incoming air is heated before it reaches the combustion point in the stove, substantially as set forth.

2. The pendent partition F of a stove, arranged to divide the fire-box into two chambers, and provided with a central chamber with a perforated bottom, and passages *b* and *c*, adapted to receive air from opposite sides of the stove, the said passages having communication with the central chamber at the ends of the partition opposite to the points where the air enters, substantially as set forth.

3. The combination, with the stove walls or sides provided with apertures *j*, of the damper H, provided with a perforated pipe, *i*, arranged to register with said apertures when the damper stands erect, and means, substantially as described, for closing said apertures when the damper is lowered, as set forth.

298,058. SCREW-CLAMP. FRANK A. MOORE, Louisville, Ky., assignor of one-half to Eugene L. Elrod, same place. Filed Oct. 15, 1883. (No model.)

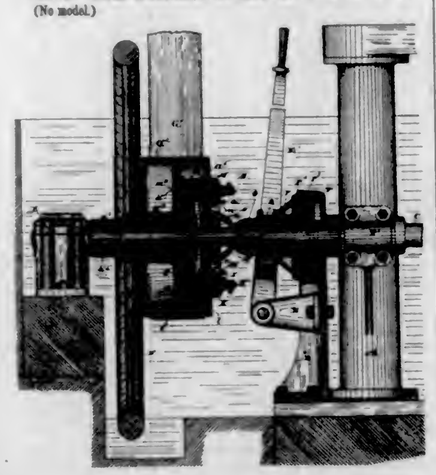


Claim.—1. The combination, with the jaws of a clamp and two screws journaled in one jaw and screw-threaded into the other jaw, of a crank mounted on one screw to revolve it, and gear-wheels mounted on both screws to communicate rotary motion from one screw to the other, substantially as and for the purpose specified.

2. The combination, with the two jaws of a screw-clamp, having two screws journaled in one jaw and screw-threaded in the other, of toothed wheels mounted on said screws, means, substantially as described, for disengaging one of said toothed wheels from the other, and a crank, mounted substantially as described, whereby the two screws may be simultaneously rotated, or one may be rotated independently of the other.

3. The clamp-jaw A, the screws B and C, journaled therein, the jaw G upon and engaging the thread of said screws, the shoulder-nuts N, fixed on said screws, the toothed gear-wheels E and F on said screws, and the crank D, mounted on one of said screws, one of said gear-wheels being longitudinally adjustable on its screw, as and for the purpose specified.

298,059. COMBINED BRAKE AND SPEED-REGULATING MECHANISM. THOMAS R. MORGAN, Sr., Alliance, Ohio. Filed Nov. 26, 1883. (No model.)



Claim.—1. The combination, with a shaft, driving-pulley, and fly-wheel, of clutch and brake mechanism, constructed and arranged substantially as set forth.

2. The combination, with a shaft and band-pulley, of a friction-clutch, friction-brake, and a hand-lever, the parts being constructed and arranged so that by moving the hand-lever in one direction the clutch will lock the band-pulley to the shaft, and also move the friction-brake disk longitudinally on the shaft and release the brake, while an opposite movement of the hand-lever will release the band-pulley and apply the brake, substantially as set forth.

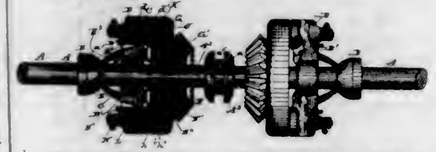
3. The combination, with a shaft, of a fly-wheel and band-pulley, constructed and arranged to be rotated independently of the shaft, and clutch mechanism for locking the fly-wheel and band-pulley to the shaft and causing them to rotate therewith, substantially as and for the purpose set forth.

4. The combination, with a shaft, a fly-wheel provided with an elongated sleeve, and a band or driving pulley attached to said sleeve, of a clutch secured to said shaft, and devices for locking the band-pulley to said clutch by frictional contact therewith, substantially as and for the purpose set forth.

5. The combination, with a band-pulley having frictional surfaces a cast integral therewith, of the cross-bar secured to the shaft, the yielding face-plate, curved levers, conical sliding collar, and frictional wearing blocks or plates, substantially as and for the purpose described.

6. The combination, with the shaft, fly-wheel, band-pulley, and clutch, of the sliding collar provided with wearing-blocks and a stationary friction-surface, constituting a friction-brake for the shaft, substantially as and for the purpose set forth.

298,060. CLUTCH. THOMAS R. MORGAN, Sr., Alliance, Ohio. Filed Nov. 26, 1883. (No model.)



Claim.—1. The combination, with two clutches, of a sliding key having conical collars secured to its opposite ends, and a shifting collar and lever for simultaneously locking one clutch and releasing the other, substantially as set forth.

2. The combination, with two clutches having bevel or gear wheels or pinions connected therewith, of a shifting collar or sleeve and a sliding key for simultaneously locking and unlocking said clutches, substantially as and for the purpose set forth.

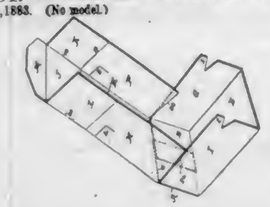
3. The combination, with a pinion, bevel, or gear wheel loosely mounted on a shaft, and a clutch-disk secured thereto, of a cross-bar keyed to the shaft, a face-plate secured in a yielding manner to said cross-bar, and a sliding collar and levers for operating said face-plate, substantially as and for the purpose set forth.

4. The combination, with a bevel-wheel, gear-wheel, or pinion loosely mounted on a shaft and having a clutch-disk secured thereto, the latter being provided with an annular groove, of a cross-bar keyed to said shaft, a face-plate secured to the cross-bar in a yielding manner, and bolts extending through the face-plate and cross-bar, and provided with friction-blocks that engage in the annular groove in the clutch-disk, substantially as and for the purpose set forth.

5. The combination, with the bevel-wheel F, clutch-disk G, provided with the annular groove H, of the cross-bar C, face-plate D, bolts L, levers E, conical blocks B, and the friction-surfaces K N, substantially as and for the purpose set forth.

6. The combination, with the bevel-wheel F, and the clutch-disk secured to the rear side of said wheel, of the clutch mechanism constructed and arranged to be engaged with and disengaged from said disk, and a sliding key passing through the sleeve of the bevel-wheel for operating the clutch, substantially as set forth.

298,061. PAPER BOX. HARVEY S. MUNSON, New Haven, Conn. Filed Oct. 29, 1883. (No model.)



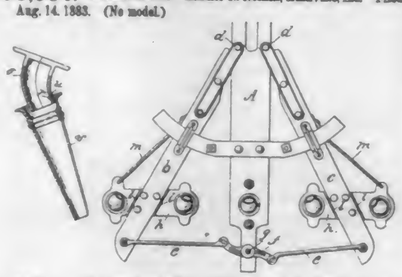
Claim.—1. A blank consisting of the general rectangular form shown, having folding lines 5 6 7 8 9 10 11 12 13 14 15 16 and incisions 21 22 17 18 19 20, whereby the folding parts necessary to constitute a box and cover are provided, and having the incisions forming the tongues 1 2 and pockets 3 4, whereby said parts are locked into hollow or box form, substantially as described.

2. A box formed of a single piece of material cut, scored, and incised to form the bottom A, bottom flaps, B C, front D, back E, sides F G H I, locking-tongues 1 2, and locking-pockets 3 4, said parts being folded, so that the bottom flaps are confined between the bottom A and the lower edges of the sides F H, substantially as described.

3. A box and cover formed of a single piece of material cut, scored, and incised to form the bottom A, bottom flaps, B C, front D, back E, sides F G H I, top J, top closing-flaps, K L, tucking-flap M, locking-tongues 1 2, and locking-pockets 3 4, said parts being folded so that the bottom flaps are confined between the bottom A and lower edges of the sides F H, and the locking tongues and pockets are arranged to confine the free edges of the sides G I, substantially as described.

4. A locking-pocket for the parts of boxes made from paper or similar material, the same being formed by a right-angular incision, whereby the locking-tongue is free to enter, and is nipped securely at one edge, substantially as described.

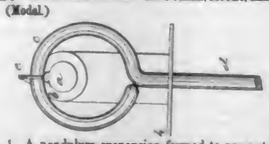
293,062. GRAIN-DRILL. ALBERT N. NORRIS, Rushville, Ind. Filed Aug. 14, 1883. (No model.)



Claim.—1. In a grain-drill, the combination, substantially as shown and described, of plate *h*, having receiving-cups V V, and secured diagonally across radial wing *b*, and a pair of drill-hoes secured to the under side of said plate.

2. In a grain-drill, the combination of a grain-feed box having a hole in one side and a swinging spout having a flaring mouth provided on one side only with a short inwardly-projecting pin engaging said hole in said feed-box, all substantially as shown and described.

293,063. CLOCK-PENDULUM. LEVI ORSER, Mobile, Ala. Filed Aug. 1, 1883. (Model.)



Claim.—1. A pendulum suspension formed to present two curved lines or surfaces of support or bearing parallel to each other and to the plane in which the pendulum swings, substantially as described.

2. The combination, with the ring or loop *c*, of the pendulum-rod and the supporting-stud *a* and curved bearing *b*, substantially as described, whereby the contact between the loop *c* and the bearing is taken upon two points or surfaces parallel to each other and to the plane of vibration.

3. The combination of the guard *a* with the pendulum-suspension loop *c* and stud *a*, having bearing *b*, substantially as described.

4. In a pendulum-suspension device, the combination of the guard A with the pendulum-rod having a ring mounted between curved supports or bearings, substantially as and for the purpose set forth.

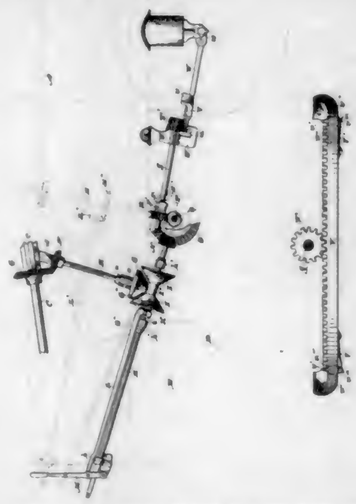
293,064. SHOE. FREDERICK PACKARD Brockton, Mass. Filed Aug. 24, 1883. (No model.)



Claim.—1. A shoe having its leg portion provided on both sides with an elastic gore extending around the rear of such leg portion and projecting above the inelastic heel portion thereof, substantially as and for the purpose set forth.

2. In a shoe, the combination, with the leg portion, of the two elastic side gores, B B, united by an elastic portion, *c*, extending around the rear of such leg portion and projecting above the inelastic heel portion thereof, all constructed and arranged to operate substantially in the manner and for the purpose described.

293,065. TRACTION-ENGINE. J. FORMAN PALMER, Auburn, N. Y., assignor to himself, John Seymour, and Sidney W. Palmer, all of same place. Filed Nov. 5, 1883. (No model.)



Claim.—1. In a steering apparatus for traction-engines, the friction-wheel driven by means of suitable connections from the driving mechanism of the engine, and the steering mechanism for turning the front axle to guide the machine, the two friction-wheels connected with the steering mechanism by suitable gearing, and adapted to be brought into frictional contact with opposite sides of the power-driven friction-wheel at will, so that the steering mechanism can be driven in either direction, and means for so bringing either one of the wheels into contact with the power-wheel, as desired, substantially as shown and described.

2. In a steering apparatus for traction-engines, the combination of the friction-wheel driven by suitable connecting-gearing from the driving mechanism of the engine, with the friction-wheels adapted to be brought into contact with either side of said friction-wheel, the shaft upon which they slide, but which turns with them, means for shifting them on the shaft, and mechanism connected with the shaft and actuated by its revolution in one direction or the other, whereby the front axle of the machine is turned to guide the engine, substantially as shown and described.

3. In combination with the friction-wheel driven by suitable gearing from the driving-shaft of the engine, the double friction wheel or spool feathered on a shaft and adapted to be slid thereon, so that it can be brought into contact with one side or the other of the single friction-wheel, and be turned thereby in either direction, and suitable connecting gearing or mechanism between this shaft and the front axle, all so arranged and constructed that by the rotating of the shaft the axle will be caused to swing on its pivot to guide the engine, substantially as shown and described.

4. In combination with the friction-cone driven from the driving-shaft of the engine, the double cone sliding on a shaft and adapted to be brought into contact with either side of the single cone, means for so shifting the double cone within reach of the driver, the bevel-wheel on said shaft meshing with the bevel-gear on a shaft carrying a worm, and the worm-wheel meshing with this worm and fixed on a shaft which bears at its front end a bevel-wheel, which meshes with and actuates a segmental rack attached to the front axle by means of suitable arms, substantially as and for the purpose set forth.

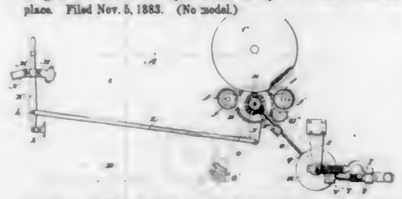
5. The segmental steering-rack connected by suitable arms with the front axle and provided with upturned portions at each end, to act as stops to limit the movement of the rack, and with yielding teeth at each end of the series of rack-teeth, in combination with a pinion for actuating such rack, so as to turn the front axle, substantially as shown and described.

6. In the steering apparatus for a traction-engine, the shaft which carries the rack-actuating pinion, in combination with the worm-wheel loosely mounted on the shaft and driven by suitable mechanism, and a clutch for connecting and disconnecting the worm-wheel and shaft, substantially as shown.

7. In a steering apparatus for traction-engines, the friction-cone driven by gearing connecting it with the driving-shaft of the engine, the shaft at right angles to the shaft of the friction-cone, a double friction cone or spool sliding on this shaft, with one of the cones composing it on each side of the power-driven cone, and means for shifting such double cone back and forth on its shaft, to throw it into contact with either side of the single cone or out of contact with the latter, and suitable connecting mechanism between this shaft and the segmental steering-rack attached to the front axle, all in combination, substantially as and for the purpose set forth.

8. The shaft carrying the sliding double friction cone or spool, which is adapted to be thrown into or out of contact with the power-driven cone, connected by suitable gearing with the pinion meshing with and actuating the segmental steering-rack, and adapted at its rear end to receive a crank, whereby said shaft can be turned by hand to cramp the front axle when the machine is at rest or when it is in motion, but the double friction-cone is shifted out of contact with the power-driven cone, substantially as and for the purpose set forth.

293,066. TRACTION-ENGINE. J. FORMAN PALMER, Auburn, N. Y., assignor to himself, John Seymour, and Sidney W. Palmer, all of same place. Filed Nov. 5, 1883. (No model.)



Claim.—1. In a traction-engine, in combination with the crank-wheel thereof, a rocking yoke carrying friction-wheels adapted to be alternately brought into contact with the crank-wheel and to be rotated thereby, gearing connecting one of these wheels with a shaft, so as to rotate it in one direction, and gearing connecting the other with the shaft, so as to rotate it in the opposite direction, and suitable connecting-gearing between this shaft and the steering mechanism, which swings the front axle on its pivot to guide the machine, substantially as shown and described.

2. In a power steering apparatus for traction-engines, the gear-wheel journaled on a stud near the crank-wheel, the yoke pivoted on the stud and rocking thereon, the friction-wheels carried on the arms of the yoke and adapted to be brought alternately into contact with the edge of the crank-wheel as the yoke is rocked on its pivot, the toothed wheel attached to and revolving with one of the friction-wheels, meshing directly with the gear-wheel on the yoke-stud, the toothed wheel attached to and revolving with the other friction-wheel, and also connected with the large gear-wheel on the yoke-stud by an intermediate pinion, and suitable actuating-gearing connecting this wheel with the front axle-shifting device, all substantially as and for the purpose set forth.

3. In combination with the crank-wheel, the friction-wheels mounted on arms of a rocking yoke, and adapted to be alternately brought into contact with the crank-wheel by movement of the yoke, the pinions attached to and revolving with the friction-wheels, the large gear-wheel meshing directly with one of these pinions, and connected with the other by an intermediate pinion, the bevel-gear wheel revolving with the large gear-wheel and meshing with the bevel-pinion on a shaft which, on the other end, carries a second bevel-pinion meshing with the bevel-wheel on the screw-shaft for shifting the segmental rack for swinging the front axle on its pivot, substantially as and for the purpose described.

4. The combination of the pivoted rocking yoke carrying the friction-wheels, and means within the reach of the driver or engineer for rocking said yoke on its pivot to bring the one or the other of the friction-wheels into contact with the crank-wheel, substantially as and for the purpose set forth.

5. In combination with the rocking yoke carrying the friction-wheels, and provided with a downwardly-extending arm, the link pivotally connected to said arm and to a lever in reach of the engineer or driver, and springs for normally holding the lever in such position that the yoke will be so held on its pivot that the friction-wheels will be at rest and out of contact with the crank-wheel, substantially as shown and described.

6. In a steering apparatus for traction-engines, the rack-actuating worm-sleeve turning with but capable of longitudinal movement on its shaft, the collars on said shaft, and the rubber buffers between these collars and the ends of the worm-sleeve, to act as yielding stops to limit its movement, substantially as shown and described.

7. The guiding segmental rack sliding and supported in a suitable box attached to supports from the boiler or engine frame, in combination with the rigid sleeves attached underneath the front and rear ends of the rack-web, and the axle-guiding fork hinged at its front end to the axle, and at its rear end provided with arms projecting to the front and rear and playing longitudinally in the sleeves on the rack-web, substantially as and for the purpose set forth.

293,067. TRACTION-ENGINE. J. FORMAN PALMER, Auburn, N. Y., assignor to himself, John Seymour, and Sidney W. Palmer, all of same place. Filed Nov. 5, 1883. (No model.)



Claim.—1. In combination with the double coned pulley driven by power from the engine, gearing for shifting the front axle to guide the machine, and connecting mechanism between the pulley and such gearing, whereby the speed at which and the direction in which the axle-shifting gearing will be driven from the pulley can be changed at will, substantially as shown and described.

2. In combination with the shaft L, journaled in fixed bearings, and adapted through suitable gearing to cause the front axle of the machine to be shifted as the shaft is revolved, the connecting-gearing between such shaft and the main driving-shaft of the engine, whereby the shaft L can be caused to revolve by power from the engine, and means for throwing such connecting-gearing out of action, for reversing its action upon the shaft, and for changing the speed of such action, substantially as shown and described.

3. In combination with the shaft L, adapted through connecting-gearing to cause by its revolution the front axle of the machine to swing on its pivot to guide the machine, the double friction cone or pulley D, driven by power from the engine, the journal-box M, pivoted and rocking on the shaft, the gear-wheel fast on the shaft, the short shaft journaled in the box parallel to shaft L, the pinion on the short shaft gearing with the wheel on the other shaft, the friction-cone on the end of the short shaft and situated between the two cones of the double friction-cone, and means for rocking the double journal-box on the long shaft to carry the cone on the short shaft into contact with the face of one or the other of said cones, substantially as and for the purpose set forth.

4. In combination with the shaft L, for shifting the front axle on its pivot through suitable connecting mechanism, the box M, pivoted and rocking on the shaft, the long-toothed pinion fast on said shaft and gearing with the short-toothed wheel on the shaft N', journaled and capable of sliding motion in the box parallel to shaft L, the friction-cone on the end of shaft N', situated between the friction-cones of the double friction pulley or spool D, driven by power from the driving mechanism of the engine, and means for sliding the shaft N' in the bearings and rocking the journal-box on shaft L, substantially as and for the purpose set forth.

5. In combination with the sprocket-pulley on the end of the crank-shaft of the engine, the sprocket-chain, the sprocket-wheel fixed to the double friction cone or spool, the shaft for operating the axle-shifting mechanism, the long pinion on such shaft, the journal-box pivoted on the shaft, the short shaft journaled and sliding in the box, the toothed wheel fixed on this shaft and gearing with the long pinion, the friction-cone on the end of the shaft and situated between the faces of the double cone, and a lever adapted to slide the short shaft in its bearings and to rock the journal-box upon the shaft on which it is pivoted, substantially as and for the purpose described.

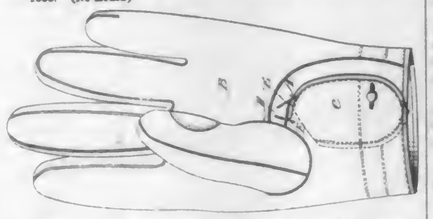
6. In combination with the shaft L, the box M, pivoted and rocking upon it, the shaft N', journaled and sliding in said box, and provided with a fixed gear-wheel in mesh with a long-toothed pinion on shaft L, and the lever S, fulcrumed on a sleeve on shaft L, and pivotally connected with and embracing a sleeve on shaft N', which is prevented from longitudinal motion on said shaft, all substantially as shown and described, so that by the same lever the box can be rocked on shaft L and the shaft N' can be reciprocated in its bearings in the box.

7. In combination with the fork Z, hinged to the front axle, the

transverse screw-shaft V, journaled in supports from the boiler or engine-frame, and adapted to be revolved in either direction by suitable actuating means, the screw sleeve or nut X, traveling on shaft V, and the ring Y, embracing the sleeve and pivoted thereto above and below, as shown, and provided with a fixed sleeve, y', in which is inserted so as to be capable of longitudinal play therein the reduced end of the axle-shifting fork Z, substantially as and for the purpose set forth.

8. In combination with the axle-shifting fork Z, the perforated lugs attached to the bottom of the boiler, and so situated that when the fork is detached from the front axle and swung upward its front ends will come close beside the lugs, and the pivot-bolt x' can be slid through the latter and the ends of the fork, substantially as and for the purpose set forth.

293,068. GLOVE. S. OSCAR PARKER, Littleton, N. H. Filed Jan. 31, 1883. (No model.)



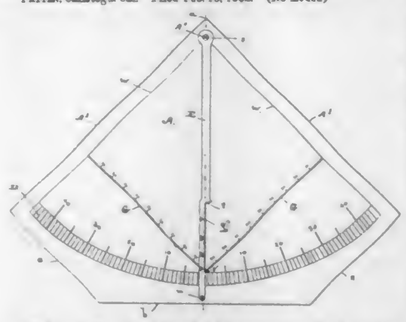
Claim.—1. The combination, with a glove having flap C integral with its body, of a button-piece, A, attached to one edge of the slit and projecting under the flap, substantially as herein shown and described.

2. The combination, with a glove having a flap integral with its body, of the button-piece A, secured to one edge of the slit, and provided with the tongue D, substantially as herein shown and described.

3. A glove having its thumb-piece H made separate and extending to the lower part of the glove, and covered by the wristband G, substantially as herein shown and described, whereby the glove is strengthened and risk of tearing off the thumb avoided in pulling on the glove, as set forth.

4. The combination, with a glove having the button-piece A, provided with the tongues D, of the staples E, substantially as herein shown and described.

293,069. HYPOTENUSE CALCULATOR AND INDICATOR. DANIEL PATTEN, Calistoga, Cal. Filed Feb. 18, 1882. (No model.)



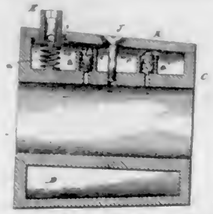
Claim.—1. The herein-described instrument, consisting of the plate A, with the edges b c c, and scales D and G G, and swinging pendulum E, substantially as set forth.

2. In an instrument of the kind described, the combination, with the swinging pendulum E, having the scale, of the graduated lines or scales G G upon a plate or surface over which the pendulum is adapted to swing, said lines forming the adjacent sides of a square having the pivot of the pendulum situated at the opposite angle, substantially as described, to operate as set forth.

3. The hypotenuse-indicator consisting of the plate or surface A, with its scales D, and having the angular sides or faces c c b, the swinging pendulum E, having the scale d, and the scales or graduated lines G G, substantially as described, to operate as set forth.

293,070. LUBRICATING DEVICE FOR WHEELS. GEO. PEACOCK, Selma, Ala. Filed Dec. 14, 1883. (No model.)

Claim.—1. The box C of a hub, cast with an annular oil-reservoir within it, the said reservoir being provided with cups having ducts at

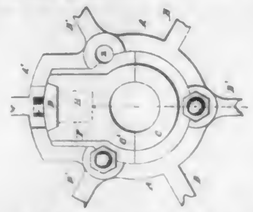


their bottoms, through which the oil is conveyed to the axle, in combination with the removable top, the whole arranged substantially as and for the purposes specified.

2. The combination, with the hub having an annular reservoir, D, of the hollow barrel E, provided with a flange, F, a spline, H, and an orifice, L, above the flange, and at its bottom with a stem, G, setting in the upper end of a spiral spring, a, substantially as and for the purposes specified.

3. In combination with the oil-reservoir in the box, a hollow barrel, E, having a spline, H, a feeding-orifice, L, and a packed valve, F, the barrel being actuated longitudinally and outward by means of a suitable spring, substantially as described.

293,071. HUB FOR CAR-WHEELS. GEO. PEACOCK, Selma, Ala. Filed Dec. 14, 1883. (No model.)

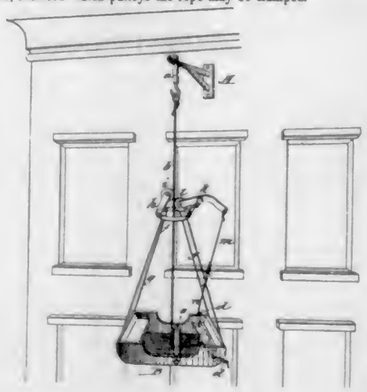


Claim.—1. A skeleton hub cast with tapering external surface and of uniform thickness, and with an enlargement and bolt-openings, in combination with a box constructed in two parts, one having an enlargement adapted to fit in the enlargement in the hub and containing an oil-reservoir communicating with the interior by means of suitable ducts, the parts being provided with bolt-openings corresponding to those of the hub, the whole being secured together by means of bolts, substantially as specified.

2. The combination, with the skeleton hub, of the box constructed in two parts and provided with interlocking lugs and recesses, the hub and box being provided with bolt-holes for the reception of bolts for securing the parts together, substantially as specified.

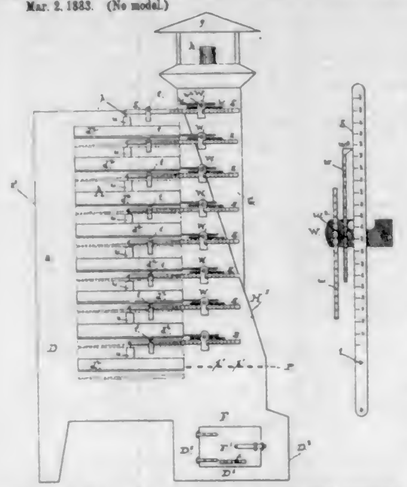
293,072. FIRE-ESCAPE. THOMAS BROWER PEACOCK, Topeka, Kans. Filed Apr. 7, 1883. (No model.)

Brief.—Upon the ring from which the cage is suspended is arranged a brake consisting of a fixed pulley and a pulley on the end of a pivoted lever, between which pulleys the rope may be clamped.



Claim.—In fire-escapes, the combination of ring f, pulley i, lever k, and pulley l, combined with the car and suspension-rope, substantially as shown and described.

293,073. FRUIT-DRIER. TRUMAN J. PEARCE, Oakland, Cal. Filed Mar. 2, 1883. (No model.)



Claim.—1. In a drying apparatus of the character described, a closed compartment having communication through valve-controlled apertures with flues, passages, or other conductors that supply air to and carry it off from said compartments, and a suspended scale or weighing platform within the compartment, to support the matter to be treated, and which is provided with a device to indicate the weight of the supported matter, and a connection with or to the valves of the air-aperture by means of mechanism that causes the said valves to be operated by the movement of the platform.

2. The combination, with a drying-compartment through which air from the heater or hot-air generator is caused to circulate, of a supporting-platform suspended or balanced from a scale-beam, to hold the matter to be dried, a set of valves to control air inlets and outlets to and from the compartment, and mechanism connecting said valves and suspended platform, whereby the reduction of the matter by the drying process to a certain standard or degree of dryness will cause the platform to rise and close the valves.

3. The combination, with a drying-compartment, B, &c., inlet and exhaust flues, passages, or conductors E D, &c., of valves governing the apertures leading into said flues, a suspended scale-platform placed in said compartment, to receive and support the matter to be dried, but having its weighing-beam and balance located outside of the compartment, and mechanism connecting the said valves and platform to cause the upward movement of the platform to operate the valves.

4. The combination, with a drying-compartment having inlet and outlet apertures communicating with air flues, passages, or conductors through apertures controlled by valves m n, of the tray receiving and supporting platform T, suspended and balanced from a scale-beam, S, by a system of levers, as described, and the pivoted valve-actuating levers Z' Z^2 Z^3, and posts or rods Z Z on the platform.

5. The combination of a closed compartment, B, supply and exhaust flues, passages, or conductors, inlets and outlets controlled by valves m n, and situated one above and the other beneath the supporting-platform, and a balanced tray-supporting platform, T, connected with a weighing-beam, by which the weight of the contents of the tray can be determined, and mechanism connected with and operated by the upward movement of the platform, to act upon and close the valves.

6. The combination, with a case or chamber having separate drying-compartments, of the air flues, passages, or conductors D D' D^2, leading from near the top on one side down the side and under the drying-compartments and the fire, the furnace or heater-chamber K, and the hot-air-distributing chamber H, having independent flues or conductors—one for each compartment—said flues leading from above the furnace and entering the drying-compartments on the side opposite to the air-passage, substantially as described.

7. The heater having a closed fuel-supporting plate and an air-flue delivering over it, the corrugated top formed into deep pockets j, and the top plate or roof, P, lying just above the corrugated plate, and provided with openings registering with the flues in the chamber H, as set forth.

293,074. REFRIGERATING DISH-COVER. ALFRED C. PRIOR, Baltimore, Md. Filed Nov. 15, 1883. (No model.)



Claim.—1. In combination with the cover of a dish, an ice-receptacle provided with a suitable cover, and connected to the dish-cover within the same and above the contents of the dish, substantially as described.

2. The combination, with the butter-dish and its cover, of an ice-receptacle within the cover, and an air-space between the ice-receptacle and cover.

3. The combination, with a butter-dish, of the flanged intermediate cover, C, having the ice-chamber E connected therewith, and the whole connected to the butter-dish cover, substantially as described.

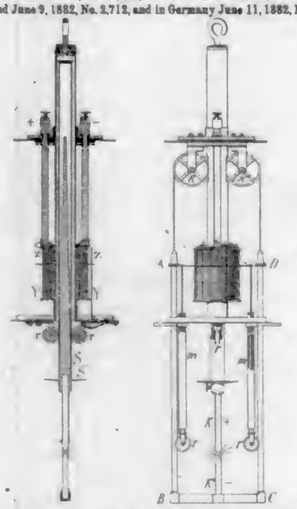
4. The combination, with the intermediate cover, C, having the ice-receptacle and the catches, of the main cover B, substantially as described.

293,075. COTTON-MARKING BRUSH. GUS. PFEIFER, Galveston, Tex. Filed July 11, 1883. (No model.)



Claim.—As a new article of manufacture, the cotton-marking brush embodying the combination of the handle A, formed with the single slot, diagonally-trimmed bristles, with clamping-ferrule, and the wrapping in the exterior formed grooves, substantially as described.

293,076. ELECTRIC LAMP. LUDWIG PIETTE and FRANZ KRIZIK, Pilsen, Austria-Hungary. Filed July 1, 1882. (No model.) Patented in Belgium June 6, 1882, No. 58,118; in France June 7, 1882, No. 149,436; in England June 9, 1882, No. 2,712, and in Germany June 11, 1882, No. 21,372.

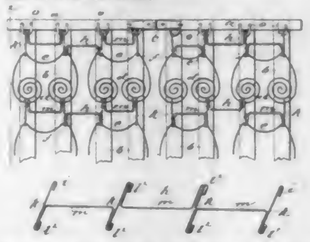


Claim.—1. In an electric-arc lamp, the combination, with the sliding solenoid-core S, of the solenoid-coils Y Z, wound one around the other,

the convolutions in each coil gradually increasing toward one end, substantially as described.

2. In an electric-arc lamp, the combination, with the solenoid-core S, of the coils Y and Z, wound one around the other, and tapered or graduated in opposite directions, as shown and described.

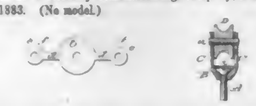
293,077. SPRING BED-BOTTOM. BUTLER R. PLATT, Plainwell, Mich. Filed June 16, 1883. (No model.)



Claim.—1. As a new article of manufacture, the wire coupling for coiled springs of bed-bottoms, the same consisting of a series of cross-heads, *k*, each having a hook at both ends, and the straight stems *m*, which are arranged at right angles to said cross-heads and connect them, as and shown described.

2. The combination of the coupling, consisting of cross-heads *k*, having terminal hooks *i i²*, &c., and connecting stems *m*, with the pairs of springs having connecting cross-bar *s* and notches or outward bends *f*, all as shown and described, for the purpose specified.

293,078. SCREW PULLEY. CHARLES F. POPE, Waterbury, Conn., assignor to the Waterbury Manufacturing Company, same place. Filed Nov. 26, 1883. (No model.)



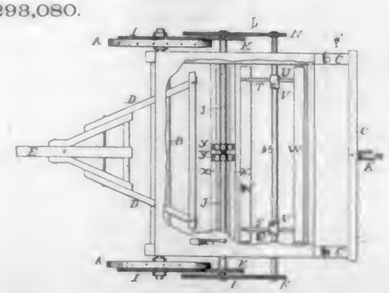
Claim.—The herein-described screw-pulley, consisting of the base B and arms C C, struck from sheet metal, the headed screw-shank A introduced through the base between the arms and secured therein, with the pulley arranged upon a pivot between the arms, substantially as described.

293,079. SCREW HOOK OR RING. CHARLES F. POPE, Waterbury, Conn., assignor to the Waterbury Manufacturing Company, same place. Filed Nov. 26, 1883. (No model.)



Claim.—As an article of manufacture, the herein-described screw hook or ring, consisting of the headed screw-shank A, having the collar B secured to its body below the head, the cap-shaped base D, struck from sheet metal, with a central opening, *d*, therein, the ring or hook struck from sheet metal, and constructed with a radially-projecting shank, *a*, having a tenon, *b*, upon its end corresponding to the central opening in the base, the hook and base secured together by said tenon, the screw and collar introduced into the open end of the base to bring the screw-head to a bearing against the said tenon, and the flange or edge of the base closed down upon the collar on the screw, substantially as described.

293,080.

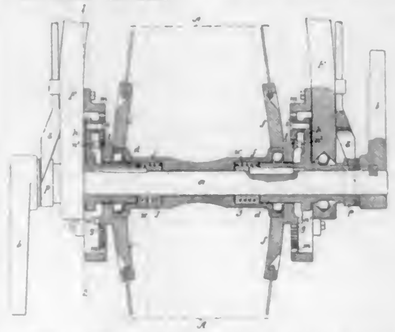


293,080. SOIL-PULVERIZER. JOHN DAXY RANKIN and WILLIAM CURTIS KNOX, Groesbeck, Tex. Filed July 30, 1883. (No model.)

Claim.—1. In soil-pulverizers, the combination of rotating blades on a shaft adjustable forward and backward, the driving-wheel shaft B, the intermediate operating mechanism, and the two transverse shafts J J, substantially as described.

2. The combination of the driving-wheels, the multiplying gear-wheels, the two shafts J J, blades W, shaft M, adjustable forward and backward by means of a lever, S, frame C, having recesses for journal-boxes P, the lugs Q on the latter, and the connecting-rod R, all constructed and adapted to operate substantially as described.

293,081. BICYCLE. WILLIAM RENNYSON, Norristown, Pa. Filed Nov. 12, 1883. (No model.)



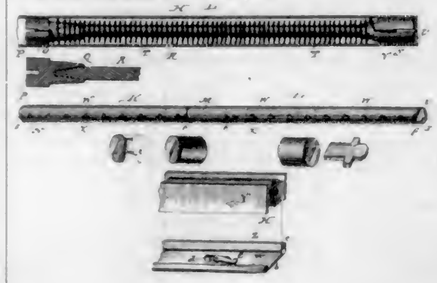
Claim.—1. The combination of the driving-shaft *a* of a bicycle or tricycle, the driving-wheel A, free to turn thereon, and having a spur-wheel, *g*, the fixed annular rack *m*, and an arm, *h*, turning with the shaft *a* and carrying a pinion, *i*, which gears into said spur-wheel and rack, as set forth.

2. The combination of the rear wheel, B, frame D, and steering-yoke F of a bicycle with the crank-shaft *a*, the driving-wheel A, free to turn thereon, and having a spur-wheel, *g*, the annular rack *m*, secured to the yoke F, and an arm, *h*, turning with the shaft *a* and carrying a pinion, *i*, gearing into said spur-wheel and rack, as set forth.

3. The combination of the driving-shaft *a* of a bicycle or tricycle, the wheel A, free to turn thereon, and having a spur-wheel, *g*, the fixed annular rack *m*, a sleeve, *d*, adjustable laterally on the shaft *a*, and having an arm, *h*, with pinion *i*, which, as the sleeve is moved laterally, engages with or is disengaged from the spur-wheel and rack, and means, substantially as described, whereby the wheel is locked to the sleeve as the pinion is thrown out of gear, as set forth.

293,082. WINDOW-SCREEN. GEO. L. REYNOLDS, Orange Valley, N.J. Filed Nov. 12, 1883. (No model.)

Brief.—A screen or curtain roller consisting of two sleeves of sheet metal united by a round stick inserted into their ends and having a series of perforations, having tongues projecting from one edge of said perforations to hold the screen ends. A short spindle, having a socket in one end to receive the reduced end of a longer spindle and a transverse slot in its other end, is secured in the tubular roller. The long spindle has a cap having a transverse slot fitted over its end and two inwardly-projecting lugs projecting into the transverse slot of the spindle. A flat lug secured to the frame projects into the slot in the cap. The screen-bar consists of two strips of metal united at their inner edges by being doubled back together, their outer edges bent upward, and the outer edge of the lower strip doubled downward again.

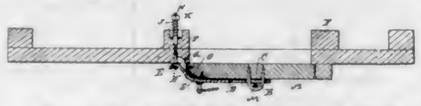


Claim.—1. A roller for screens or curtains, consisting of one or more sheet-metal sleeves having a series of slots or perforations having tongues projecting from one edge of the said slots or perforations and pointing in one direction across the roller, as and for the purpose shown and set forth.

2. The combination of a tubular roller, a short spindle secured inside the tubular roller and forming a socket at one end and having a transverse slot in the other end, a long spindle turning with its reduced end in the socket of the short spindle, and having a transverse slot in its other end, a spiral spring wound around the spindles and having its ends inserted into the transverse slots, a cap or socket having a transverse slot in its head fitting over the end of the long spindle, and having two inwardly-projecting lugs projecting into the transverse slot of the spindle, and a flat lug secured to the window-frame and projecting into the slot in the cap, as and for the purpose shown and set forth.

3. The bar at the lower edge of a screen, consisting of two flat strips of metal united at their inner edges by being doubled back together, having their outer edges bent upward, and having the outer edge of the lower strip doubled downward again, in combination with the lower edge of a screen or curtain inserted between the outer edges of the strips and doubled under the outer doubled edge of the lower strip, as and for the purpose shown and set forth.

293,083. CAR-DOOR FASTENING. JACOB RHULE, Pittsburg, Pa., assignor to himself and Onslow K. Gardner, same place. Filed Oct. 12, 1883. (Model.)

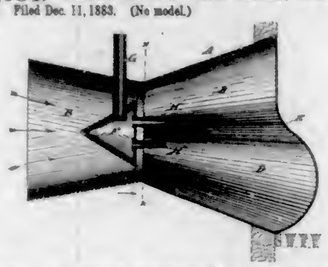


Claim.—1. In a car-door lock, the combination, with the hasp D, having a hook end, of the staple B on the door A, and the adjustable eyebolt H, held in the door-frame, substantially as herein shown and described.

2. In a car-door lock, the combination, with the hasp D, having a hook end, of the staple B on the car-door, and of the eyebolt H, provided with a spring, J, for drawing the eyebolt inward, substantially as herein shown and described.

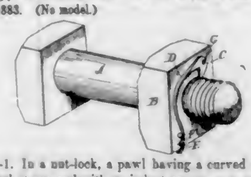
3. In a lock for sliding car-doors, the hasp D, having a hook end, in combination with the spring-eyebolt H on the car-door frame, provided with the collar and nut whereby the tension of spring J may be regulated, and the staple B, substantially as set forth.

293,084. FURNACE-BLOWER. PHILIP RICHARDS, Wilkes-Barré, Pa. Filed Dec. 11, 1883. (No model.)



Claim.—The improved furnace-blower or blast apparatus herein shown and described, consisting of the cones A and B, partitions C, whereby the chambers or compartments D are formed, and conical steam-chest F, provided with the steam-pipe G and nozzles H, projecting with their upper ends into the compartments D, substantially as and for the purpose set forth.

293,085. NUT-LOCK. EDWARD H. RINGER, Bradenville, Pa. Filed July 18, 1883. (No model.)

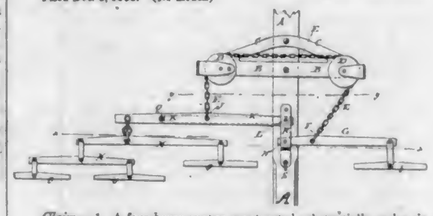


Claim.—1. In a nut-lock, a pawl having a curved flexible arm or spring provided at one end with an indent or recess, as and for the purpose herein set forth.

2. In a nut-lock, a pawl having a curved flexible arm or spring provided at one end with an indent or recess, in combination with a nut, as and for the purpose herein set forth.

3. In a nut-lock, a nut having on the face thereof a stud, and a pawl having a curved flexible arm or spring provided at one end with an indent to engage with the stud, in combination with the bolt, as and for the purpose herein set forth.

293,086. DRAFT-EQUALIZER. DAVID PITCH ROBBINS, Berlin, Minn. Filed Dec. 5, 1883. (No model.)

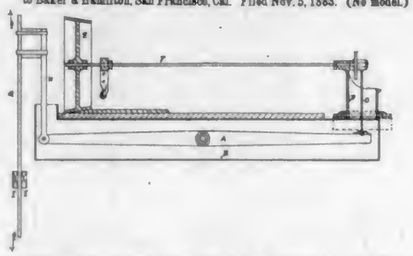


Claim.—1. A four-horse evener constructed substantially as herein shown and described, and consisting of the cross-bar B, having grooved pulleys D, the chain E, passing around the said pulleys, and the levers G K, connected with the ends of the said chain, and provided the one with a whiffletree and the other with a three-horse evener, as set forth.

2. The combination, with the tongue A, the whiffletree I, and the three-horse evener M N O, of the cross-bar B, the pulleys D, the chain E, and the levers G K, substantially as herein shown and described, whereby the draft will be equally divided, as set forth.

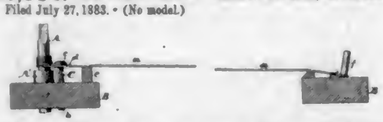
3. In a four-horse evener, the combination, with the tongue A and the lever K, of the brace P, substantially as herein shown and described, whereby the said lever is strengthened against the weight of the three-horse evener connected with its outer end, as set forth.

293,087. HORSE-POWER. ALEXANDER ROBINSON, Benicia, assignor to Baker & Hamilton, San Francisco, Cal. Filed Nov. 5, 1883. (No model.)



Claim.—A horse-power having the box B, and beam A, and pitman H, substantially as and for the purpose described.

293,088. STRINGING PIANOS. CHARLES E. ROGERS, Boston, Mass. Filed July 27, 1883. (No model.)



Claim.—1. The combination, in a piano or other musical instrument, of a tuning-pin, a friction-block arranged to bear against the periphery of said tuning-pin and be prevented from revolving therewith, and a spring attached to both tuning-pin and friction-block, substantially as and for the purposes described.

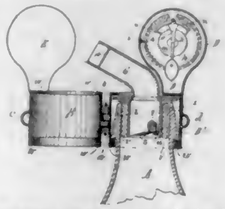
2. In a stringing device for pianos and similar instruments, the combination of the pin A, string *a*, having loop *d*, sheave *c*, block C, and means for preventing the block C from revolving with the pin A, substantially as and for the purposes described.

3. In a stringing device for pianos and similar musical instruments, the combination of a tuning-pin, A, string *a*, having loop *d*, block C, shank *b*, pulley *c*, wrest-plank B, and hitch-pin *f*, all arranged and adapted to operate substantially as and for the purposes described.

293,089. BOTTLE-REGISTER. EBENEZER H. ROGERS, Jr., New York, N.Y. Filed Dec. 27, 1883. (No model.)

Claim.—1. The combination of a bottle, a hinged frame shaped to

293,089.



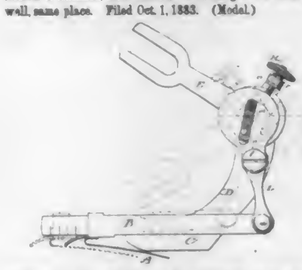
clasp the neck of the bottle, a registering and indicating device mounted upon the hinged frame, suitable mechanism for operating the same, and a device for locking the entire apparatus upon the bottle-neck, all substantially as and for the purposes as herein shown and set forth.

2. The combination, in a registering and indicating apparatus arranged for attachment to a bottle-shaped vessel, of a hinged frame shaped to be clasped and locked upon the neck and mouth of the vessel, a registering and indicating dial, with mechanism for operating the same, and a spout having an automatic valve for opening and closing the same, all arranged, applied, and operating substantially as and for the purposes as herein shown and set forth.

3. The combination of the chambered case D, the cover E, the swinging frames B and B', locking device *c d*, registering and indicating dial A, pendulum *o*, escapement-wheel *m*, and escapement *n*, all arranged, applied, and operating substantially as and for the purposes as herein shown and set forth.

4. The combination of the vessel A, the swinging clasping-frames B B', the chambered case D, provided with registering mechanism, locking device *c d*, pouring-spout G, having automatic valve *z*, and filter 10, all arranged, applied, and operating substantially as and for the purposes as herein shown and set forth.

293,090. RUFFLING ATTACHMENT FOR SEWING-MACHINES. JOSEPH S. SACKETT, New Haven, Conn., assignor of one-half to Jane Halliwell, same place. Filed Oct. 1, 1883. (Model.)

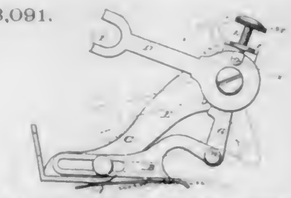


Claim.—1. The combination of a crimping-blade arranged to receive reciprocating movement, a vibrating lever constructed for connection with the needle-arm, a slide, G, arranged in guides in the head of the lever at substantially right angles to the central line of the lever carrying a stud, *s*, and made adjustable with relation to the center of vibration of the lever, substantially as described, and the lever L, one arm in substantial connection with the crimping-blade, the other arm constructed with a diagonal slot, P, within which the said stud works, substantially as described.

2. The combination of the crimping-blade A, a slide carrying said blade, the lever E, constructed for engagement with the needle-bar, and with guides *n n* at right angles to the central line of the lever, the slide G, arranged between said guides, carrying the stud *s* and constructed with the screw *o*, the nut H, arranged in the head of the lever for rotation, but without longitudinal movement, and through which said screw *o* passes, and the lever L, hung upon a pivot between the pivot of said lever E and the slide, one arm connected to the slide, the other arm constructed with a diagonal slot, P, within which the stud *s* works, substantially as described.

293,091. RUFFLING ATTACHMENT FOR SEWING-MACHINES. JOSEPH S. SACKETT, New Haven, Conn., assignor of one-half to Jane Halliwell, same place. Filed Oct. 15, 1883. (Model.)

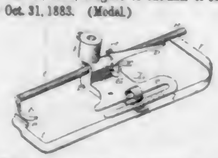
Claim.—1. The combination of a crimping-blade arranged to receive reciprocating movement, a vibrating lever, D, constructed for connection with the needle-arm, a lever, G, one end hung upon the same pivot, *m*, as the vibrating lever D, the other end substantially in connection with the crimping-blade, and a slide, H, arranged in guides in the head of the said lever D, and in a plane at right angles to the pivot on which the two levers turn, said slide made radially adjustable in the head of



the vibrating lever D, and constructed with legs *s t*, extending downward each side the pivot and so as to bear upon opposite sides of the lever G, the said lever G constructed with inclined surfaces, upon which the legs *s t* will respectively bear, and substantially as and for the purpose described.

2. The combination of the crimping-blade A, a slide carrying said blade, the lever D, hung upon a pivot, *m*, and constructed for engagement with the needle-bar, the lever G, one end hung upon said pivot *m*, the other in connection with the slide which carries the crimping-blade, the slide H, arranged in guides in the head of the lever D, and in a plane at right angles to the pivot *m*, said slide constructed with legs *s t*, extending, respectively, downward on opposite sides of the lever G, the said lever G constructed with inclined surfaces, upon which the said legs *s t* will bear, an adjusting-screw L, in connection with the head of the lever D, and the slide H, whereby said slide may be adjusted radially, substantially as described.

293,092. TUCK-MARKER FOR SEWING-MACHINES. JOSEPH S. SACKETT, New Haven, Conn., assignor of one-half to Jane Halliwell, same place. Filed Oct. 31, 1883. (Model.)

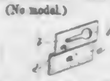


Claim.—1. The combination of the presser-foot, the bar C, arranged to slide through the body of the foot at right angles to the line of stitches to be made, the lever D in connection with said bar, and whereby the rocking or oscillatory movement is imparted to the said bar, the arm I, hung to one end of said bar, and extending across to the opposite end, and at that opposite end constructed with a rib, *a*, and the eccentric finger *b*, fixed to the bar over said rib, and whereby any oscillation of the bar to which the finger *b* is attached produces a rubbing movement of said finger upon the rib below, substantially as described.

2. The combination of the bar C, arranged to slide through the presser-foot at right angles to the line of stitches, the lever D on said bar, and arranged to impart a rocking movement thereto, the arm I, hung to one end of said bar, and extending to the opposite end, that opposite end provided with a rib, *a*, the finger *b* on the end of the bar corresponding to said rib, and the presser-foot provided with an extension constructed with a slot, *e*, parallel to said bar C, and with a guide, *f*, arranged therein, substantially as and for the purpose described.

3. In a tuck-marker, the combination of the marking mechanism, a guide arranged to move in a slot at right angles to the line of stitches, and attached to or made a part of a horseshoe-shaped spring, L, its two ends extending through said slot, and the guide attached to one of said ends, whereby said guide may be adjusted and held at any point within said slot, substantially as described.

293,093. SCARF-RETAINER. JOHN SANDILANDS, San Francisco, Cal. Filed Aug. 3, 1883. (No model.)

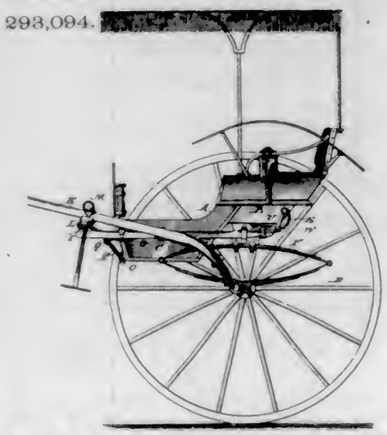


Claim.—The herein-described fastening device for attachment to neck-wear, consisting of the plate *a*, provided with the button-hole slot *b b'*, and an offset portion, *a'*, for attachment to the scarf, as set forth.

293,094. TWO-WHEELED VEHICLE. ADELBERT FOSS SARGENT and RALPH DORAN FARRELL, Geneseo, Ill. Filed Oct. 16, 1883. (No model.)

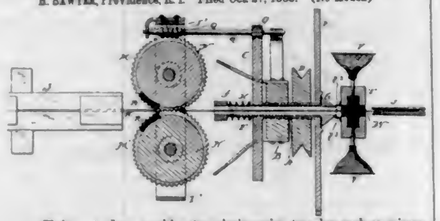
Claim.—The combination of an axle, elliptic springs clipped to the axle, shafts clipped to the axle and having the usual cross-bar, side bars hinged at their forward ends to the cross-bars and secured near their rear ends to the springs, upwardly-curved irons secured to the rear ends of the side bars and forming transverse eyes at their ends, a body having transverse bearings at its front and rear ends, and rods rocking in said bearings and having their ends bent upward, forming cranks rock-

293,094.



ing with their ends in the eyes of the upwardly-curved irons and in bearings near the forward ends of the side bars, as and for the purpose shown and set forth.

293,095. MACHINE FOR COLORING COVERED WIRE. WILLIAM H. SAWYER, Providence, R. I. Filed Oct. 27, 1883. (No model.)



Claim.—1. In a machine for coloring wire, two dye-pads or wipers arranged to clasp a wire between them, in combination with mechanism for rotating such pads or wipers about the wire, and means for separating said pads and bringing them together intermittently and feeding the wire longitudinally between the pads while they are separated, substantially as described.

2. The combination, with the rotary disk mounted on a hollow shaft and carrying the blocks provided with dye-pads, as described, of means for feeding a wire through the said hollow shaft and between the pads intermittently, and means for rotating the disk and intermittently separating and bringing together the pad-blocks and pads, so that the pads will clasp the wire, substantially as described.

3. The combination, with the disk E, open at its center and mounted upon a hollow shaft, and carrying the pad-blocks provided with dye-pads and pressed together automatically, as described, of the hollow rod arranged through said shaft and provided with a conical head between the pad-blocks and disk, suitable means for feeding a wire through said hollow rod and its head to and between the dye-pads intermittently, and means for operating said rod intermittently to cause its conical head to enter between projecting portions of the pad-blocks and separate said blocks and pads while the wire is being fed, substantially as described.

4. The combination, with the rotary disk E, open at the center and mounted on a hollow shaft, of the blocks T T, provided with pads and pivoted upon said disk, as described, of the sheaves N N', arranged to feed a wire forward intermittently, means for imparting rotary motion from the hollow shaft of the disk to said sheaves, the hollow rod F, extending through the hollow shaft of the disk and provided with a conical head having an opening at its center, the segmental plate K, projecting from said hollow rod, the pin P, projecting from one of the sheaves and arranged to strike and traverse said segmental plate, and means for pressing the rod F toward the sheaves with a yielding force, substantially as described.

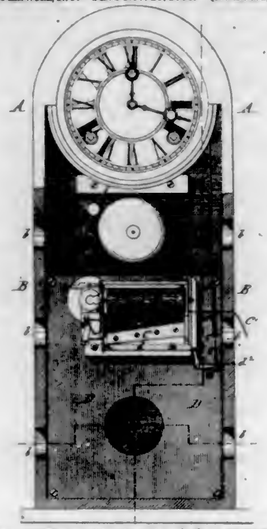
5. The combination, with the disk E, open at the center and mounted upon a hollow shaft, of the blocks T T, provided with dye-pads and connected to said disk, as described, being provided with the projecting plates t^2 t^2, of the hollow rod F, arranged through the hollow shaft of the disk and provided with a conical head in front of the disk, the sheaves N and N', provided with elastic lugs, and the pin P, projecting from one of said sheaves, the segmental plate K, projecting from the hollow rod F, the spring for forcing said rod toward the sheaves, and means for communicating motion to the hollow shaft of the disk and from said shaft to the sheaves, substantially as described.

6. The combination, with the color-applying and wire-feeding devices, as described, of the guide-wheel arranged to receive the colored wire, and constructed of absorbent material, substantially as and for the purpose set forth.

7. The combination, with the pad-blocks and dye-pads mounted thereon, of the cams connected with the blocks and arranged to supply a liquid dye or coloring-liquid to the pads, respectively, substantially as described.

8. The combination, with two absorbent pads suitably supported and facing each other, of means for feeding a wire intermittently between said pads, and for alternately pressing the pads toward each other and separating them, substantially as and for the purpose set forth.

293,096. MUSIC-BOX ATTACHMENT FOR CLOCKS. JACOB SCHMID, New Brunswick, N. J. Filed Nov. 28, 1883. (No model.)



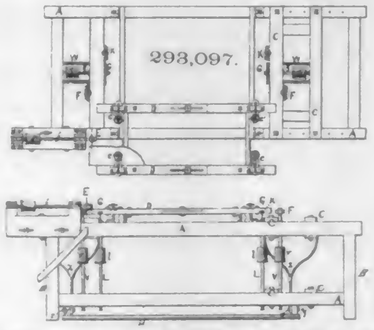
Claim.—1. The combination of a clock-movement having a trip-arm on the pawl of the striking mechanism, a trip mechanism on the arbor of the hour-hand, a trip-hammer that is raised by the same and dropped after the full hour is struck, a music-box arranged below the clock-movement, and an intermediate mechanism that extends from a point in the path of the hammer to the locking device of the music-box, so that whenever the clock has struck the full hour the locking device is released and the music-box set in motion, substantially as set forth.

2. The combination, with a clock-case having screened side openings, of a music-box placed on a sounding-board attached to the case, means connecting the starting device of the music-box with the clock-movement, a trip-hammer pivoted to the rear frame of the movement, a trip device on the arbor of the hour-hand, and a trip-arm of the pawl of the striking mechanism, whereby the music-box is started after each full hour has struck, substantially as specified.

3. The combination of a music-box provided with a locking-pawl and a spring-actuated guard-plate sidewise of the disk of the cylinder-barrel, an intermediate mechanism connecting the pawl with the clock-movement, a trip-hammer pivoted to the frame of the clock-movement and adapted to actuate the intermediate mechanism, a trip mechanism secured to the arbor of the hour-hand and adapted to engage the hammer-rod, and the trip-arm on the pawl of the striking mechanism, that releases the trip mechanism of the arbor from the hammer-rod as soon as a full hour has struck, substantially as set forth.

4. The combination of a music-box, A, having a locking-pawl, *a*, and a spring-acted guard-plate, a^2, sidewise of the disk A' of the cylinder-barrel, a connecting-rod, *d*, bell-crank *d'*, a vertically-guided and spring-cushioned trip-rod, *e*, a trip-hammer, E, pivoted to the frame of the clock-movement and having a fork, f^3, a disk, E^2, on the arbor of the hour-hand, said disk having a spring-acted trip, *f*, and pin *f''*, and a trip-arm, *g*, on the pawl of the striking mechanism of the clock, substantially as described.

293,097. DOVETAILING-MACHINE. JOHN SCHMIDT, Burlington, Iowa. Filed Sept. 28, 1883. (No model.)



Claim.—1. In a machine for trimming and dovetailing, the combination of the horizontally-moving carriage on which the stuff is placed with the cutting devices G and G, and means for lowering and raising the same, consisting of the boxes W W, the forked arms *x x*, operated by levers *y y*, and treadle H, substantially as set forth.

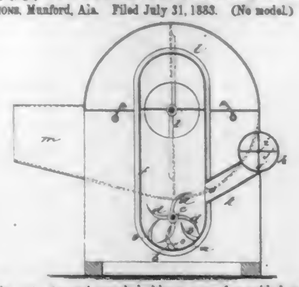
2. In combination with the horizontally-moving carriage D and the vertically-movable cutting devices G G, operated by spindles *g g*, the circular trimming-saw E, secured upon and rotated by spindle *f*, all as set forth.

3. In a machine as described, the vertically-movable cutting devices G G, operated by spindles *g g*, combined with the horizontally-moving frame D, carrying the stuff, the trimming-saw E, and the bits F F, secured to and operated by the shafts V, substantially as set forth.

4. In a machine as described, the horizontally-moving frame D, carrying the stuff to be cut and trimmed, the vertically-movable cutting devices G G, for operating on each end or side of the stuff, and moved by spindles *g g*, and the spurs K K, fastened to and revolved by the vertical spindles L L, substantially as set forth.

5. In a machine for trimming and dovetailing, the combination of the frame D, horizontally moving over frame A and carrying the stuff to be cut, with the circular trimming-saw E, the bits F F, for making one score, the vertically-movable cutters G G, and the spurs K K, for following up the work of said cutters the entire length of the cut, substantially as described.

293,098. PEA-THRASHER AND COTTON-OPENER. CALVIN HENRY SIMMONS, Mumford, Ala. Filed July 31, 1883. (No model.)



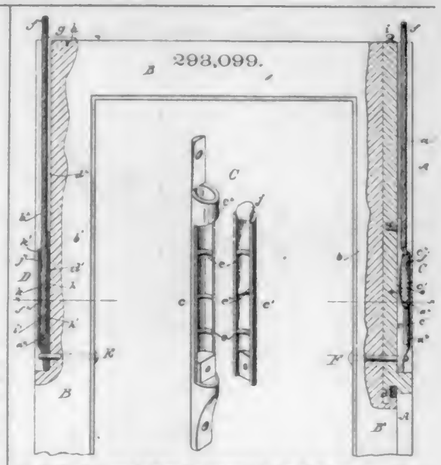
Claim.—1. An end-rounded oblong case, *f*, provided with perforations and curved teeth *b* on the bottom, and an opening, *o*, at one end, near the bottom, in combination with reversely-curved teeth *d*, arranged on a rotary shaft, to intermesh with teeth *b*, and a suction-fan communicating with said case near the top of the latter, as described.

2. The combination, with a bottom-perforated oblong case, *f*, of the connected preparatory beater *h i j*, the bottom beaters, *b d*, and a suction-fan connecting with the upper part of the case, whereby the fan will feed the material from the preparatory to the main beater, and then remove the lighter particles, as described.

293,099. WINDOW-SASH. WILLIAM A. SINSEL, Waukesha, Wis. Filed July 17, 1883. (No model.)

Brief.—Employs cord-fasteners made in two parts, one part having a penetrating-spur, a lip to fit beneath an embracing portion of the main part, and a screw to secure it thereto. The main part of one fastener is extended to the top of the sash. The other fastener is secured to a removable sash-section, such section on the one side and the cord-fastener on the other being detachably secured by pins.

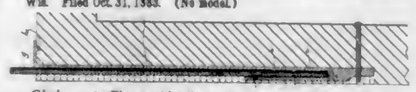
Claim.—1. The removable section A of the window-sash B, provided with the rope-fastener C, substantially as and for the purposes set forth.



2. The sash B, having removable section A, with rope-fastener C attached, in combination with the removable rope-fastener D, substantially as and for the purposes set forth.

3. The removable section A, provided with rope-fastener C, and held in place by the removable pin F, substantially as described.

293,100. SASH-CORD FASTENER. WILLIAM A. SINSEL, Waukesha, Wis. Filed Oct. 31, 1883. (No model.)

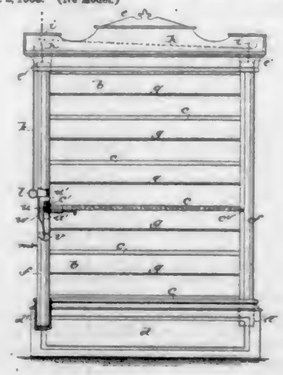


Claim.—1. The combination, with a sash-cord fastener having a hole through its lower end edgewise with the sash, and an upward-projecting shank with an angular end, provided with a fixed spur, of a pin adapted to enter the aforesaid hole from the inner edge of the sash, substantially as shown and described.

2. A trough-shaped body-piece having a bridge arching over it, forming a complete cylinder, in combination with an arched cap having a lip shaped to fit beneath said bridge, and a screw for holding said cap to said body, whereby the body and cap, joined, form a cylinder, as described.

3. A trough-shaped body-piece having a bridge arching over it near one end, and a ledge rising above the sides of said trough near the other end, in combination with a trough-shaped cap having a lip at one end to fit under said bridge, and a ledge near the other end, the sides of the trough rising above said ledge, and a screw adapted to enter holes in said body and cap at said ledges, as shown and described.

293,101. BOOK-CASE. WILLIAM A. SMITH, Wilmington, Del. Filed Aug. 2, 1883. (No model.)



Claim.—1. The combination, with a book-case having shelves *c*, of the vertically-movable frame B, provided with horizontal cross-bars *g*, as and for the purposes specified.

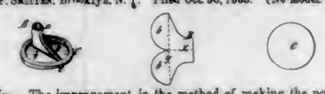
2. The combination, with the book-case A and the movable frame B, formed of vertical and horizontal bars *f g*, of the adjusting cords and pulleys *h i k*, substantially as shown and described.

3. The combination, with the book-case A and the movable locking-frame B, of the slotted plates *o*, fixed to the case, and the headed pins *r*, fixed to the vertical bars *f* of the movable frame, substantially as shown and described.

4. The combination, with the book-case A and the movable locking-frame B, carrying the pins *c'*, of the spring latch-bar *u a'*, substantially as shown and described.

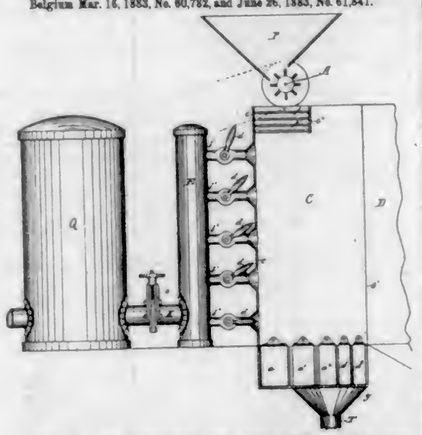
5. The combination, with the book-case A, of a movable locking-frame, B, consisting of vertical and horizontal bars *f g*, re-enforced at the back by the metal plates *n*, substantially as shown and described.

293,102. MANUFACTURE OF BUTTONS AND STUDS. THOMAS W. F. SMITTEN, Brooklyn, N. Y. Filed Oct. 30, 1883. (No model.)



Claim.—The improvement in the method of making the post of a button or stud and a shoe eccentric thereto, which consists in first producing a blank having the post portion B and the shoe portions *b b*, in then bending the shoe portions *b b* into a position at right angles to the post portion B, and in subsequently folding the post portion B lengthwise to form a post of double thickness, and to bring the portions *b b* into proximity, so that they will form, in effect, a single plate, as and for the purpose described.

293,103. PNEUMATIC COAL-CLEANER. AMOUR SOTTIAUX, Strepy-Bracquegnies, Belgium. Filed Oct. 6, 1883. (No model.) Patented in Belgium Mar. 16, 1883, No. 60,782, and June 26, 1883, No. 61,841.



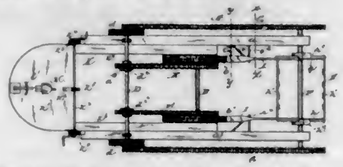
Claim.—1. The combination, with a case having a series of receptacles across its bottom, an open side, and means for introducing material at its upper part, of an air-conducting pipe and means for connecting it with the said case, substantially as described, whereby air may be admitted into the case at a varying pressure increasing from the top downward, as and for the purpose specified.

2. The combination, with a case having a series of receptacles across its bottom, an open side, and means for introducing material at its upper part, of a layere consisting of an air-distributing column provided with a series of nozzles placed one above another and connecting said column with said case, and a valve in each nozzle, substantially as described.

3. The combination of the case C, having the open side *c'*, the compartments or apertures *a a' a² a³ a⁴*, the air-distribution column E, having the nozzles *b'*, provided with graduating-cocks *d*, the bars *f*, arranged in alternating series, the distributing-cylinder A, and the hopper B, substantially as shown and described.

293,104. SPADING-MACHINE. DAVID F. SPANGLER, Santa Ana, Cal. Filed Sept. 30, 1882. (No model.)

Brief.—The power—a horse-power in this instance—is mounted upon the main frame, its front elevation being adjusted by crank and pinion. When spading, the gear-wheels, connected to the shaft of the bearing-wheels, run loosely on their shaft. Thus the power is transmitted wholly to the spading-shaft. The spader-frame twice in each revolution strikes a pallet or pawl engaging teeth upon the bearing-wheels, which drives them forward one notch, the pallet being retracted by a spring. A spring bears against an arm upon the spade-shaft to insure the right presentation to the ground of the pivoted spades.



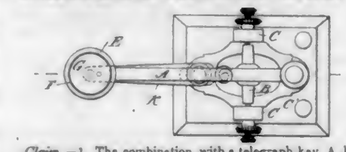
Claim.—1. The spading-frame H, composed of the shaft F, the bearing-block h^3, secured on the shaft F, the side bars, A A, the spade-carrying rods *h'*, journaled in the ends of bars A, and the arms A^2, extended at right angles from the ends of rods *h'*, and having one end arranged to bear on the block h^3, the said frame being suitably journaled and adapted to be revolved, as set forth.

2. In a spading-machine, the combination, substantially as hereinbefore set forth, of the wheels *b b'*, the pallets I I, and spading-frame H, arranged and operating substantially as described, and means for revolving the frame H, as specified.

3. In a spading-machine, the combination of the wheels *b b'*, the revolving spading-frame H, the pallets I I, pivoted on a swinging support, means for revolving frame H, and springs *c'*, connecting the pallets at a point in advance of their pivots with the framing, substantially as set forth.

4. In a spading-machine, the combination, substantially as set forth, of the frame A, having axle B and driving-wheels *b b'*, the spading-frame journaled in the rear end of the frame A, the operating mechanism mounted on said frames, suitable belts and pulleys gearing the operating mechanism with the drive-wheels and with the revolving spading-frame, and the pallets I I, all arranged and operating as and for the purposes specified.

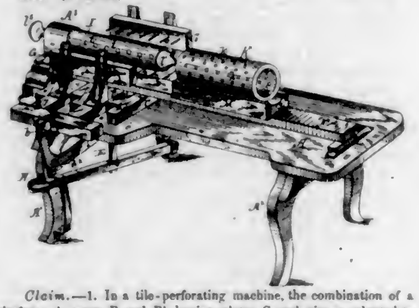
293,105. CIRCUIT-CLOSER FOR TELEGRAPH-KEYS. SAMUEL J. SPURGEON, Houstonia, Mo. Filed Oct. 31, 1883. (No model.)



Claim.—1. The combination, with a telegraph-key, A, having a recess in its button E, of the circuit-closing spring or lever K, the button G, held loosely in the recess of the button E, the stem H, having a slot, H', and the pin J', substantially as herein shown and described.

2. The combination, with a telegraph-key, of the circuit-closing spring or lever K, having a slotted end, the pin M, passing through the slotted end of the lever K, the insulating-sleeve O, the screw N, the button G, held loosely in the button E, and the stem H on the button G, substantially as herein shown and described.

293,106. DRAIN-TILE PERFORATING MACHINE AND PERFORATED DRAIN-TILE. HIRAM P. STAFFORD, Decatur, Ill. Filed July 11, 1883. (No model.)



Claim.—1. In a tile-perforating machine, the combination of a platform, A, ways B and B', having plates G and pins *g*, adapted to move toward each other, and perforated tile I between said pins, substantially as and for the purpose described.

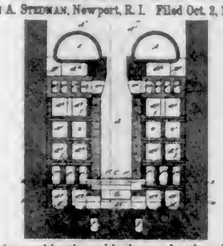
2. The combination of platform A, ways B and B′, and plates G, provided with pins *g*, with bell-cranks D, treadle H, and connecting-rod E, substantially as and for the purpose set forth.

3. The combination of a platform, A, ways B and B′, plates G, and pins *g* with bell-cranks, a treadle, connecting-rod, and spring, substantially as and for the purpose described.

4. In a tile-perforating machine, the combination of laterally-movable plates G, carrying pins *g*, with tube I, having perforations *i* in the sides thereof, and tube-cleaner L, having a conical point, *l*′, at one end, a handle at the other, and a series of parallel wires between them, substantially as and for the purpose described.

5. As a new article of manufacture, a cylindrical tile of uniform diameter from one end to the other, and provided with fine perforations upon the whole periphery thereof, substantially as and for the purpose described.

293,107. GAS-RETORT FURNACE. IRA N. STANLEY, Brooklyn, N. Y., and WILLIAM A. STEDMAN, Newport, R. I. Filed Oct. 2, 1883. (No model.)



Claim.—1. In combination with the combustion-chamber and ash-pit, substantially as described, the series of hot-gas flues d^2 d^2, &c., leading to the chimney and embracing the cross-flue d^3, connecting the flues d^1 and d^3, as shown, the air-flues d' d', &c., alternating with the hot-gas flues and connecting with the upper part of the combustion-chamber *d* and the air-flues f' f' f', &c., alternating with the hot-gas flues and connecting with the ash-pit, as and for the purposes set forth.

2. The open or uncovered water-pan G, exposed directly to the radiant heat from the fire above, and arranged to present its contents directly to currents of previously-heated air flowing to the grate, in combination with the two flues d^3 and independent connections therefrom conducting separate streams of hot products of combustions in opposite directions under the pan, as herein specified.

3. In a gas-furnace, substantially as described, the combination of the water-pipe H and controlling means H′, and the water-pan G, with the flues d^1 d^3 and their connections d^3 with each other, as and for the purposes set forth.

4. In combination with the furnace, the hot-air flues d^2 d^3, &c., and the series of air-flues e' e^3, &c., arranged as described, the flues d^1 and d^3, connected by the flues d^3, the air-flues f' f' f', &c., having the vertical flues f' f^3, as set forth.

5. The series of chambered tiles B′, arranged with their apertures connecting to form air-flues, in combination with the hot flues d^2 d^3, and with the flues e' e^3, bringing partially-heated air, and arranged to discharge the air intensely heated into the furnace, substantially as herein specified.

6. The metallic joint-plates I, in combination with suitable tiles, arranged to break joints with the tiles and to aid in preventing any flow of air through the joints, substantially as herein specified.

7. In a gas apparatus, the flues d^2 d^3, &c., for conducting hot gaseous products of combustion, flues e' e^3, &c., for conducting fresh air near the former, so as to be heated thereby, water-pan G, with provisions for heating it to generate steam, and a fire-grate, C, supporting the fuel for combustion, arranged substantially as shown, whereby previously-heated air from the flues e', &c., mingles with the steam and the mixture is drawn directly through the grate, all substantially as herein specified.

293,108. ATTACHMENT FOR BRIDLES. JOSEPHUS J. SUTPHEN, Washington, D. C. Filed June 21, 1883. (No model.)

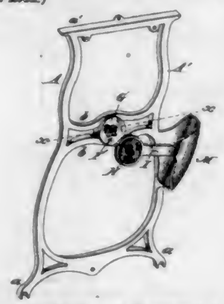


Claim.—1. In a bridle, a nose-strap having an elastic section which is connected to a bit-ring and a supplemental ring, said elastic strap adapted to be passed over the upper jaw of the animal, in combination with reins which are connected to said rings, whereby a primary pull upon the reins comes upon the nose and a secondary pull upon the bit, as and for the purposes set forth.

2. In a bridle, a nose-strap having an elastic section inclosed in a sheath, which is connected to a bit-ring and a supplemental ring, in combination with the reins, whereby a primary pull upon the reins comes upon the nose-band and a secondary pull upon the bit, as and for the purpose set forth.

3. The combination of the nose-strap inclosed in a sheath, rings B B′, straps *b* and *c*, in combination with the reins, as and for the purpose set forth.

293,109. SEWING-MACHINE FRAME. SAMUEL C. TATUM, Jr., Cincinnati, Ohio, assignor to S. C. TATUM & Co., same place. Filed Nov. 24, 1883. (No model.)



Claim.—1. In combination with the centers F H and driving-wheel B, the boss G, having the concentric opening, serrated boss E, and stop-pin *h*, substantially as herein set forth.

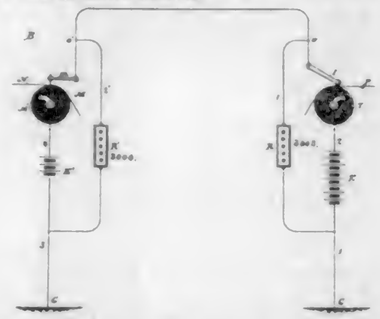
2. In combination with the frame A A′, the boss G, adjustable center F, adapted to receive the stop E, and pin *h*, substantially as herein set forth.

3. In combination with the driving-wheel B, crank K, and wrist-pin L, the serrated boss E, forming a center for a journal-support and secured to the arms of the driving-wheel, substantially as herein set forth.

4. A lock or stop motion for a sewing-machine, composed, essentially, of the serrated boss E, secured to the driving-wheel, and the hub G, secured to the frame, provided with an eccentric central opening adapted to receive the boss E, and pin *h*, substantially as herein set forth.

5. The shield M, cast integral with the post A′ of the frame, and with the arm I, which serves as a journal-support, substantially as shown and described.

293,110. AUTOMATIC TELEGRAPH. THEODORE F. TAYLOR, Chicago, Ill. Filed Apr. 14, 1883. (No model.)



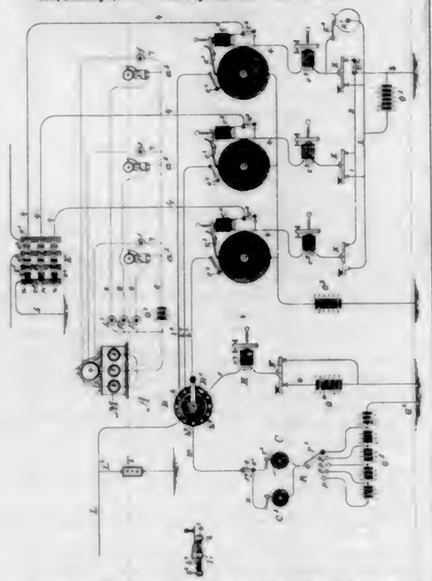
Claim.—1. The combination, substantially as hereinbefore set forth, of a telegraphic main line, a main battery, means for transmitting electric impulses from said battery upon said main line, a telegraphic receiving-instrument, an opposing battery having less electro-motive force than said main battery, through which the impulses transmitted from said main battery to the receiving-instrument are caused to pass, and two branch conductors, each containing an artificial resistance, permanently completing the circuit of the opposing battery through the line and receiving-instrument.

2. The combination, substantially as hereinbefore set forth, of a main circuit, in which is placed a main battery, a transmitting-instrument, an opposing battery of less electro-motive force than the main battery, and a receiving-instrument, two branch or shunt conductors permanently united with the main circuit, one of which spans the transmitting-instrument and main battery and the other the receiving-instrument and opposing battery.

3. The combination, substantially as hereinbefore set forth, of a main circuit, in which is placed a main battery, a transmitting-instrument, an opposing battery of less electro-motive force than the main battery, and a receiving-instrument, two branch or shunt conductors permanently united with the main circuit, one of which spans the transmitting-instrument and main battery and the other the receiving-instrument and opposing battery, and an artificial resistance placed in each of said branch or shunt circuits.

4. The combination, substantially as hereinbefore set forth, of a main line, a main battery, means for transmitting electric impulses therefrom upon said main line, a chemical receiving-instrument, an auxiliary battery of reverse polarity placed in the line adjacent to the said receiving-instrument, a branch or shunt conductor permanently completing the circuit of said opposing battery through said receiving-instrument, and an artificial resistance included in said conductor.

293,111. AUTOMATIC-TELEGRAPH SYSTEM. THEODORE F. TAYLOR, Brooklyn, N. Y. Filed Sept. 18, 1883. (No model.)



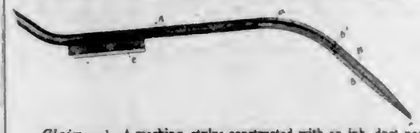
Claim.—1. The combination of a telegraphic main line, two or more independent automatic transmitting devices, means for preparing said devices with matter for automatic transmission, and means, substantially such as described, for connecting each of said devices with said main line in its proper succession.

2. The combination, with a telegraphic main line, of a terminal station provided with a central managing desk and two or more subsidiary desks, each being equipped with an automatic transmitting device, means for preparing said devices with matter for automatic transmission, electric signaling apparatus for transmitting signals to and from the central desk, and means for connecting any one of said transmitting devices with said main line.

3. The combination of a main line, two or more independent automatic transmitting-instruments, a switch for placing any one of said transmitting-instruments in connection with said main line at pleasure, a battery, and a series of two or more branch conductors leading therefrom, for preparing the messages to be transmitted from said automatic transmitting-instruments, a series of subsidiary main lines, and a switch by means of which any one of said branch conductors may be connected with any one of said subsidiary lines.

4. The combination of two or more automatic transmitting-cylinders, a transmitting-stylus applied to each of said cylinders, a main battery, a main line, means, substantially such as described, for charging each of said cylinders with matter for automatic transmission, a switch for placing any one of said stylusses in connection with said main line, an annunciator located near said switch, and means, substantially such as described, whereby the respective drops and said annunciator may be actuated from a point near said cylinders.

293,112. MARKING-STYLUS FOR AUTOMATIC TELEGRAPHS. THEODORE F. TAYLOR, Brooklyn, N. Y. Filed Sept. 18, 1883. (No model.)



Claim.—1. A marking-stylus constructed with an ink-duct narrowed or constricted near its lower extremity, and widened into a flattened opening at the nib, substantially as described.

2. A marking-stylus consisting of two sections, the main section and the nib-piece, the latter being constructed with an aperature narrower through a portion of its lenth than that formed in the main section, and widening at the nib into a flattened opening, substantially as described.

3. A stylus constructed with an ink-duct narrowed through a portion of its length, said stylus terminating in a flattened nib-piece having a slit or cut formed across its face.

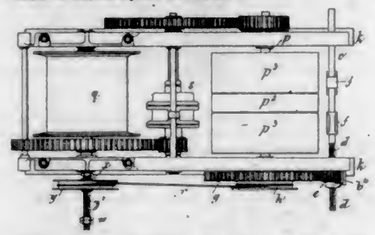
4. The combination, substantially as hereinbefore set forth, of the main section A, and the nib-piece B, having the narrow aperture *b* and slit *d*.

293,118. NUT-LOCK. GEORGE WILLIAM TEGG, Peoria, Ill. Filed Oct. 11, 1883. (No model.)



Claim.—The bolt B, having groove D longitudinally therein through its threads, in combination with a nut, N, thereon, and the spring-metal key C, notched to correspond with said threads, and having its outer end bent away from its containing-groove D, substantially as and for the purpose specified.

293,114. MACHINE FOR LIFTING OR HOISTING. THOS. THOMAS, Cardiff, County of Glamorgan, England. Filed Nov. 30, 1883. (No model.) Patented in England Apr. 28, 1883, No. 2,162.



Claim.—1. The combination of the pulley-shaft, the brackets adjustable in the slotted seats, the belt-shifting bar having its bearings in the said brackets, and the belt-forks connected to the shifting-bar, substantially as and for the purpose set forth.

2. The combination of the screw-threaded shifting-bar, a supporting-bracket therefor, the pinion working on the threaded portion of the shifting-bar and inclosed in the supporting-bracket, the pulley-shaft, and the loose pinion and sheave connected with the pulley-shaft, substantially as and for the purpose set forth.

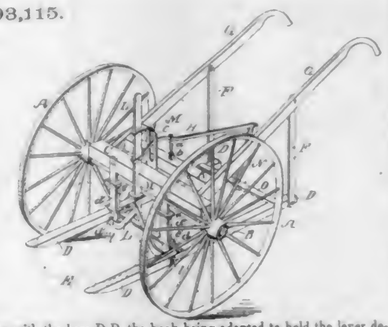
3. The combination of the drum-shaft having a portion thereof screw-threaded, the sheave traveling on the threaded portion thereof, the screw-nut and collar on opposite sides of the said sheave, the pulley-shaft with the sheave and pinion thereon, means for connecting the two sheaves, the screw-threaded belt-shifting bar and the belt-forks connected thereto, and the pinion working on the threaded portion of the shifting-bar and meshing with the pinion on the pulley-shaft, substantially as and for the purpose set forth.

4. The combination of the drum-shaft having a portion thereof screw-threaded, the sheave traveling on the threaded portion thereof, and the screw-nut and collar on opposite sides of the said sheave, substantially as and for the purpose set forth.

293,115. HIVE-CART. CHARLES R. THOMPSON, Fort Omaha, Nebr. Filed June 25, 1883. (Model.)

Claim.—1. In a hive-cart, the lever H, having hook N, in combi-

293,115.



nation with the bars D D, the hook being adapted to hold the lever depressed and the forward ends of the bars elevated, substantially as described.

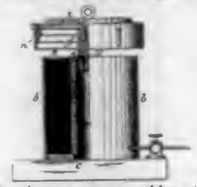
2. The hive-cart herein shown and described, consisting of the wheels A A, axle B, and handles G G, in combination with bars D D, lever H, T-iron L, and hook N, the bars D D being pivoted in hangers F F, and the hook being adapted to catch under cross-piece O, substantially as and for the purposes set forth.

3. In a hive-cart, the lever H, fulcrumed by means of the link *a* upon the cross-piece K, substantially as shown and described.

4. The combination, with lever H and T-iron L, of the guide-plate M, arranged substantially as and for the purposes set forth.

5. The T-iron L, provided with the irons *d d*, in combination with the irons *d' d'*, attached to the axle or cross-bar C and yoked together, substantially as and for the purposes set forth.

293,116. ELECTRO-MAGNET AND ARMATURE. ILLICS AUGUSTUS TIDDES and STANLEY CHARLES CUTHBERT CURRIE, London, England. Filed Dec. 7, 1883. (No model.) Patented in England Aug. 4, 1882, No. 3,712.



Claim.—1. An electro-magnet comprising a tubular core of magnetic material constituting one of the poles, a cylindrical shell of similar material constituting the other pole, a plate of magnetic material connecting the pole-pieces, and an insulating conducting-helix surrounding the central core, in combination with an armature consisting of a disk having a central projection adapted to slide within the tubular core, substantially as described.

2. The combination, with an electro-magnet having a tubular core, a surrounding helix, and an inclosing-shell of magnetic material, and a connecting-yoke, of an armature consisting of a disk provided at its center with a projection adapted to enter the tubular core, and at its edge a depending flange adapted to slip over the edge of the outer shell, substantially as described.

3. In an electro-magnet, the combination of a central core, a surrounding helix, and an inclosing-shell of magnetic material, with an armature consisting of a disk provided with a depending flange, substantially as described.

4. The combination, with an electro-magnet, of an armature having an adjustable depending flange.

293,117. MANUFACTURE AND PROPORTIONING OF WEIGHTS AND MEASURES. CHARLES A. L. TOTTEN, United States Army. Filed Apr. 30, 1883. (No specimens.)

Claim.—1. Weights, for use upon scales, balances, &c., based upon the aliquot subdivision of a cubic inch of 5.7 density material, at mean temperature and pressure, into 1,536 grains and 2,000 ultimates, as and for the purposes specified.

2. Weights for similar use based upon suitable multiples of my standard density—to wit, 5.7 specific gravity—as and for the purposes specified.

3. Weights, for similar use, made of an iron or other substance whose density shall be 7.125 water, at mean temperature and pressure, or suitable multiples thereof, as and for the purposes specified.

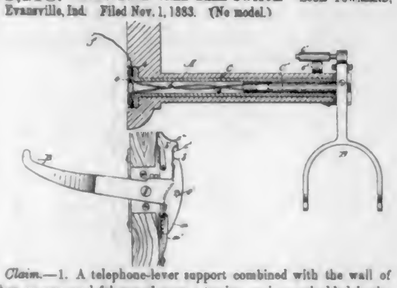
4. Measures of capacity, liquid and dry, based upon the fact that the standard ounce or unit of capacity-measure shall have the same volume or occupy the same space (to wit, 1.78125 cubic inch) as is occupied by a unit-ounce weight, expressed in pure water under standard circumstances, as above described.

5. The combined system of weights and capacity-measures, unified as above by my formulæ and moduli, and with or without reference to any particular standard temperature and pressure, as and for the purposes specified.

6. Cubes (standard, unit, &c.) of material 5.7 times the density of water, at mean or standard circumstances, marked, stamped, or otherwise designated to show their value in aliquot parts, and their several relations to the foregoing system, as and for the purposes specified.

7. Cubes and other geometrical solids suitable for reference, and of specific materials, metals, alloys, &c., duly stamped, engraved, or otherwise marked, so as to show their relations to the foregoing rectified system of measures, for use as standards of reference, &c., as and for the purposes specified.

293,118. TELEPHONE-CALL-BELL SWITCH. LOUIS TOWNSEND, Evansville, Ind. Filed Nov. 1, 1883. (No model.)



Claim.—1. A telephone-lever support combined with the wall of the box or case, and fulcrumed upon a torsion-spring embedded in the wall of the box, as and for the purpose described.

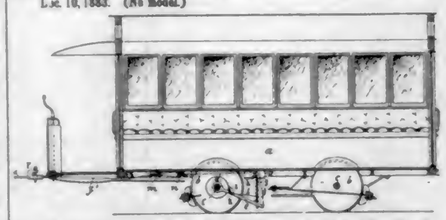
2. The combination, with the telephone-lever support, of the tube C, the shorter inner tube, C', and the torsion-spring connecting the two, the said lever-support being fastened to one tube and the outer tube being fastened to the case, as described.

3. The combination of the tube C, having flange *c*, the shorter inner tube, C', projecting beyond C, the torsion-wires *d d*, connected at one end to one of these tubes and at the other end to the other of said tubes, and the telephone-lever support rigidly fixed to tube C', as and for the purpose described.

4. A switch or contact-spring consisting of three spring-tongues, 1 2 3, the two side tongues of which project at right angles to the middle one, and upon the same side thereof, as described.

5. The combination of tube C, tube C', with slotted end, the torsion-springs *d*, and the adjustable telephone-lever, substantially as described.

293,119. CAR-STARTER. WILBURT C. TRUSSELL, Boston, Mass. Filed Dec. 10, 1883. (No model.)

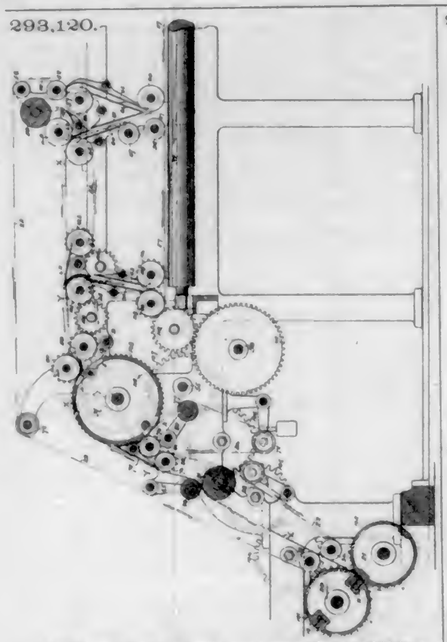


Claim.—In a car-starter, the combination of the sliding draw-head *r* on the clevis *s*, the rope *f'*, pulley-blocks *m n*, rope *f*, pulley A, and sliding frame *o*, lever *e* and yoke *t*, pawl *i*, and ratchet-wheel *d*, secured to the axle *c*, all operating conjointly, substantially as and for the purpose specified.

293,120. SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES. STEPHEN D. TUCKER, New York, N. Y. Filed Aug. 30, 1881. (No model.)

Claim.—1. The combination, with a primary sheet-manipulating apparatus, consisting of a carrier, as A, which is provided with means by which it is capacitated to guide or fold the sheets, of a secondary sheet-manipulating apparatus, to which the sheets are delivered from the carrier A and folded, of interchangeable gearing, whereby said secondary apparatus is driven at the same or a lesser speed than the primary apparatus, all substantially as described.

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2. The combination, with a primary apparatus adapted to fold sheets, of a secondary apparatus adapted to fold the sheets delivered from the primary apparatus, means for rendering the folding mechanism of the primary apparatus inoperative, means for guiding the sheets therefrom, and means for varying the speed of the secondary apparatus, all substantially as described.

3. The combination, with a primary apparatus adapted to fold and associate and fold sheets, of a secondary apparatus adapted to fold the sheets delivered from the primary apparatus, means for rendering the associating and the associating and folding mechanisms of the primary apparatus inoperative, means for guiding the sheets therefrom, and means for varying the speed of the secondary apparatus, all substantially as described.

4. The combination, with a primary apparatus adapted to associate sheets, of secondary apparatus adapted to fold the sheets delivered from the primary apparatus, means for rendering the associating mechanism inoperative, and means for varying the speed of the secondary apparatus, all substantially as described.

5. The combination, with a pair of folding-rollers and a carrier provided with a folding-blade coacting therewith, of a switch or guide, as 13, and means for adjusting the same so that it may be arranged to guide the sheets off from the carrier and permit their being folded, or be removed to admit the operation of the folding-blade, which latter is provided with means for rendering it inoperative, all substantially as described.

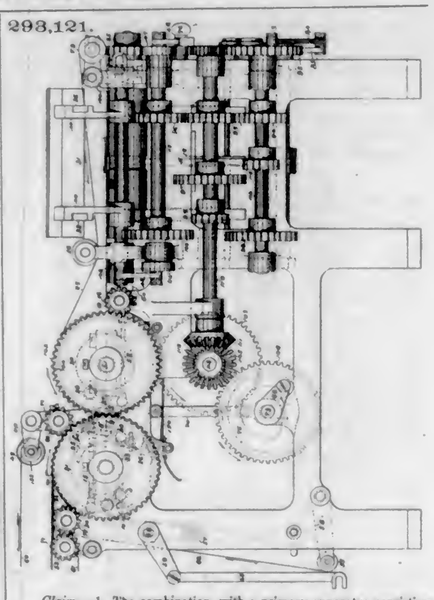
6. The combination, with the primary sheet-manipulating apparatus, consisting of the cylinder or carrier A and its appurtenances, and the secondary sheet-manipulating apparatus, of the main sheet channel or pathway and two auxiliary sheet channels or pathways leading at different points therefrom to the said secondary manipulating apparatus, all substantially as described.

7. The combination, with the primary sheet-manipulating apparatus, consisting of the cylinder or carrier A and its appurtenances, and the secondary sheet-manipulating apparatus, of the main sheet channel or pathway and three auxiliary sheet channels or pathways leading therefrom to said secondary sheet-manipulating apparatus, all substantially as described.

8. The combination, with the primary sheet-manipulating apparatus, consisting of the cylinder or carrier A and its appurtenances, and the secondary sheet-manipulating apparatus, of the main and auxiliary sheet-conducting pathways and switches governing the passage of sheets from said main pathway to the auxiliary pathways, all substantially as described.

293,121. SHEET-DELIVERY APPARATUS FOR PRINTING-MACHINES. STEPHEN D. TUCKER, New York, N. Y. Filed Sept. 14, 1881. (No model.)

293,121.



Claim.—1. The combination, with a primary apparatus consisting of a rotating folding and gathering apparatus, of a secondary apparatus consisting of a pair of rollers, as 65 66, and the interchangeable vibrating folding-blade, and two vibrating sheet-forwarding devices, with change-gearing whereby said secondary apparatus is driven at an equal, a lesser, and a more rapid speed than the primary apparatus, all substantially as described.

2. In a sheet-delivery apparatus, the combination, with a primary sheet-manipulating mechanism and means for rotating the same, of a secondary sheet-manipulating apparatus, to which the sheets are delivered from said primary apparatus, and change-gearing connecting the primary and secondary apparatus, whereby the latter is run at a lesser and greater speed than the primary apparatus, while the normal speed of the latter is maintained, all substantially as described.

3. In a sheet-delivery apparatus, the combination, with a primary sheet-manipulating mechanism and means for rotating the same, of a secondary sheet-manipulating apparatus, to which the sheets are delivered from said primary apparatus, and change-gearing connecting the primary and secondary apparatus, whereby the latter is run with the same at a lesser and a greater speed than the primary apparatus, while the normal speed of the latter is maintained, all substantially as described.

4. The combination, with a pair of folding-rollers, of means for feeding two sheets over the same so that one edge of each sheet shall overlie said rollers, and means for directing said sheets in succession between said rollers, all substantially as described.

5. The combination, with a pair of folding-rollers, of a slitter for dividing a sheet into two half-sheets, means for feeding said half-sheets so that one edge of each shall overlie said rollers, and means for directing said half-sheets in succession between said rollers, all substantially as described.

6. The combination, with a pair of folding-rollers, of a slitter for dividing a sheet into two half-sheets, means for feeding said half-sheets so that one edge of each shall overlie said rollers, means for directing said half-sheets in succession between said rollers, and means for subsequently folding said sheets, all substantially as described.

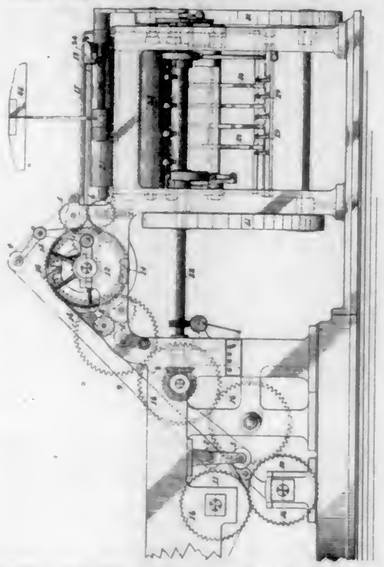
7. The combination, with two carriers, as A B, provided with means for associating sheets and for folding sheets, devices for rendering the gathering means inoperative, and devices for causing the folding means to be inoperative during certain revolutions of its carrier, of a subsequent folding mechanism and means for delivering the sheets thereto, and means for varying the speed of the subsequent folding mechanism, all substantially as described.

8. The combination, with a rotating carrier provided with means for gathering sheets thereon, and with a folding-blade capacitated to move beyond and within the periphery of the carrier, of a cam for thus moving said blade, means for vibrating the cam into and out of operative relation with said folding-blade, and a companion revolving carrier provided with nipping-jaws, all substantially as described.

9. The combination, with the rotating primary sheet-manipulating

mechanism, operating to gather or fold, or both, and the secondary sheet-manipulating mechanism, of a shaft, 110, transmitting the motion of the former to the latter, and the wheels 97 and 116, for varying the speed of the latter to double that of the former, while that of the former remains unchanged, all substantially as described.

293,122. SHEET FOLDING AND DELIVERY APPARATUS. STEPHEN D. TUCKER, New York, N. Y. Filed Apr. 12, 1883. (No model.) Patented in England July 26, 1876, No. 3,019.



Claim.—1. A folding mechanism consisting of the combination, with a pair of tapering folding-rolls, of a means for entering sheets between them, substantially as described.

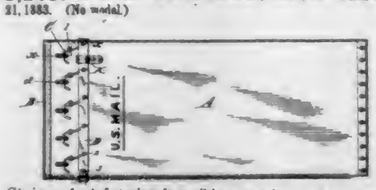
2. The combination, with a folding mechanism consisting of a pair of rolls and means for entering sheets between them, of a second folding mechanism adapted to receive and fold the sheets as they are delivered from the first, the rolls of said first mechanism being made tapering, so as to present the sheets in proper position to said second mechanism, all substantially as described.

3. The combination, with a mechanism for imparting one fold to a sheet, of a mechanism for imparting another fold at right angles to the first, a pair of tapering rolls, as 21 22, arranged to act upon the sheet after receiving the first of said folds to present it in proper position to receive the second of said folds, and means for directing the sheet between said tapering rolls, all substantially as described.

4. The combination, with a primary folding mechanism, as 14 5 6, of a pair of tapering rolls, 21 22, means for directing the sheet between said rolls, and a final-folding mechanism, as 25 26 27, arranged to receive the sheet from said tapering rolls, all substantially as described.

5. The combination, with the rolls 25 26 and blade 27, of the tapering rolls 21 22 and blade 23, arranged parallel thereto, substantially as described.

293,123. MAIL-BAG. WILL A. VAN CAMP, Milton, Ind. Filed Nov. 21, 1883. (No model.)

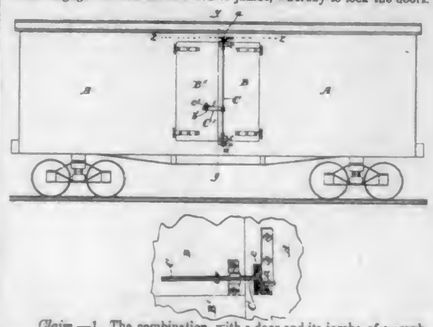


Claim.—1. A fastening for mail-bags, consisting of the strap D, having one end permanently secured to the bag, and the other end provided with means for detachably connecting it to the bag, the catches C C, each having one end riveted to the strap D, and pivoted at about their middle portions to the bag, and the staples *a a*, all constructed and arranged substantially as described.

2. A fastening for mail-bags, consisting of the strap D, having one end riveted to the bag and the other end provided with means for locking it to the bag, said strap having at or near one end the loop E, the loops K, the catches C C, each having one end riveted to the strap D, and pivoted at or about their middle portions to the bag, and the staples *a a*, all constructed and combined substantially as described.

293,124. CAR-DOOR FASTENER. JOHN L. WAGNER, Terre Haute, Ind., assignor of two-thirds to Thompkins A. Lewis, Indianapolis, Ind., and Henry R. Duvall, New York, N. Y. Filed July 12, 1883. (No model.)

Brief.—A crank-rod mounted on a hinged car-door, the cranks of which engage with catches secured to jambs, whereby to lock the doors.

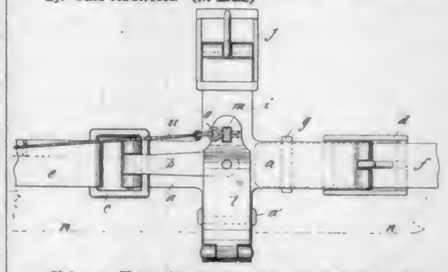


Claim.—1. The combination, with a door and its jambs, of a crank-rod mounted on said door, and catches secured to said jambs, with which the cranks of said rod are adapted to engage, substantially as described, and for the purposes specified.

2. The combination of the car A, having catches *a a*, the hinged door B, and the rod C, having cranks *c c*, substantially as set forth.

3. The combination of the car, catches thereon, the doors mounted on hinges, the crank-rod, the cranks thereon, and the handle therefor, substantially as shown and specified.

293,125. HORSE-DETACHER. WILLIAM MADISON WALKER, Fulton, Ky. Filed Oct. 29, 1883. (No model.)



Claim.—1. The combination of trace-latch *b*, shaft-latch *l*, fastening-stud *m*, and spring-key *o*, with the plate *a*, having trace-buckle *d* and back-strap buckle *j*, substantially as described.

2. The combination of trace-latch *b*, shaft-latch *l*, fastening-stud *m*, spring *p*, and spring-key *o*, with the plate *a*, having trace-buckle *d* and back-strap buckle *j*, substantially as described.

3. The trace-latch *b*, having stud *t*, in combination with plate *a*, having shaft-latch *l*, said trace-latch *b* being arranged to close behind latch *l*, and be confined by the shaft *s* when it is confined by the latch *l*, substantially as described.

4. The plate *a*, having trace-latch *b*, shaft-latch *l*, trace-buckle *d*, trace-loop *g*, back-band buckle *j*, belly-band loop *d'*, and the latch-stud *m*, combined and arranged substantially as described.

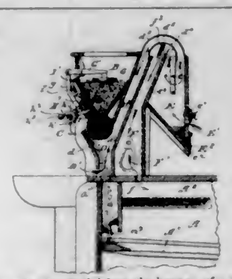
5. The combination of the foot-lever *x*, in the body of the carriage, with the spring-keys *o* and fastening-studs *m* of a horse-detaching apparatus, for releasing the same, substantially as described.

6. In a horse-detaching apparatus, the spring-keys *o*, for releasing the retaining-latches *b l*, having attached cords *n*, extended through the eye *v* of the dash-board, and connected with the foot-lever *x*, pivoted to the floor of the carriage-body at *y*, and supported on the spring *z*, substantially as described

293,126. FEED-HOPPER. JOHN T. WALTER, Easton, Pa. Filed May 10, 1883. (No model.)

Claim.—1. In a feeding-hopper, the combination, with a valve, I, for regulating the exit of material from the hopper, of a plate, G, located within the hopper, a pivoted lever, G', connected with the plate, and a rock-shaft, H, provided with arms A and A', connected, respectively, with said lever and valve, substantially as described.

293,126.

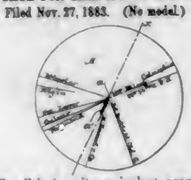


2. In a feeding-hopper, the combination, with a valve, I, for regulating the exit of material from the hopper, of a plate, G, located within the hopper, a pivoted lever, G', connected with the said plate, a rock-shaft, H, and arms A and A', adjustably secured to said shaft and connected, respectively, with said lever and valve, substantially as described.

3. The combination, with a feed-hopper, B, of a sliding valve, I, a plate, G, located in the hopper, connections joining the plate G and the valve, a spring, *i*, constructed to engage the said valve at its ends, a plate, I', adjustably secured to the hopper and connected with the said spring at the central portion of the latter, and an adjustable stop, I², for limiting the upward movement of the valve, substantially as described.

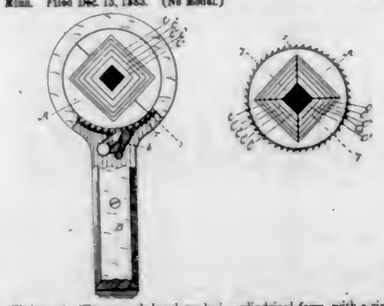
4. The combination, with an exhaust-fan, of a hopper, B, provided with a passage, D, a settling-chamber, E, located in the same casing as the said hopper and adjacent thereto, a screen, *e*, located in the upper portion of said chamber, and a partition, *d'*, located between the adjacent walls of the hopper and chamber, and joined at its ends to the side walls of the casing, and constructed to form with said walls of the hopper and chamber passages D² and F, connecting the top of the chamber at opposite sides of the screen *e* with the passage D and with the said exhaust-fan, substantially as described.

293,127. GAGE FOR HAIR-SPRING STUDS. JOSEPH P. WATHEN, Chicago, Ill. Filed Nov. 27, 1883. (No model.)



Claim.—The disk A or its equivalent, provided with apertures *a* and *a'*, or other means of locating the staff and ruby-pin, and an index for showing the proper position of the stud *b*, substantially as and for the purpose described.

293,128. RATCHET-WRENCH. CHARLES WICKSLER, Minneapolis, Minn. Filed Dec. 13, 1883. (No model.)

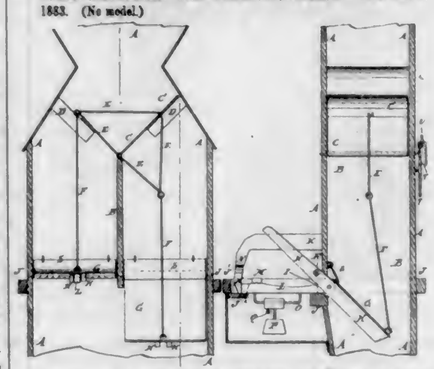


Claim.—1. The wrench-head made in cylindrical form, with a ring of ratchet-teeth around it, and an angular hole through it, with guide-pins projecting inwardly, in combination with a series of slotted angular bushings arranged concentrically in said hole or opening, and extending the full length of the head, and a handle swiveled about the middle of the wrench-head, and provided with a pawl to engage the ratchet-teeth, substantially as and for the purpose described.

2. The wrench-head made in cylindrical form, with a ring of ratchet-teeth around it, and an angular hole through it, with guide-pins projecting inwardly, in combination with a series of flat plates with beveled edges arranged concentrically about the central opening, and of the same length as the head, and slotted longitudinally, to move freely in the head on the pins, a handle swiveled about the middle of the wrench-head, and a pawl contained in the latter, and adapted to engage the ratchet-teeth, substantially as and for the purpose described.

3. A wrench-head having a series of telescoping or sliding angular bushings, of increased thickness toward the center of the head, as and for the purpose described.

293,129. AUTOMATIC REGISTER FOR GRAINS, SEEDS, AND OTHER SUBSTANCES. JOHN WHERRY, Jr., Putnam, Ill. Filed Nov. 3, 1883. (No model.)



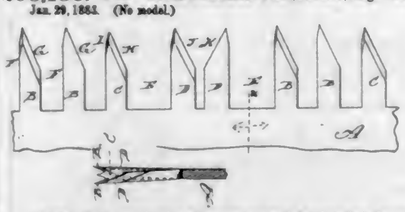
Claim.—1. A grain-register constructed substantially as herein shown and described, and consisting of a two-compartment case provided with an adjustable guide-plate, and hinged bottoms having elastic bars engaging with scale-beams, as set forth.

2. In automatic grain-registers, the combination, with the flanges D D, arranged on the inner and opposite sides of the case A directly under its throat, of the vertical partition B, swinging plate C, pivoted to the upper end of said partition, rods E F, and pivoted platforms G, substantially as shown and described.

3. In a grain-register, the combination, with the case A and the hinged bottom G, of the pairs of elastic bars H, the weighted scale-beams L, having catches M, and the spreaders N, substantially as herein shown and described, whereby the said hinged bottoms will be released when a given weight of the substance has been received upon them, as set forth.

4. In a grain-register, the combination, with the scale-beams L and the elastic bars H, of the catches M and the spreaders N, substantially as herein shown and described, whereby the said elastic bars are made to engage with and release the scale-beams automatically, as set forth.

293,130. SAW. GEORGE WASHINGTON WILLS, Portland, Oreg. Filed Jan. 29, 1883. (No model.)

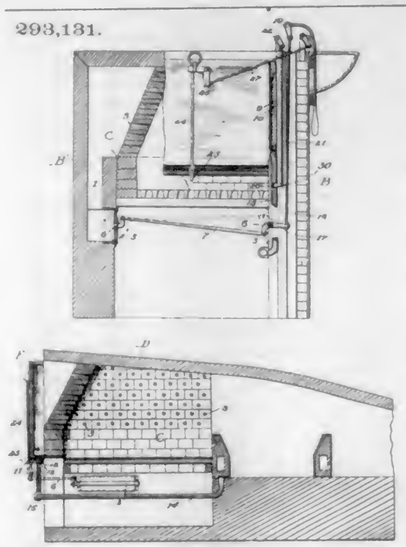


Claim.—The combination of two cutter-teeth having their forward edges straight and their rear edges cut off inclined at their upper portions, and having the edges beveled and sharpened at opposite sides of the two teeth, a clearer-tooth having a straight forward edge and inclined rear edge, and having its edges beveled to both sides, and two drag-teeth having their facing edges cut off inclined and their outer edges straight, and having their edges beveled and sharpened upon opposite sides, said teeth being arranged in alternating groups, the two cutter-teeth in front of the clearer-tooth forming one group, and the drag-teeth forming another group, each group having an intermediate space, as and for the purpose shown and set forth.

293,131. METALLURGICAL FURNACE. JACOB ABTMEYER, Benwood, W. Va. Filed Mar. 21, 1883. (No model.)

Claim.—1. In a furnace, an air-chamber on each side of the com-

293,131.

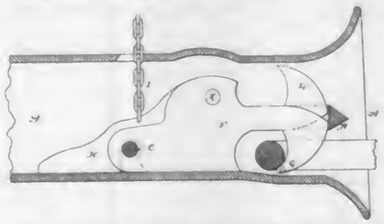


bustion-chamber having openings into said combustion-chamber above the fuel, air-passages leading from said air-chambers to the ash-pit, and valves at each opening in the ash-pit, connected to each other and to suitable operating mechanism, whereby air may be supplied to the two air-chambers, and thence to the combustion-chamber in regulated quantities, substantially as described.

2. The furnace having side chambers separated from the combustion-chamber by inclined perforated walls with valve-passages leading to the ash-pit, and an air-chamber composed of an iron box having flanges bolted to end plates on the end side walls and communicating to the fire-chamber through the perforated wall, air-pipes connecting said box with the heating-passage in the fire-bridge wall, and valves for regulating the supply of air through said pipes, the parts being constructed and arranged substantially as described.

3. The side walls of the furnace having perforations leading into the combustion-chamber, air-passages leading into the ash-pit, and a perforated end wall covered by a separate iron box having flanges, and bolted to the said wall, and suitable valves arranged and adapted to be operated substantially as described.

293,132. CAR-COUPLING. JOHN E. ANGER and DAVID PORTER, Schenectady, N. Y. Filed Aug. 20, 1883. (No model.)



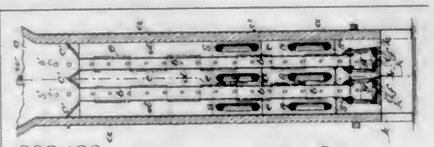
Claim.—1. In a car-coupling, the combination of two hooks which move in opposite directions, and which are pivoted together in such a manner that the raising of the rear end of one hook will move the front ends of the hooks in opposite directions, substantially as shown.

2. In a car-coupling, the combination of the draw-head, the link-guide, and the two coupling-hooks, which are pivoted together and connected to the link-guide in the manner and for the purpose set forth.

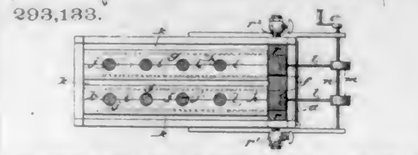
293,133. GRAIN-DRIER. WILLIAM HENRY APPLEGATE, Atlantic, Iowa. Filed June 14, 1883. (No model.)

Claim.—1. The combination, with the grain-passages *b*, having sides *d* of intermeshing wires, of the continuous interlacing wires *e*, forming cross-bars and surface-stays to the sides *d*, substantially as shown and described.

2. The combination, with the grain-passages *b*, of the two-part



293,133.



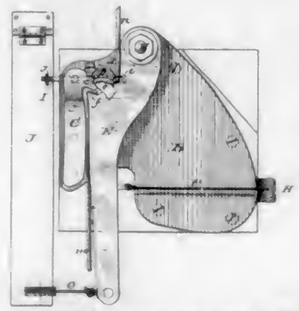
valve-casings *g*, flared toward the bottom and centrally divided, and the valves *f*, substantially as shown and described.

3. The combination, with the grain-passages *b* and the flared casings *g*, apertured at *j*, of the valves *f*, apertured at *i*, the rods *l*, eccentrics *m*, and operating-shaft *n*, substantially as shown and described.

4. The combination, with the case *a*, grain-passages *b*, having sides *d* of intermeshing wires, valves *f*, heating-pipes *s*, and passages *k*, of the moisture-outlets *w*, substantially as shown and described.

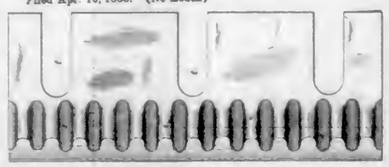
293,134. WIRE CUTTER AND SHAPER. BENJAMIN E. BALL, Denver, Colo. Filed June 13, 1883. (No model.)

Brief.—After completing the coil of one coiled spring, by depressing a treadle severs its rear portion from the main wire and shapes the end of the spring just coiled; also shapes the advanced end of the wire as required to be in the advanced end of the next spring to be coiled. When the treadle rebounds, the finished coiled spring is discharged from the machine.



Claim.—The combination, in a device for cutting and shaping wire, of the bed-plate B, the standard D, and the standard C, having the cutting projection *c* thereon, the lever E, the cutter and shaper *e*, the shaper *f*, and bolt F, all operating as described.

293,135. PLANER-KNIFE. EDWIN BENJAMIN, South Evanston, Ill. Filed Apr. 16, 1883. (No model.)

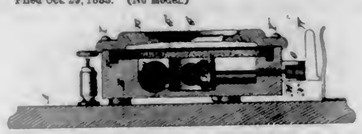


Claim.—1. A planer-knife adapted to be secured by fastening-bolts at or near its center to a revolving cylinder, said knife having that portion which extends forward from the fastening-bolts to the cutting-edge lightened, substantially as described, whereby the momentum of the forward portion of the knife is reduced.

2. A planer-knife adapted to be secured at or near its center to a revolving cylinder, said knife being provided with a series of transverse flutes extending from near the center of the knife toward the cutting-edge, whereby said knife is lightened, substantially as and for the purpose specified.

3. The combination, in a planer-knife adapted to be bolted to a revolving cylinder, of the slots *i*, through which the fastening-bolts pass, and the transverse flutes extending from near the center of the knife toward the cutting-edge, substantially as described.

293,136. TELEPHONE-CASE. PARK BENJAMIN, New York, N. Y. Filed Oct. 29, 1883. (No model.)



Claim.—1. A telephone-case formed of glass or similar vitreous material, provided with suitable recesses, indentations, or appertures for the reception of the working parts of the instrument, substantially as described.

2. A telephone-case formed of glass or similar vitreous material, pressed or molded into substantially a block, which block is provided with suitable recesses, indentations, or apertures for the reception of the working parts of the instruments, substantially as described.

3. A telephone box or case having a detachable cover containing a mouth-piece and mouth-piece orifice, and a receptacle containing suitable recesses, apertures, or indentations for the reception of the working parts of the instrument, and a means of connecting said cover and receptacle, said receptacle and cover being formed of glass or similar vitreous material, substantially as described.

4. In a telephone, the receptacle B, provided with recesses, indentations, or apertures for the reception of the working parts of the instrument, substantially as described, and made of pressed or molded glass or similar vitreous material.

5. In a telephone, the cover E, having a mouth-piece and a mouth-piece opening, substantially as set forth, and made of pressed or molded glass.

6. In a telephone, a glass mouth-piece, substantially as described.

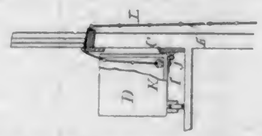
7. A telephone box or case constructed of transparent material, substantially as described.

8. A telephone box or case constructed of transparent non-inflammable material, substantially as described.

9. A telephone box or case constructed of transparent non-inflammable insulating material, substantially as described.

293,137. FIRE-ESCAPE. DANIEL BENNETT, Logan, Ohio, assignor of one-third to Sewell G. Bennett, same place. Filed Apr. 27, 1883. (No model.)

Brief.—The box for storing the ladder is provided on one side with supporting-casters and on the other side with gibs for moving along the horizontal rod.

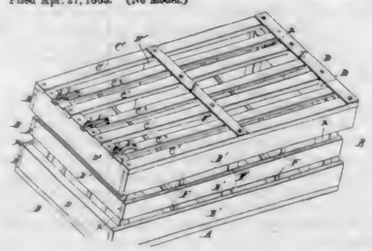


Claim.—1. The box D, having on one side, beneath the box, the casters or wheels F, resting on the floor to support said box, and the other side of the box provided with gibs I, so that said box may be moved along the wall on the rod H, substantially as herein set forth.

2. The box D, having on one side, beneath the box, the casters or wheels F, resting on the floor to support said box, and the other side of said box provided with the gibs I, in combination with the base-board C, having the brackets G, which carry the horizontal rod H, substantially as herein set forth.

3. In fire-escapes, the combination of the rod H, secured by brackets permanently to the wall, the box D, having rollers F on one side, and on the other side gibs I, to secure said box to the rod H, and with the rope ladder L, secured within the box or to the rod H, substantially as herein set forth.

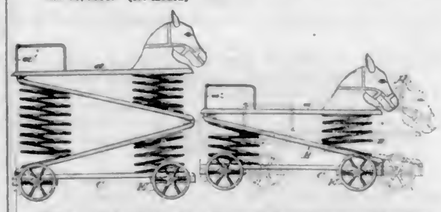
293,138. POULTRY-COOP. WILLIAM T. BLEKER, Jr., Galveston, Tex. Filed Apr. 27, 1883. (No model.)



Claim.—1. In a poultry-coop, the combination of bottom A, side strips, B', end strips, D', the top end strips having recesses *d*, central vertical partition, F', having recesses *f*, vertical transverse partitions F, and vertical longitudinal partitions G, forming compartments H, between the central partition and the ends of the coop, corner-posts K, and the top strips, C' C², fitting in the recesses, as set forth.

2. In a poultry-coop, the combination of bottom A, side strips, B', end strips, D', the top end strips having recesses *d*, central partition, F', having recesses *f*, corner-posts K, vertical transverse partitions F, and vertical longitudinal partitions G, forming compartments H, the top fixed and removable strips, C' C², having suitable fastenings and fitting in the recesses, and transverse tie-strips E, as set forth.

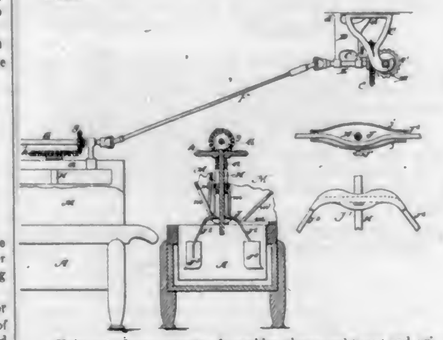
293,139. HOBBY-HORSE. MARTIN BOHLIG, Dubuque, Iowa. Filed Dec. 18, 1883. (No model.)



Claim.—1. In a hobby-horse, a sloping board interposed between the horse and its supporting-base and hinged to both, and springs interposed between the horse and the sloping board, and between the sloping board and the base, substantially as described.

2. A hobby-horse having one or more sloping boards, with hinged connections to the horse and the base, and springs interposed between the boards and the horse, and between the boards and a base supported upon wheels, substantially as described.

293,140. MACHINERY FOR MANUFACTURING CHEESE. ARCHIBALD H. BRIDTNELL, Belleville, Ontario, Canada. Filed Mar. 8, 1883. (No model.)



Claim.—1. In an apparatus for making cheese and to cut and agitate the curd within the vat, the combination of the bevel-gears mounted in bearings on the vat, the shaft F, having a universal joint at each end, the swinging bracket D, the movable arm d^2, and the gears *e* and *e'*, substantially as described.

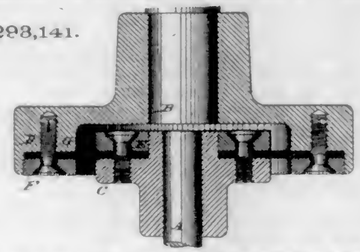
2. In an apparatus for making cheese and for cutting and agitating the curd within the vat, the combination of the gears *h*, mounted on vertical shafts H, the gears *g*, carried by the horizontal shaft G, the shaft F, having a universal joint at each end, the short shaft E, mounted in a swinging bearing, and having a gear adapted to engage a gear upon the main shaft, and means for engaging and disengaging the gears on the short and main shafts, substantially as described.

3. In an apparatus for making cheese, the combination, with the main shaft geared to the vertical shafts in the curd-vat, and provided with a pinion, T, of the vertical shaft S, carrying agitators at its lower end and a gear-wheel, V', at its upper end, a horizontal shaft, U, adapted to slide longitudinally, and provided with a pinion, V, and spur-wheel T', swinging lever W, connected with the horizontal shaft for adjusting the same, and means for holding the lever, substantially as described.

293,141. COUPLING FOR SHAFTING. PETER BROTHERHOOD, Lambeth, County of Surrey, England. Filed Nov. 19, 1883. (No model.) Patented in England Oct. 17, 1883, No. 4,943.

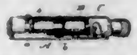
Claim.—A coupling for connecting two lines of shafting, consisting of a diaphragm of flexible material clamped by its periphery to the one

293,141.



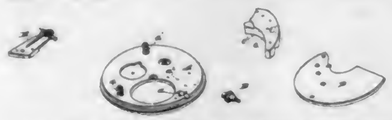
shaft and by its middle to the other shaft, substantially as herein described.

293,142. MAINSPRING-BARREL FOR WATCHES. DANIEL A. A. BUCK, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 21, 1883. (Model.)



Claim.—In combination with stem-winding mechanism, a mainspring-barrel made separate from the main wheel, journaled upon the main-wheel arbor, and provided with peripheral teeth, whereby it may be rotated upon and around said arbor to wind the mainspring, substantially as and for the purpose specified.

293,143. WATCH-MOVEMENT. D. AERO A. BUCK, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed Sept. 10, 1883. (No model.)

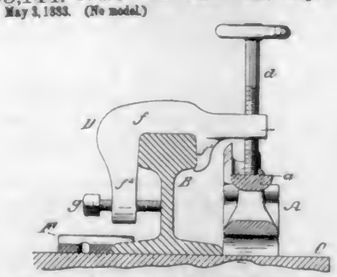


Claim.—1. A winding-bridge which is adapted to confine in place the winding-pinion, to support the balance-bridge, and to act as a pillar between and in connection with the pillar-plate and the top plate, substantially as and for the purpose specified.

2. The combination of the pillar-plate A, provided with the recess *a*, the winding-pinion B, the winding-bridge C, having the recess *c*, and the top plate, D, substantially as and for the purpose shown.

3. In combination with the balance-bridge E, the winding-bridge C, secured upon the pillar-plate A, substantially as and for the purpose set forth.

293,144. BORING-GAGE. THOMAS J. BUSH, Lexington, Ky. Filed May 3, 1883. (No model.)



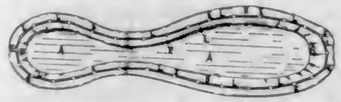
Claim.—1. The boring-gage A, having the seat or similar rest *a*, in combination with means, substantially as described, for locking the gage to and parallel with the rail, as and for the purposes set forth.

2. The locking-device D, having a forked end adapted to bear against the top, against one side, and against the under side of the head or tread of the rail, in combination with the boring-gage A, substantially as and for the purpose set forth.

3. The cramp-iron *f*, carrying screw *d*, and formed with the projection *f'*, adapted to catch against or under the head of the rail B, in combination with the boring-gage A, substantially as and for the purposes set forth.

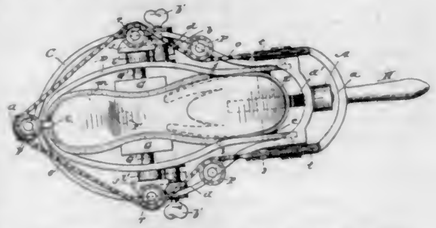
4. The cramp-iron *f*, formed with the projection *f'* and arm *f''*, and provided with the screws *d g*, in combination with the boring-gage A, substantially as and for the purposes set forth.

293,145. BOOT AND SHOE FASTENING. FRANK CLARK, Boston, Mass. Filed Sept. 17, 1883. (No model.)



Claim.—That improvement in uniting the uppers and soles of boots and shoes consisting in forming holes in the parts to be united, by punching out or removing portions of the same, then passing a cord or thread over such holes, then forcing the removed portions or cores back into the holes, carrying with them the overlaid cord or thread, thus forming a continuous line of fastening, substantially as set forth.

293,146. LASTING-JACK FOR BOOTS AND SHOES. FRANK CLARK, Boston, Mass. Filed Dec. 1, 1883. (No model.)



Claim.—1. The combination, with the last-holding frame proper, of the heel-post, the toe-piece, and the system of gears and connecting-links for causing the same to clamp and hold the last in place in said frame, substantially as and for the purposes hereinbefore set forth.

2. The last-holding frame provided with a heel-stop, in combination with the heel-post, the links connecting said post to the frame, the toe-piece, the pinion to which said toe-piece is pivoted, the sector-gear, and means for locking the links in the position to which they may be brought by the rotation of said sector-gear, the combination being and acting as hereinbefore set forth.

3. The last-holding frame proper, and the heel-post and toe-piece and system of connecting links and gears carried by said frame, in combination with the outer frame, in which said last-holding frame is hung by side trunnions, and the yoke in which said outer frame is hung by end trunnions, substantially as and for the purposes hereinbefore set forth.

4. The combination, with the last-holding frame proper and the pressers movable independently of said frame, of mechanism arranged and operating, substantially as hereinbefore set forth, to act directly and simultaneously upon said pressers, and at the same time to permit differences in the extent of movement of the individual pressers, as and for the purposes described.

5. The combination, with the last-holding frame, the pressers, and the presser-actuating mechanism, of the lining carried by the last-holding frame and interposed between the pressers and the last, substantially as and for the purposes hereinbefore set forth.

6. The combination, with the last-holding frame and its outer supporting-frame, of the pressers, the belt, the system of guide-rollers for the same, and the belt-operating mechanism, under the arrangement and for joint operation substantially as hereinbefore set forth.

293,147. MACHINE FOR UNITING THE SOLES AND UPPERS OF BOOTS AND SHOES. FRANK CLARK, Boston, Mass. Filed Dec. 1, 1883. (No model.)

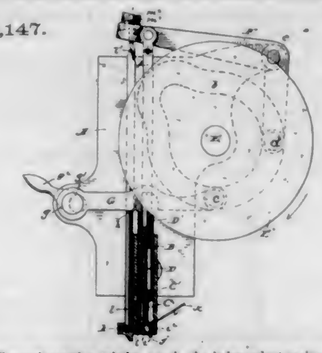
Brief.—The machine makes holes in the material by punching out pieces therefrom, lays a thread across the holes thus formed, and afterward drives the punched-out pieces, with the thread, into the holes or apertures.

Claim.—1. The combination, with the punch and the driver, of the cord or thread guide arranged and operating automatically and at the proper times to remove the thread from the path of the punch and to present it to the driver, substantially as and for the purposes hereinbefore set forth.

2. The tubular punch, and the driver arranged within the punch, and operating to expel therefrom the core or plug cut out from the work, in combination with the thread-guide and thread-guide-operating mechanism, whereby the said guide is operated alternately to carry the thread out of the path of the descending punch and into the path of the descending driver, substantially as and for the purposes hereinbefore set forth.

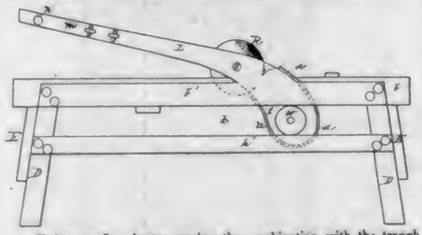
3. The combination, with the punch and punch-stock, of the punch-actuating lever supported upon a fulcrum adjustable for the purpose of varying the depth of cut made by the punch, substantially as hereinbefore set forth.

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4. The reciprocating tubular punch, the independent reciprocating driver contained in said punch, and the thread-guide, in combination with the head B, swiveled to the frame of the machine, substantially as and for the purposes hereinbefore set forth.

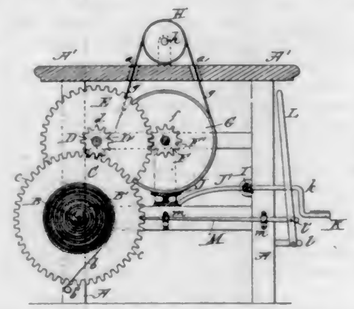
293,148. BUTTER-WORKER. ANSEL C. CLARK, Manchester, Iowa. Filed Aug. 12, 1882. Renewed Apr. 21, 1883. (No model.)



Claim.—1. In a butter-worker, the combination, with the trough A, provided on each side with a double set of parallel guide-bars or track-bars, one set above the other, of the reciprocating roller-frame having extensions of its side bars downward between said guide-bars, and anti-friction wheels, one on each side of each extension between the upper and lower track-bars, substantially as specified.

2. In a butter-worker, the combination, with the trough A and the reciprocating working-roll R, of the handle-frame L, formed with downward extensions V, its side arms provided each with an anti-friction wheel, *w*, and the upper and lower sets of parallel guide-bars, *b b' k k'*, on each side of the trough, engaging the sides of said extensions and the circular edges of said anti-friction wheels, substantially as specified.

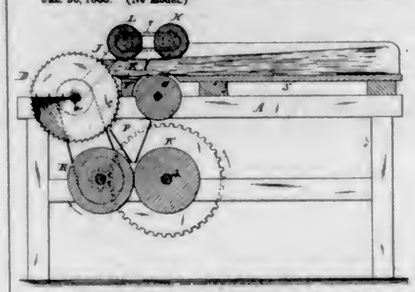
293,149. SEWING-MACHINE MOTOR. JAMES R. CRANDELL, Upper Marlborough, Md., assignor of one-half to James Flint, same place. Filed Dec. 14, 1883. (No model.)



Claim.—1. The foot-treadle K, rod *k*, rock-shaft I, lever J', and brake-shoe J, in combination with the wheel G, substantially as and for the purposes described.

2. The pivoted hand-lever L, reciprocating bar M, and guides *m*, in combination with the tooth-wheel C, as and for the purposes described.

293,150. STRAW-CUTTER. DANIEL M. CUMMINGS, Enfield, N. H. Filed Jan. 30, 1883. (No model.)



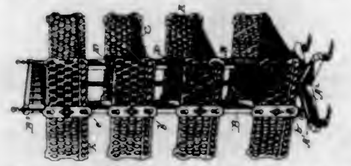
Claim.—1. The combination, in a cutting-machine, of a revolving cutter, D, and stationary blade E, a frame swinging on the cutter-shaft, a feed-roll carried at the outer end of said frame and driven from said shaft, and a pressure-roll carried by said frame at a point above the blade E, all as set forth.

2. The combination of the cutter cylinder and shaft, the frame J, hung to the shaft and carrying the rollers L H, and shaft N, gearing with one of the rollers, and worm-gear for driving the shaft N from the shaft *a*, substantially as set forth.

3. In a straw-cutter, the combination, with the stationary cutter-blade E, of the cutter D, consisting of a shaft having a spiral flat blade mounted thereon with teeth at its edge, the said spiral winding in one direction throughout the cutting extent of the shaft, substantially as set forth.

4. The combination of the cutting-cylinder D, cutter-blade E, rollers H L, supported in frame J, as set forth, and the grinding-rolls R R', geared to rotate at different speeds, substantially as and for the purpose set forth.

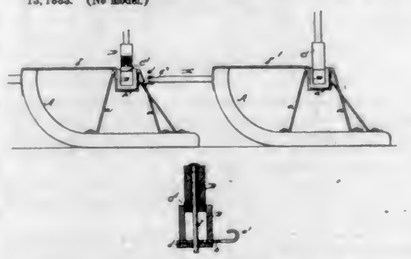
293,151. REVOLVING BOOK CASE AND STAND. JOHN DANNER, Canton, Ohio. Filed Aug. 2, 1883. (No model.)



Claim.—1. The combination of the frame having side pieces, B, with shelf-supports having vertical rows of lugs $e' e^2$, arranged parallel with each other, and horizontal rows of lugs or flanges e^3, substantially as and for the purpose described.

2. The combination of the frame having side pieces, B, with shelf-supports having vertical rows of lugs $e' e^2$, horizontal rows of lugs e^3, removable shelves resting on the latter, and vertical dividing-boards between the rows of lugs e' and e^2, substantially as and for the purpose described.

293,152. BOB-SLEIGH. HENRY DETAMBLE, Aurora, Ill. Filed Dec. 13, 1883. (No model.)



Claim.—1. In a bob-sled, the runners A, continuous braces *a a*, formed with a deep bend, *a'*, and open troughs or boxes B B, in combination with the cross-bars C', springs Q, and rods *c c*, substantially as and for the purpose set forth.

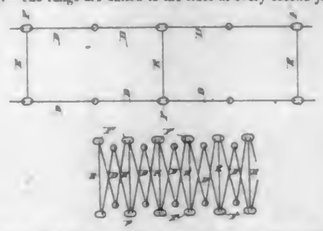
2. In a bob-sled, the combination, with the runners A and the braces

a a, of the troughs or boxes B, adapted to receive the axles of a wagon substantially as and for the purpose set forth.

3. In a bob-sled, a reach-coupling consisting of a metal strap or plate passed through the knee of the forward sled and bent or flanged at its forward end, and formed with a hook at its rear end, whereby all strain is removed from the king-bolt, substantially as and for the purpose set forth.

293,153. FIRE-ESCAPE LADDER. ARNOLD M. DOWNING, Oneida, N. Y. Filed Apr. 10, 1883. (No model.)

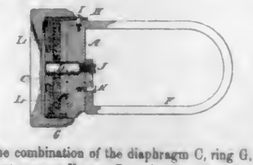
Brief.—The rungs are united to the sides at every second joint.



Claim.—1. A folding ladder constructed of a series of rods, D, linked to each other, and united at every second joint by a transverse rod or rung, E, substantially as herein shown and described, and for the purpose set forth.

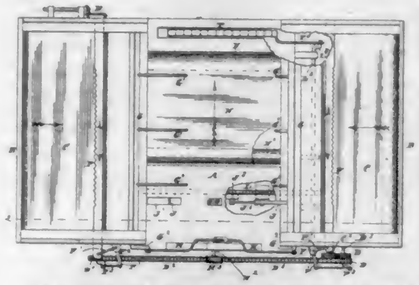
2. A folding ladder constructed of a series of rods, D, linked to each other, and united at every second joint by a transverse rod or rung, E, which is slightly longer than a rod, D, substantially as herein shown and described, and for the purpose set forth.

293,154. TELEPHONE. DANIEL DRAWBAUGH, Eberly's Mill, Pa. Filed Nov. 12, 1883. (No model.)



Claim.—The combination of the diaphragm C, ring G, and projection H, permanent magnet F, core D, and surrounding electro-magnet coil and pole-pieces L, substantially as described.

293,155. BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES. BANNAD DRILLER, St. Charles, Mo. Filed Sept. 22, 1883. (No model.)



Claim.—1. In a band-cutter and feeder, the combination of a cradle, wings secured thereto, an apron and knife in each wing, plates and fingers to receive the straw and deliver it to the floor of the cradle, an apron to catch and deliver the straw from the floor of the cradle, and mechanism to operate the different moving parts.

2. The combination of a cradle, wings, plates, a pair of rock-bars provided with fingers, and suitable means whereby the bars are operated alternately, for the purpose specified.

3. The combination of a cradle, wings thereto, aprons, cutters, and suitable means for operating the aprons and the cutters, for the purpose set forth.

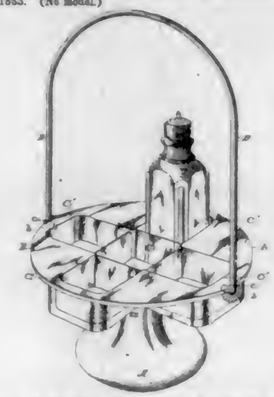
4. The arms and suitable means for operating them, in combination with the cradle, wings, plates, and fingers, for the purpose set forth.

5. The jumper having two arms and a cradle having a floor through which the jumper moves, in combination with suitable means for operating the jumper.

6. The jumper made in two parts, a spring for opening the parts as the jumper is raised, and suitable means for operating the jumper, in combination with a cradle.

7. The combination, with a cradle having a floor formed with a slot transverse thereof, of the hangers transverse of and beneath the floor-slot, the serrated bar to project through the floor-slot, having diagonal slots for the cross-bars of the hangers, and means to reciprocate the bar.

293,156. CASTER. WILLIAM K. ELSON, Martin's Ferry, Ohio. Filed Dec. 1, 1883. (No model.)



Claim.—1. A glass or earthenware caster provided with a detachable bail applied to maintain a vertical rigid position, substantially as set forth.

2. A glass or earthenware caster having its cruet support or base pressed complete in one mold, with a central cruet-receptacle and four outer receptacles contiguous thereto, all dependent from the under side of said support or base, substantially as described.

3. A glass or earthenware caster having its cruet support or base pressed complete in one mold, with a central cruet-receptacle and four outer receptacles contiguous thereto, and centrally mounted upon a supporting-foot welded to the support with glass, substantially as described.

4. The combination, in a glass or earthenware caster having a detachable bail, of the cruet support or base centrally mounted upon a supporting-foot, both parts being pressed separately in molds and welded together when hot, the support provided with a central cruet-receptacle, four outer receptacles contiguous thereto, means for receiving the ends of the bail, and means for holding the bail in a vertical rigid position, substantially as described.

293,157. PROCESS OF ROASTING AND AMALGAMATING GOLD AND SILVER ORES. ERNST OTTO FRANCKE, Tupiza, Bolivia, and CARL FRANCKE, Cassel, Germany, assignors of one-third to Charles Adams, Manitou, Colo. Filed June 26, 1883. (No specimens.) Patented in Bolivia Aug. 31, 1880.

Claim.—1. The process described of extracting precious metals from refractory ores, the same consisting in roasting the ores with salt at such low temperature as will transform the sulphides of iron, copper, &c., into the sulphates and leave the arsenides, antimonides, selenides, and tellurides undisturbed, and subsequently amalgamating said roasted ore, substantially as herein described and set forth.

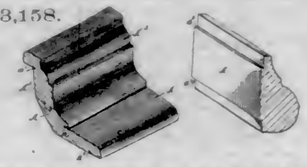
2. The process herein described of treating refractory ores, consisting in salting and roasting the same at a low temperature for conversion of certain sulphides into sulphates without disturbing other metallic salts, as described, and afterward treating the same in a pulp with common salt and quicksilver, under the influence of heat and in the presence of metallic copper, whereby, through a series of reactions, the silver is reduced to a metallic state and amalgamated, substantially as set forth.

3. The process herein described of treating refractory ores, consisting of the following steps: first roasting the ores at a low temperature, then subjecting them, while in a state of pulp with water, to the action of common salt and quicksilver, under the influence of heat and in the presence of metallic copper, and finally adding quicksilver at successive intervals in small quantities, substantially as and for the purpose set forth.

293,158. APPLICATION OF FABRICS TO MOLDINGS AND OTHER ARTICLES. ALFRED FRENCH, Detroit, Mich., assignor to the Detroit Casket Company. Filed Oct. 20, 1883. (No model.)

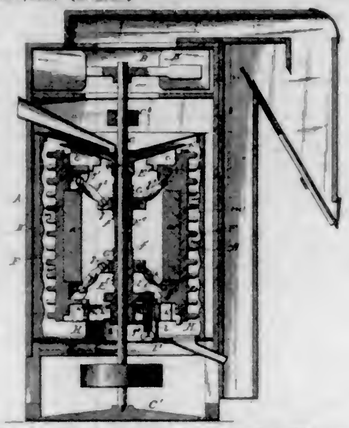
Brief.—A molding provided with one or more kerfs or grooves, and having the covering fabric pressed into said grooves, so as to conceal its edges.

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Claim.—A molding covered with fabric, said molding provided with one or more kerfs or grooves and the fabric pressed into said grooves, the construction being such that the edges of the fabric may be suitably concealed in said grooves, substantially as described.

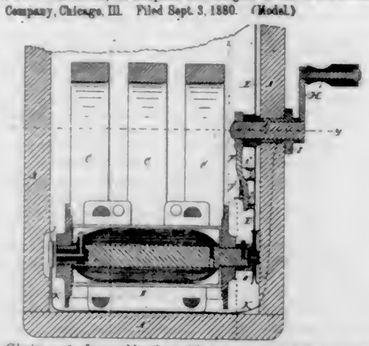
293,159. GRAIN-SCOURER. CHARLES M. GILBERT, Milwaukee, Wis., assignor to the Richmond Manufacturing Company, Lockport, N. Y. Filed Nov. 7, 1883. (No model.)



Claim.—1. In a grain-scourer, the combination, with a scouring-case composed of alternating solid corrugated and open-work sections, of a revolving scourer within the scouring-case, having adjustable studded scouring-plates adapted to be moved nearer to or farther from the scouring-case, substantially as specified.

2. In a grain-scourer, the combination, with the scouring-case composed of alternate staves or sections of solid material, having wave-corrugations on their inner faces and perforated sections connecting them, of a revolving scourer provided with scouring-plates having friction-projections, substantially as specified.

293,160. DRIVING-GEAR FOR MAGNETO-ELECTRIC MACHINES. EZRA T. GILLILAND, Indianapolis, Ind., assignor to the Western Electric Company, Chicago, Ill. Filed Sept. 3, 1880. (Model.)



Claim.—1. In combination with a magneto-electric generator, a driving-gear in which the shaft carries both a wheel and an arm, the wheel being loosely mounted on said shaft, and insulated therefrom and from the arm, and the arm being rigidly mounted on the shaft and arranged to pass between two projecting studs or points on said wheel, one of which is insulated from electrical contact with said arm, and the other is not, and which is provided with means for maintaining the contact between the arm and one of said points when the apparatus is at rest, but which shall not operate to prevent a contact from being made between the arm and the other point when the apparatus is put in motion, substantially as set forth.

2. The combination, in a driving-gear for magneto-electric generators, of a wheel insulated from the shaft thereof, an arm on said shaft which is at times insulated by means, substantially as described, from the wheel, and at others not, one of which said conditions shall result from the mechanical act of turning the wheel and the other from allowing it to remain at rest, and means for maintaining the proper contact when the apparatus is at rest, substantially as set forth.

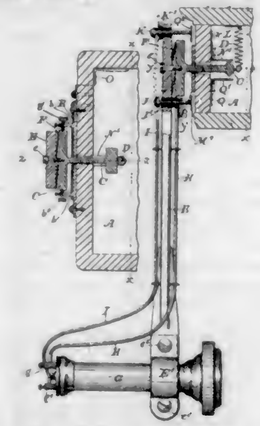
3. The combination, in a driving-gear for magneto-electric generators, of a shaft, a wheel, and an arm, the wheel and arm being mounted on the shaft and so connected, by means substantially as described, that an electrical circuit passing through them shall remain uniformly either open or closed when the apparatus is at rest, but in which the mechanical act of turning the wheel shall operate to automatically change the condition of said electrical circuit, substantially as set forth.

4. The combination, in a driving-gear for magneto-electric generators, of a shaft, G, an arm, F, a spring, F', a wheel, E, having a hub of insulating material, and studs or points on said wheel with which said arm comes in contact, substantially as and for the purposes set forth.

5. The combination, with a main circuit and a magneto-electric machine, of a shunt or short circuit around the machine, and means—consisting of an arm, two points between which it vibrates, one of which is insulated and the other not, and a retractile spring—whereby such short circuit is, immediately upon and continuously during the operation of the machine, broken and kept open, substantially as set forth.

6. The combination, in a driving-gear for magneto-electric generators, of a shaft, a projection thereon, points with which said projection comes in contact, and a spring, said projection forming a part of an electrical circuit when in one position, but, by means of insulating material, being "cut out" when in another position, the mechanical act of turning the gear and the action of the spring being the means of effecting said change of position, substantially as set forth.

293,161. TELEPHONE APPARATUS. EZRA T. GILLILAND, Indianapolis, Ind., assignor to the Western Electric Company, Chicago, Ill. Filed May 2, 1882. (No model.)



Claim.—1. The telephone apparatus consisting of a telephone, its line, and a vibrating telephone-supporting arm having a portion or projection which is held into contact with a contact-spring forming a portion of said line by a pressure of the ear of the user against the telephone, and out of such contact by a spring which acts reversely to such pressure, substantially as set forth.

2. The combination of the telephone, its arm, the vertical pivots *b' b'*, the device or arm C, a spring for holding the same in position, the contact-springs, and the wires leading therefrom, substantially as set forth.

3. The combination of the telephone, its vertically-movable arm, and the horizontally-movable device C, secured thereto, whereby the telephone can both be accommodated to the height of the user and thrown in and out of circuit, substantially as set forth.

4. The combination, with a telephone-arm, of the bearing-plate B, having arms *b b* and the pivots *b' b'*, whereby said arm is allowed a lateral movement, substantially as described, and for the purposes specified.

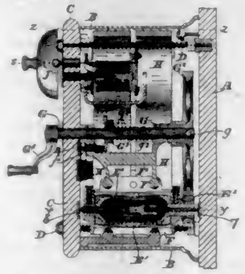
5. The combination, with a telephone and its supporting-arm, of connections substantially rigid with said arm, and running back along the same to the rear end thereof, where a connection with the other ap-

paratus is made by means of screws or pins J K and springs M^2 O^2, said pins being adapted to slide on said springs as the arm is raised and lowered, substantially as set forth.

6. The combination of the telephone, the supporting-arm, the device C, and pivots *b' b'* and *c*, substantially as described, and for the purposes set forth.

7. The combination of the telephone, the supporting-arm, the connection H, the connection I, the screws or pins J K, the pieces of insulating material J' K', the springs M^2 and O^2, and the wires forming the remainder of the electrical circuit, substantially as set forth.

293,162. TELEPHONE APPARATUS. EZRA T. GILLILAND, Indianapolis, Ind., assignor to the Western Electric Company, Chicago, Ill. Filed Feb. 3, 1883. (No model.)



Claim.—1. The combination, with a call-signal apparatus box and the cover thereto, of screw-rods D, which secure said cover to said box, and also form a part of the electrical connections, substantially as set forth.

2. In a call-signal apparatus for telephonic purposes, in combination with the frame of the magnets which actuate the bell-hammer and the frame on which the armature is mounted, a differential screw passing through both, whereby the relation of one of said frames to the other may be accurately and conveniently adjusted, substantially as set forth.

3. In a call-signal apparatus for telephonic purposes, the combination, with the frame of the magnets I and the frame of the armature thereto, of the screw K, which extends from the front of the box containing the apparatus to said frames, whereby the relation of said frames to each other, and consequently that of the armature to the magnets, can be adjusted from the outside of the box, substantially as set forth.

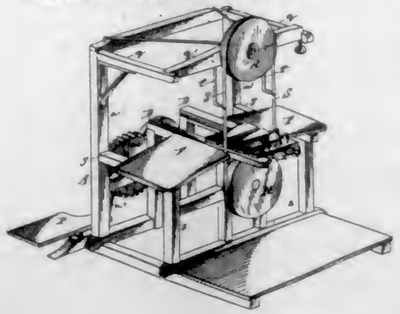
4. The combination, with the frame of the magnets I, provided with dowel-pins *i*, of the pivoted clamps I', whereby said frame is removably secured to the portion of the box on which it is mounted, substantially as set forth.

5. In a call-signal apparatus for telephonic purposes, the combination, with the bells J, of base-plates J', having cam-slots therein, through which the securing-screws pass, and projections *j'*, by which said base-plates may be partly rotated, substantially as described, and for the purpose specified.

6. The combination, with the gravity or movable switch of a telephone call-signal apparatus, of a device for establishing electrical connections, consisting of a combined anvil and spring contact piece, substantially as set forth.

7. The combination of the gravity-switch having pins or projections thereon, and devices with which said gravity-switch comes in contact, said devices being provided with springs with which said pins or projections come in contact, substantially as set forth.

293,163. BAND SAWING MACHINE. ALEXANDER L. GRAY, East Monmouth, Me. Filed Sept. 6, 1883. (No model.)



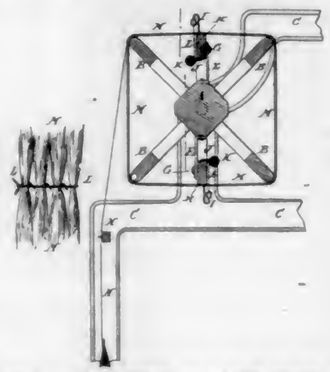
Claim.—1. The combination, in a sawing-machine, of the guide-beams D D, a table supported and sliding thereon, a band-saw, S, suitably supported devices for driving the same, the limbs of said saw being respectively located at each side of the said sliding table, and an inclined table located at the side of each limb, substantially as set forth.

2. The combination, in a sawing-machine, of the guide-beams D D, a table supported and sliding thereon, and provided with devices adapted to engage the beams and secure the table rigidly in position, a band-saw, S, suitably supported devices for driving the same, the limbs of said saw being respectively located at each side of said sliding table, and an inclined table located at the side of each limb, substantially as set forth.

3. In a band sawing machine, the combination, with the shaft I, carrying the saw-driving pulley, of the pinion secured to said shaft, the toothed wheel gearing with said pinion and provided with a wrist-pin and winch, and the intermediately-fulcrumed treadle-platform having one end connected to the wrist-pin by a link, substantially as and for the purpose set forth.

293,164. SKEIN LACING AND TYING ATTACHMENT FOR REELS. GEORGE GRESHAW, Jr., Paterson, N. J. Filed May 18, 1883. (No model.)

Brief.—To one or more sides of the reel-shaft are secured brackets the projecting arms of which are provided with slots. One or more arms having S-shaped hooks arranged in sets upon their outer edges and pivots upon their inner edges are placed parallel with the reel-arms and secured to the projecting arms of the brackets by screws passing through the slots in said arms. On the pivots upon the inner edges of the interposed arms are placed spools upon which are wound the threads for lacing and tying the skein. The thread from a spool is carried up to and laid upon one set of hooks and attached to a hook of the next set, or to a pin. As the thread to form a skein is laid upon the reel in the ordinary manner, it will press the lacing and tying thread down into the spaces between the hooks. When enough thread for a skein has been wound upon the reel, the end of the lacing-thread is passed through the loops formed in said thread, the screws are loosened, the interposed arms pushed inward, withdrawing the hooks from the skein, the lacing-thread is drawn tant, and the skein is ready to be removed from the reel.



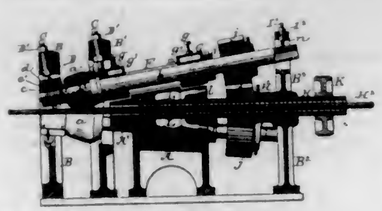
Claim.—1. The combination, with a silk-reel provided with a supporting-shaft, of the arm H, provided on its outer edge with a series of hooks, I, and upon its inner edge with supports adapted to carry spools for holding the binding-threads, and the supports E, said hooks being arranged in relation to one another as described, whereby intermediate spaces are formed, in which the skeins are wound, all as set forth.

2. The combination, with the reel-shaft A, of the slotted brackets E, the clamping-screws G, and the arms H, provided at their upper edges with hooks I and at their lower edges with spool-carrying pivots J, substantially as herein shown and described, whereby the lacing and tying will be done automatically while reeling the thread or yarn, as set forth.

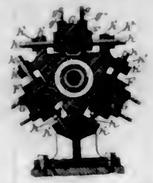
293,165. ROLLING-MILL. PHILIP M. HAAS, Youngstown, Ohio, assignor of one-half to Andrews, Bros. & Co., same place. Filed Apr. 14, 1883. (No model.)

Claim.—1. The metal-reducing rolls, arranged in divergent direction, each rounded at their edges and comprehending a beveled collar or shoulder, *a'*, combined with a shaft provided with a screw-thread, *b'*, a screw-sleeve bearing, *c'*, matching the screw *b'*, and a centrally-arranged feeding-tube, H, substantially as described, for the purpose specified.

2. The metal-reducing rolls and their shafts, arranged in divergent direction, in combination with the main housing A, a central feeding-tube supported thereby, the separate housings B B' B^2, and means, substantially such as described, arranged within the said housings, whereby said roll-shafts are supported and may be adjusted in the several directions stated at one or at both ends within said housings, substantially as described, for the purpose specified.



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3. The combination of the rolls arranged in divergent direction, the bed-plates carrying said roll-shafts, provided with cross-slots *f*, the main housing A, and a central feeding-tube, H, with means, substantially such as described, whereby the said bed-plates, with their roll-shafts, are adjusted crosswise to adjust the rolls in relation to each other, for the purpose specified.

4. The combination of the metal-reducing rolls, having their shafts arranged with their axial lines diverging, with the main housing, a centrally-arranged feeding-tube, H, the separate supporting-housings for the roll-shafts, the bed-plates F, provided with the cross-slots *f*, the clamping-screws *f'*, and the screws *g h i*, arranged to act upon the main housing to adjust the bed-plates to set the rolls in relation to each other, substantially as described, for the purpose specified.

5. The metal-reducing rolls, arranged in divergent direction, said rolls having the edges of their ends rounded or beveled, combined with the main housing A, a central feeding-tube, H, the separate housings B B' B^2 for the shaft-bearings, the bed-plates F, and the screws *f' g i*, whereby the roll-carrying bed-plates are adjusted in the direction of the axis of the machine to properly line the rolls transversely, and to adjust said bed-plate radially in relation to said axis to increase and diminish the space between said rolls, substantially as described, for the purpose specified.

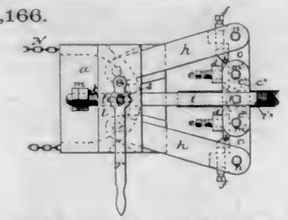
6. The combination, with the main housing A and a feeding-tube, H, centrally arranged therein, of the reducing-rolls having their shafts arranged with their axial lines diverging, the bed-plates F, adjustably secured to the main housing, and the separate housings B B' B^2, each provided with adjustable bearings for the roll-shafts, whereby the roll-shafts and their bed-plates are carried and supported out of contact with the said main housing, substantially as described, for the purpose specified.

7. The combination, in a mill for rolling metal articles of cylindrical form, with the reducing-rolls arranged in divergent direction, the main housing A, and a central feeding-tube, H, for the article being reduced, of the chamber L in said housing, through which cold water may be caused to flow over and around that part of said feeding-tube which has its bearing within said housing, substantially as described, for the purpose specified.

8. In a rolling-mill, the combination, with the main housing A, having the surface projections *h'*, and the central feeding-tube, H, and the rolls, of the bed-plates F for the roll-shafts, having side projections, and the screws *i*, threaded into said housing projections, and adapted to bear upon the bed-plate projections, all constructed and arranged for operation as described.

9. The combination, in a rolling-mill, of the main housing A, having the nose A', the central feeding-tube, H, and the rolls, the bed-plates, within which the roll-shafts are mounted, the several screws for securing and adjusting the bed-plates upon said main housing, and the separate housings B B' B^2, within which the roll-shafts are mounted, each provided with boxes supported upon screws for adjustment in any direction, substantially as described, for the purpose specified.

293,166. METAL-DRAWING DOG. PHILIP M. HAAS, Youngstown, Ohio, assignor of one-half to Andrews, Bros. & Co., same place. Filed Apr 20, 1883. (No model.)



293,166.

Claim.—1. The combination, with a suitable drawing-die, of grasping-dogs, suitable holders therefor, pivoted couplings for the inner ends of said holders, and pivoted operating-connections for their outer ends, connected to the draw-head, whereby the dogs are adapted to operate upon the article being drawn by a compound movement of their biting-points toward each other at right angles to the line of draft, and by a deflection from a right line in their biting action in a direction opposite to that of the draft, substantially as described, for the purpose specified.

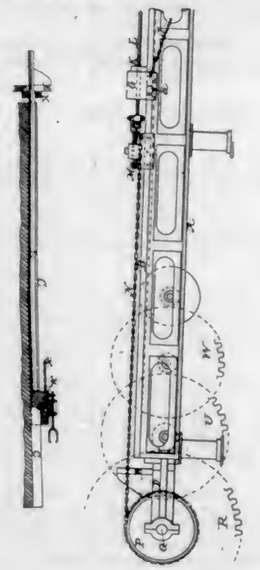
2. In a metal-drawing machine, the grasping and drawing device, consisting of the dogs *b b*, their pivoted holders *c c*, their coupling-plates c^2, their coupling-arms *h*, the yoke *i*, provided with the nuts *m*, the draw-head *a*, and the screws *e f*, for adjusting and supporting the dogs, substantially as described.

3. The combination, with a suitable drawing-die, of the dogs *b b*, their holders *c c*, the coupling-plates c^2, to which said holders are pivoted across the line of draft, the pivoted coupling-arms *h h*, the draw-head, and means, substantially such as described, connected with the draw-head and with the coupling-plates, whereby the biting action of the dogs into the article being drawn is automatically limited.

4. The combination, in a metal-drawing machine, a suitable drawing-die, the draw-head *a*, the dogs *b b*, their pivoted holders *d d c c*, the coupling-plates c^2 c^2, the coupling-arms *h h*, the adjustable yoke *i*, and the lever *r*, connected therewith and with the draw-head, substantially as described, for the purpose specified.

5. The dogs *b b*, their holders, and suitable pivoted coupling-connections for their inner ends, in combination with suitable operating-connections pivoted to the outer ends of said dog-holders, and a suitable draw-head, to which said operating-connections are also pivoted, substantially as described, for the purpose specified.

293,167. MACHINE FOR DRAWING METAL BARS. PHILIP M. HAAS, Youngstown, Ohio, assignor of one-half to Andrews, Bros. & Co., same place. Filed Apr. 20, 1883. (No model.)



Claim.—1. The combination, in one machine, of appliances for pushing and for drawing bars or shafts of metal into and through a gaging-die adapted to be shifted in relation to fixed abutments, whereby the said die is placed upon the bar as a preparatory operation of drawing the bar through it, substantially as described, for the purpose specified.

2. In a metal-drawing machine, the combination of a trough-shaped

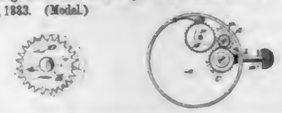
bed or way with a fixed abutment, E, a removable gaging-die, K, a pushing-abutment, M, adapted to slide upon and within said trough, and means, substantially such as described, for drawing said pushing-abutment within said trough against the bar to place the die upon its end, for the purpose specified.

3. The combination, in a metal-drawing machine, of a trough-shaped bed or way, with a fixed abutment, G, a removable gaging-die, K, an abutment, M, adapted to slide upon said trough, a suitable dog or grasping device carried by said sliding abutment, and means, substantially such as described, for operating the drawing device.

4. The combination, with suitable drawing mechanism and a removable gaging-die, of a trough-shaped bed or way, abutments having fixed relation thereto, forming supports for said gaging-die, and an abutment having a nose adapted to slide within said trough to push the bar therefrom into said die, and carrying a suitable dog or grasping device adapted to draw the bar through said die, both the pushing and the drawing operations being in the same direction, substantially as described.

5. In a metal-drawing machine, the combination of a trough-shaped bed or way having a concave line of support for the bar in the line of the drawing action, with the abutment M, having a nose adapted to travel in said trough, an abutment, E, fixed at the end of said trough, a removable gaging-die, and suitable drawing mechanism for said abutment M, substantially as described, for the purpose specified.

293,168. STEM-WINDING WATCH. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed July 21, 1883. (Model.)



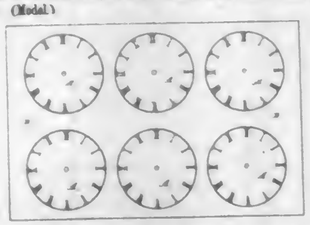
Claim.—A winding mechanism in which are combined the following elements, to wit: a toothed wheel attached to and adapted to rotate a barrel-arbor, a toothed wheel arranged to be rotated by a stem-journaled winding-arbor, and an intermediate wheel which is loosely journaled upon an eccentric or flattened stud, is held in constant engagement with said stem-rotated wheel, and is adapted to automatically engage with said barrel-arbor wheel when rotated in one direction, and to automatically move out of engagement therewith when rotated in an opposite direction, substantially as and for the purpose specified.

293,169. COMPENSATION WATCH-BALANCE. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed Sept. 10, 1883. (No model.)



Claim.—A watch-balance composed of brass, with the inner surface and a portion of the edges of its rim coated with deposited nickel or platinum, substantially as and for the purpose specified.

293,170. WATCH-DIAL. GEORGE E. HART, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed Sept. 10, 1883. (Model.)

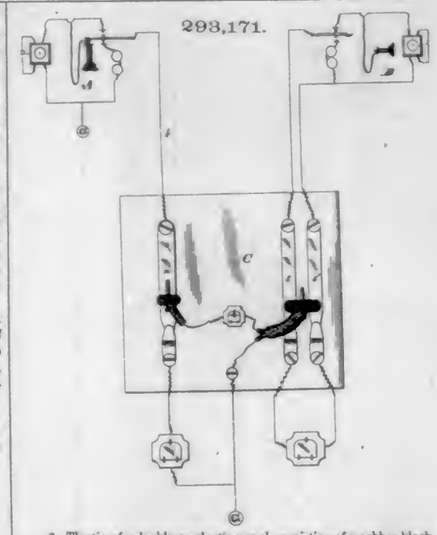


Claim.—As a new article of manufacture, a watch-dial composed of a metal base or body covered with paper which has printed upon its surface the necessary letters, figures, or characters and time-division marks, and such surface then coated with and protected by means of celluloid, substantially as and for the purpose specified.

293,171. TELEPHONE CIRCUIT-CHANGER. CHARLES D. HASKINS, New York, N. Y., assignor, by mesne assignments, to the Western Electric Company, Chicago, Ill. Filed Feb. 9, 1881. (No model.)

Claim.—1. The combination of spring *n*, stop *o*, and hook *r*, or their equivalents, with a flexible conducting-cord, substantially as and for the purpose specified.

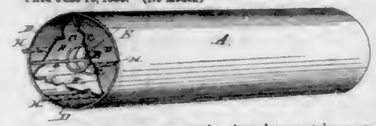
293,171.



2. The tip of a double conducting-cord, consisting of a rubber block provided with eyelet *u* and contact-points *v* and *v'*, each connecting with a strand of the cord, substantially as and for the purpose specified.

3. The combination, at the central office of a telephone-exchange, of the single switch and the double switch, and means, as described, whereby the single telephone-line of station A and the metallic circuit of station B may be united to form a single ground-circuit, substantially as and for the purpose specified.

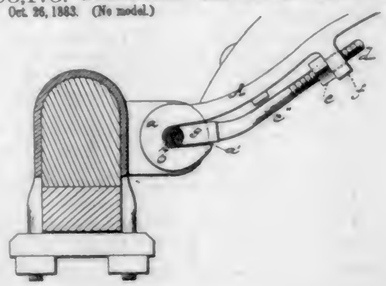
293,172. PREVENTING INCRUSTATION IN STEAM-BOILERS. EDWARD J. HOFFMAN, Sioux City, Iowa, assignor of two-thirds to William H. Freed, same place, and William H. Ransom, Missouri Valley, Iowa. Filed June 16, 1883. (No model.)



Claim.—1. A case or receptacle adapted to contain compound or composition for preventing incrustation of steam-boilers, consisting of a closed casing of suitable shape containing one or more inside chambers or compartments adapted to contain the compound, and provided with wires having their ends projecting through apertures in the heads of the casing, and adapted to feed the contents of the same gradually through the apertures, substantially as and for the purpose shown and set forth.

2. The apparatus for preventing incrustation of steam-boilers, consisting of a box or casing, A, of suitable shape, divided longitudinally by diaphragms B into a central compartment, C, and outside compartments, D, and provided with the coiled spring E and twisted wires H, projecting out through apertures in the heads of the casing or receptacle, constructed and combined substantially as and for the purpose herein shown and set forth.

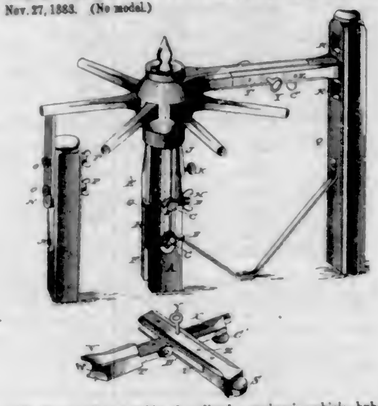
293,173. THILL-COUPLING. ELIAS HOYER, Red Creek, N. Y. Filed Oct. 26, 1883. (No model.)



Claim.—1. In a thill-coupling, the combination, with the coupling-iron A, provided with the hooked end *a*, of the rod *c*, having the flat end *g*, adapted to bear against the coupling-bolt *b*, and forward screw end, *d*, to receive the nut *e*, as shown, described, and for the purpose set forth.

2. In a thill-coupling, the combination, with the axle-clip, the bolt and coupling-iron having hooked end, and provided with the perforated lug rigidly secured thereto, of the rod *c*, having the flat bearing or head *g*, screw-threaded end *d*, and nut *e*, the former adapted to bear against the bolt *b* and the latter against the lug *f*, the whole operating as described, and for the purpose specified.

293,174. SPOKE-SETTING MACHINE. JAMES H. HULBURT, Millbrook, Mich., assignor of one-half to George Haggit, same place. Filed Nov. 27, 1883. (No model.)

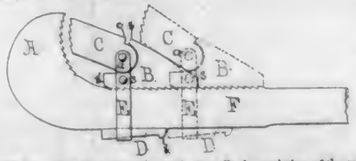


Claim.—1. In a machine for adjusting spokes in vehicle-hubs, a hub-supporting post having a slotted plate sliding adjustably upon one side, having a bar having its upper end bent sliding in a vertical groove in the other side, having means for clamping it, and provided with two flat bars secured at their upper ends to the upper end of the post, and having means for adjusting their lower ends nearer to and farther from the sides of the same, as and for the purpose shown and set forth.

2. The combination of a hub-supporting post, an upright post having notches in the side facing the hub-supporting post, and a prop consisting of a tenoned portion adapted to engage one of the notches, and having a longitudinal slot, a reduced shouldered portion adapted to bear against the hub and to slide and rock in the slot, a bolt passing through a series of perforations in the sides of the slot and in the reduced end, and a turn-button and a plate attached to the under side of the reduced end, each at one side of the bolt, as and for the purpose shown and set forth.

3. A machine for adjusting spokes in vehicle-hubs, consisting of a hub-supporting post having means for holding the hub and for securing it from rocking, a post having a slotted bar sliding adjustably upon it, adapted to support the outer end of a spoke, a notched bar, and a jointed prop adapted to bear with one end into one of the notches and with the other end against the hub, as and for the purpose shown and set forth.

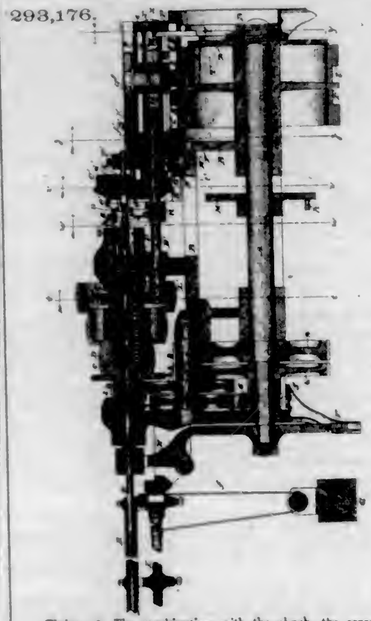
293,175. PIPE-WRENCH. JAMES JEWELL, Grandville, Mich., assignor of one-half to George Fraser and John J. Fidler, both of same place. Filed Aug. 27, 1883. (No model.)



Claim.—The pipe-wrench herein described, consisting of the toothed jaw A, having the toothed shank F, the toothed block B, pivoted to the pin *a* of the loop E, and having the shoulder *b* and socket, as shown, the jaw C, pivoted to the pin *a* of said loop, and provided with a shoulder, *c*, adapted to abut against the shoulder of the block, whereby strain is relieved on the pin *a*, and the wedge D, for securing the block and shank together, as shown and described.

293,176. METAL-SCREW MACHINE. ALLEN JOHNSTON, Ottumwa, Iowa. Filed July 31, 1883. (No model.)

293,176.



Claim.—1. The combination, with the chuck, the screw-cutting die, and the pointing-tool arranged in line with the axis of the die, of the devices to which said pointing-tool is attached, the said devices being disconnected from the body of said die, so that the pointing-tool constitutes a separate tool, and may by suitable mechanism be made to cut at a different speed from that of the die, substantially as described.

2. The combination, with the chuck, die, and pointing-tool, of the supporting and operating mechanism, substantially as described, whereby the pointing-tool is brought into action while the die is on the screw-stock, and is made to cut the latter at a different speed of rotation from that of the die, as set forth.

3. The hollow screw-cutting die having the cutting-jaws formed in one piece with the body of the die, and provided with an opening in said body of greater diameter than the space between the cutting-edges, in combination with the annular or perforated support for holding the die by the periphery, as explained, so that a pointing-tool can be introduced through said opening into position for acting upon the stock in process of threading, substantially as described.

4. The combination, with the chuck, the die, and the pointing-tool arranged in line with the die, of the mechanism for holding the pointing-tool to its work rigidly and positively instead of by yielding pressure, substantially as described.

5. The combination of the rotary screw-cutting die, the rotating chuck, and the non-rotating pointing-tool, substantially as described.

6. The combination, with the chuck, the turning-down tool, the screw-cutting die, and the pointing-tool, of the automatic mechanism for bringing said tools into action in the order above named and in the manner hereinbefore described.

7. The combination, with the chuck, the chuck-spindle, the cam-shaft, the cam for relieving and restoring the bite of the chuck-jaws, and the mechanism through which the cam controls the said chuck-jaws, of the swinging length-gage mounted upon a stationary part of the machine-frame, and a rotating device—such as an eccentrically-placed pin—carried by a disk on the cam-shaft, and arranged to strike the tail of said length-gage to swing the same across the axis of the chuck, substantially as described.

8. The combination, with the chuck adapted to receive a long rod or screw-stock, and the feed weight and cord, of the slotted tube supported independently of the chuck for upholding the end of the rod or screw-stock outside the chuck-spindle, substantially as described.

9. The turning-down tool movable longitudinally and laterally with respect to the screw-stock, in combination with the mechanism for moving the said tool slightly backward at the end of its cutting action, and then shifting it aside, substantially as described.

10. The combination, with the chuck, the longitudinal slide, the turning-down tool, the screw-cutting die placed immediately behind the turning-down tool, and the cam and connections for operating said slide

to bring said tools into action successively and by the same forward motion, of the separate cam and its connections for moving aside the turning-down tool at the end of its cutting action, substantially as described.

11. The combination, with the rock-shaft supporting the turning-down tool, of the nut or sleeve engaging the said shaft for rocking the same, and imparting thereto a slight end motion in its bearings, substantially as described.

12. The combination, with the main slide, of the screw-cutting die, the auxiliary slide forming a support for said die, and movable in ways of the main slide, and the pointing-tool supported on said main slide, substantially as described.

13. The combination of the rotating sleeve and clutch-piece for revolving the die with the rotating shaft inclosed in said sleeve, the non-rotating clutch-piece surrounding said sleeve, and the clutch-piece revolved by said shaft, substantially as described.

14. The hollow screw-cutting die having cutting-jaws formed integral or in one piece therewith, and provided with an exterior flange at the base for securing it in position in its support, substantially as described.

15. The herein-described automatic screw-machine, comprising the chuck adapted to receive a long rod or screw-stock, the length-gage, the turning-down tool, the screw-cutting die, the pointing-tool, the automatic mechanism for releasing and restoring the bite of the chuck-jaws, the means for advancing the long rod or screw-stock, the automatic mechanism for operating the length-gage, and the automatic mechanism for operating the cutting-off tool, in combination with the longitudinal slide carrying the turning-down tool, the screw-cutting die, and the pointing-tool, the automatic mechanism for reciprocating said slide, the automatic mechanism for revolving and holding stationary the die, and the automatic mechanism for moving aside the turning-down tool and for returning the same, substantially as described.

16. In the screw-cutting die having cutting-jaws formed in one piece with the body of the die and held in by pressure, the compressing means bearing mainly upon the front or cutting side of said jaws, so that the rear or farther part may spring out more or less, and thereby give a slight twist to the jaws, substantially as described.

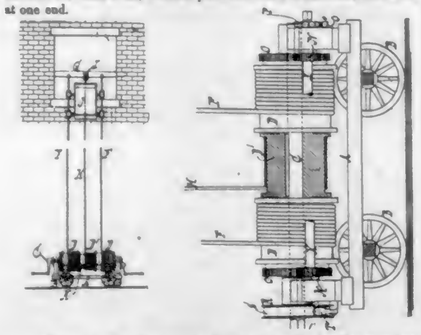
17. The combination, in a screw-cutting die, of the jaws formed all in one piece, with the compressing-ring having bearings upon said jaws mainly over the front or cutting edges instead of over the whole width, substantially as described.

18. In the screw-cutting die, the jaws cut away on the outside so as to leave them thickest at points opposite the front or cutting edges, substantially as and for the purpose described.

19. The screw-cutting die comprising the jaws formed in one piece and screw-threaded on their exterior, and cut away so as to leave threaded bearing-surfaces only opposite the front or cutting edges, in combination with the internally-threaded compressing-ring, substantially as described.

293,177. FIRE-ESCAPE. SAMUEL J. JOYCE, New York, N. Y. Filed Apr. 7, 1883. (No model.)

Brief.—The flexible rails, which form the way for the car, are wound upon the reels, which are loose on the main shaft and move independently therewith by means of a driving-shaft which is geared to them. The other ends of the rails are secured to a cross-bar in the window of the building. The windlass upon which the traction-rope is wound is fixed on the main shaft, which is provided with a brake-wheel and brake at one end.

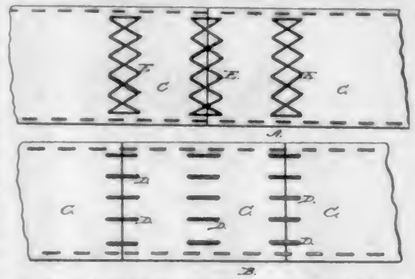


Claim.—1. The combination of the portable frame, the shaft supported thereby, the two reels and the windlass, all mounted on the one shaft, with the windlass between the two reels and turning with the shaft, and the reels loose thereon, the flexible car-rails arranged on the reels, the traction-rope arranged on the windlass, the car connected with the traction-rope, the brace-bar secured to the car-rails and provided with the guide-pulley, and a driving-shaft for rotating the reels on the shaft of the windlass, substantially as and for the purpose described.

2. The combination, substantially as hereinbefore set forth, of the main shaft, the windlass fixed to said shaft, the reels mounted loosely thereon, the driving-shaft geared with the reels, the ratchet-wheel fixed to the driving-shaft, and the pawl engaging the ratchet-wheel.

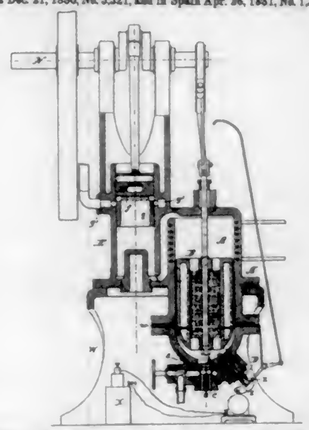
3. The combination, substantially as hereinbefore set forth, of the main shaft, the windlass fixed to said shaft, the reels mounted loosely thereon, the driving-shaft geared with the reels, the ratchet-wheel fixed to the driving-shaft, the pawl engaging the ratchet-wheel, the brake-wheel fixed to the main shaft, and the brake-strap acting on the brake-wheel.

293,178. LEATHER BELTING. HUGH KERR, New York, N. Y., assignor of one-half to Andrew Graf, same place. Filed Nov. 21, 1883. (No model.)



Claim.—The herein-described leather belting, consisting of the sections C, arranged together in layers A B, with the joints of one layer breaking joints with the opposite layer, and the whole being connected together by means of the longitudinal metallic stitching at the edges of the belt and transverse stitches at the adjacent ends of the abutting sections, all substantially as shown, and for the purpose specified.

293,179. GAS-ENGINE. CHARLES WILDEN KING, Manchester, and ALFRED CLIFF, London, assignors to Philip Middleton Justice, Chancery Lane, London, England. Filed Apr. 9, 1883. (No model.) Patented in England Oct. 24, 1879, No. 4,337; in France Apr. 24, 1880, No. 136,313; in Belgium Apr. 27, 1880, No. 51,303; in Germany May 8, 1880, No. 12,183; in Canada Oct. 13, 1880, No. 11,849; in Italy Oct. 16, 1880, No. 40; in Austria Dec. 21, 1880, No. 5,321, and in Spain Apr. 26, 1881, No. 1,366.



Claim.—1. The combination, in a gas-engine, of a cylinder having an exhaust-port communicating freely with the external atmosphere, as described, near its forward end, inlet-port near the rear end, and appliances constructed to open said exhaust for the discharge of spent gases, while the working-piston is at or near the forward position to which it is moved by the explosion of the gases, substantially as set forth.

2. The combination, in a gas-engine, of a cylinder provided with ports near its opposite ends, and means, substantially as described, for supplying an explosive charge at the inner end of the cylinder, and for opening the exhaust as the piston nears its forward position, whereby the incoming fresh charge is made the means of expelling spent gases through the exhaust, substantially as set forth.

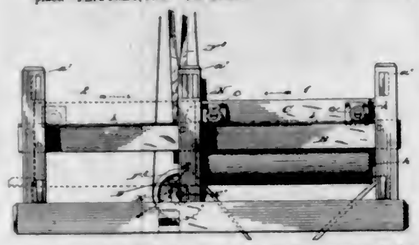
3. The combination of the cylinder having its exhaust and inlet

ports at separate points in the cylinder, and a pump and connections whereby the fresh charge is forced in when the exhaust is open, substantially as set forth.

4. The combination of a cylinder having an inlet-port near the rear end, and means for introducing the charge under pressure, and an exhaust-port near the forward end, arranged to be uncovered by the piston as the latter approaches its forward position, and means for then closing the exhaust, so that the further forward movement aids to draw in the new charge, as set forth.

5. The combination of a cylinder having an inlet-port at the rear end, an exhaust which is closed by the piston except when the latter is in a forward position, and means for controlling the ports, substantially as described, whereby each fresh charge is admitted to expel spent gases, is compressed on the inward stroke, and is exploded to impart the outward motion to the piston, substantially as set forth.

293,180. ASPHALT-MIXING MACHINE. WILLIAM H. H. KNIGHT, Washington, D. C., assignor to the Barber Asphalt Paving Company, same place. Filed Jan. 3, 1884. (No model.)



Claim.—1. In a mixing-machine for asphalt, concrete, and other analogous material, the combination of a frame provided with mixing shafts and blades, with a shell or bottom in which the material to be mixed is placed, said shell or bottom having no ends, and means, substantially as described, whereby the shell or case may be moved longitudinally, as and for the purpose set forth.

2. In a mixing-machine for asphalt, concrete, and other analogous material, a frame provided with mixing shafts and blades, in combination with a bottom provided at its bottom and sides with gear rack-bar and rollers, and means for moving said open-ended shell or case in longitudinal direction, substantially as herein set forth and described.

3. In a mixing-machine for asphalt, concrete, and other analogous material, a shell without ends, and provided with gear rack-bar and rollers, in combination with track-timbers secured to the frame, stationary ends, mixing shafts and blades, and means, substantially as described, whereby said shell and mixing-blades are operated, as herein set forth.

4. In a mixing-machine for asphalt, concrete, and other analogous material, the shell C, formed without ends, and provided upon its bottom with a geared rack-bar, D, and upon its sides with rollers *c*, in combination with a gear-pinion, E, mounted upon shaft F, journaled in bearings *d*, said pinion E engaging with the rack-bar D, for the purpose of moving the shell endwise, timbers B, secured to the frame, and provided with tracks *b*, upon which the rollers *c* travel, and mixing shafts and blades, substantially as described.

5. In a mixing-machine for asphalt, concrete, and other analogous material, the ends H H', made separate from the shell C, said ends secured to the frame A, and provided with bearings A', in which are journaled the mixer-shafts I, in combination with said shafts I, and shell C, provided with rack-bar D, rollers *c*, and means, substantially as described, whereby said shell is moved back and forth, as and for the purpose specified.

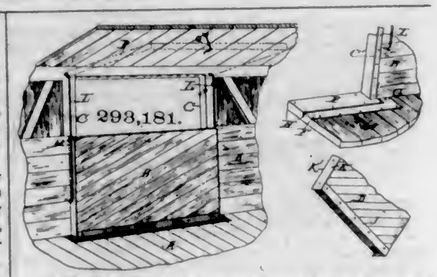
6. In a mixing-machine for asphalt, concrete, and other analogous material, blades L, the faces at the outer ends of which are at an angle of about forty degrees with the face at a point near the shaft, the face-surface between the points named being somewhat spiral in form, as and for the purpose specified.

7. In a machine for mixing asphalt, concrete, and material of an analogous nature, the blades L, having faces spiral in form, said blades having a bifurcated end, L', the arms *l* of which embrace the shafts I, and are held in position upon said shafts by tapering pins P, that pass through said arms and shafts, substantially as herein described.

293,181. CAR-DOOR. THOMAS LEE, Cincinnati, Ohio, assignor of one-half to Oliver Kinney, same place. Filed Sept. 12, 1883. (No model.)

Brief.—A flange on the lower edge of the door and flanges at the ends enter an angled groove in the floor. The latter is provided with perforations to permit escape of water.

Claim.—1. A plain car-door frame having along the floor an angled groove or recess, H, to receive the flange of the door, said groove having holes I through the floor, substantially as herein set forth.



2. The floor of the car-door opening having the angled groove H, in combination with the door D, having the projecting or flanged ends J K' to enter the grooved floor, substantially as herein set forth.

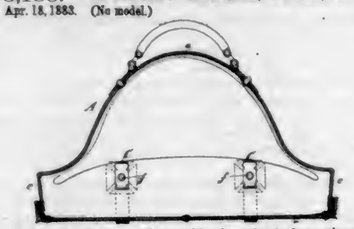
3. The combination of the car-door opening having the angled groove E in the floor and the vertical bars or rods L on the sides, with the door D, having the staples or eyes M and the flanged lower end, substantially as herein set forth.

293,182. RIPPING ATTACHMENT FOR SCISSORS. FRANCIS S. LOCKERMAN, Manokin, Md. Filed Oct. 31, 1883. (No model.)



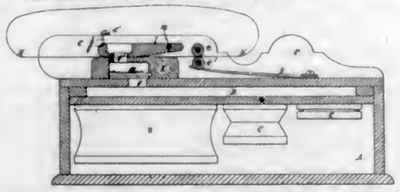
Claim.—An improved ripping attachment for ordinary scissors, consisting of a casing secured to the under side of one of the handles, and a ripping-blade pivoted to and adapted to fold within said casing, substantially as set forth.

293,183. CASE FOR HATS. JAMES LUKER, New York, N. Y. Filed Apr. 18, 1883. (No model.)



Claim.—In a hat-case, the combination of a body portion having an upper compartment shaped internally to approximate to the external contour of a hat such as is worn by a Knight Templar, and adapted to contain the hat in an upright position, a handle at the top of the body portion, which will be adjacent to the top of the hat, a strap or straps adapted to extend across the body portion under the hat, so as to support the hat and retain it in its compartment, a lower compartment into which the feather of the hat may extend, and in which other articles may be placed, and a cover applied to the bottom of the body portion, and forming the bottom of said lower compartment, substantially as specified.

293,184. MECHANICAL MUSICAL INSTRUMENT. NEWMAN E. MARSHMAN, New York, N. Y. Filed Nov. 6, 1877.



Claim.—1. In a mechanical musical instrument, the combination of a series of sound-producing devices, a rest provided with openings, a music-sheet traveling over said rest and controlling the operation of said sound-producing devices, and a cap or presser arranged immediately over said rest and holding the music-sheet thereto, substantially as specified.

2. In a mechanical musical instrument, the combination of sound-producing devices, a rest provided with openings, a music-sheet travel-

ing over said rest and controlling the operation of said sound-producing devices, and a cap or presser provided with apertures extending between its exterior and the music-sheet, arranged immediately over said rest and holding the music-sheet thereto, substantially as specified.

3. In a mechanical musical instrument, the combination of sound-producing devices, a rest provided with openings, a music-sheet traveling over said rest and controlling the operation of said sound-producing devices, and a cap or presser arranged immediately over said rest for holding said music-sheet to the rest, and capable of movement toward and from the rest, substantially as specified.

4. In a mechanical musical instrument, the combination of sound-producing devices, a rest provided with openings, a music-sheet traveling over said rest and controlling the operation of said sound-producing devices, and a cap or presser arranged immediately over said rest for holding the music-sheet thereto, and pivoted longitudinally, substantially as specified.

5. In a mechanical musical instrument, the combination of sound-producing devices, a rest provided with openings, a music-sheet traveling over said rest and controlling the operation of said sound-producing devices, a pivoted cap or presser arranged immediately over said rest for holding the music-sheet thereto, and springs for impelling and holding said cap or presser against the music-sheet, substantially as specified.

6. In a mechanical musical instrument, the combination of sound-producing devices, a rest provided with openings, a music-sheet traveling over said rest and controlling the operation of said sound-producing devices, a cap or presser arranged immediately over said rest, and springs for impelling and holding said cap or presser against the music-sheet, substantially as specified.

7. In a mechanical musical instrument, the combination of sound-producing devices, a rest provided with openings, a music-sheet traveling over said rest and controlling the operation of said sound-producing devices, and a cap or presser arranged immediately over the rest and bearing upon said music-sheet opposite partitions in the rest between the said openings, whereby said music-sheet is held tightly against said rest, substantially as specified.

8. In a mechanical musical instrument, the combination of sound-producing devices, a rest provided with openings, a music-sheet traveling over said rest and controlling the operation of said sound-producing devices, and a cap or presser arranged immediately over the rest and bearing upon the music-sheet opposite a portion of the rest at the front and rear of said openings, whereby said sheet is held tightly against said rest, substantially as specified.

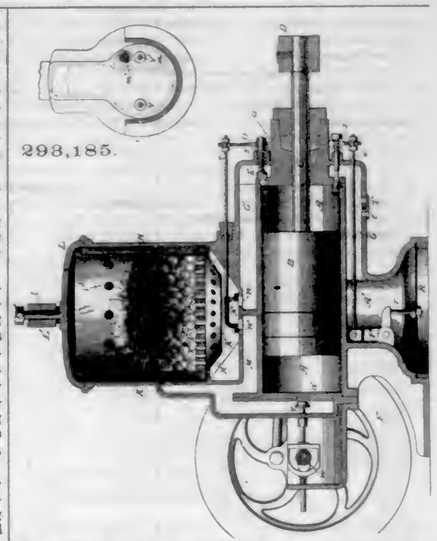
9. In a mechanical musical instrument, the combination of sound-producing devices, a rest provided with openings, a music-sheet traveling over said rest and controlling the operation of said sound-producing devices, a cap or presser arranged immediately over said rest and holding said music-sheet thereto, and guide-rails for the music-sheet, substantially as specified.

10. In a mechanical musical instrument, the combination of reeds, chambers containing said reeds, air-ducts communicating with said chambers on one side, transverse openings communicating with said chambers at the opposite sides, but out of line with said air-ducts, and a perforated music-sheet acting as a valve, whereby the passage of air through said openings is controlled, the reeds and the music-sheet, as it travels, being approximately parallel, substantially as specified.

11. In a mechanical musical instrument, the combination of a reed, a reed-chamber, an air-duct communicating with one side of said chamber, a transverse opening communicating with the opposite side of said chamber, but out of line with the said air-duct, and a slide-valve for controlling the passage of air through said opening and operating upon said opening in a plane parallel with said reed, substantially as specified.

12. In a mechanical musical instrument, a cap or presser held against a music-sheet in proximity to the reed-ducts by spring-pressure, substantially as specified.

293,185. HOT-AIR OR GAS ENGINE. HIRAM S. MAXIM, Paris, France. Filed Jan. 31, 1883. (No model.)



293,185.

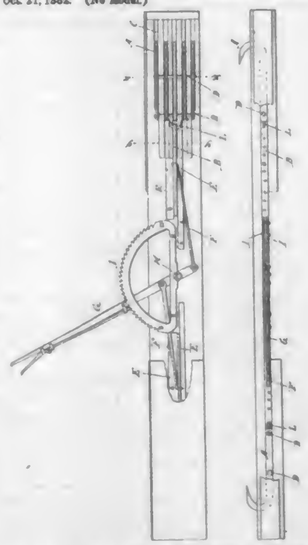
Claim.—1. In an air or gas engine, the combination of a cylinder and piston, a flame or fire chamber, passages or chambers of communication from said flame or fire chamber to opposite ends of the cylinder, valves located at opposite ends of the cylinder, those at one end operating, in conjunction with the piston, as a compressor, and those at the other end for admitting and exhausting air to and from the working end of the cylinder, passages and a valve arranged to connect said passages of communication independently of the fire or flame chamber, and automatic means for operating said valve to shunt all or a portion of the air entirely from said flame or fire chamber in its route from the pumping to the working end of the cylinder, substantially as described.

2. In an air or gas engine having a fire-chamber in communication with the opposite ends of its cylinder by means of suitable passages and valves, and suitable shunt-passages arranged to connect the opposite ends of the cylinder independently of the fire-chamber, a valve arranged to control the flow of air through said shunt-passages, an air space or chamber connected with the pumping end of the cylinder, a flexible diaphragm, forming one of the walls of said space or chamber, and devices connecting said diaphragm with the valve controlling the shunt-passages, and arranged to move said valve in proportion to the pressure on the diaphragm, substantially as and for the purpose set forth.

3. The method herein described of regulating the speed of an air or gas engine, which consists in shunting, through a route distinct from and independent of the fire-chamber, a portion or the whole of the air or gas forced into the engine, as and for the purpose set forth.

4. The method herein described of increasing the efficiency of an air or gas engine, the same consisting in adding a small portion of cool air to the gases issuing from the fire on their way to the cylinder, essentially as set forth.

293,186. SAW-MILL DOG. JOHN J. MCGILLIS, Marinette, Wis. Filed Oct. 21, 1882. (No model.)



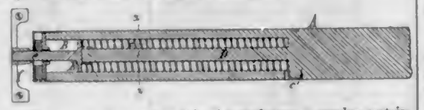
Claim.—1. In a saw-mill, an ordinary reciprocating carriage on which the log rests, in combination with one or more dogs arranged at each end of the carriage, and mounted thereon in a way to permit a reciprocating movement of said dogs on the carriage, a lever on the carriage, and devices for connecting the respective dogs to said lever, whereby the dogs may be operated simultaneously and from one position to dog and undog the logs upon the carriage, substantially as described.

2. In a saw-mill, the log-carriage provided with grooves C at each end, in combination with dogs A, arranged to slide in said grooves at each end of the carriage, the links L, the link-bars B, the connecting-rods F, and the lever G, substantially as and for the purposes set forth.

3. The reciprocating log-carriage, in combination with the sliding dogs A at each end thereof, the lever G on the carriage, the rods F, connecting the dogs at the respective ends of the carriage to the lever on opposite sides of its pivot, the notched segment I, and a pawl on the lever arranged to engage with said segment, substantially as and for the purposes set forth.

293,187. CURTAIN-ROLLER. CHARLES H. MILLER, Buffalo, N. Y., assignor, by direct and mesne assignments, to Edward S. Warren, same place. Filed Mar. 12, 1877. Renewed Mar. 31, 1879.

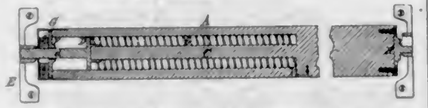
Brief.—The core around which the coiled spring is wound is made integral with the roller inclosing the coiled spring.



Claim.—1. As a new article of manufacture, a wooden curtain-roller provided with the bore B, and having the axial bar D, made in one piece with the roller, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the hollow roller A, of the bar D, formed therewith, so as to rotate with the roller, stationary bearing E *c*, in which the outer end of the bar D rotates, and spiral spring *c*, secured with its ends, respectively, to the roller A and bearing E, substantially as and for the purpose hereinbefore set forth.

293,188. CURTAIN-FIXTURE. CHARLES H. MILLER, Jr., Buffalo, N. Y., assignor to the Buffalo Curtain Fixture Company, same place. Filed Mar. 6, 1877. Renewed Mar. 31, 1879.

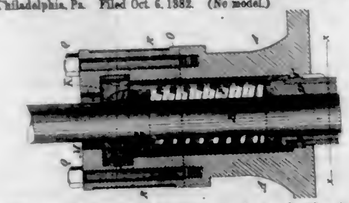


Claim.—1. The combination, with a spring curtain-roller having flattened shank *d*, of one or more sliding catches, *g*, provided on the inner side with a concave portion and projecting lip, as and for the purpose shown and described.

2. The combination, with a spring curtain-roller having a flattened shank, *d*, of the plate F, provided with parallel guide-bars *f f*, and one or more sliding catches, *g*, provided on their inner side with a concave portion and projecting lip, substantially as and for the purpose hereinbefore set forth

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293,189. METALLIC ROD PACKING. EDWIN PEAR MONROE, New York, N. Y., assignor to the United States Metallic Packing Company, Philadelphia, Pa. Filed Oct. 6, 1882. (No model.)



Claim.—1. The combination of the valve box or chamber A, rod B, support C, and lining D, substantially as described.

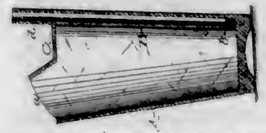
2. The combination, with the packing-receptacle and the stuffing-box cover, having bearing-surfaces arranged in juxtaposition, so as to allow of the sliding of the former upon the latter, of the ring of Babbitt or other anti-frictional metal inserted in the face of the packing-receptacle, so as to move therewith and bear upon the face of the stuffing-box cover, substantially as described.

3. In a metallic packing for valve or other rods, the combination, with the packing-rings, of a tapering coiled metallic spring having at each end two or more of its coils or turns brought in contact, to form abutments or bearings, substantially as described.

4. The combination of the valve box or chamber A, support C, spring F, follower G, packing-rings H I, packing-receptacle J, and covers M O, substantially as described.

5. In a metallic packing for valve or other rods, the combination of the packing-receptacle J and the stuffing-box cover M, provided with the brass lining P, substantially as described.

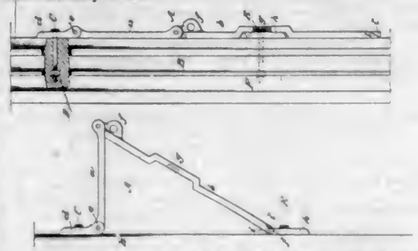
293,190. DRINKING-GLASS. EDWARD L. MOORE, Knoxville, Tenn., assignor to himself and Thomas J. Smith, Chicago, Ill. Filed Jan. 4, 1884. (No model.)



Claim.—As a new article of manufacture, the drinking-vessel having the body A, tube B, projecting mouth-piece *d*, cover C, and opening *a*, substantially as described.

293,191. FIRE-ESCAPE BRACKET. CHARLES MURDOCK, New Rochelle, N. Y. Filed Nov. 6, 1883. (No model.)

Brief.—A folding bracket, the long section of which has a bend in its center for folding over the step when not in use, and the ends of said section and the step so beveled and formed as to prevent all lateral movement when ready for use.

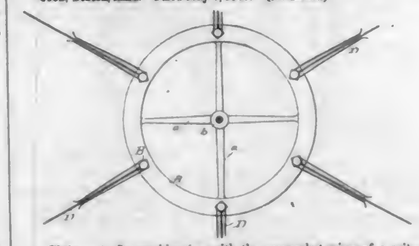


Claim.—1. A fire-escape bracket consisting of the securing-plate *d*, to which is hinged the short section *a*, carrying the section *b*, formed with an eye at its upper end, angular bend or recess near its middle portion, and a projection on its free end for engaging the step *h*, bolted to the window-casing, substantially as set forth.

2. In a folding bracket, the step *h*, beveled at its upper end, and formed with the inwardly-beveled projections *j j*, in combination with the section *b*, formed with the projection *i*, and beveled portions *i*, for engaging the beveled projections *j j*, whereby all lateral movement of the section *b* is prevented, substantially as set forth.

3. In a folding bracket, the section *b*, bent in the center, as at *g*, to fold over the step *h*, substantially as herein shown and described.

293,192. CASH-CAR SYSTEM. BYRON A. OSGOOD and EDWIN P. OSGOOD, Boston, Mass. Filed May 7, 1883. (No model.)



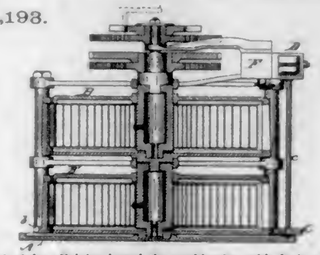
Claim.—1. In combination with the suspended wires of a railway cash system, a supporting bar or ring and pins set therein, and adapted to be connected to the wires and to turn to wind up said wires, said pins having suitable retaining devices, substantially as described.

2. In combination with the wires and supporting bar or ring of a cash-car system, an arresting-stop or a spring-buffer adapted to receive and hold the car.

293,193. SPRING-MOTOR. JOHN R. POWELL, Philadelphia, Pa., assignor to the Powell Motor Company, (Limited,) same place. Filed Oct. 31, 1883. (No model.)

Claim.—1. In a spring-motor comprising two or more barrels, each having its own shaft and spring, the barrel of one shaft being coupled to

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the shaft of the adjoining barrel, the combination, with the barrel at that end of the motor opposite to the end where the power of the springs is directly given off, of a winding gear-wheel, substantially as and for the purpose set forth.

2. In a spring-motor comprising two or more barrels, each barrel having its own shaft and spring, and the barrel of one shaft being connected to the shaft of the adjoining barrel, the lower or end barrel formed or provided with gear-teeth, so as to serve as a winding-wheel, substantially as and for the purpose set forth.

3. The combination, with barrel B', formed or provided with gear-teeth, of pinion C on a vertical shaft, *c*, substantially as and for the purpose set forth.

4. In combination with winding-wheel B', the automatic clutch H, comprising a sliding pawl or wedge, *h*, and cam-shield *h'*, substantially as shown and described.

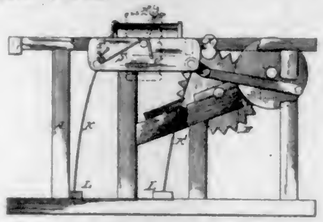
293,194. PREVENTING RAILROAD-TRACKS FROM SPREADING. JOHN REVEN, Lancaster, Pa. Filed May 9, 1883. (No model.)

Brief.—An iron bar with a screw-thread at the end, the other end bent to fit the outside of the rail. On this bar there are three movable slotted flanges with side projections to fit into the sides of the rails, one on the outside and two on the inside of each rail. These flanges are secured against the rails by keys and nuts and washers.



Claim.—The rod passing under the rails with a fixed flange or bent portion at the one end, in combination with the three movable flanges, the keys, and the nut and washer to keep them in position, substantially as and for the purposes as set forth.

293,195. CHURN. WILLIAM H. ROTHWELL, Midway, Va. Filed Aug. 10, 1883. (No model.)



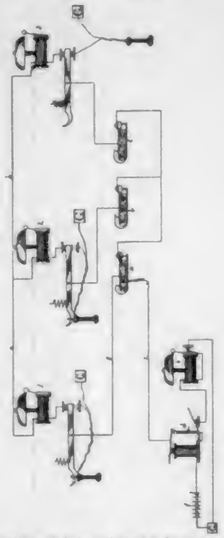
Claim.—1. The combination of the frame A, drive-wheels B, D, and F, shaft E, pitman H, vibrating frame I J, fixed and supported upon the springs K, and having the boxes M and set-screw R, cylindrical churn-body O, having trunnions N, and spring-catches S, the whole constructed to operate substantially as and for the purpose shown and set forth.

2. In a vibrating-body churn, the combination of the vibrating spring-supported frame I J, having the boxes or bearings M, churn-body O, having trunnions N, set-screw R, and spring-catches S, substantially as and for the purpose shown and set forth.

293,196. NIGHT-SIGNAL CIRCUIT FOR TELEPHONE-EXCHANGES. CHARLES E. SCRIBNER, Chicago, Ill., assignor, by mesne assignments, to the Western Electric Company, same place. Filed June 20, 1881. (No model.)

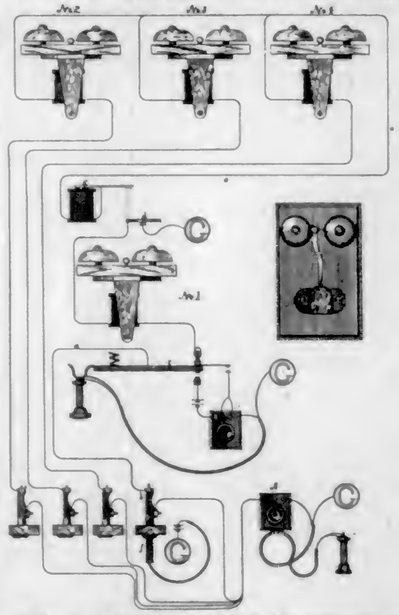
Claim.—The combination, in a telephone-exchange, with several individual telephone-lines connected together by a common outer line, of a branch circuit to ground at the central office containing a battery

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and annunciator, said branch being adapted to be connected at the central office to any one of the telephone-lines, and switching apparatus at each subscriber's station, whereby the branch containing the battery and annunciator may be closed to ground at any subscriber's station through one or more of the individual lines and the common outer line.

293,197. ANNUNCIATOR-SWITCH AND TELEPHONE-CIRCUIT. CHARLES E. SCRIBNER, Chicago, Ill., assignor, by mesne assignments, to the Western Electric Company, same place. Filed Dec. 12, 1881. (No model.)

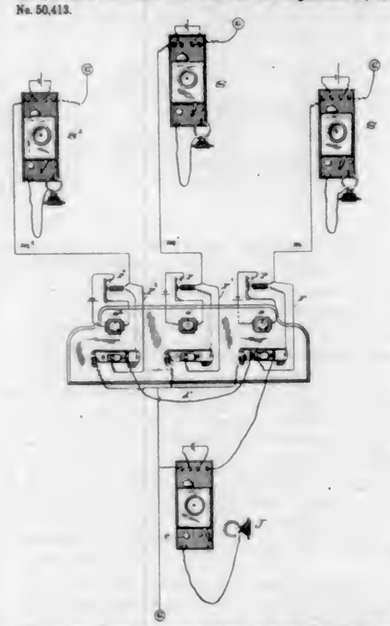


Claim.—1. The combination of a group of telephone-lines with any usual central office and subscribers' outfits, with switching devices, one in the circuit of each line between the bell-magnet and common outer line, whereby any line may be separated from the group and connected to ground, as and for the purpose set forth.

2. The combination of the annunciator-shutter with the contact piece or catch and the lever of the automatic switch, whereby the subscriber is compelled to replace the shutter before hanging the telephone on the switch.

3. The combination, with the switch at a subscriber's station, of the shutter of an annunciator, adapted to be operated by current sent from the central office, and means whereby the subscriber must replace said shutter after a call before hanging up the telephone.

293,198. TELEPHONE-SWITCH. CHARLES E. SCRIBNER, Chicago, Ill., assignor, by mesne assignments, to the Western Electric Company, same place. Filed Aug. 23, 1879. Patented in England Nov. 29, 1879, No. 4,903; in France Jan. 15, 1880, No. 134,596, and in Belgium Jan. 28, 1880, No. 50,413.



Claim.—1. In a telephone-exchange, two subscribers' telephone-lines, each line permanently connected with the metallic frame of its switch at the exchange-station, the switch of each line being provided with an insulated ground-contact point, a contact-piece which closes on said contact-point, and a plug-hole in the frame adapted to direct a plug against said contact-piece, in combination with a flexible conducting-cord provided with terminal plugs, whereby the two telephone-lines may be connected together while the contact-pieces are at the same time disconnected from the ground-contact points.

2. The combination, in a telephone-exchange switch, of a metallic frame provided with a plug-hole and insulated ground-contact point, a telephone-line permanently in electrical connection with the movable contact piece or lever of the switch, and a metallic pointed plug adapted to be inserted in said plug-hole, whereby the switch-lever is disconnected from the contact-point and connected to the plug-point, as and for the purpose specified.

3. The switch, in combination with the plug and circuits, whereby the relay is shunted at the same time the ground-wire is taken off.

4. A switch provided with two plug-holes and contact-points C D, in combination with a plug and means whereby the contact of said points is broken when a plug is inserted in either hole, said points closing when said plug is removed—that is, when there is no plug remaining in either hole.

5. A switch consisting of frame E, lever B, and spring I, combined substantially as set forth.

6. A switch consisting of frame E, lever B, spring I, block of hard rubber *b*, and plate *a*, combined substantially as and for the purpose specified.

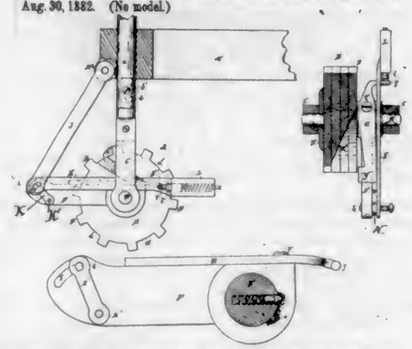
7. In a telephone-switch, plate *a* and frame E, insulated by a block of insulating material, and combined substantially as shown and set forth.

8. In a telephone-switch, the combination of plate *a* and insulated frame E, with lever B, contact-points C D, and a conducting-plug, whereby the circuit is broken at point D, while at the same time the frame E and plate *a* are connected.

9. The combination, with the telephone-lines connected together for conversation, of a branch circuit to ground at the central office, including a telephone and a switch and plug provided with a flexible conducting-cord, as described, whereby said branch circuit may be connected with and disconnected from the circuit of said united telephone-lines.

10. In a spring-jack switch, the combination, with a normally-insulated metallic piece, of a movable contact piece or lever, a contact point, and a connecting-plug adapted to separate the said movable contact piece or lever from said contact-point, and at the same time to form an electric connection between said movable contact piece or lever and said normally-insulated metallic piece.

293,199. PAGING AND NUMBERING MACHINE. CHAS. SEYBOLD, Cincinnati, Ohio, assignor of one-half to Alexander Reid, same place. Filed Aug. 30, 1882. (No model.)



Claim.—1. The combination of the disks B, vibrating lever F, provided with pawl G, and means, substantially as described, for causing said pawl to approach and recede from the disks, and the connecting-rod J, connecting the end of the lever to the neck of the machine, substantially as and for the purposes specified.

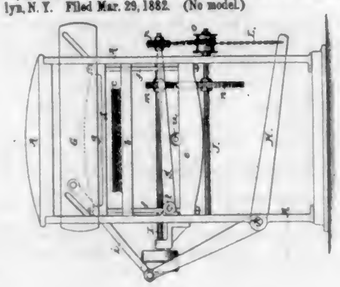
2. The combination of the disks B, provided with notches *d* and the inclined notches *d'*, and the vibrating lever F, provided with the pawl G and sliding bar H, and the connecting-rod J, connected at one end to the sliding rod and at the other end to the neck of the machine, substantially as and for the purposes specified.

3. The disks B, provided with notches, substantially as described, in combination with the vibrating lever F, pawl G, sliding bar H, and connecting-rod J, the pawl G being pivoted at *g'* to the vibrating lever and one end of said pawl being provided with an arm, *g*, which passes through an opening near one end of the sliding bar, substantially as and for the purposes specified.

4. In combination with the disks B, the pawl G, pivoted at *g'* to the vibrating lever F, and provided with arm *g*, the sliding bar H, provided with slot H', through which the arm *g* passes, and the connecting-rod J, connected at one end to the neck of the machine and at the other end connected to the sliding bar H by the pin A, said pin being capable of moving in the slot *f* in the end of the vibrating lever F, substantially as and for the purposes specified.

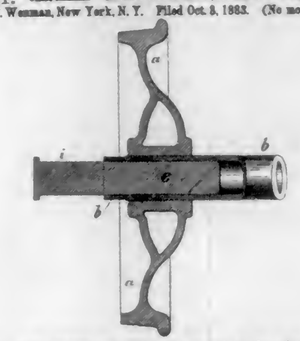
5. The combination of the connecting-rod J, sliding bar H, and vibrating lever F, the end of the rod being connected to the end of the sliding bar by a pin, A, said pin being connected to the vibrating lever by a link, K, and located in a slot, *f*, in the end of said lever, substantially as and for the purposes specified.

293,200. PAPER-CUTTING MACHINE. EDWIN R. SHERIDAN, Brooklyn, N.Y. Filed Mar. 29, 1882. (No model.)



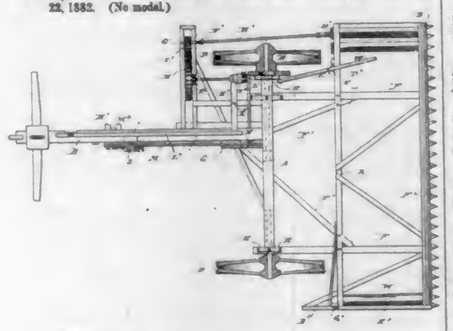
Claim.—In combination with the usual clamping-frame, knife-bar, and connected main lever for pulling down the latter, an intermediately-arranged auxiliary lever, S, provided with a sheave, *p*, and the usual winch, O, and chain L, the latter arranged in the manner specified, and the whole adapted to operate as and for the purposes hereinbefore explained.

293,201. CAR-AXLE. GEORGE W. STEWART, Atlanta, Ga., assignor to James F. Wenman, New York, N. Y. Filed Oct. 3, 1883. (No model.)



Claim.—The tubular axle and wheel, united by the wheel being driven upon the tubular axle so that the end of said axle passes through the wheel, in combination with a journal having a solid projecting inner end that fits the interior of the tubular axle and is driven tightly into the same, but is removable therefrom, substantially as set forth.

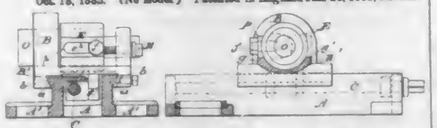
293,202. HARVESTER. CHARLES S. STICKLE, Pekin, Ill. Filed June 22, 1883. (No model.)



Claim.—1. The combination, in a harvester, of the transverse bars F^2 K, the side bars, F, the converging bars F', the upright standards carrying the adjustable bearings, and secured to the bars F, the tongue B, the transverse bar A, the fixed bearing secured thereto, and short independent axles carried in said bearings, substantially as specified.

2. The combination, in a harvester constructed substantially as described, of the transverse bars F^2 K, the converging and rearwardly-extending bars F' F', the curved bar G, the tongue, the tilting lever having a keeper and a spring-catch, and fulcrumed between the standards secured to the tongue, the ratchet attached to the tongue, and the rod connecting the lever with the curved bar, as and for the purpose specified.

293,203. MACHINE FOR TRUING GRINDSTONES. FRANK THIER, Westminster, England, assignor to A. C. Baldwin, Boston, Mass. Filed Oct. 18, 1883. (No model.) Patented in England Jan. 20, 1883, No. 341.

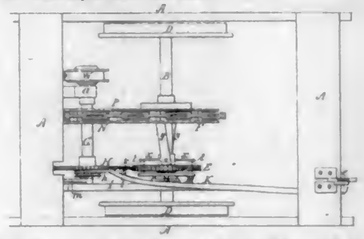


Claim.—1. In a stone working or dressing machine, the cylindrical sleeve adapted to be detachably secured to the cutter-carrying bar, provided with a lug, *p*, and slot e^2, in combination with the trough H' and slide B, whereby the angle of inclination of the cutter can be changed by the partial rotation of the sleeve, as set forth.

2. In a stone-dressing machine, the cutter-carrying slide B, having a trough, H', in which is located a sleeve, E, for holding the cutter-carrier O, said sleeve being provided with a lug or projection, *p*, which is adapted to impinge against the edges of the trough, as and for the purpose set forth.

3. The sleeve E, mounted in the slide B, as described, provided with the slotted projection *p*, in combination with the cutter-carrying bar O and set-screws *f* and H, as set forth.

293,204. SPRING CAR-STARTER. WILLIAM A. WARRINER, Franklin, Gloucester County, N. J., assignor, by direct and mesne assignments, of one-half to Olin B. Pendleton, Brooklyn, N. Y., and Jesse Myers, Towanda, Pa. Filed May 24, 1883. (No model.)



Claim.—1. A spring car-starter in which the axle B, having a chain-wheel, F, and pinion E, with pawl-connection, is combined with a spring-shaft, G, having chain-wheel N and spur-wheel H, a belt, P, and means for moving said shaft so as to throw the wheel H into and out of gear with the pinion E, as set forth.

2. The combination of the axle B, the wheel F, the pinion E, and the spring-pawls *y*, carried by the pinion and bearing on the wheel, with the spring-shaft, its wheels H and N, and the belt P, as set forth.

3. The combination of the axle B, the wheel F, the pinion E, the pawls *y*, hung to said pinion and having arms *x*, and the adjustable disk M, having pins *t*, for acting on said arms, as set forth.

4. The combination of the axle B, the wheel F, pinion E, the pawls *y* and their arms *x*, the disk M and its pins *t*, and a cam-plate, *n*, for adjusting said disk, as set forth.

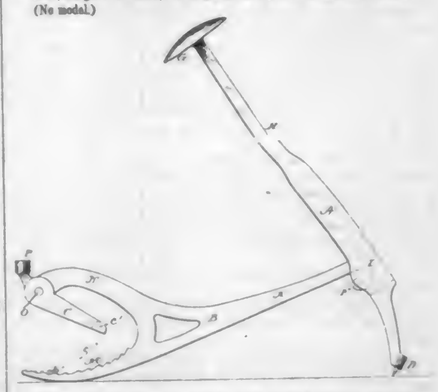
5. The combination of the axle B, its wheel F and pinion E, the spring-shaft G, its wheel N and spur-wheel H, the belt P, the bar I, carrying one end of said shaft G, the spring *f*, and the lever J, for acting on said bar I, as specified.

6. The combination of the spring-shaft G, having a scroll-cam, *k*, and stop-arm *m*, with the arm K under control of said scroll-cam, as set forth.

7. The combination of the spring-shaft G, having a scroll-cam, *k*, and wheel H, with stop-pin *k*, with the arm K, controlled by the cam *k*, and having a stop-lug, *i*, as set forth.

8. The combination of the axle B, the pinion E and its pawls, the disk M, having pins acting on said pawls, the shaft G, having a cam, *k*, and the arm K, controlled by said cam *k*, and having a cam-plate, *n*, for actuating the disk M, as set forth.

293,205. CARPET-STRETCHER. NORMAN WIARD, Washington, D. C., assignor to Henry R. Hughes, same place. Filed Nov. 22, 1883. (No model.)



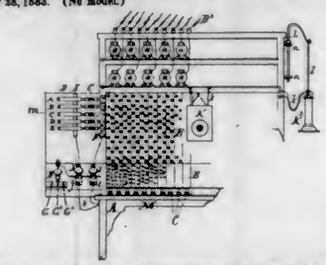
Claim.—1. A thrust carpet-stretcher provided with a grip attachment, as described.

2. A thrust carpet-stretcher having bar H, provided with points D, head G, and means for attaching a grip mechanism.

3. The part B, provided with clutch M C and hammer-head P.

4. An implement formed of parts A B, arranged for use alternatively together and separately in putting down carpets, substantially as and for the purpose set forth.

293,206. LOOPING-IN MECHANISM AND OPERATOR'S APPARATUS FOR TELEPHONE EXCHANGES. EUGENE M. WILSON, Worcester, Mass., assignor of one-half to Alice P. Carpenter, Foxcroft, Me. Filed July 28, 1883. (No model.)



Claim.—1. The slide-bar C, in combination with its guide C', springs D and F, and contact-bar E, with their respective conductors or wires, D *d e f*, substantially as and for the purpose described.

2. In a looping-in device for telephone apparatus, the reciprocative slide-bolt C, mounted in the guiding-case C', fixed upon the table, and provided with the thumb-knob *c*, in combination with contact plates or springs at its front and rear ends, said parts being adapted for making and breaking the circuit through the operator's loop, in the manner set forth.

3. In a system of individual switch-board tables for telephone-exchange, the combination, substantially as described, of the interexchange lines W' W^3, &c., connecting with the indicating-drops on the respective tables, the reciprocating slides C, the springs D, the contact-plates E, and signaling-keys J I, connected with said contact-plates in series *m*.

4. In a system of individual operators' tables for telephone-exchanges, the combination, substantially as hereinbefore described, of the lines D', connecting, through the annunciators or indicating-drops *a* on the tables, the main series M of springs and reciprocative slides, the switch-board B, the contact-bars E and F, the signaling-keys I and J, the operator's loop *k*, an electro-generator, with conducting-wires arranged and organized for operation as set forth.

5. In a system of individual operators' tables for telephone-exchanges, the combination, with the switch-board B, the subscribers' lines D', entering thereon, and the operator's loop *k*, of a main series, M, of looping-in mechanism, constructed as shown and described, for looping in the operators' instruments, and the minor series *m* of looping-in mechanism, with circuit-lines, as W' W^3, &c., connecting with other tables, and the signaling-keys I and J, with their anvils, back contacts, and generator-conductors adapted for signaling in both said main and minor series of mechanism, as set forth.

6. The combination, with a switch-board table and telephone-lines entering thereon, of the series of springs D, connected to said lines, the reciprocating slide-bar C, mounted for action, as described, and connected with the line-bars *b* on the switch, the contact bars or plates E and F at the respective ends of said slides, the signal-keys I and J, connected with said plates and having their back contacts, *i* and *j*, connected with the operator's instrument, and the anvil *k*, connected with an electro-generator or battery, substantially as and for the purpose set forth.

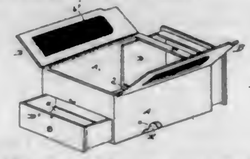
7. The combination, with a switch-board stand for telephone-exchanges, of the swinging crane L and dependent chain *l*, adapted for supporting the operator's receiving-telephone, substantially as shown and described.

293,207. MANUFACTURE OF ARTIFICIAL STONE. RUDOLF C. WITTMANN, New York, assignor to himself and Charles Nelson, East New York, N. Y. Filed July 12, 1883. (No specimens.)

Claim.—1. An artificial stone prepared by mixing together a salt of magnesia—such as carbonate or silicate of magnesia—and a binding material—such as carbonate of lime—then adding to this mixture a sufficient quantity of muriatic acid to moisten the mass, and finally compressing this mass in suitable molds, substantially as described.

2. An artificial stone prepared by mixing together a salt of magnesia—such as carbonate or silicate of magnesia—and a binding material—such ascarbonate of lime—then adding to this mixture a sufficient quantity of muriatic acid to moisten the mass, then introducing into a suitable mold a bottom layer of this moistened mass, an intermediate layer of pasteboard, wood, muslin, or equivalent material, and a top layer of the moistened mass, and finally compressing the whole, substantially as set forth.

293,208. GRASS-COLLECTING ATTACHMENT FOR LAWN-MOWERS. JOHN H. WYNN, Oakland, Cal., assignor of one-half to Maier A. Cahn, same place. Filed Mar. 30, 1883. (No model.)

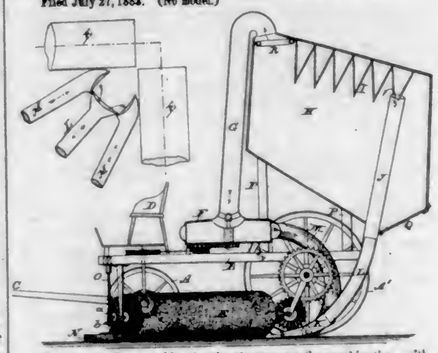


Claim.—1. The herein-described detachable grass-collecting attachment for lawn-mowers, consisting of the frame A, adapted to fit over and inclose the cutting apparatus of the mower, the removable drawers or compartments D D', the lid or cover B, and means for attaching the rear end of the frame to the mower-handle, constructed for application and use substantially as set forth.

2. The combination of the box A, having covered top B, and the space E in the bottom to receive the cutters of a lawn-mower, the front receptacle, D', and the rear receptacle, D, adapted to be withdrawn from the box to discharge its contents and clean out the receptacles, substantially as and for the purpose set forth.

3. A detachable grass-collecting box for lawn-mowers, having the drawers D D' in front and rear of the mower, covered sides, and hinged top, provided with the wire-cloth portions *b'*, substantially as set forth.

293,209. STREET-SWEEPER. JAMES P. HERRON, Washington, D. C. Filed July 27, 1883. (No model.)



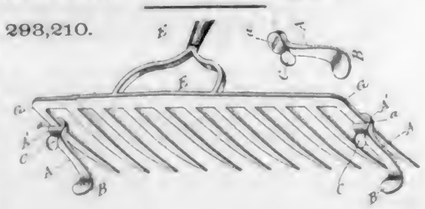
Claim.—1. In a machine for cleaning streets, the combination, with the frame and carrying-wheels, and suitable brooms arranged to sweep the dirt into a ridge or ridges, of a dirt-chest provided with a conduit-tube arranged to travel close to the surface of the street and in a path coincident with the ridge of dirt, and also provided with a suction-pipe having an exhaust-fan, whereby a vacuum is created in the dirt-chest, operating to raise the dirt through the inlet-tube and deposit it in the dirt-chest, substantially as described.

2. In combination with the frame, carrying-wheels, dirt-chest, and exhaust-fan, arranged as described, and the conduit-tube, the blast-tubes M M, arranged each side of the conduit-tube, the blast from which directs and assists the dirt in the movement toward and up the conduit-tube, substantially as and for the purpose set forth.

3. In combination with the revolving brooms E, the end brushes, N, mounted on vertical shafts geared with the shafts of the brooms E, whereby the dirt near the curb is swept into the path of the brooms E, substantially as and for the purposes set forth.

4. The inlet-tube having a flexible section, L, and metallic nozzle K, provided with wheels whereby the said nozzle is kept a uniform distance from the surface of the street, and injury to the nozzle from contact with obstructions avoided, substantially as described.

293,210.

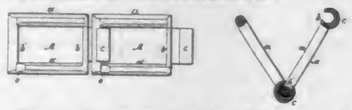


293,210. RAKE SHOE OR RUNNER. CHARLES O. DENNEN, WILLIAM C. GRAY, and HOMER C. NELLIS, Piqua, Ohio. Filed Dec. 17, 1883. (No model.)

Claim.—A detachable and adjustable shoe or guard for rake or harrow teeth, consisting of a shank, A, curved or bent end B, and perforated shoulder *a*, provided with a set-screw or other suitable clamping device, substantially as and for the purposes set forth.

REISSUES.

10,444. DRIVE-CHAIN. WILLIAM DANA EWART, Chicago, Ill., assignor to Ewart Manufacturing Company, same place. Filed Aug. 22, 1883. Original No. 154,594, dated Sept. 1, 1874; Reissue No. 6,337, dated Apr. 20, 1875; Reissue No. 9,256, dated June 15, 1880.



Claim.—1. The combination, in a drive-chain, of the coupling-hooks *c* and side bars sufficiently small close to the end bars to pass through the opening of the hook *c*, as shown and described.

2. The combination, in the open link of a drive-chain, of the end bar *b*, provided with a coupling-hook, and an opposite end of the link adapted to be coupled to the hook of a correspondingly-constructed link, to form a chain, substantially as set forth.

10,445. PANORAMIC SIGN FOR CARS. WILLIAM HALKYARD, Providence, R. I., assignor to Thomas H. Bowles, Fulton County, Ga.; said Bowles assignor of nineteen one-thousandths to said Halkyard. Filed Jan. 8, 1884. Original No. 263,898, dated Sept. 5, 1882.



Claim.—1. In a car, an endless apron having advertisements on its surface, arranged longitudinally of the car upon supporting-rollers, in combination with suitable gearing positively connecting one of the rollers to one of the car-axles, whereby a continuous longitudinal movement is imparted to the apron when the car is in motion, substantially as described.

2. In combination, in a car, the endless apron B, the axle C, and means for conveying motion from the axle to the apron, and an automatic reversible clutch constructed to drive the apron in one direction only, as described.

10,446. GLASS GLOBE. JOSEPH LOCKE, Somerville, assignor to William L. Libbey, Newton, (Sarah C. Libbey, Administratrix of said William L. Libbey, deceased,) and Edward D. Libbey, Boston, Mass. Filed Jan. 11 1884. Original No. 238,582, dated Nov. 13, 1883.

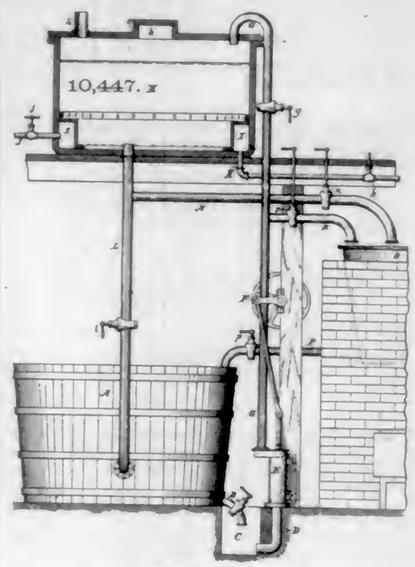


Claim.—That improvement in the art or method of producing lamp-globes of two different colors from the same homogeneous stock which consists in forming the globe from amber glass, as described, and cooling and heating the same unequally to develop the darker colors where desired, substantially as described.

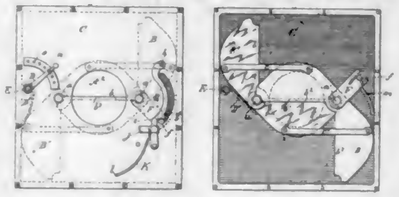
10,447. BREWING. MICHAEL MUHLER, Cincinnati, Ohio, assignor, by mesne assignments, of part interest to Leo A. Brigol and Louis Barger, same place. Filed Sept. 17, 1883. Original No. 247,209, dated Sept. 20, 1881.

Claim.—1. The within-described process of brewing, which process consists in steeping the grain in warm water after the wort has been drawn off, then discharging the resultant glattwasser into a suitable receptacle, where it is properly heated, and finally returning this glattwasser or sugar-water to the mash-tub, substantially as herein described, and for the purpose set forth.

2. The improvement in the art of brewing, consisting in applying heat to the glattwasser, and then applying said glattwasser, before it has become cool, to the steeping of subsequent charges of malt.



10,448. PHOTOGRAPHIC CAMERA. GEO. S. NORTH, South Norwalk, Conn. Filed Oct. 30, 1883. Original No. 276,455, dated Apr. 24, 1883.



Claim.—1. The combination, in a photographic camera, of two shutters, pivots on which the shutters swing with a continuous movement in opening and then closing, connecting-bars from one shutter to the other, and a stud by which the simultaneous movements of the shutters are controlled.

2. The combination, in a photographic camera, of two shutters acting in opposite directions, and each having only one continuous movement in opening and closing, a connection from one to the other, a spring to give motion to the shutters, and a latch to hold the shutters open, substantially as set forth.

3. The combination, with a photographic camera, of the plate C, provided with the aperture A^2, the shutters B B', pivoted on said plate at *a a'*, respectively, the connecting-rods *c c'*, and the spring D', as and for the purpose described.

4. The combination, with a photographic camera, of the shutters B B', pivoted on plate C, connecting-rods *c c'*, spring D', arm D, provided with the pin *n*, and series of holes *o*, all as and for the purpose described.

5. The combination, with a photographic camera, of the shutters B B', pivoted on the plate C, which is provided with the curved opening *g*, the rods *c c'*, the arm F, fastened in the shutter B, and provided with the stud *f*, the arm G, provided with the notch *i*, the keeper *j*, and the spring K, all as and for the purpose described.

6. The combination, with a photographic camera, of the shutters B B', pivoted on the plate C, the rods *c c'*, the spring D', the arm F, provided with the stud *f*, and the spring-catch *m*, all as and for the purpose described.

7. The combination, with a photographic camera, of two pivoted shutters, each having two parts or leaves at an angle to each other, and mechanism for swinging the same simultaneously, so that the lens will be uncovered uniformly from the center line outwardly by one leaf of each pair of leaves, and closed from the opposite sides inwardly by the other leaf of the pairs of leaves, the movement being continuous, substantially as specified.

N. PITTS, Photo-Lithographer, Washington, D. C.

REPORT

OF THE

COMMISSIONER OF PATENTS

TO CONGRESS,

FOR THE YEAR ENDING DECEMBER 31, 1883.

Laid before the House of Representatives by the Speaker *pro tempore* January 31, 1884, referred to the Committee on Patents, and ordered to be printed.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., January 29, 1884.

To the Senate and House of Representatives of the United States of America in Congress assembled:

In compliance with the requirements of section 494 of the Revised Statutes, I have the honor to submit the following report of the business of this Office for the year ending December 31, 1883.

RECEIPTS.

Detailed statement of all moneys received for patents, for copies of records or drawings, or from any source whatever.

Applications (including caveats, trade-marks, and disclaimers):		
Cash received	$961,785 00	
Cash refunded	2,160 00	
Net cash	959,625 00	
Certificates of deposit	61,040 00	
Total cash and certificates		1,020,665 50
Copies:		
Cash received	79,549 15	
Cash refunded	1,910 75	
Net cash	77,638 40	
Certificates of deposit	923 65	
Total cash and certificates		78,562 05
Recording assignments:		
Cash received	28,405 90	
Cash refunded	1,390 05	
Net cash	27,015 85	
Certificates of deposit	603 50	
Total cash and certificates		27,619 35
Subscription to Official Gazette:		
Cash received	13,134 70	
Cash refunded	55 90	
Net cash	13,078 80	
Certificates of deposit	65 30	
Total cash and certificates		13,144 10
Registration of labels:		
Cash received	5,483 00	
Cash refunded	120 00	
Net cash	5,363 00	
Certificates of deposit	126 00	
Total cash and certificates		5,489 00
Proceeds of sale of rejected models		760 50
Aggregates.		
Cash received	$1,089,118 25	
Cash refunded	5,636 70	
Net cash	1,083,481 55	
Certificates of deposit	62,758 45	
Total cash and certificates		1,146,240 00

EXPENDITURES.

Amount expended under the several appropriations from January 1, 1883, to January 1, 1884.

Salaries	$543,160 15
Contingent expenses (to June 30, 1883)	10,642 99
[By act of Congress, approved March 3, 1883, making appropriations for the legislative, executive, and judicial expenses of the Government for the fiscal year ending June 30, 1884, it was provided that the contingent funds of the various bureaus of the Department of the Interior be consolidated. The contingent expenses herein mentioned therefore only cover a period of six months.]	
Official Gazette	34,220 00
Photolithographing	66,091 49
Copies of drawings	14,990 18
Scientific library	6,130 05
Total	675,234 86

Statement of contingent expenses in detail.

Stationery and books	$267 52
File-holders	60 50
Card-board	257 00
Furniture	453 71
Hardware	175 33
Painting	139 00
Carpets, &c	498 84
Services	1,907 70
Ice	447 47
Engraving and printing	401 47
Desks, cases, and repairing	2,018 55
Tin shelves	14 00
Washing towels, horse livery, paste, lumber, telephone, winding clocks, and sundries	4,001 80
Total	10,642 99

RECEIPTS OVER EXPENDITURES.

Total receipts	$1,146,240 00
Total expenditures	675,234 86
Receipts over expenditures	471,005 14

Statement of balance in the Treasury of the United States on account of the Patent fund.

Amount to the credit of the fund January 1, 1883	$2,205,471 10
Amount of receipts during the year 1883	1,146,240 00
Total	3,351,711 10
Deduct expenditures for year 1883	675,234 86
Balance January 1, 1884	2,676,476 24

SUMMARY OF THE BUSINESS OF THE OFFICE.

Number of applications for patents for inventions	33,073
Number of applications for patents for designs	1,238
Number of applications for reissues of patents	265
Total number of applications relating to patents	34,576
Number of caveats filed	2,741
Number of applications for registration of trade-marks	915
Number of applications for registration of labels	834

Number of disclaimers filed	18
Number of appeals on the merits	640
Total	5,148
Total number of applications requiring investigation and action	39,724
Number of patents issued, including designs	22,216
Number of patents reissued	167
Number of trade-marks registered	902
Number of labels registered	906
Total number of patents granted and certificates issued	24,191
Number of patents expired during the year	8,874
Number of patents withheld for non-payment of final fee	2,366

PATENTS ISSUED.

Patents issued to citizens of the United States, with the ratio of population to each patent granted.

States and Territories.	Patents and Designs.	One to every—
Alabama	77	16,396
Arizona Territory	14	2,888
Arkansas	59	13,602
California	596	1,450
Colorado	119	1,633
Connecticut	883	705
Dakota Territory	30	4,505
Delaware	36	4,070
District of Columbia	217	318
Florida	24	11,288
Georgia	115	13,410
Idaho Territory	6	5,435
Illinois	1,792	1,717
Indiana	712	2,777
Iowa	445	3,650
Kansas	189	5,270
Kentucky	228	7,231
Louisiana	80	11,749
Maine	183	3,546
Maryland	260	3,595
Massachusetts	2,173	920
Michigan	727	2,251
Minnesota	310	3,717
Mississippi	51	22,188
Missouri	625	3,469
Montana Territory	17	2,303
Nebraska	37	5,200
Nevada	23	2,707
New Hampshire	139	2,406
New Jersey	1,066	1,061
New Mexico Territory	11	10,809
New York	4,359	1,106
North Carolina	87	16,088
Ohio	1,604	1,993
Oregon	76	2,299
Pennsylvania	2,168	1,975
Rhode Island	327	845
South Carolina	47	21,182
Tennessee	124	12,408
Texas	208	7,652
Utah Territory	21	6,855
Vermont	109	3,048
Virginia	122	12,398
Washington Territory	21	3,576
West Virginia	82	7,542
Wisconsin	394	3,338
Wyoming Territory	5	4,157
United States Army	6	.....
United States Navy	3	.....
Total	20,957	.....

Patents issued to citizens of foreign countries.

Of patents issued to foreigners there were granted to citizens of—

Australia	10
Austria	31
Belgium	20
Bermuda	1
Brazil	1
Canada	251
Central America	3
Cuba	5
Denmark	7
East Indies	2
England	435
France	179
Germany	235
Hawaiian Islands	2
Holland	2
Italy	2

Patents issued to citizens, &c.—Continued.

Japan	2
Mexico	2
Newfoundland	1
New Zealand	4
Norway	4
Peru	2
Russia	5
Spain	2
Sweden	12
Switzerland	22
Turkey	3
United States of Colombia	2
Venezuela	1
Victoria	4
West Indies	4
Total	1,259

Comparative statement of the business of the Office from 1837 to 1883, inclusive.

Year.	Applications.	Caveats filed.	Patents and reissues.	Cash received.	Cash expended.	Surplus.
1837	.....	.....	435	$29,289 08	$33,506 98	.....
1838	.....	.....	520	42,123 54	37,402 10	$4,721 44
1839	.....	.....	425	37,260 00	34,543 51	2,716 49
1840	735	228	473	38,056 51	39,020 67	.....
1841	847	312	495	40,413 01	52,666 87	.....
1842	761	391	517	36,505 68	31,241 48	5,264 20
1843	819	315	510	35,315 81	30,776 96	4,538 85
1844	1,045	380	495	42,509 26	36,244 73	6,264 53
1845	1,246	452	504	51,076 14	39,395 65	11,680 49
1846	1,252	448	638	50,264 16	46,158 71	4,105 45
1847	1,531	553	569	63,111 19	41,878 35	21,232 84
1848	1,698	607	652	67,576 69	58,905 84	8,670 85
1849	1,955	595	1,068	80,752 98	77,716 44	3,036 54
1850	2,193	602	903	86,927 05	80,100 95	6,816 10
1851	2,258	760	872	95,738 61	86,916 93	8,821 68
1852	2,639	996	1,019	112,656 34	95,916 91	16,739 43
1853	2,673	901	961	124,527 45	132,869 83	.....
1854	3,328	868	1,844	163,789 84	167,146 32	.....
1855	4,435	906	2,012	216,459 35	179,540 33	36,919 02
1856	4,960	1,024	2,506	192,588 02	199,931 02	.....
1857	4,771	1,010	2,896	196,132 01	211,582 09	.....
1858	5,364	934	3,695	203,716 16	193,193 74	10,522 42
1859	6,225	1,097	4,504	245,942 15	210,278 41	35,663 74
1860	7,653	1,084	4,778	256,352 59	252,820 80	3,531 79
1861	4,643	700	3,320	137,354 44	211,491 91	.....
1862	5,038	824	3,532	215,754 99	182,810 39	32,944 60
1863	6,014	787	4,184	195,593 29	189,414 14	6,179 15
1864	6,932	1,063	5,025	240,919 98	229,868 00	11,051 98
1865	10,664	1,937	6,616	348,791 84	274,199 34	74,592 50
1866	15,269	2,721	9,458	495,665 38	361,724 28	133,941 10
1867	21,276	3,597	13,026	646,581 92	639,263 32	7,318 60
1868	20,420	3,705	13,410	681,565 86	628,679 77	52,886 09
1869	19,271	3,624	13,997	693,145 81	486,430 78	206,715 03
1870	19,171	3,273	13,353	669,456 76	557,149 19	112,307 57
1871	19,472	3,366	13,056	678,716 46	560,595 08	118,121 38
1872	18,246	3,090	13,613	699,726 39	665,591 36	34,135 03
1873	20,414	3,248	12,864	703,191 77	691,178 98	12,012 79
1874	21,602	3,181	13,599	738,278 17	679,288 41	58,989 76
1875	21,638	3,094	14,837	743,433 36	721,657 71	21,795 65
1876	21,425	2,697	15,595	757,987 65	652,542 60	105,445 05
1877	20,308	2,809	14,187	732,342 85	613,152 62	119,190 23
1878	20,260	2,755	13,444	725,375 55	593,082 89	132,292 66
1879	20,050	2,620	13,213	703,931 47	529,638 97	174,292 50
1880	23,012	2,490	13,947	749,685 32	538,865 17	210,820 15
1881	26,059	2,406	16,594	853,665 89	605,173 28	248,492 61
1882	31,522	2,553	19,267	1,009,219 45	683,867 67	325,351 78
1883	34,576	2,741	22,383	1,146,240 00	675,234 86	471,005 14

It will be observed that the business of the Office has greatly increased during the past year, and it is now increasing in a steady ratio. With this increase of business there is, of course, a corresponding increase in the receipts of the Office, the amount paid in during the year ending December 31, 1883, being $1,146,240.00, which is $137,020.55 in excess of the amount received during the year 1882, and $471,005.14 in excess of all expenditures by and for the bureau during the year last past.

AN INCREASE OF FORCE NECESSARY.

I wish, in connection with the above exhibit, to respectfully call the attention of Congress to certain facts, which I trust may have some influence in securing the adoption of such measures as will in the future remove all just cause for the complaints that reach me from all

quarters and sections of the country touching the delay in dispatching the business which comes to this bureau.

I am daily in receipt of communications severely censuring the honorable Secretary and the Commissioner for not employing such additional force as is necessary to bring and keep the work of the bureau up to date. The impression seems to prevail that since the patrons of the Office have provided the funds for the prompt disposition of their business, some blame attaches to the Department or to this Office for not applying the money to the purpose for which it was received. I am daily appealed to by Senators and Members to make applications special, on the ground that if an examination is delayed until the case is reached in its regular order the value of the patent may be in large measure lost to the inventor. Although well disposed to oblige my friends, I cannot, without violating a well-considered rule of the bureau, comply with these requests. I know these delays are not only vexatious, but in some instances very disastrous to the interests involved. There is no valid reason why a single application should remain a week in the Office without being taken up for action, and as little excuse for compelling assignees of interests in patents to wait several months before their deeds can be recorded. Parties entitled to copies of records, which are indispensable as evidence on the trial of pending causes, are compelled to wait several weeks before they can be furnished.

The examining corps is greatly behind with its work simply because it is a physical impossibility with the number employed to keep it up. It has frequently been suggested that the force of the Office does not accomplish as much as ought to be required of it. Since I have taken charge of the Office I have been at pains to ascertain if those employed in the bureau are unfaithful or shirk duty in any wise. I note first that under the rules of the Office shirking is next to impossible, and absence in excess of the thirty days authorized by statute (unless in case of sickness) is not allowed, except in rare instances, and without pay. I am satisfied that no private employer in the country has more faithful and excellent service from his employés than is rendered by those employed in this bureau. There are exceptions, but they are very few, and, I may add, that in such cases what the individuals lack in earnest effort in the discharge of duty here they endeavor to make up by exceptional activity in securing influence and indorsement to induce the Department to retain them in the service and promote them.

It is evident that the Government never intended to make the Patent Office a source of revenue. It was and is desired to make it self-sustaining, and the fees were fixed and are as low as was and is deemed compatible with the possibility of providing ample revenue to secure all necessary facilities of every kind and character for the prompt and thorough dispatch of the business properly coming before it. Not a cent of money expended, directly or indirectly, for the support and maintenance of the Patent Office is raised by taxation. Every dollar is paid by those who have business before the Office—the inventors of the country. It is beyond question that, not only the inventors and those immediately interested in inventions, but the great body of the people as well, are interested in having the business of this bureau done promptly and thoroughly. The inventor does not want a worthless patent, nor are the people willing to pay a royalty when none can be justly claimed, nor do they wish to go into the courts to test the validity of a patent. The inventor not only wants to know whether he is legally entitled to a patent for the subject-matter of his application, but he desires and is entitled to have the question speedily determined.

To provide ample accommodations and a thoroughly-competent corps of examiners, clerks, and needful help, the inventors have paid to the Government a sufficient fund, which is held in trust for that purpose. Under these circumstances I respectfully submit that force enough should be employed to dispatch the business of the bureau thoroughly and without needless delay. The present force is utterly inadequate, nor will the increase suggested by my predecessor be sufficient.

INCREASE IN SALARIES.

I concur in what my predecessor said in his report, dated September 14, 1883, to the honorable the Secretary of the Interior in regard to salaries. The examining corps in this bureau should be composed of men of first-class ability and undoubted integrity. It is of consequence to inventors and to the people at large that patents should not be improvidently issued. The examining corps must, in the main, be relied upon to prevent this. Not one patent in fifty comes under the personal supervision of the Commissioner or his assistant. The examiners determine these important questions in the first instance, and in a great majority of cases *first* and *finally*. The Government, I submit, can afford (especially when inventors provide the funds) to pay as full compensation for first-class ability and strict integrity as a private individual or corporation. The experience of the Office is that it is next to impossible to secure, with the hope of retaining for more than a short period, assistant examiners whose thorough fitness renders them especially valuable to the service. They are constantly leaving to accept more lucrative employment outside. Since every conceivable advantage is on the side of *just*, not to say *liberal*, compensation, I trust it may please Congress to adopt the suggestions of my predecessor and provide the increase of salaries indicated in the estimates submitted, as well as for the increase of the force employed.

ROOM.

I cannot refrain from repeating what Mr. Commissioner Marble said in regard to the rooms occupied by the bureau. They are inadequate. I am compelled to keep valuable documents and records piled on the floor; some are in rooms so damp that the papers are moldy.

Many of the employés occupy small, dark, and damp rooms, and in numerous cases their health has been seriously impaired. Within a few years the entire building now occupied by the Department of the Interior will be required by this Office for the proper accommodation of its force and the safe keeping of its records and files.

Very respectfully, your obedient servant,

BENJ. BUTTERWORTH,

Commissioner.

Statement showing the number of the first patent, design patent, and reissued patent, and the number of the first certificate of registration of a trade-mark and a label issued in each calendar year since July 28, 1836, when the present series of numbers for letters patent commenced, together with the total number of each issued during the year.*

Year.	Number of first patent and certificate issued in each calendar year.					Number of patents and certificates of registration issued during each calendar year.						
	Patents.	Designs.	Reissues.	Trade-marks.	Labels.	Patents.	Designs.	Reissues.	Total patents.	Trade-marks.	Labels.	Total certificates.
1836 July 28	1					109						
1837	110					436						
1838	546		1			515		6				
1839	1,061		7			404		13				
1840	1,465		20			458		10				
1841	1,923		30			490		6				
1842	2,413		36			488		13				
1843	2,901	1	49			494	14	11	510			
1844	3,395	15	60			477	12	7	495			
1845	3,872	27	67			476	17	11	504			
1846	4,348	44	78			506	50	13	638			
1847	4,914	103	91			495	60	14	569			
1848	5,409	163	105			583	46	23	652			
1849	5,992	209	128			909	49	30	1,068			
1850	6,981	258	158			884	83	26	993			
1851	7,865	341	184			757	90	25	872			
1852	8,622	431	209			890	109	20	1,019			
1853	9,512	540	229			846	86	29	961			
1854	10,358	626	258			1,750	57	22	1,844			
1855	12,117	681	286			1,891	70	51	2,012			
1856	14,008	753	337			2,316	107	83	2,506			
1857	16,324	860	420			2,686	113	97	2,896			
1858	19,010	973	517			3,467	102	126	3,695			
1859	22,477	1,075	643			4,165	108	231	4,504			
1860	26,642	1,183	874			4,361	183	232	4,778			
1861	31,005	1,366	1,106			3,040	142	147	3,329			
1862	34,045	1,508	1,253			3,221	195	116	3,532			
1863	37,266	1,703	1,369			3,781	176	227	4,184			
1864	41,047	1,879	1,596			4,638	139	248	5,025			
1865	45,685	2,018	1,844			6,099	221	296	6,616			
1866	51,784	2,239	2,140			8,874	294	290	9,458			
1867	60,658	2,533	2,430			12,301	325	400	13,026			
1868	72,959	2,858	2,830			12,544	446	420	13,410			
1869	85,503	3,304	3,250			12,957	506	534	13,997			
1870	98,460	3,810	3,784	1		12,157	737	439	13,333	121		121
1871	110,617	4,547	4,221	122		11,687	905	464	13,056	486		486
1872	122,304	5,442	4,687	608		12,300	884	529	13,613	491		491
1873	134,504	6,336	5,216	1,099		11,616	747	501	12,864	492		492
1874	146,120	7,063	5,717	1,591	1	12,230	886	483	13,599	557	234	791
1875	158,350	7,969	6,200	2,150	233	13,291	915	631	14,837	1,138	232	1,370
1876	171,641	8,884	6,831	3,288	465	14,172	802	624	15,595	959	472	1,431
1877	185,813	9,686	7,452	4,247	937	12,920	699	568	14,187	1,216	392	1,608
1878	198,733	10,385	8,020	5,463	1,329	12,345	590	509	13,444	1,455	492	1,947
1879	211,078	10,975	8,529	6,918	1,821	12,133	592	488	13,213	872	355	1,227
1880	223,211	11,567	9,017	7,790	2,176	12,926	515	506	13,947	349	203	552
1881	236,137	12,082	9,523	8,139	2,379	15,548	565	471	16,584	836	202	1,038
1882	251,685	12,647	9,994	8,973	2,581	18,135	861	271	19,267	947	304	1,251
1883	269,820	13,508	10,265	9,920	2,885	21,196	1,020	167	22,383	902	906	1,808
1884	291,016	14,528	10,432	10,822	3,791							

*Prior to this date and the present series of numbers 9,957 patents were issued.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 26—No. 7. TUESDAY, FEBRUARY 12, 1884. PRICE—$5 per year

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., February 4, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that James F. Lingenfelter, of Nowark, Ohio, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
Washington, February 1, 1884.

SIR: I am directed by the Secretary to inform you that the order of the Department, dated May 24, 1877, disbarring C. P. S. Daniels, of Midway, Alabama, from practice before the Department and its bureaus, has this day been rescinded.

Very respectfully,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Amendment of Rule 26.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, February 4, 1884.

Rule 26 of the Rules of Practice (revised edition November 15, 1883) is hereby amended to read as follows:

26. In case of an assignment of the whole interest in the invention, or of the whole interest in the patent to be granted, the patent will, upon request of the applicant, issue to the assignee; and if the assignee hold an undivided part interest, the patent will, upon like request, issue jointly to the inventor and the assignee; but the assignment in either case must first have been entered of record, and at a day not later than the date of the payment of the final fee; and if it be dated subsequently to the execution of the application, it must give the date of execution of the application, or the date of filing, or the serial number, so that there can be no mistake as to the particular invention intended. The application and oath must be made by the actual inventor, if alive, even if the patent is to issue to an assignee. If the inventor be dead, it may be made by the executor or administrator.

(Signed) BENJ. BUTTERWORTH,
Commissioner.

Approved to take effect February 7, 1884.

(Signed) H. M. TELLER,
Secretary of the Interior.

Amendment of Rule 62.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, January 23, 1884.

Rule 62 of the Rules of Practice (revised November 15, 1883) is hereby amended to read as follows:

62. All cases in the Patent Office are classified and taken up for examination in regular order, those in the same class of invention being examined and disposed of, as far as practicable, in the order in which the respective applications are completed; but applications which have received action by an examiner and have been put into condition for further action on his part shall be entitled to precedence over completed applications in the same class of invention which have received no action. When, however, the invention is deemed of peculiar importance to some branch of the public service, and when for that reason the head of some department of the Government specially requests immediate action, the case will be taken up out of its order. These, with cases remanded by an appellate tribunal for further action, statements of grounds of decisions by primary examiners, provided for in Rules 130 and 140, applications for extensions, for reissue, for letters patent for inventions for which foreign patents have already been obtained, and for designs, have precedence over all others in the order enumerated. Action upon such cases in the order indicated will be promptly made by the examiner in charge, to the exclusion of all other business interfering therewith.

(Signed) BENJ. BUTTERWORTH,
Commissioner.

Approved to take effect February 1, 1884.

(Signed) H. M. TELLER,
Secretary of the Interior.

Issue of February 12, 1884.

Patents	404	No. 293,211 to No. 293,614, inclusive.
Designs	37	No. 14,640 to No. 14,676, inclusive.
Trade-marks	17	No. 10,924 to No. 10,940, inclusive.
Labels	16	No. 3,883 to No. 3,898, inclusive.
Reissues of patents	1	No. 10,449.
Total issue	475	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	9	2
Austria			Hawaiian Islands		
Barbadoes			Hayti		
Belgium			Italy		
Bermuda			Mexico	1	
Brazil			Portugal	1	
Canada	7		Russia		
Chili	1		Scotland	1	
Colombia, U. S. of			Sweden	1	
Cuba			Switzerland		1
Denmark					
Ecuador			Total to citizens of		
England	8		foreign countries	33	3
France	4				

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	.....	.....	Nebraska	2	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	2	.....	New Hampshire	1	.....
California	10	.....	New Jersey	21	7
Colorado	.....	.....	New Mexico Territ'y	1	.....
Connecticut	20	.....	New York	97	11
Dakota Territory	.....	.....	North Carolina	.....	.....
Delaware	1	.....	Ohio	33	1
District of Columbia	3	.....	Oregon	1	.....
Florida	.....	.....	Pennsylvania	36	2
Georgia	2	.....	Rhode Island	10	.....
Idaho Territory	.....	.....	South Carolina	6	.....
Illinois	33	1	Tennessee	2	1
Indiana	9	.....	Texas	8	.....
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	5	1	Vermont	.....	.....
Kansas	6	.....	Virginia	5	2
Kentucky	7	.....	Washington Territ'y	.....	.....
Louisiana	2	2	West Virginia	.....	.....
Maine	6	.....	Wisconsin	12	.....
Maryland	4	.....	Wyoming Territory	.....	.....
Massachusetts	38	.....	United States Army	.....	.....
Michigan	10	.....	United States Navy	.....	.....
Minnesota	3	.....			
Mississippi	2	.....	Total to citizens of the United States	408	30
Missouri	9	2			
Montana Territory	.....	.....			

DESIGNS.

14,640.—VEGETABLE-DISH.—*Henry Alcock*, Cobridge, county of Stafford, England. Application filed December 13, 1883. Term of patent 7 years.

14,641.—COFFIN-PLATE.—*Eli H. Eldridge* and *John H. Eldridge*, Taunton, Mass. Application filed August 10, 1883. Term of patent 7 years.

14,642 to 14,663, inclusive.—CARPET.—*James L. Folsom*, Brooklyn, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed January 9, 1884. Term of patents 3½ years.

14,664.—CARPET.—*Walter J. Gadsby*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed January 7, 1884. Term of patent 3½ years.

14,665 and 14,666.—TRIMMING.—*George F. Ominder*, New York, N. Y. Applications filed December 29, 1883. Term of patents 3½ years.

14,667.—FONT OF PRINTING-TYPE.—*John Graham*, Chicago, Ill., assignor to *Marder, Luse & Co.*, same place. Application filed October 12, 1883. Term of patent 14 years.

14,668 to 14,671, inclusive.—CARPET.—*Arthur L. Halliday*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed January 4, 1884. Term of patent 3½ years.

14,672.—LADY'S MITT.—*Warren P. Jennings*, Brooklyn, N. Y. Application filed December 19, 1883. Term of patent 7 years.

14,673.—CARPET.—*David G. Melville*, Medford, assignor to *The Roxbury Carpet Company*, Boston, Mass. Application filed January 7, 1884. Term of patent 3½ years.

14,674.—INSULATOR.—*Samuel Oakman*, Melrose, Mass. Application filed November 2, 1883. Term of patent 7 years.

14,675.—COLLAR AND CUFF.—*Frederick Prêbe*, Jersey City, N. J. Application filed December 1, 1883. Term of patent 3½ years.

14,676.—FENDER.—*James H. White*, New York, N. Y., assignor to *The Manhattan Brass Company*, same place. Application filed December 29, 1883. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

10,924.—BITTERS.—*William H. Burt*, New York, N. Y. Application filed January 15, 1884.

"The arbitrarily-selected word-symbol 'SWA-GEH.'"

10,925.—PLUG, TWIST, FINE-CUT, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*William T. Hancock*, Richmond, Va. Application filed January 12, 1884.

"The words 'THE FOUR SEASONS.'"

10,926.—PLUG, TWIST, FINE-CUT, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*William T. Hancock*, Richmond, Va. Application filed January 12, 1884.

"The word 'MARITANA.'"

10,927.—PLUG-TOBACCO.—*Liggett & Myers Tobacco Company*, St. Louis, Mo. Application filed January 8, 1884.

"A star-shaped tag or label having an aperture at its center, and of such material, color, or appearance as to contrast strongly with the surface upon which it is affixed."

10,928.—FERTILIZERS.—*Cord Meyer, Jr.*, Newtown, N. Y. Application filed January 8, 1884.

"The letters or word 'ACME.'"

10,929.—CIGARS.—*Gustave Paulsen*, Chicago, Ill. Application filed December 18, 1883.

"The words 'GARDEN CITY,' and three separate views or pictures, one of the pictures being a view of a frontier scene, consisting of a log hut, some trees, and a camp-fire, around which are a group of four Indians. The second picture shows a burning city on the shores of a lake or sheet of water; and the third picture shows an active city on the shores of a lake or sheet of water, with the sun in the horizon."

10,930.—PILE-OINTMENT.—*Will R. Post*, Catskill, N. Y. Application filed January 2, 1884.

"The word 'GITST.'"

10,931.—BOLTING-CLOTH.—*O. Schindler-Escher*, Zurich, Switzerland. Application filed December 19, 1883.

"A colored line or thread along one selvage of the bolting-cloth."

10,932.—LINIMENT AND INHALENT.—*Shepherd Spencer*, Knoxville, Tenn. Application filed September 17, 1883.

"A picture representing in the foregrounnd a shepherd reclining at the foot of a tree. In his hand he holds his crook, and by his side lies his dog. In front of him his sheep are grazing, and in the backgrounnd rises the spire of a church."

10,933.—CORDIALS AND LIQUORS.—*Luyties Brothers*, New York, N. Y. Application filed January 11, 1884.

"The word 'CALORIC.'"

10,934.—PACKAGE DYES.—*Frank A. Ransom*, Dunellen, N. J. Application filed December 27, 1883.

"The arbitrarily-selected word or term 'HOUSEHOLD.'"

10,935.—PACKAGE DYES.—*Frank A. Ransom*, Dunellen, N. J. Application filed December 27, 1883.

"The arbitrarily-selected words or term 'RICH WOMAN'S.'"

10,936.—PACKAGE DYES.—*Frank A. Ransom*, Dunellen, N. J. Application filed December 27, 1883.

"The arbitrarily-selected word or term 'GEM.'"

10,937.—PACKAGE DYES.—*Frank A. Ransom*, Dunellen, N. J. Application filed December 27, 1883.

"The arbitrarily-selected words or term 'RICH MAN'S.'"

10,938.—PACKAGE DYES.—*Frank A. Ransom*, Dunellen, N. J. Application filed December 27, 1883.

"The arbitrarily-selected words or term 'POOR WOMAN'S.'"

10,939.—PACKAGE DYES.—*Frank A. Ransom*, Dunellen, N. J. Application filed December 27, 1883.

"The arbitrarily-selected word 'COTTAGE.'"

10,940.—CORNMEAL.—*Ira Crandall Woodward* and *Charles H. Crofut*, Cleveland, Ohio. Application filed December 27, 1883.

"The word 'GOLD-DUST.'"

LABELS.

3,883.—Title: "CHEMICAL PARLOR ILLUMINATOR."—*Lyman H. Abrams*, Philadelphia, Pa. Application filed January 21, 1884.

3,884.—Title: "BARNSLEY DUCKS."—*Adolph Bernheimer*, New York, N. Y. Application filed January 21, 1884.

3,885.—Title: "BELFAST FANCY DRILLS."—*Adolph Bernheimer*, New York, N. Y. Application filed January 21, 1884.

3,886.—Title: "BARNSLEY DRILL."—*Adolph Bernheimer*, New York, N. Y. Application filed January 21, 1884.

3,887.—Title: "GREENBACKS THE PEOPLE'S CHOICE." (FOR CIGARS.) *Henry Coan*, St. Louis, Mo. Application filed January 17, 1884.

3,888.—Title: "NEUTRALINE," (FOR A PREPARATION FOR THE FEET.)—*Henry G. Haring*, Philadelphia, Pa. Application filed January 17, 1884.

3,889.—Title: "OLD HICKORY," (FOR BITTERS.)—*Herrmann & Grossman*, New Orleans, La. Application filed January 22, 1884.

3,890.—Title: "CARBONATED LITHIA WATER." (FOR A MEDICINE.) *Christian Lewis Keppler*, New Orleans, La. Application filed January 19, 1884.

3,891.—Title: "ÄECHTER AROMATIQUE FEINSTER MAGEN-LIQUEUR."—*Julius Lappe*, Neudietendorf, Thuringia, Germany. Application filed January 22, 1884.

3,892.—Title: "ÄECHTER AROMATIQUE-FEINSTER MAGEN-LIQUEUR."—*Julius Lappe*, Neudietendorf, Thuringia, Germany. Application filed January 22, 1884.

3,893.—Title: "MADAME C. LEWENBERG'S OPALINE," (FOR THE CURE OF CHAPPED HANDS, &C.)—*Clara Lewenberg*, New York, N. Y. Application filed January 17, 1884.

3,894.—Title: "CENTENNIAL" (FOR PAINTS, LEADS, ZINCS, &C.)—*William E. Lucas*, New York, N. Y. Application filed January 21, 1884.

3,895.—Title: "MILLER'S NECKTIE HOLDER AND FASTENER."—*Henry F. Miller*, New York, N. Y. Application filed January 19, 1884.

3,896.—Title: "NEW PROCESS HOMINY."—*Martin L. Mowrer*, Newark, N. J. Application filed January 12, 1884.

3,897.—Title: "INFALLIBLE CORN CURE. E. M. B. SCOTT, MANUFACTURING CHEMIST, SOLE PROPRIETOR, OTTUMWA, IOWA."—*E. M. B. Scott*, Ottumwa, Iowa. Application filed January 18, 1884.

3,898.—Title: "ARTOPHYLAX" (FOR A PREPARATION FOR THE HAIR.) *Peter Stieb*, New York, N. Y. Application filed January 18, 1884.

DISCLAIMER.

66,499.—*George Johnston* and *Edwin G. Smith*, Auburn, Cal. Patent dated July 9, 1867. IMPROVED AMALGAMATOR AND CONCENTRATOR. Disclaimer filed January 31, 1884, by the present assignee, *The True Vanning Machine Company*, by Sydney D. Miller, president.

Enters its disclaimer "to the words 'or percussive,' as the same occur in the following sentence in the specification, namely: 'A rocking or percussive motion may be employed for the same purpose; but we think a shaking motion preferable.' By this disclaimer it is intended to exclude from the first claim a revolving belt or apron having a percussive motion, and leave said claim to be considered as though it read as follows:

'1. The revolving belt or apron F, with its raised edges O, having a shaking or rocking motion from side to side,' (not a percussive motion,) 'substantially as and for the purpose described.'"

PATENTS

GRANTED FEB. 12, 1884.

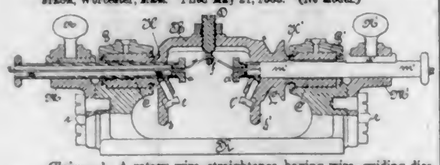
293,211. CAR-WHEEL. RICHARD N. ALLEN, Cleveland, Ohio. Filed July 28, 1883. (No model.)



Claim.—1. A car-wheel composed of a hub, a single central plate, and a tire provided with an inwardly-projecting web, in which the tire and the central plate are secured together by two tongue-and-groove locks, one formed upon the web and the outer face of the central plate, and the other upon the central plate and the inner edge of the tire, and by bolts passed through the central plate and the web of the tire.

2. A car-wheel composed of a hub, a single central plate, and a tire provided with an inwardly-projecting web, in which the tire is secured to the central plate by a tongue-and-groove lock formed upon the web of the tire and the outer face of the central plate, and by bolts passed through the central plate and the web of the tire.

293,212. MACHINE FOR STRAIGHTENING WIRE. CARL ANGSTRÖM, Worcester, Mass. Filed May 21, 1883. (No model.)



Claim.—1. A rotary wire-straightener having wire-guiding dies, which are adapted for adjustment toward or from each other in a direction longitudinal with the axis of rotation, for the purpose set forth.

2. In a rotary wire-straightener, the end guides or wire-holders, *a* and *a'*, adjustable toward and from each other, substantially as set forth.

3. In a rotary wire-straightener, the end guides, *a* and *a'*, adapted for adjustment toward and from each other, and means for supporting them in stationary position, in combination with the revolving mandrel, for the purpose set forth.

4. In a rotary wire-straightener, the end guides, *a* and *a'*, adapted for adjustment to and from each other, and in combination therewith, means for supporting said guides in connection with the mandrel for rotative action therewith.

5. In a rotary wire-straightener, the combination, with the revolving mandrel, of adjustable end guides, as *a a'*, adapted for stationary or rotative action at will, substantially as set forth.

6. In a rotary wire-straightener, the combination of longitudinally-adjustable, end dies or wire-guides, *a* and *a'*, and a radially-adjustable wire-guide, *f*, with a revolving mandrel or flier, for the purposes set forth.

7. In a rotary wire-straightener, the revoluble mandrel B, formed open at one side, and provided with counter-weights or projections *d d'*, substantially as and for the purpose set forth.

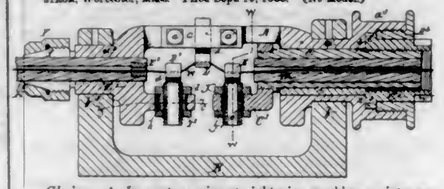
8. In a revolving wire-straightener, the combination, substantially as described, of a revolving mandrel or flier having hollow journals, the end dies or wire-guides fixed in longitudinally-adjustable guide-supporting tubes extending through the mandrel-journals, the tube-supporting brackets attached to the bed-frame, and means for retaining said tubes and guides at adjusted positions, as set forth.

9. In a rotary wire-straightener, the combination, with the revoluble mandrel B, provided with journals C C', the bearing portion of which is of greater diameter than the neck portions K, of the journal-boxes G G' for the mandrel-journals, provided with inwardly-projecting lips or collars *s* and *s'*, that embrace the journals at the ends of their bearing-surfaces, substantially as and for the purposes set forth.

10. In a rotary wire-straightener, the combination, with the revoluble flier or mandrel, of the screw stud or bar D, provided with a guide hole or loop, *f*, for the purpose set forth.

11. In a rotary wire-straightener, the combination, with the wire tubes *m* and *m'* and bed-plate R, of the tube-supporting bearings M and M', set-screws N and N', and the gib-keys *x x'*, as and for the purpose set forth.

293,213. MACHINE FOR STRAIGHTENING WIRE. CARL ANGSTRÖM, Worcester, Mass. Filed Sept. 19, 1883. (No model.)



Claim.—1. In a rotary wire-straightening machine, an intermediate wire-guide adapted for longitudinal adjustment in relation to the revolving mandrel and end guides, as and for the purpose set forth.

2. In a rotary wire-straightening machine, the combination, with the revoluble mandrel provided with longitudinally-adjustable end guides, of the intermediate wire guide or guides adjustable in longitudinal direction, as set forth.

3. In a rotary wire-straightening machine, the combination, with the mandrel, of the intermediate wire-guides adapted for adjustment both radially and in longitudinal direction, substantially as set forth.

4. A guide for rotary wire-straightening machines having its wire-guiding eye formed with an opening or slot, *d*, for admitting the wire into said guide from one side without the necessity of threading its end through the eye, as set forth.

5. The guide D, for rotary wire-straightening machines, formed as a loop or hook of flat metal, with the guiding-eye *d'* and passway *d*, for the introduction of the wire, substantially as set forth.

6. In a rotary wire-straightening machine, the combination, with the revolving mandrel, of a wire-guide having flattened sides, and a clamp device for connecting said guide with the mandrel and retaining it at any desired position of radial and longitudinal adjustment, as set forth.

7. The combination, with the revoluble mandrel A in a wire-straightening machine, of the flat wire-guide D, the clamp-bar G, and set-screws G', for the purposes set forth.

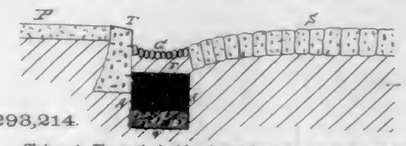
8. In a rotary wire-straightening machine, the combination, with a tubular guide or bushing, as E', of a revoluble mandrel having the divided and tapered end *f*, and the conically-bored chuck-nut F, for compressing said tapered end inward upon said bushing, as and for the purpose set forth.

9. The combination, with the revolving mandrel, of the longitudinally-adjustable tube or guide carrier provided with an arm, C', carrying radially-adjustable wire-guide E, substantially as and for the purpose set forth.

10. The combination, with the revoluble arbor A and longitudinally-adjustable tube carrying the wire guide or guides E, of the flanged sleeve-nut O', fitted with a screw-thread upon said tube, and the collar A^4, fitted with a screw-thread within the mandrel end, as and for the purposes set forth.

11. The combination, with the revoluble mandrel, of the longitudinally-adjustable tube C, carrying a radially-adjustable wire-guide, as E, the radially and longitudinally adjustable intermediate guide, D, and the radially and longitudinally adjustable guide D', as and for the purposes shown and described.

293,214. ASPHALTIC-CONCRETE CONDUIT. WILLIAM W. AVERELL, Bath, N. Y. Filed May 26, 1883. (No model.)



293,214.

Claim.—1. The method of forming an insulating concrete, consisting in first ascertaining the voids or interstices of the silicious materials used, and then adding such a percentage of the binding agent thereto, substantially as set forth.

2. The insulating-concrete hereinbefore described, consisting of silicious matter, asphaltum, and petroleum residuum, combined in the proportions ascertained or determined by the measurement of the interstices or voids, as set forth, and substantially as described.

3. An insulating asphaltic-concrete conduit formed of silicious materials and tempered asphalt, the percentage of the latter being equal to the ascertained voids of the silicious material, and containing wires laid *in situ*, substantially as set forth.

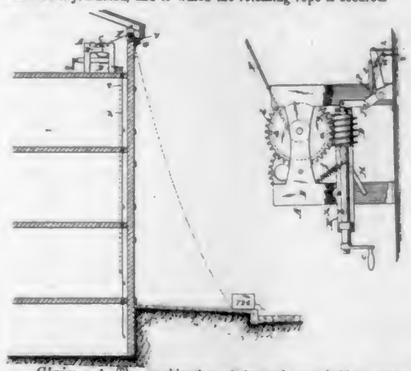
4. An insulating asphaltic-concrete conduit formed of silicious materials and tempered asphalt, the percentage of the latter being equal to the ascertained voids of the silicious material, and containing tubes laid *in situ*, substantially as set forth.

5. An insulating asphaltic-concrete conduit formed of silicious materials and tempered asphalt, combined in the proportions set forth, and having its top finished off to form part of the street or roadway, substantially as set forth.

6. An insulating asphaltic-concrete conduit formed of silicious materials and tempered asphalt, combined in the proportions set forth, and containing pipes or tubes laid and lined with paper *in situ*, substantially as set forth.

293,215. FIRE-ESCAPE. N. ROBERT BAAR, CALVIN J. COE, and IRA R. COE, Lowville, N. Y. Filed May 23, 1883. (No model.)

Brief.—The worm and shaft which winds up the flexible ladder and which holds the reel from turning when the ladder is wound up is journaled in a frame which can be lowered at one end, to permit the ladder to unwind from the reel, by means of toggle-jointed arms, in which that end is journaled, and to which the releasing-rope is secured.



Claim.—1. The combination of the reel, rope ladder, worm D, adapted to a toothed wheel upon the reel-shaft, frame E, carrying the worm, and appliances for adjusting the frame, substantially as specified.

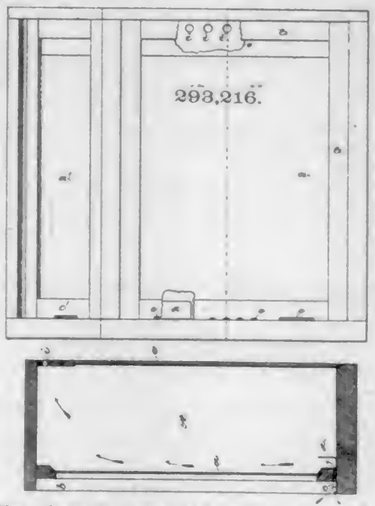
2. The combination of the worm-frame E, appliances for adjusting the same, operating-cords extending therefrom to rooms in the building, and a supplemental operating device extending to a point accessible to the clerk or attendant, substantially as described.

3. The combination of the frame B, reel, pivoted frame E, carrying a worm and shaft, toggle-arms J, and cables A, extending to the different rooms, substantially as specified.

4. The combination, with the series of reeling apparatus A, and appliances for releasing the reel of each apparatus, of a shaft, *p*, with arms bearing upon the releasing appliance of each apparatus, and means for operating the said shaft, substantially as set forth.

293,216. STORE-WINDOW. LYMAN CLAFF BAILEY, Calais, Me. Filed July 10, 1883. (No model.)

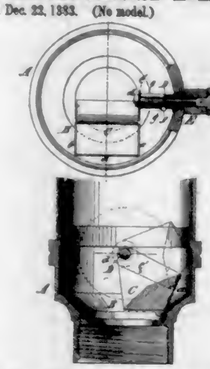
Claim.—A store or show window consisting of the fixed exterior window, *a*, having at its bottom the air-openings *c* and the air-deflecting plate *d*, arranged before said openings, to direct the incoming air upwardly along the interior surface of the pane and the interior window or



293,216.

partition, *e*, having the openings *i* at the top thereof, substantially as shown, and for the purpose described.

293,217. BINOCULAR MICROSCOPE. EDWARD BAUSCH, Rochester, N. Y. Filed Dec. 22, 1883. (No model.)

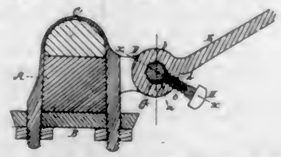


Claim.—1. In a binocular microscope, a swinging prism-holder adapted to support the prism within the body of the microscope either in or out of the field of vision, as herein specified.

2. The combination, with the doubly-reflecting prism of a binocular microscope, of a prism-supporting arm and spindle attached thereto, and extending outward through the microscope-body, as described.

3. The combination, in a binocular microscope, of the prism C, prism-holder B, spindle D, provided with the stop-pin *f*, and the slotted sleeve E, as herein specified.

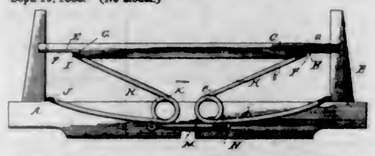
293,218. ANTI-RATTLER FOR THILL-COUPLINGS. JOB N. BERRY, Boston, Mass. Filed Dec. 17, 1883. (No model.)



Claim.—1. As an improvement in anti-rattlers for thill-couplings, the hollow screw H, having an elastic substance located therein, in combination with the axle-clip C, thill-iron E, and connecting-bolt O, substantially as set forth.

2. In combination with the hollow screw H, the spring *c*, and pressure-block *d*, located therein, for keeping the rear surface of the thill-eye *a* and contiguous surface of the connecting-bolt G in contact, as and for the purpose described.

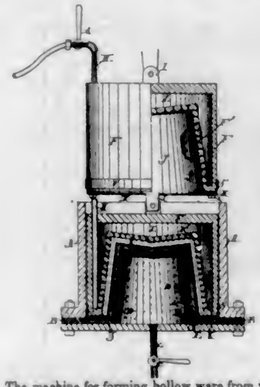
293,219. VEHICLE-SPRING. GEO. E. BLAINE, Ringgold, Ga. Filed Sept. 19, 1883. (No model.)



Claim.—1. The combination, with the bolster A, provided with the standards B and coil-support N, of the sliding bolster C and springs H H, all constructed, arranged, and operating as set forth.

2. The combination of stationary bolster A, having standards B, bolster C, having at each end a recess or notch, D, and a sheathed recess, E, in the under surface, and a notch or shoulder, G, the springs H, each having a short arm, I, adapted to rest and slide within said recess E and support the bolster C, coils K L, and arms J, adapted to rest upon and with the coils embrace the stationary bolster A, and the coil-supports M, attached to said bolster A, all substantially as and for the purpose herein shown and described.

293,220. MACHINE FOR FORMING HOLLOW WARE FROM PAPER-PULP. JOSEPH G. BODGE, Waterville, Me. Filed June 19, 1883. (No model.)



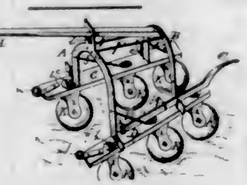
Claim.—1. The machine for forming hollow ware from wood pulp, consisting of the cylinder A, containing the perforated male die or former D, combined with the plunger F, containing female die F', chamber L, rubber bag J, and pipe H, all substantially as described and shown.

2. In a machine for forming hollow ware, the perforated male die B, over which fits the female die F", lined with the rubber bag J, formed smaller than the female die, combined with the chamber L and pipe H, by means of which the bag J may be held away from the forming pail and by a hydraulic pressure afterward applied, substantially as shown and described.

3. The process of forming hollow ware from wood pulp on the outside of a perforated male die, consisting of lowering over the male die a female die lined with a rubber bag, which bag is expanded away from the forming article by suction or otherwise, and after the article is formed allowing the bag to collapse and immediately applying a hydraulic pressure, substantially as described and shown.

4. The process of forming hollow ware on the outside of a male die, consisting of forcing over it a female die of larger diameter lined with a rubber bag, and applying a heavy hydraulic pressure on the outside of said bag as soon as the article is formed, substantially as shown and described.

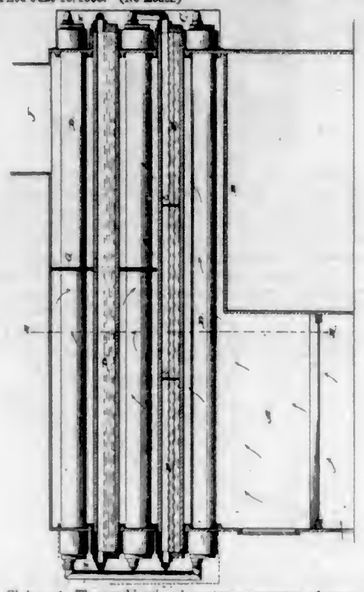
293,221.



293,221. CULTIVATOR. LOUIS A. BRINGHER, Donaldsonville, La. Filed Oct. 20, 1881. (No model.)

Claim.—A cultivator composed of side pieces, C D, provided with yoke-standards *i* and revolving disks K, the said side pieces adjustably secured by stirrups *e* to the arches A B, as described, and the machine provided with a beam, H, and having strengthening-rods *g g'*, braces *f*, and a guide-handle, O, substantially as and for the purpose specified.

293,222. STEAM-GENERATOR. GEO. F. BROTT, Washington, D. C. Filed June 15, 1883. (No model.)



Claim.—1. The combination, in a steam-generator, of two or more series of steam-generating tubes or flues, each of said tubes or flues being adapted to constantly remain partially filled with water by connecting the exit-tubes near the upper surface thereof and communicating with each other, the ends of said tubes being connected in pairs by double-headers provided with plugs *b b*, substantially as described.

2. The combination, in a steam-generator, of two or more series or sections of tubes arranged above each other, the ends of each pair of tubes united by a cap, which cap is screw-threaded, and has a circulating-tube near its upper surface cast therewith, and provided with plugs *b b*, as set forth.

3. A steam-generator composed of a series or sections of generating tubes or flues, each of said tubes being adapted to be constantly supplied with water, in combination with communicating tubes arranged in such manner that the water entering the upper section of generating-tubes must traverse the entire number of tubes, and having a separate series of steam-and-water-circulating tubes running in opposite directions, in the manner set forth and described.

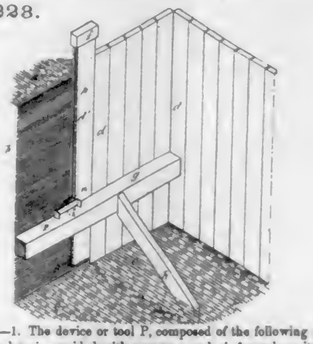
4. The combination, in a steam-generator, of two or more series or sections of tubes or flues with a steam-separating series, each of said series having communicating tubes connected to the upper portion of said tubes, and a steam-conveying pipe connecting the lower series to the upper, substantially as described.

5. The combination of a boiler composed of sections, consisting of the lower series of tubes, which are partially filled with water, and having a steam-space, and being connected with the upper series of steam-drums, which are adapted to steam alone, and with the intermediate horizontal partition arranged below said drums and running partially back to the rear of the boiler, and arranged in such manner as to protect the steam-tube drums from direct contact with the flame, and also form an outlet for the waste gases, smoke, &c., substantially as described.

293,223. DEVICE FOR GUIDING TONGUED AND GROOVED SHEATHING-PLANKS. TRUMAN B. BROWN, New York, N. Y. Filed Aug. 18, 1883. (No model.)

Brief.—A device for guiding tongued and grooved sheathing-planks, consisting of a circumferential grooved pulley placed between two parallel bars, which fits over the tongue of the plank to be driven. One of the parallel bars is provided with beveled spikes for securing it to the breast-piece.

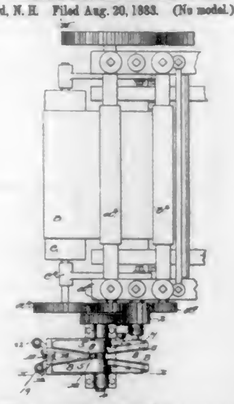
293,223.



Claim.—1. The device or tool P, composed of the following parts, namely: the bar *i*, provided with prongs *s* and *s'*, formed on its outwardly-extending ends *k*, the bar *l*, welded or otherwise attached to said bar *i*, and the sheave or pulley *n*, pivoted or journaled between said bars *i* and *l*, and provided with the circumferential groove *n'*, all substantially as herein shown and described, and for the purpose set forth.

2. In combination with the bars *l i k* and pulley *n*, all constructed substantially as described, the prongs or spikes *s* and *s'*, the latter being beveled or inclined, as shown and described, for the purpose set forth.

293,224. MACHINE FOR LAP-SHAVING HOOPS. HENRY F. CAMPBELL, Concord, N. H. Filed Aug. 20, 1883. (No model.)



Claim.—1. The combination, substantially as shown and described, in a barrel-hoop machine, of rotary cutters, a table to support the hoop while being pointed, a block fast to the framing and supporting such table, and a V-shaped gage beneath said table, and adjustably held in said block, to make a variable V-shaped pocket between said block and one of the cutters, to bevel the hoop, as set forth.

2. In a lap-shaving machine, a block provided with a rest for one edge of the hoop to be beveled, a table to support the hoop while being pointed, and a cutter, combined with the pivoted and adjustable wedge-shaped gage 14, substantially as shown and described, and for the purpose specified.

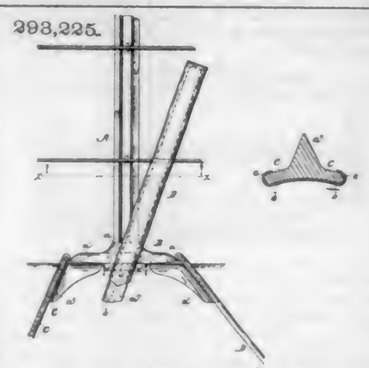
3. In a lap-shaving machine, a block provided with a rest for one edge of the hoop to be beveled, a table, and a cutter, combined with an adjustable gage to enable the pocket between the said rest and table to be made more or less tapering from edge to edge, substantially as described.

4. In a lap-shaving machine, the combination, substantially as shown and described, of a block provided with a rest for one edge of the hoop to be beveled, a table to support the hoop while being pointed, cutters, a pivoted and adjustable wedge-shaped gage, and guide-rollers to direct the stuff while being pointed and beveled, as set forth.

293,225. IRON OR STEEL FENCE-POST. ROBT. J. CARSON, Dixon, assignor of one-half to Edward Ratz, Belleville, Ill. Filed Aug. 14, 1883. (No model.)

Claim.—1. The fence-post base-piece B, consisting of a central portion, *a*, adapted to support the post, and of two or more radial arms, *a' a'*, having depending and inclined portions *a'' a''*, with the flanges or ribs C C on their vertical or lateral edges, in combination with the pegs

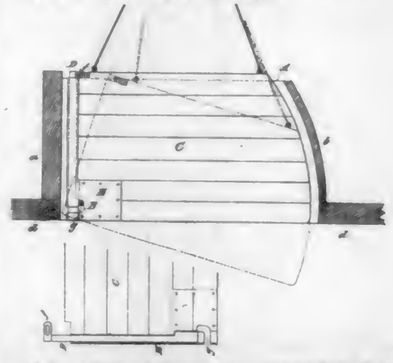
293,225.



D D, having on their vertical or lateral edges the flanges *c c*, adapted to engage or clasp the flanges or ribs C C, substantially as shown and described, and for the purpose set forth.

2. The pegs D D, made curved or curvilinear between their vertical edges, and having on the said edges the flanges *c c*, in combination with the radial arms *a' a''*, curved inwardly on their outer faces, and provided with the flanges C C, substantially as and for the purposes specified.

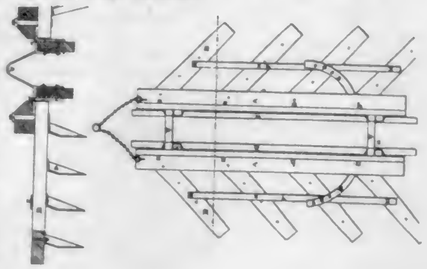
293,226. CENTER-BOARD FOR VESSELS. ROBERT CRITER, New York, N. Y. Filed Nov. 2, 1883. (No model.)



Claim.—1. The combination, with a center-board having its pivot-corner sheathed and provided with a right-angled slot extending inward and upward for receiving the pivotal pin, of a bolt adapted to slide in the sheathing and close the said right-angled slot, to retain the pivotal pin therein, as herein specified.

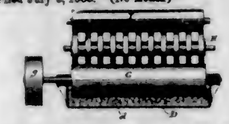
2. The center-board C, provided with the sheathing E, having the right-angled slot *g*, the bolt D, adapted to slide in the said sheathing and close the said slot, and the fixed pivotal pin B, in combination, as specified.

293,227. HARROW FOR CULTIVATING LISTED CORN. BYRON CLARK, Greenwood, Nebr., assignor of one-half to Obidiah Hull, same place. Filed July 7, 1883. (No model.)



Claim.—In combination with the runners C C, connected by arches U U, the harrow frames or wings A B, hinged to said runners, as shown, substantially as and for the purpose set forth.

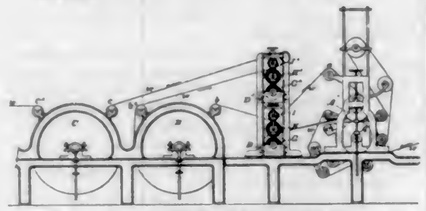
293,228. MANUFACTURE OF ORNAMENTAL PAPER. WINTHROP MURRAY CRANE, Dalton, Mass., assignor to Albert G. Goodall, New York, N. Y. Filed July 5, 1883. (No model.)



Claim.—1. The hereinbefore-described art, method, or process of surface-printing or coloring paper during the process of manufacture, which consists in applying the coloring material to either or both surfaces of the continuous web after the same has been consolidated and partially dried by passing through the press-rolls of the machine, as set forth.

2. The new article of manufacture hereinbefore described, which consists of a paper surface printed or colored after the web has been compressed and a portion of its moisture expelled by passing through the press-rolls of the paper-machine in the process of manufacture.

293,229. MACHINERY FOR MANUFACTURING ORNAMENTAL PAPER. WINTHROP MURRAY CRANE, Dalton, Mass. Filed July 5, 1883. (No model.)



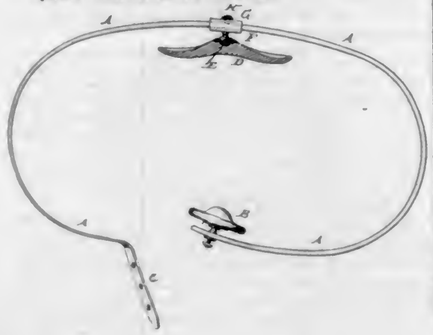
Claim.—1. In a paper-making machine, the combination, substantially as hereinbefore set forth, of the press-rollers, the drying-cylinders, and the color-printing roller revolving in contact with the paper web between the press-rollers and the drying-cylinders.

2. In a paper-making machine, the combination, substantially as hereinbefore set forth, of the press-rollers, two or more drying-cylinders, and two color-printing rollers, one of the latter revolving in contact with the paper web at a point between the press-rollers and the drying-cylinders, and the other in like manner at a point between two drying-cylinders.

3. In a paper-making machine, the combination, substantially as hereinbefore set forth, of the press-rollers, the color-roller, the printing-roller, the jockey-roller, and mechanism, substantially such as described, whereby the periphery of the printing-roller is caused to move at the same rate of speed as the periphery of the press-rollers.

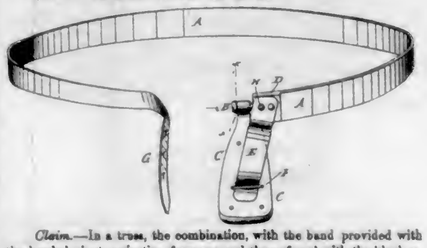
4. In a paper-making machine, the combination, substantially as hereinbefore set forth, of the press-rollers, the drying-cylinders, the printing-roller, the divided color-roller, and the reservoir of coloring material divided into compartments corresponding to the divisions of said color-roller.

293,230. TRUSS. ORLANDO G. DARLING and HENRY A. SCHULE, Brooklyn, N. Y. Filed Feb. 24, 1883. (No model.)



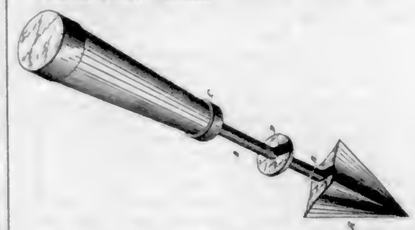
Claim.—A truss consisting of the spring A, the convex pad B at the front and connecting by its stem the two ends of the spring, and the concave rear pad, D, ball-jointed to an adjustable sleeve on the spring, as shown and described.

293,231. TRUSS. ORLANDO G. DARLING and HENRY A. SCHULE, Brooklyn, N. Y. Filed Mar. 16, 1883. (No model.)



Claim.—In a truss, the combination, with the band provided with the headed pivot projecting from one end thereof, and with the block or shoulder arranged at one side of said end, of the pad hung upon the said pivot, and the flat spring secured to the block or shoulder, and projecting through a keeper of the pad and bearing against the latter, essentially as shown and described, and for the purpose set forth.

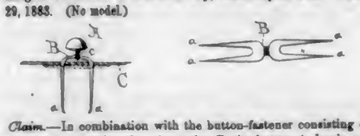
293,232. BUNG-EXTRACTOR. GEORGE M. DOBSON, Antigo, Wis. Filed Dec. 26, 1883. (No model.)



Claim.—1. The combination, with the shank of a bung-extractor, of a collar interposed between the blade and the handle-supporting shoulder, adapted to arrest the downward movement of the instrument, whereby a claw-iron may be readily interposed between said collar and the shoulder of the extractor in extracting the bung, substantially as and for the purpose specified.

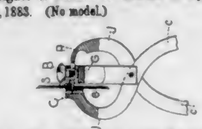
2. In bung-extractors, the rigid collar D, in combination with the knife A, the shank B, and the shoulder C, substantially as and for the purpose specified.

293,233. BUTTON-FASTENER. CHARLES H. EGGLESTON, Marshall, assignor of one-half to Edward O. Ely, Grand Rapids, Mich. Filed June 29, 1883. (No model.)



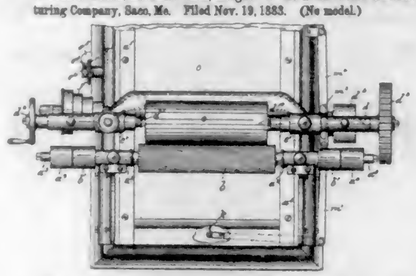
Claim.—In combination with the button-fastener consisting of the prongs *a a* and the reduced neck portion B, the button A, having a suitable eye permanently secured upon such fastener, all substantially as shown and described.

293,234. BUTTON-SETTING INSTRUMENT. CHARLES H. EGGLESTON, Marshall, assignor of one-half to Edward O. Ely, Grand Rapids, Mich. Filed Nov. 9, 1883. (No model.)



Claim.—In a button-setting instrument, the guide G, provided with the slot *i*, and groove *t*, placed between and in combination with the jaws J and J', the groove *t* and the slot *i* being so placed with reference to each other that the groove will receive the staple and the slot *i* the eye of the button, substantially as described.

293,235. MACHINE FOR REDUCING WOOD TO PULP AND FIBER. G. FRANK EVANS, Mechanic Falls, assignor to the Evans Fiber Manufacturing Company, Saco, Me. Filed Nov. 19, 1883. (No model.)



Claim.—1. In a machine to reduce wood for the production of fiber, the revolving cutting-cylinder *b*, having pulleys at each end, combined with the two independent loose pulleys to receive the driving-belts, and with supports for the said cylinder and loose pulleys, substantially as and for the purpose described.

2. The carriage *c*, its uprights, the center-point and chuck to hold the block of wood to be reduced, and the base provided with guides to receive the said carriage, combined with the rotating cutting-cylinder, and with means to rotate the said block and move the carriage longitudinally, substantially as described.

3. The carriage, its uprights, and the center-point, chuck, spindle *d*, and gear d^3, combined with the pinion d^5, shaft d^6, and driving-pulley d^8, substantially as described.

4. The carriage, its uprights, and the center-point, chuck, spindle *d*, and gear d^3, combined with the pinion d^4, shaft d^6, and loose pulley d^9 and clutch, substantially as described.

5. The base *a*, cutting-cylinder, means to rotate it, the separable nuts, and the carriage to support the block of wood, combined with the shaft *f*, its worms, the worm-gears, and the shafts f^4 f^5, and with means to rotate the shaft and the said block of wood, substantially as described.

6. The base *a*, the slide-bars *g g'*, the carriage fitted into ways of the base, the threaded shafts f^4 f^5, worm-gears f^2 f^3, worm-shaft *f*, and means to rotate it, combined with means, substantially as described, to move the slide-bars to close them upon or release them from the said threaded shafts when it is desired to move or stop the said carriage, as set forth.

7. The base *a*, the slide-bars, the toggle-lever, and means to straighten the said toggle-lever or to break its joint, combined with the carriage and its attached threaded shafts, to operate substantially as set forth.

8. In a machine for reducing wood to shavings for the production of pulp, a rotating cutting-cylinder provided with blades shaped substantially as described, to cut from a block short shavings, combined with means, substantially as described, to rotate the block of wood more slowly than the said cutting-cylinder.

9. The carriage, center-point, chuck, and spindle, and means to rotate it, and a block held by the said point and chuck, and the base *a*, combined with a rotating cutting-cylinder provided with blades having their cutting-edges subdivided or shaped to remove short shavings from the periphery of the rotating block, substantially as and for the purpose set forth.

10. The cutting-cylinder and carriage and block supported thereon, and means to rotate the said cutting-cylinder and block, combined with feeding mechanism for moving the said carriage and block toward the cutting-cylinder, and mechanism automatically operated by the carriage, whereby its feeding mechanism is disengaged and the rotation of the block stopped, substantially as described.

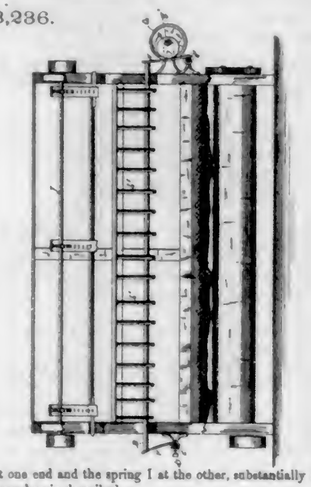
11. The cutting-cylinder and carriage and block, and its actuating pulley and clutch, combined with the separable nuts and threaded shafts, and the stopping device, whereby the said nuts are separated and the clutch simultaneously disengaged, substantially as described.

12. The cutting-cylinder and the carriage and block and gears, pulley, and clutch to rotate it, combined with the clutch and shipper and carriage-feeding mechanism, and the arm A, connected with the said shipper and with a portion of the carriage-feeding mechanism, and the rod *i*, connected with the carriage and co-operating with the arm A, as described, whereby the forward movement of the carriage and rotation of the block are simultaneously stopped, substantially as described.

293,236. MACHINE FOR TREATING MIDDLINGS. JAMES JOHNS FAULKNER and ELIZA TAYLOR FAULKNER, McMinnville, Tenn. Filed May 18, 1883. (No model.)

Claim.—1. In a middlings-purifier, the sieve C, having a lateral incline, and provided with the central supporting-bar, B, parallel bars *b b*, and cross-bars *b' b'*, in combination with the knocker H and eccentric *g'* at one end and the spring I at the other, substantially as and for the purpose herein described.

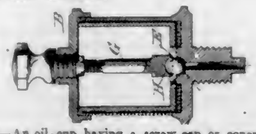
293,236.



2. The sieve C, having a lateral inclination, in combination with the supporting-bar B, parallel bars *b b*, cross-bars *b' b'*, knocker H, and spring I, all constructed to operate substantially as and for the purpose set forth.

3. The knocker H, in combination with the shaker, the rocker-shaft H', set-screw *h'*, and eccentric *g'*, all constructed to operate substantially as and for the purpose set forth.

293,237. OIL-CUP. ROBERT A. FISHER, San Francisco, Cal. Filed June 23, 1883. (No model.)



Claim.—An oil-cup having a screw cap or cover, a screw-stem passed through said cover, two hemispherical chambers, one of which is formed in the bottom of the cup in an axial line with the oil-passage and the other within the end of the screw-stem, and a ball-valve placed in and between said hemispherical chambers, and adapted to be operated by motion imparted to the machinery to which the oil-cup is attached, substantially as described.

293,238. WATER-WHEEL. THEODORE M. FLENNIKEN, Rockford, Ill., and THOMAS W. GRAHAM, Dubuque, Iowa; William McGregor Administrator of Theodore M. Flenniken, deceased. Filed Jan. 16, 1882. (Model.)

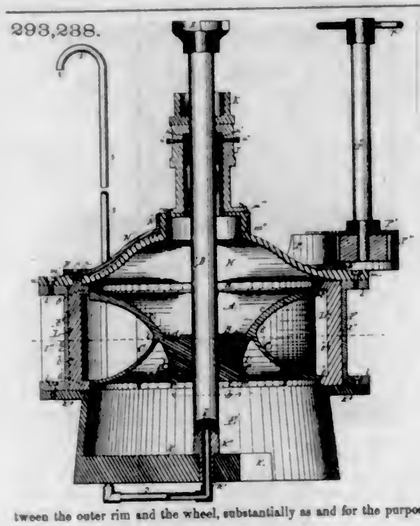
Claim.—1. The combination, in a two-rimmed water-wheel having its upper plate curved inward and downward, meeting the periphery of the hub in the plane of the lower face of the wheel, of buckets connecting the rims at their peripheries in vertical lines, their upper edges connecting the under curved face of the upper plate in a curved spiral line in easy curves terminating in the periphery of the hub in the lower plane of the wheel on the side of the hub opposite the connection of the bucket with the rims at their peripheries, substantially as and for the purpose hereinbefore set forth.

2. The herein-described water-wheel, consisting of an upper plate having its under surface concave on radial planes, buckets joining the lower and upper outer rims of the wheel in vertical lines, having their upper edges connected with the under curved surface of the upper plate in smooth, easy curves in a descending spiral line terminating in the lower plane of the wheel on the side of the hub opposite to the bucket-connection with the outer rim, from which connection they curve downward and outward, their lower edges producing the lower outer rim, and their lower ends terminating in the plane of the lower face of the wheel, substantially as and for the purpose hereinbefore set forth.

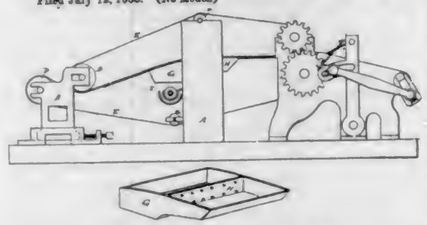
3. The combination, with the herein-described two-rimmed water-wheel, consisting of the upper plate with curved under surface, the buckets connected to the upper rim and descending in spiral lines and terminating in the lower plane of the wheel on the side of the hub opposite to the bucket-connection with the upper rim, of an outer rim having induction-openings, and a gate-ring provided with induction-openings to correspond with the openings in the outer rim, and fitted to oscillate between the outer rim and the wheel, substantially as and for the purpose set forth.

4. The combination, with the step-support of the wheel, of a tube-connection with the axial center of the step, to conduct a lubricant to the bearing-surface of the support, as and for the purpose hereinbefore set forth.

293,238.

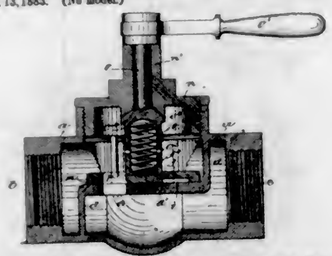


293,239. PLAITING-MACHINE. JOHN B. FOLEY, New Haven, Conn. Filed July 12, 1883. (No model.)



Claim.—In a plaiting-machine, the boiler G and steamer H, connected together, with communicating passages between them, arranged between the rolls over which the endless apron carrying the goods passes, the steam from the steamer coming into direct and immediate contact with the apron, and the boiler adapted to impart heat to and dry or partially dry the steamed goods as they pass through the machine.

293,240. VALVE. J. MORTIMER GOLDSMITH, Boston, Mass. Filed Aug. 13, 1883. (No model.)

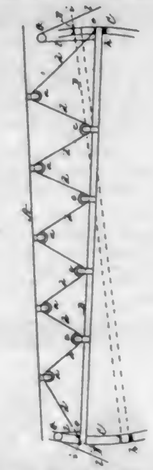


Claim.—1. In a register-valve, the combination, with the ported seat, of the valve proper, having corresponding ports, openings, and pockets or recesses in the wearing-face of the valve between the said port-openings, substantially as and for the purpose set forth.

2. The ported valve-seat and valve having corresponding ports, and having its periphery notched adjacent to the said ports, substantially as and for the purpose described.

3. The valve-seat and valve having a recessed hub combined with the valve-stem, having a shoulder and recessed hood, and a spring inclosed in the said hub and hood, which are engaged with one another, substantially as described.

293,241. CASH AND PARCEL CARRIER. CHARLES GRANT, Jr., Boston, Mass. Filed Jan. 7, 1884. (No model.)

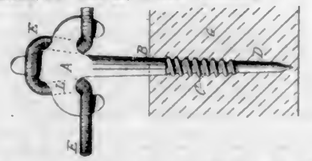


Claim.—1. In combination, a flexible supporting wire, cord, band, or chain, *d*, two series of pulleys or guide-rolls, *a c*, arranged substantially as described, and a track, B, of a form in cross-section adapted thereto, for the purpose set forth.

2. An inverted-T-shaped track having a series of pulleys or guide-rolls secured thereto, a series of pulleys or guide-rolls secured to or depending from the ceiling of an apartment, a flexible supporting cord, wire, chain, or band, and suitable track-inclining and locking devices, combined and arranged as specified.

3. A track having a central hollow or tubular portion, *b*, and a horizontal wire, cord, or band, *w*, extending loosely through it, in combination with suitable locking and track-inclining devices, substantially as described.

293,242. INSULATOR FOR ELECTRIC WIRES. ALBERT W. HALE, Plainfield, N.J. Filed May 17, 1883. (No model.)



Claim.—1. As a new article of manufacture, metallic insulators for electric wires, combining in a single piece a bearing for the wire and a means of attachment to the support, insulated and made insulating by a complete covering of glaze, substantially as and for the purposes set forth.

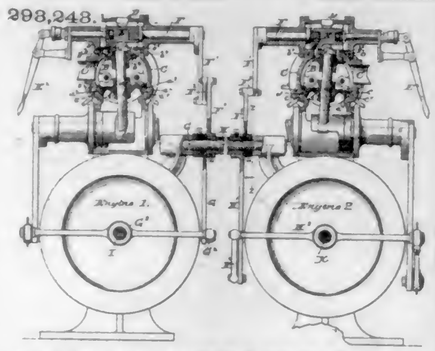
2. As a new article of manufacture, metallic insulators for electric wires, protected from atmospheric influences, and also insulated from both the wire and the support for such insulators by a complete covering of glaze.

293,243. DIRECT-ACTING DUPLEX PUMPING-ENGINE. ROBERT W. HAMILTON, Hartford, Conn., assignor of two-thirds to Marshall T. Davidson, Brooklyn, N. Y. Filed Sept. 8, 1883. (No model.)

Claim.—1. In a duplex engine, the combination, substantially as before set forth, of a supplemental valve for governing the supply of steam to the induction-valve of the chest-cylinder of one engine and the piston-rod of the other engine

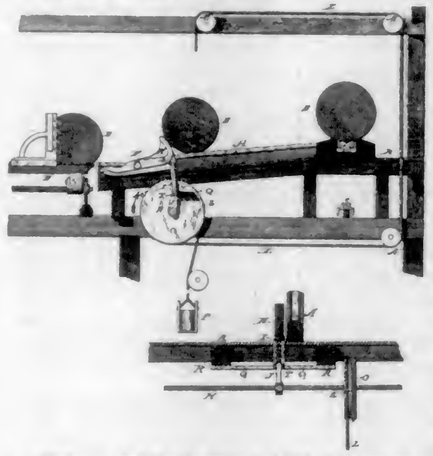
2. In a duplex engine, the combination, substantially as before set forth, of the piston-rod of one engine and a supplemental valve for governing the supply of steam to the induction-valve of the chest-cylinder of the other engine, said supplemental valve being shiftable by hand at pleasure from a position in which it opens and closes the ports to the in-

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duction-valve alternately to a position in which said ports remain constantly uncovered, and vice versa.

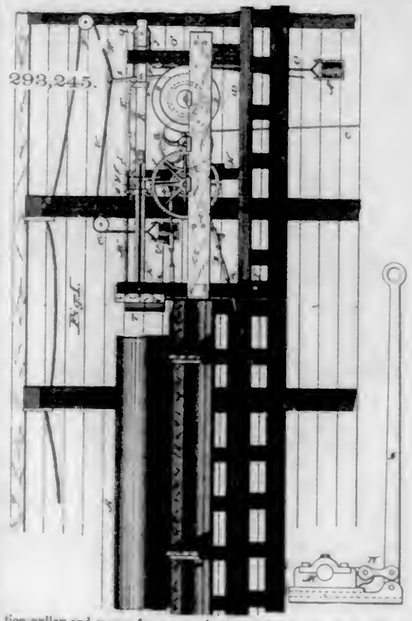
293,244. LOG-LOADER. JAMES P. HANSON, Oshkosh, Wis. Filed Dec. 3, 1883. (No model.)



Claim.—1. In devices for stopping and holding logs preparatory to being sawed, the combination of a series of two or more log-stops, E, pivoted centrally below the upper surface of the logways, shaft H, extending beneath said several log-stops, and provided with arms J, rigidly attached thereto, links I, communicating between said arms and said stops, and means for communicating motion to said shaft, whereby said stops are thrown up as said shaft is turned in one direction, and drawn down as it is turned in the opposite direction, substantially as set forth.

2. In devices for stopping logs, the combination, with the shaft H, provided with series of arms J, connected to the several log-stops, of pulley O and rope L, one end of said rope being arranged upon said pulley, and provided with a weight, and the other end extending over supporting-pulleys above the log-deck, whereby said pulley O and shaft H may be turned in one direction by said weight, and in the other direction by the operator, as set forth.

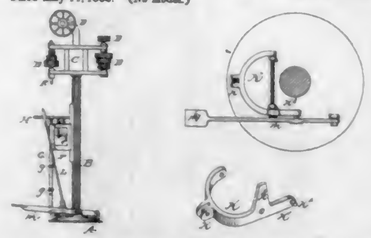
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tion-pulley and means for communicating motion therefrom to the bull-chain, a movable pulley communicating through bars and levers with a movable buffer, against which the approaching log is adapted to be brought in contact and moved in one direction, and weights suspended from ropes adapted through their connecting medium to bring said friction-pulleys in contact and move said buffer when relieved from the log in the opposite direction, thereby starting the bull-chain, substantially as and for the purpose specified.

3. In a log-jacking machine, the combination of standards A A, buffer T, bar R, rod M‴, bar L′, said bar L′ adapted to move on bar R, retaining-plates *a a*, cord O, as attached to bar L, and adapted to operate pulley Q in bar R, and pass beneath bar R, over pulley B, in post O′, said rope being provided at its lower end with weight N, lever S, provided with rope V, from the end of which is suspended a weight, U, said bar L′ being provided with brackets E′ and F′, for the reception of rod M‴, arm T′, adapted to be brought in contact with lever S, pin Y, adapted to communicate motion to the brake H′, brake H′, adapted to check the motion of the friction-pulley G, link W, movable journal-box M, shaft E, band-pulley D, friction-pulleys F and G, shaft H, gears I and J, shaft K, sprocket-gear L, and bull-chain B, said shafts, pulleys, and gears being adapted to communicate motion from said friction-pulley G to the endless chain, all substantially as and for the purpose specified.

293,246. DRILLING-MACHINE. LEWIS HERRICK, New Haven, Conn. Filed May 11, 1883. (No model.)

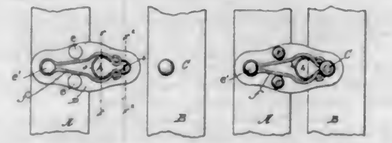


Claim.—1. In a drill-press, the curved lever K, connected at the middle of its curvature with the table-bearing rod, fulcrumed as described, and provided with a long arm, *k*′, and an upright arm, *k*², said long arm connected with a treadle, and said upright arm adapted to carry a hand-lever, substantially as and for the purposes described.

2. The combination, with the curved lever K, having a long arm, *k*′, provided with a pin, *k*², of the pedal-lever M, pivoted in rear of said curved lever, and provided with a longitudinal slot, *m*, adapted to fit over the aforesaid pin, as and for the purposes described.

3. The combination, with the work-table and the elevating mechanism, of the rod G, composed of two sections held together by collars and set-screws, and the screw I, provided with nuts, as described, whereby said table may be adjusted, for the purposes set forth.

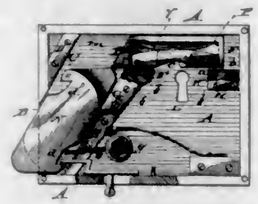
293,247. FASTENING-CLASP. LUCIAN HILL, North Brookfield, Mass., assignor to Theodore C. Bates, same place. Filed Dec. 13, 1883. (No model.)



Claim.—1. The herein-described plate, provided with a slot having a contracted extension, and having a flange, 3, extended more or less about the large part of the said slot, combined with one or more spring jaws or arms, the front ends of which are adapted to extend partially across the said slot, and to yield laterally to co-operate with the headed stud, substantially as and for the purpose set forth.

2. The plate D, slotted and provided with a flange, 4, about the small end of the slot, combined with one or more spring jaws or arms extended partially across the slot in the said plate between the said flange 4 and the larger part A of the said slot, and with a headed stud adapted to rest at its under side upon the flange 4, beyond the free end of the said arm, as and for the purpose described.

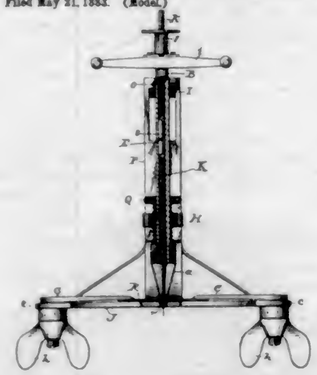
293,248. COMBINED LOCK AND LATCH. ANDERSON D. HOLLAND, Newport, Ark. Filed Jan. 4, 1883. (Model.)



Claim.—1. In a door-lock, the oblique reciprocating bolt, having its opposite ends beveled, whereby the said bolt will rise automatically in closing the door, in combination with the knob-shank and arm engaging the notches of the bolt, substantially as specified.

2. The door-lock herein described, consisting of the case having the communicating oblique and horizontal slideways, the oblique reciprocating bolt, having its ends beveled, and the horizontal locking-slide over the key-hole, the knob-shaft, and its arm engaging a notch or bearing of the oblique bolt, all combined and adapted to operate substantially as specified.

293,249. JEWELING-MACHINE. ERVIN HOUGHOUR, Shelbyville, Ill. Filed May 21, 1883. (Model.)



Claim.—1. In a machine for jeweling watches, the combination, with a hollow spindle journaled in a suitable frame over a face-plate provided with a central hole, of an expansible tool secured to the lower end of the hollow spindle, a spreader passing through said spindle, and means for forcing the spreader downward to spread the jaws of the tool, substantially as shown and described.

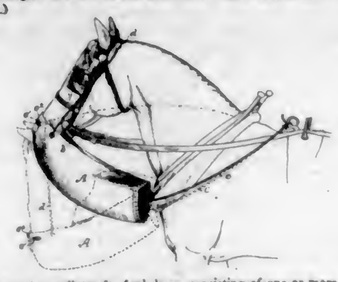
2. In a machine for jeweling watches, the combination, with the face-plate J, provided with a central hole, *r*, and frame P, secured to said face-plate, of the hollow spindle B, provided with handle *i*, hollow nut 1, threaded spreader K, and an expansible tool, substantially as shown and described.

3. In a machine for jeweling watches, the combination, with the face-plate J, provided with a central hole, *r*, and frame P, secured to said face-plate, of the hollow spindle B, provided with handle *i*, hollow nut Q, and threaded bracket H, substantially as described, and for the purpose set forth.

4. In a machine for jeweling watches, the combination, with the frame P, provided with the bracket H and bracket I, of the hollow spindle B, the hollow screw-nut Q, and the spring O, substantially as shown and described.

5. In a machine for jeweling watches, the combination, with the face-plate J, having a central hole, *r*, and frame P, secured to the face-plate, of the clamps C, hollow spindle B, handle *i*, hollow nut 1, threaded spreader K, hollow nut Q, and threaded bracket H, substantially as shown and described.

293,250. FEED-BAG FOR HORSES. GEORGE W. HORNE, New York, N. Y., assignor to A. A. Knudson, same place. Filed May 9, 1883. (No model.)



Claim.—A ventilator for feed-bags, consisting of one or more upright tubes secured to the front portion of the bag and opening into the inside thereof, substantially as hereinbefore set forth.

293,251. WHEEL. GEORGE W. HOWELL, Covington, Ky. Filed June 26, 1883. (No model.)



Claim.—1. The combination, in a wheel-hub, of the disks A A′, the flanged thimbles *e* and *f*, connected with the disks and having internal screw-threads, and the shaft or sleeve F, having right and left exterior threads, and engaging the threads of the thimbles to simultaneously adjust both the disks, substantially as and for the purpose described.

2. The combination, in a wheel-hub, of the disks A A′, each having a many-sided orifice, the interiorly-threaded flanged thimbles *e* and *f*, having exterior surfaces fitting in the orifices of the disks, and the shaft or sleeve F, having right and left screw-threads engaging the threads of the thimbles to simultaneously adjust both disks, substantially as described.

3. The combination, in a wheel-hub, of the disks A A′, the interiorly-threaded thimbles connected with the disks, and the shaft or sleeve F, having right and left threads engaging the threads of the thimbles to simultaneously adjust both the disks, substantially as described.

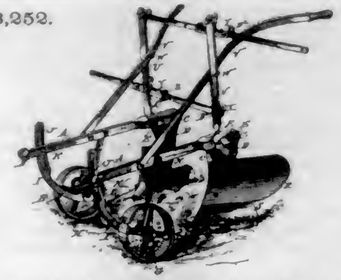
4. In combination with the disks A A′, having the slotted spoke-holes *a* and screw-threaded hub, the spokes C, having neck *c*, and connected to the rim D and disks A A′, substantially as herein set forth.

5. The combination, with the disks A A′, the threaded thimbles, and the threaded shaft or sleeve, of the T-shaped rim H and the spokes C, having their outer ends secured in the lateral flanges of the rim, substantially as shown and described

293,252. PLOW. CONRAD HUEHN, Rochester, N. Y. Filed June 30, 1883. (No model.)

Claim.—1. The combination of the beam, having the bifurcated

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rear end, with the standard, formed of a single plate, bent or doubled so as to form a pair of wings, connected by the curved front edge, and having their upper edges brought together so as to form a flange, fitted in the bifurcated rear end of the beam, and shoulders abutting against the under side of the latter, substantially as set forth.

2. The combination of the beams A A, having bifurcated rear ends, vertically-adjustable wheels or casters at the front ends of said beams, uprights U at the rear ends of said beams, handles V, secured to said beams and uprights, which latter are thereby braced, braces connecting the said uprights, adjustable near their upper and lower ends, and adapted to permit the beams to move vertically independently of each other, and the standards secured in the forked rear ends of the beams, as set forth.

293,253. GATE-LATCH. WESLEY HULL, Fort Wayne, Ind. Filed Jan. 17, 1883. (Model.)



Claim.—In a pendent gate-latch, the case having a chamber with interior bearings and open bottom for the reception of the latch, in combination with two diverging arms, each of which curves out an equal distance from the center of the upper end of the vertical portion of the latch in such a manner that the head of each arm will rest in the opposite side of the chamber on its respective bearing, upon which the latch is suspended, and the horizontal arms of the bar which project out beyond the case at each side, substantially in the manner and for the purpose specified.

293,254. THREAD CUTTER AND HOLDER. EDWIN JERAULD, Jr., Bristol, R. I. Filed Sept. 10, 1883. (No model.)



Claim.—1. The combination, with the presser-foot bar and mounted thereon, of the thread-cutter and the spring-plunger provided with a head, and serving as a thread-holder for compressing thread between one side of said head and a coincident surface, substantially as described.

2. The combination of the spring-plunger, serving with an abutting-surface as a thread-holder, and the thread-cutter, serving also as a guide for said plunger, substantially as described.

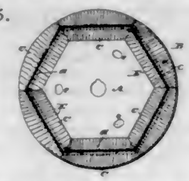
3. The combination of the thread-cutter and the thread-holder having the thread-compressing spring, and provided with means for adjusting the power of said spring, substantially as described, whereby said holder can be adjusted to compress a coarse thread no tighter than a fine one, and to hold both equally well during the use of the cutter, as set forth.

293,255. PULLEY. CLAY KEMBLE, Philadelphia, Pa. Filed Nov. 8, 1883. (No model.)

Claim.—1. A pulley having the grain running radially, and a peripheral portion formed of segmental pieces of wood, each having the grain exposed at the periphery, substantially as and for the purpose set forth.

2. A pulley having separate heads with collars on the inner faces thereof, sections or segments fitted between the heads around the collars thereof, and clamping bolts and nuts, said bolts being passed through

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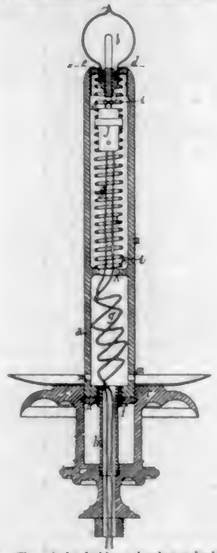


the heads parallel with the supporting-shaft, substantially as and for the purpose set forth.

3. A pulley having separate heads, the outer faces whereof are depressed or countersunk, and clamping bolts and nuts, the heads of said bolts and nuts occupying positions in the spaces formed by said depressions, substantially as and for the purpose set forth.

4. Separate heads with depressions on their outer faces and collars and tongues on their inner faces, a peripheral portion formed of segments or sections of wood with grooved sides, and clamping-bolts passed through the separate heads, and provided with nuts, the parts being combined and operating as described, forming an improvement in pulleys.

293,256. HOLDER FOR INCANDESCENT ELECTRIC LAMPS. JEAN LANGUEREAU, Paris, France. Filed July 23, 1883. (No model.)



Claim.—1. The tubular holder *a*, having at its lower end a threaded portion, *f*, in combination with the socket *c*, having a removable plate, *n*, and a central pipe, *h*, for receiving said portion *f*, all arranged substantially as and for the purposes specified.

2. The tubular support *a* and inclosed spiral spring *i* and piece *j*, in combination with an incandescent lamp, *b*, suitable means for fastening the latter upon the holder *a*, and suitable means for connecting the same to the conductor, the piece *j* being located below the upper end of the spiral spring, so as to permit the upper portion of spring to exert an upward tension on the lamp, as and for the purposes herein specified.

3. The tubular support *a*, having an internal flange, *k*, dividing the space into two parts, one for the reception of the spring *i* and the other for the reception of an extra length of conducting-wires *g*, in combination with said spring and wires, and with an incandescent lamp, *b*, arranged upon the holder *a*, all substantially as and for the purposes herein specified.

4. The tubular support *a*, mounted upon a socket, *c*, and carrying an incandescent electric lamp, *b*, said tubular support being provided at its base with holes *m*, adapted to allow the conducting-wires to be led from the exterior into and up through the hollow space of the support to the lamp *b*, substantially as herein specified.

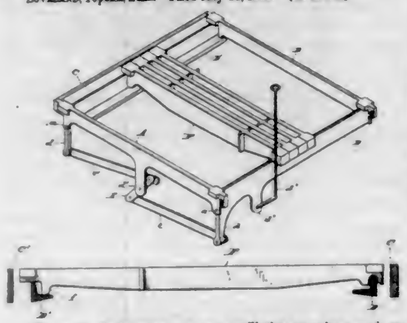
293,257. CARTRIDGE-CASE. WILHELM LORENZ, Carlsruhe, Baden, Germany. Filed May 21, 1883. (No model.) Patented in Germany Mar. 19, 1882, No. 19,677, and Aug. 24, 1882; in France May 27, 1882, No. 149,236; in Belgium July 1, 1882, No. 58,359; in England July 3, 1882, No. 3,137, and in Austria-Hungary Oct. 12, 1882.

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Claim.—The compound cartridge-case described, having an inner shell, A, with its closed rear and flange, as usual, but with a body of less thickness than is required to fill the cartridge-chamber of the gun, in combination with an external removable shell, B, in the form of a plain cylinder, adapted for joint operation relatively to each other and to a breech-loading gun, substantially as herein specified.

293,258. FURNACE FIRE-GRATE AND FRAME. HORACE W. LOVELAND, Topeka, Kans. Filed May 21, 1883. (No model.)



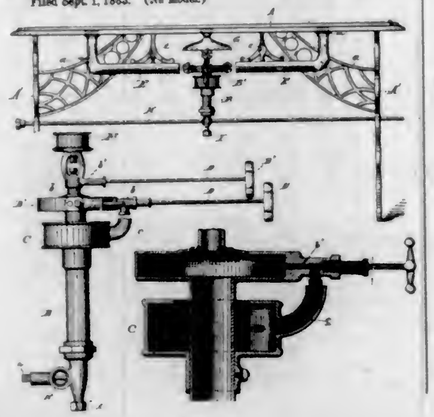
Claim.—1. In furnace grate-bars, oscillating cross-bars, each provided with an upright and a horizontal leg, and so arranged that the respective horizontal legs extend toward each other, and provided with suitable connecting mechanism, so that the two cross-bars will oscillate simultaneously and the respective upright legs move in opposite directions, substantially as and for the purpose set forth.

2. Furnace grate-bars provided at one end with a notch adapted to engage the upright leg of the oscillating cross-bar, and the other end of the grate-bar provided underneath with a flat surface and a lug, the former adapted to slide on the contiguous cross-bar, and the latter adapted to engage the horizontal leg of the said cross-bar, so as to be actuated vertically thereby, substantially as described, and for the purpose set forth.

3. In furnace grate-bars, oscillating cross-bars, each provided with an upright and a horizontal leg, and connected by suitable mechanism, so that the cross-bars will oscillate simultaneously, but in opposite directions, in combination with grate-bars provided on the under side with a notch at one end and a flat surface and a lug at the other end, and so arranged that alternate grate-bars will engage with their notched ends opposite cross-bars, so that when the said cross-bars are oscillated contiguous grate-bars will move endwise in opposite directions, and will be actuated vertically at opposite ends, substantially as described, and for the purpose specified.

4. The combination, with furnace grate-bars, substantially as described, of the cross-bars D and D', provided with the actuating mechanism E, *e*, and *e'*, and the lever d^3.

293,259. VAPOR-STOVE. FORDYCE ALLEN LYMAN, Cleveland, Ohio. Filed Sept. 1, 1883. (No model.)



Claim.—1. The combination, with an oil stove or stand and commingling-tubes secured thereto, and provided with burners, of the generator situated between the free ends of the commingling-tube, and a supply-pipe for supplying oil to the generator.

2. The combination, with an oil stove or stand, the bent commingling-tubes secured to the stand, and burners secured to the commingling-tubes, of a generator situated between the commingling-tubes, and separate and independent therefrom, and a burner situated above the generating-chamber, substantially as set forth.

3. The combination, with an oil stove or stand, the bent commingling-tubes secured thereto and provided with burners, of the generator situated between the free ends of the commingling-tubes, and valves for closing the orifices in the generator and the supply-pipe.

4. The combination, with the generating-chamber, provided with a jet-orifice and a valve for regulating the flow of vapor therefrom, of a commingling-chamber constructed substantially as described, surrounding the supply-pipe, and provided with an upwardly-projecting spout, *c*, which latter terminates below the jet-orifice, whereby the gas is projected directly into the commingling-chamber, without the intervention of a series of passages, substantially as set forth.

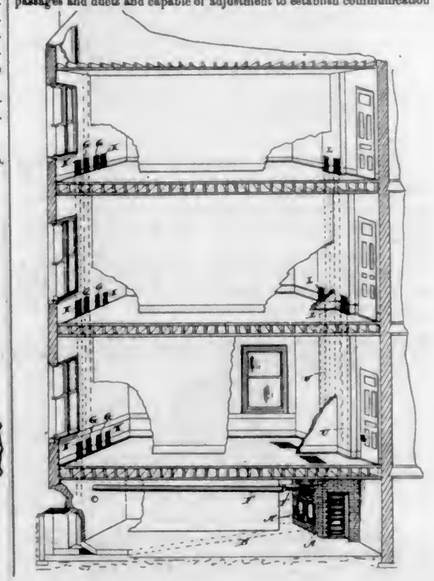
5. The combination, with a vaporizing-chamber provided with a boss, the latter being provided with a bore, *d*, a short bore situated alongside of the bore, and provided with a jet-plug, and a valve-opening situated at right angles to the bore *d*, and communicating with the said bore, and the short bore containing the jet-plug, of the valve D, constructed as described, and adapted to shut off communication between the vaporizing-chamber and the jet-plug, substantially as set forth.

6. The combination, with the neck *c*, integral with the part C, of the boss *b'*, integral with the generating-chamber B', and provided with a suitable valve mechanism, and adapted, by means of the short route thus provided, for the passage of heated gases from the generating-chamber to the commingling-chamber with so little loss of heat that no auxiliary heating device is required, substantially as and for the purpose set forth.

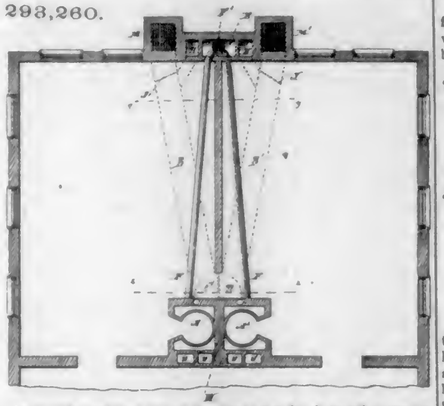
293,260. APPARATUS FOR HEATING AND VENTILATING BUILDINGS. JAMES H. MANNY, Chicago, Ill., assignor to the Richardson & Boynton Company, of New York. Filed July 23, 1881. (No model.)

Claim.—1. The two furnace-chambers A A', for containing furnaces, and provided with a valve, V, for opening and closing communication between the chambers, in combination with ducts arranged to supply cold air either to both or to one of the said chambers, whereby the furnaces can be used together, each heating a separate part of a building, or either of the furnaces can be used alone for heating the whole building, substantially as and for the purposes specified.

2. The circulating-passages H, one connecting with each room, in combination with separate cold-air ducts B B', opening, respectively, into the passages, and valves J, arranged, respectively, at the junction of the passages and ducts and capable of adjustment to establish communication



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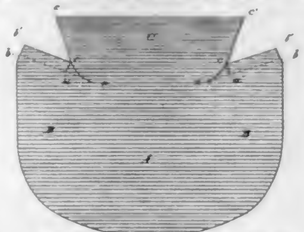
between the said passages and ducts and cause the air from the rooms to flow through the cold-air ducts, substantially as described.

3. The combination of the ventilating-registers G, the circulation-passages H, and valves J, controlling both the cold-air ducts and the passages H, all adapted to be operated simultaneously, substantially as and for the purposes specified.

4. A valve, V, and a valve, D, controlling the air-inlets to the furnace-chambers, said valves being connected together, so as to be simultaneously operated, in combination with two furnace-chambers, A A', and air-ducts B B', substantially as and for the purposes specified.

293,261. BLANK FOR ROAD-SCRAPERS. GEORGE D. MATCHAM, Pittsfield, Ohio. Filed Aug. 4, 1883. (No model.)

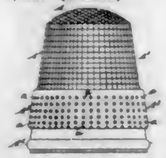
Brief.—The scraper-blank is formed with pieces on its sides to lap straight portions of the edges of the back, the seams at the lower and curved portions being protected, and the back supported by triangular pieces of the sides, formed by cutting the lines of the back and lines separating them from the main lapping pieces, and bent over such seams.



Claim.—1. In a blank for a road-scraper, the triangular pieces *a* *a'* *c*, integral with the respective sides B, and separated from the back C only by the slit *c a*, that has removed no metal, and adapted to be bent behind the part C, and to support it on the curved portion thereof, and adapted also to cover the crack on the curved parts between the sides and the back, substantially as described, and for the purpose specified.

2. In a blank for a road-scraper, the combination, with the back, as shown, of the sides provided with flaps for attaching the sides to the back, and with triangular pieces adapted to support the curved portion of the back, substantially as and for the purpose set forth.

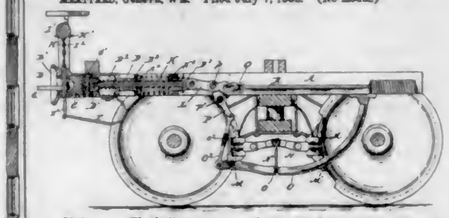
293,262. SEWING-THIMBLE. ELIZABETH F. MCCARTNEY, Omaha, Nebr. Filed Sept. 3, 1883. (No model.)



Claim.—1. The sewing-thimble described, having a raised portion, A^2, extended partially or entirely around, adapted to relieve the root of the finger-nail from pressure, as herein specified.

2. A thimble having a portion, A^2, both raised and furnished with fine perforations *a*, adapted to relieve the nail from pressure, and to ventilate the space, while completely protecting it from the needle, as herein specified.

293,263. COMBINED CAR BRAKE AND COUPLER. EDWARD B. MEATYARD, Geneva, Wis. Filed July 7, 1882. (No model.)



Claim.—1. The hollow open-mouthed buffer B, in combination with the coupler C, the pin C', rigidly affixed to the coupler, but arranged to have a limited backward and forward play in the buffer, and the pin C^2, arranged to have a vertical play in both coupler and buffer and a limited longitudinal play in the former only, and means for lowering and raising the pin C^2, substantially as and for the purpose described.

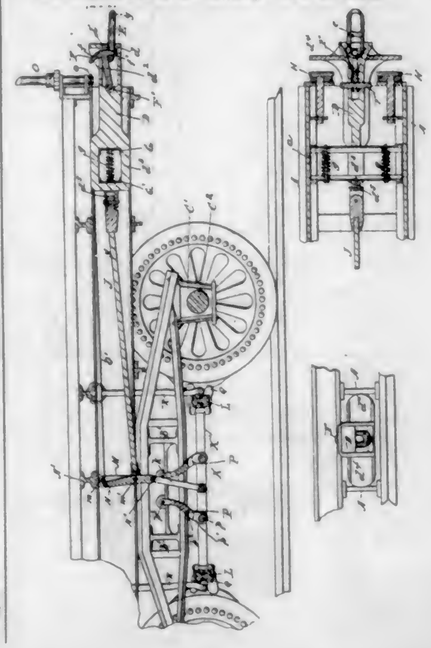
2. The buffer B, coupler C, upright pin C^2, horizontal pins E and E^2, guiding-rods E', and mechanism for lifting the pin E, all in combination, substantially as and for the purpose described.

3. The buffer B, coupler C, upright pin C^2, horizontal pins E and E^2, guiding-rods E', bar H, shaped and arranged as described, spring F, arranged as described, and means for lifting the pin E, all in combination, substantially as and for the purpose described.

4. In a traction car-brake, the bifurcated toggle-arms N and N', connected with and arranged to operate two or more brake-bars, in combination with readily-yielding draw-bars, and mechanism for connecting the knuckle of the toggle-arms with the draw-bar, substantially as and for the purpose set forth.

5. The springs K and R', lever P, arranged as described, mechanism connecting the springs with each other and with one end of the lever, rod O^2, arranged substantially as described, bent lever O, connecting-rod N', toggle N, and brake-bars M, all in combination, substantially as and for the purposes described.

293,264. COMBINED CAR BRAKE AND COUPLER. EDWARD B. MEATYARD, Lake Geneva, Wis. Filed May 7, 1883. (No model.)



Claim.—1. A draw-bar, in combination with a brake-bar, a system of levers connecting the draw-bar to the brake-bar, and springs arranged in the usual gap at the rear end of the draw-bar, adapted and adjusted to maintain the said draw-bar in a normal position intermediate between the extremes of its range, and at the same time in this position to keep the brakes set up, and also adapted and adjusted to yield nearly the whole of their elastic range under a pull or thrust of traction due to the resistance of a single moving car, to thereby take off the brakes, substantially described.

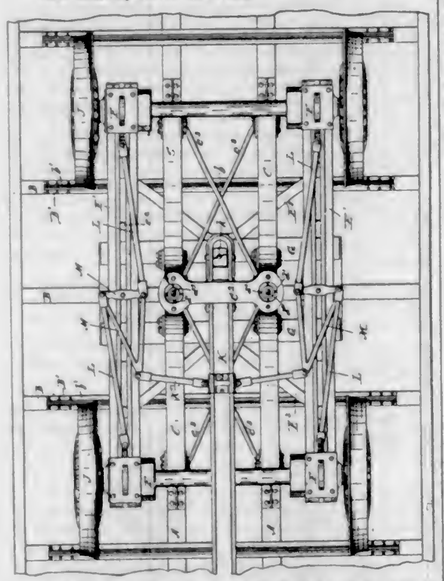
2. The buffer provided with laterally-projecting wings, in combination with traction-springs, to keep slack between said wings and the end of the car, and auxiliary springs filling part of the slack to meet excessive buffing-shock as the traction-springs are compressed, and mechanism connecting the rear of the draw-bar with the brake.

3. The toggle K, arranged substantially as described, the hanger M, suspended above the knee of the toggle, so as to admit of oscillation lengthwise of the car, the bar N, vertically pivoted at the lower end of the hanger, extending a little way below the pivot, and having the part above the pivot equal in length to the hanger and bent slightly toward the inner end of the truck, the chain O^2, connecting the upper end of the bar with the hand-wheel, means for communicating the motion of the draw-bar to the lower end of the hanger, and means for communicating to the knee of the toggle the upward and downward motion of the lower end of the bar, all in combination, substantially as and for the purpose described.

4. The brake-bar L, in combination with two stiff connecting-bars, K', to which the brake-bar is readily fastened, and which converge near the center of the truck, and are there attached to an independent and substantially level support, whereby the brake-bar is held from rocking and the brake-shoes prevented from rubbing the wheels, substantially as and for the purposes set forth.

5. The two toggle-hangers P, the toggle K, and the connecting-bars K', all constructed and arranged substantially as and for the purpose described.

293,265. RAILWAY-CAR. EDWARD B. MEATYARD, Lake Geneva, Wis. Filed May 7, 1883. (No model.)



Claim.—1. In a railway-car, the longitudinal girder A, in combination with the transverse floor-joists B and the truss-bars B', the floor-joists B having their ends sprung down to a deflection within a safe limit of elasticity before being fastened to the ends of the truss-bars B', to prevent vibration of the joists while the car is moving empty, and when the car is loaded so as to take a portion of each joist's load directly to the top flange of the girder A by means of the stiffness of the joist, and the other portion of each joist's load down the truss-bar to the bottom flange of the girder A, substantially as described and shown.

2. In a railway-car, the V-shaped bolster C, rigidly secured to the main floor-beams at its ends, and pivotally suspended from the cross-beams in the middle, and composed of two parallel pairs of downwardly-convergent bars rigidly connected at their convergent ends, the bars of each pair being also connected by cross-braces, substantially as and for the purpose described.

3. The two-part channel or angle-arch bar E, in combination with the two-part angle truss-bar E', and vertical braces E^2, provided with heads at each end firmly clamped between the component parts of both the arch-bars and truss-bars, substantially as and for the purposes set forth.

4. In a railway-car, the arch-bar E, the truss-bar E', the connecting-bar G', longitudinal girder A, V-shaped bolster C, and pivotal suspension-hanger D, in combination with I-beam transoms G, of the minimum depth, to permit the car-floor to be as low as possible, substantially as described.

5. In a railway-car, the arch-bars E and truss-bars E', constituting the truss spanning the distance between the two axle-boxes on each side of the truck, in combination with the transoms G, the brace-bars E^2, and the lateral brace-bars E^3, fastened to the transoms G at one end, and at the other to the brace-bars E^2 near the outer quarter of the bars E and E', substantially as and for the purposes set forth.

6. The combination of the arch-bars E, the truss-bars E', and the horn-plates F', all constructed and arranged substantially as and for the purpose described.

7. The vibration-springs H^2, in combination with the car-body and the truck cross-beams, whereby the car-body is tied down to the ends of the truck cross-beams, substantially as and for the purpose set forth.

8. The transverse floor-joists, in combination with the longitudinal floor-plank and the channel-beams O, fastened to the end of the joists, and also to the edges of the floor-plank, substantially as and for the purposes set forth.

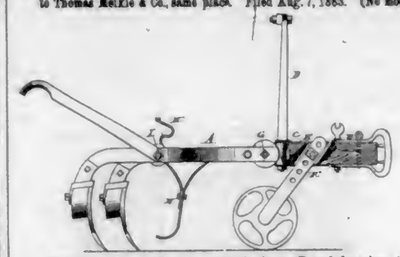
9. The axle-box, in combination with the rods L, the triangular bell-crank M, and the arms K', arranged and operating substantially as and for the purposes set forth.

10. In a railway-car, an angle-bar, P, in combination with a sheet-metal strip or strips bent or flanged at the edges to meet the sides of the angle-bar, and a U-shaped strip, R', inclosing and clamping together the angle-bar and edges of the sheet, substantially as and for the purposes set forth.

11. A car-axle, in combination with an independent tubular bearing of oval shape and hardened metal shrunk on the axle, substantially as and for the purposes set forth.

12. In combination with the running-board, the casting Q', bent at the ends to inclose the board, and having one of the bent ends prolonged to form a support, *q'*, for a hand-rail.

293,266. CULTIVATOR. THOMAS MEIKLE, Louisville, Ky., assignor to Thomas Meikle & Co., same place. Filed Aug. 7, 1883. (No model.)



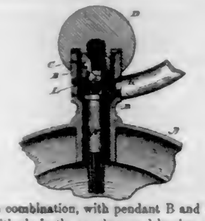
Claim.—1. In combination with the beam B and drag-bar A of a cultivator, a coupling consisting of the central piece, C, pivoted to the rear end of the beam, and the side pieces, F F, attached to the front end of the drag-bar and pivoted to the piece C, said parts being constructed, respectively, and arranged to form a compound joint substantially as set forth.

2. In combination with the drag-bars and beams of a straddle-row cultivator, the arch-yoke D, having stems D', connecting the beams and turning in the beams to permit the fore and aft independent play of the plows, and said stems D' also forming pivots on which the drag-bars swing from side to side, substantially as set forth.

3. In combination with the vertically-swinging drag-bars of a cultivator, the swinging bifurcated spring-foot H H', the elastic arm H' of which is curved, substantially as shown, so as to perform the double function of supporting the spring-foot itself on the cross-bar K of the drag-bars, or of supporting the drag-bars on the spring-foot when the former are raised, so as to lift the shovels above the ground, substantially as set forth.

293,267. DEVICE FOR HOLDING THE STEM IN THE PENDANT OF STEM-WINDING WATCHES. ALEXANDER W. MILLER, Bellefontaine, Ohio. Filed Aug. 6, 1883. (Model.)

293,267.



Claim.—The combination, with pendant B and stem N, of the collar G, secured positively in the pendant, and having spring-tongue L, as and for the purpose set forth.

293,268. EAR-RING. FRANK W. MOORE, Waupun, Wis. Filed June 6, 1883. (No model.)



Claim.—1. In an ear-ring, the strap A, raised from the plate *x*, in combination with the bar *y*, for the purposes set forth.

2. The combination of the loop B and coil C, the bar *y*, bent at *b*, and strap A, raised from the plate *x*, as and for the purpose described.

3. In a spring-clasp for ear-rings, the combination of the bar *x*, having a coil, C, and tongue *c*, with the bar *y* through the strap A of the plate *x*, and the loop B, as and for the purpose set forth.

4. The combination, in a hinged and spring-clasped ear-ring, of the strap A on plate *x*, the bar *y*, having bend *b*, and loop B, secured to the plate by means of the strap, the flexible bar *z*, having coil C and tongue *c*, the loop and coil being united to form a hinge, substantially as set forth.

293,269. BOTTLE-STOPPING DEVICE. GEO. S. NORRIS, Baltimore, Md. Filed Nov. 9, 1883. (No model.)

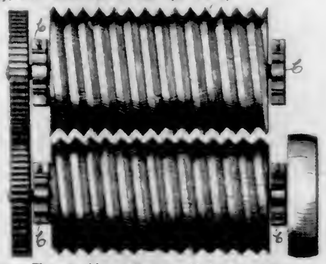


Claim.—1. A bottle-stopper cap consisting of a sheet-metal plate having two peripheral lugs, a disk, and an arm carrying said disk, stamped from said plate, substantially as and for the purpose described.

2. The combination of a bottle-stopper cap with a rubber plug having a central cavity, the floor of which cavity has a central projection resting against the end of the device forming a part of the stopper-cap, substantially as and for the purpose described

3. The combination of a bottle-stopper cap with a rubber plug having a central cavity and an opening, *d'*, in the top surface of said plug, leading into the side of said cavity, or eccentrically to said top, substantially as described.

293,270. CLAY-CRUSHING ROLLER. JAMES W. PENFIELD, Willoughby, Ohio. Filed Dec. 21, 1883. (No model.)

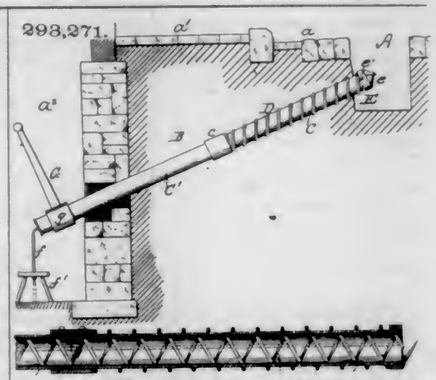


Claim.—Clay-crushing rollers provided each with a continuous spiral corrugation running from end to end of the roller, the corrugations having the same lead on each roller, either right or left handed, as preferred, substantially as set forth.

293,271. METHOD OF AND APPARATUS FOR LAYING BRANCH UNDERGROUND ELECTRICAL CONDUCTORS. WM. J. PHILIPS and GEO. L. KITSON, Philadelphia, Pa., assignors to said Philips. Filed Mar. 8, 1883. (No model.)

Brief.—For horizontal boring, a tube has a detachable drill-head, an exterior spiral, and an interior spiral of greater pitch, substantially the same diameter as the tube, and held from revolving with the tube.

293,271.



Claim.—1. The method herein described for laying branch or lateral conductors underground, which consists of first boring or drilling a passage-way underground to the main-line conductors, then withdrawing the core or internal appliances of the drilling-tool, then inserting the branch conductor through the drilling-tool, then coupling the branch conductor to the main-line conductor, and then withdrawing the drilling-tool, substantially as set forth.

2. The drilling or boring tool herein described, composed of a hollow tube carrying a cutter-head, an external spiral or thread, and a removable hollow spiral or helix of the same or nearly the same diameter as the hollow tube, substantially as described.

3. A drilling or boring tool composed of a hollow section carrying a removable cutter-head, an exterior feeding-spiral, and a removable hollow spiral of the same or nearly the same diameter as the hollow section, substantially as set forth.

4. A drilling or boring tool having an automatic feed arranged upon its exterior surface, and hollow internal appliances of the same diameter as the interior of the tube, for feeding the core or dirt cut by the drill through the latter, said appliances being designed and adapted to be removed from the drill, substantially as shown and described.

5. A hollow drilling or boring tool having a removable hollow spiral within, and of the same or nearly the same diameter as the interior of the tool, substantially as described.

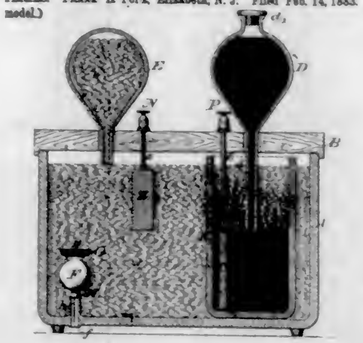
6. A drilling or boring tool having an external thread or spiral and a removable hollow spiral of the same or nearly the same diameter as the bore of the tool, and having its coils of greater pitch than the external thread or spiral, for the purpose set forth.

7. A drilling or boring tool composed of one or more hollow sections carrying a removable cutter-head, an exterior feeding spiral or thread, an internal hollow spiral of the same or nearly the same diameter as the bore of the tool, and means for rotating said drill, substantially as described.

8. A drilling or boring tool composed of a rotating hollow section carrying a feeding-spiral and cutter-head, and an internal stationary spiral designed and adapted to be removable from said section, substantially as shown and described.

9. A drilling or boring tool composed of a rotating hollow section carrying a feeding-spiral, a removable cutter-head, and an internal stationary spiral, substantially as shown and described.

293,272. AUTOMATIC FEEDING APPARATUS FOR VOLTAIC BATTERIES. FRANK L. POPE, Elizabeth, N. J. Filed Feb. 14, 1883. (No model.)



Claim.—1. In a voltaic battery, the combination, substantially as hereinbefore set forth, of a containing-vessel, a conduit whereby the solution may be withdrawn from the containing-vessel, a valve normally closing said conduit, and a float for automatically opening said valve when the specific gravity of the solution becomes abnormally great.

2. In a voltaic battery, the combination, substantially as hereinbefore set forth, of a containing-vessel, a conduit whereby the solution or a portion thereof may be withdrawn from said containing-vessel, a valve normally closing said conduit, a float for opening said valve, and means, substantially such as described, for adjusting the specific gravity of said float, whereby the valve is automatically opened when the solution reaches a predetermined density.

3. In a voltaic battery, the combination, substantially as hereinbefore set forth, of a containing-vessel within which the positive and negative elements of the battery are respectively immersed in solutions of normally unequal specific gravities, a conduit having its uppermost or inlet opening situated in the lower portion of the solution of least specific gravity, and a water-reservoir having its discharge-orifice situated at the normal level of the surface of the last-named solution, whereby the lower portion of said solution may be withdrawn when it becomes partially or wholly saturated, and automatically replaced by an equal volume of water.

4. In a voltaic battery, the combination, substantially as hereinbefore set forth, of a containing-vessel within which the positive and negative plates or elements are supported in different horizontal planes, a solution surrounding the lower plate having normally a greater specific gravity than the solution surrounding the upper plate, a conduit having its uppermost or inlet openings situated in a horizontal plane between the planes of the respective positive and negative plates, and a water-reservoir having its discharge-orifice situated at the normal level of the surface of the solution in the containing-vessel, whereby the lower portion of the uppermost solution may be withdrawn when it becomes partially or completely saturated, and automatically replaced by an equal volume of water.

5. In a voltaic battery, the combination, substantially as hereinbefore set forth, of a containing-vessel, a positive plate or element placed in the upper part and a negative plate or element placed in the lower part of said vessel, a solution surrounding the negative plate having normally a greater specific gravity than the solution surrounding the positive plate, a conduit having its uppermost or inlet opening situated in a horizontal plane between the planes of the respective positive and negative plates, and a water-reservoir having its discharge-orifice at the normal level of the surface of the solution surrounding the positive element, whereby the lower portion of said solution may be automatically withdrawn when it becomes partially or completely saturated, and replaced by an equal volume of water.

6. In a voltaic battery, the combination, substantially as hereinbefore set forth, of a containing-vessel, a positive plate or element placed in the upper part and a negative plate or element placed in the lower part of said vessel, a solution surrounding the negative plate having normally a greater specific gravity than the solution surrounding the positive plate, a water-reservoir having its discharge-orifice situated at the normal level of the surface of the solution surrounding the positive element, and a reservoir containing a supply of solution for exciting the negative plate, having its discharge-orifice in the immediate vicinity of said plate.

7. In a voltaic battery, the combination, substantially as hereinbefore set forth, of a containing-vessel within which the positive and negative elements of the battery are respectively immersed in solutions of normally unequal specific gravities, a conduit having its uppermost or inlet opening situated in the lower portion of the solution of least specific gravity, a water-reservoir having its discharge-orifice situated at the normal level of the surface of the last-named solution, and a reservoir containing a supply of solution for exciting the negative plate, having its discharge-orifice in the immediate vicinity of said plate, whereby the specific gravities of the respective solutions may be automatically rendered practically constant during the continuous operation of the battery.

8. In a voltaic battery, the combination, substantially as hereinbefore set forth, of a containing-vessel, a positive plate or element placed in the upper part and a negative plate or element placed in the lower part of said vessel, a solution surrounding the negative plate having normally a greater specific gravity than the solution surrounding the positive plate, a conduit having its uppermost or inlet opening situated in a horizontal plane between the planes of the respective positive and negative plates, a water-reservoir having its discharge-orifice at the normal level of the surface of the solution surrounding the positive element, and a reservoir containing a supply of solution for exciting the negative plate, having its discharge-orifice in the immediate vicinity of said plate, whereby the specific gravities of the respective solutions may be rendered practically constant during the continuous operation of the battery.

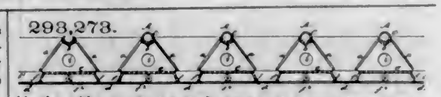
293,273. FURNACE-GRATE. JOHN A. PRICE, Scranton, Pa. Filed May 17, 1883. (No model.)

Claim.—1. A furnace having hollow or grated grate-bars, in combination with means for introducing steam and air through said bars into the fire-bed, and with means for positively withdrawing ashes from the fire and discharging them into the ash-pit, substantially as described.

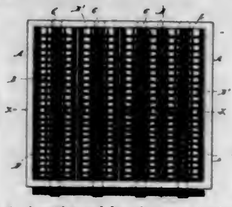
2. The combination of the grated fire-bars, means for supplying steam and air through the same to the fire, the stationary supporting plates between the fire-bars, and the intermediate movable plates, adapted, when operated, to scrape the ashes from the stationary plates and discharge them into the ash-pit, substantially as described.

3. The fire-bars having the grated inclined sides and the water-bars at the crown, substantially as described.

293,273.



293,274. FURNACE-GRATE. JOHN A. PRICE and DUNCAN WRIGHT, Scranton, Pa.; said Wright assignor to said Price. Filed Aug. 23, 1883. (No model.)



Claim.—1. A cutting and dumping grate having its fire-supporting arms or bars mounted upon shafts made tubular for the free circulation of air through them, whereby the sections are rendered light and strong and prevented from warping under the action of the heat, substantially as described.

2. In a cutting and dumping grate, the combination of the hollow supporting-shafts, open at both ends, and having the longitudinal groove, in combination with the independent fire-supporting arms or bars adapted to be slipped upon the tubular shaft, and provided with the projections or tongues for preventing their rotation independent of the shaft, substantially as described.

3. The fire-supporting bars or arms of the grate-sections, having the lateral projections or fingers, which serve to grate the space between the bars or arms, substantially as described.

4. In a cutting and dumping grate, the combination of the fire-supporting arms or bars and the hollow open shafts on which said bars or arms are separately mounted arranged in inclined position, substantially as described, for the purpose specified.

5. The combination of the hollow shafts and the fire-supporting arms or bars mounted thereon, having the lateral projections or fingers, which serve to space the arms from each other, and also to grate the space between the arms, substantially as described, for the purpose specified.

6. The combination of the hollow tubular shafts with the series of independent removable fire-supporting bars or arms mounted thereon, substantially as described.

293,275. URINAL. ALBERT B. PULLMAN, Chicago, Ill. Filed Mar. 2, 1883. (No model.)



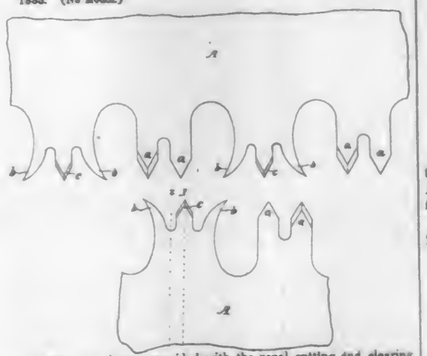
Claim.—1. A urinal comprising the basin A, provided with a downward extension, B, to connect with the waste-pipe at the floor, and with the high channeled back C, substantially as described, and for the purpose set forth.

2. In a urinal, the basin, A, provided with the extension B on its under side, and extended into a high channeled back, C, above, in combination with mechanism for detachably securing it in position, substantially as described.

3. The urinal comprising a basin, A, provided with the downward extension B, having its lower end adapted to enter an opening in the floor, and a high channeled back provided at its top with a socket, *n*, in combination with the casing H, having means for securing it to the wall, bolt I, and helical spring K, substantially as described.

4. In a urinal, the basin A, having a high channeled back, C, and downward extension B, provided with the internal shoulder, *t*, in combination with the cover F, constructed and arranged to operate substantially as described.

293,276. SAW. JOHN H. RILEY, Indianapolis, Ind. Filed June 26, 1883. (No model.)

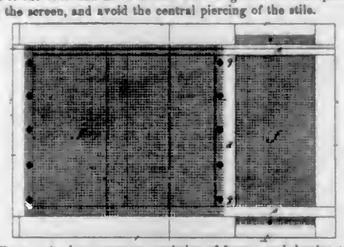


Claim.—1. A saw provided with the usual cutting and clearing teeth, and also with scoring-teeth, said scoring-teeth being filed alike on both sides, thus forming their points in the center of the teeth, and adapting them to score the bottom of the kerf in the middle before the regular cutting-teeth make the usual cut therein, substantially as set forth.

2. In a crescent-saw, scoring-teeth *c*, interposed between the reversely-set clearing-teeth, substantially as shown and specified.

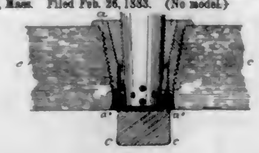
293,277. WINDOW-SCREEN. MORRIS ROBERTS, Philadelphia, Pa., assignor of one-half to George W. Hopkins, same place. Filed Sept. 8, 1883. (No model.)

Brief.—A window-screen consisting of two frames the stiles of which are grooved on opposite sides. The top and bottom pieces, *s c*, are secured to the stile and fitted to slide in said grooves when opening or closing the screen, and avoid the central piercing of the stile.



Claim.—An insect-screen consisting of frames each having top and bottom horizontal pieces, a side piece, a grooved stile, and additional horizontal pieces which are secured to the frame on the face opposite to said top and bottom pieces, substantially as and for the purpose set forth.

293,278. TAP-HOLE BUSHING AND PLUG. HENRY A. ROUTER, Boston, Mass. Filed Feb. 26, 1883. (No model.)

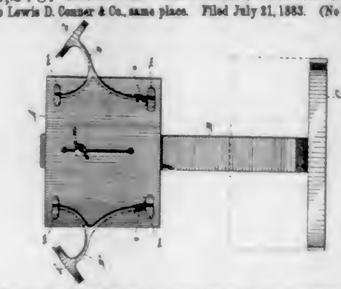


Claim.—1. The combination of a cask having a tap-hole of a frustum of conical or spheroidal form about half the length of the hole from the outer end of it, and of cylindrical form the remainder of the length of the hole to the inner end thereof, and a tap-hole stopper of a form corresponding to the form of the tap-hole, substantially as set forth.

2. A tap-hole stopper having the chamber c^3 and the transverse cut a^3, substantially as set forth.

3. A cask having a tap-hole provided with the short bevel a^4 at its inner end, substantially as described, for the purpose set forth.

293,279. BAG-HOLDER. CURTIS J. SAWYER, Cleveland, Ohio, assignor to Lewis D. Conner & Co., same place. Filed July 21, 1883. (No model.)



Claim.—In a bag-holder, the combination, with the support A, of the bifurcated arms D D', journaled in bearings secured to the support A, said arms being provided with jaws *d d'* and the coiled springs *e*, for forcing the arms away from each other, substantially as set forth.

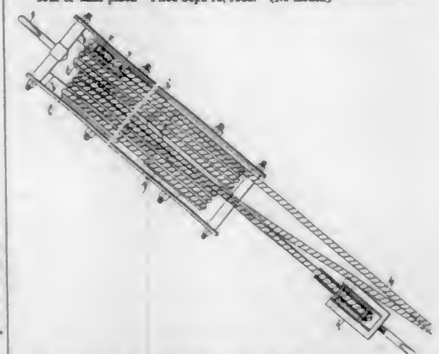
293,280. SELF-SHARPENING PENCIL AND ERASER COMBINED. HENRY R. SCAMMELL, St. Louis, Mo. Filed Jan. 11, 1883. (No model.)



Claim.—1. A self-sharpening pencil, consisting of an outer shell having an internal screw-thread and converging blades or sharpener-wings at one of its ends, an interior rotating tube having vertical slots, and a lead carrier or traveler having threaded wings projecting through said slots and engaging with the threads of the outer shell, substantially as herein set forth.

2. The combination of the rotating tube D, having collar or enlargement E, screw-threaded neck *e*, shell or cap I, and india-rubber eraser H, with the outer shell, C, and lead supporting and feeding devices, substantially as herein set forth.

293,281. DIFFERENTIAL PULLEY. GEORGE SMITH, Jr., New York, N. Y., assignor of one-fourth to Leander H. Thorn and James R. Langdon, both of same place. Filed Sept. 18, 1883. (No model.)



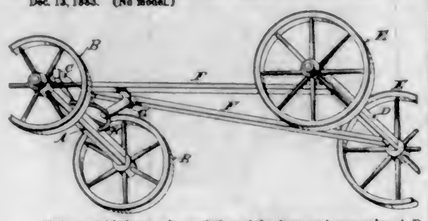
Claim.—1. In a differential pulley of the character herein set forth, the upper and lower sheaves, grooved for the reception of the rope, each sheave being composed of two sections movable together, the sections in the two sheaves bearing the same relative proportions to each other, substantially as shown and described.

2. In a differential pulley, the combination, with the two grooved sheaves, proportioned as explained, and the fall, of the operating-rope wound over and under the larger sections of the two sheaves from outside to outside, under the fall, and over and under the smaller sections of the two sheaves from outside to outside, and spliced, substantially as shown and described.

3. In a differential pulley having the two grooved sheaves, proportioned as explained, the rope wound thereon, as explained, and the fall, and the spring-actuated rollers mounted upon the frame of the pulley-block, and serving to guide the hand portions of the rope, substantially as set forth.

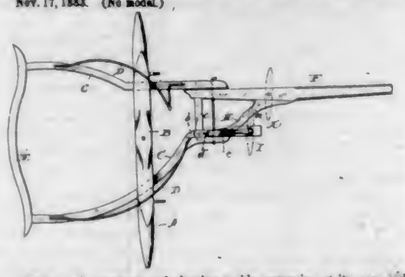
4. In a differential pulley, the upper and lower sheaves, grooved for the reception of the rope, the axes of the two sheaves being inclined with respect to each other, substantially as shown and described.

293,282. BINDER-TRUCK. JOHN C. SMITH, Miamisburg, Ohio. Filed Dec. 13, 1883. (No model.)



Claim.—A binder-truck consisting of the front and rear axles, A D, wheels B E, bolster C, bounds F, the king-bolt uniting the bounds, bolster, and front axle, the pendent arm G, and semicircular staple H, the parts constructed and relatively arranged substantially in the manner and for the purpose specified.

293,283. DRAFT-EQUALIZER. JOS. W. STREE, Goshen, Ind. Filed Nov. 17, 1883. (No model.)



Claim.—A tongue or pole having a side extension at its rear end, consisting of the curved front bar, *a*, parallel bar *b*, the rear transverse bar, *c*, the straps *f f'*, and hammer-strap *e*, said straps being perforated to receive the connecting-bolt of a single-tree, substantially as described.

293,284. BICYCLE-BRACE. WILLIAM X. STEVENS, Washington, D. C. Filed Jan. 2, 1884. (No model.)



Claim.—1. The combination, with a brace and a hinge, of a spring or its equivalent, adapted to lift and support said brace, substantially as shown and described.

2. The combination, with a bicycle, of a brace hung thereto by a hinge, and a spring or its equivalent, adapted to raise and support said brace, as shown and described.

3. The combination, with a bicycle, a brace, and a spring, of a hinge having an inclined axis, substantially as and for the purpose specified.

4. The combination, with a bicycle and a brace, of a hinge, constructed substantially as described, whereby the foot of the brace in rising from the ground will be guided toward the wheel, as specified.

5. The combination, with a bicycle-brace, of a hinge and means for removably attaching the same to the step of a bicycle, substantially as and for the purpose specified.

6. The combination, with a bicycle having a step, of a brace, a hinge, and means for removably attaching the same to the step of the bicycle, substantially as and for the purpose specified.

7. The combination, with a bicycle having a fixed portion, upon which the rider's foot may rest, of a brace having an arm, substantially as described, whereby the rider's foot may rest upon said fixed portion while holding the brace down, as and for the purpose specified.

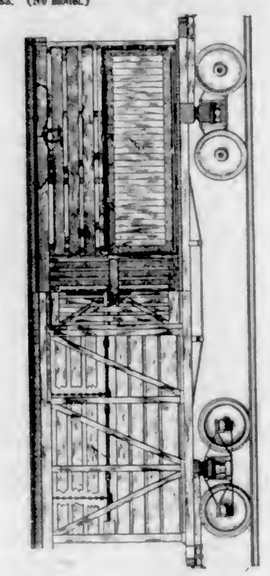
8. The combination, with a bicycle, of a brace and an arm on said brace, whereby the brace may be put down by the rider's foot, and whereby the said foot may rest upon both the bicycle-step and upon the said arm when the brace is down, as and for the purpose specified.

9. The combination, with a bicycle-brace, of a hinge therefor, fitted to engage the step of a bicycle, and a screw-bolt fitted for removably securing the hinge to the step, substantially as and for the purpose specified.

10. The combination, with a bicycle having a step, a brace having a hinge fitted to engage said step, and a screw-bolt therefor, of a washer countersunk to receive the bolt-head, and roughened to serve as a step, substantially as and for the purpose specified.

11. The combination, with a bicycle having a step, of a brace and means for securing the brace to the step, substantially as and for the purpose specified.

293,285. STOCK-CAR. LUTHER R. STILES, Chicago, Ill. Filed Nov. 24, 1883. (No model.)

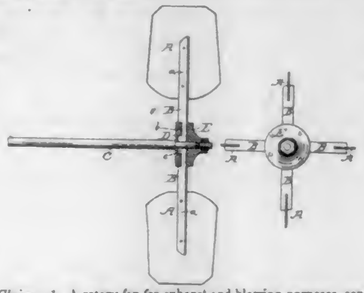


Claim.—1. The combination of the several hinge-rods *f*, securely fastened to the side walls of the described stock-car, and the several sections A of the main portion of the upper deck, each provided with a series of eyes, *e*, adapting them not only to revolve on the hinge-rods, but to move back and forth lengthwise upon them and free the doorways when required, substantially as and for the purpose described.

2. The series of chains *c*, having their upper ends attached to the roof of the described car, and their lower ends provided with disks or plates *d*, adapted to support the inner edges and corners of the leaves A and B, substantially as described.

3. The stock-car described, provided with end leaves hinged to the walls thereof about midway between the roof and lower deck, having such lengths that when folded down upon their hinges against the walls sufficient space will be left at either end for the sections of the main portion of the upper deck to slide back against the end walls and free the doorways, substantially as described.

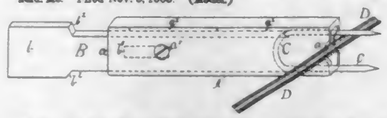
293,286. ROTARY FAN. CHARLES E. TUNELIUS, Chicago, Ill. Filed July 16, 1883. (No model.)



Claim.—1. A rotary fan for exhaust and blowing purposes, consisting of removable vanes provided with suitable shanks, and a sectional boss having a suitable formation corresponding to the extremity of said shanks, said vanes being removable by the separation of the sections of said boss.

2. The combination, with the vane having angle-iron ribs and a T-iron shank, recessed in the manner hereinbefore set forth, of a boss composed of two sections, one of which is mortised to receive the T-iron of said shank, and the other of which is a washer bearing against and confining said shank in position, the whole kept together by means of bolts or nuts.

293,287. FENCE-STAPLE DRIVER. JAMES D. VAN BIBBER, Springfield, Mo. Filed Nov. 5, 1883. (Model.)

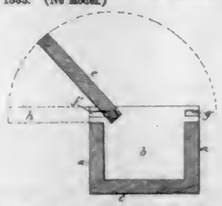


Claim.—1. In a fence-staple driver, the combination of a holder, A, having recesses *a' a'* at its forward end to straddle the fence-wire, and the shouldered driver B, having its driving end curved and recessed to fit the bow of the staple, the whole arranged so that the forward end of the driver will stop short of the fence-wire to be secured by the staple, in order not to injure the same, substantially as specified.

2. The combination, in a fence-staple driver, of the holder recessed on opposite sides at the forward end in a diagonal direction, and provided with a shouldered plunger curved and recessed at its forward end to fit the bow of the staple, and adapted to be operated substantially in the manner and for the purpose specified.

3. In a fence-staple driver, the combination of a holder, A, having recesses *a' a'* at its forward end to straddle the fence-wire, and provided with a slot on one side to receive an adjusting-screw, and the shouldered driver B, having its driving end recessed to fit the bow of the staple, and provided with an adjusting-screw working in said slot in the side of the holder, the whole so arranged and combined that the forward movement of the driver is limited by the shoulders and the backward movement limited by the adjusting-screw, substantially as specified.

293,288. BOX AND SIMILAR RECEPTACLE. WILHELM VON DARTEN, Bremerhaven, Germany, assignor to Carl Edelheim, Philadelphia, Pa. Filed Nov. 23, 1883. (No model.)



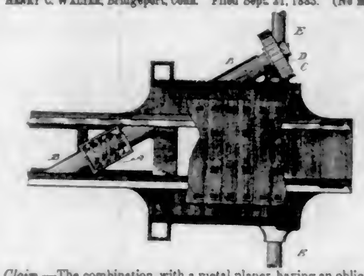
Claim.—1. A box and a cover therefor connected at the two ends by studs on one part entering open-ended slots in the other, said connecting devices being located, as described and shown, at or near the sides of the box, whereby the lid is rendered detachable and adapted to swing open without sliding the top backward in so doing.

2. A box and a detachable hinged cover therefor, the two connected by four studs on one part entering four open-ended grooves in the other, said parts constructed, substantially as described, to admit of the lid sliding edgewise to effect the engagement and disengagement of the studs.

3. A box and a detachable hinged lid therefor, one of said parts provided with flattened studs, and the other provided with grooves having one end open and the opposite end enlarged, to permit the rotation of the studs therein, whereby the accidental disengagement of the cover is prevented.

4. A box having the ends extended above the sides and provided with open-ended grooves at the front and rear sides, in combination with a lid having two pairs of studs to enter said grooves, as described and shown.

293,289. METAL-PLANING MACHINE. EDWARD P. WALTER and HENRY C. WALTER, Bridgeport, Conn. Filed Sept. 21, 1883. (No model.)



Claim.—The combination, with a metal planer, having an obliquely-arranged shaft provided with a spirally-toothed pinion meshing with a rack in the table and a spur-wheel on its outer extremity, of a transversely-arranged driving-shaft, having a spirally-toothed pinion meshing with said spur-wheel, substantially as shown and described.

293,290. IRONING-MACHINE. LEWIS H. WATSON, Chicago, Ill. Filed June 25, 1883. (No model.)

Claim.—1. In an ironing-machine, an iron and an ironing-table, in combination with mechanism, substantially as described, operating to move the table forward in contact with the iron, lower the table at the end of its forward movement, and return the table to the limit of its backward stroke without contact with the iron, substantially as set forth.

2. The combination of an ironing-table with mechanism, substantially as described, operating successively and automatically to move the table forward, lower the table at the end of its forward stroke, and return the table in its lowered position to the limit of its backward stroke, substantially as described.

3. The combination, substantially as herein described, of the iron and ironing-table with mechanism operating to reciprocate the table, an operating mechanism by which the table is brought up to and held against the iron during its forward stroke, and mechanism connected with and actuated by the table at the end of the forward stroke of the latter, and operating to lower the table-lifting mechanism, whereby the table shall be automatically lowered at the end of each forward stroke and returned in a lowered position, substantially as set forth.

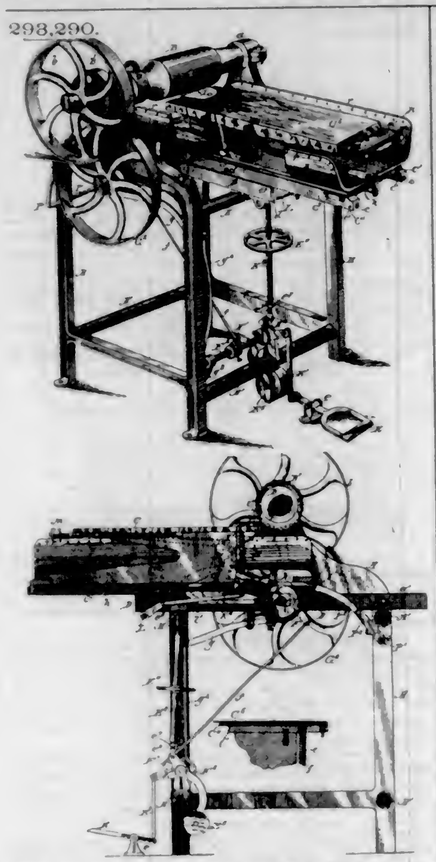
4. In an ironing-machine, the ironing-table provided at one end with a clamp operating to hold down the shirt-bosom at the neck, and at its opposite end provided with an extensible gripping and stretching mechanism, substantially as described, whereby the shirt may be held at the tail portion thereof and outward from one end of the table, in order to stretch the shirt thereon, substantially as described.

5. An ironing-table provided with means at one end for holding the neck end of the shirt, in combination with a combined shirt bolder and stretcher at the opposite end, consisting of a clamp mounted substantially as described, whereby it may be extended out from the end of the table, and comprising a pair of jaws and a spring connected to the inner jaw, next to the table, to force the same against the face of the outer with a yielding spring-pressure, substantially as described.

6. As a means for stretching a shirt upon an ironing-table, the combination, with a table provided with means for holding the shirt at one end, and with supporting-guides, of a pair of slide-rods mounted in said guides, springs connected with said rods, substantially as described, to throw the rods out from the table, and a jaw rigidly connected with said rods, a movable jaw supported upon said rods, and springs of greater strength than the springs employed for projecting the rods connected with the movable jaw, substantially as set forth, and for the purposes specified.

7. An ironing-table provided with means for holding the neck end of a shirt, and provided with supporting-guides, in combination with means for stretching the bosom of the shirt upon the table, consisting of a pair of slide-rods mounted in said guides, springs connected with said rods, substantially as described, for projecting the same out from the table, a fixed jaw rigidly connected with said rods, and a sliding jaw and the stops supported on said rods, and springs located between the

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sliding jaw, the said springs being of greater force than the spring or springs acting on the slide-rods, substantially as described.

8. In an ironing-machine, the ironing-roller and the ironing-table provided with a seat in its top face, in combination with a vertically-movable clamping-plate for the neck portion of a shirt, constructed to fit in said seat, and means operating to automatically raise and lower the clamp, substantially as described.

9. In an ironing-machine, the combination, with a supporting-frame, a table normally mounted thereon, and provided with a clamp-seat recessed in the upper face of said table, a clamping-plate fitted to said seat, a spring connected to said clamping-plate and serving to draw the same into the seat, means for reciprocating the table, and devices, substantially as described, for raising the clamping-plate at the termination of the backward stroke of said table, substantially as described.

10. The combination, in an ironing-machine, of the reciprocating and vertically-movable table, with mechanism operating to propel the table forward, a mechanism, substantially as set forth, by which the table is raised and the forward-propelling mechanism is brought into action, mechanism operating to lower the table at the end of its forward stroke and throw the forward-propelling mechanism out of action, and a spring connected indirectly with the table, substantially as set forth, to cause the return movement of the same, as and for the purposes specified.

11. As a means for causing the forward movement of an ironing-table in an ironing-machine, a friction drive-pulley, a propelling-wheel, and a movable bearing, in combination with mechanism connected with a movable bearing by which the table and propelling-wheel are raised and the latter brought into frictional contact with the friction drive-pulley, and means, substantially as described, connecting the propelling-wheel with the table, whereby when the propelling-wheel is raised the table shall be forced forward, substantially as set forth.

12. The combination, in an ironing-machine, of the reciprocatory ironing-table with a rotary friction drive-pulley, a propelling-wheel, G^2, a movable bearing for the same, and mechanism connected with movable bearing for raising said wheel up to the friction drive-pulley, and means connecting the propelling-wheel with the table, by which the latter is advanced while the propelling-wheel and pulley are in frictional contact, substantially as described.

13. The ironing-table and mechanism for reciprocating the said table, in combination with a rotary spool, two cords or wires wound in reverse directions upon the spool and connected with the table, mechanism, substantially as described, for rotating the spool in opposite directions, and mechanism, substantially as described, for automatically throwing out of action the forward-propelling mechanism of the spool when the table arrives at the end of its forward stroke, as and for the purposes set forth.

14. The combination, in an ironing-machine, of the reciprocating ironing-table with a spool secured upon a rotary shaft, and having cords or wires wound thereon in reverse directions and connected with the table, frictional drive-gear, substantially as described, by which the shaft is rotated in one direction, and a spring attached to the shaft, substantially as set forth, by which the latter is rotated in a reverse direction, substantially as described.

15. In an ironing-machine, the combination of an ironing-table with a clamping-plate for the neck portion a shirt-bosom, a support for said clamping-plate, extending through and below the table, and a horizontal slide provided with an incline formed and located with relation to the support for the clamp substantially as described, whereby when said incline strikes the clamp-support both the latter and the clamp shall be raised, substantially as and for the purpose set forth.

16. The combination, in an ironing-machine, of the ironing-table, means for reciprocating the same, with the slide K', provided with an incline, a rock-shaft having a suitable operating-handle, and provided with an arm, *l*, a link connecting the slide and arm *l*, and a neck-clamp mechanism, substantially as described, carried by the table, substantially as and for the purposes set forth.

17. The table, neck-clamp mechanism, consisting of a clamp-plate, I, a vertically-movable rod supporting the clamp-plate, a spring connecting the table and rod I', substantially as described, and a pivoted lever, I^3, provided with a notch, in which a pin on the rod is received, said members being combined for operation and carried by the ironing-table, substantially as described.

18. The ironing-table and mechanism for actuating the same, and the spring-seated jaws, in combination with an incline and mechanism connecting said jaws with the incline, substantially as and for the purpose set forth.

19. The supporting-frame, the ironing-table and means for actuating said table, and the clamp having a spring-seated jaw, in combination with the slide provided with an incline, the bell-crank, and rod connecting said bell-crank and jaw, substantially as described.

20. The supporting-frame, the ironing-table, and means for reciprocating the same, in combination with the slide-rods M, the fixed and movable jaws on the ends of said rods, the bell-crank pivoted to the table and connected with the movable jaw, and means for actuating said bell-crank and the spring m^3, substantially as described.

21. The ironing-table, its supporting-frame, and means for reciprocating said table, in combination with the treadle and devices connecting said treadle with the table, and means, substantially as described, connecting the driving mechanism and the treadle-connections, whereby the downward movement of the treadle will raise the table and the table be allowed to drop at the end of its forward movement, as and for the purpose specified.

22. The frame, the table, and means for reciprocating the table, in combination with a treadle, the rock-shaft, the bell-crank fixed on said rock-shaft and connected with the treadle, the shaft E^2, and the screw supporting said shaft at one end of the frame, substantially as described.

23. The combination, with a reciprocating ironing-table and a frame supporting the same, of a jointed support for one end of said frame and means for supporting the other end, substantially as set forth, and a treadle connected with the jointed support, substantially as described, whereby the joint may be flexed to lower the frame and have its members brought on a dead-center, in order to extend the support to its highest limit, as and for the purpose specified.

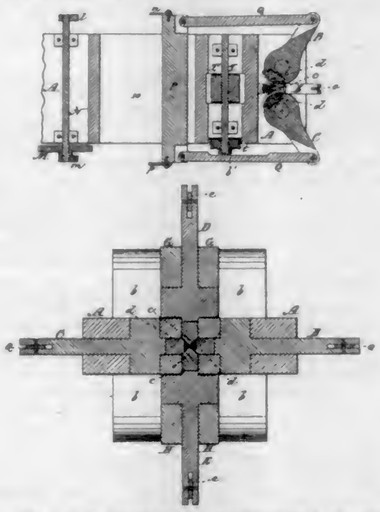
293,291. STREET-CAR-CURTAIN FIXTURE. JOHN ALEXANDER WATT, Boston, assignor of one-fourth to Henry B. Sellon and James L. Whitaker, both of Somerville, Mass. Filed July 3, 1883. (No model.)



Claim.—1. The combination, with an open street-car or other open-sided covered vehicle, of curtains suspended at the sides of the vehicle, and an operating device for each curtain extended to one or both ends of the car, whereby an attendant at an end of the car can raise or lower said curtains, as set forth.

2. The combination, with an open street-car or like vehicle, of curtains suspended from the sides of the car, a substantially horizontal operating cord or cords extending over suitable supports from end to end of the car, and clew-lines secured to said cord or cords and to the lower portions of the curtains, whereby each curtain may be raised and lowered by an attendant at one end of the car, as set forth.

293,292. DRILL-MAKING MACHINE. EDWIN O. WILLIAMS, Taunton, Mass., assignor to himself and Byron L. Dwinell, same place. Filed June 22, 1883. (No model.)



Claim.—1. In a forging-machine, the combination of four rocking levers arranged in opposite pairs, and provided with convex and concave dies, respectively, said dies adapted to operate simultaneously upon the four opposite sides of a drill-blank or other piece of metal, and to extend entirely around the same, and means for operating said levers, the grooves in the blank being rolled as the blank is drawn in and forced out between the dies, substantially as and for the purpose set forth.

2. In a forging-machine, the combination of a pair of rocking levers provided with dies adapted to produce longitudinal grooves in two opposite sides of a rod or drill blank, with a pair of rocking levers provided with dies adapted to operate simultaneously with the grooving-dies upon the outside of the rod or drill blank between the edges of the grooves, means for diminishing the distance between the grooving-dies, and means for operating said levers, substantially in the manner and for the purpose set forth.

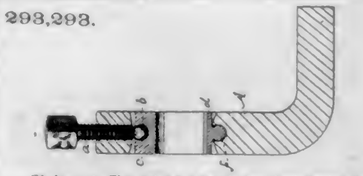
3. In a forging-machine, the combination, with a pair of rocking levers provided with dies, and adapted to operate upon two opposite sides of a rod or drill blank, of a pair of levers, D E, provided with dies, and pivoted to levers or carriers G H, and means, substantially as described, for operating said carriers to cause the dies of their levers D E to advance toward and recede from each other, substantially as and for the purpose set forth.

4. In a forging-machine, the combination, with the movable carriers G H and their rocking levers D E, provided with dies, of the cam T, placed between the carriers G H, the springs *r r*, shaft *q*, ratchet-wheel *t*, and the arm or pawl *u*, all constructed to operate substantially in the manner and for the purpose described.

5. In a forging-machine, the combination of the movable carriers G H, the rocking levers D E, pivoted thereto and provided with dies, the cam T, shaft *q*, pawl *u*, and the ratchet-wheel *t*, secured to the cam-shaft, and provided with one or more spaces, *a'*, whereby the intermittent rotation of the cam T is automatically arrested when the rod or blank has been rolled the required number of times, and the dies *c* have been separated to their greatest distance apart, all constructed to operate substantially in the manner and for the purpose set forth.

293,293. LATHE-DOG. JOHN WINSLOW, Jr., and ROSWELL ATKINS, Bristol, Conn. Filed May 12, 1883. (No model.)

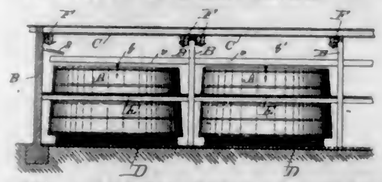
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Claim.—1. The lathe-dog herein described, having the rocking piece *c* permanently secured to the inner end of its set-screw and free to rock thereon, substantially as described, and for the purpose specified.

2. The combination of the lathe-dog, the set-screw *a*, the rocking piece *c*, mounted upon the inner end of said set-screw, so as to rock freely, and the rocking block *d*, permanently secured to the lathe-dog body at a point directly opposite the set screw and its rocking piece *c*, substantially as described, and for the purpose specified.

293,294. FERMENTING-ROOM IN DISTILLERIES. FREDERICK W. WOLF, Chicago, Ill. Filed July 12, 1883. (No model.)

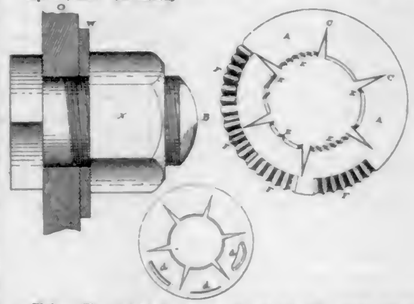


Claim.—1. In a distillery, a fermenting-room provided with a non-conducting floor built to surround the fermenting-vats over the supporting-floor, in combination with means for regulating the temperature of the upper chamber as circumstances shall require, substantially as described.

2. In a distillery, a fermenting-room having its ceiling and walls constructed wholly or in part of non-conducting materials, and provided with a non-conducting floor built to surround the fermenting-vats over the supporting-floor, and having pipes along the ceiling or walls, or both, to permit the circulation of cold or warm air through them, for the purpose of cooling or heating the atmosphere of the upper chamber as circumstances shall require, substantially as described.

3. In combination with the fermenting-vats A in a distillery, the walls B, ceiling C, and working-floor E, all formed wholly or in part of non-conducting materials, the floor D, supporting the vats A, and pipes F, lying along the said ceiling or walls, or both, substantially as described.

293,295. NUT-LOCK. FRANKLIN HOWELL AGNEW, Beaver, Pa. Filed Apr. 12, 1882. (No model.)

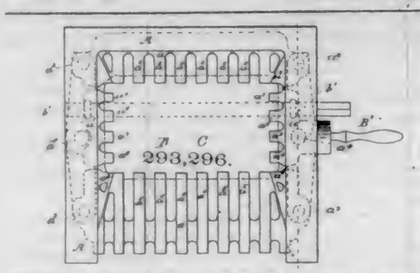


Claim.—The combination, with a nut and bolt, of a washer having a dished or concave inner portion, partial slits *c c*, a hole less, when the washer is flattened, than the diameter of the bolt, and with plane or roughened surfaces to come in contact with the bolt and nut, and with or without the cuts or indentations *d d*, all substantially as set forth.

293,296. STOVE-GRATE. EDGAR W. ANTHONY, Boston, Mass. Filed May 14, 1883. (No model.)

Claim.—1. A stove-grate having the parallel side bars, *a*, and the parallel end bars, *a'*, the end bars being pivoted to the frame of the grate, as described, and the side bars being pivoted to the end bars at a^2, the said bars having the fingers a^3 projecting inwardly therefrom, all substantially as and for the purposes described.

2. A stove or furnace provided with a rectangular or square grate,



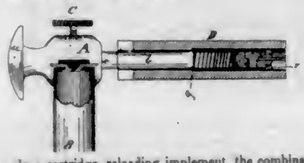
293,296.

consisting of the fingered bars *a a'*, surrounding the opening B, adapted to be reciprocated as specified, and the grate C below said opening B, capable of being tipped toward the ash-pit door, and a clearing-space, D, between the upper surface and the lower surface of the upper grate, substantially as and for the purposes specified.

3. The combination, in a grate, of the fingered grate-bars *a a'*, pivoted to each other and to the grate-frame, as specified, surrounding the opening B, and adapted to be moved or reciprocated in relation to each other as indicated, with the grate C below said opening B, all substantially as and for the purposes described.

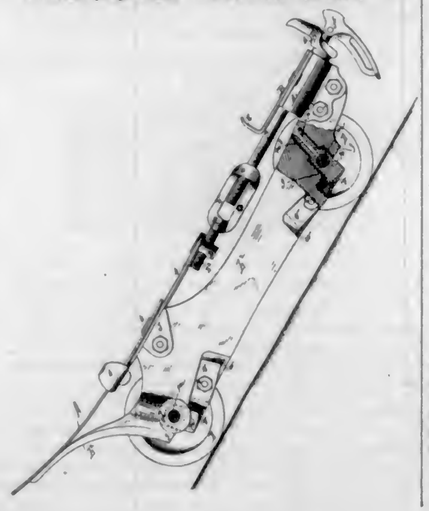
4. In a grate, the combination of the fingered bars *a a'*, pivoted to each other and to the grate-frame surrounding the opening B, the fingers of the back bar being more inclined than those of the front, and adapted to be moved or reciprocated in relation to each other as indicated, with the grate C, arranged below said opening B, all substantially as and for the purposes described.

293,297. CARTRIDGE IMPLEMENT. JOHN H. BARLOW, New Haven, Conn. Filed Dec. 20, 1883. (No model.)



Claim.—In a cartridge-reloading implement, the combination of the body A, having a suitable recess upon one side for receiving and holding the head of the cartridge-shell B while seating a primer, also provided with the primer-seating screw C or its equivalent, and convex hand-piece *a*, with the piston *b*, provided with an extractor-pin, as shown, together with the movable rammer-sleeve D, all being arranged to operate substantially as and for the purpose set forth.

293,298. ROLLER-SKATE AND SKATE-FASTENING. EVERETT H. BARNEY, Springfield, Mass. Filed Dec. 5, 1883. (No model.)



Claim.—1. A roller-skate frame, substantially as described, having therein inclined cylindrical journal-bearings, one at each end, an axle-journal, substantially as described, for each of said bearings, having a journal-post fitting said bearings, and having on its side opposite to said post a flat-sided stud, and springs, substantially as described, secured to the frame, which bear upon the opposite sides of said stud under the journal, combined and operating substantially as set forth.

2. In a roller-skate, the frame *b'*, having the journal *d* pivoted and adapted to vibrate therein, and having portions 3 3 thereof extending in the front and rear of said journal to constitute axle-stops, substantially as set forth.

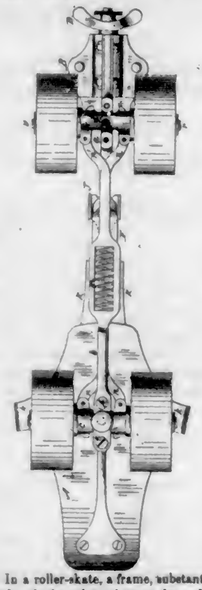
3. A roller-skate frame, substantially as described, having therein inclined cylindrical journal-bearings, one at each end, an axle-journal, substantially as described, for each of said bearings, having a journal-post fitting the latter, which post is provided with an oil-passage from its upper end to the interior of the journal, and having on its opposite side to said post a flat-sided stud, and springs, substantially as described, secured to the frame, which extend under the journal and bear against the opposite sides of said stud, combined and operating substantially as set forth.

4. A roller-skate frame, substantially as described, having an inclined cylindrical journal-bearing therein, a journal to receive and support that part of the axle between the rollers having a post thereon to fit said bearing, whose axial line intersects the longitudinal center line of the journal, and a flat-sided stud thereon opposite said post, and two springs secured on each side of the frame and bearing against the opposite sides of said stud, combined and operating substantially as set forth.

5. In a skate-fastening, the combination, with a non-rotating draw-bar, and with the sole-clamp pivot, of an adjusting-screw, substantially as described, connecting the said pivot and draw-bar, a heel-clamp secured to and having a sliding movement on the draw-bar, and a locking cam-lever pivoted to the latter in the rear of the heel-clamp, substantially as set forth.

6. The combination, with a non-rotating draw-bar, and with a locking cam-lever pivoted thereto, of a heel-clamp secured to said draw-bar by means substantially as described, but having a sliding movement thereon, substantially as set forth.

293,299. ROLLER-SKATE. EVERETT H. BARNEY, Springfield, Mass. Filed Dec. 5, 1883. (No model.)



Claim.—1. In a roller-skate, a frame, substantially as described, to support the fastening devices thereof, two axles and rollers therefor, two axle-cases pivoted to vibrate in said frame in a horizontal plane whose vibratory axes stand at an incline to each other, two connections pivoted to and uniting said axle-cases, and a spring to act through said connections upon both axle-cases simultaneously, combined and operating substantially as set forth.

2. In a roller-skate, the frame *a* and the strap *b*, each provided with a corresponding pivot-socket, the axle-case *c*, having pivots *d d* to

fit said sockets, and a suitable axle and rollers, combined and operating substantially as set forth.

3. In a roller-skate, the frame *a* and the strap *b*, each provided with corresponding pivot-sockets, two axle-cases, *c*, each having pivots *d d'* to fit said sockets, the connections *n n'*, the spring *m*, and suitable axles and rollers, combined and operating substantially as set forth.

4. The lever J, having the lip *z* thereon, and the link F, having the hook *x*, combined and operating substantially as set forth.

293,300. VEGETABLE-CUTTER. ERNST HARTH, Stauchitz, and OTTO SPILLER, Döbeln, Germany. Filed Mar. 23, 1883. (No model.)



Claim.—1. In a vegetable-cutter, in combination with the table B, provided with a stationary knife, M, and sliding box K, a number of knives, *m*, attached side by side to a shaft, *g*, and the plate R, provided with slots or openings *r*, through which the ends of the knives *m* project, and in which the same are guided, the whole being arranged to operate substantially in the manner and for the purpose described.

2. In a vegetable-cutter, the sliding plate S, inserted between the table B and the sliding box K, in the manner and for the purpose described.

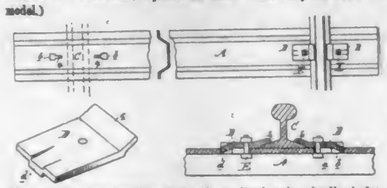
293,301. BUTTON OR STUD FASTENER. DUKE F. BAXTER, Rochester, N. Y., assignor of one-fourth to FRANCES A. BAXTER, same place. Filed Nov. 26, 1883. (No model.)



Claim.—1. A detachable stud consisting of a head having a threaded opening and a stem having a threaded body terminating at one end in a head and at the other in a tapering gimlet-point having one or more quick screw-threads, substantially as set forth.

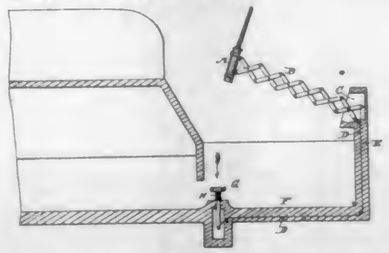
2. The combination of the button or stud and the attachment having a screw-stem and lateral arms at the outer ends, for the purpose set forth.

293,302. FASTENING RAILWAY-RAILS TO METALLIC TIES. GEORGE W. BLODGOOD, Wyandotte, Mich. Filed July 14, 1883. (No model.)



Claim.—The combination of the tie A, having longitudinal slot *a*, provided with the enlargement *b*, adapted to receive the head of a bolt, the clip D, having stop *d* and upturned end *c*, and the bolt E, substantially as and for the purpose specified.

293,303. WHIP-HOLDER. ST. GEORGE J. BOSWELL, Quebec, Quebec, Canada. Filed June 26, 1883. (No model.)



Claim.—1. A whip-socket fastened to one end of lazy-tongs, the other end of which is fastened to a vehicle, substantially as herein shown and described.

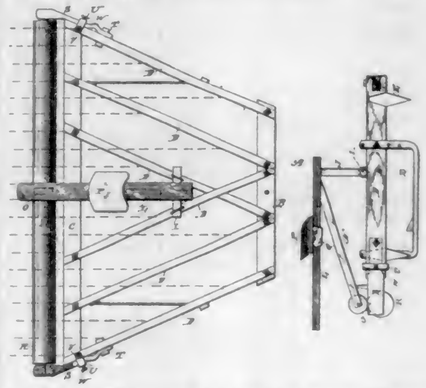
2. A whip-socket fastened to one end of lazy-tongs held to the bottom of a pocket in the dash-board of a vehicle, substantially as herein shown and described.

3. The combination, with a vehicle, of lazy-tongs held to the same, a whip-socket held to one end of the lazy-tongs, and devices connected with the opposite end of the tongs for the purpose of lengthening the tongs, substantially as herein shown and described.

4. The combination, with a vehicle, of lazy-tongs held to the same, a whip-socket held to one end of the tongs, the wire or chains D, connected with one lever of the end of the tongs held to the vehicle, and the pedal G with which the wire D is connected, substantially as herein shown and described.

5. The combination, with a vehicle, of lazy-tongs held to the same, a whip-socket, A, the wire or chain D, the pedal G, and the spring H, substantially as herein shown and described, and for the purpose set forth.

293,304. HARROW. WILLIAM E. BUDD, Chatham, N. J. Filed Oct. 5, 1883. (No model.)

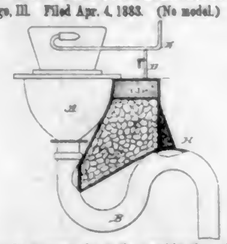


Claim.—1. The combination of a harrow having a series of beams, D, which have recesses made in their sides where the teeth are to be applied to them, with the teeth provided with the shoulders F and studs or projections G, and the clamping-bolts H, whereby the teeth are made removable from one side of the harrow to the other, so that their cutting-edges can be reversed, substantially as specified.

2. The combination, in a harrow, of the seat-lever L, the adjustable seat attached thereto, an arm or brace, N, the friction-roller O, and the roller R, which is attached to the rear end of the harrow by means of the adjustable levers S, substantially as shown.

3. The combination of the harrow, provided with the pivoted adjustable bearings S at its rear end, the bolts T, brackets U, set-screws W, roller R, the pivoted seat-frame L M J, and the roller O, substantially as described.

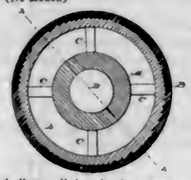
293,305. ATTACHMENT FOR WATER-CLOSETS. LUTHER H. BURNETT, Chicago, Ill. Filed Apr. 4, 1883. (No model.)



Claim.—1. In a water-closet, the combination of a chamber to receive a suitable chemical, and having a perforated bottom, and a pipe for conducting water to the chamber to dissolve the chemical, with a box which is filled with charcoal, through which the dissolved chemical flows into the waste-pipe, substantially as shown.

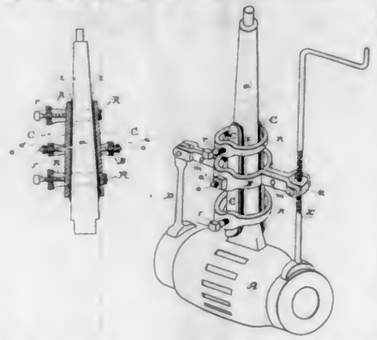
2. The combination of a chamber to receive a chemical, and having a perforated bottom, a pipe for conducting water into the chamber for the purpose of dissolving the chemical, and a chamber, F, for receiving powdered charcoal, and which is connected at its lower end with the waste-pipe, with a chamber, H, through which the gases are conducted from the waste-pipe into the chamber containing charcoal, substantially as shown and described.

293,306. ROLL FOR CRUSHING GRAIN. JOHN M'CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed Apr. 25, 1883. (No model.)



Claim.—The hollow roll herein described, consisting of an externally-chilled cylinder, B, of strained metal, an inner hub, A, of less pure metal, connecting-arms C, and a wrought-iron or steel shaft, D, on which the aforesaid parts are cast, as herein set forth.

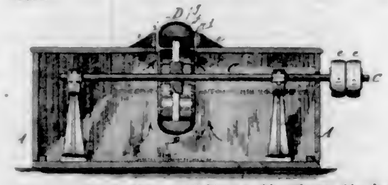
293,307. SPOKE-EXTRACTOR. ROBERT NELSON CADWELL, Shedd, Oreg. Filed Sept. 25, 1883. (No model.)



Claim.—1. In a spoke-extractor, the ring-lever B, the pivoted fulcrum-bar D, and screw-power E, in combination with the long jaws C, having trunnions *c*, upon which the ring-lever is pivoted, the nuts *c'*, and means for clamping said jaws on the spoke, substantially as herein described.

2. In a spoke-extractor, the ring-lever B, the pivoted fulcrum-bar D, and screw-power E, in combination with the long jaws C, having trunnions *c*, upon which said ring-lever is pivoted, and the means for clamping said jaws to the spoke, consisting of the rings R, secured above and below to one jaw, and the set-screws *r*, passing through said rings and impinging on the other jaw, substantially as herein described.

293,308. MACHINE FOR POLISHING LEATHER. ADOLPHE GERLAMENBERG, Paris, France. Filed Sept. 18, 1883. (No model.) Patented in France Mar. 22, 1882, No. 135,978, and in Belgium Apr. 20, 1882, No. 41,614.

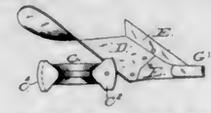


Claim.—1. In a buffing or polishing machine, the combination of a polishing or buffing wheel provided with radial arms and a polishing-face, an inclosing-box having an induction air-opening at the bottom and an eduction air-opening at the top, and guards arranged at the sides of the top opening, which serve to direct the currents of air against the buffer, and also serve to guard the wheel against contact with the leather upon the table.

2. In a buffing or polishing machine, a buffing-wheel having radial arms and a polishing-face, in combination with a table or platform having an opening provided with guards at its sides for directing the air forced through the opening by the arms of the wheel, substantially as described.

3. A buffing-wheel having radial arms, and a face of oval cross-section composed of a layer of rubber and an outer covering of cloth, in combination with a box having an air-induction opening at its bottom and an eduction air-opening at its top, provided with guards at its sides for the purpose of directing the air-currents against the buffer and preventing it from heating, substantially as described.

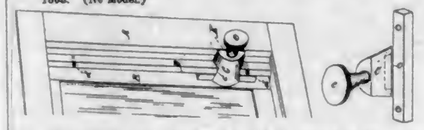
293,309. PLOW. AUGUSTUS G. CHRISTMAN, Litiz, Pa. Filed May 12, 1883. (No model.)



Claim.—1. In a plow, the combination, with the beam A and handles B, of an independent double and rearwardly-bifurcated standard, C, of the form shown, provided with beam-seats C' C^2, pad C^3, and ear C^4 for handles, landside-face C^5, recess-seat for landside C^6, nose-recess C^7, for reversible point G, and clamping-bolt C^8 and lug C^9, and in combination therewith the mold-board D, cutter E, share-wing F, reversible point G, and landside H, substantially as shown, and for the purpose set forth.

2. In combination with a double standard for a plow, as described, a reversible point, G, provided with a taper stem, and of varying section, as shown, a lug, G^2, and undercut portion G', adapted to combine with lug C^9 of recess C', and by bolt C^8 to be removably connected therewith, and by under-cut G' to lock both cutter E and share-wing F at their forward ends, as and for the purpose specified.

293,310. SASH-HOLDER. GEORGE P. CLEMENTS, New Milford, Pa., assignor of one-half to John C. McConnell, same place. Filed Oct. 31, 1883. (No model.)



Claim.—In a sash-fastener, the slide C, secured to the window-sash, and having the slot *c* and set-screw E, in combination with the bead D, secured to the window-frame, substantially as and for the purpose shown and described.

293,311. SHADE-PULL. CHARLES W. CLARK, Philadelphia, Pa. Filed Nov. 15, 1883. (No model.)

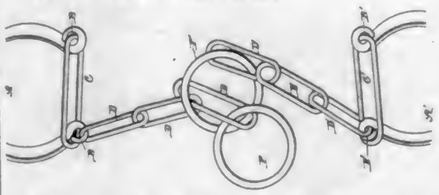


Claim.—1. A shade-pull having a bar, end balls, and a suspension-cord, the latter having its ends fitted in the bar and secured by the balls, substantially as and for the purpose set forth.

2. In a shade-pull, a bar having its ends tubular and compressible, a suspension-cord having its ends fitted in the ends of the bar, and balls which are fitted on the ends of the bar and clamp the same on the cord, combined and operating substantially as and for the purpose set forth.

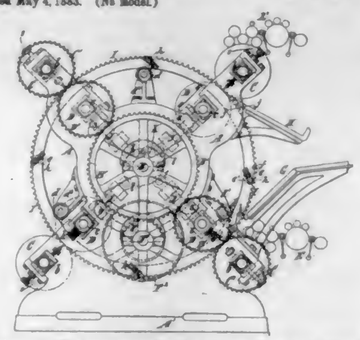
3. A shade-pull having a bar, a suspension-cord, and slide, said cord being stiffened and said slide tightening the stiffened cord, substantially as and for the purpose set forth.

293,312. HOPPLE FOR HORSES. JULIUS O. COTTLE and RUFUS IVIE, St. Jo, Tex. Filed Nov. 19, 1883. (No model.)



Claim.—A hopple composed of the two bent pieces A A', each one of which is provided with a long link, C C', a short chain, D D', and a ring, F F', substantially as shown.

293,313. PRINTING-PRESS. CALVERT B. COTTRELL, Westerly, R. I. Filed May 4, 1883. (No model.)



Claim.—1. The combination, with a number of separate pairs of form and impression cylinders arranged in a circular series, of a rotary series of grippers for presenting the sheets successively to the several pairs of cylinders in the series, substantially as described.

2. The combination, with two or more pairs of form and impression cylinders arranged in a circular series, of a rotary annular gripper-carriage and attached grippers, for presenting sheets successively to the pairs of cylinders, substantially as described.

3. The combination, with two or more pairs of form and impression cylinders, of a center shaft, a gear-wheel thereon, gear-wheels on the several cylinders engaging with the wheel on said center shaft, and a rotary gripper-carriage and attached grippers, for presenting sheets successively to the pairs of cylinders, substantially as described.

4. The combination, with two or more pairs of form and impression cylinders, of a rotary gripper-carriage for presenting sheets successively to the pairs of cylinders, toothed rings comprised in said carriage, and gear-wheels upon the shafts of the cylinders engaging with said rings and operating the gripper-carriage, substantially as described.

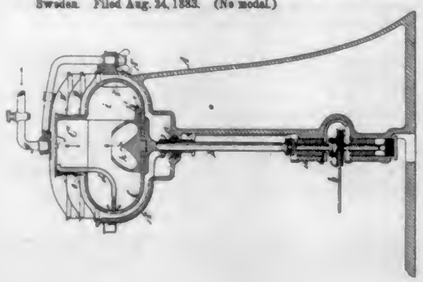
5. The combination of the pairs of form and impression cylinders C D, arranged in a circular series, the center shaft, B, and its gear-wheel B', the wheels C' D', gearing the cylinders of each pair together, and with the wheel B', the toothed rings I, comprised in the gripper-carriage, and the wheels *g* on the shafts of the form-cylinders, engaging with and driving said rings, substantially as described.

6. The combination, with pairs of form and impression cylinders arranged in a circular series, of a rotary gripper-carriage for presenting sheets successively to the pairs of cylinders, and devices, substantially such as described, for relieving the impression-cylinders, to provide for double rolling or inking, substantially as set forth.

7. The combination, with pairs of form and impression cylinders arranged in a circular series, and a rotary gripper-carriage for presenting sheets successively to the pairs of cylinders, of a center shaft from which the cylinders derive motion, plungers or rods acting on the bearings of the impression-cylinders, and cams on said center shaft for controlling said plungers or rods to relieve the impression-cylinders for double rolling or inking, substantially as described.

8. The combination, with the center shaft, B, pairs of form and impression cylinders deriving motion therefrom, and a rotary gripper-carriage for presenting sheets successively to the pairs of cylinders, of the plungers J acting on the bearings of the impression-cylinders, and the cam K on said shaft B, composed of the plates or sections *m m*, one of which is circumferentially adjustable relatively to the other, substantially as described.

293,314. CENTRIFUGAL CREAMER. GUSTAF DE LAVAL, Stockholm, Sweden. Filed Aug. 24, 1883. (No model.)



Claim.—1. A rotary vessel, C, for a fluid-separator, provided with an upwardly-projecting throat, C', open at the top, and having a discharge orifice or notch, *j*, in its upper edge, substantially as and for the purpose described.

2. The combination, with the rotary vessel C, of the blade *i*, extending nearly but not quite to the side wall of the vessel, leaving an opening, *i'*, between the outer edge of the blade and the vessel, substantially as described, and as illustrated in the accompanying sheet of drawings.

293,315. MAGAZINE FIRE-ARM. WILLIAM H. ELLIOT, New York, N. Y. Filed Dec. 3, 1883. (No model.)



Claim.—1. The combination, in a magazine fire-arm, of the longitudinally-reciprocating strap *h*, pivotally connected at its rear end to the arm *d''* of the brace of the breech-block, and having at its forward end the handle *n*, with inwardly-projecting arms or edges, taking with the grooves or guides in the barrel above and independent of both the magazine-tube and the guard-strap, whereby the handle is supported and guided independently of said tube and guard-strap, and the rear end of said connecting-strap is guided by the breech-block, substantially as shown and described.

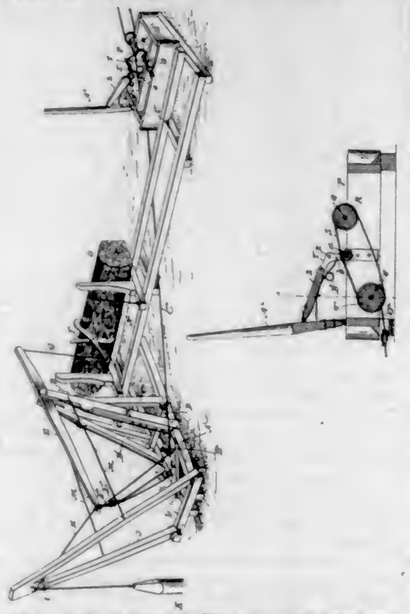
2. In a magazine fire-arm, the construction and combination of devices substantially as follows: a breech-block for closing the chamber, movable in a line with the barrel, actuated by a longitudinally-reciprocating handle, *n*, arranged forward of the receiver, through a suitable connection therewith, and having upon its forward end the inclined surfaces or cams *a* and *a'*, a bifurcated or slotted carrier pivoted at its rear end and provided with bar *s''*, upon which said surfaces act, whereby the carrier is depressed from its highest to its lowest position by the said inclined surfaces during the forward movement of the breech-block, substantially as specified.

3. In a magazine fire-arm, a breech-block movable in a line with the barrel, bearing the pivotally-connected brace, and having the eccentric bearing-surfaces *d'''*, for forcing the cartridge into the chamber, and *d'*, for starting the cartridge-shell out of the chamber, in combination with the receiver having the stationary shoulders *g''* and *m*, rigidly fastened thereto, whereby the cartridge is forced home in the chamber, and the shell is started out of the chamber by the alternate raising and lowering of the brace, substantially as shown and described.

4. In a magazine fire-arm, a breech-block provided with a brace for resisting the recoil of the charge, which brace abuts upon suitable recoil-shoulders that are formed eccentric to the axis of the brace and are supported by the receiver, and in combination therewith the two levers *d''* and *o*, both being pivoted to the brace and acted upon by the devices that give movement to the breech mechanism, to displace the brace from the recoil-shoulders, substantially as specified.

5. In a magazine fire-arm, a hammer having the curved projection *r'* extending forward from the face of the hammer under the rear end of the bolt, and the recess *r''* under said projection, in combination with the carrier *s* and brace *d*, the parts being arranged in such relation to each other that during the manipulation of the arm the rear end of the carrier occupies the recess *r''* when the arm is closed and the hammer down, the rear end of the brace occupies said recess when the arm is open, and the rear end of the receiver is kept all the time closed, substantially as shown and described.

293,316. LOG-TURNER. WILLIAM FREY, Zoar Station, Ohio. Filed Dec. 12, 1883. (No model.)



Claim.—1. In a log-turner, the lifting-lever carrying a hook at one end, in combination with the rotary operating-shaft, a pulley and drum formed integral with each other and mounted loosely upon a bar, a loosely-fitting belt connecting the pulley and shaft, devices for increasing the tension of the belt, and means for connecting the drum with the power end of the lifting-lever, as set forth.

2. In a log-turner, the lifting-lever fulcrumed in suitable uprights and provided at one end with devices for raising the log, in combination with means for operating said lever, a pivoted frame having a jointed connection with the uprights, and a weighted line connecting the power end of the lever with the said frame, as set forth.

3. In a log-turner, the lifting-lever fulcrumed in uprights B, and provided at one end with devices for grasping the log, in combination with means for operating said lever, a pivoted frame working in the rear of the lever, and provided with jointed rods secured to uprights B, which permit the free forward movement of the frame, and a weighted line secured to the power end of the lever and passing through a pulley secured to the frame, as set forth.

4. In a log-turner, the lifting-lever fulcrumed in suitable uprights and provided at one end with means for grasping the log, in combination with a rope connecting with the power end of the lever, a drum upon which said rope is wound, a rotary operating-shaft, a loosely-fitting belt connecting the shaft and drum, and devices for increasing the tension of the belt at will, as and for the purpose set forth.

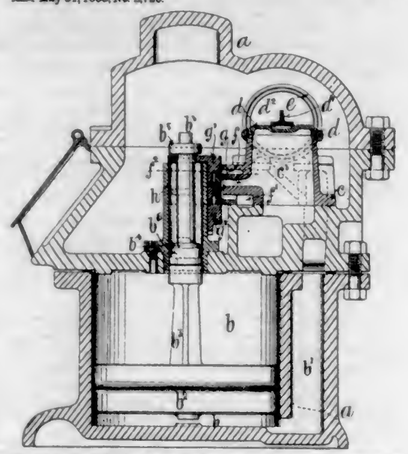
5. In a log-turner, the lifting-lever fulcrumed in suitable uprights and provided at one end with devices for grasping the log, in combination with a rope connecting with the power end of the lever, a drum upon which the rope is wound, a rotary operating-shaft, a loose belt connecting the shaft and drum, and a hand-lever provided with an arm carrying a pulley arranged to increase the tension of the belt at will, as set forth.

6. In a log-turner, the combination, with the rotary operating-shaft, of a bar arranged parallel with the same, a pulley and drum formed integral and mounted upon the bar, a loose belt connecting the shaft with the pulley, and a hand-lever provided with an arm carrying a pulley arranged to increase the tension at will, as set forth.

7. In a log-turner, the combination, with the rotary operating-shaft, of a bar arranged parallel with the same, a pulley and drum formed integral and mounted upon the bar, a loose belt connecting the rotary shaft and pulley, a hand-lever, A^2, provided with an arm, Z, a hanger, Y, secured to the arm and carrying a pulley, *a*, a cross-bar, X, supporting the hanger, and a brace-rod connecting the hanger and arm, as set forth.

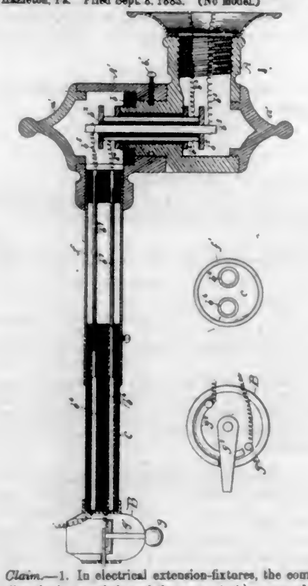
8. In a log-turner, the uprights B, provided with suitable brace-bars, and a lifting-lever fulcrumed between the uprights, a hook, F, attached to one end of the lever, a weighted line secured to the other end, a rope, C^3, pulleys G^2 D^2 E^2, a drum upon which the rope is wound, and means for operating the drum, as set forth.

293,317. FLUID-METER. HERBERT FROST, Manchester, County of Lancaster, England. Filed Dec. 7, 1883. (No model.) Patented in England May 31, 1883, No. 2,720.



Claim.—In a fluid-meter or water-motor, the block or casting *c*, with its ports c' c^2 c^3 and f f' f^2, combined with the supplementary cylinders e e' and pistons d^2 d^3, respectively, with the valve-covers *d* and *g*, for controlling the ingress and egress of fluid to and from the main cylinder *b*, substantially in the manner and for the purposes described.

293,318. ELECTRICAL EXTENSION-BRACKET. J. EDWIN GILES, Hazleton, Pa. Filed Sept. 8, 1883. (No model.)



Claim.—1. In electrical extension-fixtures, the combination of the swiveling device consisting of the parts A A', arranged to rotate, and secured together as shown, with the tube *f*, carrying conductors *b'*, and

bar c, of insulating material, having tubes b^2, extending longitudinally therethrough, and sliding in said tube f, all substantially as described.

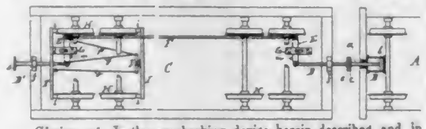
2. In electrical extension-fixtures, the combination of the swiveling device consisting of the parts A A', each having cap a', with tube b^2, pin b^2, passing through said tube and insulated therefrom, and electric conductors connected with said tube and pin, substantially as shown and described.

3. The combination of the swiveling device, tube f, carrying conductors b^1, and bar c, having tubes b^2, extending therethrough, all as described, with tube b^2, pin b^2, and conductors b^1 b^2, all substantially as shown and set forth.

4. In electrical brackets, the combination, with a joint or swiveling device maintaining electrical communication, of a tube secured thereto inclosing conductors, and an extension-bar of non-conducting material carrying tubes for continuing electrical contact in extension-arms, substantially as described.

5. In electrical extension devices, the combination of two naked bars secured as shown, with a bar or tube containing two metal tubes for receiving said naked bars, substantially as shown and described.

293,319. CAR-BRAKE. JOHN M. GRACE, Chicago, Ill., assignor of one-half to Francis R. Murphy, same place. Filed Mar. 27, 1883. (No model.)



Claim.—1. In the car-braking device herein described, and in combination with push-bars D D' and connecting-bar F, vibrating beams E E', having trunnions h, and mortise-plates G, having slots g and shoulder-studs m, all substantially as and for the purpose set forth.

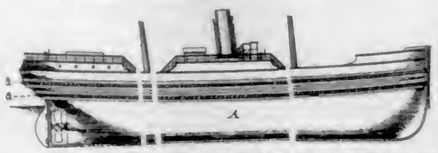
2. The combination, with steam-actuated piston b, of push-bars D D', vibrating beams E E', provided with trunnions h, connecting-rod F, and mortise-plate G, provided with slots g and stud m, the parts arranged and operating substantially as described and shown.

3. The vibrating beams E E', provided with trunnions h, and connected by bar F, in combination with brake-beams I I' and mortise-plate G, said plate provided with slot g and stud m, and the beams E' and I being suitably connected, the several parts being operated by steam-actuated piston b and push-rods D D', as described and shown.

293,320. INSECTICIDE. ISABELLA S. GRAVES, Fishkill-on-the-Hudson, N. Y. Filed Oct. 10, 1883. (No specimens.)

Claim.—The compound herein described for protecting plants and seeds from insects and other vermin, consisting of oleate of potash, nitrate of potash, and alum, with water in proportions substantially as herein set forth.

293,321. FENDER FOR SHIPS. JOHANN HEINRICH GRELL, Sr., Hamburg, Germany. Filed Sept. 26, 1883. (No model.)



Claim.—1. The combination, with the hull of a vessel, of one or more ropes extending longitudinally around the sides and ends of the same, parallel angle-irons, which are attached to the hull at each side of the rope or ropes, and transverse straps that extend across the ropes and serve to retain them between the angle-irons, substantially as and for the purpose set forth.

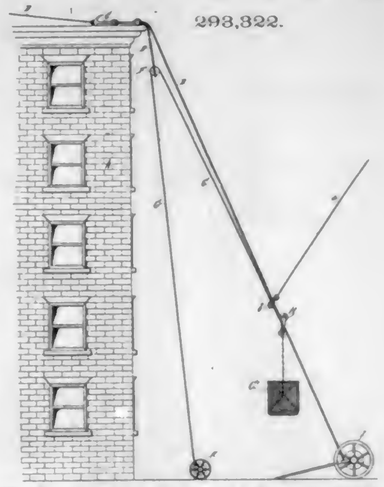
2. The combination, with the hull of a vessel, having one or more pairs of parallel angle-irons extending longitudinally around the hull, of ropes retained by said angle-irons and transverse straps, and of a vertical fender-rope applied to angle-irons of the stem-post of the bow, substantially as set forth.

293,322. FIRE-ESCAPE. WILLIAM N. GRENWOLD, New York, N. Y. Filed Oct. 29, 1883. (No model.)

Brief.—The hoisting-rope to which the carriage is secured runs through a pendant-block near the top of the building. The carriage runs upon a main line the upper end of which is anchored to the roof and the other end drawn taut by a windlass on a truck.

Claim.—1. In a fire-escape of the character herein set forth, the combination, with the anchor, of the main line or cable, the pendant carrying the block for the hoisting-line, and the backing-line, all connected

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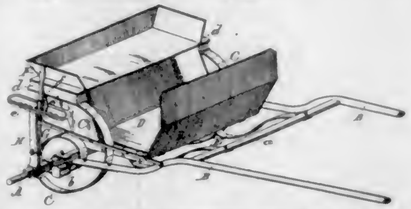
with said anchor, and arranged to operate substantially as and for the purposes set forth.

2. In a fire-escape of the character herein set forth, the combination of the anchor, the main line, backing-line, pendant having the block, the hoisting-line running through said block, and the cage arranged to travel on the main line, substantially as shown and described.

3. The herein-described fire-escape, consisting of the main line, anchor, backing-line, pendant with the block, hoisting-line running through said block, folding cage arranged to travel upon the main line, and reels for the lines, all combined and arranged substantially as shown and described.

4. In a fire-escape, the combination of the main line, anchor, pendant, hoisting-line, cage, and the shifting-line a, with its runner b, applied upon the main line, substantially as explained.

293,323. TWO-WHEELED VEHICLE. GEORGE E. GUERNE, Santa Rosa, Cal. Filed June 22, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, the axle, body, and intervening springs supporting the body, and shafts hinged to the axle, in combination with the axle-arm H, having rack e, the spring-lever F, and the rod G, connecting the lever F and shaft, substantially as herein described.

2. In a two-wheeled vehicle, the axle A and shaft B, hinged thereto, in combination with the axle-arm H, having rack e, and guard e', the lever F, having spring f, and the rod G, substantially as herein described.

3. In a two-wheeled vehicle, the axle, body, intervening springs supporting the body upon the axle, and the spring-straps connecting the front of the body with the cross-bar of the shafts, in combination with the axle-arm having the rack, the spring-lever, and the rod connecting the lever and shaft, substantially as set forth.

293,324. THEATER APPLIANCE. WILLIAM HANLON, New York, N. Y. Filed Sept. 22, 1883. (No model.)

Claim.—1. As a theatrical appliance, the figure of an animal or fowl, provided with two heads arranged to point in opposite directions, one of which corresponds to the natural head, and the other of which projects rearward from the hind quarters or tail of said animal or fowl, in combination with a support or figure of a man, or woman, or animal, so formed as to have two faces, two pairs of arms and legs, and two body-fronts, the said double-faced figure being supported upon the back of the animal or fowl, and between the two heads thereof, substantially as and for the purpose specified.

293,324.



2. The combination of the figure of a horse, A, head-mask B, body F F', masks I, two pairs of arms, H, and legs K, secured to body F F', substantially as and for the purpose specified.

3. The combination of the figure of a horse, A, head-mask B, body F F', masks I, double hat J, and two pairs of arms, H, and legs K, secured to body F F', substantially as and for the purpose specified.

4. The combination of the figure of a horse, A, head-mask B, body F F', masks I, double hat J, coat G, having four arms, and four legs, K, secured to body F F', substantially as and for the purpose specified.

5. The combination of the figure of a horse, A, head-mask B, a body, F F', masks I, two pairs of arms, H, and two pairs of legs, K, and bands D, substantially as and for the purpose specified.

6. The combination of the figure of a horse, A, head-mask B, a body, F F', masks I, two pairs of arms, H, and two pairs of legs, K, and bands E, substantially as and for the purpose specified.

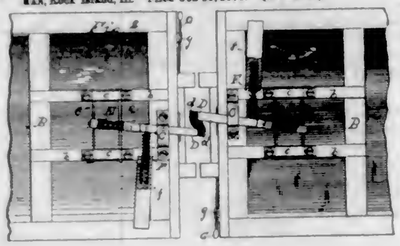
7. A detachable mask of the head of a horse or other figure, having its neck part so formed as to fit the hind quarters or tail of said figure, substantially as set forth.

8. A detachable mask of the head of a horse or other figure, having its neck part so formed as to fit the hind quarters or tail of same, and means to hide the juncture of the mask with the body, substantially as set forth.

9. The combination of a head or mask of an animal or fowl, having its neck part formed to fit the hind quarters or tail of said animal, with the double figure or clothes of a man facing in opposite directions, substantially as shown, and a support for said figure or clothes, whereby it or they are carried upon the back of said animal between its real and imitation head, substantially as and for the purpose specified.

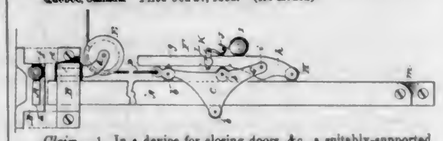
10. The combination of a head or mask of an animal or fowl, having its neck part formed to fit the hind quarters or tail of said animal, with the double figure or clothes of a man facing in opposite directions, substantially as shown, a pair of reins in each pair of hands of said figure, and adapted to connect with the real and imitation head of the animal, and a support for said figure or clothes, whereby it or they are carried upon the back of said animal between its real and imitation head, substantially as and for the purpose specified.

293,325. CAR-COUPLING. CHARLES A. HANSGEN and JAMES R. COLEMAN, Rock Island, Ill. Filed Oct. 19, 1883. (No model.)



Claim.—In car-couplers, the vertically-elongated heads rounded off on sides opposite to each other and having their clasping portions turned in reverse direction, said heads formed with the lips and attached at top and bottom to the bands at the end of the draw-bar, in combination with said draw-bar, the springs E and F, bars e e', and the lever G, all substantially as set forth and shown.

293,326. DOOR-CLOSING DEVICE. W. ANTROBUS HOLWELL, Quebec, Quebec, Canada. Filed Oct. 27, 1883. (No model.)



Claim.—1. In a device for closing doors, &c., a suitably-supported shaft or bar, in combination with a carrier traveling on said shaft and connecting with the door, and a weighted lever pivoted to said carrier, as and for the purposes set forth.

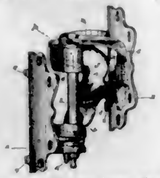
2. In a device for closing doors, &c., a suitably-supported bar or shaft provided with a beveled or chamfered recess, m, in combination with a carrier traveling on said shaft and connecting with the door, and a weighted lever pivoted to said carrier and provided with a roller, H, as and for the purposes set forth.

3. In a device for closing doors, &c., a suitably-supported bar or shaft provided with a beveled or chamfered recess, m, in combination with a carrier traveling on said shaft, and provided with rollers b, a cord or chain connecting said carrier to the door, a lever pivoted to the carrier and provided at one end with a roller, H, and an adjustable weight, as and for the purposes set forth..

4. In a device for closing doors, &c., a bar or shaft fitted at its upper end in a block, B, and provided with a beveled or chamfered recess, m, in combination with a carrier encompassing and traveling on said shaft, a cord connected to the carrier and leading through requisite pulleys to the door, a lever pivoted to the extension G of the carrier and provided at one end with a roller, H, and an adjustable weight connected to the lever, as and for the purpose set forth.

5. In a device for closing doors, &c., a suitably-supported bar or shaft, in combination with a carrier traveling on the same and connecting with the door, a lever pivoted at i to the carrier, a sliding sleeve arranged to be adjusted on said lever by means of suitable binding-screws, and a weight connected to the sleeve, as and for the purpose set forth.

293,327. AUTOMATIC GATE-HINGE. WESLEY HULL, Fort Wayne, Ind. Filed Mar. 26, 1883. (Model.)



Claim.—1. In an automatic gate-hinge, the leaf B and right-angled plate P, with open lower surface, having on its under outer corner a downward-projecting stay, with lower end curved inward and upward to retain the closing device in position, in combination with said stay, and the end of the closing device shaped to enter the orifice formed by said stay and allow the free operation of the closing device therein and upon the under surface of said plate, substantially as and for the purpose specified.

2. In an automatic gate-hinge, the leaf A, with drum O, having inclined upper surface, in combination with the long tapering end of the closing device and the projection U on the side of the inclined arm thereof, substantially as and for the purpose set forth and described.

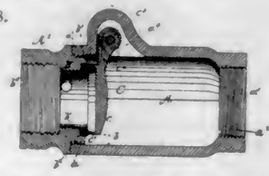
3. In an automatic gate-hinge, the curved horizontal arm of the closing device with notch V in its outer edge, in combination with rib R and projection E on leaf B, which enter said notch in the closing device and guide it in the act of opening and closing the gate, substantially as specified.

293,328. CHECK-VALVE. CHARLES JENKINS, Boston, MASS. Filed Feb. 17, 1883. (No model.)

Claim.—1. In a check-valve, the combination of the casing A, having the valve C hinged thereto, as described, with the removable section A', having the shoulder B integral therewith, and a valve-seat, b, of resilient or elastic packing, supported by said shoulder B, all substantially as and for the purposes described.

2. The combination, in a check-valve, of the section A', having the shoulder B, provided with the seat b, of Jenkins or other resilient pack-

298,328.



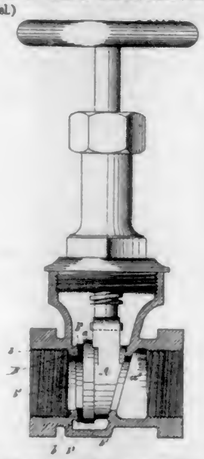
ing, screwed to the shell or casing A, with the said casing A, having a recess, a^4, formed in casting it, and a valve, C, having an arm, c^3, extending into said recess, and fastened therein by a screw-pivot, c^3, all substantially as and for the purposes described.

3. In a check-valve, the combination of the valve-casing A, supporting the hinged valve C, and having the screw-thread a', with the section A', having the resilient or elastic valve-seat b, and the screw-thread b^2, all substantially as and for the purposes described.

4. In a check-valve, the combination of the casing A, bearing or supporting the hinged valve C, and having the screw-thread a, with the section A', having a resilient or elastic valve-seat b, the screw-thread b^2, and the screw-thread b^4, all substantially as and for the purposes described.

5. In a check-valve, the combination of the casing A and the hinged valve C with the section A', having the shoulder B, supporting the resilient or elastic packing b, secured thereto by the screw-sleeve b', and also having the screw-thread b^4, all substantially as and for the purposes described.

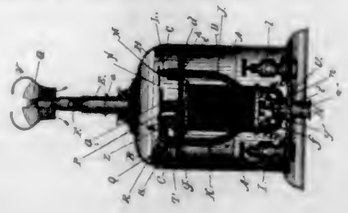
298,329. VALVE. CHARLES JENKINS, Boston, MASS. Filed Feb. 17, 1883. (No model.)



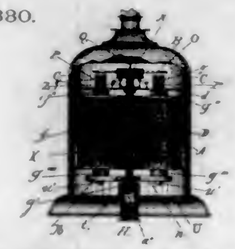
Claim.—1. The combination, in a valve having the rest b, of the packing b', with the movable connection or coupling described, for holding and securing the packing to the rest, all substantially as and for the purposes set forth.

2. The combination, in a valve having the rest b, of the packing b' and the movable connection or coupling described, for holding and securing the packing to the rest, and the gate A, all substantially as and for the purposes described.

298,330. ELECTRO-MAGNETIC GAS-LIGHTER. EVANS H. JENKINS, Richmond, Ind. Filed Aug. 6, 1883. (No model.)



298,330.



Claim.—1. In an electro-magnetic gas-lighter, the combination, with an electro-magnet and a gas-inlet duct provided with a valve-seat, of a counterbalanced tilting lever mounted pivotally upon an adjustable fulcrum, an armature attached to said lever, and a conoidal valve, also attached to said lever and arranged to operate in conjunction with the valve-seat of the gas-inlet duct, substantially as and for the purposes described.

2. The combination, with an electro-magnet and a gas-inlet duct provided with a valve-seat, of a tilting lever carrying an armature, and a conoidal valve arranged to act in conjunction with the valve-seat and mounted pivotally upon an adjustable fulcrum, a counterbalance-weight attached to said lever, and a screw passing through the counter-weight and arranged to limit the decent of said weight, substantially as and for the purposes set forth.

3. The combination, with an electro-magnet, a main gas-inlet duct provided with a valve-seat, and an auxiliary gas-inlet duct provided with an adjustable discharge-opening, of a tilting lever mounted pivotally upon an adjustable fulcrum, an armature attached to said lever, a conoidal valve, also attached to said lever and arranged to act in conjunction with the valve-seat, and a counterbalance-weight mounted upon said lever and provided with an aperture for the reception of the upper end of the auxiliary gas-duct, substantially as and for the purposes set forth.

4. The combination, with the electro-magnet $f\,f$, the gas-inlet ducts H J, and the externally-beveled valve-seat formed at the upper extremity of the duct J, of the tilting lever N, mounted upon the adjustable fulcrum Z, the armature O, attached to said lever, the counterbalance-weight S, with its regulating-screw Q, and the conoidal valve L, secured movably to the lever by its stem M, and arranged to operate in conjunction with the said beveled valve-seat, substantially as set forth.

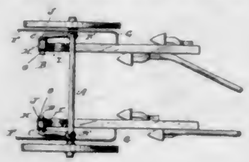
5. The combination, with the electro-magnet $f\,f$, the inlet-duct H, the branch duct J, provided at its upper extremity with the beveled valve-seat, and the auxiliary branch duct K, of the sub-cylinder D, provided with the inverted cover for the terminus of said duct, the adjusting-screw R, the tilting lever N, mounted upon an adjustable fulcrum secured to said sub-cylinder, the conoidal valve L, secured movably by its stem to said lever, the apertured counter-weight S, and the armature O, mounted upon said lever, substantially as described.

6. The combination, with the casing-sections A B, the sub-cylinder D, and the base-plate U, of the chamber g', the plate n, the magnet $f\,f$, the screw t, connecting the said chamber with the plate n, the screws n', connecting the plate n to the base of the magnet, and the screws g'', connecting the upper ends of the magnet to the plate d of sub-cylinder D, substantially as specified.

7. The combination, with the casing and the sub-cylinder, the counterbalanced lever carrying the armature and the conoidal valve, and the electro-magnet, of the base-plate n, the aperture chamber g', and the branches J K, opening from the apertures in said chamber, said branch J being provided with a valve-seat for the conoidal valve, and said branch K being provided with an adjustable valve, substantially as herein set forth.

298,331. TONGUELESS WHEEL-CULTIVATOR. THOS. B. JEWETT, Steubenville, Ohio. Filed Oct. 29, 1883. (No model.)

Brief.—The horizontal ends of the arch extend forward and then inward to form advanced bearings for the drag-bars. The spindle-plate has draft-rods to the front and arms to the rear for carrying the drag-bars when elevated. The drag-bars are connected to one end of the couplings, which may be interchanged to vary the distance apart of the drag-bars.



Claim.—1. In a cultivator, an arch or axle having its ends turned forward and then inward, for the purpose of having the front ends of the beams attached to them, substantially as shown.

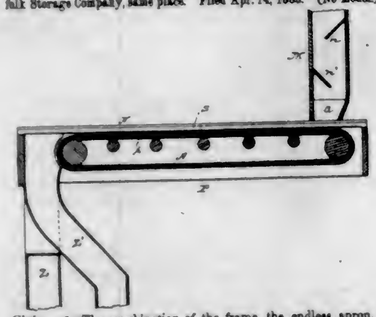
2. In a wheel-cultivator, the combination of the axle, having its ends turned forward and then inward, with the sleeves, which are applied to the ends, the sleeves being provided with means for limiting the movement of the beams, substantially as described.

3. The combination of an axle with the sleeves, having the vertical portion I provided with pin or bolt holes, made at or near one end of the sleeve, whereby, when the sleeves are reversed from one end of the axle to the other, the distance between the beams is increased or decreased, substantially as set forth.

4. In a wheel-cultivator, the combination of the axle, the draft-rods, the arms or braces, and the beams, whereby, when the beams are hung upon the arms or braces, the machine is locked rigidly in position, substantially as specified.

5. In a wheel-cultivator, the combination of an axle, having its ends turned forward and then inward, with the sleeves, provided with suitable means for regulating the vertical play of the beams, the draft-rods, the arms or braces which are formed with or secured to the draft-rods, and the cultivator-beams, substantially as shown and described.

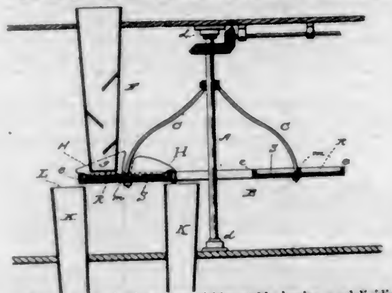
298,332. DEVICE FOR CLEANING AND SEPARATING PEANUTS. JOSEE JOHNSON, Norfolk, Va., assignor, by mesne assignments, to the Norfolk Storage Company, same place. Filed Apr. 14, 1883. (No model.)



Claim.—1. The combination of the frame, the endless apron, the partitions dividing the belt into a series of compartments, the feed-chute, the deflectors in said chute to direct matter into a portion of the compartments and exclude it from the other, and separate discharge-chutes for said compartments, substantially as described.

2. The combination of the frame provided with ways along its sides, the endless apron traveling in the ways of the frame, the longitudinal partitions dividing the apron into a series of compartments, the feed-chute provided with the deflectors to direct matter into a portion of said compartments and exclude it from the others, and the separate discharge-chutes to said compartments, substantially as described.

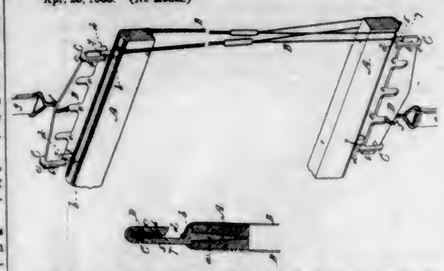
298,333. TABLE FOR ASSORTING BEANS, NUTS, FRUIT, &c. JOSEE JOHNSON, Norfolk, Va., assignor, by mesne assignments, to the Norfolk Storage Company, same place. Filed Apr. 14, 1883. (No model.)



Claim.—1. A circular rotary picking-table having a subdividing-partition extending circularly around the table, and automatic discharging devices for the compartments, in combination with the chutes or receivers into which the discharge is made, substantially as specified.

2. A horizontal rotary picking-table having a subdividing-partition extending circularly around the table, and each compartment provided with an automatic discharging device, substantially as and for the purpose specified.

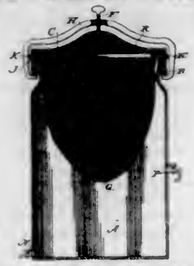
298,334. DEVICE FOR CONNECTING LOOM-HARNESSES WITH THEIR ACTUATING MECHANISM. JOHN P. KELLY, Saco, Me. Filed Apr. 28, 1883. (No model.)



Claim.—1. The combination, with the shaft of a heddle-frame, of a fastening or connecting device, C, consisting of a head, b, an open spring eye or loop, c, with a projection, 7, and having a space, d, between said projection and the head b, and a shank, a, adapted to be driven into the shaft until the head b lies flush with its surface, all constructed to operate substantially as and for the purpose described.

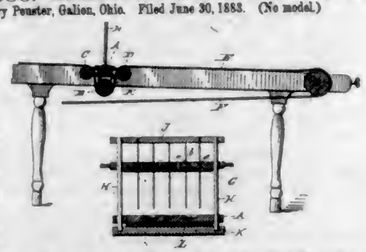
2. The combination, with the shaft A of a heddle-frame, of the draft-bar D, provided with a series of notches or apertures, e, and the spring fastening-eyes C, constructed as described, and adapted to receive the ends of said bar and secure them to the shaft A, substantially as set forth.

298,335. VACUUM-PRESS PERCOLATOR. CHAS. RICHARD KNAPP, San Francisco, Cal. Filed Mar. 2, 1883. (No model.)



Claim.—The combination of an elastic diaphragm, made of india-rubber or other suitable elastic material, separating the normal atmosphere from a vacuum created within a glass jar or other suitable air-tight vessel, in the interior upper part of which is suspended a porous conical bag, holding drug or other substance, so arranged as to be subject to the pressure of the diaphragm, transmitting atmospheric weight, for the purpose of separating volatile, gaseous, liquid, or soluble matter from solid or insoluble matter.

298,336. BRETZEL-MACHINE. WM. LAMPERT, Crestline, assignor to Henry Peuster, Galion, Ohio. Filed June 30, 1883. (No model.)

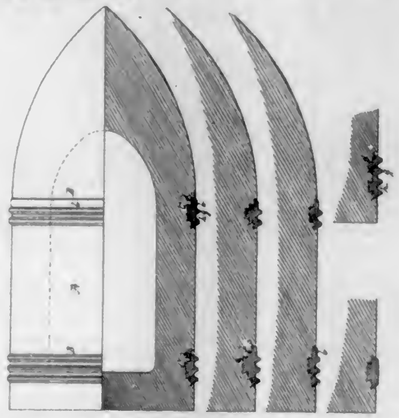


Claim.—1. In a machine for making bretzels or other like articles, the combination, with upper and lower dies, of endless apron having upper section, E, located substantially in the same horizontal plane with the lower die forward and rearward thereof, and means for conducting said apron-section beneath the lower die, substantially as set forth.

2. In a machine for making bretzels or other like articles, the combination, with the lower die and the endless apron, of a guide located below the lower die, beneath which the upper apron-section passes, and two guides respectively located to the front and rear of the lower die, over which said apron-section passes, substantially as set forth.

3. In a machine for making bretzels or other like articles, the combination, with upper and lower dies, and an endless apron whose upper section is located substantially in the same horizontal plane with the lower die forward and rearward thereof, of a guide located in vertical line below the lower die, beneath which said apron-section passes, and two guides respectively located to the front and rear of the lower die, over which said apron-section passes, substantially as set forth.

293,337. PROJECTILE. HENRY F. MANN, Pittsburg, Pa. Filed Dec. 20, 1883. (No model.)



Claim.—1. A projectile having a band-groove composed of a peripheral dovetail groove or grooves and a sub-goove of similar form made in the bottom thereof, substantially as and for the purposes specified.

2. The combination, with a projectile having a peripheral dovetailed groove and a sub-groove of like form in the bottom of the main groove, of a soft-metal band, substantially as and for the purposes specified.

3. The combination, with a projectile having a dovetailed band-groove, of a soft-metal band having one or more ribs and groove and a leading ring which corresponds in external diameter with the internal diameter of the bore of the gun at the top of the lands, substantially as and for the purposes specified.

4. The combination, with a projectile having a dovetailed band-groove, of a soft-metal band having two or more ribs, interposed grooves which correspond with or are less than the windage given to the shell, and a leading part which corresponds in diameter with the diameter of the bore of the gun at the top of the lands, substantially as and for the purposes specified.

5. The combination, with a projectile having a band-groove composed of a peripheral dovetailed band-groove and a sub-groove of like form in the main groove, of a soft-metal band having one or more ribs and interposed grooves and a leading part whose diameter corresponds with the diameter of the bore at the top of the lands, substantially as and for the purposes specified.

293,338. MAGNET. CHARLES MATTHEWS MANY, Brooklyn, N. Y. Filed Aug. 17, 1883. (No model.)

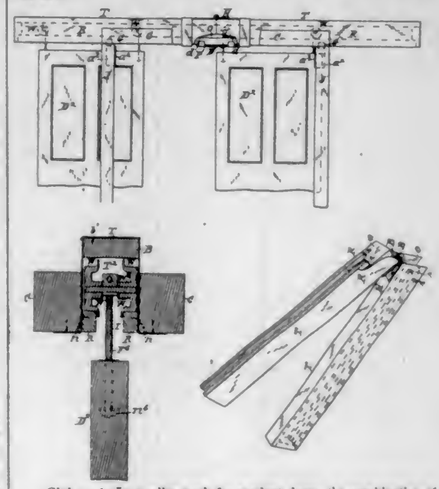


Claim.—1. A magnet provided with notches or projections, in combination with an armature provided with corresponding projections or notches, respectively, for connecting together the said magnet and armature, substantially as and for the purpose herein set forth.

2. The combination, with a magnet, A, provided with whole or half dovetailed projections *a*, of an armature, B, having notches *b*, shaped to correspond to said projections, substantially as shown in Fig. 1, and above described.

293,339. ROLLER-TRACK MECHANISM FOR PENDENT SLIDING DOORS. EDWARD WILLIAM MARTIN, Lansingburg, N. Y., assignor to Henry Martin, same place. Filed May 16, 1883. (No model.)

Brief.—The invention comprises a two-part track-inclosure having its adjacent inner ends connected at the top by a hinge and rails, arranged on its inner, lower, and opposite edges, and having a longitudinal opening between them, and also an opening below the hinged connection. A central top support of wood is attached to the interior of said inclosure, and adjustable slotted plates are constructed for the reception of short rails to make the track continuous past the hinge-joint. A pair of hinged plates, provided with stirrups to support the rails and a vertical set-screw at the bottom of same, is attached to door-opening jambs, to permit the door in certain cases to swing. A hook-shank constructed with an offset-arm is attached to the door, and has a hook-bearing to hook onto an axle of the roller, to serve the purpose of a hanger. A plate with corner tangs and screw-openings for attachment to the door, and a tubular opening through which passes a hook-shank, hold the hanger rigidly to the door.



Claim.—1. In a roller-track for pendent doors, the combination of the two-part track-inclosure T, the rails R R, arranged on the inner, lower, and opposite edges of said two-part track-inclosure, and the hinge-H, connecting the adjacent inner ends of the two-part inclosure for the track, as shown and described.

2. In a roller-track for pendent doors, the combination of the two-part track-inclosure T, the rails R R, attached on the inner, lower, and opposite edges of said inclosure, the longitudinal opening I between the rails, the hinge H, connecting the inner adjacent ends of the said track-inclosure at the top, and the opening O, made in said inclosure between the rail ends beneath the hinge, as and for the purposes herein set forth.

3. In a roller-track for pendent doors, the combination of the two-part sheet-metal track-inclosure T, the central top support, B, of wood, attached to the interior of said inclosure, the rails R R, attached to the inner, lower, and opposite edges of the sheet-metal track-inclosure, the opening I between the said rails, and the hinge H, connecting the inner adjacent ends of said inclosure, as shown and described.

4. In a roller-track for pendent doors, the combination of the two-part track-inclosure T, the rails R R, arranged on the inner, lower, and opposite edges of said track-inclosure, the hinge H, connecting the inner adjacent ends of the two-part inclosure, the opening O, made between the rail ends below the hinged connection, the adjustable plates P P, and the short rails N N, constructed to adjust in said plates, and the parts specified arranged to attach and operate as herein shown and described.

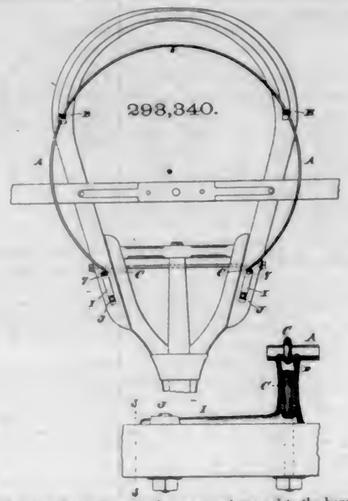
5. In combination with a roller-track for pendent doors, the hinge C, constructed with the plates a' a^2, the stirrup G, attached to the top of the plate a', and the set-screw K, in the bottom of the stirrup, as and for the purposes herein set forth.

6. In a roller-track mechanism for suspended doors, the combination of the hook-shank F^4, adapted at its lower end to attach to the doors, and constructed with the offset-arm S^4, and the hook-bearing B^4, adapted to hook onto the roller-axle, and constructed with the opening b^4, and vertical groove l^4, for the passage of said hook-shank and offset-arm, as shown and described.

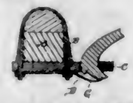
7. In a roller-track mechanism for suspended doors, the plate P^7, constructed with the corner-tangs h^7, and screw-openings for attachment to the top of the door, and the tubular opening O^7, for the passage of the hook-shank, as shown and described.

293,340. CIRCLE-IRON FOR WAGONS. JOHN MASSEY, Salem, Mo. Filed Oct. 15, 1883. (No model.)

Claim.—In combination with a circle-iron for wagons, &c., made of one continuous piece of bent iron, the notched hollow vertical posts with horizontal projections resting upon and secured to the hounds, and the eyebolts in which fit the ends of the circle-iron, and which pass down through the hollow posts and through the hounds with nuts on their lower ends, substantially as and for the purpose set forth.

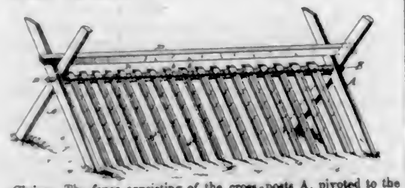


293,341. THILL-COUPLING. OSCAR C. MEHURIN, Newark, Ohio. Filed June 23, 1883. (No model.)



Claim.—The combination, in a thill-iron having on its rear end the downwardly-projecting hook or cam, and provided on its rear end or convex surface with a shoulder, of a draft-plate, C, having an opening through it just large enough to admit the thill-iron, and the spring G, which bears against the thill-iron, the parts being constructed and arranged to operate substantially as shown.

293,342. FENCE. JOHN WM. MEWBORN, Centerville, Tex. Filed Aug 30, 1882. (No model.)



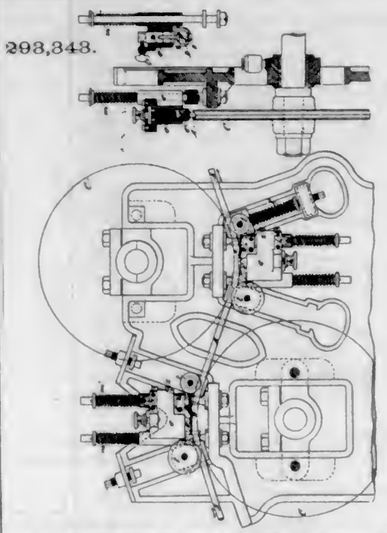
Claim.—The fence consisting of the cross-posts A, pivoted to the stringer B, provided with a top rail, D, and having slats E, extending from the stringer to the ground, and secured to said stringer by the barbed wire *b* and staples *b'*, said slats being further provided with barbed wire *b'*, substantially as shown and described.

293,343. MACHINE FOR WORKING RATTAN. HEINRICH ADOLPH MEYER, Hamburg, Prussia, Germany. Filed May 12, 1883. (No model.) Patented in Germany June 6, 1882; in Belgium July 5, 1882, No. 58,390, and in Austria-Hungary Oct. 19, 1882.

Claim.—1. The combination of the rotary disk C, having a grooved periphery, the chuck D and its cutter *s*, the presser *e* and springs *m m'*, for impelling it toward said disk, the bolt *o*, whereby said chuck is pivoted in said presser, and the screw *i*, for swinging the chuck D on said bolt *o*, and thus effecting the lateral adjustment of the cutter *s* relatively to said grooved disk, substantially as herein described.

2. The combination, with the disk C, chuck D, cutter *s*, and presser *e*, all arranged and operating substantially as herein described, of the movable presser-foot *e'*, and the screw A, whereby it may be adjusted in the presser *e* relatively to the cutter *s*, as set forth.

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3. The combination of the disk C, chuck D, cutter *s*, presser *e*, springs *m m'*, movable presser-foot *e'*, rollers *t t*, for holding the rattan against said disk in rear of and in advance of the cutter *s*, and presser-foot *e'*, and springs P, all substantially as herein described.

293,344. PROCESS OF EXTRACTING GLYCERINE FROM FATTY MATTERS. EDMOND FRANÇOIS MICHAUD and ERNEST NICOLAS MICHAUD, Aubervilliers, France, assignors, by mesne assignments, to the Continental Glycerine Company, New York, N. Y. Filed Oct. 6, 1883. (No specimens.) Patented in France Oct. 4, 1882, No. 151,404; in England Oct. 27, 1882, No. 5,112; in Germany Nov. 2, 1882, No. 23,213; in Belgium Nov. 8, 1882, No. 59,512; in Russia Nov. 13, 1882, No. 8,159; in Italy Nov. 15, 1882, No. 14,804; in Austria-Hungary Feb. 19, 1883, No. 37,740; in Canada Mar. 31, 1883, No. 15,594, and in Spain May 29, 1883, No. 2,573.

Claim.—1. The process of extracting glycerine from fatty matters, which consists in placing the fatty matters, with water and a zinc preparation, and without other more powerful base, in a closed vessel and subjecting the same to heat and pressure until the separation is effected, substantially as set forth.

2. The process of extracting glycerine from fatty matters, which consists in placing the fatty matters, with water and a zinc preparation, and in the absence of calcareous or alkaline substances, in a closed vessel, subjecting the same to steam-pressure for a sufficient time, and seperating the water containing the glycerine from the resulting fatty acids, substantially as set forth.

3. The process of extracting glycerine from fatty matters, which consists in adding to said fatty matters water and a zinc preparation known as "zinc-powder," and consisting, principally, of finely-divided metallic zinc and zinc oxide, and subjecting the mixture to the action of heat, substantially as set forth.

293,345. HARVESTER. LEWIS MILLER, Akron, Ohio. Filed June 2, 1883. (No model.)

Claim.—1. The curved and angular drive-wheel axle-bracket connected by its horizontal arm with the forward platform-sill, in combination with a brace supporting its upper end and the axle block or sleeve adjustable on said bracket, substantially as described.

2. The curved angular axle-bracket having its horizontal arm rigidly connected with the platform-sill, in combination with a chair supporting the upper end of the inclined binder-frame, and a brace connecting said angular bracket and chair, substantially as and for the purpose described.

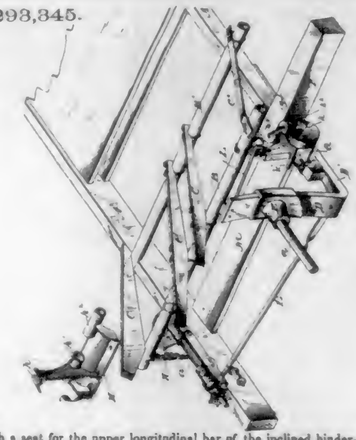
3. The combination, with the transverse grain-platform sills A and A', of the inclined binder-frame and the chairs supporting the upper end of said inclined frame, substantially as and for the purpose described.

4. The combination, with the forward platform-sill, of the chair G, forming a support for the upper end of the inclined binder-frame, and a tongue-socket, substantially as described.

5. The chair G, forming a combined binder-frame support and tongue-bracket, and provided with the shields or guards and bearings for the mechanism for adjusting the frame, substantially as described.

6. The combination, with the platform-sill, of the chair H, provided

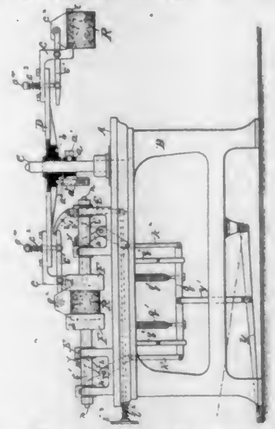
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with a seat for the upper longitudinal bar of the inclined binder-frame, and with bearings for the secondary or bevel-wheel shaft and counter-shaft, substantially as described.

7. The combination, with the platform sills or frame, of the chairs G and H, the inclined binder-frame secured to said sills and chairs, the angular axle-bracket D, and the braces L' and M, all substantially as described.

293,346. CAN-SOLDERING MACHINE. DAVID M. MONROE, Baltimore, Md. Filed Dec. 11, 1883. (No model.)



Claim.—1. The combination of a rotary conveyer, D, having attached thereto projecting arms *c* and clamping-knives c^2, and a gaging device provided with gages *d*, inside expanding-jaws, *e e*, and mechanism that will force the jaws *e e* apart, as set forth, and for the purpose as herein specified

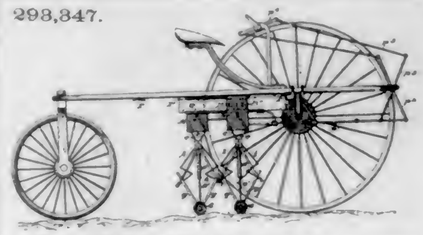
2. In a can-body-gaging device, the combination of two reciprocating heads, F F, provided with outside gages, *d*, inside expanding-jaws, *e e*, and mechanism to force the jaws *e e* apart, whereby each end of the can-body will be gaged at the same time.

3. The combination of the outside gages, *d*, inside expanding-jaws, *e e*, a reciprocating carrier or shaft, *t'*, attached thereto, and mechanism contained therein which will force apart the jaws *e e* when they cease to move in the direction of the can-body.

4. In a can-seaming machine, the combination of a conveyer having a vertical adjustment and a device to stop and hold the conveyer, whereby the conveyer may be adjusted vertically by the vertical adjustment of the stop and holder.

5. The combination of a reciprocating cross-head, *t*, adjustable gages *d*, expanding-jaws *e*, rod *n*, spring n^3, and shaft or carrier *t'*, operated as set forth.

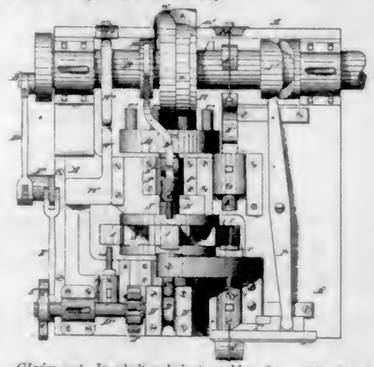
293,347. PROPELLING VEHICLES. BALDWIN S. MOORE, Austin, Tex. Filed May 26, 1883. (No model.)



Claim.—1. The combination of the vehicle, the vertically-extensible propeller-frame connected thereto, so that the one may slide longitudinally upon the other, and arranged so that when elongated it will bear above against the vehicle and below upon the ground, and mechanism for causing the elongation and sliding movement of the said propeller-frame, these parts being combined and having the mode of operation substantially as hereinbefore set forth.

2. The combination, with the vehicle, the vertically-extensible propeller-frame carried by and sliding lengthwise on said vehicle, and the propeller-actuating mechanism, of reversing mechanism, substantially as described, whereby the direction of movement of the vehicle upon the propeller-frame at the time the latter is elongated or extended by its actuating mechanism can be reversed at will, substantially as and for the purposes hereinbefore set forth.

293,348. BOLT OR RIVET MACHINE. JAMES MORGAN, Pittsburg, Pa. Filed May 14, 1883. (No model.)



Claim.—1. In a bolt and rivet machine, the combination of feed-tube C, dies *s*, in any desired number, such dies being movable backward to partially sever the blank, and then forward to completely sever the blank, and a device, substantially as described, which gives such backward and forward movements to the dies and holds them in positions of rest thereafter against movement in either direction.

2. The die-carrying shaft S', in combination with wheel R, having pins projecting from its side face, and wheel R', having cams and grooves on its periphery engaging with the pins on wheel R, substantially as and for the purposes set forth.

3. The combination of a die-carrying shaft, a wheel secured thereon having pins projecting from its side face, and a wheel having on a part of its periphery-face a groove parallel with the plane of the wheel, and on the remaining part of such periphery having inclined cams and grooves, substantially as set forth.

4. The combination of die-carrying shaft S', wheel R, having pins projecting from its side face, driving-shaft B, and wheel R', the latter having on its periphery-face straight groove *a*, inclined grooves *a' a² a³ a⁴*, and inclined cams *c c' c²*, substantially as and for the purposes set forth.

5. The combination of die-carrying shaft S', disk or wheel R, having four pins, r' r^2 r^3 r^4, on its side face set in circular order about the axis of the shaft, and wheel R', having on its periphery-face straight groove *a*, inclined grooves *a' a² a³ a⁴*, and inclined cams *c c' c²*, substantially as and for the purposes set forth.

6. The combination of feed-tube C, stop N, dies *s s*, heading mechanism K *i*, and mechanism, substantially as described, for moving the dies both backward and forward to sever the blank and carry the dies in succession from the feeding to the heading positions, and for holding the dies during the feeding and heading operations from movement either forward or backward, as set forth.

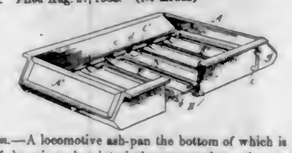
7. The wheel R', having straight groove *a*, inclined grooves *a'*, a^2, a^3, and a^4, and inclined cams *c* c^2, in combination with removable cam-piece *c'*, substantially as and for the purposes set forth.

293,349. PAPER-HOLDER. MILLARD F. NEWBURY, Coxsackie, N. Y., assignor to Benjamin F. Eaton, same place. Filed Sept. 4, 1883. (No model.)



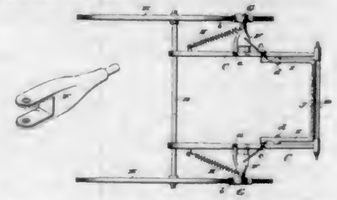
Claim.—The combination, with the paper-holder and the knife-stock, of a compound knife formed of the blade *o*, and the separate plates or strips *r*, having teeth at their ends, and the attaching-screws for holding the blade to the stock and clamping the strips *r*, substantially as set forth.

293,350. LOCOMOTIVE ASH-PAN. WILLIAM H. D. NEWTH, Detroit, Mich. Filed Aug. 27, 1883. (No model.)



Claim.—A locomotive ash-pan the bottom of which is formed with a series of dumping-slats interiorly connected together, and adapted to be opened and closed from the cab of the engine, each slat being provided with a flange, J, upon its upper face, substantially as and for the purposes set forth.

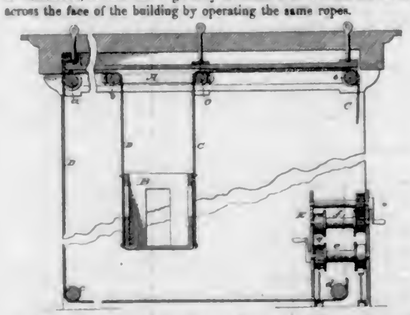
293,351. BRAKE FOR CHILDREN'S CARRIAGES. GEO. D. FAUL, Orange, assignor of one-half to Andrew R. Miller, East Orange, N. J. Filed May 8, 1883. (No model.)



Claim.—The combination, with the wheels and handle of a child's carriage, of brake-operating levers I I J, pivoted at *d d* to the side arms of the carriage-handle, brake-shoes, rods *c c*, and springs H H, substantially as set forth.

293,352. FIRE-ESCAPE. DENISON C. PIERCE, Chicago, Ill. Filed May 11, 1883. (No model.)

Brief.—The ropes are secured to the sides of the cage, passing up over pulleys on the carriage, and one passed in one direction, the other in the opposite direction over pulleys at the corners of the building down to windlasses, so that the cage may be raised and lowered and moved across the face of the building by operating the same ropes.



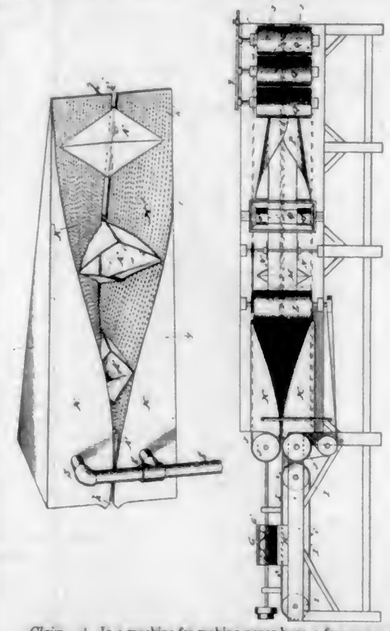
Claim.—1. The combination, in a fire-escape, of a cab suspended by cables or ropes at its two opposite sides, a traveling carriage carrying sheaves, over which said ropes pass, and two pulleys located one at each corner of the building in line with the traveling carriage, said ropes being led to winding-drums below, all arranged to operate substantially as described, whereby the cab, by means of said ropes, can be both elevated, lowered, and also moved laterally, as set forth.

2. In combination with the traveling carriage A, the cab B, with the ropes C D, sheaves *a b c d*, and winding-drums *e f*, all arranged to operate substantially as and for the purpose set forth.

3. The combination, in a fire-escape, of a traveling carriage, A, provided with the two sheaves *o o*, and the cab B, having the two ropes C D connected thereto, and passing up over sheaves in the traveling carriage, and from thence in opposite directions around the pulleys *a d* at the opposite corners of the building, and from thence to the two winding-drums, whereby the ropes which sustain the cab can be made to move the same both vertically and laterally, as herein shown and described.

293,353. PAPER-BAG MACHINE. WILLIAM B. PURVIS, Philadelphia, Pa., assignor, by direct and mesne assignments of one-half to Louis E. Pfeiffer, same place. Filed Oct. 11, 1881. Renewed May 26, 1883. (No model.)

Brief.—The tube is formed, creased for the diamond-fold, and severed into bag-lengths in the usual way, and discharged upon idler-rolls H. Belts I', provided with projecting pins and running at right angles to the tube-forming mechanism, seize the blanks, and, with belts, J present them transversely to and carry them through "suction-former" K, where, by exhausting the air from the former, the plies of the blank are sucked apart to form the diamond-fold of the bag-bottom. The creases for the final folds are made by disks N, and the final folds made by folder P.



Claim.—1. In a machine for making paper bags, a former provided with means to create a suction and a longitudinal aperture through which the tubes are fed in close succession, side by side, for the purpose of forming the bottom of the bag, substantially as and for the purpose specified.

2. In a machine for making paper bags, a stationary former made hollow, with its operating surfaces provided with numerous small apertures, in combination with an exhaust-fan, and pipes connecting said fan with the interior of the former, substantially as and for the purpose specified.

3. In a machine for making paper bags, a former having two suction-faces curved in opposite directions arranged to allow the tube-sections to pass between said faces, and side by side, as described and shown, and adapted to suck and draw the sides of said tube apart to form the bottom of the bag, substantially as and for the purpose specified.

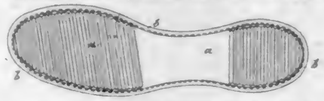
4. In a paper-bag machine, the combination of the feeding-bands I', suction-former K, roller L, creasing-rollers N, support *n*, plate M, pasting-roller O^2, folder P, and drying-rolls Q, substantially as and for the purpose specified.

3.

5. In a paper-bag machine, the combination of leveling-roller B, creasing-roller C, pasting device D, folder E, drying-rolls F, and creasing and cutting roller G, with suction-former K, means, substantially as described, to feed the tube-section to said former, pipe S, exhaust-fan U, feeding-bands J, a pasting-roller, and a folder, P, for folding over the bottom to complete the bottom as formed in former K, substantially as and for the purpose specified.

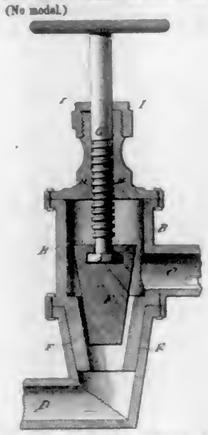
6. In a machine for making paper bags, a former provided with means to create a suction and a longitudinal aperture through said former, through which the tubes are fed in close succession for the purpose of forming the bottoms of the bags, in combination with two endless bands having their line of contact in line with the aperture in the former, and means, substantially as described, to press said bands together to feed the tubes through said former, substantially as set forth.

293,354. BOOT OR SHOE. HENRY EDWARD RANDALL, Northampton, County of Northampton, England. Filed Apr. 23, 1883. (No model.) Patented in England Dec. 1, 1882, No. 5,739; in France Apr. 13, 1883, No. 154,938; in Belgium Apr. 27, 1883, No. 61,240; in Canada Aug. 10, 1883, No. 17,439, and in Italy Sept. 30, 1883, XVII, 15,732, and XXXI, 345.



Claim.—In a lawn-tennis or other boot or shoe, an inner sole of leather, in combination with an outer sole, *a*, of rubber, made with a border or flange of lesser thickness than the main body of such outer sole, and united by a line of stitching through such flange to the leather sole, all as shown and described.

293,355. STOP-VALVE. ALBERT RAFFOLD, Titusville, Pa. Filed Dec. 26, 1882. (No model.)



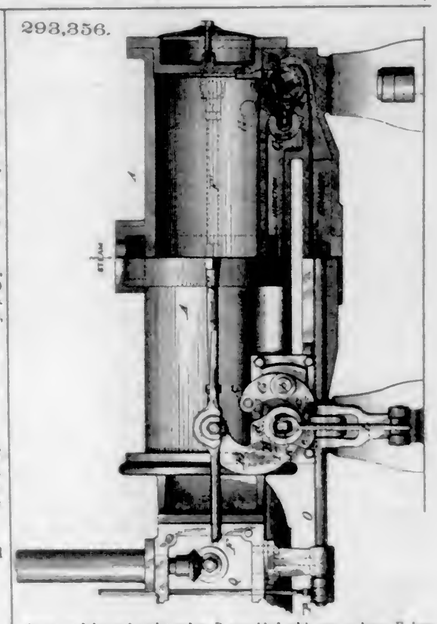
Claim.—As an improved article of manufacture, a stop-cock valve especially adapted for corrosive substances, and comprising a valve-chamber, A, formed of lead or equivalent soft metal, and consisting of the walls B and the conical valve-seat E, formed integral with the walls B, and forming the bottom of the valve-chamber, the cap-piece H, the operating-stem G, the conical valve-plug F, corresponding to the seat E, and likewise formed of lead or an equivalent soft metal, whereby should particles become lodged between the plug and seat they will be compressed into the soft metal, and not prevent closing of the valve, and the discharge-pipe D, having a conical throat that encircles the soft-metal seat E and protects and strengthens the same from damage from the outside, substantially as set forth.

293,356. CUT-OFF-VALVE GEAR. EDWIN REYNOLDS, Milwaukee, Wis. Filed Oct. 12, 1883. (No model.)

Claim.—1. In a steam-engine, the combination of a steam inlet and outlet valve, a cut-off valve, a double-ended lever for operating the cut-off valve, and a swinging arm or lever connected with the eccentric-rod and provided with bearing-faces on opposite sides of its center of motion, to actuate the double-ended lever in opposite directions, one of said bearing-faces being adjustable relatively to the lever, substantially as explained, to vary the point at which the steam shall be cut off.

2. The combination, in a steam-engine, of a steam cylinder and

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piston, an inlet and outlet valve, B, provided with arm or lever E, having bearing-face or cam *d*, cam or ear *e*, adjustable in relation to cam *d*, substantially as set forth, cut-off valve C, and double-ended lever G, connected with the cut-off valve, substantially as and for the purpose explained.

3. In a steam-engine, the combination of a steam-cylinder, and at each end of said cylinder an inlet and outlet valve, B, provided with lever E, cam or bearing-face *d*, and adjustable cam *e*, cut-off valve C, provided with double-ended lever G, and a rod, F', connecting the two levers E at opposite ends of the cylinder, a rod, F, connected with the eccentric of the engine, and a regulator connected with the adjustable cam *e*, substantially as set forth, whereby said cam is automatically set to cut off the steam at any required point.

4. In a steam-engine, the combination of a cut-off valve, C, provided with a double-ended lever, G, an induction and eduction valve, B, provided with an operating-lever, E, having a rigid cam or bearing-face, *d*, and a movable cam or bearing-face, *e*, connected with said lever, and with a regulator or governor, D, substantially as explained, whereby the governor is caused to control the position of the adjustable cam or bearing-face.

5. In combination with cut-off valve C, having double-ended lever G, valve B, provided with lever E, having rigid cam or face *d*, stem *a*, and hub or sleeve I, provided with slots *g*, sleeve H, encircling hub I, and provided with slots *f*, sliding block J, having arms *j*, extended through slots *f g*, governor D, and intermediate connections, substantially as described and shown, between the block J and governor.

6. In combination with cylinder A, cut-off valve C, having double-ended lever G, valve B, provided with lever E, having face *d*, stem *a*, and hub I, provided with slots *g*, sleeve H, encircling hub I, and provided with slots *f*, and sliding block J, provided with arms *j*, said arms being extended through the slots *f g*, and serving to rotate sleeve H about sleeve or hub I when moved longitudinally of the hub, substantially as explained.

7. In combination with valves B C, constructed and arranged to operate as described, sleeve H, provided with ear or cam *e* and slots *f*, hub I within said sleeve, and provided with slots *g*, sliding block J, link K, connected with block J by a universal joint, yoke L, connecting-rod M, shaft O, crank-arms N P, governor D, and rod Q, all combined and operating substantially as set forth.

8. In combination with valves B C, and with a rotary sleeve adapted to control the movements of cut-off valve C, substantially as explained, a sliding block, J, adapted to rotate said sleeve, and connected with the rod Q of a governor, D, through the medium of link K, yoke L, rod M, shaft O, and arms N P, as shown and described.

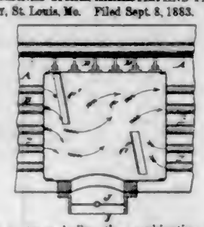
9. In a steam-engine, the combination of a steam inlet and outlet valve, a cut-off valve provided with an arm or lever, and a moving arm or body, substantially as shown, provided with two bearing-faces or cams

to act alternately upon the arm of the cut-off valve, one of said bearings being adjustable relatively to said moving body to vary the point at which the steam is cut off.

10. In a steam-engine, the combination of a steam inlet and outlet valve, a cut-off valve provided with an arm or lever, a moving block or lever, substantially as shown, provided with two bearing-faces to act alternately upon the arm of the cut-off valve, one of said bearing-faces being adjustable relatively to the other, a governor, and intermediate devices connecting the governor and the movable bearing-face, substantially as and for the purpose set forth.

11. In a steam-egine, the combination, substantially as shown, of a steam cylinder and piston, an inlet and outlet valve, B, provided with arm or lever E, having bearing-face or cam *d*, cam or ear *e*, adjustable in relation to cam *d*, substantially as set forth, and cut-off valve C, provided with an arm or lever, substantially as and for the purpose explained.

293,357. COMBINED SPARK-ARRESTER AND FLUE-SUPPORTER. JOSEPH C. RIDLEY, St. Louis, Mo. Filed Sept. 8, 1883. (No model.)

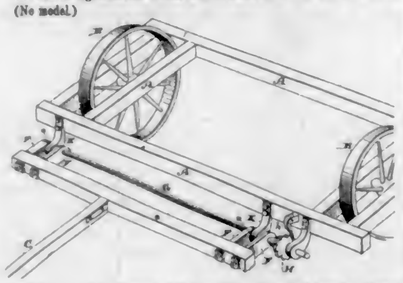


Claim.—1. In a steam-boiler, the combination, with a chamber, divided flues connected thereto, and a discharge at the bottom of the chamber, of a deflector depending from the top of the chamber at the end nearest to the fire-box, to throw the solid matter down to the discharge-pipe, as set forth.

2. In a steam-boiler, the combination, with a chamber, flues connected thereby, and a discharge at the bottom of the chamber, of the deflector projecting upward from the bottom of the chamber to throw the solid matter back into the discharge-pipe, as set forth.

3. In a steam-boiler, the combination, with a chamber, flues connected thereby, and a discharge at the bottom of the chamber, of the depending deflector at the end of the chamber nearest to the fire-box, and a deflector extending upwardly from the bottom of the chamber in advance of the discharge-pipe, as set forth.

293,358. HARVESTER. ALEXANDER ROBINSON, Benicia, assignor to the Benicia Agricultural Works, San Francisco, Cal. Filed July 20, 1883. (No model.)



Claim.—1. In a harvester, the pole C and wheeled frame A, hinged thereto, to adapt it to be adjusted to an inclination, in combination with an intervening torsion-spring, forming the pivotal connection between said pole and frame, and having a tendency to return said frame from its inclination, substantially as herein described.

2. In a harvester, the pole C, having cross-bar *c*, and the wheeled frame A, in combination with the metal rod G, hinging the cross-bar and frame, and a means for twisting said rod by the movement of the frame to an inclination to form a torsion-spring, substantially as and for the purpose herein described.

3. In a harvester, the pole C, having cross-bar *c* and eyebolts F, and the wheeled frame A, having bars E, with eyes *e*, in combination with the metal rod G, passing through eyebolts F and bars E, and squared at one end in one of said eyebolts F, as described, the ratchet-wheel H on the other end of rod G, and the pawl *h* on the frame A, all arranged and operating substantially as and for the purpose herein described.

293,359. BOOT OR SHOE. GEORGE ROLLRAHS, Pittsburg, Pa. Filed Oct. 1, 1881. Renewed Sept. 21, 1883. (Model.)

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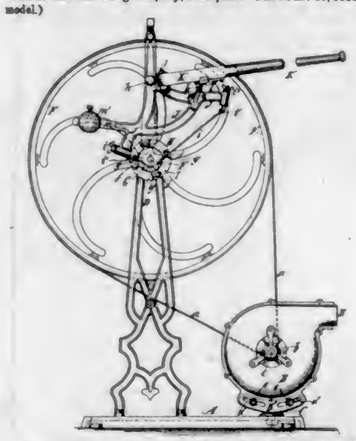


Claim.—1. The inside plate, C, in combination with the heel A and shank B, fastened together, as hereinbefore described.

2. The combination of the heel, shank, and plate C, with the quarter and vamp of a boot or shoe, the latter being held by compression between the former, substantially as described.

3. The combination of the heel and shank A B, and the inside plate, C, provided with longitudinal slots, clamping-screws, plates *a*, and buttons *b*, substantially as set forth.

293,360. DRIVING MECHANISM FOR FAN-BLOWERS. JOHN R. ROWLANDS, New York, N. Y., assignor, by mesne assignments, to the J. G. Hoffman Manufacturing Company, same place. Filed June 15, 1883. (No model.)



Claim.—1. The combination, with a driving wheel or pulley and its shaft, of a chain-wheel having a clutch-connection with said shaft which will permit the wheel to turn independently of the shaft in one direction only, a rocking frame and means for oscillating it, and a drive-chain carried by said rocking frame and gearing with said chain-wheel, substantially as specified.

2. The combination, with a driving wheel or pulley and its shaft, of a chain-wheel having a clutch-connection with said shaft which will permit the wheel to turn independently of the shaft in one direction only, a rocking frame and means for oscillating it, and a drive-chain having one or both ends detachably connected with said frame and gearing with said chain-wheel, whereby provision is afforded for detaching the chain and rotating the wheel or pulley by a hand-crank, substantially as specified.

3. The combination, with a driving wheel or pulley and its shaft, of a ratchet-wheel secured to the shaft, a flange or wheel loosely fitting on said shaft, and carrying a number of pawls adapted to engage with the said ratchet-wheel by gravity only, and means for rotating said loose flange or wheel alternately in opposite directions, substantially as specified.

4. The combination of the wheel or pulley F, the shaft E, the ratchet-wheel G, fast on said shaft, the chain-wheel H, loose on said shaft, and carrying pawls *f*, the rocking frame J and its drive-chain *i*, and means for oscillating said rocking frame, all substantially as specified.

5. The combination of the wheel or pulley F, the shaft E, the chain-wheel H, having a clutch-connection with said shaft, the rocking frame J, provided with the arm *m* and carrying the drive-chain *i*, and the weight *m'*, all substantially as specified.

6. The combination, with a driving wheel or pulley and its shaft, of a chain-wheel having a clutch-connection with said shaft which will permit the wheel to turn independently of the shaft in one direction only, a rocking frame and a drive-chain connected therewith and engaging with said chain-wheel, an operating-lever fulcrumed at its inner end to said frame, and a bearing or bracket projecting from the frame, and upon which said operating-lever may be adjusted laterally, substantially as specified.

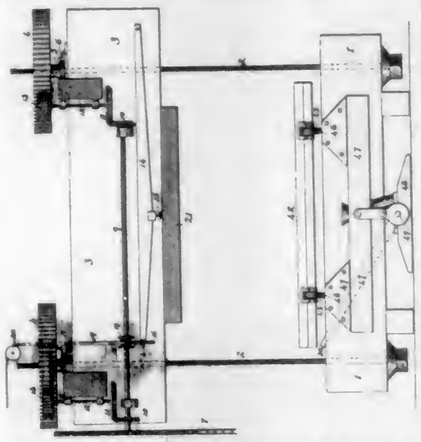
7. The combination, with the pulley F and its shaft E, of the pinion *o* on said shaft, and the crank L and its internal gear, L', mounted on a pivot independent of the shaft E, and gearing into the pinion *o*, substantially as specified.

293,361. COOLING-CASKET FOR PRESERVING THE BODIES OF CHILDREN. CHARLES M. RUTAN, Paterson, N. J. Filed Sept. 4, 1882. (No model.)



Claim.—In a cooler for corpses of children, a lid, *b*, having full-length glass *d*, in combination with a cooling-board, *g*, vertically adjustable upon supports *l* within the cooler, whereby the full length of the corpse can be exposed to view at a suitable distance below the glass, substantially as set forth.

293,362. CIDER-MILL. MARCUS P. SCHENCK, Fulton, N. Y. Filed July 5, 1883. (No model.)



Claim.—1. In a cider-press, the combination, with the bed 1, stationary screws 2, moving press-beams 3, and pinions 4, of a train of driving mechanism, 8 9 10 11 12 13, located between said moving beams, substantially as set forth.

2. In a cider-press, the combination, with the vertically-moving press-beams 3, of an adjustable lever, 14, pivoted at one end to said beams, and carrying at the other end a friction-wheel, 16, and a friction-wheel, 17, mounted on the main driving-shaft, and having flanges 18, for retaining a loose belt, 19, substantially as and for the purpose set forth.

3. In a cider-mill, a pomace-chute having a hinged trap-door and a sliding cut-off above said door, for measuring an equal quantity of material for each layer, as set forth.

4. In a cider-mill, a pomace-chute having a hinged trap-door provided with a marginal flange, in combination with a trough for catching the juice and delivering it into a suitable pipe or conveyer, as set forth.

5. In a cider-mill, the combination, with the pomace-chute 22, having hinged door 23, of a trough, 26, suspended by a spring, and adapted to hold said door in a closed position, and a suitable trigger for liberating it, as set forth.

6. In a cider-mill, the combination, with the chute 22, having trap-door 23, of a cut-off 29, operated by a crank through the medium of rack 30 and pinion 31, as set forth.

7. In a cider-mill, the combination, with a pomace-chute, of a flexible shield suspended from the ceiling by ropes passing over pulleys, and having a counterbalancing-weight, substantially as and for the purpose set forth.

8. In a cider-mill, a turn-table consisting of a frame supported and held centrally by suitable wear-irons, substantially as herein described, and having at its ends wheels running on a circular track or way, substantially as and for the purpose set forth.

9. The combination, with a turn-table supported at each end by suitable wheels, of a pair of corrugated wear-irons adapted to work together, as and for the purpose set forth.

10. The combination, with a turn-table supported at each end by suitable wheels, and having a central longitudinal trough, as described, of a pair of corrugated wear-irons adapted to work together, and having a central opening, as and for the purpose set forth.

11. In a cider-mill, the combination, with a wheeled press-board, of a turn-table having upright corner-pieces adapted to assist in laying up the cheeses evenly, as set forth.

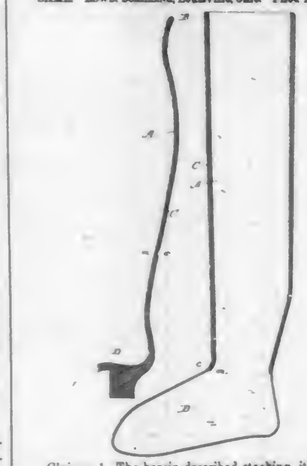
12. In a cider-mill, the combination, with a turn-table carrying a track on the top thereof, of a wheeled press-board and a suitable latch for holding it in place on the turn-table, substantially as and for the purposes set forth.

13. In a cider-mill, the combination, with a turn-table, of a wheeled press-board having a marginal flange and an opening in the front thereof for discharging juice into a suitable trough or receptacle, as set forth.

14. In a cider-mill, the combination, with a turn-table carrying tracks or ways, of a press-bed having similar tracks and a wheeled press-board, as set forth.

15. In a cider-press, the combination, with a wheeled press-board, of a track secured to and having its ends project beyond the press-bed, and connected to cross-beams operated by an eccentric-lever, whereby said ends are raised or lowered, substantially as and for the purposes set forth.

293,363. STOCKING AND THE ART OF MANUFACTURING THE SAME. EDWD. SCHILLING, Louisville, Ohio. Filed Apr. 7, 1883. (Model.)



Claim.—1. The herein-described stocking, it having a double-ply continuous fabric for the leg above the foot portion or shoe portion, and a single-ply tubular knit fabric for the foot portion, adapted to be inserted into a shoe without increase of pressure therein or an unusual enlargement of the foot portion of the fabric, the whole being knitted with stitches running in a continuous series, substantially as set forth.

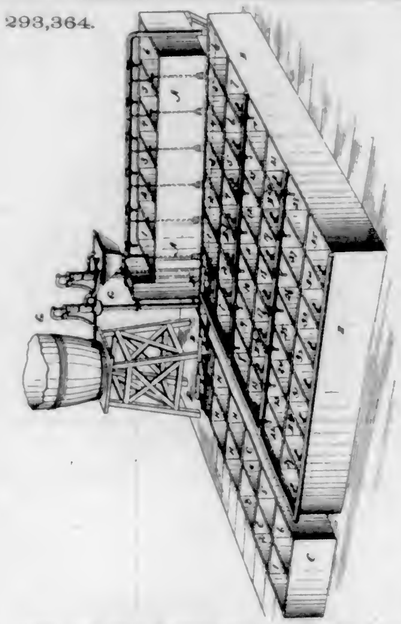
2. The herein-described stocking, it being made of a single-ply tubular knit fabric for the foot portion or shoe portion, and of a fabric which is double ply around the leg above the foot portion or shoe portion, said double-ply leg portion being open at both ends, the lower end communicating with the foot portion, and the upper open end having the inner thickness made integrally with the outer by a continuous series of stitches, substantially as set forth.

3. The herein-described method of manufacturing a stocking, it consisting in knitting a tubular fabric with both ends open, then turning one part thereof inside of the other to form a double-ply fabric around the leg, joining the two ends of the tubular part together, and continuing the stitches of that thickness of the leg which was last knit and forming the foot, all with one continuous knitting operation.

4. The herein-described method of manufacturing a stocking, it consisting in knitting a tubular fabric with both ends open, then turning one part thereof inside the other to form a double-ply fabric around the leg, then replacing a series of stitches or loops of one of the thicknesses upon the needles while a series of stitches or loops of the other thickness are still upon the needles, then by a knitting operation joining the two said series of stitches or loops together and knitting the foot portion, all with one continuous operation, substantially as set forth.

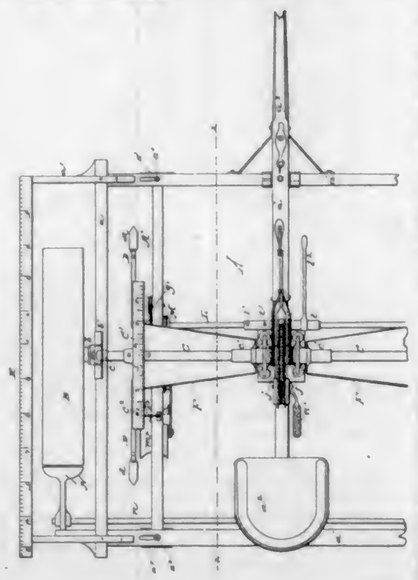
293,364. PROCESS OF TANNING HIDES. LOUIS SCHRADEL, Chicago, Ill. Filed June 23, 1883. (No model.)

293,364.



Claim.—The process of tanning hides consisting in, first, treating the hides in fresh water and in the hide-mill; second, placing the hides in the lime-vats until the coarser hair is taken off; third, washing the hides; fourth, placing the hides in a bed made of human excrement or fowl-manure; fifth, washing the hides clean; sixth, soaking them in water until the fine hair is taken off; seventh, placing the hides in a coloring-mill; eighth, then placing them in handling-vats; ninth, placing the hides in the layer-vats, substantially as described.

293,365. CORN-PLANTER. BENJAMIN SCOTT, Bloomington, Ill. Filed May 29, 1883. (No model.)



Claim.—1. In a corn-planter, the circular flanged dropping-disks C', provided with a series of radiating spokes, D, for engaging the ground and revolving said disks, substantially as herein shown and described.

2. In a corn-planter, the combination of the dropping-disks C', having adjustable spokes D for engaging the ground, and the vertically-adjustable supporting-wheels, substantially as and for the purpose herein shown and described.

3. In a corn-planter, the combination, with the revolving flanged dropping disk or disks C', of the interior flanged disk or disks E, having a series of holes through its flange or flanges arranged in a series of divisions at equal distances apart, substantially as and for the purpose herein shown and described.

4. In a corn-planter, the combination, with the revolving flanged disk or disks C', of the interior flanged disk or disks E, having a series of oblique holes through its flange or flanges arranged in a series of divisions of holes at equal distances apart, substantially as and for the purpose herein shown and described.

5. In a corn-planter, the combination, with the revolving flanged disk C', of the interior flanged disk, E, having a series of holes through its flange arranged in a series of divisions at equal distances apart, and the series of holes in each division varying in size uniformly in advance of the larger ones, substantially as and for the purpose herein shown and described.

6. In a corn-planter, the circular recessed flanged disk E, having a series of holes through its flange arranged in a series of divisions at equal distances apart, and the series of holes in each division varying in size uniformly in advance of the larger ones, in combination with an interior adjustable band, e^2, having a series of single holes through it for each division of holes in disk E, and of the same size as the largest hole in each division, substantially as and for the purpose herein shown and described.

7. In a corn-planter, the combination of the disk E and a semicircular or troughed shaped inclined and tapering hopper, F, having its enlarged end communicating with said disk, substantially as and for the purpose herein shown and described.

8. In a corn-planter, the combination of the disk E and a semicircular or troughed shaped inclined and tapering hopper, F, having its enlarged end communicating with said disk, and provided with an offset or rabbet, f^3, which fits outside of and one-half around the disk, substantially as and for the purpose herein shown and described.

9. In a corn-planter, the combination, with the disk E, of the inclined and tapering hopper, having a hammer, H, pivoted therein, with its larger end extending inside of said disk, and having a beveled shoulder, A, inclining toward said hopper, substantially as and for the purpose herein shown and described.

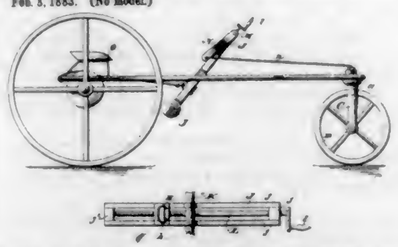
10. In a corn-planter, the combination of the flanged dropping-disks C' E and hoppers F, arranged on opposite sides of the central beam, *a*, and adapted to be adjusted toward and from each other, substantially as and for the purpose herein shown and described.

11. In a corn-planter, the combination of the shaft C, carrying the dropping mechanism, journaled in boxes *c c*, castings *b' b'*, having vertical slots for the reception of said boxes, hollow tube *c'*, castings 2, having vertical tubes c^3, bent or curved guide-rods I, toothed bar K, gear-wheel J, and lever 4, for operating said gear in raising and lowering the dropping mechanism, substantially as herein shown and described.

12. In a corn-planter, the gear-wheel J, having hexagonal hube *j' j'*, in combination with the lever H, having forked arms with hexagonal openings through them, by which they are adapted to be sprung on said hubs, substantially as and for the purpose herein shown and described.

13. In a corn-planter, the combination of the laterally-adjustable beams A' A', sectional shaft L, journaled in said beam and adjustably coupled together, and carrying the operating-lever l^2, gear-wheels m^2, and pulleys M, and mechanism for connecting said gear-wheels and pulleys with the cutters and covering-wheels, substantially as and for the purpose herein shown and described.

293,366. VELOCIPEDE. SAML. NORMAN SILVER, Auburn, Me. Filed Feb. 3, 1883. (No model.)



Claim.—1. In a velocipede having two or more wheels, the combination, with a driving shaft or axle, of the single operating-lever, con-

sisting of rigidly-connected parallel bars pivoted on a rock-shaft, and having treadles and handles at its respective ends, a block connected with said shaft or axle, arranged and adapted to slide between said bars, and means, as described, for adjusting said block, substantially as set forth.

2. In a velocipede, the combination, with the frame thereof, its supporting-wheels, and a driving shaft or axle, of the operating-lever pivoted on a rock-shaft, and consisting of two parallel bars, the adjustable block arranged within said bars, a screw passing through said block and rock-shaft, and connections, as described, between said block and shaft, for revolving the latter, substantially as set forth.

3. In a velocipede, the combination, with the frame thereof, the driving-axle, and a rock-shaft having bearings on said frame, of a lever fulcrumed between its ends on said rock-shaft, consisting of parallel rods, and having treadles at its lower end and handles at its upper end, the adjustable block fitted between said rods, and the screw working in said block and the upper cross-piece of the lever, whereby the block is adjusted, substantially as set forth.

4. The combination, with the axle, of a drum loosely mounted thereon, and provided with spring mechanism and a pawl-and-ratchet device, a lever provided with an adjustable block, and a strap or band wound upon said drum and connected to said block by a rigid connecting-rod, substantially as set forth.

5. The combination, with the frame, provided with elongated bearings to receive the fulcra of operating-levers, of levers provided with adjustable blocks suitably connected to the axle, substantially as set forth.

6. The combination, with the axle and loosely-mounted drum, of the operating-lever fulcrumed between its ends, and having an adjustable block arranged between the bars of the lever, said block being connected with the axle by a strap or band and said lever being provided with treadles and handles, whereby the machine may be operated both by the hands and feet of the rider, thus obtaining a rowing movement, substantially as set forth.

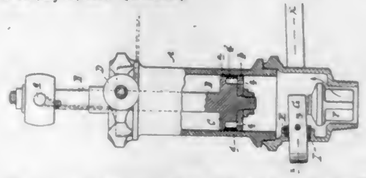
7. The combination, with the axle, of a drum loosely mounted thereon, and provided with spring and pawl-and-ratchet mechanism, an operating-lever, or lever having adjustable blocks connected with said drum by straps or bands, and having treadles and depending handles, the latter being connected with the guide-wheel of the machine by suitable rods, substantially as set forth.

8. The combination, with the axle, of an operating lever or levers provided both with handles and treadles and a band or strap, and spring mechanism between said axle and lever, to obtain both a pulling and pushing action to revolve the axle, substantially as set forth.

9. The combination, with the main axle, of the separate operating-levers having two adjustable blocks fitted thereto, and upon screw-threaded rods, provided at their inner ends with beveled gears adapted to mesh with an intermediate beveled gear secured upon the pivotal shaft, and the straps wound upon the drums upon the said axle, and their ends secured, respectively, to the forward blocks, and the rigid connecting-bars secured to the rear blocks, substantially as set forth.

10. The combination, with the axle and separate operating-levers, of connections between said axle and levers, whereby both a pulling and pushing action upon the axle is obtained, and a crank-rod arranged adjacent to the rider's seat and connected intermediately with the lever and axle connections, for adjusting the said connections to vary the power and speed of the machine, substantially as set forth.

293,367. DAMPER-REGULATOR. GEORGE W. SMITH, Milford, Mich. Filed July 14, 1883. (No model.)

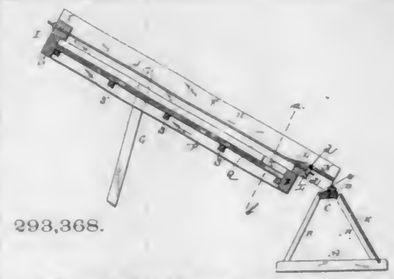


Claim.—1. In combination with the cylinder A and valve F, the lever G, pivotally secured at a point between the valve and the long arm of the lever, substantially as and for the purposes specified.

2. The combination of the cylinder A, provided with the stuffing-box E, valve F, and lever G, provided with the elastic packing I, substantially as described.

3. The combination of the cylinder A, piston B C, expanding packing-rings *d*, stuffing-box E, valve F, lever G, and packing I, when constructed, arranged, and operating substantially in the manner and for the purposes set forth.

293,368. SCREEN FOR SCREENING POTATOES. ORSON J. SMITH, Farmer City, Ill. Filed Dec. 3, 1883. (No model.)

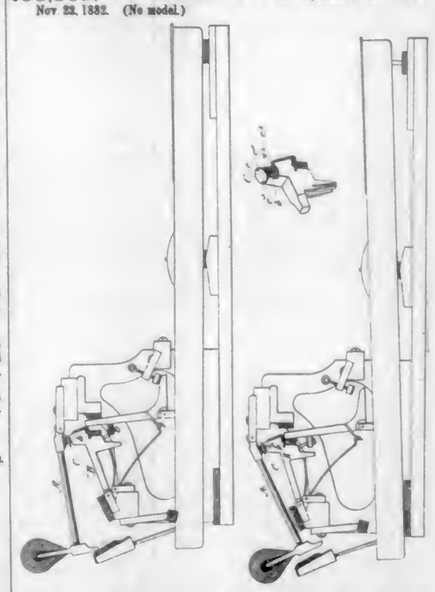


Claim.—1. In a potato-screen, the combination of the side pieces, H, end pieces, I L, and screw-threaded rods J, the pieces L being provided with the shoulders *d*, substantially as shown.

2. The combination of the upper screen, legs to support it at one end, and a trestle at the other, with the lower screen having its surface inclined toward one side, and provided with the opening T through one side near its lower end, whereby potatoes of different sizes are deposited at the front and rear of the trestle, substantially as described.

3. The combination of the upper screen, the legs G, the trestle provided with means upon its top to keep the end of the upper screen in place, and the lower screen, P, removably attached to the upper one, and having its surface inclined toward one side, and provided with the opening T through one side, substantially set forth.

293,369. PIANO-ACTION. FRANCIS ST. AMANT, Boston, Mass. Filed Nov. 22, 1882. (No model.)



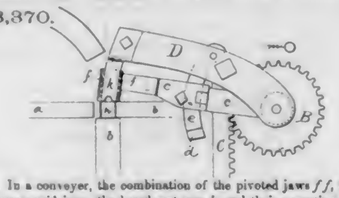
Claim.—1. The combination, in a piano-forte action, of the hammer-stem, the hammer-elevator B, and the interposed adjustable regulating device C, made of metal, and having the regularly rounded or curved head *c* and the threaded shank *c'*, all substantially as described.

2. The combination of a hammer-stem, the hammer-elevator B, and the curved or rounded metallic bumper C, arranged between the hammer-stem and the hammer-elevator and fastened to one of them, and adapted to contact with a rounded or curved leather or cloth covered bumper or projection upon the other, all substantially as and for the purposes described.

293,370. CONVEYER FOR NUT-MACHINES. MORTIMER D. STEDMAN, Unionville, Conn., assignor to Charles C. Dunham, same place. Filed May 12, 1883. (No model.)

Claim.—1. The combination of the conveyer-arm D, having knock-out *k*, said arm being rigidly secured to its driving-shaft, the arm *c*, carrying holding-jaws and loosely mounted on the same driving-shaft, and mechanism for oscillating the shaft upon which said arms are mounted, substantially as described, and for the purpose specified.

293,370.

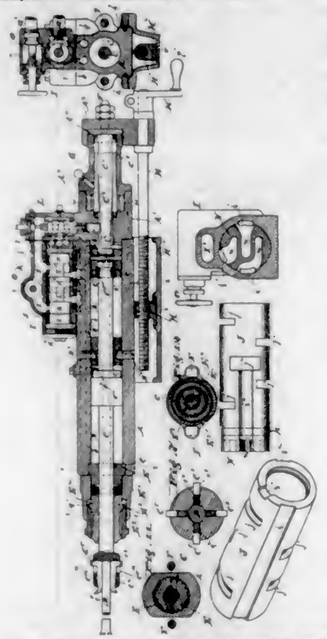


2. In a conveyer, the combination of the pivoted jaws *f f*, the table between said jaws, the knock-out arm *k*, and their operating mechanism, substantially as described, and for the purpose specified.

3. The combination of the conveyer, the holding-jaws, the knock-out, and mechanism for swinging the conveyer back and forth from and to the hammering-dies, substantially as described, and for the purpose specified.

4. The combination of the conveyer-arm D, having knock-out *k*, the arm *c*, bearing holding-jaws and loosely mounted upon the driving-shaft, and devices for limiting the extent of the swinging movement of the arm *c*, substantially as described, and for the purpose specified.

293,371. STEAM ROCK-DRILL. AMOS STEVENS and ARTHUR L. STEVENS, Philadelphia, Pa. Filed June 27, 1883. (No model.)



Claim.—1. The combination of a cylinder, piston-rod C, having piston C', split bushing E, head E', split gland E^2, ring E^3, and a chuck made solid on the end of said piston-rod, substantially as and for the purpose specified.

2. The combination of a cylinder, ring-piece B', piston-rod C, having solid piston C', loose piston C^2, split bushing E, head E', split gland E^2, ring E^3, a chuck made solid on the end of said piston-rod, and mechanism to give said piston-rod a partial revolution upon its upstroke, substantially as and for the purpose specified.

3. The combination of a cylinder, ring-piece B', piston-rod C, having solid piston C', loose piston C^2, split bushing E, head E', split gland E^2, ring E^3, a chuck made solid on the end of said piston-rod, cam-extension C^3 C', having feather C^4, cylinder G, having oblique slots *g*, ratchet-wheel G', and one or more pawls, *g'*, substantially as and for the purpose specified.

4. The combination of a cylinder, ring-piece B', piston-rod C, having solid piston C', loose piston C^2, split bushing E, head E', split gland E^2, ring E^3, a chuck made solid on the end of said piston-rod, cam-extension C^3 C', having feather C^4, cylinder G, having oblique slots *g*, ratchet-wheel G', one or more pawls, *g'*, parts A' A^2, and cap A^3, and bolts F F, substantially as and for the purpose specified.

5. The combination of a cylinder, ring-piece B', piston-rod C, having solid piston C', loose piston C^2, split bushing E, head E', split gland E^2, ring E^3, a chuck made solid on the end of said piston-rod, cam-extension C^3 C', having feather C^4, cylinder G, having oblique slots *g*, ratchet-wheel G', one or more pawls, *g'*, parts A' A^2, and cap A^3, packing A^4, and bolts F F, substantially as and for the purpose specified.

6. The combination of cylinder A, ring-piece B', piston-rod C, having solid piston C', loose piston C^2, bisected ring *c'*, and means to secure said piston C^2 on the piston-rod, substantially as and for the purpose specified.

7. The combination of cylinder A, having steam-ports *b*, ring-piece B', piston-rod C, having solid piston C', loose piston C^2, bisected ring *c'*, and means to secure said piston C^2 on the piston-rod, the said pistons having a portion of their length reduced in diameter, as at *c*, substantially as and for the purpose specified.

8. A cylinder, in combination with a piston-rod having a solid piston and chuck formed upon it, a split bushing to fit the end of the cylinder and encircle the piston-rod, a head to hold said split bushing together and in place, and means to make a steam-tight joint, substantially as and for the purpose specified.

9. The combination of cylinder A, having steam-ports *b*, the lower of which enters the lower chamber, B, of the cylinder a short distance above its bottom, to enable the piston to cushion on live or exhaust steam, ring-piece B', piston-rod C, having solid piston C', loose piston C^2, bisected ring *c'*, and means to secure said piston C^2 on the piston-rod, the said pistons having a portion of their length reduced in diameter, as at *c*, substantially as and for the purpose specified.

10. In a rock-drill, a piston-rod extended to form cam-extension C^3 C', in combination with a piston steam-valve to admit steam to the cylinders above and below the pistons, and an auxiliary valve mechanism controlled by said cam-extension to control or govern the time of admittance of steam to each end of said piston steam-valve to cause it to reciprocate, substantially as and for the purpose specified.

11. In a rock-drill, the piston-rod extended to form cam-extension C^3 C', in combination with a piston steam-valve to admit steam to the cylinders above and below the pistons, an auxiliary valve mechanism controlled by said cam-extension to control or govern the time of admittance of steam to each of said piston steam-valves, to cause it to reciprocate, and mechanism, substantially as set forth, to vary the stroke of the piston-rod, substantially as and for the purpose specified.

12. In a rock-drill, a piston-rod provided with the cam-extension C^3 C', projecting from the rear end of the cylinder and inclosed in a separate case, in combination with said cylinder-case, valve mechanism actuated by said cam-extension to control the admittance of steam to the cylinder above and below the piston, and means, substantially as set forth, controlled by the reciprocations of said cam-extension, to impart an intermittent rotary motion to said piston-rod, substantially as and for the purpose specified.

13. In a rock-drill, the cam-extension C^3 C', in combination with valve mechanism I and L, when constructed as shown, substantially as and for the purpose specified.

14. In a rock-drill, the cam-extension C^3 C', in combination with valve M, having screw M^2, ports *l l' l²*, valve K, ports *j j' j² n n' i i' i²*, nut M^4, and means to screw said screw M^2 more or less into the said nut M^4, substantially as and for the purpose specified.

15. In a rock-drill, the cam-extension C^3 C', in combination with valve M, ports *l l' l²*, valve K, ports *j j' j² n n' i i' i²*, packing *k' k'*, to receive the concussion of the valve K in its reciprocations, substantially as and for the purpose specified.

16. In a rock-drill, the cam-extension C^3 C', in combination with valve M, ports *l l' l²*, valve K, ports *j j' j² n n' i i' i²*, passage-way I, and steam-valve O in said passage-way, to admit steam from the steam-main simultaneously to both valves K and M, substantially as and for the purpose specified.

17. The combination of cylinder A, piston-rod C, a rear cylinder-head, and split bushing E with head E' and longitudinal binding-bolts F F, substantially as and for the purpose specified.

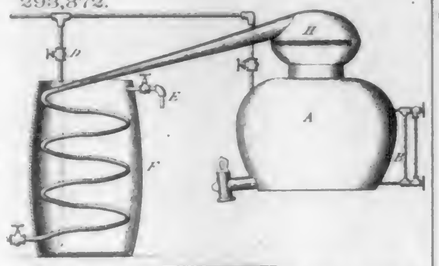
18. The combination of cylinder A, piston C, a rear cylinder-head, and split bushing E with head E', a packing-gland, E^2, and longitudinal binding-bolts F F, substantially as and for the purpose specified.

19. The combination of cylinder A, piston-rod C, a rear cylinder-head, and split bushing E with head E', a split packing-gland, E^2, ring E^3, and longitudinal binding-bolts F F, substantially as and for the purpose specified.

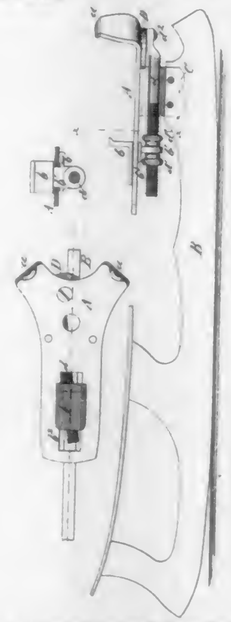
293,372. HAIR-DRESSING AND WASH FOR SILKS, LACES, EMBROIDERY, AND WOOLEN GOODS. HENRY P. STULTZ, Santa Fé, N. Mex. Filed Nov. 20, 1883. (No specimens.)

Claim.—The herein-described double-distilled and concentrated soap-root, to be used for hair and skin wash and for washing silks, laces, embroidery, and woolen goods.

293,372.



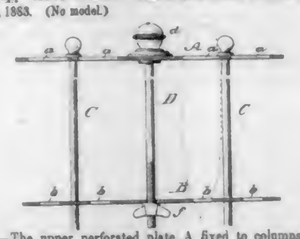
293,373. SKATE. WILLIAM A. SUTTON, New York, N. Y. Filed Feb. 28, 1883. (No model.)



Claim.—1. As an improvement in skates, the lever D, having a disk pivoted at its center to the rear part of the heel-plate on one side of the longitudinal axis of said heel-plate, in combination with the connecting-rod *d*, the rear end of which is pivoted to the disk of the lever D between the central pivot of said lever and the outer edge of said disk, and threaded at the front end, which engages the shank *b'* of the front clamp, *b*, and the adjusting screw nuts *d' d''*, substantially as described.

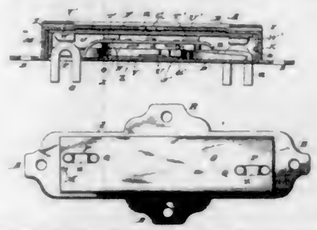
2. The combination of the centrally-pivoted lever D, the connecting-rod *d*, the front clamp, *b*, the adjusting screw-nuts *d' d''*, the heel-plate A, and the fixed clamps *a a*, substantially as described.

293,374. CIGAR-STAND. CHAS. N. SWIFT, New York, N. Y. Filed June 13, 1883. (No model.)



Claim.—The upper perforated plate, A, fixed to columns C, that form the legs of the stand, in combination with the lower perforated plate, B, screw-rod D, and nut *f*, arranged substantially as and for the purposes set forth.

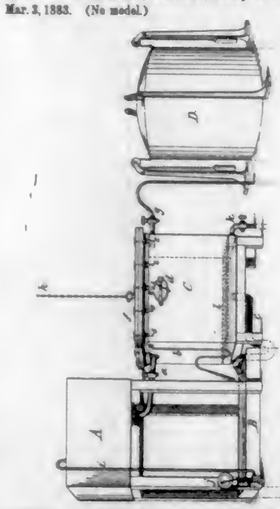
293,375. LOCK. ELISHA P. TREFFERS, Alliance, Ohio. Filed Apr. 11, 1883. (Model.)



Claim.—1. In a lock, the combination, with the casing and the case secured therein, the latter having an oblong slot at each end, the said slots being parallel with the length of the case, of the described pivoted and independent lock-bolts provided with shoulders, and the described pivoted locking-tumblers provided with shoulders which engage those of the said lock-bolts to lock the lock-bolts in their locked adjustment, substantially as set forth.

2. In a lock, the combination, with the casing and the case secured therein, the latter having an oblong slot at each end, of independent pivoted lock-bolts provided with shoulders and respectively extending across said slots, independent pivoted locking-tumblers associated with each of said bolts, and an elastic ejector adapted to prevent the bolts from passing the slots, to automatically admit of the bolts engaging with the staples, and to automatically eject the staples from the lock, substantially as set forth.

293,376. PROCESS OF AND APPARATUS FOR BLEACHING. JACOB BATHER THOMPSON, New-Cross, County of Kent, England. Filed Mar. 3, 1883. (No model.)

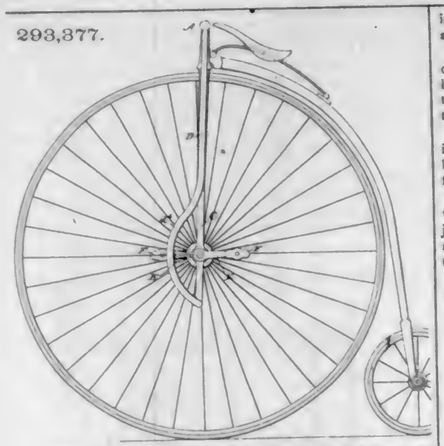


Claim.—1. An apparatus for bleaching linen and cotton or other vegetable fibers or fabrics, composed of the tanks A and B for the bleaching-liquor, the bleaching-vessel C, the gas-holder D, the pipe *a*, connecting vessels A and C, the pipe *g*, connecting vessel C and holder D, discharge-pipes *b c* from the vessel C, and a pump, *j*, for transferring the liquid from vessel B to vessel A, substantially as shown and described.

2. The herein-described process for bleaching vegetable fiber, threads, and fabrics, the same consisting in first boiling them in a solution of cyanide of potassium, or sodium, then subjecting them to alternate baths of a solution of chloride of lime and of carbonic-acid gas in a closed vessel, and lastly passing them through a solution of triethylrosaniline and oxalic acid, with suitable washings, all substantially as described.

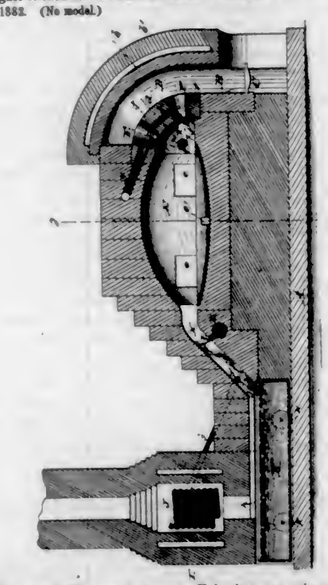
293,377. BICYCLE. RICHARD COMINGS THOMPSON, Brixton, and WILLIAM SPENCE, Surbiton, County of Surrey, England. Filed Dec. 4, 1883. (No model.)

293,377.



Claim.—The combination, with the steering-fork of a bicycle, of extensions or arms attached rigidly to the lower extremities of the said fork or formed in one therewith and passing beyond and clear of the paths described by the cranks and pedals and rising at either side of the steering-fork at such a distance therefrom as to admit the rider's legs between them and the fork, and of handles attached to the upper ends of said arms or extensions, substantially as shown and described, for the purpose specified.

293,378. ORE-FURNACE. GEORGE B. N. TOWER, New York, N. Y., assignor of one-half to Edward L. Lambie, Washington, D. C. Filed Feb. 14, 1882. (No model.)



Claim.—1. The tapering tuyeres F, having connecting openings through them, arranged in a spiral manner, and discharging therein obliquely to their axes, in combination with the bridge-wall of a furnace having air-spaces surrounding said tuyeres for admitting air thereto, substantially as and for the purpose specified.

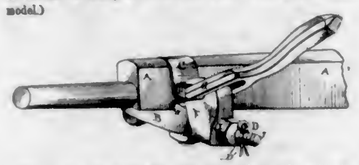
2. The combination, with a smelting-chamber and fire-place, B, of a series of intermediate tuyeres, constructed as described, to convey the gases and air toward a common center in said chamber, and having openings for admitting air therein, said openings being arranged through the tuyeres obliquely to their axes, the bridge-wall through which said tuyeres pass having air-spaces *f* surrounding said tuyeres, and wall *b'*, having air-space *b* and connecting-flues *f'*, and supply-pipe *g'*, substantially as and for the purpose specified.

3. The combination, with the discharge-flue H of the smelting-chamber E, of the water-pipe L, arranged through the furnace-walls below said flue, and having discharge-pipes *l*, for admitting jets of water to said flue against its upper inclined wall, substantially as and for the purpose specified.

4. The combination, with the inclined discharge-flue H of the smelting-chamber E, of the water-pipe L, and jet-pipes *l*, and steam-pipe *j*, having jet-pipe *j'*, all arranged to discharge water and steam into said flue, substantially in the manner and for the purpose specified.

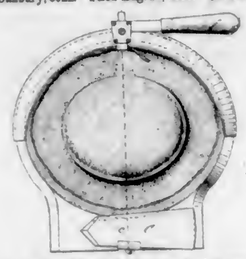
5. The combination, with the smelting-chamber E, flue H, stack I, vessel K, for containing water, and coiled pipe J, of the pipe *j*, having jet-pipe *j'*, for supplying the steam to the interior or neck of said flue, and water-pipe L, and jet-pipe *l*, for discharging water therein, substantially as described.

293,379. THILL-COUPLING. OSCAR TOWER, Wilson, N. Y., assignor of one-half to Henry M. Davis, same place. Filed Aug. 22, 1883. (No model.)



Claim.—In a thill-coupling, the combination of the axle, clip, block B, having the tapering portion I, screw-threaded portion J, and hole D', with the coupling F, nut E, and pin D, the parts being combined and arranged to operate substantially as shown.

293,380. APPARATUS FOR TRIMMING HAT-BODIES. EDMUND TWEEDY, Danbury, Conn. Filed Aug. 28, 1883. (No model.)



Claim.—1. A curled-hat-rim-trimming device consisting of a hat-supporting bed-piece provided with suitable means of securing a hat thereto, and which holding devices are not part of the hat-shaping mechanism, and with a pattern or guide rest for the trimming-tool, in combination with the latter, substantially as herein described.

2. A curled-hat-rim-trimming device consisting of a hat-supporting bed-piece provided with suitable means for securing a hat thereto, and with a pattern or guide rest for the trimming-tool, and having an adjustable bed-plate, in combination with a trimming-tool, substantially as herein described.

3. In combination with a curled-hat-rim-trimming device consisting of a hat-supporting bed-piece provided with suitable means for securing a hat thereto, and with a pattern or guide rest for the trimming-tool, a trimming-tool formed with a projecting finger or flange arranged to enter the curl of a hat-brim and support its extreme upper edge during the operation of trimming the edge of the curl, substantially in the manner and for the purpose described.

4. In combination with a curled-hat-rim-trimming device consisting of a hat-supporting bed-piece provided with suitable means for securing a hat thereto, and with a pattern or guide rest for the trimming-tool, a curl smoothing and supporting tool for use in conjunction with the pattern or guide rest, substantially in the manner and for the purpose described.

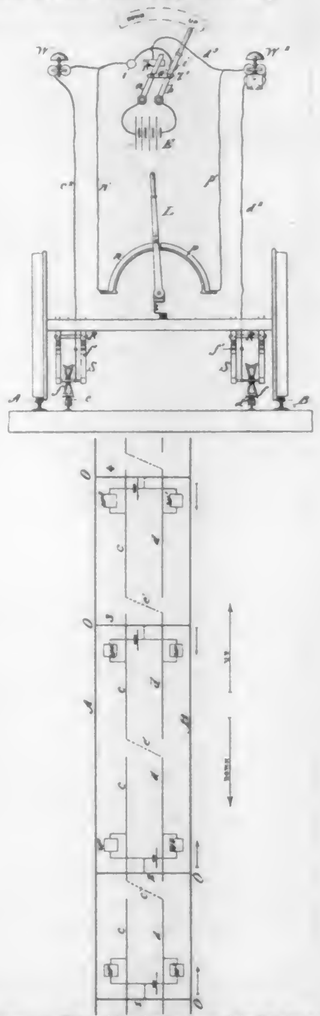
5. In combination with a curled-hat-rim-trimming device consisting of a hat-supporting bed-piece provided with suitable means for securing a hat thereto, with a pattern or guide rest for the trimming-tool, and with a trimming-tool of suitable construction, a curl smoothing and supporting device for use in conjunction with the pattern or guide rest and the trimming-tool, substantially in the manner and for the purpose described.

6. A curled-hat-rim-trimming device consisting of a hat-supporting bed-piece and suitable wedge-shaped adjusting-pieces, means for securing the hat to the bed-piece, and a pattern or guide rest for the trimming-tool, substantially as described.

7. The process of trimming the curled edges of hats, which consists in securing the hat upon a plate or bed having a pattern or guide rest, and then moving a cutting-tool around the hat and in contact with the said pattern or guide rest.

293,381. ELECTRIC RAILWAY-SIGNAL. JAMES C. UPHAM, North Sydney, and JOHN P. ROGERS, Elmsdale, Nova Scotia, Canada. Filed MAR. 12, 1883. Renewed Dec. 8, 1883. (No model.)

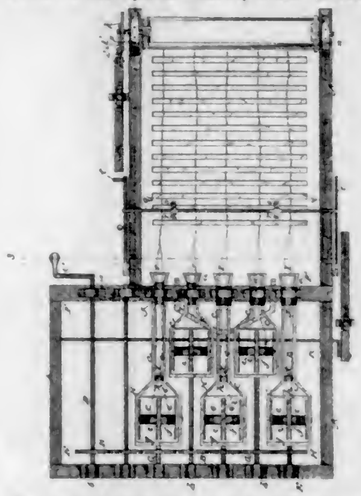
Brief.—The battery on engine entering section before advance engine has passed off thereof sends current through its own alarm W^2, (danger ahead,) and through advance engine's alarm W', (danger behind,) return-circuit being made through rails of track. In case of approaching (meeting) engines both batteries are thrown into circuit sounding W^2 (with redoubled force) on both engines. Commutators T and L (L the reversing-lever of engine) prevent opposition and consequent neutralization of batteries, however engines are moving.



Claim.—1. The paddle-wheel contacts *f*, having sharp edges, in combination with the supporting-frames S, hinged at *f'*, and insulated from the upper frames, R, as shown and described.

2. The combination on locomotives with the instruments W' W^2, and circuit-closers *f*, of the lever L, connected to the axle, segments *n p*, and connections *n' p'*, substantially as described, for bringing these instruments in direct connection with the axle, as set forth.

293,382. MACHINE FOR MAKING WIRE-AND-SLAT FENCES. WILLIAM VAN HORN, Piqua, Ohio. Filed July 13, 1883. (No model.)



Claim.—1. A fence-machine having a spool-frame having forwardly-extending wire-guarding arms, and a wire-twisting head formed integrally out of a single piece of metal, and a hollow shaft or sleeve connected with said arms for the purpose of guiding the wires to the twister-head, substantially as set forth.

2. In a fence-machine, a combined spool-frame and twister-head, consisting of a spool-holder having a rear cross-piece and side arms, said side arms being extended inwardly and forwardly to form wire-guarding arms, and having their outer ends perforated to receive the wires and formed into a twister-head, substantially as set forth.

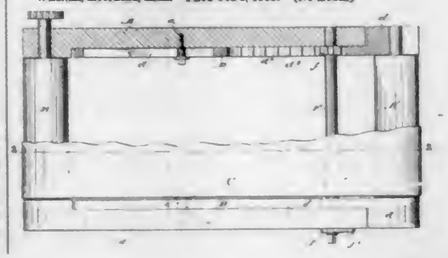
3. In a fence-machine, a combined spool-frame and twister-head, consisting of a spool-holder having a rear cross-piece and side arms, said side arms being extended inwardly and forwardly to form wire-guarding arms, and having their outer ends perforated to receive the wires and formed into a twister-head, and provided with a hollow shaft or tube for guiding the wires to the twister-head and forming a bearing for the wire-guarding arms and twister-head, substantially as set forth.

4. The spool-frame H, having vertically-extending rear cross-bar, *g*, side bars and wire-guarding arms, *c*, formed integrally, and a front cross-bar, *h*, having a rearwardly-extending arm, *i*, for supporting the spool-spindle during the removal of a spool, substantially as set forth.

5. The slat-spacer herein described, consisting of the arms *o*, hinged or pivoted at their rear ends to the main frame of the machine, and having a suitable handle at their front end, a cross-bar having a downwardly-extending rigid pin, and a removable and adjustable lug for the purpose of adjusting or changing the spacing of the slats, as desired.

6. The reel herein described, consisting of an end piece or frame, *y*, having a short shaft or journal, *f'*, extending outwardly therefrom, and a notch, *b b'*, in its upper edge, an end block, *v*, having a shaft or journal, *e'*, extending outwardly therefrom, and having ears *w*, longitudinal arms *u*, hinged at one end between the ears *w*, supported at their opposite ends within the block *y* by pins *x*, and a key, *z*, having hinge-connection at one end with the end block, *v*, its opposite end engaging the notch *b'*, substantially as and for the purpose set forth.

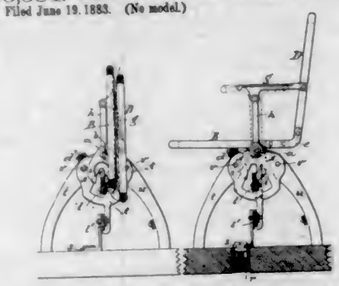
293,383. ENDLESS CARRIER FOR HARVESTERS. JOHNSTON WAGNER, Moorhead, Minn. Filed Oct. 3, 1883. (No model.)



Claim.—1. In an endless carrier, the combination, with the side pieces of the frame, of a drum or roller journaled in said side pieces, two adjustable plates, each provided with inner and outer inclosed slots, the outer slots each having a rack on one side, pins or bolts fixed to said side pieces and arranged in the said inner slots, a drum or roller journaled in the outer ends of said plates, a shaft journaled in said side pieces, two pinions fixed to said shaft and arranged in said outer slots in engagement with racks, and means for securing said plates in position after adjustment, substantially as hereinbefore set forth.

2. The combination, with the recessed side pieces, A A, of the drum or roller B, the plates D D, provided with bearing-blocks *d*, inner slots, *d'*, and outer slots, d^3, the latter having racks d^2, the drum or roller B', the pins *a a*, the shaft F, the pinions *f f*, the ratchet-wheel *f'*, and the pawl f^3, substantially as hereinbefore set forth.

293,384. FOLDING SEAT. JOHN E. WAKEFIELD, Worcester, MASS. Filed June 19, 1883. (No model.)



Claim.—1. The combination, with the pivoted seat, of a back, hinges connecting the seat and back, supporting-frames, radius-bars pivoted to the frames, mechanism, substantially as described, to limit the movement of such radius-bars, and links connecting the radius-bars to the back, substantially as set forth.

2. In combination with the supporting-frames, the seat B, pivots upon which such seat is swung, a back, D, hinges connecting the back and seat, radius-bars *h* upon the seat-pivots, links *g*, connecting the upper ends of the radius-bars with the back, forked lower ends upon the radius-bars, and means, substantially as described, to limit the swinging movement of such radius-bars, substantially as set forth.

3. The metallic seat-frames having projecting rests *d*, in combination with the seat B, the pivots upon which the seat is swung, the radius-bars A, pivoted upon the frames, mechanism, substantially as described, to limit the movement of the radius-bars, the back D, hinges connecting the same to the seat, and links connecting the upper ends of the radius-bars with the back, substantially as seth forth.

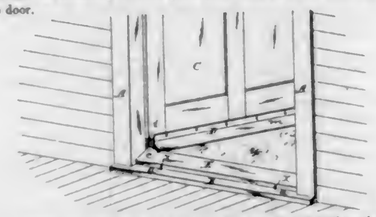
4. The combination, with movable seats, of the split foot-pieces connected therewith, the socket having external and internal screw-threads, and whereby it may be screwed into the floor, and a screw within the socket to confine the split foot-pieces, substantially as set forth.

5. The combination, with the seat, of a split foot-piece united at the upper end of the frame of the seat, and a metal socket and screw within the same, for confining the split foot-piece, substantially as set forth.

6. A screw for movable seats, formed of a metal socket fastened into the floor, and a screw within such socket, for the purpose and as set forth.

293,385. WEATHER-STRIP. DAVID WARNOCK, Olathe, Kans. Filed Aug. 23, 1883. (No model.)

Brief.—A weather-strip consisting of an L-shaped metal plate hinged to the sill by staples, and having a lip turned up at one corner, which is struck by a plate secured to the door, the sill-plate being forced up under an outwardly-inclined guard-plate secured to the outer face of the door.



Claim.—A weather-strip for doors, consisting of an L-shaped plate, E, provided with a corner lip, *e*, with recesses *x*, and secured by staples to the sill of the door, in combination with a corner-plate, *i*, arranged upon the door to bear against the inner side of the lip *e*, and a plate D, provided with an inclined flange, *m*, and connected to the door, substantially as set forth.

293,386. CLOAK. SIGMUND WETZLER, Hoboken, N. J. Filed Nov. 4, 1882. (No model.)

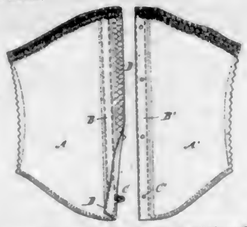


Claim.—1. The combination, with a garment, of a receptacle into which the garment may be packed, and which is so attached to the garment that its mouth will be presented upward when the garment is worn, so that it may be used as a pocket, substantially as specified.

2. The combination, with a garment, of a receptacle adapted to receive it, having the inner side of the garment secured to the receptacle on the interior of the latter only and within its mouth, the receptacle being otherwise unconnected with the garment, and the edges of the receptacle being left free from the garment, so that they may be drawn over the garment when it is packed, substantially as specified.

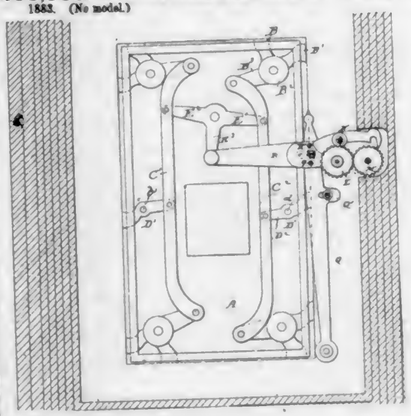
3. A circular, cloak, or other outer garment having permanently connected thereto a receptacle or device constructed substantially as described, whereby it may be used as a pocket when the garment is upon the wearer, and also as a receptacle or traveling-bag for carrying the cloak and other articles when the garment is not in use.

293,387. ATTACHMENT FOR DRESSES. ELLA WHAPLES, Jackson, Mich., assignor of one-half to Lewis Shannon, same place. Filed Aug. 8, 1883. (No model.)

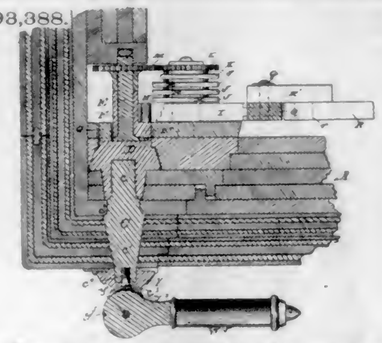


Claim.—An attachment to dress-fronts, consisting of the parts A A', provided with the busk-steels B B', and adapted to be used substantially as and for the purposes described.

293,388. SAFE-LOCK. JAMES WHITE, Canton, Ohio. Filed May 23, 1883. (No model.)



293,388.



Claim.—1. In a safe, the combination of the bolts secured to the inner face of the door, the arbor passing through the stationary front wall of the safe at right angles to the door when the latter is closed, the permutation devices supported stationarily upon the front stationary wall of the safe, and arranged, substantially as set forth, to be operated by the arbor, means, constructed and operating substantially as described, which connect the bolts with the arbor, and devices, substantially as described, which throw the bolts out of engagement with the arbor.

2. The combination of the arbor provided with the loose collar and projecting pin, and means for preventing the complete rotation of the collar and pin around the arbor, the bolts, the arm I, means which engage said arm with the bolts, and the permutation devices arranged, substantially as set forth, to throw the arm I into and out of engagement with the loose pin on the arbor, substantially as set forth.

3. In a safe, the combination of the bolts secured to the inside of the door, the arbor passing through the front stationary wall of the safe at right angles to the door when the latter is closed, the swinging lever or bar pivoted to the said stationary wall, a catch which automatically connects said lever with the bolts when the door is shut, the permutation devices interposed between the said swinging lever and the arbor, and means, substantially as described, operated by said permutation devices, for intermittently connecting the arbor with the swinging lever, substantially as set forth.

4. The combination of the arbor passing through the front stationary wall of the safe at right angles to the door when the latter is closed, the spur-wheel on the inner end thereof, the tumblers J, the cam K, spur-wheel L, arm I, adapted to be raised and lowered by the cam and tumblers and to be engaged with the arbor, the bolts secured to the inner side of the door, and devices supported upon the stationary wall of the safe, which connect the arbor with the bolt, substantially as set forth.

5. In a safe, the combination of an arbor situated in the front stationary wall, and having its inner end journaled in a fixed bearing independent of the bearing for the outer end, the bolts secured to the inside of the door at one side of the arbor, and the devices which connect the arbor with the bolts, substantially as and for the purposes set forth.

6. The combination of the arbor having upon the inner side of the safe an inwardly-projecting spindle, a bearing for the inner end of said spindle having a socket, and a loosely-mounted button situated in said socket at the inner end of said spindle, substantially as and for the purposes set forth.

7. The combination of the arbor carrying the crank-pin G, the sleeve F, carried by and loosely supported on the arbor, the crank-pin H, carried by said sleeve, the permutation devices operated by the arbor, the bolts on the inside of the door, and the means which intermittently connect the bolts with the arbor, substantially as set forth.

8. In a safe, the combination of the arbor, the permutation devices connected with and operated by the arbor, the bolts, the lever which connects the bolts with the arbor, a laterally-expanded wheel mounted loosely on the axis of the arbor, and a second wheel secured rigidly to the arbor, and provided with a crank-pin adapted to be detachably connected with the aforesaid lever which operates the bolts, substantially as set forth.

9. The combination, with the outer part of the arbor, which tapers outwardly, and is provided with a shoulder adapted to bear against the plates of the wall, of the wheel or intermediate portion secured to the outer part by a screw-thread, and the inwardly-projecting spindle mounted at its inner end in the wall of the safe, substantially as set forth.

10. In a safe, the combination of an arbor having the outer portion, C, formed with a conical part, c', the shouldered part c^3, and the threaded portion c, and the wheel D, having the outwardly-projecting conical part and the inner inverted conical part, and united to the part C by a screw-thread, and provided with the eccentric pin G, substantially as and for the purposes set forth.

11. In a safe, the combination of an arbor having the part C, formed with an outwardly-narrowing portion, whereby it is prevented from being drawn outward, and an inwardly-narrowing portion, whereby it is prevented from being driven inward, a bar or arm for connecting the arbor with the bolts, a crank-pin which connects the arbor with said bar, and a wheel or support for said pin, secured to the said part C of the arbor, and of greater diameter, substantially as set forth.

12. In a safe, the combination of the arbor, the permutation devices connected with and operated by the arbor, the bolts adapted to be operated by the arbor, a laterally-swinging lever, and a vertically-swinging arm pivoted to said lever, and adapted, substantially as set forth, to be engaged with and disengaged from the aforesaid swinging lever, as described.

13. The combination of the bolts, the sliding bar carried by the door for operating the bolts, a bar which travels to and fro and is attached to the wall of the safe, a pin adapted to detachably connect the two aforesaid bars together, and means, substantially as described, for connecting the arbor to the bar which is attached to the wall of the safe, and which moves to and fro, substantially as set forth.

14. The combination of the bolts, the lever Q, the lever I, pivoted thereto, the arbor, means, substantially as described, for intermittently engaging the arbor with the lever I, and means, substantially as described, for throwing the lever out of engagement with the arbor when the door is shut, as set forth.

15. The combination of the arbor, the bolts, the lever Q, means, substantially as set forth, for detachably connecting said lever with the bolts, and means, substantially as set forth, for intermittently engaging said lever with the arbor, as described.

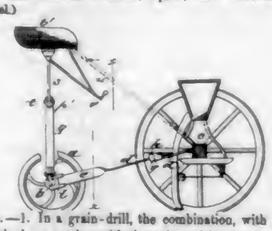
16. The combination of the bolts, the lever Q, arranged to swing in planes transverse to the arbor, means, substantially such as described, for detachably connecting the bolts to said lever, and means, substantially such as described, for intermittently connecting the lever with the arbor, as set forth.

17. The combination of the arbor, the bolts, a laterally-swinging lever, a bar or arm connected to said swinging lever, variable permutation devices interposed between said bar or arm and the arbor, and operated by the rotation of the latter, and means, substantially such as described, for detachably connecting the bolts with the laterally-swinging lever, and thereby connecting them directly with the arbor which moves the permutation devices, as described.

18. The combination of the laterally-swinging lever Q, the bolts, the draw-bar which operates the bolts, the pin r, carried by the swinging lever and adapted to engage with said draw-bar, the arbor, and means, arranged and operating substantially as described, for intermittently connecting said swinging lever with the arbor, substantially as set forth.

19. The combination of the arbor, the bolts, means, constructed and arranged substantially as set forth, for detachably connecting the arbor with the bolts, a series of tumblers constructed to alternately hold said connecting means out of engagement with the arbor, and means for permitting the engagement thereof with the arbor, a cam which throws said connecting means out of engagement with the arbor, and devices for transmitting power from the arbor to said cam.

293,389. ROLLER ATTACHMENT TO GRAIN-DRILLS. JAMES M. WEIKART and WILLIAM F. BUDEK, Topeka, Kans. Filed Aug. 17, 1883. (No model.)



Claim.—1. In a grain-drill, the combination, with each pair of rolls, of a rod, d, connecting with the axle, and having two branches, e e, fitted at the ends with separable bearings which receive the outer ends of the roll-axle, as shown and described.

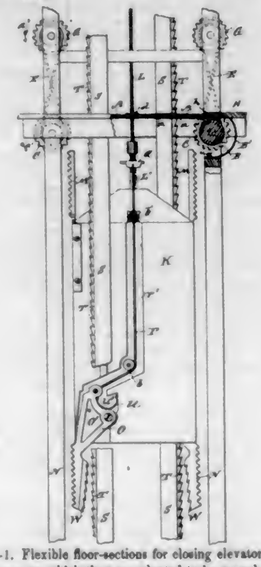
2. The frame-sections and roller-axles, connected by knuckle-joints, sustaining the load and the wear independently of the joint-pin, and having shoulders a', that limit the lateral vibration, substantially as described.

3. The combination, with the seat-frame, of the axles b, sleeves n, and role-joints p, having seats o, whereby said frame may be supported, as described.

4. The independent pairs of rollers a, connected to the drill-axle by an extensible and vibrating connecting-rod, d, made in two parts, one having a socket and the other being inserted in said socket and fastened with a pin, substantially as described.

5. A roller attachment for grain-drills, consisting of independent pairs of rollers connected to the axle of the grain-drill by independent connecting-rods, said rods having an extensible and vibrating joint, and being connected to the axle by a T-head and eyebolts, substantially as described.

293,390. COMBINED AUTOMATIC FLOOR AND SAFETY-CLUTCH FOR ELEVATORS. THOMAS H. WOOD, Philadelphia, Pa. Filed July 16, 1883. (No model.)



Claim.—1. Flexible floor-sections for closing elevator-shafts, combined with drums on which they are adapted to be wound, racks on the elevator-car, and cog-wheels connected with the drums, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with flexible floor-sections for closing elevator-shafts, of drums on which the sections are wound, cog-wheels on the said drums, cog-wheels journaled in the frame of the elevator-shaft above the drums, pulleys connected with the upper cog-wheels, pulleys on the shafts, ropes or belts passing over the said pulleys, and racks secured on the car, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the flexible floor-sections A, secured on the drums B, of the cog-wheels C on the ends of the drums, the cog-wheels G, journaled in the elevator-frame above the shafts, and in a plane parallel with the plane of the cog-wheels C, the belts E, the belt-pulleys F, connected with the cog-wheels G, the pulleys D on the drum B, the racks M, projecting from the top of the car, and adapted to engage with the cog-wheels C, and the racks N, projecting from the bottom of the car, and adapted to engage with the cog-wheels G, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with an elevator-car, flexible floor-sections adapted to be wound on drums, and racks arranged in the shaft, of angle-levers pivoted to the lower sides of the car, and provided with racks on opposite sides, ropes attached to said levers and connected with the cable for raising the car, and a pinion arranged above the floor and connected with the floor-drums, substantially as herein shown and described.

5. The combination, with an elevator-car, flexible floor-sections adapted to be wound on drums, and racks arranged in the shaft, of the angle-levers O, provided with the racks N W, the ropes P, secured to the upper ends of the levers and connected to the car-operating cable, the pinion G, and the belt E, connecting the pinion with the floor-drums, substantially as herein shown and described.

6. The combination, with the car K, of the racks W, secured to levers O, pivoted to the side of the car, the springs U, the ropes P, the cable L, the elongated hook L', and the elongated eye E, substantially as herein shown and described, and for the purpose set forth.

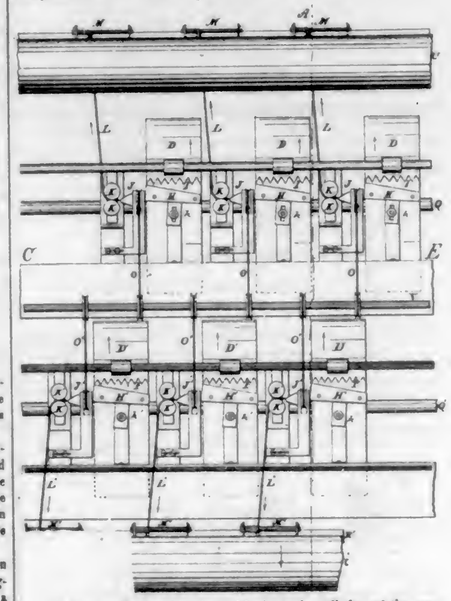
7. Flexible floor-sections for closing an elevator-shaft, combined with drums to which the said floor-sections are attached, and racks projecting from the top and bottom of the car for revolving the said drums, which bottom racks are attached to pivoted angle-levers, and are made integral with racks adapted to engage with vertical ratchet-bars secured on the side of the elevator-shaft, substantially as herein shown and described, and for the purpose set forth.

8. The combination, with the flexible sections A, of the drums B, the cog-wheels C G, the belt-pulleys D F, the belts E and car K, the upwardly-projecting racks M, the downwardly-projecting racks N, made integral or connected with racks W, and attached to the pivoted angle-levers O, the springs U, the ropes P, attached to the levers O and to the elevator-cable, and the vertical ratchet-bars T, substantially as herein shown and described, and for the purpose set forth.

9. The combination, with the drums B and means for rotating the drums by the movement of elevator, of the flexible floor-sections A, provided at their outer edges with the check-lugs d, for limiting the winding of said sections on the drums, substantially as herein shown and described.

293,391. CARDING AND SPINNING MACHINERY FOR THE MANUFACTURE OF ASBESTUS YARN, &c. WILLIAM WOOD, Philadelphia, Pa. Filed Mar. 16, 1882. (No model.)

Brief.—Sectional doffers and combs deposit the material in adjustable receiving-shells which deliver the fiber to twisting-tubes and delivery-rollers.

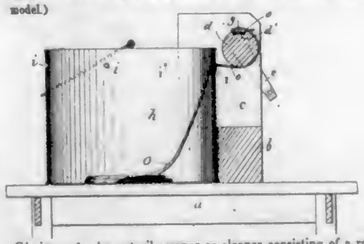


Claim.—1. The combination, with the main cylinder, of the sectional doffer-cylinders, the doffing-combs, receiving-shells, twisting-tubes, delivery-rollers, bobbin-winding rollers, and means for operating said parts, substantially as described.

2. The combination, with the main cylinder, of the doffer-cylinder, twisting-tube and delivery-rollers, doffing-comb, receiving-shell, and means for operating said parts, substantially as described.

3. The combination, with the doffing-cylinder and doffing-knife, of the receiving-shell, and means for supporting and adjusting said shell, the twisting-tube, drawing-rolls, and means for operating said parts, substantially as and for the purpose set forth.

293,392. MACHINE FOR SCRAPING AND CLEANING INTESTINES. ANDREW M. WOODS, Shiloh, S. C. Filed June 16, 1883. (No model.)

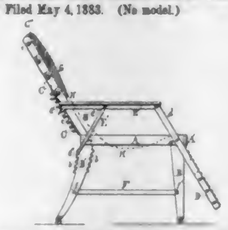


Claim.—1. An entrail scraper or cleaner consisting of a rotating drawing-roller fitted with a suitable clamping device for grasping an end of the entrails, and a contiguous die-plate, through the apertures of which the entrails are drawn by the revolution of the roller, substantially as shown and described.

2. The combination, with the frame a b c, supporting the rotating

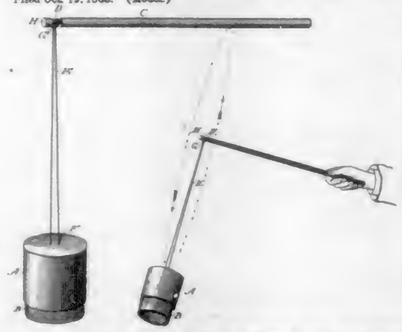
roller *d*, fitted with a clamping device, of the pail *h*, having die-apertures *i* formed therethrough, for the passage and cleaning of the entrails, substantially as shown and described.

293,393. RECLINING AND FOLDING CHAIR. FRANKLIN E. YOUNG, Canton, Ohio. Filed May 4, 1883. (No model.)



Claim.—The combination of the supporting-frame, the legs B', provided with notches, as shown, the standards *d*, arms E, pivoted brace E', having cross-rod *e'''*, engaging with the notches in legs B', the back G, having notches *c*, rod *e*, secured to the arms, and engaging said notches, and flexible seat H, whereby the inclination of the back and the elevation of the arms are simultaneously adjusted, as described.

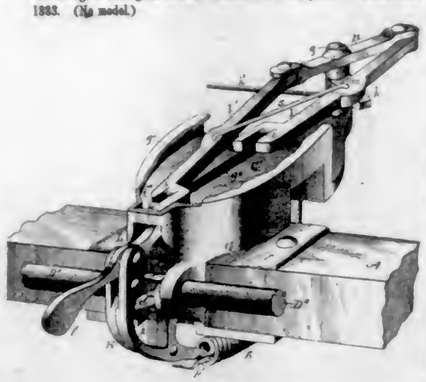
293,394. ADVERTISING-TOY. ROBERT ALBRECHT, Oneida, N. Y. Filed Oct. 19, 1883. (Model.)



Claim.—1. In combination with a string hung movably on a rosined handle, as shown, a resonant shell connected to the free end of said string, and adapted to be distended or contracted to produce different sounds, substantially as set forth and shown.

2. The combination of the cylinders A and B, the handle C, having a groove, D, coated with resin, and the string attachment E, fastened to the cylinder A and looped over the handle C, substantially as specified and shown.

293,395. CORN-PLANTER CHECK-ROWER. ABRAHAM ANDERSON, Galesburg, Ill., assignor to G. D. Colton & Co., same place. Filed Oct. 20, 1883. (No model.)



Claim.—1. In a check-rower, in combination with the oscillating bar H, connected by suitable mechanism with the planter seed-slides, and the arms I I', hinged or journaled one to each end of the bar H, the link J, hinged to said arms, and adapted to swing one of them in a curved path in its return movement to pass the other, which moves in a straight or nearly straight path in its direct movement, substantially as and for the purpose specified.

2. In a check-rower, in combination with the oscillating bar H and the arms I I', hinged or journaled one to each end of said bar, and connected by a link, J, a pawl adapted to move in a straight line in contact with the arms I I' alternately, substantially as and for the purpose specified.

3. In a check-rower, in combination with the oscillating bar H, arms I I', hinged or journaled to said bar and connected by a link, J, the pawl L, and plate G', having a slot, *g''*, in which the pawl reciprocates and upon which the arms I I' slide, substantially as and for the purpose specified.

4. In a check-rower, in combination with the oscillating bar H, arms I I', hinged or journaled to said bar, connected by a link, J, and having each a fork, *i*, in its end, the pawl L, adapted to move in a straight path and to engage with a fork, *i*, in the arms I I' alternately, substantially as and for the purpose specified.

5. In a check-rower, in combination with the oscillating bar H, arms I I', hinged or journaled thereto, connected by a link, J, and provided with forks *i* at their ends, the pawl L, adapted to move in a straight path, with its part *l'''* in the slot *g''* in the plate G', and its part *l'* in position to act on the arms I I' alternately, substantially as and for the purpose specified.

6. In a check-rower, in combination with the oscillating bar H, arms I I', hinged or journaled thereto and connected by a link, J, the weighted pawl L, hinged to the rocking plate K, which is oscillated by connection with the fork-carrying shaft D, substantially as and for the purpose specified.

7. In a check-rower, in combination with the oscillating bar H, arms I I', hinged or journaled thereto and connected by a link, J, the weighted pawl L, hinged to the plate K, which is loosely seated on the divided shaft D, and has a recess, *k*, adapted to receive the arms *d' d'''*, one on each end of the divided shaft, and to be actuated by one of said arms while the other remains stationary, substantially as and for the purpose specified.

8. In combination, the oscillating bar H, with arms I I' hinged thereto, and connected by a link, J, pawl L, and rocking plate K, loosely mounted on the ends of the shafts D' D'', and provided with a recess, *k*, which receives the arms *d' d''* of said shafts, and the spring E, connected directly to the plate K, substantially as and for the purpose specified.

9. In combination, the two-part shaft D' D'', having arms *d' d''*, respectively, plate K, loosely seated on said shafts, and provided with a recess, *k*, pawl L, arms I I', connected by link J, and oscillating bar H, substantially as and for the purpose specified.

10. In combination, the two-part shaft D' D'', having arms *d' d''*, respectively, plate K, loosely seated on the adjacent ends of said shafts, and provided with a recess, *k*, spring E, connected with the plate K, pawl L, arms I I', links J, and oscillating bar H, substantially as and for the purpose specified.

293,396. NAPKIN RING AND HOLDER. GUS A. BAEN, Austin, Tex. Filed Dec. 13, 1883. (No model.)



Claim.—A combined napkin ring and holder, consisting of the two sections A and B, hinged together, and provided with a catch for fastening them, and a sliding clasp-piece, C, substantially as and for the purpose described.

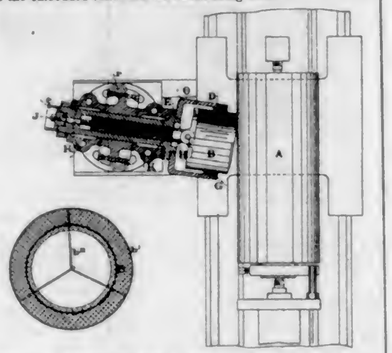
293,397. BORING-TOOL. GEO. W. BAKER, Wilmington, Del. Filed June 23, 1883. (No model.)



Claim.—The combination of the adjustable sleeve *a*, having the forward end of its axial bore enlarged, and provided with diametrically-arranged notches *e e*, the cutter *m*, and the stem *g*, having the enlargement *k*, to fit within the enlargement of the sleeve-bore, and provided with a transverse slot, *l*, to receive the cutter *m*, the wings of which fit over the notches *e*, and provided at its opposite end with a thread to receive the lock-nut *z*, substantially as specified.

293,398. ABRADING-TOOL. WILLIAM PARK BARCLAY, Chicago, Ill. Filed June 4, 1883. (No model.)

Brief.—One or more wire-gauze or perforated metal rings are embedded in a ring-grinder; also, a surrounding like ring is heated and shrunk into the abrading-ring. Wings of like material are connected by interlocking thin wires to each other at the center and by alternate wires to the embedded tubes and the surrounding tube.



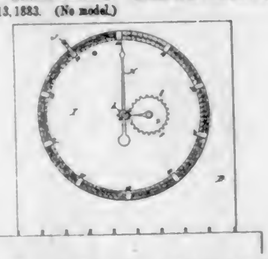
Claim.—1. An abrading-tube, B, surrounded by a cylindrical wire-gauze tube, *b''*, or thin sheet-metal tube perforated with holes, the said metal tube being of a material capable of being worn away with the particles composing the body of the abrading-tube when the same is rotated, substantially as described and shown.

2. An abrading-tube, B, having one or more concentric wire-gauze tubes, *b'*, embedded in the body of the abrading-tube B, the said tubes also having radial arms *b'''*, that assist to strengthen the abrading-tube, substantially as shown and described.

3. An abrading-tube, B, with one or more recesses, *b*, at one end, in combination with thrust-plate I, spindle H, thrust-screw J, spindle E, collar *e*, and hollow cylinder D, substantially as shown and described.

4. The double pillar K and slide-plate L, in combination with spindle E, pulley F, cylinder D, nut G, and abrading-tube B, substantially as shown and described.

293,399. ADDING-MACHINE. ALBERT KING BARMORE, Benton, Tex. Filed Sept. 13, 1883. (No model.)



Claim.—1. The combination, with a toothed wheel fixed on a shaft to rotate in a frame, of a dial having indices corresponding to the number of teeth in said wheel mounted to revolve upon said shaft, and means for securing said dial to said frame, substantially as described, whereby the shaft of the toothed wheel may revolve in said dial when the latter is fixed, or the dial may be loosened to revolve on said shaft.

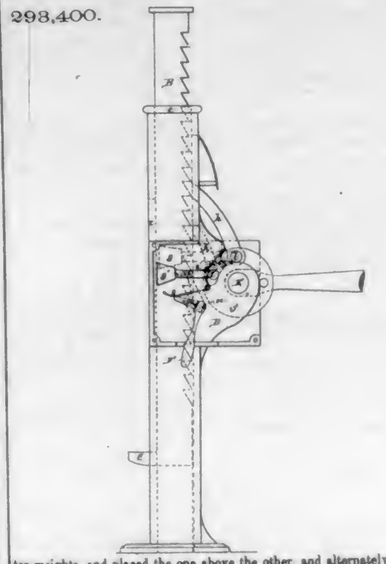
2. The combination, with the toothed wheel A, the shaft *a*, secured thereon and journaled in the frame B, the index or pointer H, secured on said shaft, the arm C, journaled on said shaft, the pawl *c* on said arm, adapted to engage the teeth of wheel A, the lever E, the connecting-rod D, and the digital levers G, each pivoted near its center to engage lever E, of the graduated dial I, concentric with shaft *a*, and the clamp *j*, as and for the purpose specified.

293,400. LIFTING-JACK. JOSIAH BARRETT, Allegheny, Pa. Filed Dec. 14, 1883. (No model.)

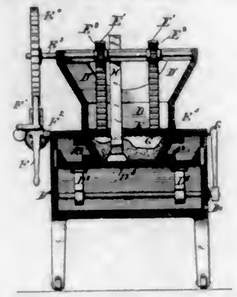
Claim.—1. In a lifting-jack, the pawls *h h'*, provided with counter-weights, and placed the one above the other, and alternately acting in raising or lowering the lifting-bar, substantially as described.

2. In a lifting-jack, the lever E, with the disks *f f''*, in combination with the pawls *h h'*, weighted levers *g g'*, springs *s s*, crank *m*, and lever F, arranged substantially as shown and described.

298,400.



293,401. SAND MOLDING-MACHINE. WILLIAM N. BARROWS, Philadelphia, Pa. Filed Nov. 7, 1883. (No model.)



Claim.—1. In a machine for making green-sand molds, the combination of a flask, having sides converging toward the parting of the mold, with a sand-supplying vessel and plunger, and a mechanism for depressing the same, and bearing forms corresponding to the shape of the patterns, for the purpose of distributing and regulating the pressure in the sand in the flask, substantially as and for the purpose set forth.

2. In combination with a flask having sides converging toward the parting thereof, a false cope adapted to measure the quantity of sand to be compressed into the flask, and a plunger fitting in said false cope, and an actuating mechanism arranged to displace the sand from the said false cope into the flask and compact the sand therein, substantially as and for the purpose set forth.

3. In a machine for making sand molds for casting metals, the combination of a pattern, a flask having sides converging toward the parting thereof, and a sand-supplying vessel having a plunger fitting therein, provided with forms adapted to compact the sand equally against the pattern, with a gate-former fitting through said plunger, substantially as and for the purpose set forth.

4. In a machine for making sand molds for casting metal, the combination of a pattern, a flask having sides converging toward the parting thereof, a sand-supplying vessel provided with a plunger, having projections conforming to the shape of the pattern, a gate-former, plates for separating the sand in the flask from the sand in the supply-vessel, a mechanism for raising and lowering the plunger, and a mechanism for

supporting and lowering the flask, substantially as and for the purpose set forth.

5. In a machine for molding in sand, the flask shown and described, having sides converging toward the parting or joint between the cope and drag, for the purpose of permitting lateral compression of the sand against the pattern and of better retaining the sand, as and for the purpose set forth.

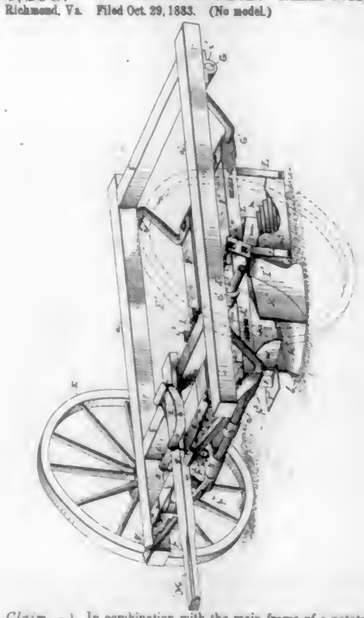
6. In a machine for molding in sand, the combination of a flask having sides converging toward the parting thereof, and a false cope for measuring the quantity of sand placed in the mold, with a pressing mechanism and plunger adapted to press sand in said false cope and flask, substantially as and for the purpose set forth.

293,402. THREAD-GUIDE FOR SEWING-MACHINES. JOHN H. H. BENNETT, Springfield, Ill. Filed June 28, 1883. (No model.)



Claim.—In a sewing-machine, the check-lever or needle-bar used as a thread-carrier, in combination with the slot A, the check C, the flanges F F, and the thread-groove B, under the check C, substantially as described, and for the purpose set forth.

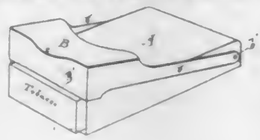
293,403. POTATO DIGGER AND RIDGER. BALLARD W. BENFORD, Richmond, Va. Filed Oct. 29, 1883. (No model.)



Claim.—1. In combination with the main frame of a potato-digging machine, the axle *d* and shaft G, having offsets or cranks, and a frame carrying the digging apparatus and grating, said frame connected with the aforesaid cranks, as described, so as to permit of its being raised by the backing of the machine, as set forth.

2. In combination with the main frame of a potato-digging machine, the axle *d* and shaft G, provided with offsets or cranks, the frame carrying the digging apparatus, said frame connected with the aforesaid offsets or cranks, so as to be raised by the backing of the machine, and the levers *p p'*, with locking means, substantially as described, and for the purpose set forth.

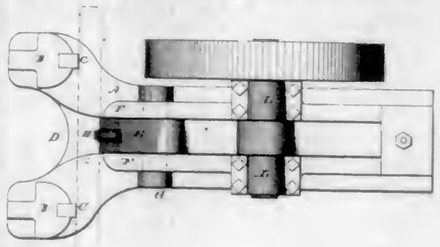
293,404. COMBINED TOBACCO BOX AND CUTTER. CHARLES S. BIRD, Elyria, Ohio. Filed Feb. 12, 1883. (No model.)



Claim.—1. As a new article of manufacture, the tobacco-box herein described, consisting of the body or box A, having an open end, and the frame B, carrying knife B', and pivoted at *b'* to said box A, as set forth.

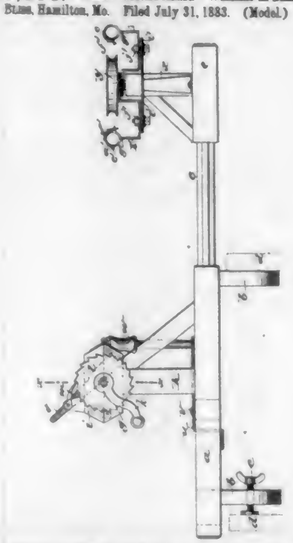
2. The tobacco-box described, consisting of the box A, having an open end, the frame B, pivoted to the box A at *b'*, the knife B, the inclosed follower *a*, and spring *z*, as and for the purposes specified.

293,405. PIG-IRON BREAKER. THEODORE A. BLAKE, New Haven, Conn. Filed Sept. 3, 1883. (No model.)



Claim.—In a pig-iron breaker consisting of two vertical jaws, stationary on the frame, and a vibrating jaw hung to swing in a plane between said stationary jaws, and in which the plane of the face of the stationary jaws and the plane of the vibrating jaw converge from their lower end upward, the frame constructed with a recess, D, at the front end, between the said stationary jaws, substantially as and for the purpose described.

293,406. WIRE-STRETCHER. WILLIAM H. BLISS and JEREMIAH W. BLISS, Hamilton, Mo. Filed July 31, 1883. (Model.)



Claim.—1. The combination, in a wire-stretching apparatus, of the reel-shaft *f*, guide-eyes *a'* and *c'*, and the guide-pulley *y*, the said reel-shaft being provided with a friction-lever, *o*, and a ratchet and pawl, *l m*, substantially as described.

2. The combination, in a wire-stretching apparatus, of the reel-shaft *f*, guide-eyes *a'* and *c'*, and the guide-pulley *y*, the said reel-shaft having hinged and hooked bearing-caps, and the guide-eyes being arranged to open and close for the removal of the reel and wire and the replacing of the same, substantially as described.

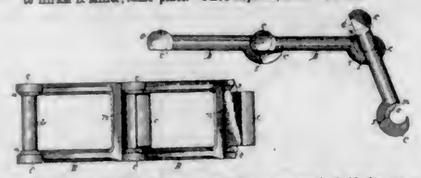
3. The combination, in a wire-stretching apparatus, of the guide-pulley *y* and the guide-eyes *a'* and *c'*, said guide-eyes being swiveled to their bearing-arms *h'*, and said arms pivoted in the axis of the guide-pulley *y*, for shifting around the same, substantially as described.

4. The combination, in a wire-stretching attachment, of the guide-pulley *y* and guide-eyes *a' c'*, stand *x*, circularly-slotted table *i'*, and the supporting-arms *h'* of the guide-eyes, said arms being pivoted to the stand, and resting on and connected to the table, substantially as described.

5. In a wire-stretching attachment to be secured to a wagon-box, the combination of the bed-frame *a*, having ears or lugs *b*, and a binding-screw, the wire-reel mounted on said bed-frame, the extension *e* of said bed-frame, and the guide-eyes *a'* and *c'*, mounted on said extension, substantially as described.

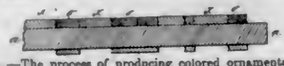
6. The combination of the spool-guide *w*, mounted on the elbow-lever *u*, with the wire-reel *t*, and the guide-eyes *a'* and *c'*, and the guide-pulley *y*, substantially as described.

293,407. DRIVE-CHAIN. JOHN C. BLOOM, Kalamazoo, Mich., assignor to Hiram B. Miller, same place. Filed Sept. 28, 1881. (Model.)



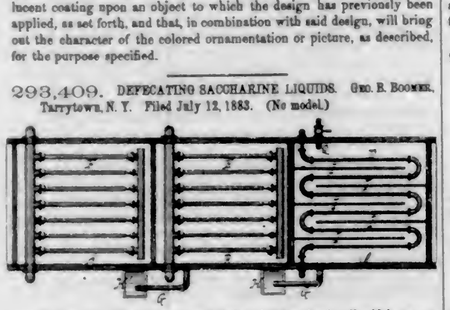
Claim.—A chain-belt consisting of links composed of side bars having concave shoulders at one end and convex shoulders at the other end, the former shoulders adapted to fit into and bear against the latter, and all having a like radius, said side bars being connected by a cylindrical coupling-bar at one end and by a hook at the other end, forming a cylindrical bearing adapted to receive said coupling-bar, all substantially as set forth.

293,408. ORNAMENTATION OF GLASSWARE, &c. VICTOR BLÜTHGEN, Freienwalde-on-the-Oder, Prussia, Germany. Filed Oct. 6, 1883. (No model.) Patented in England Sept. 26, 1883, No. 4,589; in Italy Sept. 26, 1883, XXXII, 36, XVII, 15,946; in France Sept. 26, 1883, and in Belgium Sept. 26, 1883.



Claim.—The process of producing colored ornamentations upon glass, ceramic products, or other objects, which consists in applying a gelatinous substance that will produce a rigid or stiff transparent or translucent coating upon an object to which the design has previously been applied, as set forth, and that, in combination with said design, will bring out the character of the colored ornamentation or picture, as described, for the purpose specified.

293,409. DEFECATING SACCHARINE LIQUIDS. GEO. B. BOOMER, Tarrytown, N. Y. Filed July 12, 1883. (No model.)



Claim.—1. In the process of defecating saccharine liquid by passing it successively through heated vessels, the step herein described, consisting in drawing the liquid from the vessels at a point intermediate of the top and bottom of the liquid, for the purpose of leaving it free of scum and sediment.

2. The combination, substantially as hereinbefore set forth, of the train of vessels, each provided with a heating medium, an overflow-spout connected to one vessel at a point intermediate of the top and bottom, and a delivery-pocket connected to the adjacent vessel for receiving the liquid from the spout.

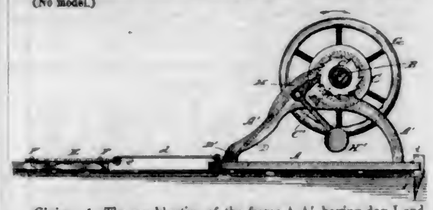
3. The combination, substantially as hereinbefore described, of the train of vessels, each provided with a heating medium, an overflow-spout adjustably connected to one vessel, and a delivery-pocket connected to the adjacent vessel for receiving the liquid from the spout.

4. The combination, substantially as hereinbefore set forth, of the vessel A, provided with a heating-coil, the vessel B, a means for conveying liquid from one such vessel to the other, and the longitudinal partitions arranged in the first vessel between the pipes composing its coil, such partitions terminating alternately near the opposite ends of the vessel, to form a circuitous channel.

5. The combination, substantially as hereinbefore set forth, of the train of vessels closed at the top and provided with heating mediums, the end wall, K, of the first vessel, and the partition-walls N O, such end and partition walls terminating below the top of the vessels to leave openings for the passage of steam from one vessel to another.

6. The combination, substantially as hereinbefore set forth, of the train of vessels closed at the top and provided with heating mediums, the end wall, K, of the first vessel, and the partition-walls N O, such end and partition walls terminating below the top of the vessels, and gradually increasing in height, for the purpose specified.

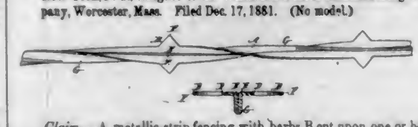
293,410. CARPET-STRETCHER. GEORGE WASHINGTON BOWERS and THOMAS JEFFERSON THOMPSON, Beaver Falls, Pa. Filed Nov. 23, 1883. (No model.)



Claim.—1. The combination of the frame A A', having dog I and guide-bar D', flanged roller C, having ratchet-wheel C' and shaft B, means for rotating the roller in its bearings, pawl or dog H H', strap D, bifurcated strap *d*, and stretcher-bar E, of a zigzag shape, and provided with the teeth or hooks F and loops *e*, substantially as set forth.

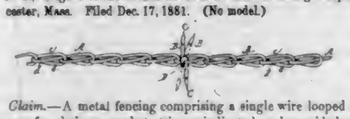
2. In a carpet-stretcher, the stretcher-bar E, of a zigzag shape, and provided with teeth or hooks F, and loops *e*, for its attachment to the stretching machine or mechanism, substantially as set forth.

293,411. BARBED-METAL-STRIP FENCING. WILLIAM E. BROCK, New York, N. Y., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass. Filed Dec. 17, 1881. (No model.)



Claim.—A metallic-strip fencing with barbs B cut upon one or both edges thereof and integral therewith, the strip being folded at its center, as shown at G, with the extended flanges G and D D, substantially as and for the purposes set forth.

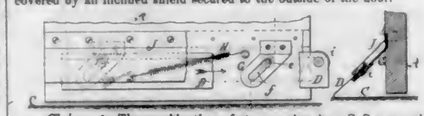
293,412. BARBED-WIRE FENCING. WILLIAM E. BROCK, New York, N. Y., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass. Filed Dec. 17, 1881. (No model.)



Claim.—A metal fencing comprising a single wire looped after the manner of a chain or crochet strip, as indicated, and provided with suitable barbs, substantially as described.

293,413. WEATHER-STRIP. GUSTAV BURKHARDT, Homer, Ill., assignor of one-half to Charles E. Wolfkill, same place. Filed Dec. 5, 1883. (No model.)

Brief.—A weather-strip consisting of inclined brackets with inclined slots, a spring-operated strip provided with pins that work in the slots of the bracket, and an inti-friction roller secured to one end, all covered by an inclined shield secured to the outside of the door.



Claim.—1. The combination of the two brackets G G, secured to the lower edge of a door, and provided with inclined slots, the strip D, moving vertically upon one side of the brackets, and provided with laterally-projecting pins on one of its vertical sides, which are arranged, respectively, in the slots of the bracket, and a spring, H, acting on the strip, substantially as described.

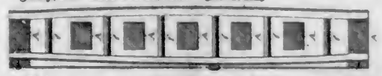
2. The combination of the inclined guides G, the strip D at one side thereof, the spring acting on the strip to throw one end beyond the vertical edge of the door, and the friction-roller journaled to one end of the strip, for riding against the door-frame when the door is closed, substantially as described.

3. The combination of the brackets G G, attached to the door in inclined planes, and provided with inclined slots, the strip D, arranged upon one side of the brackets, and provided with lateral pins on one side, arranged, respectively, in the inclined slots, and a spring, H, acting on the strip, substantially as described.

4. The combination of the brackets G G, attached to the door and provided with inclined slots, the strip D, arranged at one side of the brackets and having lateral pins on one side, arranged, respectively, in the inclined slots, and a spring, H, secured at one end to the door and at the other end to the strip, substantially as described.

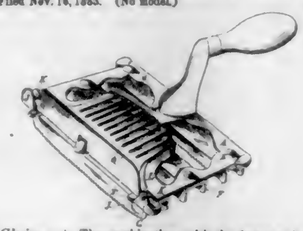
5. A weather-strip consisting of the brackets G, attached to a door and provided with inclined slots, the strip D, arranged upon one side of the brackets, and having lateral pins arranged, respectively, in the slots, an anti-friction roller journaled at one end of the strip, to ride against the door-frame when the door is closed, a spring, H, acting on the strip, and the inclined shield J, substantially as described.

293,414. SOUNDING-BOARD FOR PIANOS. GEORGE CADDICK, Allegheny, Pa. Filed Feb. 20, 1882. (No model.)



Claim.—In a piano, the double sound-board composed of the two sound-boards, one in front of the back framing, the other in rear of it, said boards being sprung into an arched or crowning form by means of sound-posts introduced between them, substantially as specified.

293,415. CURRY-COMB. FREDERICK A. CANFIELD, Thomaston, Conn. Filed Nov. 14, 1883. (No model.)



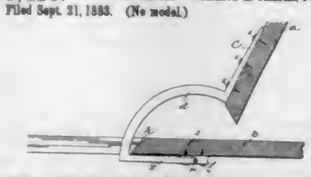
Claim.—1. The combination, with the frame or back of a curry-comb, of a combined comb and scraper, constructed as shown and described, and journaled thereupon, a bearing for the comb of the combined comb and scraper when shut down upon the said frame or back of the curry-comb, and a guard for the teeth of the comb when so depressed, substantially as set forth.

2. The combination, with the frame or back of a curry-comb, of a combined comb and scraper journaled thereupon in bearings formed integral with it, and provided with lips which are bent to secure the journals of the said comb and scraper in place, substantially as set forth.

3. The combination, with the frame or back of a curry-comb, of a combined comb and scraper journaled thereupon, and lugs to prevent the said combined comb and scraper from tipping back, substantially as set forth.

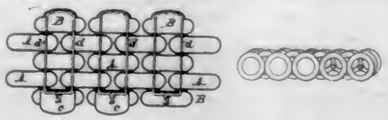
4. The combination, with the frame or back of a curry-comb, of a combined comb and scraper journaled thereupon, a flat spring secured to the said frame and bearing upon the corner of the comb and scraper, and lugs to prevent the said comb and scraper from tipping back, substantially as set forth.

293,416. SCUTTLE-HINGE. WALLACE H. CARTER, Farmingdale, Me. Filed Sept. 21, 1883. (No model.)



Claim.—The hinge herein described, consisting of a part, *c*, for connection with the door, the part *e*, pivoted to a bracket or equivalent device secured to the floor, and the segment *d*, connecting the parts *c* and *e* the whole being arranged and operating substantially as described.

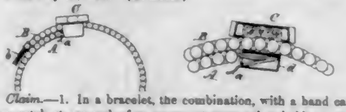
293,417. ORNAMENTAL CHAIN. HENRY A. CHURCH, Providence, R. I. Filed Nov. 13, 1882. (No model.)



Claim.—1. In a roller-chain, the combination, with wires or staples for securing the links together, of the links, each of which is provided with a pair of apertures of such form as to nearly fit the wires or staples, and thus prevent the links from turning on the staples.

2. The combination, with the links provided with the apertures arranged to nearly fit the staples, of the closed units B, the edge-cups provided with the caps C, and the staples *d*, said staples being secured at one end within the closed units and at the opposite end beneath the caps of the edge-cups, and the latter being arranged within said edge-cups, substantially as described.

293,418. CHAIN-BRACELET. HENRY A. CHURCH, Providence, R. I. Filed July 13, 1883. (No model.)

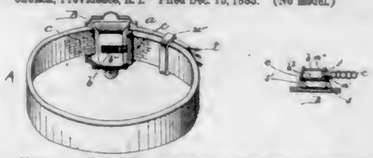


Claim.—1. In a bracelet, the combination, with a band carrying a spring-catch at one end, of an ornament arranged to hold one end of the band by frictional contact and to hold the other end of said band by virtue of the resilient action of the said catch, substantially as described.

2. The combination, with the slide C, provided with the friction-stop *c* and catch-socket *d*, of the band or chain provided with the catch *a*, the whole constructed to secure the bracelet and adjust the same, as described.

3. As a new article of manufacture, a band-bracelet provided with an ornament containing a friction-stop for adjusting the size of the bracelet, and a socket arranged to receive a spring-catch secured to the end of the band, as described.

293,419. CLASP FOR ROLLER-CHAIN BRACELETS. HENRY A. CHURCH, Providence, R. I. Filed Dec. 15, 1883. (No model.)



Claim.—1. In a roller-chain bracelet, the clasp or fastening herein described, consisting of a double-chambered slide provided at the back with an opening or slot adapted to receive suitable attaching means secured to the free end of the chain, as and for the purpose set forth.

2. In a roller-chain bracelet, the slide B, herein described, provided with the two chambers *a b*², the former adapted to receive and frictionally retain the chain, the latter chamber adapted by means of the opening *b* to receive and retain the free end of the chain when in use, substantially as shown and set forth.

3. In a roller-chain bracelet, the slide B, provided with chambers *a b*², and slotted opening *b*, in combination with the T-shaped clasp or fastening *a*² *a'*, secured to the free end of the chain, substantially as shown and described.

4. In a roller-chain bracelet, the slide B, herein described, provided with chambers *a b*², and slotted T-shaped opening *b' b*, in combination with the T-shaped fastening or clasp secured to the free end of the chain, substantially as shown and set forth.

293,420. WATCH-REGULATOR. ADLER C. CLAUSEN, Minneapolis, Minn., assignor of one-half to J. C. Slafter, same place. Filed Nov. 13, 1882. (No model.)



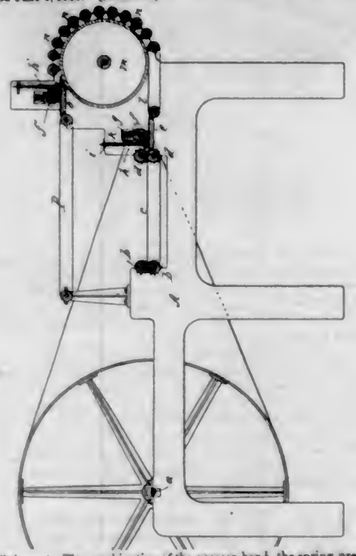
Claim.—In a regulator, the spring-arm F, held under the segment friction tight, substantially as herein shown, and for the purpose described.

293,421. HARNESS-LOOP. ADAM COFFMAN, Warsaw, Ohio. Filed Mar. 31, 1883. (No model.)



Claim.—A harness-loop, substantially as described, provided with the supporting strap-keepers C C on opposite sides, at the upper end of the loop, the inner edges of the keepers being close together, leaving a narrow opening in which the supporting-strap is clamped between the said keepers, as and for the purpose set forth.

293,422. MACHINE FOR EXTRACTING AND CLEANING THE FIBERS OF PLANTS. PHILIP COHN, New Laredo, Tamaulipas, Mexico. Filed June 6, 1883. (No model.)



Claim.—1. The combination of the presser-bar *h*, the spring-pressed roll *f*, having spiral blunt-edged blades *f'*, and the table *e*, whereby the plants may be held sufficiently and scraped, as described.

2. The combination of the endless traveling apron *l*, the drum *m*, and the rollers *n*, whereby the plant may be carried from one table to the other and reversed in position, as described.

293,423. SAMPLING-TUBE. PAUL CONTANT, Reims, France. Filed June 13, 1883. (No model.) Patented in France Nov. 13, 1882, No. 152,017.

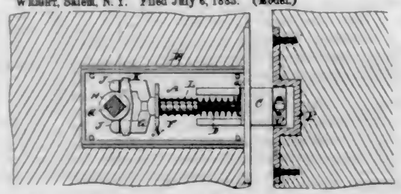


Claim.— 1. A sampling-tube adapted to be telescoped and provided with a testing-cup, substantially as described, for the purposes specified.

2. A sampling-tube composed of tube-sections arranged to telescope into one another, the end sections being provided with suction-orifices for drawing in the liquid to be sampled, substantially as described, for the purposes specified.

3. A sampling-tube composed of tube-sections arranged to telescope one into the other and provided with a holding device pivoted to the outer tube and adapted to be set at right angles thereto to form a projection or projections to hold the instrument when inserted in the bung-hole of a cask, as described.

293,424. EXTENSIBLE LATCH. BRONNIE COPELAND and FRANK WRIGHT, Salem, N. Y. Filed July 6, 1883. (Model.)



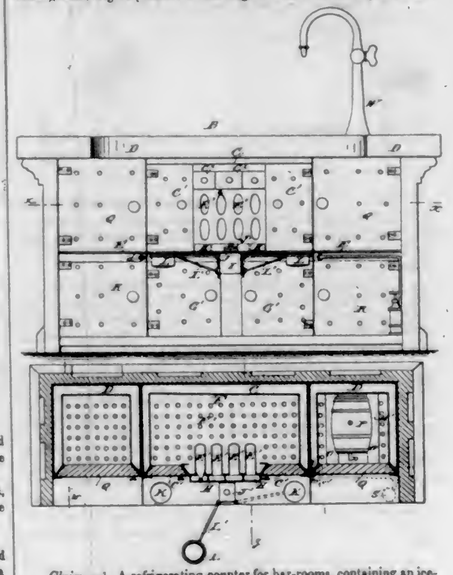
Claim.—1. An extensible latch-bolt consisting of a block swiveled on a screw, and connected by the latter to a piece provided with a screw-threaded aperture, substantially as herein shown and described.

2. A latch-bolt consisting of a block, C, provided with a counter-sink, O, a screw, D, provided with a head, E, and means for preventing the screw from sliding in the block, and of a tubular piece, F, provided with a fork, G, substantially as herein shown and described.

3. The combination, with the hub H, having arms K, of the fork G, formed with projections J and plate N, and having an internally-threaded sleeve, F, the screw D, having head E and pin *o*, the block C, having countersink O, and the spring L, substantially as shown and described.

293,425. REFRIGERATING-COUNTER FOR BAR-ROOMS. CHAS. ELBURY CROCKETT, Waupun, Wis. Filed Nov. 24, 1883. (No model.)

Brief.—Air compressed by a pump within hollow walls of ice-tanks within the counter serves as a non-conducting filling; also, through connecting-hose, to give pressure within kegs to force beer, &c., up to faucet.



Claim.—1. A refrigerating-counter for bar-rooms, containing an ice-box made in two or more independent removable sections, substantially as herein shown and described.

2. A refrigerating-counter for bar-rooms, containing an ice-box made in two or more independent removable sections, having hollow walls, substantially as herein shown and described.

3. The combination, with a refrigerating-counter for bar-rooms, of an ice-box provided with a series of pigeon-holes, with drawers above the pigeon-holes, and boxes for sugar, spices, &c., below the pigeon-holes, substantially as herein shown and described.

4. The combination, with a refrigerating-counter for bar-rooms, of an ice-box having a work-board projecting from its front at about the middle of its height, pigeon-holes for bottles, arranged above the work-board, and doors for the ice-box, arranged above and below the work-board, substantially as herein shown and described.

5. The combination, with a refrigerating-counter for bar-rooms, of an ice-box provided with a work-board projecting from its front at about the middle of its height, which work-board is provided with an aperture at one or both ends, and of rinsing tanks or cups held removably below the said apertures, substantially as herein shown and described.

6. The combination, with a refrigerating-counter for bar-rooms, of an ice-box provided with a work-board projecting from its front at about the middle of its height, which work-board is provided with an aperture at one or both ends, of rinsing tanks or cups held below the said apertures, and of swinging arms, in which the rinsing-cups are held, substantially as herein shown and described.

7. The combination, with a refrigerating-counter for bar-rooms, of an ice-box provided with a work-board projecting from the middle of its front, a box, I, arranged in the work-board and projecting from the same, and the box J, contained in the box I, and provided with an apertured bottom, substantially as herein shown and described.

8. The combination, with a refrigerating-counter for bar-rooms, of an ice-box provided with a work-board projecting from the middle of its front, a box, I, arranged in the work-board and projecting below the bottom of the same, which box I is in communication with the ice-box, and the box J, held in the box I, and provided with a perforated bottom, J³, and with a cover, J', substantially as herein shown and described.

9. The combination, with a refrigerating-counter for bar-rooms, of an ice-box formed of two or more independent removable sections, each section being provided with a work-board on the front at the middle of its height, substantially as herein shown and described.

10. The combination, with a refrigerating-counter for bar-rooms, of an ice-box having hollow walls, an air-forcing apparatus connected with the air-chamber formed by the hollow walls, and tubes connected with the chamber formed in the hollow walls and with a faucet on the bar, which tubes will be adapted to be connected with the bung or plug and with the spigot or faucet of the barrel or keg contained in the ice-box, substantially as herein shown and described.

293,426. MEANS FOR MEASURING VELOCITIES BY ELECTRICITY. FREDERICK W. CUSHING, New York, N. Y. Filed July 30, 1883. (No model.)



Claim.—1. The herein-described method of operating a time-recording device, which consists in first opening a shunt-circuit spanning the devices which actuate said recording-device, and, secondly, in breaking the main circuit in which said recording device and the devices which actuate it are included.

2. The combination, substantially as hereinbefore set forth, of a battery, a rheotome, a recording device included in the main circuit of said battery, and actuated by the pulsatory currents established by the action of said rheotome, and a shunt-circuit spanning said battery and rheotome, which normally prevents the action of said recording device.

3. The combination, substantially as hereinbefore set forth, of the battery, means for rendering its current pulsatory, the main circuit, means for shunting off the greater portion of the pulsatory current from said main circuit, and means for recording the pulsations traversing said main circuit whenever said shunt is broken.

4. The combination, substantially as hereinbefore set forth, of a main circuit, including a rheotome, a battery, and a recording device, and a shunt-circuit normally shunting said battery and said rheotome.

5. The combination, substantially as hereinbefore set forth, of a rheotome, a battery, and a chemical recording device included in a main circuit, and a shunt-circuit for preventing the operation of said recording device.

6. The combination, substantially as hereinbefore set forth, of the shunt-circuit, the main circuit, including the battery, rheotome, and recorder, and means whereby said shunt and main circuits are successively opened by the passage of a moving body.

293,427. BRIDGE. CHAUNCEY G. DIBBLE, Farmington, Iowa, assignor of one-half to Frederick E. Bangs, New Haven, Conn. Filed Nov. 26, 1883. (No model.)

Brief.—Consists of arched beams having transverse ties carrying the platform, vertical struts between said ties and beams, chords extending from the foot of the arch at one end to the foot at the opposite end, and diagonal suspension-rods extending from the arch near the struts to the chord intermediate between the ties, and connected thereto at a point above the plane of the bottom of the ties.

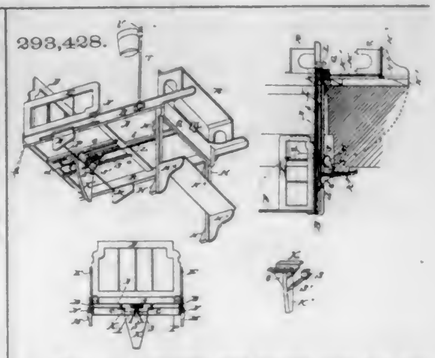


Claim.—The combination of the arched beams A, the transverse ties C, carrying the platform, vertical struts *a* between said ties and beam, chords D, extending from the foot of the arch at one end to the foot at the opposite end, and the diagonal suspension-rods *b*, extending from the arch near the struts to the chord intermediate between the ties, and there connected with the chord at a point above the plane of the bottom of the ties, whereby an upward bend is produced in the chords between the ties, substantially as described.

293,428. WINDOW-CLEANING CHAIR. ANNA DORMITZER, New York, N. Y. Filed Dec. 4, 1883. (No model.)

Brief.—Consists of a platform secured to a window-sill by a clamp which projects from blocks in ways upon the under side of the platform, and which is supported by a stay-frame. A thumb-screw extending from the front rearwardly engages a traveling nut which is secured to the clamp. A transverse connecting-bar couples inclined blocks and central clamp.

293,428.

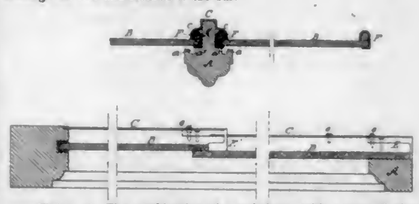


Claim.—1. An unyielding clamp projecting rigidly from blocks traversing in ways upon the under side of the platform of a window-cleaning chair, in combination with its stay-frame, a thumb-screw extending under the platform from its front rearwardly, and a traveling nut upon said screw coupled to the clamp, substantially in the manner and for the purpose herein set forth.

2. The combination, with a central clamp adapted to traverse upon the under side of the platform of a window-chair in a direction from front to rear, and to engage the outer face of the sill or wall, and which is provided with a thumb-screw adapted to produce an adjustment of said clamp, of lateral inclined-faced blocks traversing longitudinally upon the sides of the platform, to rest upon the window-sill, and a transverse connecting-bar coupling said blocks with each other and the central clamp, so that the three shall move in unison, substantially in the manner and for the purpose herein set forth.

293,429. SKYLIGHT. ALEXANDER DRUMMOND, Edinburgh, Scotland. Filed May 31, 1883. (No model.) Patented in England July 14, 1882, No. 3,340.

Brief.—Consisting of raised strengthening-ribs applied to the edges of the glass, provided with a water-proof filling combined with a cap embracing said ribs and secured to the bar.



Claim.—1. The combination of a sash-frame with a pane of glass having secured thereto strengthening-ribs F, the glass thus strengthened being applied in the frame, substantially as set forth.

2. The combination of a sash-frame having ridge-strips C, with panes of glass having secured thereto strengthening-ribs F, raised on the surface side, and adapted to be overlapped by said strips, substantially as described.

3. The combination of a sash-frame and ridge-strips C, with panes of glass having along the edges ribs F, formed of flanged strips filled with putty, into which the edge of the glass is set, substantially as specified.

293,430. APPARATUS FOR REVIVIFYING BONE-BLACK. EDWARD P. EASTWICK, New York, N. Y. Filed Nov. 1, 1883. (No model.)

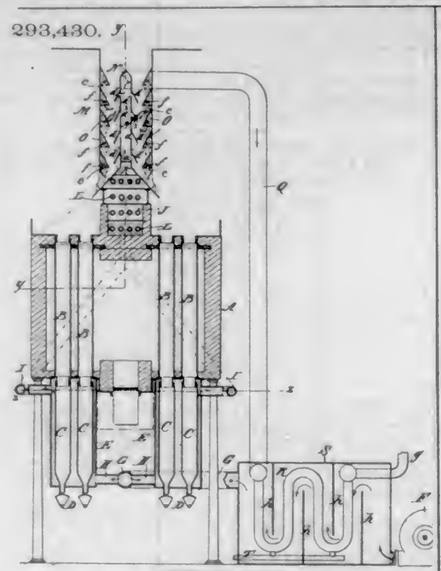
Claim.—1. The combination, with the bone-black coolers C, of a casing surrounding the coolers for confining a current of air in contact with the coolers, substantially as and for the purposes set forth.

2. The pipe R, placed in box S, and connected with the drier M by pipe Q, in combination with the blower F, boxes E, and pipes G H, all arranged to operate substantially as and for the purposes set forth.

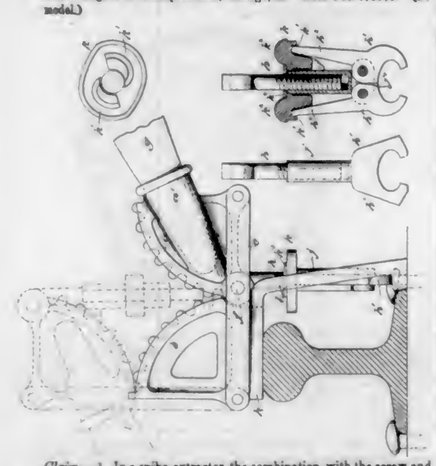
3. The casing E, surrounding the coolers C, and connected through suitable pipes with the drier M, in combination with an air-forcing device connected with the casing E, substantially as and for the purposes described.

4. The box or condenser S, connected with the drier M by suitable pipes, in combination with the blower F, connected with said box, and the pipe R, placed in the box, and connected with the drier M by pipe Q, substantially as and for the purposes set forth.

293,430.



293,431. SPIKE-EXTRACTOR. JOHN EBERT, Rockaway Beach, N. Y., assignor to Phillip A. Hall, Chicago, Ill. Filed Dec. 8, 1883. (No model.)



Claim.—1. In a spike-extractor, the combination, with the screw and the pivoted claws having upwardly-projecting stems or arms, and an internally-screw-threaded sleeve, of the cam-ring fitted upon said sleeve, and the claw stems or arms, and the nut holding the cam-ring on the sleeve, substantially as and for the purpose set forth.

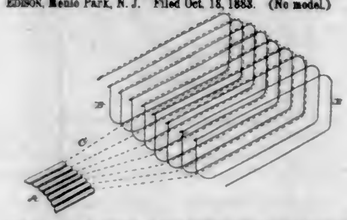
2. In a spike-extractor, the combination, with the screw and the pivoted claws having upwardly-projecting stems or arms, and the internally-screw-threaded sleeve, of the cam-ring having opposite eccentric grooves on its under side, which engage the upper ends of the claw stems or arms, substantially as and for the purpose set forth.

3. In a spike-extractor, the combination, with the screw and the pivoted claws having upwardly-projecting arms or stems, and the internally-screw-threaded sleeve, of the cam-ring having opposite eccentric grooves, and the nut which holds the cam-ring upon the sleeve, substantially as and for the purpose set forth.

4. The combination, with the connecting-bolt *h*, sleeve *j*, and pivoted claws A' A', formed with stems A^2 A^2, of the cam-ring *k*, placed upon the sleeve and upper ends of the stems and adapted to be turned, substantially as and for the purposes set forth.

5. In a spike-extractor, the bolt connected to the claws, the latter having a cam-ring, the clamping action thereof securing the claws upon the spike or other object, in combination with the intergearing sectors linked together, and one being pivoted to the upper end of the said bolt, and having a socket and handle, substantially as and for the purpose set forth.

293,432. ELECTRICAL GENERATOR OR MOTOR. THOMAS A. EDISON, Menlo Park, N. J. Filed Oct. 18, 1883. (No model.)



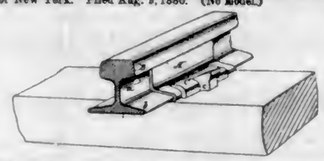
Claim.—1. The method of overcoming wholly or partially the spark at the commutators of dynamo or magneto electric machines or electro-dynamic motors, consisting in developing a counter electro-motive force opposed to the electro-motive force of the armature-coils as they are short-circuited, substantially as set forth.

2. In an electrical generator or motor, the combination, with the armature and commutator, of means for throwing a counter electro-motive force into the armature-coils as they are short-circuited, substantially as set forth.

3. In an electrical generator or motor, the combination, with the armature and commutator, of conductors connecting the armature-coils and commutator-bars and passing through the field of force, substantially as set forth.

4. In an electrical generator or motor, the combination, with the armature-coils and the commutator-bars, of extra loops wound upon the armature, and connecting the armature-coils and commutator-bars, substantially as set forth.

293,433. INSULATION OF RAILROAD-TRACKS USED FOR ELECTRIC CIRCUITS. THOMAS A. EDISON, Menlo Park, N. J., assignor, by mesne assignments, to the Electric Railway Company of the United States, of New York. Filed Aug. 9, 1880. (No model.)

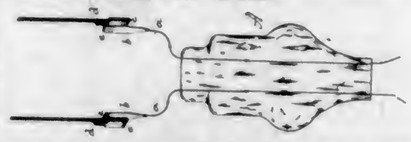


Claim.—1. A railway-rail provided with an insulating-covering except upon its head, substantially as set forth.

2. An insulating-cushion for railroad-rails, composed of a flexible water-proof fibrous material, substantially as set forth.

3. A line of rails electrically connected to form a circuit or part of a circuit, and having the foot and web of the rails covered with an elastic insulating composition adhering to the surface thereof, substantially as set forth.

293,434. INCANDESCENT ELECTRIC LAMP. THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Aug. 7, 1882. (No model.)

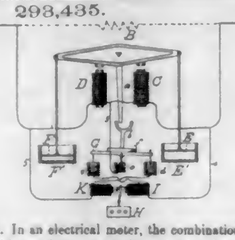


Claim.—1. In an incandescing electric lamp, the device for holding an end of the carbon during the process of electroplating, consisting of a flat piece of copper bent twice lengthwise upon itself, substantially as set forth.

2. The leading-in wires of an incandescing electric lamp, having their inner extremities formed into or attached to flat metal strips, each bent twice lengthwise upon itself, substantially as and for the purpose set forth.

293,435. ELECTRICAL METER. THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Aug. 14, 1882. (No model.)

293,435.



Claim.—1. In an electrical meter, the combination of the pivoted beam, oscillated by an electro-magnetic mechanism for moving the beam in both directions by electro-magnetic action, of a recording apparatus, and reciprocating dash-pot plungers attached to such beam, substantially as set forth.

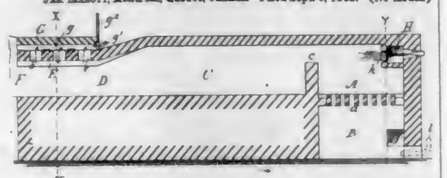
2. In an electrical meter, the combination, with a pivoted beam, of electro-magnets for tipping such beam in opposite directions, a circuit-controller moved by the beam, and a recording apparatus, substantially as set forth.

3. In an electrical meter, the combination, with a pivoted beam, of electro-magnets for tipping such beam in opposite directions, means for retarding the movement, a circuit-controller moved by the beam, and a recording apparatus, substantially as set forth.

4. In an electrical meter, the combination, with a pivoted beam, the main electro-magnets, and the dash-pots, of the circuit-controller operated by the beam, the recording apparatus, and the electro-magnets for working such recording apparatus, substantially as set forth.

5. In an electrical meter, the circuit-controller composed of a pivoted bar, mercury-cups in which the circuit is made and broken, a mercury-cup for constantly maintaining electrical connection with the moving bar, and a tube partly filled with liquid, for throwing the bar to the limits of its movements, substantially as set forth.

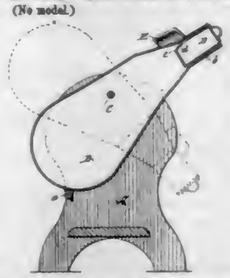
293,436. APPARATUS FOR CONSUMING SMOKE IN FURNACES. JAS. ELLIOTT, Montreal, Quebec, Canada. Filed Sept. 6, 1883. (No model.)



Claim.—1. For introduction of air to the fire-chamber above the grate, vertical flues J J, formed in the side walls, and opening at their lower ends into the ash-pit, and joined at their upper ends to a flue, H, formed at the crown of said fire-chamber, at right angles to the flue of draft, and having openings *h h*, and a blower or fan for forcing said air through said flues and over the fire, substantially as and for the purpose described.

2. In a furnace, the combination, with flues J J and H, of the steam-pipe K, having nozzles *k k*, and a fan or blower, L, substantially as and for the purpose specified.

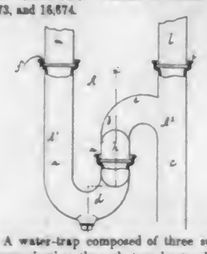
293,437. SHOT-CASE. QUINCY ADAMS ELLIS, Gatesville, TEX. Filed Sept. 8, 1883. (No model.)



Claim.—1. A case tapering toward its spout, a charger fitting said spout to slide therein, and a rod passing through said case to support it, the case being hung upon the rod to balance the spout upward, substantially as described.

2. The combination, with a case tapering toward its spout and means for hanging the same to balance the spout upward, of a drawer fitting said spout to slide therein, said drawer having a bottom, two sides and two ends, and an opening in its top, said case having an offset in the upper side of its spout, extending over the rear end of the drawer when inserted as described, whereby communication is made between the interior of the case and the interior of the drawer.

293,438. WATER-TRAP. WILLIAM J. ENGLISH, Cohoes, N. Y. Filed May 9, 1883. (No model.) Patented in Canada Nov. 11, 1882, Nos. 15,777, 16,573, and 16,574.



Claim.—1. A water-trap composed of three substantially parallel limbs, *a b c*, communicating through two bents, *d e*, an enlargement formed in the connecting-limb *b*, and a vent formed by extending the walls of the discharge-limb above the connection with bent *e*, whereby the vent is located above the discharge-limb and not in the bent *e*, substantially as described.

2. A water-trap composed of two sections, A' A^2, the section A' forming the inlet-limb *a* and part of the connecting-limb *b*, and being provided at its ends with bells *f n*, while the section A^2 forms the discharge-limbs *c* and part of the connecting-limb *b*, and is provided with a bell, *i*, substantially as shown and described.

293,439. HORSESHOE. THEODORE C. EVANS, Ludington, Mich. Filed Dec. 26, 1883. (No model.)



Claim.—As an improvement in jointed horseshoes, the combination, with the jointed heel-pieces, of movable heel-calks straight on one side but beveled on the other side and adapted to be turned in their fastenings, so as to have the beveled or inclined side face either the outside of the shoe or the inside, substantially as and for the purpose shown and set forth.

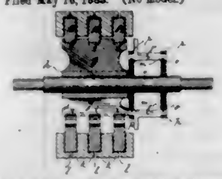
293,440. BIAS TAPE AND PROCESS OF MAKING THE SAME. CHARLES H. FARMER, Boston, MASS. Filed Dec. 4, 1882. (No model.)



Claim.—1. As a new article of manufacture, bias tape put up in sticks or rolls and formed of uniform width in continuous lengths of fabric, with a succession of pliable oblique and parallel joints having perfectly-matched cut edges, without projecting threads, substantially as set forth.

2. The improved process of making continuous bias tape, consisting in cutting the fabric at an angle of about forty-five degrees to its warp and filling, cementing together the selvages of the successive pieces to form a continuous band, winding said band upon a core of pasteboard or equivalent material susceptible of being cut with the fabric into strips, and cutting the band and its core lengthwise of said band into strips of the required width, substantially as set forth.

293,441. DYNAMO-ELECTRIC MACHINE. FREDERICK K. FITCH, New York, N. Y. Filed May 16, 1883. (No model.)



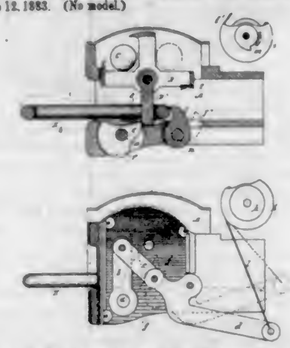
Claim.—1. In a dynamo-electric machine, the combination of an armature-ring composed of three or more segments connected together at their ends by overlapping joints and transverse rivets or screws, with a spider notched to receive said ring-segments, the latter being also notched to receive the spider-arms, substantially as described.

2. The combination, with an armature composed of two or more narrow rings, each wound with separate coils of insulated conductor, of a field-magnet internally grooved to receive said rings, and having the overhanging flanges *k* and slits *l*, substantially as described.

3. The armature-ring composed of two or more radially and peripherally grooved circular segments, A, having their ends adapted to tongue-and-groove joining, and the transverse securing screws or rivets, each segment having the internal notches, *f*, at its ends, adapting it for seating on a spider, substantially as described.

4. The commutator composed of the longitudinal strips *l'*, having the internal notches, *m*, in combination with the non-conducting heads *n*, having beads *o*, and the inclosing-hoops *p*, substantially as described.

293,442. CAR-COUPLING. CORNELIUS FLYNN, Brooklyn, N. Y. Filed June 12, 1883. (No model.)



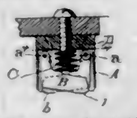
Claim.—1. The levers *b*, *c*, and *d*, inclosed within the box or compartment *f* and operated as described, in combination with the catch F and swinging bolt B', as and for the purpose set forth

2. The levers *p*, *q*, and *r*, inclosed within the box or compartment L, and constructed as described, in combination with the hook or stop I and link E, as and for the purpose set forth.

3. The hook or stop I, constructed as described, in combination with the levers *p*, *q*, and *r*, the inclined plate or bar *o*, and the link E, as set forth.

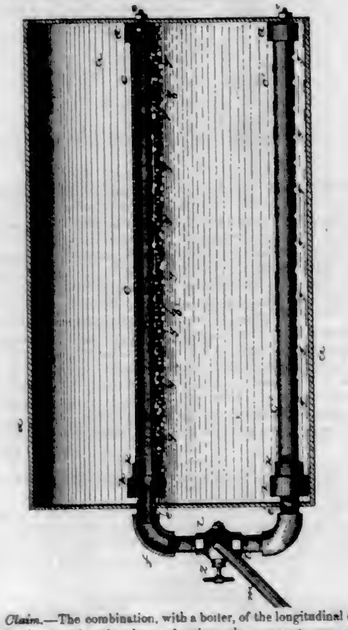
4. In combination with the levers *b*, *c*, and *d* and catch F, the shaft *g*, provided with the fast pulley A, and loose pulley *i*, and hand-wheels *k k*, the whole being constructed as described, to operate in the manner set forth.

293,443. STAMP-CANCELER. ANNA M. FORTIER and SHADRACH M. A. FORTIER, San Francisco, Cal. Filed Oct. 1, 1881. Renewed Aug. 17, 1883. (No model.)



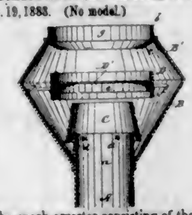
Claim.—In a canceling-stamp, the combination of the casing A' lid D, bent dogs B B, pivoted in said casing and provided with teeth *b b*, and the coiled spring C, resting on the horizontal arms of the dogs between the same and the lid of the case, substantially as shown and described.

293,444. STEAM-BOILER CLEANER. JAMES HARVEY FOSTER, Era, Tex. Filed June 27, 1883. (No model.)



Claim.—The combination, with a boiler, of the longitudinal cleaner-pipe having a series of under perforations, the aggregate area of which is about equal to the area of the pipe-opening, the cup and bolt connecting the closed end of the pipe with the boiler end, and the throttle-valve and waste-pipe, substantially as specified.

293,445. SPARK-ARRESTER. ABRAHAM O. FRICK, Waynesborough, Pa. Filed Nov. 19, 1883. (No model.)



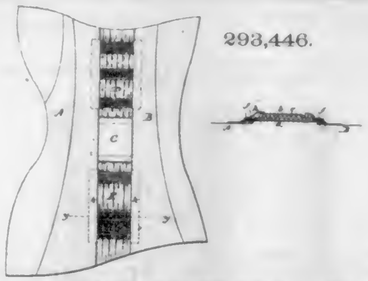
Claim.—1. The spark-arrester consisting of the combination of the deflector D D', composed of a ring of sheet metal with a circular sheet-metal flanged head inserted near its middle, the subjacent sleeve C, the double conical inclosure B B', and the smoke-pipe A, extending up and into the said sleeve, substantially as for the purpose described.

2. The spark-arrester consisting of the combination of the deflector D D', composed of a ring of sheet metal with a circular sheet-metal flanged head inserted near its middle, the double conical case B B', having flanges *b* and *c*, the smoke-pipe A, protruding into the same, and one or more sleeves, C, having its lower end arranged to overlap the smoke-pipe A and leave an annular space between, substantially as shown and described.

293,446. CORSET. THOMAS S. GILBERT, New Haven, Conn., assignor to Mayer, Stroese & Co., same place. Filed Oct. 8, 1883. (Model.)

Claim.—1. An elastic gore or section composed of two thicknesses of fabric, *a b*, the one narrower than the other, the two stitched together so as to leave both edges of the broader thickness exposed beyond the narrower thickness, the said stitching being in parallel lines transversely across the two thicknesses, and so as to form parallel pockets between said thicknesses, and helical or spiral metal springs *e* inclosed by such pockets, the ends of the springs extending beyond the edge of the narrower thickness, and the several springs secured at their ends to stripe, *f*, of flexible material, independent of the covering material, substantially as described.

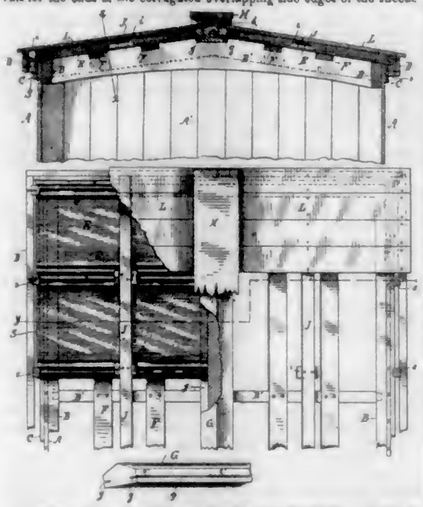
293,446.



2. In a corset, an elastic gore or section composed of two thicknesses, *a b*, of fabric, stitched together by transverse parallel lines of stitches to form transverse pockets between said thicknesses, one of said thicknesses broader than the other, and so as to leave the edges of the broader thickness exposed beyond the edges of the narrower thickness, and helical springs *c*, introduced into said pockets between said thicknesses of fabric, said springs extending beyond the edge of the narrower thickness, the ends of the springs secured to strips, *f*, of flexible material, independent of the two thicknesses which inclose the springs, the edges of the broader thickness stitched, respectively, to one thickness of the adjacent sections A B of the corset, the flexible strips which connect the springs stitched to the same thickness of the sections A B, the other thickness of the sections A B of the corset stitched to the first thickness of the elastic section outside the ends of the springs, the edges of said other thickness extending over and so as to form a flap to cover the ends of the springs, substantially as described.

293,447. CAR-ROOFING. ALBERT W. GILMORE, Chicago, Ill. Filed Nov. 1, 1883. (No model.)

Brief.—The upper edges of metal sheets are held in a horizontal groove on each side of the ridge-piece and the lower edges rest in spacing-blocks. The grooves in the ridge-piece have cross-grooves at intervals for the ends of the corrugated overlapping side edges of the sheets.



Claim.—1. The ridge-plate G, provided with two horizontal grooves, *g*—one in each side—substantially as and for the purpose described.

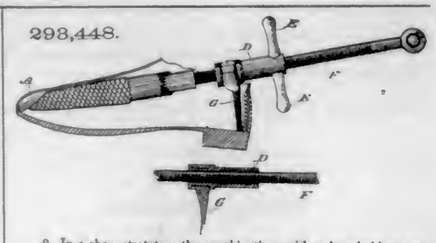
2. The sheet-metal covering described, held in position above by the pinching action of the grooves in the ridge-plate, and below by the stop-blocks *s*, substantially as described.

3. The ridge-plate G, having side grooves, *g*, provided with cross-grooves *d'* at proper intervals, corresponding to the ridges and grooves made by the corrugations of the metal sheets E, substantially as described.

293,448. DEVICE FOR STRETCHING BOOTS AND SHOES. HORACE GLEVES, Bridgeport, Conn. Filed Dec. 10, 1883. (No model.)

Claim.—1. The combination, with a detachable toe-cap attached at the end of a threaded rod in a device for stretching shoes, of a heel-plate swivelly attached to a follower-nut running on said rod, and means for operating said nut, substantially as set forth.

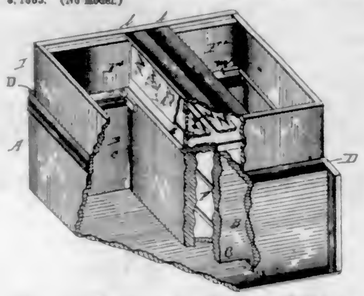
293,448.



2. In a shoe-stretcher, the combination, with a detachable cap or toe piece, of a follower-nut traveling upon the threaded rod which operates the stretching devices, and having swivelly attached thereto a heel-piece, and means for operating said rod and follower-nut independent of each other, substantially as and for the purpose set forth.

3. In combination with a device for stretching boots and shoes, as described, the cap or toe piece A and heel-piece G, connected with the follower-nut D, adapted to travel on the threaded rod F, substantially as shown and described.

293,449. BEE-HIVE. THOS. GORSUCH, Huntingdon, Pa. Filed Mar. 8, 1883. (No model.)



Claim.—1. The combination, with the grooved plates or troughs for supporting the ends of the frames, of the adjustable walls or partitions having shoulders projecting over said troughs, and provided with downward extensions projecting into and closing the passages through said troughs, substantially as and for the purpose set forth.

2. The combination, with the troughs E E, constructed and arranged as described, of one or more adjustable walls, G, having shoulders *g*, and the leather pieces A A, attached to said shoulders and slitted to take over and into said troughs, essentially as and for the purpose set forth.

3. The bee-hive having the brood-frame chamber, with the brood-frames arranged in the central part thereof, the upper honey-frame casing having a comb-space wider than the lower chamber and immediately over the same, said upper casing having its bottom open for the passage of the lower comb-frames, and the adjustable partitions G, arranged to divide the comb-frames in the lower chamber from unoccupied spaces at the ends of said chamber, and cloths *l l*, located between the brood and honey frames, the parts being organized substantially as described, and for the purpose set forth.

4. In a bee-hive, the lower casing provided with chaff-chambers B B, partitions C C, and boards D D, with blocks *m* secured thereon, so as to provide supports for the frames F and partitions G, and an upper section, I, with sides *i i*, frames F', and flexible and removable separating means *l l*, the parts being organized substantially as shown, so as to provide spaces F^3 and K, into which the frmes may be extended.

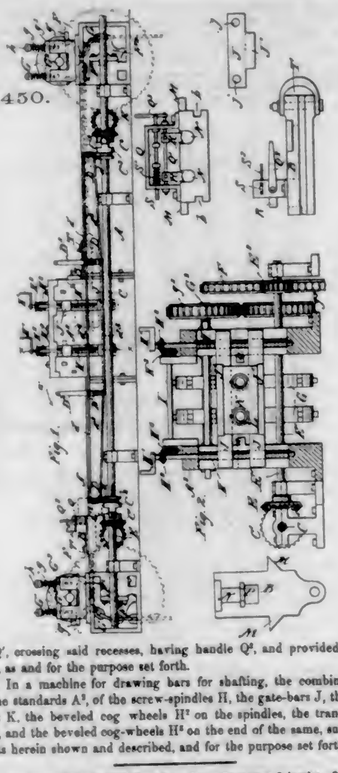
293,450. MACHINE FOR DRAWING BARS. JOHN S. GRIFFIN, Cleveland, assignor to himself and Mathew Baleyn, Newburg, Ohio. Filed Apr. 18, 1883. (No model.)

Claim.—1. The combination of the track A', the sliding carriages B B, having lugs M M, the shaft C, carrying loose beveled cog-wheels C', and its integral notched clutch-wheel C^2, the keyed sliding annularly-grooved clutch-wheel C^3, the centrally-pivoted lever D, having bifurcated prong *d*, the levers D', having upwardly-projecting handles D^2, and connecting with the ends of lever D by rods d' d^2, the transverse shaft F', having cog-wheel F, the sprocket-wheels F^2 F^3, and the chain G, attached to said carriages, as shown and described.

2. The combination of the two right and left cranked screw-spindles H H, the shafts I I, gearing with said spindles, and the gate-bars J J, having lugs J' and apertures *j'*, as and for the purpose specified.

3. A carriage, B, having a recess, N, terminating at its inner end in an enlargement, P, and forming shoulders, in combination with the

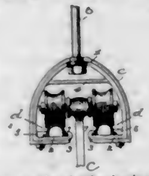
293,450.



shaft Q', crossing said recesses, having handle Q^2, and provided with cam R, as and for the purpose set forth.

4. In a machine for drawing bars for shafting, the combination, with the standards A^3, of the screw-spindles H, the gate-bars J, the die-holders K, the beveled cog wheels H^2 on the spindles, the transverse shaft I, and the beveled cog-wheels H^2 on the end of the same, substantially as herein shown and described, and for the purpose set forth.

293,451. HAY-CARRIER. FRED PAUL GROSSCUP, Columbus, Ohio, assignor to the Columbus Hay Tool Company, same place. Filed Nov. 30, 1883. (No model.)



Claim.—1. The suspended bracket having inwardly-projecting arms with a space between the inner ends for the passage of the carrier-supports, in combination with the rails secured upon said ends, substantially as described.

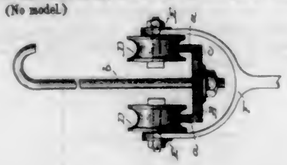
2. The suspended bracket *c*, having arms 2 2, lips 3 3, and clamps 5 5, in combination with the rails *a*, substantially as described.

3. The suspended bracket *c*, having the arms 2 2, carrying the rails, and a cross-brace, 4, substantially as described.

4. A suspended bracket having divided arms 7 7, adapted to receive the ends of the rail-section, substantially as described.

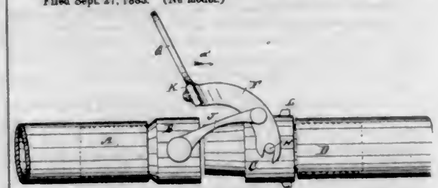
5. A suspended bracket adapted to receive and support the rails of the track and notched rails held to said bracket, substantially as described.

293,452. HAY-CARRIER. FRED PAUL GROSSCUP, Columbus, Ohio, assignor to the Columbus Hay Tool Company, same place. Filed Nov. 30, 1883. (No model.)



Claim.—A way or track for an elevator, of channel-iron, in combination with re-enforcing plates and suspension-rods passing through said channel-iron and plate, substantially as described.

293,453. HOSE-COUPLING. SAMUEL HAWER, Salt Lake City, Utah. Filed Sept. 27, 1883. (No model.)

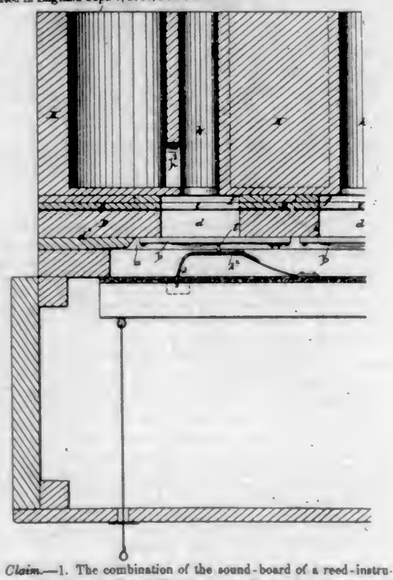


Claim.—1. A hose-coupling constructed with a fork united with one hose-section by links, with its bifurcated end adapted to receive pins or studs, on the other hose-section, which fork is provided with a spring-catch for locking the fork in place when the hose-sections are coupled.

2. In a hose-coupling, the combination, with the socket B, of the fork F, having notched ends, the links J, and the neck C, having studs H, substantially as herein shown and described.

3. In a hose-coupling, the combination, with the socket B, of the links J, the fork F, the neck C, having studs L, and the notched spring catch or lever K, pivoted on the fork F, substantially as herein shown and described.

293,454. REED-ORGAN. JAMES BAILLIE HAMILTON, Hammersmith, County of Middlesex, England. Filed Oct. 2, 1883. (No model.) Patented in England Sept. 7, 1883, No. 4,312.



Claim.—1. The combination of the sound-board of a reed-instrument and a series of pallets with a corresponding series of removable plugs or breech-pieces, each carrying two or more reeds common to one pallet and adapted to recesses in the sound-board, substantially as set forth.

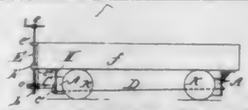
2. The combination of the sound-board of a reed-instrument, having a series of spaced bars, *a*, with reeds and pallets near together, and with a superstructure rigidly secured to the sound-board through said bars, substantially as described.

3. The combination of the sound-board, reeds, and pallets of a musical instrument, with a cavity-board having a communicating nostril, *h*, and mouth h^3 for each reed, substantially as specified.

4. The combination of the reeds of a musical instrument with pallets carrying exciting-springs *k*, adapted to come into contact with the reeds, substantially as set forth.

293,455. CAR-BRAKE. JOSIAH HARDING, Antofagasta, Chili. Filed Dec. 19, 1883. (No model.)

293,455.



Claim.—1. The combination of the pivoted hangers H at one end of the car, connected near their lower ends by the transverse shafts B with the elbow-lever C, pivoted on said shaft and connected by its long arm to the screw-staff E, and by its short arm to the connecting-rod D, secured to the hangers at the opposite end of the car, substantially as set forth.

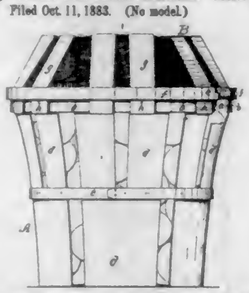
2. The combination of the pivoted hangers at one end of the car, connected near their lower ends by a shaft, B, on which is pivoted the elbow-lever C, with the rod D, provided at one end with a series of holes for adjustably connecting it with the short arm of the elbow-lever, and connected at its other end to clamps A, vertically adjustable on the hangers at the other end of the car, substantially as set forth.

3. The adjustable clamps A on bar *a'*, consisting of the plates *i*, carrying screws *k*, the plates *j*, and the teeth *l* on said plates *i j*, substantially as set forth.

4. In a car-brake for flexible wheel-bases, consisting of lever C and screw-staff E, connected to said brakes, as described, the staff E, suspended from the support *d'* by an oval collar, *e'*, as set forth.

5. The bar *a'*, for connecting the pull-rods D to the hind brakes, connected to the brakes by vertically-adjustable clamps, substantially as described.

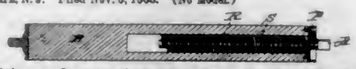
293,456. COVER FOR FRUIT-PACKAGES. JULIUS HARRIS, Ridgway, N. Y. Filed Oct. 11, 1883. (No model.)



Claim.—1. In combination with a basket for holding fruit, a cover, B, for the same, consisting of splints *g*, substantially as shown, having a portion of each splint near the respective ends thereof bent obliquely downward, and the extreme ends of each of said splints bent vertically downward and secured to one or more hoops or stays, *e f*, the vertical ends *h* of said splints projecting below the lower edges of said hoops or stays and fitting against the outer surface of the external hoop, *b*, of the mouth of the basket to strengthen the latter, substantially as set forth.

2. In combination with a basket for holding fruit and a cover for the fruit, consisting of netting or similar fabric, an outer cover or protector for the fruit and netting, consisting of splints *g*, substantially as shown, having a portion of each splint near its ends bent obliquely downward, and the extreme ends of each of said splints bent vertically downward and secured between concentric opposing hoops or stays *e* and *f*, the vertical ends *h* of said splints projecting below the lower edges of said hoops or stays and pressing tightly against the outer surface of the external hoop of the mouth of the basket, to strengthen the latter and hold the netting, substantially as shown and set forth.

293,457. SPRING SHADE-ROLLER. STEWART HARTSHORN, Millburn, N. J. Filed Nov. 8, 1883. (No model.)



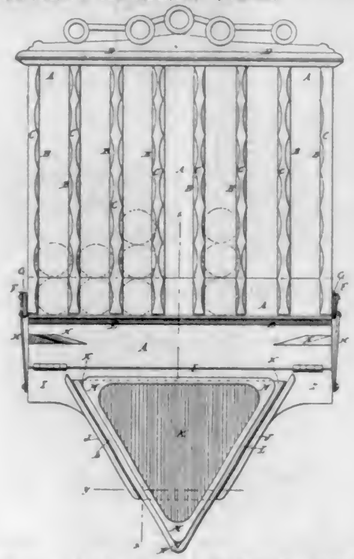
Claim.—1. In spring shade-rollers, the combination of the shaft or spindle and spring around the same with the roller and the cavity therein, substantially as described, so that any support for the inner end of the spindle or any connection of the inner end of the spring with the roller is dispensed with and rendered unnecessary.

2. In spring shade-rollers, the spindle R, the end plate, P, and spring S, connected together substantially as described, and combined with the roller so that the spring will rest upon the walls of the cavity thereof, as and for the purposes set forth.

3. In spring shade-rollers, the combination, with the roller, of the spindle R, attached thereto only at its outer end, the end plate, P, and spring S, secured at its inner end to the spindle and at its outer end to the plate, and the flattened bracket end A, connected together substantially as described, as and for the purposes set forth.

4. In spring shade-rollers, constructing the flattened or bracket end of the spindle with a shoulder and screw-tap, substantially as described, for attaching said spindle, the head or end plate of the roller, and the spring-carrying shaft together, as and for the purposes set forth.

293,458. BALL-RACK FOR POOL-PLAYING. JACOB S. HAUSMAN, New York, N. Y. Filed Dec. 31, 1883. (No model.)

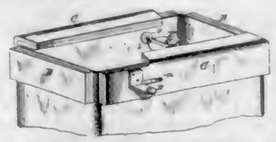


Claim.—1. A ball-rack constructed substantially as herein shown and described, and consisting of the back plate having a plate hinged to its lower edge and provided with vertical rack-bars having a plate hinged to their lower ends, the two hinged plates being connected by pivoted bars, and levers so arranged that the upward movement of the lower plate will swing the upper plate downward, as set forth.

2. In a ball-rack, the combination, with the back plate, A, and the rack-bars B, of the hinged plates E I, the pivoted connecting bars and levers F H G, the triangular plate K, and the triangle M, substantially as herein shown and described, whereby the balls will be made to pass from the rack to the triangle automatically, as set forth.

3. In a ball-rack, the combination, with the hinged plate I, having dovetailed flanges J, of the triangular plate K, having dovetailed flanges L, and the triangle M, having dovetailed sides, substantially as herein shown and described, whereby the said triangular plate and triangle will be kept in place when the hinged plate hangs in a vertical position, as set forth.

293,459. MAIL-BAG. WILLIAM HAWN, Knoxville, Tenn. Filed Dec 20, 1883. (No model.)



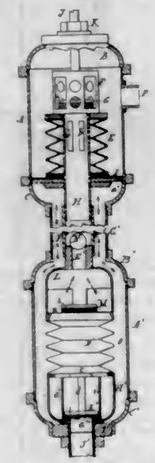
Claim.—A mail-bag provided on one of its sides with a slot and a perforated plate, and upon the opposite side of the bag a suitable perforated staple adapted to turn in its bearing after passing through the slot, to bring it over the perforated plate, for securing the two together by a suitable padlock, substantially as and for the purpose set forth.

293,460. BOTTLE. FREDERICK E. HEISS and FREDERICK STITZEL, Louisville, Ky., assignors to Thomas H. Sherley, same place. Filed Nov. 30, 1883. (No model.)



Claim.—In combination with a bottle having an inner projection forming a valve-seat, G, the perforated plug or stopper B, and valve C, secured by a stopper, D, substantially as shown and described.

293,461. PUMP. NATHAN HEMENWAY, Napa City, Cal. Filed Oct. 8, 1881. (No model.)



Claim.—1. In pumps for raising water, a cylinder, A', having secured in the lower end thereof a valve-chamber in open relation to the outside of the cylinder by an induction-pipe provided with a valve arranged within said chamber, and said chamber being in open connection with a flexible water-receiver, having in the upper end thereof a valve, whereby the water from the receiver is discharged into the said cylinder A', substantially as and for the purpose set forth.

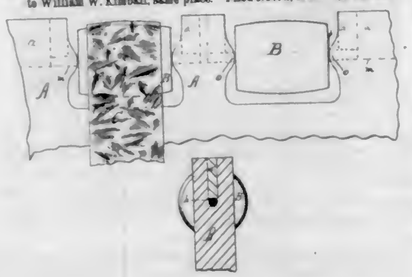
2. In an apparatus for raising water, in combination with the cylinder A' and its inclosed chamber and valve, water-receiver and valves M and N, a cylinder, A, arranged above the cylinder A', and provided at its lower end with a diaphragm, having secured thereto a flexible water-receiver with a central perforated tube or pipe therein, and having the upper end provided with a valve and the lower end connected to the receiver D' by a suitable pipe-connection, and the two cylinders connected by a corresponding pipe-connection, substantially as described, and for the purpose specified.

3. In pumps for raising water, the cylinder A, provided with a diaphragm, and water-receiver E, connected to said diaphragm, and having therein a perforated tube or pipe with the upper end furnished with a valve, and said cylinder provided with an outlet, substantially as herein described, and for the purpose specified.

4. The valve M, consisting of a disk, *i*, connected to its seat i^2 by flexible rings i' n', said rings being secured to each other at two opposite points of a diameter, and respectively connected to the valve-disk *i* and valve-seat i^2 at the ends of two parallel diameters at right angles to the diameter joining the points of attachment of the rings i' n', substantially as shown and described.

5. In a pump, the combination, with the collapsible receivers D' E, constructed of light material, of a tubular connection between them, made of wood or other buoyant material, substantially as shown and described, whereby the lifting parts of the pump are rendered buoyant, as set forth.

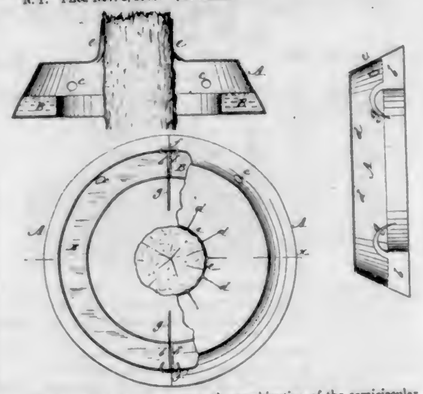
293,462. ORGAN-TREADLE. JACOB HESSLER, Chicago, Ill., assignor to William W. Kimball, same place. Filed Nov. 2, 1881. (No model.)



Claim.—1. In a cabinet-organ, the roller-bar having openings allowing the rollers to be sunk below its edge, and a longitudinal saw-kerf, furnishing a seat for the roller-pivots, in combination with the rollers having their pivots seated and secured in said kerf, and the bands passing over said rollers, substantially as specified.

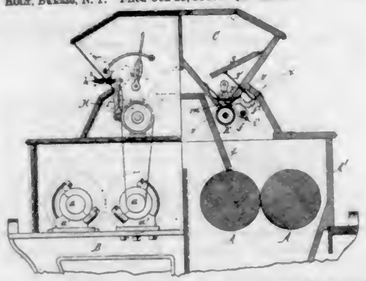
2. In a cabinet-organ, the roller-bar having cross-openings for the rollers, and a longitudinal saw-kerf for the pivots, the sides of the roller-openings approaching the rollers at the pivotal points, substantially as and for the purpose set forth, in combination with the rollers.

293,463. TREE-PROTECTOR. FRANKLIN R. HOUGHOOK, Brooklyn, N. Y. Filed Nov. 8, 1883. (No model.)



Claim.—In a tree-protector, the combination of the semicircular sections having corresponding troughs, B, with their ends *b b*, provided with hooks *g*, curved upward and downward and terminating intact with the tree, essentially as shown and described, and for the purpose set forth.

293,464. FEED MECHANISM FOR ROLLER-MILLS. NOAH W. HOLT, Buffalo, N. Y. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination, with a feed-hopper, of a pivoted feed-gate capable of being adjusted on its pivot to regulate the flow of material, and mechanism whereby a reciprocating movement is imparted to said pivoted feed-gate to loosen the material, substantially as set forth.

2. The combination, with a feed-hopper, of a pivoted feed-gate having projecting pins, and mechanism whereby a longitudinal reciprocating movement is imparted to said feed-gate, substantially as set forth.

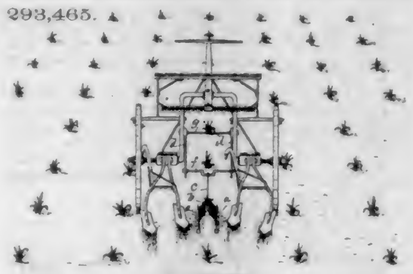
3. The combination, with a feed-hopper, of a pivoted feed-gate, mechanism whereby the feed-gate is automatically adjusted to regulate the flow of material from the feed-hopper, and mechanism whereby a longitudinal reciprocating movement is imparted to said feed-gate, substantially as set forth.

4. The combination, with a feed-hopper, of a feed-gate, a rod to which the feed-gate is secured, and which serves as a pivot for the feed-gate, and mechanism whereby a longitudinal reciprocating movement is imparted to said feed-gate, substantially as set forth.

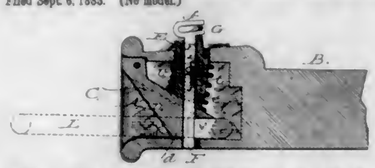
293,465. ATTACHING PLANT-SHIELDS TO CULTIVATORS. CHAS. H. HOPKINS, De Soto, assignor of one-half to H. S. Butler, Des Moines, Iowa. Filed July 23, 1883. (No model.)

Claim.—The combination of a rigid plant-shield and a pendent frame with the carriage of a straddle-row cultivator, to operate in the manner set forth, for the purposes specified.

293,465.



293,466. CAR-COUPLING. LORENZO D. HOOPER, Coffeyville, Kans. Filed Sept. 6, 1883. (No model.)

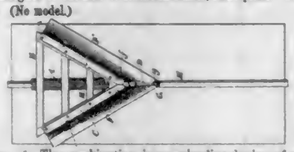


Claim.—1. The combination, with the hollow draw-head having openings in top and bottom plates, inclined pivoted tumbler-plate C, having frog D, with projecting heel *d* and hollow lug E, straight pin F, having a limited play in said lug and provided with the slitted head *f*, and the arched bar G, engaging said slitted head and having its legs pivoted to the opposite sides of the draw-head, substantially as described.

2. The combination, with the draw-head, pivoted tumbler-plate having hollow lug E, and sliding pin F, having slitted head *f*, of the arched bar G, engaging said head and having its legs pivoted to the opposite sides of the draw-head, and provided with the extensions *g*, substantially as and for the purpose set forth.

3. The combination, with the draw-head and inclined tumbler-plate having lug E, provided with notched rib *e*, of the latch *q*, arranged to engage said rib, substantially as described, and for the purpose set forth.

293,467. UNLOADING PLATFORM-CARS. JAS. HOULEHAN, Toledo Ohio, assignor of one-half to Rathbun Fuller, same place. Filed Dec. 14, 1883. (No model.)



Claim.—1. The combination, in an unloading device, of one or more wings horizontally or laterally movable, substantially as set forth.

2. The combination, in an unloading device, of one or more wings horizontally or laterally moving upon a pivot or pivots, substantially as described.

3. The combination, in an unloading device, of one or more horizontally or laterally moving wings pivoted at its or their forward ends, substantially as described.

4. The combination, in an unloading device, of one or more horizontally or laterally and vertically moving wings, substantially as described.

5. The combination, in an unloading device, of wings, one of which is adapted to be swung on a line with the other wing, substantially as set forth.

6. The combination, in an unloading device, of one or more horizontally or laterally moving wings and one or more braces, substantially as described.

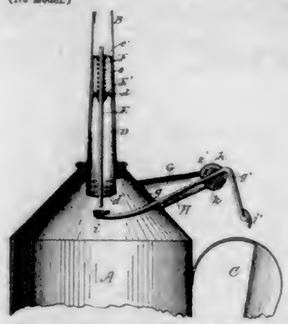
7. The combination, in an unloading device, of wings F F and devices or connections for securing one of said wings on a line with the other wing, substantially as described.

8. The combination, in an unloading device, of one or more horizontally or laterally and vertically moving wings and detachable connections permitting such movements of the wing or wings, substantially as set forth.

9. The combination, in an unloading device, of wings, one of which is adapted to swing on a line with the other wing, and a filling block or brace designed to be inserted between and brace the adjoining ends of the said wings, substantially as set forth.

10. The combination, in a device for unloading, of a nose provided with a hinge, and wings pivoted thereto, substantially as set forth.

293,468. OIL-CAN. JOHN W. JACKSON, Sharpsville, Pa. Filed Nov. 28, 1883. (No model.)



Claim.—1. In combination with a self-closing oil-can, a valve-operating mechanism attached to the body of the oil-can, consisting of a rod, H, having a disk, *k*, with groove *k'* and supporting-pieces G, the parts having the slots *g g'*, substantially as shown and described, and for the purpose set forth.

2. In an oil-can, the means for closing the spout, consisting of the conical portion D, perforated at its lower end, and having a valve-seat, E', and bail *e*, and valve-carrying rod E, provided with a spiral spring, F, in combination with the hollow side pieces, G, supporting a lever, H, with grooved disk *k'*, the parts having slots *g g'*, the parts being organized substantially as described, and for the purpose set forth.

293,469. CLOTHING FOR PULLEYS. GILMAN JAQUITH, Maysville, Ky., assignor to January & Wood, same place. Filed July 20, 1883. (No model.)



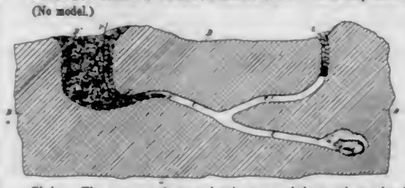
Claim.—1. A clothing for whirls and pulleys, composed of an adhesive composition applied to the band-driving surface of the pulley, and a spirally-wound thread or twine covering around the same, arranged to enter a female thread in the driving-surface of the pulley, substantially as specified.

2. A clothing for whirls and pulleys, consisting of a coating, *c*, composed of pitch and glue, and a covering, *d*, of thread or twine wound spirally around the same, and within a female thread cut in or formed around the driving-surface of the pulley, essentially as described.

3. A clothing for whirls and pulleys, consisting of an adhesive coating, *c*, applied to the band-driving surface of the pulley, having a female thread, *s*, in it, a covering, *d*, of thread or twine wound spirally around the same and within said female thread or groove, and an outer adhesive coating, *e*, substantially as specified.

4. A whirl or pulley having a spirally-grooved driving-surface and a clothing composed of an adhesive composition and spirally-wound thread or twine, essentially as shown and described.

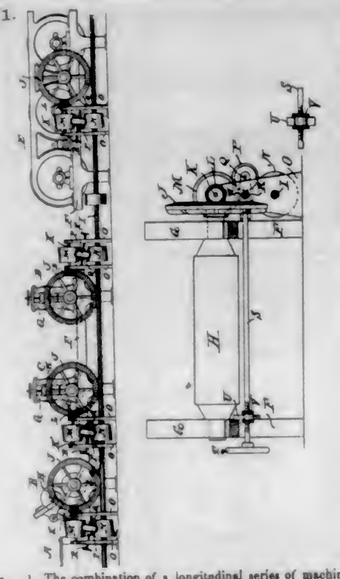
293,470. PROCESS OF EXTERMINATING GROUND-BURROWING ANIMALS. DANIEL L. JOHNSON, Kalamazoo, Mich. Filed July 24, 1883. (No model.)



Claim.—The process of exterminating ground-burrowing animals, which consists in firmly plugging up the mouth of the branch holes to the burrow, excavating the earth at the main entrance for a suitable distance on a line with the burrow, inserting a torpedo with fuse into the burrow beyond the terminus of the excavation, carrying the fuse to the surface of the earth, refilling the excavation, and firmly packing down the replaced earth, and in igniting the fuse, all substantially as set forth.

293,471. DRIVE FOR PAPER-MAKING MACHINES. GUSTAV KAPPENBERG, Hamilton, Ohio. Filed Nov. 15, 1883. (No model.)

293,471.



Claim.—1. The combination of a longitudinal series of machine parts to be independently driven, a line-shaft disposed parallel to such series of machine parts, a drum upon said line-shaft at each of said parts, a short shaft parallel to the line-shaft at each of said machine parts, connected thereto by gearing and provided with a drum, a friction-idler at each of the pairs of drums, and means for adjusting the idlers to and from the drums in starting and stopping of the machine parts, substantially as and for the purpose as set forth.

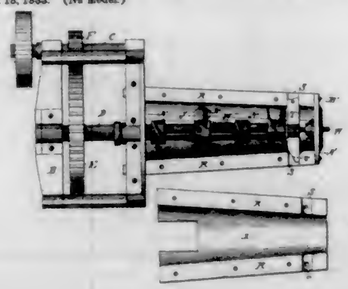
2. The combination of a longitudinal series of machine parts to be independently driven, a line-shaft disposed parallel to such series of machine parts, and provided with conical drums, a short shaft disposed parallel to said line-shaft at each of said machine parts, connected thereto by gearing and provided with a conical drum, a friction-idler arranged to be held into forcible contact with each of the pairs of conical drums, and a means for adjusting said idlers along the faces of said conical drums in regulating the speed of the machine parts, substantially as and for the purpose specified.

293,472. BUTTON. PHILIP KALESH, Chicago, Ill. Filed July 19, 1883. (No model.)



Claim.—In a button, the stem *a*, provided with neck *b* and pointed head *c'*, in combination with the hinged plates *c d*, whereof the plate *c* is provided with slot *g*, and plate *d* with socket *e* and catch *h*, substantially as specified.

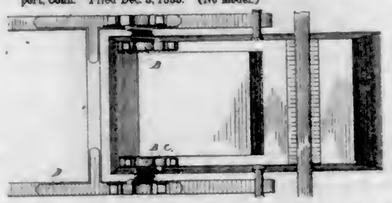
293,473. TILE-MACHINE. PHILIP HENRY KELLS, Adrian, Mich. Filed Oct. 13, 1883. (No model.)



Claim.—1. In a tile-machine, the combination of the tempering-box sections I J, formed with recesses in their adjoining surfaces near the discharge end, and the cross-bar T, having one of its ends beveled, whereby the latter may be inserted into the recesses without taking the sections apart, as described.

2. The tempering-box composed of halves or sections having laterally-extending suitably-connected flanges, provided with recesses in their inner adjoining sides, near the discharge end of the machine, a cross-bar seated in the said recesses and having a beveled end, and an outwardly-extending screw-threaded rod, a set-screw bearing against and retaining the said cross-bar, a core seated upon the screw-threaded rod, and a tile-ring secured detachably upon the end of the tempering-box, all arranged and operating substantially as set forth.

293,474. TWO-WHEELED VEHICLE. GEORGE W. KERR, Bridgeport, Conn. Filed Dec. 3, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, the spiral springs, as described, coiled about the pins connecting the body to the shafts, in combination with said body and the shafts, substantially as and for the purpose hereinbefore set forth.

2. In a two-wheeled vehicle, the shafts pivotally attached to the body, in combination with spiral springs coiled about the pivotal points, as described, and whose ends are attached, the one to the body and the other to the shafts, substantially as set forth.

3. The shafts, as described, in combination with the spiral springs, which act to take up the vertical and horizontal motion of the shafts, and the housings provided with cushions, against which the ends of the shafts may abut, all as described, and for the purposes set forth in this application.

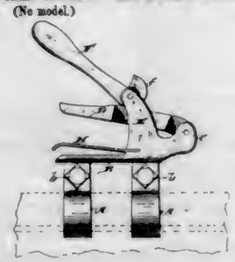
293,475. LEGGIN. JULIA A. KING, Chicago, Ill. Filed Nov. 26, 1883. (No model.)



Claim.—1. As an improved article of manufacture, an elastic knitted leggin extended to cover the upper surface of the foot, and provided with a partial sole, B, and heel-opening at B', substantially as described.

2. The combination, with the elastic knitted leggin extended to cover the upper surface of the foot, of a partial sole, B, and a facing or binding, *a'*, about the heel-opening B', substantially as and for the purpose set forth.

293,476. REIN-HOLDER. LEBBEUS A. KOPLIN, Akron, Ohio. Filed Aug. 9, 1883. (No model.)



Claim.—1. A rein-holder consisting of a pair of clamping-jaws, whereof one is movable and actuated by a cam-lever which locks said jaw down, substantially as described.

2. The combination, with the lower jaw of a rein-holder, of a spring-

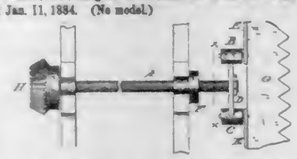
plate overlying the same, whereby reins of varying thickness may be clamped between the jaws, substantially as described.

3. The combination, with the lower jaw, B, having the spring-plate H, of the pivoted jaw D and the cam-lever F, substantially as described.

4. The combination, with the jaw B and pivoted jaw D, of the spring G and cam-lever F, substantially as described.

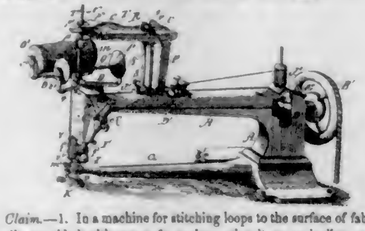
5. The rein-holder described, consisting of the clamps A A', the jaw B, having spring-plate H, the pivoted jaw D, spring G, and cam-lever F, pivoted to arms E, substantially as described.

293,477. DEVICE FOR CONVERTING MOTION. WM. R. LAMPTON, Terre Haute, Ind., assignor of one-half to Willis O. Winn, same place. Filed Jan. 11, 1884. (No model.)



Claim.—In a machine driven by either cog or belt gearing, a mechanical movement or device for converting motion, consisting of the combination, with the loosely-journaled shaft-bearing, cam-shaped, as described, of the bracketed friction-rollers on and in combination with the reciprocating bar, whereby a continuous, steady, and even rectilinear motion is imparted thereto, substantially as described.

293,478. MACHINE FOR SEWING LOOPS TO THE SURFACE OF FABRICS. SALLY M. LEVY and ADOLF J. SIEMSRADSKY, Milwaukee, Wis., assignors to said Levy. Filed July 10, 1883. (No model.)



Claim.—1. In a machine for stitching loops to the surface of fabrics, a needle provided with means for reciprocating it on an incline, co-operating stitch-forming mechanism, and an arm provided with means for presenting the fabric to the needle in successive bends, in combination with mechanism for laying the material of which the loops are formed up against the fabric in the line of travel of the needle, substantially as set forth.

2. The looping-spindle and sleeve surrounding it and carrying the feeding-thimble, in combination with the needle adapted to reciprocate on an incline, the yarn-guide and its shaft, a pinion carried by the latter, and the driving-shaft geared to said pinion and to the driving mechanism of the machine, substantially as set forth.

3. The combination of two presser-feet, an elastic connection for drawing them toward each other, and a lever having a cam-head for separating them, in combination with the work-arm for supporting the fabric, substantially as set forth.

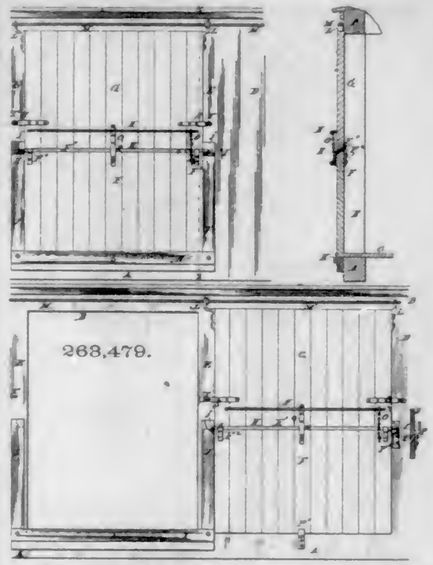
4. The combination of shaft B and its cams T^2 and S^2, levers T and S, bar R, looping-spindle, pinion p', and inclined needle, with the driving mechanism of the machine and intermediate connections, substantially as set forth.

5. In a machine for sewing loops to fabrics, the combination, with the work-arm and its feed-disk, of a foot for supporting the work up under and against the feed-disk, and a cutting-blade fixed in said foot, substantially as set forth.

6. The combination of the inclined needle-bar and needle, a vertical looping-spindle, a work-arm carrying a feed-disk, and adapted to present the fold of the fabric to the action of the needle, and an upper and a lower presser-foot and operating mechanism, substantially as described, whereby a chain-stitch may be made in only one surface of the fabric, substantially as set forth.

263,479. RAILWAY-FREIGHT-CAR DOOR. NILS P. LILJEHOLM, St. Louis, Mo., assignor of one-third to Henry Goetz, same place. Filed Nov. 7, 1883. (No model.)

Brief.—A two-part door, the upper part being suspended upon hangers from a rod secured to the side of the car and bearing on and adapted to slide on the lower part, said lower part being connected to the upper by a bar and chain, and supported, when closed, by trunnions resting in slots in said pieces, and when open one trunnion rests in one of the slots and the other in a hook upon the side of the car.



Claim.—1. A freight-car door consisting of two parts, an upper and lower, the upper part secured to the car, and the lower part connected to the upper part by a bar and chain.

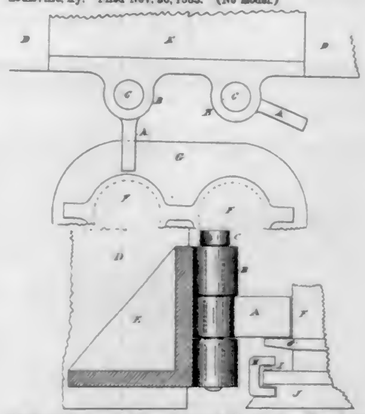
2. The combination of a car-body having a door-opening, side pieces having slots at top and a strip at bottom to form a groove, a door in two parts, an upper and lower, the lower part having trunnions to occupy the slots, and the upper part supported over the lower part, and the lower part supported in the groove and between the side pieces by the trunnions.

3. The combination, with the lower part having trunnions, and a side piece having a slot at its upper end, of the hook to support the lower part away from the door-opening.

4. A freight-car door composed of a lower member, F, secured in place by the cleat K, side strips or pieces, J, with open slots *j* and trunnions I, and the upper member, G, secured to the side of the car and bearing on the top of the lower member, F, for the purpose set forth.

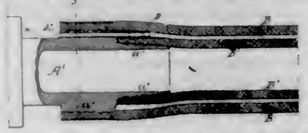
5. The combination, in a freight-car door, of a lower member, F, supported in position by trunnions I, side pieces, J, and cleat K, and an upper member bearing on the lower member, and supported on hangers L and rod M, substantially as set forth.

293,480. PIPE-MOLDING PIT. DENNIS M. LONG and JOHN KELLER, Louisville, Ky. Filed Nov. 30, 1883. (No model.)



Claim.—The combination of the wall D, the plate E, and the bars A, substantially as described.

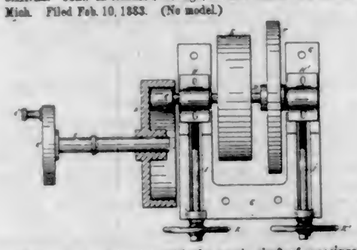
293,481. FLEXIBLE TUBE FOR AIR-BRAKES, &c. FRANK A. MAGOWAN, Trenton, N. J. Filed Nov. 22, 1883. (No model.)



Claim.—1. The combination of an inner and outer flexible tube for air-brakes or other purposes, with an attachment having a tubular stem or tail-piece, to which both tubes are secured, substantially as set forth.

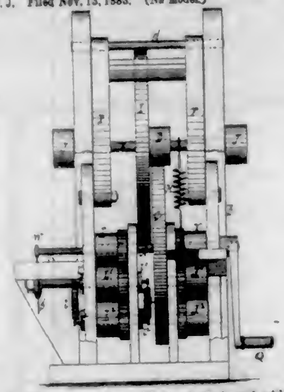
2. The combination of an inner and outer tube for air-brakes or other purposes, and a stem or tail-piece, constructed for attachment to both tubes, with a signaling device actuated by air or other fluid under pressure, which may gain access to the annular space between the two tubes, substantially as specified.

293,482. MECHANISM FOR DRIVING DYNAMO-ELECTRIC MACHINES. JOHN R. MARELL, Chicago, Ill., and JAMES H. WAYNE, Detroit, Mich. Filed Feb. 10, 1883. (No model.)



Claim.—The combination, with the crank-shaft of a reciprocating steam-engine, of a counter-shaft driven from the crank-shaft, and having thereon a fly-wheel, substantially as and for the purposes set forth.

293,483. MECHANICAL MOVEMENT. JEAN BAPTISTE MARTEL, Newark, N. J. Filed Nov. 13, 1883. (No model.)



Claim.—1. The combination, with the shaft A, and with the fly-wheel C, mounted on said shaft, of the friction-pulley D, the swinging arms F, the secondary fly-wheel I, and the spring or springs H, substantially as shown and described.

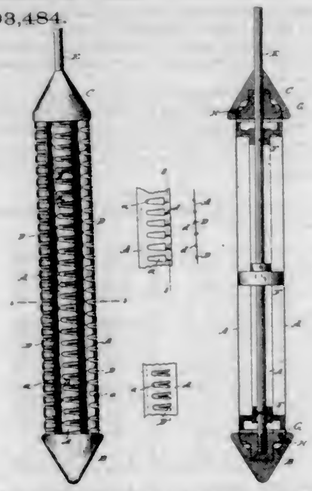
2. The combination, with the shaft A, the fly-wheel C, the friction-pulley D, the swinging arms F, and the secondary fly-wheel I, of the drums K K' K^4, substantially as shown and described.

3. The combination, with the shaft A, the fly-wheel C, the friction-pulley D, the swinging arms F, and the secondary fly-wheel I, of the drums L L' L^2, the cranks l' l^2, and the spring *l*, substantially as shown and described.

293,484. COTTON-PICKER STEM. CHARLES T. MASON, Jr., SUMTER, S. C., assignor to the Southern Cotton Harvesting Company, of South Carolina. Filed Apr. 25, 1883. (No model.)

Claim.—1. In a cotton-picker stem, the convex sheet-metal plate A, provided with slots *a*, recesses *d*, and teeth D, secured in said recesses, the said teeth lying in the slots *a*, substantially as described.

293,484.

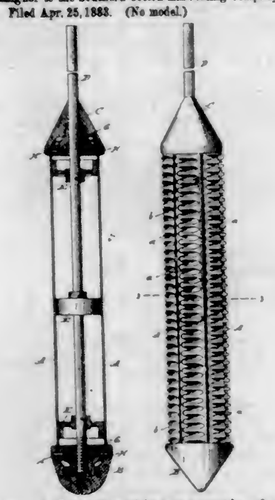


2. In a cotton-picker stem, a series of convex sheet-metal plates, A, provided with slots and teeth, as described, the said plates being secured together at their adjacent edges by solder or otherwise, substantially as described.

3. In a cotton-picker stem, the combination of the plate or plates A, having the slots *a*, recesses *d*, and teeth D, with the supporting-pieces F and G, cap-pieces B and C, and rod E, substantially as described.

4. In a cotton-picker stem, a periphery or outer envelope of sheet metal, substantially in the form of a series of parallel longitudinal convex beads, a series of slots being formed in each bead, and teeth arranged in said slots, substantially as described.

293,485. COTTON-PICKER STEM. CHARLES T. MASON, Jr., SUMTER, S. C., assignor to the Southern Cotton Harvesting Company, of South Carolina. Filed Apr. 25, 1883. (No model.)



Claim.—1. In a cotton-picker stem, a series of metal plates, A, provided with teeth *a* and recesses *b*, surrounding and secured to a support or supports attached to a central rod and so arranged that the teeth *a* of one plate shall lie in the recesses *b* of the next adjacent plate, substantially as described.

2. In a cotton-picker stem, a series of metal plates, A, provided with teeth *a* and upward projections or partitions *c'*, surrounding and secured to a support or supports attached to a central rod, and so arranged that the teeth *a* of one plate shall lie between the partitions *c'* of the next adjacent plate, substantially as described.

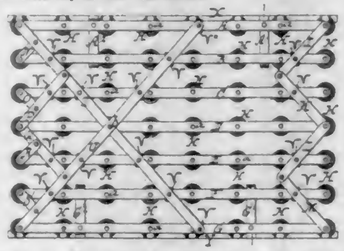
3. In a suspended cotton-picker stem, an end piece or cap for the

lower end thereof, substantially of wedge form, and having a blunt or rounded lower edge or extremity, substantially as described.

4. In a cotton-picker stem, the combination of the rod D, cap-pieces C and B, end pieces G, flanged supporting-disks E, and plates A, substantially as described.

5. A cotton-picker stem having on its periphery a series of recesses or indentations, the said recesses being arranged side by side and longitudinally or parallel to the axis of the stem, and teeth arranged in said recesses, the engaging ends of said teeth being on a level with or slightly below the outer surface of the partitions between the said recesses, substantially as described.

293,486. FOLDING-BED BOTTOM. GEORGE H. MAYNARD, Brooklyn, N. Y. Filed July 18, 1883. (No model.)

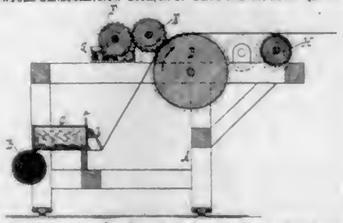


Claim.—1. The combination, with the bottom slats and with the springs mounted thereon, of the center braces T U, crossing each other and pivoted to the outer slats on opposite sides, and connected to the intermediate slats by the swivel-slides V, the end braces P and Q, connected at one end to the center slat and at the other end to the center braces T U, and the end braces I K L M, for holding the opposite ends of the slats in position, substantially as described.

2. The combination, with the bottom slats and with the springs mounted thereon, of the brackets A' A^2 G' G^2, the top slats X Y, the center braces T U, and the end braces I K L M, the braces being connected with the slats, and the several parts constructed and arranged substantially as described.

3. The combination, with the bottom slats and with the springs mounted thereon, of the center braces T U, pivoted to the outer slats on opposite sides and connected to the intermediate slats by the swivel-slides V, the end braces P and Q, connected at one end to the center slat and at the other end to the center braces T U, and the end braces I K L M, for holding the slats in position at the opposite end, substantially as described.

293,487. MANUFACTURE OF OIL-CLOTH. JOHN MCGAVIN and E. CRAWFORD SANDFORD, New York, N. Y. Filed Jan. 10, 1884. (No model.)

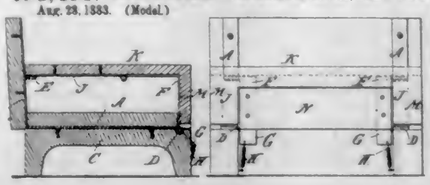


Claim.—1. In the manufacture of oil-cloth, the method herein described, consisting in coating and printing the cloth in one continuous operation.

2. The combination, substantially as hereinbefore described, of the color-box and doctor with the printing-cylinder and color-roller.

3. The combination, substantially as hereinbefore set forth, of the color-box and the doctor with the printing-cylinder, the pattern-cylinder, the color-roller, and the drag-roller.

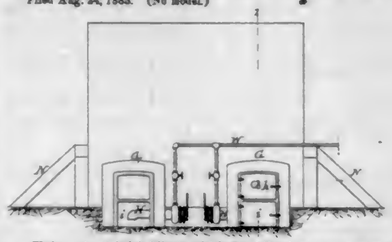
293,488. SOFA-BEDSTEAD. JOS. MCGRATH, Newton, Kans. Filed Aug. 28, 1883. (Model.)



Claim.—1. The combination, with a metallic band, A, a sofa-seat frame, C, and a back having the projections E, of the metallic angular bar F, hinged to an eye, D, of said band, the bar J, hinged to bar F, and the removable seat K, the latter being provided with downwardly projecting legs M, and a front board, N, secured between said legs to the inner shank of bar F, as shown and described.

2. The combination, with a seat-frame, C, having a back, B, of the bands A, the brackets E, the angularly-bent bars F, the removable seat K, and the bands J, secured to the under side of the same, the angular bars F being hinged to the bands A and J, substantially as herein shown and described.

293,489. BRICK-KILN. WILLIAM H. MELCHER, Philadelphia, Pa. Filed Aug. 24, 1883. (No model.)

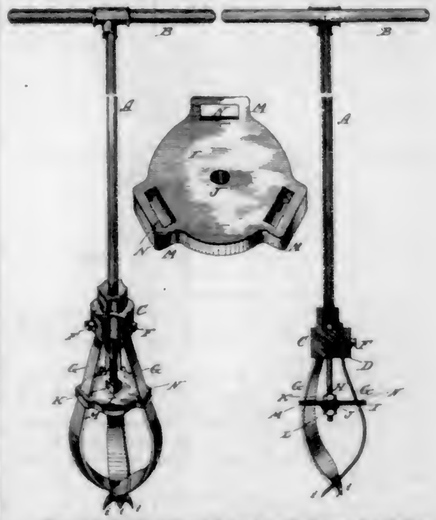


Claim.—1. A brick-kiln in which the following elements are combined, namely: first, a chamber for containing the bricks to be burned; second, a combustion-chamber underlying the said brick-burning chamber; third, a continuous uninterrupted arched floor perforated throughout between the two chambers for supporting the stacked bricks to be burned; and, fourth, fire-places communicating with the said combustion-chamber, all substantially as set forth.

2. The combination of the chambers D and E of the kiln, perforated floor, and fire-places with blast-pipes, through which air under pressure is introduced into the ash-pits of the fire-places, substantially as specified.

293,490. POST-AUGER. JOHN E. MILES, Marlin, Tex. Filed Nov 6, 1883. (No model.)

Brief.—A cross-handled auger-shaft ends in a block having sockets and set-screws to receive and secure curved blades, and a central downwardly-projecting screw-threaded rod, on which an expander-disk having slotted extensions, through which the blades pass, is adjustably held by a nut above and below it.



Claim.—1. The combination, in a post-auger, of the socketed block, the screw-threaded rod extending from the center of the lower end of the block, the expander-disk fitting upon said threaded rod, and having the slotted wings or extensions, the two nuts for adjusting the position of the expander-disk upon the threaded rod, and the curved auger-blades, as and for the purpose shown and set forth.

2. The herein-described post-auger, consisting of the shaft, the cross-handle, the socketed block, the curved auger-blades, the set-screws securing the blades in their sockets, the screw-threaded rod extending from the center of the lower end of the block, the expander-disk having slotted wings or extensions, and the two nuts for adjusting said disk upon the threaded rod, as and for the purpose shown and set forth.

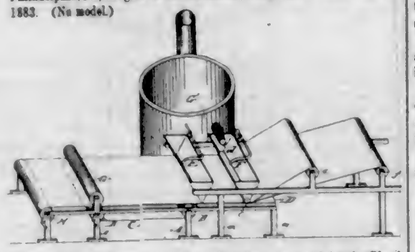
3. In a post-auger, the combination of the curved concave-convex auger-blades and the adjustable slotted expander-disk, whereby the lower pointed ends of the blades may be arranged to cross one another, as and for the purpose shown and set forth.

293,491. ROOFING FABRIC. HENRY M. MINER, Philadelphia, Pa., assignor to Charles Barclay, same place. Filed June 22, 1883. (No model.)



Claim.—The roofing fabric composed of a central burlap or similar fabric saturated with tar, and faced underneath with tarred paper and on top with sand or pebbles, and compressed, substantially as described.

293,492. MANUFACTURE OF ROOFING FABRICS. HENRY M. MINER, Philadelphia, Pa., assignor to Charles Barclay, same place. Filed June 27, 1883. (No model.)



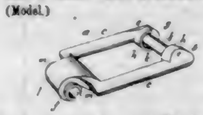
Claim.—1. The combination, with a frame, A, and kettle G', of rollers B B, apron C, hoppers E F, drawing roller or mandrel H, and compression-roller G, substantially as shown and described.

2. The combination, with hoppers E F and apron C, of table D, located beneath said hoppers and aligned with said apron, substantially as shown and described.

3. In combination with hopper F and table or support D, beneath the same, the guard *e*, substantially as and for the purpose set forth.

4. The process herein described for manufacturing roofing material by a continuous operation, consisting in passing sheets of burlap and paper or equivalent material beneath two hoppers, which supply, respectively, tar or adhesive substance and sand or gravel to the surface of the burlap, said sheets, with the tar and sand or gravel, being then subjected to compression, substantially as and for the purpose set forth.

293,493. DRIVE-CHAIN. ELIAS M. MORGAN, Belleville, Ill. Filed Dec. 4, 1883. (Model.)



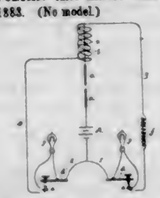
Claim.—The rectangular drive-chain link having at one end the cross-bar bearing *b*, and at the ends thereof lateral inwardly-facing shoulders *g*, formed with segmental inwardly-projecting flanges *h*, separated from the cross-bar bearing by circular interspaces *k*, and at the opposite end a hook, *l*, formed with lateral segmental outwardly-projecting flanges *m*, of less radius than the flanges at the opposite end of the link, and adapted to work in the interspaces between the said flanges and the cross-bar bearing, substantially as specified.

293,494. CUTTER-HEAD. J. HENRY MORRISON and EDWIN ALLEN, Norwich, Conn. Filed June 1, 1883. (No model.)



Claim.—In combination with the blank B, the side cutters, A A', (broken to receive the rim-cutters and washers,) two or more rim-cutters, E, each provided with the slot *c*, the washers *k*, and the barrel-cutters C, all of said cutters being secured to the blank B, as described, and for the purpose specified.

293,495. VOLTAIC-ARC LAMP. OTTO A. MOSER, New York, N. Y. Filed Apr. 20, 1883. (No model.)



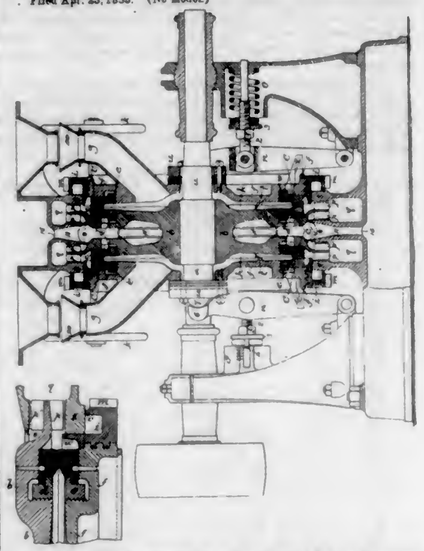
Claim.—1. A voltaic-arc lamp having two paths for the current, one through the regulating mechanism and the carbons, the other through the carbons alone, substantially as set forth.

2. The combination, with a voltaic-arc lamp, of a circuit or circuits including the regulating mechanism and the carbons, a circuit including the carbons alone, and means for opening and closing either or both of said circuits, substantially as set forth.

3. The combination, with an arc-lamp, of electro-magnetic devices acting oppositely upon the movable carbon-carrier, and means for closing circuit to either of such devices, substantially as set forth.

4. The combination, with an arc-lamp, of the oppositely-acting electro-magnetic devices, a circuit energizing each of such devices, and also the carbons, a circuit including the carbons alone, and a circuit-controller for each of said circuits, substantially as set forth.

293,496. MACHINE FOR BREAKING OR REDUCING GRAIN. AUGUST CHRISTIAN NAGEL, REINHOLD HERMANN KAEMP, and ADOLPH LENNENBOOG, Hamburg, Germany, assignors to Nagel & Kaemp, same place. Filed Apr. 23, 1883. (No model.)



Claim.—1. The combination of a stationary disk and a rotating disk, each provided with a reducing-surface composed of inclined projections that form a diverging or funnel-like space between them, and adapt them to deliver but a single blow to the grains, substantially as shown and described.

2. The combination, with a stationary disk and a rotating disk, each having inclined reducing-surfaces that form a diverging or funnel-like space between them, of throwing-ledges *h*, secured to the rotating disk, the said ledges operating to throw the grains endwise between the reducing-surfaces, and the latter to split them lengthwise, substantially as shown and described.

3. The combination, with a stationary reducing-surface, of a rotating disk provided with a co-operating reducing-surface and ledges *h*, the

outer ends of which terminate a considerable distance from the said reducing-surfaces, and thus provide a free space for the flight of the material, substantially as shown and described.

4. The combination, with a stationary disk, *f*, provided with a reducing-surface and a ledge, *i*, of a rotating disk, *b*, also provided with a reducing-surface, and having throwing-ledges, *h*, substantially as shown and described.

5. The combination, with a stationary and a rotating disk, each provided with reducing-surfaces, a feeding device communicating centrally with said disks, and a continuous delivery-channel receiving the reduced material from the periphery of said disks, of fans *p*, attached to the rotating disk and running in the inner part of said delivery-channel, whereby a current of air is drawn through the feeding-channel, and, mingled with the material, passes through the reducing-surfaces and into the delivery-channel, thus acting as a carrier for the material and operating to cool the same and the disks, substantially as shown and described.

6. The combination, with a stationary and a rotating disk, each provided with reducing-surfaces, a feeding device communicating centrally with said disks, a delivering-channel receiving the reduced material from the peripheries of said disks, and openings 11, of fans *p'*, attached to the rotating disk and running in the inner part of said delivering-channel, whereby a current of air is drawn through the openings 11 from behind said disks and mingles with the material that passes through the reducing-surfaces and into the delivering-channel, thus acting as a carrier for the material and operating to cool the same and the disks, substantially as shown and described.

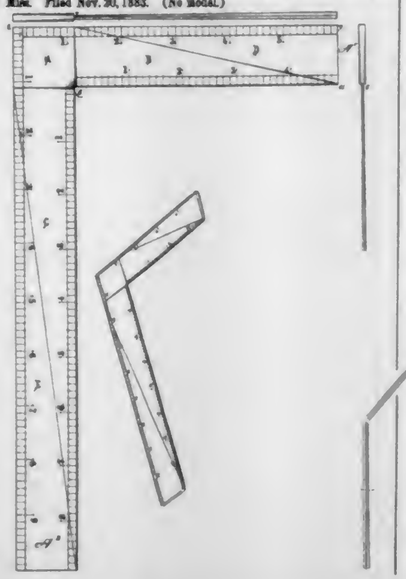
7. The combination, with the feed-channel *g* and conducting-channel *q*, of a rotating disk, *b*, provided with a reducing-surface and with fan-blades *p*, arranged to draw air through the feed-channel *g*, and with fan-blades *p'*, drawing air from behind the said disk, both series of blades delivering the air, together with the grist, into said channel *q*, surrounding the disk, substantially as and for the purpose described.

8. The means for attaching the rings C and *c*, that are provided with the reducing-surfaces, to the disks *b* and *f*, the same consisting, in the combination, with said rings and disks, of the rings *d* and *e*, overlapping said rings C *c*, and screwed onto offsets of the disks, substantially as shown and described.

9. The combination, with a stationary disk, *f*, provided with a reducing-surface, of an adjusting-ring, *i*, working on screw-threads on the body of the said disk and abutting against the frame of the machine, with means for rotating the said ring and means for maintaining it pressed into position with any required degree of force, substantially as shown and described.

10. The combination, with a stationary disk, *f*, provided with a reducing-surface, of an adjusting-ring, *i*, working on screw-threads on the body of the said disk and abutting against the frame of the machine, with means for rotating the said ring to adjust the reducing-surfaces, substantially as shown and described.

293,497. **RULE AND TRY-SQUARE.** WILEY N. NASH, Starkville, Miss. Filed Nov. 20, 1883. (No model.)

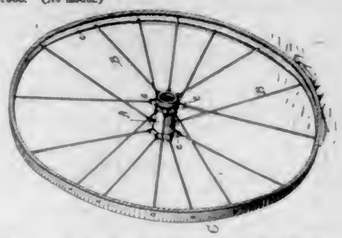


Claim.—1. A try-square having the surfaces of its arms divided into two right-angled triangles, the inner triangular portions being beveled from the diagonal line of division to the right angle 6, substantially as described.

2. A try-square having its outer ruling-edges of uniform thickness and its inner ruling-edges of increasing thickness toward their outer ends, substantially as described.

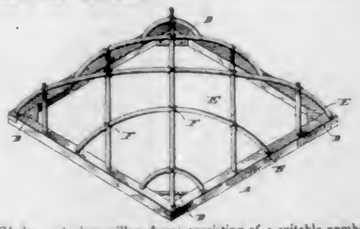
3. As a new article of manufacture, a try-square having a square corner-piece, A, of uniform thickness, and arms A' A^2, beveled on both sides thereof, substantially as described.

293,498. **WHEEL.** JOSEPH B. NEFF, Burlington, Iowa. Filed June 4, 1883. (No model.)



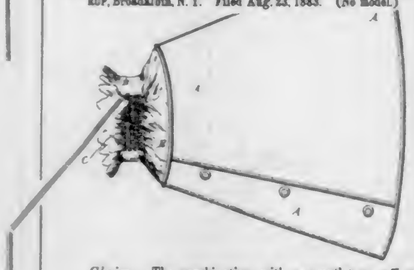
Claim.—As a new and improved article of manufacture, a wheel composed entirely of metal, consisting, first, of a hub made of one piece having annular thickened portions, and re-enforced by nipples *b*, projecting beyond the diameter of this hub, and having inclined screw-threaded holes through them, the staggered spokes screwed into said nipples, the jam-nuts *c* for the inner ends of the spokes, the rim C, centrally thickened to leave thin edges, and perforated, and the outer tenoned ends of the spokes passed entirely through the rim, shouldered, and riveted to this rim, all constructed in the manner shown and described.

293,499. **DRESS-PILLOW.** GEORGE NOBLE, Pittsburg, Pa. Filed June 14, 1883. (No model.)



Claim.—A sham-pillow frame consisting of a suitable number of intersecting sections of reed or other light elastic material, bound together at their points of intersection, and having their ends securely fastened in a rigid wooden frame in openings or sockets which are made at right angles to the plane of said frame, the same being covered and cushioned, substantially as and for the purpose set forth.

293,500. **DRIVING CUFF AND WRISTLET.** BYRON EDWIN NORTHRUP, Broadalbin, N. Y. Filed Aug. 23, 1883. (No model.)



Claim.—The combination, with a gauntlet or cuff, of a flexible wristlet, B, attached thereto, and an elastic webbing, C, secured to the wristlet, as shown and described.

293,501. **DENTAL PLUGGER.** JESSE W. NORWOOD, Greenville, S. C. Filed July 18, 1883. (No model.)



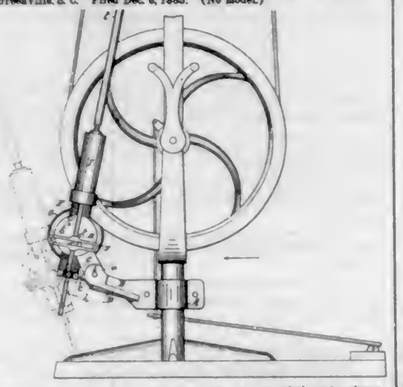
Claim.—1. The tool-holder C, having squared end *b'*, annular shoulder c^3, and threaded socket *d*, having a reduced portion provided with a separate screw-thread, substantially as shown and described.

2. The dental mallet consisting of the cylindrical hard-metal sheath *f'*, the soft-metal core *f*, arranged in one end thereof, and the rubber cushion f^3, arranged in the opposite end of the sheath, substantially as shown and described.

3. The mallet-stop consisting of the tube G, the curved bearing-plate g^2, and a connecting-screw, g', substantially as shown and described.

4. The combination of the tool-holder having the squared anvil and collar, the nose-piece having the sleeve provided with stationary plug having a squared orifice, and the movable plug screwing into the lower end of the sleeve, and the spiral spring arranged between said collar and movable plug, substantially as shown and described.

293,502. **DENTAL-ENGINE ATTACHMENT.** JESSE W. NORWOOD, Greenville, S. C. Filed Dec. 6, 1883. (No model.)



Claim.—1. An attachment to a dental engine consisting of a clamp, a journal-support, an air-pump, and a rotary shaft with friction-wheel and gearing connecting it with the pump, the said pumping mechanism being adjustable to or from the driving-wheel of the engine, as and for the purpose described.

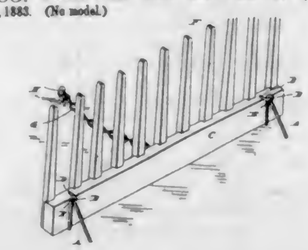
2. The combination of the clamps A A', having offset B and spring D, and the articulated journal-support having lug *c*, and bearing the pumping mechanism, substantially as shown and described.

3. The combination, with the frame F, having cylinder at one end and a guide for the piston-rod at the other, of a shaft at right angles to the cylinder, bearing a disk with wrist-pin, and a piston-rod with piston, having a slotted frame in its length to receive the wrist-pin, as shown and described.

4. The combination, with the pump-cylinder and its piston and rod, having a slotted frame in the latter, of a disk having a series of holes at different distances from the center, and a wrist-pin adapted to fit in said holes, as shown and described.

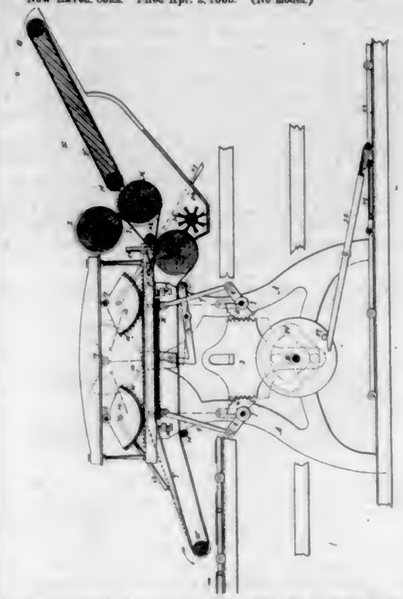
5. The frame F, with sleeve arranged in and combined with a journal-support, and a set-screw for fixing the position of said frame, substantially as described.

293,503. **WATER-GATE.** FLOYD OGDEN, Fisherville, Ky. Filed Apr. 6, 1883. (No model.)



Claim.—A flood-gate consisting of the sill C, the uprights F, the angular standards A, and the journals B, having bearings therein, substantially as and for the purpose specified.

293,504. **MACHINE FOR ROLLING PIE-CRUST.** HENRY H. OLDS, New Haven, Conn. Filed Apr. 2, 1883. (No model.)



Claim.—1. In a pie-crust-rolling machine, the combination of the main frame, a table, and two segmental rollers supported therein, substantially as described, said rollers being constructed and mounted substantially as described, whereby they may be brought together to form a continuous cylindrical surface on their under side, and means, substantially such as described, for rolling the said rollers in opposite directions, substantially as set forth.

2. The two segmental-shaped rollers, each being provided with a toothed segment and a bearing on their respective axes, a horizontal rack, a horizontal bar parallel with the rack, the rollers, rack, and bar, combined substantially as described, whereby the toothed segments shall engage the rack and the said bearings work against the said horizontal bar, with mechanism, substantially such as described, to impart a movement to the rollers toward and from each other, and a table, as and for the purpose set forth.

3. The combination of a table, an endless apron, supports, substantially such as described, whereby the said apron may pass over said table, two segment-shaped rollers, and mechanism, substantially such as described, to impart an oscillatory or rolling movement to said rollers in a plane parallel with said table, substantially as described.

4. The combination of a table, an endless apron, supports, substantially such as described, whereby the said apron may pass over said table, two segment-shaped rollers, mechanism, substantially such as described, to impart an oscillatory or rolling movement to said rollers in a plane parallel with the plane of said table, and mechanism, substantially such as described, to impart to said table an up-and-down movement toward and from said rollers, substantially as described.

5. The combination of a table, an endless apron, supports, substantially such as described, whereby the said apron may pass over said table, two segment-shaped rollers, mechanism, substantially such as described, to impart an oscillatory or rolling movement to said rollers in a plane parallel with the plane of said table, and the pair of feed-rolls I K, and the cutter O, substantially as described.

6. The combination of a table, an endless apron, supports, substantially such as described, whereby the said apron may pass over said table, the segment-shaped rollers, mechanism, substantially such as described, to impart an oscillatory or rolling movement to said rollers in a plane parallel with the plane of said table, the pair of feed-rolls I K, the cutter O, the hopper, and endless apron F therein, substantially as described.

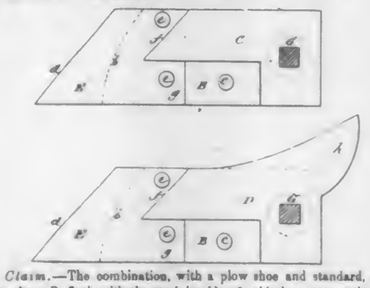
7. The combination of a table, an endless apron, supports, substantially such as described, whereby the said apron may pass over said table,

two segment-shaped rollers, and mechanism, substantially such as described, to impart an oscillatory or rolling movement to said rollers in a plane parallel with said table, with the intermittently-moving carriage, arranged to present the plates to receive the crust, substantially as described.

8. The combination of a table, an endless apron, supports, substantially such as described, whereby the said apron may pass over said table, two segment-shaped rollers, mechanism, substantially such as described, to impart an oscillatory or rolling movement to said rollers in a plane parallel with said table, mechanism, substantially such as described, to impart to said table an up-and-down movement toward and from said rollers, and the adjusting-roll 11, over which the lower run of said apron T passes, said roll connected to the table, substantially as and for the purpose described.

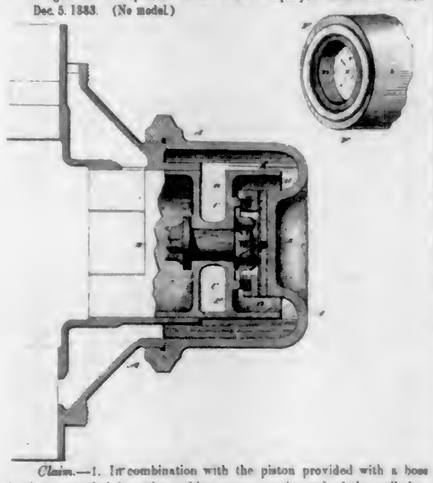
9. The combination of a table, an endless apron, supports, substantially such as described, whereby the said apron may pass over said table, two segment-shaped rollers, mechanism, substantially such as described, to impart an oscillatory or rolling movement to said rollers in a plane parallel with the plane of said table, a carriage, and mechanism, substantially such as described, to impart intermittent movement to said carriage, to present the plates to receive the crust, and a dog, 36, to arrest and hold said carriage, substantially as described.

293,505. COMBINATION-PLOW. JEFF D. PAGE, Arcadia, La. Filed Sept. 14, 1883. (No model.)



Claim.—The combination, with a plow shoe and standard, of a brace-plate, B, flush with the straight side of said shoe, arranged some distance below its upper edge, and receiving an angled plow-plate, substantially as shown and described.

293,506. PISTON WATER-METER. WILLIAM R. PARK, Taunton, assignor to the Equitable Water Meter Company, Boston, Mass. Filed Dec. 5, 1883. (No model.)



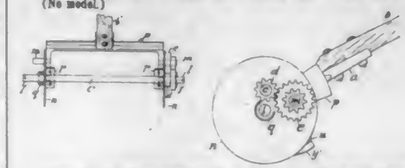
Claim.—1. In combination with the piston provided with a boss having a rounded face, the cushion at or near the end of the cylinder, also formed with a rounded face opposing that of the boss, and adapted to be struck by the latter as the piston nears the end of its stroke, substantially as shown and described.

2. In combination with the piston provided on its face with an annular boss, the annular cushion with rounded face held in a groove in the flange attached to the inner face of cylinder-head, substantially as and for the purpose set forth.

3. The annular flange on the inner face of the cylinder-head, provided with the annular dovetailed groove, the annular cushion held in the groove, and having its portion projecting above the face of the flange made rounded in cross-section, and the piston provided with an annular boss adapted to strike the cushion as the piston nears the end of its stroke, all combined substantially as and for the purpose described.

4. The annular flange on the inner face of the cylinder-head, provided with openings through its sides and on its face with an annular dovetailed groove, the annular rubber cushion fitting in said groove, and having its portion above the flange-face made rounded in cross-section, and the annular boss upon the cylinder, adapted to come in contact with the cushion as the piston approaches the end of its stroke, all combined and arranged substantially as and for the purpose set forth.

293,507. LAWN-MOWER. CHARLES H. PAYSON, Springfield, assignor of one-half to Peter T. Coffield, New Carlisle, Ohio. Filed June 6, 1883. (No model.)



Claim.—1. In a lawn-mower, the combination of the brace *p*, ground-wheels *g*, reel *a*, and actuating-gearing with the two stationary disks *n n*, around which the ground-wheels revolve, each disk provided with a bearing, *r*, for the reel-shaft, and studs *l m*, that serve as journals for the ground-wheels and the gears *e*, and also as a means of securing the brace to the disks, substantially as described.

2. In a lawn-mower, the combination of the disks *n n*, studs *l m*, gear-wheels *f e d*, reel-shaft *c*, bearings *r r*, and distance-pieces *q*, substantially as described.

3. In a lawn-mower, the combination of the ground-wheel *g*, provided with sleeve *i*, spring-pawl A, and ratchet spur-wheel *f*, substantially as described.

4. In a lawn-mower, the combination of a revolving reel, *a*, and adjustable rectangular cutting-knife *y y'*, the gearing *f d e*, partial circumferential distance-pieces *q*, and ground wheels *g*, substantially as described.

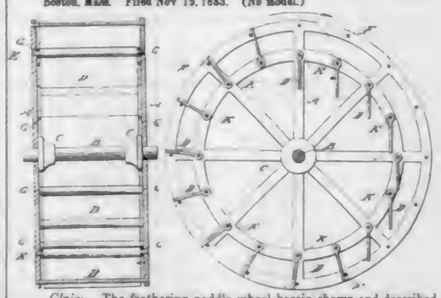
293,508. COLLAR. KOSSUTH PERPENTE, New York, N. Y. Filed Mar. 22, 1883. (No model.)



Claim.—1. A collar composed of an upper part, A, and of a separate lower part, B, which is overlapped by said part A, the two parts being connected where they overlap by the series of stitches *a b*, and constructed to form the tie-retaining sections *d* and recesses *s* at the places where they do not overlap, substantially as described.

2. A collar constructed of an upper part, A, and a lower part, B, said parts being stitched together where they overlap at *a b*, but disconnected entirely from each other between the rows of stitches, substantially as specified.

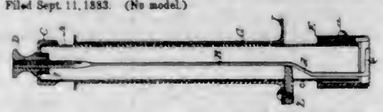
293,509. FEATHERING PADDLE-WHEEL. CHRISTIAN L. PETERSEN, Boston, Mass. Filed Nov 19, 1883. (No model.)



Claim.—The feathering paddle-wheel herein shown and described, consisting of frames A, secured on shaft B, and blades D, hinged at their

inner edges and adapted to be held to their work by the rods F, placed radially beyond the pivots of the blades and near their outer edges, substantially as shown and described.

293,510. CANCELING-STAMP. PETER PFEIFER, Durhamville, N. Y. Filed Sept. 11, 1883. (No model.)



Claim.—1. In a stamp-canceler, the tubular handle having apertures in its base, combined with a swinging bar suspended in said handle, and having serrated feet or prongs working in the apertures, substantially as described.

2. The tubular handle having an apertured base, combined with a swinging bar suspended from the upper part of the handle, and having serrated feet or prongs working through the apertures in the base, substantially as described.

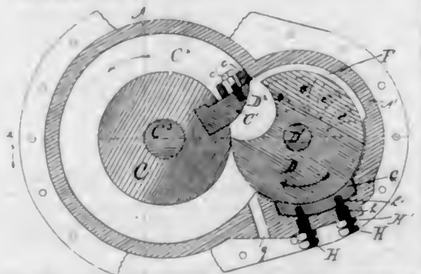
3. The tubular handle having an apertured base, combined with a swinging bar suspended from the upper part of the handle, and having serrated feet or prongs working through the apertures in the base, and the sliding sleeve operating to swing said bar, substantially as described.

4. The swinging bar suspended from the upper end of the tubular handle, having serrated feet or prongs at its lower end, and an intermediate bend or incline, in combination with said handle, and its sliding sleeve having a lug operating on said incline, substantially as described.

5. The swinging bar adjustable at the upper end of the tubular handle, and having serrated feet or prongs at its lower end, in combination with said handle having apertures in its base through which said prongs work, substantially as described.

6. In a device for canceling stamps, an apertured base having on its face serrations inclined in one direction, combined with movable feet or prongs serrated on their lower faces in an opposite direction, whereby the article is held in position while the movable feet or prongs cancel or deface the same, as set forth.

293,511. ROTARY ENGINE. JAMES H. PHELPS, Sharon, Wis. Filed July 19, 1883. (No model.)



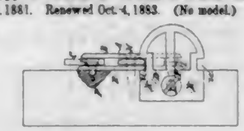
Claim.—1. The combination, with the piston and its abutment, of the valve formed with the recess D^2 and rotating in unison with said piston, and the inlet-ports *e e'*, opened and closed by said valve, substantially as specified.

2. The combination, with the piston and its abutment, of the valve having the recess to receive the abutment and rotating in unison with said cylinder, the inlet-ports opened and closed by said valve, and the passage F, substantially as specified.

3. The rotary engine consisting of the piston and its abutment, and rotating in unison with the piston, the valve having the recess to receive the abutment, the inlet-ports opened and closed by the valve, and the outlet-port located near the end of the stroke, substantially as and for the purpose specified.

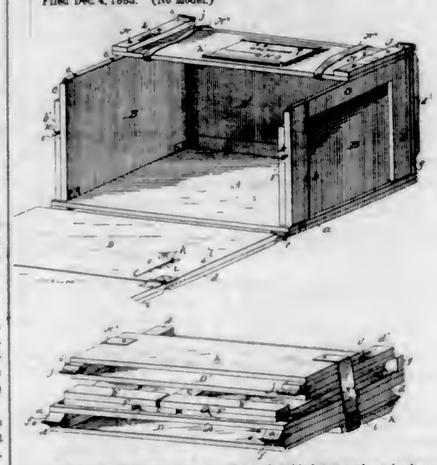
4. The combination, in a rotary engine, of the piston and its abutment, the valve and its recess, and inlet-ports opened and closed by said valve, with one or more sides corresponding to the recess in the valve, substantially as and for the purpose specified.

293,512. DOOR-LATCH. CHARLES W. PIERCE, Oak Hill, N. Y. Filed June 23, 1881. Renewed Oct. 4, 1883. (No model.)



Claim.—In a door-latch, the guard B, having the studs F extending through the plate E and into the door, in combination with the latch A, having a slot located under or behind said guard, and with an attaching-screw, H, located between said studs and passing through said slot in the latch, substantially as described.

293,513. SHIPPING-CASE. ANDREW M. PLATT, New Haven, Conn. Filed Dec. 4, 1883. (No model.)



Claim.—1. In a shipping-case, the ends folded flat against the bottom, and the sides each carrying a section of the cover, one of the sides extending over the folded ends, while the other folds flat against the under side of the bottom, as and for the purpose set forth.

2. In a shipping-case, the ends hinged to the upper face of the bottom, and the sides each carrying a section of the cover, one of the sides being hinged to the bottom in such a manner as to fold against the under side of the same, and the other side being hinged to a cleat extending up from the bottom, so as to fold over the ends, the two sections of the cover folding over the sides, and the parts being secured in this position by means of suitable straps, as and for the purpose set forth.

3. In a shipping-case, the ends hinged to the upper face of the bottom and folding flat against the same, one of the ends being provided with a cross-bar overlapping the other end, and the bottom having cross-pieces secured to its under side, in combination with the sides provided with vertical strips, one of the sides being hinged to a cleat projecting up from the bottom, and the other side having hinges connecting its vertical strips to the cross-pieces of the bottom, and the cover or lid formed in two sections or parts, one section being hinged to each side, so as to fold flat against the inner and outer faces of the same, as and for the purpose set forth.

4. In a shipping-case, the sides and ends hinged to the bottom in any suitable manner, beveled catches or rods projecting from the ends and extending through openings or sockets in the sides, and a spring-pressed lever engaging with the catch and arranged to hold the parts in place, as and for the purpose set forth.

5. In a shipping-case, the sides and ends hinged to the bottom in any suitable manner, beveled catches or rods projecting from the ends and extending through openings or sockets in the sides, and a spring-pressed lever engaging with the catch and provided with an operating-rod, as and for the purpose set forth.

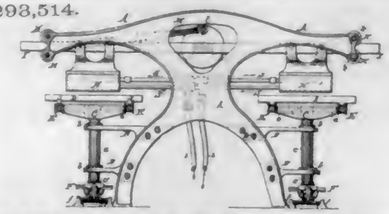
6. In a shipping-case, the sides and ends hinged to the bottom in any suitable manner, beveled catches or rods projecting from the ends and extending through openings or sockets in the sides, a spring-pressed lever engaging with the catch, a rod or projection attached to the lever and working in a slot in the sides of the case, and a rod attached to the head of said projection and working in guides on the interior of the said sides, as and for the purpose set forth.

7. In a shipping-case, the ends folding flat against the bottom, and the sides carrying a section of the cover, one of the sides extending over the said ends, and the other side folding flat against the under side of the bottom, beveled catches projecting from the ends, and spring-pressed levers engaging with said catches, as and for the purposes set forth.

293,514. IRONING-MACHINE. HENRY PODGER, Bromley, County of Kent, and WILLIAM HOOK DAVEY, Highgate, County of Middlesex, England. Filed Mar. 9, 1883. (No model.) Patented in England Aug. 14, 1882, No. 3,867.

Claim.—1. In an ironing-machine, the combination, with an iron

293,514.



and means for reciprocating the same horizontally, of a bed mounted substantially as described, whereby it may be rotated and moved vertically, and a table, said table and bed being constructed substantially as set forth, whereby the table may be moved transversely on the bed, as and for the purpose specified.

2. In an ironing-machine, the combination, with the frame, the irons, and means for reciprocating them horizontally, of the bed C, having guide-rods *c*, journaled in brackets of the frame, and provided with the grooved rollers E, the table D, provided with the ribs or rails *d*, and means for raising and lowering said bed, substantially as herein shown and described.

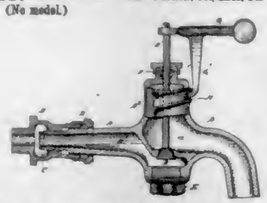
3. In an ironing-table, the combination, with the frame A, having the brackets B B, of the bed C, provided with the guide-rod *c*, mounted vertically in the said brackets, and provided with the collars *b c'*, the treadle F, the lever G, connected to the treadle at one end, and the other end embracing the guide-rod *c*, and the table D, the said table and bed being constructed as set forth, whereby the former may be moved laterally upon the bed, substantially as shown and described.

4. In an ironing-machine, the combination, with the frame A A', provided with the guide-rollers K K', the guide-rod I, and means for operating said guide-rod, of the double-faced iron H', having the hollow journal *h'*, and journaled in hangers on the bar I, the burner N, and means for locking the iron in position, substantially as herein shown and described.

5. In an ironing-machine, the combination, with journaled and double-faced iron H', provided with the hollow journal *h'*, of the burner N, secured within the iron, and provided with side perforations, substantially as herein shown and described.

6. In an ironing-machine, the combination, with the journaled and double-faced iron H', and the burner N within said iron, of the disk R, secured to the journal *h* of the iron, and provided with the recesses *r*, and the locking-lever *t*, substantially as herein shown and described.

293,515. STOP-COCK. JOHN PORSCH, Jr., Erie, Pa. Filed Apr. 12, 1883. (No model.)



Claim.—1. In a stop-cock or faucet, the combination of a shell having an inclined surface upon its outside with a vertically-moving valve having a lever which, when moved over the inclined surface, opens or closes the valve, substantially as described.

2. In a stop-cock or faucet, the combination of a valve having a stem, and a lever or handle having an arm, with a head provided with an inclined screw-thread for the arm of the lever, substantially as described.

3. In a stop-cock or faucet, the combination of the shell or body A A' A^2, having inclined groove H and chambers *a a'*, and provided with stuffing-box F, with the valve D, having stem D', and handle G, having the arm G', substantially as described.

293,516. TACK-HAMMER AND TACK-HOLDER. ADDISON A. POTTER, South Otselic, N. Y. Filed Sept. 10, 1883. (Model.)

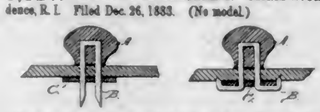


Claim.—1. As an article of manufacture, a hammer having its handle formed with one or more T-shaped grooves adapted to receive and hold the head portions of a number of tacks, substantially as and for the purpose set forth.

2. The handle A, provided with the T-shaped groove *a*, having at each end an enlargement, *a'*, in combination with the elastic bands D and E, substantially as and for the purpose shown.

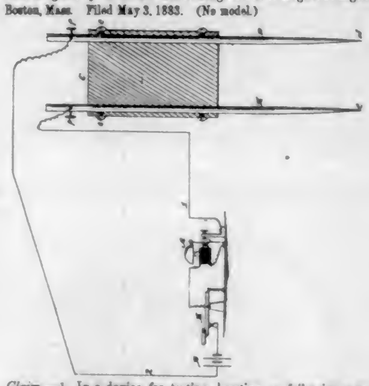
3. The hammer B, provided within its face *b* with the diagonal undercut recess *b'*, in combination with the spring F, having an inward-curving outer end, *f*, substantially as and for the purpose set forth.

293,517. BUTTON AND FASTENING. GEORGE W. PRENTICE, Providence, R. I. Filed Dec. 26, 1883. (No model.)



Claim.—As an improved article of manufacture, the herein-described combined button and fastening-prongs, consisting of the solid leather head A, compressed upon the staple-shaped fastener B, and adapted for operation in connection with the washer C, substantially as and for the purpose specified.

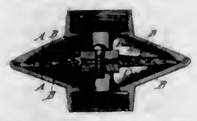
293,518. MEANS FOR ELECTRICALLY LOCATING AND FOLLOWING VEINS OF METAL IN THE EARTH. JEROME PRINCE, Milford, assignor, by direct and mesne assignments, to August P. Lighthill, Boston, Mass. Filed May 3, 1883. (No model.)



Claim.—1. In a device for testing, locating, or following metallic veins, the combination of metallic circuit-terminals adapted to be forced into the earth at different points, and an insulating bridge-block rigidly holding the terminals apart and in fixed relation to each other, with an electric circuit, a battery, and an alarm in the circuit, substantially as described.

2. In a device for testing, locating, or following metallic veins, the combination of metallic posts adapted to be forced into the earth at different points, and an insulating bridge-block, through which the posts pass, and are thereby held separated and in fixed relation to each other, with an electric circuit connected with the posts, a key, a battery, and an alarm in the circuit, substantially as described.

293,519. FILTER-CASE. EDWIN S. REED, Jersey City, N. J. Filed Sept. 26, 1883. (No model.)

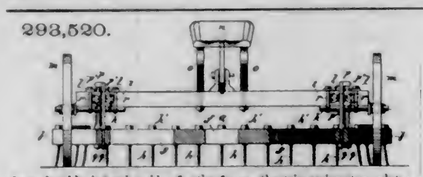


Claim.—In a filter or filter-case, the combination, with two shells, A A, having collars penetrating to the center of said filter-case, and provided with water-ways E E, of filtering material C and screw D, whereby the filtering material is securely held in place between the two shells, substantially as described.

293,520. WHEEL-HARROW. FRANK I. RUNDLE, Lowell, Ohio. Filed Oct. 26, 1883. (No model.)

Claim.—In a sulky-harrow, the combination, with the frame *a*, constructed as described, of the axle *i*, axle-guides *p p*, having the parallel vertical arms *p'*, provided with bolt ends *q* and shoulders p^2, whereby they are connected to the side rails of the harrow-frame, as shown, to

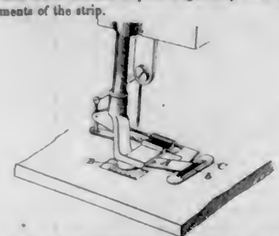
293,520.



form durably-braced guides for the frame, the triangular stop-plates *r*, arranged at each side of the guide-arms *p'*, and secured to the axle by means of the bolts *s*, whereby lateral motion of the frame is prevented, substantially as specified.

293,521. RUFFLING ATTACHMENT FOR SEWING-MACHINES. JOSEPH S. SACKETT, New Haven, Conn., assignor, by direct and mesne assignments, to himself and Jane Halliwell, same place. Filed Apr. 2, 1883. (No model.)

Brief.—The guide attached to the end of the ruffler-blade extends equally to the right and left of the line of the path of the needle, and so that the strip operated upon may be brought by hand close up in one end of the slot for a certain number of stitches, and then thrown over into the opposite end of the slot, for producing scallop-work by the transverse movements of the strip.



Claim.—In a ruffling attachment for sewing-machines, the combination therewith of the guide C at the fixed end of the crimping-blade, and attached to or made substantially a part of it, and constructed with a transverse slot longer than the width of the crimping-blade, the said slot closed at both ends and extending to the right and left of the crimping-blade, substantially as described.

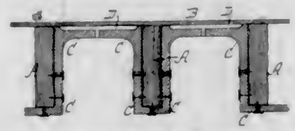
293,522. CARRIAGE-CURTAIN FASTENING. JOHN SAGE, Lockport, N. Y. Filed Nov. 1, 1883. (No model.)



Claim.—As a new article of manufacture, a fastening device for carriage-curtains, consisting of a body portion, a cap revolving thereon, and a pin-extension or rivet, substantially as set forth.

293,523. FIRE-PROOF BUILDING. JOHN J. SCHILLINGER, New York, N. Y. Filed Oct. 10, 1883. (No model.)

Brief.—A sheathing for the floor-beams and the floors of buildings consists of sections molded to the general shape of the exposed portions of the beams and floors, and with a depression in the top of the floor-sections.

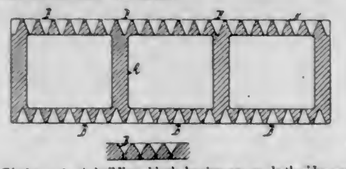


Claim.—1. A fire-proof sheathing for the beams and floors of buildings, molded in sections, and each section in a single piece to extend across the lower edge and vertically along each side of the floor-beam, and laterally or horizontally along the floor, substantially as described.

2. A fire-proof sheathing for the floor-beams and the floors of buildings, molded in sections to the general shape of the lower exposed portions of such beams and floors, and with a depression in the top of the floor-sections, to relieve the same from downward pressure, substantially as described.

3. The combination, with the floor-beams and floor of a building, of a fire-proof sheathing molded in sections, each section being in a single piece and extending across the lower edge and vertically along the sides of the floor-beam, and laterally or horizontally along the floor, substantially as described.

293,524. BUILDING-BLOCK. JOHN J. SCHILLINGER, New York, N. Y. Filed Nov. 15, 1883. (No model.)

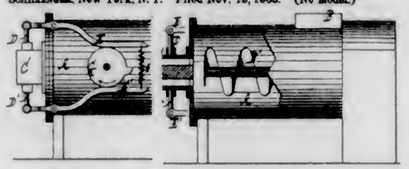


Claim.—1. A building-block having one or both sides provided with nail-holes, substantially as shown and described.

2. A building-block having one or both sides provided with nail-holes tapering in an inward direction, substantially as shown and described.

3. A hollow building-block having one or both sides provided with nail-holes tapering in an inward direction and passing entirely through the walls of the block, substantially as shown and described.

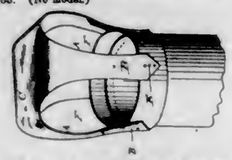
293,525. MACHINE FOR MAKING BUILDING-BLOCKS. JOHN J. SCHILLINGER, New York, N. Y. Filed Nov. 15, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with the hopper, its feed device, and the block-forming die, of the reciprocating punches arranged in the die for perforating the blocks, and a means for imparting motion to the punches.

2. The combination, substantially as hereinbefore described, with the hopper, its feed device, and the block-forming die, of the reciprocating punches arranged in opposite sides of the die, the levers supporting the punches, and the trip-wheel common to both levers.

293,526. CHIMNEY-CAP. MICHAEL SCHOLL, San Francisco, Cal. Filed May 31, 1883. (No model.)



Claim.—1. The metallic blank C, having four arms or points, B B, the sides of which are formed by the curvatures A A, substantially as described.

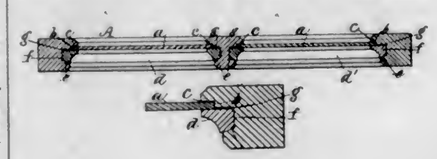
2. A chimney-cap composed of the metallic blank C, having four perforated arms or points, B, with curved sides, said arms being bent down, as shown, and connected to the chimney pot or stack, whereby four truncated oval openings, F F, of equal dimensions are formed, substantially as described.

293,527. WINDOW-SASH. HENRY W. SCHRODER, Springfield, Ohio. Filed June 13, 1883. (No model.)

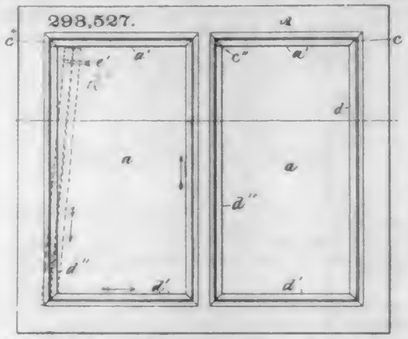
Brief.—The device consists of detachable beveled strips having a single fastening to secure the glass in the window-frame.

Claim.—1. A sash for windows, having a groove beveled upon its upper interior side, to adapt it for the insertion of a strip of like reversed shape, substantially as and for the purpose set forth.

2. The sash-frame A, having the fixed mold *a'* thereon, the groove *f* on the other three sides of the opening for the glass, and having the detachable strips *d*, *d'*, and *d''*, adapted to be inserted into the groove *f* in the order named to secure the glass, the last strip, *d'''*, being fastened



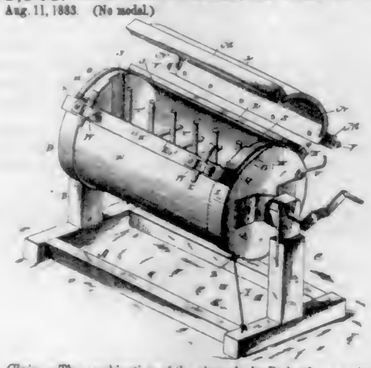
293,527.



at its top end to the sash-frame by means of a screw or its equivalent, substantially as set forth.

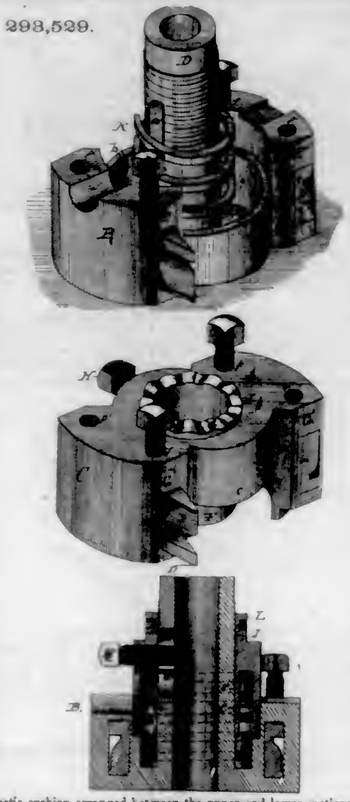
3. The combination, with a sash-frame having a rabbet and a groove over the same, and having a fixed mold at the upper end of the glass-opening, as described, of the rubber strip *c*, and the insertible and detachable strips *d*, *d'*, and *d''*, adapted to be locked into their position within the groove and fastened over the glass on the inside of said sash, substantially as set forth.

293,528. CHURN. OCTAVUS F. SCRIBNER, Bells Fountain, Wis. Filed Aug. 11, 1883. (No model.)

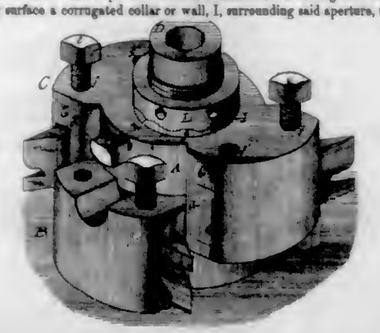


Claim.—The combination of the churn-body D, having opening J, the cleats K, secured along the sides of said opening and having grooves Q, packing-strips R, placed in the said grooves, panking P, placed in grooves O in the heads H of the churn, hooks U, pivoted to the heads H, and loops W, secured upon one of the cleats K, with the cover having cleats M, downturned ends N, and studs V, and the wedge-shaped keys X, substantially as set forth.

293,529. CUTTER-HEAD. GEO. J. SHIMER, Freemansburg, assignor to Samuel J. Shimer, Milton, Pa. Filed July 13, 1883. (No model.)



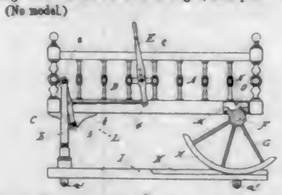
Claim.—1. In a cutter-head, the combination, with the lower section having the elongated screw-threaded hub, of the upper section provided with a central aperture to fit over said hub, and having on its upper surface a corrugated collar or wall, I, surrounding said aperture, the elastic cushion arranged between the upper and lower sections, and the nut L, screwed upon the central hub, and having its under surface adapted to form a locking engagement with the said collar I, substantially as described.



2. A cutter-head composed of two parts capable of vertical adjustment, the under section whereof is formed with a central screw-threaded hub and circular side walls, and the upper section whereof is formed with a depending sleeve and circular side walls, and having formed on its upper surface and around its central opening a circular wall with V-shaped projections or their equivalents, in combination with a locking-nut formed with V-shaped projections or their equivalents on its under surface, substantially as described.

3. The combination, with the lower section provided with a central hub, in which is formed a vertical slot, *a*, of the upper section fitting over said hub, and provided with the set-screw H, arranged to pass through the slot in the hub, the elastic cushion between the two sections, and suitable means for securing the upper section to the hub, substantially as described.

293,530. COMBINED CRIB AND CRADLE. SAMUEL G. SIDE, Port. Ind., assignor of one-half to WM. H. AUGUR, same place. Filed Aug. 6 1883. (No model.)



Claim.—1. The combination of a crib, stationary supports therefor, and links connecting the crib at one end with such supports, and rockers, substantially as described, pivoted to the crib at its opposite end, as and for the purposes specified.

2. The combination of a base, stationary supports attached thereto, a crib, rockers, substantially as described, pivoted to the crib at one end and mounted on said base, and links connecting the opposite end of the crib to the stationary supports, as and for the purposes set forth.

293,531. BUTTON. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Nov. 21, 1883. (No model.)



Claim.—The garment-button A herein described, consisting of the front *a* and staple *b*, the former being provided with the neck or shank *a'*, the face thereof having openings a^2 therein, said neck also adapted to receive the convex-headed staple *b*, the latter being rigidly secured therein by suitable means during the process of manufacture, and forming a bead, a^3, around the lower edge of the shank and the bearing-surfaces *f* outside the prongs *b'*, substantially as shown and set forth.

293,532. MANUFACTURE OF COMPOUND ELECTRICAL WIRE. LUTHER L. SMITH, Ansonia, Conn., assignor to the Postal Telegraph Company, New York, N. Y. Filed Oct. 8, 1883. (No model.)



Claim.—The herein-described compound wire, consisting of the steel or iron core *a*, coated with an electro-deposit of copper, *b*, and then covered with a strip of copper folded around the electro-coated wire, and so as to bring the two edges of the covering substantially together, and substantially as specified.

293,533. UNDERGROUND WIRE-CONDUIT. THOMAS L. SMITH, New York, N. Y., assignor of one-half to Daniel A. Mathews, same place. Filed Dec. 14, 1883. (No model.)

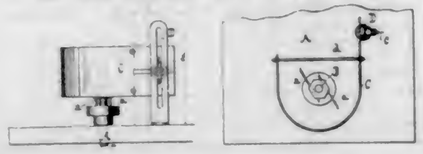


Claim.—1. In an underground telegraph conduit or pipe, the bridge B, having the upright parts *b*, in which are made the notches *n*, for supporting the wires, and having the sides of said uprights covered with glass plates, substantially as and for the purpose described.

2. The combination, substantially as hereinbefore set forth, of a pipe or conduit for underground electric conductors, consisting of the long and short sections A and A', placed alternately, and the bridge or support B, for the conductors, placed approximately in the middle of each of the longer sections, and consisting of the base B' and the upright parts *b*, in which are the notches *n*, for supporting the wires, and having said uprights covered with glass plates.

3. The combination, substantially as hereinbefore set forth, of a pipe or conduit for underground electric conductors, consisting of the sections A and A', of two different lengths, so constructed that the cover or upper part of the short sections may be removed without disturbing the longer sections, and the bridge or support B, for the conductors, placed approximately in the middle of each of the longer sections, and consisting of the base B' and the upright parts *b*, in which are the notches *n*, for supporting the wires, and having said uprights covered with glass plates.

293,534. GUARD FOR MOLDING-MACHINES. JOHN O. SQUIRES and JOSEPH K. SHRIVER, Baltimore, Md. Filed Dec. 26, 1883. (No model.)



Claim.—In a molding-machine, the table A, the vertical slotted standard D, attached rigidly to the table, the slotted guard C, having a curved end, and parallel sides connected by a stiffening-brace, and the bolt *c*, all combined substantially as and for the purpose specified.

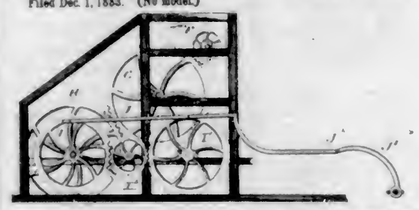
293,535. MANUFACTURE OF PORTIONS OF A HARNESS. JAMES STANLEY and THEODORE F. LEMASSENA, Newark, N. J., assignors, by mesne assignments, to Lillian Lemassena, same place. Filed July 20, 1883. (No model.)



Claim.—1. The process herein shown and described for manufacturing certain parts of harness from leather scraps, which consists, first in pasting the scraps together with cement in a suitable mold; second, in pressing the same in a finishing-mold; third, in freeing the pressed article from its moisture; and, fourth, in applying a water-proof coating to the surface and drying the same thereon, all substantially as and for the purpose set forth.

2. A horse-collar or other analogous articles of harness formed of scraps of leather, united by suitable cement and pressed to their finished form, and having a coating of water-proof material, substantially as herein set forth.

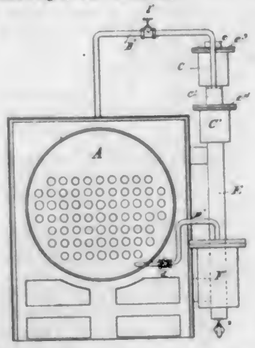
293,536. VELOCIPEDE. JOHN MORRIS STAPLES, Rose Mills, Va. Filed Dec. 1, 1883. (No model.)



Claim.—1. In combination with the axle A, having crank *a* and friction-roller *a'*, and with the wheels A', rigidly hung upon said axle, the pitman J^3, wheels I I', connected by the rod J and gear I^3, and the gears F G H, the crank K, and frame D, as and for the purpose set forth.

2. In combination with the forward axle pivoted at the king-bolt, the frame D and segment D', the shaft D^2, having cranks $d\,d^2$, the spring-bolt d', the bar M, and links d^3, as and for the purpose set forth.

293,537. FEED-WATER PURIFIER. WM. K. STEVENS, Mansfield, Ohio. Filed Aug. 3, 1883. (No model.)

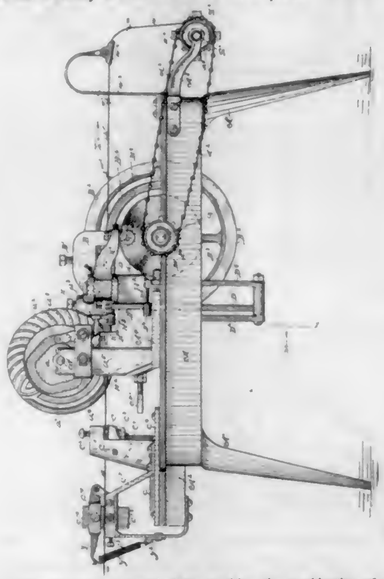


Claim.—1. In combination with the boiler A, feed-pipe D D', and steam-pipes B B', the two precipitating-chambers C C' *c c'*, and connecting-pipe c^2, when arranged and operating substantially as and for the purpose described.

2. The combination of boiler A, the two precipitating-chambers C C' c c', the filter-chamber F, containing the shell F', provided with the perforated bottom *f*, perforated lead disk H, and intermediate filtering material, and the several connecting-pipes, substantially as described.

293,538. MACHINE FOR MAKING BARBED WIRE. LESLIE E. SUNDERLAND, Joliet, Ill. Filed Oct. 30, 1883. (No model.)

Brief.—One main wire is fed through tension and straightening plates by a reciprocating head whose dies form crimps in the wire at the points where the barbs are to be applied. The coiling-head which applies the barb-wire has reciprocatory and rotary motions and recedes as it wraps the barb, forming a long coil the length of the crimp. The movable barb-cutting die is carried by an arm which oscillates horizontally. The applied barb is compressed and straightened between movable and stationary dies and the barbed wire is spooled.



Claim.—1. In a wire-barbing machine, the combination of the shaft S, crank P', pitman P, reciprocating head K, having the adjustable stop Z^4 and set-screws Z^3 Z^5, reciprocating head *c*, having the bell-crank jaw *c'*, crimping-dies *o o'*, set-screws c^3 c^5, and supporting-roller c^2, straightening-plates c^{10} c^{12}, stem H^5, and coiling-shaft H^2, having the coiling-hook *v*, and adapted to reciprocate and rotate, as and for the purpose set forth.

2. In a wire-barbing machine, the combination of the shaft S, sprocket-wheel *h*, sprocket-chain h^3, sprocket-wheel *h'*, shaft a^4, cam-wheel *a*, having the cam-channels *a' a² a³*, lever a^7, having the roller-wrist n', saddle a^5, annular ring H^6, having the two ears or pins H^4, coiling-shaft H^2, having the coiling-hook *v*, and adapted to reciprocate and rotate its coiling end simultaneously, pinion *m*, and stem H^5, as and for the purpose set forth.

3. In a wire-barbing machine, the combination of shaft S, waved cam-wheel D^7, wrist-rollers D^4 D^4, arms D^3 and D'', hanger D^4, link D^2, lever D', set-screw dies n^4 n^2, set-screw n^3, dog *r'*, spring r^3, standard *r*, and guide-tube r^5, as and for the purpose set forth.

4. In the wire-barbing machine described, the combination of the shaft S, waved cam H^1, lever H', having the head H, standard H^2, cutting-off dies Z and Z', set-screws *v'* and Z^2, and bed-plate A^4, as and for the purpose set forth.

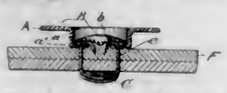
5. In a wire-barbing machine, the combination of the shaft S, cam-wheel B^7, arm B^4, having the roller-wrists to run in the cam-channel of said cam, head B, pivoted to standard B^2, bed-plate B^3, die R^3, and set-screw B', as and for the purpose set forth.

6. In a wire-barbing machine, the combination of the cam-wheel *a*, lever a^7, saddle-link a^6, annular ring H^6, and pinion *m*, adapted to rotate and reciprocate the coiling end of the coiling-shaft H^2 simultaneously, as and for the purpose set forth.

7. In a wire-barbing machine, the combination of the reciprocating head *c*, dies *o* and *o'*, and supporting-roller c^2, as and for the purpose set forth.

8. In the wire-barbing machine described, the combination of the straightening-plates c^{10} c^{12}, strand-wire feed consisting of the reciprocating head *c* and bell-crank jaw *c'*, and dies *o* and *o'*, operated by the mechanism described, coiling-shaft H^2, having the coiling-hook *v*, and adapted to reciprocate and rotate its coiling end simultaneously by the mechanism described, cutting-off dies Z Z', and their operating mechanism, barb-wire feed described and illustrated, particularly in Fig. 5, press B, having the die-press R^2, and operated as described, guide-shoe W', and spring-standard W^2, all adapted to operate as and for the purpose set forth.

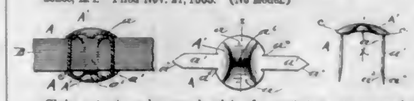
293,539. BUTTON. JAMES F. TRAYER, Providence, R. I. Filed Nov. 21, 1883. (No model.)



Claim.—1. The garment-button herein described, consisting of the front A, having a depending shank or neck, *a*, the flat face *a'* of the latter being provided with openings a^2 and central opening, a^3, and further consisting of the clinching-disk B, rigidly secured within the shank *a*, substantially as shown, and for the purpose set forth.

2. The button herein described, composed of the metallic front A, having an apertured shank, *a*, and clinching-disk B, rigidly secured within said shank, as described, in combination with a staple adapted to be inserted through the fabric from the under side thereof and clinch against said disk B, substantially as shown and set forth.

293,540. COMBINED STAPLE AND DIE. JAMES F. TRAYER, Providence, R. I. Filed Nov. 21, 1883. (No model.)

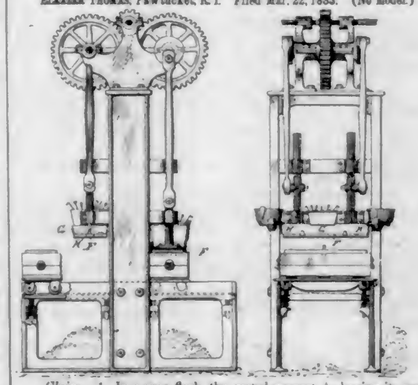


Claim.—1. As an improved article of manufacture, the pronged and enlarged headed staple herein described, provided with clinching or deflecting dies wrought or formed in said head and integral therewith, substantially as and for the purpose set forth.

2. The staple A, herein described, consisting of the enlarged head A' and prongs *a'*, said head having concave deflecting surfaces or dies formed on its under side at right angles to the prongs, substantially as shown and set forth.

3. The method of fastening, consisting in inserting the prongs of the die-headed staple, herein described, through the fabric or material at right angles to a similar staple inserted through the material from the opposite side thereof, the ends of the prongs being then clinched beneath the heads and against the dies of the staples, all substantially as shown and set forth.

293,541. MACHINE FOR MAKING MOLDS FOR CASTINGS. ELEAZER THOMAS, Pawtucket, R. I. Filed Mar. 22, 1883. (No model.)



Claim.—1. In a snap-flask, the grated support A, having its marginal band and cross-bars broadest at the lower edges, in combination with the corner-strips B, for the purposes herein set forth.

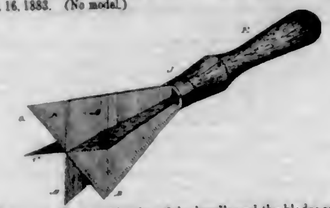
2. A snap-flask provided with a corner-hinge and with two spring tongues, C C, with catches or shoulders *c* to bind the parts together or to release them, one of said fastenings being cut away centrally to permit the other to enter, substantially as and for the purpose set forth.

3. In a snap-flask, the spring-tongues C C, in combination with the metallic plates D D, formed, respectively, with the recess *d'* and the corresponding prolongation, *d*, serving to prevent independent lateral move-

ment of the parts of the cope or nowel, substantially as and for the purposes herein set forth.

4. The adjustable follower-board F, provided with hooks H and guides I, substantially as and for the purposes herein set forth.

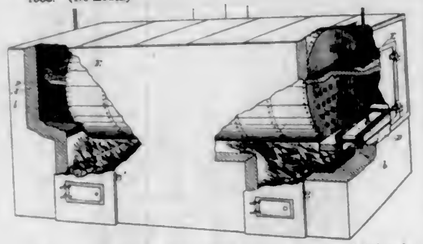
293,542. MINCING-KNIFE. ROBT. J. VICTOR, Hudsondale, Pa. Filed Apr. 16, 1883. (No model.)



Claim.—1. The combination of the handle and the blades arranged radially therein, the first blade of the series being provided with a single long slot, the last blade with a short slot, and each of the intermediate blades with both a long and a short slot, as set forth, by which the blades may all be connected together, substantially as described.

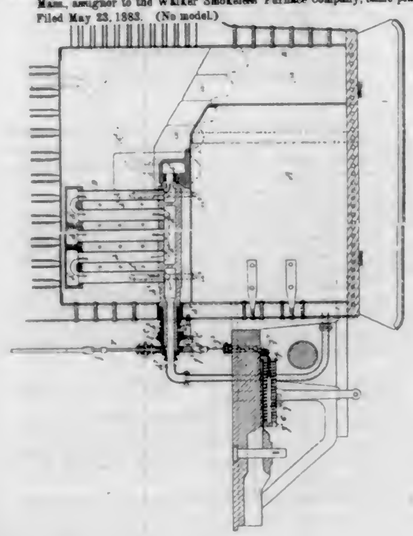
2. The combination, substantially as described, of the handle and the blades formed with correlative slots, whereby they may be connected together, as set forth, and with shanks and shoulders, by which they may be fixed on the handle.

293,543. DAMPER. ROBERT L. WALKER, Boston, Mass., assignor to the Walker Smokeless Furnace Company, same place. Filed May 23, 1883. (No model.)



Claim.—In a damper for covering openings above and below it, a pointed projection on one side, and a trough on the other side, adapted to enter a trough in the lower seat and to receive a pointed projection on the upper seat, substantially as and for the purposes set forth.

293,544. STEAM-BOILER FIRE-BOX. ROBERT L. WALKER, Boston, Mass., assignor to the Walker Smokeless Furnace Company, same place. Filed May 23, 1883. (No model.)



Claim.—1. The combination, in a steam-boiler fire-box, of a water-leg centrally located therein and dividing it into two compartments, a space between the water-leg and tube-sheet forming a communication between the two compartments, and corrugated fire-brick covering this space and partly covering the compartments, substantially as set forth.

2. A damper for covering the openings from the compartments of a fire-box, substantially as hereinbefore described, consisting of a series of pipes connecting return-bends or water-blocks to water-spaces in the damper-shaft, as and for the purposes set forth.

3. The combination, substantially as hereinbefore set forth, of a damper for covering the openings from the compartments of a fire-box, and having a water-channel, substantially as described, within it, with a pipe connecting the inner end of the damper-shaft with the space over the crown-sheet, and a pipe connecting the outer end of the damper-shaft with the rear water-leg, as and for the purpose set forth.

4. The combination, substantially as hereinbefore set forth, of a damper, a spring for maintaining a close fit between one end of the damper-shaft and its bearing, and a thrust-plate for supporting one end of the spring, with a series of anti-friction rollers, located substantially as described, and for the purposes set forth.

5. The combination of a damper for covering two openings and a lever for operating the damper, substantially as described, with a device for resisting the movement of the damper from a vertical position, substantially as and for the purposes set forth.

6. The combination, substantially as hereinbefore set forth, of a damper for covering the openings from compartments of a fire-box, with a steam or air controlled piston having its rod connected to the shaft of the damper, a cylinder in which the piston moves, and a valve operated by hand, by means of which steam or air may be admitted to and released from the cylinder, to move the piston in either direction, for the purpose set forth.

293,545. FOUNTAIN-PEN. LEWIS E. WATERMAN, Brooklyn, N. Y. Filed Sept. 19, 1883. (No model.)

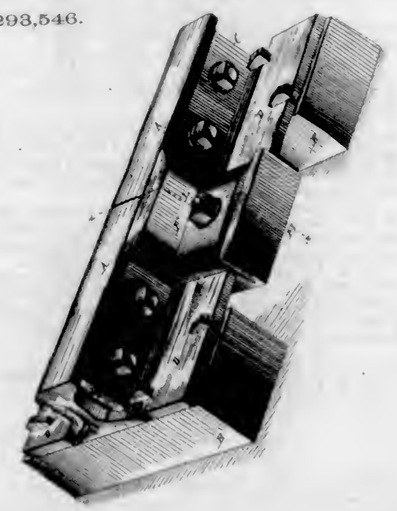


Claim.—1. An ink-duct for a fountain-pen, consisting of a bar having a longitudinal groove formed in its surface and one or more longitudinal fissures in the side or sides of said groove, substantially as set forth.

2. In a fountain-pen, the combination, substantially as hereinbefore set forth, of a barrel or ink-reservoir, a tube connected therewith, an ink-duct supported within said tube, and consisting of a bar having one or more longitudinal grooves formed in that portion of its surface which is in proximity to the pen, with one or more longitudinal fissures in the side or sides of said groove or grooves, and a pen secured between said tube and ink-duct.

3. A fountain-pen having an ink-duct provided with one or more longitudinal fissures formed in its walls, for facilitating the passage of the ink through said duct.

293,546.

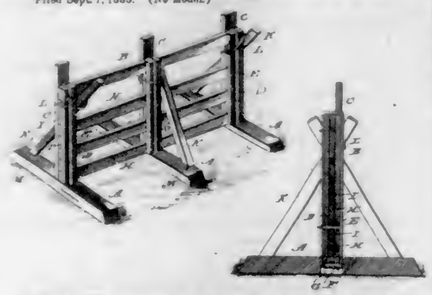


293,546. RAILWAY-RAIL CHAIR. GEORGE WEEKS, East Oakland, Cal. Filed Nov. 10, 1883. (No model.)

Brief.—A suspension rail-joint consisting of the usual fish-plates and bolts, longitudinal side plates, a chair with upwardly-extending arms, a locking-block on one side of the rail, and an angle locking-block on the other side, having its outer surface beveled, and its sides of such a height that its upper edge will be flush with the tread of the rail.

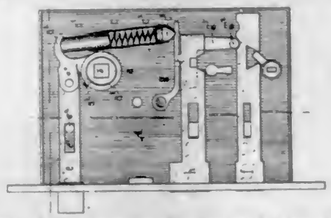
Claim.—The combination, with the rails A A, of the B B, and fish-plates C C, of the side plates, D D, having apertures I I, chair E, having upwardly-extending ends, and provided with apertures H H, locking-block G, having aperture K, and angle locking-block F, provided with apertures J J, and having its outer surface at either end beveled or rounded and its sides of such a height that when placed in operative position its upper edge will be flush with the top of the rails A A, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

293,547. FENCE. NELSON WERTH and WILLIAM SPIKER, Mendon, Ohio. Filed Sept. 7, 1883. (No model.)



Claim.—The combination, in a portable fence, of the bottom sills, A, recessed on the under side, posts consisting of the uprights C and D, vertical wire ties E, connecting said uprights, and twisted to form a knot, F, in the recessed sills, planks or rails B H, spacing-blocks I, braces K, and wire ties L, constructed and combined to form a portable fence-panel, substantially as and for the purpose shown and set forth.

293,548. DOOR-LOCK. BRUNO WESSELMANN, Hamburg, Germany. Filed Oct. 2, 1883. (No model.) Patented in Germany Dec. 9, 1882, No. 23,911.



Claim.—1. The combination of the knob-spindle *b*, nut *a a'*, having ears a^4 and extension-hook a^2, spring-bolt *e*, hinged to the ears a^4, spring-actuated slide-bolt *c'*, guide-socket c^3, tumbler *g*, having a seat for the guide-socket and a downwardly-extending arm, g' g^3, main bolt *h*, and latch *f*, substantially as set forth.

2. The combination of the knob-spindle *b*, nut *a a'*, having extension-hook a^2, spring-bolt *e*, hinged to ears of the nut *a a'*, tumbler *g*, main bolt *h*, and a spring-actuated bolt *c'* and guide-socket c^3, interposed between the hook a^2 and the tumbler *g*, substantially as set forth.

3. The combination of the knob-spindle *b*, interior nut, *a*, placed on said spindle, and having a guide-stop, a^3, exterior sleeve, *a'*, having a guide-slot, a^5, extension-hook a^2, and ears a^4, spring-bolt *e*, hinged to the ears a^4, and a spiral spring, *d*, interposed between a shoulder, *b'*, of the spindle and the interior nut, *a*, substantially as set forth.

293,549. UMBRELLA-RUNNER. JAMES BERNARD WILSON, Philadelphia, Pa. Filed June 7, 1883. (No model.)





Claim.—1. An umbrella-runner comprising a sleeve, C, and notch D, said sleeve having lips *c c*, which project from its upper edge and beyond the top of said notch, substantially as shown and described.

2. The method of producing blanks B B for forming umbrella-runner sleeves, said blanks having each projecting lips *b b* at one end, and curved edges *b' b'* at the other, the lips *b b* of one blank being cut from the plate on either side of the curved edges of the next blank, substantially as shown and described.

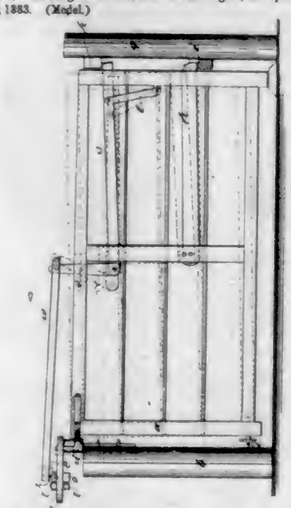
3. An umbrella-runner comprising a sleeve, C, and notch D, with lever-catch E, said lever being supported on flanges c^3 c^3, composed of the outwardly-turned edges of the sleeve, said lever terminating below the notch, and said flanges being reduced in height between the edd of the lever and notch, to form a recess for the reception of a binding or finish, substantially as shown and described.

4. In an umbrella-runner comprising a sleeve, C, and lever-catch E, said lever being pivoted on supports c^3 c^3, and terminating below the notch, arresting-stops for limiting the inward motion of said lever-catch, substantially as shown and described.

5. In an umbrella-runner comprising a sleeve, C, with flanges c^3 c^3 and a lever-catch, E, pivoted thereon, the lugs c^4 c^4, struck up from said flanges and forming stops to limit the inward motion of said lever, substantially as shown and described.

6. The combination of sleeve C and notch D, fastened together by means of lugs struck up from said sleeve and turned over on said notch, substantially as shown and described.

293,550. GATE-OPERATING APPARATUS. HENRY ZIEGLER, North Lima, Ohio, assignor to himself and Enos Ziegler, same place. Filed Aug. 13, 1883. (Model.)



Claim.—1. The upper hinge of the gate, consisting of the cranked pivots *d* and the slotted plate *e*, pivoted to the post at *g*, and having cords connected to and extending along the roadway for opening and closing the gate, substantially as described.

2. The combination of the slotted plate *e*, pivoted to post *b*, levers *l*, and cords *j*, with the gate *a*, having pivots *d*, eccentric to the hinge *c*, said pivots working in the slots of the plate *e*, substantially as described.

3. The combination of stops *o*, with the levers *l*, slotted plate *e*, and the gate *a*, said gate being provided with pivots *d*, and the plate being pivoted to the post, substantially as described.

4. The combination of the stop *p*, levers *s* and *u*, and bar *w*, with the gate *a* and the plate *e*, having slots *f*, said gate being connected to the plate by the eccentric pivots *d*, which enter said slots *f*, and the plate being pivoted to the post *b*, and having cords attached to it for opening and closing the gate, substantially as described.

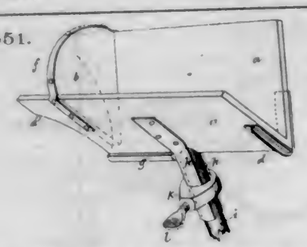
293,551. BUILDER'S HOD. STANLEY ASHWORTH, New York, N. Y. Filed Oct. 19, 1883. (No model.)

Claim.—1. As a new article of manufacture, a builder's hod having its trough or box made of paper, substantially as herein set forth.

2. A hod having its V-shaped trough formed of a sheet or mass of paper without seams or joint at the apex of the V, substantially as and for the purpose set forth.

3. A hod having its box formed entire of paper, or equivalent plastic material, pressed or molded in one integral structure without seams or joints at its angles, substantially as and for the purpose set forth.

293,551.



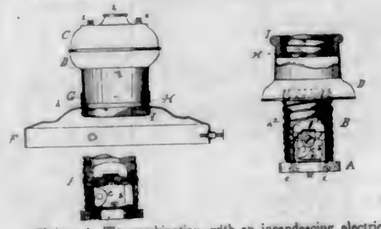
4. A hod having its trough formed of paper strengthened by metallic fittings affixed at the edges thereof, substantially as herein set forth.

5. The combination, with a hod-box, of the metallic strengthening-eroteh *d*, affixed thereto at the edge of its open end, substantially as and for the purpose set forth.

6. A hod having its fork formed of two strips, *h h*, affixed to the box, with a handle adapted to fit between the same, and an encircling clasp to securely clamp the strips to the handle, substantially as set forth.

7. The combination, with a hod-box, of the metal strips *h h*, affixed thereto, the handle *a*, adapted to fit between the same, and the collar *k* and set-screw *l*, arranged to clasp said strips, substantially as and for the purpose set forth.

293,552. SOCKET FOR ELECTRIC LAMPS. SIGMUND BERGMANN, New York, N. Y., assignor to Bergmann & Co., same place. Filed Oct. 9, 1882. (Model.)



Claim.—1. The combination, with an incandescing electric-lamp socket, of a shade-holder removably secured directly upon said socket, whereby said shade-holder may be removed without displacing said socket, substantially as set forth.

2. The combination, with an incandescing electric-lamp socket, of a shade-holder having a central ring or band fitting over said socket, and means for removably holding said band over said socket, substantially as set forth.

3. The combination, with the inner and outer metal portions of an incandescing electric-lamp socket, of a shade-holder fitting upon said outer portion, and a removable screw-threaded flanged ring of insulating material placed between said inner and outer portions, whereby the shade-holder is held removably, substantially as set forth.

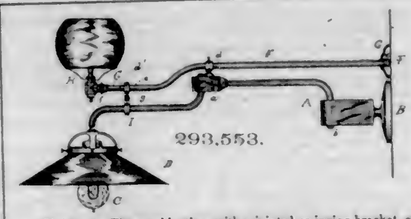
4. The combination, with the inner and outer metallic portions of an incandescing electric-lamp socket, of a removable screw-threaded insulating band or ring placed between them, substantially as set forth.

5. In an incandescing electric-lamp socket, the combination, with a screw-threaded metallic sleeve, B, forming one terminal, of an insulating-piece, *f*, supported by a metal plate, *a*, above the bottom of sleeve B, the metal plate *g* upon piece *f* forming the other terminal, the binding-screws *d d'* within said sleeve B, and openings permitting the introduction of the circuit-wires within said sleeve B, and their proper connection with the binding-screws, substantially as set forth.

6. In an incandescing electric-lamp socket, the combination, with an insulating-base perforated to permit the passage of the circuit-wires therethrough, and the socket terminals supported upon said base, of a metal cap, C, secured to said base and having a central opening, *h*, the metal sleeve H, and securing device I, substantially as set forth.

7. In an incandescing electric-lamp socket, the combination, with base A, of the metal screw-sleeve B, supported thereon and forming one terminal, the other terminal supported within said sleeve, openings A^7 in the sleeve B, the cap C, secured to the base A, and the sleeve D, adapted to be passed over the sleeve B, and secured in position after the circuit-connections are made, substantially as set forth.

293,553. COMBINED GAS AND ELECTRIC LAMP FIXTURE. SIGMUND BERGMANN, New York, N. Y., assignor to Bergmann & Co., same place. Filed Oct. 9, 1882. (No model.)



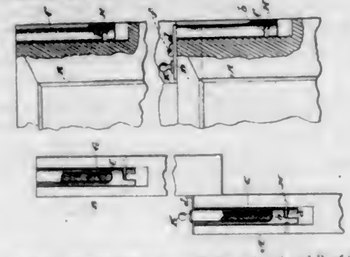
Claim.—1. The combination, with a jointed swinging bracket, of a gas-burner and an electric lamp supported by such jointed swinging bracket, and a flexible connection supported by said jointed swinging bracket for supplying one of such two devices with its lighting agent, the other being supplied through the bracket, substantially as set forth.

2. The combination, in a swinging bracket, of a jointed portion supporting both an incandescing electric lamp and a gas-burner, and so constructed and connected as to supply one of them with its lighting agent, and a flexible portion supported by the jointed portion, so constructed and connected as to supply the other, substantially as set forth.

3. The combination, with an electrical jointed swinging bracket carrying concealed circuit-wires, of a flexible tube supported by said bracket and carrying a gas-burner, substantially as set forth.

4. The combination, with the electrical jointed swinging bracket carrying an electric lamp, of the flexible gas-tube connected with the wall gas-pipe, the metal pipe G, secured to the end of the flexible tube and carrying the gas-burner, and the clamp I, supporting the pipe G from the electrical bracket, substantially as set forth.

293,554. SASH-CORD FASTENER. HENRY L. BLODGETT, Chicago, Ill., assignor to the Goforth Window Company, same place. Filed Jan. 23, 1883. (No model.)

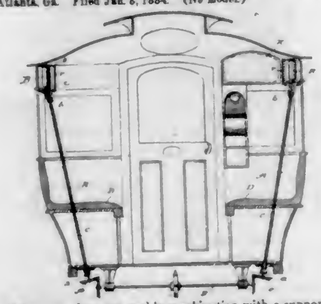


Claim.—1. The combination, with the sashes A and B, of the horizontal rotating plate D, having the laterally-projecting side arms, F, provided with the vertical projection *d* for engaging the pin on the sash, substantially as described.

2. The combination of the cord-tube C, having the bayonet-joint *a b*, with the coupling-pin H of the sash, all constructed and operating substantially as specified.

3. The cord-tube C, constructed with the interior annular shoulder, *g*, in combination with the cord G and the tapering screw *h*, passing into the cord and wedging the same within the tube under the said shoulder, substantially as described.

293,555. TRAVELING SIGN FOR CARS. THOMAS H. BOWLES, Atlanta, Ga. Filed Jan. 8, 1884. (No model.)



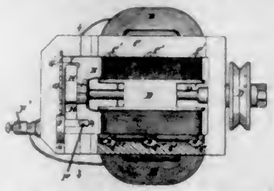
Claim.—1. In a car, and in combination with a supporting-case for such mechanism, an endless band provided with advertisements, rollers supporting the same, an inclined shaft connected by a universal joint

with one of said rollers, bearings *o b*, supporting the shaft, and means for operating the same, substantially as described.

2. The rollers B and *m*, the band mounted thereon, and means for moving the same continuously, said rollers being combined with a case formed of upper and lower strips, and a longitudinal dividing-board forming a support for said strips, and located between the parallel portions of the band, thereby preventing rubbing of such portions against each other, all as set forth.

3. The combination of the supporting and driving rollers B and *m*, carrying an endless band, the case composed of upper and lower strips, and the supporting and dividing board, together with the guide-rollers *p p*, supported in such case between the advertising-band and the frame of the car, whereby such band is deflected and freed from friction against the car-frame, all as set forth.

293,556. ELECTRIC MOTOR. WALTER BRADBURY, St. Louis, Mo., assignor to George S. Calhoun, same place. Filed May 25, 1883. (No model.)



Claim.—1. In an electric motor, the armature provided with ribs of double-V-shape form, and the magnets having corresponding grooves tapering toward the center from both directions, substantially as shown and described, for the purpose set forth.

2. In an electric motor, the adjustable disk provided with notches on its periphery, to be engaged by a pawl secured to the frame, and provided with brushes or plates, whose free ends bear upon the commutator, and one of which is insulated and has connected to it one of the conducting-wires, substantially as shown and described, for the purpose set forth.

293,557. CULTIVATOR. BYRON G. BRADLEY, Chicago, Ill., assignor to Furst & Bradley Manufacturing Company, same place. Filed Apr. 30, 1883. (No model.)

Brief.—A fixed cross-bar beneath the evener affords a central pivot upon which the hangers turn as the evener vibrates.



Claim.—1. The hangers C, loosely connected with the draft-evener, and having a central pivotal connection with a fixed support, and constructed to receive adjustably the draft-connection, substantially as described.

2. The combination of the draft-evener A, support B, the hangers C, pivoted to the support and connected with the draft-evener, the single-trees E, and hooks or rods D, connecting the single-trees to the hangers, substantially as described.

293,558. REED-BOARD. MELLEN BRAY, Newton, Mass. Filed Aug. 8, 1883. (No model.)



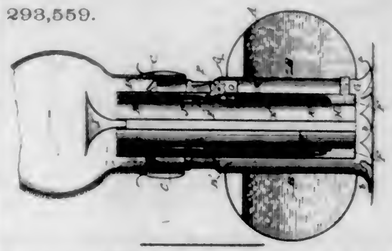
Claim.—1. In a musical instrument, a sheet-metal reed-board provided with a series of openings for the passage of air, and having a portion thereof upon each side of each of said openings bent upward to form guides to receive the reed-plates, substantially as described.

2. In combination with a series of reed-plates and tongues, a sheet-metal reed-board provided with a series of openings, *a*, a series of guides for receiving said reed-plates, formed by striking up or bending portions of said board, substantially as and for the purposes described.

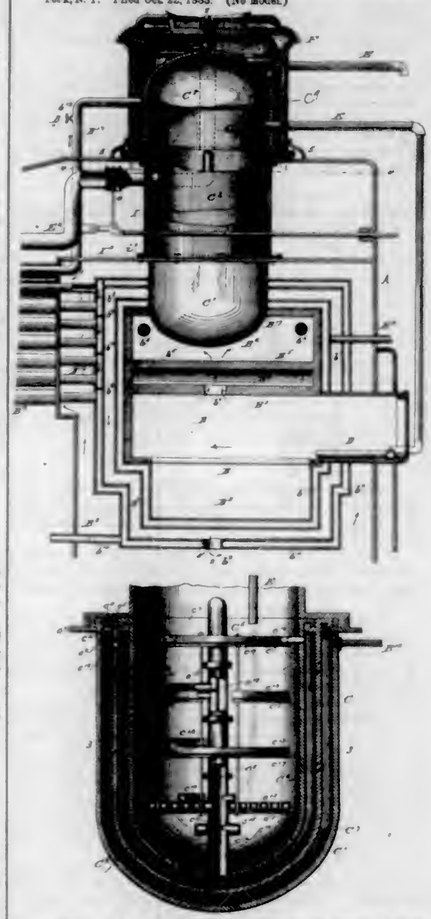
293,559. LAMP. LEWIS OLSON BREKKE, Decorah, Iowa, assignor of one-half to L. E. Davidson, same place. Filed Aug. 23, 1883. (No model.)

Claim.—The combination, with the oil-reservoir, wick-tube, and central air-flue, of the cylindrical casing B, inserted centrally through the reservoir, having its open top shaped to form a seat for the chimney-holder and its projecting lower open end notched and bent outwardly to form the flaring feet or supports *b b*, as shown and set forth.

293,559.



293,560. HYDROCARBON-FURNACE. WILLIAM H. BROOKS, New York, N. Y. Filed Oct. 22, 1883. (No model.)



Claim.—1. In a hydrocarbon-furnace, a fire-box entirely inclosed within a superheater, forming the walls of the fire-box, substantially as described.

2. In a boiler, the combination of a fire-box and a superheater entirely inclosing said fire-box, and divided into two parts by the smoke-flue connected with said fire-box, and having inlet B^{10}, connected to the outer part, and outlet-pipe B^{12}, connected to the inner part, substantially as described, and for the purpose set forth.

3. In a hydrocarbon-furnace, the combination of a water-chamber having flues, and a fire-box connected with said flues and entirely inclosed within a superheater connected with the water-chamber, substantially as described.

4. In a hydrocarbon-furnace, the combination of a fire-box, a superheater inclosing and forming the walls of the fire-box, a flue inclosing the superheater and connected with the fire-box, and pipes connecting said superheater and the steam-space of the boiler, substantially as described.

5. In a hydrocarbon-furnace, the combination of a fire-box, a superheater inclosing said fire-box, a flue inclosing the superheater and connected to said fire-box, fire-tubes connecting said flues with the exit, and pipes passing through said tubes and connecting the superheater and the steam-space of the boiler, substantially as described.

6. In a hydrocarbon-furnace, the combination of a fire-box, a superheater inclosing and forming the walls of the fire-box, and a retort projecting through the superheater into the fire-box, substantially as described.

7. In a hydrocarbon-furnace, the combination of a fire-box, a superheater inclosing and forming the walls of the fire-box, and a retort projecting through the superheater into the fire-box and connected with the superheater by a supply-pipe, substantially as described.

8. In a hydrocarbon-furnace, the combination of a fire-box, a superheater inclosing the fire-box, a flue inclosing the superheater, and a retort projecting through the superheater and flue into the fire-box, substantially as described.

9. In a hydrocarbon-furnace, the combination of a boiler having a steam-dome, and a retort projecting into said dome, substantially as described.

10. In a hydrocarbon-furnace, the combination of a boiler having a steam-dome, a fire-box below said dome, and a retort projecting into said dome and fire-box, substantially as described.

11. In a hydrocarbon-furnace, the combination of a boiler having a steam-dome, a fire-box below said dome, a superheater inclosing said fire-box, and a retort projecting into said dome and through the superheater into the fire-box, substantially as described.

12. In a hydrocarbon-furnace, the combination of a boiler having a steam-dome, a fire-box below said dome, a superheater inclosing said fire-box, a flue inclosing said superheater, and a retort projecting into said dome and through the flue and superheater to said fire-box, and connected with the superheater by a supply-pipe, substantially as described.

13. In a hydrocarbon-furnace, a retort having its cap inclosed within a second cap, substantially as described.

14. In a hydrocarbon-furnace, the combination of a boiler, a fire-box, and a retort, said retort projecting through the top of the boiler and into the fire-box, substantially as described.

15. In a hydrocarbon-furnace, the combination of a casing connecting the crown-sheet and top of the boiler, and a retort having a flange which rests upon the top of the boiler, substantially as described.

16. In a hydrocarbon-furnace, the combination of a boiler having a dome, a retort projecting into said dome, a steam-supply having a throttle-valve, and a valve-rod conforming to the shape of the retort and extending to the cab, substantially as described.

17. In a hydrocarbon-furnace, a vaporizer consisting of a tube divided in two vertical passages, plates having spiral passages connected with the vertical passages, and a perforated plate below said plates connected with one of the vertical passages, substantially as described.

18. In a hydrocarbon-furnace, a vaporizer consisting of a tube formed in sections having longitudinal partitions, plates having passages connected with said tube, a perforated plate for discharging steam, and means for holding the sections of the tube together, substantially as described.

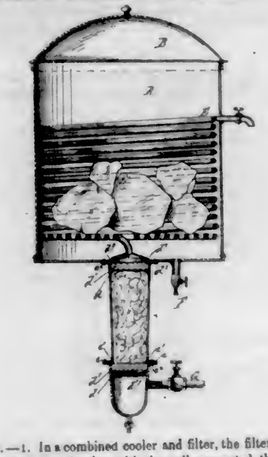
19. In a hydrocarbon-furnace, a vaporizer consisting of a tube having longitudinal and horizontal partitions, coils around and each connected with said tube above and below the partitions, and a perforated plate for discharging steam, substantially as and for the purpose set forth.

293,561. TELEPHONE-TRANSMITTER. HENRY C. BUCK, Somerville, assignor to Francis M. Holmes, Boston, Mass. Filed June 27, 1881. (No model.)



Claim.—In a telephone-transmitter, the combination of an electrode, *b*, mounted on a stand, B, constructed substantially as described, a base, D, which supports the stand B, and the wire *f*, electrically connected with base D, stand B, and electrode *b*, with the diaphragm A, provided with an electrode, *a*, and wire *f*, substantially as and for the purposes set forth.

293,562. COMBINED WATER FILTER AND COOLER. FRANK E. CADY, Auburn, N. Y. Filed June 25, 1883. (No model.)



Claim.—1. In a combined cooler and filter, the filtering and sediment chambers, in combination with the coil connected therewith, and forming a continuous passage from said chambers to the outlet-pipe, substantially as described.

2. In a combined cooler and filter, a spiral coil for holding the filtered water, constituting a receptacle for the ice, and forming a continuous passage from the filter to the outlet-pipe, substantially as and for the purpose set forth.

3. In a combined filter and cooler, the combination, with a supply pipe or main, of a sediment-chamber arranged below the filter, a coil forming a receptacle for the ice, and a filter arranged between the sediment-chamber and coil for filtering the water in its passage from the supply to the outlet pipe, substantially as described.

4. In a combined cooler and filter, the combination, with the supply pipe or main, and with the filter and coil, of a cooling-chamber interposed between the filter and coil, substantially as and for the purpose described.

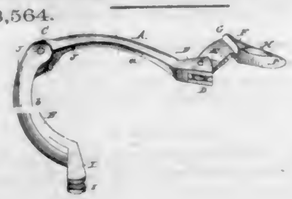
5. In a combined filter and cooler, the combination, with the coil forming a receptacle for the ice, of the inclosing-case surrounding the coil, and a filter located outside of the inclosing-case, and between the supply-pipe and coil, substantially as described.

293,563. ELECTRIC BATTERY. CHARLES L. CLARKE and JOHN LEDUC, Manchester, County of Lancaster, England, assignors to the Domestic Electric Manufacturing Company, New York, N. Y. Filed Mar. 20, 1882. (No model.) Patented in England Mar. 1, 1882, No. 985; in France Mar. 11, 1882, No. 147,830; in Belgium Mar. 14, 1882, No. 57,354; in Germany Mar. 31, 1882, No. 21,985; in Canada Apr. 3, 1882, No. 14,563; in Italy Apr. 10, 1882, No. 14,079; in Austria June 24, 1882, No. 11,800, and in Spain Aug. 1, 1882, No. 2,859



Claim.—An electric-battery cell consisting of a case containing zinc and silver-foil and chloride of silver, with a solution of an alkaline sulphate as an excitant, substantially as described.

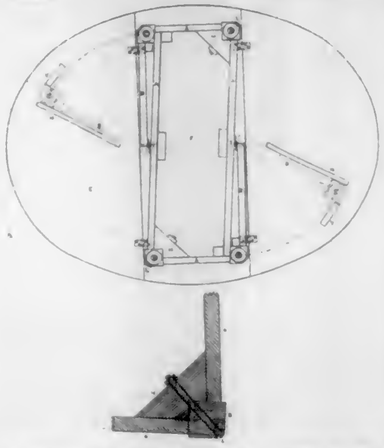
293,564.



293,564. BAG-FASTENER. CORNELIOUS COLLINS, Ottumwa, Iowa, assignor of two-thirds to John B. Ennis and William W. Ennis, both of Ottumwa, Iowa. Filed Nov. 12, 1883. (No model.)

Claim.—In a bag clasp or fastener, the curved parts A and B, having beveled edges *a b*, hinged at C, and provided with the projecting lips or ears D and I, in combination with the hinged latch E, provided with the shouldered thumb-piece F, recessed at H, substantially as set forth.

293,565. LEAF-TABLE. JACOB A. CONOVER, New York, N. Y., assignor to Albert F. Childs, Washington, D. C. Filed June 24, 1882. (No model.)



Claim.—1. In a table, a top composed of a central part and two leaves hinged thereto, in combination with a supporting-frame consisting of parallel side and end rails, and two legs attached thereto, the said frame being of less width than the central part of the top, and attached to the same diagonally, and two leaf-supporting arms hinged to the supporting-frame, and having each a leg attached thereto, substantially as and for the purpose set forth.

2. In a table, a top composed of a central part and two leaves hinged thereto, in combination with a supporting-frame consisting of a frame having parallel side and end rails, and two legs attached to the said frame at diagonally-opposite corners, the said frame being of less width than the central part of the top, and attached to the same diagonally, and two leaf-supporting arms having each a leg, as set forth, and hinged to the supporting-frame, as described, as and for the purpose specified.

3. In a table, a top composed of a central part and two leaves hinged thereto, in combination with a supporting-frame consisting of parallel side and end rails, and two legs attached thereto at diagonally-opposite corners, said frame being of less width than the central part of the top, and attached diagonally to the central part of the same, with the legs near the edges of the same, and two leaf-supporting arms having each a leg, as set forth, and hinged to the frame, as described, so that each arm may be folded against the side of the frame and along that portion of the frame farthest from the edge of the central part of the table, as and for the purpose set forth.

4. The combination of a table-top composed of a central part and a leaf hinged thereto with a supporting-frame consisting of parallel side and end rails, and two legs attached thereto at diagonally-opposite corners, said frame being of less width than the central part of the top, and attached diagonally to the central part of the same, with the legs near the edges of the same, and a leaf-supporting arm having a leg, as set forth, and hinged to the frame, as described, so that said arm may be folded against the side of the frame, and along that portion of the frame farthest from the edge of the central part of the table, the opposite side of the table having means for supporting it, as and for the purpose set forth.

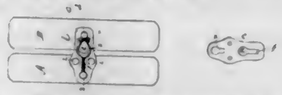
5. The combination, with a table-leg and a frame for supporting a table-top, of a wooden block in the form of a scalene triangle secured to said frame, and having a notch the faces of which are at right angles to each other, to receive one corner of the leg D, a bolt, and a nut, as and for the purposes set forth.

293,566. PAPER MANUFACTURE FROM THE PLANT GALEGA. HENRIQUE DA COSTA CORRÊA LEITE, Lisbon, Portugal. Filed Jan. 23, 1884. (Specimens.)

Claim.—1. The process of making paper from the galega plant, which consists in placing the plant in a water bath, then rolling or kneading it, then boiling it in lime-water, then boiling it in a lotion of lime and soda, after which it is again washed, compressed, and placed in a bath of chloride of lime, and after being removed from this bath and dried is finally triturated and refined, substantially as set forth.

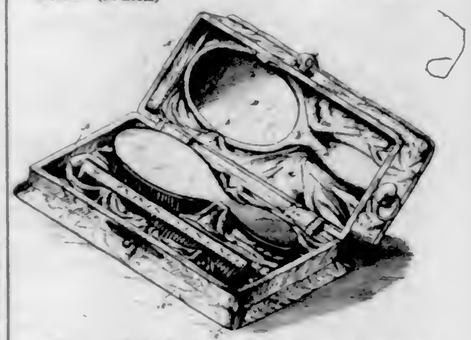
2. As a new article of manufacture, paper made from the galega plant, the pulp being obtained by washing and boiling the plant in suitable solutions, then rolling, triturating, and refining it, the paper requiring no admixture of rag pulp for felting it, substantially as set forth.

293,567. CORSET-BUSK FASTENING. DAVID ESSEX, Corona, N. J., assignor, by mesne assignments, to Theodore C. Bates, North Brookfield, Mass. Filed Mar. 15, 1880. (No model.)



Claim.—The combination, with a corset-busk, of an eye-plate provided with the opening *x*, to receive and hold the rear part of the laterally-movable spring-fastening *l*, substantially as shown and described.

293,568. TOILET-CASE. FRANZ FEIGE, New York, N. Y. Filed July 16, 1883. (No model.)



Claim.—1. In a toilet-case having a textile cover, I, uncut and folded at the corners *i*, as described, the combination of the tray A, having the inclined comb-seat *g k* and spring, with the cover A′, having mirror side springs, *b*, and the guides *b′*, all constructed substantially as described.

2. In a toilet-case, the combination of the tray A, the inclined partition or comb-seat *g k*, and the spring, substantially as described.

3. In a toilet-case, the tray A, having brush-handle springs *d*, and the comb-seat *g k*, in combination with the cover A′, having the mirror side springs, *b*, the handle guides or stays *b′*, and the flexible covering, substantially as described.

4. A toilet-case having a textile cover, I, uncut at the corners *i*, which are folded or crimped and lapped at the upper edge and finished, substantially as described.

293,569. SNOW-PLOW. ISAAC S. FILBERT, Washington, D. C. Filed July 27, 1883. (No model.)

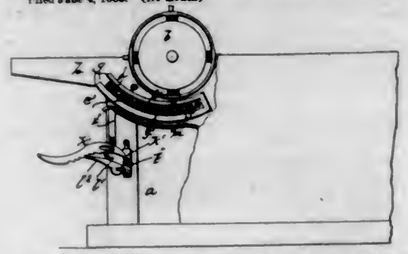
Brief.—A scraper for clearing gutters has a landside to run next the curb, a receptacle for weights, and a diagonal mold-board with a rod projecting from it at right angles to the landside, to which a clevis connecting the draft-pole thereto is pivoted. The draft-pole has an adjustable connection to the point of the scraper.



Claim.—1. A snow-plow adapted for cleaning street-gutters, consisting of a landside, A, parallel with the line of draft, a mold-board, B, oblique thereto, a receptacle for the weights F, and a stiff pole, I, connected by a pivoted clevis to the beam G, projecting laterally from the mold-board, substantially as shown and described.

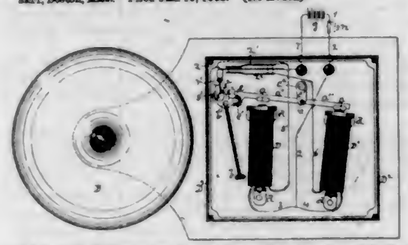
2. In combination with the plow A B and tongue or pole I, connected by pivoted clevis to the mold-board in rear of the point of the plow, the guard chain or rod J, having one end secured to the point of the plow and the other to the pole or tongue in advance of clevis attachment, substantially as and for the purpose set forth.

293,570. THRASHING-MACHINE. MARION JACKSON FOSTER, Ashley, Ill., assignor, by mesne assignments, of one-half to Wm. H. Carter and Martha J. Carter, both of same place, and William T. Moore, Richview, Ill. Filed June 4, 1883. (No model.)



Claim.—The combination, with the concave constructed as described, of the cross-bar, the notched lever for operating the concave through the cross-bar, the cross-arm, the pivoted pawl, and spiral spring, substantially as specified.

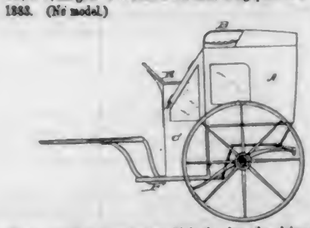
293,571. ELECTRIC BELL-RINGING APPARATUS. OSCAR GASSETT, Boston, Mass. Filed Jan. 19, 1883. (No model.)



Claim.—1. The armature-lever *a′*, recessed as at *e*, in combination with the three-pronged rocker *e²* and circuit-changer *r*, substantially as set forth.

2. The electro-magnets D D′ and their respective circuits, the armature-lever *a′*, recessed at *e*, the three-pronged rocker *e²*, carrying a vibrating bell-hammer, *b*, the circuit-changer *r*, and contact-terminals *z z′ z²*, in combination with each other, with reference to reversing the current after and only after the corresponding armature motion has ceased, substantially as set forth.

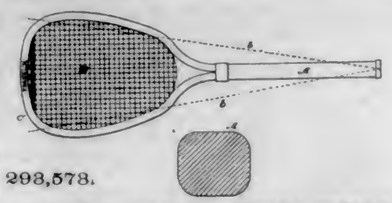
293,572. TWO-WHEELED VEHICLE. HARRY GREENFIELD, Harrison, N. J., assignor to Hincks & Johnson, Bridgeport, Conn. Filed Oct. 23, 1883. (No model.)



Claim.—A two-wheel vehicle having the driver's seat placed above the occupant's seat and over or forward of the axle, and provided on the front side with doors C and supplemental doors D all substantially as herein set forth.

293,573. TENNIS-RACQUET. ARTHUR T. GREENOUGH and WILLIAM H. BOARDMAN, Franklin, N. J., assignors to Andrew Peck and W. Irving Snyder, both of New York, N. Y. Filed Dec. 19, 1883. (No model.)

Claim.—1. A tennis-racquet having a stringed bowl, B, formed by a rim, C, shaped so that its sides will follow substantially lines which diverge equally from the center line of the handle and meet at the center of the end of the handle, as shown in Fig. 1, as and for the purposes shown and described.



293,573.

2. A tennis racquet or bat with rim C beveled or chamfered on the inner face surrounding the strings, substantially as shown and described.

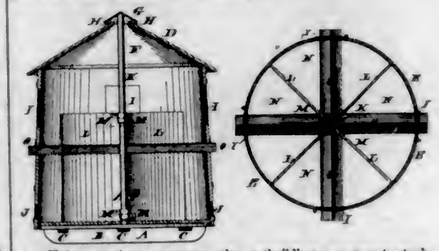
3. A tennis-racquet with rim C chamfered or beveled on the inner edge, so that the plane of the chamfer or bevel is substantially tangent to the surface of a ball which touches the surface of the stringed portion and the rim at the same time, as and for the purpose shown and described.

4. In a tennis racquet or bat, the chamfered or beveled rim C, formed and shaped to form a bowl to receive strings, as shown in Fig. 1, in combination with a handle, A, substantially as shown and described.

5. In a tennis-racquet, the rim C, with its inner edge cut away so as to form a concave bevel from the strings to the face of the rim, substantially as shown and described.

293,574. GRANARY. R. MONROE GRIER, St. Louis, Mo. Filed Sept. 22, 1883. (No model.)

Brief.—Consists of a sectional oval-shaped portable structure having a roof with a cap and ventilator, the whole provided with encircling-bands of metal or wood and mounted upon runners, and provided with partitions, doors, ventilators, and center pole.



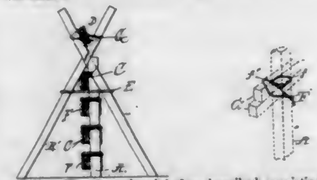
Claim.—1. As a granary or other outbuilding, except water-tank, a circular or oval-shaped portable structure composed of a series of sections or panels, and the whole provided with encircling outside bands or hoops, and mounted upon the foundation-skid A, substantially as shown and described.

2. A granary or outbuilding, except water-tank, composed of a series of circular sectional panels provided with hoops or encircling-bands of metal or wood, in combination with partitions, doors, and ventilators, substantially as and for the purpose specified.

3. As a granary or outbuilding, except water-tank, a circular structure provided with encircling hoops or bands, in combination with the runners B and cross-ties C.

4. In a granary, domicile, ice, fuel, or animal house, or other shelter, a circular or oval-shaped portable structure provided with hoops or bands of metal or wood, in combination with skid A, roof F, cap G, ventilators H and O, doors I and J, center pole, K, and partitions L, all substantially as and for the purpose set forth.

293,575. FENCE. JOHN A. GROVE, Bluffton, Ind. Filed July 14, 1883. (No model.)



Claim.—The fence hereinbefore described, consisting of the single posts having their upper ends beveled and extended above the top rails of the panels, the rails C, having their ends lapped one upon the other and upon the posts A, the double-loop wire fastenings F, the stakes B, the stakes B′, rested upon the beveled upper end of the posts A, the riders D, bound to the stakes by the wires G, and the adjustable loops E, passed around the stakes and between two adjacent rails, as and for the purpose set forth.

293,576. SAW FOR COTTON-GINS, &c. DANL. B. HASELTON, Charleston, S. C. Filed Nov. 17, 1883. (No model.)

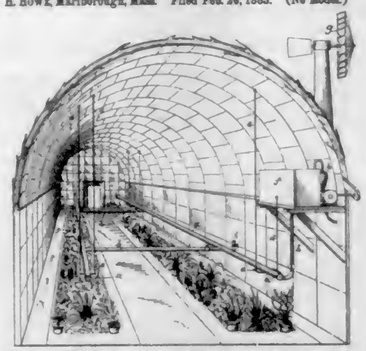


Claim.—1. A saw provided with a series of angular teeth having their heels higher than their toes, as and for the purpose set forth.

2. A saw having a series of angular teeth, C, the points or toes D thereof being lower than the heels E, and having plane breasts *a*, as set forth.

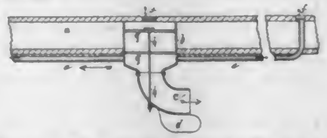
3. A saw having angular teeth C, provided with plane breasts *a*, recesses F, and heels E higher than the points or toes D, as set forth.

293,577. WATERING APPARATUS FOR HOT-HOUSES. WARREN H. HOWE, Marlborough, Mass. Filed Feb. 26, 1883. (No model.)



Claim.—The improved sprinkling apparatus for hot-houses, consisting of a system of distributing perforated pipes suitably suspended in the house, and an elevated supply tank or pump, and connecting-pipes, branches, and regulating-cocks, contrived for the supply and distribution of the water, for regulating the moisture and temperature of the air, substantially as described.

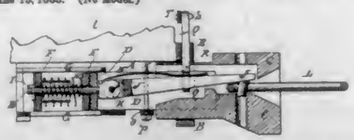
293,578. CAR-VENTILATOR. OWEN H. JONES, Hartford, Conn., assignor of one-half to Frank C. Smith, New York, N.Y. Filed Feb. 15, 1883. (No model.)



Claim.—1. The combination of air-box *b* with air-pipes *c c*, said pipes being provided with registers, and said box being provided with an exit-tube adapted to revolve on the air-box, and provided with a means to turn the opening in a direction opposite that in which the car is moving, substantially as shown.

2. As a car-ventilator, box *b*, pipes *c c*, tube *c*, having vane *d*, and a rod, A, all constructed and operating in combination substantially as shown.

293,579. CAR-COUPLING. THOMAS COKE JONES, Willows, Cal. Filed June 15, 1883. (No model.)



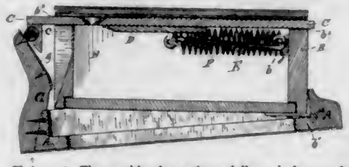
Claim.—1. A car-coupling constructed substantially as herein shown and described, and consisting of the draw-head A, the U-shaped draw-bar D, the spring-pressed coupling-hook J, the bow and yoke N O, and a mechanism for raising the coupling-hook, as set forth.

2. In a car-coupling, the combination, with the draw-head A, the U-shaped draw-bar D, the spring coupling-hook J, the bow N, and yoke O, of the lifting-bar Q, the lever T, the catch-bar X, and the bar Y, substantially as shown and described.

3. In a car-coupling, the combination, with the draw-head A and the U-shaped draw-bar D, of the coupling-hook J, provided with a recess at its rear end, spring M, bow N, yoke O, draw-rod E, cross-bars F, slides G, and spring H, substantially as shown and described.

4. In a car-coupling, the combination, with the draw-head A, the U-shaped draw-bar D, the coupling-hook J, the bow N, and yoke O, of the lifting-lever Q, the lever T, the catch-bar X, keeper W, slotted bar Y, and foot-lever *b*, substantially as shown and described.

293,580. CIGAR-CUTTER. ALVA H. KIRK, Minneapolis, Minn. Filed Apr. 9, 1883. (No model.)



Claim.—1. The combination, substantially as before set forth, of a tilting box, a reciprocating gage-plate mounted thereon, and a movable cutting-blade pivoted to said gage-plate.

2. The combination, substantially as before set forth, of a tilting box, a reciprocating gage-plate mounted thereon, and a rotating curved cutting-blade eccentrically pivoted to said gage-plate.

3. The combination, substantially as before set forth, of the tilting box, the gage-plate mounted and adapted to slide thereon, the rotating curved cutting-blade eccentrically pivoted to the gage-plate, the connecting-rod, and the spring.

4. The combination, substantially as before set forth, of the stationary base, the fixed cam-grade thereof, the tilting box, the sliding gage-plate, the rotating curved cutting-blade pivoted to the gage-plate, the connecting-rod, and the spring.

5. A cigar-cutter, substantially such as before set forth, embodying a stationary base and a detachable tilting box.

293,581. FOOT-REST FOR VELOCIPEDES. WILSON KERNELY, Washington, Lehigh County, Pa. Filed Nov. 8, 1883. (No model.)



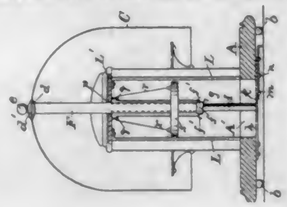
Claim.—1. The combination, with a foot-rest for bicycles and other like vehicles, of a foot-stand having an adjustable coupling for attaching the foot-stand to a crank-pin, substantially as and for the purposes described.

2. The combination, in a self-balancing foot-stand, of the hollow weight B and removable cap G, substantially as and for the purposes described.

3. The combination of the self-balancing foot-stand, the pivoted slotted plate C, hook F, and the loaded pendant B, substantially as and for the purposes described.

4. In a self-balancing foot-rest, the combination of a laterally-adjustable plate, a hollow loaded pendant, and means for tightening or loosening the latter on a crank-pin, all constructed and adapted to operate substantially in the manner and for the purposes described.

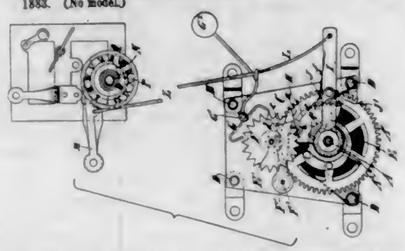
293,582. SHOW-CASE. DANIEL E. LADD and ELIJAH J. B. WHITAKER, Baltimore, Md.; said Ladd assignor to William T. Whittaker, same place. Filed Aug. 2, 1883. Renewed Dec. 20, 1883. (No model.)



Claim.—1. The combination, with a show-case cover having a vertical support rigidly attached to and depending from the center of the cover, adapted to move vertically, of a cap-piece, L, serving as a guide for the support, standards to sustain the cap-piece, and cords and weights to counterpoise the show-case cover, as set forth.

2. The combination, with the show-case cover C, having a vertical support on which the same is sustained, provided with a catch, *g*, of a cap-piece, L', through which the vertical support may move freely, standards to sustain the cap-piece, cords and weights to counterpoise the show-case cover, and a latch-bar to engage with the catch, as set forth.

293,583. ALARM-CLOCK. CHARLES S. LEWIS, Waterbury, Conn., assignor to the Waterbury Clock Company, same place. Filed July 30, 1883. (No model.)



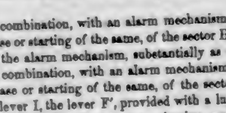
Claim.—1. The combination, with an alarm mechanism and a cam for controlling the release or starting of the same, of means so actuated by the cam that a second rotation of the cam will be necessary to cause the release or starting of the alarm mechanism.

2. The combination, with an alarm mechanism and a cam for controlling the release or starting of the same, of means so actuated by the cam that a second rotation of the cam will be necessary to cause the release or starting of the alarm mechanism, and means whereby the alarm mechanism will be blocked after running short periods, substantially as specified.

3. The combination, with an alarm mechanism and a cam controlling the release or starting of the same, of the sector H, lever I, and means for blocking the alarm mechanism, substantially as specified.

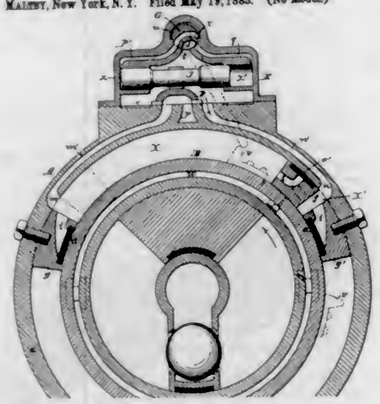
4. The combination, with an alarm mechanism and a cam controlling the release or starting of the same, of the sector H, provided with a lug, *b*, the lever I, the lever F', provided with a lug, *c*, and the escapement or strike wheel F of the alarm mechanism, provided with a pin, *d*, substantially as specified.

293,584. BARB FOR FENCE-WIRE. TYLER C. LOMB, Joliet, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Mar. 13, 1882. (No model.)

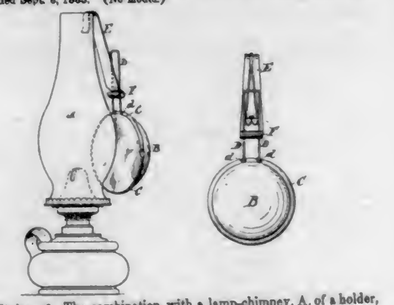


Claim.—As an improved article of manufacture, the barb made from a short piece of wire split at its ends, and the prongs or sharpened ends thus formed bent out, substantially as described.

293,585. OSCILLATING STEAM PUMPING-ENGINE. FRANK D. MALLEY, New York, N.Y. Filed May 19, 1883. (No model.)



293,586. LENS ATTACHMENT FOR LAMPS. CHARLES F. MARTINE, Boston, Mass., assignor of one-half to William H. Kimball, same place. Filed Sept. 6, 1883. (No model.)



Claim.—1. The combination, with a lamp-chimney, A, of a holder, E, having a hook at its upper end, and curved and perforated at its lower end, F, and the sliding loop D, attached to the frame C of a lens, B, substantially as and for the purpose set forth.

2. The rim or frame C of a lens, B, constructed with grooves *d d*, in combination with the loop D, as and for the purpose set forth.

293,587. STORE-SERVICE APPARATUS. WILLIAM MILLER, Boston, Mass. Filed Dec. 19, 1883. (No model.)



Claim.—1. In a store-service system, the combination, with a wire track, of vertically-movable end supports therefor, and mechanism, substantially such as hereinbefore described, connecting said end supports, whereby an attendant at either end of the track is enabled to raise either of said end supports and simultaneously lower the opposite support, and thereby give the track an inclination in either direction, as set forth.

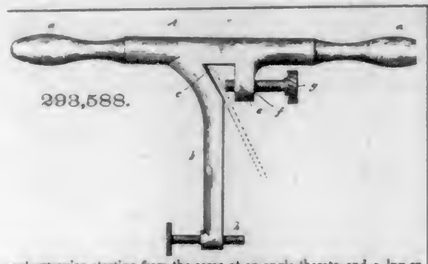
2. The combination of the wire track, the endless chains or bands *f f*, mounted on pulleys *g g g g*, and secured to said supports, and the endless cord or chain *j*, mounted on pulleys rotating with the pulleys *g g*, as set forth.

3. The combination of the wire track, the vertically-movable end supports, having detents to engage and hold a car when the latter reaches the lower end of the track, springs, as *g*, at the ends of the track, adapted to be compressed by the car, mechanism, substantially as described, for simultaneously raising either of said end supports and lowering the other, and a fixed device at each end of the track, adapted to disengage the car from the detent which holds it when the support carrying said detent is raised, thereby allowing the spring to impel or start the car, as set forth.

293,588. SAW-SET. JAMES M. MORRHEAD, The Plains, Va., assignor of one-half to J. Blake Kendall, Washington, D.C. Filed Sept. 27, 1883. (No model.)

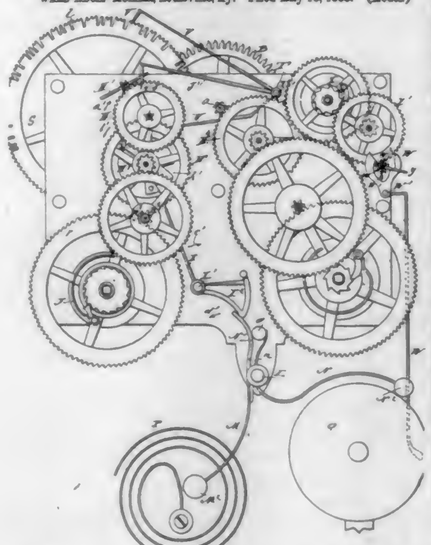
Claim.—A saw-set consisting of a tool having two handles, a lat-

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eral extension starting from the same at an angle thereto, and a lug or ear opposite said angular portion, the extension and lug being provided with set-screws, whereby the teeth of the saw may be bent or set at a uniform angle, substantially as specified.

293,589. STRIKING MECHANISM FOR EIGHT-DAY CLOCKS. EDWARD ADOLF MÜLLER, Louisville, Ky. Filed May 13, 1883. (Model.)



Claim.—1. The combination, with the second-hand arbor *a*, of the loose sleeve C, the spring *c*, the sixty-toothed wheel *c'*, and the wheel H^4, carrying pinion J^4 on its pivot, said wheel being a part of the hand-operating mechanism, as shown and described.

2. The combination, with the sleeve C, of the disk F, having equidistant studs *f* and cam projection F', the lever G, having one end behind said disk and an upwardly-projecting arm, G', the wheel H, flier H', and spring J, the latter being a part of the striking mechanism and connected with said wheel, as and for the purpose set forth.

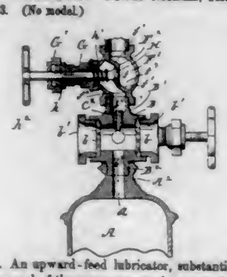
3. In a clock, the combination, with the hour-bell P, the quarter-hour bell Q, and the hammers M N, of the adjustable shaft I', provided with an arm, P, adapted to act on the upper ends of the hammers, and with an arm, I, adapted to be acted upon by the striking mechanism, substantially as herein shown and described, and for the purpose set forth.

4. In a clock, the combination, with the bells P Q, of the hammers M N, provided with the tongues M' N', the springs *m n*, and the adjustable shaft I', provided with the arm P, adapted to act on the tongues M' N', and with the arm I, adapted to be acted upon by the striking mechanism, substantially as herein shown and described, and for the purpose set forth.

5. In a clock, the combination, with the disk F, mounted on the sleeve C of the hour-hand, of the studs *f*, the cam-ridge F', the lever K, the spring K^3, the sliding shaft I', the arms I and P, the hammers M N, and the bells P Q, substantially as herein shown and described, and for the purpose set forth.

6. In a clock, the combination, with the alarm-hammer W, of the anchor W^3, the shaft *w*, the tooth *w'*, the pinion w^2, cog-wheels for revolving the pinion, the arm Y, and the alarm-releasing lever E, substantially as herein shown and described, and for the purpose set forth.

293,590. LUBRICATOR. ALONZO NOTEMAN, Toledo, Ohio. Filed June 30, 1883. (No model.)



Claim.—1. An upward-feed lubricator, substantially as described and shown, composed of the cup or reservoir arranged at the lower end thereof, the sight-chamber mounted thereon, and the condenser arranged above the sight-cylinder, the said reservoir, sight-cylinder, and condenser being arranged in a line, one above the other, and provided with connecting passages or openings, also arranged or formed in line with each other, as and for the purposes specified.

2. The lubricator, substantially as described and shown, consisting of the cup or reservoir A, the sight-cylinder mounted thereon, and closed at its ends by transparent plates, and communicating with the cup A through the passage b^2 *a*, the horizontal pipe D, connecting the sight-cylinder and the steam-pipe, the feed-pipe C', opening into the cylinder B at a point opposite the connecting-pipe D, the dropper C^2, threaded as shown, and adjustable into the cylinder B in line with the passage b^2 *a*, and the condenser F, communicating with the dropper C^2, and provided with suitable valve, F', the said condenser, dropper, and passage b^2 *a* being arranged in line with each other and relatively to the oil-feed and connecting-pipes C' D, all as and for the purposes specified.

3. In a lubricator, substantially as hereinbefore shown and described, the sight-chamber B, having its opposite ends or openings closed by transparent plates *b*, and provided with upper and lower nipples, B' B^2, and lateral nipples B^3 B^4, in combination with reservoir A, screwed on lower nipple, B', the condenser-pipe F, screwed on upper nipple, B', and provided with suitable valve, F', the feed-pipe C' and connecting-pipe D, screwed, respectively, on the nipples B^3 B^4, and the dropper C^2, forming the connection between the condensing-pipe and the sight-chamber B, and extended into the latter and adjustable vertically, in the manner as and for the purposes specified.

293,591. SLIDING BED FOR MACHINERY. FREDERICK OUTRAM, Montreal, Quebec, Canada. Filed Dec. 4, 1882. Renewed Nov. 6, 1883. (No model.) Patented in Canada July 5, 1882, No. 15,043.



Claim.—1. In a file-cutting or like machine, a stationary bed and a carrier sliding therein having at their meeting surfaces longitudinal grooves.

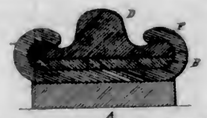
2. The combination, in a file-cutting or like machine, of a bed-plate having a number of longitudinal grooves, and a traveling carrier having a number of corresponding longitudinal feathers formed integral with it, and adapted to engage with the grooves in the said bed-plate, substantially as and for the purpose set forth.

293,592. RAILWAY-RAIL LOCK. JAS. PATTERSON, Brooklyn, N. Y., assignor of one-half to Henry C. Wright, same place. Filed Nov. 14, 1883. (No model.)

Brief.—A street-railway rail fastening having the longitudinal stringers cut away crosswise to form shoulders and seats for the base-plate and clamps.

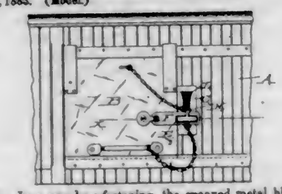


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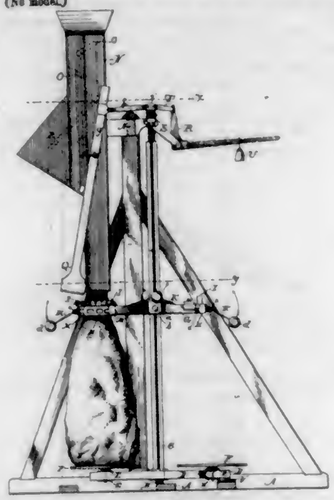
Claim.—In the construction of a street-railway fastening for rails, the sleeper A, cut away crosswise to form shoulders *a a* and *z z*, and surfaces *c c* and *d d*, in combination with the plate B, the clamps F F, and the rails D D, substantially as and for the purpose set forth.

293,593. SLIDING-DOOR LOCK. SAMUEL S. PETERSON, Wyandotte, Kans., assignor of one-half to William C. Duvall, Kansas City, Mo. Filed Nov. 13, 1883. (Model.)



Claim.—In a car-door fastening, the grooved metal block C, provided with the dovetailed groove D, and the metal block E, provided with a dovetailed tenon fitting into the dovetailed groove D, and perforated to receive a slotted key or seal, H, in combination with the hasp F, pivotally secured to the car-door, all substantially as shown, and for the purposes described.

293,594. GRAIN-SACKER. RICHARD HOPE PURNELL, Rosedale, Miss., assignor of one-half to THOMAS R. McGuire, same place. Filed July 12, 1883. (No model.)



Claim.—1. A horizontal disk or table provided with and supported on a vertical pivot, in combination with means independent of said table for holding a bag open thereon, said table being free to revolve on its pivot, to accommodate any twisting tendency of the bag, as described.

2. The combination, with two parallel jaws, of a series of spurs adapted to play vertically through the faces of said jaws, two rods supporting said spurs, levers pivoted to the jaws, supporting said rods at one end and weighted at the other end, whereby the spurs are held projecting from the jaws, or may be withdrawn, to hold or release a sack, as described.

3. A pair of parallel jaws adapted to hold a sack by the sides of its mouth, in combination with a pair of parallel end pieces hinged to said jaws at the four ends thereof, with rule-joint and jack-knife-blade hinges, as described, whereby a sack may first be held with its mouth open, and then the two sides be closed together while attached to the holder, as specified.

4. A vertical shaft stepped to rotate in a frame, a pair of cross-bars secured upon said shaft near its lower end, a disk or base-piece on each end of said bars, a frame provided with jaws for holding open sacks upon said base-pieces, and means, substantially as described, for adjusting said frame vertically, for the purpose specified.

5. A vertical shaft, a step for the same to rotate in, means for supporting an open sack on either of two sides of the shaft, and a cylindrical bearing at the upper end of the shaft flattened on two sides, in combination with an upper bearing having a circular hole to fit the cylindrical portion, and a narrow extension of the hole on one side, adapted to fit the flattened portion of the shaft, as described, whereby the shaft will be free to rotate when tipped one way and held from rotation when tipped the other way, as described.

6. A vertical shaft, a step for it to rotate in, means for supporting a sack open on either of two sides of the shaft, and an upper bearing in which the shaft may vibrate laterally, in combination with a flue suspended over the sack-holder, a gate swinging across to close the lower end of the flue, and a rod connecting the gate with the top of the shaft, whereby the filling of the bag vibrates the shaft and closes the gate, as described.

7. The combination, with a vertical shaft adapted to vibrate upon its toe and to rotate in an upper bearing, of a head journaled on top of said shaft, and a rod pivoted to said head connecting it with a flue-gate, whereby the gate is operated to open and close by the vibrations of the shaft, yet the shaft is free to rotate without affecting the gate-connections.

8. A vertical shaft stepped to rotate in a frame and to vibrate laterally at its top, means for supporting a sack on said shaft, to be filled, a flue secured to the frame, with its delivery over the mouth of the sack-holder, a gate adapted to vibrate across the flue, and a connection between the gate and the top of the shaft, in combination with an elbow-lever pivoted in the main frame, connected by one arm with the top of the shaft, having a graduated scale on the other arm, and provided with a balance-poise, as described, whereby the filling of the sack causes the shaft to vibrate to close the gate, and the graduated arm and poise decide the amount required to fill the sack, as described.

293,595. KIOSK. ANTONIO CUTÁS Y RIBOT, Los Angeles, Cal. Filed Dec. 10, 1883. (No model.)

Brief.—Consists of a portable frame or structure having movable plates of glass upon the inner side, and elevating and transporting mechanism consisting of vertically-adjustable wheels connected with operating-levers.



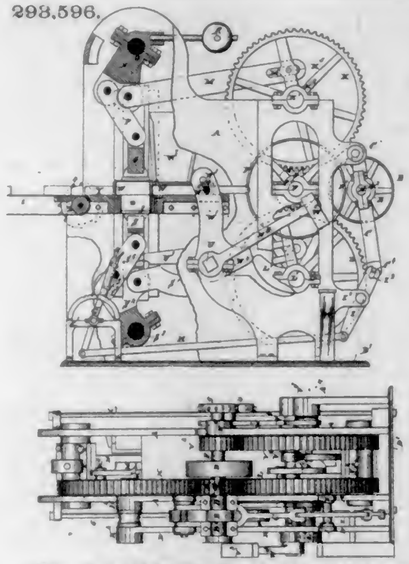
Claim.—1. A kiosk for advertising purposes, having an elevating and transporting mechanism, substantially as shown and described, and movable plates of glass, for the purpose set forth.

2. The portable kiosk having the elevating mechanism, consisting, substantially as shown and described, of the wheels D, racks C, pinions B, shafts A, ratchets F, pawls H I, and levers G, all in combination, substantially as and for the purpose shown and described.

3. In a kiosk, the vertically-moving wheels mounted upon vertical racks, and connected, substantially as shown, with operating-levers, for the purpose set forth.

293,596. BRICK-MACHINE. ROBERT N. ROSS, St. Louis, Mo., assignor, by direct and mesne assignments, to the Eureka Brick Machine Manufacturing Company, Louisville, Ky. Filed Feb. 5, 1883. (No model.)

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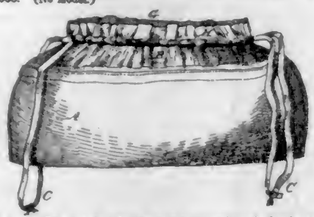


Claim.—1. In a brick-machine, the stationary molds Z, in combination with plungers Q and S, connected to blocks N and S' by links P and S', and coupling links or arms M and S' and drive-wheels K and L, to which the arms are connected, and suitable means for turning the wheels, substantially as shown and described.

2. In a brick-machine, the charger W, operated in one direction by arms W', pivoted to the shaft U, and cams L' V' on the shafts L' V', and in the other direction by a counter-balance, V', substantially as shown and described, for the purpose set forth.

3. In a brick-machine, the combination of driving-pulley B and friction-roller F, secured to the swinging frame C, and the friction-roller brought and held in contact with the driving-roller F by pivoted arm I, rod H, lever G, and frame G', all substantially as shown and described, for the purpose set forth.

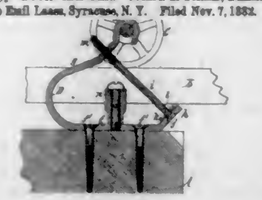
293,597. POCKET. WILLIAM F. RUSSELL, Peabody, Mass. Filed Sept. 14, 1883. (No model.)



Claim.—1. In a pocket for garments, a series of elastic straps, D, applied on one side of the interior of the mouth of the pocket, and on the opposite side a series of eyes, E, substantially as described.

2. A pocket for garments, provided with a series of elastic straps, D, applied on one side of the interior of the mouth, and on the opposite side with a series of eyes, E, and with puckering-strings C, for closing the pocket, substantially as described.

293,598. DOOR-HANGER. JOSEPH E. SCHMID, Buffalo, assignor of one-half to Emil Lasss, Syracuse, N. Y. Filed Nov. 7, 1882. (No model.)



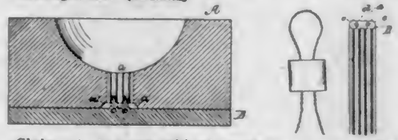
Claim.—The combination, in a door-hanger, of wheels or rollers C C, a plate, *f*, secured to the door and provided with an ear, *h*, a movable arm, *g*, provided with a bearing for the wheels and connected with the plate *f*, and a bolt, *i*, connecting the fixed portion of the hanger-frame with the movable arm *g* thereof, whereby the roller-bearing is adjusted, substantially as set forth.

293,599. SHOE-LACE, &c. FRANK P. SHOREY, Auburn, N. Y., assignor of one-half to Samuel S. Wood, same place. Filed Dec. 10, 1883. (No model.)



Claim.—As an improvement in laces or lace-cords for shoes, corsets, and analogous purposes, the tag or stiffener composed of a piece of wire inserted through the lace or cord near its end, and then doubled upon itself and twisted in two spirals around the free end of the lace or cord and around itself, to form a pointed end, substantially as shown and set forth.

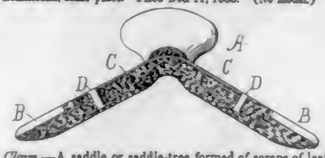
293,600. LEAD RIBBON FOR METALLIC SEALS. ELISHA C. SLOAN, Boston, Mass., assignor to Joseph H. Chadwick, Agent, same place. Filed Aug. 6, 1883. (No model.)



Claim.—1. As a new article of manufacture, a continuous lead seal-ribbon pressed hot through a die, substantially such as described, perforated throughout its length at *c c*, substantially as and for the purpose described.

2. In a machine for forming lead ribbon for metallic seals, perforated throughout its length with cavities for wires for attaching said seals, the combination, with the die A and bridge B, provided with the slot *a* and basin *a'*, of the conical spurs *c*, for forming the longitudinal perforations of the ribbon, substantially as described.

293,601. SADDLE OR SADDLE-TREE. JAMES STANLEY and THEODORE F. LEMASSENA, Newark, N. J., said LEMASSENA assignor to Lillian Lemassena, same place. Filed Dec. 11, 1883. (No model.)



Claim.—A saddle or saddle-tree formed of scraps of leather pasted together into the desired form, and combined with a spring inserted in the arch, substantially as and for the purpose set forth.

293,602. LOCOMOTIVE-GRATE. ISAAC W. SWALLOW, Kingston, Pa. Filed Oct. 29, 1883. (No model.)



Claim.—1. In a locomotive-grate, the water-bars extending longitudinally of the fire-box, in combination with the front and rear sections of connected tumbler-bars, operated by shaking-rods from the exterior of the fire-box, substantially as specified.

2. In a fire-grate for locomotives, the combination, with the water-bars extending longitudinally of the fire-box, of the tumbler rods or bars, connected to the slotted connecting-bars by an intermediate and two outer arms, and a connecting-rod passed through the several arms and the slotted connecting-bar, substantially as specified.

293,603. PRESS FOR WHEAT-BRAN, &c. MELCHISEDEK Y. THOMPSON, Arkadelphia, Ark., assignor of one-half to Austin M. Crow, same place. Filed Nov. 23, 1883. (No model.)

Claim.—1. The rotary baling-box consisting of the cast ends and their center bearings, the horizontal corner timbers and their side boards

293,603.



and doors at each end, and the middle opening for the packing-box, substantially as specified.

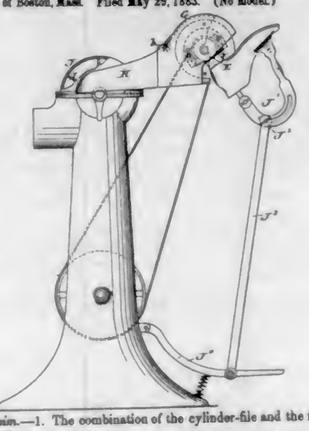
2. The combination, with a rotary baling-box having chambers at opposite ends, formed by beveled-edged boards and doors, of the headless packing-box having bevel-edges, and the straps and fastening-wedges of the baling-box, substantially as specified.

3. The combination, with a rotary baling-box having cast and peripherally-toothed circular ends, of the large fixed bearing-nuts, the followers having reversely-threaded screw-stems, and the driving cog-wheels engaging the teeth of the cast ends, substantially as specified.

4. The rotary press-box having the followers in opposite ends and their reversely-threaded screw-stems, the end castings and the wooden circles having radial handles, and the binding-straps encircling the timbers of said press-box, substantially as specified.

5. The combination, with a rotary press-box having end chambers and a middle opening, of a headless packing-box in the middle opening, oppositely-moving followers in the end chambers having reversely-threaded screw-stems, and loose heads of the packing-box moving in the end chambers, with the followers to the packing-box, substantially as specified.

293,604. MACHINE FOR FINISHING HEEL-BOTTOMS. MERRILL A. TYLER and DANIEL S. SMITH, Rockland, assignors, by direct and mesne assignments, of seven-twelfths to Thomas C. Dunn and Edward H. Dodge, both of Boston, Mass. Filed May 29, 1883. (No model.)



Claim.—1. The combination of the cylinder-file and the rests V V, as set forth.

2. The combination, with the cylinder-file, of the adjustable rests V V, substantially as described, and for the purpose stated.

3. The combination, with the cylinder-file, of the adjustable rests V V, the hood S, to which said rests are secured, the slotted plate N, and the flange K, the parts being held and adjusted by set-screws, and all being arranged substantially as described.

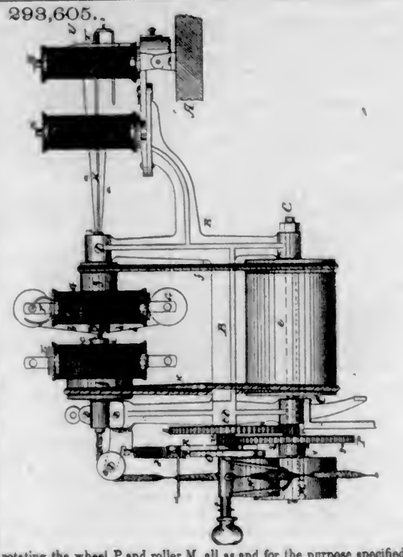
4. The combination, in an organized machine, of a rotary cylinder-file, the guard-plates arranged to gage the depth of cut of said file, and a shoe-holding jack pivoted to a standard, as described, so as to present the heel properly to said file, substantially as shown and described.

293,605. MACHINE FOR MAKING ORNAMENTAL LOOPED CORD. ALWIL URBAHN, Paterson, N. J. Filed Apr. 5, 1883. (No model.)

Claim.—1. The combination, with the guide-tube A, for the core-threads, of the inner rod or core-pin, H, carrying the perforated enlargement or disk *n*, which can be removed with said rod H, substantially as and for the purpose specified.

2. The combination of the posts E, tubes A *i*, core-pin H, and means for revolving spools containing enveloping and binding threads around the core-pin, with the lever R, having guide-loop *w*, wheel P, having projection *v*, rollers M and N, and means, substantially as described, for

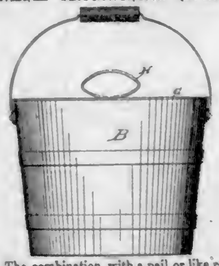
293,605.



rotating the wheel P and roller M, all as and for the purpose specified.

3. The wire or rod H, having tapering front end, combined with the adjusting-screw T and post U, and with mechanism, substantially as described, for supplying the core-threads and wrapping the same with enveloping-threads and binding-threads, as set forth.

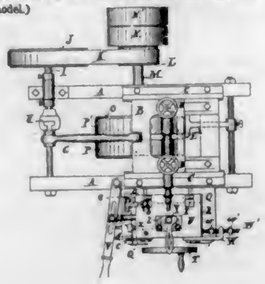
293,606. EGG-CARRIER. LEVI J. WALLICH and WASHINGTON E RIGLER, Arcenville, Ill. Filed Nov. 17, 1883. (No model.)



Claim.—1. The combination, with a pail or like receptacle, of a series of separate trays, each consisting of a single disk having egg-holding apertures, a depending flange, and a central support secured to the disk, the supports and flanges being of such height that each disk supports a series of eggs independently of the other disks.

2. In combination with a vessel or receptacle, a cover composed of a double thickness of material, the inner thickness being split and formed into a flange, and having a paper handle secured to it, all substantially as described.

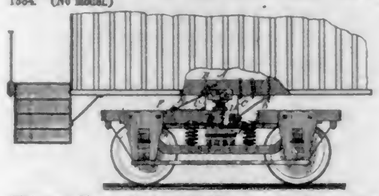
293,607. MORTISING-MACHINE. HENRY A. WILBUR, Cambridge, assignor of one-half to Frank W. Lowe, Boston, Mass. Filed May 22, 1883. (No model.)



Claim.—1. In a mortising-machine, the combination of the plate R, sliding in brackets Q Q, and operated by the screw S, through the nut *r* on plate R, and the sliding plate U, operated by the lever V and connecting-rod *u*, the screw W', adjustable stop W, and check-nuts *w w'*, all as shown, and for the purpose set forth.

2. In a mortising-machine, the combination of the sliding plate R, the bar *c*, fixed to the plate R, the adjustable slide *e*, attached to the bracket Q, and the arm *d*, pivoted to the slide *e*, and provided with a recess fitting over the bar *c*, for the purpose of regulating the depth of cut at each end of the mortise for the reception of the pulley-flanges, as set forth.

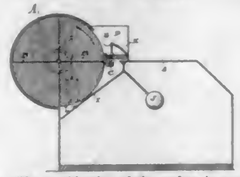
293,608. RAILWAY-CAR. THOMAS L. WILSON, Port Hope, Ontario, assignor of one-half to Austin D. Cable, Montreal, Canada. Filed Jan. 2, 1884. (No model.)



Claim.—1. The combination, with the intermediate longitudinal timbers, A, of angle-brackets C, one arm of each being bolted to its respective intermediate timber, A, while the other arm extends downwardly behind the truck-transom D, and is provided with a flange, *d*, to project below the bottom of the said transom, and a diagonal brace, E.

2. The combination, with the side timbers, F, of a truck, of angle-brackets C, bolted to the top side of the said timbers F, as specified, provided with a flange, *d*, to project over the body-bolster B of the car, and with a brace, E, substantially as and for the purpose specified.

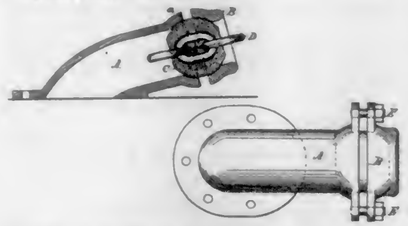
293,609. VERMIN-TRAP. HENRY THEODORE WIENDT, Toronto, Ontario, Canada. Filed Sept. 14, 1883. (No model.)



Claim.—1. The combination of the casing A, provided with the winged platform B, revolving in the cylindrical part A' of said casing, which part is provided with openings G, the bait-box D, having a hinged cover, F, and an opening, H, communicating with said cylindrical part A', and the pivoted hook C, whose lower end receives and supports the wings of the platform, and whose upper end carries a bait-hook, E, all constructed and arranged substantially as shown and described.

2. A casing, A, having a winged platform, B, within it, and an opening leading into one of the wings of the said platform, in combination with a pivoted support having a supporting-hook at its lower end and the bait-hook at its upper end, and the hinged platform I, provided with weight J, all constructed and arranged substantially as described.

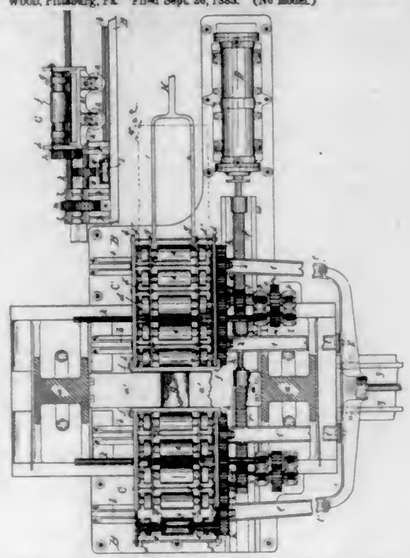
293,610. HAWSE-PIPE. HERMAN WEPFER, Brooklyn, N. Y., assignor of one-half to the American Ship Windlass Company, Providence, R. I. Filed June 9, 1883. (No model.)



Claim.—1. An improved hawse-pipe stopper, consisting of a two-part spherical stopper arranged to receive a cable or cable-chain and to fit the hawse-pipe, and provided with attachments for compressing it laterally, so as to cause it to expand and engage snugly with the sides of said pipe, substantially as described.

2. The combination, with a hawse-pipe, a ring, B, and connecting-bolts E for the same, of the spherical stopper C, made in two parts, each of which is formed with depressions to receive the chain or cable, as described.

293,611. FEED-TABLE FOR HAMMERING-MACHINES. W DEWEES WOOD, Pittsburg, Pa. Filed Sept. 26, 1883. (No model.)

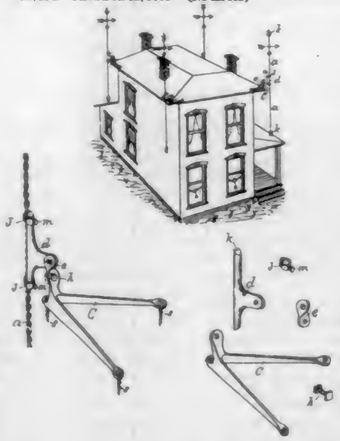


Claim.—1. In a machine for hammering sheet-iron, the combination of the anvil A, the reciprocating carriages C C', the rolls *e*, mounted in said carriages, means for reciprocating said carriages, and means for rotating the feed-rolls, substantially as shown and described.

2. In a machine for hammering sheet-iron, the combination of the anvil A, the reciprocating carriages C C', the feed-rolls *e e*, mounted in said carriages, the gear-wheels A, and idlers A', the reciprocating rack *r*, means for transmitting motion from rack to the gears and idlers, and means for reciprocating the carriages, substantially as shown and described.

3. The combination of the carriage C, the feed-rolls *e*, provided with grooves *e'*, the longitudinal and transverse bars *g f*, the gears and idlers A and A', and the means for rotating said gears and idlers, substantially as shown and described.

293,612. LIGHTNING-DIFFUSER. LEONIDAS G. WOOLLEY, Indianapolis, Ind. Filed Dec. 12, 1883. (No model.)



Claim.—1. A neutralizer or diffuser of atmospheric electricity, consisting of an electrical conductor placed in a vertical position, and provided with one or more points at its upper and lower ends, the lower end of said neutralizer or diffuser terminating above the ground, substantially as shown and described.

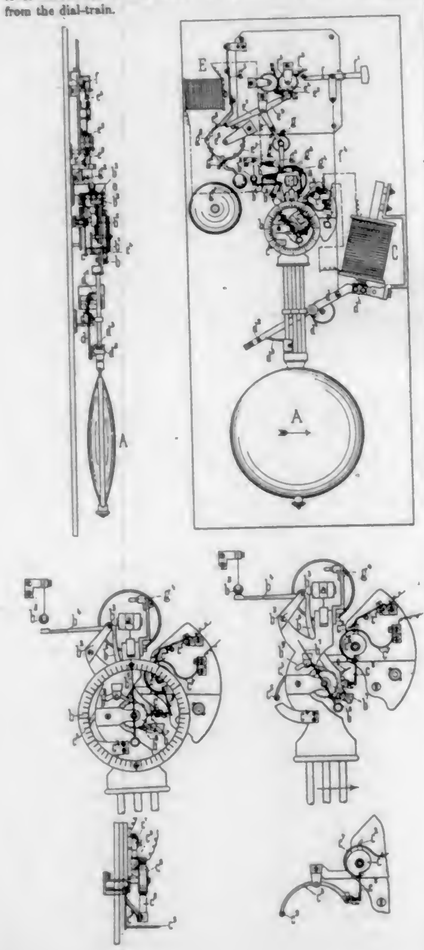
2. Two or more electrical conductors arranged in a vertical position, and having their upper and lower ends provided with points, said conductors being attached to different parts of a building, and having no metallic connection with each other or with the ground, substantially as set forth.

3. An electrical conductor arranged in a vertical position, and having its upper and lower ends provided with points, the upper end of said conductor terminating above the roof or top of a building, and the lower end terminating below said roof or top of a building and above the ground, substantially as and for the purpose set forth.

4. A vertical conductor having points at both its upper and lower ends, in combination with an adjustable support, constructed as shown and described, and for the purpose set forth.

293,613. ELECTRIC CLOCK. GUSTAV MAXIMILIAN HEROTHET, Hamburg, Germany. Filed Aug. 15, 1883. (No model.)

Brief.—Seconds indicated on a disk attached to the pendulum-rod by a hand advanced at each oscillation. Circuit closed at each rotation of second-hand, and impulse given to the pendulum by release of the armature-lever when circuit is broken. Connections with the armature-lever actuate the minute-wheel. An electric strike-work is controlled from the dial-train.



Claim.—1. In an electric clock, the combination, with a pendulum and an electric circuit, of the ratchet-wheel b^3, the angle-lever b^4 b^5, the pawl b^6, the suspended weight b^8, and the stop device consisting of the parts *c*, c^2, c^3, c^4, and *c'*, or their equivalents, all constructed and relatively arranged substantially as herein set forth.

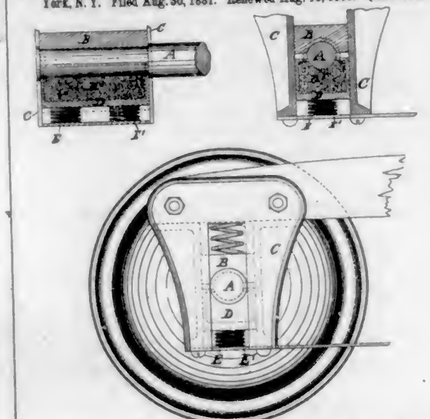
2. In an electric clock, the combination of the bobbin C with the pendulum A, the ratchet-wheel b^3, the lever *c*, the disk c^2, with arm c^3, and finger c^4, and spring c^5, the contact-spring *c'*, and the arresting-lever c^4, substantially as and for the purpose specified.

3. In an electric clock, the combination of the pendulum A, having bracket d^3, and the inclined lever *d*, having armature *d'*, and pin or roller d^2, with the magnet or bobbin C, and the stop d^4, substantially as herein set forth.

4. In an electric clock, the combination of the minute-wheel f^2 with the bobbin C, the lever *d*, the thread f^3, the lever *f*, the counter-weight *f'*, and the ratchet-pawl f^2, substantially as set forth.

5. In an electric clock, the combination of the bobbin E, the armature g^2, the lever g^3, the pawl g^4, the ratchet-wheel c^2, the disk c^4, the lever *c c' c³*, the minute-wheel f^2, the angle-lever *g g'*, and the projection g^5, with the contact-springs g^7 g^8, the pendulum A, and the pin g^4, substantially as and for the purpose specified.

293,614. JOURNAL-LUBRICATING BOX. GEORGE F. SENTER, New York, N. Y. Filed Aug. 30, 1881. Renewed Aug. 16, 1883. (No model.)



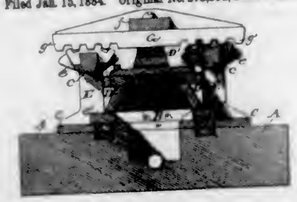
Claim.—1. A hollow lubricating-box adapted to contain a stiff plastic or semi-solid lubricant, provided with a longitudinal opening in the side next the journal, whereby the body or mass of said lubricant is allowed to contact with the journal, said box being constructed of soft anti-friction metal adapted to wear away with the lubricant, whereby the latter is kept in contact with the journal, substantially as described.

2. In a journal-box, the combination of a hollow lubricating-box adapted to contain a semi-solid lubricant, constructed of soft anti-friction metal, and provided with a longitudinal opening on the side next the journal, a spring for holding said lubricating-box in contact with the journal, and a rest for said spring, substantially as described.

3. The combination of the slotted pedestal C, the bearing-box B, the axle A, the rectangular hollow lubricating-box D, constructed of soft anti-friction metal, and provided with a longitudinal opening in its upper side, the semi-solid lubricant D', contained in said box, the spring E, and plate E', all substantially as described.

REISSUES.

10,449. BALANCE SLIDE-VALVE. WARREN T. REASER, Rockford, Ill. Filed Jan. 15, 1884. Original No. 273,891, dated Mar. 13, 1883.



Claim.—1. In a balanced slide-valve, the combination of supports having bearing-surfaces curved from a common center, cross-arms rigidly connecting the supports in pairs, and a bar connecting the cross-arms with each other and with the valve, substantially as described.

2. In a balanced slide-valve, the combination of supports having bearing-surfaces at top and bottom, curved from a common center, cross-arms rigidly connecting the supports in pairs, and having toothed segments *g g*, with a bar supporting the valve, and having teeth that engage with those of the segments *g g*, substantially as described.

3. The combination, with a slide-valve and its seat, of vibrating supports having segmental or rocking bearings at their upper and lower ends, toothed segments connected thereto, toothed segments *g g*, toothed bars *h h*, cross-bars *c c*, and rod or bar G, substantially as set forth.

PHOTO-LITH. NORRIS PETERS WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

OPINION Touching the Right of Employés of the Patent Office to file an Application for a Patent.

1. SECTION 480 R. S. CONSTRUED.

Under Section 480 R. S. officers and employés of the Patent Office are prohibited from acquiring, directly or indirectly, any interest whatever in a patent, and are also prohibited from filing an *application* for a patent.

2. SAME—APPLICATION EVIDENCE OF A PARTY'S TITLE.

An application is the evidence of an applicant's title to the exclusive right or privilege sought, and since he can acquire no interest in the thing itself, to say that he might nevertheless take steps to establish his title thereto would be to pronounce an absurdity.

3. SAME—APPLICATION AND FEE TO BE RETURNED.

Applications filed in contravention of the statute as construed by this decision will be returned to the party filing the same, and the fee will also be returned.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, February 5, 1884.

I am called upon to decide whether an officer or employé of this bureau may file and prosecute an application for a patent. Section 480 of the Revised Statutes provides that—

> All officers and employés of the Patent Office shall be incapable, during the period for which they hold their appointments, to acquire or take, directly or indirectly, except by inheritance or bequest, any right or interest in any patent issued by the Office.

That the section just quoted renders all officers and employés of the bureau incapable of acquiring, directly or indirectly, any interest whatever in a patent is clear. I am equally clear that they are alike prohibited from filing or prosecuting an *application* for a patent. It would seem on its face absurd to hold that a party may file and prosecute a claim to obtain a right or privilege in which he is by express provision of statute made incapable of acquiring any interest whatever.

An application is the basis upon which the right to a patent rests. It is the evidence of applicant's title to the *exclusive right* or *privilege* sought. But since he can acquire no interest in the thing itself, to say that he might nevertheless take steps to establish his title thereto would be to pronounce an absurdity. The reason upon which the section rests is clear. The proceedings of the bureau in the matter of considering the claims of applicants are secret, and for obvious reasons. It would be palpably unjust to allow those who, by virtue of their employment, learn the nature, character, and scope of an applicant's invention, to enter the field as a competitor to obtain a patent for the same or a similar invention, and especially when such officer or employé may be charged with the duty of passing upon the patentability of the invention mentioned and described in his competitor's application. Public policy and common justice to the inventors of the country who are prosecuting claims for patents before this Office render it necessary that the section of the statute which renders the officers and employés of the Patent Office incapable during the period for which they hold their appointment of acquiring any interest in a patent be strictly enforced.

Applications filed in contravention of the statute as construed herein will be returned to the party filing the same. Of course the fee will be returned.

BENJ. BUTTERWORTH,
Commissioner.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

ESTEY *et al. v.* BURDETT.

Decided January 7, 1884.

1. BURDETT'S REED-ORGAN PATENT—CLAIM 1 CONSTRUED AND DEFINED.

Claim 1 of Letters Patent No. 67,241, granted February 23, 1869, to Riley Burdett, as inventor, for seventeen years from August 24, 1868, for an improvement in reed-organs—namely, "The arrangement, in a reed musical instrument, of the reed-board A, having the diapason set *a* and its octave set *b* and the additional set L extending from about at tenor F upward through the scale, substantially as and to the effect set forth"—defined and construed.

2. SAME—ANTICIPATION.

A reed-board with two sets of reeds and a third partial set was made and put into an organ by one Dayton prior to the invention of Burdett, and, such organ being put in evidence, it was held that the alleged infringing organs contained nothing which, so far as said claim 1 was concerned, was not found in such prior organ.

3. SAME—CLAIM 2 CONSTRUED—ANTICIPATION—NON-INVENTION.

As to claim 2—namely, "The reed-board A and foundation-board G, constructed with the contracted valve-openings D F F, and the reeds arranged in relation thereto, all in the manner described"—it was held that, in view of the state of the art, there was no invention in making the length and size of the valve-opening greater or less in a reed-board of a given width, or where the reed-board was made wider or narrower, or had more or less sets of reeds in it, either full or partial; and that the vibrating ends of the lowest and longest reeds in such prior organ were as near together as they were in the reed-boards of the alleged infringing organs. On these views a decree was entered in favor of the defendant.

APPEAL from the Circuit Court of the United States for the District of Vermont.

Mr. E. N. Dickerson and *Mr. Wm. M. Evarts* for the appellants.

Mr. Geo. Harding and *Mr. E. J. Phelps* for the appellee.

Mr. Justice BLATCHFORD delivered the opinion of the Court.

This is a suit in equity brought for the infringement of Letters Patent No. 87,241, granted February 23, 1869, to Riley Burdett, the plaintiff, for seventeen years from August 24, 1868, for an improvement in reed-organs. The specification of the patent is in these words:

Figure 1 is a perspective view of one of my reed celeste organs. Fig. 2 is a diagram plan, showing the relative arrangement of the reeds. Fig. 3 is a vertical transverse section of my reed-board, &c.

This invention consists, first, in the arrangement of the reed-board; second, in a method of tuning, by which a peculiar quality of tone is produced, and by which the power of the instrument is greatly increased without an increased resistance in the action, and without an increase of power being necessary to operate the bellows. The advantages gained by my peculiar arrangement are a greatly increased power and variety of tone. This is effected by the use of an additional set of reeds, commencing at tenor F, or thereabout, and running upward through the scale of the instrument, and tuning the same in the peculiar manner hereinafter described. No other reed musical instrument containing the same number of reeds, so far as I know, has ever possessed so great a variety or pleasing quality of tone, while simplicity of construction, compactness of form, and ease of operation are other excellences of this arrangement not found in others.

I will now describe particularly the construction of that part of my instrument which forms the subject of this patent. The case, bellows, pedals, &c., may be in general construction and arrangement like those in common use, and therefore no special description is required. The foundation of the reed-board is also constructed in the usual manner, but the reed-board proper, in itself, differs from the ordinary reed-board in the following particulars, viz: The main board A contains two sets of reeds running through

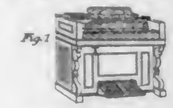


Fig. 1

Fig. 2

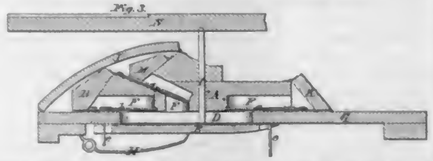


Fig. 3

the entire scale, the back set of which is marked *a*, and is tuned as a unison or diapason, while the front or octave set, marked *b*, is tuned an octave above the diapason. In the arrangement of these reeds, it will be seen that the lowest and longest reeds in the diapason and the octave sets are placed with their vibrating ends as near together as they can be, with room only for the tracker-pin, which communicates the motion of the key to the valve beneath the reeds; but as the reeds continually shorten as they advance upward in the scale, there is necessarily a vacant space left between the diapason set *a* and the octave set *b*, which constantly enlarges itself, and has heretofore been regarded as useless. Within this space, commencing on tenor F and running upward through the scale, I have introduced a third set of reeds, L, which forms the distinguishing feature of this instrument. These are placed in the reed-board over the octave set *b*, and run obliquely to the foundation-board G, as shown in Fig. 3, the vibrating ends resting on the same base as the other sets of reeds *a* and *b*. These reeds are of the same size as the corresponding ones in the diapason *a*, and are tuned either a trifle above or below the diapason, but only sufficiently so to produce a slightly waving and undulating quality or effect, without producing any discord. A few trials will enable any tuner of reed instruments to tune these reeds so as to realize the best effect. This method of tuning will, when this set of reeds, which I have named the "Harmonic Celeste," is drawn and used in connection with the diapason, produce a most wonderfully pleasing and captivating effect, while the power and beauty of both sets of reeds are greatly augmented and enriched in a manner which cannot be realized without being heard. Fig. 2 shows a top view of the reed-board proper, wherein the location of the reeds is shown with reference to the divergence of the reeds of the diapason set *a* and the octave set *b*, and also the space afforded for the introduction of the third set L. Fig. 3 exhibits a transverse section of my reed and foundation board, showing the arrangement of my reeds and the valve-connections. In this figure, A is the reed-board, G is the foundation-board, D is the valve-opening, E is the valve, and F F are the throats over which the reeds are located and placed. The valve E is retained in its proper place by the pins *e e* and spring H, and is operated by the tracker-pin I, which rests upon its upper surface, and passes upward through the reed-board to the under surface of the key N. The swell-boards J and K and stop-dampers B and M are raised whenever desired by the knee-stop C, Fig. 1, or by a hand draw-stop, or by some other convenient device.

Another important advantage arising from the introduction of the harmonic celeste is that a greater power and variety are attained than can be by the use of any of the octave coupling arrangements now in use. These, while they augment the power by drawing down octaves to the keys actually played, are objectionable, inasmuch as they offer more than double the resistance to the key, and are thus often exceedingly undesirable. In my instrument no such objection can ever arise, as the pressure upon the keys is always the same, whether one or all the sets of reeds are used. This is of prime importance to the performer, as the required exertion becomes involuntary, and not a matter of calculation, and thus the mind is not distracted from the proper feeling and expression of the music performed.

The claims of the patent are as follows:

1. The arrangement, in a reed musical instrument, of the reed-board A, having the diapason set *a* and its octave set *b* and the additional set L, extending from about at tenor F upward through the scale, substantially as and to the effect set forth.

2. The reed-board A and foundation-board G, constructed with the contracted valve-openings D F F, and the reeds arranged in relation thereto, all in the manner described.

3. The diapason *a* and its octave or principal *b*, arranged over the same valve-opening, as described, so that the octave unison may be produced, when desired, without the use of coupler, and without any additional pressure upon the keys.

4. In connection with the reed-board A, having the sets *a*, *b*, and L, as described, the independent dampers B and M, as set forth.

The circuit court made an interlocutory decree declaring the patent to be valid so far as claims 1 and 2 are concerned; that those two claims had been infringed; that the plaintiff was not the original and first inventor of what is set forth in claim 4, and did not before the commencement of this suit file a disclaimer of what is claimed in claim 4, and had not unreasonably neglected to file such disclaimer, and had presented evidence of his having filed such disclaimer; that no evidence had been offered to show any infringement of claim 3, and that the plaintiff was entitled to recover profits and damages because of such infringement. A reference to a master to ascertain the same was ordered, and a perpetual injunction was awarded as to claims 1 and 2. On the report of the master a final decree was made for the plaintiff for $161,011.79, without costs to either party. The decisions of the circuit court in the case are reported in 15 Blatchf. C. C. R., 349, 16 Id., 105, and 19 Id., 1. The defendants have appealed.

An examination of the text of the specification shows that the inventor purposed to cover by his patent two things: (1) a new arrangement of the reed-board; (2) a new method of tuning. In the application for the patent claim 1 read as it does now, while claims 2, 3, and 4 had specific reference to the method of tuning described. The Patent Office rejected all the claims. The plaintiff then amended two of the claims relative to tuning, still retaining the tuning feature in them, and added the claims which are now claims 2, 3, and 4. The Office then rejected all seven of the claims. On appeal to the Examiners-in-Chief the decision rejecting the three tuning claims was affirmed, and that rejecting the other four claims was reversed, and the patent was issued accordingly. There is nothing in claims 1 and 2 as granted which has any reference to any new method of tuning, unless it is to be intended, in accordance with the description, that the partial set is to be capable of being tuned a trifle above or below the diapason set. Except, perhaps, to that extent, all there is in the descriptive part of the specification in relation to a new method of tuning may be dismissed from consideration, as it was introduced to lay a foundation for the original claims 2, 3, and 4 in reference to such new method of tuning. Claims 1 and 2, as they stand, relate only to the arrangement of the reed-board and the sets of reeds, in conjunction with the foundation-board and the valve-openings and the valves.

The specification shows that the inventor takes a reed-board having two sets of reeds running through the entire scale, a diapason set, and an octave or principal set, and makes no change in the foundation-board, or in the case, bellows, pedal, &c. The reed-board with the two sets was old. In its structure, as shown in figure 2 of the drawings, and as described in the specification, the lowest and longest reeds in the two sets are placed so near together as to leave between them room only for the tracker-pin, which communicates motion from the key to the valve; but as the reeds shorten continually as the scale proceeds upward, there is a vacant space between the ends of the reeds in the two sets, which space continually grows wider. Within that space the inventor introduces a third set of reeds, commencing at or about tenor F and running upward through the scale. He places this third set over the octave set, and the reeds run downwardly in a direction oblique to the foundation-board, and their vibrating ends, which are their lower ends, rest on the same base as that of the other two sets of reeds. They are of the same size as the corresponding reeds in the diapason set. The point of advantage in bringing down the vibrating ends of the reeds in the third set, so that they shall rest on the same base with the vibrating ends of the reeds in the other two sets, is shown by the evidence to be the same point of advantage which is set forth in the specification of the prior patent granted to the plaintiff on the 9th of January, 1866. In that the invention is stated to be to so make the reed-board that the three or four sets of reeds in it shall be acted upon instantly and simultaneously by the rush of air upon the opening of the valve; and it is set forth that that result is effected by placing two sets of reeds on the same horizontal plane and placing the other sets on an inclined plane, each with its base on the same level as the first and second sets, thus making the head of each reed equidistant from the valve and making each produce instantaneous concerted sound.

There was introduced in evidence a reed organ, known as "Exhibit No. 21," containing a reed-board with two sets of reeds and a third partial set, alleged to have been made by one Dayton in 1866, prior to the plaintiff's invention. There was much testimony on the question as to whether the reed-board and reeds in this organ were made prior to the plaintiff's invention in the shape in which they appeared when put in evidence. The circuit court decided that question in the affirmative, but nevertheless it held that the arrangement of reed-board and reeds found in No. 21 did not embrace the entire arrangement specified and claimed in claim 1 of the patent, because, although it had a reed-board no wider than was necessary for two full sets of reeds, and had an additional partial set of reeds put in on an incline, and although the reeds in that set may have been tuned flat in relation to the diapason set, yet such reeds did not rest on the same base as that of the other two sets of reeds.

We concur with the circuit court in its conclusion as to the genuineness and the date of No. 21, but are of opinion that there is nothing found in the alleged infringing organs which, so far as claim 1 of the plaintiff's patent is concerned, is not found in No. 21. The vibrating reeds in the partial set in the alleged infringing organs do not rest on the same base as that of the other two sets of reeds, and occupy a position in that respect no different in reference to any requirement of the plaintiff's patent from that occupied by the vibrating ends of the partial set in No. 21. In all other respects in which the alleged infringing reed-board and reeds embrace what is covered by claim 1 of the plaintiff's patent what they contain is found in No. 21.

The material point in claim 2 is the contraction of the valve-openings. The idea is that the valve openings and passages for the two complete sets of reeds and the intermediate partial set are contracted or condensed within the same space which was usually occupied by the valve openings and passages for only two complete sets of reeds in an instrument of the usual prior construction; and that therefore no more force is required to be applied to the keys to open the valves than where only two full sets of reeds are used. The circuit court was of opinion that the valve-openings in No. 21 were not the contracted valve-openings of the plaintiff's patent, because they were as large as the valve-openings in a reed-board having three full sets of reeds; and that the lowest and longest reeds in No. 21 did not, as in the plaintiff's arrangement, have their vibrating ends as near together as they could be, with room between them only for the tracker-pin. Our conclusion is that the absolute length and size of the valve-opening was a matter of judgment, in view of the state of the art shown, and that there was no invention in making its length and size greater or less in a reed-board of a given width, or where the reed-board was made wider or narrower, or had more or less sets of reeds in it, either full or partial. The dimensions of the valve-opening and of the valve are regulated by the judgment of the manufacturer as to the quantity of air necessary, and the resistance to be overcome in working the valve and the inconvenience of the leakage of air. We are also satisfied that the vibrating ends of the lowest and longest reeds in No. 21 were as near together as they are in the reed-boards of alleged infringing organs.

It results from these considerations that the decree of the circuit court must be reversed, and the case be remanded to that court, with direction to dismiss the bill.

U. S. Circuit Court—Southern District of New York.

DRYFOOS *v.* WIESE.

Decided January 24, 1884

1. PROCESS—PROCESS OF OPERATING A MECHANISM NOT PATENTABLE.

A party having invented effective means for giving circular direction to a feed mechanism is entitled to a patent for said means, but not for merely giving such direction apart from the mechanism, nor to the process of operation of his mechanism for giving such direction.

2. REISSUE—BROADENING OF THE INVENTION BEYOND THAT ORIGINALLY PRESENTED NOT PERMISSIBLE.

A claim in a reissue which covers an invention clearly beyond that shown in the original is invalid, whether the time elapsing between the reissue and original patent is great or not.

3. SAME—LAPSE OF A FEW MONTHS NOT TOO GREAT.
A reissue granted within a few months of the date of the original patent, and before others appear to have done anything in that region of invention, is looked upon favorably.

4. SAME—INVALIDITY OF ONE DOES NOT AVOID ANOTHER CLAIM.
A claim valid in a first reissue is valid in a second reissue, notwithstanding the latter contains an invalid claim.

5. INFRINGEMENT.
The accomplishment of the same result, but by different means, does not constitute infringement.

Mr. Edmond Wetmore for the plaintiff.
Mr. Gilbert M. Plympton for the defendant.

WHEELER, *J.*:

This suit is brought upon Reissue Letters Patent No. 9,097, granted February 24, 1880, to August Beck, assignor to the orator, for an improvement in quilting-machines. The original was No. 190,184, dated May 1, 1877. It was reissued in No. 8,063, dated January 29, 1878, and surrendered for the reissue in suit. The improvement was and is stated in the original and reissues to be for improvements on the quilting-machine shown in Letters Patent No. 159,884, dated February 16, 1875, granted to the same inventor. That machine was for quilting by gangs of needles in zigzag parallel lines, and was fed by cylindrical rolls having an intermittent rotary motion, which would move the cloth while the needles were out of it, and could be arranged to feed in straight lines direct or oblique. The original of the patent in suit showed different mechanism for actuating the feed-rolls, so that the length of stitch could be varied at pleasure, and conical rolls having an intermittent motion to feed the conical bodies of skirts and skirt-borders in a circular direction when the needles were out of the cloth, as well as cylindrical rolls for straight goods, and other improvements upon the other parts of the machine, and had claims for the feed mechanism and improvements upon the other parts of the machine, but none of the conical feed-rolls. The first reissue further described the conical feed-rolls as made of such taper as to conform to the shape of the skirt or border to be quilted, and claimed the combination of the series of needles with the conical feed-rolls acting intermittently, in place of one of the other claims. The reissue in suit still further describes the conical feed-rolls as the embodiment of a feed device which extends substantially throughout the width of the conical strip of goods, and as it departs from the shorter curved edge and approaches the lower curved edge is adapted to have a proportionately-increased range of feed-movement, so that it will feed the conical strip of goods in the requisite curved path evenly and without any injurious strain or drag, and further claims the combination, with the gang of sewing mechanism and the cloth-plate which supports the goods under them, of a feed device operating intermittingly in the intervals between the formation of the stitches, which extends and operates substantially across the conical strip of goods, and which as it departs from the shorter curved edge and approaches the longer curved edge of the goods is adapted to have a proportionately-increased range of feed-movement.

The defendant is engaged in using a quilting-machine for quilting conical goods, having a gang of needles and short cylindrical feed-rollers at each edge of the goods, which they feed in a circular direction by moving at different rates of speed constantly, the needles having a forward movement corresponding to that of the cloth while in it, and also one with a four-motion feed, which is capable of feeding in a circular direction by lengthening the feed at the longest edge of the goods, but is not shown to have been so used or intended to be so used. The validity of the reissue and infringement of it, if valid, are denied.

Beck well appears to have meritoriously invented effective means for giving circular direction to the feed of quilting-machines having gangs of needles for quilting several parallel seams. He set forth these means in the specification and drawings of his original patent, and seems to have been well entitled to then have a patent for them and for the combination of the mechanism with the gang of needles. But he does not appear to have been entitled to a patent for merely giving such direction to such feed-motion apart from the mechanism nor to the process of operation of his mechanism for giving such direction. (*McKay* v. *Jackman*, 20 Blatchf., 466; 12 Fed. Rep., 615.) Neither could he claim the combination of mechanism not then known or its processes with the needles. He invented his own mechanism and the combination of that with the co-operating parts of the machine, and nothing more, and seems to have been entitled to a patent for those and no more. The first reissue was within a few months of the original, and before others appear to have done anything in that region of invention, and seems to have been well enough. (*Meyer* v. *Goodyear*, 11 Fed. Rep., 891; *Hartshorn* v. *Eagle Shade Roller Co.*, 18 Fed. Rep., 90.) The second reissue was more than two years after the original, but, whether too long after or not, was in effect for the combination of the gang of needles and cloth-plate with any feeding mechanism which would reach across the cloth and feed the long side faster than the other. This was clearly beyond the invention shown in the original, and, except as to the mechanism shown in the original, beyond the invention in every way. This claim of the reissue is therefore wholly invalid. (*Wing* v. *Anthony*, 106 U. S., 142; *James* v. *Campbell*, 104 U. S., 356.) The new claim of the first reissue brought forward into the second, being valid in the first, is not avoided by the invalid claim of the second. (*Schillinger* v. *Greenway Co.*, 24 O. G., 495; *Gage* v. *Herring*, 107 U. S., 640.) The orator appears, therefore, to be entitled to a monopoly of the conical rollers in that combination. It is argued that the defendant's machines invade that monopoly. Those machines have not conical rollers, nor are they claimed to have any of his other mechanism. It is said that there is no invention in dividing the conical rollers into parts, and that the parts are the equivalent of the whole. This is not what the defendant does. The orator's machine gives the circular direction by mechanism that accomplishes that result in one way; the defendant's by different mechanism that accomplishes it in a different way. That claim, therefore, is not infringed.

Let there be a decree dismissing the bill of complaint, with costs.

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THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Patents	381	No. 293,615 to No. 293,995,	inclusive.
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	1	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	1	.....	New Hampshire	.....	1
California	7	1	New Jersey	38	.....
Colorado	3	.....	New Mexico Territ'y	.....	.....
Connecticut	13	1	New York	143	13
Dakota Territory	1	.....	North Carolina	1	.....
Delaware	3	.....	Ohio	32	.....
District of Columbia	4	.....	Oregon	2	.....
Florida	.....	.....	Pennsylvania	31	6
Georgia	3	.....	Rhode Island	2	.....
Idaho Territory	.....	.....	South Carolina	.....	.....
Illinois	44	1	Tennessee	1	.....
Indiana	13	3	Texas	5	1
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	7	.....	Vermont	1	.....
Kansas	1	.....	Virginia	2	3
Kentucky	2	.....	Washington Territ'y	1	.....
Louisiana	1	.....	West Virginia	5	.....
Maine	2	.....	Wisconsin	7	1
Maryland	4	2	Wyoming Territory	.....	.....
Massachusetts	84	3	United States Army	.....	.....
Michigan	13	4	United States Navy	1	.....
Minnesota	3	1	Total to citizens of the United States	493	42
Mississippi	.....	.....			
Missouri	10	.....			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Patents and Designs—Canada, 5; England, 6; France, 4; Germany, 2; Russia, 1, and Switzerland, 1.—Total, 19.

DESIGNS.

14,677.—CARPET.—*Jacob B. Campbell*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed January 8, 1884. Term of patent 3½ years.

14,678 to 14,683, inclusive.—CARPET.—*Eugene A. Crowe*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed November 9, 1883. Term of patents 3½ years.

14,684 to 14,696, inclusive.—CARPET.—*Eugene A. Crowe*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed November 23, 1883. Term of patents 3½ years.

14,697 to 14,703, inclusive.—CARPET.—*Eugene A. Crowe*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed January 4, 1884. Term of patents 3½ years.

14,704.—ROSETTES FOR JEWELRY.—*Joseph F. Chatellier*, New York, N. Y. Application filed December 11, 1883. Term of patent 7 years.

14,705 to 14,711, inclusive.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed November 9, 1883. Term of patents 3½ years.

14,712 and 14,713.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed November 23, 1883. Term of patents 3½ years.

14,714 to 14,716, inclusive.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed January 4, 1884. Term of patents 3½ years.

14,717 to 14,751, inclusive.—CARPET.—*James L. Folsom*, Brooklyn, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed January 9, 1884. Term of patents 3½ years.

14,752 to 14,755, inclusive.—CARPET.—*James L. Folsom*, Brooklyn, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed January 15, 1884. Term of patents 3½ years.

14,756.—WRENCH.—*J. Ashton Greene*, Brooklyn, N. Y. Application filed July 2, 1883. Term of patent 14 years.

14,757.—FONT OF PRINTING-TYPES.—*Julius Guildenstine*, New York, N. Y., assignor to *Arthur M. Harnhart, Alton E. Barnhart*, and *Charles E. Spindler*. Application filed December 3, 1883. Term of patent 14 years.

14,758.—DISH.—*Charles E. Haviland*, Limoges, France. Application filed July 30, 1883. Term of patent 14 years.

14,759.—CARPET.—*Henry Horan*, East Orange, N. J., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed November 9, 1883. Term of patent 3½ years.

14,760.—SATCHEL.—*Morris F. Langfeld*, Chicago, Ill., assignor to himself and *David Heidelberger*, same place. Application filed November 19, 1883. Term of patent 3½ years.

14,761.—CARPET.—*Milton R. Loudon*, Jersey City, N. J., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed December 21, 1883. Term of patent 3½ years.

14,762 and 14,763.—CARPET.—*William McCallum*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Applications filed January 16, 1884. Term of patents 3½ years.

14,764.—CARPET.—*John McMann*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed January 4, 1884. Term of patent 3½ years.

14,765.—CARPET.—*John McMann*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed November 23, 1883. Term of patent 3½ years.

14,766.—CARPET.—*Thomas E. Meagher*, Philadelphia, Pa., assignor to *Horner Brothers*, same place. Application filed January 22, 1884. Term of patent 3½ years.

14,767.—CARPET.—*John Merry*, Brooklyn, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Application filed January 16, 1884. Term of patent 3½ years.

14,768.—WALL-POCKET.—*William H. Miles, Jr.*, Brooklyn, N. Y. Application filed December 20, 1883. Term of patent 3½ years.

14,769.—CARPET.—*Howard North*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed November 9, 1883. Term of patent 3½ years.

14,770.—CARPET.—*Edward Poole*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed November 9, 1883. Term of patent 3½ years.

14,771 to 14,773, inclusive.—CARPET.—*Edward Poole*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed January 4, 1884. Term of patents 3½ years.

14,774.—RUBBER SHOE.—*Everett B. Preston*, Chicago, Ill. Application filed September 18, 1883. Term of patent 7 years.

14,775.—CARPET.—*Fred F. Ricker*, Philadelphia, Pa., assignor to *Bromley Brothers, (Limited,)* same place. Application filed January 2, 1884. Term of patent 3½ years.

14,776.—CARPET.—*Emil G. Sauer*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed January 4, 1883. Term of patent 3½ years.

14,777 and 14,778.—CARPET.—*Stephen Smith*, Philadelphia, Pa., assignor to *Horner Brothers*, same place. Applications filed January 22, 1884. Term of patents 3½ years.

14,779 to 14,781, inclusive.—CARPET.—*Charles W. Swapp*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed November 14, 1883. Term of patents 3½ years.

14,782.—CARPET.—*Charles W. Swapp*, New York, N. Y. Application filed November 23, 1883. Term of patent 3½ years.

14,783 to 14,793, inclusive.—CARPET.—*Charles W. Swapp*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed November 23, 1883. Term of patents 3½ years.

14,794 to 14,801, inclusive.—CARPET.—*Charles W. Swapp*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed January 4, 1884. Term of patents 3½ years.

14,802.—MISS'S JACKET.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed November 19, 1883. Term of patent 3½ years.

14,803.—MISS'S COSTUME.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed November 19, 1883. Term of patent 3½ years.

14,804.—MISS'S POLONAISE.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed November 19, 1883. Term of patent 3½ years.

14,805.—GIRL'S COSTUME.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed December 26, 1883. Term of patent 3½ years.

14,806.—CARPET.—*Lucy W. Valentine*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed November 9, 1883. Term of patent 3½ years.

14,807.—INKSTAND-FRAME.—*Webster R. Walkley*, Brooklyn, N. Y., assignor of one-half to *The Peck, Stow & Wilcox Company*, Southington, Conn. Application filed December 24, 1883. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

10,941.—PLUG, TWIST, FINE-CUT, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Robert James Christian*, Richmond, Va. Application filed January 16, 1884.
"The word 'PIONEER.'"

10,942.—PLUG, TWIST, FINE-CUT, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Robert James Christian*, Richmond, Va. Application filed January 16, 1884.
"The arbitrary word 'SENATOR.'"

10,943.—REFINED HYDROCARBON OIL.—*Clark & Warren*, Corry, Pa. Application filed December 28, 1883.
"The letters 'C' and 'W' and the symbol '&.'"

10,944.—MINERAL WATER.—*Clark Cornwell*, Ypsilanti, Mich. Application filed December 31, 1883.
"A landscape, in the foreground of which is a derrick, tank, vats, barrels, and men engaged in filling and handling such barrels. In the background there are represented trees and shrubbery, derrick, tank, and barrels."

10,945.—WHISKY.—*Forster, Müller & Co.*, Baltimore, Md. Application filed January 14, 1884.
"The word 'ELEVATOR.'"

10,946.—NATURAL MINERAL WATERS.—*Fred. Hollender & Co.*, New York, N. Y. Application filed January 12, 1884.
"The word 'NEPTUNE.'"

10,947.—ANIMAL-TRAP.—*Elijah P. Peacock*, Chicago, Ill. Application filed December 5, 1883.
"The words 'LITTLE THROTTLER.'"

10,948.—TOILET-PINS.—*Thomas Porter*, New York, N. Y. Application filed January 14, 1884.
"The pictured representation of a cupid seated on the back of a dolphin, with a pin grasped in his right hand."

10,949.—MEDICINE TO PURIFY THE BLOOD.—*Lewis Jacobs & Co.*, Talladega, Ala. Application filed November 1, 1883.
"The words 'LEWIS JACOBS & Co.,' with a picture or representation of said Lewis Jacobs."

10,950.—BISCUITS OR CRACKERS.—*E. J. Larrabee & Co.*, New York, N. Y. Application filed January 26, 1884.
"The words 'SNOW FLAKE,' the snow-flakes, and a bird."

10,951.—ORANGES AND LEMONS.—*Antonio Minaldi*, New York, N. Y. Application filed January 23, 1884.
"The figure of an obelisk and the words 'THE OBELISK,' both or either."

10,952.—ORANGES AND LEMONS.—*Antonio Minaldi*, New York, N. Y. Application filed January 23, 1884.
"The figure of a drummer-boy or the word-symbol 'DRUMMER-BOY.'"

10,953.—ORANGES AND LEMONS.—*Antonio Minaldi*, New York, N. Y. Application filed January 23, 1884.
"The figure of a bicycle or the word 'BICYCLE.'"

10,954.—CRACKERS.—*John B. Ruger & Sons*, Lafayette, Ind. Application filed January 23, 1884.
"A representation of the sun."

10,955.—SMOKING-TOBACCO, CHEWING-TOBACCO, AND SNUFF.—*H. Wilkens & Co.*, Baltimore, Md. Application filed October 20, 1884.
"The word 'MARTHA.'"

10,956.—BISCUITS, CRACKERS, OR CAKES.—*Walter G. Wilson*, Philadelphia, Pa. Application filed January 26, 1884.
"The word-symbol 'WILSON'S.'"

10,957.—TINNED SPOONS AND FORKS.—*G. I. Mix & Co.*, Yalesville, Conn. Application filed January 18, 1884.
"The word 'MALACCA.'"

LABELS.

3,899.—Title: "DICKEY'S INDIAN BLOOD AND LIVER PILLS."—*John R. Dickey*, Goodson, Va. Application filed January 30, 1884.

3,900.—Title: "DR. WILDER'S VEGETABLE LIVER REMEDY."—*Joseph T. Fleming*, Princeton, Ind. Application filed January 30, 1884.

3,901.—Title: "GREBE'S SAGE HAIR TONIC."—*Conrad Grebe*, Chestnut Hill, Philadelphia, Pa. Application filed January 24, 1884.

3,902.—Title: "FOR GOODNESS SAKE DON'T SAY I TOLD YOU." (FOR TIP-LININGS FOR HATS.)—*Francis G. Hanson*, Brooklyn, N. Y. Application filed January 22, 1884.

3,903.—Title: "PINT ENGLISH" (FOR PICKLES.)—*F. & J. Heinz*, Pittsburg, Pa. Application filed January 23, 1884.

3,904.—Title: "ART CLUB" (FOR CIGARS.)—*S. F. Hess & Co.*, Rochester, N. Y. Application filed January 22, 1884.

3,905.—Title: "DR. VON BREEMBERG'S ZYMOTIC MALARIA ANTIDOTE."—*Edwin W. Higbee*, Northampton, Mass. Application filed January 26, 1884.

3,906.—Title: "DR. VON BREEMBERG'S HOMEOPATHIC BILIOUS POWDERS."—*Edwin W. Higbee*, Northampton, Mass. Application filed January 26, 1884.

3,907.—Title: "DELICIOUS SIPS" (FOR ROASTED COFFEE.)—*Herman Hulman*, Terre Haute, Ind. Application filed January 28, 1884.

3,908.—Title: IRVINE'S INDIGOTIQUE."—*Samuel I. Irvine*, Newville, Pa. Application filed January 26, 1884.

3,909.—Title: "KINSEY'S FINE GRAHAM BREAKFAST CAKE FLOUR."—*Z. B. Kinsey*, Rochester, Pa. Application filed January 25, 1884.

3,910.—Title: "GRAND ROYAL SEC." (FOR CHAMPAGNE.)—*Luyties Brothers*, New York, N. Y. Application filed January 26, 1884.

3,911.—Title: "MOUNT CLEMENS SPRUDEL WATER."—*Henry F. Meier*, Mount Clemens, Mich. Application filed January 23, 1884.

3,912.—Title: "VEGA" (FOR CIGARS.)—*Nilson Bros.*, St. Paul, Minn. Application filed January 22, 1884.

3,913.—Title: "BANNER TIP" (FOR SHOES.)—*Benjamin F. Oblinger*, Philadelphia, Pa. Application filed January 24, 1884.

3,914.—Title: "DR. REND'S ACTINIC SPECTACLES AND EYEGLASSES."—*W. Robert Rend*, Oshkosh, Wis. Application filed January 22, 1884.

3,915.—Title: "WILLIAMS' LINIMENT."—*J. Allen Rice*, Milford, Mass. Application filed January 29, 1884.

3,916.—Title: "THE NICKEL SWEET CHOCOLATE PACKAGE."—*Runkel Brothers*, New York, N. Y. Application filed January 24, 1884.

3,917.—Title: "DAZZLEINE GOLD AND SILVER POLISH, PRODUCES A DAZZLING BRILLIANCY WHICH IT RETAINS."—*Hugh M. Spalding*, New York, N. Y. Application filed January 26, 1884.

3,918.—Title: "A NO. ONE SMOKE" (FOR CIGARS.)—*George T. Warren*, Flint, Mich. Application filed January 26, 1884.

3,919.—Title: "THE FLINT" (FOR CIGARS.)—*George T. Warren*, Flint, Mich. Application filed January 26, 1884.

3,920.—Title: "WOMACK'S SPECIFIC."—*W. D. Wear*, Tarrant County, and *A. M. Womack*, Bosque County, Tex. Application filed January 23, 1884.

3,921.—Title: "SILVER PILLS."—*Wells & Church*, San Francisco, Cal. Application filed January 24, 1884.

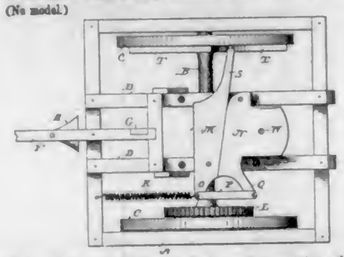
3,922.—Title: "TURKISH BATH" (FOR A LINIMENT.)—*David W. Wentworth* and *Jared P. Wentworth*, Great Falls, N. H. Application filed December 14, 1883.

3,923.—Title: "NEW PROCESS YEAST."—*E. Delavan Woodruff*, Auburn, N. Y. Application filed January 23, 1884.

PATENTS

GRANTED FEB. 19, 1884.

293,615. COMBINED CORN-PLANTER AND FERTILIZER-DISTRIBUTER. WILLIAM NOAH ARNOLD, Omen, Tex. Filed Oct. 6, 1883. (No model.)



Claim.—1. The combination of the frame, the revolving axle having transporting-wheels, blocks or bars upon the inner side of one of the latter, longitudinal frame-bars, a hopper mounted upon the same, a pair of levers or plates pivoted upon the longitudinal frame-bars, under opposite sides of the hopper, and forming the bottom of the latter, arms extending from the said levers and connected by a pivoted rod, a spring connecting the arm of the front lever with the front part of the frame, and an arm extending from the opposite side of the front lever and adapted to engage the blocks or bars upon the inner side of the adjoining transporting-wheel, substantially as set forth.

2. In a combined corn-planter and fertiliser-distributer, the combination of a hopper, a pair of levers, forming the bottom of the same, mechanism for moving or opening the said levers in opposite directions, so as to permit the escape of a portion of the contents of the hopper, a seed-hopper arranged in rear of the main hopper above the rear lever, a seed-cup formed in the latter, a bottom plate having an inclined opening or chute, and mechanism for automatically closing the levers or bottom plates of the main hopper, substantially as set forth.

3. In a combined seed-planter and fertilizer-distributer, the combination of the seed-hopper, the seed-slide consisting of a lever, which forms part of the bottom of the fertilizer-hopper, mechanism for moving the said lever or seed-slide in a rearward direction to receive seed from the hopper, a spring arranged to move the said lever or seed-slide in a forward direction by a quick and sudden action upon the cessation of the actuating mechanism, and a bottom plate having a forwardly-inclined opening or chute, through which the seed will be thrown by the forward action of the seed-slide, as and for the purpose set forth.

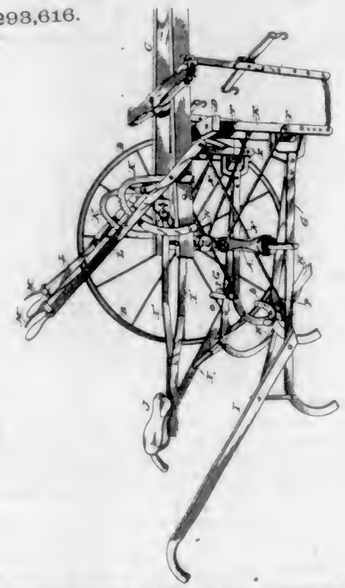
293,616. WHEEL-CULTIVATOR. CHARLES A. BAKER, Moline, Ill. Filed Aug. 4, 1883. (No model.)

Brief.—The rod from the lever may slide through the foot-block, permitting the beam to rise, or by the insertion of a pin be locked at a fixed position.

Claim.—1. In a riding and walking cultivator, the combination of the following elements: a wheeled frame, shovel-carrying beams free to swing in a lateral direction, jointed at the forward ends to said frame and provided with operating-handles at the rear, a driver's seat mounted upon the frame, hand-levers mounted upon the frame, devices for locking said levers in different positions, rods connecting the hand-levers to the respective beams, and means, substantially as described, whereby said rods may be given a rigid or a sliding connection at one end, as occasion may require.

2. In a wheeled cultivator, laterally and vertically swinging shovel-beams, jointed at their forward ends to the frame, combined with hand-levers mounted upon the frame and provided with devices whereby the levers may be locked in different positions, rods connecting the lower ends of the hand-levers with the respective beams, said rods being arranged to slide through their connection at one end, as described, and the removable keys or pins inserted through the sliding end of the rod for

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the purpose of preventing the sliding movement, whereby the levers may be caused to act simply for lifting the beams, for suspending the same at a given elevation, or for the additional purpose of locking the beam down positively in an operative position.

3. The wheeled frame having the laterally and vertically swinging shovel-beams jointed thereto at their forward ends, the hand-levers having their lower ends substantially over the forward ends of the beams, the locking devices for said levers, the rods N, having their upper ends jointed to the levers substantially over the forward ends of the beams, and their rear ends extended through eye-plates on the beams, and provided with nuts or heads at the lower end, and a key or locking device combined with said rod above the eye-plates.

4. In combination with the shovel-beams and suspending or lifting rods, the combined eye and foot plates, as described.

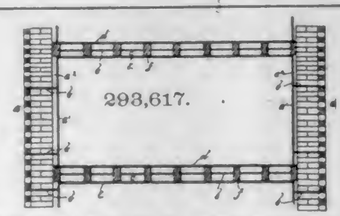
5. In combination with the shovel-beam and the lifting-rod, the plate attached to the beam and provided with a series of openings, as described, whereby a lateral adjustment of the lifting-rod with respect to the beam is permitted.

293,617. PROTECTING BUILDINGS FROM VERMIN, FIRE, &c. FREDERICK W. BARTLETT, Buffalo, N. Y. Filed Apr. 6, 1883. (No model.)

Brief.—The spaces between the lath and plaster and the walls and between the ceilings and floors are sectioned by intervening partitions sealed with cement.

Claim.—1. A building having the spaces between the lath and plaster and the walls and between the ceilings and floors sectioned by means of intervening partitions of suitable material placed in position during the construction of the building, and carefully sealed with mortar, cement, &c., so as to form permanent barriers to the circulation of vermin, fire, and air, substantially as shown and described.

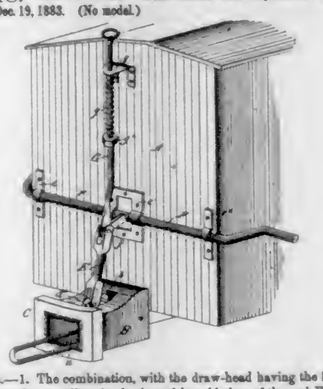
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2. In a building, the combination, with the wall *a* and lath and plaster *a'*, of the dividing partition or partitions *b*, as and for the purpose stated.

3. In a building, the combination, with the floor *d* and ceiling *e*, of the dividing-partitions *b*, as and for the purpose stated.

293,618. CAR-COUPLING. JAMES LARKEN BIAS, Guyandotte, W. Va. Filed Dec. 19, 1883. (No model.)



Claim.—1. The combination, with the draw-head having the longitudinal slot and a coupling-hook pivoted in said slot, of the rod E, pivoted to the upper end of said hook, and pivoted to the lower end of a rod, G, said rod being secured in a bracket, *g*, and provided with a coil-spring, *g'*, whereby the coupling-hook is held in position and the accidental displacement of the link prevented, substantially as set forth.

2. The combination, with a draw-head having the longitudinal slot *a* and a coupling-hook pivoted therein, of a rod, E, pivoted to the upper end of said hook, a lever, F, secured in brackets to the front of the car, and provided with the central arm, *f*, a rod, G, secured in a bracket to front of the car, its lower end, together with arm *f'* of the lever F, being pivoted to the upper end of the rod E, substantially as set forth.

3. The combination, with a draw-head having the longitudinal slot *a* and a coupling-hook pivoted therein, of a rod, E, pivoted to the upper end of said hook, a lever, F, secured in brackets to the front of the car, and provided with the central arm, *f*, a rod, G, secured in a bracket to the front of the car, its lower end, together with the arm *f'* of the lever F, being pivoted to the upper end of the rod E, and a coil-spring mounted on said rod G, its upper end bearing against the bracket *g*, and its lower end against the burr or washer *g²*, substantially as set forth.

293,619. WHEEL. RICHARD THOS. BISHOP, St. Louis, Mo., assignor of one-half to Theodore Hunt, same place. Filed Nov. 27, 1883. (No model.)

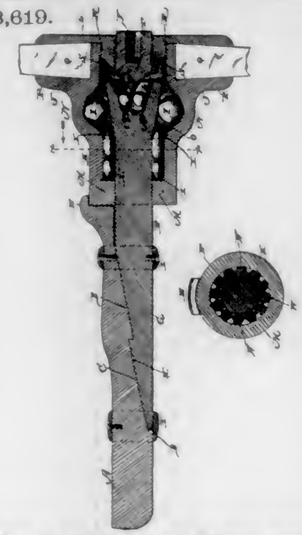
Claim.—1. The combination, with a shaft or axle beveled on its under side at its outer end, and having a recess provided at its inner or lower edge with an outwardly-extending lug, of a detachable spindle having a projecting portion adapted to fit in the said recess, and suitable connecting clips or bands, substantially as set forth.

2. The combination of an axle having beveled outer end, B, and overhanging flange E, with a detachable spindle having a tapering or conically-enlarged outer end, and inwardly-extending beveled arm G, and a wheel mounted upon the said spindle, substantially as set forth.

3. The combination, with a spindle having a tapering or conically-enlarged outer end, of a wheel consisting of a mainly cylindrical sheath or casing having a bulging portion forming an interior angular groove, an inward-projecting flange at its inner end, and an exterior angular flange near its outer end, and a cap having an inwardly-projecting threaded flange fitting in the outer end of the sheath, and interposed friction-rollers, substantially as set forth.

4. The combination of a spindle having a tapering or conically-enlarged outer end provided with a recess, Z, with a wheel comprising a sheath, K, having flanges M P, and interior annular groove O, cap L,

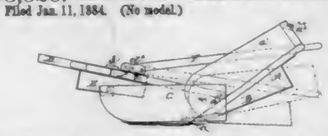
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having flange S, provided with exterior and interior screw-threads, and plug T, having conical inner end, U, and recess V, and the friction-rollers W, and balls Y and A', all arranged and operating substantially as set forth.

5. The combination, with a detachable spindle having tapering or conically-enlarged outer end provided with recess Z, of a wheel fitted or arranged upon said spindle, and equipped with a plug having a conically-pointed inner end entering the recess Z, and friction-balls placed in the said recess and bearing against the said plug, substantially as set forth.

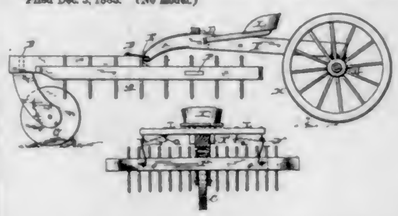
293,620. SNOW-SCRAPER. GEORGE A. BIRCH, East Greenbush, N. Y. Filed Jan. 11, 1884. (No model.)



Claim.—1. In a snow-scraper, the combination, with a face-board, A, and tongue D, hinged to said face-board, and provided with a lever, F, adapted to engage with the face-board A, substantially as described, of the runners C, pivotally connected to the face-board A, all being constructed and arranged to operate substantially as herein specified.

2. In a snow-scraper, the combination, with a face-board, A, provided with the runners B, or their described equivalents, of the tongue D, hinged to said face-board, and a lever, F, fulcrumed to said tongue and adapted to secure the face-board A in its angular position, and to effect the dumping movement of said face-board, substantially as herein specified.

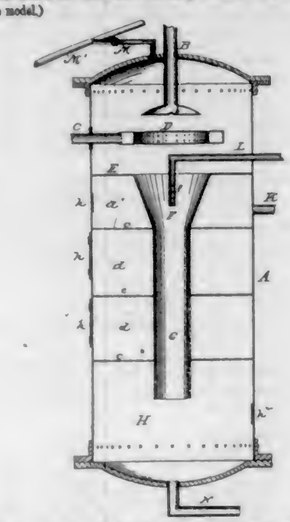
293,621. SULKY-HARROW. JAMES E. BEARD, Cold Water, Ohio. Filed Dec. 3, 1883. (No model.)



Claim.—The combination of a harrow provided at its front end with means for the attachment of a removable caster-wheel, the beam hinged to the harrow at its front end, and supported at its rear end upon the axle-tree, which is supported upon wheels, and provided with a seat and a

hole for the attachment of said caster-wheel, the cross-bar, and the hooks for supporting the rear end of the harrow while being transported, substantially as shown.

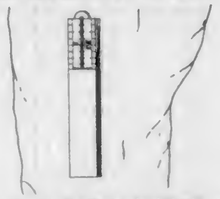
293,622. FEED-WATER HEATER AND PURIFIER. JOHN H. BERKSHIRE, Muscatine, Iowa, assignor to the Kennedy & Berkshire Feed Water Heater and Filter Manufacturing Company. Filed Sept. 27, 1883. (No model.)



Claim.—1. In a feed-water heater having the scum-chamber F, consisting of the mouth of the central tube, G, the scum-blow-off pipe consisting of the horizontal portion L, arranged above the water-line, and of the vertical portion *f*, extended downward in the center of the scum-chamber, and perforated from the water-line downward to its closed end, substantially as and for the purposes set forth.

2. In a feed-water pressure-heater, the escape-pipe M, connecting the water and steam receiving chamber of the heater with a steam-circulating pipe, M', in combination with the live-steam-induction pipe C, substantially as and for the purposes described.

293,623. HOLDER FOR MECHANICS' RULES. JAMES S. BORDEN, Terre Haute, Ind. Filed Nov. 23, 1881. (No model.)



Claim.—1. A rule-holder for mechanics' rules, consisting of the case A, spring-pin B, and safety-eye C, constructed and arranged for operation substantially as described and shown.

2. In combination with overalls or other articles of clothing, a rule-holder composed of the elements A, B, and C, as described, and applied substantially as and for the purpose set forth.

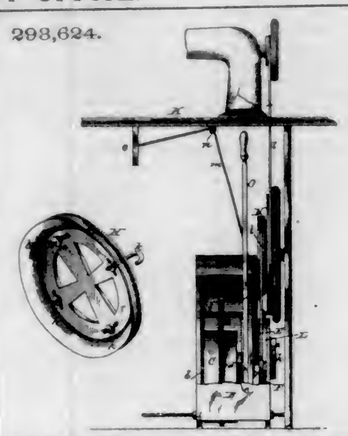
293,624. MECHANICAL MOTOR. FRIEND NEWTON BRETT, Sparta, Wis. Filed Dec. 10, 1883. (No model.)

Claim.—1. In a motor, the combination, with suitable winding mechanism, of a removable and reversible drum, inclosing the usual coiled spring, the shaft of said drum having secured to its ends right-hand and left-hand ratchet-wheels, substantially as and for the purpose set forth.

2. In a motor, the combination, with a removable and reversible drum containing the usual coiled spring, and having upon its shaft right and left hand ratchet-wheels, of an arm loosely mounted on the shaft, and carrying a spring-dog, and an adjustable link pivoted to the arm and to an adjustable lever, substantially as and for the purpose set forth.

3. A mechanical motor consisting of a reversible drum inclosing a

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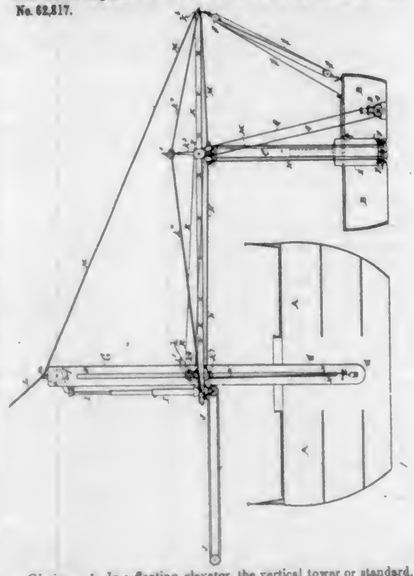


coiled spring, and having right and left hand ratchet-wheels upon its shaft, a reversible pawl to engage therewith, an upright arm loosely mounted on the shaft, and carrying a spring-dog, a pivoted lever, and a link connecting said lever with the arm, both the lever and link being adjustable, to adapt them to the drum when reversed, substantially as and for the purpose specified.

4. In a motor, the combination, with the band-pulley thereof, of a grooved pulley provided with adjustable clamps for detachably connecting it to the fly-wheel of a sewing-machine, substantially as and for the purpose specified.

5. A brake mechanism for sewing-machine motors, consisting of a spring-brake arranged over the driving-belt pulley of said motor, and a cord attached thereto, which extends up over a pulley secured to the under side of the sewing-machine table, and its end secured to a pivoted lever, also secured to the under side of the table, and adapted to be operated by the knee of the person sewing, substantially as and for the purpose specified.

293,625. FLOATING ELEVATOR. WILLIAM SOUTHERN BREES, Liverpool, County of Lancaster, England. Filed May 18, 1883. (No model.) Patented in England Oct. 7, 1882, No. 4,732, and in Belgium Oct. 8, 1883, No. 62,817.



Claim.—1. In a floating elevator, the vertical tower or standard, the frame arranged to swing both vertically and horizontally upon the said standard, and the endless elevator attached to and adjustable ver-

tically with respect to the overhanging end of the frame, all combined substantially as described.

2. In a floating elevator, the combination of the pillar or standard, a supporting-frame connected to said standard in such manner as to swing both vertically and horizontally, and an elevator, substantially as described, connected to the outer end of said frame, and adjustable vertically thereon by means substantially as described.

3. In a floating elevator, the combination of the tower or standard, the frame movable vertically and horizontally about the same, and the elevator connected to the end of said frame by means substantially as described, adapted to permit the elevator to be raised and lowered, and also varied in inclination with respect to the supporting-frame.

4. In a floating elevator, the combination, with a fixed supporting-frame, K, of an upright elevator having an endless chain of buckets, substantially as described, said elevator being movable in a vertical direction with respect to the frame, and driving-pulleys h', for said elevator, mounted on the supporting-frame, whereby the vertical adjustment of the elevator is permitted without affecting the action of the driving mechanism.

5. A floating elevator formed of a floating base, a column, a frame-work cradle or jib jointed to same, so that it can stand at any required angle, and an elevator-frame hung from the said jib, but capable of being stowed away, lying flat upon said jib, without disconnecting the driving mechanism, substantially as described.

6. In a floating elevator, the combination of a column, C, a frame, K, pivoted to same, so as to be swung to almost any angle, with the axis of said column horizontal or vertical, and an elevator, G, pivoted to said frame, so as to hang to any desired angle with the vertical, substantially as described.

7. The combination of the frame K, the shaft A, the elevator G, capable of partial rotation on the shaft A, and also capable of being raised or lowered while the shaft remains stationary, and elevator driving-pulleys mounted on said shaft, substantially as described.

8. The combination of an elevator, G, formed of a slotted frame-work, belt or chain of buckets, and the requisite pulleys and driving-shaft A, working in slot of frame, with carriage g' and system of pulleys thereon carrying the belt of buckets, and driving same without any other contact than a sliding or rolling one with the frame-work.

9. The slotted elevator G, suspended by chain or rope N, but free otherwise to descend, and driven by shaft A, passing through the longitudinal slot in the elevator-frame.

10. The combination of slotted elevator-frame G, the chain of buckets, the driving-shaft A, passing through the slot, and the carriage g', carrying the driving and tension pulleys, and carried itself by the shaft A.

11. In an elevator-frame, the driving mechanism consisting of a driving-axle driven by wheels h', and carrying driving-wheels g^3, and a carriage, g', which in turn, on spindles in suitable bearings, carries tension-pulleys g^4 and runners g^5.

12. In combination with an elevator, the driving-pulleys g^3, carrying pulleys g' and g^4, tension-pulleys g^4, and deflecting-pulleys g^2, substantially as and for the purposes specified.

13. In an elevator, the combination of the upright endless chain of buckets g^6, mounted in a vertically-adjustable frame, the supporting-pulleys g', guide-pulleys g^4, pulleys g^3, arranged to deflect the chain inward below the pulleys g', and the spout i^3, entering between the pulleys g' and g^3, as described and shown, whereby the delivery of the grain from the buckets into the spout is insured.

14. In combination with an upright elevator having an endless chain of buckets, as described, a spout or hopper, I, affixed to the front of said elevator, and a series of pivoted doors, i, mounted in the front of said spout or hopper, and each adapted for adjustment as a spout or deflector, whereby the delivery of the grain may be effected at any required point in the length of the spout or hopper.

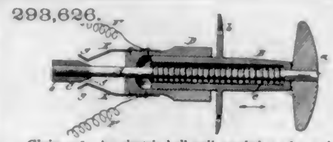
15. In combination with the frame K, the elevator containing an endless chain of buckets supported upon said frame, and adjustable thereon, both as to height and inclination, and a telescopic hopper or chute having one end affixed to the upper end of the elevator, and the opposite end affixed to the supporting-frame, whereby the delivery of the grain at a fixed point is secured, notwithstanding variations in the position of the elevator.

16. The combination of the pivoted elevator-frame G, the guiding-ropes M and N, attached to opposite ends of same, and leading to winches, and the guide-pulleys l^2 and l^2, placed near opposite ends of the horizontal or oblique-lying frame K, carrying said elevator-frame, all for the purposes specified.

17. The pivoted head-stock c, free to rotate horizontally on the column C, and carrying pulleys c'' and c^3, and the trunnions c', for pivoted bracket l^2 and its frame or jib K, substantially as specified.

18. The frame-work cradle or jib K, formed with a straining-post, l^2, and tie-rods l^4, and a bracket, l^3, immediately below the straining-post, fitted with bearings, so that the said jib can freely oscillate on the journals or trunnions of said bearings, for the purposes described.

293,626. ELECTRIC BELL-PULL. AUGUSTUS S. BUNKER, Lawrence, Mass. Filed Nov. 26, 1883. (No model.)



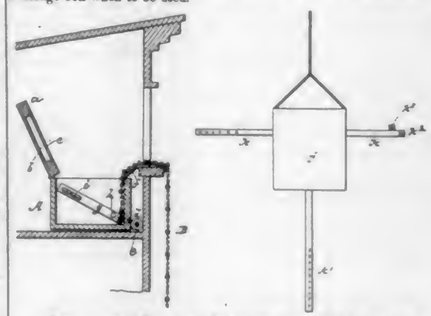
Claim.—1. An electric bell-pull consisting of a casing cast with a circumferential flange, a spring and spindle constructed substantially as described, and an insulator adapted to fit over the end of the casing, substantially as and for the purpose set forth.

2. In an electric bell-pull, the combination, with a suitable casing and an insulator fitting over the end of the same, of a spindle having at one end detachably connected a beveled button, and at its opposite end a button formed with a conical or beveled inner face, substantially as and for the purpose set forth.

3. An electric bell-pull consisting of a casing cast with a circumferential flange or escutcheon, and having connected to its inner end an insulator provided with curved or bent spring-arms and conducting-wires, and a spindle extending through the casing and insulator, and having a spiral spring coiled around it, and provided at one end with a button formed with a conical or beveled face, and at the opposite end with a knob beveled outward upon its inner side from its center of axis, substantially as and for the purpose described.

293,627. FIRE-ESCAPE. SPENCER D. BUTLER, Marshfield, Oreg. Filed June 6, 1883. (No model.)

Brief.—A pad or front piece made of a stout bag and provided with suitable attaching-straps and buckles is secured to one end of an escape-rope which is passed around a cleat and pin on a bar secured in a storage-box when to be used.

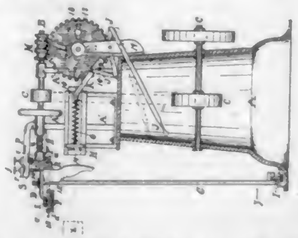


Claim.—1. In a fire-escape, the combination, with the receptacle A, constructed and arranged as described, of the inclined plate or bar g, secured to the inside of the receptacle, and provided with a pin, h, at its lower end, and the cleat i at its upper end, said cleat and pin or stud adapted to operate in connection with the rope of an escape, whereby said escape is lowered, as described.

2. In a fire-escape, the combination of the receptacle, plate g, pin h, cleat i, and escape J, having straps $k\ k\ k'$, as shown and described.

3. In a fire-escape, the escape consisting of the rope, the bag j at the end thereof having secured thereto straps $k\ k\ k'$, adapted to fasten the escape to the wearer, as shown and described.

293,628. HEEL TRIMMING AND BREASTING MACHINE. ULDERIC D. BYRON, Chicago, Ill., assignor of one-half to Albert E. Dike, same place. Filed Aug. 8, 1883. (No model.)



Claim.—1. In machines for trimming and breasting boot and shoe heels where the breasting-knife and the cutter-head operate at different times on the heel, the intermediate gear-shaft, B, of the cutter-head, and the intermediate gear-worm, M, wheel L, provided with pin 13, levers J J' K, with the main drive-gear C C C, as specified.

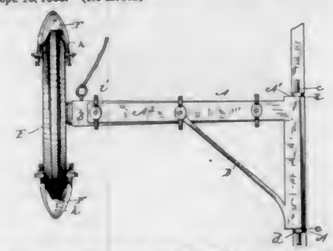
2. The jack F F' D, hung in bearings 1, 2, and 3 by mechanism to have vertical rocking and horizontal reciprocating motions, as described and shown.

3. The wheel L, provided with pin 13, disconnected from and operating intermittently on the lever J J' K 16, in combination with worm-gear M and breasting-knife H, as a means for breasting a heel at the proper time, while there is a continuous movement of the driving-gear.

4. The guard 20, combined with the plate r, slotted at $m\ m$, slotted arm P, and set-screws $l\ l$, for adjusting the guard to different lengths of cutter-heads.

5. The pattern-guide 23, hung to a grooved support, A, in combination with spring v, to allow heels of varying depths at all parts to be brought to the knives.

293,629. ROW-GUIDE. ROBERT W. CHAPPELL, Waverly, Va. Filed Sept. 10, 1883. (No model.)



Claim.—The land-marker herein described, comprising the combination of the triangular-shaped frame A, diagonal brace D, axle-bar B, marking-wheel E, with the adjustable markers F, and the axial bearings, substantially as described.

293,630. TIRE FOR VEHICLE-WHEELS. CHAS. JACKSON CLARKE Mount Crawford, Va. Filed Aug. 15, 1883. (No model.)

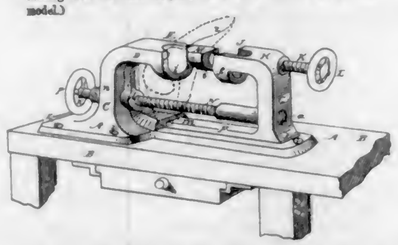


Claim.—1. A felly-protector consisting of a flanged bisected ring, C, and detachable piece D, in combination with the central piece, E, secured in place by a screw, f, substantially as shown and set forth.

2. A felly-protector consisting of a flanged bisected ring, C, and detachable piece D, provided with recesses for the lugs e, in combination with a central piece, E, secured in place by a screw, f, substantially as specified.

3. A felly-protector consisting of a flanged bisected ring, C, and detachable piece D, provided with recesses for reception of the lugs e on said ring, in combination with the central beveled piece, E, screw f, and the bolts d, all constructed substantially as specified.

293,631. MOLD FOR MOLDING THE UPPERS OF BOOTS AND SHOES. GEORGE H. CLARK, Boston, Mass., assignor to the Clark Glove-Fitting Boot and Shoe Company, Portland, Me. Filed May 5, 1883. (No model.)



Claim.—1. The improved mold herein described, the same consisting of the bed A, having the standard C and arm D, provided with the die E, the slide F, having the standard G and arm H, provided with the recess J, the shaft N, provided with the wheel P, and the shaft K, provided with the wheel L and die M, combined and arranged to operate substantially as set forth.

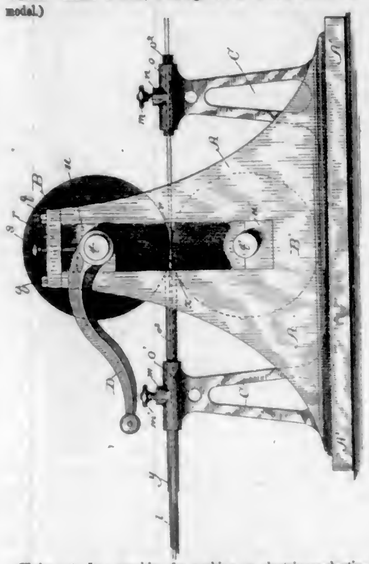
2. In a mold for molding or stretching the uppers of boots and shoes, the clamp or clamping device, between the jaws of which the upper around its shank portion is grasped and firmly held or kept in its normal condition, in combination with the movable die or former adapted to mold or stretch the unclamped portion of the upper at the shank, substantially as specified.

3. In a mold for molding or stretching the uppers of boots or shoes, the clamp or clamping device, between the jaws of which the upper around its shank portion is grasped and firmly held or kept in its normal condition, in combination with the movable die or former and suitable operative mechanism, said die or former being adapted to override or partially override and mold or stretch the unclamped portion of the upper at its shank, substantially as set forth.

4. In a mold for molding the uppers of boots and shoes, the recess J, in combination with the arm H, arm D, die E, and die M, substantially as shown and described.

5. The process of molding or stretching the upper of a boot or shoe at its shank, substantially as herein described, the same consisting, essentially, in uniting the vamps and quarters, then clamping the portion around the shank to hold or keep it in its normal condition, and while so clamped molding or stretching the shank portion, substantially as set forth.

293,632. MACHINE FOR LAYING ELECTRIC CONDUCTING-WIRES. HENRY B. COBB, Wilmington, Del. Filed Nov. 24, 1883. (No model.)



Claim.—1. In a machine for pushing an electric conducting-wire through a tube formed to receive it, the combination, with the frame A A', adjustable rollers B B', and mechanism for adjusting the said rollers relatively to each other, of the upright C, die c^3, supported by the said upright, and mechanism for detachably securing the said die to the said upright, substantially as described.

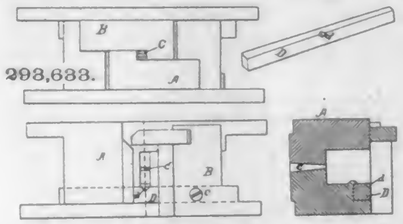
2. In a machine for pushing an electric conducting-wire through a tube formed to receive it, the combination, with the frame A A', adjustable rollers B B', and mechanism for adjusting the said rollers relatively to each other, of the upright C', the tube c^3, supported by the said upright, and mechanism for detachably securing the tube c^3 in position to the said upright, substantially as described.

3. In a machine for pushing an electric conducting-wire through a tube, the combination, with the frame A A', adjustable rollers B B', mechanism for adjusting the said rollers relatively to each other, and upright C', having tube c^3 adjustably secured thereon, of the upright C, die c^3, and mechanism for detachably securing the said die to the said upright, substantially as described.

293,633. TYPE-CASTING MOLD. JAS. M. CONNER, New York, N. Y. Filed Dec. 26, 1882. (No model.)

Brief.—A notched rod is adapted to slide in front of the matrix in the mold. For "descending" letters, the notched portion is brought opposite the matrix, forming a continuation of the hollow portion of the mold. For ordinary letters, the unnotched portion is made to register with the matrix.

293,633.



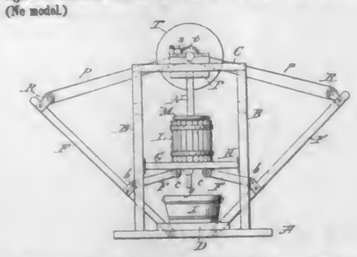
Claim.—A mold for forming type which may be descending or not, provided with the adjustable strip D, having at one edge the notch *d*, whereby the mold is adapted for both kinds of type, as set forth.

293,634. SAILOR'S JACKKNIFE. THOMAS J. COWIN, United States Navy. Filed July 23, 1883. (No model.)



Claim.—In combination with a sailor's jackknife having the usual lanyard-hole through the handle at the butt-end thereof, a swivel, *b*, provided with a yoke, B, having bent ends *f f*, adapted to enter said lanyard-hole *a* in the jackknife-handle from opposite sides, the whole designed to provide a means for proper and substantial securement of the knife to the lanyard, substantially as described.

293,635. FRUIT-PRESS. BURWELL J. CURRY, Huntsville, Ala., assignor of one-sixth to John H. Rannoker, same place. Filed Nov. 30, 1883. (No model.)



Claim.—1. In a fruit-press, the concaved follower or plate G, substantially as described.

2. In a fruit-press, the concaved follower or plate G, having spout *g*, substantially as described.

3. In a fruit-press, the concaved follower G, having radial grooves *r e*, opening *f*, and spout *g*, substantially as described.

4. In a fruit-press, the combination, with the uprights B B and follower G, of the guides H H, attached to the follower, and provided with rollers *d d*, adapted to bear on the faces of the uprights, substantially as described.

5. In a fruit-press, the combination, with the concaved follower G, having spout *g* and rabbet *h*, of the slotted plate K, substantially as described.

6. In a fruit-press, the combination of the concaved follower G, slotted plate K, tub L, and piston M, substantially as described.

7. In a fruit-press, the combination of the uprights B B, concaved follower G, having spout *g* and guides H H, the slotted plate K, tub L, piston M, suspended rigidly by rod N, the levers E F, drum Q, pulleys R R, and rope *p*, substantially as described.

8. In a fruit-press, the combination of the sills A A, uprights B B, cross-pieces C C, base D, cross-beam P, rod N, piston M, drum Q, rope *p*, levers E E, having pulleys R R, levers F F, concaved follower G, having spout *g*, the slotted plate K, and tube I L, substantially as described.

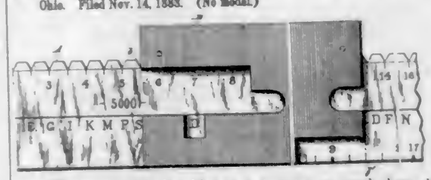
293,636. ARTISTIC TILE. GYULA DE FESTETICS, Perth Amboy, N. J. Filed Jan. 16, 1884. (No model.)



Claim.—1. As a new article of manufacture, an artistic tile consisting of a clay body with superimposed crystals or vitreous masses thereon, secured through the medium of a fluxing material, as described.

2. The herein-described method of producing artistic tiles, consisting in the application upon the surface of the clay body of a fluxing material and crystals or vitreous masses and uniting the whole by means of heat, substantially as described.

293,637. DUPLEX-CHECK SCALE-BEAM. JOHN A. DENUTH, Toledo, Ohio. Filed Nov. 14, 1883. (No model.)



Claim.—1. A series of letters or characters on a scale-beam, in combination with a poise so arranged that always at the same distance from the part of the poise that indicates the weight on the scale-beam one or more of the aforesaid letters or characters will be exposed to view, while the adjacent letters or characters on one or both sides will be concealed by the poise, substantially as set forth.

2. In a scale-beam provided with a scale and poise arranged in the usual manner, the combination, with a series of letters or characters and an open space in the poise, as aforesaid, of a second scale and a pointer or other means on the poise for indicating numbers on the second scale, and so arranged that the numbers indicated on the second scale should be different from the numbers indicated at the same time on the first scale, but should always be of the same relative value to the said numbers indicated on the first scale, substantially as set forth.

3. The combination of two scale-beams, each arranged with a scale and poise in the usual manner, and each provided with a series of letters and an opening in the poise for reading the same, and with a second scale and pointer, substantially as set forth.

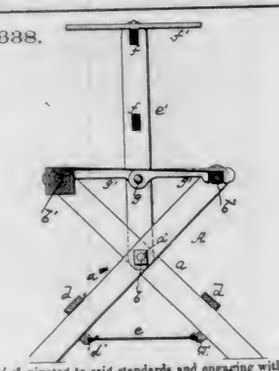
4. One or more secondary scales whose figures bear a given ratio to the figures on the primary scale, where the weights are indicated, and a series of letters or characters, the said scale being provided with suitable mechanism whereby figures are indicated on the secondary scale and letters or characters of the said series are exposed to view, and always at the same distance from the point where the weights are indicated on the primary scale, substantially as set forth.

293,638. QUILTING-FRAME. LUCIAS E. DICKSON, Brazil, Ind. Filed Aug. 4, 1883. (No model.)

Claim.—1. The combination, with a suitable frame-work, of quilting-rolls having bearings in said frame-work, and lock-catches pivoted to said frame-work, with their outer ends constructed, substantially as described, to engage with said rolls and prevent them from turning, as herein set forth.

2. The combination of the legs *a a*, pivoted to each other, quilting-rolls *b' b²*, having bearings in said legs, upright standards *d' d'*, and lock-

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catches *g' g²*, pivoted to said standards and engaging with the said rolls, substantially as and for the purpose herein specified.

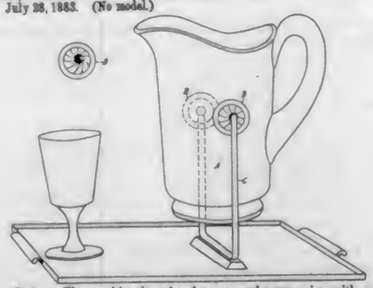
3. A combined quilting-frame and clothes-rack, comprising pivoted legs, quilting-rolls, having bearings in said legs, standards at both ends of the frame, pivoted to said legs, cross-bars connecting the standards and legs, respectively, on opposite ends of the frame, pivoted locking-hooks, which engage with the quilting-rolls, means for keeping the legs from spreading too far apart, and arms pivoted to the cross-bars connecting the standards, substantially as and for the purpose set forth.

293,639. MODE OF DECORATING GLASSWARE. JOHN SEFTON DRINAN, London, Ontario, Canada. Filed June 1, 1883. (No model.)



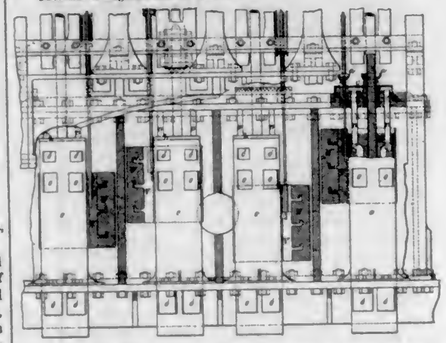
Claim.—The mode of decorating the hollow stems and cover-knobs of articles made of glass in representation of an aquarium, substantially as and in the manner hereinbefore described.

293,640. JUG. JOHN SEFTON DRINAN, London, Ontario, Canada. Filed July 28, 1883. (No model.)



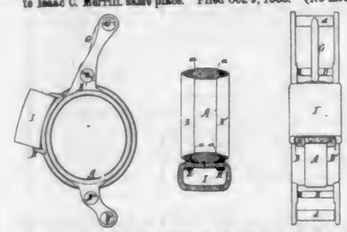
Claim.—The combination of a glass or earthenware jug with a rigid handle of the same material, a separate tray, also of the same material, and a U-shaped metal swing grasping the jug between its two upper ends, and held in an upright position by having the part central between the two ends inserted in a cavity in the tray, substantially as and in the manner hereinbefore described.

293,641. HYDRAULIC MACHINERY. WILLIAM DONALDSON, Ambleside, County of Westmoreland, England. Filed June 11, 1883. (No model.) Patented in England Jan. 18, 1883, No. 294.



Claim.—The combination of parts, consisting of one or more cylinders, *c*, surrounded by a liquid-holding casing, *d*, the balanced cylindrical valve V and its adjusting-weight, with the loose safety-valve-cylinder cover or lid *b*, cap K, and lubricators *s* and *a*, together with the weighted valve H, all substantially as described and illustrated, for the purposes set forth.

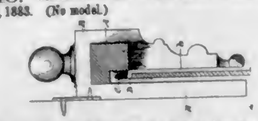
293,642. TUG. GEORGE CRAWFORD EASTMAN, Lewiston, Me., assignor to Isaac C. Merrill, same place. Filed Oct. 9, 1883. (No model.)



Claim.—1. The shaft-supporter having its metallic parts B B' provided with grooves to receive the edge of the packing and connected by screws arranged in them, the said parts, in combination with the packing A, arranged between the rings of such parts, with its inner and outer peripheries essentially even or flush with the next contiguous surfaces of such rings, all substantially as set forth.

2. The shaft-supporter composed of the two grooved metallic parts B B', the leather packing A, and their connection-screws C, D, E, and F, a buckling-tongue, G, adapted to two of the screws, and a buckling-loop, I, of leather or other suitable material, arranged in eyes extended from the said two parts and connected to the packing between them, as specified.

293,643. CURTAIN-POLE. CYRUS ENERLY, Columbus, Ohio. Filed Dec. 17, 1883. (No model.)



Claim.—1. A pole or cornice for curtains, having a guideway on its rear face for the reception of adjustable curtain hangers or supports, the latter being free to slide on or in said guideway, but unable to rise therefrom, substantially as herein set forth.

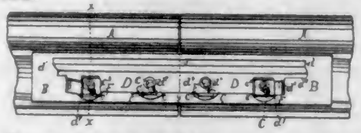
2. A pole or cornice for curtains, having an attachable and detachable guideway on its rear face for the reception of adjustable curtain hangers or supports, the latter being free to slide on said guideway, but unable to rise therefrom, substantially as herein set forth.

3. A pole or cornice for curtains, having on its rear face a metallic guideway or strip consisting of a body portion or attaching-plate and a hook-shaped outer or guide portion, in combination with hook-shaped

certain hangers or supports fitted on said guideway or strip, substantially as herein set forth.

4. The combination of brackets having vertical slots intersecting with their curtain-pole openings, with the curtain pole or cornice, and the curtain or curtains sliding thereon and adapted to be carried through the slots in the brackets, substantially as herein set forth.

293,644. DEVICE FOR SECURING THE SPLICE-JOINTS OF RAIL-ROAD-RAILS. DAVID L. EMRY, Carthage, Mo. Filed Nov. 26, 1883. (No model.)



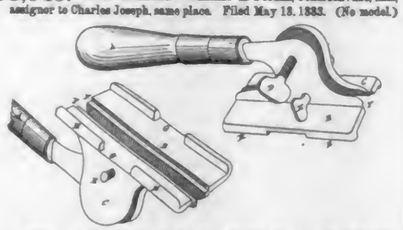
Claim.—1. A device for securing the splice-joints of railroad-rails, composed of a spring-washer, F, upon a bolt, C, said bolt having screw-nuts c' c^2, with different-sized threads, and a plate, D, having the parts d d' d^3 and ends d^4 turned back upon itself, all substantially as shown and described.

2. In a device for securing the screw-nuts on bolts extending through the splice-joints of railroad-rails, a plate, D, with parts d d' d^3 and a part, d^4, turned outward and backward upon itself, substantially as shown and described, for the purposes set forth.

3. The combination of a plate, D, having the parts d d' d^3 and a piece, d^4, with screw-nuts c' c^2, having different-sized threads, upon a bolt, C, holding the fish-plates of railway-rails, substantially as and for the purpose set forth.

4. The combination of a plate, D, having the parts d d' d^3 and piece d^4, with concave and convex spring-washer F upon the bolts and under the nuts, holding the splice-joints of railway-rails, substantially as and for the purpose set forth.

293,645. FILE-HOLDER. WILLIAM H. FOSTER, Jeffersonville, Ind., assignor to Charles Joseph, same place. Filed May 18, 1883. (No model.)



Claim.—In clamp-handles for files, having tine A, with stationary jaw B, flange H, and rabbet F, as above described, combined with the movable jaw C, having flange H, rabbet F, and set-screw E, which is used for the purpose of closing the jaws upon the file, and also to answer as a fulcrum when the jaws are forced up more firmly by the screw D, substantially as described, and for the purpose set forth.

293,646. MEANS FOR SUSTAINING DOWEL-PINS OR HINGE-PINS. AMOS F. GERALD, Fairfield, Me., assignor to the Gerald Sewing Machine Cabinet Company, New York, N. Y. Filed July 11, 1883. (No model.)

Brief.—To prevent the splitting out of dowel or hinge pins in wood, strap metal bent into heart or other shape is driven into the wood so as to surround the pin-pole.

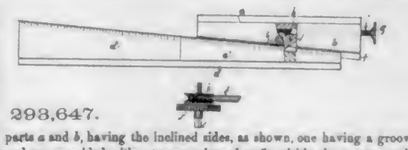


Claim.—1. The combination, with a dowel or hinge pin and a piece of wood into which it is inserted or to be inserted, of a strip of metal inserted into the piece of wood so as to extend around the pin and into a portion of wood at some distance from the pin, substantially as specified.

2. The combination, with a dowel or hinge pin and a piece of wood into which it is inserted or to be inserted, of a strip of metal bent into the shape of a heart and inserted into the piece of wood so that the obtuse point will extend close to the pin, substantially as specified.

293,647. MACHINIST'S TOOL. FRED I. GETTY and FREDERICK DICKINSON, Geneva, Ohio. Filed June 7, 1883. (No model.)

Claim.—1. A machinist's tool consisting of the combination of the parts a and b, having the inclined sides, as shown, one having a groove, and one provided with a tongue adapted to fit within the groove, and a means to hold and adjust the parts, substantially as and for the purposes shown.



2. In a machinist's tool, the inclined piece a, provided with a rack, in combination with a piece, b, having a spur-wheel adapted to mesh with the rack, and a means to turn the spur-wheel, substantially as shown.

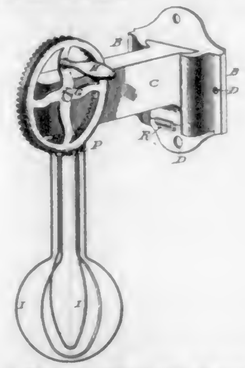
3. A tool consisting of wedge-shaped pieces having a means to hold them in position, in combination with pieces c and d, whereby both outside and inside measurement may be made, substantially as shown.

4. A tool consisting of two pieces, wedge-shaped in the direction of their length, as shown, having a means to hold them in position, and provided with a graduated scale whereby variance is indicated, substantially as shown.

5. In a machinist's tool, the combination of a piece, a, having a rack, with piece b, having stem h, worm-gear i, spur j, and pivot l, substantially as shown.

6. A machinist's tool consisting of the two parts a and b, having inclined sides, and having two or more series of graduations marked thereon, and a means to adjust and hold the parts in position, substantially as shown.

293,648. EGG-BEATER. HANNAH ZEPHYRENE GIBSON, Oberlin, Ohio. Filed Nov. 5, 1883. (No model.)



Claim.—1. The large cylindrical wires, all revolving in the same direction, substantially as described.

2. The revolving wires, all permanently attached to a single pinion, substantially as described, and for the purpose set forth.

3. The combination of the arm, bracket, and driving-wheel with the pinion and wires, substantially as described, and for the purpose set forth.

4. The revolving wires separated at the bottom, as described, and for the purpose set forth.

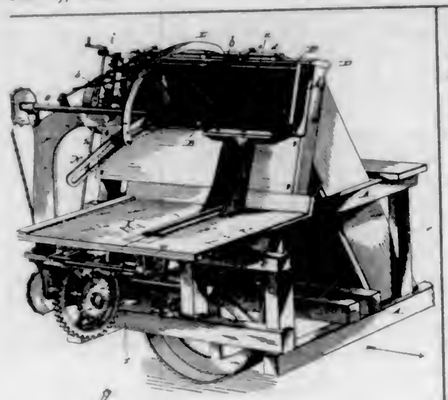
293,649. GRAIN-BINDER. JOHN H. GORDON, Rochester, N. Y. Filed Feb. 5, 1878.

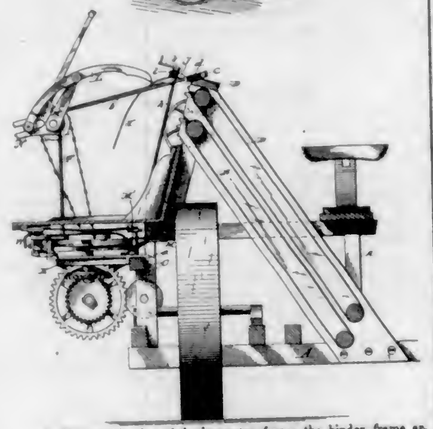
Claim.—1. In combination with a harvester having an elevating-apron, a binder-frame having a base portion, E, and an elevated binder-arm support, F, the base portion being connected to the harvester below the delivery end of the conveyer-apron, and the elevated portion being connected to the harvester at a point above the delivery end of the elevator-apron, substantially as described.

2. In combination with a harvester provided with a grain-elevator, a binding-machine having an overhanging arm, F, sustained at its upper end by stays or braces connecting with the harvester-frame at a point above the delivery end of the elevator.

3. In a grain-binding machine, an overhanging arm or standard to sustain the binder-arm, in combination with a brace extending from the overhanging end or portion of the arm to a rigid support out of the path of the grain, substantially as shown and described.

4. The binder-frame E F, having its base provided with arms engaging upon the harvester-frame, and its standard or bracket provided with the braces, having rollers mounted on a track or rail on the harvester-frame.



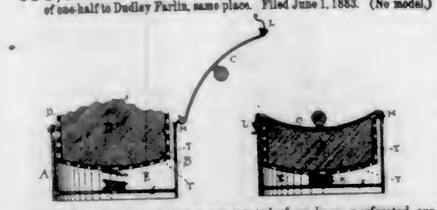


5. The combination of the harvester-frame, the binder-frame arranged to slide thereon, the rack-bar attached to the binder-frame, and the vertical shaft mounted in fixed bearings in the harvester-frame, and provided at its lower end with a pinion to engage the rack, and at its upper end with a hand-crank in position to be operated by the attendant, whereby the crank is maintained in constant and convenient relation to the driver's seat.

6. In combination with the harvester-frame and the binder-frame arranged to slide thereon, the pinion G, having its shaft mounted in fixed bearings in the harvester-frame, and the rack-bar engaging said pinion and connected by a vertical pivot to the binder-frame, as described, whereby the rack is permitted to adjust itself to the varying relations of the frames, and thus avoid a clamping or binding action.

7. In a grain-binding machine, the combination of a binding table or platform and an intermittingly-acting kicker or deliverer located below the same, and arranged to extend beyond its outer edge, as described and shown, whereby it is caused to separate such bundles as may cling together after leaving the table and hang upon the side of the machine.

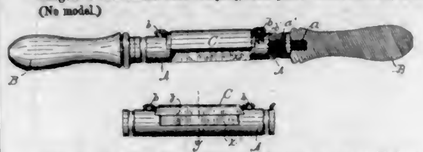
293,650. PEN-CLEANER. THOS. C. GORMAN, Albany, N. Y., assignor of one-half to Dudley Farlin, same place. Filed June 1, 1883. (No model.)



Claim.—1. A pen-cleaner constructed of an inner perforated cup or vessel to contain a sponge provided with a spring, an outer cup or stand provided with a stud to retain the spring, and a convex cover to press the sponge when closed, substantially as described.

2. In a pen-cleaner, the perforated cup B, provided with the sponge D and the spiral spring K, in combination with the outer stand, A, provided with the convex cover C, and the stud O, all substantially as described, and for the purpose set forth.

293,651. SPOKESHAVE. ALBERT D. GOODELL, Miller's Falls, Mass., assignor to the Millers Falls Company, same place. Filed Nov. 30, 1883. (No model.)



Claim.—1. A spokeshave consisting of the body A, removable handles B B, and circular cutter or knife C, and the set-screws b b, adapted to secure in place the cutter or knife C by pressure of the screw-heads upon the edges of the same, substantially as and for the purposes set forth.

2. In a spokeshave, the body A, circular knife C, arranged and secured thereto, so that the chips or shavings pass under said knife to the place of discharge, in combination with detachable handles B, substantially as and for the purposes set forth.

3. In a spokeshave, the circular knife or cutter C, formed with a straight cutting-edge, and adapted to be detachably secured to the body of the shave by suitable means, as and for the purposes set forth.

4. In a spokeshave, the body A, straight circular knife C, and set-screws b b, adapted to hold the said knife to the body, combined as and for the purposes set forth.

5. The combination of the body A with straight circular knife suitably secured thereto, and the detachable handles B B, substantially as set forth and described.

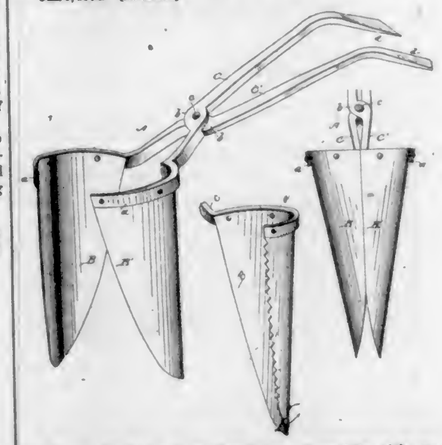
6. In a spokeshave, the body A, with bevel x', in combination with the circular knife or cutter C, substantially as and for the purposes described.

7. In a spokeshave, the body A, provided with the rear discharge-passage, x, in combination with a circular knife or cutter having a straight cutting-edge and suitably secured to said body, substantially as and for the purposes described.

8. A spokeshave provided with a straight circular body adapted to receive a straight circular knife or cutter, and to discharge the chips or shavings under the said knife or cutter and to the rear of the working-face, all substantially as and for the purposes set forth.

9. In a spokeshave, the combination of the body A, provided with the discharge-opening x, formed by removing a portion of the body, and having a face-bevel, x', and circular knife formed with a straight cutting-edge and adapted to be detachably secured to the said body, substantially as and for the purposes set forth.

293,652. TRANSPLANTER. ELIAS A. GROSS, Camden, N. J. Filed Jan. 9, 1884. (No model.)

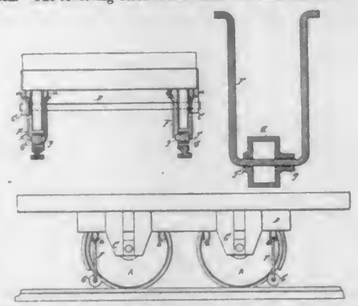


Claim.—The herein-described transplanter A, consisting of the sections B B', having the serrated edges, as shown, handles C, secured at their upper ends, said handles overlapping one another, and provided with enlarged portions near their ends to receive a rivet or bolt for piv-

oting the sections together, said handles extending at nearly a right angle to the sections B B′, substantially as set forth.

293,653. LIFE-GUARD AND TRACK-CLEARER. CHAS. W. FIELD and RICHD. B. LOCKE, Brooklyn, N. Y. Filed Apr. 7, 1883. (No model.)

Brief.—The hanger is made of a bar or rod of metal passing through the block and forming the axle thereof. It also extends up both sides of the block and is hooked to the car-body in such a manner as to swing thereon. The revolving block is cast hollow to admit the axle.



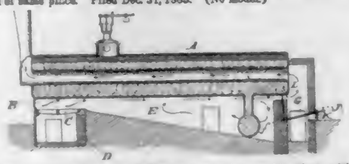
Claim.—1. In a life-guard and track-clearer, the herein-described hanger for the revolving block, the same being made of a bar or rod of metal passing through the block in order to form the axle thereof, extending up on both sides of the block and arranged to be applied upon the car-body and to swing thereon, substantially in the manner and for the purposes set forth.

2. In a life-guard and track-clearer, the hanger for the revolving block, made of a bar or rod of iron passing through the block, the hooks or rings for connecting said hanger with the car-body, and the revolving block, all combined and arranged to permit the hanger to swing freely in its supports, substantially as shown and described.

3. In a life-guard and track-clearer, the revolving block arranged to swing in front of the car-wheel, the same being cast hollow and admitting the axle, substantially as and for the purposes set forth.

4. The herein-described hollow revolving block or guard, provided with the projecting hub on one side to clear the flange of the car-wheel and another hub or projection on the opposite side to prevent wearing against the hanger, substantially as shown and described.

293,654. STEAM-BOILER FURNACE. PERRY JOHNSON, Cincinnati, Ohio, assignor of one-half to Augustus G. Bolinger and Lewis G. Hopkins, both of same place. Filed Dec. 31, 1883. (No model.)

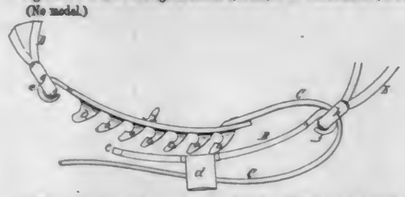


Claim.—1. In a steam-boiler furnace, the combination, with a boiler, of a grate whose rear end is level with its supporting-pier, a gradually-shelving combustion-chamber, which extends underneath the boiler its entire length in rear of said pier, a pier at the rear end to close the said combustion-chamber at bottom, formed with a vertical opening, and having its top concaved out to conform to the shape of the lower part of the boiler to form a narrow throat, and a gate or shutter to slide in said opening to regulate the width of or to close the throat, as set forth.

2. In a steam-boiler furnace, the combination, with boilers, of a grate whose rear end is level with its supporting-pier, a gradually-shelving combustion-chamber, which extends underneath the boilers their entire length in rear of said pier, a pier at the rear end to close the said combustion-chamber at bottom, formed with a vertical opening, and having its top concaved out to conform to the shape of the lower part of the boiler to form a narrow throat, and a gate or shutter to slide in said opening to regulate the width of or to close the throat, as set forth.

3. In a steam-boiler furnace, the combination of a grate-support about level with the grate, a combustion-chamber having a floor shelving downwardly from the grate-support, a pier at the rear of the combustion-chamber, having a vertical opening and top conforming in shape to the lower portion of the boiler to form a narrow throat, a gate or shutter of similar shape at top as the top of the pier to slide vertically in the opening, a lever whose short arm lifts and lowers the gate or shutter, and means to hold the long arm of the lever to its adjustment to regulate the width of or close the throat, as set forth.

293,655. HAME-FASTENER. WILLIAM H. JOHNSON, De Lancy, assignor of one-half to George E. Marvine, Delhi, N. Y. Filed Jan. 30, 1883. (No model.)



Claim.—In a hame-fastener, the combination of the part A, provided with hooks *a a*, and adapted to be attached to the eye *g* of one hame, D, the part B having a long slot, *b*, therein, and provided with a catch, *c*, and adapted to be attached to the eye *h* of the other hame, E, and the flexible strap C, secured to the free end of the hook part A, and adapted to be passed through the hame-eye *h*, around the part B, all substantially as and for the purpose herein specified.

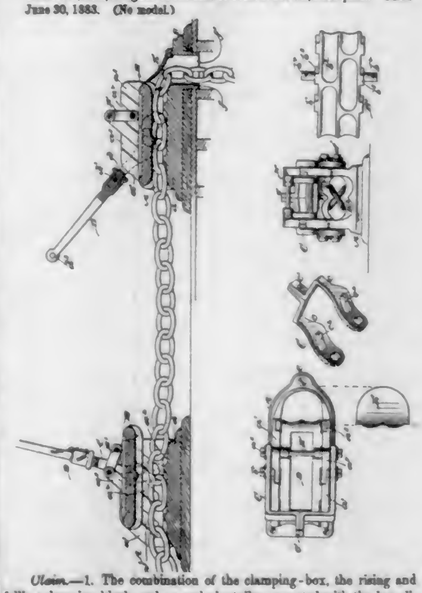
293,656. SADDLE FOR BICYCLES. JAMES ALFRED LAMPLOUGH, Birmingham, County of Warwick, England. Filed Dec. 28, 1883. (No model.) Patented in England Feb. 24, 1883, No. 1,008.



Claim.—1. The combination, with the frame or support, and the seat composed of leather or similar flexible material, of the adjusting devices comprising a slotted plate, a pin working in the slot, and a screw for adjusting the position of said pin in said slot, substantially as described.

2. The combination of the seat, made of leather or similar flexible material, the concavo-convex support or frame having three arms or branches, and the fastening devices for securing the seat to the ends of said arms or branches, substantially as described.

293,657. LOCKING-PAWL FOR ANCHOR-CHAINS. THOS. P. LUCAS, Galveston, Tex., assignor of one-half to John S. Brown, same place. Filed June 30, 1883. (No model.)



Claim.—1. The combination of the clamping-box, the rising and falling clamping-block, and a pawl pivotally connected with the box directly over the block, and having its free end adapted to fall by gravity and rest upon the upper surface of the block to lock the latter in engagement with the cable, substantially as described.

2. The combination of the clamping-box and the rising and falling clamping-block with the pintle supported by the sides of the box above the block, and the yoke-shaped pawl suspended at one end from the pintle, and having its other end adapted to fall by gravity and rest upon the upper surface of the block to lock the latter in engagement with the cable, substantially as described.

3. The combination of the clamping-box having its sides provided with upwardly-projecting lugs, the clamping-block, and a locking-pawl pivotally connected with the said lugs directly over the clamping-block, and adapted to fall by gravity and rest upon the upper surface of the block to lock the latter in engagement with the cable, substantially as described.

4. The clamping-block A, having its side walls, *a′*, brought together at one end and constructed on its under side with the depending flanges *f f′*, in combination with the clamping-block, substantially as described.

5. The combination, with the clamping-block having its sides provided with the inclined slots, and the clamping-block having the lugs *b′*, provided with studs *b²*, of the forked lever C, having the shank *c′*, and the detachable handle D, having a socket adapted to said shank, substantially as described.

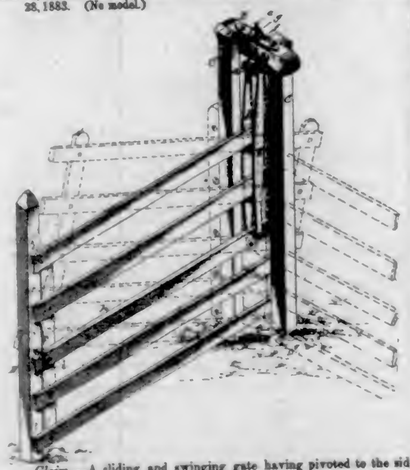
293,658. BUTTON-FASTENER. CHARLES BERNHARD MAENDL, Kansas City, Mo. Filed June 18, 1883. (No model.)



Claim.—1. A button-fastener consisting of a disk having a suitable slot therein and a radial extension from the periphery of said disk, constituting the bolt, which is adapted to be bent over in the plane of said disk and in line with its slot and enter the eye of a button, and an auxiliary extension from the periphery of said disk, which is adapted to be bent over and upon the end of the opposite extension of the disk, as shown and described.

2. In combination with a button having a suitable eye, a fastener consisting of a disk, and a slot in said disk to receive the eye of the button, and a radial extension from the periphery of said disk, constituting the bolt, which is adapted to be bent over in the plane of said disk and in line with its slot, and an auxiliary extension from the periphery of said disk, which is adapted to be bent over and upon the opposite extension of the disk, as shown and described.

293,659. GATE. ROBERT E. MASON, Vernon County, Mo. Filed June 28, 1883. (No model.)

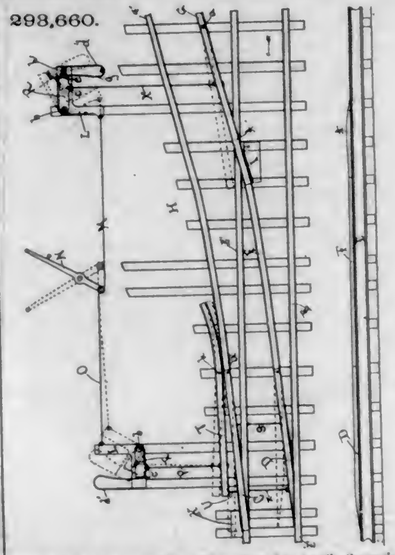


Claim.—A sliding and swinging gate having pivoted to the sides of its central rail suitable hanger-straps, the upper ends thereof being pivoted to a swivel-connection, consisting of a horizontal sleeve having a screw-threaded bolt extending up through the cross-brace of the gate-posts, and held thereto by an adjusting screw-nut, by which means the gate is rendered vertically adjustable, substantially as and for the purpose set forth.

293,660. RAILWAY SWITCH AND CROSSING. DANIEL MCCARTHY, Norwich, Conn., assignor to Patrick J. O'Connor, same place. Filed June 20, 1883. (No model.)

Brief.—At a junction of main track and siding a movable inclined

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crossing-rail cut away underneath to adapt it to overlie the main rail, and the points formed to fit closely against or overlap the rails of the main track, are operated from the same hand-lever, being connected therewith by separate mechanism, consisting in each case of a bell-crank lever and links. To render the rails mentioned movable automatically independently of the hand-operating mechanism, the connection between the rails and the bell-crank embraces a bar pivoted to the bell-crank and held by a spring, so as to yield to the movement of the rails when pushed by the car-wheels, and the hand-lever is locked. A stop-block, as described, is provided for the crossing-rail.

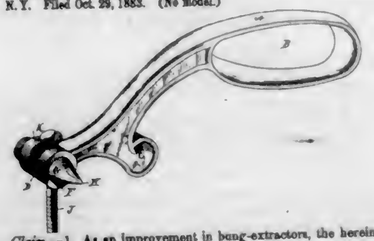
Claim.—1. The combination of the siding-rails G G′, main rails E E′, movable part A, and points C D, the parts C A overlapping the rail E′, the lever-rail T, connected to the points C D, and a moving mechanism with automatic releasing-connections for moving parts C D A, all substantially as described.

2. The combination, with the fixed rails of main track and sidings, and the movable parts, as described, of the arms R, bell-crank levers L, spring-catches, and the moving operating-lever connected with the bell-crank levers, all substantially as described.

3. The combination of the bell-crank lever L, the arm R, the spring-catch carried upon the lever L, and adapted to hold the arm R and the points of the switch, all substantially as described.

4. The combination of the siding-rails G G′, main rails E E′, movable part A, block I, having upturned iron flange, and inclined face parallel with the rail of the siding, and face *i*, parallel with the rail of the main track, with the space for the flange of the wheel between, all substantially as described.

293,661. BUNG-EXTRACTOR. ADELBERT H. MCKEAN, Trumansburg, N. Y. Filed Oct. 29, 1883. (No model.)



Claim.—1. As an improvement in bung-extractors, the herein-described device, comprising a handle or lever constructed with a fulcrum-stud and with a transversely-perforated head, a plug seated in the said head where it may partially revolve, and a screw extending through said plug and through slots in the said head, with means for holding the screw in place, as set forth.

2. As an improvement in bung-extractors, a device comprising a

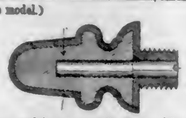
lever or handle having a fulcrum-stud, a head, a plug seated in said head and having a conical point extending beyond the same, and a screw passing vertically through said plug, with means for holding the screw in place, substantially as set forth.

3. In a bung-extractor, the herein-described lever or handle provided with a fulcrum-stud having on its under side a rib or flange, substantially as and for the purpose set forth.

4. A bung-extractor comprising a lever or handle having a transversely-perforated head having slots in its upper and lower sides, a plug seated in said head and having at one end a projecting conical point and at the other end a longitudinal recess, a screw passing through the said plug and through the slots in the head, and having a recess in one side, a pin entering the recess in the plug and engaging the recess in the side of the screw, and a pin or wedge driven transversely through the plug and retaining the pin in the latter, as set forth.

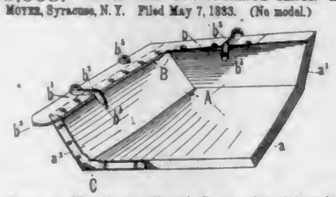
5. The herein-described improved bung-extractor, the same comprising the lever or handle having an opening or hand-hold, a rounded fulcrum-lug having a rib or flange on its under side and a transversely-perforated head, a plug seated in said head and having an extending conical point, and a screw passing vertically through said plug and through slots in the upper and lower sides of the head, with means for holding the screw in place, whereby the plug is permitted to partially revolve, as set forth.

293,662. HINGE-TIP. HARVEY MILLER, Cincinnati, Ohio. Filed Oct. 20, 1883. (No model.)



Claim.—As an article of manufacture, a hinge-tip consisting of an outer metal shell cast over and inclosing a pressure-resisting form, and having the screw cast hollow and integral therewith, substantially as described.

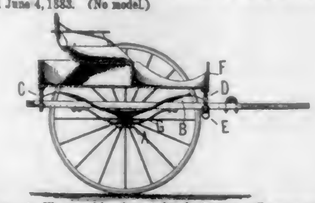
293,663. CORNER-IRON FOR CARRIAGE-SEATS. HARVEY A. MOYER, Syracuse, N. Y. Filed May 7, 1883. (No model.)



Claim.—1. The flat metallic strip B, of L-shaped form, having the series of screw-openings, and the ribs b^2, with short extensions, as and for the purpose described.

2. In combination with the main corner-iron, the auxiliary corner-iron having the overhanging portion *c*, as described.

293,664. PLEASURE-CART. HARVEY A. MOYER, Syracuse, N. Y. Filed June 4, 1883. (No model.)



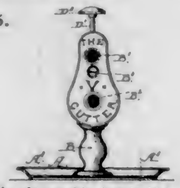
Claim.—1. The combination of the shaft system G, supported from the lower side of the axle, and the spring system B B C D, supported from the upper side of the axle, with the shackles E E, as described.

2. In combination with the side springs, B B, and end spring, D, the shackles E E, having the iron *a*, bolts a' a^2, and iron a^3, as described.

293,665. CIGAR-CUTTER. WM. H. MYERS, Reading, Pa., assignor of one-half to Jacob Hall, same place. Filed Apr. 28, 1883. (No model.)

Claim.—1. A cigar-tip cutter composed of the following elements: a half-case having chutes and side openings for the cuttings, front openings for the introduction of the cigar-tips, and a spring-rest and guide-recess for the piston-rod, in combination with a back or cap having corresponding spring-seat and guide-recess and a filling-piece, a double-yoke piston-rod provided with angular knives having ears, said knives being secured within the yoke by means of clamps and screws, the spring arranged to throw the piston-rod back to its highest position, and a base-tray, all said parts being removably connected with each other, as set forth.

293,665.



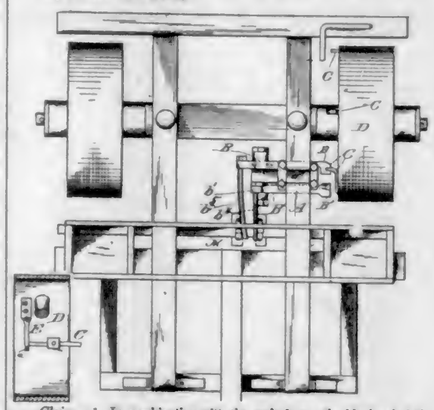
2. In a cigar-tip cutter, the half-case provided with perforations B' B^2, countersink B^3, thickened portions B^4, chute-openings B^5, chutes B^6, guide and spring rest B^7, screw-hole B^8, and piston-rod guide-slot B^9, in combination with back or cap C, piston-rod D, knives F F, having ears F' F', screws G^2, clamp G, spring E, and base or tray A, substantially as and for the purpose set forth.

3. In a cigar-cutter, as described, the cap C, provided with a reenforce, C^2, a threaded boss, C', half spring-seat, piston-rod guide C^3, and filling-piece C^4, in combination with half-case B, piston-rod D, knives F F, having ears F' F', clamp G, spring E, and tray A, all the parts being connected substantially as and for the purpose specified.

4. The double-yoke piston-rod D, provided with stem D', knob D^2, tail D^3, threaded screw-holes D^4, said yoke being recessed to receive the knives or cutters F F, and clamp G, having projecting lugs G', screw-holes G^2, and securing-screws, in combination with spring E, half-case B, and cap C, having seats and guides B' and C^3, slot B^9, filling-piece C^4, and tray A, substantially as shown, and for the purpose described.

5. In a cigar cutter or nicker, angular V-shaped knives F, having ears F' integral therewith, piston-rod D, having recesses, and a stem, D', and knob D^2, provided with clamp G, lugs G', and screws for securing the knives in said recesses, in combination with half-case B, and cap C, having openings B' B^2, seat and guide B' and C^3, slot B^9, and spring E, whereby the depression of said knob will bring the knives in contact with the cigar-tips, cut, shear, or nick the same, and the piston-rod will be returned to position by the spring, substantially as shown, and for the purpose set forth.

293,666. SEED-PLANTER. JOHN F. W. NEETHEL, Arago, Nebr. Filed July 19, 1883. (No model.)



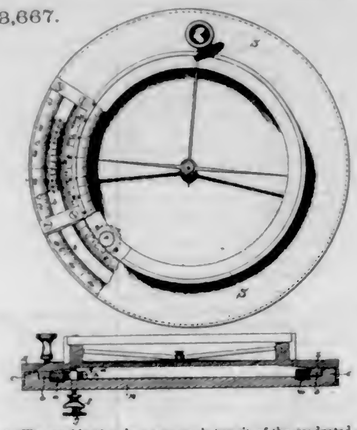
Claim.—1. In combination with the main frame, the blocks a' a^2 a^3 and the clips *a*, the lever B, pivoted below upon one side of the block a^2, and having upward extension *b*, trip b', and arm b^4, the lever B', having arm b^4, and pivoted above upon the opposite side of the block a^2, and the pivoted lugs or levers C, adapted to impinge alternately upon said levers, as set forth.

2. The pivoted lugs or levers C, each alternate one being bent to project inward, and the hooked springs E, combined with the trip-levers B and B', arranged as shown, and with the feed-bar M, all adapted to serve as and for the purposes set forth.

293,667. SURVEYOR'S AND ENGINEER'S TRANSIT. THOMAS LEA NIXON, New Tacoma, Wash. Filed Aug. 27, 1883. (No model.)

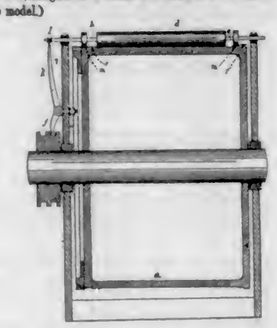
Claim.—1. The combination, with a surveyor's transit, of a graduated course-ring, *a*, having gear-teeth in the edge thereof, the pinion meshing with said teeth, the clamp-plate of said pinion, the spindle carrying said pinion and clamp-plate, and a tightening or clamp nut fitted to threads upon said spindle, substantially as described.

293,667.



2. The combination, in a surveyor's transit, of the graduated circle *c*, the graduated ring *a*, and the vernier *b*, between said circle and ring, having double graduations extending to both edges thereof, substantially as described.

293,668. COLOR-PRINTING PRESS. JOHN W. OSBORNE, Washington, D. C., assignor to William H. Forbes, Boston, Mass. Filed June 6, 1883. (No model.)



Claim.—1. The combination, with the form-carrying bed of a printing-press, of inking-rolls and mechanism, substantially as described, whereby the rolls may be shifted endwise, and at the same time caused to approach or recede from the forms, all co-operating substantially as stated.

2. The cylinder provided with high and low bearers, the inking-rolls and their trucks, and means, substantially as described, for shifting the trucks lengthwise of the cylinder from the high to the low bearers, all the parts being in combination, substantially as described.

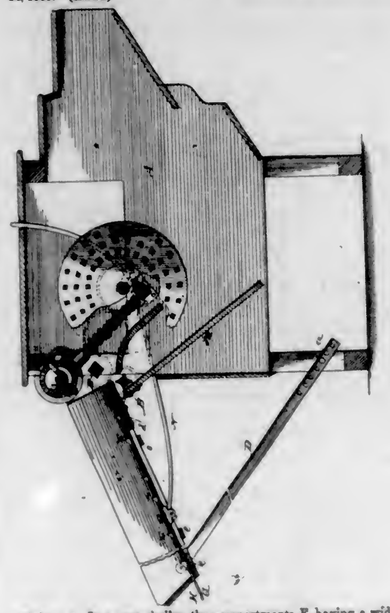
3. The cylinder provided with a high and a low bearer at each end, the low bearer having the specified relation to the form, the inking-rollers having trucks arranged, as specified, to ride on said bearers, the lever for shifting the trucks, and an operating-cam, all in combination, as set forth.

4. The cylinder having two high bearers extending around it, and having low bearers alternating with high bearers arranged beside said first-mentioned high bearers, said low bearers extending the length of the respective forms, in combination with inking-rolls having trucks on the shafts thereof, said trucks being capable of shifting lengthwise to ride on high or low bearers when operated by suitable mechanism, substantially as described.

5. The combination, with the stock or spindle of an inking-roll, of a truck splined to said stock, high and low bearers on the cylinder of the press, and mechanism, substantially as described, for shifting the truck lengthwise of the roller-spindle, so that it may ride on either the high or low bearer, substantially as described.

6. The combination, with the cylinder of a press having high and low bearers at each end, of inking-rolls having driving-trucks upon their spindles, a lever pivoted to the frame and engaging with the trucks, and a cam adapted, substantially as described, to shift said lever and trucks, all in the manner and for the purpose substantially as stated.

293,669. CORN-SHELLER. HARVEY PACKER, Rock Falls, assignor to Thomas A. Galt and George S. Tracy, both of Sterling, Ill. Filed Aug. 24, 1883. (Model.)



Claim.—1. In a corn-sheller, the compartments F, having a width but slightly greater than the transverse diameter of the ears of corn, the bars G, arranged in compartments F, and provided with spurs L, in combination with means for imparting to said bars reciprocating movement in the line of such sheller, substantially as shown, and for the purpose described.

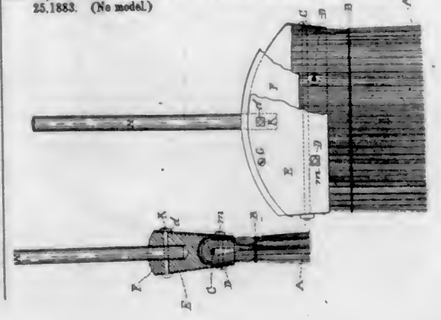
2. The combination of the hopper C, compartments F, partitions E, and the reciprocating bars G, the whole placed and operating in the line of such sheller, substantially as shown, and for the purpose specified.

3. In a corn-sheller, the feed-hopper C, having its outer end adjustable vertically, and provided with the partitions E and compartments F, the bars G, arranged to reciprocate in the line of such sheller, and the transverse shafts B, in combination, substantially as shown, and for the purpose mentioned.

4. In a corn-sheller, the combination of the hopper C, provided with partitions E and compartments F, the board M, the bars G, and means for imparting to such bars reciprocating motion in the line of such sheller, substantially as shown, and for the purpose described.

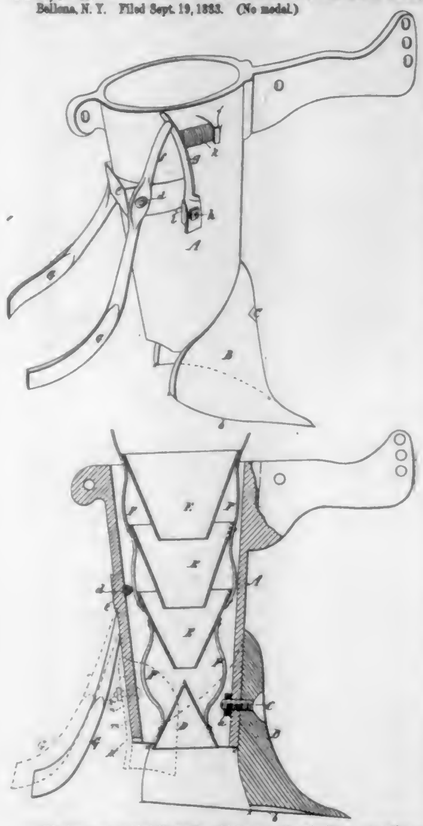
5. The hopper C, provided with a closed bottom, consisting of the bars G and board *d*, in combination with the board M and a corn-sheller, relatively arranged as hereinbefore described, whereby an uninterrupted and entirely closed surface is provided for the passage of the loose corn from such hopper to such sheller, substantially as shown, and for the purpose specified.

293,670. BROOM. WILLIAM H. PAINE, Barnstable, Mass. Filed Aug. 25, 1883. (No model.)



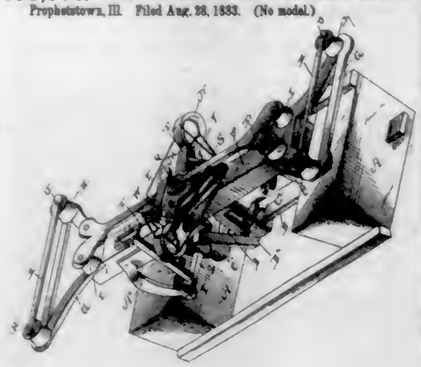
Claim.—The improved broom herein described, the same consisting of the filling A, rod C, bolts D, case E, block F, screws G, handle H, bolt K, and nuts *d w x*, all constructed, combined, and arranged to operate substantially as set forth.

293,671. SEED-DRILL. JAMES H. PURDY and CHARLES T. WELSH, Bellona, N. Y. Filed Sept. 19, 1883. (No model.)



Claim.—A seed-drill tooth which comprises in its construction a series of hollow inverted truncated cones, E, a conical scatterer, D, suspended beneath the lowermost cone of the series, an adjustable guard, M, for preventing too great scattering of the grain during shallow plowing, and vibrating coverers G, substantially as described.

293,672. CHECK-ROW CORN-PLANTER. EARL HOUSTIN REYNOLDS, Prophetstown, Ill. Filed Aug. 28, 1883. (No model.)



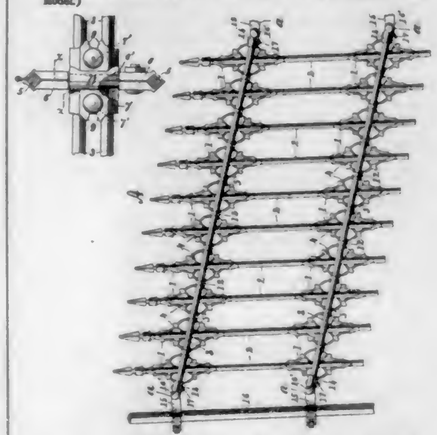
Claim.—1. In a check-row corn-planter, the combination, with the seed-boxes, connected seed-slide, and brackets, of the cross-bar F, the end frames, G G, provided with horizontal pulleys H and I, the parallel guards K and L, connected to the axles of the pulleys, and the guide-disk M, substantially as and for the purpose set forth.

2. In a check-row planter, the guide-disk M, consisting of the horizontal cruciform plates O P, with the oppositely-arranged loops N N, the braces U and V, and the upper and lower spindles, Q R, as described.

3. In a check-row planter, the combination, with the guide-disk M, constructed substantially as described, of the crank W, attached to the upper end of the spindle Q thereof, pitman X, crank Y, rock-shaft Z, with crank B^2, and seed-slide C, with bracket C^2, substantially as and for the purpose set forth.

4. As an attachment to a planter, the cross-bar F, with the end frames, G G, provided with pulleys H and I, and guard-plates K K, the cruciform guide-disk M, connected to the cross-bar F, and a transverse guard-plate, L, the crank W, pitman X, crank Y, rock-shaft Z, with crank B, and slotted bracket C^2, substantially as described.

293,673. IRON FENCE. TIMOTHY ROGERS, Springfield, Ohio, assignor to the Rogers Fence Company, same place. Filed Mar. 24, 1883. (No model.)



Claim.—1. In an iron fence having double-rail sections, as described, pickets between said rail-sections, and notched clip-bands between the pickets, for securing the rails and pickets together, the combination, with said pickets, rails, and bands, of the ornament-frames having their concentric bars extending in the central line between the rails, and engaging with the notches in said clip-bands, which operate as guides to keep the ornaments in line between the rails, and to retain the pickets upon their pivotal centers during the operation of adjustment, substantially as set forth.

2. In an iron fence having double rails square in their cross-section, and the intermediate picket-rod pivotally centered upon the inner angles of said rails, and adapted for adjustment thereto, as described, the combination therewith of an ornament having its frame-bars between the rail-sections concentric to said pivotal center, and a clip-band notched in either side at the center, with which said frame-bars engage, and which operates as a guide for the same in adjusting the fence-panel, as set forth.

3. In a double-rail iron fence, with its rails square in their cross-section, and having pickets of the same form between the rail-sections, and pivotally engaged therewith, the ornament-frames having the central converging loop-bars extending to the angle and inner sides of the rear rail-section, and adapted to facilitate the adjustment of the picket, by having the points of the loop-bars beveled downward and inward to fit the inclined sides of the rail on either side of the angle of the same, substantially as set forth.

4. In a double-rail iron-fence panel having the picket and its ornament pivoted between the rail-sections, the combination, with the rails and ornament-bars, of a clip-band provided with sprockets, between which said ornament-bars are allowed to move in adjusting the fence-panel, substantially as set forth.

5. A flexible connection for the attachment of the rails of an iron fence to the line or terminal post thereof, having that part attached to the rails pivoted to the section attached to the post, to allow it to conform to the adjustment of said rails when inclined either upward or downward, substantially as set forth.

6. In a double-rail-fence panel for an iron fence, the flexible clamp-connections *a*, for attaching the rail ends of the panel to the terminal post, consisting of the hinged section 15, having the ears 15′, extending therefrom, and the section 14, (attached to the ends of the rails of the panel,) pivoted between said ears by a bolt, 16′, extending through the hole *b*, and having its upper and lower halves clamped to the rail ends 3 by a vertical bolt, 17, extending through them between the rails, substantially as set forth.

7. A clip-band for clamping the rail-sections together in a double-rail iron fence, having sprockets projecting therefrom at the middle of its sides, to form a cleft or notch between them, to adapt it for the engagement therewith of the circular frame-bars of the ornament of a picket pivoted between said rail-sections in the central longitudinal line thereof, as set forth.

8. A cross-tie connection for a line-post for adjustable iron fences, having the section which incloses the rail ends horizontally divisible and pivoted upon the transverse section which connects the two uprights of the post, said transverse section being cylindrical in the middle part, to provide for the adjustment of the fence to grade, substantially as set forth.

9. The combination, with the line-post, having uprights 5 and section 6 attached to and connecting said uprights, of the two-part section 7, pivoted upon said section 6 and adapted to operate in connection therewith in the adjustment of the fence to grade, substantially as set forth.

10. In an adjustable iron fence having a two-part section connecting the rail ends to the post, the combination, with said two-part section, of the transverse cross-piece having a cylindrical middle part adapted to pivot said section, and vertical bolts extending through the latter on either side of said cross-piece, for securing the section and rail ends together.

11. A cross-tie plate for the line-post of an iron fence, having a fixed part extending transversely across the fence-line, and connecting the uprights of the post, and having a movable part extending across said fixed part, inclosing the connecting rail ends, and centrally pivoted upon the fixed part, to allow of the adjustment to grade of the connecting fence-panels, as set forth.

12. The combination, in a double-rail fence, of the cross-tie plate attached to the line-post, and provided at either end with notches to adapt it to engage with the frame of the ornament, and to allow of the adjustment of the latter therein, as set forth.

13. In a double-rail iron fence having pickets and their ornament-frames pivotally centered between the rail-sections, the separable splicing-band, horizontally divided, and having the triangular divisions upon the inside of the two sections, and the slots in its ends, to adapt it for coupling the rails, and allowing of the adjustment of the engaging picket, substantially as set forth.

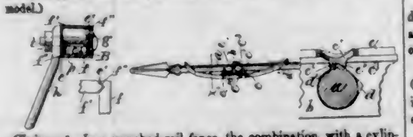
14. In a line-post for a double-rail iron fence, the two bent uprights 5, having the arched or bent top, and extending perpendicularly from thence to the ground-line, from which they diverge in a curved line outward, and then extend downward, terminating in flat disk-shaped feet 22, and having their uprights connected at the rail-line by cross-tie plates, and below the ground-line by the cross-braces and their adjustable clamping attachments, as and for the purpose set forth.

15. In a line-post for a double-rail fence, the cross-braces having their alternate ends secured to the two uprights of the same by the clamp-plates, and adapted for adjustment upon said uprights, substantially as and for the purpose hereinbefore set forth.

16. In an iron fence having double-rail sections, and adapted for adjustment, as described, the line-post C, having the cross-tie connections D for coupling the ends of the rails together, and allowing their adjustment therewith, and the continuous-rail bar forming the two perpendicular uprights and the base of the same in a single piece, and having the cross-braces 18, and the clamp-plates 19, by which their ends are secured to the uprights of the post, below the ground-line, and by which said braces are made adjustable, all arranged substantially as set forth.

17. A two-part clamp-plate for securing a brace to a line-post, provided with a cavity for the insertion of the end of the brace, and a flange at the lower edge of said cavity, in combination with a brace having a notch in one side of the end, engaging with said flange, and adapted to be adjusted by the movement of the clamp-plate upon the rod of the upright, substantially as specified.

293,674. IRON FENCE. TIMOTHY ROGERS, Springfield, Ohio, assignor to the Rogers Fence Company, same place. Filed Mar. 24, 1883. (No model.)



Claim.—1. In a punched-rail fence, the combination, with a cylindrical picket-rod formed with an angle on one side and a notch in said angle, and adapted to be engaged with the rail, as described, of an ornament having sprockets extending from its frame-bars upon either side of said picket-rod, which, when said frame-bars are bent or set back against the rod, will straddle said angle and secure the rod from turning axially, substantially as set forth.

2. In a punched-rail fence, an ornament for a picket-rod formed with an angle thereon, having sprockets extending across the line of the rod, and adapted to engage therewith by being set back with a punch beyond the front line of the rail, substantially as set forth.

3. An adjustable sleeve-connection for the rails of an iron fence, consisting of two short angular pieces of iron with engaging angles and grooves on their flanges, to retain them in position, and lugs cast on the inside of one of the sections, adapted to engage with notches in the end of the inserted rail, whereby the connection is made and the adjustment secured, and having a fastening-bolt securing the end of the brace of the line-post, the two sections of the sleeve, and the rails together, substantially as set forth.

4. The combination, with the T-channel rails *b*, having notches *g′*, of the box-sleeve connection B, formed of the two angular sections *f* and *f′*, having lugs *g*, and each provided with the angles *e′* and the grooves *f″*, to adapt them for engaging each other, the brace A of the line-post, and the bolt *i*, by which the whole is secured together, substantially as specified.

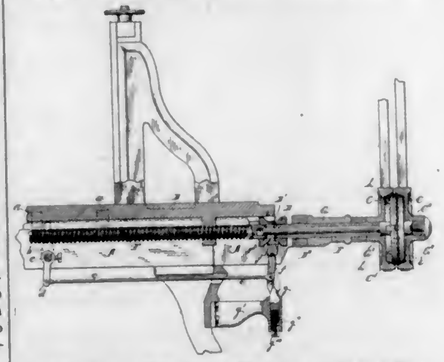
5. A foot-piece for a line-post in two longitudinal vertically-divided sections, having a central oblong hole to adapt it for adjustment upon the base, and having a socket in either end for the insertion of the picket-rod, said sockets being made with a longitudinally oblong hole, to adapt them for the adjustment of the picket in the direction of the fence-line, and with a drainage-hole of less diameter at the lower end of the socket, substantially as set forth.

6. In a line-post, the combination, with the base D, having the oblong slot *p* therein transversely to the fence-line, of the foot-piece C, having the slot *p′*, and the oblong socket-holes *k*, for allowing the adjustment of the picket therein, as set forth.

7. The combination, with the base D, having the oblong vertical slot *p*, and the arm *j*, having the vertical hole *i*, with inclined sides, of the brace A and the set-screw *i′*, with their auxiliary connecting devices, as set forth.

8. In a punched fence having a picket adapted to engage with the rail, after being inserted, by a partial rotation on its axis, the combination, with said picket and rail, of an ornament having its frame-bars bent over the front of the rail, the ends of said ornament inclosing said picket above and below said rail, and having sprockets extending from its frame-bars upon either side of the angle of the picket, whereby the latter is prevented from turning, as set forth.

293,675. METAL-PLANER. FREDRICK P. ROSBACK, Chicago, Ill., assignor to Charles Colahan, Cleveland, Ohio. Filed Sept. 20, 1883. (No model.)



Claim.—1. In a metal-planing machine, the combination of a reciprocating table, B, the screw F, with its actuating-shaft G, disk C′, and pulleys C C, substantially as shown and described.

2. The combination of the carriage B, screw F, its actuating-shaft G, disk C′, and pulleys C C, provided with space *i i*, said space serving as an air cushion to the sliding disk C′, pulleys C C, and carriage B in its operation, substantially as shown and described.

3. The combination of the screw F, provided with slots F′ G′, shaft G, with its pins or keys D′ C″, disk C′, and pulleys C C, with the sliding carriage and the tripping devices, substantially as shown and described.

4. The planer-carriage B, provided with lugs *a a*, screw F, shaft G, clutch C′, pulleys C C, pins or keys D′ C″, clutch-sleeve D, rock-shaft *c*, and crank-levers *b d*, rod *e*, and clutch-lever *f*, to impart reciprocating movements to said carriage, substantially as shown and described.

5. The sliding carriage B, provided with the lugs *a a*, the rock-shaft *c*, its crank-levers *b d*, rod *e*, clutch-lever *f*, stop-pin *g*, clutch-sleeve D, and rollers E E and shaft G, for imparting reciprocating movements to

disk C', in combination with the pulleys C C and the screw F, whereby the planer-bed is caused to move back and forth.

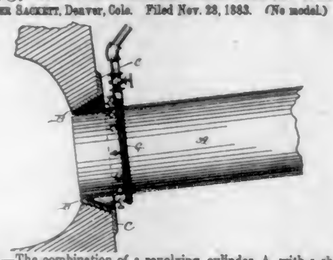
6. The pulleys C C and their belts traveling in opposite directions, the friction-disk C', its sliding pins A A, reciprocating shaft G, and its pin G'', for imparting rotary movement to shaft F, substantially as shown and described.

7. The shifting-lever *f*, its fulcrum *f''*, bevel-wheels E E, sleeve D, vertical sliding stop-pin *g*, provided with its spring *g''*, and set-screw *g'''* and supporting-arm *g'*, substantially as and for the purpose set forth.

8. In the mechanism imparting a reciprocating movement to a planer, the screw F, the friction-disk C', and the pins A A, fitted loosely therein and projecting beyond the sides thereof, in combination with the pulleys C C, whereby a space is secured for compression of air, which serves as a cushion, preventing sudden shock or jar in the shifting of said friction-disk, substantially as shown and described.

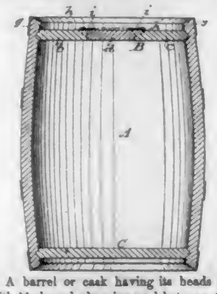
9. The reciprocating friction-clutch C', provided with its two bevel-edges, for alternately engaging pulleys C C, and its sliding pins A A, shaft G, and screw F, substantially as shown, and for the purpose described.

293,676. REVOLVING CYLINDER FOR FURNACES. SHERMAN GARDNER SACKETT, Denver, Colo. Filed Nov. 23, 1883. (No model.)



Claim.—The combination of a revolving cylinder, A, with a short flanged ring or collar which is secured thereto, and the water-pipe G, the parts being arranged to operate substantially as shown.

293,677. BARREL OR CASK FOR LIQUID AND SIMILAR ARTICLES. FREDERICK SCHEIPER, Union, N. J. Filed June 25, 1883. (No model.)



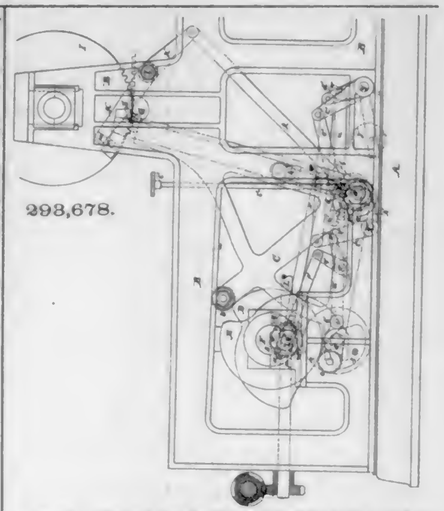
Claim.—1. A barrel or cask having its heads provided with a wedge-piece, *d*, with U-shaped edges inserted between the parts *b* and *c*, having corresponding seats, said wedge-piece inserted through an opening, *e*, protected by a metal piece, *f*, and held in place by the hoop *g*, substantially as shown, and for the purpose set forth.

2. A barrel or cask having one or both heads provided with a wedge-piece, *d*, having its edges made U-shaped, and fitting into corresponding grooves in the parts *b* and *c*, in combination with packing material *h*, held in place by metal strips *i* on each side of the wedge-piece, and extending over the joints, substantially as specified.

3. In a barrel or cask, the combination of the parts *b* and *c* with the wedge-piece *d*, inserted through the opening *e*, protected by the metal piece *f*, and held in place by the hoop *g*, in the manner shown, and for the purpose set forth.

4. A barrel or cask consisting of the body A, heads B C, one or both provided with a wedge-piece, *d*, having U-shaped edges fitting into corresponding grooves in pieces *b c*, the opening *e*, protected by metal piece *f*, and the packing material *h*, secured by metal strips *i* on each side, and covering the joints of said wedge-piece *d* and parts *b* and *c*, all constructed and arranged substantially as shown and specified.

293,678. PRINTING-PRESS. WALTER SCOTT, Plainfield, N. J. Filed Apr. 10, 1883. (No model.)



Claim.—1. The combination, with the impression-cylinder having a toothed segment, of a three-armed lever provided with a toothed sliding bar, and mechanism for operating said lever, all substantially as described.

2. The combination, with the impression-cylinder having a toothed segment, of the three-armed lever C, provided with a toothed sliding bar, H, and cams D and E, for actuating said lever, substantially as described.

3. The combination, with the impression-cylinder, of a lever, as C, provided with a bar, as H, an eccentric-strap having a socket, as *g*, eccentric, as *d*, and its actuating mechanism, substantially as described.

4. The combination, with the impression-cylinder, of a lever, as C, provided with a bar, as H, eccentric, as *d*, and its operating mechanism, an eccentric, as *e*, a catch-lever, as K, and actuating-cams, as D and E, substantially as described.

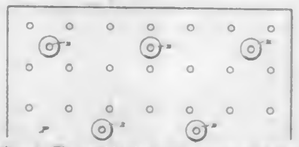
5. The combination, with the impression-cylinder, of a lever, as C, bar, as H, and its actuating mechanism, a lever, as K, and its actuating mechanism, and a mechanism, substantially as described, for operating the parts at every second revolution of the crank-shaft.

6. The combination, with the impression-cylinder, of a lever, as C, bar, as H, and its actuating mechanism, a lever, as K, and its actuating mechanism, and a mechanism, substantially as described, for operating the parts so that the form-bed can travel beneath the inking-rolls any number of times for each impression taken, substantially as described.

7. The combination, with the impression-cylinder, of a lever, as C, bar, as H, and its actuating mechanism, a lever, as K, and its actuating mechanism, a mechanism, substantially as described, for operating the parts so that the form-bed can be reciprocated any number of times for each impression taken, and a mechanism, substantially as described, for preventing the tripping of the parts except at proper times, substantially as described.

8. The combination, with the impression-cylinder, of a lever, as C, bar, as H, and lever, as K, and their actuating mechanisms, substantially as described, of a mechanism, substantially as described, for operating the parts so that the form-bed can be reciprocated any number of times for each impression taken, and a mechanism, substantially as described, for preventing the return of the parts except at proper times, substantially as described.

293,679. VOLTAIC PLASTER. WILLIAM F. STARK, New York, N. Y. Filed Sept. 20, 1883. (No model.)

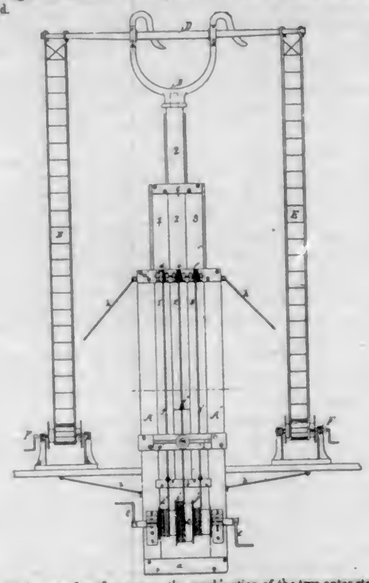


Claim.—1. The combination, with a porous or adhesive plaster, of the eyelets of zinc on the adhesive face thereof, and the perforated pieces of copper on the reverse side, for the purpose of creating a voltaic current and yet avoiding the contact of copper with the skin, substantially as described.

2. In a porous or adhesive plaster, the voltaic element composed of an eyelet-piece of zinc attached through the plaster to a corresponding perforated piece of copper on the reverse side of the plaster, for the purpose set forth, and substantially as described.

293,680. FIRE-ESCAPE. JOHAN STENWENDER, Allegheny, Pa. Filed Oct. 19, 1883. (No model.)

Brief.—An extensible structure having a detachable hook with a cross-piece attached thereto. An endless rope with baskets or cars secured to it moves over pulleys in the ends of the said cross-piece, and a tightening mechanism for holding said rope tant is placed upon the ground.

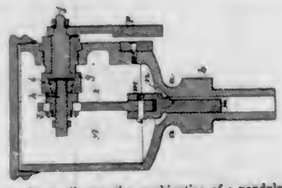


Claim.—1. In a fire-escape, the combination of the two outer standards, 1 3, the central standard, 2, the ropes *g g' g''*, which are secured to the lower ends of the standards and to the pulley *d' d' f'*, guiding-pulleys, and a detachable hook, B, having a cross-piece secured thereto, substantially as shown.

2. In a fire-escape, the combination of the three vertically-movable pieces 1 2 3 and a mechanism for raising and lowering them, the hook, the cross-piece, and suitable means applied to the cross-piece for raising and lowering persons and things, substantially as shown.

3. The combination of the hook, the cross-piece provided with pulleys, an endless rope or chain having baskets secured thereto, and a tightening mechanism on the ground for guiding and stretching the rope while in use, substantially as shown and described.

293,681. OIL-CUP. HERMAN W. STEMMERICH, Pittsburg, Pa. Filed Oct. 19, 1883. (No model.)



Claim.—1. In an oil-cup, the combination of a pendulum, a shaft which passes through the side of the cup below its top, nut *i*, block *d*, wrist-pin *h*, pitman *k*, and plunger *m*, the parts being combined and arranged to operate substantially as shown and described.

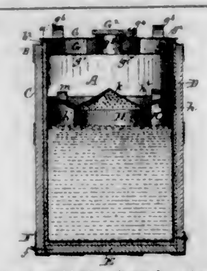
2. In an oil-cup, the combination of the pendulum P, shaft *f*, block *g*, and nut *i*, substantially as set forth.

3. The combination of the nut *i*, wrist-pin *h*, pitman *k*, and plunger *m*, arranged and operating substantially as described.

293,682. SHIPPING MILK-CAN. JOSEPH F. SWAB, Cedar Rapids, Iowa. Filed Dec. 6, 1883. (No model.)

Claim.—1. In combination with the polygonal wood casing of a milk-can, the upper hoop, B, of sheet metal, having a smooth uninterrupted horizontal surface, and sides composed of plane segments, having one of their ends overlapping the flanged end *b* of the adjoining segment, and soldered thereto, substantially as and for the purpose described.

293,682.

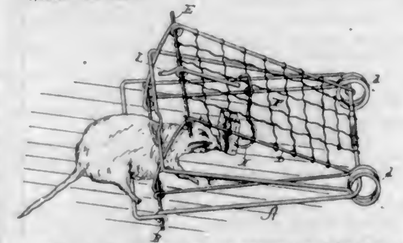


2. The combination, with the polygonal wood casing and bottom of a milk-can, of the lower hoop, F, of sheet metal, having its upper portion formed with angles corresponding with the wood casing, and its lower portion slitted and bent under the bottom of the casing, and one end of each turned-under segment overlapping the end *f* of the adjoining segment, substantially as and for the purpose described.

3. In a transportation milk-can, a float composed of two concentric cylinders, the inner one of less depth than the outer one, an air-tight cover extending from the top edge of the outside cylinder inward and downward to the top edge of the inner cylinder, and a perforated cover secured over the central opening of the inner cylinder, substantially as and for the purpose set forth.

4. The combination of the concentric cylinders A A', of different length, the flat annular disk uniting them at the bottom, the flaring annular cover uniting the upper edges of said cylinders, and the perforated cone *d* over the inner cylinder, whereby a milk-can float is produced, to operate as set forth, for the purpose specified.

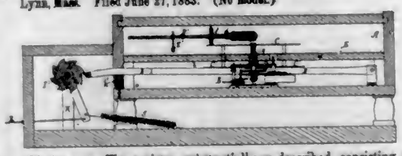
293,683. RAT-TRAP. JOHN L. SIMONDS, Detroit, Mich. Filed Sept. 1, 1883. (No model.)



Claim.—1. In an animal-trap, the combination of the base-wire, made of a single piece of wire, formed with the side lopped eyes, and provided with the transverse rod B, the spring striking-arm, likewise made of a single piece of wire connected to the transverse rod B of the base-wire, and the side inclined pieces, D, having the eyes *d'*, and provided with the transverse rod E, and a rod or wire for suspending the bait-hook, substantially as described.

2. The animal-trap herein described, consisting of the combination of the base-wire, made of a single piece of wire, formed with the side looped eyes, and provided with the transverse rod B, with the spring striking-arm connected to the said base-wire at its front end, the inclined roof, the suspended bait-hook, and trigger, substantially as described.

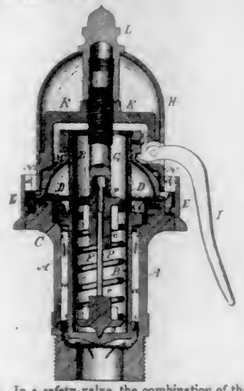
293,684. WATCHMAN'S TIME-DETECTOR. JAMES EDWIN TARBOX, Lynn, Mass. Filed June 27, 1883. (No model.)



Claim.—1. The register, substantially as described, consisting of the time-piece movement, the lever and its spring, the tablet or sheet, marked as explained, the disk, the arm, the screw and its wheel, and the marker, all being arranged essentially and to operate as set forth.

2. The combination, with the register, substantially as described, of the mechanism, essentially as explained, for depressing the lever of such register, such mechanism consisting of the shaft I, its toothed wheel L, series of toothed wheels O, O', O², and O³, and their series of operative pawls and levers, provided with springs and pulling-wires, all being as represented.

293,685. SAFETY-VALVE. REHARD J. THOMAS, Milwaukee, Wis. Filed Aug. 7, 1883. (No model.)



Claim.—1. In a safety-valve, the combination of the base A, valve C, plate D, and stem B, substantially as and for the purposes set forth.

2. The combination, in a safety-valve, of the base A, valve C, hollow threaded stem B, adjustable plate D, spiral spring F, disks *o* and *p*, cross-head K, and adjusting-screw G, substantially as and for the purposes set forth.

3. In a safety-valve, the cap H and lock-nut L, in combination with the spring F and adjusting-screw G, substantially as and for the purposes set forth.

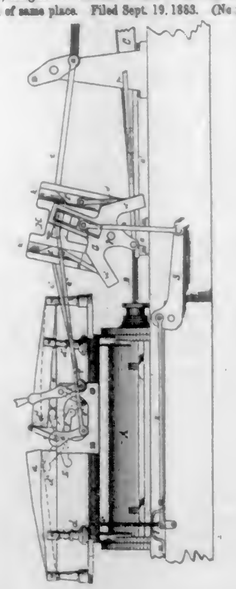
4. In a safety-valve, the combination of the cap H, shell E, screw G, and lock-nut L, substantially as and for the purposes set forth.

5. The combination, in a safety-valve, of the base A, valve C, stem B, spring F, disks *o* and *p*, stem P, adjusting-screw G, and cross-head K, substantially as and for the purposes set forth.

6. In a safety-valve, the combination of the base A, shell E, inner shell, N, cross-head K, adjusting-screw G, spring F, valve C, hollow stem B, adjustable umbrella-shaped plate D, cap H, set-nut L, and lever I, substantially as and for the purposes set forth.

7. The combination, in a safety-valve, of the adjustable umbrella-shaped plate D, the base A, provided with the flange *m m*, and the valve C, substantially as and for the purposes set forth.

293,686. STEAM-ENGINE VALVE-GEAR. WILLIAM D. THOMAS, Pittsburg, Pa., assignor of one-half to Thomas M. Herriott and Cavett & McKnight, all of same place. Filed Sept. 19, 1883. (No model.)



Claim.—1. In a steam-engine valve-gear, the combination, with apparatus moving with the exhaust-valve cam-rod, of a slide therein connected with the supply-valves, and a frame pivoted below said exhaust-valve cam-rod and adapted by its vibration to free said slide, substantially as set forth.

2. In cut-off apparatus, the combination of a wabbler connected to the exhaust-valve cam-rod, and having a sliding block mounted therein, connected with the supply-valves, and a frame pivoted in front of said wabbler, and adapted by its vibration to free said sliding block, substantially as and for the purposes set forth.

3. In cut-off apparatus, the wabbler H, connected to the exhaust-valve cam-rod, and having the sliding block *m* and cut-off blocks *l l'* mounted therein, in combination with the pivoted frame G, having rods connected to said cut-off blocks, substantially as and for the purposes set forth.

4. In cut-off apparatus, the pivoted wabbler H, provided with the sliding block *m*, connected with the supply-valves, in combination with the sliding cut-off blocks *l l'*, operated by suitable apparatus to control the motion of said block *m*, substantially as and for the purposes set forth.

5. In cut-off apparatus, the pivoted wabbler H, provided with the sliding block *m*, connected with the supply-valve apparatus, in combination with cut-off blocks *l l'*, sliding within said wabbler, and having inclined upper faces, l^2, substantially as and for the purposes set forth.

6. In cut-off apparatus, the pivoted frame G, having the arms $n' n^2$, said arms having slides *t*, mounted in suitable guides, in combination with means for varying the position of the slides in the arms, substantially as and for the purposes set forth.

7. In cut-off apparatus, the pivoted frame G, having the vertically-moving slide *r*, in combination with the rod *s*, and suitable means for varying the position of the slide in the frame, substantially as and for the purposes set forth.

8. In cut-off apparatus, the pivoted frame G, formed of the body *n*, having the slide *r* and arms $n' n^2$, having the slides *t*, in combination with links *u*, and suitable means for adjusting said slides in the frame, substantially as and for the purposes set forth.

9. In cut-off apparatus, the combination, with the wabbler H, having the cut-off blocks *l l'* therein, of the pivoted frame G, provided with the slides *t*, rods *v v'*, connecting said slides with the cut-off blocks, and means for varying the position of the slides, and so varying the throw of the cut-off blocks, substantially as and for the purposes set forth.

10. In cut-off apparatus, the combination, with the wabbler H, having the slide *m* and cut-off blocks *l l'* therein, of the pivoted frame G, having the slides *r t t*, links *u*, connecting said slides, and rods *v v'*, connecting cut-off blocks and the slides *t t*, substantially as and for the purposes set forth.

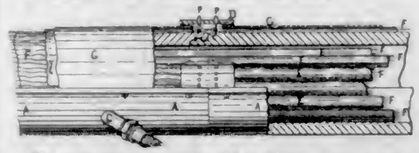
293,687. LINE-INDICATOR FOR TYPE-WRITING MACHINES. CHAS. G. TINSLEY, Grand Rapids, Mich. Filed May 29, 1883. (No model.)



Claim.—1. In a type-writing machine, the combination, with the line feeding mechanism and the feed-table, of an indicator or graduated plate adapted to support upon its upper surface the sheet of paper being printed, and means for removably securing said plate to said table, substantially as described.

2. In a type-writing machine, the combination, with the line feeding mechanism and the feed-table, of a graduated indicator-plate adapted to be secured to said table in such position as to support the end of the sheet of paper being printed, and an adjustable pointer projecting above the upper surface of the said plate, substantially as described.

293,688. UNDERGROUND ELECTRIC-WIRE CONDUIT. CHARLES H. TRASK, Lynn, Mass. Filed June 22, 1883. (No model.)



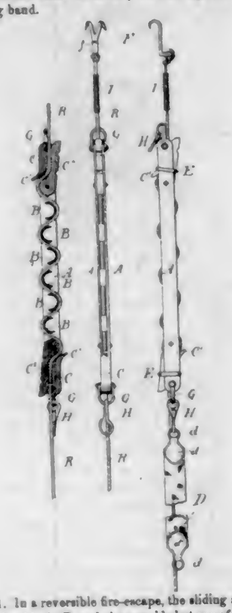
Claim.—1. An underground conduit provided with a series of insulated wire cables, and having one or more of said cables extended outward therefrom, and carried into a separate conduit, and having the insulated wires thereof separated and connected with a series of insulators, and extended beneath a casing and outward through a perforated cap-piece, substantially as described, as and for the purposes set forth.

2. The combination, with the conduit A B, of the outer casing, G, and perforated cap-piece D, as and for the purposes set forth.

3. The combination, with the conduit A B, of the insulated wire cables E, insulated wires F, insulators *t*, lead jacket *l*, casing G, perforated cap-piece D, and connecting-tubes C, constructed and arranged substantially as described, as and for the purposes set forth.

293,689. FIRE-ESCAPE. JOHN USBORNE, Arnprior, Ontario, Canada. Filed May 17, 1883. (No model.)

Brief.—A fire-escape in which the friction device is provided with fixed blocks or bearings, over and between which the rope is rove, and pivoted clamps at the ends, which may be held against the rope by an elastic encircling band.



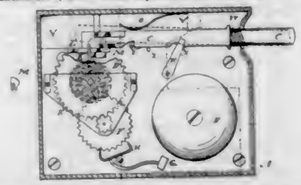
Claim.—1. In a reversible fire-escape, the sliding arm or guide provided with friction-blocks B, and also provided at one of its two ends with a suspension device, H, and a friction-brake, C'', the latter with an actuating-spring, and also adapted to be operated by hand, as described, whereby the attendant is enabled to grasp and operate either brake, the other being automatically actuated at the same time by means of its springs.

2. In a fire-escape, the frame or body provided with the fixed friction-surfaces B and C', the two pivoted brakes C'', and springs applied to actuate said brakes, whereby the action of both brakes is secured automatically independently of the control of the operator.

3. In a fire-escape, the combination, with the frame having the stationary friction-surface C', of the pivoted brake C'', and the elastic encircling band E, the parts being provided as described with a series of notches to admit of the band being secured in different positions.

4. The combination of elastic bands E with the bar and the brake-blocks C C^2, all substantially as described, and for the purpose set forth.

293,690. ALARM-LOCK. ROBERT G. VARNAR, New York, N. Y., assignor of two-thirds to Garrett S. Mott, Philadelphia, Pa., and James G. Smith, Hackensack, N. J. Filed Sept. 18, 1882. (Model.)



Claim.—1. The combination, substantially as described, of an alarm mechanism and detent with a laterally and vertically movable sliding bolt having its fulcrum in the edge of the casing, and provided with a releasing shoulder or projection for releasing the alarm mechanism upon a longitudinal movement of said bolt in a straight line.

2. The combination, with a laterally and vertically movable bolt, of an alarm mechanism whose detent is arranged in the path of the bolt when moved laterally by any unauthorized means, a releasing projection or shoulder upon the side of the bolt for releasing the alarm mechanism upon a longitudinal backward movement in a straight line, and an operating key or knob for throwing back the bolt, constructed in the manner described, to lift the end of the bolt carrying the releasing-projection, so that the latter will avoid the detent of the alarm mechanism.

3. The combination, with the alarm-detent mounted on mainspring-arbor of an alarm mechanism, of the bolt C, having operating-shoulder N, and the lateral and vertical pressure-springs P Q, as and for the purpose described.

4. The combination, with the alarm-detent of the bolt C, projecting through an opening in the casing, and adapted to have a vertical and lateral movement upon the edges of said opening as a fulcrum, and alarm-detent arranged in the path of the releasing projection N upon the bolt, and an operating knob or handle, S, provided with means for lifting the free end of the bolt, so that when the bolt is thrown back the alarm will not be sounded.

5. The combination, with an alarm mechanism, of the bolt C, confined at one end within an opening in the casing and free to move vertically and horizontally at its other, the spring W, the catch Y, and the operating knob or handle for lifting the free end of the bolt.

6. The combination, with the bolt C, arranged in the manner described, to move vertically and horizontally at its inner end, of the alarm-detent arranged in the path of the operating-projection N, the springs P Q W, applied as shown, stop Z, plate V, and catch Y.

7. The combination of a spring detent-arm mounted on mainspring-arbor of an alarm mechanism, means for holding said detent, and a laterally-movable bolt, as and for the purpose set forth.

8. The combination, with the stop or shoulder for the detent-arm, of a yielding guard-plate normally projecting above said shoulder and adapted to allow said arm to pass the shoulder in either direction.

9. The combination, with the plate L, having a stop or shoulder, and the detent secured to the mainspring-shaft, of the yielding guard-plate M, rounded upon one side, so as to allow the detent to pass the shoulder in running down.

293,691. SELF-WINDING WATCH. HERMANN VON DER HEYDT, Chicago, Ill. Filed May 16, 1883. (No model.)



Claim.—1. In a watch, the self-winding mechanism, consisting of the pendulum A, suspended by means of a rod, A', from the axis of the pinion *b'* of the ratchet-wheel B, spring C, engaging with the rivet *v*,

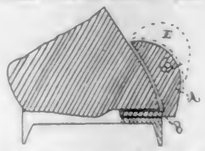
non-flexible pawl *u*, secured to the rod A', to engage with the teeth of the ratchet-wheel B, non-flexible detent *t*, ratchet-wheel B, supporting the pinion *b'*, wheel D, supporting the pinion *d*, and the wheel E on the barrel, the whole being constructed and arranged to operate substantially as described.

2. In a self-winding watch, the combination, with the pendulum which operates the winding mechanism, and is provided with a recess, *p'*, of the pivoted catch-click L, provided with a projection, *p*, and mechanism for causing the said projection to enter the said recess when the watch is wound to a given degree, thus preventing further vibration of the pendulum, and for releasing it at the end of a given time, substantially as described.

3. In a self-winding watch, in combination with the pendulum A, mechanism to prevent overwinding of the mainspring, said mechanism consisting of a cam-wheel, G, on the barrel containing the mainspring, intermittent wheel H, having the tooth *r* to press against the finger *q*, the latter being pivoted to the wheel K, and having a continuation to form a spring, *q'*, to force the wheel K around in the direction of the revolving barrel when the mainspring is unwinding, and catch-click L, engaging at its point with the teeth of the wheel K, and held in position by means of the spring *n*, and provided with a projection, *p*, to fit into a recess, *p'*, in the pendulum, substantially as described, and for the purpose set forth.

4. In a self-winding watch, the band M, fitting within recesses, one on each inner face of the two plates of a watch, and formed near the edges of the said plates, and having its ends project into the pendulum-chamber to allow the pendulum to strike against them in its vibrations, thus preventing clattering noise and operating to accelerate the vibrations of the said pendulum, substantially as described.

293,692. FOOT-WEIGHT. GEORGE W. WEMPLE and BRAINERD W. CHILD, Boston, Mass. Filed June 28, 1883. (Model.)



Claim.—1. In combination with a shoe having slots D D, the weight A in sections, as described, having the forks B, as and for the purpose set forth.

2. An attachable piece, *e*, having a projection, E', in combination with a weight provided with a recess for the reception of the projection E', and a transverse screw-hole for securing the same, as and for the purpose set forth.

293,693. HASP-LOCK. BYRON D. WEST, Chicago, Ill. Filed July 7, 1883. (No model.)



Claim.—1. The combination of the hasp A, provided with a slot therein for the staple lock-piece B, secured rigidly thereto, and broken ring C, mounted in a concentric arc groove or hole in said lock-piece, said ring standing parallel to said hasp, so as always to be in position to engage the staple, substantially as specified.

2. The combination of the ring C, provided with opening *c* therein, with lock-piece B, and lock-bolt *b'*, provided with prongs *d d'*, for clasping the ends of said ring C together when the same is locked, substantially as specified.

293,694. MATCH-SAFE. JOHN M. WHEELER, Toledo, Ohio. Filed Apr. 9, 1883. (No model.)

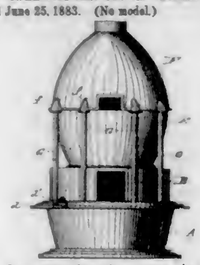


Claim.—1. A match safe or receptacle composed of an open-backed pocket and a marginal back piece, said pocket and back piece being adapted to be nested in packing, the surface to which said back piece is applied forming a back for said pocket, as set forth.

2. The combination, in a match-safe, of a flat back piece, a pocket or receptacle on one side of said back piece, and an adhesive coating on the opposite side, whereby said back piece and pocket may be attached to a wall or other support, as set forth.

3. An open-backed match-safe, composed of a flat piece of material slotted transversely to form the mouth of a pocket, embossed below said slot to form the body of the pocket, and provided with a flat marginal portion entirely surrounding the pocket and having an adhesive coating on its rear surface, as set forth.

293,695. RAILWAY-CAR STOVE. ALONZO P. WINSLOW, Cleveland, Ohio. Filed June 25, 1883. (No model.)



Claim.—1. In a water-base for a stove, the sides sloping upward and outward, and adapted to prevent the base from breakage when water is frozen therein, substantially as and for the purpose set forth.

2. In a stove provided with a water-base, the plate *d*, provided with a depression and ribs, as shown, and adapted to retain a layer of ashes to protect the plate from heat, substantially as shown and described.

3. The combination, with a stove made in two sections, the lower supporting the upper one, and the upper one provided with the bosses and perforations, of the water-base and pipes connecting the water-base and bosses of the upper section, substantially as set forth.

4. The combination, with the dome provided with the bosses *f* and perforations *f''*, of the section E, provided with the portions *e*, which latter form seats for the bosses and receive the upper ends of the pipes G.

293,696. GREENHOUSE. EDMUND MORTIMER WOOD, Natick, Mass. Filed May 17, 1883. (No model.)

Brief.—Light trusses have braced "right-angular ties" or brackets supporting tubular rock-shafts, to which the centers of the sashes are secured, and by which the sashes are tilted through devices operating to open or close the tiers collectively. The lower sash-edges lap the upper edges of the next tier below, and drip-water is conveyed to the interior of the rock-shaft from gutters on such edges. Pivoted latches have lips to engage lugged plates on the sash-edges to lock them closed, such latches being connected to operate collectively. The sashes of the upper tier are locked closed by turn-buttons (all on one side operated through arms by one connecting-rod) supported by "saddle-plates" protecting the openings in the sashes through which the buttons pass. The ridge of the roof may be inverted and provided with conductors to carry off the water collected.

Claim.—1. In greenhouses, and as a support to the roof, light metal trusses of suitable shape to permit of tilting of the sashes, either individually or collectively, in combination with a series of sashes adapted to swing at about their centers upon their supports, substantially as explained.

2. In combination with the side walls, the roof-trusses composed of the longitudinal side bars, right-angular lateral ties, and diagonal braces, which latter permit tilting of the sashes, substantially as explained.

3. In greenhouses, a series of sashes adapted to swing at about their centers either laterally or longitudinally upon their supports, and operated by suitable mechanical means, whereby they may be swung collectively and simultaneously upon their supports.

4. In greenhouses, a tier of sashes swinging at about its center, collectively, upon its supports, a rock-shaft supporting such tier, and light metal trusses supporting such rock-shaft and adapted to permit of swinging of the tier.

5. The inverted ridge crowning the roof of the house, and operating as a gutter to collect water.

6. The inverted ridge, in combination with conductors for conveying off the water arrested by such ridge.

7. In combination with a sash adapted to swing at about its center, a tubular shaft, constituting the pivotal support of such sash, and provision for conducting drip-water from the sash to the interior of such shaft.

8. The saddle, in combination with the pivotal sashes and the trusses supporting the same, such saddle constituting the support or bearings of the devices for locking the upper sashes.

9. The saddle, in combination with the pivotal sashes and the trusses supporting the same, such saddle constituting the support of the devices for locking the upper sash and a covering for the openings in or between such sashes, through which the said locking devices operate to fasten the sash.

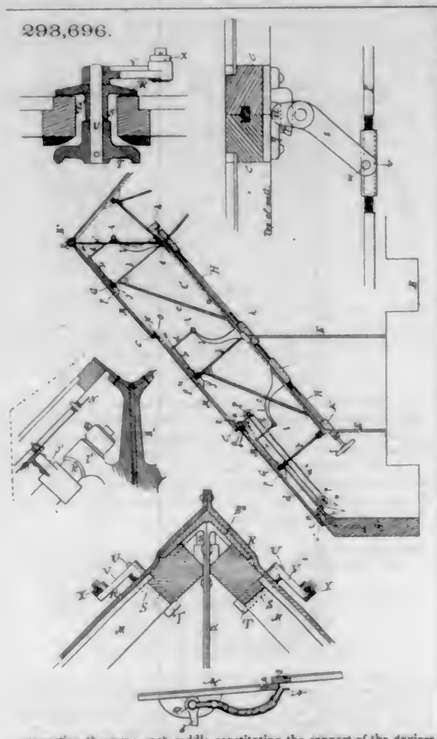
10. The device herein explained for locking the upper sash consisting of the shafts U and turn-buttons T, the shaft being mounted in the saddle R, and provided with the arms V, which are connected and operated by the rod X.

11. The openings S' in the sashes, in combination with the saddle R, or its equivalent.

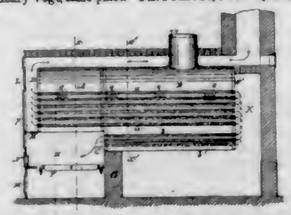
12. The device herein shown and explained for locking the sashes, consisting of the latches *s*, with their lips *u*, and the plates *q*, with their lugs *r*, the latches being preferably connected and operated by the rod P.

13. In greenhouses containing two or more tiers of sashes so arranged that the lower edge of one tier overlaps the upper edge of the tier next below, a series of devices for locking such edges together, when such series of devices are operated collectively by mechanical means.

293,696.

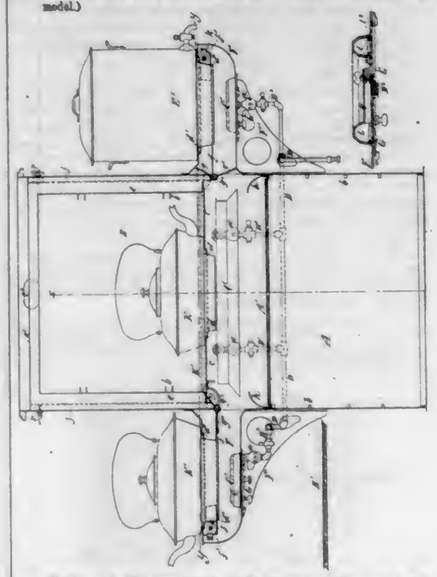


293,697. STEAM-BOILER. WILLIAM D. ADAMS, Brooklyn, N. Y., assignor to Henry Vogt, same place. Filed June 29, 1883. (No model.)



Claim.—The combination, with a boiler the shell of which is composed of the two cylindric sections A B of different diameter, and having their upper sides in line, and a crescent-shaped plate, C, uniting said sections, of long tubes *a*, extending through both said sections, shorter tubes *b*, extending through the section B, a furnace, E, below the section A and forward of the section B, and a bridge-wall, G, at the front end of said section B, extending upward to the under side thereof, whereby the heated products of combustion are caused to pass from said furnace directly through the tubes *b*, substantially as and for the purpose herein described.

293,698. GAS-STOVE. JOHN ALDENSLEY, New York, assignor of one-half to William N. Milsted, Brooklyn, N. Y. Filed July 31, 1883. (No model.)



Claim.—1. The combination, with an upper baking-oven and a lower roasting or cooking chamber, of a gas-burner arranged between the two, and non-conducting shields or partitions removably fitted to the oven and chamber, substantially as and for the purpose described.

2. In a gas-stove, the combination, with a chamber containing a burner and a superposed oven surrounded by heating flues or spaces, of a lateral extension furnished with one or more pot-holes, and a damper for directing the heat from the burner through said lateral extension, or through the flues or spaces around said oven, substantially as and for the purpose described.

3. In a gas-stove, the combination, with a burner and a superposed oven surrounded by heating flues or spaces, of a lateral extension provided with one or more pot-holes, and dampers whereby the heat may be caused to pass directly upward around the oven, or first through the lateral extension and then around the oven, substantially as herein described.

4. In a gas-stove, the combination of a chamber containing a main burner, a lateral extension provided with one or more pot-holes, a damper for directing the heat from the burner through said lateral extension, and one or more auxiliary burners arranged in the lateral extension, substantially as herein described.

5. In a gas-stove, the combination, with a chamber containing a main burner, and a lateral extension through which the heat from the main burner may be directed, of an auxiliary burner in said extension, and a draft plate or valve controlling the admission of air to the auxiliary burner, and adapted to be closed when the extension is heated by said main burner, substantially as herein described.

6. The combination of a chamber containing the main burner C, the lateral extension F, having the horizontal partition *f*, and a damper for directing the heat from the burner C under and then over the partition *f*, substantially as described.

7. The combination of the oven B with its surrounding heating-space *e*, a burner, C, arranged in a chamber below the oven, the lateral extension F, with its partition *f*, and the dampers *g g'*, substantially as described.

8. The combination of the oven B with its surrounding heating-space *e*, a burner, C, arranged in a chamber below the oven, the lateral extension F, with its partition *f*, the dampers *g g'*, and the shaft *g²*, to which both dampers are attached, substantially as described.

9. The combination of the chamber containing the main burner C, the lateral extension F, with the partition *f*, and having a pot hole or holes extending through said partition, and the damper *g'*, substantially as described.

10. The combination of a chamber containing the main burner C, and the lateral extension F, constructed with the horizontal partition *f* and the vertical partition *f'*, and having pot-holes on opposite sides of the partition *f'*, substantially as described.

11. The combination, with the lateral extension F, constructed with the horizontal partition *f*, the vertical partition *f'*, and two pot-holes, *d'*, of auxiliary burners C' on opposite sides of said partition *f'*, and the hinged guard or damper plate *k*, substantially as herein described.

12. The combination, with a chamber containing the main burner C, of the lateral extension F, and the checks or guards A, for confining the products of combustion, substantially as described.

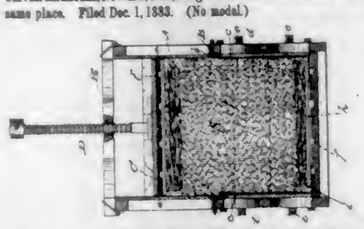
13. The combination, with the oven B, having the heating-space *e* at the sides and back, of the burner C, the dampers *g* at the sides of the oven, the damper *l* at the back of the oven, and connections between one of the dampers *g* and the damper *l*, whereby both said dampers can be opened by manipulating the damper *g* only, substantially as described.

14. The combination, with the baking-oven B, the main burner C, and flues or heating-spaces *e* around the oven, and having a main outlet-flue at the top, of the lateral extensions F, containing auxiliary burners C', and an outlet-flue, *j*, leading upward from each extension to the main outlet-flue, and provided with a damper *j'*, substantially as described.

15. The combination, with the extension F, of the auxiliary burners C', each consisting of a bottomless shell secured upon the bottom of the extension, the said bottom of the extension forming the bottom of the burner, substantially as described.

293,699. PROCESS OF AND APPARATUS FOR BALING BRAN.

OLIVER AMSTELL, Newark, N.J., assignor of one-half to Andrew Allbright, same place. Filed Dec. 1, 1883. (No model.)



Claim.—1. The process herein described of preparing bran for transportation—to wit, of arranging the end, side, and bottom covering of the bale within a suitable press before pouring in the bran, of pouring in the bran and placing the material to form the top covering upon the same, of compressing the whole to the required dimensions, and securing the covering of the bale while under pressure.

2. A bran-press having removable doors on each of the four sides thereof, and a single movable follower, C, actuated by suitable mechanism.

3. In combination, a press the upper portion of which is boarded, and provided with four doors in the lower portion thereof, a single follower or compressing-cover, C, a screw, D, and removable dog E.

4. In combination, a press provided with four doors, and having grooves *f* in the floor thereof, and a compressing cover or follower, C, having grooves *f'* therein, all substantially as set forth.

5. In combination, a press provided with four doors, and having grooves *f* in the floor thereof, a compressing-cover, C, having grooves *f'* therein, and means for holding the canvas *c* in position while the bran is being compressed.

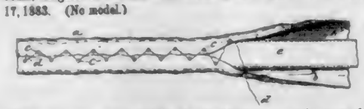
6. In combination, a press provided with four doors, and having grooves *f* in the floor thereof, a compressing-cover, C, having grooves *f'* therein, an iron strip, *b*, secured by bolts to the frame, and the canvas *c*, all substantially as and for the purposes herein set forth.

7. In a press for baling bran, the combination of a grooved compressing-cover, C, screw D, and an adjustable dog, E.

8. In combination with a bran-press, a frame composed of uprights *a* and hinged cross-pieces, for the purpose set forth.

293,700. HARNESS-COVERING.

HOLLAND C. BABCOCK, Hartford, Conn., assignor of one-half to P. Jewell & Sons, same place. Filed Nov. 17, 1883. (No model.)

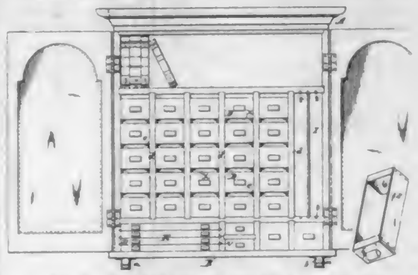


Claim.—1. As a new article of manufacture, a wool-covered harness-protector made in strips of any desired length and width, with hooks, studs, or equivalent devices secured on opposite edges, in combination with the lacing, whereby the whole is attached in place on the harness, all substantially as described.

2. In combination, the wool-covered protector *a*, the re-enforce *b* the hooks or studs *c*, and the lacing *d*, with the enveloped harness, all substantially as described.

293,701. BOOK AND FILE CASE.

JACOB BAKER, Greenville, Ohio. Filed May 11, 1883. (No model.)



Claim.—1. The main body or frame of the case, in combination with partitions and drawers, said partitions being provided with supporting-strips for the drawers at intervals, substantially as described, whereby a space is left above each drawer, for the purpose specified.

2. The receptacle for file-cases, consisting of a block, G, rabbeted block F, and a strip, *u*, of metal, bent to form the sides and bottom of the box, inclosing the block G, and fitted to the rabbeted edge of the block F, substantially as set forth.

293,702. SIGN.

WALTER E. BANNING, Syracuse, N. Y. Filed Oct. 11, 1883. (No model.)

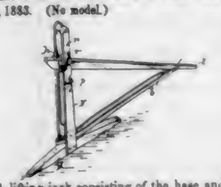


Claim.—1. In combination with a street-lamp and its frame, a stencil sign-plate having extended from its end two strips wound spirally around the guards of the lamp, the one upward and the other downward from the strip, substantially as described and shown.

2. In combination with a street-lamp and its frame, two stencil sign-plates arranged in line with each other, and provided at their adjacent ends, respectively, with a strip disposed in a different plane and wound around the lamp-guard in a different direction from the strip of the adjacent plate, substantially as described and shown.

293,703. LIFTING-JACK.

JOSEPH F. BAHLL, Christiansburg, Ohio. Filed July 31, 1883. (No model.)



Claim.—1. A lifting-jack consisting of the base and standards provided with notches, a lever, *l*, the clamping-rod *b*, and the clevis *r*, secured to the lever, substantially as shown and described.

2. The combination, in a lifting-jack, of the base and standards with the lever *l*, having the securing-rod *b* attached thereto, the pawl *d*, clevis *r*, and lifting-rod *k*, substantially as and for the purpose set forth.

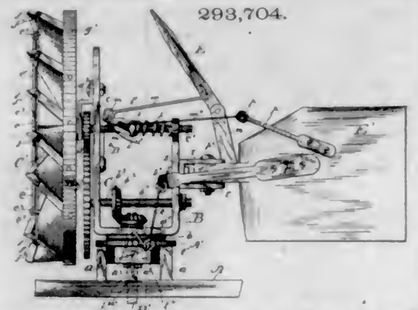
293,704. WINDMILL.

HERMANN BENNEMANN, Minster, Ohio. Filed Aug. 17, 1883. (No model.)

Claim.—1. The combination, in a windmill, of the wheel-blades *f' f'*, connected to one another by the rods e^2 e^2, having eyes in each and to engage the studs *f'' f''*, the arms *d' d'*, secured to the rods e^2 e^2, and disk *a* on the end of the shaft *c'*, which latter is provided with the groove *h*, to engage the pin *h'* in the hub of the wheel C', of the pivoted slotted bar *l'*, shaft *c'*, spring *i'*, connecting-rods *m' m²* *i*, gear-wheel C, pinions *c b' b²*, wing E, vane E', U-shaped frame B, and stationary table A', as shown and described.

2. The combination, in a windmill, of the U-shaped frame B, provided with bearings for the horizontal shafts *c' b²* of the stationary table, supported upon the posts *a a*, the vertical operating-rod *w*, bent at its upper and lower ends at right angles thereto, of the connecting-rods,

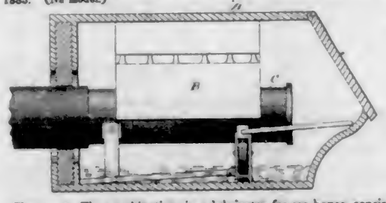
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gear-wheels, pinions *c b' b²*, slotted bar *l'*, shaft *c'*, spring *i'*, wing E, vane E', and wind-wheel C', constructed as described, the whole as shown and set forth.

293,705. LUBRICATOR.

ADDISON BRADFORD, Brooklyn, N. Y.; Wm. W. Blackman, Administrator of said Addison Bradford, deceased, assignor of five-thirteenths to Theodore C. Wiggins, same place, Aaron R. Smith, New Brighton, and Albert S. Comstock, New York, N. Y. Filed July 25, 1883. (No model.)



Claim.—1. The combination, in a lubricator for car-boxes, consisting of the yielding lubricating-rollers, pivoted as described, and adapted to be in contact with the journal-bearing for the supply of oil, of the vertical spring-supports having the rubbers, also adapted to be in contact with the journal-bearing, for preventing the waste of oil, as set forth.

2. The lubricator for car-axles and the like, consisting of the carrying-frame D D', horizontal frame E, pivoted as set forth, and the spring-rubbers, the former having lubricating-rollers, as set forth.

3. The combination, in a lubricator having the upright frame-head and the horizontal frame, the former having the elongated slot adapted to receive the horizontal moving bearings of the oilers, of the springs, whereby the oil-rollers may approach to and recede from each other, as shown and described.

4. A lubricator for railroad-car axles, consisting of the hinged frames having the oilers and rubbers, in combination with the bail and brace, as described.

5. A lubricator for car-axles, having the hollow head forming an oil-box, said box being provided with oil-inlet apertures for the supply of oil to the rollers, whereby only sufficient lubricant is fed to the axles, and with the movable spring-operating journal-bearings for said rollers, as described.

6. The combination, with a journal-box, of an oil-receptacle therein, and adapted to have one or more lubricating-rollers, said box being provided with controlling oil-inlet aperture, for the purpose set forth.

7. In a lubricator, one or more journaled rollers in a suitable box or device, to prevent said rollers from running in the oil outside of said box or device, the said box or device being provided with controlling oil inlet or apertare, for the purpose set forth.

8. A lubricator provided with spring-armed oil wiper or rubber, as set forth.

293,706. LUBRICATOR.

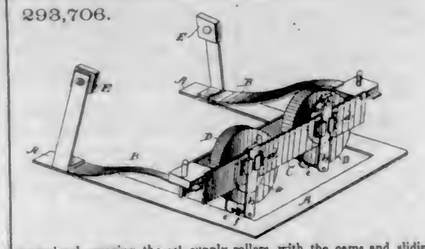
ADDISON BRADFORD, Brooklyn, N. Y.; Wm. W. Blackman, Administrator of said Addison Bradford, deceased, assignor of five-thirteenths to Theodore C. Wiggins, same place, Aaron R. Smith, New Brighton, and Albert S. Comstock, New York, N. Y. Filed July 25, 1883. (No model.)

Claim.—1. A lubricator having the base-frame adapted to rest on the bottom of the journal-box, and having springs secured thereto, which are adapted to sustain a lubricating device, which device is kept in contact by the resiliency of said springs, substantially as described.

2. The combination, in a lubricator, of the frame A, the supporting-springs, and the lubricating-rollers, mounted as shown, and operating as described.

3. The combination, in a lubricator, of the frame, the springs, and

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cross-head carrying the oil-supply rollers, with the cams and sliding yokes or their equivalents, and oiling device, operating as set forth.

4. The combination of the frame, the supporting-springs, and oil-supplying devices with the wipers for wiping off the surplus oil, substantially as described.

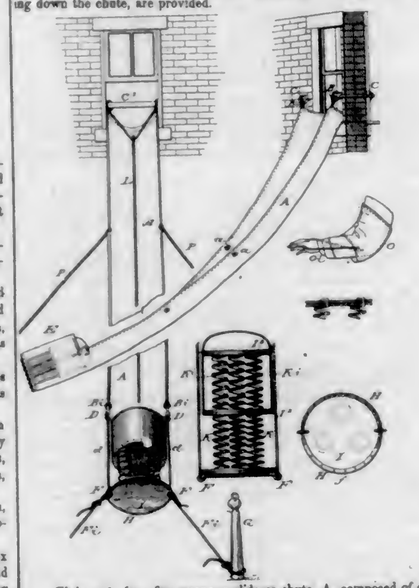
5. A lubricator having the base-frame, the supporting-springs, the frame carrying the rollers, said rollers having eccentrics or cams or their equivalents for operating oil-supply devices, for the purpose set forth.

6. A lubricator having one or more rollers adapted to be operated by a journal, said roller or rollers being provided with eccentrics, cams, or their equivalents for operating oil-supply devices.

293,707. FIRE-ESCAPE.

ROBERT W. BRADLEY, Denver, Colo. Filed Mar. 5, 1883. (No model.)

Brief.—The bottom of the chute is formed into a cylindrical spring-receiver. Cuffs, with fastenings, for the protection of the arms in sliding down the chute, are provided.



Claim.—1. In a fire-escape, a slide or chute, A, composed of canvas or other flexible material, having its edges strengthened by ropes provided with loops B B and loops B' B', and having its lower end formed into a cylindrical-shaped spring-receiver, E, the hooks D D, ropes *d d*, loops F F, stationary bottom I, springs *k k k*, partition-board I', springs *k' k' k'*, and board I², having the cushion and cover attached, as specified and described.

2. The combination, with a fire-escape, of the slide or chute A and cylindrical spring-receiver E, the ropes H and F', and posts G, fully as set forth.

3. The combination, with a fire-escape, of the cuffs O, having straps *o'*, for the purpose of protecting the elbows from injury while descending, fully as set forth and described.

293,708. METAL-MOLD-LUBRICATING MATERIAL.

CHARLES F BRUSH, Cleveland, Ohio. Filed Oct. 24, 1883. (No specimens.)

Claim.—1. As a material for lubricating or coating molds, a non-

oxygenous or non-saponifiable oil incapable of complete evaporation at or approximately at the melting-point of lead, substantially as set forth.

2. As a material for lubricating or coating molds, a non-oxygenous or non-saponifiable oil capable of liquefying and incapable of complete evaporization at or approximately at the melting-point of lead, substantially as set forth.

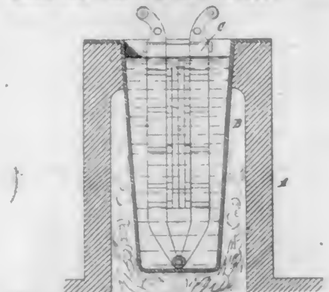
3. As a material for lubricating or coating molds, the combination of a non-oxygenous non-saponifiable oily substance and a suitable diluent, substantially as set forth.

4. As a material for lubricating or coating molds, a non-oxygenous or non-saponifiable substance incapable of complete evaporation at or approximately at the melting-point of lead, and a diluent rapidly evaporating below said temperature, substantially as set forth.

5. As a material for lubricating or coating molds, a non-oxygenous or non-saponifiable oily substance and a non-oxygenous or non-saponifiable diluent, substantially as set forth.

293,709. PROCESS OF CASTING METALS.

CHARLES F. BRUSH, Cleveland, Ohio. Filed Oct. 24, 1883. (No model.)



Claim.—1. The herein-described method of casting metals, which consists in submerging a jointed or divided mold in a bath of molten metal, allowing the mold to fill while two or more of its opposite walls or parts are separate, and then closing the same while still submerged, substantially as set forth.

2. The herein-described method of casting metals, which consists in submerging a tightly-closed jointed or divided mold in a bath of molten metal, separating the opposite parts thereof, and reclosing the same while still submerged, substantially as set forth.

3. In the process of casting by the submergence of a jointed or divided mold in the molten metal, the combination of the following steps: first, the heating of the mold to a point above that at which the metal flowing therein on or after submergence would chill too rapidly, but below the melting-point of such inflowing metal; second, submerging the mold in the molten metal; third, allowing the mold to fill while two or more of its opposite parts are separated; fourth, closing the same while still submerged; and, fifth, withdrawing the same from the molten metal, substantially as set forth.

4. In the process of casting by submergence of a jointed or divided mold in the molten metal, the combination of the following steps: first, the heating of the mold, substantially as described; second, submerging the closed mold, substantially as described; third, opening and filling it, substantially as described; fourth, reclosing the same, excluding surplus metal, and packing the joints with chilled metal, substantially as described; and, fifth, withdrawing the same from the molten metal, substantially as set forth.

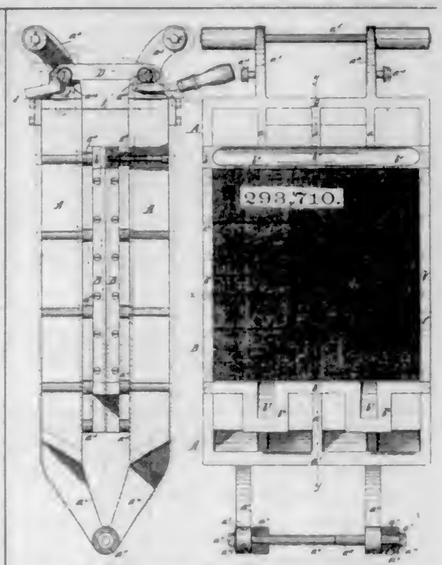
5. In the process of casting by the submergence of a jointed or divided mold in the molten metal, the process of simultaneously pressing the molten metal into the smaller cavities of the mold, expressing the excess of metal, and packing the joint or joints of the reclosed mold by clamping the meeting walls of the mold onto and so chilling a film of metal between such walls on the closing movement of the previously-separated parts of the mold while still submerged, substantially as set forth.

6. In the process of casting by the submergence of a jointed or divided mold in the molten metal, the method of packing the joint or joints of the mold by closing the meeting walls thereof on a film of the escaping metal and simultaneously solidifying such film by the lower temperature of such walls before the emergence of the mold from the bath, substantially as set forth.

293,710. MOLD FOR CASTING METALS.

CHARLES F. BRUSH, Cleveland, Ohio. Filed Oct. 24, 1883. (No model.)

Claim.—1. In a mold for casting metals, the combination of a surrounding frame and a series of spaced strips arranged within said frame, the frame and strips constituting the casting faces or walls of the mold, substantially as set forth.



2. In a mold for casting metals, the combination of surrounding frame and series of properly-spaced strips arranged longitudinally within said frame, each strip being notched at one or more points, as at c^2, along its face edge, substantially as set forth.

3. In a mold for casting metals, the combination of a surrounding frame and a series of transversely-beveled strips arranged within said frame, the frame and strips constituting the casting faces or walls of the mold, substantially as set forth.

4. In a mold for casting metals, the combination of a surrounding frame, a series of transversely beveled and notched strips arranged within said frame, and a series of narrow strips arranged between and separating the other strips, substantially as set forth.

5. In a mold for casting metals, the combination of a surrounding frame consisting of top, bottom, and side bars, the top bar being provided with a longitudinal filling-head recess and slots connecting said recess with the matrix of the mold, a series of transversely beveled and notched strips arranged within the frame, and a series of narrow spacing-strips, substantially as set forth.

6. In a mold for casting metals, the combination of a surrounding frame consisting of top, bottom, and side bars, the top bar having a longitudinal recess and slots connecting said recess with the upper transverse groove in the matrix, and the lower bar having recessed lugs connecting with the lower transverse groove of the matrix, a series of strips being transversely beveled on their sides and ends, and a series of narrow spacing-strips, substantially as set forth.

7. A mold for casting metals, consisting of two parts hinged or jointed together, as described, each of said parts having a series of transverse and longitudinal grooves formed in its surface, the transverse grooves in one part being somewhat deeper than the like grooves in the other part, substantially as set forth.

8. A mold for casting metals, consisting of two parts hinged or jointed together, as described, one of said parts having a series of transverse and longitudinal grooves in its surface, and the other part having transverse grooves, substantially as set forth.

9. A mold-structure the casting-faces of which are composed wholly or in part of parallel or approximately parallel strips having beveled sides, said strips being arranged with their beveled sides facing in opposite and outward directions, substantially as set forth.

10. The combination of the two parts of a flask, each part being provided with two perforated lugs, one of said lugs on each part having an adjustable sleeve within its perforations, and a pintle, substantially as shown and described.

11. The combination of the two parts of a flask, each part being provided with two perforated lugs, one of said lugs on each part having an adjustable sleeve within its perforations, a pintle passing through the perforations and sleeves of the lugs of each part, and a pipe extending between the inside lugs and surrounding the pintle, substantially as shown and described.

12. The combination of the two parts of a flask, having arms with pins thereon, a locking-bar, D, having at one end the pin *d*, the plain portion d', the vertical part d^4, and recess d^5, and at the other end the horizontal slot d^2 and the vertical and curved slot d^3, said parts being constructed and arranged substantially as shown and described.

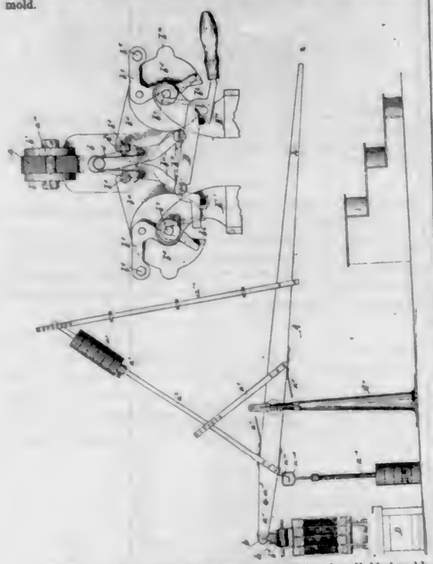
13. In combination with the two parts of a divided mold, a locking mechanism suitably constructed to permit of the opening of the mold, and thereby be shifted to a locking position, and to automatically lock the mold in a closed position on the closing thereof, substantially as set forth.

14. In combination with the two parts of a divided mold, a locking mechanism suitably constructed to permit of the opening of the mold, and thereby be shifted to a locking position to limit the opening movement, and to automatically lock the mold in a closed position immediately on the closing thereof, substantially as set forth.

293,711. APPARATUS FOR MANIPULATING MOLDS IN CASTING.

CHARLES F. BRUSH, Cleveland, Ohio. Filed Oct. 24, 1883. (No model.)

Brief.—Two cylindrical blocks, each provided with lugs which are pivoted to an arm that is in turn pivoted to the forward end of a lever, are lowered over the handles of the closed mold. The handles enter the slots in the blocks, and are locked therein by gravitating bell-crank hooks. The mold is swung over the metal bath and lowered therein. After the mold reaches the bottom of the vessel, the downward motion of the lever is continued, forcing the lugs down to and beneath a horizontal position. Their adjacent cam-surfaces roll against each other and force the blocks outward and open the mold. A further downward movement of the lever causes the lugs to turn on the handles as a center, their inner ends to be depressed, and their outer ends and the blocks to be brought toward each other, closing the mold. Spring-hooks slide outward over the top of the mold and catch into the notches on the sides, thus locking the mold; or the hand-tool shown may be used to lock the mold.



Claim.—1. An apparatus for manipulating jointed or divided molds in casting metal, having in combination a mechanism for taking hold of the opposite parts of said mold, mechanism for lowering and raising the mold, and mechanism for opening and closing the mold, substantially as set forth.

2. An apparatus for manipulating jointed or divided molds in casting metal, having in combination a mechanism for taking hold of the opposite parts of said mold, mechanism for moving the mold vertically and horizontally, and mechanism for opening and closing the mold, substantially as set forth.

3. An apparatus for manipulating jointed or divided molds in casting metal, having in combination mechanism for taking hold of the opposite parts of said mold, mechanism for lowering and raising the mold, mechanism for opening and closing the mold, and mechanism for locking the mold when closed, substantially as set forth.

4. An apparatus for manipulating jointed or divided molds in casting metals, having in combination mechanism for taking hold of the opposite parts of the mold, mechanism for raising and lowering the mold, and mechanism for opening and closing the mold, all constructed and arranged to be operated in lowering, opening, and closing the mold by a continuous movement in one direction, substantially as set forth.

5. An apparatus for manipulating jointed or divided molds in casting metal, having in combination mechanism for taking hold of the opposite parts of the mold, mechanism for raising and lowering the mold, mechanism for opening and closing the mold, and mechanism for locking the parts of the mold when closed, all constructed and arranged to be operated in lowering, opening, and closing the mold by a continuous movement in one direction, substantially as set forth.

6. The combination of the parts of a jointed or divided mold provided with suitable handles, two pivotally-mounted blocks provided with radial slots and a catch device for holding the mold-handles in said slots, and mechanism connected to said blocks whereby the mold may be raised and lowered and opened and closed, substantially as set forth.

7. The combination of the parts of a jointed or divided mold provided with suitable handles, a pair of pivotally-mounted blocks provided with radial slots and a catch device for holding the mold-handles in said slots, a pair of pivotally-mounted hooked dogs, and mechanism suitably connected with said blocks and dogs, whereby the mold may be raised and lowered, opened and closed, and locked when closed, substantially as set forth.

8. The combination, with a bath of molten metal for the casting of metals by the submergence of a mold therein, and a lever mechanism for the raising and lowering of the mold, of a weight, a^7, suitably arranged to counterbalance, wholly or in part, the weight of the mold before submergence, but to aid submergence as the latter takes place, substantially as set forth.

9. The combination of the handles of a jointed or divided mold, the lever A, the arm *b*, pivoted to the end of said lever, and provided with horizontal slots, the cylindrical pieces b^2, having radial V-shaped slots b^3, and provided with lugs b^4, having cam-shaped ends, said lugs b^4 being pivoted in the horizontal slots in the arm *b*, and the hooked bell-crank levers b^5, substantially as set forth.

10. In combination with the halves or parts of a divided mold, and with a lowering mechanism for immersing the same in a bath of molten metal, a toggle-joint mechanism suitably arranged to open and reclose the mold without stopping the lowering mechanism, substantially as set forth.

11. In combination with the halves or parts of a divided mold, and with a lowering mechanism for immersing the same in a bath of molten metal, a toggle-joint mechanism suitably arranged to open and reclose the mold without stopping the lowering mechanism, and a locking mechanism for preventing the reopening of the molds as they are lifted from the bath, substantially as set forth.

12. The combination of the lever A, the arm *b*, pivoted to the end of said lever, and provided with horizontal slots b^2 and the hooked spring-dogs b^{10}, the cylindrical pieces b^2, having radial V-shaped slots b^3, and provided with lugs b^4, having cam-shaped ends, said lugs being pivoted to the arm *b* in the slots b^2, the hooked bell-crank levers b^5, and a divided or jointed mold provided with suitable handles, and having the groove or notch *e*, substantially as set forth.

293,712. DEVICE FOR EXTRACTING CASTINGS FROM MOLDS.

CHARLES F. BRUSH, Cleveland, Ohio. Filed Oct. 24, 1883. (No model.)



Claim.—1. In an apparatus for extracting castings from the mold, the combination of a gripping mechanism for taking a firm hold on the casting and a mechanism suitably arranged for forcing asunder the grippers and the mold in which the casting is made while the grippers retain their hold on the casting, substantially as set forth.

2. In an apparatus for extracting castings from molds, the combination of the frame A, transverse bars a', pivoted bars *a*, and mechanism for causing said gripping mechanism to take a firm hold on the casting, substantially as set forth.

3. In an apparatus for extracting castings from molds, the combination of the frame A, transverse bars a', provided with flanges a^4, pivoted bars *a*, provided with recess a^5, and mechanism for lifting the frame from the mold, substantially as set forth.

4. In an apparatus for extracting castings from molds, the combination of a frame provided with mechanism for grasping and holding the casting, the levers *b*, and the handles B, substantially as set forth.

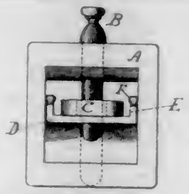
5. In an apparatus for extracting castings from molds, the combination of the frame A, transverse bars a', provided with bars *a*, the levers *b*, and the handles B, substantially as set forth.

293,713. CAR-COUPLING.

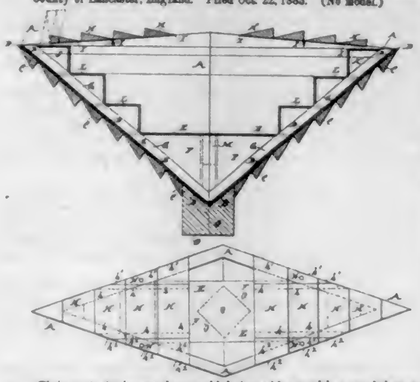
GEO. BRYAN, Chicago, Ill., assignor of one-half to Alphonso Goodrich, same place. Filed June 11, 1883. (No model.)

Claim.—In combination with a draw-head of a car-coupling, the self-adjusting link-supporter D, as and for the purpose shown.

293,713.



293,714. CONSTRUCTION OF BOATS. FRANCIS BYRNES, Liverpool, County of Lancaster, England. Filed Oct. 22, 1883. (No model.)



Claim.—1. An inverted pyramidal-shaped boat, with one axis longer than the other, and having on its sides a series of inverted steps, and provided with a folding covering, H, substantially as herein set forth.

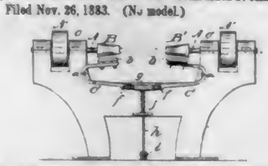
2. The boat-sides formed of a series of inverted steps, with an inner backing of wood, and lined with india-rubber, gutta-percha, or like material, substantially as herein described.

3. In combination with a boat, a covering formed of wooden blocks or steps, with their vertical faces facing from the center line of the boat toward the sea, attached to a gutta-percha, india-rubber, or canvas backing capable of being easily folded up, substantially as herein set forth.

4. A boat having the form of an inverted pyramid, with a series of inverted steps extending longitudinally on the outer surface.

5. In an inverted pyramidal-shaped boat, the steps L, placed along its sloping sides, for standing upon, substantially as herein set forth.

293,715. HAT-POUNCING MACHINE. FREDERICK F. CAMPBELL, Newark, N. J. Filed Nov. 26, 1883. (No model.)



Claim.—1. A hat-pouncing machine provided with pouncing-blocks having the shape of truncated cones placed between bearings with the truncated portion more nearly adjacent.

2. The combination, in a hat-pouncing machine, of pouncing-blocks B B′, arranged on a shaft or shafts between bearings, as O O′.

3. A hat-pouncing machine provided with two independent shafts, each of which has attached thereto a pouncing-block.

4. In a hat-pouncing machine provided with two independent shafts, the combination of the shafts A, pouncing-blocks B B′, and mechanism adapted to press the hat-bodies against said blocks.

5. In combination, in a hat-pouncing machine, the shafts A, pouncing-blocks B B′, and curved arms C, all substantially as set forth.

6. In combination, in a hat-pouncing machine, the shafts A, pouncing-blocks B B′, and curved levers C, having secured thereto supporting-blocks *b*.

7. In combination, in a hat-pouncing machine, the shafts A, pouncing-blocks B B′, and levers having secured thereto automatically-adjustable supporting-blocks.

8. In a hat-pouncing machine, an automatically-adjustable supporting-block capable of accommodating itself to the varying thickness of the hat-bodies.

9. In combination, in a hat-pouncing machine, a pouncing-block, B, and an automatically-adjustable supporting-block adapted to press the hat-bodies against said block.

10. The combination, in a hat-pouncing machine, with a block, *b*, and an arm, C, of means adapted to secure an elastic support, all substantially as set forth.

11. In combination, in a hat-pouncing machine, a block, *b*, arm C, and an elastic backing, *c*.

12. In combination, in a hat-pouncing machine, a block, *b*, arm C, elastic pieces *c*, and means whereby the amount of elasticity may be increased or diminished.

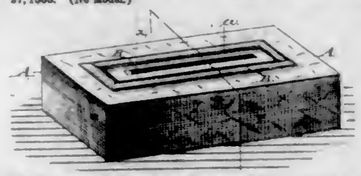
13. In combination, in a hat-pouncing machine, a block, *b*, arm C, elastic pieces *c*, and bolts *d*.

14. In combination, in a hat-pouncing machine, the shaft A, pouncing-blocks B B′, and curved levers C, having attached to one end an elastic supporting-block, the other end being provided with a slot, *f*.

15. In combination, the shaft A, pouncing-blocks B B′, curved levers C, having attached to one end supporting-blocks *b*, the other end being provided with slots *f*, and a connecting piece or link, *g*.

16. In combination, the shaft A, pouncing-blocks B B′, curved levers C, having attached to one end a supporting-block, *b*, the other end provided with a slot, *f*, a link, *g*, having pins working in said slots, and mechanism whereby said curved levers and link may be raised.

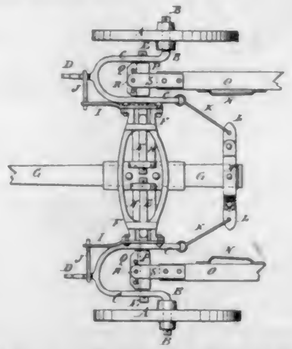
293,716. BRICK. WILLIAM E. CARLETON, Boston, Mass. Filed Dec. 27, 1883. (No model.)



Claim.—As an improved article of manufacture, a brick having a tapering slot or opening, *a*, and provided with a beading, B, surrounding the slot and raised above the face of the brick, substantially as and for the purpose herein set forth.

293,717. SULKY-CULTIVATOR. READING L. CARVER, Pre-emption, Ill. Filed Sept. 7, 1883. (No model.)

Brief.—The wheel-spindles are made upon the curved draft-frames. These are pivoted upon the sectional arch or axle, and have each independent forward and back movement. They are upheld and braced by link-connection in front to the top of the arch, and in the rear by like connection to an evener on the rear end of the tongue.



Claim.—1. In a cultivator, the combination, with the cranks E, connected to the draw-bars having the wheels and shovel or plow-beams connected thereto, of the cross-frame F, with the upper portions of the cranks bearing therein, and the plate H, pivoted on the under side of the said frame, and having slots at its ends which receive the side bars of the cranks, substantially as and for the purpose set forth.

2. In a cultivator, the combination, with the cranks E, frame F, and the draw-bars C, pivoted on the lower ends of the cranks, and having apertured projections at about their central forward ends, of the arms I, affixed to the ends of the frame F, and the rods or chains J, substantially as and for the purpose set forth.

3. In a cultivator, the combination, with the frame F, having the end slotted, pivoted bar H, and the cranks E, bearing in the former, of U-shaped draw-bars C, pivoted upon the lower arms of said cranks, and connected at their forward ends, by rods or chains J, to the arms I of the frame F, and at their opposite ends to the tongue G by the rods or chains K and pivoted bar M, substantially as and for the purpose set forth.

4. In a cultivator, the combination, with the frame F, having the end slotted, pivoted bar H, and cranks E, pivoted thereon, of the U-shaped draw-bars C, pivoted upon the lower arms of the cranks, the rods or chains J, arms I, secured to the frame F, rods or chains K, bars M, sleeves P, disposed upon the cranks between the arms or sides of the draw-bars, and the cultivator-beams O, substantially as and for the purpose set forth.

293,718. POCKET IMPLEMENT. ALLISON N. CLARK, Plainville, Conn. Filed May 19, 1883. (No model.)



Claim.—1. The herein-described pocket implement, consisting of the spring-tweezers, the nail-cutter, the nail-cleaner, file, and ear-spoon, arranged to slide between the body of the tweezers, substantially as described, and for the purpose specified.

2. The combination of the spring-tweezers having slotted blades, the slide having a suitable tool at the end, which is adapted to be projected from the tweezer end of the blades, suitable projections rigidly connected to said slide and extending through the slotted blades, and caps at the ends of said projections, which move with the slide and close the spring-blades upon the slide when said slide is projected, substantially as described, and for the purpose specified.

3. The combination of the tweezer-blades *a*, having longitudinal slot *c*, the ear-spoon *d*, and nail-cleaner *e*, arranged to slide between the slotted blades, substantially as described, and for the purpose specified.

4. The spring-tweezers having a U-shaped portion at one end, sharpened upon the edge to form a nail-cutter, substantially as described, and for the purpose specified.

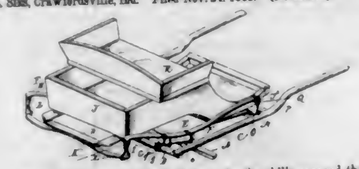
293,719. BREECH-LOADING FIRE-ARM. NATHAN RUSSELL DAVIS, Freetown, Mass. Filed Dec. 11, 1883. (No model.)



Claim.—1. The combination of the stationary breech, the barrel or barrels having a pivotal and locking projection, as described, the two arms extending from such breech and recessed, and having a connection rivet or screw, as explained, and the tubular pivot arranged between such arms, and provided with end projections to enter their recesses, all being substantially as represented.

2. The combination of the pivot-sustaining arms of the breech, having in them a connection rivet or screw and cylindrical recesses, as explained, with the tubular and cylindrical pivot arranged on the said rivet or screw, and having end projections to enter the said recesses, and with pins extending into the pivot and arms, all being substantially as represented.

293,720. TWO-WHEELED VEHICLE. FISHER DOHERTY and ENOS L. SIMS, Crawfordsville, Ind. Filed Nov. 24, 1883. (No model.)



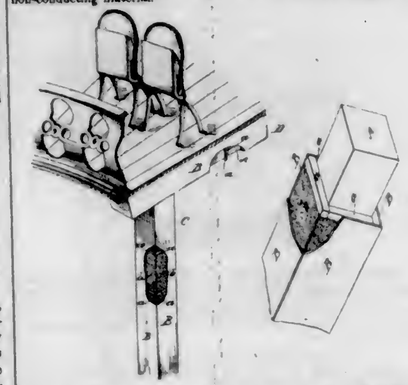
Claim.—1. The combination of the axle, the thills secured thereto and projecting in rear thereof, a cross-bar connecting the rear end of the thills, blocks carrying the body, and plates secured to the under sides of these blocks and bearing upon the axle at their front ends, and adjustably connected to the cross-bar at their rear ends, substantially as set forth.

2. The combination of the axle, the thills secured thereto and projecting in rear thereof, a cross-bar connecting the rear ends of the thills, the plates having their front ends bearing upon the axle and provided with the slotted rear extensions, and the set-screws securing these plates to the cross-bar, substantially as set forth.

3. The combination of the axle, the thills, plates having a bearing on the axle and connected with the thills and adjustable on said bearings, the body, and devices connecting the body with the plates, substantially as set forth.

293,721. FIRE-PROOF TIMBER. WILLIAM H. DOLMAN, New York, N. Y. Filed Sept. 26, 1883. (No model.)

Brief.—Timbers are provided with narrow spacing-strips, which, with a metallic casing surrounding the timber, form spaces filled with non-conducting material.



Claim.—The combination, with a joist, rafter, or other piece of timber, of the narrow strips *a* and metallic sheets B, arranged to form pockets or chambers, and non-conducting material filling said spaces between the iron and the wood, as shown and described.

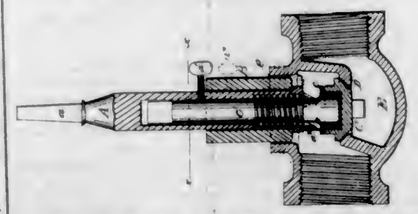
293,722. DRESS-PROTECTOR. ELIZABETH M. DOWNING, Grant City, Pa. Filed Nov. 7, 1883. (No model.)



Claim.—1. As an improved article of manufacture, the combined dress pad and protector, consisting of a wadded case comprising a straight central portion and upwardly-curved front and rear ends, substantially as described, in combination with an impervious flap secured to the inner edge of the front portion, as and for the purpose set forth.

2. The combination, with a dress-waist, of the herein-described improved pad and protector, the same consisting of a wadded case comprising a straight central portion and upwardly-curved front and rear ends, and an impervious flap secured to the inner edge of the front end, said pad or protector being secured in the said dress-waist under and around the sleeve, as herein described, for the purpose set forth.

293,723. GLOBE-VALVE GRINDER. JOHN EDWARD DOYLE, Richmond, Ind. Filed Oct. 20, 1883. (No model.)

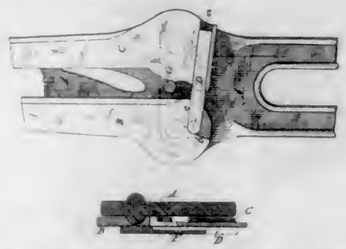


Claim.—1. The socket A, constructed, substantially as described, with teeth adapted to engage the valve or its washer, as set forth.

2. The combination of the socket A, provided with teeth a^2, with bushing B and means for securing said bushing to the socket, substantially as set forth.

3. The combination of the toothed socket A a^2, provided with the annular flange a^3, with the bushing B, resting against said flange, and a set-screw for securing said bushing to the socket, substantially as set forth.

293,724. OPERA-CHAIR. EDWARD G. DURANT and ELI SHUPE, Racine, Wis.; said Shupe assignor to Thomas Kane, Chicago, Ill. Filed July 6, 1883. (No model.)



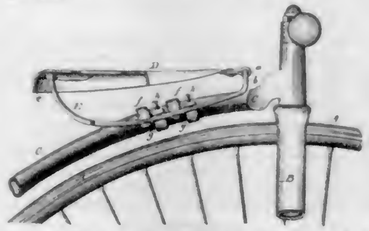
Claim.—1. In a folding seat, a supporting-standard, in combination with a pivoted back-arm and a pivoted seat-arm, one of said arms being provided with a recess, as set forth, and a bar pivoted to one of said arms and fitted to slide in the recess in the other arm, substantially as described and shown.

2. In combination with the supporting-standard, the pivoted back-arm and the pivoted seat-arm, the back-arm being provided with the groove or recess, as set forth, and the bar D, having its forward end pivoted to the seat-arm, and its opposite end fitted loosely in the groove or recess in the back-arm, as shown.

3. In combination with a supporting-standard, the pivoted back-arm provided with the groove, as set forth, the pivoted seat-arm provided with shoulders, as described, and the bar pivoted to the seat-arm and fitted loosely in the groove in the back-arm, as and for the purpose described.

4. In combination with the standard and the pivoted seat-arm provided with the opening, as described, the pivoted back-arm provided with the open groove, as set forth, the bar D, provided with the circular lug loosely seated in the opening in the seat-arm and fitted loosely in the groove of the back-arm, and the plate F, applied, as shown, to retain the bar in its proper relation to the back and seat arms.

293,725. BICYCLE-SADDLE. CHARLES E. DURYEA, St. Louis, Mo., assignor of one-half to Richard Garvey, same place. Filed Dec. 3, 1883. (No model.)



Claim.—1. The improved saddle for a bicycle, consisting of a flexible seat or saddle proper, and a supporting-spring having two substantially parallel arms with upturned ends attached to the seat, and adapted, as described, to apply a longitudinal tension thereto.

2. In combination with the flexible seat of diminishing width toward its front end or neck, the supporting-spring consisting of a single elastic rod doubled and bent upon itself, and having its ends upturned and connected to the extremities of the seat, substantially as described.

3. In a bicycle-saddle, the combination of a flexible seat having a widened rear end, and a supporting-plate attached to the rear edge of the seat, and two parallel spring-arms attached to the plate, and extended thence downward and forward to the forward extremity of the seat.

4. In combination with the backbone of a bicycle, a flexible seat or saddle, two longitudinal springs located on opposite sides of the backbone and connected to the extremity of the seat, to maintain a longitudinal tension thereof, and means, substantially as described, connecting said springs with the backbone.

5. In combination with the backbone of a bicycle, a flexible seat or saddle, two spring-arms extending lengthwise of the saddle on opposite sides of the backbone and acting, as described, to strain the seat longitudinally, and clips or fastening devices adjustable longitudinally with respect to the backbone, whereby the saddle may be adjusted forward and backward without affecting its tension.

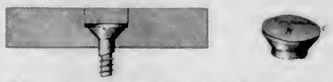
6. In combination with the backbone of a bicycle, clips or fastening devices applied thereto, and a saddle having two longitudinal springs connected to the extremities of the seat and adapted to strain the same longitudinally, said springs being adjustable longitudinally with respect to the clips, whereby the saddle may be adjusted forward and backward and its tension or stiffness modified at the same time.

7. In combination with the backbone and two saddle-supporting arms on opposite sides thereof, the clips applied to the upper and lower sides of the backbone, and the adjusting-screws, applied substantially as shown.

8. In combination with a backbone and two saddle-supporting arms on opposite sides thereof, clips applied to the top of the backbone and engaging at their ends beneath the arms, and secondary clips applied beneath the backbone and engaging at their ends above the arms, as described.

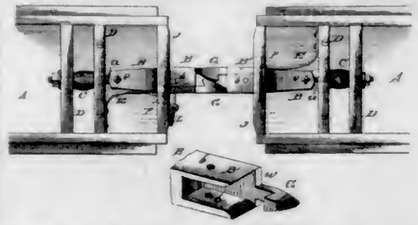
293,726. WOODEN PLUG. ROMAN I. FANCHER, Baldwinsville, N. Y. Filed July 27, 1883. (No model.)

Brief.—A wooden plug having an overlapping beveled rim, in connection with a countersunk hole cut into wood, so as to receive the plug and form a perfect joint.



Claim.—A wooden plug having an overlapping beveled rim or lip, in combination with a countersunk hole cut into wood in such a manner as to receive the plug and make a perfect joint between the wood into which it is inserted and the rim or lip of the plug, for the objects and purposes herein set forth and described.

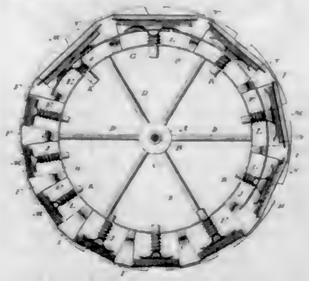
293,727. CAR-COUPLING. ALPHEUS FAY, Columbia, Tenn., assignor of one-fourth to Zillmon Smith, Maury County, Tenn. Filed June 5, 1883. (No model.)



Claim.—1. The combination of a pivoted draw-bar, a three-sided flaring-mouth draw-head, and a coupling-hook formed on the end of the vertical side of this head, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. Vibrating spring-actuating draw-bars having three-sided draw-heads and coupling-hooks formed on them, in combination with the side springs, E, beams J, in which the draw-bars are guided, levers L, connected to the draw-bars, and springs acting on said levers, all constructed and adapted to operate substantially in the manner and for the purposes described.

293,728. PAPER-BAG HOLDER. GEORGE NEWTON PENN, Prophetstown, Ill. Filed Dec. 19, 1883. (No model.)



Claim.—1. In a paper-bag holder, the series of compartments or receptacles of varying sizes, the larger sizes being provided with means attached to the top of bag-holder for supporting the upper projecting ends of the bags, as set forth.

2. In a paper-bag holder, the series of compartments or receptacles

of varying sizes, in combination with a ring and bail extending over the compartments containing larger sizes of bags, the upper projecting ends of the latter fitting between the ring and bail, as set forth.

3. In a paper-bag holder, the series of compartments or receptacles having spring-pressed clamps, and an opening formed in the bottom plate or compartment to receive the fingers in withdrawing the bag, as set forth.

4. In a paper-bag holder, a series of compartments or receptacles, in combination with spring-pressed clamps working in the same, said clamps having an operating-rod extending backward through the inner plate, and a spring coiled on said rod, as set forth.

5. In a paper-bag holder, a series of compartments or receptacles of various sizes, the bottom plate of the compartments being formed with an opening to receive the fingers in withdrawing the bag, as set forth.

6. In a paper-bag holder, the compartments formed of partitions having an inner plate, bottom plate, and two or more hoops attached to outer face of partitions, as set forth.

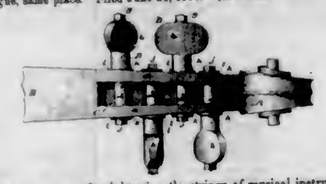
7. In a paper-bag holder, the series of compartments of varying sizes, formed with hoops as an outer wall for the same, means for pressing the bags against said hoops, and openings formed in the bottom plate of the compartments to receive the fingers in withdrawing the bags, as set forth.

8. In a paper-bag holder, the series of compartments, in combination with spokes connected to the same and radiating from a hub, as set forth.

9. In a paper-bag holder, the compartments arranged in a circular series, in combination with spokes connected to the same and radiating from a hub, and a pipe fitted in the hub and journaled on a suitable suspending-rod, as set forth.

10. In a paper-bag holder, the pipe journaled on a suitable suspending-rod, in combination with the circular series of compartments around the pipe and connected to the same, as set forth.

293,729. TUNING-PEG FOR MUSICAL INSTRUMENTS. ROBERT F. FLEMMINGS, Jr., Melrose, Mass., assignor of one-half to Charles Lamson Sprague, same place. Filed June 21, 1883. (No model.)

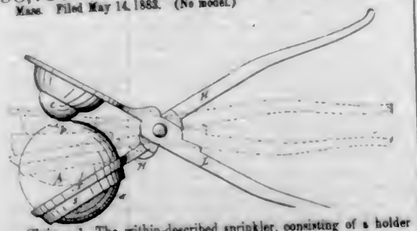


Claim.—1. A peg for tightening the strings of musical instruments, consisting of the shank *c*, the sliding head *b*, the screws *e* and *f*, and the nuts *g* and *h*, all adapted to operate substantially as and for the purposes described.

2. A peg for tightening the strings of musical instruments, consisting of the shank *c*, the sliding head *b*, the screws *e f*, the nuts *g j*, and the washers *i k l*, all adapted to operate substantially as and for the purposes described.

3. A peg for tightening the strings of musical instruments, consisting of the head *b*, shank *c*, screw *f*, nut *j*, and sleeve *d*, substantially as and for the purposes described.

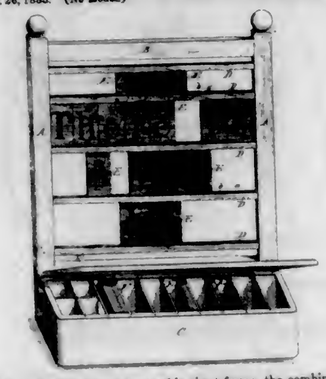
293,730. SPRINKLER AND ATOMIZER. MOSES GOLDMAN, Pittsfield, Mass. Filed May 14, 1883. (No model.)



Claim.—1. The within-described sprinkler, consisting of a holder having a ring, a hollow elastic ball secured in said ring, and having one of its protruding sides provided with perforations for throwing a spray, and the other protruding side provided with an induction-port, and a plunger connected with the holder and adapted to compress the ball and simultaneously close the induction-port thereof, substantially as set forth.

2. In combination with the holder provided with a ring, the compressible hollow ball seated in said ring, and provided underneath the same with a ledge or shoulder, substantially as and for the purpose shown and set forth.

293,731. INTERCHANGEABLE CHART-FRAME. JAMES E. HAMILTON, Two Rivers, Wis., assignor to Hamilton & Katz, same place. Filed Nov. 26, 1883. (No model.)

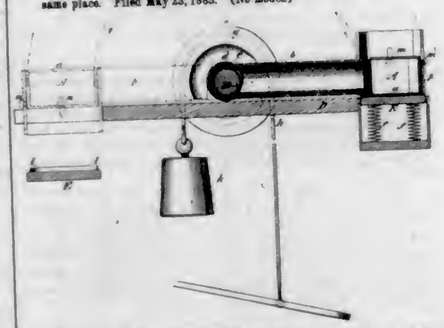


Claim.—1. In an interchangeable chart-frame, the combination of the side bars, A A, and top and bottom bars, B B', forming a skeleton frame, with the transverse supports D and the letter or symbol blocks E E, the contiguous surfaces of the parts D and E being held together by means of horizontal grooves in one of them receiving the edges of the other, both above and below, and each alternate groove being of different depth from the groove immediately above and the groove immediately below it, whereby every block E shall be firmly held at its upper and lower edge, and yet be capable of removal, interchange, or replacement without disturbing the block on either side of it, substantially as set forth.

2. In an interchangeable chart-frame, the combination of the skeleton frame A A B B', the base C, forming part of the frame, and divided into compartments to retain the letter-blocks, the transverse supports D, and the blocks E E, substantially as set forth.

3. In an interchangeable chart-frame, the combination of the skeleton frame A A B B' and the transverse supports D, having rear extended flanges, *b*, of greater height or depth than their front flanges, and having between said front and rear flanges the shallow grooves *a* and the deeper grooves *a'*, with the letter or symbol blocks E E, substantially as set forth.

293,732. MACHINE FOR MANIPULATING CIGAR-WRAPPERS. OSCAR HAMMERSTEIN, New York, N. Y., assignor to Malvina Hammerstein, same place. Filed May 23, 1883. (No model.)



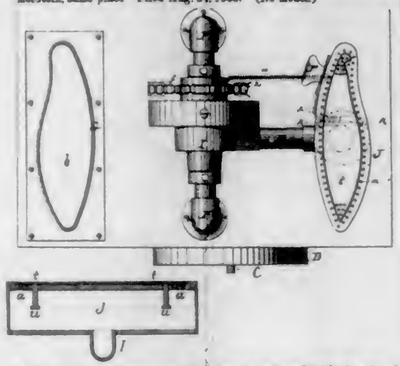
Claim.—1. The combination of the hollow table A, having perforated suction-plate *a*, with the hollow arm *b*, hollow supporting-shaft B, having aperture *c*, and with means for revolving the hollow table A and its appurtenances around said hollow shaft, substantially as and for the purpose specified.

2. The combination of the hollow suction-table A, with mechanism, substantially as described, for moving it, with the sliding sleeve F and receiving-table, substantially as described.

3. The table E, resting on the spring *f*, in combination with the hollow suction-table A, having perforated plate *a*, and with means, substantially as described, for moving said table A, as specified.

4. The table F, in combination with the hollow suction-table A, having perforated face-plate *a*, and with mechanism for moving said suction-table, and with the cutter *l*, substantially as described.

293,733. MACHINE FOR CUTTING AND PILING CIGAR-WRAPPERS. OSCAR HAMMERSTEIN, New York, N. Y., assignor to Malvina Hammerstein, same place. Filed Aug. 24, 1883. (No model.)



Claim.—1. The combination of the suction-box J with the pipe I and mechanism, substantially as described, for moving the same, with the box-shaped receiver G, having upper cutting-edge, and with the movable bottom *b*, substantially as specified.

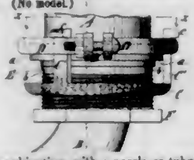
2. The movable suction-box J, combined with the spring-clamp P, for operation substantially as herein shown and described.

3. The movable suction-box J, having perforated face-plate *a*, in combination with the movable portion *t* of said face-plate, for disengaging from the suction-box the part cut out thereon, as specified.

4. The combination of the movable suction-box J and means, substantially as described, for moving it, with the perforated face-plate *a*, movable portion *t* of said face-plate, and with a cutter which is adapted to cut the leaf of tobacco placed against the face-plate *a*, as specified.

5. The combination of the shaft C and its spur A with the levers L M, chains *f f'*, swiveled tube I, and suction-box J thereon, substantially as and for the purpose specified.

293,734. WATER-CLOSET. CHARLES HARRISON, New York, N. Y. Filed Sept. 1, 1883. (No model.)



Claim.—1. The combination, with a nozzle or tubular portion of a water-closet bowl or hopper, having a flange at the outer end, and a pipe provided with a flange, of a coupling-ring having arms, a band embracing the arms of the said coupling-ring, and adapted to secure this coupling-ring to the nozzle or tubular portion of the water-closet bowl or hopper, another coupling-ring engaging with the flange of the pipe, and means whereby the coupling-rings may be united, substantially as specified.

2. The combination, with a nozzle or tubular portion of a water-closet bowl or hopper, having a flange at the outer end, and a pipe provided with a flange, of a coupling-ring having externally-shouldered arms, a band embracing the arms, abutting against the shoulders thereof, and provided with lugs that lap over the back of the flange of the nozzle or tubular portion of the water-closet bowl or hopper, another coupling-ring engaging with the flange of the pipe, and means whereby the coupling rings may be united, substantially as specified.

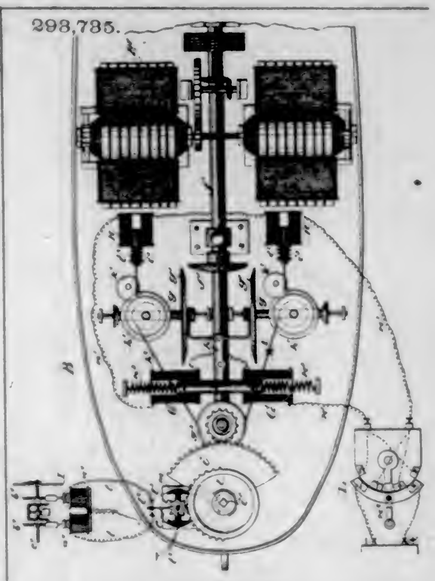
293,735. MARINE ELECTRIC MESSENGER. JOHN C. HENDERSON, New York, N. Y. Filed May 21, 1883. (No model.)

Claim.—1. The combination, with the drums A' A', of the cams *k'*, bearing against said drums, the armature i^2, operating said cams, the spiral springs i^3, and the axial magnets H in circuit with the magnets G, as and for the purpose specified.

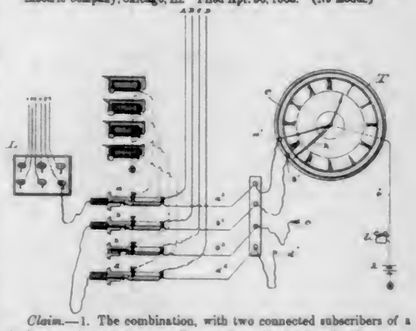
2. The combination of the shaft *f*, friction-wheels *f' g'*, shafts *g g*, drums A', ropes h^2, magnets G G, the armature *k*, and the lever *h*, substantially as described, for effecting the operation by electricity of the rudder of the pilot-vessel.

3. The combination of the electric cable *a*, windlass *b*, having a hollow shaft, rings *d*, and brushes *d'*, substantially as described, for allowing the winding and unwinding of the cable upon or from the windlass without breaking the electrical connection.

293,735.



293,736. TIME-SIGNAL FOR TOLL-LINES OF TELEPHONE-EXCHANGES. ANGUS S. HIBBARD, Milwaukee, Wis., assignor to the Western Electric Company, Chicago, Ill. Filed Apr. 30, 1883. (No model.)



Claim.—1. The combination, with two connected subscribers of a telephone-exchange, of a normally-open branch circuit, and a time-piece adapted to automatically close said branch circuit to the circuit of the connected subscribers, and thus send a signal to line at the expiration of a given time, substantially as set forth.

2. The combination, with two subscribers' lines connected together, of a normally-open branch circuit to ground, including a signal-bell and battery, and a time-piece, whereby said branch circuit may be closed automatically at the expiration of a given time, substantially as and for the purpose set forth.

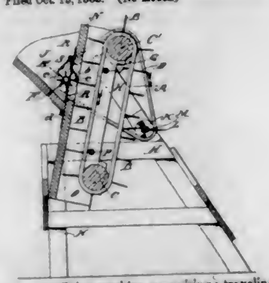
3. The combination, at a telephone-exchange, with toll-lines and connecting apparatus, of independent branch lines, one branch line from each toll-line, a normally-open earth-circuit, including a battery and signaling device, and means whereby the said earth-circuit may be connected automatically at different times to the independent branch lines, substantially as and for the purpose specified.

4. The combination, at a telephone-exchange of two or more telephone-lines and their spring-jacks, of branch lines provided with terminal plugs or clasps, one branch line from each spring-jack, a time-piece adapted to support said terminal plugs or clasps about its dial, and means for automatically sending a signal on a telephone-line when the hand of the time-piece arrives at the plug connected to said line, substantially as and for the purpose set forth.

5. The combination, with a telephone-line, of a time-piece having an extra hand placed at a given distance behind the minute-hand and moving with said minute-hand, and a normally-open branch circuit adapted to be closed to said telephone-line by said extra hand when it has advanced

a distance equal to the distance between it and the minute-hand, substantially as specified.

293,737. CORN-SILKING MACHINE. WILLIAM SAMPSON HORN, Mill Green, Md. Filed Oct. 15, 1883. (No model.)



Claim.—1. A corn-silking machine comprising a traveling belt provided with points or fingers, a brush for cleaning the fingers, a hopper, and a feeder, F *c*, arranged to operate substantially as described.

2. The combination, with the hopper J and the feeder F *c*, of the slotted plate R and shield S, arranged above the feeder in the hopper J, substantially as and for the purposes set forth.

3. The inclined endless traveling apron A, provided with points B, in combination with hopper J, feeder F *c*, and slotted plate R, arranged in the hopper, substantially as and for the purposes set forth.

4. In a corn-silking machine, the inclined endless apron A, provided with fingers B, in combination with hopper J, feeder F *c*, slotted plate R, arranged in the hopper, the shaft M, having pulley K, and the brush L, connected to shaft M, substantially as and for the purpose set forth.

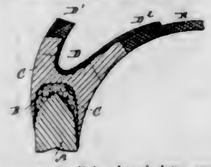
293,738. WEATHER-STRIP. JAMES H. HUMBL, New York, N. Y. Filed Aug. 24, 1883. (No model.)

Brief.—A weather-strip consisting of a rubber strip folded in part fourfold, the fourfold part being held in the under bent margin of the metallic strip, and the two raw edges being held by the underbent other margin of the said metallic strip, all adapted to be secured to the door-jamb by nails.



Claim.—The elastic strip folded once upon itself along the center and back again from the raw edges part way the width of the double portion, in combination with the metal strip formed concavo-convex in cross-section, and having its edges folded into the cavity part way toward the center thereof, and embracing, respectively, the raw edges and fourfold edge of the elastic strip, substantially as described and shown.

293,739. RELINING RUBBER DENTAL PLATES. FRANK T. HYATT, Norwalk, Conn. Filed Oct. 2, 1883. (Model.)

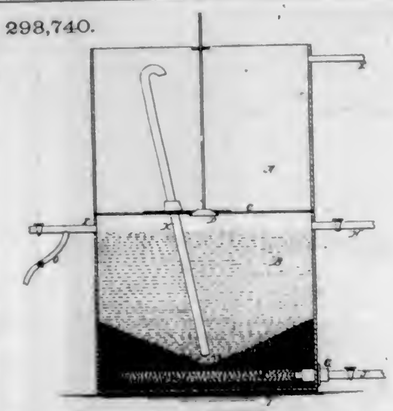


Claim.—The process of relining dental plates, consisting in first cutting away a portion of the roof-plate, and in notching the remaining portion containing the gum and teeth, applying a thin coating of rubber in the grooved upper portion of the gum-frame, and forming the roof-plate and the ridge above the gums, the new ridge and roof-plate being connected by said thin coating and tenoned to enter notches in the original gum-frame, substantially as set forth.

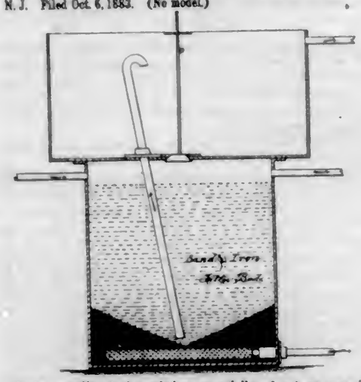
293,740. METHOD OF PURIFYING WATER. ISAIAH SMITH HYATT, Morristown, N. J. Filed Sept. 20, 1883. (No model.)

Claim.—The method hereinbefore described of arresting and removing the impurities from water during an uninterrupted passage of same from a supply-pipe into a filtering apparatus, thence through a filter-bed contained therein, and out through a delivery-pipe leading therefrom, which method consists in introducing into the water simultaneously with its passage to or into the filter a substance which will sufficiently coagulate or separate the impurities to facilitate their arrest and removal by the filter-bed, thus obviating the necessity of employing settling-basins.

293,740.

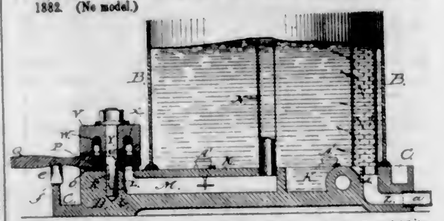


293,741. FILTERING MATERIAL. ISAIAH SMITH HYATT, Morristown, N. J. Filed Oct. 6, 1883. (No model.)



Claim.—A filter-bed consisting, essentially, of an inert material and metallic iron in comminuted form thoroughly commingled, substantially as set forth.

293,742. FILTER. JOHN W. HYATT, Newark, N. J. Filed Dec. 28, 1882. (No model.)



Claim.—1. In a filter, the base having the passages G, J, and M, in combination with a valve by which the water may be caused to flow either through the passage G or through the passage J and return-passage M, substantially as set forth.

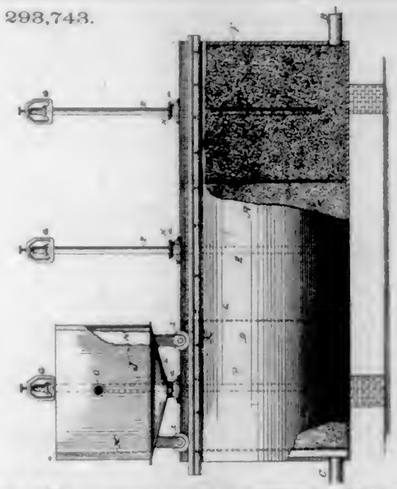
2. In a filter, the valve consisting of the movable plate P, placed between the blocks V D, the plate having ports R S T, the block V, having ports W X, and the block D, having the ports E, F, and L, in combination with the base having passages leading therefrom into the filter, substantially as set forth.

3. In a filter, the escape-passage M and central pipe, N, having a perforated cone on its upper portions, substantially as set forth.

293,743. FILTER. JOHN W. HYATT, Newark, N. J. Filed Aug. 11, 1883. (No model.)

Claim.—1. A filter subdivided by the vertical partitions G into a series of compartments, the upper part of the partitions being imperfo-

293,743.



rate, and the compartments containing beds of filtering material in comminuted form and graded as to the size of the particles thereof, the finer being in the compartment adjacent to the outlet and the coarse elements in the compartment adjoining the inlet, the water being caused to pass through the partitions and separate filter-beds from the inlet to the outlet, substantially as set forth.

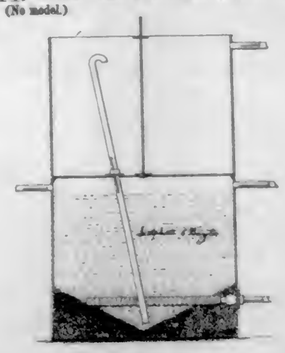
2. A filter consisting of a receptacle subdivided into two or more compartments containing separate beds of filtering material in comminuted form and graded as to size, the finer particles being in the chamber adjacent to the outlet, in combination with an auxiliary receptacle arranged over the compartments containing the filtering material, and means for transferring the filtering material from each compartment of the main into the auxiliary receptacle by a current of water, the particles of the filtering material being washed in transit substantially as set forth.

3. A filter consisting of a receptacle subdivided into two or more compartments containing beds or filtering material, in combination with an auxiliary receptacle mounted thereon, and the transfer-pipes for discharging the contents of each of the compartments by means of a current of water into the said auxiliary receptacle, substantially as set forth.

4. A filter containing an inlet and an outlet, and consisting of two or more compartments inclosing beds of filtering material, in combination with an auxiliary receptacle mounted thereon, and pipes for transferring the contents of each of the compartments by means of a current of water into the auxiliary receptacle, the upper part of each compartment being provided with means of communication with the lower part of the said auxiliary receptacle, substantially as set forth.

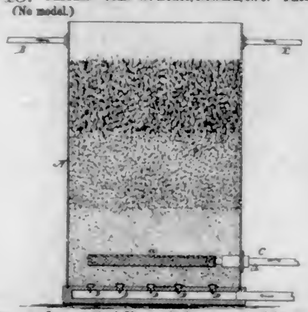
5. A receptacle subdivided into two or more compartments by perforated partitions, each compartment containing a bed of filtering material, in combination with an auxiliary receptacle mounted over the same upon tracks, and the transfer washing-pipe for each of said compartments, the auxiliary receptacle containing a lining of perforated metal or wire-cloth and a waste-outlet, substantially as set forth.

293,744. FILTER. JOHN W. HYATT, Newark, N. J. Filed Aug. 21, 1883. (No model.)



Claim.—A filter-bed consisting, essentially, of natural sulphate of baryta or heavy-spar in comminuted form, substantially as set forth.

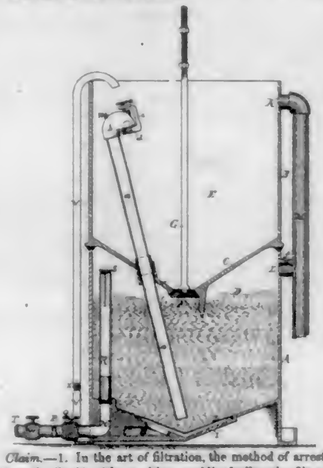
293,745. FILTER. JOHN W. HYATT, Newark, N. J. Filed Aug. 21, 1883. (No model.)



Claim.—1. In a vertical filter, a bed composed of layers of material of varying specific gravity, the layers being placed one directly upon another, and the heavier material being adjacent to the outlet, substantially as described.

2. A filter-bed consisting of comminuted sulphate of baryta, sand, and coke, or equivalent substances, the material being arranged in well-defined layers, one upon another, the baryta being at the bottom and the coke at the top, substantially as set forth.

293,746. ART OF FILTRATION. JOHN W. HYATT, Newark, N. J. Filed May 28, 1883. (No model.)

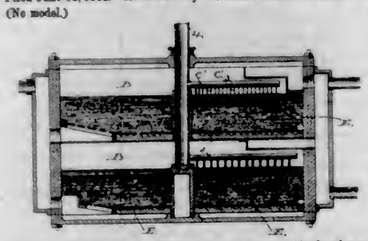


Claim.—1. In the art of filtration, the method of arresting impurities from the liquid without either rapidly fouling the filter-bed or permitting the more minute particles of foreign matter to escape, and of cleansing the filter-bed by discarding such portions thereof as have become intimately united with the impurities and washing the remaining portions, which method consists in passing the liquid through a bed composed of fine and coarse agents commingled together, and then agitating the bed and causing the finer elements thereof, together with the impurities, to be carried away by a current of the liquid, substantially as set forth.

2. In the art of filtration, the method of arresting impurities from the liquid without either rapidly fouling the filter-bed or permitting the more minute particles of foreign matter to escape, and of cleansing the filter-bed by discarding such portions thereof as have become intimately united with the impurities and washing the remaining portions, which method consists in passing the liquid through a bed composed of material of varying specific gravity thoroughly commingled, and then agitating the bed and causing the lighter elements thereof, together with the impurities, to be carried away by a current of the liquid, substantially as set forth.

3. In the art of filtration, the method of arresting impurities from the liquid without either rapidly fouling the filter-bed or permitting the more minute particles of foreign matter to escape, and of cleansing the filter-bed by discarding such portions thereof as have become intimately united with the impurities and washing the remaining portions, which method consists in passing the liquid through a filter-bed composed of comminuted charcoal and sand commingled together, and then agitating the bed and causing the charcoal, together with the impurities, to be carried away by a current of the liquid, substantially as set forth.

293,747. ART OF FILTRATION. JOHN W. HYATT, Newark, N. J. Filed June 18, 1881. Renewed May 11, 1882. Renewed Aug. 16, 1883. (No model.)

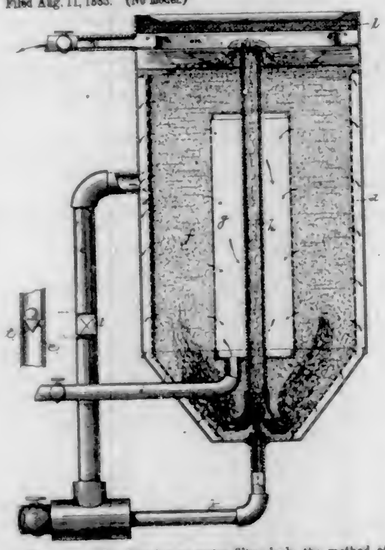


Claim.—1. In the art of filtration by means of beds of granular material, the method of preventing the deposition of silt and other obnoxious substance, which consists in agitating the upper part of the bed to a sufficient depth without disturbing the lower part of the bed or interfering with its functions as a filtering agent, substantially as set forth.

2. In the art of filtration by means of beds of granular material, the method of preventing the deposition of silt and other obnoxious substance, which consists in the frequent or continuous agitation of the upper surface of the bed by raking without disturbing the lower part of the bed or interfering with its operation as a filtering agent, substantially as set forth.

3. A device for effecting the agitation of the upper layer of a filter-bed composed of material in reduced or granular form, consisting of the pipes 4, 3, 2, and 1, the last being adapted to be moved through the surface of the filter-bed and to issue jets of water therein, substantially as set forth.

293,748. ART OF FILTRATION. JOHN W. HYATT, Newark, N. J. Filed Aug. 11, 1883. (No model.)



Claim.—1. In cleansing granular filter-beds, the method of removing the impurities therefrom in such manner that a small portion only of the whole body of the filtering medium is subjected to the cleansing process at the same time, which method consists in moving a current of the filtering substance, together with a stream of water, from the lower to the upper part of the filter-bed, whereby the particles are separated and washed in transit and the impurities are carried off with the escaping water, substantially as set forth.

2. In cleansing granular filter-beds, the method of removing the impurities therefrom by a continuous washing without interfering with the filtering process, which method consists in moving a current of the filtering substance, together with a stream of water, from the lower to the upper part of the bed without checking the flow of the liquid to be purified, whereby the particles are separated and washed in transit, and the impurities are carried off by the escaping water without interfering with the filtering process, substantially as set forth.

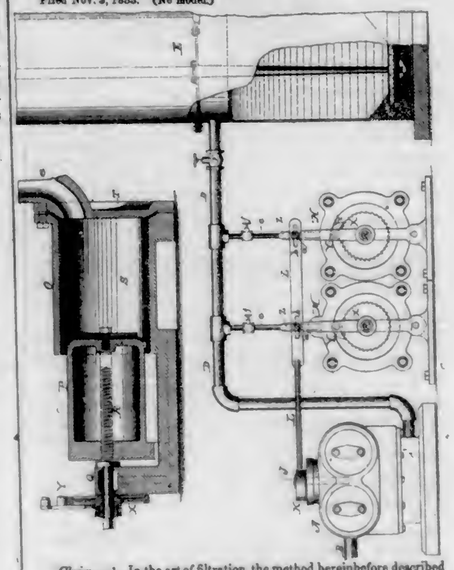
3. A filter consisting of the outer casing having a supply and delivery, a filter-bed composed of material in granular or comminuted form, and a pipe or tube passing through the bed adapted to transfer the material from the lower to the upper part thereof by means of a stream of water, whereby all of the elements of the bed are displaced and cleansed, the impurities being allowed to escape with the waste water, substantially as set forth.

4. A filter consisting of the outer casing, the bed of filtering material in granular or comminuted form, a supply and delivery, a transfer pipe or tube, and means for moving the elements of the filter-bed, together with a stream of water, from the lower and depositing it upon the upper part of the same, through said pipe or tube, in process of washing the bed, substantially as set forth.

5. In a filtering apparatus containing a bed of filtering material in granular or comminuted form, and a supply and delivery, a transfer pipe or tube, and a jet-pipe placed directly below the lower end of said pipe or tube, by which a current of water carrying the elements of the filter-bed is induced upward through the tube, substantially as set forth.

6. In a filtering apparatus, the outer casing, the bed of filtering material in granular or comminuted form, the central transfer pipe or tube, the jet-pipe placed directly below the lower end of transfer pipe or tube, and overflow-trough, substantially as set forth.

293,749. ART OF FILTRATION. JOHN W. HYATT, Newark, N. J. Filed Nov. 3, 1883. (No model.)



Claim.—1. In the art of filtration, the method hereinbefore described of coagulating and arresting the impurities and of preventing any of the coagulating agents in solution passing off with the filtered water, which method consists, first, in introducing into the water prior to or at its entrance into the apparatus a substance which will produce coagulation, and then a substance which will operate to precipitate the excess of the coagulant and prevent any of the same in solution from passing off with the water, and finally allowing the water to pass through a bed of filtering material.

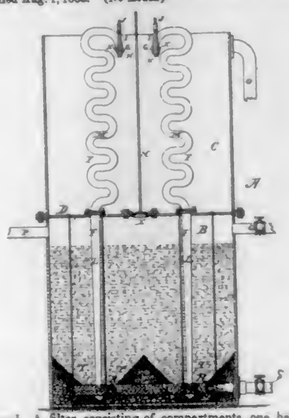
2. In the art of filtration, the method hereinbefore described of coagulating and arresting the impurities and of preventing any of the coagulating material from passing off in solution with the filtered water, which method consists in introducing iron and lime, substantially as described, into the water prior to or at its entrance into the apparatus, and then allowing the water to pass through a bed of filtering material.

3. The combination of a filter, an ejector consisting of a cylinder and piston, and being in communication with the supply-pipe of the filter, and a motor for actuating the piston of the ejector, substantially as set forth.

4. The ejector consisting of the cylinder, piston, screw, and escape-pipe, in combination with a filter and means for actuating the screw simultaneously with the flow of water to the filter, substantially as set forth.

5. The ejector consisting of the cylinder, hollow piston, flexible bag or diaphragm, screw, pawl, and ratchet, substantially as set forth.

293,750. APPARATUS FOR FILTERING. JOHN W. HYATT, Newark, N. J. Filed Aug. 1, 1883. (No model.)



Claim.—1. A filter consisting of compartments, one having inlet and outlet ports and containing a bed of filtering substance, and being connected with another compartment by a transfer washing pipe or pipes arranged within the filter, substantially as set forth.

2. A filter consisting of compartments, one having inlet and outlet ports and containing a bed of filtering substance, and being connected with another compartment by a transfer washing pipe or pipes, cone-shaped formations being provided upon the base of the filter, to direct the elements of the filter-bed to the mouth of the transfer pipe or pipes during the process of washing the same, substantially as set forth.

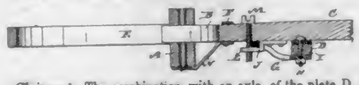
3. A filter consisting of compartments provided with suitable inlet and outlet ports, one of the compartments containing a bed of filtering substance, and being connected with the adjacent compartment by a transfer washing pipe or pipes, and provided upon its base with cone-shaped formations composed of coarse and finer stone or gravel, substantially as set forth.

4. A filter consisting of compartments, one containing a bed of filtering substance, and being connected with the other compartment by a transfer pipe or pipes, that portion of same outside of the compartment containing the filtering substance being bent into a serpentine coil, substantially in the manner and for the purposes expressed.

5. A filter consisting of compartments, one containing a bed of filtering substance, and being connected with the other by a transfer pipe or pipes arranged within the filter, the pipe in the compartment containing the filter-bed being tapered, and that within the other compartment being coiled or bent, substantially as and for the purpose set forth.

6. A filter consisting of compartments connected by one or more transfer washing-pipes arranged within the filter, a portion of the pipe being formed into a serpentine coil, substantially as set forth.

293,751. WAGON-TONGUE SUPPORT. NATHANIEL JOHNSON, Harrisburg, Ill. Filed Nov. 17, 1883. (No model.)



Claim.—1. The combination, with an axle, of the plate D, held in front of the same, the fork or slotted plate G, secured beneath the tongue to the said plate D, the clip L on the under side of the tongue, the bolt or wrench M, and the hounds B, secured to the axle and on the plate D, substantially as herein shown and described.

2. The combination, with an axle, of the plate D, held on the front ends of yoke E, secured on the axle, the hounds B, secured to the axle and to the bar D, the cross-plate F, the fork or slotted plate G, having cross-bar J, connecting its forked ends, and which plate is held to the plate D, the clip L on the under side of the tongue, and of the bolt or wrench M, substantially as herein shown and described.

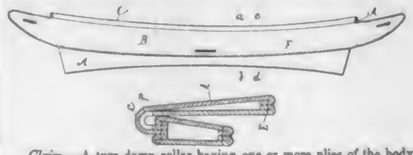
3. The combination, with the axle, the yoke C, secured upon the axle, and having an attached plate, D, the hounds B, secured to the axle and to the plate D, and provided with a cross-plate, F, of the fork G, having its ends connected by a cross-bar, J, the tongue C, having the angular clip L, secured upon its under side, and of the bolt or wrench M and bolt H, the said bolt serving as a connection for the plates D G and as a pivot for the axle-tree I, located between said plates, substantially as shown and described.

293,752. COVERING FOR STEAM BOILERS, PIPES, AND OTHER HEATED SURFACES. EDWARD KRAHNSTEHL and PAUL RECK, Allegheny, Pa. Filed Oct. 10, 1883. (No model.)



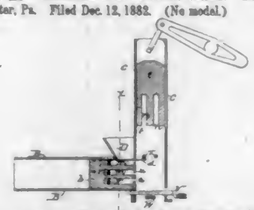
Claim.—A covering for steam boilers, pipes, &c., consisting of layers of paper firmly united together, or paper-pulp, the said covering being lined or coated on its inner surface with asbestus, and the said lining and covering being fluted or corrugated longitudinally, whereby air-spaces are formed between the boiler and covering, substantially as set forth.

293,753. COLLAR. FREDERICK R. LEWIS, Troy, N. Y., assignor to Wood, Lewis & Hawley. Filed June 15, 1883. (No model.)



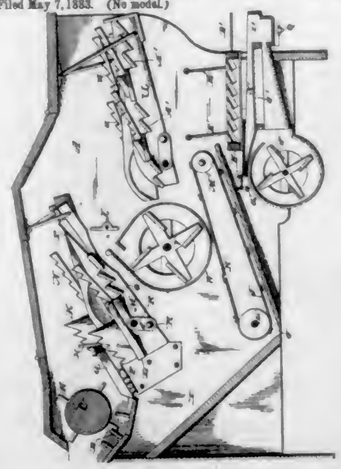
Claim.—A turn-down collar having one or more plies of the body part punctured to form a row of small apertures longitudinally of the collars, substantially as described, and for the purposes set forth.

293,754. MACHINE FOR MINCING MEAT. DANIEL H. LINTNER, Lancaster, Pa. Filed Dec. 12, 1882. (No model.)



Claim.—In combination with the slotted plungers *b* and *c*, the cleaning-rods *v v*, substantially as and for the purpose specified.

293,755. THRASHING-MACHINE. DAVID LIPPY, Mansfield, Ohio. Filed May 7, 1883. (No model.)



Claim.—1. In a thrashing-machine, the combination, with a thrashing cylinder and concave, of a grate arranged to incline toward the rear end of the concave, said grate consisting of longitudinal and cross bars, a portion of the longitudinal bars being provided with shields on their rear ends, substantially as set forth.

2. In a thrashing-machine, the combination, with a grate provided with shields at its rear end, of vibrators provided with straw carrying and elevating devices located between the bars of the grate, and arranged and adapted to carry the straw rearwardly and lift it over said shields, substantially as set forth.

3. The combination, with the concave, a grate in rear of the concave provided with upwardly-projecting shields and vibrators, and an independent set of vibrators, of an air-forcing device arranged to deliver a blast of air to the straw at a point between said shields and the rear set of vibrators, substantially as set forth.

4. In a thrashing-machine, the combination, with the vibrators, of an air-forcing device arranged close beneath the rear ends of said vibrators, and adapted to force the blast directly against the under side of said rear ends, substantially as described.

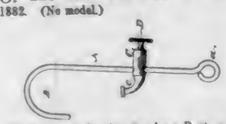
5. In a thrashing-machine, the combination, with the vibrators and air-forcing device, arranged as described, of the deflector, the hand-lever for adjusting the deflector, and the rack to secure the hand-lever after adjustment, substantially as described.

6. The combination, with two sets of independent vibrators, an air-forcing device for delivering air to the straw before its delivery to the rear set of vibrators, of a hopper bottom located beneath the concave and vibrators adjacent thereto, and endless carrier located in close proximity to said hopper, substantially as set forth.

7. The combination, with the concave, grate, two sets of vibrators, and the fan, of the hopper bottom and carrier and screen located beneath said vibrators, substantially as set forth.

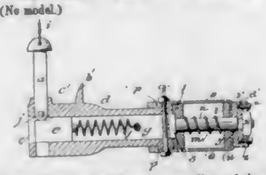
8. The combination, with the grate, of the forward set of vibrators, consisting of the longitudinal frame-bars, the transverse slats secured thereon, the serrated elevators and serrated carriers mounted above said slats, and the rearwardly-projecting fingers, substantially as described.

293,756. KEY-FASTENER. NELSON B. LITTLE, Chicago, Ill. Filed Sept. 5, 1882. (No model.)



Claim.—The wire A, having the loop B at one end and the loop *a* at the other, in combination with the hub C, having hook *c*, said hub having a transverse opening, *d*, for the passage of the wire, and a screw-threaded longitudinal opening for the reception of a set-screw, and the set-screw D, substantially as described.

293,757. CAR-COUPLING. JOHN J. LLOYD, Streator, Ill. Filed May 22, 1883. (No model.)



Claim.—1. The combination, in a car-coupling, of the draw-bar *d*, yoke-bar *o*, draw-bolt *n*, buffer-spring *m*, and washers *l*, the yoke being connected to the draw-bar by the shoulders *p* and bolt *q*, and the bolt *n* being extended through the bar *o* and secured by nut *x*, substantially as described.

2. The draw-bolt connected to the plate *d'* by a square shank, *y*, and secured by the nut *x*, having a lock-plate, *z*, held to the plate *d'*, and also fastened to it with a screw or screws, substantially as described.

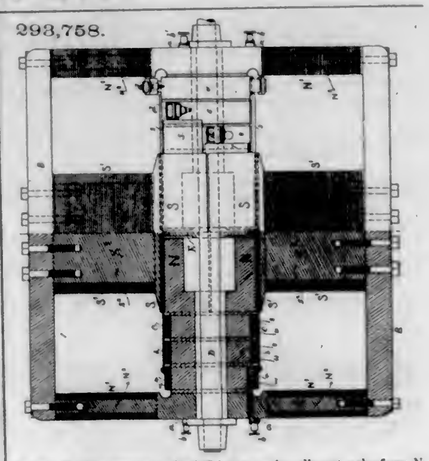
3. The link *b*, having a slot increasing in width from the rear to the front end thereof, to adapt it for self-coupling on a curved track.

4. The combination, with the draw-bar, buffer-spring, and bolt *n*, of the flat bent bar *o*, connected by shoulders *p* with said draw-bar, the fastening-bolt *q*, passing through the rear end of draw-bar in front of the head of bolt *n*, and the washers *l l*, arranged at the head and back end of said bar, whereby the buffer-spring and bolt are secured, as described.

293,758. DYNAMO-ELECTRIC MACHINE. ADOLPH E. GUSTAV LIEBE, New York, N. Y. Filed Nov. 12, 1883. (Model.)

Claim.—1. The external electro-magnets, having pole-faces S, the internal poles, N, and back bars or frames connecting the cores and poles, in combination with the shaft D, passing through the tubular portion of

293,758.

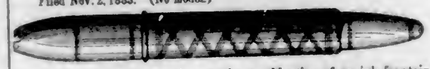


the pole N, the armature-wheel E between the adjacent pole-faces N, and the armature-cage C, connected to the edge of the wheel E, and passing between the pole-faces N S, substantially as set forth.

2. The field-magnets and pole-faces N S, arranged substantially as described, in combination with the central shaft, D, to which power is applied to rotate the same, the disk E, the armature-cage composed of metal plates connected at the edge of the disk E and passing between the pole-faces N S, the rings 4 6, connecting the plates of the armature-cage, the insulated rings 41 61, and circuit-connections, substantially as set forth.

3. The field-magnets and pole-faces N S, arranged substantially as described, in combination with the central shaft, D, to which power is applied to rotate the same, the armature-disk E upon such shaft, the cage C, connected to the edge thereof and passing between the pole-faces, the rings connecting the end portions of the armature-cage, and brushes applied to maintain metallic contact between the revolving and stationary parts, substantially as set forth.

293,759. FOUNTAIN-PEN. HERMANN MADEHEIM, Brooklyn, N. Y. Filed Nov. 2, 1883. (No model.)

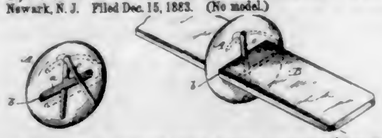


Claim.—1. In a fountain-pen, the combination of an ink-fountain having a discharge-spout, a fixed exterior handle-section surrounding the ink-fountain, and a telescoping extension that is guided between the ink-fountain and the main handle-section, substantially as set forth.

2. In a fountain-pen, the combination of an ink-fountain having a discharge-spout and a stop-shoulder at each end, a fixed handle-section inclosing the ink-fountain, and a telescoping extension-handle having a shoulder at its inner end, by which it is guided between the ink-fountain and handle-section, substantially as specified.

3. The combination of the ink-fountain having a valved ink-discharge spout, a piston having a hollow piston-rod, and a detachable extension piston-rod adapted to be screwed into a socket at the end of the hollow piston-rod, or placed in inverted position into the same when not in use, substantially as set forth.

293,760. BUTTON FOR DRIVING-REINS. STEPHEN A. MARKER, Newark, N. J. Filed Dec. 15, 1883. (No model.)



Claim.—1. A driving-rein button having a transverse slot or opening through it for the reception of the rein, and provided with a self-closing slit or opening extending from said transverse slot or rein-opening to the periphery of the button, in combination with a device for securing said button to the rein, substantially as and for the purpose specified.

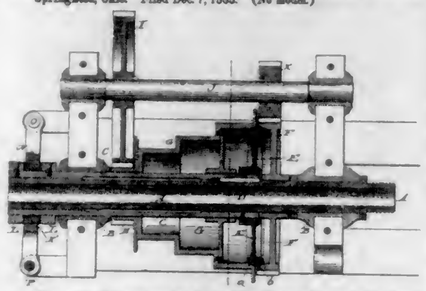
2. A driving-rein button having interposed or embedded between its sides a bent wire or brace, substantially as and for the purpose described.

3. A driving-rein button having a transverse opening through it for

the reception of the rein or strap thereof, a slit extending from said opening to the periphery of the button, and a tongue suitably connected directly thereto, substantially as and for the purpose set forth.

4. The combination of a driving-rein button having a transverse slot or opening for the reception of the rein, and a slit or opening extending from said transverse slot or rein-opening to the periphery of the button, with a bent wire or brace interposed or embedded between the sides of said button, and a fastening device for securing the rein thereto, substantially as and for the purpose specified.

293,761. CHANGEABLE-SPEED GEARING. SAMUEL W. MARTIN, Springfield, Ohio. Filed Dec. 7, 1883. (No model.)



Claim.—1. The rotary spindle, and the double friction-wheel movable lengthwise thereof, but fixed against rotation thereon, in combination with the driving-gear F, and the cone-pulley and its pinion, both arranged to revolve loosely on the spindle, and the gears connecting the cone-pulley and gear F, substantially as described, whereby the friction-wheel and spindle may be driven directly from the cone-pulley or from the gear F, or permitted to remain at rest.

2. The rotary spindle, the sleeve arranged to rotate therewith and slide thereon, the double conical friction-wheel secured to said sleeve, the gear F, mounted loosely on the spindle and adapted to engage with the friction-wheel, and the cone-pulley mounted loosely on the sleeve and provided with the pinion H, in combination with the differential gear connecting the gear F and pinion H.

3. In combination with the spindle, the sleeve, the friction-pulley, the gear F, the cone-pulley, and the connecting-gear, the collar encircling the spindle, the lever engaging with said collar, and the eccentric to operate the lever.

4. In combination with the spindle, the two toothed wheels arranged to revolve loosely thereon at different speeds, the friction-wheel having tapered surfaces adapted to connect with the two gears alternately, and means, substantially as described, for effecting the lateral movement of the friction-wheel.

5. In combination with the spindle, the loose pulley G and its gear H, the loose gear F, the intermediate connecting-gear, and the friction-pulley connected to the spindle to revolve therewith, and arranged for engagement with the cone-pulley or the driving-gear at will by a lateral movement.

293,763. GAS-MOTOR. HIRAM S. MAXIM, Paris, France. Filed Mar. 9, 1883. (No model.)

Claim.—1. In a gas motor or engine operating by explosions of gas or gaseous mixtures, the combination of two working-pistons, two exhaust-pistons, valve mechanism, and igniting devices, all substantially as described, these parts being constructed for operating conjointly as a double-acting engine, as set forth.

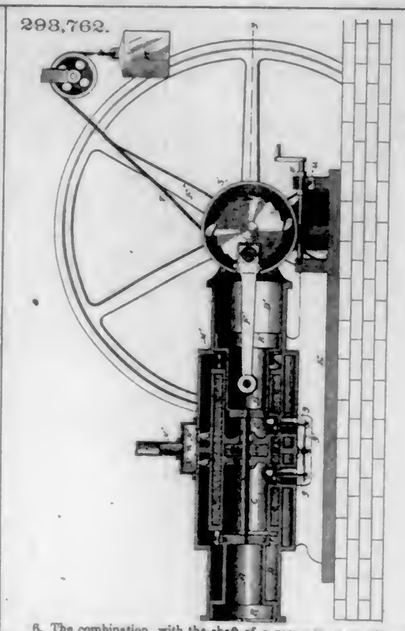
2. In a gas motor or engine operating by explosions of gas or gaseous mixtures, the combination, with two sets of cylinders placed end to end, of two working and two exhaust pistons connected together and working in said cylinders, valve mechanisms connected with the cylinders, and igniting mechanism operating conjointly as a double-acting engine, as set forth.

3. In a double-acting gas-engine, the combination, with two sets of cylinders and connected pistons working therein, of two sets of exhaust-air-inlet and gas-inlet valves, and an igniting mechanism for exploding the charges in the cylinders alternately, as set forth.

4. The combination, with cylinders C C' and connected pistons A A', of valve mechanism for admitting charges of air and gas into the cylinders alternately, mechanism for igniting the charges, and mechanism for withdrawing the products of the combustion of the charges, these parts being constructed and arranged for conjointly operating as a double-acting engine, as set forth.

5. The combination, with the shaft of a gas engine or motor, of a loose belt or fly-wheel, means for locking it to the shaft, and a starting device for imparting a rotary movement to the shaft, as and for the purpose set forth.

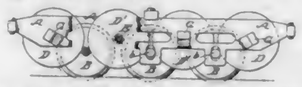
293,762.



6. The combination, with the shaft of a gas engine or motor, of a winding-drum, a cord, and a weight arranged for imparting a rotary movement to the shaft for starting the engine, as set forth.

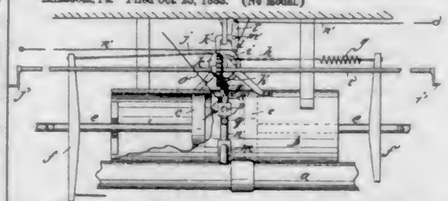
7. The combination, with the shaft of a gas engine or motor, of a loose belt or fly-wheel, an adjustable friction-clamp, a winding-drum, a cord, and a weight, these parts being constructed to operate as a starting device for the engine, as set forth.

293,768. CAR-TRUCK. ALEXANDER E. MCCONNELL, New Orleans, La. Filed June 27, 1883. (No model.)



Claim.—The combination, in a railroad-car truck or frame, A, of the axles C and running-wheels B thereon, the superimposed wheels D D', arranged to run upon opposite sides of the journals *b* of said axles, and so that each intermediate wheel, D', bears against the journals of two adjacent axles, C, and the axles E arranged to connect the superimposed wheels D D' upon opposite sides of the truck or frame, substantially as specified.

293,764. AIR OR LIQUID BRAKE. ROBERT MARSHALL MCKINNEY, Elizabeth, Pa. Filed Oct. 25, 1883. (No model.)



Claim.—1. The combination, in a fluid-brake apparatus, of one or more springs, *g*, to apply the brakes to the wheels, cylinder *b*, pistons *c*, and a fluid substance under pressure to force back the springs and release the brakes, and a balanced valve, *o*, to open the exhaust and close the same, according as the pressure is increased or diminished in the supply-pipe to the cylinder, substantially as described.

2. The combination, in a fluid-brake apparatus, of the cylinder *b* and pistons *c*, to release the brakes from the wheels by the effect of fluid pressure on the pistons, and allow said brakes to act when the fluid-

pressure is diminished, the pipe *a*, for supplying the liquid under pressure to the cylinder, check-valve *l*, and slide-valve *t* in the branch *m*, connecting said pipe *a* and cylinder, and the balanced exhaust-valve *o* in stand-pipe *n*, connecting with the cylinder and supply-pipe, said exhaust-valve *o* being connected with the slide-valve *t*, substantially as described.

3. The combination, in a fluid-brake apparatus, of the supply-pipe *a*, cylinder *b*, pistons *c*, one or more springs, *g*, scroll-pulleys *i*, and concentric pulleys *k*, and means for closing and opening the exhaust of said cylinder, the said supply-pipe being charged with fluid under pressure, substantially as described.

4. The combination of a spring, *y*, with the balanced valve *o*, said spring being adapted to vary the balance of pressure on the different sides of the valve *o*, and said valve being arranged in the pipe *n*, and with relation to the supply-pipe *a*, cylinder *b*, exhaust *q*, and the slide-valve *t*, substantially as described.

5. The combination of the adjusting-screw *b'* with the spring *y* and the balanced valve *o*, said valve being arranged in the pipe *n* and in relation to the supply-pipe *a*, cylinder *b*, slide-valve *t*, and the exhaust-passage *q*, substantially as described.

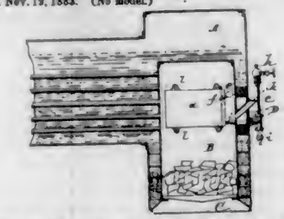
6. The adjusting-shaft *z'*, adjusting-screw *b'*, and spring *y*, in combination with the balanced valve *o*, said valve being arranged in the pipe *n* and with relation to the supply-pipe *a*, cylinder *b*, exhaust *q*, and the slide-valve *t*, substantially as described.

7. The adjusting-screw *b'*, hollow stem *c'*, disk *z*, spring *y*, and bar *x*, in combination with the balanced valve *o*, said valve being arranged in the pipe *n* and with relation to the supply-pipe *a*, cylinder *b*, exhaust *q*, and the slide-valve *t*, substantially as described.

8. The combination of the conductor's cord *c'* with the spring *y* and valve *o*, said valve being arranged in the pipe *n* and with relation to supply-pipe *a*, cylinder *b*, exhaust *q*, and the slide-valve *t*, substantially as described.

9. The combination, in a brake apparatus having springs to apply the brakes, of the pistons *c*, cross-heads *f f'*, springs *g*, chains *h*, scroll-pulleys *i*, chains *j*, and concentric pulleys *k*, substantially as described.

293,765. SMOKE-CONSUMER. THOMAS J. MCLAUGHLIN, Chicago, Ill. Filed Nov. 19, 1883. (No model.)

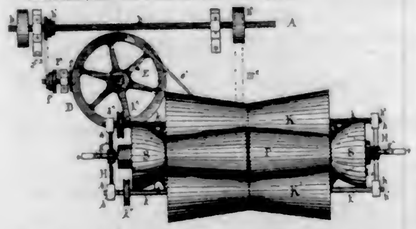


Claim.—1. The pipe or tube *d'*, having two or more discharge-nozzles, *f*, in combination with the case *a* and a steam-coil, *d'*, forming the superheater, located in the interior of the fire-box, substantially as described.

2. The combination of the coil or superheater *d'*, casing *a*, located in the interior of the fire-box, discharge-pipe *e e'*, and nozzles *f*, substantially as described.

3. The combination of the pipes *c d* and valve *A* with the superheating coil *d'*, casing *a*, inclosing the coil and located in the interior of the fire-box, delivery-pipe *e e'*, and nozzles *f*, substantially as described.

293,766. MACHINE FOR FORMING FELT BOOTS OR SHOES. DANIEL F. MESSER, Baltimore, Md., assignor to the Merino Shoe Company, Kennebunk, Me. Filed Dec. 22, 1883. (No model.)



Claim.—1. In a machine of the kind described, a rectilinearly-reciprocating former-frame, as set forth.

2. In a machine of the kind described, a former-frame combined with means for imparting rectilinear reciprocating motion to the frame, as set forth.

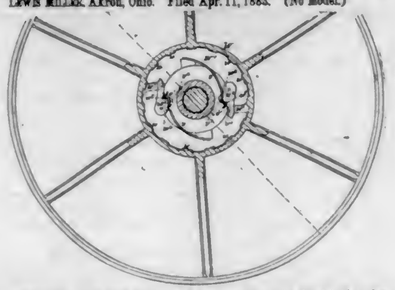
3. In a machine of the kind described, a rectilinearly-reciprocating former-frame having main former-rollers K K' and ancillary former-rolls L L, as set forth.

4. A cone having a body and end pieces, in combination with main former-rolls K K' and ancillary former-rolls L L, as set forth.

5. In a machine of the kind described, the former-rolls K K', one of which is in a plane below the other, as set forth.

6. A former-frame provided with main former-rollers K K' and ancillary former-rolls L L, as set forth.

293,767. PAWL-AND-RATCHET MECHANISM FOR HARVESTERS. LEWIS MILLER, Akron, Ohio. Filed Apr. 11, 1883. (No model.)

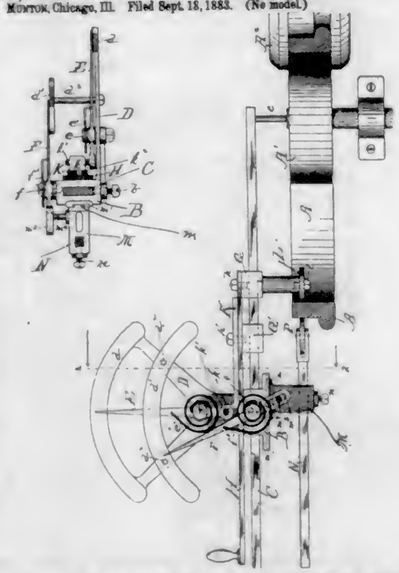


Claim.—1. The combination of the pawl provided with the elongated hub or lug, the plate to which it is pivoted, and the spring provided with the angle or shoulder and acting on the pawl-lug to hold the pawl in either of two positions according to adjustment, substantially as hereinbefore set forth.

2. The combination of the rotated ratchet, the shaft upon which it is loosely mounted, the pawl-carrier fastened to said shaft, the adjustable pawl, and the spring by which the pawl is held in or out of action, substantially as hereinbefore set forth.

3. The combination of the slotted pawl-carrier, the shaft to which it is keyed, the rotating hub having the internally-toothed peripheral flange and loosely mounted on said shaft, the pawl, the pin or arm secured thereto and projecting through the slot of the pawl-carrier, the pawl-lug, and the spring provided with the angle or shoulder and acting on the pawl-lug, substantially as described, for the purpose hereinbefore set forth.

293,768. INDICATOR FOR TIRE-ROLLING APPARATUS. JAMES MOYTON, Chicago, Ill. Filed Sept. 18, 1883. (No model.)



Claim.—1. In a tire-rolling indicator, the combination of a device for indicating the interior diameter of the tire as it is being rolled with

a device for simultaneously indicating its exterior diameter, substantially as specified.

2. The combination of a pair of index-fingers with movable slides or arms adapted to bear against the interior and exterior surfaces of the tire, and mechanism connecting said slides or arms with said index-fingers, so as to simultaneously indicate both the interior and exterior diameters of the tire, substantially as specified.

3. The combination of rod C, provided with pin e, adapted to be fixed at the center of the roll or other point from which measurements may be taken, and adjustable slide B, provided with dial-arcs *d* and *d'*, index-levers E and F, pivoted to said slide, slide G, furnished with roller L, handle-bar H, and plate K, secured to slide G, for operating said index-lever E therefrom, slide M, mounted on slide B, and connected with index-lever F, rod N, and roller P, substantially as specified.

4. The combination, with rollers L and P, mounted on movable slides or arms and adapted to bear against the interior and exterior surfaces of the tire, of the index-levers E and F, for indicating the interior and exterior diameters of the tire, and operated from said rollers L and P through suitable connecting rods or devices, substantially as specified.

5. In a tire-rolling indicator, the combination, with a roller adapted to bear against the surface of the tire and mounted on a movable slide, of a dial-arc and a movable index-lever connected with said movable slide to indicate the diameter of the tire, substantially as specified.

6. In a tire-rolling indicator, the combination of rod C, adjustable slide B, dial-arc *d*, index-lever E, slides G, provided with roller L, and means for operating said index-lever from said slide G, substantially as specified.

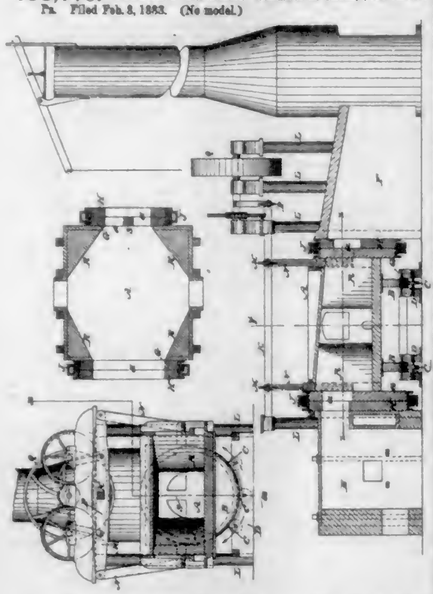
7. The combination of rollers L and P with movable slides or arms on which they are mounted, the index-levers E and F, dial-arcs *d* and *d'*, and means for operating said index-levers from the movable slides or arms on which said rollers are mounted, substantially as specified.

293,769. MUFF. PHILIPP NORDEN, Leipsic, Germany. Filed May 25, 1883. (No model.)



Claim.—In combination with a muff, A, the pocket or bag-shaped opening S, with the elongated part V, and projection or strap w, arranged to operate as and for the purpose substantially as described.

293,770. PUDDLING-FURNACE. RICHARD H. OATES, Port Clinton Pa. Filed Feb. 8, 1883. (No model.)

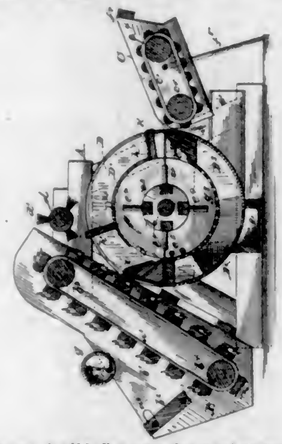


Claim.—1. The furnace E and flue F, each with a boss, H, in combination with an intermediate puddling-chamber, A, having segmental shoes B, and a saddle, D, with rollers C, said chamber having on its inner corners deflectors R, and at opposite ends divisional bridges S and hollow trunnions G, substantially as set forth.

2. The furnace E and flue F, each with a boss, H, in combination with an intermediate puddling-chamber, A, having segmental shoes B, flanged annuli J, and a saddle, D, with rollers C, said chamber having interior deflectors, R, and at opposite ends divisional bridges S and hollow trunnions G, having flanges which are embraced by the flanged annuli J, substantially as set forth.

3. The furnace E and flue F, each with a boss, H, in combination with an intermediate puddling-chamber, A, having segmental shoes B, divisional bridges S, deflectors R, hollow trunnions G, the saddle D, with rollers C, the annuli J, shaft K, cross-heads M, arms N, cross-head P, and operating mechanism, substantially as and for the purpose set forth.

293,771. SELF-FEEDING COTTON-CLEANER AND GIN-FEEDER. JAMES WOOD OGLESBY and ZENOS WEB OGLESBY, Kingston, Ga. Filed May 25, 1883. (No model.)



Claim.—1. A self-feeding cotton-cleaner and gin-feeder consisting of a frame, an endless receiving-belt provided with projecting saw-teeth, a revolving brush, a perforated cylinder having feed and discharge openings, a cylinder provided with arms working within said perforated cylinder, revolving exhaust-fans at the ends of said perforated cylinders, suitable exhaust and discharge flues, an endless apron, and suitable operating mechanism, substantially as and for the purpose set forth.

2. In a cotton-cleaner, the combination of a frame, a perforated cylinder provided with openings for the reception and discharge of the cotton, a series of projecting arms mounted on a revolving shaft working within said cylinder, a pair of exhaust fans, exhaust and discharge flues, means for feeding to and carrying away the cotton from said cylinder, and suitable operating mechanism, substantially as and for the purpose set forth.

3. A cotton-cleaner comprising a frame, a cleaning-cylinder the lower half of which is perforated, a revolving shaft working centrally through said cylinder, said shaft having projecting arms and fan-blades mounted thereon, suitable fan-casings, exhaust and discharge flues, a revolving brush journaled above said cylinder, an endless apron, said apron being adapted to deliver the cotton against said brush and into said cylinder, and suitable operating mechanism, substantially as and for the purpose set forth.

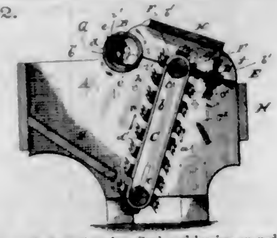
4. In a cotton-cleaner, the cylinder D, having an inlet-opening, *j*, inclined metal projection *i*, stop-board projection *h'*, discharge-opening *l'*, incline g^3, perforated bottom g^2, and projection K, in combination with the shaft *b*, fan-blades *c*, drum c^2, arms c^4, fan-casings, and discharge-flues d' d^3, substantially as and for the purpose set forth.

293,772. COTTON-GIN FEEDER. JAMES WOOD OGLESBY and ZENOS WEB OGLESBY, Kingston, Ga. Filed June 2, 1883. (No model.)

Claim.—1. In a cotton-gin feeder, the combination of a box or frame, A, endless saw-toothed apron C, inclined feed-board *g*, adapted to feed the cotton to said saw-toothed apron, hollow retarding-roller B, having slots *i'*, and eccentric-rod *d*, provided with plates or tongues *c* and loop *h*, substantially as and for the purpose set forth.

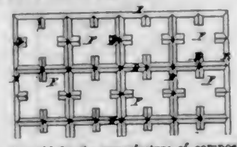
2. The combination of the box or frame A, retarding-roller B, having journals G, and an eccentric bent rod, *d*, within said roller, provided with hinged tongues *c*, one end of said rod extending out through the hollow journal G of roller B, and connected to box A, with the endless apron C, having saw-teeth *a*, shaft F, rollers *c c'*, shaft E, carrying brush

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D, and the cover H, formed as described, and having curved wire screen *f*, substantially as shown and described.

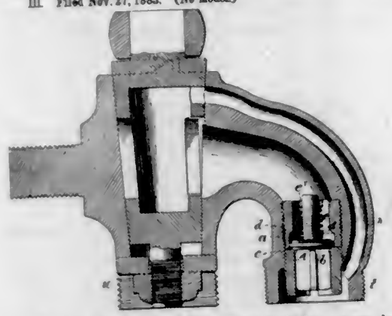
293,773. FIRE-KINDLER MOLD. CHARLES E. PADDACK, Richmond, Ind. Filed Oct. 9, 1883. (No model.)



Claim.—1. A mold for the manufacture of composition fire-kindlers, consisting of an exterior case, E, having attached to it cross-partitions D, having broad bases, all in the plane of the lower edge of the mold, for shaping and partly dividing the cake, combined with a flat bottom board, B, and a follow-board, C, provided with lateral flanges, which arrest its descent into the mold at a distance above the partitions D, as and for the purpose set forth.

2. A mold, E, having attached to it cross-partitions D, extending upward from the plane of the lower edge of said mold, and its upper edges beveled outwardly, as shown, combined with a removable bottom board, B, and a solid follower, C, tapering to conform to the top of the mold E, and a laterally-extended flange, to be arrested by and rest upon the edge of said mold, as and for the purpose set forth.

293,774. COCK FOR AIR-BRAKES. NORMAN J. PARADISE, Auburn, Ill. Filed Nov. 27, 1883. (No model.)



Claim.—In combination with a cock for air-brakes, a spring double-faced valve arranged in the branch connecting with the main reservoir, and seats provided therefor, substantially as and for the purposes set forth.

293,775. TELEGRAPH-CABLE. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 15, 1883. (No model.)

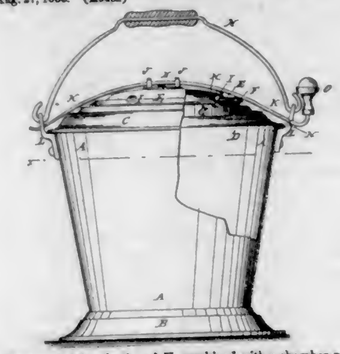


Claim.—1. The combination, in a telegraph-cable, of special test-wires of different lengths, whereby faults may be located approximately substantially as and for the purpose specified.

2. The combination, in a telegraph-cable, of special test-wires, the wires in a given section differing in length by a common difference, whereby faults may be located approximately, substantially as and for the purpose specified.

3. The combination of two sections of telegraph-cable, each provided with special test-wires, said test-wires being all accessible at the test-station between said sections, whereby both sections may be tested from said station, as and for the purpose specified.

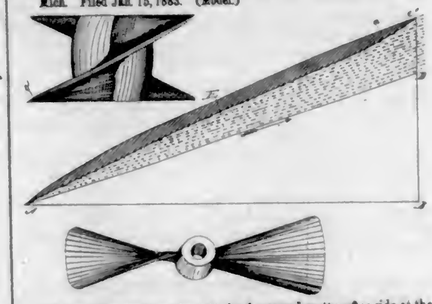
293,776. CHAMBER-PAIL. CHAS. H. PAULIN, Irvington, N. J. Filed Aug. 27, 1883. (Model.)



Claim.—1. The elastic rod K, combined with a chamber-pail cover and ears having recesses N, whereby a bail may be used for carrying said chamber and the cover be readily fastened or unfastened, as described.

2. In a chamber-pail, the combination, with the cover E, of the separable flange G, having lugs H, the packing-ring F, and the bolts I, substantially as herein shown and described, whereby a close joint will be formed between the said cover and its seat, as set forth.

293,777. SCREW-PROPELLER. HARRISON C. PEARSONS, Ferrysburg, Mich. Filed Jan. 15, 1883. (Model.)



Claim.—A propeller-wheel blade sharpened on the after side at the forward or leading edge, and having its forward side constructed with a convex surface, so as to make it tangent to the "line of motion" at the forward edge of the blade, substantially as and for the purpose set forth.

293,778. BARB-WIRE-FENCE MACHINE. MARK A. PENNEY, Des Moines, Iowa, assignor to William L. Carpenter, same place. Filed Apr. 16, 1883. (No model.)

Brief.—The wrapping-sleeve is reciprocated by a sliding bar. The spindle is retracted by the sleeve and advanced by a spring. The upper knife is swung into position after the barb is coiled and the lower knife is reciprocated past it.

Claim.—1. In a barb-fence machine, a sliding coiler and oscillating knife-head, both combined with and connected to the same bell-crank lever, substantially as specified, whereby when the coiler is advanced the head is oscillated to make room for the coiler.

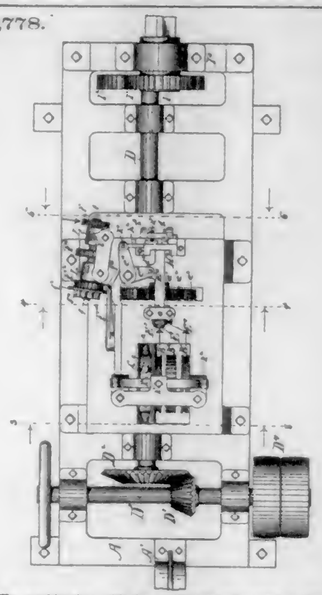
2. In a barb-fence machine, the severing devices, consisting of an oscillating knife and a reciprocating knife, combined and operating substantially as specified.

3. The combination of the sliding spindle, the sleeve carrying a coiler, and secured upon the spindle so as to rotate therewith, the gear rotating the spindle, and the bar retracting both sleeve and spindle, substantially as specified.

4. The combination, with the coiler and spindle, of the bar E^5, crank-arm e'', spindle e^3, crank e^4, and cam E^4, substantially as specified.

ratus, whereby the material to be treated can be subjected to jets of hot or cold air, as occasion may require, as and for the purpose set forth.

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5. The combination, with the oscillating knife-head, of the sliding bar b^3, crank-arm c', spindle c^2, crank c^3, and cam E^2, substantially as specified.

6. The spindle, actuated in the forward direction by a spring, and having a shoulder, c^{23}, and a sliding sleeve mounted on said spindle and engaging with said shoulder, and actuated in both directions by the sliding bar, in combination with the spring and sliding bar, substantially as specified.

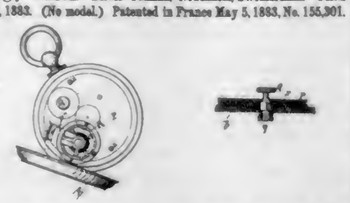
7. The forked bar F^2 and its actuating devices, in combination with the coiler, the spindle, and the spring E^3, substantially as specified.

8. The combination, with the lower knife-head, of the barb-guide g^3, substantially as specified.

9. The combination, with the lower knife-head, of the barb-guide g^3, provided with the adjusting-screw g^{23}, substantially as specified.

10. The combination, with the lower knife-head and the guide carried thereby, of the cam G^2 and the connecting-bar, whereby said head and guide, after the cutting off of the barb, are first lowered, then raised partially, and then raised completely for the severance of the next barb, substantially as specified.

293,779. WATCH. DAVID PERRET, Neuchatel, Switzerland. Filed Nov. 14, 1883. (No model.) Patented in France May 5, 1883, No. 155,301.



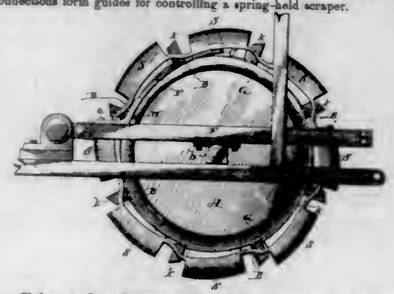
Claim.—1. The wheels R r and plate P, the wheel r having a square opening at its center, and the plate P having an opening for the stem of the setting-key, in combination with the setting-key having a squared portion, q, a cylindrical portion next to said squared portion, and a knob or button outside the plate P, substantially as and for the purposes specified.

2. The combination of the plate P, having two openings, one at F S, to give access to the regulator, and the other over the balance O, in order that said balance may be visible, a glass, v, covering the last-mentioned opening, the key Q, and wheels R r, substantially as and for the purposes specified.

3. The combination, with the winding or setting portion in a watch, of a key, Q, having the squared or prismatic end, the head, and the cylindrical portion between the square end and the head, substantially as and for the purposes set forth.

293,780. DITCHING-MACHINE. FAWCETT PLUMB, Streator, Ill. Filed Oct. 17, 1883. (No model.)

Brief.—Open-ended scoops secured to a wheel, with cutters between the adjacent scoop ends, are connected to each other, so that the connections form guides for controlling a spring-held scraper.

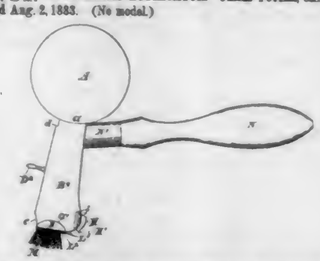


Claim.—1. In a ditching-machine, the cutting-wheel thereof consisting, essentially, of a series of open ended scoops attached to the periphery of the wheel, and cutters situated between the adjacent ends of the scoops.

2. The combination, with a series of scoops bound together at their outer corners, so as to form a continuous scoop, the said connections between the scoops forming a guide for the spring-actuated scraper, of a spring-actuated scraper adapted to move in contact with the inner surfaces of the scoops, substantially as set forth.

3. In a ditching-machine, the combination, with a series of open-ended scoops provided with bands uniting their outer corners, and cutters located between the adjacent ends of the scoops, of a pivoted spring-pressed scraper, substantially as set forth.

293,781. UNIVERSAL LUBRICATOR. JAMES POTTER, Chicago, Ill. Filed Aug. 2, 1883. (No model.)



Claim.—1. In a lubricator, the combination of the reservoir A, the receiver B, the blanks B^2, provided with flanges B^3, and shoulders c and d, the feed-slide D, and teeth D', the thumb-piece D^2, the springs E with a wick, M, the whole operated as described and set forth.

2. In a lubricator, the combination of the reservoir A, the receiver B, the blanks B^2, provided with flanges B^3, the springs F, the rod G, the thumb-piece f, the cams H, the points H', the clamps I, provided with screw J, the cover K, and openings K', with clamps L and L', provided with lip L^2, and wick M, all for the purpose described and set forth.

3. In a lubricator, the reservoir A, the receiver B, the handle N, the cap N', the indenture k, in combination with clamps L and L', the flange L^2, the openings L^4, and wick M, the whole operating as described and set forth.

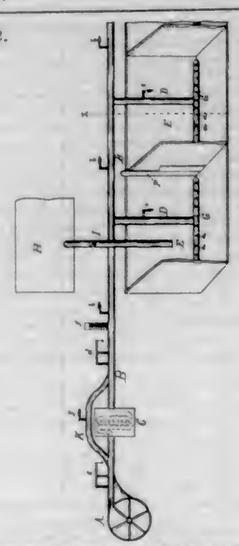
4. In a lubricator, the wick M, provided with loop O, the points O', in combination with clamps L and L', and the indenture L^2, all for the purpose described and set forth.

293,782. APPARATUS FOR EVAPORATING SIRUPS, &c., AND FOR CLARIFYING THE SAME. DANIEL DAVIDSON POWERS, Ozark, Kans. Filed Mar. 31, 1883. (No model.)

Claim.—1. The method herein described of evaporating and clarifying saccharine juices, sirups, and other material, which consists in passing streams or jets of heated and atmospheric air alternately through the material, as and for the purpose set forth.

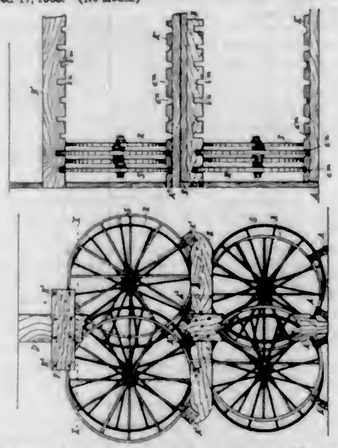
2. An evaporating apparatus in which the material to be treated is subjected to streams or jets of heated and cold air, the main air-pipe B, leading into a heated chamber or any suitable device for heating, and the branch pipe K, leading from the main pipe B in front of heating-chamber, and with branch pipes joining hot-air pipes in front of sections of evaporators, in combination with a blower or other air-forcing appa-

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3. An evaporating apparatus in which the material to be treated is heated or boiled by sprays or jets of heated air, the compartments D, having the perforated air-pipe in the lower corner, in combination with an adjustable partition, I, on the opposite side from the perforated pipe, whereby the scum and other impurities are driven over at varying heights, as set forth.

293,783. RACK FOR WHEELS. HIRAM W. RANSOM, Cincinnati, Ohio, assignor of one-half to the Emerson & Fisher Company, same place. Filed Dec. 17, 1883. (No model.)



Claim.—1. In a rack for wheels, the combination of the two lower rack-rails and the upper rack-rail, each provided with transverse slots, substantially as and for the purposes specified.

2. The combination of the two lower rack-rails and the upper rack-rail, each provided with transverse slots, the upper rack-rail being located behind the vertical central plane between the lower rails, substantially as and for the purposes specified.

3. The combination of the lower rack-rails and upper rack-rail provided with slots whose bottoms are alternately nearer to and farther from the axial center of the particular rack to which said slots belong, substantially as and for the purposes specified.

4. The combination of the lower rack-rails provided with slots a' m a' n, and upper rack-rail provided with slots b' m b' n, the slots a' m of the forward lower rail and the slots b' n in the upper rail and a' n in the lower rear rail being in the same transverse plane, and the slots a' n of the forward lower rail and the slots b' m of the upper rail and a' m of the rear lower rail being in the same transverse plane, substantially as and for the purposes specified.

5. The combination of a lower rail, A, and an upper rearwardly-placed rail, B, provided with transverse slots, substantially as and for the purposes specified.

6. Two contiguous racks having lower rails and upper rails provided with slots, the bottoms of the slots on rack-rail alternating in height, substantially as set forth, and the planes of the slots of one rack passing between the planes of the slots on the other rack, substantially as and for the purposes specified.

7. The combination of two contiguous racks, the rails being provided with transverse slots, the planes of the slots in one rack passing between the planes of the slots in the other rack, substantially as and for the purposes specified.

8. The combination of the four racks having the rails A A A' A' B B' A^2 A^2 A^4 A^2 B^2 B^2, provided with transverse slots, substantially as described, and uprights D and cross-pieces E F, substantially as and for the purposes specified.

9. The combination of the four racks, two above and two below, placed back to back, and the rails thereof being provided with transverse slots, the upper racks being adapted to receive hind wheels, and the lower racks to receive front wheels, substantially as and for the purposes specified.

10. The combination of an upper and lower rack having rails provided with transverse slots, the upper rack being adapted to receive hind wheels, and the lower rack to receive front wheels, substantially as and for the purposes specified.

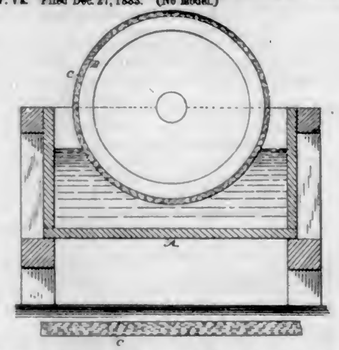
11. In a rack, the combination of the separate blocks K, having slots a' m or b' m, and the rack-rail, the ends of the adjacent blocks forming the slots a' n or b' n, substantially as and for the purposes specified.

12. In a rack, the rails A A and B, provided with transverse slots having inclined sides, substantially as and for the purposes specified.

293,784. PULP CASTER-WHEEL. WALTER S. RAVENSCROFT, Parkersburg, W. Va. Filed Apr. 23, 1883. (No specimens.)

Claim.—As a new article of manufacture, a caster-wheel made of paper or wood pulp, as set forth.

293,785. MANUFACTURE OF ARTICLES FROM WOOD PULP. WILLIAM R. RAVENSCROFT and WALTER S. RAVENSCROFT, Parkersburg, W. Va. Filed Dec. 27, 1883. (No model.)



Claim.—1. A bat or felt composed of wood pulp or fiber and silicate of soda, formed by depositing on a roller repeated layers of the composition as it is taken from the mixing vat or tank, as set forth.

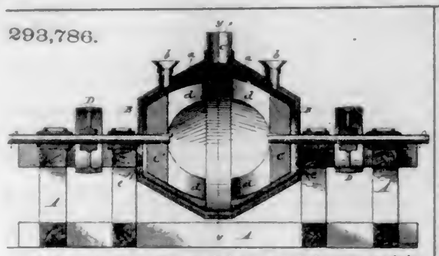
2. The method herein described of forming articles from wood fiber or pulp and silicate of soda, the same consisting in forming bats or felts of the composition, cutting from said bats or felts blanks of the desired form and configuration, and then subjecting one or more of said blanks to the requisite pressure to form the article, as set forth.

3. A wheel composed of layers or blanks cut from a bat or thick web of wood fiber and silicate of soda, substantially such as described, said layers being joined together by pressure and by strengthening bars and disks, as set forth.

293,786. MACHINE FOR REDUCING ORES, &c. GEORGE RAYMOND and ALBERT RAYMOND, Chicago, Ill. Filed July 2, 1883. (No model.)

Claim.—1. In a machine for reducing refractory materials by impact and attrition between the fragments, the combination of a horizontal body or casing enlarged from its two ends toward the middle, and two oppositely-revolving heads located in the respective ends of the body, each head provided with a series of spiral curved arms following the inner conical surface of the body and overhanging the central space therein, substantially as described.

293,786.



2. In combination with an inclosing case or body, two oppositely-revolving heads, each head having a series of overhanging spiral arms projected toward but terminating at a considerable distance from the arms of the other, substantially as described.

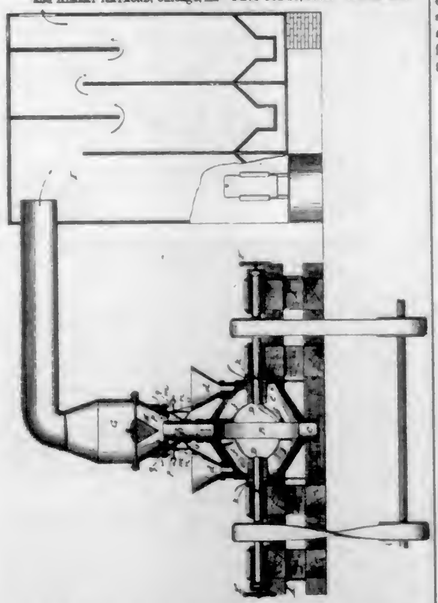
3. The head for an ore-reducing machine, consisting of a hub provided with the series of thin overhanging arms or blades extending both laterally and outwardly therefrom in curved lines, whereby an open central space is left between the arms, as and for the purpose described.

4. In an ore-reducing machine, the combination, with an external case or body, substantially as described, of two oppositely-rotating heads located in its respective ends, each head having on its inner side a series of spiral arms or blades with smooth surfaces and overhanging disconnected ends, substantially as described, whereby the ore is permitted to pass over the faces of said arms and escape at their ends.

5. In an ore-reducing machine, the body, of a double conical form, with ore and air inlets at the two ends and the outlet in the middle, in combination with the oppositely-revolving heads having radially and laterally curved arms or blades overhanging a central space or chamber, as described, whereby the blades are caused to serve the double purpose of propelling the ore fragments violently against each other, and of producing a strong blast of air through the machine for the delivery of the pulverized material.

6. In an ore-reducing machine, a circular body or casing enlarged from its two ends toward the middle, combined with oppositely-revolving heads mounted in the respective ends of said body, each head consisting of a central hub at the outer end of the body, provided with peripheral disconnected arms following the inner surface of the body and extending toward the middle of the same, substantially as described.

293,787. MACHINE FOR REDUCING ORES, &c. GEORGE RAYMOND and ALBERT RAYMOND, Chicago, Ill. Filed Oct. 23, 1883. (No model.)



Claim.—1. In an ore-reducing machine, the body or casing, of decreasing diameter toward its ends, and the rotary heads having the divergent overhanging arms, combined with means, substantially as described, for adjusting said heads in the line of their axes.

2. In an ore-reducing machine, the combination of the body or casing of the form described, and the two revolving heads, each consisting of a hub provided with spiral laterally-projected arms, and with peripheral surfaces forming continuations of the faces of said arms.

3. The rotary heads having hubs with laterally-extending divergent arms overhanging the central space between them, and with peripheral surfaces forming continuations of said blades across the hubs, in combination with the body or casing, with feed-openings, arranged as described, to deliver material upon the peripheries of the hubs.

4. The rotary heads, each provided with disconnected overhanging blades, substantially such as described and shown, in combination with the body or casing provided with annular air-inlets at the ends and an air-outlet at the middle.

5. The combination of the body or casing, having the central air-inlets at the ends, and the rotary heads, as described, adjustable in the line of their axes, whereby the air-admission may be varied as required.

6. In combination with the body and the rotating heads, adapted, as described, to produce an outward blast, the receiving-chamber and deflector, the hopper, and the spouts for returning the coarse material to the machine.

7. In combination with the reducing and blast-producing mechanism, substantially as described, the discharge-tube *b*, the chamber, the deflector, the hopper having an air-inlet around its top, and the return-spouts from the hopper to the machine.

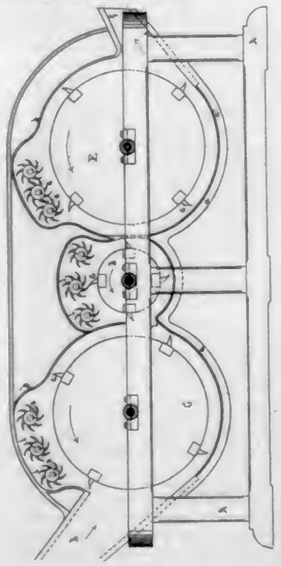
8. In combination with the reducing and blast-producing mechanism, the discharge-spout, the hopper, the receiving-chamber adjustably connected with the hopper, and the deflector.

9. In combination with the reducing and blast-producing mechanism, substantially as described, the discharge-spout, the receiving-chamber, the hopper, the automatic discharge-valves, and the conductors for returning the material to the reducing mechanism.

10. In combination with the body and the revolving heads, as described, the discharge-spout, the settling-chamber I, connected therewith, and a deflector and hopper located in said discharge-spout between the reduction mechanism and the settling-chamber, as described, whereby the coarse material delivered from the machine is arrested, and the fine material only delivered to the settling-chamber.

293,788. MACHINE FOR CLEANING WOOL. FREDERICK GRANDISON SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Oct. 21, 1881. (No model.)

Brief.—Two or more cone-duster cylinders, so located that the larger end of one cylinder is beside the smaller end of the next, are operated in connection with toothed workers located with their surfaces substantially parallel with the said cone-cylinders, all being covered with a closed bonnet. A delivery-passage leading from the larger end of the first cylinder to the smaller end of the second, &c., is provided, whereby the fiber is conducted through the machine.

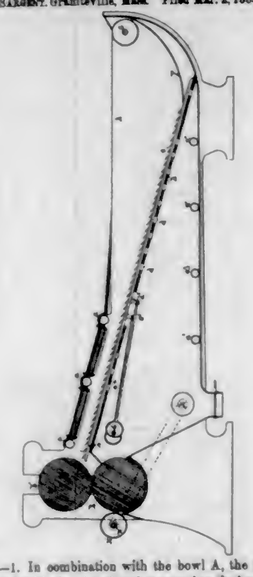


Claim.—1. The combination, with a cone-duster cylinder, of one or more toothed worker-rolls and a bonnet, the said rolls having their surfaces substantially parallel to and working with the conical face of the cylinder and inclosed within said bonnet, substantially as described.

2. The combination of the cone-duster C with the cone-duster D, and the fiber-delivery passage *l*, leading from the larger end of the former to the smaller end of the latter, substantially as described.

3. The combination of two cone-dusters in one machine having their axes placed parallel to each other, and the larger end of one alongside the smaller end of the other, with a fiber-passage, *l*, connecting said ends and adapted to conduct the fiber from the one of said cone-dusters to the other, substantially as described.

293,789. WOOL-WASHING MACHINE. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Mar. 2, 1883. (No model.)



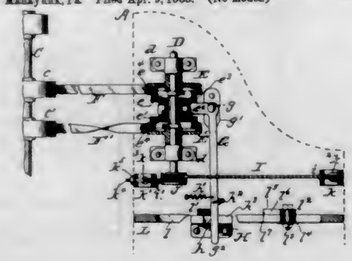
Claim.—1. In combination with the bowl A, the perforated feed-roll *c*, connected with the pipe c^3, and arranged on the bowl, substantially as described.

2. The perforated doffer-roll N, connected with the pipe n^3, in combination with the squeeze-rolls B B′, substantially as described.

3. In combination with the bowl A, squeeze-rolls B B′, and bottom D, the alternately-reciprocating sets of bars e e^3, extending from the bottom of the bowl at the feed-in end entirely below the surface of the liquid to said squeeze-rolls above the surface of the liquid at the delivery end, and upon an incline partly below and partly above the surface of the liquid in the bowl, and adapted to convey the fiber from the feed-in end to the delivery end of the bowl upon said bars, substantially as described.

4. In combination with the bowl A, the bars e e^3, extending partly below and partly above the surface of the liquid in the bowl, and adapted to convey the fiber thereon through the same, one or more perforated pipes, *a*, extending over the portion of the carrier above the liquid in the bowl, substantially as described.

293,790. AUTOMATIC REVERSING MECHANISM FOR LAPPING-MACHINES. WM. SCHOFIELD, Philadelphia, assignor to Ellen Schofield, Manayunk, Pa. Filed Apr. 9, 1883. (No model.)



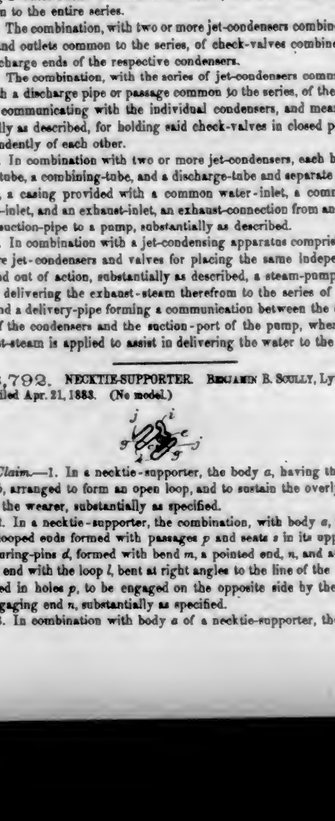
Claim.—1. The combination of a driving-shaft, a driven shaft connected to the driving-shaft and having a revolving wheel upon one of its ends, and mechanism for reversing the motion of said wheel, and a carriage moved backward and forward by the wheel on the end of the driven shaft, and having means for shifting the reversing mechanism.

2. The combination of a driving-shaft, a driven shaft connected to the driving-shaft and having a revolving wheel upon one of its ends, and mechanism for reversing the motion of said wheel and carriage, moved backward and forward by the wheel on the end of the driven shaft, and having adjustable means for shifting the reversible mechanism.

3. In combination with shaft D, carrying wheel J, the carriage A, having band I in gear with wheel J, which moves the carriage backward and forward, means for applying tension to said band, and mechanism for reversing the rotation of said shaft D, substantially as shown and described.

4. The combination of shaft D, reversing mechanism therefor, lever G, bracket H, having one or more shoulders, A, and springs A′ and A², substantially as shown and described.

293,791. JET-CONDENSER. LOUIS SCHUTTE, Philadelphia, Pa. Filed Dec. 10, 1883. (No model.)



Claim.—1. The combination of two or more water-jet condensers, each comprising a water-tube, a condensing-tube, and a discharge-tube, with sources of water supply and delivery common to the series, and means, substantially as described, whereby the condensers may be thrown into and out of action independently.

2. In combination with two or more jet-condensers, each comprising a water-tube, a combining-tube, and a discharge-tube, a pipe or discharge forming a water-inlet common to the series, a pipe or discharge forming a water-outlet common to the series, and an exhaust-inlet also common to the entire series.

3. The combination, with two or more jet-condensers combined with inlets and outlets common to the series, of check-valves combined with the discharge ends of the respective condensers.

4. The combination, with the series of jet-condensers communicating with a discharge pipe or passage common to the series, of the check-valves communicating with the individual condensers, and means, substantially as described, for holding said check-valves in closed positions independently of each other.

5. In combination with two or more jet-condensers, each having a water-tube, a combining-tube, and a discharge-tube and separate closing-valves, a casing provided with a common water-inlet, a common discharge-inlet, and an exhaust-inlet, an exhaust-connection from an engine, and a suction-pipe to a pump, substantially as described.

6. In combination with a jet-condensing apparatus comprising two or more jet-condensers and valves for placing the same independently into and out of action, substantially as described, a steam-pump, a conductor delivering the exhaust-steam therefrom to the series of condensers, and a delivery-pipe forming a communication between the delivery ends of the condensers and the suction-port of the pump, whereby the exhaust-steam is applied to assist in delivering the water to the pump.

293,792. NECKTIE-SUPPORTER. BENJAMIN B. SCULLY, Lynn, Mass. Filed Apr. 21, 1883. (No model.)

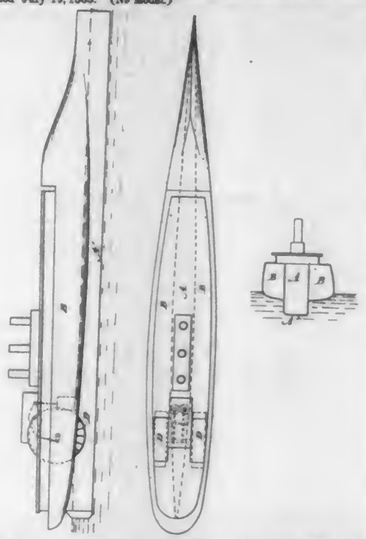
Claim.—1. In a necktie-supporter, the body *a*, having the turned ends *b*, arranged to form an open loop, and to sustain the overlying collar of the wearer, substantially as specified.

2. In a necktie-supporter, the combination, with body *a*, provided with looped ends formed with passages *p* and seats *s* in its upper edge, of securing-pins *d*, formed with bend *m*, a pointed end, *n*, and at the opposite end with the loop *l*, bent at right angles to the line of the wire and inserted in holes *p*, to be engaged on the opposite side by the pointed tie-engaging end *n*, substantially as specified.

3. In combination with body *a* of a necktie-supporter, the attach-

ing-loop *e*, formed of a single piece of elastic wire bent centrally, as at *i* and also as at *h h*, to form four nearly parallel parts or members, *g g*, and with said central part, *i*, and ends *j j*, bent hook-like and inserted and secured in said body, substantially as specified.

293,793. MARINE VESSEL. AMÉDÉE M. G. SEBILLOT, Paris, France. Filed July 19, 1883. (No model.)



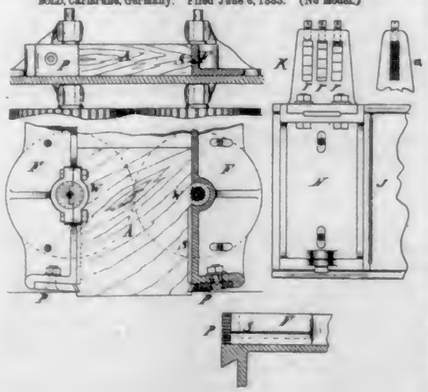
Claim.—1. A marine vessel divided into three longitudinal compartments by partitions or walls extending from the bottom of the hull to the deck, the side compartments being formed on the sides of the middle compartment and the latter projecting below the side compartments, as set forth.

2. A marine vessel constructed with three longitudinal compartments, the middle compartment being tapered toward the front and rear, and the side compartments gradually increasing in width from the front of the vessel to about the middle, and then running at a uniform width toward the rear of the vessel, substantially as herein shown and described.

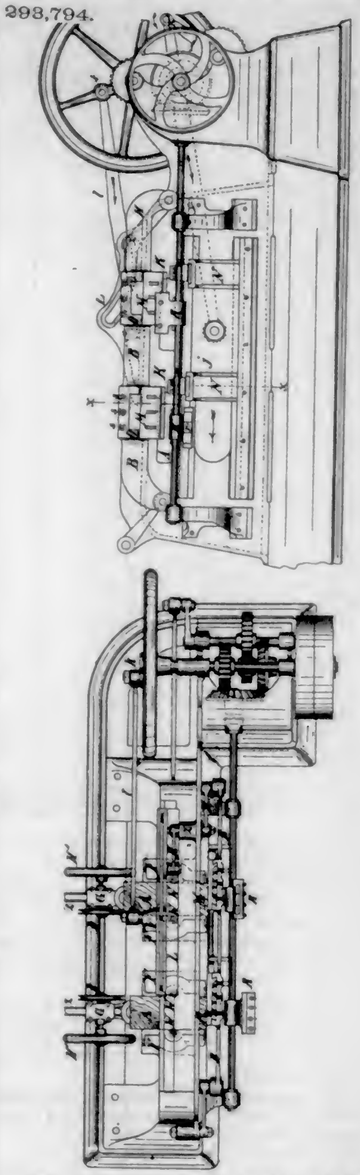
3. A marine vessel constructed with three longitudinal compartments, the middle compartment projecting below the bottoms of the side compartments, and the side compartments having flat bottoms, substantially as herein shown and described.

4. A marine vessel constructed with three compartments, of which the middle compartment projects below the bottoms of the side compartments, each side compartment containing a paddle-wheel, substantially as herein shown and described.

293,794. MACHINE FOR MAKING MATCH-SPLINTS. GEORG SEBOLD, Carlsruhe, Germany. Filed June 6, 1883. (No model.)



293,794.

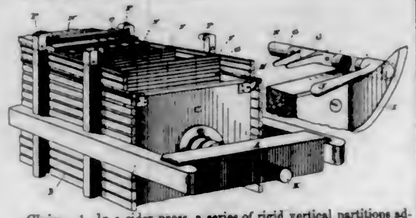


Claim.—1. In a machine for cutting match-sticks, the sliding carriage J, provided with slitting-knives *r*, the swinging knife-bar B, and shearing-knife M, the slide L, provided with a cam-slot, the lever H, fulcrumed at Z', and having one arm connected with said knife-bar B and the other engaging with the cam-slot in the slide L, the cranks *k k'*, connected by gearing, and rods connecting the crank *k* with the slide L and the crank *k'* with the sliding carriage J, substantially as herein described, whereby the shearing-knife M is caused to cut at each movement of the carriage J and its slitting-knives.

2. In a machine for cutting match-sticks, the combination of the sliding carriage J, the knife-head K, and the slitting-knives *r*, arranged in two or more vertical tiers, the knives in each vertical tier being set opposite the spaces between the knives in the other tier or tiers, substantially as and for the purpose herein described.

3. The combination, with the sliding carriage J and slitting-knives *r*, and the shearing-knife M, of the adjustable guides F, between which the blocks are fed to said knives, the sharp-toothed plates arranged vertically at the inner ends of said guides, and the horizontal knife-edges S S, secured in the inner faces of said guides F, all substantially as and for the purpose herein described.

293,795. CIDER-PRESS. HUGH SELLA, Toronto, Ontario, Canada. Filed Oct. 1, 1883. (No model.)



Claim.—1. In a cider-press, a series of rigid vertical partitions adjustably fitted into the press between the stationary and movable ends, having passages for the escape of the liquid, substantially as and for the purpose specified.

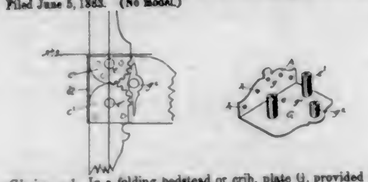
2. In a cider-press having a series of partitions arranged between the stationary and movable ends, two rods, journaled one on each side of the press, and having fingers attached to them for the purpose of holding the partitions, as specified, in combination with lugs attached to the movable end, and so shaped and situated that upon the inward movement of the head the lugs come in contact with fingers attached to the rods, causing the said rods to roll in their journals sufficiently to move the holding-fingers clear of the partitions, substantially as and for the purpose specified.

3. In a cider-press provided with a movable cover, blocks fixed upon each side of the top of the cover, in combination with wedge-shaped lugs fixed to the side of the press, and located substantially as and for the purpose specified.

4. In a cider-press, a movable hollow partition, F, made of a series of horizontal strips, *f*, tacked on each side of the vertical strips *g*, having a space between each horizontal strip, and an open space being left between the two rows of horizontal strips by the vertical strips, in combination with devices for holding the same in position in the press and then releasing the same as the press is operated, substantially as and for the purpose specified.

5. The combination, with the frame A and press B, having movable end C and stationary end D, of the wedges E, fitted into notches made in the frame A, and adapted to hold the end D away from the frame, substantially as and for the purpose specified.

293,796. FOLDING BEDSTEAD AND CRIB. CHARLES T. SHEPARD, Albany, N. Y., assignor of one-half to William Appleton, Jr., same place. Filed June 5, 1883. (No model.)



Claim.—1. In a folding bedstead or crib, plate G, provided with pivot *e'*, and wear-plates F and *f*, in combination with bed-frame A and leg C, substantially as and for the purpose set forth.

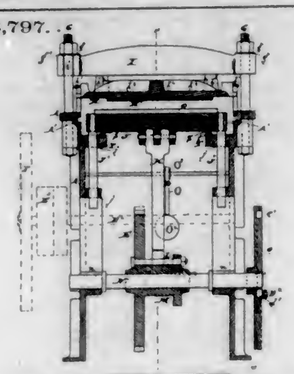
2. In a folding bedstead or crib, plates G, provided each with pivots *e* and *e'*, set relatively on the same vertical line, and having perforated stud *g*², in combination with bed-frame A, an end board having end brackets provided with gear, and leg C, provided with gear, as described, substantially as and for the purpose set forth.

3. In a folding bedstead or crib, the combination, with a bed-frame, of plate G, provided with a perforated right-angular flange, *g*, and with pivots *e e'* and perforated stud *g*², an end board having brackets, and folding legs, both provided with gears, as set forth; and pivoted upon pivots *e e'*, substantially as and for the purpose described.

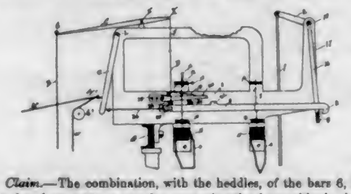
293,797. CASE PRINTING AND EMBOSSING MACHINE. HENRY F. SHEPHERD, Philadelphia, Pa. Filed Feb. 2, 1883. (No model.)

Claim.—The combination of the impression-plate, its guide-pins, guide-lugs, and stop-pins, substantially as and for the purpose specified.

293,797.



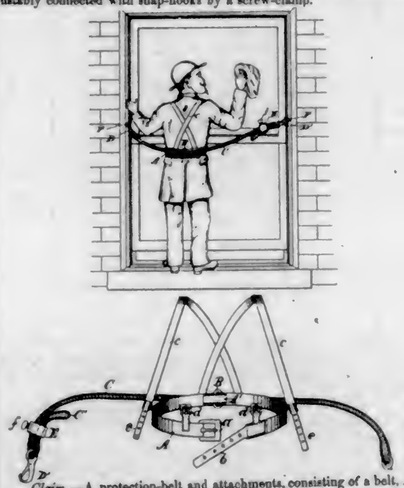
293,798. SHEDDING MECHANISM FOR LOOMS. THOS. SHILLOCK, Paterson, N. J. Filed Feb. 24, 1883. (No model.)



Claim.—The combination, with the heddles, of the bars 6, having hooks 8 and stops 21, means for connecting the bars with the heddles, the pawls 20, springs 19, pins 7 and 14, the pattern-cards for acting upon said needles, means for presenting the cards to the needles, the bar 9, means for operating the same, the bar M, wire D, link F, lever C, cord B, and handles A, substantially as set forth.

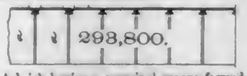
293,799. PROTECTION-BELT AND ATTACHMENT. GEO. B. SIMKIN, Chicago, Ill. Filed Apr. 25, 1883. (No model.)

Brief.—A belt is united by a ring to a rope passed behind the person at work. The belt is sustained by shoulder-braces. The rope is adjustably connected with snap-hooks by a screw-clamp.



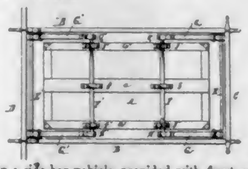
Claim.—A protection-belt and attachments, consisting of a belt, A, the ring B, the buckle *a* and strap *b*, the shoulder-braces C, the buckles *d*, and straps *e*, in combination with rope C, the snap-hooks D and collar E, the thumb-screws *f*, and support-staples F, substantially as and for the purpose described.

293,800. BRICK. GEO. W. SIMONDS, Boston, assignor of two-thirds to James F. Emerson, Wakefield, and George O. Carpenter, Boston, Mass. Filed June 9, 1883. (No model.)



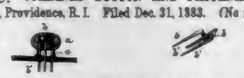
Claim.—A brick having a marginal groove formed in one or more of its sides in close proximity to one of its vertical faces or ends, said grooves being formed to constitute a space between the proximate surfaces of two bricks of suitable form to receive and secure mortar, as set forth.

293,801. VEHICLE-SPRING. EDWARD S. SMITH, Ovid, Mich. Filed May 29, 1883. (No model.)



Claim.—In a side-bar vehicle provided with front and rear equalizers, the combination, with the vehicle-body, of front and rear torsion-springs rigidly secured to the body intermediate of their length, and provided with loose bearings *f'* at the edges of the body, and a front and rear pair of side springs, having one of their ends connected with the ends of the torsion-springs, their opposite ends being connected with the equalizer, substantially as described.

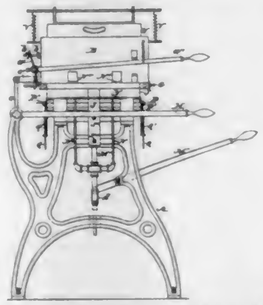
293,802. COMBINED BUTTON AND FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Dec. 31, 1883. (No model.)



Claim.—1. A leather, leather-board, or analogous button provided with three or more substantially-straight integral prongs partially embedded in the button and projecting from its bottom, substantially as and for the purpose set forth.

2. The button *a*, provided with the metallic fastening consisting of a head-bar, *b*, and the straight prongs *b'*, the head-bar *b* wholly, and the prongs *b'* partially, embedded in the button, and said prongs projecting from the bottom of the button, and the tube or annulus *c*, all substantially as and for the purpose set forth.

293,803. CANDY-DROPPING MACHINE. JOHN SMITH, Philadelphia, Pa., assignor to Croft, Wilbur & Co., same place. Filed Dec. 7, 1883. (No model.)



Claim.—1. In a confectionery-dropping machine, a material-box provided with a bottom and a false bottom, both perforated, and having between them a perforated slide or cut-off, substantially as and for the purpose set forth.

2. In a confectionery-machine, a horizontally and vertically moving material-box, and a cut-off below the same, substantially as and for the purpose set forth.

3. Cut-off wires connected with a supporting-frame, whereby they may be relieved of strain, or subjected thereto, as desired, substantially as and for the purpose set forth.

4. Cut-off wires connected with the supporting-frame by means of adjustable plates, substantially as and for the purpose set forth.

5. In a confectionery-dropping machine, a material-box and a cut-off device, in combination with a rising and falling table having a clamp for the pan or sheet on which the confectionery is dropped, substantially as and for the purpose set forth.

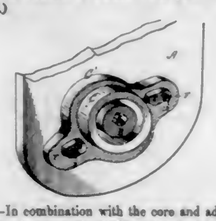
6. In a confectionery-dropping machine, a rising and falling table and a clamp, the latter being raised by the table, substantially as and for the purpose set forth.

7. In a confectionery-dropping machine, clamping-wires mounted freely on the frame of the machine, and a rising and falling table located below said wires, whereby a pan or sheet may be placed on the table and clamped by the wires when the rising table comes in contact with the wires, the table and the wires then advancing to the pendent material on the bottom of the supply-box, substantially as and for the purpose set forth.

8. In a confectionery-dropping machine, a material-box and a rising and falling table provided with stops which abut when the table is elevated, substantially as and for the purpose set forth.

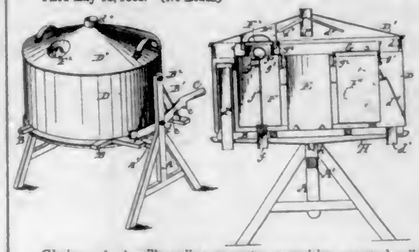
9. A sliding box with a perforated bottom and sliding cut-off, a wire cut-off, a rising and falling table and clamp controlled thereby, and means for operating said box and table, combined and operating substantially as and for the purpose set forth.

293,804. TILE-MACHINE. JOHN S. SMITH, Jackson, Mich., assignor of one-half to Theodore G. Bennett, same place. Filed Nov. 30, 1883. (No model.)



Claim.—In combination with the core and adjustable sleeve of a tile-machine die, the eccentrics E E', acting in holes in the base-plate of the sleeve to adjust its position in relation to the core, substantially as set forth.

293,805. MILK-COOLER. JULIUS G. SMITH, Margaretville, N. Y. Filed May 18, 1883. (No model.)



Claim.—1. A milk-cooling apparatus comprising a central cylindrical ice or water receptacle, a contentric encircling milk-receptacle, and an outer encircling water-receptacle connected to the central ice or water receptacle by a passage radially through the milk-receptacle, substantially as specified.

2. The combination of a main exterior water-receptacle and a circular milk-receptacle having a water-passage radially therethrough, each of the receptacles having an inlet and an outlet, substantially as specified.

3. The combination of the cover D', pipe d^2, and divergent pipes d^4, having one end projecting within the pipe d^2, substantially as shown and described.

4. The combination of the receptacles D and F, the cover D', provided with flange D^2, surrounding and depending from an opening therein, with the cover G, having upward flanges g^2 g^4, and cover F^2, substantially as shown and described.

5. The combination of the water-receptacle D, milk-receptacle F, having a radial passage, F', and the central ice-receptacle, E, substantially as described.

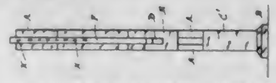
6. The combination of the uprights A, pendent bent rods B', platform B, suspended therefrom, water-receptacle D, supported on said platform and containing milk and ice receptacles, with the lever C, provided with notches *c c*, substantially as described.

7. In a milk-receptacle having a discharge-opening, the annular cover G, provided with upward flanges g^2 and g^4, in combination with a plug, and the handle or rod f' thereof, provided with a branch, f^3, to rest upon the flange g^2, substantially as and for the purpose described.

8. The combination of a water-receptacle, an annular milk-receptacle therein, and an ice-box within the latter, with a drip-pan under the water-receptacle, having openings for the passage of the water and milk discharging pipes, substantially as and for the purpose described.

9. The combination of water and milk receptacles provided with stuffing-boxes, with a pipe, I, passing through the latter, its slotted bracket i^2 and cover i^3, having a stem extending through the bracket, and lug i^5, substantially as and for the purpose set forth.

293,806. WAGON-JACK. NICHOLAS SMITH, Perry, N. Y. Filed May 19, 1883. (No model.)



Claim.—1. In a wagon-jack, the combination of slide E, having axle-rest D, with the follower-block M, as described, and for the purposes set forth.

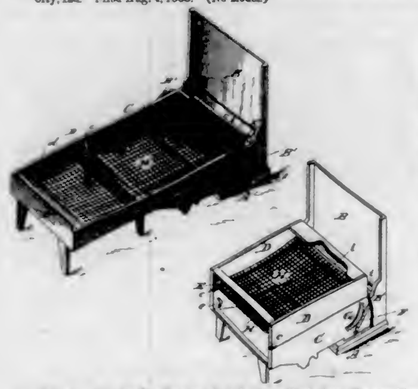
2. In a wagon-jack, the standards A, base B, braces C C', block G, slide E, having axle-rest D, follower-block M, and strap F, having slots K, in combination with lever H, having hook H', as described, and for the purposes set forth.

293,807. TRACE-CARRIER. WILLIAM M. SMITHER, Keene, Ky. Filed Nov. 12, 1883. (No model.)



Claim.—As an article of manufacture, a trace-carrier constructed, as herein described, of a single piece of metal having formed upon it a corrugated tongue, two unbroken supporting-loops, and its lower end curved under and projecting upward, and adapted to be secured to the body of the carrier and to the back-band of the harness by the same rivets, substantially as described.

293,808. WARDROBE-BEDSTEAD. WILLIAM D. SNYDER, Columbia City, Ind. Filed Aug. 4, 1883. (No model.)

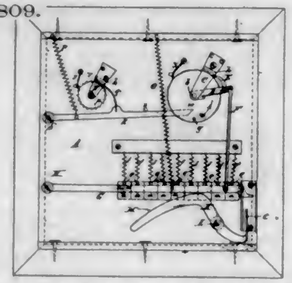


Claim.—In a folding bedstead of the described class, the combination of the stationary frame or casing having ways or supports F F, the bed-section C, having segments or side bearings, G G, traveling upon the fixed supports F, the bed-section D D', hinged to the outer end of the inner section, C, the spring-actuated fastenings E *e*, and the flexible bed-bottom fixed at one end in the foot-board, and attached at the other end to the fixed back of the stationary frame or casing, as and for the purpose shown and set forth.

293,809. ADDING-MACHINE. CYRUS G. SPALDING, Springfield, Mass. Filed Oct. 10, 1883. (Model.)

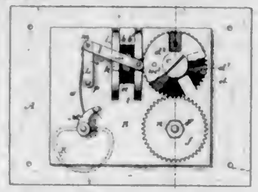
Claim.—In an improved adding-machine, the combination of the slides or keys, each provided with a projection on its rear side, the pivoted controlling-bar G, against which the said projections have a bearing, and a pivoted stop-lever, K, against one arm of which said projections strike, and against whose other arm the said pivoted controlling-

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bar strikes when the said slides are moved downward, whereby the limit of the downward movement of the said slides and said bar is made coincident and positive, substantially as described.

293,810. PERMUTATION-LOCK. DAVID R. STEDMAN, Elizabeth, N. J., assignor of one-half to George H. Horning, same place. Filed June 19, 1883. (Model.)



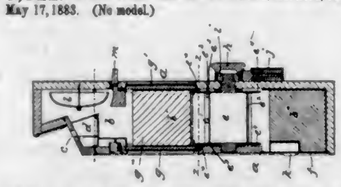
Claim.—1. In a permutation-lock, a bolt having its actuating or throwing lever or levers operatively united with a cam operating independently of the dial or tumbler mechanism, in combination with a yielding connection between said lever or levers and cam, whereby the force of the cam is compensated, substantially as herein set forth.

2. In a permutation-lock, the combination of a series of notched tumblers, a bolt, one or more levers for moving or throwing said bolt, the cam M, and the spring *o*, united to said lever or levers at one extremity, and having a free end projecting in the path of said cam, substantially as and for the purpose set forth.

3. In a permutation-lock, the combination, with the lever mechanism for throwing the bolt, of a cam, for operating said mechanism, and a pendent handle attached to the spindle of the cam, and so arranged that a sufficient amount of its weight to overbalance the cam will normally hang below the axis of said spindle, substantially as herein set forth, whereby the cam may be normally maintained in engagement with said lever mechanism, substantially as herein shown and described.

4. In a permutation-lock, the combination, with the plate B, having projections *i i*, of the series of notched tumblers, the bolt A, mounted in or upon said projections, the lever *l*, pivoted to said bolt at one extremity, the lever L, pivoted to said plate at one end and pivoted to the lever *l* at its other extremity to form a toggle-joint, the cam M, and the spring *o*, united at one end to the lever L, and having its free end projecting in the path of said cam, substantially as herein set forth.

293,811. FARE-BOX. TIMOTHY B. STEWART, Hartford, Conn. Filed May 17, 1883. (No model.)

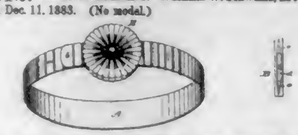


Claim.—1. In a fare-box, in combination, the frame *a*, having the receiving-section *b*, with trough *d* for guiding the fares, the inspection-section with side panes, *g g' g''*, and the vertical cross-partitions *g'''* of glass, the rotary cylinder *e*, with compartments at the bottom of the latter section, and the drawer *f*, having the vertical partition *b''*, all substantially as described.

2. In a fare-box of the within-described class, the rotary cylinder *e*, having peripheral compartments, and fast to its axis that projects through the side of the box the handle *h*, with the flat surfaces co-operating with

the spring-impelled broad-faced bolt *i*, whereby the cylinder may be held in place to receive the fares, or rotated in either direction to deposit them all substantially as described.

293,812. BAND-FASTENING. WILLIAM W. STEWART, Brooklyn, N. Y. Filed Dec. 11, 1883. (No model.)



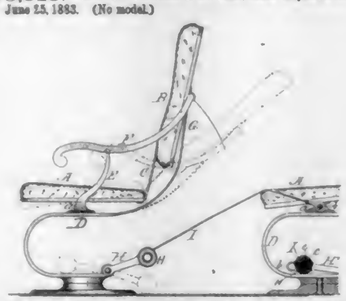
Claim.—1. A fastening for bands or straps, consisting of a movable clamp embracing the same, and provided with a slot or passage through it of sufficient width to admit two superposed layers or thicknesses of the band or strap, and with a lateral extension of said slot or passage, the thickness of which is less than that of the superposed layers of the band or strap, whereby, when the clamp is turned until the layers of the band or strap are forced into this lateral extension, they are pressed tightly together and so fastened, substantially as set forth.

2. The combination, with the end *a* of a band, of a clamp, B, pivoted thereto, and provided with a passage or slot, *d*, therethrough, and with a lateral contracted extension, *e*, of said passage, constructed and adapted to operate substantially as set forth.

3. The combination of band A, the ends *a b* of which are corrugated with interlocking corrugations, with a clamp, B, connected to said band, and having a slot or passage, *d*, of sufficient thickness to admit the ends *a b* and permit them to be slid past each other therein, and a lateral extension, *e*, of said passage contracted to less thickness than the superposed ends *a b* when their corrugations are interlocked, adapted to operate substantially as set forth.

4. The combination of band A, clamp B, formed with passage *d* and contracted lateral extension *e*, and pivot *c*, joining the clamp to the band, substantially as set forth.

293,813. CHAIR. GARLAND B. ST. JOHN, Cedar Rapids, Iowa. Filed June 25, 1883. (No model.)



Claim.—1. The combination, in a reclining-chair, of a pivoted seat and an independently-pivoted back, with a connecting-webbing, pivoted arms F, having rack-teeth, the standard E, adapted to engage with said teeth, and a spring-frame, D, and the supporting-base therefor, all constructed substantially as described.

2. In a chair, the combination of the flexible web I, secured at one end to the seat-pivot *a*, and the other end to a winding-up spring-roller, and the pivoted arm H', and a supporting-base, substantially as described.

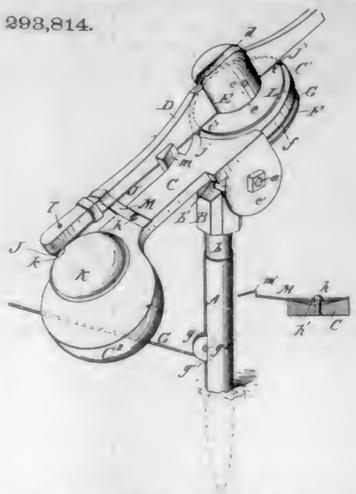
3. In a reclining-chair, the combination of the main frame, the centrally-pivoted back, the centrally-pivoted seat, and the flexible webbing connecting them, said webbing being secured to the lower part of the back, and extending across to the seat-frame, substantially as shown and described, whereby a continuous supporting-surface is formed between them, and they are made to fit the form of the occupant, as set forth.

293,814. BALL-TRAP. CHARLES F. STOCK, Peoria, Ill. Filed Aug. 14, 1883. (No model.)

Claim.—1. The combination, with the casting-arm, of the hollow post A, carrying the grooved pulley *g* in a slot, the head B, having hollow shank *b*, fitting into said post, the support C, hinged to said head at *a*, and having hole *e* in its end C', the hub E, turning in said hole, and having slot *d*, the edge-grooved pulley F, placed horizontally in the lower end of the hub, the pulley H on hinge-pin *a*, and the plates *b' c'*, forming recess *a'*, and respectively attached to head B and support C, with the cord G attached to the edge of pulley F, and passing between the plates and over pulleys H *g*, as shown and described.

2. The combination, with a throwing-arm, D, having the inclined

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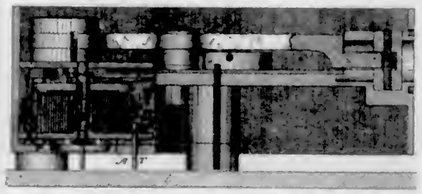


stud *l'* near one end, a supporting-standard, and suitable operative mechanism, of the under clamp-plate, J, having the front hole, *l*, and rear studs, *j j'*, the support C, having cam L, fitting between said studs and provided with the opposite projection and depression, *i i'*, whereby a clay pigeon may be thrown, as described.

3. The combination, with the throwing-arm D, of the support C, weighted at the end C², and provided with a stud, *m*, arranged to be struck by said arm, as described.

293,815. TIME-LOCK. EMORY STOCKWELL and HERBERT C. STOCKWELL, Stamford, Conn., assignors to the Yale & Towne Manufacturing Company, same place. Filed Sept. 25, 1883. (No model.)

Brief.—The object of the invention is to release the mainspring and allow it to uncoil without running down the clock-work, and thus unlocking the safe in case of an attack upon the latter, as by an explosion directed against it.



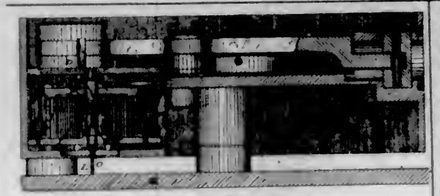
Claim.—1. In a time-lock, the combination of a spring-barrel set in bearings in which it may rotate, a movable pin or stop so constructed and arranged that it normally prevents the rotation of the barrel, but when moved longitudinally, by concussion or otherwise, will release the rotary barrel, and the mainspring within the barrel, which, when the barrel is thus released, will cause it to rotate, whereby the mainspring will be uncoiled from its outer end, substantially as and for the purpose set forth.

2. The combination of the mainspring, the flanged barrel, the ring provided with the hole or socket intersecting the flange of the barrel, and the shouldered pin T, all constructed and operated substantially as set forth.

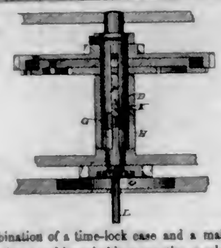
293,816. TIME-LOCK. EMORY STOCKWELL and HERBERT C. STOCKWELL, Stamford, Conn., assignors to the Yale & Towne Manufacturing Company, same place. Filed Sept. 26, 1883. (No model.)

Brief.—The object is to disconnect the mainspring from the clock-work, so as to prevent the latter from running down in the event of its being broken by a blow, as of an explosion directed against the safe.

Claim.—1. The combination of the mainspring and winding-post of a time-lock and connecting mechanism between them, constructed and arranged to automatically disconnect the inner end of the mainspring from its operative connection with the post when the post is moved longitudinally by concussion or the like, substantially as described.



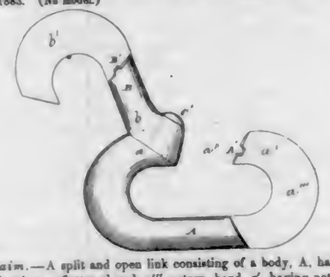
293,816.



2. The combination of a time-lock case and a mainspring detachably secured at its inner end by suitable connecting mechanism to a winding-post which projects from the back of the case, and is constructed and arranged to slide inward when struck on its projecting end, and to thereby release the connection between the inner end of the spring and the post, substantially as and for the purpose set forth.

3. The combination of the mainspring, the inner end of the winding-post having the annular and longitudinal grooves, and the sleeve with its stud and short spline, all constructed and operated together substantially as set forth.

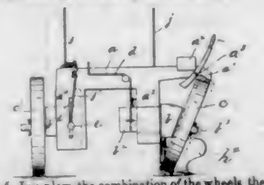
293,817. OPEN LINK. THOMAS J. TERRY, Ashland, Mo. Filed June 26, 1883. (No model.)



Claim.—A split and open link consisting of a body, A, having a return-bend, *a*, a flattened end, *a'''*, return-bend, *a'*, having notch A', and pivot-pin C, having head C', and the part B, hinged to the pivot-pin, having flattened end *b'*, and projection B', fitting the flattened end and recess in the body, as set forth.

293,818. WHEEL-PLOW. ROBT. A. THOMPSON, Montrose, Mo. Filed Dec. 14, 1882. (No model.)

Brief.—The furrow-wheel has a lateral adjustment by a lever to slide the spindle. An arm of the frame projects over the wheel to clear it, and has a side-cleaner; plow-beams attached to a forward-projecting bail, on which is a lever to hold the plow-beams down.



Claim.—1. In a plow, the combination of the wheels, the arch having its top bar extended over the furrow-wheel in position to scrape the periphery thereof, and the scraper *a⁶*, pivoted on the extension *a'*, and working in a line at right angles to the plane of the wheel, and adapted to be turned down against the edge thereof, and provided with a handle above its pivotal center, whereby it may be operated by the driver, substantially as set forth.

2. The improved sulky for plows, consisting of the arch having the depending arm *a⁴*, constructed with a vertical mortise, *b⁴*, open at its lower end and outer side, and having its inner portion made larger than its open side, the arm *a³*, having lateral opening *a⁴*, the wheel *c'*, having its axle *b'* fitted to and sliding vertically in the mortises *b⁴*, and the furrow-wheel *c*, spindled on the axle *b*, the shank *b³* of which is placed and adjustable laterally in the opening *a⁴*, and the levers *f* and *d*, connected with and operating, respectively, the wheel *c'* and the wheel *c*, as set forth.

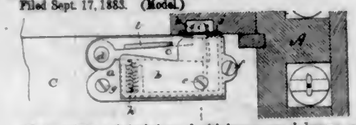
3. In a wheel-plow, the combination, substantially as described, of the frame G, having its rear end pivoted to the wheel-frame and extended forward therefrom, the plow-standard having its forward end pivoted to the forward end of the frame G, the rack *i*, mounted on the plow-standard, the bar *g²*, secured to the frame G, and adapted to engage the rack *i*, and the lever *j*, pivoted to the frame G, and connected with the plow-standard, as and for the purposes specified.

293,819. REIN-HOLDER. JUDSON L. THOMSON, Syracuse, N. Y. Filed June 21, 1883. (No model.)



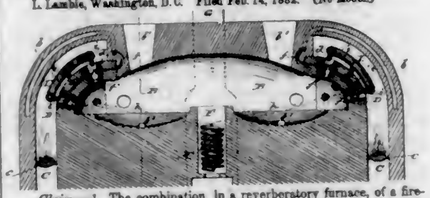
Claim.—The combination, with a whip-socket clamp, of an arm integral therewith and projecting laterally therefrom, and a rein-holding clamp secured to the free end of said arm, substantially in the manner described and shown.

293,820. SASH-FASTENER. SAMUEL M. TIMERAN, Taunton, Mass. Filed Sept. 17, 1883. (Model.)



Claim.—The sash-lock formed with base *a*, cap *b*, lever *c*, and spring *A*, said lever being pivoted at one end to plate *a*, and at its opposite end formed with angle *i*, and having a thumb-piece, *l*, by which to retract it, all as specified.

293,821. FURNACE FOR BURNING GARBAGE, ROASTING ORES, &c. GEO. B. M. TOWER, New York, N. Y., assignor of one-half to Edward L. Lambie, Washington, D. C. Filed Feb. 14, 1882. (No model.)



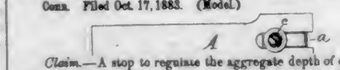
Claim.—1. The combination, in a reverberatory furnace, of a fire-place and a series of tapering tuyeres built in the walls and communicating with the reducing or smelting chamber, and pipes for conveying superheated steam, arranged therein, and having openings to discharge the steam in said tuyeres obliquely to their axes, whereby the gases from the fire place or places are intimately mixed with said steam, and mixture discharged into the reducing-chamber in a whirling manner, substantially as and for the purpose specified.

2. The tapering tuyere E, having openings through it to discharge air therein obliquely to its axis and the bridge-wall of the furnace, having an air-space surrounding the tuyere, in combination with a pipe arranged therein, and having openings for discharging superheated-steam jets obliquely to the axis of the tuyere, substantially as and for the purpose specified.

3. In a reducing-furnace, the combination, with the tapering tuyeres E, flue or flues D, and flue or flues G, of the coiled water pipe or pipes H, pipe or pipes I, having roses *i*, arranged to discharge in the tuyeres E obliquely to their axes, and connected with the pipe or pipes H, substantially in the manner as and for the purpose specified.

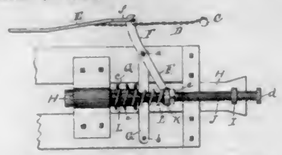
4. The pipe I, for conveying superheated steam, constructed in triangular shape, as shown, in combination with a steam-supply pipe and a series of tuyeres, substantially as and for the purpose described.

293,822. GAGE FOR PLANE-BITS. JUSTUS A. TRAUT, New Britain, Conn. Filed Oct. 17, 1883. (Model.)



Claim.—A stop to regulate the aggregate depth of cut, attached directly to the cutter of a matching-plane, with the body of the stop within the slot of the cutter, substantially as described, and for the purpose specified.

298,823. CAR-BRAKE. CHARLES TREPONING, Lead City, Dak. Filed Dec. 31, 1883. (No model.)

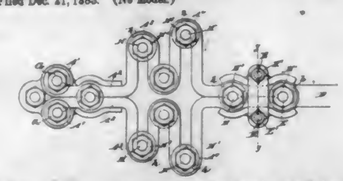


Claim.—1. The combination, with a car-brake having a hooked rod or its equivalent, forming part of the connection between the brake-lever and the brake-operating handle, a draw-head, and a spring therefor, of a buffer-rod hung to project beyond the draw-head, and a lever or levers connecting said buffer-rod with the aforesaid hooked rod, and having a pivotal connection with the draw-head, substantially as shown and described, whereby an inward movement of the buffer-rod will apply the brake, and an inward movement of the draw-head will release the brake, as specified.

2. The combination, with the hooked rod E, the draw-head H, having a pivot, *a*, attached to it, and the spring *c*, to force the draw-head outward, of the lever G, having a fixed pivot, *b*, and engaged by the pivot *a*, the lever F, pivoted to lever G, to engage the hooked rod E, the actuating-rod J, pivoted to lever F, and the spring L, substantially as and for the purpose specified.

3. The combination, with the draw-head H and the spring *c*, of the brake-actuating rod J, connected by levers and pivots with said draw-head and with the car-brake, said rod J being provided with a screw-thread, and a spring whereby the draw-head may be pushed out, and the actuating-rod may be still farther pushed out and may be adjusted relatively to the draw-head, as shown and described.

298,824. VEHICLE-SPRING. WILLIAM VAN ANDEN, New York, N. Y. Filed Dec. 21, 1883. (No model.)



Claim.—1. The carriage-spring described, having parallel or nearly parallel convolutions A^2 A^4, adapted to serve as herein specified.

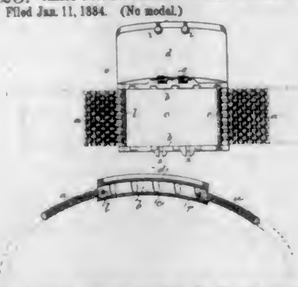
2. The carriage-spring described, having convolutions or folds A^2 A^4 increasing in length from the supporting-point A′ outward, as herein specified.

3. The carriage-spring described, having convolutions A^2 A^4, with the bends thickened by upsetting, so as to offer a greater cross-section at those points, substantially as herein specified.

4. A carriage-spring having convolutions A^2 A^4, in combination with re-enforcing clamps H H′, adapted to serve as herein specified.

5. The carriage-spring described, in two parts, having pairs of convolutions A^2 extending in opposite directions, and pairs of convolutions A^4, of greater length, extending also in opposite directions, combined and arranged to serve substantially as and for the purposes herein specified.

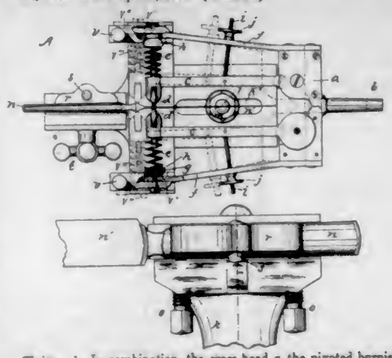
298,825. CLASP FOR BRACELETS. SAMUEL WALLACH, New York, N. Y. Filed Jan. 11, 1884. (No model.)



Claim.—1. The combination, with the flat bracelet-chain, of a clasp having a bottom, sides, and a hinged cover, there being grooves in the inner surfaces of the sides, and a cross-bar at the end of the chain passing into such grooves, substantially as set forth.

2. The bracelet-chain having a cross-bar at one end and an attaching-pin at the other end, in combination with a clasp that is provided with a movable cover, and inclined grooves in the opposite faces of the clasp to receive the ends of the cross-bar, substantially as set forth.

298,826. BURNISHING MACHINERY. WILLIAM O. WAY, Newington, Conn. Filed Sept. 15, 1883. (No model.)



Claim.—1. In combination, the cross-head *a*, the pivoted burnish-bearing arms *c*, the spiral springs *e*, and the arms *f*, wholly supported against the outward pressure of said springs by said cross-head, all constructed and arranged to operate substantially as shown and described, and for the purpose set forth.

2. In combination, the cross-head *a*, the two pivoted burnish-bearing arms *c*, the spiral springs *e*, the arms *f*, wholly supported against the outward pressure of said springs by said cross-head, and the adjusting screws and nuts *i i*, all constructed and arranged to operate substantially as shown and described, and for the purpose set forth.

3. In combination, the cross-head *a*, the pivoted burnish-bearing arms *c*, the arms *f*, the spiral springs *e*, and the rubber spring-beds *g*, all constructed and arranged to operate substantially as shown and described, and for the purpose set forth.

4. In combination, the stock-holding standard *k*, bearing the clamp-jaw *k‴*, the pivoted clamp *r*, the bolt *s*, and the nut *t*, all constructed and arranged to operate substantially as shown and described, and for the purpose set forth.

5. In combination, the stock-holding standard *k*, bearing the clamp-jaw *k‴*, the pivoted clamp *r*, the bolt *s*, the nut *t*, and the leveling-screws *o*, all constructed and arranged to operate substantially as shown and described, and for the purpose set forth.

6. The combination of the posts *v* and the pattern-plates *v′* with the pivoted burnish-bearing arms and suitable intermediate parts, substantially as described, and for the purpose set forth.

7. The combination of the adjustable posts *v* and the pattern-plates *v′* with the pivoted burnish-bearing arms and suitable intermediate parts, substantially as described, and for the purpose set forth.

298,827. ALLOY FOR AND PROCESS OF THE MANUFACTURE OF SILICIOUS COPPER AND SILICIOUS BRONZE. LAZARE WEILLER, Angoulême, France. Filed June 28, 1883. (No specimens.) Patented in France Oct. 31, 1882, No. 151,846; in England Nov. 7, 1882, No. 5,316, and in Italy Dec. 14, 1882.

Claim.—1. Sodium bronze, as a new composition of matter.

2. The method of making silicious copper or bronze by introducing sodium or sodium alloy and a decomposable compound of silicium—such as fluosilicate of potash—into melted copper or bronze, substantially as described.

3. In the manufacture of silicious copper or bronze, the improvement consisting in alloying the sodium with tin or bronze and afterward using the said alloy in the said manufacture, substantially as described.

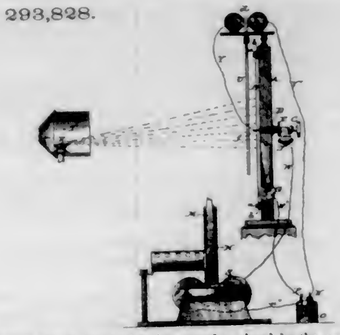
4. In the manufacture of silicious bronze, the improvement consisting in adding tin and sodium together with fluosilicate of potash to the melted copper or bronze, substantially as described.

298,828. THERMOSTATIC ELECTRIC REGISTERING APPARATUS. CHARLES W. WYNN, Brooklyn, assignor of one-half to Charles Kruse, New York, N. Y. Filed Oct. 10, 1882. (No model.)

Claim.—1. The method as herein described of opening and closing an electric circuit to produce a movement of the armature of an electro-magnet included in said circuit by the contraction of a sensitive strip or plate under the influence of an obstruction or interruption of constant heat-rays made to fall upon said plate, substantially in manner as set forth.

2. The combination, with a sensitive strip which will expand when submitted to heat and contract when the heat-rays are intercepted, of an

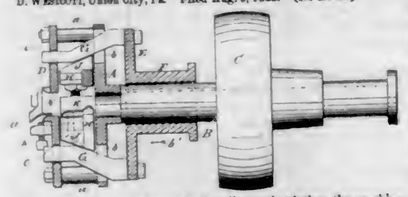
293,828.



electric circuit arranged to be opened or closed by the expansion and contraction of said strip, an electro-magnet included in said circuit, and a registering device actuated by and indicating the movements of the armature of said electro-magnet, all substantially in the manner and for the purpose herein set forth.

3. The combination, with a burner or device, R, producing radiant heat, a sensitive strip, C, expanded by the projection thereon of the radiant heat and contracted by its interception, and an electric circuit, W W′, arranged to be opened by the expansion of said strip and to be closed by its contraction, and which includes therein an electro-magnet, S, actuating an indicating device, H K, of an auxiliary electric circuit, V V′, arranged to be closed by the expansion of said strip C and to be opened by its contraction, and electro-magnet *d*, included in said circuit, and a slide or shutter, U, arranged to pass between the strip and the burner to intercept the heat-rays when said auxiliary circuit is closed, and to drop away automatically from between the strip and burner when the circuit is opened, all substantially in the manner and for the purpose herein set forth.

293,829. CUTTER-HEAD FOR HANDLE-TURNING LATHES. JOHN D. WESCOTT, Union City, Pa. Filed Aug. 9, 1883. (No model.)



Claim.—1. In a cutter-head for handle-turning lathes, the combination, with the tubular shaft B, provided with the apertured plate A and the apertured plate D, held in front of and some distance from the plate A, of the knife-carrying arms H, pivoted between the said plates, the sliding plate E, and the arms G, secured to said plate E, and passing through the apertures of the plates A D, substantially as herein shown and described.

2. In a cutter-head for handle-turning lathes, the combination, with the plates A D, attached to a tubular shaft, B, of the knife-carrying arms H, pivoted to the plates A D, the weight-blocks L, attached to the arms H, and of devices for adjusting the distance the arms H are to be separated by the centrifugal force, substantially as herein shown and described, and for the purpose set forth.

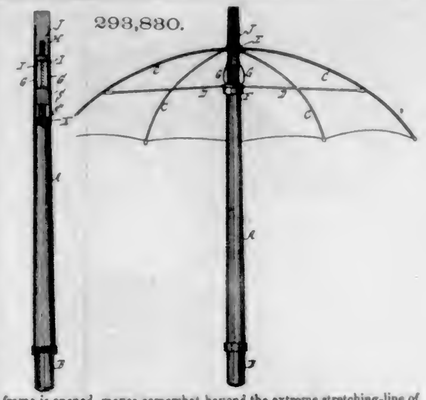
3. In a cutter-head for handle-turning lathes, the combination, with the plates A D, attached to a tubular shaft, B, of the knife-carrying arms H, pivoted to the plates A B, the beveled projections J on the ends of the arms H, and the adjustable beveled arms G, passing through the plates A D, substantially as herein shown and described, and for the purpose set forth.

4. In a cutter-head for handle-turning lathes, the combination, with the plates A D, attached to a tubular shaft, B, of the knife-carrying arms H, pivoted to the plates A D, the beveled arms G, passing through the plates A D, and the knives N and O, attached to the outer surface of the outer plate, D, substantially as herein shown and described, and for the purpose set forth.

293,830. COMBINED CANE AND UMBRELLA. HENRY A. WHITING, Brooklyn, and WILLIAM J. WINGHART, New York, N. Y. Filed Nov. 22, 1883. (No model.)

Claim.—1. The combination, in an umbrella-frame, of a series of ribs hinged to a crown-piece, and a series of stretchers hinged at their outer ends to the ribs and at their inner ends to a runner, which, when the

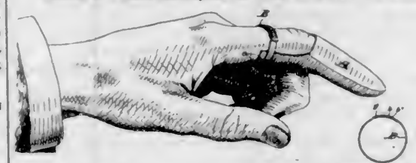
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frame is opened, moves somewhat beyond the extreme stretching-line of the stretchers, and when the frame is shut moves to a point beyond the extreme ends of the ribs.

2. The combination, with the cane and with the spring-stops which serve to arrest the runner when the umbrella-frame is opened, of a cap which is placed upon the cane to conceal and protect said spring-stops.

293,831. RING FOR SECURING FINGER-COTS IN POSITION. WILLIAM H. WICKERS, Indianapolis, Ind. Filed Oct. 3, 1883. (No model.)



Claim.—1. The combination of a finger-cot and a separable ring, the ends of said separable ring being adapted to be adjustably secured together, and said cot being adapted to be secured to said ring, whereby said cot may be readily secured in place, substantially as set forth.

2. The combination, with the cot A, its front part being extended downwardly, and said extended part being provided with slots, of the ring B, having a slot, *b*, in one end and a series of projections, *b′*, in the other, adapted to engage with said slot, substantially as set forth.

3. The combination of the cot A, having its back part extended down only to the middle joint of the finger and its front part extended down to the lower part of the finger, and provided with slots *a*, and the separable ring B, inserted through said slots, and adapted to fit around the finger and be adjustably secured together, substantially as described, and for the purposes specified.

293,832. REFRIGERATING CAR AND APPARATUS FOR SHIPPING MEAT. HERMAN G. WIDMAN, San Francisco, Cal. Filed Nov. 12, 1883. (No model.)

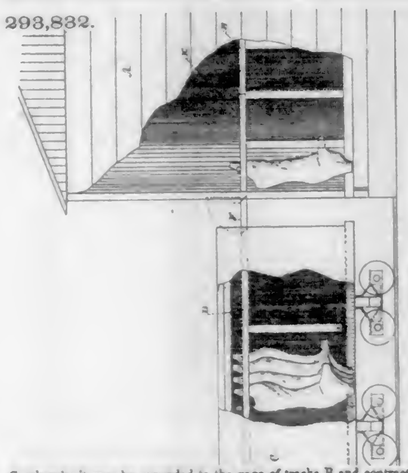
Claim.—1 An improved apparatus for shipping meat, consisting of a slaughter-house building having elevated tracks B, a meat-car having elevated tracks D, an elevated-track connection between said tracks, and gambrels fitted and traveling upon said tracks and adapted to suspend entire carcasses of slaughtered animals, whereby they may be pushed from the slaughter-house into the car, substantially as herein described.

2. In an apparatus for shipping meat, elevated tracks of a wide gage in the slaughter-house, elevated tracks of a narrow gage in the car, a switch-track connection between them, and an extensible gambrel adapted to travel on said tracks and to be switched from one to the other, substantially as herein described.

3. In an apparatus for shipping meat, the wide-gage tracks B in the slaughter-house, the narrow-gage tracks D in the car, the pivoted switch-track E, having a gage at its outer end corresponding with tracks D and connected therewith, and its inner end loosely in relation with tracks B, whereby its gage may be widened or contracted and an expanding gambrel adapted to travel on said tracks, substantially as herein described.

4. In an apparatus for shipping meat, the wide-gage tracks B in the slaughter-house, the narrow-gage tracks D in the car, the pivoted switch-track E, having a gage at its outer end corresponding with tracks D and connected therewith, and its inner end resting on inclined beams

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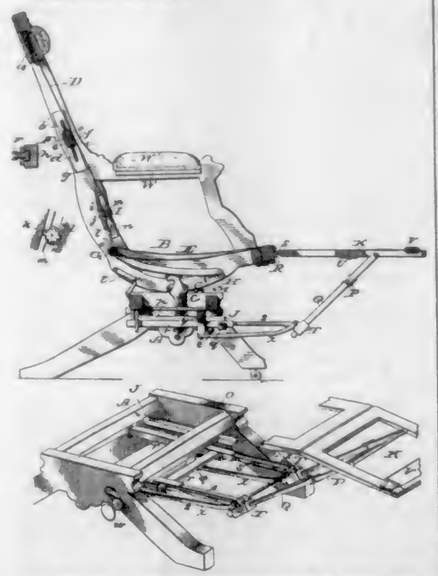


G, whereby it may be expanded to the gage of tracks B and contracted to the gage of tracks D, and an expanding gambrel traveling on said tracks, substantially as herein described.

5. In an apparatus for shipping meat, the tracks B D in the slaughter-house and car, of different gages, and the expanding switch-track E between them, as described, said tracks having grooves *a*, in combination with the gambrel H, constructed of telescoping sections, and having the studs *a'*, fitting said grooves, substantially as herein described.

6. In an apparatus for shipping meat, elevated tracks in the slaughter-house, elevated tracks in the car, and the tracks F connecting them, in combination with a gambrel mounted and traveling upon said tracks, substantially as herein described.

293,833. CHAIR. GEORGE C. WINCHESTER, New York, N. Y. Filed Sept. 30, 1882. (No model.)



Claim.—1. In a chair, the combination of a main frame, a flexible seat attached at its forward edge to said frame, links pivoted to the frame below the seat, in advance of its rear edge, and connected with said rear edge, substantially as shown, and springs, also connected with said rear edge, all substantially as shown and described.

2. In combination with a seat-supporting frame, seat E, attached at its forward edge to said frame, rod G; applied to the rear edge of the seat, links H, pivoted to the frame beneath the seat and forward of the rear edge thereof, and having rod G mounted in their free ends, and springs *a*, connected with the rod G, substantially as set forth.

3. In combination with a seat-supporting frame and a back-frame, back D, seat E, springs connecting the back-frame and the back, the seat connected at its front edge to the supporting-frame, a cross-bar, G, secured to the seat and back at the point of unison, and pivoted arm H, connected to the bar G and the seat-supporting frame, substantially as shown and described.

4. In combination with a chair-frame and a flexible back arranged therein, the support F, consisting of elastic strips *e*, connected to the back-frame, substantially as described, and rubber sheath or covering *f*, as and for the purpose explained.

5. In combination with frame B and flexible back D, the elastic support F, provided with heads or buttons *h*, and slotted plate *g*, substantially as and for the purpose described.

6. In combination with stationary base A and rocking body B, foot-rest K, jointed to the rocking body, supporting-legs Q, and pivotal supports for said legs applied to the base of the chair, substantially as shown and described, whereby the rest is permitted to move with and in substantially the same manner as the body of the chair.

7. In combination with frame B and back D, the elastic rod *i*, connected with the back-frame, substantially as described, and provided with rubber roll or sheath *j*.

8. In combination with the back B, recessed and provided with racks *l*, the rod *i*, provided with pinions *k* and knob *m*, and flexible covering D, as set forth.

9. In combination with a chair, tubular guides *r*, toothed racks *s*, shaft *u*, provided with pinions *t* and knob *w*, cross-bar *y*, and links *z*, with rods *x* and slides *p*, all combined and operating as explained, whereby the turning of the knob causes the racks, links, and cross-bar to move in or out, according to the direction of rotation.

10. In combination with base A and with racks *s*, applied thereto, and provided with pivoted sockets T, the rocking body B, provided with hooks E, and the foot-rest K, provided with eyes S and with pivoted legs Q, all substantially as shown and described.

11. The herein-described folding foot-rest, for use in connection with a chair, provided with supports, such as shown and described, consisting of main frame K, jointed across its middle, frame P, hinged, substantially as shown, to fold within frame K, and legs Q, hinged, substantially as shown, to fold inward across frame P from opposite sides, as and for the purpose set forth.

293,834. WINDMILL. OSWALD E. WINGER, Freeport, Ill., assignor of one-half to Elam B. Winger, same place. Filed Aug. 27, 1883. (No model.)



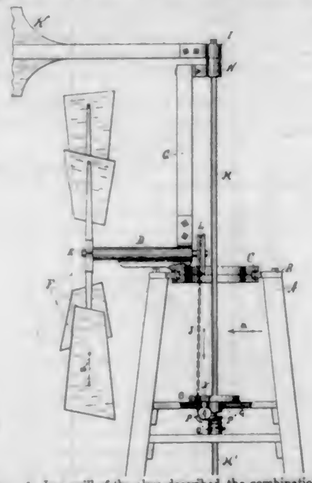
Claim.—1. In a windmill of the class described, the combination of a horizontal wind-wheel shaft consisting of two independently-journaled parts, rotating uniformly in their bearings, but having independent rotation about the vertical axis of the mill, a wind-wheel mounted on one of said parts, gearing connecting the other of said parts with the vertical shaft of the mill, and a vane rigidly attached to the bearing of the part so geared to the vertical shaft, substantially as and for the purpose set forth.

2. In a windmill of the class described, the combination of two horizontal shafts lying in the same horizontal plane, and journaled in independent bearings rotating freely about the vertical axis of the mill, a flexible coupling connecting said shafts and adapted to secure their uniform rotation in their bearings, but at the same time to permit independent rotation of said bearings about the vertical axis, a wind-wheel mounted on one of said shafts, gearing connecting the other with the vertical shaft of the mill, and a vane rigidly attached to the bearing of said last-named horizontal shaft, substantially as and for the purpose set forth.

3. The combination of the sleeve K'', independent collars B'' A'', rotating freely about said sleeve, bearings B A, formed integrally with said collars, respectively, shafts E F, rotating in said bearings, respectively, universal coupling H, connecting said shafts, and vane N, rigidly attached to said bearing, and collar B B'', substantially as shown and described, and for the purpose set forth.

4. The combination of the bearings A B, shafts F E, rotating in said bearings, respectively, coupling H, connecting said shafts, and vane N, rigidly attached to the bearing B at an acute angle to the vertical plane of the shaft E, substantially as shown and described, and for the purpose set forth.

293,835. WINDMILL. OSWALD E. WINGER, Freeport, Ill., assignor of one-half to Elam B. Winger, same place. Filed Sept. 8, 1883. (No model.)



Claim.—1. In a mill of the class described, the combination of the horizontal shaft of the wind-wheel, the vertical power-transmitting shaft of the mill, a band adapted to transmit the motion of the wind-wheel shaft to the vertical shaft, intermediate pulleys for changing the direction of said band, an independently-rotating vertical shaft to which said intermediate pulleys are attached, and a vane rigidly attached to said vertical shaft, substantially as shown and described, and for the purpose set forth.

2. The combination of the horizontal wind-wheel shaft E, the vertical power-transmitting shaft M', the independent vertical shaft M, and vane K thereto attached, the band J, connecting the shafts E M', and intermediate means, substantially as described, connecting said chain J and shaft M, whereby the reaction of the work performed by the mill operates to throw the vane K into the wind, substantially as shown and described, and for the purpose set forth.

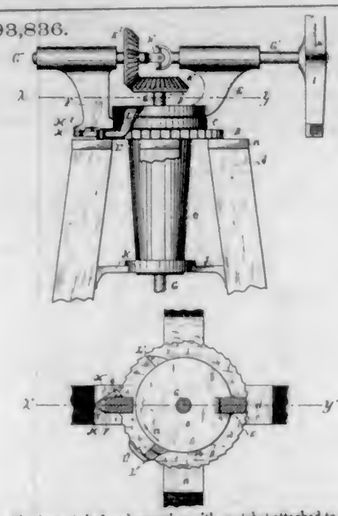
3. The combination of the shafts E M', chain-pulleys L P'', attached to said shafts, respectively, the vertical shaft M, block Q, rigidly attached thereto, and pulleys P P'', pivoted to said block, and the chain J, passing around said pulleys L P P' P'', and transmitting the motion of the shaft E to the shaft M', substantially as shown and described, and for the purpose set forth.

4. The combination of the turn-table C, bearing D, formed integrally therewith, vertical post G, rigidly attached to said bearing D, bracket H, rigidly attached to said post and vertically bored in the axial line of the mill, to serve as the bearing of the vertical shaft M, the shaft M, journaled and rotating in the bearing so formed, the vane K, rigidly attached to said shaft, and the pulleys P P'', connected with said shaft, substantially as shown and described, and for the purpose set forth.

293,836. WINDMILL. OSWALD E. WINGER, Freeport, Ill., assignor of one-half to Elam B. Winger, same place. Filed Dec. 6, 1883. (No model.)

Claim.—1. In a windmill of the class described, the combination of two horizontal shafts journaled in independent bearings and connected by means adapted to insure their simultaneous rotation in their bearings, but to permit limited independent rotation of their bearings about the vertical axis of the mill, a wind-wheel mounted on one of said shafts, gearing connecting the other of said shafts with the vertical power-transmitting shaft of the mill, a pawl attached to the bearing of said last-named horizontal shaft and engaging with a ratchet attached to the tower of the mill, said pawl and ratchet being adapted, when in engagement, to prevent the rotation of said bearing in a direction opposite to the direction of rotation of the vertical power-transmitting shaft, and means attached to the bearing of the wind-wheel shaft, whereby the rotation of said bearing beyond its prescribed limit shall disengage said pawl and ratchet and cause the rotation of the bearing to which said pawl is attached, substantially as shown and described, and for the purpose set forth.

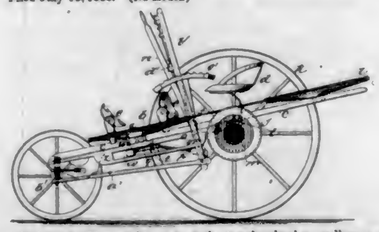
293,836.



2. In a windmill of the class described, the combination of two horizontal shafts journaled in independent bearings and lying in the same horizontal plane, a universal-joint coupling connecting said shafts, a wind-wheel mounted on one of said shafts, and a beveled gear mounted on the other and connecting it with the vertical power-transmitting shaft of the mill, a pawl attached to the bearing of said geared shaft and engaging with a stationary ratchet, and adapted to prevent the rotation of the bearing in the direction opposite to the direction of rotation of the vertical power-transmitting shaft, and means attached to the bearing of the wind-wheel shaft, whereby the rotation of said bearing, until it strikes the bearing to which said pawl is attached, disengages said pawl and ratchet, and causes the rotation of the bearing to which the pawl is attached, substantially as shown and described, and for the purpose set forth.

3. The combination of the bearings E F, ratchet-plate B, pawl M', attached to the bearing F and engaging with the ratchet-plate B, lugs L L', attached to the bearing E, and arm L'', formed integrally with the lug L, and adapted to disengage said pawl and ratchet, substantially as shown and described, and for the purpose set forth.

293,837. VELOCIPEDE. JOHN WESLEY WOODRUFF, Wise, W. Va. Filed July 18, 1883. (No model.)



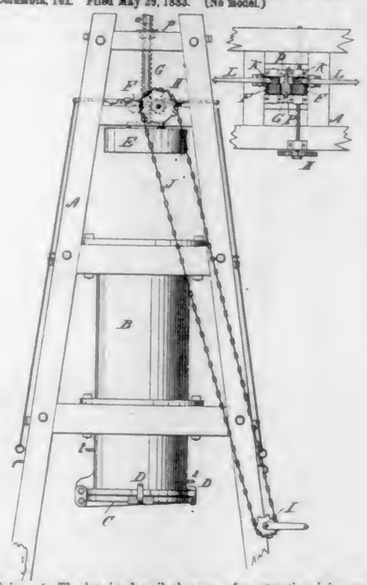
Claim.—1. The combination of the tread-wheel *a*, endless cord *f*, ratchet-drums *g j*, and the reversing-wheel *i* with the driving-wheels A and *k* of a road-vehicle, said tread-wheel being arranged with relation to the driver's seat, the ratchet-drums arranged with relation to the driving-wheels, and the reversing-wheel arranged on the rear of the bed-frame and in the plane of the tread-wheel *a*, substantially as described.

2. The combination of the hand-lever *n* with the tread-wheel *a*, said tread-wheel being arranged with relation to the driver's seat, and geared with the driving-wheels, substantially as described.

3. The steering-lever *y*, arranged on the left-hand side of the bed-frame, and connected with the front axle by a rod, *a'*, in a road-vehicle

having propelling mechanism consisting of tread-wheel *a*, geared, substantially as described, with the driving-wheels, and having a hand-lever, *n*, combined with it, and located on the right-hand side of said bed-frame, substantially as herein specified.

293,838. PROCESS OF AND APPARATUS FOR EXTRACTING CRYSTALLIZED SUGAR FROM BAGASSE. THOMAS BLOSSOM YALE, Columbia, Tex. Filed May 29, 1883. (No model.)

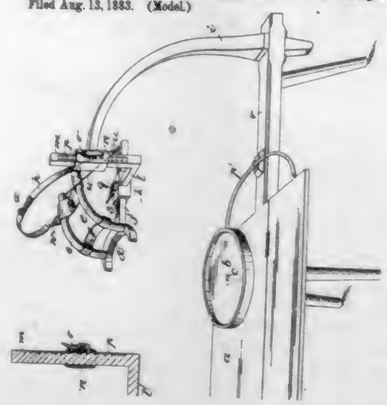


Claim.—1. The herein-described process for extracting juice and crystallized sugar from crushed saccharine material, consisting in subjecting said saccharine material in a closed vessel to the action of steam, and then extracting the juice and dissolved crystallized sugar from the saccharine material by means of a vacuum, as set forth.

2. In an apparatus for extracting juice from saccharine materials, the combination, with the cylinder B, having the hinged bottom C and clamps D, and provided with the air and steam pipes *s t*, of the piston E, rack G, pinions F, and means for operating said pinions, substantially as shown and described.

3. In an apparatus for extracting juice from saccharine materials, the combination, with the cylinder B, having the hinged bottom C and clamps D, and provided with the air and steam pipes *s* and *t*, of the piston E, rack G, pinions F, ratchet-wheels K, pawls L, and means for operating the pinions and pawls, substantially as shown and described.

293,839. SHEEP-SHEARING TABLE. JOS. LEE ADDISON, Quaker City, assignor to himself, and Malancthon R. Patterson, Cambridge, Ohio. Filed Aug. 13, 1883. (Model.)



Claim.—1. In a sheep-shearing table, the combination, with the bench *a* and the revolving seat *b*, of the breast-support *d*, provided with the vertically-curved bars *e*, the cross-straps *f g*, and the neck-strap *h*, the said support being vertically and horizontally adjustable, substantially as herein shown and described.

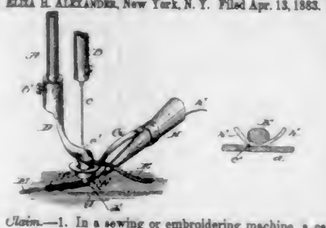
2. In a sheep-shearing table, the combination, with the bench *a*, provided with the beam *v*, the revolving seat *b*, and the curved standard *i*, of the breast-support *d*, having the curved arms *e*, provided with supporting and fastening straps *f g h*, and vertically and horizontally adjustably connected to said arm, substantially as herein shown and described.

3. In a sheep-shearing table, the combination, with the curved standard *i*, provided with the box *n*, having the catch-pawl *o*, of the notched angle-bar *l m*, the box *k*, having catch-pawl *q*, and the breast-support *d*, having notched bar *j*, substantially as herein shown and described.

4. In a sheep-shearing table, the combination, with the bench *a* provided with the beam *v* and the revolving seat *b*, of the curved standard *i*, provided with the box *n*, having the catch-pawl *o*, the notched angle-bar *l m*, the box *k*, having the catch-pawl *q*, and the breast-support *d*, provided with the notched bar *j*, and the curved bars *e*, having the cross-straps *f g*, and the neck-strap *h*, substantially as herein shown and described.

5. In a sheep-shearing table, the combination, with the bench *a*, provided with the beam *v* and the revolving seat *b*, of the curved rod *p'*, substantially as herein shown and described.

293,840. APPARATUS FOR AND METHOD OF EMBROIDERING. ELIZA H. ALEXANDER, New York, N. Y. Filed Apr. 13, 1883. (No model.)



Claim.—1. In a sewing or embroidering machine, a carrier for an embroidering material or thread, combined with a former about which the embroidering material only is wound or wrapped, and from which the successive coils are delivered to be stitched upon a fabric by a needle-thread passing through the former independently of the embroidering material, substantially as described.

2. In a sewing or embroidering apparatus, a former or presser-foot made hollow to receive a cord or core, combined with an embroidering-thread carrier adapted to wrap embroidering material or thread about the said cord or core outside of the former preparatory to attaching the said combined core and embroidering material to a fabric by sewing-machine stitches, substantially as described.

3. The former or presser-foot provided with an opening for the passage of a cord or core, and a carrier adapted to carry embroidering material or thread, and adapted to be revolved about the opening in the said former or presser-foot, and also about the cord or core carried by said opening to wind the said embroidering material or thread about the cord or core, combined with a sewing-machine needle adapted by its thread to secure the cord or core and embroidering-thread upon the fabric, substantially as described.

4. That improvement in the art or method of producing embroidery on fabrics which consists in closely wrapping a core of one material with a thread of the same or another material, and confining the said core and embroidery-threads upon a fabric by stitches made as the embroidering-thread is being wrapped about the said core, the said stitches being concealed from view, substantially as described.

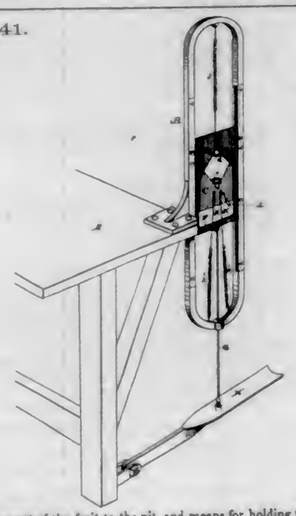
293,841. FRUIT CUTTING AND PITTING MACHINE. CHARLES ALBON, San Francisco, Cal. Filed Nov. 5, 1883. (No model.)

Claim.—1. In a fruit cutting and pitting machine, the knives having V-shaped cutting-edges inclosing a space for the reception of the fruit, each knife having a socket in the angle of its cutting-edge for fitting the points of the pit, and a means for bringing the knives together until their cutting-edges meet the stone and their sockets fit its points, substantially as herein described.

2. In a fruit cutting and pitting machine, the frame A and stationary knife C, having a V-shaped cutting-edge in its top and a thimble or band, *c*, in the angle thereof, in combination with the knife D, fitted to slide in guides in said frame, and having an inverted-V-shaped cutting-edge in its bottom, with a thimble or band, *d*, in its angle, the arms *f* on said knife, having cross-head F, the rod G and treadle H, and the return-spring J, substantially as herein described.

3. In a fruit cutting and pitting machine, knives for encircling and cutting the meat of the fruit to the pit, and means for holding the pit, in combination with a flexible line for encircling each half of the fruit and cutting it from the pit, substantially as herein described.

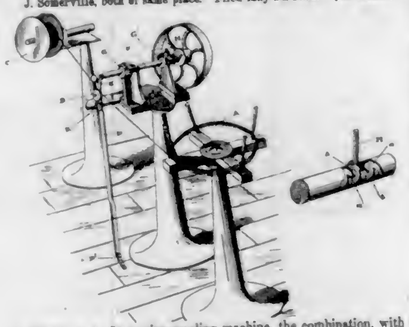
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4. In a fruit cutting and pitting machine, the frame A, stationary knife C, having a V-shaped cutting-edge, with a thimble or band, *c*, in its angle, and the reciprocating knife D, having an inverted-V-shaped cutting-edge, with a thimble or band, *d*, in its angle, in combination with the flexible lines K K, passing through the stationary knife, one from back to front, the other from front to back, and the springs *k k*, securing them to the frame, substantially as herein described.

5. In a fruit cutting and pitting machine, the knives C D and thimbles *c d*, arranged and operating as herein described, in combination with the flexible lines K K, arranged as shown, the springs *k k*, and the fine-pointed handles L on the ends of the lines, substantially as herein described.

293,842. WIRE-SPOOLING MACHINE. THOMAS S. BAYLES, Toronto, Ontario, Canada, assignor of two-thirds to Thomas R. Wood and Andrew J. Somerville, both of same place. Filed May 24, 1883. (No model.)



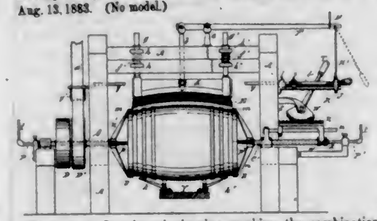
Claim.—1. In a wire-spooling machine, the combination, with a wire-guide and a spindle carried in suitable bearings constructed to give motion to said wire-guide, and having a right and left hand thread cut on it, so that the end of one thread shall intersect with the other, of a pin, H, fixed in the spindle-bearings fitting into the threads, so that the spindle, when revolving, shall have a reciprocating longitudinal movement imparted to it and impart the same to the wire-guide, substantially as and for the purpose specified.

2. In a wire-spooling machine, the combination of a guiding-pulley, B, interposed between the coil and spool, and mechanism arranged to impart a reciprocating movement to the said pulley in such a manner that the wire passing around it shall be guided onto the spool in regular convolutions, substantially as and for the purpose specified.

3. In a wire-spooling machine, a pulley, B, grooved to receive the wire being guided, and journaled on a spindle fixed to the pivoted bar D, in combination with mechanism arranged to rock the said bar for the purpose of guiding the wire in regular convolutions onto a revolving spool, substantially as and for the purpose specified.

4. In a wire-spooling machine, a pulley, B, journaled on the pivoted bar D, and grooved to receive the wire as it passes from the coil A to the spool C, in combination with the pin H, fixed in the spindle-bearing, and the revolving spindle F, having a right-hand thread, *a*, cut on it, and intersecting with the left-hand thread *b*, so that the end of the pin H, fitting into the threads, will impart a reciprocating longitudinal movement to the revolving spindle, substantially as and for the purpose specified.

293,843. BARREL-CLEANING MACHINE. WILLIAM W. BEACH, Brooklyn, assignor to the Standard Oil Company, New York, N. Y. Filed Aug. 13, 1883. (No model.)



Claim.—1. In a barrel-cleaning machine, the combination of a brush, E, shaped to conform to the contour of a barrel, and suspended by a rod, *b*, connected with a lever, F, for raising said brush, a pair of rotating chucks, B B', each constructed, as described, to clamp the barrel, the rack-bracket R, toothed segment, W, and lever T, for operating said chucks, and the guide-rods *g g'* and springs *f f'*, connected with said brush, for bringing the same in contact with the barrel, the whole constructed as described, for the purposes set forth.

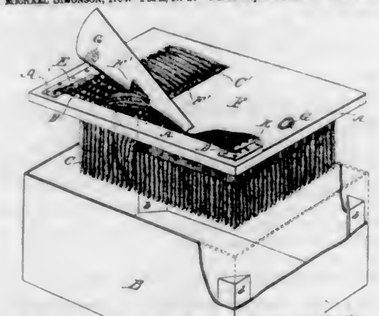
2. In combination with the brush E and the chucks B and B', each constructed and operated as described, the brushes N and N', fitted upon the shafts P and P' within the cavities of said chucks and kept in contact with the heads of the barrel, as and for the purpose set forth.

3. In combination with the chucks B and B', the brush E, attached to the rod *b*, which is pivoted to the end of the lever F, the guide-rods *g g'* and springs *f f'*, cords H and H', rod K, ring J, and weight I, as and for the purpose set forth.

4. The combination, with the chucks B B' and their shafts C C', each constructed as described, of the devices for rotating and stopping said chucks, said devices consisting of the lever L, rod K, ring J, pulleys D D', and belt-shifter *y*, fixed upon the rod *y'* and operated by said lever L, all constructed as shown and described.

5. In combination with the chuck B' and its shaft C', the latter provided with the grooved flange *x*, the rack-bracket R, provided with pin *w*, the toothed segment W, and lever T, said rack-bracket being fitted to slide on the bar *u*, as and for the purpose set forth.

293,844. SHOW-BOX FOR TRIMMINGS. SAM. GUST. BERNSTEIN and MICHAEL SIMONSON, New York, N. Y. Filed Sept. 18, 1883. (No model.)



Claim.—1. In a show-box for trimmings, the combination, with the frame A, having the series of hooks D D, of the box B, provided with supports *b b*, for holding the frame above the bottom and within the box, as set forth.

2. The frame A, having hooks D, in combination with the backing F, secured to the frame, and slotted, as shown at F', substantially as and for the purposes set forth.

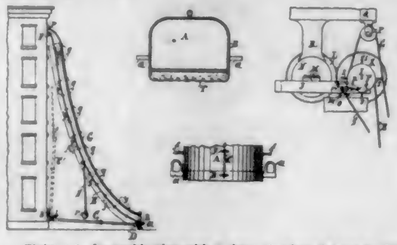
3. The combination, with box B, provided with posts *b b*, of the frame A, having holding devices or hooks D, the backing F, slotted at F', and the lifting devices G, substantially as and for the purposes set forth.

4. In a show-box for trimmings, the combination, with the frame A, having the series of hooks D, and the backing F, of the box B, provided with supports *b b*, for holding the frame above the bottom and within the box, substantially as set forth.

5. In a show-box for trimmings, the combination, with the frame A, having the flexible straps E, the series of hooks D, secured to said straps, and the backing F, of the box B, provided with supports *b b*, for holding the frame above the bottom and within the box, substantially as and for the purpose set forth.

293,845. FIRE-ESCAPE. GEORGE M. BIRD, Boston, Mass. Filed Nov 23, 1883. (No model.)

Brief.—The chute is released when to be used and drops upon hinged supports which carry the lower end of the chute out from the building. The rapid falling of the chute is prevented by a suitable brake-shoe acting upon the rope-reels of the chute. An elastic cushion is applied to the straight side of the frame, to which the lower end of the chute is secured.



Claim.—1. In combination with a chute, A, pivoted supports C C, and means for dropping said chute to said supports, substantially as and for the purpose set forth.

2. The combination of chute A, having ring-bolts *a a*, pivoted supports C C, having V-hooks D D, and ropes E E, connecting said supports with rope-wheels, substantially as and for the purpose set forth.

3. The combination of chute A, pivoted supports C C, ropes E E and G, and rope-wheels F F and H, substantially as specified.

4. In a fire-escape, the combination of rope-wheels F F, shafts I M, gears K L, ratchet-wheel H, pawl *i*, brake-wheel N, and brake-shoe R, substantially as specified.

5. In a fire-escape, the combination of a frame, J, pivoted and bearing shafts I M, as specified, rope-wheels F F, gears K L, brake-wheel N, brake-shoe R, ratchet-wheel, and pawl, substantially as set forth.

6. In a fire-escape, a frame, J, bearing the hoisting or dropping mechanism, pivoted by means of trunnions *j j* to the building, substantially as and for the purpose specified.

7. The combination of the chute A, rope-wheels F F, rope S, stop-piece *p*, and pin *q*, substantially as and for the purpose set forth.

8. In a fire-escape, a frame, B, at the lower end of the chute, having ring-bolts *a a*, providing wrist-pins, substantially as and for the purpose set forth.

9. In a fire-escape, a chute having a frame, B, provided with a straight side and an elastic cushion, T, substantially as specified.

10. The combination of chute A, ring-bolts *a a*, supports C C, having V-hooks D D, and catches *d d*, substantially as specified.

11. The combination of chute A, supports C C, ropes E E, rope-wheels F F, gears K L, pivoted frame J, ratchet-wheel A, pawl *i*, brake-wheel N, and brake-shoe R, substantially as described.

12. In a fire-escape, the combination of a chute, A, rope G, rope-wheel H, pulley P, and suitable bearings for said rope-wheel and pulley P, to maintain them in the relation to each other specified, substantially as and for the purpose set forth.

13. A frame pivoted by means of trunnions and bearings therefor which serve as a fulcrum bearing two shafts—one on each side of said trunnions—said shafts geared together, one of said shafts having one or more rope-wheels thereon, and the other shaft provided with a brake-wheel, substantially as and for the purpose set forth.

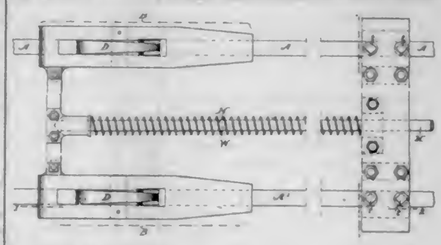
293,846. DEVICE FOR ARRESTING LOCOMOTIVES AND CARS. MAXIMILIAN F. BONZANO, Philadelphia, Pa. Filed Nov. 21, 1883. (No model.)

Brief.—Sliding shoes on rails have pivoted levers which receive impact of car, and through such levers acting upon the rails friction is imparted, which retards the moving vehicle.

Claim.—1. The combination of a shoe, B, adapted to a rail, with a lever, D, pivoted to the shoe, and serving with the same as a medium by which a locomotive or car will cause friction on the rail, substantially as set forth.

2. The combination of the shoe and its lever with counterbalancing mechanism, substantially as specified.

3. The combination of the shoe B, adapted to the rail, and the lever



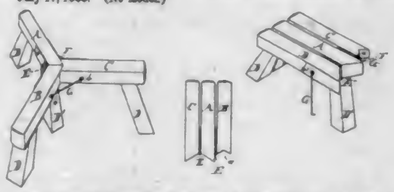
293,846.

D, pivoted to the shoe, with a removable block, *i*, interposed between the arm *e* of the lever and the rail, substantially as specified.

4. The combination of the shoe B with the lever D, having a toe, *h*, for limiting the movement of the lever, as set forth.

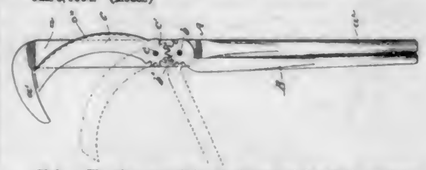
5. The combination of two or more shoes, B, adapted to rails on a track, and each shoe having a lever, D, with a bar or bars for connecting the shoes together, substantially as described.

293,847. WASH-BENCH. HENRICH BREMER, Chicago, Ill. Filed July 17, 1883. (No model.)



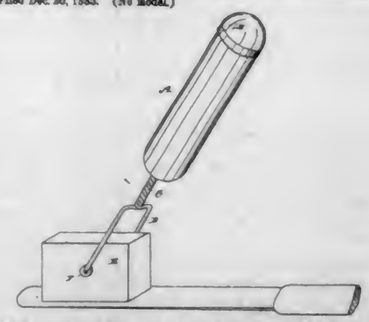
Claim.—The combination, with hinged and beveled bars A B, and hinged and grooved bar C, of means for holding the several parts in position, substantially as described and shown.

293,848. PIPE-WRENCH. DANIEL S. BROWN, Burdette, N. Y. Filed Jan. 3, 1884. (Model.)



Claim.—The pipe-wrench herein shown and described, consisting of the main body A, formed with the recess *a*, jaw *a'*, and handle portion *a²*, and of the handle B and jaw C, pivoted in the recess *a*, the handle and jaw being geared together by the sectors *b' c'*, substantially as and for the purposes set forth.

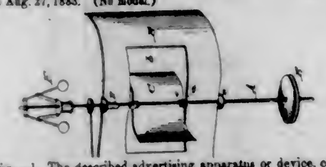
293,849. KNIFE-SCOURER. CHARLES A. BRYANT, Wakefield, Mass. Filed Dec. 20, 1883. (No model.)



Claim.—1. In a knife-scourer, the combination, with the handle A, of the frame D, secured on the lower end of the same, the rubbing-block E, mounted on the cross-piece of the frame, and of the sleeve F, mounted on the said cross-piece, substantially as herein shown and described.

2. A knife-scourer consisting of the wire frame D, carrying the rubbing-block E, and provided with the tang C, formed by the upper twisted ends of the said frame, and a handle, A, substantially as set forth.

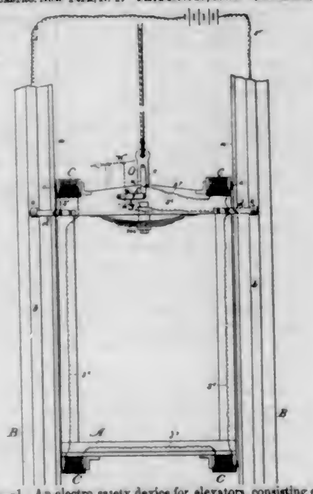
293,850. ADVERTISING DEVICE. JOHN WESLY CARLY, Mexia, Tex. Filed Aug. 27, 1883. (No model.)



Claim.—1. The described advertising apparatus or device, consisting of the fixed staff or upright A, bent rotary vane B, having the opening *b*, and adapted for the display of advertisements, and inside bent rotary vane, C, substantially as set forth.

2. In an advertising apparatus or device, the combination of the fixed staff or upright A, having pulley E, bent rotary vane B, having the opening *b*, and adapted for the display of advertisements, inside bent rotary vane, C, and the governor F, adapted to regulate automatically the speed at which the vanes are to revolve, substantially as and for the purpose shown and set forth.

293,851. ELECTRIC SAFETY DEVICE FOR ELEVATORS. JACOB WM. DE CASTRO, New York, N. Y. Filed Nov. 27, 1883. (No model.)



Claim.—1. An electro safety device for elevators, consisting of iron strips upon or adjacent to the guides, electro-magnets, with the ends of their cores adjacent to said strips, a circuit-closer, and connections whereby, upon any undue increase of speed, the circuit is completed and the magnets excited, substantially as set forth.

2. The combination, with a cage supporting electro-magnets and connections, and a circuit-closer arranged to complete the circuit and excite the magnets should the cage part from its cable or attain undue speed, of iron strips arranged opposite the cores of the magnets to insure a magnetic retarding effect when the magnets are excited, substantially as set forth.

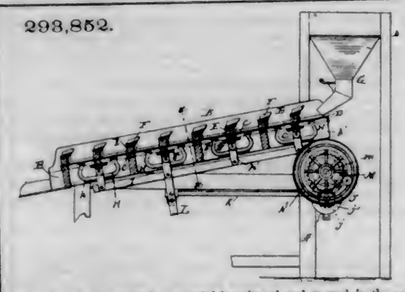
3. The combination of a movable cage carrying electro-magnets, safety-detents, and a circuit-closer, a stationary generator, and strips *b* in the electric circuit, and circuit-connections on the cage, moving in contact with said strips, substantially as set forth.

4. The combination of the cage, magnets, automatic circuit-closers, strip *a*, generator, and connections, as described, whereby to complete the circuit in case the cage attains undue speed, and to then insure contact between the cores and strips on the magnets becoming excited, substantially as specified.

293,852. PLACER-MINING MACHINE. RICHARD V. F. DE GUIDON, Chicago, assignor of one-half to John W. Parmelee, Englewood, Ill. Filed May 7, 1883. (No model.)

Claim.—1. A separating-box composed of a series of compartments arranged on an incline descending from the point where the material is received, and provided with flexible bottoms, in combination with mechanism for striking blows on the under side of the flexible bottom of each

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compartment, whereby the material is agitated and turned in the compartments, and the sand delivered from one to another, substantially as and for the purposes set forth.

2. In a separating-machine for mining, a series of compartments arranged on an incline, in combination with a flexible diaphragm or bottom for the compartments, and a mechanism constructed and operating to deliver blows upon the under side of the flexible bottom of each compartment in the direction of curved lines, substantially as and for the purposes set forth.

3. The receiver B, divided into compartments, in combination with the diaphragm D, of suitable flexible material, the rocking agitators H, and mechanism for oscillating said agitators, substantially as and for the purposes set forth.

4. The receiver B, in combination with the cross-bars C, concave upon their upper faces, the cross-bars E, arranged above the bars C and conforming thereto, the caps F, provided with concave front faces *f*, and the flexible bottom D, substantially as and for the purposes set forth.

5. The receiver-compartments provided with a flexible bottom, in combination with the U-shaped agitators H, connecting-rod I, and mechanism whereby a reciprocating movement is given to said connecting-rod, substantially as and for the purposes set forth.

6. The flexible diaphragm D, constituting the bottom of the receiver-compartments, in combination with the U-shaped agitators H, the connecting-rod I, the pitman K, and the crank-wheel J, substantially as and for the purposes set forth.

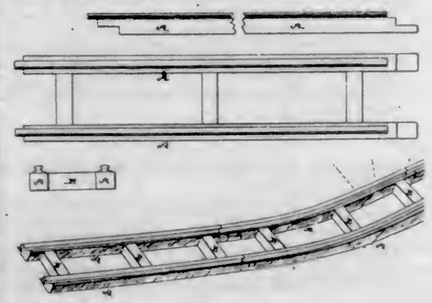
7. The inclined receiver B, in combination with the cross-bars C and E, the flexible diaphragm D, the hopper G, and the rocking agitators H, all arranged and operating substantially as and for the purposes set forth.

8. In a separating-machine for mining, an independent inclined frame, in combination with an independent separating-box composed of a series of compartments provided with a flexible bottom, and adapted to be applied to the said independent frame, an agitating mechanism mounted on the said frame independent of the separating-box, and adapted to strike blows upon the bottoms of the compartments, substantially as and for the purposes set forth.

9. The separating-box composed of a series of compartments provided with a flexible bottom turned up at the side edges on a curve, in combination with the agitators for striking blows on the under side of the flexible bottom, substantially as and for the purpose set forth.

293,853. PORTABLE RAILWAY. JOHN DOLBEER, San Francisco, Cal. Filed Sept. 25, 1883. (No model.)

Brief.—Consists of stringers permanently united by cross-timbers, and having their ends notched to overlap. Rails are secured upon the stringers, so as to project beyond one end and not reach the opposite end of the stringers. The inner and outer stringers of curved sections terminate on lines which are radii of the curves.

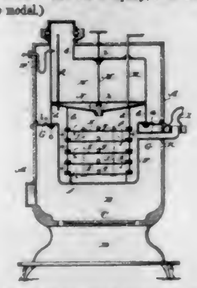


Claim.—1. A portable railway consisting of stringers permanently united by cross-timbers, and having rails secured upon them, so as to project beyond one end and not reach the opposite end, substantially as herein described.

2. A portable railway consisting of stringers permanently united by cross-timbers, and having their ends notched to overlap, in combination with rails fixed to the stringers, so that their alternate ends extend upon the succeeding stringer, the rails being united by fish-plates, substantially as herein described.

3. A portable railway consisting of stringers having straight or curved rails secured to them, and permanently united, as shown, the inner and outer stringers of curved sections, terminating on lines which are radii of the curves, substantially as herein described.

293,854. APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS. WILLIAM H. DOUGLASS, Philadelphia, Pa., assignor to the North American Petroleum Gas Company, New York, N. Y. Filed May 25, 1883. (No model.)



Claim.—1. The casing having at or near its center a ring or flange provided with perforations, a retort suspended from such ring and containing a series of plates having alternating openings, a pipe leading from the retort for carrying off the gas, a reservoir having a rim forming a cover to the retort, and having a bottom provided with a valve-opening, a valve for controlling said opening to regulate the supply of gas-producing material to the retort, a reticulated false bottom in the reservoir above its main bottom, and means for charging the reservoir, substantially as described.

2. In a hydrocarbon-gas generator, a retort provided with a seal-cup at its upper end, a series of communicating vaporizing-chambers, and an evacuating-tube communicating therewith, in combination with a reservoir fitting in the seal-cup of the retort, and provided with a valved opening communicating with the retort, a supplemental grated or reticulated bottom, and means for supplying either liquid or other gas-producing substances thereto, substantially as described.

3. In a hydrocarbon-gas generator, the retort provided with a series of vaporizing-chambers, and a seal-cup to both the retort and partition-plate of the top chamber, in combination with the reservoir, provided with a pendent rim and flange to fit into said cups, substantially as described.

4. In a hydrocarbon-gas generator, the combination of a retort provided with a seal-cup around its top, a reservoir fitting into said cup, a pipe connecting the reservoir with the retort to equalize the pressure in both, and a siphon or trap overflow to the reservoir, substantially as described.

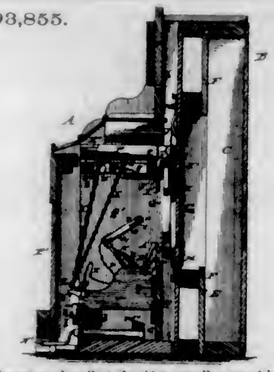
5. In a hydrocarbon-gas generator, the combination of the sectional casing, the retort provided with a seal-cup around its top, and the detachable reservoir fitting into the seal-cup of the retort and closing the top of the latter, substantially as described.

6. The combination of the retort provided with a seal-cup around its upper end, a series of communicating vaporizing-chambers formed of plates provided with cups and rims fitting together, as set forth, a detachable reservoir having a rim and flange fitting into the cup of the retort and top partition-plate thereof, and provided with the grated or reticulated bottom, the valve for regulating the flow of hydrocarbon into the retort, and the tubes for the introduction of liquid or other gas-producing substance, the equalizing-pipe, and the siphon or trap overflow, substantially as described.

293,855. PIANO-FORTE. JOSEPH DOYLE, Mount Liberty, Ind. Filed June 8, 1883. (No model.)

Claim.—1. In an upright piano-forte, the combination of the upright rectangular frame in the rear portion of the casing, the upright stanchions, the bridge and the wrest-plank, extending in two divergent curves from near the middle of the side piece of the frame at the treble side to near the ends of the side piece at the bass side, and having their rear surfaces connected with the upper and lower side pieces of the frame by

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the thin boards, as described, the thick sounding-board having the transverse series of perforations at its center, and the thin sounding-board fastened across the center of the thick sounding-board, as and for the purpose shown and set forth.

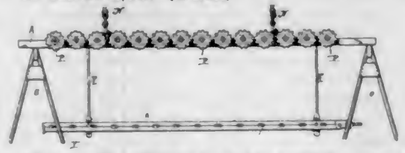
2. The bridges or agraffes, each consisting of a small strip of spring-steel bent to form a transverse bulge at the center, and adapted to support the strings at their ends, as and for the purpose shown and described.

3. The bridge or agraffe consisting of a small strip of spring-steel bent to form a transverse bulge at the center, and having the longitudinal notches upon the upper surface of the bulge, and adapted to support the strings at their ends, each string resting in one of the notches, as and for the purpose shown and set forth.

4. The combination of the upright casing, open at the top and at the front side, in which the action is pivoted, the straight hopper having the notch in its lower edge pivoted in the front portion of the upright casing, and having the felt strips upon the upper and lower edge of its inner end, the hammer having the eccentric cam at its lower end, at which it is pivoted, and having the wire spring bent double at its lower end, forming a projecting arm provided with a rubber head and fastened at the upper and lower end of the hammer, and having the strip of cloth attached to the top of the hammer and to the upper edge of one of the sides of the casing, the bent wire spring fastened to the front edge of one of the sides of the casing and passing under the outer end of the hopper, resting in the notch in the same, with its lined hooked free end, and the damper consisting of a straight stick pivoted at the upper edge of the upright casing, and having the zigzag-bent wire at its upper end, upon which the damper-pad is fastened, as and for the purpose shown and set forth.

5. The hammer having the straight head having the transverse notch or recess at its outer end and the transverse notch cut from its under side near the outer end, and provided with the roll of textile material placed in the transverse recess, and held in place by the string or cord passing through the center of the roll and into the notch in the under side of the head, as and for the purpose shown and set forth.

293,856. DYEING-MACHINE. ALEXANDER N. DUBOIS, Philadelphia, Pa. Filed Nov. 23, 1883. (No model.)



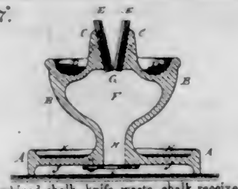
Claim.—1. The combination of a driving mechanism, a series of angular pulleys provided with wheels, a driving-chain, the frame A, and a lower swinging frame provided with pulleys, substantially as shown.

2. The combination of the frame A, tub B, angular rollers *a*, provided with wheels at one end, chain D, swinging frame A', provided with rollers, and a mechanism for imparting a rotary motion to the angular rollers, and a mechanism for reciprocating the frame A', substantially as described.

293,857. COMBINED IMPLEMENT FOR TAILORS' USE. CLAUDIUS EDLUND, Brooklyn, N. Y. Filed Aug. 6, 1883. (No model.)

Claim.—1. A combined chalk-knife, waste-chalk receiver, pin-cup, and paper-weight constructed substantially as herein shown and described, and consisting of the base A, the hollow body B, having top and bottom openings and recessed top, and provided with outwardly-inclined recessed jaws C, the corrugated knives E, and the stopper I, as set forth.

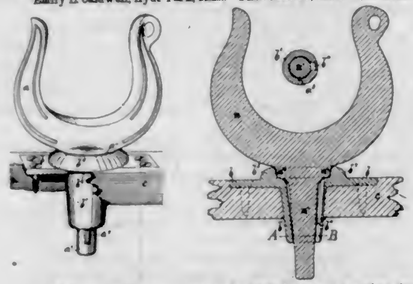
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2. In a combined chalk-knife, waste-chalk receiver, pin-cup, and paper-weight, the body B, made hollow, having top and bottom openings and a recessed top, and provided with outwardly-inclined recessed jaws C, substantially as herein shown and described, to adapt the said body to receive chalk-shaving knives, and to serve as a waste-chalk receiver and as a pin-cup, as set forth.

3. In a combined chalk-knife, waste-chalk receiver, pin-cup, and paper-weight, the combination, with the outwardly inclined and recessed projecting jaws C, of the hollow body B, and of the knives E, having corrugated faces, substantially as herein shown and described, whereby the chalk can be readily brought to an accurate V-shaped edge, as set forth.

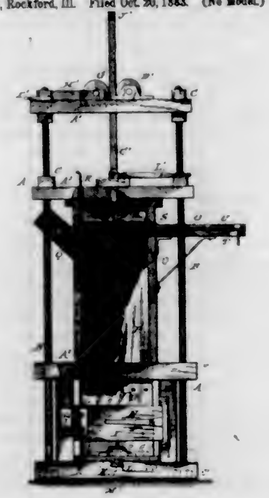
293,858. ROWLOCK. JACOB EDSON, Boston, assignor of one-half to Emily L. Caldwell, Hyde Park, Mass. Filed June 18, 1883. (No model.)



Claim.—1. The combination of the forked piece *a*, tapering shank *a'*, enlarged collar *a''*, and locking projection *a²*, with the socket consisting of plate *b*, tapering sleeve *b'*, having vertical groove *b''*, and upper annular bearing-ring, *b²*, adapted to receive the collar *a''* in a manner substantially as and for the purpose set forth.

2. The herein-described bearing-piece or socket for rowlocks, consisting of plate *b*, with its downwardly-projecting tapering sleeve *b'*, having internal vertical groove, *b''*, in combination with upper annular bearing-ring, *b²*, all combined and arranged as and for the purpose set forth.

293,859. PACKER FOR FLOUR, BRAN, &c. JACOB FRYSINGER and BENJAMIN CAUGHT FRYSINGER, Rock Island, assignor of one-third to George P. Frysinger, Rockford, Ill. Filed Oct. 20, 1883. (No model.)



Claim.—1. The combination of the platforms A^2 A^4, having openings through the same, the follower having the flat bar C', the roller D', mounted upon the stationary shaft E', the sliding frame H', carrying roller G', and the lever I', substantially as shown and described.

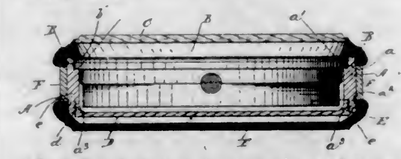
2. The combination, with the follower and its bar and the friction-rollers, of the spring-catches arranged on opposite sides of said bar and adapted to engage with notches in the bar, to hold the same at a given position, substantially as shown and described.

3. The press-box having a chute and slide in one side, and in another side an opening provided with a sliding apron for placing a head between the compressing-follower and the bran or material to be compressed, substantially as shown and described.

4. The frame having the grooved platform and hinged sides, combined with the ribbed slide having means for holding a packing-case, substantially as shown and described.

5. The packing-case having perforations to allow air to escape from the material being packed therein, and through which a head may be nailed in the case, substantially as shown and described.

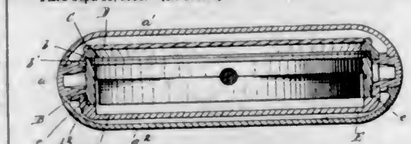
293,860. WATCH-CASE. CHAS. K. GILES, Chicago, Ill. Filed Sept. 13, 1883. (Model.)



Claim.—1. A circular band adapted to receive a watch-movement, and provided with a threaded section at each edge, in combination with a bezel provided with a screw-thread, a back plate also provided with screw-thread, and an independent "center" adapted to be placed upon the band between the bezel and back plate, whereby both bezel and back plate are removably attached to the band by their threaded sections, and may be adjusted thereon at pleasure to fix the position of the center and firmly clamp it between the two, substantially as and for the purposes set forth.

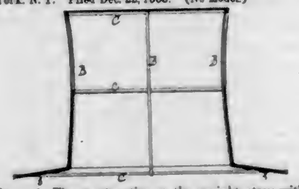
2. The circular band adapted to receive the movement of a watch, and threaded, as described, in combination with the screw-threaded bezel, the screw-threaded back cap, the screw-threaded back plate, and the independent center fitted to the exterior of the band, all constructed and operating substantially as and for the purposes set forth.

293,861. LINING FOR WATCH-CASES. CHAS. K. GILES, Chicago, Ill. Filed Sept. 13, 1883. (No model.)



Claim.—A lining-band for a watch, adapted to receive the movement, and provided at each edge with a threaded section, in combination with a "ring" case-center closely and accurately fitting the outside of the lining-band, a screw bezel or ring adapted to be turned on the front edge of the band, a screw back cap adapted to be turned upon the back edge of the band, and front and back case-pieces hinged to the center and adapted to be closed upon the latter outside of the bezel and back cap, whereby the case may be accurately adjusted to the lining and securely clamped in place, and the box formed by the lining, bezel, and back cap inclosed within the hinged portions of the case, substantially as and for the purposes set forth.

293,862. CAP OR OTHER HEAD-COVERING. PHILIPP GOLDMANN, New York, N. Y. Filed Dec. 22, 1883. (No model.)



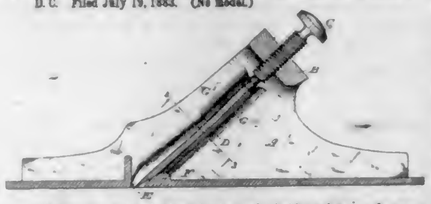
Claim.—1. The combination of the upright stays with the fixed horizontal rings—one on the upper end, one on the lower end, and one intermediate of the ends of the stays—substantially as described.

2. The combination of the upright stays, the horizontal ring on the upper end of the stays, and the horizontal band on the lower part of the stays, substantially as shown and described.

3. The combination of the upright stays, the horizontal rings—one on the upper ends, and one intermediate of the ends of the stays—and the horizontal band on the lower part of the stays below the intermediate ring, substantially as shown and described.

4. The combination, with a cap or hat having a flexible crown, of the horizontal ring intermediate of the top and bottom of the crown, and the band having the ring connected to its upper edge.

293,863. BENCH-PLANE. ARTHUR T. GOLDSBOROUGH, Washington, D. C. Filed July 19, 1883. (No model.)



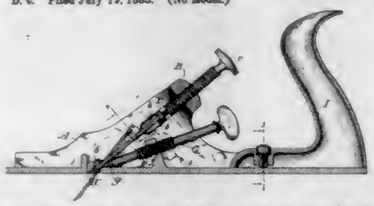
Claim.—1. A bench-plane having a single bit, and means for moving the same longitudinally, and a stock provided with fixed projections arranged in the path of the cutting-bit, but on different lines, between which projections the bit is held when forced to its operative point, as set forth.

2. A bench-plane having a single bit and detachably-connected adjusting-screw, and a stock formed with cleats, between which said bit moves freely, and a deflector at or near the throat, over which the bit is forced to its operative point by its adjusting-screw, and between which deflector and cleats it is securely held, substantially as set forth.

3. In a bench-plane, the stock A, formed with a guiding-cleat extending from the point of insertion of the bit to and terminating at a deflector or raised portion at or near the throat, and a cleat arranged above and parallel to and only a portion of the length of the said guiding-cleat, between which short cleat and the deflector a cutting-bit may be securely held.

4. In a bench-plane, the combination, with the stock A, provided with slotted and screw-threaded bridge B, uniting the sides thereof, cleats G and G', extending inward from the sides of the slot, and deflector or projection F, at or near the throat of the plane, of the bit D and detachable adjusting-screw C, all constructed and operating substantially as shown and described.

293,864. BENCH-PLANE. ARTHUR T. GOLDSBOROUGH, Washington, D. C. Filed July 19, 1883. (No model.)



Claim.—1. A bench-plane having a single bit and a detachably-connected adjusting-screw arranged in line therewith, and adapted to move said bit longitudinally in its plane of adjustment, a stock provided with rigidly-fixed inward projections arranged on parallel lines on each side thereof, between which the bit is held and moved, and means for locking the adjusted bit by forcing it obliquely upward against the projections of the stock, as set forth.

2. A bench-plane having a single bit, an adjusting-screw detachably connected thereto, a stock formed with spaces or recesses leading obliquely upward from the throat and adapted to allow the upper end of said bit to be moved at right angles to its plane of adjustment while being connected to its adjusting-screw, and a set-screw arranged to exert pressure below said bit and lock it in its adjusted position.

3. In a bench-plane, a stock formed with a bridge connecting the sides thereof on the line of the cutting-bit, and adapted to support a screw for controlling the longitudinal adjustment thereof, and a supplementary bridge located below the bit and adapted to support a set-screw operating between the bit and the inner side of the sole, cleats projecting inwardly from the sides of said stock, between which said bit moves and is adjusted, and a recess or space between the lower and upper cleats, within which the bit may be moved at right angles to its plane of adjustment, as set forth.

4. The stock A, formed with bridges B and F, the cleats *b* and *b'*, and recesses E or equivalent, substantially as shown and described.

293,865. COMPENSATING PENDULUM. FRANK CHARLES GREENLEAF, Apulia, N. Y. Filed Apr. 5, 1883. (No model.)



Claim.—1. The frame A, provided with an adjustable weight suspended upon a thermostatic bearing, and adapted to be adjusted vertically, substantially as described, and for the purpose set forth.

2. In a pendulum-weight, the open frame A, provided at its upper end with a thermostatic bearing having a free end adjusting-spring, C, and vertically-adjustable weight B, substantially as shown, and for the purpose set forth.

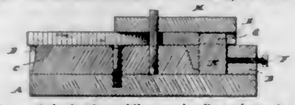
3. In a pendulum-weight, an open frame having attached at its upper portion a thermostatic bar and means for vertically adjusting one end of the same, said thermostatic bar having depending therefrom a rod which carries an adjustable weight, the parts being combined substantially as shown, and for the purpose set forth.

4. In combination with the open frame having a thermostatic bar secured to one side within the frame, and at the opposite side of said frame a means for vertically adjusting the free end of the bar, a screw-threaded rod attached to the under side of the bar and passing through a guide on the lower part of the frame, and a pointer secured to the frame, the parts being organized substantially as shown, and for the purposes set forth.

5. In a compensating pendulum-weight, the thermostatic bar having a weight or bob carrying rod secured to the under side of the same, and a frame and means for attaching said frame to the pendulum-rod, for the purpose set forth.

6. In a compensating pendulum-weight, the open frame A, having rigidly secured at one side of the same a thermostatic bar provided at its under central portion with a partially screw-threaded rod, I, which carries a vertically-adjustable weight, the free end of the thermostatic bar being vertically adjustable by means of a spring, C, and set-screw, and a guide, *d'*, located near the base of the frame, and pointer E, attached to the frame opposite the spring C, the parts being organized and combined substantially as shown, and for the purpose set forth.

293,866. DEVICE FOR WELDING STEEL CALKS TO HORSE-SHOES. JOHN D. HALL, Orrville, Ohio. Filed Sept. 4, 1883. (No model.)



Claim.—A device for welding steel calks to horseshoes, the same consisting of a bed-plate having a flange and set-screws at one end, a swiveled die-plate, and a removable die provided with an abutment serving as a guide for the shoe, the set-screws adapted to hold the die in position, and the upper die-plate, all constructed and arranged to operate substantially as specified.

293,867. PRESSER-FOOT FOR SEWING-MACHINES. SAMUEL HALLIWELL, New Haven, Conn., assignor of one-half to J. S. Sackett & Co., same place. Filed Sept. 19, 1883. (No model.)

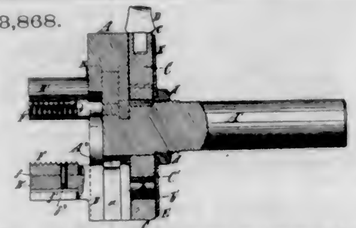


Claim.—The herein-described presser-foot attachment for sewing-machines, consisting of the presser-foot A, constructed with the shank B, extending upward therefrom, the said shank constructed with a horizontal flange, *a*, combined with the socket C, constructed with a recess corresponding to the shank, said recess provided with a vertical bearing or shoulder, and with a transverse shoulder, *d*, corresponding to the flange *a* on the shank, and a device, substantially such as described, to secure the shank in said recess, all substantially as specified.

293,868. SCREW-CUTTING IMPLEMENT. WILLIAM HARGRAVE, New York, N. Y., assignor of one-half to James Gregory, same place. Filed Oct. 16, 1883. (No model.)

Claim.—1. The combination, with the body or stock piece, constructed with radial slots, of sliding blocks fitting in said slots, having

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projecting beyond the face of said body forward extensions provided with chasers, and having rearwardly-projecting studs extending beyond the back of said body, and a disk or plate at the back of the body, having cam-like or eccentric slots receiving said studs, substantially as and for the purpose described.

2. The combination, with the body or stock piece, constructed with radial slots, of sliding blocks fitting in said slots, and having forward extensions projecting beyond the face of the body and provided with chasers, and rearwardly-projecting studs extending beyond the back of the body, and a disk or plate at the back of said body, having cam-like or eccentric slots, which receive said studs, and are provided at the ends with concentric portions, substantially as and for the purpose described.

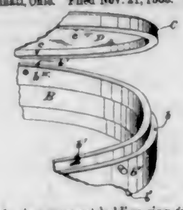
3. The combination, with the body A, having radial slots A^3, of the sliding blocks B, having forward extensions, B', with chasers, and rearwardly-projecting studs *b*, the disk or plate C at the back of said body, having cam-like or eccentric slots C', and the shield or guard-plate E, all substantially as described.

4. The combination, with the body A, having radial slots A^3, and the shank or spindle A', of the sliding blocks B, having chasers and rearwardly-projecting studs *b*, the disk or plate C at the back of the body, having cam-like or eccentric slots C', the shield or guard-plate E, and the nut *d*, all substantially as described.

5. The combination of the sliding blocks B, constructed with forward extensions, B', in which are slideways *f*, the chasers F, and pins *f'*, for detachably securing the chasers in said slideways, substantially as described.

6. The combination of the sliding blocks B, constructed with forward extensions, B', in the outer and inner sides of which are slideways *ff*, the chasers F, and the pins *f'*, all substantially as described.

293,869. WATCH-CASE. C. WESLEY HARMAN and HORACE G. SKIDMORE, Cincinnati, Ohio. Filed Nov. 21, 1883. (No model.)



Claim.—1. A movement-holding ring for watches, adapted to be held from movement in the case-center, and having the bezel and back secured to it by being turned on, as by a screw or bayonet-joint connection, so that access can be had to the movement without removing it from the case-center, said ring being adapted for use as a movement-holding box, as set forth.

2. The watch-movement box or receptacle in three parts, consisting of annular body B, having rabbets *b b'' b'''*, the spiral grooves *b'*, the hole *b**, and the stud *b**, in combination with the separately-attached covers C D and C', having inwardly-extending studs *c*, as and for the purpose set forth.

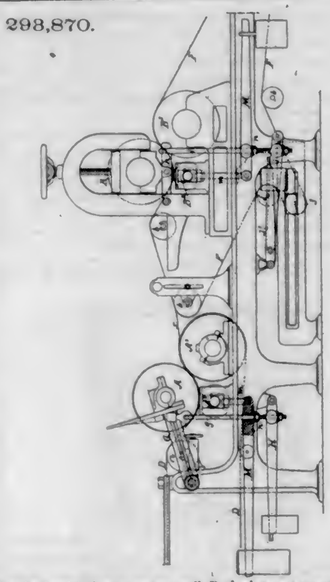
3. The combination of a watch-case center, A, having recess *a'* and lip *a*, a movement box or receptacle in three pieces, consisting of annular body B, having rabbets *b b'' b'''*, the spiral grooves *b'*, the hole *b**, and the stud *b**, and the covers C D and C', turned thereon independently of the case-center, having studs *c* to engage in the spiral grooves, as set forth.

293,870. PAPER-MAKING MACHINE. JOHN J. HARRIS, Wilmington, Del. Filed Nov. 30, 1883. (No model.)

Claim.—1. The combination of the upper couch-roll, A, of a Fourdrinier machine, the two lower rolls, A' and A^2, upon both of which the upper roll has a bearing, the press-rolls, and a conveyer, whereby the web of paper is caused to pass first between the rolls A A^2, then between the rolls A A', and thence to the press-rolls, as set forth.

2. The combination of the couch-rolls A, A', and A^2, arranged as

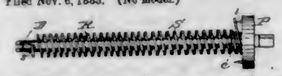
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described, with the upper press-roll, B, the lower press-rolls, B' and B^2, providing a double support for said upper roll, and a conveyer, whereby the web of paper is carried first between the couch-roll A and the rolls A^2 and A', and then between the roll B and the rolls B^2 and B', as set forth.

3. The combination, in couch or press roll mechanism of a paper-machine, of the upper roll and the two lower rolls, with a weighted rod for depressing said upper roll, and a weighted lever, M, having an opening for the passage of said rod fulcrumed on a nut, *n*, thereon, and acting on a rod, *m*, which presses upward upon the bearing of one of the lower rolls, as set forth.

293,871. SPRING SHADE-ROLLER. STEWART HARTSHORN, Millburn, N. J. Filed Nov. 6, 1883. (No model.)



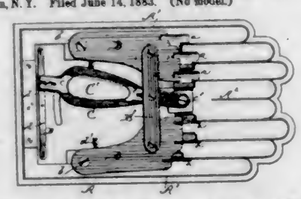
Claim.—1. In spring shade-rollers, the combination, with the roller, of a slotted spindle or spring, the latter permanently or fixedly connected at one end to the spindle by the slot therein, and at the other end to the roller, substantially as and for the purposes set forth.

2. In spring shade-rollers, constructing the shaft or spindle on which the spring is mounted with an open slot or groove in its inner end, substantially as and for the purposes set forth.

3. In spring shade-rollers, the combination, with the spindle having a groove cut in its inner end, of the head end or end plate of the roller, and the spring attached by one end to the spindle by means of the groove therein, and by the other end to the head end or plate, substantially as and for the purposes set forth.

4. In spring shade-rollers, the combination of the spindle R, having a groove cut in its inner end, the plate P, having the collar C, and the spring S, attached to the spindle by means of the groove, and to the collar, substantially as described, and for the purposes set forth.

293,872. DIE FOR CUTTING GLOVES. GEORGE A. HATHORN, Johnstown, N. Y. Filed June 14, 1883. (No model.)



Claim.—1. In a glove-die adapted to cut either a right or left hand

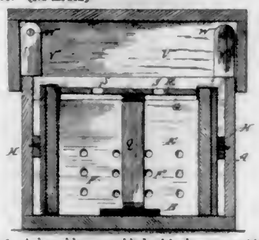
glove, the combination, with the finger-cutting blades, of the two sets of hinged extensions, one adapted to be thrown up as the other is thrown down, substantially as shown and described.

2. In a glove-die, a shifting bar carrying a removable die for cutting the thumb-opening, in combination with two sets of hinged extension-blades, adapted to register with the finger-blades upon either side, substantially as described and shown.

3. In a die for cutting gloves, the extension-blades *a a*, each set secured in a pivoted operating-bar, and so connected that one set will be thrown up when the other is down, substantially as shown and described.

4. In a glove-cutter, the back plate, A, having the blades A′ A^2, in combination with the hinged extensions *a a*, pivoted plates B, cross-bar B′, shifting bar C, carrying the thumb-die C′, secured by adjustable plates *c c*, guide c^3, holding-spring D, and handles C^2 D′, all constructed and arranged to operate substantially as described and shown.

293,873. BEE-HIVE. WILLIAM E. HATTON, Clarksburg, Ind. Filed July 19, 1883. (No model.)



Claim.—1. A bee-hive provided with the removable perforated side, end, and top pieces covered with an absorbent and non-conducting material, and side pieces having metallic strips upon their exposed edges, as and for the purpose shown and set forth.

2. The combination, in a bee-hive, of the outer casing having a removable top, removable side, end, and top pieces lined with an absorbent and non-conducting material, and the removable perforated inner side, end, and top pieces, the said lined pieces being interposed between the sides, ends, and top of the outer casing and the removable inner perforated pieces, as and for the purpose shown and set forth.

3. The combination of the casing having removable top, removable lined-outer side pieces having perforations at their upper edges, inner side pieces having perforations at their lower ends and metallic strips at their upper edges, forming rabbets, removable outer end pieces having laterally-projecting lugs at their upper corners and perforations at their upper ends, inner end pieces perforated at their lower ends, having laterally-projecting lugs at their upper corners, lined edges, metallic strips upon the inner side of the upper edges, and pivoted strips at the side edges, transversely-slotted inner top piece, and lined outer removable top piece, as and for the purpose shown and set forth.

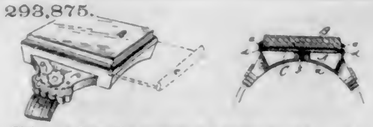
4. The herein-described bee-hive, consisting of the rectangular casing having the entrance-hole at the bottom, the lined perforated removable outer side pieces, the inner perforated removable side pieces having metallic strips or rabbets at their upper edges, the outer perforated lined end pieces having lugs at their upper corners, the inner perforated end pieces having strips of metal and textile fabric and lugs at their upper corners, the slotted inner top piece, the lined removable top piece, the comb-frames having projecting top pieces resting in the rabbets in the upper edges of the inner side pieces, and the honey-box fitting over the top of the casing, and having the cleats pivoted at their upper ends in the upper corners of the box, all constructed, arranged, and combined as and for the purpose shown and set forth.

293,874. FINGER-RING. HEINRICH HENRICH, New York, N. Y. Filed Nov. 3, 1883. (No model.)



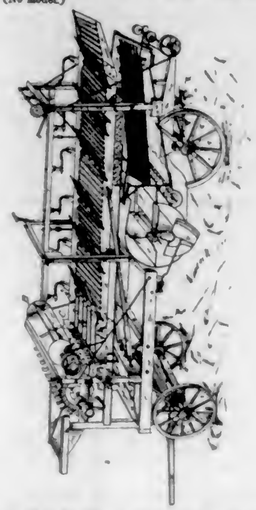
Claim.—In a finger-ring, the combination of the head B, having the described recessed wing *b*, provided with orifice b^2, the segment A of the finger-band forked at one end, the sectional sleeve C, having exterior recesses, *c*, and an interior female screw-thread with conical countersink *c′*, and the screw D, having a conical-shaped head, d^2, all constructed and arranged to operate as and for the purpose described.

293,875. FINGER-RING. HEINRICH HENRICH, New York, N. Y. Filed Dec. 8, 1883. (No model.)



Claim.—A finger-ring or analogous article of jewelry containing a stone-setting wherein is combined the frame A and detachable plate C, retained in place in said frame by a removable screw, as and for the purpose described.

293,876. THRASHING-MACHINE. ANDREW J. HOAG, Battle Creek, Mich., assignor to Nichols, Shepard & Company, same place. Filed Dec. 4, 1883. (No model.)



Claim.—1. In a thrashing-machine, the combination, with the beater and with the teeth for guiding the grain from the concave to the beater, of mechanism for changing and holding the teeth at different inclinations in respect to the beater, substantially as described.

2. The combination, with the thrashing-cylinder and concave and the lower shaker or screen, of the vibrating shaker or straw-carrier provided with the open grating at its receiving end, running lengthwise of said screen, for permitting the free escape of the grain as discharged from the concave to the lower shaker or screen, substantially as described.

3. The combination, with the beater, of the open grating running lengthwise of the screen, and arranged in the shaker below the beater, substantially as and for the purpose set forth.

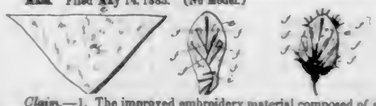
4. The combination, with the thrashing-cylinder, of the vibrating shaker or screen having the hinged grating connected thereto at its receiving end, substantially as and for the purpose set forth.

5. The combination, with the beater and with the adjustable fingers for directing the grain thereto, of the adjustable grating mounted in the vibrating shaker or screen, and operating substantially as and for the purpose set forth.

6. The vibrating shaking-screen having the adjustable grating mounted therein, and provided with the slotted side, for permitting the adjustment of the grating, substantially as and for the purpose set forth.

7. The combination, with the vibrating shaker or screen and the upright fixed frame-timber, of the bracket D, for closing the space between the vibrating shaker or screen and the fixed timber, and forming a bearing for the shaft of the rocking fingers, substantially as and for the purpose set forth.

293,877. RAISED EMBROIDERY. FREDERICK H. HOLBROOK, Boston, Mass. Filed May 14, 1883. (No model.)

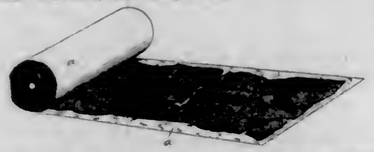


Claim.—1. The improved embroidery material composed of a piece of fabric folded, as described, to form a series of plaits, *f f*, and a marginal backwardly-turned folded edge, *e*, said plaits being secured together at their outer ends, as set forth.

2. Raised embroidery composed of a piece of fabric, *a*, folded to form a series of plaits, *f*, and a backwardly-turned edge, *e*, and embroidery-stitches connecting said folded piece to the surface to be ornamented, as set forth.

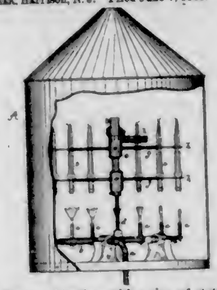
3. The raised embroidery, formed as described, and connected to the material to be ornamented by embroidery-stitches, combined with the molded or embossed ornament *a*, provided with means for attachment to said material, as set forth.

293,878. COMPOUND FABRIC. FREDERICK H. HOLBROOK, Boston, Mass. Filed Oct. 8, 1883. (No specimens.)



Claim.—An improved article of manufacture, the same consisting of a continuous piece of cloth and a veneering of leather secured thereto by a cement of gutta-percha, the leather being in separate pieces, as described, and the whole being rendered compact, as by pressure, substantially as described.

293,879. MANUFACTURE OF INCANDESCING ELECTRIC LAMPS. WILLIAM HOLZER, Harrison, N. J. Filed June 7, 1883. (No model.)



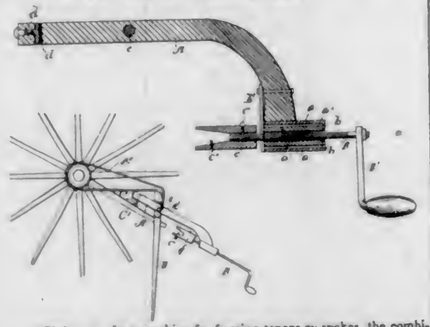
Claim.—1. The combination, with a ring of stationary burners of graduated relative intensity, of a circular frame revolving above the burners for supporting one or more incandescent-lamp stems, substantially as set forth.

2. The circular gas-pipe, provided with a series of gas-burners, but with a portion of its length unprovided with burners, substantially as and for the purpose set forth.

3. The combination of the stationary series of burners, the stationary stem, the revolving frame provided with spring-fingers, and the stop for limiting the revolution of the frame, substantially as set forth.

4. The combination of the inclosing-cage, the stationary ring of burners, and the revolving frame for carrying the lamp-stems, substantially as set forth.

293,880. MACHINE FOR BORING TENONS. WILLIAM W. HOSLER, Petoskey, Mich. Filed Dec. 27, 1883. (No model.)

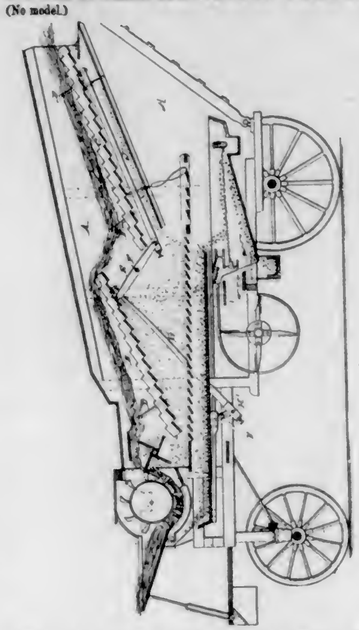


Claim.—1. In a machine for forming tenons on spokes, the combination of the stock A, having one end curved downwardly, to which is secured cylinder-box *a* in sleeve *a′* by means of plate *b′*, chuck-holder *c*, in connection with spindle B, having handle B′, bar C, projected through slot *d* of stock A, and having rest C″, lever D for supporting stock A, and strap E for holding the parts to the wheel-hub, substantially as shown, and for the purpose described.

2. The combination of stock A, having tool or chuck holder spindle B, with handle B′, and holder *c*, secured to spindle B by plate *b′*, lever D, pivoted to stock A, bar C for supporting stock A, and strap E for securing the parts to the wheel-hub, substantially as shown and described.

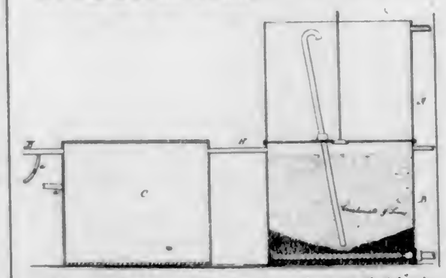
3. A tenon-boring machine consisting of a stock or brace, a chuck-holder comprising a spindle operated by a crank and secured to the stock by plate *b′*, bar C, having foot C″, lever D, and strap E, substantially as shown, and for the purpose described.

293,881. STRAW-CARRIER FOR THRASHING-MACHINES. EDWARD HUBER and FREDRICK STROBEL, Marion, Ohio. Filed Dec. 10, 1883. (No model.)



Claim.—In a straw-carrier of the described construction, the combination of the sections B C, hangers D, shaft H, having cranks H′, and provided with a pulley-wheel, I, pitman G, rock-levers E, connected by a shaft, F, shaft F, and pitman J, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

293,882. ART OF FILTERING WATER. JOHN W. HYATT, Newark, N. J. Filed Jan. 29, 1884. (No model.)



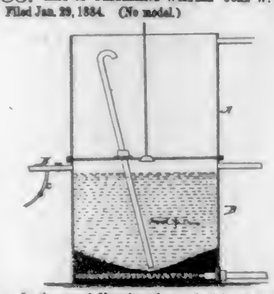
Claim.—1. In the art of filtration, the continuous method hereinbefore described of coagulating and arresting the impurities and of preventing any of the coagulating material from passing off in solution with the filtered water, which method consists in introducing a coagulant into

the unfiltered water, and then passing the same through a filter-bed containing carbonate of lime.

2. In the art of filtration, the continuous method hereinbefore described of coagulating and arresting the impurities and of preventing any of the coagulating material from passing off in solution with the filtered water, which method consists in introducing a coagulant into the unfiltered water, and then passing the same through an intermediate tank into a filter-bed containing carbonate of lime.

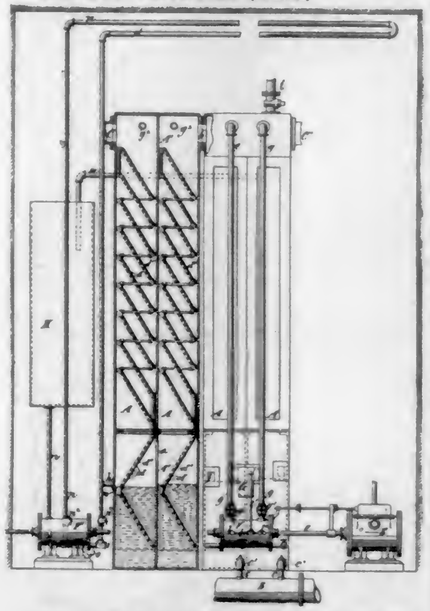
3. In the art of filtration, the method hereinbefore described of coagulating and arresting the impurities and of preventing any of the coagulating material from passing off in solution with the filtered water, which method consists, first, in introducing the coagulant and unfiltered water into a tank; second, allowing it to settle therein, and, third, passing it through a filter-bed containing carbonate of lime.

293,883. ART OF FILTERING WATER. JOHN W. HYATT, Newark N. J. Filed Jan. 29, 1884. (No model.)



Claim.—In the art of filtration, the method hereinbefore described of coagulating and arresting the impurities, and of preventing any of the coagulating material from passing off in solution with the filtered water, which method consists in introducing lime or equivalent substance into the unfiltered water, and then passing it through a filter-bed containing metallic iron in comminuted form.

293,884. CONDENSER-SCRUBBER FOR GAS. CHARLES W. IRRELL, New York, N. Y. Filed Feb. 9, 1883. (No model.)



Claim.—1. The improved method of scrubbing gas, consisting in causing both the gas and the scrubbing-liquor to pass in contact with artificially-cooled surfaces, substantially as and for the purpose herein described.

2. The improved method of operating a gas-scrubber, consisting in circulating or passing the gas and washing-water over surfaces contained in the scrubber, and in simultaneously and artificially cooling or refrigerating such surfaces and cooling or refrigerating the atmosphere surrounding the scrubber, substantially as and for the purpose described.

3. The combination, with a gas-scrubber containing a system of tubes or conduits, of means for producing the circulation of the scrubbing-liquor and gas over and in contact with the surfaces of said tubes or conduits, and means for simultaneously producing the circulation of a cooling or refrigerating fluid through said tubes or conduits, substantially as and for the purpose described.

4. The combination, with a gas-scrubber containing a system of tubes or conduits, of means for producing the circulation of the scrubbing water or liquor over and in contact with the surfaces of said tubes or conduits, a system of tubes or pipes extending through the room containing the scrubber, and means for producing the circulation of a cooling or refrigerating fluid through both said systems of tubes or conduits, substantially as and for the purpose described.

5. The combination, with a scrubber containing a system of tubes or conduits partly immersed in the cooling water or liquor at the bottom of the scrubber, of means for producing the circulation of washing-water and gas over the surfaces of said tubes or conduits, and means for simultaneously producing the circulation of a cooling or refrigerating fluid through said tubes or conduits, substantially as and for the purpose described.

6. The combination, with a scrubber containing a system of tubes or conduits, of means for producing the circulation of the washing water or liquor and gas over the surfaces of said tubes or conduits, a cooler connected with the upper end of said system, a pump connected with the lower end of the system, and a suction-pipe leading from the cooler to the pump, substantially as and for the purpose described.

293,885. LOCK. MILTON JACKSON, Philadelphia, Pa. Filed Oct. 9, 1883. (Model.)



Claim.—1. The combination, in a lock, of the casing having a recess, *f*, and a shallower recess, *f'*, adjacent thereto, the cylinder carrying the locking-dog, the tumblers having notches for the entrance of the dog, and a cam, *m*, adapted to lift the dog before the action of the tumblers thereupon to force it into the recess *f*, as set forth.

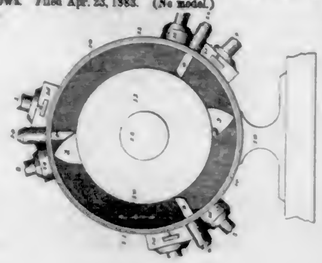
2. The combination, in a lock, of the casing having the recess *f f'*, the cylinder having a dog, and a pivoted lever, J, connected thereto, the tumblers having notches for the entrance of the dog, and a cam, *m*, adapted to act upon the lever J, to effect the elevation of the dog prior to the action of the tumblers thereupon, as set forth.

3. The combination of the spindle B, slotted for the reception of the key, and having a wing, *n*, with the tumblers fitted to said spindle, and having openings with edges *y* for the action of said wing, and notched or bitted edges *y'* for the action of the key, as set forth.

293,886. ALLOY FOR COATING METALS. JOHN B. JONES, Brooklyn, N. Y. Filed July 15, 1882. (No specimens.)

Claim.—An alloy for coating iron, consisting of lead, tin, and zinc, with metallic sodium added, substantially in the manner and proportions specified, whereby the alloy is rendered electro-positive to iron, its melting-point reduced, and oxidation destroyed, arrested, or prevented, as set forth.

293,887. ROTARY STEAM-ENGINE. THOMAS E. JONES, Fairfield, Iowa. Filed Apr. 23, 1883. (No model.)



Claim.—1. In a rotary engine, a revolving head to transmit the power driven by floats, which pass around a stationary drum.

2. In a rotary engine, a hinged valve permitting the floats to pass under it, and then holding the pressure of the steam against them.

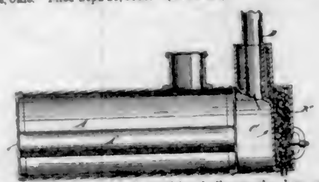
293,888. CHECK-ROWER. AMBROSE L. JORDAN, Ottawa, Ill., assignor of one-half to Richard C. Jordan, same place. Filed Nov. 21, 1883. (No model.)



Claim.—1. In a check-rower, the triangular-shaped piece centrally pivoted, having upon its two outer edges or sides, which diverge from the front, tubes or tubular flanges, which along their entire inner sides are open to allow free passage of the check-rower wire, but sufficiently closed to prevent the escape of the knots or obstructions, except through the tubes, (lengthwise of said tubes,) which receive them in front and discharge them in the rear through openings for that purpose, substantially as specified.

2. In a check-rower, the centrally-pivoted triangular piece, in combination with the cross-rod or long pitman, the clamp holding the short pitman and attaching it to the cross-rod, the friction-spring, the centrally-pivoted perpendicular lever, and the attaching device by which it is connected to the shake-bar, substantially as specified.

293,889. FEED-WATER HEATER. FRANK JAMES KORTE, Zanesville, Ohio. Filed Sept. 25, 1883. (No model.)



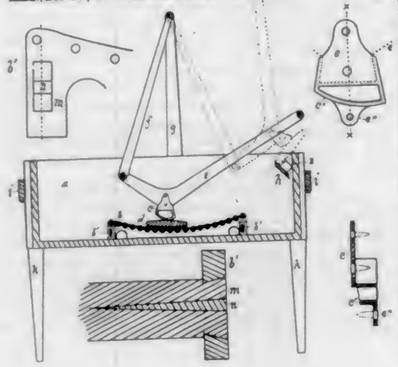
Claim.—1. The combination, with a boiler smoke-box, of a feed-water heater secured thereto, and composed of the chamber having partitions E', a filtering material arranged between the partitions, the inlet-port *e*, outlet-port *e'*, and blow-off port *e''*, substantially as and for the purposes described.

2. The combination, with a boiler, of a feed-water heater consisting of a chamber constructed to constitute a wall of the smoke-box, said heater hinged to the boiler at this point and serving as a door for gaining access to the tubes and flue, substantially as described.

3. The feed-water heater herein described, consisting of a chamber provided with partitions E', filtering material, and inlet and outlet ports, said heater constructed to fit within the boiler smoke-box and hinged to the boiler at this point, substantially as described.

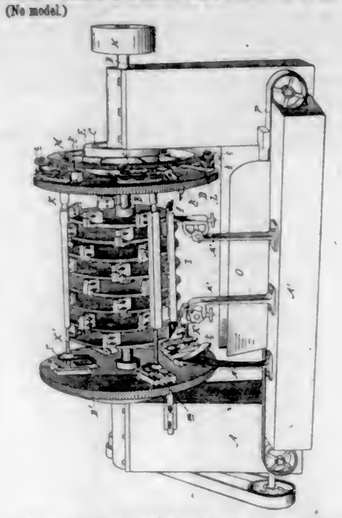
4. The combination, with a boiler, of a feed-water heater consisting of a chamber constructed to constitute a wall of the smoke-box, said heater extended upward around the base of the smoke-stack and forming a part of said stack, substantially as described.

293,890. WASHING-MACHINE. WILLIAM C. KRIEG and JOSEPH T. ALEXR, Decatur, Ill. Filed Jan. 20, 1883. (No model.)



Claim.—The bracket *c*, provided with the rounded portion *c'* and projections *c''*, in combination with an operative lever-frame attached to the bracket, as described, and the rubber *d*, pivoted to the projections *c''*, as and for the purposes set forth.

293,891. LATHE FOR TURNING ECCENTRIC OR POLYGONAL FORMS. WILLIAM H. LENHART, Defiance, Ohio. Filed July 14, 1883. (No model.)



Claim.—1. In a lathe for turning irregular forms, the rotating disks D D', carrying one or more pairs of spindles journaled in bearings eccentrically adjustable in said disks, in combination with cams secured upon the ends of said spindles, and bearing upon guide-plates or gages secured to the rotating disks, and radially adjustable thereon, substantially as and for the purpose specified.

2. The revolving disk D, having one or more vibrating plates, L, pivotally secured thereto at one end, and provided with a bearing for the spindle upon the opposite end, said bearing passing through a curved slot, *s*, in said disk, so as to allow the plate or plates to vibrate, in combination with means, substantially as described, for vibrating said plates, so as to produce an eccentric movement of the spindle, substantially as described.

3. One or more vibrating plates pivotally secured at one end to the rotating disk D, and provided with a bearing for a spindle upon the opposite end, said bearing passing through a slot of the disk, in combination with two revolving cams adapted to vibrate said plates by bearing successively upon guide-plates adjustably attached to the disk, for the purpose of imparting an eccentric motion to the spindle, substantially as described.

4. As a means for imparting a rotary motion to the eccentrically-movable spindle K, a vibrating plate pivoted at one end to the rotary disk D, and carrying the spindle upon the other end in a bearing passing through a curved slot in the disk, a pinion, *c*, secured at the pivotal point of the vibrating plate, and a train of intermeshing pinions connecting the same with a pinion upon the spindle and in combination with the stationary circular gear M, meshing into the pinion *c*, substantially as described and shown.

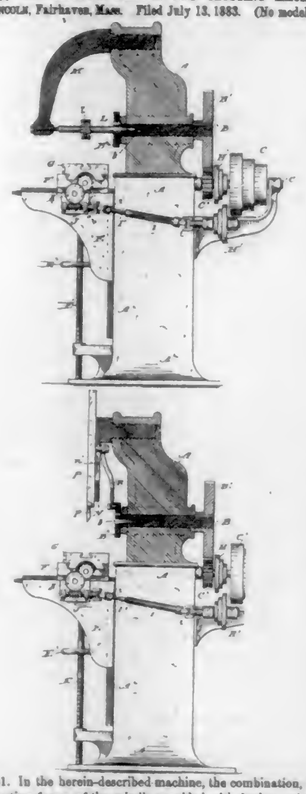
5. In a lathe for turning irregular forms, a series of cutter-heads which simultaneously work upon the stick, and in combination with one or more pairs of spindles revolving the stick, exchangeable cams secured upon the spindles, and radially-adjustable guide-plates secured to the disks which carry the spindles, whereby the size and shape of the work may readily be adjusted, substantially as described.

6. In a lathe for cutting irregular work, a series of cutter-heads revolving at a high rate of speed with the main shaft B, the spindle-carrying disks D D', revolving at a low rate of speed independent of the cutter-heads, but in the same direction and around the same line of motion, cams *i*, secured on the stub-shaft *w*, and geared with spindle K, rollers *o*, secured near the inner ends of the boxes *m*, cams *h*, secured upon the spindle K, and stops *n*, secured upon the spindle K', guide-plates *l*, adjustably secured to the disk D, and stationary guide-track *q*, secured to the frame A, and gages *k*, adjustably secured to the disk D, and gages *p*, secured to the disk D', all substantially as and for the purposes specified.

7. The combination, with the vibrating spindle-carrying plate L and disks D D′, having guides, as shown, of the revolving cam *i*, bearing upon the guide-plate *l*, and revolving cam *h*, bearing upon the guide-plate *k*, the eccentric cam *i* arranged to revolve slower than the cam *h*, and allow the other cam, during a portion of its movement, to gain a bearing, substantially as described.

8. The vibrating plate L, pivoted at one end to the disk D, and carrying a spindle at the other, in combination with the disks D D′, having guides, as shown, the stationary gear M, secured to the frame A, a train of pinions, *b f g u v c*, secured to the vibrating plate L, and the latter pinion meshing with the gear M, cams *h* and *i*, secured upon the spindle K and stub-shaft *w*, respectively, and driven by said train of pinions, and bearing-plates *k* and *l*, adjustably secured to the disk D, substantially as and for the purpose specified.

293,892. CONVERTIBLE MILLING AND SLOTTING MACHINE. Wm. O. Lincoln, Fairhaven, Mass. Filed July 13, 1883. (No model.)



Claim.—1. In the herein-described machine, the combination, with the main supporting-frame, of the spindle provided with devices, substantially as described, whereby it may be connected with and actuate the milling-arbor or the slotter-slide, said frame being also adapted, as set forth, to support either the milling or the slotting tool holding attachments, substantially as described.

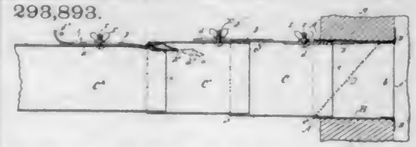
2. In the herein-described machine, the combination, with the main supporting-frame, of the spindle provided with devices, substantially as described, whereby it may be connected with and actuate the milling-arbor or the slotter-slide, said frame having an aperture for the reception of the milling-arbor support or the arm of the slotter-guide, substantially as set forth.

293,893. STOVE-PIPE. Jacob Z. Lindley and John V. Elder, Lamar, Mo. Filed Aug. 24, 1883. (No model.)

Claim.—1. The combination, with a pair of sections of stove-pipe, of a sliding slotted strap or extension provided with a wedge-shaped end for the purpose of holding the said sections in position, substantially as and for the purpose described.

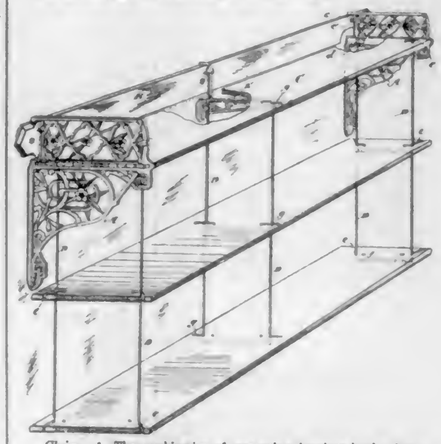
2. The combination, with a pair of sections of stove or other similar pipe, of a sliding slotted strap held in position by a binding-screw or

293,893.



equivalent means, and provided with an inclined spring extension or wedge, substantially as shown and described.

293,894. WALL-BRACKET EXTENSION-SHELF. Arthur Loomis, Jeffersonville, Ind. Filed June 16, 1883. (No model.)



Claim.—1. The combination of supporting-brackets having laterally-projecting shelf-supporting lugs provided with slots, a shelf having its ends supported by the lugs, suspending-wires passing through the shelf and the slots in the lugs, and having their upper ends hooked to clamp the upper shelf between the lugs and the upper ends of the wires, and a shelf suspended by the lower portions of the wires, substantially as described.

2. The combination of a horizontal strip, supporting-brackets having hooks engaging with the strip and provided with laterally-projecting slotted lugs, a shelf supported at its ends by the lugs, a suspending-wire having its upper end passing through the slotted lugs and the shelf and secured on the latter to clamp it on the lugs, and a shelf suspended by the lower portions of the wires, substantially as described.

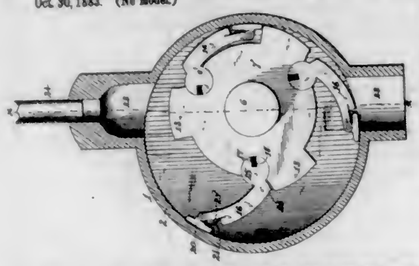
3. The combination of supporting-brackets having laterally-projecting shelf-supporting lugs, a shelf having its ends supported by the lugs, suspending-wires passing through the shelf, and having hooks at their upper ends secured upon the upper surfaces of the shelf, and a shelf suspended by the lower portions of the wires, substantially as described.

4. The combination of supporting-brackets having inwardly-projecting slotted lugs and overhanging hooks, a horizontal bracket-supporting strip with which the hooks engage, a shelf having its ends resting on the slotted lugs, suspending-wires passing through the shelf and the slotted lugs, and having their upper ends provided with hooks resting upon the upper surface of the shelf to clamp the latter on the lugs, and a shelf suspended by the lower portions of the wires, substantially as described.

5. The combination, in wall-bracket shelves, of supporting-brackets having inwardly-projecting slotted lugs, a series of shelves having their ends provided with slots open at one end, and the upper shelf having its ends arranged on the lugs, and suspending-wires passing through the slots in the respective shelves and the slots in the lugs, and having their upper ends provided with hooks resting upon the upper surface of the shelf to clamp the latter on the lugs, substantially as described.

6. The combination, in a wall-bracket shelf, of a horizontal strip, supporting-brackets having laterally-projecting slotted lugs at their sides and downwardly-projecting hooks at one end to engage over the upper edge of the strip, a top shelf having its ends resting on the lugs, suspending-wires carrying a shelf at their lower ends, and having their upper ends passed through the slots in the lugs and attached to the top shelf to clamp the latter on the lugs, suspending-wires detachably secured to the ends of the shelf, suspended from the wires connected to the top shelf, and a shelf detachably supported by the said detachable wires, substantially as described.

293,895. MOTOR. Henry E. Marchand, Allegheny City, Pa. Filed Oct. 30, 1883. (No model.)



Claim.—1. The combination of the cylinder, the piston-head eccentrically journaled therein, and having cylindrical transverse sockets, and swinging pistons having cylindrical journals mounted in said sockets, and provided with longitudinal recesses, with the spring-plates arranged in said recesses, and the packing-strips arranged between the plates and the walls of the cylindrical sockets in the piston-head, substantially as described.

2. The combination of the cylinder, the piston-head eccentrically journaled therein, and constructed with radial projections 13, segmental recesses 26, and a transverse cylindrical socket at the base of each projection, the pistons having the cylindrical journals mounted in the sockets, and the packing-strips arranged in recesses in the journals of the pistons, to preserve a tight joint with the walls of the cylindrical sockets, substantially as described.

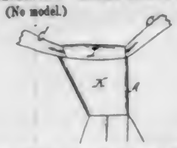
3. The combination of the cylinder, the rotating eccentrically-journaled piston-head, having transverse cylindrical sockets, the swinging pistons having cylindrical journals mounted in the sockets, and the shoes swiveled to the outer ends of the swinging pistons, substantially as described.

4. The combination of the cylinder, the piston-head, the oscillating pistons, and a hinged connection between the inner ends of the pistons and the piston-head, with the shoes swiveled to the outer ends of the pistons, and having their working-face turned to the circle of the cylinder, substantially as described.

5. The combination of the cylinder and the piston-head, the pistons swiveled to swing on said head in their travel around the cylinder, and having recesses at their outer ends, springs secured to said pistons, and shoes swiveled to the pistons, and adapted to turn at one end into the recesses of the pistons to compress the springs, substantially as described.

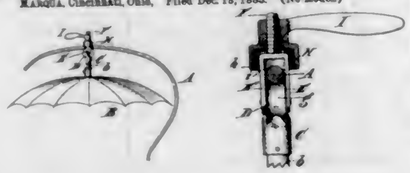
6. The combination of the cylinder and the eccentrically-journaled piston-head, having transverse cylindrical sockets, with the pistons, having at their inner ends cylindrical journals mounted to rock in the sockets, and shoes swiveled to the outer ends of the pistons, substantially as described.

293,896. NECKSCARF. Solomon Marcus, New York, N. Y. Filed June 14, 1883. (No model.)



Claim.—In a scarf of the character specified, the head A, composed of a strip folded to form a passage for the neckband, and the back section J of the strip, having an edge, *l*, extending diagonally from the lower to the upper edges of the back section J′, said diagonal edge of the back section J extending across the back section J′ and unattached thereto intermediate its upper and lower edges, whereby the neckband can be drawn through the heads at points along the width of the back J′, substantially as described.

293,897. DEVICE FOR SUSPENDING CARRIAGE-TOPS. Philip Marqua, Cincinnati, Ohio. Filed Dec. 18, 1883. (No model.)



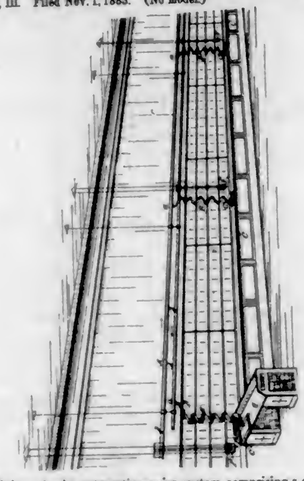
Claim.—1. A device for suspending a parasol or top, composed of the block D, groove *g*, and clamp H and screws F and I, substantially as herein set forth.

2. In combination with the grooved block D and clamp H, I, and F, the parasol B, secured thereto, substantially as herein set forth.

3. In combination with the grooved block D and clamp H, I, and F, the rod A, adapted to suspend the same over a carriage-seat, substantially as herein set forth.

4. A supporting device consisting of the grooved arc-block D, adapted to fit the supporting-rod A, and to be moved in the two right-angle circular paths, in combination with clamping mechanism for securing it in any fixed position, substantially as herein set forth.

293,898. AUTOMATIC CARRIER SYSTEM. Jacob M. Martin, Sterling, Ill. Filed Nov. 1, 1883. (No model.)



Claim.—1. An automatic carrier system comprising a substantially horizontal and direct main elevated track or tracks, means for raising the vehicles to said main tracks, and indirect descending subordinate tracks leading from said main tracks to the delivery-stations, substantially as herein shown and described.

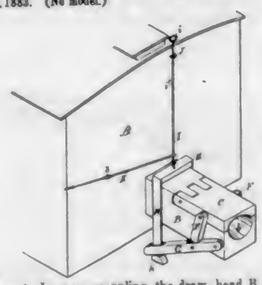
2. An automatic carrier system comprising a substantially horizontal and direct main elevated track, A, the elevators F, and the indirect descending tracks B, arranged with reference to each other, and operating together substantially as herein shown and set forth.

3. The combination of the spiral track B, upright E, and arms *e*, substantially as described.

4. The combination, with the elevated track A, of the indirect descending track B and the box or equivalent receptacle, C², substantially as shown, and for the purposes set forth.

5. The combination, with the elevated track A, of an indirect descending track, B, constructed of longitudinal parallel wires *b′ b′*, substantially as described, and for the purposes set forth.

293,899. CAR-COUPLING. John Martin, Knight's Ferry, Cal. Filed Nov. 12, 1883. (No model.)



Claim.—1. In a car-coupling, the draw-head B, hinged latch C, between which and said draw-head a chamber, *b*, having a front shoulder, *b′*, is formed, for the reception and engagement of a coupling-pin, as described, in combination with the means for raising the latch, con-

sisting of the pivoted arms F, levers G, bail H, and rod I, substantially as herein described.

2. In a car-coupling, the draw-head B, hinged latch C, between which and said draw-head a chamber, *b*, having a shoulder, *b'*, is formed for the reception and engagement of a coupling-pin, D, and the staple E in the latch, for the reception of the point of the pin, in combination with the means for raising said latch and staple to free the pin, consisting of the pivoted arms F, levers G, bail H, and rod I, substantially as herein described.

3. In a car-coupling, the draw-head B and hinged latch C, for receiving and engaging the coupling-pin, in combination with the arms F on the latch, the levers G on the draw-head, the bail H, upon the sides of which the rear ends of lever G loosely play, and the rod I, substantially as and for the purpose herein described.

4. In a car-coupling, the draw-head B and swinging latch C, forming a chamber, with a shoulder for the reception and engagement of the coupling-pin D and the staple E in the latch, in combination with the means for raising said latch from the side of the car, consisting of the arms F, levers G, bail H, rod I, and lever K, substantially as herein described.

293,900. PILLOW-SHAM HOLDER. FREDRICK T. MAYNARD, Detroit, Mich. Filed Nov. 21, 1883. (No model.)



Claim.—A pillow-sham holder consisting of two rectangular frames, A B, each formed from a continuous wire, one end of said wire being provided with a loop, *a*, adapted to hang the frame upon a bracket, and its other end formed with a loop, *b*, embracing and holding the end of the wire carrying the loop *a*, and adjustably secured together by the slides C D, embracing both wires at top and bottom, substantially in the manner and for the purposes specified.

293,901. LOCK WIRE INSULATOR. THOMAS MCGROORY, Philadelphia, PA. Filed Dec. 14, 1883. (No model.)



Claim.—In an insulator having in one side a V-shaped groove, C, an oval inclined ledge, B, a bridge, *a*, with recess *c* at its inner end, and the upwardly-projecting grooves *d d* at the ends of the opening C, substantially as and for the purpose set forth.

293,902. ART OF SWEEPING CARPETS. EZRA MILLER, Hoboken, N. J. Filed Mar. 8, 1883. (No model.)

Claim.—The improvement in the art of sweeping carpets, the same consisting in distributing over the carpet moistened pieces of comminuted sponge, and moving the same over the carpet by a sweeping implement, whereby the said pieces of moistened sponge collect the dust, lint, &c., and prevent the same from rising, substantially as described.

293,903. HARNESS-TUG SLIDE. JOHN G. MILLER, Champaign, Ill. Filed July 12, 1883. (No model.)

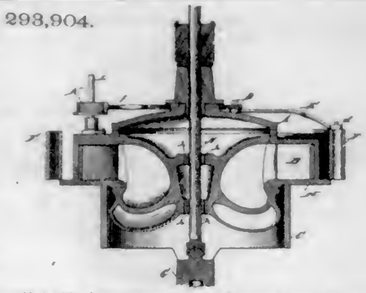


Claim.—The combination, with the rack-plate on the saddle-flap, of the adjustable metallic loops, the metallic tug-slide having end loops and center pin to engage the back-band, and slotted or recessed in its inner face to accommodate the rack-plate, substantially as specified.

293,904. TURBINE WATER-WHEEL. WILLIAM M. MILLS, Dayton, Ohio. Filed Aug. 3, 1883. (No model.)

Claim.—1. In a turbine water-wheel, the wheel proper, having spiral concavo-convex buckets substantially tangential to the hub, and surrounded by a projecting ring, in combination with the wheel-casing

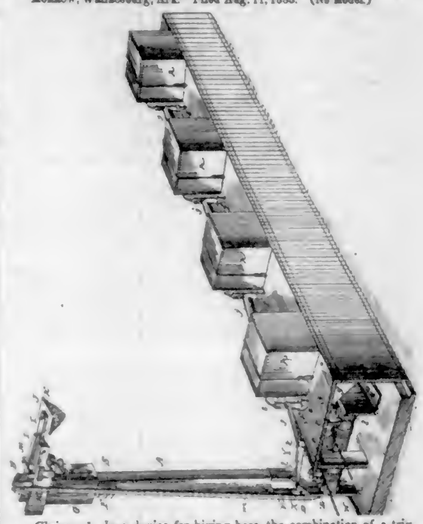
293,904.



provided with chutes whose bottom walls extend over said projecting ring, and are beveled or rounded, substantially as described.

2. In a turbine water-wheel, the chutes having enlarged or flaring mouths or water-ways formed by the turned-up upper walls thereof, and the bent or curved ends of the gates pivoted therein, substantially as described.

293,905. DEVICE FOR HIVING BEES. FREDERICK CARPENTER MORROW, Wallacsburg, Ark. Filed Aug. 11, 1883. (No model.)



Claim.—1. In a device for hiving bees, the combination of a trigger having a head or block shaped and colored in imitation of a settled swarm of bees, a sliding case released by said trigger, and chutes having connection with hives adapted to receive the swarm dropped from the block, and having lids adapted to close the chutes, as and for the purpose shown and set forth.

2. In a device for hiving bees, the combination of an upright standard, a frame or casing sliding upon the standard, a lever or trigger releasing the said frame, and having a block upon its outer end shaped and colored in imitation of a bee settle, a sliding table or board having chutes for receiving the bees when dropped from the block, means for closing the chutes when the bees are in the same, and hives communicating with the chutes, and means for sliding the table and raising the sliding frame or casing after it has descended, as and for the purpose shown and set forth.

3. The combination of a standard having a rabbeted edge, forming a cogged rack near its upper end, a frame or casing fitting and sliding upon the standard, having laterally-projecting cross-pieces upon its upper end, a spring-operated revolving cylinder provided with a bail upon its surface, a lever pivoted between the cross-pieces, and having a block upon its outer end shaped and colored to imitate a bee settle, a spring upon its upper surface forcing the inner end down, and a catch upon its under side engaging the bail upon the cylinder, a spring fastened upon the side of the frame, and a block or bolt sliding in a perforation upon the side of the frame, bearing with its inner end against the side of the standard, and fastened at its outer end to the said spring, and means for raising the frame, as and for the purpose shown and set forth.

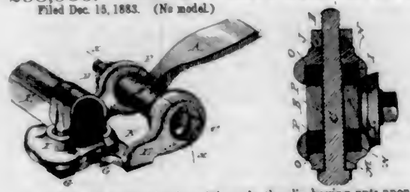
4. The combination of a standard, a frame sliding upon the said standard, having a trigger provided with a block for receiving the settling swarm of bees, releasing the frame by the weight of the bees, and having a downwardly-projecting bent rod upon its lower end, a chute having connection with a hive, a hinged lid covering the opening of the chute, a flat pointed arm hinged to the side of the lid, and a trigger or arm hinged to the base of the hive and scoop, projecting out to be struck by the rod upon the sliding frame when it descends, and having a notch upon the inner end of its upper surface for the reception of the flat point of the hinged arm, as and for the purpose shown and set forth.

5. The combination of a standard, a frame sliding upon the standard, and having a trigger, releasing the frame by the weight of the bees settling upon a block upon its outer end, a drum having connection with a motor, and having pinions upon each end, a table sliding upon ways, having a series of hives and traps for receiving the bees, the said traps being operated by the descending sliding frame, and a rack-bar upon its under side meshing with the pinion upon the inner end of the drum, a wheel journaled in the lower end of the standard, having a pinion upon its shaft meshing with the pinion upon the outer end of the drum, and having a projecting lug upon its outer face, and a bar sliding upon the lower end of the standard, having a notch at its inner edge slightly above the point where the lug upon the wheel bears against it, and operated by the descending frame, as and for the purpose shown and set forth.

6. The combination of a standard, a frame sliding upon the standard, having a trigger, releasing the frame by the weight of the bees settling upon the outer end of the same, and having a horizontally-projecting bent arm upon one side, a drum having connection with a motor, and having a pinion upon its outer end, a sprocket-wheel journaled in the lower slotted end of the standard, having a pinion upon its shaft meshing with the pinion upon the drum, and having a lug projecting from its face, a bar sliding in bearings upon the lower end of the standard, having a notch slightly above the point where the lug upon the wheel bears against it, and operated by the descending frame, and a sprocket-chain or perforated belt passing over the sprocket-wheel and a pulley upon the upper end of the standard, and having a catch engaging the rod upon the sliding frame when ascending, as and for the purpose shown and set forth.

7. The bee-hiving device consisting of a standard having a pulley at its upper end and a slot at its lower end, a sliding frame or casing having a trigger provided with a block shaped and colored to imitate a bee settle upon its outer end, and a horizontally and a vertically projecting bent rod upon its sides, a sliding bar having a notch in its inner edge, a sprocket-wheel having a lug upon its outer face and a pinion upon its shaft, a drum having connection with a motor and having a pinion upon its inner and outer end, a sliding table having a rack-bar upon its under side, chute fastened in the table, hives fastened over one end of the chute, lids hinged over the open ends of the chute, flat pointed arms or props hinged to the lids, and triggers having notches upon their upper surfaces and hinged upon the outer edge of the sliding table, all constructed, combined, and arranged as and for the purpose shown and set forth.

293,906. THILL-COUPLING. FRANK P. MUNSER, Beaver Falls, Pa. Filed Dec. 15, 1883. (No model.)



Claim.—The combination of the axle, the clip having nuts upon its threaded ends, the upper shackle having forwardly-projecting perforated and female-threaded recessed bearing, the lower shackle having transverse slots and perforated and recessed forwardly-projecting bearing, the perforated rubber blocks, the leather washers, the thill-iron forming the eye, and the coupling-bolt having the nut upon its threaded end, all constructed to operate as and for the purpose shown and set forth.

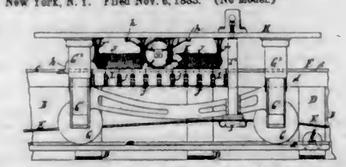
293,907. VEHICLE RUNNING-GEAR. JOHN I. NISSEN and CHRISTIAN F. NISSEN, Salem, N. C.; said C. F. Nissen assignor to C. F. Nissen & Co., same place. Filed Oct. 19, 1883. (No model.)



Claim.—1. The cap E, provided with the upper plate, *a*, lug *b*, wings *c*, having the diagonal portion, lips *f*, and horizontal flange *g*, in combination with the tongue A and hounds, all constructed as and for the purpose described.

2. The cap E, provided with lug *b*, wings *c*, lips *f*, and the horizontal flange *g*, in combination with the double-tree F, provided with the bent plate *i*, and the plate A, all constructed to operate substantially as and for the purpose set forth and described.

293,908. STREET-SWEEPER. OREL D. ORVIS and NELSON B. ADAMS, New York, N. Y. Filed Nov. 6, 1883. (No model.)



Claim.—1. The combination, in a sweeper for use upon a railway structure of the kind herein described, of a platform and wheels connected by vertical plates, a brush or brushes, and plates or guards arranged below the brush or brushes and serving to temporarily close the longitudinal slots as the brush or brushes sweep across them, substantially as herein described.

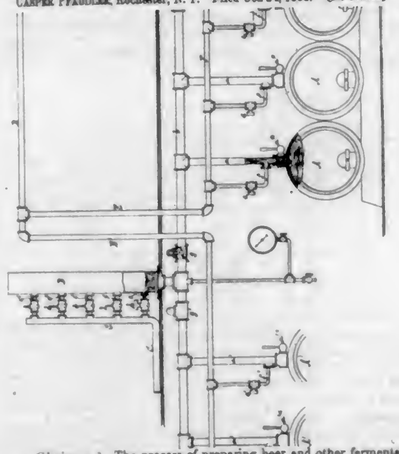
2. The combination, in a sweeper for use upon a railway structure of the kind herein described, of a platform and wheels connected by vertical plates, a brush or brushes, and plates or guards composed of hinged sections arranged below the brush or brushes and serving to temporarily close the longitudinal slots as the brush or brushes sweep across them, substantially as herein described.

3. The combination, in a sweeper for use upon a railway structure of the kind herein described, of a platform and wheels connected by vertical plates extending through longitudinal slots, and plows projecting in front of said plates, entering said slots, and serving to throw upward and out of the slots any obstructions by which they may be clogged, substantially as herein described.

4. The combination, with the body or platform of a street-sweeper, of a yielding frame connected therewith, a driving-wheel supported in said yielding frame and by it held in frictional contact with the street-surface, a bevel-wheel at the side of said driving-wheel, and a brush provided with a bevel-wheel engaging with the first-mentioned bevel-wheel, substantially as herein described.

5. The combination, with the body or platform of a street-sweeper, of a yielding frame composed of springs *h h i i*, the springs *h h* having an upward flexure and being connected between their ends to the body or platform, and the springs *i i* having a downward flexure and being connected at their ends to the ends of the springs *h h*, a driving-wheel supported by the springs *i i*, and a brush or brushes receiving motion from said wheel, substantially as herein described.

293,909. PROCESS OF AND APPARATUS FOR PREPARING BEER AND OTHER FERMENTED LIQUIDS FOR THE MARKET. CASPER PFAUDLER, Rochester, N. Y. Filed Oct. 24, 1883. (No model.)



Claim.—1. The process of preparing beer and other fermentable liquids for the market, which consists in holding such beer or other liquid

during fermentation under a controllable hydrostatic pressure and carrying off the barm which rises from the fermenting mass by a current of liquid, substantially as set forth.

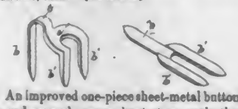
2. The combination, substantially as hereinbefore described, with a fermenting cask or vessel, of a pipe filled with water or other liquid, for holding the liquid in the cask under a hydrostatic pressure, the regulator for controlling this pressure, and the spout *f*, for passing a current of liquid through the hydrostatic pipe and the regulator.

3. The combination, substantially as hereinbefore described, with a series of fermenting casks or vessels, a series of hydrostatic pipes—one for each cask—and the regulator for controlling the pressure in the hydrostatic pipes and in the casks.

4. The combination, substantially as hereinbefore described, with a series of fermenting casks or vessels, a series of hydrostatic pipes—one for each cask—the regulator for controlling this pressure, and the spouts *f*—one for each of the hydrostatic pipes.

5. The combination, substantially as hereinbefore described, with two series of fermenting casks or vessels, A A A A′ A′, of a series of hydrostatic pipes, *a a′*—one for each cask—the regulator B, connected to all the hydrostatic pipes by a pipe, *b*, the water-supply pipes E F, and spouts *f*, connected to the hydrostatic pipes *a*, and the water-supply pipes E′ F′ and spouts *f′*, connected to the hydrostatic pipes *a′*.

293,910. BUTTON-FASTENER. GEORGE W. PRENTICE, Providence, R. I. Filed Dec. 31, 1883. (No model.)



Claim.—1. An improved one-piece sheet-metal button-fastener, consisting of a table and several prongs bent at an angle thereto, with one of said prongs of thinner metal than the remaining prongs, and adapted to carry a button, for the purpose set forth.

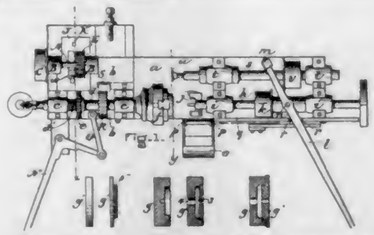
2. An improved one-piece sheet-metal button-fastener, consisting of a table having different thicknesses of metal, and several prongs projecting from said table and bent at an angle thereto, with one of said prongs of the thickness corresponding to the thinnest portion of the table, and adapted to engage the shank-eye of a button, for the purpose set forth.

3. A button-fastener consisting, essentially, of a table having a plane upper surface and an uneven or corrugated under surface, and provided with several prongs integral therewith and bent at an angle thereto, and one of said prongs adapted to engage the shank-eye of a button, for the purpose set forth.

4. The herein-described button-fastener, consisting, essentially, of a table the metal of which varies in thickness, and a button-prong and two holding-prongs, the said button and holding prongs projecting from opposite sides of the table and bent at an angle thereto, with the button-prong of a thickness corresponding to the thinnest portion of the table, and the holding-prongs corresponding in thickness to the thickest portion of the said table, all as set forth, and for the purpose specified.

293,911. MACHINE FOR FORMING ANNULAR SURFACES AND CUTTING SCREW-THREADS THEREON. HARVEY REDDING, Everett, assignor to himself and Jerome Redding, Malden, Mass. Filed June 26, 1883. (No model.)

Brief.—The work-hold spindle is first held from rotating while a rotary cutter is moved lengthwise against the blank. It is then moved laterally to a gear-wheel, by which it is rotated, and at the same time fed longitudinally to a screw-cutter.



Claim.—1. The combination of a chuck or holder mounted on an arbor, mechanism, substantially as described, adapted to move said arbor both laterally and longitudinally from a normal position, a rotated primary cutter adapted to be presented to the article held by the chuck when the latter is in its normal position, a rotated thread-cutter or saw located at one side of the primary cutter, and automatic feeding devices, substantially as described, whereby when the chuck or holder is moved laterally from its normal position it is rotated and at the same time moved longitudinally and presented to the thread cutter or saw, as set forth.

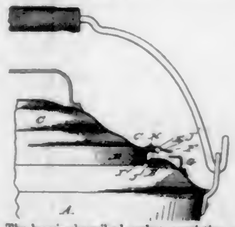
2. An organized machine for forming circular screw-threaded articles of wood or like material, the same consisting of a supporting-frame, a carriage movable laterally on guides on said frame, an arbor journaled in bearings on said carriage, provided with a threaded portion and with a pinion and capable of a limited endwise movement in its bearings, a chuck or holder on said arbor for the article to be formed, an arbor having a primary cutter for partially forming said article, and adapted to be moved endwise to present its cutter to the article, a rotary thread cutter or saw mounted on an arbor beside the primary cutter, a fixed arm at one side of the chuck-carrying arbor, having segmental threads adapted to engage with the threaded portion of said arbor when the latter is moved laterally from its normal position, and a positively-rotated arbor journaled in fixed bearings and provided with a pinion adapted to engage with the pinion of the chuck-carrying arbor when the same is moved laterally from its normal position, whereby when the chuck-carrying arbor is so moved the article held by the chuck is presented to the thread cutter or saw and the arbor is positively rotated and moved progressively endwise, thereby causing said cutter or saw to form a screw-thread on said article, as set forth.

3. The combination of the longitudinally-movable arbor carrying the primary cutter, the hand-lever *l*, pivoted to said arbor and having a pivotal connection with the frame of the machine, the slide *q*, engaged with said lever, and the shield *o*, forming, when covering the cutter, a stop or bearing for the end of said slide, and thus preventing the endwise movement of the arbor and cutter, as set forth.

4. The combination, with the slide or carriage *b*, supporting the chuck-holding arbor *d*, of the automatic feeding devices, substantially as described, the bracket J, supporting said devices, means for adjusting said bracket toward or from the normal position of said arbor, and means for positively securing said bracket in any position to which it may be adjusted, as set forth.

5. The combination, with a chuck carried by a laterally-movable arbor, of a fastening device, substantially such as described, which retains the arbor from rotation in one direction while in one of its lateral positions, and driving mechanism, substantially as described, which engages and rotates said arbor in the direction in which it is free to move when said arbor is shifted into its other position, substantially as set forth.

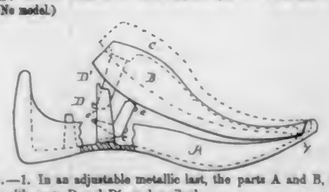
293,912. CHAMBER-PAIL. GEORGE L. REYNOLDS, Orange Valley, N. J. Filed Dec. 18, 1883. (Model.)



Claim.—1. The herein-described gasket, consisting of a flange projecting inward and a tapering downwardly-projecting flange, both flanges being at right angles to each other, the said gasket being adapted to be slipped with its normally inwardly-projecting flange over the downwardly-projecting flange of the cover of a vessel, with its normally downwardly-projecting flange projecting outward, as and for the purpose shown and set forth.

2. In a chamber-pail or similar vessel, the combination of a cover having a downwardly-projecting flange and an outwardly-projecting edge, with a gasket slipped with its normally inwardly-projecting flange upon the downwardly-projecting flange of the cover, and with its normally downwardly-projecting flange projecting outward and slightly downward beneath the outwardly-projecting edge of the cover, as and for the purpose shown and set forth.

293,913. LAST. GEORGE A. REYNOLDS, Utica, N. Y. Filed Dec. 20, 1883. (No model.)

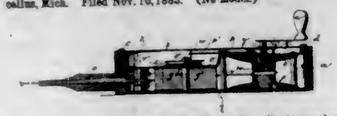


Claim.—1. In an adjustable metallic last, the parts A and B, in combination with posts D and D′, as described.

2. In an adjustable metallic last, parts A and B, provided with posts D and D′, and support E, provided with extensions *e* and *d′*, as described.

3. In an adjustable metallic shell-last, parts A and B, provided with tongue F and groove F′, posts D and D′, and support E, provided with extensions *e* and *d′*, as described.

293,914. CLOTH-MEASURING DEVICE. WARNER J. SAMPSON, Marcellus, Mich. Filed Nov. 10, 1883. (No model.)



Claim.—The cloth-measuring machine described, consisting of the frame *e*, having rounded ends, and a removable cover secured thereto by screws, and provided with the hollow pointed nozzle *e*, the spool *f*, drum *g*, rubber tension-rollers *h h′*, and the guide-loops *u* and *v*, the base-plate *i*, and shoulder top plate, *k*, connected by posts and pins *l* and *m*, the dial-wheel *p*, pinion-wheel *r*, gear-wheel *r²*, rubber washer *s*, yard-dial *s′*, provided with the vertical stud *w*, and the crank *a*, provided with a threaded shank, all constructed and adapted to operate substantially as specified.

293,915. FLY-SCREEN. JAS. IRVING SPENCER, Chelsea, Mass. Filed Nov. 15, 1882. (No model.)

Brief.—A netting provided with a re-enforcing fold is wound upon a roller having a groove in its circumference. The roller is mounted in a longitudinally-slotted removable casing.



Claim.—The roller F, having rabbet K, in combination with a flexible extensible screen attached to said roller, and having re-enforcing bands or folds J, and adapted to be wound thereon, and a longitudinally-slotted cylindrical casing adapted to contain said roller and screen, and having said roller journaled in the ends thereof, said casing and its contents being readily removed from and attached to the wood-work as a single piece

293,916. HOOP. A. RENSSELAER SPROUT, Picture Rocks, Pa. Filed July 7, 1883. (No model.)



Claim.—1. A wood hoop provided on its inner side with scores *b*, cut crosswise of the fibers, and having the cut ends of the fibers pressed inward, as set forth.

2. A wood hoop provided on its inner side with short scores *b*, cut crosswise of the fibers, said scores being arranged in rows extending lengthwise of the hoop, with a space or row, *d*, of uncut fibers between the rows of scores, also extending lengthwise, as shown and described.

3. A wood hoop having its lapped ends secured by a metallic fastener, consisting of a flat strip, E, provided on one side with raised edges *f*, and tightly wrapped about the hoop, with the raised edges embedded in the wood, as shown and described.

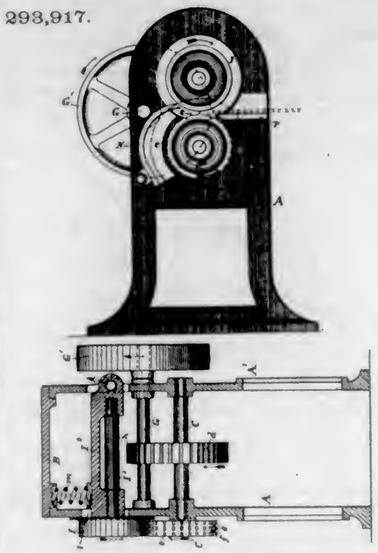
293,917. MACHINE FOR BENDING AND SCORING HOOPS. A. RENSSELAER SPROUT, Picture Rocks, Pa. Filed July 7, 1883. (No model.)

Claim.—1. In a machine for bending hoops, the combination of a scoring-wheel, C′, provided with cutting-teeth, a smooth wheel, I, adjoining the scoring-wheel, means to cause the smooth wheel to press against the scoring-wheel, a guide-bracket, *p*, at the front side of the scoring-wheel, and a bending-plate, N, which curves about the rear side of the scoring-wheel, as set forth.

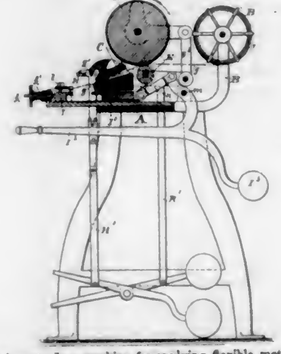
2. In a machine for bending hoops, the combination of a scoring-wheel, C′, provided with cutting-teeth, a shaft, I′, having one end pivoted, whereby the other end may have play or movement, a smooth wheel, I, on the movable end and adjoining the scoring-wheel, means to cause the smooth wheel to press against the scoring-wheel, and means at the rear side of the scoring-wheel to bend the hoop, as set forth.

3. In a machine for bending hoops, the combination of a scoring-wheel, C′, provided with cutting-teeth, an arm, I², pivoted at one end, a shaft, I′, mounted on said arm, a smooth wheel, I, on the movable end of the shaft, and means to cause the smooth wheel to press against the scoring-wheel, as set forth.

293,917.



293,918. MACHINE FOR APPLYING FASTENERS TO HOOPS. A. RENSSELAER SPROUT, Picture Rocks, Pa. Filed July 7, 1883. (No model.)



Claim.—1. In a machine for applying flexible metal fasteners to hoops, the combination, substantially as set forth, of a pair of sinkers having shanks with two joints, one at a right angle to the other, whereby the sinker is adapted to yield to the irregularities of the wood, and means to tightly wrap the flexible metal about the lapped ends of the hoop.

2. In a machine for applying flexible metal fasteners to hoops, the combination, substantially as set forth, of means to depress or sink the hoop upon the flexible metal, and a pair of jaws having in their confronting faces a right-angled recess, whereby to wrap the metal about the lapped ends of the hoop.

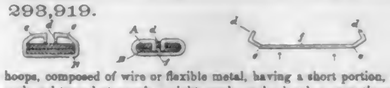
3. The combination, substantially as set forth, of means to feed and cut the flexible metal into given lengths, a pair of jaws having an opening and closing movement in a given direction, and another pair of jaws having a movement in a direction at right angles thereto.

4. The combination, substantially as set forth, of means to feed and cut the flexible metal into given lengths, means to depress or sink the hoop upon the flexible metal, and a pair of jaws having in their confronting faces a right-angled recess.

293,919. HOOP-FASTENER. ASA RENSSELAER SPROUT, Picture Rocks, Pa. Filed Jan. 7, 1884. (No model.)

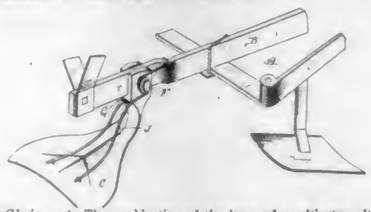
Claim.—As a new article of manufacture, the metal fastener for

293,919.



hoops, composed of wire or flexible metal, having a short portion, *d*, at each end turned at nearly a right angle, and a bend, *e*, near the right-angled ends, whereby the latter are inclined toward each other, as shown and described.

293,920. CULTIVATOR. GEORGE W. TAYLOR and SAMUEL TAYLOR, Smyrna, Del. Filed Dec. 14, 1883. (No model.)

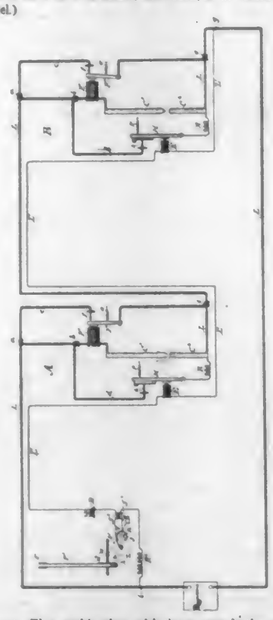


Claim.—1. The combination of the beam of a cultivator with a presser-plate having a recess in its top, so as to catch over the beam, a pivotal bolt, and a spring for keeping the presser-plate pressed downward, substantially as described.

2. The combination of the presser-plate having a recess in its upper portion, and provided with the inclined surfaces at the bottom of the recess, and the lug I, with the pivotal bolt, the beam of the cultivator, and the spring which is applied to the beam and the plate, substantially as described.

3. The combination of the presser-plate having a recess in its upper end, and provided with the lug I, with the pivotal bolt, the spring which is applied to both the beam and the plate, and the staples which are secured to the plate for holding the ends of the spring in position, substantially as specified.

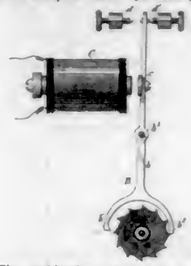
293,921. CUT-OUT FOR ELECTRIC-ARC LAMPS. HENRY C. TOWNSEND and CHARLES L. BUCKINGHAM, New York, N. Y. Filed Dec. 1, 1883. (No model.)



Claim.—1. The combination, with the magnet in the arc branch, of a circuit-closer for intermittently or periodically closing a branch around said magnet and the arc, an electro-magnet in an auxiliary line for operating said circuit-closer, and a safety short or shunt circuit, which is closed by the armature-lever of the magnet in the arc branch when retracted.

2. The combination, with an arc branch electro-magnet, of a periodic or intermittent circuit-closer for diverting current from said magnet and the arc, an electro-magnet in an auxiliary line for controlling said circuit-closer, a periodic or intermittent circuit closer or controller in the auxiliary line, and a safety shunt or short circuit closed by the armature-lever of the arc-branch magnet when retracted.

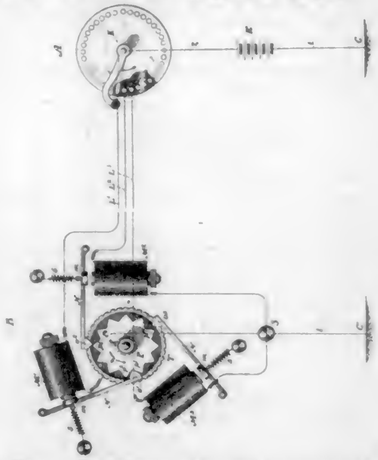
293,922. PRINTING-TELEGRAPH. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Apr. 30, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of an electro-magnet, a scape-wheel revolved in a given direction, under the influence of a constant force, and an escapement device for controlling the movements of said scape-wheel, which device is actuated in one direction by the force exerted through said scape-wheel and in the opposite direction by the action of said electro-magnet.

2. The combination, substantially as hereinbefore set forth, of an electro-magnet, a scape-wheel, and an escapement device for said wheel, consisting of a vibrating lever and two pallets, which pallets alternately engage the teeth of said scape-wheel, one through the instrumentality of said electro-magnet and the other through the instrumentality of the force exerted through the teeth of said scape-wheel impinging against said pallet.

293,923. ELECTRO-MECHANICAL MOVEMENT. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Apr. 30, 1883. (No model.)

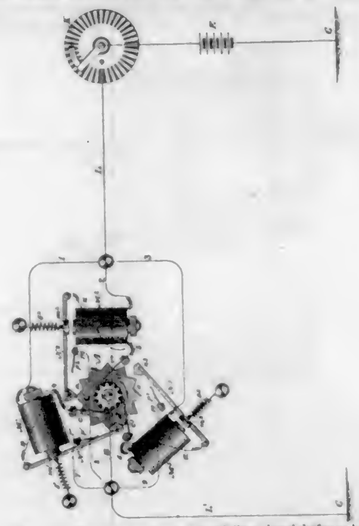


Claim.—1. The combination, substantially as hereinbefore set forth, of a battery, a series of electric conductors, means for completing the circuit of said battery through each of said conductors in succession, and a series of electro-magnets, one included in the circuit of each of said conductors, an armature and armature-lever applied to each of said electro-magnets, a double-faced pawl or pallet carried at the extremity of said armature-levers, and a wheel having a series of beveled teeth against which said pallets are successively caused to impinge.

2. The combination, substantially as hereinbefore set forth, of a star-wheel, a series of electro-magnets, means for vitalizing said electro-magnets in succession, and a series of pallets successively engaging the teeth of said star-wheel, thereby causing the same to be revolved in one direction or the other, according to the order of succession in which said electro-magnets are vitalized.

3. The combination, substantially as hereinbefore set forth, of a star-wheel, a series of pallets, and a series of electro-magnets for causing each of said pallets to engage the teeth of said star-wheel in succession, thereby advancing the same in one direction or the other through a predetermined distance.

293,924. ELECTRO-MECHANICAL MOVEMENT. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Apr. 30, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a main line, a battery, and means for transmitting electric impulses from said battery upon said main line, of a star-wheel, a series of electro-magnets respectively included in branch circuits of the main line, an armature and armature-lever for each of said electro-magnets, means for completing the connections of said main line through each of said branch circuits in succession, and for automatically severing said connections when the armature of the electro-magnet included in a circuit so completed has responded to the attraction of said electro-magnet, and means, substantially such as described, for automatically forming a second electrical connection through said electro-magnet before the first-named connection has been thus severed.

2. The combination, substantially as hereinbefore set forth, of an electro-magnet, its armature and armature-lever, a circuit-closing device acting to periodically and momentarily complete a circuit through the coils of said electro-magnet, and a second circuit-closing device operating, when said armature is actuated, to complete a circuit through the coils of said electro-magnet independently of the first-named circuit-closing device.

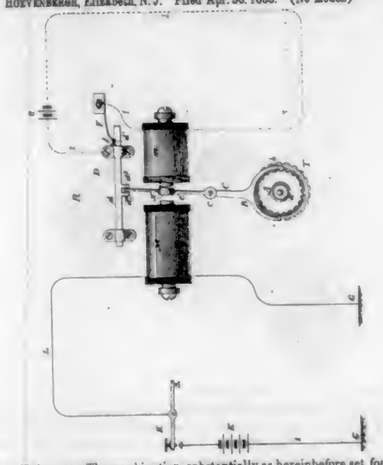
3. The combination, substantially as hereinbefore set forth, of an electro-magnet, a battery, means for transmitting an electric impulse from said battery through the coils of said electro-magnet, a circuit-closing device acting through the influence of said impulse to interrupt the connections of the circuit first traversed by said impulse, and a second circuit-closing device acting to keep the circuit of said battery closed through the coils of said electro-magnet until said circuit is interrupted at another point.

4. The combination, substantially as hereinbefore set forth, of a battery, a motor-wheel, a series of electro-magnets, a series of armatures and armature-levers respectively acting through the influence of said electro-magnets to actuate said motor-wheel, and two series of circuit-closing devices, the devices of one series acting to momentarily complete the circuit-connections of said battery through the coils of said electro-magnets in succession, and to automatically interrupt those connections, while the devices in the second series act, through the instrumentality of a current traversing the respective electro-magnets through the first-named circuit-closing devices, to independently complete the circuit-connections of said battery through said coils, respectively.

5. The combination, substantially as hereinbefore set forth, of a main line, a battery, means for transmitting electric impulses from said battery upon said main line, a motor-wheel, a series of electro-magnets, their armatures and armature-levers, and means, substantially such as described, for causing each electric impulse transmitted from said battery to rotate said motor-wheel in either direction a definite distance through the instrumentality of said armature-levers.

6. The combination, substantially as hereinbefore set forth, of a series of electro-magnets and means, substantially such as described, for vitalizing each of said electro-magnets in succession, and for causing each electro-magnet, when thus vitalized, to complete independent circuit-connections through itself and the succeeding electro-magnet.

293,925. ELECTRO-MECHANICAL ESCAPEMENT. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Apr. 30, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a main battery and a transmitting device, of the type-wheel of a printing-telegraph instrument, an escapement-wheel, a lever for controlling the movements of said escapement-wheel, an electro-magnet included in the circuit of said main battery for actuating said lever in one direction, an electro-magnet included in a local circuit for actuating said lever in the opposite direction, and means, substantially such as described, for automatically completing the connections of said local circuit when said lever is actuated in response to the first-named electro-magnet.

2. The combination, substantially as hereinbefore set forth, of the escapement of a printing-telegraph, an armature and armature-lever for actuating said escapement, an electro-magnet vitalized by currents from a distant station for actuating said armature and armature-lever in one direction, and an electro-magnet included in a local circuit for actuating said armature and armature-lever in the reverse direction.

3. The combination, substantially as hereinbefore set forth, of a main battery, an armature and armature-lever, an electro-magnet included in the circuit of said battery and acting, when vitalized, to impel said lever in a given direction, a local battery, a second electro-magnet included in the circuit of said local battery and tending, when vitalized, to impel said lever in the opposite direction, a stationary contact-point in electrical connection with one pole of said local battery, and a movable point electrically connected with the remaining pole of said local battery, said contact-points serving to complete the circuit of said local battery in the course of the passage of said armature-lever from one limit of its excursion to the other, and to interrupt said circuit during the course of movement of said lever in the opposite direction.

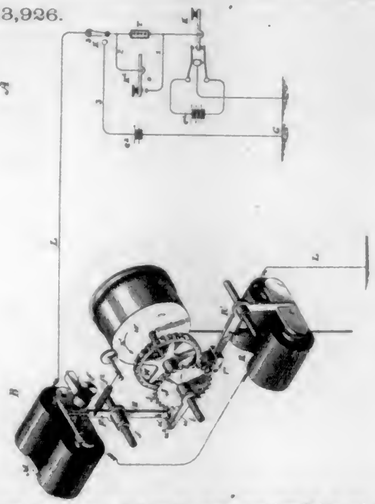
293,926. PRINTING-TELEGRAPH. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Apr. 30, 1883. (No model.)

Brief.—Each reverse current effects two movements in the neutral armature of the type-wheel magnet, the residual magnetism in the latter causing it to be first repelled, releasing a tooth of the scape-wheel, after which it is quickly drawn up, catching the next tooth. A resistance is switched out of circuit for printing, and a weak battery, which repels without again attracting the armature of the type-wheel magnet, is used for unison.

Claim.—1. The combination, substantially as hereinbefore set forth, with a main line, a source of electricity, and means for transmitting alternate positive and negative electric impulses upon said main line, of a type-wheel actuated by a constant force, a scape-wheel moving with said type-wheel, a detent for engaging the teeth of said scape-wheel, and an electro-magnet, its armature and armature-lever acting under the influence of each succeeding electric impulse to cause said detent to successively release and engage the teeth of said scape-wheel.

2. The combination, substantially as hereinbefore set forth, with a main line, and means, substantially such as described, for transmitting alternate electric impulses of a given strength upon said main line, of an electro-magnet included in the circuit of said main line and oppositely

293,926.



polarized by each succeeding impulse, an armature impelled to and fro by each succeeding impulse, a type-wheel impelled in a given direction by a constant force, a scape-wheel moving therewith, an escapement device controlled by the movements of said armature to permit the advance of said scape-wheel at each complete vibration, an arm moving with said scape-wheel, a detent caused to intercept the path of said arm when said armature is remote from said electro-magnet, and means, substantially such as described, for transmitting upon said main line an electric impulse of the requisite strength to impel said armature from said electro-magnet without again attracting the same into proximity thereto.

3. The combination, substantially as hereinbefore set forth, of a type-wheel impelled in a given direction under the influence of a constant force, a scape-wheel for controlling the movements of the same, a detent for engaging the teeth of said scape-wheel, an electro-magnet, means for reversing the polarization of said electro-magnet, and a soft-iron armature applied to said electro-magnet, which armature is successively repelled and attracted by said electro-magnet at each reversal of its polarity, and when so repelled and attracted permits a step-by-step movement of said scape-wheel.

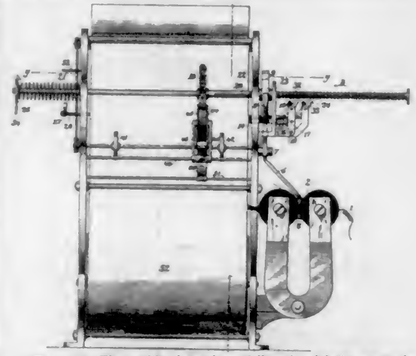
4. The combination, substantially as hereinbefore set forth, of an electro-magnet, a neutral armature, its lever, and means, substantially such as described, for causing said armature to be alternately repelled and attracted by said electro-magnet, a detent carried upon said lever, a type-wheel actuated in a given direction by constant force, a scape-wheel moving with said type-wheel, an arm revolving with said scape-wheel, a detent carried by the movements of said neutral armature to alternately arrest and release said scape-wheel, and means, substantially such as described, for causing said electro-magnet to impel said armature without again attracting it.

5. The combination, substantially as hereinbefore set forth, with a main line, and means, substantially such as described, for transmitting upon said main line alternating electric impulses having a given strength, of a type-wheel and escapement device for controlling the movements of said type-wheel, an electro-magnet and its armature, which armature is successively repelled and attracted through the influence of each succeeding impulse of alternating polarity, thereby controlling the movements of said escapement device, means for increasing the strength of any one of said alternating electric impulses, a printing-platen, and a second electro-magnet acting through the influence of an electric impulse of increased strength to actuate said printing-platen.

6. The combination, substantially as hereinbefore set forth, with a main line, and means, substantially such as described, for transmitting upon said main line alternating electric impulses having a given strength, of a type-wheel, an escapement device for controlling the movements of said type-wheel, an electro-magnet and its armature, which armature is successively repelled and attracted through the influence of each succeeding impulse of alternate polarity, thereby controlling the movements of said escapement device, means for increasing the strength of any one of said alternating electric impulses, a printing-platen, and a second electro-magnet acting through the influence of an electric impulse of increased strength to actuate said printing-platen, means for transmitting upon said main line an electric current or impulse of less strength than that of said alternating impulses, an arm revolving with said type-wheel, and means, substantially such as described, for arresting the movement of said arm in a predetermined position under the influence of an electric current of the last-named character.

293,927. PAGE-PRINTING TELEGRAPH. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Aug. 16, 1883. (No model.)

Brief.—A page-printing telegraph having a platen the width of the sheet, and a shifting type-wheel, which is mechanically brought to unison at the end of its excursion, where the paper is automatically fed for the next line.



Claim.—1. The combination, substantially as hereinbefore set forth, in a printing-telegraph instrument, of a longitudinally-movable type-wheel shaft and a type-wheel rigidly fixed thereto.

2. The combination, substantially as hereinbefore set forth, of a longitudinally-movable type-wheel shaft or spindle, a type-wheel rigidly fixed thereto, and means, substantially such as described, for rotating said type-wheel and shaft.

3. The combination, substantially as hereinbefore set forth, of a longitudinally-movable type-wheel shaft, a type-wheel rigidly fixed thereon, and means, substantially such as described, for impelling said type-wheel and type-wheel shaft to and fro.

4. In a printing-telegraph instrument, the combination, substantially as hereinbefore set forth, with the longitudinally-movable type-wheel and the armature-lever of the printing-magnet, of devices actuated by the movements of said armature-lever for both longitudinally and vertically spacing the impressions produced.

5. The combination, substantially as hereinbefore set forth, of a type-wheel shaft, a spring or equivalent device tending to move said shaft longitudinally in one direction, teeth formed upon said shaft, a dog engaging with said teeth, and mechanism for moving said dog in the direction to impel said shaft against the action of said spring.

6. The combination, substantially as hereinbefore set forth, of the armature-lever, the traction-bar, the beveled surfaces of said lever and bar, the dogs, the shaft, and the type-wheel, co-operating in the manner described.

7. The combination, substantially as hereinbefore set forth, of the type-wheel shaft, mechanism for moving it horizontally through succeeding steps corresponding to the succeeding letters in a horizontal line of characters, and mechanism actuated by its last step movement for returning it to a position to print the first letter of a horizontal line.

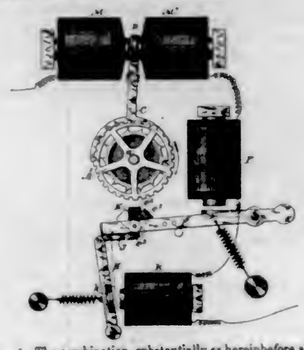
8. The combination, substantially as hereinbefore set forth, of the horizontally-moving type-wheel shaft, a subsidiary shaft advanced by the last step movement of said type-wheel shaft, and mechanism released by said subsidiary shaft for causing the return of said type-wheel shaft.

9. The combination, substantially as hereinbefore set forth, of the mechanism for printing characters in horizontal lines, the paper-feeding mechanism, including the ratchet, ratchet-wheel, and feed-rollers, the magnet-armature for actuating said ratchet and ratchet-wheel, and the detent for preventing the engagement of said ratchet with said ratchet-wheel, except on the completion of the printing of a horizontal line of characters.

10. The combination, substantially as hereinbefore set forth, of the type-wheel, the type-wheel shaft, and mechanism for vertically advancing the page upon which the impressions are received from said type-wheel, which mechanism is brought into position for operation by the last step movement of said shaft.

11. The combination, substantially as hereinbefore set forth, of the longitudinally-movable type-wheel shaft, the arm carried at one end thereof, a pin against which said arm is caused to impinge by the revolution of said shaft after the last character of a line has been printed, and the releasing device for said shaft brought into action after the type-wheel shaft has been arrested by said arm and pin.

293,928. MEANS FOR PRINTING FROM EITHER OF TWO TYPE-WHEELS IN PRINTING-TELEGRAPHS. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Sept. 24, 1883. (No model.)



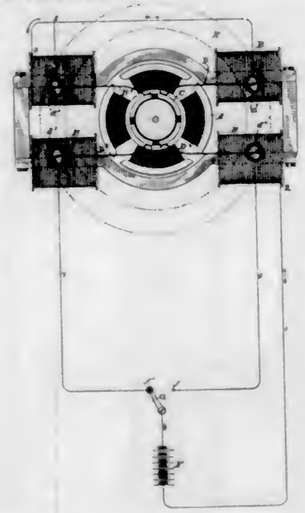
Claim.—1. The combination, substantially as hereinbefore set forth, of two type-wheels revolving in parallel planes, two platen-faces rigidly united with each other but situated in different planes, and supported upon a common axis, and an electro-magnet serving, when vitalized, to cause one of said platen-faces to confront one type-wheel, and when not vitalized to permit the other platen to confront the other type-wheel.

2. The combination, substantially as hereinbefore set forth, of two type-wheels, means, substantially such as described, for imparting an intermittent advance movement to said type-wheels, a printing-magnet, its armature and armature-lever, two platen-faces united with each other but situated in different planes, and an electro-magnet acting when vitalized to present one of said platen-faces to one type-wheel, and when not vitalized to present the other platen-face to the other type-wheel.

3. The combination, substantially as hereinbefore set forth, of a type-wheel axis, two type-wheels fixed thereupon and revolving in parallel planes, two platen-faces situated, respectively, in the planes of said type-wheels, and supported upon an independent axis parallel with said type-wheel axis, an electro-magnet, its armature and armature-lever, and a link connecting said lever with the platens, whereby the latter may be turned upon their common axis by the to-and-fro movements of said lever.

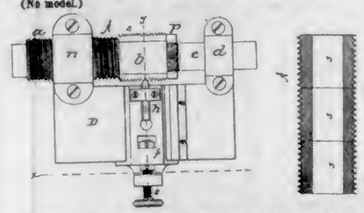
4. The combination, substantially as hereinbefore set forth, of a type-wheel axis, two type-wheels fixed thereupon and revolving in parallel planes, a printing-magnet, its armature and armature-lever, two platen-faces supported upon said armature-lever upon a common axis parallel to said type-wheel axis, and an independent electro-magnet for controlling the angular position of said platen-faces.

293,929. ELECTRIC MOTOR. WILLIAM T. WATERS, Atlanta, Ga. Filed Nov. 28, 1883. (No model.)



Claim.—In an electric moter, the combination of an outgoing circuit with two or more return-wires, a double set of commutator-brushes, each set being connected to one outgoing but to a different return wire, and an adjustable face-plate or frame upon which the said brushes are mounted, so as to be readily placed on the line of commutation, substantially as set forth.

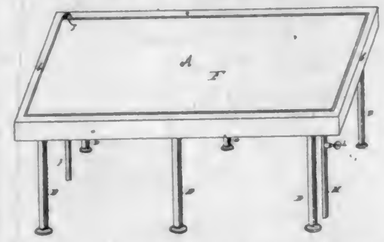
293,930. MACHINE FOR THREADING SECTIONAL LEADING-SCREWS. CHARLES V. WORTH, Waltham, Mass. Filed Aug. 25, 1882. (No model.)



Claim.—1. The improved mechanism for threading the screw-sections, composed of an arbor, A, having a short leading-screw, *a*, and adapted to hold a section to be threaded, and a plate, D, engaged with the screw *a* and supporting a cutting-tool, as set forth.

2. The plate D, carrying the nuts *s d*, the adjusting-screw *s*, and the adjustable slide *f*, in combination with the arbor A, composed of the screw-threaded portion *a*, the work-holder *b*, and the cylindrical portion *c*, substantially as and for the purposes set forth.

293,931. TABLE FOR THE MANUFACTURE OF CANDY. CHAS. ADOLPH AILNEY, Portland, Oreg. Filed Aug. 13, 1883. (No model.)



Claim.—1. In a table for manufacturing candy, the combination of the bottom B, sockets C C, and legs D, operating as shown, and for the purpose described.

2. In combination, bottom B, having right angles *b b c c*, and zinc lining E, located as shown, and inlet and exit pipes H A I *i*, for the purpose described.

3. In combination, top F, having pins or lugs *f f*, wedge-pieces G, and bottom B, provided with zinc lining E, and inlet and exit pipes suitably provided with valves, for the purpose described.

4. In combination with bottom B and exit-pipe I, the inner pipe, *i*, for the purpose shown.

5. A table for cooling candy, constructed with a hollow interior, N, whereby cold or hot water can be applied to the surface upon which the candy rests.

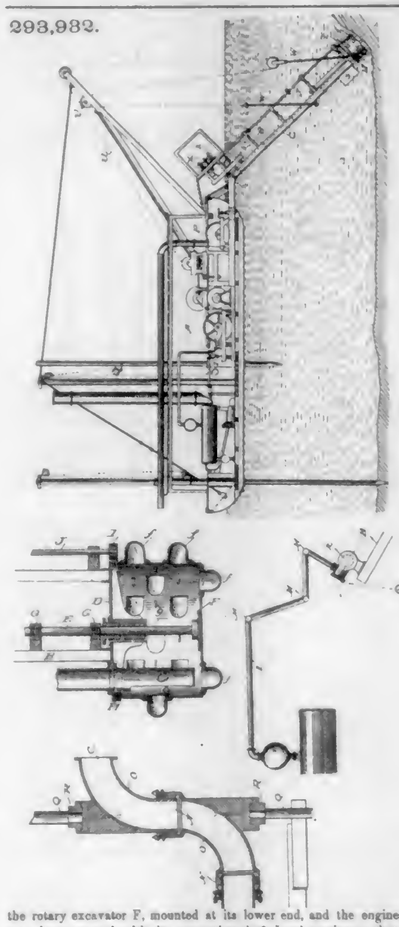
293,932. DREDGER. HORACE B. ANGELL, San Francisco, Cal. Filed Nov. 28, 1883. (No model.)

Brief.—A ladder-frame with a lightening-float hinged to the scow has at its lower end a fixed disk, through which passes a shaft, with bearings on the ladder, carrying an interiorly-spiked drum (with openings and scoops delivering the material inside the drum to a suction-pipe, also passing through the disk) driven by an exterior gear, a pinion, and a shaft from an engine having jointed steam-pipe on the upper end of the ladder. The suction-pipe has swiveled elbow-sections, from which extend the shafts forming the pivot of the ladder. Last elbow-section is swiveled to the pump-tube.

Claim.—1. In a dredging-machine, the hinged ladder swinging in a vertical arc, and having the rotary excavating-cylinder F at its lower end, and the suction-pipe C, extending from said excavator along the ladder and to a suction-pump, P, in combination with the driving-gear H, pinion I, shaft J, and the engine K, supported upon the upper end of the ladder, substantially as herein described.

2. In a dredging-machine, the ladder or frame B, hinged to the boat A, so as to have a movement in a vertical arc, in combination with

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the rotary excavator F, mounted at its lower end, and the engines K upon its upper end, with the connecting-shaft J and gearing, so that the whole moves together, and their relative positions remain unchanged, as herein described.

3. In a dredging-machine, the ladder B, hinged to the boat A, and having the rotary excavator F at its lower end, the suction-pipe C, leading to the pump P upon the boat, and the engine K, mounted upon and moving with the ladder, in combination with the elbows O O, rotary joint N, and shafts Q, substantially as herein described.

4. In a dredging-machine, the boat A, with the stationary boilers, in combination with the hinged ladder or frame B, supporting the rotary excavator F and driving-engine K, and the pipes L, with the extension-joints M, substantially as herein described.

5. In a dredging-machine, the ladder or frame B, hinged to the boat A, and having the excavator F and driving-engine K mounted upon it, in combination with the float S, substantially as herein described.

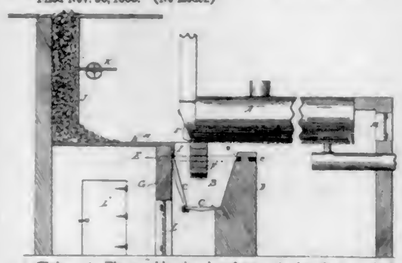
6. The rotary drum F, having the exterior excavating-openings *f*, by which material is carried into the drum, in combination with the inwardly-projecting spikes, stirrers, or cutters *g* and a stationary suction and discharge pipe, C, substantially as herein described.

7. In a dredging-machine, the ladder B, hinged to the boat A, and having the rotary excavator F at its lower end, the suction-pipe C, leading to the pump P upon the boat, in combination with the elbows O O, rotary joint N and shafts Q, and the supplemental joint N', whereby the pipe may be adjusted, substantially as herein described.

8. In a dredging-machine, a ladder hinged to a boat so as to swing in a vertical arc, a rotary excavator supported at its lower end, a suction and conveying pipe extending from the excavator to a pump upon the boat, with suitable connecting-joints, in combination with an engine upon the boat and a supplemental engine upon the ladder, whereby the pump and excavator may be driven independently and at different rates of speed, substantially as herein described.

9. A dredging device consisting of a fixed disk, D, a driven supporting-shaft, E, passing through such disk, a single hollow excavating-drum mounted upon said shaft, and having excavating openings or backets, and a suction-pipe passing through the disk.

293,933. BOILER-FURNACE. ABSALOM BACKUS, Jr., Detroit, Mich. Filed Nov. 30, 1883. (No model.)



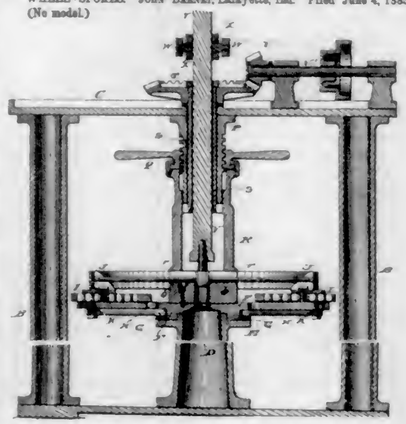
Claim.—1. The combination, in a furnace for burning sawdust and similar substances, of the boiler, the feeding-floor at or near the level of the boiler, the feeding-throat between the boiler and the edge of the floor, the grate, the combustion-chamber, the bridge-wall at the rear of the combustion-chamber, and the arch depending below the boiler over the grate and between the rear bridge-wall and combustion-chamber and the rear edge of the feeding-throat, for dividing said throat from the combustion-chamber proper, substantially as described.

2. The combination of the boiler, the feeding-floor at or near the level of the boiler, the feeding-throat between the rear edge of the floor and the boiler, the fire-grate composed of a horizontal section, and an upright section extending directly from the front edge of the same, the combustion-chamber, the bridge-wall at the rear thereof, and the pendent arch over the horizontal section of the grate, and arranged between the combustion-chamber and bridge-wall and the rear edge of the feeding-throat, for dividing said throat from the combustion-chamber proper, substantially as described.

3. The combination of the boiler, the front furnace-wall, G, the feeding-floor H over the latter, the feeding-throat I between the boiler and the rear edge of the floor, the fire-grate C, composed of the horizontal and upright sections between the bridge-wall and the front furnace-wall, the combustion-chamber B, and the pendent arch F, between the front wall and the bridge-wall, arranged to divide the feeding-throat from the combustion-chamber, substantially as described.

4. The combination of the boiler, the feeding-floor at or near a level therewith, the feeding-throat formed between the rear edge of the feeding-floor and the front end of the boiler, and the arch depending from the rear edge of the feeding-throat directly over the fire-grate, and between said throat and the bridge-wall, to divide said throat from the combustion-chamber and also direct the cold air downward, substantially as described.

293,934. MACHINE FOR MILLING OFF THE HUB ENDS OF WHEEL-SPOKES. JOHN BARNEY, Lafayette, Ind. Filed June 4, 1883. (No model.)



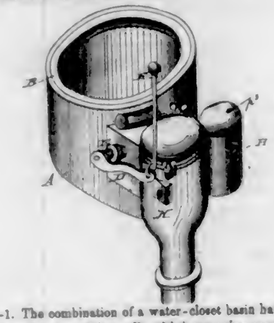
Claim.—1. In a machine for truing wheels before applying the hubs, the combination of a concentric series of radial tire-distending chucks, a center-block and spoke-clamp, and a drill cutter or reamer adapted for trimming the inner ends of spokes, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination of expanding chucks, a circularly-movable slotted ring, its lever-connections, and the links K, for adjusting said chuck, the central spoke-rest, the spoke-clamps, and a vertically-movable rotary spindle bearing a spoke-cutting tool, all constructed and adapted to operate substantially in the manner and for the purposes described.

3. In combination with the tire-distending chucks, the spoke-clamp, the spindle V, its balanced lever Z, for giving vertical movement to the spindle, the sleeve S, and the driving-wheels for rotating the spindle, all constructed and adapted to operate substantially in the manner and for the purposes described.

4. The combination of the face-plate, the central spoke-rest, the perforated slides T, and the adjustable chuck-jaws on said slides, all constructed and adapted to operate substantially in the manner and for the purposes described.

293,935. WATER-CLOSET. NICHOLAS BARRY, Jr., Muscatine, Iowa. Filed May 10, 1883. (No model.)



Claim.—1. The combination of a water-closet basin having broad ribs at the upper edge, curved inwardly with intervening spaces, and the flaring internal wall forming an annular chamber, and an inlet-pipe, whereby water is supplied and distributed to the basin in separate currents or ripples, substantially as specified.

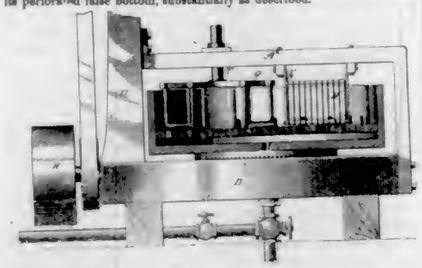
2. The combination, with the basin A, and chamber H at one side of the valve S^2, located therein, and the mechanism for operating the same, the communicating chamber H, the float T, rod H, and angle-lever connecting with the hollow valve-rod V^4, the valve-chamber V, and guided valves V', and the supply-pipe, all arranged to operate substantially in the manner specified.

3. The combination, with the basin A, the chambers H H', and the float T, valve S^2, and hollow valve-rod V^4, and valve V', of the guide-chamber V^2 and piston-guide V^3, the whole adapted to operate substantially in the manner specified.

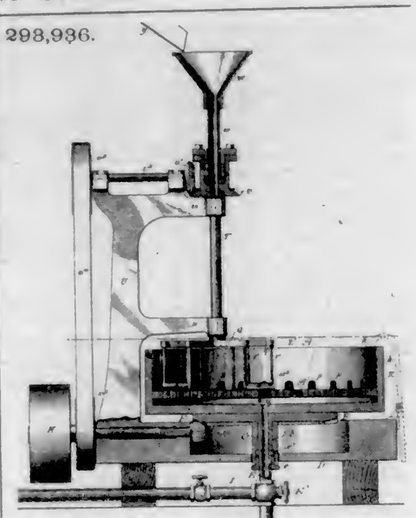
4. The combination, with the air-tight chamber H, of the basin A, the discharge-valve S^2, and the float-chamber H' and float T, the float-chamber being provided with a vent, p^3, substantially as and for the purposes set forth.

293,936. AMALGAMATOR. THEODORE H. BUCKER, Central City, Colo. Filed Nov. 9, 1883. (No model.)

Claim.—1. In an amalgamator, concentrator, and separator, the combination, with a rotary tub having a perforated false bottom and one or more copper plates, of an agitator arranged within said tub, and having an opposite rotary motion thereto, and suitable means for feeding ore or earth into the tub from the top and forcing water into the same through its perforated false bottom, substantially as described.



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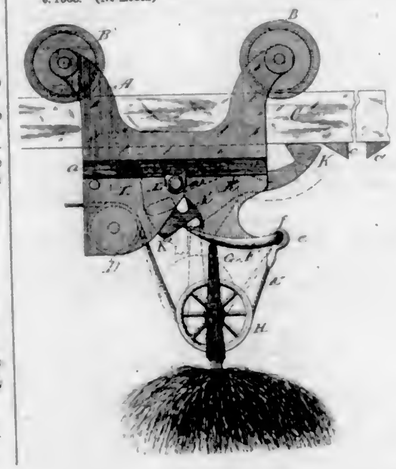


2. The combination, with the rotary tub having a perforated false bottom and one or more metallic plates capable of amalgamation, of a rotary agitator arranged in the tub eccentrically to the same, means for rotating the agitator and the tub in opposite directions simultaneously, means for feeding water into the bottom of the tub, and means for discharging the material automatically from the tub at different levels, substantially as described.

3. The combination, with the rotary tub and agitator, of the series of siphons arranged to carry off the material from the tub at different levels, and means for communicating rotary motion to the tub, substantially as described.

4. The combination, with the rotary tub having the perforated false bottom provided with grooves for mercury and the concentric plates capable of amalgamation, of the pipe opening into the bottom of said tub, a suitable shaft and intermediate gearing for rotating said tub, the agitator Q, constructed substantially as described, and arranged within said tub eccentrically thereto, the hollow vertical shaft mounted in suitable bearings and supporting said agitator, a hopper arranged to discharge into said shaft, and suitable intermediate connections for transmitting to said vertical shaft and agitator rotary motion from the shaft which operates the tub, substantially as set forth.

293,937. HAY-CARRIER. FRANK H. BOLTE, Milwaukee, Wis., assignor to the Egelhoff Manufacturing Company, same place. Filed Oct. 6, 1883. (No model.)



Claim.—1. The combination, with a carrying-frame, (as A,) of a removable and reversible latch-frame, (as I I,) substantially as described.

2. The combination, with carrying-frame A, having grooves *a'*, of removable latch-frame I I, having longitudinal flanges *i i*, adapted to engage said grooves, substantially as shown and described.

3. The combination, with the carrying-frame A, grooved as described, the latch-frame I I, having flanges adapted to engage said grooves, and the bolt L, which passes through both frames from side to side, so as to lock the two together, substantially as set forth.

4. The latch-frame I I, having a central notch in its under surface, and rigid hook or fork F, extending back into said notch to form a bearing for the bail of a hay-fork, substantially as shown.

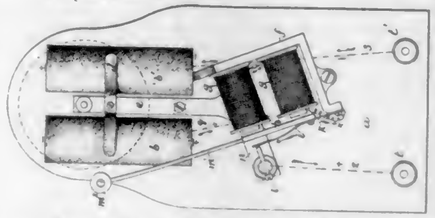
5. The latch-frame I I, having a notch, as described, in its under surface, a rigid hook, F, extending partly across said notch, and a pivoted latch, K, having an inclined surface, K^2, which extends beyond said hook, all in combination, substantially as set forth.

6. The combination of the latch-frame I I, having hook F, and the pivoted latch K, having arm K', arranged relatively to said hook, substantially as shown and described.

7. The combination of the latch-frame I I, having a notch, as shown, the hook F, extending partly across said notch, the latch K, pivoted in said frame, and having the incline K^2 and arm K', arranged, as shown, relatively to said hook, all substantially as shown and set forth.

8. The combination of carrier A, reversible latch-frame I I, having rigid hook F, and latch K, constructed and arranged as shown, and the inclined catches *c c'*, all arranged and adapted to operate substantially as described.

293,938. ELECTRIC CALL-BELL. DAN BOYD, Manchester, England, assignor to the Domestic Electrical Manufacturing Company, Boston, Mass. Filed June 2, 1883. (No model.)



Claim.—1. As a new article of manufacture, the herein-described self-contained electrical call-bell, consisting of a base, an electro-magnetic bell and one or more battery-cells in circuit therewith, and two terminals or posts, all mounted on the said base, and the whole complete for use and operative on the closure of the circuit, substantially as set forth.

2. The combination of a base and an electro-magnetic bell with one or more detachable sealed cells of battery in circuit therewith, and binding-posts or terminals, the bell, cells, and posts or terminals being mounted on the said base, and the whole constituting a self-contained electric call-bell operative on the closure of the circuit, substantially as described.

3. The combination of an electro-magnetic bell and a detachable sealed cell of battery having terminals with a base carrying said bell and battery, and having circuit-connections and spring-contacts, substantially as described, whereby the connections are made on simply placing the said cell in position.

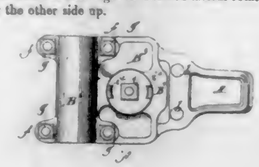
4. The combination of an electro-magnetic bell and base therefor with sealed cells of battery mounted on said base, and a retaining-yoke for said cells.

5. The combination of an electro-magnetic bell and sealed cells of battery with a base having recesses *c*, and contact-springs for the cells, substantially as set forth.

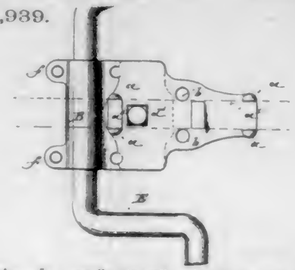
6. The combination of a base and a frame, *f*, carrying electro-magnet, armature, hammer, and circuit-breaker, and having an extension, *e*, with sealed cells of battery, and retaining-yoke carried by said extension of the frame.

293,939. SED-PLATE FOR SULKY-PLOW BEAMS. BYRON C. BRADLEY, Chicago, Ill. Filed Nov. 26, 1883. (No model.)

Brief.—A plate or washer in the coupling-plates having differing sides. The plow-beam is held rigid or allowed lateral rotation by turning the washer the other side up.



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Claim.—In a coupling for sulky-plow beams, the plate A and socket or box B B', having an extension, B^2, in combination with the reversible plate C and bolt D, substantially as and for the purpose specified.

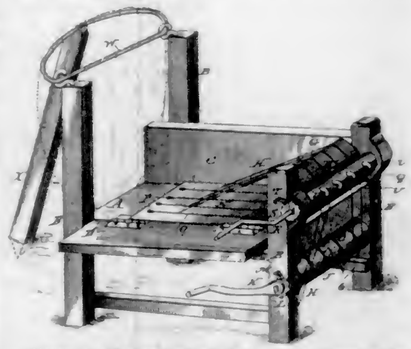
293,940. APPLE CORER, PARER, AND SLICER. WILLIAM E. BROCK, Dunellen, N. J., assignor to John H. Bell, Brooklyn, N. Y. Filed July 26, 1883. (No model.)



Claim.—1. The combined apple parer, corer, and slicer herein described, composed of the blade or barrel A, the upper and lower ends, *a* and *b*, of which are cylindrical or tubular, and the intermediate portion, *c*, of which is partially cut away longitudinally to form an opening, and having a cutting-edge, *e*, formed on its lower extremity, and a paring and slicing knife, B, formed or inserted longitudinally in said intermediate portion, *c*, as and for the purposes set forth.

2. In an apple-corer, the inclined plate or surface *m*, in combination with the blade or barrel A, the upper and lower ends of which said blade are cylindrical or tubular, and the intermediate portion, *c*, thereof is cut away to form an opening, said plate or surface *m* being located as described, for the purpose set forth.

293,941. WOOL-PRESS. DAVID F. BROOKS, Lampasas, Tex. Filed Dec. 15, 1883. (No model.)



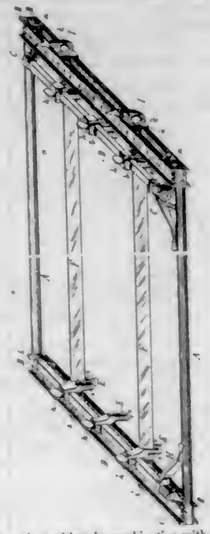
Claim.—1. The combination of the box or wool-receptacle provided with a hinged side and fixed concave end-gate, the slotted apron fitting in the bottom of the box, the drum or roller journaled below and at one end of the box, and having one end of the apron fastened to it, the upper roller provided with a series of hooks adapted to engage the free end of the apron, and means for rotating the rollers and holding the same fixed under tension, substantially as set forth.

2. The combination of the box or wool-receptacle having a series of slots in its bottom, and provided with a hinged side and fixed concave end-gate having notches registering with the slots in the bottom of the box, the slotted apron, the drum or roller journaled below and at one end of the box and having one end of the apron fastened to it, the upper roller provided with a series of hooks adapted to engage the free end of the apron, and means for rotating the rollers and holding the same in a fixed position under tension, substantially as set forth.

293,942. STONE-SAW RACK. JOHN P. BROUNSCOMBE, Wilkes-Barre, Pa. Filed May 1, 1882. (No model.)

Claim.—1. The fingers E, slotted to receive a saw or saws, and

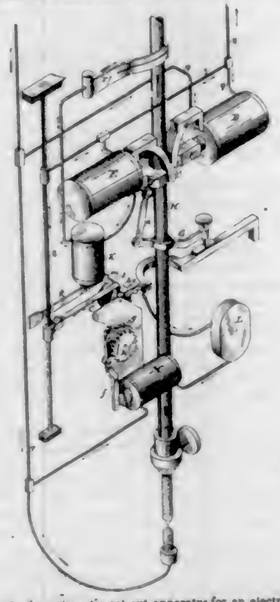
293,942.



adapted to hold the same in position, in combination with the graduated bar D, and means for securing said fingers upon the said bar, substantially as herein set forth.

2. In a stone-saw rack, the graduated bars D D, capable of being rocked in their bearings, and carrying adjustable fingers, as E, each of the latter having one or more slots for receiving a saw or saws, in combination with the frame, and with means for securing the ends of the saws, substantially as described.

293,943. CUT-OUT FOR ELECTRIC LAMPS. CHARLES L. BUCKINGHAM and HENRY C. TOWNSEND, New York, N. Y. Filed Aug. 15, 1883. (No model.)



Claim.—1. An automatic cut-out apparatus for an electric lamp or other translating device, comprising a controlling electro-magnet in circuit with the lamp or such portion thereof as is liable to interrupt the flow of current on the general circuit, a branch circuit affording a continuous path for the current around the lamp in case of derangement, and means for intermittently diverting current from the electro-magnet and such portions of the lamp or other apparatus as are liable by a derangement to interfere with the flow of current upon the general circuit, as and for the purpose described.

2. The combination, substantially as described, of an electro-magnet in the main circuit with the carbons, an intermittent circuit-closer for intermittently and momentarily completing a branch around the electro-magnet and carbons, and means for holding said circuit-closer at the circuit-closing point when the main-circuit electro-magnet is weakened to a predetermined degree, owing to an abnormal resistance in the carbon-circuit.

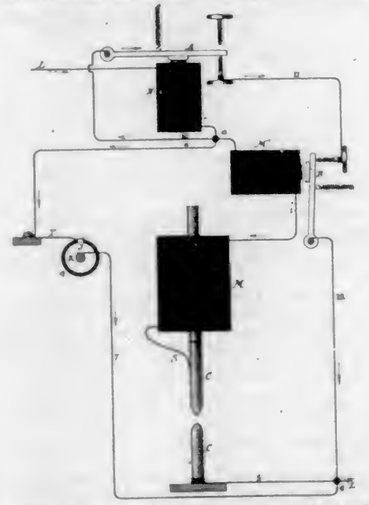
3. In an electric lamp, a periodically-closed short-circuiting branch, in combination with means for holding said branch closed to form a continuing circuit around the arc of the lamp in case of abnormal resistance on the arc branch, substantially as described.

4. In a cut-out for an electric lamp, an electro-magnet in the same branch or circuit with the carbons, in combination with a normally-open shunt around said electro-magnet and the arc, and means whereby said shunt may be closed to cause the operation of said electro-magnet to effect a continued short-circuiting of the lamp.

5. In a cut-out for an electric lamp, and in combination with the arc branch or circuit, an electro-magnet therein, an armature therefor which in a retracted position causes the short-circuiting of the lamp, and a normally-open branch around the electro-magnet and arc, which effects the retraction of said armature, if closed, when the resistance of the arc is abnormally great.

6. In an electric lamp, the combination of an electro-magnet in the arc branch or circuit, an armature therefor, a normally-open shunt, as specified, and a circuit-closer for closing the same provided with a stop so arranged that in the retracted position of the armature of the electro-magnet in the arc branch or circuit the circuit-closer will be arrested to retain the normally-open branch closed, substantially as described.

293,944. ELECTRIC-ARC LAMP. CHARLES L. BUCKINGHAM and HENRY C. TOWNSEND, New York, N. Y. Filed Aug. 15, 1883. (No model.)



Claim.—1. In an electric lamp, the combination of an arc branch including the coils of a circuit-controlling electro-magnet, a normally-open branch around the arc, having a circuit-closer for occasionally closing the same, and another branch for short-circuiting the lamp, and means for closing said short-circuiting branch, said means being brought into operation by a diversion of current from the arc branch through the branch of the periodic circuit-closer.

2. The combination of a periodic circuit-closer in a normally-open branch around the arc of an electric lamp, an electro-magnet in the arc branch, whose magnetism is weakened by a diversion of current through the periodically-closed branch, a second branch of low resistance for short-circuiting the lamp, and means brought into action to close said short-circuiting branch upon a diminution of magnetism in the arc-branch electro-magnet.

3. In an electric lamp, a safety short-circuit around the arc, and an armature-lever for closing the same when at back contact, an electro-magnet in the arc branch for controlling said circuit-closing arm, a periodically-closed branch to divert current from the arc branch and to there-

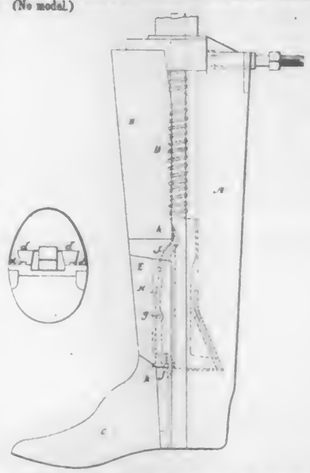
upon cause the closing of the cut-out branch, and means for causing the feed of the carbons by diversion of current from said arc branch.

4. In an electric lamp, a safety shunt-circuit around the arc, and an armature-lever for closing said shunt-circuit, an electro-magnet in the arc branch for controlling said armature-lever, another branch around the arc of sufficiently low resistance to divert enough current from the arc branch to permit the armature of the electro-magnet therein to close the short-circuiting or cut-out branch.

5. An electro-magnet, N, whose coils are in the main line, and its armature A forming part of the short-circuiting branch, an armature-lever, B, and electro-magnet M', whose coils are in the arc branch, for controlling armature-lever B, as and for the purpose described.

6. The combination, in a safety short-circuit for an arc-lamp, of an armature-bar forming a part of said short-circuit when on front contact, a second armature-bar also forming a part of said short-circuit when on back contact, substantially as described.

293,945. BOOT-TREE. JOTHAM H. BURBANK, North Brookfield, assignor of one-half to Alfred H. Batcheller, Boston, Mass. Filed Aug. 21, 1883. (No model.)



Claim.—1. A boot-tree having right and left detachable and changeable foot and front pieces, each of the latter being formed, as described, with the fullness upon their respective sides, so that they may be used with one tree to properly form both right and left boots, substantially as and for the purpose set forth.

2. In a boot-tree, the right and left changeable front pieces, E and F, one of said front pieces having the center and line of fullness upon that side which, when attached to the tree, presents the proper form for a right-foot piece, while the other having the center and line of fullness upon that side which, when attached to the tree, presents the proper form for a left-foot piece, substantially as and for the purpose set forth.

3. In a boot-tree, the combination, with detachable foot and front pieces, of a double-acting locking-lever adapted to be operated by the draw-bar, and having a T-head adapted to lock the said foot and front pieces alternately when the draw-bar is moved out and in, respectively, as described.

4. In a boot-tree, the combination of draw-bar D with the T-shaped lever H, having the spring-piece J, bearing upon its upper end, and provided with the lug *j* at its lower end, engaging in the recess *i* of the heel-piece *e* when straining, and provided also with the lug *k*, engaging under the projection *j'* when the strain is released, substantially as and for the purpose set forth.

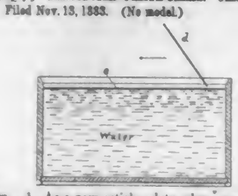
293,946. LIFTING JACK. WARD B. CARPENTER, West Topsham, Vt., assignor of one-half to John R. Abbe, Manchester, N. H. Filed Nov. 30 1883. (No model.)



Claim.—1. The combination, with the standard and a movable section, of an adjustable collar embracing the standard, an arm pivotally secured to the movable section, and a lever pivotally secured to the adjustable collar and to the arm, substantially as set forth.

2. The combination, with a telescopic standard, of a clamping-collar encircling the stationary section of said standard, an arm connected at its upper end to the adjustable section of the standard by a ball-and-socket joint, and a lever pivotally connected to the clamping-collar and the lower end of said arm, substantially as set forth.

293,947. DECORATED PLATE-GLASS. JAS. J. CARROLL, Baltimore, Md. Filed Nov. 13, 1883. (No model.)

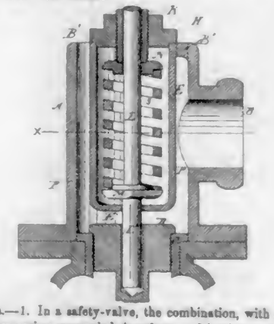


Claim.—1. As a new article, plate-glass ornamented with colors, and having a back or protecting covering of slate, substantially as set forth.

2. The method of producing plate-glass ornamented with colors, consisting in applying the colors to one surface of the glass, then applying over the colors a plastic composition embracing slate-dust, and finally hardening the composition, as set forth.

3. The method of producing plate-glass ornamented with colors, consisting in distributing oil-mixed colors on the surface of water, immersing a glass plate into the water, so as to have the colors adhere to one surface of the plate, and then covering the colored surface with slate, as set forth.

293,948. SAFETY-VALVE. JOHN O. CHENEY, Boston, Mass. Filed July 9, 1883. (No model.)



Claim.—1. In a safety-valve, the combination, with an outer casing, an inner casing suspended therefrom, and having an opening in the top for inserting the spring, of a spring, substantially as shown and described.

2. In a safety-valve, the combination, with an outer casing, an inner casing suspended therefrom, having a closely-fitting orifice for the valve-stem in its lower end, and opened at its upper end for the insertion of a spring, and means for adjusting the tension of the same, substantially as shown and described.

3. In a safety-valve, the combination of an outer casing having a steam-outlet, and adapted to fit the valve-seat, an inner casing suspended therefrom, and having an opening at its top, a cap for the opening of the inner casing, with a spring and means for adjusting the same, substantially as shown and described.

4. In a safety-valve, the combination, with an outer casing, an inner casing suspended therefrom, of openings at the top of the annular chamber formed by the casings, whereby the sound of the escaping steam is muffled, substantially as shown

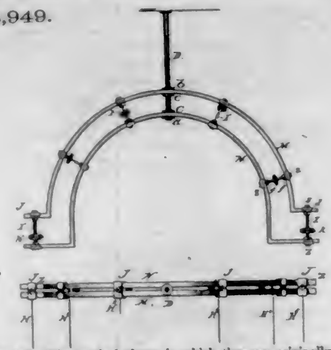
293,949. STORE-SERVICE SYSTEM. MILTON CLARK, Baltimore, Md., assignor to the Continental Cash Car Company of Baltimore, same place. Filed Jan. 23, 1884. (No model.)

Claim.—1. A store-service system consisting of a series of wires radiating from a central or cashier's station to various salesmen's counters or sub-stations, and provided with means at the central station for varying the grade of any or all of said wires, substantially as described.

2. A store-service system consisting of a series of wires radiating from a central or cashier's station to various salesmen's counters or sub-stations, and provided with means for moving any or all the ends of the wires at the central station to different elevations or horizontal planes, substantially as described.

3. A store-service system consisting of a series of wires radiating from a central or cashier's station to various salesmen's counters or sub-stations, and provided with means for moving the ends of the wires to the

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right or left of the vertical planes in which they are originally placed, substantially as described.

4. A store-service system consisting of a series of wires radiating from a central station to various salesmen's counters or sub-stations, and provided with means for tightening or stretching each of the said wires.

5. In a store-service system, a central fixture provided with horizontally-movable attachments for the inner ends of the wires, substantially as described.

6. In a store-service system, a central fixture provided with vertically-adjustable attachments for the inner ends of the wires, substantially as described.

7. In a store-service system, a central fixture provided with horizontally and vertically adjustable attachment for the inner ends of the wires, substantially as described.

8. In a store-service system, a central fixture composed of guide-rails and connecting-bolts, substantially as described.

9. In a store-service system, the combination of guide-rails M N, having a central opening, with the adjustable bolts I I, provided with means for locking them in any position upon said rails, substantially as described.

10. In a store-service system, the guide-rails M N, having an upward curvature, in combination with the adjustable locking-bolts I I, substantially as described.

11. In a store-service system, the adjustable bolts I I, in combination with sleeve-clamps L, having means for attaching thereto the wire H, substantially as described.

12. In a store-service system, the bolts I I, in combination with sleeve-clamps L, having extended arms K K and transverse bar P, provided with key-head *r*, and lock-nut *n*, substantially as described.

13. In a store-service system, the combination of a wireway, adapted to be raised and lowered at the salesman's end, with upright standard T, sleeve-piece U, having lugs or balls V V, rope Q, and drum R, substantially as described.

14. In a store-service system, the combination of a wireway, adapted to be raised and lowered at the salesman's end, with upright standard T, sleeve U, having lugs or balls V V, rope Q, and handles T' T'', substantially as described.

15. In a store-service system, the combination of a wireway, adapted to be raised and lowered at the salesman's end, with upright standard T, carriage Z, with wheels *l l*, rope Q, and drum R, substantially as described.

16. In a store-service system, the combination of a wireway, adapted to be raised and lowered at the salesman's end, with upright standard T, carriage Z, with wheels *l l*, rope Q, and handles T' T'', substantially as described.

17. In a store-service system, the combination of a wireway, adapted to be raised and lowered at the salesman's counter, with an upright standard, a piece sliding thereon, to which the end of the way is attached, a rope, and winding-drum, substantially as described.

18. In a store-service system, a center plate at the cashier's desk, flat or horizontal throughout, and provided with a series of tightening-bolts, substantially as described.

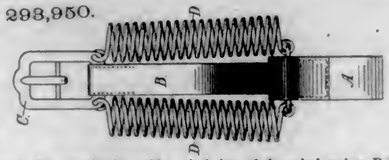
19. In a store-service system, a center plate at the cashier's desk, flat or horizontal throughout, and provided with a series of tightening-bolts adjustable in the grooves of said plate, substantially as described.

293,950. HARNESS. JOSEPH T. CLARKSON, Amesbury, Mass. Filed July 18, 1883. (No model.)

Claim.—1. The combination, with a shaft-lug, of the elastic connection shown and described, and the limit or safety strap, all substantially as set forth.

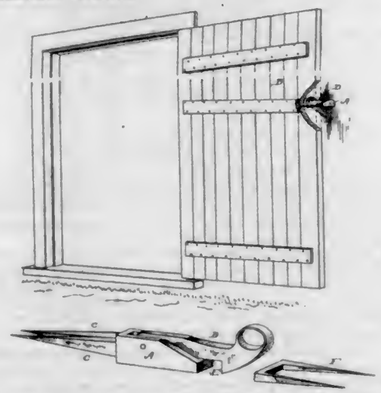
2. The combination, with the shaft-support A, provided with a suitable attaching-buckle, of the elastic connection, all substantially as shown and described.

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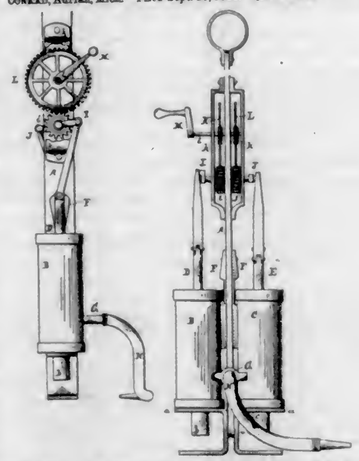
3. The combination, with a shaft-lug, of the spiral springs D D, limit-strap B, and buckle C, all substantially as and for the purpose described.

293,951. DOOR-CHECK. JAMES CLELAND, Wales Centre, N. Y. Filed Dec. 3, 1883. (No model.)



Claim.—As an improvement in door-checks, the combination, with the door provided with a staple, F, projecting from its outer face, of a stirrup or box, A, secured by prongs C to the building, adjacent to the door, a latch or lever, D, pivoted within the stirrup or box and rounded at its rear end, and a spring secured to the box and projecting over so as to bear upon the latch or lever, the front end of the box being cut away, as at *e*, to allow the latch or lever to rest in a horizontal position upon the same, as set forth.

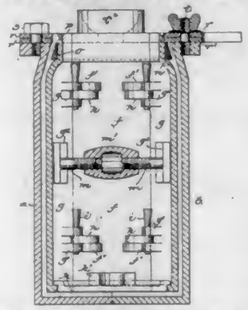
293,952. PUMP FOR FIRE-EXTINGUISHERS, &c. CHRISTOPHER F. CONRAD, Adrian, Mich. Filed Sept. 10, 1883. (No model.)



Claim.—The combination of the two cylinders B C, having the outflow-pipe G, connected with their sides, the frame A, the arms F, connecting the cylinders to the frame, the frame or housing *k*, attached to the said frame, the two crank-shafts I and J, journaled in the frame or housing, and provided, respectively, with the pinions *i* and *j*, the hand-

crank shaft *l*, journaled in the frame or housing and provided with two driving cog-wheels, K L, engaging, respectively, with the pinions, and the piston-rods D and E, connected, respectively, with the crank-shafts, substantially as shown and described.

293,953. MOLD. JOHN T. COFFINBERRY, Boston, Mass., assignor of one-half to Edward H. Stadley, same place. Filed Nov. 1, 1883. (No model.)



Claim.—1. The outer mold and the separable core, consisting of independent side pieces and means to fasten them together, they having, when thus fastened, an opening at their ends, combined with the removable bottom piece made in separable parts for closing the said opening, substantially as described.

2. A separable core composed of side pieces, *f f* and *g g*, the latter capable of being drawn together or contracted, and thereby disengaged from the former, combined with fastening-links *h*, for holding the said part together in expanded position, and the independent threaded bottom or end piece, adapted to screw in a threaded opening at the end of the side pieces when fastened together, substantially as described.

3. A separable core composed of side pieces, *f f* and *g g*, the latter provided with sockets g^3, combined with the bolts *w* and nut *w'*, whereby the side pieces *g g* are withdrawn from the others, thus separating the core and permitting its parts to be removed from the casting, substantially as described.

4. The outer mold and the separable core, provided with a shoulder to receive the ring *o*, combined with the core-suspending device mounted in the outer mold, substantially as described.

5. The core and the separable outer mold, combined with the core-supporting device *r r'*, hinged upon the outer mold, and adapted to engage and hold the core, the core-supporting device being provided with a pouring-cup and passage, substantially as described.

293,954. WHIP MOUNT OR BUTTON. WOLCOTT C. DANIELS, Westfield, Mass. Filed Apr. 6, 1883. Renewed Jan. 3, 1884. (No model.)

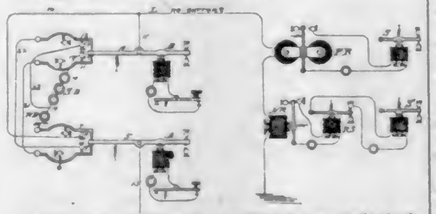


Claim.—A whip-mounting consisting of a metallic ferrule and an independent ring of rigid material mounted centrally thereon, and held in place by annular beads on either side of it, all substantially as set forth.

293,955. COMPOUND FOR PRESERVING WOOD. HERBERT C. DORR, San Francisco, Cal. Filed June 30, 1883. (No specimens.)

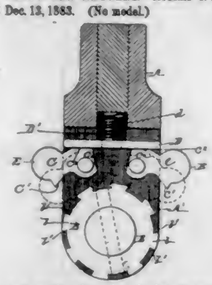
Claim.—The herein-described compound for preserving wood, the same consisting of the oil of tar, fifty gallons; sulphur, twenty-five pounds; and paraffine, twenty-five pounds, as specified.

293,956. QUADRUPLEX TELEGRAPH. BETTE K. J. ELIA, Washington, D. C. Filed Mar. 5, 1883. (No model.)



Claim.—The combination, substantially as before set forth, of a single main line, two unequal sections of battery normally both out of circuit, and two continuity-preserving keys or transmitters, one of which is directly and permanently connected to ground, and both being otherwise connected up, substantially as described, whereby if the electro-motive force of the weaker section of battery be represented by 1 and that of the stronger section by 3 the separate closure of one key will cause the flow of a current of strength 1 of a determinate—say positive—polarity, the separate closure of the other key one of strength 4 of negative polarity, and the closure of both keys one of strength 4 of positive polarity.

293,957. PAWL AND RATCHET. ROBERT C. ELLREN, Plantsville, Conn. Filed Dec. 13, 1883. (No model.)



Claim.—1. In a pawl-and-ratchet device, a pawl, C, having three flat faces, one of which comes against the ratchet, and one of the others is borne upon to hold the pawl in engagement, and the other to be borne upon to hold the pawl out of engagement, with the ratchet, as set forth.

2. The combination, with the ratchet, and either pawl having a means for engaging the ratchet and two flat faces, of a bar, as D, adapted to bear upon one of the faces to hold the pawl against the ratchet, and upon the other face to hold it away from the ratchet, as set forth.

3. The combination of a ratchet-wheel, B, having teeth *b*, both sides of which are adapted to be engaged by the pawls, with two pawls, each of which has two flat faces, and means for throwing them into or out of engagement with the ratchet, separately or together, and a bar, D, having a spring, *d*, behind it, for holding the pawls in any position in which they are placed, by bearing on one or the other of the flat faces, as herein set forth.

4. In a pawl-and-ratchet device, the combination, with the ratchet and means for holding the pawl in or out of engagement therewith, of a pawl having two flat faces meeting each other at an angle, upon which the means for holding the pawl bears alternately, to keep the pawl in the position in which it is set, substantially as shown and described.

293,958. EAR-RING. MORRIS FALKENAU, New York, N. Y., assignor to Falkenau, Oppenheimer & Co., same place. Filed Oct. 25, 1883. (No model.)



Claim.—1. An ear-ring the ear-wire of which has an elongated slot at its upper front part and a transverse bridge that extends across the slot of the ear-wire, substantially as set forth.

2. The combination of an ear-wire having a front part with an elongated slot and a transverse bridge extending across the slotted part, with a setting suspended by an eye from the bridge of the ear-wire, substantially as set forth.

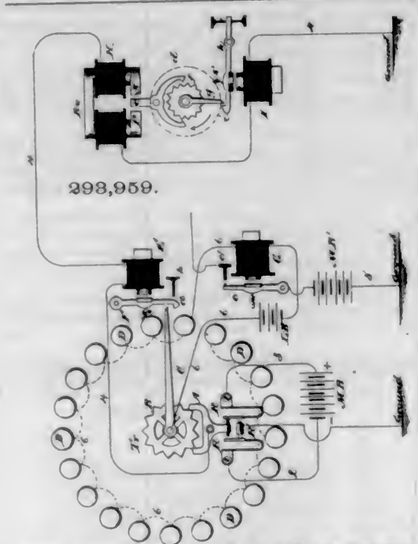
293,959. UNISON MECHANISM FOR PRINTING-TELEGRAPHS. STEPHEN D. FIELD, New York, N. Y. Filed Jan. 14, 1884. (No model.)

Claim.—1. In a printing-telegraph, the combination, with a receiver, a unison mechanism therefor, and means for controlling said mechanism by a prolongation of current, of a transmitter and means for automatically halting the same at definite intervals to prolong the pulsations or impulses upon the line, substantially as and for the purposes hereinbefore set forth.

2. In a printing-telegraph, the combination, with the transmitter and escapement or type-wheel circuit, of a magnet at the transmitter and a magnet at the receiver, both adjusted to respond only to prolonged pulsations, and controlling the unison mechanism by their conjoint action, substantially as set forth.

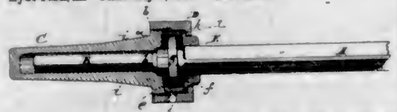
3. In a printing-telegraph system, the combination of a main battery, a transmitter adapted to send short or normal pulsations therefrom through the type-wheel or escapement-circuit, and means for halting or stopping the transmitter at definite intervals to transmit an abnormal or prolonged pulsation, substantially as set forth.

4. In a printing-telegraph system, the combination of one main line automatically controlled by the transmitter, and controlling in turn the printing mechanism, a second main line controlling the escapement or type-wheel mechanism, and independent magnets in the latter, adapted to arrest both the transmitting and receiving mechanism at definite intervals, and to release both upon a prolonged or abnormal current, substantially as set forth.



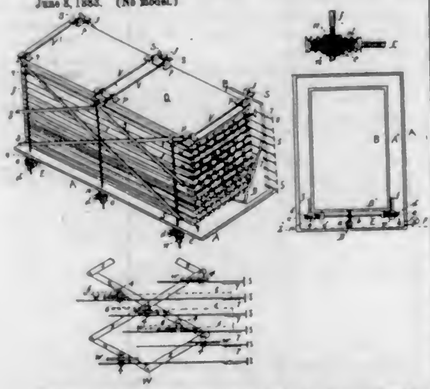
293,959.

293,960. AXLE-ATTACHING DEVICE. ALBERT FONTAINE, Chicago Ill., assignor to himself, ISAAC PFAUM, same place, and JOHN S. WILLIAMS, Hyde Park, Ill. Filed May 4, 1883. (No model.)



Claim.—The combination of the spindle B and collar *g* with the box C, having one or more notches, *c*, the cap E, having one or more projections, *d*, and the screw-coupling D, having the flange *k*, all constructed and operating substantially as described.

293,961. LUMBER-DRIER. DAVID GOODWILLIE, Oak Park, Ill. Filed June 8, 1883. (No model.)



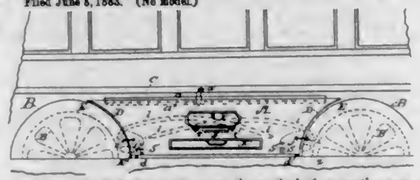
Claim.—1. In lumber-driers wherein the lumber is treated under a following pressure, the drying-chamber B, inclosed within the exterior case, A, to form an outer chamber, A', and having an opening, *g*, at the rear end of the bottom thereof communicating with the chamber A', beneath the bottom of chamber B, in combination with the furnace H, having the superheating steam-chamber L above, also with the suction-fan F, placed at the front of chamber A' and below the chamber B, for treating lumber with superheated steam and hot air, as specified.

2. In lumber-driers which hold the lumber under a following pressure, the mechanism to attain such pressure, consisting of the central horizontal shaft, D, provided with worm-gear *a a a*, the shafts E, provided with gear *b b b*, worm-gear *d d d*, the nut-gear *e* on the rods *f*, levers *s*, rods *v*, pulleys T, and weighted ropes R U, in combination with the chamber B and follower Q, the latter being elevated and depressed, as specified.

3. The combination of a series of shelves, *w*, hung to adjusting devices W W, which are composed of levers 2, jointed, so that the entire length of the devices shall be shortened by the shrinkage of the lumber proportionately as one board will shrink, as specified.

4. The combination of the shelves *w*, hung to the levers 2 by pivoted straps 4, with the ratchet-rods 5 7, which are also pivoted to the straps, so that the shelves may be swung to the front and elevated, as and for the purpose specified.

293,962. STREET-CAR HEATER. JAMES F. GYLES, Chicago, Ill. Filed June 8, 1883. (No model.)



Claim.—1. In heating street-cars, the method of supporting combustion without the intervention of the usual chimney or smoke-pipe, which consists in utilizing the currents caused by the rotating car-wheels to supply air to the car-heater and to withdraw the smoke from said heater, substantially as herein explained.

2. In combination with the wheels and wheel-caps of a street-car, a car-heater provided with suitably-controlled induction and eduction end ports connecting with said caps, substantially as and for the purpose set forth.

3. In combination with the wheels and apertured semicircular wheel-caps of a street-car, a car-heater provided with concaved ends, carrying suitably-controlled inlet and outlet ports, and connecting with said caps, substantially as and for the purpose set forth.

4. In combination with the wheels and wheel-caps of a street-car, a heater-body or combustion-chamber provided with the vertical bars S and means for controlling the interstices formed thereby, separable end pieces, D, provided with controllable inlet and outlet ports, and suitable means for locking the combustion-chamber and end pieces together, substantially as herein set forth.

5. In a car-heater, the combustion-chamber, combined with the separable end pieces, D, provided with suitably-controlled inlet and outlet ports, and means whereby the combustion-chamber and end pieces are secured together, substantially as set forth.

6. In a car-heater, the combustion-chamber, combined with the separable end pieces, D D, having inlet and outlet ports, ledges G G, and legs *d d*, substantially as herein set forth.

7. In a car-heater, the combustion-chamber provided with concaved end walls, combined with the separable convexed end pieces, having suitably-controlled inlet and outlet ports, and means whereby the combustion-chamber and end pieces are secured together, substantially as herein set forth.

8. In a car-heater, the combustion-chamber provided with the vertical bars S and means for controlling the interstices formed thereby, combined with the end pieces, D, provided with suitably-controlled inlet and outlet ports, substantially as and for the purpose set forth.

9. In a car-heater, the combustion-chamber provided with the vertical bars S and slide-bars S', combined with the end pieces, D, having inlet and outlet ports E E', dampers *e e'*, and supporting-ledges G, substantially as herein set forth.

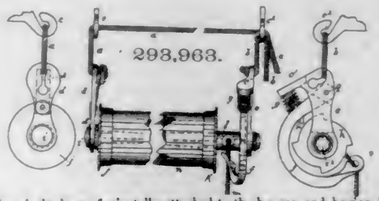
10. In a car-heater, the combustion-chamber provided with the vertical bars S, means for controlling the interstices formed thereby, and the diagonal tubes *l l*, combined with the end pieces, D, having suitably-controlled inlet and outlet ports, substantially as set forth.

11. In a car-heater, the combustion-chamber provided at its top with the open water-receptacle *a*, combined with means whereby the water may be gently sprinkled on the fire, substantially as and for the purpose set forth.

12. In a car-heater, the combustion-chamber provided with the water-receptacle *a*, combined with the valved tube *a'* and the perforated distributer *a''*, substantially as and for the purpose set forth.

293,963. CURTAIN-FIXTURE. MILTON B. HILL, Springfield, Mass., assignor of one-half to George W. D. Upton, same place. Filed July 1, 1882. (No model.)

Claim.—1. In a curtain-fixture, the hanger *c*, formed with the pro-



jection *c'*, the lever *f*, pivotally attached to the hanger, and having its free end projecting to carry the cord from a straight line, and provided with a pawl, *r*, spring *g*, ratchet-disk *h*, cylindrical portion *l*, arranged between the end of the roller and the ratchet-disk, a roller having a suitable hanger at its free end, and a cord passed through the free end of the lever and secured to the cylindrical portion, all constructed and arranged substantially as and for the purpose set forth.

2. In a drop-curtain, the combination of two roller suspension cords, *a b*, a guide-bracket formed with projecting walls for the cords, and a lever having one arm centrally disposed between the walls of the bracket, substantially as and for the purpose set forth.

3. A suspension-roller curtain having an end bar bearing-plate or hanger, provided with a cord-retaining spring and an aperture for the reception of the cord, as and for the purpose stated.

4. In a curtain-fixture, the combination of a suspended roller-curtain hanger, a projecting journal-bearing, and a friction washer or ring attached to the journal of the roller between the hanger and the head of the journal, substantially as and for the purpose set forth.

5. The combination of the hanger *c*, formed or provided with projection *c'*, the ratchet-disk *h*, fixed to the journal-bar of the curtain-roller, the lever *f*, pivoted to the bracket, and formed or provided with a pawl adapted to engage with the ratchet-disk, and the spring *g*, substantially as and for the purpose set forth.

6. The bracket formed with the upward-projecting walls *z z*, in combination with a lever pivotally attached thereto, and having the upper arm projected inward and centrally disposed between said walls, and the lower arm provided with a perforation, substantially as and for the purpose set forth.

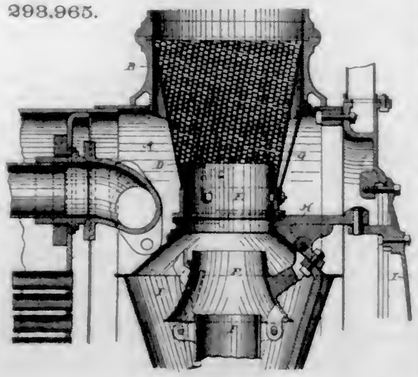
7. The bracket formed with upward-projecting walls *z z*, and a lever pivotally attached thereto, having the upper arm projected inward and centrally disposed between said walls, in combination with a spring adapted to sustain said lever in position, substantially as and for the purpose set forth.

293,964. CUTTING BOOT AND SHOE UPPERS. WILLIAM P. HOBSON and HIRAM A. RAGLEY, Haverhill, Mass., assignors of one-half to John L. Hobson and Fred B. Kingsbury, both of same place. Filed Apr. 14, 1883. (No model.)



Claim.—The within-described improvement in cutting uppers, consisting in dividing a piece of stock of suitable size for two portions upon an irregular line, *i j*, substantially as described, into two like sections each, thereby constructing without further shaping a portion of the upper.

293,965.



293,965. SPARK-ARRESTER. GEORGE D. HUNTER, Terre Haute, assignor of two-thirds to Morton C. Hunter and Thomas C. Van Nuys, Bloomington, Ind. Filed Dec. 11, 1883. (No model.)

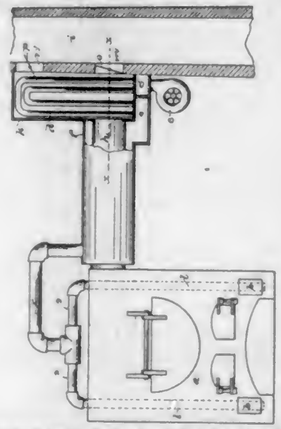
Claim.—1. In a spark-arrester, the screen for dividing the smoke from the more solid particles of combustion, in combination with the tubular section and the braces secured thereto and extending into apertures formed in the saddle.

2. In a spark-arrester, the conical screen for dividing the smoke from the more solid particles of combustion, having its upper end fitted against the inner wall of the stack or saddle, in combination with the tubular section fitted to its base and the braces secured to said section and extending into apertures formed in the saddle.

3. In a spark-arrester, the combination, with the tubular section having an angular shoulder, of the conical drum fitted thereon at its lower end and against the inner wall of the stack or saddle at its upper end, and the braces secured to the tubular section and extending into apertures formed in the stack.

4. In a spark-arrester, the tubular section of the exhaust-confining tube, in combination with a series of braces secured thereto and extending into apertures formed in the stack-saddle.

293,966. FURNACE. KINGSBURY M. JARVIS, Malden, assignor to the Jarvis Engineering Company, Boston, Mass. Filed May 22, 1883. (No model.)

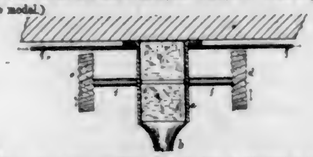


Claim.—1. A furnace having the air-ducts *l*, the flue *h*, leading to the smoke-stack, and the air-circulating pipes *d*, interposed between the flue *h* and smoke-stack, and connected with the ducts *l*, combined with an air-forcing apparatus for said pipes *d*, substantially as shown and described.

2. A furnace having the heated-air ducts *l*, the flue *h*, to lead the products of combustion to the chimney or stack, the jacket *f* therefor, connected with the ducts *l*, combined with an air-forcing apparatus, substantially as described.

3. A furnace having the heated-air ducts *l*, flue *h* for the products of combustion, the air-circulating pipes *d*, interposed between the flue *h* and smoke-stack or chimney, and an air-forcing apparatus therefor, combined with the jacket *f*, chamber *k*, and dampers *o* and *p*, all substantially as shown and described.

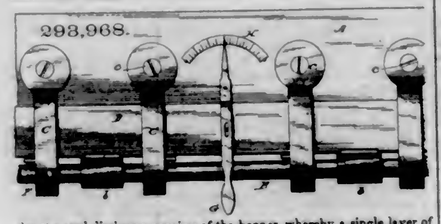
293,967. CAR-VENTILATOR. OWEN H. JONES, Hartford, Conn., assignor of one-half to Frank C. Smith, New York, N.Y. Filed May 14, 1883. (No model.)



Claim.—As a car-ventilator, the air-box *a*, adapted to be secured to a car, in combination with tubes *g*, adapted to connect the interior of the car with the interior of the air-box, and the shaft *f*, having fan *e* and two wind-wheels, *d s*, all constructed and operating substantially as shown.

293,968. FEED-ROLLER FOR GRASS-SOWERS. JOHN F. KELLER, Martinsburg, W. Va. Filed Sept. 11, 1883. (No model.)

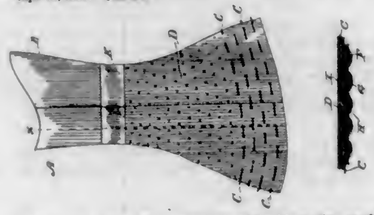
Claim.—1. The described overshot feed-roller, working directly un-



der the seed-discharge opening of the hopper, whereby a single layer of seed is delivered from the hopper without any sliding or rubbing friction and wear upon said roller or upon the seed, substantially as set forth.

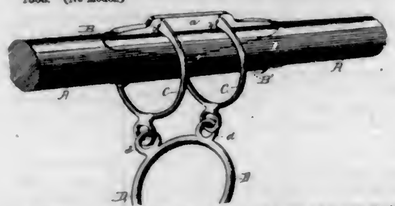
2. In combination with the overshot feed-roller, the adjustable slide having notches on the under side to regulate the amount of seed discharged at each feed-opening, substantially as and for the purposes specified.

293,969. CORSET. ELMER LEONARD, Bridgeport, assignor to L. Harvey Loomer and Andrew F. Loomer, both of Birmingham, Conn. Filed Sept. 28, 1883. (Model.)



Claim.—In a corset, the central ply of the bip-section, perforated and corded transversely, as described, and secured within the outside and inside plies by stitches extending vertically, whereby vertical pockets are formed between the rows of stitches for the insertion of the bones, substantially as shown and set forth.

293,970. NECK-YOKE. JOHN JAMES LOONEY, Hazel Green, Wis., assignor of one-fourth to William H. Lightcap, same place. Filed July 14, 1883. (No model.)

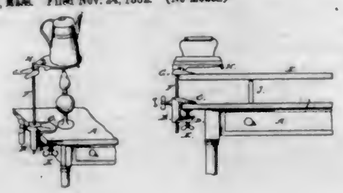


Claim.—1. The combination, with a neck-yoke, of a pair of rings encircling the same, and secured thereto by means preventing said rings from turning upon the neck-yoke or moving in any direction but a lateral one, substantially as and for the purpose set forth.

2. The combination, with the neck-yoke and its rings, notched as set forth, of a metallic strip secured upon the top of the neck-yoke, and provided with notches fitting over those in the rings, substantially as and for the purpose set forth.

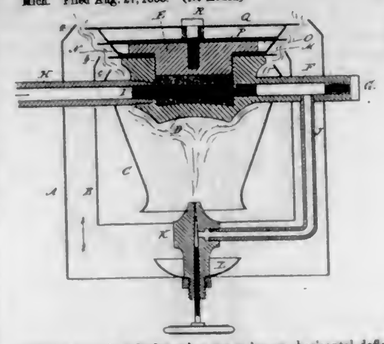
3. The combination, with the neck-yoke and its rings, provided with eyes or loops, as set forth, of a tongue-ring having eyes or loops interlocking with those of the neck-yoke rings, substantially as and for the purpose set forth.

293,971. LAUNDRY JACK OR BRACKET. FRANCIS LYFORD, Boston, Mass. Filed Nov. 24, 1882. (No model.)



Claim.—In a laundry-bracket, the combination of the clamp B, having projecting lips C and D and set-screws E and I, with the adjustable vertical rod F, formed to slide within bracket B, and the perforated bracket H, having projecting feet, and pivoted on the upper end of rod F by means of a recess in its angular end, said bracket forming a support for a sad-iron above the table, or a tea-pot over a lamp, substantially as shown and specified.

293,972. HYDROCARBON-BURNER. BRUNO MARTIN, East Saginaw, Mich. Filed Aug. 27, 1883. (No model.)



Claim.—1. In a hydrocarbon-vapor burner, horizontal deflectors overlapping each other in vertical series, in combination with shells and cup, substantially as and for the purposes described.

2. The combination, with a burner, of a cup provided with supply and exit pipes, a perforated pipe passing through said cup, connecting such supply and exit pipes, and refractory material around said perforated pipe, substantially as set forth.

3. In a hydrocarbon-burner, horizontal deflectors in vertical series, with inclined deflectors interposed between them, in combination with a vaporizing-cup, substantially as and for the purposes described.

4. In a hydrocarbon-burner, a vaporizing-cup provided with suitable inlet and outlet pipes and a plug secured therein, performing the double function of forming a cover for the cup and holding the plates M and N between the projecting flange of said plug and top of the cup, substantially as specified.

5. In a hydrocarbon-burner, the combination of a vertical series of horizontal deflectors with vertical annular ducts, forming air-passages to the flame in its passage around said deflectors, substantially as described.

6. In a hydrocarbon-burner, a vaporizing-cup formed with a concave bottom and sides, in combination with an inclosing-shell, substantially as and for the purposes specified.

7. In a hydrocarbon-burner, and as a means for producing an undulating or tortuous flame, the combination of the horizontal deflectors, in vertical series, with the deflecting-flanges of the inclosing-shells, forming the air-ducts, substantially as set forth.

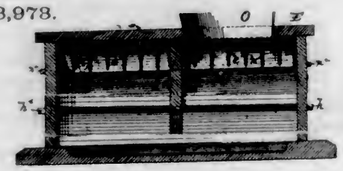
8. The combination, with a vaporizing-cup and hydrocarbon-burner, of the inner conical shell or ring-duct provided with a deflecting-flange, for the purpose of guiding and deflecting the flame against the bottom and side walls of such cup, substantially as described.

9. In a hydrocarbon-burner, a vaporizing-chamber filled with granulated refractory material, such chamber being arranged centrally over the burner, and communicating therewith by a pipe, and adapted to receive the hydrocarbon from any suitable source, substantially as specified.

10. In a hydrocarbon-burner, a series of annular air-ducts of graduated size, concentrically surrounding the burner, and each provided at top with an inwardly-projecting deflecting-flange, for the purpose of supplying oxygen at succeeding intervals to a flame, substantially as set forth.

11. A hydrocarbon-burner consisting of the shells A B C, with their flanges *a b c*, vaporizing-cup D, plug E, pipes F H I J, burner K, rings M N, and plates O P Q, the parts being constructed, arranged, and operating substantially as and for the purposes described.

293,973.

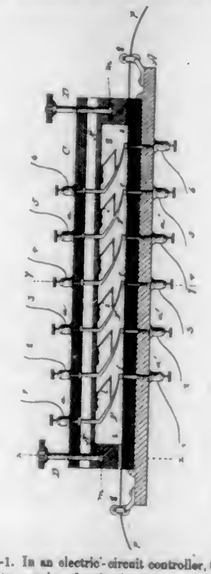


293,973. STOVE. CHRISTOPHER MATTER, Delhi, N. Y. Filed May 25, 1883. (No model.)

Claim.—In a stove, the top E, provided with a series of solid teeth, *e*, cast integral therewith, whereby the fuel is prevented from getting into the draft-passages, as set forth.

293,974. MULTIPLE CIRCUIT-CONTROLLER. WILLIAM FITZ CHARLES MASON MCCARTY, Moscow, Russia, assignor to JAMES F. PIERCE, Trustee, New York, N. Y. Filed Nov. 9, 1883. (No model.)

Brief.—Each perforation passes successively beneath each set of contacts, thereby sending the same signal to a multiplicity of main lines successively. The perforated strip has several series of perforations, so that each line of perforations may be adjusted to pass beneath the contacts.



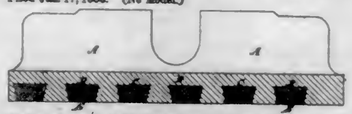
Claim.—1. In an electric-circuit controller, the combination of a series of contacts, a series of main circuits therefor, a fillet or band perforated with a series of perforations, each forming a distinct and separate message, and means for guiding any desired line of perforations over and through the series of contacts, substantially as set forth.

2. In an electric-circuit controller adapted to be controlled by a perforated paper fillet or band, the combination of the guide or interior casing, and means for adjusting said guide or casing, so that any desired line of perforations in said fillet or band may be passed through or between the contacts of the circuit-controller, substantially as set forth.

3. In an electric-circuit controller or transmitter, the combination, with a base, of a casing mounted thereon, a second or interior casing, and means of adjustment thereof relatively to the exterior casing, so that the proper or desired line of perforations may be guided over the series of contacts, substantially as set forth.

4. In an electric-circuit controller or transmitter, a series of contact-controlling devices, a guide for the perforated fillet controlling said devices, and means for adjustment of said guide, so that any desired line of perforations may be passed under the contact-controlling devices, substantially as set forth.

293,975. SLIDE-VALVE. EDWIN PEAR MONROE, New York, N. Y. Filed Jan. 17, 1883. (No model.)



Claim.—1. In a slide-valve, the combination of a cast-iron body, a face-plate of gun metal or analogous alloy, and plugs or blocks of anti-friction metal inserted and held in mortises or pockets in the face-plate, substantially as described.

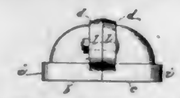
2. A slide-valve having an iron body provided with a dovetail tenon, and a gun-metal or composition face-plate provided with a corresponding mortise, the body and face-plate being united by said tenon and mortise, substantially as described.

3. In a slide-valve, a face-plate of gun metal or analogous alloy, containing pockets of dovetail cross-section filled with Babbitt or other anti-friction metal, substantially as described.

4. In a slide-valve, and in the face-plate thereof, pockets containing Babbitt or other anti-friction metal, each pocket having two of its parallel outer edges placed at an acute angle to the longitudinal axis of the valve-face, substantially as described.

5. The method herein set forth of attaching Babbitt-metal plugs to and in the gun-metal face-plate of a slide-valve, consisting in forming said face-plate with pockets of dovetail cross-section larger at the base than at the orifice, tinning the interior of said pockets and filling the same with melted Babbitt metal, substantially as described.

293,976. PIPE-RETURN. ROBERT H. D. MORRISON, Winona, Minn., assignor of one-half to M. TOYE, same place. Filed May 19, 1883. (No model.)



Claim.—The pipe-elbow consisting of the sections *b* and *c*, cast with arched perforations, and flanges *d d* around the mouths of said sections, forming the adjacent faces of the sections, and perforated lugs for the fastening-bolts, and with base-flanges *i*, extending to the adjacent face-flanges and joining the same in angular form, the angles being solidly filled by the metal of the sections, all substantially as specified.

293,977. MANUFACTURE OF ARTICLES FROM GLASS. CHAS. T. MORTIN, Pittsburg, Pa., assignor to JOSEPH K. BROWN, Canton, Ohio. Filed Oct. 22, 1883. (No model.)



Claim.—1. The herein-described process of manufacturing glass seed-cups and water-holders for bird-cages, it consisting in first forming, by means of a press, a blank having the lower or receptacle portion proper formed with walls entirely around the vessel, and having an upwardly-projecting plate, and then, before the glass leaves the mold, bending said upwardly-projecting plate down to and upon the upper edges of the wall of the receptacle portion, substantially as set forth.

2. The herein-described seed-receptacle or water-holder for bird-cages, it having the lower or receptacle portion formed with the walls entirely around and integrally with each other, and with the top formed integrally with one of the walls and secured to the tops of the others by welding after being bent into proximity to them, substantially as set forth.

3. A seed-holder or water-receptacle for bird-cages, having the front slotted wall, A, the side walls, D D, whose upper edges incline downwardly and backwardly, the rear wall, B, formed integrally with the side walls, D D, and formed also with the upwardly-projecting extension E, which can be bent downward into the proximity to the upper edge of the side walls, D, and the front wall, substantially as set forth.

293,978. BUCKLE. JAMES A. PARK, Lansing, Mich., assignor of one-half to PHELLA E. PARK, same place. Filed Oct. 16, 1882. (No model.)



Claim.—1. A buckle consisting of a frame having curved sides *a a*, cross-bars D D, arranged, respectively, at the ends of the sides *a a*, downwardly-turned end loops, and a cross-bar, B, arranged centrally between the bars D D upon the curved sides, and provided with a pivoted tongue, substantially as set forth.

2. A buckle consisting of a frame having curved sides *a a*, cross-bars D D, arranged, respectively, at the ends of the sides *a a*, downwardly-turned end loops, E E, a cross-bar and pivoted tongue, and a rigid stud, substantially as set forth.

293,979. TELEGRAPH-KEY. CHAS. PLUMB, Buffalo, N. Y., assignor of one-half to O. P. BABCOCK, same place. Filed Feb. 18, 1881. Renewed Jan. 14, 1884. (Model.)

Claim.—1. A telegraph transmitting-key carrying a loosely-revolving contact-wheel, M, in combination with an anvil consisting of a loosely-suspended contact-wheel, N, with its axis parallel to that of the wheel M substantially as described.

293,979.



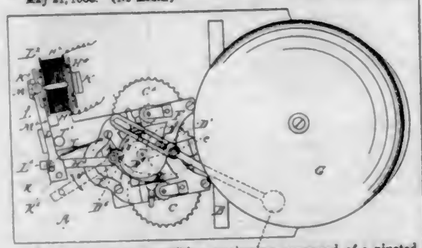
2. A telegraph-key provided with the wheel-hammer M, arranged in the shank, in combination with an easily-movable anvil-wheel, N, arranged in the same plane therewith, their axes being parallel, as and for the purposes described.

3. The combination of the anvil N, its supporting-base C', hard-rubber non-conducting base A, and an intermediate sheet of soft rubber or other soft material, *f*, for the purposes described.

4. A telegraphic key-lever supported on a shaft, D, and pivoted to the frame C, in combination with the spring J, contact-wheel hammer M, set-screws H, jam-nut L, and anvil N, the said anvil N being arranged to operate in the same plane with the wheel M, for the purposes described.

5. In a telegraph transmitting-key, a switch, O, and frame C, provided with a downwardly-projecting pin, R, adapted to pass through a hole in the switch, substantially as shown, in combination with a base, A, to which it is attached, as and for the purposes specified.

293,980. ELECTRIC GONG. JEROME REDDIE, Malden, Mass. Filed May 21, 1883. (No model.)



Claim.—1. A gong-striking mechanism composed of a pivoted hammer-lever having a longitudinal slot, a rotary crank or disk having a pin projecting into said slot, and thereby adapted during a rotation of the crank or disk to first retract and then throw forward the hammer, two driving-springs and intermediate gearing, substantially as described, to impel said disk or crank, and let-off mechanism, substantially as described, adapted to release the disk or crank and automatically arrest the same after it has operated the bell-hammer, as set forth.

2. In a gong-striking mechanism having as elements a motor composed of the two driving-springs and the gearing operated thereby, and electro-mechanical let-off mechanism adapted to alternately release and stop said motor, the combination, with said elements, of a pivoted hammer-lever having a longitudinal slot and a crank or disk impelled by said motor, and having a wrist-pin projecting into said slot, whereby when the motor is released the crank or disk is caused to alternately retract and throw forward the hammer, as set forth.

3. The combination of a slotted hammer-lever, the motor, the disk D^4, impelled by said motor, and provided with the pin D^5, projecting into the slot of the hammer-lever, and with the stop-pin D^6, the pivoted lever H H', having at one end the catch or shoulder adapted to arrest the pin D^6, and the curved end adapted to be acted on by said pin when the disk is in motion, and at the other end the pin L^2 and the lever L, having the pins R R', and controlled by an electro-magnet, as set forth.

4. The combination of the disk D^4, pin D^5, lever H H', and lever L with the polarized armature L' L^2, permanent magnet K K', and electro-magnets H^2 H^3, substantially as described, and for the purpose set forth.

5. A gong-striking mechanism composed of a pivoted hammer-lever, two driving-springs, intermediate mechanism, substantially such as described, and a let-off mechanism, all arranged in combination, substantially as stated.

293,981. WIRE-CLOTH SCENERY. FERDINAND W. ROEBLING and WILLIAM OER, Jr., Trenton, N. J., assignors to the New Jersey Wire Cloth Company, same place. Filed Nov. 3, 1883. (No model.)



Claim.—1. The process herein described of rendering stage-scenery incombustible or fire-proof, consisting in coating wire-cloth with a cement composed of asbestus or clay, one or both, combined with a suitable vehicle or vehicles therefor, as described, by subjecting said cloth and a body of said cement together to frictional drawing or rolling pressure, whereby the fabric so produced is given a smooth and durable surface, suitable for the artist's brush or scenic decoration, substantially as set forth.

2. As a new article of manufacture, a flexible incombustible fabric, consisting of wire-cloth and a cement formed of the materials described, compressed into the meshes of said cloth, thoroughly closing and coating the same, so that the surface of the material thus formed is rendered uniformly even and smooth and capable of receiving colors laid on with a brush or printed for purposes of ornamentation or scenic effect, substantially as described and set forth.

293,982. SHOE. WARNER ROGERS, Cincinnati, Ohio, assignor to the Warner Rogers Flexible Shoe Company, same place. Filed Apr. 5, 1883. (No model.)



Claim.—1. A shoe having the upper on the forward part of the shoe turned in and stitched upon the upper face of the sole, and the upper of the rear end of the shoe turned under and stitched upon the under side of the sole, in combination with the upper sole having midway between the ends, on both sides, slanting transverse slits, substantially as described.

2. In a shoe, the combination of a sole having a channel cut on its upper surface inside of and near its edge, providing a feather or leaf, with the upper having its front edge portion turned in and resting in and stitched in said channel, and having said feather or leaf turned down upon and pasted over the edge of the upper and line of stitching, substantially as described.

293,983. SEPARATOR. ALFRED W. ROPER, St. Louis, Mo. Filed June 5, 1882. (No model.)



Claim.—1. A screen-frame having a recess on its under side for the reception of the cloth, in combination with the cloth, a winding-rod, d^4, the ratchet d^4, and pawl e^3, as described, and for the purpose set forth.

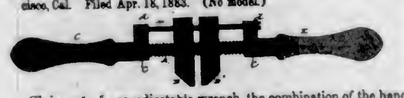
2. The combination of a screen-frame having stops *e*, and the disintegrating-frame E, suspended by links *e'*, the stops limiting the vibration of the disintegrating-frame, as set forth.

3. The combination of a vibrating screen, B, and an actuating-frame, C, loosely surrounding it, as set forth.

4. The combination of a vibrating screen, B, an actuating-frame, C, loosely surrounding it, and a spring, D, at the discharge end of the screen, as set forth.

5. The combination of the feeding-plunger F^2, the feed-hopper F, pitman *f*, pendulous lever *f''*, crank-disk F^4, and adjustable crank-pin f^5, as set forth.

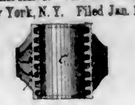
293,984. ADJUSTABLE WRENCH. ALPHONSO B. SMITH, San Francisco, Cal. Filed Apr. 18, 1883. (No model.)



Claim.—1. In an adjustable wrench, the combination of the handle and double-screw-threaded shaft set in line with the handle, with the two jaws having oppositely-threaded apertures, and a means or device separate from the handle, by which the jaws are held in line as they are moved, as set forth.

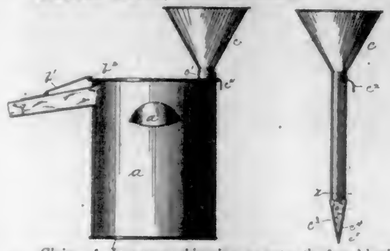
2. In an adjustable wrench, the combination of the double-screw-threaded shaft, jaws moving thereon, and means for operating said shaft, with the supports *d*, in which the screw-shaft is mounted, and the rod D, upon which the jaws ride, and by which they are held in place, as set forth.

293,985. FINGER-RING. CHRISTOPH STAIGER, Brooklyn, assignor to L. SAUTER & CO., New York, N. Y. Filed Jan. 17, 1884. (No model.)



Claim.—As an improvement in finger-rings, the combination of the enlarged frame or setting having solid end walls and side cramps with a stone having straight ends and slightly-beveled sides, substantially as set forth.

293,986. CREAM-SKIMMING APPARATUS. DAVID STOVER, La Motte, Iowa. Filed July 27, 1883. (No model.)

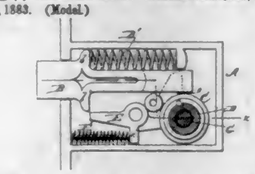


Claim.—1. In a cream-skimming apparatus, the funnel having extended tube, the lower end of which is brought to a point or cutting-edge, and provided with side openings near its said end, substantially as set forth.

2. In a cream-skimming apparatus, the combination of the tube c', having its lower end cut away on opposite sides, forming the V or wedge shaped extension c, and the plate c^4, secured on said end, substantially as described, whereby the side openings, c^3, are provided, substantially as and for the purposes specified.

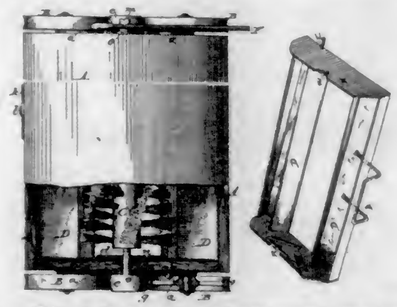
3. As an improved article of manufacture, the funnel c, provided with hook c^5, and having its lower end formed with plates c^3, and provided with plate c^4, all arranged and operating substantially as set forth.

293,987. LOCKING-LATCH. HENNING SUNDQUIST, Chicago, Ill. Filed Mar. 5, 1883. (Model.)



Claim.—In a locking-latch, the combination, with a latch formed with a lug upon one side and a hollow spindle or knob shank having a transverse slot formed in it, of a revolving slotted shaft within the hollow spindle, and a lever adapted to lock the latch by the turning of said shaft, substantially as and for the purpose set forth.

293,988. CARPET-SWEEPER. CHARLES L. TRAVIS, Minneapolis, Minn., assignor to the Wilton Manufacturing Company, same place. Filed Sept. 24, 1882. (No model.)



Claim.—1. In a carpet-sweeper, the combination of a case or body, a rotary brush therein, and a hinged dust-receiver constructed, substantially as described, to retain the brush in position within the body.

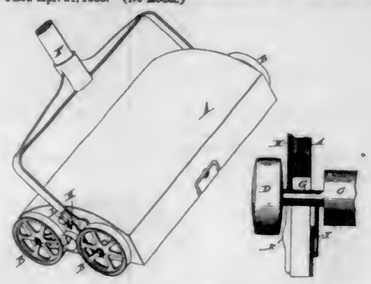
2. In combination with the case or body, the rotary brush having its journals seated in bearings therein, and the dust-receiver provided with spring arms or supports beneath the journals of the brush.

3. In a carpet-sweeper, the combination of the rotary brush and the case or body provided with the movable dust-receiver, having spring-supports to act upon the journals of the brush.

4. In combination with the slotted body and the removable rotary brush, the dust-receiver provided with notches to receive the journals of the brush and hold the latter in position to enter the slots of the body, as described and shown.

5. In a carpet-sweeper, the combination of the body provided with vertical slots, the removable rotary brush having journals to enter said slots, and a dust-pan removable from the under side of the body and arranged to bear against the journals of the brush, as described, whereby it is caused to retain the brush in position.

293,989. CARPET-SWEEPER. CHARLES LESLIE TRAVIS, Minneapolis, Minn., assignor to the Wilton Manufacturing Company, same place. Filed Apr. 21, 1883. (No model.)



Claim.—1. In a carpet-sweeper, the combination of the body provided with the vertical slots, the rotary brush having its journals mounted in said slots, and round sleeves or thimbles loosely encircling the journals within the slots, whereby the vertical adjustment of the brush is permitted and the winding of fibrous matters upon its journals prevented.

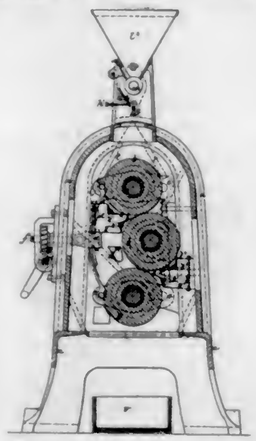
2. In combination with the vertically-slotted body, and the brush having pulleys D upon its ends, projections K on the ends of the body, substantially as described, to prevent the accidental escape of the brush.

3. In a carpet-sweeper, the body, and the handle F, having its arms pivoted to the body at one side of the middle, and having its handle thrown out of line with the arms, in the manner described and shown, in combination with the centrally-applied stops L upon the body, whereby the body is adapted to sustain the handle in an upright position when the machine stands upon the floor, and the handle caused to maintain the body in a horizontal position when inverted.

4. In a carpet-sweeper, the combination of the brush shaft or spindle, the wooden pulley applied thereto, a central metal pin, and the outer wooden pin.

5. The improved bearing-plate for a carpet-sweeper, having the central vertical slot, the projections K at its lower end, and the stop or projection L at its upper end, substantially as described.

293,990. ROLLER-MILL. EDWARD RUSH TURNER and FREDERICK TURNER, Ipswich, County of Suffolk, and JAMES HARRISON CARTER, London, England. Filed Aug. 9, 1883. (No model.) Patented in England June 28, 1879, No. 2,626.



Claim.—1. The combination of the adjustable rollers, the levers by which they are carried, and the springs by which the levers are coupled in pairs, substantially as and for the purpose hereinbefore set forth.

2. The combination of the frame, the adjustable rollers, the intermediate roller mounted in bearings of the frame, the levers carrying the adjustable rollers, and the springs acting upon the levers for drawing the adjustable rollers toward the intermediate roller, substantially as hereinbefore set forth.

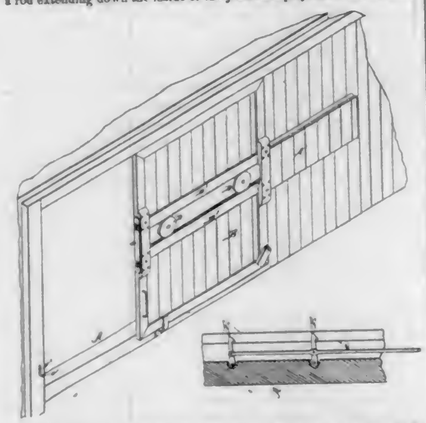
3. The combination of the frame, the adjustable rollers, the intermediate roller mounted in fixed bearings, the springs, the spring-connected levers supporting the adjustable rollers, and adjusting mechanism acting upon said springs, substantially as and for the purpose hereinbefore set forth.

4. The combination of adjacent rollers one above the other, the pair of pivoted scrapers, also one above the other, and acting upon the respective rollers, the spring-arms of the scrapers, and their connecting screw-bolt, substantially as and for the purpose hereinbefore set forth.

5. The combination of the hopper from which the material to be operated upon is supplied, the adjustable inclined board upon which the material falls as delivered from the hopper, and the angular or wedge-shaped bar, against which the material is directed by said adjustable board, as and for the purpose hereinbefore set forth.

293,991. SLIDING DOOR. WINFIELD S. VOORHIS and GEORGE H. HOUSER, Chicago, Ill. Filed July 26, 1883. (No model.)

Brief.—The door has rails across its longitudinal center which traverse grooved rollers on side of car-body, said rails moving in a protecting-housing when the door is opened. A slotted plate on edge of door is engaged by pivoted catches in door-jamb, said catches being operated by a rod extending down the inside of the jamb and projects outside thereof.



Claim.—1. A sliding door provided with tracks or bearings at its longitudinal center, in combination with two or more rollers journaled upon the frame of the car or building, whereby the door is equally balanced both above and below its hangers, substantially as and for the purpose set forth.

2. In a sliding door, a door having two bars provided with bearing-irons, extending across its longitudinal center and projecting in rear of the same, and covered in to exclude the weather, in combination with two or more grooved rollers journaled upon the side of the car or building and working between the bearing-irons, substantially as shown and described.

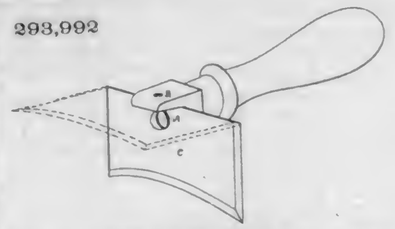
3. The combination, with the car or building A, provided with the plates C, having hollow studs C', and grooved rollers D, of the door B, having central bars, B', and bearing-strips b, closed or covered from the weather by boarding corresponding to those forming the side of the car, and extending somewhat in rear of the same, substantially as and for the purpose set forth.

4. In a car-door, the combination, with the door B, having a slotted plate, e, of the hinged or pivoted latches E, connected by a rod, e', extending through the side of the car, substantially as shown and described.

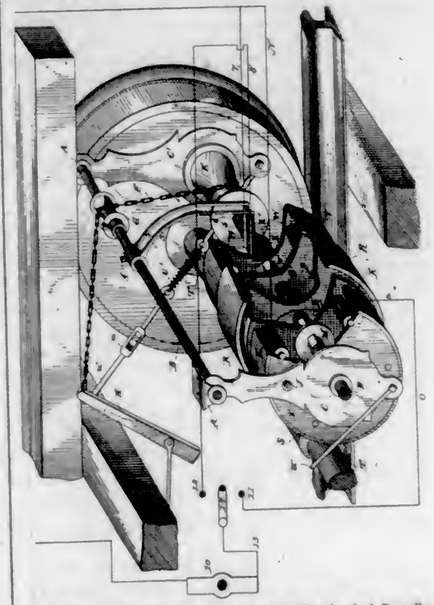
293,992. REVERSIBLE SCRAPER FOR SHIPS' SPARS. GEORGE WALL, Fall River, Mass. Filed June 9, 1883. (No model.)

Claim.—The combination, in a scraper, of a steel blade, C, having one concave edge, with the body B, which has two screw-holes to secure the blade in two positions, together with the handle, substantially as shown, and for the purpose specified.

293,992



293,993. ELECTRO-MAGNETIC CAR-BRAKE. JAS. E. WITHERS, Henderson, Ky., assignor to Robert A. Holloway, same place. Filed Nov. 21, 1883. (No model.)

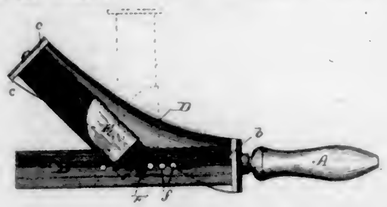


Claim.—1. In an electro-magnetic car-brake, the shaft D, pulley R, disk L, the latter arranged to slide longitudinally on said shaft and to turn with it, the electro-magnet V W, its connections x x', fingers 5 6, and arm 3, the drum E, chain F, and brake-lever H, in combination with the rods U U', axle T, and friction-wheel S, substantially as and for the purpose set forth.

2. In an electro-magnetic car-brake, the pulley R, shaft D, magnet I K, armature-disk L, drum E, and chain F, in combination with the magnet V W, axle T, and pulley S, as set forth.

3. In an electro-magnetic car-brake, the shaft D, mounted in the swinging brackets C C', and provided with the rotating magnet V W, pulley R, and armature-disk L, in combination with the non-revolving magnet I K and friction-wheel S, as and for the purpose set forth.

293,994. RAZOR-STROP. PETER S. WOLD, Chicago, Ill. Filed Nov. 19, 1883. (No model.)



Claim.—1. In a razor-strop consisting of a belt of leather or other suitable material stretched upon a frame, a frame having two pieces of metal or other suitable substance, one of said pieces having a tongue or projection interlocking with a series of holes or depressions, or any one thereof, on the other of said pieces, all substantially as described, and for the purpose specified.

2. In a razor-strop consisting of a belt of leather or other suitable material stretched upon a frame, a frame composed of two parts, one of said parts consisting of handle A, cross-head *b*, and blade B, having holes *ff* therein, and the other of said parts consisting of blade C, having cross-heads *c*, fastened firmly at one end thereof, and tongue F, bent in suitable form at the other end thereof, with lip or projection E, bent or formed as here shown and described, in combination with the leather or other material D, attached to said parts or the cross-heads placed thereon, all substantially as described, and for the purpose specified.

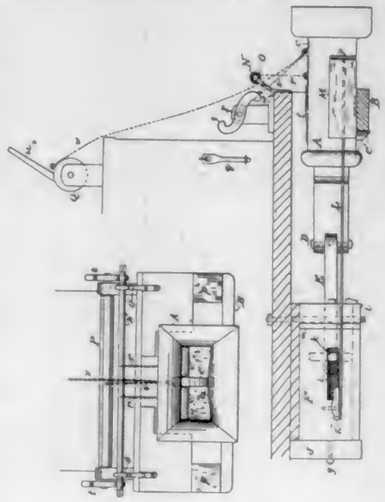
293,995. CAR-COUPLING. FREDRICK M. WRIGHT, Fort Ridge, Mo. Filed Nov. 16, 1883. (No model.)

Claim.—1. In a car-coupling, a draw-head connected with a draw-bar, E, with moving plate G, secured thereto, and connected with pivoted levers K, and the rods L, provided with buffing-plates *p*, the parts being properly supported, substantially as and for the purposes described.

2. In combination with a draw-head having a draw-bar, E, coupled thereto, a box, F, plate G, moving on guide-rods *g* within the box, pivoted levers K, connected with plate G, rods L, provided with plates *p*, and the buffers M, the parts being properly secured in position, substantially as and for the purposes set forth.

3. In combination with a draw-head and draw-bar loosely supported, as shown, the moving plate G, having arms *k*, connected with levers K, which are connected with buffing-rods L, the slotted box F, provided with a removable bottom, the guide-rods *g*, and springs *h*, the parts being constructed substantially as shown, for the purposes set forth.

4. In combination with a draw-head having a coupling-hook, a roller, P, journaled in bearings secured to the car and connected by chain with the hook, said roller being provided with the fixed handles *i*, each having one arm longer than the other, and constructed to bind against the car, as herein set forth, for the purpose specified.



5. In combination with draw-head loosely supported, as shown, a rotative shaft, N, having bearings fixed to the car, said shaft being connected by chains with the draw-head and provided with the removable handles *q*, substantially as set forth and described.

PHOTO-LITH. NORRIS PETERS WASHINGTON D.C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

BUSSEY *et al* v. THE EXCELSIOR MANUFACTURING COMPANY. THE EXCELSIOR MANUFACTURING COMPANY v. BUSSEY *et al*.

Decided January 21, 1884.

1. BUSSEY'S COOKING-STOVE PATENTS—FIRST FOUR CLAIMS OF SECOND REISSUE CONSTRUED AND LIMITED.

The first four claims of Reissue Letters Patent No 3,815, granted to Esek Bussey and Charles A. McLeod, February 1, 1870, for a cooking-stove, the original patent, No. 56,686, having been granted to said Bussey, as inventor, July 24, 1866, and reissued to him, as No. 3,649, September 28, 1869—namely "1. A diving-flue cooking-stove with the exit-flue so constructed as to inclose on the sides and bottom the culinary boiler or hot-water reservoir B; 2. A diving-flue cooking-stove with the exit-flue constructed across the bottom and up the rear upright side of the culinary boiler or hot-water reservoir B; 3. A diving-flue cooking-stove constructed with an exit-passage, F, below the top of the oven, and an exit-flue, E E', in combination with an uncased reservoir, B, attached to the rear of the stove, and placed just above such exit-passage, and so arranged that the gases of combustion, in passing through such exit-flue, will impinge upon or come in direct contact with said reservoir, substantially as and for the purposes hereinbefore specified; 4. An exit-passage, F, constructed in the rear of a diving-flue cooking-stove and below the top of the oven, in combination with an uncased reservoir, B, attached to the rear of the stove, the bottom of which reservoir is also below the top of the oven, and so arranged that the gases of combustion will come in contact with and heat such reservoir by a direct draft from the fire-box to the smoke-pipe"—are limited to a structure in which the front of the reservoir has no air-space in front of it, and in which the exit-flue does not expand into a chamber at the bottom of the reservoir, and in which the vertical part of the exit-flue does not pass up through the reservoir.

2. SAME—NOT INFRINGED.

Hence, those claims are not infringed by a stove in which, although there are three flues, and an exit-passage below the top of the oven, and a reservoir the bottom of which is below the top of the oven, no part of the rear end vertical plate is removed, so as to allow the gases of combustion to come into direct contact with the front of the reservoir, nor is any such plate employed as the plate *w w* of the patent, but there is a dead-air space between the rear plate of the flue and the front of the reservoir, and the exit-flue is not a narrow one, carried across the middle of the bottom of the reservoir, as in the patent, but the products of combustion, on leaving the flue-space, pass into a chamber beneath the reservoir, the area of which is coextensive with the entire surface of the bottom of the reservoir, and the vertical passage out of such chamber is not one outside of the rear of the reservoir, but is one in and through the body of the reservoir, and removable with it.

3. NATION AND LITTLE'S COOKING-STOVE PATENT NO. 142,933 VOID FOR WANT OF NOVELTY.

The claim of Letters Patent No. 142,933, granted to David H. Nation and Ezekiel C. Little, as inventors, September 16, 1873, for an improvement in reservoir cooking-stoves—namely, "1. The combination, with the back-plate I of the cooking-stove A, of the reservoir C, arranged on a support about midway between the top and bottom plates of the stove, and the air-chamber *b*, between the stove-back and reservoir-front, open at the top, and communicating with the air in the room, substantially as and for the purposes set forth; 2. The combination, with the stove A and reservoir C, of the small opening *a*, the sheet-flue G under the entire bottom of the reservoir, and the small exit passage or pipe E, all substantially as and for the purposes herein set forth"—are void for want of novelty.

4. NATION AND LITTLE'S COOKING-STOVE PATENT NO. 142,934 VOID FOR WANT OF NOVELTY.

The claims of Letters Patent No. 142,934, granted to said Nation and Little, September 16, 1873, for an improvement in reservoir cooking-stoves—namely, "1. The detachable base-pan or flue-shell D, attached to the body at a point near the center of the back-plate of the stove, by means of hooks *a a*, cast on the base-pan, and pins *b b* on the stove-body, substantially for the purposes herein set forth; 2. The portable reservoir F, with the flue E in the rear side, in combination with the portable base-pan or flue-shell D, substantially as and for the purposes herein set forth; 3. The combination, with a three-flue stove having damper H, arranged as described, of the portable base-pan or flue-shell D, and warming-closet G, all substantially as and for the purposes herein set forth"—are void for want of novelty.

5. SAME—NON-INVENTION—OLD DEVICES.

There was no invention in claim 1 in using, to attach the base-pan, an old mode used in attaching other projecting parts of the stove.

6. SAME—SAME—AGGREGATION.

Claims 2 and 3 are merely for aggregations of parts and not for patentable combinations.

APPEALS from the Circuit Court of the United States for the Eastern District of Missouri.

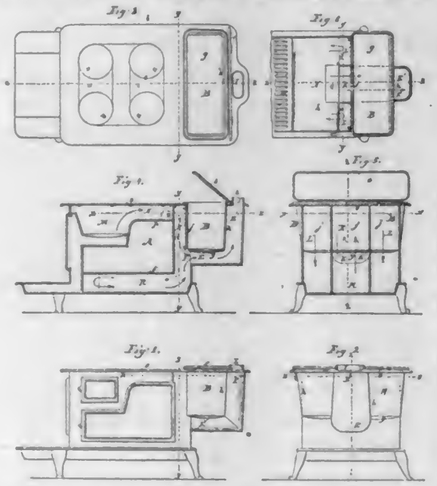
Mr. Justice BLATCHFORD delivered the opinion of the Court.

This is a suit in equity brought in the Circuit Court of the United States for the Eastern District of Missouri, by Esek Bussey and Charles A. McLeod against the Excelsior Manufacturing Company of St. Louis, a corporation, for the infringement of three several letters patent, being (1) Reissue No. 3,815, granted to the plaintiffs February 1, 1870, for a cooking-stove, the original patent, No. 56,686, having been granted to said Bussey, as inventor, July 24, 1866, and reissued to him, as No. 3,649, September 28, 1869; (2) Letters Patent No. 142,933, granted to David H. Nation and Ezekiel C. Little, as inventors, September 16, 1873, for an improvement in reservoir cooking-stoves; (3) Letters Patent No. 142,934, granted to said Nation and Little, as inventors, September 16, 1873, for an improvement in reservoir cooking-stoves. After an answer and proofs the circuit court made a decree finding no infringement of No. 3,815, and dismissing the bill as to that patent, decreeing that the other two patents were valid and had been infringed as to all their claims, and awarding a perpetual injunction as to those claims and an accounting before a master. The master reported one cent damages. The plaintiffs excepted to the report, claiming $14,972 damages. The court confirmed the report and made a decree accordingly, which also provided that the entire costs to be taxed in the suit should

be divided, and that the plaintiffs should pay five-sevenths of them and the defendant two-sevenths. Both parties appealed to this Court.

The specification of No. 3,815 says:

Figure 1 is a side elevation; Fig. 2, a rear elevation; Fig. 3, a plan; Fig. 4, a vertical section at the line z z; Fig. 5, a front view of a section at the line y y; and Fig. 6, a top view of a partial section at the line x x, all of a cooking-stove embodying my said invention, like parts being marked by the same letters in all the figures, and the arrows therein being indicative of the courses in which the gases of combustion pass through the stove.



One part of my invention consists in arranging a culinary boiler or hot-water reservoir in the rear of the oven of a diving-flue cooking-stove, with an exit-flue extending down the front, under the bottom, and up the rear of the said reservoir, substantially as hereinafter described and specified.

It also consists in arranging a culinary boiler or hot-water reservoir in the rear of the oven of a diving-flue cooking-stove, with an exit-flue leading from some point in the rear of the vertical flue or flues below the top of the said oven, and continuing under the bottom and up the rear side of said reservoir, substantially as hereinafter described and specified.

It also consists in the arrangement of a diving-flue cooking-stove, with an exit-passage constructed in the vertical rear flue or flues thereof, and below the top of the oven, in such a manner that the gases of combustion, after passing through such exit-passage, will impinge upon or come in contact with the bottom or sides of a reservoir placed in the rear of the stove, and just above said exit-passage, substantially as hereinafter described and specified.

It also consists in the employment of a thin plate or sheet of metal between the front plate of the reservoir and the rear end vertical flues of the said stove, substantially as shown and specified.

In illustration of my invention, the aforesaid drawings represent a cooking-stove having an oven, A, a culinary boiler or hot-water reservoir, B, arranged opposite to the rear upright side or end, d, of the oven, and an exit-flue, E E', extended from the central vertical flue, K, of said stove at a point below the top of the oven, under or across the bottom g of the reservoir, and from thence up along the rear upright side of said boiler or reservoir to the draft-pipe I.

For the purpose of allowing the boiler to heat more readily, a portion of the rear end vertical plate of said stove is removed, so as to uncover the upper portion of the rear end vertical flues, and the front of the boiler is attached to the rear of said flues in the manner shown and described in my reissued patent of July 24, 1866. Between the inner side of the boiler B and the rear end vertical flues, K and L L', a plate may be employed, indicated by dotted line w w. The object of this plate is as follows: It has been ascertained by experience that when, during the use of the oven for baking purposes, a large quantity of cold water is suddenly poured into the reservoir, and there is nothing between the front of the boiler and gases of combustion passing through the rear end vertical flues, the heat of the said gases will be so much absorbed by the reservoir as to sensibly cool the oven and interfere with the process of baking. To obviate this I employ the thin plate w w, placed between the front of the reservoir and the said rear end vertical flues, and which, while it allows sufficient heat to pass through it to aid in heating the boiler, protects the front thereof from the direct impact of the gases of combustion and preserves an equable heat in the oven. In case the said plate is dispensed with, the inner side, J, of the said boiler will form a part of the lateral rear casing of the said rear end vertical flues, and will be heated by direct contact with the gases of combustion as they pass down and up the same.

M is the fire-box, and N and R the top and bottom flues of said stove.

The operation of my said invention is as follows: A fire being kindled in the fire-box M, and the damper Q at the top of the oven being open, so as to allow of a direct draft, the gases of combustion from the said fire-box will pass down the middle vertical flue, K, through the exit-passage F and exit-flue E E', to the smoke-pipe I, heating the contents of the reservoir in its passage through the exit-flue, as aforesaid. By this mode of construction I am enabled to obviate what has been heretofore the greatest objection to reservoir-stoves of this class—namely, that the reservoirs would not heat with a direct draft. It will also be observed that, by this device of constructing the exit-passage below the top of the oven, I can at the same time by a direct draft heat the rear side of the oven and the reservoir, instead of wasting the heat by carrying it directly to the chimney. When the damper Q is closed for the purpose of heating the oven, the gases of combustion will pass down the side vertical flues, L L', and under the bottom of the oven, returning through a central horizontal flue to the central vertical flue, K, from which they pass through the exit-flue E E', as aforesaid.

I am aware that cooking-stoves have been in use in which the reservoir has been incased or inclosed on all sides except the top by a kind of expanded flue, through which the gases of combustion are made to pass. The advantages of my plan over this device are twofold: First, it is much more economical, requiring far less material and labor to construct it, and, second, by confining the heat and gases of combustion to a small space at the bottom and rear of the reservoir the contents thereof will be much more effectually heated than where the products of combustion are admitted to an extensive flue-space and permitted to rise and expend their heat at or near the top of the reservoir.

The claims of the patent, the first four only of which are alleged to have been infringed, are as follows:

1. A diving-flue cooking-stove with the exit-flue so constructed as to inclose on the sides and bottom the culinary boiler or hot-water reservoir B.

2. A diving-flue cooking-stove with the exit-flue constructed across the bottom and up the rear upright side of the culinary boiler or hot-water reservoir B.

3. A diving-flue cooking-stove constructed with an exit-passage, F, below the top of the oven, and an exit-flue, E E', in combination with an uncased reservoir, B, attached to the rear of the stove, and placed just above such exit-passage, and so arranged that the gases of combustion, in passing through such exit-flue, will impinge upon or come in direct contact with said reservoir, substantially as and for the purposes hereinbefore specified.

4. An exit-passage, F, constructed in the rear of a diving-flue cooking-stove and below the top of the oven, in combination with an uncased reservoir, B, attached to the rear of the stove, the bottom of which reservoir is also below the top of the oven, and so arranged that the gases of combustion will come in contact with and heat such reservoir by a direct draft from the fire-box to the smoke-pipe.

5. In a cooking-stove wherein the rear end vertical plate, or a portion of the same, has been removed for the purpose of heating a reservoir placed in the rear thereof, the shield-plate w w, in combination with the uncased reservoir B and the rear end vertical flues, K, L, and L', substantially as and for the purposes hereinbefore described and specified.

The defendant's stove has three flues and an exit-passage below the top of the oven, and a reservoir, the bottom of which is below the top of the oven; but no part of the rear end vertical plate is removed so as to allow the gases of combustion to come into direct contact with the front of the reservoir, nor is any such plate employed as the plate w w of the patent; but there is a dead-air space between the rear plate of the flue and the front of the reservoir. The exit-flue is not a narrow one, carried across the middle of the bottom of the reservoir, as in the patent, but the products of combustion, on leaving the flue-space, pass into a chamber beneath the reservoir, the area of which is coextensive with the entire surface of the bottom of the reservoir, and the vertical passage out of such chamber is not one outside of the rear of the reservoir, but is one in and through the body of the reservoir and removable with it. In view of the earlier patents put in evidence, we are of opinion that the four claims in question must be limited to a structure in which the front of the reservoir has no air space in front of it, and in which the exit-flue does not expand into a chamber at the bottom of the reservoir, and in which the vertical part of the exit-flue does not pass up through the reservoir. Under this construction there is no infringement of No. 3,815.

Claim 1, in requiring that the exit-flue shall "inclose on the sides and bottom," the reservoir requires, in the language of the text of the specification, that it shall extend "down the front, under the bottom, and up the rear" of the reservoir; and it does not admit of an air-space in front of the reservoir; nor is it limited to what is called a "low-down boiler or reservoir." The Getz patent of 1840 shows an exit-flue passing under the bottom and up the rear side of a reservoir. The Spaulding or Paris patent of 1858 shows a diving-flue inclosing the bottom and one of the sides of a reservoir.

Claim 2 is not limited to a low-down boiler or reservoir. If a stove with an exit-flue constructed across the bottom and up the rear upright side of a boiler or reservoir existed before, there was nothing patentable in applying such construction to a diving-flue stove. The combination of exit-flue and reservoir with which claim 2 is concerned has no patentable relation to the arrangement of the internal flues of the stove. The Getz patent of 1840 shows an exit-flue extending across the bottom and up the rear upright side of a boiler. In the Stewart patent of 1859 the products of combustion enter a chamber under the reservoir, and thence pass off by a pipe embraced within the walls of the reservoir. The exit-flue of claim 2 must, therefore, be limited to one which passes under the bottom of the reservoir without expanding into a chamber substantially coextensive with the area of the bottom of the reservoir, as in the defendant's stove and in the Stewart patent of 1859, and also to one in which the escape-pipe is outside of the rear wall of the reservoir and not within the reservoir, as in the defendant's stove and in the Stewart patent of 1859.

Claim 3 adds to claim 2 only the feature of having the exit-passage or exit orifice into the exit-flue below the top of the oven. There is no patentable relation between the combination of exit-flue and reservoir and the location of the exit-passage with reference to the oven, in view of the state of the art. In the Stewart patent of 1859 the exit-opening was on a level with the top of the oven and led into a chamber under the reservoir. In the Spaulding or Paris patent of 1858 and in the Bussey patent of 1865 the bottom of the reservoir was below the top of the oven. There was no invention in causing the gases to act on a low-down reservoir in the same way in which they had acted before on an elevated reservoir, and no invention in lowering the exit-opening to correspond with the depression of the reservoir, even though the incidental effect was to heat by a direct draft at the same time the reservoir and the rear side of the oven.

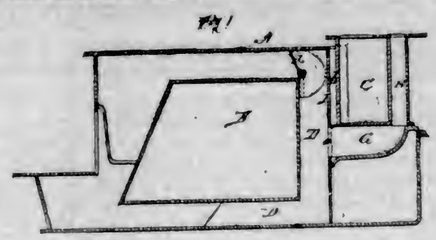
Claim 4 adds to claim 3 only the feature of heating the reservoir by a direct draft from the fire-box to the smoke-pipe. This, however, is only a statement of the effect produced in a structure made according to the first three claims. In the Getz patent of 1840 and in the Stewart patent of 1859 the exit-pipe was in the rear of the reservoir, and the gases were brought into contact with the bottom of the reservoir, and it was heated by a direct draft. There is really nothing in claim 4 beyond what is found in claim 3.

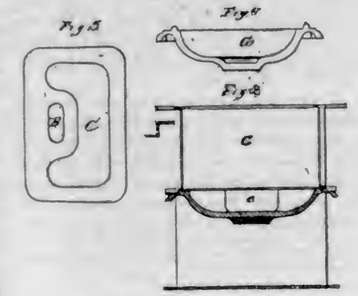
The specification of No. 142,933 is as follows:

Our invention relates to that class of cooking-stoves in which a water-reservoir is situated at the rear end of the stove; and it consists in the arrangement of the reservoir upon an extended support at the rear of the stove, so that an air-chamber, opening at its top into the air of the room, is left between the back-plate of the stove and the front of the reservoir, thereby protecting the front of the same from becoming burned out by being in direct contact with the heat from the fire.

It also consists in a broad sheet-flue arranged under the reservoir, the heated air for which enters through a small passage in the back-plate of the stove, and after circulating in said flue passes out through the small opening in the rear thereof, all as more fully hereinafter set forth.

Figure 1 is a longitudinal vertical section of our stove; Fig. 2 is a transverse vertical section of the same through the water-reservoir; Fig. 3 is a plain view of the reservoir; and Fig. 4 is a front view of the sheet-flue under the bottom of the reservoir.





A represents the top plate of the stove. B is the oven; C, the water-reservoir; D, the center one of the three flues of the stove; and E, the exit-flue, located in the rear of the reservoir C. This reservoir is located upon a support therefor, which extends rearward from a point about half-way between the top and bottom plates of the stove, and which may either be attached to or form part of the stove, and a sheet-flue, G, is provided in the same under the bottom of the reservoir C. The heat, entering this flue, passes through the small central passage *a* in the stove-back I. It is there spread and retained under the reservoir until it gradually ascends through the small passage or exit-flue E. By this construction the rapid exit of the heated air from under the reservoir is prevented, and the heat, being retained under the bottom of the reservoir, causes the water in the same to become hot in a short time. The reservoir C is so arranged with respect to the back-plate I of the stove that an air-space, *b*, communicating with the air of the room at the top, is left between the front of the reservoir and the back-plate. By this means the outside air will pass down between the back-plate and front of the reservoir and prevent the front of the reservoir from burning out, which would be the case if the parts were in direct contact, especially when the water in the reservoir becomes low. In the ordinary method the flame is made to strike directly upon the front surface of the reservoir, thereby rendering it liable to crack while replenishing with cold water upon the heated plates. The opening *a* in the back-plate I of the stove is of the same width as the center-flue D, and the products of combustion pass through said opening into the sheet-flue G, which thus has a contracted entrance and a contracted exit. When using the direct draft the damper *d* of the center-flue D is turned downward and rests against the back-oven plate, as shown by the dotted lines in Fig. 1. At such times the heat passes down the center-flue D of the back, through the opening *a* in the back-plate I, into the sheet-flue G, under the bottom of the reservoir, and out of the exit-flue E. When the indirect draft is used, the damper *d* occupies the position shown in Fig. 1, and at such times the heat passes down the usual side flues and under the bottom of the oven to the front of the stove, where it turns into the center-flue D and passes back through the opening *a* to the sheet-flue G under the bottom of the reservoir, and out of the exit-flue. With a stove thus constructed, the reservoir is heated almost entirely from the bottom, and the heat acts upon the entire surface of the bottom of the reservoir, and when the reservoir is but partially filled there is no danger of the heat acting against and burning out the top part of the front side of the reservoir.

We do not claim under this patent a flue-shell and rear central extension that be detachable from the stove-body by means of hooks on the one and catches or pins on the other; nor do we specifically claim a reservoir with a flue in its rear, as these elements of invention are the subject of a separate application for a patent now pending; neither do we wish to be understood as claiming the arrangement of the reservoirs and flues for heating the same in front of the fire-box of the stove, as shown in our patent of May 6, 1873, No. 138,662.

The claims of No. 142,933 are two in number, as follows, and the infringement of both is admitted:

1. The combination, with the back-plate I of the cooking-stove A, of the reservoir C, arranged on a support about midway between the top and bottom plates of the stove, and the air-chamber *b* between the stove-back and reservoir-front, open at the top, and communicating with the air in the room, substantially as and for the purposes set forth.

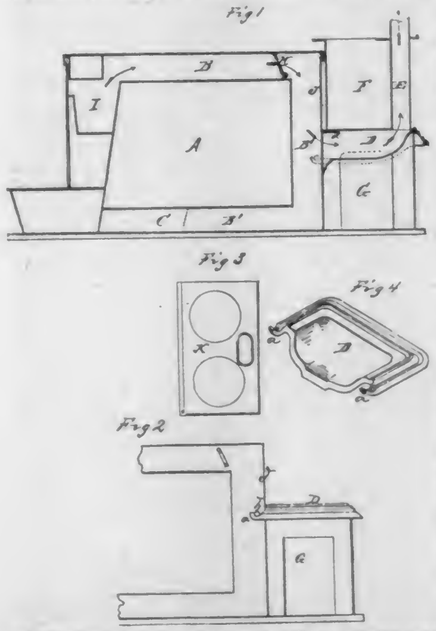
2. The combination, with the stove A and reservoir C, of the small opening *a*, the sheet-flue G under the entire bottom of the reservoir, and the small exit passage or pipe E, all substantially as and for the purposes herein set forth.

The point of invention in claim 1 is in so arranging the reservoir as to have an air-space between the front plate of the reservoir and the back-plate of the stove, to a sufficient extent to prevent the flame from striking against the upper part of the front plate of the reservoir, which it would do if the upper part of the back-plate of the stove were cut away and there were no such air-space. It is the upper part of the front side of the reservoir which, as the specification states, is liable to be burned out by the direct action of the flame as the water in the reservoir is lowered. In the McDowell patent of 1871 all the upper part of the reservoir is protected by an air-space, open at the top, between the reservoir and the stove.

The point of invention in claim 2 is to take the gases through a small opening into a broad sheet-flue under the bottom of a reservoir and out through another small opening in the rear, so that they will circulate in the broad flue and act on the entire surface of the bottom of the reservoir. The Stewart patent of 1859 shows the same arrangement with an elevated reservoir, but there is no invention in applying it to a low-down reservoir. The Tiffany patent of 1869 shows the same arrangement with a low-down reservoir.

The specification of No. 142,934 says:

The nature of our invention consists in the construction and arrangement of a cooking-stove with a portable base-pan or flue-shell,



and the means for attaching the same, as will be hereinafter more fully set forth.

* * * * * * *

Figure 1 is a longitudinal vertical section of our improved cooking-stove. Fig. 2 is a side view of the rear end of the same. Fig. 3 is a plan view of a loose cover or plate for the base-pan, and Fig. 4 is a perspective view of the portable base-pan or flue-shell.

A represents the main baking-oven of the stove. B is the top flue; B′ B″, the vertical and horizontal side flues. C is the center flue. D is the base-pan or flue-shell; E, the exit-flue passing up the rear side of the reservoir. F is the reservoir; G, the warming-closet; H, the damper; I, the fire-chamber; and J, the division-plate. When using the direct draft, the damper H occupies a line parallel with the back plate of the main oven, hanging down in the center flue of the back part of the stove. At such time the products of combustion pass from the fire-chamber I, along the top flue, B, and down the center flue, between the back oven-plate and the division-plate J, into the base-pan D, and out of the exit-flue E. When using the indirect draft, the damper H occupies the position shown in Fig. 1. At such time the products of combustion pass over the top oven-plate flue, B, and down the vertical end flues, B′, into the corresponding flues at the bottom, making the turn into the center flue of the bottom at C, through said bottom center flue, into and through the rear center flue, through the division-plate J, into the base-pan flue D, and out of exit-flue E, so that, whether using the direct or indirect draft, the reservoir is heated only on its bottom surface. The base-pan D is made separate from the stove, and provided on each side with a hook-projection, *a*, to be fastened on a pin, *b*, projecting from the side of the stove. By this means the base-pan can readily be attached and detached, and when attached it fits in the upper end and forms the top of the warming-oven G.

K represents a plate with two boiler-holes in it, which can be used when the reservoir is removed or should become broken in shipment, thus converting it into a six-hole stove.

It is our purpose to insert a loose center-piece between the boiler-holes in the plate K, so that an ordinary wash-boiler can be used on said plate, if desired.

The novelty of this invention consists in the portability of the reservoir base-pan D and in the warming-closet attachment, whereby we economize space in shipment, and whereby repairs can be made at a very small cost and by unskilled workmen, as all the attachments will be shipped separate from the body of the stove, and mounted after they reach their destination.

Should the reservoir become broken in shipment or otherwise, the plate K can be used, thus converting it into a six-hole stove, upon which an ordinary wash-boiler can be used in case of emergency.

The front bottom corner of the reservoir rests upon a strip, *d*, attached to the division-plate J, which thus entirely shuts off the air-space at the bottom.

By means of the base-pan flue D, extending under the whole bottom of the reservoir F and the space between the reservoir and the division-plate J, the reservoir becomes heated only on its bottom surface, where there will always be water, if any in the reservoir at all. The exit-flue E passes up through and forms part of the reservoir F at the back or rear side, as shown.

We do not claim, under this specification, the combination of the reservoir with the back of the stove when an air-space open at the top is left between the two, as seen in the drawings; nor do we claim the sheet-flue under the reservoir in the shell D, as both of these arrangements are the subject-matter of a separate application for a patent now pending.

The claims of No. 142,934 are three in number, as follows, and the infringement of all of them is admitted:

1. The detachable base-pan or flue-shell D, attached to the body at a point near the center of the back plate of the stove by means of hooks *a a* cast on the base-pan, and pins *b b* on the stove-body, substantially for the purposes herein set forth.

2. The portable reservoir F, with flue E in the rear side, in combination with the portable base-pan or flue-shell D, substantially as and for the purposes herein set forth.

3. The combination, with a three-flue stove having damper H, arranged as described, of the portable base-pan or flue-shell D and warming-closet G, all substantially as and for the purposes herein set forth.

The Tiffany patent of 1869 shows a low-down reservoir at the rear of a three-flue stove, and a warming-closet below the reservoir. The gases pass from the flue-space into a base-pan or chamber which is immediately below the reservoir, and forms the top of the warming-closet. The flue by which the gases escape from the base-pan is in the rear of the reservoir, and is removable with it. The Tiffany stove, having three flues, must have a damper to open and close the middle flue.

The specification of the Tiffany patent states that the reservoir and the warming-closet are capable of being attached to and detached from the stove, so that the stove is complete without them, and they are complete without being attached; and it also states that they may be attached to the stove by lugs or hook either cast in the back of the stove, with a corresponding eye in the side of the case surrounding the reservoir, or in the top and side of the reservoir, or the hook and the eye may be reversed. A detachable base-pan existed before, and hearths and ash-pans existed attached by lugs and hooks in the same way as the defendant's base-pan. A portable reservoir was old, with an escape-pipe or flue forming a part of the reservoir. A damper for the middle flue was old. A warming-closet below a base-pan and that below a reservoir were old.

In view of the state of the art, there was no invention in claim 1 of the patent in using to attach the base-pan an old mode used in attaching other projecting parts of the stove. Claim 2 is merely for an aggregation of parts, and not for a patentable combination, there being no patentable relation between a portable reservoir with a flue in its rear side and the existence or portability of a base-pan beneath it. In claim 3 there is merely an aggregation of parts, there being no patentable relation between a damper for the middle flue of a three-flue stove and the existence or portability of a base-pan or the existence of a warming-closet.

The decree of the circuit court is reversed, with costs in this Court to the Excelsior Manufacturing Company on both appeals, and the case is remanded to the circuit court, with direction to dismiss the bill, with costs.

Supreme Court of the United States.

ZANE *et al.* v. SOFFE.

Decided January 21, 1884.

1. PARTICULAR PATENTS.
Letters patent granted to Nathaniel Jenkins, June 22, 1865, construed.

2. CONSTRUCTION OF PATENTS.
In view of the fact that certain mechanical equivalents of a device claimed were previously used, the patent was construed to cover only the specific device mentioned in the claim.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. Thos. Wm. Clarke for the appellants.
Mr. Henry P. Wells for the appellee.

Mr. Justice BRADLEY delivered the opinion of the Court.

This writ was brought by Zane and Roach, as assignees of one Nathaniel Jenkins, against the defendant Soffe, for infringing (as charged) certain letters patent granted to said Jenkins, June 22, 1865, for an improvement in self-acting cocks or faucets.

The general features of the invention patented so far as material to be considered may be described as follows: The valve is situated in a chamber below the valve-seat, where the water is introduced by the induction-pipe, and is kept in place against the valve-seat by a spiral spring underneath resting on the bottom of the chamber. On its upper side the valve is connected by a swivel with a stem which projects upward through the top of the faucet, where it is provided with a handle, by which it may be turned. A screw is formed on the upper part of the stem, by which, when the stem is turned by the hand, it is forced downward and pushes the valve from its seat, thus permitting the water to flow out of the cock. On letting the handle go the spiral spring below the valve, aided by the pressure of the water, forces the valve back to its seat, and the flow of water is stopped. In the specification the stem is called a "screw-follower." The patent has two claims, only the first of which is claimed to be infringed by the defendant, and this is in the following words, to wit:

What I claim as new, and desire to secure by Letters Patent, is—

1. The screw-follower H, in combination with the valve of a self-closing faucet, substantially as set forth, and for the purpose described.

The defendant answered the bill, denying that Jenkins was the first inventor of the thing patented, denying infringement, and setting up a patent granted to defendant himself on the 10th of May, 1874, under and according to which the faucets manufactured by him were made, and which he alleges are no infringement of the Jenkins patent. The answer specifically refers to only one patent as anticipating the supposed invention of Jenkins—namely, a patent granted to one Frederick H. Bartholomew, in August, 1846—in which (as alleged) all the essential elements of the faucet patented to Jenkins are described and exhibited. The answer, however, contains the following general averment:

This defendant, further answering, denies that the patent granted said Nathaniel Jenkins is valid, and alleges that prior to the invention described in said patent a screw and spring, worked in opposition to each other, had been used to open and close faucets and hydrants, in which faucets and hydrants the screw did all the work of opening the faucets and hydrants, and the spring did all or most of the work of closing the valve of the faucets and hydrants; that faucets and hydrants operated in the above manner had been in public and general use and for sale in the cities of New York and Brooklyn and in various other places long prior to and at least fifteen years before the date of the alleged invention of Nathaniel Jenkins; and defendant is advised and believes that by reason of said prior public use and sale the patent granted to said Jenkins is invalid.

This answer was not excepted to, and evidence was given by the defendant, without objection, showing that a large number of faucets and hydrants were made by Bartholomew and publicly used in the city of New York several years before the issuing of the patent sued on, differing in some respects from the specific device described in Bartholomew's patent referred to in the answer, but relied on as anticipating the alleged invention of Jenkins, or, at least, as containing all the essential elements of the faucets manufactured by the defendant. The court below held that this evidence was competent to show the state of the art at the time Jenkins's patent was granted, and might be used for the purpose of limiting its construction, but not for the purpose of showing such a previous knowledge and use of the invention as would affect the validity of the patent. But since the decision of this case in the circuit court we have held, in Loom Company *v.* Higgins, (105 U. S., 595,) that under a general denial of the patentee's priority of invention, evidence of prior knowledge and use, taken without objection, is competent at the final hearing on the question of the validity of the patent; and since in the present case there was neither an exception to the answer nor any objection to the evidence, except as to a single faucet marked "Defendant's Exhibit No. 2," (which may be laid out of the case,) we think that the remaining evidence of prior knowledge and use might well have been considered by the court on the question of priority as affecting the validity of the patent. Viewing the evidence however with the court below only as demonstrative of the state of the art, and therefore competent to limit the construction of the patent to the precise form of parts and mechanism described and claimed therein, it was amply sufficient to sustain the decree.

Self-closing cocks and faucets were no new thing in June, 1865, when the patent of Jenkins was issued. Bartholomew had manufactured and sold them for a period of ten or fifteen years before that time. As early as 1854 he had made and sold faucets in which the valve was kept on its seat by the pressure of a spiral spring, and when a flow of water was desired the valve was lifted from its seat against the force of the spring by means of a stem operated by a collar or cross-piece moving around on a fixed circular inclined plane or cam, having the same effect as a screw. When the handle or thumb-piece attached to the collar was liberated or let go, the spiral spring would force the valve back to its seat and the flow of water would be stopped.

The improvement of Jenkins, (or what was patented to him as such,) as we have seen, was the employment of a screw on the upper part of the valve-stem, in lieu of the circular cam or inclined plane, to force the valve from its seat. This valve-stem, called by him the "screw-follower," forced the valve not only against the pressure of the spring, but against that of the water, both of which were exerted in carrying the valve back to its seat as soon as the force operating upon the screw was removed. Now, in view of the fact that an inclined plane or cam was previously used by Bartholomew as a means of producing the same result upon the valve-stem as that produced by the screw made upon it by Jenkins, it is clear that the claim of the latter in his patent of "the screw-follower H in combination with the valve of a self-closing faucet, substantially as set forth," must be limited to the precise form of mechanism designated. It must be limited to a screw-follower, and cannot be construed to embrace a cam arrangement for moving the valve. Whether it is also to be limited to a valve which moves to its seat concurrently with and not against the pressure of the water it is not necessary to determine. The limitation to the screw is sufficient to determine this case. In the faucet manufactured by the defendant the screw is not used, but the old cam device is employed for lifting the valve from its seat. It is true that the cam, instead of being placed at the top of the stem, on the outside of the faucet, as was done by Bartholomew, is placed at its lower extremity by the valve inside of the faucet; but this does not change the principle of its construction or operation.

We concur with the court below in holding that, construed as the patent of Jenkins must be in view of the state of the art at the time of its issue, the defendant has not infringed it, and the bill of complaint was properly dismissed. The decree of the circuit court dismissing the bill is therefore affirmed.

Supreme Court of the District of Columbia.

IN RE HATCHMAN.

1. FORMER DECISION AFFIRMED.

Decision of the Commissioner of Patents in *ex parte* Hatchman (reported in 25 O. G., 979) affirmed.

2. ATTORNEY—PARTY BOUND BY ACTS OF HIS ATTORNEY.

In legal effect the action of an applicant or his attorney is the same.

3. REISSUE—INADVERTENCE, ACCIDENT, OR MISTAKE.

Where one of the claims in an original application was rejected upon reference to certain patents, and the applicant, by his attorney, orders the same to be erased, and thus obtains and accepts a patent for the residue of his claims, there has been no inadvertence, accident, or mistake within the meaning of the patent law, and the patentee is not entitled to a reissue covering the claim before erased.

Application of Robert Hatchman for reissue of Letters Patent No. 283,602.

Mr. Justice MCARTHUR delivered the opinion of the court.

This is an appeal from the decision of the Commissioner of Patents. In his application for a patent, Hatchman made several claims, all of which were allowed except one, and that was rejected on the ground that it was too broad and was met by previous inventions for which patents had issued. Upon such examination said claim was erased and withdrawn by order of his attorney, and he obtained and accepted the original patent for the other claims, dated August 21, 1883. The application for reissue was made October 5, 1883, for the same claim which had been examined in granting the original patent and rejected with his acquiescence or that of his attorney, which is the same thing in legal effect. Upon this state of the record the reissue was denied on the ground that the claim had been canceled by the duly authorized attorney of the applicant, and that, having been canceled and the patent issued without it, he is not entitled to a reissue covering that identical claim. The case is here on appeal from that decision.

The sole question presented is whether, under these circumstances, Hatchman is entitled to a reissue to protect the disallowed claim on the ground that the same had been rejected by inadvertence, accident, and mistake, and without any fraudulent or deceptive intention.

We are of opinion that on an application for a patent, when one of the claims presented is covered by previous inventions and the patents therefor are referred to, and the Examiner upon such reference decides against such claim, and the applicant thereupon, by his attorney, orders the same to be erased and withdrawn, and thus obtains and accepts a patent for the residue of his claims, he is not entitled to a reissued patent containing the identical claim which he has so erased and withdrawn. We also hold that under such circumstances no error has arisen by inadvertence, accident, or mistake within the meaning of the patent law which would authorize the Commissioner to entertain the application for a reissue. We therefore think that the decision appealed from ought to be affirmed and the appeal dismissed. Let the proper order be prepared.

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United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Amendment of Rule 209.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, February 20, 1884.

Rule 209 of the Rules of Practice (revised edition November 15, 1883) is amended to read as follows, viz:

209. The following is the schedule of fees and of prices of publications, &c., of the Patent Office:

On filing each original application for a design patent for three years and six months	$10 00
On filing each original application for a design patent for seven years	15 00
On filing each original application for a design patent for fourteen years	30 00
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BENJ. BUTTERWORTH,
Commissioner.

Approved to take effect March 1, 1884.

H. M. TELLER,
Secretary of the Interior.

Issue of February 26, 1884.

Patents	349—No. 293,996 to No. 294,344, inclusive.	
Designs	28—No. 14,808 to No. 14,835, inclusive.	
Trade-marks	11—No. 10,958 to No. 10,968, inclusive.	
Labels	22—No. 3,924 to No. 3,945, inclusive.	
Reissues of patents	5—No. 10,450 to No. 10,454, inclusive.	
Total issue	415	

TO CITIZENS OF THE UNITED STATES.

Patents and Designs—Alabama, 3; Arkansas, 3; California, 6; Colorado, 1; Connecticut, 19; Dakota Ter., 1; District of Columbia, 4; Georgia, 1; Illinois, 40; Indiana, 10; Iowa, 8; Kentucky, 1; Louisiana, 3; Maine, 3; Maryland, 3; Massachusetts, 28; Michigan, 5; Minnesota, 1; Missouri, 8; Nebraska, 3; Nevada, 1; New Hampshire, 1; New Jersey, 11; New York, 93; Ohio, 24; Pennsylvania, 41; Rhode Island, 5; Tennessee, 2; Texas, 4; Virginia, 2; Washington Ter., 1; West Virginia, 5; Wisconsin, 8; Wyoming Ter., 1.—Total, 353.

Trade-Marks and Labels—California, 1; Connecticut, 1; Florida, 1; Georgia, 1; Illinois, 3; Iowa, 1; Louisiana, 1; Massachusetts, 2; New York, 12; Ohio, 1; Oregon, 1; Pennsylvania, 4; Rhode Island, 1; Utah Ter., 1; Virginia, 1.—Total, 32.

TO CITIZENS OF FOREIGN COUNTRIES.

Patents and Designs—Austria-Hungary, 1; Canada, 3; England, 11; Germany, 7; Scotland, 2.—Total, 24.

Trade-Mark—England, 1.

DESIGNS.

14,808.—DINNER OR TEA SET.—*James Barlow* and *James Moses*, Trenton, N. J., assignor to *The Mercer Pottery Company*, same place. Application filed February 28, 1883. Term of patent 7 years.

14,809.—STATUE.—*Abia Z. Boda*, Washington, D. C., assignor to *Christian Devries*, *Minnie A. Vogeler*, and *Herman D. Umbstaetter*, all of Baltimore, Md. Application filed December 19, 1883. Term of patent 14 years.

14,810 to 14,816, inclusive.—BACK OF A PLATING-CARD.—*Edwin R. Eavenson*, Philadelphia, Pa., assignor to *James H. Caterson* and *Robert Brotz*, both of same place. Applications filed January 23, 1884. Term of patents 3½ years.

14,817.—CIGAR CUTTER CASE.—*Le Roy O. Fairchild*, New York, N. Y. Application filed October 16, 1883. Term of patent 7 years.

14,818.—GEM-SETTING.—*Sylvester K. Merrill*, Auburn, R. I. Application filed January 17, 1884. Term of patent 3½ years.

14,819.—CALENDAR.—*Clarence S. Nathan*, New York, N. Y. Application filed November 28, 1883. Term of patent 3½ years.

14,820.—LADY'S COSTUME.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,821.—LAMP.—*William J. Patterson*, Beaver, Pa. Application filed January 15, 1884. Term of patent 7 years.

14,822.—GIRL'S COSTUME.—*Catherine Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,823.—LADY'S WALKING-SKIRT.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,824.—CHILD'S COSTUME.—*Catherine Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,825.—MISS'S WALKING-SKIRT.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,826.—LADY'S WALKING-SKIRT.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,827.—LADY'S DRESS.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,828 and 14,829.—LADY'S COSTUME.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Applications filed January 23, 1884. Term of patents 3½ years.

14,830.—MISS'S COSTUME.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,831.—CHILD'S WRAP.—*Mary Turner*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,832.—MISS'S COSTUME.—*Mary Turner*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,833.—LADY'S COAT.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed January 23, 1884. Term of patent 3½ years.

14,834.—BILLIARD-TABLE.—*Albert Wagner*, New York, N. Y., assignor to *H. W. Collender*, same place. Application filed December 31, 1883. Term of patent 3½ years.

14,835.—TOY.—*Edward L. Morris*, Boston, Mass. Application filed August 8, 1883. Term of patent 3½ years.

TRADE-MARKS.

10,958.—GLOVES.—*Elias Apfelbaum*, Gloversville, N. Y. Application filed January 15, 1884.

"The letters and word 'KIRBY.'"

10,959.—CERTAIN KIND OF JEWELRY.—*Orsp. C. Devereux*, Providence, R. I. Application filed December 17, 1883.

"The combination of letters of any kind to form the word 'STONNE.'"

10,960.—WHISKY.—*Elias Block & Sons*, Cincinnati, Ohio, assignors to *M. and K. Gottstein*, Seattle, Wash. Ter. Application filed January 24, 1884.

"The arbitrary symbol-word 'GOLDRAR.'"

10,961.—GOLD-LEAF.—*Stephen Hickson*, New York, N. Y. Application filed February 2, 1884.

"The word-symbol 'EUREMA.'"

10,962.—WATCH-MOVEMENTS.—*Mathey Brothers & Mathez*, New York, N. Y. Application filed January 25, 1884.

"The word 'LEONVILLE.'"

10,963.—ORANGES AND LEMONS.—*Antonio Minaldi*, New York, N. Y. Application filed January 23, 1884.

"The words 'GOOD MORNING.'"

10,964.—CIGARS.—*Celestino Palacio & Co.*, New York, N. Y. Application filed November 21, 1883.

"The word 'EUDORA.'"

10,965.—RAT-TRAPS.—*Elijah P. Peacock*, Chicago, Ill. Application filed December 5, 1883.

"The representation of a rat upon the neck of which is sprung a trap constructed of wire, the end of which is on the neck of the rat in the form of a bow set on end, and the ends thereof connected with a ring at about opposite the hind part of the rat."

10,966.—SPECTACLES, EYEGLASSES, AND OPTICAL GOODS.—*Sussfeld, Lorsch & Co.*, New York, N. Y. Application filed November 14, 1883.

"The representation of a crown with pointed ends finishing in balls."

10,967.—CAPS, CARTRIDGES, PRIMERS, WADS, AND SHELLS FOR SMALL-ARMS.—*Union Metallic Cartridge Company*, Bridgeport, Conn. Application filed January 11, 1884.

"The letters 'U. M. C.'"

10,968.—ANVILS.—*Peter Wright & Sons*, Dudley, County of Worcester, England. Application filed June 23, 1883.

"An arbitrary circular arrangement of the words 'SOLID WROUGHT.'"

LABELS.

3,924.—Title: "R. S. REPELLENT SHIELDS WARRANTED."—*Brooklyn Shield Company*, Brooklyn, N. Y. Application filed January 16, 1884.

3,925.—Title: "BRUCKLINE" (FOR A HAIR RESTORER.)—*Matthew Bruce*, New York, N. Y. Application filed February 1, 1884.

3,926.—Title: "CUPID'S TEARS" (FOR CAPSULES.)—*George Burwell*, Boston, Mass. Application filed February 4, 1884.

3,927.—Title: "CHAMBERLAIN'S EYE AND SKIN OINTMENT."—*Chamberlain & Co.*, Des Moines, Iowa. Application filed February 1, 1884.

3,928.—Title: "LEMON" (FOR AN EXTRACT.)—*Chapman, Smith & Co.*, Chicago, Ill. Application filed February 4, 1884.

3,929.—Title: "VANILLA" (FOR AN EXTRACT.)—*Chapman, Smith & Co.*, Chicago, Ill. Application filed February 4, 1884.

3,930.—Title: "B. FARLEY'S WONDERFUL DISCOVERY" (FOR A MEDICINE.—*Bernard Farley*, San Francisco, Cal. Application filed February 1, 1884.

3,931.—Title: "HICKMAN'S RELIABLE HAIR AND SCALP REMEDY."—*William McO. Hickman*, Jefferson, Pa. Application filed January 31, 1884.

3,932.—Title: "TROPHY" (FOR CIGARS.)—*Hier & Aldrich*, Syracuse, N. Y. Application filed January 24, 1884.

3,933.—Title: "THE SILVER KING" (FOR MANUFACTURED TOBACCO.) *Charles D. Hill & Co.*, Richmond, Va. Application filed February 2, 1884.

3,934.—Title: "HOLBROOK'S ENAMELINE" (FOR A COSMETIC.)—*George H. Holbrook*, Portland, Oreg. Application filed February 1, 1884.

3,935.—Title: "FLORIDA WATER."—*Benjamin L. Hughes*, Jacksonville, Fla. Application filed January 14, 1884.

3,936.—Title: "CARBONATED-IODINE-LITHIA WATER."—*Christian Lewis Keppler*, New Orleans, La. Application filed February 5, 1884.

3,937.—Title: "SUN MACKINAW" (FOR HAT TIPS OR LININGS.)—*Lippincott, Oglevee & Co.*, Philadelphia, Pa. Application filed January 31, 1884.

3,938.—Title: "CHINESE MACKINAW" (FOR HAT TIPS OR LININGS.) *Lippincott, Oglevee & Co.*, Philadelphia, Pa. Application filed January 31, 1884.

3,939.—Title: "ROYAL CURTAIN FIXTURE."—*Louis Page* and *Louis Keber*, Brooklyn, N. Y. Application filed February 4, 1884.

3,940.—Title: "DR. SALTER'S EYE LOTION."—*M. T. Salter*, Atlanta, Ga. Application filed February 4, 1884.

3,941.—Title: "SUNSHINE METAL POLISH."—*Lucius E. Sayre*, Philadelphia, Pa. Application filed February 2, 1884.

3,942.—Title: "WAY UP BAKING POWDER."—*Smith & Case*, Salt Lake City, Utah Ter. Application filed February 4, 1884.

3,943.—Title: "NABOB" (FOR CIGARS.)—*David B. Stewart*, Ithaca, N. Y. Application filed January 24, 1884.

3,944.—Title: "PEARLIOCA" (FOR FOOD PRODUCTS.)—*William J. Stitt & Co.*, New York, N. Y. Application filed January 31, 1884.

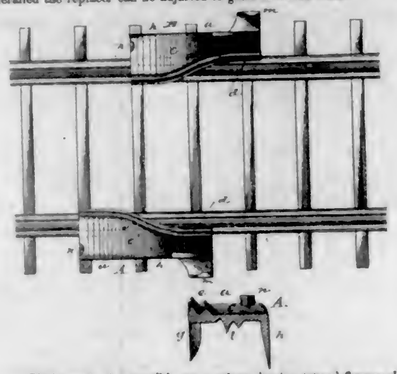
3,945.—Title: "WHITING'S IMPERVIOUS DRAFTING INKS."—*Frederic A. Whiting*, Wellesley Hills, Mass. Application filed February 2, 1884.

PATENTS

GRANTED FEB. 26, 1884.

293,996. CAR-REPLACER. ROBERT E. ALEXANDER, Niagara, Pa. Filed May 12, 1883. (No model.)

Brief.—A pair of reversible right and left car-replacers so arranged with lateral flanges, inclined track-bodies, and curved guide-grooves on their bodies that in whatever position a car may be when derailed the replacer can be adjusted to guide it on the track.

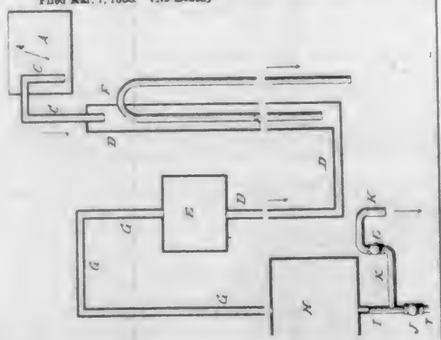


Claim.—1. A reversible car-replacer having lateral flanges *d h*, and holding legs or lugs *g m*, and an inclined track-body, *c*, having on one side a guide-groove, *e*, next the lateral flange, and on the other side a guide-groove, *l*, separated from the flange by an interval, substantially as specified.

2. A pair of reversible right and left car-replacers, A and B, respectively formed with lateral flanges, inclined track-bodies, and curved guide-grooves on said track-bodies, substantially as specified.

3. The combination, with a right-hand car-replacer, A, having lateral flanges *d h*, and holding-lugs *g m*, and an inclined track-body, *c*, formed with curved guide-grooves *e l*, respectively, on opposite sides thereof, of a left-hand replacer, B, of similar formation, but having its guide-grooves reversely curved with reference to those of the right-hand replacer, substantially as specified.

293,997. APPARATUS FOR RAISING WATER. THOMAS ARTHUR, Bangor, Pa., assignor to himself and Robert James Nagle, same place. Filed Mar. 7, 1883. (No model.)



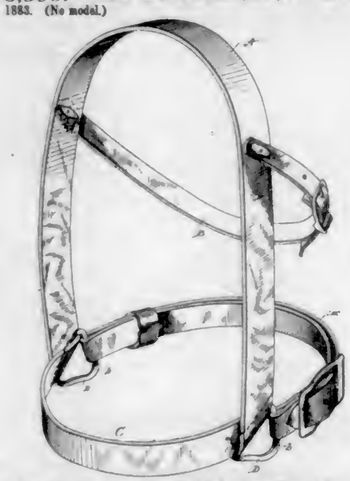
Claim.—1. An apparatus for raising water constructed substantially as herein shown and described, and consisting of three tanks placed at different levels, and connected by two bent tubes and a siphon, one of the said bent tubes being provided with a discharge-siphon, and the lower tank being provided with a pipe leading to the water to be raised, and having an upwardly-opening valve, and a discharge-pipe having an outwardly-opening valve, as set forth.

2. In an apparatus for raising water, the combination, with the three tanks A E H, placed at different levels, of the siphon C, the bent tubes D G, the discharge-siphon F in the bent tube D, and the valve-pipes I K, substantially as herein shown and described, whereby water can be raised by atmospheric pressure induced by the flowing of water through the said tanks and siphons, as set forth.

293,998. PASTE FOR CLEANING METALS. HERRMAN BARLET, Nuremberg, Bavaria, Germany. Filed Aug. 31, 1883. (No specimens.)

Claim.—A paste for cleaning metals, obtained by mixing stearine, oil of stearine, trip, and nitrobenzoyle, according to the process described above.

293,999. HALTER. EDWARD BARNARD, Rome, N. Y. Filed Dec. 26, 1883. (No model.)



Claim.—1. The herein-described bail or loop D for halters, having the upper portion, *a*, and the lower rounded portion, *b*, substantially as described, and for the purpose set forth.

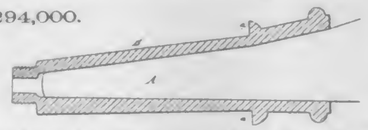
2. In a halter, the combination, with the head and nose portions, consisting of a single strap, of bails or loops D, made substantially triangular in form, and located at the angle formed at the junction of the head and nose portions of the halter, substantially as set forth.

3. The combination, with a bail or loop, D, consisting of the upper portion, *a*, and the lower rounded portion, *b*, of the head-strap secured to said upper portion, *a*, and bent upon itself at an angle to form the nose-strap, and the halter-strap secured to the lower rounded portion, *b*, substantially as set forth.

294,000. THIMBLE-SKEIN FOR WAGONS. ALLEN J. BEACH, Linden, Mich. Filed Dec. 1, 1881. (No model.)

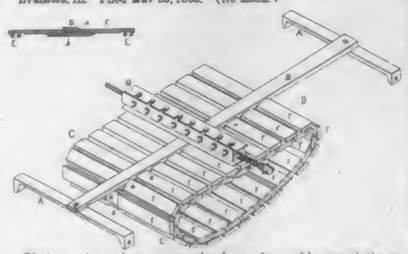
Claim.—In combination with an axle having its lower edge horizontal, an axle-skein having the lower portion of its interior in a hori-

294,000.



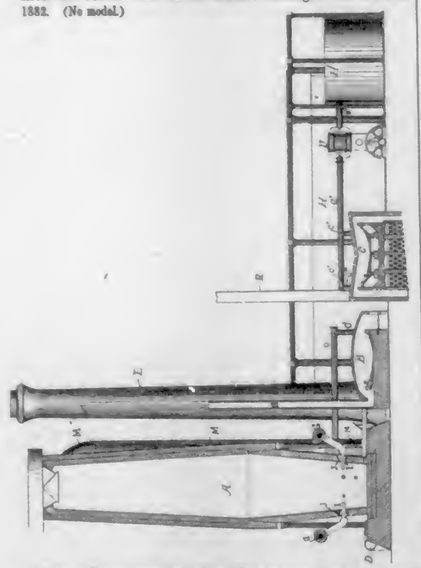
zontal line on a level with the bottom of the axle-tree, and having its point or outer end extending below the horizontal plane of the skein at the base or rear end of its bearing-surface, substantially as and for the purpose specified.

294,001. WOOD-PLANING MACHINE. EDWIN BENJAMIN, South Evanston, Ill. Filed May 23, 1883. (No model.)



Claim.—As an improvement in planers for working wood, the tapered guide B, gained into the bed at *a*, and placed with its wider end to the delivery end of the machine, to shorten the cutting-length of the knives to the cutter-head gradually from the narrow to the wide end of the guide B, and thus forming a draft for the uniform delivery of stuff from the machine, as specified.

294,002. APPARATUS FOR THE MANUFACTURE OF INGOT IRON AND STEEL. JOHN FRANCIS BENNETT, Pittsburg, Pa. Filed Dec. 1, 1882. (No model.)



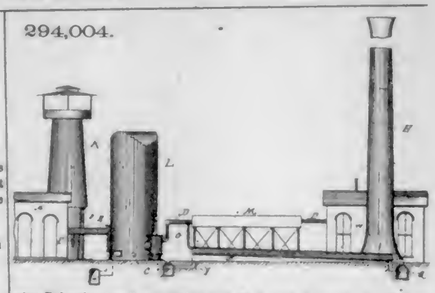
Claim.—The combination, with a blast-furnace, A, of a reverberatory furnace, B, a regenerative furnace, C, connected and constructed as described, of a gas-holder, H, suitable blowers, F F, and connections, as and for the purposes herein fully set forth.

294,003. HOT-BLAST APPARATUS FOR BLAST-FURNACES. JOHN FRANCIS BENNETT, Pittsburg, Pa. Filed Feb. 7, 1883. (No model.)

Claim.—1. The combination, with a blast-furnace, of two hot-blast stoves, a steam-boiler, a preheating-reservoir, and connecting-pipes and valves, substantially as and for the purpose specified.

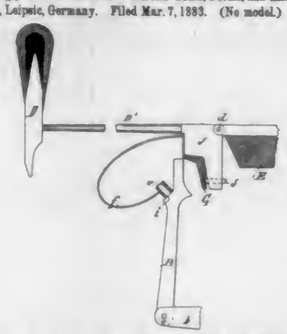
2. The combination, with a blast-furnace, K, of a downcomer, T, drop-

294,004.



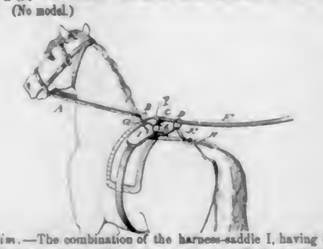
pipe P, bustle-pipe J, connecting-pipe E', heated-air-supply pipe E, hot-air-supply pipe U, connecting-pipes V X X', valves S S', stoves L L', valves R R', hot-air pipe F, air-pipe D, steam-pipe O, flues Y Z G, chimney H, blower I, and tank M, substantially as and for the purpose specified.

294,004. PIANO-ACTION. ALFRED BIESE, Berlin, and KARL GUSTAV ZIEROLD, Leipsic, Germany. Filed Mar. 7, 1883. (No model.)



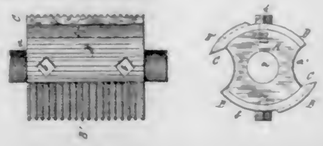
Claim.—In a piano-action, the combination of the hammer-butt, hammer-fly, and interposed spring with the cushion G, attached to said hammer-butt, and receiving the pressure of said spring, and the adjusting-screw, which works through said hammer-butt against the back of said cushion, to regulate the stress of said spring, substantially as set forth.

294,005. HARNESS. SAMUEL L. BUSH, Custard's, Pa. Filed July 7 1883. (No model.)



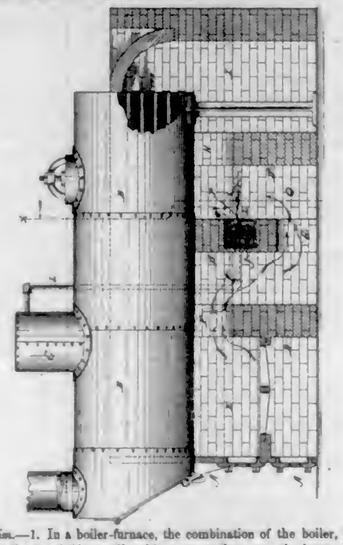
Claim.—The combination of the harness-saddle I, having check-hook G, the crupper-strap H, having elastic strap E, the guide-ring D, placed loosely upon the said strap, the plate P, having hook B, adapted to receive the check-rein, and provided on its under side with a staple having a ring, C, adapted to engage the check-hook, and the operating-strap F, attached to the rear end of the plate P and passing through the guide-ring D, substantially as and for the purpose herein set forth.

294,006. CUTTER-HEAD. HORACE S. BOYNTON, Oshkosh, Wis. Filed Nov. 2, 1883. (No model.)



Claim.—The curved plates having elevations on the outside, bevsled to serrated cutting-edges from the inside, and curved to conform to cutter-head having convexed knife-seats, in combination with the latter, all constructed substantially as specified.

294,007. SMOKE AND GAS CONSUMING FURNACE. HENRY M. BRADY, Dalton, Ill. Filed Nov. 5 1883. (No model.)



Claim.—1. In a boiler-furnace, the combination of the boiler, the fire-grate, the two bridge-walls with passages thereover, the intermediate bridge-wall having a passage thereunder, the transverse air-chamber located in the intermediate wall, means for controlling the admission of air into said chamber, and steam-ejector nozzles located in said chamber, and arranged, as described, to deliver the air in a backward direction.

2. In a boiler-furnace, a bridge-wall provided with a transverse air-chamber divided longitudinally, as described, into two compartments, in combination with means for controlling the admission of air to said compartments independently, a steam-pipe provided with nozzles, and located in the rear compartment, and nozzles O, also located in said compartment and arranged to deliver the air in a backward direction, as described.

3. In a boiler-furnace, a bridge-wall provided with a transverse air-passage divided longitudinally into two communicating compartments, the rear compartment being provided with a steam-pipe and with nozzles, as described, for delivering the air in a backward direction.

4. The combination, in a furnace, of the bridge-wall D, having over it the space or passage F, and the wall D', having under it the space or passage G, and a steam-injector arranged in an air-supplying chamber, the said injector and air-supplying chamber communicating with the chamber behind the wall D', substantially as and for the purposes set forth.

5. The combination, in a furnace, of the bridge-wall D, having over it the space or passage F, the bridge-wall D', having under it the space or passage G, the bridge-wall D'', having over it the space or passage H, and the box J, located in the wall D', and containing the chambers N and M, with their slides or doors K K, the said chambers being separated by means of a perforated partition, and the chamber M containing the injector L P and the funnels O O, substantially as and for the purposes specified.

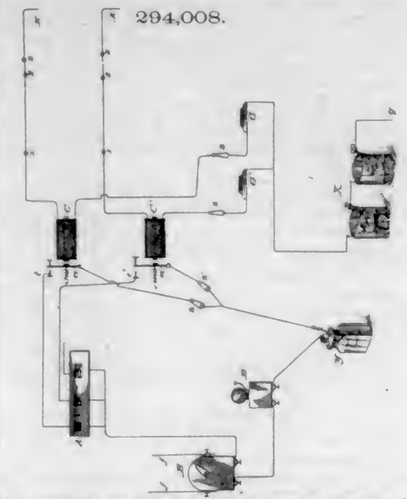
294,008. ELECTRIC FIRE-ALARM AND FIRE-EXTINGUISHER SYSTEM. CHARLES E. BUELL, New Haven, Conn. Filed Dec. 22, 1883. (No model.)

Claim.—1. The combination, with two or more alarm-circuits that are adapted to open by heat, of alarm apparatus adapted to be made operative when either of said circuits opens, and an independent circuit and means common to the several alarm-circuits adapted to transmit a definite alarm-signal thereon to a remote station when either of said alarm-circuits opens.

2. The combination, with two or more alarm-circuits that are adapted to open by heat, of alarm apparatus adapted to be made operative when either of said circuits opens, and a galvanometer in each circuit for determining the cause of accidental alarms and for showing the condition of the circuits.

3. The combination, with two or more normally-closed alarm-cir-

294,008.



cuits adapted to open by heat, of an alarm apparatus common to the several circuits and adapted to sound an alarm by the opening of either, and an annunciator controlled by said circuits to indicate the opening of the several circuits, or either of them, and means common to the several circuits for transmitting a definite alarm-signal to a remote station.

4. The combination, with two or more alarm-circuits adapted to open by heat, of an alarm apparatus adapted to sound an alarm when either circuit opens, an annunciator controlled by said circuits to indicate the opening of said circuits, or either of them, and a galvanometer in each circuit to indicate the condition of said circuits, substantially as described.

5. The combination, with two or more alarm-circuits adapted to open by heat, of alarm apparatus adapted to sound an alarm when either of said circuits opens, an annunciator adapted to indicate the opening of said circuits, or either of them, and an independent circuit, and means common to the several circuits adapted to transmit a definite number-signal thereon to a remote station when either of said circuits open.

6. The combination, with two or more alarm-circuits adapted to open by heat, of an alarm apparatus adapted to be made operative by the opening of either of said circuits, and an annunciator adapted to indicate the opening of either of said circuits, a galvanometer in each of said circuits for denoting the condition of said circuits, and a normally-closed independent circuit, and mechanism common to the several circuits adapted to transmit a definite number-signal over said independent circuit when either of said alarm-circuits opens.

7. The combination, with a series of alarm-circuits adapted to open by heat, of the alarm apparatus D, the annunciator A, the circuit *f f*, signaling mechanism B, the galvanometers G G, and switches *s s'*, the whole arranged and operating substantially as set forth.

8. The combination, with the sprinkler H, of a spring insulated thereon and held to close an electric circuit by the parts T and L of said sprinkler when those parts are in the position of normally closed, and in a manner to allow said spring to retract and make operative said circuit when the said parts T and L, or either, become displaced from the position of closed.

9. The combination, with the distributing part of a sprinkler, of a circuit-closing key insulated thereon and held to close an electric circuit by the interlocking parts T and L, or either of them, in a manner to allow said spring to retract when said parts, or either, become displaced from their normally-closed position, to make operative said electric circuit.

10. A series of sprinklers, each provided with a circuit-closing spring that is insulated therefrom and adapted to close a circuit common to the series when the moving parts of the sprinkler are in their normal position, for excluding water, and the said spring in such relation to the fusible devices of the sprinkler as to accelerate their movement when released by heat.

11. The combination, with a sprinkler that is adapted to be made operative by the action of heat upon a fusible substance, of electrical circuit-connections insulated thereon and portable therewith, and adapted to make operative an electric circuit when said sprinkler becomes open by heat or its moving parts displaced by accident.

12. The combination, with a sprinkler that is adapted to be made operative by the action of heat upon a fusible substance, of circuit-con-

nections insulated thereon and held to close an electric circuit when the said sprinkler is closed to exclude water, and said circuit-connections adapted to become operative when said sprinkler is in a position the reverse from pendent and its moving parts become released.

13. The combination, with an alarm-circuit composed in part of a water-conducting pipe, of means for short-circuiting the battery charging said circuit by the opening or partial opening of a sprinkler.

14. The combination, with battery X, of the pipe P, sprinklers H H H, with W W, resistance, and means for shunting said resistance by the partial opening or opening of the sprinklers, or either of them, to produce an alarm.

15. The combination, with a series of alarm-circuits that are normally charged, and composed of lengths of wire not easily fused, held in electrical continuity by easily-fused joints, of an alarm apparatus common to the series of circuits, adapted to sound an alarm when either of said circuits opens, and means to indicate which of the several circuits has opened.

16. The combination, with a series of alarm-circuits that are normally charged, and are composed of lengths of wire not easily fused, held in electrical continuity by easily-fused joints, and provided with alarm apparatus common to the several circuits, adapted to sound an alarm when either of said circuits opens, of a normally-closed independent circuit and a call mechanism adapted to transmit a definite call-signal to a remote station when either of said alarm-circuits opens, substantially as described.

17. The combination, with a series of alarm-circuits that are normally charged, and are composed of lengths of wire not easily fused, held in electrical continuity by easily-fused joints, and provided with alarm apparatus adapted to sound an alarm when either of said circuits opens, and to indicate which of the several circuits has opened, of a normally-closed independent circuit and mechanism common to the series of circuits adapted to transmit a definite call-signal to a remote station when either of said alarm-circuits becomes open.

18. The combination, with a series of alarm-circuits that are normally charged, and are composed of lengths of wire not easily fused, held in electrical continuity by easily-fused joints, and provided with alarm apparatus common to the several circuits, adapted to give an alarm when either of said circuits opens, of a normally-closed independent circuit and devices adapted to produce an alarm at a remote station when either of said alarm-circuits becomes open.

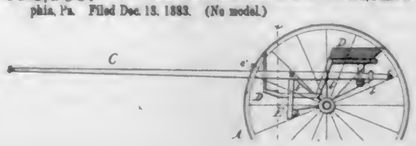
19. The combination, with a series of alarm-circuits that are normally charged, and are composed of lengths of wire not easily fused, held in electrical continuity by easily-fused joints, and provided with alarm apparatus common to the several circuits, adapted to give an alarm when either of said circuits opens, of independent devices in each of said circuits adapted to indicate the condition of said circuits, substantially as described.

20. The combination, with a series of alarm-circuits that are normally charged, and are composed of lengths of wire not easily fused, held in electrical continuity by easily-fused joints, of alarm apparatus in a local or sub circuit adapted to be made operative to give an alarm when either of the said normally-closed alarm-circuits becomes open, whereby said normally-closed circuits may be short-circuited or the force charging said circuits be augmented without making operative said alarm.

21. The combination, with a series of alarm-circuits that are normally charged, and are composed of lengths of wire not easily fused, held in electrical continuity by easily-fused joints, and provided with alarm apparatus adapted to give an alarm when either of said circuits becomes open, of a local circuit that is normally open, and a call mechanism, and means controlled by said local circuit and adapted to transmit a signal to a remote station when the said local circuit is closed by the opening of either of said alarm-circuits, and devices in the said alarm-circuits for closing the said local circuit when either of said alarm-circuits opens.

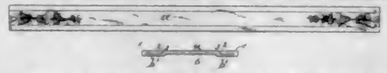
22. The combination, with a series of alarm-circuits that are normally charged, and are composed of lengths of wire not easily fused, held in electrical continuity by easily-fused joints, of an alarm apparatus adapted to sound an alarm when either of said circuits opens, and an annunciator adapted to be made operative by the closing of a local circuit when either of said alarm-circuits opens, to indicate which of said alarm-circuits has opened, with devices for each alarm-circuit adapted to close said open circuit through its respective drop of said annunciator when it becomes opened, the whole arranged and operating substantially as set forth.

294,009. TWO-WHEELED VEHICLE. LEWIS F. CASTOR, Philadelphia, Pa. Filed Dec. 13, 1883. (No model.)



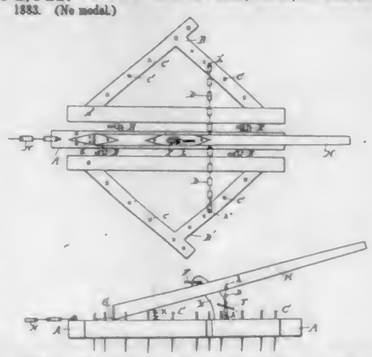
Claim.—In a two-wheeled vehicle, the combination of the shafts C C, having cross-bars *c c'*, axle B, bent or elliptic cross-bar E, spring F, dropped or curved front body D, and the spring G, the whole arranged as described, and for the purpose specified.

294,010. PLATED-EDGE BAND-BRACELET. JAS. A. CHARNLEY and CHAS. F. CHARNLEY, Providence, R. I. Filed Nov. 2, 1883. (No model.)



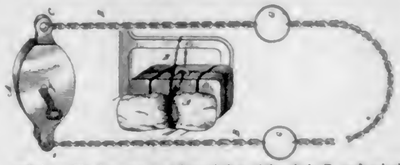
Claim.—A bracelet formed of a gold plate or other malleable metal, having its edges 1 1 turned over on its face *a*, and said face forced up from the back *b* until even with the upper side of edges 1 1, forming a level face, *a*, and ribs *b' b'*, on the back *b*, which plate is engraved and bent into proper shape, substantially as shown and described.

294,011. HARROW. JOHN H. CHENEY, Cowden, Ill. Filed July 24, 1883. (No model.)



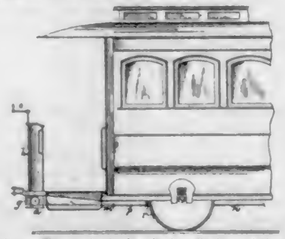
Claim.—The hinged and slotted handle H, arc L, having check-rings F, and spring K, in combination with the central draft-beam of a harrow, having vibrating frames affixed to the sides thereof, substantially as specified.

294,012. CHAIN-LOCK OR BAGGAGE-GUARD. MYRON J. CLARK, Washington, D. C. Filed Nov. 3, 1883. (No model.)



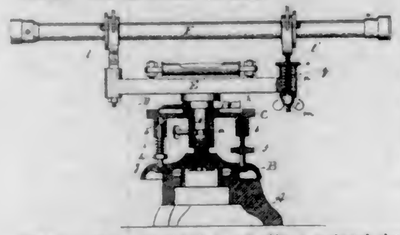
Claim.—The baggage-guard consisting of the chain B, spring-lock A, hasp C, and the rings or loops G G near the respective ends of the chain, all constructed and combined as herein shown and described.

294,013. CAR-BRAKE. GEORGE W. COFFIN, Pittsburg, Pa. Filed Dec. 10, 1883. (No model.)



Claim.—The car-brake herein described, consisting of the boxing *b c*, secured together and to the platform of the car by rods *d e*, the worm *g*, having the cylinder *f* seated in bearings in the boxing, the shaft *j*, carrying the toothed wheel *k*, meshing with said worm, the drum *l* on said shaft, having one end of the chain *m* attached thereto, the other end thereof connected to the rod *n* and lever *p* of the brake, and the removable crank-shaft A, for winding and unwinding the chain on the drum to operate the brake, as shown and described.

294,014. LEVELING-INSTRUMENT. WILLIAM T. COMSTOCK, New York, N. Y. Filed Jan. 14, 1884. (No model.)

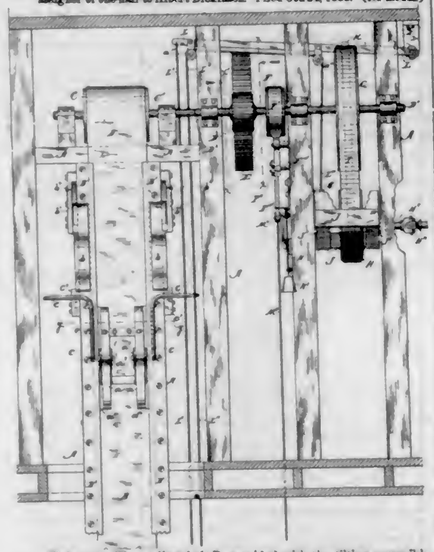


Claim.—1. The combination, in a level, of lower graduated plate C, with base-plate B, and with thumb-screws *f f* and pins *g g*, having shoulders A and springs *i*, substantially as and for the purpose specified.

2. The combination, in a level, of a base-plate, B, with the telescope-carrying frame E, and with two graduated plates, C D, the lower plate, C, made in one piece with the central sleeve, *a*, open on top, and with the sleeves *b b' d d'* open at the bottom, substantially as specified.

3. The combination of frame E, having hollow arm *s*, with the screw-shank *m*, nuts *o p*, spring *q*, and with the supports *l l'*, and telescope F, substantially as specified.

294,015. ELEVATOR FOR BAGS, &c. ADAM CONRAD, Chicago, Ill., assignor of one-half to Albert Dickinson. Filed Oct. 24, 1883. (No model.)



Claim.—1. The endless belt B, provided with the tilting reversible carrier composed of the frame *a* and the two arms *a'*, rigidly connected together and pivoted or hinged to the frame, substantially as and for the purpose described.

2. The described dumping device, composed of the bar *b* and of the bar *v*, rigidly attached thereto, and pivoted at *b''*, adapted to throw off packages in their upward passage, substantially as described.

3. The described dumping device, consisting of bar *b* and bar *v*, rigidly fastened thereto and pivoted at *b''*, and provided with a hinge, as shown in Fig. 6, adapting it to be folded back out of the way when packages are to be elevated above it, substantially as described.

4. The skids *c*, bent laterally, as shown, so as to form loops *c'* in each one, and leave space for a bag to pass up between them, and made detachable and interchangeable for use on any floor in the building, the lower ends resting on or in the floor, and their upper ends loosely in sockets or brackets, adapted to allow packages to pass up between them and then catch them when thrown off the carriers and guide them to the floor, substantially as described.

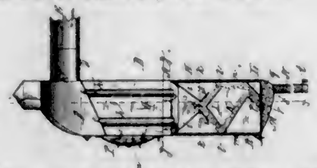
5. The rods *c'''* in pairs, having bearings for their upper ends in the uprights A, and for their lower ends in or upon the floor, and detachable, adapted to receive bags or packages in their downward passage and guide them out of the way and upon the floor, substantially as described.

6. The combination of the lever L, having one end pivoted to the main frame, and having pivoted to it the fulcrum-bar *k*, and the pivoted weighted frame J, bearing its pinion H and shaft H', substantially as described.

7. The brake for the pulley F, composed of the two shoes F', pivoted at their lower ends to the main frame, and the vertical lever F'', working on pivot F', and operating the brake-shoes by the two links, as shown in Fig. 5, substantially as described.

8. The combination of the pawl O, pivoted on the main frame, and the rack-bar O' on the inner end of pivoted frame J, adapted to hold that end down against the weight J' on the other end of the same, substantially as described.

294,016. CAR-VENTILATOR. WILLIAM E. COWEN, Defiance, Ohio. Filed Oct. 9, 1882. Renewed Aug. 15, 1883. (No model.)

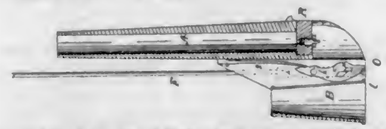


Claim.—1. As an improvement in car-ventilators, a deflector, H, in combination with and interposed between a receptacle, M, for collecting cinders, dust, &c., located thereunder, and one or more vertical pipes, A A', extending through a compartment, G, located thereover, and an inlet and outlet for the air, as and for the purpose described.

2. An inlet-pipe, E, a chamber, D, the compartment G, provided with a series of vertical pipes, A A', extending through the same, a deflector, H, a cinder and dust receptacle, M, and an outlet, *u*, opening into the car, and controlled by a register, P, slide, damper, or other suitable valve, combined and arranged as shown and described, for the purpose set forth.

3. The deflector H, with its inclined partitions *i' i* I K L and passages *g e r*, in combination with and interposed between a compartment, G, located thereover, and provided with a series of vertical pipes, A A', extending down through the same, and a cinder and dust receptacle, M, located thereunder and provided with a discharge-pipe, N, having a suitable valve, as and for the purpose specified.

294,017. BOMB-GUN. PATRICK CUNNINGHAM, New Bedford, Mass. Filed Nov. 30, 1883. (No model.)

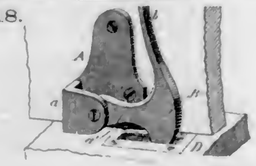


Claim.—1. In a breech-loading bomb-gun, the combination of a gun-barrel having a lock-case containing firing devices arranged along its side, and having a suitable breech-block adapted to turn on a hinge, with a suitable pole-socket arranged alongside of said barrel, as and for the purpose shown and described.

2. In a breech-loading bomb-gun, the combination of a gun-barrel having a lock-case containing firing devices arranged along its side, and having a suitable breech-block adapted to turn on a hinge, with a pole-socket having suitable lugs on its side for the support of a harpoon, arranged alongside of said gun-barrel, as and for the purpose shown and described.

3. In a breech-loading bomb-gun, the combination of a gun-barrel having a suitable breech-block adapted to turn on a hinge, a lock-case containing firing devices arranged alongside of said barrel, and having a socket in which a rod is adapted to slide and actuate the firing devices, and a suitable pole-socket having on its side suitable lugs for the support of a harpoon, arranged alongside of the lock-case or gun-barrel, all as shown and described.

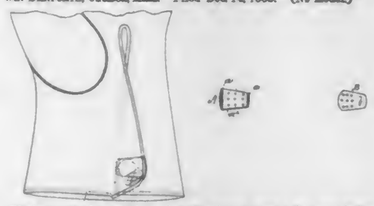
294,018.



294,018. DOOR-CHECK. WILLIAM B. DAGER, Canton, Ohio. Filed June 25, 1883. (No model.)

Claim.—The door-check herein described, consisting of the plate A, adapted to be secured to a door, and provided with an arm, *a*, and the pivotal lever B, rounded upon its bearing-surface, and provided with a projection, C, in combination with a plate, D, adapted to be secured to the door-sill, said plate and sill being mortised, substantially as and for the purpose set forth.

294,019. CLASP OR FASTENING FOR GLOVES, &c. GEORGE EDWIN DANFORTH, Chelsea, Mass. Filed Dec. 14, 1883. (No model.)



Claim.—A clasp or fastening for gloves, shoes, &c., consisting of the two parts A and B, the part A having a grooved flange at each end, as described, and the part B adapted to be inserted under the end flanges to close the clasp, the parts each having suitable means for attachment to the glove or shoe, all substantially as set forth.

294,020. LUMBERMAN'S SOCK. WILLIAM N. EISENDRATH, Chicago, Ill., assignor to himself and Benjamin D. Eisendrath, same place. Filed Oct. 1, 1883. (No model.)



Claim.—1. In a wool-skin sock, the combination of wool-skin sock A, composed of two pieces, *a* and *a'*, united together by a seam, a^2, at their edges, with felt lining B, likewise composed of two pieces, *b* and *b'*, united together at their edges by a seam, b^2, said lining being secured to said wool-skin only at the top of the sock by a seam, b^3, and smooth facing C, secured on the inside of the leg of the sock to said piece *a* by seams c^2 and central seam, c^3, thus forming pockets *c* and *c'*, substantially as specified.

2. The combination, with wool-skin sock A, of felt lining B, secured to said wool-skin only at the top of the sock, so as to be removable therefrom, substantially as specified.

294,021. MAGNETIC-IRON-ORE SEPARATOR. CHARLES FABER, Brooklyn, N. Y. Filed Nov. 20, 1883. (No model.)

Claim.—1. In a magnetic-iron-ore separator, the combination of the magnet-carrying cylinder A and the scraper S, held by a suitable support, with its operative edge in proximity to the convex surface of the cylinder, whereby collected ore may be removed therefrom and a covering or armature of said ore left for the ends of the magnets, substantially as set forth.

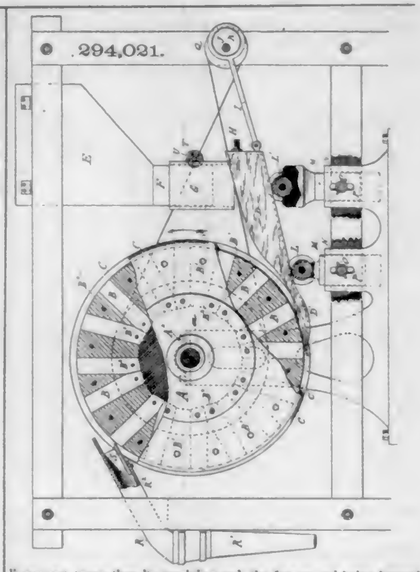
2. In a magnetic-iron-ore separator, the combination of the magnet-carrying cylinder A, having end flanges, C, projecting radially beyond the periphery thereof, and a scraper, S, held above the cylinder by a suitable support, the operative edge of said scraper projecting inwardly toward the cylinder between the flanges C, whereby the material collected by the scraper is confined and its escape over the edges of the cylinder prevented, substantially as set forth.

3. In a magnetic-iron-ore separator, the combination of the magnet-carrying cylinder A, ore-feeding trough or spout D, vertically-adjustable rollers L L', situated at or near each end of said trough and supporting the same, and mechanism, substantially as described, for reciprocating said trough, as set forth.

4. In a magnetic-iron-ore separator, the combination of the magnet-carrying cylinder A, ore-feeding trough or spout D, situated with one end in proximity to said cylinder, to deliver ore to the same, ore-hopper E, having a spout, F, the casing G, situated above the trough D and forming a conduit between the latter and said spout F, and means, substantially as described, for adjusting said casing G toward or from the bottom of the trough D, as set forth.

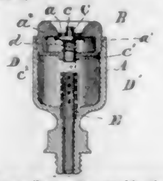
5. In a magnetic-iron-ore separator, the combination of the magnet-carrying cylinder A, trough D, situated with its delivery end in proximity to said cylinder, to feed ore thereto, and a water-connection, whereby a stream may be directed through said trough, substantially as set forth.

6. In a magnetic-iron-ore separator, the combination of the magnet-carrying cylinder A, the ore-feeding trough D, situated with its delivery end lower than its receiving end, the former end being beneath the cylinder and in proximity thereto, and having the depression D' in its bottom, and a water-connection, whereby a stream may be directed through the trough and out at its delivery end, by which devices an interruption to the descending stream of ore and water is caused at the point D', and said stream diverted upward toward the magnetic surface, to facilitate the separation of the attracted particles, substantially as set forth.



7. In a magnetic-iron-ore separator, the combination of the magnet-carrying cylinder A and scraper S, arranged to remove the attracted particles from said cylinder, the scraper being composed of non-magnetic material incapable of being magnetized, and rendered attractive by the magnet-carrying cylinder, substantially as set forth.

294,022. OIL-CUP. JOHN J. FAWCETT, Springfield, Ohio. Filed Dec. 17, 1883. (No model.)



Claim.—1. In an oil-cup, the combination, with a cap having a conical cavity and an inlet-opening therein, as described, of a bridge-tree extending diametrically across the lower end of said cap, a collar central in said bridge-tree, a valve having its lower stem extending through the collar of said bridge-tree, and a spiral spring supported upon the latter and adapted to operate said valve in automatically closing the same, as set forth.

2. In an oil-cup, a cap having an opening therein, and a valve and means for operating the same inclosed therein, said valve being provided with a central upright stem projecting from the top as means for operating the same in addition to the pressure of the can-nozzle, substantially as set forth.

3. The combination, with an oil-cup, A, having a discharge-outlet, E, of the screw-threaded cap B, having a rounded top to prevent the lodgment of dust, a conical cavity, and an opening, *a*, therein, a bridge-tree, D, extending diametrically across the lower end of said cap, provided with a central collar, *c'*, and a valve, C, with its lower stem extending through said collar and its upper stem projecting centrally through said opening *a*, said valve being operated in closing the latter by a spiral spring, *d*, surrounding the valve-stem c^2, within said cap and supported upon the bridge-tree D of the same, substantially as set forth.

294,023. RACK FOR CIDER-PRESSES. WILLIAM H. FERGUSON, Voorheesville, N. Y. Filed June 4, 1883. (No model.)

294,023.



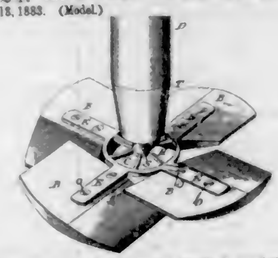
Claim.—1. A rack for cider-presses, composed of slats or bars arranged in a square series, and provided with two oppositely-located hinged rails, which are adapted to be turned alternately to vertical and horizontal positions in relation to the rack, and be temporarily secured in vertical positions by means of other side rails which are transversely arranged with the rack, for temporarily supporting the outer portions of the straining-cloths of a layer of cheese, and for the retention of the pomace on the rack, substantially as set forth.

2. The combination, with a cider-press rack which is provided at two of its oppositely-located edges thereof with rails so hinged thereto as to be adapted to be turned from horizontal positions to vertical ones and the reverse, of two rails which are separate from and independent of said hinged rails, and adapted to be secured transversely to the hinged side rails, so that the hinged rails and these transversely-arranged rails will be made to temporarily support each other in a vertical position, as and for the purposes set forth

3. The combination, with rack A, made with a square form and composed of slats, of rails A' A', hinged to two oppositely-located edges of the rack, transversely-arranged rails B B, or their described equivalents, which are removable from connection with rails A' A', and mechanism by which the ends of said hinged rails and transversely-arranged rails will be securely connected at will, for the purposes set forth.

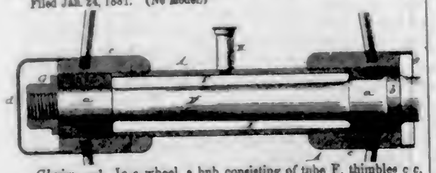
4. The means for holding straining-cloths and pomace in forming the several layers of a cheese in a cider-press, consisting of the combination and arrangement of two or more slat-racks, A, made with uniformly the same dimensions and squared form, and each provided at two oppositely-located edges with hinged rails A' A' and the removable rails B B, adapted to be used interchangeably with each rack and its hinged rails, and having secure temporary connection with said hinged rails, substantially as and for the purposes set forth.

294,024. CHURN-DASHER. JOHN E. FINLEY, Memphis, Tenn. Filed Aug. 18, 1883. (Model.)



Claim.—The churn-dasher herein described, consisting of the casting C, having central perforated hub, and provided with arms E E, having slanting ends, the segmental wedge-shaped sections of wood B B, attached to said ends, hub H, screw S, and staff D, as specified.

294,025. VEHICLE-WHEEL. FRANK L. F. FISH, East Saginaw, Mich. Filed Jan. 24, 1881. (No model.)



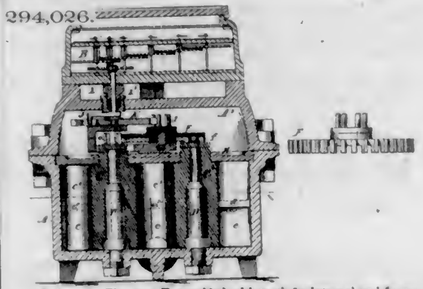
Claim.—1. In a wheel, a hub consisting of tube F, thimbles *c c*, and internal wearing sleeves or thimbles, E, all substantially as shown.

2. The herein-described hub, consisting of tube F, end sleeves, *c*, inner sleeves or wearing-thimbles, E, sand-band *g*, and dust-cap *d*, all substantially as described.

3. A vehicle-wheel consisting of a hub, A, composed of tube E, thimbles *c c*, and internal bearing sleeves or thimbles E, spokes B, formed with a series of connecting short curves in a plane at right angles to the circumference of the wheel, and a rim or felly connected with the outer ends of the spokes, all substantially as shown and described.

294,026. ROTARY METER. BENAIAH FITTS, Worcester, Mass. Filed Oct. 11, 1883. (No model.)

294,026.



Claim.—1. The gear F, provided with teeth for internal and for external action on the same pitch-circle, in combination with rotating pistons having pinions which severally intermesh with said gear for simultaneously operating it, substantially as set forth.

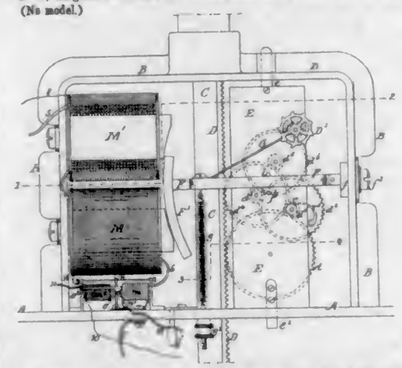
2. The combination, with two rotating pistons provided with pinions or pin-teeth, of a gear adapted to be simultaneously actuated from both pistons, and means for transmitting motion therefrom to a mechanical train or registering mechanism, as set forth.

3. The combination, with two rotating pistons having a series of intermeshing blades which are adapted to make contact on their adjacent surfaces, of a single end gear intermeshing with pinions or studs on the piston-axes, and adapted for retaining said pistons and their interacting blades in uniform relation with each other as the pistons revolve, substantially as set forth.

4. The pistons C C', having series of thin blades *c*, with faces *c'*, curved as described, and provided with narrow transverse back ribs, *d*, the edges of which, in connection with the face-curve *c'*, give the contour of gear-teeth for close intermeshing action as said pistons are revolved in contact with each other, as set forth.

5. A water-meter having the shell or case A, provided with a divided inlet with ports a' a^2, directed to the right and left, the rotating pistons provided with series of blades *c*, intermeshing with each other and making contact on adjacent curved faces *c'*, a train of spur-gears within the cap A, for receiving motion from said pistons, and a crank with shaft passing through a stuffing-box in said cap, for transmitting motion to the registering mechanism, as shown and described.

294,027. ELECTRIC-ARC LAMP. WARREN P. FREEMAN, Brooklyn, N. Y., assignor to William F. Jobbins, same place. Filed Mar. 9, 1883. (No model.)



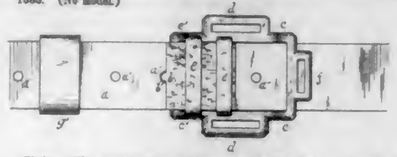
Claim.—1. The combination of the movable carbon-holder of an electric-arc lamp having a rack, with a movable frame carrying a train of gears, electro-magnets in the main and shunt circuits, an armature-lever adapted to raise the movable frame, and a catch or arm carried wholly by the said armature-lever, to lock and release the gears, substantially as set forth.

2. The combination of the movable carbon-holder of an electric-arc lamp having a rack, with a movable frame having lifting-pins and carrying a train of gears, and ratchet or break wheel, and with electro-magnets in the main and shunt circuits, and an armature-lever carrying a catch for said ratchet or break wheel and adapted to act on the said lifting-pins, all substantially as described.

3. The combination of the movable carbon-holder having a rack, and the frame slotted for the passage of said holder, with a train of wheels gearing with the rack, and a retaining-lever, J, as and for the purpose specified.

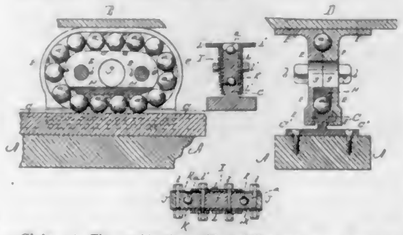
4. The combination of electro-magnets *m m'* in the main and shunt circuits, and armature *n*, carrying a catch-pin, with a contact, *n'*, and pivoted catch adapted to come in contact with the latter on its release by the catch-pin and conductors 11 12, substantially as set forth.

294,028. TUG-BUCKLE. SAMUEL FUNK, Decatur, Ill. Filed Dec. 7, 1883. (No model.)



Claim.—The combination of frame *c c'*, having loops *e e*, wedge *b*, provided with projection *b'*, and hame-tug *g*, provided with elongated perforation *h*, as and for the purpose set forth.

294,029. SLIDING SEAT FOR BOATS. JOHN C. GARROOD, Boston, Mass. Filed Dec. 24, 1883. (No model.)



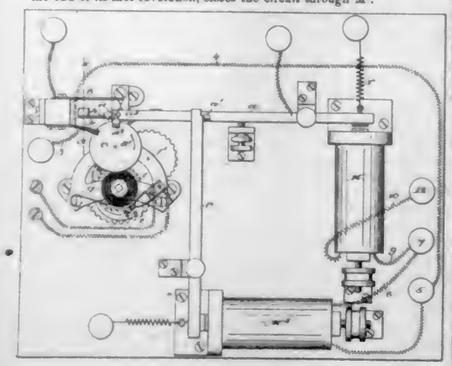
Claim.—1. The combination, with a sliding seat and a track in a boat, of a box or carriage secured to said seat, provided with the internal passage, *e e'*, the parts *e* thereof being substantially straight and parallel, and the parts *e'* being curved and connecting the parts *e* at opposite ends, said passage being provided with balls *a*, adapted to run on said track, substantially as and for the purpose set forth.

2. The ball-bearing for a sliding boat-seat, of substantially the shape shown—*i. e.*, flattened at its upper and under sides—and having the passage *e e'*, provided with the hard-metal lining H, placed next the upper side of the under of the portions *e* of said passage, substantially as and for the purpose described.

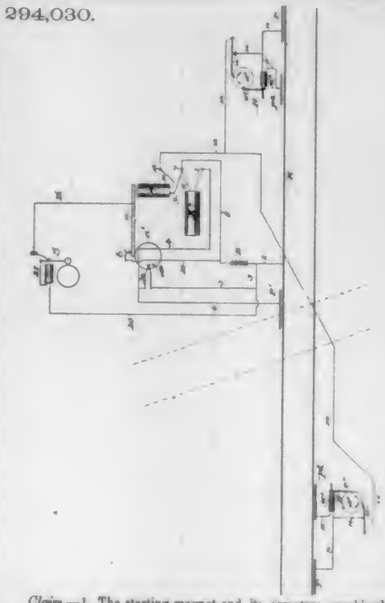
3. The herein-described improved box or carriage E, made in two parts by dividing it vertically and longitudinally, provided with the seat-flanges E'', the passage *e e'*, balls *a*, and the guides E', all constructed and arranged substantially as and for the purpose hereinbefore set forth.

294,030. RAILWAY-SIGNAL. OSCAR GARRETT, Boston, Mass., assignor to the Union Switch and Signal Company, Pittsburg, Pa. Filed June 6, 1883. (No model.)

Brief.—Train approaching crossing energizes magnet M, withdrawing armature, closing signal-circuit, and allowing disk to revolve under impulse of clock-work. The armature of M is locked by armature of a magnet, M^3, in normally-open circuit. At crossing train closes circuit through M^3, withdrawing its locking-armature and stopping the signal; but if train does not proceed to crossing, a pin on the revolving disk, near the end of its first revolution, closes the circuit through M^3.



294,030.



Claim.—1. The starting-magnet and its armature, combined with the stopping-magnet and its armature controlling the said starting-magnet armature, and the mechanical motor controlled by the starting-magnet, and adapted to operate a circuit-controlling instrument in the circuit of the stopping-magnet, substantially as described.

2. The starting electro-magnet and armature and the stopping electro-magnet and its armature controlling the armature of the starting-magnet, combined with a mechanical motor controlled by the starting-magnet, and circuit-controlling instruments for the starting-magnet operated by passing trains, and circuit-controlling instruments for the stopping-magnet operated by the trains and by the said motor, substantially as described.

3. The signal and its co-operating starting and stopping electro-magnets operated by a momentary change in the condition of the circuit, combined with circuit-controlling instruments for the said magnets and an independent intermediate circuit-controlling device for the starting-magnet, all controlled by passing trains, substantially as and for the purpose described.

4. The starting electro-magnet and armature and signal controlled thereby, combined with the mechanical motor having a regulated time-movement when in operation, controlled by the said magnet, and adapted to cause the signal to cease operating at the end of a definite interval of time after it is started by the said magnet, substantially as described

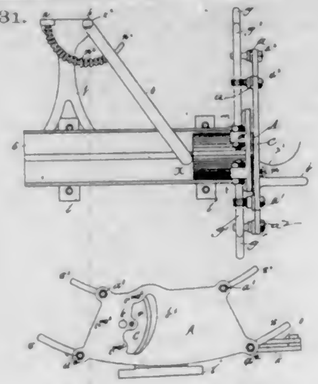
5. The signal and its starting electro-magnet and circuit thereof, containing a circuit-controlling track-instrument, and a circuit-controlling instrument and mechanical motor for actuating it, combined with an electro-magnet and its armature controlling the said motor, and provided with a circuit-controlling track-instrument near that of the starting-magnet, whereby trains moving in one direction will cause the release of the said motor, which will remove the starting-magnet and signal from the control of its track-instrument while the motor remains in operation, substantially as described.

294,031. BEEF-CUTTER. JOSEPH GLOVER, Paterson, N. J. Filed Aug. 23, 1883. (No model.)

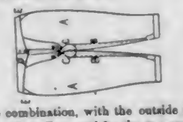
Claim.—1. The combination, with the stationary head provided with curved guide-rods, of the cutter-head having an eye-stud in each corner, and provided with a curved opening and an operating-handle, the cutting-tool C, carried by said cutter-head, the devices for securing and adjusting said cutting-tool, and the means for securing the curved guide-rods, substantially as described.

2. The combination, with the stationary head provided with curved guide-rods, V-shaped bed, and projecting arm having a lug, of the feed-rod pivoted on said arm, curved rod secured in said lug and passing through the feed-rod, spring arranged on said curved rod for actuating the feed-rod, and securing means for the stationary head, substantially as described.

294,031.



294,032. PANTS OR DRAWERS. PHILIPP GOTTHEIMER, Omaha, Nebr. Filed June 7, 1882. (No model.)



Claim.—1. The combination, with the outside leg portion, A, of the curved inside leg portion, B, as and for the purposes set forth.

2. In a pair of drawers, the curved inside leg portions, terminating at the crotch in two inside seams for each leg, as and for the purposes set forth.

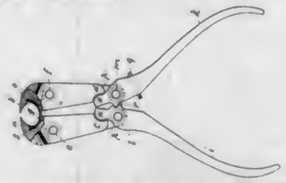
294,033. MACHINE FOR ATTACHING AND SETTING METALLIC HANGERS TO COATS OR OTHER GARMENTS. EDWARD P. HART and JOHN H. WALKERDEN, Brooklyn, N.Y. Filed Dec. 19, 1883. (No model.)



Claim.—1. In a machine for attaching metallic hangers, the combination of the movable bar B, having the semicircular projection E, with the crimping-blocks G G, having the recess F between them, said blocks being supported upon the base-plate A, substantially as described.

2. The combination of the base-plate A, the crimping-blocks G, containing the channel or groove *g'*, and having between them a recess, F and the bar B, carrying the projection E, and having a slot, D, containing the striking-bar C, substantially as described.

294,034. CUTTING-PLIERS. THOS. G. HALL, Brooklyn, N.Y. Filed July 25, 1883. (No model.)

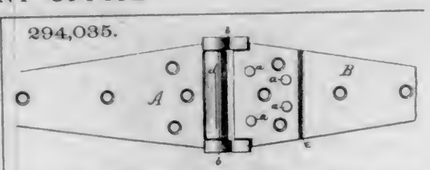


Claim.—A cutting pliers or nippers consisting of a pair of jaw-levers, *a b c d*, handle-levers *i k n o*, connected by gearing *r*, the independent fulcra *e f l m*, C-spring *g*, seated in notches cut in the under side of the jaws, side plates, *p p*, and a stop, *q*, substantially as described.

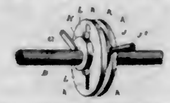
294,035. HINGE. CHARLES E. HART, New Britain, Conn., assignor to the Stanley Works, same place. Filed June 7, 1881. (Model.)

Claim.—The improved strap-hinge consisting of the flanged plate C, bearing the pintle, the coilless strap-leaf B, secured to the body of said plate, said two parts forming one half of the hinge, and the strap-leaf A, coiled around the pintle and forming the other half of the hinge, substantially as described, and for the purpose specified.

294,035.



294,036. CUT-OFF-VALVE GEAR. GEORGE T. HATCH and FRANK W. RIEMENSNS, Peoria, Ill. Filed July 11, 1883. (No model.)

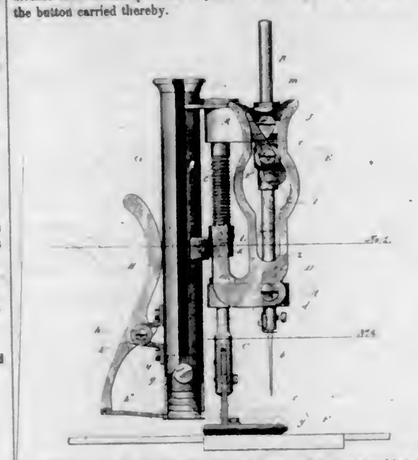


Claim.—1. The eccentric J, having non-central slot J' and pins L L, the disks K K, having slots K' K', and the eccentric H, having arm G, in combination with the rod D, weighted lever C, rod E and spring F, the fly-wheel A, and shaft B, substantially as and for the purpose specified.

2. The eccentric J, having non-central slot J' and pins L L, the disks K K, having slots K' K', and the eccentric H, having arm G, in combination with the shaft B and means whereby the variations in the speed of revolution of said shaft shall oscillate said arm G, substantially as and for the purpose specified.

294,037. SEWING-MACHINE ATTACHMENT FOR SEWING BUTTONS ON FABRICS. JOHN HEDEMAN and BENJAMIN THACKRAH, Amsterdam, N.Y. Filed May 5, 1883. (No model.)

Brief.—A switch-cam oscillates a bell-crank lever, which, by means of an arm connected therewith by a ball-and-socket joint, rocks the presser-foot bar, and thereby causes the button-holding presser-foot to assume the alternate positions required for stitching through the eyes of the button carried thereby.



Claim.—1. In combination with an organized sewing-machine, the cam-link D, so constructed as to be operated by the pivoted switch E, secured to the needle-bar B, and the stationary switch-wedge J, the presser-bar C, provided with a button-holder presser-foot, c, the spiral spring *c'*, and the ball-and-socket joint L *l*, all constructed and operated as and for the purposes set forth.

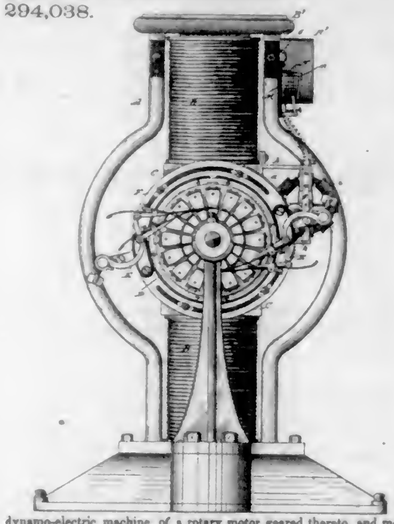
2. In combination with a sewing-machine, the barrel or reservoir G, provided with a slot upon one side, an internal weight provided with a thumb-piece working in the slot, and a lever and plunger to force out the buttons, and the button-holder presser-foot, all operating together substantially as set forth.

3. The button-holder presser-foot c, constructed as described, combined with the presser-bar C, spring *c'*, cloth-plate F, cam-link D, stationary switch-wedge J, pivoted switch E, spring *m*, ball-and-socket joint L *l*, and needle-bar B, all substantially as set forth.

294,038. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. WILLIAM HOCHHAUSEN, New York, N.Y. Filed Mar. 16, 1883. (No model.)

Claim.—1. The combination, with the adjustable commutator on a

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dynamo-electric machine, of a rotary motor geared thereto, and means for reversing said motor, controlled by an armature that is supported by the field-magnet and arranged to be actuated by the magnetic attraction thereof.

2. The combination, with the adjustable commutator, of the rotary motor placed in a bridge between two branches, each containing a resistance, and means for admitting the current to one or the other terminal of the motor, or to both simultaneously, as and for the purpose described.

3. The combination of the adjustable commutator, the rotary motor geared thereto, the bibranched circuit, each branch containing an artificial resistance, the motor-terminals connected to the two branches, and a circuit-closer for admitting the current to one or the other of the branches, as described.

4. The combination, with the electric motor, of the rocking lever carrying two insulated contacts, one connected to one and the other to the other terminal of the motor, and a rocking circuit-closer working upon said lever in the manner described, so as to close one or the other circuit, or both simultaneously.

5. The combination of the circuit-closing lever *r*, the double contact-lever $q\ q^2$, whose contacts are insulated from one another and arranged one above the other, and the electric motor and artificial resistance, connected as described.

6. The combination, with the commutator-brush support F, of the rack *a*, the electric motor, and the gear *b d c*.

7. The combination, with the rotary motor and the adjustable commutator, of reversing devices for said motor, and an armature for actuating said circuit-reversing devices, supported on the field-magnet frame and arranged to be actuated by the magnetic attraction of said frame.

8. The combination, with the adjustable commutator, of the rotary actuating electromotor, the pole-pieces G G for said motor, connected to the pole-pieces of the machine, and the non-magnetic connecting-pieces $g\ g^2$, in which the motor-shaft is pivoted.

9. The combination of armature M, circuit-closer *r*, double insulated contacts $t\ t^2$, each connected with the continuation of the circuit through a separate branch containing an artificial resistance, and an electric motor in a bridge between said branches at a point between the resistances and the circuit-closer.

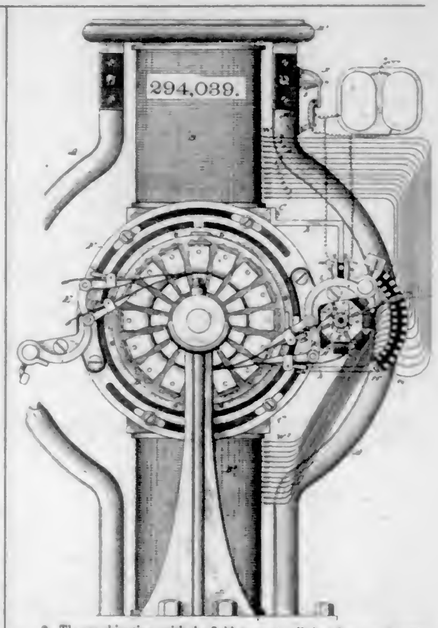
10. The combination of circuit-closer *r*, armature N, compound contact-lever $q\ q^2$, contacts $t\ t^2$, resistances R R^2, and electric motor, connected as described.

11. The combination, with the adjustable commutator on a dynamo-machine, of an actuating electric motor whose pole-pieces are magnetized from the field-magnets of said machine.

294,039. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Mar. 22, 1883. (No model.)

Claim.—1. The combination, with a series of loop-connections from the field-coils in a dynamo-electric machine, of a circuit closer and breaker, a motor operating the same, and automatic reversing devices for causing said motor to move in one direction or the other, so as to vary the number of field-coils through which the exciting-current shall flow.

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2. The combination, with the field-magnet coils in a dynamo-electric machine, of a circuit-closer and loop-connections from the coils, whereby an exciting-current may be caused to flow through a greater or less number of said coils, an electric motor for operating said circuit-closer, and means for automatically reversing said motor in accordance with a rise or fall of the current generated by the machine.

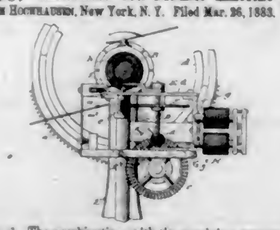
3. The combination, with the field-magnet coils, of a circuit-closer and connections, whereby a greater or less number of said coils may be included in circuit, a rotary electric motor for operating said circuit-closer, and devices whereby the direction of the current through said motor may be automatically reversed in accordance with variations in the working-resistance.

4. The combination, with the field-magnet coils, of a circuit-closer and connections, whereby a greater or less number of coils may be included in the circuit, an actuating electric motor for said circuit-closer in a bridge-wire between two branches, each including a resistance, and a circuit-closer for admitting the current to one or the other branch singly, or to both together.

5. The combination, with the rotary electric motor, of the contact-arm secured to the armature-shaft thereof, and means for automatically reversing said motor as the main-current strength rises or falls above or below normal.

6. The combination, with the two field-magnets, of the two intermediate series of insulated contacts forming the terminals of loops from the magnet-coils, and a circuit-closer for connecting said insulated contacts in succession, as described.

294,040. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Mar. 26, 1883. (No model.)



Claim.—1. The combination, with the revolving armature or armature-shaft on a dynamo-electric machine, of an adjustable commutator for said armature, two revolving wheels actuated by said armature-shaft, an intermediate wheel gearing positively with the adjustable commutator, and an electro-magnet for bringing said intermediate wheel into connection with one or the other of the revolving wheels, said electro-magnet being energized by and varying in power with the current collected by said commutator.

2. The combination, with the armature-shaft, of adjustable commutator-brushes connected therewith by intermediate reversing mechanism, two electro-magnets acting in opposite directions on said reversing mechanism, so that when one actuates said reversing mechanism the commutator-brushes may be moved in one direction, and vice versa, and means for energizing one or the other of said magnets simultaneously with the rise or fall of the normal current strength.

3. The combination, with the armature-shaft, of two disks or wheels, A A^2, on the armature-shaft, a wheel, *f*, through which movement may be communicated to the regulating devices for changing the electro-motive force of the machine, and means for bringing said wheel into contact with one or the other of said disks or wheels A A^2, according as the current strength rises or falls above or below normal.

4. The combination of the armature-shaft having the two disk wheels or surfaces A A^2, the adjustable commutator-brushes or other device for regulating the electro-motive force of the machine, the intermediate actuating mechanism, wheel *f*, forming a portion of the same, and mounted on a swinging lever, and two electro-magnets acting on said lever in opposite directions, as and for the purpose described.

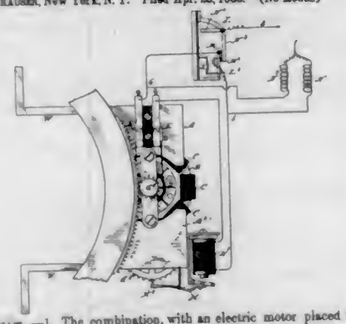
5. The combination, with the armature-shaft, of the adjustable commutator or other device by the adjustment of which the electro-motive force of the machine may be regulated, the intermediate actuating mechanism, the frame or support G, carrying wheel *f*, or other device whereby the mechanism may be run in either direction from the shaft, and two electro-magnets, H H^2, arranged to actuate the frame G in opposite directions, substantially as and for the purpose described.

6. The combination of the armature-shaft having driving-surfaces A A^2, the adjustable commutator or its equivalent, the intermediate actuating mechanism provided with the movable driving-wheel *f*, the two electro-magnets controlling the position of said wheel, and suitable means whereby a current may be admitted to both or one of said magnets, according as the current strength is at normal or above or below normal.

7. The combination, with the armature-shaft having driving-surfaces A A^2, of the wheel *f*, mounted on swinging frame G, magnets H H^2, brush-support A, having rack *a*, and the intermediate driving mechanism between said rack and wheel *f*.

8. The combination of support G, wheel *f*, gear F *d c*, horizontal shaft C, pinion *b*, and rack *a*.

294,041. AUTOMATIC BRAKE FOR ELECTRIC MOTORS. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Apr. 23, 1883. (No model.)



Claim.—1. The combination, with an electric motor placed in a bridge between two branches of a supply-conductor, of an automatic electro-magnetically-controlled brake the electro-magnet for which is placed in the bridge-wire.

2. The combination, with an electric motor placed in a bridge between two branches of a main circuit, of means for admitting current to either or both of said branches, and an electro-magnet in the bridge-wire controlling an automatic brake for the motor.

3. The combination, with an electric motor placed in a bridge-wire between two branches, of the main conductor, a resistance in each branch, a switch for admitting the electric current to either branch, and a brake for the motor controlled by an electro-magnet in the bridge-wire.

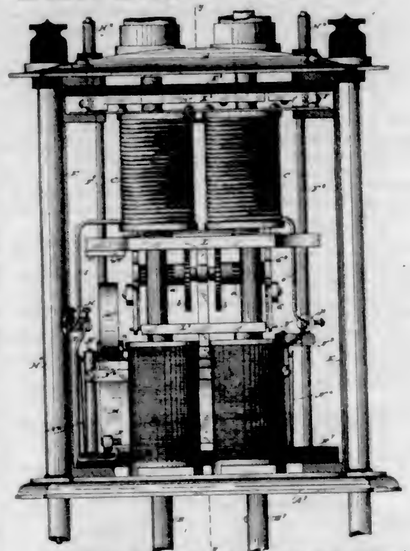
4. The combination, with an electric motor placed in a bridge-wire, of an electro-magnet in said bridge-wire, a brake for stopping the motor actuated by a spring or other power, and an electro-magnet in the bridge-wire for holding the brake out of action so long as there is an excess of current in either branch over that in the other.

5. The combination, with an electric motor, of the bibranched conductor containing artificial resistances, a bridge-wire containing an electric motor, a brake for said motor supported by an armature-lever, and an electro-magnet acting on said armature and included in the bridge-wire.

6. The combination, with an electric motor placed in a bridge-wire, of a switch for producing an inequality of flow in the two branches between which the bridge-wire is placed, and a brake for said motor controlled by an electro-magnet which is arranged to hold the brake out of action when the current in either branch prevails over that in the other.

7. The combination of the lever N^2, the double contact-lever L^2, electric motor in the bridge-wire between the branches from the double contact-lever, and a brake electro-magnet, H^2, substantially as and for the purpose set forth.

294,042. DOUBLE ELECTRIC-ARC LAMP. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Apr. 23, 1883. (No model.)



Claim.—1. The combination, with two carbon-carriers, of two independent sets of feed-regulating mechanisms—one for each carrier—constantly in normal or feed-regulating connection with said carrier, so that when the magnet system acts it will act alike and in the ordinary manner upon both mechanisms and their carriers, a catch for engaging with and preventing the movement of one carrier when the feed-regulating mechanism is released by the movement of the lever, while the other is left free to move, and means for automatically releasing the first-named carrier when the latter has fed to a predetermined point.

2. The combination, in a double-carbon lamp, of a single pivoted frame, a single magnet system actuating said frame, two independent trains of wheels mounted on said frame, independent retarding devices for each train, detents arranged to release both trains when the frame is moved, carbon-carriers—one for each train—and means for holding one train from movement when both are released, while the other is left free to rotate.

3. The combination, with two carriers supported from a common armature lever or support, of an intermediate locking-lever carried by said support and engaging positively with one carrier, and a releasing projection upon the other carrier, for actuating and disengaging said locking-lever when the latter carrier has moved downward to a predetermined extent.

4. The combination, with the two carbon-carriers, of the intermediate elbow-lever pivoted on the armature-lever of the lamp, and locking and releasing projections on the carriers, as described, whereby the one carrier may be held while the other is feeding, and when the latter has fed to a predetermined point it may itself be held by the lever, and at the same time may release the first carrier.

5. The combination, with two carbon-carriers, of a locking mechanism for holding one of said carriers from movement while the other is feeding, said mechanism being mounted on the support that carries and actuates the feed-regulating devices for said carriers, and a suitable projection upon the first-acting of the two carriers, suitably arranged to bring said carrier to rest, so that its weight will bear upon the common support after said carrier has fed to a predetermined extent.

6. The combination of the lever, the two independent feed-regulating mechanisms, with their independent escapements and detents, the two carbon-carriers, the overbalancing-weight resting on the lever when

there is no current passing, the main-circuit magnet for holding said weight out of action, and the derived-circuit magnet connected to the lever.

7. The combination of the derived-circuit regulating-magnet, the armature presented to the side thereof, a stop for said armature, through which the main-circuit magnet is short-circuited, and a spring connected to the armature and arranged to be forced against the frame of the lamp by the weight released by the main-circuit magnet.

8. The combination of the pivoted armature, the contact-stop for the lower end thereof, and the spring connected to the other end and arranged in the path of the weight normally supported by the main-circuit magnet.

9. The combination of the insulated plate to which the positive conductor is connected, the two carbon-carriers, and the contact-springs supported by said plate.

10. The combination of the insulating-plate E^3, plates E^3 and F, conducting-rods F^2 F^3, and suitable binding posts or clamps, whereby the derived-circuit magnet may be connected in circuit between said rods.

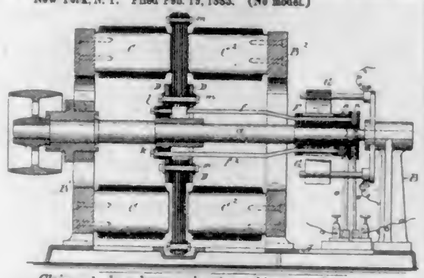
11. The combination, in a double-carbon lamp, with the second-acting of the two carbon-carriers, of a lug or projection, T^2, arranged in the manner described, to engage with the automatic cut-out mechanism of the lamp when the carrier has completed its speed.

12. The combination of plate M, conducting-strip M^2, bent around the lower edge of plate M, stop R, and means for forcing the upper end of the strip into contact with the rod F^3, or other portion of the lamp-frame, upon an abnormal increase in the length of arc.

13. The combination of the lever G, supporting the two feed-regulating trains and the two carbon-carriers, the counterbalance-weight G^2, or its equivalent, the derived-circuit magnet D, connected to said lever, and the main-circuit magnet C, whose cores are supported by said lever when the lamp is out of action, but may be raised out of connection therewith when the magnet is energized.

14. The combination, in a double-carbon lamp, of the feed-regulating lever G, the derived-circuit magnet D D, whose cores are hung from cross-bar L^2, and the main-circuit magnets C C, whose cores are connected by cross-bar L, arranged to rest loosely on the end of the lever G.

294,043. DYNAMO-ELECTRIC MACHINE. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Feb. 19, 1883. (No model.)



Claim.—1. In a dynamo-electric machine, a conducting armature-plate having radial portions *c*, and alternate interior and exterior connecting portions *e d*, as and for the purpose described.

2. The combination, with the armature-shaft *a*, of a conducting sheet-metal plate stamped or formed in the shape described, with radial portions *c* and connecting portions *e d*.

3. The combination, with the armature-shaft *a*, of a conducting sheet-metal plate, *c e d*, and a series of fixed magnets, as and for the purpose described.

4. The combination, with a series of parallel conducting-plates connected in series, and each formed with the radial and connecting portions, as described, of a series of field-magnets between whose poles said plates are made to rotate.

5. In a dynamo-electric machine, an armature-plate composed of radial portions and alternate interior and exterior connecting portions, said plate being provided with a projecting portion, *g*, as and for the purpose described.

6. The combination, with the series of conducting armature-plates having parallel radial portions *c*, of the bolts *m*.

7. The combination of the series of plates *c e d*, the bolts *m*, and clamp rings or plate D, as and for the purpose described.

8. The combination, with the radial conductors capable of rotation, of, the conductors *f f'*, arranged on opposite sides of the shaft, and the conducting-ring between one of said conductors and a terminal of the radial conductors, whereby the armature is balanced.

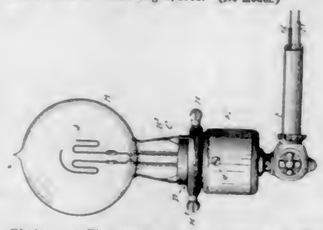
9. The combination, with the parallel conducting-plates *c e d*, electrically connected in series, of the bolts *m*, insulated from said plates, and two circular ranges of magnets, between which the radial portions of said plates are made to pass.

10. The armature-plate, as described, made with connecting portions *d e*, larger in cross-section than the radial portions *c*, which they unite.

11. The armature-plate *c e d*, having portions *e* and *d* wider than the radial portion *c*.

12. The combination, with the two circular ranges of magnets C C^2, of a series of conducting-plates formed as described, and having their radial portions in the same lines parallel with the armature-shaft, said plates being bolted together, and adapted to rotate in the interpolar space between the two ranges of magnets.

294,044. INCANDESCENT ELECTRIC LAMP. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Aug. 6, 1883. (No model.)



Claim.—1. The combination, substantially as described, of the holder D, adapted to revolve, the split conductors, the entering conductors for the lamp, and the set-screws bearing upon said conductors, as and for the purpose described.

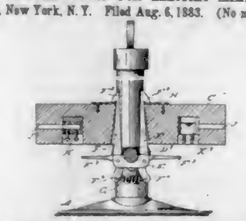
2. The combination of the revolving holder D, carrying the lamp and the switch-plates, the socket E for said holder, and the set-screws entering the horizontal groove on the exterior of the holder.

3. The combination, with the fixed contact-springs, of the contact-plates secured to a revolving support, and terminating in conductors having split or divided ends, and the set-screws for compressing said split ends, so as to grasp and form connection with the entering conductors for the lamp.

4. The combination, with the revolving switch-block and holder D, of the plates J J^2, secured to the lower face of said block, the conductors projecting up through the block and split or divided at their upper ends, and the screws H H^2, as and for the purpose described.

5. The combination, with the revolving switch-block and holder, of the clamping-screws, of non-conducting material, forming knobs or handles, by which the block may be turned in its socket for the purpose of turning the light on or off.

294,045. HANGER-BOARD FOR ELECTRIC LAMPS. WILLIAM HOCHHAUSEN, New York, N. Y. Filed Aug. 6, 1883. (No model.)



Claim.—1. The combination, with the carrier-tube for an electric-arc lamp, of a collar clamped upon the same, and a spring-catch supported by said collar and adapted to engage with the hanger board or support from which the lamp is to be suspended.

2. The combination of the hanger-board perforated for the carrier-tube, a catch or catches supported from said tube, for engaging with said board, and spring-switches upon the board adapted to receive the terminals of conductors leading into the lamp.

3. In a double electric lamp, the combination, with the collars D D, clamped to the carrier-tubes, and having eyes or rings that receive and support the lamp-conductors I I^2, of an intermediate connecting-piece, and an automatic catch pivoted from the latter, as and for the purpose described.

4. In a hanger-board for an electric lamp, the combination, with a block, C, perforated at its center, and provided with a circular groove upon its bottom, of the horizontally-movable connecting-springs lying in said groove.

5. The combination, with the insulating-block C, having annular groove on its bottom, of the binding-posts seated in said groove, and a connecting spring and plate extending from each of said posts, and adapted to receive the terminals of conductors rising from the lamp.

6. The combination, with each of the two binding posts or blocks seated in the bottom of the hanger-board, of a horizontally-projecting spring and two horizontally-projecting plates, one of which on each of said posts forms, in connection with the spring, a connecting-clip for grasping the terminal of a conductor of the lamp, while the other plate forms an anvil or stop for the free end of the spring connected with the other post when the lamp is lowered.

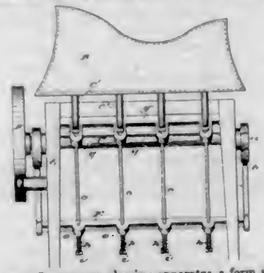
7. In a hanger-board for an electric lamp, the combination of two binding posts or blocks, K' K^2, curved plates and springs extending from said blocks and lying in a circular groove in the bottom of the block, and conductors I I^2, rising from the lamp-casing.

8. The combination, with the hanger-board C, perforated at its center, of a binding-post, K, on the bottom of said board, horizontally-curved plates M R, curved around a central boss or projection, and spring I, between which and plate R the end of a conductor on the lamp may be forced, and a second post provided with a similar spring and plates, one of which latter forms a contact-stop for the free end of the spring connected with the first-named binding-post when the lamp is lowered.

9. The combination, with the block C of insulating material, perforated at its center, of the binding posts or blocks seated in a circular groove on the bottom of the board, and the longitudinal openings J, for the insulated line-wires.

10. The combination, with the hanger-board C, perforated at its center, and provided with means for completing the circuit to the lamp when the latter is raised to a sufficient distance, of the two catch-levers F F, carried by the lamp, the connecting-spring, and the releasing horizontal arms F^2 F^3, as and for the purpose described.

294,046. APPARATUS FOR FORMING AND SHAPING CORSETS. JAMES ALFORD HOUSE, Bridgeport, Conn. Filed July 16, 1883. (No model.)



Claim.—1. In a corset-shaping apparatus, a form and a series of independent clamps at each side thereof to grasp the corset, and a series of movable clamp-carriers, combined with means to actuate the said clamp-carriers, and with springs to enable the clamps and carriers to stretch the corset by a strain measured by the said springs, substantially as described.

2. The shaft C, cross-head E, or equivalent, clamp-carriers, clamps, and springs, combined with the form, to operate substantially as described

294,047. INHALER FOR ANÆSTHETICS. GEORGE H. HURD, Cleveland, Ohio. Filed Mar. 15, 1881. (No model.)

Brief.—A stop-cock having an opening to carry a definite quantity of the anæsthetic fluid is located between the source of supply and a pipe situated at a lower level. Beneath the stop-cock is a sponge-chamber, to which the definite quantities of fluid are conveyed upon turning the stop-cock.

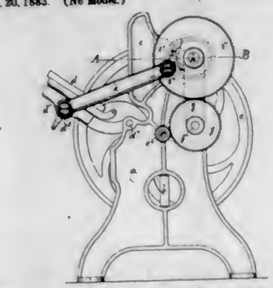


Claim.—1. The combination, with a reservoir for ether, chloroform, or other similar substances, and a pipe arranged upon a lower level, and connected with said reservoir by an intermediate pipe, of a stop-cock arranged in said intermediate pipe, and having a cavity in its side, whereby definite quantities of the contents of the reservoir may be transferred therefrom to a position to fall toward the pipe below, substantially as described.

2. The combination, with a reservoir and a pipe arranged adjacent thereto on a lower level, of an intermediate connecting-pipe, and means arranged in said connecting-pipe for transmitting definite quanties of liquid from the reservoir through said connecting-pipe to the lower pipe, substantially as described.

3. The combination, with the upper reservoir and lower pipe, of the intermediate connecting-pipe provided with a stop-cock, the plug of which has a cavity formed in one side, and the sponge-chamber arranged below said stop-cock, substantially as described, and for the purpose set forth.

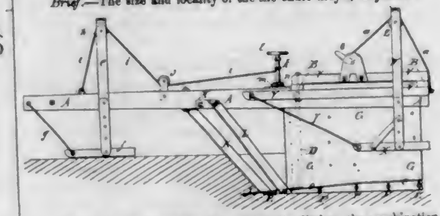
294,048. PRINTING-PRESS. ALBE P. HYDE, Boston, Mass. Filed Aug. 20, 1883. (No model.)



Claim.—In a printing-press, the oscillating link *g*, shaft *h*, cam *l*, pin and roll *m m'*, cranks *i i'*, connecting-rods *k k*, and hinged platen-yoke *d'*, combined and arranged as and for the purpose set forth.

294,049. TILE-DITCHER. KERWIN JAMES, Adair, Iowa. Filed Apr. 30, 1883. (No model.)

Brief.—The size and locality of the tile-chute may be adjusted.



Claim.—1. In a machine for making tile-ditches, the combination, with the beams A, adjustably secured together at their rear ends, of the side plates, G, and the base-plate E, the said side and base plates being adjustably connected together, substantially as herein shown and described.

2. In a machine for making tile-ditches, the combination, with the beams A and the slotted bars B, connecting the rear ends of the beams together, of the side plates, G, the base-plate E, and the rod D, the said side and base plates being adjustably connected together, substantially as herein shown and described.

3. In a machine for making tile-ditches, the combination, with the shear J, the base-bar E, the angle-irons H, and the side plates, G, of the adjustable flanged plates O, substantially as herein shown and described, to assist in opening a channel to receive the tiles, as set forth.

4. In a machine for making tile-ditches, the combination, with the adjustable beams A, the side plates, G, and the base-plate adjustably connected to the side plates, of the shear J, provided with flanges M, and the central and side cutter, K L, secured to the shear and beams, substantially as herein shown and described.

5. In a machine for making tile-ditches, the combination, with the adjustable beams A and the curved guide-plates Q R, of the slotted angle-plates S, substantially as herein shown and described, whereby the said guide-plates can be adjusted midway between the beams, and will be securely held in place, as set forth.

6. In a machine for making tile-ditches, the combination, with the cross-bars B, of the bar V, the slotted standard W, the foot X, the hinged draw-rods Y, and the rope, pulley, and windlass *a* Z *b*, substantially as herein shown and described, whereby the machine is kept in an erect position, as set forth.

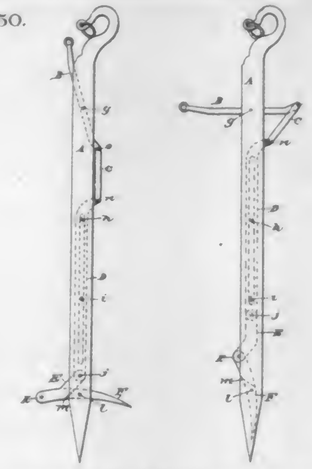
7. In a machine for making tile-ditches, the combination, with the adjustable beams A and the side plates, G, adjustably connected to the base-plate, of the guide-plates Q R and the angle-irons S T, for adjusting the said guide-plates midway between the beams and side plates, substantially as herein shown and described.

8. In a machine for making tile-ditches, the combination, with the beams A and the bars B V, of the platform U, the standard W, the foot X, the brace-rod Y, the cord *a*, and windlass *b*, substantially as herein shown and described.

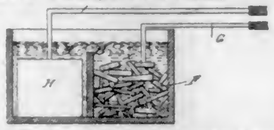
294,050. HAY-FORK. JOHN GEORGE KAWOHNE and RICHARD MILLER, Appleton, Wis. Filed Mar. 15, 1883. (No model.)

Claim.—In combination with the slotted vertical shaft A, provided with the pins *h* and *i*, the lever B, pivoted to said shaft, the link C, the slotted sliding bar D, the angle-bar E, and the curved bar F, pivoted to said shaft A, substantially as and for the purpose set forth.

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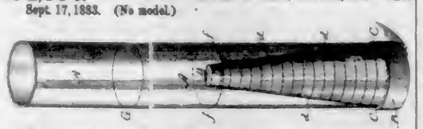
294,051. PROCESS OF MAKING COPPER SALTS BY THE AID OF ELECTRICITY. JOHANN KARL KESSLER, Milwaukee, Wis., assignor to the Wisconsin Chemical Company, of Wisconsin, and George Sylvester, Milwaukee, Wis. Filed Aug. 3, 1882. (No model.)



Claim.—1. The process of making basic acetate of copper, which consists, first, in passing an electric current through a solution of chloride of sodium or chloride of potassium, using copper as an anode and any suitable substance as a cathode, keeping the products forming at the opposite poles separate from each other, and then mixing them together, whereby hydrated suboxide of copper is precipitated; and, secondly, in mixing the precipitated hydrated suboxide of copper, properly washed and dried, with neutral acetate of copper, moistening the mixture with water, and exposing it to the air, substantially as described.

2. The process of producing basic acetate of copper from hydrated suboxide of copper, which consists in mixing the hydrated suboxide of copper with neutral acetate of copper, in the proportion of seventy-nine parts, in weight, of the former to one hundred and ninety-eight parts, in weight, of the latter, moistening the mixture with water, and exposing it to the air, as set forth.

294,052. LACTOMETER. ALBERT R. LEEDS, Hoboken, N. J. Filed Sept. 17, 1883. (No model.)



Claim.—An instrument for testing milk, consisting of the glass vessel A, in combination with the conical stopper B, made of any non-transparent material, on which are drawn lines at regular intervals parallel to the circumference of its base forming a graduated scale, substantially as described.

294,053. METHOD OF AND DIE FOR FORMING RAIL-JOINTS. FRANCIS LIGHTFOOT, Media, Pa. Filed May 12, 1883. (No model.)



Claim.—1. The method of making rail-joints which consists in laterally flattening each end of the rail, but on opposite sides, at opposite ends, down to the longitudinal vertical plane of the middle of the rail, thickening the web on the outer side thereof, and elongating the reduced end by means of dies, substantially as set forth.

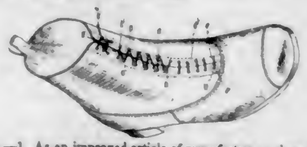
2. A die-box, B B', for clamping a rail and supporting its projecting end beyond or outside the clamping-point, in combination with a series of dies, D D' D^2, more or less in number, for progressively elongating and flattening the rail end down to the vertical longitudinal middle plane of the rail, substantially as set forth.

3. In combination with the die-box B B', the dies D D' D^2, three or more in number, having working-faces d d' d^2, substantially as and for the purposes set forth.

4. The series of dies D D' D^2, having each a recess, d', for the formation of a tongue, c, substantially as set forth.

5. The die D^2, having recesses d' and projection e, substantially as and for the purposes set forth.

294,054. SHOE-LACE FASTENER. HOSE H. V. LILLEY, Milford, Mass. Filed July 9, 1883. (No model.)

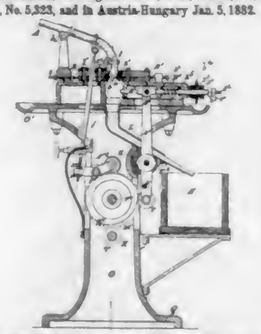


Claim.—1. As an improved article of manufacture, a shoe string or lacing fastener composed of a tubular part adapted to surround the shoe string or lacing, and provided with a spring-finger, between which and the string or lacing in the said fastener a part of the said string or lacing may be drawn to effectually secure said string or lacing in position, substantially as described.

2. The combination, with a shoe string or lacing, of a fastener, a, applied thereto, composed of a tubular part, a spring-finger, and a prong, to operate substantially as described.

3. A shoe string or lacing provided at one end with a holder, b, applied thereto, combined with the fastener a, provided with the spring-finger, and applied directly to the said string or lacing where the same is to be fastened, substantially as described.

294,055. MACHINE FOR TREATING CARTRIDGE-SHELLS. WILHELM LORENZ, Carlsruhe, Baden, Germany. Filed June 10, 1882. (No model.) Patented in Germany June 29, 1881, No. 17,333; in France Aug. 26, 1881, No. 144,574; in Belgium Oct. 3, 1881, No. 55,879; in England Dec. 6, 1881, No. 5,323, and in Austria-Hungary Jan. 5, 1882.



Claim.—1. The feed mechanism for the cartridge-cases, consisting of the pivoted chute A, having a spring-jaw, a, and gage-plate d^2, in combination with the rod i, lever N^2 and cam M', as set forth.

2. The combination of the cheeks b b', slides B B', and adjusting means therefor with the spring f, levers N N', and cam M, as set forth.

3. In a cartridge-finishing machine, the combination of the slide B' and rod b^2 with the washer b^3, sleeve b^4, having collar b^5, and springs Z Z' and lever N N', as herein set forth.

4. The combination of the spindle C and spring-pin e with the cheeks b b', substantially as herein set forth.

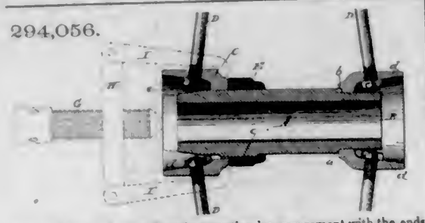
294,056. CARRIAGE-WHEEL. EDWARD P. LYNCH, Davenport, Iowa. Filed Nov. 10, 1883. (No model.)

Claim.—1. In a suspension-wheel, the tubular box having one end threaded externally and the opposite end reduced in diameter and provided with a lip, the non-rotating collar applied over one end of the box, the sliding non-rotating collar applied over the other end of the box, and the nut E, applied to the box and acting to urge the collar C outward, whereby the parts are adapted to apply a tensile strain to the spokes.

2. The tubular box A, provided with the shoulder a and mutilated screw-thread, combined with the spokes, the stationary collar B, the movable non-rotating collar C, and the nut acting against said collar.

3. In a carriage-wheel, the combination of a tubular box with mutilated threads thereon, a sliding spoke-receiving collar mounted to slide

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upon said box, and secured against rotation by engagement with the ends of the threads, and a nut mounted upon said threads and acting against said collar, substantially as described.

4. In a suspension-wheel, the tubular box, the two non-rotating collars applied to the ends of the box, and constructed, as described, to afford an open space between their inner surfaces and the outer surface of the box, the nut applied to urge the collar C outward, and the spokes inserted through the collars from the exterior, and provided with retaining nuts or heads upon their inner ends, as described, whereby the entire series of spokes may be adjusted simultaneously, or the individual spokes removed and replaced or varied in tension without removing or adjusting the other parts.

5. In a suspension-wheel, the combination of the following elements: a rim or felly, a central box, two spoke-receiving collars, one of which is fixed and the other movable upon the box, and means, substantially as described, for effecting the adjustment of the movable collar lengthwise of the box.

294,057. DETACHABLE BARREL-COVER. HENRY MANN, Milwaukee, Wis. Filed June 13, 1883. (No model.)



Claim.—1. The combination of a detachable barrel-cover provided with outward-projecting barbs adapted to engage against the inner surface of a barrel-chine, chine-hook E, the shank of which is provided with a series of cog-teeth, rack-pinion G, and stud H, said chine-hook being adapted to be moved horizontally and inserted and withdrawn from the chine by turning said stud, substantially as set forth.

2. The combination, with the stationary leaf of a detachable cover, of the chine-hook E, provided with a series of teeth, F, retaining-block J, provided with projecting barbs D, and rack-pinion G, adapted to engage in the teeth of said chine-hook E, said pinion G being provided with angular projection H' for the reception of a wrench, said chine-hook E and barbs D being adapted to be inserted in the respective sides of the chine by turning said stud in one direction, and withdrawn therefrom by turning said stud in the opposite direction, substantially as and for the purpose specified.

294,058. PADLOCK. AUGUST FRIEDRICH MARTENS, Hamburg, Germany. Filed Sept. 27, 1883. (No model.)



Claim.—1. In a safety-lock for securing overcoats and other articles of wearing-apparel, the combination of a shell provided with a perforation to receive a button, and a hook, g, with a sliding plate, e, having perforation b and slit b', and a locking mechanism, substantially as and for the purpose set forth.

2. In a safety-lock for securing overcoats and other articles of wearing-apparel, the combination, with a shell having a perforation to receive a button, of a sliding plate, e, provided with hole and slit, as shown, spring f, and a locking mechanism, substantially as and for the purpose set forth.

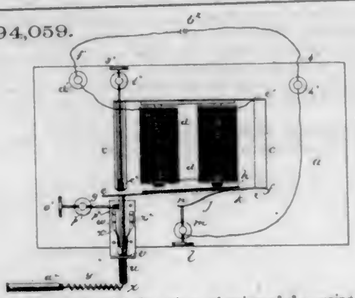
3. In a safety-lock for securing overcoats and other articles of wearing-apparel, the combination, with a shell having hook g and perforation to receive a button, of a sliding plate, e, provided with hole and slit, as shown, a toothed rod, d, and locking mechanism engaging with it, and spring f, substantially as and for the purpose set forth.

294,059. PHOTOGRAPHER'S RETOUCHING-POINT. HASKELL HARRIS MCELHINEY, Nebraska City, Nebr. Filed Dec. 5, 1883. (No model.)

Claim.—1. The combination, in a photographer's retouching device having frame c, magnets d d, and spring e, having armature h, and hollow tube u, of hollow column c', with threaded post f^2, set-screw c^3, and rubber bumper c^2, substantially as shown and described, and for the purposes set forth.

2. The combination, in a photographer's retouching device having frame c, hollow column c', rubber cap c^2, set-screw c^3, brass spring e,

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having armature h, and hollow tube u, of springs x^2 x^3, grasping hollow tube u, and set-screw o', passing through threaded post p', and having soft-rubber cap p^3, adapted to press gently against the side of hollow tube u, substantially as shown and described.

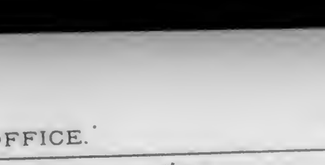
3. In combination with electric batteries b^2, wires f b', magnets d d, spring-plate a, having on its under face armature h, insulated tube u, spiral spring y, and pencil-holder a^2, substantially as shown and described, and for the purposes set forth.

294,060. LINK-WELDING DIE. ALEXANDER MCINNES, St. Louis, Mo., assignor to the Helmbacher Forge and Rolling Mills Company, same place. Filed June 28, 1882. (No model.)



Claim.—The die herein described for welding links and cutting off the fins, consisting of the part B, having a recess, b, of a greater depth than the diameter of the finished link, the projection or guide b^3, and the recess b^4, forming a raised fin-cutter, in combination with the part C, having a recess, c, of less diameter than the finished link, the chamber for receiving the projection b^3, and the recess c^3, forming the upper fin-cutter, all constructed and adapted to operate substantially as described.

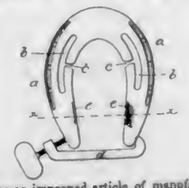
294,061. NEEDLE-THREADER FOR SEWING-MACHINES. EDWIN N. MCPHERRON, Greenfield, Ill. Filed June 21, 1883. (Model.)



Claim.—1. In a needle-threader, the combination of the arm C, supporting-axis d, spiral spring c, stop p, and guide-blocks r and o, all of said parts being adapted for united operation, substantially as and for the purpose herein set forth.

2. In a needle-threader, the arm C, provided with a longitudinal slit, f, near its inner edge, so as to form a spring, to the lower extremity of which is attached one half, m, of the split funnel-shaped thread-guide, the other or fixed half, n, being secured to the rigid part a of the arm C, said rigid part being provided with a guide, o, and the free or spring part q with a guide and stop, r, all these parts combined substantially in the manner and for the purpose herein set forth.

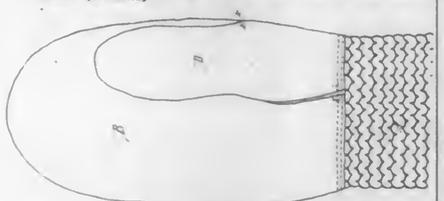
294,062. HORSESHOE. OLIVER H. MERRILL, North Manchester, Conn., assignor to H. Lydall & Foulds, same place. Filed June 2, 1883. (No model.)



Claim.—1. As an improved article of manufacture, the horseshoe a, of spring-steel, having in each side, between the toe and heels, the T-shaped mortise b, piercing the shoe depthwise, whereby the prongs are made capable of lateral adjustment under pressure, and of recoil when the pressure is removed, all substantially as described.

2. As an improved article of manufacture, the horseshoe *a*, of spring-steel, having in each side, between the toe and heels, the T-shaped mortise *b*, piercing the shoe depthwise, whereby the prongs are made capable of lateral adjustment under pressure, and of recoil when the pressure is removed, and bearing integral with the shoe on the inner edge of the heels the upturned flanges *c*, all substantially as described.

294,063. MITTEN. THOUR MUNTER, Rockford, Ill. Filed Sept. 8, 1883. (No model.)



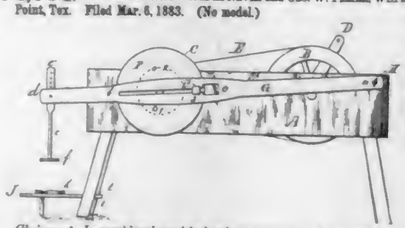
Claim.—1. The combination, with the palm-facings of the hand and thumb in one piece, of a thumb outer facing and upper-edge-overlap facing in one piece, substantially as and for the purpose set forth.

2. The combination, with the hand and thumb palm-facing in one piece, an outer thumb-facing, and an upper-edge-overlap facing in one piece, of a tip and under-edge facing, substantially as and for the purpose set forth.

3. The herein-described four-part facings, consisting of a palm-facing of the hand and thumb in one piece, an outer facing of the thumb and upper-edge facing in one piece, a tip, and an under-edge facing, said several facings united to each other by a single continuous seam, to produce a complete facing, substantially as and for the purpose set forth.

4. The combination, with a textile mitten, of the herein-described four-part facing, the meeting edges of the palm and outer portions of which are joined to each other by a continuous seam, and the outer edges of which are joined to the textile mitten by a continuous seam, substantially as and for the purpose set forth.

294,064. CHURN-MOTOR. WM. A. NEVEL and GEO. W. FISHER, Will's Point, Tex. Filed Mar. 6, 1883. (No model.)



Claim.—1. In combination with the churn-motor, as above described, removable apron J, fitting into grooves on the inside of the front legs of the frame A, and chine-brace K, consisting of parts M, *k*, k^2, and k^3, substantially as shown, and for the purposes set forth.

2. In a churn constructed substantially as above described, the removable apron J, and chine-brace K, consisting of the parts M *k* k^2 k^3, substantially as shown and described, and for the purposes set forth.

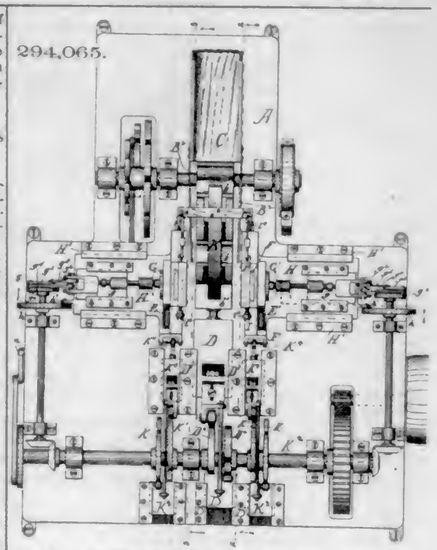
294,065. CAN ENDING AND SEAMING MACHINE. EDWIN NORTON and JOHN G. HODGSON, Chicago, Ill., assignors to said Norton and Oliver W. Norton, same place. Filed June 8, 1883. (No model.)

Brief.—Can-bodies are fed to an intermittingly-revolving carrier containing half-molds. A reciprocating half-mold clamps each body successively to a half-mold in the revolving carrier. While thus clamped, a head is forced upon each end of the can-body, and then seamed to the can-body.

Claim.—1. The combination, with a reciprocating part-mold and an intermittently-revolving wheel provided with part-molds on its periphery for clamping the can-body, of mechanism for bending and compressing into a seam the flanges uniting the head to the body, substantially as specified.

2. The combination, with a reciprocating part-mold and an intermittently-revolving wheel provided with part-molds on its periphery for clamping the can-body, of mechanism for applying the can-head to the can-body and mechanism for bending and compressing into a seam the flanges uniting the head to the body, substantially as specified.

3. The combination, with a reciprocating part-mold and an intermittently-revolving wheel provided with part-molds on its periphery for clamping the can-body, of a chute or device for delivering the can-bodies to the machine automatically, chutes or devices for automatically delivering the can-heads at the mouth of the mold, pistons or devices for forcing the can-heads on the can-body, and mechanism for bending and compressing into a seam the flanges uniting the head to the body, substantially as specified.



4. The combination, with the reciprocating part-mold and intermittently-revolving wheel provided with part-molds on its periphery for clamping the can-body, of a reciprocating piston-head for forcing the can-head upon the can-body, and crimping-jaws projecting over the seam at the end of the can-body, and operating, in conjunction with the faces or periphery of the piston-head, to squeeze the parts of the seam together, substantially as specified.

5. The combination, with a reciprocating part-mold and an intermittently-revolving wheel provided with half-molds on its periphery for clamping the can-body, of a reciprocating piston-head for applying the can-heads to the can-body, and squeezing or crimping jaws mounted on a reciprocating frame or block, and operating, in conjunction with the piston-head which forms the interior mandrel or support for the seam, to squeeze the parts of the seam together, substantially as specified.

6. The combination, with a device for clamping the can-body at its middle portion, of mechanism for simultaneously applying or forcing both the heads upon the can-body, and mechanism for simultaneously bending and compressing into a seam the flanges uniting both the heads to the can-body, substantially as specified.

7. The combination, with a mold or device for clamping the can-body, of reciprocating piston-heads for applying the heads thereto, and crimping-jaws mounted on a reciprocating block, mechanism for operating the jaws, and mechanism for reciprocating the block on which said jaws are mounted, and mechanism for reciprocating the piston-heads, substantially as specified.

8. The combination, with reciprocating part-mold *b'*, wheel B, provided with part-molds *b* on its periphery, can-body delivery-chute C, curved guard B', mechanism for revolving wheel B intermittently, mechanism for reciprocating the part-mold *b'*, can-head delivery-chutes E E', piston-heads G G', provided with peripheries or faces to fit the countersunk can-head, mechanism for reciprocating said piston-heads, reciprocating frame or block H and mechanism for operating the same, crimping-jaws F F' F^2 F^3, mounted on said reciprocating block or frame, and mechanism for operating said crimping-jaws, and a chute for delivering the headed and seamed cans from the machine, substantially as specified.

9. The combination, with a can-body-clamping mold or device, of a reciprocating block, seaming mechanism mounted on said reciprocating block, and a reciprocating piston-head forming the interior mandrel or support against which the seam is formed, substantially as specified.

10. The combination, with a can-body-clamping mold, of a reciprocating block, can-head delivery-chute mounted on said reciprocating block, mechanism for applying the can-head to the can-body, and mechanism for seaming the same, substantially as specified.

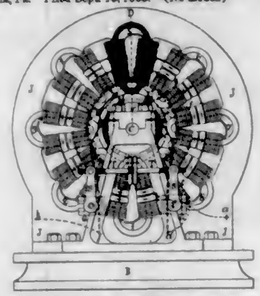
11. The combination, with a reciprocating part-mold and an intermittently-revolving wheel provided with part-mold on its periphery for clamping the can-body, of a reciprocating block provided with mechanism for seaming the can-head to the can-body, substantially as specified.

12. The combination, with a reciprocating part-mold and an intermittently-revolving wheel provided with part-molds on its periphery for clamping the can-body, of a reciprocating block, a can-head delivery-chute, mechanism for applying the can-head to the can-body, and mechanism for seaming the same, substantially as specified.

13. The combination, with a mold or device for clamping the can-body at its middle portion, of reciprocating mechanism at each end of said mold for simultaneously seaming both heads to the can-body, and reciprocating piston-heads at each end, forming the interior mandrels or supports against which said seams are formed, substantially as specified.

14. The combination, with a can-body-clamping mold, of a chute or device for delivering the can-bodies thereto, a chute or device for delivering the can-heads at the mouth of said mold, mechanism for applying the can-head to the can-body, and mechanism for bending and compressing into a seam the flanges uniting the can head and body, substantially as specified.

294,066. ELECTRO-MAGNETIC MACHINE. JOHN W. NYSTROM, Philadelphia, Pa. Filed Sept. 10, 1883. (No model.)

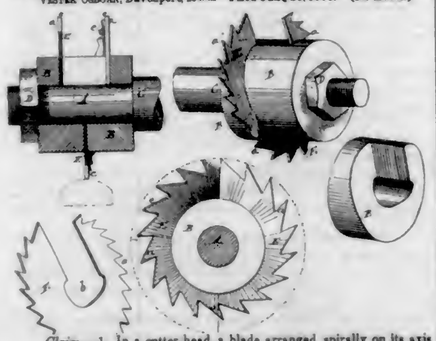


Claim.—1. In an electro-magnetic or magneto-electric machine, the elongated and curved magnets having polar extensions solidly formed in one piece with each leg of both the field and armature magnets, arranged so that both the poles of each magnet are in the magnetic field, substantially as and for the purpose described.

2. In an electro-magnetic or magneto-electric machine, the curved magnets, cast solid in one piece with their supporting frames or ribs, so that both the poles of each magnet are in the magnetic field, and that the neutral magnetic line is in the horseshoe bend, substantially as and for the purpose described.

3. The combination of the shafts O P with the brush-clamps Q at the inner ends, the levers S at the outer ends, and the screw T, the levers being connected with the screw for the purpose of regulating the pressure of the brushes upon the commutator.

294,067. CUTTER-HEAD FOR WOOD-WORKING MACHINES. SYLVESTER OSBORN, Davenport, Iowa. Filed June 20, 1883. (No model.)



Claim.—1. In a cutter-head, a blade arranged spirally on its axis, and provided with peripheral teeth arranged, respectively, at different distances from the axis.

2. In a cutter-head, the combination with clamping devices, substantially as shown, of a cutter consisting of a single spiral blade provided with peripheral teeth, the points of which are respectively at different distances from the axis of rotation.

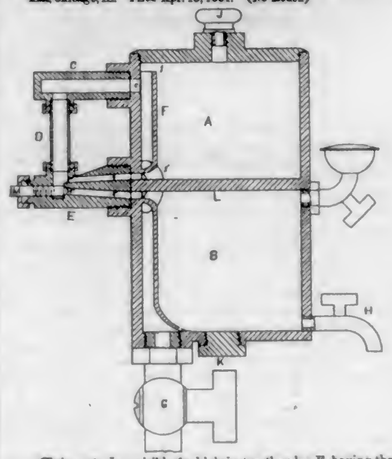
3. A rotary cutter-head encircled by an eccentrically-disposed series of teeth arranged to revolve in parallel planes at right angles to the axis of rotation.

4. A cutter-head, substantially as described, provided with a spiral series of teeth terminating at different distances from the axis, and revolving in parallel planes, said teeth having their edges inclined or beveled transversely, substantially as described and shown, whereby they are caused to co-operate in producing a smooth curved surface.

5. The improved blade for a cutter-head, consisting of a single plate of metal, having a spiral curvature, an opening for the arbor, and a series of teeth the points of which are at different distances from the center of said opening.

6. In combination with the spiral blade E, having eccentrically-disposed teeth, the hubs E, and clamping devices, substantially as shown.

294,068. STEAM-CYLINDER LUBRICATOR. WASHINGTON L. PARKER, Chicago, Ill. Filed Apr. 13, 1881. (No model.)



Claim.—1. In a visible-feed lubricator, the plug E, having the tubes *e* and *e'*, so arranged as to form a water-trap, as and for the purpose set forth.

2. In a visible-feed lubricator, the plug E, having the tubes *e* and *e'*, so arranged that when it is attached to the cylinder at the line of intersection of the diaphragm a connection of the chambers A and B will be effected, as and for the purpose set forth.

3. In a visible-feed lubricator, the combination of the plug E, having the tubes *e* and *e'*, arranged as described, and the valve M, with the transparent tube or chamber D, plug C, and the pipe F, as and for the purpose set forth.

4. In a visible-feed lubricator, the pipe G, connected with the feed-pipe F, and issuing from the base of the cylinder and attaching directly to the parts to be lubricated, as described above, as and for the purpose set forth.

5. In a visible-feed lubricator, the combination of condensing-chamber A and oil-chamber B, connected by a single passage through the plug E by the tubes *e* and *e''*, with the plug E and transparent tube or chamber D, as and for the purpose set forth.

6. In a visible-feed lubricator, the combination of chambers A and B, separated by diaphragm L, with plug E, having tubes *e* and *e'*, arranged as described, and valve M, with transparent tube D, plug C, pipes F and G, as and for the purpose described.

7. The method of feeding oil in a lubricator, which consists in carrying it drop by drop from the oil-chamber in and by a current of moving water to the parts to be lubricated.

8. In a visible-feed lubricator, the transparent tube or chamber D, connected at its base by a double connection with the base of the condensing-chamber and the top of the oil-reservoir, as described.

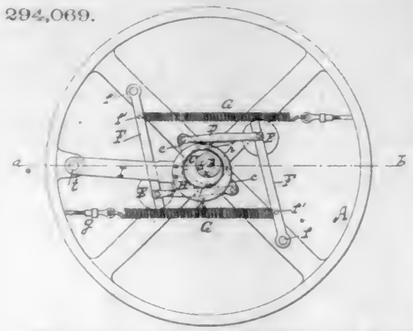
9. The combination of the transparent tube or chamber D with the condensing-chamber A, being connected therewith, as described, and for the purpose set forth.

10. In a lubricator, the method of feeding oil to the parts to be lubricated, which consists in discharging it in drops from the oil-chamber by means of hydrostatic pressure and then carrying it by and in a current of water to the parts to be lubricated.

11. In a lubricator, the method of feeding oil to the parts to be lubricated, which consists in discharging it in drops from the oil-chamber by means of hydrostatic pressure, and then carrying it to the parts to be lubricated by means of its inferior specific gravity and the action of a moving current of water.

294,069. STEAM-GOVERNOR OR SHIFTING ECCENTRIC. DAVID W. PAYNE and CHARLES R. WILLIAMS, Corning, N. Y., assignors to B. W. Payne & Sons, same place. Filed Feb. 24, 1883. (No model.)

294,069.



Claim.—1. An eccentric provided with interiorly-projecting bearing-surfaces, as *h h*, substantially as specified.

2. The combination of an outer eccentric having interiorly-projecting bearings *h h* with an inner eccentric mounted loosely upon a shaft and having a continuous bearing upon said interiorly-projecting bearings, substantially as specified.

3. The combination of an outer eccentric adapted to be suspended to a wheel or disk, and provided with interiorly-projecting bearing-surfaces arranged opposite each other and on opposite sides of the line of suspension, with an inner eccentric mounted loosely upon the shaft and adapted to bear continuously upon said oppositely-located bearings, and to be automatically rotated upon said shaft, substantially as specified.

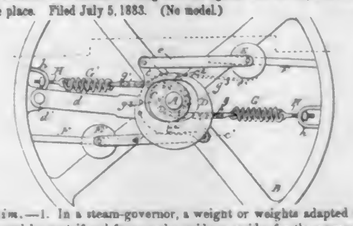
4. The combination of a shaft, and an inner eccentric mounted loosely thereon and connected to centrifugal weights, with an outer eccentric mounted upon said inner eccentric, suspended upon a wheel or disk and connected with the valve, substantially as specified.

5. The combination of the wheel A, shaft B, eccentric C, and eccentric H, having interiorly-projecting bearings *h h*, substantially as specified.

6. The combination of the wheel A, shaft B, and eccentric C, having lugs *c c*, connected to centrifugal weights, with eccentric H, having interiorly-projecting bearings *h h*, and arm I, substantially as specified.

7. The combination of wheel A, shaft B, centrifugal weights E, links D, and springs G, with eccentrics C and H, the latter having internal projections, *h h*, and an arm I, pivotally secured to the wheel, substantially as shown and described.

294,070. GOVERNOR OR SHIFTING ECCENTRIC. DAVID W. PAYNE and CHARLES R. WILLIAMS, Corning, N. Y., assignors to R. W. Payne & Sons, same place. Filed July 5, 1883. (No model.)



Claim.—1. In a steam-governor, a weight or weights adapted to be influenced by centrifugal force, and a guide or guides for the same arranged squarely within the area of the governor or its described equivalent area, substantially as specified.

2. In a steam-governor, a shifting eccentric connected with and operated by a weight or weights mounted upon straight guides arranged squarely within the area of the wheel or disk, substantially as specified.

3. The combination of a suspended shifting eccentric, a weight or weights arranged to slide upon a straight guide or guides arranged in or on other than radial lines, connecting links, bands, or chains, and a counterbalancing spring or springs, substantially as specified.

4. The combination of a shifting outer eccentric, an inner eccentric, and links secured to the latter and to weights adapted to slide upon straight guides arranged on other than radial lines, substantially as specified.

5. In a steam-governor, the combination of an eccentric, a counterbalancing-spring, and a flexible connecting band or strap, substantially as specified.

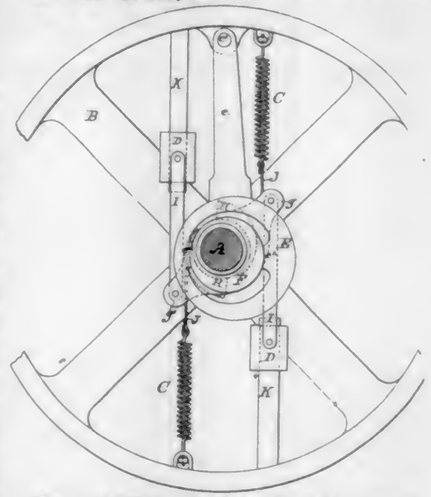
6. In a steam-governor, the combination of an inner eccentric, and an outer eccentric operated thereby by means of centrifugal weights, with counterbalancing-springs connected to said inner eccentric by flexible means, substantially as specified.

7. The combination of the eccentric D, links *e e'*, weights E E', and straight guides F, arranged as described, with means for counterbalancing the weights, substantially as specified.

8. The combination of the eccentrics C D, springs G G', links *e e'*, weights E E', straight guides F, wheel B, and shaft A, substantially as shown and described.

9. The combination of the suspended outer eccentric, D, inner eccentric, C, having hub C' and lugs *c c'*, the bands, straps, or chains *g g'*, springs G G', bolts H, brackets A, links *e e'*, weights E E', guides F, wheel B, and shaft A, substantially as shown and described.

294,071. SHIFTING ECCENTRIC. DAVID W. PAYNE and CHARLES R. WILLIAMS, Elmira, assignors to R. W. Payne & Sons, Corning, N. Y. Filed Nov. 21, 1883. (No model.)



Claim.—1. A shifting eccentric the hub of which is provided with peripheral cams, substantially as and for the purpose set forth.

2. In a shifting eccentric, a hub provided with peripheral cams, in combination with counterbalancing-springs and connecting straps, bands, or chains, substantially as specified.

3. In a shifting eccentric, a hub provided with peripheral cams, in combination with counterbalancing-springs, centrifugal weights, connecting links and straps, bands, or chains, substantially as specified.

4. In a steam-governor of the class specified, the combination of centrifugal weights and counterbalancing-springs with an eccentric formed with or connected to a hub having peripheral cams, and with devices for connecting the said eccentric with said springs and weights, substantially as specified.

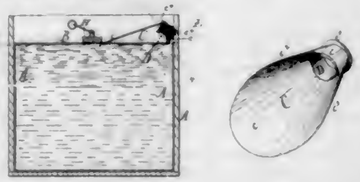
5. The combination of an outer eccentric with an inner eccentric, having as adjuncts peripheral or circumferential cams, and with centrifugal weights and counterbalancing-springs, constructed and arranged substantially as and for the purpose described.

6. The combination of an eccentric, a link-plate, and oppositely-arranged peripheral cams with connecting straps, bands, or chain, substantially as specified.

7. The combination of the eccentric F, link-plate G, and cams H H, with the shaft A, wheel B, springs C, and centrifugal weights, and with links I and straps, bands, or chains J, substantially as shown and described.

8. The combination of shaft A, wheel B, guides K, weights D, links I, straps, bands, or chains J, and springs C, with an outer eccentric suspended by an arm to said wheel, and with the inner eccentric, having a link-plate and peripheral cams, substantially as shown and described.

294,072. OIL-CAN. CHARLES R. PEASLEE, Louisville, Ky. Filed Dec. 29, 1883. (No model.)

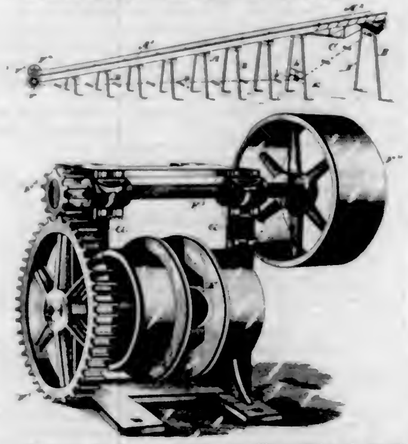


Claim.—1. The combination, with a can and its top, of an elliptical flaring inclined spout having a circular mouth or end, and a conical cork nozzle inclined to said spout, projecting inside the same, and secured thereto at its circular end, substantially as specified.

2. The combination, with a can and its top, of an inclined flaring spout and a cork nozzle inside the same, said cork nozzle and spout being inclined toward each other and united together at their circular ends, substantially as specified.

3. The combination, in a can, of an inclined flaring spout and conical cork nozzle inside the spout, and inclined thereto, whereby the liquid may be drawn from its surface and the cork nozzle protected from injury, substantially as specified.

294,073. REFUSE-CONVEYER FOR SAW-MILLS. WILLIS J. PERKINS, Grand Rapids, Mich. Filed Dec. 21, 1883. (No model.)

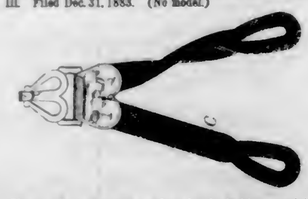


Claim.—1. A refuse-conveyer for saw-mills, consisting of a trough made up of two sections, the upper section being made of metal suitably trussed, and the lower of wood, and an endless chain provided with buckets or sweeps, which latter move in said trough, substantially as set forth.

2. A refuse-conveyer for saw-mills, consisting, essentially, of an inclined trough, an endless chain provided with buckets or sweeps, driving mechanism secured to the lower end of the trough, and a chain-wheel journaled to the upper end of a trussed metallic portion of the trough, substantially as set forth.

3. A refuse-conveyer for saw-mills, consisting of a trough made up of two sections, the lower section being made of wood and the upper section of metal, the outer end of the metallic portion of the trough being provided with metallic boxes and wooden bearing-blocks, and the lower end of the wooden trough being provided with the driving mechanism, and a suitable chain having buckets or sweeps secured thereto, substantially as set forth.

294,074. SUSPENDERS. SOLOMON PRICE and HERMAN ANDES, Chicago, Ill. Filed Dec. 31, 1883. (No model.)



Claim.—In a suspender-end made of suitable material, doubled edgewise upon itself to form a reach, a securing device consisting of a continuous wire or cord passed lengthwise through the interior of each of the strands of braid, and from one strand to the other, so as to fasten the two together to form a button-hole, substantially as described.

294,075. BROOCH-PIN. JOHN H. PURDY, Chicago, Ill. Filed Aug. 30, 1883. (No model.)

Claim.—1. A brooch-pin consisting of a steel wire, over which a sheath or envelope of gold, silver, or metallic composition is drawn, substantially as and for the purposes set forth.

2. As a new article of manufacture, a brooch-pin consisting of a



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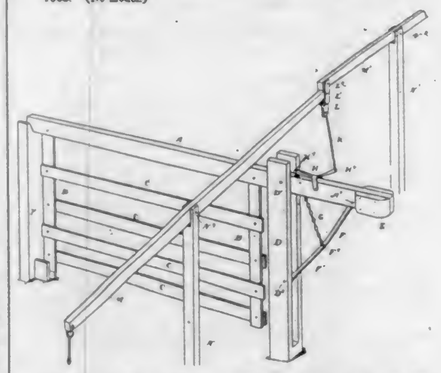
pointed steel wire provided with a sheath or envelope of gold, silver, or other ductile metal or metallic composition drawn thereover and attached thereto, in the manner and for the purposes described.

294,076. MECHANICAL TOY. WILLIAM S. REED, Leominster, Mass. Filed May 12, 1883. (No model.)



Claim.—As an improvement in mechanical toys, an object, person, or thing provided with a means for projecting a ball or other weapon or thing, in combination with another object, person, or thing, also provided with a means for projecting a ball or other weapon or thing, the action of one toy upon the other producing the response or reply of the action of the former, substantially as described.

294,077. GATE. DULANEY E. ROBINSON, Roanoke, Ill. Filed Sept. 5, 1883. (No model.)



Claim.—1. The combination, with a counterweighted vertically-swinging bar having a folding gate depending therefrom, of a toggle-joint pivoted at its ends to the weighted end of said bar, and to the post supporting the same, and means whereby to flex said joint, substantially as described, and for the purpose specified.

2. In combination with the weighted bar A, pivotally supported by the post D, the gate B C, the toggle-joint F F', chain G, rocking lever H, and means for depressing the end H^2 of the same, substantially as and for the purpose set forth.

3. The bars B B, counterweighted bar A, having pivotally-supporting post D, toggle-joint F F', chain G, and rocking lever H, in combination with means whereby the end H^2 of said rocking lever is acted upon by the movement of the levers M, substantially as and for the purpose described.

294,078. CONSTRUCTION AND OPERATION OF CAISSONS. JOHN E. ROBINSON, Baltimore, Md. Filed July 21, 1883. (No model.)

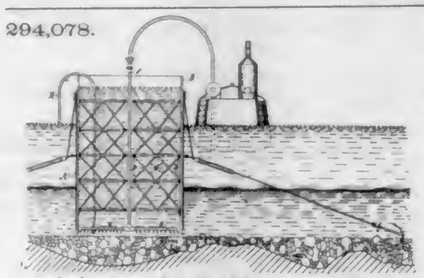
Brief.—An iron cylinder lined with wooden staves, adjustable and jointed, as described, is provided with a rotative valved perforated pipe in the interior, for supplying water in jets to wear away the bottom, and for maintaining the water at a higher head within than without, for the purpose of producing an outgoing current underneath the sides for washing away the ground, and thus sinking the structure. A siphon or pump is provided for removing the mud and for emptying the cylinder after it has reached bed.

Claim.—1. A caisson which consists of an iron shell supported internally by staves arranged to form a complete cylinder, substantially as specified.

2. A caisson which consists of an iron shell supported by staves arranged to form a complete cylinder, and bracing, substantially as specified.

3. A caisson which consists of an iron cylinder supported by staves and tightening-logs, substantially as specified.

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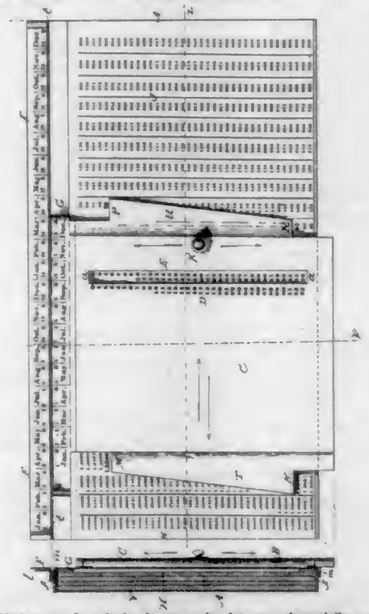
4. A caisson composed of an iron shell and supporting logs or staves arranged to form a complete internal cylinder, the said staves having pointed lower ends, substantially as and for the purpose specified.

5. In a caisson constructed as described, the staves separated by T-iron bars, substantially as specified.

6. The process of removing mud from a caisson, which consists in supplying the caisson with water to a height above the natural level, stirring up the mud at the bottom, and holding it in suspension in said supplied water and siphoning out the mixture, substantially as specified.

7. In combination with the vertical pipe F and the perforated cross-pipe G, the ball-valve *f*, and means for adjusting it within the said cross-pipe, substantially as specified.

294,079. MACHINE FOR COMPUTING INTEREST. J. WATTS ROBINSON, Boston, Mass. Filed Dec. 15, 1883. (No model.)



Claim.—1. In a device for computing interest, substantially such as described, the body A, provided with the tables H J and scale F, the carriage B, provided with the scales E G, and the slide C, provided with the slot *a*, scale D, and flanges T U, combined and arranged to operate substantially as set forth.

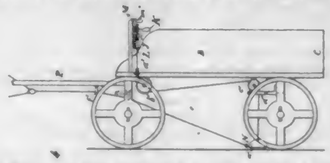
2. In a device for computing interest, substantially such as described, the body A, provided with the bracket *l* for the scale F, and with the groove *t* for receiving the flange *m* of the carriage B, and thereby preventing the carriage from moving longitudinally, substantially as specified.

3. In a device for computing interest, substantially such as described, the flange U, having the wide shoulder P and narrow end R, and the flange T, having the wide shoulder N and narrow end M, said flanges being arranged substantially as shown and described.

294,080. MANUFACTURE OF CEMENT. LUDWIG ROTH, Wetzlar, Prussia, Germany. Filed Oct. 1, 1883. (No specimens.)

Claim.—The method of making cement by burning and pulverizing a mixture of blast-furnace cinder, carbonate of lime, and an alkaline chloride, substantially as herein specified.

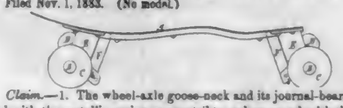
294,081. HALTER-WEIGHT. JOSEPH ROY, Montreal, Quebec, and EMILE WALLOT, Toronto, Ontario, Canada. Filed Dec. 17, 1883. (No model.)



Claim.—1. A halter drag-weight for one or more horses, constructed with anchors in the bottom thereof, in combination with a grooved pulley, J, with handle K and pivot *k'*, a ratchet, L, with pawl M and handle *m'*, a flexible cord or strap, O, with guide-pulleys *a' b' c'*, and stopping-ring *d'*, all as shown and described, and operating as set forth.

2. In combination with the drag-weight N, a cord or strap, O', connecting the horses with the drag-weight, and the guide-rings *e' f'*, as specified and described, and for the purpose set forth.

294,082. ROLLER-SKATE. LUCIUS LORENZO RYERSON, Boston, Mass. Filed Nov. 1, 1883. (No model.)

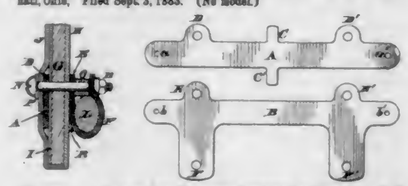


Claim.—1. The wheel-axle goose-neck and its journal-bearing, provided with the metallic spring connected to and arranged with them substantially as set forth.

2. The wheel-axle goose-neck journal-bearing provided with the lips or lateral stops, in combination with the said goose-neck, and with the spring connecting it with the said bearing and arranged therewith as represented.

3. The goose-neck bearing having the duplex conical bore, as and arranged in it as set forth, in combination with the goose-neck connected to such bearing by a metallic spring arranged as represented, and provided with a cylindrical journal to work in the bearing, as specified.

294,083. BACK-STAY FASTENER. CHARLES M. SCHAEFER, Cincinnati, Ohio. Filed Sept. 3, 1883. (No model.)



Claim.—1. A back-stay fastening consisting of the plates A B, pierced at *a a' b b'*, to receive the shanks of knobs K K', and furnished with perforated ears D D' E E' and perforated clips F F', to admit the bolts N N', wherewith said stay is clamped to the shifting-rail L, as herein described.

2. A back-stay fastening consisting of the plates A B, pierced at *a a' b b'*, to receive the shanks of knobs K K', and furnished with perforated ears D D' E E' and perforated clips F F', to admit the bolts N N', for the purpose specified, said clips F F' being integral with the plate B, as herein described.

3. A back-stay fastening consisting of the plate A, having holes *a a'*, perforated ears D D', and integral tongues C C', and the plate B, having holes *b b'*, perforated ears E E', and integral clips F F', for the purpose specified.

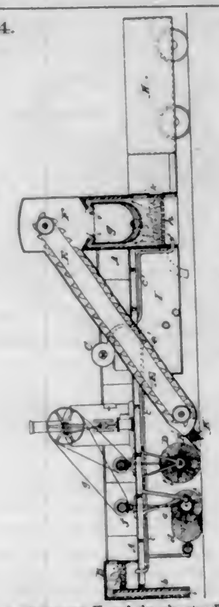
4. The combination, in a back-stay fastening, of plates A *a a'* B *b b'*, tongues C C', perforated ears D D' E E', perforated clips F F', knobs K *k* K' *k'*, and bolts N *n* N' *n'*, as herein described.

294,084. SNOW-CLEARER FOR TRACKS, &c. LOUIS SCHULER, Philadelphia, Pa., assignor of one-half to William Briscoe, same place. Filed Mar. 20, 1883. (No model.)

Brief.—A snow-remover consisting of a front furnace with downward fire, rotating brushes, an endless elevator which discharges into a receiver which is supplied with heat at top and bottom, and tanks to receive the melted snow, from whence it is discharged into the street gutters or sewers.

Claim.—1. The combination of the inclined sweepers *d d'*, the large

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sweeper D, the small sweeper K, and the elevator E, and melter F, all arranged substantially as shown and described.

2. The combination of the furnace F, having receiver *g* and grate *h*, with the blast-pipe *c'* and blower C, all substantially as and for the purpose herein set forth.

3. In a snow-clearer, the receiver *g* in the furnace F, arranged to have heat applied from above as well as from below, in combination with the swiveled pipes G, arranged for the purpose described.

4. In a snow-clearer, the combination of a furnace, F, and melter *g*, having heat applied from above and below, with a tank, I, conveying the water from the melter to any distances, substantially as and for the purpose specified.

5. In combination with a furnace, B, having flat pipe *b*, the revolving brushes and elevator, arranged as shown, the furnace F, and melter *g*, arranged to have heat applied above and below, substantially as specified.

6. The snow-clearer herein described, consisting of a frame, A, a furnace, B, having flat pipe *b*, the blower C, the inclined brushes *d d'*, brushes D and K, elevator E, furnace F, provided with melter *g*, the tank I, and truck H, with suitable engine and driving machinery, substantially as specified.

7. The method herein described of clearing snow from streets, &c., consisting in first loosening the snow by a hot-blast, then sweeping it toward the center, then sweeping it on a catcher, E', then elevating it and dumping it into a furnace with melter, and finally conveying the water into a tank or into the gutters, substantially as specified.

294,085. HYDRAULIC RAMS ARRANGED IN SERIES. LOUIS SCHUTTE, Philadelphia, Pa. Filed Jan. 24, 1883. (No model.)

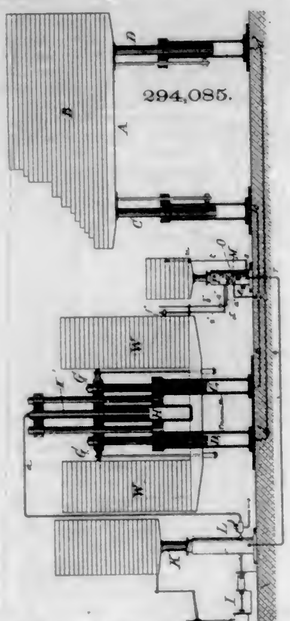
Claim.—1. In combination with two or more hydraulic lifting-rams, a transmitter embracing a corresponding number of rams connected separately with the respective lifting-rams, accumulators or sources of fluid-supply, and means whereby communication may be established between said accumulators and the lifting-rams at or near the end of their movement, substantially as described.

2. In combination with a series of hydraulic lifting-rams, a corresponding number of transmitting-rams arranged to move in unison and connected separately with the respective lifting-rams, the accumulators or equivalent sources of fluid-pressure supply, substantially as described, and stop-valves located between the accumulators and lifting-rams and operated by the transmitter, substantially as described and shown.

3. The combination of a series of lifting-rams, a corresponding number of transmitter-rams moving in unison, and connected separately with the respective lifting-rams, accumulators, or equivalent sources of supply, O P, automatic valves connecting the same alternately with a common chamber, and check-valves, whereby communication may be established with the respective rams independently of each other.

4. In combination with the series of lifting-rams, the corresponding series of simultaneously-moving transmitter-rams, each connected separately with the corresponding lifter-rams, the accumulators O P, chamber N, automatic valves *o* and *p*, and check-valves *c d e f*.

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5. In combination with the valves *o* and *p* and the series of check-valves, arranged to operate as described, the bar Q, whereby the opening of the check-valves is effected.

6. In a system of hydraulic rams, the combination of a series of lifting-rams, a corresponding series of transmitter-rams, each connected independently with the corresponding lifter-rams, and intermediate means, substantially as described, for automatically supplying to the rams fluid to replace that which may escape by leakage.

7. In combination with the series of lifter-rams, the series of simultaneously-operating transmitter-rams in individual connection therewith, the operating piston and cylinder H, the check-valves between the transmitter and lifting rams, and the automatic valves *o p*, connecting with sources of pressure-fluid supply, substantially as described.

8. The combination, with the lifting-rams, of the corresponding series of transmitter-rams, the individual fluid-conductors connecting the rams, substantially as described, the counterbalancing-weight W, applied to the transmitter, check-valves applied to the respective fluid-conductors, and automatic valves *o* and *p*, communicating, respectively, with sources of high and low pressure fluid-supply, substantially as described and shown.

9. In combination with a series of elevator-rams, each having an independent fluid-supply by which it is actuated, an independent fluid-supply at a pressure greater than that required to actuate the lifter-rams, and automatic means, substantially as described, whereby said independent supply is placed in communication with the rams as the latter complete their outward or lifting movement, whereby automatic compensation for the leakage of fluid is effected.

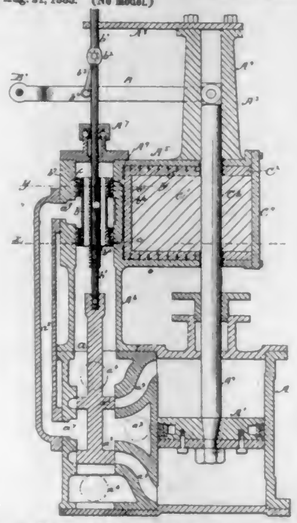
10. In combination with the lifting-rams, the simultaneously-operating transmitter-rams, conductors connecting the respective transmitting and lifting rams, the intermediate check-valves, accumulators and automatic valves, and the accumulator K in advance of the transmitter, and a pump or equivalent source of supply to said accumulator K.

11. In combination with the lifting-rams, the transmitter-rams connected therewith, substantially as described, the cylinder and piston H H', for operating the transmitter, the high-pressure accumulator K, connected with said cylinder, and a reversible valve, L, located between the accumulator and transmitter, substantially as and for the purpose described.

12. In a hydraulic ram, the combination of a lifting or working ram, a transmitter-ram, a fluid-conducting pipe connecting the two, a branch pipe provided with a check-valve opening outward, and a high-pressure fluid-supply communicating with said check-valve on the opposite side, substantially as described, whereby the outward flow of fluid from the conductor-pipe is prevented, but the inward flow from the high-pressure supply permitted to replace loss from leakage.

13. In combination with a hydraulic ram, a conductor for supplying fluid thereto, a source of high-pressure supply to said conductor, a source of low-pressure supply to said conductor, and automatically-operating valves, substantially as described, connecting said sources of supply alternately with the conductor, whereby the admission of fluid to supply loss from leakage is permitted through the one valve or the escape of surplus fluid permitted through the other.

294,086. STEAM-ENGINE. FREDERICK E. SICKELS, New York, N. Y. Filed Aug. 31, 1883. (No model.)



Claim.—1. In a steam-engine, a valve mechanism constructed substantially as described, and so combined with a brake-valve as to act automatically to apply the brake, substantially as set forth.

2. In a steam-engine, a brake-valve connected with the main valve and automatically operated by the valve mechanism of the main valve to apply the brake, substantially as described.

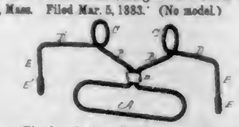
3. In a steam-engine, a brake-cylinder and brake-valve connected with and automatically operated by the valve mechanism of the engine to apply the brake, substantially as described.

4. In a steam-engine, the combination of a brake-lever and its connection, as described, a brake-valve, and operating mechanism to automatically admit the steam upon the brake-piston to apply the brake, substantially as described.

5. In a steam-engine, the combination of the main steam and exhaust passages, a steam-brake cylinder, and steam-passages leading thereto, with a brake valve and lever to automatically apply the brake controlling the steam to the main and brake cylinders, substantially as described.

6. In a steam-engine, the combination of a brake with a valve mechanism, constructed substantially as described, which valve mechanism is adapted to be moved by the operator to start the engine and release the brake, and is automatically moved to stop said engine, substantially as set forth.

294,087. DEVICE FOR HOLDING OPEN THE LEAVES OF BOOKS. GEORGE D. B. SMALL, Chelsea, assignor of one-half to William G. Emery Boston, Mass. Filed Mar. 5, 1883. (No model.)

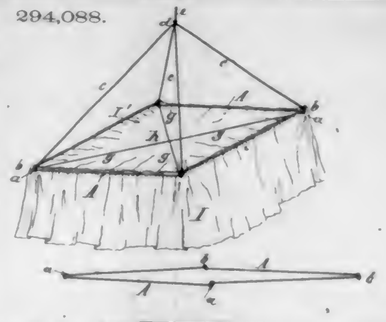


Claim.—The herein-described improved device for holding open the leaves of books, consisting of a wire bent as shown at A, B, C, D, and E, and provided with a ring, *a*, substantially as and for the purpose set forth.

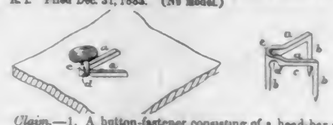
294,088. MOSQUITO BAR AND CANOPY HOLDER. DEWITT C. SMITH, Cincinnati, Ohio. Filed July 23, 1883. (Model.)

Claim.—In combination with a mosquito-bar, the mosquito-bar holder herein described, consisting of a series of rods, A, provided with eyelets *a*, and connected as set forth, and the suspending-cords *c* and cords *g*, as and for the purpose described.

294,088.



294,089. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Dec. 31, 1883. (No model.)



Claim.—1. A button-fastener consisting of a head-bar and three or more prongs integral therewith, and projecting in substantially the same direction from one side or edge thereof, the said head-bar being bent at an angle to and at each side of the middle or button prong, for the purpose specified.

2. A metal fastener consisting of a V-shaped head-bar having prongs integral therewith located at its ends and at the angle or bend, and projecting in substantially the same direction from one side or edge of the head-bar, substantially as set forth.

3. A button-fastener consisting of an angular head-bar and three or more prongs integral therewith, and projecting from the head-bar in substantially the same direction from the edge and in the line of said head-bar, all of said prongs being adapted to enter the material while they are in the line of the head-bar, and the cut edge of said head-bar adapted to engage or rest upon the material to which the fastener may be secured, substantially as set forth.

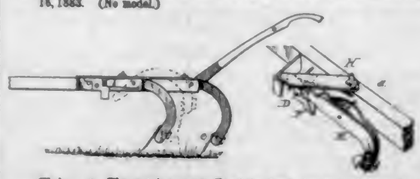
4. The improved sheet-metal button-fastener, consisting, essentially, of the V-shaped head-bar *a*, provided with the recesses *d* and strengthening portion *e*, and having the prongs *b* integral therewith, disposed at the ends and middle of the head-bar and projecting in substantially the same direction from the cut edge *c* of said head-bar, the head-bar and prongs being in alignment when adapted to be secured to leather or other material, all substantially as described, and for the purpose set forth.

294,090. CAR-WHEEL. FREDERICK H. SMITH, Baltimore, Md. Filed Aug. 3, 1883. (No model.)



Claim.—A car-wheel in which there is interposed between a peripheral tire and a central hub a separate annular web constructed of wrought-iron or steel annular plates strengthened, braced, and stiffened by wrought-iron or steel spokes placed in between and in contact with the annular plates, and attached thereto and combined therewith by bolts or rivets passing through the annular plates and spokes, as shown.

294,091. CULTIVATOR. ISAAC A. SMITH, Dexter City, Mo. Filed Aug. 16, 1883. (No model.)

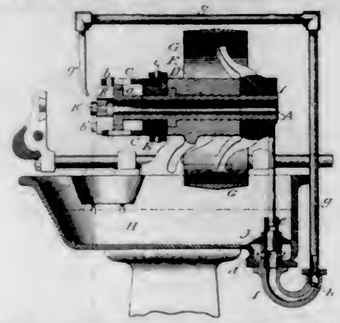


Claim.—1. The catch or cam F, of the form shown and described, centrally pivoted, and having the shoulder *f* and beveled or knife edge C.

2. The combination, with a cultivator-beam and a pivoted standard, of the rotating catch F, of the form shown and described, and the spring H.

3. The combination, with a cultivator-beam and pivoted standard, of the catch F, of the form shown and described, spring H, and side spring, *d*, substantially as described.

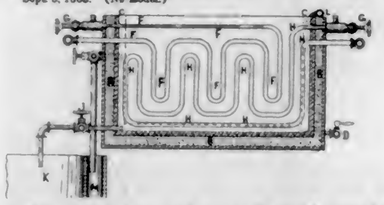
294,092. MACHINE FOR CUTTING SCREW-THREADS. ELMER A. SPERRY, Cortland, N. Y., assignor to Jesse Van Duzburgh, same place. Filed Sept. 30, 1882. (No model.)



Claim.—1. Jointly with the rotating spindle A, eccentrics *f f*, carriers B B, and cam-plates C, the base H, serving as a reservoir, and means for automatically forcing a lubricant from this base to the dies, as set forth.

2. In combination with the die-carriers B, pivoted to the spindle A, and longitudinally-sliding cam-plates C C, the eccentrics *f* and pulley G, the whole being adapted to throw the dies in and out of action without disconnecting the power, as and for the purposes set forth.

294,093. ICE-MACHINE. GEORGE TAYLOR, Everett, Mass. Filed Sept. 8, 1883. (No model.)

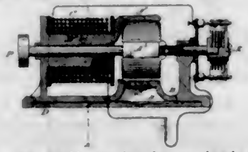


Claim.—1. In a congealer, the evaporating-pipe F, arranged so as to extend horizontally through the upper portion thereof, and thence downward below the center thereof, and upward and backward and downward with two or more of such angular turns or vertical zigzag curves, and thence outward below the point of entrance, as shown and described, as and for the purposes set forth.

2. In a congealer, the two evaporating-pipes F and H, provided with valves, and each arranged so as to extend through the same in two or more vertical zigzag curves passing upward and downward above and below the central horizontal plane thereof, and nearly equidistant at all points, and thence outward therefrom near the point of entrance, as shown and described, as and for the purposes set forth.

3. In combination with the ice-box, the perforated bottom plate, E, and vertical end plates, C, as and for the purposes set forth.

294,094. DYNAMO-ELECTRIC MACHINE. ELIHU THOMSON, New Britain, Conn. Filed May 23, 1883. (No model.)



Claim.—1. The combination, in a dynamo-electric machine or motor, of a field-magnet core, through which and parallel with whose axis the armature-axis passes, and two or more pole-pieces, between which the armature rotates, said pole-pieces being magnetically connected with the opposite ends of the core, so as to be of opposite polarity.

2. The combination, in a dynamo-electric machine or motor, of a field-magnet having a longitudinally-perforated core, an armature whose axis passes through the core, and pole-extensions projected from opposite ends of the core, and respectively of north and south polarity, said pole-extensions forming the magnetic pole-pieces between which the armature rotates.

3. A field-magnet for a dynamo-machine, the axis of whose core coincides with the armature-axis, and provided with field-of-force poles formed the one by a direct extension from said core and the other by the base-plate to which or with which said core is in magnetic connection.

4. The combination of the frame D B of iron, core D′, formed with or secured thereto, pole-pieces N S, coils C, and an armature, A, mounted on a shaft passing through the core D′.

5. In a dynamo-electric machine or motor, an armature wound with two coils or conducting wires in different planes or positions, two of the four terminals of said coils being united together and to a commutator-segment, while the other terminals are singly connected to two other commutator-segments, substantially as set forth.

6. In a dynamo or magneto electric machine or motor, a system of two revolving coils wound in different planes or positions, as described, united by a joint formed of two of the terminals at a commutator-segment, and having their other or remaining terminals connected to the two other segments of a three-segment commutator.

7. The combination, substantially as described, of two armature-coils and a three-segment commutator, one segment of which is united to a terminal from each coil, while the remaining segments are separately connected to the remaining terminals of said coils.

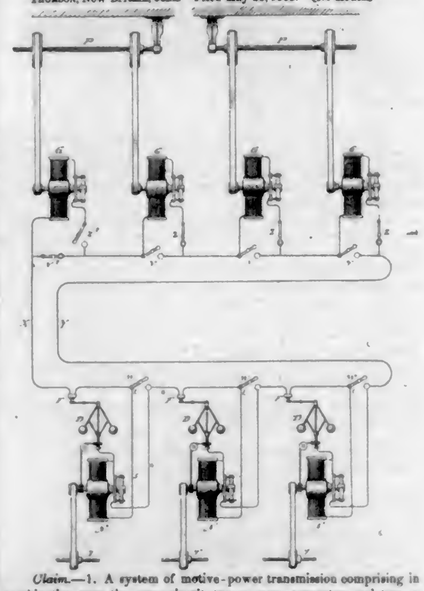
8. The combination, with a set of two armature-coils or armature-helices, of a three-segment commutator, the overlap of whose segments is made unequal, as described.

9. The combination, with a set of two armature-helices, of a three-segment commutator, connected, as described, to said helices, and having an overlap between its successive segments approximately twice as long at one of its points between the segments connected to single ends of the armature-helices as is the overlap at the two other points.

10. In a magneto or dynamo electric machine or motor, a commutator-cylinder made in two sections adjustable with respect to one another, as described, so as to permit the overlap between successive commutator segments or sections to be adjusted.

11. A commutator for a dynamo-electric machine or motor consisting of two commutator-rings, L M, each divided into the proper number of segments, and means for setting the divisions of said ring at any desired circumferential angle with relation to one another.

294,095. ELECTRIC-POWER-DISTRIBUTION SYSTEM. ELIHU THOMSON, New Britain, Conn. Filed May 25, 1883. (No model.)



Claim.—1. A system of motive-power transmission comprising in combination upon the same circuit two or more generators and two or more motors, all in series with one another, switch devices for open-circuiting each generator, and means for shunting each generator and each motor.

2. A system of motive-power transmission comprising in combination two or more driven electric generators and two or more motors or translators coupled in series, as described, an automatic regulator for each generator, and an automatic governor for each motor, that cuts down the strength of the motor field-magnet upon an increase of the motor's speed beyond a determinate point.

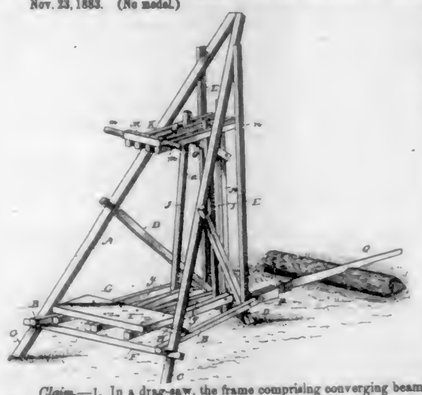
3. The combination upon one and the same electric circuit, and in series with one another, of two or more electric generators, each provided with a suitable current-governor, and two or more electric motors, each provided with means for closing a shunt around its field upon an abnormal increase of speed.

4. The combination upon one and the same circuit of two or more electric generators, two or more electric motors, means for varying the electro-motive force of the current generated in accordance with variations in the current strength upon the main circuit, and motor-governors for cutting down the effective magnetism of such motor when their speed increases to an abnormal extent.

5. The combination upon one and the same electric circuit of two or more electric generators, an automatic regulator for each generator that simultaneously shifts the commutator-brushes and decreases the field-magnetism upon an increase in the current upon the general circuit supplied by the generators, and two or more motors arranged in series with one another and with said generators, each provided with a suitable automatic speed-governor that shunts the field-magnet of the motor upon an abnormal increase in the speed.

6. The combination of the motor N, governor D, lever S^2, contacts F, and derived or shunt circuit 9.

294,096. DRAG-SAW. GEORGE VALENTINE, Monticello, Ill. Filed Nov. 23, 1883. (No model.)

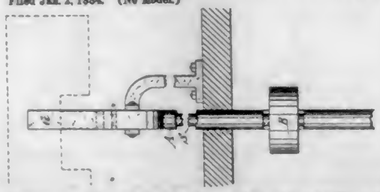


Claim.—1. In a drag-saw, the frame comprising converging beams B, converging legs C, legs D, attached to said legs C and converging downward, uprights E, connecting the legs C D to the beams B, in combination with the treadle G, oscillating frame K, saw-handle P, and connecting-rod N, as set forth.

2. In a drag-saw, the treadle, formed in two parts, *g*, in combination with an oscillating frame, K, above the treadle, a connecting-rod attached to one end of said frame and provided with a detachable saw-handle, and a handle, M, at the other end of the frame, and pitmen connecting the oscillating frame and treadle, as and for the purpose set forth.

3. In a drag-saw, the combination, with saw and saw-handle, a connecting-rod, N, oscillating frame K, comprising a series of bars connected together, a handle, M, at rear of said frame, brace-bars O, connecting the frame with the rod N, a treadle formed in two parts, *g*, between which the saw-handle works, and pitmen connecting the frame and treadle, arranged and operating for the purpose set forth.

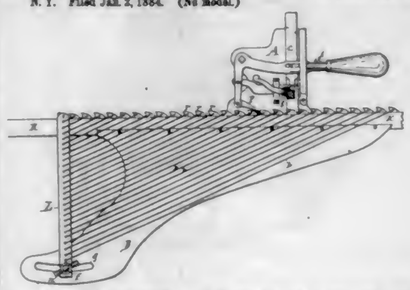
294,097. MORTISE-CLEANER. SIDNEY VAN AUKEN, Oswego, N. Y. Filed Jan. 2, 1884. (No model.)



Claim.—1. The combination of a vertical rotary spindle, a tool mounted upright on the upper end of said spindle, and having the face of its uppermost end provided with scraping or cutting edges, and guides at opposite sides of said tool adapted to receive between them the article containing the mortise to be cleaned, substantially as set forth and shown.

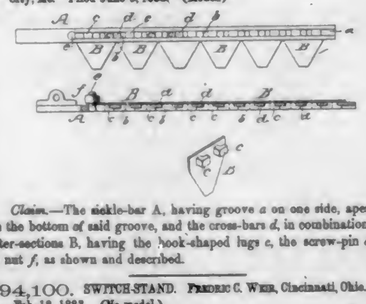
2. In combination with the cutter C, arranged vertically with its cutting end uppermost, the guides G G, arranged at opposite sides of the cutter adjustably in relation to the distance between them, substantially as described and shown, for the purpose specified.

294,098. WIRING BLIND-STILES. SIDNEY VAN AUKEN, Oswego, N. Y. Filed Jan. 2, 1884. (No model.)



Claim.—In combination with the staple-driver A, provided with a pawl, P, the within-described gage, consisting of the rail R, provided with the way *a* for the reception of the blind-rod, a series of separate rack-teeth, *r r*, mounted movably on said rail, the pivoted lever L, connected with the respective rack-teeth by a series of rods, *b b*, and a clamping device for confining the lever in its requisite position, substantially as described and shown.

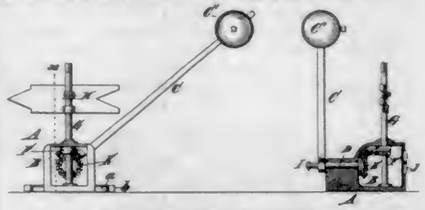
294,099. SICKLE BAR AND KNIFE. LORENZO WALLACE, Kansas City, Mo. Filed June 5, 1883. (Model.)



Claim.—The sickle-bar A, having groove *a* on one side, apertures *b* in the bottom of said groove, and the cross-bars *d*, in combination with cutter-sections B, having the hook-shaped lugs *c*, the screw-pin *e*, and the nut *f*, as shown and described.

294,100. SWITCH-STAND. FREDERIC C. WEIR, Cincinnati, Ohio. Filed Feb. 12, 1883. (No model.)

Brief.—The vertical target-shaft and the horizontal shaft of the switch-actuating lever—said lever being adjustably weighted or slotted to receive a locking-staple, and having a crank-pin adapted to a switch-connecting rod—have their bearings in a casting which constitutes the body of the stand, and is chambered to receive the bevel-gears which connect the two shafts. The chambered casting has a sliding door.



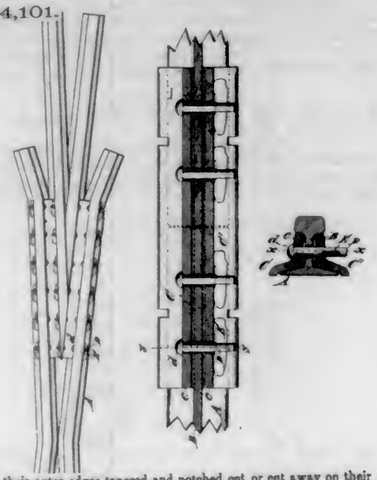
Claim.—The combination of the chambered casting having the horizontal and vertical bearings of the shaft D, target-shaft G, gears E and F, inclosed within the casting, and the weighted lever C, rigidly attached to shaft D, and carrying the crank-pin I, to which the pitman or connecting-rod is adapted to be connected, the whole arranged and operating substantially as described.

294,101. RAILWAY-RAIL JOINT. FREDERIC C. WEIR, Cincinnati, Ohio. Filed Feb. 12, 1883. (No model.)

Brief.—The elastic keys have their inner portions straight and their outer edges tapered, and are cut away on their inner edges, so as to form bearings on either side of each bolt.

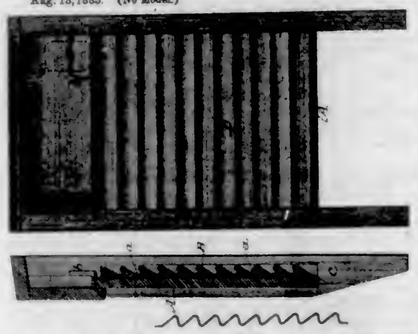
Claim.—The combination, with the rail and the fish-plates, of the headed and slotted bolts passing through the web of the rail, and the fish-plates and the elastic keys having their inner bearing portions straight

294,101.



and their outer edges tapered and notched out or cut away on their inner edges opposite to the bolts, so as form bearings on either side of each bolt, substantially as described.

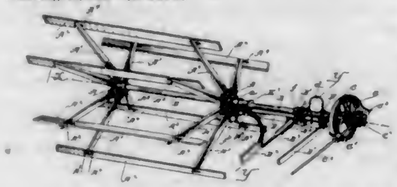
294,102. WASH-BOARD. ANGELINE WHITE, London, Ohio. Filed Aug. 18, 1883. (No model.)



Claim.—1. In combination with the back board, A, and side pieces, C, of a wash-board, the sheet of zinc B, having grooves extending from one side to the other, formed with a deeply re-entering angle, whereby transverse pockets capable of retaining water upon a vertically-held wash-board are formed, substantially as and for the purpose described.

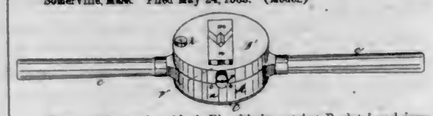
2. The combination of the back board, A, and side pieces, C, of a wash-board with the bent wire *b*, having one end inserted into one of the side pieces and the other into the back board, substantially as and for the purpose described.

294,103. HARVESTER-REEL. WALTER A. WOOD, Hoosick Falls, N. Y. Filed Aug. 25, 1883. (No model.)



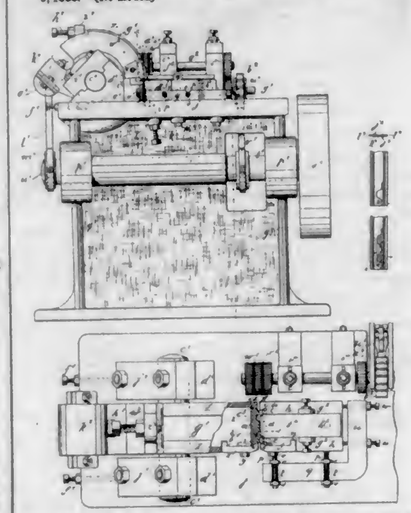
Claim.—The combination of the reel-support D, the tubular reel-shaft B, and internal shaft, F, the lever-supporting plate B^3, secured to the reel-support, and provided with perforations b^2 b^2 b^2, the pivot-bolt b^2, and spring b^2, with the bifurcated lever B^3, having a pin, b^4, on the under side thereof, substantially as and for the purpose described.

294,104. TAP AND REAMER WRENCH. HARRY E. WOODS, West Somerville, Mass. Filed May 24, 1883. (Model.)



Claim.—The ratchet-block B', with its ratchet B, slot *l*, and jaws *m n*, the stock or holder A, having handles *c c*, an opening, *b*, for the reception of the ratchet, and one or more pawls to engage therewith, in combination with a plate, C, for keeping the ratchet within the holder, constructed to operate substantially as and for the purpose described.

294,105. MACHINE FOR BARBING METALLIC FENCING. HORACE L. ARNOLD, Middletown, Conn., assignor to Thomas W. Hall. Filed Feb. 9, 1883. (No model.)



Claim.—1. The combination, in a barbing-machine, of a bed-die, *a*, having two projecting ribs in its side, a movable die, *a'*, having two grooves in its side corresponding to the ribs of die *a*, mechanism for working the movable die, and mechanism for feeding the blank strips, said ribs and grooves having bevel sides to produce the required taper of the barbs, and being located the same distance apart the barbs are to be, also being as much wider than the barbs to be formed as the width of the waste material to be cut away between the barbs, and said feed mechanism being adapted to feed the blanks intermittingly half the length of the dies from outside to outside of the ribs and grooves at each operation, substantially as described.

2. In a barbing-machine, the combination of mechanism consisting of bed-die *a*, working-die *a'*, rocker die-stock w^3, feed-rolls w', and a driving-shaft w', said driving-shaft being arranged with relation to said die-stock and feed-rolls and connected directly to said die-stock by eccentric m' and rod l', and to the feed-rolls by the eccentric t', rod v', and ratchet u' a^2, substantially as described.

3. The rocker die-stock w^3, having a turned and grooved face for the die *a'* and follower g', the cheek-piece *x*, for clamping the die, and the adjusting-screw h', substantially as described.

4. The rocker die-stock w^3, having pivot-trunnions c', mounted in inclined boxes d' j', by which the taking up of the slack of the journals also takes up the slack of the dies, substantially as described.

5. The rocker die-stock w^3, having pivot-trunnions c', mounted in inclined boxes d' j', by which the taking up of the slack of the journals also takes up the slack of the dies, in combination with the pillow-block e', adjustable toward the stationary die, substantially as described.

6. The combination of the die-block A, bed-die *a*, cheek-piece *f*, follower *i*, and adjusting-screw *k*, substantially as described.

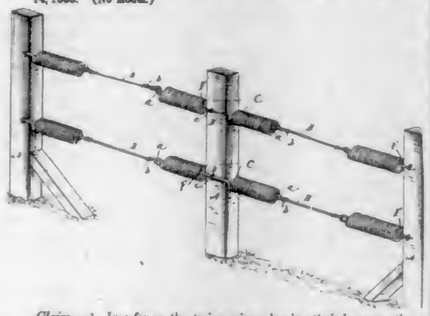
7. The combination, with the dies *a* and *a'*, in which the blank strip is supported in part of its breadth only by the bed-die, of a guard, f^3, attached to the die-block h^3, and projecting over the strip to or near the limit of the working-die, substantially as described.

8. The combination, with the dies *a* and *a'*, in which the blank strip is supported in part of its breadth only by the bed-die, of a guard, f^3, attached to the die-block h^3, and projecting over the strip to or near

the limit of the working-die, said guard having a groove in the lower face of its projecting part for the rib j^3 on the strip to be cut, substantially as described.

9. The combination, with the die-block h^2 and dies a a', of the presser-guard f^3 and spring k^3, said presser being pivoted to the die-block, substantially as described.

294,106. FENCE. LEROY AMBURY BAKER, Elmira, N. Y. Filed Aug. 14, 1883. (No model.)



Claim.—1. In a fence, the twin springs, having their inner portions bearing against the sides of the posts, and formed with a bridge-piece connecting the springs and secured to the front face of said posts, as set forth.

2. In a fence, the combination, with the posts and wires, of the twin springs, secured to the wires at one end and bearing at their other ends against the sides of the posts, and a bridge-piece formed with and connecting the twin springs, said bridge-piece being secured to the face of the posts, as set forth.

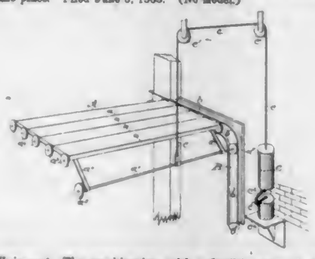
3. The herein-described fence, comprising the posts A, wires B, and twin springs C, the latter being connected to the wires at their outer ends, and formed with a connecting bridge-piece at their inner ends, said bridge-piece being bent at right angles to the springs and secured to the face of the posts, substantially as and for the purpose set forth.

294,107. THILL-COUPLING. NELSON R. BAKER, Greene, N. Y. Filed Jan. 7, 1884. (No model.)



Claim.—The combination of the iron A, attached to the thill or pole, with hinge B, forming the fastening, including bolt, spring, or clutch D, as shown in Fig. 1 and as set forth in the description.

294,108. SELF-CLOSING HATCH-COVER. ANDREW J. BALLARD, Cohoes, N. Y., assignor to the Cohoes Iron Foundry and Machine Company, same place. Filed June 8, 1883. (No model.)



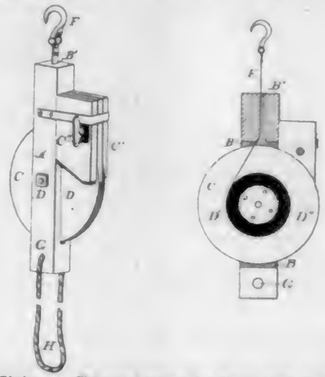
Claim.—1. The combination, with a flexible cover, A, for a hatchway, the said cover being connected together by means of hinge-joints a', and provided with a series of friction-wheels, a^2, as herein described, of the tracks B, each being composed of a horizontal portion, b, curved portion b', and vertical portion b^2, the said tracks being adapted to receive the friction-wheels a^2 in such manner as to govern the direction of the travel of the cover A, as herein specified.

2. The combination, with a flexible cover, A, for a hatchway, the said cover being jointed together and provided with friction-wheels a^2, as herein described, of the tracks B, composed of horizontal portion b, curved portion b', and vertical portion b^2, as herein set forth, and the weights C, all being constructed and arranged to operate substantially as herein specified.

3. The combination, with a flexible cover, A, for a hatchway, the cross-bar a^3, flexibly connected to said cover by means of the links a', and the weights C, connected to said cross-bar, of the tracks B, composed of horizontal portions b, curved portions b', and vertical portions b^2, all being constructed and arranged to operate substantially as herein specified.

294,109. FIRE-ESCAPE. FRANK A. BOSS, Lebanon, Ohio. Filed May 3, 1883. (No model.)

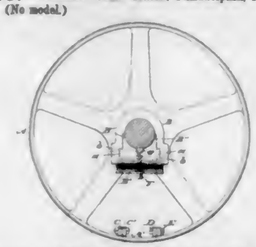
Brief.—To the main frame are secured three wings, one between and one on each side of the rope-spool flanges. A thumb-screw is passed through these wings for clamping them upon the flanges of the spool to check its rotation.



Claim.—1. The combination of the sheave-block A, having the longitudinal slot B, opening B', with the pulley D'', composed of the disks, as shown, and the wings C', provided with the thumb-screw C'', substantially as herein set forth.

2. The combination of the sheave-block A, having the longitudinal slot B and vertical slot B', and the rope, strap, or chain H, with the pulley D'', disks C, wings C', clamping-screw C'', and the tape E, substantially as herein set forth.

294,110. PULLEY. JOHN BRAUN, Philadelphia, Pa. Filed Nov. 8, 1883. (No model.)



Claim.—1. A pulley having a divided rim, and a divided hub in the portions between two adjacent arms, said rim and hub being provided each with sections independent of the other, closing the divisions of the rim and hub, substantially as and for the purpose set forth.

2. A pulley having its rim divided, and provided with a removable section occupying the space of the division, preserving the continuity of the rim, both ends of the section and of divided rim being formed with ears, in which fastening-bolts are fitted, substantially as and for the purpose set forth.

3. A pulley having its hub divided, and a section occupying the space of the division removably connected with the hub, in combination with a bolt passed through the section and tightening against the shaft, substantially as and for the purpose set forth.

4. A pulley formed of a rim having a removable section with ears and fastening-bolts, and a hub portion with a removable section tongued and grooved, and fastening devices, substantially as and for the purpose set forth.

294,111. NAIL-STRIP. WM. H. BROCK, Corona, N. Y. Filed Sept. 4, 1883. (No model.)

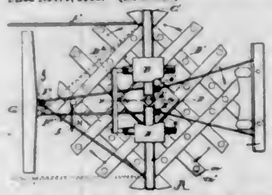
Claim.—A nail-strip for box-nailing having such structure that its head-piece is partly severed by the indentations a and b, made in its sides, and that the single nail mechanically cut therefrom has its head, shank,

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and entering end identical with the corresponding parts of the regular nail in common use for the nailing of boxes, all substantially as and for the purposes herein shown and described.

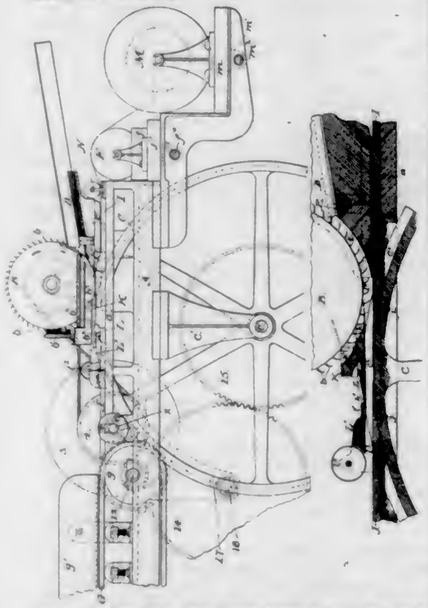
294,112. ROTARY HARROW. DAVID W. BROWN, Buckhannon, W. Va. Filed Nov. 9, 1883. (No model.)



Claim.—1. In a rotary harrow, the combination, substantially as described and shown, of the harrow, the draft-beam pivoted centrally thereon, the draft-bars secured to the said beam, and one on each side of and near the center thereof, and the guy-rods secured to the draft-beam near the opposite outer ends thereof, as and for the purposes specified.

2. The improved rotary harrow herein described, composed of the harrow proper, the draft-beam pivoted centrally on and supported thereby, the draft-bars F F', secured to forward side of the draft-beam and near to and on opposite sides of the pivot thereof, and the guy-rods, secured one near each end of the draft-beam, the bar E', provided with shovels E, and the rods s s, connecting said bar E' and the beam C, all substantially as and for the purposes specified.

294,113. CIGARETTE-MACHINE. JAMES BURNS, Brooklyn, and ALEXANDER BUCKMAN, Schodack Depot, N. Y., assignors of twenty-two fortieths to Abram L. Schermerhorn and John S. Baker, both of Stuyvesant, and James R. Downer and Frank P. Harder, both of Castleton, N. Y. Filed Jan. 22, 1883. (No model.)



Claim.—1. In a cigarette-machine, a tobacco-feeding wheel whose periphery is provided with circumferential rows of pins, which are curved or bent backward in respect to the direction of the rotation of said wheel, as herein described, and a stationary channel-piece, which forms part of the tobacco-feeding table, and contains a concave groove whose bottom is parallel, or nearly so, to the periphery of the tobacco-feeding wheel, the fixed peripheral pins of said wheel being adapted to pass through the entire length of said groove, in combination with a device for stripping the tobacco from the pins and compressing it into a trough of wrapper, the said device being constructed and arranged in relation to the tobacco-feeding wheel to operate as herein specified.

2. In a cigarette-machine, a peripherally-grooved wheel, in combination with tobacco feeding and filling mechanisms, as herein described, the said grooved wheel being adapted to contain the trough of wrapper during the operation of filling, and to feed forward the cigarette-stock, as herein specified.

3. In a cigarette-machine, the combination, with a tongue-piece, of the peripherally-grooved wheel, the said tongue-piece being provided with a tongue that is tangentially fitted to the bottom of the groove of said wheel and with cheeks, as herein described, whereby a stationary groove of a width and depth that is uniform with the peripheral groove of the grooved wheel is formed beneath the tobacco-feeding mechanism, as and for the purpose herein specified.

4. In a cigarette-machine, the combination, with a tobacco-feeding wheel provided with peripheral rows of immovable pins, as herein described, of a stationary channel-piece adapted to convey the tobacco directly into an open trough form of wrapper lying directly under the center of said feeding-wheel, the said channel-piece being adjunctive to the feeding-table, and provided with a channel or groove whose bottom has a curvature that is parallel or nearly parallel to the periphery of the tobacco-feeding wheel, the peripheral pins of the latter being adapted to pass through the entire length of said groove in such manner that the ends of the pins will not reach to the bottom of said groove, as and for the purpose specified.

5. In a cigarette-machine, the combination, with a rotative wheel containing a peripheral groove, as herein shown and described, of one or more tongue-pieces provided with tongues which are arranged tangentially to the bottom of said groove, one of said tongue-pieces being provided with a straight groove that conforms to the size and produces an unbroken continuation of the groove in the rotative wheel, as and for the purpose herein specified.

6. In a cigarette-machine, the combination, with a tobacco-feeding wheel, of a dust-guard adapted to bear against the side of said feeding-wheel, so as to protect the pasted edge of the wrapper, as herein specified.

7. In a cigarette-machine, the folder L, having a spring terminal, l, and being provided on its under face with diagonal corrugations or grooves, as and for the purpose herein specified.

8. In a cigarette-machine, the combination, with a tobacco-feeding wheel, B, provided with retrorsely-arranged pins b, a stationary channel-piece, E, provided with concave channel e, and tongue e', and a tongue-piece, I, provided with cheeks i', having upwardly-inclined edges i^3, and expanding throat i^5, of the grooved wheel C, and stripping and compressing device K, all substantially as set forth.

9. The folder L', provided with curved blade l', groove l^2, and the pressing-wheel P, arranged in relation to the groove l^2, and to operate as herein specified.

10. In a cigarette-machine, the combination of the horizontally-reciprocating head H, vertically-reciprocating knife A, and the horizontal spring h', arranged in relation to the cutting-edge of said knife, the said spring being adapted to receive the severed cigarettes and elevate them to the plane of the outcoming cigarette-stock, as and for the purpose herein specified.

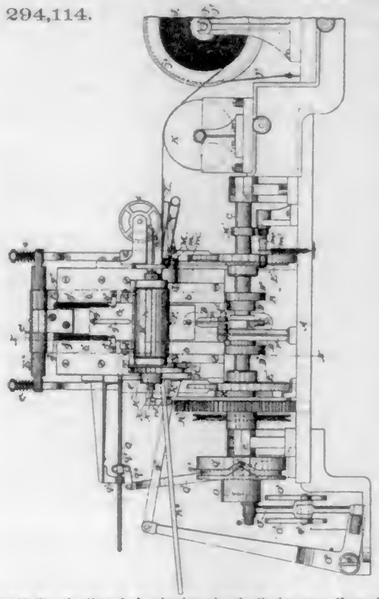
11. In a cigarette-machine, the combination of a tobacco-feeding mechanism, a stationary feeding channel-piece, a combined wrapper-trough holding and cigarette-stock feeding device, composed of a stationary grooved tongue-piece, and a peripherally-grooved rotative wheel arranged to form an unbroken straight groove, as herein described, a combined stripping and compressing device, and a wrapper-folding mechanism, all substantially as herein set forth.

294,114. MACHINE FOR MAKING CIGARETTES. JAMES BURNS, Brooklyn, and ALEXANDER BUCKMAN, Schodack Depot, N. Y., assignors of twenty-two fortieths to Abram L. Schermerhorn and John S. Baker, both of Stuyvesant, and James R. Downer and Frank P. Harder, both of Castleton, N. Y. Filed June 20, 1883. (No model.)

Claim.—1. In a cigarette-machine, the combination of a reciprocating bed-die, D, and sliding plate d, having a longitudinal groove, d^2, whose transverse form consists of a segment of more than a semicircle, as herein set forth, and a reciprocating upper die, E, having in its lower end a longitudinal concave groove, e, that will combine with the groove d^2 to form a complete circle, as herein described, with the means, substantially as specified, for reciprocating the said dies D and E toward and from each other, as and for the purpose herein set forth.

2. In a cigarette-machine, the combination, with a vertically-reciprocating bed-die, D, having a vertically-sliding plate, d—which forms part

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of said die—the die and plate having a longitudinal groove, d^2, consisting of more than a semicircle, as herein described, the cams D′ and D^2, and springs d^4, for actuating said bed-die, of the folders P and mechanism, substantially as described, whereby the said folders are caused to turn over in consecutive order, first the pasted edge and then the unpasted edge of the wrapper, whereby the adhesion of the wrapper around the molded form of tobacco is effected, substantially as herein specified.

3. In a cigarette-machine, the combination, with a reciprocating bed-die, D, provided with a reciprocating sliding plate, d, and a tobacco-feeding mechanism, substantially as described, for feeding the tobacco into the machine, of a vertically-reciprocating upper die, E, arranged in relation to said bed-die, and having on its lower end a cutting-edge, as herein set forth, the cross-bar F′, and mechanism, substantially as described, for reciprocating the dies D and E, in the manner and for the purpose herein specified.

4. In a cigarette-machine, the combination, with the box F and bed-die D, the latter containing a sliding plate, d—the said die and plate having a longitudinal groove, d^2, formed therein, as herein described—and the said die being provided with a strip, d^3, of yielding material, for clamping one edge of a wrapper between said box and die, as herein set forth, and mechanism, substantially as described, for feeding the tobacco into the machine, of the upper die, E, having a reciprocating movement, and adapted to sever a charge of tobacco from the incoming supply, and to force the said charge and its inclosing-wrapper into the groove d^2 of the bed-die D and sliding plate d, as herein specified.

5. In a cigarette-machine, a reciprocating bed-die adapted to retain a molded charge of tobacco and its inclosing-wrapper, folders for turning over and causing the edges of said wrapper to adhere, a reciprocating upper die adapted to cut off the required charge of tobacco and force it—with its inclosing-wrapper—down into the groove of the bed-die, and a sliding plate adapted to reciprocate in the bed-die, for the purpose of dislodging the finished cigarette from the groove in said bed-die, in combination with the mechanisms, substantially as shown and described, for reciprocating said bed-die, sliding plate, and upper die, and for actuating the said folders in the manner and order herein specified.

6. In a cigarette-machine, the combination, with the reciprocating bed-die D, reciprocating upper die, E, and folders P, as herein shown and described, of the mechanisms, substantially as described, for feeding in the wrapper and pasting the edge thereof, in the manner herein specified.

7. In a cigarette-machine, the combination, with a pasting-wheel, K, and wrapper-bed L, of the spring l', arranged on the front edge of said wrapper-bed, for the purpose of raising the pasted edge of the wrapper, as herein specified.

8. In a cigarette-machine, the wrapper-feeding device, consisting of a sliding bar, N, frictionally retarded, substantially as set forth, and a bifurcated lever, N′, pivoted to one end of the sliding bar N, and provided with a pendent arm, n^3, the said pendent arm being connected to mechanism for actuating the said wrapper-feeding mechanism in such manner that a combined vibratory and sliding movement will be imparted to the said bifurcated lever, as and for the purpose specified.

9. In a cigarette-machine, the combination, with a wrapper-feeding device consisting of the sliding bar N and a bifurcated lever, N′, pivoted to said sliding bar, and adapted to operate as herein set forth, the wrapper-bed L, and vibrating knife M, of the bed-die D, upper die, E, folders P, and the several mechanisms, substantially as described, for actuating the said parts, in the manner specified.

10. In a cigarette-machine, the wrapper-feeding mechanism herein described, consisting of a sliding bar, N, and a bifurcated lever, N′, pivoted to one end of said sliding bar, and provided with a pendent arm, n^3, for the purpose of giving to said bifurcated lever a combined vibratory and sliding movement, as herein set forth, in combination with an ejector, n^7, attached to the bifurcated lever N′, and adapted to effect the discharge of the cigarettes, as herein specified.

11. In a cigarette-machine, the ejector n^7, provided with a facing, n^8, as herein described, the said ejector being adapted to reciprocate and to effect the cleaning of the groove d^2 of the bed-die D, in the manner herein specified.

12. In a cigarette-machine, the combination, with a tobacco-feeding mechanism, a reciprocating upper die, E, having the presser-plate G attached directly thereto, and a cut-off, I, and box F, all arranged to operate as herein described, of the several mechanisms, substantially as described, for actuating the said upper die and cut-off, in the manner herein specified.

13. In a cigarette-machine, the combination, with a reciprocating upper die, E, bed-die D, having the groove d^2, and folders P, adapted to move consecutively, as herein set forth, of the sliding plate d, adapted to dislodge the finished cigarette from the groove d^2, and the ejector n^7, as and for the purpose herein specified.

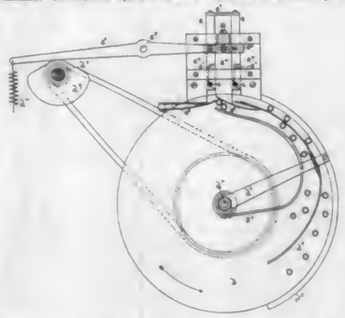
14. In a cigarette-machine, the reciprocating bed-die D, having a groove, d^2, that consists of a segment greater than a semicircle, whereby inturned edges are formed at the opposite sides of said groove, for the purpose of retaining the molded cigarette in place, and a sliding plate, d, adapted to dislodge the finished cigarette from the groove d^2, in the manner herein specified.

15. In a cigarette-machine, the wrapper-feeding mechanism, substantially as described, and consisting of a sliding bar, N, and a bifurcated lever, N′, having the free end of its limbs n^{20} faced on the under side with rubber or other elastic material, for producing a more perfect adhesion to the wrapper, the said bifurcated lever being pivoted to one end of the sliding bar N, and having at its pivoted end a pendent arm, n^3, as herein described, in combination with mechanism, substantially as described, whereby a combined sliding and vibratory movement is imparted to the bifurcated lever N′, as and for the purpose herein specified.

16. In a cigarette-machine, the combination, with the lower die, D, and sliding plate d, having a longitudinal groove, d^2, as herein set forth, of the folders P and the mechanism, substantially as described, for actuating the said folders in such manner that they will first fold over one edge of the wrapper and hold it in place until the second edge is folded over and adhered to the first, in the manner herein specified.

17. In a cigarette-machine, the combination, with an upper die, E, having a groove, e, in its lower end, as herein described, of the reciprocating wiper Q, adapted to clean the groove e, in the manner herein specified.

294,115. MACHINE FOR DRAWING METALLIC CARTRIDGE-SHELLS. PAUL BUTLER, Lowell, Mass. Filed Oct. 13, 1883. (No model.)



Claim.—1. In combination with the feed-table D, three or more shell-guides, d^5 d^7 d^8, substantially as described.

2. In combination with the revolving table D, the two sets of punches and dies c c′ and two reciprocating feeding-slides, e e, substantially as described.

3. In combination with the rigid outer and inner shell-guides, d^5 d^8 the intermediate shell-guide, d^7, having an elastic delivery end, substantially as described.

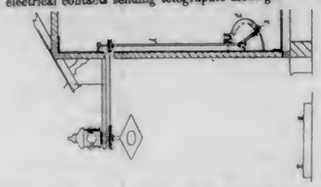
4. In combination with the revolving feed-table D, three shell-guides, d^5 d^7 d^8, two reciprocating carrier-slides, e e, and two sets of dies and punches, c′ c, substantially as described.

5. In combination with the feed-table D, the shell-guides d^5 d^7 d^8, the springs d^9 d^{7}, and the two reciprocating carriers e e, substantially as described.

6. The combination of the feed-table D, three shell-guides, d^5 d^7 d^8, and two punches, c c, substantially as described.

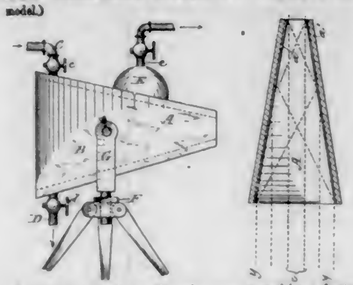
294,116. RAILWAY-SIGNAL. BERT BUYS, Reese, Mich., assignor of one-third to Frank Wilcox, same place. Filed Nov. 3, 1883. (No model.)

Brief.—The arm by which the signal-shaft is rotated makes a series of electrical contacts sending telegraphic message.



Claim.—The combination of the vertical shaft A for operating a visual signal, the horizontal plate C, forming a step for the shaft, and carrying a series of fixed electrical contacts connected with a telegraph-line, and an arm carrying a contact-point and attached to said shaft, and constructed to both operate said shaft and signal and move said contact-point over the fixed contacts as the visual signal is moved, substantially as described.

294,117. METHOD OF AND MEANS FOR CONDENSING SOLAR RAYS. WILLIAM CALVER, Washington, D. C. Filed Apr. 25, 1883. (No model.)



Claim.—1. A condenser for solar rays, comprising a frustum of a pyramid, or its described equivalent, the length of the same and the inclination of its walls with its axis being relatively determined to advance the rays entering at its base, and to deliver them from its apex in a smaller column or beam, the whole constructed so as to withstand high degrees of heat, substantially as specified.

2. A solar condenser comprising a hollow frustum and a surrounding water-space provided with an inlet, an outlet, and a steam-outlet, each provided with controlling-valves, substantially as specified.

3. A solar condenser comprising a frustum of a pyramid, or its described equivalent, having inner reflecting walls or surfaces, a, and an outer re-enforcing and protecting backing a', substantially as shown.

4. The combination of the condenser A, swivel-bracket G, and tripod F, substantially as shown and described.

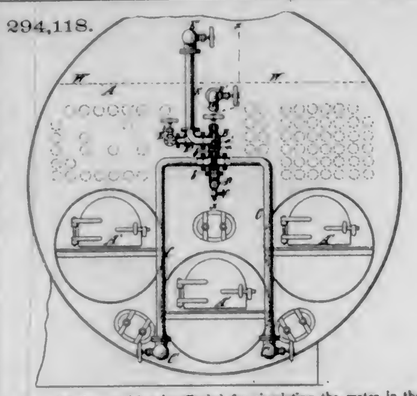
5. The combination of the condenser A, jacket B, steam-dome E, inlet C, and outlets D e, substantially as shown and described.

294,118. MEANS FOR PRODUCING CIRCULATION IN STEAM-BOILERS. WM. CRAIG, Brooklyn, N. Y. Filed Dec. 14, 1883. (No model.)

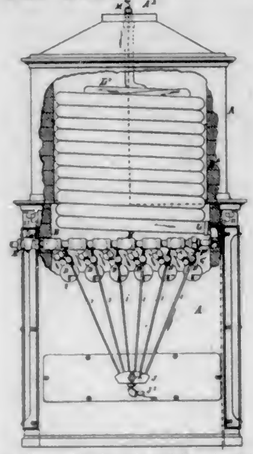
Claim.—1. The combination, with a steam-boiler, of an injector, a suction or supply pipe leading from the lower part of the boiler to the water-inlet of the injector, and a discharge-pipe leading from the injector to the upper part of the boiler, whereby water taken by the injector from the lower part of the boiler will be delivered into the upper part thereof, and an outside circulation of the water in the boiler will be produced, substantially as described, and for the purpose set forth.

2. The combination, with a steam-boiler, of an injector, two suction or supply pipes provided with valves and leading from the lower part of the boiler at opposite sides thereof to the water-inlet of the injector, and a discharge-pipe leading from the injector to the upper part of the boiler, whereby provision is afforded for circulating the water in the boiler and for varying the quantity of water supplied to the injector from different parts of the boiler, substantially as herein described.

294,118.



294,119. STEAM-GENERATING APPARATUS. JOHN H. DALE, Philadelphia, Pa., assignor of two-thirds to Abraham S. Jenks, same place. Filed Mar. 16, 1882. (No model.)



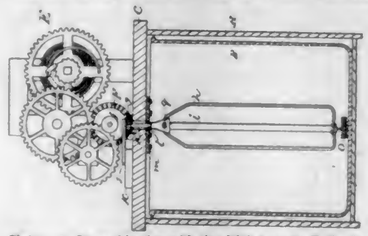
Claim.—1. The combination, substantially as hereinbefore set forth, of the furnace, the water-distributing manifold, the series of feed-pipes connected therewith, the generators extending transversely through the furnace, each connected with its respective feed-pipe and interposed between it and the furnace, the steam-outlets at the opposite end of each generator from its feed-inlet, and the steam-collecting manifold, with which all the generators are connected.

2. The combination, substantially as hereinbefore set forth, of the furnace, the water-distributing manifold, the feed-pipes connected therewith, extending transversely through the furnace, the generators, each connected with its respective feed-pipe and interposed between it and the furnace, the steam-outlets at the opposite end of each generator from its feed-inlet, the steam-collecting manifold, with which all the generators are connected, and the continuous superheating-coil, through which the products of combustion pass from around the generators interposed between the furnace and the superheating-coil.

3. The combination, substantially as hereinbefore set forth, of the furnace, the water-distributing manifold, the feed-pipes, the generators connected therewith, the steam-collecting manifold, the superheating-coil, and the deflector interposed between the central opening of the coil and the generators to diffuse the heat among the coils.

4. The combination, substantially as hereinbefore set forth, of the furnace, the water-distributing manifold, the feed-pipes, the generators, the lower steam-collecting manifold, E, the series of independent concentric or multiple superheating-coils connected therewith, and the upper collecting manifold, E′, with which all the superheating-coils are connected.

294,120. CHURN-MOTOR. WILLIAM FLETCHER EVANS and JAMES BENNETTE FIELDING, Prescott, Ark. Filed Dec. 22, 1883. (No model.)

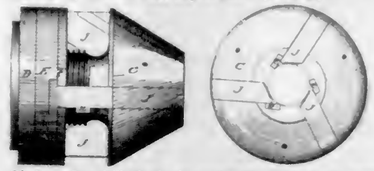


Claim.—1. In combination with the driving-power E, the double-gear wheel F, rigidly secured on shaft *f*, with pinions *g*, rigidly secured on the upper ends of shafts *i*, shafts *i*, dashers or agitators A, and brace O, substantially as shown and described, and for the purposes set forth.

2. The combination, with the lid C, of block K, rod *j*, plates m' m^2, and brace O, all adapted as bearings for shaft *i*, substantially as shown and described.

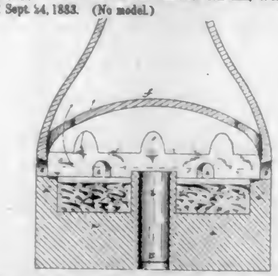
3. The combination of grasps *a* with slots *c'* in lid C, fitting over grasps *a*, and latches *c*, pivoted on the upper face of said cover, and fitting into mouths *a'*, all adapted to hold said cover in place and down on the top of churn-holder A, substantially as shown and described.

294,121. DRILL-CHUCK. CHAS. GAGE, Somerville, assignor to Lewis B. Russell, Lynn, Mass. Filed Aug. 15, 1883. (No model.)



Claim.—In a drill-chuck, the combination of the body-piece C, having the jawways P and the supplemental guideways *s*, with the jaws J, having ribs X, and the rings E and F, substantially as set forth.

294,122. GLASS-FURNACE. HENRY GASKILL, Wellsburg, W. Va. Filed Sept. 24, 1883. (No model.)



Claim.—1. In a glass-furnace, an open melting-pot built around the eye of the furnace, the walls of the furnace forming the sides and bottom of the melting-pot, substantially as and for the purposes specified.

2. In a glass-furnace, an open melting-pot built around the eye of the furnace, the walls of the furnace forming the sides and bottom of the melting-pot, the melting-pot having a lining of clay or other suitable material, substantially as and for the purposes specified.

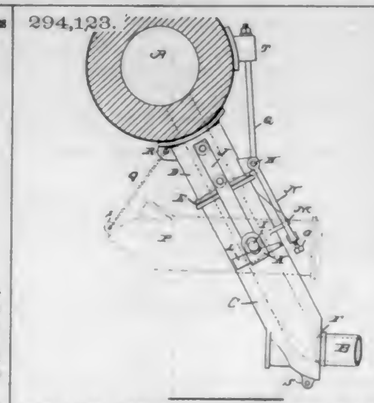
294,123. TUYERE-PIPE. FRED. W. GORDON, Pittsburg, Pa. Filed Sept. 21, 1883. (No model.)

Claim.—1. A tuyere-pipe for blast-furnaces, provided with and supported on trunnions, and adapted to be turned into a horizontal position above the plane of the tuyeres, substantially as and for the purpose set forth.

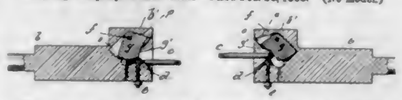
2. The tuyere-pipe provided with trunnions, combined with the trunnion-bearings rigidly connected with the circle-pipe of the furnace, and provided with keys or their equivalent engaging the trunnions, substantially as and for the purpose set forth.

3. The combination of the tuyere-pipe provided with trunnions, the neck-piece, the side bars rigidly secured to the neck-piece and carrying loose bearings for the trunnions, and the bearing-keys or their equivalent, substantially as and for the purpose set forth.

294,123.



294,124. CAR-COUPLING. EDWARD I. GRANGER, South Manchester, Conn., assignor, by mesne assignments, to the Granger Automatic Car Coupling Company, of New York. Filed Feb. 26, 1883. (No model.)

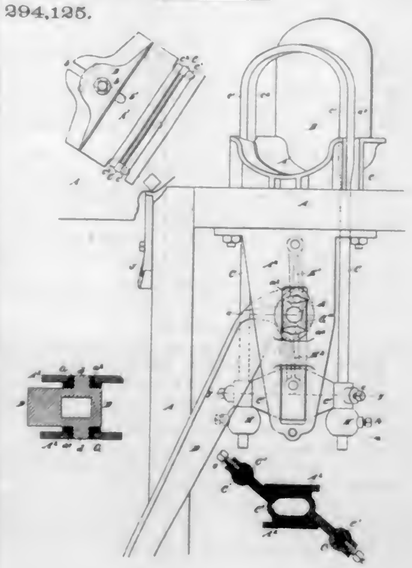


Claim.—1. In a car-coupler, the combination of the draw-bar with the head bearing the swinging cam *g*, covered within it and fast to the rotary shaft *f*, the counterpoise f^3, also fast to the shaft, the chain *h*, and the rod *j*, pivoted to the car-front, and bearing the pawl *k*, held in contact with the fixed ratchet *l* by means of the spring *m*, all substantially as described.

2. In combination, the draw-bar *b*, having a head with a flaring mouth and hook *d* therein, the shaft *f*, and the locking-cam *g*, covered and arranged within the draw-head, and the counterpoise f^3 and the link *c*, with cam-operating mechanism, all substantially as described.

3. In a car-coupler, the combination of the draw-bar *b*, having a head with a flaring mouth, and within the head the hook *d*, and the swinging cam *g* on the shaft *f*, the cam being seated in a mortise within the head, and arranged to hold the link in place by its foot or bottom, and to then bear with its head upon the under side of the roof of said mortise, and not on the shaft or pivot, and the link *c* and cam-lifting mechanism, all substantially as described.

294,125.



294,125. WOOD-BUNDLING MACHINE. DARWIN A. GREENE, New York, N. Y. Filed June 25, 1883. (No model.)

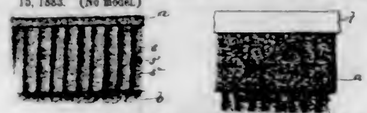
Claim.—1. In a wood-bundling machine, the cradle A', cross-head C', and one or more straps, c' c^2, arranged askew relatively to the shaft *d*, and lever D, in combination therewith, and with the toggle-links E' E^2, as herein set forth.

2. In a wood-bundler, the cradle A', having the slot *b'*, in combination with the fastening-bolt *b*, and with a gage, B, having its lower outline curved to match the cradle and allow it to be adjusted forward and backward thereon, as herein specified.

3. The strap C, single at each end and double at and near the middle, bent as shown, and combined with the cross-head or yoke C', and suitable mechanism for operating it up and down, and with the cradle A' and gage B, as herein specified.

4. In a wood-bundler operating with the aid of a strap, C, and treadle-lever D, the cross-head C', and adjusting means *c*, in combination therewith, and with the re-enforcing clamps H and their adjusting means *h*, as herein specified.

294,126. TRACK OR ROAD-BED. SETH GRIFFIN, New York, N. Y., assignor of one-half to William Halkyard, Providence, R. I. Filed Oct. 15, 1883. (No model.)



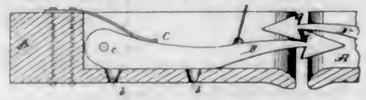
Claim.—1. In the track or road-bed herein described, having a suitably-prepared foundation, the combination therewith of grass sods, turf, or peat adapted to rest upon said foundation, and further adapted to be covered with loam or other suitable top-dressing, substantially as and for the purpose set forth.

2. An elastic track or road-bed composed of layers or courses of sods, peat, or other analogous substance, when arranged and adapted for use substantially as herein set forth.

3. The improved process in constructing tracks herein described, wherein grass sods, turf, or peat are adapted to rest upon a suitably-prepared foundation or base, the upper edges or courses of said sods, &c., being covered with loam or other equivalent material, substantially as shown and specified.

4. The track or road-bed A herein described, consisting of the prepared foundation *b*, sods or turfs *s*, and top covering, *a*, the whole combined and arranged to produce an elastic or springy track, substantially as shown and specified.

294,127. CAR-COUPLING. DANIEL AMBROSE GROUNDS and JAMES RAMBO GIBSON, Hope, Ark. Filed Dec. 13, 1883. (No model.)



Claim.—1. In a car-coupling device, bumper-head A, made of a whole unbroken body of metal, having trench *a*, opening into a wide mouth at its open end a^2, having in the bottom of said trench funnel-shaped openings *b*, and adapted to carry a coupler, B, and spring C, substantially as shown and described.

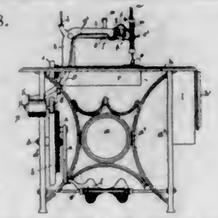
2. In a car-coupling device, couplers B, pivoted at their rear ends, at point *c*, into the slot *a*, and having one-half of their length lying on the bottom of slot *a*, and their spear ends standing up from said bottom about two inches, and having their barbs slightly rounded on their faces *e*, substantially as shown and described.

3. In a car-coupling device, in combination with a car-coach, the combination of bumper A, having slot *a*, cone-shaped openings *b*, with couplers B, pivoted in said slot at point *c*, spring C, secured to bumper A, and its front end holding said couplers down, rod *l*, its lower end hinged to said couplers, and its upper end hinged to the end of arm *h*, rod *k*, its lower end hinged to the end of arm *h*, its upper end hinged to the front end of lever *i*, and lever *i*, hung on the end of the car-coach, substantially as shown and described, and for the purposes set forth.

4. In a car-coupling device, in combination with a car-coach, the combination of bumper A, having slot *a*, cone-shaped openings *b*, with couplers B, pivoted in said slot at point *c*, spring C, secured to bumper A, and its front end holding said couplers down, rod *l*, its lower end hinged to said couplers, and its upper end hinged to the end of arm *h*, and rod *f*, pivoted to the end of the coach, having rigidly secured on either end hand-wheels *g g*, and extending from its center arm, *h*, substantially as shown and described, and for the purposes set forth.

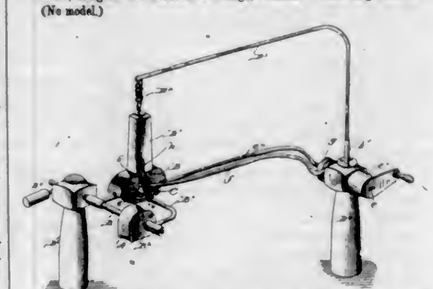
294,128. LIGHTING SEWING-MACHINES. OLIVE HEALY, Paterson, N. J., assignor of one-half to John Inglis, same place. Filed Mar. 30, 1883. (No model.)

294,128.



Claim.—The combination of the holder and stationary arm, the holder provided with recess to accommodate the tube, and thumb-screw for holding the tube adjustably therein, the holder secured to the stationary arm by a clip, and clip for securing said holder to the arm, and hollow tube for holding the lamp, and lamp suitably secured to said tube, the lamp having a shade, and insulated wires suitably secured to said lamp, the wires passing through said tube and connected with the dynamo, and dynamo, the dynamo arranged in frictional contact with the driving mechanism of said machine, and frame to which the dynamo is secured by a knuckle-joint, and driving mechanism for operating said dynamo and needle, substantially as set forth.

294,129. BURNISHING-MACHINE. WILLIAM J. HEFFERNAN, Lynn, Mass., assignor to Theodore A. Dodge, Trustee. Filed Aug. 13, 1883. (No model.)



Claim.—1. In a burnishing-machine, a burnishing-tool, and means to reciprocate it in the head or hand-piece, the said head or hand-piece being connected loosely with the support or arm D^3, combined with a rod or arm, *f*, to engage a slotted ear on the said head or hand-piece, to permit the lateral movement of the said head, substantially as described.

2. The loosely held or supported head or hand-piece, and the rod or arm *f*, connected loosely with the said head, to permit the same to rock, as described, combined with the reciprocating tool mounted on the said head, and with rod e^3, having a swivel or universal joint, and with means to reciprocate the said rod, substantially as described.

3. The loosely-supported head or hand-piece provided with the slotted ear 5, and the arm *f*, connected with said slotted ear, to permit the lateral movement of the head or hand-piece, combined with the burnishing-tool supported in said head or hand-piece, the link or arm e^3, connected thereto by a swivel or universal joint, and means to reciprocate said link, substantially as described.

294,130. HARDENING AND STRAIGHTENING IRON AND STEEL RODS. J. HENRY HELM, Allegheny, Pa. Filed May 28, 1883. (No model.)

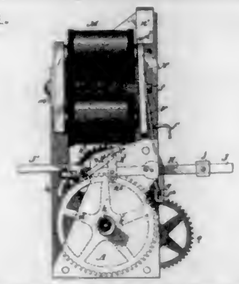


Claim.—The herein-described process of hardening, stiffening, and straightening iron or steel bars or shafts, which consists in drawing them through two or more solid tapering dies, the centers of which are fixed in a line one with the other, substantially as and for the purpose specified.

294,131. SECONDARY ELECTRIC CLOCK. VITALIS HERMER, New York, N. Y., assignor, by mesne assignments, to Joseph Koenigsberg, St. Louis, Mo. Filed Apr. 5, 1883. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of the toothed wheel, the pawl and lever for actuating the same through the influence of gravity, the electro-magnet, its armature and armature-

294,131.



lever, for actuating said pawl and lever in the direction opposite to that in which they are actuated by gravity, and one or more pins, and the set-screw for adjusting the position of said electro-magnet with reference to said armature.

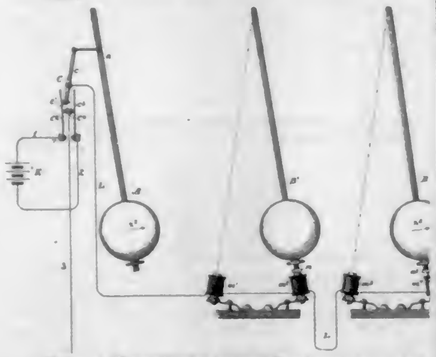
2. The combination, substantially as hereinbefore set forth, of the electro-magnet, the adjustably-supported armature, the flexible armature-lever, the train of wheels, the lever and pawl for actuating said train of wheels, the arbor for supporting said lever, and a mechanical connection between said arbor and armature-lever, comprising a yoke or plate secured to said arbor and an extension of said armature-lever embracing both sides of said yoke or plate.

3. The combination, substantially as hereinbefore set forth, of an armature and armature-lever, an electro-magnet for actuating said armature and armature-lever, a lever supported independently of said armature-lever and actuated in one direction by the movements of said armature-lever and in the opposite direction by the force of gravity, an arm and an adjustable weight supported thereon for modifying the active influence of gravity upon said lever, a pawl carried upon said lever, and a train of wheels actuated by said pawl and lever when the latter responds to the action of gravity.

4. The combination, substantially as hereinbefore set forth, of the train of wheels, the pawl and lever acting, when actuated in a given direction by force of gravity, to advance said train of wheels, means, substantially such as described, for actuating said lever in the opposite direction, an adjustable weight for modifying the active influence exerted by gravity upon said lever, and two arms or extensions, respectively extending upon opposite sides of the supporting-arbor of said lever, each of which arms is adapted to receive said adjustable weight.

5. The combination, substantially as hereinbefore set forth, with a toothed wheel, of a propelling-lever constructed from a single piece of metal and provided with a bracket for supporting a pawl, a stop or detent for engaging the teeth of said wheel, and an arm for receiving an adjustable weight, said bracket, stop, and arm being each integral with said lever.

294,132. ELECTRIC DEVICE FOR SYNCHRONIZING CLOCK-PENDULUMS. VITALIS HEMMER, New York, N. Y., assignor, by mesne assignments, to Joseph Koenigsberg, St. Louis, Mo. Filed Apr. 17, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a regulating-pendulum, a series of automatically-actuated pendulums, a battery and a main line, and means, substantially such as described, for transmitting electric impulses from said battery upon said main line, each of said automatically-actuated pendulums vibrating over a pair of electro-magnets included in said main line and located near the respective limits of vibration.

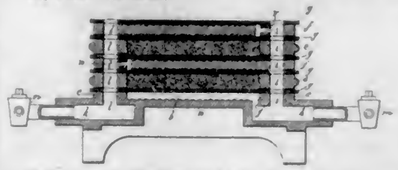
2. The combination, substantially as hereinbefore set forth, of a battery, means, substantially such as described, for periodically transmitting electric impulses of opposite polarity from said battery upon said main line, a series of automatically-actuated pendulums, and an armature applied to each of said pendulums, each of said armatures vibrating over a pair of electro-magnets included in said main line and located at the opposite extremities of vibration.

3. The combination, substantially as hereinbefore set forth, of a vibrating pendulum, an armature applied to said pendulum, two electro-magnets having their fields of force at or near the respective limits of the arc of vibration of said pendulum, and means, substantially such as described, for simultaneously vitalizing said electro-magnets, and for reversing the polarity of said electro-magnets at each vitalization.

4. The combination, substantially as hereinbefore set forth, of an automatically-actuated pendulum, an armature carried upon said pendulum, two electro-magnets, and means, substantially such as described, for simultaneously inducing in said electro-magnets magnetism of like polarity, and for reversing that polarity at each semi-vibration of said pendulum.

5. The combination, substantially as hereinbefore set forth, of a vibrating pendulum and armature carried at the extremity thereof, and means, substantially such as described, for inducing in said armature magnetism of opposite polarity at each semi-vibration of said pendulum.

294,133. WATER-FILTER. JOHN JOHNSON, Brooklyn, N. Y. Filed Aug. 6, 1883. (No model.)



Claim.—1. The combination, in a filter, of a series of plates, *f*, and filtering-disks *g*, said plates having inlets *i* and outlets *l*, with which the filtering-chambers connect, respectively, by the alternate passages *v* and *u* in the plates, substantially as described.

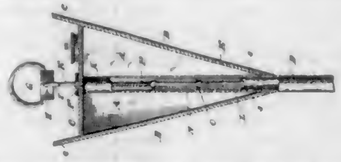
2. The combination, in a filter, of a series of plates, *f*, rings *e*, filtering-disks *g*, and layers of filtering material *b'*, said plates having inlets *i* and outlets *l*, with which the filtering-chambers connect, respectively, by alternate passages *v* and *u* in the plates, substantially as described.

3. The combination, in a filter, of a series of plates, *f*, and filtering-disks *g*, said plates and disks having passages *i* and *l*, and said disks having passages *v* and *u* alternately, as described, and means for reversing the flow of water through said plates and filtering-disks, as specified.

4. The combination, in a filter, of a series of plates, *f*, filtering-disks *g*, supply-pipe *o*, discharge-pipe *p*, and the three-way cocks *m n*, said plates having inlets *i* and outlets *l*, with which the filtering-chambers connect, respectively, by alternate passages *v* and *u* in the plates, substantially as described.

5. The combination, with plates *f*, of filtering-disks *g*, of paper, felt, or other material, having water-proof margins to be clamped between said plates, substantially as described.

294,134. OIL-CUP. HENRY L. JOHNSTON, Palmetto, Ga. Filed Jan. 16, 1884. (No model.)



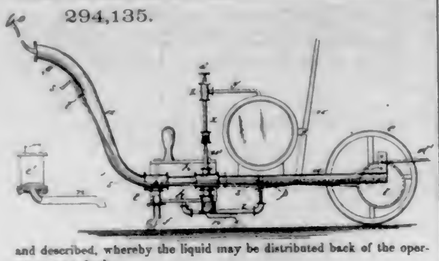
Claim.—The wedge-shaped oil-cup A, having vent K, and provided with the central tube, D, having inlet-holes *x x*, and the piston-rod E, provided with piston L, spring P, handle G, and stopper-arm H I, substantially as and for the purpose set forth.

294,135. COTTON-WORM DESTROYER, SPRINKLER, &c. JOHN D. LAWBERT, Sr., and JOHN GILLMORE WIGGINS, Mooreville, Ala. Filed Aug. 30, 1883. (No model.)

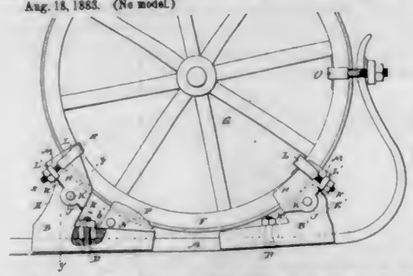
Claim.—1. The combination, with a pump, tank, and sprinkling devices, of a three-wheeled vehicle having side bars, *a a*, turned up to form handles *g g* at the requisite height for a man to hold and guide the machine or propel without lift.

2. In a sprinkler, the combination, with a liquid-tank and a pump for raising the liquid in said tank, of the turned-up tubular bars *a*, provided with the sprinklers *e* at their upper rear ends, substantially as shown and described, whereby the liquid may be distributed back of the operator, as set forth.

294,135.



294,136. SLEIGH-RUNNER. FRANK J. LARKIN, Kenosha, Wis. Filed Aug. 18, 1883. (No model.)



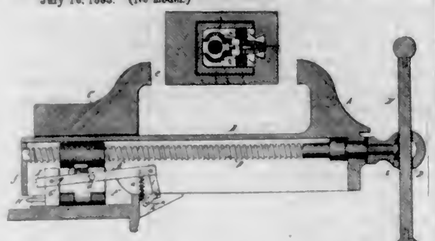
Claim.—1. The combination, with suitable bolts and clips, of the runners A A, the wedges B B', having longitudinal runner-grooves C and top projection, E, and the jaws H H, rabbeted at *a*, as shown and described.

2. The combination, with a runner, of the grooved pieces B B', having upwardly-projecting parts E E', fitting against the rim or felly of the wheel, the jaws H, fitting partly in recesses in the parts E E', the bolts K, and the clips L, substantially as herein shown and described.

3. The combination, with a runner, of grooved pieces B B', the jaws H, the bolts K, the clips L, and the jaws P, held on the piece B, substantially as herein shown and described.

4. The combination, with the runner A and wheel G, of the grooved pieces B B', the jaws H, provided with lugs J and notches M, the bolts K, and the clips L, substantially as herein shown and described.

294,137. BENCH VISE. MORTIMER G. LEWIS, Lowville, N. Y. Filed July 16, 1883. (No model.)



Claim.—1. In a vise of the character herein set forth, a sectional or divided nut the two parts whereof are hinged at the bottom and provided with a surrounding yoke, said nut being combined with the screw and arranged to clamp and release the same, substantially as and for the purposes set forth.

2. In a vise of the character herein set forth, the combination, with the screw, of a nut made in two parts hinged together and mounted in the bench-head, substantially as shown, and for the purposes explained.

3. In combination with the two parts of the nut arranged to clamp the vise-screw, an intervening spring, substantially as and for the purposes set forth.

4. In combination with the two parts of the nut arranged to clamp the vise-screw, a movable yoke for forcing the said two parts into operative position, substantially as shown and described.

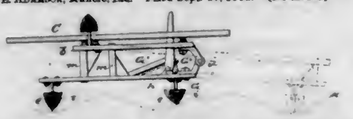
5. In a vise of the character herein set forth, the two parts of the clamping-nut hinged together, the surrounding yoke or frame for operating the nut, and the projecting crank or handle, combined substantially as shown, and for the purposes explained.

6. In a vise, the combination of the clamping-nut made in two parts and hinged at the bottom, and the operating-yoke arranged for operation in connection with the vise-screw and the forward abutting-block, against which said nut is made to bear, substantially as shown and described.

7. In a vise, the combination, with the two parts of the clamping-nut, hinged together as explained, of the front and rear abutting-blocks mounted in the head, substantially as shown and described.

8. In combination with the yoke or frame arranged to move the two hinged sections of the clamping-nut, the spring applied in connection with said frame, and arranged to operate substantially as shown, and for the purposes set forth.

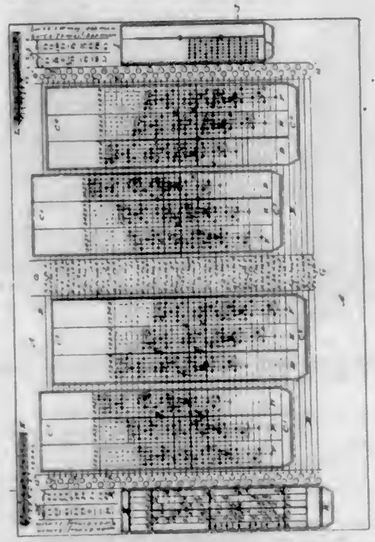
294,138. LAND-MARKER. JNO. W. MADDOX, Wheeling, and CHAS. E. ADAMSON, Muncie, Ind. Filed Sept. 17, 1881. (No model.)



Claim.—1. In a land-marker, the combination, with the section *a*, provided with a central rest or support, *m'*, marking-shoes *e e*, and a mortise, 1, and a section, *b*, hinged to the section *a*, and having a support, *m*, and marking-shoe *e'*, of a seat-board, *c*, one end of which rests upon the support *m'*, while the opposite end is supported by the rest *m*, which latter, when the seat is removed, is designed to enter the mortise 1, substantially as set forth.

2. In a land-marker, the combination, with hinged sections, one of which is provided with a central support, while the other is provided with an end support, of a seat-board adapted to be removably held by said supports, whereby the weight of the driver will be distributed equally upon the shoes, substantially as set forth.

294,139. APPARATUS FOR USE IN STUDYING HARMONY. BLIGH SIDENHAM MAITLAND, London, England. Filed Oct. 22, 1883. (No model.) Patented in England Apr. 16, 1883, No. 1,918.



Claim.—1. An apparatus to be employed in the study of the science of harmony, comprising a frame or board bearing a chromatic scale, and four or other number of chord-slides to move on the said frame or board, these slides being each divided vertically into three parts, and each of these parts having vertical chord-lines, and each slide bearing arbitrary signs, (to correspond with a guide or reference table,) and having also devices to represent, respectively, the tonic root, the relative minor key to a major tonic key, and the relative major key to the minor tonic key, all substantially as and for the purposes herein set forth.

2. An apparatus to be employed in the study of the science of harmony, comprising the frame or board A, bearing a chromatic scale, B,

and the chord-slides C' C² C³ C⁴, having the holes *f f* in line with the note-lines of the chromatic scale, in combination with pegs or pins *g g*, to fit in said holes, and wires A, to connect said pins *g g*, as and for the purpose set forth.

3. An apparatus to be employed in the study of the science of harmony, comprising a frame or board, A, bearing a chromatic scale, B, the chord-slides C' C² C³ C⁴, and a wind-box containing a number of toned reeds, the valves connected with these reeds being operated by buttons or knobs on or in line with the note-lines of the chromatic scale, said parts being arranged and constructed substantially as and for the purpose set forth.

4. The combination, with the frame or board A, bearing the chromatic scale B, of the chord-slides C' C² C³ C⁴ and interval-slide H, as and for the purpose set forth.

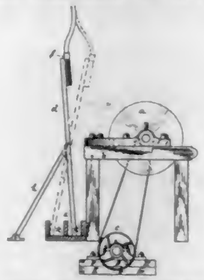
5. The combination, with the frame or board A, bearing the chromatic scale, of the chord-slides C' C² C³ C⁴, interval-slide H, and scale-slide I, as and for the purpose set forth.

294,140. CAR-TRUCK. JAMES E. MASON, Blanchard, Pa. Filed Dec. 26, 1883. (No model.)



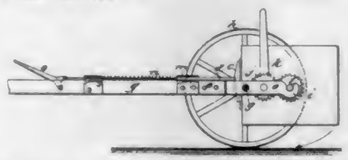
Claim.—In a car-truck, the combination, with divided axles having collars or flanges c and oval bearing portions *d*, of axle-boxes D, consisting of two sections, each having grooves *a*, for the reception of the flanges *c*, said sections being also provided with oval recesses E, for the reception of the oval bearing portions *d* of the axles, and beams E', connecting the said axle-boxes, whereby the boxes are held stationary, substantially as set forth.

294,141. DEVICE FOR SAVING THE WASTE FROM EMERY-WHEELS. PHILIP MATHER, Idlewood, Pa. Filed Aug. 10, 1883. (No model.)



Claim.—The devices herein described, consisting of an adjustable screen having a perforated pipe attached to the upper portion of the face thereof, and a series of boxes or separate receptacles, substantially as and for the purpose specified.

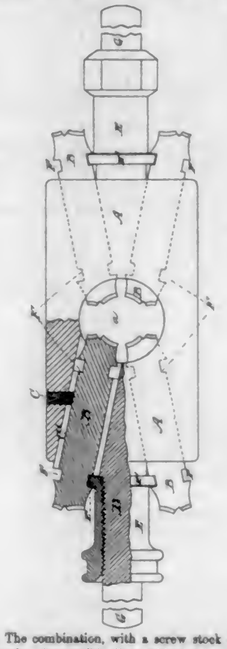
294,142. TRUCK. WARWICK C. MAYOR, Puritan Hope, La. Filed July 7, 1883. (No model.)



Claim.—1. The combination of a box, *a*, having trunnions *b*, and a toothed wheel, *l*, on one of said trunnions, with the truck having hooked bearing rear extensions, *i*, of the frame, and the toothed wheel *j* and lever *k*, said frames being open at the rear end to receive the box between the sides, substantially as described.

2. The combination of a box, *a*, having trunnions *b* and the notched cleat *c*, with the truck having hooked bearing-extensions *i* of the frame, and the sliding latch-bolt *d*, the said frame being open at the rear end to receive the box between the sides, and the latch-bolt having a spring and a lever for actuating it, substantially as described.

294,143. SCREW STOCK AND DIE. WILLIAM J. MCCORMACK, Paignton, County of Devon, England. Filed July 16, 1883. (No model.) Patented in France May 28, 1883, No. 156,707; in England May 29, 1883, No. 2,665; in Germany May 30, 1883, and in Belgium May 30, 1883, No. 61,540.

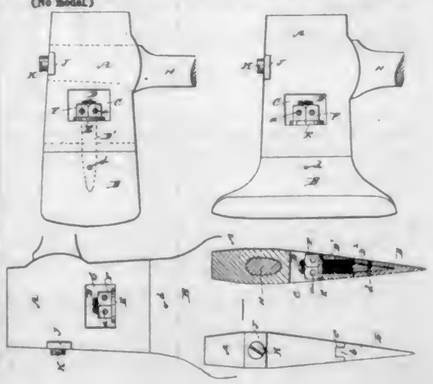


Claim.—1. The combination, with a screw stock or die plate and with a screw-ferrule, of reversible dies or bits having at each end two kinds of threads or teeth, the dies being adapted to be turned axially to bring into position for operative action either kind of such teeth at a given end of the bit, and means for securing the bits in place.

2. In combination with a die-stock, the dies or bits having each a groove or grooves near each end, a screw-ferrule provided with a flange arranged to work in such grooves, and serving to force the dies up to their work or to withdraw them, and a threaded support for such ferrule, substantially as shown and described.

3. In combination, the screw stock or die plate A, reversible dies or bits B, provided with grooves, as described, and having two sets of threads or teeth at each end of the bit, stops C, the threaded piece for supporting the ferrule, and the ferrule E, provided with a flange working in a groove in the dies or bits, all substantially as and for the purposes set forth.

294,144. AX. RICHARD R. PACE, Lineville, Ala. Filed Oct. 2, 1883. (No model.)



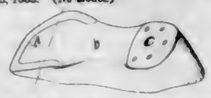
Claim.—The combination, with the ax-body A, having a groove, *c*, extending entirely across its lower end, and provided with an opening, C, and an aperture, D', extending from said opening to the lower end of the ax-body, of the blade B, having the aperture D², adapted to register with the aperture D', and provided with the tongue *b*, extending entirely across the upper end of the blade, and adapted to fit into the groove *c*, screw-spindle D, removably secured in the aperture D² of the blade and adapted to fit in the aperture D', and the pin *d* and nut F, substantially as described, and for the purpose set forth.

294,145. HARNESS-SNAP. JAMES A. PARK, Lansing, Mich., assignor of one-half to Ptolla E. Park, same place. Filed Apr. 24, 1882. Renewed July 6, 1883. (No model.)



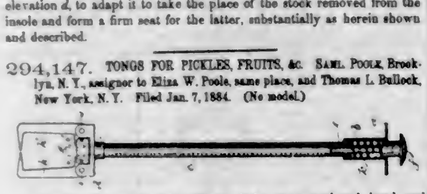
Claim.—In a harness-snap, the combination, with the frame provided with a hook, and a slot, F, of a spring adapted to extend through said slot and be guided by the adjacent sides of the frame, and secured to the under side of the rear end of the frame, which latter is perforated to receive a fastening-bolt, a strap upon which said spring bears, a washer, and retaining-nut, substantially as set forth.

294,146. BOOT AND SHOE LAST. WILLIAM POND, Kansas City, Mo. Filed June 13, 1883. (No model.)



Claim.—A boot or shoe last provided on the extreme outer edge of its bottom, around the toe portion, with the inwardly inclined or beveled elevation *d*, to adapt it to take the place of the stock removed from the insole and form a firm seat for the latter, substantially as herein shown and described.

294,147. TONGS FOR PICKLES, FRUITS, &c. SAML. POOLE, Brooklyn, N. Y., assignor to Eliza W. Poole, same place, and Thomas L. Bullock, New York, N. Y. Filed Jan. 7, 1884. (No model.)



Claim.—In combination with a tubular stem, push-rod, head, and spring, the claws pivoted at 3 4 upon the head *d*, and provided with short slotted arms extending toward each other, a block upon the push-rod, and pins passing through the slotted arms, substantially as set forth.

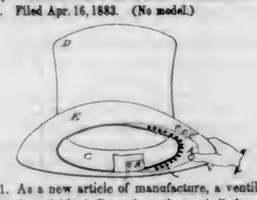
294,148. ELECTRICAL CONDUCTOR. FRANK L. POPE, Elizabeth, N. J., assignor to the Postal Telegraph and Cable Company, of New York. Filed June 2, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a central core formed of metal having a high coefficient of tensile strength, a continuous metallic coating of greater specific electrical conductivity than the central core closely enveloping the same, and one or more conductors formed of a metal having approximately the same electro-motive properties and conductivity as the coating laid about said coating and its inclosed central core.

2. The combination, substantially as hereinbefore set forth, of a central conductor of steel closely enveloped in a continuous coating of copper, and one or more conductors of copper laid upon or around the steel conductor and its exterior envelope.

294,149. VENTILATOR FOR HATS. WILLIAM M. PROTHEROE, New York, N. Y. Filed Apr. 16, 1883. (No model.)



Claim.—1. As a new article of manufacture, a ventilator for hats composed of the ring of felt A B, perforated at *a a' a''*, &c., prepared and shaped substantially as described.

2. As a new article of manufacture, a ventilator for hats composed of the annular section of felt A' B', perforated at *a a' a''*, &c., prepared and shaped substantially as described.

3. As a new article of manufacture, a ventilator for hats composed of the ring of stiffened cloth A B, perforated at *a a' a''*, &c., prepared and shaped substantially as described.

4. As a new article of manufacture, a ventilator for hats composed of the annular section of stiffened cloth A' B', perforated at *a a' a''*, &c., prepared and shaped substantially as described.

5. The combination, in a ventilator-hat, of the ring of felt A B, with the perforations *a a' a''*, &c., the sweat-band C, and the row of stitches *z z' z''*, &c., substantially as and for the purposes described.

6. The combination, in a ventilator-hat, of the ring of felt A B, with the perforations *a a' a''*, &c., the sweat-band C, and the clamps or fastenings *x*, with chock-blocks *y*, substantially as and for the purposes described.

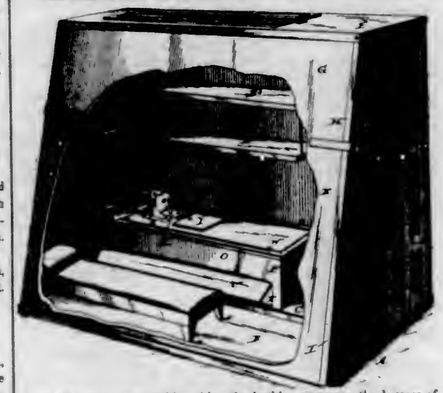
7. The combination, in a ventilator-hat, of the ring of felt A B, with perforations *a a' a''*, &c., sweat-band C, row of stitches *z z' z''*, &c., and clamps or fastenings *x*, with chock-blocks *y*, substantially as and for the purposes described.

8. In a ventilator-hat, the construction of the flange A of the ring A B sufficiently broad in that part which is adapted to the front of the hat to enable the wearer to grasp it between the thumb and fingers and support it up against the under side of the hat-brim in the operation of putting on or removing the hat, substantially as described.

9. The combination, in a hat the crown of which is enlarged as it approaches the brim for the purpose of ventilation, of the ring of felt A B, perforations *a a' a''*, &c., and the sweat-band C, substantially as and for the purposes described.

10. The combination, in a hat the crown of which is enlarged as it approaches the brim for the purpose of ventilation, of the ring of felt A B, perforations *a a' a''*, &c., sweat-band C, row of stitches *z z' z''*, &c., and supporting-stripe *r*, secured at *s* and *s'*, substantially as and for the purposes described.

294,150. BATHING APPARATUS. JOHN RAMSON, Williamsport, Pa. Filed June 15, 1883. (No model.)



Claim.—1. A portable cabinet for bathing purposes, the bottom of which is composed of one or more shallow pans adapted to retain water that may be splashed over from the bath tub or tubs, substantially as set forth.

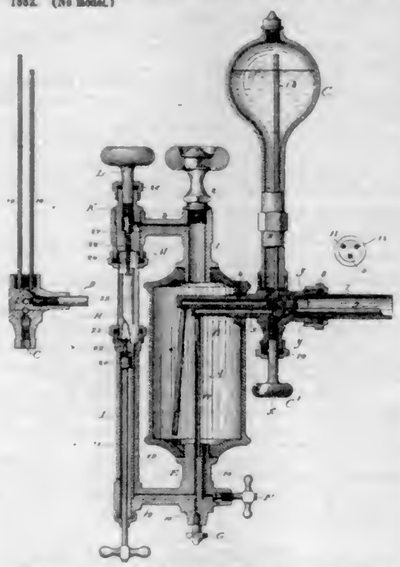
2. A portable cabinet for bathing purposes, the bottom of which is composed of shallow pans adapted to be set or fitted within each other, or nested together, substantially as and for the purpose herein set forth.

3. A portable cabinet for bathing purposes, the bottom of which is composed of shallow pans adapted to be nested together, each pan being provided with end walls adapted to be fitted between the end walls of the pan next behind, substantially as set forth.

4. A portable cabinet for bathing purposes, consisting, essentially, of bottom pans adapted to be nested together, a rear wall secured vertically to the rear edge of the rear pan, end walls secured vertically to the ends of the rear pan, a top secured to said rear and end walls, a hood depending from the front edge of said top and having triangular end pieces, end walls, and a front wall secured to the ends and front edge of the front pan, and connected detachably to the end walls of the rear pan and to the hood, and suitable means for ingress and egress and for ventilation, substantially as set forth.

5. The combination, with a portable cabinet for bathing purposes, having its bottom constructed of two or more shallow pans adapted to be nested together, of a bath-tub arranged to fit in or between the sides of the rear pan, substantially as set forth.

294,151. LUBRICATOR. SAMUEL REED, Chicago, Ill. Filed June 15, 1882. (No model.)



Claim.—1. A sight-feed the glass of which contains an excess of air under pressure, substantially as described.

2. A sight-feed lubricator containing an excess of air under pressure, in combination with devices, substantially as described, for supplying air to and compressing the same in the sight-feed, substantially as described.

3. The combination, with a lubricator, of a sight-feed tube arranged at a point between the oil-reservoir and an oil-passage to a steam-pipe, said feed containing air under pressure, substantially as described.

4. In a lubricator, the combination, with a sight-feed and with the outlet oil-passage to the steam-pipe, of an intermediate oil-passage adapted to contain an opposing column of oil for preventing the steam from entering the sight-feed, substantially as described.

5. The combination, with a sight-feed and with the direct outlet of the oil to the steam-pipe, of a horizontal passage, 18, and a vertical passage, 17, connecting said outlet and sight-feed, substantially as described.

6. A combined valve and nozzle, the nozzle of which is provided with perforations intersecting and extending at a right angle to each other, substantially as described.

7. In a lubricator, the combination, with the oil-reservoir, the passage 1 3, the plug K, and its bushing, of the combined and removable valve and nozzle and a sight-feed, substantially as described.

8. The combination, with the sight-feed and with the projecting oil-nozzle, of an air-supply tube extending up into the sight-feed and above the opening of the nozzle, substantially as described.

9. In lubricators, the herein-described method of feeding oil, which consists in passing oil through a glass tube filled with an excess of air under pressure.

10. In a lubricator, the means for determining the amount or quantity of oil or other liquid being injected or fed, consisting of a sight-feed arranged in a supply-pipe, and a valve for limiting or regulating the passage of the liquid therethrough, substantially as described.

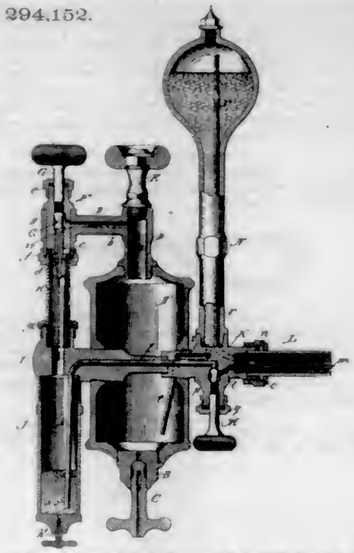
294,152. LUBRICATOR. SAMUEL REED, Chicago, Ill. Filed June 11, 1883. (No model.)

Claim.—1. The herein-described method of compressing and maintaining compressed air in the sight-tube of a lubricator, the same consisting in subjecting the air to a direct pressure of water, afterward displaced by oil under pressure, and in its passage to the device to be lubricated, substantially as described.

2. The combination, in a hydrostatic lubricator, of a sight-feed tube filled with air compressed by and in direct contact with water, substantially as described.

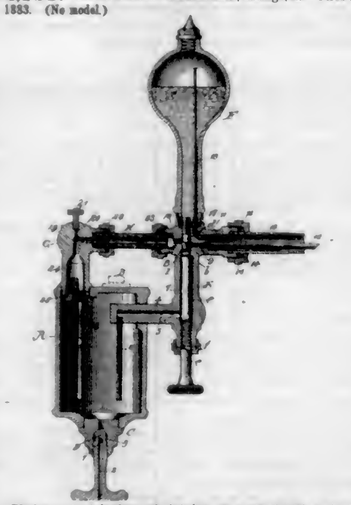
3. The combination, with the lubricator and the sight-feed tube thereof filled with air, of a water-chamber connected with said tube, and in turn having a direct communication with a steam-pipe or other steam-containing device to which the lubricator is attached, whereby condensed steam may be employed for forcing the air from said chamber and compressing it in the sight-feed tube, substantially as described.

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4. The combination, in a lubricator, of the sight-feed tube H, the chamber J, the tube *k*, and devices connecting said parts with the oil-reservoir, the condenser, and the device to be lubricated, substantially as described.

294,153. LUBRICATOR. SAMUEL REED, Chicago, Ill. Filed July 11, 1883. (No model.)



Claim.—1. A hydrostatic lubricator provided with a single valve adapted to control both the flow of the oil and water, substantially as described.

2. A hydrostatic lubricator in which feed-passages bisect each other, and which is provided with a valve working in and controlling both of said passages, substantially as described.

3. A hydrostatic lubricator in which feed-passages bisect each other, and which is provided with a tubular valve working in and adapted to control both of said passages, substantially as described.

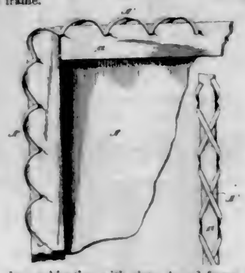
4. The combination, with the oil-reservoir and condenser, of a valve, I, provided with passages *a b*, annular groove *d*, and shoulder *e*, substantially as described.

5. A sight-feed lubricator provided with a water-supply chamber arranged in the path of the oil being fed to and through the sight-feed, substantially as described.

6. A hydrostatic lubricator provided with a water-supply chamber communicating with the oil-reservoir and hydrostatic column, substantially as described.

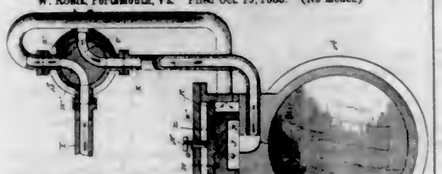
294,154. MUFFLER FOR SCHOOL-SLATES. JOS. RIDGE, Chicago, Ill., assignor to John H. Beers, same place. Filed Nov. 5, 1883. (No model.)

Brief.—A strip of rattan, chair-cane, wood, or metal laced over the edge of the frame.



Claim.—In combination with slate A and frame a, the flexibly-elastic spring-muffler, substantially as described, and for the purpose specified.

294,155. REVERSING-VALVE FOR STEAM-ENGINES. HENRY W. ROBIE, Portsmouth, Va. Filed Oct. 19, 1883. (No model.)



Claim.—1. The combination, with the steam-chest of an engine having an exhaust-port and a feed-port, of an intermediate rotary valve having two independent and direct passages into which the exhaust and feed ports of the steam-chest directly connect on opposite sides of the said valve, the main feed and exhaust being in direct connection with the other ends of said passages and on opposite sides of the valve, whereby the direct feed of the steam is reversed by simply turning the rotary valve, substantially as and for the purpose set forth.

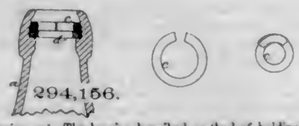
2. An engine embodying the cylinder having the steam-ports and exhaust-ports, the steam-chest arranged over these ports and having the feed-port, a slide-valve working in the steam-chest and having the passage or port in its under side, the four-way stop-valve from which extends the main steam-pipe and the main exhaust-pipe, and the independent pipes leading from opposite sides of the four-way valve into the exhaust-port of the cylinder and the feed-port of the steam-chest, substantially as and for the purpose set forth.

3. The combination of the cylinder having the exhaust-port, the steam-chest having the feed-port, the slide-valve arranged over said exhaust-port, the plate or partition adjusted against the back of the valve to retain it in its seat, mechanism for adjusting this plate, and the four-way valve receiving the main exhaust and feed pipes and having connection with the exhaust-port under the slide-valve and with the feed-port in the steam-chest, substantially as set forth.

4. An engine embodying the cylinder having the steam-ports and the exhaust-port, the steam-chest having the feed-port at one end, and provided with a top plate or partition having a longitudinal guide-rib on its under side, and the slide-valve of less width than the steam-chest and having the smooth back formed with the groove to receive the rib, substantially as set forth.

5. In an engine adapted to take its feed under the slide-valve, the herein-described steam-chest having a series of screw-threaded perforations in its top plate, the slide-valve having a top partition disposed between the top plate and the back of the valve and fitted neatly between the walls of the steam-chest, and a series of set-screws disposed in a series along the said partition and working from the outside through the top plate and against the partition, substantially as set forth.

294,156. STOPPERING BOTTLES FOR CONTAINING AERATED OR GASEOUS LIQUIDS. RICHARD J. SAWKEY, South Hill, near Ashford, County of Kent, England. Filed June 26, 1883. (No model.) Patented in Germany May 26, 1883, No. 24,740, and June 19, 1883, No. 25,679; in England June 9, 1883, No. 2,883; in Victoria Aug. 7, 1883, No. 3,516; in South Australia Aug. 13, 1883, No. 380, and in New South Wales Oct. 11, 1883, No. 12,341.

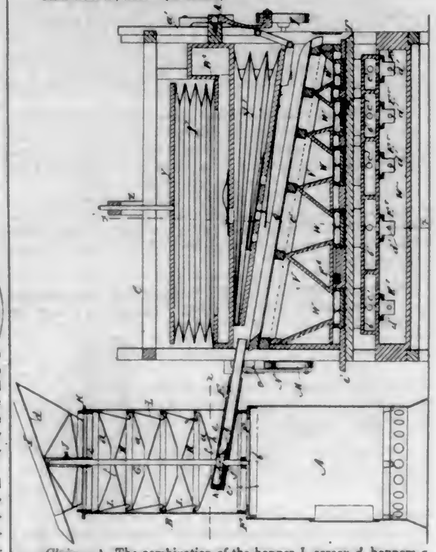


294,156.

Claim.—1. The herein-described method of holding to place an elastic seating, located in the neck of a bottle, consisting in introducing into such neck and against such seating a severed or a non-severed ring and effecting the expansion of such ring within the neck while the ring is in its cold or unheated state.

2. A bottle for internal stoppers having a seating fixed against a shoulder in the neck thereof by means of a severed or cut ring of suitable flexible material, substantially in the manner hereinbefore described, and illustrated in the accompanying drawings.

294,157. ORE DRIER AND SEPARATOR. ALBERT SENEFF, Laramie City, Wyo., assignor to himself and Francis Mulhern, same place. Filed June 30, 1883. (No model.)



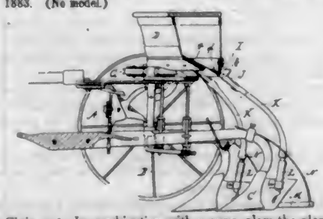
Claim.—1. The combination of the hopper I, screen *d*, hoppers *a*, conical disks H, shaft G, heat-flue B, and vibrating spout E, as and for the purpose described.

2. The combination of the spout E, jacket *e*, sliding bar O, shaft G, the hopper, and the disks, as and for the purpose set forth.

3 The combination, in an ore-separator, of the sloping graded and shaking screen Q, series of hoppers W, shakers X, blow-pipes c^3, and receptacles D^4, substantially as described.

4. The bellows Y', regulator Y, conductors B^3, and the air-trunk *w*, in combination with the blow-pipes c^3, shaking-spouts X, and the receptacles D^4, substantially as described.

294,158. SEEDING-MACHINE. ABRAHAM SHAFFER, Canopolis, Mich., assignor of one-fourth to Carlton E. Sage, Elkhart, Ind. Filed Aug. 27, 1883. (No model.)



Claim.—1. In combination with a gang-plow the plows of which are adapted to cut furrows of uniform depth, a seeding attachment for conducting the seed to the furrows, and means, as M, in the rear of each plow for covering the seed as it is dropped, substantially as set forth.

2. A seeding attachment provided with an endless carrier running continuously in the same direction, and operated by one of the traction-wheels for continuously delivering the seed to the spout, substantially as and for the purposes described.

3. A seed-box provided with an inclined bottom, *a*, openings *c*, trough *b*, and a regulating-slide, E, in combination with an endless carrier, I, adapted to be operated from one of the traction-wheels of the device to which it is attached, substantially as and for the purposes specified.

4. In combination with a series of gang-plows, C, mounted upon a suitable frame and traction-wheel, with a seed-box D, slide E, groove-pulleys G and H, endless carrier I, spouts J K, spreader-spouts L, and spring spreader-bar M, when constructed, arranged, and operating substantially in the manner and for the purposes described.

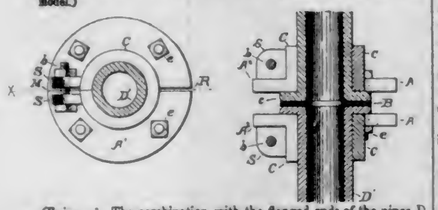
294,159. **PROCESS OF EXTRACTING SUGAR FROM MOLASSES, SIRUPS, AND THE JUICES OF PLANTS.** CARL STETTEN, Vienna, Austria-Hungary. Filed June 6, 1883. (No specimens.) Patented in Germany Mar. 26, 1883, and in Austria May 3, 1883.

Claim.—1. The herein-described improvement in the art of forming insoluble calcareous saccharate, which consists in mixing with an aqueous saccharine solution enough lime at one dose to form, first, a lime-saturated saccharine solution, and, second, a precipitate of calcareous saccharate, the temperature of the mixture being maintained during the operation below 95° Fahrenheit, and as nearly uniform as possible, substantially as set forth.

2. The herein-described process of forming calcareous saccharate, which constitutes a continuous step in my process, and which consists in mixing previously-precipitated saccharate with an aqueous saccharine solution, and then precipitating the saccharate by the addition of lime or a further quantity of the saccharate, substantially as set forth.

3. The herein-described process of reducing the percentage of lime in the finished and purified saccharate before its conversion into sugar, which consists in mixing the hard purified saccharate with a saccharine liquid, and then separating the precipitated hydrate of lime by filtering, substantially as set forth.

294,160. **METALLIC STEAM-PIPE CONNECTION.** JOHN M. SWEENEY, Wheeling, W. Va. Filed Nov. 21, 1882. Renewed Oct. 5, 1883. (No model.)



Claim.—1. The combination, with the flanged ends of the pipes D D', of the laterally-split collars A, adapted to be sprung one upon the end of each pipe, and to be connected by longitudinal bolts *c c*, substantially as described.

2. An improved flange-coupling for connecting pipe ends together, consisting of a ring, A^2, and collar C, the flange cut through to the collar at R, and cut through the flange and collar at *m*, and having lugs S S and compression-bolt *b*, substantially as and for the purpose set forth.

3. In combination with the pipes, a coupling consisting of an annular collar, C, and a base-ring, A^2, split upon one side entirely through said collar and base-ring, and upon the opposite side through the said base-ring alone, and having means, substantially as described, for clamping it upon the end of the pipe, substantially as described.

294,161. **LUBRICATOR.** JOHN C. THAYER, Chicago, Ill. Filed June 20, 1882. (No model.)

Claim.—1. The combination, in a lubricator, of a sight-feed tube filled with alternately-arranged portions of oil and water during the operation of the lubricator, and means for supplying said oil and water to the sight-feed, substantially as described.

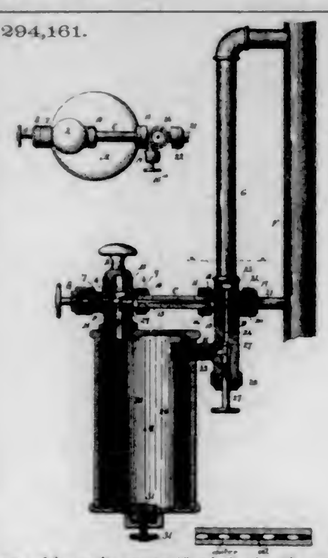
2. The combination of the sight-feed of a lubricator, with oil-passages leading from the reservoir, and a water-eduction passage intersecting with said oil-passages, substantially as and for the purpose described.

3. The combination of the sight-feed of a lubricator, with intersecting oil and water eduction passages, and a valve controlling one of said passages, substantially as described.

4. The plug B, provided with passages 3 4, and a water-cut-off passage, in combination with an oil-reservoir and means for conducting the oil and water to said passage and the device to be lubricated, substantially as described.

5. The combination, with the sight-feed and the oil-passage leading

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thereto, of the angular passages 15 and 18 and a valve working in said passages at their intersection, substantially as described.

6. The reservoir, the casting D, provided with passages 24 and 25, valve 27, induction-pipe 26, and eduction-pipe 30, in combination with plug B, cut-off passage 29, passage 4, valve 6, and sight-feed tube C, substantially as described.

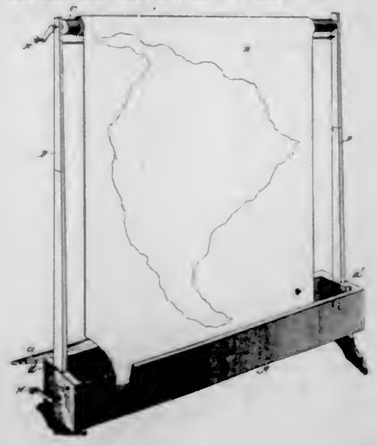
7. The casting D, provided with the passages 24 25 and 15 18, induction-pipe 26, valve 27, and the reservoir, in combination with the plug B, provided with passages 3 and 4, cut-off 29, eduction-pipe 30, and a sight-feed tube, substantially as described.

8. The reservoir, the casting D, and plug B, constructed as described, induction-pipe 26, eduction-pipe 30, and valves 6 and 27, in combination with the sight-feed C, condensing-pipe G, steam-pipe H, and nipple 21, substantially as described.

9. The herein-described method of lubricating, the same consisting in continuously feeding a stream composed of alternate portions of oil and water through a passage or passages leading to the device to be lubricated.

10. The herein-described method of lubricating, the same consisting in continuously feeding a regulated stream composed of alternate portions of oil and water, in desired variable proportions, through a passage or passages leading to the device to be lubricated.

294,162. **COMBINED MAP CASE AND HOLDER.** JEROME TRAVIS, North Adams, Mich. Filed Oct. 8, 1883. (No model.)



Claim.—1. A portable map-holder consisting of a case provided with map-rollers, and with a pair of detachable standards adapted, when set upon the case, to support in an elevated position a roller for holding the map in a spread-out condition, substantially as described.

2. The combination, with the map-case provided with a pair of map-rollers, of the removable sectional standards adapted to support a roller above the case, one of said rollers being removably journaled within the case, whereby it can be removed and mounted between the standards, substantially as described.

3. The herein-described portable map-holder, comprising map-rollers and removable sectional standards, all capable of being contained within the case, said standards and one of the rollers being also capable of adjustment above the case, substantially in the manner and for the purpose specified.

4. The combination, with the case A, of the sectional standards removably supported thereon, the upper map-roller mounted between the upper ends of the standards, the lower map-roller mounted in the box, the map disposed substantially as described, and the crank-handles for operating the map-rollers, substantially as and for the purpose set forth.

5. The map-case A, containing a pair of map-rollers, and having sockets for receiving a pair of standards for supporting a roller for the maps thereon, said case being provided with a hinged lid, substantially as described.

294,163. **AUTOMATIC LUBRICATOR.** JOHN C. THAYER, Chicago, Ill., assignor of one-half to Charles H. Morse, same place. Filed Oct. 17, 1883. (No model.)

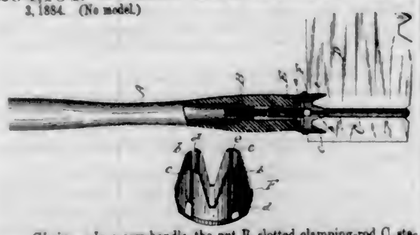


Claim.—1. In a lubricator, the valve provided with a stem having an elongated opening, in combination with the right-angled lever having a fixed pivot bearing in its angle, its perpendicular arm weighted at the upper end, and its other arm working loose in the elongated opening in the valve-stem, substantially as described.

2. The reservoir and the valve provided with a stem having a bearing at each extremity of the reservoir, in combination with an angular lever connected with said stem, and having a fixed pivot bearing in its angle, and its perpendicular arm weighted, substantially as described.

3. The reservoir, the valve seated in the bottom thereof, the valve-stem extending the length of the reservoir, and an angular lever pivoted in its angle for automatically actuating said valve, in combination with a filling-plug provided with an axial bore receiving said stem, and an adjusting-screw working in said plug, substantially as and for the purpose described.

294,164. **SAW-HANDLE.** MOSES E. TRUE, Batavia, N. Y. Filed Jan. 3, 1884. (No model.)



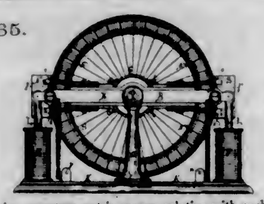
Claim.—In a saw-handle, the nut B, slotted clamping-rod C, stationary ferrule E, having the lugs *a*, in combination with the loose ferrule F, having the braces *b* and *c*, and provided with sets of slots of different sizes, so arranged that the slots diametrically opposite each other are of the same size, substantially as and for the purpose shown and described.

294,165. **MOTOR FOR ELECTRIC REGULATORS.** CHARLES J. VAN DEPOELE, Chicago, Ill. Filed June 14, 1883. (Model.)

Claim.—1. A motor for electric regulators, consisting of a stationary electro-magnet and a revolving armature disposed between the opposite poles of said electro-magnet, in combination with a commutator and four brushes constantly in contact with said commutator, and means for allowing the current to pass through all four of the brushes, as shown, so as to prevent the armature from revolving or moving either way, as above described and set forth.

2. In a motor for electric regulators, a stationary electro-magnet,

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and a revolving armature put in proper relation with each other's poles, in combination with a commutator to said revolving armature, upon which four brushes are constantly pressing, and proper means to put a diametrically-opposite pair of said brushes out of circuit, in order to make the armature in the device to rotate either to the right or to the left, according to the position of the pair of brushes remaining in circuit, with regard to the stationary poles of the electro-magnet, substantially as described.

3. In a motor for electric regulators, a revolving armature placed between the poles of a stationary electro-magnet, the commutator to said armature provided with four contact-brushes constantly pressing upon said commutator, in combination with two insulated contacts borne by an oscillating beam, which will keep all four of the brushes in circuit when the apparatus is to be kept stationary, but which on the oscillating of said beam will cut out of circuit one pair of diametrically-opposite brushes, while the other pair remain in circuit, so as to produce the motion in said armature from its highest point of attraction toward the stationary poles of its field-magnet, as above shown and described.

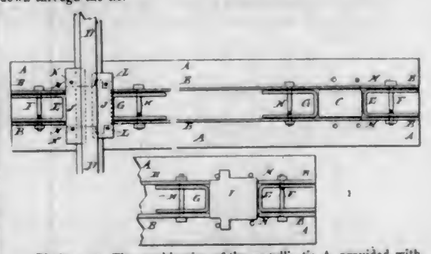
4. A motor for electric regulators, consisting of an electro-magnet, M M, having its poles N and S, between which a circular armature, A, is placed capable of revolving on its center, either to the right or the left, by the action of an electric current directed by brushes *a a'* and *b b'*, all bearing upon a commutator, C, and an oscillating beam, B B, carrying insulated contacts I and I' in connection with the brushes, and so disposed as to allow the current to circulate through four brushes at the same time, and by locating the centers of attraction in the revolving armature at points opposite the centers of attraction in its field-magnet to keep the said armature stationary, but when it is desired to revolve A either to the right or the left, I and I', to break contact with either pair of diametrically-opposite brushes, and thereby displacing the polarity in the revolving armature with regard to the stationary poles N and S, and producing motion in A corresponding to the two brushes left in circuit, as set forth.

5. In a motor for electric regulators, a revolving armature and its commutator, in combination with four brushes constantly in contact with said commutator and on opposite sides of the latter, and a means for cutting either out or in circuit a pair of diametrically-opposite brushes, in order to alter the position of polarity in the revolving armature with regard to two stationary magnetic points, and so to produce motion in said armature in such direction as determined by the action of the current through the brushes left in circuit.

6. In a motor for electric regulators having a stationary field-magnet and rotating armature, the commutator whereof is provided with two pairs of opposing or oppositely-placed contact-brushes, an oscillating contact-breaking device capable of making contact with all the brushes at once, and means, substantially as described, whereby the same is adapted to break contact with either pair of opposing brushes without breaking the main circuit, as set forth.

294,166. **METALLIC RAILROAD-TIE.** CHARLES H. VAN ORDEN, Catskill, N. Y. Filed Aug. 23, 1883. (No model.)

Brief.—Between the vertical flanges of the metallic tie and at the ends a rail-supporting block is held by U-shaped bars bolted to the flanges. A wear-plate is secured to the top of the block by bolts passed down through the tie.

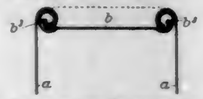


Claim.—1. The combination of the metallic tie A, provided with the flanges B, with the block C, held in place by the U-shaped bars E G, placed upon either side of said block, the arms of said U-shaped bars being attached to the flange B by bolts, keys, or other suitable means passing through said arms and flanges, substantially as set forth.

2. The combination of the tie A B, having the rail-supporting block C, provided with the wear-plate I, resting against the shoulder M of bolts, for securing said wear-plate and the rail in place on the tie, substantially as set forth.

3. The combination of the flanged and shouldered tie A B M with the rail-chairs J J, the outer ones of which are secured by bolts passing vertically through them and the tie, and the inner ones of which are secured by bolts passing through them and the tie in an inwardly-inclined direction, whereby a firm support against lateral strain is afforded the rails, substantially as described.

294,167. SEAM FOR SHEET-METAL VESSELS. FRANCIS A. WALSH, Chicago, Ill. Filed July 2, 1883. (No model.)

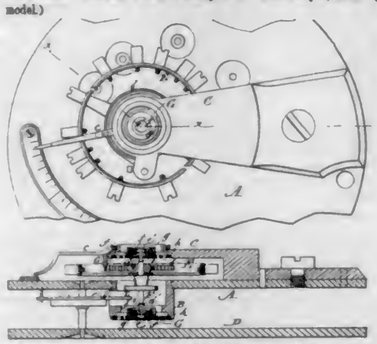


Claim.—1. A seam or joint for uniting the bodies and ends of sheet-metal vessels, wherein the body and flange of the end are rolled inward upon the end of the can, substantially as specified.

2. In combination with a straight can body and end united by an involute seam, a packing applied substantially as specified.

3. A sheet-metal vessel formed of the straight-sided body *a* and head or end *b*, provided with a groove, *b'*, the body and end being united by an involute seam, substantially as specified.

294,168. JEWEL-SUPPORT FOR THE BALANCE-STAFFS OF WATCHES. WALTER WARK, Waverly, N. Y. Filed July 5, 1883. (No model.)

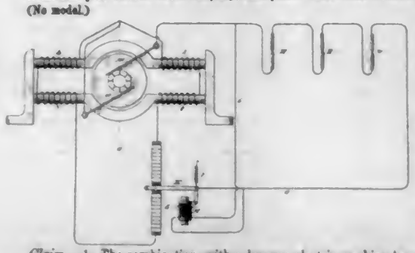


Claim.—1. In a jewel-bearing for the balance-staffs of watches and other time-pieces, the combination, with the box *g*, in which the settings are secured, of the single spring G, to the center of which the box *g* is secured, substantially as herein shown and described.

2. In a jewel-bearing for the balance-staff of a watch, the combination, with the internally-threaded box *g*, of the exteriorly-threaded settings *f f*, substantially as herein shown and described.

3. An improved spring for supporting the jewel-bearings of the balance-staff of a time-piece, constructed of a plate of elastic material having a series of interrupted and connected concentric slots, and branch slot extending to and through the outer edge of the plate, substantially as herein shown and described.

294,169. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. ADDISON G. WATERHOUSE, New York, N. Y., assignor, by mesne assignments, to the Schuyler Electric Light Company, same place. Filed June 12, 1883. (No model.)



Claim.—1. The combination, with a dynamo-electric machine having two field-magnetizing current-coils or sets of coils working in harmony to produce the field magnetism in which the armature moves, of means for increasing one magnetizing-current and simultaneously decreasing the other magnetizing-current to the same extent, so as to keep the total magnetizing influence of the currents or coils the same, whatever the adjustment, but at the same time to shift the poles of the field-magnet.

2. The combination, with a dynamo-electric machine having two paths or circuits in its field-magnet carrying currents that act in conjunction in producing the field magnetism, of means for increasing the flow of the current in one circuit and simultaneously decreasing the flow in the other to the same extent, without varying the total magnetizing-current, substantially as and for the purpose described.

3. The combination, with a dynamo-electric machine having two field-magnet circuits, of a reciprocating adjustable resistance device interposed in said circuits, and arranged and constructed in the manner described, to increase the resistance in one circuit simultaneously with producing a decrease in the other, without, however, disturbing the total amount of current-circulation in the two circuits.

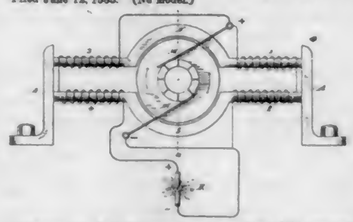
4. The combination, in a dynamo-electric machine, of two field-magnet circuits and an automatic current-distributer, whereby the magnetizing effects of one circuit may be increased simultaneously with a corresponding decrease in the other circuit, as and for the purpose described.

5. The combination, with a dynamo-electric machine, of two sets of field-magnet circuits carrying currents that act in conjunction to produce the field magnetism in which the armature moves, and a current-regulator for increasing the magnetizing action in one circuit and simultaneously and to the same extent decreasing the magnetizing effects in the other, and vice versa.

6. The combination, with two sets of field-magnet coils acting in conjunction to produce consequent polarity in the field-of-force pole-pieces, of two adjustable resistances, one for each set, and means for increasing one resistance and simultaneously and to a corresponding extent decreasing the other.

7. The combination, with two sets of field-magnet coils, of the two carbon resistances and the intermediate pressure-bar, E, as and for the purpose described.

294,170. AUTOMATIC REGULATOR FOR DYNAMO-ELECTRIC MACHINES. ADDISON G. WATERHOUSE, New York, N. Y., assignor, by mesne assignments, to the Schuyler Electric Light Company, same place. Filed June 12, 1883. (No model.)



Claim.—1. In a dynamo-electric machine, field-magnet coils divided into sets, as described, such that a diminution or a variation of current in one set will cause a shifting of the consequent points of the field-magnet, one of said sets being arranged in a derived circuit around the working-resistance.

2. The combination, in a dynamo-electric machine, of two field-magnet coils or bobbins conspiring to produce consequent polarity in an intermediate field-pole, one of said coils or bobbins being arranged in a direct circuit with the working-resistances, and the other, of higher resistance, being arranged in a derived circuit around the working-resistances.

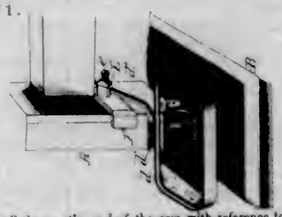
3. The combination, substantially as described, of four field-magnet coils wound in the manner described, to produce consequent polarity in the field-of-force pole-pieces, one set of coils being arranged in a direct circuit with the working-resistance and the other in a derived circuit, so that a variation of the distribution of currents in said coils consequent upon change of working-resistance will shift or distort the consequent points of the pole-pieces.

4. The combination, substantially as described, with a field-of-force magnet, of four magnetizing-coils acting to produce consequent poles, said coils being divided into two sets, each including two diagonally-opposite coils, one of which sets is in a derived circuit around the working-resistances, while the other set is in direct circuit therewith.

294,171. OPTICAL ATTACHMENT FOR SEWING-MACHINES. JEREMIAH WATTS, Racine, Wis. Filed Apr. 14, 1883. (No model.)

Claim.—1. In a sewing-machine, the combination of the needle, needle-bar, the head, a clamp upon the head, an adjustable arm held by the clamp, and a magnifying-glass and frame therefor, the said frame being jointed to the adjustable arm, whereby the position of the glass

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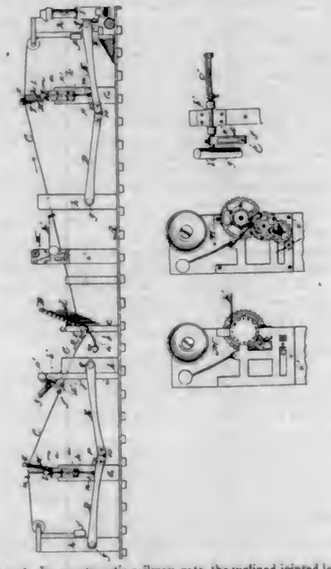


may be controlled upon the end of the arm with reference to the work under the needle, substantially as set forth.

2. In combination with the head of a sewing-machine, a magnifying-glass held by an adjustable arm secured thereto, and provided with a hinge, whereby it may be turned up against the said part when not in use, as set forth.

294,172. RAILWAY GATE AND SIGNAL. HENRY F. WIGHT, Boston, and HOSEA P. ALDRICH, Somerville, assignors of one-half to Samuel N. Aldrich, Marboro, Mass. Filed Dec. 8, 1883. (No model.)

Brief.—A pivoted gate is operated by a wire rope connected to a crank-arm mounted on a support at the side of the track, and which is operated to open and close the gate by means of two inclined jointed and pivoted levers actuated by a projecting arm on the locomotive or car. A signal and an alarm are operated by the same mechanism.



Claim.—1. In an automatic railway-gate, the inclined jointed levers D E, pivoted above the level of the track to supports A, and arranged alongside of and parallel with the said track, and adapted to be vibrated together by an arm, K, projecting out laterally from a locomotive or car, in combination with the pivoted gate B, connected by a wire rope, C, with a bell-crank lever, H, actuated by the jointed levers D E, all constructed to operate substantially in the manner and for the purpose described.

2. The combination, with the pivoted gate B, of two pairs of inclined levers, D E, each pair jointed together at 10 and located one pair on each side of the gate, mechanism, substantially as described, adapted to be operated by said jointed levers, and the wire rope C, for connecting the lever mechanism with the gate B, whereby the gate is first closed on the approach of the train by the contact of the arm K with one pair of levers, and then opened after the passage of the train by the contact of the arm K with the other pair of levers, substantially as set forth.

3. In an automatic railway-gate, the combination, with the inclined jointed levers D E, pivoted above the level of the track and arranged alongside of the same, of the adjustable suspension-rod *k*, sliding vertically in guides *a* on the post G, and provided with a collar or stop, *l*, substantially as and for the purpose set forth.

4. In an automatic railway-gate, the combination, with the inclined jointed levers D E, pivoted above the level of the track, of the crank-arm H, adapted to slip over the wire rope C, passing through its upper end, and operate the same by contact with a collar thereon, substantially as described.

5. The combination, with the inclined jointed levers D E, crank-arm H, and wire rope C, operated as described, of the rock-shaft *b'*, with its arm *d'* and signal *c'*, operating substantially as set forth.

6. The combination, with the signal *c'*, mounted upon a rock-shaft, *b'*, having a slotted arm *d'*, vibrated by collars *f'* upon the wire rope C, of the tubular guide *g'* and rolling counter-weight or ball *h'*, all constructed to operate substantially in the manner and for the purpose set forth.

7. The combination, with the inclined jointed levers D E, crank-arm H, and wire rope C, operated as described, of the bell-alarm M, adapted to be set in operation by the movement of the rope C, substantially as set forth.

294,173. RUBBER BOOT OR SHOE. ISAAC F. WILLIAMS, Bristol, R. I. Filed June 24, 1882. (No model.)



Claim.—1. A rubber boot or shoe lined with a fabric having on its inner face fibrous surfaces, and intervening rubber-coated surfaces, substantially as described.

2. In a rubber boot or shoe, a fibrous lining having upon its inner face parallel raised ribs, and intermediate surfaces of rubber, substantially as described.

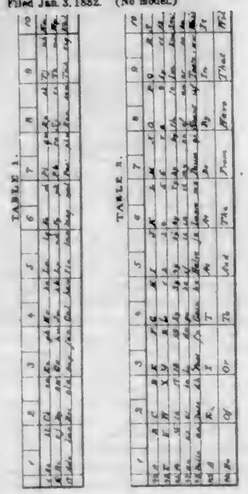
294,174. RUBBER BOOT OR SHOE. ISAAC F. WILLIAMS, Bristol, R. I. Filed Aug. 28, 1883. (No model.)



Claim.—1. Rubber boots and shoes having a tap or tread sole and a heel, or either of them, united to the main sole by the ordinary method, supplemented by rubber studs or tenons and mortises, substantially as described.

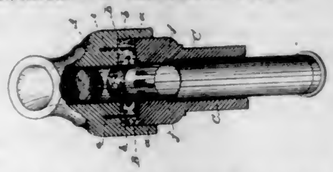
2. The combination, substantially as hereinbefore described, of the rubber main sole, the rubber heel, and the interlocking rubber studs or tenons, whereby, with the usual vulcanizing operations, the heel and sole are firmly united, as set forth.

294,175. CRYPTOGRAPHEAL TABLE. JOHN L. WINNEA, San Francisco, Cal. Filed Jan. 3, 1882. (No model.)



Claim.—A table or tables from which cryptograms with keys therefor may be constructed, consisting of columns of letters, figures, words, or symbols, and corresponding lines or columns of numerals or figures above or at one side, together with blank spaces, in which other independent numerals or figures may be inserted, substantially as herein described.

294,176. CARTRIDGE IMPLEMENT. MARCELLUS SHERRARD ALEXANDER, Moorefield, W. Va. Filed Jan. 3, 1884. (No model.)



Claim.—1. In an implement for dampening and seating gummed wads in cartridges, the combination, with the cylindrical portion adapted to receive the wad and guide it into the shell, substantially as described, of the sponge having a central opening for the passage of the wad placed within said cylindrical portion.

2. In an implement for seating wads in cartridges, the cylindrical body composed of the portion A, provided with the projections *e* and the depending flange *a*, and the portion C, having the shoulder *f*, in combination with the sponge B, substantially as described.

3. In an implement for seating wads in cartridges, the cylindrical body composed of the portion A, provided with the projections *e* and the depending flange *a*, and the portion C, having the notched shoulder, as described, in combination with the sponge B, substantially as described.

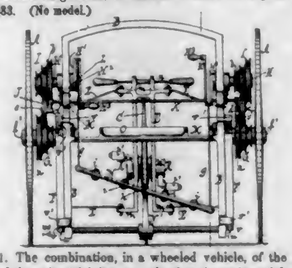
294,177. GUN-WAD. MARCELLUS SHERRARD ALEXANDER, Moorefield, W. Va. Filed Jan. 3, 1884. (No model.)



Claim.—1. The combination, with a gun-wad, of a disk of suitable material attached thereto, and extending a short distance beyond the periphery of said wad, said projecting portion being provided with adhesive material for securing the wad in place, substantially as described.

2. The combination, with a gun-wad, of a disk of suitable material attached thereto, and having the notched projecting portion provided with a coating of adhesive material, substantially as and for the purpose set forth.

294,178. VELOCIPEDE. ARTHUR M. ALLEN, New York, N. Y., assignor, by mesne assignments, to Leonora I. Allen, same place. Filed Apr. 12, 1883. (No model.)



Claim.—1. The combination, in a wheeled vehicle, of the pair of wheel-cones and the pair of driving-cones having circumferential grooves corresponding to each other, the pair of gear-wheels adapted to enter said grooves for connecting the wheel-cones with the driving-cones, a means for throwing the gear-wheels into and out of action, either independently from or in unison with each other, and a means, substantially such as herein described, for operating the driving-cones.

2. The combination, substantially as hereinbefore set forth, of the pair of wheel-cones and the pair of driving-cones having circumferential grooves corresponding to each other, the pair of gear-wheels adapted to enter said grooves for connecting the wheel-cones with the driving-cones, a support common to both gear-wheels for throwing them into and out of action, and a means, substantially such as herein described, for operating the driving-cones.

3. The combination, in a wheeled vehicle, of the pair of wheel-cones and the pair of driving-cones having circumferential grooves corresponding to each other, the pair of gear-wheels adapted to enter said grooves for connecting the wheel-cones with the driving-cones, a means for throwing the gear-wheels into and out of action independently from or in unison with each other and adjusting them to different grooves of the cones, and a means, substantially such as herein described, for operating the driving-cones.

4. The combination, in a wheeled vehicle, of the pair of wheel-cones and the pair of driving-cones having circumferential grooves corresponding to each other, the pair of gear-wheels adapted to enter said grooves for connecting the wheel-cones with the driving-cones, a support common to both gear-wheels for throwing them into and out of action and adjusting them to different grooves of the cones, and a means, substantially such as herein described, for operating the driving-cones.

5. The combination, substantially as hereinbefore described, of the pair of road-wheels having central cones, the pair of driving-cones, the pair of gear-wheels for connecting the wheel-cones with the driving-cones, and the longitudinally and laterally movable hand-rod supporting both gear-wheels.

6. The combination, substantially as hereinbefore described, of the pair of road-wheels having central cones, the pair of driving-cones, the pair of gear-wheels for connecting the wheel-cones with the driving-cones, the hand-rod supporting both gear-wheels, and the levers supporting the hand-rod.

7. The combination, substantially as hereinbefore described, of the pair of road-wheels, the operating-cranks, the foot-bar, the rods connecting the foot-bar to said cranks, and a means for throwing each crank into and out of gear with its road-wheel independently of the other.

8. In a wheeled vehicle, the combination, with a road-wheel, a driving medium having a fixed relation to the road-wheel, and with foot-gear for operating the driving medium, of a gear-wheel for connecting the road-wheel with the driving medium, and a support for the gear-wheel adapted to be adjusted for throwing said wheel into and out of action, whereby the power may be taken off from the road-wheel without affecting the driving medium or foot-gear.

9. In a wheeled vehicle, the combination, with a road-wheel and a driving medium having a fixed relation to the road-wheel, of a gear-wheel for connecting the road-wheel with the driving medium, a support for the gear-wheel adapted to be adjusted for throwing said wheel into and out of action, and a brake connected to said wheel-support to act on the road-wheel when the gear-wheel is thrown out of action.

10. The combination, substantially as hereinbefore described, of the pair of road-wheels having central cones, the driving-cones, the gear-wheels for connecting the wheel-cones with the driving-cones, the hand-rod supporting the gear-wheels, and the brake-straps connected to the hand-rod, to be applied thereby to the wheel-cones when the gear-wheels are thrown out of action.

11. In a wheeled vehicle, the combination, with a road-wheel, of a movable frame connected to the axle of said wheel, and a driving medium arranged in the frame to act on the road-wheel by the friction maintained between it and the wheel by the weight of the load.

12. In a wheeled vehicle, the combination of a road-wheel having a central cone or pulley, a movable frame connected to the axle of said wheel, a driving cone or pulley arranged in the frame above the wheel cone or pulley to maintain friction, and a gear-wheel connecting the wheel-cone with the driving-cone.

13. The combination, substantially as hereinbefore described, of the pair of road-wheels having central cones, the movable frame, the pendants connecting the frame to the axles of the wheels, the driving-cones arranged in the frame, and the gear-wheels connecting the wheel-cones with the driving-cones.

14. The combination, substantially as hereinbefore described, of the pendants having knuckles *v*, the frame having knuckles *v'*, the pivots passing through said knuckles, the pair of road-wheels having central cones, the driving-cones arranged in the frame, and the gear-wheels connecting the wheel-cones with the driving-cones.

15. The combination, substantially as hereinbefore described, with the pair of road-wheels, of the pendants having knuckles *v*, the frame having knuckles *v'*, and the pivots passing through said knuckles, and having different lengths on the respective edges of the frame.

16. The combination, substantially as hereinbefore described, with the pair of road-wheels and driving-gear, of the foot-bar oscillating on a central pivot and connecting with the driving-gear, and a series of pedals arranged on each side of said pivot, at equal distances therefrom, upon the foot-bar, whereby a positive hold is afforded to the feet of the rider at different portions of the bar.

17. The combination, substantially as hereinbefore described, with the pair of road-wheels and their driving-gear, of the crank-shafts concomitant to the driving-gear, the cranks, each having its pin provided with a supplemental arm carrying a handle diametrically opposite to the crank-pin, the oscillating foot-bar, and the rods connecting said bar to the crank-pins, whereby an alternating action of the hands and feet is produced.

18. The combination, substantially as hereinbefore described, of the reversible seat O with the frame B, the pair of road-wheels, and the road-wheel driving-gear.

19. The combination, substantially as hereinbefore described, of the reversible seat O and the reversible hand-rod K with the frame B, the pair of road-wheels, and the road-wheel driving-gear.

20. The combination, substantially as hereinbefore described, of the reversible seat O and the reversible oscillating foot-bar N with the frame B, the pair of road-wheels, and the road-wheel driving-gear.

21. The combination, substantially as hereinbefore described, of the reversible seat O, the reversible hand-rod K, and the reversible oscillating foot-bar N with the frame B, the pair of road-wheels, and the road-wheel driving-gear.

22. The combination, substantially as hereinbefore described, of the frame B, the frame D and its seat, the pair of road-wheels, and the single road-wheel supporting said frames, respectively, and the connecting-rods united to the opposite sides of said frames above and below the wheel-axles by coincident pivots.

23. The combination, substantially as hereinbefore described, of the frame D, having the reversible seat P, and the single road-wheel supporting said frame, and having a cranked axle.

24. The combination, substantially as hereinbefore described, of the frame D, the single road-wheel, the wheel-axle having its bearings in the sides of said frame, and having the collar and screw-nut on opposite sides of the wheel-hub, and the washers interposed between said collar and nut and the sides of the frame.

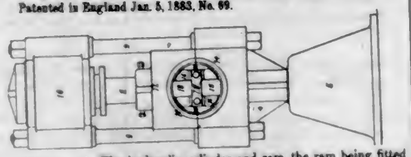
25. The combination, substantially as hereinbefore described, of the frame B, the single road-wheel, the wheel-axle having its bearings in the sides of said frame, and having the collar and screw-nut on opposite sides of the wheel-hub, the bushes fitted to said bearings of the axle, and the washers interposed between said collar and nut and the sides of the frame.

26. The combination, substantially as hereinbefore described, of the frame D, the single road-wheel, the wheel-axle, the split cranks arranged thereon, and provided with pedals, and bolts for clamping the jaws of said cranks on the axle.

27. The combination, substantially as hereinbefore described, of the frame D, the single road-wheel, the wheel-axle, the split cranks arranged thereon, the bent pins fitted between the jaws of said cranks, and bolts for clamping said jaws of the cranks on the axle and on the crank-pins.

28. The combination, substantially as hereinbefore described, of the frame D, the single road-wheel, the wheel-axle, the split cranks arranged thereon, the bent pins fitted between the jaws of said cranks, bolts for clamping said jaws, and pedals mounted on the bent pins.

294,179. DEVICE FOR WELDING BOILERS, &c. STEPHEN ALLEY, Glasgow, County of Lanark, Scotland. Filed Oct. 2, 1883. (No model.) Patented in England Jan. 5, 1883, No. 99.



Claim.—1. The hydraulic cylinder and ram, the ram being fitted with two rollers, one to roll along and operate with welding-pressure on the joint, and the other to roll along the opposite part of the shell, in combination with external blocks or parts, which confine the shell and prevent its enlargement, substantially as herein set forth.

2. A hydraulic cylinder, ram, and welding-rollers, and devices applied to the outside of a shell to keep it in place, the whole mounted on a turn-table, in combination with a series of furnaces arranged radially in relation to the center of the turn-table, substantially as described.

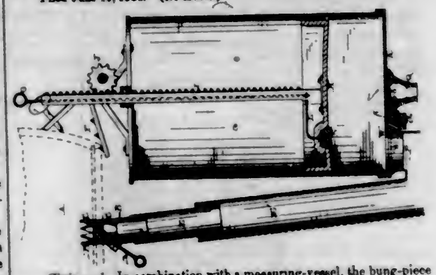
294,180. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. CHARLES E. BALL, Philadelphia, Pa. Filed Nov. 19, 1883. (No model.)



Claim.—1. An automatic regulator for a dynamo-electric machine, comprising an electro-magnet or solenoid in the external circuit of the machine, and having its armature or core connected to both the commutator brushes or collectors, said brushes or collectors being movable toward and from each other, substantially as shown and described.

2. In a dynamo-electric machine in which the armature is adapted and designed to rotate in the inductive field of only one magnetic pole, the combination, with two movable commutator brushes or collectors, of an electro-magnet or solenoid in the external circuit of the machine, and having its armature or core connected with both said brushes or collectors, whereby variations in said circuit will affect said magnet and produce the movement of both said brushes or collectors, substantially as shown and described.

294,181. MEASURING-TANK. WILLARD E. BARGUR, Vineland, N. J. Filed June 19, 1883. (No model.)



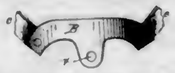
Claim.—1. In combination with a measuring-vessel, the bung-piece B, having its inner end shaped as shown, the plug C, and the rod D, passing through an opening in the side of the bung-piece, whereby the plug can be moved in and out of the mouth of the bung-piece, substantially as shown.

2. In a measuring-vessel, the combination of the rotary valve, having but a single opening through it, and adapted to be turned one-half way round, with the cap-piece provided with two openings, and the head of the cylinder having suitable recesses to receive the two parts, and provided with suitable inlet and outlet openings for the passage of the fluid, substantially as set forth.

3. In a measuring-vessel, the combination of the valve, provided with the suitable packing material upon its under side, and having a curved flange upon its top, with the cap-plate, provided with two openings, and having a groove in its under side to receive the curved flange, substantially as specified.

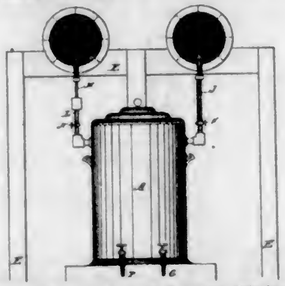
4. The combination, with a measuring-vessel, of the pivoted arms and a slide or other device for closing the arms, substantially as shown.

294,182. SKATE-FASTENING. EVERETT H. BARNEY, Springfield, Mass. Filed Dec. 31, 1883. (No model.)



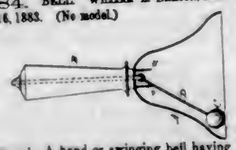
Claim.—The within-described portable skate-fastening, consisting of a metallic strap-yoke having a perforated leg, and having straps attached to its arms, substantially as and for the purpose set forth.

294,183. BEER-COOLER. CHAS. A. BARTLETT, Bartlett, Tenn. Filed July 2, 1883. (No model.)



Claim.—The combination, with the cooler, of the ice-basket formed of pipe F, having two inlets for stale and fresh beer, respectively, and an outlet for drawing off the beer after it is mixed and cooled, substantially as shown and described.

294,184. BELL. WILLIAM E. BARTON, East Hampton, Conn. Filed July 16, 1883. (No model.)

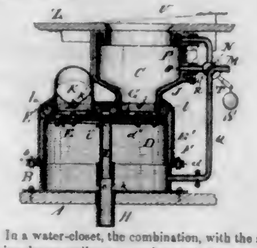


Claim.—1. A hand or swinging bell having the hammer centrally suspended therein by an elastic arm, a concentric circular stop within the bell between the point where the hammer is suspended and the hammer,

to arrest the swing of the arm just before the hammer reaches the bell, substantially as described.

2. The combination of the hand or swinging bell A, internal concentric circular flange, *a*, the bell-hammer having an elastic arm hung within said flange, the said flange serving as a stop to arrest the swing of the arm just before the hammer reaches the bell, substantially as described.

294,185. WATER-CLOSET. EMIL BAUDE, Cincinnati, Ohio. Filed July 18, 1883. (No model.)



Claim.—1. In a water-closet, the combination, with the soil-hopper and soil-pipe having downwardly-presented ports in the same horizontal plane, of the duplex valve, to seat upwardly and simultaneously against said ports by the pressure of water-supply.

2. In a water-closet, the combination, with hopper and soil-pipe having downwardly-presented ports in the same horizontal plane, of duplex valve, hat-formed diaphragm, and temporary receiver.

3. In a water-closet, the combination, with temporary receiver B B' and diaphragm D, of the double-seating valve G, whose tubular and perforate stem I occupies a tubular perforate guide, H, in the reservoir-floor, as and for the purpose set forth.

4. In a water-closet, the described organism, to wit: a soil hopper or bowl and a soil-pipe, both ported downward and at the same level, a valve whose gravity during use of the closet opens both ports simultaneously, and which on vacation of the closet closes both ports simultaneously by pressure of the water-supply, a four-way cock, N, and an operating instrumentality, substantially as set forth.

294,186. BUTTON-HOOK. JAMES CLARENCE BEETLE, New Bedford, Mass. Filed Dec. 27, 1883. (No model.)



Claim.—1. The combination, with a handle, of a button-hook pivoted on the end of the same, and of a spring for holding the hook at right angles to the handle, substantially as herein shown and described.

2. The combination, with a handle, of a tube held on the end of the same, a button-hook pivoted in the outer end of the tube, and a spring held in the tube and acting on the hook in such a manner as to hold it at right angles to the tube, substantially as herein shown and described.

3. The combination, with the handle B, of the tube A, having jaws *a*, and notches *b*, formed on its outer end, the hook C, pivoted in the outer end of the tube A, the spring D, and the chain F, substantially as herein shown and described.

294,187. DEVICE FOR CHECKING HORSES. W. STUART BENTZ and HARRY BENTZ, York, Pa. Filed Nov. 9, 1883. (No model.)

Claim.—1. The axle B', provided with the anti-friction roller *d*, and the shaft C', provided with the drum C and rubber roller D, in combination with the hub D', check-rein *a*, and strap E, all constructed to operate substantially as and for the purpose set forth.

2. The axle B' and shaft C', provided with the drum C and roller



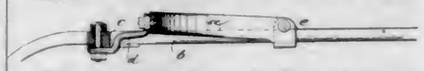
D, in combination with the check-rein *a* and strap E, and spring-pin F, all constructed to operate substantially as and for the purpose set forth.

294,188. REVOLVER. WILLIAM H. BLISS, Norwich, Conn. Filed Dec 17, 1883. (No model.)



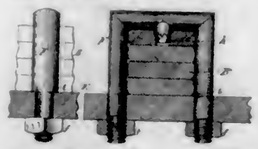
Claim.—In a revolving fire-arm, a cylinder whose rear end is so concaved or cupped that the flanges of the cartridge-shells find a bearing only on the outer edge of said cylinder, forming an anvil immediately opposite that part of the cartridge-head which is to be struck and indented by the falling hammer, as described.

294,189. BREECHING ATTACHMENT FOR CARRIAGE-SHAFTS. SAMUEL WALKER BOOKER, Baton Rouge, La. Filed Oct. 27, 1883. (No model.)



Claim.—In a breeching attachment for carriage-shafts, the combination, with the shafts or thills of a vehicle, of the bow *a*, with its ends clipped to the thills, and its curved rear portion somewhat elevated above a horizontal plane touching the upper surfaces of the shafts, said curved rear portion being connected to the cross-bar of the thills or shafts by an upwardly and downwardly bent or curved rod bolted to said curved rear portion of breeching-bar and thill cross-bar, essentially as shown and described, and for the purpose set forth.

294,190. VEHICLE-SPRING. CHRISTOPHER COLUMBUS BRADLEY, Syracuse, N. Y. Filed Dec. 10, 1883. (No model.)



Claim.—1. The combination, with a carriage-body and carriage-spring, of a clip rigidly secured to the carriage-body and constructed with a projection or stud fitted loosely in a recess in the spring, whereby the spring is held in place, while being permitted to rock in the clip in adjusting itself to the movements of the carriage-body, substantially as described.

2. The combination, with the carriage-body, of end springs, C C, side springs, B B, connected with the end springs by couplings D, and clips F, secured to the carriage-body and having projections *g*, loosely fitted in openings or depressions *h* in the side springs, whereby the springs are held in place, and at the same time permitted to move in the clips, substantially as described.

294,191. RAILROAD-TIE. THOS. BREEN, Knowlton, Pa. Filed May 25, 1883. (No model.)

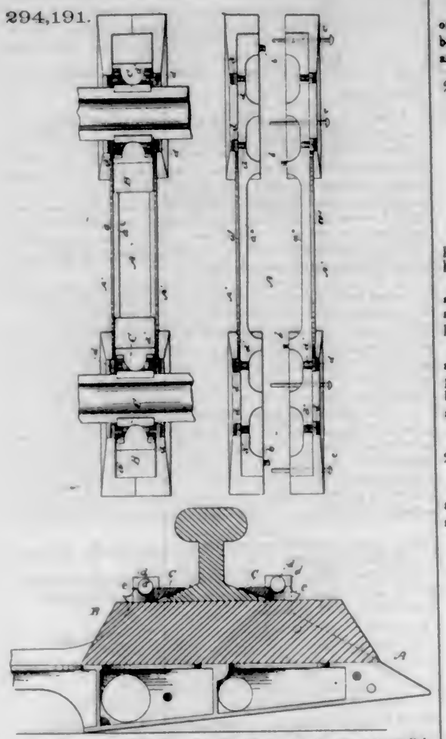
Brief.—A railway-tie having wedge-shaped end portions. The tie is made in readily-separable sections. It has also upwardly-inclined lower surfaces.

Claim.—1. In a railroad-tie, sections A', having wedge-shaped end portions, in combination with blocks B and key-plates C, substantially as shown and described.

2. In a railroad-tie, the end portions and their connections formed in readily-separable sections, said sections having studs and sockets for the latter, to prevent individual endwise displacement, substantially as and for the purpose set forth.

3. In a railroad-tie, the end portions having studs, in combination with the key-plates having concavities in their upper surfaces, and upwardly-inclined lower surfaces, substantially as and for the purpose set forth.

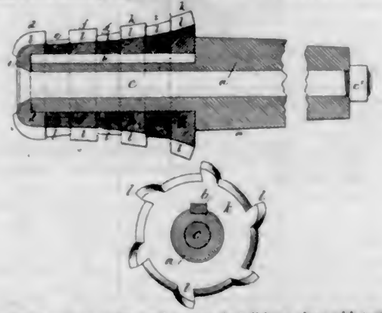
294,191.



4. In a railroad-tie, the end portions having studs arranged parallel with the rail, in combination with the key-plates having concaved upper surfaces, upwardly-inclined under surfaces, and concaved lower outer surfaces, the ends of the latter projecting below the inner ends thereof, and the whole made of elastic metal, substantially as and for the purpose set forth.

294,192. MILLING-CUTTER. SIDNEY BROADBENT, Scranton, Pa. Filed Aug. 20, 1883. (No model.)

Brief.—The inclination of the cutting-edges of the teeth gives a shear cut, and the alternation of the teeth, in connection with the greater breadth of their cutting-edges, prevents the formation of burrs or ribs.



Claim.—1. A milling-tool composed of disks or rings with teeth upon their edges, each tooth being longer on its edge than the thickness of the disk, and said disks secured together upon a spindle, with the teeth on one disk between the teeth upon the next disk, substantially as set forth.

2. The combination, in a milling-tool, of the spindle *a*, key *b*, and tie-bolt *c*, with movable rings, each of which is provided with teeth that are wider than the thickness of the ring, and at an inclination, as specified.

3. The milling-tool having peripheral teeth in rows, the teeth in one row alternating with those in the next, and the edge of each tooth being at an inclination and longer than the distance between one tooth and the next, substantially as set forth.

294,193. LEAD-AND-WIRE SEAL. EDWD. J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Dec. 29, 1883. (No model.)



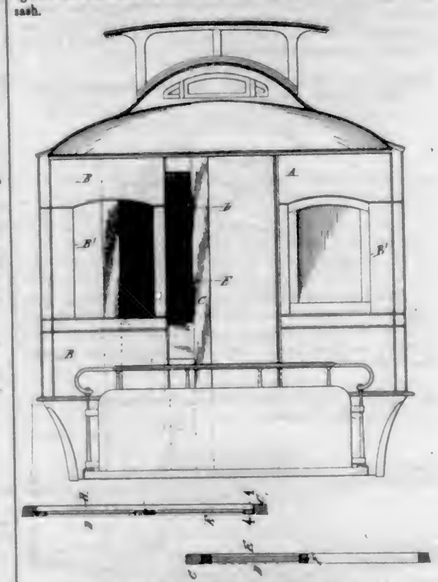
Claim.—1. An improved lead-and-wire seal having a tubular leaden part cast fast within an eye at one extremity of its wire, substantially as herein specified, for the purposes set forth.

2. The combination, in a lead-and-wire seal, of a tubular leaden part and a wire having an eye at one extremity to embrace said leaden part, and provided at its other end with anchoring devices, substantially as herein described, for the purposes set forth.

3. The combination, in a lead-and-wire seal, of a tubular leaden part and a wire having at one extremity an eye, *e*, within which said leaden part is cast fast, and at its other end anchoring devices, with detector-indentations *d* in that end of the wire which forms said eye, substantially as herein specified, for the purposes set forth.

294,194. CAR-DOOR. FREDERICK B. BROWNELL, St. Louis, Mo. Filed June 19, 1882. (No model.)

Brief.—A sash hinged to a fixed sash in a sliding car-door folds up against the fixed sash into a recess equal in depth to the thickness of said sash.



Claim.—1. A sliding car-door having a window-opening provided with a fixed sash and a movable sash to fold against the fixed sash, the window-opening being of sufficient depth to receive both sashes when folded together and permit the door to pass in and out of its casing.

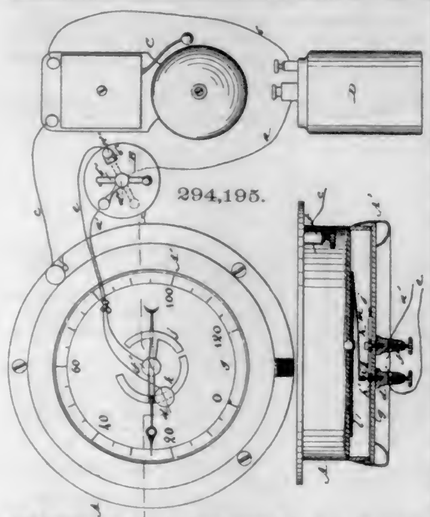
2. A sliding car-door having a hinged sash folding, when opened, against a fixed sash and into a recess in the door on one side of the fixed sash.

3. The combination, with the window-opening of a sliding car-door, of the two sashes D and E, hinged one to the other, and adapted, when folded together, to be flush on both sides of the door, as set forth.

294,195. ELECTRIC ALARM FOR STEAM-GAGES. HARVEY CARLEY and THOMAS MCKENNA, Long Branch, N. J.; said Carley assignor to said McKenna. Filed May 11, 1883. (No model.)

Brief.—Adjustable contact-plates determine a neutral limit for fluctuation of needle. When pressure exceeds maximum limit, alarm sounds. When pressure falls too low, alarm may be sounded by closing a circuit.

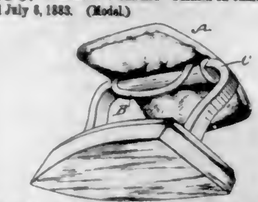
Claim.—The combination, with the steam-gage A, having the ne-



294,195.

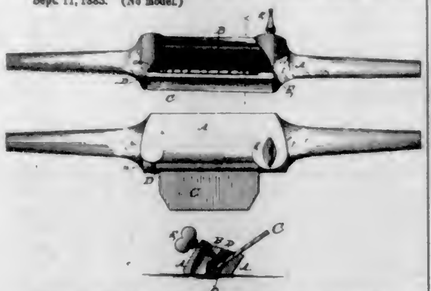
tallic binding-posts *d f f'*, the electric switch B, having binding-post *d'*, the electric-alarm bell C, and the galvanic battery D, of the circuit-plates *j k*, struck from the same center, the screws *h h'*, the pointer *l*, and the flat spring *m*, as shown and described.

294,196. SAD-IRON HOLDER. SERENA M. CARNES, New York, N. Y. Filed July 8, 1883. (Model.)



Claim.—In a sad-iron holder, the combination, with the pad, of the clasp-spring connected to the under side of and externally to the pad, and curved to immediately clasp the sad-iron handle, whereby the holder or pad is enabled to open out from the handle and remain connected thereto, substantially as and for the purpose set forth.

294,197. SPOKESHAVE. ADDISON E. CHAPMAN, Olean, N. Y. Filed Sept. 11, 1883. (No model.)



Claim.—The stock of a spokeshave, having an aperture to receive the blade and a bed for the same to rest on throughout its length, and a wedging-ledge at one end of said aperture, in combination with a tapering pointed screw in the stock at the opposite end of said aperture, and a wedge inclined at both ends, as shown and described, whereby a blade may be held, as specified.

294,198. SOFA-BED. WILLIAM A. CLARK, San Francisco, Cal. Filed Aug. 22, 1883. (No model.)



294,198.

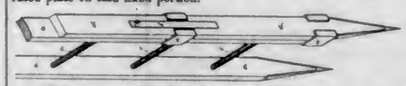
Claim.—1. The plate D, having a perpendicular, a horizontal, and one or more intervening arms, *b*, and an extension, *d*, having a lower wall notched or shouldered at *e*, as shown, and in line with the lower wall of the horizontal groove, said arms having grooves, the walls of which leave a space, *c*, open on top, and a point, *m*, formed by the outer wall of the perpendicular groove and the lower wall of the extension *d*, said point being in line with the lower walls of the horizontal and inclined intervening grooves, in combination with the bar or pin C, which fits and slides within any of said grooves, changing from one to the other by fulcruming on point *m*, substantially as herein described.

2. The body or seat frame A, having end guides, *a*, and the plates D, secured to the inner surfaces of said guides, and having a perpendicular, horizontal, and one or more intervening arms, *b*, grooved as shown, to form space *c*, open on top, and fulcrum-point *m*, and having an extension, *d*, with a notched or shouldered lower wall, in combination with the head-frame B and the bars or pins C, secured to the sides or ends of said head-frame, constructed as set forth, and to fit and slide within said grooved arms, substantially as and for the purpose herein described.

3. The plate D, having a perpendicular, a horizontal, and one or more intervening arms, *b*, said arms having grooves, as shown, the walls of which are so arranged as to leave a space, *c*, open on top, and a projection, *m*, in a line with the outer and lower walls of the perpendicular and horizontal grooves, respectively, and the lower walls of the inclined intervening grooves, in combination with the bar or pin C, adapted to fit and slide within said grooves, substantially as herein shown and described.

294,199. LADDER. GRANVILLE H. CLOVES, Portland, Me. Filed Apr. 27, 1883. (No model.)

Brief.—The adjustable leg of the ladder slides in clasps on the fixed portion, and is adjusted thereon by a spring-held pin entering a perforated plate on said fixed portion.



Claim.—The combination of the side *a*, rungs *c c*, short side *b*, having the holes K, leg *d*, clasps *e e*, spring *f*, and pin *h*, substantially as described.

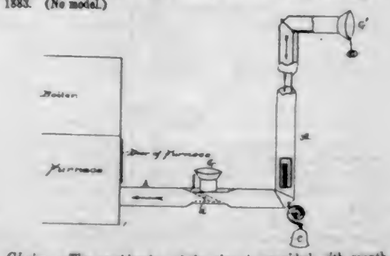
294,200. POOL TRIANGLE AND BOX. HUGH W. COLLENDER, New York, N. Y. Filed Jan. 25, 1884. (No model.)



Claim.—1. A combined triangle and ball-case, substantially as set forth.

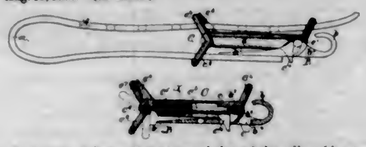
2. In a triangle and tray, a sliding bottom having two parallel edges and means for supporting said edges during the movements of the bottom, as set forth.

294,201. APPARATUS FOR INDICATING TEMPERATURES OF DISTANT ROOMS. WILLIAM R. COMINGS, Norwalk, Ohio. Filed Aug. 27, 1883. (No model.)



Claim.—The combination of the pipe A, provided with mouthpieces G G', a thermometer located in the pipe, a valve which can be used either to check the flow of air through the pipe or to close the lower mouth-piece, and a mechanism for exhausting the air through the pipe, substantially as shown and described.

294,202. HAME-FASTENER. ALONZO B. CONDE, Albany, N. Y. Filed Aug. 13, 1883. (No model.)

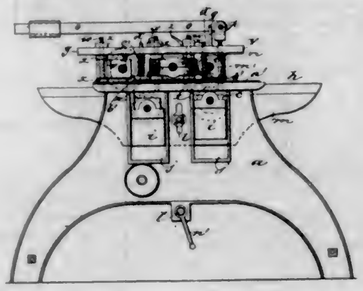


Claim.—1. A hame-fastener consisting of the adjustable strap A, having the plate B, with retaining-bar b^3, permanently attached to one end of said strap, in combination with the detachable catch C, the latter adapted to engage with the retaining-bar, substantially as set forth.

2. In a hame-fastener, the combination, with a strap, A, provided with a hook-piece, B, having a hook, *b*, and transverse bar b^3, as herein set forth, of a detachable catch, C, provided with a hook, *c'*, a spring-actuated sliding bolt, c^2, having a head, c^4, adapted to abut against the point of the hook *c'*, a stationary tongue, c^5, formed on the body-piece *c*, and a double buckle-frame composed of the loops c^6 and c^6 and center bar, c^6, pivoted, as described, to the body-piece *c*, all constructed and arranged to operate substantially as herein specified.

3. The catch C, composed of the body-piece *c*, provided with a hook, *c'*, adapted to engage with the bar b^3, as herein described, and a spring-actuated sliding bolt, c^2, having a pendent head, c^4, which abuts against the point of the hook *c'*, but projects laterally beyond the point of said hook, in combination with means, substantially as described, for engaging the latter with the hame, as and for the purpose set forth.

294,203. WOODEN-STIRRUP MACHINE. WILBER F. COWLES, St. Mary's, and JAMES WOOLWORTH, Sandusky, Ohio. Filed Dec. 27, 1883. (No model.)



Claim.—1. The combination, in a stirrup-slat-planing machine, of the forward upper planer, *e*, fitted with notched or spaced knives adapted to plane the inside portions of the stirrup-slat, except the platform, narrow upper rear planer, *g*, adapted to plane the platform portion of the slat, and the lower middle planer, *f*, having cutters adapted to surface the outside portion of the stirrup-slat, said machine having suitable feed-rolls, substantially as described.

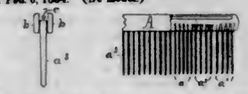
2. The combination, in a stirrup-slat-planing machine, of the upper forward planer, *e*, fitted with notched or spaced knives adapted to plane the inside portions of the stirrup-slat, except the platform, narrow upper rear planer, *g*, adapted to plane the platform portion of the slat, saws *z* on the shaft *z'*, on both sides of the planer *g*, for trimming the ends of the slat, and the lower middle planer, *f*, adapted to surface the outside portion of the stirrup-slat, said machine being provided with suitable feed-rolls, substantially as described.

3. The combination, in a stirrup-slat-planing machine, of the upper forward planer, *e*, fitted with notched or spaced knives adapted to plane the inside portions of the stirrup-slat, except the platform, narrow upper rear planer, *g*, adapted to plane the platform portion of the slat, lower planer, *f*, adapted to surface the outside portion of the stirrup-slat, and the pressers *f'*, mounted on vertical guide-rods above the table and on both sides of it, to hold the stirrup-slats against the pressure of the planer *f*, substantially as described.

4. The combination, in a stirrup-slat-planing machine, of the upper table-planers, *e g*, and upper feed-roll, *b*, mounted in suitable boxes sliding on vertical bars on the side frames or housings, *a*, and the lower planer, *f*, and lower feed-roll, *c*, journaled below the table A, said table being provided at its sides with blocks *i* and binding-screws *l*, working in slots in the sides of said housings *a*, and provided with means for adjusting the said planer *f* and feed-roll *c* to and from the upper planer and feed-roll, mounted on said housings, substantially as described.

5. The guides *a'*, presser-bars *b'*, presser-springs *c'*, and rods *d'*, mounted on each of the housings above and on each side of the table A, combined with the feed-rolls *b c*, planers *e f g*, and the table A, substantially as described.

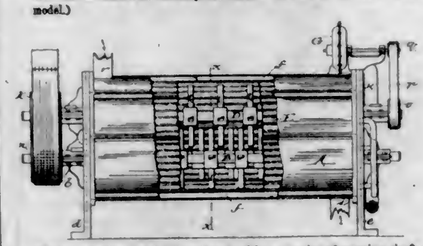
294,204. COMB. WM. CRABB, Newark, N. J. Filed June 16, 1882. Renewed Feb. 6, 1884. (No model.)



Claim.—1. The method herein described for forming a comb-back of celluloid or analogous material upon a series of separate teeth, consisting in supporting the series of teeth in one half of a divided mold with a strip or strips of material adapted to yield under pressure below a temperature of 300° Fahrenheit, and then applying the other half of the mold and causing the material to flow in a plastic state around and between the roots of the teeth, substantially as shown and described.

2. In combination with a comb-back of the nature herein described, the teeth *a*, provided with crimped ends, substantially as shown and described.

294,205. GRAIN-CLEANING MACHINE. FRANK E. CURTIS and WILLIAM H. HELFRICH, Minneapolis, Minn. Filed Nov. 17, 1883. (No model.)

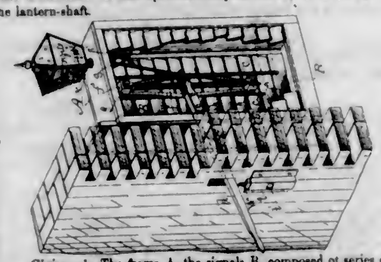


Claim.—1. In a grain-cleaning machine, a series of rotating shafts carrying beaters, in combination with an inclosing investment having a series of curvilinear plane surfaces, the curves of which are substantially struck from the axes of the rotating shafts, for the purpose set forth.

2. The casing A, provided with the suction-fan G and discharge-pipe H, and proper gearing to drive said fan, in combination with the curvilinear shell E, of less cross-sectional dimension than casing A, and a series of shafts, B C D, geared to revolve in opposite directions, and carrying interlapping beaters *l*, all constructed, arranged, and operated as set forth.

294,206. RAILWAY-SIGNALING APPARATUS. WM. N. DAWSON, Adel, Iowa. Filed June 14, 1883. (No model.)

Brief.—A lever extending through the wall of the building operates by spring-connections the operating-bars of the rolling slats in the sides of the case. It also operates a loop embracing spiral prongs upon the lantern-shaft.



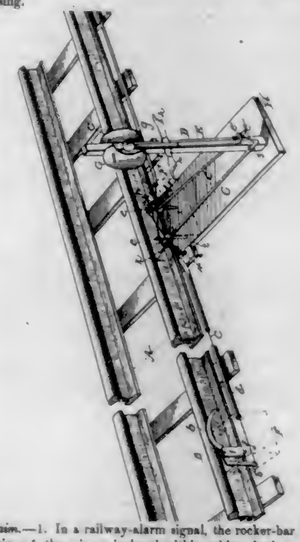
Claim.—1. The frame A, the signals B, composed of series of pivoted slats connected by rods *c*, the rod *f f'*, the blocks *g*, the springs *h*, and a lever, *d*, arranged and combined substantially as shown and described, to operate in the manner set forth, for the purposes specified.

2. The shaft *k*, carrying a signal-lantern, J, and having a cross-head, *m*, and spiral prongs *n*, and the rod *r*, having a cross-head, *s*, in combination with the lever *d*, for the purposes set forth.

3. The railway-signaling apparatus composed of a frame, A, two reversible signals, B, and their operating mechanism *d f g h*, a signal-lantern, J, and its operative mechanism *k m n r s*, and an indicator, *t t' w*, substantially as shown and described, and adapted to be applied and operated in the manner set forth, for the purposes specified.

294,207. ALARM-SIGNAL FOR RAILROAD-CROSSINGS. JOHN B. DEEDS and JOSEPH H. BLAKE, Terre Haute, Ind.; said Deeds assignor to said Blake. Filed Apr. 7, 1883. (No model.)

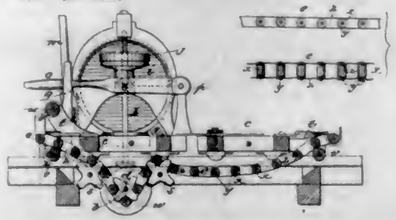
Brief.—The device embraces a bell and vertically-pivoted hammer mounted on a post near a railroad-crossing, a slot in an arm on the lower end of which hammer being provided to receive the actuating-arm of a rock-shaft having a crank-arm on its opposite end, the crank-arm being connected by means of a wire with a lever situated by the track at a suitable distance from the crossing, and constructed and arranged, as described, to be depressed by the wheels of a passing train, the crank-arm being also provided with a retracting-spring, by means of which lever and spring the shaft is rocked and the bell rung while the train is passing. Another rock-shaft of like construction and operation is connected with like actuating mechanism situated on the opposite side of the crossing.



Claim.—1. In a railway-alarm signal, the rocker-bar fulcrumed in the bearings 1, the wire *c*, inclosed within tubing, both as described, in combination with the spring, and rod C, turning in bearings, one end of which rod extends up through the slotted portion of rod E, and said rod E adapted to be oscillated by the alternate depression of the curved rocker-bar and its restoration to position by the spring, as set forth.

2. In a railway-alarm signal, a sonorous body secured to both sides of a post at or near its upper end, in combination with the vertical oscillating rod E, pivoted to said post, its upper end having a clapper and its lower end bent and slotted, the rod C, turning in bearings and its outer end entering the slot in rod E, spring *k*, wire *c*, and the rocker-bar, the whole connected and designed to be operated substantially as set forth.

294,208. SAW-MILL-FEED MECHANISM. SILAS DICKSON, Marcy, Ohio, assignor of one-third to Samuel Myers, same place. Filed Nov. 19, 1883. (No model.)



Claim.—1. In a saw-mill-feed apparatus, the combination, with the log-carriage, of a chain having a series of frictional rolls at the pivotal connection points of its links, and connected to end extensions of said carriage by slack-taking-up rolls, the driving sprocket-wheel, and additional sprocket-wheels arranged one in a plane on each side and slightly above the driving sprocket-wheel, substantially as and for the purpose set forth.

2. In a saw-mill-feed apparatus, the combination, with the log-carriage-operating chain and the chain-operating gearing, of the drive-wheel adapted to be shifted from one to the other of two wheels arranged upon a common shaft, gearing with the shaft of the driving sprocket-wheel of the log-carriage, substantially as and for the purpose set forth.

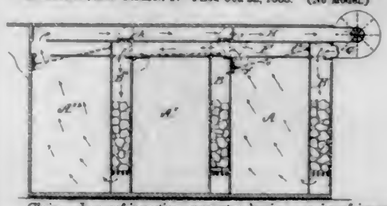
3. In a saw-mill-feed apparatus, the combination, with the log-carriage-operating chain and the chain-operating gearing, of the drive-wheel and additional wheels arranged upon a common shaft, gearing with the driving-sprocket-wheel shaft of the carriage, one of said latter wheels adapted to be shifted vertically, substantially as and for the purpose set forth.

4. In a saw-mill-feed apparatus, the combination, with the log-carriage-operating chain and the chain-operating gearing, of the drive-wheel and additional wheels arranged upon a common shaft, gearing with the shaft of the driving sprocket-wheel of the log-carriage, one of said latter wheels adapted to be shifted vertically, and the drive-wheel arranged to be shifted from one to the other of the latter wheels, substantially as and for the purpose set forth.

5. In a saw-mill-feed apparatus, the combination, with the log-carriage-operating chain and the chain-operating gearing, of the drive-wheel adapted to be shifted from one to the other of two wheels arranged upon a common shaft, gearing with the shaft of the driving sprocket-wheel of the log-carriage, and the lever, with one end connected to an adjustable bearing of the drive-wheel shaft, and having its other end fulcrumed a suitable distance from said adjustable bearing, and provided with an operating arm or handle, substantially as and for the purpose set forth.

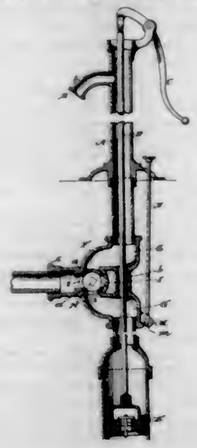
6. In a saw-mill-feed apparatus, the combination, with the log-carriage-operating chain and the chain-operating gearing, of the drive-wheel, additional wheels arranged upon a common shaft, gearing with the driving-sprocket-wheel shaft of the log-carriage, one of said latter wheels adapted to be vertically adjustable, and the hand-lever connected about centrally to the hub of said vertically-adjustable wheel, and suitably fulcrumed and retained in position, substantially as and for the purpose set forth.

294,209. REFRIGERATING APPARATUS FOR CARS, &c. WM. H. DOUGHTY, New York, N. Y. Filed Oct. 22, 1883. (No model.)



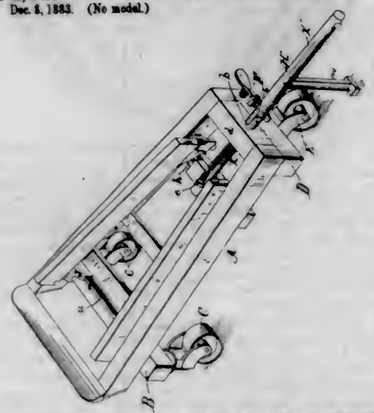
Claim.—In a refrigerating apparatus having a series of ice-receptacles and provision-chambers, and provided with means for forcing a current of air through said receptacles and chambers, the combination, with flues and passages arranged substantially as described, of valves connected together in pairs, whereby the opening of one passage closes another, and a circulation can be conveniently obtained in either or all of the compartments, as set forth.

294,210. PUMP. JOSEPH W. DOUGLAS, Middletown, Conn., assignor to himself and W. & B. Douglas, same place. Filed Apr. 6, 1883. (No model.)



Claim.—The combination, with a pump-tube, of a three-way valve or cock having a lateral branch pipe, and provided with two water-ways arranged in alignment and introduced into the pump-tube to form straight continuations thereof, and a plunger-rod passing directly through the pump-tube from its top portion, and also through both the aligned water-ways of the three-way valve or cock, substantially as described.

294,211. HAND-TRUCK. JAMES L. DOWNING, Richmond, Ill. Filed Dec. 8, 1883. (No model.)



Claim.—1. A truck-frame mounted on three wheels, substantially as described, the single wheel at one end of the frame being detachable, so that this end of the said truck-frame can be lowered and adjusted under the object to be raised.

2. In a hand-truck, the combination of a truck-frame mounted on three caster-wheels, one of which is readily detachable, and a handle with leverage means, substantially as and for the purposes set forth.

3. A hand-truck having at its rear end a detachable caster-wheel, a locking device, and handle with leverage means, substantially as and for the purpose set forth.

4. The combination, with a truck-frame mounted on wheels, one of which is detachable, of an adjustable handle or lever with a pivoted support to rest on the floor, substantially as and for the purpose set forth.

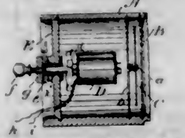
5. The combination, with a truck-frame mounted on wheels, one of which is detachable, of an auxiliary frame adjustably connected to the truck-frame, and a handle with leverage means, substantially as and for the purposes set forth.

6. In a hand-truck, an adjustable frame composed, essentially, of the connected side pieces and inclined lifts, as described.

7. In a hand-truck, the adjustable handle composed of the hinged sections *k k'* and pivoted support *n*, substantially as and for the purpose set forth.

8. The improved hand-truck consisting, essentially, of a bed-frame mounted on three castor-wheels, one of which is readily detachable, an auxiliary adjustable frame, and an adjustable handle with leverage means, substantially as described.

294,212. ELECTRIC ANNUNCIATOR. ISAIAH H. FARNHAM, Portland, Me., assignor to the American Bell Telephone Company, of Massachusetts. Filed Dec. 26, 1883. (No model.)

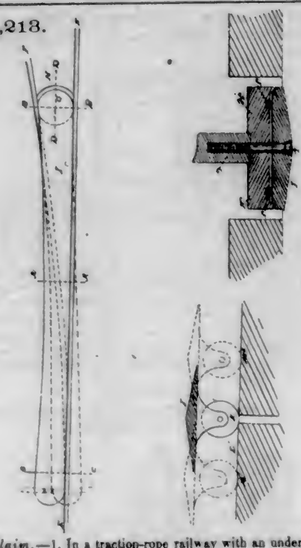


Claim.—An annunciator consisting of an electro-magnet capable of horizontal and rotary adjustment, and provided with a magnetic and polarized needle pivoted in front of or between the poles of the electro-magnet, substantially as described.

294,213. TRACTION-ROPE RAILWAY. CHARLES F. FINDLAY, Liverpool, England. Filed Nov. 18, 1882. (No model.)

Brief.—The wide slot where cable-tubes meet is covered by a swinging plate turning upon a pivot in a pillar-block, the pivot end of said plate resting upon a supporting-piece on the pillar-block. The forward end of the plate has a supporting-roller moving over a notched or depressed track, whereby the plate is retained in position.

294,213.



Claim.—1. In a traction-rope railway with an underground tube, the combination of the piece H, the pillar G, and the cover I, substantially as set forth.

2. In a traction-rope railway with an underground tube, the combination, with the piece H and the pillar G, of the slotted screw L and a cover for the aperture between E and F, substantially as set forth.

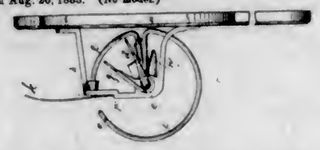
3. The combination, for use in a traction-rope railway, of an underground tube or tunnel for the traction-rope, the cover I, and piece H, secured to a pillar, G, and upheld at the other end by a roller, K, which runs on a track, L', as set forth.

4. For use in connection with a traction-rope railway, the track L', having depressions M' and M², in combination with roller K and cover I, held in place by screw L, as set forth.

5. The combination, with a tube for a traction-rope railway, of the piece H and pillar G, ring J, cover I, screw L, roller K, and track L', provided with depressions M' and M², substantially as and for the purposes set forth.

6. In combination with the cover I, turning on a pivot, the roller K, and track L', substantially as and for the purposes set forth.

294,214. BILL AND LETTER FILE. SAMUEL H. FISH, Hinsdale, Ill. Filed Aug. 20, 1883. (No model.)



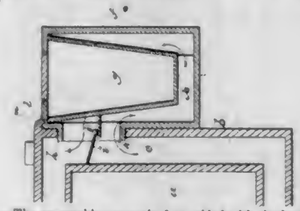
Claim.—1. The rings attached to the shaft, as described, in combination with the sleeve provided with the arm, the springs, and the cranks, whereby said rings may be opened by hand and closed automatically, substantially as and for the purpose specified.

2. The combination, in a bill and letter file, of the hooks or rings, each composed of two portions, one portion of each hook or ring being fixed to the shaft, and the other portion of each movable thereon a determinate distance, with the sleeve, provided with the arm extending across the frame within the rings or hooks, and means, substantially as described, for opening the hooks and piercing the paper, substantially as and for the purpose specified.

3. The frame provided with the gage, in combination with the hooks, and the shaft provided with the sleeve, mounted between the thumb-piece and the frame, and the arm extending across the frame parallel with the shaft, whereby the hooks may be opened and the bills placed thereon, substantially as and for the purpose specified.

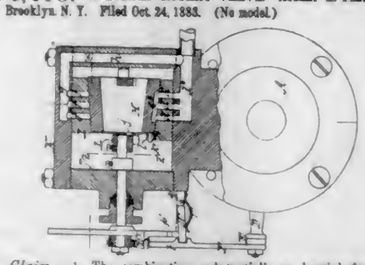
4. The combination, with the hooks or rings, each consisting of two parts, the pointed portion of one of the parts of each ring being provided with an eyelet, *o*, of the shaft provided with the crank, and the sleeve provided with the arm and crank, substantially as specified.

294,215. PORTABLE RESERVOIR FOR STOVES. HARVEY L. FISHER and ANGELL J. HASSELL, Toledo, Iowa. Filed Jan. 19, 1883. (No model.)



Claim.—The removable reservoir *f*, provided with the basin *g* and flange *h*, extending laterally from the same, furnishing bearings for the damper *i*, which is journaled in the vertical portions thereof, the said damper adapted, when in operation, to engage the outer surface of the inner wall of the stove, the top plate of the reservoir having notches *l* to engage the flange *m* of the stove-top, the whole adapted to be applied to a cook-stove having a rectangular opening in its rear wall, substantially as specified.

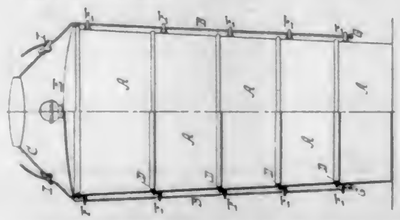
294,216. BALANCED ROTARY VALVE. ROBERT H. FLETCHER, Brooklyn, N. Y. Filed Oct. 24, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the hollow plug-valve H, seated in the shell I, which is secured to the bottom of the steam-chest, the cover K, fitting the top of the shell I, the opening or openings *d* in the bottom of the shell and communicating with the exhaust-port *d*², and the opening or openings *f* in the top of said shell and communicating through channels *g h* with the exhaust-port *d*².

2. A rotary valve having ports and cavities for balancing it in relation to the live steam, and also ports and cavities for balancing it in relation to the exhaust-steam, substantially as set forth.

294,217. DINNER-PAIL. ALBERT A. FOOS, Brooklyn, N. Y. Filed Aug. 3, 1883. (No model.)



Claim.—1. A dinner-pail consisting of a series of superposed detachable pans tapering continuously from the top to the bottom member, to adapt them to be nested or placed one within the other, each pan having a bottom which forms a cover to the upper end of the pan beneath it, substantially as described.

2. The combination, substantially as hereinbefore set forth, of the series of superposed pans tapering continuously from the top to the bottom member of the series, and each having side loops diametrically opposite each other, and the supporting-straps having their lower ends provided with stops to abut against such loops.

3. The combination, substantially as hereinbefore set forth, of the series of superposed pans tapering continuously from the top to the bottom member of the series, and each having side loops diametrically opposite each other, the supporting-straps having their lower ends provided with stops to abut against such loops, and the handle-strap having the upper ends of the supporting-straps connected to it.

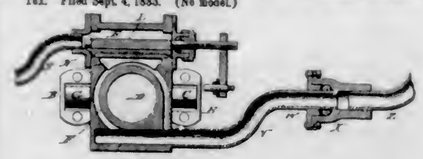
294,218. HORSE-COLLAR. MARION S. FORT, Greenfield, Iowa. Filed Dec. 26, 1883. (No model.)



Claim.—1. The combination of a protecting-plate for horse-collars, bent and curved to conform to the shape of the inner side of the lower portion of a collar, having thin flexible edges, a longitudinal corrugation, and countersunk perforations in the said corrugation, a protecting-plate bent and curved to conform to the shape of the outer side of the lower portion of a collar, having thin flexible edges, a longitudinal corrugation corresponding to the crease in the collar, and threaded perforations in the said corrugation, and threaded bolts resting with their heads in the countersunk perforations in the inner plate, and fitting and turning with their threaded ends in the perforations in the outer plate, as and for the purpose shown and set forth.

2. The combination of a horse-collar with an inner plate having thin and flexible edges, bent and curved to conform to the shape of the inner side of the lower portion of the collar, having a longitudinal corrugation and countersunk perforations in the said corrugation, an outer plate having thin and flexible edges, bent and curved to conform to the shape of the outer side of the lower portion of the collar, having a longitudinal corrugation, and headed screw-bolts resting with their heads in the countersunk perforations in the inner plate, passing through the creased portion of the collar, and fitting and turning in the threaded perforations in the outer plate, as and for the purpose shown and set forth.

294,219. OSCILLATING ENGINE. JOHN OAKLEY GILBERT, Houston, Tex. Filed Sept. 4, 1883. (No model.)



Claim.—1. An oscillating steam-engine having its trunnions solid, and having a curved live-steam pipe and exhaust-pipe opening at opposite sides of the cylinder at one end, and opening at their other ends into stuffing-boxes upon the ends of the feed and exhaust pipes rocking in the same, the said boxes being opposite to and concentric with the trunnions, as and for the purpose shown and set forth.

2. An oscillating engine having a curved live-steam pipe opening into the valve-chest upon the side of the cylinder, and having the other end of the said pipe turning in a stuffing-box opposite to and concentric with one of the trunnions of the cylinder and fastened upon the end of the feed-pipe, as and for the purpose shown and set forth.

3. An oscillating engine having a curved portion of its exhaust-pipe opening into the exhaust-channel upon the side of the cylinder, and having its other end fitting and rocking into a stuffing-box upon the end of the exhaust-pipe opposite to and concentric with a trunnion of the cylinder as and for the purpose shown and set forth.

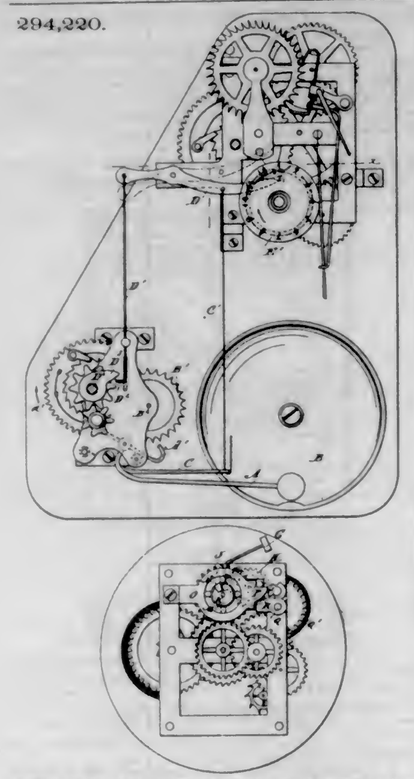
294,220. ALARM-CLOCK. ISAAC ST. CLAIR GOLDMAN, Pasadena, Cal. Filed Nov. 23, 1883. (Model.)

Claim.—1. The combination, with an alarm-clock mechanism, of a latch-plate for covering the notch in the wheel for releasing the alarm-clock mechanism, substantially as herein shown and described.

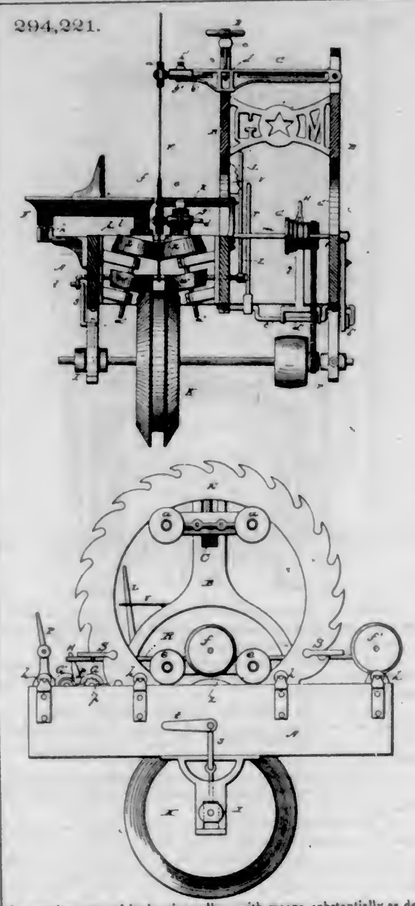
2. The combination, with an alarm-clock mechanism, of a latch-plate for covering the notch in the wheel for releasing the alarm-clock mechanism, and of a cam on the arbor for winding the alarm-spring, which cam is adapted to adjust the alarm-releasing device in such a manner that it will rest upon the latch-plate, and thus cannot pass into the notch in the releasing disk or wheel, substantially as herein shown and described.

3. The combination, with an alarm-clock mechanism having a notched wheel, of a latch-plate for covering the said notch, a spring for pressing the said latch-plate over the notch, and of a cam adapted to act on the lever for releasing the alarm mechanism, for adjusting the said lever

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in such a position that it will rest on the latch-plate, substantially as herein shown and described.

4. The combination, with an alarm-clock mechanism having a notched wheel or disk, of a latch-plate covering the said notch, a spring for pressing the latch-plate over the said notch, a cam on the spring-winding shaft of the alarm mechanism, and of a lever or a spring-bridge adapted to be acted on by the said cam, substantially as herein shown and described.

5. The combination, with an alarm-clock mechanism having a notched disk or wheel, of a spring-latch adapted to cover a notch, a cog-wheel mounted to slide on the arbor carrying the notched disk, which cog-wheel is provided with a stud, and of a spring for pressing the stud against the notched disk, which spring extends inward, and is adapted to engage with an arm or projection on the hammer-vibrating shaft, substantially as herein shown and described.

6. The combination, with an alarm-clock mechanism, of the notched disk or wheel K, mounted on the end of the shaft I', the spring-band M, terminating in a beveled flange, N, and secured to the edge of the disk K, the cog-wheel J, adapted to slide on the shaft I', the stud L, projecting from the cog-wheel J', adapted to engage with the arm I of the hammer-vibrating shaft G', and of the spring-bridge O, substantially as herein shown and described.

7. The combination, with an alarm-clock mechanism, of the notched disk K, mounted on the end of the shaft I', the spring-band M, terminating in a beveled flange, N, and secured to the edge of the disk K, the cog-wheel J, adapted to slide on the shaft I', the stud L, projecting from the cog-wheel J, the spring J', adapted to engage with the arm I of the hammer-vibrating shaft G', the spring-bridge O, provided with a beveled tongue, P, and of the cam R, mounted on the spindle for winding the alarm-spring, substantially as herein shown and described.

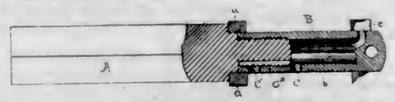
8. The combination, with an alarm-clock mechanism having a notched disk, of means for automatically covering the notch when the clock is wound immediately after the alarm has been sounded, substantially as herein shown and described.

294,221. CIRCULAR SAW MILL. JOHN B. GORRELL and JOHN MILLER, La Otte, Ind. Filed May 19, 1883. (No model.)

Claim.—1. In a circular sawing machine, the combination, with the annular saw and its bearing-rollers, with means, substantially as described, for adjusting the same, of the kerf-dividing disks and saw-actuating mechanism, as specified.

2. In a circular sawing machine, the combination, with the double-bevel friction-wheel K, of the bevel friction-pinions *w*, engaging the same, and the bevel friction-wheels *z*, engaging the sides of the annular blade, with mechanism for adjusting the same, substantially as specified.

294,222. CARRIAGE-AXLE. JOHN GOWLAND, Philipsburg, Pa. Filed June 30, 1883. (No model.)



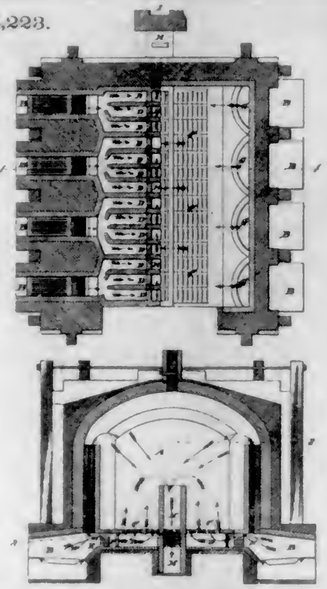
Claim.—1. The collar D, provided with notches *f f'*, raised portion *f*², and notch *f*³, substantially as described and shown.

2. The combination, with the axle A, having groove *c*², of the hollow sleeve B, provided with the perforations *c*, *c'*, and *c*, and secured to said spindle, substantially as described and shown.

3. In the device as described, the combination, with the hollow perforated sleeve B, of the movable collar D, provided with notches *f f'*, raised portion *f*², and notch *f*³, substantially as and for the purpose set forth.

294,223. BRICK-KILN. WILLIS N. GRAVES, St. Louis, Mo., assignor of one-half to the Hydraulic Press Brick Company, same place. Filed Feb 12, 1883. (No model.)

294,223.



Claim.—1. The process of burning bricks in a kiln-chamber, which consists in drawing the products of combustion from the top and bottom to the center of the chamber, as set forth.

2. A brick-kiln having means to draw the products of combustion simultaneously from the top and bottom to the central portion of the chamber, as set forth.

3. A brick-kiln in which the products of combustion attack the contents of the chamber from the top and bottom of chamber simultaneously, and pass out through the central portion of the contents, as set forth.

4. A brick-kiln having an exit-flue whose mouth is located at the central portion of the main chamber between the top and bottom and sides, as set forth.

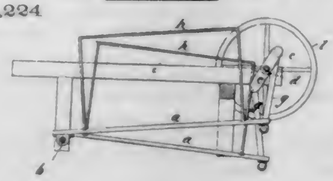
5. In a brick-kiln, the combination of a main chamber having vertical side flues extending to near the top thereof, and a perforated floor to admit the products of combustion, and a central flue having its mouth located between the top and bottom and sides of the chamber, as set forth.

6. In a brick-kiln, the combination of a main chamber having a perforated floor, fire-chambers on each side of the main chamber, vertical flues on each side of the main chamber, forming a communication between the fire-chambers and the top of the main chamber, horizontal flues beneath the perforated floor, communicating with the fire-chambers, and a central flue extending up into the body of the main chamber and in communication with the chimney, as set forth.

7. In a brick-kiln, the combination, with the main chamber having a perforated floor, of the fire-chambers located on each side, a central flue extending into the body of the chamber to form the exit for the products of combustion, vertical and horizontal flues carrying the products of combustion to the top and floor of the chamber, and walls built up in the horizontal flues to regulate the amount of draft therethrough, as set forth.

8. In a brick-kiln, the combination of main chamber A, vertical side flues, G, extending to near the top thereof, fire-chambers B on each side, perforated floor C to the main chamber, horizontal flues D beneath the floor, having openings E, formed by walls F, central flue, H, extending up into the body of the main chamber, and the chimney I, as set forth.

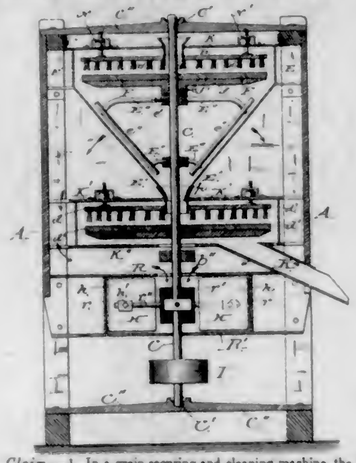
294,224



294,224. TREADLE-POWER. GEO. A. GREENE, Taylor, Tex. Filed July 11, 1883. (No model.)

Claim.—In a treadle-power, the combination, with the shaft *d*, carrying the cranks *c*, of the treadles *a*, connected at one end to the arms *g*, connected to oppositely-projecting cranks *e*, the opposite ends of said treadles *a* being pivoted upon a shaft, *b*, and the bail-shaped rails *h*, with both their lower ends fastened to the treadles, substantially as and for the purpose set forth.

294,225. GRAIN SCOURER AND CLEANER. RICHARD HENRY GRIFFITHS, Janesville, Wis. Filed Nov. 13, 1883. (No model.)

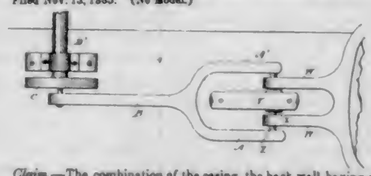


Claim.—1. In a grain scouring and cleaning machine, the framework and a cylindrical perforated casing forming at one portion thereof the funnel-shaped compartment, in combination with the vertical shaft, provided with suitable bearings, the revolving emery-disks F *d'* and their metal plates, the stationary disks D and *d*, provided with brushes, and the radial and diagonal arms forming beaters, the whole being operated substantially as set forth and described.

2. The plates K K', the stationary disks provided with brushes, the vertical and revolving shaft, the emery-disks, and arms or beaters, in combination with the perforated casing having air and discharge openings, substantially as shown and described.

3. The stationary brushes and revolving emery-disks, and the radial and connecting diagonal arms, the whole being surrounded by a perforated casing, in combination with the fan having adjustable blades, and mechanism for operating the same, all substantially as shown and described.

294,226. STEAM-ENGINE. JOHN EMIL GUENTHER, Fort Wayne, Ind. Filed Nov. 13, 1883. (No model.)



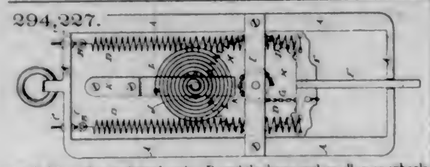
Claim.—The combination of the casing, the back wall having steam and exhaust passages, the steam chest and valve, the shaft mounted transversely upon the back wall and carrying the piston, and the valve-gear with the cranks upon the ends of the piston-shaft, a bail connecting the said cranks and having a forwardly-extending arm or arms, the cross head or heads connected pivotally with the said arm or arms, and a pitman connecting the said cross head or heads with the crank upon the main shaft, substantially as set forth.

294,227. SPRING-BALANCE. HUGO HAENTER, New York, N. Y. Filed Jan. 4, 1884. (No model.)

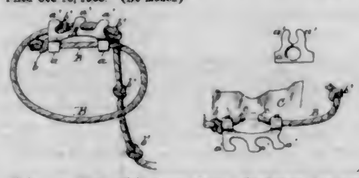
Claim.—1. A spring-balance constructed substantially as herein shown and described, with a large and a small gear-wheel meshing into each other, and connected with a cross-bar suspended from the graduated springs by a chain passing around the hub of the large gear-wheel, and provided with a coiled spring connected with the journals of the small gear-wheel, as set forth.

2. In a spring-balance, the combination, with the cross-bar E, suspended from the graduated spring D, and the large and small gear-wheels H J, of the chain G, and the coiled spring L, substantially as herein shown and described, whereby great accuracy in weighing is secured, as set forth.

294,227.



294,228. BAG-FASTENER. WILLIAM B. HANLON, Bridgeport, Ohio. Filed Oct. 10, 1883. (No model.)

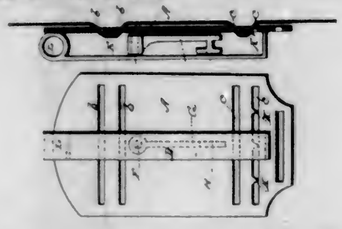


Claim.—1. As an article of manufacture, the fastener A, comprising the T-headed and perforated lugs *a*, and the successive pairs of oppositely-arranged bent lugs *a'*, having hook-shaped sides, substantially as shown and described.

2. The combination of a fastener provided with a series of pairs of hooked lugs, *a'*, and perforated lugs *a*, and a bag, C, perforated, as at *c c*, with a cord, B, passing through the perforations *c c* of the bag, substantially as shown and described.

3. A fastener provided with a series of hook-shaped bent lugs, *a'*, and perforated lugs *a* at each end, in combination with a knotted rope, substantially as shown and described.

294,229. BACK-BAND HOOK. FRANK HAYNES, Monticello, Ark. Filed Dec. 15, 1883. (No model.)



Claim.—1. The horizontally-slotted back-band plate, having a vertical central stay connected thereto, the pivot-bearing connecting the plate and stay, and the pendent vibratory trace-hook pivoted on said bearing, substantially as specified.

2. The back-band plate having an outer stay and a pendent pivotal trace-carrier having its lower end turned outward in ⊣ form, substantially as specified.

3. The back-band plate having a pendent vibratory trace-hook between said plate and a stay, and at the upper end of the latter a ring or loop for the passage of a plow-line, substantially as specified.

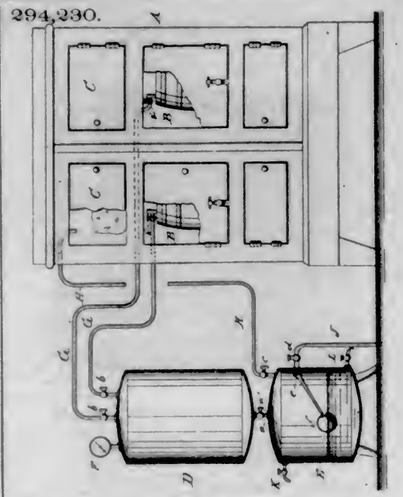
294,230. AIR-PRESSURE APPARATUS FOR BEER-KEGS, &c. CHRISTIAN HENTZ and GEORGE M. HENTZ, Buffalo, and ANDREW DOTTERWICH, Dunkirk, N. Y. Filed Feb. 14, 1883. (No model.)

Claim.—1. The superposed air-chamber D, having a pipe, G, leading to the beer-chamber, and provided with a cock, *b*, in combination with the water-chamber E, connected to the chamber D by a pipe, *a*, having a cock, *a'*, and supply-pipe J, having a cock, *d*, and leading to the head of water, substantially as and for the purpose set forth.

2. The combination, with the ice-box C and pipe H, of the water-tank E, water-pipe J, having valve *e* and cock *d*, and float *f*, substantially as shown and described.

3. The combination, with the ice-box C and pipe H, having cock *c*, of the water-tank E and discharge water-cock I, and the supply-pipe J, having valve *e*, cock *d*, and float *f*, the supply-pipe J having a greater area than the discharge-cock, and first partially filling the water-tank until the rise of the float causes the supply and discharge pipes to be equal in area, substantially as shown and described.

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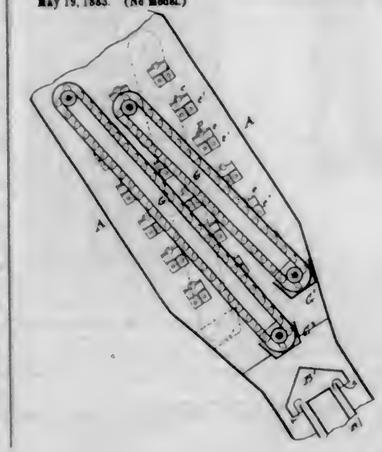
294,231. GLASS WATER-TRAY. AUGUSTUS H. HEISEY, Idlewood, Pa. Filed Dec. 29, 1883. (No model.)

Claim.—1. A glass pitcher provided with journal-bearings, in combination with supporting-standards having journals and provided with a suitable base, substantially as and for the purposes described.

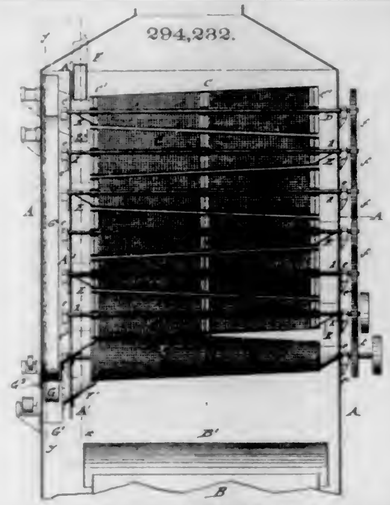
2. A glass base or tray of sufficient width to hold a row of tumblers, provided with standards having journals, in combination with a pivoted or swinging pitcher mounted thereon, substantially as and for the purposes described.

3. A glass base or tray having standards for supporting a swinging pitcher, and provided with brackets on the standards, for receiving and supporting goblets and similar articles, substantially as and for the purposes described.

294,232. MALT-DRIER. HENRY HERRMANN, Brooklyn, N. Y. Filed May 19, 1883. (No model.)



294,232.



Claim.—1. The combination, substantially as set forth, of a casing, two or more vertical series of conically-tapered horizontal rotary drums, the drums of each series and the adjacent drums of adjoining series being alternately reversed, so that the smaller ends alternate with the larger, both in vertical and lateral directions, means for conducting the malt from drum to drum of a series, and an elevator or elevators for conveying the malt from the lower drum of one series to the upper drum of another series.

2. The combination, substantially as described, of a casing, two or more vertical series of conically-tapered horizontal rotary drums, the drums of each series and the adjacent drums of adjoining series being alternately reversed, so that the smaller ends alternate with the larger, both in vertical and lateral directions, means for conducting the malt from drum to drum of a series, an elevator or elevators for conducting the malt from the lower drum of one series to the upper drum of another series, and means for supplying heated air to said casing.

294,233. WINDOW-BLIND. ALEXANDER H. HILL, Oskaloosa, Iowa. Filed Aug. 7, 1883. (No model.)

Brief.—A window-blind consisting of grooved strips to guide the blinds, strips and blinds arranged inside of the window-sash and taking the place of the inside stop of the sash.

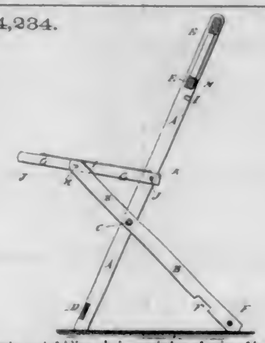


Claim.—1. The combination of a window-frame, the outer and parting stops, the sashes, the grooved strips secured to the inner sides of the frame, and forming the stops or beads for the inner sash, and a series of blinds mounted to slide in the said strips, one of said blinds being equipped with pivoted slats, as set forth.

2. The blind J, having side stiles provided with the beads *e*, and center strip, *f*, in combination with the slats pivoted in said beads and center strip, as set forth.

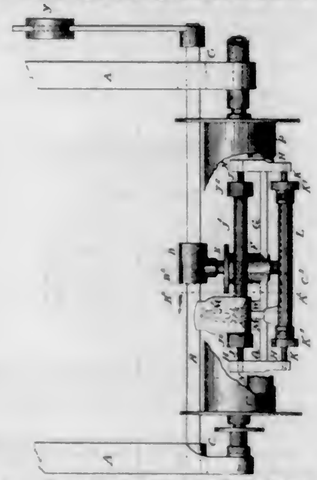
294,234. FOLDING CHAIR. JONATHAN HILL, New York, N. Y. Filed July 31, 1883. (No model.)

294,234.



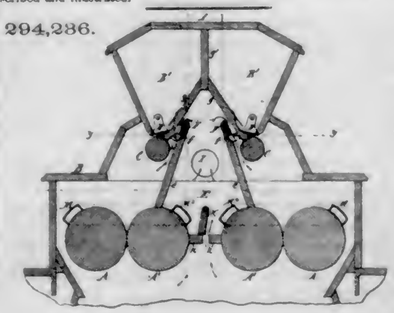
Claim.—A folding chair consisting of pairs of legs crossed and pivoted or jointed together, the upper rear extension of the front legs being constructed to form the chair-back, and having transverse locking-recesses K L on their back edges, in combination with a rigid seat-board pivoted or jointed to the tops of the front legs at or near the middle of the seat-board, and having its rear edge wholly disconnected from the back, and provided with locking-pins adapted to fit into the recesses K L to secure the chair in its two positions, substantially as shown and described.

294,235. APPARATUS FOR PRESSING OR LEVELLING YARN ON WEAVERS' BEAMS IN WARP-SIZING MACHINES. ALFRED HITCHON, Barrowford, near Burnley, County of Lancaster, England. Filed Oct. 19, 1881. (Model.) Patented in England June 29, 1880, No. 2,661.



Claim.—The combination of the roller N with the long collar J', having enlargements J^2 J^3, worm R, wheel S, pin T, arm W, tongue M, cover L, and spindle K, having friction-disks K' K', substantially as described and illustrated.

294,236.



294,236. ROLLER-MILL. NOAH W. HOLT, Buffalo, N. Y. Filed Sept. 11, 1883. (No model.)

Claim.—1. The combination, with a revolving roller, of an air passage or conduit fitted with its open side lengthwise against the roller, and mechanism whereby an air-current is caused to flow through said conduit or passage along the portion of the roller-face which is covered by said conduit or passage, substantially as set forth.

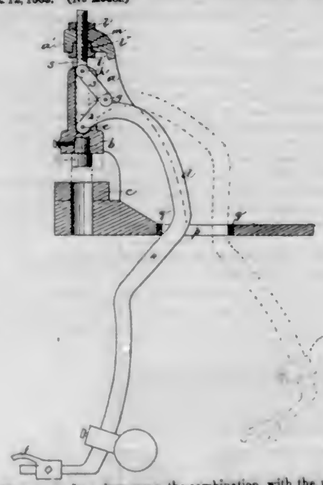
2. The combination, with two revolving rollers, of air passages or conduits fitted with their open sides lengthwise against the rollers, a conduit whereby said passages are connected, and mechanism whereby an air-current is caused to flow successively along both rollers through both of said conduits or passages, substantially as set forth.

3. The combination, with rollers A A', of air-conduits arranged along the rollers, a chamber, E, into which the several air-conduits open, and an exit-spout, I, through which the air is discharged from the chamber E, substantially as set forth.

4. The combination, with the reducing-rollers A A', feed-rollers C, and inclosing-casing B, of an air-chamber, E, having openings *f* and *k'*, substantially as set forth.

5. The combination, with the reducing-rollers A A', feed-rollers C, and inclosing-casing B, of an air-chamber, E, having openings *f*, and air-conduits M', opening into the chamber E, substantially as set forth.

294,237. DROP-PRESS. JAMES A. HORTON, Reading, Mass. Filed Oct. 12, 1883. (No model.)



Claim.—1. In a drop-press, the combination, with the plunger and body, of the gravitating foot-lever pivoted at one end directly to said plunger, and a link connecting the lever to a fixed support on the body of the press, said link and the end of the foot-lever constituting the members of a toggle-joint, as set forth.

2. The combination, with the plunger, the foot-lever pivoted to the plunger, and the link 3, pivoted to said foot-lever, of an adjustable support to which said link is pivoted, and means for positively holding said support at any position to which it may be adjusted, whereby the plunger may be adjusted to the different heights, as set forth.

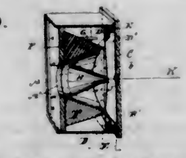
3. The combination, with the plunger, the foot-lever pivoted to the plunger, and link pivoted to the foot-lever, of the screw-threaded rod to which the link is pivoted, said rod passing loosely through an orifice in the frame of the press, and check-nuts engaged with said threaded rod and bearing, respectively, on the upper and lower sides of the portion of said body through which said rod passes, as set forth.

4. The combination of the body *a*, having the recess *m*, the threaded rod supporting the link, foot-lever, and plunger, the upper check-nut, *l*, bearing on the upper surface of the body, and the lower check-nut, *l'*, bearing against the lower surface of said body, and having an extension, *B*, projecting into the recess *m*, as set forth.

5. The combination of the plunger, the link pivoted to a fixed support, the foot-lever pivoted to said link and plunger, and formed as a member of a toggle-joint between the link and plunger, and having the portion 4, which is substantially parallel with said toggle-joint member, and stops or buffers *q q*, arranged to limit the movements of the portion 4, as set forth.

294,238. ACOUSTIC TELEPHONE. HARVEY E. HUSTON, Monticello, Ill. Filed Aug. 28, 1883. (No model.)

294,239.



Claim.—1. An acoustic telephone constructed with a ring having a wedge-shaped cross-section and resting on the diaphragm, the inner wall of said ring being flared toward its rear edge, and a funnel held within the ring, to concentrate the sound-waves in the middle of the diaphragm, substantially as herein shown and described.

2. In an acoustic telephone, the combination, with the box B and the diaphragm C, of the ring F, having a wedge-shaped cross-section and resting on the diaphragm, and of the funnel H, held within the ring F by wires, substantially as herein shown and described.

3. In an acoustic telephone, the combination, with the box B, of the board D, having an aperture, D', the diaphragm C, stretched over the aperture, and the ring F, having a wedge-shaped cross-section and resting on the diaphragm within the edges of the aperture D', the inner wall of said ring being flared toward its rear edge, substantially as herein shown and described.

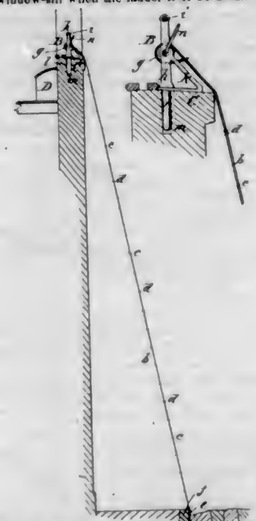
4. In an acoustic telephone, the combination, with the box B, of the front or top board, A, the board D, having an aperture, D', the diaphragm C, the ring F, the inner wall of said ring being flared toward its rear edge, and the bolts G, substantially as herein shown and described.

5. In an acoustic telephone, the combination, with the box B, of the apertured board D, the strengthening-ribs E, the diaphragm C, the ring F, having a wedge-shaped cross-section, and its inner wall flared toward its rear edge, the funnel H, the top or front board, A, and the bolts G, substantially as herein shown and described.

6. In an acoustic telephone, a diaphragm formed of alternate layers of animal-skin and textile fabric, substantially as and for the purpose set forth.

294,239. FIRE-ESCAPE. WILLIAM JENSEN, Victoria, British Columbia, Canada. Filed Sept. 14, 1883. (No model.)

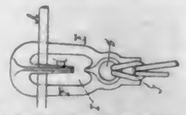
Brief.—The flexible ladder is wound upon a portable windlass, the lower part of which is provided with legs which are entered into cavities in the window-sill when the ladder is to be used.



Claim.—In a combined windlass and flexible-ladder fire-escape, the combination of the portable windlass B, having lower pins or legs, *l*, for entry within cavities in the window-sill of a building, the wire-rope ladder A, having its outer longitudinal strands arranged to diverge from one another in an outward direction, and the fastening-pins *e* at the outer ends of the longitudinal strands of the ladder, substantially as shown and described.

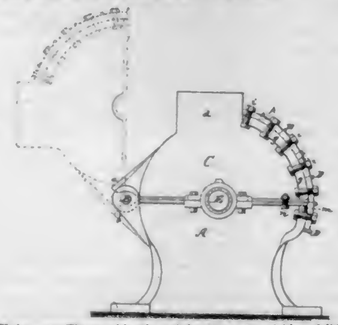
294,240. TRELLIS-HOOK. JOHN JUDD, Cherry Valley, N. Y. Filed Apr. 7, 1883. (No model.)

294,240.



Claim.—A trellis-hook consisting of the frame F, having at one end the jaw G and at the opposite end the recess J and eye S, said recess being in the lower edge of the frame for receiving the loop or knot of the cord tied in the eye, to prevent the loop or knot from turning, substantially as described.

294,241. COTTON-SEED-HULLING MACHINE. DAVID KAHNWEILER, New York, N. Y. Filed Nov. 12, 1883. (No model.)



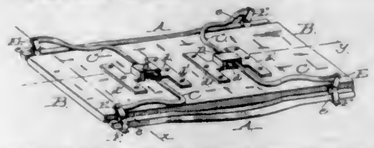
Claim.—1. The combination of the frame A and hinged lid C with the hollow cylinder F, having end openings, and the knives G, all arranged so that the knives G can be taken out endwise and reinserted when the lid C is swung back, substantially as specified.

2. The combination of the frame A and hinged lid C, carrying knives D, with cylinder F, carrying knives G, and a single adjusting-screw, *m*, for supporting the lid C and regulating the coarseness or fineness of the cut, substantially as specified.

3. The combination of the frame A, the hinged lid C, having knives D, and cylinder F, having knives G, with the supporting and adjusting screw *m* and holding-bolt *n*, substantially as specified.

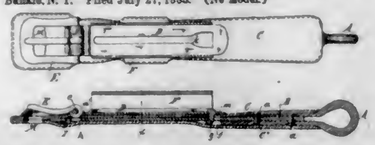
4. The combination of the lid C, having slotted flanges *g*, and the ribs H, having slotted end portions, A, with the knives D and fastening-bolts *i* and *j*, substantially as herein shown and described.

294,242. VEHICLE-SPRING. SHIELDS D. LANCE, Columbus, Ohio. Filed Sept. 28, 1883. (No model.)



Claim.—In a side-bar vehicle, the bars A, provided with the clips F, eyes *a*, and shackles E, in combination with the springs C and plates D, all constructed to operate substantially as and for the purpose set forth.

294,243. HAME-TUG. ERNST G. LATTA, Friendship, N. Y., assignor of two-thirds to Adrian C. Latta, same place, and Harvey D. Blakeslee, Buffalo, N. Y. Filed July 27, 1883. (No model.)



Claim.—1. In a hame-tug, the combination, with the clip A, of a draft-bar, B, a trace-buckle, E, and a coupling-plate, D, provided with fastening devices I, whereby it is attached to the draft-bar, substantially as described.

2. In a hame-tug, the combination of a leather cover or sheath, closed at its edges except at the front end, and a draft-bar and clip seated in said cover, and adapted to be drawn out through the opening at its front end, whereby the clip can be removed without defacing the leather cover, substantially as set forth.

3. The combination, with the clip, of a draft-bar having openings *f* and *h*, and a coupling-plate having a hook, *g*, and head I, substantially as set forth.

4. The combination, with the clip and draft-bar, of a loop and a coupling-plate having spurs adapted to penetrate the loop, and means whereby the coupling-plate is attached to the draft-bar, substantially as set forth.

5. In a hame-tug, the combination, with a draft-bar, B, having an elongated opening, *h*, of a coupling-plate, D, having a head, I, constructed with lateral projections *i*, substantially as set forth.

6. In a hame-tug, the combination, with a draft-bar, B, having openings *f* and *h*, of a coupling-plate, D, having a hook, *g*, a head, I, and a socket, *j*, substantially as set forth.

294,244. FILTER. JAMES T. A. LEWIS and CHARLES A. WOLFF, Boston, Mass. Filed May 14, 1883. (No model.)



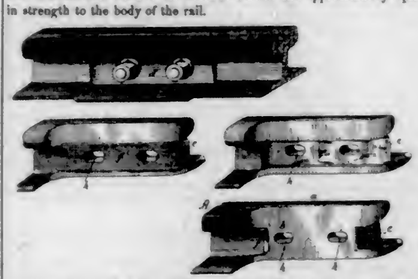
Claim.—1. The improved filter composed of the part *b*, having the annular seat *c*, adapted to support a filtering-disk, and provided with an annular groove, *f*, and the part *a*, having an annular end provided with an annular bead, *g*, adapted to project into said groove and co-operate with the latter in holding the edges of the filtering-disk, said parts *a* and *b* being connected by screw-threads formed thereon, as describe l, whereby said parts may be adjusted to cause the bead and groove to either bind or release the edges of the filtering-disk, as set forth.

2. In a filter, the combination of the threaded part *b*, having the annular seat *c*, provided with the annular groove *f*, the part *a* threaded to engage with the threaded surface of the part *b*, and having an annular end provided with the annular bead *g*, adapted to project into said groove, and the filtering-disk having its edges interposed between said bead and groove, and co-operating with said bead and groove in forming a water-tight joint between the parts *a* and *b*, as set forth.

3. The improved filter composed of the parts *a b*, separably connected, as described, and adapted to clamp a filter-disk between their proximate surfaces, the part *b* having a flange, *b'*, and a strainer, *i*, supported by said flange, as set forth.

294,245. RAILROAD-RAIL. FRANCIS LIGHTFOOT, Media, Pa. Filed Oct. 19, 1883. (No model.)

Brief.—A railway-joint made by swaging or pressing the ends of the rails aside and lapping them by each other in such a manner as to form a continuous tread of the width of the rail and approximately equal in strength to the body of the rail.



Claim.—1. Railway-rails having their ends swaged or pressed aside, and at the same time thickened in the web and elongated, the swaged, thickened, and elongated ends of the adjoining rails being adapted to lap by each other, and thereby form a continuous tread equal in width to that of the rail, and equal or approximately equal in strength to the body of the rail, substantially as set forth.

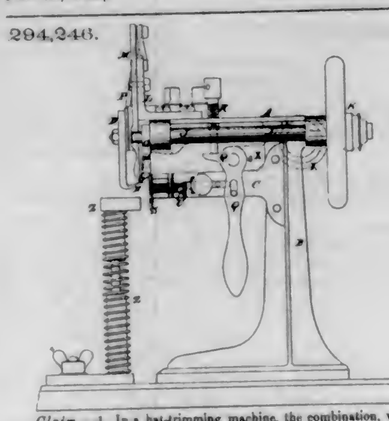
2. A railway-joint consisting of two laterally-swaged rail ends lapping onto each other in or approximately in the vertical central plane of the rails, each thickened in its web, but having in cross-section a less area of metal than the original rail, substantially as set forth.

3. A railway-rail swaged or pressed aside, and having a longitudinally-projecting tongue, *c*, a recess, *e*, formed by said tongue and the head and flange of the rail, and having a projection, *f*, forming a continuation of the web on the recessed side of the rail, in combination with an adjoining rail having a similarly-formed end, substantially as set forth.

294,246. APPARATUS FOR PARING THE BRIMS OF SILK AND FELT HATS, &c. LEWIS FAIRBURN MARSH, Bristol, County of Gloucester, and JAMES CREE, Denton, County of Lancaster, England. Filed Aug. 30, 1883. (No model.) Patented in England Apr. 13, 1883, No. 1,963.

Brief.—Improvement on the invention of Letters Patent No. 206,298, granted to John R. Kelsey, dated January 27, 1882.

294,246.



Claim.—1. In a hat-trimming machine, the combination, with a feeding-tool and a reciprocating knife, of an adjustable face-plate against which the hat rests during the operation of trimming, substantially as described.

2. The combination, with a hooked gage-plate upon which the edge of the hat-brim rests, of a feeding-tool, a guillotine-knife, and an adjustable face-plate, substantially as described.

3. The combination, with the adjustable face-plate, of the end pieces jointed thereto, and means, substantially as described, for adjusting the same to suit hats of different sizes, substantially as described.

4. The combination, with the adjustable face-plate, of the weighted lever having a finger upon its end and a set-screw bearing thereon, and serving to adjust the position of the lever, substantially as described.

5. The combination, with the gage-plate having a hooked end, of the feeding-tool actuated by a cam upon the shaft of the machine, and a spring drawing said tool downward and to one side, substantially as described.

6. The combination, with a reciprocating knife, of a feeding-tool and means, substantially as described, for actuating the same.

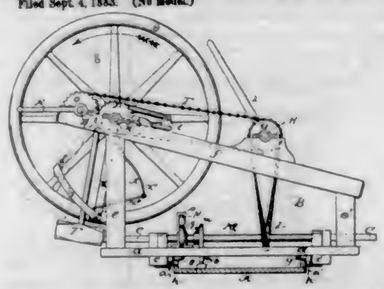
7. The combination, with a reciprocating or guillotine knife, of a gage-plate which supports the hat-brim during the operation of trimming, and means for actuating said knife, substantially as described.

8. The combination, with the feeding-tool M, having a slot, *m*, of the spring P and shaft J, having a cam, N, substantially as described.

9. The combination, with the face-plate S, of the pivoted end pieces, S', steel springs Y Y, and means for adjusting said end pieces relatively to the face-plate, substantially as described.

10. The combination, with the gage-plate D, having hooked end E, of the knife F, carried by the plate G, pivoted to stud H, and having a loop, *g*, the cam I, and shaft J, substantially as described.

294,247. MINING-MACHINE. JAMES H. MCDONALD, Worden, Ill. Filed Sept. 4, 1883. (No model.)

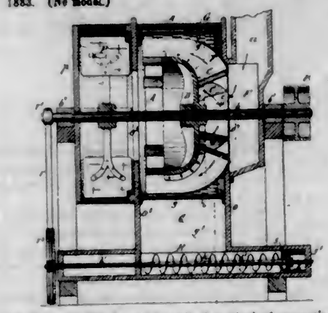


Claim.—1. In combination with the shaft R, having the arm *s* fixed thereto, and the hammer pivotally secured in said arm, the harness for the hammer, consisting of the arm *x*, secured to the shaft R, and the loop *x'*, provided with elastic cushions x^2, substantially as and for the purpose set forth.

2. In combination with the shaft R, having the arm *s* fixed thereto the hammer pivotally secured in said arm, and the harness for the hammer, consisting of the arm *x*, secured to the shaft R, and the loop *x'*, provided with elastic cushions x^2, and the spring-arm x^4, provided with the stirrup x^3, substantially as and for the purpose set forth.

3. In combination, the gear-wheel E, fixed to the power-shaft, the wheel G, suitably connected to the wheel E, and having fixed to its shaft the lever I and sprocket-wheel K, the latter suitably connected with the wheel L on a shaft, M, having the cam r, the lever N, provided with lug P, and the drill-bar C, having the twisted gear J, adapted to engage with the lugs P on the lever N, and the lug *i*, adapted to engage with the lever I, substantially as and for the purpose set forth.

294,248. METHOD OF AND APPARATUS FOR SEPARATING DUST FROM AIR. JOHN M. MCINTYRE, Lockport, N. Y. Filed July 5, 1883. (No model.)



Claim.—1. The herein-described method of separating dust from air, which consists in driving the dust particles out of the air-current by centrifugal force into a closed receiving-chamber, while the air which has been freed from dust is permitted to escape in a different direction, substantially as set forth.

2. In a machine for separating dust from air, the combination of revolving beaters, and a closed receiving-chamber having an inner perforated wall surrounding said beaters, and inlet and outlet openings through which the dust-laden air is conducted to the beaters, and the purified air is permitted to escape therefrom, substantially as set forth.

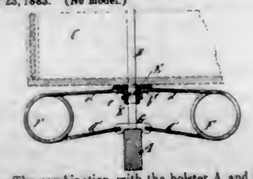
3. In a machine for separating dust from air, the combination of revolving beaters, and a closed receiving-chamber having an inner perforated wall surrounding said beaters, and inlet and outlet openings through which the dust-laden air is conducted to the beaters, and the purified air is permitted to escape therefrom, and a trapped discharge device, whereby the dust is removed from the closed chamber without permitting the air to escape therefrom, substantially as set forth.

4. In a machine for separating dust from air, the combination of revolving beaters, and a closed receiving-chamber having an inner perforated wall surrounding said beaters, and inlet and outlet openings through which the dust-laden air is conducted to the beaters, and the purified air is permitted to escape therefrom, and an auxiliary fan, whereby the air is caused to flow through the separator, substantially as set forth.

5. In a machine for separating dust from air, the combination of revolving beaters with a closed receiving-chamber having its inner wall constructed with openings having inwardly-projecting rear edges, substantially as set forth.

6. The combination, with the chamber G, having an inner perforated wall, *g*, of revolving beaters C, a head, D, to which the beaters are secured, and a hood, F, by which the spaces between the receiving portions of the beaters are closed, substantially as set forth.

294,249. BOLSTER-SPRING FOR WAGONS. BERNARD G. MEINKEN, Newtown, assignor to himself, and Charles Cook, New York, N. Y. Filed May 23, 1883. (No model.)

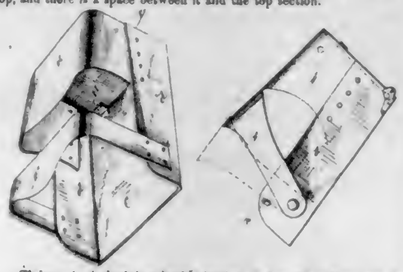


Claim.—The combination, with the bolster A and its stakes B, of the bearers composed of the pieces or bars E, extending at their ends on opposite sides of the stakes, and the adjustable spacing pieces or blocks *a*, and the coiled springs having their ends connected with the bolster and bearer, substantially as herein described.

294,250. DREDGING-BUCKET. JOSEPH MENGE, New Orleans, La. Filed Oct. 18, 1883. (No model.)

Brief.—The dredger-bucket, constructed of upper and lower sec-

tions and a bottom, has a pivoted cutter-bar conforming in outline to the periphery of the bucket. Such cutter is limited in forward play by a stop, and there is a space between it and the top section.



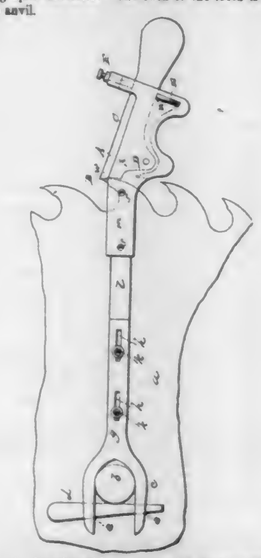
Claim.—1. A dredging-bucket having at the upper front end, in advance of the top section, an attached cutter having a similar peripheral outline and an intermediate space between the top section and cutter-bar substantially as described.

2. A dredging-bucket having the cutter pivotally connected to the sides of the bucket and arranged in advance of the top section of the bucket, and stop means, substantially as and for the purpose set forth.

3. The improved dredging-bucket consisting of the lower section, upper section, bottom, and cutter having peripheral outlines to correspond with the upper section, with the intermediate space, substantially as described.

294,251. SAW-SWAGE. JOHN MILLER, La Otto, Ind. Filed May 26, 1883. (No model.)

Brief.—The metal at the point of a saw-tooth is spread by striking with the tool G, or striking the point *x* of the tool with a hammer, the edge 2 resting upon the tooth. The back of the tooth is supported by an adjustable anvil.



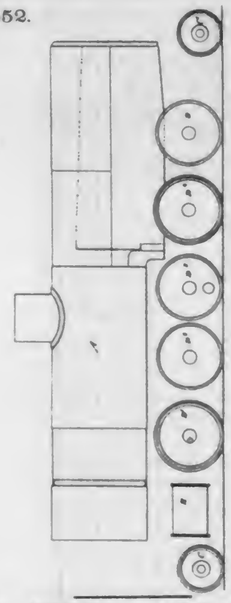
Claim.—1. An adjustable saw-swaging device consisting of the forked shank end *c* and tapering key, the adjustable shank *l*, and cleft head *m*, the lateral adjustable slip-bearing *t*, and the adjustable swage-anvil A, pivoted in the cleft head, the said device being adapted for operation in connection with the instrument G, substantially as specified.

2. The combination with an extensible shank, of a reversible cleft head, carrying attached to one of its arms an adjustable lateral bearing, and having pivoted between its walls an anvil-piece, adjustable between a rear tapering key and a front key or set-screw, substantially as specified.

294,252. LOCOMOTIVE. ALEXANDER MITCHELL, Wilkes-Barre, Pa. Filed July 31, 1883. (No model.)

Claim.—A locomotive-engine having three, four, five, or more pairs of driving-wheels, and a truck at each end of the boiler, the rear driving-wheels having plain or flangeless tires, substantially as set forth.

294,252.



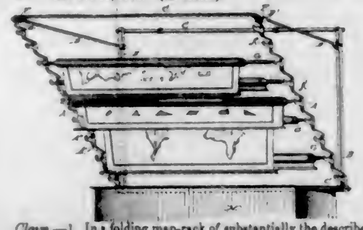
294,253. BOOT OR SHOE. CHARLES W. MONSON, Lagro, Ind. Filed Oct. 11, 1883. (No model.)



Claim.—1. The combination, with a boot or shoe sole and upper, of a cord inserted beneath the loops of the sole-edge stitches and upon the leather, substantially as and for the purpose set forth.

2. The method herein described of securing the sole and upper of a boot or shoe, consisting of passing a cord of suitable size back and forth between the loops of the sole-edge stitches and the surface of the leather, whereby the bearing-surface of the stitches is increased and cutting of the leather prevented, substantially as shown and described.

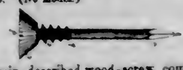
294,254. FOLDING MAP-RACK. FRANK P. MONTGOMERY, San Jose, Cal. Filed Oct. 13, 1883. (No model.)



Claim.—1. In a folding map-rack of substantially the described construction, the combination of the front end pieces, A A, bent to form steps A′, and provided with eyes A″, adapted to receive the ends of the spring-rollers, upon which the maps or charts are mounted, and having rings F secured upon them at their upper extremities, rear end pieces, B B, connecting horizontal rods C C C, and hinged rods D D, having hooks D′, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

2. The combination of the folding map-rack herein shown and described, consisting of the front end pieces, A A, bent to form steps A′, and provided with eyes A″ and rings F, rear end pieces, B B, connecting horizontal rods C C C, and hinged rods D D, having hooks D′, with the box H firmly secured to the lower horizontal rod, C, of the rack-frame, as set forth.

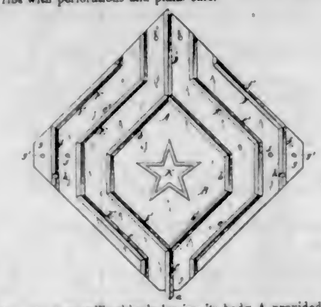
294,255. WOOD-SCREW. SAMUEL MONTGOMERY, New York, N. Y. Filed Oct. 24, 1883. (No model.)



Claim.—The herein-described wood-screw, composed of the head, a threaded portion adjacent thereto, and a cylindrical or plain portion, pointed as explained, substantially as shown and described.

294,256. METALLIC SHINGLE. LEVI H. MONTROSS and JOHN C. WENT, Simcoe, Ontario, Canada, assignors of one-third to James Peachey, same place. Filed Nov. 23, 1883. (No model.)

Brief.—Consists of a square plate having a central plane portion inclosed by a rib, and ribs extending upward and downward from the upper and lower corners of the central rib to the upper and lower corners of the main plate. A lip depends from the lower corner of the main plate. Ribs are arranged on the outside of the central rib, and beyond these are ribs with perforations and plane ears.



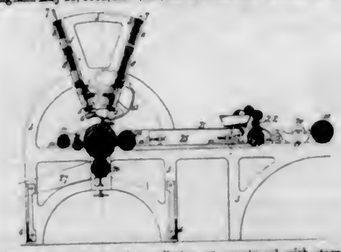
Claim.—1. A metallic shingle having its body A provided with a central plane portion, B, inclosed by a rib, *b*, and ribs C and D, extending downwardly and upwardly from the lower and upper corners of the rib *b* to the lower and upper corners of the body A, substantially as set forth.

2. A metallic shingle having its body A provided with a central plane portion, B, inclosed by a rib, *b*, ribs C and D, extending downwardly and upwardly from the lower and upper corners of the rib *b* to the lower and upper corners of the body A, and upright ribs E E and F F, arranged on opposite sides of the central rib, *b*, substantially as set forth.

3. A metallic shingle having its body provided with a central plane portion, B, inclosed by a rib, *b*, a rib, D, extending upwardly from the upper corner of the rib *b*, a rib C, extending downwardly from the lower corner of the rib *b*, and provided with a lip, *a*, and outer ribs, F, having openings *h*, substantially as set forth.

4. A metallic shingle having its body provided with a central plane portion, B, inclosed by a rib, *b*, a rib, D, extending upwardly from the upper corner of the rib *b*, a rib, C, extending downwardly from the lower corner of the rib *b*, and provided with a lip, *a*, outer ribs, F, having openings *h*, and plane ears *g*, arranged outside of the ribs F, substantially as set forth.

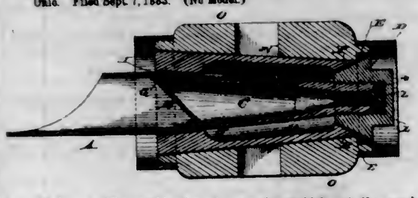
294,257. MACHINE FOR EMBOSSING AND BACKING WALL-DECORATING MATERIALS. WM. SCOTT MORTON, Edinburgh, County of Mid-Lothian, Scotland. Filed June 18, 1883. (No model.) Patented in England May 23, 1882, No. 2,420, and in France Nov. 23, 1882, No. 152,258.



Claim.—1. An embossing-cylinder, 11, combined with stampers 6, which are lifted by rotating cams 9, and are made by springs 8 to press the material into the intaglio parts of the cylinder, substantially as set forth.

2. In combination with the embossing-cylinder 11 and the stampers 6 and their actuating mechanism, apparatus, substantially as described, for moistening, pasting, warming, and applying backing-paper, substantially as set forth.

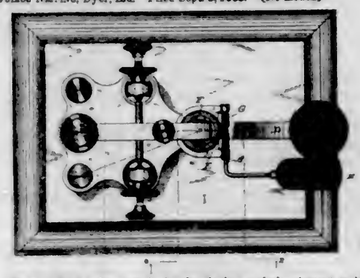
294,258. SPINDLE FOR VEHICLES. CHARLES E. MURRAY, Brandt, Ohio. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination of a tapering vehicle spindle or axle having a screw-threaded end, a wheel-hub having an inverted conical outer end in its perforation, a screw-cap fitting upon the end of the spindle and having an inner conical end, and a number of washers bearing against the end of the spindle and the inside of the screw-cap, as and for the purpose shown and set forth.

2. The combination of a hollow spindle forming an oil-receptacle, and adapted to be attached to the end of an axle-tree having a longitudinal groove upon its upper side opening into the interior of the spindle through two perforations, one at each end of the groove, having a perforation at its lower side opening into the interior, and provided with a screw-threaded open neck at its outer end closed by a removable plug, a vehicle-hub having the outer end of its bore beveled inwardly, and forming an annular recess near the said end, a screw-cap having a conical inner end, and a number of washers fitting inside said cap, as and for the purpose shown and set forth.

294,259. CIRCUIT-CLOSER FOR TELEGRAPHIC INSTRUMENTS. JULIUS NEPPING, Dyer, Ind. Filed Sept. 8, 1883. (No model.)



Claim.—1. An improved circuit-closing switch adapted to be applied to an ordinary operator's instrument, so that the circuit is opened by the hand of the operator in the act of manipulating the key and automatically closed when his hand is removed, said switch consisting of the combination of the securing-plate *a*, the spring-arm A, pivoted thereon, and the contact-stud E, carried by the spring-arm, substantially as set forth.

2. The herein-described circuit-closing switch adapted to be applied to an operator's instrument, consisting of the combination of the bifurcated securing-plate *a*, the spring-arm A, pivoted thereon, and the contact-stud *c*, carried by the spring-arm, substantially as set forth.

3. The combination of the securing-plate, the spring-arm pivoted thereon, the adjustable thumb-piece mounted on the outer end of the spring-arm, and the contact-stud carried on the inner end of the arm, substantially as and for the purpose specified.

294,260. TRUNK. JOHN O. NILES, Saratoga Springs, N. Y. Filed Oct. 2, 1883. (No model.)



Claim.—1. The combination, in a trunk, of the re-enforcing heads setting within the ends of the trunk, and recessed, as described, the end sections of the trunk, and the sides thereof, the heads having central aper-

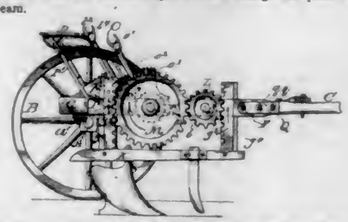
tures, through which extend the handles secured to the end sections, substantially as and for the purposes specified.

2. In combination with the sides and ends of a trunk constructed and arranged as described, the strengthening-battens at the sides and bottom, and the rabbeted batten at the top, substantially as and for the purposes set forth.

3. The combination, with a trunk, of a series of drawers provided with removable backs, whereby the contents may be readily handled in unpacking and the dust removed, substantially as specified.

294,261. WHEEL-PLOW. E. FRANK O'HAVER, Murphysborough, Ill. Filed Dec. 18, 1883. (No model.)

Brief.—The rear vertical rack-bar slides in a guide-block placed upon an arm that has vertical adjustment to change the pitch of the plow-beam.



Claim.—1. In a wheel-plow, a plow-supporting beam having at each end front and rear guide-blocks and rack-bars, the combination of a master-gear and pinion arranged parallel with the beam and meshing with each other and with said rack-bars, and a lever adapted to operate the master-gear, substantially as specified.

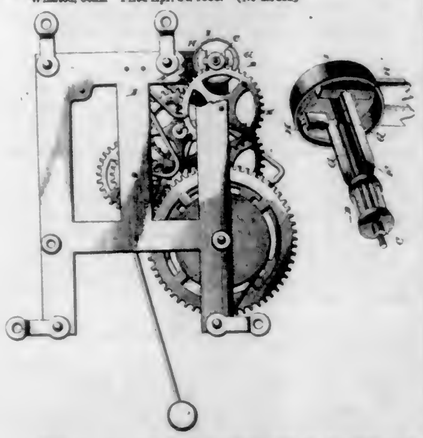
2. The combination of a plow-supporting beam having a front guide-block and rack-bar with a rear guide-block and rack-bar pivotally supported thereon, a master-gear and pinion meshing with each other and with said rack-bars, and means for operating at will either the master-gear or the pivotally-supported block and rack, substantially as specified.

3. The combination of the beam G, gear M, pinion L, arm P, rack-bars g^2 g^3, and levers O P', substantially as shown and described.

4. The combination of beam G, segmental ratchet *p*, arm P, lever P', rack-bar g^3, plow-beam K, and rack-bar g^2, substantially as shown and described.

5. The combination of the beam G, segmental racks *p* o^3, levers P' O, the latter having pawls o^3 *o*, ratchet N, gear M, pinion L, rack-bars g^2 g^3, and plow K, substantially as shown and described.

294,262. STRIKING MECHANISM FOR CLOCKS. GEO. B. OWEN, Winsted, Conn. Filed Apr. 24, 1883. (No model.)



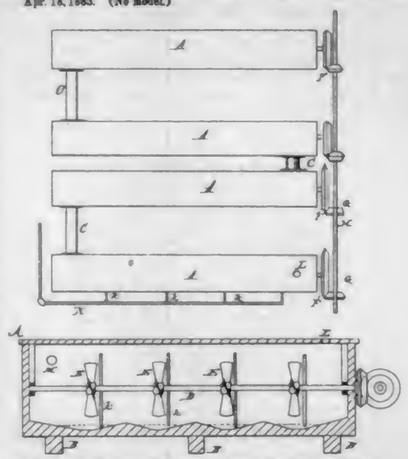
Claim.—1. In a clock, the combination, with the fan-arbor of the strike-train, of a speed-regulator attached to the fan-arbor and actuated thereby, said regulator consisting, essentially, of springs and weights constructed and arranged to regulate the rate of speed of the striking-train substantially as set forth.

2. In a clock, the combination, with the fan-arbor of the striking-train, of a speed-regulator attached to the fan-arbor and actuated thereby and constructed and arranged to regulate the rate of speed of the striking-train by varying frictional resistance, substantially as set forth.

3. In a clock, the combination, with the fan-arbor of the striking-train, of a speed-regulator attached to the fan-arbor and actuated thereby, said speed-regulator constructed and arranged to be adjusted and insure any predetermined uniform rate of speed to the striking-train, substantially as set forth.

4. In a clock, the combination, with the fan-arbor of the strike-train, of a speed-regulator consisting, essentially, of spring-arms attached to the fan-arbor, weights attached to the outer ends of said arms, and a stationary frictional surface with which said weights engage, substantially as set forth.

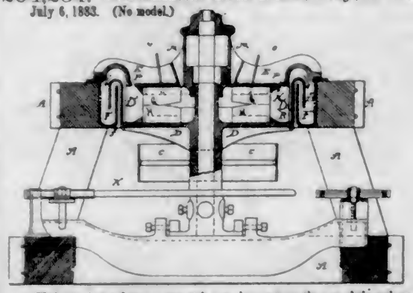
294,263. AMALGAMATOR. AUSTIN B. PAIGE, Chicago, Ill. Filed Apr. 18, 1883. (No model.)



Claim.—1. The combination of a series of chests, A, having a series of depressions therein, shafts D, provided with radial arms E, working in said depressions, and means whereby shafts D and radial arms E are revolved at different rates of speed, substantially as set forth, for the purposes specified.

2. The combination of a series of chests, A, connected by pipes C, said chests having a series of depressions for mercury along the bottom thereof, a series of shafts D, having radial arms E, working in said depressions, means for revolving said shafts at different rates of speed, and a series of pipes, *k*, for discharging steam upon the mercury and pulp in the bottom of said depressions, substantially as and for the purposes set forth.

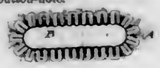
294,264. AMALGAMATOR. AUSTIN B. PAIGE, Chicago, Ill. Filed July 6, 1883. (No model.)



Claim.—As an improvement in amalgamators, the revolving chamber N, surrounding the grinding-plates G and H, and provided with recesses R, in combination with the water-inlets P and overhanging lip D'', substantially as and for the purposes set forth.

294,265. EYELET. CHARLES K. PECKHAM, St. Louis, Mo. Filed May 31, 1883. (No model.)

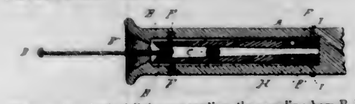
Brief.—The eyelet is formed from a thin narrow strip of metal, or from fine wire bent back and forth to form a series of open-end loops, its two ends brought together and secured, when the eyelet is ready to be inserted within a button-hole.



Claim.—1. An expansible and contractible metallic eyelet for button-holes.

2. An expansible and contractible eyelet for button-holes, consisting of a thin strip or piece of metal bent and formed substantially as shown and described.

294,266. CAR-COUPLING. HIRAM PEDOCK, Burlington Junction, Mo. Filed Nov. 28, 1883. (No model.)



Claim.—In a barbed-link car-coupling, the coupling-bars B, hinged in the manner shown, the socketed tension-springs F, and the shaft J', provided with lever K, for operating the cam C from the ground, in combination with the draw-bar, having inward projections covering the ends of the coupling-bars, and the ordinary link-pin hole, all constructed and arranged to operate substantially as specified, for the purpose set forth.

294,267. WEATHER-STRIP. DEVOLCO C. POTTER and JOHN STONE, Pittsburg, Pa. Filed Jan. 19, 1884. (No model.)

Brief.—An elastic weather-strip formed in one piece and consisting of a main body, an oblique apron, and a longitudinal bead on the rear face of the main body. Strengthening-ribs are secured at intervals to the oblique apron and main piece.



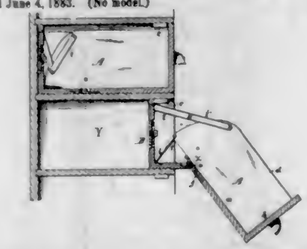
Claim.—1. A weather-strip for doors, consisting, essentially, of a main body and an oblique apron, constructed in such manner as that when the door is closed the lower edge of said main body will lie between the lower outer edge of the door and the elevation upon the sill, and the lower edge of the apron will press upon the upper surface of the sill, substantially as and for the purposes described.

2. A weather-strip for doors, consisting of the main body A and the apron A', constructed in a single piece, as and for the purposes described.

3. A weather-strip for doors, consisting of a main body, A, provided upon one side with a longitudinal bead, *a*, and upon the opposite side with an oblique depending apron, A', substantially as and for the purposes described.

4. The within-described weather-strip, consisting of a main body, A, provided with bead *a*, and apron A', secured to said main body, and provided with strengthening-ribs a^2, connecting it with the body, substantially as and for the purposes set forth.

294,268. PAPER-FILE BOX. FRED. W. PRATT, Washington, D. C. Filed June 4, 1883. (No model.)



Claim.—1. A file-box consisting of a receptacle having closed sides, bottom, and ends, and divided transversely into two sections hinged together, adapted to slide into the compartment of a file-case, and a stop limiting the sliding motion of the rear section substantially as set forth.

2. A file-box consisting of an outer section, constituting the receptacle for the papers, an inner section hinged to the outer section at the bottom thereof, and adapted to support the same when withdrawn from the case, and means for limiting the downward movement of the outer section when so withdrawn, and the sliding movement of the inner section, substantially as set forth.

3. A file-box composed of two sections, A B, hinged together at the bottom, and provided with means, substantially as described, for limiting the movement of the outer in respect to the inner section, substantially as described.

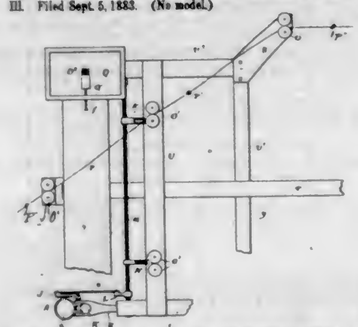
4. The inner section of a file-box, hinged to the outer section, consisting of two pieces, the upper of which is connected adjustably to the lower, for the purpose specified.

5. The combination, in a file-box, of a rear section, B, a leaf, *f*, hinged directly to the bottom thereof, and a receptacle connected to the leaf, substantially as set forth.

6. The combination, in a file-box, of the sections A B, hinged together, and jointed arms *i i'*, for limiting the movement of the outer section; substantially as set forth.

7. The combination, with a file-case provided with stops, as *c*, of sliding file-boxes, each consisting of two sections hinged together, and provided with devices, substantially as described, for limiting the movement of the sections, the end of the inner section being made adjustable, substantially as described.

294,269. CHECK-ROW CORN-PLANTER. EDMUND W. QUINCY, Peoria, Ill. Filed Sept. 5, 1883. (No model.)



Claim.—1. The combination, with the machine-frame, of the line-guiding sheaves arranged diagonally upon said frame in line one with the other, whereby the check-line may be conducted in a direct line diagonally across the machine.

2. The combination, with the machine-frame, of the line-guiding sheaves O O^2 and intermediate guiding-sheaves, O', arranged diagonally upon said frame, and the rock-shaft, carrying the rock-arms, arranged relatively to the sheaves O', to be engaged positively by the diagonally-passing check-line.

3. The combination, with the machine-frame, the line-guiding sheaves, and the rock-shaft carrying the rock-arms, of the pivoted cup secured upon a counter-shaft, the seed-cup, and the seed hopper and spout, substantially as and for the purposes set forth.

4. The combination, with the frame, the projections or brackets S, carrying sheaves O, the sheaves O', mounted upon said frame, and the bracket carrying the sheaves O^2, of the rock-shaft M, the rock-arms L N, the spring *s*, the link K, shaft D, arm J, cup A, and the seed-cup B C F, substantially as and for the purposes described.

294,270. COMMUTATOR FOR DYNAMO OR MAGNETO ELECTRIC MACHINES. FRANK B. RAE and CLARENCE L. HEALY, San Francisco, Cal. Filed Mar. 12, 1883. (No model.)



Claim.—1. In a commutator for dynamo or magneto electric machines, a series of rings or sections composed of four segments each, two of which, diametrically opposite, are of a length proportionate to the neutral space of the machine and electrically connected together, substantially as set forth.

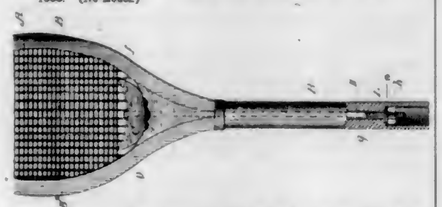
2. In a commutator for dynamo or magneto electric machines, a series of rings or sections composed of four segments each, two of which, diametrically opposite, are connected with the free ends of a coil or coils, substantially as set forth.

3. A commutator for dynamo or magneto electric machines, consisting of a series of metal rings or sections, each made in four parts and connected in pairs, as described, in combination with a series of brushes, so that a current of constant direction passes from one coil to the next through a brush adapted to bear upon the commutator-sections of both such coils, substantially as set forth.

4. A commutator for dynamo or magneto electric machines, consisting of a series of rings composed of four sections or parts connected as

described, and brushes arranged substantially as described, so that all the active coils are connected in series, and their current is shunted around the inactive coil or coils, substantially as set forth.

294,271. RACKET. ROBERT REACH, Philadelphia, Pa. Filed Dec. 3, 1883. (No model.)

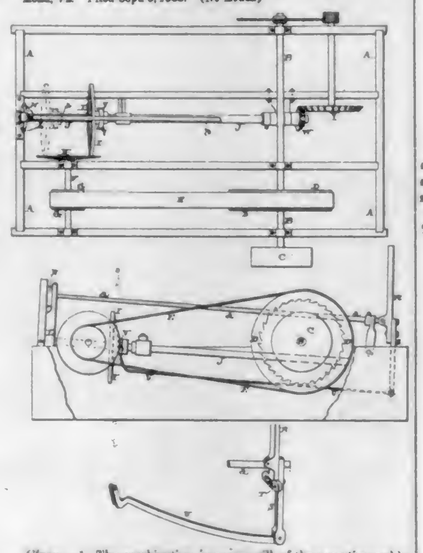


Claim.—1. The combination of handle B', having orifice *g* and shoulder L, nutted screw-rod D, tongue C, having semicircular arches *f*, and frame B, substantially as shown and described.

2. The tongue C, having perforated plate E, wings F, and arches *f*, for tightening the strands of net A, in connection with tightening-rod D, substantially as shown and described.

3. The tongue C, having arches *f* to protect the strands of net A against being cut or worn by plate E, substantially as shown and described.

294,272. SAW-MILL-FEED MECHANISM. THOMAS J. REANY, Richmond, Va. Filed Sept. 3, 1883. (No model.)



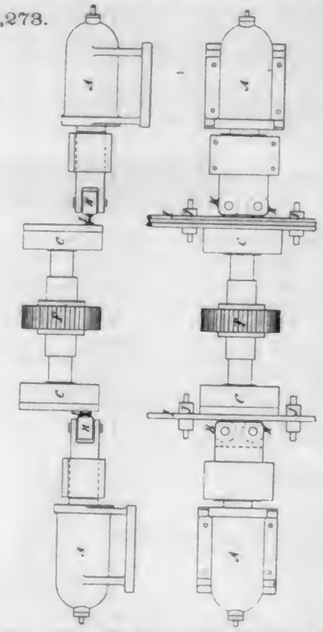
Claim.—1. The combination, in a saw-mill, of the operating-rod by means of which the friction-disk and flange are thrown in and out of contact with the lever R S, which is loosely attached to one end of the operating-rod, the rod U, which is loosely connected to the lower end of the lever, the yoke V, which is connected to the friction-disk, and the shaft J, upon which the friction-disk is placed, substantially as set forth.

2. The combination of the operating-rod A, for moving the friction-disk in and out of contact with the flange, and the operating-lever R S, loosely connected to one end of the rod A, the lower end of the part R being slotted, and the part S being connected to the part R through the slot, with the connecting-rod U, yoke V, the friction-disk, and the shaft J, substantially as specified.

3. In a saw-mill, the combination of the saw-shaft, a short driving-shaft located to one side thereof, and a driving-belt for both shafts, with the friction-disk secured to one end of the short shaft, the friction-wheel adapted to be moved back and forth past the center of the disk, the shaft J, having the friction-wheel applied to one end and a pinion for driving the carriage upon the other, and a rod for moving the friction-wheel in and out of gear with the disk, substantially as shown.

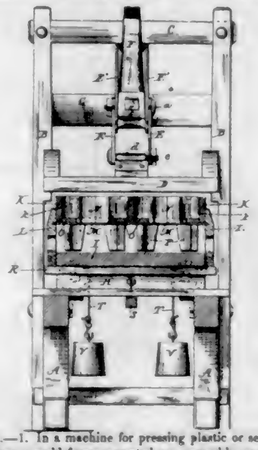
294,273. APPARATUS FOR STRAIGHTENING RAILS. LEWIS RICHARDS, Dowlais, County of Glamorgan, England. Filed July 27, 1883. (No model.) Patented in England Oct. 30, 1882, No. 5,145.

294,273.



Claim.—The combination, in an apparatus for straightening rails, of a rotary disk and a roller or rollers arranged opposite the face of the disk and adapted to rotate in a plane at right angles to the face of the disk, substantially as herein described.

294,274. MACHINE FOR COMPRESSING PLASTIC MATERIAL. CYRUS J. RIDENOUR, Springfield, Ohio. Filed Jan. 15, 1884. (No model.)



Claim.—1. In a machine for pressing plastic or semi-plastic material into form, a mold-frame mounted on a movable supplemental frame located therein, said mold-frame being adapted to yield to the force exerted thereon by the pressure-plate, and provided with mold-bottoms having legs adapted to rest upon the floor of the supplemental frame and receive the impact of the pressure-plate, as set forth.

2. In a machine for pressing plastic material into form, a vertically-sliding mold-frame provided with mold-compartments, and an elastic strip, M, carrying the cores N, secured to the under side of the mold-frame, as and for the purpose set forth.

3. In a machine for molding and pressing plastic material into form, a supplemental frame, H, adapted to be moved laterally to and from the pressure-platen provided with the floor I, in combination with a vertically-moving mold-frame and mold-bottoms, as set forth.

4. In a machine of the character described, a supplemental frame, H, adapted to be moved laterally to and from the pressure-platen, in combination with a vertically-moving mold-frame, said mold-frame being connected to the supplemental frame by elastic connections, which will permit the mold-frame to yield or move down under pressure and be returned again to an elevated position when released from such pressure, as set forth.

5. In a machine of the character described, the supplemental frame H, provided with the sheaves or pulleys J, in combination with the vertically-moving mold-frame provided with weighted cords passing over said pulleys, whereby the mold-frame is held in an elevated position, as set forth.

6. In a machine of the character described, the vertically-moving mold-frame adapted to slide over and connected to the supplemental frame by means of the cross-bar R, in combination with the lever S, whereby the mold-frame is drawn down and the articles ejected therefrom by means of the mold-bottoms, the legs of which come in contact with the floor of the supplemental frame, located within the side extensions of the mold-frame, as set forth.

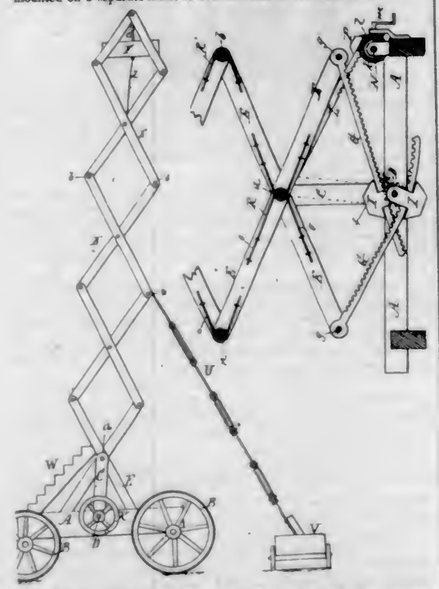
7. The combination of the hand-lever F and toggle-levers E and E', pivoted as described, with the cross-bar G, hinge A, and staple *i*, as and for the purpose set forth.

8. In a mold for shaping plastic material, an elastic bar secured to the under side of the mold-frame, and provided with stationary cores secured thereto, which project up into the mold-cavities, as and for the purpose set forth.

9. A mold-frame provided on its under side with a bar or bars, M, to which are secured the cores N, in combination with a movable mold-bottom resting loosely upon and held in position by said bars M, and adapted to have the cores pass therethrough, as and for the purpose set forth.

294,275. FIRE-ESCAPE. CHESTER A. ROBERTS, Caledonia, N. Y. Filed June 29, 1883. (No model.)

Brief.—Racked bars are secured by one end to the top of the pivoted standards, and at the other end engage with gears on the truck, by which the standards can be adjusted to any angle of inclination; also, racked bars are pivoted by one end to the outer ends of the lower lazy-tongs arms, and also engage pinions on the truck to raise the structure. Guide-blocks hold the racks to the pinions. A lazy-tongs brace is mounted on a separate frame and is swiveled to the main structure.



Claim.—1. In a fire-escape, the combination, with the extension-bars, of pivoted standards which support the bars, racks attached to the top of the standards, and engaging at their outer ends with gears, by which the standards can be adjusted to any position, and racks attached to the bottom of the lower set of bars, extending inward and engaging with gears on a shaft turning on the same center with the standards, for the purpose of raising and lowering the extension-bars, as herein set forth.

2. In a fire-escape, the combination of pivoted standards for supporting the extension-bars, a set of extension-bars pivoted to the top of the standards, a set of gears on a shaft in the same center as the pivots of the standards, and a set of racks attached to rods connecting the ends of the bottom bars, and engaging with the gears on the shaft, as herein set forth.

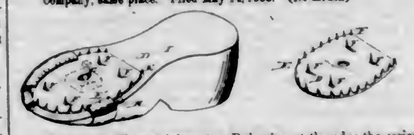
3. In a fire-escape, the combination of the pivoted standards C C, the set of extension-bars E E, the gears H H on the shaft D, the racks G G, attached to the bottom of the extension-bars and engaging with the gears, and the guide-blocks I I, turning on shaft D and holding the racks in place, as herein shown and described.

4. In a fire-escape, the combination, with the pivoted standards C C and extension-bars E E, of the main spring R, having its fulcrum on the cross-rod *o* at the top of the standards, and connected with the two lower bars, and the springs R' R', connected with the outer joints, as set forth.

5. In a fire-escape, the combination, with the axle S, of the bracket T, provided with the dovetailed slot *p*, the journal Q, provided with a dovetailed tongue, *r*, which rests in the slot, and a screw, *s*, passing through the axle and into the tongue, as and for the purpose specified.

6. In a fire-escape, the combination, with the main extension-bars E E, resting on the pivoted standards C C, of the secondary extension-bars U, mounted on a separate frame, and standing at right angles to the main bars, and attached by a swivel to one of the pivots of the main bars, as herein shown and described.

294,276. DEVICE FOR LASTING BOOTS AND SHOES. WARNER ROGERS, Cincinnati, Ohio, assignor to the Warner Rogers Flexible Shoe Company, same place. Filed May 14, 1883. (No model.)



Claim.—1. The retaining-plate D, having at the edge the series of pins or hooks E and in the body thereof the pins or points F, for holding the sole and upper, substantially as herein set forth.

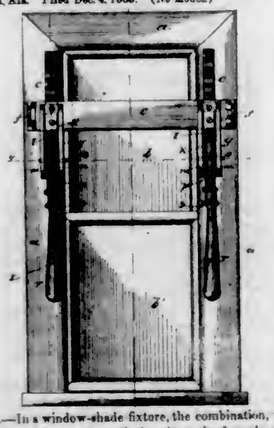
2. The retaining-plate D, having at the edge the series of pins or hooks E and in the body thereof the pins F, projecting upward, in combination with the sole and upper, substantially as herein set forth.

294,277. LOCK FOR ADJUSTING FINGER-RINGS, BRACELETS, &c. FRANZ J. SCHINDLER, New York, N. Y. Filed Dec. 20, 1883. (No model.)



Claim.—The combination, with a finger-ring or bracelet having its shank left detached from the head thereof, of the rotating lock-plate arranged in the head on a suitable key-arbor, and constructed with one or more cam-slots, and the studs of the shank engaging the slots of the rotating plate, substantially as shown and described.

294,278. WINDOW-SHADE FIXTURE. ANTON SCHNACKERS, Birmingham, Ala. Filed Dec. 4, 1883. (No model.)



Claim.—In a window-shade fixture, the combination, with the window-frame having a pair of vertical racks on its face along the vertical

edges of its upper half, of the grooved and shouldered brackets having springs in their front grooves, and dogs with operating-handles pivoted in said grooves, said brackets being secured at their upper ends to a cross-strip for carrying the castings for the shade-roller, substantially as specified.

294,279. PAPER-FILE HOLDER. AUGUSTUS C. SCHOOLEY, Chicago, Ill. Filed Nov. 15, 1883. (No model.)



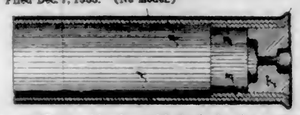
Claim.—1. The combination, with the back A, flange-strip A', and puncturing-wires a^2, forming the essential parts of the body, of a presser, B', and springs B^2, and devices for detachably securing the presser to the body, substantially as described.

2. The combination, with the back A, flange-strip A', and puncturing-wires a^2, of a bar, B, presser B', springs interposed between the bar and presser, and devices for holding the bar upon the body, substantially as described.

3. The combination, with the back A, flange-strip A', puncturing-wires a^2, and end blocks, a a', of the presser-strip B', fitted to drop over the wires a^2 and between the end blocks, a bar, B, fitted to rest on the end blocks, springs B^2, interposed between the bar B and the presser B', and spring-catches A^3, arranged to engage the bar B to the body of the structure, substantially as described.

4. The combination, with the body and the bar B for holding the presser, of spring-catches arranged to engage the ends of said bar, and a detachable clamp arranged to secure the middle of said bar to the body, substantially as described.

294,280. CARTRIDGE-SHELL. OTTO FERDINAND SEBOLD, Brooklyn, N. Y. Filed Dec. 7, 1883. (No model.)

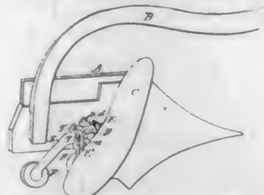


Claim.—1. The combination, with the body of a paper shell, and with its re-enforcement, its base, and its metallic head, of a protecting-tube which embraces the body and the base of the shell, substantially as and for the purpose described.

2. The combination, with the body of a paper shell, and with its re-enforcement and base, of a metallic head embracing the entire body and the base of the shell, substantially as and for the purpose set forth.

294,281. PLOW. RUSSEL B. SHAPCOS, Meadota, Ill. Filed Sept. 21, 1883. (No model.)

Brief.—A cluster of bearing-wheels on adjustable arms that may be adjusted to throw the plow upon the point or heel, or upon either side.



Claim.—1. The combination, in a plow attachment, of a body carrying wheel-arms, circular wedge-plates C C', adapted to support the body on the plow-brace, and a hooked rod for securing the body to the brace, with a tightening-nut and washer, substantially as described.

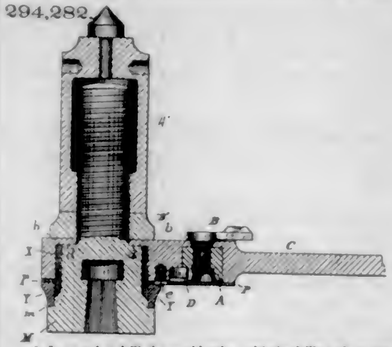
2. The combination, with body D and means for securing it to the plow-brace, of adjustable wheel-arms having slotted shoulders and bolts for securing them in adjustment, as set forth.

3. The combination, with brace a of a plow, of plates c c', bolt b', body D, washer d, and adjustable wheel-arms, as described.

294,282. RATCHET-DRILL. JOHN E. SINCLAIR, Worcester, Mass. Filed Aug. 11, 1883. (No model.)

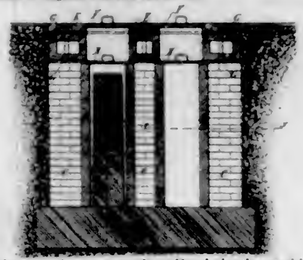
Claim.—1. The combination, with the drill-stock provided with the shoulders d and m, the threaded stem, and ratchet-teeth, of the handle having the aperture a and interior shoulder, b, the collar Y, nut B', and means for actuating the spring-pawls contained in the handle, substantially as specified.

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2. In a ratchet-drill, the combination, with the drill-stock constructed as described, of the handle provided with the under recess, H, the thumb-latch B, perforated block A, having shoulders c c, to engage the rear ends of the spring-pawls D D_1, the securing-plate P, and bolt L, with means for securing the stock to the handle, substantially as specified.

294,283. APPARATUS FOR TREATING STEEL INGOTS. GEORGE JAMES SHIELD, Workington, England. Filed Oct. 3, 1883. (No model.) Patented in England Feb. 22, 1883, No. 980.



Claim.—1. An apparatus for uniformly heating steel ingots, consisting, essentially, of a steel casing, B, sunk in the ground, a metallic frame secured over the upper end of the casing, and having an opening leading into the latter, an inner lid, H, for covering the upper open end of the casing, and an outer lid, F, for covering the opening in the metallic frame, substantially as described.

2. The combination of the steel casing B, sunk in the ground, the metallic frames D and E, arranged over each other above the casing, and each having an opening, bolts connecting the two frames, an inner lid, H, for covering the upper end of the casing, and an outer lid, F, for covering the opening in the upper metallic frame, E, substantially as described.

3. The combination of the steel casing B, sunk in the ground, the metallic frames D and E, bolted together above the casing, and each having an opening through it, non-conductors arranged, respectively, between the two frames and between the casing and the lower frame, and lids H and F, for covering the upper end of the casing and the opening in the upper frame, substantially as described.

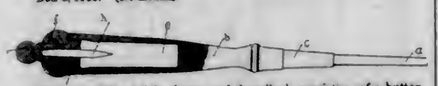
4. The combination of a series of steel casings, B, inclosed by brick-work in the ground, a metallic frame secured over the casings, and having a series of openings—one for each of the latter—and lids H and F, for covering the upper ends of the casings and the openings in the metallic frame, substantially as described.

5. The combination of a series of steel casings sunk in the ground and surrounded by brick-work, metallic frames D and E, bolted together above the casings, and each having a series of openings leading to the casings, and lids H and F, for covering the upper ends of the casings and the openings in the metallic frames, substantially as described.

6. The combination of a series of steel casings sunk in the ground, the brick-work C, surrounding the casings, the metallic frames D and E, attached one upon the other above the casings, and each having a series of openings leading to the latter, non-conducting layers interposed between the two metallic frames and between the brick-work, the casings, and the under frame, D, and lids H and F, for covering the upper ends of the casings and the openings in the top frame, E, substantially as described.

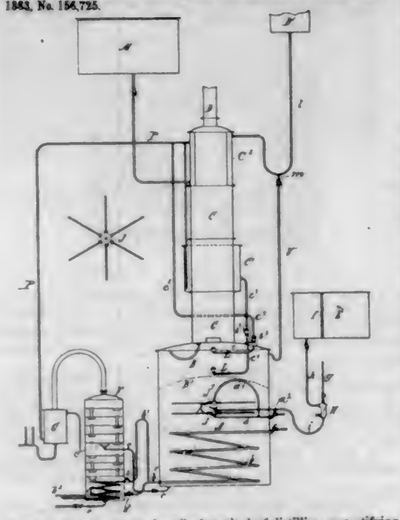
7. A soaking-pit for uniformly heating steel ingots, having an upright lining of steel, in combination with the metallic frames D and E, united by bolts, and having openings leading to the pit, and lids H and F, for covering the top of the pit-lining and the opening in the top frame, E, substantially as described.

294,284. SHOE-BUTTONER. JOHN L. SOMMER, Newark, N. J. Filed Dec. 6, 1883. (No model.)



Claim.—The article shown and described, consisting of a button-hook having a recessed handle, and provided with a removable cap for closing its end, with a piercer or cutting-blade secured to said cap and inclosed within the handle, as and for the purpose set forth.

294,285. PROCESS OF AND APPARATUS FOR THE PRODUCTION OF HIGHLY-PURIFIED ALCOHOL. JULIUS ALFRED STELZNER, Alt Chemnitz, Saxony, Germany. Filed Apr. 2, 1883. (No model.) Patented in Germany Dec. 9, 1882, No. 25,773; in England Feb. 2, 1883, No. 577; in Italy May 23, 1883, XVI, 15,068, and XXX, 434, and in France Nov. 7, 1883, No. 156,725.



Claim.—1. The herein-described method of distilling or rectifying alcohol, which consists in injecting the crude alcohol into the still in the form of spray, vaporizing and purifying the same by means of steam injected into the sprayed alcohol, and injecting water in the form of spray into the combined steam and alcohol vapors, to dilute and purify the same, as set forth.

2. The herein-described method of distilling or rectifying alcohol, which consists in injecting the crude alcohol into the still in the form of spray, vaporizing and purifying the same by means of steam injected into the sprayed alcohol, and injecting water in the form of spray of gradually-diminishing temperature into the combined steam and alcohol vapors as they rise on their way to the rectifying-column, as set forth, for the purposes specified.

3. The herein-described method of distilling or rectifying alcohol, which consists in injecting the crude alcohol into the still in the form of spray, vaporizing and purifying the same by means of steam injected into the sprayed alcohol, subjecting the latter to the action of an alkali or an oil, and injecting water in the form of spray into the alcohol-vapors, substantially as described, for the purposes specified.

4. The herein-described method of distilling or rectifying alcohol, which consists in injecting steam in the form of spray into the sprayed alcohol, subjecting the latter to the action of an alkali in solution, or an oil, and injecting into the combined sprayed liquids and vapors water in the form of spray, and of gradually-decreasing temperature, as said vapors pass from the still to the rectifying-column, substantially as described, for the purposes specified.

5. In a distilling or rectifying apparatus, the combination, with a rectifying-column and a still divided into a series of distilling-chambers, of an injector, a heater, and steam-spraying devices for injecting the alcohol in the form of spray into one of the stills, vaporizing the same and injecting steam in the form of spray into said alcohol-vapors before they reach the second still, and spraying devices for injecting water in the form of spray into the combined vapors as they enter the second still and before they reach the rectifying-column, substantially as described, for the purpose specified.

6. In a distilling apparatus, a still divided into a series of distilling chambers or compartments by means of perforated diaphragms, a rectifying-column, a cooler at the upper end thereof, and a dephlegmator, in combination with a second cooler, C', applied to said rectifying-column between the still and upper cooler, and a connection for connecting the dephlegmator, through one of the coolers, with the still, substantially as described, for the purpose specified.

7. In a rectifying apparatus, the combination, with a rectifying-column, of a refrigerator located at its upper end, a still divided into two or more compartments by means of perforated diaphragms, an injector, heater, and steam-spraying devices located in the initial compartment, into which the alcohol is injected in the form of spray, spraying devices located in the terminal compartment, for injecting water in the form of spray into the combined vapors as they arrive from the initial compartment, and a second refrigerator, C', located on the rectifying-column intermediate of the terminal compartment of the still and the upper refrigerator on the column, all combined for co-operation, substantially as described, for the purposes specified.

8. In a distilling or rectifying apparatus, the combination, with a rectifying-column and a still, of two or more superposed spraying devices, L L', for injecting water at gradually-decreasing temperatures into the alcohol vapors on their way to the rectifying-column, substantially as described, for the purposes specified.

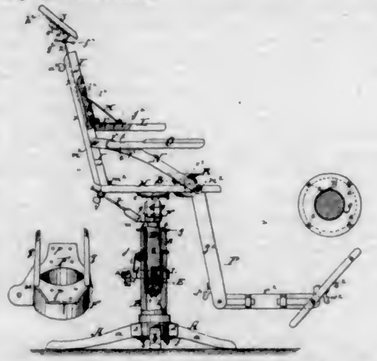
9. In a distilling and rectifying apparatus, the combination, with a distilling and rectifying column, a still, its steam heating-coil, and the exhaust-pipe thereof, of an auxiliary rectifying-column, F, and its steam heating-coil d, connected with the exhaust-pipe of the coil of the still, substantially as described, for the purpose specified.

10. In a distilling and rectifying apparatus, the combination, with a distilling and rectifying column, a still, its steam heating-coil, and the exhaust-pipe thereof, of an auxiliary rectifying-column, F, its steam heating-coil d, and the exhaust-pipe thereof, both connected with the exhaust-pipe of the coil of the still, substantially as and for the purposes specified.

11. In a distilling apparatus, the combination, with a still and a distilling and rectifying column, of a dephlegmator connected by a siphon-pipe with the rectifying-column and by a discharge-pipe with the still, substantially as and for the purposes specified.

12. In a distilling and rectifying apparatus, the combination of a still, an injector provided with a spraying-nozzle for injecting the liquid into the still in the form of spray, and two steam-spraying pipes, J J', located, respectively, above and below the injector spraying-nozzle, substantially as described, for the purposes specified.

294,286. DENTAL CHAIR. EDMUND P. STILES, Austin, Tex. Filed Apr. 24, 1883. (No model.)

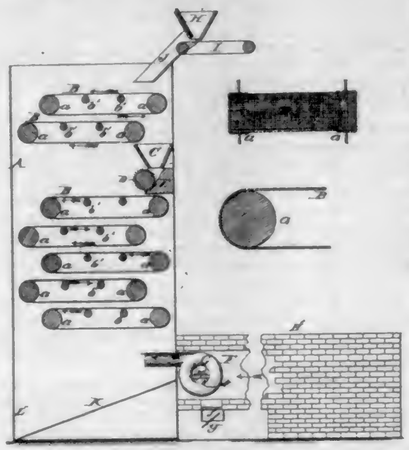


Claim.—1. The dental chair, combined with the downwardly-projecting post D, swiveled block E, roller h, longitudinally-grooved pedestal-cylinder B, cable i, roller j, and windlass k, substantially as described, the cable i passing through two apertures that pierce the cylinder B, and resting in the grooves of said cylinder, substantially as specified.

2. The clamp F, having ears p and lugs q, combined with the bar G, having trunnions r, and with the post D, base-support A B, and seat H, having bearings s, substantially as and for the purpose specified.

3. The child's seat I, combined with the plates J^2, having upright perforated ears I^2, and with the detachable brackets M M, having horizontal pins that extend through said ears, and having downwardly-projecting hooks I^3, and with the perforated plates i^2 and recessed chair-back I, substantially as and for the purpose herein shown and described.

294,287. GRAIN-DRIER. MOSHER A. SUTHERLAND, New York, N. Y. Filed Mar. 4, 1882. (No model.)



Claim.—1. The combination, in apparatus for drying malt and brewers' grains, of a substantially-closed vertical flue or trunk open at the top for a direct draft, and having a bottom opening, L, and a series of perforated endless aprons, with a furnace and a blower arranged to inject the hot gaseous products of combustion into the bottom of said trunk, substantially as described, for the purpose specified.

2. An organized apparatus for drying grain, malt, brewers' grains, &c., composed of the following elements, viz: a flue or vertical chamber open at the top, connected with a suitable furnace, to receive the hot gaseous products of combustion therefrom, a series of perforated endless aprons arranged within said flue or chamber to transmit the material to be dried from one to the other of said aprons successively from above downward, and subjected to the action of the gaseous products of combustion, a blower arranged to inject the hot gaseous products of combustion into said flue or chamber, and devices, substantially as described, for separating or disintegrating the material while subjected to the action of said products of combustion, all substantially as and for the purpose herein set forth.

3. An organized apparatus for drying grain, brewers' grains, &c., composed of the following elements, viz: a flue or vertical chamber open at the top, connected with a suitable furnace to receive the hot gaseous products of combustion therefrom, a series of perforated endless aprons arranged within said flue or chamber to transmit the material to be dried from one to the other of said aprons successively from above downward, and subjected to the action of the gaseous products of combustion, and a blower arranged to inject hot gaseous products of combustion into said flue or chamber, a valve and inlet-passage so placed as to control the admission of air to the flue, and devices, substantially as described, for separating or disintegrating the material while subjected to the action of said products of combustion, all substantially as and for the purpose herein set forth.

4. The combination, in apparatus for drying grain, of a flue or vertical trunk open at the top, a furnace connected with it at the bottom to deliver the gaseous products of combustion into said flue or trunk, a series of endless foraminated aprons arranged within and across said flue to transmit the material to be dried and to allow the hot products of combustion to pass directly through the moving substance, with means, substantially such as described, for separating and disintegrating the material while subjected to the action of said products of combustion.

294,288. MEDICAL COMPOUND. GEORGE TAYLOR, Redding, Cal. Filed Aug. 13, 1883. (No specimens.)

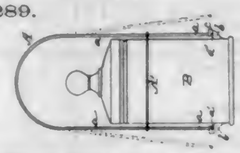
Claim.—The herein-described composition of matter, consisting of pulverized buckeye-nuts, Cayenne pepper, and ground ginger, in the proportions specified.

294,289. DETACHABLE HANDLE FOR GLASS AND EARTHENWARE DISHES. JOHN B. TIMBERLAKE, Jackson, Mich. Filed Dec. 14, 1883. (No model.)

Claim.—1. The combination, with a dish having resisting walls upon opposite sides, of a handle having downwardly-extending elastic legs, which are adapted, substantially as set forth, to be pressed outward against said resisting walls by their elasticity, to hold the handle in place upon the dish, substantially as set forth.

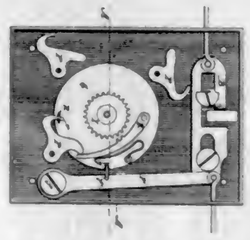
2. The combination, with a dish having two horizontally-arranged walls or surfaces opposite to each other, of a handle having outwardly-extending elastic legs, provided with outwardly-projecting parts which lie under the said walls or surfaces on the dish, and which by their elasticity are pressed outward to engage with said walls or surfaces, substantially as set forth.

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3. The combination, with a dish having seats or recesses opposite to each other, of a handle having downwardly-extending elastic legs, and the foot-pieces hinged to said legs, and which by the elasticity of the legs are forced outward to engage with the dish in the said seats or recesses, substantially as set forth.

294,290. COMBINATION-LOCK. CHARLES TRESCONIS, Lead City, Dak. Filed Sept. 18, 1883. (Model.)



Claim.—1. The combination, with the sliding bolt of a lock, of one or more levers or latches, D, a spring engaging the same to retain it at either end of its arc of motion, and a wire or other means for connecting said latch with said bolt, substantially as specified, whereby the latch may slide the bolt.

2. A spindle, a toothed wheel fixed thereon, a disk adjustably secured on the same, and a spring-pawl on the disk, arranged to engage said toothed wheel, in combination with an arm pivoted in the frame to be set into or out of the path of said pawl, substantially as and for the purpose specified.

3. The disk G, the pawl K, pivoted thereon, and the staple R, secured thereto, in combination with the arm P, having the hook *r*, pivoted to the lock-case, as shown and described.

4. The disk G, the pawl K thereon, and the arm P, journaled to the frame to engage said pawl, in combination with a handle, Q, attached to said arm, a stud in said handle, and the lock-plate provided with notches to receive said stud, as shown and described.

294,291. STEAM-GENERATOR. JAS. W. UPSON, Cleveland, assignor to James E. Upson, Shawnee, Ohio. Filed May 23, 1883. (No model.)

Claim.—1. In an upright steam-boiler or water-heater, the combination of two vertical fuel-magazines, each in the shape of a truncated cone, and each provided with horizontal cold-air tubes, substantially as shown and described.

2. In an upright steam-boiler or water-heater, the combination, with one or more truncated-cone-shaped fuel-magazines, each provided with horizontal cold-air tubes, of the vertical tubes b', substantially as set forth.

3. In an upright steam-boiler or water-heater, the combination, with the plate b^2, having the sheet C secured thereto, of the plate D, having a perforated sloping top extending to and against the plate b^2, and forming an air-chamber, and the tubes *d*, adapted to supply the said chamber with air, substantially as shown and described.

4. In an upright steam-boiler or water-heater, the combination, with the horizontal crown-sheet having the sloping part b^2, of the plate b^2, the latter forming a support for the former, substantially as shown and described.

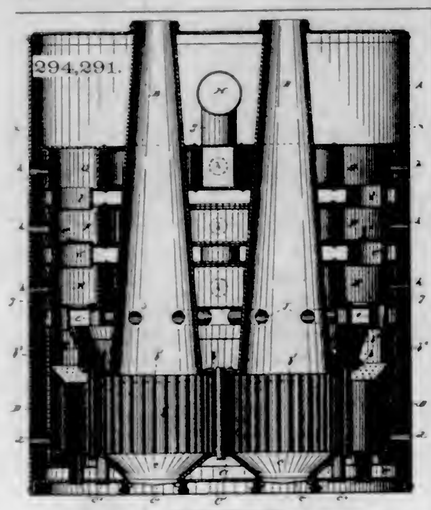
5. One or more funnel-shaped disks, *c*, adapted to connect the plates C and C', and adapted to support the grates, substantially as described, and for the purpose specified.

6. In an upright boiler or water-heater, the combination, with the chambers E and F, of the tubes *d* and dampers adapted to close said tubes, substantially as set forth.

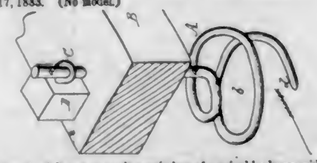
7. In an upright steam-boiler or water-heater, the combination of the hot-air chambers E, F, and G, connected with the outer air by the tubes A, and with each other by the tubes *f* and *d'*, the latter being provided with dampers e^2, substantially as shown and described.

8. The hot-air chamber F, provided with the dampers e^2, substantially as described, and for the purpose specified.

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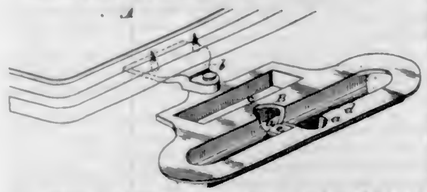
294,292. HARROW-TOOTH. PLATT R. VIELE, Rochester, N. Y. Filed Dec. 17, 1883. (No model.)



Claim.—1. A harrow-tooth consisting of a spiral body provided with a projecting point at the lower end, the coils standing horizontally, as herein shown and described.

2. The combination of a harrow-tooth consisting of a spiral body provided with a projecting point at the lower end, and a clamp for securing the tooth fast to the supporting-bar, whereby the tooth can be adjusted axially to bring its point forward as it wears away, as set forth.

294,293. COMBINED CIGAR AND MATCH HOLDER FOR TABLES. JOHN P. WALCH, Sutro, Nev. Filed Aug. 7, 1883. (No model.)



Claim.—1. In combination with a table, A, the holder B, pivoted under its edge, said holder having an elongated chamber, *d*, with a central block or piece, *c*, and side apertures, *a*, substantially as herein described.

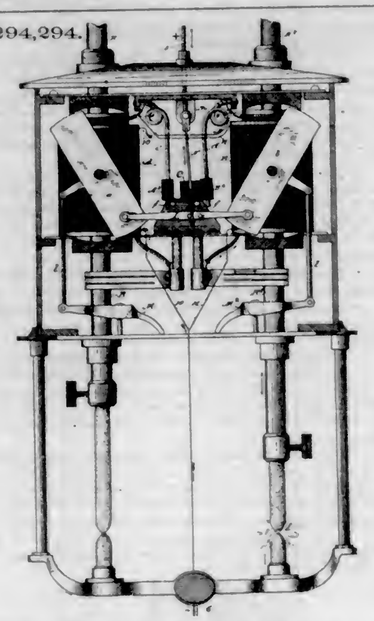
2. In combination with a table, A, the holder B, pivoted under its edge, said holder having a chamber, *c*, for matches, and an elongated chamber, *d*, for a cigar, said chamber *d* having a central block or piece, *c*, and side apertures, *a*, substantially as herein described.

294,294. DOUBLE ELECTRIC-ARC LAMP. ADDISON G. WATERHOUSE, New York, N. Y., assignor, by mesne assignments, to the Schuyler Electric Light Company, same place. Filed June 12, 1883. (No model.)

Claim.—1. The combination, substantially as described, in a double-carbon lamp, of two sets of carbons, two magnets, one connected with each set, and a circuit-controlling device upon which said magnets act in opposite directions, so as to determine which of the two sets of carbons with its feed-regulating magnet or magnets shall be in circuit.

2. The combination, in a double-carbon lamp, of a reciprocating switch-contact connected to the circuit on one side of the lamp, two switch-contacts or connecting-points, with one or the other of which said reciprocating contact closes the circuit, according to the direction in which it is drawn, and two magnets or coils in circuits respectively from said contacts and acting on said reciprocating contact, as and for the purpose described.

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3. The combination, substantially as described, of two sets of carbons arranged in branch or multiple-arc connections, a magnet in each branch, and a circuit-controller that breaks the circuit of one branch and completes the circuit of the other, or vice versa, according to the direction in which it is drawn by said magnets, as and for the purpose described.

4. The combination, in a double-carbon lamp, of two sets of carbons, two magnets, each wound with a coarse and a fine wire, and having mechanically-connected armatures or cores, and a circuit-controller operated by said armatures for completing the circuit through the coarse wire of one magnet and a set of carbons, and through the fine wire of the other in derived circuit around said carbons, while at the same time disconnecting the remaining coarse and fine wires of the two magnets and the other set of carbons, or vice versa, as described.

5. The combination, substantially as described, of two sets of carbons, magnets, or cores—one in connection with each set—and a circuit-controller acted upon by said magnets in opposite directions, for the purpose of completing the circuit through one set of carbons and breaking it to the other, or vice versa, according to which of the two magnets exerts the greater force.

6. The combination of two switch-contacts—one connected with one set of carbons and the other with the other set—two magnets—one in a connection from each contact—an intermediate switch-contact connected with the main circuit, and means connected with the armatures of said magnets for moving said switch-contact in one or the other direction, according to the relative flow of current in the two connections.

7. The combination, with two sets of carbons, of two magnets having mechanically-connected armatures or cores, clamps, or clutches—one for each set of carbons connected with the common armature system—main and derived circuit coils on the magnets, and an electric switch controlled by the armatures for throwing the main-circuit coil on one magnet and the derived circuit on the other into circuit, or vice versa, according to the relative resistance of the two branches, including the switch-contacts and the sets of carbons.

8. The combination, in a double-carbon electric lamp, of magnets A B, each wound with coarse and fine wire, armatures therefor mechanically connected, two switch-contacts on either side of a contact connected with the general circuit, a connection from one of the exterior contacts to the main-circuit or coarse-wire coil on one magnet and the fine-wire coil on the other, and connections from the other contact to the coarse-wire coil of the latter magnet and the fine-wire coil of the first-named magnet, said coarse-wire coils forming each a portion of the

main circuit with one set of carbons, and said fine-wire coils being in derived circuits around said carbons.

9. The combination, in a double electric lamp, of a switch-lever working between two swinging contacts, each connected with one of the sets of carbons, magnets—one in each connection from said contacts, and having mechanically-connected armatures acting on said switch-lever—and suitable contact-stops for limiting the movement of the switch-contacts, to prevent them from following and remaining in contact with the switch-lever when it is moved to one side.

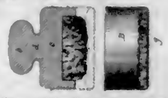
10. The combination, substantially as described, of the magnets A B, armatures therefor, contact C, contacts A^3 B^3 on either side thereof, connected with the fine and coarse wire coils of the magnet in the manner described, and clutches—one for each carrier—operated by the connected armature, as described, so that as one clutch is raised the other is lowered.

11. The combination of the magnets A B, wound with coarse and fine wire, the armatures *a b*, connecting-link for the latter, double contact-switch controlling the circuit of the coarse and fine wire coils in the manner described, clutches M M^3, and devices connecting said clutches with the armatures.

12. The combination, with the contact C, connected with the general circuit, of two sets of carbons, two contacts, A^3 B^3, each connected with a magnet or coil and a set of carbons, and mechanism connected with said magnets for breaking the connection with contact C of either of the contacts A^3 B^3, and preserving the connection of the other, as and for the purpose described.

13. The combination, with two sets of carbons, of a magnet or coil connected with each set, and a circuit-controlling apparatus operated by said magnets for throwing the two sets of carbons into and out of circuit automatically in accordance with the strength of said magnets as dependent on the resistance between the two carbons of a set.

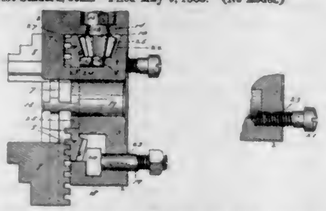
294,295. SLATE-ERASER. WILLIAM M. WHITING, Elizabeth, N. J. Filed Oct. 17, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a handle, a mass of absorbent material attached thereto, a cup into which said handle is adapted to fit tightly, and a second mass of absorbent material contained within said cup.

2. As an article of manufacture, a slate-eraser consisting of a handle, a drying-sponge attached to one end of the same, a moistening-sponge attached to the other end of the same, and a cup inclosing the last-named sponge.

294,296. LATHE-CHUCK. DAVID E. WESTON and LUCIUS E. WESTON, West Stafford, Conn. Filed May 9, 1883. (No model.)

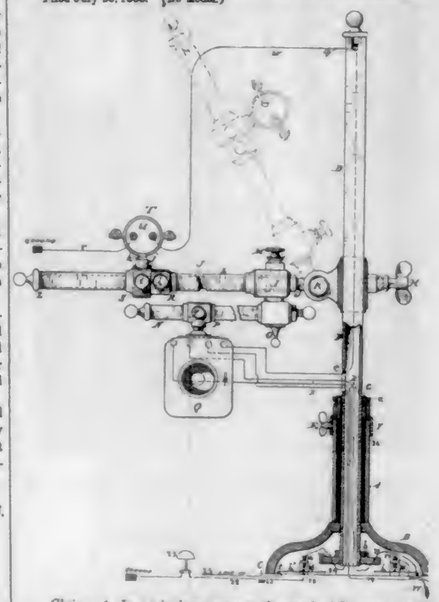


Claim.—1. In a geared scroll-chuck, the shell or case 2, provided with tapered holes for pinion-bearings, in combination with a series of pinions, each having a tapered journal to revolve in one of said tapered holes in the shell, and a back plate fitted to the open rear end of said shell, substantially as described.

2. In a geared scroll-chuck, the shell or case 2, having its rear end open, in combination with a back plate fitted into said open end, and holes made partly in said plate and partly in said shell at the joint, and screw-bolts adapted to extend through the chuck-plate of a lathe and fitted into said holes, whereby said back plate is secured in place and the chuck secured to the chuck-plate of the lathe by the same set of screw-bolts, substantially as described.

3. In a geared scroll-chuck, the shell or case 2, provided with tapered holes for pinion-bearings, in combination with a back plate fitted and secured in the open end of said shell, a series of pinions, each having its outer journal tapered and adapted to revolve in one of the tapered holes in said shell, and its inner journal supported in a bearing in said back plate, the toothed scroll-disk, the jaws adapted to move in the radial guideways, and the screw-bolts fitted to the holes at the joint in the back plate and the shell or case, and adapted to extend through the chuck-plate of a lathe, substantially as described.

294,297. TELEPHONE-SUPPORT. GEO. A. WILKINS, Philadelphia, Pa. Filed July 20, 1883. (No model.)



Claim.—1. In a telephone-support, the standard D, provided with the studded collet G, in combination with the pedestal A, provided with the cam-sleeve F, substantially as and for the purpose described.

2. In a telephone-support, the disk *m*, in combination with the button 15, switches *h h'*, screws 14 17, standard D, proper conducting-wires, and means for raising and depressing said disk to close and open the circuits, substantially as set forth.

3. The combination of a pedestal or support provided with a cam-sleeve, a standard adapted to turn in said pedestal, provided with a studded collet, and a swinging arm attached to said standard and carrying a receiver, substantially as described.

4. In a telephone-support, the carrier R, provided with the screw *h*, in combination with the sleeve S, provided with the screw *i*, clamp T, sleeve L, and arm J, substantially as described.

5. In a telephone-support, the arm J, carrying the receiver U, and provided with the joint K, in combination with the standard D, substantially as and for the purpose set forth.

6. In a telephone-support, an extensible swinging arm carrying a receiver, in combination with means for supporting said arm and moving it out of the way of the operator automatically when released after using the receiver, substantially as set forth.

7. In a telephone-support, an extensible swinging arm carrying a receiver, and provided with an auxiliary swinging arm carrying a transmitter, in combination with means for supporting said arms and moving them out of the way automatically when released after using the receiver or transmitter, substantially as set forth.

8. In a telephone-support, the slide I, provided with the screw M, in combination with the sleeve L, arms J N, and transmitter Q, substantially as set forth.

9. In a telephone apparatus substantially such as described, a switch or switches operated by the vertical movements of the standard by which the receiver or transmitter is supported for switching the main-line current from the signal-bell through the receiver and transmitter, and proper conducting-wires, substantially as set forth.

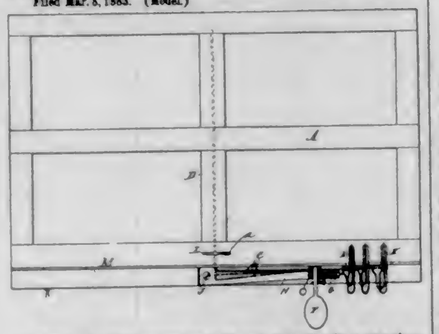
10. In a telephonic apparatus substantially such as described, the switches *h h'*, screws 14 17, button 15, and wires 22 23 24 25 20 21, in combination with the disk *m*, supporting-standard D, and means for giving said standard vertical movements to close and open the circuits, substantially specified.

11. In a telephonic apparatus substantially such as described, a standard carrying a receiver or a transmitter, or both, in combination with means for rotating or partially rotating said standard to move the receiver or transmitter out of the way of the operator after using the same, with means for raising and depressing the standard to close and open the circuits, and with means for adjusting the standard in reference to its pedestal or support, substantially as described.

12. In a telephonic apparatus substantially such as described, the hard-rubber disk *m*, in combination with the standard D, springs *h h'*, button 15, screws 14 17, proper conducting-wires, and means for moving said disk to open and close the circuits, substantially as set forth.

13. A pedestal for telephone-supports, provided with a cam-sleeve, the lower part of which is adapted to fit over and form a cap for said pedestal, to prevent the entrance of dust and other foreign substances to the interior thereof.

294,298. MUSIC-LEAF TURNER. JOHN M. WHITMAN, St. Mary's, Pa. Filed Mar. 8, 1883. (Model.)

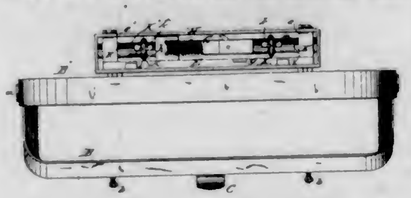


Claim.—1. The combination, with rack A, having its center piece, D, grooved upon its rear side, and angular spring-arms C, of unequal length, having clamps on their outer ends, slotted upright O, trigger F, having notches V U and cam *n*, and spring G, substantially as described.

2. The combination, with rack A, having its center piece, D, provided with a narrow groove on the rear side, right-angular spring-arms C, of unequal length, fitting in said groove, and having clamps on their outer ends, and perforated plate M, of a plate, H, provided with adjustable upright O, having an angular slot, F, trigger F, provided with notches V U and cam *n*, spring G, and card-board R, substantially as specified.

3. The combination, with the music-rack A, having holes *a*, of the iron hooks L, having one of the ends of each hook T split, substantially as described, and for the purpose set forth.

294,299. BAG-LOCK. TWEETMAN WOOD, Westport, Conn., assignor of one-half to John D. Wood, same place. Filed June 28, 1883. (Model.)



Claim.—1. The satchel lock and clasp case consisting of a metallic shell of rectangular form with end and side walls, the side walls being deeper or wider than the end walls, so as to embrace the mouth-irons of the bag, and one of said side walls being provided with hinges or hinge-sections for attachment to one of the mouth-irons, substantially as set forth.

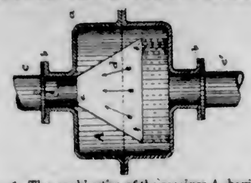
2. The hinged lock-case provided with the bar E and the notched and beveled catches E', for engagement with the studs *b b*, in combination with the mouth-irons B B' of the bag, substantially as described.

3. The combination of the hinged lock-case D and the spring-tongue C with the mouth-irons B B', the studs *b b*, attached thereto and located on either side of the tongue, and the beveled catches *e e*, forming parts of the latch mechanism, substantially as described.

4. The combination, with the lock-case D, having slots near either end in one of its side walls, of the spring-bar E, arranged within said case and adapted to move lengthwise, the notched and beveled catches E', connected with said bar and projecting through the slots, the mouth-irons B B', having the studs *b b*, connecting with said catches, and the knob or thumb-piece *j*, connected to said bar E, substantially as described.

5. In a lock for traveling-bags and satchels, the combination, with the slotted lock-case D, of the detachable handle-rings K, fitting the slots *k*, and the key-pieces *k' k'*, constructed and arranged to embrace the metal of the rings and to hold the rings in place, substantially as described.

294,300. APPARATUS FOR SEPARATING LIQUIDS FROM GASES AND STEAM. WILLIAM H. WOOD and GEORGE RICHMOND, New York, N. Y. Filed Feb. 20, 1883. Renewed Jan. 26, 1884. (No model.)



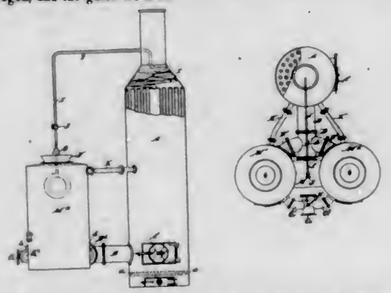
Claim.—1. The combination of the receiver A, having flanged necks *b b*, inlet-pipe *c'*, inverted funnel *d*, having knife-edge *f*, means for securing the funnel in the upper flanged neck of the receiver, and outlet-pipe *e*, substantially as and for the purpose shown and specified.

2. The combination of the receiver A, having flanged necks *b b*, inlet-pipe *c'*, inverted funnel *d*, having knife-edge *f*, ferrule *e*, and outlet-pipe *e*, substantially as and for the purpose shown and specified.

3. The combination, with the outlet-pipe *e* of a steam-boiler or gas-generator, of the inverted funnel *d*, having knife-edge *f*, and fitting with its upper contracted end into the outlet, substantially as and for the purpose herein shown and set forth.

294,301. APPARATUS FOR PRODUCING AND BURNING GAS. LEVI D. YORK, Portsmouth, Ohio. Filed Jan. 14, 1884. (No model.)

Brief.—Gas is produced for heating and other purposes by passing air through ignited gas-producing coal, so as to produce perfect combustion in the lower part thereof, forming carbonic acid, then converting such gas into carbonic oxide, and at the same time distilling off the heavy hydrocarbons by passing the carbonic acid up through the mass of coal, then introducing superheated steam into the gaseous products, and finally passing them down through a bed of incandescent carbon, whereby the added steam is decomposed, forming an additional volume of carbonic oxide and hydrogen, and the gases are fixed.



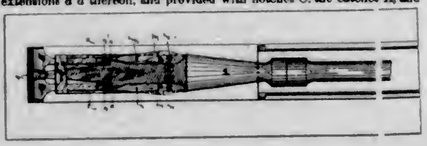
Claim.—1. The steam-boiler A, and furnace for burning solid fuel to maintain an igniter for the gas, the pipe B, valve D *d*, and branches B' B³, and the two gas-producing furnaces M' and M³, with connecting-passage M, combined and arranged for joint operation as herein specified.

2. The two furnaces M' M³ and connection M, in combination with means, I, for introducing superheated steam into M to mingle with the gaseous products of combustion and traverse therewith down through the second furnace, and with means, as D H, for causing the flow alternately in opposite directions, as herein specified.

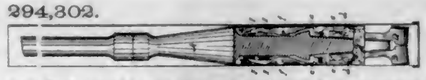
3. In combination with the steam-boiler A, the cylinders M' M³ and their connections, as described, and air-inlet, the valves D and H, adapted to be operated simultaneously to direct the flow of gas through the furnaces alternately in reverse directions, as may be required, substantially as set forth.

294,302. EXPANSIBLE DRILL. ORRIN ALLEN, Denver, Colo. Filed Jan. 28, 1884. (No model.)

Claim.—1. The hereinbefore-described expansible drill, consisting, substantially, of the stem A, having grooves *a a* made therein, and the guard B, affixed thereto, as set forth, the supplemental drills D D, having extensions *d d* thereon, and provided with notches C, the catches E, and



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spring F, all operating as described and specified, and for the purpose set forth.

2. The stem A, having grooves *a a* therein, and guard B, attached thereto, as specified.

3. The supplemental drills D D, pointed at their lower extremities, and provided with notches C.

4. The catches E, fulcrumed between the sides of the stem A, by which the supplemental drills are sustained in position.

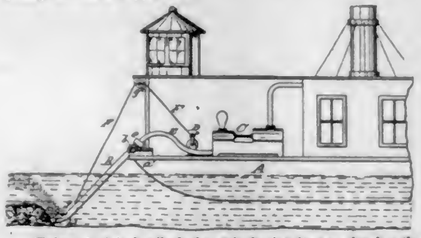
5. In an expansible drill, the combination, with the stem A, having grooves *a a* therein, and the guard B, attached thereto, as set forth, of the supplemental drills D D, as specified and described.

6. In an expansible drill, the combination, with the stem A, having grooves *a a* therein, and the guard B, attached thereto, and the supplemental drills D D, of the catches E E and springs F, all operating as described and specified.

7. In an expansible drill, a stem forming a drill, supplemental drills by which the cutting-surface is increased, suitable means of retaining the drills in position to penetrate rock or other materials, and suitable means of retaining the drill in position to be raised and lowered through the casing, as described and specified.

294,303. HYDRAULIC DREDGE. JOHN H. ANDERSON, Shelby, Nebr. Filed Sept. 20, 1883. (No model.)

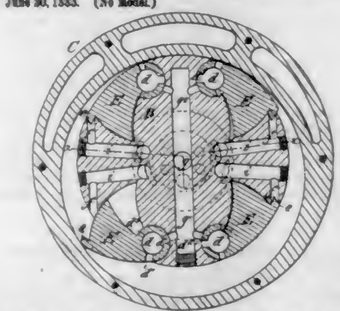
Brief.—An ejection-tube having trunnions at the upper end to permit its vertical play has at the lower end a nose provided with upwardly-opening valves on its upper face.



Claim.—1. A hydraulic dredge-tube having its nose closed at the end and provided on top with upwardly-opening valves *b*, as and for the purpose specified.

2. The dredge-pipe B, constructed substantially as described, with the nose b^2, valves b^4, and trunnions *b*, and adapted to be secured to the boat A and to have a vertical motion about the trunnions *b* and to carry a stream of water, as set forth.

294,304. REVOLVING-CYLINDER ENGINE. JOHN J. BLAIR, Tacoma, Wash., assignor to himself, and Robert R. Blair, Aurora, Ind. Filed June 30, 1883. (No model.)



Claim.—1. In a revolving-cylinder engine, the combination, with the packing between the gland and solid part *c*, of the stationary shaft A, having between its ends the disk B, the ring C, and the plates *a*, provided with boxes D, whereby said shaft A and disk B may be inclosed, so as to press the packing, as described.

2. The combination, with the swinging gates E, having hollow journals *d* and projections *e*, of disk B, formed with passages *i g f*, and shaft A, having longitudinal passages *g m*, substantially as shown and described.

3. The combination of ring C, plates *a*, boxes, packing-glands *b*, shaft A, having steam-passages, and disk B, having longitudinal and radial passages, substantially as described.

4. The shaft A, having a reduced or shouldered portion, and formed with a solid projection, *c*, combined with box D, so as to form a steam and valve chest, *l*, substantially as shown and described.

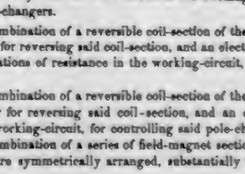
5. The combination of the fixed ring *o* and valve-rings *p q*, provided with ports, and formed with lugs *p' q'*, combined with shaft A, having steam-passage *m*, and the box D, having grooves p^3, substantially as described.

6. The swinging gates E, having hollow journals *d* and ports *d''*, combined with disk B, having passages $g' g^3$, substantially as described.

7. In a revolving-cylinder engine, the gates E, having their journals or ends *d* made hollow and with ports *d''*, in combination with shaft A, having passage *g*, and the disk B, having transverse passages $g' g^3$ and ports d^3, whereby steam may be exhausted from the steamway, as described.

8. The valves m^2, combined with the shaft and disk having passages *m' i*, and the valve-rings *o p q*, substantially as described.

294,305. CURRY-COMB. HENRY C. BULL, Southington, Conn., assignor to the Southington Cutlery Company, same place. Filed Oct. 5, 1883. (Model.)



Claim.—The herein-described curry-comb, consisting of a series of double comb-bars of a curved form and with a curved and solid back between each adjoining pair, each back and two comb-bars being made integral from blank of form shown in Fig. 3, and secured to the main frame, substantially as described, and for the purpose specified.

294,306. CAR-BRAKE. WILLIAM BRUMMER, Baltimore, Md. Filed Jan. 19, 1884. (No model.)

Claim.—1. In a railway-car brake, the metal plates F F', constructed substantially as shown, in combination with a lever, D, and connecting-bars E E', substantially as herein set forth.

2. A brake for railway-cars, consisting of the metal plates F F', carrying the rubber blocks, the lever D, connected to said plates by rods E E', and a spring, *e*, all arranged to operate substantially as and for the purpose specified.

3. In a railway-car brake, the metal plates F F', having inwardly-projecting portions H, and slotted outer ends, in combination with connecting-bars, and a lever for operating the same, substantially as and for the purpose set forth.

294,307. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. CHAS. L. BUCKINGHAM, New York, N.Y. Filed Dec. 17, 1883. (No model.)

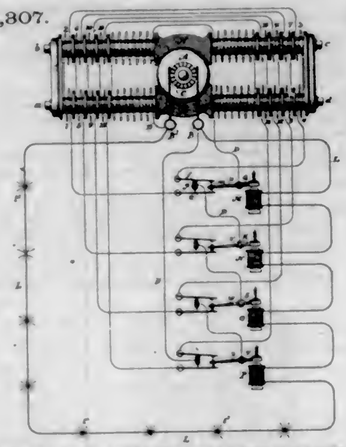
Claim.—1. In a dynamo-electric machine, the combination of a series of coil-sections of the field-magnets, and a series of pole-changers for reversing the circuit through any one or all of the coil-sections, and means, controlled by variations of current in the working-circuit, to operate said pole-changers.

2. The combination of a reversible coil-section of the field-magnets, a pole-changer for reversing said coil-section, and an electro-magnet controlled by variations of resistance in the working-circuit, to operate said pole-changer.

3. The combination of a reversible coil-section of the field-magnets, a pole-changer for reversing said coil-section, and an electro-magnet placed in the working-circuit, for controlling said pole-changer.

4. The combination of a series of field-magnet sections whose component parts are symmetrically arranged, substantially as described, a

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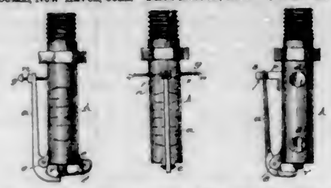
pole-changer for reversing said section, and an electro-magnet for controlling said pole-changer by variations of current in the working circuit.

5. The combination of a series of reversible field-magnet sections, a corresponding series of independent pole-changers, a mechanical device for operating said pole-changers in succession, and an electro-magnet for controlling said mechanical device for controlling the pole-changers.

6. The combination of a series of field-magnet sections and a corresponding series of devices, each of which is adapted to short-circuit its corresponding field-section, a mechanical apparatus for operating said devices, and an electro-magnet placed in the working-circuit, for controlling said mechanical apparatus.

7. The combination of electro-magnet M', placed in the working-circuit, a series of circuit-controlling arms, Q R S T, a series of field-coil sections, and means for bringing said arms successively into operation, substantially as specified.

294,308. FIRE-EXTINGUISHER AND FIRE-ALARM. CHARLES E. BULL, New Haven, Conn. Filed Nov. 20, 1883. (No model.)



Claim.—1. A sprinkler provided with a screw-threaded portion and with means for spreading the water, combined with a valve for closing the sprinkler and a lever having a fusible adjunct, whereby said valve is held normally closed, said lever being attached to the sprinkler without the application of heat, substantially as set forth.

2. As a new article of manufacture, a lever provided with a fusible adjunct and adapted to be attached to a sprinkler without the interposition of heat, substantially as set forth.

3. The combination, with a sprinkler and a valve for closing the same, of a lever pivoted to the sprinkler and provided with a fusible adjunct, and means whereby one arm of the lever is caused to hold the valve closed while the other arm is pressed outward from the sprinkler until released by heat, substantially as set forth.

4. A sprinkler constructed to deliver opposed streams, and provided with a valve governing the water-supply, combined with fusible devices adjustably attached to the sprinkler, and connected thereto without the interposition of heat, substantially as set forth.

5. The sprinkler A, provided with a valve, as described, combined with the pivoted lever *a* and means whereby one arm of the lever is pressed outward from the sprinkler, while the other arm is caused to exert a pressure upon the valve, substantially as set forth.

6. The sprinkler A, provided with a valve, as described, combined with the pivoted lever *a*, having a fusible adjunct, and the screw *g*, substantially as set forth.

7. The sprinkler A, combined with the pivoted lever *a*, valve-stem *o*, and intermediate device, *f*, substantially as herein set forth.

8. A sprinkler constructed to deliver opposed streams, combined with fusible devices adjustably attached to the sprinkler upon its exterior, and connected thereto without the interposition of heat, substantially as set forth.

9. The sprinkler A, having arms provided with openings *d d*, combined with the valve *v'*, pivoted lever *a*, screw *g*, and nut *n*, the whole constructed to operate substantially as set forth.

10. A sprinkler consisting of a screw-threaded portion, *a*, distributing portion secured thereto and provided with outlets adapted to discharge opposed streams, a valve seated against the screw-threaded portion, so as to exclude water from the distributing portion, and fusible devices located upon the outside of the sprinkler, for holding said valve to its seat until released by the action of heat, substantially as described.

11. The combination, with a sprinkler, of electrical-circuit connections insulated therefrom, and constructed to be actuated by the gravity of the moving parts, or by the pressure of water upon the moving parts of said sprinkler, to make operative an electric circuit when said sprinkler becomes open.

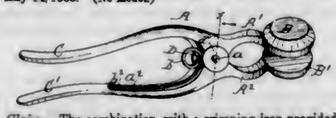
12. The combination, with a sprinkler, of electrical-circuit connections insulated therefrom and adapted to be actuated by the pressure of water acting upon the moving parts of the sprinkler, for making operative an electric circuit when said sprinkler becomes open.

13. The combination, with the sprinkler A, of the contact-plates 1 and 2 and means for holding them in contact with each other until the sprinkler becomes open.

14. The combination, with a sprinkler, of electrical-circuit-controlling devices insulated therefrom and adapted to make operative an electric circuit when said sprinkler opens, and so arranged in relation to the moving parts of said sprinkler as to neither accelerate nor retard their motion when said moving parts are released.

15. The combination, with a sprinkler, of electrical-circuit-controlling devices insulated thereon in a manner to become detached therefrom when said sprinkler opens.

294,309. HAIR-CRIMPER. MARK CAMPBELL, Chicago, Ill. Filed May 14, 1883. (No model.)



Claim.—The combination, with a crimping-iron provided with shallow recessed grooves on the inner side of the handles thereof, of the spring D, having a tension-loop formed in the middle, and the washers *d d'*, placed on the fulcrum-rivet, substantially as described.

294,310. CHECK-REIN HOOK. THOMAS A. CRABTREE, East Surry, assignor of one-half to Eugene Hale, Ellsworth, Me. Filed Dec. 12, 1883. (No model.)



Claim.—As an improved article of manufacture, a check-rein hook consisting of a standard for holding the rein, a rear standard having a horizontal guard extending forward past the standard which holds the rein, with a space between it and the said standard to admit the rein, the whole being provided with an extension for attachment to the saddle, substantially as described.

294,311. PRESS FOR PRESSING AND STAMPING. JOHN DENNIS and GEORGE B. CORAM, Lowell, Mass., assignors, by direct and mesne assignments, to Joseph A. Coram and Nathan Crosby, same place. Filed June 8, 1883. (No model.)

Claim.—1. A press provided with a positive automatic picking-off device, as and for the purpose specified.

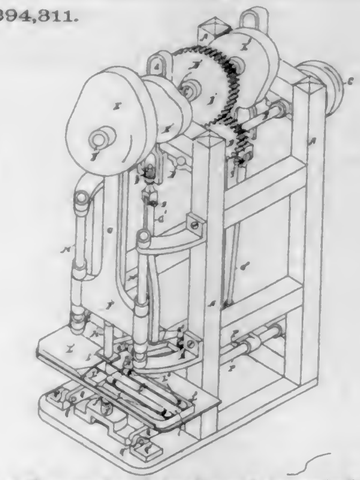
2. The combination of the die-box K, the lower die, I', and means for giving to said die a positive motion in both directions, as and for the purpose specified.

3. The combination of the dies, means for raising the same, means for causing the same to rest, means for causing the same to draw away from each other and the nippers, and means for causing the same to advance and close, as and for the purpose specified.

4. The combination of the dies, means for raising the same, means for causing the same to rest, means for causing the same to draw away from each other, the nippers, and means for causing the same to advance and close, and means for causing said nippers to rest until the dies have separated from the stamped bar, as and for the purpose specified.

5. The combination of the lever Q, means for reciprocating the same, the nippers R R, hinged to said lever, and provided with the projections R' R', and the dead-points R^2 R^2, as and for the purpose specified.

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6. The combination of the lever Q, means for reciprocating the same, the nippers R R, hinged to said lever, and provided with the projections R' R', the dead-points R^2 R^2, and means for opening said nippers, as and for the purpose specified.

7. The combination of the lever Q, provided with the arm Q^2, the cam E', means for rotating the same, and the rod G', provided with the stud k', and adjustably connected to said arm Q^2, as and for the purpose specified.

8. The combination of the die-box K, the table provided with an opening to receive said die-box, and means for adjusting the upper surface of said table to fit said die-box, as and for the purpose specified.

9. The combination of the die-box K, the bed-piece L, and the top pieces, L' L^2 L^3 L^4, and means for adjustably securing said top pieces to said bed-piece, as and for the purpose specified.

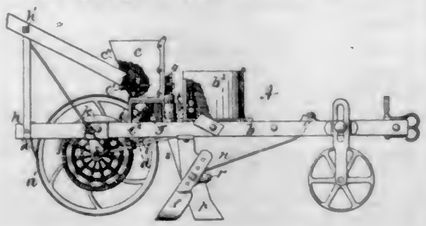
294,312. DEVICE FOR HOLDING AND CUTTING PAPER FROM ROLLS. JOHN H. EARL, Chicago, Ill., assignor to the National Roll Wrapping-Paper Company, same place. Filed Nov. 9, 1883. (No model.)



Claim.—1. The combination, with a receptacle or case, as described, of the projecting lips C C', provided with the central aperture, *d*, and a roll of wrapping-paper inserted loosely in said case, the loose end whereof is adapted to be drawn through between and severed by said lips into sheets of the required size, substantially as set forth.

2. In a roll wrapping-paper holder and cutting device, the combination, with the case A, of the lateral projecting lips C C' and the encircling-bands *a a'*, provided with the clamping-lugs a^2, substantially as and for the purpose set forth.

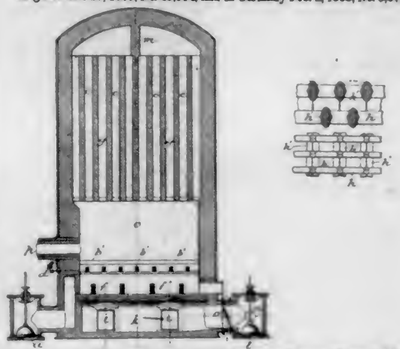
294,313. COMBINED DRILL AND FERTILIZER-DISTRIBUTER FOR ONE-HORSE PLANTERS. AUSTIN C. EVANS, Springfield, Ohio. Filed June 21, 1883. (No model.)



Claim.—1. A bottom plate for a fertilizer-hopper, having an inclosed ring cast upon or attached thereto under the feed-disk, whereby the latter is elevated above said bottom plate, and the fertilizer substance prevented from packing between the disk and the bottom plate of the fertilizer-hopper.

2. In a bottom plate for a fertilizer-hopper having a horizontal feed-disk rotating over the same, a chamber formed under the middle portion of said disk in the hopper-bottom by means of an endless flange or ring, upon which said disk rotates, said chamber having a hole or holes leading out through the bottom plate under it, to allow the escape of any fertilizer-dust that may have worked its way between the bearing-ring and the body of the disk.

294,314. REGENERATIVE HOT-BLAST STOVE FOR BLAST-FURNACES. BENJAMIN FORD, Middlesbrough-on-Tees, and JOHN MONCUR, Distington, England. Filed Mar. 10, 1883. (No model.) Patented in England Aug. 15, 1882, No. 3,897; in France Jan. 27, 1883, No. 141,105; in Belgium Jan. 27, 1883, No. 43,914, and in Germany Feb. 2, 1883, No. 5,072.



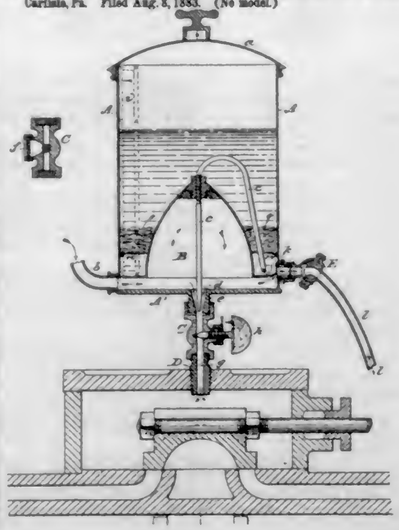
Claim.—1. The combination, with the several compartments *h* into which the regenerator is divided, of the corresponding internal valves, *i*, and the flue *k*, substantially as and for the purposes described and shown.

2. In combination, the compartments *h*, valves *i*, combustion-chamber *c*, air-flues *f f*, openings *f'' f''*, gas-flues *b b*, and openings *b' b'*, substantially as described and shown.

3. The combination of the separate compartments *h* of the regenerator, the internal valves, *i i*, flue *k*, and external valve or valves, *o*, for the purpose of removing and carrying away deposit from combustion, substantially as described and shown.

4. The triangular or lozenge-shaped stays *h'*, located between the walls of the regenerator *h*, substantially as described and shown.

294,315. LUBRICATOR. WILLIAM S. GERHEYER and JOHN A. DURKIN, Carlisle, Pa. Filed Aug. 8, 1883. (No model.)



Claim.—1. In a lubricator, a reservoir provided with a receptacle for steam connected to the steam-space, and having a siphon-connection with the lubricant in said reservoir, and acting as an injector to force the lubricant to the desired place, substantially as specified.

2. In a lubricator, a reservoir provided with a steam-receptacle, and having a siphon-connection with the lubricant in said reservoir, and acting as an injector to force the lubricating material regulated by a needle-valve to the desired place, substantially as shown, and for the purpose set forth.

3. A lubricator provided with a steam-receptacle, as shown, and having a pipe provided with a universal joint and a receptacle for asbestus at its lower end for lubricating the piston-rod, substantially as described.

4. The combination of a reservoir, A, provided with a steam-receptacle, B, connected to the steam-space of boiler, and by siphon-pipe *c* to lubricant in reservoir, with the openings *d* and *g*, arranged substantially as set forth.

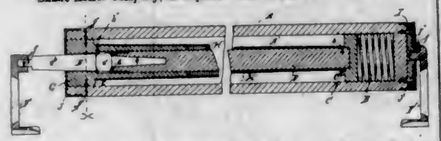
5. The combination of a reservoir, A, constructed, as shown, with the wire screen *n* and asbestus filling *o*, all arranged as and for the purpose specified.

6. The combination of a reservoir, A, provided with steam and siphon connections, as shown, with a pipe, F, having branches F', and the guides of an engine, substantially as and for the purpose set forth.

7. The combination of a reservoir, A, provided with steam and siphon connections, as shown, with opening *g* and needle-valve C, provided with sight-glass *f*, all substantially as specified.

8. The automatic lubricator herein described, consisting of reservoir A, steam-receptacle B, steam-pipe *b*, siphon-pipe *c*, opening *d*, needle-valve C, having sight-hole *f*, and handle *h*, provided with indicator, and a pipe leading to the piston-rod, all substantially as specified.

294,316. SPRING SHADE-ROLLER. MARSHALL E. GRAVES and PRESCOTT C. GATES, Lowell, Mass., assignors to the Shorey Spring Bed and Shade Roller Company, same place. Filed Sept. 3, 1883. (No model.)



Claim.—1. The combination of the hollow barrel, the spindle having a portion angular in cross-section, means of imparting a longitudinal outward motion to said spindle, the plug secured within said barrel, and having a longitudinal central opening adapted to fit said spindle, and thereby to prevent rotation of the same, as and for the purpose specified.

2. The combination of the hollow barrel, the spindle having a portion angular in cross-section, the locking-spring, the sliding bearing, the plug secured within said barrel, and having a longitudinal central opening, a portion of said opening being angular in cross-section to fit said spindle, and thereby prevent the rotation of the same, all constructed and arranged substantially as set forth.

294,317. PENCIL AND ANALOGOUS ARTICLES. GEORG HACKER, Nuremberg, Bavaria, Germany, assignor to Gustavus Schwanhaeusser, same place. Filed Jan. 4, 1884. (No model.)



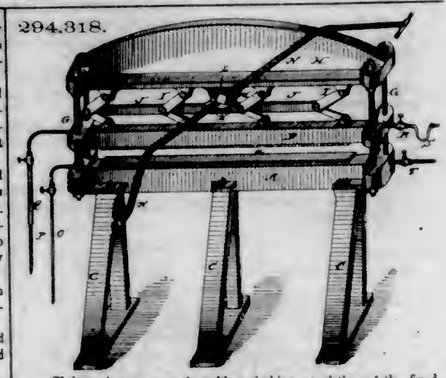
Claim.—1. The combination of the ring E, with means, substantially as described, for imparting a reciprocating movement to it, with the spring-jaws *d e*, and means, substantially as described, for moving the same, and with the outer tube, A A^3, all arranged so that the object B, which is embraced by the ring E, can be pushed out by said ring, and will then be retained and prevented from returning to its former position by the spring-jaws *d e*, substantially as described.

2. The combination of the tube A A^2 with the push-button C, spring *b*, tubes D F, the tube D having lugs *g*, for engaging the tube F, and with the push-ring E and spring-detents *d e*, substantially as herein shown and described.

3. The combination of the tube A A^2 with the push-button C, spring *b*, tubes D and F, push-ring E on tube D, and spring-detents *d e* on tube F, substantially as herein shown and described.

4. The combination of the tube A A^2 with the push-button C, spring *b*, tube D, arms *f*, ring E, tube F, shoulder *i*, and spring-detents *d e*, substantially as herein shown and described.

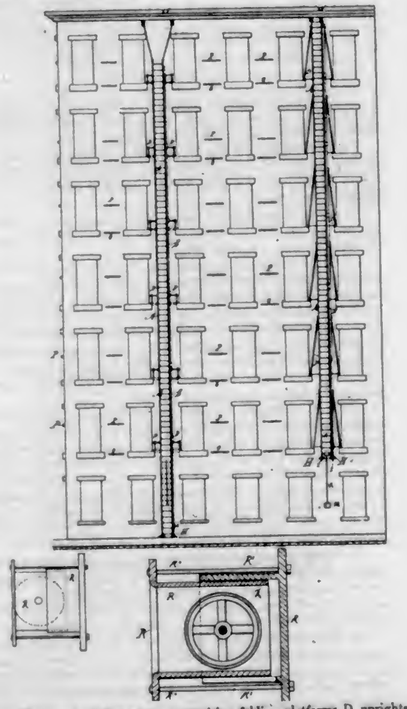
294,318. STAY-PRESS FOR RUBBER CLOTHING. THEODOR HAWLEY, Fairfield, Conn., assignor of one-half to E. W. Harral, same place. Filed Oct. 18, 1883. (No model.)



Claim.—A stay-press for rubber clothing, consisting of the fixed bed A, having steam-chamber B and raised portion *a*, movable platen D, having steam-chamber E, and recessed on its under side at *d*, elastic cushion F, means for actuating the movable platen D, fixed steam-pipe O, steam-pipe P, having telescopic joint Q, fixed exhaust-pipe T, and exhaust-pipe R, having flexible joint S, the whole constructed and combined substantially in the manner and for the purpose herein shown and described.

294,319. FOLDING FIRE-ESCAPE LADDER. FERDINAND W. HOFELE, New York, assignor to Eben S. Allen, Larchmont, N. Y. Filed Apr. 17, 1882. (No model.)

Brief.—A ladder adapted to be folded close against the building, one upright of which is formed of a water-supply pipe, and is provided with folding platforms and railings. An extension-pulley is arranged in the wall of the building, through and over which the counter-weight ropes pass.



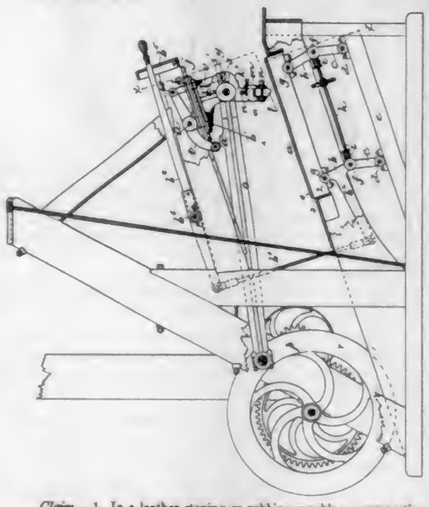
Claim.—1. A fire-escape comprising folding platforms D, uprights E and hand-rails F, and a ladder, one upright of which ladder is formed of a water-supply pipe.

2. The combination, with a ladder adapted to fold up against the building, of the platforms D with the upright posts E and rails F, substantially as set forth.

3. In a folding-platform fire-escape, the combination of the extension-pulleys R and bolts R', substantially as described, and for the purpose set forth.

4. A fire-escape comprising folding platforms and a ladder, one upright of which ladder is formed of a water-supply pipe, as and for the purposes set forth.

294,320. LEATHER-STONING MACHINE. JOHN H. HOVEY, Woburn, Mass., assignor of one-half to E. L. Shaw & Co., same place. Filed Dec. 19, 1883. (No model.)



Claim.—1. In a leather stoning or rubbing machine, a supporting bed or table composed of a rigid base, a sheet of elastic rubber, and a covering of flexible sheet metal, as set forth.

2. The combination of a bed or table, a rubbing-tool reciprocating in fixed guides, and means, substantially as described, for varying the height of said bed and holding it at any height to which it may be adjusted, as set forth.

3. The combination of a bed or table, a rubbing-tool reciprocating in fixed guides, and means, substantially as described, for varying the inclination of said bed, as set forth.

4. The combination of a bed or table, fixed rectilinear guides, a cross-head adapted to move in said guides, a rotating wheel or crank, and a connecting-rod actuated thereby, whereby the cross-head is reciprocated, a tool-holder pivoted to the cross-head, and adapted to oscillate independently of the cross-head and connecting-rod, and shoulders or bearings, as *s s'*, formed on the cross-head and tool-holder, and adapted to make the tool-holder rigid when the cross-head is moving forward, the pivotal connection of the tool-holder to the cross-head enabling it to yield when the cross-head is moving backward, as set forth.

5. The combination of a bed or table, a cross-head movable in fixed guides, mechanism for reciprocating said cross-head, a tool-holder pivoted to the cross-head, and means, substantially as specified, whereby the tool-holder is thrown back to raise the tool from the leather during the backward movement of the cross-head, and thrown forward to present the tool to the leather during the forward movement of the cross-head, as set forth.

6. The combination of the bed or table, the jointed legs or supports therefor, having oppositely-threaded sockets *i i*, and the rod *k*, having oppositely-threaded ends engaged with said sockets, as set forth.

7. The combination of the bed or table, the jointed legs or supports therefor, the arm b^2 on one of said legs, the connecting-rod b^3, the pivoted lever b^4, and locking devices for said lever, as set forth.

8. The cross-head having the shouldered arm *k'*, combined with the shouldered tool-holder k^2, pivoted to said arm, as set forth.

9. The combination of the cross-head having the shouldered arm *k'*, the shouldered tool-holder k^2, pivoted to said arm, the connecting-rod *o*, the lever *t*, pivoted to the cross-head, the link *v*, connecting the lever *t* with the tool-holder, and the spring *b'*, connecting the lever *t* with the cross-head, as set forth.

294,321. TRUSS. ELSBRIDGE HOWE, Peterborough, N. H. Filed Dec. 3, 1883. (No model.)

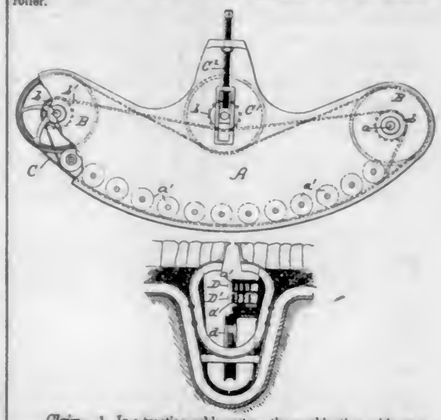


294,321.

Claim.—In a truss, the combination of a plate secured upon the pad, and forming a concavo-convex cup upon its outer end, provided with corrugations upon its convex side, and having a large central aperture, a plate secured upon the end of the spring, and forming a concavo-convex cup upon its outer end, provided with corrugations upon its concave side, and having a small central aperture, a set-screw fitting in the smaller aperture and playing in the larger aperture of the cup, and a concavo-convex nut fitting upon the inner end of the screw, as and for the purpose shown and set forth.

294,322. MECHANISM FOR CARRYING WIRE CABLES AROUND CURVES. GEORGE JUDGE, Chicago, Ill. Filed July 11, 1883. (No model.)

Brief.—To prevent wear of the cable by contact with the pulleys on curves, an endless traveling belt overlies the pulleys and receives the friction of the cable. The slack of the belt is taken up by an adjustable roller.



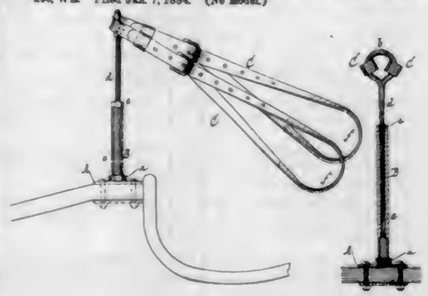
Claim.—1. In a traction-cable system, the combination, with an operating-cable, of two or more sets of revolving drums, a series of rollers arranged in a curved plane between said drums, and an endless carrying-belt interposed between said rollers and cable, whereby said cable is provided with a continuous bearing-surface, substantially as and for the purpose set forth.

2. In a traction-cable system, the combination, with a number of revolving drums, of a series of rollers arranged in a circular plane, an endless belt, an adjustable tightening-pulley, and an adjusting-screw, substantially as set forth.

3. The combination, with a wire cable used in operating street-cars around a curve, of an endless belt supporting and carrying said cable by frictional contact, said belt traveling over a series of drums and rollers, whereby the wear and strain on the cable are distributed over all parts alike.

4. The combination, with the drums B B', of the tightener-pulley C', the sprocket-wheels *b*, and the chain belt *b'*, as and for the purpose described.

294,323. SCHOLAR'S SHOULDER-BRACE. ISIDOR KELLER, Milwaukee, Wis. Filed Jan. 7, 1884. (No model.)



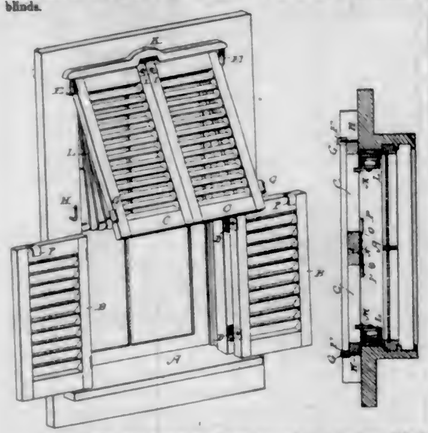
Claim.—1. The combination, substantially as hereinbefore described, of the bracket, the standard secured in said bracket, and the shoulder-straps secured to the standard.

2. The combination, substantially as hereinbefore described, of the bracket A, the tube *c*, secured to said bracket, the rod *d*, fitting the tube *c*, and made adjustable therein, and the looped shoulder-straps secured to the rod *d*.

3. The combination, substantially as hereinbefore described, of the tube *c*, the rod *d*, fitting the tube *c*, and made adjustable therein, and the shoulder-straps secured to the rod *d*.

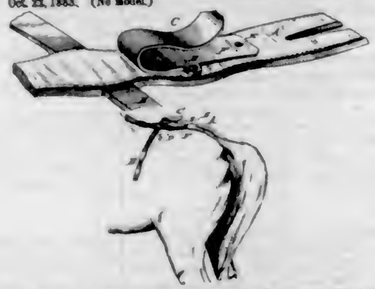
294,324. WINDOW BLIND AND AWNING. EDWARD LEE, Dannemora, N. Y., assignor of one-half to Aaron T. Clark, Warnerville, Mass. Filed Sept. 5, 1883. (No model.)

Brief.—Detachable fan-shaped leaves form the sides of the awning portion. Means are provided for detachably connecting the upper and lower halves, when they may be opened horizontally, like ordinary blinds.



Claim.—The combination of the window-frame, the lower blinds, the upper blinds, hinged in such a manner as to be capable of swinging either in a vertical or horizontal plane, the fan-like leaves, pivoted to the upper inner corners of the window-frame and adapted to be detachably connected with the upper blinds, means for connecting the upper blinds together, and means for connecting the upper blinds detachably with the lower blinds, substantially as set forth.

294,325. REIN-HOLDER. NATHAN CARTER MOODY, Newburyport, Mass., assignor of one-half to Charles H. Richardson, same place. Filed Oct. 22, 1883. (No model.)

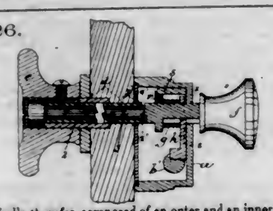


Claim.—A rein-holder consisting of a flat rearwardly-pointing spring-hook having two perforated laterally-projecting lips upon the sides of its base-plate, and a perforation in the rear end of the base-plate for the reception of fastening-rivets, in combination with the crupper-strap of a set of harness, as and for the purpose shown and set forth.

294,326. DOOR-LATCH. EPHRAIM S. MORTON, Plymouth, assignor of one-half to SAMUEL LORING, Duxbury, Mass. Filed Dec. 11, 1883. (No model.)

Claim.—1. In a latch and lock, the combination of a bolt, a rotary

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operating-spindle therefor, composed of an outer and an inner section having operating knobs and handles at their outer ends and interlocking teeth at their inner or meeting ends, the inner section being engaged with the bolt, and adapted to be separated from the outer section, to render the latter inoperative, and means for locking the inner section when it is separated from the outer section, as set forth.

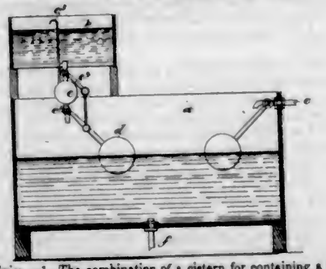
2. The combination of a bolt, a rotary operating-spindle therefor, composed of an outer and an inner section having operating knobs or handles at their outer ends and interlocking teeth at their inner or meeting ends, the inner section being adapted to be separated from the outer to render the latter inoperative, an arm or lever whereby the inner section is connected with the bolt, a spring arm or detent adapted to engage with the inner section when it is disconnected from the outer, to hold the two sections apart, and a spring whereby the inner section is engaged with the outer when disengaged from said arm or detent, as set forth.

3. In a latch and lock, the combination of the following elements, viz: first, a bolt; secondly, a rotary operating-spindle therefor, composed of two separable sections automatically engaged, as described, and provided with operating knobs or handles, and a key-hole extending through the outer and into the inner section, the latter having an eccentric socket for the end of a key-shank, a notch or transverse slot for a spring locking-arm, and an arm or lever engaged with the bolt; thirdly, a spring locking-arm adapted to automatically engage with the slot of the inner section when the latter is separated from the outer section; and, fourthly, a key adapted to be inserted in the key-hole of the tubular sectional spindle, to disengage said spring-arm from the inner section, as set forth.

4. The combination of the bolt, the rotary operating-spindle composed of automatically-engaged separable outer and inner sections, and provided with a key-hole extending through the outer and into the inner section, an arm or lever engaging the bolt with the inner section of the spindle, a spring arm or detent adapted to automatically engage and hold the inner section of the spindle when the same is separated from the outer section, to hold the two sections apart, and a rotary button or cam adapted either to lock said spring-arm in engagement with said inner section or to hold it away from said section, as set forth.

5. In a latch and lock, the bolt-operating spindle composed of the separable and automatically-engaged sections 2 3, the latter having an arm, *h*, engaged with the bolt, a stud, *r*, and a transverse notch or slot, *k*, combined with the fixed lug or shoulder *s*, and the spring arm or latch *j*, adapted to engage with the stud *r* and notch *k* when the section 3 is separated from the section 2, and prevent both longitudinal and rotary movement of said section 3, as set forth.

294,327. DEODORIZING AND DISINFECTING APPARATUS. GEO. NOSER, 27 Dudley Grove, Harrow Road, County of Middlesex, assignor to John William Raimes, Acaster Malbis, England. Filed Apr. 20, 1883. (No model.) Patented in England Aug. 30, 1882, No. 4,136.

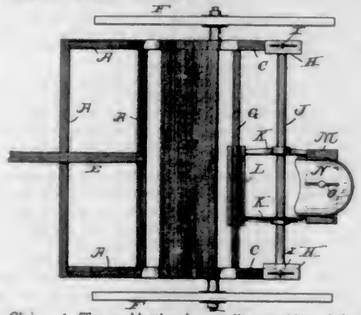


Claim.—1. The combination of a cistern for containing a fluid disinfectant, a cistern for containing a supply of water, means for automatically maintaining a supply of water in the latter, a disinfectant-holder arranged between the two cisterns, and connected with the cistern containing the fluid disinfectant and discharging directly into the water-supply cistern, a vent to the holder, two cocks arranged, respectively, on opposite sides of the holder, and means for operating the valves by the rise and fall of the water-level in the water-supply cistern, the falling of the water-level opening the cock between the holder and the fluid-disinfect-

ant cistern, and the rising of the water-level closing said cock and opening the other cock to discharge the contents of the holder into the water-supply cistern to charge the water therein with the disinfectant-fluid.

2. The combination of the water-supply cistern *a*, a supply-pipe, *c*, therefor, the fluid-disinfectant cistern *b*, the holder *e*, connected with the said cisterns, connected valves arranged on opposite sides of the holder, and a ball in the water-supply cistern, raised and lowered by the change of water-level in the water-supply cistern to control the two connected valves, substantially as described.

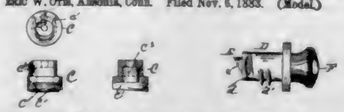
294,328. SEEDING-MACHINE. ALBERT N. NORRIS and HARRISON D. SPAULDER, Rushville, Ind., assignors to Norris & Brother, same place. Filed Nov. 10, 1883. (No model.)



Claim.—1. The combination, in a seeding-machine, of the bar J, attached to the frame of the seeder, and fitted to adjust thereon, the seat-support pivoted thereon, and the seat fitted to adjust upon its support, substantially as and for the purpose specified.

2. In a seeding-machine, the combination of the bar J, secured to the rear of the frame, and a driver's seat pivoted on said bar and fitted to slide along the same.

294,329. FASTENER FOR MEETING-RAILS OF SASHES. FREDERIC W. OTIS, Ansonia, Conn. Filed Nov. 6, 1883. (Model.)



Claim.—1. In a sash-fastener, the combination of the socket-piece C, having the central bore, C^2, and face-opening *c*, with undercut sides *c'*, the catch E, and barrel D, having the depressions *d d* on the sides, for engagement with the undercut sides, as set forth.

2. The sash-fastener described, composed of the socket-piece C, having fin c^3, central bore, c^2, face-opening *c*, with undercut sides *c'*, and the inclined face described, and the barrel D, having depressions *d d* and fins *d''*, catch E, spring E', non-circular stem *e'*, and head F, all substantially as set forth.

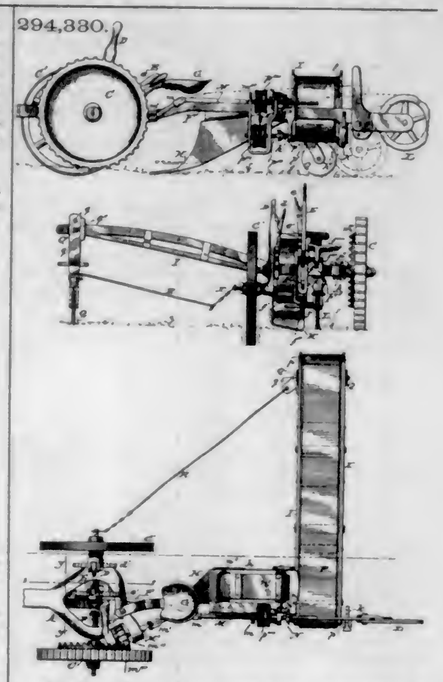
294,330. ROAD GRADING AND DITCHING MACHINE. JOHN W. OTTERMAN, Fort Byron, and CHRISTIAN A. R. L. VER GENNIS, Galesburg, Ill.; said Ver Gennis assignor to said Otterman. Filed Feb. 2, 1883. (No model.)

Brief.—The front end of the plow-beam is swung by a link from an angle-lever pivoted in a block carrying a locking rack-bar or arc for such lever, and a slotted pendant embracing and preventing lateral play of the beam, but permitting adjustment on the carrying-axle, and having a set-screw and slotted bracket below and a cam-lever at top to secure in adjustment. The beam carries a plow with an elevator-belt driven by gearing from a double universally-jointed shaft, which also gives motion through pulleys to a transverse carrier universally jointed at one side to the plow-beam, and having at the other side a slotted connection, and having at its outer end a vertically-adjustable caster-wheel and an adjustable rod-connection to the main axle. A lever bent to project rearward and carrying a wheel is pivoted to the rear end of the plow-beam.

Claim.—1. In combination with the wheeled frame, plow, carrier-belt *n'*, and lateral frame I, carrying the dirt-belt, the shaft M, having universal joints *m' m''*, and geared with the wheel C and said carrier-belt *n'* and the dirt-carrying belt, substantially as and for the purpose specified.

2. In combination with the wheeled frame, plow, and dirt-carrying belts, the lever E, journaled on the axle and connected with the forward end of the plow-beam by a link, *f*, substantially as and for the purpose specified.

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3. The combination of the wheeled frame, axle, plow-beam, the lever E and its segmental rack-bar, and the pendant *f''*, adapted to slide laterally on the axle and to be held by the cam-lever *f'''*, substantially as and for the purpose specified.

4. In combination with the wheeled frame and plow-beam, the pendant *f''*, adjustable laterally at its upper end on the axle and at its lower end in the slotted brace *f'''*, substantially as and for the purpose specified.

5. In combination with the wheeled frame, plow, and dirt-carrying belts and frame I, the wheel having its rearwardly-projecting bent lever hinged to the rear end of the plow-beam, adapted to operate substantially as and for the purpose specified.

6. In combination with the plow, the adjustable rod R and adjustable caster-wheel Q, the lateral belt-carrying frame I, hinged to the plow-beam, to permit swinging the outer end of said frame I laterally and vertically, substantially as and for the purpose specified.

7. In combination with the plow, the laterally-extending frame I, hinged at one side to the plow-beam by a universal joint and at its other side by a slotted connection which permits swinging said frame I laterally, substantially as and for the purpose specified.

8. The combination of the wheeled frame, the plow-beam hinged thereto, the lateral belt-carrying frame I, having a pulley upon its lower shaft, the carrier-belt *n'*, having geared shaft *n N'*, and a shaft, M, having a gear-wheel, N, which meshes with gear-wheel N', and a pulley connected with the pulley on the shaft of frame I by a band, substantially as described.

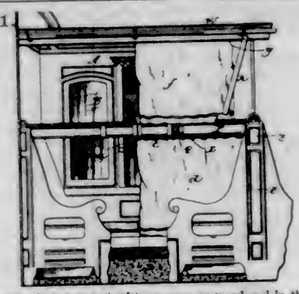
294,331. SLEEPING-CAR. THOMAS CLARKE, Truro, Nova Scotia, Canada, WILLIAM H. PAULDING, Peekskill, and GEORGE RENT, New York, N. Y. Filed June 29, 1882. (No model.)

Claim.—1. In a sleeping-car, the semi-tubular gutters hinged to the ends of the top bars of the berth, adapted to receive and cover the curtains of the upper berth, and having means for fastening their free ends at the center of the top bar of the berth, as and for the purpose shown and set forth.

2. In a sleeping-car having stationary seat-supports and back panels, the rods hinged to the upper corners of the back panels, near the aisle, having the curtains sliding upon them, and adapted to be swung out, covering the sides of the berth, and to be swung back, covering the back panels of the seat-supports, as and for the purpose shown and set forth.

3. In a swinging back for sleeping-car seats, the hinges for the swinging backs, consisting of the plate fastened upon the inner side of

294,331.



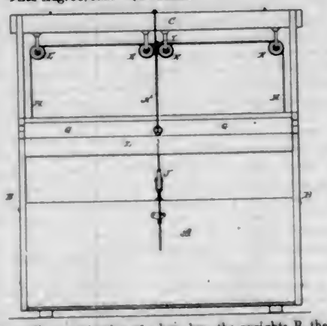
the frame and the bolt fastened with its inner reduced end in the plate, and projecting through the side piece of the frame, beyond the outer side of the same, as and for the purpose shown and set forth.

4. In a sleeping-car, the combination, with the sliding partitions, having a vertical series of notches upon one side, near their outer edge, of the spring-catches, consisting of a flat spring fastened at its lower end upon the inner side of the back panel, forming a shoulder or offset at its upper end, engaging the notches in the sliding partition, and provided with a bar having a transverse eye, fastened into the upper shouldered end, and having a bolt provided with a handle upon its outer end, and turning in horizontal bearings upon the back panel, fastened in the said eye, as and for the purpose shown and set forth.

5. The combination, in a sleeping-car, of the seat-supports, forming a vertically-slotted recess at the point where the seats adjoin, the back panels of the seats, the sliding partition having a handle projecting from the lower end of its outer edge, and having a notch in the lower outer corner of one of its surfaces, the spring-catch, and the hinged door, and the upper hinged panel, as and for the purpose shown and set forth.

6. The combination, in a sleeping-car, of the spring-catches, fastened at their lower ends to the window-frames in the side of the car, sliding horizontally and transversely to the length of the car, with their upper horizontal portions in slots in the same, and engaging under the frame of the swinging backs or upper-berth bottoms, as described, with the rods sliding transversely in the outer ends of the swinging backs, bent downward at one end, bearing against the upper ends of the spring-catches, adapted to push them in, releasing the backs, forming a handle or catch for the fingers, and having a spring keeping the sliding rod away from the spring-catch, as and for the purpose shown and set forth.

294,332. SHADE FOR HOP-BOXES. THOMAS PRIOR, Westmoreland, N.Y. Filed Aug. 31, 1883. (No model.)



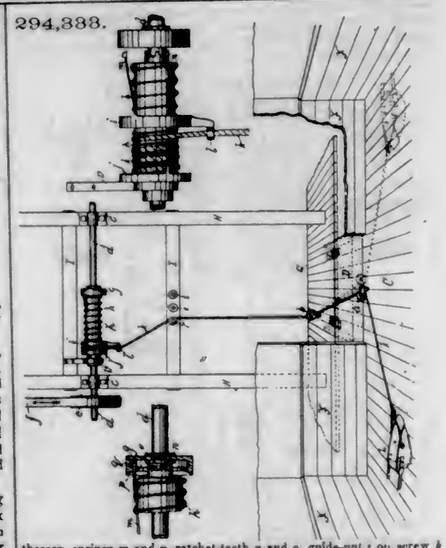
Claim.—The combination of a hop-box, the uprights B, the cross-beam C, a shade which is made of the three parts G L hinged together, the cords N, and a mechanism for raising and lowering the shade upon the standards, substantially as shown and described.

294,333. AUTOMATIC GRAIN-SHOVELER. JESSE B. POGE, Indianapolis, Ind. Filed Dec. 7, 1883. (No model.)

Claim.—1. The combination, in an automatic grain-shoveler, of a shaft, *d d*, to which ratchet-teeth *o* and head *g*, with rim *p*, are attached, and a cylinder bearing screw *h h* on its outer surface, and to which ratchet-teeth *n* and spring *m* are attached, and guide-nut *i*, with its arm *l*, through which rope *k k* works, all substantially as described, and for the purposes specified.

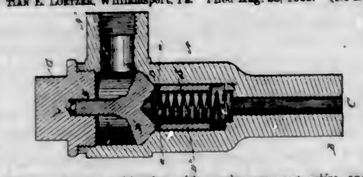
2. The combination, in an automatic grain-shoveler, of a scraper, L, rope *k k*, leading-blocks *a* and *b*, leading-rollers *r s t*, head *g*, bearing rim *p* on its inner surface, attached to shaft *d d*, cylinder bearing screw *h h* on its outer surface, encircling shaft *d d*, and having lateral movement

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thereon, springs *m* and *v*, ratchet-teeth *n* and *o*, guide-nut *i* on screw *h h*, with arm *l* and guide-nut *j*, all substantially as described, and for the purposes specified.

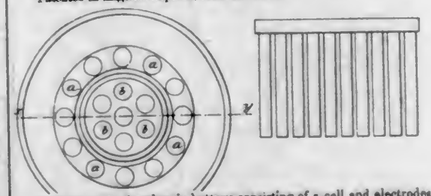
294,334. AUTOMATIC CYLINDER-COCK. ROBERT REED and CHRISTIAN E. LOETZER, Williamsport, Pa. Filed Aug. 22, 1883. (No model.)



Claim.—1. In combination with a valve-box cast entire, and having a vertical branch bored out, and constructed with a valve-seat, D, and a horizontal branch, the screw-cap G, and a valve having a perforated hollow skirting on one end and a valve-stem on the other end, substantially as described.

2. In an automatic cylinder-cock, a puppet-valve having a skirting which is perforated at *a*, in combination with a helical spring, the seat *h* therefor, and the valve-seat D, substantially as described.

294,335. GALVANIC BATTERY. OWEN C. DALHOUSIE ROSS, 50 Trafalgar Road, County of Surrey, England. Filed May 11, 1883. (No model.) Patented in England Sept. 13, 1882, No. 4,355.



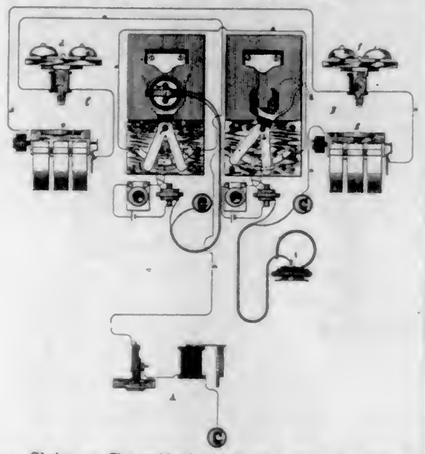
Claim.—1. A galvanic battery consisting of a cell and electrodes composed of an outer group of carbon rods or plates, *a*, and an inner group of zinc rods or plates, *b*, all united at the top by a cap-plate.

2. The combination of the group of carbon rods or plates *a*, the group of zinc rods or plates *b*, and metal plates connecting all the upper ends of the respective groups of rods or plates with a single cell having a diaphragm separating the carbon from the zinc rods or plates, substantially as shown and described.

294,336. TELEPHONE-CIRCUIT. CHARLES E. SCRIBNER, Chicago, Ill. Filed Oct. 11, 1881. Renewed Dec. 31, 1883. (No model.)

Brief.—The circuit from the central office passes first through all

the subscribers' switches to the last station on the line, and then returns through all the bells and generators. The grounding of the line at any subscriber's station therefore cuts out the switches of all stations beyond it, and the bells and generators of all stations on the line.

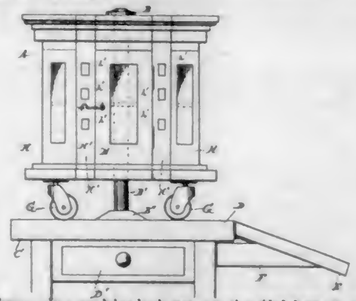


Claim.—1. The combination, at the sub-stations of a telephone-line, of switches, bell-magnets, and generators, (one switch, one bell-magnet, and one generator being at each sub-station,) said switches being connected in line in the telephone-line, so as to be in circuit nearer the central office than any of said bell-magnets or generators, whereby any subscriber, by moving the switch of his station, may cut off all generators and bell-magnets upon the line, substantially as and for the purpose specified.

2. A telephone-line extending from the central office through two, three, or more subscribers' stations, and back through signaling apparatus at said stations, in combination with switches placed in line in said telephone-line, one at each subscriber's station, whereby the signaling apparatus of all subscribers' stations on the line may be cut off at any one of said subscribers' stations.

3. A telephone-line extending through signaling apparatus at each of two or more stations, in combination with telephones, one in the ground-line of each station, and switches, one at each station, whereby all the signal-instruments may be cut off from the portion of the line which is being used for conversation.

294,337. REVOLVING BOOK-CASE. WILLIAM C. SELDOMRIDGE, Coal City, Ind., assignor of one-half to William J. Clark, same place. Filed Apr. 24, 1883. (No model.)

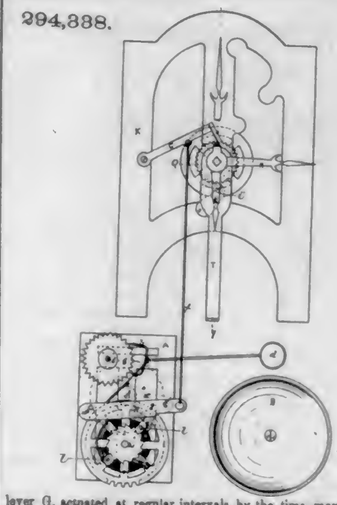


Claim.—In a revolving book-case, a twelve-sided drum, A, supported by casters, having at the top thereof a cap, B, to receive and hold the upper end of shaft B', and the shaft B', in combination with a socket, B'', permanently secured to the top of a table, D, as shown and described.

294,338. ALARM APPARATUS FOR CLOCKS. WILLIAM D. SMITH, Pittsburg, Pa., assignor to himself and Emil G. Stuckey and Robert Frew, both of same place. Filed Feb. 19, 1883. (Model.)

Claim.—1. In an alarm apparatus consisting of a train of wheels operating a bell-ringing device, and connected mediately or immediately with an independent time-movement, the combination of the starting-

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lever G, actuated at regular intervals by the time-movement, a stop-latch, *g*, pivoted to said lever, the locking-rod of the alarm device, and one or more locking-studs connected and revolving with the shaft of one of the wheels of the alarm-train, and engaging the stop-latch, so as to raise it into contact with the locking-rod of the alarm device, for the purpose of starting and stopping the alarm at regular intervals, substantially as described.

2. In an alarm apparatus, the combination of the notched disks D and E, actuated by a clock or time-movement, one revolving in twelve hours and the other in twenty-four hours, the lever C, and connecting-rod *f*, an alarm-train and bell-ringing device operated thereby, and having a locking-rod, the starting-lever G, and stop-latch *g*, and one or more locking-studs, *l*, connected and revolving with the shaft of one of the wheels of the alarm-train, to raise the starting-lever in contact with the locking-rod of the alarm, substantially as and for the purposes described.

3. In an alarm apparatus, a time-movement or clock having a disk fixed to the hour-hand shaft and revolving therewith, with a notch at one point in its periphery, a ratchet-wheel fixed to a sleeve on the hour-hand shaft, with a pin on said wheel to engage said notch in the disk when the alarm is to be sounded, and a hand for setting the alarm by the figures on the hour-circle of the clock, fastened to the sleeve and moving with the ratchet-wheel, in combination with a lever connected with and operating the starting and stopping device of an alarm-movement, said lever engaging and operated by the said ratchet-wheel of the time-movement, substantially as and for the purposes described.

4. In an alarm apparatus, the combination of a notched disk fixed to and revolving with the hour-hand shaft of the time-movement, having a cam, *y*, near its periphery, a loose disk having pins *i i'* projecting from its side, a ratchet-wheel, Q, fixed to a sleeve on the hour-hand shaft, and having a pin, *w*, which is in contact with the faces of the disks as they revolve, a hand, S, attached to the sleeve or hub of the ratchet-wheel and indicating time on the hour-circle of the clock-face, and a lever, C, engaging and operated by the ratchet-wheel, said lever being connected with and operating the starting and stopping device of an alarm-movement, substantially as and for the purposes described.

5. A device for setting an alarm-clock by means of a hand pointing to the required time for the sounding of the alarm on the hour-circle of the time-piece, consisting of a ratchet-wheel or equivalent device fixed to a sleeve on the hour-hand shaft of the clock, a clock-hand fixed to the same sleeve, a notched disk or equivalent device fixed to the hour-hand shaft, a pin on the face of the ratchet-wheel which enters the notch in the disk when the alarm is to ring, and a lever connected with and operating the starting and stopping device of the alarm-movement, and also engaging the teeth of the ratchet-wheel and operated thereby, constructed and operating substantially as and for the purposes hereinbefore set forth.

6. In an alarm apparatus operated by a clock or time-movement, the alarm-dial movably attached to hour-hand shaft of the clock, and having ratchet-teeth on its periphery, or a ratchet-wheel fastened thereto, in combination with an arm and a pawl pivoted thereto and engaging said ratchet-teeth, substantially as and for the purposes described.

7. In an alarm apparatus operated by a clock, the combination of the clock-face, the alarm-dial having the hour-circle marked thereon movably attached to the shaft of the hour-hand, and a central face-plate rig-

idly attached to the shaft of the hour-hand, so as to move therewith, and having an aperture for exposing to view the figures denoting the time for which the alarm is set, substantially as described.

8. The arrangement of the alarm-dial relatively to the notch in the disk by which the alarm is set off, and of the alarm-dial and movable face-plate, such that the figures XII of the alarm-dial are situate at any point from one to eleven twelfths of the circle distant from the notch in said disk, and that the aperture in the central face-plate for exhibiting the hour at which the alarm is set is fixed on the hour-hand shaft in the same relative position (in twelfths of a circle) from the hour-hand, for the purpose of enabling the alarm to be set without covering with the hour-hand the figures on the alarm-dial indicating the time for which the alarm is set, substantially as described.

294,339. PIPE-CUTTER. WILLIAM L. SWEETLAND, New Haven, Conn., assignor of one-half to Felix Chillingworth, same place. Filed Nov. 28, 1883. (No model.)



Claim.—1. In a pipe-cutter, in combination with the cutting device, means for cutting into and crushing down the burr formed at the edges of the cut, substantially as shown and described.

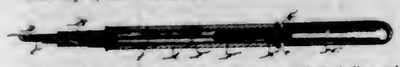
2. In a pipe-cutter, the knurled or toothed roller adapted to cut and roll down the burr formed on the end of the pipe in the process of cutting, substantially as shown and described.

3. The roller for cutting and rolling down the burrs formed by pipe-cutters upon the pipe at the edges of the cut, provided on its face with knurled or toothed portions, each adapted to come in contact with and press upon one of said burrs, substantially as shown and described.

4. In combination with the cutter-wheels of a pipe-cutter, the roller, formed with a sharp rib in the same plane with the edges of the cutter-wheels, and having its face on each side of the rib knurled or provided with sharp teeth, substantially as and for the purpose set forth.

5. The burr cutting and removing roller for pipe-cutters, having the sharp rib adapted to cut into but not through the pipe, and the portions of its face on each side of the rib knurled or provided with sharp teeth, substantially as and for the purpose set forth.

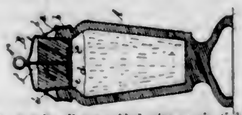
294,340. FOUNTAIN-PEN. EDWARD TYRRELL, Cincinnati, Ohio. Filed May 19, 1883. (No model.)



Claim.—1. In a fountain-pen, in combination with the hollow valve-rod or air-conduit F, adjustably secured within sleeve or guide-tube E, the rubber tubing F', secured to and uniting said rod and guide-tube, and adapted to operate as a spring to withdraw the valve-rod from its seat, substantially as herein set forth.

2. The combination, with the ink-chamber A, the guide-tube E, secured therein, and the valve-rod F, arranged to slide in the guide-tube, of a shield, F', arranged around the valve-rod and the inner end of the guide tube, to exclude ink from the latter, substantially as described.

294,341. SALT-CELLAR. STEPHEN CLARK WILCOX, Dubuque, Iowa, assignor to Le Roy Delos Randall, same place. Filed Sept. 8, 1883. (No model.)



Claim.—1. A salt-cellar provided with an air-tight closing cover or plug and a perforated diaphragm, substantially as and for the purpose described.

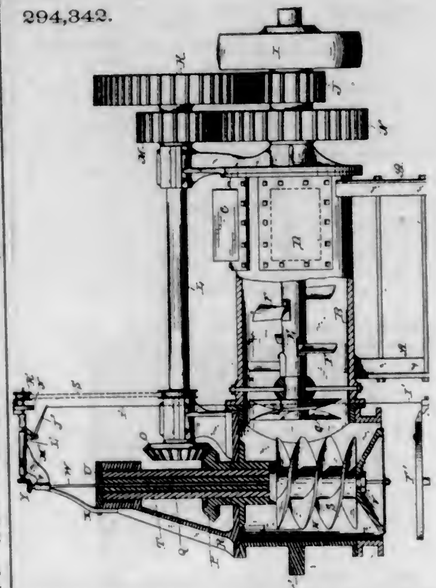
2. A salt-cellar provided with a ring having a perforated bottom, whereby chambers *d* and *d'* are formed within the vessel for containing the salt, and with a yielding plug or cover, which fits down into the chamber *d'* and seals the chamber *d* hermetically, substantially as described.

3. A salt-cellar, as a new article of manufacture, provided with a yielding plug or cover, whereby the salt contained in it is excluded from air and prevented from caking, substantially as described.

294,342. TILE-MACHINE. WM. J. WOOLLEY, Hilliard, Ohio. Filed Dec. 8, 1883. (No model.)

Claim.—1. The combination of the core, the cross-bar Z, operating-shaft, arm A'. rod B', cutter C', and spring, substantially as shown.

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2. The combination of the two cylinders B H and their operating mechanisms with the stand A, the cylinder B, having two openings through its sides, and provided with the interchangeable hopper C, and plate D, whereby the cylinders may be used in different positions, substantially as described.

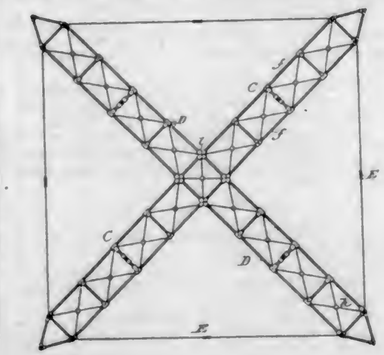
3. The combination of the cylinder B, having the operating-shaft E projecting beyond one end to form a pivot, with the cylinder H, secured to the cylinder B at right angles, and provided with the pivot W', the stand A, upon which the cylinder B rests, and suitable devices for raising the cylinders up so as to turn them on their sides, substantially as set forth.

4. The combination of the core, the frictional cross-bar which is clamped against the under side of the core, and provided with the stop D', the operating-shaft W, arm A', rod B', cutter C', and spring E', substantially as specified.

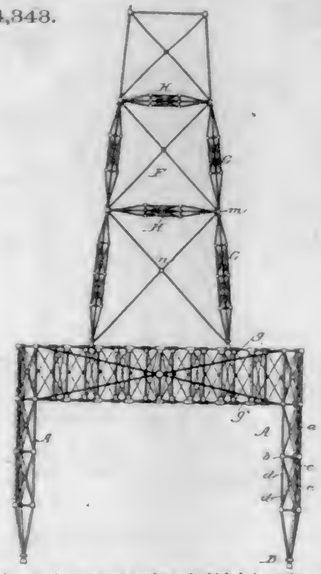
5. In a tile-machine, the combination of the lever J', shaft L', bent rod O', provided with the dog P', and loose pulley R', provided with the projections Q', substantially as set forth.

294,343. TOWER. JOHN S. ADAMS, Elgin, Ill. Filed Aug. 7, 1882. (No model.)

Brief.—A skeleton tower formed of trussed sections, and supported upon a trussed bridging, supported also upon skeleton uprights, all adapted to be erected at the junction of streets without obstruction of highway.



294,343.



Claim.—1. A tower each upright of which is in sections, said sections being composed of several trussed chords converging toward their extremity, substantially as described.

2. A tower each upright of which consists of several sections, said sections being respectively composed of several trussed chords converging at their extremities, and each section being joined to the adjacent section by a single coupling, substantially as described.

3. A tower the uprights and struts of which are each respectively composed of several trussed chords, said uprights and struts being connected with each other by screw-threaded couplings, substantially as described.

4. A tower each upright of which is in sections composed of several trussed and tubular chords, screw-threaded at their extremities, and each section coupled with the adjacent section or sections, substantially as described.

5. The combination of a bridging supported above a carriage-way with a skeleton tower consisting of two or more sections, the uprights of which rest upon and are supported by said bridging, the base of said tower being less than the area covered by said bridging, substantially as described.

6. The combination, with a tower, of a bridging supported above a carriage-way and composed of several members intersecting with each other and having a common center with the tower at their points of intersection, substantially as described.

7 The combination, with a tower, of a base-support elevating the tower above a carriage-way, the uprights of which support are each composed of several trussed chords, substantially as described.

8. In base-supports elevating towers above a carriage-way, the combination, with uprights, each composed of several trussed chords, of a bridging, likewise composed of several trussed chords, substantially as described.

9. The combination, with a tower, of a base-support elevating the tower above a carriage-way, the uprights of which supports are each composed of several trussed tubular chords, substantially as described.

10. In base-supports elevating towers above a carriage-way, the combination, with uprights, each composed of several trussed tubular chords, of a bridging, likewise composed of several trussed tubular chords, substantially as described.

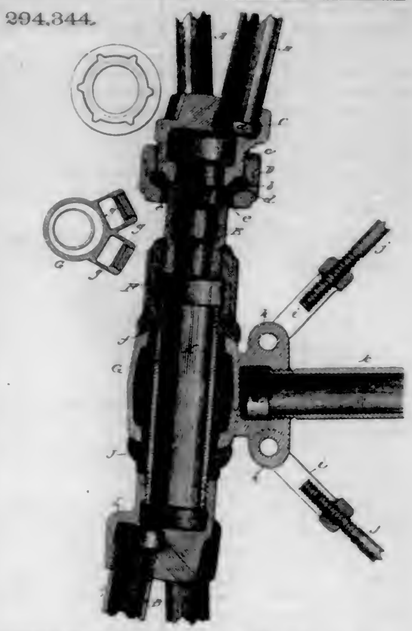
294,344. SKELETON IRON TOWER. JOHN S. ADAMS, Elgin, Ill. Filed Feb. 20, 1883. (No model.)

Brief.—Adjacent ends of trussed sections of the uprights, girts, and braces are connected by a compound ball-and-socket joint, with fastening-nuts to hold the parts in adjustment.

Claim.—1. In a skeleton tower, the combination, with one element thereof, of another joined thereto by a universal joint, whereby the two may be adjusted at any angle with each other, substantially as described.

2. In a skeleton tower, the combination, with one element thereof,

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of another element joined thereto by a ball-and-socket joint, whereby the elements may be adjusted at any desired angle with each other, and means for rigidly setting or fixing the joint when the adjustment has been effected, substantially as described.

3. In a skeleton tower, the combination, with one element thereof, of another element joined thereto by a ball-and-socket joint, one of said elements being made to pass axially through the ball and sockets of said joint, substantially as described.

4. In a skeleton tower consisting of several uprights joined by lateral braces and tie elements, which constitute with said uprights a trussed structure, a universal joint uniting said lateral braces with the upright, whereby the two may be adjusted to any required angle with each other and brought into proper relation with each other regardless of the angle of spread between the upright elements.

5. In a skeleton tower, an upright or corner element consisting of two or more sections, one or more of said sections united to its adjacent section by a flexible joint, thus permitting the said adjacent sections to stand at different angles with the axis of the tower, substantially as described.

6. The combination, with the uprights and a coupling connecting the sections thereof, of a girt and a ball-and-socket coupling, the socket of which is formed in two parts opposing each other, substantially as described.

7. The combination, with the uprights and girts, of a tower with a ball-and-socket joint-coupling the socket of which consists of two parts opposing each other, and one of said parts being adjustable and adapted to be tightened upon the ball and the ball in turn upon the opposing socket-piece, substantially as described.

8. In a coupling, the combination of the universal joint, the compound coupling I, and the nipple, all arranged and operated substantially as described.

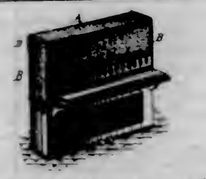
9. The combination of the coupling I, collar J, ball G, concave coupling F, and nipple K with a universal joint having one of its members screw-threaded in the concave coupling F, substantially as described.

10. The combination, with the concave coupling F, the coupler I, ball G, and collar J, of the nipple K, passing through said ball and collar and screw-threaded in the opposing couplings, F and I, substantially as described.

REISSUES.

10,450. COVER FOR UPRIGHT PIANOS. THEOPHILE F. KRAEMER, New York, N. Y. Filed Jan. 2, 1884. Original No. 270,443, dated Jan. 9, 1883.

10,450.

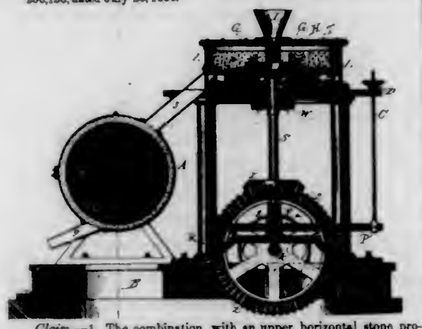


Claim.—1. A cover for upright pianos, composed of a top piece or scarf having pendent ends, a connecting front piece, and means arranged at the back of the piano whereby the top and front pieces are retained on the upper part of the piano, substantially as set forth.

2. A cover for upright pianos, composed of a top piece or scarf having pendent ends, a front piece of less length than the pendent ends, and means at the back of the piano whereby the top and front pieces are retained on the upper part of the piano, substantially as specified.

3. A cover for upright pianos, consisting of a top piece or scarf having pendent ends, a front piece of less length than the pendent ends, and adjustable fastening-straps, which extend from the front piece across the ends of the piano to the back of the same, and are applied to a supporting center strap of the top piece or scarf, substantially as set forth.

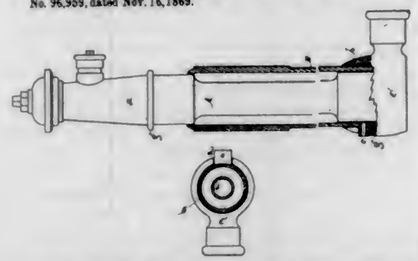
10,451. MACHINE FOR TRIMMING OR SMUTTING WHEAT, &c. WILLIAM LAUHOFF, Detroit, Mich. Filed May 22, 1882. Original No. 230,138, dated July 20, 1880.



Claim.—1. The combination, with an upper horizontal stone provided with a radial slot having closed longitudinal walls, of a slide which fits in the slot and a set-screw which engages with the upper edge of the slide, substantially as described.

2. In a machine for trimming wheat, the combination of a pair of suitably-dressed stones for ending up and trimming the wheat, an inclosing-case for said stones, having an interior grated surface, and means for carrying the grain around and throwing it against the grated interior surface of said case, substantially as described.

10,452. HYDRANT. NANCY RACE, Volney, N. Y., (Administratrix of WASHBURN RACE, deceased,) and SAMUEL R. C. MATHEWS, Philadelphia, Pa.; said WASHBURN RACE and MATHEWS assignors, by mesne assignments, to S. R. C. MATHEWS, RICHARD WOOD, EDWARD R. WOOD, GEORGE WOOD, RANDOLPH WOOD, (I. H. JOHNSON Administrator of said RANDOLPH WOOD, deceased,) and WALTER WOOD, all of Philadelphia, Pa. Filed Oct. 31, 1882. Original No. 96,959, dated Nov. 16, 1869.

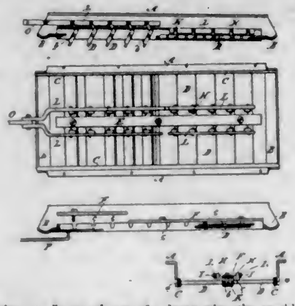


Claim.—1. The detached case or jacket B, combined with a hydrant to have end-play or vertical motion, to compensate for heaving by frost, the said case B forming a comparatively close sliding joint with the hydrant both at top and bottom, the upper part of same passing outside of the main stock of hydrant, so that any change in its position can be easily ascertained and the case driven back to its place without disturbing the hydrant.

2. The detached case or jacket B, combined and arranged with a hydrant to have end-play or vertical motion, to compensate for heaving by frost, the said case B closely surrounding the hydrant at the bottom and supported by the main elbow, and the upper part of the same passing outside of the main stock of hydrant, so that any change in its position can be easily ascertained and the case driven back to its place without disturbing the hydrant, substantially as set forth.

3. As an improvement on the detached case or jacket surrounding the hydrant-stock shown and described in the former patent of RACE and MATHEWS, dated January 26, 1858, No. 19,206, the case B forming a comparatively close sliding joint both at top and bottom, and made shorter than that portion of the hydrant-stock upon which it is to have end-play, and so that such case shall have a range for vertical motion upon said hydrant-stock, substantially as and for the purpose specified.

10,453. ASH-PAN FOR LOCOMOTIVES. CHARLES F. SMITH, West Bay City, Mich. Filed Dec. 5, 1883. Original No. 281,236, dated July 24, 1883.



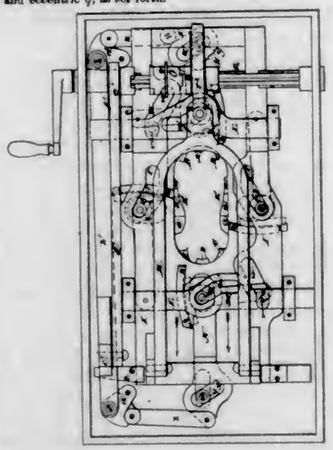
Claim.—1. In an ash-pan of a locomotive, the combination of the revolving leaves D, provided with the lugs H, pivoted by the bolts I to the connecting-bar L, with the bed-pieces C and center bed-piece, E, substantially as described.

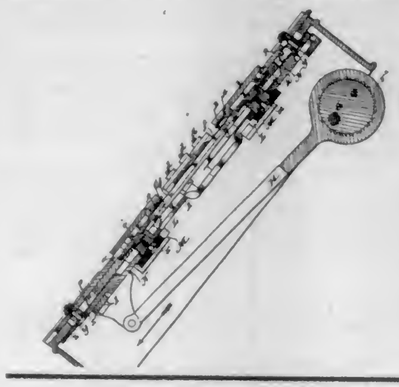
2. In an ash-pan for locomotives, the hollow bed-piece E, provided with the detachable cap F and the slots *a*, in combination with the revolving leaves D and the pivots *b*, substantially as described and shown.

3. In an ash-pan for locomotives, the hollow bed-piece E, provided with the slots *c* in each side, substantially as shown, and for the purposes specified.

10,454. LASTING-MACHINE. EZRA FLURET EVAL, Everett, MASS., assignor, by mesne assignments, to himself and Stephen Snow, same place. Filed Dec. 4, 1883. Original No. 277,664, dated May 15, 1883.

Claim.—1. In a shoe-lasting machine, the combination of sets of opening and closing jaws with the reciprocating slotted frame I, pitman H, and eccentric *q*, as set forth.





2. In a machine for lasting shoes, the combination of the longitudinal and transverse bars for operating the central heel and toe and side jaws with the bifurcated pitman H, eccentric *q*, shaft G, and suitable mechanism for operating said shaft, as set forth.

3. In a shoe-lasting machine, the pitman H, adapted to be operated by the eccentric *q* on the shaft G, in combination with the parallel bars I and transverse bars L, secured in guides to the bed of the machine, as described, and provided with jaws for clamping the sides and the central portions of the heel and toe of the vamp, as set forth.

4. In a machine for lasting shoes, the continuously-rotating shaft G, provided with the eccentrics *q* and *f'*, and their pitmen connected to the jaw-operating mechanism, as described, in combination with the movable clutch O, whereby the side jaws and central heel and toe jaws are first operated, and then the two side-toe and side-heel jaws, as set forth.

5. In a shoe-lasting machine, the longitudinal bar *b'*, adapted to be moved in guides by the pitman *d''*, in combination with the bell-crank levers *a' a'*, links *z z*, slides *p p*, and jaws B B and C C, as set forth.

6. In a machine for lasting shoes, the pitman *d'*, adapted to be operated by the eccentric *f'* on the shaft G, in combination with the bars *b'*, bell-cranks *a' a'*, links *z z*, slides *p p*, and jaws B B and C C, whereby the side-heel and side-toe jaws are thrust forward to stretch the vamp over the last.

PHOTO-LITH NORRIS PETERS WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE MATTHEWS AND RACE.

Decided January 24, 1884.

1. REISSUE—RULE OF LACHES MORE RIGID WHEN INVENTION IS BROADENED THAN WHEN LIMITED.

Unreasonable delay a bar to reissue, although it is sought to narrow and restrict the claims; but the rule as to laches is more rigid in cases where applicant seeks to broaden claims.

2. REISSUE—NO LACHES UNDER THE CIRCUMSTANCES.

After litigation lasting twelve years the Supreme Court of the United States held that the patent of Matthews and Race covered a broader invention than they had a right to claim as new. Matthews and Race thereupon apply for reissue with claims restricted: *Held* that they might do so, and that six months was not in the particular case unreasonable delay.

APPEAL from the Primary Examiner.

HYDRANTS.

Reissue application filed October 31, 1882.

Mr. R. M. Hunter for the applicants.

BUTTERWORTH, *Commissioner:*

It appears from the records of this case that on November 16, 1869, there was granted to applicants a patent which contained *one broad* claim, which was subsequently—to wit, in 1882—by the Supreme Court held to be broader than they were entitled to. Within a few months after such decision the reissue application under consideration was filed with a view of narrowing the claim. The reissue contains several claims, each of which is more restricted than that contained in the original patent; but whether they are sufficiently narrow, in view of the state of the art and the decision of the Supreme Court above referred to, I am not at present called upon to decide.

The question now presented is whether the delay between the granting of the original patent and the filing of the present application does not operate as a bar to the reissue. The Examiner holds that it does, and in support of his decision refers to a number of cases decided by my predecessor in which two years are indicated as the longest period which may elapse between the date of a patent and the filing of an application for a reissue thereof. I have carefully examined said decisions, and find that they treat of cases in which the object was to *broaden* the claims, and do not contemplate a case where the purpose is to restrict or narrow them.

Section 4916 of the Revised Statutes provides:

Whenever any patent is inoperative or invalid by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery *more* than he had a right to claim as new, * * * the Commissioner shall, on the surrender of such patent, * * * cause a new patent for the same invention * * * to be issued to the patentee.

In construing this section the courts have of late decided that a reissue for the purpose of enlarging the claim is not in terms provided for therein, and that though in a case of undoubted accident or mistake a reissue curing the defect resulting therefrom may be permitted under the general provisions of the law, yet in each case relief must be speedily applied for. (*Miller v. Bridgeport Brass Co.*, 21 O. G., 49.) But in the same decision the court hold that the statute in terms authorized a reissue for the correction of errors in the description and for the purpose of narrowing the claim, and suggest that a reissue may be proper in such cases after a longer delay than would be sufficient to bar a reissue for enlargement. An examination of the decisions upon the question of reissue will disclose the fact that the rule which suggests that laches on the part of the applicant justifies a rejection of the application has generally been applied when the end, aim, and purpose were to enlarge and broaden the claims. I do not mean to say or suggest that a party may not be guilty of such laches as would bar an application for reissue even when it is for the purpose of restricting the claim, but merely indicate that the courts hold applicants who seek in a reissue to broaden or enlarge their claim to a much more rigid rule than in cases where the reverse is true, and for reasons which are obvious.

There is no case reported which decides the question as to what is unreasonable delay in applying for a reissue for the purpose of restricting or narrowing the claim; but the decision already referred to will still be useful in guiding to a right conclusion in this case, as the question of the effect of laches is to be considered.

Section 4922 of the Revised Statutes provides in substance that a party upon disclaiming any definite part of a patented invention may maintain a suit for such other part of the invention as is justly his own, provided he has not unreasonably neglected to file the disclaimer. This section and section 4916, being in *pari materia*, must be construed together. The latter section provides that whenever a patent is "inoperative or invalid by reason of * * *. the patentee claiming as his own invention or discovery *more* than he had a right to claim as *new*, * * * the Commissioner shall, on surrender of such patent," &c.; while the former section provides that he may maintain suit, &c., on such part of a patent as is his own if he has not *unreasonably neglected to file the disclaimer*. Under these sections it is clear to my mind that unreasonable delay in filing a disclaimer of the parts of the invention to which the patentee was not entitled would bar the reissue. The surrender of a patent with a view of narrowing the claims is in effect a disclaimer of all contained in the original claim in excess of what is demanded in the reissue application, and the same rule would apply.

In November, 1869, a patent was issued to applicants, by which it appeared the tribunal duly authorized to adjudicate upon that question had determined that the patentees named in said patent were entitled to have all the claims mentioned and recited therein. The patent vested in them *prima facie* the exclusive right to make, use, and vend, &c., the thing as mentioned and described in their several claims, and until the right so vested was modified or annulled by a competent tribunal, in the absence of proof to the contrary we must presume that the patentees believed they were entitled to all they claimed. They had so sworn, and the examiner, who was by law charged with the determination of that question, had so found, and the contract (patent) had been written in conformity to the finding. The Supreme Court modified the contract, and said the patentees claimed and were allowed more than they were entitled to, and refused a decree in their favor. The Court in fact found the claims were *broader* and covered more than the patentees had a right to claim as *new*. The Court did not draw the line definitely between that which the applicants might and that which they might not have claimed, and whether they would have sustained the patent if narrowed to the extent now presented in the application for reissue I am not at present called upon to decide.

The suit seems to have been pending in the courts for over twelve years, during which time we must suppose the public were paying tribute as if the patent were valid. The patentees have been, in accordance with what they supposed to be their strict legal right, exacting tribute where none was due. The Supreme Court having determined, if not the limit of applicants' legal rights, at least that those theretofore enjoyed under their patent were excessive, they come and ask this bureau to review its former action, and, in the light of the decision referred to, grant a reissue for such claims as they allege might properly have been secured under their original application.

The decision of the Court was in March, 1882, and application for reissue was filed in October of the same year. From what date shall we regard the lapse of time? The issuance of the surrendered patent, or from the date of the decision of the Supreme Court by which the applicants were adjudged to have claimed and been allowed more than they were entitled to? There are some cases directly in point, viz: *O'Reilly* v. *Morse* (15 How., 62) and *Tuck* v. *Bramhill*, (3 Fish., 400.) In the former case the Supreme Court held that it was not unreasonable neglect to file a disclaimer after the Court had held the claim to be too broad, and the same doctrine is announced in the latter case. If these decisions are to serve as guides, and they must until modified or reversed, or the rule they prescribed is changed by statutory enactment, I must hold applicants to be in time, though it may be doubted whether the delay of several months is excusable.

The decision of the Examiner is overruled.

EX PARTE CLARKE.

Decided February 6, 1884.

An application was filed December 11, 1882, certain claims of which were put into interference. Under Rule 125 matter not in interference was withdrawn from the *first* and made the basis of a second application, upon which second application a patent was granted February 20, 1883. Said patent contained a disclaimer covering all features shown but not claimed therein, and also a clause reserving the right to claim such features in an application filed previously. During the pendency of the first application, and after the patent had issued on the second, a third application was filed with claims covering the matter described in both the first application and the patent. *Held* that under the circumstances the third must be regarded as a division of the first application, and therefore the invention claimed in the latter cannot be deemed to have been abandoned by reason of its being described in the patent.

Neither of the applications above referred to should be allowed until amended so as to disclaim the invention shown but not claimed therein, with proper cross-reference to the application in which such claim *is* made.

APPEAL from the Primary Examiner.

REVERSING-GEAR FOR STEAM-ENGINES.

Application of Willard A. Clarke filed March 12, 1883.

Messrs. Doubleday & Bliss for the appellant.

BUTTERWORTH, *Commissioner:*

This is an appeal from the decision of the Primary Examiner holding that the subject-matter of the application has been dedicated to the public by reason of its appearing in a patent previously granted the applicant, but which did not contain a claim thereto. Clarke filed an application December 11, 1882, certain claims of which were put into interference with an application filed by another party. Under Rule 125, Clarke withdrew matter not in interference, and made it the basis of a second application, filed January 23, 1883, which was patented February 20, 1883. In this patent is a disclaimer covering all features not therein claimed, and a clause reserving the right to claim such features in an application filed previously.

On March 13, 1883, Clarke filed an application in which he claimed matter shown, described, and disclaimed in the aforesaid patent which was contained also in a reservation clause. The question is, may he properly claim in this third application the matter disclaimed and reserved as above set forth?

In all the decisions which have been cited against the allowance of Clarke's third application the general proposition announced is that a party cannot claim in a second application matter shown and described but not claimed in a patent previously granted to him. But in each of these cases it will be observed that when the second application was pending at the same time with that upon which the patent was based the rule was held not to apply. Clarke's first and second applications were pending at the same time, and when the patent upon the latter was granted it contained (in compliance with Rule 42) a disclaimer of matter shown, but not claimed therein. It contained also a reference to the first application, in which it *was* embraced. Under these circumstances, there can hardly be a doubt that under the rules and the decisions mentioned the matter now claimed in the *third* could be claimed in the *first* application. But, furthermore, in *Singer* v. *Braunsdorf* (7 Blatchf., 521) it was expressly decided that where two applications were pending simultaneously a patent granted upon one of them which showed and described but did not claim a certain invention did not invalidate a *second patent* based upon the other application, and in which claims to said invention were introduced subsequently to the issuance of the *first* patent, and to the same effect is the decision of my predecessor in *ex parte* Emerson, (C. D. 1880, 143.) Instead of making these claims in the first application, (as we have seen he might have done,) the applicant elected to take the matter from said application and present it in a third. There is no objection to this course, and it is one of common practice. The third application simply stands in lieu of the first to the extent of the matter subtracted from the latter. In other words, it is a division of the first application.

Abandonment or dedication to the public cannot be urged against the third application unless it can be against the first. This proposition involves a familiar principle, and hardly needs the citation of authority in its support; but the case of *Smith* v. *Goodyear Dental Vulcanite Company* (11 O. G., 246) may be mentioned as in point. The Supreme Court in that case held that a second application for the same invention filed during the pendency of the first must be regarded as a continuation of the latter, and though public use for five years before the filing of the second application was proven the invention was not abandoned. I therefore cannot adopt the views of the Examiner in holding that the invention claimed in the third application has been dedicated to the public. The Examiner is instructed, however, that neither application should be allowed until amended so as to disclaim the invention shown but not claimed therein, with proper cross-reference to the application in which such claim is made.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

ADAMS v. HOWARD *et al.*

Decided February 6, 1884.

1. PARTICULAR PATENTS.
   Patents Nos. 47,551 and 55,991, granted, respectively, May 2 and October 24, 1865, to John H. Irwin, construed.
2. INVENTION—SIMPLE CHANGE REMEDYING DEFECTS SUFFICIENT.
   A simple change, which others failed to discover, and which remedied a grave defect, *Held* to constitute a patentable difference.
3. PRIOR USE—PRIOR APPLICATION ALONE NOT SUFFICIENT.
   A prior application for a patent alone, without evidence to show that such a lantern as is described therein was ever constructed, is not sufficient to defeat a patent.
4. PARTIES TO SUIT—NO OBJECTION BEING TAKEN TO NON-JOINDER, DECREE GIVEN.
   A complainant being owner of an undivided third interest in a license, and no objection having been taken by demurrer or the answer to the non-joinder of the other two owners of the license, such non-joinder cannot be insisted on to defeat a decree.
5. DEFENSES—INFRINGEMENTS OF PATENT WITHOUT KNOWLEDGE OF PATENTEE DOES NOT WORK AN ABANDONMENT.
   Where infringements by various parties and for considerable periods have been shown to have taken place during the life of the patent, but the circumstances fail to establish acquiescence in the instances when the infringement was known to the owners of the patent, there exists no such laches as would defeat an accounting.
6. PRACTICE IN COURTS—COURT WILL DETERMINE THE WHOLE CONTROVERSY, EVEN IF PATENT EXPIRES PENDING SUIT.
   There is no doubt of the propriety of decreeing an accounting, although the patent has expired since the commencement of the suit, and although for that reason there should not be an injunction. The jurisdiction of a court of equity having been legitimately invoked by the complainant, he will not be sent away without redress, because all the redress to which he was originally entitled cannot now be awarded to him. The court will retain the cause in order to completely determine the controversy.
7. COSTS.
   Where the defendants infringe only one of two patents sued upon, neither party should recover costs as against the other.

WALLACE, *J.:*

Infringement is alleged of two letters patent for improvements in lanterns, granted to John H. Irwin, one May 2, 1865, and the other October 24, 1865, both of which have been assigned to the complainant.

The second patent only is infringed upon the construction of the claims of the first patent adopted and expressed at the hearing of the cause, which limits it to a lantern having two horizontal guards connected by a hinge or catch, whereby the lantern may be opened at or near the middle of the globe.

Infringement of the second patent is not contested. The claim is to be constructed as one for a loose-globe lantern in which the globe is protected by a basket of guards, and is held in place by the top of the lantern when the lantern is closed, the basket being hinged at its upper horizontal guard to the top of the lantern and opened by a spring-catch opposite the hinge. The special utility of the device over the lantern of the first patent consists in the protection of the loose globe against accident in case the catch is accidentally unlocked, as when unlocked the basket will prevent the globe from falling out.

It is insisted that there is no patentable novelty in the improvement; but, as was suggested at the hearing of the cause, assuming that Irwin's first patent was granted before the lantern of the second patent was invented, it is believed that the change made in the last lantern was not such an obvious one as to negative the exercise of invention. As the lantern of Irwin's first patent approximates to that of the second far more closely than any other preceding device, it is unnecessary to examine further into the prior state of the art. The difference between the lantern of the second patent and that of the first consists only in a new location of the hinge and spring-catch and the employment of a horizontal guard to form the upper rim of the basket for the purposes of this new location. This change of location seems to have been a very simple thing after it was made; but simple as it may have been, it remedied a grave defect in the lantern of the first patent, and the advantages which it introduced were immediately recognized by the public. Others who were actively experimenting in the same field of improvement failed to discover how readily this change could be made and what advantages would result by its being made.

The defense that the patent is anticipated by the lantern described in the prior application for a patent by Anthony M. Duburn is not tenable, because there is no evidence, except his application for a patent, that he ever invented such a lantern. It was conceded by his solicitors upon the application that the model accompanying his application would not answer for use as a lantern, although it was sufficient to illustrate the construction of the device, and the examiner in charge condemned the model as inoperative. As there is no evidence in the case to show that such a lantern as was described in the application and illustrated by the

model was ever actually constructed by Duburne, sufficient does not appear to defeat the novelty of Irwin's invention.

It will not be profitable to consider in detail the numerous objections urged by the defendant to the complainant's title to the patent. The conclusion reached is that the complainant Adams is vested with the title to the patent which was acquired by the Chicago Manufacturing Company October 6, 1866, together with the right of action of that company to recover for infringements since that date. This title is of course subject to the license which had been granted by that company to Archer and others to make and use the invention in this State and elsewhere. The complainant Dietz has acquired an undivided third interest in this license by the transfer of Pancoast of March 24, 1881. No objection having been taken by demurrer or the answer to the non-joinder of the other two owners of this license, such non-joinder cannot now be insisted on to defeat a decree. If these parties are within the jurisdiction of the court, which does not appear, a decree can be made without affecting their rights, and which will completely adjust the rights of all the parties to the suit as between themselves.

In this view the recovery by Dietz must be limited to one-third of the damages and profits by reason of the making and using of the invention accruing since March 24, 1881. The case does not disclose such laches on the part of the owners of the patent as should defeat an accounting. While infringements by various parties and for considerable periods have been shown to have taken place during the life of the patent, the circumstances fail to establish acquiescence in the instances when the infringement was known to the owners of the patent.

No doubt is entertained of the propriety of decreeing an accounting, although the patent has expired since the commencement of the suit, and although, for that reason, there should not be an injunction. The jurisdiction of a court of equity having been legitimately invoked by the complainant, he will not be sent away without redress merely because all the redress to which he was originally entitled cannot now be awarded to him. Under such circumstances the court will retain the cause in order to completely determine the controversy. (*Godfrey* v. *Moerlin*, 14 Fed. Rep., 170.)

Inasmuch as the complainants have united two distinct causes of action in their bill, and upon their allegation that the defendant's lanterns infringed both the letters patent have compelled the defendants to litigate both, and as to one of these causes of action the defendants have prevailed, neither party should recover costs as against the other. (*Strickland* v. *Strickland*, 3 Beav., 242; *Crippen* v. *Heermance*, 9 Paige, 211; *Elfelt* v. *Steinhart*, 11 Fed. Rep., 896–899.)

A decree is ordered for complainants in conformity with this opinion.

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U. S. Circuit Court—Southern District of New York.

THE TIME TELEGRAPH COMPANY v. CAREY *et al.*

Decided January 30, 1884.

PRELIMINARY INJUNCTION—GRANTED WHERE DEFENDANTS ARE ESTOPPED.

A party having induced a complainant to acquire a patent and to engage in making and selling articles under it, is estopped from contesting the validity of it for the purposes of a motion for a preliminary injunction, and a second party who was cognizant of all the facts and seems to have been the principal promoter of the transaction occupies no better position.

Mr. B. S. Clark, *Mr. Roscoe Conkling*, and *Mr. Edward N. Dickerson, Jr.*, for the complainant.

Messrs. Turner, Lee & McClure and *Mr. B. F. Lee* for the defendants.

WALLACE, *J.*:

The peculiar facts of this case authorize the granting of a preliminary injunction as to some of the defendants, although the complainant's patent is of a recent date and has never been adjudicated.

The defendant Himmer was the inventor and assignor to the complainant of the improvement in electric clocks described and claimed in the letters patent of the complainant. While he was in the employ of the complainant as its superintendent he ordered certain clock mechanism to be made which was identical in parts and arrangement with that now sought to be enjoined, representing it to be one of the modifications of the invention secured by the patent. Special tools and dies were obtained to construct this mechanism, and the complainant's officers, assuming that the complainant was protected by the patent, have embodied this mechanism in their clocks and introduced them to the public. After Himmer left the complainant's employ he induced the manufacturers who were then making this clock mechanism for the complainant to supply him with the various parts sufficient to make a number of complete clocks. These have been put together by him, (or his wife, in whose name the clock-making business is carried on,) and through the agency of the defendant Carey, who seems to have been cognizant of all the facts and to be the principal promoter of the transaction, are now being introduced to the public in competition with the complainant's clocks. Upon these facts Himmer is estopped for the purposes of a motion like this from contesting the validity of the patent or denying that the clock mechanism he employs is covered by the claims of the patent. He cannot be heard to assert either of these defenses after inducing the complainant to acquire the patent and engage in making and selling clocks under it such as he now undertakes to make and vend.

Carey occupies no better position than Himmer does. He is Himmer's *alter ego* in the scheme of pirating the complainant's rights. His general denial of community of interests with Himmer goes for nothing in view of the facts and circumstances which are set forth in the complainant's affidavits, and which are sufficient to call upon him for a full and explicit disclosure of his relations with Himmer in order to exonerate himself.

No case is made for an injunction against the defendants other than Himmer and Carey. As to Himmer and Carey an injunction is granted; as to the other defendants the motion is denied.

Letters patent in question were No. 274,325, dated March 20, 1883, granted to The Time Telegraph Company as assignee of Vitalis Himmer.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	....	Nebraska	....	....
Arizona Territory	....	....	Nevada	....	....
Arkansas	1	3	New Hampshire	1	....
California	6	2	New Jersey	33	1
Colorado	3	....	New Mexico Territ'y	....	....
Connecticut	23	1	New York	94	11
Dakota Territory	2	....	North Carolina	1	....
Delaware	2	....	Ohio	25	1
District of Columbia	6	....	Oregon	1	....
Florida	....	....	Pennsylvania	57	2
Georgia	2	....	Rhode Island	10	....
Idaho Territory	....	....	South Carolina	1	....
Illinois	23	3	Tennessee	....	....
Indiana	18	1	Texas	4	....
Indian Territory	....	....	Utah Territory	2	....
Iowa	11	....	Vermont	2	....
Kansas	2	....	Virginia	1	....
Kentucky	3	1	Washington Territ'y	1	....
Louisiana	1	3	West Virginia	3	....
Maine	7	1	Wisconsin	8	....
Maryland	4	1	Wyoming Territory	....	....
Massachusetts	27	3	United States Army	....	....
Michigan	14	2	United States Navy	....	....
Minnesota	5	1	Total to citizens of the United States	414	38
Mississippi	....	....			
Missouri	7	1			
Montana Territory	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	....	....	Germany	4	....
Austria-Hungary	1	....	Hawaiian Islands	....	....
Barbadoes	....	....	Holland	....	....
Belgium	....	....	Mexico	....	....
Bermuda	....	....	New Zealand	....	....
Brazil	....	....	Russia	....	....
Canada	2	....	Scotland	1	....
Chili	....	....	Spain	....	....
Columbia, U. S. of	....	....	Sweden	....	....
Cuba	....	....	Switzerland	1	....
Denmark	....	....			
Ecuador	....	....	Total to citizens of foreign countries	19	....
England	6	....			
France	4	....			

DESIGNS.

14,836.—CARPET.—*Julius W. Bassett*, Brooklyn, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed January 28, 1884. Term of patent 3½ years.

14,837.—BOTTLE.—*Henry Auguste Chalein*, New York, N. Y., assignor to *Cook & Bernheimer*, same place. Application filed November 5, 1883. Term of patent 14 years.

14,838.—LAMP-BRACKET.—*Rodolphe Christeeen*, New Britain, Conn., assignor to *Russell & Erwin Manufacturing Company*, same place. Application filed August 6, 1883. Term of patent 7 years.

14,839 and 14,840.—CARPET.—*Florence E. Cory*, New York, N. Y., assignor to *Vandeventer & Horne*, same place. Applications filed January 28, 1884. Term of patents 3½ years.

14,841.—CARPET.—*James L. Folsom*, Brooklyn, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed January 28, 1884. Term of patent 3½ years.

14,842.—BLOCK OF MAGNESIA.—*William Griscom, Jr.*, Philadelphia, Pa. Application filed December 17, 1883. Term of patent 7 years.

14,843 and 14,844.—CARPET.—*Arthur L. Halliday*, Yonkers, N. Y., assignor to *The Bigelow Carpet Company*, Clinton, Mass. Applications filed January 25, 1884. Term of patents 3½ years.

14,845.—CARPET.—*Henry Hunt*, Greenville, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed January 28, 1884. Term of patent 3½ years.

14,846.—BANNER.—*Seth W. Johnson*, New York, N. Y. Application filed December 12, 1883. Term of patent 14 years.

14,847.—SHADE-PULL.—*Hubert L. Judd*, Brooklyn, N. Y. Application filed November 22, 1883. Term of patent 7 years.

14,848.—CARPET.—*David G. Melville*, Medford, assignor to *The Roxbury Carpet Company*, Boston, Mass. Application filed January 28, 1884. Term of patent 3½ years.

14,849.—CARPET.—*Julius S. Meyer*, New York, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed January 28, 1884. Term of patent 3½ years.

14,850 to 14,852, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed January 23, 1884. Term of patents 3½ years.

14,853 and 14,854.—CARPET.—*Julius Pegel*, New York, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed January 28, 1884. Term of patents 3½ years.

14,855.—LADY'S WRAP.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed January 23, 1884. Term of patent 3½ years.

14,856 and 14,857.—EAR-RING.—*John B. Van Houten*, Newark, N. J. Applications filed November 21, 1883. Term of patents 7 years.

14,858.—EAR-RING PENDANT.—*John B. Van Houten*, Newark, N. J. Application filed November 21, 1883. Term of patent 7 years.

14,859 to 14,862, inclusive.—EAR-RING.—*John B. Van Houten*, Newark, N. J. Applications filed November 21, 1883. Term of patents 7 years.

14,863 and 14,864.—EAR-RING PENDANT.—*John B. Van Houten*, Newark, N. J. Applications filed November 30, 1883. Term of patents 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

10,969.—BANJOS.—*George C. Dobson*, Boston, Mass. Application filed January 21, 1884.
"The word 'VICTOR.'"

10,970.—WHISKY.—*J. H. Rogers & Co.*, Maysville, Ky. Application filed February 6, 1884.
"The word 'LIMESTONE.'"

10,971.—UNFERMENTED GRAPE-JUICE.—*August Werner*, New York, N. Y. Application filed February 4, 1884.
"The words 'GRAPE MILK.'"

10,972.—AGUE-MEDICINE.—*Sanford C. Bolling*, Fort Smith, Ark. Application filed February 6, 1884.
"The word 'BUSTER.'"

10,973.—BAKING-POWDER.—*Bothin Manufacturing Company*, San Francisco, Cal. Application filed January 14, 1884.
"The word 'GIANT.'"

10,974.—LIQUID PURGATIVE COMPOUNDS.—*California Fig Syrup Company*, San Francisco, Cal. Application filed January 15, 1884.
"The representation of a branch of a fig-tree bearing the fruit and leaves of the same."

10,975.—BITTERS.—*E. Büring & Co.*, New York, N. Y. Application filed February 4, 1884.
"The word 'CARÁCAS.'"

10,976.—SKIN-LOTION.—*Goodwin & Thurston*, Minneapolis, Minn. Application filed January 26, 1884.
"Two figures, (representing the Goddess of Power and Æsculapius,) a lake, a water-jar, water and pool, and mountains. The Goddess of Power is in a sitting posture, holding in her left hand a bowl, and in her right hand a serpent which is in the act of thrusting its fangs into the liquid contained in the bowl. At the left of the Goddess of Power, and partly in front, sits Æsculapius, resting his right arm on an overturned water-jar, out of which is flowing a liquid, forming a turbulent pool at his feet, to which he points with the index-finger of his right hand. Æsculapius, with arm outstretched, holds in his left hand a drinking-vessel, grasped by the stem. The Goddess of Power is dressed in a simple, loosely-fitting garment, rather low at the neck, the sleeves coming to just below the elbows. The right foot, which is bare, is partially exposed. Her hair is somewhat curly and falls carelessly upon her shoulders. Æsculapius is nude, save the lower extremities, which are protected by a robe."

10,977.—PILLS.—*James Mitchell Sparks* and *Ada Leonora Belling*, Fort Smith, Ark. Application filed January 24, 1884.
"The word 'BULLETS.'"

10,978.—DANDRUFF-CURE.—*The Speicher Dandruff Cure Company*, Philadelphia, Pa. Application filed January 22, 1884.
"A monogram of the letters 'T C S.'"

10,979.—SUBSTITUTE FOR LARD.—*William Elliott Worth*, Brooklyn, N. Y. Application filed January 26, 1884.
"The word 'CUISINE.'"

10,980.—CIGARS.—*Estabrook & Eaton*, Boston, Mass. Application filed February 4, 1884.
"The words 'CLOTH OF GOLD.'"

10,981.—LAUNDRY-SOAP.—*Lautz Brothers & Co.*, Buffalo, N. Y. Application filed January 25, 1884.
"The pictorial representation of an ox."

10,982.—RIBBONS AND SILK TEXTURES.—*Oberteuffer, Abegg & Darnier*, New York, N. Y. Application filed December 18, 1883.
"A picture, image, or cut representing a woman holding a sword in her right hand, which rests upon her knee, her left hand resting upon a shield, and in front of her a cock with one claw resting on a globe, and adjoining said picture is the word 'GALLIA.'"

10,983.—CIGARS.—*Reid, Murdoch & Fischer*, Chicago, Ill. Application filed February 11, 1884.
"The letters and words 'RIPORD'S MAGIC,' together with the figure or representation of a maid, who has apparently paused in the act of entering a house. She holds elevated in her right hand a lighted lamp, which throws out a bright light. Her left forearm is raised to the height of her waist. The impression of her left knee is seen through her clothing, showing her to have paused with the left foot raised to step and in advance of her right. Her head is inclined slightly forward, and she is looking toward her right-hand side with a pleasant expression on her face. Upon her head is a cap or hood trimmed in front with lace, and which cap or hood hangs down her back. Around her neck, and hanging down over her bosom, is a light bib-like ornament or covering, gathered in loose folds and thrown back over her left shoulder. She has a large rope or cord around her waist, while a smaller cord also depends from her waist and strikes her at the knee, by means of which her dress is caught up in easy and natural folds. Above her head and on a curved line appear the words 'RIPORD'S MAGIC.'"

10,984.—TIME-KEEPING INSTRUMENTS.—*Seth Thomas Clock Company*, Thomaston, Conn., and New York, N. Y. Application filed January 31, 1884.
"The representation of a rectangle and circle."

10,985.—CIGARS AND CIGARETTES.—*John C. Sullivan*, Detroit, Mich. Application filed January 21, 1884.
"The arbitrarily-selected word 'DARDANELLES.'"

LABELS.

3,946.—Title: "LA ROSITA" (FOR CIGARS.)—*R. C. Brown & Co.*, New York, N. Y. Application filed February 11, 1884.

3,947.—Title: "LA MULO" (FOR CIGARS.)—*R. C. Brown & Co.*, New York, N. Y. Application filed February 11, 1884.

3,948.—Title: "SOUR MASH TONIC" (FOR MEDICINES.)—*O. B. Cook & Co.*, Detroit, Mich. Application filed February 11, 1884.

3,949.—Title: "THE IMPERIAL BLOOD AND LIVER TONIC, THE KING OF ALL TONICS."—*Reason Drake*, La Grange, Ind. Application filed February 6, 1884.

3,950.—Title: "DUPUY'S FOUNTAIN BITTERS."—*Willard D. W. Dupuy*, Mount Carroll, Ill. Application filed February 11, 1884.

3,951.—Title: "EARL & WILSON'S COLLAR AND CUFF."—*Earl & Wilson*, New York and Troy, N. Y. Application filed February 11, 1884.

3,952.—Title: "P. V." (FOR MANUFACTURED TOBACCO.)—*G. W. Gail & Ax*, Baltimore, Md. Application filed February 8, 1884.

3,953.—Title: "RIGHT BOWER, PURE OLD RYE."—*Jules A. Gauche*, New Orleans, La. Application filed February 12, 1884.

3,954.—Title: "SOUTHERN BELLE, FINE OLD RYE."—*Jules A. Gauche*, New Orleans, La. Application filed February 12, 1884.

3,955.—Title: "SERENADE, PURE OLD RYE."—*Jules A. Gauche*, New Orleans, La. Application filed February 12, 1884.

3,956.—Title: "DR. JOHN GOODE'S CELEBRATED CHILL AND FEVER TONIC."—*John Goode* and *John M. Kelso*, Magnolia, Ark. Application filed February 11, 1884.

3,957.—Title: "JAPANESE FURNITURE RENEWER."—*Joseph W. Harris*, Chicago, Ill. Application filed February 11, 1884.

3,958.—Title: "DR. DAY'S BLOOD COMPOUND" (FOR A MEDICINE.) *Charles E. Houghtaling* and *George E. Ferguson*, Albany, N. Y. Application filed January 30, 1884.

3,959.—Title: "GRAND DUPLEX" (FOR CIGARS.)—*The Ithaca Cigar Manufacturing Company*, Ithaca, N. Y. Application filed January 24, 1884.

3,960.—Title: "CYCLONE ELIXIR OR BOTTLED LIFE, SLEEP AND BEAUTY." (FOR A MEDICINE.)—*E. Ion McCrary*, Easton, Mo. Application filed February 9, 1884.

3,961.—Title: "GOLDEN SPIKE" (FOR CIGARS.)—*Meade & Hyland*, Penn Yan, N. Y. Application filed February 13, 1884.

3,962.—Title: "HARRIS' CORN SALVE."—*Charles H. Meserve*, Boston, Mass. Application filed February 8, 1884.

3,963.—Title: "REGATTA" (FOR DRESS SILKS.)—*R. & H. Simon*, Weehawken, N. J. Application filed February 13, 1884.

3,964.—Title: "DURHAM DISTILLING COMPANY RYE."—*Strauss, Fritz & Co.*, Cincinnati, Ohio. Application filed February 13, 1884.

3,965.—Title: "BROWN'S SARSAPARILLA."—*Ara Warren*, Bangor, Me. Application filed February 13, 1884.

3,966.—Title: "THE ARABIAN HEAVE REMEDY FOR HORSES."—*John M. Weber*, Norristown, Pa. Application filed February 12, 1884.

DISCLAIMER.

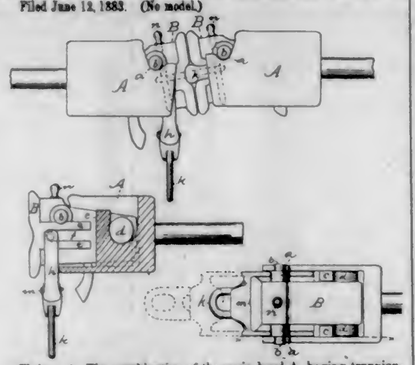
269,084.—*William W. Smalley*, Roundbrook, N. J. Patent dated October 15, 1878. IMPROVEMENT IN JOURNAL-BEARINGS. Disclaimer filed February 21, 1884, by the present assignee, *The Graphite Lubricating Company*, Jersey City, N. J.

Enters its disclaimer "to that part of the specification which is in the following words, to wit: 'The invention consists in a journal-bearing surrounded by a groove or grooves formed on the interior of the said bearing, and inclined to the longitudinal axis of the said bearing, by which the following advantages are secured: There is always, in every position of the shaft or journal revolving in the said bearing, solid metal for supporting the weight of the shaft, while at the same time the said journal is in every part brought into intimate contact with the lubricating material at every revolution. Moreover, the said inclined position of the groove or grooves relatively to the axis of revolution of the shaft or the journal in said bearing acts to carry out or to force out of or off from the said bearing-surface any dirt or extraneous matters that may accidentally find their way into the said bearing or onto the bearing-surface, thereby keeping the said bearing free from anything that might tend to increase the friction therein.'" Also, to "the word 'spiral' where it occurs in the following clause, 'The form of bearing that I prefer is shown in Figs. 1 and 2. In this bearing there are one or more spiral grooves, *b*, extending the entire length of the said bearing. The said spiral groove or grooves somewhat resemble screw-threads, but they are not screw-threads.'" Also, to "so much of claim No. 2 as is set out in the specification of the patent aforesaid, by disclaiming all constructions covered by said claim except where the grooves, inclined as to their direction, have also their sides inclined to radii drawn from the longitudinal axis, the same being well suited to holding any solid or plastic lubricating material."

PATENTS

GRANTED MAR. 4, 1884.

294,345. CAR-COUPLING. ARTHUR H. ARMSTRONG, Plainville, Conn. Filed June 12, 1883. (No model.)



Claim.—1. The combination of the main head A, having trunnion-recesses *a* at its outer end, and the cheeks *c* upon the inside at its inner end, with the supplementary head B, having trunnions *b* and *d*, the latter of which receives the drawing strain, substantially as described, and for the purpose specified.

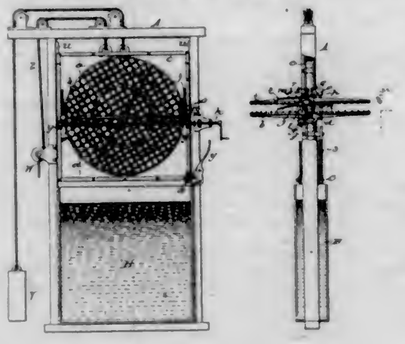
2. The combination of the coupling, the longitudinally sliding and swinging bail, and the coupling-link secured within the cross-arm of said bail, substantially as described, and for the purpose specified.

3. The combination of the supplementary head B, having side cheeks, *c*, the longitudinal slot *f*, and the swinging bail *h*, carrying link *k*, and having inwardly-projecting trunnions *g*, for engagement with the slot *f*, substantially as described, and for the purpose specified.

4. The combination of the main head A, supplementary head B, and the sliding and swinging bail carrying the coupling-link, substantially as described, and for the purpose specified.

5. The combination of the main head A, supplementary head B, the bail carrying the coupling-link, and means located within the walls of the main head for guiding the inner end of the bail longitudinally, and also allowing it to swing freely within said walls, whereby the bail is protected from injury, all substantially as described, and for the purpose specified.

294,346. MACHINE FOR DIPPING SAWS. ELIAS C. ATKINS, Indianapolis, Ind. Filed Oct. 17, 1883. (No model.)



Claim.—1. A machine for dipping saws, consisting of the following elements, namely: a pair of skeleton disks adapted to clamp a saw-plate between them and mounted on trunnions in a vertically-sliding frame; means for separating and for forcing together said disks; a frame mounted on vertical ways and adapted to slide thereon; means for turning said disks from a horizontal to a vertical position in said frame; a tank containing liquid and adapted to receive said frame and disks, and means for raising and lowering said sliding frame and disks, all combined and arranged to co-operate substantially as and for the purpose specified.

2. In a machine for dipping saws, the combination of a frame mounted on vertical ways and adapted to slide thereon, and a pair of skeleton disks mounted in said frame and adapted to clamp a saw-plate between them and to turn from a horizontal to a vertical position in said frame, all substantially as specified.

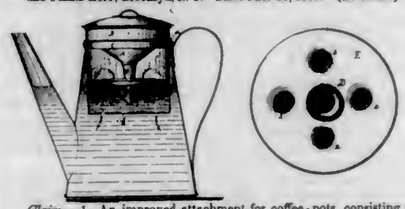
3. In a machine for dipping saws, the combination, with a vertical sliding frame and a pair of disks, one of which is pivoted to said frame and the other movable therein, of a pair of clamping-bars secured to said frame eccentrically to the pivots on which said disk is mounted, and friction-rolls secured to said movable disk so as to come in contact with said bars, whereby said disks are clamped together when turned to a vertical position, substantially as specified.

4. The combination, with disks *b* and *i*, of center pin, *q*, having rack *r*, pinion *s*, and means for turning said pinion, all arranged substantially as and for the purpose specified.

5. The combination, with sliding frame *c* and disk *b*, pivoted thereto, of segment-gears *d e*, secured to said disk, shaft *f*, mounted in bearings on said frame, pinions *g g*, and means for turning shaft *f*, all substantially as and for the purpose specified.

6. The combination, with disks *b* and *i*, pivoted in sliding frame *c*, segment-gears *d e*, pinions *g g*, and shaft *f*, of the detachable crank-shaft *k*, mounted in bearings on frame A, for the purpose set forth.

294,347. COFFEE-POT ATTACHMENT. MORTE BALLIN, New York, and FRANZ HOYT, Brooklyn, N. Y. Filed June 28, 1883. (No model.)



Claim.—1. An improved attachment for coffee-pots, consisting of a funnel, A, the spout of which is surrounded by a cup, E, extending above the orifice of the spout, so as to form a hydraulic seal, substantially as set forth.

2. An attachment for coffee-pots, consisting of a funnel, A, having a rimmed cylindrical portion, B C, at its upper part, and a cup, E, extending around the lower part of spout D, and forming a hydraulic seal therewith, substantially as set forth.

3. The combination of a coffee-pot and strainer with a funnel seated at its upper part in the coffee-pot, and provided at the lower end of its spout with a cup that extends above the orifice of the spout and forms a hydraulic seal therewith, substantially as specified.

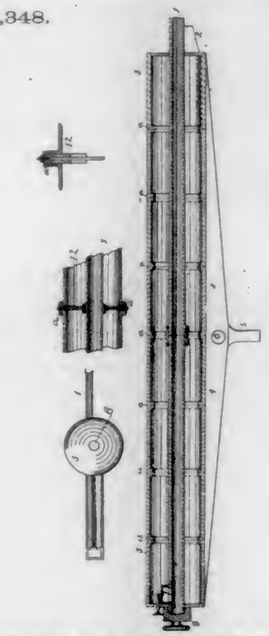
294,348. PNEUMATIC CANNON. WALLACE A. BARTLETT, Washington, D. C. Filed Jan. 8, 1884. (No model.)

Claim.—1. A pneumatic cannon in which the gun-tube is inclosed within the air-flask.

2. A pneumatic cannon in which the gun-tube is inclosed within the air-flask for a portion of its length.

3. A pneumatic cannon having the gun-tube within the air-flask and adjustable relatively thereto.

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4. A pneumatic cannon consisting, essentially, of a gun-tube and an air-flask surrounding and inclosing the same, the whole supported by suitable mechanism, substantially as described, so as to be trained together.

5. The air-flask of a pneumatic cannon and the gun-tube thereof, made in readily-detachable sections, so that the proportions of each may be increased or diminished relatively to the other.

6. The combination, with a cylindrical air-flask, of a gun-tube passing longitudinally through the same, and breech-closing mechanism outside the flask.

7. The combination, with an air-flask, of a gun-tube passing longitudinally through the same and projecting at the muzzle, and a brace for supporting said gun-tube at the muzzle end.

8. The combination, with a gun-tube and an air-flask surrounding the same, as described, of a longitudinal support, as 4, substantially as described.

9. The combination of a gun-tube, an air-flask surrounding and inclosing the same, and trunnions on the flask, by which the air-flask and tube may be trained, as described.

10. The combination of a gun-tube, an air-flask surrounding the same, and screw-bolts passing through the shell of the air-flask, by which the position of the tube within the flask may be adjusted.

11. The combination of a gun-tube, a cylindrical air-flask made up of sections surrounding the same, a ring interposed between two of said sections, and screw-rods passing from the gun-tube through the ring.

12. The combination of a cylindrical air-flask, a gun-tube passing through the same longitudinally, and a passage-way and valve leading from the flask to the tube outside the shell of the flask, substantially as described.

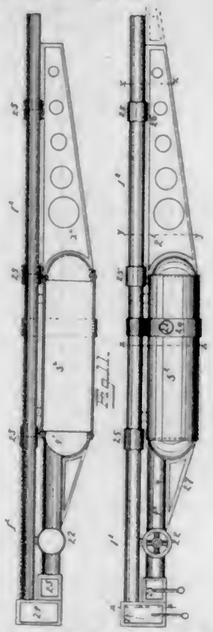
13. The combination of a cylindrical air-flask in sections, the ends of the sections forming turned-out flanges, as a' a', a gun-tube passing through said flask from end to end, a ring, 12, interposed between two of the sections, a collar surrounding the gun-tube, and screw-rods passing from said collar through the ring, all substantially as described.

14. The method of cutting off the gas-supply from the bore of a gun, which consists in closing the valve governing said supply by the passage of the projectile along the bore of the gun, substantially as described.

15. The combination, with a pneumatic gun-tube, an air-flask, and a valve governing the passage from the flask to the tube, of mechanism, substantially as described, whereby the passage of the projectile past a given point in the tube is made to close the valve, substantially as described.

16. The combination, with an air-flask, a gun-tube, and a valve which controls the passage from the flask to the tube, of pneumatic connections leading from the bore of the gun, and mechanism, substantially as described, controlled thereby, whereby the valve is closed when the projectile reaches a given point.

294,349. PNEUMATIC CANNON. WALLACE A. BARTLETT, Washington, D.C. Filed Jan. 8, 1884. (No model.)



Claim.—1. The combination, in a cannon of the character described, of the gas-flask and the gun-tube arranged outside above the flask, so as to be supported and rigidly held thereby, said flask provided with trunnions or equivalent supporting mechanism, whereby the gun and flask may be trained together, as set forth.

2. The combination, with a cylindrical gas-flask, of a gun-tube placed above and rigidly supported by said flask, and supporting-trunnions for the same, substantially as described.

3. The combination, with an air-flask and a gun-tube composed of longitudinal sections secured to and supported by said flask, of movable trunnions, whereby the preponderance of the gun may be changed, as set forth.

4. The combination, with an air-flask, of a gun-tube attached thereto and supported thereby, and a movable band surrounding the flask, said band having trunnions attached thereto, substantially as described.

5. The combination, with a gas-flask and a gun-tube arranged upon and supported by said flask, of a supporting-brace, as 2^9, projecting from the flask to support the gun-tube.

6. The combination, with an air-flask and gun-tube, arranged substantially as described, of a supporting brace or web, as 2^9, made in sections and secured to the flask, so as to support the tube, substantially as described.

7. The combination, with the air-flask and gun-tube, having projections, as 25, arranged relatively to each other, substantially as described, of a brace-web, as 2^9, provided with notches to receive the projections on the gun-tube, as set forth.

8. The combination, with a gun-tube and air-supply pipe, arranged with open rear ends side by side, of a breech-block having a passage-way leading from one tube to the other, substantially as set forth.

9. The combination, with a cylindrical gas-flask, of a gun-tube arranged on top of and parallel therewith, a supply-pipe arranged alongside the gun-tube and communicating with the flask, a breech-frame in which both tubes terminate, and a breech-block arranged to slide in said frame and form a communication from the supply-pipe to the gun-tube, substantially as set forth.

10. The cylindrical flask, a gun-tube mounted thereon and projecting at each end thereof, the supply-pipe communicating with the flask and with the breech of the gun-tube, the supporting-brace in front of the flask and under the gun-tube, and the supporting-brace behind the flask and under the supply-pipe, all in combination, as set forth.

11. A gun-tube and supply-pipe, a valve controlling the supply-pipe,

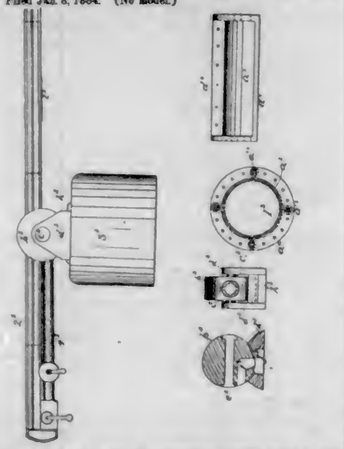
mechanism, substantially as described, for actuating said valve, and mechanical connections leading from the muzzle of the gun to a valve-detent, whereby the valve may be closed automatically as the projectile leaves the muzzle, all in combination, substantially as described.

12. The combination, with the supply-pipe, of a valve and a trigger for retaining the same in open or closed position, a sleeve on the valve, spindle adapted to engage therewith, as described, and a spring which tends to rotate said sleeve and through it the valve, substantially as stated.

13. The combination, with a rotary valve, its detent or trigger, and propelling mechanism, of a train of mechanical connections, substantially as described, leading from the muzzle to the detent or trigger, whereby the detent is actuated to permit the closing of the valve by the projectile in its passage from the gun, as set forth.

14. The combination, with an air-flask and supply-pipe, of a breech-closing piece, as 24^3, swiveled on the supply-pipe and forming a passage-way from said supply-pipe to the gun-tube, as set forth.

294,350. PNEUMATIC CANNON. WALLACE A. BARTLETT, Washington, D.C. Filed Jan. 8, 1884. (No model.)



Claim.—1. The barrel or tube of a pneumatic cannon made in sections, the breech-sections of ordinary tubing, (not bored out,) and the muzzle-section of bored and finished tubing, substantially as described.

2. The combination, with a gun-tube, of an inclosing-sleeve divided longitudinally into sections, and having radial flanges, and mechanism by which the flanges are secured together, substantially as described.

3. The trunnion-piece having tubular connection with the gas-flask and with the gun-tube, substantially as described, the gun-tube supported by said trunnion-piece, and a strengthening-sleeve for said gun-tube, having a bearing on said trunnion-piece, all in combination, substantially as set forth.

4. The combination, with a gun-tube, of an inclosing-sleeve composed of sections having radial and annular flanges adapted to be united, substantially as described.

5. The combination, with a gun-tube, of a strengthening-sleeve composed of four parts, each having a concavo-convex portion and side and end flanges, as described, which parts, when united, form a cruciform sleeve, substantially as described.

6. The combination, with the air-flask, of the trunnion-piece which supports the gun-tube and supply-pipe, substantially as described, said flask connecting with the trunnion-piece through a chamber, g^9, in part h^3, which part has edges x^3 x^3, made thin to serve as gas-closing joints, substantially as described.

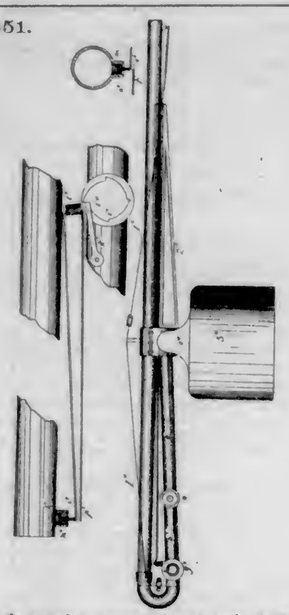
294,351. PNEUMATIC CANNON. WALLACE A. BARTLETT, Washington, D.C. Filed Jan. 8, 1884. (No model.)

Claim.—1. The combination of the gun-tube, the supply-pipe, and a trunnion-piece which unites and furnishes a support for both tubes, and a supporting-brace for the gun-tube, secured to the trunnion-piece, substantially as described.

2. The combination of the gun-tube, the supply-pipe, and a trunnion-piece having a socket, as c^4, for the gun-tube, a socket for the supply-pipe, and a supporting-web for the gun-tube, with a hollow trunnion-support through which and through the trunnion gas is supplied to the supply-pipe and gun, as set forth.

3. The trunnion-piece, substantially as described, having a support

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or sleeve for the gun-tube, a separate support or socket for the supply-pipe, and hollow trunnion with passage-way to the supply-pipe, substantially as stated.

4. The combination of the trunnion-piece, supply and gun tubes, and hollow trunnion-support, as described, with the hollow trunnion having a gas-closing joint consisting of a thin-edged tube and bearing therefor, all constructed and arranged substantially as described.

5. The flask, trunnion-support, trunnion-piece, and supply and gun tubes, constructed and arranged relatively to each other, substantially as described, and two valves—a relief and an operating valve—arranged in the supply-pipe, as set forth.

6. The method herein described of closing the operating-valve of an air-gun, which consists in causing the passage of the projectile to open or close an electric circuit, and by such circuit controlling the movement of the valve, substantially as set forth.

7. The combination, with a pneumatic gun, of electrical connections, substantially as described, arranged to be thrown into operation by the passage of the projectile, and having control of the starting or stopping mechanism of the operating-valve, as set forth.

8. The combination, with the supply-pipe of a pneumatic gun, of a valve, mechanism, substantially as described, to propel such valve, and a trigger or stop under control of an electric circuit, so as to be actuated thereby to permit the opening or closing of the valve.

9. The combination, with the supply-pipe of a gun of the character described, of a spring-valve, a stop or detent for said valve, and electrical mechanism, substantially as described, whereby said detent may be controlled.

10. The combination, with an electric circuit leading from near the muzzle of a gun, of a gas-escape passage from the gun-tube, and mechanism, substantially as described, whereby the escape of gas through said passage will close said circuit, as set forth.

11. The combination, with the air-supply pipe and gun-tube of a pneumatic gun, of a breech-block having a passage-way from one tube to the other, said breech-block being pivoted between said tubes, so as to open or close both tubes when turned on its pivot.

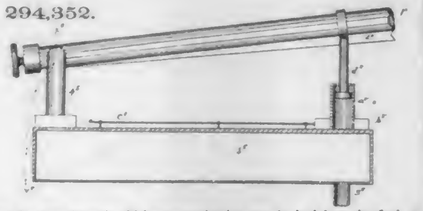
12. The combination of the trunnion-piece, the gun-tube, the brace or web supporting said tube, and tie-rods connecting said brace to the trunnion-piece, as set forth.

13. The combination of the trunnion-piece, the gun-tube, the web or brace secured to the trunnion-piece and supporting the gun-tube, and mechanism, substantially as described, whereby the gun-tube may be adjusted with reference to its supporting-web.

294,352. PNEUMATIC CANNON. WALLACE A. BARTLETT, Washington, D.C. Filed Jan. 8, 1884. (No model.)

Claim.—1. A gas-flask forming the gun-carriage, a gun-tube supported thereon by a support independent of the trunnions, substantially as described, and hollow trunnions and trunnion-supports near the breech

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of the gun, through which communication may be had from the flask to the gun, all combined substantially as set forth.

2. A gas-flask forming the gun-carriage, and having a passage leading to the bore of the gun, in combination with mechanism, substantially as described, whereby the pressure of gas from the flask is made to elevate the gun.

3. The combination, with the gas-flask and a gun-tube mounted thereon, and having communication with the flask through the trunnions, of a cylinder and piston arranged to elevate and depress the gun by the pressure of gas from the flask, substantially as described.

4. The combination, with the gas-flask and supply-pipe of a gas-pressure gun, of a valve which controls the passage between said flask and pipe, and mechanism, substantially as described, whereby the pressure of gas in the flask may be made to actuate said valve, substantially as set forth.

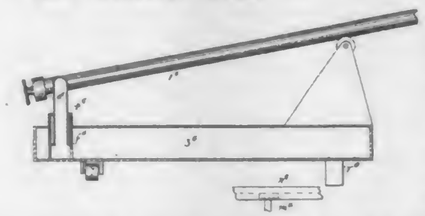
5. The combination, with the gas-flask and the supply-pipe of a gas-pressure gun, and a valve controlling the passage between the same, of an operating cylinder, piston, and valve, by which the first-mentioned valve may be operated by means of gas-pressure, substantially as described.

6. The combination, with the gas-flask, supply-pipe, and valve controlling the supply, arranged to co-operate as described in a gas-pressure gun, of operative mechanism, substantially as described, whereby the valve may be shifted by the pressure of air from the flask, and mechanism, substantially as described, leading therefrom, by which the same may be controlled, as set forth.

7. The method herein described of closing the operating-valve automatically, which consists in actuating mechanism by the passage of the projectile through the bore, which in turn throws into operation mechanism actuated by the pressure of gas in the flask, substantially as stated.

8. The combination, with the gas-flask, the supply-pipe, and valve controlling the passage between the two, of mechanism, substantially as described, whereby the pressure of the gas in the flask may be made to operate the valve, and mechanism leading therefrom to near the muzzle of the gun, by which the gas-pressure may be operated to close the valve as the projectile leaves the gun, as set forth.

294,353. PNEUMATIC CANNON. WALLACE A. BARTLETT, Washington, D. C. Filed Jan. 8, 1884. (No model.)



Claim.—1. The combination, with a gun-tube and gas-flask, of a supply-pipe connecting the two, said supply-pipe being in sections having a movement relatively to each other, substantially as described.

2. The combination, with an air-flask and gun-tube, of a telescopic supply-pipe connecting the two, substantially as described.

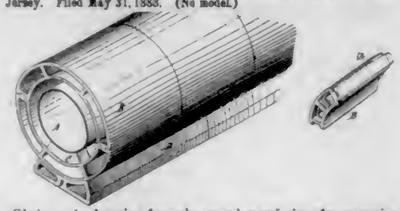
3. The combination, with a gun-tube mounted as described, so as to be free to move lengthwise, of a gas-flask and a telescopic supply-pipe connecting the two, substantially as stated.

4. The combination, with a gas-flask and gun-tube mounted thereon, of a telescopic supply-pipe connecting the two, said pipe being provided with a bearing-surface, by means of which the gas-pressure may be utilized to raise the breech of the gun.

5. The combination, with the gas-flask and the gun mounted thereon, and a pipe connecting the flask with the gun-tube, of mechanism, substantially as described, whereby the gas-pressure in the flask may be utilized to traverse the gun.

6. The combination, with a gas-flask and gun mounted thereon, of a telescopic supply-pipe connecting the two, and a projection from the gas-flask into which a portion of said telescopic tube may enter.

294,354. CONDUIT FOR STEAM-PIPES. LEONARD F. BRICKWITH, New York, N. Y., assignor to the Fire Proof Building Company of New Jersey. Filed May 31, 1883. (No model.)



Claim.—1. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of porous terra-cotta, jointed together, substantially as described.

2. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in cross-section, substantially as described.

3. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in horizontal section, substantially as described.

4. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in cross-section and in horizontal section, substantially as described.

5. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together, substantially as described, said casing and metal pipe being so combined as to form an air-space between the metal pipe and the casing, substantially as described.

6. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in cross-section, substantially as described, said casing and metal pipe being so combined as to form an air-space between the metal pipe and the casing, substantially as described.

7. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in horizontal section, substantially as described, said casing and metal pipe being so combined as to form an air-space between the metal pipe and the casing, substantially as described.

8. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in cross-section and in horizontal section, substantially as described, said casing and metal pipe being so combined as to form an air-space between the metal pipe and the casing, substantially as described.

9. In combination with a casing for metal underground pipes, an invert for drainage, substantially as described.

10. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together, and having an invert for drainage, substantially as described.

11. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in cross-section, and having an invert for drainage, substantially as described.

12. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in horizontal section, and having an invert for drainage, substantially as described.

13. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in cross-section and in horizontal section, and having an invert for drainage, substantially as described.

14. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together, substantially as described, said casing and metal pipe being so combined as to form an air-space between the metal pipe and the casing, and having an invert for drainage, substantially as described.

15. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in cross-section, substantially as described, said casing and metal pipe being so combined as to form an air-space between the metal pipe and the casing, and having an invert for drainage, substantially as described.

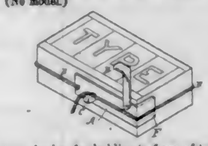
16. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in horizontal section, substantially as described, said casing and metal pipe being so combined as to form an air-space between the metal pipe and the casing, and having an invert for drainage, substantially as described.

17. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces, made of burned clay or porous terra-cotta, jointed together by broken joints or tongue-and-groove joints or lap-joints in cross-section and in horizontal section, substantially as described, said casing and metal pipe being so combined as to form an air-space between the metal pipe and the casing, and having an invert for drainage, substantially as described.

18. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces or bricks, and having an interior filling or layer composed of non-conducting substance—such as mineral wool or plaster—or of non-conducting and water-repelling substance—such as lamp-black—substantially as described.

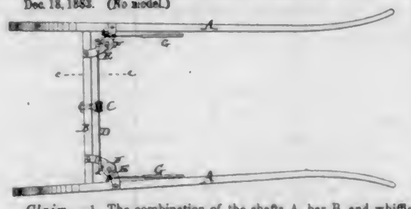
19. A casing for underground metal pipes for conveying steam, hot water, hot air, gas, smoke, &c., composed of separate hollow pieces or bricks of porous terra-cotta, having their surface covered with coal-tar, asphalt, silicate-paint, glazing, or other water-proof covering, substantially as described.

294,355. TYPE-HOLDER. EDWIN C. BELL, Titusville, Pa. Filed Apr. 27, 1883. (No model.)



Claim.—As a device for holding a form of types together, the bed-piece A, with its booked end E, cord B, stud C, and swinging hook D, all working in combination, substantially as described.

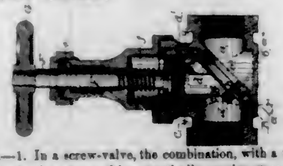
294,356. WHIFFLETREE. HANS H. E. BERT, Brooklyn, N. Y. Filed Dec. 18, 1883. (No model.)



Claim.—1. The combination of the shafts A, bar B, and whiffletree D with the swiveled blocks F F, having projecting ears *a b*, and with two pairs of braces, E E, between which said blocks are swiveled, all arranged substantially as herein shown and described.

2. The combination of the springy whiffletree D with the guide tube or support C, swiveled blocks F F, having projecting ears *a b*, and braces E E, in which said blocks are swiveled, and cross-bar B, all arranged to spring the whiffletree in the middle whenever the draft is unequal at its ends, as set forth.

294,357. STOP-VALVE. JAMES H. BLESSING, Albany, N. Y. Filed May 16, 1883. (No model.)

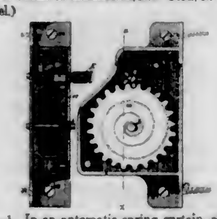


Claim.—1. In a screw-valve, the combination, with a valve-casing and an inclined valve, operated by a vertically-moving stem, of a removable valve-seat arranged in an inclined position and supported by an annular tongue, which prevents a lateral movement of said seat, but permits a slight tilting movement thereof by reason of an elastic packing between said valve-seat and its support, thereby enabling the valve-seat to accommodate itself to the face of the valve, substantially as specified.

2. In a screw-valve, the combination, with a valve-casing provided with a valve-seat arranged in an inclined position, as herein described, and a removable sleeve provided with oppositely-arranged vertical guides, and having its lower end made to conform to the angle of the valve-seat, of a valve adapted to be guided in said removable sleeve, and having its face on an inclined plane that conforms to the angle of the valve-seat, the line of motion of said valve being constantly in a vertical direction, but inclined in respect to the plane of the valve-seat, substantially as herein specified.

3. In a screw-valve, the combination, with a valve-casing, A, containing a transverse partition, a^3, arranged in an inclined position, as herein described, a valve-seat, B, removably attached to the inclined partition a^3, and a removable sleeve, C, provided with guiding-grooves c', and adapted to secure the valve-seat B in place, as herein set forth, of the valve D, having its face set to conform to the angle of the valve-seat B, and having wings *d*, that are adapted to engage in the guiding-grooves c', as and for the purpose herein specified.

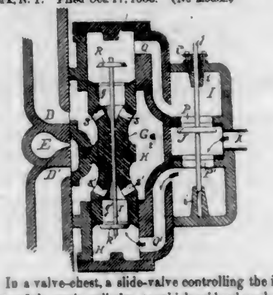
294,358. WINDOW-SHADE FIXTURE AND ROLLER. DAVID BLOCH and PETER E. MALMSTROM, New York, N. Y. Filed Dec. 10, 1883. (No model.)



Claim.—1. In an automatic spring curtain-roller, the arbor *b*, provided with the spring *g* and toothed wheel *a*, in combination with the shaft *e*, longitudinally grooved and formed with the truncated prismoidal end, the pinion *c*, carried by said shaft and pawl, and the roller B, provided with the cap-piece K, for clutching the end of shaft *e*, substantially as shown and described.

2. In an automatic spring curtain-roller, the roller B, provided with the cap-piece K, in combination with the grooved shaft *e*, and pawl for engaging in said groove, the cap-piece and shaft being provided, respectively, with interlocking elongations, as shown and described.

294,359. FLUID-ACTUATED VALVE. WILLIAM BOORMAN, Philadelphia, Pa., assignor, by direct and mesne assignments, to Charles Bernhard Behrens and Thomas Sherman, both of same place, and Sigmund Behrens, New York, N. Y. Filed Oct. 17, 1883. (No model.)



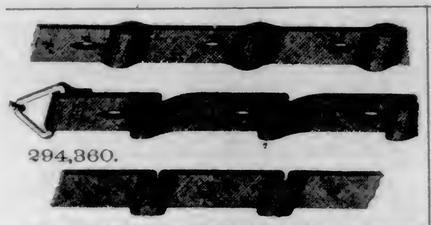
Claim.—1. In a valve-chest, a slide-valve controlling the induction and eduction ports of the main cylinder, to which said valve-chest is applied, in combination with an auxiliary valve fitted to reciprocate in said valve-chest, and provided with ports and a relief-valve, substantially as described.

2. In combination, the main cylinder, the auxiliary cylinder, the reversing-chamber, the slide-valve, the auxiliary valve, the relief-valve, and the reversing-valve, all arranged, constructed, and operating substantially as hereinbefore set forth.

3. In combination with the auxiliary cylinder, the air-chamber, substantially as and for the purposes specified.

4. The combination of the auxiliary cylinder, the reversing-chamber, inlet-ports communicating between corresponding extremities of said cylinder and chamber, and an air-chamber, all substantially as set forth.

294,360. FIRE-ESCAPE. NICHOLAS H. BORGFELDT, New York, N. Y. Filed Apr. 28, 1883. (No model.)

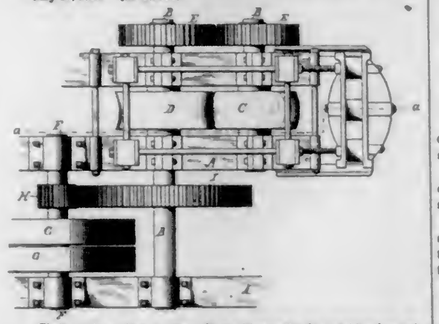


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Claim.—1. As a new article of manufacture, a fire-escape composed of a flexible flat band, A, provided with lateral enlargements, which do not exceed in length the width of said band, and which are placed at intervals along the surface of said band, substantially as and for the purposes herein shown and described.

2. The band A, having slits *h h*, and lateral enlargements between said slits, substantially as herein shown and described.

294,361. CRUSHING-ROLL. WILLIAM H. H. BOWERS, Salt Lake City, Utah, assignor of one-half to Stephen P. M. Tasker, Philadelphia, Pa. Filed July 16, 1883. (No model.)



Claim.—As an improvement in crushing-rolls, the combination, substantially as and for the purposes described, of two oppositely-placed or opposing rolls, one of which is convex as to its peripheral or acting face, and the other of which is correspondingly concave as to its peripheral or acting face, and both of which are isodiametric as to the central portions of their acting faces and travel at the same rate of speed, and means for occasioning the reverse rotation of the said two rolls.

294,362. VEGETABLE PARER AND SLICER. WILLIAM E. BROCK, Dunellen, N. J., assignor to George E. Brinckerhoff, Brooklyn, N. Y. Filed Oct. 11, 1883. (No model.)



Claim.—A parer and slicer having a handle, A, and a guide, B, formed from one continuous piece of wire, said wire being bent spirally to form said handle, and extended longitudinally to form said guide, and a knife, C, secured to said handle A at one end and to said guide B at its other end, as shown and described.

294,363. MACHINE FOR WEIGHING AND ASSORTING CARTRIDGES. PAUL BUTLER, Lowell, Mass. Filed Oct. 13, 1883. (No model.)

Claim.—1. The combination of the stationary sleeve D, provided with the circumferential groove *d*, having two branches, d^2 d^3, with the moving scale-beam c^4, having its end traversing in said groove, substantially as described.

2. In combination with the rotary moving scale-beam c^4, the fork *m*, having its tines projecting forwardly with relation to the path it moves in, substantially as described.

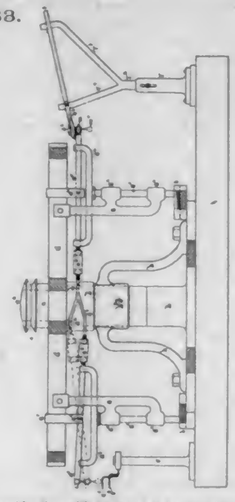
3. In combination with the moving scale-beam, the fork *m*, and the feeding-chute adapted to feed the cartridges thereto one at a time, substantially as described.

4. In combination with the moving fork *m*, the feeding-chute adapted to feed the cartridges thereto one at a time, and formed of side bars, *s s'*, bent so as to conduct the cartridges in an angular or curved path, substantially as described.

5. In combination with the moving fork *m*, the feeding-chute composed of the parallel bars *s s'* for cartridges, and the retaining-spring s^2, substantially as described.

6. In combination with the moving fork *m*, the chute for cartridges composed of the parallel bars *s s'*, and the spring s^2, substantially as described.

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7. In combination with the moving fork *m*, the chute for cartridges composed of parallel bars *s s'*, and the springs s^2 s^3, substantially as described.

8. In combination with the cartridge-feeding chute, the scale-beam c^4 and pivoted fork *m*, mounted at the end thereof, substantially as described.

9. In combination with the cartridge-feeding chute, the fork *m*, scale-beam c^4, vertically-moving arm c^5, supporting the scale-beam, and track *i*, connected therewith by suitable mechanism to raise and lower the same, substantially as described.

10. In combination with the rotary disk C, the scale-beam c^4, fork *m*, and cartridge-feeding chute, substantially as described.

11. In combination with the rotary disk C, the scale-beam c^4, fork *m*, supporting-bar c^5, piston-rod c^6, and circular track *i*, substantially as described.

12. In combination with the rotary disk C, the scale-beam c^4, fork *m*, and cartridge-tripping finger c^7, adjusted to discharge the cartridge from the fork, substantially as described.

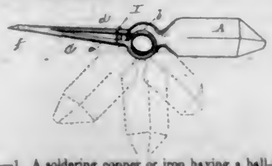
13. In combination with the rotary disk C, the scale-beam c^4, provided with fork *m*, the groove *d*, having branches d^2 d^3, and the cartridge-tripping fingers c^7 c^8 adjusted, respectively, to discharge the cartridges while the scale-beam is traversing either of said branches, substantially as described.

14. In combination with the rotary disk C, a scale-beam, c^4, provided with cartridge-holder *m*, an automatic cartridge-feeding device therefor placed at one point of the rotation of said disk, and an automatic cartridge-discharging device placed at another point in said rotation, substantially as described.

15. In combination with the scale-beam c^4, the groove *d*, with branches d^2 d^3, the supporting-arm c^5, rod c^6, and track *i*, substantially as described.

16. In combination with cartridge-carrier *m*, the cartridge-feeding chute provided with the rod r^2, and sleeved post *r*, provided with a set-screw for adjusting and fixing the height of the same, substantially as described.

294,364. SOLDERING-IRON. WILLIAM B. CROATE, Aurora, Ill. Filed Nov. 2, 1883. (No model.)

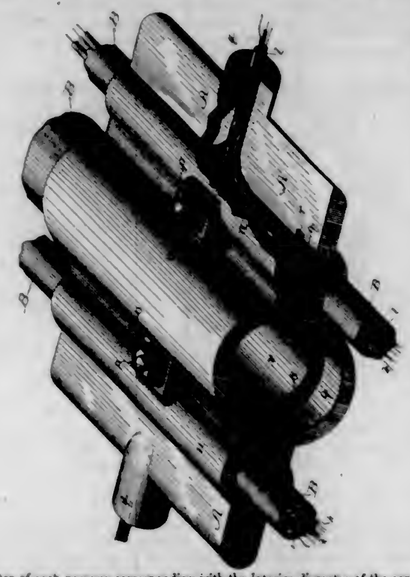


Claim.—1. A soldering copper or iron having a ball-head, in combination with a spring-shank adapted to grip and hold such head, and to permit its adjustment therein.

2. In combination, the iron made with a ball-head, the shank C, having the described arms *d* and *e*, united at one end, and each having its other or gripping ends made annular, and a slide, A, on said shank, all substantially as set forth.

294,365. CONDUIT FOR UNDERGROUND ELECTRIC WIRES. HENRY B. COHB, Wilmington, Del. Filed Nov. 24, 1883. (No model.)

Claim.—1. A coupling for conduit-sections in underground systems of electric wires, comprising a metal body divided longitudinally into separable parts, and having one or more passages through it to receive the ends of the conduit-sections and form continuations thereof, the diame-

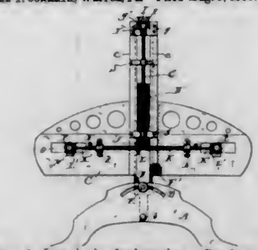


ter of each passage corresponding with the interior diameter of the conduit-sections which enter it, and being enlarged where the conduit-sections enter it to the extent of the thickness of the metal of the said conduit-sections, substantially as described, and for the purpose set forth.

2. A conduit-coupling comprising the separable parts A and A', provided with three longitudinal passages, *u u* and *v*, each having a diameter equal to the interior diameter of the conduit-sections which enter it, and enlarged where the conduit-sections enter it to the extent of the thickness of the metal of the said conduit-sections, and provided, also, with lateral passages *t*, leading from the passages *u*, substantially as described.

3. A coupling for conduit-sections, comprising a metal body formed of the separable parts A and A', with mechanism for securing said parts together, and having one or more longitudinal passages through it to receive the ends of the conduit-sections and form continuations thereof, and provided with annular recesses *s* near the ends of the passages, to receive flanges *r* on the ends of the conduit-sections, and having the passages from the said recesses to the ends made larger than elsewhere, whereby the inner surfaces of the conduit-sections and coupling may be flush with each other, substantially as described.

294,366. DEVICE FOR LOWERING COFFINS INTO GRAVES. GEORGE T. CONRATH, Warren, Pa. Filed Aug. 3, 1883. (No model.)



Claim.—1. In a device for lowering coffins into graves, the combination of the supporting-frame adapted to rest upon the ground, the lowering mechanism mounted thereon and adjustable to a longitudinal level position, and devices which lock said mechanism in a level position, substantially as set forth.

2. In a device for lowering coffins into graves, the combination of the supporting-frame adapted to rest upon the ground, the lowering mechanism mounted thereon and adjustable to a transverse level position, and devices which lock said mechanism in said level position, substantially as set forth.

3. In a device for lowering coffins into graves, the combination of the supporting-frame adapted to rest upon the ground, the lowering mechanism mounted thereon and adjustable to both a longitudinal and a transverse level position, and devices which lock said mechanism in both of said level positions, substantially as set forth.

4. In a device for lowering coffins into graves, the combination of the foot-pieces A and A', provided with curved slots D D', a frame carrying the lowering mechanism supported upon pivots *b b'*, and the set-screws which pass through said slots, substantially as set forth.

5. In a device for lowering coffins into graves, the combination of the foot-piece A', a frame for supporting one end of the lowering mechanism attached to said foot-piece, the foot-piece A, a vertical post attached to foot-piece A, and a cross-frame sliding upon said post and carrying the other end of the lowering mechanism, substantially as set forth.

6. The combination of the foot-pieces A A', the frames C C', carrying the lowering mechanism, the post B, upon which the frame C slides vertically, and the rack and pinion for elevating and lowering said frame, substantially as set forth.

7. The combination of the foot-pieces A A', the frames C C', carrying the lowering mechanism, the post B, upon which the frame C slides vertically, and having recess B' in its outer face, for the purpose described, and mechanism for elevating and lowering frame C upon the post B, substantially as set forth.

8. The combination of the supporting-frame adapted to rest upon the ground, the frames C C', mounted upon said supporting-frame, the vertical post B, upon which slides the frame C, the strips *c*, carried by frame C, adapted to prevent displacement of post B, and mechanism for elevating and lowering the frame C upon the vertical post, substantially as set forth.

9. In a device for lowering coffins into graves, the combination of the supporting-frame adapted to rest upon the ground, and the lowering mechanism mounted upon said frame and adjustable to suit coffins of various widths, substantially as set forth.

10. In a device for lowering coffins into graves, the combination of the supporting-frame adapted to rest upon the ground, and the lowering mechanism mounted upon said frame and adjustable longitudinally and transversely, to suit coffins of various sizes, substantially as set forth.

11. In a device for lowering coffins into graves, the combination, with the supporting-frame, of the longitudinal shafts mounted thereon and carrying gear-wheels, a transverse shaft carrying gear-wheels engaging with the wheels on the longitudinal shafts, and mechanism for rotating said shafts, substantially as set forth.

12. In a device for lowering coffins into graves, the combination, with the supporting-frame adapted to rest upon the ground, of the longitudinal shafts carrying the straps R, the transverse shaft, the gear-wheels between said shafts, the upright shaft G, the gear-wheels between said shaft G and the transverse shaft, and means for rotating all of said shafts and wheels, substantially as set forth.

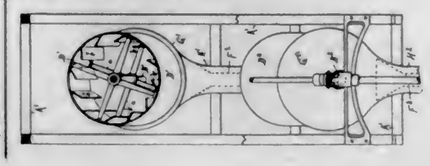
13. In a device for lowering coffins into graves, the combination, with the supporting-frame, of the transverse extensible shaft K K' K', the longitudinal shafts movable toward and from said transverse shaft, bevel-wheels between said shafts, and mechanism for rotating said shafts, substantially as set forth.

14. In a device for lowering coffins into graves, the combination, with the supporting-frame, of longitudinal extensible shafts M M', a transverse shaft, bevel-wheels between said shafts, and mechanism for rotating said shafts, substantially as set forth.

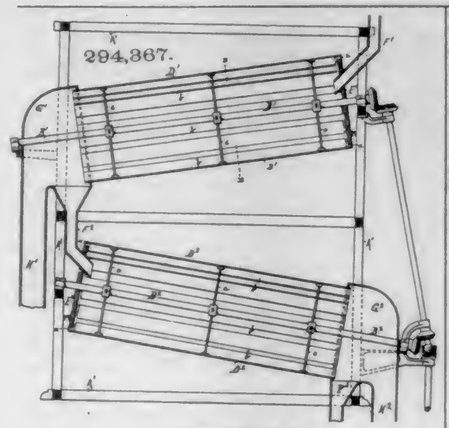
15. In a device for lowering coffins into graves, the combination, with the supporting-frame, of the longitudinal extensible shafts M M', the transverse extensible shaft K K' K', the bevel-wheels between said shafts, the vertical shaft G, bevel-wheels between said shaft G and the transverse shaft, and devices for rotating said mechanism, substantially as set forth.

294,367. GRAIN-DRIER. SHELDON PAUL COOK, Minneapolis, Minn. Filed July 2, 1883. (No model.)

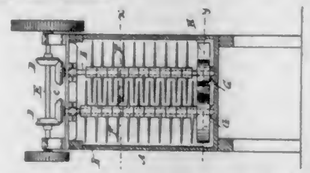
Claim.—The combination of cylinder D', adapted to be revolved, and provided with angular wings *b*, hot-air pipe H', and stationary head E', with hot-air exits *a* between said head and said cylinder, substantially as and for the purpose set forth.



294,367.



294,368. BRICK-MACHINE. ANTHONY CRAMER, Detroit, Mich. Filed Sept. 18, 1883. (No model.)



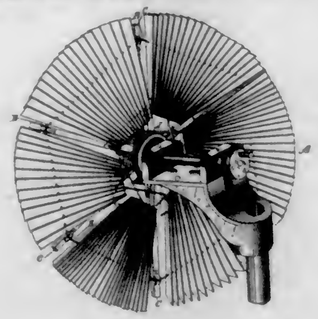
Claim.—1. A pug-mill provided with two vertical shafts revolving in opposite directions, and carrying interacting wipers set at right angles to each other, the end of one acting in close proximity to the rear face of the other, whereby both are kept free from and prevent the clay clogging each other, substantially as specified.

2. In a brick-machine, a pug-mill provided with two vertical shafts revolving in opposite directions, and having interacting cutting-blades, and provided with interacting wipers at their lower ends set at right angles to each other, substantially as specified.

3. In a brick-machine, a pug-mill provided with two vertical shafts revolving in opposite directions, and having interacting cutting-blades F and wipers G, set at right angles to each other, the outer end of one wiper approaching close to the hub of the other, in combination with a rectangular-shaped casing having a discharge-opening, H, in its lower end, substantially as and for the purpose described.

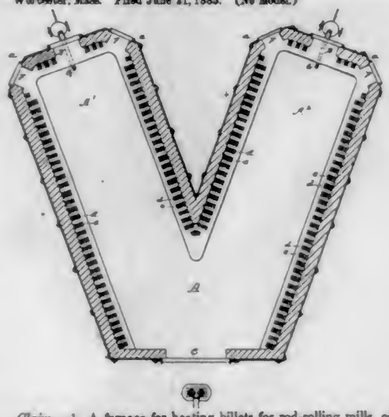
4. In a pug-mill, in combination with the casing having a discharge-opening, H, at its lower end, of two oppositely-revolving vertical shafts mounted therein, and carrying interacting cutters and interacting wipers, said wipers set at right angles to each other, as specified, bevel-pinions G, secured to the upper ends of said shafts, and meshing with bevel-pinions D, secured to the horizontal main shaft E, all constructed, arranged, and operating as specified.

294,369. WIND-ENGINE. CHARLES H. CRAMER, Lake Mills, Wis. Filed Mar. 5, 1883. (No model.)



Claim.—The combination of the windmill-hub D, provided with lugs *a*, shaft E, collar F, provided with recesses *b* and arms G, chain O, spiral spring N, radial arms C, rods H, and sections A, said lugs *a a* being adapted to move in the recesses *b b*, and said chain being adapted to be wound upon said collar, and said spiral spring extended as the motion of said collar F is resisted by the action of the brake, while said sections A are thrown from a vertical into a horizontal position out of the wind as said wheel moves forward by the action of said rods H, said collar being moved forward, and said sections brought into the vertical position by the said spring when the resistance of the brake is removed, all for the purpose and substantially as specified.

294,370. FURNACE FOR HEATING BILLETS. FRED H. DANIELS, Worcester, Mass. Filed June 21, 1883. (No model.)



Claim.—1. A furnace for heating billets for rod-rolling mills, constructed, substantially as shown and described, with two heating-sections, A' A^2, adapted for receiving long billets, which sections converge and unite in a manner to permit the withdrawal of the billets at the delivery end at a single place of discharge, as set forth.

2. A furnace for heating long billets for wire-rod-rolling mills, provided with feeding-in doors at one end and a discharging-door at the other, and having auxiliary thereto the doors F, located in the angles formed at the divergent ends of the furnace, substantially as shown, and for the purpose set forth.

294,371. WATCHMAN'S ELECTRIC TIME-RECORDING SYSTEM. GEORGE W. DAVIS, Freeport, Me. Filed Dec. 17, 1883. (No model.)

Brief.—The operation of sending a signal from one post sets the instrument at the next post. As it cannot be used without this previous setting, the watchman is compelled to visit his posts in a prearranged order.

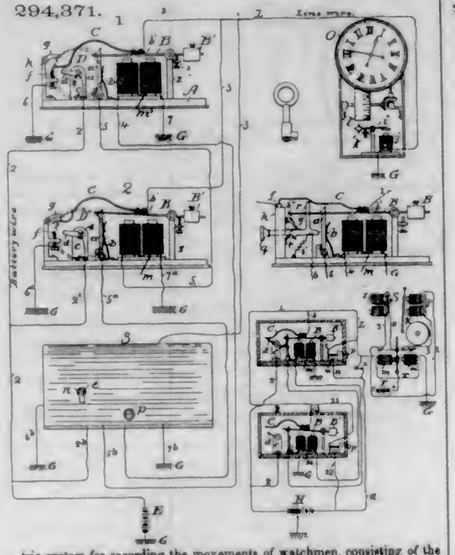
Claim.—1. The combination, substantially as hereinbefore described, in an electric signaling system for watchmen, of a main-line circuit extending outward to a recording-instrument, and inwardly terminating in a series of branch circuits, one of which is normally grounded, a ground-wire for each branch circuit, a battery and normally-open battery-wire, means, as indicated, for sending the signal by connecting the battery to the main-line circuit, and simultaneously severing the line from the normal ground, and other means, whereby the act of sending the signal grounds the line through another of the said branch circuits, for the purposes described.

2. An electric signaling system for watchmen, consisting of a recording-station and a recording-instrument located thereat, two or more signaling-stations, a signaling-instrument at each signaling-station, provided with devices for setting the succeeding instrument, a connecting-line circuit extending between the said recording and signaling stations, and having a separate branch to each signaling-instrument, a normally-open battery-circuit branching to each signaling-instrument, and a normally-open controlling-circuit extending from each signaling-instrument to the electro-magnet of the next in order, and adapted to be closed by the act of sending the signal, whereby the next instrument to be operated may be automatically set in operative position, substantially as hereinbefore described.

3. In a system of electric signaling for watchmen, the method of preventing false signals from being sent to line, which consists in causing the act of sending the legitimate signal from any given signaling-instrument to ground or short-circuit the main line at the next station, substantially as described.

4. A signaling-instrument adapted to form one of a series in an electric system for recording the movements of watchmen, consisting of the following instrumentalities: an arbor carrying a revolving arm, and adapted to be manually rotated in sending a signal, the said arbor being connected with a battery; a ratchet-wheel fixed upon and adapted to be rotated with the arbor, and a pawl engaging therewith to prevent retrograde movement; a ground-terminal; an electro-magnet in a local circuit normally open at a point external to the instrument, an armature and detent therefor, and a contact-spring in electric connection with a main-line circuit, supported by but insulated from the said armature, and adapted, when the armature is in its forward position, to rest on the said ground-terminal in the path of the revolving arm, and a normally-open circuit-wire connected with the armature-detent and leading to the electro-magnet of the succeeding instrument, all in combination and for the purposes specified.

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5. The combination, in a signaling-instrument for an electric watch-box system, of a main line, a battery-line, a ground-wire, a normally-open local circuit leading to another instrument, and means, as indicated, for disconnecting the line from its ground-wire and connecting it momentarily with the battery-wire, and for connecting the said battery-wire immediately thereafter to the normally-open branch circuit, whereby the signal is sent and the succeeding instrument set, for the purposes specified.

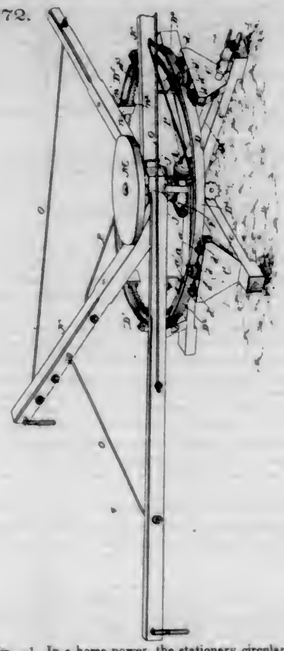
6. A series of watchmen's signaling-instruments, adapted, when manipulated, to send electric signals to a recording-instrument, each of the series being connected with a line branch, a ground-wire, a battery branch, and a normally-open circuit leading to the next instrument, and provided with an electro-magnet, adapted, when energized, to ground the main line, and each provided with devices for manual operation, so arranged that the act of sending the signal successively breaks the main-line ground from its own instrument, sends the signal to line, and closes the circuit of the succeeding electro-magnet, whereby the next instrument is put into operative position.

7. The combination, in an instrument for use in a system of electric signaling for watchmen, of a signaling-instrument, an inclosing-case therefor, and circuit-closers attached thereto, and a main battery having its ground or return wire connected as hereinbefore described, whereby the proper manipulation of the signal-instruments causes currents of definite direction to flow to line and work the recorder, and whereby an attempted removal of the case causes reversed currents to flow to line for the purpose of sounding an alarm, substantially as specified.

8. The combination, in a system of electric signaling apparatus for watchmen, of a recording system consisting of a polarized relay and a local recorder and alarm-bell adapted to be actuated thereby, a series of signaling-stations to be visited in turn by the watchman, a main battery, a signaling-instrument of the character described at each station, and connections whereby when the regular signal is transmitted currents of definite direction are sent to line, operating the recorder, and if the signal-box is tampered with currents of opposite direction are sent, operating the alarm, substantially as described.

294,372. HORSE-POWER. JOSEPH DICK, Jr., Canton, Ohio. Filed Aug. 16, 1883. (No model.)

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Claim.—1. In a horse-power, the stationary circular rack, toothed on its lower face, in combination with the traveling pinion engaging therewith, and a bevel-wheel concentric with said rack and actuated therefrom, substantially as described.

2. In a horse-power, a circular rack composed of sections cogged on their lower faces, in combination with and supported by stationary uprights, to which they are secured, substantially as described.

3. In a horse-power, the stationary circular rack or ring toothed on its lower face, in combination with the traveling shaft geared thereto and a bevel-gear arranged below the plane of and geared to said traveling shaft, substantially as described.

4. In a horse-power, the frame of the machine, consisting of radial arms, a central flanged or socketed hub, the uprights secured to said arms, and a stationary circular rack, made in sections toothed upon their lower surfaces, and secured to and connecting said uprights, substantially as described.

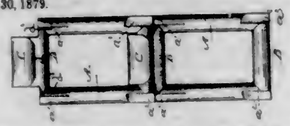
5. The circular rack made in sections, each provided with flanged and semi-conical projections, in combination with the supporting-standard, the socketed cap-pieces, and the through-bolts for uniting said sections to each other and to the radial arms of the frame, substantially as described.

6. The combination of the circular rack, the central bevel-gear, and the connecting traveling shaft, said rack and bevel-gear being geared to the traveling shaft, the rack above and the bevel-gear below the horizontal plane thereof, and both on the same side of the axial center of the bevel-wheel, substantially as described.

7. The stationary circular rack, in combination with the sweep for actuating the traveling pinion and the draft-rod connecting said sweep with the pinion-shaft bearing, in the manner and substantially as specified.

8. The stationary circular rack, toothed on its lower face, in combination with a traveling shaft and its pinion, and a sliding shoe upholding said pinion in engagement with the lower surface of the rack, and forming a bearing for the shaft thereof, substantially as described.

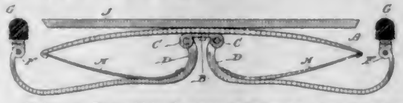
294,373. DRIVE-CHAIN. WILLIAM H. DICKEY, Jackson, Mich. Filed Sept. 30, 1879.



Claim.—A chain-link having an end bar, D, which is flattened upon its upper face, as at *d*, with an open hook projecting therefrom, having

at its opposite end an end bar adapted to enter a similar hook upon an adjacent link, and having side bars recessed at one end, as at d' d', to the plane of the flattened part d of the end bar, or thereabout, provided with stops a' a' and recesses a^3 a^3, to receive the stops when the links are turned into an unusual relative position for coupling or uncoupling.

294,374. VEHICLE-SPRING. WILLIAM H. DOYLE, Bantam Falls, Conn. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a vehicle, the upper spring, upon which the bolster rests, in combination with two lower springs, pivoted independently to said spring, and the intermediate or auxiliary springs, secured at one end to the lower springs, and the other extremities resting in sockets in the upper springs, substantially as set forth:

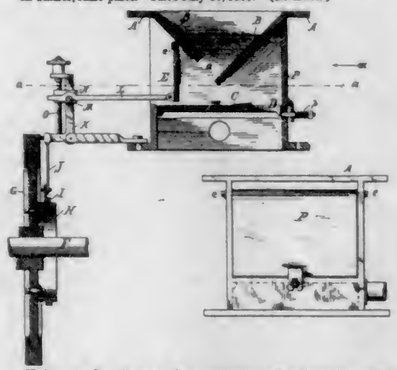
2. The springs D, having their inner ends formed with eyes E, in combination with the plate B, secured to the spring A, and provided with ears C, and intermediate springs, H, substantially as described.

3. The spring A, with sockets I, as described, in combination with the springs H and springs D, substantially as and for the purpose set forth.

4. In combination with the spring A, having sockets I, and the lower springs, D, pivoted to said spring, the auxiliary or intermediate springs, H, resting within said sockets, and secured upon said lower springs, whereby the strain is distributed throughout all the springs and a uniform and positive action had, substantially as hereinbefore shown and described.

5. In combination with the upper spring, A, the spring H, secured on the upper surface of the lower spring, D, whereby the greater the weight placed upon the upper spring the longer will be the line of contact between the lower and the intermediate springs, substantially as set forth.

294,375. HOPPER FOR PULVERIZING-MACHINES. HERMANN BERNHARD FELDMANN, Philadelphia, Pa., assignor of one-half to Stephen P. M. Tucker, same place. Filed July 16, 1883. (No model.)



Claim.—1. In a hopper, the combination of an inclosing-casing, a diaphragm or floor therein provided with a discharge-opening, chutes or kindred devices adapted to direct the deposit of material fed into the casing upon the diaphragm, an oscillatory feed-plate adapted to occasion the feed of a predetermined quantity of material deposited upon the diaphragm to the discharge-opening therein, and means for occasioning the oscillation of the feed-plate, substantially as set forth.

3. The combination, with an inclosing-casing containing convergent chutes, and a diaphragm provided with a discharge-opening, substantially as set forth, of an oscillatory feed-plate, a link, a bell-crank lever, an eccentric yoke, and an eccentric, all substantially as set forth.

3. In combination with a casing for a hopper provided with the inclined convergent chutes and the horizontal diaphragm and the oscillatory feed-plate, the spring-controlled door, substantially as and for the purpose set forth.

294,376. CANOPY-HOLDER FOR CHILDREN'S CARRIAGES. ADDEN S. FITCH, New York, N. Y. Filed Aug. 2, 1883. (No model.)

Claim.—1. The combination, with the supporting-rod B, of the leaf-spring holder A, having the loop *a* to grip the rod, and the parallel ends *a'*, with the button *c* on the canopy-ferrule C, adapted to be gripped by said ends *a'*, as and for the purpose specified.

2. The combination, with the supporting-rod B, of the leaf-spring holder A, the wide middle portion of which forms the rod-gripping loop



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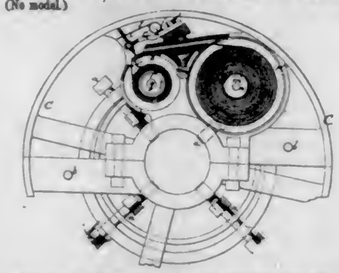
a, and the narrowed ends of which are parallel to each other and form a grip for the button *c* on the canopy-ferrule C, substantially as and for the purpose set forth.

3. The combination, with the supporting-rod B, of the leaf-spring holder A, having the rod-gripping-loop *a*, and the ends *a'*, recessed at a^3, together with the ferrule C, having button *c*, with convex opposite sides *c'*, as and for the purpose specified.

4. The combination, with the supporting-rod B, of the leaf-spring holder A, having the rod-gripping loop *a* and extended parallel ends *a'*, on the bearing-face of one of which are the radial depressions a^3, together with the ferrule-button *c*, having the rib c^3 across one side, and arranged to operate as and for the purpose described.

5. The combination, with the rod B, of the leaf-spring holder A, having the loop *a* and the extended parallel ends *a'*, together with the ferrule C, having the shank c^4, carrying the button *c* and the pin c^3, all arranged to operate as and for the purpose specified.

294,377. DYNAMOMETER. FRANKLIN A. GLEASON, Brooklyn, assignor of one-half to John H. Swartz, Oyster Bay, N. Y. Filed June 15, 1883. (No model.)



Claim.—1. The combination of the dynamometer-wheel C with the lever D and mechanism, substantially as described, for recording the movements of the lever D on a tape, and with the lever E and the lugs *e e* on the actuating-pulley B, all arranged for the purpose of balancing the apparatus, substantially as specified.

2. The combination of the dynamometer-wheel C with the two levers D E and the two springs F F, and with the actuating-wheel B and its lugs *e e*, that bear against both of said levers, substantially as described.

3. The combination of the dynamometer-wheel C, having annular flange *u* and notch *v* therein, with the loose ring I, lever J, having pin *w*, pawl *s*, and ratchet-wheel *r*, all arranged for converting the continuous rotation of the wheel C into intermittent rotation of the ratchet-wheel *r*, substantially as described.

4. The combination of the dynamometer-wheel C, having notched flange *u*, with the ring I, lever J, pin *w*, spring *x*, pawl *s*, ratchet-wheel *r*, intermediate gearing, a^2 b^2 d^2, and shaft f^2, upon which the registering-tape is wound, substantially as specified.

5. The combination of the dynamometer-wheel C, having notched flange *u*, with the loose ring I, lever J, having pin *w*, pawl *s*, ratchet-wheel *r*, spool *p*, and mechanism, substantially as described, for conveying the motion of said ratchet-wheel *r* to the spool *p*, and with the lever D, elbow-lever G, pencil-holder *i*, and spring F, substantially as herein shown and described.

6. The slotted pencil-holder *i*, combined with the plug or slide *k*, sustaining-lever G, and spring *l*, substantially as described.

7. The spool *p*, combined with the spring g^2 and pin k^2, for the purpose of clamping the end of the tape H, substantially as specified.

8. The combination of the box l^2 and drum *m*, contained therein, with the cover j^2, spring i^2, and plug l^2, substantially as described.

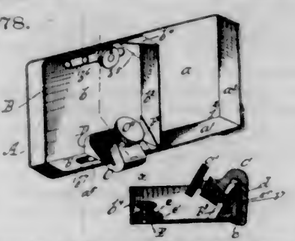
9. The combination of the dynamometer-wheel C, having toothed projection m^2, with the slotted plate J^3, having series of teeth on one side and one tooth, n^3, on the other side, and with the lever D, having notches wherein to receive the tooth n^3, substantially as described.

10. The dynamometer-wheel C, made in two parts, which can be fastened onto a shaft already hung, in combination with the connecting-bolts p^2, substantially as specified.

294,378. COMPOSING-STICK. WILLIAM H. GOLDING, Chelsea, Mass. Filed Feb. 24, 1883. (Model.)

Claim.—1. A gage or knee for a composing-stick, formed of a single piece of sheet metal and having integral re-enforcing flaps at its

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ends, constructed as and for the purpose of triangular braces to the wall of the knee, substantially as specified.

2. A gage or knee for a composing-stick, formed of a single piece of sheet metal and having a triangular bracing re-enforcing flap at its outer end, substantially as specified.

3. A gage or knee formed of a single piece of sheet metal, and having a re-enforcing flap integral with its back and secured to its end, and a re-enforcing flap integral with its end and secured to its bottom, substantially as specified.

4. The combination of a stick, a knee, and a self-adjusting corner-block with suitable clamping mechanism, substantially as specified.

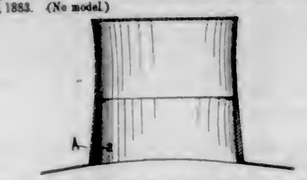
5. The combination of a knee provided with slots in its bottom, a stick provided with holes in the bottom thereof, registering with said slots, and suitable clamping mechanism terminating flush with the outer surface of the bottom, substantially as specified.

6. A blank for a sheet-metal composing-stick, comprising a bottom, a back, and an end-forming portion, the latter portion having an integral triangular re-enforcing flap, substantially as specified.

7. The blank for a composing-stick, consisting of the back portion, *a'*, and margin a^3, integral with the bottom portion, *a*, an end-forming portion, a^2, integral with the back-forming portion, and provided with an integral re-enforcing flap, a^4, and with a margin, a^5, and flap a^6, separated from each other and from the margin a^3, substantially as shown and described.

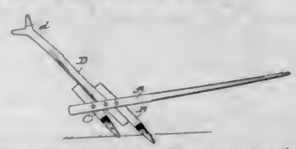
8. The blank for a knee, consisting of the bottom *b*, back *b'*, end b^2, and re-enforcing flaps b^3 b^4 b^5, substantially as shown and described.

294,379. HAT. ROBERT D. GREENLEES, Watertown, N. Y. Filed July 16, 1883. (No model.)



Claim.—The hat described, consisting of a single structure separated at one point to form the main body portion A, having the usual rigidity and stiffness, and the auxiliary body portion *a*, having a yielding capacity at any point, as described.

294,380. LIFTING-JACK FOR STARTING CARS. HENRY GRIMM, Quincy, Ill. Filed Aug. 2, 1883. (No model.)



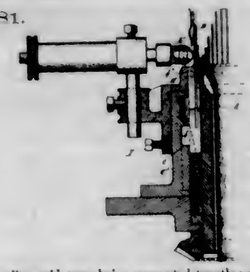
Claim.—The combination of the lever, pivoted standards adapted to grip or take hold of the track or way, and the arm B, pivoted to the lever between the standards, and adapted to bear against the car, substantially as described.

294,381. KNITTING-MACHINE. LEWIS T. GROSS and JOSEPH ADAMS, Philadelphia, Pa. Filed May 17, 1882. (No model.)

Claim.—1. In a knitting-machine, the combination of needle-head A, provided with grooves *b'*, bearded needles B, provided with needle-jack *b*, cam-cylinder C, provided with camway *c*, plate H, presser-wheels E, and looper-wheels D, supported and carried by said plate H, substantially as shown.

2. The combination of a rotating circular needle-bed, a series of bearded needles carried by said needle-bed, a series of cams to recipro-

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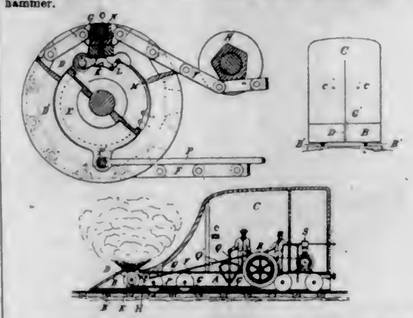


cate said needles, said cams being connected together to form a continuous guideway, a series of looper-wheels, a series of presser-wheels, said cams and looper and presser wheels being equal in number, and a single circular and adjustable supporting-plate to which said looper-wheels are secured, whereby the said looper-wheels may be removed or adjusted about said needles without changing their relative position, as shown.

3. The combination of needle-bed A, provided with vertical guide-slots *b'*, bearded needles B, circular plate H, arranged about said needle-bed, but held stationary, and adapted to close the outer openings of slots *b'*, presser-wheels E, and looper-wheels D, secured to said plate H, and adapted to be all removed or adjusted simultaneously about said needle-bed, substantially as shown and described.

294,382. SNOW-PLOW. GEORGE A. GUNTHER, New Utrecht, and H. WILBUR HUBBARD, Brooklyn, N. Y. Filed Oct. 9, 1883. (No model.)

Brief.—A snow-plow provided with a chain having receptacles for torpedoes or cartridges which are fired by an automatically-operating hammer.



Claim.—1. A snow-plow combined with a chain provided with pockets or mortars for receiving cartridges or torpedoes, substantially as specified.

2. A snow-plow combined with a chain provided with mortars for receiving cartridges or torpedoes, and a firing-wheel over which the said chain passes, substantially as specified.

3. The combination, with a snow-plow, of a chain provided with mortars for receiving torpedoes or cartridges, and a toothed wheel over which the chain passes, the wheel being provided in its periphery with a recess for receiving the mortars successively, substantially as specified.

4. The combination, with a snow-plow, of a chain provided with mortars for receiving cartridges or torpedoes, a firing-wheel over which the said chain passes, and a firing mechanism, substantially as specified.

5. The combination, with a snow-plow having a slot in its top, of a wheel journaled below the slot, a chain passing over the wheel and provided with mortars for receiving cartridges or torpedoes, and a mechanism for firing the cartridges or torpedoes, substantially as specified.

6. The combination, with a snow-plow, of a wheel, a chain passing over the said wheel and provided with mortars for receiving cartridges or torpedoes, a firing-pin held loosely in the rim of the wheel, and a mechanism for forcing the pin against the cap or fulminate of cartridges held in the mortars in the chain, substantially as specified.

7. The combination, with a snow-plow, of a wheel, a chain passing over it and provided with mortars for receiving cartridges or torpedoes, a firing-pin passing loosely through the rim of the wheel, a spring-hammer adapted to strike the pin, and a cam-disk for operating the hammer, substantially as specified.

8. The combination, with a snow-plow, of a wheel, D, the chain F, provided with mortars *G*, the firing-pin N, held loosely in the rim of the wheel D, the hammer I, pivoted to the wheel, the spring M, connected with the free end of the hammer and fastened to the wheel, the finger K

on the hammer, and the cam-disk E, mounted loosely on the shaft of the wheel D, and provided with a shoulder, E', in its track, substantially as specified.

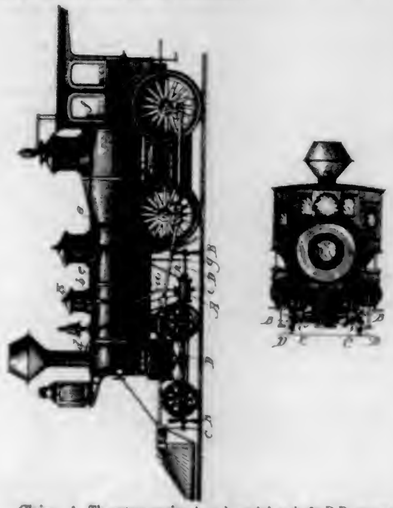
9. The combination, with a snow-plow, of the wheel D, the chain F, provided with mortars G, the firing-pin N, held loosely in the rim of the wheel D, the hammer I, pivoted to the wheel, the spring M, acting on the hammer, the disk E, having a cam-track provided with a shoulder, E', the finger K on the hammer I, the connecting-rod P, and the lever Q, substantially as specified.

10. The combination, with a snow-plow, of a wheel, a chain passing over the same and provided with mortars for receiving cartridges or torpedoes, a firing mechanism for firing the torpedoes, a cam-disk for operating the firing mechanism, and means for adjusting the cam-disk according to the desired direction of the force of the explosion of the cartridges or torpedoes, substantially as specified.

11. The combination, with a snow-plow, of a wheel, a chain passing over the wheel and provided with mortars for receiving cartridges or torpedoes, a firing mechanism, and a steam-engine for operating or driving the chain, substantially as herein shown and described.

294,383. SNOW-PLOW ATTACHMENT TO LOCOMOTIVES. FREDERICK HAINSWORTH, Chicago, Ill. Filed Mar. 12, 1883. (No model.)

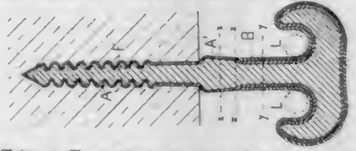
Brief.—Twisted fan-wheels and knife-cutters are rotated through a rotary engine carried upon the locomotive.



Claim.—1. The rotary engine A, and revolving shafts D D, arranged alongside of boiler, provided with twisted-shaped fan-wheels B B, in combination with a locomotive, as and for the purpose shown.

2. The rotary engine A, revolving shafts D D, arranged alongside of locomotive-boiler, the twisted-shaped fan-wheels B B, and knives C C, in combination with a locomotive, as and for the purpose shown.

294,384. INSULATOR FOR ELECTRIC CONDUCTORS. ALBERT W. HALE, Plainfield, N. J. Filed May 29, 1883. (No model.)



Claim.—1. The combination herein described of the metallic support for the wire, the insulating-glaze, and the outer re-enforcing jacket of metal or alloy, arranged and operating as and for the purposes set forth.

2. As a new article of manufacture, glazed metallic supports for electric conductors, having the coating of glaze re-enforced by a coating of metal or alloy, substantially as and for the purposes set forth.

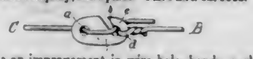
294,385. BRACKET. EUGENE S. HERRENWAY, Boston, Mass. Filed Oct. 19, 1883. (No model.)

Claim.—1. A window-curtain bracket provided with a slot or opening in the end portion, A, and having the penetrating portion B and right-angle portion C provided with a point, E, substantially as described.



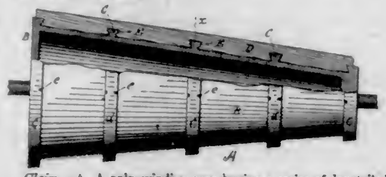
2. The sheet-metal bracket A, provided with the attaching portion B, of uniform size, having a bevel point, and right-angle portion E, provided with the point C, as and for the purposes set forth.

294,386. WIRE BALE-TIE. WM. HEWITT, Trenton, N. J., assignor to the Trenton Iron Company, same place. Filed Dec. 12, 1883. (No model.)



Claim.—As an improvement in wire bale-bands, a plate provided with a hole at one extremity and a slotted hole or opening at the other, in combination with a wire band, one end of which is twisted to form a loop, which is engaged within the slotted hole or opening of the plate, and the other end of which is first inserted through the hole in the plate, and then within the slotted hole or opening, substantially as and for the purposes set forth.

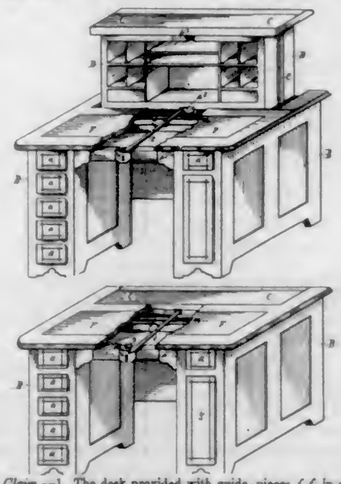
294,387. METHOD OF SECURING THE KNIVES IN PAPER-PULP-GRINDING ENGINES. JOHN HENRY HORNE, Lawrence, Mass. Filed Dec. 19, 1883. (No model.)



Claim.—1. A pulp-grinding cone having a series of dovetailed annular ribs cast therewith or shrunk thereon, each rib being recessed on the same longitudinal line, so as to leave its external width at that point no greater than the width of its base or line of junction with said cone, substantially as set forth.

2. A series of bars for the knives of a pulp-grinder, each bar being provided with a series of dovetailed or inwardly-flaring slots or recesses, in combination with a grinding device having a series of dovetailed annular ribs corresponding, respectively, in position to said slots, each rib being recessed on the same longitudinal line, so as to leave its width at that point uniform from the outside to the base, said width corresponding to the width of the neck of corresponding slot or recess in the bars, substantially as set forth.

294,388. DESK. NICHOLAS A. HULL, Peru, Ind. Filed Apr. 14, 1883. (No model.)



Claim.—1. The desk provided with guide-pieces *f f*, in combination with movable pigeon-hole case having guide-bars *e* fitting between said guides, in combination with yokes *u*, said yokes having slotted bearings C' C', supporting pulleys P, with cord and weights, the said yokes *u* being attached to the guides *f f*, as described, for the purposes specified.

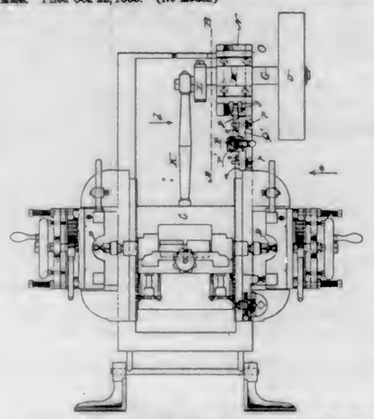
2. In a desk having a vertically-moving pigeon-hole part, the combination of the stationary part having guides *f f*, the yokes *u*, attached thereto, as described, said yokes having horizontal slotted bearings C' C', supporting pulleys P, with the movable pigeon-hole part, cords, and weights W W, the cord T passing through the arms *x* of the movable case, and secured thereto by screws or bolts *g g*, in the manner and for the purposes set forth.

3. In a desk having a movable pigeon-hole case balanced by cords and weights, the combination of the case C, having stop a^2 and lug a^3, engaging with pivoted bar *t*, said bar being pivoted to the under side of the fixed top F, the outer end of said bar engaging with the bolt *o* of the lock *h* in the drawer *d'*, substantially as and for the purposes set forth.

4. In a desk having a movable pigeon-hole case suspended by weights, cords, and pulleys, as set forth, the drawer *d'* and series of drawers *a*, in combination with the locking mechanism consisting of the pivoted bar *t*, lock *h*, transverse bar *r*, coil-spring *n*, hinged bar *v*, having lugs *s'*, engaging with the prongs *i* upon the drawers *a*, the stop a^2, and lug a^3, attached to the case C, the whole when arranged and combined for the purposes set forth.

5. In a desk having a movable pigeon-hole case balanced by weights and pulleys, as set forth, the bracket *n'*, attached to the case C, as specified, in combination with the pulleys *b b*, strap R, and handle *h'*, said strap being attached in the manner specified, for the purposes set forth.

294,389. MORTISING-MACHINE. EDWARD J. HUMPHREYS, Millbury, Mass. Filed Oct. 22, 1883. (No model.)



Claim.—1. In a mortising-machine, the combination, with the carriage C, upon which are mounted boring-bits D, operated substantially as described, the connecting-rod K, and crank L, of the crank-shaft G, having an adjustable bearing, M, and means, substantially as described, for adjusting said bearing M longitudinally upon the bed O of the machine, all constructed and operated substantially as shown, and for the purpose stated.

2. In a mortising-machine, the crank-shaft G, having a sliding and adjustable bearing, M, and means for operating the same, substantially as described, in combination with the carriage C, upon which are mounted the boring-bits D, operated substantially as described, in connection with rod K and crank L, all constructed and operated substantially as shown and described.

3. The combination, with the crank-shaft G and sliding bearing M, of a suitable connecting-rod, *g*, bed O, fixed segmental bearing Q, and suitable operating-lever, P, substantially as and for the purposes set forth.

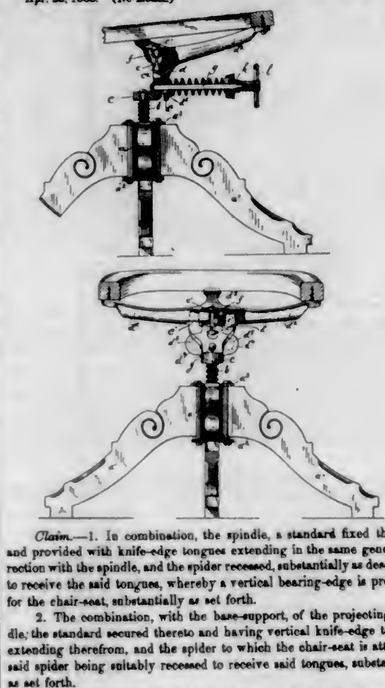
4. In a mortising-machine, the combination, with the bed O, way N, and fixed segmental bearing Q, of crank-shaft G, adjustable bearing M, connecting-rod *g*, and suitable operating-lever, P, all constructed and operated substantially as shown, and for the purposes stated.

294,390. WATCH-CASE SPRING. EVANS H. JENKINS, Richmond, Ind. Filed Aug. 13, 1883. (No model.)

Claim.—A lifting-spring for watch-cases, consisting of a single strip of suitable metal, provided at one end with a raised curved lug, C, and the opposite end terminating in a fish-tail bearing, *m*, when said spring is provided with a loop or bracket, *f*, and is made tapering vertically from the bracket or loop *f* in the direction of the lug C by being cut away on the lower edge, and the opposite tapering from the loop or bracket *f* toward the fish-tail bearing *m* by being cut away from both edges, as herein set forth and described.



294,391. TILTING CHAIR. JOSEPH W. KENNA, Chicago, Ill. Filed Apr. 23, 1883. (No model.)



Claim.—1. In combination, the spindle, a standard fixed thereon, and provided with knife-edge tongues extending in the same general direction with the spindle, and the spider recessed, substantially as described, to receive the said tongues, whereby a vertical bearing-edge is produced for the chair-seat, substantially as set forth.

2. The combination, with the base-support, of the projecting spindle, the standard secured thereto and having vertical knife-edge tongues extending therefrom, and the spider to which the chair-seat is attached, said spider being suitably recessed to receive said tongues, substantially as set forth.

3. The combination, with the base-support, of the projecting spindle, the standard secured thereto and having vertical knife-edge tongues extending therefrom, the recessed spider to which the chair-seat is attached, and the retaining-bolt which holds said standard and spider together, substantially as described.

4. The combination, with the base-support, of the spindle, the standard secured thereto and having vertical knife-edge tongues extending therefrom, the recessed spider, the retaining-bolt, and the tie-plate co-operating therewith to hold said standard and spider in position, substantially as described.

5. The combination, with the base-support, of the projecting spindle *b*, the standard *c*, secured thereto and having vertical bearing-edges *c'*, the recessed spider *d*, the retaining-bolt *e*, and adjustable spring mechanism, substantially as described, co-operating with said standard and spider to return the latter to position when tilted about the vertical bearing-edges, substantially as set forth.

6. The combination, with the base-support, and with the projecting spindle *b*, of the standard *c*, secured thereto, the spider *d*, provided with a dependent portion, as described, and tilting about said standard, the rod *g*, extending from the standard and through the dependent portion of the spider, the sliding plate *h* and adjusting-wheel *l*, mounted on said rod, and the double recoil-springs *i*, retained between the sliding plate and the dependent extension of the spider, substantially as set forth.

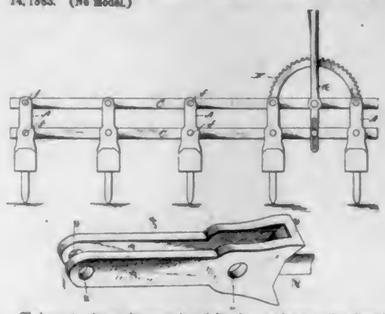
294,392. CLAMP FOR ATTACHING ROPES. CHARLES KORTÜM, Berlin, Germany. Filed Aug. 18, 1882. (No model.)



Claim.—1. The combination, with a rope, conical box, and two or more keys, *k*, of the ring *i*, the material of the rope being unlaid and caused to inclose the ring and the keys *k*, substantially as herein specified.

2. The combination, with a rope, conical box, and two or more keys, *k*, of the ring *i* and the external keys, *k'*, joined to the internal keys, *k*, by engaging the irregular surfaces, substantially as herein specified.

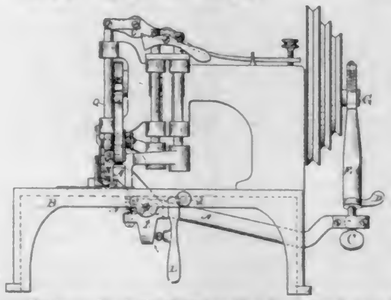
294,393. HARROW. JOHN L. LAUGHLIN, Louisville, Ky. Filed Nov. 14, 1883. (No model.)



Claim.—1. As an improved article of manufacture, the described connecting-link, consisting of the perforated parallel side arms, the web with the octagonal sides on the under side thereof, and the screw-threaded bolt, all united together, substantially as described.

2. In a harrow, the combination of a plurality of tooth-bars, with the connecting-links constructed as described, each link having the parallel arms to receive and connect pivotally the parallel adjusting-bars, a web with octagonal sides to fit the angle-surfaces of the tooth-bar, and the screw-threaded bolt passed vertically through the tooth-bar, substantially as described.

294,394. LEATHER-FOLDING MACHINE. RICHARD H. LUPKIN, Chelsea, Mass. Filed Jan. 7, 1884. (No model.)



Claim.—1. In a leather-folding machine, the combination of a fold-presser and means, substantially as described, whereby the effective operation of such presser may, at will, be suspended and restored while the machine is in operation, as and for the purposes set forth.

2. In a leather-folding machine, a pressure-lever, A, mounted upon movable centers, combined with means for moving its pivotal centers, and means, substantially as described, for vibrating such lever, substantially as and for the purposes specified.

3. The combination of rock-bar I, pivoted to the bed-plate, fold-presser A, pivoted to the rock-bar, locking-lever L, also pivoted to said rock-bar, and arranged to secure the bar in position, and counteracting-spring N, all substantially as and for the purposes specified.

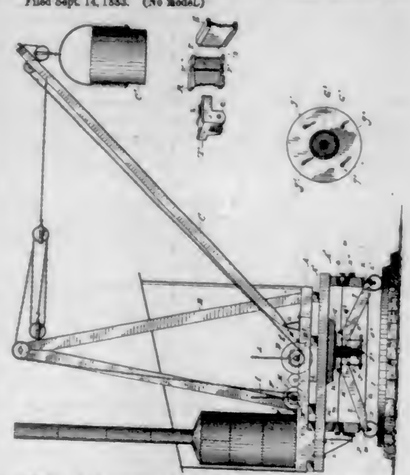
4. In a leather-folding machine, a cutting mechanism composed of a fixed cutting-block and a coacting reciprocating cutter, combined with means, substantially as described, whereby the effective operation of the cutting devices may at will be suspended and restored by a separation of the block from the reciprocating cutter while the machine is in active operation, substantially as and for the purposes specified.

5. In a leather-folding machine employing pressing and cutting devices, substantially as described, the combination therewith of means, substantially as described, whereby the effective operations of such cutting and pressing devices may be conjointly suspended and restored, as and for the purposes specified.

6. The reciprocating cutter S, cutting-block T, arranged to slide as described, lever *a*, pivoted to the bed and connected with said block, rod *c*, jointed to said lever and supported in a horizontal position by the bed, and the counteracting-spring *h*, combined and arranged to operate together substantially as and for the purposes specified.

7. The combination of the pressing devices, comprising rock-bar I, fold-presser A, lever L, and spring N, the cutting devices comprising the cutter S, cutting-block T, lever *a*, rod *c*, and spring *h*, and means whereby said cutting and pressing devices are connected and conjointly operated, as and for the purposes specified.

294,395. STEAM-DERRICK. CHESTER C. LYMAN, Cleveland, Ohio. Filed Sept. 14, 1883. (No model.)



Claim.—1. A revolving derrick, a double friction-gear mechanism, and brake-shoes, in combination with the mast-blocks and ropes and the boom-arm, for the purpose of raising, holding, and lowering said boom-arm, substantially as and for the purpose described.

2. In a steam-derrick, the braces I I, in combination with hub G^2 and flange H', substantially as and for the purpose set forth.

3. The circular collar H, in combination with the hub G^2, substantially as shown and described.

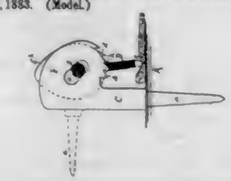
4. The adjustable step G^2 and rods and nuts *g'*, in combination with the step-journal, substantially as and for the purposes described.

294,396. SUSPENDERS. MORRIS MARCUS, Chicago, Ill. Filed Jan. 7, 1884. (No model.)



Claim.—A securing device provided at the desired point to form a button-hole with the double parts forming a reach of suitable material for a suspender-end, said securing device comprising a strand or wire passed transversely through the interior of each of the doubled parts, and having a stop formed at each end, substantially as described, and for the purpose set forth.

294,397. CARPET-FASTENER. JOHN A. MARKOE, St. Paul, Minn. Filed Aug. 13, 1883. (Model.)



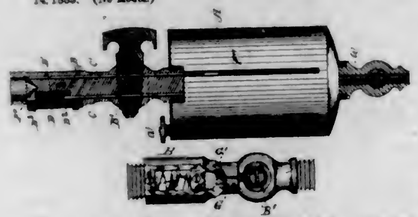
Claim.—A carpet-fastener composed of a fixed bar, C, provided with means *a* for attaching it to the floor or base-board, and with a forwardly-projecting head, *b*, having a slot, *c*, therein and teeth *d* on its under edge, and a movable jaw, D, having ears E' E^2 pivoted to the bar C in the said slot *c*, and clamp-teeth *e e* on its lower edge, operating substantially as and for the purpose herein specified.

294,398. LIFTING-JACK. JOHN T. MASON, Streator, Ill. Filed Apr. 26, 1883. (No model.)



Claim.—In a lifting-jack, a suitable base provided with standards, a ratchet-bar, and guides, in combination with a lever adjustably connected to the standards, and having connected to it a suitable bar adapted to engage with the ratchet-teeth, substantially as and for the purpose set forth.

294,399. LUBRICATOR. CHARLES B. MCALVAY, Jackson, Mich., assignor of three-eighths to Charles H. Christopher, same place. Filed Dec. 14, 1883. (No model.)

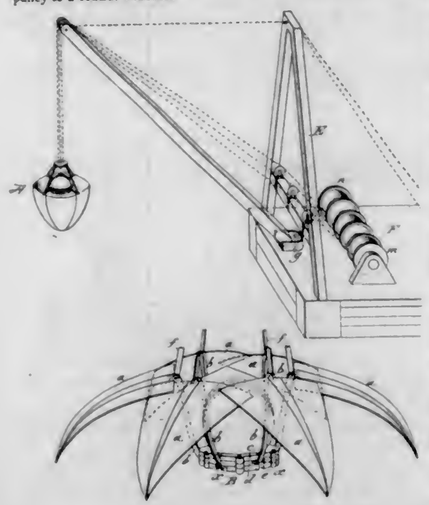


Claim.—1. In a lubricator, the combination of the reservoir A, having screw-plug *a'*, petcock *a*, casting B, having screw-threaded upper end and apertures C and C', double-apertured plug B', chamber D, having duct or passage F and mirror D', glass D^2, secured in frame D^2, and pipe or duct F', substantially as shown, and for the purpose described.

2. A lubricator consisting of a reservoir, A, having opening therein a petcock, *a*, and screw-plug *a'*, casting B, having ducts C and C', plug B', registering mechanism, and a screw-threaded upper end chamber, D, having duct or passage F, mirror D', glass D^2, and pipe or duct F', substantially as shown, and for the purpose described.

294,400. DREDGING-MACHINE. SOLOMON MEAD, New Haven, Conn. Filed Oct. 9, 1883. (No model.)

Brief.—A clam-shell formed of like sections of a hollow ellipsoid, the arms of the alternate sections of which are pivoted in different planes, is operated by two hoisting-chains running over pulleys on a derrick, enabling the swinging of the derrick to the right or left as the right or left chain is the more drawn, the closing-chain running over a central pulley to a central windlass.

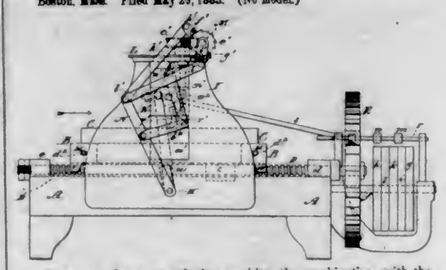


Claim.—1. A dredging-bucket consisting of like sections of a hollow ellipsoid, provided with arms which are pivoted to the lower sheave-block, B.

2. A dredging-bucket consisting of like sections of a hollow ellipsoid, provided with arms which are pivoted alternately in different planes to the sheave-block, to prevent any interference of the overlapping sections in opening the bucket.

3. In a dredging-machine, three chains—two hoisting-chains and a closing-chain—in combination with an ellipsoidal form of bucket, as described, and with the winding-drums and the derrick, all the said parts constructed and combined substantially as set forth.

294,401. MACHINE FOR DRESSING STONES. FRANCIS MEISEL, Boston, Mass. Filed May 29, 1883. (No model.)



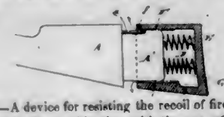
Claim.—1. In a stone-planing machine, the combination, with the reciprocating carriage B, for supporting the stone to be planed, of the oscillating cutter-stock P, pivoted to the cross-head K, and provided with a pair of cutters, *q' r'*, adapted to be alternately brought into contact with the stone at opposite ends of its traverse, the toothed segments *i' l'*, shaft *u'*, lever a^2, rod b^2, lever N, and means, substantially as described, for oscillating the said lever N at each traverse of the carriage, all constructed to operate substantially in the manner and for the purpose described.

2. In a stone-planing machine, the combination, with the vertically-movable cross-head K, sliding in slots in the standards I, and provided with an oscillating cutter-stock, P, having a pair of cutters, *q' r'*, adapted to be alternately brought into contact with the stone at opposite ends of its traverse, of the screw-shafts *b'*, adapted to support the cross-head, and provided at their upper ends with worm-gears *c'*, rotated by worms d^2 on the horizontal shaft M, located above the cap-piece L, the ratchet-wheel *e'* on the shaft M, rotated by the pawls *f' g'* on the levers *k' i'*, oscillating upon the shaft M, and connected by rods *k' l'* with the lever N on the rock-shaft H, the lever *u* on the said shaft H, and the projections *v w* on the carriage B, adapted to vibrate the lever *u* alternately in opposite directions, all constructed and arranged to operate substantially in the manner and for the purpose described.

3. In a stone-planing machine, the combination, with a rocking cutter-stock, P, supported within the cross-head K, of the two cutters *q' r'*, extending transversely across the entire width of the carriage B, and each made adjustable vertically at different portions of its length by means of screws e^2, whereby each cutter can be adjusted to a perfect level transversely with the carriage, substantially as set forth.

4. In a stone-planing machine, the combination of the reciprocating carriage B, the oscillating cutter-stock P, pivoted to the cross-head K, and provided with the cutters *q' r'*, means, substantially as described, for oscillating the cutters, the shaft H, connected with the mechanism for oscillating the cutters, and operated by the projections *v w* on the carriage B, the lever *t*, secured to the shaft H, and provided with a slot, 15, the connecting-rod *s*, bar *r*, sliding in standards above the pulleys *g* and *h'*, and belt-shippers *m n*, secured to the sliding bar *r*, all constructed and arranged to operate substantially in the manner and for the purpose described.

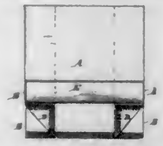
294,402. RECOIL MECHANISM FOR FIRE-ARMS. JOHN P. ONDERDONK, Philadelphia, Pa. Filed Apr. 20, 1883. (No model.)



Claim.—A device for resisting the recoil of fire-arms and ordnance, which consists in the combination, with the gun, of an air-chamber provided with an air-vent in such manner that the recoil of the gun is resisted by the air in said chamber and controlled by its gradual escape through said vent to the atmosphere.

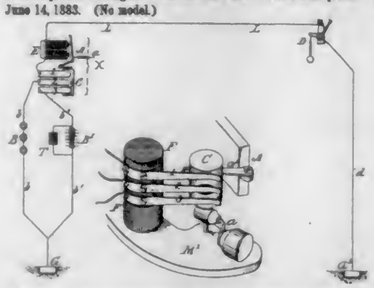
294,403. PAPER BAG. JOHN P. ONDERDONK, Philadelphia, Pa. Filed June 13, 1883. (No model.)

294,403.



Claim.—A paper bag having inward bellows-folds in which the four outer bottom corners of the bellows-folds are cut, substantially as shown and described, and one part of each of said corners is turned inwardly and pasted to the walls of the tube.

294,404. AUTOMATIC ELECTRICAL CUT-OUT. CHAS. S. PINKHAM, Philadelphia, Pa., assignor of one-half to James J. Seal, same place. Filed June 14, 1883. (No model.)



Claim.—1. The combination of an open-circuit line and an open-circuit battery with a constant battery and an automatic switch, substantially as described, whereby on the continued grounding or closure of the circuit the open-circuit battery will be cut out and the constant battery thrown into circuit, substantially as set forth.

2. The combination of an open-circuit line and its working-battery with a constant battery, an electro-magnet in the circuit, and a switch controlled by the electro-magnet to throw the working-battery out of and the constant battery into circuit on the continued closure of the circuit, substantially as described.

3. The combination of an open-circuit line and its working-battery with a constant battery, an electro-magnet in the line-circuit, its armature, a switch controlled by the armature, and a retractor for the armature, whereby the open-circuit battery is thrown out and the constant battery is thrown into circuit on the continued closure of the circuit, and the normal arrangement restored automatically on the reopening of the circuit.

4. The combination of an open-circuit line and its working-battery with a constant battery, an electro-magnet in the circuit, its armature, a commutator operated by the movement of the armature, and contacts for the commutator, substantially as described, whereby on the continued closure of the line-circuit the working-battery will be thrown out and the constant battery thrown into circuit.

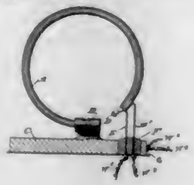
5. The combination of an electro-magnet, armature, and a switch operated by the armature and a retractor with a fan geared to the switch to retard the action of the armature.

6. The combination of the electro-magnet, armature, commutator operated thereby, and contacts with a retractor and a fan geared to the commutator, substantially as set forth.

7. The combination of an electro-magnet and armature with a retractor, contacts, a commutator-cylinder mounted in bearings and operated by the said armature, and carrying a quadrantal rack, and a fan having a pinion gearing into said rack, all substantially as described.

8. The combination of an open-circuit line and open-circuit battery with a constant battery, an automatic switch to cut out the open-circuit battery and put the constant battery into circuit, and a signal operated by the switch, substantially as set forth.

294,405. THERMOSTAT. ALEXANDER KIRK RIDER, Walden, N. Y. Filed Nov. 13, 1883. (No model.)

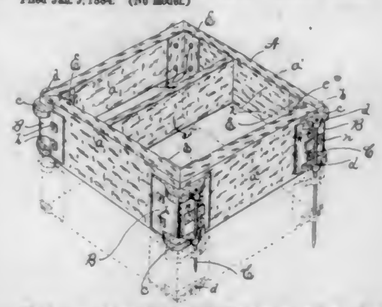


Claim.—1. A thermostat consisting, essentially, of a flattened metallic tube filled or partly filled with an expanding fluid, the said tube being bent or coiled into a suitable shape and secured at one end to a base, and provided at its opposite end with a contact-pin, which is adapted to be moved into contact with a pin secured to the base.

2. In a thermostat, the combination, with a tube partly or wholly filled with an expansible or volatile liquid, one end of the said tube being rigidly secured to a base made of conducting material, the opposite end thereof being free and provided with a contact-pin, of two separate contact-pins secured to the base, but insulated therefrom and from each other, the said pins being brought into electrical connection with the said tube by the expansion thereof, substantially as set forth.

3. The combination, with the base and the curved flattened tube secured at one end thereto, and provided at its free end with a contact-pin, the said tube being filled or partly filled with an expansible or volatile liquid, of the plug F, spring-contact pins, and the wires W', W^2, W^3, and W^4, all of the above parts combined and adapted to operate as described.

294,406. MOLDER'S FLASK. SAMUEL P. ROBINSON, Plainfield, Conn. Filed Jan. 9, 1884. (No model.)

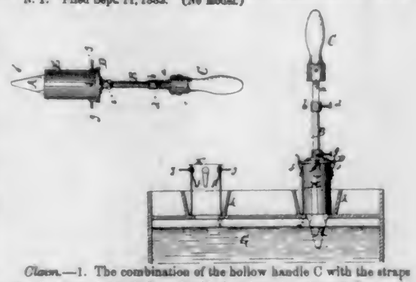


Claim.—1. In combination with the sides or walls of a flask for molders' use, a series of right-angular metallic corner-pieces, and a corresponding series of washer-plates, E, on the inner side of the flask, the plates E, the sides of the flask, and the metallic corner-pieces being clamped firmly together by bolts and nuts, as described, said corner-pieces being provided with strengthening-ribs *c*, for the purpose of retaining the flask in its rectangular form, as described.

2. In combination with the walls of a flask for molders' use, a series of right-angular metallic corner-pieces having strengthening-ribs *c*, perforated, as at *d*, to receive guide-wires, whereby the upper and lower flasks, or a series of flasks, may be held in vertical alignment, as and for the purpose specified.

3. In combination with the walls of a flask, the angular corner-pieces B, with perforated strengthening-ribs, and the guide-wire C, held firmly in place by wedges entered between the body of the guide-wire and the plate of the corner-piece, said angular corner-pieces being clamped to the walls of the flask by bolts and nuts as and for the purpose specified.

294,407. SOLDERING-IRON. CHARLES FREDERICK SCHWARZ, Corona, N. Y. Filed Sept. 11, 1883. (No model.)



Claim.—1. The combination of the hollow handle C with the straps *a*, ring *b*, screw *d*, shank B, and soldering-iron A, substantially as and for the purpose specified.

2. The combination of the soldering-iron A with the movable sleeve E, which is adapted to surround a portion of the soldering-iron, but not the soldering-point thereof, substantially as described.

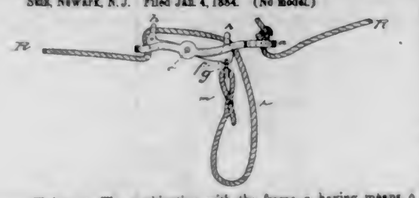
3. The combination of the soldering-iron A with the movable sleeve E and movable flange D, substantially as herein shown and described.

4. The combination of the soldering-iron A with the movable sleeve E and retaining-springs *f*, substantially as described.

5. The combination of the soldering-iron A with the movable sleeve E, retaining-springs *f*, and projecting pin or pins *g*, substantially as herein shown and described.

6. The combination of the soldering-iron A and its removable sleeve E with the acid-pot G, having funnel-like projection h and supporting-flange *i*, substantially as specified.

294,408. AUTOMATIC ROPE-BUCKLE. SIMON SEIB and FRANK SEIB, Newark, N. J. Filed Jan. 4, 1884. (No model.)

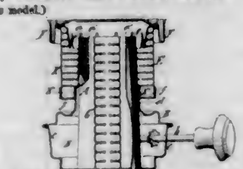


Claim.—1. The combination, with the frame *a*, having means, *o*, thereon to receive the rope, of a plate, *b*, working therein, having bearings *d d'* lying adjacent to bearings *e e'* on the frame, and having means, as *f g*, adapted to open the plate against the draft of the rope, substantially as shown and described.

2. In combination, the frame *a*, having means *o* therein or thereon, and open to receive the plate *b*, and having bearings *e e'*, and said plate pivoted in said frame and provided with bearings *d d'*, means *f g*, and loops *h h*, all said parts being arranged and operating substantially as and for the purposes set forth and shown.

3. In combination, the frame *a*, having means, *o*, to receive one end of the rope, roller *e''*, and bearing *e'*, the plate *b*, pivoted in said frame, having the roller *d* and bearing *d'*, and having means, *f g*, to receive the opposite end of the rope, and loops *h h*, all said parts being arranged and operating substantially as and for the purposes set forth.

294,409. BURNER. IRA W. SHALER, Brooklyn, N. Y. Filed July 2, 1883. (No model.)



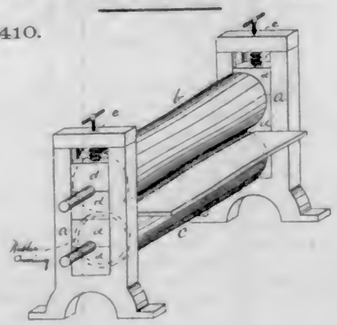
Claim.—1. The combination, with a burner, of a deflector having a central opening conforming in shape to the tip of the burner-tube, and a flange or petticoat extending downwardly therefrom, and provided with notches or openings, substantially as specified.

2. The combination, with a burner, of a deflector having a central opening conforming in shape to the tip of the burner-tube, and a flange or petticoat extending therefrom downwardly and toward the burner-tube, and provided with notches or openings, substantially as specified.

3. The combination, with a burner, of a deflector having a central opening conforming in shape to the shape of the tip of the burner-tube, a flange or petticoat extending downwardly therefrom, and provided with notches or openings, and a cylinder or shell which the deflector surmounts and which is perforated around the tip of the burner-tube, substantially as specified.

4. The combination, with a burner, of a vertically-adjustable deflector having a central opening conforming in shape to the tip of the burner-tube, and a flange or petticoat extending downwardly therefrom, and provided with notches or openings, substantially as specified.

294,410.



294,410. APPARATUS FOR PREPARING HIDES. TRAFTON SHAW, Bangor, Me., assignor of one-half to Hinckley & Egery Iron Company, same place. Filed Feb. 23, 1883. (No model.)

Claim.—In a machine substantially of the class described for expressing the water from and equalizing the thickness of tanned and drenched hides, the pressure-rolls *b c*, one having a hard or unyielding surface, smooth upon its surface, and the other an elastic covering, as herein set forth.

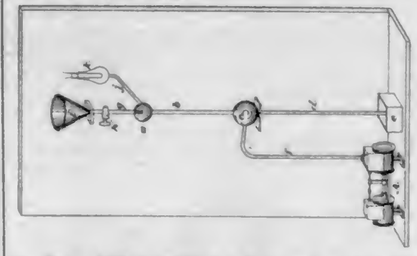
294,411. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Dec. 17, 1883. (No model.)



Claim.—1. A sheet-metal button-fastener consisting of the base and the hook integral therewith, the said hook projecting from the cut edge *c* of the base, and having the semicircular bend *d* and straight free end below the said bend *d*, the said straight free end being substantially parallel with the post of the hook below the said curve and with the base, the point or extremity of the hook passing beyond the upper cut edge, *c*, of the base, substantially as shown and described, and for the purpose set forth.

2. The herein-described one-piece sheet-metal button-fastener, consisting, essentially, of the base *a* and hook *b*, the said hook projecting from the cut edge *c* of the base and bent upon itself, with its free end opposite to and substantially parallel with one side of the base *a*, and its point or extremity slightly below the bottom line of said base *a*, all as shown and described, and for the purposes set forth.

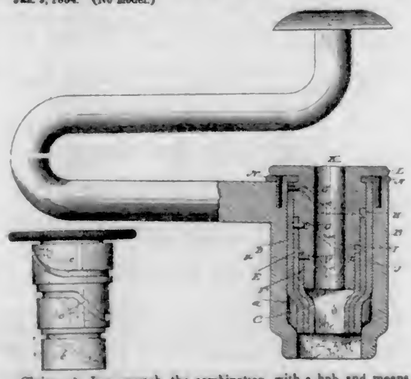
294,412. AIR-PUMP. WILLIAM STANLEY, Jr., Englewood, N. J. Filed Apr. 27, 1882. (No model.)



Claim.—1. The combination, in an apparatus for exhausting globes for electric lamps and other vessels, of a mercurial air-pump with a common exhaust-pump arranged to operate simultaneously, whereby the mercurial pump will exhaust into the partial vacuum produced by the operation of the common exhaust-pump, substantially as described.

2. The combination, substantially as described, in an apparatus embracing a mercurial air-pump and a common exhaust-pump, of an air-chamber, *c*, connected above with a mercury-supply and a vessel to be exhausted, and with a barometrical tube, *d*, and an exhaust-tube, *f*.

294,413. WRENCH. JUDSON A. STANTON, Sauk Rapids, Minn. Filed Jan. 9, 1884. (No model.)



Claim.—1. In a wrench, the combination, with a hub and means for operating the same, of a series of vertically-sliding sleeves moving therein and increasing in size, a spindle or chuck disposed within the

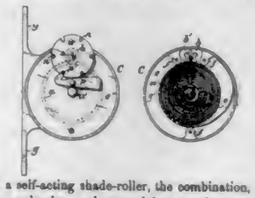
hub, and devices whereby as the spindle is operated the sleeves are caused to descend successively into position, as set forth.

2. In a wrench, the combination, with a hub having a series of vertically-sliding sleeves moving therein and increasing in size, of a spindle or chuck disposed within the hub, pins projecting from the sleeves and entering grooves in the spindle or chuck, and means for operating the hub, as set forth.

3. In a wrench, the combination, with a hub and means for operating the same, of a series of vertically-sliding sleeves increasing in size and moving therein, a spindle or chuck disposed within the hub, means for guiding and limiting the descent of the sleeves, a projecting rim or flange at the upper end of the spindle, and a washer-plate interposed between the rim and the top of the hub, as set forth.

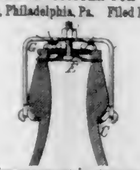
4. In a wrench, the combination, with a hub having a series of vertically-sliding sleeves increasing in size and moving therein, of a spindle or chuck disposed within the hub and formed with bands increasing in size in proportion to the sleeves, grooves formed in the bands to receive pins projecting from the sleeves, said grooves having an angular or inclined portion, and means for operating the hub, as set forth.

294,414. SHADE-ROLLER. DAVID R. STEDMAN, Elizabeth, N. J., assignor of one-half to Robert J. Bowen, same place. Filed Nov. 6, 1883. (No model.)



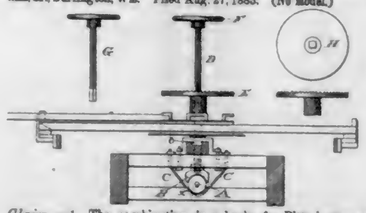
Claim.—In a self-acting shade-roller, the combination, with spring or other motive mechanism and a pawl for arresting and locking the roller, of the wheel w, having its periphery indented by the series of notches n, the intervening spaces between said notches being formed into convex sections or segments of a circle of which the axis of said wheel forms the center, substantially as herein shown and described.

294,415. AUTOMATIC STOPPER FOR BOTTLES, JARS, &c. STEPHEN P. M. TASKER, Philadelphia, Pa. Filed Dec. 11, 1883. (No model.)



Claim.—As an improvement in stoppers or covers for bottles, jars, and other vessels, the combination, with a bail secured to the vessel, of a cover composed of a flexible diaphragm, a ring resting thereon, a disk or rest for the inner arms of the levers, a threaded stem connected with the disk and projecting above the bail, a nut screwing upon the stem above the bail, and bell-crank levers or cams pivoted to the bail and resting as to their inner extremities upon the disk, and as to their outer extremities upon the ring, the construction being such that the cover as an entirety is seated externally upon the neck of a bottle or vessel, and is held in place thereon by screwing down the nut on the stem, and by the pressure of the bottle's contents, substantially as set forth.

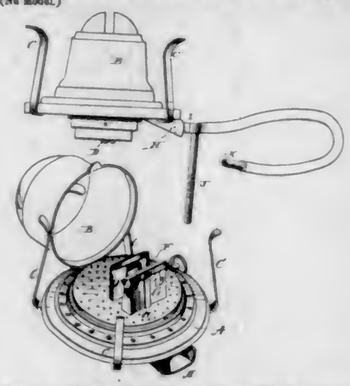
294,416. FRICTION-BRAKE FOR HARVESTERS. HUBERT WAGNER, Sr., Burlington, Wis. Filed Aug. 27, 1883. (No model.)



Claim.—1. The combination, in a brake for Pitts horse-power, of a friction-yoke, B, and a friction-strap, C C, with a friction-wheel, A, being the method by which I obtain a double friction, all substantially as set forth.

2. In a brake for Pitts horse-power, the combination of a perpendicular brake-rod, D, with a screw cut on its end, which enters a screw-thread cut into a friction-yoke, B, the brake-rod D having two shoulders upon it, so as to prevent its working up or down upon being revolved, and the thread cut in such a manner that upon the brake-rod D being revolved the friction-yoke will be forced down upon or lifted from the friction-wheel A, as substantially specified.

294,417. LAMP-BURNER. CHARLES GRIFFIN WEBBER, Flushing, N. Y., assignor to Sarah A. Webber, same place. Filed Aug. 10, 1883. (No model.)



Claim.—1. The combination, with the wick-tube of a lamp-burner, of a blow-tube provided with a valve and mouth-piece, substantially as set forth.

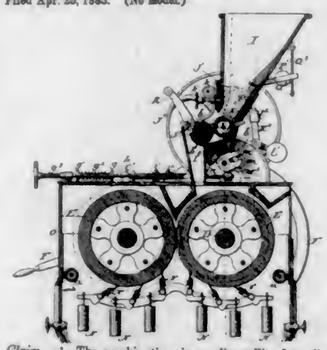
2. The combination, with the wick-tube of a lamp-burner, of a blow-tube provided with a valve and flaring mouth-piece, and a blow-pipe adapted to be inserted into said mouth-piece, substantially as set forth.

3. The combination, with the wick-tube of a lamp-burner, of a blow-tube whose upper end is inclined to form a valve-seat, a valve pivotally supported upon the upper end of said blow-tube, and a mouth-piece secured to the lower end of the blow-tube, substantially as set forth.

4. The combination, with the wick-tube of a lamp-burner, of a blow-tube whose upper edge is flush with the upper edge of the wick-tube, and an inclined mouth-piece adapted to guide the draft in an upward direction, substantially as set forth.

5. The combination, with a wick-tube and a blow-tube provided with a pivoted valve and a mouth-piece, of a blow-pipe adapted to be inserted into said mouth-piece and provided with a handle, substantially as set forth.

294,418. ROLLER-MILL. FRIEDRICH WEBMANN, Zurich, Switzerland. Filed Apr. 25, 1883. (No model.)



Claim.—1. The combination, in a roller-mill, of a roller-adjusting mechanism, a feeding mechanism, a valve or gate arranged in the feeding-hopper and receiving the weight of the grain or material to be operated upon, and intermediate connecting devices, substantially such as described, between said parts, whereby the rolls are spread and the feed cut off whenever the quantity of material in the hopper falls below a certain predetermined point.

2. In combination with a feed-hopper, a feed-roll at the discharge-opening thereof, a driving-wheel detachably connected with said feed-roll, a valve or gate within the hopper, and an intermediate connection, substantially such as shown and described, between the valve or gate and the driving-wheel of the feed-roll, whereby the movements of said valve

or gate are caused to effect the connection and disconnection of the driving-wheel and feed-roll.

3. The combination of roll E, adjustable roll E', swinging arms C', hand-lever R, shaft or journal m, cross-shaft M', arms M, and slotted blocks M^3, secured upon said cross-shaft, and tension rods or frame L, and a locking device to hold the lever R in a fixed position, substantially as shown.

4. In combination with the hand-lever R, provided with cam or incline W, the feed-roll shaft J, pulley J^2, clutch U, and fork S, all combined and operating substantially as described.

5. In combination with a roll-adjusting lever, R, the dog or catch R', provided with arm R^3, gate K, shaft P, weighted arm Q^2, rigidly attached to said shaft, weight Q^4, dog or arm Q, and rod Q^3, all combined and operating substantially as described.

6. In combination with the gate K, rod or shaft P, weighted arm Q^2, weight Q^4, catch Q, rod Q^3, lever R, provided with cam or incline W, dog R', provided with arm R^3, and weight l', feed-roll shaft J, band-wheel J^3, clutch U, and fork S.

7. The combination of a gate or board arranged to receive the weight of the grain or material to be operated upon, feeding mechanism to deliver the material to the reducing apparatus, a driving-pulley for said feeding mechanism, and intermediate connections, substantially such as shown, for causing the driving-wheel to be disconnected from the gearing when the feed becomes low.

8. The combination of a gate or board arranged to receive the weight of the grain or substance to be operated upon, two grinding or reducing rolls, adjustable bearings for one of said rolls, and intermediate connections, substantially such as shown and described, between the gate or board and the adjustable bearings, whereby the rolls are caused to be separated when the feed becomes low in the hopper.

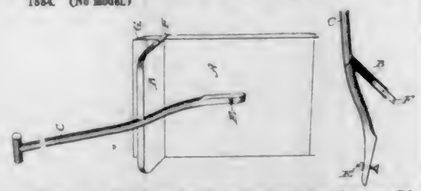
9. The combination of a gate or board arranged to receive the weight of the grain or substance to be operated upon, feeding mechanism arranged to deliver the material to reducing-rolls, a driving-pulley for the feeding mechanism, two reducing-rolls, adjustable bearings for one of said rolls, and intermediate connections, substantially such as shown, connecting the gate or board with the driving-pulley of the feed mechanism and with the adjustable bearings of the roll, whereby a diminution of the feed below a certain point is caused to simultaneously stop the feeding mechanism and separate the reducing-rolls.

10. In combination with roll E and its bearings, roll E', mounted in swinging arms C', pressure-springs g^3, arranged to bear against the outer side of the arms, and a second pair of springs bearing against the inner sides of the arms, substantially as and for the purpose set forth.

11. In combination with roll E and its bearings, and with roll E' and its supporting-arms C', frames L L' L^2, springs g^3, screws g^2, telescopic rods i', nuts i, springs A^2, and arms M, bearing against the cross-heads L^2, all substantially as shown and described.

12. In combination with a stationary roll, an adjustable roll, and movable supporting-arms for the latter, springs arranged to bear against the movable arms and to press the movable roll toward the fixed roll, telescopic rods bearing against the supporting-arms at one end, fixed supports at the opposite ends of said rods, springs encircling said rods, nuts screwed upon said rods, and arranged, substantially as shown, to support one end of the encircling-springs, and a frame, substantially such as shown and described, carrying the rods and springs, and serving to keep them in place.

294,419. SHOVEL. HENRY J. WELCH, Carthage, N. Y. Filed Jan. 7, 1884. (No model.)



Claim.—1. In a snow-shovel, the combination of the reversible blade and the head-block with the handle, the securing-bolt E, and strap F, substantially as described.

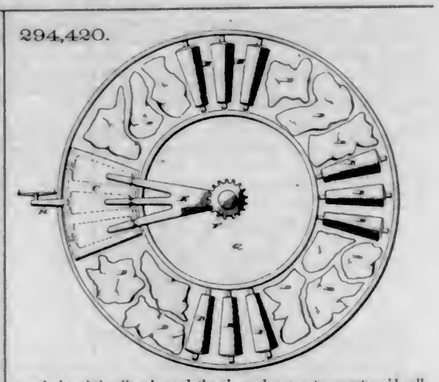
2. In a snow-shovel, the blade A, having double edges G G and central perforation, and adapted to be reversed, substantially as described.

294,420. APPARATUS FOR TANNING. WALTER S. WELLS, New York, N. Y. Filed Mar. 8, 1883. (No model.)

Claim.—1. An apparatus for tanning, consisting, essentially, of a trough, a bed or flat surface within the trough, on which the hides are spread, rollers located in said trough, and means to actuate said rollers for compressing the hides between said bed or supporting surface and the rollers, substantially as set forth.

2. An apparatus for tanning, consisting, essentially, of an annular

294,420.

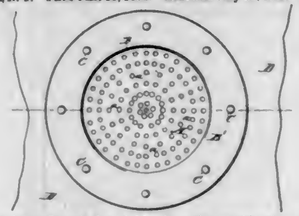


trough, beveled rollers located therein, and means to actuate said rollers in compressing the hides or other skins which are spread upon the bottom of the trough, substantially as set forth.

3. An apparatus for tanning consisting, essentially, of an annular trough, beveled rollers mounted in cars located in the trough, and means to actuate the said cars, substantially as set forth.

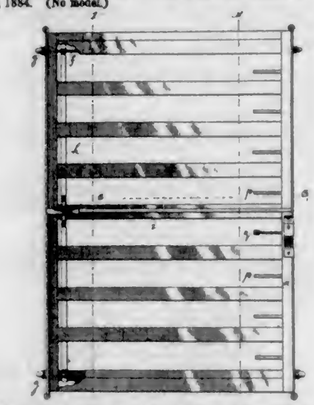
4. An apparatus for tanning, consisting, essentially, of an annular trough, beveled rollers located therein, a vertical shaft located in the center of the space inclosed by the trough, connections between the shaft and rollers, and means to rotate the shaft, substantially as set forth.

294,421. VENTILATOR FOR FEED-BAGS. FRANK WHEATON, Brooklyn, N. Y. Filed June 13, 1882. Renewed July 21, 1883. (No model.)



Claim.—In a feed or fodder bag, the combination, with the bag portion D, of the perforated bottom or plate A, having the raised surrounding rim B, provided with a horizontal apertured flange, B', substantially as shown and described, and for the purpose set forth.

294,422. POOL-RACK. LOUIS WIDMAYER, Chicago, Ill. Filed Jan. 30, 1884. (No model.)



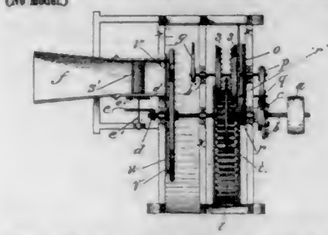
Claim.—1. A pool-rack formed of iron, and provided with removable wooden cross-pieces or ball-supports, as described.

2. The combination, with a pool-rack, of a vertical rod provided with a series of arms, and adapted to force all the balls from the rack simultaneously, as described.

3. The combination, with a pool-rack, of a rod provided with arms adapted to close the orifices of said rack, and means for locking the parts together, as described.

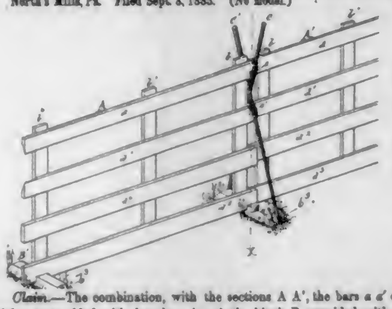
4. The combination, with a pool-rack constructed as described, of a spring-lock, *r*, and a rod, *o*, provided with arms *p*, one of which is formed with an enlarged hollow end, *q*, as described.

294,423. COMBINED FODDER-CUTTER, CORN-SHELLER, AND FEED-MILL. ISAAC P. WOODARD, Richmond, Ind. Filed Nov. 23, 1883. (No model.)



Claim.—The herein-described apparatus, comprising the supporting-frame, the main power-shaft, a rotary fodder-cutter, a corn-shelling wheel, *t*, a feed-mill having its rotary parts mounted upon said shaft, fodder-feeding devices, a counter-shaft mounted parallel to said main shaft, and carrying rotary devices constructed to co-operate with said wheel *t* as a corn-sheller, suitable power-transmitting devices connecting said shafts, and an elevator and spouts arranged to deliver the shelled corn from the sheller to the feed-mill, substantially as set forth.

294,424. FENCE. WILLIAM F. ZAENDER and GEORGE M. ZAENDER, North's Mills, Pa. Filed Sept. 3, 1883. (No model.)



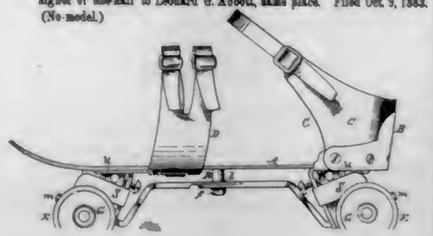
Claim.—The combination, with the sections A A', the bars *a a'* of which are provided with bevels *c c'*, and the block B, provided with a recess to receive the bars a^2 a^3, which overlap each other, the block being also provided with grooves b^2, of the stakes O O', passing between the bars *a a'*, bearing against bevels *c c'*, and resting in the grooves b^2 of the block, substantially as set forth.

294,425. MANUFACTURE OF LINSEED-OIL. ALBERT J. ADAMS, Cleveland, Ohio. Filed Apr. 26, 1883. Renewed Jan. 19, 1884. (No specimens.)

Claim.—1. In the manufacture of linseed-oil, the soaking or moistening of flaxseed in neutral oil previous to grinding, substantially as and for the purpose set forth.

2. The herein-described process of extracting linseed-oil from flaxseed by moistening the seed in neutral oil, grinding the moistened seed, and pressing and filtering the oil from the ground seed, substantially as and for the purpose set forth and described.

294,426. ROLLER-SKATE. SAMUEL W. ALWARD, Boston, Mass., assignor of one-half to Leonard G. Abbott, same place. Filed Oct. 9, 1883. (No model.)



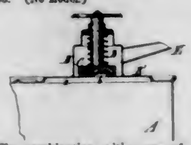
Claim.—1. In a roller-skate, the sliding box S, provided with the elastic cushion T, in combination with the rocker J, and means for forcing said cushion against the rocker, substantially as set forth.

2. In a roller-skate, the combination of the following instrumentalities, to wit: a pair of trucks, an axle for the trucks, a journaled rocker, a rubber cushion, a box or slide for the cushion, a wedge, proper ways for the slide and wedge, and a screw, the screw being adapted to force the box or slides against the cushion and the cushion against the rocker, substantially as and for the purpose set forth.

3. In a roller-skate, the trucks E, axle G, bar H, rocker J, pin P, cushion T, box S, wedge U, screw *p*, and flanges K L, constructed, combined, and arranged to operate substantially as specified.

4. In a roller-skate, the pins P Q, respectively provided with the holes *q*, for inserting and removing the screws *p*, substantially as specified.

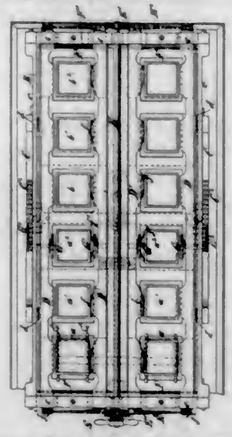
294,427. CAN-NOZZLE. ROBERT C. ANDERSON, Bayonne, N. J. Filed Sept. 1, 1883. (No model.)



Claim.—The combination, with a can, of a stationary chamber attached thereto, an opening establishing communication between the chamber and can, a spout or nozzle extending from the side of the chamber, a valve arranged in the chamber, for controlling the opening between the chamber and the can, and provided with means extending outside the chamber, where they can be reached to open the valve, and a spring for closing said valve, arranged in said chamber between the valve and the top of the chamber, substantially as herein described.

294,428. CAN-SOLDERING MACHINE. ROBERT C. ANDERSON, Bayonne, and FREDERIK WINTERHALTER, Bergen Point, N. J. Filed Feb. 5, 1883. (No model.)

Brief.—A can is inserted into the first receptacle, which contains acid; the clamps are brought together, gripping the can; the carriage and carriage-supports are raised by the treadle and the carriage moved along, moving the can over the second receptacle, which contains molten solder; the carriage is lowered, the can released, and the carriage returned to its first position and another can inserted in the first receptacle. The next forward movement of the carriage moves the cans from the first and second receptacles to the second and third, respectively, the third receptacle containing wet cloths to cool the seam. The carriage is moved back again, and a third can inserted in the first receptacle and the above operations repeated. After passing the third receptacle, the cans are reversed and the other head soldered.



Claim.—1. In a machine for soldering cans, a bed containing a series of receptacles, a carriage, devices upon the carriage for gripping cans, means for releasing the gripping devices, supports whereon the carriage may be reciprocated forward and backward above said receptacles, and means whereby said supports may be raised and lowered for the purpose of raising and lowering the carriage, all being so combined and organized that cans arranged in the receptacles may be gripped by the gripping devices on the carriage, that the carriage may be raised for the purpose of taking the cans out of the receptacles, that the carriage may then be moved forward to bring the cans over receptacles in advance of those from which they were taken, and that the carriage may be subsequently lowered, the gripping devices released from the cans, and the carriage moved back to its original position, substantially as specified.

2. In a machine for soldering cans, a bed containing a series of receptacles, a carriage, devices upon the carriage for gripping cans, and rotary clamps carried by said gripping devices, means for releasing said gripping devices and for rotating said clamps, supports whereon the carriage may be reciprocated forward and backward above said receptacles, and means whereby said supports may be raised and lowered for the purpose of raising and lowering the carriage, all being so combined and organized that cans arranged in the receptacles may be gripped by the said gripping devices, that the carriage may be raised for the purpose of lifting the cans out of the receptacles, that the carriage may then be moved forward to bring the cans over receptacles in advance of those from which they were taken, that the carriage may be subsequently lowered, the gripping devices released from the cans, and the carriage moved back to its original position, and that the rotary clamps, after the soldering of the cans at one end, may be turned during the forward movements of the carriage to reverse the cans end for end, substantially as specified.

3. The combination, with a bed, A, provided with a series of receptacles, of a carriage, B, bars D D', and means for operating the latter, substantially as specified.

4. The combination, with a bed, A, provided with a series of receptacles, of a carriage, B, bars D D', spring-fingers *f*, and means for operating the bars, substantially as specified.

5. The combination, with a bed, A, provided with a series of receptacles, of a carriage, B, bars D D', the rock-shaft E, pulleys E', cords or bands E^2, and pulleys f^2, substantially as specified.

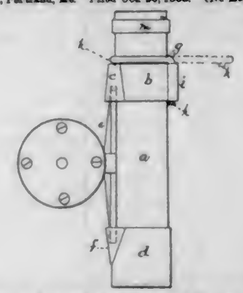
6. The combination, with a bed, A, provided with a series of receptacles, of a carriage, B, the bars D D', the frames C C, and the lever H, substantially as specified.

7. The combination, with a bed, A, of a carriage, B, the bars D D', means for causing the bars to grip cans, the clamping-pieces G G', and means for rotating the latter, substantially as specified.

8. The combination, with a bed, A, of a carriage, B, the bars D D', means for causing the bars to grip cans, the clamping-pieces G G', the sectors G^2, and the racks C^2, substantially as specified.

9. The combination, with a bed containing a series of receptacles, of a carriage adapted to travel along the said bed, means for gripping cans, guide-rods for the cans, and means for raising the carriage and simultaneously depressing the guide-rods, substantially as specified.

294,429. REEL-FASTENING FOR FISHING-RODS. GILBERT L. BAILEY, Portland, Me. Filed Oct. 20, 1883. (No model.)



Claim.—1. In a reel-fastening for a fishing-rod, a loose or sliding band having a raised receptacle for one end of a reel-plate on one portion of its surface, and a groove struck from the inside on an opposite portion, in combination with a cam working in said groove, having a lever attached, and adapted to fasten said band over said reel-plate, and a metal reel-seat adapted to surround the butt of a fishing-rod, and having a raised receptacle for the other end of said reel-plate, fixed thereto, substantially as and for the purpose herein set forth.

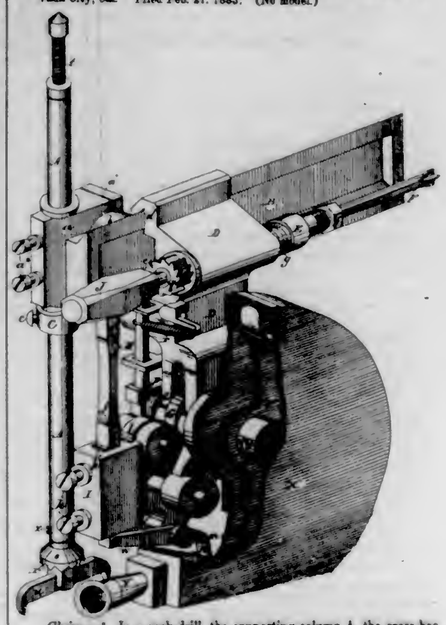
2. In a reel-fastening for a fishing-rod, a loose or sliding band having a raised receptacle for one end of a reel-plate on one portion of its surface, and a groove struck from the inside of an opposite portion, in combination with a cam working in said groove, having a lever attached, and adapted to fasten said band over said reel-plate, and with the butt of a fishing-rod, having a raised receptacle for the other end of said reel-plate, fixed thereto, substantially as and for the purpose herein set forth.

3. In a reel-fastening for fishing-rods, a loose or sliding band having a raised tapering receptacle for one end of a reel-plate, and a groove struck from the inside, in combination with a cam to work in said groove, having a lever attached adapted to tighten said band upon and release it from said reel-plate, substantially as and for the purpose herein described.

4. In a reel-fastening for fishing-rods, a loose or sliding band having a groove struck from the inside for the reception of, and in combination with a cam to work in said groove, having a lever attached adapted to tighten said band upon and release it from a reel-plate, substantially as and for the purpose herein described.

5. The combination of sliding band *b*, with its raised portions *c* and *i*, lever *g*, with its cam *h*, and tube *a*, provided with receptacle *f*, substantially as herein described.

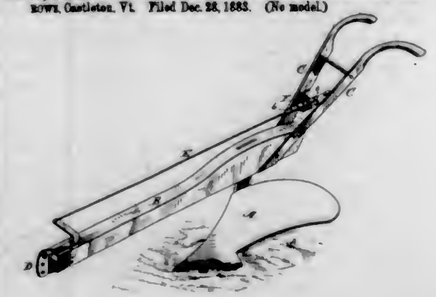
294,430. ROCK-DRILL. CHAS. O. BARLOW, Nevada City, and GEO. T. EMERY, San Francisco, assignors of one-fourth to Joseph W. Sprague, Nevada City, Cal. Filed Feb. 27, 1883. (No model.)



Claim.—1. In a rock-drill, the supporting-column A, the cross-bar B, and connecting means, substantially as described, whereby the cross-bar is adapted to be adjusted vertically and to any desired inclination, in combination with the body-bar D and cross-head *d*, for suspending the body-bar from the cross-bar, the arbor or drill-holding spindle *e*, the hammer-holder I, hinged to the base of the body-bar, and having roller *l* in its front, the hammer J, having handle *j*, secured in the holder, and the means for oscillating said hammer-holder, consisting of the spring K, the cam G, and shaft H, the several parts arranged to operate substantially as herein shown and described.

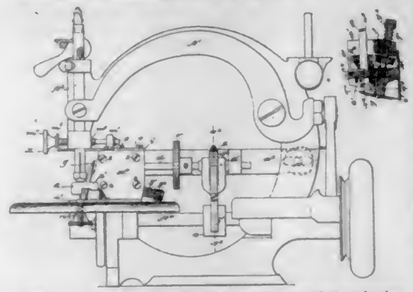
2. In a rock-drill, the column A, cross-bar B, and means whereby said bar is adapted to be adjusted vertically and to any desired inclination, and trunnion *b*, journaled in a box, *a'*, in combination with the sharp-pointed screw *d* in its top, the collar C, set by a screw, *e*, the corrugated flange *s*, and the removable swiveled crow-foot *u* at its bottom, substantially as and for the purpose herein shown and described.

294,431. CLEVIS FOR REVERSIBLE PLOWS. FRANCIS A. BARROWS, Castleton, Vt. Filed Dec. 28, 1883. (No model.)



Claim.—A pivoted plow-clevis provided with a laterally-extending arm and a lever-rod connected thereto, and having at its rear end a series of holes or perforations, in combination with an angle-plate provided with a guard and a transversely-adjustable pin adapted to enter one of the series of holes or perforations in the rod, substantially as and for the purpose specified.

294,432. SEWING-MACHINE TRIMMER. WILLIAM F. BEARDSLEE, Boston, Mass. Filed July 16, 1883. (No model.)



Claim.—1. The combination, with an organized sewing mechanism, of the two cutting-disks *b* and *g*, rotated positively and in unison by gearing and their shafts *b'* and 3, placed at an angle with relation to each other, as set forth, whereby the edge of disk *g* is enabled to pass the edge of disk *b*, and a spring to keep the edges of the disks together, the two disks having a common cutting-point located at a point substantially diametrically opposite the needle and stitching-point, as shown and described, whereby the stitching and cutting operations are essentially simultaneous and the disks kept sharp, as specified.

2. In a sewing-machine, the rotating cutting-disk *b*, having its face arranged substantially parallel with relation to the acting face of the feed or the work-support, and the rotating disk *g*, having its face set at an angle with relation to disk *b*, combined with the presser-foot and the smoother adapted to bear upon the material above the disk *b*, as and for the purpose set forth.

3. The combination, with stitch-forming mechanism in a sewing-machine, of a rotating cutting-disk, *b*, adapted to rotate in a plane substantially parallel with the acting face of the feed or the face of the work-support, a rotating disk, *g*, adapted to rotate in a plane angular thereto, an attachment-frame to support the shafts of the said disks, and means to adjust the said frame horizontally while the machine is in operation, substantially as described.

4. The combination, with stitch-forming mechanism in a sewing-machine, of a rotating cutting-disk, *b*, adapted to rotate in a plane substantially parallel with the acting face of the feed or the face of the work-support, a rotating disk, *g*, adapted to rotate in a plane angular thereto, an attachment-frame to support the shafts of the said disks, and means to adjust the said frame backward and forward with relation to the feed of the material, substantially as described.

5. The combination, with stitch-forming mechanism in a sewing-machine, of a rotating cutting-disk, *b*, adapted to rotate in a plane substantially parallel with the acting face of the feed or the face of the work-support, and a rotating disk, *g*, adapted to rotate in a plane angular thereto, an attachment-frame to support the shafts of the said disks, and means to adjust the said attachment-frame both laterally and lengthwise with relation to the direction of the feed, substantially as described.

6. The combination, with the stitching mechanism of a sewing-machine, of a rotating disk, *b*, having its face arranged substantially parallel with the cloth-support, a cutting-disk, *g*, having its face placed at an angle thereto, and an attachment-frame supported above the cloth-plate, leaving a space between the trimming mechanism and the cloth-plate, substantially as described.

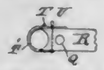
7. In a sewing-machine, the combination, with stitching mechanism and two rotating cutters, *b g*, having their faces placed at an angle with relation to each other, as shown and described, of a presser-foot and a smoother to hold at both sides of the disk *g* the material being sewed and trimmed, substantially as described.

8. The stitch-forming mechanism of a sewing-machine, combined with two cutting-disks, *b g*, and means to positively rotate them, the said disks having their faces inclined with relation to each other, and having a common cutting-point located at a point substantially diametrically opposite the needle and stitching-point and in close proximity thereto, as shown and described, whereby the stitching and cutting operations are essentially simultaneous, as set forth.

9. The stitching mechanism and cloth plate or support and attached lifting-plate, combined with the attachment frame and its two rotating cutting-disks *b g*, arranged as described with relation to each other and the cloth-plate, substantially as set forth.

10. A sewing-machine combined with a trimming mechanism for attachment thereto, the latter comprising two cutting-disks and means to positively rotate each, one of such disks having its face substantially parallel with relation to the acting face of the feed or work-support, while the face of the other disk is arranged at an angle thereto, so that the meeting edges of such disks constitute a common cutting-point located at a point substantially diametrically opposite the needle and stitching-point, as shown and described, whereby the stitching and cutting operations are essentially simultaneous, as set forth.

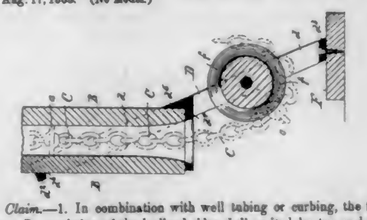
294,433. CHAIR. WILLIAM H. BEARDSLEY, Hamilton, Ohio, assignor of one-half to James E. Campbell, same place. Filed Mar. 27, 1883. (No model.)



Claim.—1. The combination of legs A, having brace-notches 1, legs B, fabric O, and brace D, having joint E and short length engaging end H, substantially as specified.

2. The combination of the legs A B, the stretchers connecting the legs, the braces D, fabric O, linked extensions R S, pivoted together and to the front stretcher of the chair, said links being pivoted together, as described, and left free to flex either upward or downward while in use, and brace V, adjustably engaging the foot-stretcher of legs B and pivoted to the outer section, S, of the linked extension, substantially as described.

294,434. CHAIN-PUMP. AUGUST BECKMANN, St. Louis, Mo. Filed Aug. 17, 1883. (No model.)



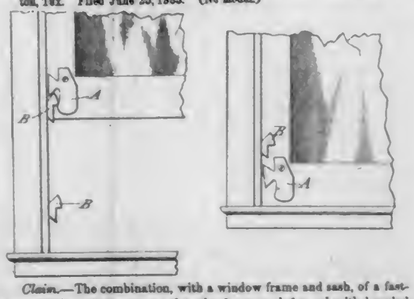
Claim.—1. In combination with well tubing or curbing, the foot-support D, consisting of the inclined sides *d d'*, united by top and bottom cross-frames, d^3 d^3, and central cross-frame, d^4, having the vertical face d^5, also the inner face of the top cross-frame, being a vertical face, d^6, by means whereof the said curbing can be kept supported, in the manner and for the purposes set forth.

2. In combination with the foot-support D, consisting of the inclined frames *d d'*, top and bottom cross-frames, d^3 d^3, and central cross-frame, d^4, said top and central cross-frames having the vertical faces at d^3 d^5, the ring or collar *g*, projecting from the central cross-frame, substantially as and for the purposes set forth.

3. In combination with the foot-support D, consisting of the inclined frames *d d'*, top and bottom cross-frames, d^3 d^3, central cross-frame d^4, and the vertical faces at d^3 d^5, the sheave or pulley-wheel *f*, substantially as and for the purposes set forth.

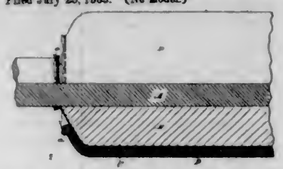
4. The combination, with the well-tubing and endless chain in chain-pumps, of the foot-support D, consisting of the incline frames *d d'*, having top, bottom, and central cross-frames, d^3 d^3 d^4, and the vertical faces at d^3 d^5, the sheave *f* and ring or collar *g*, to operate in the manner and for the purposes set forth.

294,435. SASH-FASTENER. NAPOLEON BONAPARTE BENDT, Galveston, Tex. Filed June 25, 1883. (No model.)



Claim.—The combination, with a window frame and sash, of a fastener consisting of stops secured to the frame and formed with beveled ends and a shoulder, as shown, and a button, A, pivotally secured to the sash and recessed to form a triangular projection, and a finger-piece extension, which latter serves also as a weight to effect an automatic fastening as the window is lowered, substantially as shown and described.

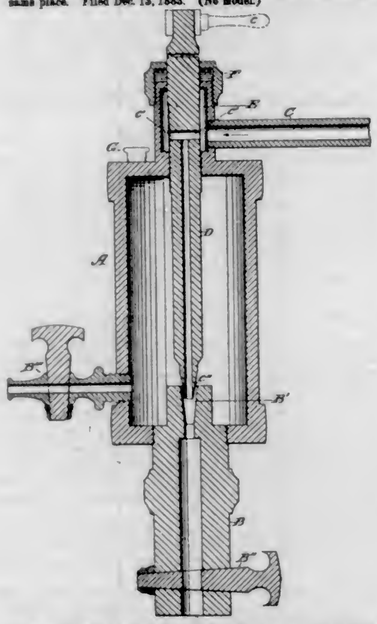
294,436. PRINTER'S DAMPING-ROLLER. JOHN H. BINGHAM, Hartford, Conn., assignor to John and Edmund McLoughlin, New York, N. Y. Filed July 25, 1883. (No model.)



Claim.—1. A wetting-roller for printers, comprising a core or cushion of the ordinary roller composition formed or molded on the stock, an exterior felt covering to form the roller-face, and a covering of rubber interposed between said felt and composition to prevent the water from getting at and injuring the composition core, substantially as herein shown and described.

2. A wetting-roller for printers, comprising a stock, a core or cushion of the ordinary roller composition molded or formed on the stock, a protective covering of rubber placed over said composition core and drawn down and secured to the stock, so as to protect the ends of said core, as shown, and an exterior covering of felt, all arranged substantially as set forth.

294,437. LUBRICATOR. DANIEL BAKER BRINDLE, Martinsburg, W. Va., assignor of two-thirds to John Fitz and David H. Bowers, both of same place. Filed Dec. 13, 1883. (No model.)



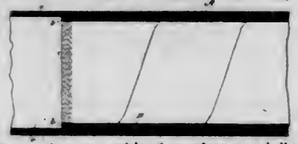
Claim.—1. The method of supplying oil to steam-valves which consists in conducting steam through the chamber of the oil-reservoir to a point near the bottom of the same, and then discharging it intermingled with oil in a continuous current therefrom.

2. The combination, with an oil-supplying vessel, of a steam-discharging pipe which is so adjustable within the oil-reservoir as to prevent the outflow of oil.

3. The combination, with an oil-supplying cup, of a discharge-pipe which is connected to the bottom thereof, and a steam-pipe which leads into the oil-cup and downwardly from the top thereof within the same, and which is adjustable to or from the orifice of the discharge-pipe, and by which oil may be either forcibly ejected through the discharge-pipe or prevented from entering the same.

4. The combination, with an oil-supplying vessel, of a steam-pipe which is adapted to conduct steam to the discharge-orifice of the vessel, and which is also adapted either to prevent or to permit or to compel the discharge of oil from the vessel through such orifice.

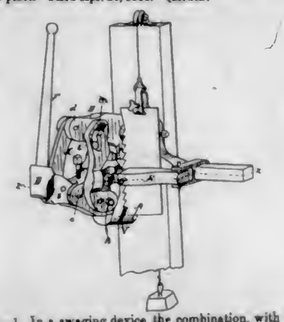
294,438. SHELL OR COVER FOR PRINTERS' ROLLERS. ANDREW CAMPBELL, Brooklyn, assignor to John and Edmund McLoughlin, New York, N. Y. Filed July 30, 1883. (No model.)



Claim.—1. As a new article of manufacture, a shell to form the cover of a printer's roller, comprising an exterior cover of leather and a lining of linen or other similar material glued to the inside of the said leather, and the whole formed into a cylindrical shell, substantially as set forth.

2. As a new article of manufacture, a shell to form the cover of a printer's roller, comprising an exterior cover of leather, cut away at *c*, an inner lining of linen or other like fabric glued to the inside of the leather, and the band *b*, secured to the inside of the tubular shell at its end, substantially as set forth.

294,439. SAW-SWAGING MACHINE. PASCAL B. CHARBONEAU, Bay City, Mich., assignor of two-thirds to H. A. Fraser and J. B. Barber, both of same place. Filed Apr. 26, 1883. (Model.)



Claim.—1. In a swaging device, the combination, with the stay M and the lever R, of the cam-lever O, constructed to operate said stay M and lever R, and provided with means for operating the same, substantially as described.

2. In a swaging device, the power-lever B, connected with lever D, and means for actuating the same, in combination with stay M, lever R, and the cam-lever O, constructed to operate the said stay M and lever R, substantially as described.

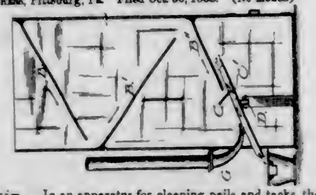
3. In a swaging device, the power-lever B and means, as C D, for operating the same, cam-lever O, and side stay, M, in combination with the clamping-jaw R, all combined and constructed as and for the purposes specified.

4. In a swaging device, the bed-tool J, constructed substantially as described, and secured obliquely in the body of the device, as set forth.

5. In a swaging device, the obliquely-seated bed-tool J, in combination with the obliquely-seated spring-stop K, substantially as and for the purpose set forth.

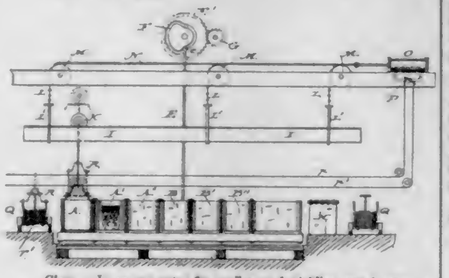
6. In a swaging device, the combination of a reversible swaging-tool with a reversible bed-tool, substantially as and for the purpose described.

294,440. DEVICE FOR CLEANING NAILS AND TACKS. HARVEY B. CRESS, Pittsburg, Pa. Filed Oct. 30, 1883. (No model.)



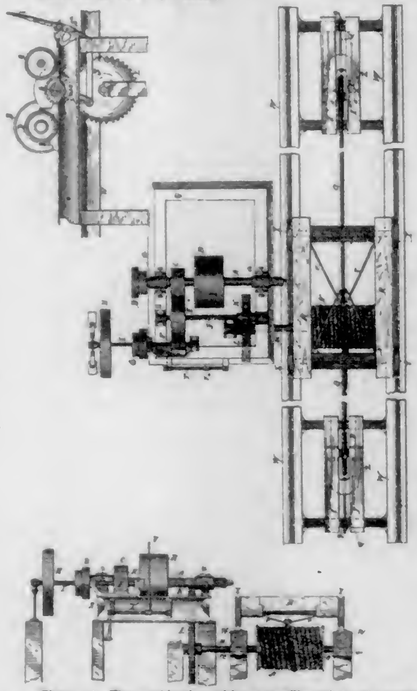
Claim.—In an apparatus for cleaning nails and tacks, the inclined planes B B' B'' and bridge C, in combination with the vibrating chute C'' and an air-blast nozzle, G, all constructed to operate substantially as and for the purpose described.

294,441. APPARATUS FOR SCALING AND PICKLING METAL PLATES. HENRY CHESE and HARVEY R. CHESE, Pittsburg, Pa. Filed Nov 2, 1883. (No model.)



Claim.—In an apparatus for scaling and pickling metal plates, a series of rigidly-clamped tanks, in combination with the track I, traveler K, chains L, stirrups L', pulleys M, and rod N, with suitable mechanism for operating the rod, substantially as and for the purpose set forth.

294,442. CIRCULAR SAW MILL. WILLIAM P. CLARK, Belmont, N. Y. Filed Nov. 26, 1883. (No model.)



Claim.—1. The combination, with a saw-mill carriage, of a revolving drum and a rope connected with the carriage and passing over pulleys at the opposite ends of the track, and having its ends connected with the drum, substantially as described.

2. The combination, with a saw-mill carriage and a rope connected therewith and passing over a pulley at each end of the track, of a spirally-grooved revolving drum having the ends of the rope made fast at its opposite ends, substantially as described.

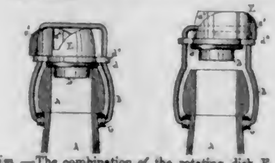
3. The combination, with a saw-mill carriage, of a rope connected therewith and passing over a swinging pulley at each end of the track, and of a revolving drum having the opposite ends of the rope connected thereto, substantially as described.

4. The combination, with a saw-mill carriage, of the pulleys P, mounted in yokes, as Z, constructed to be adjusted lengthwise of the ways, the drum N, and the rope O, connected to the drum and carriage and passing over the pulleys P, all substantially as shown and described.

5. In a rope gig and feed works of a saw-mill, the rope O, connected to the carriage and passing around pulleys P and drum N, said drum being connected with the saw-arbor by gearing, substantially as described, constructed to give the drum and rope different speeds in opposite directions, in combination with the fly-wheel H, arranged on the shaft I of the feeding-pulley, whereby the momentum of said fly-wheel prevents the slipping of the friction and belts, substantially as described.

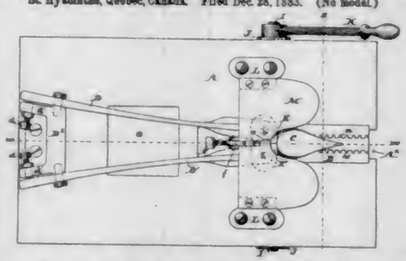
6. The combination, in a saw-mill, of the rope O, connected to the log-carriage and running over the pulleys P and wound around the drum N, said drum being connected by its shaft M and gearing K L with the friction-wheel E, mounted on the shaft J, carrying gear K, and adapted to be alternately thrown into contact with the friction-wheel C on the saw-arbor, and with the friction-wheel F, running on the shaft I, and the fly-wheel H, mounted on said shaft, substantially as and for the purpose specified.

294,448. BOTTLE-STOPPER. GEORGE D. COREY, Lowell, MASS., assignor of one-half to Woods, Sherwood & Co., same place. Filed July 3, 1883. (No model.)



Claim.—The combination of the rotating disk E, having slot e^2, with cam-shaped walls, the plate d^2, having holes d^3 d^3, surrounding the bail-wire, and the bail B, having its ends sprung into holes in neck-band C, with the latter, substantially as described.

294,444. HEEL-STIFFENER-SHAPING MACHINE. LOUIS COTE, St. Hyacinthe, Quebec, Canada. Filed Dec. 28, 1883. (No model.)



Claim.—1. In a machine for shaping heel-stiffeners for boots and shoes, the combination of a heel-shaped former having its sides and rear end molded or shaped to present different contours or outlines when cut transversely at different points, and a pair of yielding pressure-rolls arranged to revolve about their axes toward each other, and to move in the same direction as said former, and having their exterior surfaces molded or shaped to conform to the varying curvature of the surfaces of said former, substantially as and for the purposes described.

2. The combination of the former C, the rolls E and E', and the springs D and D', all constructed, arranged, and adapted to operate substantially as and for the purposes described.

3. The combination of the former C, the yielding pressure-rolls E and E', the gear-wheels F and F', the racks *a* and *a'*, and mechanism for imparting to said former and racks a reciprocating motion, substantially as described.

4. The combination of the reciprocating former C, the yielding pressure-rolls E and E', the gear-wheels F and F', the racks *a* and *a'*, and the flange-turning plate M, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

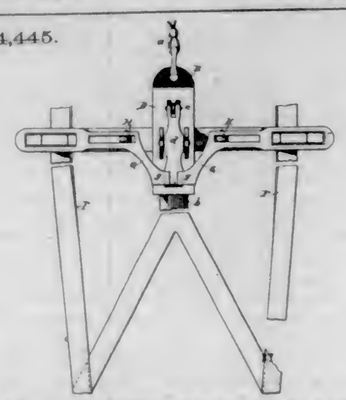
5. The combination of the reciprocating former C and racks *a* and *a'*, the yielding pressure-rolls E and E', the gear-wheels F and F', the flange-turning plate M, and the stiffener-discharging pawl N, all arranged and adapted to operate substantially as and for the purposes described.

294,445. HORSE-CHECKER. DANIEL O. COX, Marysville, N. Y. Filed Nov. 1, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 287,419, dated October 30, 1883.



294,445.

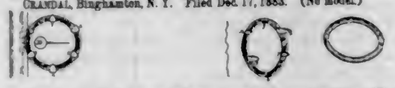


Claim.—1. The combination, with the check-rein-holding device C, of the levers G, as shown and described.

2. The combination, with the check-rein-holding device C, having the clip E and spring stop-pin *c*, of the strap *b*, bifurcated, and having its bifurcated ends secured to the reins, as described.

3. The combination, with a check-rein-holding device having the clip E, spring-pin *c*, and lever *d*, of the levers G and the spring *f*, as shown and described.

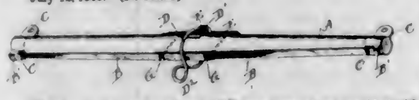
294,446. MEANS FOR PROTECTING BUTTON-HOLES. GEORGE L. CRANDAL, Binghamton, N. Y. Filed Dec. 17, 1883. (No model.)



Claim.—1. In a button-hole protector, the combination, with the ring C, of the ring B, made with three (more or less) teeth or projections, *z*, on the outside edge, and three (more or less) teeth or projections, *y*, on the inside edge, substantially as described.

2. In a button-hole protector, the combination, with the two rings B and C and teeth *x y*, of a carriage-curtain or other fabric having made therein a button-hole, said button-hole being surrounded and protected by said rings B and C, and the teeth *x y*, after passing through the fabric, being clinched down from opposite directions on the ring C, substantially as described.

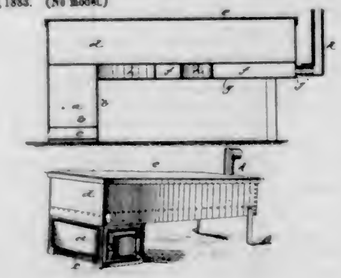
294,447. NECK-YOKE. MONTGOMERY DAKIN, Leslie, Mich. Filed July 12, 1883. (No model.)



Claim.—1. In a neck-yoke or whiffletree, truss-plates provided with end hooks, and ferruled having offset to admit the plates, as specified, in combination with bolts whereby said plates are secured to the whiffletree, substantially as set forth.

2. The plates E and F, having the depressions adapted to receive the ring D, as specified, in combination with the ring D, having the depression D' and right-angled twist D^2 substantially as described, and for the purpose set forth.

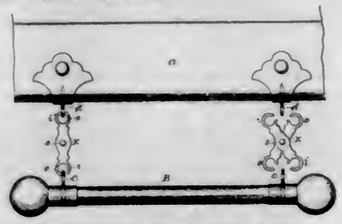
294,448. BOILER. ALFRED E. DALLEY, Quincy, Mich. Filed June 30, 1883. (No model.)



Claim.—1. The improved boiler consisting of a furnace, *a*, pan *d*, and cover *e*, the said pan having a flue, *f*, under the bottom, through which the heat products from the furnace pass, and in which two or more oblique partitions, *h*, are arranged, to cause the heat to traverse the bottom of the pan crosswise and backward, substantially as described.

2. The furnace *a*, arranged under one end of the pan, and the flue *f*, extending from said furnace along under the pan to the other end, and having two or more diagonal partitions, *h*, arranged in said flue, substantially as described.

294,449. WINDOW-SHADE PULL. JOHN DAY, Brooklyn, N. Y. Filed Jan. 9, 1884. (No model.)



Claim.—The combination, with the bar and screw-eyes in a shade-pull, of a connecting-link having two hooks, that stand in opposite directions and grasp the eye when closed, substantially as set forth.

294,450. TOY PISTOL. ALBERT H. DEAN and CHARLES A. HOTCHKISS, Bridgeport, Conn., assignors to Ives, Blakeslee & Co., same place. Filed Dec. 29, 1883. (No model.)



Claim.—1. In a toy, the combination of a receptacle representing an egg, or a barrel or analogous article, a cover therefor, a device representing a bird or other object, a hammer-like contrivance for forcing the said device forward, so that it will open the cover and protrude, and a trigger, substantially as specified.

2. In a toy, the combination of a receptacle representing an egg, a barrel, or analogous article, a cover therefor, a device representing a bird or other object, a hammer-like contrivance, and a shank on the device for connecting it with the hammer-like contrivance, so arranged that the device may receive a reciprocating motion lengthwise of the receptacle to open the cover.

294,451. BANJO. HENRY C. DOBSON, New York, N. Y. Filed Jan. 18, 1883. (No model.)



Claim.—1. A banjo or other parchment-head instrument, the main rim of which, composing the body of the instrument, is made of an annular metallic tube forming a sounding-box, substantially as set forth.

2. In a banjo or other parchment-head instrument, the combination of a rim made of an annular metallic tube forming a sounding-box, a parchment head strained over said rim, a series of standards fixed to said rim, a straining-ring for stretching said head, and tightening devices engaging said standards for drawing down said ring, substantially as set forth.

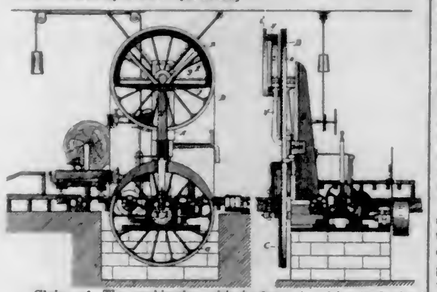
3. A banjo or other parchment-head instrument, the main rim of which, composing the body of the instrument, is tubular and made from sheet metal, stiffened by a hoop of wood extending around it and within the hollow of said tube, substantially as set forth.

4. A banjo or other parchment-head instrument, the ring or rim of which consists of an annular tube of sheet metal provided with apertures or sound-holes *c c*, affording communication between the annular hollow or cavity thereof and the external air, substantially as set forth.

5. A banjo or other parchment-head instrument, the ring or rim of which is formed of sheet-metal in tubular form, the annular tube being built up of two or more rings of sheet metal with annular seams, substantially in the manner set forth.

6. The ring or rim of a banjo or other parchment-head instrument, built upon three rings of sheet metal, two of which have outer and inner flanges and intermediate swelled or convex portions to form the top and bottom of the rim, while the third is of cylindrical shape to form the outer periphery of the rim, substantially as set forth.

294,452. BAND-SAW MACHINE. WALLACE H. DODGE, Mishawaka, Ind. Filed July 5, 1883. (No model.)

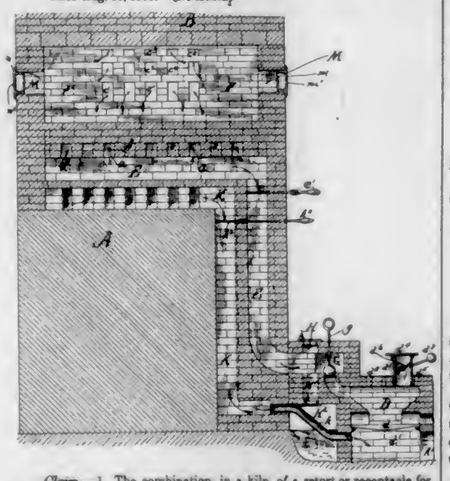


Claim.—1. The combination, with the frame A and band-wheels of a band-saw machine, of a stationary catcher, E, located near the upper band-wheel of said machine, to catch the saw if it runs off said wheel, substantially as and for the purpose described.

2. In a band-saw machine, the frame A and the band-wheels mounted thereon, combined with the catcher-plate E, slightly smaller in radius than said band-wheels, and permanently attached to the saw-frame or band-wheel bracket.

3. The frame A and band-wheels mounted thereon, combined with the flanged semicircular plate E, mounted upon the arms *f g*, and attached to the band-wheel bracket H, so as to stand close to the band-wheel B, for the purpose of catching and supporting the saw when it shall run off said wheel.

294,453. KILN AND FURNACE. JOHN DRUBEKER, Chicago, Ill. Filed Aug. 13, 1883. (No model.)



Claim.—1. The combination, in a kiln, of a retort or receptacle for holding the material to be baked or burned, with a gas producer or furnace, a separate secondary chamber surrounding said retort, and a passage for conducting the gas from the gas-producer to the secondary chamber, and an air-passage for conducting hot air from the gas-producer to the secondary chamber, substantially as specified.

2. The combination, in a kiln, of a retort, with a gas producer or furnace, a secondary chamber surrounding said retort, and having ports leading into the same, a gas-passage leading from said producer to said chamber and subdivided into a number of small passages or branches, and an air-passage leading from said gas-producer and subdivided into a number of small passages or branches, substantially as specified.

3. The combination, in a kiln, of a retort, with a gas-producer, a secondary chamber surrounding said retort, and having a series of ports leading into said retort, and provided with a series of air and gas inlet ports distributed over its interior, of separate air and gas passages connecting said air and gas inlet ports with said gas-producer, and provided with dampers or valves for regulating and controlling the supply of gas and air, as may be required, substantially as specified.

4. The combination, in a kiln, with a retort, C, of fire-box D, grate *d*, ash-pan *d'*, gas-passage E, gas-reservoir G, valve *g*, for closing said passage E between said reservoir and fire-box, secondary chamber F, and air-passage K, leading into said secondary chamber from the ash-pan *d'*, said secondary chamber F being provided with a graduated series of ports, *c'*, *c²*, and *c³*, the smaller series of said ports being arranged above the others, substantially as specified.

5. The combination, in a kiln, of a retort or receptacle for holding the material to be baked or burned, with a secondary mixing recuperator or regenerator chamber surrounding said retort, and having a graduated series of ports opening into said retort, and provided with a series of air and gas inlet ports distributed over its interior, said air and gas inlet ports being deflected toward each other at their mouths in pairs, a gas producer or apparatus for converting the fuel into gas, and air and gas passages connecting said air and gas inlet ports with the gas-producer, substantially as specified.

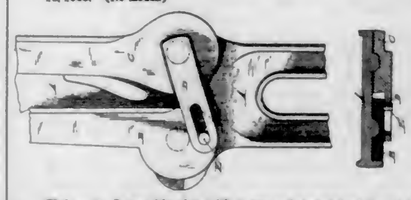
6. The combination, in a kiln, of a retort, with a gas-producer, a secondary chamber surrounding said retort, and having ports opening into the same, and provided with a series of air and gas inlet ports distributed over its interior, separate air and gas passages connecting said air and gas inlet ports with said gas-producer, said gas-passage being provided with a supplemental gas-reservoir for regulating and rendering uniform the supply of gas to said secondary chamber, substantially as specified.

7. The combination, with retort C, of secondary chambers F F, surrounding said retort, and provided with ports *c'*, *c²*, and *c³*, leading into said retort, and air-inlet ports *b'*, and gas-inlet ports *a'*, gas-producing chamber or fire-box D, gas-passage E, provided with damper *e*, and branches *a*, connecting said chambers F F with said fire-box D, ash-pan *d'*, and air-passage K, provided with damper k^3, and branches *b*, connecting said ash-pan *d'* with said chambers F F, said air and gas branch passages *a* and *b* and inlet-ports *a'* and *b'* being arranged alternate with each other, substantially as specified.

8. The combination, with gas-producing chamber or fire-box D and grate *d*, of fuel-hopper d^3, cap d^4, pivoted dumper d^5, provided with lever d^7, substantially as specified.

9. The combination of retort C with a gas-producer, a secondary chamber surrounding said retort, and provided with ports opening into said retort, and air and gas inlet ports connected with said gas-producer by means of separate air-passages and gas-passages, and a door, P, at the bottom of said retort, through which additional air may be admitted to said retort, substantially as specified.

294,454. OPERA-CHAIR. EDWARD G. DURANT and ELI SHUPE, Racine, Wis.; said Shupe assignor to THOMAS KANE, Chicago, Ill. Filed July 11, 1883. (No model.)



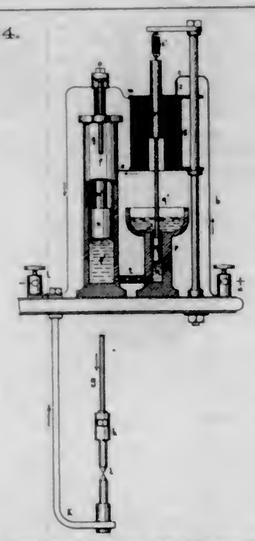
Claim.—1. In combination with a supporting-standard, a seat-arm and a back-arm pivoted thereto, one of said arms provided with a stud, and the other arm provided with a rigid slotted projection mounted upon said stud, as described and shown.

2. The combination of the standard A, the seat-arm B, pivoted thereon and provided with the stud E, and the back-arm C, also pivoted to the standard and provided with the rigid slotted extension D, loosely engaging the stud, as shown, whereby the two arms are caused to move simultaneously and positively in both directions.

294,455. ELECTRIC-ARC LAMP. HARDMAN ARTHUR EARLE, London, England, and EWALD GOLDSTEIN, Hanover, Prussia, Germany. Filed Dec. 4, 1883. (No model.)

Claim.—1. In an electric-arc lamp in which one of the carbons is carried by a piston, *s*, working in a cylinder, *f*, containing a liquid, the combination, with the said cylinder, of a regulating-cylinder, *p*, having the channel *u'* of *s* piston, *q*, working in *p*, and of means adapted to operate according to the variations in the strength of the current on the piston, so that it will be pushed inward within the cylinder *p* when the lamp is switched into circuit, substantially as and for the purpose described.

2. The combination, with the cylinders *f* and *p*, containing liquid, reservoir *q'*, pistons *s* and *q*, and means for operating the piston *q* according to the variations in the strength of the current, of a channel establishing communication between the reservoir *q'* and the space occupied by the liquid in *f* and *p*, and of a valve adapted to close the said channel, substantially as and for the purpose specified.



294,456. BURIAL-CASKET. FRANKLIN A. FIELD, Everett, assignor to Henry C. Miller, Cambridge, and Allen F. Miller, Winchester, Mass. Filed Dec. 13, 1883. (No model.)



Claim.—A casket-body provided externally with one or more longitudinal grooves, *b*, and a cloth or flexible covering applied to the said body, combined with cords applied outside the flexible covering and drawn into the said grooves, the said cords being retained by the said grooves from vertical movement on the said body, all substantially as and for the purposes described.

294,457. COMPOSITION FOR ELECTRICAL INSULATION. JOHN FOTTERELL, Philadelphia, Pa., assignor to Thomas S. Leigh, Trustee, same place. Filed Jan. 7, 1884. (No specimens.)

Claim.—1. Metallic soap for the purposes of electrical insulation, substantially as described.

2. A composition for electrical insulation, consisting of metallic soap, benzine or its equivalent, linseed-oil, and varnish.

3. Metallic soap benzine or its equivalent, linseed-oil, and varnish, in combination with a thickening material, substantially as and for the purpose set forth.

294,458. DYNAMO-ELECTRIC MACHINE. GEORGE W. FULLER, Norwich, Conn. Filed Feb. 19, 1883. (No model.)

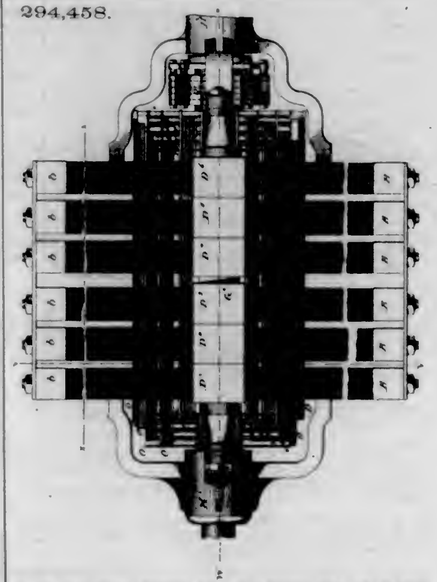
Claim.—1. In a dynamo-electric machine having stationary field-magnets and a cylindrical armature, a rotating system of induction-bars, arranged in the form of a cylindrical cage and loosely surrounding a stationary cylindrical iron core.

2. In a cylindrical armature for a dynamo-electric machine, provided with longitudinally-circumposed groups of induction-bars, a series of nests of insulated connecting-rings at each end of the armature, for effecting the appropriate electrical connections of the induction-bars with each other, substantially as described.

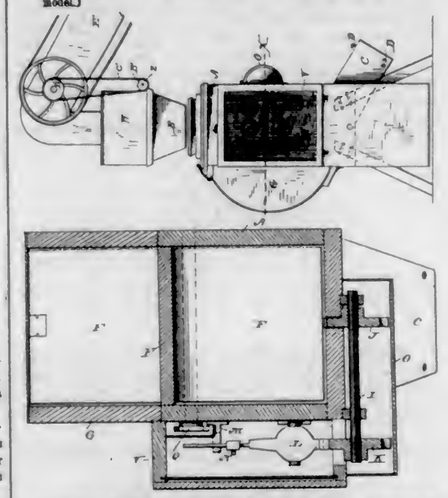
3. A cylindrical armature for a dynamo-electric machine, having an internal iron core loosely mounted upon the armature-shaft, and a rotating system of induction bars or coils independent of the said iron core and appropriately connected with each other and with the commutator-strips, and supported upon the peripheries of two or more wheels fastened to and revolving with the armature-shaft.

4. In a dynamo-electric machine, substantially such as described, in which the cage of induction bars or coils is rotated around a cylindrical iron core loosely mounted upon the armature-shaft, one or more sleeves, *h h'*, each provided with the oil-supply hole *s'*, extending through the upper part of the sleeve and terminating at its lower end in the oil-cavity S, formed in the interior surface of the sleeve and containing a strip of suitable material for absorbing oil, in combination with the enlarged part of the shaft H, which the sleeve surrounds, as and for the purposes set forth.

294,458.



294,459. AUTOMATIC GRAIN MEASURE, REGISTER, AND SACKER. JOHN M. FULTON, Roanoke, Ind. Filed May 23, 1883. (No model.)

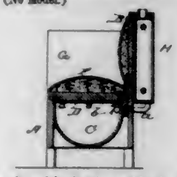


Claim.—1. The combination of the casing having a hopper at its upper end and an inclined chute at its lower end, the four-winged wheel or paddle journaled in the rear part of the said casing, the horizontal shaft having a centrally-located ratchet-wheel adapted to support one of the wings which forms a temporary floor of the casing, a correspondingly-toothed ratchet-wheel at the outer end of the said shaft, and a suitably-poised scale-beam arranged to act as a detent against the said outer ratchet-wheel, substantially as set forth.

2. The combination of the casing, the revolving four-winged wheel or paddle, a horizontal shaft having a ratchet-wheel arranged to support the wing which forms at the time a temporary floor of the casing, a correspondingly-toothed ratchet-wheel at the outer end of said shaft, a suitably-poised scale-beam arranged to act as a detent against the said outer ratchet-wheel, a wheel at the outer end of the paddle-shaft, and a registering mechanism arranged to be actuated by the said sprocket-wheel, as set forth.

3. The combination, with the casing having the revolving paddle-wheel, the shaft of which is journaled in the rear part of the said casing, of the hinged bulging door which provides room for the said paddle-wheel to revolve, and affords access to the same, substantially as and for the purpose set forth.

294,460. COMBINED SOFA AND BATH-TUB. GILBERT E. GA NUN, Mount Kisco, N. Y., assignor of one-half to Asa Young, same place. Filed Mar. 19, 1883. (No model.)



Claim.—1. A sofa and bath-tub combined, wherein the bath-tub is located and supported in the body-frame of the sofa, and the seat thereof forms a cover for the bath-tub, concealing it from view, substantially as specified.

2. The combination, with a sofa having a bath-tub in its body portion, and a removable seat, of a water tank or reservoir attached to the back of the sofa, substantially as specified.

3. The combination, with a sofa having a bath-tub and water-tank provided with a faucet extending into the tub, of a water-heating attachment, substantially as specified.

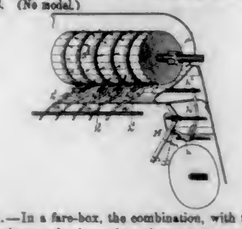
294,461. TIRE FOR WAGON-WHEELS. PETER GENDRON, Toledo, Ohio, assignor to the Gendron Iron Wheel Company, same place. Filed Aug. 1, 1883. (No model.)



Claim.—1. The method herein described of making a rubber-tired wheel, which consists in first securing to the spokes a thin-edged metallic tire having said thin edges extending outwardly, then putting the rubber tire around the metal tire, and finally pressing the edges of the said metallic tire against the sides of the rubber tire, substantially as described.

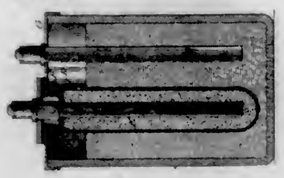
2. A carriage-wheel provided with a thin metal tire, and a supplemental tire formed partly of soft and partly of hard rubber, and held in place by turning the edges of the metal tire against the hard rubber, substantially as described.

294,462. FARE-BOX. JAS. F. GOODRIDGE, Boston, Mass. Filed June 14, 1883. (No model.)



Claim.—In a fare-box, the combination, with the ticket feed-roll and its actuating mechanism, of an alarm, a stop to prevent the alarm from sounding, and means, substantially as described, by which the passage of a ticket will remove the stop and allow the alarm to sound, substantially as and for the purposes set forth.

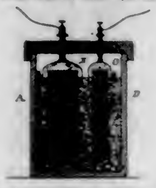
294,463. BATTERY. ALFRED HAID, Rahway, N. J. Filed Sept. 12, 1883. (No model.)



Claim.—1. An electrode for galvanic or secondary batteries, consisting of a carbon rod or plate, in combination with a mixture of Prussian blue, or its described equivalent, and carbon, as described.

2. The combination, in a battery, of an acid or equivalent solution, a zinc pole, and a carbon rod or plate in a porous jar containing a mixture of Prussian blue and carbon, all as set forth.

294,464. SECONDARY BATTERY. ALFRED HAID, Rahway, assignor, by direct and mesne assignments, to Haids Electrical Storage Company, Newark, N. J. Filed Feb. 17, 1883. (No model.)

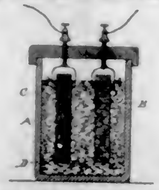


Claim.—1. In a battery, the combination, with the electrodes, of an acid solution containing a metallic salt—such as sulphate of zinc—and a metallic salt capable of forming under electrolytic action a depolarizing substance or compound on the positive electrode, substantially as described.

2. In a battery, the combination, with a carbon and metal electrode, of an acid solution containing a salt of a metal electro-positive to carbon and a metallic salt capable of forming under electrolytic action a depolarizing substance or compound on the positive electrode.

3. In a battery, the combination of a carbon plate, an amalgamated-zinc plate or its equivalent, and a solution containing sulphuric acid, sulphate of zinc, and sulphate of manganese or its equivalent, substantially as described.

294,465. SECONDARY BATTERY. ALFRED HAID, Rahway, assignor, by direct and mesne assignments, to Haids Electrical Storage Company, Newark, N. J. Filed Mar. 21, 1883. (No model.)



Claim.—1. The method of preparing lead plates for secondary batteries, which consists in coating them with zinc, and then dissolving said coating prior to forming the plates by the action of a current, as described.

2. The method of preparing lead plates for secondary batteries, which consists in coating them by an electric current with zinc, and then removing such coating by reversing the current, substantially as set forth.

294,466. WATCH-WINDING DEVICE. C. WESLEY HARMAN and HORACE G. SKIDMORE, Cincinnati, Ohio. Filed Nov. 21, 1883. (No model.)

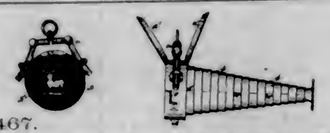


Claim.—1. A winding attachment for watches, consisting of a short winding-pipe having a retaining-flange, a recess in one side of the pipe, a handle fitted in the upper end of the pipe, whose shank occupies the recess when folded, and pin to hinge the handle to the pipe, as set forth.

2. The combination, with a winding-arbor having a guard-plate to form a funnel surrounding the arbor and an inner back having an orifice, of a short pipe having a flange to occupy the funnel and retain the pipe in the inner back, and a handle hinged directly to the short pipe on the outside of the inner back, as set forth.

3. The winding attachment consisting of a short winding-pipe, F, having a flange, *f*, and a handle, H, hinged within the pipe, in combination with a winding-arbor, an inner back having an orifice around the pipe, and a washer, G, having an orifice snugly fitting the pipe and securing the latter to the inner back, as set forth.

294,467. CHARM-TELESCOPE. CARL HOLBEIN, Pforzheim, Baden, Germany. Filed Sept. 18, 1883. (No model.) Patented in England Oct. 13, 1883, No. 4,870, and in France Oct. 16, 1883, No. 145,702.



294,467.

Claim.—1. A charm consisting of a locket having secured therein a telescope capable of being extended (when the locket is opened) without removing it from the locket, substantially as and for the purposes specified.

2. A charm having a supporting-ring and a lid and a telescope capable of extension and connected to said ring, the lid securing the telescope, when closed, from extension, substantially as and for the purposes specified.

3. A charm having a supporting-ring and front and rear lids and a telescope capable of extension secured to said ring, and, when closed up, inclosed by the said supporting-ring and the closed front and rear lids, substantially as and for the purposes specified.

4. A charm having a supporting-ring and rear and front lids, in combination with a telescope consisting of sections and secured to the supporting-ring of the locket by a bayonet-joint, substantially as and for the purposes specified.

5. A charm consisting of a locket having a supporting-ring and a rear lid, in combination with a telescope, B, consisting of a number of sections, *b b'*, said telescope being secured in the locket by means of a bayonet-joint, and the rear lid shutting over the ocular end of the telescope when closed, substantially as and for the purposes specified.

6. A telescope having the sections *b*, each provided on one side with a pin, *e*, and on the other side with the slit *e'*, the pin of one section engaging the slit of an adjacent section, substantially as and for the purposes specified.

7. A telescope having the sections *b*, each interior section being as narrow as its encircling section, each section having a pin, *e*, and slit *e'*, the pin of one section engaging the slit of an adjacent section, substantially as and for the purposes set forth.

8. The combination of section *b'* and the sections *b*, each of the latter being provided with pin and slit, substantially as and for the purposes hereinbefore mentioned.

294,468. SLEEVE-BUTTON, &c. STEPHEN C. HOWARD, New York, N. Y. Filed May 19, 1883. (No model.)



Claim.—1. In a button, a non-metallic exterior plate and a flanged metal lining placed within the same, combined with a separate center plate to fill in the face of the opening in the said non-metallic exterior plate, substantially as described.

2. In a button, the non-metallic exterior plate, its metal lining, center plate, and back, combined with the said holder to confine the back and its attached parts in the said exterior plate, substantially as described.

3. In a button, a non-metallic exterior plate, an independent center plate held within said plate, and a back, combined with a shank and pivoted shoe, substantially as described.

294,469. SLEEVE-BUTTON. STEPHEN C. HOWARD, New York, N. Y., and JOHN C. SCHOTT, Providence, R. I. Filed Oct. 12, 1883. (No model.)



Claim.—A button shank, back, shoe, and frame, *d*, and stone or other ornamental panel or plate, combined with a supplemental frame supported above the level of the frame *d*, and a stone or other ornamental panel or plate therein, all substantially as described.

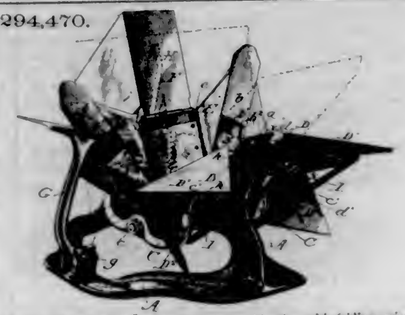
294,470. WRAPPER-FOLDING MACHINE. WARREN R. HOWE, Chicago, Ill. Filed Jan. 2, 1883. (Model.)

Claim.—1. In a folding-machine, the V-shaped female die B, in combination with the hinged triangular gage G, arranged and operating substantially as described and shown.

2. In a folding-machine, the female die B, V-shaped in cross-section, and provided with adjustable slides *a a'*, as and for the purposes specified, substantially as shown and described.

3. In a folding-machine, female die B, provided with adjustable slides *a a'*, in combination with cap F, hinged to the adjustable slide *a'*, substantially as shown and described.

4. In a folding-machine, cap F, in combination with female die B, arranged substantially as described, in combination with folding-wings E E and D D, operating to form and press the finishing-flaps of the wrapper, substantially as shown and described.



294,470.

5. In a folding-machine, cap F, provided with handle *f''* and lug *j*, in combination with spiral spring *i*, and adjustable slide *a'*, arranged so as to operate as and for the purposes specified, substantially as described.

6. In a folding-machine, the cams C C and means for pivoting and operating the same, substantially as described and shown, in combination with folding-wings E E and folding-wings D D, as and for the purposes shown and described.

7. In a folding-machine, the folding-wings D D, provided with rigid folding-blades D^2 D^2, as and for the purposes specified, substantially as described and shown.

8. In a folding-machine, the folding-wings D D, provided with blades D' D' and rigid folding-blades D^2 D^2, substantially as described, as and for the purposes specified.

9. In a folding-machine, folding-wings D D, provided with rigid folding-blades D^2 D^2, and hinged to ends of female die B, and so arranged as to operate, in combination with folding-wings E E, to crease and press the end folds of the wrapper, substantially as described and shown.

10. The folding-wings D, folding-blades D^2, and folding-wings E, in combination with die B, arranged, substantially as described, to form, crease, and press the end folds of the wrapper.

11. The folding-wings D, blades D^2 and D', and die B, in combination with folding wings E and cap F, arranged, substantially as described, to form, crease, and press the end folds and crease and press the finishing flaps of the wrapper.

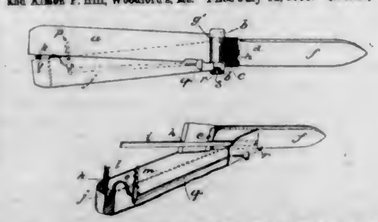
12. In a folding-machine, folding-wings E E, provided with adjustable slides b^2 b^2, hinged to folding-blades *b b* at *b' b'*, in combination with female die B, and hinged to it, so as to operate in forming and pressing the finishing folds of the wrapper, and also at the same time to operate in combination with cap F, in forming and pressing the finishing flaps of the packet, substantially as described.

13. In a folding-machine, the combination of frame A, die B, gage G, cap F, folding-wings D D, folding-wings E E, stop H, cams C C, and means for operating the same, substantially as described and shown.

14. In a folding-machine, folding-wings D D, provided with adjustable blades D' D' and folding-blades D^2 D^2, substantially as described, as and for the purposes specified.

15. The folding-wings D, blades D^2 and D', and die B, in combination with folding-wings E, cap F, and folding-blades *b b*, arranged, substantially as described, to form, crease, and press the end folds and crease, press, and fold the finishing flaps of the wrapper.

294,471. POCKET-KNIFE. ORSON HUFF, Lyman, assignor to himself and ALMON F. HILL, Woodford's, Me. Filed July 12, 1883. (Model.)



Claim.—1. A knife-handle formed of two hollow sections, *a j*, the upper one having collar *b*, with pin *s* and projections *p*, and the lower one having rear pin, *k*, surrounded by a spiral spring, a pivoted spring-pressed and notched locking-plate, *m*, an operating-rod, *q*, and a perforated projection, *r*, as shown and described.

2. In a hollow knife-handle, the front collar, *b*, carrying a pivoted

spring-pressed cap, *c*, in its recess *g'*, and a stud, *d*, on the cap *c*, in combination with a loose blade, *f*, having a socket, *e*, in its shank, whereby the blade may be securely held inside or outside the handle, as described.

3. A hollow handle having the bevel-edged plate *i*, pivoted at its front end, in combination with a loose blade, *f*, having the dovetailed groove *h*, whereby the blade may slide in or out of the handle without striking its edge, as described.

294,472. METALLIC BAND FOR TRANSMITTING POWER. ANTHONY JAROLIMEK, Hainburg-a-Donau, Austria-Hungary, assignor of one-half to John G. Avery, Spencer, MASS. Filed May 5, 1883. (No model.)

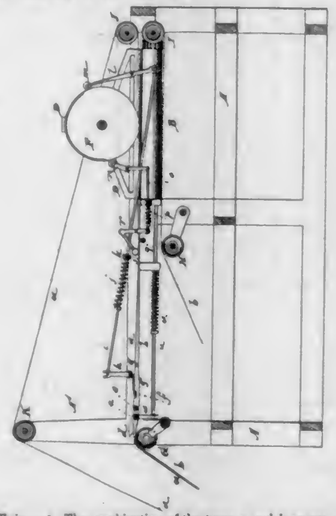


Claim.—1. In a flat driving-band of spirally-spun wire, the combination of a series of spirals, *f f*, having open coils, and a series of spirals, *g g*, crossing the former on diagonal rows of coils, and interlocking therewith to unite said spirals *f f* with each other, side by side, substantially as hereinbefore specified.

2. In a flat driving-band of spirally-spun wire, a series of open-coil spirals to form the tractional face of the band, arranged diagonally, as shown and described, to render their coils at the face of the band transverse with reference to the length of the band and the direction of tractional strain, substantially as hereinbefore specified.

3. The improved flat driving-band of spirally-spun wire, composed of a series, *f f*, of diagonally-arranged open-coil spirals united by a similar series, *g g*, of diagonally-arranged open-coil spirals crossing the former on diagonal rows of coils, and interlocking therewith at each coil, as hereinbefore specified, for the purposes set forth.

294,473. PAPER-FOLDING MACHINE. CONRAD KAHLER, Chicago, Ill. Filed Apr. 16, 1883. (No model.)



Claim.—1. The combination of the tapes *a* and *b*, means, substantially as described, for dividing two sheets advancing between the tapes, a plate, *f*, arranged between the tapes, and vibrating fingers *g'*, arranged above the plate to catch the rear edge of the upper sheet and detain it until the under sheet passes thereunder, as and for the purpose set forth.

2. The combination of the divider *c d*, roller *e*, plate *f*, and detaining-fingers *g'* with the tapes *a b* and roller *s*, substantially as and for the purpose described.

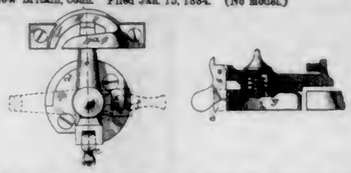
3. The combination, with tapes *a* and *b*, of means, substantially as described, for dividing two sheets entering between the tapes, the plate *f*, arranged between the tapes, vibrating fingers *g'*, arranged above the plate for catching the rear edge of one sheet and detaining it until the succeeding sheet passes under it, the rock-shaft *g*, to which the fingers are attached, the arm A on the shaft, the rod *i*, the spring *j*, the lever *l*, and cam-disk F, essentially as and for the purpose set forth.

4. The combination, with the tapes *a* and *b* and divider *c d*, of the roller *e*, plate *f*, detaining-fingers *g'*, rock-shaft *g*, arm A, rod *i*, spring *j*, lever *l*, and cam-wheel F, arranged for operation substantially as and for the purposes described.

5. The combination of the divider *c d*, roller *e*, plate *f*, detaining-fingers *g'*, and roller *s* with the tapes *a b* and folding-rollers B, substantially as and for the purpose specified.

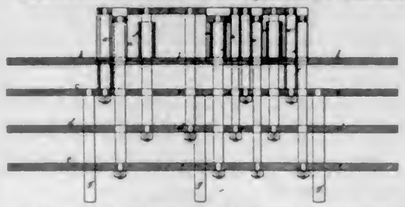
6. The combination of the divider *c d* and roller *e* with the tapes *a b*, plate *f*, and the detaining-fingers *g'*, substantially as described.

294,474. WINDOW AND DOOR BUTTON. ELEAZER KEMPSHALL, New Britain, Conn. Filed Jan. 15, 1884. (No model.)



Claim.—The combination of the notched or shouldered plate, the sweep pivoted on said plate and provided with a gravity-latch, and the sweep-spring, substantially as described, whereby the gravity-latch is firmly held against its shoulder when said sweep occupies its locked position.

294,475. MANUFACTURE OF MOSAIC AND OTHER TILES. JEAN LARMANJAT, Paris, France. Filed Dec. 12, 1883. (No model.) Patented in France Mar. 27, 1876, No. 112,794, and Sept. 13, 1878, No. 126,514; in England Dec. 23, 1876, No. 5,021, and in Belgium Mar. 1, 1880, No. 50,691.



Claim.—1. In the manufacture of tiles and other ceramics, the process of brightening the colors, consisting in treating the material or cement with a solution of soap previous to baking the tiles, substantially as set forth.

2. In the manufacture of tiles and other ceramic ware, the process of brightening the colors, consisting in moistening the powdered materials or cements with a solution of soft soap to oppose the efflorescence of the salts of lime contained in the powdered material or cement, substantially as set forth.

3. In the manufacture of tiles and other ceramic ware, the process of brightening the colors, consisting in moistening the powdered material or cement with a solution of soft soap, and treating the tiles after they have been molded and while they are yet porous with a solution of soft soap, and then removing the excess of soap, whereby the free alkali potash in the soap displays a portion of the lime of the opaque insoluble salt in the cement.

4. In a machine for molding tiles and other ceramics, a mold-plate composed of series of separate parts, forming a continuous and practically unbroken surface, each series of said separate parts being vertically adjustable independently of the other, substantially as set forth.

5. In a machine for molding tiles and other ceramics, a mold-plate composed of a series of separate parts adjustable independently of each other by means of independently-operated vertically-sliding rods, substantially as set forth.

6. In a machine for molding tiles and other ceramics, a mold-plate composed of a series of separate parts adjustable independently of each other by means of independently-operated vertically-sliding rods mounted in plates beneath the mold, said rods being provided with tubes or sleeves between the plates to limit their vertical movement, substantially as set forth.

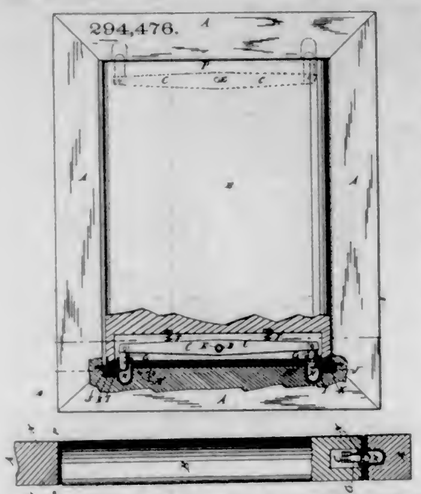
7. In a machine for molding tiles and other ceramics, a mold-plate composed of a series of separate and independently-operated parts and a series of metallic forms corresponding in shape to the parts of the mold, mounted on a plate beneath the said parts of the mold, and extending up flush with the upper surface of said mold parts, substantially as set forth.

294,476. HANGING DOORS. ALEXANDER H. P. LEUF, Brooklyn, N. Y. Filed Aug. 4, 1883. (No model.)

Brief.—A pivoted spring-actuated cross-bar is located in a recess in each end of the door, and is provided at its ends with grooved pivot-pins engaging alternately its socket in the casing, said pins being engaged in turn by a spring-bolt.

Claim.—1. The combination, with the door B, having recessed ends,

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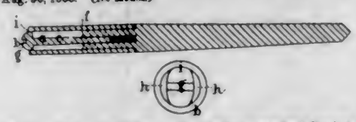


and the door-casing A, of the pivoted cross-bars C, hinged pivots G, and the sockets H, substantially as herein shown and described, whereby the said door can be opened in either direction and from either edge, as set forth.

2. The combination, with the door B, having recessed ends, and the pivoted cross-bars C, of the springs F, substantially as herein shown and described, whereby the said cross-bars, when left free, will be held in horizontal positions, as set forth.

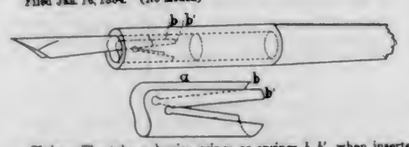
3. The combination, with the pivoted bar C, provided with the pivots G, having grooves M, and the sockets H, of the bolts I and the springs K, substantially as herein shown and described, whereby the said pivots, when serving as hinges, will be locked in their sockets, as set forth.

294,477. PEN-HOLDER. FREDERIC M. LIBBY, Portland, Me. Filed Aug. 30, 1883. (No model.)



Claim.—The combination, with a hollow pen-stock having a solid portion to receive the screw *a*, of the screw *a* and head *b*, the said head being shaped as herein set forth.

294,478. PEN-HOLDER. FREDERICK MATTHIAS LIBBY, Portland, Me. Filed Jan. 16, 1884. (No model.)



Claim.—The tube *a*, having wings or springs *b b'*, when inserted into the hollow of a pen-stock, as herein set forth, and secured as described, for the purposes specified.

294,479. APPARATUS FOR ADMINISTERING ANÆSTHETIC GASES. AMOS M. LOWE, Monroe, Mich. Filed June 6, 1883. (Model.)



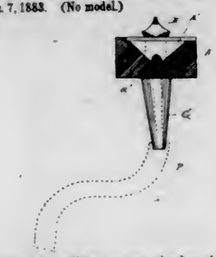
Claim.—1. In an apparatus for administering anæsthetic gases, the combination of gas-holder A, floating partition A^3, having a central opening for supply or inlet pipe, and packing, shown and described, whereby the gas is separated from the water, substantially as set forth.

2. In an apparatus for administering anæsthetic gases, the combination of a gas-tight floating partition, A^3, opening *g*, inlet-pipe A^2, gas-holder A, and cistern B, whereby the gas is kept from contact with the water, substantially as set forth and described.

3. In an apparatus for administering anæsthetic gases, the combination of cistern B, gas-holder A, weight-seat and weights, floating partition A^3, packing S, opening *g*, supply-pipe A^2, and detachable open-bottomed floats A^4, substantially as and for the purposes set forth.

4. In an apparatus for administering anæsthetic gases, a gas-holder having detachable chambers A^4 secured to the lower inner surface of holder, said chambers being open at the bottom and acting as floats, substantially as set forth.

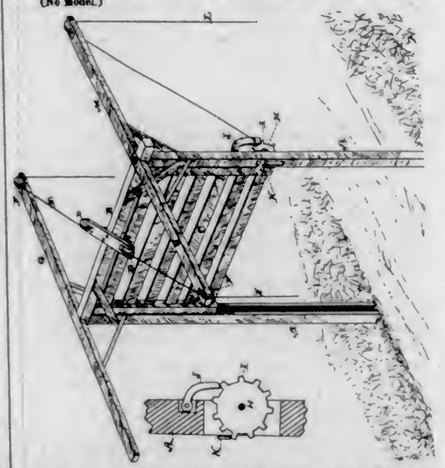
294,480. LUBRICATOR. WILLIAM ALONZO LOVELIS, Bingen, Ark. Filed Dec. 7, 1883. (No model.)



Claim.—1. In an oil box or cup, the box A, having oil-receptacle A', openings *a* and C', in combination with an oiler-plug, B, having oil-passages C D, substantially as described, and for the purposes set forth.

2. In an oil box or cup, the box A, having sliding cover F, oil-receptacle A', openings *a* C', and oiler-plug B, having passages C D, in combination with pipe G, substantially as described, and for the purposes set forth.

294,481. GATE. JOHN R. LOWE, Anderson, Cal. Filed Aug. 4, 1883. (No model.)

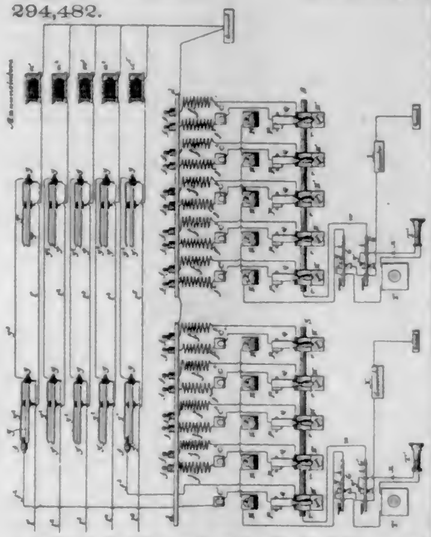


Claim.—1. A vertically-sliding gate moving between guide-posts, and having an arm, K, projecting alongside one of the posts, in combination with a toothed wheel journaled to the post, so that the arm may engage the projecting teeth, and a pawl which engages the teeth upon the opposite side and prevents the wheels turning back, substantially as herein described.

2. A vertically-sliding gate moving between guide-posts, and having an arm which engages the teeth of a spur-wheel journaled upon one of the posts, and a swinging pawl upon the opposite side of the post by which the wheel is prevented from returning, in combination with the cords E, attached to the gate, and the cords L, attached to the pawl, substantially as herein described.

294,482. TELEPHONE CENTRAL-OFFICE APPARATUS. FELTON M. LITTLE and JOHN A. MCCOY, Baltimore, Md., assignors to Henry B. Lytle, Boston, Mass., Trustee. Filed Sept. 25, 1883. (No model.)

294,482.



Claim.—1. The combination, with a series of pairs of connecting-cords arranged to connect subscribers' lines, and two signaling-keys, each having a contact-point connected with a generator, of a series of switches arranged to connect either of the pairs of connecting-cords with said two signaling-keys, respectively, substantially as described.

2. The combination, with the series of pairs of connecting-cords arranged to connect subscribers' lines, and two signaling-keys having contact-points, with which they are normally in contact, connected to the opposite terminals, respectively, of a circuit including a telephone, and opposite contact-points, each connected with a generator, of a multiple looping-in switch and connections, arranged to place the cords of any pair separately in connection with said two keys, respectively, substantially as described.

3. The combination, with the series of pairs of connecting-cords, of the multiple looping-in switch, having a separate jack or movable metallic part connected with one cord of each pair, a resilient contact-point in connection with the other cord of each pair, a common conductor arranged to make contact with said resilient contact-points when the latter are not in contact with the jacks, and to break contact therewith when in contact with said jacks, the opposite contact-points electrically connected together, the two keys connected to said opposite contact-points and the common conductor, respectively, and the generator, arranged for connection with both of said signaling-keys, substantially as described.

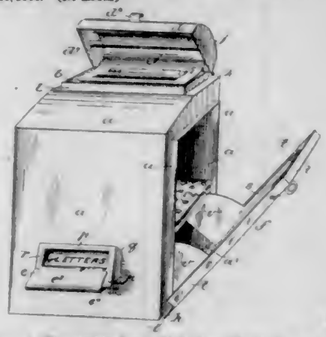
4. The combination, with a pair of connecting-cords provided with metallic plugs and arranged for connecting subscribers' lines, of an electro-motive instrument—as, for instance, the operator's receiver—and a testing-battery arranged for operative intermediate connection with said cords and a switch for effecting such connection, whereby, when such connection has been made and one of the cords plugged to a calling-line, the other cord is properly connected for testing another line, substantially as described.

5. The combination of one or more pairs of connecting-cords, a telephone, a testing-battery connected with said telephone, and a switch and connections arranged to connect said telephone and testing-battery simultaneously in circuit between the two cords of a pair, substantially as described, and for the purpose set forth.

6. The combination, with a series of switch-boards or switch-board sections, each provided with subscribers' line-terminals and pairs of connecting-cords, a multiple looping-in switch, two signaling-keys arranged for connection with the cords, and telephone-instruments, as described, of the chief operator's apparatus having a series of switches and a set of telephone-instruments arranged to be connected by said switches with the telephone-instruments of the switch-board operators, respectively, substantially as described.

7. The combination, with a series of switch-board apparatuses, each provided with pairs of connecting-cords and a multiple looping-in switch, two signaling-keys, and telephone-instruments, connected as described, of the chief operator's apparatus, provided with a multiple looping-in switch, having jacks connected in loops with the switch-board operators' telephones, hooked spring-arms connected also in said loops, and the opposite spring-arms, and a conducting-rod connected with the opposite terminals of a circuit including chief operator's telephone, substantially as described.

294,488. LETTER-BOX. CHARLES F. MAHR, Philadelphia, Pa. Filed July 20, 1883. (No model.)



Claim.—1. The combination, with the box *a*, having an opening, *b*, and hinged lid *d* therefor, of the guard *j*, hinged to the box *a*, and the rod d^4, fixed to lid *d*, for operating the guard by the lid, substantially as shown and described.

2. A letter-box having the outer flange, *u*, and a door hinged thereto at *g*, said door being extended below the hinge to form a ledge, *h*, whereby the door may be held open, as shown and described.

3. The combination, with the box *a*, having an opening, *b*, and lid *d*, fitted with a rod, d^4, or equivalent devices, of the guard *j*, hinged to the box *a* at *k*, and having a slot, *m*, in its lower portion, j^3, substantially as shown and described.

4. The combination, with the box *a*, provided with opening *b*, lid *d*, fitted with bar d^4, and the guard *j*, of the pendent plate *n*, substantially as shown and described.

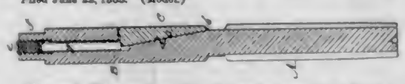
5. A mail-box divided by a horizontal partition, *o*, into an upper and lower compartment, a' a^2, having a single outlet-door, *f*, at one end for both compartments, and two inlets—one on the top and the other on the lower half of the front of the box—said inlets having covers, as shown and described.

6. The door *f* and mail-box *a*, provided with the flanges *t u*, upwardly inclined toward each other, and the flange *t*, overlapping flange *u* to produce a water-proof joint, as described.

7. The hood *p*, constructed with a flared top, *q*, a front apertured at *r*, and falling inward at the top, and a lid, *e*, arranged to close the opening *r* by gravity, and at the inside of the hood front, substantially as shown and described.

8. The combination, in a letter or mail box, of the compartment a', having an opening, *b*, lid *d*, and guard *j*, and the compartment a^2, having an opening, *c*, and hood *p*, apertured at *r*, and fitted with an inwardly-opening and self-closing lid, *e*, substantially as shown and described.

294,484. REAMER. CHARLES H. WALMSLEY, New Bedford, Mass. Filed June 22, 1883. (Model.)



Claim.—1. The combination, with a reamer having its shank constructed to form a gage, of an adjustable cutter arranged in said shank, substantially as herein shown and described, whereby provision is made for making a hole as determined by the gage after the reaming portion proper has become worn below the size, as set forth.

2. The combination, with a many-edged reamer having its shank constructed to form a gage, of an adjustable cutter arranged in a longitudinal slot in said shank, and extending below the lower end of the gage, substantially as herein shown and described, whereby the cutter is presented to the work in advance of the shank, as set forth.

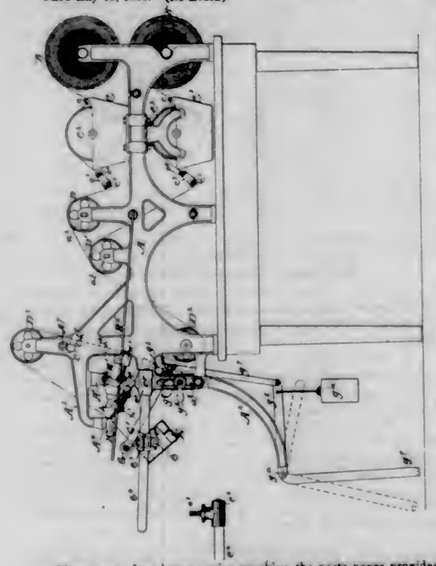
3. In a reamer, the combination, with the many-edged reaming portion A, and its slotted shank B, constructed to form a gage, of the cutter C, the pin *g*, and screw *e*, substantially as herein shown and described.

294,485. PROCESS OF MAKING COPIES OF TRACINGS. PHILIP H. MANDEL, Astoria, N. Y. Filed June 26, 1883. (No specimens.)

Claim.—1. The process of copying a tracing, drawing, or other illustration delineated on transparent material, consisting in applying to a pane of glass a sensitive material composed of bichromate of ammonia, gum-arabic, sugar, and water, or the equivalent of such material, which when not exposed to the light is tacky or sticky, but which when exposed to the light loses its tackiness or stickiness; in laying the illustration over the said sensitive material; in exposing the illustration to the light; in subsequently removing the illustration; in applying lamp-black or analogous material outside the sensitive material; in subsequently applying a sheet of material on which the copy is to be made, and in finally stripping off the material on which the copy was to be made, and the said sensitive material with it, substantially as specified.

2. The process of copying a tracing, drawing, or other illustration delineated on transparent material, consisting in taking a pane of glass, in applying to one side thin collodion; in next applying over the collodion a sensitive material composed of bichromate of ammonia, gum-arabic sugar, and water, or the equivalent of such material, which when not exposed to light is tacky or sticky, but which when exposed to light loses its tackiness or stickiness; in subsequently applying the illustration to be copied over the sensitive material; in subsequently exposing the illustration thus applied to the light; in subsequently removing the illustration; in then applying lamp-black or analogous material outside the sensitive material; in subsequently applying a thin collodion; in afterward applying a sheet of material on which the copy is to be made, and in finally stripping off this sheet of material, and the said sensitive material with it, substantially as specified.

294,486. BOX MAKING AND COVERING MACHINE. CHARLES HENRY MANNEK, Brooklyn, N. Y., and WILLIAM WITTE, New Haven, Conn. Filed May 19, 1883. (No model.)



Claim.—1. In a box-covering machine, the paste-cores provided with an acute edge and a roll, c^2, in advance thereof, with roll-carrying arms c^3, adjustably secured to each paste-box by the screws c^4, forming the pivots for said arms, substantially as and for the purpose described.

2. The combination of the side frames, provided with slots a^2 for the passage of roll-bearing screws *a*, and paper-carrying roll D, with bearing-screws *a* at each end of said roll, and jam-nuts a' upon said screws to regulate the height of each end of said roll, substantially as and for the purposes set forth.

3. The combination of the side frame of the machine, the angularly-adjustable rod c^7 and adjustable clamp c^8 thereon, with shaft *e* and expansive box-block formed of pieces E, substantially as and for the purpose described.

4. In combination with a box-block, the bottom presser, composed of a disk, f^3, upon the end of the presser-rod *f*, adapted to slide in bearings F^1, connected with the frame of the machine, the sleeve f^4, having tapering chamber f^5 and spring-latch f', substantially as and for the purpose described.

5. The combination of the side frame, rod F, projecting therefrom, rod F^2, adjustably secured thereto, sleeve F^4 thereon, provided with latch-pin f^{12}, presser-rod *f*, and spring-latch f', provided with notch to engage with latch-pin, substantially as and for the purpose described.

6. The combination of presser-rod *f*, sleeve F^4 thereon, and spring-latch f' with disk f^3, adapted to revolve upon the end of the presser-rod, adjusting-nuts f^6, and sleeve f^4, substantially as and for the purpose described.

7. The combination of the rubbing-roller G, its supporting-arms G', and pivot-pin *g* with adjustable bearing g', rocking arm g^9, and shaft g^8, retained in bearings vertically adjustable upon the frame, substantially as and for the purpose described.

8. The combination of the vertically-adjustable shaft g^8, rocking arm g^9, arm G', and roller G with crank g^{10}, connecting-rod g^{11}, and bell-crank lever g^6, provided with swinging treadle g^5, substantially as and for the purpose described.

9. In combination with the ledger-blade, transverse rods H and A^7, and sleeve H', carrying the shaft of the revolving cutter, the arm H^2, secured to said sleeve, and rod A^8, carrying a coiled spring, substantially as and for the purpose described.

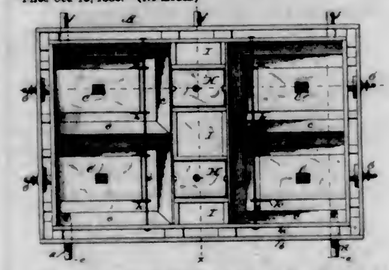
10. In combination with sleeve H', carrying the shaft of the rotary cutter, the shaft A, provided with slots A^{14} and screws A^{15}, secured to said sleeve and entering loosely within said slots, substantially as and for the purpose described.

11. In combination with the shaft of the rotary cutter, provided with slots in the sides thereof, the sleeve H', shaft-retaining screws A^{15}, secured thereto, and supporting-screw A^{13} in the rear thereof, substantially as and for the purpose described.

12. The combination of the shaft of the rotary cutter, stud A^{16}, secured thereto, and operating-rod H^7, connected with said stud, the shaft-supporting sleeve provided with a slot, A^{17}, to receive said stud loosely, substantially as and for the purpose described.

13. In combination with a series of paste-rolls, a paste-box provided with a tubular passage-way, *i*, extending upward from the bottom of the box through the paste therein, substantially as and for the purpose described.

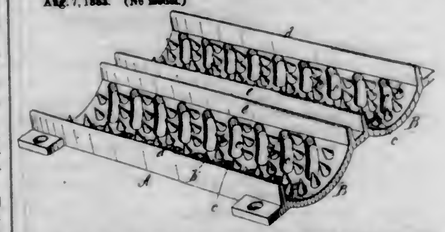
294,487. MILK-COOLER. ALEXANDER H. MARTIN, Oskaloosa, Iowa. Filed Oct. 13, 1883. (No model.)



Claim.—1. A creamery provided with two rows or series of milk-tanks, between which are arranged a series of ice-tanks and a series of compartments for a non-conducting material, said ice-tanks and compartments alternating, and the former being on a line opposite the inner ends of the milk-tanks, substantially as and for the purpose set forth.

2. In a creamery, the combination, with false inclined bottom having inclined sides, as shown, to form vats for containing the milk-tanks, of a central row of ice-tanks and compartments for a non-conducting material, the two alternating with each other, and the ice-tanks being on a line opposite the inner ends of both series of milk-tanks, substantially as and for the purpose described.

294,488. CORN-SHELLER. LUTHER MATTHEWS, Paris, Tex. Filed Aug. 7, 1883. (No model.)



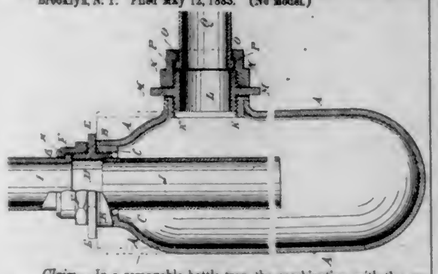
Claim.—1. A corn-shelling plate or bed-piece having duplicate shelling-concaves B B, arranged side by side, with a longitudinal protector, *e e*, for the hands between them, substantially as specified.

2. A corn-shelling plate or bed-piece constructed with duplicate shelling-concaves B B, having a longitudinal protector, *e e*, for the hands between them, isolated shelling-teeth on their upper surfaces, and clearance-openings in or through them for the shelled corn, essentially as specified.

3. The combination, in a stationary corn-shelling plate or bed-piece, of the duplicate shelling-concaves B B, arranged side by side, and hav-

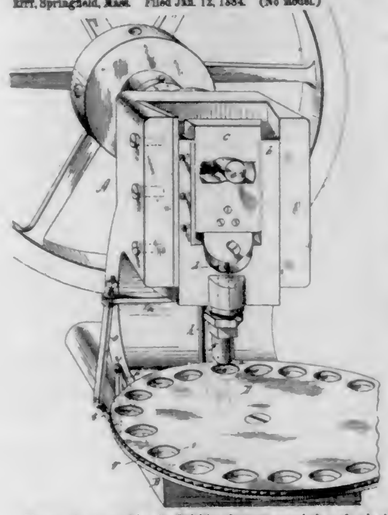
ing opposite side rows of reversely-inclined clearance-openings c c in them, the isolated teeth *b b*, arranged in similarly-inclined rows between said openings, and the longitudinal protector *e e*, for the hands of the operator, between the concaves, substantially as shown and described.

294,489. REMOVABLE BOTTLE-TRAP. GEORGE M. MCCLOSKEY, Brooklyn, N. Y. Filed May 12, 1883. (No model.)



Claim.—In a removable bottle-trap, the combination, with the cylindric cup having its mouth spun into a neck which is provided with a female-screw tube, of the tubular male screw having an external circumferential flange, and coupling-ring to receive the inlet-pipe, substantially as and for the purpose set forth.

294,490. MACHINERY FOR AND PROCESS OF FINISHING BUTTONS. HENRY W. MERRITT, MORTIMER G. MERRITT, and CHARLES E. MERRITT, Springfield, Mass. Filed Jan. 12, 1884. (No model.)



Claim.—1. A machine for finishing buttons, consisting of a double-acting press, substantially as described, a hollow punch having a perforated face, a punch operating within the latter, and having thereon a series of small punches passing through said perforated face, and a button-seat having perforations coinciding with those in said hollow punch, combined and operating substantially as set forth.

2. A machine for finishing buttons, consisting of a double-acting press, substantially as described, a hollow punch having a perforated face, and having on the latter projecting cone-shaped collars surrounding its perforations, and thread-slot bars between the latter, a punch operating within said hollow punch, having thereon a series of small punches passing through the said perforated face, and a button-seat having perforations coinciding with those in said hollow punch, and having projecting cone-shaped collars surrounding its perforations, combined and operating substantially as set forth.

3. A machine for finishing buttons, consisting of a double-acting press, substantially as described, a hollow punch having a perforated face, a punch operating within the latter, and having thereon a series of small punches passing through said perforated face, a perforated button-seat having an intermittent reciprocating movement before the ends of said punches, by means substantially as described, and suitable feeding devices for depositing button-blanks one by one between said punches and button-seat, combined and operating substantially as set forth.

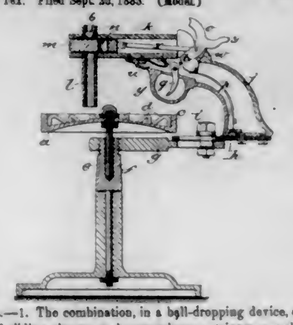
4. A machine for finishing buttons, consisting of a double-acting press, substantially as described, a hollow punch having a perforated face upon which is engraved or otherwise formed an ornamental design, a punch operating within said hollow punch, having thereon a series of small punches passing through the perforated face of the hollow punch, and a button-seat having perforations coinciding with those in the latter, combined and operating substantially as set forth.

5. The combination, with a double-acting press, substantially as described, of the hollow punch *f*, having a perforated face, the interior punch, *d*, having thereon the series of small punches *a*, and the movable button-seat *w*, having therein perforations coinciding with those in the hollow punch, substantially as set forth.

6. The process of perforating and embossing buttons, which consists in pressing a button-blank between a design-bearing punch and a seat, and while so pressed forcing one or several thread-hole-forming punches through the blank, all substantially as described.

7. The process of perforating, thread-slotting, and embossing buttons, which consists in pressing a button-blank between a design-bearing punch having slotting-bars thereon and a seat, and while so pressed forcing one or several thread-hole-forming punches through the blank, all substantially as described.

294,491. PISTOL-GAME APPARATUS. JOHN RENI MESTIER, Corpus Christi, Tex. Filed Sept. 25, 1883. (Model.)

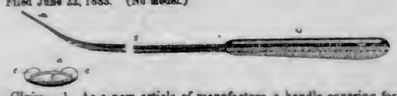


Claim.—1. The combination, in a ball-dropping device, of the barrel *k*, tube *l*, sliding plunger *m*, hammer-lever *o*, trigger *q*, and springs *p* and *u*, said devices being arranged and operating substantially as described.

2. The combination, in a ball-dropping device, of the barrel *k*, tube *l*, sliding plunger *m*, hammer-lever *o*, trigger *q*, and springs *p* and *u*, said devices being arranged on a supporting-stock, *j*, and a fixed base-plate, *A*, substantially as described.

3. The combination, with a revolving table, *a*, having an arched top and partitions, *d*, to form stalls to receive the ball, of the ball-dropping apparatus, consisting of the barrel *k*, tube *l*, sliding plunger *m*, hammer-lever *o*, trigger *q*, and the springs *p* and *u*, said devices being arranged on a supporting-stock, *j*, and said stock being supported on a bracket of the revolving-table stand, and also being adjustably connected to said stand, substantially as described.

294,492. HANDLE-COVERING. HENRY C. MILLIGAN, South Orange, N. J., assignor to the Iron Clad Manufacturing Company, New York, N. Y. Filed June 22, 1883. (No model.)



Claim.—1. As a new article of manufacture, a handle-covering for pan-handles and like articles, composed of wood or other non-conducting material, and having the surface of one side cut away to form recessed flanges, substantially as set forth, for the purposes described.

2. The combination, with a pan-handle, of a handle-covering, c, having the edges of one side shaped to form flanges *e e*, with a recess or groove between each flange and the body of the handle-covering, whereby the attachment of the handle-covering to the handle may be obtained without riveting or soldering, substantially as herein shown and described.

294,493. FENCE-POST. ELIJAH DANIEL MINER, Dayton, Wash. Filed Nov. 28, 1883. (Model.)

Claim.—1. In a fence-post, the pointed, spirally-flanged, screw-threaded, and shouldered metallic ground-section *a*, in combination with an upper section, *g*, substantially as described.

2. In a fence-post, the pointed, spirally-flanged, screw-threaded, shouldered, and headed metallic ground-section *a*, in combination with an upper section, *g*, substantially as described.

3. The improvement in fence-posts, consisting of a tubular upper



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section having a portion removed to form two bearing-surfaces for the wire, and slotted in the back of the remaining portion for the reception of clamping-bolts to secure the wires, substantially as described.

4. The combination of hook-headed clamping-bolts *m* and nuts *n* with the wires *l* and the longitudinally sectioned and slotted upper tubular section, *g*, of a fence-post, substantially as described.

5. The longitudinally sectioned and slotted tubular upper section, *g*, of a fence-post having the undercut lip *i*, in combination with an L-shaped clamping-bolt, *p*, and board *o*, substantially as described.

6. In a fence-post, the upper portion of semi-tubular form in cross-section, with a short closed tubular section at each end of said upper portion, and a longitudinal slot at the back of the semi-tubular portion, substantially as described.

7. In a fence-post having a semi-tubular upper portion with tubular upper and lower ends, the upper tubular portion formed with a downwardly-projecting lip, substantially as described.

8. The improved fence-post consisting of a tapering spirally-flanged base and a semi-tubular upper section having tubular ends, and also having a longitudinal slot at the back of the semi-tubular portion, substantially as described.

294,494. SPRING SHADE-ROLLER. ABBOTT MORGAN, Philadelphia, Pa. Filed Apr. 2, 1883. (No model.)



Claim.—1. In a spring shade fixture or roller, a circular or true spindle-disk, E, having tapering recess *e*, elongated tapering cam F, and roller A, substantially as set forth.

2. In a spring shade-roller, a circular or true spindle-disk, E, having tapering recess *e*, elongated tapering cam F, and washer C, substantially as shown and described.

294,495. BUTTON OR STUD. NELS NELSON, Providence, R. I., assignor to Hiram Howard, same place. Filed Aug. 21, 1883. (No model.)

Brief.—Improvement on Reissued Letters Patent No. 9,931, dated November 15, 1881.



Claim.—1. In a button or stud, a post having notches and shoulders 2 2 at its edges, turned backward at its outer end, and provided with one or more teats, combined with a shoe composed of a face-plate, a slotted back-plate having elongated recesses or chambers, and an anchor-plate provided with one or more recesses for the reception of the said teat or teats, the shoulders 2 2 traveling along in the recesses of the back-plate as the shoe is turned on the post, substantially as described.

2. In a button, the post provided with the shoulders and with a teat, combined with the face-plate, the slotted back-plate, and the spring anchor-plate, provided with a recess which receives the teat, substantially as shown and described.

294,496. BUTTON OR STUD. NELS NELSON, Providence, R. I., assignor to Hiram Howard, same place. Filed Oct. 29, 1883. (No model.)

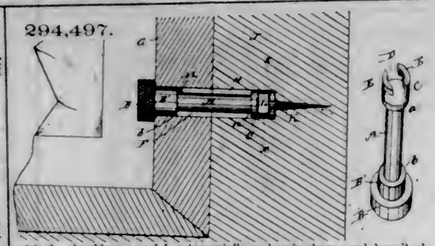


Claim.—In a button, the post B, having its end turned back, and provided with the notches *b* and wide shoulders 14, combined with the slotted back-plate c^3, having the elongated recess c^4, the anchor-plate having the notches 10, the face-plate, and the spring *s*, to operate all substantially as described.

294,497. WINDOW-BEAD FASTENER. HORACE F. NEUMEYER, Macungie, Pa. Filed Jan. 4, 1884. (Model.)

Claim.—1. A device for fastening window-beads, consisting of a bolt provided at its inner end with two hook-shanks, substantially as herein shown and described.

2. In a device for fastening window-stop beads, the bolt A, provided with the milled head B and the head C, having two hooks, E, and



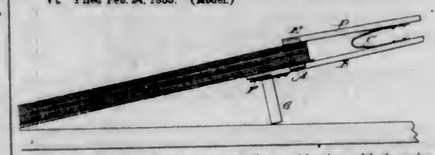
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with the shoulders *a* and *b*, substantially as herein shown and described.

3. The combination, with a screw-held in the end of an apertnre in the sash-frame, and provided with a cross-head, of a bolt passed through the bead, which bolt is provided at its inner end with two hooks, substantially as herein shown and described.

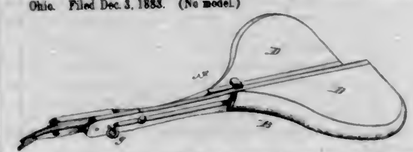
4. The combination, with a screw, K, having a head, I, and held in the end of the apertnre in the window-casing, of the bolt A, provided with hooks E at its inner end, and with shoulders *a b*, and of the brad or pin M, passed through the bead G, substantially as herein shown and described.

294,498. BOOK HOLDER AND REST. EDWIN V. PARKER, Strafford, Vt. Filed Feb. 24, 1883. (Model.)



Claim.—In a book holder and rest, the combination, with the strips B D and their cross-pieces A E, of the spring C, the spring-clip F, attached to the under side of the strip B, and of the U-shaped standard G, passed in between the bottom of the strip B and the clip F, substantially as herein shown and described, and for the purpose set forth.

294,499. EMBROIDERY-MACHINE. JOSEPH L. PARKS, Wauseon, Ohio. Filed Dec. 3, 1883. (No model.)



Claim.—1. As an improvement in embroidering-machines, the section A, provided with the bar C, formed with an elongated slot, *b*, and button-opening *c* and adjustable flat spring *e*, the section B, provided with bar C', having headed stud *h*, elongated slot *i*, and adjustable flat needle *m*, and a connecting-screw for coupling the lower ends of the bars C and C', substantially as and for the purposes set forth.

2. In an embroidery-machine, the combination, with the needle-bar C', provided with a flanged recess, *k*, in its inner face, at its lower end, in which the needle is secured, said flanges projecting above the needle, of the bar C, having the flat spring *e*, curved inwardly, so that it enters between the flanges *k*, whereby the flat spring will be guided and lateral movement of the same prevented, substantially as specified.

294,500. APPARATUS FOR DRAWING TELEGRAPH-CABLES INTO PIPES. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed July 28, 1883. (No model.)

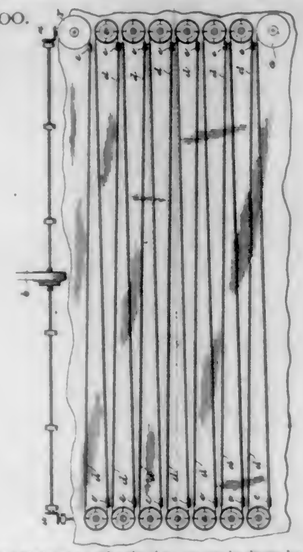
Claim.—1. The combination of capstans arranged in rows with mechanism for driving the same uniformly, and friction devices upon the different capstans, whereby the core may be drawn simultaneously through several sections of pipe without danger of breaking the conductors, substantially as and for the purpose specified.

2. The combination, with the whelps or sections of the described barrel, of links, a collar, and lever for turning said collar, whereby the circumference of the barrel may be decreased, substantially as and for the purpose specified.

3. The combination, with the beveled barrel composed of sections or whelps, of pins radiating from the hub, which guide the sections, and means for varying the diameter of the barrel, substantially as and for the purpose specified.

4. The combination, with the shaft provided with a duct for oiling the bearings, of the friction-cone keyed to and resting upon the bearing, the hub loose upon the shaft, and means for adjusting the friction between

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the hub and friction-cone, whereby the core may be drawn into the pipe without injuriously straining the conductors, as and for the purpose specified.

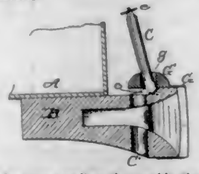
5. Adjustable holders for the different sections of pipe, whereby said sections are held tangent to the capstans, substantially as and for the purpose specified.

6. The capstans and driving mechanism, combined with means for holding the sections of pipe substantially tangent to the capstans, respectively as and for the purpose specified.

7. The combination, with capstans arranged in rows, of mechanism for driving the same uniformly, whereby a core may be drawn simultaneously through several sections of pipe, substantially as specified.

8. The combination, with series of capstans arranged in rows and mechanism for driving the same uniformly, said capstans being adapted to draw a core simultaneously through several sections of pipe, of means for reducing the diameter of each of said capstans, whereby the said core may be removed from said capstans successively, and the ends of the respective sections of pipe brought together over said core, substantially as set forth.

294,501. CAR-COUPLING. THOMAS HOWARD PEGRAM and JOHN HENRY KEISTER, Winston, N. C.; said Keister assignor to said Pegram. Filed June 4, 1883. (No model.)



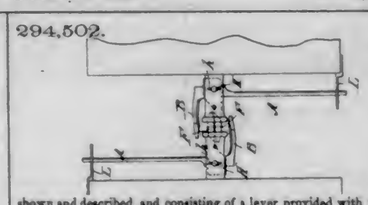
Claim.—1. In a car-coupling, the combination of the draw-head B, having the seat *c* for the coupling-pin at its top portion, band G, encompassing or passing entirely around the front portion of the draw-head and projecting from the front edge of the same, guide-rods H, attached at each side of the band, and springs I, mounted upon said rods and acting to keep the band in a forward position, with the coupling-pin adapted by suitable means to be held in a vertically-suspended position above the pin-hole, substantially as and for the purposes described.

2. In a car-coupling, the combination, with the draw-head B, having seat c in its top position, and band G, encircling the front portion of the draw-head and projecting from the front edge of the same, of the lever O, pivoted to the end of the car, and attached to the band, whereby said band may be operated by hand at the side of the car, for the purpose set forth.

294,502. CAR-COUPLING. EDWARD F. PENDEXTER, Milford, Mass. Filed Sept. 19, 1883. (No model.)

Claim.—1. A car-coupling device made substantially as herein

294,502.



shown and described, and consisting of a lever provided with two prongs at its inner end, one of which prongs is provided with a lug on the outer end, substantially as herein shown and described, and for the purpose set forth.

2. In a car-coupling, the combination, with the lever A, provided at its inner end with a curved prong, B, having its end C beveled, of the prong D, secured on the lever A at the outer end, and provided on the under surface of its outer end with a lug, F, substantially as herein shown and described, and for the purpose set forth.

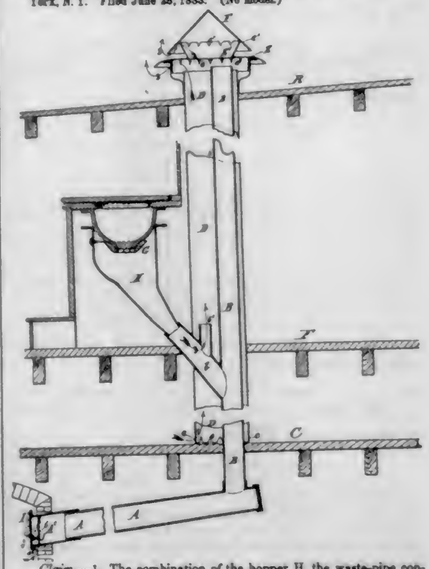
3. In a car-coupling, the lug F, having a rounded front side and bottom tapered toward the point of the prong D, which lug is provided with a lever, G, at its inner upper corner, substantially as herein shown and described, and for the purpose set forth.

4. In a car-coupling, the combination, with the lever A, having a prong, B, of the prong D, provided with an aperture, E, at the inner end, and a lug, F, at the outer end, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with a car, of a lever, A, suspended from the draw-head, the prongs B D, formed on the lever, the lug F on the end of the prong D, and of the V-shaped frame L, secured to the side of the car, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with a car and its draw-head, of the pin H, provided at the lower end with a head, K, having a beveled upper edge, the lever A, having prongs B D, of which the latter is provided at its inner edge with an aperture, E, and at its outer edge with a beveled lug, F, and of the V-shaped frame L, secured to the side of the car, substantially as herein shown and described, and for the purpose set forth.

294,503. WASTE-PIPE VENTILATOR. JOHANNES PERSSON, New York, N. Y. Filed June 28, 1883. (No model.)

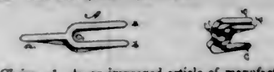


Claim.—1. The combination of the hopper H, the waste-pipe connection *b*, provided with the upwardly-projecting open pipe *b'*, the waste-pipe B, and the air-pipe D, inclosing the said pipes B and *b'*, the said pipe D being open at its upper end, and having also openings c at its lower end, substantially as and for the purpose set forth.

2. In combination with the waste-pipe B and drain-pipe A, the flanged joint A', provided with the end valve, I, and the valve J, pivoted inside of the said joint A', the said valve J being provided with means i, operating against the valve I to open the latter simultaneously with the former, substantially as and for the purpose set forth.

3. The hopper H, having a laterally-inclined discharge-leg entering into and in a straight line with the waste-pipe, in combination with the pipe *b'*, waste-pipe B, and surrounding air-pipe D, all constructed and arranged substantially as and for the purpose set forth.

294,504. BUTTON-FASTENER. GEORGE W. PRENTICE, Providence, R. I. Filed Dec. 6, 1883. (No model.)



Claim.—1. As an improved article of manufacture, the herein-described button-fastener, formed from the blank A, having a portion thickened at a central line, from which the prongs *a b* are gradually reduced in thickness outward to their extremities, and which are bent at right angles, substantially as and for the purpose specified.

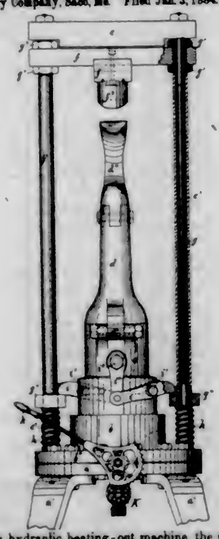
2. The blank A, formed as described, with a portion thickened at a central line, from which the prongs *a b* are gradually reduced in thickness outward to their extremities, substantially as and for the purpose specified.

294,505. BAG-HOLDER. ALEXANDER ROBINSON, Benicia, assignor to Baker & Hamilton, San Francisco, Cal. Filed Nov. 5, 1883. (No model.)



Claim.—A bag-holder comprising suitable devices for its support, a sliding fork, E, shaft B, provided with hooks, and the lever or arm C, and the inclined plane D, substantially as set forth.

294,506. BEATING-OUT MACHINE FOR BOOT OR SHOE SOLES. JOSIAH W. ROGERS, Beverly, Mass., assignor to the Winslow Beating-Out Shoe Machinery Company, Saco, Me. Filed Jan. 3, 1884. (No model.)

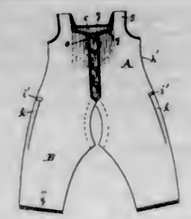


Claim.—In a hydraulic beating-out machine, the stationary cylinder *b* and movable plunger c, carrying the jack *d'''*, combined with the movable head *f*, carrying the former *f'*, and suitable connecting mechanism, substantially as described, between them, for the purpose of causing the said jack and former to move from opposite directions toward each other by the hydraulic pressure, as set forth.

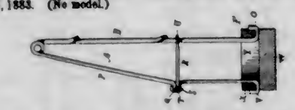
294,507. UNDER-GARMENT. SOPHIE ROSENTHAL, Baltimore, Md. Filed Dec. 26, 1883. (No model.)

Claim.—A garment for underwear, consisting of a chemise and drawers made of one integral piece of fabric, having in the body part a cut-out directly under the arms, the edges of which form a vertical seam, and the horizontal bottom edge of which is formed into a plait at the lower end of the said seam, whereby the desired fit is produced about the body and the requisite fullness about the hips, as shown and described.

294,507.

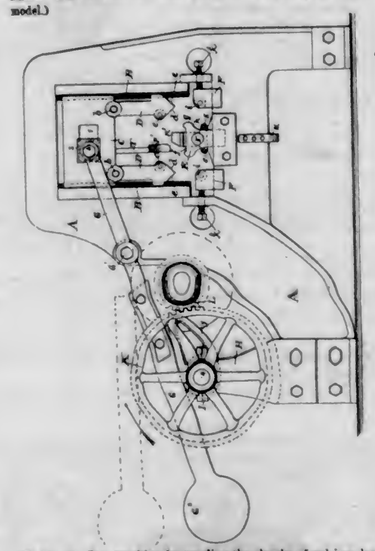


294,508. FENCE-POST. JAMES B. ROSE, Union City, Ind. Filed July 28, 1883. (No model.)



Claim.—The combination of the wire-post, comprising a main portion and a brace portion, each portion having a right-angular foot at its lower end, the bottom section of the base, on which these feet are rested, and the removable top section of the base, having the elongated slot receiving the ends of the main and brace portions of the post, and rested on the horizontal portions of the right-angular feet, substantially as set forth.

294,509. MACHINE FOR BENDING SHANKS OF SAD-IRON HANDLES. JOHN SABOLD, Jr., Little Oley, Pa. Filed Aug. 20, 1883. (No model.)



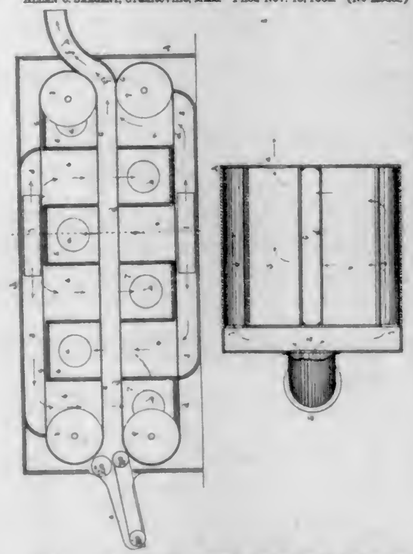
Claim.—1. In a machine for bending the shanks of sad-iron handles, the combination, substantially as set forth, of a stationary mandrel having a sunken surface, *f*, to receive the grasp part of the handle, a raised shoulder, *f''*, at each end of said surface, and sides which curve first outward near said shoulders, and are then hollowed inward, and means to bend both shanks about the mandrel at once.

2. In a machine for bending the shanks of sad-iron handles, the combination, substantially as set forth, of a mandrel, vertical guides, a large head, C, to move in the guides, two shank-formers, D, pivoted by their upper ends to the head, and each having a V-shaped lower end, and laterally-adjustable block-guides F at each side of the mandrel.

3. In a machine for bending the shanks of sad-iron handles, the combination, substantially as set forth, of a mandrel, vertical guides, a large head, C, to move in the guides, means to bend both shanks about the mandrel, a pusher, *s*, adapted to reciprocate across the top of mandrel, and attached to a head, *s'*, having a downward-inclined side, *p*, and a vertically-movable rod, T, having its upper end connected to the said large head, and provided on its lower end with an upwardly-inclined face, *p'*.

4. In a machine for bending the shanks of sad-iron handles, the combination, substantially as set forth, of a mandrel of requisite form, a head moving in vertical guides, and having a horizontal slot, I, provided with a slide-block, 2, two shank-formers, D, to bend both shanks about the mandrel, a pivoted lever, G, having one end pivoted to the said slide-block and the other end weighted, and a rotary shaft provided with a cam to move the weighted end of the lever.

294,510. FIBER-DRYING MACHINE. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Nov. 13, 1882. (No model.)



Claim.—1. In combination with the moving screen-surfaces c and d, the alternate air-passages 4 5 and 6 7, adapted to convey the air-blast in opposite directions through the fiber, substantially as described.

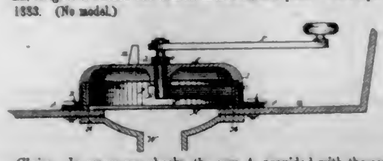
2. In a wool-drying machine, the combination, with two moving screen-surfaces, c d, placed far enough apart to allow the fiber to lie loosely between them, of the air delivery and escape passages 4 and 5 above and below said screen-surfaces, substantially as described.

3. In combination with screens c d, the passages 6 7 and 4 5, and passages 3 3 and 2, leading from the air-pipe G, substantially as described.

4. In combination with the screens c d, having a space between them, and passages 6 7 and 4 5, the feed-apron e, and air stop-roll E'', substantially as described.

5. In combination with the screens c d, the tube f, having its edges arranged to doff the fiber from the screens, substantially as described.

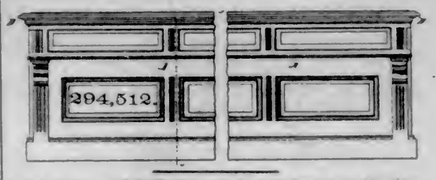
294,511. SEWER-GAS CHECK. CHAS. ANDREW SCHEFFLER, Chicago, Ill., assignor to himself and SAMUEL H. ADAMS, same place. Filed Apr. 17, 1883. (No model.)



Claim.—In sewer-gas checks, the case A, provided with the semi-circular flange a, an opening, D, and an annular seat, I, in combination with the sliding gate B C, post E, and lever F, the gate having an upper bearing on the guide I, a bearing on the vertical part of the case, and a lower bearing on the sink-bottom, as specified.

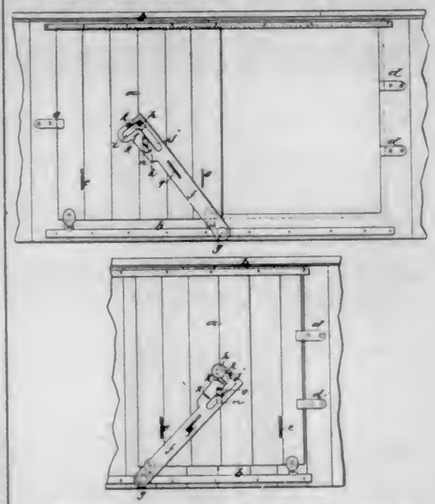
294,512. GLASS-TOP COUNTER FOR STORES. SAMUEL SCHUTZ, New York, N. Y. Filed Sept. 26, 1883. (No model.)

Claim.—An improved stationary sales-counter, constructed with a continuous transparent top of plate-glass, supported upon an extended fixed frame, constituting the edges of the counter, and covering a receptacle in the top of the counter, closed at front and ends by its solid casing and in the rear by suitable drop-panels, all substantially in the manner and for the purpose herein set forth.



294,513. CAR-DOOR LOCK. JAS. SHARKEY, Honey Creek, Ind. Filed Aug. 18, 1883. (No model.)

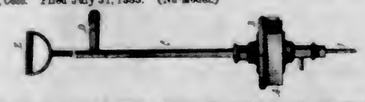
Brief.—A latch-bar pivoted under the lower back corner of the door-opening is connected to the middle of the sliding door by a stud-pin on the door engaging an angular slot in the end of the bar. The stud-pin is held in the end of the slot by a sliding bolt on the latch-bar held by a pivoted link secured over a staple on the sliding bolt.



Claim.—1. The combination, with a sliding door, of a latch-bar, f, pivoted to a permanent support at the lower back corner of the door and connected to the door at the middle, or thereabout, by a stud-pin, h, in the door and the angle-slot i j in the bar, said bar being inclined, so that it gravitates to a rest at the upper end of slot j on the stud h, and thereby forms a latch to fasten the door shut, substantially as described.

2. The combination of a slide-bolt, l, having staple m for a lock, p, with the latch-bar f, having staples k and link n, pivoted to a support and connected to the door, as shown and described, the said staples k and bolt l being located between the part i of the slot and the stud h, to lock said stud in the upper end of part j of the slot, substantially as described.

294,514. ROTARY DRILLING-ENGINE. ELIHU L. SHARPNECK, Denver, Colo. Filed July 31, 1883. (No model.)



Claim.—1. A rotary engine having its revolving and operating cylinder provided with journals at its opposite sides, one of which has a socket for a drill and the other a conical center bearing, substantially as described.

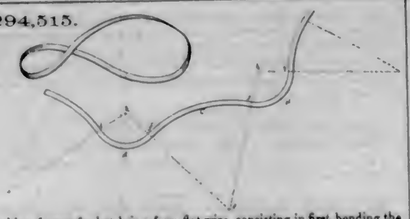
2. The combination, with a rotary engine having an elongated journal, forming a bearing for a socket for a drill, of the rod C, provided with the handles D and E, substantially as described.

3. The combination, with the casing A, of the head B, provided with a step, I, and socket h, the rod C, handles D E, cylinder F, having center H, drill J, and pistons P, all constructed and arranged substantially as shown and described.

294,515. WIRE FRAME FOR HAT-BRIMS. GEORGE E. SHERMAN, Danbury, Conn. Filed Dec. 26, 1883. (No model.)

Claim.—1. The herein-described improvement in the method of

294,515.

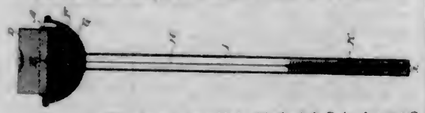


making frames for hat-brims from flat wire, consisting in first bending the wire edgewise to give it a downward curve from the center sides toward the front and rear to the quarter-points, and from those quarter-points reversely curved without changing the plane of the wire throughout its length, substantially as described.

2. The herein-described frame for hat-brims, consisting of a flat wire bent edgewise without turning the wire from its natural flat plane to give the droop to the front and rear, the flat surface of the frame being vertical at all points, substantially as described.

3. A frame for hat-brims, consisting of a flat wire bent edgewise without turning the wire from its natural flat plane, the bend alike on both sides from the center toward the front and rear, and around the front and rear the curve in the opposite direction to that of the sides, and upon a shorter radius, substantially as described.

294,516. AUTOMATIC CHALK-HOLDER FOR BILLIARD-TABLES. WILL SHERWOOD, Chicago, Ill. Filed Feb. 7, 1884. (No model.)



Claim.—1. The clamp A, provided with the bolt B, having nut C, as and for the purpose set forth.

2. The clamp A, having bolt B, with angular bend b' and nut C, as set forth.

3. The combination, with the clamp A, chalk-cube D, and cord H, of the rubber bumper E, as and for the purpose set forth.

4. The combination, with the clamp A, bolt B, and rubber bumper E, of the cord H and cup G.

5. The clamp A and bolt B, bumper E, and cord H, in combination with the cup G, tube I, and spring K, as and for the purpose set forth.

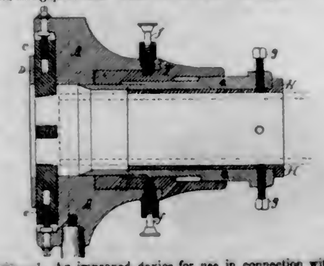
6. The combination, with a billiard or pool table having a chalk-receptacle, G, of the spring K, cord H, rubber bumper E, clamp A B, and chalk-cube D, as and for the purposes set forth.

294,517. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Jan. 16, 1884. (No model.)



Claim.—A sheet-metal button-fastener consisting of a table, with a prong or prongs at opposite sides of the table and integral therewith, and bent at or about at right angles thereto, with one of said prongs having an unbent portion contiguous to the table and in the same horizontal plane, and adapted to carry a shank-button, substantially as specified.

294,518. GAGE FOR PIPE-THREADING MACHINES. GEORGE F. SMITH, Bridgeport, Conn. Filed Feb. 21, 1883. (No model.)



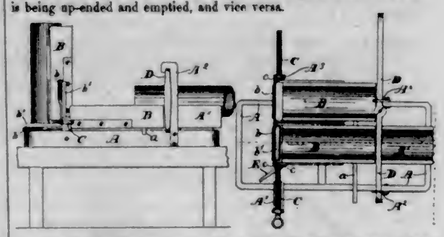
Claim.—1. An improved device for use in connection with pipe-threading machines, consisting of a gage having a series of steps of different diametrical distances, arranged to be inserted between the thread-cutters and to distance the same for operation upon pipes of different circumferences, substantially as described.

2. The combination, with a thread-cutting machine constructed and operating substantially as herein described, and having its stock-front provided with a series of holes, of a gage consisting of a cylinder provided with a series of steps of different diameters, and a supporting-cylinder for said gage provided with a series of pins or projections arranged to enter the holes of the stock-front, substantially as described.

3. The combination, with the threading-machine herein described and its stock A, provided with the holes a, of the gage e', provided with the steps e², and the supporting-cylinder E, provided with the pins a' and slots e², and a series of adjusting-pins passing through said slots and into the said gage, as set forth.

294,519. TABLE FOR TILE-MILLS. JOHN S. SMITH, Jackson, Mich., assignor to Michael Nolan, Rushville, Ind. Filed May 21, 1883. (No model.)

Brief.—Two receiving-troughs are alternately brought to register with the forming-nozzle, one receiving the issuing tile while the other is being up-ended and emptied, and vice versa.

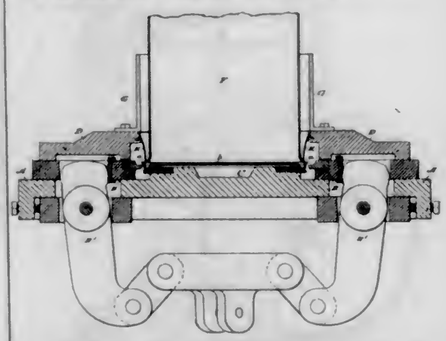


Claim.—1. The combination, in a tile-mill, of two or more wings for receiving the column of clay as it issues from the mill, and a shaft on which said wings are mounted and adapted to be moved, substantially as described, and for the purposes specified.

2. The combination, in a table for tile-mills, of two or more wings arranged side by side and adapted to be moved transversely across the track of the advancing column of clay, thus bringing first one and then the other into position to receive a tile, substantially as set forth.

3. The combination of a table for tile-mills, consisting of a wing or wings, B, and a frame-work, on which the same are mounted, a reciprocating cut-off, and a lever for operating the same, extending from said cut-off to the opposite end of said wings, whereby the operator is enabled to do any part of his work in connection with such table from either end of said wings, substantially as set forth.

294,520. CAN-SEAMING MACHINE. THOMAS L. SMITH and WILLIAM S. DOIG, Brooklyn, N. Y. Filed Aug. 1, 1883. (No model.)



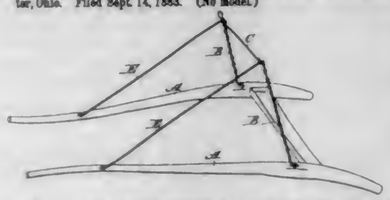
Claim.—1. In a can-seaming machine, as a means for squaring the body of the can and guiding it into the channel in the head, the elastic hopper-like guide E, constructed and arranged substantially as set forth.

2. In a can-seaming machine, as a means for squaring the can-body and guiding it into the channel formed in the head, the hopper-like guide E, formed of thin elastic metal with a roll, a, formed on its pendent edge, and arranged to operate substantially as set forth.

3. The combination, with the seaming-jaws of a can-seaming machine, and the die on which the can-head rests, of the bed-frame D, and the guide E, constructed substantially as described, and attached thereto, all arranged to operate substantially as set forth.

4. In a can-seaming machine, the combination, with the bed-frame D and guide E, of the auxiliary guide G, all constructed and arranged to operate substantially as set forth.

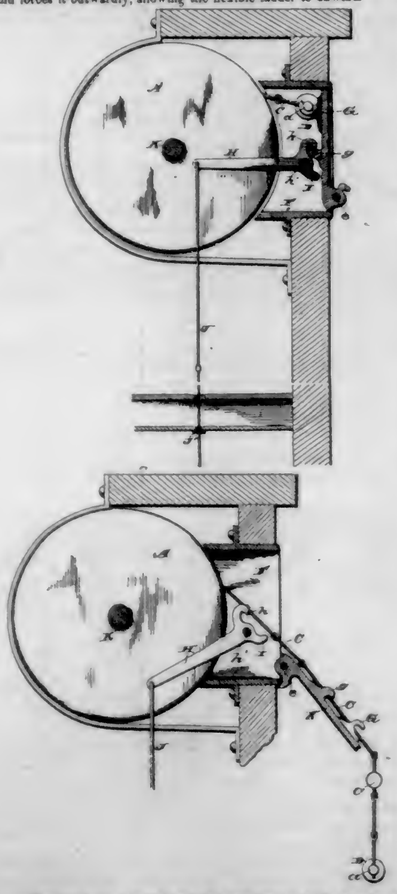
294,521. REIN-GUARD. CHARLES WILLIAM SPEARS, Canal Winchester, Ohio. Filed Sept. 14, 1883. (No model.)



Claim.—A rein-holder consisting of a wire frame bent and twisted to form the standards B, rein-rest C, and braces E E, as shown and described.

294,522. FIRE-ESCAPE. JEREMIAH STEVER, Bridgeport, Conn., assignor, by direct and mesne assignments, to the Bridgeport Automatic Safety Ladder and Hardware Company, same place. Filed Feb. 24, 1883. (No model.)

Brief.—A trip-lever engages the catch on the inside of the door, and, when unlocked, an arm on said lever engages directly with the door and forces it outwardly, allowing the flexible ladder to unwind.



Claim.—1. In a fire-escape, the combination, with an outwardly-swinging door provided with a catch, and with jaws on its inner side, and a trip-lever constructed with a holding-jaw that engages the catch on the door, and provided with an arm or projection that directly engages with the door and forces it outwardly when unlocked, of a flexible ladder provided with a weight on its free end, and having arms adapted to engage the jaws on the door and close it, and a drum for supporting the ladder, substantially as set forth.

2. In a fire-escape, the combination, with an outwardly-swinging door and a flexible ladder adapted to engage the door and close it, of a trip-lever constructed to engage a catch on the door, and provided with an arm or projection that directly engages the door and forces it outwardly when unlocked, substantially as set forth.

294,523. FIRE-ESCAPE. JEREMIAH STEVER, Bridgeport, Conn., assignor to the Bridgeport Automatic Safety Ladder and Hardware Company, same place. Filed June 14, 1883. (No model.)

Brief.—The ladder, when unwinding, passes out through a stationary chute opening downward and provided with a counterweighted door.



Claim.—1. The combination, with a flexible ladder and means for operating it, of a stationary chute opening downward, and a counterweighted valve or door constructed and arranged to close the lower and open end of the chute, substantially as set forth.

2. The combination, with a flexible ladder and means for operating it, of a stationary chute having a downwardly-curved outer end, the lower end being open, and a counterweighted valve or door constructed to be self-closing and to be opened by the ladder, substantially as set forth.

3. The combination, with a flexible ladder and means for operating it, of a stationary chute, and a balanced valve suspended from the bottom of the chute and arranged to normally close it and to be opened by the free end of the ladder, substantially as set forth.

4. The combination, with a flexible ladder and means for operating it, of a stationary chute, and a balanced valve arranged to normally close the chute and be opened by the free end of the ladder, and provided with an adjustable weight, substantially as set forth.

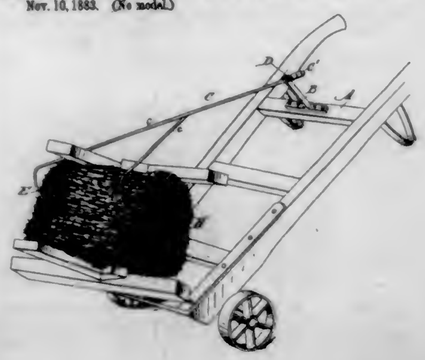
5. The combination, with a flexible ladder and means for operating it, of a stationary chute, a valve adapted to normally close it, and ribs depending from the bottom of the chute and arranged to deflect water away from the valve, substantially as set forth.

294,524. CAPPED WOOD-SCREW. EDWARD STIENKE, Milwaukee, Wis. Filed May 12, 1883. (No model.)



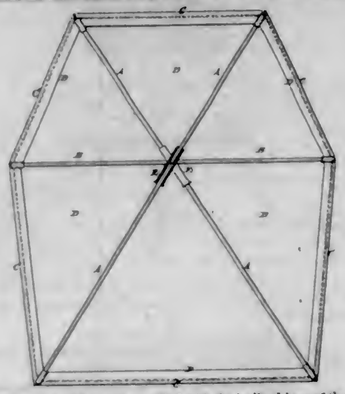
Claim.—A capped wood-screw consisting of the screw A, having slotted head and screw-threaded hole *b*, and the screw-cap C, provided on its upper surface with wrench-holes *c c*, and on its lower surface with a downward-projecting screw, *d*, substantially as and for the purpose specified.

294,525. HAND-TRUCK. CHARLES F. STRIEBEL, Cresco, Iowa. Filed Nov. 10, 1883. (No model.)



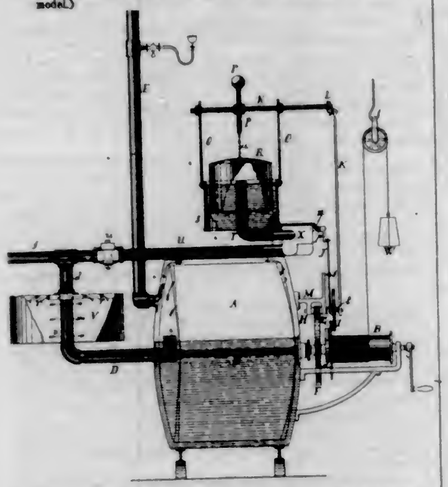
Claim.—The combination, with a truck and the standard B, having an aperture in its upper end, and rigidly secured to the cross-bar A of the truck, of the rod C, provided with the prongs *c*, having hooks E at their ends, and the flattened end C', having apertures *a*, and serving as a handle for operating the rod and the pintle D, substantially as herein shown and described.

294,526. FOLDING KITE. JOB STUMPF, Brooklyn, N. Y., assignor to himself and JAMES SMITH, same place. Filed Nov. 26, 1883. (No model.)



Claim.—A folding kite provided with the inclined bars of the frame made in two parts and connected at their adjacent ends by independent sliding tubes, whereby the kite may be folded without detaching the connecting-cord by simply sliding the tubes along the bars until their joints are uncovered, substantially as set forth.

294,527. CARBURETING-MACHINE. OAKES TERRILL, New York, N. Y., and JAMES P. WILSON, Newark, N. J. Filed Jan. 16, 1883. (No model.)



Claim.—1. In a gas-machine, the combination of a generator, a pump for inducing a current through the generator, and a regulator having a movement under control of the pump, substantially as specified.

2. In a gas-machine, the combination of a generator, a pump connected with the generator, so as to draw gas therefrom, a pipe or conduit, through which the pump draws air from the atmosphere, and a regulator having a movement controlled by the pump and serving to govern the quantity of air which passes through the air pipe or conduit, substantially as specified.

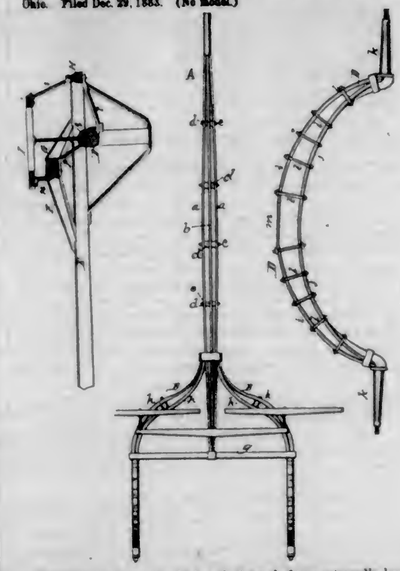
3. In a gas-machine, the combination of a generator, a pump connected with the generator, so that it will draw gas from the generator, a pipe or conduit, through which the pump will draw air from the atmosphere, a regulator serving to govern the quantity of air passing through the air pipe or conduit, a rotary disk deriving motion from the pump, and means for transmitting motion from the disk to the regulator, substantially as specified.

4. In a gas-machine, the combination of a generator, a pump connected with the generator, so that it will draw gas from the generator, a pipe or conduit, through which the pump will draw air from the atmosphere, a regulator serving to govern the quantity of air passing through the air pipe or conduit, and having a reciprocating part or parts, and also having valves, devices connecting the pump with the valves of the regulator, and means whereby the stroke of the reciprocating part or parts of the regulator will be controlled, substantially as specified.

6. In a gas-machine, the combination of a generator, a pump connected with the generator, so that it will draw gas from the generator, a pipe or conduit, through which the pump will draw air from the atmosphere, a regulator serving to govern the quantity of air passing through the air pipe or conduit, and having a reciprocating part or parts, and also having valves, devices connecting the pump with the valves of the regulator, and means whereby the stroke of the reciprocating part or parts of the regulator will be varied in length, substantially as specified.

7. In a gas-machine, the combination of a generator, a meter-wheel pump, A, connected with the generator, so that it will draw gas from the generator, a pipe or conduit, through which the pump will draw air from the atmosphere, a regulator, R S N P, provided with valves and serving to govern the quantity of air passing through the air pipe or conduit, the cam-disk I, the arm L, the rod K, the rock-shaft *n*, for operating the valves of the regulator, the arm *p* on the rock-shaft *n*, and the lever J, substantially as specified.

294,528. TWO-WHEELED VEHICLE. SAMUEL TOOMEY, Canal Dover, Ohio. Filed Dec. 29, 1883. (No model.)



Claim.—1. A trussed vehicle-pole formed of two outwardly-bowed strips and a middle strip, for the purpose herein specified.

2. A trussed vehicle-pole formed of two outward strips and a middle strip made wide at the middle and narrow at the ends, for the purpose specified.

3. In combination with a vehicle-pole, hounds trussed in the part forward of the cross-brace, substantially as and for the purpose herein specified.

4. An arched axle trussed with two arches of different degrees of curvature, substantially as set forth.

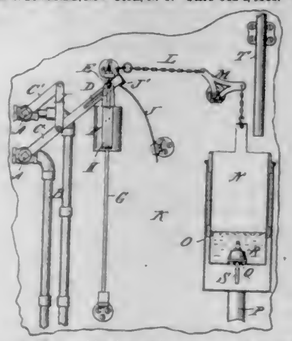
5. The T-shaped brace *n*, in combination with the cross-bar F and seat I, for the purpose specified.

6. The combination of the brace *n*, braces *o o*, cross-bar F, and seat I, substantially as and for the purpose herein specified.

7. The combination of the braces *n p r s*, cross-bar F, axle D, cross-bar H, and seat I, substantially as and for the purpose herein specified.

294,529. AUTOMATIC DEVICE FOR STOPPING STEAM-PUMPS.

THOMAS C. TOWNSEND, New York, N. Y. Filed Oct. 4, 1883. (No model.)



Claim.—1. The combination, with a cock, of a lever secured to the same, a sliding weight held on the free end of the lever, a spring for holding the lever raised, and a vessel connected with the spring and adapted to be weighted by the overflow-water of a tank, substantially as herein shown and described.

2. The combination, with a cock, of the slotted lever C, the sliding weight F, provided with a pin passing into a slot of the lever C, the spring J, the elbow-lever M, the chain L, and a vessel suspended from the lever M, which vessel is adapted to be filled from the overflow-pipe of a water-tank, substantially as herein shown and described.

3. The combination, with a cock, of the slotted lever C, the sliding weight F, the spring J, having a shoulder, J', the chain L, the elbow-lever M, the sliding vessel N, having a valve, R, in its bottom, and of the vessel O, substantially as herein shown and described.

4. The combination, with a cock provided with a lever, a spring for holding it, and a weight connected with the lever, of a vessel, N, connected with the spring, the vessel O, the valve R on the bottom of the vessel N, the valve R having a stem, S, the inlet-pipe P, and the tell-tale pipe T, substantially as herein shown and described.

294,530. ART OF MANUFACTURING STARCH.

WILLIAM W. UNDERHILL, Brooklyn, N. Y. Filed Jan. 2, 1884. (No specimens.)

Claim.—1. The improvement in the art of manufacturing starch, consisting in the introduction into the starch-liquor or starch-water, after its separation by sieving from the bran and coarser parts of the grain, of a sufficient quantity of sulphurous acid to produce an acid reaction, substantially as and for the purpose herein described.

2. The improved method of manufacturing starch, consisting in first bringing the starch-water or starch-liquor which has been sieved from the bran and coarser portions of the soaked and ground grain to a density of 3° to 6°, then adding sufficient sulphurous acid to obtain an acid reaction, and afterward obtaining the subsidence of the starch from the said starch-water or starch-liquor, substantially as herein described.

294,531. ART OF MANUFACTURING STARCH.

WILLIAM W. UNDERHILL, Brooklyn, N. Y. Filed Jan. 9, 1884. (No specimens.)

Claim.—1. The improvement in the art of manufacturing starch, consisting in the antiseptic treatment, with sulphurous acid, as herein described, of the tailings or water from which starch has been obtained by subsidence.

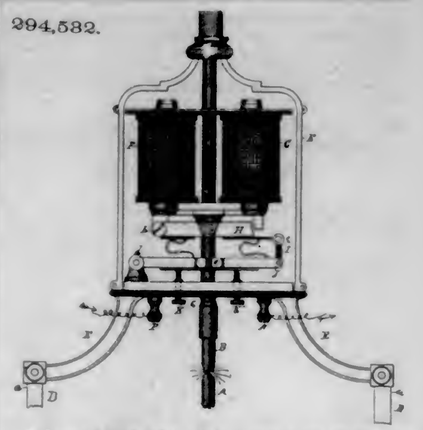
2. The improvement in the art of manufacturing starch, consisting in the addition to starch which has been collected from the starch-water by subsidence of sufficient water to bring it to a proper density, then adding and stirring with it sufficient sulphurous acid to produce an acid reaction, and afterward separating the starch from the water by subsidence, substantially as herein described.

294,532. ELECTRIC-ARC LAMP.

CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Dec. 15, 1881. (No model.)

Claim.—1. In an electric-arc lamp, the combination of an electro-magnet of relatively low resistance located in the main circuit, and having its armature connected to the carbon-rod clutch, and automatic vibrating circuit-breaking devices in circuit with an electro-magnet of high resistance located in a shunt around the arc, adapted to operate said circuit-breaking devices continuously, whereby the current passing through the main or feed-controlling magnets is rendered pulsatory, as set forth.

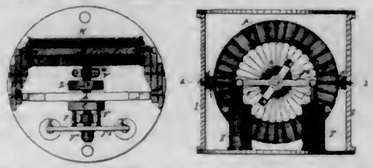
294,532.



2. In an electric-arc lamp, a lifter, J, made of two separate parts joined together at their middle by means of an elastic band or plate, substantially as described.

294,533. ELECTRIC LAMP.

CHARLES J. VAN DEPOELE, Chicago, Ill. Filed May 15, 1883. (No model.)



Claim.—1. In an electric-arc lamp, a circular armature provided with iron extensions from its core, between which extensions the wire is wound and acted upon by a fixed field-magnet having contracted poles, said armature and field-magnets being energized by the main current, the circuits in said armature and field-magnet to be a derivation one from the other, and their respective coils having an equal resistance, in combination with suitable mechanism to produce the feed of the carbons in an electric-arc lamp, as described and set forth.

2. In an electric-arc lamp, and in combination with the carbons thereof, a field-magnet having contracted fixed poles acting upon a revolving circular armature provided with an iron core, and both provided with proper circuits, and means, substantially as described, for altering the point of entering and leaving of the current through the coils of the armature, so as to displace the polarity upon the circumference of the same with regard to the fixed poles of its field-magnet, and thus to produce the feed of the carbons by the action of the revolving armature, substantially as described.

3. In an electric-arc lamp, a fixed field-magnet having contracted poles and a circular armature capable of oscillating or revolving between the same, the armature being provided with a commutator and properly-insulated contact-brushes, said field-magnet and armature reacting upon one another at their polar extremities, in combination with means for automatically changing the position of the brushes upon the commutator above mentioned before the motion of the armature has occurred, in order to displace the polarity of the circular armature with regard to the fixed poles of its field-magnet, and thus cause said armature to revolve or oscillate either to the right or left to produce the feed of the carbons, substantially as set forth.

4. The herein-described method of regulating the feed of carbon in an electric-arc lamp, which consists in raising or lowering the same by the rotation of an annular armature in which the polarity is shifted automatically by reason of the varying resistance of the arc, the upper carbon being attached to a band wound upon the axis of said armature, as set forth.

5. In an electric-arc lamp, a fixed field-magnet provided with fixed contracted poles between which is mounted a circular armature capable of an oscillating or rotary motion, in combination with an oscillating beam carrying properly-insulated brush-holders and brushes bearing upon the commutator of said armature, said beam being connected to and operated by a solenoid located in a derivation between the poles of the lamp, so arranged that whenever the carbons are close together said beam shall first be drawn down toward the said solenoid, and thereby move the brushes to such points on the commutator as will cause the armature to revolve and separate the carbons; and, second, when the proper arc is obtained, the beam to move the brushes to the median magnetic line, so that the armature will be prevented from revolving either way; and, third, on the arc growing longer by oscillating in the opposite direction, to place the brushes upon such points of the commutator that the armature shall be caused to revolve to feed the carbons and restore the normal arc, substantially as described.

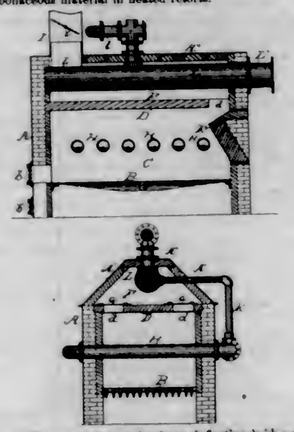
6. In an electric-arc lamp, the combination, with a rotating armature and a pulley, D, attached to the axis thereof, of a copper ribbon, L, attached to said pulley and provided with a carbon-holder, O, from which the carbon hangs down above the lower carbon of said lamp, as described and set forth.

7. In an electric-arc lamp, the feed mechanism of the same, consisting of a field-magnet, M, and circular armature A and connections, substantially as described, whereby proper currents circulate therethrough when the same are in operation, in combination with a pivoted balance or beam, F², brush-holders and brushes F and F', all operated by an electro-magnet, E', in a derivation between the poles of the lamp, and an electro-magnet, E, in the main circuit, or an equivalent therefor, counteracting E', substantially as described.

294,534. APPARATUS FOR MANUFACTURING GAS.

BURHANS VAN STEENBERGH, Goshen, N. Y. Filed Oct. 23, 1883. (No model.)

Brief.—Gas is made by the decomposition of steam and oil in contact with carbonaceous material in heated retorts.



Claim.—1. The retort-furnace having a deflecting-bridge projecting from its rear wall, in combination with the connected series of retorts, arranged as and for the purpose described.

2. The retort-furnace having the deflecting-bridge projecting from an end wall, and also having a horizontal partition provided with openings at one end, dividing the furnace into two chambers, in combination with the retorts, arranged as described.

3. The horizontal series of retorts extending transversely across the furnace, and connected outside the walls by return-bends, and having supply-pipes for steam and oil connected with one or more of the retorts, in combination with the fixing-retort, a connecting-pipe, and the horizontal partition, having passages and separating the first series of retorts from the fixing-retort, for the purpose described.

4. The furnace A, constructed with deflecting-bridge E, partition D, having openings *d* at one end, the chimney I at the opposite end of the furnace, and with slanting crown-plates A', in combination with the connected generating-retorts H and the fixing-retort L, as and for the purpose described.

294,535. SPEAKING-TUBE ANNUNCIATOR.

JOSEPH WALTER, New York, N. Y. Filed Jan. 22, 1884. (No model.)

Claim.—1. In an annunciator for speaking-tubes, the combination of a main tube having an enlargement at one end, a valve pivoted to the enlarged end, said valve being smaller than its enlarged end, a striker, C, attached to the outer end of the valve-pivot, and a gong secured to the main tube A, substantially as set forth.

2. The combination of a tube, A, having a mouth-piece, A', at one end and an enlargement, A², at the other end, a valve, B, pivoted to the enlarged end, an exterior striker, C, attached to the pivot of the valve, a gong, D, attached to the tube A, and means whereby the striker C is stopped in either direction, substantially as specified.

3. The combination, with a main tube, A, having a mouth-piece, A', at one end and an enlargement, A², at its opposite end, a valve, B, pivoted to the enlarged end, a striker, C, attached to the pivot of the valve, a gong, D, secured to the tube A, a pivoted indicator, E, operated by the striker, and a stop or rest, *e'*, for the indicator, substantially as set forth.

294,535.



294,536. COMPOUND ELECTRIC CABLE.

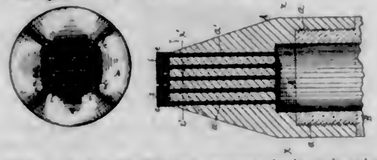
RICHARD S. WARING, Pittsburg, Pa. Filed July 20, 1883. (No model.)

Claim.—1. A compound electric cable having an integral homogeneous body or covering of lead, with insulated wires inclosed in separate passages therethrough, such wires being arranged in two rows, the adjacent wires of the two rows being in closer proximity than the adjacent wires of either row, substantially as set forth.

2. A compound electric cable having an integral homogeneous body of metal covering, with insulated wires inclosed in separate passages therethrough, such wires being arranged in two rows, the adjacent wires of the two rows being in closer proximity than the adjacent wires in either row, and the wires of one row alternating in order of position with those of the other row, substantially as set forth.

294,537. MANDREL FOR CABLE-PRESSES.

RICHARD S. WARING, Pittsburg, Pa. Filed July 20, 1883. (No model.)



Claim.—1. A mandrel, A, for a cable-press, having at its point a series of nipples, *e e'*, arranged in one or more pairs of rows, the nipples in one row of such pair or pairs alternating in order of succession with the nipples in the other or companion row of the pair, substantially as set forth.

2. A mandrel, A, having its nipples *e e'* arranged in one or more pairs of rows, the successive nipples in each row being separated a greater distance than adjacent nipples in a pair taken across the rows, substantially as set forth.

3. A mandrel, A, for a cable-press, having thereon tubular nipples *e e'*, arranged in pairs of rows, the two rows of a pair being in closer proximity than the adjacent rows of successive pairs, substantially as set forth.

4. A mandrel for a cable-press, having nipples thereon arranged in pairs of rows, the nipples in the two rows composing a pair alternating in order of succession, and the nipples in adjacent rows of successive pairs corresponding to each other in order of position, substantially as set forth.

5. A mandrel for a cable-press, having nipples *e e'* thereon, such nipples being arranged in pairs of rows, with the nipples in the two rows of a pair alternating in order of succession, and the two rows of a pair being in closer proximity than the adjacent rows of successive pairs, substantially as set forth.

6. A mandrel, A, for a cable-press, having groups of tubular nipples thereon, with grooves or channels *c* crossing the mandrel between groups, such grooves or channels being of greater depth than the nipples, substantially as set forth.

7. A mandrel, A, having nipples *e e'* thereon, arranged in pairs of rows, with channels *c* of greater depth than the nipples formed in the mandrel-body between pairs of rows, substantially as set forth.

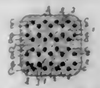
8. A mandrel, A, having separate wire-passages *d* therethrough, such passages emerging at the point in two or more distinct groups, with grooves or channels *c* formed in the body of the mandrel across the point between groups of wire-passages, substantially as set forth.

294,538. COMPOUND ELECTRIC CABLE.

RICHARD S. WARING, Pittsburg, Pa. Filed July 20, 1883. (No model.)

Claim.—1. An electric cable having a body or protective covering of soft ductile metal or equivalent alloy with tubular passages therethrough inclosing insulated conducting-wires, such wires being arranged in pairs of rows, the two rows composing a pair being in closer proximity than successive pairs, substantially as set forth.

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2. An electric cable having a body of soft ductile metal or alloy with passages therethrough inclosing insulated conducting-wires, such wires being arranged in pairs of rows, the two rows composing a pair being in closer proximity than successive pairs, and the adjacent wires taken across the two rows of a pair being in closer proximity than adjacent wires taken in the same row, substantially as set forth.

3. An electric cable having a body of soft ductile metal or alloy with passages therethrough inclosing insulated conducting-wires, such wires being arranged in pairs of rows, the two rows composing a pair being in closer proximity than successive pairs and the wires in one row of each pair alternating in order of position with those of the other row of the pair, substantially as set forth.

4. An electric cable having a body, A, of soft ductile metal or alloy, with passages *a* therethrough inclosing insulated conducting-wires *c c*, such wires being arranged in pairs of parallel rows, the two rows of a pair being in closer proximity than the adjacent rows of successive pairs, the wires *c* in one row of a pair alternating in order of positions with the wires *c* of the companion row of the pair, and the wires in the adjacent rows of successive pairs having the same order of succession and occurrence, substantially as set forth.

5. An electric cable having a body of soft ductile metal or alloy, with passages therethrough inclosing insulated conducting-wires, such wires being arranged in pairs of rows, the two rows of a pair being in closer proximity than successive pairs, the individual wires in the two rows of a pair alternating in order of succession, and the adjacent wires taken in different rows of a pair being in closer proximity than adjacent wires taken in the same row, substantially as set forth.

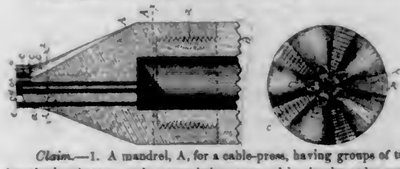
294,539. MANDREL FOR CABLE-PRESSES. RICHARD S. WARING, Pittsburg, Pa. Filed Aug. 9, 1883. (No model.)



Claim.—1. A mandrel, C, for a cable-press, having a tapered body with separate wire-passages therethrough, and longitudinal grooves *c'*, extending between the lines of wire-passages to the point, and having shallow cuts or channels *e* in the end, connecting the grooves between the openings of the wire-passages, substantially as set forth.

2. A tapering mandrel, C, for a cable-press, having three wire-passages therethrough, emerging at the point in close proximity, and in positions corresponding to the angles of a triangle, with longitudinal grooves *c'* extending along the exterior surface of the mandrel between wire-passages to the point, and cuts or channels *e*, crossing the point between the passage-openings, substantially as set forth.

294,540. MANDREL FOR CABLE-PRESSES. RICHARD S. WARING, Pittsburg, Pa. Filed Aug. 9, 1883. (No model.)



Claim.—1. A mandrel, A, for a cable-press, having groups of tubular nipples thereon, such groups being arranged in circular order around a central group, and having grooves *c* in its side, such grooves extending longitudinally between successive groups of nipples, substantially as set forth.

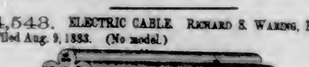
2. A mandrel, A, for a cable-press, having wire-passages therethrough, terminating at the point in separate groups of nipples, such groups being arranged in circular order around a central group, the outer circle of groups being divided one from another by grooves cut radially between them, such grooves being extended in depth at the point of the mandrel to or within its central group of nipples, substantially as set forth.

3. A mandrel, A, having wire-passages therethrough, such passages terminating at the point in separate groups arranged in circular order around some central group, with grooves *c*, separating the groups of the outer circle, smaller grooves *c'* between the individual passages of each group, and channels *c²*, connecting the grooves *c'* across the ends between passages, substantially as set forth.

4. A mandrel for a cable-press, having passages therethrough, terminating at the point in separate tubular nipples, such nipples being arranged in groups of three around some central group, with surface-grooves on the mandrel extending to its point between the outer groups of nipples, substantially as set forth.

5. A mandrel for a cable-press, having wire-passages therethrough, terminating at the point in separate groups of nipples, such groups being arranged in circular order around and in the radial lines of the nipples of a central group, with surface-grooves on the mandrel, dividing the several outer groups one from another, and extending in depth within the circle of nipples of the inner group, substantially as set forth.

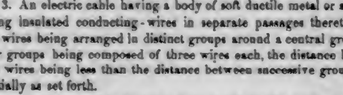
294,541. ELECTRIC CABLE. RICHARD S. WARING, Pittsburg, Pa. Filed Aug. 9, 1883. (No model.)



Claim.—1. An electric cable having a body of lead having passages therethrough at intervals around and in close proximity to its solid center, the thickness of metal wall between wires being less than the thickness of covering surrounding such wires, substantially as set forth.

2. An electric cable having a body, *a*, of lead, such body inclosing three separate insulated conducting-wires, *c*, arranged at equal intervals around and in close proximity to the solid core a^3 of the body, the thickness of metal walls between wires being less than the thickness of exterior metal covering, substantially as set forth.

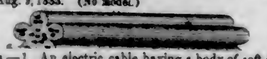
294,542. MANDREL FOR CABLE-PRESSES. RICHARD S. WARING, Pittsburg, Pa. Filed Aug. 9, 1883. (No model.)



Claim.—1. A mandrel for a cable-press, having separate passages therethrough for insulated conducting and for strengthening wires, such passages terminating at the point in tubular nipples, the nipples for conducting-wires being grouped at the center, and the nipples for strengthening-wires surrounding such central group, with grooves in the surface of the mandrel extending to the point between the nipples for strengthening-wires, substantially as set forth.

2. The mandrel A, having wire-passages therethrough, terminating at the point in separate nipples, three of such nipples *e* being near the center and surrounded by double the number of nipples *e'*, arranged in circular order, with grooves *c* in the surface of the mandrel, extending in depth between the outer nipples, *e'*, to the inner group of nipples, *e*, substantially as and for the purposes set forth.

294,543. ELECTRIC CABLE. RICHARD S. WARING, Pittsburg, Pa. Filed Aug. 9, 1883. (No model.)



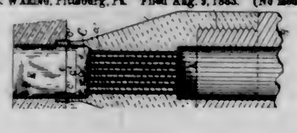
Claim.—1. An electric cable having a body of soft ductile metal or metallic alloy inclosing insulated conducting-wires, each in its appropriate passage through the body, such wires being arranged in distinct groups at intervals around a central group, the distance between adjacent wires of a group being less than the distance between the successive groups composing such outer circle, substantially as set forth.

2. An electric cable having a body of soft ductile metal or metallic alloy inclosing insulated conducting-wires, each in its appropriate passage through the body, such wires being arranged in distinct groups in circular order around a central group, the central group being composed of wires arranged in circular order around a common center, the wires of such circle occurring in the radial lines of the surrounding groups, substantially as set forth.

3. An electric cable having a body of soft ductile metal or alloy inclosing insulated conducting-wires in separate passages therethrough, such wires being arranged in distinct groups around a central group, the outer groups being composed of three wires each, the distance between such wires being less than the distance between successive groups, substantially as set forth.

4. An electric cable having a body of soft ductile metal or alloy inclosing insulated conducting-wires in separate passages therethrough, such wires being arranged in distinct groups arranged in circular order around a central group, with grooves made longitudinally in the exterior surface of the body, between the groups composing the outer circle, substantially as set forth.

294,544. MANDREL AND DIE FOR CABLE-PRESSES. RICHARD S. WARING, Pittsburg, Pa. Filed Aug. 9, 1883. (No model.)



Claim.—1. A mandrel for a cable-press, having separate wire-passages therethrough, and a recess therein at the point, into which the passages open, substantially as set forth.

2. A mandrel for a cable-press, having wire-passages therethrough, with a rim extension at the point surrounding the ends of the passages, and openings in the sides of the rim to admit lead to the rim-inclosure, substantially as set forth.

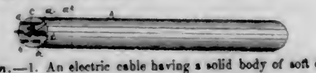
3. The mandrel A, having separate passages *a'* therethrough, opening into a recess, C, in the point, such recess having openings c^2 in its side walls for admitting lead-supply to the recess, substantially as set forth.

4. The mandrel A, having separate passages *a'* therethrough, opening into a recess, C, at the point, such passages being arranged in one or more rows, substantially as set forth.

5. A mandrel for a cable-press, having a recess at the point, into which the wire-passages open, in combination with a die co-operative with the walls of the recess in shaping the exterior of the cable, substantially as set forth.

6. The mandrel A, having recess C and rim extensions *c'*, in combination with die E, having recesses *e'* therein, adapted to receive the extensions *c'*, substantially as and for the purposes set forth.

294,545. ELECTRIC CABLE. RICHARD S. WARING, Pittsburg, Pa. Filed Aug. 9, 1883. (No model.)



Claim.—1. An electric cable having a solid body of soft ductile metal or metallic alloy, inclosing insulated conducting-wires, each in its appropriate passage through the body, such wires being arranged in close proximity around the solid core or center of the body, with a series of strengthening-wires inclosed within the soft-metal body, such strengthening-wires being arranged in circular order around the conducting-wires, substantially as set forth.

2. An electric cable having a solid body of soft ductile metal or metallic alloy, inclosing three insulated conducting-wires, each in its appropriate passage through the body, such wires being arranged in close proximity at intervals around the solid core or center of the body, with a series of strengthening-wires inclosed within the soft-metal body, such strengthening-wires being arranged at intervals around the conducting-wires, substantially as set forth.

3. An electric cable having a body, A, of soft ductile metal or alloy, inclosing three insulated conducting-wires, *c*, each in its appropriate passage through the body, such wires being placed in triangular relationship and in close proximity around the solid metal center a^3, with a series of strengthening-wires, *e*, inclosed in the body of soft metal, such strengthening-wires being double the number of conducting-wires *c*, and arranged around the latter wires on either side of radial lines produced through the conducting wires, substantially as and for the purposes set forth.

294,546. MAKING JOINT-CONNECTIONS IN ELECTRIC CABLES. RICHARD S. WARING, Pittsburg, Pa. Filed Aug. 9, 1883. (No model.)

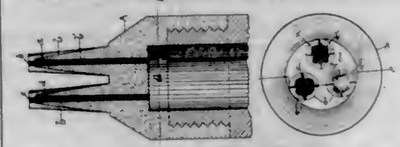


Claim.—1. The method herein described of making branch or loop connections in lead-covered electric cables, consisting in removing the metal covering of and exposing the wire at the side of the cable-body, severing such wire and connecting its ends by metallic contact with the exposed ends of the wires of a branching cable, re-covering the exposed wire surfaces with insulating material, and finally inclosing the wire connection thus made in a plumber's wiped joint of solder, making solid union thereby between the side of the main cable and the branching cable, substantially as set forth.

2. A cable, A, having a soft-metal body inclosing insulated conducting-wires therein, having one or more such wires severed and exposed at the side of the cable, in combination with branching cable C, the same being metal-covered, and having its wires connected electrically with the exposed ends of the severed wire or wires of the main cable, insulating covering *i*, and a plumber's wipe, E, of solder, inclosing the connected wire ends and making solid connection between the metal covering of the branching cable and the side of the main cable, substantially as set forth.

3. A cable, A, having a soft-metal body inclosing insulated conducting-wires therein, with one or more such wires exposed and severed at the side of the cable, in combination with metal-covered cable C, having its wire ends connected with the exposed wire ends of cable A, an insulating covering, *i*, and a metal covering, c^2, for each wire connection, and a plumber's wipe, E, of solder, inclosing such wire connections and making a solid union between the metal covering of the branching cable and the side of the main cable, substantially as set forth.

294,547. MANDREL FOR CABLE-PRESSES. RICHARD S. WARING, Pittsburg, Pa. Filed Sept. 27, 1883. (No model.)



Claim.—1. A mandrel, A, for a cable-press, having a teat or projection on its end, with separate wire-passages through both the mandrel and teat, the outside wire-passages extending beyond the central wire-passage, the teat having the longitudinal grooves *d* extending between the outside wire-passages to the point, and having the channels *e* connecting the grooves with the central recess, *f*, substantially as set forth.

2. A mandrel, A, for a cable-press, having a tapered body and a teat or projection on its end, with five separate wire-passages through both the tapered body and teat, and arranged in positions corresponding to the intersection and ends of the diagonals of a square, the teat having grooves *d* extending between the outside wire-passage to the point, the channels *e* connecting the grooves with the recess *f*, and the central recess, *f*, in its end, substantially as set forth.

294,548. MANDREL FOR CABLE-PRESSES. RICHARD S. WARING, Pittsburg, Pa. Filed Sept. 27, 1883. (No model.)



Claim.—1. The core A for a lead-press, having three or more teats, *a*, with passages therethrough, in combination with a die having an equal number of openings, substantially as set forth.

2. The mandrel A for a lead-press, having three or more teats, a^3, with a passage through each teat, and having the incline guiding-surface a^4, substantially as set forth.

3. The mandrel A for a lead-press, having the inclined guiding-surface a^4, and provided with three or more teats, a^3, each teat having a wire-passage, a^2, and an incline guiding-surface, a^4, substantially as set forth.

4. The mandrel A for a lead-press, having three or more teats, a^3, each teat having a wire-passage therethrough and an inclined guiding-surface, a^4, in combination with a die, B, having a like number of openings, *b*, provided with flaring sides, substantially as set forth.

294,549. REPAIRING DEFECTS IN THE CONDUCTORS OF LEAD CABLES. RICHARD S. WARING, Pittsburg, Pa. Filed Oct. 24, 1883. (No model.)



Claim.—1. The method herein described, which consists in uncovering one of the conductors of a lead-covered electric cable having two or more conductors inclosed in separate passages in the lead covering, severing the conductor, electrically uniting the severed ends, covering said union with insulating material, and re-covering the union with lead, substantially as set forth.

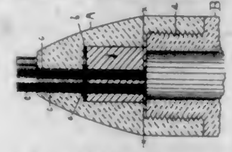
2. The method herein described of repairing the conductors of a lead-covered electric cable having two or more conductors inclosed in separate passages in the lead covering, which consists in uncovering one of said conductors, removing the defective part of said conductor, electrically uniting the severed ends of said conductor, covering said union with insulating material, and re-covering the union and exposed parts of the conductor with lead, substantially as set forth.

3. The method herein described of repairing the conductors of a lead-covered electric cable having two or more conductors inclosed in separate passages in the lead covering, which consists in removing the lead covering from around one of said conductors, removing the defective part of the conductor, electrically uniting the severed ends by any suitable coupling, covering said coupling and exposed parts of the conductor with insulating material, re-covering the insulated coupling and conductor with a piece of lead, and soldering said piece of lead to the body of the cable, substantially as set forth.

4. In a lead-covered electric cable having two or more conductors inclosed in separate passages in the lead covering, one of whose conductors is so severed that the several ends will not meet, the combina-

tion of the spiral coupling *c*, in which the severed ends of the conductor are soldered, the insulating-covering *d*, and the flap *e*, securely soldered over the coupling, substantially as set forth.

294,550. MANDREL FOR CABLE-PRESSES. RICHARD S. WARING, Pittsburg, Pa. Filed Oct. 24, 1883. (No model.)



Claim.—1. In a mandrel for lead-presses, the combination of the body A, having longitudinal openings therethrough, the removable nipples *e*, forming the passages and the protruding nipples for the wires, and mechanisms described for holding the nipples in place, substantially as set forth.

2. In a mandrel for lead-presses, the combination of the body A, having longitudinal openings therethrough, the removable nipples *e*, provided with a flange at one end thereof, the perforated plug *f*, and the core-bar, substantially as set forth.

3. In a mandrel for lead-presses, the combination of the body A, having openings therethrough, the removable nipples *e*, forming passages for the wires, and having interlocking flanges, as described, the perforated plug *f*, and the core-bar, substantially as set forth.

4. In a mandrel for lead-presses, the combination of the body A, having a series of openings therethrough, arranged as described, the removable nipples *e*, having flanges at one end, the flange of the central nipple having recesses formed in its outer side at intervals around its circumference, the flangee of the outer nipples having a recess formed in their inner sides at one point of their circumference, whereby the central nipple is supported by the outer nipples, and mechanism, as described, for holding the outer nipples in place, substantially as set forth.

5. In a mandrel for lead-presses, the combination of the body A, having a series of openings arranged around and inclined toward a central opening, the removable nipples *e*, having flanges *e'*, the perforated plug *f*, and the core-bar, substantially as shown and described.

294,551. BALING-PRESS. JAMES WATSON, London, England. Filed Jan. 3, 1884. (No model.) Patented in England Apr. 28, 1883, No. 2,155.



Claim.—1. The doors *e e*, hinged to a fixed piece, *d*, in combination with a frame, *h*, fixed at one end to a center piece, *f*, and with a lashing-plate, *k*, and easing-door *l*, said pieces *h*, *f*, *k*, and *l* being mounted to revolve, so as to be brought into coincidence at one time with a preparatory ram or rams, and at another time with a finishing ram or rams, substantially as and for the purpose set forth.

2. The combination, with the finishing ram or rams *a a*, of the two preparatory rams *b b'*, two sets of preparatory boxes, *c c c' c'*, two pairs of main doors, *e e d' d'*, and two sets of revolving or swinging devices, *f h k l* and *f' h' k' l'*, for swinging the partly-finished bales from the preparatory rams to the finishing ram or rams, substantially as set forth.

294,552. ELECTRIC CLOCK. GEORGE R. WEBB, Newark, N. J., assignor of one-half to Plumb & Marcus, same place. Filed Sept. 7, 1883. (No model.)

Brief.—Swing of the pendulum makes and breaks circuit. Train driven by impulses from an arm attached to the armature-lever.

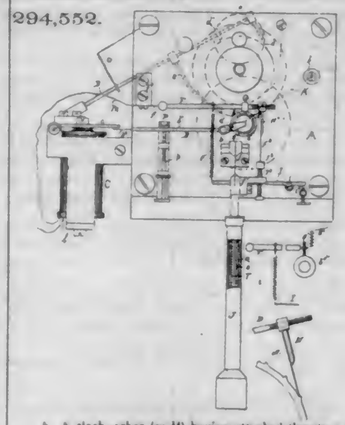
Claim.—1. In an electric clock, the combination, with an escape-wheel and an actuating-arm of a clock, of a spring click or pawl secured upon said arm, adapted to engage with said wheel, and an auxiliary spring also secured to said arm and bearing against said spring-click to prevent the vibration thereof, substantially as set forth.

2. In combination, a spring-pawl, *d*, an auxiliary spring, H, a clock-wheel, and a stop, *d'*, all as set forth.

3. In a clock, the combination of a spring-pawl, *d*, a toothed wheel, E, a stop, *d'*, and a safety-stop (as *e'*) adapted to engage with the teeth of the wheel when the spring-pawl is disengaged from said wheel, all substantially as set forth.

4. In combination, a spring-pawl, *d*, a toothed wheel, E, a stop, *d'*, a safety-stop, *e'*, and means whereby said stop *e'* and spring-pawl *d* may be operated simultaneously, all substantially as set forth.

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5. A clock-arbor (as b^4) having attached thereto a contact-wheel, (as b^5,) both of which have a rotary motion, and at the same time at intervals an upward and downward motion, all substantially as and for the purposes set forth.

6. In an electrical clock, the combination of a lever, (as B,) contact-wheel, (as b^5,) spring-piece b^2, and means for regulating the extent of vibration of said lever, all as set forth.

7. In combination, an impulse-arm, F, adapted to carry a contact-point, a spring, f^3, auxiliary spring H, a pendulum, J, provided with an arm, *j'*, and means for depressing said impulse-arm, all substantially as and for the purposes set forth.

8. The combination, with the pendulum of a clock, of a spring, *i'*, impulse-arm F, accommodating-spring f^3, and means for regulating the tension of the spring *i'*, (as I,) all as set forth.

9. In combination, the magnets C, armature *c*, actuating-arm D, means for raising said arm, (as the spring G,) a spring-pawl, *d*, secured to said actuating-arm, and adapted to engage with a toothed wheel, an auxiliary spring, H, and a stop, *d'*, both of which are also secured to said actuating-arm, all as set forth.

10. A clock-arbor having attached thereto a contact-wheel provided with a continuous peripheral surface of conducting material.

11. The combination, with a clock-arbor, b^4, having secured thereto a contact-point, of mechanism whereby said arbor and contact-point may be raised and lowered, all as set forth.

12. In an electrical clock, the combination of co-operating contact-wheels, and mechanism whereby both of said wheels may be rotated automatically and independently, all substantially as and for the purposes set forth.

13. In combination, a clock-arbor, a contact-point, a spring, K, and means for raising said contact-point and arbor, all substantially as and for the purposes set forth.

14. In combination, a clock-arbor, a contact-point, a spring, (as K,) and a lever, (as B,) a magnet, C, armature *c*, and means for regulating the extent of the movement of said lever, all substantially as and for the purposes set forth.

15. In combination, a lever, B, contact-wheel b^5, arbor b^4, spring K, impulse-arm F, contact-point *g*, and means for lowering said arm, all substantially as set forth.

16. In a clock, the combination of a pawl, a toothed wheel, E, a stop, *d'*, and a safety-stop (as *e'*) adapted to engage with the teeth of said wheel when the pawl and stop *d'* are disengaged therefrom, substantially as set forth.

17. In combination, an impulse-arm, automatically-rotating contact-wheels, one of said wheels being attached to a clock-arbor, the other to said impulse-arm, and a pendulum, substantially as set forth.

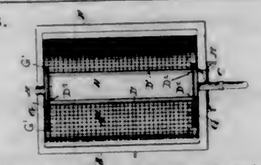
18. In combination, a pendulum, an automatically-rotating contact-wheel, an impulse-arm, and a contact-point attached to said impulse-arm, substantially as described.

294,553. ROTARY COAL-SIFTER. JOHN WEIKERT, Indianapolis, Ind. Filed Jan. 22, 1883. (No model.)

Claim.—1. The combination of a casing, a rotary sieve provided with end journals, a longitudinal opening, and arc-shaped parallel guide-rods secured to the outer periphery thereof, and a sliding door provided with parallel side bars having end perforations, substantially as described, and for the purpose set forth.

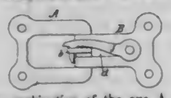
2. The casing and a rotary sieve provided with end journals, a longitudinal opening, arc-shaped guide-rods, and a door circumferentially

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movable on said rods, as specified, in combination with crank C, and means whereby said crank may be secured, substantially as described, and for the purpose set forth.

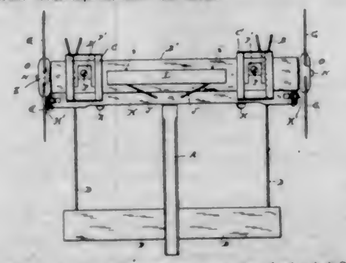
294,554. HOOK-AND-EYE FASTENING. FRANCIS G. WHELAN, Philadelphia, Pa. Filed Oct. 15, 1883. (No model.)



Claim.—1. The combination of the eye A of the fastening, the hook B, adapted to engage with the end bar, *a*, of the eye, and having a longitudinal opening, *d*, and a retaining device, substantially as described, part of which is carried by the bar *a*, and is adapted to the recess *d* of the hook, as set forth.

2. The combination of the eye A, having a loop *b*, with the hook B, having a central recess, *d*, and pivoted hook *f*, as set forth.

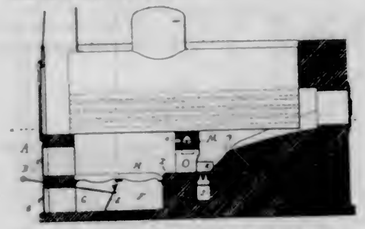
294,555. CHECK-ROW CORN-PLANTER. EMORY B. WHITE, Clarion, Iowa. Filed Sept. 25, 1883. (No model.)



Claim.—1. In a check-row corn-planter, the wheel or hub O, having sharp-pointed metal spokes G, provided with balls F and cams E, in combination with reciprocating bar H, having friction-rollers H' and rods J, adapted to operate sliding bar L, as described, and for the purposes set forth.

2. In a check-row corn-planter, the shaft N, having wheels O, with sharp-pointed metal spokes G, provided with cam E, in combination with reciprocating bar H, having friction-rollers H', rods J, bar L, guide-pins *i*, hoppers C, and feed-wheel P', having adjusting-screws P and holes P'', as described, and for the purposes set forth.

294,556. FURNACE. HENRY C. WILLIAMSON, Michigan City, Ind. Filed Oct. 30, 1883. (No model.)



Claim.—1. The damper E, situated in ash-pit F, and operated as described, in combination with arch M, provided with passage *a* and openings *c*, and communicating with the outer air, as and for the purpose set forth.

2. The combination of damper E, arch M, provided with passage *a* and openings *c*, and communicating with the outer air, and auxiliary ash-pit J and grate K, as and for the purpose set forth.

3. The combination of damper E, arch M, constructed as described, auxiliary ash-pit J and grate K, and inclined floor P, as and for the purpose set forth.

294,557. MANUFACTURE OF MATERIAL FOR ELECTRIC INSULATION. WILLIAM VIRGO WILSON, Jubilee Street, Mile End, County of Middlesex, England. Filed Jan. 4, 1884. (No specimens.) Patented in England July 11, 1883, No. 3,413.

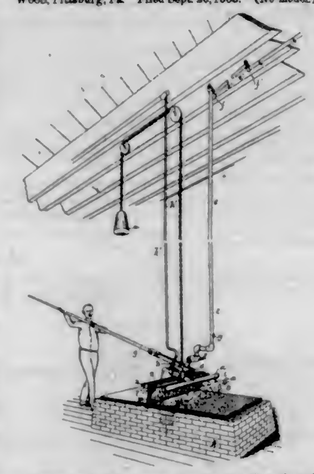
Claim.—The consolidation of wood or vegetable tar by the use of nitro-cellulose softened as hereinbefore set forth, and its application to the purpose of insulating electric conducting-wires.

294,558. KNIFE. CHARLES WINGFIELD, Sheffield, County of York, England, assignor to Joseph Rodgers & Sons, (Limited,) same place. Filed Jan. 5, 1884. (No model.)



Claim.—The combination, with a knife-blade or analogous article provided with a flat tang, of externally-roughened bolster-pieces adapted to fit close to the sides of the tang and against the heel of the knife-blade or analogous article, and a handle made of plastic material molded or otherwise formed around the tang and bolster-pieces, substantially as specified.

294,559. APPARATUS FOR TREATING SHEET-IRON. W. DEWEES WOOD, Pittsburg, Pa. Filed Sept. 26, 1883. (No model.)



Claim.—1. In an apparatus for treating sheet-iron, the combination of a steam supply and distributing mechanism and a cooling or chilling mechanism, arranged for operation in immediate succession along the surface of the sheet under treatment, substantially as set forth.

2. An apparatus for applying superheated steam to sheet-iron surfaces, having a transverse pipe, *a*, provided with suitable jet-openings, for the uniform distribution of the steam over the surface of the sheet, and a valve, *d*, for turning on or shutting off the steam-supply, in combination with means for opening and closing the valve at will and reciprocating the transverse pipe over the surface of the sheet, substantially as set forth.

3. In an apparatus for treating sheet-iron, the combination of the steam supply and distributing mechanism, a water supply and distributing mechanism, and a mechanism for sweeping off the sheets by frictional contact therewith, arranged for operation along the surface of the sheet under treatment, substantially as set forth.

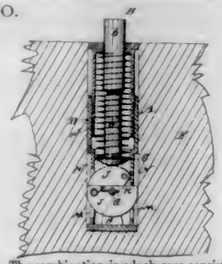
4. In an apparatus for treating sheet-iron, a steam supply and distributing mechanism and a water supply and distributing mechanism connected with the same operating-handle, *g*, in combination with a flexible supply to each, substantially as set forth.

5. In an apparatus for treating sheet-iron, the combination of the transverse pipe *a*, having perforations or nozzles, the pipe *e*, the perforated pipe *o*, and the hose *h'*, substantially as set forth.

6. In an apparatus for treating sheet-iron, the combination of the transverse pipe *a*, having perforations or nozzles, the hinged and ported coupling *d*, the pipe *e*, the perforated pipe *o*, the flexible pipe *h'*, and the handle *g*, substantially as set forth.

294,560. LOCK. RUDOLF E. WOODRICH, New York, and CHARLES LANGBEIN, Brooklyn, N. Y. Filed Apr. 25, 1883. (Model.)

294,560.



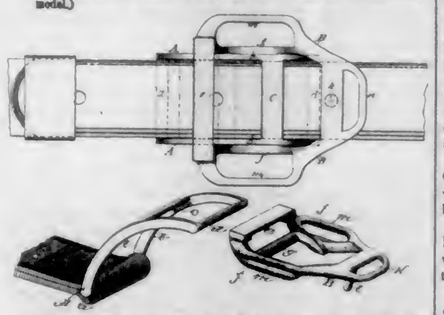
Claim.—1. The combination, in a lock-case consisting of two parts—a main case and an extension cylindrical in the direction of the bolt—of the main case having a hole through it crosswise to receive the key, and provided with a screw-thread upon or within its outer end, and the said extension having a screw-thread adapted to engage the said screw-thread of the main case, substantially as described, whereby the whole lock may be inserted into a hole bored into the edge of a door, and the case may be extended or contracted between the key-hole and the edge of the door to adjust a lock-case to different situations.

2. The combination, with a lock-case longitudinally extensible between its key-hole and its outer end, of a bolt consisting of two cylindrical parts provided with telescoping screw-threads, whereby the length of the bolt may be adjusted to the length of the lock-case, as described.

3. In a lock, the combination of the case A, the bolt B, the standard H on the bottom of the casing, the pintle G in the standard, and the cam-plates J J, mounted independently and loosely on the said pintle, with the screw K, adapted to unite the two cam-plates, as described, whereby the lock is adapted to be operated at one side independent of the other or to be operated from both sides, as set forth.

4. The combination, with a tubular lock-case, of a bolt having a head at its lower end, a spring forcing the bolt downward, and independently-mounted cam-plates adapted to be screwed together, so as to be both worked from either side, or disconnected, so that each may be locked and unlocked only from its own side, as described.

294,561. HARNESS-BUCKLE. WILLIS A. ALLEN, Palmyra, Wis., assignor of one-half to Nelson Willis, same place. Filed Oct. 22, 1883. (No model.)



Claim.—1. A harness-buckle consisting of a curved loop-link having cross-bars, the lower of which is adapted to receive and hinge a tug or strap, in combination with a tongue-bearing frame, with rear cross-bar and downwardly-curving sides connected by another cross-bar, and thence extending forward with an upward curve, and then again connected by a front cross-bar on substantially the same plane as the rear cross-bar, and above the plane of the intermediate cross-bar, substantially as set forth.

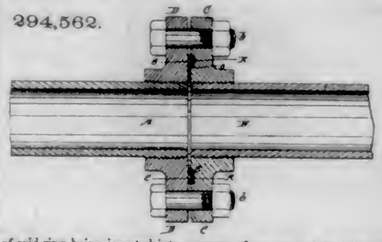
2. In a harness-buckle, the strap-link A, having the curved sides *b b*, the hinging-bar *a*, and pressure-bars *c* and *d*, in combination with the tongue-bearing frame B, having notched sides *f f*, cross-bars *e* and *g*, forming loop A, and cross-bar *k*, with lug *l*, substantially as shown and described, and for the purpose set forth.

294,562. PIPE AND OTHER JOINTS. JAMES A. BALDWIN, Jr., East Jaffrey, N. H. Filed Sept. 14, 1883. (No model.)

Claim.—1. The packing-ring having a plain surface on one side, and an annular groove in its opposite side, substantially as and for the purpose set forth.

2. The packing consisting of the ring with a plain surface on one side, and an annular groove in its opposite side, the plain-surfaced side

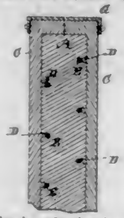
294,562.



of said ring being inserted into a groove of one part of the joint, and the projecting grooved side of said ring bearing against the face of the opposite part of said joint, substantially as and for the purpose set forth.

3. In pipe-joints, the combination of the internally-screw-threaded flanges C D, the bolts *b*, uniting said flanges, the externally-screw-threaded pipes A B, and the copper ring R, having in its projecting face an annular groove, *c*, and partially countersunk within the face of the one of said flanges, substantially as specified.

294,563. INSULATOR FOR ELECTRIC WIRES. WM. W. BEACH, New York, N. Y. Filed June 27, 1883. (No model.)



Claim.—1. An insulator for electric wires, consisting of an insulating-block having grooves to receive the wires and a tongued piece for holding the wires in the grooves, substantially as herein shown and described.

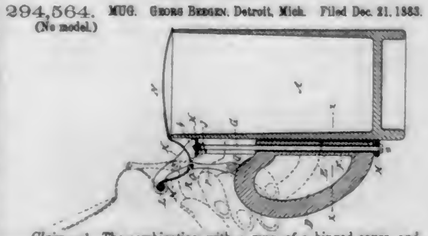
2. An insulator for electric wires, consisting of an insulating-block provided with a series of grooves for receiving the wires, and of a frame adapted to surround the block, and provided with a series of tongues for partly filling the grooves, substantially as herein shown and described.

3. In an insulator for electric wires, the combination, with a block having transverse grooves for receiving the wires, an outer frame formed of two strips provided with tongues fitting in the said grooves, and of devices for holding the ends of the strips together and on the block, substantially as herein shown and described.

4. In an insulator for electric wires, the combination, with the block O, having tongues P, of the transversely-grooved glass strips L, and of wooden strips J, on which the glass strips L are held, substantially as herein shown and described.

5. In an insulator, the combination, with the block O, having tongues P, of the hollow glass strips L, having dovetailed flanges M, and of the wooden strips J, having tongues K and dovetailed grooves N, substantially as herein shown and described.

294,564. MUG. GEORG BERGEN, Detroit, Mich. Filed Dec. 31, 1883. (No model.)

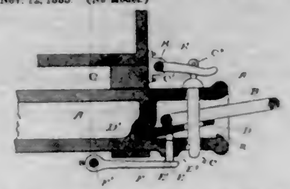


Claim.—1. The combination, with a mug, of a hinged cover, and sliding handle attached to the hinge by a pivoted connecting-rod, substantially as shown and described.

2. The combination of the mug A, ribs B, clips H H, guide-rod G, handle D, having the perforation F in the part E thereof, cover N, hinge K L M, and connecting-rod P, substantially as shown and described.

3. The combination of the mug A, hinged cover N, handle D, adapted to slide vertically on the guide-rod G, and connecting-rod P, pivoted to the handle and to the swinging leaf of the hinge, substantially as shown and described.

294,565. CAR-COUPLING. WILLIAM A. BENJAMIN, Cleveland, Ohio. Filed Nov. 12, 1883. (No model.)



Claim.—1. In a coupling for cars, the draw-head A, in combination with the plate D, T-pin E, and means, substantially as shown, whereby said pin is elevated, for the purpose set forth.

2. The draw-head A, in combination with the concave plate D, having pivot D', T-pin E, and the shaft F', having arm F, by means of which said pin and plate D, resting thereon, are raised and lowered, substantially as and for the purpose specified.

3. The draw-head A, having boss E' and opening E', in combination with the T-pin E, concave plate D, having pivot D' and central opening, and the shaft F', having arm F, whereby said pin E and plate D are moved vertically, for the purpose set forth.

4. The draw-head A, opening E', and boss E', T-pin E, plate D, having pivot D', arm F, and shaft F', in combination with the link B, pin C, having neck C', and cross-pin C², rod H' and arm H, suitable bearings and handles, H², as set forth.

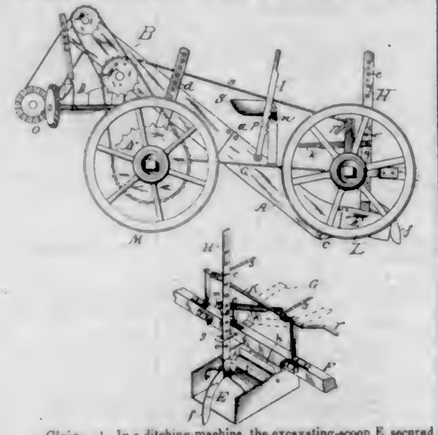
294,566. PRIMER. THOMAS G. BENNETT, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Dec. 31, 1883. (No model.)



Claim.—The herein-described improvement in primers for cartridges, consisting of the anvil constructed for insertion into the cup, with its center closed, and with a recess upon its inner surface at the center, substantially as described.

294,567. DITCHING-MACHINE. WILLIAM T. BENNETT, Newport, Ind. Filed July 21, 1883. (No model.)

Brief.—The lower hinged section of a two-part elevator-frame has a pivoted rack-bar for locking its upper end, engaging a cross-bar on frame and a supporting perforated standard passing up through a slot in the forked coupling-bar for the rear wheels, and extended forward and down to form a cutter in front of and below the scoop on said section. The upper section is adjusted by a chain run to a windlass on front axle.



Claim.—1. In a ditching-machine, the excavating-scoop E, secured to the elevator-frame and provided with a perforated standard, H, arranged to slide vertically in the slotted end of the coupling G, and having its lower end constructed to form a vertical cutter, *f*, extended downward in front of and below the cutting portion of the scoop, substantially as and for the purposes described.

2. The combination, with the elevator in two sections hinged together, as shown, of a toothed hand-bar pivoted to the forward section, a cross-bar, *n*, supported by the machine-carriage, and a windlass carried by the front axle and connected by cords or chains with the rear section of the elevator, substantially as shown and described.

294,568. REMOVABLE POST FOR HORSE-POWER TRANSMITTERS. FRANK B. BIGWELL, Smyrna, Mich. Filed Nov. 26, 1883. (No model.)



Claim.—1. The combination of the post H, plate L, having wings L', the sweep N, and staples I, all suitably united, substantially as described, and for the purposes set forth.

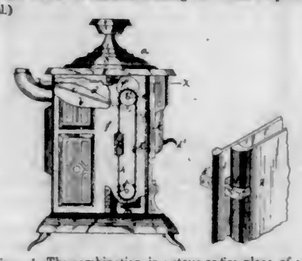
2. The combination of the post H, plate L, having wings L', the staples I, and bolts J K, the staples being secured to the sweep and plate L, in the manner and for the purposes specified.

3. The combination of the post H, provided on its under side with the plate E and stud F, and having the plate A and studs B on its upper end, the plate C, having notches C', and shaft D', substantially as described, and for the purposes set forth.

4. The combination of the post H, provided on its upper end with the curved flanges A' and studs B, the notched plate C, and shaft D', substantially as described, and for the purposes set forth.

5. The combination of the post H, provided with stud F on its under side, and having the circular flanges A' and studs B on its upper side, the plate G, having opening G', the notched plate C, and shaft D', substantially as described, and for the purposes set forth.

294,569. ADJUSTABLE BLOWER FOR FIRE-PLACES AND STOVES. FRANK S. BISSELL, Pittsburg, Pa. Filed July 2, 1883. (No model.)

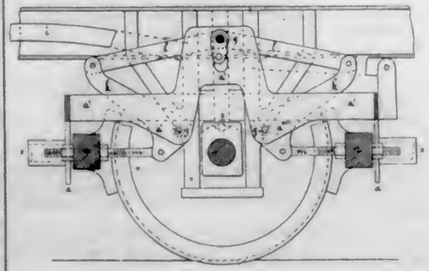


Claim.—1. The combination, in a stove or fire-place, of a vertically-adjustable blower, with counter-weights carried by endless chains mounted and moving vertically on upper and lower sprocket-wheels journaled in the sides of the stove, substantially as and for the purposes described.

2. The combination of the vertically-adjustable blower provided with pins, endless chains having counter-weights and connected to the blower by the pins, a shaft having sprocket-wheels rigidly attached thereto and sustaining the pins, and other sprocket-wheels revolving loosely on stationary bearings, substantially as and for the purposes described.

3. The combination, in a stove or fire-place, of the removable shaft and division-plates having holes to permit the lateral removal of the shaft, substantially as and for the purposes described.

294,570. CAR-BRAKE. ANDRÉ BOLZANO, Markt Redwitz, Bavaria, Germany. Filed Nov. 5, 1883. (No model.) Patented in Italy Dec. 31, 1883, XVII, 15,993, and XXXII, 109.

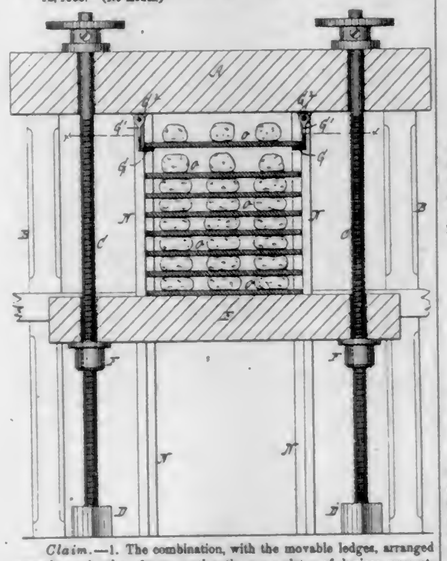


Claim.—1. The combination, in railway-brakes, of the toggle-links *l*, actuating the brake-blocks through elbow-levers K, with a loaded lever, *i*, and bar *q*, so arranged as to cause the toggle-link to apply the brakes when the lever is released.

2. The combination of car-wheels, springs, and brake-levers with a frame, *a*, straps *b*, axle-boxes having pins *z*, and means, substantially as described, for preventing the rotation of the frame.

3. The combination of car-wheels, brake-levers, and brake-blocks with a frame, *a*, having guides *e* for the brake-blocks, substantially as set forth.

294,571. PRESS. GEORGE B. BOOMER, Tarrytown, N. Y. Filed Dec. 12, 1883. (No model.)



Claim.—1. The combination, with the movable ledges, arranged opposite each other, for supporting the press-plates, of devices connecting the said ledges together and positively moving them simultaneously from the press-plates, to permit the latter to descend, substantially as described.

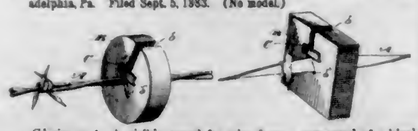
2. The combination, substantially as hereinbefore set forth, of the movable ledges for temporarily supporting the press-plates at a point above the follower, the hinged brackets supporting the ledges, the operating-levers of the brackets, and the intermediate lever and rods connecting such operating-levers together.

3. The combination, substantially as hereinbefore set forth, of the platform arranged on the side of the press to receive the press-plates, and the inclined rails leading from such platform.

4. The combination, substantially as hereinbefore set forth, of the movable ledges for temporarily supporting the press-plates at a point above the follower, and the platform arranged on one side of the press, substantially in the horizontal plane of the ledges, to receive the press-plates which are to be placed on the ledges, or which are removed therefrom.

5. The combination, substantially as hereinbefore set forth, of the movable ledges for temporarily supporting the press-plates at a point above the follower, and the vertical ways adapted to receive and guide the press-plates deposited on the follower by the ledges.

294,572. GUARD FOR WIRE FENCING. ROBERT BOOMER, JR., Philadelphia, Pa. Filed Sept. 5, 1883. (No model.)



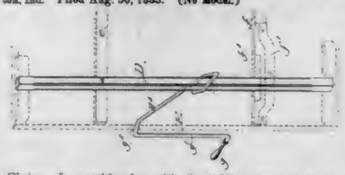
Claim.—1. A visible guard for wire fences, composed of a block slotted to admit the strand, and having a key or locking-plate lying across the slot and holding the guard upon the strand, substantially as described.

2. The visible guard composed of the wooden block B, having a slot, *b*, with kerf *b'*, and provided with slots *d d*, cut transversely to the slot *b*, substantially as described.

3. The combination, with a fence-strand, of the guard B, having a slot, *b*, to receive the strand, and a kerf, *b'*, at the end of said slot, and the key C, entering slots *d d*, and having its ends bent against the opposite faces of the block, substantially as described.

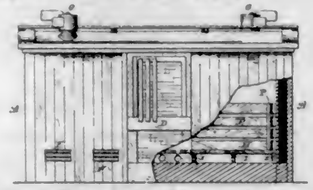
4. A visible guard for wire fencing, composed of a block of suitable material, slotted radially to receive the wire strand or strands, and having means to confine the wire in the slot, substantially as described.

294,573. FASTENING DEVICE FOR DOORS. JOHN E. BOXELL, Tipton, Ind. Filed Aug. 30, 1883. (No model.)



Claim.—In combination with the folding doors A B and locking-bar D, an operating-lever, E, provided at one end with a handle, *g*, and at the opposite end with a bent portion, which encircles the locking-bar, said lever being provided with bent portions or members g' g^2 g^3, substantially as shown.

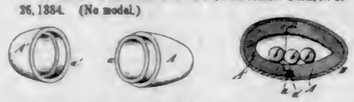
294,574. CAR. RICHARD HENRY BRIGGS and CLEVELAND PRICHARD, Whistler, Ala. Filed July 30, 1883. (No model.)



Claim.—1. The combination of the car with sections of flooring which are placed in the ends of the car, and the section of flooring which is placed at right angles thereto, each section being composed of the perforated cross-bars I and the slats J, and the car being provided with the ventilating-openings F B below the level of the sections, substantially as shown.

2. The car A, provided with the ventilating-holes B F, combined with the sections of flooring, arranged at right angles to each other, and provided with the perforated cross-pieces I and the side sections or lattice-work, P, substantially as set forth.

294,575. CANDY. SAMUEL H. BRITTON, Hoboken, N. J., assignor to Albert Green and Willis R. Blackwell, both of New York, N. Y. Filed Jan. 26, 1884. (No model.)



Claim.—1. An egg or egg-shaped candy consisting of a box having a cover detachable from the body, and a casing or shell of candy enveloping the box, substantially as specified.

2. An egg or egg-shaped candy consisting of a box containing small candies and enveloped in a shell or casing of candy, substantially as specified.

294,576. METALLIC SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Dec. 29, 1883. (No model.)



Claim.—1. An improved metallic seal composed of a shackle of flexible wire, having eyes *a b*, formed at its respective ends, and a leaden seal-disk cast fast on one of said shackle ends, a portion of the lead penetrating said eye *a*, so as to permanently secure this end, and constructed with a stud, *c*, on its face, to engage with said eye *b*, substantially as herein specified, for the purposes set forth.

2. The combination, in a metallic seal, of a flexible shackle having eyes *a b* at its respective ends, and a leaden seal-disk cast fast on one of said shackle ends, a portion of the lead penetrating said eye *a*, and constructed with a stud or studs, *c*, on its face, to engage with said eye *b*, and a wall or walls, *d*, to coact externally with that end of the shackle which is provided with said eye *b*, substantially as herein specified, for the purposes set forth.

3. In a metallic seal, a flexible shackle having rounded ends provided, respectively, with eyes *a b*, in combination with a leaden seal-disk cast fast on one of said shackle ends, portions of the lead penetrating said eye *a* and forming a central stud, *c*, to engage with said eye *b*, and a wall or walls, *d*, to embrace that end of the shackle which is provided with said eye *b*, including its extremity, the cast-in end being correspondingly inclosed, substantially as herein specified, for the purposes set forth.

4. In combination with a shackle, S, of flexible wire, having an eye, *b*, formed at one of its ends, the leaden seal-disk D, cast fast on the other end of said shackle, and constructed with a central stud, *c*, on its face, to engage with said eye *b*, and a concentric wall, *d*, to embrace said eye externally, said wall having two or more embrasures, *e*, to provide for different dispositions of the shackle substantially as herein specified, for the purposes set forth.

294,577. METALLIC SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Jan. 15, 1884. (No model.)



Claim.—1. A metallic seal of sheet metal and soft metal combined, having compressible receptacles *a b*, formed at the respective ends of the sheet-metal strip, and its soft-metal part cast fast in one of said receptacles, and constructed with a protruding end adapted to enter the other of said receptacles, and to be secured therein when the seal is pressed, substantially as herein specified, for the purposes set forth.

2. The combination, in a metallic seal, of a sheet-metal strip constructed with bent-up tubular compressible receptacles at its respective ends, and a leaden part cast fast in one of said receptacles and having a protruding end fitted to enter the other, said receptacles being adapted to be flattened upon the lead within them and to receive deep indented press-marks, substantially as herein specified, for the purposes set forth.

3. An improved metallic seal composed of a sheet-metal strip having its respective ends constructed with bent-up tubular receptacles, and a leaden part cast fast in one of said receptacles, having a protruding end fitted to the other, said receptacles and leaden part forming, when united and unpressed, a loose hinge with its axis transverse to the strip, substantially as herein specified, for the purposes set forth.

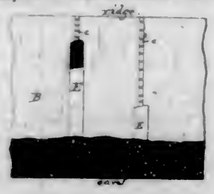
294,578. PLOW ATTACHMENT. JOHN O. CALDWELL, Goshen, Ga. Filed Aug. 8, 1883. (No model.)



Claim.—1. As a new article of manufacture, the mold-board attachment B, having an approximately triangular form, and curved, as specified, and provided on the under side, at its inner wider end, with a boss having a notch, of the form specified, to receive a bolt for attaching to a plow, as shown and described.

2. The combination of the attachment B, having a notched boss on its under side, with the shovel A, and bolts for securing the two parts together, substantially as shown and described.

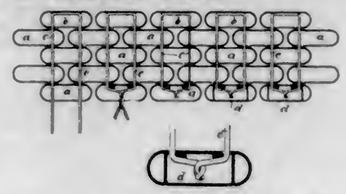
294,579. FELT AND GRAVEL ROOF. WILLIAM HENRY HARRISON CHILDS, Brooklyn, N. Y. Filed Jan. 15, 1884. (No model.)



Claim.—1. A roof composed of a sheathing or layer of untarred paper laid on the roof-boards, one or more layers of manufactured felt, substantially such as described, superposed on the sheathing of untarred paper, a layer of bituminous cement, and a layer of gravel embedded therein, as set forth.

2. A roof composed of one or more layers of a manufactured felt, substantially such as described, having the adjoining or overlapping edges secured or joined together by strips of wood or metal disks being nailed down over them, a layer of pitch and a strip of felt or paper secured over the wooden strips, and superposed layers of pitch and gravel, as set forth.

294,580. ORNAMENTAL CHAIN. HENRY A. CHURCH, Providence R. I. Filed Mar. 13, 1882. (No model.)



Claim.—As a new article of manufacture, a chain composed of a series of units, each provided with two apertures at one side and a single aperture at the opposite side, and arranged side by side, and interlapping at their ends with the next series of units, a series of closed units forming one side of the chain, a series of open units forming the opposite side of said chain, a series of staples passing through the middle units, and united to the closed sides of the closed units, and secured by twisting to the open side units, and caps secured within the open units over the twisted ends of the staples, substantially as and for the purposes described.

294,581. MAGAZINE FIRE-ARM. JEFFERSON M. CLOUGH, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Dec. 15, 1883. (No model.)



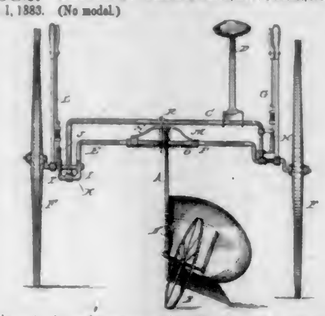
Claim.—1. In that class of magazine fire-arms in which the magazine is located in the butt-stock and opens forward into the receiver, a receiver constructed to receive a butt-stock independent of the fore-end, and with the mouth through which the cartridges are introduced to the magazine, or into which the cartridges are successively forced from the magazine, the rear end of said mouth constructed to form a shoulder, *a*, and with a recess, *c*, in rear of it, and of other than cylindrical shape, combined with a magazine-tube, its forward end constructed of corresponding other than cylindrical shape, so as to fit said recess and abut against said shoulder, whereby said magazine-tube is located in its proper

relation to the mouth, irrespective of the butt-stock into which it extends, substantially as described.

2. The receiver constructed to receive the butt-stock independent of the fore-end, the trigger-guard plate arranged between the two sides of a receiver, and so as to form substantially the bottom thereof, said plate extending rearward and fitted for attachment to the butt-stock, and forward fitted for attachment to the fore-end, the receiver constructed with a mouth through which the cartridges may be introduced to the magazine, or into which the cartridges may be successively forced from the magazine, the rear end of said mouth constructed to form a shoulder, *a*, and with a recess in rear of it, combined with a magazine-tube, its forward end constructed to fit said recess and abut against said shoulder, whereby said magazine-tube is located in its proper relation to the mouth, irrespective of the butt-stock into which it extends, with a shoulder, *g*, on the trigger-guard plate, constructed to engage with a corresponding shoulder, *f*, on the magazine-tube, in rear of its forward end, substantially as described.

3. In a magazine fire-arm, the receiver constructed with the mouth H, through which the cartridges are introduced to the magazine, and into which the cartridges are successively presented from the magazine, said receiver constructed at its rear end to receive the butt-stock, and with a vertical shoulder, *b*, in rear of its forward end, against which the fore-end L will abut, whereby said fore-end extends to a point in rear of the forward end of the receiver, substantially as described.

294,582. SULKY-PLOW. FRANK N. CLUTE, Lee's Summit, Mo. Filed Dec. 1, 1883. (No model.)

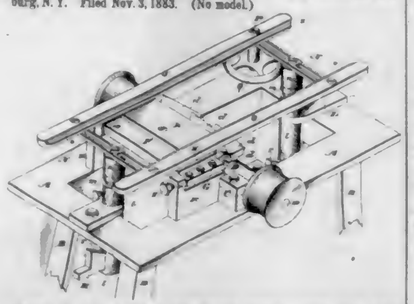


Claim.—1. As an improvement in sulky-plows, the combination of the main frame C, having segmental rack H, arch E, having lever G, adapted to engage with the segmental rack H, bearings I, and segmental rack J, crank-shaped stub-axle K, journaled in the bearings I, and provided with a segmental lever, L, adapted to engage with the segmental rack J, and wheels F F, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

2. The improved clip herein shown and described, consisting of the metallic strips N O, collar P, and end piece, S, connected to the arch E by means of a link, Q, as set forth.

3. In a sulky-plow of substantially the described construction, the combination of the arch E, plow A, and clip M, constructed as described, to form a yielding connection.

294,583. BRUSH-TRIMMING MACHINE. THOMAS COLDWELL, Newburg, N. Y. Filed Nov. 3, 1883. (No model.)

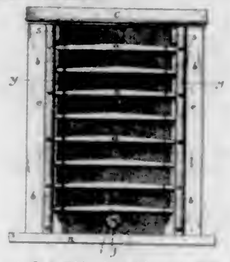


Claim.—1. As a means for holding and guiding a brush while being trimmed, the bars O, provided with the rabbets *o*, made straight or curved longitudinally, and combined and made relatively adjustable toward or from each other by means of the pivoted cross-bars N, substantially as shown and described.

2. In combination with the cross-bars N, the standards M, fitted into and contained within the sleeves *l*, the wedge-bar R, provided with the inclined faces *r*, and having its outer end, *r'*, threaded, the journaled nut S, and the hand-wheel *s*, substantially as and for the purpose specified.

3. The hereinbefore-described machine in which are combined the following elements, to wit: a revolvable cutter with radial longitudinal blades extending in oblique lines inward from each end beyond the middle point of the cutter hub or cylinder, a stationary cutter, means for adjusting it positively toward or from the cutting-edges of said blades, slides for supporting and guiding a brush while being trimmed, and means, substantially as shown, for adjusting said slides to receive brushes of different sizes, and for varying the lengths of the bristles when trimmed, substantially as and for the purpose described.

294,584. POOL-RACK. HUGH W. COLLENDER and STEPHEN DE GAETANO, New York, N. Y.; said de Gaetano assignor to said Collender. Filed Jan. 31, 1884. (No model.)



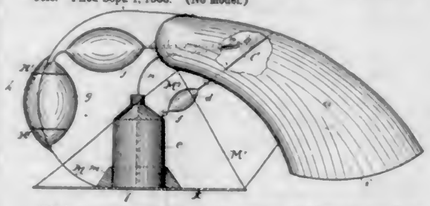
Claim.—1. In combination with vertical side conduits or passage-ways and suitable supporting means, a set of shelves which are free to be moved up and down, and stationary perforated partitions between said conduits and said set of shelves, all substantially as and for the purpose set forth.

2. In combination with a lifting set of shelves, and means for the discharge of their contents into ball-conduits, as explained, a device for elevating the shelves, all as set forth.

3. In combination with a movable set of shelves and side conduits, as described, a stop or stops to regulate the extent to which the shelves can be lifted to insure the coincidence of the shelves with the openings through which the balls must pass to get from the shelves into the conduits, as set forth.

4. In combination with a vertical conduit or passage-way for the fall of the balls in a pool-rack, a rubber or other cushion to break the fall and render the descent of the balls less noisy, as set forth.

294,585. INHALER FOR ANÆSTHETICS. HENRY COOK, Leadville, Colo. Filed Sept. 1, 1883. (No model.)



Claim.—1. In an inhaler and respirator, the combination of the hood *a*, spray-arrester C, bulb *d*, with stop-cock *f*, and bottle *e*, substantially as shown, and for the purpose described.

2. The apparatus specified for administering the fumes or vapor of an anæsthetic combined with atmospheric air, consisting of the bottle *e*, having tube *n*, bulb *g*, secured to handle by bands H', bulb *j*, hood *a*, spray-arrester C, and bulb *d*, with stop-cock *f*, substantially as shown and described.

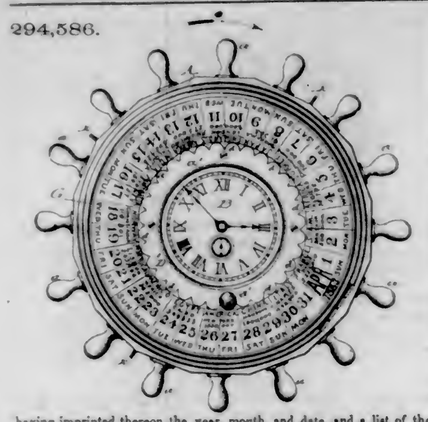
3. The combination of the bulbs *g* and *j*, spray-arrester C, bulb *d*, stop-cock *f*, and bottle *e*, having tube *n*, substantially as shown and described.

294,586. GAME APPARATUS, CALENDAR, AND CLOCK. WM COOPER, New York, N. Y. Filed Jan. 3, 1884. (No model.)

Claim.—1. In a game apparatus, the revolving cylinder provided with an annular recess to receive a tablet, and an inner groove having notches, in combination with a ball and clock, the whole being secured by a shaft to suitable supports, all substantially as shown and described.

2. In a game apparatus, a cylinder suitably supported and adapted to be revolved, and provided with a groove adapted to receive a tablet

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having imprinted thereon the year, month, and date, and a list of the principal cities of the world and population, the inner groove provided with notches, in combination with a ball and clock, substantially as shown, and for the purposes described.

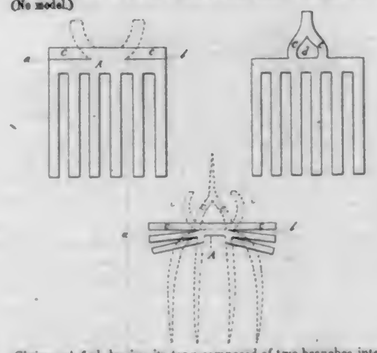
3. In a game apparatus, the revolving cylinder suitably supported, and provided with grooves to receive a tablet and ball, and the clock B, in combination with the door or plate H, having inwardly-extending projections I, whereby the same is secured to the cylinder, substantially as shown and described.

4. In combination with a game apparatus, the cylinder having notches and removable tablets forming a calendar, a ball adapted to enter said notches, whereby the number attained is indicated, substantially as shown and described.

5. In a game apparatus, the cylinder provided with annular grooves, in combination with a clock and tablets, substantially as shown, and for the purposes described.

6. In a game apparatus, a revolving cylinder suitably supported and provided with knobs *a*, the outer annular groove adapted to receive tablets forming calendars, the inner groove provided with notches, the removable door having inwardly-extending projections, whereby the same is secured to the cylinder, in combination with a clock and a ball adapted to rest in the notches, whereby a game may be determined, all substantially as shown and described, and for the purposes set forth.

294,587. HAY-FORK. WARREN H. COWDERY, Ashtabula, Ohio, assignor of one-half to Samuel R. Harris, same place. Filed May 20, 1882. (No model.)

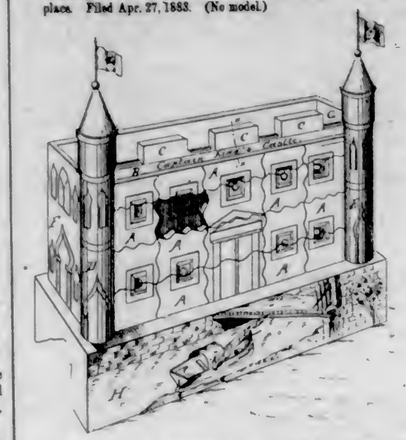


Claim.—A fork having its tang composed of two branches integral with and extending upward from the back of the fork, substantially in line with the tines, then united to form a single tang, leaving an aperture, *d*, between the branches of the tang, as and for the purposes set forth.

294,588. STEREOTYPE-BACKING POWDER OR FILLING. EDWIN COWLES and ALFRED H. COWLES, Cleveland, Ohio. Filed Nov. 23, 1882. (No specimens.)

Claim.—As an article of manufacture, a filling or backing powder for matrices for stereotype-plates, composed of lime and a glutinous substance, substantially as and for the purpose set forth.

294,589. TOY BUILDING-BLOCK. CHARLES M. CRANDALL, Montrose, Pa., assignor to Fred W. Crandall and Benjamin L. Baldwin, both of same place. Filed Apr. 27, 1883. (No model.)



Claim.—1. A toy composed of a series of blocks with scroll-cut edges, and combined with cylindrical tower-blocks D and E and side blocks, F and G, as and for the purpose described.

2. In a toy, the combination of a series of blocks with scroll-cut edges, tower-blocks D and E, and a foundation formed from the box H, ornamented with a design in harmony with said blocks, as and for the purpose described.

294,590. TOY. CHARLES M. CRANDALL, Montrose, Pa., assignor to Fred W. Crandall and Benjamin L. Baldwin, both of same place. Filed Nov. 23, 1883. (No model.)



Claim.—A toy composed of the foundation B, having a series of houses, *a*, at right angles to the same, each house bearing a given name, and provided at its rear with guides, elastics, and stop-pins, combined with a figure for each house, representing the names on the houses, and adapted to be projected into view from the roofs of the houses by the mechanism hereinbefore described.

294,591. COMBINED RESERVOIR AND PALETTE. FREDERICK S. DELLENBAUGH, New York, N. Y. Filed Dec. 6, 1883. (No model.)



Claim.—1. The combination, with an artist's palette, of one or more reservoirs adapted to contain pigments and permit the exit of the same upon the palette in quantities desired by the artist, substantially by means herein described.

2. The combination, with an artist's palette, of an adjustable reservoir formed with an orifice at or near its base, and provided with means for forcing the pigment contained within said reservoir (or reservoirs) upon the palette in such quantity only as desired by the artist, substantially as set forth.

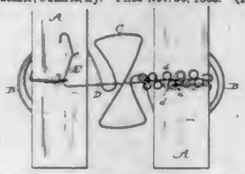
3. The combination, with an artist's palette, of reservoir A, provided with orifice C, cap D, screw B, and plunger F, all constructed and arranged to operate substantially as and for the purpose set forth.

294,592. MANUFACTURE OF CREAM OF TARTAR. FRANZ DIETRICH, Munich, Germany. Filed Oct. 23, 1883. (No specimens.)

Claim.—1. The process herein described of manufacturing cream of tartar from argols, consisting in treating the dissolved argols with phosphoric acid or its compounds, and then clarifying and decolorizing it, as set forth.

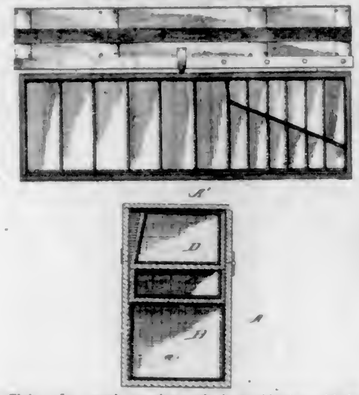
2. The method herein described of manufacturing cream of tartar from argols, consisting in treating the dissolved argols with phosphoric acid or its compounds, boiling the mixture, clarifying it with clay, and finally decolorizing it with animal charcoal which has been previously treated with muriatic acid, as set forth.

294,593. TWIN-BED-SPRING CONNECTOR. JOSEPH L. DIXON, Falmouth, Ky., assignor of two-thirds to George W. Dawson, same place, and Henry A. Hatcher, Guthrie, Ky. Filed Nov. 30, 1883. (No model.)



Claim.—The combination, with the twin spring united at the top as herein described, and provided with hooks at the bottom, of the coupler consisting of the wire D, provided with loops *d*, and the arm E, curved as described, and for the purpose set forth.

294,594. SALESMAN'S SAMPLE-TRUNK. ALEXANDER DODD, Baltimore, Md. Filed May 23, 1883. (No model.)



Claim.—In a sample-carrying trunk, the combination, with the body A, with its lid or cover A', of a compartment-receptacle, B, the receptacle C, and receptacle D, having the upward-sloping front, substantially as and for the purpose specified.

294,595. ORNAMENTAL CHAIN-LINK. VIRGIL DRAPER, North Attleborough, Mass. Filed Nov. 12, 1883. (No model.)

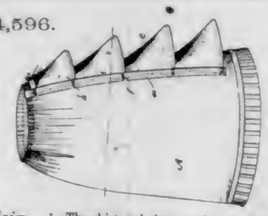


Claim.—The combination, with the link or loop c and rings *d*, of the staves *a* and the circular caps *b*, fitting over the ends of said staves, as described.

294,596. SKIRT. LOUIS DRYFOOS, New York, N. Y. Filed Mar. 17, 1883. (No model.)



294,596.



Claim.—1. The skirt and the pannier made substantially as described, in combination with means carried by the skirt and pannier, respectively, whereby the two may be detachably connected together, as and for the purposes hereinbefore set forth.

2. The pannier consisting of a backing of fabric, having a series of ruffles or strips arranged as described, in combination with the skirt provided with flaps *a* and buttons and button-holes or their equivalent on the edges of the pannier and the flaps *a*, respectively, whereby the said pannier may be detachably connected to the skirt, substantially as set forth.

294,597. NECKTIE-FASTENER. NATHAN I. DRYFOOS, Fremont, Ohio. Filed Dec. 18, 1883. (No model.)



Claim.—1. A necktie-fastener consisting of metallic clamp A', having wings *b* and *b'*, forming button-holder D, lap B, and lap C, having prongs C', substantially as shown, and for the purpose described.

2. In a necktie-fastener, the metallic clamp A', having wings *b* and *b'*, forming button-holder D, and lap C, having prongs C', secured to the stock of the necktie, substantially as shown, and for the purpose described.

294,598. RAILROAD FROG AND SWITCH GUARD. PHILIP S. DURENBURY, Sedalia, Mo., assignor of one-half to W. Z. Baum and A. H. Randall, both of same place. Filed Apr. 4, 1883. (No model.)

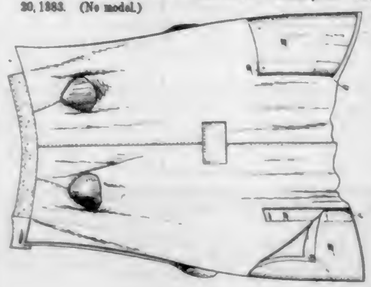
Brief.—A plate provided with shouldered ends and a longitudinal side flange placed between the rails and supported by a spring.



Claim.—1. In a guard for railway-crossings and switch-frogs, the strap D and the plate B, provided with shouldered ends and longitudinal flanges *d*, said plate being placed between the rails and supported by a spring, C, substantially as and for the purpose set forth.

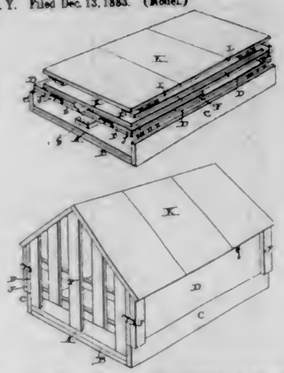
2. In a guard for railway crossings and switches, the combination, with the plate having the end shoulders, *a*, and longitudinal flanges *d*, of the spring C and the strap D, secured at one end to the bed-plate, the opposite end resting on a shoulder of plate B, substantially as and for the purpose set forth.

294,599. OVERCOAT. HENRY EMANUEL, New York, N. Y., assignor to David Heineman and Solomon Lersch, both of same place. Filed Apr. 20, 1883. (No model.)



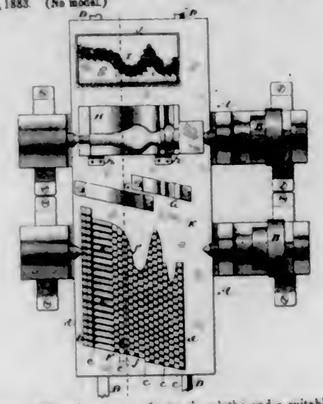
Claim.—A coat provided with open-ended pockets at the bottom of its skirts, said pockets being permanently stitched to the skirts the entire length of one of their edges and for a portion of their length along the opposite edge to leave unattached side portions, and means for attaching the loose upper corner of the pocket-piece to the skirt, substantially as described.

294,600. FOLDING COOP OR KENNEL. HENRY EVERSON, Hempstead, N. Y. Filed Dec. 13, 1883. (Model.)



Claim.—A folding coop or kennel composed of the combination of the bottom piece, A, provided with rigid side strips C, the folding sides D, the hinged piece E, which folds down upon the bottom, in between the rigid side pieces C and end piece or pieces, and the hinged roof K, substantially as shown and described.

294,601. TURNING-LATHE. HENRY W. FARLEY, Oswego, Ill. Filed Oct. 16, 1883. (No model.)



Claim.—1. With the centers of a turning-lathe and a suitable carriage adapted to be reciprocated across the lathe-bed, the combination of a cutting device consisting of a series of cutters, *a b*, arranged upon said carriage, having straight cutting-edges of different lengths, and joining in parallel rows or groups *c*, their cutting-edges in step form gradually inclined vertically to the surface of the carriage from the receiving to the finishing end of said cutter, the rows or groups *c* being of unequal length from their entering ends *f* to their finishing ends, the latter terminating in an ascertained irregular consecutive or continuous forming-line, *f'*, the counterpart of the curved outline or contour of the article produced by said straight-edged cutters, substantially as described.

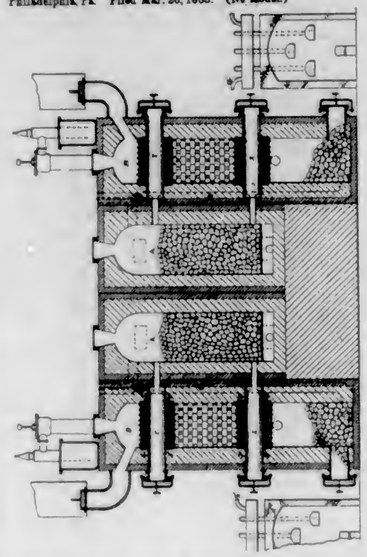
2. The combination, with the centers of a turning-lathe, of a suitable carriage adapted to have a reciprocating movement across the lathe-bed, and a cutting device consisting of a series of cutters, *a b*, arranged upon said carriage in parallel joining rows or groups *c* of unequal length, the cutting-edges whereof being straight and of unequal length, inclined in step form, the said rows or groups terminating in an ascertained irregular consecutive or continuous forming-line, *f'*, the counterpart of the curved outline or contour of the article produced, and one or more knife or saw edge cutters or blades, *d*, arranged at suitable points lengthwise between the said rows or groups of cutters, *a b*, coincident with the inclined cutting-surface thereof, substantially as described, for the purpose specified.

3. The combination, with the centers of a turning-lathe, of a suitable carriage adapted to have a reciprocating movement across the lathe-bed, a cutting device consisting of a series of cutters, *a b*, arranged upon said carriage in parallel joining rows or groups *c* of unequal length, the cutting-edges being straight and of unequal length and inclined in step form, the said rows or groups terminating in an ascertained irregular or continuous forming-line, *f'*, the counterpart of the curved outline or contour of the article produced, and one or more separate cutters or blades, G, having a cutting-edge conforming to the finished article and to the said irregular consecutive terminal forming-line, substantially as described, for the purpose specified.

4. The combination, in a turning-lathe, of a suitable carriage, E, adapted to have a reciprocating movement across the lathe-bed, with a cutting device consisting of rows of reducing and forming cutters F, constructed and arranged substantially as described, a suitable sand-paper block, H, and an oil or burnishing brush, I, all arranged upon said carriage, for operation substantially as described.

5. A lathe for turning forms, comprising a platform adapted to be reciprocated beneath the work, reducing and forming cutters F, arranged thereon in series of different lengths, which gradually increase in height from the plane of the table in step form, the inclined knife or saw edged shoulder-forming cutters *d*, the smoothing blade or blades G, the sand-paper block H, and the finishing oil-brush, all constructed and adapted for operation substantially as described.

294,602. HYDROCARBON-GAS GENERATOR. JOSEPH FLANNERY, Philadelphia, Pa. Filed Mar. 20, 1883. (No model.)



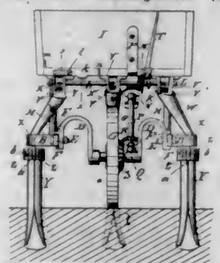
Claim.—1. The combination of a series of gas retorts or generators, a pipe leading therefrom and connecting with the base of the generating-chamber, a steam-jet nozzle, which is placed in the pipe for the purpose of exhausting the gas from the retorts or generators, and the generator-chamber in which fire is made, and up through which fire the commingled steam and gas is made to pass for the purpose of fixing the gas, substantially as shown.

2. The combination of the generator-chamber A and regenerative chamber B, both chambers having a fire made in them, and through both of which fires the gas is made to pass, a passage-way between the two chambers, and suitable retorts which are passed through the chamber B and connected with the chamber A, substantially as described.

3. The combination of the chambers A B, located side by side and connected together, the gas generators or retorts, the pipe G, connected both with the retorts and the chambers, a steam-jet nozzle connected with the pipe for exhausting the steam from the retorts, and the by-pass valves *a*, whereby the gas directly from the retorts may be forced into either the chamber A or B, substantially as set forth.

4. The combination of a retort or chamber with a jacket and a filling of lead or other metal between the jacket and the retort, substantially as specified.

294,603. GRAIN-DRILL. MOSES FRANKLIN FOLEY and THOMAS ALBERT FOLEY, Waveland, Ind. Filed Aug. 6, 1883. (No model.)

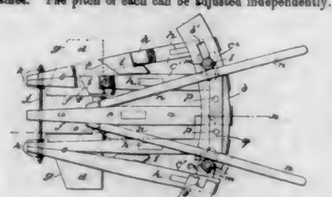


Claim.—1. The combination of the median beam, A, split and spread apart as shown, the bent side beams, B B, bolted at their front ends to the spread part of beam A, and the brackets D D, to support all parts of the drill on a median rear wheel, as shown and described.

2. The combination, with the beams B, of the brackets D, provided with lugs F, overlapping the upper and lower sides of said beams, as shown and described.

294,604. COTTON SCRAPER AND CULTIVATOR. SETH HAMPTON FOUNTAIN, Amite City, La. Filed July 17, 1883. (Model.)

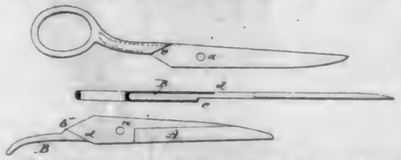
Brief.—Two hilling-plows of differing sizes behind each scraper, the scraper being on the middle beam and the hilling-plows upon the side frames. The pitch of each can be adjusted independently.



Claim.—1. The combination, in a cotton-cultivator, of the two front scrapers, beveled at *g*, and having an open space between them, and two shovels, *i i*, arranged in the rear of each scraper, the scrapers being made vertically adjustable and the plows laterally adjustable, as and for the purpose specified.

2. The bar *b*, bolt *j*, screw-bolt *s*, and nuts *r r' t t'*, in combination with the beam *a*, handles *n*, and frame *p q*, jointed together to allow the scrapers to be graduated in depth, as described.

294,605. MANUFACTURE OF SCISSORS. JAMES D. FRARY, Bridgeport, Conn. Filed Oct. 22, 1883. (No model.)



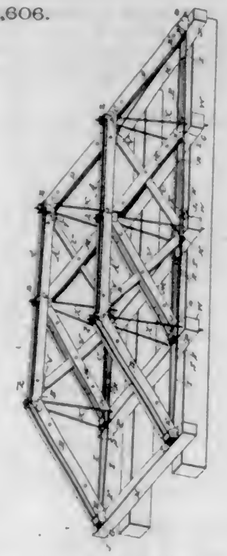
Claim.—The herein-described improvement in the manufacture of scissors, consisting in forging the blade and shank complete in one piece, the shank extending from the side of the blade opposite the striking-surface, and offset from the plane of the blade, so as to project beyond the flat surface of the blade, and then casting the soft-metal bow onto the shank, and so as to inclose said shank, substantially as described.

294,606. TRUSS-BRIDGE. MILTON C. FRITS, La Harpe, Ill. Filed Dec. 5, 1883. (No model.)

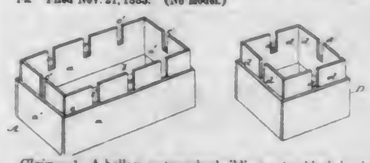
Brief.—Consists of truss-beams having shouldered ends, end struts having shouldered ends, shoes, longitudinal rods, inner struts, shoes bearing against their ends, shorter longitudinal rods, links connecting the inner ends of the longitudinal rods, vertical rods having nuts at both ends, and cross-beams.

Claim.—The combination of the truss-beams having shoulder ends, the end struts having shouldered ends, the shoes, the longitudinal rods, the inner struts, the shoes bearing against their ends, the shorter longitudinal rods, and the links connecting the inner ends of the longitudinal rods, the vertical rods having nuts at both ends, and the cross-beams, all constructed as and for the purpose shown and set forth.

294,606.



294,607. TOY BUILDING-BLOCK. CHARLES W. FROST, Philadelphia, Pa. Filed Nov. 21, 1883. (No model.)



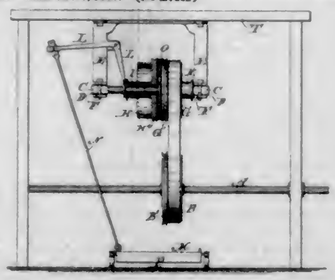
Claim.—1. A hollow rectangular building or toy block having rabbeted edges on opposite sides, the rabbet or edge on one side being slotted, substantially as shown and described.

2. A series of building or toy blocks of whole, half, and quarter sizes, relatively, all the blocks of the series being hollow, rectangular, and rabbeted on opposite sides, the rabbets on one side of each block being slotted for engagement with lapping blocks or blocks of different sizes, substantially as shown and described.

3. Door or window frames for block structures or designs, the same consisting of hollow rectangular blocks having elongated sides, with rabbets or flanges, substantially as shown and described.

4. The combination, with a series of hollow rectangular building-blocks having slotted rabbeted edges, of sills, cornices, and door and window frames having rabbeted edges, and adapted and designed to engage with said blocks, substantially as shown and described.

294,608. MOTION-TRANSMITTER. HENRY GARDNER, Bordentown, N. J. Filed Dec. 5, 1883. (No model.)



Claim.—1. The stationary shaft C, provided with square ends, in combination with the depending hangers E E, secured to the under side of the table, and provided at their lower ends with the angular open sockets D D, and the bolts F F, for retaining the squared ends of the shaft within the sockets, substantially as set forth.

2. A motion-transmitter consisting of the shaft having its squared ends mounted in the open angular sockets D in the lower ends of the hangers E, and the retaining-bolts F, the stationary shaft also provided with the pulleys G H, between the adjacent faces of which is mounted a flexible disk, and the sleeves I K, on the shaft outside of the pulleys, the former being operated by a forked elbow-lever pivoted to the hanger above the shaft, and the long arm of said lever being in turn connected by a rod, N, to the treadle M, having the weight P on its under rear edge, substantially as set forth.

294,609. BALE-TIE. JOHN W. GARLAND, Allegheny City, and EMIL BECKER, Pittsburg, assignors to the Oliver & Roberts Wire Company, (Limited,) Pittsburg, Pa. Filed Jan. 11, 1884. (No model.)

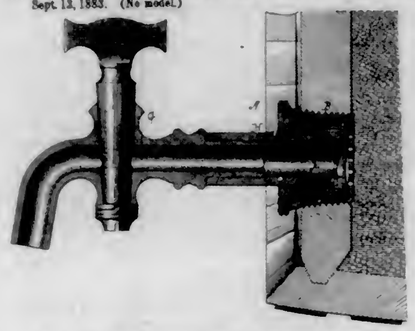


Claim.—1. In a wire bale-tie, a loop bent back upon itself, so as to form a hook and tongue, the extremities of the bent middle portion of the loop being spread so as to be capable of receiving and interlocking with another similar tongue and reflexed loop, substantially as and for the purposes described.

2. In a wire bale-tie, a loop bent back upon itself, so as to form a hook and tongue, said tongue being partially twisted, and the bent middle portions of the loop spread so as to receive and interlock with another similar tongue and reflexed loop, substantially as and for the purposes described.

3. A bale-tie buckle consisting of two reflexed loops and tongues, *b b'*, substantially as and for the purposes described.

294,610. COMBINED FAUCET AND TAP VALVE. KING C. GILLETTE, New York, N. Y., assignor to Joseph L. Spofford, same place. Filed Sept. 13, 1883. (No model.)



Claim.—1. The combination, with a faucet having notches in its end, of a cup or shell with a perforated bottom, a valve with inclined ways engaging with guides in the interior of the cup or shell, and provided with lugs for engaging with the notches in the faucet, and an elastic ring or washer confined within the cup and adapted to be compressed around the faucet by the forward movement of the valve, substantially as set forth.

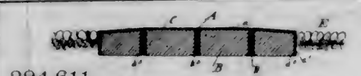
2. A tap-valve consisting of a threaded cup with perforated bottom, a removable annular face-plate and elastic ring or washer, and a screw-threaded valve provided with lugs or ears, in combination with a faucet of a conformation to be inserted through the face-plate and elastic ring, and having notches in its end for engaging with the lugs or ears on the valve, whereby the latter may be turned and raised, substantially as set forth.

3. The combination, with a cup or shell having a perforated bottom, of the removable annular plate C, the elastic ring F, washer E, screw-threaded valve D, having lugs *g g*, and a faucet provided with notches or slots for engaging with and operating the valve in the manner set forth.

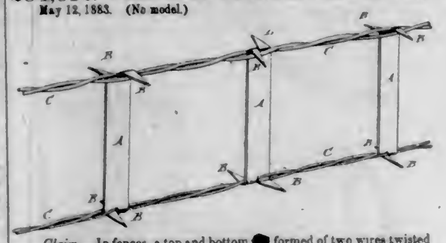
4. The combination, with the shell or cup B, having a perforated bottom, of an annular face-plate, C, an elastic ring or washer confined thereby, a plate or valve having lugs *g g*, and inclined flanges or threads engaging with guides in the cup, and a faucet having a cylindrical shank provided with a groove, *h*, and slots K K, all substantially as herein described.

294,611. IRON PAVING-BRICK. JAMES M. GLENN, Cincinnati, Ohio. Filed June 18, 1883. (No model.)

Claim.—A paving brick or block consisting of a cast-iron shell, as A, and a concrete filling, as B, with yielding stripe, as C, interposed between the cast-iron shell and concrete filling, constructed substantially in the manner and for the purpose described.

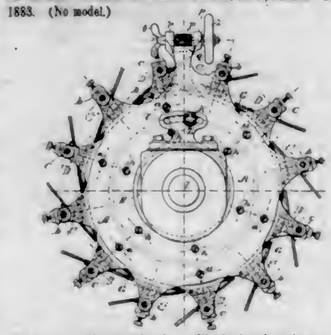


294,612. BARBED FENCE. WILLIS K. GORE, Johnstown, Pa. Filed May 12, 1883. (No model.)



Claim.—In fences, a top and bottom [illegible] formed of two wires twisted together, in combination with intermediate vertical plates, A, having at each end two barbs, B B, bent and passing in opposite directions through the twisted wires, as shown and described.

294,613. COMMUTATOR FOR MAGNETO OR DYNAMO ELECTRIC MACHINES. ZÉNOBE THÉOPHILE GRAMME, Paris, France. Filed Dec. 18, 1883. (No model.)



Claim.—1. The combination, with the brush sockets or carriers and the common support therefor, of the devices for shifting the said sockets or carriers and the common support for said devices, substantially as described.

2. The combination, with two or more pairs of commutator-brushes, of mechanism, substantially as described, for simultaneously moving said brushes into and out of contact with the commutator-disk, as set forth.

3. The combination, with brush sockets or carriers, movable to bring the commutator-brushes into and out of contact with the commutator-disk, of a ring or plate movable around the axis of said disk, and connected with said sockets or carriers to shift the same, substantially as described.

4. In combination with the brush sockets or carriers, plates fastened together but insulated from each other, and connected, respectively, with sockets or carriers of unlike sign, substantially as described.

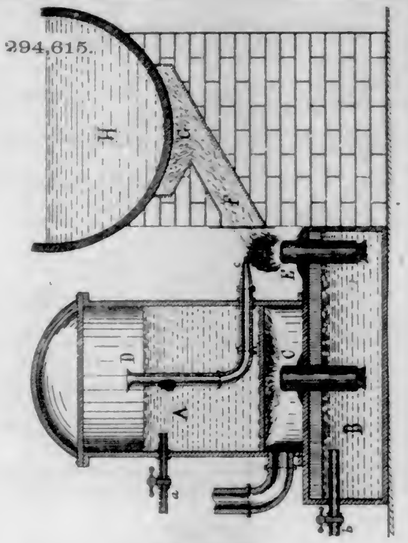
5. The combination, with the brush sockets or carriers, of the two supports connected with said sockets or carriers, said supports being movable with respect to each other to move the brushes toward and away from the commutator-disk, and movable together to adjust the position of the brushes with respect to the neutral and maximum points on the commutator-disk, substantially as described.

6. The combination, with the commutator disk and brushes of an electrical machine, of means, substantially as described, for simultaneously moving the said brushes toward and away from the commutator-disks, and for simultaneously adjusting the position of the brushes with respect to the neutral and maximum points on the commutator-disk, substantially as described.

294,614. HYDROCARBON-BURNER. WILLIAM LAMPAS GREGG, Philadelphia, Pa. Filed June 11, 1883. (No model.)

Claim.—The combination of the oil-tank B, the burners C E, fed therefrom, the receiver A, situated above the burner C, the discharge-pipe D, the nozzle of which is situated over the burner E, and the ignited-gas conducting-flue F, located in line with the nozzle of the pipe D, substantially as and for the purpose set forth.

294,615.



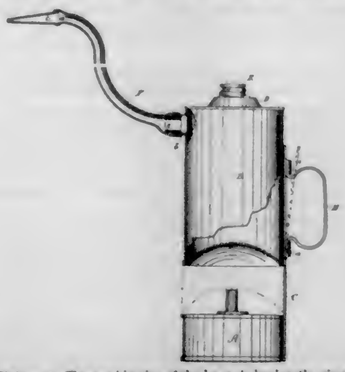
294,615. WIRE-FENCE FASTENER. CHARLES E. GRIFFITH, Storm Lake, Iowa. Filed Sept. 27, 1883. (No model.)



Claim.—1. A fastening for wire fences, consisting of a screw-threaded shank, *a*, and a spirally-curved eye, *b*, having an offset and lapped end to form an outlet from the eye, substantially as shown and described.

2. The combination, with a wire-fence cable or strand, of the fastening A, consisting of a screw-threaded shank, *a*, and a spirally-curved eye, *b*, having an offset and lapped end, substantially as shown and described.

294,616. DEVICE FOR DESTROYING INSECTS. CHARLES J. GUSTAVESON, Salt Lake City, Utah. Filed May 23, 1883. (No model.)



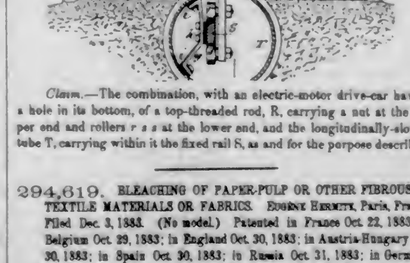
Claim.—1. The combination of the lamp A, having the single bent spring-standard C, with the vessel B, having loops or keepers *a a*, for sustaining and adjusting the vessel above the lamp, as described.

2. The combination, with the lamp A, having standard C, of the vessel B, made adjustable thereon, and adapted to slide down and rest upon the wick-tube to form a cover for the same, as described.

3. The combination, with vessel B, having nipple *b*, of the flexible tube F and internal supporting-wire, *d*, with friction-sleeve *e*, substantially as shown and described.

4. The combination, with the standard C and vessel B, having keepers *a a*, of the curved handle H, having its ends secured along with the standard in said keepers, as shown and described.

294,617. TWO-WHEELED VEHICLE. WILBUR F. HEATH, Fort Wayne, Ind. Filed Apr. 14, 1883. (No model.)



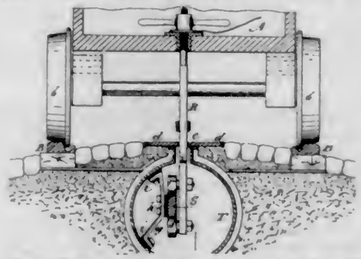
Claim.—1. The combination of the body A, the draft-frame having the cross-bar H, the bars G G, pivoted to the under side of the body, the shackle-bars which connect said bars G G to the cross-bar H, the flat steel springs I, secured to the body directly above the axle, and the shackle-bars, each pivoted at one end to one of the bars G and at the other end to a spring, I, the aforesaid parts being arranged substantially as set forth, to permit the flat spring to be secured as aforesaid between the axle and the seat, and whereby a displacing-strain upon the spring-fastening is avoided.

2. The combination of the draft-frame having the forward part, C C, with downwardly-curved rear ends, and the rear portion, D D, with upwardly-curved front ends rigidly secured to the downwardly-curved parts of the forward portion, C, whereby there is produced a strong two-part draft-frame, which permits the body to be hung low, the rocking bars G, below the body, pivotally secured at the forward ends to the draft-frame, and the flat steel springs fastened to the bottom of the body and pivotally secured to the rear ends of said rocking bars, substantially as set forth.

3. The combination of the body, the draft-frame secured to the axle, the rocking bars G G, pivotally connected to the draft-frame at their front ends, the flat springs I, connected with the rocking bars at their rear ends, and the supplemental springs K, below the springs I, and arranged to support the body when unusual weight is upon it, substantially as set forth.

294,618. GRIP FOR ELECTRIC CARS. JOHN CARLOS HENDERSON, New York, N. Y. Filed July 30, 1883. (No model.)

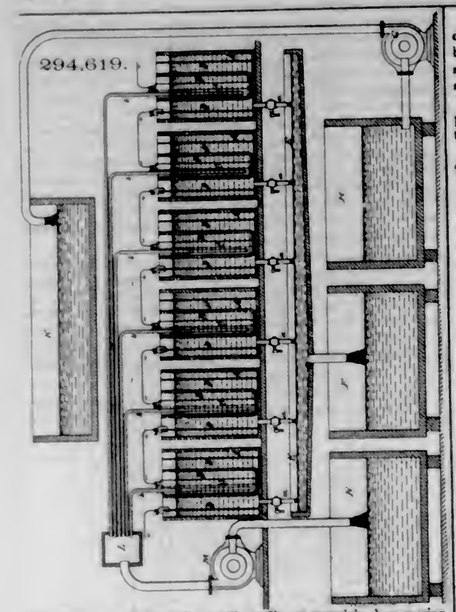
Brief.—Device for increasing friction of car-wheels upon rails of the track. The bar S may serve as electrical conductor.



Claim.—The combination, with an electric-motor drive-car having a hole in its bottom, of a top-threaded rod, R, carrying a nut at the upper end and rollers *r s s* at the lower end, and the longitudinally-slotted tube T, carrying within it the fixed rail S, as and for the purpose described.

294,619. BLEACHING OF PAPER-PULP OR OTHER FIBROUS OR TEXTILE MATERIALS OR FABRICS. EUGENE HERMITE, Paris, France. Filed Dec. 3, 1883. (No model.) Patented in France Oct. 22, 1883; in Belgium Oct. 29, 1883; in England Oct. 30, 1883; in Austria-Hungary Oct. 30, 1883; in Spain Oct. 30, 1883; in Russia Oct. 31, 1883; in Germany Nov. 3, 1883; in Norway Nov. 3, 1883; in Italy Nov. 8, 1883; in Denmark Nov. 8, 1883; in Sweden Nov 10, 1883, and in Portugal Dec. 22, 1883.

294,619.

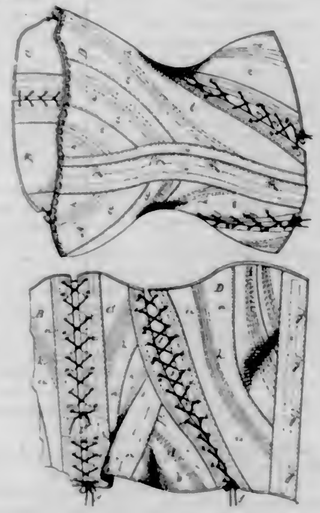


Claim.—1. In bleaching textile or fibrous materials, decomposing chlorides of soda or potash by an electric current under such conditions as to cause the formation of an alkali (soda or potash) and a metallic chloride, preferably chloride of lead, substantially as hereinbefore described.

2. In bleaching textile or fibrous materials, decomposing the metallic chloride in the presence of the materials that are to be bleached, and recovering the metal in the metallic state for use in subsequent operations, substantially as hereinbefore described.

3. In an apparatus for bleaching fibrous materials, the combination of a rag-engine or equivalent apparatus with the above-described devices for simultaneously effecting the electrolysis of the metallic chloride, bleaching the pulp, and recovering the precipitated metal, substantially as set forth.

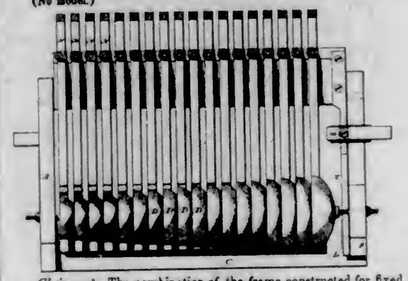
294,620. CORSET. CHARLES W. HIGBY, Jackson, Mich. Filed Sept. 7, 1883. (No model.)



Claim.—1. A corset composed of four parts, A, B, C, and D, each of said parts consisting of a series of diagonal sections, *a*, with diagonal bones *h* placed therein, the parts being united by lacing-cords *f*, all constructed and arranged in the manner hereinbefore particularly described and set forth.

2. A corset with the four parts A, B, C, and D composed of the pieces *a* and gores, as shown, said parts being adapted to be united by the lacing-cords *f*, as and for the purpose described.

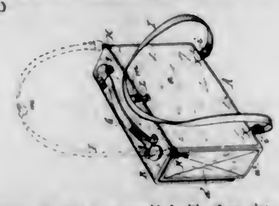
294,621. REED-ORGAN ATTACHMENT. WILLIAM HOPER, New Haven, Conn., assignor to B. Shoninger, same place. Filed June 11, 1883. (No model.)



Claim.—1. The combination of the frame constructed for fixed arrangement within the organ-case, the series of bells D, hinged hammers M, rocker-board F, hung in said frame, levers N, hung upon said rocker-board, one arm extending forward into a position to stand beneath the corresponding key of the organ, the other arm extending rearward to its corresponding hammer-lever, and the stop mechanism, substantially such as described, in connection with said rocker-board, all arranged within and as a part of said frame, and whereby said rocker-board may be turned to bring the forward arm of the levers N into a position to be acted upon by the respective keys, substantially as and for the purpose described, said frame, bells, rocker-board, hammers, and levers constituting a structure independent of the organ itself.

2. The combination of the bells D, hinged hammers M, corresponding keys, the hinged board F, carrying intermediate levers, N, the stop-slide I, and adjusting-screw *m*, substantially as and for the purpose described.

294,622. SCHOOL-BAG. MICHAEL HÖNINGER, Buffalo, N. Y., assignor of one-half to John C. Pickelmann, same place. Filed Oct. 18, 1883. (No model.)



Claim.—1. A school-bag provided with a front plate, *a*, back plate, a^2, cover B, and end plate, *a'*, having vertical ways or grooves *c*, arranged near the back plate, a^2, and adapted to receive a slate, which latter confines the books and papers in the body of the bag when the cover B is opened, substantially as described.

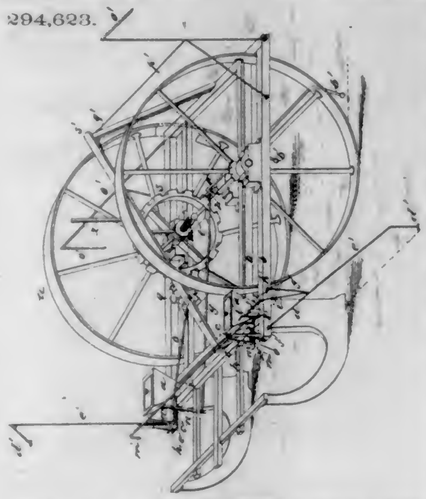
2. In a school-bag, the combination of a body provided with top hooks, H H L, and bottom hooks, K K, and a carrying-strap, I, provided with end rings, *i i*, and a central ring, *m*, substantially as set forth.

294,623. CORN-PLANTER. WILLIAM HOPPER and ISAIAH J. ALLEN, Jefferson, Iowa. Filed Oct. 5, 1883. (No model.)

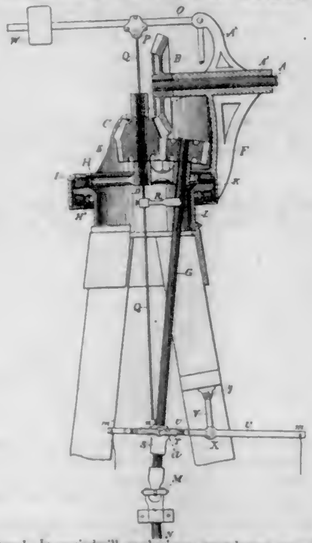
Claim.—1. The combination, with the dropper-slide, of the transverse rock-shaft *i*, mounted on standards *m m* at the forward end of the frame, and provided with downwardly-projecting arms *h h*, engaging the dropper-slide, and with an arm, *n*, connected with the gear-wheel *q* and the transverse rock-shaft *a'* at the rear end of the frame, to which are attached the denters *b'* by the rods *o y*, whereby the dropper-slide and denters are simultaneously operated, substantially as set forth.

2. The combination, with rock-shaft provided with arms *m' m'* at each end, arms *h h*, and arm *n*, of the dropper-slides, operated by the arms *h h*, the spring-levers *j*, connected with the pointers *d d'* by rods *i'*, and operated by the arms *m' m'*, the denters *b'* on rock-shaft *a'*, connected to arm *n* by rod *y*, and a rod, *o*, connecting the gear-wheel *q* with the arm *n*, whereby motion is imparted to the rock-shaft *i*, and the above-named parts connected therewith, substantially as set forth.

294,623.



294,624. SHIFTING APPARATUS FOR WINDMILLS. LEANDER M. HOSKINS, Evansville, Wis. Filed Aug. 6, 1883. (No model.)



Claim.—1. In a windmill employing a secondary or compensating turn-table, revolving at a different rate of speed from that of the main turn-table, an apparatus for shifting the wind-wheel in and out of the wind, consisting of three sets of devices, of which one connects and revolves concurrently with the main turn-table, another with the secondary or compensating turn-table, and the third is so secured to the tower as to avoid revolution with the turn-tables, the three sets being swiveled so as to act independently of each other, for the purpose set forth.

2. In a windmill employing a secondary or compensating turn-table, and an oblique shaft arranged as described, a sleeve loosely adjusted upon said shaft, and connecting with the compensating turn-table by means compelling it to revolve concurrently therewith, for the purpose set forth.

3. In a windmill employing a secondary or compensating turn-table, and an oblique shaft arranged as described, the combination, with a sleeve loosely adjusted upon said shaft, and revolving concurrently with the compensating turn-table, of a rod connecting said sleeve with the shifting devices attached to the main turn-table, and swiveled to allow of the different rates of revolution of said turn-tables, for the purpose set forth.

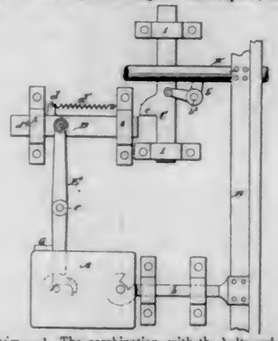
4. In a windmill employing a secondary or compensating turn-table, and an oblique shaft arranged as described, the combination, with a sleeve loosely adjusted upon said shaft, and revolving concurrently with the compensating turn-table, of a second sleeve or ring swiveled upon the first-mentioned sleeve and connecting with the shifting devices attached to the tower by means preventing said sleeve or ring from revolving by the revolution of the turn-tables, for the purpose set forth.

5. In a windmill employing a secondary or compensating turn-table, and an oblique shaft arranged as described, the combination, with a sleeve loosely adjusted upon said shaft, and a second sleeve or ring swiveled upon it, of a lever attached to said sleeve or ring and to the tower by means preventing the revolution of said sleeve or ring, and allowing both sleeves to change position according as the position of the oblique shaft varies, for the purpose set forth.

6. In the windmill described, the combination, with the sleeves S and T, the former revolving concurrently with the secondary or compensating turn-table, of the lever U, provided on both sides of its fulcrum with means adapting the sleeves to be actuated either upward or downward from the base of the tower, for the purpose set forth.

7. In the windmill described, the arm R, rigidly attached to the rod Q, and loosely embracing the oblique shaft G, for the purpose set forth.

294,625. SAFE-LOCK. JOHN T. HOUGH, Chicago, Ill., assignor of one-half to John A. Harper, Pittsburg, Pa. Filed Sept. 18, 1883. (No model.)



Claim.—1. The combination, with the bolts and bolt-work of a safe, vault, or other lock-up, of a vertically-reciprocating lipped or recessed bolt actuated by the movement of the locking-bolts, a spring-actuated safety-bolt adapted to engage with the latter, a detachable lock-bar connected with said bolt and with the lock-spindle, and a notched keeper against which said lock-bar rests, thereby holding the safety-bolt out of engagement with the lipped bolt, substantially as described.

2. The combination, in a safe or vault lock, of the locking-bolts, the bolt-work, the vertically-sliding lipped bolt connected with and actuated by the bolt-work, the horizontally-sliding safety-bolt, the guide-staple for the latter, a pin arranged in an aperture in the safety-bolt and normally projected by a spring to bear against the staple when the safety-bolt is advanced, and a lock-bar connected with the safety-bolt and with the spindle of the lock-bolt, substantially as described.

3. The combination, with the locking-bolts, of a lipped or recessed bolt, a bell-crank lever connecting said parts, by which the lipped bolt is reciprocated by the action of the locking-bolts, and a spring-actuated safety-bolt engaging with said lipped or recessed bolt when the lock is tampered with, substantially as described.

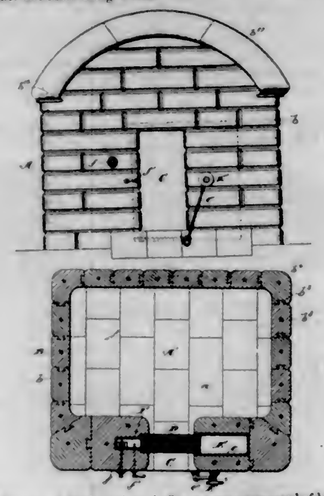
4. The combination of the lock having its spindle projecting from the back thereof, a grooved nut secured on the said projecting end of the spindle, the lock-bar having its lower end forked and engaging the nut, a safety-bolt connected with the upper end of the lock-bar, a vertically-sliding lipped bolt, and the bolt-work connected with and actuating the vertically-sliding bolt, substantially as described.

5. The combination, with the lock A, having spindle *a* and keeper G, of the lock-bar E, the safety-bolt D, having spring *d'*, the lipped bolt C, bell-crank *b'*, and bolts B', substantially as described.

6. The combination of the locking-bolts of a safe or vault, the bolt-work, a vertically-sliding lipped bolt connected with and actuated by the bolt-work, a sliding safety-bolt, a lock-bar connected with the latter and with the spindle of the lock, and means for holding the safety-bolt in engagement with the lipped bolt, and thereby preventing the movement of the bolt-work, substantially as described.

294,626. BANK-VAULT. JOHN T. HOUGH, Chicago, Ill., and JOHN A. HARPER, Pittsburg, Pa. Filed Sept. 18, 1883. (No model.)

Brief.—Constructed of blocks of hard cast-iron united by tongue and groove on one face, and dovetailed upon the faces at an angle thereto. Rods pass through the blocks and are secured by nuts in pockets in the end blocks. The door moves in a steel-lined recess, and the lock and bolt work is located in a corresponding steel-lined recess in the opposite side of the doorway. The door consists of a solid block of hard iron cast upon a perforated wrought-iron case in the center thereof. The vault has an inner and outer lining of steel.



Claim.—1. A bank-vault or similar structure composed of blocks of hard cast-iron or equivalent material, said blocks being tongued and grooved upon one face and dovetailed upon the faces at an angle thereto, and united by tie-rods, substantially as described.

2. The combination, in a bank-vault, of the blocks jointed in the manner described, the rods binding the several courses together, and nuts set in pockets in the end blocks to receive the ends of the tie-rods, substantially as described.

3. The combination, with the walls composed of hard cast-iron blocks united in the manner set forth, of a door moving in a steel-lined recess in the wall, and a lock and bolt-work set within a corresponding steel-lined recess upon the opposite side of the doorway, substantially as described.

4. The combination, with the blocks forming the side wall, of the angular corner blocks, dovetailed to the adjacent blocks upon their vertical faces, and having a tongue-and-groove joint upon the other faces, the outer corners of said blocks being rounded and tie-rods being passed through the whole course, substantially as described.

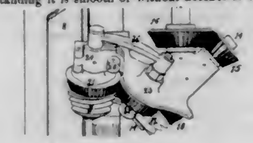
5. The combination, with the door moving in a steel-lined recess in the body of the thickened wall, having a perforated wrought-iron case in the center, and having friction-rolls supporting it, of a rack-bar attached to the bottom of said door, a pinion engaging therewith, and means for rotating the latter, substantially as described.

6. The combination, with the recessed wall, of a door moving therein and extending beyond the limits of the doorway in all directions when closed, said door being composed of a solid block of hard cast-iron and a perforated wrought-iron case in the center, upon which the body of the door is cast, substantially as described.

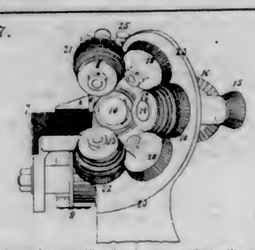
7. The combination, with a bank-vault composed of hard cast-metal blocks jointed together by tongues and grooves and dovetails in the manner set forth, and having tie-rods binding the individual blocks and several courses together, of an inner and outer lining of steel, substantially as described.

294,627. DEVICE FOR DRIVING A HELICAL SEWING-NEEDLE. EDMUND HUNT, Glasgow, County of Lanark, Scotland. Filed Dec. 5, 1883. (No model.) Patented in England July 17, 1878, No. 2,856; in France Jan. 16, 1879, No. 128,474, and in Germany Feb. 11, 1879, No. 9,802.

Brief.—The invention relates to sewing-machines of the kind by which a thread is laid in a helical form, passing around the edges of the material to be sewed together. The needle is driven in a positive manner, notwithstanding it is smooth or without notches or teeth.

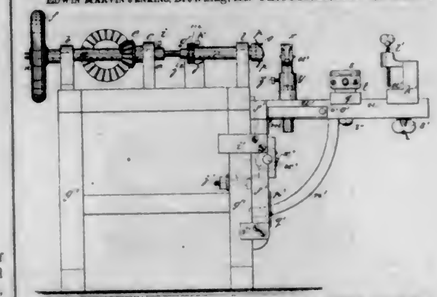


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Claim.—A sewing-machine having a needle in the form of a conical helix, and conical helically-grooved pulleys supporting and adapted to drive said needle, substantially as described.

294,628. FELLY-BORING AND SPOKE-TENONING MACHINE. EDWIN MARVIN JENKINS, Browning, Mo. Filed June 20, 1883. (No model.)



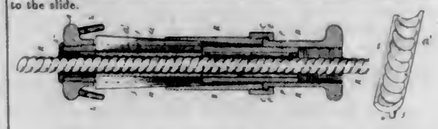
Claim.—1. The combination of the rotary hollow mandrel *a*, adapted to carry a tenoning-head or boring-bit, and a hollow cutter and boring-socket, *j*, with a shaft, *g*, arranged to slide in said socket and mandrel and be screw-clamped thereto, having a key-seat along its whole length, and provided with a stop, *n*, as and for the purpose described.

2. The combination, with the table *u*, of the chuck *q s* on a transverse right and left screw, *t*, the clamping-bolt *v*, the rest *w*, held at different adjustments in a socket-post, *y*, by a screw, *z*, and arranged between the spoke-holder and tool, the clamp-lever *x*, pivoted to the top of said rest, the lever *c'*, connected by a cord with lever *x*, and pivoted to the frame at *d''*, and the ratchet *e'*, as and for the purpose specified.

3. The combination, with the chuck *q s* and felly-clamp *k' l'*, of a table, *u*, arranged to shift up and down to determine the relation of said chuck and clamp to the tool-socket, as shown and described.

294,629. FIRE-ESCAPE. GEORGE R. JENKINS, Weston, Ky. Filed May 19, 1883. (No model.)

Brief.—The stock is slotted at the top for the insertion of two flanged semi-tubular clamp-sections corrugated on their inner sides. A tubular slide is pushed up on these clamps by a screw-threaded hand-piece moving up on the screw-threaded portion of the stock and coupled to the slide.



Claim.—1. In a fire-escape, the combination, with the tubular stock having the slots and the grippers loosely located therein, of a vertically-playing compressing-cylinder and means for operating it, substantially as set forth.

2. The combination of the semi-cylindrical grippers having the beveled flange, a tubular stock, and means for compressing said grippers, substantially as described and shown.

3. The stock provided with the crown, having the bolt-loops, in combination with the grippers, the compressing-cylinder, and the band-tube, substantially as specified and shown.

4. In a fire-escape, the combination of the slotted tubular stock having the lower portion threaded, the semi-cylindrical grippers having the beveled flange, the compressing-cylinder having the beveled grooves, the internally-threaded hand-tube flanged at the upper end, and the flanged coupling-collar, all substantially as described and shown.

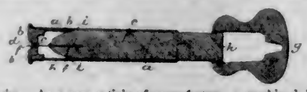
5. The tubular slotted stock provided with the crown and the in-

ternal thimble, in combination with the grippers, the compressing-cylinder, and the hand-tube, substantially as set forth.

6. The combination of a rope, the semi-cylindrical grippers adapted to grip the rope in its straight vertical position, the compressing-cylinder, and means for operating the same, all substantially as specified and shown.

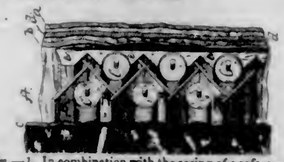
7. The combination of the tubular slotted stock, the internal thimble, the grippers having the diagonal corrugated semi-cylindrical surface and the compressing-cylinder, and the hand-tube, substantially as set forth.

294,630. CARTRIDGE-LOADER AND CAP-EXPELLER. LOUIS KELLER, New York, N. Y. Filed Nov. 19, 1883. (No model.)



Claim.—As a new article of manufacture, a combined loader and cap-expeller in which the body of the loader is truly cylindrical, and with the expelling-needle at one end thereof, and a handle the recess in which is bell-mouthed, and adapted to receive either end of the loader, substantially as and for the purposes set forth.

294,631. BURGLAR-PROOF SAFE. GEO. W. KENNEDY, Garnaville, Iowa. Filed Dec. 26, 1883. (No model.)



Claim.—1. In combination with the casing of a safe, a series of plates set at an angle between the walls of the casing, and a series of rollers arranged on opposite sides of the plates and in the angle thereof, substantially as described.

2. In combination with the outer and inner walls of a safe-casing, a plurality of metallic plates set between the walls at an angle, a series of rollers arranged on opposite sides of the plates and in the angles thereof, and an elastic filling between the outer casing and the plates and rollers, substantially as described.

3. In combination with the outer and inner walls of a safe-casing, an intermediate partition-wall, an elastic filling between the outer wall and the partition, a plurality of plates set at an angle between the partition and the inner wall, a series of rollers arranged on opposite sides of the plates and in the angle thereof, and an elastic filling between the partition and the plates and rollers, substantially as described.

4. A safe-casing consisting of an inner and an outer wall, an intermediate partition-wall, and elastic filling between the outer wall and the partition, substantially as described.

5. A safe-casing consisting of an outer and an inner wall, an intermediate partition-wall, an elastic filling between the outer wall and the partition, and another elastic filling between the partition and the filling of the inner space, substantially as described.

6. A safe-casing consisting of an outer and an inner wall, an intermediate partition-wall, an elastic filling between the outer wall and partition, a plurality of rollers journaled in between the partition and the inner wall, and an elastic filling between the partition and the rollers, substantially as described.

294,632. VEHICLE-AXLE. SIMON KENNEDY, Auburn, N. Y., and SAMUEL G. WARNER, Wilmington, Del., assignors to the Alfred E. Smith and Warner Axle Company, of Delaware. Filed July 24, 1883. (No model.)



Claim.—1. An axle for vehicles, having on its outer end an annular groove and a rounded or curved head projecting beyond the axle-box, in combination with a binding screw-cap having an internal annular groove corresponding with the groove on the axle, a catch or washer to fit said grooves, and attached to said cap by means of a spring, and an axle-box with a screw-threaded end to receive said cap-nut, substantially as described.

2. A binding screw-cap provided with an elastic end bearing for the axle, in combination therewith, when the latter is held within the axle-box by means of a washer or catch, the parts being held together by said cap, substantially as set forth.

3. The combination of the axle A, with or without a grooved end, the axle-box B, with screw-threaded end, and the spring *m*, with catch or washer attached thereto, the latter operating to hold the axle and axle-box together when retained in position by a binding-nut screwed on the end of the axle-box, as set forth.

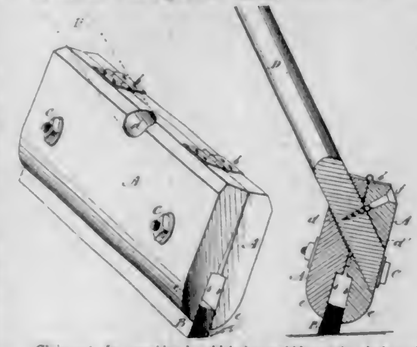
294,633. TOOL-HANDLE. JOHN A. KING, St. Louis, Mo. Filed June 30, 1883. (No model.)



Claim.—1. A tool having a handle with wooden body for grasping, and a weighted metal cap to adapt it to form a hammer, as set forth.

2. A combined hammer and screw-driver having wooden body A, for grasping, and weighted metal cap for driving a screw, as set forth.

294,634. SCRUBBER. PETER O. KING and ANDREW M. CARLSON, Valley City, Dak. Filed Aug. 25, 1883. (Model.)



Claim.—1. In a scrubber in which the scrubbing-surface is formed by a strip of rubber or other analogous material held in place by an adjustable clamp, the combination, with the scrubbing-strip B, of the clamping-jaws or side pieces, A A, constructed to receive the inner portion of said strip within them, the hinges *b b*, by which said jaws are connected together along their tops, and one or more adjusting-screws, C, arranged intermediately of the hinges and scrubbing-strip, substantially as specified.

2. The combination of the hinged jaws or clamping side pieces, A A, of the scrubber, having an oblique hole, *d d'*, in or through both of them for reception of the handle, the adjusting-screws, C, and the yielding or elastic scrubbing-strip B, essentially as shown and described.

294,635. EXTENSIBLE FIRE-ESCAPE. PAUL KINGSTON, Hastings, Minn. Filed May 5, 1883. (No model.)

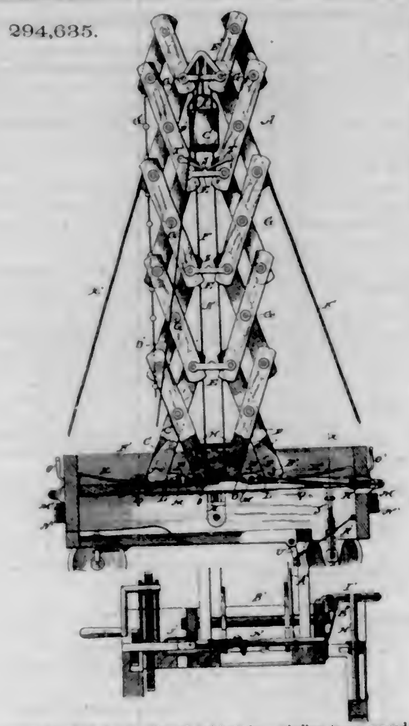
Brief.—The two pairs of lazy-tongs are connected by cross-rods and connecting-links, having stops with which braces pivoted to the arms of the lazy-tongs engage. The inner lower arms of the lazy-tongs are pivoted on stationary rods, and the outer lower arms are moved on segmental supports on the truck. Guide-ropes carrying a basket are arranged within the structure. A supplemental frame, to which the structure is secured upon the truck, may be tilted at one side to incline it toward the building.

Claim.—1. The combination of the series of lazy-tongs arranged in pairs connected by cross-rods, and the connecting-links E, having stops thereon, and the braces T, adapted to engage with the stops when the device is extended, whereby the same may be rendered rigid and firm, substantially as shown and described.

2. The combination, with the lazy-tongs having the inner cross-bars, H, pivoted on stationary rods I, and the segmental supports K, the outer cross-bars, J, having elbows L, and the rods M, sleeves P, cords O Q, pulleys R, and windlass N, substantially as shown and described.

3. The combination, with the extensible fire-escape, of the guide-

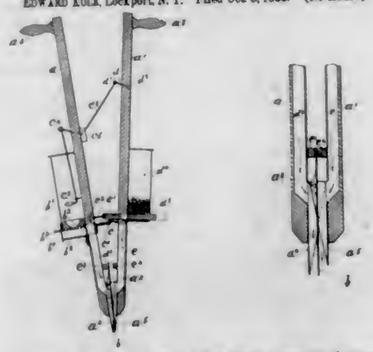
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ropes A', adapted to be adjusted and held by a windlass to correspond to the desired height of the scaffold, and the basket C', connected to the ropes A', and adapted to be raised or lowered by the cord D', substantially as shown and described.

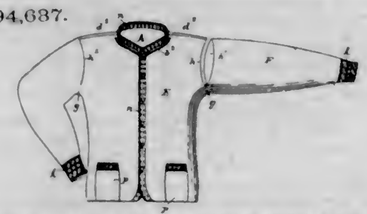
4. The combination, with the supporting-frame B and the scaffold A, of the supplemental frame B', adapted to be lowered at one side to incline the scaffold, and the windlass-operated stay-cords E' and cam-supported props M', substantially as shown and described.

294,636. CORN-PLANTER AND FERTILIZER-DISTRIBUTER. EDWARD KOLB, Lockport, N. Y. Filed Oct. 3, 1883. (No model.)



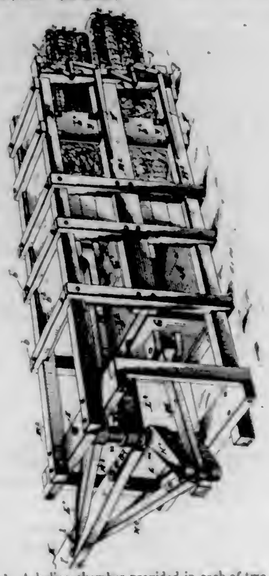
Claim.—In a corn-planting and fertilizing machine, the parts *a a'*, provided with the usual handles, seed-planting and fertilizing receptacle, their operating mechanism, and lugs a^3 a^4, in combination with the pivoted central plate, *b*, and plates a^5 a^6, substantially as and for the purposes specified.

294,637. KNIT JACKET. OTTO KREISEL, Baltimore, Md. Filed Jan. 7, 1884. (No model.)



Claim.—A knit jacket having the sleeves attached to the body partly by a seam and partly by a continuous knit-fabric connection integral with both body and sleeve, as set forth.

294,638. DUPLEX BALING-PRESS. JOHN LA DOW, Albany, N. Y. Filed June 26, 1883. (No model.)



Claim.—1. A baling-chamber provided in each of two of its oppositely-located sides with a duplex opening and a division-piece located between the two openings comprising said duplex openings of the side and facing said baling-chamber.

2. The combination, with a baling-chamber having each of two of its oppositely-located sides made with duplex openings, of an adjustable division-piece provided with tie-band-supporting ledges.

3. The combination, with a baling-chamber which has each of two of its oppositely-located sides made to consist of duplex openings, a rear-end-closing door provided with grooves for receiving tie-bands, and a follower or partition-piece or a platen provided with similar grooves, of division-piece *b'*, provided with tie-band-supporting ledges.

4. The combination, with a pressing-chamber, a platen, and a division-board or follower provided with grooves, of a baling-chamber which is provided with a rear-end-closing door provided with corresponding grooves, and a division-piece provided with tie-band-supporting cleats, which are located at each of two of its oppositely-located sides, and made to separate the duplex openings of said sides.

5. In a duplex baling-press, the combination and arrangement, with a pressing mechanism which is adapted to move two platens simultaneously, but in opposite directions and alternately, of two baling-chambers, which are arranged one above the other, each provided with oppositely-located duplex open sides and division-piece *b'*, provided with ledges *c*, made in their respective vertical sides.

6. In a baling-press, the combination, with platen-chamber A or A', having feed-openings *a a'* made in both vertical sides thereof, of the removable and interchangeable closing-board C, whereby either of the vertical sides of said chamber or chambers will be closed at will, while the opposite side will be open, substantially as and for the purpose set forth.

7. In a baling-press, the combination, with a baling-chamber and an end-closing board or door fitting in said chamber, and provided with tying-off grooves or recesses, of eccentric locking-bars E E, connected together by angular lever F, link *j*, and arm *k*, so that said bars will be moved simultaneously and in opposite directions for operations with said end-closing board or door, substantially as and for the purposes set forth.

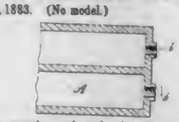
8. In a baling-press, the combination, with platen G, (or G',) adapted to be moved in a reciprocating manner in a platen-chamber, of a toggle-lever having limbs of unequal length in which its long and short limbs will be each pivoted to the other, and also to bar H^3, coupled with a sweep-lever, with the thrusting end of the long limb pivoted to said platen, and the stationary end of the short limb pivoted to a vertical shaft, and a sweep-lever also pivoted to or from said vertical shaft, substantially as and for the purpose set forth.

9. In a duplex baling-press, the combination, with vertical shaft I, of sweep-lever K, having bars H^2 H^2 branching therefrom and pivoted each to a toggle-lever of a pair which are arranged one above the other and made with like unequal length of limbs H and H', in which the long limbs of each will have a hinged connection with a platen, and the short limbs of each will have a pivoted connection with said vertical shaft, and both limbs of each toggle-lever will be pivoted together, and also to one of said coupling-bars H^3, substantially as and for the purpose set forth.

10. In a baling-press operated by a sweep-lever, the combination, with said sweep-lever and the vertical shaft I, of coupling-bars H^3 H^3, having each a pivoted connection with a toggle-lever, connecting-bolt *l*, and coupling-plates *m m*, secured to the rear end of said sweep-lever in a detachable manner, whereby said sweep-lever may, at will of the operator, be made to have a rigid connection with its branch arms and with an arm of each of said toggle-levers and the vertical shaft, and be disconnected from said vertical shaft, and have a flexible connection with each said coupling-bars, and be swung against a side of the press-body, all substantially as and for the purpose set forth.

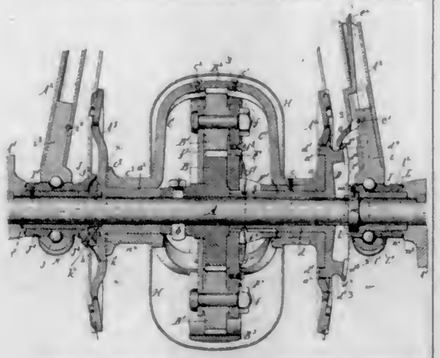
11. In a baling-press, the combination, with a sweep-lever and toggle-limbs, H H', of coupling-bars H^3 H^3, provided with a series of pinning-holes, *l' l'*, and pin or bolt *l*, whereby said toggle-limbs may be adjusted at different angles, as set forth.

294,639. THREADED CASTING. JOHN B. LARKIN, Pittsburg, Pa. Filed June 4, 1883. (No model.)



Claim.—A metal casting having in combination therewith a threaded sheet-metal thimble having its threads struck up or spun, embedded therein or thereon by pouring the casting metal around or into the said thimble, substantially as described.

294,640. BICYCLE. EMMIT G. LATTA, Friendship, N. Y., assignor of one-half to Adrian C. Latta, same place. Filed Apr. 17, 1883. (No model.)



Claim.—1. In an internally-geared driving-wheel, the combination of a sliding shifting-sleeve adapted to be held rigidly against rotary movement by being engaged with the fork or frame, and to be detached from the fork or frame at desire for changing the motion of the wheel, and a spring whereby the sleeve is held away from the fork or frame, substantially as set forth.

2. The combination, with the axle A, of a gear-wheel, B, a planet-wheel, B', attached to a supporting frame or arm, and a gear-wheel, B^2, secured to the driving-wheel of a sliding sleeve, whereby the planet-wheel support can be released or held rigidly at will, substantially as set forth.

3. The combination, with the axle, of the gear-wheel B, a planet-wheel, B', a gear-wheel, B^2, secured to the wheel, an arm, F, supporting the planet-wheel, and provided with teeth *g'*, and a sliding sleeve, *d*, provided with teeth *g*, substantially as set forth.

4. The combination, with the axle, gear-wheel B, planet-wheel B', and a driving-wheel provided with a gear-wheel, B^2, of an arm, F, supporting the planet-wheel, a spring, *f''*, and a sliding sleeve, *d*, substantially as set forth.

5. The combination, with the axle, of the gear-wheel B, planet-wheel B', gear-wheel B^2, secured to the driving-wheel, arm F, provided with hub F' and spring *f''*, and a sliding sleeve, *d*, provided with disk D, having devices for connecting it with the hub or fork at desire, substantially as set forth.

6. The combination, with the axle and driving-gear mounted thereon, of hub-disks A^3 A^4, arranged on opposite sides of the driving-gear, and the skeleton frame C C', whereby said hub-disks are connected, substantially as set forth.

7. The combination, with the axle, variable driving-gear, and fork or frame, of a sliding shifting sleeve, *d*, having a grooved disk, D, a lever, *e*, pivoted to the frame and engaging in the groove of the disk, and a shifting rod, e^2, bearing upon the lever *e*, substantially as set forth.

8. The combination, with a hollow fork, of a bent shifting rod arranged in the same, substantially as set forth.

9. In a bearing, the combination of a ball-bearing and an auxiliary parallel bearing, which is called into action when the ball becomes inoperative, substantially as set forth.

10. In a bearing, the combination of a ball-bearing and an auxiliary parallel bearing attached to the axle or other rotating part by a connection which is broken or released when the ball-bearing becomes inoperative, substantially as set forth.

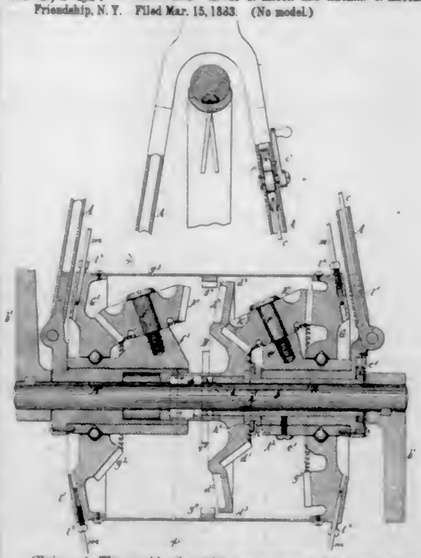
11. The combination, with the bearing-box I and axle A, of the sleeve L, provided with a conical face, *l*, a cone-bearing, L', surrounding the sleeve L, and balls interposed between the cones *l* L' and the box I, substantially as set forth.

12. The combination, with the bearing-box I and axle A, provided with collar *m*, of the sleeve L, having a conical face, *l*, a fastening-screw, *m'*, a cone-bearing, L', and balls *l'*, substantially as set forth.

13. The combination, with a fork provided with a socket at its lower end, of a bearing-box provided with a shank seated in said socket and capable of turning therein, substantially as set forth.

14. The combination, with the bearing-box I, provided with shank *i*, of the fork A^2, provided with the lining *i'*, forming a socket, in which the shank *i* is seated, substantially as set forth.

294,641. VELOCIPEDE. EMMIT G. LATTA and ADRIAN C. LATTA, Friendship, N. Y. Filed Mar. 15, 1883. (No model.)



Claim.—1. The combination, with the crank-shaft *b* and hubs G G', of a connecting-drum, g^3, an internal-gear rim secured to said drum, and gear-wheels, whereby the shaft can be engaged at desire with said gear-rim, and whereby the direct motion of the crank-shaft, or a reduced or increased motion can be imparted to said gear-rim, substantially as set forth.

2. The combination, with the crank-shaft *b*, of the hubs G G', constructed, respectively, with bevel-gears g' g^2, bevel-wheels E and F, turning on fixed arbors, and a drum, g^3, secured to the hubs G G', and provided with an internal-gear rim, g^4, and an adjustable wheel, D, provided with bevel-gears d' d^2, and spur-gear d^3, adapted, respectively, to mesh with the wheels E, F, and g^3, substantially as set forth.

3. The combination, with the crank-shaft *b*, of hubs G G', provided with bevel-gears g' g^2, connecting-drum g^3, provided with the gear g^4, bevel-wheels E and F, shifting-wheel D, arranged between the bevel-wheels E and F, and means, substantially as described, whereby the wheel D can be adjusted to mesh with either of the gears E, F, and g^4, substantially as set forth.

4. The combination, with the crank-shaft *b*, of the bearing A', sleeve B, adapted to turn on the shaft and provided with spiral grooves A, collar H, engaging in the spiral grooves A, and shifting-wheel D, connected with the collar H, substantially as set forth.

5. The combination, with the crank-shaft *b* and gear-adjusting sleeve B, adapted to turn upon the crank-shaft, of the arms b^2, secured to said sleeve, wires *c*, and bell-crank lever C, whereby the sleeve can be turned and the gear mechanism be adjusted, substantially as set forth.

6. The combination, with a rim having an opening extending through it and the hub of a wheel, of a series of spokes constructed of a continuous piece of wire secured to the rim by extending along its outer side between two openings for the passage of the wire, substantially as set forth.

7. The combination, with the rim K and bent-wire spokes *m*, of the clamping-plates *k'*, interposed between the wire and the rim, substantially as set forth.

8. The combination, with the rim K, of a tire, N, and a clamping-plate, *k'*, secured to the rim and adapted to grasp the tire, substantially as set forth.

9. The combination, with the rim K and tire N, of clamping-plates *k'*, constructed with biting-edges adapted to be closed by an inward pressure against the clamping-plate, substantially as set forth.

10. The combination, with a hub constructed in its face with radial recesses *l*, of the bent spokes *m*, and followers *l'*, seated in said recesses, and tightening-screws *l''*, working in the threaded walls of said recesses, substantially as set forth.

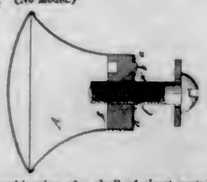
294,642. WRENCH. ORLANDO A. LEE, Mansfield, Ohio. Filed Jan. 10, 1884. (No model.)



Claim.—1. A wrench provided with a stationary jaw and a shank with inclined serrations *b' b'* and smooth sides, in combination with an adjustable jaw recessed for the reception of a thumb-piece, said thumb-piece having an oval-shaped opening, the sides of said opening being provided with serrations *b b*, and a spring-actuated sliding bolt bearing upon the thumb-piece, the parts being organized substantially as shown, and for the purpose set forth.

2. In a wrench having a stationary and sliding jaw, the shank B, screw-threaded on opposite sides, and provided with intermediate plain surfaces, and the thumb-piece D, located upon the shank and embraced by the sliding jaw, so that the thumb-piece will extend beyond the same on opposite sides, the parts being organized and combined substantially as shown, and for the purpose set forth.

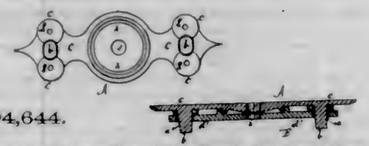
294,643. KNOB OR HANDLE. CHARLES S. LEWIS, Waterbury, Conn. Filed July 2, 1883. (No model.)



Claim.—The combination of a shell of sheet metal forming part with the body of a knob or handle, of an internally-screw-threaded washer of thick strong metal fitted in the back part of such shell, and teats forced from the washer and extending through the shell, substantially as specified.

294,644. COUPLING-PLATE FOR WHIFFLETREES. DENNIS H. LUDDY, Monticello, Iowa. Filed Feb. 26, 1883. (No model.)

Claim.—The plate A, provided with the central draw-bolt aperture,



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the extensions C, having the under bossed perforations, *g*, studs *b*, and annular flanges A, in combination with the under plate, B, having the branches *d* and *d'*, the former having perforations, and the latter elongated slots *a*, the central draw-bolt aperture, and the annular flange, all adapted to operate substantially as and for the purposes specified.

294,645. SADDLE FOR BICYCLES. FREEMAN LILLIBRIDGE, Cedar Rapids, Iowa. Filed Jan. 31, 1883. (No model.)



Claim.—1. A bicycle-saddle seat made in two longitudinal parts, each composed of but a single thickness of leather lying side by side, and suspended at the rear by and movable on the T-head of an upriving spring, substantially as described.

2. A bicycle-saddle seat made in two longitudinal parts, each composed of but a single thickness of leather lying side by side, and supported in front, so that the tension on one side will reciprocate with that of the other, substantially as described.

3. A separate upright post or support combined with the fore part of the backbone of a bicycle, and constituting the forward support of a flexible saddle-seat, while its rear end is supported by a spring.

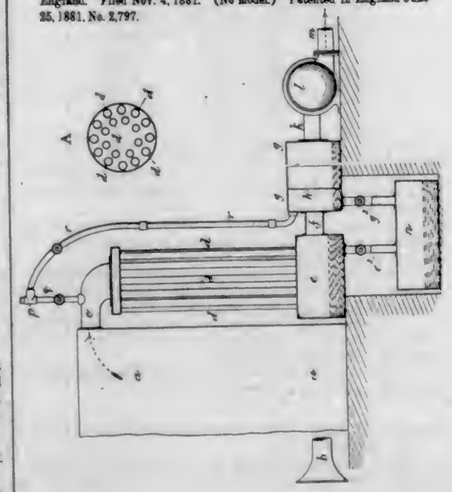
4. A post or support for a flexible saddle, having a seat adapted to be secured to the forward part of the backbone, and having its upright curved forward to support the front part of the saddle-seat.

5. In combination with a flexible saddle-seat supported substantially as described, a spring which extends backward from the seat, when it makes a turn underneath itself and is attached to the backbone.

6. A flexible saddle-seat suspended at its forward end from a post attached to the fore part of the backbone, and suspended at its rear end from a spring which extends backward from the seat, where it makes a turn underneath itself, and is attached to the backbone.

7. In combination with a flexible saddle-seat attached to its upper and free end of a spring, which extends backward therefrom, and makes a curve underneath itself, by means of which and the curve of the backbone an adjustment in height is afforded, substantially as and for the purpose set forth.

294,646. APPARATUS FOR GENERATING AND PURIFYING GASEOUS FUEL. SAMUEL LLOYD, Birmingham, County of Warwick, England. Filed Nov. 4, 1881. (No model.) Patented in England June 25, 1881, No. 2,797.



Claim.—1. The combination, with a gaseous-fuel generator comprising a stack and air-inlets, of a tubular surface condenser, a dry friction-scrubber, and steam-pipes for admitting steam into the condenser and scrubber for cleaning the same, substantially as described.

2. The combination of the gaseous-fuel generator provided with air-inlets, the condenser comprising the series of tubes, the scrubber comprising perforated plates inclosed in a casing, and the branched steam-pipe having a branch opening into the condenser, and a second branch opening into the scrubber, substantially as described.

3. In a steam-propelled vehicle—such as a steamboat, locomotive, or the like—the combination, with the boiler-furnace, of a gaseous-fuel generator comprising a stack and air-inlets, and purifying apparatus for condensing and separating the smoke-producing elements, interposed between the generator and boiler-furnace, substantially as described.

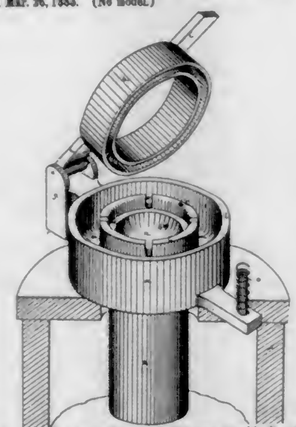
4. In a vehicle—such as a steamboat, locomotive, and the like—the combination, with a gaseous-fuel generator carried by said vehicle, of a condenser for purifying the gaseous fuel, and means for cooling the condenser by a current or circulation of the fluid, air, or water through which the vehicle moves, substantially as described.

294,647. ILLUMINATING-TILE. JACOB MARX, New York, N. Y. Filed Dec. 11, 1883. (Model.)



Claim.—A lens for illuminating-tile, provided with a pendant, which, upon one side, has an axially-diagonal face that is composed of two transversely-convex facets, substantially as and for the purpose specified.

294,648. SOLDERING-TOOL. GEORGE A. MARSH, Brunswick, Me. Filed Mar. 26, 1883. (No model.)



Claim.—1. In a device for soldering cans, a soldering-tool having a horizontal circular ledge on which the can may be revolved, a rim surrounding the ledge, by which the solder is applied to the can, and slots for the admission of the melted solder, in combination with a solder-receptacle surrounding the tool.

2. In a device for soldering cans, the combination of the receptacle *a* with recess *m*, and the tool consisting of the rim *c*, slots *s*, ledge *d*, and cup *n*, substantially as described.

3. In a device for soldering cans, the combination of the receptacle *a*, having the recess *m*, with the tool consisting of the rim *c*, slots *s*, ledge *d*, cup *n*, and air-passage *f*, substantially as described.

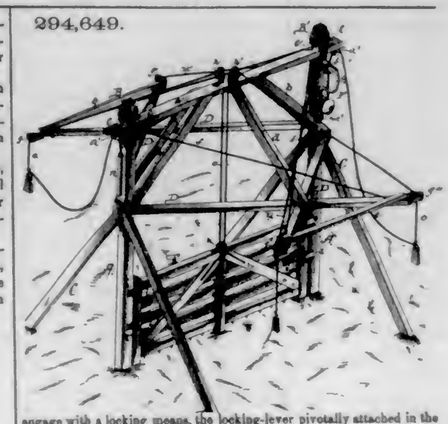
4. The combination of the receptacle *a*, having the recess *m*, the tool consisting of the rim *c*, slots *s*, ledge *d*, and cup *n*, with the piece *h* and hinged bar *i*, substantially as described.

5. The combination of the receptacle and tool, as described, with the bar *i*, piece *h*, and spring *o*, substantially as described.

294,649. GATE. DAVID R. MATLOCK, Red Bluff, Cal. Filed Aug. 17, 1883. (No model.)

Claim.—1. In combination with the vertical sliding gate provided with guide-plates of unequal lengths, the longer of which is adapted to

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engage with a locking means, the locking-lever pivotally attached in the uprights of the gate-frame, substantially as described.

2. In combination with a vertical gate having extended guide-plates, the latch consisting of the lever *q* and latch-bar *s*, substantially as described.

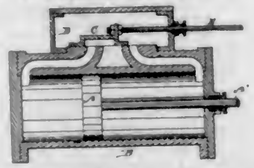
3. In combination with a vertical sliding gate having extended guide-plate, the latch consisting of the lever *q* and latch-bar *s*, and signal lever and bell, substantially as described.

4. In combination with a vertical sliding gate having extended guide-plates, and carrying friction-wheels journaled therein, the latch consisting of the lever *q* and latch-bar *s*, substantially as described.

5. In combination with a vertical sliding gate having adjustable extending guide-plates carrying friction-wheels journaled thereon, the latch consisting of the lever *q* and latch-bar *s*, substantially as described.

6. In combination with the hand-cord *o*, a cord secured thereto and connected with the cord or weight to draw up the gate, substantially as and for the purposes set forth.

294,650. CUT-OFF-VALVE GEAR. MARSHALL J. MCCARTER, Norristown, Pa. Filed Aug. 3, 1883. (No model.)



Claim.—1. In a cut-off for steam-engines, the combination, with the disk J, mounted rigidly on the shaft, of an adjustable ring, Q, held centrally on the said disk, and connected with a cam-ring section, also held on the said disk, of the rocking frame or lever F, provided with the pin or roller T, which rocking frame or lever F is connected with the valve, substantially as herein shown and described, and for the purpose set forth.

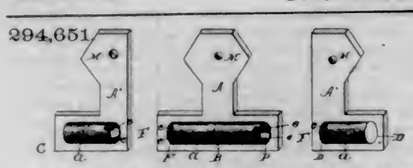
2. In a cut-off for steam-engines, the combination, with the disk J, mounted rigidly on the shaft, of a ring, Q, held centrally on the said disk, a cam-ring section, K, held on the said disk, the ring S, held on the disk, and provided with an arm, S', to which arm S' the ring K is fastened, the screw R, for connecting the ring Q with the arm S', the rocking frame or lever F, and the pin T, which frame or lever F is connected with the valve, substantially as herein shown and described, and for the purpose set forth.

3. In a cut-off for steam-engines, the combination, with the disk J, provided with the ridges O and L, of the ring Q, connected with the cam-ring section K, both resting on the disk J, the rocking frame or lever F, having a pin or roller, T, and a rod connecting the frame or lever F with the valve, substantially as herein shown and described, and for the purpose set forth.

4. In a cut-off for steam-engines, the combination, with the disk J, provided with the slots P and M, and the ridges O and L, of the ring Q and the cam-ring section K, which are connected and both resting on the disk, the rocking frame or lever F, having a roller or pin, T, and a lever or rod connecting the said frame or lever F with the valve, substantially as herein shown and described, and for the purpose set forth.

294,651. PAPER-FILE. LUTHER A. MCCORD, Clinton, S. C. Filed Aug 1, 1883. (No model.)

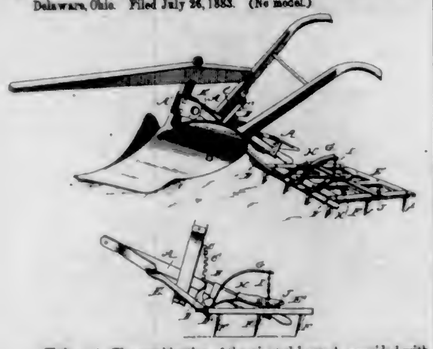
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Claim.—1. In a paper-file, the combination, with a sectional bracket provided with tubular bearings, of a spring-roller having pins for holding paper, substantially as specified.

2. In a paper-file, the combination with the sectional bracket having tubular bearings provided with notches, of the roller having pins, and a wire for holding the paper, and the springs adapted to be inserted in the tubes, being provided with disk-heads to engage the ends of the roller, substantially as set forth.

294,652. HARROW ATTACHMENT. CHARLES ADDISON MCELROY, Delaware, Ohio. Filed July 26, 1883. (No model.)

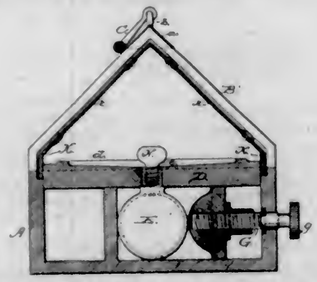


Claim.—1. The combination of the pivoted lever A, provided with a spring-catch, B, arm D, secured at right angles to the lever A, and provided with an arm, G, and spring-arms H H, harrow E', movably secured to the arm D, and provided with a chafing-plate, J, and chain I, as and for the purpose shown and set forth.

2. The combination of the arm D, provided with an arm, G, and spring-arms H H, harrow E', movably secured to the arm D, and provided with a chafing-plate, J, chain I, and means for connecting the arm D to a plow or cultivator, as and for the purpose shown and set forth.

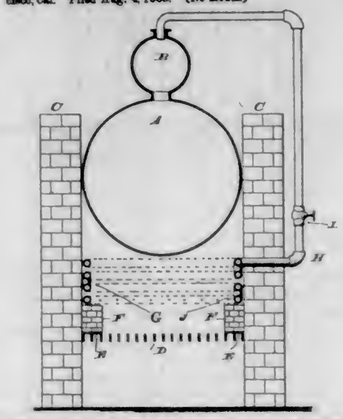
3. The combination of a plow or cultivator provided with a plate, C, having a segmental rack, C', upon its outer edge, and having a keeper, A', secured to the plow-standard or one of the shovel-standards, lever A, pivoted at one end between the ends of the keeper A', and provided with a spring-catch, B, adapted to engage with the segmental rack C', arm D, secured at right angles to the lever A, and provided with an arm, G, and spring-arms H H, harrow E', movably secured to the arm D, and provided with a chafing-plate, J, and chain I, all constructed, combined, and arranged as and for the purpose shown and set forth.

294,653. ARTIFICIAL HORIZON. GEORGE W. MELVILLE, Philadelphia, Pa. Filed Jan. 29, 1884. (No model.)



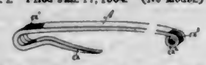
Claim.—An artificial horizon consisting of a suitable box or receptacle, A, provided with a bag of mercury, a plate having a reservoir upon its upper surface, and a central opening communicating with said bag containing the mercury, a compression-screw and slide, glass frame K, and screw-plug H, all substantially as and for the purpose specified.

294,654. STEAM-BOILER FURNACE. ISAAC L. MERRELL, San Francisco, Cal. Filed Aug. 4, 1883. (No model.)



Claim.—In a steam-boiler furnace, the combination of the grate-bars D D, cast-iron plates E E, bench-walls F F, and perforated steam-coil G, substantially as shown and described.

294,655. SPRING FOR BICYCLE-SADDLES. OLIVER M. MITCHELL, Providence, R. I. Filed Jan. 17, 1884. (No model.)



Claim.—1. The spring A, having the front bend and flattened end *a* and the eye a^2, as set forth.

2. The spring A, having the front bend and the flattened end *a* and the eye a^2, and provided with the slots a' a^3, as set forth.

3. The ribs *b* b^2 and the strap b^3, formed upon the backbone of a bicycle, the rib *b* being formed with an eye, b', in combination with the spring A, and having the front bend and flattened end *a*, the eye a^2, and slots a' a^3, and the pin or bolt *c*, all arranged and operating as set forth.

294,656. GARTER. RANDOLPH MITCHELL, St. Louis, Mo. Filed June 18, 1883. (No model.)



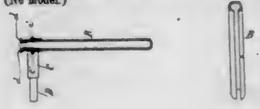
Claim.—The elastic band A, one end of which is provided with a buckle and looped into ring D, the other end being provided with a hook adapted to catch into said ring, in combination with the short elastic strap E, one end of which is secured to ring D and the other having a clamping device attached to it, substantially as shown and described.

294,657. PRIMER. ROBT. F. MITCHELL, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Dec. 31, 1883. (No model.)

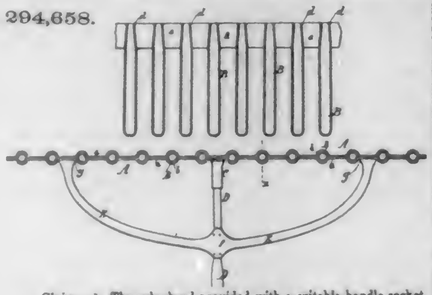


Claim.—The herein-described improvement in primers, consisting in the cup constructed at its closed end or bottom with a recess upon the outside to form a projecting portion, *b*, around said recess, the center projecting outward into said recess, but within the plane of said surrounding portion *b*, and upon the inside with a recess or depression at the center, to receive the fulminate, substantially as described.

294,658. RAKE. JOSEPH MOORE, Greeley, Colo. Filed Oct. 17, 1883. (No model.)



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Claim.—1. The rake-head provided with a suitable handle-socket, and formed of two wrought-metal strips, *a a*, with upwardly-tapered semicircular depressions *b b*, and riveted upon the top of rake-teeth, substantially as and for the purpose described.

2. The rake-teeth formed of tubular wrought metal brought to a taper at tops, rounded at points, and riveted upon the rake-head, substantially as and for the purpose described.

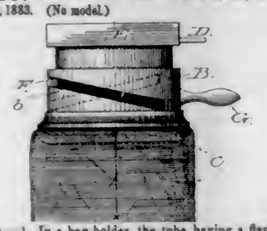
3. The bow-brace of the rake, formed of a piece of inverted-U metal bent or bowed, and flattened at its middle, and riveted to the handle, and also flattened at its ends and bent down and riveted to the head, substantially as described.

4. The combination of the rake-head A, formed of strips *a a b b*, rake-teeth B, and the U-metal bow-brace E, substantially as and for the purpose described.

5. A metallic rake with its head formed of two wrought-metal ribbed strips, *a a*, having upwardly-tapered semicircular depressions *b b* formed in them, and provided with a wrought-metal handle-socket, C, and with separated or single wrought-metal hollow teeth, B, confined between the strips by rivets, and kept from vertical movement by being riveted upon the top of the strips, substantially as described.

6. The combination of the wrought-metal flanged handle-socket C, the wrought-metal rake-head A, formed of ribbed strips *a a*, and the tubular rake-teeth B, substantially as described.

294,659. BAG-HOLDER. EDWD. H. MORESCOMB, Plover, Wis. Filed Nov. 9, 1883. (No model.)

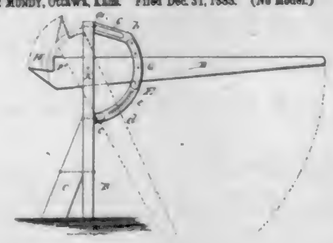


Claim.—1. In a bag-holder, the tube having a flange, C, inclined on its upper surface, and the lugs, in combination with the band provided with inclined slots, substantially as shown and described.

2. The combination of a tube provided with a flange, the top frame having a valve or shut-off, and the lugs F F, with the loosely-fitted band having the inclined slots, and adapted to slide upward and downward on the lugs, substantially as shown and described.

3. In a bag-holder, the tube A, provided with the frame E, valve D, the downwardly-inclined flange C, and lugs F F, in combination with the loosely-fitted band B, provided with the handle G, and inclined slots *b b*, adapted to slide upon the lugs, all substantially as shown and for the purpose described.

294,660. WAGON-JACK. WILLIAM K. MOTTRAM and JAMES ARCHIBALD MUNDY, Ottawa, Kans. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a hay-stacker, the combination of the runners B B, the uprights A A, the grooves *a a'* in these uprights, terminating at stops *b*, the forked elevator, the rear extensions thereof, the pieces *c*, secured to these extensions, and provided with rollers guided in grooves *a a'*, and means for raising and lowering the said forked elevator, substantially as described.

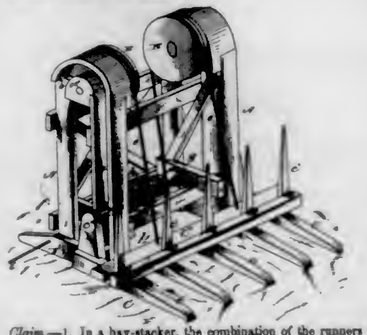
2. In a hay-stacker, the combination of the uprights A A, the vertical grooves, and the semicircular grooves therein, terminating at stops *b*, the grooved pulleys E E, concentric with the semicircular grooves, and to the upper rounded ends of the uprights A A, the forked elevator, the guide-rollers *d'* thereof, and means whereby the elevator is raised and tilted, substantially as described.

294,661. PLASTIC COMPOUND FROM PYROXYLINE AND MICA. GEORGE M. MOWBRAY, North Adams, Mass. Filed Oct. 27, 1883. (No specimens.)

Claim.—1. The new composition of matter consisting of mica and soluble pyroxyline, substantially as described.

2. The new composition of matter consisting of mica, soluble pyroxyline, coloring-matters, and inert substances, to serve as a body thereto, substantially as described.

294,662. HAY-STACKER. ASHBEL A. NOYES, Steamboat Rock, Iowa. Filed Dec. 4, 1883. (No model.)



Claim.—1. In a hay-stacker, the combination of the runners B B, the uprights A A, the grooves *a a'* in these uprights, terminating at stops *b*, the forked elevator, the rear extensions thereof, the pieces *c*, secured to these extensions, and provided with rollers guided in grooves *a a'*, and means for raising and lowering the said forked elevator, substantially as described.

2. In a hay-stacker, the combination of the uprights A A, the vertical grooves, and the semicircular grooves therein, terminating at stops *b*, the grooved pulleys E E, concentric with the semicircular grooves, and to the upper rounded ends of the uprights A A, the forked elevator, the guide-rollers *d'* thereof, and means whereby the elevator is raised and tilted, substantially as described.

294,663. SCREW-DRIVER. WILLIAM L. PARMELEE, Ansonia, Conn. Filed Oct. 2, 1883. (No model.)



Claim.—1. A reversible bit provided about equidistant from its ends with a cylindrical boss having studs, in combination with a handle and ferrule having notches to receive the studs on the boss, as and for the purpose set forth.

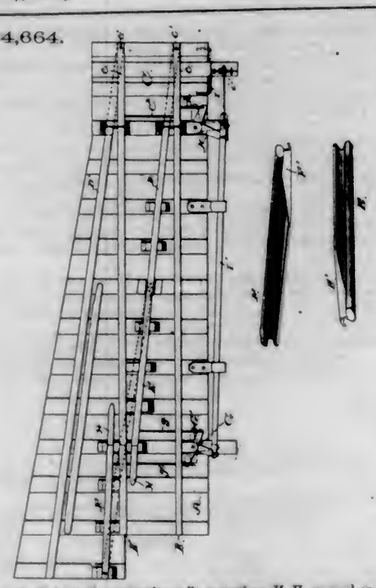
2. A handle having a longitudinal bore from its smaller or ferrule end, an unbroken exterior, and a ferrule, in combination with a reversible bit having a cylindrical boss about equidistant from its ends, and means for interlocking it with the ferrule of the handle, as and for the purpose set forth.

294,664. RAILROAD-FROG. JOHN F. PENROD, Derry, Westmoreland County, Pa. Filed Sept. 15, 1883. (No model.)

Brief.—A railway-crossing in which the main rail is unbroken and the movable cross-over rails are protected by fixed sections of rails which register with them when they are not in use.

Claim.—In a railway-crossing, substantially as described and shown, the combination, with the unbroken main-line rail and the pivoted movable rails E F, of the protecting rails or sections H H, secured on the track in position to register with the movable ends of the rails E F when the latter are adjusted away from the fixed rail, substantially as described, and for the purposes set forth.

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294,665. ROOFING COMPOSITION. JOHN F. PERRY, Chicago, Ill. Filed Apr. 4, 1883. (No specimens.)

Claim.—The within-described fire-proof roofing-paint, which consists, essentially, of soapstone, thirty-five per cent.; slate, twenty per cent., and crude oil ten per cent., mixed and treated substantially in the manner set forth.

294,666. COFFEE-URN. CHARLES H. PETERS, Cincinnati, Ohio. Filed Sept. 21, 1883. (No model.)



Claim.—1. In combination with a coffee-urn having a sealing-trough at its upper end, a cover fitting in said trough, and provided with one or more air-inlets below the water-level of the latter, each air-inlet being furnished with a pocket or equivalent receptacle communicating with the interior of the apparatus, for the purpose stated.

2. A coffee-urn having a sealing-trough, D, the outer wall of which, *a*, is lower than its inner wall or neck, C, for the purpose herein described.

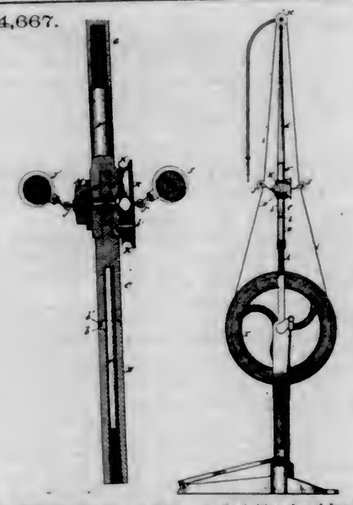
3. The combination of urn A, sealing-trough *a* B C D, cover E, rim F, tubes G, air-inlets *g*, pockets H, and openings *h*, as and for the purpose specified.

4. The combination of urn A, sealing-trough *a* B C D, cover E, rim F, tubes G, air-inlets *g*, pockets H, openings *h*, and deflecting-plate I, which plate is attached to said cover and enters the neck C, as herein described.

294,667. DENTAL ENGINE. ELIHU R. PETTIT, Philadelphia, Pa., assignor, by mesne assignments, to the S. S. White Dental Manufacturing Company, of Pennsylvania. Filed Oct. 30, 1878.

Claim.—1. The dental-engine upright or standard, hinged or jointed so as to be capable of being rocked or moved out of the perpendicular, in combination with a turning-connection below said joint or hinge, by which the standard may be turned or moved horizontally, substantially as described.

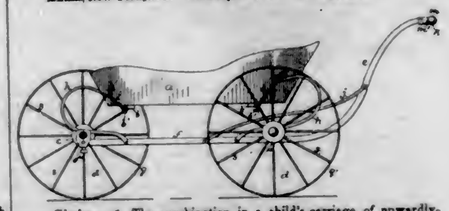
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2. The dental-engine upright or standard, hinged or jointed so as to be capable of being rocked or moved out of the perpendicular, in combination with a turning-connection below said joint or hinge, by which the standard may be turned or moved horizontally, and a fastening device, O, to lock the standard when adjusted upon its turning-connection at the point desired, substantially as described.

3. The combination of the dental-engine upright or standard with the driving-pulley, the driven pulley at the upper end of said standard, the driving-belt, the hinge or joint in said standard, between the driving and driven pulleys, which permits the upper end of the standard to be moved out of the perpendicular, a turning-connection below the hinge or joint of the standard, and belt-guides at or about the hinge or joint of said standard, substantially as described, whereby the standard may be both moved out of the perpendicular and turned horizontally for proper adjustment without interfering with the operation of the engine.

294,668. CHILD'S CARRIAGE. JAMES POOLMAN and FRANK R. MARKS, New York, N. Y. Filed Apr. 26, 1883. (No model.)



Claim.—1. The combination, in a child's carriage, of upwardly-turned supporting-bars connected to the running-gear frame, and arranged on each end thereof, and a flexible chain depending from the upper end of said supports, with the body *a*, provided with the cross-bars *b b*, having a loop or hook end for engaging the opposite end of said chain, whereby the body is suspended elastically above the running-gear frame, substantially as set forth.

2. The standard or support *h*, provided with the hangers *o*, to receive the axle and reach-bar, substantially as shown and described.

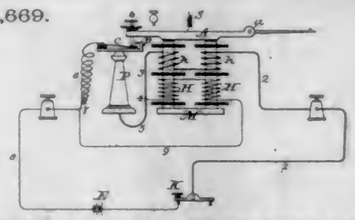
3. In the running-gear frame, the combination of the reach-bars *f*, axles *c*, and standards *h*, having the hanger-blocks *o*, to receive the ends of the said reach-bars and axles, as set forth.

4. The combination of the reach-bars *f*, axles *c*, and V-shaped brace-bars *g*, connecting the said reach-bars and the axles, substantially as and for the purpose set forth.

294,669. AUTOMATIC CUT-OUT FOR ELECTRO-MAGNETIC HELICES. FRANK L. POPE, Elizabeth, N. J. Filed June 22, 1883. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of an electro-magnet provided with two independent assisting helices included in the same electric circuit, an armature movable toward the poles of said electro-magnet by virtue of the attractive force induced therein by one of said helices, a normally-closed shunt spanning the other or

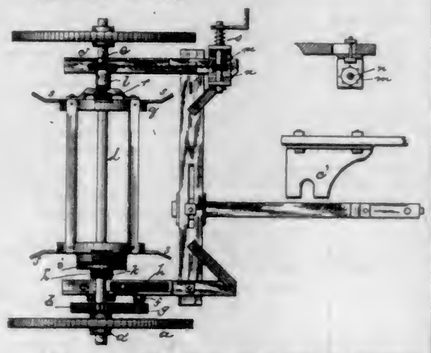
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inactive helix, and mechanism, substantially such as described, for interrupting said shunt by such movement of the armature, thereby bringing the second helix into conjoint action with the first one as the armature approaches the poles of the electro-magnet.

2. The combination, substantially as hereinbefore set forth, of an electro-magnet provided with two independent assisting helices, one having a greater electric resistance than the other, and both being included in the same electric circuit, an armature movable toward the poles of said electro-magnet by virtue of the attractive force induced therein by the helix of lesser resistance alone, a normally-closed shunt spanning the helix of greater resistance alone, and mechanism, substantially as set forth, for interrupting said shunt by such movement of the armature, thereby bringing the helix of greater resistance into conjoint action with the helix of lesser resistance as the armature approaches the pole of the electro-magnet.

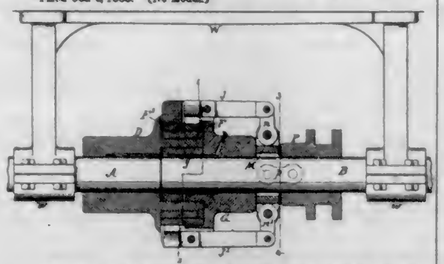
294,670. WIRE-REEL. HENRY C. PRATT, Canandaigua, N. Y. Filed Sept. 17, 1883. (No model.)



Claim.—1. In a reel for barbed wire for fences, the combination, with the threaded axle and pulley-nut thereon, of the spool, geared friction-plate, removable geared drive-wheel, and intermediate gearing, substantially as specified.

2. In a reel for barbed wire for fences, the combination, with the threaded axle carrying the reel and grooved pulley-nut, of the chain, pulley, and crank arranged upon the forward end of the frame for moving the reel into engagement with the operating mechanism at the opposite end of the frame and reel, substantially as specified.

294,671. FRICTION-CLUTCH. JOSIAH K. PROCTOR, Philadelphia, Pa., assignor to the James Smith Woolen Machinery Company, same place. Filed Oct. 4, 1883. (No model.)



Claim.—1. The combination of a shaft, wheel, or pulley having a hub or flange, two split clamping-rings adapted to said hub or flange and set opposite each other, a pair of levers whereby the rings may be clamped to the hub or flange, and a transversely-yielding sleeve for applying power to said levers, as set forth.

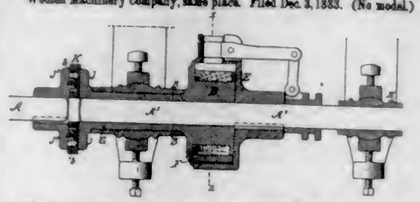
2. The combination of a series of operating-levers of a friction-clutch with a longitudinally-moving sleeve for operating said levers, the opening in said sleeve being larger than the shaft on which it slides, whereby a transverse yield of the sleeve is permitted, as set forth.

3. The combination of a shaft, wheel, or pulley having a hub or flange, a clutching-ring adapted thereto, a disk or driver, G, a fixed stud forming a connection between the disk and the front end of the ring, and a lever hung to the disk and bearing on the opposite end of the ring, as set forth.

4. The combination of the two shafts A and B and friction-clutch mechanism for connecting the same, with bearings *w* for said shafts, one or both of the latter having outside its bearing a yielding coupling, *x*, as set forth.

5. The combination of the shafts A B and the friction-clutch mechanism for connecting the same, the coupling or couplings *x*, and the single hanger W, having a bearing, *w*, for each shaft, as set forth.

294,672. FRICTION-COUPLING FOR SHAFTS. JOSIAH K. PROCTOR and IRVING W. HOSKINS, Philadelphia, Pa., assignors to the James Smith Woolen Machinery Company, same place. Filed Dec. 2, 1883. (No model.)



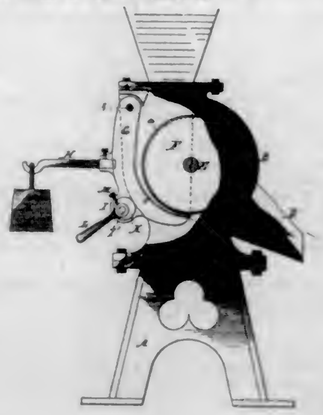
Claim.—1. The combination, in a friction-coupling for shafts, of a bearing, B, a sleeve, G, adapted thereto and carrying one part of the clutch, the shaft A', carrying the other part of the clutch and having its end supported in the sleeve, the shaft A, and a coupling between said shaft and the sleeve G, as set forth.

2. The combination, in a friction-coupling for shafts, of a bearing, B, a sleeve, G, adapted thereto and carrying one part of the clutch, the shaft A', carrying the other part of the clutch and having its end supported in the sleeve, the shaft A, and a yielding coupling between said shaft and the sleeve G, as set forth.

3. The combination of the bearing B, the sleeve G, adapted thereto and having the hub D, the shaft A', having a disk with friction-band F and clamping devices therefor, and having its ends supported in the sleeve, the shaft A, and a coupling between said shaft and the sleeve G, as specified.

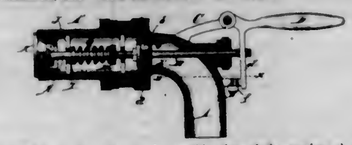
4. The combination, in a friction-coupling for shafts, of the bearing B, a sleeve, G, adapted thereto, carrying one part of the clutch and having a disk, J, with projecting lugs *a*, a shaft, A', carrying the other part of the clutch and having its end supported in the sleeve, a shaft, A, having a disk, J', with lugs *a* at right angles to those of the disk J, and a disk, K, having radially-elongated openings for the reception of the lugs *a*, as set forth.

294,673. GRINDING-MILL. EZRA REDDY, Cleveland, Ohio, assignor of two-thirds to William R. Eynon and James W. Field, both of same place. Filed Nov. 23, 1883. (No model.)



Claim.—The herein-described grinding-mill, comprising the casing B, cylinder F, concave G, arm H, weight H', shaft I', provided with the eccentrics K and handle L, substantially as and for the purpose described.

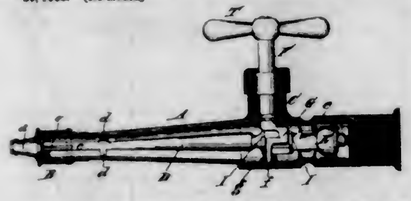
294,674. WATER AND STEAM COCK OR FAUCET. JOS. RICHTER, Cincinnati, Ohio. Filed Feb. 15, 1883. (No model.)



Claim.—1. In a faucet, the combination of the sections A A', the valve-rod B, the ogee-valve *b*, seated on the section A, means for operating the said valve-rod and locking it in its adjusted position, the guides I, having the radial arms J, the valve-rod N, loosely passing through the guides, and having the valve K, seated on the section A', and the spring O, arranged between the guides, substantially as described.

2. The combination, with the two-part barrel A A', valve-rod B, stop E *f*, and lever D *d*, of the auxiliary valve K, its rod N, the guide I, having arms J, the spring O, and the nut *m*, all arranged and operating substantially as described.

294,675. HOSE-NOZZLE. JOS. RICHTER, Cincinnati, Ohio. Filed Sept. 20, 1883. (No model.)



Claim.—1. The combination of the barrel A, the nozzle B at the outer end thereof, having the orifice *a*, the piston D, having a stem, *c*, at one end, for entering the orifice in the nozzle at the outer end of the barrel to convert the solid stream of water into a spray, a cut-off valve at the other end of the piston, and means for shifting the piston longitudinally.

2. The combination, with the barrel A, its valve-seat *e*, and the nozzle B at the outer end of the barrel, having the orifice *a* for throwing a solid stream, of the piston D, having at one end the stem *c*, for entering the orifice of the nozzle at the outer end of the barrel to convert the solid stream into a spray, said piston having at its other end the cut-off valve E and the slot H, and a crank journaled in the barrel and extending through the slot, said crank having a stem, *f*, at its lower end, seated in a part of the barrel, substantially as described.

3. The combination, with the barrel A, having the valve-seat *e*, of the piston D, having guide-wings *d*, and provided at one end with the stem *c*, and at its other end with a cut-off valve, E, a slot, H, and guides K, and a crank journaled in the barrel and extending through the slot, said crank having a stem, *f*, at its lower end, seated in a ledge of the barrel, which ledge vertically supports the piston, substantially as described.

4. The combination, with the barrel A and the nozzle B, having the orifice *a* for throwing a solid stream, of the piston D, having at one end the stem for entering the orifice in the nozzle and converting the solid stream into a spray, a cut-off valve at the other end of the piston, and a crank for moving the latter, said piston having between its stem *c* and the crank the lateral guide-wings *d d*, to hold the said stem centrally in relation to the orifice of the nozzle, substantially as described.

294,676. PROCESS OF PRESERVING WOOD. WILLIAM W. ROBINSON, Ripon, assignor of one-half to George N. Lyman, Milwaukee, Wis. Filed Aug. 31, 1883. (No specimens.)

Claim.—The herein-described process of treating wood to render it fire and weather proof, consisting in subjecting it to a bath in a boiling solution composed of salt, quicklime, copperas, mineral paint, and sulphur mixed with water, subsequently drying the wood, and then coating it with a hot solution composed of mineral paint, as described, whiting, glue, and quicklime mixed with linseed-oil, substantially as specified.

294,677. COMPOSING-STICK. ROBERT STOWE ROBSON, Cambridgeport, assignor, by mesne assignments, to himself and John Loughrey, East Cambridge, Mass. Filed Feb. 3, 1883. (No model.)

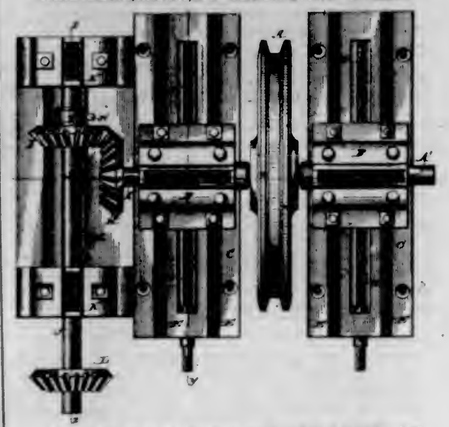
Claim.—The type-receiver provided with the slotted standard and

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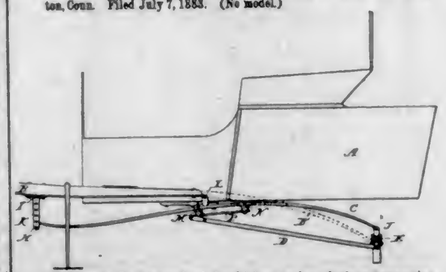
the nut and pointed clamp-screw, adapted thereto as described, in combination with the adjustable gage having the screw furnished with notches and extended from it through the standard and nut, and to operate therewith and with the clamp-screw as explained.

294,678. BELT-TIGHTENER. MARTIN LUTHER RUSSELL, Renfrew, Ontario, Canada, assignor of two-thirds to William Albaugh, Ovid, and Charles A. Keeler, Rochester, N. Y. Filed Dec. 20, 1883. (No model.)



Claim.—In a device for tightening cables and machine-belts of substantially the described construction, the combination of the pulley-wheel shaft A', having pulley-wheel A and bevel-pinion H, adjustable journal-boxes B B, having guide-blocks D D and downwardly-projecting piece F, provided with a screw-threaded aperture, F', blocks C C, having longitudinal grooves E E, adjusting-screws G G, with the shaft J, having a longitudinal groove or recess, M, and bevel-pinion I, having a key, N, to adapt it to be adjustably secured upon the grooved shaft J, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

294,679. TWO-WHEELED VEHICLE. CYRUS W. SALADEE, Torrington, Conn. Filed July 7, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, a spring-platform supporting the body, and connected to the axle at the rear end, and to the shaft-frame at the forward end, the shaft-frame being connected to the platform, substantially as set forth.

2. The combination of the spring-platform, axle at the rear thereof, and a vertically-adjustable connection between the front end and shaft-frame, substantially as set forth.

3. The combination of the axle, spring-platform connected at the rear to said axle, and at the front to the shaft-frame, the shaft-frame being pivoted to the platform, and braces D, substantially as set forth.

4. The combination of the spring-platform, connected at its rear end to an axle, body supported by the platform, and shaft-frame pivoted to the platform at the rear, and attachments connecting the front end of the platform to the shaft-frame, substantially as set forth.

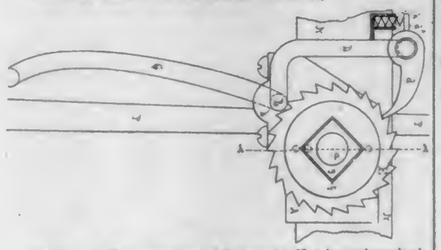
5. In a two-wheeled vehicle, semi-elliptic side springs having their rear ends secured to the axle, and the front ends to the shaft-frame, a body carried by the springs in advance of the axle, and the shaft-frame having the rear end pivotally connected to the springs, substantially as described

6. In a two-wheeled vehicle, semi-elliptic side springs extended from the axle to the shaft or pole frame, in combination with a spring or brace extended rearward to support the rear of the body, substantially as and for the purpose set forth.

7. In a two-wheeled vehicle, the combination, with the axle and a phaeton or drop front body, of semi-elliptic side springs, C, extended from the axle to the shaft or pole frame, a spring or brace, C', extended rearward, and arms S, connected to the drop-front of the body, substantially as set forth.

8. In a two-wheeled vehicle, the side springs, C, extended from the axle to the shaft or pole frame, cross-bar M, and diagonally-arranged axle-stays D, having their front ends pivotally connected to the center of the platform, and their rear ends, F, shackled to the axle at widely-separated points, substantially as and for the purpose set forth.

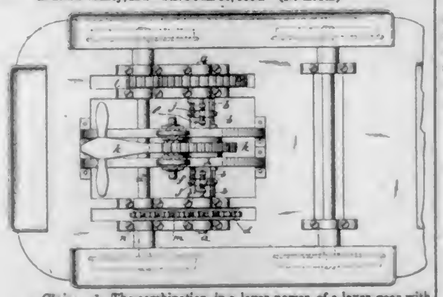
294,680. PICKER-STAFF CHECK FOR LOOMS. OREEN A. SAWYER and CHARLES S. FOSS, Lowell, Mass., assignors of three-fourths to Moses M. Lane, same place. Filed Mar. 30, 1882. (No model.)



Claim.—1. The combination of the loom-lay N and a ratchet-wheel, and friction-creating devices for retarding the rotation thereof, with a rock-shaft having an arm adapted for contact with the picker-staff, and an arm provided with a pawl which engages with the ratchet-wheel, substantially as described.

2. The combination of the loom-lay N and the ratchet-wheel E, frictional washers *e e*, and binding-nut *f* with the rock-shaft B, provided with the arms C and D, one of which is provided with a pawl engaging with the ratchet-wheel, and the other with an end portion adapted to extend across the path of the picker-staff, substantially as described.

294,681. MECHANICAL POWER. JOHN H. SCHAFFER, Blue River, Hancock County, Ind. Filed Jan. 10, 1884. (No model.)

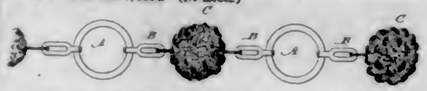


Claim.—1. The combination, in a lever-power, of a lever-gear with the separate and independent shafts *a a*, each having one or more fixed ratchet-wheels, *b*, and a gear on their outer ends, and a gear mounted loosely upon their contiguous ends, having side projecting arms, *f f*, and one or more spring-ratchets, *g g*, carried by said gear-arms in co-operating relation to the said ratchet-wheels, whereby the said shafts form separate and distinct drivers, substantially as described, for the purpose specified.

2. The combination, with the separate and distinct drive-shafts *a a*, each having two fixed ratchet-wheels, *b b*, with their teeth inclining in opposite directions, and a gear, *c d*, on their outer ends, of a gear, *e*, loosely mounted upon the contiguous ends of said shafts, having side projecting arms, *f f*, two connected ratchet-pins, *g g*, carried by said arms in co-operating relation to the said ratchet-wheels, a suitable adjustable spring-connection for each ratchet-pin, and a lever-gear operating with the said loose armed gear, substantially as described, for the purpose specified.

3. In combination, the following devices constituting a lever-power, viz: two separate and independent shafts, *a a*, each having two fixed ratchet-wheels, *b b*, their teeth inclining in opposite directions, a spur-gear, *c*, on the outer end of one shaft, and a sprocket-wheel, *d*, on the outer end of the other shaft, the gear *e*, loosely mounted upon the contiguous ends of said separate shafts, having side arms, *f f*, the spring-operated ratchet-pins *g g*, carried by said gear-arms, the hand-operating lever-gear, the power-transmitting shaft, the spur-pinion, the sprocket-wheel, and the chain, all constructed and arranged for operation substantially as herein set forth.

294,682. CHAIN FOR DRAPERIES. CHRISTIAN A. SCHMIDT, Hoboken, N. J. Filed Jan. 7, 1884. (No model.)

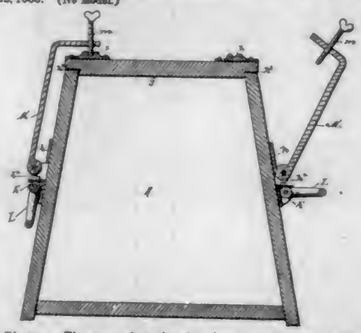


Claim.—1. As an improved article of manufacture, a chain on which balls or tufts of fibrous material are secured at intervals, substantially as herein shown and described.

2. The combination, with a chain, of a series of balls or tufts of fibrous material held on the chain, the said tufts or balls being suitably spaced, substantially as herein shown and described.

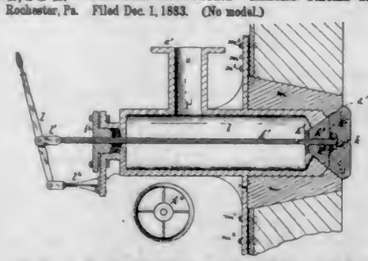
3. The combination, with the links B and the rings A, of the balls or tufts C, forming a chain with the said links and rings, substantially as herein shown and described.

294,683. COVER-FASTENING FOR CHURNS. ERNST HUGO SCHMIDT and HENRY FRIEDRICH CHRISTIAN BRAMMER, Davenport, Iowa. Filed June 22, 1883. (No model.)



Claim.—The cover-fastening for churn-vessels, consisting of the plates A, secured to the sides of the vessel A, and provided with sockets A' and perforated ears A^2, the arms M, carrying set-screws *m*, pivoted in said ears, and the cover D, having the bearings *i*, to engage said set-screws, to secure said cover to the churn, as shown and described.

294,684. BESSEMER CONVERTER. HERMANN SCHULER-BERGE, Rochester, Pa. Filed Dec. 1, 1883. (No model.)



Claim.—1. A Bessemer converter provided with wind-box and tuyeres, in combination with internal stoppers for stopping and regulating the size of the tuyere-openings, and means for operating such internal stoppers, so as to seat or unseat them at will during the operation of the converter, substantially as and for the purposes described.

2. In a Bessemer converter, the combination of removable tuyeres or tuyere-sections with internal stoppers operated through the tuyeres, and means for operating such stoppers, substantially as and for the purposes described.

294,685. SHOW-CASE FOR JEWELS. CHARLES WM. SCHUMANN, New York, N. Y. Filed June 22, 1883. (Model.)

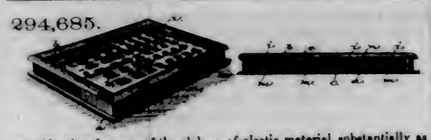
Brief.—The slab may be of other elastic material than rubber, as felt or papier-mache; or it may be made of rigid material, with enlarged perforations, provided with spiral springs to act on each jewel.

Claim.—1. In a show-case for jewels, the combination, with the removable glazed cover, of the slab, *c*, of elastic material, substantially as described.

2. In a show-case for jewels, the combination, with the removable glazed cover, of the slab, *c*, of elastic material, provided with means for holding the jewels in their proper positions, substantially as described.

3. In a show-case for jewels, the combination, with the removable glazed cover, of means by which each jewel is independently pressed against said cover, so that jewels of different sizes may be placed in the same case and all held securely in position, substantially as described.

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294,686. GARMENT ATTACHMENT. CHAS. D. SPENCE, Brooklyn, N. Y., assignor to Smith, Gray & Co., same place. Filed Dec. 14, 1883. (No model.)



Claim.—1. A supplementary band for the waist of pantaloons, consisting of a main strip, A, having opening *x x*, and provided with elastics D, arranged obliquely, as set forth, substantially as described.

2. The combination of a waistband for pantaloons, having button-holes or analogous fastening devices, with a series of elastic bands arranged in opposite oblique positions in couples, substantially as described.

3. A supplementary waistband for pantaloons, consisting of the following elements: a main strip, *a*, an under parallel strip, *a'*, opening *x x*, elastic strips D, fastened at their upper and lower ends to the band A in oblique positions, said elastics being connected at their apexes, as and for the purpose intended, substantially as described.

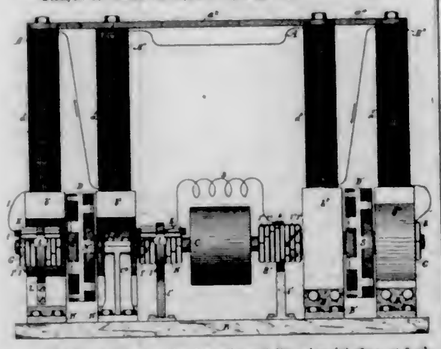
4. In a supplementary waistband for pantaloons, having elastics D, arranged diagonally, as shown, in couples, and meeting at their apexes, in combination with stay-piece B on the lower portion, *a'*, of the band, as and for the purpose intended, substantially as described.

5. The combination, with a pair of pantaloons, of a supplementary waistband provided with button-holes or the like, and having fastened thereto a series of elastics, D, arranged in couples of V's at the rear center of said band, whereby said pantaloons, when fastened, will yield to tension and strain from any angle, as and for the purpose set forth, substantially as described.

294,687. MEDICAL COMPOUND. GEO. SHERRY, Wheeling, W. Va. Filed Aug. 24, 1883. (No specimens.)

Claim.—The herein-described compound, consisting of pulverized sulphur, pulverized charcoal, refined sugar, lemon-rind, and sulphate of quinia, in the proportions specified.

294,688. DYNAMO-ELECTRIC MACHINE. ROBERT J. SHERRY, New York, N. Y. Filed Nov. 17, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a central armature plate or disk of soft iron, and an annulus of soft iron carried thereby, by suitable projections, and situated in a plane parallel to the plane of said central plate.

2. The combination, substantially as hereinbefore set forth, of a central armature disk or plate of soft iron, two annuli of soft iron—one on either side of said disk—and means of attaching said annuli to the face of said disk, substantially as described.

3. The combination, substantially as hereinbefore set forth, of the central armature-disk, upon each face thereof an annulus of soft iron, means of attachment, substantially as described, and coils of conductors surrounding each annulus, except at the points of attachment.

4. The combination, substantially as hereinbefore set forth, of a central shaft, a disk of soft iron carried thereby, situated in a transverse plane thereto, an annulus of soft iron carried upon the face of said disk, shouldered lugs projecting from said disk, lugs projecting from said annulus for fitting said shouldered lugs, and bolts for securing them in place.

5. The combination, substantially as hereinbefore set forth, of a central disk of soft iron, two series of bobbins—one on either side thereof—the bobbins of one series being placed in intermediate angular positions to those of the other series, and said bobbins lying lengthwise in a plane parallel to the plane of said disk, substantially as described.

6. The combination, substantially as hereinbefore set forth, of two field-magnets having their respective parts parallel the one to the other, two semicircular fields arranged in the same axial line, produced by said magnets in the manner described, and facing in opposite directions.

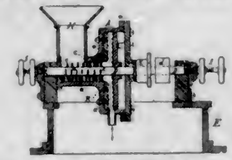
7. The combination, substantially as hereinbefore set forth, of two independent magnetic fields arranged in the same axial line, one produced by two semicircular pole-pieces of similar polarity, and the other by the remaining pole-pieces of the electro-magnets producing said first-mentioned field.

8. The combination, substantially as hereinbefore set forth, of two fields, one produced by two semicircular pole-pieces of similar polarity, and the other produced by the remaining pole-pieces of the electro-magnets producing said field first mentioned, a single shaft traversing both fields, and two armatures mounted on said shaft and having equal and diametrically-opposite sections respectively situated in said fields at the same time.

9. The combination, substantially as hereinbefore set forth, of two magnetic fields respectively created by the pole-pieces having similar polarity, of two independent electro-magnets, two armatures having diametrically-opposite sections of coils respectively traversing said fields simultaneously, and the four commutators described for collecting the currents generated in said armatures.

10. The combination, substantially as hereinbefore set forth, of two fields created and disposed in the manner described, two armatures revolving in said fields, a single shaft upon which said armatures are mounted, and a central pulley by which said shaft is impelled.

294,689. MACHINE FOR GRINDING PAPER-PULP. JOHN B. SHEPLER, Toledo, Ohio. Filed Apr. 16, 1883. (No model.)



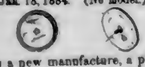
Claim.—1. In a machine for reducing paper-pulp, the combination of the bed plate or frame E, hopper H, cylinder *e*, having fingers *c'*, back plate, *a*, hoop A, having flange *a'*, plate *i*, and grinding-plate B, secured to the back plate, in combination with the shaft D, mounted in the bed-plate, and provided at each end with adjusting-screws *f*, a grinding-plate, C, mounted on the shaft, pulley *d*, stuffing-box *s*, and fingers *c*, as set forth.

2. In a machine for reducing paper-pulp, the combination of the bed plate or frame, hopper H, cylinder *e*, back plate, *a*, provided with the grinding-plate B, secured thereto, the front plate, *i*, and hoop A, with the shaft D, mounted in the bed-plate, and having adjusting-screws *f*, a grinding-plate, C, mounted on the shaft, and means for operating the same, as set forth.

294,690. FINISHER-PLATE FOR PLUG-TOBACCO PRESSES. ALBERT SICHEL, New York, N. Y. Filed Jan. 8, 1884. (No model.)

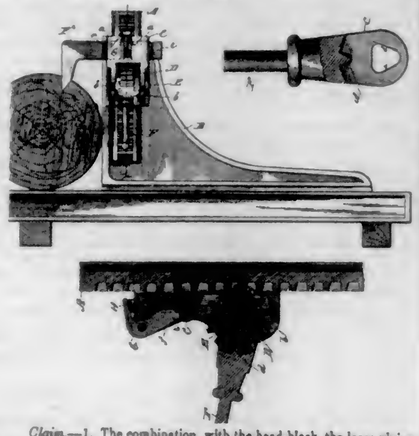
Claim.—A finisher-plate for use in the manufacture of plug-tobacco, composed of sheet or plate iron or other stiff metal, having one or both of its faces covered with a plate of sheet-tin united therewith, as and for the purposes hereinbefore set forth.

294,691. TAG FOR PLUG-TOBACCO, &c. ALBERT SICHEL, New York, N. Y. Filed Jan. 18, 1884. (No model.)



Claim.—As a new manufacture, a pressed sheet-foil or soft-metal tag provided with one or more attaching projections, substantially as shown and described.

294,692. SAW-MILL DOG. WILLIAM H. SNYDER, Waynesborough, Pa. Filed Jan. 10, 1884. (No model.)



Claim.—1. The combination, with the head-block, the loose pinion, the axial bolt securing the latter to the head-block, and the rack-bar, of the handle-lever having branched ends *c c*, with elongated openings in them, with independent bearings *e e'*, and a tooth, *d*, as and for the purpose described.

2. The head-block C, having a hole through it for the dog, and another hole in its face communicating with the hole for the dog, and provided with ears *f f*, rising from the edges of the hole in the face, in combination with the right-angular latch G, pivoted to the ears *f f*, and having one end extending through the hole in the face to engage with the dog, and its other end lapping over the top of the head-block, and a spring, H, located between the top of the head-block and the upper arm of the latch, as and for the purpose described.

294,693. HAY-LOADING MACHINE. MARTIN M. SORNBORGER, Millville, Cal. Filed Apr. 11, 1881. (No model.)

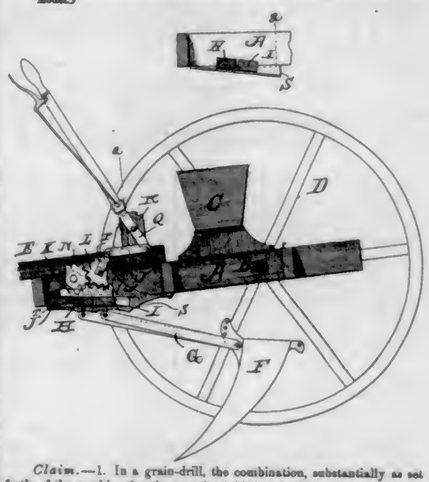


Claim.—1. The combination of a pair of horizontal and upwardly-inclined track-beams, a pair of horizontal and upwardly-inclined track-beams placed above the former, a pair of upwardly-inclined switch-sections leading from the latter track-beams to a track above them, a pair of horizontal and upwardly-inclined track-beams placed above the second pair, and constructed with a pair of hinged track-sections near their upper ends, resting upon the upper ends of the inclined switch-sections of the track below, a carriage having rollers at its sides traveling in the lowest track, a rake hinged to the rear end of the carriage, and having rollers at the end of its head traveling upon the middle and the upper tracks, and means for elevating it, as and for the purpose shown and set forth.

2. The combination of a triple track, horizontal at its lower end and upwardly inclined at its other end, upwardly-inclined switch-sections leading from near the end of the middle track to the upper track, hinged track-sections forming parts of the upper track, as described, a traveling rake consisting of a carriage having rollers traveling upon the lowest track, and a rake having rollers upon the ends of its head traveling upon the middle and upper tracks, and hinged to the carriage, and an inclined slat floor hinged under the tracks at the point below the switch-sections, as and for the purpose shown and set forth.

3. A hay-loader consisting of a frame mounted upon wheels, a triple track consisting of a lower horizontal portion and an upper inclined portion, upwardly-inclined switch-sections and hinged switch-rails leading from the middle to the uppermost track-beams, as described, a slat floor hinged under the tracks below the switch-sections, a carriage having rollers traveling upon the lowest track, a rake hinged to its rear end, and provided with rollers upon the ends of its head traveling upon the middle and upper tracks, a windlass having a drum of a larger diameter upon its middle, and journaled at the forward end of the frame, pulleys journaled at the upper ends of the inclined tracks, ropes attached to the forward end of the carriage, passing over the pulleys and winding upon the ends of the windlass, and a rope winding upon the drum of the windlass in the opposite direction to the ropes upon its ends, and having means at its end to be attached to draft-power, all constructed and arranged to operate as and for the purpose shown and set forth.

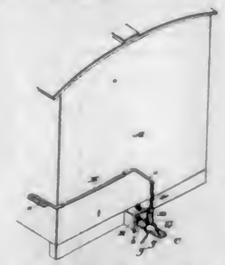
294,694. SEEDING-MACHINE. HARRISON D. SPANGLER, Rushville, Ind., assignor to Norris & Brother, same place. Filed Nov. 16, 1883. (No model.)



Claim.—1. In a grain-drill, the combination, substantially as set forth, of the machine-framing, a pair of shifting draft-bars, hoes and drag-bars attached to the draft-bars, in the manner specified, means for shifting the draft-bars, and angularly-arranged guides for the draft-bars, as specified.

2. In a grain-drill, the combination, substantially as set forth, of the machine-framing, a pair of shifting draft-bars having drag-bars and hoes attached, a hand-lever, guides for the draft-bars, a pair of racks, as set forth, secured to each draft-bar, pinions engaging each other in pairs and engaging the racks, and a shaft uniting the pairs of pinions.

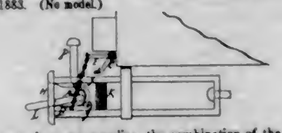
294,695. CAR-COUPLING. ALFRED D. STANSBURY, Colliers, W. Va. Filed Dec. 5, 1883. (No model.)



Claim.—1. As a means for raising a coupling-link to position for entry into an approaching draw-head, a forked clamp adapted to engage with the sides of a link, in combination with means, substantially as described, whereby said clamp may be moved vertically by a person stationed at one side of the car, substantially as specified.

2. In combination with a car, A, provided with a draw-head, B, the rod E, journaled upon said car, and provided with the handle *e* and arm *e'*, the chain F, and the clamp G, having within its forks the notches *g'*, for engagement with the sides of a link, C, substantially as and for the purpose shown.

294,696. CAR-COUPLING. ALONZO C. STEVENS, Elmira, N. Y. Filed Mar. 15, 1883. (No model.)

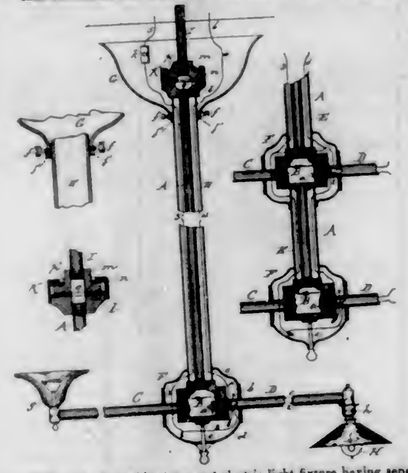


Claim.—1. In a car-coupling, the combination of the upper and lower draw-head plates, *g*, and buffer-plate H, with a removable U-shaped block, K, having connected therein a U-shaped dog, A, for holding and tripping the coupling-pin, also an L-shaped lifting-lever, B, all as and for the purpose set forth.

2. The U-shaped dog A, pivoted at the rear near the bottom and working automatically in a slot in the U-shaped block K.

3. The L-shaped lifting-lever B, pivoted to the side near the rear end of the U-shaped block K by the same bolt that pivots the U-shaped dog A, and the other end of which lies inside of buffer-plate H, and its connection with the rolling rod C, which is attached to the end of the car, substantially as and for the purpose set forth in the foregoing specification.

294,697. COMBINED GAS AND ELECTRIC-LIGHT FIXTURE. LUTHER STERRINGER, New York, N. Y. Filed June 14, 1882. (No model.)



Claim.—1. A combined gas and electric-light fixture having separate arms for the electric lamps, and provided with wires passing to such arms, concealed by the ornamental covering of the gas-pipe, and with wires extending through the electric-lamp arms and connected with the main wires within the said ornamental covering, whereby the wiring is wholly concealed, substantially as set forth.

2. In a combined gas and electric-light fixture, the combination of separate arms for the gas-burners and electric lamps with the central supporting gas-pipe stem or arm, the ornamental sleeve covering such central stem or arm, the conducting-wires passing to the electric-lamp arms within such ornamental sleeve, and wires passing through such electric-lamp arms and connected with the main wires within the ornamental covering of the fixture, substantially as set forth.

3. In a combined gas and electric-light fixture, the combination, with a central supporting gas-pipe stem or arm and one or more gas-distributing bodies, of separate arms for gas-burners and electric lamps, supported by such distributing body or bodies, the arms for electric lamps being closed against the admission of gas thereto, substantially as set forth.

4. In a combined gas and electric-light fixture, the combination, with a central supporting gas-pipe stem or arm and one or more gas-distributing bodies, of separate arms for gas-burners and electric lamps, supported by such distributing body or bodies, the arms for electric lamps being closed against the admission of gas thereto, and conductors entering or running out of the electric-lamp arms through side openings in such arms outside of such body or bodies, substantially as set forth.

5. In a combined gas and electric-light fixture, the combination, with a central supporting gas-pipe stem or arm and one or more gas-distributing bodies, of separate arms for gas-burners and electric lamps, supported by such distributing body or bodies, the arms for electric lamps being closed against the admission of gas thereto, side openings in such electric-lamp arms outside of the gas-distributing body or bodies, but within the ornamental covering of such body or bodies, conductors inclosed within said electric-lamp arms and passing outwardly through such side openings, and main or stem conductors connected with such arm-conductors and concealed within the ornamental covering of the fixture, substantially as set forth.

6. In a combined gas and electric-light fixture made as a single structure, the combination of a central pipe for supplying the gas, surrounded by an ornamental covering, with wires for supplying the electric current, located in the space between the pipe and ornamental covering, and concealed by said ornamental covering, substantially as set forth.

7. In a combined gas and electric-light fixture made as a single structure, the combination of a central pipe for supplying the gas, surrounded by an ornamental covering, a canopy or shell at the top or inner end of such ornamental covering, and wires supplying the electric current, located in the space between the pipe and ornamental covering, and entering such space within the canopy or shell, substantially as set forth.

8. In a combined gas and electric-light fixture made as a single structure, the combination of a central pipe for supplying the gas, surrounded by an ornamental covering-sleeve, a canopy or shell adjustably secured upon the upper or inner end of said covering-sleeve, and wires for supplying the electric current, located in the space between the pipe and ornamental covering-sleeve, and entering such covering-sleeve within the canopy or shell, substantially as set forth.

9. In a combined gas and electric-light fixture made as a single structure, the combination of a central pipe for supplying the gas, surrounded by an ornamental covering-sleeve, an insulating-joint introduced in said pipe above the ornamental covering-sleeve, and wires for supplying the electric current, entering said covering-sleeve below said insulating-joint, substantially as set forth.

10. The insulating-joint constructed in the form of a gas-union and having insulating-washers, the opposing parts of such union being locked against turning upon each other, substantially as and for the purpose set forth.

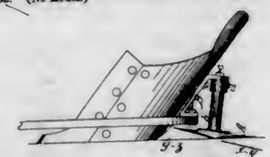
294,698. DIE FOR FORMING PULLEY-CENTERS. NORMAN C. STILES, Middletown, Conn., assignor to the Indianapolis Machine and Bolt Works, Indianapolis, Ind. Filed June 23, 1883. (No model.)



Claim.—1. The herein-described dies for forming wrought-metal pulley-centers, consisting of the two parts A B, each having a series of projections, *a*, alternating with recesses *b* around its edge, leaving a circular space within them corresponding substantially to the diameter of the center to be produced, the projections *a* on the one corresponding to the recesses *b* on the other part, and whereby the ears on the edge of the center or disk may be turned alternately to the right and left of the plane of the disk, substantially as described.

2. The herein-described dies for forming wrought-metal pulley-centers, consisting of the two parts A B, each having a series of projections, *a*, alternating with recesses *b* around its edge, leaving a circular space within them corresponding substantially to the diameter of the center to be produced, the projections *a* on the one corresponding to the recesses *b* on the other part, and whereby the ears on the edge of the center or disk may be turned alternately to the right and left of the plane of the disk, the circular space within the said projections concentrically corrugated, substantially as described.

294,699. PLOW. GARLAND B. ST. JOHN, Jackson, Mich. Filed Dec. 1, 1883. (No model.)



Claim.—1. In a disk-landside plow, the combination of the plow beam or standard with the bracket B, axle *a*, hub *b*, and disk A, secured by bolt *c*, substantially as described.

2. The combination, with a plow, of a frog, C, made separate from the standard or beam and bolted to it, and also to the mold-board and share, said frog consisting of a vertical portion, a horizontal portion, and a curved or concave portion, substantially as and for the purposes described.

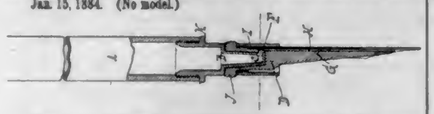
3. The combination, with the mold-board and beam or standard, of

the angular bracket B, secured at one end to the standard, at the other end to the axle-arm of a hub, bearing a convex turning-landside disk, A, and also secured to the mold-board, substantially as described.

4. The combination, with the mold-board and beam or standard, of the angular bracket secured at one end to the standard and at or near the other end to the mold-board, of a hub bearing a convex turning-landside disk, said disk being set with its front part leading inward, and sustained by the said bracket, substantially as described.

5. The combination, with the plow-standard and mold-board, of the rotating-landside disk A, the bracket B, the flanged and recessed hub *b*, the axle having a sand-band, and the bolt *c*, substantially as described.

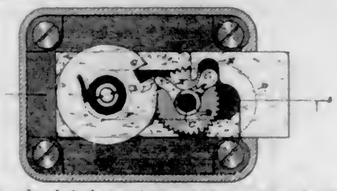
294,700. FOUNTAIN-PEN. HENRY STOCKMANN, Brooklyn, N.Y. Filed Jan. 15, 1884. (No model.)



Claim.—1. A fountain-pen embodying in its structure the tubular handle, forming an ink-reservoir, the tapering nipple on the lower end of the handle, having a lateral discharge-orifice, the rotating valve on the nipple, having an orifice to register with the nipple-orifice, and the sleeve on the valve, forming a pen-holder, substantially as and for the purpose described.

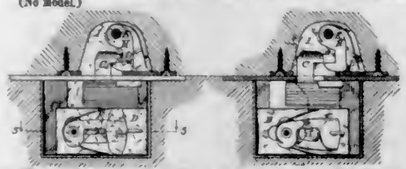
2. A fountain-pen embodying in its structure the tubular handle, forming an ink-reservoir, the tapering nipple on the lower end of the handle, having a lateral discharge-orifice, the rotating valve on the nipple, having an orifice adapted to register with the nipple-orifice, and a shank provided with a channel for conveying the ink from the valve-orifice to the nib of the pen, and the sleeve on the valve, forming a pen-holder, substantially as and for the purpose described.

294,701. PERMUTATION-LOCK. EMORY STOCKWELL, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed Dec. 1, 1882. (Model.)



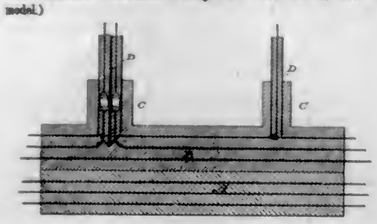
Claim.—In a lock, the combination of a balanced fence, its arbor, a moving bearing between them, and means for moving the bearing on the arbor, substantially as set forth.

294,702. LOCK. WARREN H. TAYLOR, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed Oct. 6, 1883. (No model.)



Claim.—In combination with a lock having a movable bolt and a bolt-locking mechanism, a concealed spring-catch inaccessible to a key or other instrument, substantially as set forth.

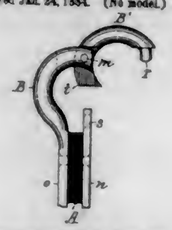
294,708. UNDERGROUND CONDUIT FOR ELECTRIC CONDUCTORS. EDMOND VERSTRAETE, Chicago, Ill. Filed Oct. 23, 1883. (No model.)



Claim.—1. An underground conduit for electrical conductors, consisting of the section B, carrying the main conductors, and provided with projections C, forming a water-tight insulating-joint for branch wires, the whole being composed of the herein-described plastic material, adapted to be placed in position while hot, and to be self-sustaining thereafter, substantially as described.

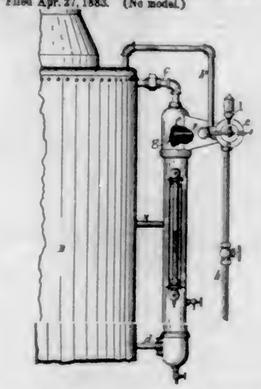
2. A branch for electrical conduits, consisting of the rubber tube D, inclosing the branch wires and covering their junction with the main conductors, and provided with a filling of the herein-described plastic material, and also having a portion of the same built up around the exterior of the junction of said tube and conduit, as set forth.

294,704. TUG-CLIP. STEPHEN A. WALL, Newark, N.J. Filed May 12, 1883. Renewed Jan. 24, 1884. (No model.)



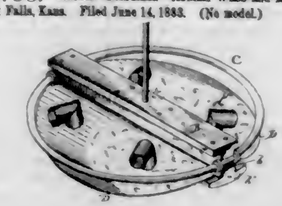
Claim.—The combination, with the hame-tag A, of the strap *o*, having the hook B, with pivoted part B' jointed thereto, and provided with the dowel *r*, as described, and the strap *n*, provided with hole *s*, the whole arranged and operated substantially as and for the purpose set forth.

294,705. FEED-WATER REGULATOR. DAVID C. WALTER, Toledo, Ohio. Filed Apr. 27, 1883. (No model.)



Claim.—In a boiler-feeder substantially as described and shown, the combination of the boiler, the float-chamber arranged alongside of and connected with the boiler by steam and water pipes, the float, the valve-chamber connected by suitable pipes with pumping-engine and supported on and opening into the float-chamber, the steam-pipe connecting the boiler and the valve-chamber, and the rotary valve connected with the float and provided with ports adapted to register with the pumping-engine pipes, and connected with and rotated by the float, said valve being provided on its inner end with plate a^2, serving as a partition between the valve and float chamber, whereby the steam is passed direct from the boiler to the pumping-engine, substantially as described, and for the purposes specified.

294,706. CHURN-DASHER. ROBERT WEBB and MILTON G. BRIDGES, Elk Falls, Kans. Filed June 14, 1883. (No model.)



Claim.—In a reciprocating churn-dasher, the cross-bar B, with a downwardly-projecting portion, *b*, and the rim C, secured to the cross-bar within grooves, and provided with wires *c c*, to which are hinged side wings, D D, which are perforated and provided with exit-pipes having outwardly-projecting ends, the parts being combined and organized substantially as shown, and for the purpose set forth.

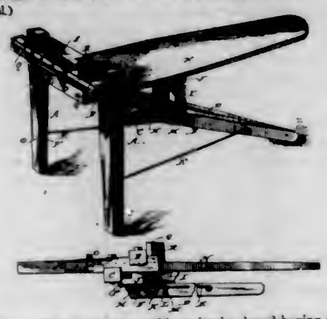
294,707. TAG OR LABEL FOR MAIL-BAGS. GEO. W. WENTWORTH, Boonville, N.Y. Filed Dec. 29, 1883. (No model.)



Claim.—1. A destination tag or label for mail-bags, provided with a longitudinal sinuous open slot, its inner end provided with an enlarged opening, substantially as and for the purposes set forth.

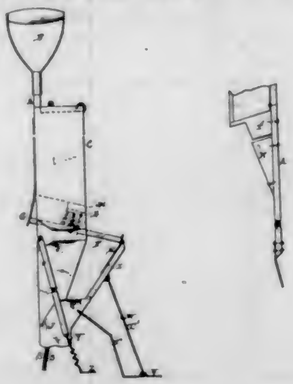
2. A destination tag or label for mail-bags, having a longitudinal sinuous slot contracted between its ends and terminating in an enlarged opening, in which the cord may rest.

294,708. IRONING-BOARD. JOHN C. WEST, Clarksville, Mo., assignor of one-half to Jefferson D. Smith, same place. Filed Oct. 13, 1883. (No model.)



Claim.—The combination, with an ironing-board having a transverse cleat at one end projecting above its upper surface, of two upright legs connected at their upper ends by cross-pieces, one upon each side of the legs and one a distance above the other corresponding to the thickness of the board, as described, and means for supporting the outer portion of the board, and for bracing the legs, as and for the purpose shown and set forth.

294,709. HAND CORN-PLANTER. FRANK A. WHITBROOK, Port Jervis, N.Y. Filed Mar. 29, 1883. (No model.)

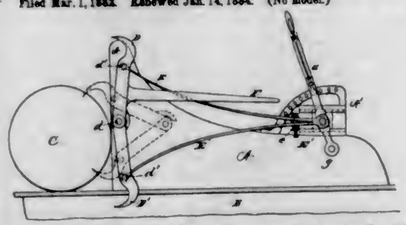


Claim.—1. In a hand corn-planter, the combination of the seed-slide and the spring for returning it to place with the two blocks I' N, which are secured to the side of the piece A, and between which the slide moves, substantially as shown.

2. The combination, in a hand-planter, of the pivoted lever I, ground-plate U, rods T T', levers X, cranks Y, and covering device, substantially as described.

3. In a hand corn-planter, the combination of the operating-lever I, a ground-plate connected thereto, and the covering device Z, which is moved by means of a crank, substantially as set forth.

294,710. SAW-MILL DOG. WILLIAM M. WILKIN, East Saginaw, Mich. Filed Mar. 1, 1882. Renewed Jan. 14, 1884. (No model.)



Claim.—1. In a saw-mill dogging apparatus, the combination, substantially as shown, of the following elements: two dogs adapted to grasp the log or cant from opposite directions, which are independent of the knee, and are pivoted together by their shanks, and are also pivoted near their bits to bars which are pivoted to a support upon the knee back of the standard.

2. In a saw-mill dogging apparatus, the combination, substantially as shown, of the following elements: two dogs adapted to grasp the log or cant in opposite directions, which are pivoted together by their shanks, and are also pivoted near their bits to spring-bars which are pivoted to a support upon the knee back of the standard.

3. The combination, with the knee or jack of a saw-mill head-block, of a dogging apparatus which has its attachment to said jack upon a laterally-movable support back of the standard, and is yoked at its forward end loosely within a frame formed by or upon said standard, and is provided with means, substantially as shown, whereby the attendant can move the same laterally upon the jack and extend the bits of the dogs more or less beyond the face of the standard, for the purposes mentioned.

4. In a saw-mill dogging apparatus, the combination, substantially as shown, of the following elements: two dogs adapted to grasp the log or cant in opposite directions, which are pivoted together at their shanks, and are also pivoted near their bits to bars which are pivoted upon a sliding pivot on the knee back of the standard, which sliding pivot is provided with means whereby the attendant can move the same to and fro at pleasure, whereby the said dogging apparatus can be adjusted by the attendant so as to cause the dogs to act at a greater or less distance from the face of the knee, and also whereby the attendant can grapple a log or cant not snug against the knee and draw it back against the face of the knee.

5. In a saw-mill dogging apparatus, the combination, substantially as shown, of the following elements: a spring-bar pivotally connected with the knee back of the standard, and extending to near the face of the knee, and there connected with a dog which is pivoted thereto near its bit, and is operated upon by a toggle-lever.

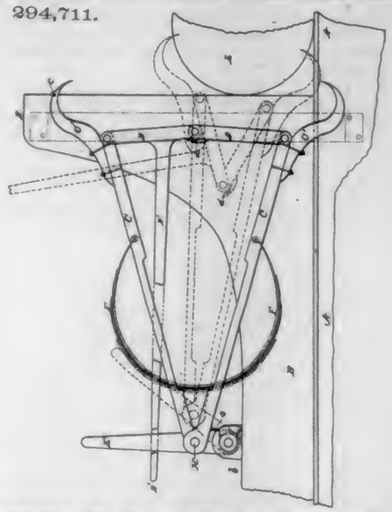
6. In a saw-mill dogging apparatus wherein the dog-bits are pivoted on the ends of spring-bars which are pivotally connected with the knee back of the standard, and are moved from contact with the log or cant by a toggle-lever, the combination, with said toggles, of a stop for limiting the movement of the same at the joint toward the face of the head-block standard, substantially as and for the purposes set forth.

294,711. SAW-MILL DOG. WILLIAM M. WILKIN, Erie, Pa. Filed Mar. 21, 1882. Renewed Jan. 14, 1884. (No model.)

Claim.—1. In the dogging apparatus of a saw-mill head-block, which consists of dog-bits actuated by spring-bars, substantially as shown, to drive them into the log or cant, which spring-bars are provided with other proper mechanism for withdrawing the bits from the log or cant, the said dog-bits formed upon or firmly attached to the outer extremities of said spring-bars, for the purposes mentioned.

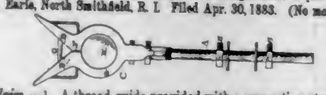
2. In the dogging apparatus of a saw-mill head-block wherein the dog-bits are actuated to enter the log or cant by spring-bars which are attached back of the face of the knee to or connected with a lever, E, by which the said dog-bits can be moved more or less beyond the face of the knee, the combination therewith of a spring operating upon said lever to

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automatically hold back said dog-bits until the power of said spring is overcome by power applied to said lever E, and a stop near said dog-bits for preventing the said dog-bits from being drawn back wholly within the face of the knee by the said spring operating upon said lever, for the purposes mentioned.

294,712. THREAD-GUIDE FOR SPOOLING-MACHINES. EDEN B. WILLIAMS, Forestdale, assignor by mesne assignments, of part to Daniel D. Earle, North Smithfield, R. I. Filed Apr. 30, 1883. (No model.)



Claim.—1. A thread-guide provided with a supporting-stem having a joint therein, with an opening through said guide in which the thread will sink, with the device for partially filling the opening, around which device the thread will pass, and the support for the device, substantially as described.

2. The combination of a thread-guide pronged at its upper end and provided with a vertical slot, and an opening, G, the opening being provided with beveled edges, with a device which is adjustable in relation to the opening, and a support for the device, the opening and the device being shaped as described, whereby the thread will automatically sink down, after catching between the prongs, through the slot and upon either side of the device, substantially as set forth.

3. The combination of a suitable support for the frame, the frame having an opening provided with beveled edges made through it, with a device having a screw-threaded stem arranged within said opening, the stem L for supporting the stem connected to the device, and the support for the stem L, the stem L being provided with means for vertical adjustment, whereby a double adjustment may be given to the device, substantially as shown.

4. The combination of the frame having a circular opening provided with beveled edges made through it, with a device having a screw-threaded stem arranged within said opening, and a second stem for supporting the first, the second stem being capable of vertical adjustment, whereby a double adjustment may be given to the device, substantially as shown.

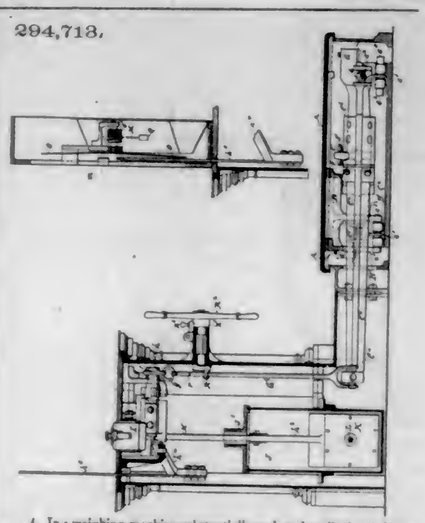
294,713. WEIGHING-MACHINE. EDGEN WOLNER, Liverpool, County of Lancaster, England. Filed Aug. 13, 1883. (No model.) Patented in England Feb. 22, 1883, No. 977, and in Belgium Sept. 17, 1883, No. 62,515.

Claim.—1. In a weighing-machine, the combination of the series of stirrup-links c', supporting the weight of a series of saddle-links, c, carrying the same, the knife-edges c^2, load-arms C^3, and lever-beams C^2 C^3, linked together, by which means the load is well and evenly distributed.

2. The lever-beams C^2 C^3, with hanger-shaped ends provided with knife-edges G, upon which they are supported on their central axis of gravity, whereby a swinging or rocking motion in stable equilibrium is produced.

3. The combination of the lever-beams C^2 C^3, having their respective arms C C', one under and the other above said beams, respectively, and carrying knife-edges F F, with the adjustable link E.

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4. In a weighing-machine substantially such as described and shown, the combination of a lever-beam, C^2, provided with a circular rim, C^6, and lever-arm C^4, having a flange curved to fit said rim and secured thereto, substantially as and for the purpose explained.

5. In a weighing-machine substantially such as described and shown, the lever consisting of the major lever-beam C^2, having circular rim provided with slots, and lever-arm C^4, provided with a circular flange fitting the rim of beam C^2, and secured thereto by bolts passing through the flange and the slots of the rim, whereby the lever-arm C^4 is adapted to be adjusted to any angle relatively to beam C^2

6. In a weighing-machine substantially such as described, the combination of lever-beam C^2, provided with rim C^6, and the reversible lever-arm C^4, applied thereto, substantially as and for the purpose explained.

7. In a weighing-machine substantially such as described, the combination of transfer-lever C^4 with the loose muff C^5, fitted upon the end of said lever and provided with a set-screw, and an arm, C^{11}, provided with suspension knife-edges and adjustably secured to said muff, whereby the knife-edges may be brought into the exact position required to make connection with the rod which connects with the indicating devices.

8. In a weighing-machine substantially such as described and shown, the combination of transfer-lever C^4 and rod G', the loose muff C^5, having a rim, and a short arm adjustably bolted to said rim and provided with suspension knife-edges, whereby said knife-edges are adapted to be set at any required angle with the lever.

9. In a weighing-machine, the combination of a swinging indicator, a cylinder, and a piston fitting loosely within the cylinder, said cylinder and piston being secured one to the frame of the machine and the other to the swinging indicator, substantially as and for the purpose set forth.

10. The combination, in a weighing-machine, of the counterpoise-arm A^2 with the box K, the loosely-fitting piston L', and the chamber of liquid, J, substantially as and for the purposes described.

11. In a weighing-machine, substantially as described, the combination, with a movable arm, A^2, thereof, of cylinder K, carried by said arm, and stationary piston L', of smaller diameter than the interior of the cylinder, substantially as described and shown, whereby the movements of said arm are guided, the parts are cushioned against jar and concussion, and violent oscillations of the indicator are prevented.

12. The combination of the counterpoise-cylinder oscillating on lever-arm A^2, the curved piston-rod L, and the piston L', fitting loosely in the counterpoise-cylinder, but rigidly attached to the piston-rod L, with the cistern of liquid, J, substantially as described.

13. The relieving apparatus consisting of the hand-wheel R^2, shaft R', and crank and crank-pin R, capable of engaging into hook r as the hand-wheel is actuated, whereby the hook r is raised and brought forward till the hook r hooks into shackle g g', where it is left, when the crank-pin, continuing its forward revolution, falls again, and the reverse action takes place when the crank is turned the reverse way.

14. The combination of the suspension-rod G', having two hooks—one the terminal or suspension hook and the other the relieving-hook—with a device for lifting the rod G' out of position by lifting hook r, and a stop, R^3, for holding said device in any position.

15. The lever carrying on its respective arms a balance-weight and scale for showing tare, a set of indicator-scales, the pull of a system of levers from the platform, and, lastly, a weight hanging at a steep inclination below the axis of the lever.

16. The combination, with a lever carrying the pull of a system of levers, of the weighing-scale on one arm, a weight on a nearly-vertical arm, a series of scales attached to an arm, and the finger-wheel O, worked by gear from said lever, and so geared that each of the fingers of the wheel shall indicate in succession, on the moving scales, the smaller increments of weight, while a stationary pointer, A^7, shall indicate the large weights, substantially as set forth.

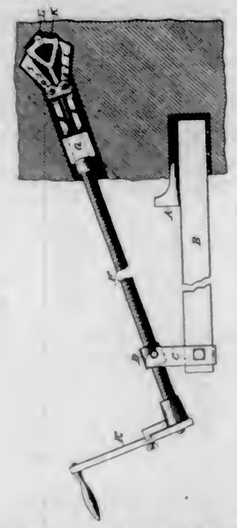
17. The combination of lever A^4, weighted chain M, and finger-wheel O with the series of scales A^8 and stationary pointer A^7, substantially as and for the purposes described.

18. In a weighing-machine, the combination, with an arm, A^4, oscillating (with differences of weights to be weighed) beside a stationary frame, the one (arm or frame) carrying a pointer and the other a scale for that pointer, of a conductor of motion—such as chain M—giving motion to the axle of a wheel revolving alongside of the lever, so as to greatly multiply the motion of the wheel relatively to the lever, by which means, with a pointer or series of pointers on one and a series of scales or a scale on the other, the minor weights can be read off through the movement of the wheel in reference to the lever, and the major weights by the movement of the lever in reference to the stationary frame.

19. In a weighing-machine substantially such as described, the combination, with a lever-beam, C^2, of a transfer-arm adjustably secured thereto, whereby it is adapted to be set at different angles to suit different sizes and forms of weighing-machines.

20. In a weighing-machine, the combination of a diagonal lever, C^4, fitted with circular flange, and connecting the levers supporting the table or platform A to the indicating apparatus, with a circular flange, C^6, fixed to the center of the beam C^2, to which flange the flange of lever C is attached by a bolting device, by which means the length of the arm C^4 and distance between C^2 and the indicating apparatus can be indefinitely increased without altering the amount of leverage and weighing of the machine or the patterns of the various levers.

294,714. EXPANDING REAMER. CHRISTOPHER WREN, Plymouth, Pa. Filed Nov. 16, 1883. (No model.)



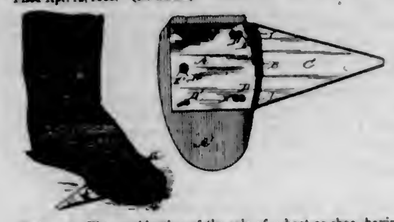
Claim.—1. The combination, in an expanding reamer for use in coal, cutting with a rotary motion, of the crank E, threaded box or nut D, and screw F, having a coupling, G, with a carrier-arm, H, cutters I, springs J, head K, and jam-head L, all substantially as shown and described.

2. A carrier-arm, H, having a tongue, m, lugs n, and an irregular-shaped longitudinal slot, p, through it, substantially as shown and described, and for the purpose set forth.

3. In an expanding coal-reamer operating with a rotary motion and continuous feed by means of a screw, the application of a jam-head, L, to the purpose of attaining a reflex action for the purpose of expanding the cutters, substantially as described and set forth.

4. The combination of the threaded box D, screw F, and crank E, operating in such a manner that the feed is continuous when the reamer is revolved, for the purposes set forth, substantially as shown and described.

294,715. CORN-HARVESTER. GUSTAF ERICK ALENDER, Athol, Dak. Filed Apr. 12, 1883. (No model.)



Claim.—1. The combination of the sole of a boot or shoe, having two studs near its outer edge and one near its inner edge, under the ball of the foot, and a rectangular plate having an upturned portion, a laterally-projecting cutter-blade, two slots near its outer edge, having enlarged inner portions, and a perforation near the inner edge, as and for the purpose shown and set forth.

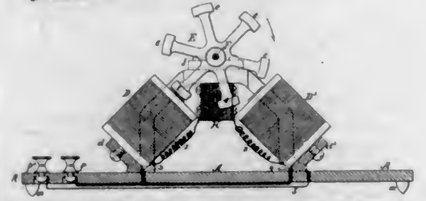
2. The combination of the sole of a boot or shoe, having two studs near its outer edge and a stud near its inner edge, under the ball of the foot, a plate provided with four slots, one in each corner, having enlarged inner ends, a perforation near its inner edge, and having an upturned portion terminating in a laterally-extending cutter-blade, and provided with slots, one at each end, having their lower ends enlarged, and an adjustable strap having bifurcated ends provided with headed studs, as and for the purpose shown and set forth.

294,716. WIRE-STRETCHER. WILBOURN DAVIS AMES, Fairfield, Iowa. Filed Oct. 31, 1883. (No model.)



Claim.—The wire-stretcher having a transverse slot and oblique grooves in its flanges, terminating in eyes f', and shouldered at f^2, adapted to receive a locking-pin, substantially as described.

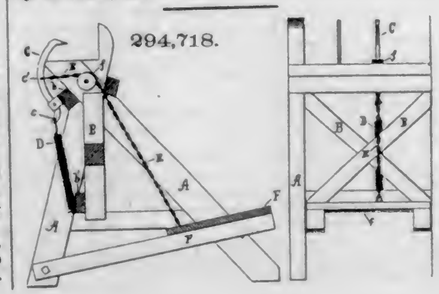
294,717. ELECTRIC MOTOR. MURRAY BAGON, Philadelphia, Pa., assignor to the Novelty Electric Company, same place. Filed Dec. 10, 1883. (No model.)



Claim.—1. The herein-described frame for electric motors, consisting of the arched side pieces with connecting cross-pieces at their ends, having inclined lugs, as and for the purpose set forth.

2. The combination of the frame, consisting of the arched side pieces, connecting cross-pieces, and inclined lugs, with an armature mounted in bearings on the side pieces, and electro-magnets secured to said inclined lugs, substantially as described.

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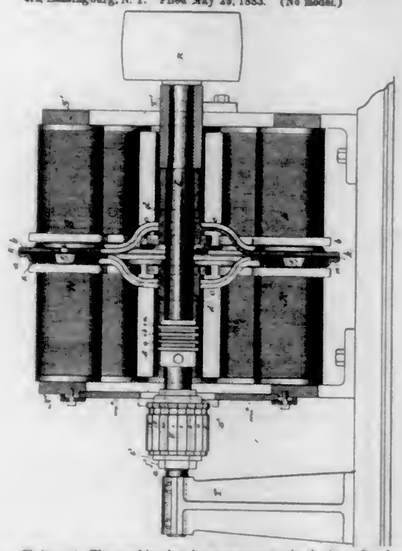


294,718. SAW-BUCK. BENJAMIN ROBERT BAKER, Northfield, Minn. Filed Sept. 6, 1883. (No model.)

Claim.—1. In combination with a saw-buck frame provided with the cross-pieces *b* and *b'*, the clamp C, pivoted to the cross-piece *b*, and provided with the spring D, secured to the cross-piece *b'*, the chain E, fixed to the clamp-arm and bearing on the pulley *f*, and an actuating-lever, substantially as described.

2. In combination with a saw-buck frame provided with the cross-pieces *b* and *b'*, the clamp C, pivoted to the upper cross-piece, *b*, and provided with the spring D, having its lower end secured to the lower cross-piece, *b'*, the chain E, fixed to the clamp-arm and bearing on a pulley, *f*, and the foot-lever F, fulcrumed to the standards, substantially as described.

294,719. DYNAMO-ELECTRIC MACHINE. CLINTON M. HALL, Troy, assignor of two-thirds to John McKenzie, West Troy, and Joseph A. Powers, Lansingburg, N. Y. Filed May 29, 1883. (No model.)



Claim.—1. The combination, in an armature-wheel, of two flat rings or disks with conical or tapered openings, ranges of coils or helices introduced into the openings, and screws or rivets for clamping the rings together and holding the helices into the disks, substantially as set forth.

2. The combination, in an armature-wheel, of two flat rings or disks having conical or tapered openings, and two separate ranges of coils introduced into the openings in such disks, substantially as set forth.

3. The combination, in an armature-wheel, of two flat rings or disks having openings, helices or coils within such openings, and a layer of insulating material between the respective disks and their coils, substantially as set forth.

4. The combination, with the helices, of an armature wheel or ring of metal recessed to receive the coils or helices, and having separations in the metal between the alternate helices at 4, for the purposes and substantially as set forth.

5. The combination, with the armature-wheel, of helices or coils wound with an exterior conical form to fit into the similarly-shaped openings in the armature-wheel, substantially as set forth.

6. The combination, with the commutator-plates and intervening insulating material, forming a cylinder, of collectors or rubbers, each composed of a range of plates with concave ends fitting the surface of the commutator-cylinder, boxes for holding such plates, and springs to press upon the rubbers, substantially as set forth.

7. The combination, with the rubbers, of the boxes l^2 for holding the same, the springs p^2, the covers n^2 for the boxes, and the screws for adjusting the springs, substantially as set forth.

8. The combination, with the ranges of armature-coils each having free ends, of the rings $+a$ $+b$ $-c$ $-d$, the commutator-plates and collectors, and the circuit-connections, arranged substantially as set forth.

9. The combination, with the circular range of field-magnet poles, separate ranges of induction elements in the armature, and the commutator-plates and collectors, of the branched connections between the free ends of the armature elements and their respective commutator-plates, arranged substantially as and for the purposes set forth.

294,720. LUBRICATOR. JEAN BESSETT, Houston, Tex., assignor of one-half to Tobias Buffinger, same place. Filed Jan. 3, 1884. (No model.)



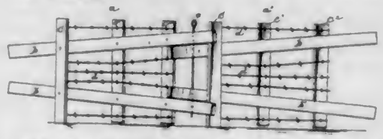
Claim.—1. The combination, with an oil-reservoir having a shank provided with a perforated top, of the rotating nut fitted over the shank, and having a cup-shaped top and a perforated wall, substantially as described.

2. The combination, with a reservoir having a screw-threaded shank provided with a perforated top wall, of the screw-nut on the shank, having a cup-shaped top and a perforated wall, substantially as described.

3. The combination of a reservoir having a screw-threaded shank provided with a top wall having a central orifice and a side perforation, the screw-nut having the rim or flange, and a wall provided with a central orifice and a side perforation, and the valve-stem passing through the said central orifice, substantially as described.

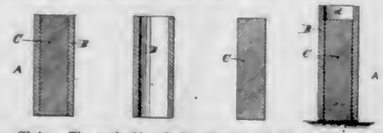
4. The combination of a reservoir having a screw-threaded shank provided with a perforated top wall, the screw-nut fitted on the shank, and having a perforated top wall, and the packing-disk arranged between the two walls, substantially as described.

294,721. FENCE. IRVIN M. BROWN, Covington, Ind. Filed Jan. 23, 1883. (No model.)



Claim.—In a portable fence, the panels *a a'*, consisting of the vertical slats *c*, fixed to one side of the bars, and the vertical slats *c'* and *c²*, fixed to the other side of the bars, the horizontally-arranged converging bars *b b'*, and the vertical connecting-bars *e*, the ends of the bars *b b'* being extended beyond the end uprights of each panel to such a distance that when the panels are united and the bar *e* passed through a hole in the bars at the point of intersection the extended ends shall rest against the adjacent uprights, substantially as and for the purpose set forth.

294,722. INGOT FOR GOLD-PLATED WIRE. LEVI L. BURDON, Providence, R. I. Filed Sept. 12, 1883. (No model.)



Claim.—The method herein described of making metallic compound ingots, which consists, first, in inserting the suitably-prepared metallic core within the seamless tube, the latter extending beyond the end of said core to form a space or chamber; secondly, placing solder within said chamber, then introducing the whole into a suitably heated furnace, thereby fusing said solder, thus uniting or welding the core and tube together; and, lastly, withdrawing the ingot from the furnace, after which it is adapted to be drawn or reduced to the required size, substantially as and for the purpose set forth.

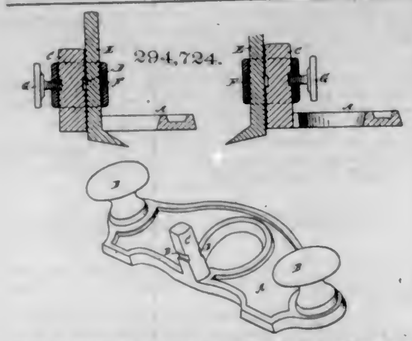
294,723. HOP-TRAINING DEVICE. CLARK T. BUSH, Maryland, N. Y. Filed Sept. 6, 1883. (No model.)



Claim.—In combination with the standard or ground-post and the upper or smaller sticks, the cap or ring D, formed with a central quarterfoil opening, the space between the points adapted to receive the ground-stick, and the segments thereof adapted to receive the upper or smaller sticks and admit of their free ends being spread apart, substantially as and for the purposes set forth.

294,724. ROUTER-PLANE. HENRY P. COPE, Detroit, Mich., assignor of one-half to John H. Bissell, same place. Filed Jan. 12, 1884. (No model.)

Claim.—1. A router-plane having a support secured to its stock between one edge thereof and an opening therethrough, combined with



means for connecting the plane-iron to either the inner or the outer portion of said support, to bring the cutting-edge of the plane-iron within or without the stock, substantially as described.

2. A router-plane having a post secured to its stock between one edge thereof and an opening therethrough, and a clamp adapted to secure the plane-iron to either the inner or outer side of said post, substantially as shown and described.

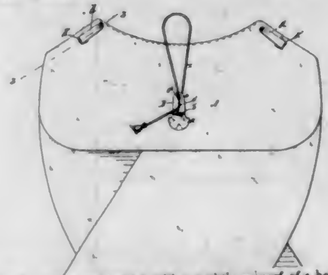
3. A router-plane having a post, C, secured to its stock, and having grooves D on its inner and outer sides, respectively, combined with the plane-iron E, the clamp F, and the set-screw G, passing through the clamp and entering one of the grooves, for holding the plane-iron on either the inner or the outer side of the post, to bring the cutting-edge of said iron within or without the stock, substantially as described.

294,725. MAKING ROLLED METALLIC FOIL. HENRY S. CROOKE and LEWIS CROOKE, New York, N. Y. Filed Oct. 29, 1883. (Specimens.)

Claim.—1. The improvement in the art of making metallic foil, which consists in the following operations, performed in the order named, viz: first, rolling the metal or alloy to or nearly to the required thickness for the foil; second, embossing the foil; and, third, rerolling, substantially as described.

2. The improvement in the art of making metallic foil, which consists in the following operations, performed in the order named, viz: first, embossing the foil to remove the wrinkles and impart a roughened appearance to its surfaces; and, second, rerolling the same to crush down the protuberances constituting the embossing, substantially as described.

294,726. NECKTIE. WILLIAM C. CROSS, Boston, Mass. Filed Dec. 26 1883. (No model.)



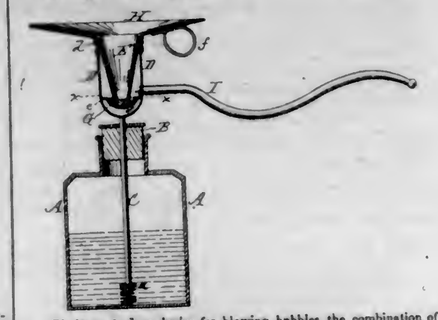
Claim.—The combination, with a necktie or scarf, of a holding-clip having an offset, *b*, with eye *b'* therein, and a tongue, *c*, with a wedge-shaped or tapering slit or slot therein, communicating with the eye *b'*, and a cord secured at one end to the tie, with its free end passing through the eye *b'*, as and for the purposes hereinbefore set forth.

294,727. COMPOSITION FOR CLEANING AND RENOVATING FABRICS. THOMAS EWING, Philadelphia, Pa., assignor to C. Frederick Clarke and Gustavus M. Spencer, both of same place. Filed Dec. 10, 1883. (No specimens.)

Claim.—1. The within-described compound for cleansing and renovating the colors of fabrics, the same consisting of aniline solution, alkali, and ammonia, compounded substantially in the manner and proportions herein set forth.

2. The mode herein described of cleansing and restoring the colors of fabrics, said mode consisting in applying to the fabric a composition of aniline solution, alkali, and ammonia, and then sponging the fabric, substantially as specified.

294,728. BUBBLE-BLOWER. WILLIAM S. FICKETT, Rochester, N. Y. Filed Aug. 11, 1883. (No model.)



Claim.—1. In a device for blowing bubbles, the combination of the chamber for holding the liquid, the cone resting in the chamber and reaching nearly to its bottom, the wide disk at the top of the chamber, and the stem opening into the chamber above the liquid for blowing air to produce the bubble, as set forth.

2. In a device for blowing bubbles, the combination of the exterior holding-chamber, the perforated cup in the bottom of the chamber, the cone resting in the chamber and its bottom passing below the top of the cup, the flaring disk at the top of the chamber, and the stem opening into the chamber above the cup, as set forth.

3. The combination of the exterior chamber, the perforated cup in the bottom of the chamber, the cone passing through the chamber, its lower end resting below the top of the cup, the flaring disk at the top of the chamber, the stem opening into the chamber above the cup, and the tube attached to the chamber and passing down into the bottle or other supply-reservoir, as set forth.

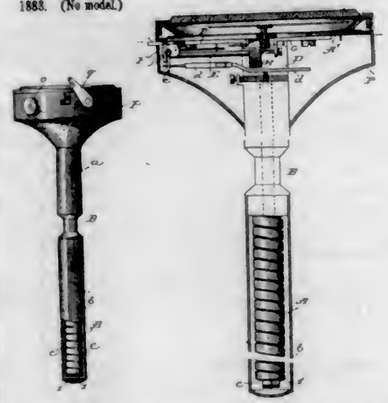
4. In a device for blowing bubbles, the combination of the stopper resting in the mouth of the bottle, the tube attached to the stopper and passing down into the bottle, and an attachment at the top of the tube for blowing and forming the bubble, as set forth.

5. In a device for blowing bubbles, the combination of a stopper resting in the mouth of the bottle, a tube attached to the stopper and passing down into the bottle, and a spring at the bottom of the tube for producing the reaction of the parts, as specified.

6. In a device for blowing bubbles, the disk at the top of the attachment, forming a wide base for the bubble, and provided with sloping sides for discharging surplus liquid, as set forth.

7. In a device for blowing bubbles, the combination, with the chamber for receiving and holding the liquid that forms the bubble, of a disk at the top of the chamber, which is removable, and is provided with a handle, whereby it may be removed from the chamber with the bubble adhering, as set forth.

294,729. CLINICAL METALLIC THERMOMETER. WM. B. POWLE, Newton, assignor to Robert M. Morse, Jr., Boston, Mass. Filed Nov. 15, 1883. (No model.)



Claim.—1. A clinical thermometer consisting of a dial-plate having suitable index-finger, a stem attached to the rear of the dial-plate, a bimetallic spiral coil within said stem, and fixed thereto at its lower end,

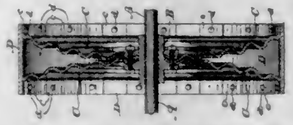
an arm connected to its upper end, and mechanism connected to the spindle of the index-finger, adapted to be struck and pushed by the said arm, whereby the said finger is advanced as the temperature of the coil rises, substantially as described.

2. In combination, the hollow stem and coil having a staff fixed to the upper end of said coil, an arm on upper end of said staff, a rocking shaft having an arm within the sweep of the staff-arm, a crown-wheel on the inner end of the rocking shaft, and a pinion on the spindle of the index-finger, all substantially as described.

3. In combination with the rock-shaft of the thermometer, having an arm, *a*, the jointed arm of the coil-staff, as and for the purpose set forth.

4. In a clinical thermometer, an index-finger and a laminated coil, with intermediate mechanism connecting it to the finger, whereby the movement of the coil pushes the finger over the dial, and a brake mechanism, the parts being combined and operating as described.

294,730. WHEEL OR PULLEY. HARMON H. FULTON, Indianapolis, Ind., assignor to the Indianapolis Machine and Bolt Works, same place. Filed Jan. 14, 1884. (No model.)



Claim.—1. A wheel or pulley composed of a hub, a rim, and a web, said web being composed of two corrugated sheet-metal disks formed dished or hollowing, substantially as described, and for the purpose specified.

2. The combination, with the hub and rim of a wheel or pulley, of a web consisting of two corrugated disks, C C, brought together in the center, where they are joined to the hub, and spread outwardly at the outer edge, where they are joined to the rim at or near its edges, substantially as set forth.

294,731. MANUFACTURE OF EMBOSSED FABRICS. CLAUDE GARNIER, Lyons, and PAUL DEPOULLY, Paris, France. Filed Nov. 3, 1883. (No specimens.) Patented in France May 30, 1883, No. 155,776.

Claim.—1. In the manufacture of embossed fabrics, first treating the fabric with a preparatory dressing which is softened by heat, next passing it between heated embossing-rollers, and finally passing it through a fixing or completing solution, substantially as herein described.

2. In the manufacture of embossed fabrics, the preparatory treatment of the fabric with an alkaline solution, for the purpose of shrinking it before embossing, substantially as herein described.

3. In the manufacture of embossed fabrics, the interposition between the engraved metallic embossing-cylinder and the fabric to be embossed of a blanket of cotton cloth which has been treated with an alkaline solution, substantially as herein described.

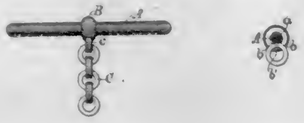
294,732. THERMOMETER. HENRY GUTE, New York, N. Y. Filed Jan. 26, 1884. (No model.)



Claim.—1. The combination, in a thermometer-frame, of the vertical portion A, having integral therewith the disks *d* and *a*, the latter being provided with the flange *c*, and the casing B, adapted to rest on the said flange *c* and be revolved at will, substantially as described.

2. The combination, in a thermometer-frame, of the vertical portion A, having integral therewith the disks *d* and *a*, the latter being provided with the flange *c*, the casing B, adapted to rest on the said flange *c* and be revolved at will, and the cap C, provided with screw-threads for securing it in place on the disk *a*, adapted to secure the casing against vertical movement, substantially as described.

294,733. WATCH-CHAIN ATTACHMENT. HENRY M. HERRING, North Attleborough, Mass., assignor to Oscar M. Draper, same place. Filed Dec 17, 1883. (No model.)



Claim.—1. The combination, with a cross-bar having a circumferential groove, of a sleeve, and a link or ring secured to said sleeve and engaging with said groove, for the purposes set forth.

2. The combination, with the bar A, having the groove *a*, of the sleeve B, having the apertures *b b*, and the link of ring *c*, passing through said apertures and entering at its periphery the said groove, substantially as and for the purposes described.

294,734. ORNAMENTAL-CHAIN LINK. HENRY M. HERRING, North Attleborough, Mass., assignor of one-half to OSCAR M. DRAPER, same place. Filed Jan. 17, 1884. (No model.)



Claim.—1. An ornamental-chain link consisting of an open loop and separate fillings secured to the sides of said loop by a concealed wire fastening.

2. In an improved ornamental-chain link, the combination, with an open link and its connecting-rings, of fillings arranged to fit the sides of said link and formed with obliquely-cut ends adapted to rest against the sides of said rings, and a wire fastening for said fillings.

3. The combination, with the loop A and its rings *a*, of the tubular fillings B, having the oblique ends *b*, and the wire fastening C, all constructed and arranged substantially as described.

4. The combination, with the loop A and its rings *a*, of the fillings B, having oblique ends *b* and slots *b'*, and the fastening C, all constructed and arranged substantially as described.

294,735. GRINDING-MILL. DANIEL HESS, Atlanta, Ga. Filed Apr. 20, 1883. (No model.)



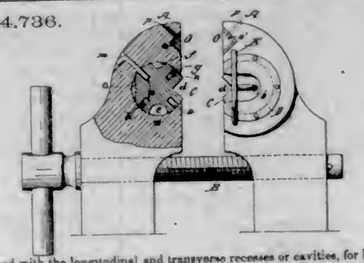
Claim.—The feed-box F, the stationary burr G, and conical crushing-shell H', in combination with the driving-shaft B, the conical burr H, collar I', grinding-disk I, provided with the tapering supporting-shell J, and set-screw *i'*, as set forth.

294,736. VISE. HENRY A. HYLE, Redwood, N. Y. Filed Dec. 14, 1883. (Model.)

Claim.—1. The jaws A, recessed, as shown at *a*, in such manner as to remove a portion of the faces of the jaws, in combination with the cylinders C, placed in the said recesses, the cylinders being formed with cavities of various shapes and adapted to be turned in the jaws, substantially as and for the purposes described.

2. The combination, with the recessed jaws A, of the cylinders C,

294,736.



formed with the longitudinal and transverse recesses or cavities, for holding objects in horizontal and vertical positions, substantially as described.

3. The cylinders C, formed with cavities or recesses and with the flat portions *c*, substantially as and for the purposes described.

4. The cylinders C, placed in recesses made in the jaws, and formed with the narrow slots for holding flat or edged objects, as set forth.

5. The cylinders C, placed in recesses made in the jaws, and formed with shallow and short recesses *i j*, for holding pointed objects, as set forth.

6. The combination, with recessed jaws A and cylinders C, placed in the jaws, of the plates D, for holding the cylinders in place, and for preventing the entrance of dust, &c., substantially as described.

7. The cylinders C, formed with cavities and placed in recesses *a*, and provided with the handles *b*, for revolving the cylinders, substantially as described.

8. The combination, with the cylinders C, placed in the recesses *a*, of the key-pins *m*, arranged for holding the cylinders, substantially as set forth.

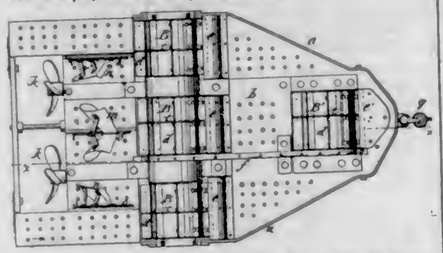
9. The jaws A, having recesses *a* formed in them, for receiving the cylinders C, in combination with the removable staples E, for strengthening the jaws and for preventing them from spreading, substantially as described.

10. The cylinders C, adapted to be placed and revolved in the recesses *a* of the jaws A, and formed with angular cavities or recesses for holding angular objects, as set forth.

11. The cylinders C, adapted to be placed and revolved in the recesses *a*, made in the jaws A, and formed with the concaved recesses for holding round objects, substantially as set forth.

294,737. APPARATUS FOR LOOSENING UP AND REMOVING SAND-BARS, &c., IN RIVERS AND HARBORS. LARENOW ALEXANDER JOHNSON and NELS EMANUEL JOHNSEN, Portland, Oreg. Filed July 21, 1883. (No model.)

Brief.—A frame tapered at the front, covered with perforated plates, and having a headed cross-shaft with end protecting-plates carries air-tight drums with longitudinal cutting-flanges connected by a peripheral flange. A double and two single plows secured to cutting-plates deliver to propeller-shaped dispelling-wheels.



Claim.—1. The apparatus for loosening up and removing obstructions from rivers and harbors, consisting of a frame-work having a pointed or rounded forward end, and provided with drums having radial blades, and with plows, substantially as shown and described.

2. The combination, with the frame *a*, provided with covering-plates *b*, of the drums B B', provided with the radial blades *d*, substantially as shown and described.

3. The combination, with the revolving drums B, of the plows *m n*, substantially as and for the purpose specified.

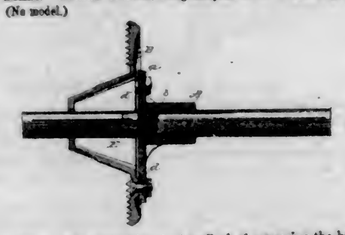
4. The combination, with the supporting-frame, of the revolving drums B, the plows *m n*, and the propeller-wheels *k*, substantially as and for the purpose specified.

5. The combination, with the plows *m n*, arranged substantially as described, of the blades or bars *o*, substantially as and for the purpose specified.

6. The cross-shaft *c*, provided with heads at its ends, and the covering-plates *i*, combined with the side plates or frames, *a'*, of the apparatus, substantially in the manner and for the purpose specified.

7. The combination, with a series of revolving and air-tight drums provided with radial blades, each extending continuously the length of its drum, and provided with a central supporting-flange, of a suitable supporting-frame and shaft provided with end heads, to prevent the frame from spreading laterally, substantially as shown and described, to form an apparatus adapted for being dragged on the bottoms of rivers or harbors, for the purpose of removing obstructions, as specified.

294,738. METHOD OF ATTACHING THE GRINDING-PLATES OF MILLS. WILLIAM J. LANE, Poughkeepsie, N. Y. Filed Aug. 21, 1883. (No model.)



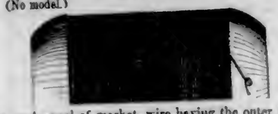
Claim.—The method herein described of preparing the burr of an iron mill for attachment to its spindle, consisting in taking a separate soft-metal hub provided with a flange for connecting it with the burr, in securing the hub to the face-plate of a lathe and boring it in that position, in grinding the back of the burr in a lathe, and, finally, in attaching the hub-flange to the ground back of the burr, all substantially as described.

294,739. FEED MECHANISM. NICHOLOS P. LEFE and JOSEPH W. LEFE, Fremont, Ohio. Filed Jan. 12, 1884. (No model.)



Claim.—In a feed mechanism, the combination, with the feeder-shaft having the ratchet, of the oppositely-acting dogs or pawls, each provided with a tooth and an arm at its angle, and pivoted between and at the outer ends of levers having their bearings on the feeder-shaft on the sides of the ratchet-wheel, substantially as described, and for the purpose set forth.

294,740. SPOOLED MARKET-WIRE. ARTHUR B. MALIN, Cleveland, Ohio, assignor of one-half to George W. Malin, same place. Filed June 12, 1883. (No model.)



Claim.—A spool of market-wire having the outer layer of wire covered or coated with shellac or other suitable substances to protect the wire of the outer layer and prevent the ingress of air or dampness to the inner layers, substantially as set forth.

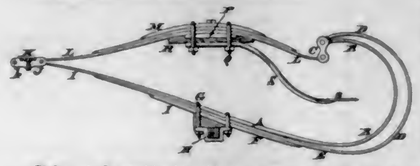
294,741.



294,741. SHIRT. EMILIE S. MOORE, New York, N. Y. Filed Oct. 27, 1883. (No model.)

Claim.—The hereinbefore-described shirt-front, consisting of the outer and inner sections, A C, and the intervening section B, combined and united together substantially as hereinbefore set forth

294,742. RUNNING-GEAR FOR VEHICLES. CHAUNCEY M. MURCH, Cincinnati, Ohio. Filed Dec. 3, 1883. (No model.)



Claim.—1. In combination with the lower spring, A B, having its forward extension, I, elevated and connected to the splinter-bar K, the upper spring, L, whose front or longer portion is attached to said extension I, while its rear or shorter portion is loosely coupled by a shackle, C, to the upwardly-curved termination B of the aforesaid lower spring, A, as herein described.

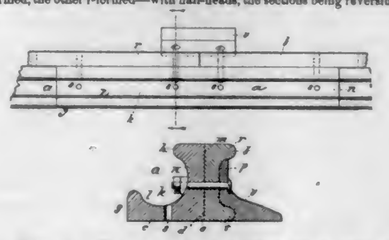
2. In combination with the composite spring A B D E I, the semi-elliptic spring L, coupled thereto in the manner described, and supporting a fifth-wheel frame, as set forth.

3. The combination, in a running-gear, of the X-shaped frame Z, terminating with curved portions P P', made of angle-iron, said frame being pierced at its center to receive the king-bolt O, and having the lower ring, N, of the fifth-wheel secured thereto, for the purpose described.

4. The combination, in a running-gear, of springs A B D E I L, shackle C, frame Z P P', fifth-wheel N T, and king-bolt O, for the purpose described.

294,743. REVERSIBLE SECTIONAL LAP-JOINT RAILWAY-RAIL. HAMSFORD D. NORRELL, Richmond, Va. Filed Aug. 24, 1883. (No model.)

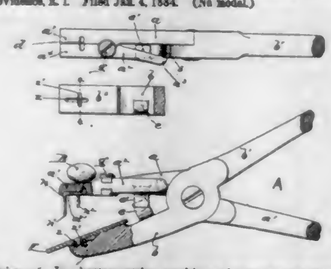
Brief.—A railway-joint consisting of two rail-sections—one L-formed, the other I-formed—with half-heads, the sections being reversible.



Claim.—1. The L-form railway-rail section having plane faces meeting at right angles to each other, and half-heads arranged, respectively, in vertical and horizontal position, substantially as specified.

2. A lap-joint railway-rail composed of the reversible L-shaped sections *a*, the reversible I-form section *b*, the coupling-plates *v*, and coupling-bolts, substantially as specified.

294,744. BUTTON-SETTING INSTRUMENT. GEORGE W. PRENTICE, Providence, R. I. Filed Jan. 4, 1884. (No model.)

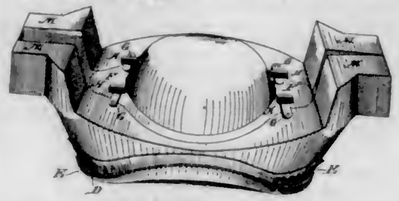


Claim.—1. In a button-setting machine or instrument provided with means for retaining a button and fastener in position, the prong-deflecting device herein described, consisting of the dies *z z'*, the latter having a concave form, and arranged at right angles with and crossing the die *z*, said dies being formed in a jaw or member of said instrument, substantially as shown, and for the purpose set forth.

2. The button-setting instrument A, herein described, consisting of the jaws *a b*, the former being provided with the pivoted supplemental lever or jaw a^2, and the jaw *b* being provided with the clinching-dies *z z'* and cam projection *c*, the whole combined and arranged substantially as shown, and for the purposes set forth.

3. In a two-jaw button-setting instrument provided with clinching-dies and wedge *c*, and further provided with means for retaining a button and pronged fastener in position, the combination therewith of a supplemental lever adapted to be pivoted to the button-holding jaw, and having a wedge or cam, *c'*, adapted to engage with the wedge *c* of its fellow jaw, substantially as shown, and for the purpose described.

294,745. DEVICE FOR FLANGING HAT-BODIES. MARTIN H. RYDER, Stamford, assignor to Alden Selmans, South Norwalk, Conn. Filed Nov. 15, 1883. (No model.)



Claim.—1. A device for flanging hat-brims, having an inner removable portion, through which the crown of the hat extends, and with the sides adapted to close or contract, substantially as set forth.

2. A device for flanging hat-brims, consisting of a block or frame constructed and flanged as described, and adapted to receive a removable inner portion, through which the crown of the hat extends, substantially as described.

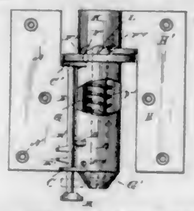
3. A hat-flanging device composed of three sections—a central removable section, through which the crown of the hat extends, and the side sections flanged and constructed as described and adapted to close or contract, substantially as set forth.

4. In a device for flanging hats, the sides and ends of the frame inclined and formed as described, whereby the hat may be firmly held and the retaining-cord prevented from slipping upward, substantially as set forth.

5. The inner removable section adapted to receive the crown of the hat within the same, in combination with the sides of the frame adapted to contract, and clamping devices attached to said frame, whereby said inner section may be forced and held in the required position, substantially as and for the purpose set forth.

6. In a hat-flanging machine, the sides of the frame and the flanged portion thereof, constructed as described, and with their line of junction adapted to correspond with the desired curve of the inner portion of the hat-flange, substantially as set forth.

294,746. LOCK-HINGE. THOMAS P. STRAUP and LOUIS MORGENSTERN, Easton, Pa.; said Morgenstern assignor to said Straup. Filed Oct. 12, 1883. (Model.)



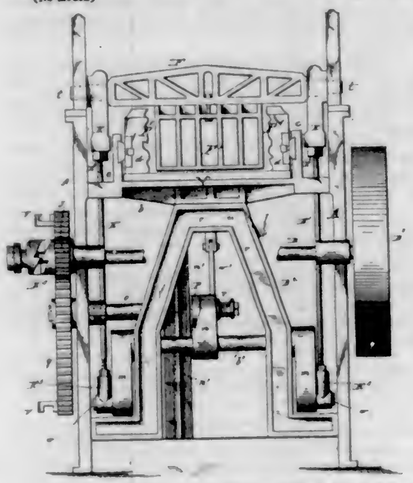
Claim.—1. In a hinge, a cylinder having open ends, said cylinder being provided with a wing, and a disk provided on its upper side with a socket-plug and clutching-teeth, in combination with a socket-clutching cup and a wing formed integral therewith, a rod fixed to the under side of said disk, and a spring having one end secured to the disk and the other end secured to the cylinder, substantially as described, and for the purpose set forth.

2. In a hinge, a cylinder having a wing projecting therefrom, said cylinder being provided with guide-lips and a locking-lug on the cylinder, a locking-rod provided with lugs adapted to engage the said locking-lug, as specified, a disk provided with slots around its outer edge, and having on its upper side a socket-plug and clutching-teeth, and a rod on its under side provided with a spiral spring wound thereon, the lower end of the spring being connected to the cylinder and the upper end thereof fixed to the disk, in combination with a wing and a socket-clutching cup, substantially as described, and for the purpose set forth.

3. In a hinge, a cylinder having a wing connected thereto, said cylinder having lug D and lips C C', provided with openings at the intersection of said wing and cylinder, a locking-rod, E, provided with lugs E', a disk provided with a recess for the reception of the upper end of the cylinder, said disk having slots around its outer edge, and provided on its upper side with a socket-plug, F^2, and clutching-teeth, and a rod on its under side provided with a spiral spring wound thereon, the upper end of the spring being fixed to the disk and the lower end thereof secured to the cylinder, in combination with a wing and a socket-clutching cup formed integral, substantially as described, and for the purposes set forth.

4. In a hinge, a cylinder having a wing fixed thereto, said cylinder having lug D and lips C C', provided with openings at the intersection of said wing and cylinder, a locking-rod, E, provided with lugs E', a disk provided with a recess for the reception of the upper end of the cylinder, said disk having slots around its outer edge, and provided on its upper side with a socket-plug, F^2, and clutching-teeth, and a rod on its under side provided with a spiral spring wound thereon, the upper end of the spring being fixed to the disk and the lower end thereof secured to the cylinder, in combination with a wing and a socket-clutching cup and a lip, J, having opening J' at the intersection of said cup and wing, substantially as described, and for the purposes set forth.

294,747. PRESS. JAS. N. WRIGHT, Quincy, Ill. Filed June 5, 1883. (No model.)



Claim.—1. In a pressing-machine, the combination of the main frame, the auxiliary angular bracing-frame, and the table of the press, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination, in a press, of the brace B^2, adapted to support the table V at the middle thereof, the guides *e e*, rigid on the table, the adjustable draws *d*, for holding and adjusting the back plate of the mold, and the cross-head or bridge, all constructed and adapted to operate substantially in the manner and for the purposes described.

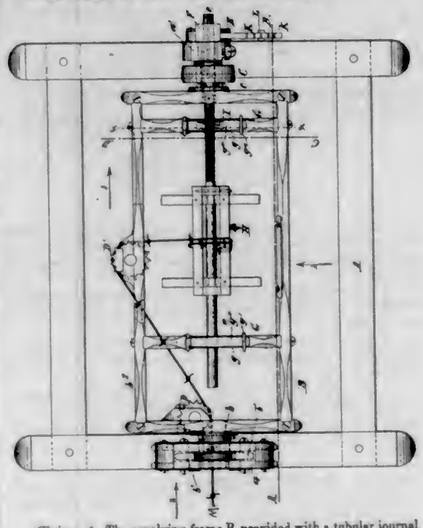
3. In a press of the character described, the combination of the vertically-movable cross-head guided in the main frame, with the loops, the adjustable pitman-rods, and the crank on the shaft *b'*, substantially as and for the purposes described.

4. In a press, the combination of the shaft *b'*, the angular bearing-brace therefor, the three cranks thereon, the shaft located at the back of the press-frame, and provided with a pulley, the clutch K^2, the device *r*, the crank P, the brace fastened to the angular brace, the shaft *o*, and the gear *q*, having an automatic throw-off catch, and the catch *u*, attached to the starting-lever, all constructed and adapted to operate substantially in the manner and for the purposes described.

5. The combination, in a press, of the starting-lever, the catches *v u*, the spur-wheel *q*, and the clutch and its pinion on the belt-drum shaft B, substantially as described.

6. The combination, in a press of the character described, of a main supporting-frame, an intermediate angular frame, a press-table supported thereon, and a vertically-movable cross-head guided thereby, all constructed and adapted to operate substantially in the manner and for the purposes specified.

294,748. WIRE-TWISTING MACHINE. JAMES AYERS and ALEXANDER C. DECKER, Bushnell, Ill., assignors to Washburn & Moen Manufacturing Company, Worcester, Mass. Filed June 14, 1879.



Claim.—1. The revolving frame B, provided with a tubular journal *b*, at one end, and hollow journal *c* and band-pulley C at the other, and rag-wheels D D', relatively arranged as described, in combination with the sectional longitudinally-movable reel-shaft *e*, about which the reel rotates, and actuating mechanism, substantially as and for the purposes set forth.

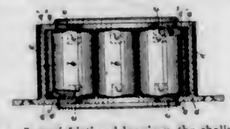
2. The combination, with frame B and sectional shaft *e*, of removable bearing-pieces *g*, substantially as and for the purposes set forth.

3. The combination, with the revolving frame, sectional reel-shaft and reel, of the cross-pieces having bearings for the removable portion of said shaft, which supports the reel and the removable bearing-blocks, substantially as described.

4. The combination, with the revolving frame, the threaded reel-shaft, the cross-pieces, the means for controlling the rotation of the reel-shaft, and the switch engaging in the thread of said shaft, of the removable bearing-blocks arranged on the opposite side of the shaft from said switch, substantially as described.

REISSUES.

10,455. ANTI-FRICTION BEARING. THOMAS R. FERRALL, Boston, Mass. Filed Jan. 28, 1884. Original No. 252,872, dated Jan. 31, 1882.



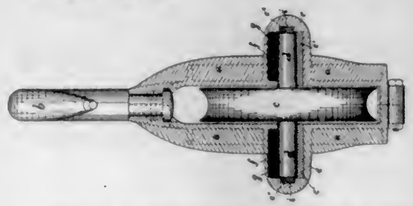
Claim.—1. In anti-frictional bearings, the shells *a a'' a' a'''* and the rollers *b b*, in combination with the regulators *c c* and their radial intermediate projections *c'' c'' c''*, adapted to serve as stops for the said regulators against the inside of the flanges *a'' a'''*, as herein shown and described.

2. In anti-frictional bearings, the shells *a a'' a' a'''*, the rollers *b b*, with their cylindrical recesses *b' b'*, the regulators *c c*, with cylindrical projections *c' c'* and radial intermediate projections, *c'' c''*, as and for the purpose set forth.

3. The herein-described method of making anti-frictional bearings, consisting in casting the shells *a' a'* with solid ends *a'' a'''*, inserting therein the rollers and regulators, then casting around the abutting shells *a a'* the metal ring *e*, and finally boring out or removing the central parts of the ends *a'' a'''*, for the insertion and reception of the shaft *d*, as and for the purpose set forth.

4. In anti-frictional bearings, the independent washer or regulator *c*, having inwardly-projecting cylindrical pegs *c' c'*, to separate the rollers, and radial projections *c'' c''*, to hold the washer in its proper position within the shell of the bearing, substantially as set forth.

10,456. SELF-LUBRICATING BEARING. THOMAS R. FERRALL, Boston, assignor to Herbert Loud, Everett, Mass. Filed Feb. 4, 1884. Original No. 272,369, dated Feb. 27, 1883.



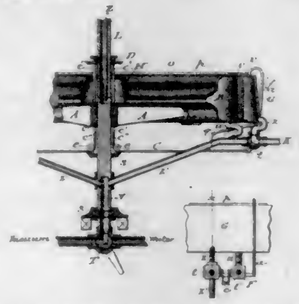
Claim.—1. The herein-described self-lubricating bearing, consisting of the metal shell or case *a*, chamber *f*, adapted to contain the lubricant *g*, and having end recess, *a''*, with its cushion or material *i*, as and for the purpose set forth.

2. In combination with the shell *a* and the chamber *f*, adapted to contain the lubricant *g*, the semicircular bushing *a'*, as and for the purpose set forth.

3. In a pulley-block having wood or metal side pieces, *a a*, as shown, the bearings *e e*, projecting outside of the side pieces, *a a*, as and for the purpose set forth.

4. In a pulley-block, the sheave *c*, secured to spindle *d*, and made to revolve with the latter, in combination with the wood or metal side pieces, *a a*, and outwardly-projecting bearings *e e*, projecting beyond said side pieces, *a a*, as and for the purpose set forth.

10,457. CENTRIFUGAL FILTERING OR STRAINING APPARATUS. S. MORRIS LILLIE, Philadelphia, Pa. Filed Jan. 23, 1884. Original No. 252,733, dated Jan. 24, 1882.



Claim.—1. In a centrifugal machine, an annular basket, B, consisting of an annular hollow shell supported on the axial tube by suitable radial supports, and whose outer wall consists of a sieve or straining medium, in combination with a central hopper having radial tubes or passages leading into the annular basket and making liquid and air tight junctions with the shell of the same, the hopper and radial passages affording means for introducing a liquid or semi-liquid into the basket while the machine is in motion, substantially as specified.

2. The combination, in a centrifugal machine, of a basket to hold the material to be drained or filtered, a chamber or chambers surrounding the basket and revolving with it, into which the drained or filtered liquid flows from the basket and discharging-pipes through which the liquid may flow from the chamber or chambers while the machine is in motion, substantially as specified.

3. The combination, in a centrifugal machine, of two concentric chambers formed in the annular body of the machine by an annular straining-partition, and tubes leading from the outer chamber and communicating, through the axle and bearing for the same, with one or more conduits, substantially as specified.

4. A centrifugal machine having an annular basket to hold the material to be drained or filtered, a chamber or chambers surrounding the basket and revolving with it, into which the filtered or strained liquid flows from the basket, in combination with any suitable vacuum apparatus communicating, through the bearing and axle of the machine, with the chamber or chambers surrounding the basket of the same, substantially as specified.

5. In a centrifugal machine, the combination, with the chamber surrounding and revolving with the basket, of discharge-pipes curved so that the liquid will, while the machine is revolving, form air-traps and prevent any flow of air through the said pipes while the machine is in motion, substantially as specified.

6. The combination of a centrifugal machine having a basket arranged to be tightly closed toward the axle, a suitable vacuum-inducing apparatus, and an axial communication between the vacuum-inducing apparatus and the basket of the machine, substantially as specified.

7. In a centrifugal machine, the combination of an annular basket for holding the material to be drained or filtered, axial passages through the bearings and axle, and radiating tubes connecting the axial passages with the annular basket, substantially as specified.

8. The combination, in a centrifugal machine, of a central hopper communicating with the basket of the machine by suitable passages, and a sleeve-cap, D, on the axle, by which the mouth of the hopper may be closed, substantially as specified.

9. The combination, in a centrifugal machine, of an annular basket, for holding the material to be subjected to centrifugal force, and arranged to be tightly closed toward the axle, a central hopper communicating with the annular basket through suitable passages, a sleeve-cap on the axle of the machine, by which the mouth of the central hopper may be closed, and an axial passage through the axle and bearing of the same, communicating with the annular basket, substantially as specified.

10. The combination, in a centrifugal machine, of two concentric chambers formed in the body of the machine by an annular straining-partition, and two series of discharge-spouts of one or more spouts each, one series for each of the two chambers, substantially as described.

11. The combination, in a centrifugal machine, of the outer annular chamber, G, inner annular chamber, B, and intervening straining medium, and discharging-spouts furnished with suitable faucets for the outer chamber, or for the inner chamber, or for both chambers, substantially as specified.

12. The combination, in a centrifugal machine, of two annular chambers and intervening straining medium, discharge-spouts for the outer chamber, faucets or valves for the said spouts, and means for operating the faucets or valves while the machine is revolving, substantially as specified.

13. The combination, in a centrifugal machine, with the annular basket for holding the material to be strained, of a discharging spout or spouts, faucets or valves for the same, and means for operating the faucets or valves while the machine is revolving, substantially as specified.

14. The combination, in a centrifugal machine, of two concentric chambers and intervening straining medium, a series of discharge-spouts—one or more—each having a suitable faucet or valve for the outer chamber, the same for the inner chamber, and mechanism for operating the cocks or valves of the two series of spouts while the machine is revolving, substantially as specified.

15. The combination, in a centrifugal machine, of two concentric chambers, intervening straining-wall, and means for introducing a liquid into the outer chamber while the machine is in motion.

16. The combination, in a centrifugal machine, of two concentric chambers, a filtering-wall separating the two, and means for causing a flow of liquid at will through the filtering-wall in either direction—i. e., from either chamber into the other—substantially as specified.

17. In a centrifugal machine having its body divided into two concentric compartments by an annular filtering-wall, the combination, with the outer of the two compartments, of the draining-spout *s*, nozzle K, pipe *s'*, connecting with an axial tube, N, and the cock *t*, for putting the draining-spout *s* in communication with either the nozzle K or pipe *s'*, substantially as described.

18. In a centrifugal machine having its basket for holding the material to be strained or filtered surrounded by a chamber, G, the combination, with the chamber, of pipes *a*, opening into the chamber through the top and communicating with a passage through the axle and bearing of the machine, and discharging ports or spouts for the chamber at the bottom of the same, substantially as specified.

19. In a centrifugal machine having its basket for holding the material to be strained or filtered encircled by a chamber, G, the combination, with the chamber, of means for introducing a liquid into it at the top while the machine is revolving, and ports or means for the escape of the liquid from the bottom of the chamber, substantially as specified.

20. In a centrifugal machine, the combination, with the basket for holding the material to be strained, of means or mechanism for drawing off liquid or semi-fluid matters from the basket while the machine is revolving independently of the permeable straining-wall or periphery of the basket, substantially as specified.

21. The within-described process of removing the matter collected in the basket B of a centrifugal machine, consisting in washing the same from the basket through suitable discharging-spouts, as *u*, by means of a current of liquid caused to flow through the filtering-wall into the basket and out of it through the said spouts, substantially as specified.

22. The within-described process of cleansing the filtering medium of a centrifugal machine, consisting in causing a flow of cleansing-liquid through the said filtering medium in a direction contrary to that of the filtration, through the agency of the centrifugal force developed by the revolution of the machine, substantially as specified.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

THE LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY COMPANY, APPELLANT, *v.* THE NATIONAL CAR BRAKE SHOE COMPANY.

Decided January 28, 1884.

1. BING'S PATENT—SHOES FOR CAR-BRAKES—CONSTRUED AND LIMITED.

In this case it was held that on the record herein claim 2 of Letters Patent No. 40,156, granted to James Bing, October 6, 1863, for an improved shoe for car-brakes—namely, "The combination of shoe A, sole B, clevis D, and bolt G, the whole being constructed and arranged substantially as specified"—does not embody any lateral rocking motion in the shoe as an element of the combination.

2. SAME—INFRINGEMENT—COMBINATIONS—MECHANICAL CHANGES.

On such a construction, there was on the record herein patentable novelty in said claim, and a structure having the same four parts in combination, with merely formal, and not substantial, mechanical differences, infringes said claim.

APPEAL from the Circuit Court of the United States for the Northern District of Illinois.

Mr. Geo. Payson for the appellant.

Mr. E. Banning and *Mr. Thos. A. Banning* for the appellees.

Mr. Justice BLATCHFORD delivered the opinion of the Court.

This is a suit in equity brought by the National Car Brake Shoe Company, a corporation, against the Lake Shore and Michigan Southern Railway Company, in the Circuit Court of the United States for the Northern District of Illinois, for the infringement of Letters Patent No. 40,156, granted to James Bing, as inventor, October 6, 1863, for seventeen years, for an improved shoe for car-brakes. The bill was filed June 7, 1880, less than four months before the expiration of the patent. The answer, which was filed October 4, 1880, two days before the patent expired, denies infringement, and alleges that the thing patented had been in public use or on sale, with the consent and allowance of Bing, for more than two years prior to his application for the patent, and that the invention had been abandoned by him to the public. There is no defense of want of novelty or patentability set up in the answer. The replication was filed on the same day with the answer. No proofs were taken, but five days after the filing of the replication and three days after the patent expired the parties entered into the following written stipulation:

It is hereby stipulated by and between the parties to the above-entitled suit, for the purposes of said suit and no other, as follows, to wit:

1. That the patent sued on, No. 40,156, issued to James Bing, October 6, 1863, may be considered as formally offered in evidence, and that complainant is the exclusive owner thereof.

2. That the small brass model offered by complainant, and marked "Complainant's Exhibit, Bing's Brake-Shoe," is a correct representation of the invention described in said patent, except that defendant claims that said model has not enough rocking motion.

3. That the small wooden model offered by defendant, and marked "Defendant's Exhibit A," is also a correct representation of the said invention, except that complainant claims that said model has too much rocking motion.

4. That defendant has used two different kinds of brake-shoes, both of which are claimed by complainant to be infringements of the second claim of said patent, but as to both of which infringement is denied by defendant.

5. That the first of said brake-shoes is constructed in all respects like that described in said patent, except that the two parts—viz., the shoe and the sole—are fitted on each other so snugly as to have no rocking motion.

6. That the second of said shoes is correctly represented by the small wooden model marked "Defendant's Exhibit B," and that it also has no rocking motion.

7. That brake-shoes having a detachable sole attached to the shoe by bolts passing through the shoe and sole at right angles to the face of the sole, one at the top and one at the bottom, and secured by nuts screwed onto the inner ends of said bolts, so that the sole could be taken off upon the removal of said bolts, had been known and used in the United States for some years prior to the said invention of said Bing, and that the small wooden model marked "Defendant's Exhibit C" is a correct representation of said brake-shoes.

8. That said shoe last mentioned was suspended from the truck by a hanger or clevis attached to a bolt passing through a hole at the top of said shoe, as shown in said model.

9. That neither of said brake-shoes used by defendant has the lateral rocking motion described in said patent or infringes the first claim of said patent.

10. That, if the court be of the opinion that said lateral rocking motion forms no part of the second claim of said patent, then the first of said defendant's brake-shoes above mentioned is admitted to be an infringement of said claim, and the decision as to that shoe shall be in favor of complainant, provided the court shall also be of the opinion that there is on that construction any patentable novelty in said claim. But if the court be of the opinion that said lateral rocking motion does form a part of said second claim, or that there is no patentable novelty in said claim, if so construed as to exclude said rocking motion, then, in either of these cases, the decision shall be in favor of defendant as to said first shoe.

11. That, if the court shall be of the opinion that said lateral rocking motion forms no part of the second claim, and that defendant's second brake-shoe—viz., that the defendant's Exhibit B is in its mechanical construction substantially the same as the combination described in said claim—then the decision as to that shoe also shall be in favor of complainant, provided the court shall also be of opinion that there is any patentable novelty in said claim when so construed. But, if the court shall be of opinion either that said lateral rocking motion does form a part of said second claim, or that the mechanical construction of said shoe-brake is not substantially the same as that shown in said claim, or that there is no patentable novelty in said claim if so construed as to exclude said rocking motion, then, in either of said cases, the decision as to that shoe shall be in favor of defendant.

12. That, in case the court finds the issues in favor of the complainant, both parties waive a reference to the master, and agree that complainant's damages may be assessed at the sum of $200.

13. That all the evidence in this case is comprised in this stipulation, the models therein referred to, and the said letters patent.

On that stipulation and the models referred to in it and the patent the case was heard in the circuit court. That court filed a written opinion on the 26th of October following, (9 Bissell, 503,) upon which a decree was entered on the same day as of the preceding 9th of October, declaring the patent to be good and valid in law so far as regards the second claim thereof and to be owned by the plaintiff; that the defendant had infringed the patent by using the invention secured by the second claim, and that the plaintiff recover $200 damages in accordance with the stipulation, the same

to be in full satisfaction of all claims of the plaintiff against the defendant on account of the defendant's infringement of the patent. The defendant has appealed.

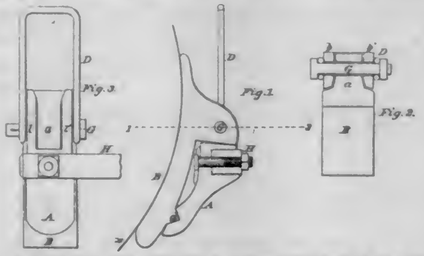
The specification of the patent is in these words:

My invention relates to the construction of shoes or rubbers for car-wheels, and consists, first, in constructing the shoe of two parts, in the peculiar manner described hereafter, so that the part in contact with the wheel can accommodate itself to the same; secondly, in the peculiar combination, described hereafter, of the two parts of the shoe, the clevis by which the shoe is suspended to the truck, and the bolt which secures the clevis to the shoe, and the two parts of the shoe to each other.

In order to enable others skilled in this class of mechanism to make and apply my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of my improved shoe for railway-car brakes; Fig. 2, a sectional plan on the line 1, 2, Fig. 1; and Fig. 3, a front view of the shoe.

Similar letters refer to similar parts throughout the several views.



A is the shoe, and B the sole, the latter being formed to fit the periphery of the car-wheel, (part of which is shown by the line *x*,) and having a lug, *a*, which fits between the lugs *b b'* on the shoe.

D is a clevis, the upper end of which is suspended to the truck of the railway-car, the lower end being arranged to embrace the lugs *b* and *b'* of the shoe, a bolt, G, passing through the lower end of the clevis, through the lugs *b* and *b'* of the shoe, and through the lug *a* of the shoe B.

It will be observed on reference to Fig. 2 that the lug *a* is made tapering, and that the bolt G fits loosely in the said lug, as well as in the lugs *b* and *b'*, so that the sole is self-adjustable laterally, for a purpose described hereafter.

A projection, *d*, on the sole B fits into a socket in the shoe in such a manner that the sole can vibrate laterally in the said socket, while the projection serves to maintain the shoe and sole in their proper relative positions.

H is the usual brake-beam, one end of which fits into a recess in, and is secured to, the shoe A, the other end of the beam being secured to a similar shoe on the opposite side of the car-truck.

The peripheries of car-wheels are always beveled or inclined, so that it becomes necessary to make the soles of the ordinary shoes or rubbers of a corresponding bevel, one shoe at one end of the beam being beveled in one direction, and the other shoe at the opposite end of the beam being beveled in a contrary direction. Even when the usual shoes are properly fitted to the beveled peripheries of the wheels, the lateral movement of the axles as the wheels traverse curves of the track is such that the ordinary shoes cannot fit accurately at all times.

Another evil attending the use of ordinary shoes or rubbers is that, as the lateral movement of the axles takes place, an undue strain is imparted to the brake-beam. These difficulties are avoided by my invention, inasmuch as the sole B is permitted to have a lateral rocking motion on the shoe, and can at once accommodate itself to the bevel of the wheel, or to any variation caused in that bevel by the lateral movement of the axle.

Another improvement in my invention is the peculiarly simple arrangement of the clevis which supports the shoe, the bolt G serving the purpose of connecting the clevis to the shoe and the latter to the sole.

The claims of the patent are as follows:

1. The shoe A and sole B, both being constructed and adapted to each other substantially as described, so that the sole can have a lateral rocking movement on the shoe, for the purposes specified.
2. The combination of shoe A, sole B, clevis D, and bolt G, the whole being constructed and arranged substantially as specified.

It is stipulated that neither of the two brake-shoes of the defendant infringes the first claim of the patent, for the reason assigned in the stipulation, that neither of them has the lateral rocking motion described in the patent, although it is stipulated as to one of them that it is constructed in all respects like that described in the patent, except that the shoe and the sole are fitted to each other so snugly as to have no rocking motion.

1. The first question presented for decision on the stipulation is as to whether the lateral rocking motion forms a part of the second claim of the patent. The circuit court held that the second claim did not embody as an essential element the lateral rocking motion, and that such element need not be found in a car-brake shoe in order to make it an infringement of the second claim. The view urged on the part of the defendant is, that the combination of the shoe, the sole, the clevis, and the bolt cannot, as a whole, be "constructed and arranged substantially as specified," if the whole is not so constructed and arranged as to admit of the lateral rocking motion, and that there is no suggestion in the specification of any construction or arrangement in which the sole has not a lateral rocking motion on the shoe. We think that the circuit court was correct in its construction of the second claim on the record before it. The first part of the invention is stated in the specification to be the peculiar manner of constructing the shoe proper and the sole in two parts in such way that the sole can accommodate itself to the wheel by reason of its having a lateral rocking motion on the shoe proper. That is the subject-matter of the first claim. The second part of the invention, or, as the specification says, the second improvement in the invention, is stated to consist in the peculiar combination of the shoe proper, the sole, the clevis, and the bolt, the clevis suspending the shoe and its sole to the truck, and the bolt securing the clevis to the shoe proper and that to the sole. The combination of the mode of suspending by the clevis with the mode of securing by the bolt is the same whether the sole has a lateral rocking motion or not. That combination as a whole is constructed and arranged substantially as specified, even where there is no lateral rocking motion to the sole. The words "substantially as specified" mean "substantially as specified in regard to the combination which is the subject of the claim." The adaptation of the shoe proper and the sole to each other in such way as to produce or allow of the lateral rocking motion was the subject of the first claim. The combination formed by the peculiar arrangement of the clevis and the bolt in reference to the shoe proper and the sole is a combination which has no effect to produce or prevent the lateral rocking motion; and the stipulation states that this combination can be used constructed exactly as described in the patent when the shoe proper and the sole are so snugly fitted together that the sole has no rocking motion. In consonance with this view, the specification and the claims maintain a distinction between the arrangement for the rocking motion and the manner of combining together the shoe proper, the sole, the clevis, and the bolt. The stipulation declares that when the combination of the second claim is made there may be a lateral rocking motion in the sole, or there may not, for it states that the exact structure of the patent may be copied and yet the fitting of the sole to the shoe proper may be so snug that there may be no lateral rocking motion in the sole, and so no infringement of the first claim. Hence, a loose fitting of the same parts in the same structure would produce a lateral rocking motion and an infringement of the first claim. There is no suggestion that the combination of the second claim was not new; and, there being nothing shown in the state of the art which requires any such construction of the second claim as that contended for by the defendant, and it being fairly susceptible of the opposite con-

struction, and the latter being one which is commensurate with the real invention embraced in the second claim, and one which prevents the real substance of that invention from being bodily appropriated by an infringer, it is proper to give the claim such a construction.

2. The next question raised by the stipulation is as to whether there is any patentable novelty in the second claim on such a construction. No question of novelty is raised in the answer, and nothing is introduced in evidence on that subject, or on the state of the art, except what is found in paragraphs 7 and 8 of the stipulation. The opinion of the circuit court, which is set forth in the record, speaks of "the various patents that have been put in evidence," but none such are before us, and the brief of the appellee states that the model marked "Defendant's Exhibit C," (mentioned in paragraph 7 of the stipulation,) "has been selected, as the nearest approach to the patented invention, from a large number used in the court below." This would indicate that the full case presented to the court below is not presented here. As, however, the parties to this suit have stipulated as to what the record is so far as anything in the controversy between them in this suit is concerned, and the stipulation states that it is a stipulation for the purposes of this suit and no other, and the clerk of the circuit court certifies the transcript to be "a true, correct, and complete transcript of the record of all the proceedings" had in the circuit court in this suit, "as appears from the files and records of" the court remaining in his custody and control, what is furnished to us must be accepted as sufficient for the purposes of this suit, leaving our decision in the case to stand, in its bearing in respect to other suits on the same patent, with only that weight which is due to it in view of the manner in which the case is presented in the record.

The brake-shoe described in paragraphs 7 and 8 of the stipulation, and shown in defendant's Exhibit C, it is very clear does not contain what is covered by the second claim of the patent as we have defined it or destroy its patentable novelty. Bing accomplishes by one bolt what required three bolts in the prior structure. His whole structure can be taken off from the clevis by removing the one bolt, while in the prior structure it required the removal of two bolts to take off the sole from the shoe proper and the removal of a third bolt to take off the shoe proper from the clevis.

3. On the foregoing views, it is admitted by paragraph 10 of the stipulation that the first of defendant's brake-shoes infringes the second claim, and there must be a decision as to that shoe in favor of the plaintiff.

4. The only remaining question is as to whether the defendant's other brake-shoe, Exhibit B, is in its mechanical construction substantially the same as the combination described or shown in the second claim. In the Bing shoe-brake the clevis is a three-sided structure, the two lower ends of which embrace the two lugs of the shoe proper, and the bolt passes through the lower end of one arm of the clevis, then through one of the lugs on the shoe proper, then through the lugs on the sole, then through the other lug on the shoe proper, and then through the lower end of the other arm of the clevis, and the sole cannot be removed without first removing the bolt, because the lug on the sole fits in between the lugs on the shoe proper. In the defendant's structure there is no bolt-hole through the lug on the sole, but there is a curved depression made in its top, in which the curved lower end of the clevis rests. The clevis does not have two arms, the lower ends of which embrace the lugs of the shoe proper, and the bolt goes through one of those lugs, then through a hole in the lower end of the clevis, (the clevis being a vertical piece, without arms, and not three-sided,) and then through the other one of those lugs, but the bolt does not go through the lug on the sole. That lug is kept in place by the pressure on it of the curved lower end of the clevis, which cannot move out of position, because the bolt goes through it and holds it. The bolt alone, without the clevis, will not confine the lug on the sole. The lug on the sole cannot be removed until the bolt is removed and the clevis is detached. The shoe proper, the sole, and the clevis are combined by the single bolt, which secures together the clevis, the shoe proper, and the sole. The bolt and the clevis perform the same office in the two structures, and the mechanical differences are merely formal and not substantial. The combination consists of the same four parts, differing only in form.

The decree of the circuit court is affirmed.

Supreme Court of the United States.

THE ILLINOIS CENTRAL RAILROAD COMPANY, APPELLANT, *v.* LAURA B. TURRILL, ADMINISTRATRIX OF SAMUEL H. TURRILL, DECEASED. THE MICHIGAN SOUTHERN AND NORTHERN INDIANA RAILROAD COMPANY, APPELLANT, *v.* LAURA B. TURRILL, ADMINISTRATRIX OF SAMUEL H. TURRILL, DECEASED.

Decided January 28, 1884.

1. PROFITS.

In view of the former decision of this Court in these cases, (reported under the name of the Cawood patent, 94 U. S., 695,) nothing was left open for further inquiry but the amounts of the former recoveries for the use of the non-infringing machines, and the true way of determining this clearly was to find out what part of the profits for which the original decrees were rendered had been made by the use of the non-infringing machines.

2. PROFITS—WHEN INTEREST IS ALLOWABLE.

As a general rule, a patentee is not entitled to interest on profits made by an infringer, because profits are regarded in the light of unliquidated damages; but where a case was sent back to ascertain how much should be deducted from decrees for errors in the accounting as then stated, it seems not at all inequitable to allow interest on the corrected amounts from the date of the master's report. The cases are entirely different in this particular from what they would have been if the original decrees had been reversed for error in the principles of the accounting. The decrees in the present cases may be considered as affirmed in part and reversed in part, the new reference being had only to find out the exact extent of the reversals.

3. PRACTICE IN THE COURTS—DEATH OF PATENTEE AFTER APPEAL DOES NOT ABATE THE SUIT.

The death of the patentee since the appeals were taken does not prevent the suits from being further prosecuted in the name of the legal representatives.

APPEAL from the Circuit Court of the United States for the Northern District of Illinois.

Mr. Geo. Payson for the railroad companies.

Mr. Chauncey Smith and *Mr. L. L. Bond* for the administratrix.

Mr. Chief Justice WAITE delivered the opinion of the Court.

The effect of the judgments in these cases when here on the former appeals, as reported under the name of

the "Cawood patent," (94 U. S., 695,) was to affirm the decrees then appealed from so far as they charged these appellants, respectively, with the profits made from the use of the infringing machines, known as the "Illinois Central," the "Etheridge," and the "Whitcomb," and to reverse as to the profits made by the use of the "Bayonet Vise," the "Michigan Southern," and the "Beebee & Smith," which were adjudged to be non-infringing machines. The total amount of profits arising from the use of all the machines, infringing and non-infringing, was settled, and the judgment of the court was that the profits had properly been estimated by comparing the cost of mending on the machines with the cost of mending on a common anvil. This was found to be about thirty-six cents per foot mended in favor of the machines. (Page 709.) Nothing was left open for further inquiry but the amounts of the former recoveries for the use of the non-infringing machines. It was quite right therefore for the circuit court, when the cases went back, to direct the master to ascertain from the old evidence, if possible, and, if not, from new, how much should be deducted from the old decrees on account of the erroneous recoveries. The true way of determining this clearly was to find out what part of the profits for which the original decrees were rendered had been made by the use of the non-infringing machines. This the master attempted to do, and in the case of the Illinois Central Company there is no doubt in our minds that the conclusion he reached was entirely correct. In fact, we do not understand that this is disputed. It is argued that a sufficient allowance was not made in the accounting for cut rails, but that question was settled by the original decree, and could not be re-examined on this reference. The inquiry now is limited to the amount of mending done by the use of the non-infringing machines and its comparative cost.

In the case of the Michigan Southern and Northern Indiana Company the evidence is not as satisfactory as in that of the Illinois Central. The shop-books in which the accounts for repairing rails were kept, if kept at all, were not produced, and had probably been destroyed, as of no value before the accounting took place. In their absence it is difficult to determine with accuracy what the facts were, but upon full consideration we are satisfied the circuit court did not in its decree underestimate the amount of deduction to be made in favor of this company.

In making up the decree interest was added from the date of the master's report on the balances found due after the ascertained deductions had been made, and this is assigned for error. As a general rule a patentee is not entitled to interest on profits made by an infringer. The reason is that profits are regarded in the light of unliquidated damages, (*Parks* v. *Booth*, 102 U. S., 106,) but in many of the cases it is said that circumstances may arise in which it would be proper to add interest. (*Mowry* v. *Whitney*, 14 Wall., 653; *Littlefield* v. *Perry*, 21 Wall., 230.) Here, as has been seen, in effect the original decrees rendered in July, 1874, were affirmed in 1876 to the extent of the present recoveries. The cases were only sent back to ascertain how much should be deducted from those decrees for errors in the accounts as then stated. If the decrees had been entered originally for the present amounts, the patentee would have been entitled to interest from 1874. That was settled in *Railroad Company* v. *Turrill*, (101 U. S., 836,) which was one of the cases affirmed in whole at the former hearing in this Court. Under these circumstances it seems to us not all inequitable to allow interest on the corrected amounts from the date of the master's report in 1879. The cases are entirely different in this particular from what they would have been if the original decrees had been reversed for error in the principles of the accounting. Those decrees may very properly be considered as affirmed in part and reversed in part, the new reference being had only to find out the exact extent of the reversals.

Since the present appeals were taken the patentee has died, and the appellants now suggest that the causes of action do not survive, and the suits cannot be further prosecuted in the name of the legal representatives of the decedent. As to this, it is sufficient to say that what was called by Chief Justice Marshall in *Gordon* v. *Ogden* (3 Pet., 35) "the silent practice of the Court" has always been the other way. It is every-day practice to revive such suits, and the books are full of cases in which this has been silently done, no one apparently entertaining a doubt of its propriety.

The decree in each of the cases is affirmed.

Mr. Justice Blatchford did not sit in these cases and took no part in their decision.

THE

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of March 11, 1884.

Patents	392—	No. 294,749 to No. 295,140, inclusive.
Designs	18—	No. 14,865 to No. 14,882, inclusive.
Trade-marks	24—	No. 10,986 to No. 11,009, inclusive.
Labels	23—	No. 3,967 to No. 3,989, inclusive.
Reissues of patents	4—	No. 10,458 to No. 10,461, inclusive.
Total issue	461	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	3	
Austria Hungary			Hawaiian Islands		
Barbadoes			Hayti		
Belgium			Italy		
Bermuda			Mexico		
Brazil			Portugal		
Canada	1		Russia		
Chili			Scotland		
Colombia, U. S. of			Sweden	2	
Cuba			Switzerland		
Denmark					
Ecuador			Total to citizens of foreign countries	11	5
England	4	1			
France	1	4			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	5	
Arizona Territory	2		Nevada		
Arkansas	3		New Hampshire	1	1
California	11		New Jersey	25	
Colorado	1		New Mexico Territ'y		
Connecticut	33		New York	77	12
Dakota Territory			North Carolina	1	
Delaware			Ohio	24	1
District of Columbia	3		Oregon	2	
Florida			Pennsylvania	39	1
Georgia	5		Rhode Island	4	
Idaho Territory			South Carolina		
Illinois	37	1	Tennessee	2	
Indiana	4		Texas	1	
Indian Territory			Utah Territory		
Iowa	10		Vermont		1
Kansas	9		Virginia	1	9
Kentucky	1		Washington Territ'y	3	
Louisiana	2		West Virginia	3	
Maine			Wisconsin	8	4
Maryland	7	7	Wyoming Territory		
Massachusetts	34		United States Army		
Michigan	17		United States Navy	1	
Minnesota	5				
Mississippi	2		Total to citizens of the United States	399	42
Missouri	16	5			
Montana Territory					

DESIGNS.

14,865.—LANTERN.—*Francis Billingham*, Brooklyn, assignor to *The E. P. Gleason Manufacturing Company*, New York, N. Y. Application filed February 9, 1884. Term of patent 14 years.

14,866.—WATCH-CASE.—*Jean François Boyer*, Boston, Mass., assignor to *The Boston Watch Case Company*, same place. Application filed February 16, 1883. Term of patent 7 years.

14,867.—CARPET.—*Walter J. Gadsby*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed February 12, 1884. Term of patent 3½ years.

14,868 to 14,873, inclusive.—CARPET.—*Otto Heinigke*, New Utrecht, N. Y., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed January 28, 1884. Term of patents 3½ years.

14,874 to 14,881, inclusive.—CARPET.—*Winthrop L. Jacobs*, East Orange, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Applications filed January 28, 1884. Term of patents 3½ years.

14,882.—CARPET.—*Arthur L. Halliday* and *William McCallum*, Yonkers, N. Y., assignors to *The Bigelow Carpet Company*, Clinton, Mass. Application filed February 8, 1884. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

10,986.—PREPARATION FOR DISGUISING THE BITTERNESS OF QUININE, &c.—*Academic Pharmaceutic Company*, New York, N. Y. Application filed December 27, 1883.

"The name 'QUINEPTUS.'"

10,987.—PLUG-TOBACCO.—*Charles L. Adams*, Lynchburg, Va. Application filed January 30, 1884.
"The words 'ARKANSAS TRAVELER.'"

10,988.—SMOKING AND CHEWING TOBACCO, CIGARS, AND CIGARETTES. *James G. Butler & Co.*, St. Louis, Mo. Application filed February 2, 1884.
"The arbitrary representation or device of a heart."

10,989.—COGNAC BRANDY.—*J. Denis, Henry Mounié & Co.*, Cognac, France. Application filed December 16, 1882.
"The letters and words 'J. DENIS, HENRY MOUNIÉ & CO.,' the signature in fac-simile of our firm, the whole being connected with the representation of a grape-leaf."

10,990.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed February 2, 1884.
"The words 'HOOK & LADDER' and a pictorial representation of a hook and ladder, which may be used either separately or in connection with each other."

10,991.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed February 2, 1884.
"The words 'BOAR HEAD' and a pictorial representation of a boar's head, which may be used either separately or in connection with each other."

10,992.—SMOKING-TOBACCO.—*B. Leidersdorf & Co.*, Milwaukee, Wis. Application filed February 13, 1884.
"The word-symbol 'RED CLOVER.'"

10,993.—CERTAIN EMBOSSED METAL ARTICLES.—*A. Massé & Anglade*, Paris, France. Application filed July 2, 1883.
"The representation of a bee and the letters 'A. M. & CIE.'"

10,994.—LIVER-PELLETS.—*Henry E. Peters*, Allentown, Pa. Application filed November 30, 1883.
"The representation of a dandelion-plant in bloom."

10,995.—MELISSA-WATER.—*Henry Renouard & Co.*, Paris, France. Application filed November 2, 1883.
"The fac-simile signature 'BOYER.'"

10,996.—MELISSA-WATER.—*Henry Renouard & Co.*, Paris, France. Application filed November 2, 1883.
"The words 'EAU DES CARMES.'"

10,997.—CERTAIN PROPRIETARY MEDICINES.—*United States Medicine Co.*, New York, N. Y. Application filed January 5, 1884.
"Within one or more circular lines is the figure of an eagle with raised wings, and which is represented as standing upon a shield and holding with one foot a number of arrows, and with the other foot a branch bearing leaves and fruit. Beyond the head of the eagle are seen the upper parts of a number of flags, and above and behind the eagle are a number of stars. Around the circular line or lines are printed the words 'THE LEAVES OF THE TREE WERE FOR THE HEALING OF THE NATIONS.'"

10,998.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The words 'THE PATHFINDER.'"

10,999.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The words 'QUEEN OF THE SEAS.'"

11,000.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The words 'THE FLOWER OF ALL NATIONS.'"

11,001.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The word 'VENUS.'"

11,002.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The words 'ST. ANDREW'S.'"

11,003.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The words 'ELSIE'S HARVEST.'"

11,004.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The words 'ALL THE RAGE.'"

11,005.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 20, 1884.
"The words 'SPIRIT OF THE TIMES.'"

11,006.—GUNPOWDER.—*Curtis's & Harvey*, London, England. Application filed February 9, 1884.
"The symbol, representation, or word 'DIAMOND.'"

11,007.—CRACKERS, BISCUITS, WAFERS, AND CAKES.—*F. A. Kennedy Company*, Chicago, Ill. Application filed February 18, 1884.
"The representation of a phenix in the act of rising from the flames."

11,008.—CIGARS.—*C. C. Saums*, Baltimore, Md. Application filed January 21, 1884.
"The word 'MINERVA.'"

11,009.—BANJOS, BANJO CASES AND STRINGS, AND OTHER TRIMMINGS. *John F. Stratton*, Brooklyn, N. Y. Application filed February 15, 1884.
"A representation of the music-staff, the treble clef, and the notes F B C."

LABELS.

3,967.—Title: "CHAPPELEAR'S BRONCHINI" (FOR A MEDICINE.)—*William M. Chappelear & Sons*, Zanesville, Ohio. Application filed February 12, 1884.

3,968.—Title: "THE LEADER" (FOR CIGARS.)—*Hermann Dunker*, Milwaukee, Wis. Application filed February 13, 1884.

3,969.—Title: "CLARK'S EXTRACT OF JAMAICA GINGER, CONCENTRATED."—*Dort & Chandler*, Keene, N. H. Application filed February 14, 1884.

3,970.—Title: "MURRAY'S SPECIFIC."—*Carlos H. Elmore* and *William M. Whitelaw*, Kansas City, Mo. Application filed February 15, 1884.

3,971.—Title: "FLINT'S SAPONACEOUS TOOTH POWDER THE PEERLESS DENTIFRICE."—*J. T. Flint & Co.*, Derby Line, Vt. Application filed February 16, 1884.

3,972.—Title: "DR. VON BIEBER'S SURE CURE FOR MALARIA."—*John B. Henion*, Rochester, N. Y. Application filed February 19, 1884.

3,973.—Title: "HIGGINS CROWN LAUNDRY SOAP."—*Walter Higgins*, Brooklyn, N. Y. Application filed February 14, 1884.

3,974.—Title: "WESTERN DELIGHT," (FOR FLOUR.)—*Huber & Wack Milling & Live Stock Co.*, St. Louis, Mo. Application filed February 19, 1884.

3,975.—Title: "RED CROSS ENGINE OIL."—*Isted & Halsted*, Milwaukee, Wis. Application filed February 15, 1884.

3,976.—Title: "RED CROSS CYLINDER OIL."—*Isted & Halsted*, Milwaukee, Wis. Application filed February 15, 1884.

3,977.—Title: "THE WHITE ELEPHANT" (FOR CIGARS.)—*Mensing & Stecher*, Rochester, N. Y. Application filed February 12, 1884.

3,978.—Title: "VICTORIA PILLS."—*A. C. Meyer & Co.*, Baltimore, Md. Application filed February 14, 1884.

3,979.—Title: "CAUTION." (FOR A MEDICAL COMPOUND.)—*A. C. Meyer & Co.*, Baltimore, Md. Application filed February 14, 1884.

3,980.—Title: "DAY'S HORSE AND CATTLE POWDER."—*A. C. Meyer & Co.*, Baltimore, Md. Application filed February 14, 1884.

3,981.—Title: "I. A. POTTER'S NEW AMERICAN STRENGTHENING PLASTER."—*Ira A. Potter*, Watertown, N. Y. Application filed February 18, 1884.

3,982.—Title: "RHOREE'S BREAD RAISING."—*Provident Chemical Works*, St. Louis, Mo. Application filed February 4, 1884.

3,983.—Title: "THYMOLINE CHILDREN & ADULTS HEALTH PROTECTOR."—*Gustav Schwarzwald*, New York, N. Y. Application filed February 7, 1884.

3,984.—Title: "SOLID GOLD" (FOR CHEESE.)—*John Thallon*, New York, N. Y. Application filed February 19, 1884.

3,985.—Title: "SOLID SILVER" (FOR CHEESE.)—*John Thallon*, New York, N. Y. Application filed February 19, 1884.

3,986.—Title: "FINEST SELECTED DAIRY" (FOR BUTTER.)—*John Thallon*, New York, N. Y. Application filed February 19, 1884.

3,987.—Title: "FRENCH COOK BAKING POWDER."—*John McO. Thornburgh*, St. Louis, Mo. Application filed February 18, 1884.

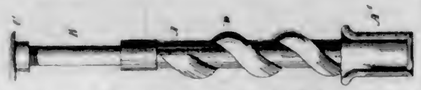
3,988.—Title: "TWENTY-FOUR O'CLOCK" (FOR CIGAR-BOXES.)—*H. Westcott, Son & Co.*, Binghamton, N. Y. Application filed February 14, 1884.

3,989.—Title: "PÂTE ROUGE METALLIQUE" (FOR A PASTE FOR POLISHING METALS.)—*W. H. Winslow & Co.*, Boston, Mass. Application filed February 14, 1884.

PATENTS

GRANTED MAR. 11, 1884.

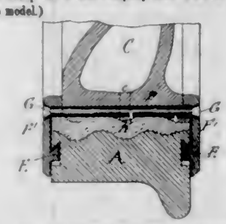
294,749. CASE FOR OPERATING STOP-COCKS FOR WATER AND GAS PIPES. EVERETT L. ABBOTT, South Bend, Ind. Filed Sept. 4, 1882. (No model.)



Claim.—1. The lower section, A, formed with the exterior spiral swell, D, having in its interior the spiral groove *b*, in combination with the interior section, B, having the pin *c*, substantially as shown and described.

2. The rod *a*, having the twist *d* for keeping it in a central position, in combination with the section B, substantially as described.

294,750. CAR-WHEEL. ANSON ATWOOD, Dunellen, N. J., assignor to the Atwood Hemp Car Wheel Company, New York, N. Y. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination of an elastic packing, K, with the tire A and rim D, having corresponding corrugations or roughenings upon their adjacent faces so shaped as to lock the tire against both lateral and rotary slip on the wheel, substantially as described.

2. The combination of the rim D, tire A, and elastic packing, with their circumferential corrugations, with the loosely-engaging tongue and groove upon the tire, and flange or ring, and with suitable means for preventing rotary slip, substantially as described.

3. The combination of the tire A, rim D, packing K, flange F or ring or rings F', loose tongue-and-groove lock E, and bolts G, having no metallic contact with tire or rim, substantially as described.

4. The combination of the tire A, rim D, packing K, flange F or ring F', lock E, and bolts G, passing through grooves in the rim, with the lip *g*, substantially as described.

5. The combination of the tire A, rim D, packing K, rings or flange F F', lock E, bolts G, and keys H, substantially as described.

6. The compound of fiber and vaseline for packing railway-car wheels, substantially as described.

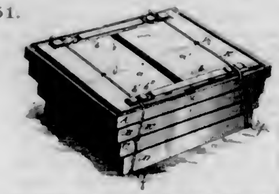
7. A car-wheel having the separate tire and a body cast in one piece, consisting of the hub and rim, with the intermediate double-arched portion, having sand-holes from the inner arch through the hub and from the outer arch through the rim, and with unperforated sides, substantially as described.

8. In a wheel having a tire, A, capable of yielding radially to thrust or jar, the combination of the body, tire, and a loose tongue-and-groove lock, E, connecting the tire to the body, substantially as and for the purpose described.

294,751. KNOCKDOWN CRATE. WILSON M. BAKER, Urbana, Ohio. Filed Jan. 8, 1884. (Model.)

Claim.—1. A crate consisting of a series of trays gradually diminishing in size, whereby a nest can be made by setting one into another, the trays set apart and above each other, a sectional cover for the upper tray, and means for holding the trays in position, substantially as and for the purpose set forth.

294,751.



2. A crate consisting of a series of trays of unequal length and width, each tray having means for supporting it upon and apart from the next lower tray when set up, whereby an air-space is left between the trays, and a holding device, substantially as set forth.

3. In a crate, the combination, with a series of trays of unequal length and width, of two swinging bails secured to the under side of the bottom tray, and means for fastening the bails near the ends when the crate is set up, and near the middle when it is knocked down, substantially as set forth.

4. In a crate, the combination, with the trays, the fastening device, and the covers *a a'*, of the holding-bars *b*, having notches *b'*, as set forth.

5. A crate consisting of trays of unequal length and width, each tray except the top one being covered by the one above it, and means for effecting an air-space between adjacent trays, and the top covers, *a a'*, of dimensions to fit into the lower tray when the crate is knocked down, as set forth.

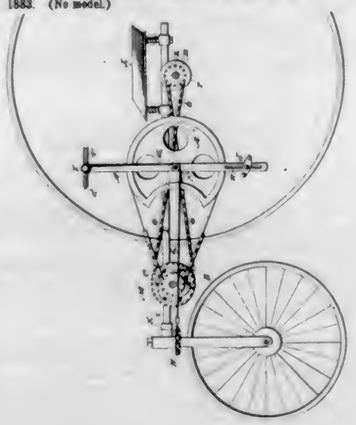
6. A cover for a crate, consisting of the pieces *a a'*, of dimensions to fit into one of the trays, and provided with cleats which prevent the cover from slipping and afford space for ventilation, substantially as and for the purpose set forth.

294,752. COMPOSITE OIL FOR LUBRICATING, &c. GEORGE W. BARKER, Brooklyn, N. Y. Filed July 31, 1883. (No specimens.)

Brief.—Improvement on Letters Patent No. 255,096, dated March 21, 1882.

Claim.—The herein-described composite oil, composed of castor-oil and corn-oil in nearly equal proportions.

294,753. TRICYCLE. ALBERT BOWN, Streator, Ill. Filed Aug. 15, 1883. (No model.)



Claim.—1. In a tricycle, the combination, with a disk mounted on a frame, of an oscillating lever adapted to move said disk, a pinion connected to the disk by means of chains or belts, or both, and a wheel or wheels C, connected to a suitable wheel or wheels on the rear axle by one or more endless chains, substantially as described.

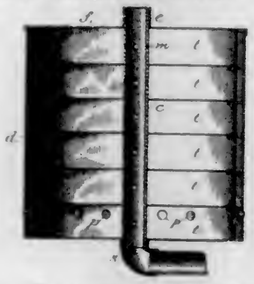
2. In a tricycle, the combination, with a disk mounted on a frame, of an oscillating lever secured thereto, a pinion connected with the disk by a belt, chain, or both, and a clutch or clutches connected with pinions secured to the rear axle, substantially as set forth.

3. In a tricycle, the combination, with a disk loosely secured to a frame, the latter resting in the rear axle, of an oscillating lever secured thereto, a pinion secured to a shaft and connected with the disk, and clutches, also mounted on said shaft and connected by chains or equivalents to pinions secured to the rear axle, the latter provided with a differential gear, substantially as set forth.

4. In a tricycle, the combination, with a frame, the rear end resting on the rear axle, of a disk secured to a cross-piece journaled in bearings secured to the frame, a lever, also secured to said cross-piece, said lever provided with adjustable pedals, a pinion secured to a shaft and connected with the disk by a belt and chain, and clutches mounted on said shaft and connected by chains or equivalents with pinions secured to the rear axle, substantially as set forth.

5. In a tricycle, the combination, with an oscillating lever provided on its upper end with handles, and also near its center with rollers or pulleys, of a wheel or disk secured to the lever and provided with pulleys, and a rope and chain or equivalent secured to the handles and passing partly around the wheels and pulleys and around a pinion connected to the fork of the steering-wheel, substantially as set forth.

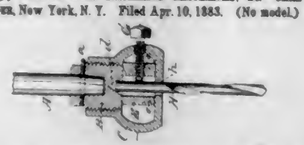
294,754. BOILER-WATER PURIFIER. GEO. MICHAEL BRAUNINGER, Janesville, Wis. Filed Apr. 30, 1883. (No model.)



Claim.—1. The combination, in a boiler-water purifier, of a series of pans forming chambers, and a central column or shaft, *c*, pierced with holes *m m*, communicating with each chamber, all arranged to operate in the manner and for the purpose herein described.

2. The combination of the inclosing-case *d*, the series of pans *a a*, provided with the partition *n* and holes *k k*, and central tubular shaft, *c*, provided with cap *e* and the holes *m m* in each succeeding chamber, said partition *n* being adapted to cause the water to flow over the entire surface of the pans while flowing from one to the other, all substantially as and for the purpose specified.

294,755. CHUCK FOR DRILLING-MACHINES, &c. CARL ADAM REINGER, New York, N. Y. Filed Apr. 10, 1883. (No model.)



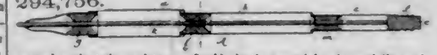
Claim.—1. In a chuck, the combination of a threaded piece, B, with a nut, C, ring-piece E, and set-screw G, for securing the drill in place, substantially as before set forth.

2. The combination of the threaded piece B, having a tapering hole, *d*, the nut C, having projections *s s*, the ring-piece E, set-screw G, pin *a*, and the nose or stop *c*, for controlling the movement of the threaded piece B, substantially as shown and described.

294,756. LEAD AND CRAYON HOLDER. CHARLES W. BROWN, Philadelphia, Pa. Filed May 2, 1883. (No model.)

Claim.—1. A lead or crayon holder consisting of a casing, as A, provided with a piece of elastic material, as *g*, so arranged that by reason of its elasticity it will hold the lead or crayon in any position to which it may be moved, and means by which said lead or crayon can be

294,756.



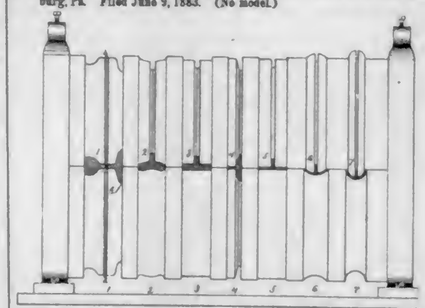
moved against the resistance of said elastic material, substantially as described.

2. A lead or crayon holder consisting of a casing, as A, provided with a piece of elastic material, as *g*, so arranged that by reason of its elasticity it will hold the lead or crayon in any position to which it may be moved, one or more guide-blocks, as *l m*, and means by which said lead or crayon can be moved against the resistance of said elastic material, substantially as described.

3. A lead or crayon holder consisting of a casing, as A, provided with a piece of elastic material, as *g*, having a central opening and conically-recessed ends, and so arranged that by reason of its elasticity it will hold the lead or crayon in any position to which it may be moved, and means by which said lead or crayon can be moved against the resistance of said elastic material, substantially as described.

4. A lead or crayon holder consisting of a casing, as A, provided with a piece of elastic material, as *g*, so arranged that by reason of its elasticity it will hold the lead or crayon in any position to which it may be moved, one or more guide blocks or pieces, as *l m*, all of said pieces having central openings and conically-recessed ends, and means by which said lead or crayon can be moved against the resistance of said elastic material, substantially as described.

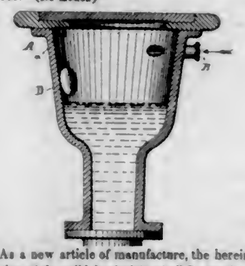
294,757. MANUFACTURE OF T-PLATES. HENRY G. BROWN, Pittsburg, Pa. Filed June 9, 1883. (No model.)



Claim.—1. The improvement in the art of making T-plates or T-bars herein described, consisting in severing a rail in the web, and by suitable rolls, which support the section of the web and slightly reduce it flatwise, rolling the head or tread down to a flat plate, substantially as described.

2. In rolls for rolling T-plates or T-bars from rails, the combination of the upper and lower rolls having the passes 2, 3, 4, and 5, substantially as and for the purposes set forth.

294,758. DISINFECTANT. CHAS. A. CATLIN, Providence, R. I. Filed June 18, 1883. (No model.)



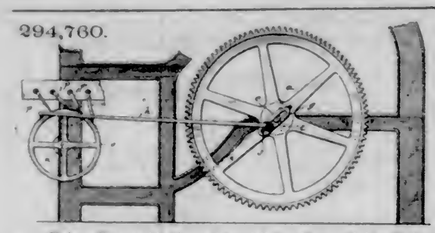
Claim.—As a new article of manufacture, the herein-described disinfector, consisting of the solid deodorizing-ball D, provided with a length of cord or other suspending means secured to said ball, and adapted to be attached to the lid of a water-closet, substantially as set forth.

294,759. DISINFECTANT. CHAS. A. CATLIN, Providence, R. I. Filed July 30, 1883. (Specimens.)

Claim.—A solid disinfecting compound composed of chloride of zinc and boracic acid molded or formed into masses of any desired shape, for the purposes specified.

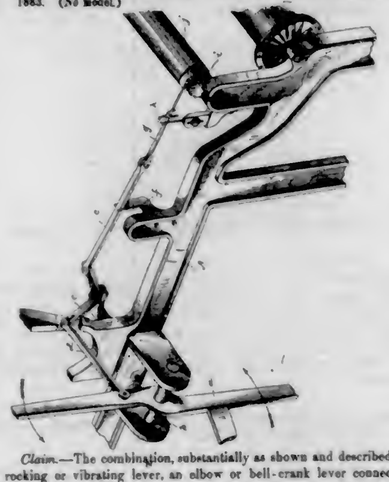
294,760. REGULATING SPEED OF DRIVEN SHAFTS. JOSEPH W. CHENEY, Palmer, Mass., assignor of one-half to Roscius C. Newell, same place. Filed Sept. 12, 1883. (No model.)

294,760.



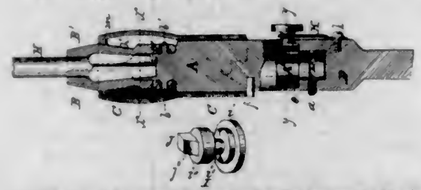
Claim.—The combination, substantially as shown and described, of a main rotary shaft and a driven shaft with an elbow secured to the driving-shaft, a pawl adjustable therein to vary its throw, a ratchet on the driven shaft, engaged by the pawl to impart an intermittent or step-by-step motion to said driven shaft, and means to hold said driven shaft at the points to which it is pulled by the pawl, as set forth.

294,761. CONVERTING MOTION. JOSEPH W. CHENEY, Palmer, Mass., assignor of one-half to Roscius C. Newell, same place. Filed Sept. 12, 1883. (No model.)



Claim.—The combination, substantially as shown and described, of a rocking or vibrating lever, an elbow or bell-crank lever connected therewith by one arm, a rod connected to the other arm of said elbow-lever, a pawl, bearings for said rod and pawl, and a ratchet-shaft engaged by said pawl, as and for the purpose specified.

294,762. RATCHET BIT-BRACE. WILLIAM R. CLARKSON, Buffalo, N. Y. Filed Oct. 5, 1883. (No model.)

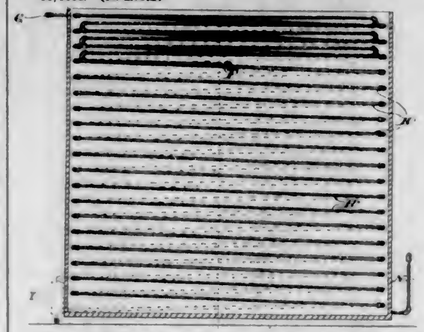


Claim.—1. In ratchet bit-braces and similar implements, the combination, with the socket A, having the shank A', provided with longitudinal grooves *e*, of the button I, having the milled head *i*, neck *i'*, and a projection, J, having one face, *j*, inclined to and the opposite face parallel with the axial line of said button, said button being journaled upon a blade-spring, K, by the neck *i'*, and the whole constructed and combined substantially in the manner as and for the object stated.

2. In bit-braces and similar implements, the combination, with the socket part A, having a fixed abutment, *f*, of a nut, C, having in its internal surface an inclined portion, *g*, formed in said nut in the process of casting, as described, said nut being constructed to operate in conjunction with the socket portion A, having in its upper end the central angular depression, G, and two longitudinal side grooves fitted with jaws B B', stuck upon projecting pins *b b'*, substantially as and for the object stated.

3. In ratchet bit-braces, a dog for the ratchet-wheel, consisting of an annular head, *i*, neck *i'*, collar *i''*, and the angular projection J, having one of its faces inclined to and its opposite face parallel with the axial line of said dog, said dog being constructed to revolve with its neck *i'* in an aperture of the blade-spring K, substantially as and for the purpose specified.

294,763. CONDENSER FOR AMMONIA ICE-MAKING APPARATUS. MAHLON S. CONLY, Indianapolis, Ind., assignor of two-thirds to Thomas H. Butler and Orange R. Weaver, both of same place. Filed Aug. 10, 1883. (No model.)

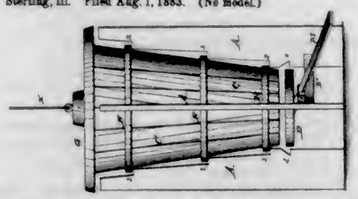


Claim.—1. In an ice-making apparatus, a condenser a portion of the coils of which convey the gas received from the retort upwardly from the receiving-point to the top of said condenser, and the remaining portion of which convey the gas downwardly to the liquid-gas reservoir, substantially as described, and for the purposes specified.

2. A condenser for an ice-making apparatus, the coils of which are arranged in two divisions, one of which carries the gas upward to the top of the condenser through water of a temperature low enough to condense whatever aqueous vapors it may contain before reaching said top, and thus cause the products of said vapors to run back into the retort, and the other division of which conveys the gas downward through water of a constantly-decreasing temperature, whereby it is gradually condensed until it becomes liquid gas and flows out into the liquid-gas reservoir, substantially as set forth.

3. The combination, in a gas-condenser, of an outside casing, a gas-inlet pipe, a series of ascending pipes, with which said gas-inlet communicates, a series of descending pipes, with which the ascending pipes communicate, a liquid-gas reservoir, with which the descending pipes communicate, a cold-water inflow-pipe entering at or near the bottom of the casing, and a water-overflow pipe passing out at or near the top of the casing, substantially as described, and for the purposes specified.

294,764. MACHINE FOR TRUSSING TUBS. MATHEW CORCORAN, Sterling, Ill. Filed Aug. 1, 1883. (No model.)



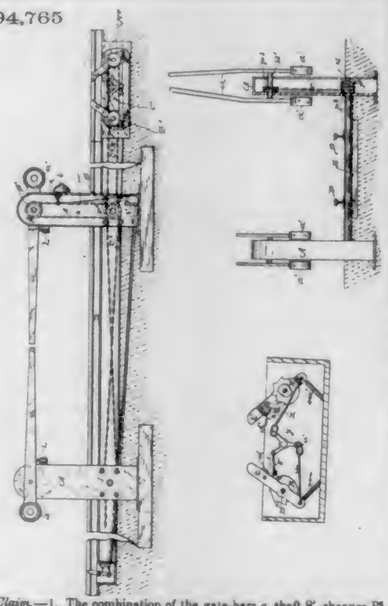
Claim.—1. The combination of the standards A, provided on their inner faces with recesses 1, the truss-hoops B, fitted to rest in said recesses, the bottom D within said standards, the lever E, and fulcrum F, substantially as shown, and for the purpose described.

2. The combination of the standards A, provided with recesses 1 and 2 on the inner faces thereof, the truss-hoops B, fitted to rest in such recesses 1, the removable bottom I, fitted to rest in such recesses 2, the weight G, arranged to be suspended over and dropped upon the upper ends of the staves C within such hoops, and the rope H, substantially as shown, and for the purpose specified.

294,765. RAILROAD-CROSSING GATE. JOSEPH OTT, Joliet, Ill. Filed July 20, 1883. (No model.)

Brief.—A railroad-gate worked by levers operated upon by the tread of the car-wheels. The levers carry ratchets, and are returned to their normal position by springs. Through sheaves, chains, and Y-shaped piece connected to the levers the successive wheels of the train lower or raise the gate-bars gradually.

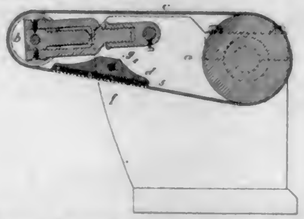
294,765



Claim.—1. The combination of the gate-bars *a*, shaft S', sheaves P^a P^b P^c, chains *c c' c'*, posts A, levers *t t'*, links *z v w*, Y-shaped piece *y*, springs *m m'*, ratchets R R', pawls *x x*, rock-shafts S^a R', and sheaves P P', all arranged to operate substantially as and for the purpose set forth.

2. The combination of the levers *t t'*, pawls *x x*, ratchets R R', links *z v w*, coil-springs *m m'*, sheaves P P', Y-shaped piece *y*, and chains *c' c²*, by means of which successive wheels of the approaching train lower the gate-bars *a a*, or elevate them, gradually, in the manner and for the purpose set forth.

294,766. ABRADING-MACHINE. FREDERICK W. COY, Boston, Mass. Filed Dec. 1, 1883. (No model.)



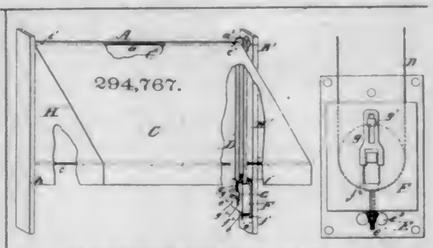
Claim.—1. The combination, with a belt having an abrasive surface, supporting-pulleys therefor, and an intermediate rigid support, of a surface of yielding material arranged between said rigid support and the belt, substantially as described.

2. The combination of a belt having an abrasive surface, supporting-pulleys therefor, an intermediate support of rigid material approximating the form of the article to be abraded, yielding material arranged, as described, between the rigid support and belt to support a portion of the belt, a fixed standard or holder, and means for detachably securing the intermediate support to said holder, whereby differently-formed supports are adapted to be used interchangeably, as set forth.

3. The combination of a belt having an abrasive surface, supporting-pulleys therefor, and an intermediate fixed support of rigid material, and an interposed surface of yielding material, arranged as described, to support a portion of the belt between the pulleys, substantially as described.

294,767. AWNING. HUGH B. COYLE, Philadelphia, Pa. Filed June 28, 1883. (No model.)

Claim.—1. In an awning-frame, the combination, with box F, of bracket E, having screw *a'* and nut *a²*, and supporting the pulley *e*, substantially as shown and described.

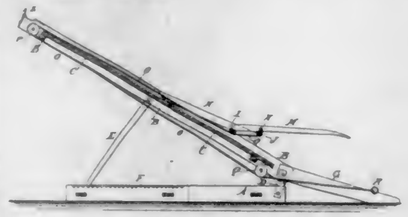


294,767.

2. In an awning-frame, the combination, with box F, having slot *f'*, of pulley *e*, bracket E, screw *a'*, and nut *a²*, said pulley having a shaft, *e²*, which projects through said slot, substantially as shown and described.

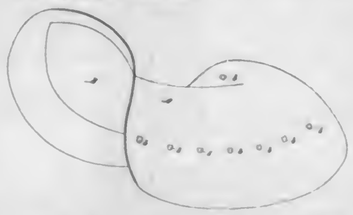
3. In an awning-frame, the combination, with pulley e, having squared or angular shaft *e²*, of lock or fastening G, for engaging with said shaft to prevent said pulley from turning, substantially as shown and described.

294,768. HAY-STACKER. ALBERT COOLEY, Osceola, Iowa. Filed Sept. 21, 1883. (No model.)



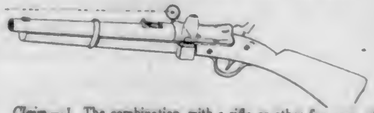
Claim.—In a hay-stacker, the combination, with the frames A B, connected together, and one having hooks or recesses S at its upper end, and a bottom board, C, of the rake H I J K, having rearwardly-projecting teeth, and the ropes O O, connected to the cross-bar J of the rake, in the rear of the cross-bar I thereof, the lower outer ends of the teeth of the rake resting upon the board C, and the ropes acting upon the under side of the rake-head, as shown and described, and for the purpose set forth.

294,769. HORSE-COLLAR PAD. DEXTER CURTIS, Madison, Wis. Filed Aug. 29, 1883. (No model.)



Claim.—The herein-described leather metal-lined collar-pad, consisting of a curved body of leather or like flexible material, and a narrow metal bearing-plate applied to the under side of the arch, and secured thereto by integral edge prongs or lugs, substantially as described.

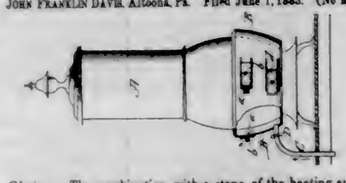
294,770. SIGHTING ATTACHMENT FOR FIRE-ARMS. HARRY C. CUSHING, New London, Conn. Filed June 11, 1883. (No model.)



Claim.—1. The combination, with a rifle or other fire-arm, of the clamp-sleeve *d*, the arm *e*, pivoted to the sleeve, the tubular socket *f*, secured to the mirror-frame, and the mirror having the non-reflecting spot *h*, all substantially as described, and for the purpose set forth.

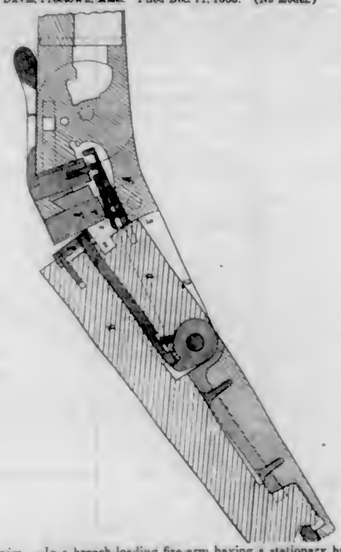
2. In combination, a rifle or other fire-arm, an adjustable reflector attached thereto, and a lamp also attached to the rifle, all substantially as described.

294,771. HEATING AND VENTILATING DRUM FOR STOVES. JOHN FRANKLIN DAVIS, Altoona, Pa. Filed June 1, 1883. (No model.)



Claim.—The combination, with a stove, of the heating and ventilating drum or jacket B, surrounding the fire-pot, and having side openings, *a a* and *c c*, controlled by slides *b b* and *d d*, and the external cold-air pipe, C, having a valve, D, all constructed and arranged as and for the purpose described.

294,772. BARREL-LOCK FOR BREAKDOWN GUNS. NATHAN RUSSELL DAVIS, Freetown, Mass. Filed Dec. 11, 1883. (No model.)



Claim.—In a breech-loading fire-arm having a stationary breech and a barrel or barrels pivoted or hinged, so as to be movable relatively to such breech, in manner as set forth, the combination of the notched latch G and its actuating-spring *b*, secured or attached to the bolt E, so as to be movable lengthwise thereby, with the breech A, the barrel or barrels B, the notched locking projection D, and the stationary latching-catch *d*, such catch being extended from the breech, and all being arranged in manner to operate substantially as set forth.

294,773. VENTILATING-DAMPER. JOHN P. DORR, Neenah, Wis. Filed June 25, 1883. (No model.)



Claim.—1. As a damper for stoves, ventilators, &c., a counterbalanced plate adapted to be hung in or over the ventilating or draft opening, in combination with means, substantially as described, for regulating and gaging its action, as set forth.

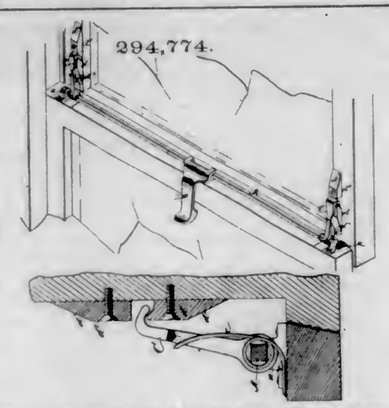
2. The damper consisting of a plate formed with two leaves bent to form an inverted V, and to be hung in or over the ventilating-opening, as set forth.

3. The combination, with plate C, having a slot in one side, of the spirally-flanged bolt D, adapted to act upon the edges of said slot, as set forth.

294,774. SASH-FASTENER. FREDERICK EBERLEIN, Chicago, Ill. Filed Jan. 12, 1884. (No model.)

Claim.—1. In a window-fastener, a rod journaled on the lower sash, having a handle in its center, and a spring-actuated hooked arm at each end, in combination with a series of beveled stops arranged in

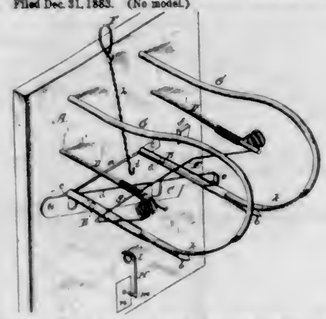
294,774.



pairs upon the upper sash, one of which is formed with an under-beveled end, substantially as and for the purpose set forth.

2. The handle B, having stop *b*, rod or journal A, castings *a a*, hooked arm C, and spring *c* upon the lower sash, in combination with the stops *d d'*, beveled upon one end, and one of them under-beveled, substantially as shown, and for the purpose set forth.

294,775. TEMPORARY BINDER. WILLIAM ERWIN ELAM, Americus, Ga. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a temporary binder, the combination, with the receiving-standards thereof, of a pivoted and slotted plate and a stop or latch for holding the plate engaged with the standards, substantially as and for the purpose set forth.

2. A temporary binder for letters or other papers, consisting of a suitable base, having removably secured thereto a receiving standard or standards, and an upright or uprights terminating in spring ends normally impinging against said standard or standards, and a suitable guard for holding said papers compactly upon the standards, substantially as and for the purpose specified.

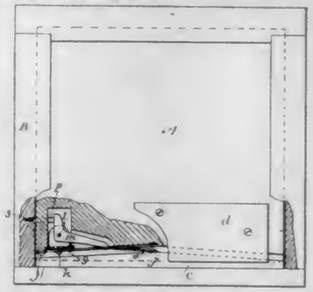
3. The base of a temporary binder for letters or other similar papers, provided with a transverse slot, having secured therein and to the base suitable receiving-standards, in combination with confining-uprights, also secured to the base, and terminating in springs normally impinging against the upper extremities of the standards, an adjustable guard, and means, substantially as described, for holding this guard out of contact with said standards, for the purpose set forth.

4. A temporary binder consisting of a slotted base, having connected thereto hollow grooved receiving-standards provided with sharpened extensions, and suitable confining-uprights having their free ends terminating in springs engaging with the extensions of the standards, in combination with a guard normally abutting against said standards and adjustable upon posts secured to the base, and a device forming a means for holding the guard out of contact with the standards, and a hanger for the binder, substantially as shown and described.

5. A temporary binder for letters or other papers, consisting of a base provided with projecting stubs, in combination with hollow receiving-standards, constructed to fit over and upon said stubs, and provided with right-angular projections fitting in a mortise in the base, a pivoted plate or plates for holding the standards upon said base, confining-uprights terminating in spring ends impinging against the standards, and an adjustable guard for retaining the papers in place, all arranged and operating substantially as and for the purpose specified.

294,776. WEATHER-STRIP. JEREMIAH R. FOGG, Salisbury, Mass. Filed Jan. 17, 1884. (No model.)

Brief.—A weather-strip consisting of a bar or guard-strip, spring, and operating-lever arm. The bar or guard-raising spring is interposed between the bar and operating-lever arm.

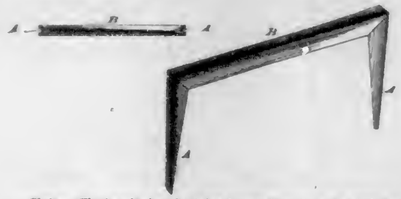


Claim.—1. As an improvement in weather-strips, the combination of the vertically-moving bar *c*, arm-spring *e*, suitably fulcrumed upon the door at one end, and at the other end attached to said bar, near the lineal center thereof, a pivotal lever arranged to act upon said spring between its fulcrum and its connection with said bar, and a stop arranged to actuate said lever and through said spring depress the bar, substantially as specified.

2. In combination with bar *c*, spring *e*, and a pivotal lever arranged to act upon said spring, and thereby depress said bar, an adjustable stop arranged to engage said lever and actuate the same to the required extent at the closing of the door, substantially as specified.

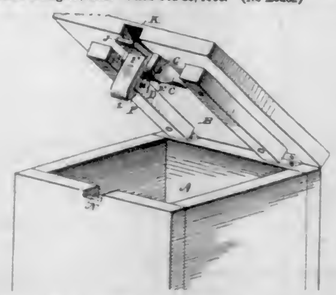
3. The combination of spring *e*, a pivotal lever arranged to act thereon, and the lever and spring-holder formed with a recessed base, *g*, to receive the spring, perforated ears *k*, to receive and pivotally support the lever, and holes *i i*, arranged adjacent to the spring-recess, whereby the heads of the securing-screws *h* engage and sustain said spring, substantially as specified.

294,777. WOOD-WORKER'S DOG. JOHN FORBES, San Francisco, Cal. Filed Jan. 3, 1884. (No model.)



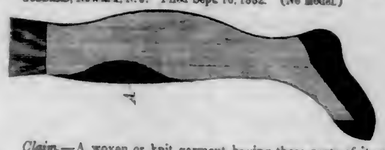
Claim.—The herein-described dog for wood-workers, consisting of a body and two depending arms constructed at right angles to the body, and provided with inwardly-beveled or V-shaped edges, and adapted to be driven into the wood, so as to be flush with the surfaces thereof, in the manner and for the purpose as set forth and specified.

294,778. BOX-FASTENER. SAMUEL D. FORD and FRANCIS M. SPENCER, South Abington, Mass. Filed Oct. 23, 1883. (No model.)



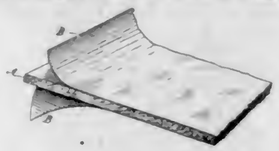
Claim.—The combination of a box having a recess in the inside of its front, a bail secured horizontally over the said recess and having beveled upper edge, a cover hinged to the said box and having a wedge-shaped or triangular recess in its under side at its front edge, registering with the recess in the front of the box, a leaf secured to the under side of the cover and having a recess at its front end, and a latch pivoted in the said recess and comprising a body, a downwardly-extending hooked catch, and a forwardly-projecting finger-piece registering with the triangular recess in the cover and extending flush with the front edge of the latter, as set forth.

294,779. ARTICLE OF KNITTED OR WOVEN WEAR. WILLIAM GODDARD, Newark, N. J. Filed Sept. 16, 1882. (No model.)



Claim.—A woven or knit garment having those parts of it which are subjected to the greatest wear and tear re-enforced or rendered durable by a strengthening solution, other parts being left untreated, substantially in the manner and for the purposes described.

294,780. COVERING FOR STEAM-BOILERS, &c. GEORGE CLEVELAND HEKES, Chicago, Ill. Filed July 16, 1883. (No model.)



Claim.—1. The combination, with the heat-radiating surface, of a protective covering therefor, the same consisting of a layer of asbestus or the like faced with tin-foil, substantially as described.

2. The protective covering for heat-radiating surfaces, the same consisting of a layer of asbestus or the like having its face coated with tin-foil, substantially as described.

3. The protective covering for heat-radiating surfaces, the same consisting of a layer of asbestus or the like having both of its faces coated with tin-foil, substantially as described.

294,781. DIVIDED SCREW-NUT. GEORGE S. HELTS, Batavia, N. Y. Filed Dec. 31, 1883. (No model.)



Claim.—1. In combination with a screw, B, and cup or holder A, made to encircle the screw, said cup or holder having inclined or diverging walls or bearings, a divided nut, C, for the screw, fitted to said bearings of the holder, with automatic means to force the parts of the nut asunder as they are moved toward the wider or more open part of the bearings of the holder, substantially as and for the purpose set forth.

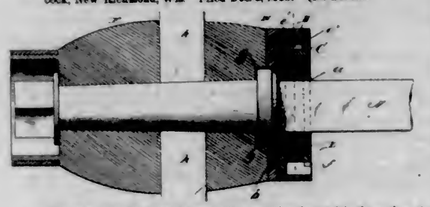
2. In combination with a screw, B, and holder A, fitted to encircle the screw, said holder having diverging walls or bearings, a divided nut, C, for the screw, fitted to said bearings or walls of the holder, with means to automatically guide the parts of the divided nut as they are moved longitudinally along the bearings of the holder, substantially as shown and described.

3. The combination of a screw, B, cup or holder A, encircling said screw, and having diverging bearings or walls, divided nut C for the screw, fitted to the bearings or walls of the holder, and stops *g*, to limit the longitudinal movements of the nut along the bearings of the holder, substantially as set forth.

4. The combination of a screw, B, cup or holder A, encircling said screw, and provided with diverging bearings, a divided nut, C, for the screw, fitted to the diverging walls or bearings of the holder, and guides for the parts of the nut serving to keep said parts of the nut evenly opposed to each other during their longitudinal and lateral movements, substantially as described.

5. In combination with the body D and screw B of a clamp, a divided nut, C, substantially as described, for the screw, fitted to the head of the clamp, so as to move longitudinally along the same, and means to force the parts of the nut asunder as the latter is moved thus longitudinally, substantially as set forth.

294,782. SAND-BAND FOR VEHICLE-WHEELS. JAMES W. HITCHCOCK, New Richmond, Wis. Filed Dec. 8, 1883. (No model.)



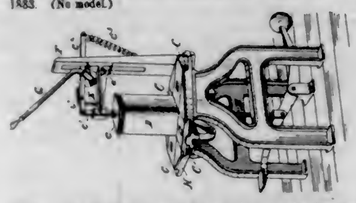
Claim.—1. In a sand-band, the combination, with the axle, of a rubber ring or band, a metallic collar fitting over and compressing the same, and a protecting-cover, as set forth.

2. In a sand-band, the combination, with the axle, of a rubber ring or band, a metallic collar fitting around the same and formed with a dust-chamber, and a protecting-cover, as set forth.

3. In a sand-band, the combination, with the axle, of a rubber ring or band, a metallic collar fitting around the same and formed with a dust-chamber, an opening communicating with said dust-chamber, and a protecting-cover, as set forth.

4. In a sand-band, the combination, with the axle, of a rubber ring or band, a metallic collar fitting around the same, and having annular flanges extending outward and forming a dust-chamber, an opening communicating with said chamber, and a protecting-cover, as set forth.

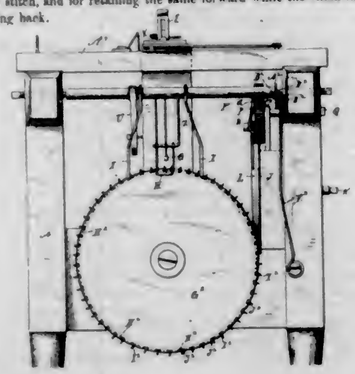
294,783. CAN-MACHINE. JAMES HOGG, Chicago, Ill. Filed Mar. 14 1883. (No model.)



Claim.—In combination with the forming or crimping mechanism of a can-machine, the independently-operating presser mechanism composed of the bar *c'*, provided with a foot or plate, *c*, bracket E, having cam-surface *g'*, lever e^2, pivoted to said bracket, and lever G, pivoted to lever e^2, all arranged and operating substantially as and for the purpose described.

294,784. KNITTING-MACHINE. WILLIAM H. H. HOLLIS, Tyrone, Pa., assignor, by mesne assignments, to Robert S. Seeds, same place. Filed Sept. 14, 1883. (Model.)

Brief.—The stitch-presser is hook-shaped, and has but one end secured to the rock-shaft, while its loop or U-shaped portion embraces or straddles the needles, as heretofore. By this means the stitch-presser is given a lateral elastic motion, so that it will not bear too hard upon or strain the needle as it moves along the same during the rotation of the needle-carrier. A right-angular guard wire or arm projects across the free end of the presser. A lock is provided at one end of the rock-shaft for the purpose of holding the presser back while the stitch-lifter is catching a stitch, and for retaining the same forward while the stitch-lifter is moving back.



Claim.—1. The rock-shaft having the approximately hook-shaped spring stitch-pressing loop secured by but one end to the shaft, means for operating this shaft, and the right-angular guard wire or arm projecting across the free end of the presser, substantially as set forth.

2. The combination of the main rock-shaft having the projecting arm, means for operating the rock-shaft, the reciprocating stitch-lifter pivoted to said arm, the pitman having the elongated bearing-slot, and pivotally connected to the arm, the auxiliary rock-shaft provided with the cam-plate formed with the double-beveled notch in its edge, and carrying the stitch-presser, fabric-pressers, and thread-carrier, the needle-carrier having the projecting needles, means for operating the needle-carrier, and a fixed spring having a bent end engaging the notches to hold the rock-shaft stationary while the main rock-shaft and its arm and stitch-lifter move the limit of the elongated pivotal bearing-slot of the pitman, substantially as set forth.

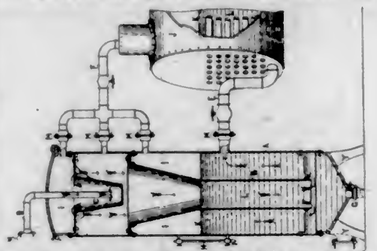
3. The combination of the frame, the needle-carrier having the projecting needles, and the rear plate or disk formed with a notched periphery, the main gear-wheel having the lateral-curved flange engaging the notches, the pinion meshing with this gear, the main rock-shaft having the two arms, the pitmen extending, respectively, from the two arms of this rock-shaft to the pinion and to an arm on the front rock-shaft, the front rock-shaft carrying the stitch and fabric pressers, and the stitch-lifter pivoted to the main arm on the main rock-shaft, substantially as and for the purpose set forth.

294,785. DOOR-SPRING. WILLIAM W. JACKSON, Chicago, Ill. Filed July 23, 1883. (No model.)



Claim.—The combination of the door having therein a mortise, C, extending entirely through it from one of its vertical edges to the other, the said door being provided on its hinged edge with the slotted plate I, located at one end of the said mortise, the hook F, projecting through the slot in the said plate, and connected by means of a cord or wire, G, to a sliding head, E', having a beveled outer end projecting from the free edge of the door, and arranged in the said mortise, the spring H, arranged between the said plate and the plate I, the fixed screw or pin D, adapted and arranged to receive or engage the hook F, the V-plate I', and the door-frame, substantially as and for the purposes specified.

294,786. FEED-WATER HEATING AND PURIFYING APPARATUS. N. A. T. JONES, Plymouth, Mass. Filed Nov. 23, 1883. (No model.)

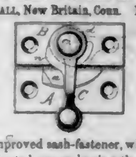


Claim.—1. In a water heating and purifying apparatus, the combination of the base O, the water-chambers R R, the blow-off pipes R' R'', the exhaust-passages V V, with condense-chambers and drip-pipes V' V'' in the bottom, and tube-sheet and base cast all in one piece, the shell N, the exhaust-steam chamber N', the group of bent water-pipes P, each pipe connected in its center by a union-joint, one end of which communicates with the inflow water-chamber and its other end with the outflow water-chamber, forming a direct water communication from one water-chamber to the other through the group of small water-pipes P, substantially as shown and described.

2. In a water heating and purifying apparatus, the combination of the reservoir A, the removable water-guide B, the deep removable overflow-pail C, the inflow-pipe D, the outflow-pipe E, the live-steam pipe or pipes F, the blow-off pipe G, all provided with suitable valves, and glass water-gage H, substantially as shown and described.

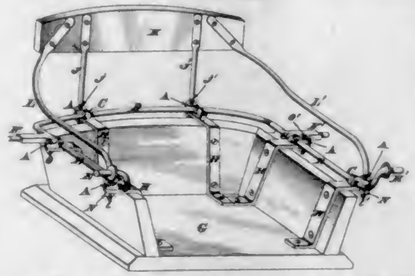
3. In a water heating and purifying apparatus, the combination of the base O, the water-chambers R R, the blow-off pipes R' R'', the exhaust-passages V V, with condense-chambers and drip-pipes V' V'' in the bottom, and the tube-sheet and base cast all in one piece, the shell N, and the exhaust-steam chamber N', the group of bent water-pipes P, each pipe connected in its center by a union-joint, one end of which communicates with the inflow water-chamber and its other end with the outflow water-chamber, forming a direct water communication from one water-chamber to the other, through the group of small water-pipes P, the reservoir A, the removable water-guide B, the deep removable overflow-pail C, the inflow-pipe D, the outflow-pipe E, the live-steam pipe or pipes F, the blow-off pipe G, all provided with suitable valves, and glass water-gage H, substantially as shown and described.

294,787. FASTENER FOR THE MEETING-RAILS OF SASHES. ELEAZER KEMPSHALL, New Britain, Conn. Filed Sept. 18, 1882. (Model.)



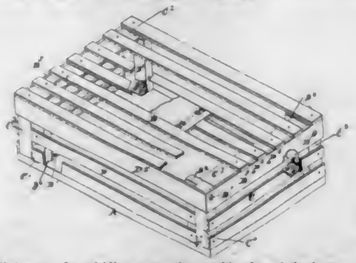
Claim.—The improved sash-fastener, which consists of the respective plates and the pivoted sweep having the cam or enlargement upon its hub, the edge of which cam stands obliquely across the meeting line of the sash-rails when the sweep stands at a right angle thereto, substantially as described, and for the purpose specified.

294,788. SHIFTING-RAIL FOR VEHICLES. JACOB KNAPP, Cincinnati, Ohio. Filed Dec. 24, 1883. (No model.)



Claim.—In combination with the ordinary seat-irons H, perforated at I, the nuts A, provided with inwardly-projecting hooks C, that grasp the rail D, said nuts being traversed by the lower ends of back-braces J J' and arm-rests L L', which braces and rests are retained in place by screwing upon them the customary nuts N, as herein described.

294,789. FOLDING CRATE. LOUIS KRIECKHAUS and CHARLES KRIECKHAUS, St. Louis, Mo. Filed Jan. 3, 1884. (Model.)



Claim.—1. In a folding crate, the combination of the bottom, the sides, the ends, and the top, the sides and the ends having end posts hinged to the bottom, to fold down with their sides and ends, and to rest on the bottom of the crate, and the top having side and end pieces to surround the sides and ends of the crate, whether the sides and ends of the crate are in vertical or horizontal position, as set forth.

2. In a folding crate, the combination of the bottom, the sides, the ends, and the top, the sides and ends having end posts formed with pin-holes and hinged to the bottom, to fold down with their sides and ends, and to rest on the bottom of the crate, and the top having side and end pieces to surround the sides and ends of the crate, whether the sides and ends of the crate are in vertical or horizontal position, the end pieces of the top having pin-holes in line with the pin-holes in the end posts when the latter are in vertical position, and pin-holes in line with the pin-holes of the end posts of the sides of the crate when the said sides and ends of the crate are folded down, as set forth.

3. In a folding crate, the top having side and end pieces and boards on its under side, inside of the end pieces and between the side pieces, in combination with a bottom and sides and ends having end posts and hinged to fold down inwardly, the said boards to occupy either a position between the upper ends of the end posts on opposite sides, or when the crate is folded occupying positions on the outside of the ends of the crate, as set forth.

294,790. PAINT-CAN. WILLIAM KUHEN, Cincinnati, Ohio. Filed Jan. 21, 1884. (No model.)

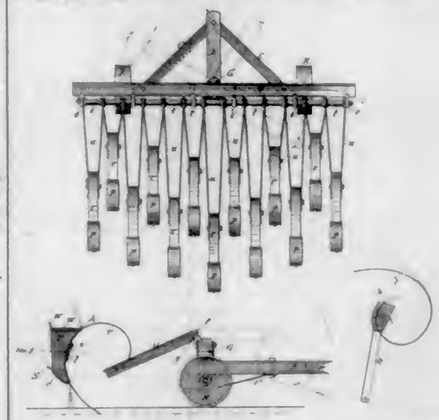


Claim.—1. A paint can or vessel composed of a pair of dished shells united at their margins, and provided with a suitable outlet, one of said shells being relatively more compressible than the other, for the purpose herein described.

2. A paint can or vessel consisting of a pair of dished shells of approximately elliptical form united at their margins, and provided with a suitable outlet, one of said shells being relatively more compressible than the other, for the purpose described.

294,791. SPRING-TOOTH CULTIVATOR AND DRILL. CHARLES LA DOW, Albany, N. Y. Filed Mar. 30, 1882. (No model.)

Brief.—Independently-hinged drag-bars with sectional tooth-sockets, between which are adjustably clamped, edgewise, flat curved spring-teeth, said sockets acting as weights and runners to regulate the depth of cut, the heavier weights being on the short bars. Seed-box with regulating-slide adjustably attached to the spring-tooth, the vibrations of which discharge the seed. Drag-bars with attached spring-tooth and seed-box reversible on frame.



Claim.—1. In a cultivator, the combination of a draft-frame, rising-and-falling drag-bars attached thereto, sectional tooth-sockets on the ends of the drag-bars, and teeth clamped between the sections of said sockets, and capable of being angularly adjusted relatively to the drag-bars, the sockets on the drag-bars acting as shoes or runners to regulate the cut of the teeth.

2. The combination of the parallel bars n n, hinged to the draft-frame at their forward ends and adapted to be drawn toward each other at their rear ends, a tooth-socket placed between the ends of the bars, a curved tooth, substantially such as described, and capable of angular adjustment in the socket, and a clamping-bolt, which draws the ends of the bars together and clamps the tooth in its socket.

3. In a cultivator, the combination of a draft-frame, alternate long and short drag-bars attached to said draft-frame, teeth on the draft-bars, and weights, also constituting tooth-sockets on the draft-bars, adapted to enforce the cut of the teeth in proportion to the length of the drag-bars.

4. In a cultivator, the combination of a vibratory spring-tooth with a grain carrying and distributing box carried on the tooth, substantially as and for the purpose described.

5. The combination of a grain carrying and distributing box and a vibratory spring-tooth, the vibrations of which set upon the grain in the box to regulate its discharge.

6. In a cultivator, the combination of a vibratory spring-tooth with a grain carrying and distributing box carried on the tooth, and with mechanism for regulating the discharge of the grain.

7. In a cultivator, the combination of the draft-frame, teeth hinged thereto and adapted to be reversed on the frame, grain-boxes mounted on the teeth, and mechanism for preventing the escape of the grain when the teeth are reversed, substantially as described.

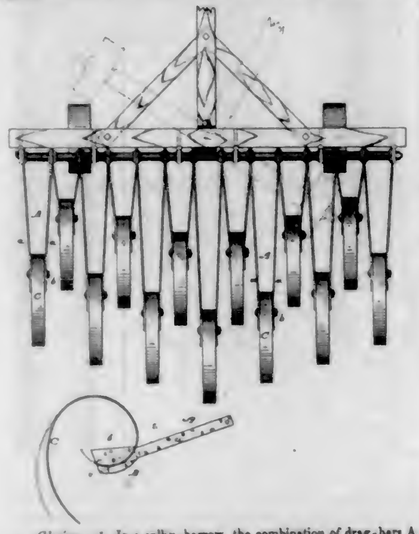
8. The combination of a vibratory spring-tooth and a seed-box adjustably mounted thereon, substantially as and for the purpose described.

9. In a cultivator, a draft-frame, a spring-tooth attached thereto and capable of being set at different angles relatively to said draft-frame, in combination with a seed-box adjustably mounted on the tooth, substantially as and for the purpose described.

10. In a cultivator, the combination of a draft-frame, drag-bars attached thereto and adapted to conform to the inequalities of the surface, spring-teeth on the drag-bars, seed-boxes adapted to conform to the movement of the drag-bars, and mechanism for gaging the penetration of the teeth, substantially as described.

294,792. HARROW OR CULTIVATOR. CHARLES LA DOW, Albany, N. Y. Filed Mar. 1, 1883. (No model.)

Brief.—Independently-hinged drag-bars carrying shoes or runners, with spring-teeth adjustably attached. The shoes gage the depth of penetration.



Claim.—1. In a sulky-harrow, the combination of drag-bars A, hinged at their forward ends and provided with shoes B at their rear ends to slide on the ground, with teeth adjustably secured to said shoes, so that said teeth may project more or less below the shoes into the ground, as shown and described.

2. The combination of the independent drag-bar A and curved tooth C with the shoe B, slotted to permit the tooth to slide therein for the purpose of setting it more or less deep in the ground below the shoe, substantially as described.

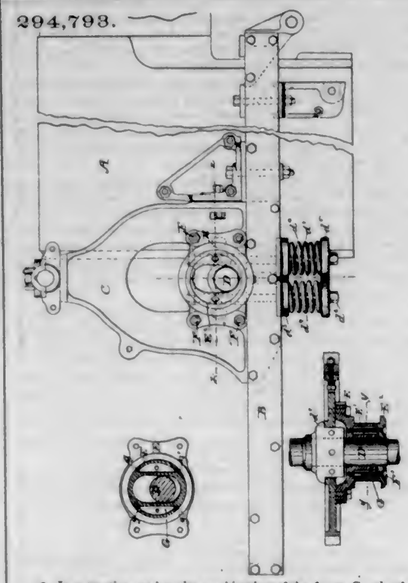
3. The combination of an independently-acting drag-bar, and a spring-tooth curved above its attachment to the bar, substantially as described, and capable of being angularly adjusted relatively to the bar, and adapted to be held as adjusted by means of clamping devices applied to the edges of the tooth.

294,793. TRACTION-ENGINE BEARING. FRANK F. LANDIS, Waynesborough, Pa. Filed Dec. 9, 1882. (No model.)

Claim.—1. In a traction-engine, an axle-bearing block provided with an inner and an outer bearing-surface, the former adapted to the rotation of the axle, and the latter adapted to its vertical oscillation, in combination with the sill B, formed of two parallel bars, suspension-rods between said bars, and springs under said sills, substantially as and for the purpose described.

2. The combination of the axle D, blocks *d* and *d'*, suspension-rods d^2, sills B, caps d^2 d^3, and springs between said caps, substantially as and for the purpose described

294,793.



3. In a traction-engine, the combination of the frame C and axle D with bridge E, having the journal E' and oil-pockets therein, substantially as and for the purpose described.

4. The combination, with the side frame, of the bridge-piece E, secured thereto, and having the journal E', with pockets G G, provided with the ducts *g g'*, and the removable flange E^2, substantially as and for the purpose described.

5. In a traction-engine, the combination of the axle D, caps d^2 d^3, springs d^4, rods d^2, and bearings *d d'*, with the slotted bridge E, having the annular journal E', substantially as and for the purpose described.

294,794. TRACTION-ENGINE. FRANK F. LANDIS, Waynesborough, Pa. Filed Mar. 21, 1883. (No model.)

Claim.—1. In a traction-engine, the combination of a boiler and a boiler-supporting frame yieldingly suspended from a traction-axle, with a yielding thrust and draft bar connecting the frame and axle-bearings, substantially as and for the purpose described.

2. In a traction-engine, the combination of a traction-axle, a frame-work yieldingly suspended therefrom, and a thrust and draft bar secured to the traction-axle bearings and passing through a bracket located upon the frame-work in front of and in line with the bearings, and provided with cushioning-springs located in front and in rear of said bracket, substantially as and for the purpose described.

3. In a traction-engine, the combination of the sills of a boiler-supporting frame, and a traction-axle located above the sills and provided with a bearing connected by suspension-rods to springs located below the sills, and having an inner flange adapted to bear against the housings, with a thrust and draft bar, comprising an inner and an outer plate, arranged to embrace a portion of the housings, and connected to cushioning-springs arranged in line with the traction-axle bearing, substantially as and for the purpose described.

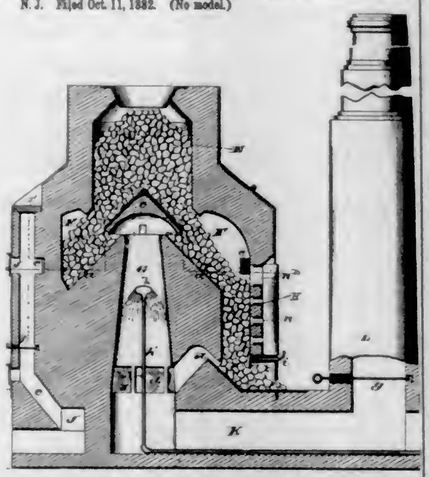
4. A traction-axle bearing-box bored vertically for the reception of suspension-rods, and bored transversely for connection with a horizontal thrust and draft bar or bars, and provided with flanges, in combination with thrust and draft bars, substantially as shown and described.

5. The combination of the bearing-box D, bearing C, strap D′, suspension-rods E, plate F, provided with flanges, sills B, springs G, and plate H under said sills, substantially as and for the purpose described.

6. The combination of the sills B, brackets K and B², the housing, and boiler, with a horizontal thrust and draft bar composed of plates, substantially as shown and described.

7. The combination, with the axle-bearing D, suspension-rods E, and springs G, of the springs M M′, located upon horizontal bars, and arranged to be compressed by the forward and backward movement of the axle, substantially as and for the purpose described.

294,795. ORE-ROASTING FURNACE. NELSON M. LANGDON, Chester, N. J. Filed Oct. 11, 1882. (No model.)



Claim.—1. In an ore-roasting furnace, a reverberatory heating or combustion chamber having an inclined or sloping bottom and a central downtake provided with a cap arranged above and over the entrance to said downtake, substantially as set forth.

2. In an ore-roasting furnace, a reverberatory heating or combustion chamber provided with a bottom having a slope or inclination of about the angle of repose of the ore to be roasted, in combination with a supply-chamber located above said heating-chamber and extending downwardly a sufficient distance to prevent the ore from filling the reverberatory space of the heating-chamber, substantially as set forth.

3. The combination, with a reverberatory heating-chamber having an inclined bottom whose slope or inclination is about that of the angle of repose of the ore to be roasted, of a supply-chamber extending downward sufficiently to prevent the ore from filling the reverberatory space of the heating-chamber, and a series of ore-chambers arranged to receive the ore by gravity from said heating-chamber, substantially as set forth.

4. In an ore-roasting furnace, the combination, with a series of ore-chambers, of a central downtake connected with said ore-chambers by passages adapted to convey gases, but so constructed as to prevent the admission of ore to said downtake, substantially as set forth.

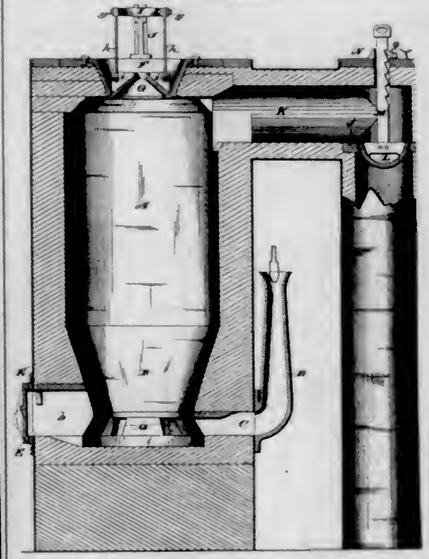
5. In an ore-roasting furnace, the combination, with a series of ore-chambers and an exit-flue, of a central downtake connected near its lower end to said ore-chambers by angular passages, as and for the purpose set forth.

6. In an ore-roasting furnace, the combination, with ore-chambers, a central downtake, and flues connecting the downtake with the lower portions of said ore-chambers, of steam-conduits located in the outer walls of the ore-chambers for admitting steam in direct contact with the ore, and a rose or sprinkler arranged within the downtake, substantially as set forth.

7. In an ore-roasting furnace, the combination, with the central downtake having a gas-passage near its lower end connecting with an ore-chamber, of a rose or sprinkler for water arranged within the downtake, substantially as set forth.

8. The combination, with the heating-chamber, of gas-flues and air-pipes arranged in the wall of the furnace, said gas-flues connecting at their lower ends with a distributing-flue, and both said flues and pipes being provided with suitable valves or dampers, substantially as set forth.

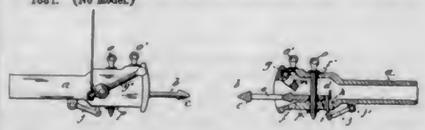
294,796. GAS-PRODUCING FURNACE. NELSON M. LANGDON, Chester, N. J. Filed May 23, 1883. (No model.)



Claim.—1. The combination, with a chamber encircling the bosh, door-passages located on diametrically-opposite sides of the bosh and communicating at their outer ends with said encircling chamber and at their inner ends with the combustion-chamber, and tuyeres located between said door-passages and on opposite sides of the bosh, of the steam-jet-blast injector for introducing steam and air into the annular chamber around the bosh and from thence through the door-passages and tuyeres to the combustion-chamber, substantially as set forth.

2. The combination, with a gas-producing furnace provided with a chamber encircling the bosh, of the tuyeres *a a*, constructed to diminish in width from their outer to their inner ends, the door-passages *b b*, located on diametrically-opposite sides of the bosh, and the steam-jet-blast injectors D, substantially as set forth.

294,797. CAR-COUPLING. GEORGE W. LARAWAY, Hartford, Conn., assignor of one-fourth to Fred C. Rockwell, same place. Filed Dec. 17, 1881. (No model.)



Claim.—1. In a car-coupler, a link wedge-shaped at one end, provided with projections about midway of its length, with the hook at the other end, and having perforations for the passage of coupling-pins, all substantially as described, and for the purpose set forth.

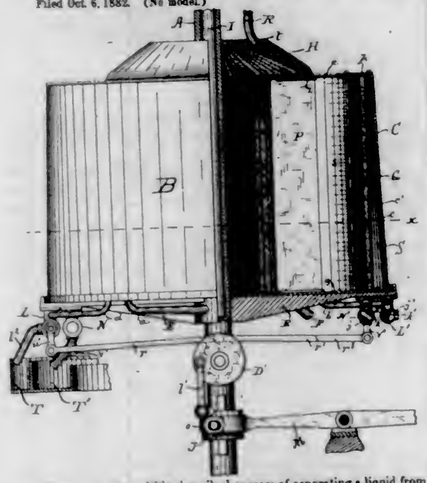
2. In a car-coupler, the draw-head *a*, having the vertical perforations *f* and *f′* in the central line of the draw-head, in combination with the pawl *g*, the pin *o*, and the link *l*, all substantially as described.

3. In a car-coupler, in combination, the draw-head *a*, having the vertical central perforations, *f* and *f′*, the pawl *g*, with vertical perforation, the link *b*, the pin *o*, and lever *g′* and connected mechanism for operating the pawl, all substantially as described.

4. In a car-coupler, the combination of draw-head *a*, having perforations *f f″ h*, pawl *g*, pawl-lever *g′*, link *b*, connecting-rod *i*, crank *j*, rod *k*, and lever *k′*, all substantially as described, and for the purpose set forth.

5. In an automatic car-coupler, the combination of draw-head *a*, link *b*, pin *o*, secured in the draw-head by spring-pin *p*, pawl *g*, and lever *g′*, and mechanism for operating the lever from the sides or top of the car, all substantially as described, and for the purpose set forth.

294,798. PROCESS OF AND APPARATUS FOR SEPARATING RAW SUGAR LIQUOR FROM THE SCUM AND MECHANICAL IMPURITIES CONTAINED THEREIN. S. MORRIS LILLIE, Philadelphia, Pa. Filed Oct. 6, 1882. (No model.)



Claim.—1. The within-described process of separating a liquid from its mechanical impurities specifically lighter and specifically heavier than itself, consisting in subjecting the impure liquid to the action of centrifugal force in a rapidly-revolving drum, and in drawing off from the revolving drum by itself the liquid separated from its mechanical impurities by the centrifugal force, substantially as specified.

2. The within-described process of separating a liquid from its mechanical impurities specifically lighter and specifically heavier than itself, consisting in running the impure liquid continuously into a suitable rapidly-revolving drum, and in drawing off, respectively, from the concentric layers of the specifically lighter impurities, and the comparatively clear liquid formed in the drum by the centrifugal force, the said lighter impurities and the clear liquid as fast as the separation progresses, substantially as specified.

3. The combination, with the drum of a centrifugal machine, of two series of discharging-spouts, one series draining the drum near the axle, and the other near its circumference, means for introducing a liquid continuously into the drum between the two series of spouts, while the machine is in motion, and means for introducing a liquid continuously into the drum, while in motion, between the circumference of the same and the outer series of draining-spouts, substantially as specified.

4. The combination, with the drum of a centrifugal machine, of one or more discharging-spouts, draining the drum through ports near the axle, means for introducing a liquid into the drum, while in motion, between the ports of the discharging-spouts and the circumference, and means for introducing a liquid continuously into the drum, while in motion, still nearer to or at the circumference of the drum, substantially as specified.

5. The combination, with the drum of a centrifugal machine, of two series of discharging-spouts attached to the drum and revolving with it, one series draining the drum at points near the circumference, and the other series draining it at points near the axle, means for introducing the liquid to be treated into the drum, while revolving, between the two series of spouts or the openings of the same into the drum, and apparatus for regulating, while the machine is in motion, the flow of material from the outer or from both series of spouts independently of the flow of the liquid into the drum, substantially as specified.

6. The combination, in the drum of a centrifugal machine, of the annular wall C, permeable to liquids, surrounding annular chamber S, inner chamber, O, a series of discharging-spouts, F, for the said inner chamber, opening into it near the axle, means for introducing a liquid continuously into the inner chamber between the openings of the discharging-spouts into the same, and the annular permeable wall C, and means for introducing a liquid continuously into the chamber S while the machine is in motion, substantially as specified.

7. The combination, in the drum of a centrifugal machine, of an annular wall, C, permeable to liquids, surrounding annular chamber S, inner chamber, O, two series of discharging-spouts for the said inner chamber, one series draining the chamber at points near the axle, as at F, and the other series draining it at points near the annular permeable wall C, as at N, means for introducing a liquid continuously into the drum at a distance from the axle between the two series of discharging-spouts while the machine is in motion, and means for introducing a liquid continuously into the annular chamber S while the machine is in motion, substantially as specified.

8. The combination, with the drum of a centrifugal machine, of an annular wall, C, permeable to liquids, and dividing the interior of the drum into two chambers, the outer annular chamber, S, and the inner chamber, O, two series of discharging-spouts for the inner chamber, one series draining it at points near the axle, and the other draining it at points near the permeable wall C, means for introducing a liquid continuously into the outer chamber, S, while the machine is in motion, and apparatus for regulating the flow of material from one or from both series of spouts, substantially as specified.

9. The combination, in the drum of a centrifugal machine, of the annular filtering-wall C, outer chamber, S, inner chamber, O, spouts F, for draining the inner chamber, spouts for draining the outer chamber, S, means for introducing a liquid continuously into the inner chamber, O, between the spouts F and the filtering-wall, and apparatus for regulating, while the machine is in motion, the flow of material through the draining-spouts of the outer chamber, substantially as specified.

10. The combination, in the drum of a centrifugal machine, of an annular filtering-wall, spouts for draining the drum at points located within the annular filtering-wall and near the axle, means for introducing a liquid continuously into the drum between the said spouts and filtering-wall, and means for regulating the flow of the liquid through the filtering-wall, substantially as specified.

11. The combination, in the drum of a centrifugal machine, of the filtering-wall C, inner chamber, O, and discharging-spouts F, for draining the same from points near the axle, outer chamber, S, and discharging-spouts L for the same, and annular hopper H, delivering into the drum between the spouts F and filtering-wall C, substantially as specified.

12. The combination, in a centrifugal machine, and with the drum of the same, of the annular filtering-wall C, inner chamber, O, and discharge-cocks F and N for the same, outer chamber, S, and discharge-cocks L, axial conduit I, communicating with the chamber S through the radiating tubes *a*, and annular hopper H, communicating with the inner chamber, O, between the discharge-cocks F and the filtering-wall C, substantially as specified.

13. In the drum of a centrifugal machine, the combination, with an annular chamber, S, encircling the annular filtering-wall of the drum, of the discharging cocks or valves L and the radiating tubes *a*, independent of the cocks or valves L, communicating with an axial conduit, substantially as specified.

14. The within-described mechanism for operating the valves or cocks in the discharging-spouts of the drum of a centrifugal machine, consisting of the pivoted lever M, collar J, links *l*, and disks D, or their equivalents, and the rods *r*, connecting the disks with the operating-levers of the cocks or valves, the combination operating substantially as specified.

15. In a centrifugal machine, a system of mechanism for operating the cocks or valves of the discharging-spouts of the drum—the said mechanism forming a part of the machine and revolving with it—arranged, as regards the mass and disposition of the elements of the system, so that the effects of the centrifugal force due to the revolution of the machine on the various elements will neutralize each other, in combination with means for operating the system while the machine is revolving, substantially as specified.

16. The within-described process of separating from a raw sugar liquor its mechanical or suspended impurities, consisting in first defecating the raw liquor with blood or its equivalent, and in then freeing the liquor of the resulting coagulum and the specifically heavier mechanical impurities by subjecting it to the action of centrifugal force in a suitable rapidly-revolving drum, and drawing off from the revolving drum by itself the clear or comparatively clear liquor, separated from the scum and from the other mechanical impurities, substantially as specified.

294,799. MAIL-BAG CORD FASTENER AND LABEL HOLDER COMBINED. HUGH EUGENE LUNDY and CHARLES LEO LUNDY, Cincinnati, Ohio. Filed Dec. 26, 1883. (No model.)

Claim.—1. The label-holder consisting of a base-plate, the plate 7, cut out in the middle and at one end, and the outer or retaining plate, 8,

294,799.

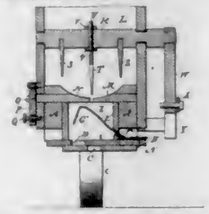


out out in the middle only, in combination with a rivet placed through said base-plate, and having its head projecting into the label-receptacle for the purpose of binding the label in place, and the said plates being secured together, as by means of rivets.

2. The combination, with an oblong box-frame for incasing and supporting the cord-fastener mechanism, of a label-holder consisting of the said box side, a C-shaped plate, 7, a retaining-plate, 8, provided with an opening in its middle, and a rivet passing through the middle of the first or base plate, and provided with a projecting head, 10, for binding and securing the label in place between the side branches of the piece 7 and the base-plate and retaining-plate 8.

3. The combination of the spring-supporting and label-binding rivet-pin 2 with the spring 5 6, and with the mechanism incasing and supporting box-frame, and with the base-plate and the plates 7 and 8, forming the label-receptacle, all having the construction, relation, and functions set forth.

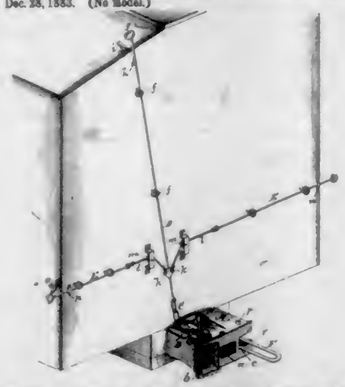
294,800. SEED-PLANTER. ANDREW JACKSON MADRA, Fort Smith, Ark. Filed Oct. 19, 1883. (No model.)



Claim.—1. The combination of the seed-box, the seed-slide having a hinged arm extending inwardly through a slot in the side of the seed-box and provided at its inner end with a downturned scraper, and suitable mechanism for reciprocating the seed-slide, as set forth.

2. The combination of the hopper, the rock-shaft having the stirrers, the seed-box arranged under the hopper and having the transversely movable seed-slide, equipped with a scraper-arm extending inwardly through a slot in the side of the said seed-box, a spring secured to the side of the frame and having its rear end connected pivotally with the outer end of the seed-slide, which is thereby forced in an inward direction, and the transporting-wheel provided on one side with cams engaging and operating the said spring, as set forth.

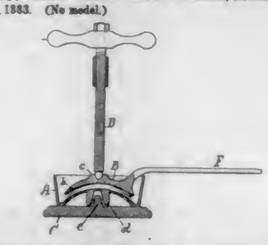
294,801. CAR-COUPLING. AMOS F. MOREY, Winfield, Kans. Filed Dec. 28, 1883. (No model.)



Claim.—1. A draw-head for car-couplings, provided with a central link-opening and two side or outer link-openings, one of which is provided with a weighted dog or latch, and the opposite outer link-opening having, in addition thereto, a lateral opening or slot to allow the link to be thrown back at right angles to the draw-head, and a boss for holding the link in said angular position, substantially as and for the purpose set forth.

2. The combination, with a suitable draw-head provided with a weighted dog or latch, of a rod connected thereto by suitable links, and extending up to the top or roof of the car, and similar rods connected to said upright rod by chains or ropes passing over pulleys and extending horizontally beyond the sides of the car, said rods passing through guides or eyebolts, and provided with projections adapted to engage with pivoted hooks or catches upon the sides and top of the car, substantially as and for the purpose specified.

294,802. HAND-PRESS. HENRY F. OSBORNE, Newark, N. J. Filed July 31, 1883. (No model.)

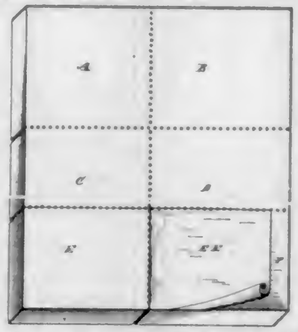


Claim.—1. The combination, with the receiver and presser, of means, substantially as described, for pressing them together, substantially as and for the purpose set forth.

2. The combination of a receiver having corrugations *a*, a presser having corrugations *b*, and provided with handle F, and means, substantially as described, for pressing them together, as and for the purpose set forth.

3. The combination, with the frame C, provided with screw D, of the removable receiver A, provided with means to hold it from turning in the frame, and a removable presser, B, provided with a handle for oscillating it, substantially as shown and described.

294,803. PERFORATED PAPER TABLET. WILLIAM O'SHEA, Lincoln, Nebr. Filed Mar. 3, 1883. (Model.)



Claim.—As an improved article of manufacture, a tablet divided into blocks or sheets of different sizes by lines of perforations, substantially as and for the purpose set forth.

294,804. DRAG-SAW ELEVATOR. WILLIS J. PERKINS, Grand Rapids, Mich. Filed Dec. 14, 1883. (No model.)

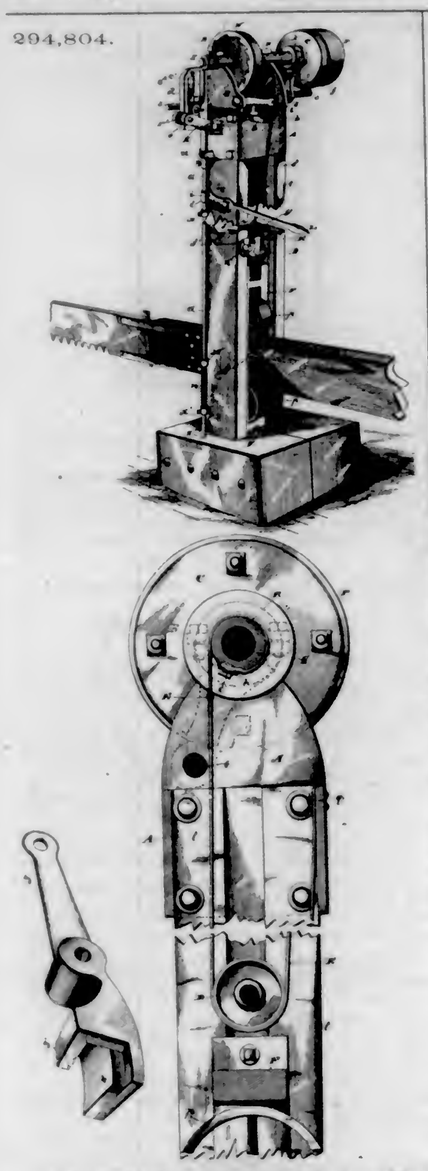
Claim.—1. The combination, with a saw and a shear-frame, of a shaft, a friction-clutch mounted on said shaft, a band or belt connecting the shear-frame, and mechanism connected to the clutch and automatically operated by the shear-frame, whereby the upward movement of the latter can be discontinued, substantially as set forth.

2. The combination, with a shear-frame and saw, of a shaft, a loose pulley thereon, a sliding clutch, a belt connecting the saw-frame to the shaft, and intermediate mechanism for automatically engaging and disengaging the pulley and shaft.

3. The combination, with a saw and shear-frame, of a shaft, a loose pulley thereon, a sliding clutch, intermediate mechanism, whereby the movements of the shear-frame automatically control the movements of the shaft, and a suitable brake mechanism, all of the above parts combined as described.

4. In a drag-saw elevator, the combination, with the upright guides, of a head-frame provided with a shaft carrying a ratchet-wheel, a combined dog and brake adapted to engage said ratchet-wheel, and devices connecting the shear-frame and said shaft, whereby said shear-frame may be raised and lowered, substantially as set forth.

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5. In a drag-saw elevator, the combination, with a saw and shear-frame, of a shaft, a band or belt connecting the shear-frame and shaft, a friction-clutch, a loose pulley, and a longitudinally-sliding shaft for moving the clutch into and out of contact with the pulley, substantially as set forth.

6. In a drag-saw elevator, the combination, with a shear-frame and saw, of a shaft to which the shear-frame is connected, a loose pulley on said shaft, a friction-clutch, a longitudinally-sliding rod for moving the friction-clutch, and mechanism connected to the shear-frame for moving the sliding rod, substantially as set forth.

7. The combination, with a saw and shear-frame, of a shaft to which the shear-frame is connected by a belt, a loose pulley mounted on said shaft, a clutch for engaging said pulley, a ratchet-wheel rigidly secured to the shaft, a dog for engaging the ratchet-wheel, a hook connected to the outer end of the dog by a cord, and adapted to be hooked over a pin on the machine-frame, and a pin or equivalent device on the shear-frame for releasing the hook, all of the above parts adapted to operate as described.

8. In a drag-saw elevator, the combination, with a shaft provided with a friction-clutch, a pulley, and a combined brake and ratchet-wheel, of a frame supporting said shaft and provided with a combined dog and friction-brake adapted to engage said combined brake and ratchet-wheel, a sliding rod provided with cams adapted to engage a sliding shaft and thereby operate said friction-clutch, and a shear-frame connected with first-named shaft and adapted to be operated by the rotation of said shaft, substantially as set forth.

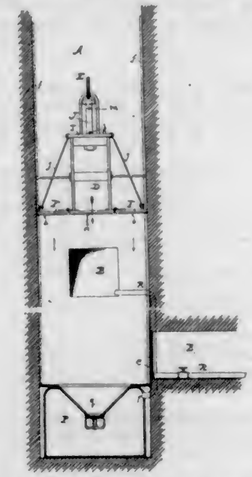
9. The combination, with a saw and shear-frame, of a shaft, a belt or other device connecting the shear-frame to the shaft, a loose pulley mounted on the shaft, a clutch for engaging the pulley, a longitudinally-sliding shaft for moving the clutch, and provided with an anti-friction roller, and a longitudinally-movable rod provided with double cams at its upper end, between which the roller on the longitudinally-movable shaft rests, substantially as set forth.

10. In a drag-saw elevator, the combination, with a revolving shaft, a sliding clutch, and loose pulley mounted on said shaft, a longitudinally-sliding shaft, one end of which is connected to the clutch, and a longitudinally-sliding rod for moving the sliding shaft, the said rod being provided with adjustable collars, of a saw and shear-frame, the latter connected to the revolving shaft by a suitable band or belt, and provided with an arm adapted to come in contact with the collars on the longitudinally-sliding rod and move the said rod alternately up and down, substantially as set forth.

11. In a drag-saw elevator, the combination, with the shaft, loose pulley, friction-clutch, longitudinally-sliding shaft, longitudinally-sliding rod connected with said sliding shaft, as described, adjustable collars secured to the rod, and a spiral spring encircling a portion of the rod and resting on the lower collar, of a saw and shear-frame, the latter connected to the shaft by a suitable belt, and provided with an arm adapted to come in contact with the upper adjustable collar on the sliding rod and the spring seated on the lower collar and move the said rod, substantially as set forth.

12. In a drag-saw elevator, the combination, with a shaft, a loose pulley mounted thereon, a longitudinally-sliding shaft, a clutch, a longitudinally-sliding rod, the upper end of which is connected to the sliding shaft, a sleeve adjustably secured to the sliding rod, and a lever, one end of which is connected to the sleeve, of a saw, a shear-frame, and a belt connecting the shear-frame to the shaft, substantially as set forth.

294,805. MEANS FOR VENTILATING MINING SHAFTS AND TUNNELS. WM. PHILLIPS, Coos Bay, Oreg. Filed Oct. 18, 1882. (No model.)

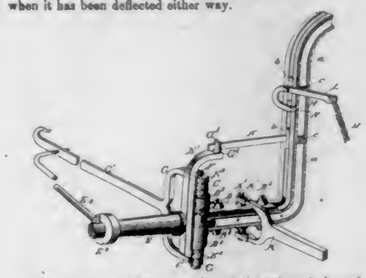


Claim.—1. A cage for mining-shafts, provided with hinged sections F on its sides, and means, substantially as described, whereby said sections may be raised on the outside, to leave open spaces between the cage and shaft-walls, as set forth.

2. The combination, with the cage D and hinged sections F F on its sides, of the standard J, secured to the cage, cross-head I, capable of being moved thereon, and connecting rods or parts *j*, substantially as set forth.

294,806. CULTIVATOR. CHARLES W. POST, Springfield, Ill. Filed Sept. 14, 1883. (No model.)

Brief.—A spring to return the spindle and wheel to the line of draft when it has been deflected either way.



Claim.—1. A cultivator-arch and the axle end thereof, composed of continuous parallel bars separated by intermediate blocks, said bars and blocks being secured together by bolts, substantially as described.

2. The combination, with the beams and with the arch of a cultivator, of blocks rigidly secured to the axle ends of the arch, and forming bearings for said beams, substantially as described.

3. The combination of the beams and arch of a cultivator with a block secured to the axle end of said arch, and forming a connection of the beams thereto, said block having one or more distinct bearings providing for a lateral adjustment of said beams, substantially as described.

4. In a cultivator, the combination, with the beams, of perforated bearing-blocks having one or more projecting conical seats or bosses, providing for a tilting movement of the beams, substantially as described.

5. The beam provided with a forked end, having slots in the ends of its fork, in combination with the block rigidly secured at one end of the arch, and bolts passing through said blocks and slots, substantially as described.

6. The combination, with the metal block formed with an upper and lower set of bosses, and rigidly secured at an end of the arch, of the beam having a forked and slotted end embracing an upper and lower boss, and a bolt passing through the block and its bosses, and also passing through the slots in the end of the beam, whereby the latter shall be capable of a vertical tilt or play, substantially as described.

7. The combination of the arch and an axle pivotally jointed thereto, with a flexible connection for exerting a force tending to maintain said arch and axle in alignment with each other, substantially as described.

8. The combination of the arch and an axle pivotally jointed thereto, with a spring connecting said arch and axle, substantially as described.

9. The combination of the arch and an axle pivotally jointed thereto, with a spring rigidly attached at one end to the arch, and at its other end having a shifting bearing in its attachment with the axle, substantially as described.

10. The arch, in combination with an axle pivotally jointed thereto, and provided with a rigid arm having a slotted bearing, and extending above the pivot of the axle, and a spring, one end of which is rigidly secured, and the other end working in said bearing, substantially as described.

11. The arch and the rigid bearing-block, in combination with the axle, and means, substantially as described, pivotally connecting and providing for a vertical adjustment of the axle with the arch, as and for the purposes set forth.

12. The arch and the rigid bearing-block, in combination with the sleeve seated and vertically adjusted in said block, and a pivot embraced by said sleeve and forming a connection between the arch and the axle, substantially as described.

13. The combination, with the draft-rod, the axle, the socket B', and pivot-bolt connecting said rod and axle, of a brace-rod rigidly connecting the block, rod, and axle, substantially as described.

14. The combination of the arch, the axle, the draft-rod, a pivot connecting said elements with each other on a concentric axis, and a flexible connection between the arch and axle, all substantially as described.

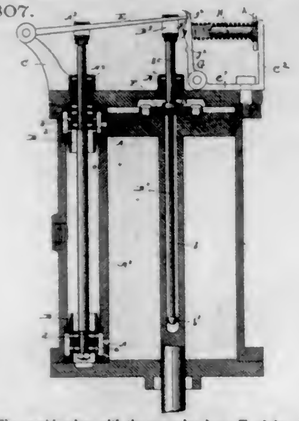
15. The combination, with the arch and the beams, of a bent hang-up arm, pivoted to the arch and provided with a right-angular bend, substantially as described.

294,807. OPERATING VALVES OF STEAM-CYLINDERS. EVAN L. REESE, Newark, Cal. Filed Sept. 16, 1882. Renewed Dec. 5, 1883. (No model.)

Claim.—1. The combination, with the valves A and rod A', of the lever E, reversing-stem B', and yielding arm G, having cam-surfaces *g*, substantially as described.

2. The combination, with the valve-operating lever E, of the reversing-stem B', having the stops *b'* *b²*, and the yielding cam-plated arm G, as set forth.

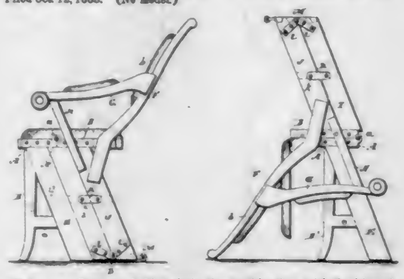
294,807.



3. The combination, with the reversing-lever E, of the yielding arm G, having the inclines, substantially as set forth.

4. In a valve mechanism actuated from the movements of the piston-rod of the working-cylinder, the reversing-stem B', working in a slot or bore, *b*, in the piston-rod, and having the stops *b'* *b²*, in combination with the striking-plate F on the piston-head, reversing-lever E, and spring pressure-arm G, provided with the inclines, substantially as herein specified.

294,808. STEP-LADDER CHAIR. FREDERICK REDDEL, York, Pa. Filed Oct. 12, 1883. (No model.)

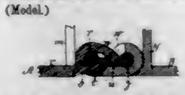


Claim.—1. In a step-ladder chair, the combination, with the hinged seat A B, of the legs B' and brace E, secured to the section A, the section J, rigidly secured to the section B, the section I, pivotally secured to the section J, and hooks for securing the parts in open and closed adjustment.

2. As a new article of manufacture, a step-ladder chair consisting, essentially, of the hinged seat A B, back F, hinged cushion C, the legs B, and sections E I J, substantially as set forth.

3. In a step-ladder chair, the combination, with the sections A B, hinged together, and the hinged cushion C, of supports rigidly secured to the section A, and supports rigidly secured to the section B, all of the above parts being combined as described.

294,809. DOUBLE HINGE. CHAS. C. RICHMOND, Boston, Mass. Filed Nov. 8, 1883. (Model.)

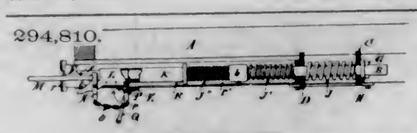


Claim.—A check for the connecting-link of a double hinge, consisting of a portion of the inner edge of one of its leaves so bent as to form a depression, *s*, a rounded surface, *t*, and a flat surface, *u*, constructed and arranged to operate substantially as described.

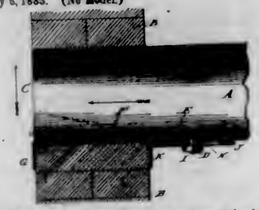
294,810. CAR-COUPLING. EDWARD J. ROBERTS, Ashland, Ky., assignor of one-fourth to William W. Culbertson, same place. Filed Sept. 6, 1883. (No model.)

Claim.—In a railway-car coupling, the combination of draw-bar B, having the integral jaw F and the sliding jaw L, the independently-sliding draw-head R, the springs J J' J'', and the releasing-lever N, and operating crank-shaft P, substantially as and for the purpose set forth.

294,810.

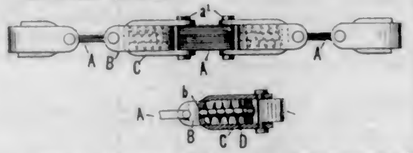


294,811. STOVE-PIPE THIMBLE. LUTHER RUSSELL, Evart, Mich. Filed July 5, 1883. (No model.)



Claim.—The combination, with a stove-pipe, of the locking or fastening device consisting of the plate E, hinged latch F G, screw D, slotted plate J K, washer H, and nut I, constructed and combined to operate substantially in the manner and for the purpose herein shown and set forth.

294,812. CHAIN. STEPHEN RYDER, North Attleborough, Mass. Filed Nov. 17, 1883. (No model.)

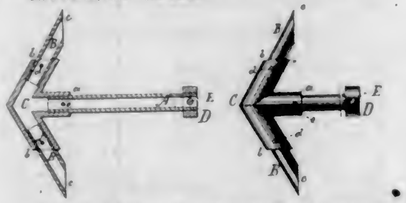


Claim.—1. An extensible link having two similar frame parts, B C, and proper attachments thereto, with a supporting-rod, *b*, and coiled spring D, as described.

2. In combination with two elastic links, each having the frame parts B C and coiled spring D, the intermediate solid-bar link, A, uniting the two elastic links together, as shown.

3. The chain described, consisting of the solid-bar links with extensions *a'* *a'*, the frame part B, with rod *b*, the frame part C, with opening *c*, and the spring D, combined and arranged as described, for the purpose set forth.

294,813. ANCHOR. HERMAN M. SCHNEEKLE, Rockaway Beach, N. Y. Filed Oct. 15, 1883. (No model.)



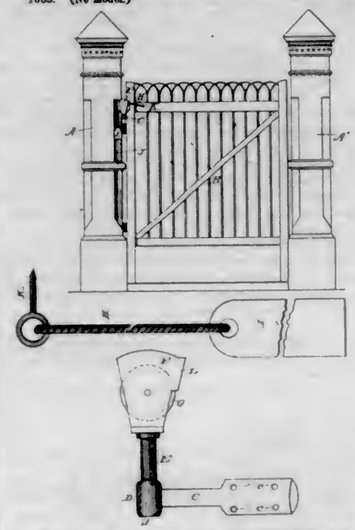
Claim.—1. An anchor having for its essential elements the pipe or tubular flukes B, the socket-head C, constructed with sockets *a* *b* *b*, the stem A, and a cross-bar, E, connected to said stem, the stem and pipe or tubular flukes being fitted to the socket of the head C, all substantially as and for the purpose herein set forth.

2. The combination of the socket-head C, having the internally-threaded sockets *a* and *b* *b*, the hollow flukes B, composed of pipe or tubing, and externally threaded at their inner ends for insertion into the sockets *b* *b*, the stem A, composed of pipe of suitable diameter and strength, externally threaded at its inner end for insertion into the socket *a*, the head D, and a cross-bar, E, secured upon the outer end of the said stem, all substantially as and for the purpose herein set forth.

3. The combination of a hollow socket-head, C, having the internally-threaded sockets *a* *b* *b*, flukes B B, formed of pipe, and externally threaded at their inner ends for insertion in the sockets *b*, the pins or devices *d*, arranged to prevent the axial turning of the hollow flukes B, the stem A, formed of pipe threaded at its inner end for insertion in the socket *a*, and at its outer end to receive the head D, the said internally-threaded head D, and the cross-bar E, all substantially as and for the purpose herein set forth.

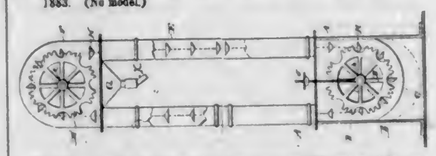
4. The combination of the wings or veins F with the hollow flukes B, the socket-head C, having the sockets *a* and *b*, the stem A, and cross-bar E, all substantially as and for the purpose herein set forth.

294,814. GATE. FRANK X. SCHULLIAN, Quincy, Ill. Filed Sept. 21, 1883. (No model.)



Claim.—As an improvement in gate-closing devices, the combination of the pulley-frame F, formed with lugs L, and carrying a pulley, and provided with a pin or extension projecting downwardly therefrom, a horizontal bar, C, arranged at right angles to the pulley-frame and secured to the gate-post, a socket or tube, D, formed at one end of the bar, and in which the pin or extension is swiveled, and a rope or chain passing through the pulley-frame, and having one end secured to the gate, while the other end is provided with a weight sliding in a recess of the post, as set forth.

294,815. ELEVATOR. FRED J. SCHUPP, Marshall, Mo. Filed Oct. 17, 1883. (No model.)



Claim.—1. In an elevator, the combination, with two upright metallic spouts, a cap secured to the upper ends of said spouts, and a hopper provided with a discharge-pipe, of suitable chain-supporting wheels and chain and buckets, substantially as set forth.

2. In an elevator, the combination, with a suitable base and sprocket-wheel, a suitable cap provided with a similar wheel, and a hopper communicating with the cap and provided with a discharge-pipe, of two parallel tubular spouts connecting the base and cap, and a chain and buckets secured to the chain, the parts being arranged as described.

3. The combination, with a base, cap, hopper, and sprocket-wheels, one of the latter being adjustable, of the parallel tubular spouts connecting the cap and base and the chain and buckets, all of the above parts being arranged substantially as described.

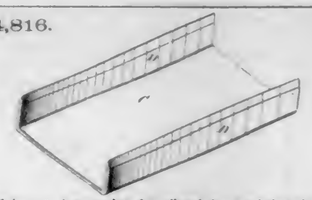
4. In an elevator, the combination, with a chain and buckets, of the sprocket-wheels, each provided with recesses situated equidistant apart, and teeth between the said recesses for engaging the chain, substantially as set forth.

5. An elevator-bucket consisting, essentially, of a saucer-shaped receptacle, an eyebolt, a sleeve, and a socketed hook, all of the above parts combined as described.

294,816. WEAR-PLATE FOR RAILROAD-TIES. DAVID SERVIS, Bennett, assignor to the Servis Railroad Tie Plate Company, New York, N. Y. Filed Feb. 18, 1882. Renewed Nov. 14, 1882. (No model.)

Brief.—A wear-plate provided with flanges having sharpened edges is adapted to be driven into the sleeper under the rail.

294,816.

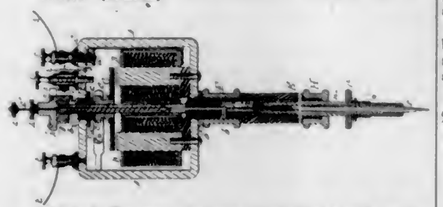


Claim.—1. A wear-plate for railroad-ties, consisting of a body having projecting flanges at its side edges, said flanges being sharpened to adapt them to be forced into the tie, substantially as described, and for the purpose set forth.

2. The combination, with a railroad-rail and supporting cross-tie, of a wear-plate consisting of a body having projecting flanges at its side edges, said plate being interposed between the rail and tie, with its flanges entered into the tie longitudinally or parallel with the grain or fibers of the wood composing the tie, substantially as described.

3. In a wear-plate for railroad-ties, the combination, with the side edges of the plate C, of flanges D, having sharpened edges, substantially as herein shown and described, whereby the said plate will be strengthened to sustain a downward pressure, and may be readily forced into the tie lengthwise of the grain of the wood, as set forth.

294,817. RETOUCHING-MACHINE. CHARLES H. SHAFFER, Rockford, Ill., assignor of one-half to Jones, Woodruff & Co., same place. Filed Aug. 11, 1883. (No model.)



Claim.—1. The combination, with the tubular shaft, with an armature mounted thereon and capable of a rotary movement, of a center shaft supported in the axial center of the tubular shaft and capable of an endwise reciprocating movement therein, substantially as and for the purpose set forth.

2. The combination, with the tubular shaft, with an armature mounted thereon and capable of a rotary movement, and with the center shaft supported in its axial center, of a clutching mechanism to connect the center shaft with the tubular shaft, or disconnect it therefrom, substantially as and for the purpose set forth.

3. The combination, with the center shaft supported in the axial center of the tubular shaft and capable of a rotary motion therewith, of a spring within the tubular shaft, and a cam to engage an anti-friction wheel to impart an endwise reciprocating movement to the shaft in its rotary movement, substantially as and for the purpose set forth.

4. The combination, with the spring within the tubular shaft, and a cam mounted upon the central shaft, of an anti-friction wheel having an adjustable support to vary the throw of the shaft in its endwise reciprocating movements, substantially as and for the purpose set forth.

5. The combination, with the anti-friction wheel having an adjustable support, of a spring within the adjustable tubular support, substantially as and for the purpose set forth.

6. The combination, with the adjustable tubular support of the anti-friction wheel, having its base grooved, of a guide-bar to engage the groove in the base of the support, substantially as and for the purpose set forth.

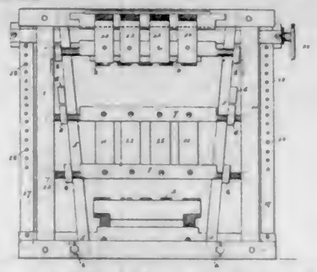
7. The combination, with the cam mounted upon the center shaft and clutch-head, of a pivoted lever-latch capable of radial position, substantially as and for the purpose set forth.

8. The combination, with the cam and with the clutching-latch pivoted therein, of a spring to hold the latch in its clutching or radial positions, substantially as and for the purpose set forth.

9. The combination, with the cam mounted upon the center shaft and disengaged from the clutching-head, of an anti-friction wheel supported in the clutch-head to impart an endwise reciprocating movement to the center shaft, substantially as and for the purpose set forth.

10. The combination, with the center shaft and with the hand-piece, of a pencil-receiving tube having its projecting end provided with a pencil-holder, said tube suitably connected with the center shaft and supported in the axial center of the hand-piece, and capable of a rotary and reciprocating movement therein, substantially as and for the purpose set forth.

294,818. BALING-PRESS. NOAH W. SPEERS, Sr., Memphis, Tenn., assignor of one-half to William A. Smith, same place. Filed July 2, 1883. (No model.)



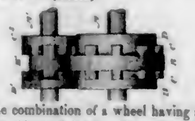
Claim.—1. In a baling-press having a two-part press-box, the hinged sides having projecting beams adapted to surround and retain the elongated braces of the front and back battens, substantially as specified.

2. The combination, with the fixed front and rear battens of a press-box, of the hinged sides and upper door or doors, said sides having bearings adapted to engage and lock the hinged doors when pressed to place, substantially as specified.

3. The combination, with hinged front and back battens having elongated braces, of hinged sides having brackets for engaging said elongated braces, and suitable cam-blocks for holding them in closed position, substantially as set forth.

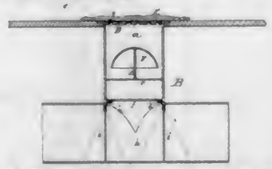
4. In a baling-press, the combination, with the follower or presser-block, of the draw bars or rods having one or more series of holes, the transverse driving-shaft, and sprocket-wheels thereon, arranged and adapted to operate substantially as specified.

294,819. COMBINED FRICTION AND COG GEAR. NOAH W. SPEERS, Sr., Memphis, Tenn., assignor of one-half to Wm. A. Smith, same place. Filed July 30, 1883. (Model.)



Claim.—The combination of a wheel having a smooth bearing-surface in the center of its periphery, with teeth projecting from each side thereof, said bearing-surface and teeth being formed in relievo out of the body of the wheel, and a second wheel having complementary portions, as described.

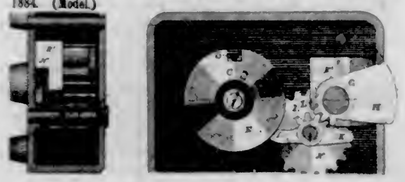
294,820. VENTILATION. MARSHALL B. STAFFORD, New York, N. Y. Filed Nov. 2, 1882. (No model.)



Claim.—1. In a ventilating apparatus applied to the bottom of a car, the vertical flue provided with means for deadening the sound, in combination with the horizontal flue, substantially as set forth.

2. In a ventilating apparatus applied to the bottom of a car, the vertical flue and the horizontal flue, the former being supplied with a sound-deadening device, and the latter with swinging valves, the whole being arranged substantially as and for the purposes set forth.

294,821. SAFE-LOCK. EMORY STOCKWELL, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed Jan. 2, 1884. (Model.)



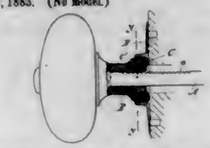
Claim.—1. In a lock, the combination of a rotary fence-bearing, a rotary fence, and a rotary bolt, operating together, substantially as set forth.

2. A lock-case provided with raised block R′, having a ledge, S, with a bolt-pivot aperture, and a recess beneath, substantially as set forth.

3. In a lock, the combination of rotary tumblers and cam, a rotary fence and bolt connected operatively together, a rotary fence-bearing, and means for rotating the bearing when the lock is operated, substantially as set forth.

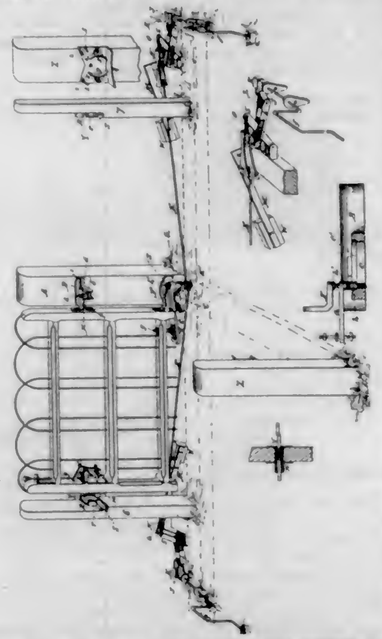
4. In a dial-lock, the combination of a rotary fence-bearing, a spindle for operating the tumblers, and mechanism connecting or gearing the two together, so that whenever the spindle is rotated the fence-bearing must also rotate, substantially as described.

294,822. KNOB ATTACHMENT. OSCAR STODDARD, Detroit, Mich. Filed Aug. 27, 1883. (No model.)



Claim.—The rose D, having the internal recess, *d*, in its socket, in combination with the neck B, having the recess *b*, and the transverse slot *c*, arranged to receive the gate C *c*′, whereby it may be adjustably engaged with the transversely-slotted spindle A, substantially as described.

294,828. GATE. WILLIAM P. TEETER and CHARLES E. TEETER, Trotwood, Ohio. Filed July 26, 1883. (No model.)



Claim.—1. In a swinging gate, the hinge device composed of the arm D, having horizontal slots *s* in the post-plate, and a toothed upper surface, the plate *d*, toothed on its lower surface, and provided with a fixed collar and pintle, *b b*′, and the arm H, provided at one end with a circular opening somewhat larger than the pintle, and at the other with a right-angled plate having vertical slots *s*′, combined with the post A and the gate, as set forth.

2. An angle-plate adapted to be fastened to the hinge-post, and having an angular slot, *c*, provided with an endless track, *c*′, in combination with the extension F of the lower gate-hinge and the gravity-latch, the extension having a loose collar or wheel, *h*, adapted to play in said endless track, as set forth.

3. A gravity-latch formed of a lever journaled about the extension of the lower gate-hinge, and pivotally attached to the under bar of the gate by a bolt having a fixed head below the latch, said bolt being adjustable by a screw-thread and nut above, as set forth.

4. In combination with a swinging gate, the trip device composed of the adjustable pull-rod, stirrup, detachable link, lever-bar journaled to the studs of the ground-beam, double-slotted bar, lever, and trip, as set forth.

5. In combination with a swinging gate, the trip device composed of the adjustable pull-rod E, stirrup N, detachable link O, lever-bar 5, journaled to the ground-beam, double-slotted bar *i*, levers J K, hook L, weighted arm M, and the wheel-iron *f*, as set forth.

6. The double-latch stop composed of the guide or rest plate Q, the double-moving lips P P, projecting stop-pins 1 1, and the confining-studs 2 2, combined with the post Z and the gate, as set forth.

7. The combination of the latch composed of the vertical handle y, elbow-lever X, and fastening-bolt V, the latter partly enveloped by a spiral actuating-spring and shoulder-plate, *n*, with the double-latch stop composed of the guide and rest plate Q, moving lips P P, stop-pins 1 1, and confining-studs 2 2, as set forth.

8. The combination of the latch composed of the vertical handle y, elbow-lever X, and fastening-bolt V, the latter partly surrounded by the spiral actuating-spring and shoulder-plate *n*, with the single-latch stop composed of the incline S and the U-shaped supporting and confining recess, as set forth.

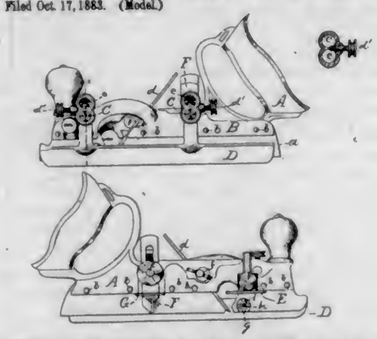
294,824. WHIP-SOCKET. JUDSON L. THOMSON, Syracuse, N. Y. Filed July 3, 1883. (No model.)



Claim.—1. The combination, with a whip-socket, of an elastic tube arranged with its axis concentric with the interior of the whip-socket, and secured in position by an expansible ring inserted in the tube, and pressing a portion thereof into its seat in the whip-socket, substantially as specified.

2. The combination, with a whip-socket, of an elastic tube having transverse excisions in one side, and secured at its opposite side to the interior of the whip-socket by an expansible ring or band pressing the tube into its seat in the whip-socket, substantially as described and shown.

294,825. BENCH-PLANE. JUSTUS A. TRAUT, New Britain, Conn. Filed Oct. 17, 1883. (Model.)



Claim.—1. The combination of the gage-rods C C of a bench-plane, the gage or fence D, having two sets of sockets—one above the other—and suitable means for fastening said gage upon said rods, substantially as described, and for the purpose specified.

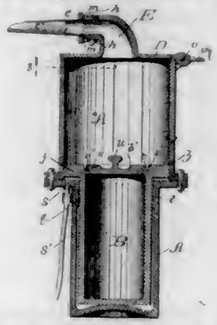
2. The combination of gage-rods C C, a suitable gage or fence having double sockets for the reception of said rods, and a set-screw arranged intermediately between the sockets and adapted to clamp the rods when placed in either one of the sockets, substantially as described, and for the purpose specified.

3. The combination of the stock and the rotatory cutting-spur adapted to project below the edge of the stock, or to be carried up above said edge by turning it upon its axis, substantially as described, and for the purpose specified.

4. The combination of the stock, the rotatory spur pivoted thereto, and a suitable stop for limiting the rotation of said spur during the forward movement of the stock, substantially as described, and for the purpose specified.

5. The combination of the stock, the spur-disk having radial arms, the adjusting-screw, by means of which said disk is secured to the stock, and a suitable stop for preventing said spur-disk from rotating on said screw, substantially as described, and for the purpose specified.

294,826. HYDRAULIC SAUSAGE-STUFFING MACHINE. FREDERICK W. TUERK, Jr., Chicago, Ill. Filed June 27, 1883. (No model.)



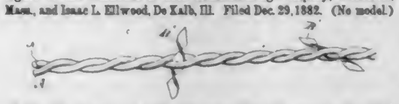
Claim.—1. A sausage-stuffing machine comprising, in combination, a hollow cylinder or shell made narrowest toward its lower end, a second cylinder of dimensions smaller than the first named, to fit within the narrower portion of the latter, and provided with a piston-head of dimensions to fit within the upper portion of the outer cylinder to serve as a piston, means for admitting water under pressure into the cylinder below the piston and discharging it therefrom at will, and a tube at the top of the device to form an outlet for the sausage-meat, substantially as described.

2. In a stuffing-machine, the combination of the shell A, having an outlet, *s*, hollow cylinder B within the same, and provided with a cover, *v*, and knob *u*, and cover D, hinged at one side to the shell A, and provided with an outlet-tube, E, and detachably secured at the other side to the shell A by means of swinging eyebolts *k* and nuts *i*, as and for the purpose set forth.

3. In a stuffing-machine, the shell A, having its lower portion narrower than its upper, and provided with means for admitting water under pressure into its lower end, and for discharging the same, and provided also with an outlet-tube at its upper end for the discharge of the sausage-meat, and with a shoulder, *y'*, having an opening, *s*, in combination with the piston comprising the cylinder B within the lower portion of the shell and flange *z*, fitting within the upper portion, the said cylindrical part B being somewhat higher than the interior of the narrower portion of the shell within which it fits, whereby when it rests upon the bottom of the same a space intervenes between the shoulder *y'* and the piston-head, substantially as described, and for the purpose set forth.

4. In a stuffing-machine, the combination of the following elements, viz: the shell A, provided with an outlet, *s*, and having its upper and lower portions of unequal size, as shown, and provided with an internally-convex bottom, piston B, provided with a lateral flange, *z*, fitting within the upper portion of the shell A, and with the cover *b'* and handle *u*, three-way valve C, operating within the tube *q*, which is connected with a water-supply, and provided with an outlet-pipe *p'*, cover D, hinged to one side of the said shell and detachably secured thereon by means of swinging eyebolts having their bearings upon the shell A, and provided with an outlet-tube, E, bent to form an elbow and made tapering toward its mouth, and spout *e'*, secured thereon by means of a collar, *v*, all being arranged to operate substantially as described.

294,827. BARBED WIRE. ANDREW J. UPHAM, Sycamore, Ill., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Dec. 29, 1882. (No model.)

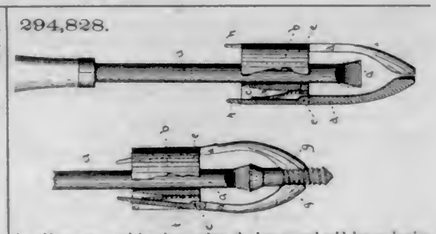


Claim.—A spirally-twisted sheet-metal barb, in combination with two main fence-strands cabled together and holding the spiral barb between its twists, substantially as set forth.

294,828. SCREW-DRIVER. ALFRED D. WALLEN, Mendham, N. J. Filed Mar. 31, 1883. (No model.)

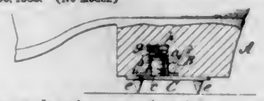
Claim.—As an improved article of manufacture, the screw-driver combining therein the driving portion *a*, having the broadened portion *a'*, the annular casing *b*, formed of one piece of metal, and provided with the central opening, and peripheral grooves *c*, the springs *f*, secured

294,828.



in said grooves, and bearing against the levers, and said levers having converging and recessed jaws, and adapted to allow the screw-shank to be thrust into said recess, all substantially as herein set forth and shown.

294,829. ICE-CREEPER. FRANK M. WEST, Mohawk, N. Y. Filed July 30, 1883. (No model.)



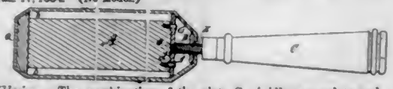
Claim.—1. In an ice-creeper, the spring-actuated plug *f*, placed in the sleeve *b*, for closing the sleeve when the spur-plate is removed, substantially as described.

2. In an ice-creeper, the combination, with the plate B, having sleeve *b*, of the plug *f*, spring *g*, and cap-plate A, arranged to operate substantially as and for the purposes set forth.

3. In an ice-creeper, the sleeve *b*, formed with the shoulder *i*, in combination with the spring-actuated plug *f*, formed with the flange *i'*, substantially as and for the purposes set forth.

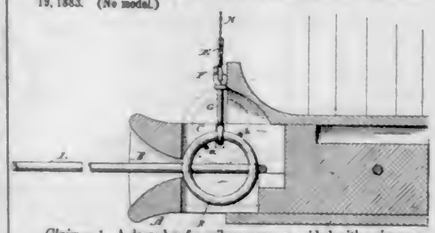
4. The plate B, formed with the screw-threaded sleeve *b*, and fitted in the recess *a*, made in the heel A, in combination with the detachable plate C, formed with the spurs *e*, and with the screw-threaded stud *c*, substantially as and for the purposes set forth.

294,830. RAZOR-STROP. JOHN H. WHITE, North East, Md. Filed Jan. 17, 1884. (No model.)



Claim.—The combination of the plate G, rigidly secured to and projecting beyond the body A, nut-plate D, and handle C, provided with the shouldered screw-shank E, substantially as and for the purpose herein specified.

294,831. CAR-COUPLING. JOSIAH WHITE, Toledo, Ill. Filed Sept. 19, 1883. (No model.)



Claim.—1. A draw-bar for railway-cars, provided with a ring serving as a coupling-bolt, as described.

2. The combination, with a draw-head for railway-cars, of a ring serving as a coupling-pin, and means for holding it in its normal position behind the link-opening, substantially as described.

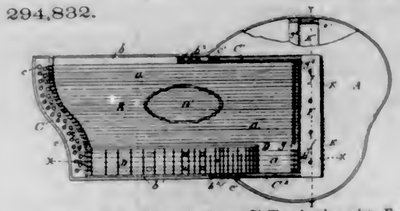
3. The combination, with a draw-bar having a slot, of a coupling-ring supported therein, and means for raising the ring to uncouple the cars, as described.

4. The combination, with the self-coupling draw-head provided with a ring, as described, of means for securing the ring in a coupled condition, as set forth.

5. The self-acting car-coupler, consisting of a slotted draw-head, a ring secured therein and serving as a coupling-pin, means for locking it in its coupling position, and means for uncoupling it without danger of injury to the operator, substantially as described.

294,832. CITHERN. FRANK F. WEHARD, St. Louis, Mo. Filed Aug. 10, 1883. (No model.)

294,832.



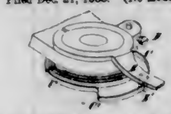
Claim.—1. In a cithern, the braces C' C² and string-plate E, in combination with the neck B and shell A, as herein shown and described, and for the purpose set forth.

2. In a cithern, the braces C' C² and string-plate E, in combination with the brace E', screws *e*, and shell A, as and for the purpose set forth.

3. The combination of the braces C' C², string-plate E, brace E', cover F, strings *a*, and body or shell A, all constructed and arranged as shown and described, and for the purpose set forth.

4. The screw H, having flattened end and straight edge *h*, in combination with the guide-plate *g*, to form an adjustable bridge, as herein shown and described, and for the purpose set forth.

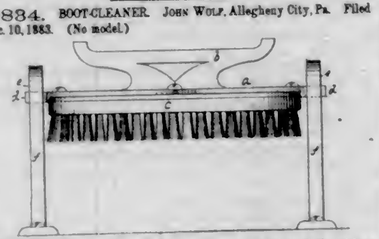
294,833. HAIR-SPRING FOR WATCHES. CHARLES AUG. WILMS, St. Louis, Mo. Filed Dec. 21, 1883. (No model.)



Claim.—1. A hair-spring for watches, &c., having a kink or bend formed in the side of the outer coil, substantially as and for the purpose set forth.

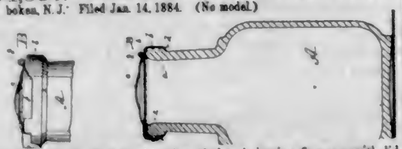
2. A hair-spring for watches, &c., having a kink or bend formed in the side of its outer coil back of the point of attachment of the regulator, substantially as and for the purpose set forth.

294,834. BOOT-CLEANER. JOHN WOLF, Allegheny City, Pa. Filed Dec. 10, 1883. (No model.)



Claim.—A new and improved foot-scraper consisting of the oblong metallic plate *a*, having on one side thereof a scraper, *b*, and on the other side a brush, *c*, and at each end a rectangular pintle or trunnion, *d*, broader or thicker in one direction than the other, in combination with the supporting-frame *f*, having the key-hole-shaped slots *s e*, as shown and set forth.

294,835. CAP FOR MUSTARD-BOTTLES. FERDINAND WOLFF, Hoboken, N. J. Filed Jan. 14, 1884. (No model.)



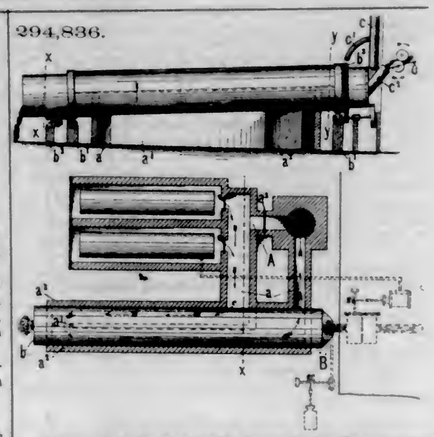
Claim.—1. The combination of ring *b*, having flange *e*, with lid *c*, having flange *f*, the hinges *e f* being turned up to form hinge *g*, substantially as specified.

2. The combination of ring *b*, having flanges *d e*, with lid *c*, having the tapering flange *f*, and with the hinge *g*, placed on top of and set back from periphery of ring *b*, substantially as specified.

3. The combination of flanged ring *b* with flanged cap *c*, hinged thereto by hinge *g*, formed on top of ring *b*, and with knobs *h i*, punched out of the flanges of the ring and cap to form a lock, substantially as specified.

294,836. BAGASSE-DRIER. RICHARD H. YALE, New Orleans, La. Filed May 21, 1883. (No model.)

294,836.



Claim.—1. In the art of treating bagasse for fuel, the combination of the following elements: a cylinder the metal surface of which is directly exposed to fire heat, means, substantially as described, for causing a positive air-current to pass directly through the cylinder, and means, substantially as described, for agitating the contents of the cylinder.

2. In combination with an auxiliary flue, *a*, located away from the furnace and main flue, and adapted to take the waste heat from the furnace, a drier, B, located in the auxiliary flue, and having the products of combustion from the furnace directly applied to its external surface, as and for the purpose described.

3. In combination with the drier B, the auxiliary flue *a*, having the walls a^2 a^3 and partition *a'*, the flues being located below the drier, as set forth.

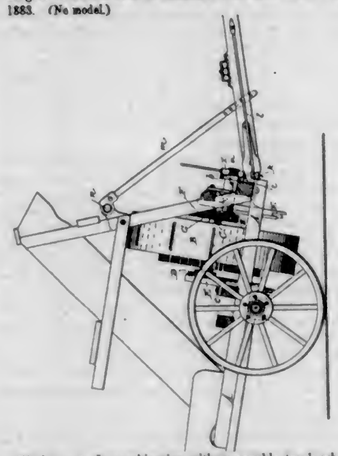
4. In combination with a drier adapted to revolve at varying speeds, an air-flue, *c*, having the exhaust-pipe *c'* leading into the same.

5. The combination of the following elements: a grinding-mill, a revolving drier adapted to receive bagasse directly from the mill, an auxiliary motor for actuating the drier independently of the mill, and means, substantially as described, for regulating the heat-supply delivered to the drier, substantially as set forth.

6. The inclined drier B, having a capacity for revolution as described, in combination with the fixed head C, having the air-flue *c* and the chute c^3, as described.

7. The drier B, having the head C, with flue *c*, chute c^3, and door c^3, adapted to tightly close the cylinder when the chute is removed, as described.

294,837. HARVESTING-MACHINE. CALVIN YOUNG, Auburn, N. Y., assignor of one-half to D. M. Osborne & Co., of New York. Filed July 7, 1883. (No model.)



Claim.—1. In combination with removable truck-wheels, a harvester-frame, a main wheel therefor, and intermediate mechanism, sub-

stantially as described, forming a permanent connection between the wheel and frame, and acting to raise either in respect to the other, and locking devices whereby said mechanism may be caused to sustain the frame upon the wheel, or to suspend the wheel within the frame, at will.

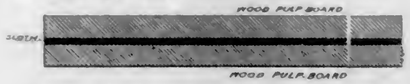
2. In combination with the main frame and rack-plates, the main wheel, the axle provided with the pinions and chain-wheel, the endless chain, the actuating-wheel therefor, and the two alternately-acting automatic pawls, adapted to lock said actuating-wheel against rotation in opposite directions.

3. In combination with removable truck-wheels, substantially as described, the harvester-frame, the main wheel, the main axle, the rack-plates and pinions connecting the axle with the frame, the endless chain and chain-wheels to actuate and hold the axle, and means, substantially as described, for locking the chain against motion in each direction.

4. In combination with removable truck-wheels, the harvester-frame provided with rack-plates to receive the axle, the main wheel, the axle provided with the pinions and chain-wheel, the endless chain, the chain-wheel on the frame, and the two alternately-acting pawls, whereby the parts may be locked against motion in opposite directions alternately.

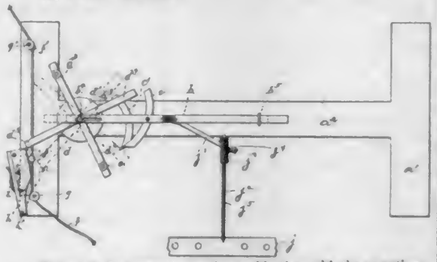
294,838. PANEL. ROBERT A. ADAMS, Grand Rapids, Mich. Filed July 2, 1883. (No model.)

Brief.—Panel-lumber is constructed of sheets of wood-pulp board cemented to interposed cloth.



Claim.—The combination, in a panel, of sheets of wood board or wood pulp with the sheet of cloth inserted, as described, and all cemented with any suitable elastic glue or cement, substantially as described.

294,839. CHECK-ROW CORN-PLANTER. CHARLES M. BABCOCK, Galesburg, Ill., assignor of one-half to John C. Stewart, same place. Filed May 9, 1883. (No model.)



Claim.—1. In a corn-planter, the combination, with the operating-wheel having slots d^4 cut in the ends of its bars d^3, and means whereby said wheel is connected with the dropping mechanism, and the knotted rope *f*, of the latch-bar A, pivoted at its rear end, a suitable supporting-spring, and the plate A^4, mounted on the latch and arranged to enter the notches d^4 in the arms d^3, said latch-bar being provided, near its forward end, with the notch A^3, arranged to receive and hold the wheel-arms, and constructed in rear of said notch with the cam or inclined face A^2, arranged in position to be engaged by the rope knots or buttons, whereby the latch is pushed back and the wheel released, all substantially as and for the purposes specified.

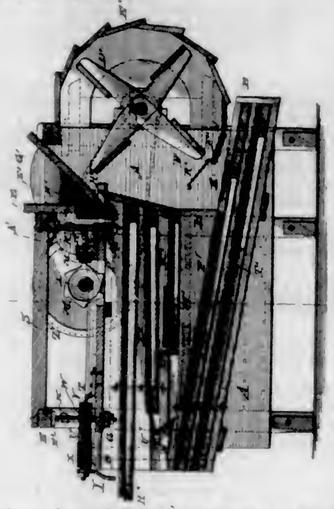
2. The combination, substantially as described, of the operating-wheel provided with pins or rollers secured on respectively the upper and lower sides of its alternate arms, and the reciprocating bar provided with cams secured on said bar, and arranged vertically on opposite and diametrically on the same side of the wheel, said cams being inclined in opposite directions in the plane of the wheel, and formed with bearing-surfaces on respectively their forward and rear edges, said bearing-surfaces being alternately engaged by the pins or rollers on the wheel-arms, substantially as specified, and for the purposes set forth.

3. The combination, in a corn-planter, of the wheel having its arms provided with pins or rollers *a a'*, and slotted in their outer ends, the pivoted latch-bar A, supported by spring *i*, and constructed with notch A^3 and inclined face A^2, the plate A^4, mounted on said latch and arranged to enter the notches in the wheel-arms, the bifurcated bar *b*, provided on its arms b' b^2 with cams *c c'*, inclined in opposite directions, and provided on respectively their forward and rear edges with bearing-surfaces arranged to be engaged by the pins or rollers *a a'*, the dropping-slide *j*, arranged parallel with the bar *b*, pivoted rod j^2, secured at its rear end to the dropping-slide, and connected at its opposite end with the bar *b* by means of pitman j^3, and adjustable sleeve j^5, and the rope *f*, all arranged and operating substantially as specified, and for the purposes stated.

294,840. LUBRICATING COMPOUND. BUEL F. BARTLETT, Dunkirk, N. Y. Filed Jan. 14, 1884. (No specimens.)

Claim.—A lubricating compound consisting of graphite, dairy-salt, flour of sulphur, and gypsum, mixed together in substantially the proportions set forth.

294,841. FLAXSEED-CLEANER. GEO. BEAL, Gilman, Iowa. Filed Nov. 10, 1883. (No model.)



Claim.—1. In a seed-cleaner, the combination of a vibrating shoe having a longitudinal top bar, a bracket secured upon the latter near its front end, a rawhide bearing-strip in the said bracket, a horizontal adjusting-screw, R, and a cam-wheel bearing against the said strip, substantially as set forth.

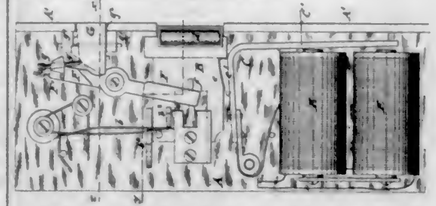
2. The combination of the vibrating shoe, mechanism for operating and for regulating the throw of the same, a bracket mounted upon the said shoe, a screw-threaded arm extending through a cross-bar of the frame, plastic cushions arranged upon the said arm on each side of the frame-bar, and a tightening-nut, as substantially set forth.

3. The combination, with the shoe carrying the screens, the suspending links, and prop-sticks, of the seat provided with an adjustable bearing of rawhide, a rotating cam-wheel adapted to strike said bearing to move the shoe in one direction, and the bracket, and the springs adapted to move the shoe in the opposite direction, substantially as specified.

4. The combination, with the shoe hung and propped as described, of adjustable devices for moving it in one direction, and the bracket T, springs X and W, and jam-nut V, forming adjustable devices for moving the shoe in the opposite direction, substantially as specified.

294,842. ELECTRIC DOOR-PULL. CHAS. BEILE, Brooklyn, assignor to Beile & Sulzer, New York, N. Y. Filed Aug. 2, 1883. (Model.)

Brief.—The slide which secures the door-bolt is set through a pivoted wedge-shaped piece which is swung in the act of closing the door, so as to operate a lever which forces the slide forward against the pressure of one section of its double returning-spring, said slide being held forward by a spring-catch which is released by a magnet. Upon the withdrawal of the spring-catch both sections of the spring act to move back the slide, thereby releasing the door-bolt.

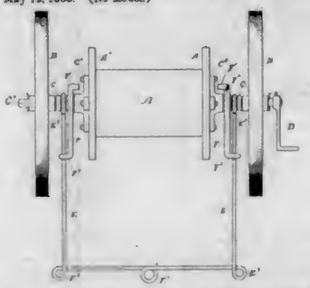


Claim.—1. The combination, with a recessed covering-plate, of a spring-actuated slide-piece, a pivoted and spring-actuated latch adapted to engage the slide-piece, means to release the latch from the slide-piece, a fulcrumed lever engaging the slide-piece and having at its upper end a guided and spring-pressed slide-pin, and a pivoted and spring-cushioned wedge-piece acting upon the slide-pin and its lever, substantially as and for the purpose set forth.

2. The combination of a recessed covering-plate, A, a spring-actuated slide-piece, B, a pivoted and spring-actuated latch, C, having an extension, C', said latch being adapted to engage the slide-piece, an electro-magnet, E, arranged close to the extension C', a fulcrumed lever, F, having an arm, F', at its upper end, a spring-pressed slide-pin, *g*, guided in said arm, and a pivoted and spring-cushioned wedge-piece, G, substantially as and for the purpose set forth.

3. In a door-pull, the combination, with a covering-plate, A, having a beveled catch, *b'*, a slide-piece, B, having a beveled releasing-catch, b^2, a double spring, *b*, applied to said slide-piece, a latch, C, adapted to engage the slide-piece, means to release the latch from the slide-piece, a fulcrumed lever, F, a spring-pressed slide-pin, *g*, at the upper end of said lever, and a pivoted and spring-cushioned wedge-piece, G, substantially as set forth.

294,843. WIRE-CARRIER. GEORGE W. BELFORD, Princeville Ill. Filed May 19, 1883. (No model.)



Claim.—1. As a wire-carrier, a spool, A A', in combination with the axles C C, each having squared end C^2 and arms C^4, whereby the same are bolted to the ends of said spool, suitable wheels, B B, and tongue E, having loop E'.

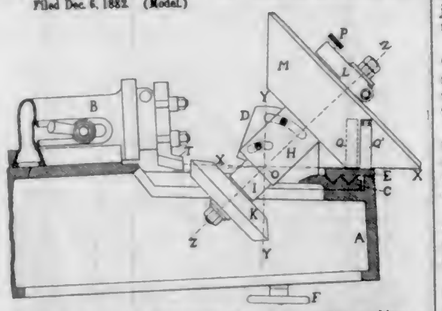
2. The spool A A', axles C C, each having squared end C^2, annular grooves C^3, and arms C^4, whereby the said axles C C are bolted to the ends of said spool, in combination with wheels B B, crank-arm D, tongue E, and dog F, having set-screw, substantially as set forth.

3. Spool A A', axle C, and crank-arm D, in combination with wheels B, tongue E, and dog F, having set-screw F', substantially as and for the purpose specified.

4. Spool A A', axles C C, having squared ends C^2, shoulders C^3, and arms C^4, in combination with crank-arm D, wheels B B, tongue E, and dog F, having ear F', as set forth.

5. The spool A A', axles C C, having squared ends C^2, grooves C^3, shoulders C^3, and arms C^4, in combination with a crank, D, wheels B B, tongue E, having loops E^2 E^2 E', and eyes E^2 E^2, and the dogs F, having ears F', looped end F^2, and set-screw F^4.

294,844. BEVEL-GEAR CUTTER. HUGO BILGRAM, Philadelphia, Pa. Filed Dec. 6, 1882. (Model.)



Claim.—1. As an improvement in bevel-gear-cutting machines, a straight-edged, truncated, V-shaped tool adapted to cut with its straight sides the curved working-faces of the teeth of the bevel-wheel through evolution, substantially as described.

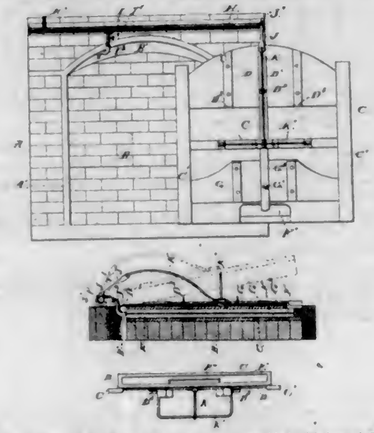
2. In bevel-gear-cutting machines, the arbor I, carrying the blank K, the bearing H of said arbor being secured in an inclined position to the plate C, which is made to revolve on its geometrical axis Y Y, and by its revolution transmits to the center line of the arbor I a motion tracing a conical surface, substantially as described.

3. In bevel-gear-cutting machines, the former-cone M, fitted to the inclined arbor I, in combination with the bands Q and Q', whereby said cone describes a rolling motion when said arbor makes the aforesaid conical movement, substantially as described.

4. In bevel-gear-cutting machines, the combination, with the index-plate N, lever L, and pin P, of the former-cone M and the arbor I, whereby said former-cone can be coupled to the arbor I in various positions in order that the rolling motion of the cone may be transmitted to said arbor.

5. In bevel-gear-cutting machines, the combination of the reciprocating tool T and its holder B with the rotating plate C, inclined bearing H, arbor I, former-cone M, with bands Q and Q', index-plate N, lever L, and pin P, substantially as and for the purpose described.

294,845. COKE-OVEN DOOR. WALTER A. BLYTHE and JAMES HENDERSON, Dunbar, Pa. Filed Dec. 18, 1883. (No model.)



Claim.—1. The door for coke-ovens, provided with lateral flanges, and provided on its upper edge with a vertically-adjustable valve, substantially as set forth.

2. In a coke-oven having its doorway walled nearly to its upper end, the door herein described, fitted to said doorway and having its upper end constructed to fit flush with the upper end of the doorway-wall, and provided with an air chamber or passage having an inlet at its outer lower edge and an air-exit at its upper side, a valve adjustable over the air-inlet, and slide-valve adjustable vertically from the upper side of the door, all arranged and operating substantially as and for the purposes set forth.

3. The combination of the oven, the horizontal water-pipe arranged above the doorway and connected with a water-supply, the door provided with a water-jacket, the connecting-pipe depending from the water-pipe and arranged to deliver water into the water-jacket, and the hanger-bar journaled at one end on the water-pipe, and having its other end connected with the door, substantially as set forth.

4. In a coke-oven having the usual draft-opening in the upper end of its doorway, the door having its upper end arranged approximately flush with the upper end of the doorway-wall, and provided with a slide-valve adjustable or movable above said door and in a plane parallel thereto, substantially as and for the purposes set forth.

5. In a coke-oven, the combination, with the door and the supporting-bar secured and arranged above the doorway and extended to one side thereof, of the hanger-bar having one end bent around or otherwise suitably journaled on and movable along the supporting-bar, and its other end connected with and supporting the door, substantially as set forth.

6. A coke-oven door provided with a water-jacket and an air flue or passage, said air flue or passage being projected into said jacket and subject on three of its sides to the heating action of the water in said jacket, substantially as and for the purposes set forth.

7. The herein-described coke-oven door, provided with a horizontal bail or handle, K', and the bar K, having its lower end secured to the door in line with bail K', and its other end carried upward and bent outward away from the door, combined with the supporting-bar H, arranged above the door and extended to one side, as described, and the hanger J, having one end swiveled to the upper end of bar K, and its other end journaled on and movable along the bar H, all arranged and operating substantially as and for the purposes set forth.

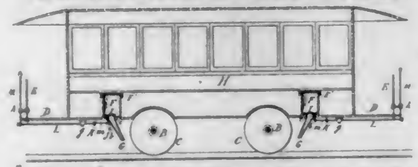
8. The combination, with the door having a water-jacket on its in-

ner side and the water-pipe arranged above the doorway, and provided with a depending pipe, I, of the pipe I^2, coupled to and rotatable on pipe I and bent into the approximately Z shape, substantially as and for the purposes specified.

9. A coke-oven door having a water-jacket on its inner side, and an air flue or passage arranged in front of and next the water-jacket, and provided with means at its upper and lower sides whereby to regulate the draft, substantially as and for the purposes set forth.

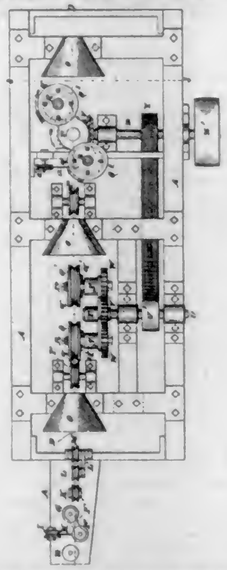
10. The hereinbefore-described coke-oven door, composed of the door proper having lateral flanges C', and constructed with water-jacket E, and the air-flue F, projected up through said water-jacket and subjected to the heating action thereof, means for controlling the admission of air to the flue F, and the valve K, movable above the door and in a plane parallel therewith, substantially as specified.

294,846. STREET-CAR SAND-BOX. MORRIS BOOKMAN and CHARLES F. BINGHAM, East New York, N. Y. Filed Mar. 5, 1883. (No model.)



Claim.—In combination with a street-car having a hole, *c*, in the floor, a device for discharging sand in front of the wheels, constructed as herein shown and described, and consisting of the sand-box F, having cover F', bottom aperture, *a*, and nipple *b*, the flanged discharge-pipe G, valve I, rod *f*, bar K, rod L, hand-staff M, and pin A, all arranged and adapted to operate as set forth.

294,847. MACHINE FOR CLEANING WIRE. THOMAS H. BURRIDGE, St. Louis, Mo., assignor of two-thirds to William L. Reynolds and John W. Govier, same place. Filed June 16, 1883. (No model.)



Claim.—1. The combination, in a wire-cleaning machine, of two emery-wheels supported on an oscillatory frame or head, T, with weight *a* or equivalent device holding the wheels to the wire.

2. The combination of emery-wheels Q Q', supported on shafts E, and oscillatory head T, the central shaft, U, carrying wheel V, and the wheels W on shafts R, substantially as and for the purpose set forth.

3. In a wire-cleaning machine, the combination of two emery-wheels, Q Q', mounted on an oscillatory frame, to work on the top and bottom of the wire, and two emery-wheels, Q^2 Q^2, mounted on an oscillatory frame, to work on the sides of the wire, as set forth.

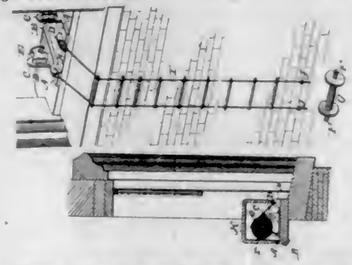
4. The combination, in a wire cleaning or polishing machine, of emery-wheels Q Q', mounted on oscillating head T, and straightening-wheels E F G K L M, arranged substantially as and for the purpose set forth.

5. In a wire-cleaning machine, the combination of a set of horizontal straightening-wheels, a set of vertical straightening-wheels, a pair of emery-wheels rotating in a vertical plane, a pair of emery-wheels rotating in a horizontal plane, and guides O between the straightening and emery wheels, as set forth.

6. An emery-wheel having studs q^4, in combination with shaft R, having cross-bar r^3, and ball-and-socket connection between the wheel and shaft, as set forth.

294,848. FIRE-ESCAPE. ROBT. ALFRED BUSH, Brockville, Ontario, Canada. Filed May 3, 1883. (No model.)

Brief.—The hooked rails to which the upper ends of the ladder are secured are provided with side flanges for hand-holes. The reel is secured to the ladder by staples which are loosely connected to the reel, so that when the ladder is unwound the reel drops therefrom, preventing a shock to the ladder.

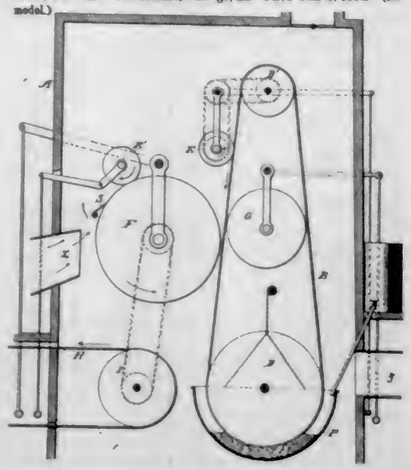


Claim.—1. In a fire-escape, the herein-described base-rails, adapted to be secured to a window-sill, and having hooks at their rear ends clamping the edge of the sill, side flanges provided with hand-holes, and perforated lugs at their front ends, in combination with a flexible escape-ladder secured to the said lugs, as set forth.

2. The combination, with a flexible fire-escape ladder, of a reel secured to the lower ends of the sides of said ladder by means of staples loosely connected to the said reel, so that the said reel shall become detached by its own weight when the ladder is unrolled, substantially as set forth.

3. As an improvement in fire-escapes, the combination of a pair of rails adapted to be secured to a window-sill, and having side flanges provided with hand-holes, and having recesses in their upper edges, forming bearings for a reel, a flexible ladder attached to the front ends of said rails, and a reel attached to the lower ends of the sides of the said ladder by means of staples detachable from the said reel by the weight of the latter, the ladder being wound, from the bottom up, upon the reel, and the latter supported by its trunnions in the bearings in the upper edges of the flanges of the rails, substantially as set forth.

294,849. METHOD OF AND APPARATUS FOR DESICCATING EGGS, &c. LYDIA J. CADWELL, Chicago, Ill. Filed Jan. 3, 1884. (No model.)



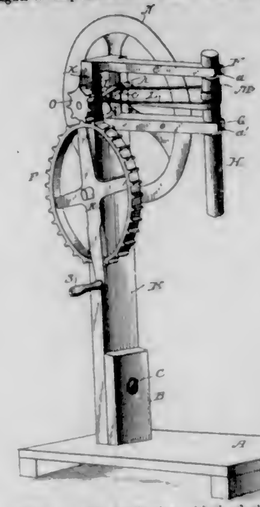
Claim.—1. The within-described improvement in treating eggs and other liquid or semi-liquid substances, which consists in forming the same into a thin film and exposing it to heat while being crushed, agitated, and desiccated, then transferring this worked material to form another film, and again similarly treating it to more thoroughly desiccate it, and finally thoroughly drying the same, as set forth.

2. In an apparatus for treating eggs and other like substances, two carriers and working appliances, and openings arranged to convey heated gases from the furnace first to the carrier on which the material is last worked, and then to the first carrier, substantially as specified.

3. The combination, in a desiccating apparatus, of two or more carriers and two or more disintegrators, and means for bringing the first carrier, after the material is sufficiently worked, in contact with and transferring it to the second, substantially as specified.

4. The combination, with the carrier B, of a disintegrating-roll, and means for revolving the latter positively in the same direction as the carrier.

294,850. MECHANICAL MOTOR. DAVID C. CAMP, Athens, Ga., assignor to Camp Brothers, same place. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination, with the double-crank shaft I, of the straps L and pulley M, as and for the purpose set forth.

2. The combination, with the upright E, having recess K and arms *e e'*, of the double-crank shaft I, strap L, and shaft H, having pulley M, as and for the purpose set forth.

3. The combination, with the standard B and bolt C, of the upright E, having slot D, recess K, and arms *e e'*, and double-crank shaft I, strap L, and vertical shaft H, having pulley M.

4. The upright E, having gear-wheel P, handle S, recess K, and arms *e e'*, in combination with double-crank shaft I, having fly-wheel N and pinion O, and the straps L and shaft H, as set forth.

294,851. TIP FOR ELECTRIC CONDUCTORS. WILLIAM A. CHILDS, Englewood, N. J., and FRANK SHAW, New York, N. Y. Filed Oct. 25, 1883. (No model.)



Claim.—1. A conducting-tip for electric conductors, made in two portions, as described, one of which constitutes the tip proper and is adapted for insertion into and removal from a binding-post, switch-socket, or such like connecting device, while the other portion is jointed to the first and receives and firmly holds the conductor.

2. A conducting-tip for electric conductors, made in two portions, as described, one of which constitutes the terminal and is adapted for insertion into and removal from a binding-post, switch-socket, or such like connecting device, while the other portion is jointed to the first and receives and firmly holds the conductor, in combination with a supplemental spring-actuated connector secured to one portion and adapted to bear on a suitable contact-surface upon the other part.

3. The combination of the tip B, adapted for insertion into a binding-post, socket, or such like connector of the conductor-holder connected by a joint with said tip, and a swivel for permitting the tip to be turned without turning the conductor, or vice versa.

4. The combination of the ferrule holding the conductor, the piece *b*, jointed to said ferrule, and the tip swiveled on the piece *b*.

5. The combination of the metallic ferrule or sleeve C for the conductor, the tip B, and a connecting-joint, as and for the purpose described.

6. The combination, with the longitudinally-perforated joint-piece *b*, of the contact-pin *c*, spring *f*, and the socketed tip B, secured to the joint-piece.

7. The combination of the longitudinally-perforated joint-piece *b*, the socketed tip B, swiveled on said joint-piece, and the contact-pin *c* and its spring, as and for the purpose described.

8. The combination, with a flexible conductor, of a terminal ferrule or holder and a jointed tip-piece adapted for insertion into a binding-post or socket, as and for the purpose described.

9. The combination of the joint-piece *b*, having the circumferential groove, the tip-piece B, and the pin *g*, as and for the purpose described.

10. The combination of the socketed tip B, the contact pin and spring in the socket, and the joint-piece *b*, having longitudinal perforation and circumferential groove, and the curved surface *d* upon the other portion of the joint, as and for the purpose described.

11. As a new article of manufacture, a tip for flexible conducting-cords, consisting of the ferrule C, to which the conductor is connected, and the tip B, adapted for insertion into a binding-post or switch-plug socket, and connected with the ferrule by a joint, as and for the purpose described.

12. As a new article of manufacture, the ferrule C and the tip B, adapted for insertion in a binding-post or socket, and having swivel-connection with the ferrule, as and for the purpose described.

13. The combination of the flexible conductor A, ferrule C, and jointed tip B, as and for the purpose described.

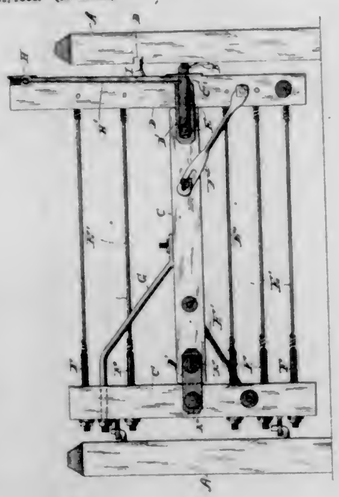
294,852. VEHICLE-BODY. HARLAN P. COLBY, Charlotte, Mich., assignor of one-half to F. L. Elma, same place. Filed Apr. 9, 1883. (No model.)



Claim.—1. In wagon-bodies, the combination of a sill having a groove and a bead forming a continuation of one of the walls of the groove, with a panel without beads near its bottom, and resting upon the bottom of the groove, substantially as described.

2. In a wagon-body, the combination of a sill having a groove and a bead forming a continuation of the wall of the groove, panel resting in said groove, a top rail resting upon the panel, an outer angle-iron having ribs resting in groove in said panel, an inner angle-iron having a rabbet for the top rail, and bolts for clamping the whole together, substantially as described.

294,853. GATE. DENNIS COLLINS, New Hampton, Iowa. Filed Sept. 21, 1883. (No model.)

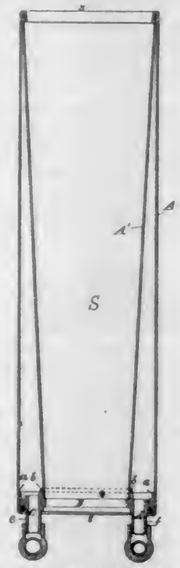


Claim.—1. In a swinging gate, the combination, with the horizontal beam having rounded ends, and the hinge and latch uprights or battens flexibly secured thereto by means of plates and bolts, of the oblique adjusting-brace secured to the horizontal beam, passing through the hinge-batten, and provided with a tightening-nut, substantially as described.

2. In a swinging gate, the combination, with the horizontal beam having rounded ends, and the hinge and latch battens flexibly secured thereto by plates and bolts, of the rods secured to the latch-batten and to the eyebolts, the latter passing through the hinge-batten and the oblique brace secured to the horizontal beam and passing through the hinge-batten, substantially as described.

3. A gate consisting of a horizontal beam, the hinge and latch battens flexibly secured thereto by plates and bolts, the rods and eyebolts connecting the battens together, the oblique slotted braces, and the oblique adjusting-brace secured to the horizontal beam and passing through a slot in the hinge batten, substantially as described.

294,854. STEAM-RADIATOR. CHESTER COMSTOCK, New Canaan, Conn. Filed May 3, 1883. (No model.)



Claim.—1. A radiator composed of one or a number of sections, each section consisting of an outer cylinder, A, and inner cylinder, A', united at one end by overlapping and soldering or in other suitable manner, in combination with the annular connecting-ring B, having flanges *a b*, whereby the lower ends of the cylinders A A' are held apart, thereby forming a steam-space between the cylinders, the sides of which are convergent, and having openings *c d*, for the admission of steam and escape of water, substantially as herein shown and described, for the purpose set forth.

2. In a radiator constructed as described, the coupling-ring B, having flanges *a b*, openings *c d*, and a stem, C, provided with branching arms E E', having passages for steam and water, substantially as herein shown and described.

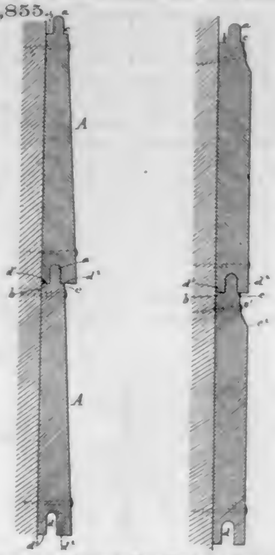
3. The combination of the cylinders A A', annular connecting-ring B, having flanges *a b*, openings *c d*, and a stem, C, provided with branching arms E E', having passages for steam and water, the passage in arm E being in line with the opening *c*, and the passage in arm E' in line with opening *d*, the whole being fitted to and supported upon a base, D substantially as and for the purpose set forth.

294,855. SIDING AND CEILING FOR BUILDINGS. GEORGE W. CRAWFORD, Davenport Centre, N. Y. Filed Dec. 17, 1883. (No model.)

Brief.—Consists of a board formed with a tongue projection on its upper edge and shoulders projecting at right angles, the inner shoulder having greater bearing-surface than the outer, said board having a groove on its lower edge, with projecting shoulders at right angles to said groove, thicker on their outer than on their inner face.

Claim.—In a siding or ceiling for buildings, a strip or board formed with a tongue projection on its upper edge, and an outer and inner shoulder projecting at right angles from the base of said tongue, the inner shoulder being wider and of greater bearing-surface than the outer, said strip having a groove on its lower edge with projecting shoulders at right angles to the groove, said shoulders being thicker on their outer face than on their inner face, substantially as and for the purpose set forth.

294,855.



294,856. INKING-PAD. CHAS. W. CRUSINGER, St. Louis, Mo. Filed June 30, 1883. (No model.)

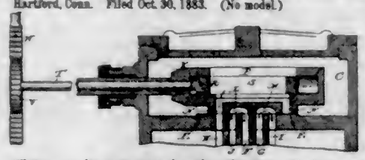


Claim.—1. In a pad, the combination of a body having a base and elastic walls forming recesses, and a porous cover to rest on the body and tops of the walls, the walls forming a firm support, as set forth.

2. A pad cast of elastic material, the said material forming an ink-chamber and supports in said chamber, as set forth.

3. The combination of elastic body, feed-mouth to receive a stopper, an ink-chamber with elastic supports being formed in the body, and a porous cover, as set forth.

294,857. CUT-OFF VALVE. ISAAC B. DAVIS and WILBUR L. SHEPARD Hartford, Conn. Filed Oct. 30, 1883. (No model.)



Claim.—1. In a compound engine, the two cylinders, each with two steam-ports, the exhaust-port, the slide-valve constructed, as described, with a steam-passage through the same from front to back, and the oscillating cut-off valve mounted lengthwise within the slide-valve, substantially as described.

2. The combination, with the slide-valve having the tubular stem or spindle and the steam-passage through its body, of the oscillating cut-off valve mounted lengthwise therein, with its spindle extended centrally through the tubular spindle.

3. In combination with the high and low pressure cylinders and the five ports opening into the steam-chest, as described, the slide-valve provided with the ports L, M, N, N', and P, and the longitudinal oscillating cut-off valve R, as described and shown.

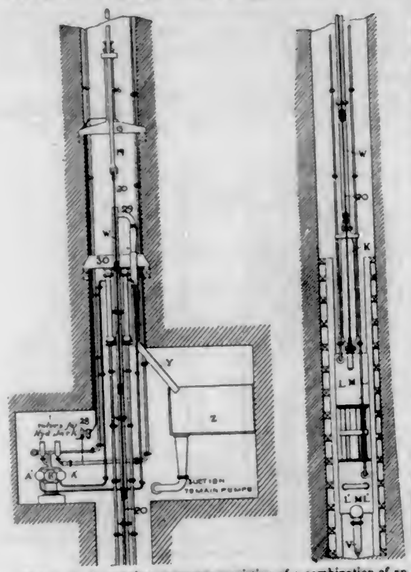
4. In combination with a slide-valve having a longitudinal slit or passage for the admission of live steam through the same from the outside, substantially as described, the oscillating valve R, mounted lengthwise therein, with a corresponding longitudinal port or slit, said oscillating valve being fixed against end motion.

294,858. PAPER WRAPPER. DUNDAS DIXE, New York, N. Y. Filed Aug. 20, 1883. (No model.)



Claim.—The described package-wrapper, provided at one end with the notches or cuts *d*, thereby forming the tongues *f*, and the edges of the border *a* being cut away at *a' a'*, as described, whereby the said wrapper is capable of being applied to a package, as specified.

294,859. APPARATUS FOR DRAINING MINES. GEO. W. DICKIE, San Francisco, Cal., assignor to the Risdon Iron and Locomotive Works, same place. Filed Dec. 23, 1882. (No model.)



Claim.—1. A pumping apparatus consisting of a combination of an actuating-engine moved by water-pressure, and having valves and valve-operating mechanism to effect a reciprocating motion therein, and a pump to which said motion is directly transmitted through pipes filled with water, as and for the purpose described.

2. In a pumping apparatus having a vertically-acting pump, the combination, with the said pump, of an actuating-engine moved by water-pressure, having separate cylinders and plungers to generate the pressure to supply each end of said pump, and in which separate cylinders different pressures may be produced to act alternately through leading pipes to effect the up-and-down stroke of the pump, substantially as and for the purpose described.

3. An actuating-engine consisting of a combination of a set of rams alternately moving backward and forward within their respective cylinders through the action of water-pressure controlled by suitable valves and valve-operating mechanism, and a second set of similar rams connected with the first set by a cross-head, which, operating in their respective cylinders, generate a power, which is transmitted through leading pipes filled with water for the purpose, substantially as herein described.

4. The pump consisting of the differential plunger, with the discharge and suction valves, all operating within suitable cylinders, in combination with side rams operated within their respective cylinders by water-pressure applied thereto, and transmitting their motion to said differential plunger by being connected therewith, substantially as herein described.

5. In combination with a pump used for sinking purposes in a mine, a hydraulic lifting-jack consisting of a ram operating in a cylinder, which ram in raising carries up with it suspensory rods, to which the pump is attached, substantially as and for the purpose herein described.

6. In combination with a pump used for sinking purposes in a mine, and a hydraulic lifting-jack operating to raise and lower the same, the suspensory rods herein described, consisting of the side straps, 19, having the slotted holes therein, with cross-key 18, rods 20, having shoulders 22, swinging rods 23, hanging from girder 15, and cross-bars 25, arranged and operated substantially as described, and for the purpose set forth.

7. As a means of raising and lowering a hydraulic sinking-pump in a mine, the combination of a lifting-jack permanently located in the shaft above said pump, and from which it is suitably suspended, and telescopic joints for the pressure-supply pipes and discharge-column, substantially as herein described.

8. In combination with a hydraulic pump operated by an actuating-engine having coincident duration of stroke, a safety device, substantially as herein described, consisting of valves, which are opened by suitable mechanism to give free communication between each end of said pump to the effect of equalizing the pressure therein to arrest further motion upon completion of the stroke.

9. In combination with a hydraulic pump, the specific combination of parts constituting the above safety device, consisting of the flat bar 12, with wedges 14 14' thereon, bell-cranks 8 8', suitably supported, twin valves 3 3' in their respective cylinders 1 1', and connecting-pipes arranged and operated substantially as herein described.

10. The air-chamber, Fig. 16, consisting of a combination, with the vertical discharge-pipe of the pump, of the envelope surrounding the same and the bowl into which the end of the discharge-pipe dips, substantially as and for the purpose described.

11. The triple valves shown in Fig. 17, consisting of a combination of the valves 33 and 34, opening and closing passages between the cylinder of the lifting-jack and the pressure and balance column, respectively, the valve 35, opening and closing a passage from the telescopic pipes, Figs. 11 and 12, to the open air, and the operating-lever 36, substantially as and for the purpose described.

12. In combination with a sinking-pump for mines, having sliding frame in which it is periodically lifted and lowered, the telescoping leading and discharge pipes and the actuating-engine, substantially as herein described.

294,860. FIRE-ESCAPE. ELAM DYE, San Francisco, Cal. Filed Apr. 2, 1883. (No model.)

Brief.—The ropes by which the sections are extended are wound upon drums provided with gear-wheels at one end. A central gear-wheel feathered on its shaft meshes with the rope-drum gears, and may be thrown out of gear with either or both, providing for extending both sides of the sections evenly. The hoist-rope drum is placed within the hollow base of the truck. The lower section is secured to the truck by links and set-screws, and by a central pivoted screw, which passes through a stationary nut in the lower section, by which the adjustment of the inclination of the structure is permitted and adjusted.

Claim.—1. The telescoping frame-sections B C D and their operating-ropes F, in combination with the winding-drums E E', one on each side, the gears G I on said drums, and the intermediate gear, J, feathered on its shaft, and the lever *l*, with its clutch *l'*, for throwing said gear out of engagement with gears G I, substantially as and for the purpose herein described.

2. The hollow base A and the telescoping frame-sections B C D, in combination with the cage M, smaller than the interior of said sections, the rope N, pulleys *w w'*, and winding-drum O, in said hollow base, substantially as and for the purpose herein described.

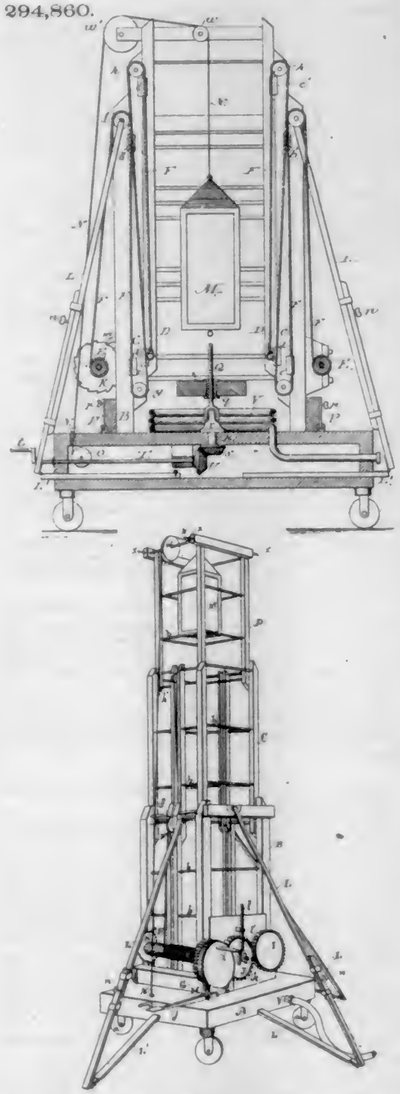
3. The hollow base A and frame-section B, in combination with the extensible braces L and strips L', hinged to their lower ends and sliding in the hollow base A, substantially as herein described.

4. The base A, telescoping frame-sections B C D, and the corner-links P, with set-screws *p*, securing section B to base A, in combination with the means for inclining said section, consisting of the pivoted screw Q, nut *q*, and means for rotating said screw, substantially as herein described.

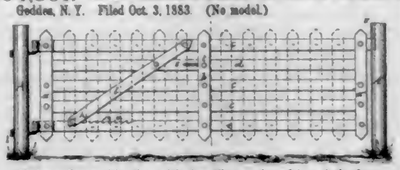
5. The hollow base A, telescoping frame-sections B C D, and the corner-links P, with set-screws *p*, securing section B to base A, in combination with the means for inclining said sections, consisting of the pivoted screw Q and nut *q*, the bearing *r*, shafts R T, pinions S U, and crank *t*, all arranged and operating substantially as herein described.

6. The hollow base A and telescoping frame-sections B C D, in combination with the hose V, lying on the base A, and having its end extending into it and through its side, substantially as herein described.

294,860.

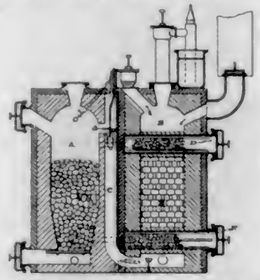


294,861. GATE. BENJAMIN N. EASTMAN and CHARLES F. FINKBEINER, Geddes, N. Y. Filed Oct. 3, 1883. (No model.)



Claim.—In combination with the stiles *a*, *a'*, and *b*, and the bars *c c*, pivoted on said stiles, the lever *d*, pivoted on the central stile, the bar *e*, provided with notches *n n*, and the brace *l*, hinged on the top bar and connected with the lever *d*, and having its lower end adapted to engage with the notches *n n*, substantially as described and shown.

294,862. HYDROCARBON-GAS GENERATOR. JOSEPH FLANNERY, Philadelphia, Pa. Filed Mar. 20, 1883. (No model.)

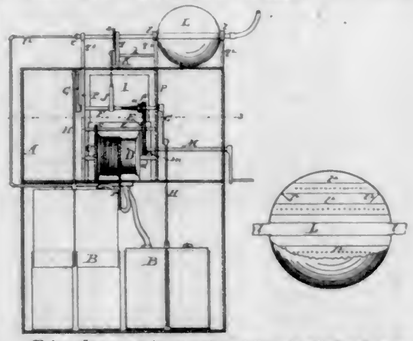


Claim.—1. In a gas-generator, the combination of the generator-chamber A, a pipe which introduces oil into the chamber, and the steam-jet pipe projecting into the gas-outlet passage, whereby the jet of steam may be introduced into the chamber at the point at which the gas makes its escape, the steam being made to form an envelope for the oil and the gas resulting therefrom, substantially as described.

2. In a gas-generator, the combination of the generating-chamber A, the chamber B, and a connecting-passage, C, with the steam-jet nozzle or injector O, placed below the opening in the generator-chamber, and which serves to exhaust the gas from the generator-chamber and drive it into the chamber B, substantially as shown.

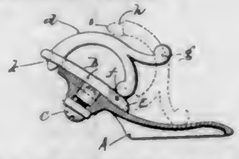
3. In a gas-furnace, the combination of the generating-chamber A, into which the oil is passed at any suitable point above the fire, the steam-pipe provided with the jet-nozzle *a* O, the passage C, and the chamber B, the jet O being made to exhaust the gas from the chamber A against jet *a*, which is passed into the chamber A at the point from which the gas escapes, whereby the gas and steam are intimately commingled, substantially as specified.

294,863. CARBURETOR. ADOLF GAIRING and HENRY LEHMANN, Cleveland, Ohio. Filed Oct. 19, 1883. (No model.)



Claim.—In a gas-carburetor substantially as described, and in combination with the segment K, link *k*, eccentric J, and the pinion *s*, the globular vessel L, having hollow journals *l*, perforated shelves *l'*, and inwardly-extending deflectors or wings *l²*, all combined and arranged to operate substantially as and for the purpose set forth.

294,864. CHECK OR WATER HOOK. THOMAS GARREN, Providence, R. I. Filed Nov. 22, 1883. (No model.)



Claim.—1. In an improved check or water hook, the hinged hook or part *d*, provided with spheroidal end *i* and groove *h*, in combination with the base or bar *a*, provided with aperture *k*, substantially as and for the purposes hereinbefore set forth.

2. As an improved article of manufacture in check or water hooks, the hook or part *d*, provided with spheroidal end *i*, groove *h*, and projection *g*, hinged to the base or bar *a*, and said spheroidal end *i*, with groove *h*, being adapted to engage aperture *k* in said base or bar *a* to form a snap-catch, substantially as shown and described.

294,865. CARTRIDGE DECAPPER, RECAPPER, AND RELOADER. FALCONER GIFFARD, Burlington, Iowa, assignor of three-fourths to Wm Penrose and Solomon McNeill, both of same place. Filed July 30, 1883. (Model.)

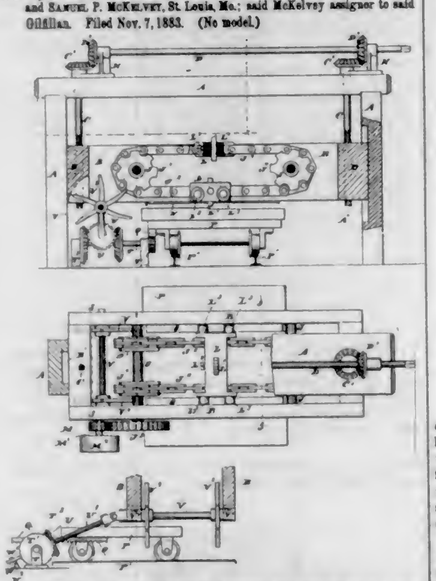


Claim.—1. The combination, in a cartridge implement, of the cartridge-chambers F G, their support A, and handles B and C, hinged thereto, the handle B having recessed chamber wherein is supported a fixed capping-anvil surrounded by a spring-actuated washer, which normally projects beyond said pin, forming a recess for the support of the primer, and the handle C provided with means for forcing the cartridge against the capping-anvil, all substantially as described.

2. The combination of the handle B, having cap-escape perforation *e*, and the handle C, both hinged to the support A of the decapping-chamber G, said chamber and the decapper M, located therein, having spring-actuated ejector-pin, all substantially as described.

3. In a cartridge implement, the combination of the handles B and C, hinged to a chamber-support, A, the handle C bearing hinged ramrod *b*, and the handle B having the capper *a*, said ramrod and capper located opposite the ends of shell-retaining chamber F in support A, all substantially as described.

294,866. STONE-DRESSING MACHINE. ESSINGTON N. GILFILLAN and SAMUEL P. MCKELVEY, St. Louis, Mo.; said McKelvey assignor to said Gilfillan. Filed Nov. 7, 1883. (No model.)



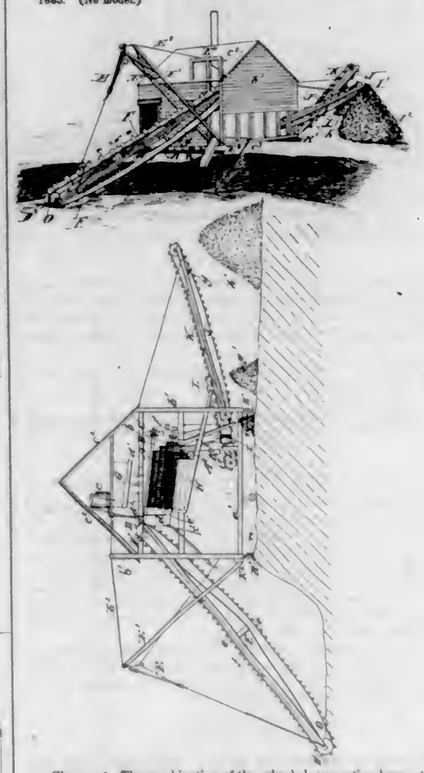
Claim.—1. In a stone-dressing machine, the combination of a main frame, a vertically-adjustable frame therein, horizontal shafts journaled in the adjustable frame, belt-wheels on said shafts, belts on said belt-wheels, cutter-heads secured to said belts, means for operating the cutter-head belts, means for raising and lowering the vertically-adjustable frame, and means for supporting the stone to be dressed.

2. In a stone-dressing machine, the combination of a frame having plates or rails secured thereto, wheels journaled in said frame, endless belts carried by said wheels, cutter-heads having friction-rollers to bear on the rails, and means for operating the belts.

3. In a stone-dressing machine, in combination with the cutter-carrying belts properly supported and the truck for supporting the stone to be dressed, suitable mechanical means whereby the movement of the belts causes the intermittent movement of the truck, substantially as and for the purpose set forth.

4. In a stone-dressing machine, the combination of the stone-supporting truck provided with a rack, a pinion secured to one end of a shaft to engage the rack, two bevel-wheels on the pinion-shaft, a bevel-wheel on a swinging shaft adapted to be engaged with either of the bevel-wheels on the pinion-shaft, two spiders arranged on a shaft connected to the swinging shaft, and endless cutter-carrying belts adapted to operate the spiders to cause an intermittent movement of the truck, for the purpose set forth.

294,867. SAND AND GRAVEL EXCAVATOR, SEPARATOR, AND ASSORTER. NICHOLAS W. GODFREY, Northport, N. Y. Filed Sept. 29, 1883. (No model.)



Claim.—1. The combination of the wheeled supporting-house, the excavating-elevator extended outward from or through one side of the house, means for raising the free end of the elevator above the beach on which the house rests, and the discharge elevator or elevators extended from the house on the opposite side from the excavating-elevator, and adapted to counterbalance the same, whereby the apparatus may be shifted laterally along the beach in working condition, substantially as shown and described.

2. The combination, with the hopper and the screens in the screening and grading apparatus, of the tank *c*, supported above the same, the sprinkler G, arranged between the tank and screens, and supplied with water from the tank, and the pipe d^2, connecting the tank with the hopper, substantially as shown and described.

3. A screening and grading apparatus having the series of discharge-spouts, and the endless carriers or elevators adapted to receive from the spouts and deliver at a distance the several grades of material coming from the screens, substantially as shown and described.

294,868. TOY DOLL. HENRY A. GOFFE, Albany, N. Y. Filed Sept. 4, 1883. (No model.)

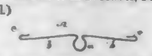
Claim.—As a new article of manufacture, a toy doll composed of a body-piece, A, of card-board or other suitable thin material, substantially

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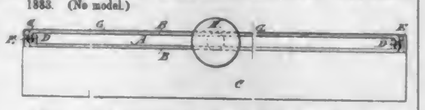
in the form shown and described, so as to expose the face and feet, having simulated apparel permanently secured thereto, and the whole permanently attached to a panel, H, as and for the purpose herein specified.

294,869. NECKTIE-FASTENER. ORIEL MUNSON GRAVES, Dayton, Wash., assignor of one-half to H. D. Graves, Portland, Oreg. Filed Oct. 6, 1883. (No model.)



Claim.—A necktie-fastener consisting of a piece of wire bent to form a central spring-loop, *a*, adapted to embrace the neck of the collar-button, and oppositely-extending arms *b*, terminating in inturned hooks *c*, for engaging with and securing the tie, substantially as herein described.

294,870. RULER. MONROE GREEN, Brooklyn, N. Y. Filed June 12, 1883. (No model.)



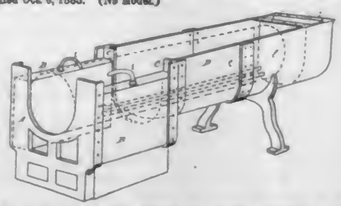
Claim.—1. The combination, with a ruler provided with a longitudinal frame forming ways, of a pen held in said ways and free to slide back and forth therein, substantially as herein shown and described.

2. The combination, with a ruler, of a longitudinal frame held on the top of the same, springs for pressing the frame upward, and a pen held to slide in the frame, substantially as herein shown and described.

3. The combination, with the ruler C, of the frame A, the springs D, for pressing the frame A upward, and of the guide-strip G, substantially as herein shown and described.

4. The combination, with the ruler C, of the frame A, held on the same, and the pen F, held between the wires or rods B of the frame, the pen being provided with recesses or notches for receiving the rods, substantially as herein shown and described.

294,871. SUPPORT FOR BOILERS. JOHN C. HAAS, Lansing, Mich. Filed Oct. 6, 1883. (No model.)



Claim.—1. A sectional support for boilers, consisting of the fire-box and combustion-chamber A, provided with side water-legs, B, and a water-leg, *a*, arranged in the rear of the boiler proper, and all detachably secured together, substantially as set forth.

2. A support or arch for boilers, consisting of the cast-iron front A, side water-walls, B, plate D, and combustion-chamber C, and provided with suitable pipes for connecting the side water-walls to the boiler, substantially as specified.

294,872. HARNESS-TUG. SAMUEL H. HAAS, Chicago, Ill., assignor to Charles J. Wright. Filed Aug. 8, 1883. (Model.)



Claim.—1. A harness-tug consisting, substantially, of a U-shaped body normally open at its top, in combination with the spring-catch, which is pivoted to the outer prong of the tug, said catch normally projecting downward into the tug and adapted to catch over the top of the thill, substantially as set forth.

2. A harness-tug consisting, substantially, of a U-shaped body normally open at its upper portion, provided with a buckle at its top and a strap-loop at its bottom, in combination with the spring-catch pivoted to the outer prong of the tug, said catch normally projecting downward into the tug and adapted to engage with the top of the thill, substantially as set forth.

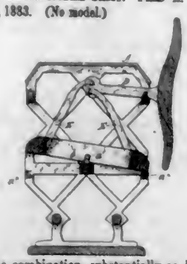
294,873. VALVE-GEAR. JAMES T. HALSEY, Richmond, Va. Filed Oct. 5, 1883. (No model.)



Claim.—1. The combination, in a valve-gear, of the eccentric, eccentric-yoke, valve-stem of the cut-off valve, valve-stem of the main valve, slide, and way for the slide, the arrangement and connection of the parts being such substantially as is set forth.

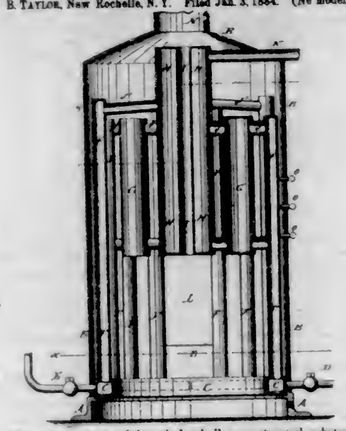
2. The combination, in a valve-gear, of the eccentric-yoke provided with a pivot, F, with the slide G.

294,874. REVERSIBLE SEAT. FRED H. HENRY, Wakefield, Mass. Filed Nov. 5, 1883. (No model.)



Claim.—The combination, substantially as before set forth, of the stands, the seat pivoted thereto, the back constructed with striker-arms, by which it is pivoted to the stands, and the suspension-rods for supporting, tilting, and locking the pivoted seat, each suspension-rod being at one end pivoted to a striker-arm, substantially as described, and at the other end to the seat.

294,875. UPRIGHT TUBULAR BOILER. RENE HENRY and HIRAM B. TAYLOR, New Rochelle, N. Y. Filed Jan. 3, 1884. (No model.)



Claim.—1. An upright tubular boiler constructed substantially as herein shown and described, and consisting of the annular tube C, the long upright tubes F, the shorter intermediate tubes, G, and central tube, H, having center flue, I, and the connecting-tubes J J', having right and left screw-threads on their ends, as set forth.

2. In an upright tubular boiler, the combination, with the outer upright tubes, of the inner upright tubes, communicating with the outer tubes at top and bottom, and the central tube, communicating with the inner tubes and with certain of the outer tubes by separate tubular connections, substantially as and for the purpose set forth.

3. In an upright tubular boiler, the combination, with the annular water-tube, of the outer upright tubes, the inner upright tubes, communicating with the inner tubes at top and bottom, and the central tube, communicating with the inner tubes and with certain of the outer tubes by separate tubular connections, substantially as and for the purpose set forth.

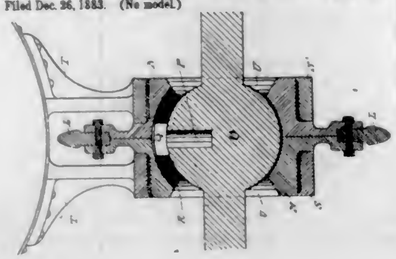
4. In an upright tubular boiler, the combination of the annular tube, the outer upright tubes, the inner upright tubes, communicating with the inner tubes and with certain of the outer tubes by separate tubular connections, and having the steam-outlet, and the central flue extending through the central tube, substantially as and for the purpose set forth.

5. In an upright tubular boiler, the combination, with the upright tubes F, the inner pipes, G, communicating at top and bottom with the pipes F, and the central tube, H, communicating with the tubes G and certain of the tubes F by separate tubular connections J J', of the annular tube C, provided with an inlet-pipe, E, and a blow-off cock, D, substantially as herein shown and described, whereby the feed-water will be distributed to all the said tubes, as set forth.

294,876. OINTMENT FOR TETTER. MANLIUS HUGGINS, Waynesborough, Miss. Filed Sept. 29, 1883. (No specimens.)

Claim.—The herein-described medical compound to be used for the cure of tetter and other cutaneous diseases, consisting of chrysophanic acid, pure glycerine, oil of sassafras, laudanum, and vaseline, in the proportions specified.

294,877. TRACTION-ENGINE. SAMUEL E. JARVIS, Lansing, Mich. Filed Dec. 26, 1883. (No model.)

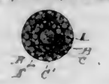


Claim.—1. In a traction-engine, the combination of the ball O, socket or two-part hub N, detachable sprocket-rim L', or its equivalent two-part box S S', provided with bracket-extensions T T', pin P, provided with bead Q, and segmental slot R, all combined and operating substantially as and for the purpose described.

2. As an improved sprocket-wheel in traction-engines, the two-part hub N, having a detachable toothed rim, as L', secured to its periphery by means substantially as set forth.

3. A sprocket-wheel made in two parts, and having a peripheral channel between the same, in which is secured a tooth-rim, substantially as described.

294,878. SHAFT FOR STEAMSHIPS. S. BRYAN JEROME, New Haven, Conn. Filed Aug. 20, 1883. (No model.)



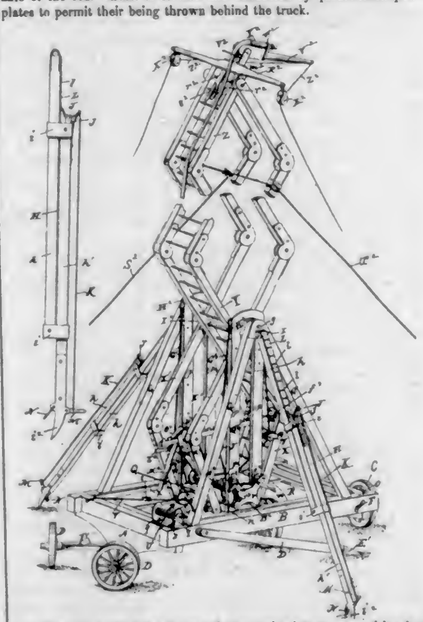
Claim.—1. A shaft composed of straight wires wrapped in spiral coils of wire having journals, substantially as herein set forth.

2. In a shaft, the combination, with a core, A, of a layer or layers of collections of straight wires placed around the core, each collection being separately wrapped in a spiral coil, substantially as herein set forth.

3. A shaft composed of a core, A, a layer or layers of collections of straight wires, each collection being wrapped in a spiral coil of wire, and a wrapping of spirally-wound wire around each layer of collections, substantially as herein set forth.

294,879. FIRE-ESCAPE. EZRA RANDALL JOHNSON, Buchanan, Mich. Filed Nov. 19, 1883. (No model.)

Brief.—A sliding table provided on its under side with runners moves in the opening of the truck-frame, and the lower arms of the lazy-tongs are secured to said sliding table, and are extended by an arrangement of ropes and pulleys. A lever pivoted to one side of the lazy-tongs engages a rack-bar secured to the opposite side for tightening the device after it is extended. Extensible racked braces support the structure laterally. A swinging arm or lever having a universal movement and carrying a hose-nozzle is carried by the top of the structure. The axle of the rear wheels is divided and connected by quadrant-shaped plates to permit their being thrown behind the truck.



Claim.—1. In a fire-escape, the extension-braces, comprising bars connected together and sliding upon each other, a catch at the upper end of one of the bars, engaging with teeth or serrations on the other, and a hand-lever pivoted at the lower end of one of the bars, and connecting with the catch for withdrawing the same from engagement, as set forth.

2. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame provided with a central opening, a table sliding in said opening and connected to the ladders, runners attached to the under side of the table, and having a cross-bar secured thereto, a projection on the under side of the frame, against which the cross-bar is arranged to abut, and means for operating the table, as and for the purpose set forth.

3. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a rack-bar attached at one end with one side of the ladders, and a lever pivoted to the opposite side of the lazy-tongs, and engaging with the rack-bar, as set forth.

4. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a rack-bar, a lever adapted to engage with the same, and a detent-bar arranged to be either lifted from the rack-bar or engaged therewith to cause the forward movement of the same, as and for the purpose set forth.

5. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a rack-bar, a lever adapted to engage the same, a detent-bar pivoted at its end to an operating-lever, and a lifting-bar attached to the side of the detent-bar, as and for the purpose set forth.

6. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame and a sliding table, a drum or windlass provided with suitable operating means, a grooved block on the sides of the ladders, and a rope or chain passing from the drum, over suitable polleys, to the grooved block, as and for the purpose set forth.

7. In a fire-escape, the ladders constructed on the lazy-tongs principle, in combination with a frame and a sliding table, a pair of bars on each side, carrying polleys at their upper ends, grooved blocks on the sides of the ladders adjacent to the polleys, a drum or windlass provided with suitable operating means, and a rope or chain connecting the drum with the polleys and grooved blocks, as and for the purpose set forth.

8. In a fire-escape, the ladders constructed substantially as explained, in combination with a frame and a sliding table, a pair of bars on each side, attached to the table and carrying polleys at their upper ends, grooved blocks on the sides of the ladders adjacent to the polleys, a rope or chain connecting with the polleys and grooved blocks, a drum or windlass to which the rope or chain is attached, a pawl and ratchet secured to the windlass or drum, and a set of gear-wheels and pinions arranged to operate the said windlass, as and for the purpose set forth.

9. In a fire-escape, the ladders constructed substantially as explained, and provided with suitable guy-lines, in combination with a frame and a table sliding in said frame, a pair of standards attached to the sides of the frame and converging toward their upper ends, a pair of bars secured at their upper ends to the said converging standards, and at their lower ends to the sliding table, polleys journaled at the upper ends of the bars, grooved blocks on the sides of the ladders adjacent to the polleys, a rope or chain connecting with the polleys and grooved blocks and attached to a drum or windlass, a pawl and ratchet secured to the latter, and mechanism for transmitting motion to the drum or windlass, as set forth.

10. In a fire-escape, a bar secured to the upper ladder, and carrying a lever having a universal movement, a hose fitted to said lever, and cords, also attached to the lever and passing through suitable polleys to the ground, as set forth.

11. In a fire-escape, a bar attached to the upper ladder, a U-shaped plate journaled in said bar, a lever pivoted in said plate, and having a hose-nozzle attached thereto, and cords connecting with said lever, and arranged to operate the same in the manner set forth.

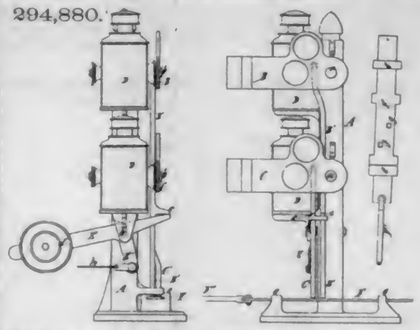
12. In a fire-escape, a bar provided with plates which hook at their upper ends over the top rung of the upper ladder, and encircle or clasp at their lower ends one of the lower rungs, a U-shaped plate journaled in said bar, a lever pivoted in the U-shaped plate, and having a hose-nozzle fitted thereto, a clamp for holding the nozzle in place, and cords connecting with the said lever, and arranged to operate the same in the manner set forth.

13. In a fire-escape, the truck having its front wheels arranged to be thrown at right angles thereto, the rear wheels being divided, as shown, and connected by quadrant-shaped plates, which permit the rear wheels to be thrown behind the frame or truck, as and for the purposes set forth.

294,880. RAILWAY-SIGNAL. HENRY JOHNSON, Eccles, County of Lancaster, England. Filed Aug. 15, 1883. (No model.)

Brief.—Each semaphore or other signal has a depending arm, whereby it is held at "danger" by a perforated sliding plate controlled by the switch-operating mechanism in such manner that "safety" cannot be displayed until the switch has first been properly set, and the sliding plate consequently shifted to bring a perforation under the proper signal-arm to permit it to come to "safety," and when the signal is so set the plate is thereby locked, and the switch cannot be changed until the signal has been again "dangered."

Claim.—1. The combination, with a semaphore-arm or other visual signal and a switch or switches, of a rod depending from the said signal,

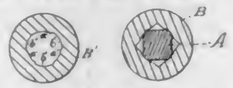


and through which it is held in the "danger" position, a stop-plate arranged below the rod and preventing the downward movement of the same when the switch or switches is or are in the "danger" position, and connections between the switch or switches and plate, so that upon the movement of the switch or switches to a "safety" position the plate will be withdrawn from beneath the rod, thus enabling the rod and its signal to descend and place the signal in the "safety" position, substantially as described.

2. The combination, with two or more semaphore-arms or other visual signals and a switch or switches controlling two or more tracks, of rods depending from the signals, devices whereby the signals and rods are held in an elevated or "danger" position, one or more stop-plates arranged below said rods, connected with the switch or switches, so as to be moved therewith, and so constructed that to whichever operative position the switch or switches may be moved the said plate or plates will be withdrawn from below one or the other of said rods, and a lever or other means for releasing said rods from the devices which hold them elevated, whereupon one rod and signal will fall to the "safety" position while the other rod or rods will be arrested by said stop plate or plates, substantially as described.

3. The combination of the post or support A, one or more signals, B or C, and a rod or rods, B' or C', the weighted lever E, and one or more stop-plates, F, all constructed and adapted for operation substantially as herein described.

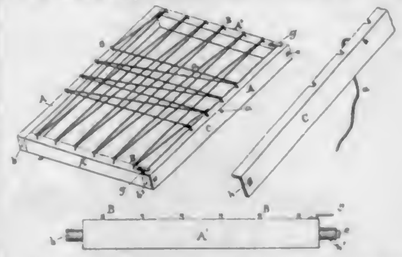
294,881. KNOB-SPINDLE ATTACHMENT. HORACE K. JONES, Hartford, assignor to the Russell & Erwin Manufacturing Company, New Britain, Conn. Filed Dec. 17, 1883. (No model.)



Claim.—A knob-spindle and socket provided each with two or more alternate concentric circular smooth holding-faces and relief-spaces, substantially as described, and for the purpose specified.

294,882. RED-SPRING FIRE-ESCAPE. MARY E. JONES, St. Paul, Minn. Filed Apr. 2, 1883. (No model.)

Brief.—The escape-rope is laced back and forth upon spring-hooks in the end and side bars, the end of the rope being fastened to a slotted metal bar forming one of the sides. By the removal of this metal bar the other bars forming the bed-bottom may be rotated, so that the rope may be removed readily.

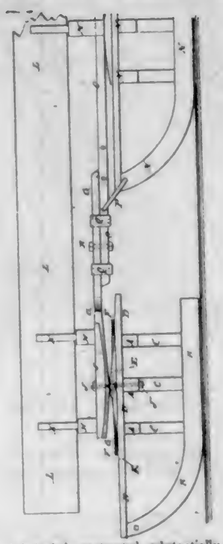


Claim.—1. The combination, in a fire-escape bed-bottom, with a frame supporting spring-hooks, and having round and square tenons on the ends of the end bars, of a slotted metal bar, whereby the end bars may be

rotated or held stationary by the removal or adjustment of said slotted metal bar, substantially as set forth and described.

2. The combination, in a fire-escape bed-bottom, of a metallic side bar, to which the suspending-cord is attached, having mortised ends, and end bars having round and square tenons and metallic springs, substantially as set forth and described.

294,883. BOB-SLED. JOSEPH HAINES KIRK, Brady, Clearfield County, assignor to himself and Miles A. Kirk, Bellefonte, Pa. Filed Jan. 11, 1884. (No model.)

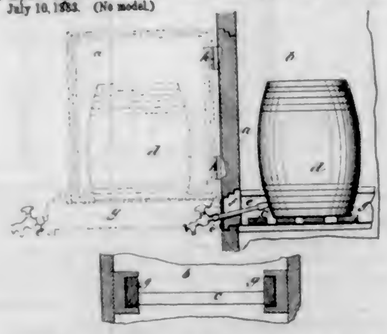


Claim.—1. A bob-sled constructed, substantially as herein shown and described, with a platform or double bolster and a jointed king-bolt, as set forth.

2. In a bob-sled, the combination, with the forward bob, A B C D, having saddle E, and the forward part, G, of the reach, of the platform or double bolster H I and the jointed king-bolt J, substantially as herein shown and described, whereby the said bob will be free to move in any direction without affecting the position of the said platform, as set forth.

3. In a bob-sled, the combination, with the forward bob, A B C D, the saddle E, the forward part, G, of the reach, and the platform H I, of the annular guard-plate F, substantially as herein shown and described, whereby the rocking and pitching of the said bob will be limited, as set forth.

294,884. BEER-COOLER. CHAS. L. KRUM, Minneapolis, Minn. Filed July 10, 1883. (No model.)



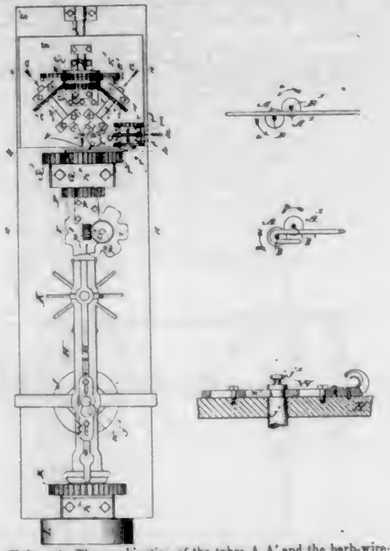
Claim.—1. The false rail or front *f*, containing a tap or faucet hole, in combination with the beer-cooler and its door *a*, to enable the door to open on its hinges, and to open and close the way for the sliding rack with the keg thereon, and having the faucet in it, substantially as described.

2. The combination of the false rail *f*, containing the tap or faucet hole or notch, with the slides *g* and rack *c*, and forming part of the same, to be drawn out with the slides, substantially as described.

3. The front rail, *f*, having the notch for the faucet *e*, notched plate *i*, and the slitted rubber packing *j*, in combination with the rack *c* and slides *g* of a beer-cooler, substantially as described.

294,885. BARB-WIRE MACHINE. GODFREY H. LASAR, St. Louis, Mo. Filed Mar. 12, 1883. (No model.)

Brief.—The main wires are fed continuously through two angularly-placed coiling-tubes mounted, with the cutters and barb-feeder, on a slide. The barb-wire is fed under one wire and over the other. One coiler begins to rotate and partially coils the free end of the barb-wire. The barb-wire is then cut. The other coiler then begins to rotate and to coil the other end of the barb. The two coilers continue rotating, each coiler completing the coiling of one end of the barb. The coiler which begins to rotate first completes its movement first. The wires are drawn forward, twisted, and spooled by the flier.



Claim.—1. The combination of the tubes A A' and the barb-wire-severing device T, and a slide, S, substantially as described.

2. The combination of the tubes A A' and a device for feeding the barb-wire across the rear ends of the tubes, and a slide, S, for the purpose described.

3. The combination, in a barbed-wire machine, of the strand-wire tubes A A' and the gears a' a^2 C C', the gear C being mounted on the hub of wheel *c*, and the gear C' being mounted on the hub of wheel *c'*, substantially as described.

4. The combination, in a barbed-wire machine, of the tubes A A', the gears a' a^2 C C' *c c'* E E', and the shafts D F, substantially as described.

5. The combination of tubes A A', arranged in different horizontal planes on a slide, S, with the shaft D, the gears C C' *c c'* on this shaft, and the gears a' a^2 on the said tubes, substantially as described.

6. The combination of the tubes A A', the gears a' a^2 C C' *c c'*, and shaft D on the broken gears E E', adjustably connected and applied on shaft F, substantially as described.

7. The combination of the tubes A A', the gears a' a^2 C C' *c c'*, the latter having broken flanges g^6, the gears E E', and the automatic locking devices G G', substantially as described.

8. The tubes A A', having slots a^1, a removable tube, a^4, projection a^5, and pins a^3 on the latter, and the nuts a^6, substantially as described.

9. The combination of the slotted and threaded tube a^6, the tube a^5, having twisting-lug a^7, and the nut a^8, as and for the purpose described.

10. The combination, in a barbed-wire machine, of a pair of strand-wire tubes, through which the strand-wires are delivered, and a device for feeding the barb-wire across the rear ends of the strand-wire tubes and severing it, as desired, into barb lengths, said strand-wire tubes being respectively provided with projections for bending the barb-wire around the strand-wires, and a supporting-slide, S, substantially as described.

11. The combination, in a barbed-wire machine, of the tubes A A', a barbed-wire feeder, a slide, S, and the flier H, substantially as described.

12. The combination, in a barbed-wire machine, of the tubes A A',

a slide, S, the flier H, and the feed device I, substantially as described.

13. The combination, in a barbed-wire machine, of the tubes A A', a feeder for the barb-wire, a slide, S, the flier H, and the spool J, substantially as described.

14. The combination, in a barbed-wire machine, of the tubes A A', the slide S, the flier H, the feed device I, the guide K, and the spool J, substantially as described.

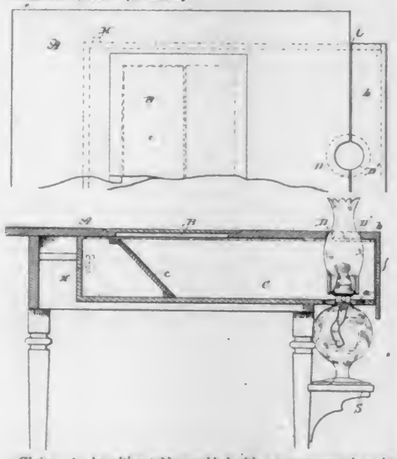
15. The combination, with the angularly-arranged tubes A A', a barb-wire-feeding device, and a slide, S, of the shaft F, the cam R, the pitman r', the spring r^3, the arm r^2, the ratchet r^1, and the feed-rollers r^{12} r^{13}, substantially as described.

16. The combination, with the angularly-arranged tubes A A', constructed as described, and mounted on a slide, S, of the shaft F, the cam *t*, the lever t^2, and the knife-slide t^1, as and for the purpose described.

17. The combination, with the tubes A A', and the slide S, of the slide t^1, the movable knife t^3, and the knife t^4, the said slide and slide-standard being cut away and perforated at t^5 t^5, substantially as described.

18. The combination of the slide S, the tubes A A', and the severing device T, the bed-plate S', the shaft F, and the cam *f*, substantially as described.

294,886. WRITING-TABLE. MARSHAL E. LENDEL, Homestead, Pa. Filed Oct. 4, 1883. (No model.)



Claim.—1. A writing-table provided with a transparent glass plate in its leaf and a drawer underneath containing a mirror, for the purpose substantially as set forth.

2. A writing-table provided with a transparent glass plate in its leaf and a drawer underneath containing a mirror that, when the drawer is drawn out to its full capacity, stands at an angle of forty-five degrees under the glass plate, substantially as described.

294,887. FIRE-ESCAPE. THEODORE P. LEFTON, Parsons, Kans., assignor to himself and Emma M. Curtis, same place. Filed July 17, 1883. (No model.)

Brief.—The lazy-tongs are extended by means of a windlass and chains which are secured to the lower bars on one side of the structure, which bars are provided with friction-rollers moving upon curved braces. The lower arms on the other side are pivoted between disks having stop-lugs above and below the pivot. The ladders are hung by the upper ends to the alternate joint-rods of the lazy-tongs arms.

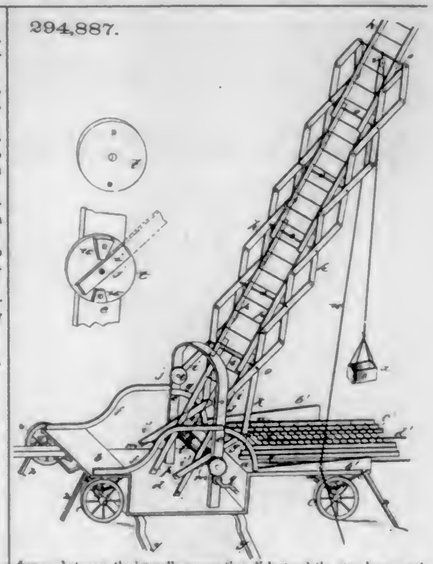
Claim.—1. In a fire-escape, the combination, with the lazy-tongs extension-frames *h*, connected together by the joint-rods *o*, the ladders *p*, hinged at their upper ends to the alternate joint-rods *o*, and overlapping and resting against each other at their lower ends, windlass *l*, and frame *e*, having the disks *t*, of the joint-bars *i*, pivoted to said disks, joint-bars i^5 *k*, cords *m*, braces *g*, and rollers *n*, riding on said braces, substantially as shown and described.

2. In a fire-escape, the combination, with the lazy-tongs extension-frames *h*, ladders *p*, jointed thereto at their upper ends, frame *e*, braces *g*, jointed bars i i^5 *k*, rollers *n*, and windlass *l*, having the ropes *m*, of a truck having a platform, *a b*, provided with side rails, *b'*, and extending over its wheels, and depressed at *d* between the wheels, and detachable braces *y*, substantially as shown and described.

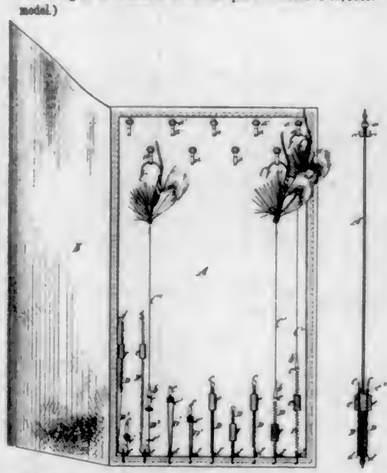
3. The combination of braces *g* and friction-rollers *n* with the joint-bars i^5 *k* of the extension-frames *h*, connected by bars *i* with the supporting-frame *e*, substantially as described.

4. The bars *i* of the extension-frames pivoted to the supporting-frame *e* between the laterally-supporting disks *t* and the stop-lugs *u*, substantially as described.

294,887.



294,888. FISHING-FLY BOOK. CHANCELLOR G. LEVISON, Brooklyn, N. Y., assignor to Thomas B. Mills, same place. Filed Dec. 20, 1883. (No model.)



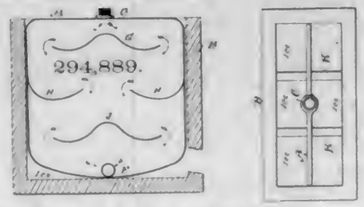
Claim.—1. The combination, with the leaf of a fly-book having hooks or clips at one end and elastic or spring retainers at the other end, of eye-guides for the several retainers, each attached to the leaf and receiving a retainer through it, substantially as herein described.

2. The combination, with the leaf, of elastic or spring retainers on opposite sides thereof, and an eye-guide consisting of a tube or ring inserted through the leaf and receiving the two said retainers through its portions which are presented on opposite sides of the leaf, substantially as herein described.

3. The combination, with the leaf A, having hooks or clips *a* at one end, of retainers, each consisting of the spring D and attached cord D^a, and a pulley, *f*, around which said cord passes, substantially as herein described.

294,889. LIQUID-COOLER. HERMAN LINDENBERG, Jersey City, N. J. Filed July 25, 1883. (No model.)

Claim.—1. A liquid-cooler made substantially as herein shown and described, and consisting of a flat sheet-metal vessel contained in a box



filled with ice, the liquid to be cooled being conducted through the said vessel, as set forth.

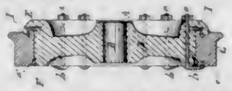
2. In a liquid-cooler, the combination, with the flat sheet-metal vessel A, of the screw-neck C, the spigot F, and the partitions G H J, substantially as herein shown and described, and for the purpose set forth.

3. In a liquid-cooler, the combination, with the vessel A, having rounded corners, of partitions G H J, the screw-neck C, and the spigot F, substantially as herein shown and described.

4. In a liquid-cooler, the combination, with the flat sheet-metal vessel A, of partitions G H J, the screw-neck C, the spigot F, and the ice-box B, substantially as herein shown and described.

5. In a liquid-cooler, the combination, with the flat sheet-metal vessel A, of the screw-neck C, the spigot F, and the ice-box B, having partitions K, substantially as herein shown and described.

294,890. CAR-WHEEL. WILLIAM I. LINDSAY, Cleveland, Ohio. Filed Dec. 1, 1882. (No model.)



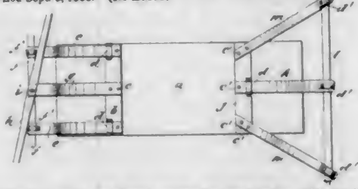
Claim.—1. The body and tire of the wheel, provided with the interlocking tongue and grooves, in combination with the bolt passing through the body, and provided with the pin for engaging the tire and with the nut for securing the parts together, substantially as and for the purpose set forth.

2. The body of the wheel, provided with the angle-iron, and with the annular tongue and groove for engaging the corresponding tongue and groove formed in the tire, in combination with the bolt and pin for engaging the body and tire, substantially as and for the purpose set forth.

3. The body and tire of the wheel, provided with the interlocked tongue and groove, in combination with the dowel-pin for engaging the adjacent faces of the body and tire, and the bolt and pin for securing the parts together, substantially as and for the purpose set forth.

4. In combination with the sections A B of the herein-described car-wheel, the dowel-pins *a'* and bolts *c* and re-enforcing angle-irons, substantially as and for the purpose set forth.

294,891. BUCKBOARD-WAGON. WILLIAM LOCKWOOD, Madrid, N. Y. Filed Sept. 8, 1883. (No model.)

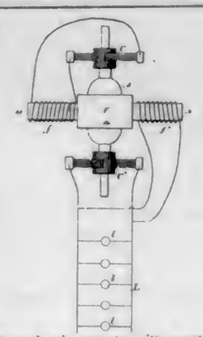


Claim.—In a buckboard-wagon, the combination, with the buckboard *a* and the front bolster, *f*, and axle A and the hind axle, *l*, of the cross-pieces *b j*, secured to the buckboard a short distance inwardly from its ends, the central springs, *g k*, one secured to the under side of the front axle, *h*, and the cross-piece *b*, and the other to the same side of the hind axle, *l*, and the cross-piece *j*, the parallel side springs, *e e*, connected to the cross-pieces *b*, and above the front axle to the bolster *f*, and the rear oblique bars or braces, *m m*, secured to the cross-piece *j* and hind axle, *l*, as shown and described, and for the purpose set forth.

294,892. DYNAMO-ELECTRIC MACHINE. CHAS. M. LUNGREN, New York, N. Y. Filed Nov. 22, 1882. Renewed Aug. 14, 1883. (No model.)

Claim.—1. The combination of two or more dynamo-electric machines with two circuits and a shunt to one of the circuits, the first of such circuits passing through one field-helix of each generator, and through one or more of the armature-helices, the second circuit passing through one or more armature-helices through the external working-circuit and a shunt through reactionary helices in the field-magnets, substantially as specified.

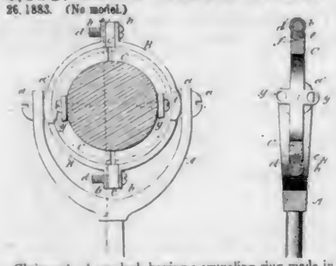
294,892.



2. In a dynamo-electric generator with an external circuit and resistances in multiple arc, two circuits, both of which pass through the field-helices differentially, and through armature-helices, one of which circuits is electrically distinct from the working-circuit, and the other of which is a shunt-circuit from the working-circuit, substantially as specified.

3. In a dynamo-electric machine, two independent circuits, one of which has a shunt circuit, the first circuit passing through an armature-helix, and through one of the field-helices, the other circuit through an armature-helix and the working-circuit, and the shunt therefrom passing through a helix of the field, so as to set up reactionary magnetism in proportion to the resistance in the working-circuit, substantially as specified.

294,893. OAR-LOCK. THOMAS MARSHALL, Ripon, Wis. Filed Dec. 26, 1883. (No model.)

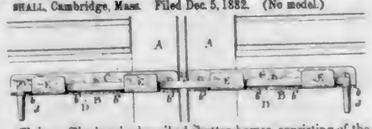


Claim.—1. A rowlock having a swiveling ring made in two parts, and provided with ears, between which are fitted elastic cushions, in combination with an oar-ring made in two parts, whereby the two segments of the latter are adapted to bear freely inside the former, and to be fastened at various points of the oar, as desired, substantially as set forth.

2. A rowlock having an oar-ring made in two parts, fitting loosely within a swiveling ring, the latter also made in two suitably-connected parts, between the points of contact of which are fitted elastic cushions, whereby the two separate segments of the oar-ring are adapted to be fastened at points of different diameters of an oar, or to oars of various sizes, substantially as set forth.

3. In a rowlock, the swiveling ring B, made in two parts, each having a shoulder, *a'*, and the ears *b*, in combination with the elastic cushions *c*, and the oar-ring C, made in two halves, substantially as shown and described, and for the purpose set forth.

294,894. SHUTTER BOWER AND FASTENER. WILLIAM P. MARSHALL, Cambridge, Mass. Filed Dec. 5, 1882. (No model.)

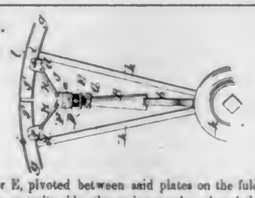


Claim.—The herein-described shutter-bower, consisting of the similar plates B B, for attachment to the shutters, each having the vertical attaching-rim C, the sockets or holes b b' b^2 b^3 and lips E E, and the loose or removable bar D, having hooked ends *d d*, to engage the said sockets or holes to hold the shutters open or closed, as set forth.

294,895. COMBINED TIRE-TIGHTENER AND JACK. RILEY MCCLOSKEY and ALBERT E. TOZIER, Walla Walla, Wash. Filed Sept. 11, 1883. (No model.)

Claim.—1. The combination, with the lifting-screw, of the fast wheels C, having reversed ratchet-teeth *c c'*, the plates D D, loose on the

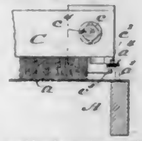
294,895.



screw, the lever E, pivoted between said plates on the fulcrum-bolt *a*, and carrying on opposite sides the spring-pawls *c c'*, and the thumb-nut G, as and for the purpose specified.

2. In a tire-tightener, the combination, with the head-block arms H, of the shoes *d*, pivoted thereto, having a slot and provided with a set-screw, as shown and described.

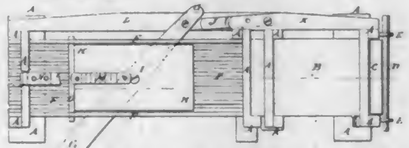
294,896. BRUSH FOR FLOUR-BOLTS. THOS. MCCUDDEN, St. Louis, Mo. Filed Nov. 12, 1883. (No model.)



Claim.—1. The combination, substantially as described, of the bolt A, having the guides a^2 a^2, the brush C, the arms *c c*, irons *c' c'*, and the chest B.

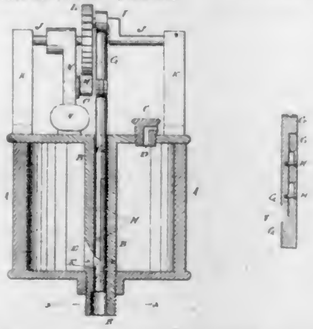
2. The combination, substantially as described, of the bolt A, having the guides a^2 a^2, the brush C, the arms *c c*, and the irons *c' c'*, provided with the lugs c^3 c^3, and the chest B.

294,897. BALING-PRESS. JOHN PERRY MCDONALD, Litchfield, Ill., assignor to himself and William H. Galloway, same place. Filed Sept. 6, 1883. (No model.)



Claim.—The follower-box F, slotted at the sides, the slotted follower H, the pivot-bolt I, passing through the center of follower, and the pivoted bar J arranged between supports K L, in combination with a lever, G, pivoted at its rear end to bar J and on the follower-bolt I, as and for the purpose specified.

294,898. VALVE-OILER. SAMUEL DAVIES MERSHON, Rahway, N. J. Filed Dec. 21, 1883. (No model.)



Claim.—1. An oiler constructed substantially as herein shown and described, and consisting of the oil-reservoir provided with a tube having an opening in one side, and a jointed discharge-rod having a recess in one side, and moved forward and back by a crank-shaft driven by a ratchet-wheel, pawl, and vibrating pendulum or lever, as set forth.

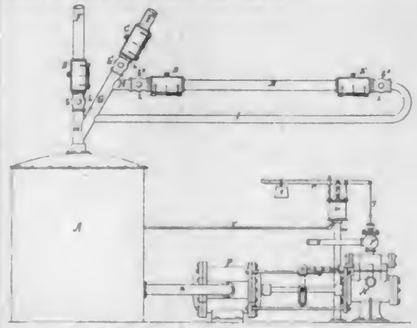
2. In an oiler, the combination, with the oil-reservoir A and the tube B, having side opening, E, of the jointed extensible sliding rod G, having oil-receiving recess F between the main part of said rod and the shoulder G' of the extensible part, whereby the size of the recess F may be regulated, and a driving mechanism, as set forth.

3. In an oiler, the combination, with the jointed oil-discharging rod G, of the crank-shaft J, the ratchet-wheel L, the weighted pawl M, and the vibrating pendulum or lever N, substantially as herein shown and described, whereby the said recessed rod will be operated at regular intervals to discharge oil, as set forth.

4. In an oiler, the oil-discharging rod G, made, substantially as herein shown and described, in two parts, halved to each other, connected adjustably by screws, and having a recess, F, between the end of one part and the shoulder of the other part, whereby the size of the said recess can be readily regulated, as set forth.

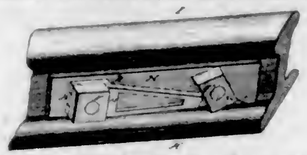
294,899. PNEUMATIC DISPATCH APPARATUS OR MECHANISM. GEORGE MILES, Wellesley Hills, Mass. Filed Sept. 25, 1882. (No model.)

Brief.—The valve of the steam-pump of an air-reservoir in a pneumatic dispatch apparatus is governed through a weighted valve mechanism operated by the pressure in said reservoir.



Claim.—The combination of the regulator or engine-starter, substantially as set forth, with the steam-engine, air-pump, air-reservoir, and one or more pneumatic dispatch-transmitting circuits, as described, all being adapted and to operate essentially as set forth.

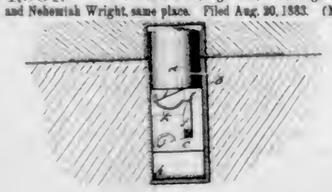
294,900. NUT-LOCK. WILLIS L. MOORE, Rochester, Minn., assignor of one-half to John T. La Du, same place. Filed Dec. 6, 1883. (No model.)



Claim.—1. In a nut-lock, a rigid non-elastic locking-plate provided with slot, jaws, and shoulder at one end, the jaws being adapted to pass beneath the nut and on either side of the nut-carrying bolt, the shoulder being adapted to fit against and engage the nut, and at the other extremity being adapted to partially pass by and lie against and hold in position a second nut at an adjusted distance from the first nut, thereby locking both said nuts, said locking-plate being capable of being removed and reapplied, either in the same place or elsewhere, without change or injury to its form or structure, substantially as and for the purpose set forth.

2. The non-elastic locking-plate A, having a slot, B, and jaws C, adapted to pass beneath the nut F and on either side of the bolt which carries nut F, the shoulder D, adapted to fit against and engage the nut F, and the end E, in combination with the nuts F and G, the fish-plate H, and the rail I, with its lower flange, K, all substantially as and for the purpose specified.

294,901. LOCK. DAVID MORER, Log Cabin, Ohio, assignor to himself and Nehemiah Wright, same place. Filed Aug. 20, 1883. (Model.)

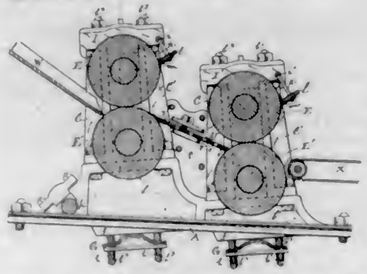


Claim.—1. The combination, with the bolt *a* and case *b*, constructed to fit each other for guiding and supporting the bolt by the case only, of the wiper-stand A, embracing the section *c* of the bolt, having less thickness than the rest of the bolt, and the wiper *f*, supported in said stand and working in the notch *e* of the said section *c* of the bolt, substantially as described.

2. The combination, with the bolt *a*, having notched section *c* and undercut ledge *l*, of the wiper *f* and a spring, *k*, said spring being arranged to retain the wiper under or in contact with the said ledge, substantially as described.

3. The combination of notched section *c* of the bolt *a*, wiper *f*, and a spring, *k*, at each end of the notch, to retain the wiper in its positions, substantially as described.

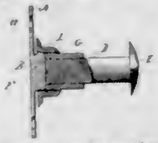
294,902. CANE-MILL. DENIS A. MCLLANE, New Orleans, La. Filed Dec. 5, 1883. (No model.)



Claim.—1. The combination, in a cane-mill, of two sets of rollers, the first set being arranged at a greater height than its second set, with an intermediate longitudinally corrugated or ribbed slide, the channels of which are provided with perforations, substantially as and for the purpose set forth.

2. The combination, in a cane-mill, of a bed-plate provided with inclined planes *f* and inclined housing-bearings, as described, the housing-standards C C', caps I I', bolts b^3 b^3, and springs G, substantially as and for the purpose specified.

294,903. VEHICLE TOP-PROP. EDWARD NICHOLAS PELKER, Ionia, Mich. Filed Jan. 4, 1884. (No model.)



Claim.—1. In a vehicle top-prop, the combination, with the bed or base plate, of a post or stem having a head formed integral therewith at one end, a sleeve or collar encircling the inner end of the stem, and a clamping-cap securing the parts together, as set forth.

2. In a top-prop, the combination, with the bed or base plate having a slot, of a post or stem having its inner end entering the slot of the base-plate, a sleeve or collar, and a clamping-cap, as set forth.

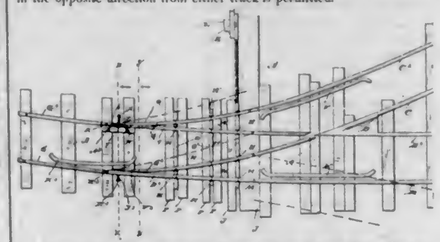
3. In a top-prop, the combination, with the base-plate having a wall projecting therefrom, and a slot in said wall, of a post or stem, a sleeve or collar fitting around the said post or stem, and a clamping-cap working over the said sleeve or collar, the inner end of the stem and collar fitting within the slot in the wall, as set forth.

4. In a top-prop, the combination, with the base-plate having a wall projecting outwardly therefrom, and a slot in said wall, of a post or stem, a sleeve or collar having projections fitting around the inner end of the post, said projections having screw-threads formed on their exterior faces, and a clamping-cap fitting over the collar and engaging with the screw-threads, as set forth.

5. In a top-prop, the combination, with the base-plate A, having wall B, provided with dovetailed slot C, of the post or stem having its end F dovetailed, a sleeve or collar, G, having dovetailed projections H H, and a clamping-cap, as set forth.

294,904. RAILWAY-SWITCH. WILLIAM W. PENNELL, Nashville, Ohio. Filed July 23, 1883. (No model.)

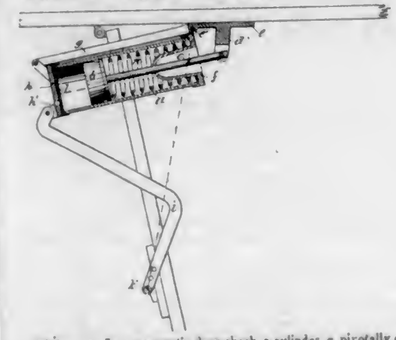
Brief.—The two point or inner rails of the main and siding switch-sections are secured to outer pivoted rails of said sections, the siding-point being secured by a spring-bolt to yield to the wheel-flange. The other point is formed with a groove for wheel-flange and bolted to a correspondingly-grooved block, the adjacent pivoted rail being cut away to receive the tapered end of the grooved point-rail. The vibrating ends of the switch-rails rest in beveled seats in shifting blocks, one of which is connected with an operating-lever. In the normal position of the tracks the main is closed to trains facing the points, while movement in the opposite direction from either track is permitted.



Claim.—1. The combination of the main track and sidings, the continuation of the main track, the rails Q and D^2 of the switch, pivoted at their ends adjoining the continuation of the main track, the rail U, having one end connected to the rail Q and cut down at W, the block or plate A^3, having the groove C^3, the rail G^3, connected to the pivoted end of rail D^2 by spring mechanism, and the sliding blocks or chairs for carrying the rails of the switch and retaining them in position, substantially as and for the purpose set forth.

2. The combination, with the main track and sidings, of the switch, comprising the rail Q, pivoted at R, and formed with the beveled notch S, the rail U, tapered at its end V to correspond to said notch S, and having this tapered end cut down at W, devices securing these rails together, the rail D^2, pivoted at E^2, the rail G^3, having the beveled end F^3, the spring-actuated bolt H^3, for securing these rails together, the plate A^3, having the groove C^3, and the sliding blocks having the recesses that receive the ends of the rails of the switch to operate and retain the same in position, substantially as and for the purpose set forth.

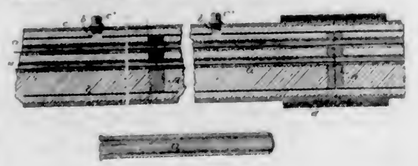
294,905. PNEUMATIC DOOR-CHECK. GUSTAVUS S. PERKINS, Hartford, Conn. Filed Aug. 21, 1882. (No model.)



Claim.—1. In a pneumatic door-check, a cylinder, *a*, pivotally connected to guide-rods *g*, lever *i*, and bracket *k*, in combination with piston *b*, spring *n*, and rod *c*, pivoted to stand *e*, whereby the cylinder is reciprocated on the piston in opening and closing the door, all substantially as described, and for the purpose set forth.

2. In a pneumatic door-check, the combination of the cylinder *a*, having recessed head *f* and cap *h*, with vent h^3 and adjustable thumb-nut *m*, piston *b*, rod *c*, plate *e*, having standard *d*, guide-rods *g*, lever *i*, and bracket *k*, all substantially as described.

294,906. UNDERGROUND ELECTRIC-CONDUCTOR SYSTEM. THOMAS J. PERRIN, New York, N. Y., assignor to Charles P. Huntington, same place. Filed Aug. 31, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of a series of short flexibly-connected multitubular conduit-sections and the enveloping-pipe, which form a street-section.

2. The combination, substantially as set forth, of the short wire-containing tubes, the sustaining or coupling disks or end pieces, the enveloping flexible sheath, and enveloping-pipe.

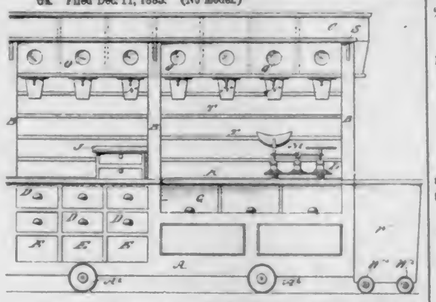
3. The combination, substantially as set forth, of the several series of short wire-containing tubes, the bores of which are flared or enlarged at the ends, the end pieces or disks in which the tubes are carried end to end, and the outside pipe.

4. The combination, substantially as set forth, of the several series of short wire-containing tubes, the end pieces or disks in which the tubes are inserted, the flexible enveloping-sheath, the outside pipe, and an insulating compound which fills the flexible sheath and the space between the sheath and outside pipe.

5. The combination, substantially as set forth, of the outer box or casing of the test-box, the inner box, the intermediate water-proof composition, the water-proof washer or cover, and the flanged cap or top.

6. The combination of two or more multitubular street-sections, the wire-containing tubes in each street-section being made up of a series of short tubes, devices for supporting said short tubes in proper relation to each other within the outer pipe of the street-section, means for supporting such wire-containing tubes at the end of each street-section in proper relative position to coincide with the wire-containing tubes of the adjoining sections, and couplings for connecting the street-sections.

294,907. PORTABLE COUNTER. JOHN THOMAS PERRY, La Grange, Ga. Filed Dec. 11, 1883. (No model.)



Claim.—1. A counter provided with tracks on which a scale provided with wheels can run, substantially as herein shown and described.

2. The combination, with a counter, of a series of hoppers held above the same, and of a traveling scale on the counter, below the hoppers, substantially as herein shown and described.

3. A counter constructed with a series of hoppers held above the same, substantially as herein shown and described.

4. A counter provided with standards B, between the upper ends of which a series of hoppers are held, substantially as herein shown and described.

5. A counter provided with a series of hoppers held above the same, each of which hoppers is provided with a bottom opening and a sliding gate for closing the said opening, substantially as herein shown and described.

6. A counter provided with a series of hoppers held above the same, the spouts N, projecting downward from the bottom of the hoppers, the sliding gates O, and the bent rods P, secured to the gates, substantially as herein shown and described.

7. The combination, with a counter, of the hoppers C, each having an opening, *c*, in its bottom, the funnel-shaped spout N on the under side of each hopper, the sliding gate O, the grooved cleats *O'*, and the bent rod P, secured to the bottom of the gate, substantially as herein shown and described.

8. A counter provided with a series of hoppers having openings in their fronts, substantially as herein shown and described.

9. A counter provided with a series of hoppers having openings in their fronts and discharge-openings in their bottoms, the said discharge-openings to be provided with sliding gates, substantially as herein shown and described.

10. The combination, with a counter, of the standards B, the hoppers C, held between the upper ends of the same, and of a shelf, S, in front of the hoppers, substantially as herein shown and described.

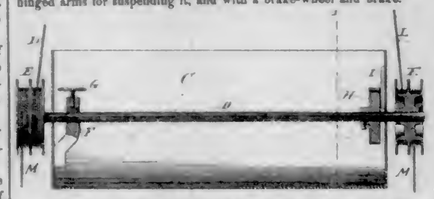
11. The combination, with a counter, of the standards B, the shelves T, held between the standards, and of hoppers C, held between the upper ends of the standards, substantially as herein shown and described.

12. The combination, with the counter A, mounted on wheels, of the box W, connected with the counter, and also mounted on wheels, substantially as herein shown and described.

13. A counter provided with bins F, having quadrant covers, and with drawers D and a desk, J, substantially as herein shown and described.

294,908. FIRE-ESCAPE. EDUARD A. C. PETERSEN, Chicago, Ill. Filed Nov. 5, 1883. (No model.)

Brief.—The shaft mounted in the car is provided with double drums for the hoist and lowering ropes, and the car is provided with hinged arms for suspending it, and with a brake-wheel and brake.



Claim.—1. The combination of car C, shaft D, mounted therein, double drums E, keyed to said shaft, ropes M M L, pulleys *b*, and arms K, hinged to car C, the parts arranged as and for the purpose set forth.

2. The combination of car C, shaft D, mounted therein, wheel H, spring J, lever I, double drums E, keyed to shaft D, ropes M M L, pulleys *b*, and arms K, hinged to car C, the parts arranged as and for the purpose set forth.

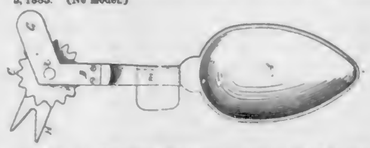
294,909. LACE-FASTENING. HENRY H. PORTER, Littleton, N. H. Filed Aug. 2, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 275,942, dated April 17, 1883.



Claim.—A lace-fastener constructed substantially as herein shown and described, and consisting of an eyelet provided with two parallel transverse bars, one above the other, as set forth.

294,910. SPOON. WILLIAM PRADDEY, Lawrence, Mass. Filed Oct. 5, 1883. (No model.)



Claim.—1. The spoon, substantially such as described, combined with the blade J, arranged substantially as and for the purpose set forth.

2. The spoon, substantially such as described, having the blade G, arranged substantially as and for the purpose specified.

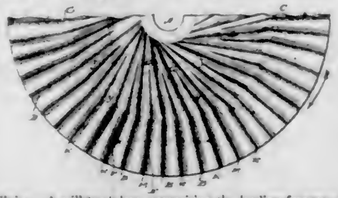
3. The spoon, substantially such as described, combined with the fork H, arranged substantially as and for the purpose set forth.

4. In a spoon substantially such as described, the wheel C, journaled in the outer end of the handle B, in combination with the fork H, substantially as specified.

5. In a spoon substantially such as described, the wheel C, journaled in the outer end of the handle B, in combination with the fork H and block G, substantially as set forth.

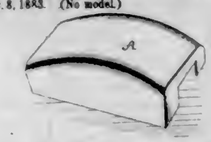
6. The improved pie-spoon herein described, the same consisting of the bowl A, handle B, knife J, wheel C, blade G, and fork H, constructed, combined, and arranged to operate substantially as specified.

294,911. MILLSTONE-DRESS. GEORGE WASHINGTON PRIOR, Booger's Store, Mo. Filed Aug. 22, 1883. (No model.)



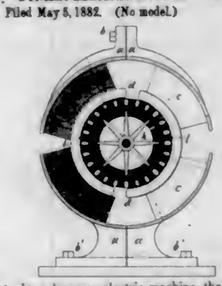
Claim.—A millstone-dress comprising the leading furrows, extending from the center or eye of the stone for about two-thirds of the distance to the edge of the stone, being drafted or carried tangentially to this point, and then carried out to the edge of the stone radially in relation to the eye of the stone, the short furrows between the leading furrows, carried from the edge of the stone inward for a suitable distance, and the lands, rounded or convexed for some distance from the eye or center of the stone, and having each side or etch of their flat outer portions also rounded, substantially as set forth.

294,912. CARRIAGE-TOP. THEODORE J. REED, Leavenworth, Kans. Filed Aug. 8, 1883. (No model.)



Claim.—As an improved article of manufacture, a seamless buggy or like top, having integral sides and back, and molded into shape from a single piece leather blank, or blank of equivalent material, substantially as set forth.

294,913. DYNAMO-ELECTRIC MACHINE. CHARLES RICHTER, Camden, N. J. Filed May 5, 1882. (No model.)

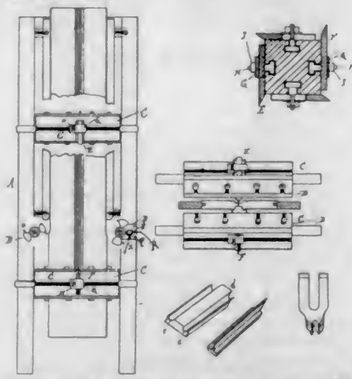


Claim.—1. In a dynamo-electric machine, the stationary magnets consisting of two sides, each in a single piece, constructed with slots c^3, to admit air, and provided with flanges *c*, upon which helices are wound, substantially as set forth.

2. In a dynamo-electric machine, the stationary magnets consisting of two concavo-convex sides provided with inwardly-extending flanges *c*, upon which helices are wound, and polar extensions *d*, each of said polar extensions being attached to two of the flanges *c*, substantially as set forth.

3. In the armature of a dynamo-machine, the consecutive series of concentric iron-wire rings placed upon the periphery of the core, these rings having radial projections, leaving intervening channels for the reception of the inducing-coils, as shown and described.

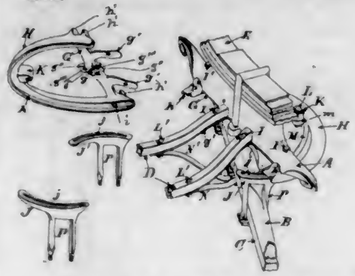
294,914. PLANING-MACHINE. JAMES A. ROBERTS, Detroit, Mich., assignor of one-half to Wm. M. Dwight, same place. Filed Dec. 19, 1883. (No model.)



Claim.—1. In a tongue-and-grooving machine for making two strips simultaneously from one piece of board, an upper and lower cutter-head, each provided with two planer-knives upon opposite faces, and a set of beading and dividing tools adjustably secured upon the intermediate faces, in combination with two-edged grooving-tools and adjustable edge-guides, substantially as described.

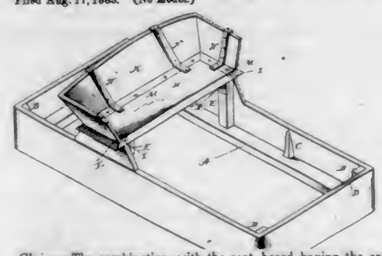
2. In a planing-machine for making two strips of ceiling or flooring simultaneously from one board, a head provided with a set of planer-knives and a set of beading-tools, said beading-tools being adjustably secured to said head, in combination with a fixed and an adjustable side grooving-tool, whereby the machine is adapted to boards of different widths, and the bead can be formed at any desired point on said board, as and for the purpose herein described.

294,915. FIFTH-WHEEL. MICHAEL J. ROGERS, Cincinnati, Ohio, assignor to Thomas T. Haydock, same place. Filed Sept. 6, 1883. (No model.)



Claim.—The article of manufacture herein described, which consists in an upper member for fifth-wheels, having its semi-annular bar H formed in one piece with its cross-bar G, the annular bar having a downwardly-projecting peripheral lip, a brace-bolt lug, K, projections *A'*, to receive a head-block, and head-block bolt-holes *i* between the projections, and the cross-bar being located parallel with and beneath the head-block, and having rearwardly-extending tongues *g'*, formed with perch-bolt holes, the central king-bolt-head socket, *g*, king-bolt hole g^x, and lugs g''', having holes g''', to receive the ends of the spring-clip, as set forth.

294,916. CARRIAGE-SEAT. GEORGE ALONZO SEARS, Syracuse, N. Y. Filed Aug. 17, 1883. (No model.)



Claim.—The combination, with the seat-board having the seat J extending from its edges inwardly and terminating in the abrupt shoulder I, of the paper-board back or side flange, having the integral inwardly-projecting bottom flange, which is secured to the seat J, with its edge abutting against the shoulder I, whereby said edge is protected from fraying, substantially as set forth.

294,917. MECHANISM FOR OPERATING DOORS OF BUILDINGS. HARLIN J. SHAW, Somerville, Mass. Filed Jan. 14, 1884. (No model.)

Brief.—Spring-opened doors released by wheel of engine or truck actuating bolt-releasing mechanism, the doors being closed through the action of a weight, which is elevated, and a clutch shifted through pulley and rope attachments actuated by the truck or engine upon leaving.

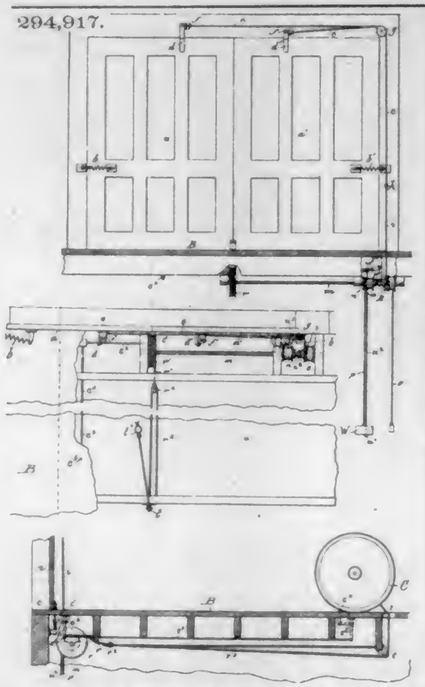
Claim.—1. The combination of the door of a building with actuating mechanism operated by the vehicle leaving the building, whereby the said door is automatically closed after the vehicle has passed out, substantially as described.

2. The combination of the door of a building and a spring or equivalent tending to open it with a door-holding device and actuating mechanism therefor controlled by the vehicle, substantially as described.

3. The door and cord connected therewith and winding-drum for the said cord, combined with an actuating-weight and winding device therefor operated by the vehicle leaving the building, substantially as described.

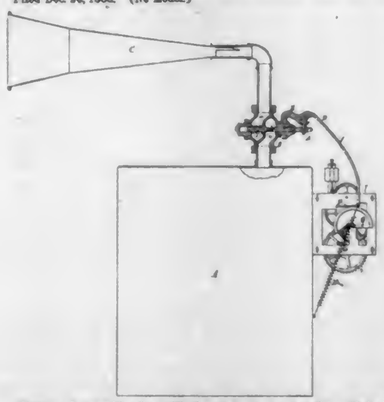
4. The door and actuating-weight for closing it, combined with the winding device for said weight and clutch, whereby it is engaged with and disengaged from the door, substantially as described.

294,917.



5. The door and actuating-weight therefor, combined with the winding-cord for said weight, provided with a spring-clamp for engaging a vehicle, substantially as described.

294,918. FOG-ALARM. ALANSON HENDLY SHERMAN, Somerville, Mass. Filed Dec. 26, 1883. (No model.)

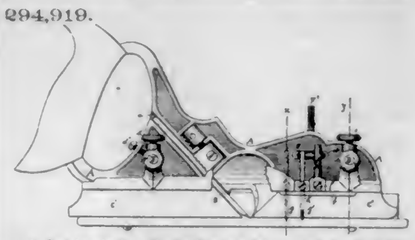


Claim.—In combination with the steam-generator, the self-closing cock, and the horn arranged as described, the cock-valve-spindle-operating lever, its foot and actuating-spring, the rotary cam, and the clock-movement for revolving such cam, all being adapted substantially and to operate as set forth.

294,919. BENCH-PLANE. JACOB SIDDLEY, Wilkes-Barre, Pa. Filed July 6, 1883. (No model.)

Claim.—1. In a bench-plane, the combination of the fixed and adjustable blades C C', each having a laterally-inclined perforation, with advance cutters *g g'* and clamp-screws *h h'*, the advance cutters projecting at their lower ends slightly beyond the outer side plane of the blades C C', substantially as set forth.

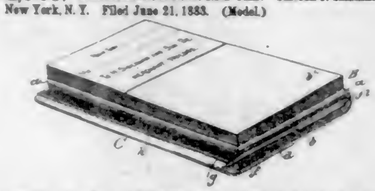
294,919.



2. In a bench-plane, the combination of the stock A, having a horizontal slot, a^2, at its front part, a stop-gage, F^2, the threaded shank of which is guided in holes of the stock, and a screw-nut, F, the rim of which is engaged by the slot a^2, so that the screw-nut F raises or lowers the stop-gage on being turned in one or the opposite direction, substantially as described.

3. In a bench-plane, the combination of the stock A, having a horizontal slot at its front part, a stop-gage, F^2, the threaded shank of which is guided in holes of the stock, an adjusting screw-nut, F, the rim of which is engaged by the slot a^2, and a gage or fence, E, having a side recess, *i*, for the stop-gage F^2, substantially as set forth.

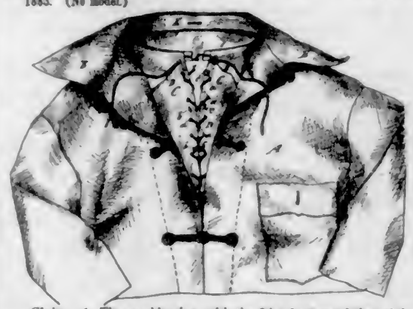
294,920. MEMORANDUM-BOOK AND PAD. SAMUEL J. SILBERMAN, New York, N. Y. Filed June 21, 1883. (Model.)



Claim.—1. The combination, with a memorandum-book, of the heavy-paper flap *d*, rivets or eyelets *d' d'*, a leaf, *f*, wider than the book-leaves, and the frame *g*, carrying a carbon-sheet, as described.

2. The book A, having pad B attached to one of its covers, in combination with the carbon-paper attachment C, attached to the other cover, substantially as described.

294,921. SHIRT. JULIUS SIMON, New York, N. Y. Filed Aug. 21, 1883. (No model.)



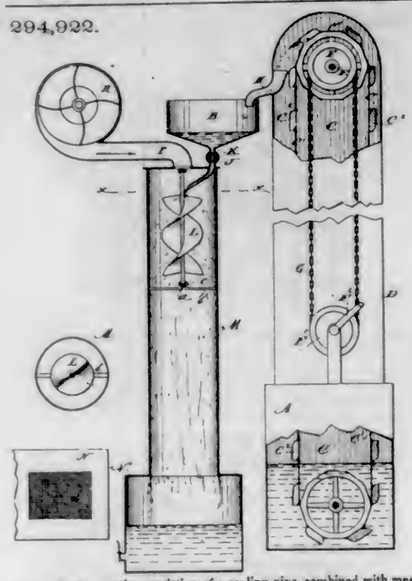
Claim.—1. The combination, with the false front consisting of the portions C C, provided with eyelet-holes or eyelets, of a lacing the two portions of which are separately laced through the eyelets in the two edges of the false front without connecting them, and means, substantially such as described, independent of the lacing, for connecting the two portions of the false front.

2. The combination, with a shirt or analogous garment provided with a collar, B, of the neckband E, attached to the shirt within the collar, and adapted to be turned inward and downward when not desired for use, or to be turned upward when it is desired to attach a linen collar to it, substantially as herein described, whereby provision is afforded for attaching a linen collar to the said neckband, while the collar B remains in its normal position on the outside of the shirt, in which position it will be covered and concealed by the vest of the wearer.

294,922. COLD-AIR-BLAST CENTRIFUGAL SIRUP-COOLER. ALBERT B. SMITH, Fairfield, Nebr. Filed Nov. 23, 1883. (No model.)

Claim.—1. The method of cooling sirup by subjecting it in a comminuted state to a current of cold air, substantially as specified.

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2. A sirup-cooler consisting of a cooling-pipe, combined with means for spreading the sirup on the inner surface of the said pipe, and means for conducting air through the pipe, substantially as herein shown and described.

3. In a sirup-cooler, the combination, with a cooling-pipe, of a revolving distributer for distributing the sirup on the inner surface of the tube, and means for forcing or conducting air through the cooling-tube, substantially as herein shown and described.

4. In a sirup-cooler, the combination, with a cooling-tube, of an air-forcing apparatus, and a revolving sirup-distributer operated by the current of air entering the cooling-tube, substantially as herein shown and described.

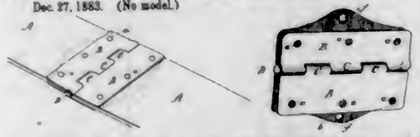
5. In a sirup-cooler the combination, with a cooling-tube, of a sirup-elevator, a revolving sirup-distributer within the cooling-tube, and of an air-forcing apparatus, substantially as herein shown and described.

6. In a sirup-cooler, the combination, with the cooling-tube M, of a revolving distributer in the same, and air-forcing apparatus, a regulating-tank, B, and means for raising the hot sirup into the regulating-tank, substantially as herein shown and described.

7. In a sirup-cooler, the combination, with the cooling-tube M, of the revolving-distributer L, the blower R, the regulating-tank B, the elevator C, and the hot-sirup tank A, substantially as herein shown and described.

8. In a sirup-cooler, the combination, with a cooling-pipe, of a sirup-distributer formed of a shaft on which spiral wings or blades are mounted, and of means for forcing air into the cooling-pipe, substantially as herein shown and described.

294,923. BELT-HINGE. EUGENE SMITH, San Francisco, Cal. Filed Dec. 27, 1883. (No model.)

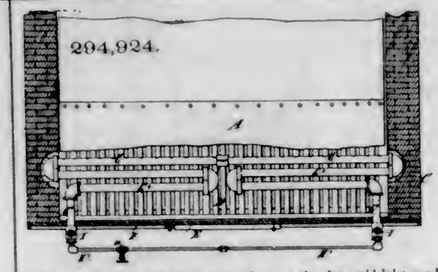


Claim.—The plates B B, having their bent edges C C cut out like a hinge, so as to fit together, and provided with the rivet-holes *a*, and extensions *b*, having the rivet-holes *f*, in combination with the pin D, substantially as and for the purpose herein described.

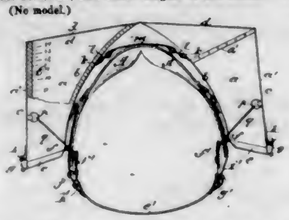
294,924. FURNACE FOR STEAM-BOILERS. JOHN B SMITH and CHARLES A. PEISSLER, Newark, N. J., and EDWARD FOX, Brooklyn, N. Y., assignors to themselves, and ANDREW ALBRIGHT, Newark, N. J. Filed Mar. 14, 1883. (No model.)

Claim.—The combination and arrangement, substantially as shown and described, with a furnace, of a perforated distributing-pipe, G, the inlets G', the steam-pipes and the air-pipes opening into said inlets, and the heating-coils G^2, interposed within the furnace between the inlets and the distributing-pipe, for the purpose specified.

294,924.



294,925. PACK-SADDLE. WILLIAM C. SMITH and WILLIAM L. HUNTER, Lone Pine, Cal.; said Smith assignor to said Hunter. Filed June 22, 1883. (No model.)



Claim.—1. The improved pack-boxes *a*, constructed substantially in the described form, with curved inner sides, *b*, and having open tops *d* and hinged bottoms *a*, and being adapted to be connected together and attached to a pack-saddle, substantially as described.

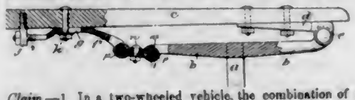
2. The improved pack-boxes *a*, suitably connected, and having curved sides *b*, to fit the sides of the pack-saddle, and provided with attaching-strap *k* and rings *l*, for connection by the strap *m* over the pack-saddle, substantially as described.

3. The improved pack-boxes *a*, having curved sides *b*, upper connections, *k l m*, attaching-rings *p*, and cords *q*, in combination with the pack-saddle A, substantially as described.

4. Improved pack-boxes, each provided with a filling-opening in its top, a discharge-opening at its bottom, a device for closing said discharge-opening, and means for connecting two together and attaching them to a pack-saddle, substantially as herein shown and described.

5. The combination, with the pack-saddle A, the pack-boxes *a*, and the lashing-cords, of the girth *d'*, provided with the loops *f'*, the ring *g'*, and the hook *j''*, substantially as herein shown and described.

294,926. TWO-WHEELED VEHICLE. NAHUM STARKEY and GEORGE W. CROWTHER, Amesbury, Mass. Filed Jan. 14, 1884. (No model.)



Claim.—1. In a two-wheeled vehicle, the combination of axle *a*, formed or provided with arms *b*, shaft *c*, plate *d*, secured to the shaft and pivotally connected with the rear arm *b*, and plate *f*, also secured to the shaft and connected with front arm *b* by a link, *k*, all substantially as specified.

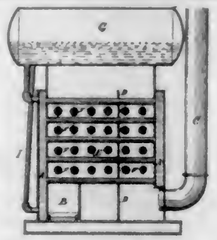
2. In combination with axle *a*, having arms *b*, shaft *c*, pivotally connected with the rear arm, and also connected by a link with the front arm, and provided with means for adjusting the tension of said link, substantially as specified.

3. In a two-wheeled vehicle, the combination of axle *a*, having arms *b*, shaft *c*, pivotally connected with the rear arm, and a leather or other flexible link uniting said shaft with front arm, substantially as specified.

4. In a two-wheeled vehicle, the combination of axle *a*, having arms *b*, shaft *c*, eye-plate *d*, secured to the shaft and pivotally connected with rear arm *b*, plate *f*, secured to the shaft and connected by link *k* with the front axle-arm, and formed with slot *g*, to receive bolt *h*, and also formed with the rounded and threaded part *i*, extended through stud *j*, and provided with an adjusting-nut, all substantially as specified.

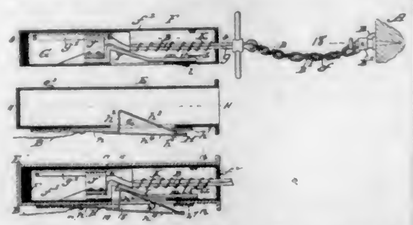
294,927. STEAM-BOILER. JOS. STEVENS, San Francisco, Cal. Filed Dec. 7, 1883. (No model.)

294,927.



Claim.—In a steam-boiler, the rectangular water-legs, with the horizontal pipes uniting the spaces upon opposite sides, the fire-place and chimney situated at the bottom and at opposite ends, and the vertical diaphragm or bridge-wall between, in combination with the cylindrical water and steam containing shell situated above and exposed to the heat of the furnace, as shown, and the circulating-pipes connecting the water-space of the cylinder with the upper and lower part of the water-legs, substantially as herein described.

294,928. ELECTRIC-WIRE CONNECTOR. THOMAS S. STEVENSON, St. Louis, Mo. Filed Sept. 27, 1883. (No model.)



Claim.—1. The combination of the car A, the removable part F of the joint, the support a', and the hood a^2, both support and hood being attached to said car, as described.

2. The combination of the car A, the supporting-chain f, the wedge G, and its casing f', substantially as described.

3. The combination of the electric wires B B', the wedge G, and the conductor-plates g' g^2, attached to the side of said wedge, substantially as described.

4. The combination of the electric wires B B', the conductor-tongue H, made of springy metal, and the part E of the joint, substantially as described.

5. The combination of the electric wires B B', the tongue H, made of springy metal, the part E of the joint, and the plate h' of said tongue H, substantially as described.

6. The combination of the tongue H, as described, the parts I I', and the wedge G, substantially as described.

7. The combination of the parts E F of the joint, the tongue H, made of springy metal, the wedge G, the parts I I', fixed to the bottom of casing f', and the electric wires B B', substantially as described.

8. The combination of the wedge G, the conductor-plates g' g^2, attached to said wedge, the conductor-springs J J', the parts I I', fixed to the casing-bottom, and the spring-tongue H, substantially as described.

9. The combination of the electric wires B B', the wedge G, having connected therewith the plates g' g^2, the conductor-springs J J', the parts I I', attached to the casing, and conductor-plate L, substantially as described.

10. The combination of the parts E F of the joint, the spring-arm k, and the spring-tongue H, substantially as described.

11. The combination of the part F of the joint, the wedge G, having conductor-plates g' g^2 and a handle, g, the spring K, the part E of the joint, and the spring-tongue H, substantially as described, and for the purpose set forth.

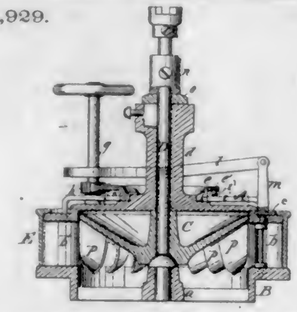
294,929. TURBINE WATER-WHEEL. ELDRIDGE W. STUBBS, Lincolnton, N. C. Filed Oct. 24, 1882. (No model.)

Claim.—1. In water-wheels, the pivoted guides b' and fixed guides b, in combination with the wheel C, and wheel-case provided with an outer ring-gate, substantially as shown and described.

2. In a water-wheel, the combination, with the ring e, provided with the projections e' and slots k, and means for operating the same, of the pivoted guides b', provided with the arms i, having projections i', substantially as herein shown and described.

3. In a water-wheel, the combination, with the ring e, provided with the cogged segment f, the projections e', and slots k, and the shaft g, provided with the pinion h, of the guides b', the axles c, and the arms

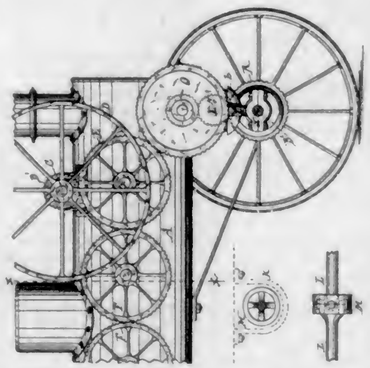
294,929.



i, provided with the projections i', substantially as herein shown and described.

4. In a water-wheel, the combination, with the top plate, A, provided with the support m, of the yoke l, pivoted to the support m, and the flanged-ring gate E, hung upon said yoke, substantially as herein shown and described.

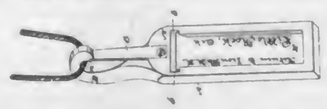
294,930. TRACTION-ENGINE. LOYAL C. TABER, Syracuse, N. Y. Filed Dec. 18, 1883. (No model.)



Claim.—1. In a traction-engine, an oscillatory supporting-axle having a central pivoted connection with the boiler, a counter-shaft extended through the center of said pivot and provided thereat with a universal joint, and mechanism for transmitting motion to the oscillatory axle through the medium of the said counter-shaft, substantially as set forth and shown.

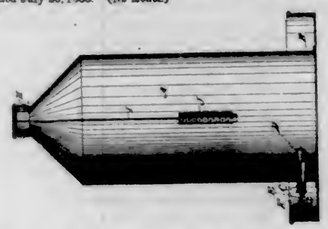
2. In a traction-engine, the combination of a saddle or truck frame mounted on the forward axle and provided with a semi-spherical step, a hollow hemispherical bearing secured to the boiler and seated in the step, and provided on one side with an opening and at the opposite side with a rigid sleeve, a counter-shaft journaled in said sleeve and extended through the hollow bearing and its side opening, and provided in the center of said bearing with a flexible joint, a journal-bearing on the saddle for the oscillatory end of the counter-shaft, pinions on opposite ends of the counter-shaft, a gear-wheel on the axle meshing in the pinion on the oscillatory end of the counter-shaft, and a train of gears arranged to transmit motion from the driving-shaft to the pinion on the lineally-rigid end of the counter-shaft, substantially as described and shown.

294,931. TAG-HOLDER. EDWARD H. TANNEHILL, Malvern Junction, Ark. Filed Oct. 19, 1883. (Model.)



Claim.—A tag or label holder having a hook made integral therewith and adapted to receive a snap-spring, an internal groove, D, closed at one end, and a portion, A', recessed at b, as shown and described.

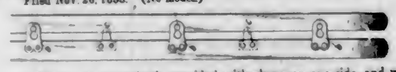
294,932. POULTRY-FOUNTAIN. JOHN C. TAPPENNER, Bisbee, Ariz. Filed July 20, 1883. (No model.)



Claim.—1. In a poultry-fountain, an elevated reservoir, a surrounding open trough with a tapering tube opening from the reservoir to the trough, and a stopper fitted to the inner end of said tube and having a rod or stem extending out through the tube, and a hook or catch by which the stopper may be held back, substantially as herein described.

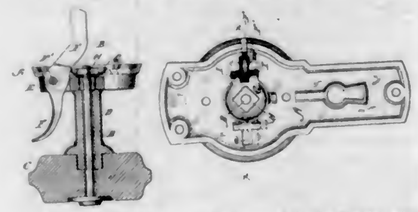
2. In a poultry-fountain, an elevated reservoir having a surrounding open trough, a tube connecting the trough and fountain, and a stopper or valve, by which the tube may be opened or closed, in combination with a removable screw-cap at the top of the reservoir, a rod depending from said cap, and a cage or cup suspended from the rod, so as to be removed with the cap without allowing the contents of the reservoir to escape, substantially as herein described.

294,933. CORSET-BUSK. ALFRED TAYLOR, Jr., Bridgeport, Conn. Filed Nov. 26, 1883. (No model.)



Claim.—A corset-busk provided with clasps on one side, and with a tongue extending from said busk at the opposite side and projecting beneath the other busk, which carries the studs.

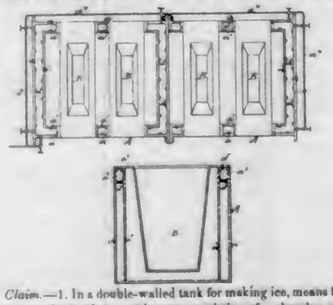
294,934. LOCK-TRIMMING. EDWARD T. TAYLOR, Chicago, Ill., assignor to Gary G. Calkins, same place. Filed Oct. 30, 1883. (No model.)



Claim.—1. The combination of the plate A, having therein a slot, a, the latch-lever F, and a detachable fulcrum having hook-shaped arms for fulcruming the said lever between it and the plate A, substantially as and for the purposes specified.

2. The combination of the bolt B, nut H, plate or washer G, having hook-shaped arms I I, the slotted plate A, and the lever F, fulcrumed in the said arms, substantially as and for the purposes specified.

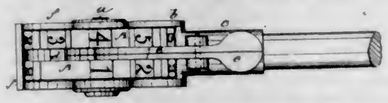
294,935. ICE-MAKING MACHINE. GEORGE TAYLOR, Everett, and FRED S. PEARSON, Medford, Mass. Filed Dec. 12, 1883. (No model.)



Claim.—1. In a double-walled tank for making ice, means for equally and evenly distributing a refrigerant consisting of a chamber partitioned off from the top of each space between the walls, and having its bottom provided with outlets next to the walls, as set forth.

2. In an ice-making apparatus, a tank having four double walls, as described, in combination with one or more tanks having three double walls, and adapted to be joined one to another, substantially as and for the purpose set forth.

294,936. TIMBER AND LUMBER STAMP. LEVI THRUSH and LEONARD WILSON, Brookville, Pa. Filed Nov. 28, 1882. (Model.)



Claim.—A timber and lumber stamp provided with two separate stamp-wheels, A A, having the inside ratchet-wheels, d d, and the two lever-pawls e e, arranged side by side on the same fulcrum, said pawls being provided at the rear with flattened ends supported by springs, and both adapted to be operated simultaneously by the same thumb, as described.

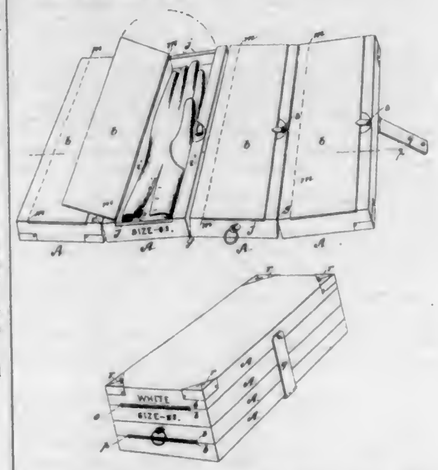
294,937. HOSE-PATCH. GEO. W. TOWLE, Jr., San Rafael, Cal. Filed Apr. 30, 1883. (No model.)



Claim.—1. A hose-patch consisting of the band A, having tongues a a and slots a' a', whereby it may be adjusted around the hose and locked, and having the longitudinal ribs d' on its inner surface, near its edges, substantially as and for the purpose herein described.

2. A hose-patch consisting of the band A, having tongues a a and slots a' a', whereby it may be adjusted around the hose and locked, and having the longitudinal ribs d' and the cross-ribs d on its inner surface, substantially as and for the purpose herein described.

294,938. FOLDING CASE. AUGUSTUS TRAVER, New York, N. Y. Filed Apr. 19, 1883. (Model.)



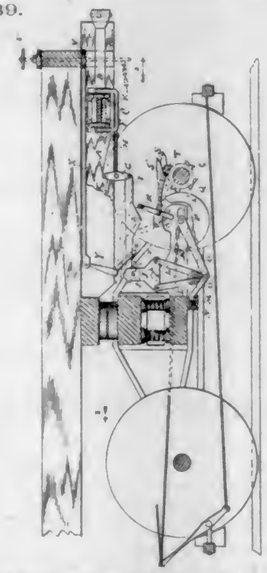
Claim.—As an improved article of manufacture, a series of boxes or cases substantially of equal size, consisting of four or more, hinged together alternately at the bottom and top, and provided each with a cover, and adapted to be unfolded to expose each opening surface, and to be refolded into one compact case, substantially as set forth.

294,939. CAR-BRAKE. WILLIAM B. TURNER, New York, N. Y., assignor of one-half to Cornelius Beard, same place. Filed Apr. 26, 1883. (No model.)

Claim.—1. In a momentum car-brake operative at all rates of speed, the combination, with the draw-bar and the brakes, of a double-acting lever, a tripping device, and other intermediate mechanism, substantially as described, between the draw-bar and brakes, constructed to operate the brakes when the car is traveling with either end forward and in either direction of the draw-bar's motion, as set forth.

2. In a car-brake operative at all rates of speed, and operated by

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the contact of friction-pulleys, the combination, with such pulleys and the draw-bar, of double-acting lever, a tripping device, and other intermediate mechanism, substantially as described, between the draw-bar and friction-pulleys, constructed to put such pulleys into operation when the car is running with either end forward and in either direction of draw-bar motion.

3. The combination, in a momentum car-brake, of a draw-bar constructed and arranged to act on the brake through intermediate mechanism in both directions of its movement, and a tripping device constructed to act independently of the brakes or draw-bar, and to operate by and at each change in direction of wheel rotation, substantially as described.

4. The combination, in a momentum car-brake, of a draw-bar constructed and arranged to act on the brake in both directions of its movement, a double-acting lever, and a tripping device constructed to cause the draw-bar to reverse its action on said double-acting lever, for the purpose set forth.

5. The combination, in a car-brake, of a double-acting draw-bar, a friction apparatus for operating the brake, and double-acting lever and other intermediate connections, substantially as described, between the draw-bar and friction apparatus, constructed to operate the brake with either end of the car forward and at any rate of speed, as set forth.

6. In a momentum car-brake operative at all rates of speed, the combination, with a movable draw-bar and an operating-bar connected therewith, of a friction-pulley and a double-acting lever and other intermediate connections for transmitting the motion of the draw-bar to the friction-pulley, constructed to move said pulley toward its operating means in both directions of the draw-bar's motion, substantially as described.

7. In a momentum car-brake operative at all rates of speed, the combination, with a movable draw-bar, an operating-bar connected therewith, a double-acting lever, a friction-pulley, and mechanism connecting the double-acting lever and pulley, constructed to move said pulley toward its driving-pulley in either direction of draw-bar motion, substantially as described.

8. The combination, with a movable draw-bar, an operating-bar connected therewith, a double-acting lever, a friction-pulley, a toggle-lever for holding the friction-pulley in connection with its driving-pulley, and means for operating said toggle-lever in the same direction in either direction of draw-bar motion, substantially as described.

9. The combination, with the double-acting draw-bar, a double-acting lever, and intermediate connections, substantially as described, between the two, of a toggle-lever for moving the friction-wheel, and links connecting the opposite arms of the double-acting lever with the toggle-levers, as set forth.

10. The combination, with the double-acting draw-bar, a double-acting lever, and intermediate connection, substantially as described, between the two, of a toggle-lever for moving the friction-wheel, a spring-bearing for one end of said toggle-lever, and links connecting the opposite sides of the double-acting lever with the toggle-lever, as set forth.

11. The combination, in a car-brake, of a double-acting draw-bar and a double bell-crank lever, with a reversible connection between said draw-bar and lever, constructed to move said lever in one direction only when in one of its positions, and to move it in the other direction only when its position is reversed, substantially as described.

12. The combination, with a double-acting draw-bar, of a double-acting lever, a loose reversible connection between the draw-bar and lever, acting on said lever in both directions, and means for holding the latter in its normal position during the reversal, substantially as described.

13. The combination, with a double-acting draw-bar, of a double-acting lever, a loose connection between the draw-bar and lever, acting in both directions on said lever, and mechanism performing the double function of holding said lever in its normal position and moving the friction-pulley, all substantially as described.

14. The combination, in a car-brake operative at all rates of speed, with a moving draw-bar and a double-acting lever loosely connected therewith, of a tripping device constructed to reverse the connection between said draw-bar and lever, whereby said draw-bar, through said loose connection, operates said lever in both directions of the draw-bar's motion, substantially as described.

15. The combination, in a car-brake, of a moving drawing-bar connected to a multiplying-lever, a double-acting lever, an operating-bar loosely connecting said multiplying-lever with the double-acting lever, and a tripping device constructed to reverse the connection between the operating-bar and the double-acting lever, substantially as described.

16. The combination, with a moving draw-bar for operating automatic brakes, and a hand-brake device, of a tripping device constructed to break the connection between the draw-bar and the brakes by the action of the hand-brake-operating device, substantially as described.

17. The combination, with a moving draw-bar for operating an automatic brake, and a hand-brake device, of a tripping mechanism operated by putting the hand-brake into operation, substantially as described.

18. In a brake mechanism in which the motion of the draw-bar throws the brake into action, the combination, with said draw-bar and its connecting-bar I, of the recessed wheel V, means for operating said wheel, lever W, a tripping device operating on the connecting-bar, and a connection between said lever W and the tripping device, substantially as described.

19. In a brake mechanism, the combination, with the moving draw-bar and an operating-bar connected therewith, of the hand-wheel U, the notched wheel V, the staff connecting said wheels, the lever W, rod X, and tripping device Y Z, substantially as described.

20. In a brake mechanism, the combination, with the moving draw-bar and the operating-bar connected therewith, of a pivoted rocking tripping device acted on by the change of direction of rotation of the car-wheels, and acting directly on the swell of the operating-bar, substantially as described.

21. In a brake mechanism, the combination, with the moving draw-bar and the operating-bar connected therewith, of a rocking lever, two rods pivoted thereto on the same side of its fulcrum, each rod having a tooth facing opposite to the tooth on the other, and a toothed collar provided with oppositely-acting teeth revolving with the car-axle, substantially as described.

22. In a car-brake, the combination, with a double-acting draw-bar, a double-acting lever connected with said draw-bar by a reversible connection, of a tripping device provided with two dogs, each having a tooth set in opposite directions to that on the other, and pivoted above the line of the centers of the car-axles, and a toothed collar constructed to revolve with the car-axle, and to engage alternately with the opposite teeth of the dogs on the change in the direction of wheel rotation, substantially as described.

23. The combination, with the axle of a car, and the double-acting draw-bar D, of the loose clevis F, the multiplying-lever G, connected therewith, the operating-bar I, the double-acting lever J, slotted links L, toggle O O', and friction-pulley N, all constructed and arranged to operate substantially as shown and described.

24. The combination, with the moving draw-bar D, of the loose clevis F, the multiplying-lever G, connected therewith, the operating-bar I, having swell i, the double bell-crank lever J, links L L', toggle O O', pulley Q, connected with the brake, toothed collar T, revolving with the car-axle, rods S S', and the rocking lever R, all constructed and arranged to operate substantially as shown and described.

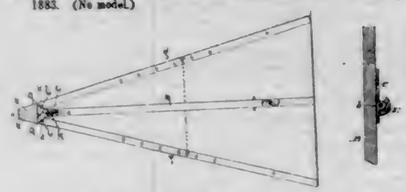
294,940. PROCESS OF EXTRACTING OILS AND FATS FROM FISH. PETER C. VOGELIUS, Gloucester, Mass. Filed July 6, 1883. (No specimens.)

Claim.—1. The improved process of extracting oils from fish, consisting in subjecting the fish to the action of plaster-of-paris or some similar water-absorbing agent, whereby the water is removed therefrom, and then mingling the fish with a suitable solvent, whereby the oil in the fish is dissolved, substantially as described.

2. The improved process of extracting oils from fish, consisting in heating the fish, subjecting the same to water-absorbing agents, and then to the dissolving action of solvents, substantially as described.

3. In the process of extracting oil from fish, the subjection of the latter to the water-absorbing action of plaster-of-paris or equivalent absorbents, substantially as specified.

294,941. EASEL. EMIL WERNER, Philadelphia, Pa. Filed Dec. 20, 1883. (No model.)

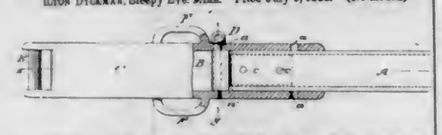


Claim.—1. In an easel, laterally-movable legs, a stationary piece between the upper ends thereof, and a hinged prop, in combination with a hinge, one butt of which is formed with laterally-extending wings, which are attached to the legs by pivotal screws or bolts, and connected at the top with said stationary piece, the other butt being connected at the bottom with the hinged prop, substantially as and for the purpose set forth.

2. In an easel, a prop and laterally-movable side legs, and stationary piece between the top of the legs, in combination with a hinge having one butt formed with wings attachable to the legs by pivotal screws or bolts, and the other butt connected with a stop which is adapted to abut against the first-named butt when the prop is unfolded, substantially as and for the purpose set forth.

3. The prop, side legs, and stationary top piece, in combination with a hinge formed with wings and a stop, the upper inner corners or ends of the side legs being chamfered, substantially as and for the purpose set forth.

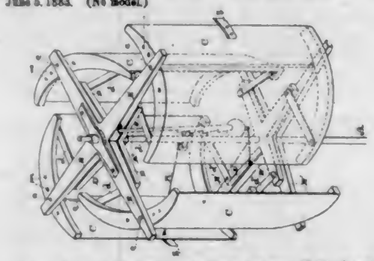
294,942. TRACE-BUCKLE. FERDINAND WETSTEIN and FRANK HAMILTON DUCKMAN, Sleepy Eye, Minn. Filed July 9, 1883. (No model.)



Claim.—1. In a trace-buckle, the box C, provided with the end loop or rod, E, the edge loops F at or near the center of its length, and holes *a a'*, and adapted to receive the end of a trace, and to be secured thereto by a pin passing through the holes and an eye in the end of the trace, substantially as herein shown and described.

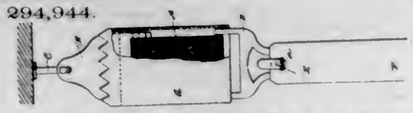
2. The trace A, provided with eye B, in combination with the box C, having the series of holes *a a'* made in its edges, and the pin D, adapted to pass through the said holes and the eye B, substantially as and for the purposes set forth.

294,943. WINDMILL. CHARLES W. WHITE, Santa Rosa, Cal. Filed June 5, 1883. (No model.)



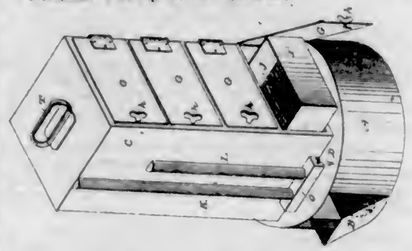
Claim.—In a windmill, the shaft A, cross-frames B B', the cross-frames D D', loose on said shaft, and connected by pivoted arms *d d'* to the vanes, in combination with the adjustable concavo-convex vanes C, pivoted vertically between the cross-frames, and provided with holes *m* and pivot-rods *c*, and means for turning said vanes at an angle to receive the wind, the hanging bars E, provided with weights F, and connected with one edge of each vane, and the operating-rope, all substantially as shown and described.

294,944. RAZOR-STROP ATTACHMENT. EMIL F. WIESLER, Milton, Wis., assignor to himself and William H. Borden, same place. Filed Dec. 1, 1883. (No model.)



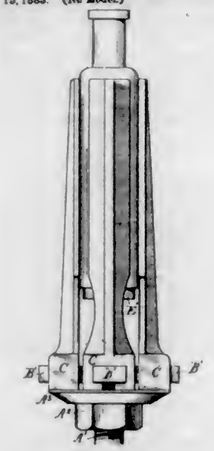
Claim.—The holder-plate B, provided with an eye, and the spring A, secured at one end to said plate, in combination with the frame D, secured to spring A, and provided with a hook, and the case G, secured at one end to said plate B, and open at the other end, substantially as described, whereby first the whole device may be hung upon a nail or hook, and a razor-strop may be suspended at full length, and whereby the strop may be used at full length under any desired degree of tension on the spring, for the purpose specified.

294,945. STEAM COOKING APPARATUS. GEORGE W. WILLIAMS, Portis, Kans. Filed Sept. 18, 1883. (No model.)



Claim.—In a steam cooking apparatus, the combination, with the boiler A, of a casing, C, separated into a series of compartments having doors G, pipes K L M N, communicating with the boiler independently of each other and extending up along the length of the casing, bends or joints *k m n o*, connecting with the top of the pipes and extending into the interior of the compartments, valve-chambers O P, located at the rear end of each pair of pipes, and valves *p q r s*, adapted to slide in said chambers, as and for the purpose set forth.

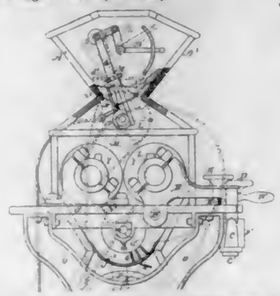
294,946. CLAMP FOR HOLDING BOTTLES. JOSEPH B. WILSON, Clayton, N. J., assignor of one-half to Joseph Wharton, Philadelphia, Pa. Filed Nov. 15, 1883. (No model.)



Claim.—1. An improved implement for holding bottles while finishing the necks thereof, consisting of a hollow central shaft provided with radiating guides upon the end thereof, bearing parallel fluted jaws radially adjustable thereon, in combination with a table adapted to support the bottom of the bottle, and having a screwed stem fitting adjustably in a corresponding nut formed in the said hollow central shaft, substantially as and for the purpose set forth.

2. In an implement for holding bottles while finishing the necks thereof, a hollow central shaft internally screw-threaded, and provided with a screw fitting adjustably as to length therein, and bearing a table

294,947. ROLLER FLOUR-MILL. ABRAHAM N. WOLF, Allentown, Pa. Filed Aug. 20, 1883. (No model.)



Claim.—1. The combination of the hopper provided with slots through its ends, the swinging levers, which are pivoted at their upper ends, inside thereof, and have the feed-board connected to them near their lower ends, and a mechanism which is connected with the pivoted levers for causing them to reciprocate, and thus keep the feed-board in motion, substantially as shown and described.

3. The combination of the hopper, the swinging feed-board, pivoted arms connected thereto, pivoted levers upon the outside of the hopper, and revolving cams for moving the levers, and thereby imparting a constant reciprocating motion to the board, substantially as shown and described.

3. The combination of the hopper, the reciprocating feed-board, pivoted arms A^4, connected thereto, the pivoted operating-levers upon the outer ends of the hopper, and operating-cams, with the bell-crank levers A′ and connecting-links, substantially as set forth.

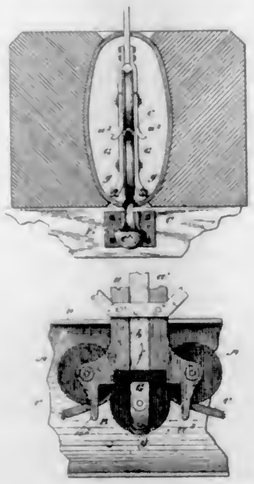
4. The combination of the frame, the bar C, provided with the box F, the spiraled boss a^5 *x*, the bolt which passes through the bar, the coil-spring, and a hand-lever having a spiral formed at its inner end, substantially as specified.

5. The combination of the frame, the two side levers, B, the bolts and wheels E E′, connected therewith, the levers D′, the spiraled boss a^5 *x*, bolt C, bar C′, and coil-spring, substantially as shown.

6. The combination of the rolls Y Y′, a revolving spiral brush, G, which brushes both rollers at once, the trough f^3, the scalping-reel I, and screen J, substantially as shown and described.

294,948. GRIPPING MECHANISM FOR TRACTION-CABLE RAILROADS. JOHN W. YOUNG, Fort Marcual, Ariz. Filed Mar. 17, 1883. (No model.)

Brief.—Gripping-sheaves arranged relative to each other, so that when applied the cable will be positively nipped between them. The movable hanger has depending arms carrying one of the sheaves, which arms rest upon the bottom of the cable-tunnel when the car is at rest, thus steadying the grip-frame while the cable is running through the grip.



Claim.—1. In a grip mechanism for traction-cables, the combination of two sheaves for gripping an endless traveling cable with mechanism for operating one or both of the sheaves, said sheaves not being directly opposite to each other with respect to the cable, but so arranged that they will press on both sides of the cable when the grip is applied to its full extent, substantially as and for the purpose set forth.

2. In a grip mechanism for traction-cables, the combination of two sets of sheaves for gripping an endless traveling cable, one of which sets may consist of a single sheave, with mechanism for operating one or both sets of sheaves, said sheaves alternating with each other, and arranged so that they will press on both sides of the cable when the grip is applied to its full extent, substantially as and for the purpose set forth.

3. In a grip mechanism for endless traveling traction-cables, the combination of sheaves A A′ and sheave B with mechanism for drawing the latter sheave in toward the former pair of sheaves, the sheave B being placed opposite the space between the sheaves A A′, and the width of the space between the sheaves A and A′ being less than the diameter of the sheave B plus twice the thickness of the cable to be used, said sheaves being constructed so that they will pinch the cable when the grip is applied to its full extent, substantially as and for the purpose set forth.

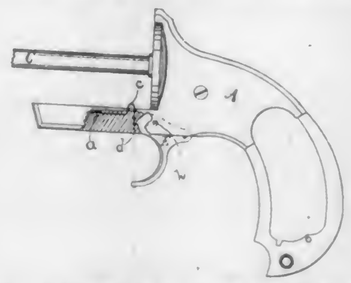
4. In a grip mechanism for endless traction-cables, the combination of the movable hanger *b*, supporting-legs G, and cable-lifting sheave B, journaled in said legs, with the cable-guide D, and suitable cable-gripping and sheave-lifting devices on a car, substantially as herein set forth.

5. In a grip mechanism for endless traction-cables, the combination of the stationary hangers *a a′*, having bottom outwardly-turned guides, a^2, with the sheaves A A′ and the movable hanger *b* and sheave B, substantially as and for the purpose set forth.

294,949. MANUFACTURE OF WROUGHT-IRON. CHRISTOPHER ZOE, Pittsburg, Pa. Filed June 18, 1883. (No specimens.)

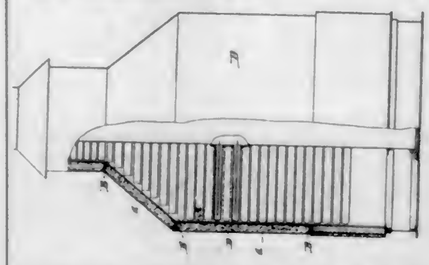
Claim.—The process of improving the quality of wrought-iron without destroying its weldable quality as such by intermixing steel therewith, in about the proportions specified, during the puddling or boiling process, as it comes to or approaches nature, substantially as described.

294,950. CYLINDER-STOP FOR REVOLVERS. FRANK H. ALLEN, Norwich, Conn. Filed Aug. 9, 1883. (No model.)



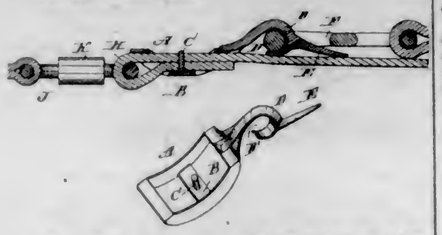
Claim.—In combination with the trigger E, the within-described cylinder-stop, made of a single continuous piece of flattened wire bent substantially as shown, having a suitable arm adapted to lie in the frame, an upward extension, *a*, to engage the cylinder-notch, and the downward extension and bend *d*, to engage a suitable notch in the trigger, said stop being held in the frame and operated as and for the purpose specified.

294,951. STEAM-BOILER COVERING. HENRY F. ALLEN, New York, N. Y. Filed Nov. 24, 1883. (No model.)



Claim.—The combination, with a boiler, of vertical and horizontal ribs formed of double channel or T irons secured on the outer surface of the shell, plates secured to the outer edges of the ribs, and of non-conducting material placed between the plates and the shell, substantially as herein shown and described.

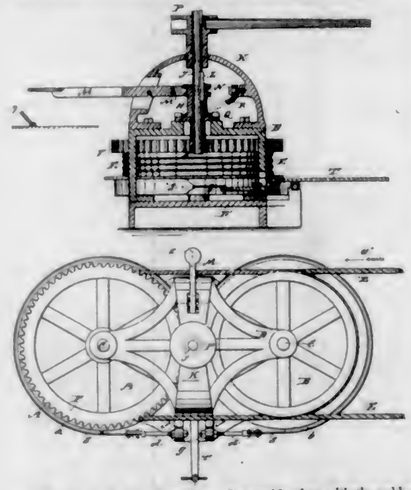
294,952. TRACE-CARRIER. LOUIS T. ANDERSON, Carroll, Iowa. Filed Aug. 24, 1883. (Model.)



Claim.—The buckle-frame A, provided with a cross-piece, B, having a pin or tongue, C, and with a hook, D, having a projecting guard, E, said hook and guard being arranged to extend in opposite directions, substantially as herein shown and described.

294,953. FRICTION-DRUM FOR INCLINED-PLANE CABLE-RAILWAYS. EARLE C. BACON, Brooklyn, assignor to Copeland & Bacon, New York, N. Y. Filed Dec. 3, 1883. (No model.)

Brief.—The endless cable of an inclined railway is rove around two drums at the top of the incline, a strap-brake being applied to each drum and operated by one lever. The initial movement is given to the loaded car through a vertically-adjustable rotary shaft carrying at its lower end a pinion which is capable of meshing with a gear upon one of said drums.



Claim.—1. In a cable-railway, the combination, with the cable, of two friction-drums, around which the cable passes, and of a brake-band for each drum, substantially as herein shown and described, and for the purpose set forth.

2. In a cable-railway, the combination, with the cable, of two friction-drums, around which the cable passes, a brake-band for each drum, and of devices for applying both brake-bands simultaneously, substantially as herein shown and described, and for the purpose set forth.

3. In a cable-railway, the combination, with the cable, of two friction-drums, around which the cable passes, a brake-band for each drum, and a lever connected with both bands, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with a friction-drum, of a brake-band, S, the lever T, the rod *d*, and the tension-adjusting nut *g*, substantially as herein shown and described, and for the purpose set forth.

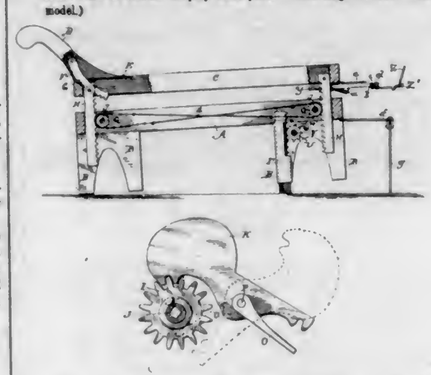
5. The combination, with a friction-drum for a cable, of a cog-wheel united with the said drum, and of a pinion mounted on a shaft that can be rotated, which pinion is adapted to be engaged with the cog-wheel, substantially as herein shown and described, and for the purpose set forth.

6. The combination, with a friction-drum for a cable, of a cog-wheel united with the said drum, of a pinion mounted on a shaft that can be rotated, and devices for engaging the pinion with the said cog-wheel, substantially as herein shown and described, and for the purposes set forth.

7. The combination, with the cable-drum A, of the cog-wheel F, united with the same, the shaft J, provided with devices for turning it, the sleeve H, the pinion G, mounted thereon, and devices for vertically adjusting the said sleeve, substantially as herein shown and described, and for the purpose set forth.

8. The combination, with the cable-drum A, of the cog-wheel F, united with the same, the shaft J, provided with devices for turning it, the sleeve H, the pinion G, the lever M, the ratchet-wheel Q, and the pawl R, substantially as herein shown and described, and for the purpose set forth.

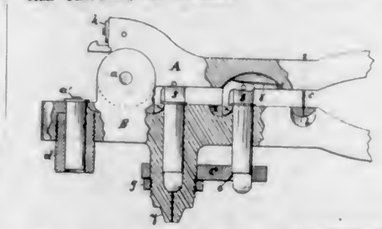
294,954. SOFA-BEDSTEAD. JOHN BAGGS, Baltimore, Md., assignor of one-half to Charles Shipley, same place. Filed Aug. 17, 1883. (No model.)



Claim.—1. A shaft shaped at its end to be engaged by a wrench, and provided with a toothed wheel, and a frame in which said shaft is journaled, in combination with a latch pivoted to said frame, having teeth to engage said wheel, a wrench having a hub shaped to engage the end of said shaft, as described, and an arm secured to said latch to engage said hub, substantially as described, whereby the said latch will be restrained from engaging the wheel by the wrench when the latter is in place on the shaft, but will be free to engage said wheel when the wrench is removed.

2. The combination, with a lounge having legs at its four corners, of the racks I′, having feet to stand on the floor, and connected to the lounge near its foot-legs, substantially as described, whereby they may slide vertically, the shaft V, journaled in the lounge, the pinions U, fixed on said shaft, the latches W, and the rod X, connecting them, journaled in the lounge, as shown and described.

294,955. CARTRIDGE IMPLEMENT. JOHN H. BARLOW, New Haven, Conn. Filed Jan. 5, 1884. (No model.)



Claim.—1. The combination, in a cartridge-reloading implement, of the two levers A and B, hinged together, one of said levers being provided with a suitable loading-chamber, also a separate chamber, *d*, which is adapted to be used, in connection with the lever A, as a shell reducer and recapper, the other lever being provided with a suitable device for withdrawing the cartridge from the chambers, substantially as and for the purpose described.

2. The combination, in a cartridge-reloading implement, of the two levers A and B, hinged together, one of said levers being provided with suitable loading-chambers, the other lever having one or more movable latches adapted to pass under the rim of the cartridge-head when the cartridge is seated in the loading-chambers, engaging therewith to withdraw the same from the loading-chambers, as set forth.

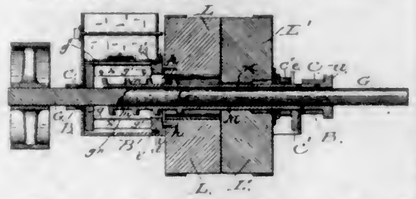
3. The combination, in a cartridge-reloading implement, of the two

levers A and B, hinged together, one of said levers having suitable devices for extracting the cartridge from the chambers, the other lever being provided with loading-chambers, together with the taper projection *y*, for expanding the mouth of the shell, substantially as described.

4. The combination, in a cartridge-reloading implement, of the lever A, provided with the movable latches *x x*, for the purpose described, the lever B, provided with a loading-chamber, a separate chamber, *d*, arranged to operate as a shell reducer and recapper, also an aperture for crimping the loaded cartridge, arranged to operate in connection with the radially-adjustable crimp-plate C, substantially as set forth.

5. The combination, in a cartridge-reloading implement, of the shell-expander *y*, reducing-chamber *d*, radially-adjustable crimp-plate C, movable latches *x x*, together with the hinged levers A B, having suitable loading-chamber, all arranged to operate substantially as and for the purpose shown and described.

294,956. GRINDING-MILL. JOHN H. BEAR, West Manchester, Pa. Filed Dec. 12, 1883. (No model.)



Claim.—1. In a grinding-mill, the plate B', annular heads *g g'*, the connecting-pieces *g''*, and knives *h'*, in combination with the feeding devices, shaft G, sleeve M, and burrs L L', substantially as and for the purpose set forth.

2. The shaft G and annular heads *g g'*, in combination with beveled connecting-pieces *g''*, knives *h'*, plate *e''*, guides *e'*, and the plates B' and D, all constructed to operate substantially as set forth.

3. The sleeve M, having a spiral flange, *m*, formed on one end, in combination with hopper F, having guides *f''' f'''*, curved plates B' and D, and burrs L L', substantially as and for the purpose set forth.

4. The frame A and wedge-shaped block C', with projections *e e* formed thereon, in combination with the sleeve M, the shaft G, the adjustable bifurcated wedge C'', and the vertical burrs L L', substantially as and for the purpose set forth.

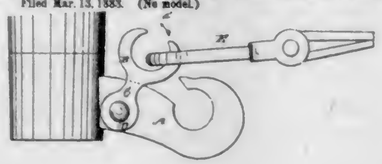
294,957. PRIMER. THOMAS G. BENNETT, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Dec. 31, 1883. (No model.)



Claim.—1. The herein-described primer, consisting in the combination of the principal cup *a*, the auxiliary cup *b*, of less diameter than the principal cup, containing the fulminate, and constructed with a flange, *c*, around its edge, of larger diameter than the internal diameter of the principal cup, and with one or more notches or openings, *e*, from the cup, the said auxiliary cup containing the fulminate introduced into the principal cup with its open mouth toward the bottom of the principal cup, and whereby said flange acts as a brace against the inner side of the principal cup, to hold the auxiliary cup in its central position upon the bottom of the principal cup, substantially as described.

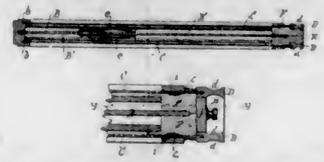
2. The herein-described primer, consisting in the combination of the principal cup *a*, the auxiliary cup *b*, of less diameter than the principal cup, containing the fulminate, and constructed with a flange, *c*, around its edge, of larger diameter than the internal diameter of the principal cup, the flange cut or notched at one or more points, *d*, the said auxiliary cup containing the fulminate introduced into the principal cup with its open mouth toward the bottom of the principal cup, and whereby said flange acts as a brace against the inner side of the principal cup, to hold the auxiliary cup in its central position upon the bottom of the principal cup, substantially as described.

294,958. WHIFFLETREE-HOOK. WILLIAM H. BEST, Eastport, Mich. Filed Mar. 13, 1883. (No model.)



Claim.—The combination, with the whiffletree-hook A, carved in a horizontal plane, of the spring guard or plate B, pivoted to the upper face of the hook A, and upwardly-arched at its middle and crescent-shaped at its free end, so that when closed the inner edge of the crescent coincides with the opening in the hook and closes its lateral passage, and also bites the upper face of the hook to retain the guard closed, substantially as shown and described.

294,959. PLATE-HOLDER. THOMAS HENRY BLAIR, Boston, Mass., assignor to the Blair Tourograph Company, same place. Filed Jan. 6, 1883. Renewed Feb. 9, 1884. (No model.)



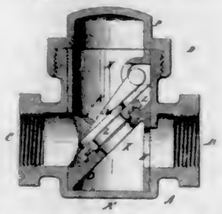
Claim.—1. In combination with the frame A and partition, the adjustable bars F F, these bars closing the mouths of the plate-chamber, respectively, and when in their inmost positions extending into such chamber beyond the inner edge of the frame, substantially as stated.

2. In combination with the frame A and the partition B, dividing such frame centrally of the adjustable bars or gates F F, the central ribs, E E, upon such bars, and the keys *f f*, operating with the said ribs E E, and the abutments *g g*, substantially as and for purposes stated.

3. In combination with each dark-slide C, the bar D, having the grooves *d* in opposite sides, and the rib E, shaped to fit said grooves, substantially as described.

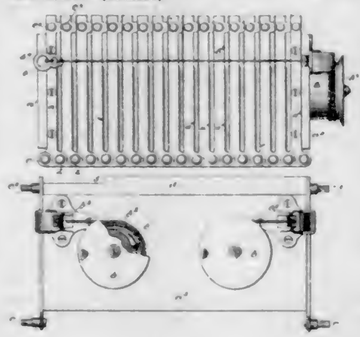
4. In combination with the frame A and partition B, the dark-slides C C with the grooved bars D, the bars D with their ribs E, and adjustable with respect to the said frame and partition, and the keys *f f*, engaging at one end the said rib, and at the other the abutments *g g*, all substantially as explained.

294,960. CHECK-VALVE. JAMES H. BLESSING, Albany, N. Y. Filed Dec. 19, 1883. (No model.)



Claim.—The combination, in a check-valve, of the removable frame O, supporting the valve-seat L on an angle with the passage through the valve, with the frame N, supporting the check-valve M and locking the frame O in the valve, and the cap P, closing the valve-casing and simultaneously locking the frames N and O within the valve, substantially as described.

294,961. SIGNATURE-PRESENTING MECHANISM FOR BOOK-SEWING MACHINES. EDWARD S. BOYNTON, Bridgeport, Conn. Filed Nov. 12, 1881. (No model.)



Claim.—1. A signature-holder composed of a series of chain-jointed end pieces and connected plates carried thereby, to operate substantially as described.

2. In a signature-holder, two parallel plates of different widths connected at their ends with end pieces, to thereby leave between the plates a suitable opening for the passage of the devices which are to remove the signatures from the said plates, substantially as described.

3. The end pieces *a'*, combined with the two parallel plates *d d'*, connected therewith, the latter being cut away at 5, to permit the signature to be acted upon at its head, substantially as described.

4. The plates *d d'*, combined with the attached end pieces *a'*, provided with independent feeding-pins *e'*, substantially as described.

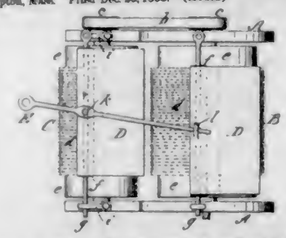
5. A signature-holder composed of chain-jointed end pieces and connected plates, combined with the heads and with the spring-actuated drums, and cords to clamp the end pieces together, substantially as described.

6. In a signature-holder, the end piece *a*, provided with a hook, and the end piece *a'* and head *a²*, combined with the spring-actuated drums, and cords provided with double eyes *b'*, substantially as described.

7. The shaft *e* and star-wheels thereon and guides B, combined with the chain-jointed signature-holder, to operate substantially as described and separate the adjacent end pieces and plates for the reception of signatures.

8. The shaft *e*, star-wheels, guides B, and chain-jointed signature-holder, combined with the side-register mechanism to push into line the ends of the signatures on the plates of the holder, substantially as described.

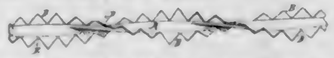
294,962. CARD-SHARPENING APPARATUS. JOHN BRIERLEY, Easthampton, Mass. Filed Dec. 20, 1883. (Model.)



Claim.—1. The combination, with the card and doffer cylinders B C, mounted to revolve in a suitable frame, of the sharpeners D D, secured to tubes *f f*, which are in turn mounted on transverse rods *g g*, secured to the frame above said cylinders B C, and a lever, E, pivoted to one sharpener and loosely engaging the other sharpener by a suitable connection, whereby when motion is imparted to said lever the tubes and their sharpeners will be reciprocated, substantially as set forth.

2. The combination, with card and doffer cylinders, of rods *g g*, secured to the frame above said cylinders, as shown, tubes *f f*, mounted on said rods, and carrying flexible sharpeners D D, of greater width than the toothed surfaces of said cylinders, the lever E, pivoted to one sharpener, D, and extending loosely through an eye, *i*, on the other sharpener, whereby the sharpener when reciprocated by said lever will at all times rest on the toothed surfaces of said cylinders, substantially as set forth.

294,963. BARBED FENCE. WILLIAM F. BROCK, New York, N. Y., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass. Filed Dec. 17, 1881. (No model.)



Claim.—1. A metallic fencing-strip with barbs B cut on one or both edges thereof and integral therewith, the central portion of the said strip being folded twice upon itself, as specified, so that the barbed edges project beyond the folded portion, substantially as described.

2. The improvement in the art of forming a metallic fencing-strip, the same consisting in cutting points or barbs on one or both edges of a thin metal strip and folding the central part of the strip twice upon itself, as specified, thereby leaving the barbed portion projecting beyond the folds, substantially as described.

294,964. CORN-PLANTER CHECK-ROWER. GEORGE W. BROWN, Galesburg, Ill. Filed Dec. 14, 1883. (No model.)

Claim.—1. In a check-rower, in combination, a supporting-head, forked lever, front guide-pulley, and a guard-finger adapted to swing away from said guide-pulley, substantially as and for the purpose specified.

2. In a check-rower, in combination, a supporting-head, forked lever, front guide-pulley, and a guard-finger hinged to the supporting-head by means of a slot, *c*, and pin *i*, and provided with a lower part, *h'*,

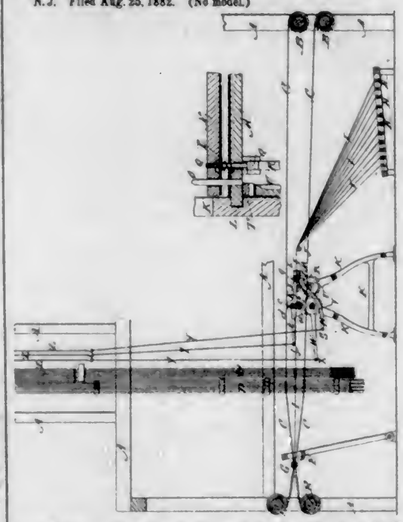
294,964.



adapted to come in contact with the part *c'* of the slot *c*, substantially as and for the purpose specified.

3. In a check-rower, in combination, a supporting-head, C, forked lever, front guide-pulley, and a guard-finger, H, constructed and hinged in the head C, substantially as and for the purpose specified.

294,965. MECHANISM FOR DELIVERING PILE-WARPS IN LOOMS FOR WEAVING DOUBLE PILE FABRICS. FRANK CHABOT, Paterson, N. J. Filed Aug. 25, 1882. (No model.)

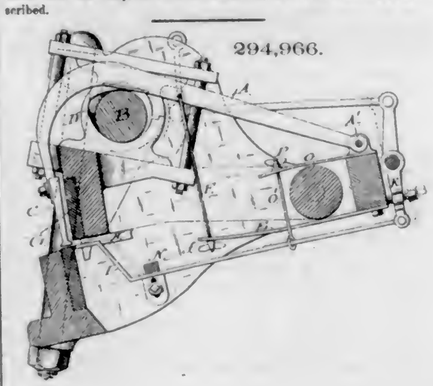


Claim.—1. The combination, with the clamping-bars M N, the clamping-rollers *b d*, and the supporting-frame, of Jacquard mechanism and means connecting the latter with said bars and rollers, whereby the latter are caused to clamp and feed forward the pile-warp, as set forth.

2. The combination, with the Jacquard hooks Z, the cross-bars M N, and the springs P, of the eyebolts Q, levers R, rack-bars T, gear-wheels U V, levers W, and means for connecting the levers R W with the Jacquard hooks, substantially as herein shown and described.

3. The combination, with the Jacquard hooks and rollers *b d*, of the gear-wheels *a* V, the levers W *e*, and means for connecting said levers with the Jacquard hooks, substantially as herein shown and described.

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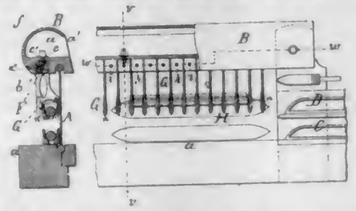


294,966. SHEARING-MACHINE. HARVEY B. CHESS, Pittsburg, Pa. Filed Nov. 2, 1883. (No model.)

Claim.—1. In shears for cutting sheet metal, the fingers I, with suitable mechanism for operating the same, the adjustable stop N, and adjustable spring C, in combination with the knife G and gages H, substantially as and for the purpose set forth.

2. In shears for cutting sheet metal, the knives G G′ and gages H, in combination with the clamps C and fingers I, all constructed to operate substantially as and for the purpose set forth.

294,967. LOOM FOR WEAVING DOUBLE PILE FABRICS. CHAS. COUPLAND, Seymour, Conn. Filed Mar. 29, 1883. (No model.)



Claim.—1. The combination, with the reed and lay of a loom, and upper and lower shuttle-boxes at each end of the lay, of a fixed upper skeleton raceway composed of vertical prongs, having coincident notches arranged in a horizontal series, an upper shuttle having a part or portion corresponding in shape to the said coincident notches, a lower raceway, and a lower shuttle, whereby provision is made for simultaneously weaving duplicate fabrics without rubbing contact of the upper shuttle with the warp, substantially as herein set forth.

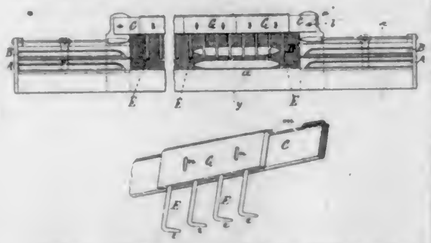
2. The combination, with the reed and lay of a loom, of a top rail, B, having an internal longitudinal chamber, *a*, and in its under side a longitudinal groove, *b*, a bar, F, carrying a skeleton raceway, and adjusting-screws *c*, for vertically adjusting said bar with reference to the top rail, all substantially as and for the purpose herein set forth.

3. The combination, with the top rail, the lay, and reed of a loom, of the skeleton race composed of vertical fingers or prongs G, having the notches *r*, openings *r′*, and slits *r″*, and a shuttle constructed with a spline, *t*, and rib *s*, whereby the shuttle is supported during its flight without contact with the adjacent warp, substantially as and for the purpose herein set forth.

4. The combination, with the reed and lay of a loom, of the top rail, B, having the longitudinal chamber *a* and longitudinal opening *a′*, and constructed with a longitudinal groove, *b*, in its under side, a bar, F, composed of the plate *g*, and blocks *h*, and screws *i*, the fingers or prongs G, arranged to receive and suspend a shuttle at the lower ends during its flight, and the screws, *m*, all substantially as and for the purpose herein set forth.

5. The combination, with the reed and lay of a loom, of a fixed upper skeleton raceway composed of vertical prongs constructed with notches *r*, openings *r′*, and elongated bulb-shaped spurs *s*, an upper shuttle constructed with the rib *s* and spline *t*, a lower raceway, a lower shuttle, and upper and lower shuttle-boxes, the whole arranged for joint use and operation, substantially as and for the purpose herein set forth.

294,968. LOOM FOR WEAVING DOUBLE PILE FABRICS. CHAS. COUPLAND, Seymour, Conn. Filed Mar. 29, 1883. (No model.)



Claim.—1. The combination, with the top rail of the reed of a loom, of a skeleton race having pivotal connection with said top rail, and bolts or set-screws *r*, for retaining said skeleton in fixed position during the normal use and operation of the loom, all substantially as and for the purpose herein set forth.

2. The combination, with the top rail of the reed of a loom, of a longitudinal adjustable bar, C, and a skeleton race pivotally attached to the said bar, all substantially as and for the purpose herein set forth.

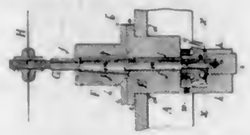
3. The combination, with the top rail of the reed of a loom, of a skeleton race formed in sections, each composed of a plate, G, and a number of prongs or fingers, E, attached to the said plate, a longitudinally-adjustable intermediate bar, C, and hinges or pivots connecting the aforesaid sections to the said bar, all substantially as and for the purpose herein set forth.

4. The combination, with the top rail of the reed of a loom, of a skeleton race formed in sections, each composed of a vertically-slotted plate, G, and prongs or fingers E, attached to said plate G, a bar, C, longitudinally adjustable with reference to the top rail, hinges or pivots connecting the said sections to the said bar, and bolts or set-screws arranged to pass through the vertical slots of the plates of the sections and hold the latter in due relation with the bar C, all substantially as and for the purpose herein set forth.

5. The combination, with the top rail of the reed of a loom, of a bar, C, formed with longitudinal slots, bolts or set-screws *a′*, constructed and arranged to pass through said slots and retain the said bar in due relation with the top rail, a skeleton race pivoted to the bar C, and bolts or set-screws for fixing said skeleton race in firm relation with the bar, all substantially as and for the purpose herein set forth.

6. The combination, with the top rail of the reed of a loom, of the skeleton race, formed of sections, each composed of a vertically-slotted plate, G, and prongs or fingers E, attached to said plate G, the bar C, having the longitudinal slots *b′*, the bolts or set-screws *a′*, for retaining the bar C in due relation with the top rail, hinges or pivots *m*, for connecting the plates G to the bar C, and bolts or set-screws *r*, for fixing the plates G in due relation with the bar, all substantially as and for the purpose herein set forth.

294,969. SPINDLE AND BEARING FOR ROTARY CUTTERS OF MACHINES FOR CUTTING DOUBLE PILE FABRICS. CHAS. COUPLAND, Seymour, Conn. Filed Mar. 29, 1883. (No model.)



Claim.—1. A spindle, G, for carrying a rotary knife or cutter, constructed with the upwardly-tapering part *m*, the shoulder *r*, the cylindrical part *n*, and the conical extremity *s*, substantially as and for the purpose herein set forth.

2. The bearing E, having a conical step, *a′*, and cylindrical bore *f*, and the cap F, having the upwardly-tapering bore *j*, in combination with the spindle G, constructed with the upwardly-tapering part *m*, shoulder *r*, cylindrical part *n*, and conical extremity *s*, all substantially as and for the purpose herein set forth.

3. The combination of the bearing E, having the step *a′*, cylindrical bore *f*, and flange *c*, the cap F, having the upwardly-tapering bore *j* and flange *c′*, and the bolts or set-screws A′, with the spindle G, constructed with the upwardly-tapering part *m*, shoulder *r*, cylindrical part *n*, and conical extremity *s*, all substantially as and for the purpose herein set forth.

4. The combination of the bearing E, having the cylindrical bore *f*, lateral recess *g*, and step *a′*, and the cap F, having the upwardly-tapering bore *j*, with the spindle G, constructed with the upwardly-tapering part *m*, shoulder *r*, cylindrical part *n*, and conical end *s*, all substantially as and for the purpose herein set forth.

5. The combination of the bearing E, having the cylindrical bore *f*, lateral recess *g*, and step *a′*, the cap F, having the upwardly-tapering bore *j* and flange *c′*, and the bolts A′, with the spindle G, constructed with the upwardly-tapering part *m*, shoulder *r*, cylindrical part *n*, and conical extremity *s*, and a circular knife or cutter, H, attached to the upper end of said spindle, all substantially as and for the purpose herein set forth.

6. The combination of the movable block *i*, constructed with the conical bearing *a′*, screw *k*, bearing E, constructed with the lateral recess *g*, flange *c*, and cylindrical bore *f*, and the cap F, constructed with the upwardly-tapering bore *j*, with the spindle G, constructed with the upwardly-tapering part *m*, shoulder *r*, cylindrical part *n*, and conical extremity *s*, all substantially as and for the purpose herein set forth.

7. The combination of the bearing E, constructed with the cylindrical bore *f*, chamber *u*, and passage or opening *n′*, and the cap F, constructed with the upwardly-tapering bore *j*, with the spindle G, constructed with the upwardly-tapering part *m* and cylindrical part *n*, all substantially as and for the purpose herein set forth.

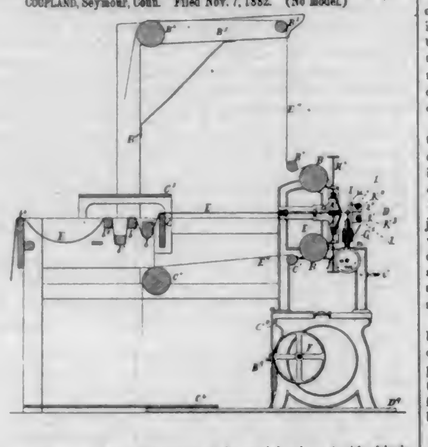
8. The combination of the cap F, constructed with the opening or orifice *r′* and upwardly-tapering bore *j*, and the bearing E, constructed with the chamber *u*, passage *n′*, and cylindrical bore *f*, with the spindle G, constructed with the upwardly-tapering part *m* and cylindrical part *n*, all substantially as and for the purpose herein set forth.

9. The combination of the plug *c‴*, of porous permeable material,

the bearing E, constructed with the chamber *u*, passage *n′*, and cylindrical bore *f*, and the cap F, constructed with the upwardly-tapering bore *j*, with the spindle G, constructed with the upwardly-tapering part *m* and cylindrical part *n*, all substantially as and for the purpose herein set forth.

10. The combination of the bearing E, constructed with the chamber *u*, opening or passage *n′*, and the coincident opening or passage *n⁴*, the screw *r‴*, and cylindrical bore *f*, and the cap F, constructed with the upwardly-tapering bore *j*, with the spindle G, constructed with the upwardly-tapering part *m* and cylindrical part *n*, all substantially as and for the purpose herein set forth.

294,970. MACHINE FOR CUTTING DOUBLE PILE FABRICS. CHAS. COUPLAND, Seymour, Conn. Filed Nov. 7, 1882. (No model.)



Claim.—1. The combination of the straining-bars A A′ with the rolls B B′, means for operating said rolls, tension-bar C, arranged with its upper edge substantially in line with the space *a* between the straining-bars, supplemental tension-bars *b b′ b″*, &c., arranged behind the bar C, a series or system of circular cutters arranged to rotate coincident with the space *a*, means for operating said cutters, two series of rollers arranged to co-operate with the rolls B B′ in drawing the double pile fabric to the cutters, and means for operating said series of rollers, all substantially as and for the purpose herein set forth.

2. The combination, with straining-bars, and means, substantially as described, for drawing the double pile fabric to and between the same, of a bar carrying a series or system of circular cutters, D, extending, substantially, the width of the fabric to be cut, arranged opposite to or coincident with the space between the said bars, and gears or toothed pinions attached to the spindles of said cutters, driving-gears arranged to co-operate with the gears or pinions aforesaid, and means for transmitting a reciprocating motion to the cutter-carrying bar, all substantially as and for the purpose herein set forth.

3. The combination of a spindle, I, carrying a circular cutter, D, with a shell or socket for receiving and supporting the bearing portion of said spindle, a stuffing-box at the bottom of said shell or socket, a gear or pinion attached to the lower end of said spindle, projected through the stuffing-box aforesaid, means for driving the said pinion, and a bar, G′, for carrying the cutter in due relation to the double pile fabric to be severed, all substantially as and for the purpose herein set forth.

4. The combination of a cutter and its carrying-spindle I, cylindrical as to its lower portion, tapered as to its upper portion, and circumferentially recessed at or near the middle of such cylindrical part, with a shell or socket-cylindrical as to the lower and tapering as to the upper part of its interior, an oil-inlet pipe coincident with the circumferential recess aforesaid, and a bar, G′, for carrying the cutter on the spindle in due relation with the double pile fabric to be severed, all substantially as and for the purpose herein set forth.

5. The combination, with the straining-bars A A′, and means, substantially as described, for drawing the double pile fabric to and between the same, of the reciprocating bar G′, carrying a series or system of circular cutters, extending, substantially, the width of the fabric to be cut, having gears on their spindles, means for reciprocating said bar, a secondary shaft, *n*, also carried by the bar G′, and provided with a series or system of gears or toothed wheels for transmitting a positive or non-slipping rotatory motion to the spindles of the cutters, and means for rotating said shaft, substantially as and for the purpose herein set forth.

6. The combination of a circular cutter, D, and a spindle tapered at its upper part, with a shell or socket composed of an internally-cylindrical flanged sleeve, I′, and a cap, I‴, having a tapering interior or chamber, and a reciprocating bar, G′, arranged to carry the cutter in due relation with the double pile fabric to be severed, all substantially as and for the purpose herein set forth.

7. The combination of a cutter and its carrying-spindle, tapered as to its upper portion, cylindrical as to its lower portion, circumferentially recessed at or near the middle of its said cylindrical portion, and having the thin or thread-like spiral groove *r²* above the circumferential recess, with a shell or socket internally cylindrical below and tapered above, and a bar, G′, for carrying the cutter on the spindle in due relation with the double pile fabric to be severed, all substantially as and for the purpose herein set forth.

8. The combination of a cutter and its carrying-spindle I, a shell or socket for holding the bearing portion thereof, a bar, G′, for supporting and carrying the said shell or socket, and a bolt or pin, *r⁴*, extended transversely through the bar G′, with its side fitted into a groove or notch formed in one side of the shell or socket, whereby provision is made for retaining the socket securely upon the bar G′, as the latter carries the cutter in due relation with the double pile fabric to be severed, all substantially as and for the purpose herein set forth.

9. The combination of the spindle I, cylindrical as to its lower and tapering as to its upper portion, provided at or near the center of its cylindrical part with a circumferential recess, and having at its extremity a screw-thread, *s*, with a circular cutter, D, nuts J and J′, a shell or socket composed of the sleeve I′, and cap I‴, a stuffing-box, *n‴*, at the bottom of the sleeve I′, a toothed gear or pinion, *n′*, at the lower projecting end of the spindle, an oil-feeding pipe, *r*, arranged coincident with the circumferential recess of the spindle, a bar, G′, for carrying the circular cutter in due relation with the double pile fabric to be severed, and a bolt or pin, *r⁴*, passed transversely through the bar G′, with its sides fitted into a notch or recess formed in the adjacent surface of the sleeve I′, all substantially as and for the purpose herein set forth.

10. The combination, with the bar G′, means for reciprocating said bar, the cutters and the spindles provided with the pinions *n′*, of the secondary shaft *n*, supported in bearings connected to the said bar G′, and provided with gears *m′*, through which a rotary motion is communicated to the spindles of the cutters, means for rotating said shaft, a collar, K, fast upon the shaft *n*, cheeks K′, and the bracket G×, depending from the bar G′, substantially as and for the purpose herein set forth.

11. The combination, substantially as described, of a series or system of sharpening devices corresponding in number with the cutters, with a series or system of circular cutters extending, substantially, the width of the fabric, and a bar arranged to carry the said cutters in due relation with the double pile fabric to be severed, and means for operating the said cutters, all substantially as and for the purpose herein set forth.

12. The combination, with the reciprocating bar G′ and the circular cutters carried on said bar G′ in due relation to the double pile fabric to be severed, of a shaft supported in suitable bearings upon said bar G′, sharpening devices provided on said shaft, and which by the rotation of the said shaft are brought at intervals upon the circumferential or edge portions of the rotary cutters, and means for actuating the said shaft, the cutters, and the bar G′, all substantially as and for the purpose herein set forth.

13. The combination, with the reciprocating bar G′ and the circular cutters carried by said bar in due relation with the double pile fabric to be severed, of two shafts, K² and K², supported in bearings upon the said bar G′, means whereby said shafts are geared together for simultaneous rotation in opposite directions, each shaft being provided with sharpening devices, which by the rotation of the two shafts are brought at intervals upon the opposite upper and lower edge portions or edges of the rotary cutters, and means for actuating the cutters, the bar G′, and the shafts K² and K², all substantially as and for the purpose herein set forth.

14. The combination, with the bar G′, means for reciprocating said bar, the cutters carried by said bar, and means for rotating the same, of the standards *u* and the two parallel shafts K² and K², the latter having its end projected, and formed with a longitudinal spline, *u′*, gear-wheels connecting said shafts, the pinion *u‴*, the yoke *u²*, the wheel D′, and means for operating said wheel, gearing, substantially as described, for connecting the pinion *u‴* with the wheel D′, and sharpening devices attached to the shafts K² and K², adapted to be applied at intervals to the upper and lower circumferential portions or edges of the rotary cutters by the rotation of the said shaft, substantially as and for the purpose herein set forth.

15. The combination, with circular cutters and means for rotating the same, of arc-shaped sharpening-blocks *m×*, springs for supporting said blocks, shafts carrying said blocks, and means for rotating said shafts, all substantially as and for the purpose herein set forth.

16. The combination, with circular cutters arranged to act in due relation with the double pile fabric to be severed, of sharpening devices composed of an adjustable block, *b×*, an adjusting screw-bolt, *f×*, a spring, K×, an arc-shaped sharpening-block, *m×*, and a shaft carrying the said parts and arranged in relation with the cutters to bring the sharpening-blocks in contact with the cutters during a portion of the revolution of said shaft, means for actuating said shaft and the cutters, and means for

transmitting movement from one to the other of the shafts K^2 K^3, all substantially as and for the purpose herein set forth.

17. The combination, with a circular cutter and its spindle, means for operating said spindle, and straining-bars, across which the double pile fabric may be strained in opposite directions, of the brace f^9, with the block $b^\times$, spring $K^\times$, block $m^\times$, shaft K^3, means for connecting block $b^\times$ to the said shaft, and means for actuating said shaft, all substantially as and for the purpose herein set forth.

18. The combination, with circular cutters arranged to act in due relation with the double pile fabric to be severed, of a shaft arranged parallel with said cutters, and radially bored to receive bolts $f^\times$, the said bolts $f^\times$ constructed with flanges $g^\times$ and squared ends $j^\times$, blocks $b^\times$, adjustable by means of the bolts $f^\times$, arc-shaped sharpening-block $m^\times$, connected with the blocks $b^\times$, springs $K^\times$, a bar, $i^\times$, attached to the shaft, to retain the bolts $f^\times$ by bearing against the flanges of the said bolts $f^\times$, and means for actuating the cutters and shaft, all substantially as and for the purpose herein set forth.

19. The combination of the following elements, to wit: straining-bars, across which the parts of the double pile fabric may be strained in opposite directions, rolls arranged to draw under tension the said fabrics across the said straining-bars, a series or system of circular cutters, a series or system of sockets for receiving the bearings of the spindles of the cutters, and provided with stuffing-boxes at their lower ends, a reciprocating bar constructed to carry said sockets and cutters, and means, substantially as described, for actuating the said parts in unison, substantially as and for the purpose herein set forth.

20. The combination of the following elements, to wit: straining-bars, across which the parts of the double pile fabric may be drawn in opposite directions, rolls for drawing said parts in opposite directions across said bars, tension-bars for resisting the traction of the aforesaid rolls to duly strain the double pile fabric as it is drawn over the straining-bars, a series or system of circular cutters extending, substantially, the width of the fabric, carried by spindles of length greater than the diameter of the cutters, and means, substantially as described, for actuating the said parts in unison, substantially as and for the purpose herein set forth.

21. The combination of the following elements, to wit: straining-bars, across which the parts of the double pile fabric may be strained in opposite directions, to present the pile under tension to the action of the cutters, a series or system of circular cutters extending, substantially, the width of the fabric, provided with gears for driving the same with a positive or non-slipping motion, sharpening devices for maintaining uniformly keen edges upon the said cutters, a bar arranged to carry the said cutters and gears, and means, substantially as described, for actuating the said parts in unison, substantially as and for the purpose herein set forth.

22. The combination of the following elements, to wit: straining-bars, across which the parts of the double pile fabric may be drawn in opposite directions, means, substantially as described, for varying or adjusting the space between the said straining-bars, a series or system of circular cutters extending, substantially, the width of the fabric, arranged opposite and parallel with the center of said space, means, substantially as described, for straining the parts of the double pile fabric in opposite directions across the straining-bars, and means, substantially as described, for simultaneously rotating the cutters each upon its own axis, and reciprocating said cutters as a series or system, all substantially as and for the purpose herein set forth.

23. The combination of straining-bars A A′ with vertical guides for controlling the vertical movement thereof, means, substantially as described, for directing the vertical movement thereof, means, substantially as described, for adjusting and retaining the said straining-bars at varied distances from each other, as required by the exigencies of work, a series or system of circular cutters placed coincident with the space *a* between said straining-bars, means for rotating said cutters, and means for reciprocating the same, substantially as and for the purpose herein set forth.

24. The combination of a series or system of circular cutters with means for operating said cutters, straining-bars A A′, provided at their ends with vertical tongues $B^\times$, brackets having vertical guides $C^\times$ for receiving said tongues, and means, substantially as described, for adjusting the distance between the said straining-bars, substantially as and for the purpose herein set forth.

25. The combination of straining-bars A A′, screws $A^\times$, for limiting the distance between the said straining-bars, brackets having nuts $W^\times$, and screw-shafts $H^\times$ and $I^\times$, acting to rigidly hold the said straining-bars in position with reference to each other, substantially as and for the purpose herein set forth.

26. The combination of brackets $D^\times$, carrying straining-bars A A′, with a series or system of circular cutters placed coincident with the space between said straining-bars, means for operating said cutters, and screws $G^\times$, for adjusting said brackets, and consequently the straining-bars, with reference to said cutting device or mechanism, substantially as and for the purpose herein set forth.

27. The combination of the brackets $D^\times$, having extensions $E^\times$ and nuts $s^\times$, and carrying the straining-bars A A′, with the screws $G^\times$, means, substantially as described, for preventing the longitudinal movement of the said screws, a series or system of circular cutters placed coincident with the space *a* between said straining-bars, means for rotating said cutters, and means for reciprocating the same, all substantially as and for the purpose herein set forth.

28. The combination of the straining-bars A A′, constructed with the vertical tongues $B^\times$, with the brackets $D^\times$, constructed with the vertical guides $C^\times$, shoulders or nuts $w^\times$, and nuts $s^\times$, the screw-shafts $H^\times$ and $I^\times$, guides for controlling the backward or forward movement of the brackets, screws $G^\times$, for affording such backward and forward movement, and means, substantially as described, for adjusting the space between the straining-bars A A′, substantially as and for the purpose herein set forth.

29. The combination of the fixed dovetail horizontal guides $F^\times$ with the brackets $D^\times$, constructed with extensions $E^\times$, having longitudinal grooves corresponding to the guides $F^\times$, the screws $G^\times$, for moving the extensions $E^\times$, and consequently the brackets $D^\times$, upon the horizontal dovetail guides $F^\times$, the straining-bars A A′, carried by the said brackets, a series or system of circular cutters placed coincident with the space *a* between said straining-bars, means for rotating said cutters, and means for reciprocating the same, all substantially as and for the purpose herein set forth.

30. The combination, with the brackets $D^\times$, having extensions $E^\times$, and the guides $F^\times$, of the straining-bars A A′, carried by said brackets, the screws $G^\times$, and squared ends $x^\times$, arranged to give motion to the said brackets, the collar $u^\times$, constructed with circumferential grooves $u^{\times\times}$, the sleeve or bearing $t^{\times\times}$, and tangential pin $w^{\times\times}$, passed through the said collar, and with its side inserted in the circumferential groove of the shaft, substantially as and for the purpose herein set forth.

31. The combination, with the rolls B B′, the straining-bars, the series or system of cutters arranged coincident with the space between the said straining-bars, and the series of rollers B'' B^3 B^4 and C' C'', of the pulleys a^3 and b^7, the belt c^7, means for actuating the rolls B B′, and means for actuating the cutters, all substantially as and for the purpose herein set forth.

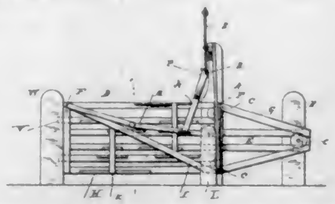
32. The combination of the rolls B B′ and means for actuating said rolls, with straining-bars A A′, cutting mechanism arranged coincident with the space between the said straining-bars, means for disconnecting the rolls B B′ from the driving or motive power, and means for applying a brake to neutralize the acquired momentum of the rolls simultaneously with the disengagement of the latter from the driving mechanism or motive power, substantially as and for the purpose herein set forth.

33. The combination of straining-bars A A′ with cutting mechanism arranged to operate coincident with the space between said bars, rolls B B′, means for driving said rolls from the shaft E^4, shaft E^4, means for driving said shaft, lever A^7, rod g^3, having the laterally-projecting inclined plane, means for operating said rod, and means operated by said rod for disconnecting the driving means of shaft E^4 from said shaft, all substantially as and for the purpose herein set forth.

34. The combination, with the bar G′, means for reciprocating said bar, a shaft, *n*, and a series of cutters, said shaft and cutters being carried by said bar, gearing for transmitting motion to said cutters from said shaft, and means for operating said shaft, of a bracket, $G^\times$, made in two connected parts and provided with cheeks K′, and the collar K on the aforesaid shaft *n*, all substantially as and for the purpose herein set forth.

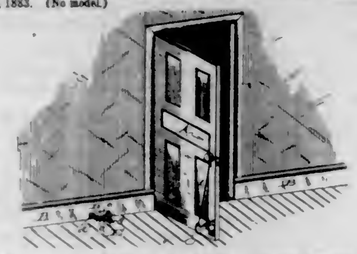
35. The combination, with a bar, G′, means for reciprocating said bar, a series of cutters carried by said bar, a shaft, *n*, mounted in bearings upon the said bar G′, and having a spline formed thereon, and gearing for imparting a rotary motion from said shaft *n* to the cutters, of a pulley, n', provided with an internal groove for the reception of the spline on the said shaft, fixed bearings for said pulley, and means for operating said pulley, all substantially as and for the purpose herein set forth.

294,971. GATE. GEO. M. CUSTER, Mattoon, Ill. Filed Sept. 10, 1883. (No model.)



Claim.—A gate the horizontal rails of which are provided with horizontal cleats located alternately near the top and bottom, upon the sides of said rails, and having vertical braces to cover them, and a diagonal brace over said vertical braces, in combination with a post or posts carrying rollers which play between the rails and between the cleats, substantially as described.

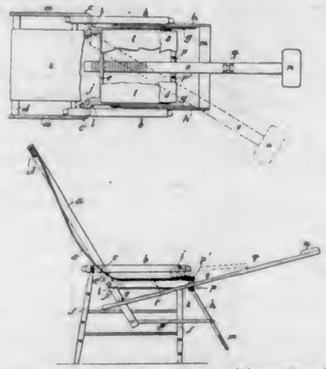
294,972. DOOR-CHECK. LELAN A. DAVIS, Newark, Md. Filed Dec. 8, 1883. (No model.)



Claim.—1. In combination with the latch C, pivoted between the vertical side wings of a casting, and a cushion which extends below the same, said latch being provided with a rod for operating the same from the door-knob, a retaining-catch, E, with a cushioned end, *g*, pivoted between projecting wings *e e*, with serrated edges for the reception of projecting pins *f f* upon the catch, substantially as shown, and for the purposes set forth.

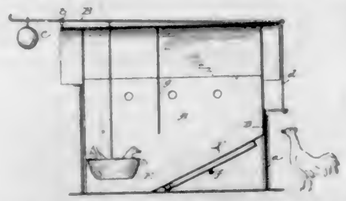
2. The casting D, provided with horizontally-extending side wings with serrated edges, and an adjustable catch, E, having projecting pins *f f*, in combination with the pivoted latch C, the parts being organized substantially as shown.

294,973. RECLINING-CHAIR. ISAAC DEPPEN, Hyde Park, Pa. Filed Mar. 21, 1883. (No model.)



Claim.—In a reclining-chair, the combination of the leg-frame having arms *b*, the back having cross-bar *c* and side bars, *a a*, bent at *a'*, the seat-frame pivoted to said back at *l*, the foot-rest frame pivoted at *i* to arms *b* and to the seat-frame at *k*, and having cross-bar *p*, and the bar *o*, carrying foot-rest and having diagonally-opposite serrations, as and for the purpose specified.

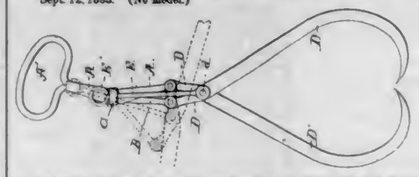
294,974. HEN'S NEST. IRA B. DILLON, Visalia, Cal. Filed Oct. 26, 1883. (No model.)



Claim.—1. The combination, with the box or house, of the lever B, pivoted at *b*, and provided on one end with weight C, the door D, suspended from the opposite end, and the nest E, suspended from lever B between the door D and pivot *b*, substantially as described, and for the purpose set forth.

2. The combination of the suspended nest on the lever B, the weight C, and the suspended door D with the pivoted platform F, the door *a*, and partition *g*, the parts being constructed and operated substantially as described.

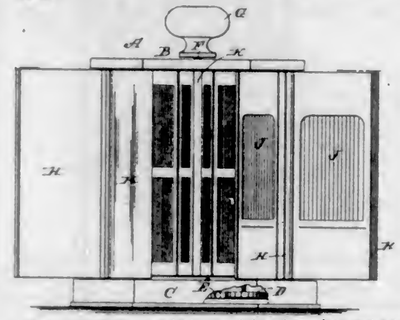
294,975. ICE-TONGS. WILLIAM DIMOND, Huntington, Ind. Filed Sept. 12, 1883. (No model.)



Claim.—1. In an ice-tongs substantially as described and shown, the combination, with the pivoted grapples, the handle-bar, and the connecting-strap, of the operating-rod having its lower end secured to the grapples at the pivot thereof, and its upper end held in suitable guides and contiguous to the hand-hold, as and for the purposes specified.

2. The ice-tongs composed of the handle-bar bent midway its ends, the connecting-strap pivoted to the handle-bar at the angle or bend thereof, and the guide or keeper swiveled to the handle-bar at the same point, the grapples pivoted together and at their upper ends, the one to the handle-bar and the other to the connecting-strap, and the operating-rod passed through the swiveled guide or keeper and secured at its lower end to the grapples at the pivot thereof, all arranged and operating substantially as and for the purposes specified.

294,976. PICTURE-EXHIBITOR. ABRAHAM J. DWORSKY, MARCUS B. KRAMER, and SIMON PHILLIPS, New York, N. Y. Filed Aug. 29, 1883. (No model.)



Claim.—1. A picture-exhibitor consisting of a casing constructed with a series of swinging doors provided in the inner sides with recesses, in each of which one or more picture-holding frames are hinged, substantially as herein shown and described.

2. A picture-exhibitor consisting of a casing constructed with a series of swinging doors provided in the inner sides with recesses, in each of which one or more picture-holding frames are hinged, and with a central standard, on which a series of picture-holding frames are hung, substantially as herein shown and described.

3. A picture-exhibitor consisting of a casing constructed with a series of swinging doors provided in the inner sides with recesses, in each of which one or more picture-holding frames are hinged, combined with mechanism for opening or closing all the doors simultaneously, substantially as herein shown and described.

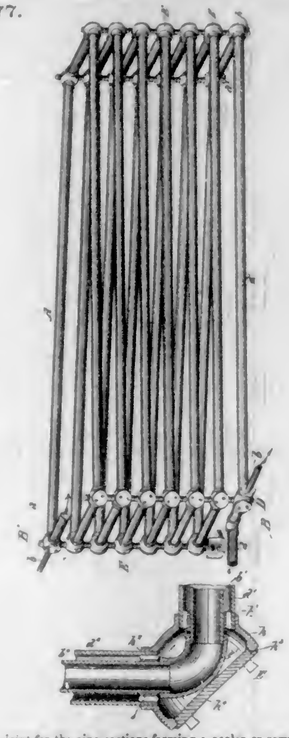
4. In a picture-exhibitor, the combination, with a casing, of a series of swinging doors provided in the inner sides with recesses, in each of which one or more picture-holding frames are hinged, a central standard, picture-holding frames hung on the same, a pinion mounted on the bottom pivot of each door, a cog-wheel engaging with each pinion, a spindle passing loosely through the standard, on the lower end of which spindle the said cog-wheel is mounted, and of a knob or handle on the upper end of the spindle, substantially as herein shown and described.

294,977. COOLER OR REFRIGERATOR FOR ICE-MACHINES. WM. EBERHARDT, Allegheny, Pa. Filed Dec. 3, 1883. (No model.)

Claim.—1. In a cooler or refrigerator, the combination of a series of two or more sections of pipe suitably connected and a series of two or more sections of smaller pipe suitably connected, arranged within the first series, and entirely surrounded thereby at and around the joints, as well as throughout their lengths, substantially as set forth.

2. In a cooler or refrigerator, a series of two or more sections of pipe suitably connected, in combination with a series of two or more sections of smaller pipe suitably connected, arranged and supported centrally within the first series, and entirely surrounded thereby at and around the joints, as well as throughout their lengths, substantially as set forth.

294,977.



3. In a joint for the pipe-sections forming a cooler or refrigerator, a combination of a shell suitably connected with the water-pipe sections and an elbow located within said shell, and connected with the gas-pipe sections arranged within the water-pipes, substantially as set forth.

4. As a joint for the pipe-sections of a cooler or refrigerator, the hemispherical shell A, having threaded openings h' h^2, the pipe-sections screwed into said openings, in combination with the elbow d', arranged within the shell, and the gas-pipe sections arranged within the water-pipe sections and connected to said elbow, substantially as set forth.

5. As a joint for the pipe-sections of a cooler or refrigerator, the hemispherical shell A, having a threaded opening, h' h^2, the water-pipe sections screwed into said openings, in combination with the elbow d', arranged within said shell, the gas-pipe sections arranged within the water-pipe sections and connected to the elbow, and the winged thimbles c, substantially as set forth.

6. As a coupling for uniting gas and water pipes to a cooler or refrigerator, a shell, d, having the threaded openings d'' d^2 d^3, the water-pipe sections screwed into the openings d' and d^2, in combination with the elbow e, located within said shell, the gas-pipe sections connected with said elbow, one of the sections being arranged within one of the water-pipe sections, and the perforated plug f, surrounding the other gas-pipe section and screwing into the opening d^3, substantially as set forth.

7. As a joint or coupling for a cooler or refrigerator, a hemispherical shell having suitable threaded openings for the reception of pipe-connections, and an opening in its flat side, in combination with a plug or cover therefor, substantially as set forth.

8. The method of cooling gases, which consists in circulating the gas to be cooled in one direction through the pipes of a cooling apparatus, and in forcing the cooling medium in an opposite direction through pipes arranged outside of the gas-circulating pipes, substantially as set forth.

294,978. TREATING VOLATILE AND INFLAMMABLE FLUIDS AND OILS. SOLOMON M. EBERMAN, New York, N. Y. Filed Dec. 20, 1883. (No specimens.) Patented in England Aug. 16, 1883, No. 3,972.

Brief.—Improvement on Letters Patent No. 282,970, dated August 14, 1883, to same inventor.

Claim.—1. As a new article of manufacture, a hardened mass, block, or cake of granulated, thickened, partly-solidified, or solidified volatile and inflammable fluid or oil, substantially as described.

2. As a new article of manufacture, a hardened mass, block, or cake of thickened, partly-solidified, or solidified volatile and inflammable fluid or oil, combined or mixed with a combustible substance, substantially as described.

3. As a new article of manufacture, a hardened mass, block, or cake of thickened, partly-solidified, or solidified volatile and inflammable fluid or oil, combined or mixed with a viscous, gelatinous, cementitious, or binding substance, substantially as described.

4. As a new article of manufacture, a hardened mass, block, or cake of thickened, partly-solidified, or solidified volatile and inflammable fluid or oil, combined or mixed with a combustible substance, and a viscous, gelatinous, cementitious, or binding substance, substantially as described.

5. As a new article of manufacture, a hardened mass, block, or cake of thickened, partly-solidified, or solidified volatile and inflammable fluid or oil, combined or mixed with a substance or substances for the purpose of protecting the mass, block, or cake from atmospheric or other influences, substantially as described.

6. As a new article of manufacture, a hardened mass, block, or cake of thickened, partly-solidified, or solidified volatile and inflammable fluid or oil, combined or mixed with a viscous or binding material and an earthy or other protective substance, for the purpose of protecting the mass, block, or cake from atmospheric or other influences, substantially as described.

7. As a new article of manufacture, a hardened mass, block, or cake of solidified or thickened volatile and inflammable fluid or oil, provided with a coating for protecting the said mass, block, or cake from atmospheric and other influences, substantially as described.

8. As a new article of manufacture, a combination of oil with a volatile alkaline substance or substance having alkaline properties, substantially as described.

9. The herein-described process of producing hardened, weather-resisting blocks, cakes, or masses of volatile and inflammable fluid or oil, consisting in thickening, solidifying, or granulating the oil or fluid and then mixing it with an earth, substantially as described.

10. The herein-described process of producing hardened, weather-resisting blocks, cakes, or masses of volatile and inflammable fluid or oil, consisting in thickening, solidifying, or hardening the oil and providing it with a protective coating, substantially as described.

11. The herein-described process of mixing oils with other substances for the purpose of thickening, solidifying, or hardening the said oils, consisting in carrying out the said operation in vacuo, substantially as described.

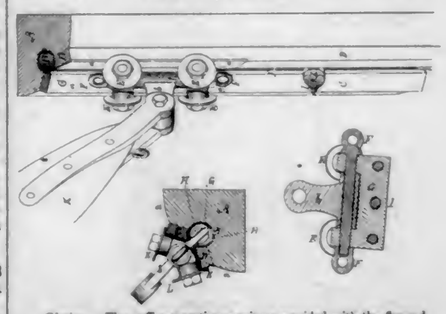
294,979. RIVET. ANDREW EPPLER, Jr., Boston, Mass. Filed Aug. 14, 1883. (No model.)



Claim.—1. A rivet or similar article having a head, and teeth bent from the inner circular edge or margin of said head, said teeth being separated by spaces, and being narrower and thinner at the points than at the bend, where they are united to the head.

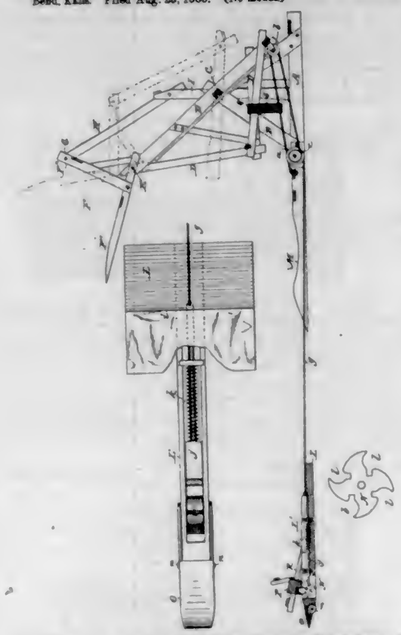
2. A rivet or similar article having a head with a round central perforation, and teeth extending from the inner edge of said head at about a right angle thereto, said teeth being separated by spaces at their line of union with the head, substantially as shown and described.

294,980. GAFF-SUPPORT FOR VESSELS. GEORGE IRA FIELD, Fall River, Mass. Filed Dec. 26, 1883. (No model.)



Claim.—The gaff-supporting carriage provided with the flanged wheels, the swinging arm, and the flange and its friction-rollers, essentially as described, in combination with the mast having the bearing-rails and the open tube or groove, as explained, all being adapted and arranged substantially and to operate as set forth.

294,981. HAY AND STRAW STACKER. MORTON B. FITTS, Great Bend, Kans. Filed Aug. 23, 1883. (No model.)



Claim.—1. A straw or hay stacker consisting of a stationary base-frame, a swinging frame supported therein, a rocking straw-holder, F, carried upon the end of the swinging frame, the bars H, and the weighted levers I, all combined substantially as shown and described.

2. The combination, with the stationary base-frame and the swinging frame D, carrying the straw-holder at its end, of a counter-weight arranged upon the opposite side of the fulcrum from the straw-holder, and arranged, as described, to rise when the straw-holder falls, as set forth.

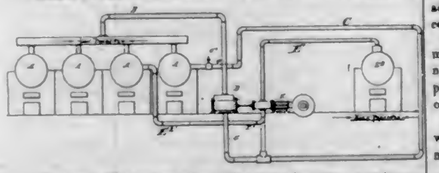
3. The combination, with the straw holding and elevating devices, of a windlass, a hitch or trip device, and a separable rake, the said windlass being connected to the tripping devices and the elevating devices, as described, and the rake adapted to connect with the tripping device to elevate the straw-holder, and then be disconnected therefrom, as described, whereby the single team of horses is made to gather and stack the straw and hay.

4. The combination, with a windlass and the stacker-frame, of the spring hitch or trip L L', ropes connecting the same to the windlass, the trip-wheel N, and a rope connecting the locking-bolt of the trip to the windlass, substantially as shown and described.

5. The combination, with the straw-elevating devices and the windlass for working them, of the rigid guides M M, and the adjustable hitch or trip L L', as and for the purpose described.

6. The adjustable hitch or trip L L', having a pivoted hood or nose, in combination with a separable rake adapted to ride upon the same, as described.

294,982. METHOD OF AND APPARATUS FOR STEAM-HEATING. MARK S. FOOTE, Burlington, Iowa. Filed June 30, 1883. (No model.)



Claim.—1. The process of supplying steam in a steam-supply system, consisting of, first, generating steam at a low pressure in suitable steam-generators, and then pumping or otherwise forcing said steam by an exterior power into and forward through the mains and service-pipes, thereby creating an artificial circulation, substantially as described.

2. The method of supplying steam in a steam-supply system, consisting, first, of generating steam at a low pressure in steam-generators, and then passing the same through a pump operated by steam or other exterior power, thereby pumping the steam forward through the mains and service-pipes, and thus creating an artificial circulation, substantially as described.

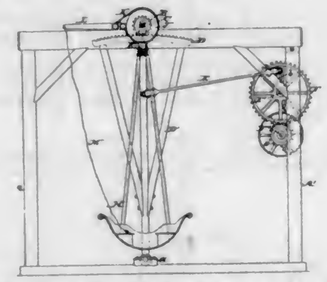
3. The method herein described for supplying steam in a steam-supply system, consisting of, first, generating the steam at a low pressure in suitable generators, and then by a suitable pump or equivalent mechanism forcing the steam forward at a higher pressure into the service-pipes and mains, substantially as described.

4. In a steam-supply system, generators for generating steam at a low pressure, a pump or other mechanism adapted to receive and force the steam forward under increased pressure into the mains, and a graduated valve or its equivalent for confining the steam within the main until it shall have reached a previously-determined degree, substantially as described.

5. In a steam-supply system, generators for generating steam at a low pressure, a pump or equivalent for receiving said steam and forcing it forward under increased pressure into the mains, said main eventually discharging again into the generators, and a graduated valve or equivalent for regulating the pressure within the main, and adapted to open by excessive pressure and permit the steam or condensed water to discharge back into the generators, substantially as described.

6. In a steam-supply system, generators for generating steam at a low pressure, a pump for receiving and forcing said steam forward at an increased pressure, a steam-engine for actuating the pump, said steam-engine being fed from a steam-generator at a high pressure, and a conduit leading its exhaust-steam into the generators A or mains C of the steam-supply, substantially as described.

294,983. SWING. ISAAC N. FORRESTER, Camden, N. J. Filed Aug. 18, 1883. (No model.)



Claim.—1. A swing hung loosely on a shaft which is adapted to rock or be continuously rotated in reverse directions, in combination with devices for coupling said swing and shaft, whereby the swing may be set in motion by the operation of said devices and stopped by the release of the same without stopping the rocking shaft, substantially as and for the purpose set forth.

2. A swing hung loosely on a shaft, and means for clamping the swing and shaft, in combination with means for rotating said shaft in reverse directions, whereby the swing and shaft may be continuously coupled and the swing receive motions in both directions from the shaft, substantially as and for the purpose set forth.

3. A swing, in combination with a shaft from which it depends, a pinion on said shaft, a toothed segment attached to an oscillating frame and engaging with said pinion, and mechanism for coupling said swing and shaft, substantially as and for the purpose set forth.

4. A swing hung loosely on a rocking shaft and means for rotating said shaft in reverse directions, in combination with a head or pulley on said shaft, a coupling or clutching device connected with the swing, adapted to engage with said head, and a lever for operating said device, combined and operating substantially as set forth.

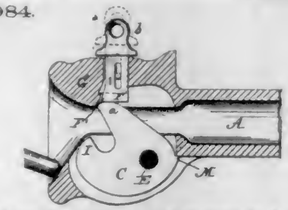
5. A swing, in combination with a reversely-rotating shaft and means for operating the same, a head on said shaft, a friction-strap connected with the swing, freely encircling said head, and a lever for compressing said strap on the head, the lever being connected with both ends of the friction-strap, substantially as and for the purpose set forth.

6. A swing, rocking shaft, and connected gearing, in combination with a pitman or rod and a crank-wheel, said rod being adjustably connected with said wheel, substantially as and for the purpose set forth.

294,984. CAR-COUPLING. DONALD FRASER and VIRTUS L. RICE, Minneapolis, Minn. Filed Jan. 4, 1884. (No model.)

Claim.—1. In a car-coupling, a cam disk or plate, C, pivoted eccentrically in the draw-head, as set forth, provided with projections I

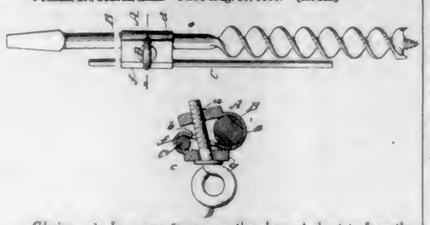
294,984.



and *a*, and stop M, in combination with the slotted pin F, as set forth.

2. In a car-coupling, the draw-head provided with an open slot, in which is pivoted the cam-plate C, as described, said cam-plate being provided with a stop, M, which impinges against the draw-bar at the rear end of said slot, as and for the purpose set forth.

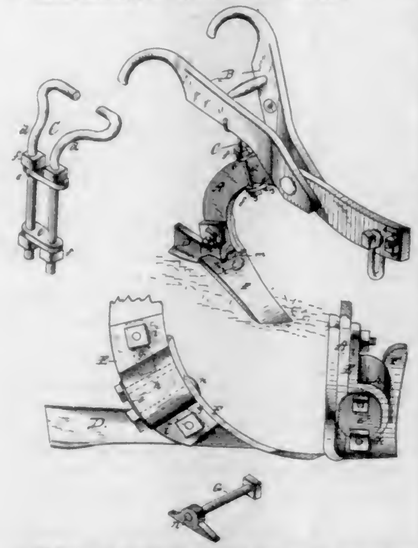
294,985. GAGE ATTACHMENT FOR BORING-BITS, &c. JOHN FULLER, Sr., Seneca, Kans. Filed Aug. 15, 1883. (Model.)



Claim.—1. In a gage for augers, the clamp A, bent to form the loops *d* and *f*, and thickened or re-enforced at its ends, substantially as and for the purposes set forth.

2. In a gage for augers, the clamp-plate A, bent to form the loops *d* and *f*, re-enforced at its ends and formed with the holes *a b c*, in combination with the screw D and bar C, arranged to operate substantially as set forth.

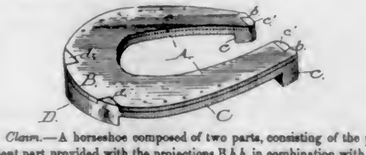
294,986. PLOW. DAVID A. C. FUNDERBURK and JEFFERSON L. FUNDERBURK, Bainbridge, Ga. Filed Sept. 4, 1883. (No model.)



Claim.—1. In combination, the plow-beam, the landside, formed with elongated bolt-holes, and the side frame, E, having elongated bolt-holes, the said landside and frame being removably and adjustably secured to the beam, substantially as and for the purpose set forth.

3. In combination with the beam-handles of a plow, said handles being pivotally secured to the beam, the stirrup C, consisting of the two side bars, *d d*, pivotally attached to the handles, the upper or lower plates or washers, *e e*, and the adjusting-nuts *f f*, said plate and adjusting-nuts, with the side bars, being adapted to embrace the plow-beam, substantially as and for the purpose set forth.

294,987. CAR-COUPLING. GARRETT B. GANO, Easton, Md. Filed Jan. 15, 1884. (No model.)



Claim.—1. The draw-head, in combination with the independent weighted link-sustaining levers H F, for the purpose set forth.

2. The curved dog B, pivoted behind the center, in combination with the vertically-sliding plate *a*, provided with vertically-moving rods *b b*, substantially as and for the purpose set forth.

3. The car-coupling herein described, having the draw-head A, curved dog B, pivoted behind the center, the sliding plate *a*, provided with slot *b'* and rods *b b*, lever C, having foot-piece *p*, and weighted levers H F, all constructed, arranged, and operated as set forth.

294,988. HANDLE FOR TRUNKS, &c. GEORGE SHATTUCK GATES, Athol, Mass. Filed Dec. 26, 1883. (No model.)



Claim.—A trunk-handle which consists of the metallic pockets E, having the horizontal slots *d*, in combination with the flexible strip A, metallic spring B, covering C, and studs *c*, the latter arranged in and passing through the strip and covering, and extending into the slots *d*, as set forth.

294,989. MACHINE-SHAFT AND ITS BEARINGS. GEORGE SHATTUCK GATES, Athol, Mass. Filed Jan. 16, 1884. (No model.)



Claim.—1. The combination, with the tubular or chambered shaft and one or each of its steps, and the pivot or pivoted journal thereof, of the spring and valve and valve-seat arranged within the shaft, the educt leading from such seat to the bearing-surfaces of the step and pivot or pivoted journal, and the valve-opener extended into and through the educt, all being applied and for use and to operate substantially as set forth.

2. The combination, with the tubular shaft and its pivotal journals, and steps arranged in it, and provided with educts and valve-seats, as set forth, of the valve-openers extended from the journals through the educts and the valves and their spring arranged in the shaft and between the valve-seats, all being substantially as represented.

294,990. HORSESHOE. GREEN CLAY GOODLOE, Washington, D. C. Filed Dec. 17, 1883. (No model.)

Claim.—A horseshoe composed of two parts, consisting of the permanent part provided with the projections B *b b*, in combination with the removable part, having the toe D, recesses *d d*, and heel-pieces *c'*, adapted to fit in the upper part, and secured thereto by screws, substantially as shown and described.

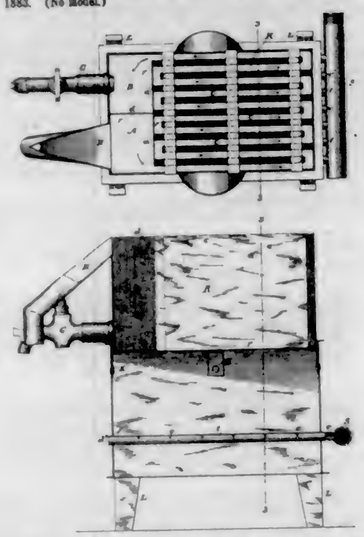
294,991. PUNCH. GEORGE H. GOODMAN and JAMES B. HUNT, Otego, N. Y. Filed June 14, 1883. (No model.)

294,991.



Claim.—The herein-described punch, provided at its lower portion with cutting-faces inclined in opposite directions, said faces crossing the base of the punch at its center, substantially as shown, and for the purpose set forth.

294,992. APPARATUS FOR HEATING WATER, &c., FOR DOMESTIC AND OTHER PURPOSES. WATSON A. GOODYEAR, New Haven, assignor of one-half to Landon Ketchum, Saugatuck, Conn. Filed Oct. 6, 1883. (No model.)



Claim.—1. In an apparatus for heating water and other liquids, a metallic heating-vessel, R, divided internally into a series of parallel vertical compartments, *c c*, connected with each other and terminating in the chambers A and B, through which the liquid to be heated passes, and having the open spaces *a a* between all the compartments, whereby the vessel is divided vertically, substantially as and for the purposes specified.

2. The combination, substantially as hereinbefore set forth, of the parallel water-heating compartments or chambers communicating with each other in series, the intervening spaces constituting flues for heating said compartments, the supply and discharging chambers A and B, in which the respective ends of said series of compartments terminate, and an overflow-spout leading from the upper portion of said supply-chamber.

3. The combination, substantially as hereinbefore set forth, of a narrow continuous water-heating chamber folded or wound upon itself throughout its entire length, so as to leave a narrow flue intervening between each adjacent fold, and terminating at both extremities in enlarged chambers or compartments.

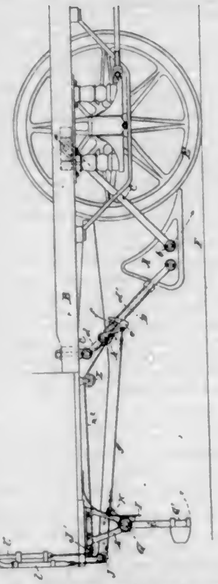
4. The combination, substantially as hereinbefore set forth, with a heating-vessel consisting of a continuous narrow water-containing chamber folded or wound upon itself, and having heating-flues intervening between the successive folds, substantially as described, of a gas-stove consisting of the horizontal gas-burner J, composed of parallel pipes *p p*, leading from the supply-pipe S, and extending within an inclosing-case of suitable proportions for receiving said water-containing chamber, substantially as described.

294,993. ROWLOCK. SAMUEL H. HAAS, Chicago, Ill., assignor to Charles J. Wright. Filed Aug. 10, 1883. (No model.)

Claim.—1. The combination of a rowlock with the spring-catch I, which is pivoted to one of the prongs of the rowlock, and which catch extends downward into the rowlock, so as to engage with the top of the oar and prevent it from having any vertical play in the rowlock, the spring-snap being provided with a suitable handle for drawing the catch back out of position, substantially as shown.

2. The combination of a rowlock with the spring-catch I, which extends downward into the rowlock, so as to engage with the top of the oar and prevent it from having any vertical play, the shank B of the rowlock being provided with suitable means for preventing the rowlock from turning into such a position that the handle of the spring-catch cannot be readily taken hold of to release the oar, substantially as specified.

294,994. CAR-BRAKE. WILLIAM HACKLÄNDER, Ehrenfeld, Germany. Filed Jan. 15, 1884. (No model.) Patented in Germany Feb. 25, 1882, No. 19,464.



Claim.—1. The combination, with a railroad-car, of a brake-shoe suspended, as described, by arms C D underneath the car, and a swinging brake, bar, or frame, G', under the end of the car, connected, as described, to a latching device on arm D, whereby the swinging of said bar or frame back and under the car will automatically detach said latching device and permit the said brake-shoe to drop downward upon the railroad-track in front of and under the car-wheel, all as specified.

2. The combination, with a railroad-car, of the shoe A, arms C and D, the latter formed of two parts, *d d'*, provided with the described latching device, the chain or cord connected to said latching device and passing around a loose pulley, J, under the platform of the car, upward above the same, all as and for the purpose described.

294,995. CAR-WHEEL. JOHN A. HAGAN, Three Rivers, Mich., assignor, by mesne assignments, to the Hagan Steel Car Wheel Company, same place. Filed Aug. 21, 1883. (No model.)



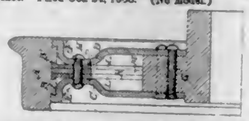
Claim.—1. The combination, with a tire for a car-wheel having a dovetail annular groove in its inner face, of a sectional dovetail ring secured in such groove, substantially as set forth.

2. The combination, with a hub of a car-wheel and its tire provided with a sectional dovetail ring, of side plates or disks pressed between the hub and tire and bolted to the hub and ring, substantially as set forth.

3. In a car-wheel, the combination, with a hub and tire provided with a sectional dovetail ring, of side plates or disks having flanged rims, and bolted to the hub and ring, substantially as set forth.

4. In a car-wheel, the combination, with a hub and a tire provided with an internal sectional dovetail ring, of side plates or disks with rims curving outwardly from the depending flange, and bearing against the tire, and bolted to the ring and hub, substantially as set forth.

294,996. CAR-WHEEL. JOHN A. HAGAN, Three Rivers, Mich., assignor, by mesne assignments, to the Hagan Steel Car Wheel Company, same place. Filed Oct. 24, 1883. (No model.)



Claim.—1. A tire for a car-wheel, having an inserted ring in its inner face, and grooves of dovetail, tongue-and-groove, or equivalent sectional form in its sides, substantially as set forth.

2. The combination, with a tire for a car-wheel, having an inserted ring in its inner surface and grooves in its sides, of side plates or disks forming the body of the wheel, substantially as set forth.

3. The combination, with a tire for a car-wheel, having an inserted ring in its inner surface and grooves in its side, of side plates or disks with rims curving outwardly, and with return-flanges interlocking with the grooves in the sides of the tire, substantially as set forth.

4. In a car-wheel, the combination, with side plates or disks having flanged rims or rims curving outwardly, of brackets supporting said rims, substantially as set forth.

5. The combination, with a tire for a car-wheel, having a ring inserted and secured in its inner surface, of side plates or disks recessed or grooved to interlock with projections on the sides of the inserted ring, substantially as set forth.

6. In a car-wheel, the combination of the tire having annular grooves in its sides, and the body of the wheel composed of one or more disks, the same being flanged at the periphery for the purpose of forming a tire-seat, of a ring or rings on the wheel-body, and formed so as to interlock with the grooves in the sides of the tire, substantially as set forth.

7. In a car-wheel, the combination of the tire having annular grooves in its sides and an annular ring in its inner surface, with a wheel-body composed of one or more disks, the same being flanged at the periphery for the purpose of forming a tire-seat, of a ring or rings on the wheel-body, and formed so as to interlock with the grooves in the sides of the tire, substantially as set forth.

8. In a car-wheel, the combination, with the tire having an annular web or ring in its inner surface and annular grooves in its sides, of dovetail or tongue-and-groove sectional form, of side plates or disks forming the body of the wheel, with rims curving outwardly from the annular web or ring and forming the tire-seat, and having return-flanges interlocking with the annular grooves in the sides of the tire, and securing the tire to the wheel-body, substantially as set forth.

294,997. CAR-WHEEL. JOHN A. HAGAN, Three Rivers, Mich., assignor, by mesne assignments, to the Hagan Steel Car Wheel Company, same place. Filed Jan. 16, 1884. (No model.)



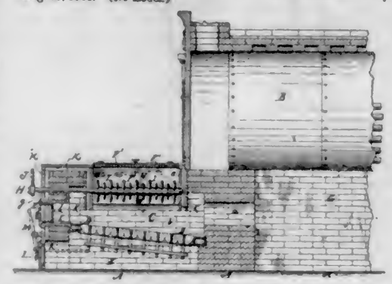
Claim.—1. The combination, with a car-wheel tire, of two inserted sectional rings on its inner face near its edges, where least wear occurs, substantially as and for the purpose set forth.

2. The combination, in a car-wheel, of a tire having two inserted sectional rings near its edges, and side plates or disks, with inwardly-projecting flanges placed inside of the rings, substantially as set forth.

3. In a car-wheel, the combination, with the tire having the two inserted sectional rings placed outside of the flanged disks or side plates, of the distance-pieces and the bolts passing through them, substantially as set forth.

4. In a car-wheel, the combination, with the hub, tire, and side plates, or body portion of the wheel, of two rings on the inner face of the tire, at least one of which is inserted in sections, and to which rings the body portion of the wheel is secured, substantially as set forth.

294,998. BOILER-FURNACE. JOSEPH J. HALL, Chicago, Ill., assignor to Hall's Automatic Feed Boiler Furnace Company, same place. Filed Aug. 13, 1883. (No model.)

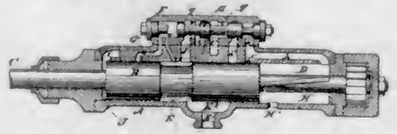


Claim.—1. The combination, in a furnace, of the coking-oven F, the retorts C C, and the rocking breaker and stoker centrally pivoted, the said coking-oven opening into the said retorts, and all arranged substantially as shown and described with relation to each other, for the purposes set forth.

2. The combination, in a furnace, of the coking-oven F, the retorts C C, and a stoker and breaker centrally pivoted in the said coking-chamber, and consisting of the rocking shaft *g*, having thereon the fingers I I, and provided with an actuating lever or handle, substantially as and for the purposes set forth.

3. The combination, in a furnace, of the coking-oven F, the retorts C C, and an air-chamber, K, the latter extending from the ash-pit up the front of the furnace, thence over the front wall, and thence around the sides and ends of the coking-oven, and entering the said retorts, substantially as and for the purposes specified.

294,999. STEAM ROCK-DRILL. FREDERIC A. HALSEY, New York, N. Y., assignor to the Rand Drill Company, same place. Filed Jan. 16, 1884. (No model.)



Claim.—1. In a steam rock-drill or analogous machine, the cylinder, the elongated circumferentially-grooved piston, and the described means for distributing the steam to both ends of the cylinder, together with steam-induction passages leading from the said circumferential chamber of the piston, and located, one or all, relatively to the piston, as described, so that the piston, in its either stroke, closes the respective inlet-ports before it reaches the limit of its stroke, whereby the steam is used expansively during a portion of the stroke of the piston, as specified.

2. In a steam rock-drill or analogous machine, the cylinder and elongated circumferentially-grooved piston, and the induction and eduction steam passages for distributing steam to the cylinder, substantially as described, and the single circumferentially-grooved steam-moved valve working in the described chambered valve-chest, and co-operating with the piston to distribute the steam to both ends of the cylinder, all constructed and arranged to operate as and for the purpose specified.

3. In a steam rock-drill or analogous machine, the cylinder, the elongated circumferentially-grooved piston, the described circumferentially-grooved steam-moved valve in the described valve-chest, and the steam passages or ports located relatively to each other and to the piston and valve, as described, whereby, while said valve operates to control the distribution of steam to the ends of the cylinder, the piston operates directly as a cut-off to the inlet-ports, as specified.

4. The combination, in a steam rock-drill or analogous machine, of the cylinder A, the elongated circumferentially-grooved piston B, valve-chest F, single valve G, the steam-inlet port I, and the exhaust-passage i', and the passage i, which serves both as an induction and eduction port for the lower end of the cylinder, substantially as and for the purpose specified.

5. In a steam rock-drill or other analogous machine, the combination of the cylinder A, elongated circumferentially-grooved piston B, single valve G, valve-chest F, and the steam-inlet port *e*, controlled directly by the said piston, and communicating between the steam-chest E, formed by the circumferential groove in the piston and the lower end of the valve-chest, whereby steam is introduced into the lower end of said valve-chest from the said steam-chest in the cylinder, as and for the purpose described.

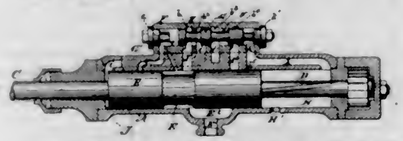
6. In a steam rock-drill or other analogous machine, the combination of the cylinder A, elongated circumferentially-grooved piston B, valve G, and the valve-chest F, with the steam-passage h opening at one end into the upper end of the cylinder, and at the other end into a branch passage, h', controlled by the piston, and opening at one end into the upper end of the valve-chest, and at the other end into the cylinder, whereby steam is introduced from the steam-chest in the piston, both into the upper end of the cylinder and the upper end of the valve-chest, substantially as and for the purpose described.

7. The cylinder provided with the longitudinal groove E', and the supply-pipe F', communicating therewith, and the elongated piston provided with the circumferential groove, forming a steam-chest in the cylinder communicating with said groove E', as and for the purpose described.

8. In a steam rock-drill or analogous machine, the cylinder, the elongated circumferentially-grooved piston, and the described means for distributing the steam to the cylinder, the combination, with the piston, of an inlet-passage to conduct steam from the circumferential chamber in the piston, to be distributed to the upper end of the cylinder, said passage being governed by the piston, and located relatively thereto, as described, so that the piston, in its upward stroke, closes said passage before reaching its termination, whereby the steam is used expansively during a portion of the upward stroke, as specified.

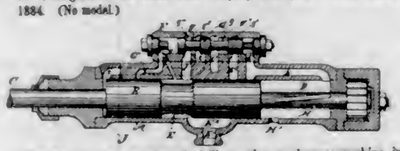
9. In combination with a steam-moved valve, means for introducing live steam into one end of the valve-chest, while the other end of the valve-chest is in communication with the end of the main cylinder containing expanded steam, whereby the valve is moved by the excess of the pressure of live steam acting upon one end of it over the pressure of expanded steam acting upon the other end of it.

295,000. STEAM ROCK-DRILL. FREDERIC A. HALSEY, New York, N. Y., assignor to the Rand Drill Company, same place. Filed Jan. 16, 1884. (No model.)



Claim.—In a steam rock-drill or other analogous machine, the cylinder and piston, the passages for distributing steam to the cylinder, and the valve governing said passages, together with the exhaust-port leading from the upper end of the cylinder and governed by the piston, and located relatively thereto, as described, so that the residual steam remaining in the upper end of the cylinder after the exhaust is confined therein and retained while the piston makes its upward stroke, and until on its return-stroke the exhaust is again opened, whereby the steam in its compression assists in arresting and terminating the upward stroke, and by its re-expansion assists in propelling the piston in its downward stroke, as described.

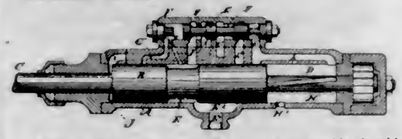
295,001. STEAM ROCK-DRILL. FREDERIC A. HALSEY, New York, N. Y., assignor to the Rand Drill Company, same place. Filed Jan. 16, 1884. (No model.)



Claim.—1. In a steam rock-drill or other analogous machine in which the length of the working-stroke is subject to variation, the combination, with the main piston and a valve governing the inlet-port to the lower end of the cylinder, of a passage for the transmission of steam whereby said valve is actuated, said passage being constricted, as and for the purpose described, and an inlet-passage to the upper end of the cylinder arranged so that it is closed before the piston reaches the limit of its downward stroke, as described.

2. In a steam rock-drill or other analogous machine in which the length of the working-stroke of the piston is subject to variation, the combination, with the main piston, the inlet-passages to the cylinder leading from the valve-chest, and the valve governing said passages, of the port *a*, leading to the valve-chest, governed by the piston and located relatively thereto, as described, so that it is opened when the piston in its downward stroke reaches the point of limit of the shortest practical working-stroke which in practice it is intended to be permitted to make, and the inlet-port h^2, for conducting steam to the upper end of the cylinder, which actuates the piston in its downward stroke, also governed by the piston and located relatively thereto, as described, so that it is closed before the piston reaches the end of its downward stroke, whereby the steam is used expansively during a portion of said stroke, all constructed and arranged to operate as and for the purpose specified.

295,002. VALVE-GEAR FOR ROCK-DRILLS. FREDERIC A. HALSEY, New York, N. Y., assignor to the Rand Drill Company, same place. Filed Oct. 26, 1883. (No model.)



Claim.—1. In a steam rock-drill or analogous machine in which the length of its working-strokes is liable to variation, the combination, with a steam-moved valve governing the inlet-port to the lower end of the cylinder, of a passage communicating with the valve-chest for the transmission of steam, by the agency of which the valve is shifted to introduce steam to the lower end of the cylinder, said passage being suitably constricted, as described, to so limit the transmission of steam that between the commencement of the movement through it of the steam whereby the valve is shifted and the actual shifting of the valve there shall necessarily occur a determinate delay, in which the piston may move beyond the point of the shortest working-stroke which, in practice, it is intended to be permitted to make, and make its longer strokes, as described, by the time steam is introduced into the lower end of the cylinder, as and for the purpose specified.

2. The method of decreasing the steam-cushioning in the working-stroke of the piston of a rock-drill or other analogous machine liable to make strokes of variable length, which consists in the application, at the time the piston reaches its shortest practical stroke, of a gradually-increased steam-pressure to the steam-moved valve governing the inlet-port to the lower end of the cylinder, whereby between the beginning of said pressure and the shifting by it of the said valve there will necessarily occur a determinate delay, as and for the purpose specified.

3. In a steam rock-drill or other analogous machine wherein the piston is liable to make strokes of variable length, the combination, with the piston and a steam-moved valve governing the inlet-port to the lower end of the cylinder, of an exhaust-passage from the upper end of the valve-chest and an inlet-passage to the lower end of the valve-chest, said inlet-passage being constricted, as described, for the purpose of compelling the gradual admission of steam to the valve-chest, whereby there shall necessarily occur a determinate delay between the commencement of the transmission of steam through said inlet-passage to shift the valve to admit steam to the lower end of the cylinder and the actual shifting of the valve, as and for the purpose described.

4. In a steam rock-drill or other analogous machine wherein the piston is liable to make strokes of variable length, the combination, with the piston and a steam-moved valve governing the inlet-port to the lower end of the cylinder, of an inlet-passage to the lower end of the valve-chest and an exhaust-passage from the upper end of the valve-chest, the said exhaust-passage being constricted, as described, for the purpose of compelling the gradual exhausting of the steam from said upper end of the vale-chest, whereby there will necessarily occur a determinate delay between the opening of said exhaust-passage and the shifting of the valve, as and for the purpose described.

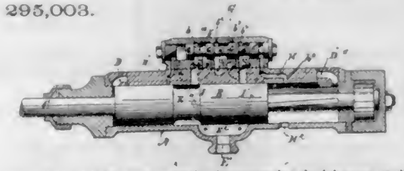
5. In a steam rock-drill or other analogous machine wherein the piston is liable to make strokes of variable length, the combination, with the piston and a steam-moved valve governing the inlet-port to the lower end of the cylinder, of the inlet-passage to the lower end of the valve-chest and the exhaust-passage from the upper end of the valve-chest, both being suitably constricted to conjointly retard the action of the steam to shift the valve, whereby there shall necessarily occur a determinate delay between the commencement of the movement through said passage of the steam to shift the valve to admit steam to the lower end of the cylinder and the actual shifting of said valve, as and for the purpose described.

6. In a steam rock-drill or other analogous machine, the steam-moved valve governing the distribution of steam to the cylinder, and the inlet and exhaust passages to and from said valve, one of said passages—either the inlet or exhaust—at one end of the valve-chest, being constricted, as described, relatively to the corresponding passage at the other end of said chest, whereby the valve has a slow motion in one direction and a quick motion in the opposite direction, as and for the purpose described.

295,003. VALVE-GEAR FOR ROCK-DRILLS. FREDERIC A. HALSEY, New York, N. Y., assignor to the Rand Drill Company, same place. Filed Jan. 17, 1884. (No model.)

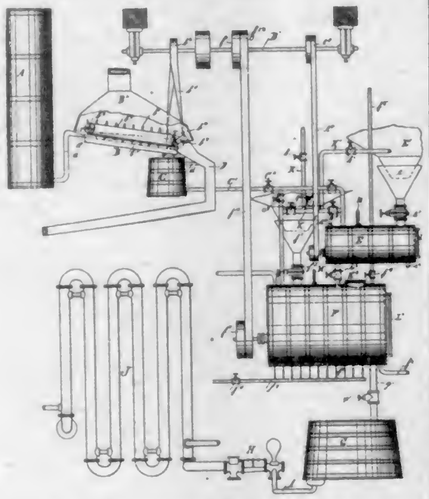
Claim.—In a steam rock-drill comprising the main cylinder and piston, the steam-moved valve, the described passages for distributing steam to the cylinder and valve-chest and exhausting steam therefrom, the combination, with the piston governing the exhaust-ports from the

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valve-chest, and the steam-moved valve governing the inlet-port to the lower end of the cylinder, of the inlet-passages to the valve-chest, that establish open communication between the ends of the valve-chest and the live-steam supply, the said inlet passage leading to the lower end of the valve-chest being of comparatively small cross-area or conducting capacity, whereby there necessarily occurs a determinate delay between the opening of the exhaust at the upper end of the valve-chest and the shifting of the valve to open the inlet-port to the lower end of the cylinder in which the piston may move from the point of the shortest working-stroke, which in practice it is intended to be permitted to make, to the termination of its longer strokes, by the time the steam is admitted to the lower end of the cylinder.

295,004. APPARATUS FOR MASHING GRAIN. TIMOTHY HAYES, Anderson's Ferry, Ohio. Filed Nov. 6, 1883. (No model.)



Claim.—1. The combination of the separator B, the tub C, to receive the slop therefrom, the tanks E and F, each composed of an inner and outer shell and provided with an agitator, the pipe C', leading from tub C and communicating by branch pipes with the tanks E and F, said pipes being provided with suitable valves, means for introducing small grain into tank E, means for introducing large grain and steam into tank F, the line-shaft B', and belts connecting said line-shaft with pulleys on the shafts of agitators in tanks E and F, and the pulley on a traveling belt of the separators, substantially as described.

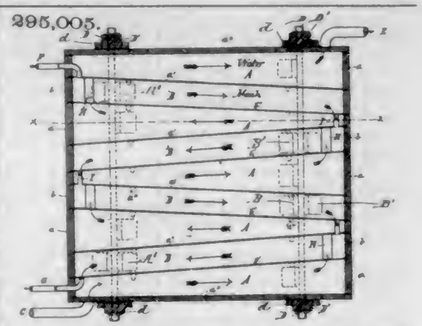
2. The combination, with pipe *a*, tub C, spout D, and pipe *d*, connecting tub C with spout D, of the separator composed of the screen *b*, the belt b^2, provided with brushes b', and trough b^3, substantially as described.

3. The combination, with pipe *a*, tub C, and spout D, of the separator composed of the screen *b*, the belt b^2, provided with brushes b', trough b^3, and brushes b^2 b^3, substantially as described.

4. The combination of tanks E and F, communicating through pipe E^3, provided with a valve, pipe c', leading from pipe C' to tank E, pipe c^3, leading from pipe C' to tank F, pipe K, connecting pipes c' c^3, and pipe K', leading to pipe K, the several pipes being provided with valves, substantially as described.

5. The combination of mixing-tank E and mashing-tank F with slop-tank C and receiving-tank G, pump H, and cooler J, substantially as and for the purpose described.

295,005. APPARATUS FOR COOLING MASH, &c. TIMOTHY HAYES, Anderson's Ferry, Ohio. Filed Nov. 17, 1883. (No model.)



Claim.—1. In an apparatus for cooling mash in transit from the mash-tub to the fermenting-tank, the combination of a series of inclined closed chambers, A, for the passage of the cooling agent, a series of inclined closed chambers, B, for the passage of the mash, said closed chambers alternating one above the other and reversely inclined, the pipes H, alternately connecting the ends of the closed chambers for the cooling agent, the pipes I, alternately connecting the ends of the closed chambers for the mash, the inlet-pipe F, for entrance of the mash to the upper mash-chamber, the outlet-pipe G, for the discharge of the mash from the lower mash-chamber, and the inlet and outlet pipes C and E, connected, respectively, with the upper and lower closed chambers for the cooling agent, substantially as described.

2. The combination of the series of inclined closed chambers A, for the passage of the cooling agent, the inclined closed chambers B, for the passage of the mash, alternately interposed between the other closed chambers, the bottom wall of one chamber constituting the top wall of the adjacent chamber, the pipes H, alternately connecting the ends of the closed chambers for the cooling agent, the pipes I, alternately connecting the closed chambers for the mash, and the pipes F and E, C and G, connected, respectively, with the uppermost and lowermost closed chamber, substantially as described.

3. The combination of the reversely-inclined chambers A and B, alternately disposed one above the other, and connected alternately at their ends, respectively, by the pipes H and I, for the passage in opposite directions of the cooling agent and the mash, the cheek-pieces A' and B' on the side walls of the chambers, the vertical tie-bolts D and nuts D', clamping all the chambers together and engaging the cheek-pieces, and the respective inlet and outlet pipes C, F, G, and E, substantially as shown and described.

4. The combination of the reversely-inclined chambers A and B, alternately disposed one above the other, the bottom of one chamber constituting the top of the adjacent chamber, and said chambers alternately connected at their ends, respectively, by the pipes H and I, for the passage in opposite directions of the cooling agent and the mash, the cheek-pieces A' and B' on the side walls of the chambers, the cheek-pieces *d* on the top and bottom chambers, the connecting-bolts and nuts clamping the chambers together and engaging the respective cheek-pieces, and the inlet and outlet pipes C and F, E and G, substantially as described.

5. The combination of the inclined chambers A and B, alternately arranged one above the other, and connected as described, and having dowel-pins d' on the lower edge of each chamber, engaging the upper edge of the adjacent chamber, with the vertical tie-bolts D and nuts D', for clamping the chambers one upon the other, substantially as described.

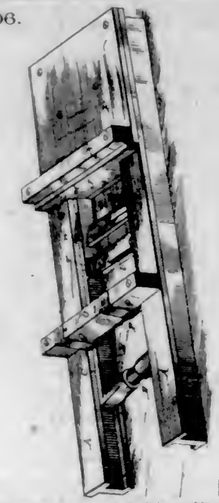
295,006. SHINGLE-MACHINE. ELLIS R. HEWETT and GALEN F. JAMES, Tenino, Wash. Filed Nov. 10, 1883. (No model.)

Claim.—1. The combination, in a shingle-machine, of two parallel ways, a reciprocating frame having a frow and two shaving-knives, one of which has means for gradually bringing it closer to the other, and provided with wedge-shaped blocks at the upper sides of its side pieces, above and slightly in front of the frow, and two cross-pieces forming a frame for holding the block to be cut up, one of which cross-pieces has a spring-actuated cross-plate resting with its end upon the upper surfaces of the side pieces of the frame and of the parallel ways, adapted to be raised by the wedge-shaped blocks, allowing the frow to pass under its lower edge, as and for the purpose shown and set forth.

2. The combination, in a shingle-machine, of two parallel ways having cross-pieces upon their upper sides, forming a frame for holding the block, a plate having a toothed edge fastened upon the ends of flat springs under one of the cross-pieces, and a sliding cutter-frame having blocks upon its upper side engaging the plate and pushing it back at the back-stroke of the frame, as and for the purpose shown and set forth.

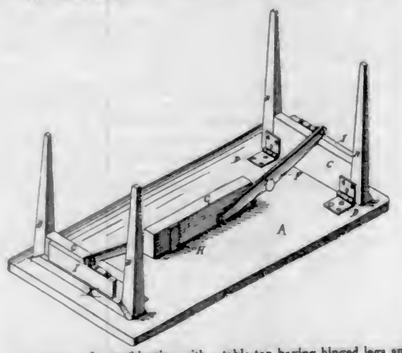
3. The combination of two parallel ways having inwardly and

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downwardly inclined grooves in their inner sides, a plate fastened across the inner ends of the ways, a plate having a transverse recess in its outer end, a longitudinal recess in its upper side, and fastened to the under side of the aforesaid plate, a transverse plate having its ends cut out to form steps and lugs, as described, fastened upon the free end of a spring secured with its inner end in the inner end of the recess in the aforementioned plate, and bearing with its lower edge against the bottom of the transverse recess in the same plate, a cross-piece having a spring-actuated toothed plate under its under side, and fastened upon the upper sides of the ways, a reciprocating frame sliding in the ways, having a plate at one end, transverse slots in its side pieces near their middle, and wedge-shaped blocks upon the upper sides of said side pieces, a transverse frow fastened at the outer end of the bottom plate of the frame a distance above the same, a stationary lower shaving-knife fastened below and to the rear of the frow, and an upper shaving-knife sliding with its ends in the transverse slots in the frame and in the grooves in the ways, all constructed to operate as and for the purpose shown and set forth.

295,007. TABLE. EDGAR R. HINMAN, Ilion, N. Y. Filed July 12, 1883. (No model.)



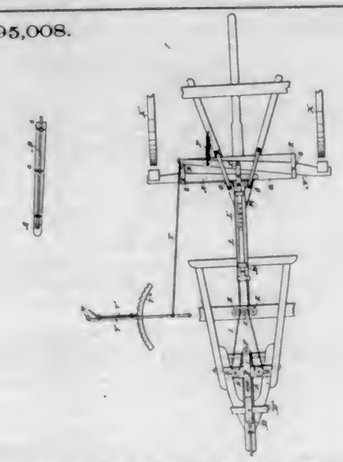
Claim.—In combination with a table-top having hinged legs and provided with jointed braces, the rectangular block G, provided with elastic plates and secured longitudinally to the under side of the table-top, and having pivotally attached on opposite sides thereof the jointed braces, substantially as described, and for the purpose set forth.

295,008. WAGON-BRAKE. JAMES HOGGINS, Denton, Nebr. Filed Dec. 15, 1883. (No model.)

Claim.—1. The combination, with the brake-levers, of a pull-rod, L, the chain I, wheels K K K, wheels G G, and the backlash-rod B B', carrying wheel F, adapted to bear against the chain, as and for the purpose described.

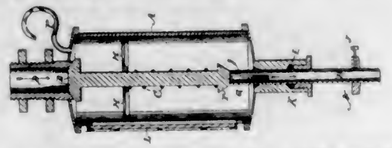
2. The combination of the sliding cuff A, rod B B', bearing wheel

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F, the wheels G G, chain I, wheels K K K, extension-rod L L', brake-levers N N, and spring P, substantially as and for the purpose described.

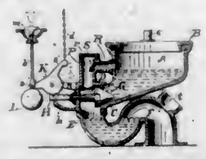
295,009. BOTTLE-FILLING DEVICE. PHILIP J. HOGAN, Negaunee, Mich. Filed May 25, 1883. (No model.)



Claim.—1. A chamber having a pipe in its upper end to connect it with a tank or other receptacle for fluids, a valve-seat in said pipe, and an aperture and valve-seat in the lower end of the chamber, in combination with two puppet-valves constructed to fit said seats alternately, a stem connecting them, and a hollow stem projecting from the lower valve through its seat below and beyond the exterior of the chamber, said hollow stem being perforated through its sides near the lower valve, substantially as and for the purpose specified.

2. The combination, with the chamber and the valves constructed to slide vertically therein, as described, and having a tubular stem extending therefrom, of a collar vertically adjustable on said stem, substantially as described, whereby the upward thrust of a bottle may close the inlet to said chamber, as set forth.

295,010. WATER-CLOSET. STANTON M. HOWARD, Wheeling, W. Va. Filed Mar. 13, 1883. (No model.)



Claim.—1. The combination, with the basin A, of the discharge-pipe having an upward extension or chamber, P, and the horizontal overflow-pipe R, connecting said chamber P and the basin, and having the valve S, substantially as described.

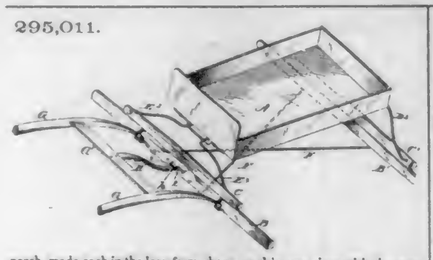
2. The combination of the basin A, the discharge-pipe and trap, the horizontally-sliding valve and vertical pull-rod, and connections between the valve and pull-rod, which permit the valve to slide horizontally, and a connection between the pull-rod and flushing-cistern.

3. The combination, in a water-closet, of the bowl A, valve-chamber D, and trap F, with conical plug-valve G, valve-stem H, lever-pinion K, weight L, pull *b*, chain *d*, and tank N, substantially as and for the purpose herein described.

295,011. ROAD-WAGON. MOSES G. HUBBARD, Norristown, Pa. Filed Nov. 23, 1883. (No model.)

Claim.—1. In a road-wagon, the combined torsion-springs and

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perch, made each in the loop form shown, and in one piece with the arms connecting the same with the axle, the transverse connecting portion of one loop being provided with a guiding-loop for the torsion-rods of the other loop, substantially as described.

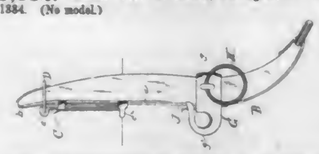
2. In a road-wagon, the torsion-rods E E', made in one piece, with the arms thereof connected to one and the same bolster or axle, in combination with the torsion-rods D and D', connecting with one and the same bolster or axle, and independently secured at their opposite ends upon either side of the rods E E', substantially as described.

3. The torsion-rods E E', made substantially in loop form, with the arms thereof connected to one and the same axle or bolster, and the torsion rods D and D', having the arms thereof connecting with one and the same bolster or axle, said rods being independently secured at their opposite ends upon either side of the rods E E', and all of said torsion-rods serving the function of a perch, in combination with an auxiliary perch, substantially as and for the purpose described.

4. The combination, with the axles and the thills or draft attachment pivoted thereto, of a spring rigidly connected to the cross-bar and pivoted to the axle in line with the other pivotal connections therewith, and operating substantially as and for the purposes described.

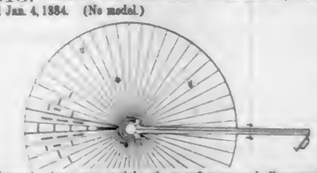
5. In a road-wagon, the combination of the torsion-springs, the elastic bolsters, and the cross-perches constructed and arranged substantially as described.

295,012. HAME. JOHN W. HUDSON, Wellington, Ill. Filed Jan. 19, 1884. (No model.)



Claim.—In combination with the parts A *a*, as shown, and the iron B, having a series of apertures, *f*, the slide C, having attachments D D' and arms *c*, and the flat spring E, secured to said slide, and having bolt *e*, as and for the purpose set forth.

295,013. SHIELD FOR FIRE-ARMS. JAMES HUNTER, Camden, N. J. Filed Jan. 4, 1884. (No model.)



Claim.—1. As a new article of manufacture, a bullet-proof shield constructed so as to be folded into compact form, as described, and having, when expanded, a central opening for the reception of the barrel of a fire-arm, as set forth.

2. The combination of a fire-arm with a bullet-proof shield attached to and carried by the barrel of said fire-arm, and capable of being folded, as set forth.

3. The combination of a fire-arm with a folding shield of bullet-proof material attached to and carried by the barrel of the fire-arm, but constructed so as to be readily detached therefrom, as set forth.

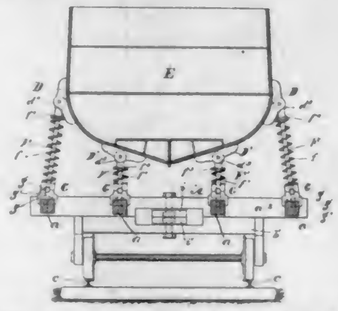
4. The within-described folding shield for fire-arms, the same comprising a series of connected segments, *a*, of bullet-proof material, side bars, *b*, and a slotted plate, *d*, adapted to the barrel of the fire-arm, as set forth.

5. The combination, in a fire-arm shield, of the segments *a*, overlapping each other and having pins *f* and slots *g* for their guidance and retention, as set forth.

6. The combination of the fire-arm with the folding shield having opposite projecting bars *b b*, serving as a rest, as set forth.

295,014. MARINE-RAILWAY CARRIAGE. WILLIAM H. H. HUNTER, Cincinnati, and JERVIS HARGITT, Hamilton, Ohio. Filed Apr. 19, 1883. (No model.)

Brief.—This carriage for transporting canal-boats over land embraces a train of railway-trucks, a platform supported by the train, and self-adjusting spring-standards arranged upon the platform in two or more continuous rows, the standards of each row being bound together by elastic connections, the standards being adapted and arranged, as described, to fit and support the boat.



Claim.—1. In a carriage for transferring vessels, the combination of a system of railway-trucks, B B', a horizontal frame or platform, A, spindles F F', springs *f f'*, and ribs D D', pivoted to the upper ends of the spindles and adapted to automatically adjust themselves in the arc of a circle to conform to the configuration of the hull of the vessel, substantially as described.

2. The combination of a system of railway-trucks, B B', a horizontal platform, A, a series of yielding ribs, D D', capable of automatically adjusting themselves to conform to the hull of a vessel, and elastic connections between the ribs to permit them to move laterally, substantially as described.

3. The combination of the trucks B B', the horizontal platform A, the abutments G, journaled thereon, the spindles F F', supported at the lower ends on the journaled abutments, the springs *f f'*, and the ribs D D', pivoted to the upper ends of the spindles and adapted to conform to the configuration of the hull of a vessel, substantially as described.

4. The combination, with ribs D D or D' D', of the spring-barrel H, spring *h'*, rod A, and rod and piston A^2, substantially as and for the purpose described.

5. The combination, with the ribs D or D' and the frame A, of the spindles F or F', springs *f* or *f'*, and adjustable abutments G, substantially as and for the purpose described.

6. The combination, with the railway-truck B', of the flexible shear or clevis I and horizontal frame or platform A, arranged and operating substantially as and for the purpose described.

295,015. METHOD OF MANUFACTURING MATERIAL FOR MAKING TRUNKS, PORTMANTEAUS, &c. OTTO JACOBI, Dresden, Saxony, Germany. Filed Sept. 24, 1883. (No specimens.)

Claim.—The process of manufacturing a durable material for the manufacture of trunks, portmanteaus, and other objects from specially-prepared sail-cloth, in combination with one or more layers of parchment, substantially as and for the purpose set forth in the foregoing specification.

295,016. MANUFACTURE OF CUTLERY-HANDLES. SILAS E. JERALDS and EDWIN R. LAWTON, West Cheshire, Conn. Filed Mar. 26, 1883. (No model.)



Claim.—1. A tubular blank for a hollow handle, having at one end a projecting lip or lips adapted to be bent edge to edge and united to form the butt or outer end of the handle.

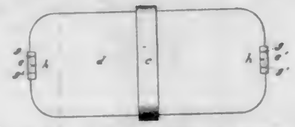
2. The method of making a handle for cutlery or other articles, consisting in introducing a tapering tool into a tube and giving to the latter, either by contraction or expansion, a tapering shape, withdrawing the tool, bending the lips edge to edge and soldering the edges together for the purpose of completing the handle, substantially as set forth.

3. As an improvement in the manufacture of handles for cutlery and other articles, the method of cutting out the large end of a metallic shell sufficiently to leave a lip or lips integral with the sides and adapted to close the said end, then bending the said lip or lips edge to edge and soldering or brazing the edges together.

4. As an improvement in the manufacture of handles for cutlery and other articles, the method of constructing a metallic shell having at its outer end one or more lips or projections integral therewith, and adapted to be bent inward and close and form the outer end of the handle, then bending said lip or lips edge to edge and brazing or soldering the edges together.

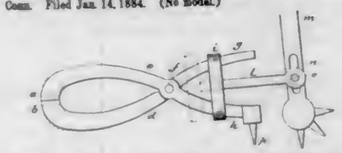
295,017. FRUIT-BASKET FASTENER. CHARLES HENRY JOHNSON, Busti, N. Y. Filed Aug. 9, 1883. (No model.)

Brief.—The fasteners are permanently affixed to the basket. One end of the cover is inserted under one fastener, one cover is ben top in the center, and its other end is inserted under the other fastener, when it is permitted to spring to place. It may or may not be secured by nails through the upper end of the fasteners.



Claim.—A fruit-basket having the fasteners *c c'* provided with the inwardly-extending flanges *f*, permanently secured to the hoop of the basket, one at each end, in combination with the flexible cover *d*, adapted to be held in place on the basket, substantially as specified.

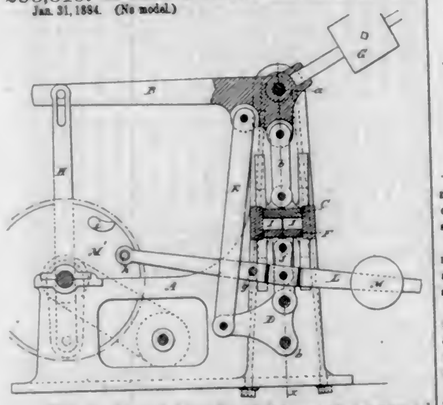
295,018. CARPET-STRETCHER. JAMES C. KELLEY, Middletown, Conn. Filed Jan. 14, 1884. (No model.)



Claim.—1. The combination of the jaws *a b*, attached, respectively, to levers *d e*, crossing each other and hinged together, the levers beyond the hinge having arms *g h*, a loop, *i*, around the arms, a lever, *m*, hung to said loop, said lever fitted with a spur to engage the floor as a fulcrum, and the arm *h*, constructed with one or more spikes, *p*, substantially as and for the purpose described.

2. The combination of the jaws *a b*, attached, respectively, to levers *d e*, crossing each other and hinged together, the levers beyond the hinge having arms *g h*, a loop, *i*, around said arms, with a lever, *m*, constructed with a slot, *n*, through which slot connection is made with said loop, substantially as described.

295,019. BRICK-MACHINE. LEWIS B. KENNEDY, Keokuk, Iowa. Filed Jan. 31, 1884. (No model.)



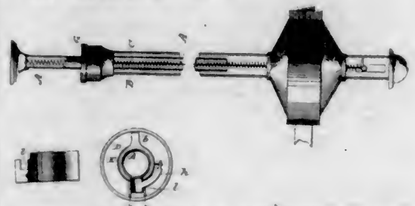
Claim.—1. The levers B and D, with their respective plungers and connecting-rods, arranged and operating in the manner described, in combination with the clay-feeding device located at the side of the machine, as set forth.

2. A brick machine the upper and lower plungers of which are moved in opposite directions to compress the clay by a single operating-lever, as described, in combination with devices, substantially such as described, for charging the clay into the mold and pushing the brick from the ejecting-plungers, said devices being located and operated from the side of the machine, as set forth.

3. The lever D, as described, provided with the arms *c*, in combination with the lower plunger, F, as and for the purpose set forth.

4. The lever L, provided with the adjustable weight M, pivoted in the frame A, and adapted to be operated by the cam *i*, in combination with the lower plunger, as set forth.

295,020. EXTENSION-CHANDELIER. JOHN C. KNIGHT, Meriden, Conn., assignor of one-half to the Meriden Malleable Iron Company, same place. Filed Nov. 26, 1883. (No model.)

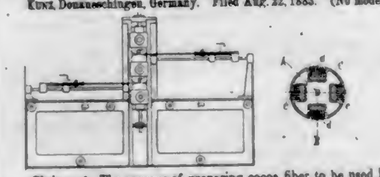


Claim.—1. The combination of the stationary inner tube or rod, A, the outer tube carrying the lamps, and constructed with a recess or shoulder, D, the divided ring-shaped spring E, surrounding the inner tube, and constructed to take a bearing upon the bottom of the shoulder or recess D, and so as to closely embrace the inner tube, the cam *f* between the divided ends of the spring, the said cam provided with an arm, *h*, extending therefrom, and a connection from the arm downward, whereby said cam may be turned to relieve its grasp upon the inner tube, substantially as described.

2. The combination of the inner tube or rod, A, the outer tube, B, carrying the lamps, the divided ring-shaped spring E, arranged in a recess in the outer tube, and so as to embrace the inner rod or tube and take a bearing upon the bottom or top of said recess, as the case may be, a cam, *f*, between the ends of said divided ring-shaped spring, said cam provided with an arm, *h*, and connection therefrom downward, whereby said cam may be turned to release the grasp of said spring upon the inner rod, substantially as described.

3. The combination of the inner stationary tube or rod, A, the outer movable rod, B, constructed with an internal recess, D, the divided ring-shaped spring E, arranged in said recess, and constructed to grasp the inner rod, one of the ends of the divided spring constructed with a notch, *l*, the cam *f*, with its arm *h*, arranged in said notch *l* as a fulcrum, the cam standing between the divided ends of the ring-shaped spring, and a connection from the arm downward, whereby said cam may be turned, substantially as described.

295,021. PROCESS OF AND APPARATUS FOR PREPARING FIBER FOR THE MANUFACTURE OF BRUSHES AND BROOMS. FRIDA KUNZ, Donaueschingen, Germany. Filed Aug. 22, 1883. (No model.)



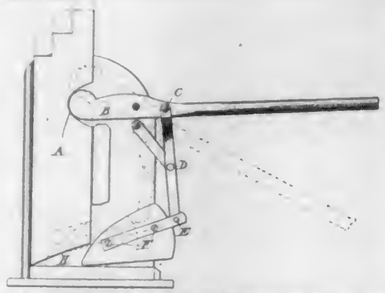
Claim.—1. The process of preparing cocoa fiber to be used in the manufacture of brushes, consisting in subjecting their ends to the action of heated rolls provided with circumferential ribs, and brushes of bristles and wires, and then greasing the same, substantially as described.

2. The combination of the frame *a a*, having journaled therein the rolls *b b*, said rolls being provided with circumferential ribs *c*, brushes *e*, and wire brushes *d*, and means for heating the same, substantially as described, and for the purpose specified.

3. The combination, with the frame *a a*, having journaled therein the steam-heated rolls *b b*, said rolls being provided with circumferential ribs *c*, brushes *e*, and wire brushes *d*, of the vertically adjustable clamps *f f'*, all constructed and arranged substantially as shown and described, and for the purpose specified.

295,022. WAGON-JACK. GILBERT LA ROCK, Adams, N. Y., assignor to Wyatt A. Hammond, same place. Filed Aug. 10, 1883. (No model.)

295,022.



Claim.—The lever B, provided with the toggle-joint D E and wedge F, in combination with the lifting-bar grooved at A, to act as a fulcrum, and provided with steps to receive the weight to be lifted.

295,023. DOMINO. JESSE L. LAW, Mount Vernon, N. Y. Filed Aug. 9, 1883. (No model.)

Brief.—Uses the dies described in Letters Patent of Shepherd, March 27, 1883, No. 274,868, and disclaims the invention in Letters Patent No. 162,072, April 13, 1875, and No. 273,559, March 6, 1883. The material called "chrolithion" is that described in Letters Patent No. 143,772, October 21, 1873.



Claim.—1. A domino consisting of a base, A, of wood or other suitable material, provided with a face or covering, B, of celluloid or similar material—such as xylonite, coralline, or chrolithion, or of vulcanized rubber, said face or covering having pressed into or upon it spots or marks D, substantially as set forth.

2. A domino consisting of a base, A, of wood or similar material, provided with a face or covering, B, and with a back, C, of celluloid, xylonite, coralline, chrolithion, or similar material, or of vulcanized rubber, said face or covering having pressed into or upon it spots or marks D, substantially as set forth.

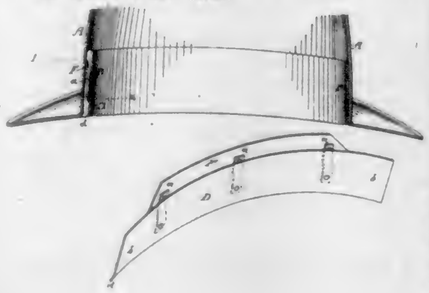
3. A domino consisting of a base, A, of wood or similar material, provided with a face or covering, B, of celluloid, xylonite, coralline, chrolithion, or similar material, or of vulcanized rubber, said face or covering having pressed into or upon it spots or marks D, and being provided with a pivotal pin, H, substantially as set forth.

4. A domino consisting of a base, A, of wood or similar material, provided with a face or covering, B, of celluloid, xylonite, coralline, chrolithion, or other similar material, or of vulcanized rubber, said face or covering having pressed into or upon it spots or marks D, and being provided with a pivotal pin, H, and with a raised border or edge, E, substantially as set forth.

5. A domino provided on its face with a raised rim, E, and a pivotal pin, H, said point rising above the level of the upper edge of said rim, as shown and described.

6. A domino provided on its face with the denomination or pictures of playing-cards between and around its spots, as shown and described.

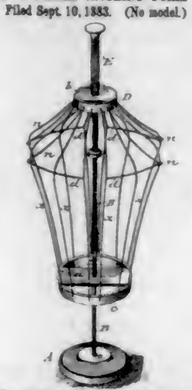
295,024. VENTILATED HAT. EDWIN M. LESCHER, Philadelphia, Pa. Filed Nov. 26, 1883. (Model.)



Claim.—1. The combination of the hat-body and sweat-band with the strip F, secured to the body, the strip D, secured to the sweat-band, and having free ends *b*, and the interposed springs, *a*, as set forth.

2. The combination of the sweat-band with the strip D, supported by springs *a*, and having a crimped lower edge, *d*, as set forth.

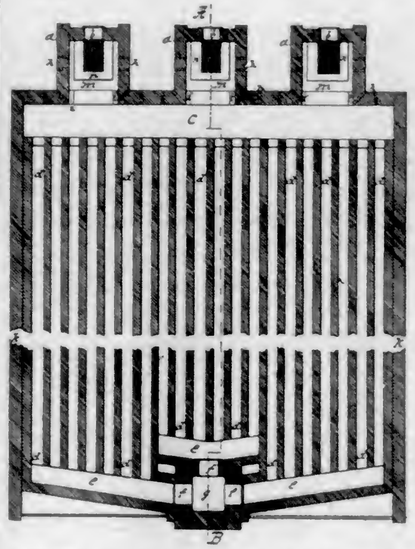
295,025. ADJUSTABLE CLOTHING-FORM. WALTER LEIGH, New Haven, Conn. Filed Sept. 10, 1883. (No model.)



Claim.—1. The clothing-form herein described, consisting, essentially, of the base A, upright notched bar B, hoops C and D, slide E, catch-lever F, arms *n*, sections *d*, and ribs *x*, all the said parts constructed and combined, as shown and set forth.

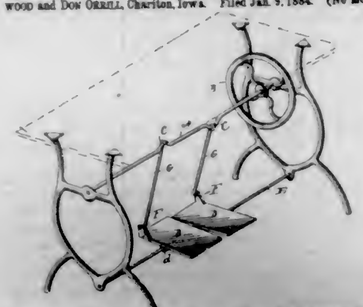
2. In a clothing-form, the slide E and catch-lever F, engaging the notches on the upright bar B, in combination with the sections *d*, and arms *n*, pivoted to the sections and to the slide to spread the ribs of the form, as set forth.

295,026. BRICK-DRYING KILN. BENJAMIN G. LOCKETT, JAMES W. ENGLISH, and JOHN W. MURPHEY, Atlanta, Ga. Filed Sept. 21, 1883. (No model.)



Claim.—The combination, in a brick-drying kiln, of the fire-boxes *a a*, front hot-air space or spaces, *c c*, cold-air chambers *m*, having draft-openings *h i*, rear hot-air passages, *e e e*, disconnected from each other, the longitudinal flues *d d*, and the chimney *g*, having valved openings *f f f*, communicating with the rear hot-air passages and flues, whereby hot air is accumulated at the back end of any or all of said flues, substantially as shown and described.

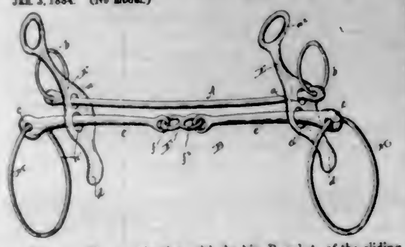
295,027. SEWING-MACHINE TREADLE. GEORGE ALONZO LOCKWOOD and DON ORRILL, Charlton, Iowa. Filed Jan. 9, 1884. (No model.)



Claim.—1. In a foot-power, the operating-shaft, formed in one piece, with cranks or wrists at each end turned at an angle to each other, in combination with the rod E, a pair of treadles pivoted at their centers upon the rod, and pitmen connecting each of the treadles to one of the cranks or wrists, for the purpose set forth.

2. In a foot-power, the operating-shaft, formed with cranks or wrists at each end turned at an angle to each other, in combination with the rod E, a pair of treadles, D, pivoted at their centers upon the rod, and formed with arms F, extending upwardly therefrom, and pitmen connecting each of the arms F to one of the wrists or cranks, as set forth.

295,028. BRIDLE-BIT. LEONARD S. LOWCOCK, Belvidere, Ill. Filed Jan. 3, 1884. (No model.)

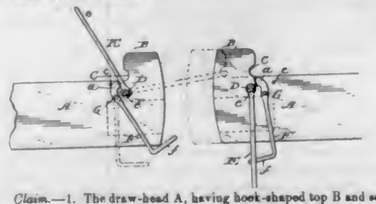


Claim.—1. The combination, with the bits B and A, of the sliding bars E, having apertures *a a'*, connecting said bits together, and provided with apertures a^2 in their upper ends above the rings *b* of the upper bit, A, as and for the purpose specified.

2. In a bridle-bit, the sliding bar having the central and upper apertures, and provided with an extension below the central aperture, as shown and described, and for the purpose set forth.

3. The combination, with the driving-bit having the double-eyed central link, the jaw-links hinged thereto at their inner ends, and the check-bit A, having rings *b*, of the sliding bars E, having central apertures for the two bits, whereby they move to and from the central portion of the bits, said bars provided at their upper portions with apertures for the passage of the straps, and having at their lower portions outwardly-curved extensions *d d*, as shown and described, and for the purposes set forth.

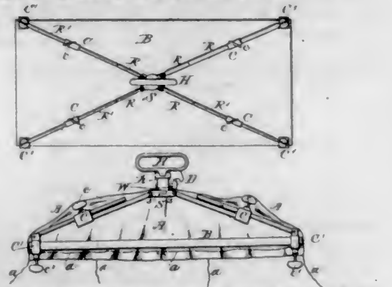
295,029. CAR-COUPLING. JOSHUA LOW, Steubenville, Ohio. Filed Feb. 8, 1884. (No model.)



Claim.—1. The draw-head A, having hook-shaped top B and semicircular recess C, and provided with the U-shaped link E, curved at *e*, and the frame F, having forwardly-projecting portion *f* and dogs *a*, as and for the purposes set forth.

2. The combination, with the draw-head A, having hooked-shaped top B, recess C, and stud *c*, of the link E and frame F, having forward-projecting portion, *f*, and dogs *a*, substantially as and for the purposes set forth.

295,030. CARRIER FOR PAINTINGS AND OTHER ANALOGOUS WORKS OF ART. CLEMENT MAROT, Troyes, France. Filed Oct. 13, 1883. (No model.) Patented in France May 5, 1883, No. 155,204.



Claim.—1. The herein-described carrier, consisting, essentially, of a series of arms or rods constructed of sections capable of being extended and contracted, and when adjusted as to length locked in position, a handle-support to which one end of said rods is flexibly or pivotally connected, and a clamping device flexibly or pivotally connected to the other end of each rod, to which clamping device the object to be carried is secured, as described.

2. The herein-described carrier, consisting, essentially, of a series of rods or arms flexibly or pivotally connected with a support or handle at one end, and flexibly or pivotally connected at their other ends to fastening devices to which the article to be supported is attached, in combination with a flexible cover adapted to be secured to the support or handle and around the object carried by the carrier, as described.

3. The herein-described carrier, consisting of a series of sectional or extensible and adjustable rods, a sectional handle or support to which one end of said rods is flexibly or pivotally connected, devices for securing the sections of the rods in the position to which they may be adjusted, and clamping devices flexibly or pivotally connected with the opposite end of said rods, and a flexible covering, A, substantially as and for the purpose specified.

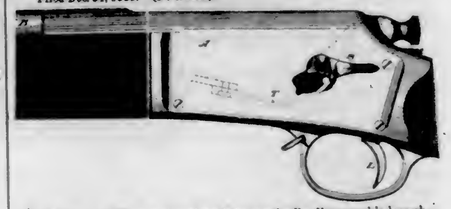
4. The combination of the rods R, carrying clamps C, and the support S, and handle H, to the sections *s s'* of which support said rods are hinged, with the rods R' and their clamps C', substantially as described.

5. The combination, with the support S, its stud s^2, perforated as described, and the rods R R', of the perforated and socketed handle H and the pin D, substantially as described, for the purpose specified.

6. The combination, with the rods R R' and the support S, composed of two sections, *s s'*, the former carrying a stud, s^2, provided with a transverse aperture, of the socketed handle H, also provided with an aperture, and the retaining-pin D, substantially as and for the purpose specified.

7. The combination, with the rods R R', the support S, its stud s^2, and the washer W, of the socketed handle H and pin D, said stud and handle being perforated to receive the pin D, as described, for the purpose specified.

295,031. MAGAZINE FIRE-ARM. WILLIAM MASON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Dec. 31, 1883. (No model.)

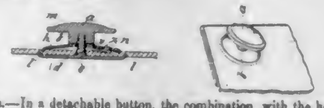


Claim.—1. The combination of the longitudinally-movable breech-piece and longitudinal hammer arranged through said breech-piece, a sear and projection therefrom constructed and arranged, respectively, so that the sear may engage a shoulder on the hammer and the said projection a corresponding notch in the breech-piece when the breech-piece is in its closed position, combined with a cam in connection with a lever on the outside of the receiver, substantially as described, whereby said sear and projection may be thrown into locking engagement with the breech-piece and hammer at full-cock or out of such locking engagement without releasing the hammer from its full-cock position.

2. The combination of a longitudinally-movable breech-piece, a hammer arranged longitudinally through the breech-piece, the trigger-

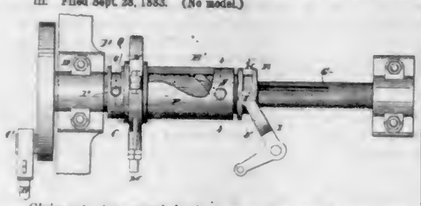
piece constructed with a sear, *d*, to engage a corresponding shoulder on the hammer, and with the projection *g*, to engage a corresponding notch in the breech-piece when the breech-piece is in its closed position, a cam, *l*, arranged through the side of the receiver, provided with a suitable handle upon its outside, the trigger-piece provided with shoulders *m n*, upon which the said cam will operate, substantially as described.

295,032. BUTTON. WILLIAM H. MATTHEWS, Livingston, Tex. Filed Nov. 17, 1883. (No model.)



Claim.—In a detachable button, the combination, with the hollow threaded shank of the button-head, having end serrations, *g*, and the base-disk *d*, having a central screw, of the loose clamp-disk *h*, applied on the screw, and having a spring-pawl or projection to engage the serrations of the shank, substantially as specified.

295,033. REVERSING-VALVE GEAR. EDWIN D. MCLEAN, Marissa, Ill. Filed Sept. 28, 1883. (No model.)



Claim.—1. An eccentric having a sleeve formed with circumferentially-extending slot, to receive a radial pin on the shaft and permit the sleeve to be turned.

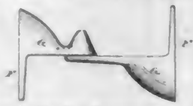
2. The combination of an eccentric having a sleeve formed with circumferentially-extending slot, a shaft, a radial pin occupying said slot, a cam-sleeve to slide endwise and keyed to the shaft, spiral groove and pin connection for the sleeves, and means to retain the eccentric to desired position.

3. The combination of an eccentric having a sleeve formed with circumferentially-extending slot and a radial pin, a crank-shaft having a feather longitudinally thereof, a collar intermediate of the eccentric-sleeve and crank-shaft, having a screw occupying the circumferentially-extending slot, and securing the collar to the crank-shaft, a cam-sleeve in line with the collar, having a spiral slot to receive the eccentric-sleeve pin, and a groove to receive the feather on the crank-shaft, and means to retain the eccentric in desired position.

4. An eccentric having capacity for rotary adjustment on the crank-shaft of a steam-engine, in combination with an actuating cam-sleeve, E, and cam-pin in the eccentric-sleeve working in the spiral cam groove or slot E' of sleeve E, and the pin or screw R, working in slot *p* of the eccentric-sleeve.

5. The combination of shaft A, eccentric and sleeve O P, having slot *p*, studs or screws R and S, cam-sleeve E, with cam groove or slot E' and groove H, and the operating device I J K, all substantially as and for the purpose set forth.

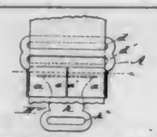
295,034. BLIND-HINGE. JOSEPH B. MERRIAM, Meriden, Conn., assignor of one-third to Everett B. Richmond, same place. Filed Oct. 1, 1883. (No model.)



Claim.—The herein-described improvement in hinges, consisting of the plates F, by which the hinge is secured, an arm extending in a plane at right angles from each of said plates and midway of the height of the said plates, the said plates contracted in width from the plane of the working-surface of the arm, each arm starting from its plate in two parts, G G, and coming together forward of the plates, so as to form a brace-like support for the arm, and so as to leave an opening, H, in front of the plates between the parts G G, the said plates F constructed with countersunk holes *a a*, and the arms constructed, respectively, the one with a socket, J, and the other with a stud, *d*, and with the locking-shoulders L, each of said two parts of the hinge cast complete in one and the same piece, substantially as described.

295,035. SUSPENDER-BUCKLE. WILLIAM E. T. MERRELL, Philadelphia, Pa., assignor to John W. Bruff, same place. Filed Jan. 22, 1884. (No model.)

295,035.



Claim.—1. A suspender-buckle having a frame or bow formed with a spring-clamp, divided at its center and integral therewith, and adapted to embrace and bind the web or suspender-cloth, substantially as described.

2. In a suspender-buckle, the combination, with a frame or bow having a spring-clamp to embrace the web or suspender-cloth, and slotted to receive a tongue, of a buckle-tongue adapted for the attachment of the suspender-straps, and having a flanged edge or lip to impinge upon the web or cloth and hold it against the clamp, substantially as described.

3. The buckle frame or bow consisting of the metallic plate A, struck up or bent into shape, and having the inwardly-turned leaves or wings *a a*, forming a clamp spring or springs, and forming the elongated space *b*, substantially as described.

4. The combination of the buckle-frame consisting of the plate A, provided with inwardly-bent elastic clamp-arms *a a*, and having the slot *s* and the movable tongue H, fitting and working in said slot, and formed with the flange or lip *h*, substantially as described.

295,036. SAFETY-PIN. FREDRICK MEYERS, Brooklyn, N. Y. Filed Jan. 15, 1884. (No model.)



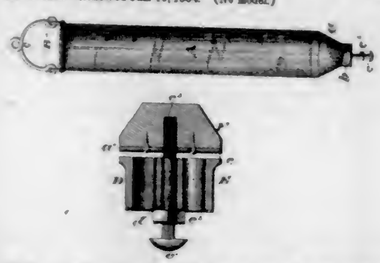
Claim.—A safety-pin composed of two flat coils, *a a'*, of wire, arranged at a distance apart, a bar, *b*, connecting the outer extremities of both coils, a pin, *c*, forming an extension of the inner extremity of the coil *a*, and a point-protector, *d*, arranged to stand away from the under side of said coil, each of said coils having the convolutions thereof arranged one within the other, substantially as shown and described.

295,037. WATCH-MAKER'S SIGN. EDWD. C. MILLER, Bellefontaine, Ohio. Filed Mar. 9, 1883. (No model.)



Claim.—In a watch-maker's sign, the combination of post A, having reduced end A', watch-casing B, having braces G, extending across the casing, and stem B', having opening F, a block, D, having opening C and secured to the bottom of the casing, and a removable pin, E, secured to the end of the post and fitting in the opening in the stem, as set forth.

295,038. WELL-BUCKET. FRED E. MILLER, Lincoln, Nebr. Filed Oct. 2, 1883. Renewed Jan. 19, 1884. (No model.)



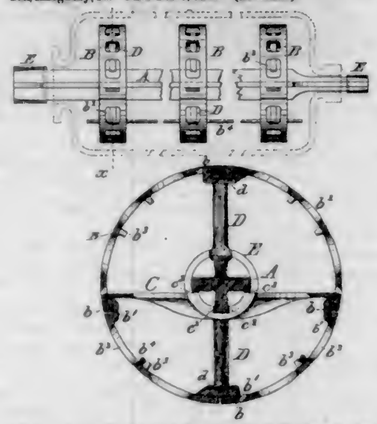
Claim.—1. The combination, with the well-bucket having an aperture at its lower end, of the disk D, arranged in said aperture, and having the central passage and one or more intermediate water-passages, the headed rod arranged in said central passage, and the valve F, screwed upon the upper end of the rod, and arranged to close and open the outer passages of the disk, substantially as described.

2. The combination, with the well-bucket having the conical lower end portion open at its bottom, of the disk D, arranged within the opening at the bottom, and having the flange *e* arranged to rest by gravity on the tapering inner surface of the conical lower end portion of the bucket, said disk having central valve-rod passage, and one or more suitable water-passages, the headed rod E, arranged in the central passage of the disk, and the valve F, secured to the inner end of said rod, and arranged to open and close the water-passages of the disk, substantially as described.

3. The combination, with the disk D, having central valve-rod passage and water-passages at the sides thereof, of the valve-rod E, arranged through said central passage, and provided with stop e^3 and the valve F, screwed upon the inner end of said rod, substantially as and for the purpose set forth.

4. The combination, with the bucket A, having the conical lower portion, *a*, terminated by the cylindrical ring *b*, of the perforated disk D, arranged to fit within the said ring, and provided with the flange *e*, resting by gravity upon the inner surface of the conical portion of the bucket, the valve-rod passing loosely through the center of the disk and projecting below the same, and the valve F, screwed upon the inner end of the said valve-rod, and adapted to rest upon the disk as its seat when the bucket is suspended, substantially as set forth.

295,039. CORE-BARREL. WILLIAM T. MORRERLEY and ROBERT TAYLOR, Allegheny, Pa. Filed Dec. 8, 1883. (No model.)



Claim.—1. In a core-barrel, the combination of a bar or arbor and one or more stays or supports connected removably thereto, each of said supports being composed of a series of plate-sections, the width of face of which is less than the length of the core to be formed, and their length less than the diameter thereof, these members being combined for joint operation to admit of the displacement and separate withdrawal of the sections, after the completion of the casting, through an end opening therein substantially less in diameter than the body thereof, substantially as set forth.

2. In a core-barrel, the combination of a bar or arbor, one or more sectional supports connected removably thereto, and a ring or sleeve fitting on said bar at one or both of its ends over interposed channels or recesses, said rings being of less diameter than the supports, and acting as end bearings for the core, as well as providing vents for the gases in casting, substantially as set forth.

3. In a core-barrel, the combination of a bar or arbor, a support formed of sections having interlocking ends, a transverse brace bearing against the sections of the support, and a key-piece bearing at its inner end against the arbor, and at its outer end against the sections of the support, substantially as set forth.

4. In a core-barrel, the combination of a bar or arbor, a support composed of interlocked sections and a transverse brace, a key-piece bearing against the arbor and the sections, and a cushion or packing-piece of wood or other shrinkable material interposed between the outer end of the key-piece and the sections, substantially as and for the purpose set forth.

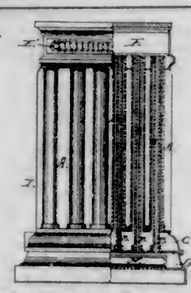
5. In a core-barrel, the combination of a bar or arbor, two or more supports attached removably thereto, and longitudinal bars or rods resting upon pins or projections on said supports, substantially as set forth.

6. A transverse brace for a core-barrel, having a central recess provided with bearings for the sides of a bar or arbor, and tongues upon its ends adapted to engage the sections of a support, substantially as set forth.

295,040. STEAM-RADIATOR. DOCTOR F. MORGAN and JOHN ROBB, Akron, Ohio. Filed July 6, 1883. (No model.)

Claim.—1. The herein-described radiator, consisting of the steam-tubes A, provided with the interior air-tubes, B, and partitions D, having

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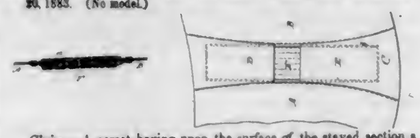


openings *a*, hollow base C, provided with supply-pipe F, exhaust-pipe F', and partition C', air-reservoir G, provided with the supply-pipe G', damper H, and opening *c*, the hollow top or cover E, having perforated plate or screen E', and the deflecting-shield I, all substantially as and for the purpose specified.

2. The air-reservoir G, provided with supply-pipe G', hollow top or cover E, provided with the perforated plate or screen E', and the deflecting-shield I, in combination with the steam-tubes A, air-tubes B, and base C, substantially as and for the purpose specified.

3. The steam-tubes A, provided with the air-tubes B and central partitions, D, having openings *a*, in combination with the shield I, hollow base C, and top E, substantially as and for the purpose specified.

295,041. CORSET. ISAAC NEWMAN, New Haven, Conn. Filed Aug. 20, 1883. (No model.)



Claim.—A corset having upon the surface of the stayed section a pocket, D, at the upper part, and a pocket, E, at the lower part, the said two pockets extending toward each other, their adjacent ends open but distant from each other, so as to leave a space between said open ends, combined with an auxiliary bone, *d*, stay F, corresponding in width to the said pockets, the said space between the pockets permitting the introduction of said stay F first one end into one pocket, and then the other end into the other pocket, the stay thus introduced overlying the stayed section, substantially as described, and so as to serve as an auxiliary support to the stays of the section.

295,042. DEVICE FOR ATTACHING THE RIBS AND BRACES OF UMBRELLA-FRAMES. MATTHEW NIAL, Troy, N. Y. Filed Sept. 21, 1883. (No model.)



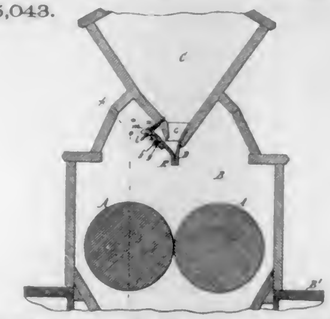
Claim.—1. In an umbrella-frame fastening, the combination of the hinging-hook *h'*, formed on the hinging end of each of the ribs, the hinging-hook h^3 on the hinging end of the braces, with the said hooks on the ribs constructed to attach to the fixed ferrule, and said hooks on the braces to the sliding ferrule, in the manner herein shown and described.

2. In an umbrella-frame, the combination of open-mouth sheath-tips on the umbrella-cover to receive the tip ends of each of the ribs, hinging-hooks on the hinging ends of the ribs, hinging-hooks on the hinging ends of the braces, said hooks on the ribs being constructed to attach to the fixed ferrule, and those on the braces to the sliding ferrule, in the manner herein shown and described.

295,043. FEED MECHANISM FOR ROLLER-MILLS. BARNIM F. ORTMAN, Buffalo, assignor of one-half to George Urban, Jr., Cheektowaga, N. Y. Filed Oct. 13, 1883. (No model.)

Claim.—1. The combination, with a feed-hopper, of a feed-gate provided on its face with inclined or curved ribs or corrugations trending from the middle of the feed-gate toward both ends thereof, and mechanism whereby a longitudinal reciprocating movement is imparted to the feed-gate, substantially as set forth.

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2. The combination, with a feed-hopper, of a pivoted feed-gate, means whereby the feed-gate can be swung on its pivot to regulate the flow of material from the feed-hopper, and mechanism whereby a longitudinal reciprocating movement is imparted to the feed-gate, substantially as set forth.

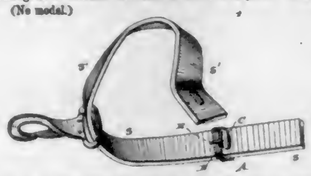
3. The combination, with a feed-hopper, of a delivery-plate having its face provided with ribs or corrugations, an adjustable feed-gate provided on its face with inclined or curved ribs or corrugations trending from the middle of the feed-gate toward both ends thereof, and mechanism whereby a longitudinal reciprocating movement is imparted to the feed-gate, substantially as set forth.

4. The combination, with a feed-hopper, of a reciprocating rod, *f*, a feed-gate, E, pivoted to said rod, and mechanism whereby the feed-gate can be adjusted on said rod to regulate the flow of material from the hopper, substantially as set forth.

5. The combination, with a feed-hopper, of a reciprocating rod, *f*, a feed-gate, E, pivoted to said rod, and provided with a slot, *m*, screw-bolt *l*, spring *n*, and thumb-nut *o*, substantially as set forth.

6. The combination, with a feed-hopper, of a delivery-plate, D, having ribs or corrugations *p* and a plain face, *p'*, and a reciprocating feed-gate, E, having ribs or corrugations *q* and a plain face, *q'*, substantially as set forth.

295,044. LOOP-BUCKLE FOR HARNESS. JAMES A. PARK, Lansing, Mich., assignor of one-half to Puella E. Park, same place. Filed Oct. 20, 1883. (No model.)



Claim.—1. A loop-buckle consisting of a substantially rectangular loop provided on one of its bars with an inclined angular shank having a button-head at its outer end, which projects beyond the body of the loop, as set forth.

2. A loop-buckle consisting of a rectangular loop having a shank projecting from one of its sides, and formed with an angular end, E, a button-head being formed at the outer end of said shank, substantially as set forth.

295,045. WELL-DRILL. FRED D. PARKER, Denver, Colo. Filed Nov. 2, 1883. (No model.)

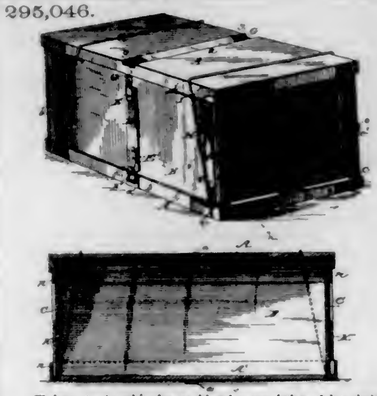


Claim.—1. A drill-tool constructed of a single piece of tubing of suitable diameter, having diametrical slots at the lower end, leaving downward extensions, which are provided with a series of cutting-edges at their lower ends, substantially as specified.

2. A device for removing the débris from wells drilled or bored as described, consisting of a tube corresponding in size diametrically with the drill-tube, and having a hinged annulus at its lower end, adapted to operate substantially in the manner specified.

295,046. RESHIPPING PACKING-BOXES. JOSEPHUS S. PARKER and WILSON M. BAKER, Urbana, Ohio; said Parker assignor to said Baker. Filed Dec. 22, 1883. (No model.)

295,046.



Claim.—1. A reshipping packing-box consisting of detachable sides and top and bottom caps, the box being held in position by detachable strips which engage with rings or hooks on the caps, substantially as and for the purpose set forth.

2. A reshipping packing-box consisting of top and bottom caps and detachable sides and ends provided with cleats, as described, and side fastening-strips, one end of each strip engaging with a bolt let into the edge of the top cap, the opposite end of said strips engaging with a ring or loop secured to the bottom cap, substantially as and for the purpose set forth.

3. A box with detachable ends and sides, having cleats, as described, and provided with sliding rods I, having bent ends, one end of said rods being adapted to turn over the cleats on the ends of the box, substantially as set forth.

4. A packing-box having detachable sides and ends provided with cleats, as described, said cleats being secured to the sides and ends so as to leave a space between them, and provided with a hook, *o*, and eye *o'*, which engage with each other in the space between the cleats, substantially as set forth.

5. A reshipping packing-box having detachable ends provided with the rods K, having bent ends, the lower ends of said rods entering holes or openings in the bottom cap of the box, substantially as and for the purpose set forth.

6. A reshipping packing-box consisting of top and bottom caps and detachable sides and ends, the ends and sides, when detached, adapted to pack in one of the caps, said caps being held in position by a hook, G, and ring or loop F, secured to said caps, substantially as and for the purpose set forth.

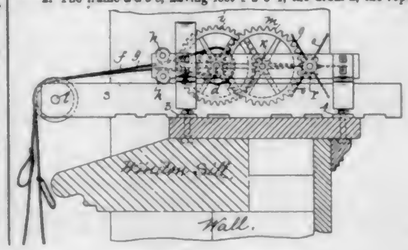
7. A reshipping packing-box consisting of top and bottom caps and detachable sides and ends, one of said caps having a screw-threaded hook, and means, in connection with the other cap, for engaging the hook and nut, by means of which the caps are tightened or loosened, substantially as and for the purpose set forth.

295,047. FIRE-ESCAPE. ROBERT B. PARROTT, Indianola, Iowa. Filed Oct. 15, 1883. (No model.)

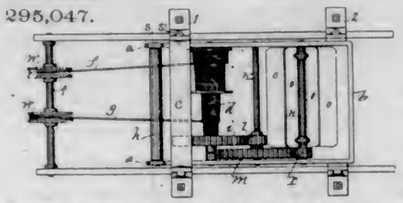
Brief.—The duplex drum, ropes, fan-governor, and connecting gearing are mounted in an adjustable frame carrying guide-sheaves, and are inclosed in a case having openings at its sides.

Claim.—1. A fire-escape and governing device for lowering persons and objects from elevated positions, composed of the following elements, to wit: a frame or box, a duplex drum, two ropes or wire cables, a fan-governor connected with the drum by gearing, and an adjustable frame carrying sheaves for directing the ropes relative to objects projecting from a wall, substantially as set forth.

2. The frame *a a b c*, having feet 1 2 3 4, the drum *d*, the ropes *f*



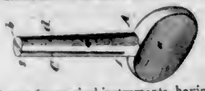
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and *g*, the rollers *h h*, the gearing *i k l m r*, the fan-governor *n o*, and the adjustable frame *s s t*, carrying independent sheaves *w w*, arranged and combined substantially as shown and described, to operate in the manner set forth, for the purposes specified.

3. The combination of a box or case having openings at its side to admit air, and openings for the passage of the racks and the exhaustion of air at its rear end, with the drum *d*, gearing *i k l m r*, the fan-governor *n o*, and the frame *s s t*, carrying sheaves *w*, substantially as and for the purposes set forth.

295,048. TUNING-PEG FOR MUSICAL INSTRUMENTS. MARIE E. PATTERSON, St. Louis, Mo. Filed Sept. 3, 1883. (No model.)



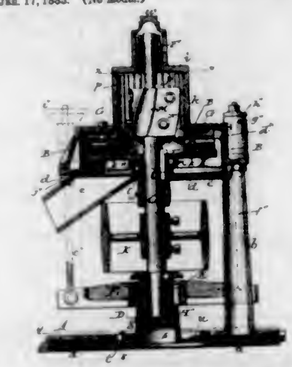
Claim.—1. A peg for musical instruments, having a piece of elastic material in the shank thereof, substantially as and for the purpose specified.

2. The peg A, having the shank *a'*, the slot *b*, and the elastic material *c*, substantially as described, and for the purposes specified.

3. The peg A, with the shank *a'*, having a piece of elastic material inserted therein, in combination with neck E of a musical instrument, substantially as described.

4. The peg A, having the head *a* and shank *a'*, the piece of elastic material C, inserted in the slot *b*, and the hole *d*, in combination with the neck E, having the hole *e*, substantially as set forth, and for the purpose specified.

295,049. GRINDING-MILL. GEORGE RAYMOND and ALBERT RAYMOND, Chicago, Ill., assignors of one-half to Orville H. Tobey, same place. Filed Jan. 17, 1883. (No model.)



Claim.—1. In a machine for reducing cane and similar materials, the grinding-disks, in combination with the rotary cutter-head provided with external knives, the head or turret having the throat or inlet, and the stationary upright blade located at the side of the throat and arranged to act in immediate proximity to the rotary blades, as described, whereby the stalks are first divided by a shearing action into lengths and subsequently subjected to a grinding action.

2. The head or turret A, provided with internal ribs and with a feed throat or opening, in combination with the upright knife secured to its side and the cutter-head provided with blades N, arranged to move in close proximity to the fixed blade, but at a distance from the ribs, whereby the ribs are adapted to check the inward motion of the cane or other material during its severance by the knife.

3. In combination with the rotary head having the upright knives thereon, the encircling turret provided with internal ribs, a knife fixed at one side of the inlet-opening, and the feed spout or throat arranged to deliver the material at one side of the rotary head, whereby the stalks are caused to be drawn automatically inward and their advance retarded, so that they may be severed by the knives.

4. In a convertible hopper for a grinding-mill, the body provided with movable end boards, *s'*, substantially as described, whereby it may be adapted at will for use with a reciprocating slide or with a feed-worm.

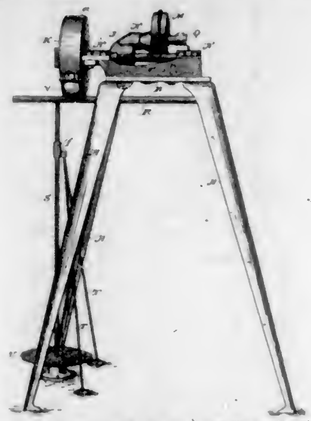
5. In combination with the shaft bearing the socket, the base-plate *a*, adjustable plate S, and the bolts *t* and *u*.

6. The hopper provided with the removable end boards, *s'*, and with the pinion *l'*, having a crank-pin thereon, whereby it is adapted for operation in connection with a worm or with a reciprocating slide, as occasion may require.

7. The hopper *d'*, provided at one end with the outlet-opening and the depending plate *v'*, in combination with the feed-worm *w'*, the worm-supporting plate *w'*, and the screws for securing said plate in position.

8. In combination with the lower grinding-disk, its spindle, and the bridge-tree, the suspension-rod *f''*, and the spring to sustain the same, the suspension-rod *d''*, and its nuts *i''* and *j'''*.

295,050. METHOD OF AND APPARATUS FOR TREATING PELTS. CHARLES F. RITCHEL and GEORGE DOOLITTLE, Bridgeport, Conn., assignors of one-third to Thomas B. Doolittle, same place. Filed AUG. 9, 1883. (No model.)



Claim.—1. In a machine for treating pelts, the combination of a support over which the skin may be drawn, a vacuum-chest, K, provided interiorly with a revolving plucking-cylinder, I, having a series of ports, *b*, in the periphery thereof, through which the ends of the master-hairs are drawn, a rubber or other flexible roll, Q, hung in the end of a stationary hanger, and arranged to impinge against and be driven by frictional contact with the cylinder I, means for driving the cylinder, and an exhaust-fan connected with the vacuum-chest K, substantially as and for the purpose set forth.

2. The combination and arrangement of the cylinder I, arranged within the vacuum-chest K, and connected by bolts or otherwise with the flanged end of a sleeve, E, provided with a driving-pulley, J, the central stationary shaft, D, extending within the chest K, hanger P, and rubber roll Q, substantially as and for the purpose set forth.

3. In combination with the support R and vacuum-chest K, the guard-plates V, for controlling the skin after the removable of the band, substantially as hereinbefore set forth.

4. In combination with the vacuum-chest K, cylinder I, and roll Q, the stripper or guard-plate W, substantially as and for the purposes set forth.

5. The revolving cylinder I, provided with a series of ports, *b*, having one side of each beveled, substantially as and for the purpose set forth.

6. The supporting-bar R, having its rear end hinged to the frame of the machine and its front end resting upon a vertically-adjustable rod, S, substantially as and for the purpose set forth.

7. The rod S, connected at its lower end to a revolving plate, V, by a quick screw-thread, and adapted to be raised and lowered by the rotation of the plate V, substantially as and for the purpose set forth.

8. The combination and arrangement of the supports A, plate B, bed C, bearings A' A'', shaft D, sleeve E, flange F, cylinder I, pulley J, vacuum-chest K, hanger P, roll Q, exhaust-fan, and trunks N O, substantially as shown and described.

9. The cylinder I, provided with inlet-ports in its periphery for the reception of the master-hairs, and adapted to be rotated to pull said hairs, substantially as hereinbefore set forth.

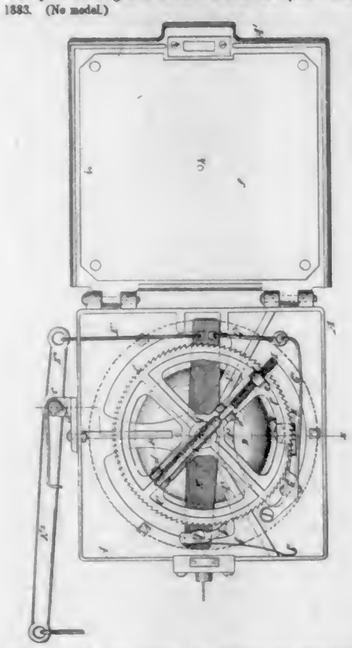
10. The method of properly presenting the master-hairs of pelts to

the action of plucking mechanism, which consists in the employment of an air-current toward the plucking mechanism, and placing the pelt within the influence of said current, whereby the hairs are caused to travel toward and within the bite of the plucking mechanism, substantially as hereinbefore set forth.

11. The method of plucking pelts, consisting in placing the same within the influence of an air-current toward the plucking mechanism, then grasping said hairs thus presented and pulling the same bodily from the skin, substantially as hereinbefore set forth.

12. The method of plucking pelts, consisting in placing them within the influence of an air-current toward the rotary plucking mechanism arranged within an exhaust or vacuum case, drawing said hairs out by rotary action, and discharging the same into a suitable cage or receptacle, substantially as hereinbefore set forth.

295,051. FARE REGISTER OR RECORDER. REUBEN M. ROSE, Brooklyn, N. Y., assignor to David F. Atkins, same place. Filed Jan. 3, 1883. (No model.)



Claim.—1. In a fare register and indicator, the combination of a concealed dial and means for recording or marking thereon, a visible dial and an index for indicating thereon, and a hollow spindle carrying said index, and serving as a passage for a rod by which the recording or marking device may be operated or moved to cause it to register or mark on the concealed dial, substantially as described.

2. The combination, with a ratchet-wheel, a hollow spindle on which the wheel is mounted, and means for imparting a step-by-step rotation to the said wheel, of a dial, a radial arm carried by said wheel and provided with a marking device, and a pin adapted to be inserted through the hollow spindle to press upon the said arm, and so cause its marking device to make a deep or heavy impression on said dial, substantially as herein described.

3. In a fare register and indicator, the combination of a case composed of two portions hinged together, a spindle and a marking device adapted to turn therewith, both being supported and carried wholly by one portion of the case, a filing or indicating point on the other portion of the case in such position that when the case is closed said point will be opposite the center of the spindle, and a paper or analogous dial provided with a hole adapted to said filing or indicating point, whereby provision is afforded for properly centering the dial relatively to the spindle when the case is opened to enable the dial to be placed in position, substantially as described.

4. The combination, with the ratchet-wheel C, means for imparting to it a step-by-step rotary motion, and a radial arm provided with a marking device carried by said wheel, of the back plate, A', provided with a central gage, and the dial J, provided with a central opening, substantially as and for the purpose herein described.

5. The combination, with a fare register or indicator case having a bridge provided with a central bearing extending across it and dividing it into two compartments, of a spindle fitting the bearing, a ratchet-wheel and its actuating-lever mounted on the spindle on one side of the bridge and in one of said compartments, a bell approximately concentric with the spindle and arranged on the other side of the bridge in the other compartment, and a bell-hammer actuated by said ratchet-wheel and extending across or beyond the bridge to operate on the bell, substantially as herein described.

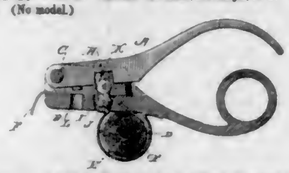
6. The combination, with a bell-hammer and a spring for impelling it against a bell, of a pull-rod or device for operating the bell, and a connection between the spring and pull-rod or device, whereby the force of the spring will be increased at the time the blow is struck by the hammer, substantially as and for the purpose herein described.

7. The combination, with the ratchet-wheel C and the bell-pawl G, of the spring G', connected with the bell-pawl, mechanism for imparting a step-by-step rotation to the said wheel, and a pull-rod or device connected with the said mechanism for operating it, and also connected with said spring for simultaneously increasing its force, substantially as herein described.

8. The combination of the spindle B, wheel C, lever E, pull-rod or device E', actuating-pawl *b*, bell D, bell-pawl G', and rod G², all arranged and adapted to operate substantially as herein described.

9. The combination, with the visible dial *j* and hand or pointer *l*, of the setting bar or arm L, the notched rim *m*, and the removable stop-pin *p*, all arranged and adapted to operate substantially as and for the purpose herein described.

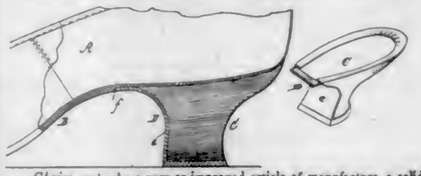
295,052. PUNCH. REUBEN M. ROSE, Brooklyn, N. Y. Filed June 6, 1883. (No model.)



Claim.—1. A punch having a pair of jaws carrying, respectively, male and female dies, the lower jaw having a slot through it from its under side, and carrying a drum upon which the strip is coiled, and from which it is fed through the slot to a position between the jaws, substantially as described.

2. A ticket or strip punch comprising a pair of jaws carrying male and female dies, and mechanism, substantially as described, for feeding the strip intermittently, the lower jaw having a slot through it, and carrying a box with a drum therein, upon which the strip is coiled, and from which it is fed through the slot to a position between the jaws, substantially as set forth.

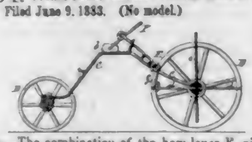
295,053. HEEL FOR SHOES. WOLF ROSENKEN and LOUIS ROSENKEN, New York, N. Y. Filed Jan. 9, 1884. (No model.)



Claim.—1. As a new or improved article of manufacture, a solid heel having the breast curved forwardly and faced with a layer of sole-leather, substantially as and for the purpose described.

2. The combination, with a slipper, of a solid heel having the breast curved forwardly and faced with a layer of sole-leather flush with the sole of the slipper, the lower heel portion of the sole being cut away to let in the heel, substantially as described.

295,054. CORNSTALK-RAKE. GEORGE ARTHUR RENYAN, Augusta, Kans. Filed June 9, 1883. (No model.)



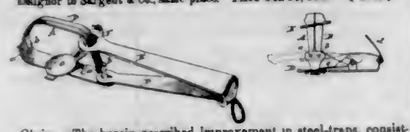
Claim.—The combination of the bow-lever F, pivoted to the rear of driver's seat, the links, and sliding stop E with the revoluble rake-head having devices adapted to engage with said stop, as shown and described.

295,055. CORD ATTACHMENT FOR SEWING-MACHINES. JOS. S. SACKETT, New Haven, Conn., assignor of one-half to Jane Halliwell, same place. Filed Sept. 10, 1883. (No model.)



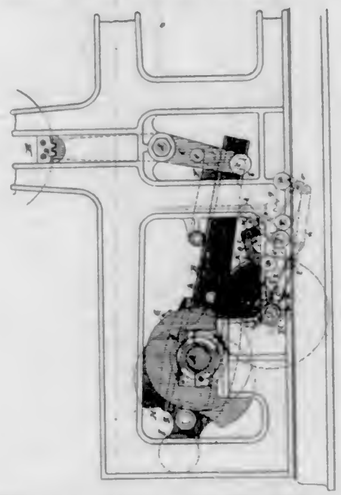
Claim.—The herein-described attachment for sewing-machines, consisting of the corder B, composed of the tubular portion *s*, and wings *f f*, formed as an integral part of said tubular portion, parallel with and distant from each other less than the internal diameter of the tubular portion, the space between the wings opening into said tubular portion, the said corder attached to or made a part of the presser-foot A, the said presser-foot constructed with a transverse slot, *h*, on the side opposite the tubular portion of the corder, substantially as described.

295,056. ANIMAL-TRAP. HENRY B. SARGENT, New Haven, Conn., assignor to Sargent & Co., same place. Filed Oct. 31, 1883. (Model.)



Claim.—The herein-described improvement in steel-traps, consisting in the spring, its active end twisted to bring it into a plane inclined to the base of the trap, the highest side being that which bears upon the jaw over which the trip is engaged, and whereby, when the trap is set, the locked jaw will bring the said twisted end into a plane substantially parallel with the base of the trap and hold the jaws in a corresponding parallel plane, and substantially as specified.

295,057. STOP-CYLINDER PRINTING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed Mar. 29, 1883. (No model.)



Claim.—1. The combination, with the crank-shaft and sliding bar, of an impression-cylinder having a toothed segment, a toothed lever arranged to engage with said segment, a lever, as M, for lifting said sliding bar, a rock-shaft, as *p*, having connections whereby it is adapted to be actuated by the operator, means for connecting the said rock-shaft with the lever M, and mechanism for preventing the rotation of the said rock-shaft when the impression-cylinder is in motion, all substantially as set forth.

2. The combination, with the lever C, sliding bar B, and mechanism, substantially as described, for reciprocating said bar, of gear-wheels as J K, a cam, as *i*, a rod, as *l*, a lever, as M, and tripping mechanism substantially as described, adapted to be actuated by the operator for raising the upper end of the lever M, and thereby breaking the connection between the bar B and lever C, and keeping the said bar and lever disconnected at pleasure, as set forth.

3. The combination, with the bar B, of a lever, as M, connecting-rod, as *n*, arm, as *o*, and rock-shaft, as *p*, substantially as described.

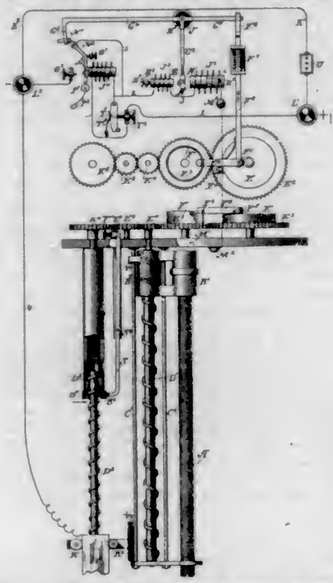
4. The combination, with the bar B, of a lever, as M, connecting-rod, as *n*, arm, as *o*, rock-shaft, as *p*, and a mechanism, substantially as described, for preventing the movement of the parts, except when the impression-cylinder is at rest.

5. The combination, with the bar B, of the lever M and its operating mechanism, and mechanism, substantially as described, adapted to be actuated by the operator, for elevating the upper end of said lever and keeping the same elevated at pleasure, all substantially as set forth.

6. The combination, with the bar B and lever M, of a lever, as *o*, a rod, as *y*, and actuating-cams, as *z z'*, substantially as described.

7. The combination, with the bar B, of a lever, as M, connecting-rod, as *n*, arm, as *o*, rock-shaft, as *p*, a second lever, as N, provided with a catch, as *w*, a connecting-rod, as *t*, and actuating-cams, as *r r'*, all arranged and combined as and for the purpose specified.

295,058. ELECTRIC-LIGHT REGULATOR AND CUT-OUT. ROBT. J. SHERRY, New York, N. Y. Filed July 17, 1882. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the electrodes of an arc-lamp, the mechanical clamping mechanism, a helix situated in a shunt-circuit spanning said electrodes, a core revolved within said helix upon its central longitudinal axis, and means, substantially such as described, co-operating with said core, to operate said clamping mechanism.

2. The combination, substantially as hereinbefore set forth, of the electrodes of an arc-lamp, mechanism for producing a constant force tending to diminish the distance between said electrodes, a grasping mechanism, a helix situated in a shunt-circuit spanning said electrodes, an electro-magnetic core within said helix revolving upon its central longitudinal axis, and means, substantially such as described, co-operating with said core, to operate said grasping mechanism and separate said electrodes.

3. The combination, substantially as hereinbefore set forth, of the electrodes of an arc-lamp, a mechanical clamping device, mechanism for producing a constant force tending to detain said clamping device in a non-clamping position, a cylindrical core revolving on its vertical longitudinal axis under reciprocal changes in the strengths of the main and branch currents, operating to bring said clamping mechanism into action when turning in one direction, and to return said clamping device to said non-clamping position when turning in the other direction.

4. The combination, substantially as hereinbefore set forth, of a central electro-magnetic core revolving upon its vertical longitudinal axis, and polarized by the current which traverses a derived circuit spanning an electric arc, a right-angled extension to said core, an electro-magnet polarized by the light-producing current to a similar polarity to that of said extension, but of greater intensity, for actuating said extension, and a clamping mechanism of an electric-arc light actuated by the rotary movements of said core.

5. The combination, substantially as hereinbefore set forth, of the electrodes of an arc-light, supported, respectively, by a screw revolving

in a nut and a nut revolving upon a screw, mechanism actuated by a spring-power for approximating said electrodes, a clamping mechanism actuated by the movements of a polarized armature for grasping through intermediate mechanism said electrodes and subjecting them to the action of said polarized armature.

6. The combination, substantially as hereinbefore set forth, of the electrodes of an arc-lamp, screw and nut bearings for supporting the same and allowing their vertical motion, mechanism actuated by a spring-power for approximating said electrodes, a core revolving on its central longitudinal axis under simultaneous increases in the strength of current traversing the main circuit and decreases in the strength of current traversing the shunt-circuit, and vice versa, and clamping mechanism actuated correlatively with said movements.

7. The combination, substantially as hereinbefore set forth, of the electrodes of an arc-lamp, a clamping mechanism, a shunt-circuit spanning said electrodes, a helix in said shunt-circuit, a core revolving on its vertical longitudinal axis within said helix, means, substantially such as described, for causing the revolution of said core, and intermediate mechanism whereby the motions of said core are communicated to said clamping mechanism.

8. The combination, substantially as hereinbefore set forth, of the electrodes of an arc-lamp, nut and screw bearings substantially such as described, a train of mechanism actuated by a spring-power for advancing said electrodes toward each other, a shaft, a clamping mechanism by which said shaft may be attached to the said advancing mechanism, a revolving core for impelling said shaft in such direction as to reverse the approximating action of said advancing mechanism, a helix in a shunt-circuit spanning the electric arc surrounding said core, an extension of said core, and an electro-magnet situated in the main circuit for attracting said extension.

9. The combination, substantially as hereinbefore set forth, of an armature polarized by the current which traverses a derived circuit spanning an electric arc, a soft-iron core polarized by the light-producing current to a polarity opposite to that of the said armature, and mechanism operated by the movements of said armature to close a shunt spanning the electric arc.

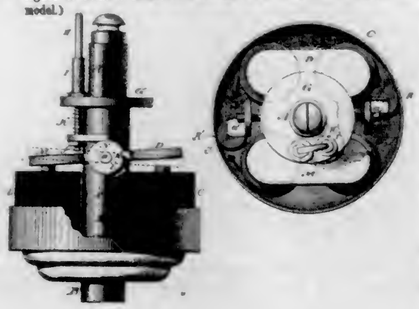
10. The combination, substantially as hereinbefore set forth, of a core rotated upon its vertical longitudinal axis, and polarized by a current traversing a derived circuit spanning an electric arc, a soft-iron attracting-piece polarized by the light-producing current to a polarity opposite to that of said core, and mechanism operated by the movements of said core upon its axis to close a shunt-circuit spanning the electric arc.

11. The combination, substantially as hereinbefore set forth, of a core situated in the helix of a shunt-circuit spanning an electric arc, an extension-piece of said core, whereby the same may be revolved by virtue of the attraction of said extension-piece for a piece of soft iron polarized by the light-producing current, a second extension of said core, a subsidiary lever operated by the movements of said second extension, and contact-points carried by said subsidiary lever for closing a cut-out shunt-circuit spanning said electric arc.

12. The combination, substantially as hereinbefore set forth, of an extension to a core revolving upon its central vertical axis, two fixed attraction-pieces polarized by the light-producing current for determining the direction in which said core shall turn, mechanisms by which a movement in one direction separates the electrodes, mechanisms by which given motion in the opposite direction allows their approximation, and mechanism, by which further motion in this latter direction operates a shunting device for short-circuiting said light.

13. The combination, substantially as hereinbefore set forth, of the electrodes of an arc-lamp, one or more co-operating levers slightly turned upon their fulcrums by the pressure of said electrodes one upon the other, contact-points normally together, but separated by the turning of said levers, and a shunt-circuit spanning said arc-lamp thereby opened.

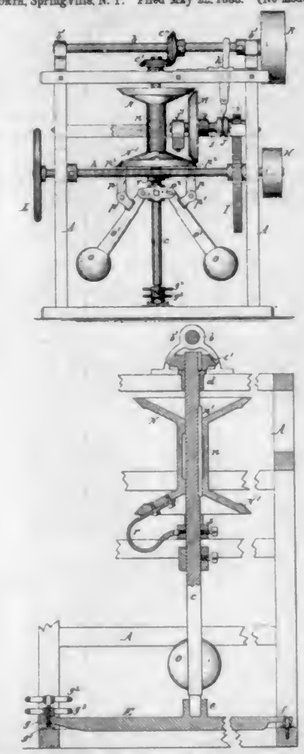
295,059. ELECTRIC GAS-LIGHTER. EDWIN L. SHUTE, Ansonia, assignor to John E. Earle, New Haven, Conn. Filed Nov. 3, 1883. (No model.)



Claim.—1. In an electric gas-lighting apparatus, the combination of the gas cock and burner, two magnets—one in connection with the circuit for opening the supply of gas, the other in connection with the circuit for cutting off the supply of gas—the armatures of said magnets in connection with the gas-cock, the magnet R in connection with the magnet for cutting off the supply of gas, and a spring-dog arranged to automatically lock the gas-cock in its open position, said dog attached to or made a part of the armature of said magnet R, and whereby said dog will be released from its engagement upon the closing of the circuit for cutting off the gas, substantially as described.

2. In an electric gas-lighting apparatus, the combination of the gas cock and burner, two magnets—one in connection with the circuit for opening the supply of gas, the other in connection with the circuit for cutting off the supply of gas—the armatures of said magnets in connection with the gas-cock, the magnet R' in connection with the magnet for opening the supply of gas, and a spring-dog arranged to automatically lock the gas-cock in its closed position, said dog attached to or made a part of the armature of said magnet R', whereby said dog will be released from its engagement upon the closing of the circuit for letting on and lighting the gas, substantially as described.

295,060. GOVERNOR FOR WATER-WHEELS. CHARLES J. SHUTTLEWORTH, Springville, N. Y. Filed May 22, 1883. (No model.)



Claim.—1. The combination, with a ball-governor, of a spring secured with one end to the spindle of the governor, and with its opposite end to a collar or sleeve which is moved by the governor-balls, the spring being adapted to resist any movement of the governor-balls out of their normal position in either direction, substantially as set forth.

2. The combination, with mechanism whereby the supply of water or other actuating agent is controlled, of a ball-governor, a spindle to which the governor-balls are attached, and an adjustable step supporting said spindle, whereby said spindle can be raised or lowered to regulate the normal speed of the machine, substantially as set forth.

3. The combination, with a vertical spindle, and mechanism whereby the same is rotated, of the connected wheels N N', mounted on the spindle, an intermediate wheel, M, connected with the gate mechanism, a ball-governor connected with the wheels N N', and mechanism whereby the spindle can be raised and lowered, substantially as set forth.

4. The combination, with the spindle c, of the connected wheels N N', a ball-governor, e, connected with said wheels, and a spring connecting said wheels with the spindle, substantially as set forth.

5. The combination, with the spindle c and connected wheels N N', of a spring connecting said wheels to the spindle, and made adjustable on the spindle, substantially as set forth.

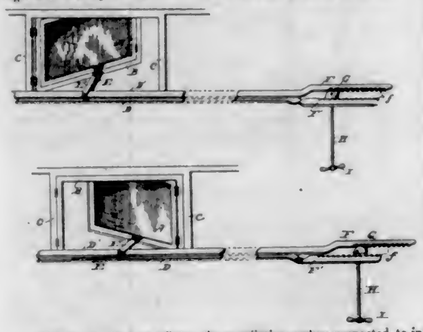
6. The combination, with the spindle c, connected wheels N N', and a ball-governor connected with said wheels, of the wheel M, shaft j, coupling J, pinion i, gear I, gate-shaft h, and wheel H, substantially as set forth.

7. The combination, with the wheel M, whereby the gate mechanism is actuated, of the spindle c, connected wheels N N', mounted on said spindle, and a ball-governor mounted on the spindle, and an adjustable bridge-tree, E, on which the spindle is supported, substantially as set forth.

8. The combination, with the wheel M, whereby the gate mechanism is actuated, of the spindle c, connected wheels N N', a ball-governor connected with the spindle and the wheels N N', a spring, r, whereby the wheels N N' are connected with the spindle, and an adjustable bridge-tree, E, upon which the spindle is supported, substantially as set forth.

295,061. VENTILATOR. JACOB G. SLATER, Albany, N. Y., assignor of one-half to Nelson Fitch, same place. Filed Sept. 28, 1883. (No model.)

Brief.—Ventilators consisting of operating-sashes hinged in operating-rims, the same being operated by toothed rods engaging with a segment, whereby the ventilator can be operated in either direction.



Claim.—1. In a ventilator, the ventilating-sashes connected to inclosing-rims, the latter being hinged to the sash-frames, in combination with a pair of rods or bars provided with arms connecting with each of the sashes, and also with the rims, and means for operating the said rods or bars to cause either the opening of the rims or the opening of the sashes independently of the rims, as set forth.

2. In a ventilator, the ventilating-sashes connected to inclosing-rims, the latter being hinged to the sash-frames, in combination with a pair of rods or bars provided with arms connecting with the sashes and rims, the front ends of said bars being provided with teeth with which a segment engages, and means for operating said segment, as and for the purpose set forth.

3. In a ventilator, the ventilating-sashes hinged to inclosing-rims, the latter being likewise hinged to the sash-frames, in combination with a pair of rods or bars provided with arms connecting with the sashes and rims, the front end of the said bars or rods being provided with teeth, a segment alternately engaging with said teeth, a rod for operating the segment, and a knob or handle for the rod, as and for the purpose set forth.

4. In a ventilator, the ventilating-sashes A and the rims B, in combination with rods D D', arms E E', said rods D D' having outwardly-extending arms F F', the inner faces of which are provided with teeth, a segment, G, rod H, and knob or handle I, arranged and operating for the purpose set forth.

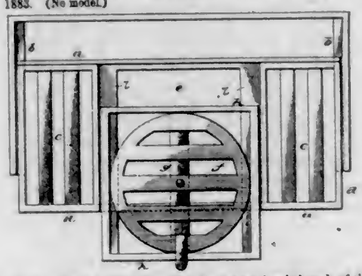
295,062. MANUFACTURE OF RUBBER BOOTS OR SHOES. ELISHA STOUT, Lambertville, N. J. Filed Jan. 3, 1884. (No model.)



Claim.—1. A boot or shoe composed of a sheet of duck or like fabric, having on its opposite sides films or sheets of rubber pressed into the fabric, and a lining of felt or similar heavy fabric cemented to the interior film or sheet of rubber, substantially as shown and described.

2. The method herein described of making a fabric for the manufacture of boots and shoes, which consists in applying a film or coating of rubber to each surface of a piece of textile fabric, pressing the rubber into the interstices of the fabric by the action of revolving rollers, and finally cementing a sheet of felt or like material to one of the films or coatings of rubber, substantially as set forth.

295,063. GRATE. JAMES G. SMITH, Cleveland, Ohio. Filed Aug. 22, 1883. (No model.)



Claim.—The combination, with the supporting-ledges b, of the sliding removable grate a, provided with the central rectangular opening, c, and ledges i i, the central rectangular sliding frame, h, having the cross-bar g, and the rotary grate f, pivoted to the said cross-bar, all adapted to operate in connection with a stove or fire-place, substantially as specified.

295,064. REVOLVER. JOHN T. SMITH, Rockfall, Conn. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a revolver, the combination of the frame and barrel hinged together forward of and carrying the cylinder, the ejector-spindle moving longitudinally through the cylinder, its forward end extending into a recess above the hinge, the disk *f* within the hinge and fixed to the frame, so as to turn with it, the dog *l*, hinged to said disk, its nose constructed and arranged to engage the forward end of the spindle when in the closed position, and so that in the opening movement the said dog will force the ejector-spindle rearward and escape therefrom at the extreme rear position of the ejector-spindle, and a spring arranged to force said spindle rearward so soon as it escapes from the dog, substantially as described.

2. The combination of the frame A, barrel B, hinged thereto forward of and carrying the cylinder, the disk *f*, arranged in a recess in the hinge, but fixed to the frame, the dog *l*, hinged to said disk, the ejector-spindle moving longitudinally through the cylinder, its forward end extending into a recess above the dog, the barrel or forward hinged portion constructed with the incline *r* forward of the hinge, and upon which the dog *l* will strike in the closing movement, substantially as described.

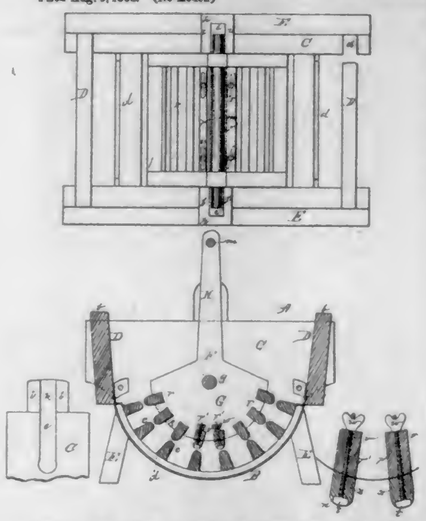
3. The combination of the frame A, barrel B, hinged thereto forward of and carrying the cylinder, the disk *f*, arranged in a recess in the hinge, but fixed to the frame, the dog *l*, hinged to said disk, the ejector-spindle moving longitudinally through the cylinder, its forward end extending into a recess above the dog, the barrel or forward hinged portion constructed with the incline *r* forward of the hinge, and upon which the dog *l* will strike in the closing movement, the said dog constructed with a flat surface, *t*, and a spring, *s*, arranged to bear upon said flat surface, whereby the said dog is held in the open position, substantially as described.

4. The combination of the frame A, barrel B, hinged thereto forward of and carrying the cylinder, the disk *f*, arranged in a recess in the hinge, but fixed to the frame, the dog *l*, hinged to said disk, the ejector-spindle moving longitudinally through the cylinder, its forward end extending into a recess above the dog, the barrel or forward hinged portion

constructed with the incline *r* forward of the hinge, and upon which the dog *l* will strike in the closing movement, the ejector-spindle constructed with a recess *u*, substantially as described.

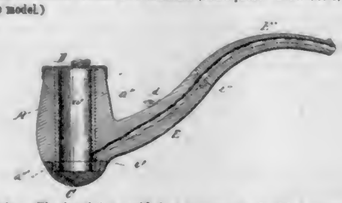
5. In a revolver, the combination of the frame and cylinder with the headed screw H, introduced in the end of the arm above the cylinder, and so as to overlap the rear end of said cylinder, one side of the said head removed, substantially as and for the purpose described.

295,065. WASHING-MACHINE. RANSOM SMITH, Cottage Grove, Oreg. Filed Aug. 9, 1882. (No model.)



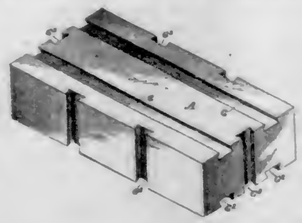
Claim.—In a washing-machine, the combination, with the tub A, having the transverse bars c in its lower portion, of the swinging rubber F, having the transverse ribs or bars *r r'*, the adjustable under sections, *z*, of the middle ribs, and the clamp-screws *v* and thumb-nuts *w*, substantially as specified.

295,066. TOBACCO-PIPE. GEORGE W. SNOOT, Washington, D. C., assignor of one-half to John H. D. Nordeman, same place. Filed Oct. 5, 1883. (No model.)



Claim.—The bowl A, provided at its lower end with a contracted and externally-threaded portion, *a'''*, and having the lining *a'*, extending the whole length of its chamber, in combination with the recessed bottom piece, C, suitably threaded to engage the threaded portion of the bowl, substantially as set forth.

295,067. DOVETAILED GROOVED BRICK FOR BUILDING PURPOSES. GEORGE E. STEARNS, New York, N. Y. Filed Jan. 22, 1884. (No model.)



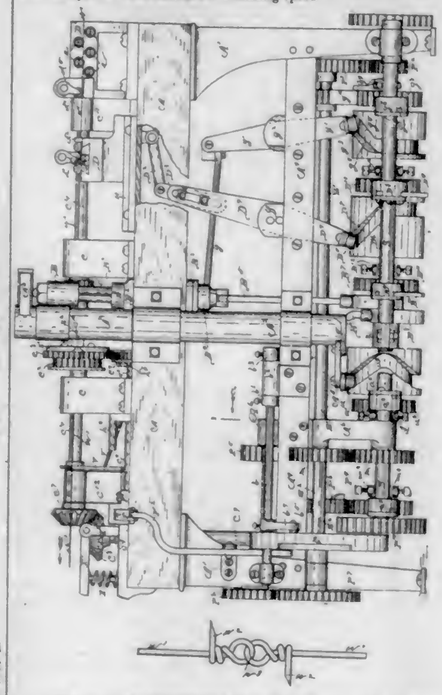
Claim.—1. A brick having one or more dovetailed grooves across its top and bottom.

2. The combination of two or more bricks placed one above the other, each having dovetailed grooves across its upper and lower surfaces, and interlocked by a layer or layers of mortar between the said surfaces and filling said grooves.

3. A brick having dovetail grooves crossing its upper and lower surface, and similar grooves crossing its ends and sides, substantially as described.

295,068. MACHINE FOR MAKING BARB-WIRE. JOS. S. STEPHEN, Joliet, Ill. Filed Sept. 4, 1883. (No model.)

Brief.—A single wire is fed by a reciprocating carriage and passes by the side of an upright needle. It is cut off between the needle and the carriage, and the rear end is bent to one side by bending-dies. This end is then fed forward past the other side of the needle. The needle is raised, carrying the ends of the wire upward. A looper loops the ends of the wire. Wrapping-spindles then advance and wrap the ends of the loops about the wire. The projecting ends of the loops form the barbs. A clamp in one wrapping-spindle clamps the wire while it is operated upon, and then opens to permit the passage of the barb. The barbed wire passes through a spring-guide, a stop-gage determining the distance apart of the barbs, and to a winding-spool.



Claim.—1. The combination of the reciprocating head D, swinging arm *d*, spur-wheel feed *d'*, ways H H, pitman D^2, arms D^3 and D^4, friction-roller D^5, and cam D^6, all arranged to operate as and for the purpose set forth.

2. In the barbing-machine described, the oscillating arm D^4, having the extension D^3, in combination with the cam D^6 and reciprocating head D, carrying devices for feeding the wire, and pitman D^2, as and for the purpose set forth.

3. In the barbing-machine described, the fingers *y y*, in combination with the cutting-dies *i i'*, and the reciprocating sliding head D, and feed *d* and *d'*, and means for operating the fingers and dies, as and for the purpose set forth.

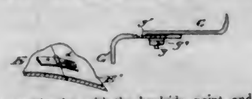
4. In the barbing-machine described, the needle r^2, having its point curved in a direction at right angles with the strand-wire, and having its side immediately below said curve hollowed, as and for the purpose stated.

5. In the barbing-machine described, the needle r^2, having the form shown and described, in combination with the shafts r^4 r', coiling-pins r^5 r^3, link r^6, crank b^2, rock-shaft *b*, crank b^1, and cam b^4, all arranged to operate as and for the purpose set forth.

6. In the barbing-machine described, the combination of the reciprocating head D, provided with a suitable grip-feed for feeding the wire into the machine, cutting-off dies *i i'*, bending-fingers *y y*, reciprocating needle r^2, coiling-pins r^5 r^3, and the mechanism described for operating said several parts, as and for the purpose set forth.

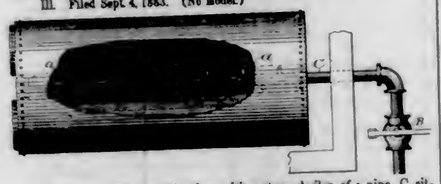
7. In the barbing-machine described, the feed consisting of the spur wheel or roller *d'*, suspended in and in combination with the swinging arm *d*, as and for the purpose set forth.

295,069. PLOW. GEO. STRUDEL, Chilton, Wis. Filed Sept. 3, 1883. (No model.)



Claim.—In combination with the landside, point, and beam of a plow, the mold-board made in sections with beveled edges, and hinged together, as shown, the section F' being adjustable, and having eye G^3, the bar G, having wide tooth *g'* and bolt *g*, the ratcheted arm G', having slot g^2, and the ratchets occupying either side of said slot, the bar G' being pivoted loosely to the landside, the bar G similarly pivoted to the movable section of the mold-board, and the nut g^4, for adjustably locking the bars G G' together, all as and for the purposes set forth.

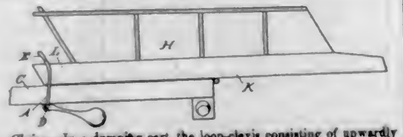
295,070. STEAM-BOILER CLEANER. ROBERT STEWART, Pittsfield, Ill. Filed Sept. 4, 1883. (No model.)



Claim.—1. The combination, with a steam-boiler, of a pipe, C, situated near the bottom thereof, and provided with short tubes *a*, having sharp beveled ends *d'*, and a valve, B, all of the above parts combined and adapted to operate as described.

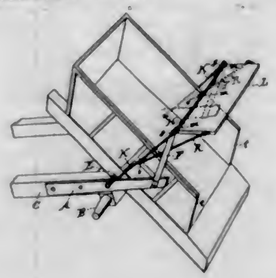
2. The combination, with a steam-boiler, of a pipe, C, situated near the bottom thereof, and provided with a series of short tubes, *a*, having sharp beveled ends *d'*, the said pipe C being greater in cross-section than the sum of the areas of the cross-sections of the short tubes, substantially as set forth.

295,071. DUMPING-WAGON. THOMAS S. STEWART, Saltsburg, Pa. Filed Dec. 10, 1883. (No model.)



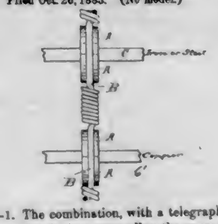
Claim.—In a dumping-cart, the loop-clevis consisting of upwardly and outwardly curved arms, connected at their upper ends by a cross-bar having a forwardly-projecting arm, and provided at their lower ends with eyes by which they are journaled to the shafts, and a rearwardly-extending weight-arm, by which the loop is held in engagement with the forwardly-projecting ends of the body-rails, substantially as shown and described.

295,072. AUTOMATIC END-GATE. THOMAS S. STEWART, Saltsburg, Pa. Filed Dec. 15, 1883. (No model.)



Claim.—In a dumping-cart, the combination, with the body D and shafts C, of the side-bars A, secured to the rear ends of the shafts, the standards F, secured at their lower ends to the side-bars, the transverse bar H, journaled in the upper ends of the standards, carrying the hinged end-gate L, the pivoted straight rods R, connected at their forward ends to the outer side walls of the cart-body, and at their rear ends to the lower side edges of the end-gate, and the brace-rods K, extending from the side-bars to the upper ends of the standards, substantially as specified.

295,073. TELEGRAPH-WIRE SUPPORTER. ROSS C. STONE, New York, N. Y. Filed Oct. 26, 1883. (No model.)

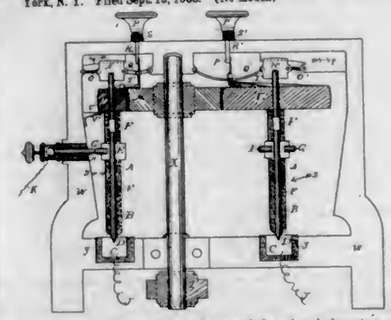


Claim.—1. The combination, with a telegraph-wire, of a divided insulator, a suspensory device surrounding the same, and a telegraph or transmitting wire suspended therefrom.

2. The combination, with a line-wire, as C, of two half-disks, as A A, of insulating material, a sustaining-wire, as B, secured around said parts A A, and the suspended wire, as C', substantially as described.

3. The combination, with line-wire C, of half-disks A A, of insulating material, secured thereto by wire loop B, the second pair of half-disks A A, suspended and secured by said loop B, and the wire C', passing through the suspended insulator, all substantially as shown and described.

295,074. TELEGRAPHIC TRANSMITTER. ROSS C. STONE, New York, N. Y. Filed Sept. 13, 1883. (No model.)



Claim.—1. The method of transmitting electric impulses, which consists in driving the contact or contacts of a series which makes the impulses constituting one letter or character at a given rate of movement, and the part of the same series which makes the impulses constituting another letter or character at a different rate of movement, substantially as set forth.

2. A series of spindles adapted to open and close an electric circuit by their movement, substantially as described, and mechanism to move various spindles of the series at different rates of speed, in combination, substantially as described.

3. A friction-driver of the character described, a series of vertical spindles arranged outside the driver, adapted, as described, to produce electrical impulses, and mechanism, substantially as described, to throw one or another of the spindles into contact with the driver, so as to be propelled thereby, all in combination, as set forth.

4. The combination, with a friction-driver, as M, of a series of spindles adapted to give electrical impulses by mechanism substantially as described, and a series of friction-drivers, as L, one on each spindle, the same being of various sizes, so that the spindles may be speeded differently, as set forth.

5. A friction-driver, a series of vertical spindles adapted to transmit electrical impulses, as described, and a series of keys adapted by suitable connections to throw the spindles into contact with the driver, all in combination, substantially as stated.

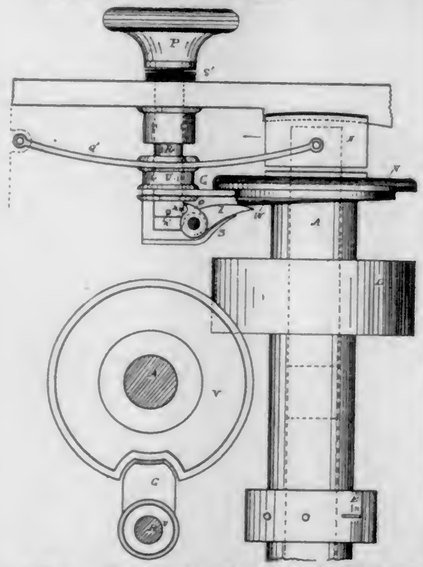
6. A friction-driver, a series of vertical spindles adapted to transmit electrical impulses, substantially as described, movable bearings supporting one end of said spindles, and a series of keys adapted to move said bearings, so that the spindles may be driven by the driver, all in combination, substantially as stated.

7. A friction-driver, a vertical spindle adapted to transmit electrical impulses constituting a telegraphic character, mechanism for throwing said spindle into position to be operated by said driver, and mechanism for retaining the spindle in contact with the driver, so that the spindle shall make a complete revolution, and stop at the close of the revolution, in combination, as set forth.

8. The combination of a friction-driver, a series of spindles adapted to transmit electrical impulses, as described, sliding bearings for said spindles, keys for moving said bearings, and an escapement or stop which throws the friction devices out of contact when the spindle has made a complete revolution, as set forth.

9. The combination of a friction-driver, a series of insulated spindles for transmitting electrical impulses, as described, sliding boxes for throwing the spindles into contact with the driver, toggle-levers for actuating said sliding boxes, and keys for operating the toggle-levers, as set forth.

295,075. TELEGRAPHIC TRANSMITTER. ROSS C. STONE, New York, N. Y. Filed Sept. 13, 1883. (No model.)



Claim.—1. The combination, with a spindle adapted by its rotation to open or close an electrical circuit, of a key and connecting mechanism adapted, as described, to unlock said spindle, and mechanism, substantially as described, adapted to lock the spindle when it has completed a single revolution, as set forth.

2. The combination, with a spindle adapted by its rotation to open and close an electrical circuit, of a locking-plate thereon, a locking device engaging with said plate, and a key adapted to disengage the locking device from the notch in the plate, as set forth.

3. The combination, with a spindle of the character described, of a notched disk thereon, a locking device engaging the notch in said disk, a key adapted to disengage the locking device from said disk, and mechanism, substantially as described, which holds the locking mechanism from the disk during one revolution of the spindle, but locks the spindle at the completion of the revolution, as set forth.

4. A spindle adapted by its rotation to open and close an electrical circuit, a notched disk on said spindle, a locking device adapted to engage the notch in said disk, a key for disengaging the locking device from the disk, and mechanism, substantially as described, which is adapted to release the key from the locking device and permit it to return to its normal position while the spindle is revolved, substantially as described, all the elements in combination, as set forth.

5. A spindle adapted by its rotation to open and close an electrical circuit, a notched disk on said spindle, a locking device adapted to engage the notch in said disk when in one position, but to be forced out of the notch and held out by the disk during one revolution of the spindle, a spring which tends to press the locking device into the notch of the disk, a key for forcing the locking device out of the notch in the disk, and mechanism, as described, for releasing the key from the locking device while the spindle rotates, all in combination, as set forth.

6. The spring-key, the locking device secured loosely thereto, a spring tending to draw the locking device into the notch in the disk, a spindle of the character described, which carries said disk and a cam, and a latch actuated by said cam to disconnect the key from the locking device, all in combination, substantially as stated.

7. A spindle of the character described, a notched disk thereon, provided with a face-cam, as set forth, a locking device adapted to engage the notch in the disk when forced into said notch by a spring, a spring-key adapted to force the locking device out of the notch in the disk, a latch which normally holds the locking device in position to move with the key, but is operated to release the key from the locking device by the action of the cam, and a spring which tends to force the latch into engagement with the key, the specified elements in combination, all substantially as set forth.

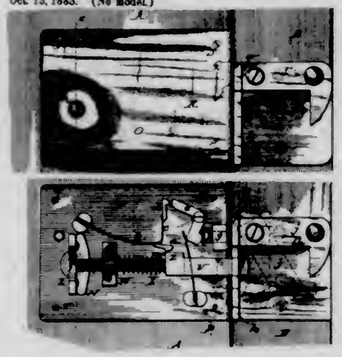
295,076. COMPASSES. FRITZ SAMUEL SVENSON, Lund, Skåne, Sweden. Filed Oct. 10, 1883. (No model.) Patented in Sweden July 3, 1883, No. 237.



Claim.—1. In compasses for use in blackboard or similar drawing, the combination of a sharp metallic point at the end of one of the legs, and a rubber block slipped over the point, the latter penetrating the block, covering the entire point or needle, excepting the extreme point, as and for the purpose shown and set forth.

2. The combination of the ruler having the crayon-holding block at one end, a slotted block sliding adjustably upon the ruler, and having a needle at its lower end, and a rubber block slipped upon the needle, the latter penetrating the block and covering the entire needle, excepting the point, as and for the purpose shown and set forth.

295,077. LOCK. FRITZ SAMUEL SVENSON, Land, Skane, Sweden. Filed Oct. 15, 1883. (No model.)



Claim.—1. The combination of a main bolt in a lock having its outer end cut off square, actuated or shot by a spring, and having a shoulder facing outward, a spring-catch adapted to engage the shoulder upon the bolt when the latter is drawn back, and having an upright spring-catch upon its upper side adapted to be engaged by the arm of a bell-crank, a bell-crank pivoted in the lock-casing, a beveled spring-bolt bearing with its inner end against the other arm of the bell-crank, and a catch-plate having a slot for the reception of the main bolt, and a removable flange adapted to be struck by the beveled spring-bolt, as and for the purpose shown and set forth.

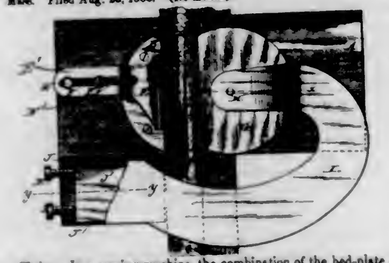
2. The combination of a main bolt in a lock having means for drawing it back, and having a spring for shooting it, and having its outer end cut off square and an outwardly-facing shoulder upon its upper side, a beveled spring-catch adapted to engage the shoulder when the bolt is drawn back, and having an upright spring provided with a beveled catch at its upper end, a bell-crank having one arm adapted to engage the catch upon the end of the upright spring, when the spring-catch engages the shoulder upon the bolt, a beveled spring-bolt bearing with its inner end against the other arm of the bell-crank, a catch-plate having a slot for the reception of the end of the main bolt and a slot below the same, and a hook pivoted upon the inner side of the door-frame or the plane part of the catch-plate, having one end turned up to form a flange adapted to be brought in line with the slotted flange of the catch-plate, and to be struck by the spring-bolt, and having its hooked end adapted to be turned down to pass through the lower slot in the flange of the catch-plate into a corresponding slot in the front plate of the lock-casing, as and for the purpose shown and set forth.

295,078. REMEDY FOR HERNIA. EDWARD C. THATCHER, Kansas City, Mo. Filed Jan. 18, 1884. (No specimens.)

Claim.—1. An improved medical compound consisting of glue, sugar, honey, gutta-percha, glycerine, borax, alum, sulphur, black-lead, nitrate of potash, bitartrate of potash, and camphor, in or about in the proportions above set forth.

2. A medical compound for the treatment of hernia, consisting of glue, sugar, honey, gutta-percha, glycerine, borax, alum, sulphur, black-lead, nitrate and bitartrate of potash, and camphor, mixed and formed into pads, as above described, and adapted for use in combination with a portable electric element, as and for the purpose set forth.

295,079. SEWING-MACHINE GUIDE. WALES B. THAYER, Brockton, Mass. Filed Aug. 28, 1883. (No model.)



Claim.—In a sewing-machine, the combination of the bed-plate A, having fixed bearing-block J', throat-plate B, having the feed-slot C and needle-hole D, adjustable spring-guide E, bent arm or plate I, provided with the box J, rotary gage-disk G, and adjusting-screws K K, all constructed and combined to operate substantially in the manner and for the purpose set forth.

295,080. CULTIVATOR. AUGUSTUS C. TOWER and JUSTUS D. TOWER, Mendota, Ill. Filed June 13, 1883. (No model.)

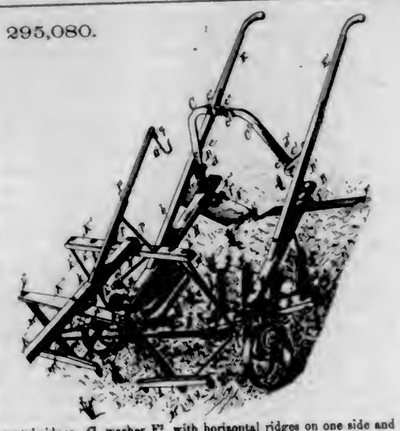
Claim.—1. In a cultivator, the combination, with the frame, of the clod-crushing plates F, loosely suspended from the rear part of the machine by adjustable bearings, whereby the vertical elevation and inclination of the said plates may be regulated at will, substantially as set forth.

2. In a cultivator having two tooth-beams adapted to operate on each side of a row of corn, &c., backward-extending beams bearing clod-crushing plates at their rear ends, in combination with the rear bow connecting said beams, and formed in two parts, C and C', adjustably united at top to regulate the distance apart of the rear end of the machine, substantially as set forth.

3. In a cultivator, the combination of the tooth-beams A with the backward-extending beams B, pivoted thereto, and the rods B^2, connecting the beams A and B, and having slots b^2 at their forward ends, whereby the said beams may be adjusted at the angle desired with respect to each other and secured in such position, substantially as set forth.

4. The plate F', having vertical arm *f*, with slot *f'*, and inner horizontal ridges, *f'*, washer F^2, with horizontal ridges on one side and radial ridges on the other, and hanger F^3, with flange having inner radial ridges, in combination with the plate F, having loops or brackets f^2, substantially as set forth.

295,080.



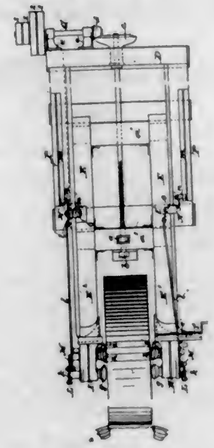
5. In combination with the rear beams and handles of a cultivator, the braces D and D', having diagonal slots *d* and *d'*, and arms e and *e'*, and the connecting-bow consisting of two arms, C and C', perforated and slotted at their upper overlapping ends, and pivoted at their lower ends to the said braces, and adapted to be adjustably secured by the bolts *c*, *c'*, and c^4, substantially as set forth.

6. The metallic tooth-beams A, formed of double-angle iron, the front vertical flange of which is of less depth than the rear vertical flange, and each provided with the notches *a* on the under side, in transverse line with each other, and with perforations in the top flange, in combination with the teeth or knives A', having curved cutting-blades and round shanks, and the eyebolts *a'* and nuts a^2, whereby the said teeth or knives may be secured with their blades at any inclination from a vertical line desired, and with their rear ends projecting downward, substantially as set forth.

7. In combination with the front beams of a cultivator having the eyebolts *l' l'*, the tongue K, rear cross-bar, K', with vertical braces *k'*, diagonal braces L L, bolted to the tongue and to the vertical braces *k'*, and ending in hooks *l l*, for engagement with the said eyebolts *l' l'*, evener K^2, having metal straps M, suspended therefrom, and rods M^2, connecting the lower ends of the said straps with the diagonal braces L, substantially as set forth.

8. In combination with the diagonal braces L, the clamping-plates N, adjustably secured thereto, and having hooks *n*, integral with said plates, whereby the closed links at the ends of the chains may be readily attached thereto or detached therefrom, substantially as set forth.

295,081



295,081. MACHINE FOR DRESSING GRINDSTONES. FRANK TREE, Westminster, England, assignor to A. C. Baldwin, Boston, Mass. Filed Oct. 18, 1883. (No model.) Patented in England Jan. 20, 1883, No. 341.

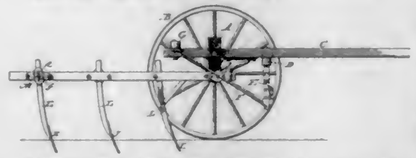
Brief.—The sides of the stone are dressed by cutters mounted upon arms that project forward in parallel lines from a carriage which is advanced in a direction at right angles to the axis of the stone. The cutter-shafts are automatically rotated in their supporting-sockets, so that the bearing-point of each cutter against the stone shall always be in one of the radial lines of the stone. For this purpose the cutters, which are of the self-rotating variety, are set obliquely to their carrying-bars.

Claim.—1. In a machine for making grindstones, a frame provided with projecting parallel arms carrying slides and cutters, and adapted to be moved toward and from the stone to be dressed, in combination with the journals for the stone-spindle, arranged at right angles to the line of feed of the frame, as set forth.

2. In a stone-dressing machine, a movable frame bearing a series of cutters, said cutters being mounted in the cutter-bars with their axes inclined to the axes of the bars, the cutter-bars being connected by means of arms to a rod which is automatically moved by the forward movement of the frame, whereby the relative positions of the cutters are changed as they are moved toward the eye of the stone.

3. The combination of the cutters *g* and *h*, mounted in the cutter-bars, with their axes inclined to the axes of said bars, the pivots of which are provided with arms L and M, and connected together by the bars or links K, with the rods *l*, bell-crank levers N, guides P, and guide-slots M.

295,082. WHEEL-CULTIVATOR. NEWTON THOWBRIDGE, Council Grove, Kans. Filed Oct. 11, 1883. (No model.)



Claim.—1. In a cultivator, the combination of the wheeled draft-frame having cultivator-beams jointed thereto, the evener D, pivoted to the under side of the frame in advance of the axle, and provided with hangers E, the rear evener, G, pivoted to the upper side of the frame at a distance substantially such as specified in rear of the axle, and the connecting-rods F, extending from the ends of the rear evener to the lower ends of the respective hangers, whereby the power or draft applied to propel the machine is caused to sustain the forward end of the draft frame or tongue.

2. In combination with a drag bar or beam, the bracket *n*, having its ends secured to the beam, and its central portion offset laterally and slotted vertically, as described, the shovel-standard inserted between the bracket and the beam, and the fastening-bolt, applied as described.

3. The improved bracket, having its two ends adapted for attachment to the beam, its middle portion offset laterally and elongated vertically, to receive the shovel-standard on the inside, with a slot in said elongated portion.

295,083. TOY. ANTON TRUNK, Bridgeport, Conn. Filed Jan. 23, 1884. (No model.)



Claim.—1. As a new article of manufacture, a knife having attached at the rear portion of the handle a cap adapted to be turned around, and thereby produce, by friction against a leaden or other plate or disk, a series of sounds, substantially as described.

2. The combination, with the handle of a knife, of an independent cap secured to the handle in such manner as to turn freely, and a leaden or other suitable plate or disk placed between said handle and cap, substantially as shown and described.

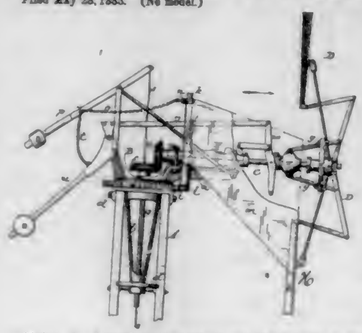
3. In combination with a knife-handle, the plate or disk, of lead or other suitable material, adapted to be attached over said handle, and having a projection extending within an independent cap secured to the handle so as to turn freely, substantially as and for the purposes set forth.

4. As a toy, a leaden or other plate or disk adapted to be placed over the rear end of a knife-handle, and having a projection on its rear face, in combination with a cap adapted at its forward portion to accommodate said projection, and secured in position by a screw or nail passed loosely through said cap and plate into the handle, substantially as set forth.

5. The combination of the handle A, plate D, constructed as described, cap H, and screw K, substantially as set forth.

6. The plate D, having projections E F, and with central opening, G, in combination with the handle A, having recess C, cap H, with central opening, J, enlarged at the forward portion, and screw K, substantially as and for the purposes hereinbefore set forth.

295,084. WINDMILL. HENRY K. UNDERWOOD, Waukegan, Ill., assignor of one-half to John F. Powell and R. John Douglas, same place. Filed May 23, 1883. (No model.)



Claim.—1. A vertical wind-wheel and a turn-table to sustain the same and permit it to swing horizontally with the wind, in combination with a pawl-and-ratchet mechanism to lock the table against rotation in one direction, a vane to cause the engagement of the pawl, a weighted lever provided with manual devices whereby it may be elevated, and connecting devices between said lever and the pawl for the purpose of disengaging the latter, said connections constructed as described, to remain inoperative when the lever is depressed.

2. In combination with the fixed toothed plate, the turn-table having the wheel thereon, the vertical shaft provided with the dog and vane, and the weighted lever *p*, connected therewith.

3. In combination with the rosette-wheel and its turn-table, the pawl-and-ratchet devices to lock the turn-table, the rock-shaft connected to the pawl, the vane and arm attached to the rock-shaft, the weighted lever connected with said arm, and the cord or chain *s*, connected with the lever.

4. In combination with the horizontally-turning turn-table, the toothed disk and the locking-dog having its forward end adapted to engage the teeth, and the rear end adapted to serve as a stop to limit its movement.

5. The vertical horizontally-swinging wind-wheel with feathering blades, combined with automatic mechanism, substantially as described, to govern the position of the blades, automatic locking mechanism, combined with a vane to control the swinging action of the wheel, and a manual device, *s*, connected, substantially as described, with the governing and also with the locking mechanism, whereby the operation of the manual device is caused to serve the double purpose of adjusting the blades to an inoperative position and of unlocking the wheel, that it may swing freely in either direction.

6. A vertical wheel sustained by a turn-table and arranged to swing horizontally to follow the course of the wind, in combination with an automatic device to lock the head against rotation in one direction, a chain or equivalent manual device to disengage the locking device, an automatic governing mechanism to control the speed of the wheel, and a connection, substantially as described, between the locking and governing devices, whereby the two are permitted to operate independently, but their simultaneous operation by hand permitted.

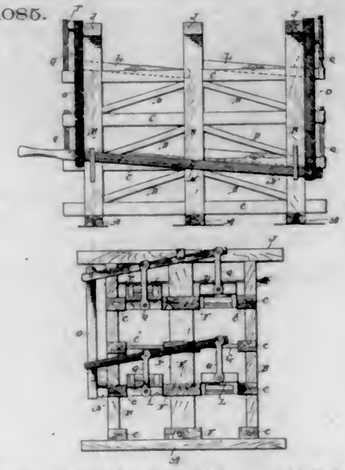
7. In combination with the vertical rosette-wheel and its turn-table, the wheel-governing collar *x*, and the weighted lever *u*, connected therewith, the pawl-and-ratchet mechanism to control the rotation of the turn-table in one direction, the vane *m*, and the opposing lever *p*, weighted out of action, both connected with the pawl, the connection *t* between the two levers, and the rod or chain *s*, connected with lever *p*, whereby, raising the upper lever by hand, the lower one may be raised simultaneously therewith.

8. In combination with the wheel and its turn-table, the stationary toothed plate, the vane upon the turn-table, and the pawl attached directly to the vane-shaft.

9. The combination, in a wind-wheel, of the device to lock the turn-table against rotation, the lever connected therewith and provided with a manual device, the lever to govern the speed of the wheel, and a connection between the two levers, whereby the governing devices are permitted to operate independently of the locking devices, but the manual action of the two simultaneously permitted.

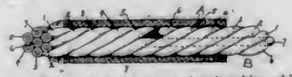
295,085. RACK FOR HOLDING BARRELS. WILLIAM WALTER, Latrobe, Pa. Filed Oct. 2, 1883. (No model.)

295,085.



Claim.—The combination of a suitable frame or rack, with the two seperate sets of tilting devices L, which are pivoted at their centers and arranged end to end, with the operating-lever N, connecting-rods O, pivoted levers P, and the rods Q, which connect the tilting devices to the levers P, substantially as shown and described.

295,086. COMPOUND ELECTRIC CABLE. RICHARD S. WARING, Pittsburg, Pa. Filed Dec. 28, 1883. (No model.)



Claim.—1. The method of forming electric cables, which consists in twisting together one central and a series of surrounding insulated electric conductors for a short distance, interchanging in position the central or core conductor and one of the outside conductors, so as to bring the central conductor into the outer series, and repeating these steps at suitable intervals throughout the entire length of the cable, substantially as set forth.

2. The method of forming electric cables, which consists in twisting together one central and a series of surrounding insulated electric conductors for a short distance, interchanging in position the central or core conductor and one of the outside conductors, so as to bring the central conductor into the outer series, repeating these steps at suitable intervals throughout the entire length of the cable, and inclosing the prepared cable within a metallic sheath, substantially as set forth.

3. An electric cable having a central and a series of surrounding insulated conductors twisted together, each surrounding conductor in turn forming the center or core of the cable, substantially as set forth.

4. An electric cable having a central and a series of surrounding insulated conductors twisted together, each surrounding conductor in turn forming the center or core of the cable, in combination with a suitable metallic covering or sheath, substantially as set forth.

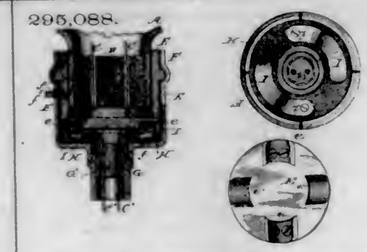
295,087. HOLDER FOR THE CARBONS OF INCANDESCING ELECTRIC LAMPS. ALEXANDER WEIHL, St. Denis, Md., assignor to the Viaduct Manufacturing Company of Baltimore City. Filed July 28, 1883. (No model.)



Claim.—The holder herein described for carbon filaments, consisting of a piece of wire having its end flattened, the flat portion pierced with a hole corresponding to the shape of the filament, bent over on the line of said hole, and pressed on a form of the shape in section of the filament, thus forming a tube to receive the carbon, substantially as and for the purpose set forth.

295,088. ELECTRIC LAMP. ALEXANDER WEIHL, St. Denis, Md., assignor to the Viaduct Manufacturing Company of Baltimore City. Filed Aug. 9, 1883. (No model.)

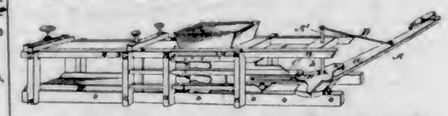
295,088.



Claim.—1. The combination of the metallic cup, slotted as described, the wooden cup inserted therein and held by the spring of the metal, the metal plates on the wooden cup connected to the lamp-wires, and the metallic spring-plates secured to the insulating-ring, as and for the purpose set forth.

2. The combination, in an electric lamp, of a wooden cup to receive the globe, having the wires passed through it and secured to metal plates on its bottom, a metallic cup encompassing said wooden cup and having within it a non-conducting ring, to which are secured two spring-plates for attachment to the outer wires, a circumferential slot in the metallic cup, and a pin passing through said slot and entering the wooden cup, whereby the relation of the cups to each other may be changed, as set forth.

295,089. BALING-PRESS. CHAS. E. WHITMAN, St. Louis, Mo. Filed Feb. 6, 1884. (No model.)



Claim.—1. In a horizontal baling-press, the combination of a bell-crank lever with a pitman, traverser, sweep, and press-box, substantially as described.

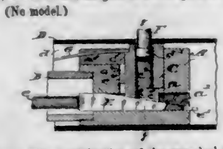
2. In a horizontal baling-press, the combination of the slotted pitman with the traverser, bell-crank lever, and sweep, substantially as described.

3. In a horizontal baling-press, the combination of the sweep provided with a lug or lugs, bell-crank lever or levers, or the equivalent thereof, as set forth, with the pitman and traverser, substantially as described.

4. In a horizontal baling-press, the combination of a bell-crank lever provided in one of its arms with a series of holes or apertures, a pitman also provided with a series of holes, and a suitable connecting pin or bolt for increasing or diminishing the power, and yet advancing the traverser to the same point, substantially as set forth.

5. In a horizontal baling-press, a connecting-link between the bell-crank lever and sweep, for securing them rigidly together at the commencement of the baling operation, substantially as described.

295,090. DEVICE FOR PUNCHING METAL TUBES. GEORGE W. WHITMAN, St. Louis, Mo., assignor to M. C. Bignall, same place. Filed Sept. 8, 1883. (No model.)



Claim.—1. The combination of the mandrel A, the tube B, the die C, the wedge E, and handle *e*, substantially as described.

2. The combination of the mandrel A, the tube B, the die C, the wedge E, the handle *e*, and the spring G, substantially as described.

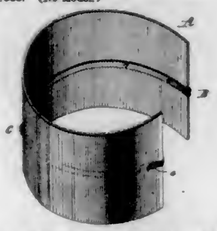
3. The combination of the mandrel A, having the perforations *a* and *a'*, as described, the die C, having the perforations c^3 c^3, as described, and the wedge E, substantially as described.

4. The mandrel having the perforations *a* and *a'* and the slot a^2, the die C, having the projection c^4, the wedge E, and the spring G, substantially as described.

5. The combination of the mandrel A, the die C, and wedge E, said wedge being flattened on the under side, and moving in a groove of corresponding shape in the mandrel, and said die being guided in its movement in the mandrel, as and for the purposes set forth.

6. The combination of the mandrel A, having the groove a^2, the tube B, having the holder *b*, the die C, having the shoulder c^3, and the spring G, substantially as described.

295,091. CUFF-HOLDER. C. MADISON ALEXANDER, Brightwood, D. C. Filed Aug. 9, 1883. (No model.)



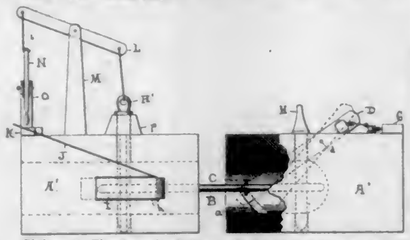
Claim.—1. An appliance to be attached to a cuff, consisting of a spring adapted to be secured to it, so as to distend the same, and provided with means for holding it in a coat-sleeve, all substantially as specified.

2. An appliance adapted to be attached to a cuff, consisting of a spring having its ends bent, as described, to embrace the edges of the cuff, and provided with points at suitable intervals to hold it to the cuff, substantially as set forth.

3. An appliance adapted to be attached to a cuff, consisting of a spring having the ends bent and pointed, so as to hold the cuff within the sleeve, substantially as specified.

4. An appliance adapted to be attached to a cuff, consisting of a spring having its ends bent, as described, and provided with a button or projection midway between its ends, substantially as specified.

295,092. CAR-COUPLING. SIDNEY D. ASPLE, Salisbury, Ill. Filed Dec. 13, 1883. (No model.)

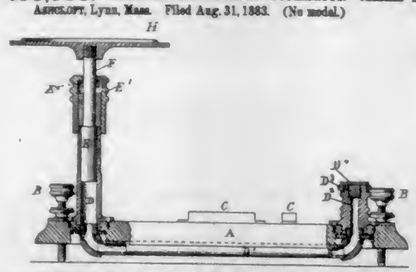


Claim.—1. The draw-head A, provided with the tilting-rod C, in combination with the link B, substantially as described.

2. The draw-head A′, provided with the block I, and the compound levers L and N, substantially as described.

3. The combination of the draw-head A, with its tilting-rod C, and the draw-head A′, with its block I, substantially as described.

295,093. PRESSURE-GAGE-TESTING APPARATUS. CHARLES E. ASHCROFT, Lynn, Mass. Filed Aug. 31, 1883. (No model.)



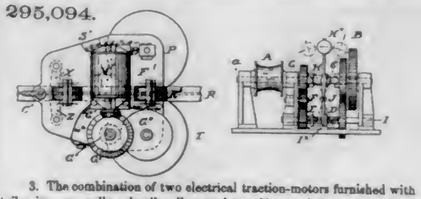
Claim.—In a pressure-gage-testing apparatus, the combination of the weight-disk H, piston E, and cylinder D with the tube D′ D^2 and coupling-joint D^3, operating substantially as described, and for the purpose set forth.

295,094. SYSTEM OF ELECTRICAL HAULAGE. WM. E. AYRTON and JNO. PERRY, London, England. Filed Apr. 18, 1883. (No model.) Patented in England July 17, 1882, No. 3,380.

Claim.—1. The combination of an electrical traction-motor furnished with tail-grips, a hauling-line, and a winding-winch, substantially as herein described.

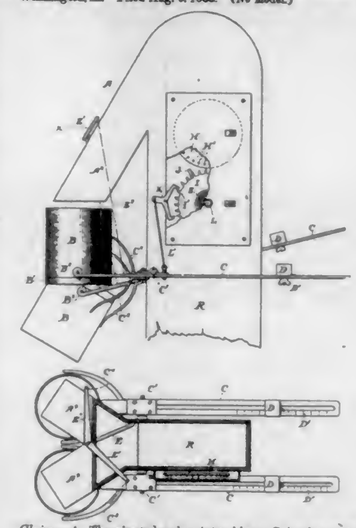
2. The combination of two or more electrical traction-motors furnished with tail-grips, a hauling line or lines, and one or more self-reversing winding-winches, substantially as herein described.

295,094.



3. The combination of two electrical traction-motors furnished with tail-grips, an endless hauling-line, and a self-reversing winding-winch upon the boat, wagon, car, or train, to effect systematic alternate haulage by winding, substantially as herein described.

295,095. GRAIN WEIGHER AND REGISTER. GEORGE D. BAIRD, Washington, Ill. Filed Aug. 6, 1883. (No model.)



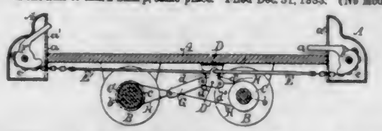
Claim.—1. The pivoted and weighted lever C, having springs C^2 C^3, and the pivoted and weighted bucket B, in combination with the spout A, having valve L, and means whereby the movements of said lever C shall open and close said valve, for the purpose set forth.

2. The weighted and pivoted lever C and the pivoted bucket B, in combination with the connecting-rod L′, pallets K, and wheel I, having spring S, substantially as and for the purpose specified.

3. The pivoted levers C, having weights D and springs C^2 C^3, and the buckets B, having pivoted supports B^2 and weighted bottoms B′, in combination with the bifurcated spout A, having valve E, handle E′, and cords E^2, substantially as and for the purpose set forth.

4. The pivoted and weighted lever C, having springs C^2, and the pivoted bucket B, having means whereby it shall return to its vertical position after being emptied, in combination with a spout and valve therein having means by which the movements of said lever shall open and close the same, for the purpose set forth.

295,096. CAR-BRAKE. ELIJAH E. BAKER, Providence, R. I., assignor of one-half to Mark Sharp, same place. Filed Dec. 31, 1883. (No model.)



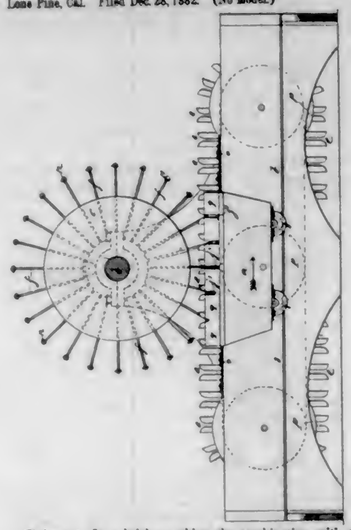
Claim.—1. An improved car-brake consisting of a band passing continuously from one axle to another, and provided with the foot-levers a, arranged and operating as described.

2. The combination, with the axles carrying the grooved friction-disks, and the brake-band, arranged as described, of the lever D′, the link G, the brake-rod, and the eccentric foot-levers, mounted upon the platform and operating as described.

3. The combination, with the brake-band, arranged as described,

and the operative connections therefor, of the sectional shoe, the spring-releasing connections, and the axles provided with the grooved disks.

295,097. BRICK-CUTTING MACHINE. THOMAS MILES BANNISTER, Lone Pine, Cal. Filed Dec. 28, 1882. (No model.)



Claim.—1. In a brick-machine, the combination, with the rotary cutters d, of an endless belt, o, provided with guides e, arranged in pairs, with an opening between them, substantially as herein shown and described, whereby a square cut will be insured, as set forth.

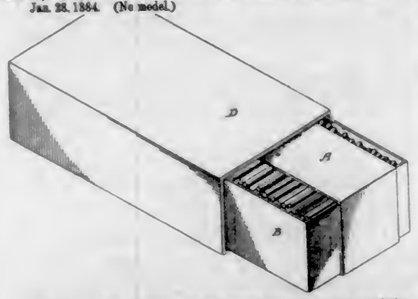
2. In a brick-machine, the combination of the heads c c, and the arms f, carrying cutters d, with the truck a, and the endless belt o, provided with the guides e, substantially as shown and described.

3. The wire cutters d of a brick-cutting reel, mounted on spring-arms f, arranged between supporting-pins g h, and connected to pins i in the reel-heads, substantially as described.

4. In a reel of clay-cutting wires, d, mounted on spring-arms f, the arrangement of the supporting-pins over which the arms spring, whereby said arms may have greater range for springing when cutting the clay than when returning therefrom, substantially as described.

5. In a reel of clay-cutting wires, d, mounted on spring-arms f, which are supported between pins g and h in the reel-heads, the said supporting-pins located in the heads to allow the said arms greater range of spring in one direction than the other, substantially as described.

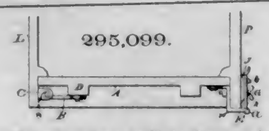
295,098. MATCH-BOX. JACOB C. BAUER, Philadelphia, Pa. Filed Jan. 28, 1884. (No model.)



Claim.—The within-described match-box, the same consisting of the combination of the tray B, the outer casing, D, and the band A, extending longitudinally over and under the tray, all substantially as set forth.

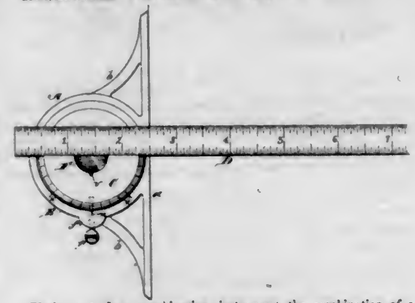
295,099. WAGON END-GATE. GEORGE BECKER, Mansfield, Ohio. Filed Apr. 12, 1883. Renewed Feb. 13, 1884. (Model.)

Claim.—The combination of the end-gate A, hinged to the wagon-body by the hinges B C, the part C being formed with the curved slot



s, whereby the end-gate may readily be disconnected from the body, with the catch E, formed of the plates W and N, adapted to hold the gate closed by means of the bolt G, and plate J, provided with the knob b, as specified.

295,100. COMBINED BEVEL AND T-SQUARE. STEPHEN H. BELLOWS, Athol, Mass. Filed Jan. 7, 1884. (No model.)



Claim.—1. In a combination-instrument, the combination of a straight-edge, a recessed base supported therefrom, a disk capable of rotation therein, provided with a groove immediately upon one side of its median line, and means for securing the base and disk in any relative position, substantially as described.

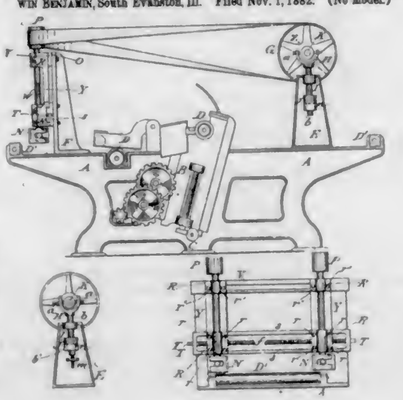
2. In a combination-instrument, the combination of the recessed base suitably supported from a straight-edge, a grooved disk capable of rotation therein, and having a conical opening in its center, and a bevel-headed screw and nut for locking the two together, substantially as described.

3. In a combination-instrument, the recessed base, grooved disk capable of rotation therein, and the conical-headed screw having a portion of its head cut away to form part of the groove, substantially as described.

4. In a combination-instrument, the recessed base, having aperture A through its flange, the rotatable disk C, seated in the recessed base, and adapted to carry the rule or level, as described, and provided with apertures i in its periphery, extending inwardly at right angles to the axis of rotation, and the pin p, adapted to pass through A and take in one of the apertures i, substantially as described.

5. The combination of a bubble-glass or spirit-level, a strip upon which it is mounted, a rotatable disk grooved to receive the strip, and into or from which it may be readily placed or removed at will, a base supported from and by a straight-edge, and recessed upon its face to receive and support the disk, the disk being arranged to rotate therein, and means for clamping the bubble-glass or spirit-level at any desired angle whatever to the straight-edge, substantially as described.

295,101. JOINTING ATTACHMENT FOR PLANING-MACHINES. EDWIN BENJAMIN, South Evanston, Ill. Filed Nov. 1, 1882. (No model.)



Claim.—In a jointing attachment to wood-planing machines, the standards E and F O, attached to the top of the planer-frame, the standards E, to support the drive-shaft K, and the standards F O, to support the jointing devices, consisting in the combination of the cutter-heads supported by adjustable box-standards Y, having sliding bearings in the bars V *f*, as and for the purpose specified.

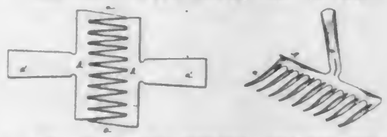
295,102. INTERNAL STOPPER FOR BOTTLES. HENRY BENSON, Nottingham, England. Filed Dec. 29, 1883. (Model.) Patented in England Apr. 21, 1882, No. 1,898, and in France Dec. 14, 1882, No. 151,557.



Claim.—1. In a bottle-stopper, the stud chambered at its upper and lower ends, and centrally perforated, and formed with a circumferential groove, in combination with the washer fitted in said groove and projecting beyond the sides of the stud, and the plug passed through the central perforation and upper chamber, and provided with a washer at its lower end, fitting within the lower chamber of the stud, substantially as described.

2. The stopper composed of the stud chambered at its upper and lower ends, and perforated and provided with a circumferential washer, in combination with the plug passed through the perforation and chambers, and provided with a washer at its lower end and a spring at its upper end, within the chamber, to hold the washer against the base of the stud, substantially as and for the purpose set forth.

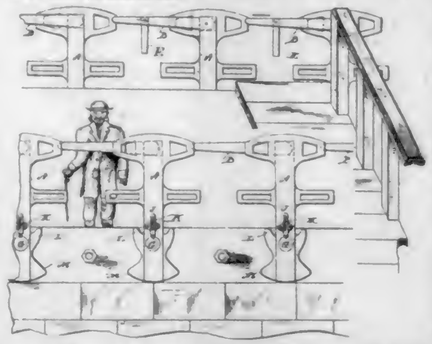
295,103. RAKE. SAMUEL BOOKER, Tiffin, Ohio, assignor of one-half to Robert Tschumy, same place. Filed May 1, 1883. (No model.)



Claim.—As an article of manufacture, a sheet-metal rake having the rake-head, teeth, and shank integral, the head of the rake being curved in cross-section, and the teeth convexed on their inside or working faces, substantially as described.

295,104. GUARD-FENCE FOR DRAW-BRIDGES. ANDREAS BOSCH, Prairie du Chien, Wis. Filed Dec. 4, 1883. (No model.)

Brief.—Independent pivoted sections in the approach with a pivoted bar having a depending bar are held in vertical position by a gravitating latch engaging a notch of the pivotal bolt. The latch is released by an arm on the bridge-section, and the pivoted sections are moved out of the way by projections on the bridge-section acting on cams on the pivoted sections.



Claim.—1. A fence which is composed of pivoted sections, in combination with latching devices, and with brackets O, applied to the draw, and adapted for adjusting the fence-sections above and below the level of the roadway, substantially as described.

2. The combination of pivoted fence-sections constructed with cams L M on their ends, latching devices, and brackets applied to the draw and adapted to operate substantially as described.

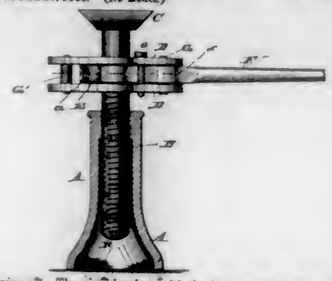
3. Fence-sections A, pivoted to the stationary part of a bridge by means of a bolt, O, having notched heads, in combination with gravitating latches and means for releasing these latches from said bolt-heads, substantially as described.

4. The combination, with swinging pivoted fence-sections, of separate arms, one pivoted to each section, substantially as described, whereby the spaces between said sections can be closed when the sections are thrown up.

5. In combination with a bridge-draw, brackets O, provided with beveled ends, and pins N, pivoted fence-sections constructed with cams M L, and provided with latching devices, substantially as described.

6. The combination of the swinging sections A, the pivoted closing-arms B, and the pivoted gravitating pieces E, substantially as described.

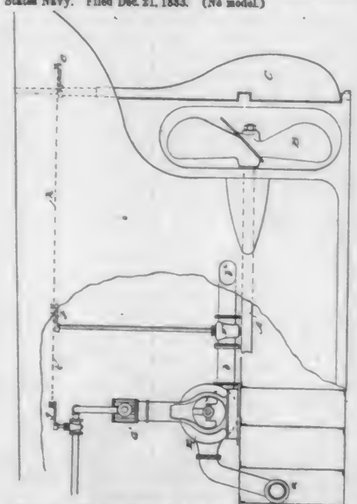
295,105. LIFTING-JACK. MORDECAI BROWN, Huntington, W. Va., assignor to himself, Robert T. Oney, and Chris Yatter, all of same place. Filed Dec. 29, 1883. (No model.)



Claim.—1. The combination, with the jack-screw, its standard, and perforated hub, of the loose collars, the fulcrum-pin, and a lever-dog having a hook and tooth, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. A lever-dog adapted for a lifting-jack, constructed as described, consisting of a long lever having formed on one end a fulcrum-hook and an engaging-hook, substantially as specified.

295,106. STEERING APPARATUS. ROBERT M. G. BROWN, United States Navy. Filed Dec. 21, 1883. (No model.)

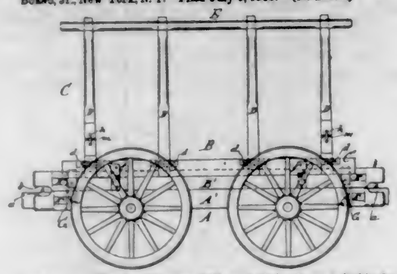


Claim.—1. The combination, with the rudder and rudder-operating mechanism, of a hydraulic steering apparatus independent of the rudder, but connected with and operated by the same mechanism through the instrumentality of which the rudder is operated.

2. The combination, with the rudder and tiller for operating the same, of a hydraulic steering apparatus connected with and operated by said tiller, said parts being organized and arranged substantially as hereinbefore set forth, so that the hydraulic apparatus shall be called into action only when the tiller moves beyond a predetermined distance to one side or the other of its amidships position.

3. The combination of the pump, its operating mechanism, and inlet and outlet branches, the throttle-valve, the two-way cock for diverting the discharge into one or the other of said outlet branches, the rudder, and the tiller connected to and adapted to operate simultaneously the throttle-valve, the two-way cock, and the rudder—claiming none of these elements separately, but only the combination of all of them when arranged to co-operate in substantially the manner hereinbefore set forth.

295,107. WAGON FOR TRANSPORTING SUGAR-CANE. TACITO BUENO, Jr., New York, N. Y. Filed July 9, 1883. (No model.)

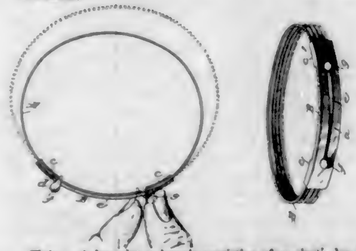


Claim.—1. The combination, with a truck having a suitable frame and wheels, of a detachable cart or wagon frame constructed, substantially as herein shown and described, with a rectangular bottom having vertical sides hinged thereto, adapted to be held in an upright position by suitable braces, and adapted by lowering to serve as discharge chutes or guides, said frame being provided with suitable clamps for coupling it to a cart or car-truck body, as set forth.

2. The combination, with the frame-bottom B' and vertical sides C C, of fastenings *d*, hinges *f*, braces *g h*, and coupling-clamps G, all constructed and arranged substantially as herein shown and described.

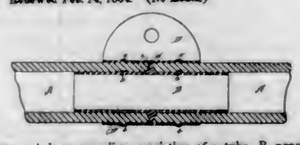
3. The combination, with the removable cart or wagon frame B, constructed substantially as herein shown and described, and provided with the coupling-clamps G, of the cart or wagon body A, as set forth.

295,108. BRACELET. CHARLES R. BOSSER, Attleborough, Mass., assignor to Burrows, Thompson & Short, same place. Filed Jan. 24, 1884. (No model.)



Claim.—A bracelet or bangle consisting of an elastic band, A, slotted piece B, in combination with a pin set in free end or ends of the band, substantially as described.

295,109. HOSE-COUPLING. WILLIAM H. BULKLEY, Cleveland, Ohio, assignor of one-half to Alfonso Charbonneau, same place. Filed Sept. 8, 1883. Renewed Feb. 14, 1884. (No model.)

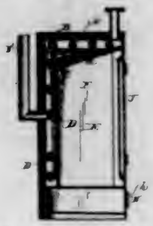


Claim.—A hose-coupling consisting of a tube, B, provided with peripheral ridges *b c*, a plate, *d*, and a collar, D', provided with grooves *a*, adapted to correspond with ridges *b*, and having wings D, provided with screw F and nut G, substantially as and for the purposes described.

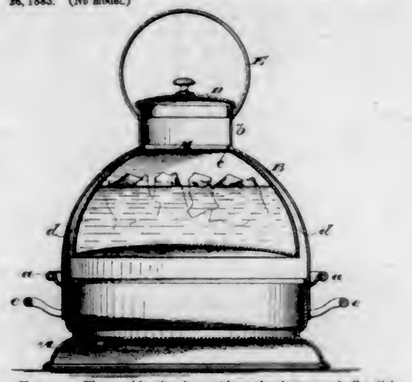
295,110. REFRIGERATOR. JOHN BURKE, Niles, Mich. Filed Dec. 12, 1883. (No model.)

Claim.—The herein-described refrigerator, consisting of an outer and inner casing, a series of pipes or tubes arranged between said casings, an inner portion, E, having the inclined roof, ventilator I, doors J J, consisting of the frame-work, and having the center portion formed of glass, openings *j'* in the side of the doors to register with openings in the casings, said doors having strips of rubber arranged upon their upper and lower edges, and the slides H H, substantially as set forth.

295,110.



295,111. BUTTER-DISH. ANDREW J. CHASE, Boston, Mass. Filed Dec. 26, 1883. (No model.)



Claim.—1. The combination, in a refrigerating butter or similar dish, of a dome or cover and an ice-receptacle suspended therein, the dome or cover and ice-receptacle being united together at an opening common to both, whereby the ice-receptacle may be charged without detachment from the dome or cover, substantially as described.

2. The combination, in a refrigerating butter or similar dish, of a dome or cover, an ice-receptacle suspended therein, and a neck common to both, the dome and ice-receptacle being united at the base of the neck, whereby the ice-receptacle may be charged without detachment from the dome or cover, substantially as described.

3. The combination, in a refrigerating butter or similar dish, of a receptacle for the article to be cooled, a dome or cover, an ice-receptacle suspended therein and rigidly attached thereto, and a neck or opening for the ice-receptacle, passing through the dome-cover and controlled from the exterior thereof, substantially as described.

4. The combination, in a refrigerating butter or similar dish, of a receptacle for the article to be cooled, a dome or cover, an ice-receptacle suspended therein and of such smaller dimensions than the interior of the dome or cover as to form an air-circulating chamber around the ice-receptacle, and a neck or opening common to both, the dome or cover and ice-receptacle being united together at the base of the neck or opening, substantially as described.

5. The combination, in a refrigerating butter or similar dish, of a receptacle, A, a cover, B, a suspended ice-receptacle, C, a neck, *b*, common to both, and a cap or cover, D, substantially as described.

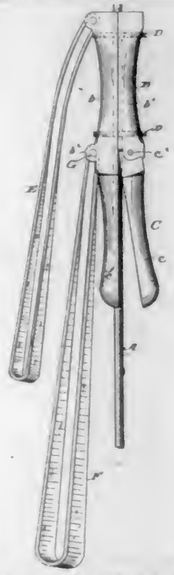
295,112. FIRE-ESCAPE. JAMES M. CHESNUT, Muncy, Pa. Filed Nov. 12, 1883. (No model.)

Brief.—A friction device for a fire-escape, consisting of two handles having a straight passage-way from end to end for the rope, one handle being incompressible, the other compressible.

Claim.—1. The herein-described device for descending a fixed rope, consisting of the combination of two handles, both constructed to surround the rope, and having a straight passage-way from end to end for the same, one of said handles being incompressible and of a form adapting it to be firmly grasped without arresting the passage of the rope, and the other made in part of a movable portion adapted to compress the rope under the grasp of the operator and act as a brake, substantially as set forth.

2. The herein-described device, consisting of the combination of the incompressible hollow handle B, adapted to surround the rope, the part c^3, rigid therewith, and the part *c*, movably connected therewith, said parts

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c^2 and c forming the compressible handle C, also adapted to surround the rope, substantially as set forth.

3. The herein-described device, consisting of the combination of the two metallic castings B c^2 and c, pivoted together, and forming the hollow incompressible handle B and the hollow compressible handle C, substantially as set forth.

4. The herein-described device, consisting of the combination of the three metallic castings b, c^2, b', and c, connected by bolts or rivets D and pivot c^2, and forming the handles B and C, substantially as set forth.

5. The herein-described device, consisting of the combination of the hollow handle B, made in two parts, b b', adjustably connected with one another, and the hollow handle C, having one portion attached to the part b and the other portion movably connected with the part b', whereby it may act as a brake to hold the rope, substantially as set forth.

6. The herein-described device, consisting of the combination of the incompressible handle B, the brake-handle C, made in two parts, between which the rope is adapted to be held, one part being rigid with the handle B and the other pivoted thereto, and means for adjusting the said pivot of one part toward or from the other part, substantially as set forth.

7. The herein-described device, consisting of the combination, with the part B, surrounding the rope, and adapted to support the weight of the operator, of the brake c c^2, having the cone-shaped throat c^2, for grasping the rope, substantially as set forth.

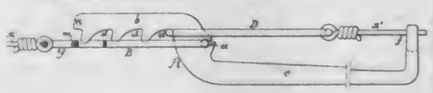
295,113. SUBSTANCE FOR RENDERING FABRICS WATER-PROOF. LYMAN P. CONVERSE, Chicago, Ill., assignor to the Water-Proof Fabric Company, of New York. Filed Aug. 22, 1882. Renewed Feb. 12, 1884. (Specimens.)

Claim.—1. The process herein described of producing a pliable waterproofing compound unaffected by variations of temperature, which process consists in boiling linseed-oil at a temperature of from 620° to 700° Fahrenheit, as hereinbefore set forth.

2. As a new article of manufacture, a pliable water-proof substance unaffected by variations of temperature, consisting of linseed-oil boiled at a temperature of from 620° to 700° Fahrenheit.

3. The hereinbefore-described waterproofing compound, consisting of linseed-oil which has been independently boiled at a temperature of between 620° to 700° Fahrenheit, combined with copal-varnish and a pigment, substantially as hereinbefore set forth.

295,114. DEVICE FOR CONNECTING AND STRETCHING FENCE-WIRES. HILLBURN DARLINGTON, Concord, Delaware County, Pa. Filed Dec. 14, 1883. (No model.)

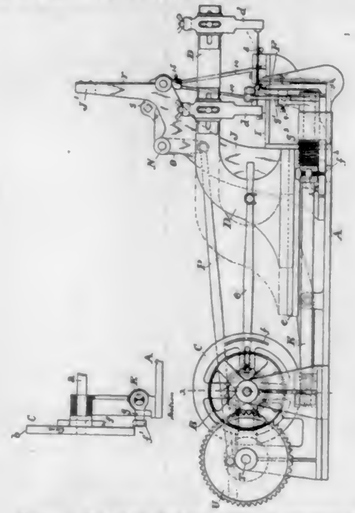


Claim.—1. The combination of cords or wires x x' with a tightening device comprising a lever, A, the short arm of which has notches d, with two links, B and D, one connected to one wire and having the lever pivoted to it, and the other connected to the opposite wire and adapted to engage with the notched arm of the lever, as set forth.

2. The combination of the lever A with the link B, hung thereto, and having a bar, m, adapted by contact with the short arm of the lever to limit the movement of said link, as set forth.

295,115. COMBINED SAW FILING AND SETTING MACHINE. JACOB S. DEITRICK and WILLIAM T. SMITH, Baltimore, Md. Filed Apr. 24, 1883. (No model.)

Brief.—The saw is intermittently fed under a reciprocating file and past two stationary anvils and swinging hammers, by which the saw-teeth are simultaneously sharpened and set.

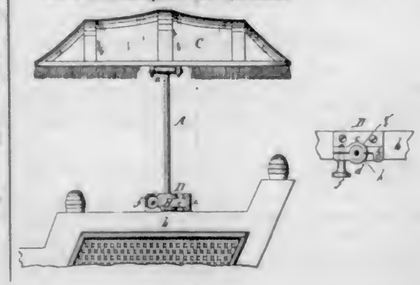


Claim.—1. The herein-described mechanism, consisting of a bell-crank lever, one arm of which carries two pivoted fingers, s—one at each side—a stop-pin, 23, to prevent movement of the fingers one way, and a spring, 24, to hold the fingers against the stop-pin, the fingers adapted so that one will bear down while the other bears up, in combination with hammers, each secured to a collar pivoted on a shaft and provided with a shoulder, p^3, on which the pivoted finger bears, as set forth.

2. The herein-described adjustable bell-crank lever for actuating the hammers, consisting of the part 18, having a slot, 21, and set-screws 19 and 20, and the part O, having a laterally-projecting square head, 22, which occupies the aforesaid slot, as set forth.

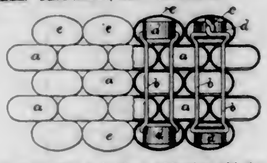
3. The combination of a reciprocating file-holder, two hammers to set the saw-teeth, and mechanism for connecting and operating them, consisting of the shaft a, provided with a crank to give motion to the file-holders, and also with a gear-wheel, V, and a shaft, T, provided with a gear-wheel, U, double the size of the first-named gear, and a crank, R, to give motion to the hammers, as set forth.

295,116. CANOPY-STANDARD FOR CHILDREN'S CARRIAGES. GEORGE A. ELLIS, Gardner, Mass., assignor to Seth Heywood, Henry Heywood, George Heywood, Alvin M. Greenwood, and Amos Merrill, New York, N. Y. Filed Apr. 27, 1883. (No model.)



Claim.—An adjustable support for canopies of carriages, consisting of the two standards A, pivoted at the sides of the canopy, and having the spheres B at their lower ends, combined with the two brackets D on the carriage-body, each consisting of the hinged parts c and d, having hemispherical cavities to form sockets for the spheres on the ends of the standards, and clamping-screws f, substantially as and for the purpose described.

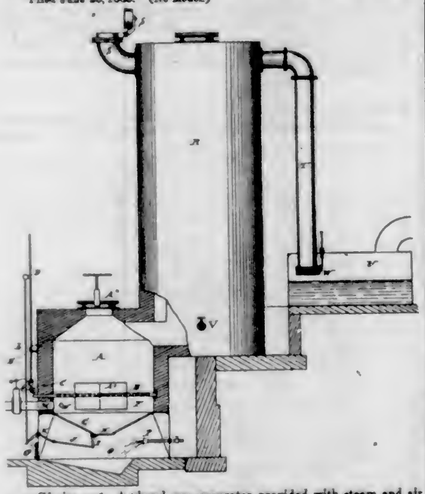
295,117. ORNAMENTAL CHAIN. JOHN EITHEIM, North Attleborough, Mass. Filed Jan. 17, 1884. (No model.)



Claim.—1. In a roller-chain, the combination, with the units a a and staples b b, of the washer d, having a closed end and open sides to receive the staples, as described.

2. The combination, with the units a a and staples b b, of the open-sided cup-shaped washer d and the end caps, e e, as described.

295,118. GAS APPARATUS. ARTHUR O. GRANGER, Philadelphia, Pa. Filed June 25, 1883. (No model.)



Claim.—1. A closed gas-generator provided with steam and air pipes at the bottom and an outlet at the top, in combination with a rocking or shaking grate, whereby the fire may be raked without admitting air to the bottom of the generator, a chamber below said grate-bars, having an inclined or sloping bottom terminating in a hole, an ash-pit below said chamber, and a water sprinkler or nozzle to wet the ashes in said ash-pit, substantially as and for the purpose specified.

2. A closed gas-generator provided with steam and air pipes at the bottom and an outlet at the top, in combination with a rocking or shaking grate, whereby the fire may be raked without admitting air to the bottom of the generator, a chamber below said grate-bars, having an inclined or sloping bottom terminating in a hole, a valve to close said hole, an ash-pit below said chamber, and a water sprinkler or nozzle to wet the ashes in said pit, substantially as and for the purpose specified.

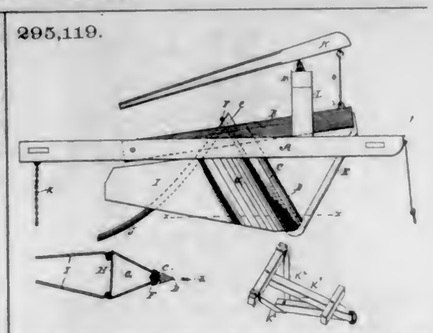
3. The generator A, having chamber F, provided with an inclined or sloping bottom, G, having an opening therein, and an ash-pit, O, in combination with valve H and sprinkler-nozzle P, substantially as and for the purpose specified.

295,119. TILE-LAYING MACHINE. JESSE THOMAS GRAVES and BENJAMIN F. BELT, Cole, Iowa. Filed Sept. 10, 1883. (No model.)

Claim.—1. The combination of the stock, the supporting-frame, the cutter-blade connecting the lower end of the stock with the frame, and having an arm extended up behind the stock, and the shield formed of two plates hinged to said arm, substantially as shown and described.

2. The combination, with a suitable frame, of the V-shaped stock inclined forward at its lower end, the cutter-blade connecting the lower

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end of the stock with the frame, and having an arm extended up behind the stock, the shield formed of two plates hinged to said arm, the supplemental shield arranged between said plates and connected thereto, and having sides which incline toward each other at the rear, and the tile-trough secured to the stock, and supported in the supplemental shield, substantially as shown and described.

3. The frame K', having the V-shaped blade K^3, set with the planes of its sides or wings extended in a transverse direction, approximately, in the line of the trench, and intersecting each other longitudinally in the trench, substantially as shown and described, and for the purpose set forth.

295,120. KITCHEN-CABINET. HIRAM HANNA, Columbus, Ohio. Filed May 28, 1883. (No model.)



Claim.—In a kitchen-cabinet, the combination, with the meal-bin L, having a removable cover, the latter being provided with the door N and screen O, situated below the door, of the detachable drawer secured to the under side of the cover below the screen, substantially as set forth.

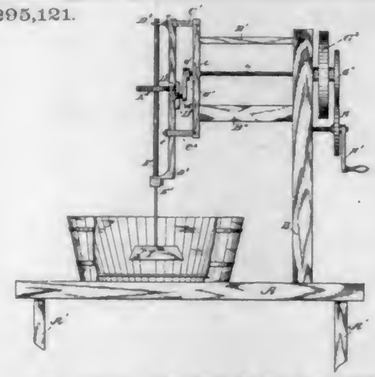
295,121. MOTOR. JOHN A. HART, HARROW SCOTT, and BENJAMIN F. PANCOAST, Iola, Kans. Filed Sept. 5, 1883. (No model.)

Claim.—1. In a motor for washing-machines, churns, and similar devices, the combination of the vertical slide, the shaft journaled on the face thereof, and provided with a ratchet-wheel, the slotted horizontal slide having a pallet engaging the ratchet-wheel, the inclined bar, and operating-framing and operating mechanism, substantially as set forth.

2. In a motor, substantially as described and shown, the combination of the vertical slide, the shaft journaled on the face thereof, the ratchet-wheel secured on said shaft, the horizontal slide provided with pallet, and having its end extended to engage the wheel and limit its revolution at each stroke of the machine, and the necessary operating mechanism, as set forth.

3. A motor having a vertical slide, a shaft journaled thereon and carrying the implement to be operated, and means for partially revolving said shaft at each stroke of the machine, substantially as set forth.

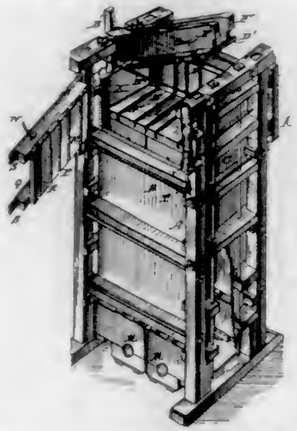
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4. The combination of the vertical slide, the cleats secured on the rear face thereof, and the operating-shaft having a suitable crank, the pin whereof is arranged and operates between the cleats on the slide, as set forth.

5. The motor, substantially as described, composed of the slide, the shaft journaled on the face of said slide, and provided with the ratchet-wheel, the horizontal slide provided with a suitable pallet, the inclined bar engaging the horizontal slide, and suitable framing and operating devices, as set forth.

295,122. BALING-PRESS. D. BRODHEAD HENDRICKS, Glasco, N. Y. Filed Dec. 27, 1883. (No model.)

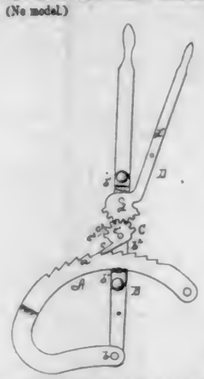


Claim.—1. The combination of the press-frame forming the press-box at its upper end, the follower sliding in the frame, the long toggle-arms having pulleys at their lower ends and hinged to the follower at their upper end, the lower toggle-arms secured in pairs at their lower ends upon cross-pieces pivoted at the lower end of the frame, and having the long toggle-arms pivoted at their middle between the upper ends of the lower toggle arms, and the rope secured at one end passing over the pulleys and attached to means for drawing it, as and for the purpose shown and set forth.

2. The combination of the side or end piece of the press-box, pivoted at its lower end upon a transverse rod between the corner-posts of the frame, at the upper end of the same, the eccentric cross-bar pivoted between the corner-posts of the press-frame, near the upper end of the pivoted side piece, and the handle pivoted in the eccentric cross-bar, and having means for securing it at the upper end of the frame, as and for the purpose shown and set forth.

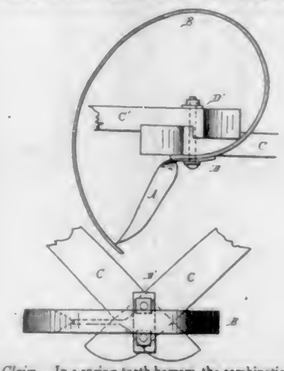
3. The combination of the hinged door having the longitudinal bars reduced at their free ends, the swinging locking-bar hinged upon the corner-post and having the projecting lips, the handle pivoted at one end between the said lips, and the hook upon the outer side of the door, adapted to hold the free end of the handle, as and for the purpose shown and set forth.

295,123. VEHICLE-BRAKE. JOHN C. HERMAN, St. Louis, Mo. Filed Oct. 3, 1883. (No model.)



Claim.—In a vehicle-brake, the rack A and main lever B, in combination with the pawl C, having the gear c', and the pawl-operating lever D, having the gear d, the lever D being pivoted to the lever B above the pawl C, the pivots of the two being in line, and such gears being in the line of the lever B, turning simply on their pivots as centers, and their contracting edges engaging between such pivots, as described, whereby the pawl and lever are operated like a train of gearing, as and for the purpose set forth.

295,124. HARROW. ISAAC LEMON, Nebraska City, Nebr., assignor of one-half to William Nelson, same place. Filed Aug. 25, 1882. (No model.)



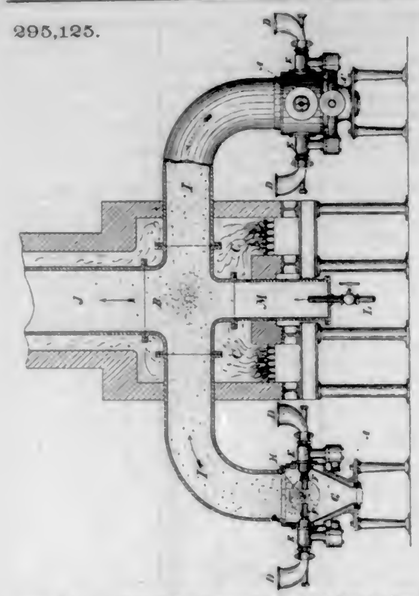
Claim.—In a spring-tooth harrow, the combination, with the spring-tooth B, of the cutter A, having its cutting-edge presented vertically in the direction of the line of draft, its upper end twisted and bent horizontally at right angles to the cutting-edge, and adapted to travel directly in advance of the tooth, with the said bent arm of the cutter removably secured to the under side of the tooth, substantially as described, and for the purposes specified.

295,125. METHOD OF PULVERIZING, DESULPHURIZING, AND OTHERWISE TREATING METALLIFEROUS ORES. FREDERIC A. LUCKENBACH, New York, N. Y., assignor to the Pneumatic Pulverizer Company, same place. Filed Feb. 9, 1882. Renewed Jan. 11, 1884. (No model.)

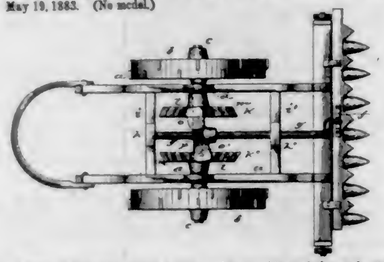
Claim.—1. The herein-described process of treating metalliferous ores or similar substances, consisting of the following steps: first, subjecting them to a concentrated current of highly-superheated dry steam or other heated vapors or gases or currents charged with materials for which the elements of such ores have affinities; second, pulverizing such ores or materials by impact with other bodies by the force of such current; third, converging the products to a second retort or heating chamber; fourth, subjecting the products in such second retort or heating chamber to the action of additional gases or materials, for the purpose of further elimination of objectionable elements.

2. The herein-described process of treating metalliferous ores or similar substances, consisting of the following steps: first, subjecting them to a concentrated current of highly-superheated dry steam or other heated vapors or gases or currents charged with materials for which the elements of said ores have affinities; second, pulverizing them by impact with other bodies by the force of such current.

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295,126. MOWING-MACHINE. JAMES EDWARD MENDENHALL, Springfield, Ohio, assignor of one-half to Salathiel H. Knox, same place. Filed May 19, 1883. (No model.)



Claim.—The combination, in a mowing-machine, of the main driving-axle, the cam-wheels secured thereon, and having star-pointed outward-beveled cam-teeth, the rock-shaft, the T-shaped arm secured to said shaft, and having arms inclined both vertically and transversely, as described, and the cutter-bar, all substantially as set forth.

295,127. FIRE-ESCAPE. WILLIAM M. MILLER, New Cumberland, W. Va., assignor of two-thirds to Robert Hamilton and William Hooper, both of same place. Filed Dec. 28, 1883. (No model.)

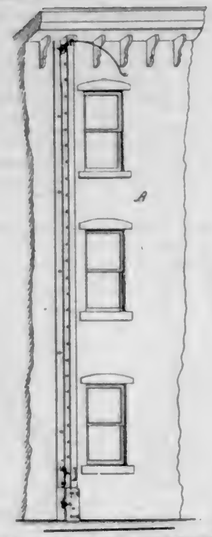
Brief.—A lever is pivoted to the inner bar of the ladder and to the lifting-rod and raises the outer bar. A locking-box embraces the lower ends of the ladder when closed.

Claim.—1. In a fire-escape, the angle-irons c c', one of which is secured to the walls of a house, in combination with the rounds a, pivotally secured to the angle-irons, whereby the angle-irons may be folded together or opened out into ladder form, and the box l, adapted to inclose the lower ends of the angle-irons when folded together, and provided with a suitable fastening device, substantially as set forth.

2. In a fire-escape, the angle-irons c c', in combination with the rounds a, pivotally secured to the angle-irons, the chain e, rod f, and lever g, said lever being adapted to raise the outer leg of the ladder, and to hold it in such raised position, substantially as set forth.

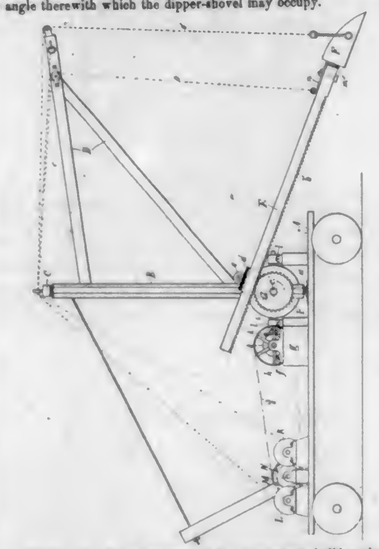
3. In a fire-escape, the angle-irons c c', in combination with the rounds a, pivotally secured to the angle-irons, the chain e, rod f, lever g, and the box l, adapted to inclose the lower ends of the angle-irons and the handle of the lever when the ladder is folded, and provided with a door, substantially as set forth.

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295,128. EARTH-EXCAVATOR AND EMBANKMENT-BUILDER. MICHAEL J. MULVIHILL, Warren County, and JOHN DARE TENNEY, Vicksburg, Miss. Filed Oct. 12, 1883. (No model.)

Brief.—On a swinging crane or jib carrying a dipper-beam, the dipper of which is hinged to be operated independently by a separate chain from that controlling the dipper, is mounted a shaft having means for thrusting and retracting the dipper-beam, and carrying a conical drum formed with several friction-faces at different angles, to engage, in any of the positions to which the crane may be turned, with friction-wheels slid on their shaft into and out of connection with such drum. A plate bolted to the dipper-beam and slotted for adjustment determines the angle therewith which the dipper-shovel may occupy.

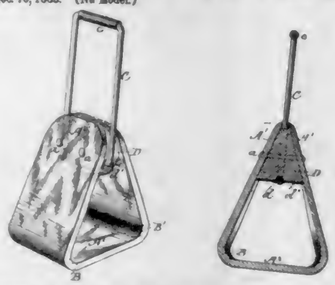


Claim.—1. In an excavator and embankment-builder, the shaft thereof, and mechanism connecting it directly to the shovel-beam, which shaft has a circumferential motion in common with the crane, and is provided with a friction-drum having a series of frictional surfaces differing in angle of inclination, combined with a pair of friction-wheels on a shaft, and susceptible of movement to and from the surface of the said drum, and means to effect the said movement of the friction-wheels, substantially as and for the purpose specified.

2. In an excavator and embankment-builder, a swinging jib, and a longitudinally-moving shovel-beam supported from the said jib, and adapted for elevation and depression, combined with a shovel hinged to the outer end of the said shovel-beam, and connected by an independent rope or chain to the said jib, whereby it may be emptied of its contents without affecting the position of the said beam, substantially as specified.

3. In an excavator and embankment-builder, a shovel-beam and shovel hinged together and supported independently by ropes or chains, combined with an adjustable stop secured only to the said shovel-beam, and adapted to be projected and held at various distances beyond the end thereof, to limit the possible angle of the said shovel with reference to its beam when the former is elevated, substantially as specified.

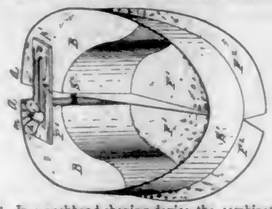
295,129. SADDLE-STIRRUP. STEPHEN A. NOLEN, Searcy, Ark. Filed Dec. 10, 1883. (No model.)



Claim.—1. A bent wooden stirrup narrower at one end than at the other, and provided with saw-kerfs B and B', converging toward the narrower end, substantially as and for the purpose described.

2. A wooden stirrup narrower at one end than at the other, composed of a bent strip provided with saw-kerfs B and B', converging toward the narrower end, in combination with the grooved block D and the wire link C, substantially as and for the purpose described.

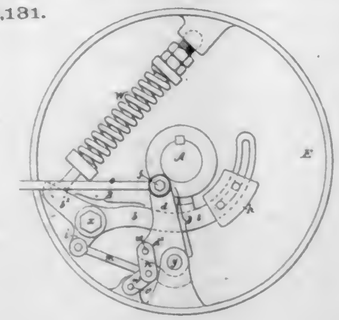
295,130. NECKBAND-SHAPING DEVICE FOR BOSOM-BOARDS. DANIEL G. NORRIS, 2d, Glen's Falls, N. Y., assignor to Julia Norris, same place, and George E. Norris, Troy, N. Y. Filed June 30, 1883. (No model.)



Claim.—1. In a neckband-shaping device, the combination of the exterior U-form sheet-metal spring, S', the interior bottom plates, F' F', the exterior bottom flanges, F² F², and the supporting-blocks B B, constructed and arranged to operate as shown and described.

2. In a neckband-shaping device, the combination of the exterior U-form sheet-metal spring, S', the interior bottom plates, F' F', the exterior bottom flanges, F² F², the interior supporting-blocks, B B, and a slotted plate and set-screw to connect the blocks, in the manner and for the purposes set forth.

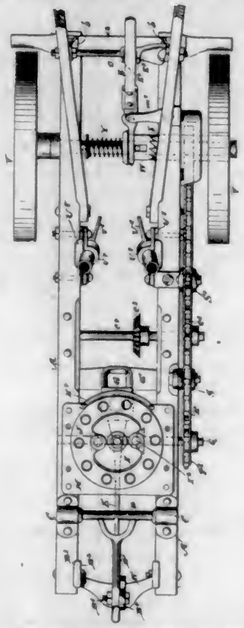
295,131.



295,131. CUT-OFF GOVERNOR FOR ENGINES. PHILIP PINTOR, Philadelphia, Pa., assignor to the Southwark Foundry and Machine Company, same place. Filed Nov. 26, 1883. (No model.)

Claim.—A cut-off governor in which the following elements are combined, namely: first, an attachment to the crank-shaft of a steam-engine; second, a lever, D, pivoted to the said attachment and carrying the valve-pin *f*; third, a lever, B, also pivoted to the said attachment; fourth, the toggle-joint connection between the two levers, and, fifth, a spring for acting on the said lever B, all substantially as set forth.

295,132. WALKING CORN-PLANTER AND FERTILIZER-DISTRIBUTER. ANDREW REMSTETLER, Dayton, Ohio, assignor to the Farmers Friend Manufacturing Company, same place. Filed Aug. 30, 1883. (No model.)



Claim.—1. The seed-hopper L, composed of a metal casting having at its upper edge an attachable inwardly-projecting top rim, for reducing the size of the lid-opening and supporting the lid, substantially as described.

2. The cast-iron or metallic hopper L, having flanges l^3 at its upper edge and an inward-projecting top rim, N, bolted to said flanges, for reducing the size of the lid-opening and supporting the lid, substantially as described.

3. The combination of a detachable seed-hopper, a stationary apertured plate forming the bottom thereof, and having an attached bridge-piece provided with a stationary journal or bearing, a crown-wheel having a hub mounted on the journal or bearing and provided with vertical studs on its upper side, a seed-dropping disk extending through the hopper and having a central aperture, perforations at the sides thereof, through which the hub and studs of the crown-wheel pass, and a plate covering the hub of the crown-wheel and its journal, substantially as described.

4. The combination of a detachable seed-hopper, a stationary apertured plate forming the bottom thereof, and having an attached bridge-piece provided with a stationary journal or bearing, a crown-wheel having a hub mounted on the journal or bearing, a seed-dropping disk mounted on the hub of the crown-wheel, devices rigidly but detachably connecting the disk with the crown-wheel, outside the hub thereof, and a plate having a hollow cap receiving the hub of the crown-wheel and its journal or bearing, substantially as described.

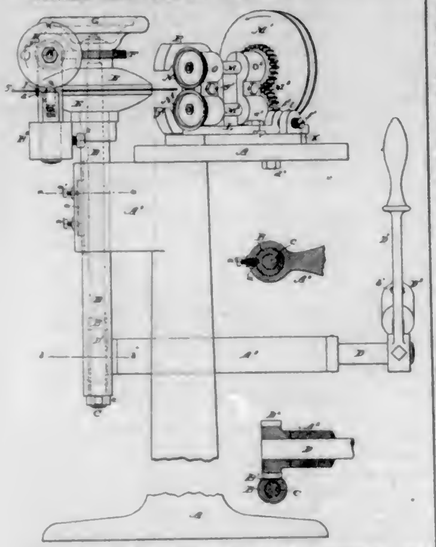
5. The combination of a seed-hopper having corner-lugs at its bottom, a plate detachably arranged on said lugs and constructed with a hollow closed cap, a curved slot, and flanges bounding the sides of the slot, a cap-plate, a spring cut-off pivoted in the cap-plate, an apertured plate forming the bottom of the seed-hopper and supporting a stationary journal or bearing, a crown-wheel having a hub mounted on said journal, and a seed-dropping disk detachably mounted on the crown-wheel, said

journal or bearing and crown-wheel hub projecting upward through the hopper-bottom plate into the hollow cap of the cut-off-carrying plate, substantially as described.

6. In a seed-hopper, the combination of the front casting, consisting of transverse bar having vertical end plates, upwardly-projecting arms, and downwardly-extending ears, with a draft-arm, furrow-opener, and parallel beams, substantially as described.

7. In a seed-planter, the combination of the pillow-blocks, the transverse shaft fitted therein, and the draft-arm forming part of said transverse shaft, with the parallel beams and a front support for the draft-arm, substantially as described.

295,133. SAW-FILING MACHINE. WILLIAM TUCKER, East Brookfield, Mass. Filed June 20, 1883. (No model.)



Claim.—1. The combination, in a saw-filing machine, of a vertical spindle furnished with a saw-clamp, devices by means of which the operator may raise and lower said spindle, and rotary files having horizontal axes and located with reference to the path of the saw-plate as carried by said spindle, substantially as herein specified.

2. The combination, in a saw-filing machine, of a vertical spindle furnished with a saw-clamp, devices by means of which the operator may raise and lower said spindle, a pair of rotary files having horizontal axes and arranged one above the other, and a device, substantially as described, for supporting the saw-plate by means of said spindle between and out of contact with the files.

3. The combination, in a saw-filing machine, of a vertical spindle furnished with a clamp for circular-saw plates, and with an index-gear, a horizontal shaft carrying at its inner end a worm meshing with said index-gear, and furnished at its outer end with a hand-wheel having stop-notches in its periphery, and a spring-detent coacting with said notches, substantially as herein described, for supporting and intermittently rotating the saw-plate in the manner set forth.

4. The combination, in a saw-filing machine, of a pair of rotary files having beveled cutting-peripheries and carried by parallel arbors, means for moving a circular-saw plate sidewise into contact with the respective files alternately, and means for turning the saw-plate in its plane of rotation between its successive contacts with the files, substantially as herein described, for filing the teeth of circular saws fleaming, with the fleam confined to the fronts of the teeth, and formed on opposite sides of alternate teeth, as set forth.

5. The combination, in a saw-filing machine, of a pair of rotary files having beveled cutting-peripheries, and carried by parallel arbors driven in opposite directions, means for moving a circular-saw plate sidewise into contact with the respective files alternately, and means for turning the saw-plate in its plane of rotation between its successive contacts with the files, substantially as herein described, for filing the teeth of circular saws fleaming, without "stubbing," in the manner set forth.

6. In a saw-filing machine, the combination, substantially as herein specified, of a vertical spindle carrying the saw-clamp, devices by means of which the operator may raise and lower said spindle, a pair of rotary files carried by horizontal arbors above and below the normal plane of the saw-plate, and stop-gages which limit the movements of the saw-plate away from said normal plane for determining the angle of the front of each saw-tooth in the manner set forth.

7. In a saw-filing machine, a pair of pivoted stop-gages having clamp-screws as their pivots, and constructed with intermeshing spur-teeth concentric with said pivots, substantially as herein described, for the purpose set forth.

8. The combination, in a saw-filing machine, of the horizontal pedestal-top A^4, having a longitudinal slot, and a horizontal plate, K, supported thereon, and adjustable by means of a vertical pivot, and a clamping-screw occupying said slot, substantially as herein specified.

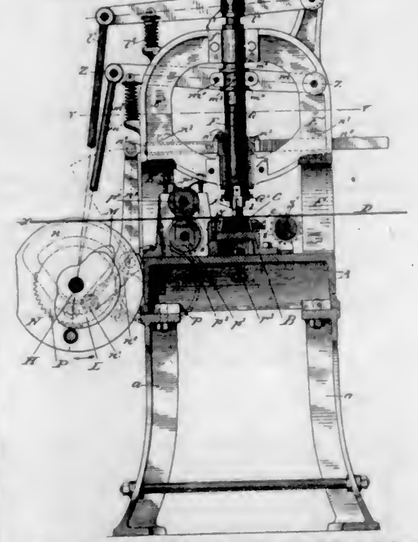
9. The combination, in a saw-filing machine, of the horizontal pedestal-top A^4, having a longitudinal slot, a horizontal plate, K, supported thereon, and adjustable by means of a vertical pivot, and a clamping-screw occupying said slot, with a slot in said plate concentric with said pivot, and a sliding nut within a depression in its upper surface to receive said clamping-screw, substantially as herein specified.

10. The combination, in a saw-filing machine, of the horizontal pedestal-top A^4, having the slot *s*, the horizontal plate K, having the pivotal stud-pin *p* on its lower surface occupying said slot, the slot s^3, concentric with said pivot, the drepression d^3 and screw-hole *h* in its upper surface, and the rib *r* and lug *l* upon the same, the head-frame L, having a grooved sole fitted to said plate K, and provided with the lug l^3 and slot s^2, the sliding nut n^2, occupying said depression d^3, and the clamping-screws *d'* *d'*, and gage-screw *f'*, substantially as shown, for the purpose set forth.

11. The combination, in a saw-filing machine, of a pair of rotary files carried by horizontal arbors and arranged one above the other, and means for adjusting one of said arbors longitudinally to render the cutting-points of the respective files in absolute line with each other in a vertical plane, substantially as herein specified.

295,134. MACHINE FOR MAKING BARBED FENCE-WIRE. ANDREW J. UPHAM, Sycamore, Ill., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Nov. 7, 1883. (No model.)

Brief.—The barb-wire is fed under the main wire, is cut, is bent into staple form, its ends are twisted across the main wire, and it is then compressed upon the main wire.



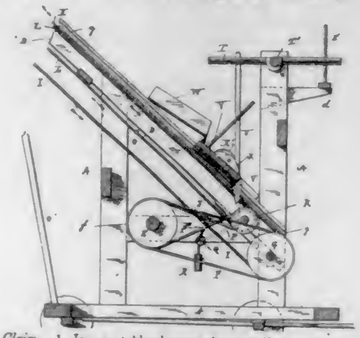
Claim.—1. The grooved die C, in combination with the die F', having wings for the purpose of coiling the barb around the strand-wire, substantially as set forth.

2. The die C, having the groove c^3, in combination with the die F', having wings for the purpose of bending and coiling the barb, substantially as set forth.

3. The grooved die C, the die F', having wings, and the die G', all in combination, for the purpose of coiling and clamping the barb, substantially as set forth.

4. The die C, having the groove c^3, the die F', having wings, and the die G', all in combination, for the purpose of bending, coiling, and clamping the barb, substantially as set forth.

295,135. ELEVATOR. THOMAS WILLIAMS, ALFRED MAUCK, and HENRY A. WILLIAMS, Princeton, Ind. Filed Aug. 9, 1883. (No model.)

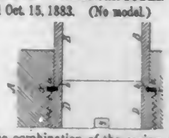


Claim.—1. In a portable elevator, the ascending dumping-rack V, provided with an apron, W, and cross-heads *h h*, in combination with the inclined grooved beams D, the knotted or balled wires, ropes, or chains, the pawls X and their springs, the projecting slotted arm *a*, the transverse bar Y, having an upright, Y', arbor *c*, and rod Z, substantially as described.

2. In a portable elevator, the arm P, slotted arm P', and a weighted shaft, Q, in combination with the knotted or balled wire, rope, or chain I, the connecting-rod U, and the dumping-rack T, substantially as described.

3. In a portable elevator, the combination of the knotted or balled wires, ropes, or chains, the pulleys, driving mechanism, the projecting slotted arms P' and *a* and their connections, and the dumping-racks operated thereby, substantially as specified.

295,136. PACKING CONDENSER-TUBES. JAMES WILSON, Philadelphia, Pa. Filed Oct. 15, 1883. (No model.)

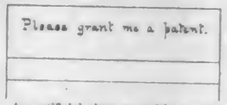


Claim.—1. The combination of the casing A, tube B, and adjustable follower D of a surface-condenser with a packing-ring, *x*, confined directly between the outer end of the tube and the inner end of the follower, as set forth.

2. The combination of the casing A, having a shoulder, *a*, the tube B, the adjustable follower D, and the packing-ring *x*, interposed between the end of the tube and the follower, as set forth.

3. The combination of the casing A, the tube B, having a beveled end, the adjustable follower D, having a tongue, *b*, and the packing-ring *x*, interposed between the follower and the end of the tube, as set forth.

295,137. WRITING-TABLET. RUDOLF C. WITTMANN, New York, N. Y., assignor to himself and Charles Nelson, same place. Filed July 18, 1883. (Modal.)



Claim.—1. An artificial slate or writing-tablet composed of two layers of cement—such as magnesia-cement—and an intermediate layer of wood, pasteboard, or equivalent material, substantially as described.

2. An artificial slate or writing-tablet made of white cement, and having imprinted on its face or faces lines or copies, or both, in a color different from that of the cement, substantially as described.

295,138. TOY. J. WARREN WORCESTER, New York, N. Y., assignor of one-half to Alfred W. Storm and Edwin R. Storm, both of same place. Filed Jan. 19, 1884. (No model.)



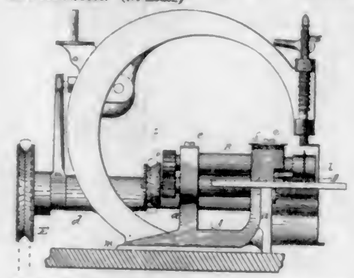
Claim.—1. A toy consisting of a case or box, a vibrating slat supported intermediate its ends, a toothed wheel or disk arranged to engage and release one end of the slat, and a diaphragm against which the other end of the slat is violently thrown when engaged and released by the wheel or disk, substantially as described.

2. A toy combining in its structure a case or box, a twisted cord or equivalent device supported thereby, a slat sustained intermediate its ends by the cord, a toothed wheel for engaging and releasing one end of the slat, and a diaphragm against which the other end of the slat is violently thrown when released by the teeth of the wheel, substantially as described.

3. A toy consisting of a case or box, a vibrating slat, a toothed wheel for engaging and releasing the slats of the diaphragm, and a quill or tube for producing a whistling sound in harmony with the sounds of the slat produced by violently striking the diaphragm, substantially as described.

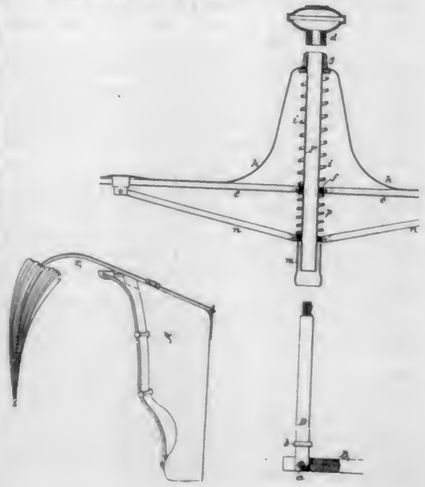
4. A toy consisting, essentially, of a slat supported intermediate its ends by a device held under tension, a diaphragm supported adjacent to one end of the slat, and means for acting on the other end of the slat to violently strike the diaphragm at short intervals, substantially as described.

295,139. DEVICE FOR TRIMMING FABRICS. AARON WRIGHT, Phœnix Mills, N. Y., assignor of one-half to Edwin Groat, same place. Filed Oct. 24, 1883. (No model.)



Claim.—As an improvement in devices for trimming fabrics simultaneously with their passage through a sewing-machine, the combination which consists of the frame A, having the upright bifurcated standards *a a*, the spring bearing-boxes located therein, and the forward standard having an overhang projection, in which is cut the recess *o*, for the passage of the fabric, the rollers B and C, journaled in the said spring-boxes, the upper roller being provided near its forward end with a rotary cutter, *k*, the lower roller having a grooved head, D, the rollers, respectively, being provided at their rear ends with intermeshing gear-wheels *b*, and the lower roller having a pulley, *c*, by means of which the working parts of the device may receive motion through the medium of a suitable band or belt from the drive-shaft of a sewing-machine, substantially as specified.

295,140. CARRIAGE-UMBRELLA. EDMUND WRIGHT, Philadelphia, Pa. Filed Dec. 26, 1883. (No model.)

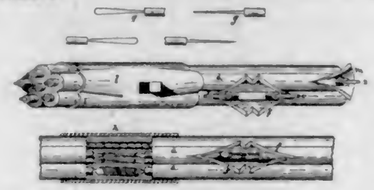


Claim.—1. The combination of the standard B of the carriage, the rod D, pivoted thereto, and having a collar, *b*, the tube F, adapted to the rod D, and carrying the parts of the umbrella, and a cap or retainer, *d*, whereby the tube is secured to the rod, as set forth.

2. The combination of the standard B, the rod D, pivoted thereto, the runner *m* of the umbrella adapted to bear upon the top of the standard, and a spring, *p*, bearing on the runner, as set forth.

REISSUES.

10,458. UNITING ELECTRIC CABLES. RICHARD S. WARING, Pittsburg, Pa. Filed Dec. 28, 1883. Original No. 268,159, dated Nov. 28, 1882. Division A.

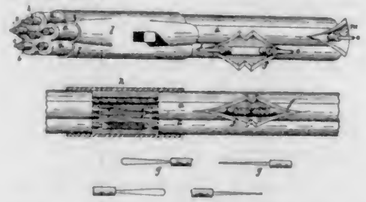


Claim.—1. The method herein described of connecting two or more sections of a lead-armored cable, which consists in electrically uniting the ends of the conductors, covering them with insulating material, covering the insulated joint and conductors from one section of lead armor to the other with lead, and finally securely connecting the two sections of the armor, substantially as set forth.

2. The method herein described of connecting two or more sections of a lead-armored cable, which consists in electrically uniting the ends of the conductors, covering them with insulating material, wrapping the insulated joint and conductors from one section of the lead armor to the other with lead, securely connecting the two sections of armor by a leaden sleeve, and finally filling the sleeve with insulating material, substantially as set forth.

3. The method herein described of connecting two or more sections of a lead-armored cable, which consists in first flattening the ends of the wires to a tapering form, then lapping and soldering them, then wrapping them with wire, then insulating them and inclosing the insulated joint of each wire with a wrapping of thin lead extending from one section of the lead armor to the other, then placing an outer leaden sleeve over the ends of the two cable-sections and soldering the same, and finally filling the space within the joint with insulating material, substantially as described.

10,459. BRANCHING ELECTRIC CABLES. RICHARD S. WARING, Pittsburg, Pa. Filed Dec. 28, 1883. Original No. 268,159, dated Nov. 28, 1882. Division B.

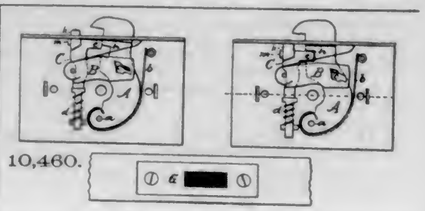


Claim.—1. The method of providing for branch connections with one or more of the conductors of a lead-armored cable, which consists in removing the lead armor from around the conductor to be branched, severing said conductor, and bending the severed ends outward, substantially as described.

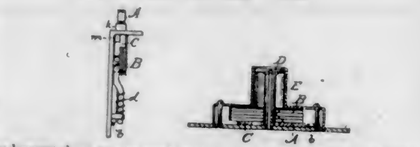
2. The method of providing for branch connections with one or more of the conductors of a lead-armored cable, which consists in cutting through the armor transversely and longitudinally a suitable distance, opening the divided parts out, severing the conductor, and bending each of the ends outward, and finally closing the parts of the armor, substantially as set forth.

10,460. CABINET-LOCK. FRANK W. MIX, New Britain, Conn., assignor to Corbin Cabinet Lock Company, same place. Filed Dec. 31, 1883. Original No. 286,327, dated Oct. 9, 1883.

Claim.—1. The combination of the swinging and hooked lock-bolt having a talon or edge face for being acted upon by the key for throwing the bolt backward out of engagement with the keeper, and also having its hooked end projecting from the face of the lock-case, the swinging tumblers and fence for holding said bolt in its position for locking,



10,460.



and mounted so as to be acted upon by the same key which acts upon said lock-bolt, suitable springs for pressing upon said bolt, and tumblers to force them into position for locking, and the spring-pressed bolt C or equivalent mechanism for snapping into engagement with the lock-bolt at a point inside of its hooked end and holding said bolt back when unlocked, said mechanism also having the projection in the face of the lock-case for being acted upon at a point outside of the case, to disengage the hooked lock-bolt, substantially as described, and for the purpose specified.

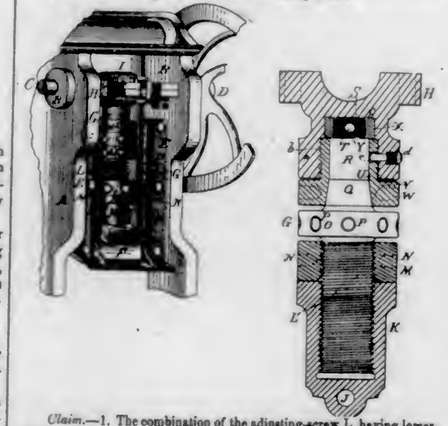
2. The combination of the spring-pressed swinging lock-bolt A, having a talon or edge face for being acted upon by the key, spring-pressed sliding bolt C, having projection *k*, and the laterally-extending arm *e*, for engagement with the keeper and lock-bolt, respectively, and a stop to limit the distance which the end *k* projects, substantially as described, and for the purpose specified.

3. The combination of the spring-pressed swinging lock-bolt A, having a talon or edge face for being acted upon by the key, tumblers B, pivoted as described, for being acted upon by the same key that moves the bolt backward, spring-pressed sliding bolt C, having projection *k*, and the laterally-extending arm *e*, for engagement with the lock-bolt and keeper, respectively, and a stop to limit the distance which the end *k* projects, substantially as described, and for the purpose specified.

4. The combination of a lock having bolts A and C projecting outside of the lock-face, and also operatively connected upon the inside of the lock-case, as described, and a keeper-plate, G, to engage the bolt A and actuate the bolt C, substantially as described, and for the purpose specified.

5. The combination of the spring-pressed and hooked lock-bolt having its hooked end projecting from the face of the lock-case, the spring-pressed sliding bolt C, having the end *k* projecting from the face of the lock-case and the arm *e* upon the inside of the lock-case for acting upon the said hooked lock-bolt, substantially as described, and for the purpose specified.

10,461. DIE-PRESS. GEORGE E. MERRIMAN, Terryville, Conn. Filed Aug. 25, 1883. Original No. 282,747, dated Aug. 7, 1883.



Claim.—1. The combination of the adjusting-screw L, having lower screw-threaded portion and upper smooth portion, Q R, and annular head or nut X at its upper end, the part having the socket K, socket *a*, female-screw-threaded at its lower portion, *b*, and forming upper cylin-

drical recess, *c*, and locking-sleeve U, fitting upon the upper portion of the adjusting-screw, screw-threaded on the outside, and turning in the screw-threaded part of socket *a*, and bearing with its upper edge against nut or head X, as and for the purpose shown and set forth.

2. The combination of the lower part having the screw-threaded socket K, adjusting-screw L, having head O, conical portion Q, cylindrical portion R, and screw-threaded end S, having perforation T, cylindrical nut or head X, having perforation-pin Y, locking-nut M, cross-head H, forming socket *a*, having female-threaded portion *b* and cylindrical recess *c*, male-threaded locking-sleeve U, having flange V and slot *e*, and screw *d*, as and for the purpose shown and set forth.

3. The combination of the part having the socket K, the adjusting-screw L, having one end threaded to correspond with the threaded socket, and its opposite end provided with the annular head or nut X, the locking-nut M, adapted to bear against the end of the part having the threaded socket K, the part having the smooth recess, which receives the nut X of the screw L, and the threaded sleeve for acting upon said annular head or nut X, substantially as described, and for the purpose specified.

4. In a pitman, the combination of the adjusting-screw L, the annular head or nut X, the part having the smooth recess, whose top forms a bearing-surface for the upper face of the nut X of the screw L, and the threaded sleeve for acting upon the under side of said annular head or nut X, substantially as described, and for the purpose specified.

PHOTO-LITHO. NORRIS PETERS WASHINGTON, D.C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of Iowa.

ANDREWS *et al. v.* HOVEY.

Decided May 9, 1883.

What the causes were that led to a long silence on the part of the patentee are not so material as the fact itself that he made public the knowledge and use of his invention, and then for four years remained wholly silent and took no action for the procurement of a patent. *Held*, that under the circumstances the invention must be regarded as dedicated or abandoned to the public.

Patent No. 73,425, January 14, 1868, and Reissue No. 4,372, May 9, 1871, granted to Nelson W. Green, construed, compared, and the reissue held to cover an invention different from that embraced in the original patent, and to be therefore void.

It being true that in 1849 and 1850 wells were driven at Milwaukee by a process not distinguishable from that devised by the patentee in 1861, and these wells were driven, not as mere experiments, nor for the purpose of exhibition, but for public and continuous use, it is held that the defense of want of novelty is sustained.

STATEMENT OF THE CASE.

This suit, with a large number of others against other defendants now pending in this court, is based upon Reissue Letters Patent No. 4,372, granted to Nelson W. Green, one of the complainants, under date of May 9, 1871, the original patent, No. 73,425, bearing date January 14, 1868, and having been issued for an improved method of constructing Artesian wells.

The bill alleges an infringement on part of the defendant, and prays for an injunction, accounting damages, and further relief.

The answer, in substance, denies that Green was the original inventor of the alleged improvement; avers that the alleged invention was known and in public use for more than two years prior to the date of the original letters patent; that Green, if he was an original inventor, abandoned his invention and knowingly permitted its public use for more than two years before applying for a patent; that the reissue is a departure from the original letters patent and embraces different and more extensive claims than are covered by the original, and also denies that defendant has infringed upon the rights and invention held and owned by the complainants.

As already stated, there are pending in this court a large number of causes brought by the complainants for alleged infringements upon their rights, and in the district of Minnesota similar suits are pending, in which the issues are substantially the same.

For convenience' sake it was agreed that these causes should be heard at one and the same time before the judges of the district of Minnesota and the districts of Iowa, and accordingly at the October term, 1882, of this court such hearing was had and the questions at issue were very fully and ably presented both in print and by oral argument before the court. At that time there was pending before the Supreme Court at Washington the case of *Wahl* v. *Hine*, on appeal from the district of Indiana, in which cause this same patent was involved, and it was hoped the decision of that case would give us a final and authoritative decision upon the more important questions discussed in this court.

When the judgment in *Wahl* v. *Hine* was announced, however, it appeared that the judges were equally divided in opinion therein, eight only of the members of that Court having sat in the case, and hence no opinion upon the merits was reached or announced in that cause.

It became, therefore, the duty of this court to consider the questions submitted, unaided by the decision in *Wahl* v. *Hine*, and we have endeavored to give them the consideration which their importance demands. Upon many of the questions involved a very large amount of evidence has been adduced, and the questions of law and fact have been ably argued and presented by the counsel in the cause.

Messrs. Stoneman, Rickel & Eastman, Messrs. Hubbard, Clark & Dawley, Mr. A. R. West, and *Messrs. Rogers & Rogers*, for the complainants.

Messrs. Lake & Harman and *Messrs. Wilson & Gale* for the defendants.

SHIRAS, *D. J.*:

Assuming for the present that Nelson W. Green is entitled to the credit of being the inventor of what is commonly known as the "driven well," we shall first consider the defense of abandonment—that is to say, the averment that he allowed the use of his invention to become part of the property of the public without asserting his right to a patent for the protection of his rights as an inventor.

In the case of *Shaw* v. *Cooper* (7 Peters, 292) it was held that—

> Vigilance is necessary to entitle an individual to the privileges secured under the patent law. It is not enough that he should show his right by invention, but he must secure it in the mode required by law; and if the invention, through fraudulent means, should be made known to the public, he should assert his right immediately and take the necessary steps to legalize it.
>
> The patent law was designed for the public benefit as well as for the benefit of inventors. * * * No matter by what means an invention may be communicated to the public before a patent is obtained, any acquiescence in the public use by an inventor will be an abandonment of his right. If the right were asserted by him who fraudulently obtained it, perhaps no lapse of time could give it validity; but the public stand in an entirely different relation to the inventor. The invention passes into the possession of innocent persons, who have no knowledge of the fraud, and, at a considerable expense, perhaps, they appropriate it to their own use. A strict construction of the act, as it regards the public use of an invention before it is patented, is not only required by its letter and spirit, but also by sound policy. * * * The doctrine of presumed acquiescence, where the public use is known or might be known to the inventor, is the only safe rule which can be adopted on this subject. * * * Whatever may be the intention of the inventor, if he suffers the invention to go into public use through any means whatever without an immediate assertion of his right, he is not entitled to a patent, nor will a patent obtained under such circumstances protect his right.

In the case of the *Consolidated Fruit Jar Company* v. *Wright* (94 U. S., 96) it is said that—

> The inventor must comply with the conditions prescribed by law. If he fails to do this he acquires no title, and his invention or discovery, no matter what it may be, is lost to him, and is henceforward no more his than if he had never been in anywise connected with it. It is made therenpon, as it were, by accretion irrevocably a part of the domain which belongs to the community at large.

From the evidence in the cause it appears that in the summer of 1861 Nelson W. Green was a resident of Cortland, New York; that he was engaged in drilling and organizing volunteers for the army, and especially in connection with the 76th regiment of New York infantry, of which regiment he was appointed colonel. That while thus employed his attention was called to the subject of procuring pure water for the use of his men, and that he set about to devise a means by which water could be readily procured from beneath the surface of the earth, thus avoiding danger from poisoned wells and springs, and also from the risk of being cut off from access to the ordinary sources of supply when in the presence of the enemy.

The patentee himself testifies that in the summer of 1861 he had devised in his own mind a method of accomplishing this result, which he explained first to his drill squad, and then to the officers of his regiment, and which consisted in driving a rod sharpened at the end into the ground, and into the water-bearing stratum, than withdrawing the same and inserting a tube, through which the water could be drawn by any ordinary style of pump. As a test of the method proposed, under the direction of Colonel Green, an experiment of driving a rod down to the water was made near his house, and this experiment was followed by driving a well at the fair-grounds at Cortland, at the expense and for the use of one Graham, who had the contract for furnishing food and other supplies at the camp on the fair grounds. This well was driven between the 1st and 15th of October, 1861, and was used generally by the men in camp, as well as by Graham and his employés.

We further find in the testimony of Colonel Green the following:

Question 60. After this experiment at the house, and the making and use of the well at the fair grounds, what was your opinion as to the practicability of making wells by that process, either for general use or for the purposes of the army, as you had originally intended? Answer. The result of the two experiments referred to had upon my mind the effect to convince me of the entire practicability and feasibility of the process for all the purposes named in the question.

Q. 61. Did you take any steps, give any orders or directions for the procurement of material to be taken with your regiment into the field for the purpose of making wells to supply that regiment with water, wherever it might be situated? A. I gave Lieutenant Mudge orders to procure such material for the purposes named, and gave Adjutant Robinson orders to furnish him with transportation for the same, and when at Albany made arrangements with the quartermaster-general for the transportation of that material with the regiment when it went to the front.

By the testimony of the patentee himself it is shown that the invention claimed by him was perfected in conception in the summer of 1861, was demonstrated to be a success by practical use in October, 1861; that the patentee caused the necessary apparatus to be procured to be taken with the regiment for its use when it moved to the seat of war, and arranged with the authorities at Albany for the transportation needed therefor. The testimony of the patentee shows beyond the possibility of a doubt that his object and purpose in 1861 was to provide a means of supplying the men under his care with pure water and protecting them from the danger to be apprehended from the polluted or poisoned springs and wells, or from being cut off by the enemy from access to the usual sources of supply, and to this end he caused the apparatus to be used in driving wells to be procured and transportation therefor to be provided. The sinking of the well at the fair-grounds at Cortland, and the providing the means for driving these wells whenever and wherever they might be needed by the regiment, establishes beyond question the intent on part of Colonel Green that this invention should be publicly and commonly used by his regiment at any and all times and places. His own testimony shows that he explained his invention and the means of carrying it into effect, first to his drill-squad, and then to the officers of his regiment, and subsequently consented to the sinking and public use of the well at the camp-ground, and yet he never cautioned any one to keep the method a secret, nor is it shown that in 1861 he ever mentioned to any one the idea of obtaining a patent, or that he purposed doing so, or that he took any action looking to that end. All that he did tended to spread the knowledge of the mode of making these wells and of the success attending their use, and nothing whatever is shown indicating an intent to restrict the right to make and use the same to himself as a patentee.

It is an admitted fact that Colonel Green was a man of intelligence and education, and he must have known what the law required of him in case he desired to secure his rights as an inventor under the provisions of the patent laws. He knew then that to secure his rights, if he desired to procure a patent, he must apply therefor before permitting his invention to pass into general or public use. His own testimony conclusively shows that he gave publicity to his invention, and consented to, nay, aided in, making the use thereof common and public. There is nothing in the evidence showing that he purposed or intended to make further or different experiments with a view to perfecting his discovery. He himself expressly testified that the experiment at his house, and the driving and use of this well at the camp-ground convinced him of the feasibility of the process in making wells either for general or army use: or as counsel for complainants in their brief upon the facts, pages 17 and 18, state it:

The two experiments fully and satisfactorily demonstrated the general practicability of the process where no rock intervenes.

The evidence shows conclusively, therefore, that the invention was thought out and was put into satisfactory use, the use being an open and public one, while Colonel Green's regiment was in camp at Cortland, and the necessary machinery and tools with transportation therefor were provided for continuing the construction and the open and public use of other wells, and yet no step was taken by Colonel Green for the procurement of a patent, nor was there at that time any act done or statement made indicating a purpose or intent upon his part to apply for a patent in the future. It is urged, however, that the reason why an application for a patent was not made at that time was because Colonel Green had become involved in serious difficulties on account of the shooting of Captain McNett, one of the officers of his regiment, on the 6th of December, 1861. If it appeared from the evidence that Colonel Green had in the fall of 1861 taken the initiatory steps for the procurement of a patent, or had even unmistakably announced his intention so to do, and it appeared that the accomplishment of such purpose was interrupted by the complications and difficulties arising out of the shooting of Captain McNett, it might then be claimed that these difficulties formed an excuse for the long delay in applying for a patent on part of Colonel Green. But it will be borne in mind that the idea of this mode of constructing a well was thought out in the summer of 1861, and the well at the camp-ground

was sunk before the 15th of October, and the shooting of McNett was not until December 6. It is also shown by Colonel Green himself that he gave the proper orders for the construction of the apparatus necessary to be used in sinking wells, and that, when in Albany, he arranged for the transportation thereof with the regiment when it moved to the seat of war. If he thus had time and opportunity enough to provide the means necessary to furnish these wells for the common and public use of his regiment, can it be fairly claimed that he did not have time and opportunity to at least announce his purpose of procuring a patent, if such was then his intent? It would seem that the utmost that can be said of the effect of the difficulties resulting to Colonel Green from the shooting of Captain McNett is that thereafter his attention was so fully occupied thereby that he gave no further thought to the subject of driven wells at that time, and hence did not, in his own mind, reach the conclusion that he would apply for a patent until several years had elapsed, and these difficulties had begun to pass away, and until it was brought to his attention that through the use of this mode of driving wells other parties had reaped large pecuniary benefits. But during this delay, extending to May, 1866, a period of over four years, the public had acquired rights through the open and uninterrupted use of the discovery. What the causes were that led to this long silence on the part of Colonel Green are not so material as the fact itself that he made public the knowledge and use of his invention, and then for over four years remained wholly silent, and took no action for the procurement of a patent. Can there be any question that Colonel Green did permit his invention to go into public use without an immediate assertion of his rights?

In *Egbert* v. *Lippman* (104 U. S., 333) it was held that "to constitute the public use of an invention it is not necessary that more than one of the patented articles should be publicly used," it being also held in the same case, that—

If an inventor, having made his device, gives or sells it to another, to be used by the donee or vendee, without limitation or restriction, or injunction of secrecy, and it is so used, such use is public, even though the use and knowledge of the use may be confined to one person.

It is not questioned that the well at the camp-ground was made with the knowledge and consent of Colonel Green. It was for a public use, being constructed at the expense of the sutler, Graham, for the purpose of supplying water for use in the cook-rooms, as well as for general use by all connected with the regiment. There was no effort made to keep the mode of its construction secret, but rather the contrary. When the regiment left Cortland, New York, Colonel Green exercised no control over this well, nor did he cause it to be taken up, or otherwise kept from public use or knowledge. If he was the inventor of that description of well, he certainly gave to Graham the full right to construct and use the well and to permit its use by others, without any limitation whatever, or any injunction of secrecy, thus bringing the case within the rule laid down in *Egbert* v. *Lippman*, even if there were no further facts showing acquiescence in the public use of the invention. But these facts are not wanting, for it is proven by Colonel Green himself that he caused the necessary tools and pipes to be procured for the use of the regiment when it went to the front, showing clearly that he proposed and intended to permit any number of wells to be sunk and used that might be needed by the regiment, thus showing that he contemplated a continuous public use of the invention without restriction or limitation. Again the evidence shows that a large number of driven wells were made and used in and about Cortland and neighboring places during the years 1862, 1863, 1864, and 1865. It is now claimed that Colonel Green had not actual knowledge of the existence of these wells; but was he not bound to know that the natural result of what he himself had done, and had caused to be done, in the way of giving publicity to the success which attended this mode of making wells, would be to spread their use by the public, unless he promptly prevented such result by procuring a patent, and can he now be heard to say that he did not know nor have reason to know that the use of these wells was becoming common in his own neighborhood, when the facts show that such use was the natural result of his own acts? But we are not left to mere inference upon this question, as there is testimony showing satisfactorily that he had knowledge of the existence of a portion at least of these wells, and despite his own testimony, wherein he endeavors to destroy the weight of this testimony, either by direct denial, or by claiming that he did not in fact recognize certain wells which came under his notice to be driven wells, yet we think the preponderance of evidence is against him on this proposition, and that it must be held that he knew that such wells were being made and used.

We find, therefore, as conclusions of fact—

1. That in 1861 Colonel Green's purpose in devising his method of driving wells was to furnish a ready means whereby the men of his regiment could procure a supply of pure water, and that he did not at that time contemplate procuring a patent therefor, and that he put his method of driving wells into public use in 1861, for the benefit of his regiment, and thereby dedicated or abandoned his invention to the public.

2. That his invention was in open and public use, with his knowledge and acquiescence, for more than four years before he applied for a patent thereon.

From these conclusions of fact it necessarily follows that the letters patent originally granted, and the reissued letters based thereon, must be held invalid and void.

It is also urged on behalf of defendants that the reissued patent enlarges the scope of the original patent, is broader in its terms, including improvements and principles not contained in the original specifications, and is therefore void.

This defense demands an examination and determination of what Colonel Green's original invention consisted, and of what is embraced within and covered by the reissued patent. We will consider the latter proposition before proceeding to the former.

William D. Andrews, one of the complainants, in giving his testimony, is asked whether he has read and understands the reissued patent, and if so to describe it, which he does in the following language:

The invention is for a method of procuring water from the earth by means of a tube inserted into the earth down to and into a water-bearing stratum, and attaching to such tube, in cases where the water does not flow naturally, a pump by an air-tight connection, and by the operation of the pump producing a vacuum within the tube which forms the body of the well and its lining, thereby causing the water in the surrounding earth, under the pressure of

the atmosphere, to rush into the well formed by the tube, and furnishing a practically inexhaustible supply of water by the means as stated and described.

In the opinion of Judge Benedict in the Carman case, cited at length by complainants, it is stated that—

The novelty consists in making the well-pit to consist of the tube of a pump connected tightly with the earth. This is accomplished by driving into the earth the tube to be used as a tube of a pump and at the same time as the pit of the well. This manner of inserting the tube renders it possible, by means of a pump attached to the tube, to create a vacuum in the pit of the well and at the same time in the water-bearing stratum of the earth.

In the printed argument of counsel for complainants it is said that—

The drive-well invented by Colonel Green left no open space between the lining and the suction-pipe, and is based upon the principle that if a vacuum is formed in the earth at the ordinary depths by the action of the suction-pump, the atmospheric pressure communicated through the earth to the water will cause it to respond to the vacuum produced within the well, whose lining is itself the suction-pipe of the well and perfectly air-tight, the earth serving as a filter.

It is not necessary to extend these quotations to show that the principle which it is claimed constitutes the discovery or invention of Colonel Green, as described in the reissued patent, is that the production of a vacuum in the earth by means of an air-tight tube driven into the earth to which is attached a suction-pump will greatly increase the supply of water. To produce this vacuum it is necessary that the tube forming the lining of the well should be in such close contact with the surrounding earth as to be air-tight, and it is claimed that driving the tube into the ground, whether with or without originally perforating the earth with a rod, constitutes a mode of constructing a well which practically results in producing a well whose lining—to-wit, the tube—is in air-tight connection with the earth. In other words, in order to successfully apply the principle it is absolutely essential that the tube forming the lining of the well should be in such close contact with the earth that the air cannot pass down around the ontside of the tube, and the pump used in drawing up the water must also be attached to the end of the tube by an air-tight connection. Unless both of these conditions are fulfilled it is impossible to create a vacuum in the tube and about the portion of it inserted in the water-bearing stratum; and as the creation of this vacuum is the essential and only means of applying the principle which it is claimed constitutes the chief merit of Colonel Green's invention or discovery, it follows that in order to protect such a discovery by a patent it must be included within the specifications. This may be done by either a proper description of the result to be obtained or by the means employed to accomplish the result—that is to say, it would be sufficient if it was stated that by the use of certain prescribed means a vacuum in and about the tube would be created, and thereby the supply of water would be increased, or if it was stated that the tubing of the well was so driven as to be made air-tight by contact with the surrounding earth and the pump to be used was affixed to the tube by an air-tight connection. In the latter case the result reached or the principle put into operation would not be described; but as the means described must necessarily produce the result or apply the principle, it is held sufficient to describe the means employed without specifying the principle which is thereby brought into play. Indeed, it is not necessary that the inventor, to be entitled to a patent, should himself understand the abstract principle which his invention brings into use. It is sufficient if he is the inventor of a means whereby a new and useful application of the abstract principle is brought about. Still, as already remarked, it is necessary that in the patent and specification the new and useful application of the principle must be described, either by setting forth the result obtained, with the means of its accomplishment, or else by such a description of the means employed as will, if followed, necessarily produce a result which embodies the practical application of the principle involved.

Let us now examine the specifications originally filed by Colonel Green, and see whether there is embraced therein the application of the principle of utilizing atmospheric pressure through the creation of a vacuum in the tube and the earth surrounding it, where it penetrates the water-bearing stratum.

The description of the invention is set forth in the following language:

My invention consists in driving or forcing an iron or a wooden rod with a steel or iron point into the earth until it is projected to or into the water, and then withdrawing the said rod and inserting in its place a tube of metal or wood to the same depth, through which and from which the water may be drawn by any of the usual well-known forms of pumps.

Finally, in setting forth his claim he does so in the following terms:

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, in the herein described process of sinking wells where no rock is to be penetrated, viz:

By driving or forcing down a rod to and into the water under ground, and withdrawing it and inserting a tube in its place to draw the water through, substantially as herein described.

It certainly cannot be successfully claimed that in these statements it is set forth in express terms that the principle to be utilized is the atmospheric pressure forcing the water to and into the tube through the agency of a vacuum created in the tube, and in the earth at the lower end of the tube, where it penetrates the water-bearing stratum. There is not to be found in any part of the specifications any reference to a vacuum either in or ont of the tube, nor any mention of atmospheric pressure created thereby. If the application of this principle formed the material and all important part of Colonel Green's invention in 1861, and is now claimed in argument, he certainly failed to set it forth in express terms in his specifications forming part of the original patent, nor can it be inferred from the description of the means to be employed that he then proposed to create a vacuum by making the well-lining air tight and by attaching a pump thereto by an air-tight connection. He describes a driving-rod having a swell thereon, which is to be driven into the ground and then withdrawn, and a tube of a diameter somewhat smaller than the diameter of the swell of the drill-rod is to be inserted in the hole thus made. In no part of the description is it said, either expressly or by fair implication, that the tube when inserted must fit so closely into the opening made by the rod that no air can pass down on the outside of the tube to the water, nor is it stated that the pump must be attached by an air-tight connection to the top of the tube. A person can follow with exactness all the instructions therein given, and yet it would not necessarily follow that he had excluded the air from the lining of the well, or from the water-bearing stratum at the place where the tube penetrated the same. In other words, the description of the means to be employed, as set forth in these specifications, does not show that one of the results arrived at is to render the lining of the well air-tight, and to have attached thereto a pump by an air-tight connection. The description of the means to be em-

ployed can be carried out in practice without making an air-tight lining or tube, and hence without forming a vacuum around the bottom of the tube or in it. This being true, it follows that it cannot, from the description of the means employed, be inferred that Colonel Green then intended to claim as part of his discovery or invention the application of the principle that, by creating a vacuum in and about the tube, the same having been made air-tight, the flow of water would be largely increased. He did not claim it in express words, and the description of his invention, and the means to be used in carrying the same into practical use, fail to show that such was the main or even a necessary part of his invention.

In our judgment his invention or discovery is fully and fairly described in the language of his own claim, to wit:

What I claim and desire to secure by Letters Patent, in the herein-described process of sinking wells where no rock is to be penetrated, viz:

By driving or forcing down a rod to and into the water under ground, and withdrawing it and inserting a tube in its place to draw the water through.

What he sought to accomplish was to devise a rapid, easy, and feasible means of reaching an underground supply of water in such a mode that any ordinary pump could be applied to bring it to the surface, and his plan was to drive down a rod into the water, withdraw it, and then insert a tube, through which the water could be drawn by any ordinary kind of pump. In our judgment the evidence introduced by complainants shows that this was all that Colonel Green sought to do in 1861, and that in making his experiments at that time he did not contemplate or conceive of the idea that the tube should be made air-tight, so as to create a vacuum in it and about it, and thereby utilize the atmospheric pressure. Hence it is that in the specifications attached to the original patent no mention is made of atmospheric pressure, or of a vacuum in and about the tube, nor is it stated, in describing the means to be employed in making the wells, that the tube must be air-tight in its connection with the surrounding earth, or that the pump must be attached thereto. It is inexplicable, if it was intended to embrace in the original patent the operation of atmospheric pressure in the earth through the creation of a vacuum, which is now claimed to constitute the chief features and merit of the driven well, that the specifications contain no reference thereto, either expressly or even by fair implication. We conclude, therefore, that the original patent cannot be so construed as to embrace the application of this principle.

Turning, now, to the specifications of the reissued patents, what do we find? In the first place it is stated—

That the hole or opening is made by the mere displacement of the earth, which is packed around the instrument, and not removed upward from the hole, as it is in boring.

And it is further said that—

I prefer to employ a pointed rod, which, after having been driven or forced down until it reaches the water, I withdraw and replace with a tube made air-tight throughout its length, except at or near its lower end.

And further—

I attach to the tube by an air-tight connection any known form of pump.

In these portions of the specifications we find it provided that the earth must be packed around the tube forming the lining of the well; that this tube must be air-tight throughout its length, except at or near the lower end, which penetrates the water, and the pump used therewith must have an air-tight connection with the tube. Under these specifications it is claimed by complainants that the main feature of the discovery consists in the utilization of the atmospheric pressure through the creation of the vacuum in and about the tube. (See questions 11 and 12, testimony of William D. Andrew, pages 210 and 211, volume 1, of complainant's record.) Giving these specifications the construction which complainants put thereon, it follows that the reissued patent covers—

1. The process of sinking wells by forcing down a rod or tube to the water-bearing stratum without removing the earth upward, as in boring or digging.

2. Creating a vacuum in the tube forming the lining of the well by making the tube air-tight except at the lower end, compacting the earth around the tube, and by attaching a pump with an air-tight connection to the tube.

In the argument of counsel, as well as in the testimony of complainants, it is urged that the great merit of Colonel Green's invention consists of the discovery of the effect of the vacuum thus created. According to the view we take of the original patent, it did not cover or describe the application of this principle. It follows, therefore, that the reissue embraces the application of an important and material principle not found in the original. The rule is well settled that a reissue can be validly granted only for the same invention which was originally patented. If the reissue goes beyond this and covers other and different inventions or improvements suggested by the use of the orginal invention, it will be void. (See *Bun* v. *Durgee*, 1 Wallace, 531; *Manufacturing Co.* v. *Ladd*, 102 U. S., 408; *Miller* v. *Brass Co.*, 104 U. S., 350; *James* v. *Campbell*, 104 U. S., 356; *Manufacturing Co.* v. *Corbin*, 103 U. S., 780.)

As we view the evidence in this case we find that Colonel Green in his original invention did not embrace the idea of creating a vacuum in the lining of the well for the purpose of utilizing the pressure of the atmosphere, nor did his original patent, either expressly or impliedly, cover or describe the application of this principle; that this idea of utilizing the atmospheric pressure was an after thought on the part of complainants; that to protect it as a part of Colonel Green's invention it was evidently necessary that the specifications should be enlarged; that the reissue was obtained for the purpose of covering thereby this idea of atmospheric pressure caused by a vacuum in an air-tight tube; that the complainant now claims that the chief merit of the invention consists in creating a vacuum in the tube and the earth surrounding it where it penetrates the water-bearing stratum, and through the pressure of the atmosphere, forcing a larger and more continuous supply of water into the tube forming the lining of the well, and that the application of this principle is provided for and embraced within the specifications of the reissued letters patent. Giving these specifications the construction claimed therefor by complainants, it follows, in our judgment, that the reissue departs widely from the original, and embraces the application of a principle not covered by the original invention of Colonel Green, and consequently that the reissued patent must be held void.

In determining this question of the validity of the reissued letters patent we have assumed that the construction put thereon by complainants and their coun-

sel is legally correct, to wit: that there is embraced therein the principle of utilizing atmospheric pressure by creating a vacuum in the tube and about the same where it penetrates the water-bearing stratum.

We have also assumed, without questioning it, that the theory of complainants in regard to the creation of a vacuum about the tube, and its effect in increasing the flow of water into the tube through the pressure of the atmosphere upon the other portions of the water-bearing stratum, is correct. In the view we have taken of the case it has not been necessary to investigate fully the scientific points involved in the latter proposition, but we will only say that the experiments made before the court and the evidence adduced on this question in physical science have not fully demonstrated to our satisfaction the correctness of the theory relied upon by complainants.

Upon the issue of originality of invention by Colonel Green a large amount of evidence has been adduced with a view of showing that this method of sinking wells had been substantially described in various publications antedating Colonel Green's discovery, and also that wells had been sunken by this method at different times and places. We do not deem it necessary to specially mention more than two of these alleged prior discoveries. While it cannot well be questioned that it is shown that in some of the other instances a near approach was made to the method subsequently adopted by Colonel Green, yet we do not think it can be said that these isolated instances were anything more than mere experiments, not developed to an extent sufficient to enable the court to say that they clearly anticipated Colonel Green's discovery. There are two instances, however, which cannot be so summarily disposed of, these being, first, the well at Independence, Iowa, and, second, the wells driven at Milwaukee, Wisconsin, by E. W. Purdy.

In regard to the well at Independence, the query is, whether it was in fact constructed in 1861, as claimed by defendants, or in 1866, as averred by complainants. The defendants claim that there were two wells driven at Independence—one in the early summer of 1861, the other in 1866; while the complainants aver that there was but one well—*i. e.*, the one driven in 1866, and that the witnesses who place it in 1861 are simply mistaken in the date.

In several of the cases heretofore heard touching the validity of Colonel Green's patent the question in regard to this Independence well has been presented, and it has been therein held that the conflict in the testimony was to be reconciled by holding that the witnesses for the defendants, while testifying truthfully to the existence and character of this well, had mistaken the date and placed an event in 1861 which really took place in 1866. If the evidence submitted to us was substantially the same as that submitted in the cases referred to, we should not feel disposed to re-examine the question at issue; but we have had presented to us much additional evidence largely intended to prove the date of the driving of the well in question by proving the date of other facts which are so connected with the existence of the well that proof of the date of the former unmistakably fixes the time when this well was driven and in use. Thus a number of witnesses who probably could not by a mere effort of memory fix the month or the year when they saw and used the well, testify to facts which corroborate their recollection—that they saw and used this well when the soldiers were enlisting at Independence and forming companies commanded by Captains Lee and Hord for the purpose of entering the Union army. That these companies were organized at Independence is a fact beyond dispute. So with other facts, the date of which is not open to question, such as the time when Sherwood and Kimball kept the hotel at Independence, the date of Colonel Lake's marriage, the use of the well by the cricket club, who played cricket upon the grounds adjoining the lot where the well was driven, and which club was broken up by a number of its members entering the army in 1861. By such facts as these the defendants have greatly strengthened their position in regard to this well at Independence, and while it cannot be doubted that there is much plausibility in the argument urged against the reliability of this evidence, still it seems to us that the preponderance of the evidence upon this question is with the defendant, and that it must be held as a conclusion of fact—

1. That in the early part of the summer of 1861 there was constructed at Independence, Iowa, a driven well which proved a success.

2. That this well was constructed by driving a tube down into the water-bearing stratum and attaching to the tube a pump, by which the water was drawn up through the tube in apparently an inexhaustible quantity.

It does not appear, however, that any other wells came into use by reason of the driving of the one under consideration, and if the decision of the court depended solely upon the effect to be given to the driving of this one well, we might well doubt whether it would not be proper to treat it as a mere isolated experiment, which would not be held to defeat the rights of an independent inventor.

In regard to what may be called the "Milwaukee wells," it is shown by the testimony of E. W. Purdy that in 1849 and 1850 he was in the business of making wells at Milwaukee, Wisconsin; that he used iron rods about two inches in diameter, and made so they could be coupled together. The first rod was about sixteen feet long, the lower end being in shape of a drill. This rod was worked up and down by a rope running over a gin-pole, the rod being raised up and down, and in that way the earth was displaced by the rod as it went down. Tubing of about four inches in diameter was driven down as the rod progressed. This tube formed the lining of the well. No earth was removed upward, except in case of striking quicksand, when a long sheet-iron bucket with a valve in the bottom was used to bring up the quicksand. When the tube had been forced down into the water, if the water did not come to the surface, a pump was used, the tube to which the pump was attached being placed inside the tube first forced down, the latter forming the lining of the well. It is shown by the testimony of Purdy that he drove a large number of these wells, and the places where and the parties for whom they were driven are given in several instances. In some cases the wells were driven to the depth of sixty and one hundred feet. In these wells thus driven there was used, first, a rod for puncturing the earth, which was driven down to the water-bearing stratum; second, into the aperture thus made a tube was forced, which was in close contact with the

earth, and which formed the lining of the well, and through which the water either flowed naturally or was drawn by the aid of a pump inserted therein.

Comparing this method of driving wells and its results with that adopted by Colonel Green in 1861, and described in the specification attached to the original letters patent, we confess our inability to see any substantial difference. What he expressly claimed in his original specifications was the process of sinking wells by driving or forcing down a rod to and into the water under ground, and withdrawing it and inserting a tube in its place to draw the water through; and it is just this process in substance that was employed in Milwaukee. These wells driven at Milwaukee cannot be set aside as abandoned experiments. Purdy testifies that he was engaged in sinking them as a regular business. Numbers were put into practical use. This testimony remains uncontradicted, and it is not claimed that these wells are a myth. If, then, it be true that in 1849 and 1850 wells were driven at Milwaukee by a process not distinguishable from that devised by Colonel Green in 1861, and these wells were driven not as mere experiments, nor for the purpose of exhibition, but for public and continuous use, and, from aught now shown, may be in use to-day, can any other conclusion be reached than that Colonel Green was not the original or first inventor of the process of driving wells described in his specification? In our judgment, the method pursued in sinking these wells at Milwaukee is the same in substance as that devised by Colonel Green, differing only in minor particulars, and hence it follows that Colonel Green's process for driving wells was only a reproduction of a method which had been devised and put to practical public use fully ten years before Colonel Green hit upon the same expedient. If this be true, then it necessarily results that the defense of want of novelty must be sustained.

The conclusions we have reached upon the points already discussed render it unnecessary to consider the other questions, including that of infringement, which are presented in the record.

Under the view we have taken of the case it follows that complainants' bill must be dismissed, with costs, and it is so ordered.

LOVE, *D. J.*, concurs.

NELSON, *D. J.*, dissents.

—

OPINION OF JUDGE LOVE.

The two years' limitation was intended in the act of 1839, as it unquestionably is in section 4886 Revised Statutes, to be general, and it applies to all cases in which the invention has been in public use or on sale for more than two years prior to the application, whether with or without the consent or allowance of the inventor.

LOVE, *J.*:

I concur fully in the opinion just delivered by my brother SHIRAS, and I can add nothing to what he has said touching the points which he has considered. I purpose, however, to give my own views upon one question which has not been discussed in the opinion. The respondent sets up the defense, among others, that the alleged invention of Colonel Green was in public use for more than two years prior to his application for a patent, and after the time when, as Colonel Green claims, his invention was perfected. But the complainants insist that this defense cannot be maintained because one of its essential conditions is that the public use for two years must have been with Green's knowledge and consent, and the complainant contends that the defendant has failed to establish the fact of Green's knowledge and consent. If it were necessary, in my view, to the decision of this point, I would be compelled to find the fact to be that Green did know of the use of the invention for more than two years prior to his application. In my judgment, the preponderance of evidence, both direct and circumstantial, shows that Green did know the fact that driven wells substantially the same as his were in public use for a period of more than two years before he made his application. Several witnesses, apparently credible, against Green alone testify to facts showing directly Green's knowledge and acquiescence in the use of his invention for the time mentioned. Besides, it appears that quite a number of driven wells were put down and used in the town of Cortland, New York, where Green lived for more than three years before he filed his application, and it is difficult to see how Green could have been ignorant of such a fact, considering the deep interest he must have felt in its results. But in my judgment, it is unnecessary to this defense to find that Green knew of and assented to the use of his invention for the period in question. Green's original patent was issued when the act of 1839 was in force, and it is clear to my mind that according to the true construction of that act a public use of an invention for two years prior to the application, with or without the consent of the inventor, is sufficient to invalidate the patent.

The seventh section of the act of 1839 (5 Stat. at Large, 353) provides that—

> Every person or corporation who has or shall have purchased or constructed any newly-invented machine, manufacture, or composition of matter, prior to the application of the inventor or discoverer, for a patent, shall be held to possess the right to use and vend to others to be used the specific machine, manufacture, or composition of matter so made or purchased, without liability therefor to the inventor or any person interested in such invention, and no patent shall be held to be invalid by reason of such purchase, sale, or use prior to the application for a patent as aforesaid, except on proof of abandonment of such invention to the public, or that such purchase, sale, or prior use has been for more than two years prior to such application for a patent.

The section just quoted was no doubt intended as an amendment of the sixth section of the act of 1836, as follows:

> That any person or persons having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not at the time of his application for a patent in public use or on sale with his consent or allowance as the inventor or discoverer, and shall desire to obtain an exclusive property therein, may make application in writing to the Commissioner of Patents expressive of such desire, and the Commissioner, on due proceedings had, may grant a patent therefor.

What is the true construction of the seventh section of the act of 1839, just quoted? Is it essential to a defense set up under that section that the "sale or prior use" of the invention for more than two years before the application for a patent should be with the inventor's "consent or allowance?"

In the case of *Egbert* v. *Lippman* Judge Blatchford said:

> The effect of the act of 1839 is to require that an inventor shall not permit his invention to be used in public at a period earlier than two years prior to his application for a patent under the penalty of having his patent rendered void by such use. Consent and allowance by the inventor are not necessary to such invalidity.

The decree in this case was affirmed by the Supreme Court of the United States, (104 U. S., 333.) Mr. Justice Woods, in delivering the opinion, says that—

Since the passage of the act of 1839 it has been strenuously contended that the public use of an invention for more than two years before such application, even without his (the inventor's) consent and allowance, renders the letters patent therefor void. It is unnecessary in this case to decide this question, for the alleged use of the invention covered by the letters patent to Barnes is conceded to have been with his express consent.

It is, therefore, to say the least, an open question whether or not the consent of the patentee to the public use is a condition essential to the defense in question. For my own part I must say that, but for the doubt thus cast upon the construction of the seventh section of the act of 1839, I could not possibly entertain a question about it.

Upon what principle of construction may we attempt to interpolate the significant words "consent or allowance" into the statute? These words do not appear in the statute. No such condition is expressed as these words imply. The plain, simple, and unqualified provision is that—

No patent shall be held to be invalid by reason of such purchase, sale, or use prior to the application, except on proof of abandonment of such invention to the public; or that such purchase, sale, or prior use has been for more than two years prior to such application for a patent.

Not a word is here used to the effect that such prior use or sale shall be with the "allowance or consent" of the patentee. If we get such a condition into the section, we must do it either by construction or interpolation. Now, the interpolation of material words into a statute is ordinarily an act of simple violence. It is a settled rule in the interpretation of contracts and statutes that their meaning and intent must be ascertained from all and not from a part of the words of the act or instrument. It would do violence to this rule in the construction of a statute to cast out certain words and consider only what remained; and surely we may with much stronger reason say that it would be wholly inadmissible to incorporate into a statute words not found in it, and thereby give the act a meaning and construction wholly different from that which it would bear without such interpolation.

It may not be amiss here to note what a celebrated writer upon the law of nations says upon the interpretation of treaties:

The first general maxim of interpretation is that it is not permitted to interpret what has no need of interpretation. When an act is conceived in clear and precise terms, when the sense is manifest and leads to nothing absurd, then there can be no need to refuse the sense which a treaty naturally presents. To go elsewhere in search of conjections in order to restrain or extinguish it is to endeavor to elude it. If this dangerous method be once admitted, there will be no act which it will not render useless. (Vattel, Law of Nations, book 2d, chapter 17, page 368.)

Now, what is there in the clause in question that needs interpretation? It is plain and unambiguous. It is free from obscurity. Does the language of the clause, when received in its obvious sense, lead to any absurd result? Would it when so taken work such gross and palpable injustice as to lead the mind to conclude that the legislature intended it to be received in some other and different sense? On the contrary, a legislature had, in my opinion, a wise purpose in fixing a period of limitation which should not depend upon the uncertain question of the patentee's consent. Its purpose was to require some degree of diligence from the inventor in the assertion of his rights, and to give him full protection when he exercised that diligence; and at the same time to protect the public in the exercise of rights examined where the patentee should, by reason of his own negligence, fail even to file his application for a patent for a period of two years. The legislature may justly have considered a period of two years from the completion of the invention quite a sufficient time to enable the inventor to make his application. No injustice could possibly arise to him from such a rule except as a consequence of his own negligence. What but negligence could lead an inventor to delay the assertions of his claims for more than two years from the maturity of his right? And was it the intention of Congress to protect him against the consequences of his own negligence? If the complainants' construction is to prevail, there is no time whatever prescribed within which, without the inventor's own consent to the use, he is required to make his application for a patent. The inventor could, under this construction, by simply refusing his consent, safely withhold his invention from public use for an unlimited period of time after bringing it to perfection. He might, after the lapse of many years, and after his invention should be in general use, by simply denying his consent, or by mere silence, obtain a patent, and thus override and prejudice intervening investments and industries unless, indeed, a case of abandonment could be made out. This, it is easy to see, would be against sound policy as well as private justice. The public interest would be prejudiced and individuals injured without real benefit to the inventor, since his true interest would certainly not be promoted by the delay. Congress did, indeed, in the act of 1836, give to the inventors and discoverers the right to apply for a patent without limit as to time after they were in public use or sale, unless the public use or sale was with their own consent or allowance. But the unwisdom of the provision becoming apparent, Congress, in the act of 1839, changed the law by prescribing a fixed period of limitation and omitting the words requiring the inventor's "consent or allowance" to the use or sale of his invention. The intention of Congress in the act of 1839 is further illustrated by section 4886 of the Revised Statutes. It will appear by inspection of this section that it embodies so much of the seventh section of the act of 1839 and the sixth section of the act of 1836 as it was the purpose of Congress to preserve; and that while the two years' limitation is in express terms re-enacted in section 4886 of the revision, the qualifying words requiring the consent or allowance of the inventor used in the act of 1836 are entirely omitted. The section is as follows:

Section 4886. Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof not known or used by others in this country, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon payment of the fees required by law and other due proceedings had, obtain patent therefor.

It will not, I suppose, be doubted that the two years' limitation clause in the seventh section of the act of 1839 must receive precisely the same construction as the two years' limitation clause in section 4886 of the Revised Statutes. The language of this clause in the two sections being substantially the same, and the purpose of the legislature the same, it follows that the construction must be the same. Now, does any one for a moment suppose that the words "and not in public use or on sale for more than two years prior to his application," in section 4886 of the revisions, will bear the construction that the two years' public use, in order to invalidate the patent, must be with the "assent or allowance" of the inventor? Will any court ever interpolate the words "assent or allowance" into section 4886, thus: And not in public use or on sale "with the assent or allowance of the inventor" for more than two years prior to his application? What possible reason could have moved Congress to provide that the public use, in order to defeat the patent and vest a right to use the invention in the public, should continue for two years if that public use was to be with the consent and allowance of the inventor?

The act of 1839 must, I think, have been specially intended to apply to a class of persons who should make, use, and vend the "machine, manufacture, or composition of matter" before the application, without the allowance or consent of the patentee. The seventh section of that act, it will be observed, provides, substantially, that any person who has or shall have constructed or purchased such newly-invented thing prior to the inventor's application shall have the right to use and vend to others such specific thing without liability to the inventor or other person interested in the same. Now, this must surely refer to persons who should construct or purchase the newly-invented thing without the inventor's consent or allowance, because if it were constructed or purchased with the inventor's allowance and consent, he could not on general principles make them liable as infringers. This particular provision of the seventh section was, therefore, wholly unnecessary and nugatory except as a protection to those who should invade the inventor's right without his "consent or allowance" before the application; and can it be doubted that the words which immediately follow in the same section refer, in part at least, to the same class of persons—namely, those who should purchase or make the inventor's "machine, manufacture, or composition of matter," without his consent or allowance? Can it be questioned that the provision that "no patent shall be held to be invalid by reason of such purchase, sale, or use prior to the application for a patent, &c., except on proof that such purchase, sale, or prior use has been for more than two years prior to such application," was intended to embrace at least the class of cases referred to in the immediately-preceding part of the section? In my opinion, this two years' limitation was intended in the act of 1839, as it unquestionably is in section 4886 of the Revised Statutes, to be general, and that it applies to all cases in which the invention has been in public use or on sale for more than two years prior to the application, whether with or without the consent or allowance of the inventor.

It is obvious from the plain reading of the act of 1836 that under its provisions an inventor who permitted or allowed the public use or sale of his invention up to the time of his application was not entitled to protection, for the unavoidable implication from the language is that he should not be entitled to a patent. The law would not permit him to call to account as infringers persons whom he had allowed to use his invention, and perhaps invest their money in it, before he gave notice of his intention to claim it by making his application. The class of persons, therefore, who used or sold the "art, machine, manufacture, or composition of matter" with the consent of the inventor were fully provided for and protected by the act of 1836. But there was another class not provided for by that act—namely, those who should use, purchase, or sell the thing invented without the inventor's consent before his application. The public use and sale of the inventor did not under the statute of 1836 preclude the inventor from his right to a patent and his right to call infringers to account where his invention was used before the application without his allowance or consent. Yet it is obvious that the latter class of persons might have a certain equity which the law ought to protect, and the primary object of the seventh section of the act of 1839 seems to have been the protection of those who might before the application, without the inventor's consent, use his invention and perhaps invest money in it. Hence the seventh section of that act provides that—

Any person or corporation who shall or shall have purchased or constructed any newly-invented machine, manufacture, or composition of matter prior to the application by the inventor or discoverer for a patent, shall be held to possess the right to use and vend to others to be used the specific machine, manufacture, or composition of matter so made or purchased without liability therefor to the inventor or any other person interested in such invention.

If the statute had stopped here a possible inference might have arisen that a patent issued to an inventor, where his invention had been on sale or in use, even without his consent, would be held invalid. This would have been unjust to the inventor. It was his own fault or negligence if his invention came into public use with his own consent or allowance, and the act of 1836 denied him relief against the consequence of his own fault or negligence. But it was the manifest purpose of the act of 1839 to guard carefully against any possible implication that the sale or use of the invention without the inventor's consent or allowance should deprive him of his right to a valid patent. Hence it is further provided in the same clause of section 7, following the words just quoted, that "no patent shall be held to be invalid by reason of such purchase, sale, or use, prior to the application for a patent," except what? Except on proof of abandonment, or on proof that such purchase, sale, or prior use has been for more than two years prior to such application for a patent.

Now, what follows from this analysis of the two statutes? Is not the inference plain and irresistible that the purchase, sale, or prior use of the things invented for two years before the application without the assent and allowance of the inventor would invalidate the patent? Can we here interpolate the words "with the assent and allowance" of the inventor, seeing that the very object of the thirty-ninth section was to provide for a class of cases in which the invention should be used without the inventor's consent or allowance? The clause of the act of 1839 in question here is, I think, a statute of limitation, and all such statutes are founded rather upon considerations of public policy than private justice; and where no exceptions are made in the statute itself, it is not competent for the courts to introduce them. If married women, infants, and other persons under disability were not excepted from the provisions of a statute of limitations, no court could incorporate into the statute a saving clause in their favor.

Standing upon the broad grounds of public policy, it matters not that a statute of limitations may work injustice in particular cases. If my construction of the seventh section of the act of 1839 be correct, it is decisive of the present case, since it is established by the evidence beyond doubt that Green's invention was in public use for more than two years prior to his application for a patent.

U. S. Circuit Court—District of Rhode Island.

SMITH v. HALKYARD *et al.*

Decided February 9, 1884.

INJUNCTIONS—MOTIONS FOR CONTEMPT.

Motions for contempt for violation of injunctions are not granted unless the violation of the injunction is plain and free from doubt. Doubted in this case whether there is a violation.

MOTION for contempt.

Mr. John L. S. Roberts and *Mr. George L. Roberts* for the complainant.

Mr. Wilmarth H. Thurston and *Mr. Benj. F. Thurston* for the defendants.

BEFORE LOWELL AND COLT, JUDGES.

COLT, *J.:*

The defendants contend that they are not violating the injunction recently granted by this court by reason of certain changes made in their machine. The plaintiff claims that the defendants still infringe the first and seventh claims of the lacing-hook patent as well as the patent for lacing-hook stock. The lacing-hook patent is for a combination. One of the elements of the feeding device mentioned in the first and seventh claims is a spring inserted in the groove along which the stock is fed, which operates to raise the stock and clear it from the dies. In their present machine the defendants use no spring. The inclines in the groove of the feeding mechanism are not, in our opinion, the equivalents of the spring, and do not perform the same function, and, as shown in the affidavit of Mr. Renwick, may be dispensed with altogether. By leaving out one element of the combination a serious doubt is raised as to the defendants' infringement.

As to the lacing-hook-stock patent, the position is strongly urged by the defendants that the patent is for stock with a series of alternate necks and indentations, and that in their present machine they only use a single neck and indentation at the end of the stock-strip, and not a series. The plaintiff contends that, while at no moment of time a series exists, this is due to the fact that each neck and indentation is cut out as soon as formed, and that a series does exist in order of time or successively, as is shown by the successive holes in the waste-strip. It is clear from the specification and drawings that the patentee contemplated the co-existence of a series of alternate necks and indentations. It is from stock so specially prepared in a series from which the blanks for the formation of lacing-hooks were to be cut. It may well be doubted whether, in view of the terms of the patent and the prior state of the art, the patent can be held to extend to a single neck and indentation.

Motions of this character are not granted unless the violation of the injunction is plain and free from doubt. (Walker Patents, 481; *Birdsall* v. *Hagerstown Mfg. Co.*, 2 Bann. & Ard., 519; *Liddle* v. *Cory*, 7 Blatch., 1; *Welling* v. *Trimming Co.*, 2 Bann. & Ard., 1; *Bate Refrigerating Co.* v. *Eastman*, 11 Fed. Rep., 902.)

Motion denied.

U. S. Circuit Court—District of Rhode Island.

TAFT v. STEERE *et al.*

Decided February 9, 1884.

1. PARTICULAR PATENTS.

The second and third claims of Patent No. 63,853, granted March 26, 1867, to James J. Walworth and Gustavus E. Buschick, assignees of Caspar Zwicki, construed, and held not to have been infringed by the defendants.

2. UTILITY OF INVENTION.

Doubted whether there is any utility in the cam mentioned in the third claim, supposing the nose-piece to be attached to the cam exactly as shown in the model, and it not appearing that any looms embodying the improvements claimed have ever been put in operation.

BEFORE LOWELL AND COLT, JUDGES.

Mr. A. K. P. Joy for the complainant.

Mr. Eugene F. Warner and *Mr. Walter B. Vincent* for the defendants.

COLT, *J.:*

The complainant in his bill charges the defendants with the infringement of certain letters patent for improvements in looms, dated March 26, 1867, No. 63,853, issued to James J. Walworth and Gustavus E. Buschick, assignees of Caspar Zwicki, the inventor. By subsequent assignments the plaintiff became the owner of the patent. The alleged infringements relate to the second and third claims.

The second claim is as follows:

2. In combination with the shuttle-race, the springs H, at either end, arranged over the top of the shuttle-path, and provided with means for vertical adjustment, substantially as described.

The specification says:

Above each end of the shuttle-race E are springs H, each fastened to holding-pieces e on the side of the race, so that they can be adjusted in a vertical direction, and provided with a set or thumb screw at *f*, for the purpose of further adjustment of the free end of said spring H in a vertical direction. The function of these springs H is to stop the shuttle gradually and without recoil, and to keep it in its proper position on the shuttle-race to receive the blows of the picker-staffs T.

The essence of this claim is a spring capable of vertical adjustment over each end of the shuttle-race, to check the flight of the shuttle and keep it in its place. The defendants do not use this. Their looms have no spring over the top of the shuttle-race and no means of vertical adjustment. They use a piece of wood screwed onto the top of the shuttle-race, or a narrow piece of wood screwed onto the inside of the top, and the evidence goes to show that these have been in use for a period of thirty-five years. The side of the shuttle-box in the defendants' looms is of such shape that it operates to check the flight of the shuttle, and it also appears to be adjustable; but the important element in the plaintiff's claim is a spring on the top of the shuttle-box capable of vertical adjustment, and this we do not find, nor any equivalent therefor, in the defendants' machine, and so there is no infringement.

The third claim is as follows:

3. In combination with the picker-staff of a loom, the cam N when provided with the adjustable piece *o*, substantially as described.

It is not contended that Zwicki was the first to make a cam with a nose in two pieces, instead of being solid; but the adjustable character of the nose-piece upon the cam is claimed as an improvement.

After carefully examining the evidence and exhibits, we are satisfied that the cams used by the defendants are not adjustable for any practicable purpose; that such adjustment is not attempted in their use, and that it is doubtful at least whether there is any utility in this feature of the patent, supposing the nose-piece to be attached to the cam exactly as shown in the model. It does not appear that any looms embodying the improvements claimed in this patent have ever been put in operation. These conclusions dispose of the two main questions raised in this case, and we therefore deem it unnecessary to consider any others.

The bill should be dismissed.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of March 18, 1884.

Patents	372	No. 295,141 to No. 295,512, inclusive.
Designs	14	No. 14,883 to No. 14,896, inclusive.
Trade-marks	19	No. 11,010 to No. 11,028, inclusive.
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TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	8	1
Austria-Hungary	1		Hayti	1	
Barbadoes			Holland		
Belgium			Mexico		
Bermuda			New Zealand	1	
Brazil			Russia		
Canada	9		Scotland	1	
Chili			Spain		
Colombia, U. S. of			Sweden		
Cuba			West Indies	1	
Denmark					
Ecuador			Total to citizens of foreign countries	32	2
England	7	1			
France	3				

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2		Nebraska	1	
Arizona Territory			Nevada		
Arkansas	2		New Hampshire	4	
California	15	2	New Jersey	14	2
Colorado	2		New Mexico Territ'y		
Connecticut	14		New York	72	18
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District of Columbia	4		Oregon	1	
Florida	2		Pennsylvania	32	2
Georgia	3		Rhode Island	5	
Idaho Territory			South Carolina	1	
Illinois	36	3	Tennessee	3	
Indiana	16		Texas	6	
Indian Territory			Utah Territory		
Iowa	8		Vermont	2	
Kansas	5		Virginia		2
Kentucky	2		Washington Territ'y		
Louisiana	3		West Virginia	2	
Maine	1		Wisconsin	5	
Maryland	9	3	Wyoming Territory		
Massachusetts	27	1	United States Army	2	
Michigan	14		United States Navy		
Minnesota	3				
Mississippi	2		Total to citizens of the United States	354	35
Missouri	11				
Montana Territory					

DESIGNS.

14,883.—STEAM-RADIATOR PIPE.—*Juan B. Arci* and *John Chapman*, Brooklyn, N. Y. Application filed January 29, 1884. Term of patent 7 years.

14,884.—ORNAMENTATION OF BUILDERS' HARDWARE.—*Charles H. Beebe*, Norwich, Conn. Application filed January 23, 1884. Term of patent 7 years.

14,885.—FONT OF PRINTING-TYPE.—*George Giesecke*, Leipsic, Saxony, Germany. Application filed October 15, 1883. Term of patent 7 years.

14,886.—CLOCK-FRONT.—*William M. House*, New York, N. Y. Application filed December 12, 1883. Term of patent 7 years.

14,887.—CARPET.—*Henry Hunt*, Greenville, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed January 22, 1884. Term of patent 3½ years.

14,888.—ORNAMENTATION OF BUILDERS' HARDWARE.—*Arthur Langerfeld*, New Britain, Conn., assignor to *P. & F. Corbin*, same place. Application filed December 8, 1883. Term of patent 14 years.

14,889.—SLIDING-DOOR HANGER.—*Edward F. Moore*, Chicago, Ill. Application filed January 26, 1884. Term of patent 14 years.

14,890.—LADY'S COSTUME.—*John Quincy Reed*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed February 13, 1884. Term of patent 3½ years.

14,891.—FONT OF PRINTING-TYPE.—*Edwin C. Ruthven*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed January 31, 1884. Term of patent 7 years.

14,892.—MISS'S COSTUME.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed February 13, 1884. Term of patent 3½ years.

11,893.—MOLDING.—*William Smith*, Philadelphia, Pa. Application filed February 11, 1884. Term of patent 7 years.

11,894.—LADY'S COSTUME.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed February 13, 1884. Term of patent 3½ years.

11,895.—LADY'S COSTUME.—*Mary Turner*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed February 13, 1884. Term of patent 3½ years.

11,896.—PACKING-CASE.—*Houghton Wardelle Wilson*, Kingston, Ontario, Canada. Application filed August 28, 1883. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

11,010.—DRILLING AND SHEETING.—*Adolph Bernheimer*, New York, N. Y. Application filed January 21, 1884.
"The figure of a bear."

11,011.—TELEGRAPHIC CALL-BOXES.—*Augustus G. Daris*, Baltimore, Md. Application filed January 18, 1884.
"The arbitrary symbol of a Maltese cross."

11,012.—COFFEE AND COFFEE-EXTRACT PREPARATIONS.—*George W. Earhart*, Columbus, Ohio. Application filed January 30, 1884.
"The symbol of a twig or branch of a coffee-plant with its leaves, blossoms, and ripening berries arranged across an elliptical figure."

11,013.—PLAYING-CARDS.—*John Gang*, New York, N. Y. Application filed February 4, 1884.
"The arbitrary word-symbol 'EDGE.'"

11,014.—BUTTON-FASTENERS.—*J. K. Krieg & Co.*, New York, N. Y. Application filed February 14, 1884.
"The word 'BOSS.'"

11,015.—PRESSED CLOVER-BLOSSOMS AND FLUID AND SOLID EXTRACTS THEREFROM.—*D. Needham's Sons*, Chicago, Ill. Application filed December 26, 1883.
"A representation or illustration of a clover-blossom."

11,016.—FERTILIZER.—*James D. Simmons*, Hagerstown, Md. Application filed December 22, 1883.
"A figure representing the bust of the registrant, in connection with the words and letters 'THE WHEAT AND CLOVER PRODUCER.'"

11,017.—SAFETY-MATCHES.—*C. C. Abel & Co.*, New York, N. Y. Application filed January 15, 1884.
"The word 'WASHINGTON,' the representation of the head of Washington, a shield, an eagle, and a scroll in any arrangement."

11,018.—FILES, STRAW-KNIVES, GRASS-HOOKS, SAWS, SICKLES, AND SCYTHES.—*William Kirkby Peace* and *Hugh Kirkby Peace*, Sheffield, England. Application filed January 5, 1884.
"The word 'EAGLE' or the pictorial representation of an eagle."

11,019.—TUNING-PINS.—*Wilhelm Wagner, Jr.*, Plettenberg, Prussia. Application filed February 21, 1884.
"The representation of a bee with spread wings, with the letters 'W W' imprinted upon said wings."

11,020.—WRITING AND CARD PAPER AND ENVELOPES.—*Whiting Paper Company*, Holyoke, Mass. Application filed February 2, 1884.
"The letter 'W' and the representation of an acorn within it."

11,021.—CANNED FRUIT AND VEGETABLES.—*Knowles & Anderson*, Camden, N. J. Application filed February 15, 1884.
"The word-symbol 'ANDERSON'S.'"

11,022.—GLASS BOTTLES.—*Henry Martin*, Pittsburg, Pa. Application filed February 5, 1884.
"The letter 'G,' words 'UNION,' 'SEAL,' and letter 'W,' placed one above the other in the order named."

11,023.—RUBBER BUTTONS.—*Novelty Rubber Company*, New Brunswick, N. J. Application filed December 1, 1883.
"The representation of a winged animal figure with a button in its claws, which has on its face the letters 'N R C' in monogram."

11,024.—KID GLOVES.—*Oberteuffer, Abegg & Daeniker*, New York, N. Y. Application filed February 9, 1884.
"A picture, image, engraving, or cut representing a woman holding a sword in her right hand, which rests upon her knee, her left hand resting upon a shield, and in front of her a cock with one claw resting upon a globe, and adjoining said picture is the word 'GALLIA.'"

11,025.—PLOWS.—*Arabella G. Starke*, Richmond, Va. Application filed February 12, 1884.
"The word 'DIXIE.'"

11,026.—LAUNDRY AND TOILET SOAP.—*C. L. Jones & Co.*, Boston, Mass. Application filed February 18, 1884.
"The phrase 'KNIFE AND FORK.'"

11,027.—BOOT-POLISH.—*Theodore Young Kelley*, London, England, and New York, N. Y. Application filed January 4, 1884.
"The word 'PET.'"

11,028.—HAIR-BLEACHING COMPOUND.—*Albert Simonson*, New York, N. Y. Application filed February 8, 1884.
"The word 'MESSALINA.'"

LABELS.

3,990.—Title: "CURA REUMATICO."—*Harry Hibben Ballard*, Washington, Ohio. Application filed February 21, 1884.

3,991.—Title: "BUCHU GIN" (FOR A MEDICAL PREPARATION.)—*Walter Wm. Crawford*, New York, N. Y. Application filed February 23, 1884.

3,992.—Title: "PENNYPACKER" (FOR HORSE-COLLARS.)—*A. F. Dunavan & Son*, Dayton, Ill. Application filed February 23, 1884.

3,993.—Title: "B. F. DURVIN'S EUREKA SALVE."—*Benjamin Franklin Durvin*, Richmond, Va. Application filed February 25, 1884.

3,994.—Title: "ÉLITE" (FOR SILK RIBBONS.)—*John Erskine & Co.*, New York, N. Y. Application filed February 21, 1884.

3,995.—Title: "J. E." (FOR SILK RIBBONS.)—*John Erskine & Co.*, New York, N. Y. Application filed February 21, 1884.

3,996.—Title: "GOLD MEDAL" (FOR SILK RIBBONS.)—*John Erskine & Co.*, New York, N. Y. Application filed February 21, 1884.

3,997.—Title: "CRESUS" (FOR SILK RIBBONS.)—*John Erskine & Co.*, New York, N. Y. Application filed February 21, 1884.

3,998.—Title: "ORCHILLA MILLS" (FOR TAILOR, DRESS, AND BROAD SILKS.)—*John Erskine & Co.*, New York, N. Y. Application filed February 21, 1884.

3,999.—Title: "BIRD ISLAND GUANO."—*Farmers' Fertilizer Company*, Syracuse, N. Y. Application filed February 27, 1884.

4,000.—Title: "FLEMING'S WONDERFUL CURE."—*James A. Fleming*, Ticonderoga, N. Y. Application filed February 21, 1884.

4,001.—Title: "GERMANIA LEAD WORKS, PERFECTLY PURE WHITE LEAD."—*Germania Lead Works*, San Francisco, Cal. Application filed February 23, 1884.

4,002.—Title: "JAMES' IMPERIAL PEPSIN BITTERS."—*James Hitchcock* and *Henry F. Gartey*, Chicago, Ill. Application filed February 21, 1884.

4,003.—Title: "THE OPTIMUS" (FOR A VAGINAL DOUCHE.)—*Isaac N. Morton*, New York, N. Y. Application filed February 27, 1884.

4,004.—Title: "PARSONS' SPECIALS." (FOR CIGARS.)—*William F. Parsons, Jr.*, New York, N. Y. Application filed February 27, 1884.

4,005.—Title: "BALMY SLEEP." (FOR A MEDICINAL PREPARATION.)—*James Quee*, Brooklyn, N. Y. Application filed February 21, 1884.

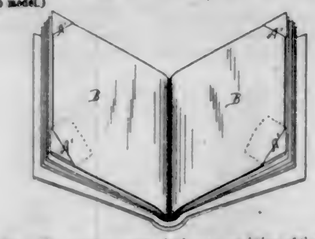
4,006.—Title: "ACME RUBBER PAINT."—*Sullivan & Ravekes*, San Francisco, Cal. Application filed February 20, 1884.

4,007.—Title: "HIGH FLYER." (FOR CIGARS AND TOBACCO.)—*Frederick Wambach*, Philadelphia, Pa. Application filed February 20, 1884.

PATENTS

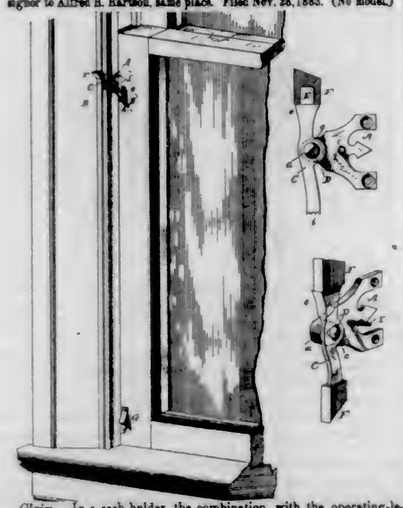
GRANTED MAR. 18, 1884.

295,141. PROTECTOR FOR BOOK-LEAVES. JOHN AKINS, Buffalo, N. Y., assignor to Orville A. Crandall, same place. Filed May 14, 1883. (No model.)



Claim.—The corner-protector for leaves, consisting of the blank A, with the projection *c* on one side and the other side cut away from *d* to the bottom, the part A' turned over from *d* to *b'*, forming a triangular receptacle or pocket, *a*, for the corners of leaves, the part *c* making one closed side, and the part from *d* up the other closed side of the pocket, substantially as specified.

295,142. SASH-FASTENER. HENRY H. ASHDOWN, Duluth, Minn., assignor to Alfred H. Harton, same place. Filed Nov. 28, 1883. (No model.)



Claim.—In a sash-holder, the combination, with the operating-lever formed with heads at each end, the upper head having a block, F, and the lower head being formed with serrations *i*, of the plates G H, the block F being adapted to bear against the corner *g* of plate G, and the serrated lower end of the lever engaging with serrations on the inclined face of plate H, as set forth.

295,143. BUGGY-SEAT. WILLIAM W. BALL, Indianapolis, Ind., assignor of one-half to Addison W. Ball, same place. Filed Jan. 9, 1884. (No model.)



Claim.—1. The combination, with the bottom, sides, and back of a buggy-seat, of corner-pieces C, which cover the corners of said sides and back and extend under the same over the corners of said bottom, and thus secure the parts of the seat together and protect the corners of the same, substantially as set forth.

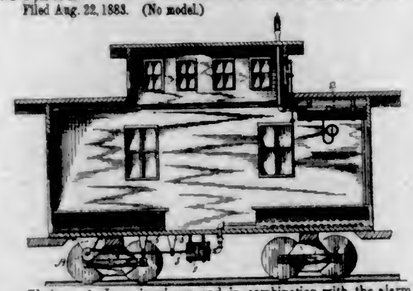
2. The combination, with the bottom, sides, and back of a buggy-seat, of corner-pieces widened at the lower end and formed to cover the corners of said bottom and be secured thereto, and extend thence up over the outside of the corners of the back and sides, substantially as described, and for the purposes specified.

3. In a buggy-seat, a corner-piece, C, having ears *c'*, formed into hooks to support the shifting-rail, in combination with said rail, substantially as set forth.

4. The combination of the usual seat parts, the shifting-rail, and a series of hooks on the seat as supports for said rail, parts of said hooks being curved to pass under said rail and a part over it, thus securing it firmly in position without the use of other fastenings, except at the ends, substantially as set forth.

5. The combination of the ordinary seat parts, A B, the corner-pieces thereon, provided with hooks, and the shifting-rail mounted in said hooks, and thus secured in position, substantially as set forth.

295,144. CAR-SIGNAL. WILLIAM D. BEATY, Mannington, W. Va. Filed Aug. 22, 1883. (No model.)

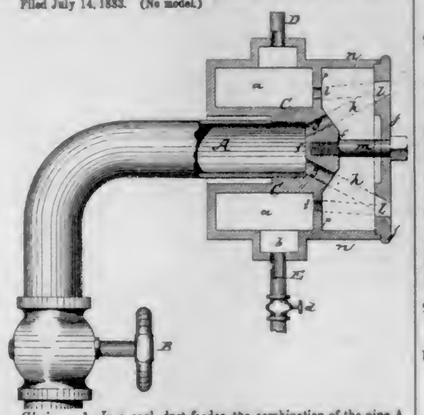


Claim.—1. In a signal-car, and in combination with the alarm thereof, the shaft A, secured beneath the car, provided with friction-wheel B, adapted to bear on the axle, and having a crank-turn, to which is secured the piston-rod of an air-pump, 1, which forces air into a reservoir, where it is held under pressure for subsequent use, the lever O, pivoted within the car, and connected to the end of the shaft A by the link *b*, and held in any desired position by the serrated plate *c*, substantially as described.

2. In a car-signal, and in combination with the alarm thereof, the shaft A, secured beneath the car, provided with friction-wheel B, adapted to bear on the axle, and having a crank-turn, to which is secured the jointed piston-rod of an air-pump having valved piston-head, said air-pump being secured to the bottom of a car, and adapted to force air through connecting-pipes into a reservoir, 2, and means for raising, lowering, and holding in place the shaft A, consisting of the lever O, pivoted inside the car, and connected to the end of the shaft A by link *b* and plate *c*, for holding the lever in any desired position, substantially as described.

3. In a car-signal, the combination of the shaft A, secured beneath the car by the hangers *a a'*, the latter of which is slotted, as described, having the crank-turn, to which is secured the jointed piston-rod supported by the hangers 5, the air-pump 1, secured beneath the car, reservoir 2, whistle, connecting-pipes, and the lever O, pivoted within the car, and connected to the shaft A by link *b*, and held in place by serrated plate *c*, all substantially as described.

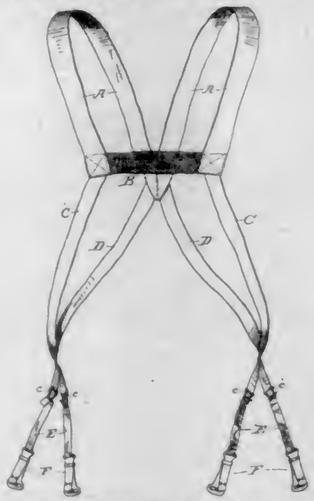
295,145. COAL-DUST FEEDER. HENRY A. BRADLEY, New York, N.Y. Filed July 14, 1883. (No model.)



Claim.—1. In a coal-dust feeder, the combination of the pipe A, with the cylindrical piece C, chamber *a*, having apertures *i*, pipe D, head *f*, having apertures *g*, chamber *h*, cap *j*, having apertures *l*, all arranged with reference to each other, substantially as herein shown and described.

2. The coal-dust feeder constructed with chamber *a*, and steam-supply pipe D, leading thereto, and with the chamber *h*, having apertures *g* for receiving coal-dust, apertures *i* for receiving steam, and apertures *l* for the discharge of the mixed steam and coal-dust, substantially as herein shown and described.

295,146. STOCKING-SUPPORTER. GERTRUDE CAMPBELL, Chicago, Ill. Filed Sept. 1, 1883. (No model.)



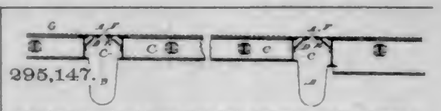
Claim.—1. The combination of the shoulder-straps connected at the point shown in the back, an elastic breast-strap connecting the front ends of the said shoulder-straps, the straps C, secured at an angle to the front ends of the same, and the straps D, connected to the back ends thereof, substantially as set forth.

2. The combination, with the strap A, straps C and D, straps E, and clasps F, of the elastic front cross-strap, B.

295,147. CABLE RAILWAY. JOHNATHAN B. CASEBOLT, San Francisco, Cal. Filed June 30, 1883. (No model.)

Brief.—The upper portion of the tunnel is formed of I-beams, inclined plates secured to the webs thereof, and top horizontal plates which form the grip-slot. The top plates are grooved where lines cross to permit passage of wheel-flanges.

Claim.—1. In a street cable railway, the cable tube or tunnel having its upper portion composed of iron beams C, with the angular plates



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extending upward and inward from their sides, substantially as herein described.

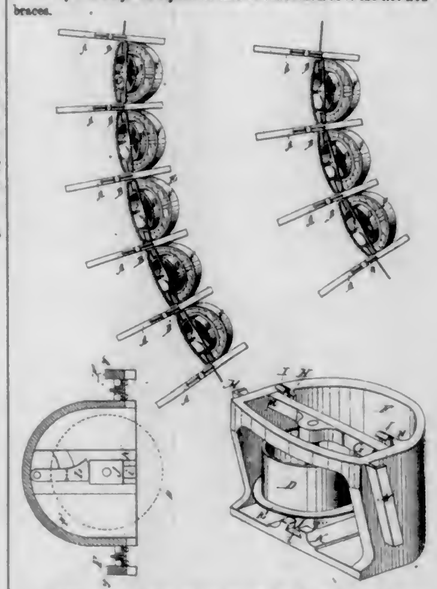
2. In a street cable railway, the cable tube or tunnel composed of the flanged iron beams C and the angular plates D, in combination with the covering-plates G, substantially as herein described.

3. In a street cable railway, the cable tube or tunnel composed of the beams C and the iron plates D, with the covering-plates G, said beams and plates being united at points of intersection to form a single rigid structure, substantially as herein described.

4. In a cable railway having the cable tube or tunnel formed of beams C, angular iron plates D, and covering-plates G, the grooves or slots H, formed in these plates in line with the inside line of the rails, substantially as herein described.

295,148. CABLE RAILWAY. JOHNATHAN B. CASEBOLT, San Francisco, Cal. Filed June 30, 1883. (No model.)

Brief.—Pulleys on adjustable axes in boxes secured to the slot-iron braces.



Claim.—1. In a cable railway having the ribs and slot-iron braces, as shown, the pulleys D, flanged at their lower ends and turning upon vertical axes, in combination with the cases or boxes F, bolted to the ribs, substantially as herein described.

2. In a cable railway, and in combination with the ribs and slot-iron braces, the flanged pulleys D, mounted in the cases F, and having their vertical shaft-journals adjustable at top or bottom, substantially as herein described.

3. The flanged pulleys D, turning upon the vertical shafts within the exterior cases, F, in combination with the bars G, supporting-lugs H, and slotted adjusting keys or wedges, substantially as herein described.

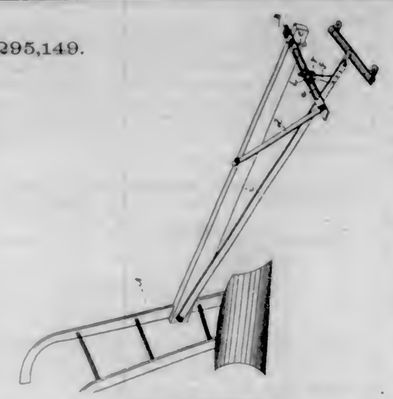
4. The flanged pulleys D, turning upon the vertical shafts within the exterior cases, F, in combination with the boxes or steps J, moving in guides K, and the cam or cam-shaped lever-arm L, substantially as herein described.

5. The case F, containing the pulley D, with its vertical shaft turning in boxes at G and J, in combination with the adjusting-keys at the top, and the box or step-guide K at the bottom, having the open slot *i*, substantially as herein described.

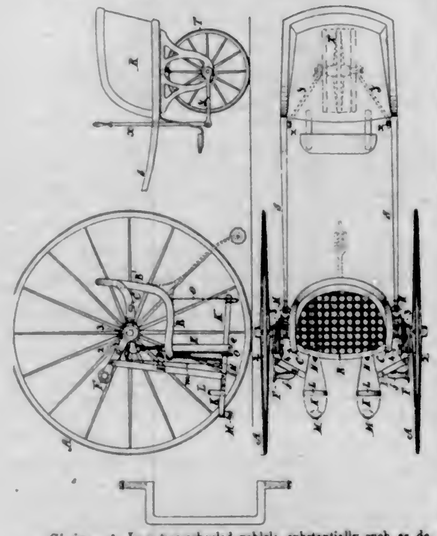
295,149. PLOW ATTACHMENT. JULES COMEAUX, Plaquemine, La. Filed June 16, 1883. (No model.)

Claim.—In combination with a plow, an attachment consisting of the slotted bar B, hanger *f*, arranged adjustably on bar B, draft-rod *i*, stirrup *e*, and brace *d*, substantially as and for the purpose specified.

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295,150. VELOCIPEDE. DANIEL CROWLEY, Boston, Mass. Filed Mar. 9, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, substantially such as described, the combination of the seat B, back B', the bars D, and the arms C C, supported directly upon the axles of the wheels A A, substantially as and for the purpose set forth.

2. The combination of the swinging seat B, the bars E, and the independently-acting treadles K, connecting-rods I I, levers F F, and the pawls and ratchets 2 3, attached, respectively, to the levers F and hubs of the wheels, as set forth.

3. The chains or cords O O, in combination with the treadles K K and the seat B, as set forth.

4. The rollers M M, in combination with treadles K K, substantially as and for the purpose set forth.

5. The brakes H, partially encircling the hubs, in combination with the rod or cord *m*, provided with a loop at its lower end, as and for the purpose set forth.

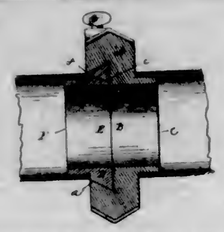
6. The combination of the annex R, caster-wheel T, rods *y*, and levers *x*, substantially as and for the purpose set forth.

7. A chair or seat, B B', having arms C C, with axles affixed thereto, substantially as set forth.

295,151. HOSE-COUPLING. JAMES CUMMINS, Janesville, Minn. Filed July 27, 1883. (No model.)

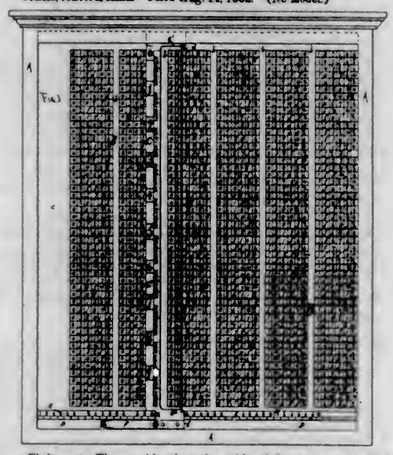
Claim.—1. In a hose-coupling, the section A, formed with a dovetailed slot, *a*, in combination with the other section, D, of a dovetail form, so as to fit entirely within the said slot, and a packing-ring fitted in a depression of the slot *a* in section A, as set forth.

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2. In a hose-coupling, the section A, formed with a dovetailed slot, *a*, in combination with the other section, D, of a dovetail form, so as to fit entirely within the said slot, a thumb-screw working through one side of section A and engaging with the other section, and a packing-ring fitted in a depression, *c*, of the slot *a* of said section A, as set forth.

295,152. INSTRUMENT FOR CALCULATING INTEREST, &c. URIAH CURTIS, Concord, Minn. Filed Aug. 14, 1882. (No model.)

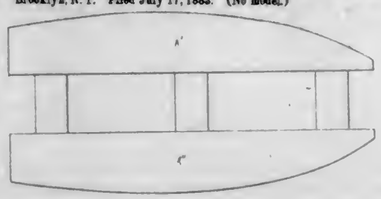


Claim.—1. The combination of a table of figures computed to denote the progressive amounts of interest or taxation at a given rate, arranged in columns, which are divided into blocks by suitable means of indication, substantially as described, a key-scale divided, numbered, and arranged to correspond with the table, as set forth, and a sliding gage graduated with prominent figures in the order of the digits, and with intermediate figures, as specified, and provided with a decimal index-wire, all for the purposes herein set forth.

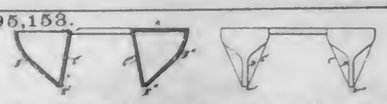
2. A table of figures computed to denote the progressive amounts of interest or taxation from a given rate, arranged in columns and divided into blocks, as described, in combination with a key-scale divided and numbered to correspond with the columns of figures, as set forth, a series of sliding gages, graduated as specified, and provided with decimal-pointers, whereby the several parts will operate as and for the purposes set forth.

3. The combination of a table of figures computed to denote the progressive amounts of interest or taxation from a given rate, a key, and a movable gage divided and numbered to indicate the valuations on which the computation is to be made, a decimal-pointing wire connected to the gage, and an adjustable plate for increasing or decreasing the rate, the several parts being arranged to operate substantially as set forth.

295,153. VESSEL HAVING DIVIDED HULL. JACOB DAVID, Brooklyn, N.Y. Filed July 17, 1883. (No model.)

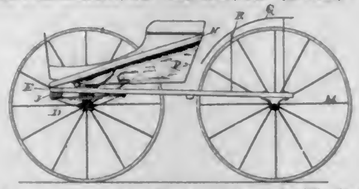


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Claim.—The hull of a vessel constructed in any of the usual general forms on the outer sides and divided into two parts, having the plane of division longitudinally through the center, the approximating or inner sides diverging downward from the deck at an acute angle toward the keel or bottom of each section, each approximating or inner side of each section being in parallel planes to each other throughout, except at the run or counter, which is cut away and narrowed at the stern of each section to form a rudder-post, thus making the approximating sides farther apart at the stern and having the deck of each section on a horizontal plane, substantially as shown and described.

295,154. THREE-WHEELED VEHICLE. WALTER S. DILATUSH and JOHN R. DRAKE, Lebanon, Ohio. Filed Dec. 31, 1883. (No model.)



Claim.—1. In an animal-tricycle or road-cart, the fifth-wheel arranged at an angle, as described, substantially as herein set forth.

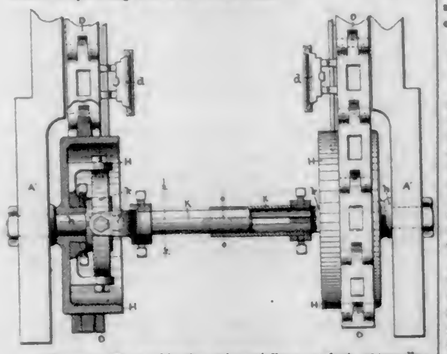
2. In an animal-tricycle, the arrangement of a rear trailing or wheel centrally located, in combination with the reaches, arranged as specified, substantially as herein set forth.

3. In an animal-tricycle or road-cart, the combination of the fifth-wheel, arranged at the angle specified, whereby the bed and the hind wheel are inclined at an angle when the axle is turned, with the axle, for the purpose specified, substantially as herein set forth.

4. The combination of the fifth-wheel, arranged as specified, so that the bed and hind wheel may be inclined to one side in turning, with the reaches and hind wheel, substantially as herein set forth.

295,155. TENTERING-MACHINE. OTIS E. DROWN, Lincoln, R. I., assignor to Ann Maria Drown, same place, and William F. Sayles and Frederic C. Sayles, both of Pawtucket, R. I. Filed Apr. 21, 1883. (No model.)

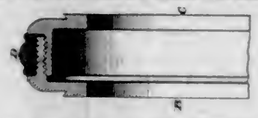
Brief.—The side rails which support the chains are mounted so that they may be adjusted toward and from each other by means of adjusting-screws pivotally mounted at their centers to enable the machine to tenter fabrics of different widths, and at the receiving end are so pivoted that they may be made to diverge, and thereby stretch the fabric. Said rails are also arranged so as to have a longitudinal reciprocating motion, to give to the fabric a certain peculiarly desirable finish. Sprocket-wheels are employed at both ends of the machine, and to the hubs of those at the receiving end are attached gimbal or universal joints connected together by a shaft, thus connecting said wheels, so that they may revolve together at the same speed without interfering with the longitudinal reciprocating motion of the side rails.



Claim.—1. The combination, substantially as set forth, of traveling chains carrying tenter-hooks or equivalent devices, side rails for supporting the chains, mechanism for alternately longitudinally reciprocating said side rails, sprocket-wheels for each chain at each end of the machine and engaging with said chains, and a shaft uniting the sprocket-wheels at the receiving end of the machine, and devices for joint-connecting said shafts to said wheels.

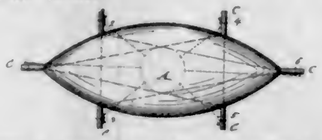
2. The combination, substantially as before set forth, of traveling chains carrying tenter-hooks or equivalent devices, side rails for supporting said chains, and devices for adjusting them relatively to each other, and mechanism for alternately longitudinally reciprocating the same, sprocket-wheels for each chain at each end of the machine, engaging with said chains, a telescopic shaft uniting the sprocket-wheels at the receiving end of the machine, and devices for joint-connecting said shafts to said wheels.

295,156. PROCESS OF MAKING WATCH-CASE CENTERS. JOHN C. DUBBER, Newport, Ky. Filed Nov. 15, 1883. (No model.)



Claim.—The within-described process of making watch-case centers, which process consists in forming said center of a ring and a pair of "halves," and then screwing together these three component members, substantially as herein described and set forth.

295,157. AIR-SHIP. CHARLES P. FITT, Philadelphia, Pa. Filed Jan. 27, 1883. (No model.)



Claim.—1. An air-ship having the lower part of its body conically-tapered toward its bottom, and provided above the tapered part with horizontally-projecting valved pipes for the discharge and regulation of heated air, whereby the air-ship may be propelled and steered in either direction, substantially as described.

2. An air-ship the body of which is provided with valved horizontally-projecting discharge-pipes, and with means for regulating the valves, and at its lower part with a downwardly-extending conically-tapering part, having valved air-inlet openings, substantially as specified.

295,158. SPLIT RING. WM. M. FISHER, Attleborough, Mass. Filed Dec. 17, 1883. (No model.)



Claim.—1. As an improved article of manufacture, an oval-shaped split ring, as and for the purposes set forth.

2. As an improved article of manufacture, the herein-described oval split ring having its free ends terminating on opposite sides at one end of the ring, all substantially as shown, and for the purpose set forth.

295,159. PRESS. ABRAHAM FITTS, HERBERT M. REED, and ALONZO E. BLANCHARD, Worcester, Mass. Filed May 16, 1883. (No model.)

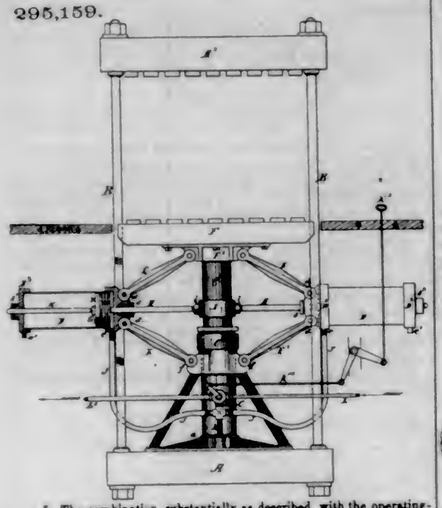
Claim.—1. In a knuckle-joint press, the combination, substantially as described, with the operating-arms, of two cylinders arranged in connection with the knuckle-joints, and respectively provided with pistons that are connected one with the other, as specified, and means for producing pressure within said cylinders for effecting the operation of the arms and press-follower by the movement of said cylinders, in the manner set forth.

2. The combination, substantially as described, of the operating-arms, the cylinders arranged in connection with the knuckle-joints of said arms and movable therewith, and the piston supported at stationary position in relation to the press, for the purposes set forth.

3. The combination, substantially as described, of the operating-arms, the cylinders arranged on the knuckle-joints of said arms, the pistons attached to rods passing through the respective cylinders and rigidly connecting said pistons to a ring or slide-piece supported on a central guide, and means for producing pressure within said cylinders for effecting movement of the parts, as set forth.

4. The combination, substantially as described, of the pressing-follower, the operating-arms, the cylinders supported on the knuckle-joint plates, the pistons in the respective cylinders joined to each other by a rigid connecting-rod, the flexible pipes communicating with the interior of said cylinders, and a valve for directing the flow to or from said cylinders, as set forth.

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5. The combination, substantially as described, with the operating-arms, of the knuckle-joint plates provided with joints or seats *d* for the arms, stuffing-boxes *s*, and connecting-flanges for attaching cylinders thereto, the cylinders D, and pistons G, as and for the purpose set forth.

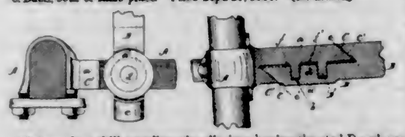
6. In a knuckle-joint press having operating-arms that fold together in the manner set forth, the combination, with the pressing-follower, the knuckle-jointed operating-arms, and an actuating mechanism for effecting pressure through said arms, of a hydraulic elevating-cylinder and piston-column arranged between the press-bed and follower, and means for producing pressure within said cylinder, substantially as and for the purpose set forth.

7. The combination, substantially as described, of the pressing-follower, the hydraulic elevating-cylinder and column arranged beneath said follower, the operating-arms, the hydraulic cylinders arranged upon the knuckle-joints of said arms, the pistons of said cylinders rigidly interconnected by the coupled rods guided by a ring upon the elevating-column, the pipes for delivering water to the respective cylinders, and a directing-valve for regulating the flow thereto, as set forth.

8. The combination, substantially as described, with the operating-arms in a knuckle-joint press, of the joint-plates or cylinder-heads having screw-threaded flanges, stuffing-boxes and ports, as shown, and the cylinder-shell externally screw-threaded and screwed into the flanges of said joint-plates.

9. A press the follower in which is operated by knuckle-jointed arms, in combination with hydrostatic presses mounted upon or acting directly in connection with the knuckle-joints of said arms, and means for connecting together said hydrostatic presses, whereby they are adapted for exerting their resistant forces one against the other, as set forth.

295,160. THILL-COUPLING. HENRY E. GAMBLE, Evanston, Ill., assignor, by direct and mesne assignments, to Oscar H. Mann and Augustine C. Buell, both of same place. Filed Sept. 29, 1883. (No model.)

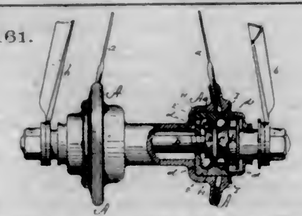


Claim.—In a thill-coupling, the clip-iron having the stud D and surfaces *c c'*, and the thill-iron B, having the recess to admit the stud, closed at its outer side, and the surfaces *e e'*, in combination with an intermediate washer, *f*, of rubber or equivalent elastic material, encircling the journal, as described, whereby the washer is caused to prevent noise, compensate for wear, and exclude dust from the wearing-surfaces.

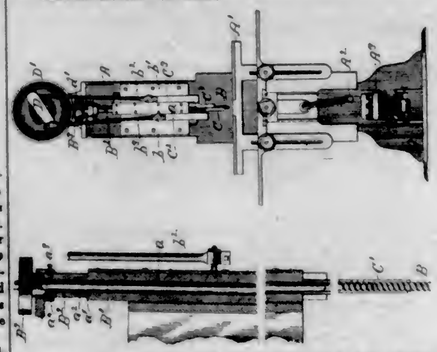
295,161. BEARING FOR VELOCIPEDES. JOHN C. GARROOD, Boston, Mass. Filed Dec. 24, 1883. (No model.)

Claim.—A double-ball bearing for bicycles and other velocipedes, consisting, essentially, of an external annular box or surface provided with two internal annular grooves, H I, the groove H being nearly semicircular in cross-section, and the groove I being an end groove and nearly quadrantal in cross-section, an internal bearing provided with the similar grooves C D, the nearly-semicircular groove C being situated opposite the nearly-quadrantal groove I, and the nearly-quadrantal groove I opposite the nearly-semicircular groove H, and the two rows of balls *d d*, all constructed and arranged substantially as and for the purpose herein set forth.

295,161.



295,162. MORTISING-MACHINE. WILLIAM W. OREEN, Chicago, Ill. Filed Nov. 20, 1883. (No model.)



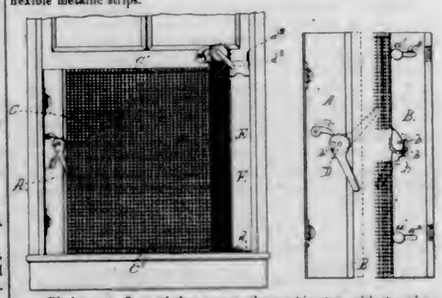
Claim.—1. In a mortising-machine, the combination, with a boring-auger, of the chisels C C', arranged on each side of said auger and adapted to have an alternate reciprocating movement, substantially as and for the purpose set forth.

2. In a mortising-machine, the combination of the auger-stem, the socket-piece *a*, provided on the upper end with the shoulder a' and the neck a^2, and the sleeve B, resting upon the shoulder a' and neck a^2, and having band-pulley B^2, substantially as described.

3. In a mortising-machine, the combination of a boring-auger having a socket-piece, *a*, and chisels C and C', having reciprocating cross-heads C^2 and C^2 on each side of the socket-piece *a*, substantially as described.

295,163. WINDOW-SCREEN. JOHN A. GROVE, Bluffton, Ind. Filed June 21, 1883. (No model.)

Brief.—A vertically-placed spring-roller window-screen, one edge being secured between adjustable strips placed one upon the other, and the other edge secured to the roller. One of the plates has an eccentric-lever and ratchet, and so attached and operating with the other strip as to make taut the window-screen. The roller is supported in suitable brackets to one side of window-frame, and is provided with operating mechanism. The free edges of the window-screen are re-enforced by flexible metallic strips.



Claim.—1. In a window-screen, the combination, with the wire-cloth, of the plates or strips adjustable one upon the other, and means

for the retention of the opposite edge of the cloth, substantially as and for the purpose set forth.

2. In a window-screen, the combination, with the screen proper, of the cylinder and its operating mechanism, and the plates or strips, one having an eccentric-lever and ratchet, and the other having slots, one of which receives a pin or projection of the eccentric-lever, and the others receiving headed projections or rivets of the former plate, substantially as and for the purpose set forth.

3. In a window-screen, the combination, with the wire-cloth cylinder, of the bracket having the end flange projected upward therefrom, the lower bearing-plate having a socket and slot, and the slat or bar arranged between the bracket and said plate, substantially as and for the purpose set forth.

4. In a window-screen, the combination, substantially as described, of the wire-cloth, the adjustable plates A B, connecting one end of said cloth to the window at one side of the latter, the roller E, made fast to the other end of the cloth, and journaled in suitable supports secured in the opposite side of the window, the bevel-pinion *g*, secured on the said roller, and the bevel-gear wheel *f*, provided with pinion *g'* and meshed with pinion *g*, all arranged and operating substantially as set forth.

5. In a window-screen, the wire-cloth having its free edges re-enforced by flexible metallic strips suitably woven upon or into the cloth, substantially as and for the purposes specified.

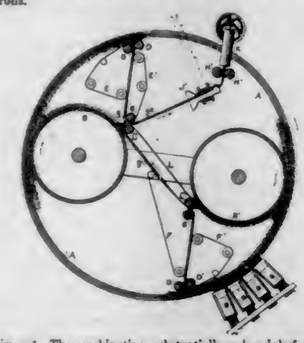
295,164. HOSE ATTACHMENT FOR STREET-WASHERS. CHAS. GUMLICH, Jr., Cleveland, Ohio. Filed May 17, 1883. (No model.)



Claim.—The combination of the pipe A with the neck C, provided with the flange *c*, the spring *s*, and the nut B, whereby a swivel-joint is formed, substantially as described.

295,165. MACHINE FOR COMBING FIBROUS MATERIAL. WILLIAM HALL and JOHN MIDGLEY, Pawtucket, R. I., assignors of one-half to William F. Sayles and Frederic C. Sayles, both of same place. Filed Apr. 21, 1883. (No model.)

Brief.—The two slivers, produced on opposite sides of the machine, are prevented from winding about the rolls which deliver them, and are joined by an endless apron passing around one of each of the set of said delivery-rolls.

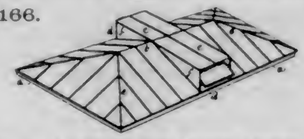


Claim.—1. The combination, substantially as hereinbefore set forth, of the revolving combing-cylinders B B', delivery-rolls C *c* and C' *c'*, appropriate thereto, and an endless traveling apron or conveyer arranged to embrace the rolls C and C' of the two sets of delivery-rolls pertaining to the combing-cylinders, respectively, substantially as described.

2. The combination, substantially as hereinbefore set forth, of the revolving combing-cylinder A, the revolving combing-cylinders B B', delivery-rolls C *c* and C' *c'*, appropriate, respectively, to the latter combs, means, substantially as described, for conveying the combed slivers from the comb A to the said rolls, and an endless traveling apron or conveyer directly connecting the rolls C and C' of the two sets of delivery-rolls, whereby the combed product is conducted so as to be united in a single sliver, as set forth.

295,166. SKYLIGHT. GEORGE HAYES, New York, N. Y. Filed Nov. 7, 1881. (No model.)

Brief.—Provides a superstructure for a skylight, consisting of a skeleton frame having vertical glazed sides and top, and a vertical open face with a valve.

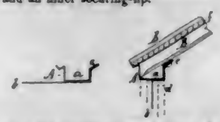


Claim.—1. In comomation with a skylight, a skeleton frame with sides *f* and top or roof *s*, constituting a superstructure raised above the plane of the glass plates of the skylight, and having a vertical face, *d*, as a ventilator, the ventilating-face *d* provided with valve or louver, essentially as shown, for excluding rain, hail, or snow, substantially as described.

2. In combination with the base-frame *a*, and ridge *b* and sloping bars *c*, a boxing having glazed sides *f* and top or roof *s*, and having a ventilating-face *d*, the said boxing open below to the interior of the structure below the skylight, to which it constitutes a superstructure for ventilation, substantially as described and shown.

295,167. SKYLIGHT. GEORGE HAYES, New York, N. Y. Filed July 5, 1883. (No model.)

Brief.—The base-frame of a skylight constructed with an extended adjustable flange and an inner securing-lip.



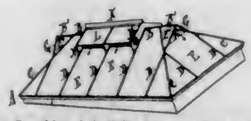
Claim.—1. As a new article of manufacture, the base-frame of a skylight formed with an extended adjustable flange attached to or a part thereof, adapted to be bent to curbs of varying widths and lengths, substantially as shown and described.

2. In combination with the base-frame of a skylight, a plate or flange, *b*, formed into several rabbets, *d*, adjusting the frame to suit openings of varying dimensions, substantially as shown and described.

3. In combination with the base-frame of a skylight and adjustable plate *b*, the necking, flange, or lip *a*, substantially as and for the purpose described and shown.

295,168. VENTILATING-SKYLIGHT. GEORGE HAYES, New York, N. Y. Filed July 17, 1883. (No model.)

Brief.—Provides ventilator-apertures in the skylight-glass, located adjacent to the ridge and covered with a hood formed with vertical and inclined top bars, the top and side being glazed. The ridge-bar is extended horizontally, and has gable-bars sloping to the hipped bars of the skylight, the parts being glazed and forming a ventilator-opening. The upper edge of the glass, which is cut away, has a supporting rabbeted cross-bar and gutter. The ridge-bar has a vertical extension with rabbets supporting glass plates. The ventilator-openings have louver-slats.



Claim.—1. In a hipped skylight, the ventilator-aperture F, located adjacent to the ridge, as shown, and provided with a hood or raised roof of metal frame and glass, essentially as shown and described.

2. In a hipped skylight, the combination of extension ridge-bar B' and gable or sloping bars G, with hipped bars C, to form frame for a ventilator-hood, substantially as shown and described.

3. In a hipped skylight, the ventilator consisting of opening F, chamber F', extension-ridge B', sloping or gable bars G, and glass sheets E', in combination with hip-bars C, substantially as shown and described.

4. In combination with gable-bars G, hip-bars C, and glass E, the cross-bar H, provided with rabbet *a* and gutter *b*, substantially as shown and described.

5. In combination with ridge-bar B' and gable-bars G, one or more movable or stationary louver slats or valves, I, substantially as shown and described.

6. In a hipped skylight, the combination of two or more ventilators located at bot below the apex of the skylight, each constructed as herein set forth, and adapted to operate simultaneously or individually, as and for the purpose described and set forth.

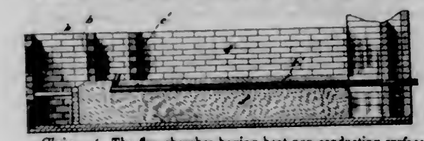
7. The vertical extension K or superaddition to the ridge-bar, provided with rabbets *c*, to form supports for sheets of glass L, essentially as shown and described.

8. In combination with super ridge or extension K, the frame-bars M and N, with glass L, and sides O, constituting a hood to an opening

F, substantially as shown and described.

9. In a double-pitch skylight, two apertures, F, provided with a hood, K, having two slopes, each slope glazed, as at L, the glasses supported by frame-work of bent sheet metal resting upon the ridge, and sloping bars of the skylight, substantially as shown and described.

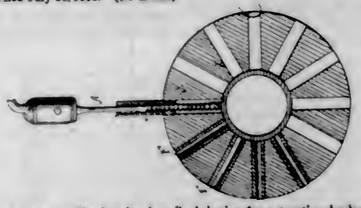
295,169. EVAPORATING APPARATUS. MARTIN PETER HAYES, Benforth, Ontario, Canada. Filed June 26, 1883. (No model.)



Claim.—1. The flue-chamber having heat non-conducting surface, consisting of the double thickness of boards and coal or wood ashes with salt, substantially as and for the purpose set forth.

2. The combination of the evaporating-pan of the inclosure or block, having the longitudinal flues, with a heat non-conducting surface or floor, the furnace combustion-chamber, the chimney having an air-space surrounding its flue, and the hot-air pipes, substantially as and for the purpose set forth.

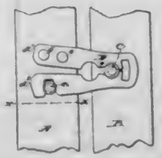
295,170. TENON-EXTRACTOR. OBADIAH HENDRIX, Macon, Miss. Filed July 21, 1883. (No model.)



Claim.—1. The herein-described device for extracting broken-off tenons from the hubs of vehicle-wheels, the same consisting of a stem or shank squared at its upper end for insertion into a brace, and having at its lower end a cylindrical bit with a smooth blunt point, and provided with a spiral flange or thread, the upper edge of which is square, or at right angles to the vertical axis of the bit, substantially as and for the purpose herein shown and specified.

2. The herein-described process of extracting broken-off tenons from the hubs of vehicle-wheels, the same consisting in first boring through the said tenon a hole extending to the axle-box, and next driving into the said hole a screw-threaded or spirally-flanged bit of slightly larger diameter than the said hole, and continuing the revolution of the said bit when it reaches and presses against the axle-box, whereby the counter-pressure thus generated shall serve to drive the tenon out of the mortise, substantially as set forth.

295,171. CORSET-STEEL FASTENING. LUCIAN HILL, North Brookfield, Mass., assignor to Theodore C. Bates, same place. Filed Sept. 8, 1883. (No model.)

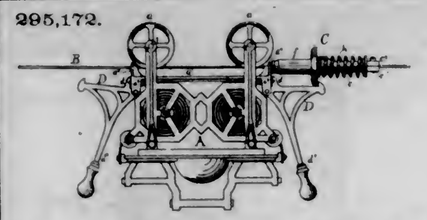


Claim.—The steel B and its headed stud, combined with the steel A and its attached clasp D, one end of the said clasp being connected loosely with the said steel, whereby the clasp is permitted to expand laterally as the stud passes from the larger into the smaller part of the eye of the clasp, and then springs back of and locks the said stud in the smaller part S of the clasp, all substantially as set forth.

295,172. CASH AND PARCEL CARRYING SYSTEM. WARREN S. HILL, Boston, Mass. Filed Feb. 6, 1884. (No model.)

Claim.—1. In a cash and parcel carrying system, a car provided with a pivoted booked arm held against a stop by a spring, and a buffer disposed axially on the wire way, consisting of a fixed part secured to the wire, and a yielding part moving against a spring, and having a retaining-flange to engage with the pivoted booked arm, substantially as set forth.

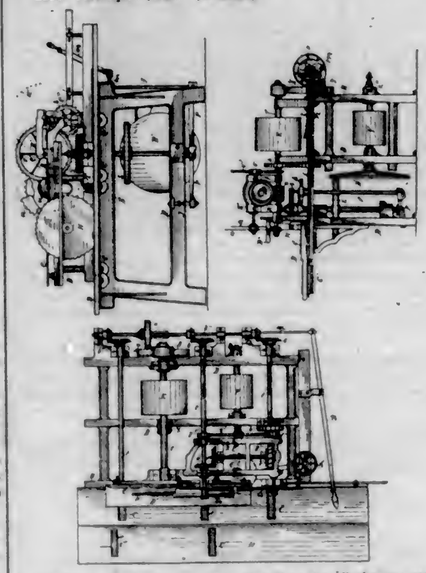
295,172.



2. In a buffer for a cash-carrying system, the combination of the fixed part *e* with lug *e'*, strap *e²*, screws *e³*, and pin *e⁴*, and the movable part *f*, with retaining-flange *f'*, slot *f²*, washer *f³*, and the spring *h*, substantially as shown and described.

3. In a cash-carrying car, the combination of the handle *d²*, made integral with the pivoted hooked arm D, the stop *d*, spring *g*, and frame *e'*, substantially as shown and described.

295,173. LATH-SAWING MACHINE. WILLIAM E. HILL, Kalamazoo, Mich. Filed Apr. 27, 1883. (No model.)



Claim.—1. In a lath-sawing machine, the perpendicular saw and the horizontal saws, in combination with the feed-rollers, the carrier-rollers, and the perpendicular serrated feed-disks, all arranged and adapted to operate substantially as described.

2. In a lath-sawing machine, the combination, with the perpendicular lath-saw, the horizontal lath-saws secured to a vertically-adjustable shaft, and the hinged support to said shaft, of the serrated feed-disks and the feed and carrier rollers, all substantially as set forth.

3. The combination, with the perpendicular saw, the horizontal lath-saws supported by a vertical shaft, and the hinged support to said shaft, of the feed and carrier rollers and the automatically-yielding feed-disks, substantially as shown.

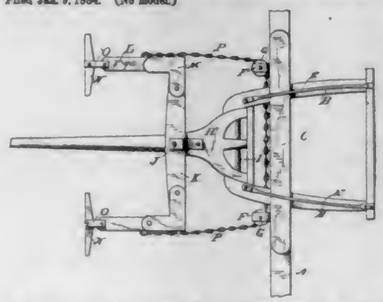
4. In a lath-machine, the combination, with the perpendicular and horizontal lath-saws, of the feed-disks and the feed-rollers, the latter provided with gear at the rear ends, the shaft having the bevel-gear meshing with the gear of said feed-roller shafts, the laterally-adjustable friction-wheel, the disk having the center depression connected with a power-shaft, and the bar and pivoted lever adapted for operating said friction-wheel, all located and adapted substantially as set forth.

5. The perpendicular lath-saw, feed-disks, and feed-rollers, in combination with a series of horizontal lath-saws mounted upon a vertical shaft which is vertically adjustable, a hinged support to the lower end of said shaft, and means for operating said hinged support, substantially as described.

6. The perpendicular lath-saw, means shown for feeding the slab, the series of horizontal lath and picket saws secured to a vertically-ad-

justable shaft, said shaft provided with the horizontal friction-wheel, the power-shaft having the friction-disk adapted to engage said friction-wheel, and means for adjusting said vertical saw-shaft, substantially as set forth.

295,174. DRAFT-EQUALIZER. WILLIAM B. HUBBARD, Greenville, Ill. Filed Jan. 9, 1884. (No model.)



Claim.—1. In a draft-equalizer, the combination, with the front axle, having pulleys attached thereto, of the whiffletrees secured to poles having a jointed connection with the double-tree, and chains passing through the pulleys and connecting the poles, as set forth.

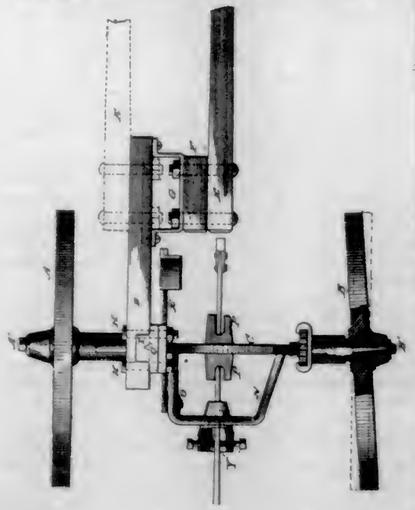
2. In a draft-equalizer, the combination, with the front axle, having pulleys or rollers attached thereto, of a chain passing through the pulleys or rollers, and whiffletrees connecting with the ends of the chain and having a jointed connection with the double-tree, as and for the purpose set forth.

3. In a draft-equalizer, the combination, with the front axle, having pulleys or rollers attached to the front face thereof, of the chain passing through the pulleys or rollers, a double-tree secured to the tongue, poles having joint-plates connecting with the ends of the double-tree, and whiffletrees attached to the poles, as set forth.

4. In a draft-equalizer, the combination, with the front axle, having pulleys or rollers attached to the front thereof, of the chain passing through the pulleys, poles provided with elbow-joint plates secured to the double-tree and connecting with the ends of the chain, and whiffletrees having a link-connection with the poles, as set forth.

5. In a draft equalizer, the combination, with the front axle and hounds, and pulleys or rollers attached to the axle, of the tongue pivoted to the front ends of the hounds, a chain passing through the pulleys, poles having a jointed connection with the double-tree, secured to the tongue, and whiffletrees attached to the poles, as set forth.

295,175. SULKY-PLOW. FRANKLIN B. HUNT, Richmond, Ind., assignor to the Richmond Sulky Plow Company, same place. Filed Jan. 26, 1884. (No model.)



Claim.—1. In a side-spring vehicle, the combination, with the head-block or like rigid transverse bar, of two side springs shackled thereto and a semi-elliptic spring arranged with its concavity forward, clipped near its middle to the rear axle, and connected by its ends with the side springs, substantially as and for the purposes specified.

2. In a side-spring vehicle, the combination, with the bed and running-gear, of two side springs, a rigid transverse bar to which the side springs are connected at one end, and a semi-elliptic spring or spring-bar to which the side springs are connected at their opposite ends, substantially as and for the purposes specified.

Claim.—1. The land-wheel B, placed obliquely to the furrow, in combination with the beam-holder Y', provided with a wedge-shaped hole and set-screws for the oblique adjustment of the plow in relation to the wheel B, substantially as set forth.

2. The beam-holder Y', provided with a wedge-shaped hole and set-screws, and a pivot, T, for swiveling the plow-beam to the crank or bail, substantially as set forth.

3. The pivoting devices X W, provided with the recess Y, in combination with the reversible cap V, whereby the plow may be loosely pivoted or made stationary laterally, as may be desired, substantially as set forth.

4. The beam-holder Y', provided with the integral pivot T, having the recess U, in combination with the cap V, provided with a projection to fit into the recess U, substantially as set forth.

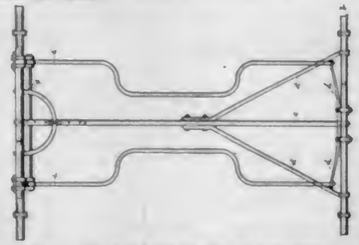
5. The combination of the axle-section C, having the vertical portion F' and the recessed plate *c*, with the axle-section C', having the projection J, spindle A', and pivot M, substantially as described.

6. The combination of the axle-section C, having plates P, and recessed plate *c*, with the axle-section C', having the projection J, and the rib I, the bar D, and the bolts H H, substantially as set forth.

7. The vertical arch-section F', having hollow stud *f* on one side and the hollow stud H' on its other side, the sector G', having a circular half-recess, the spindle-slide L', loop K', and lever I', substantially as set forth.

8. In combination with axle A', having the extension M, hand-lever L, and bail N, the foot-lever K, centrally pivoted to the axle, and its rear end resting beneath the bail N, substantially as set forth.

295,176. VEHICLE-SPRING. RUDOLPH S. HUNSICKER, Pittsburg, Pa., assignor to himself and William A. Herron, same place. Filed Aug. 9, 1883. (No model.)



Claim.—1. In a side-spring vehicle, the combination, with the head-block or like rigid transverse bar, of two side springs shackled thereto and a semi-elliptic spring arranged with its concavity forward, clipped near its middle to the rear axle, and connected by its ends with the side springs, substantially as and for the purposes specified.

2. In a side-spring vehicle, the combination, with the bed and running-gear, of two side springs, a rigid transverse bar to which the side springs are connected at one end, and a semi-elliptic spring or spring-bar to which the side springs are connected at their opposite ends, substantially as and for the purposes specified.

295,177. VEHICLE-SPRING. RUDOLPH S. HUNSICKER, Pittsburg, Pa., assignor to himself and William A. Herron, same place. Filed Aug. 10, 1883. (No model.)



Claim.—1. A spring having two or more spirals parallel with each other and united by a cross-piece at their upper ends, the spirals being arranged to act by extension in lines on or approximating the same vertical plane, substantially as and for the purpose specified.

2. In a wagon or other vehicle, a double spiral spring having two or more spirals joined or connected at their upper ends, the spirals acting by extension, the body of the vehicle being suspended from the lower ends thereof, substantially as and for the purpose specified.

3. In a vehicle having side bars and springs extending transversely between the same, the combination, with the side bars and transverse springs, of interposed extensible spiral springs arranged to suspend the transverse springs from the side bars, substantially as and for the purposes specified.

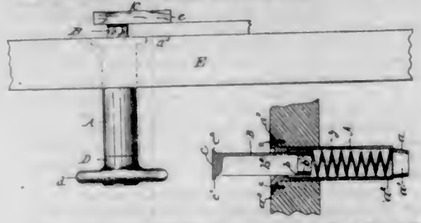
295,178. COMBINED BENCH DOG AND CLAMP. CHAS. C. JOHNSON, Springfield, Vt., assignor to the Miller's Falls Company, Miller's Falls, Mass. Filed Dec. 19, 1883. (No model.)

Claim.—1. The bench-dog herein described, consisting of the removable head C, fixed head *c*, with hollow shank B, socket A, and screw-spindle *z*, the said shank, spring, and spindle inclosed in socket A, and all arranged, adapted, and combined as and for the purposes specified.

2. A bench-dog provided with a removable head, adapted to be used as a bench-clamp, and arranged to be at all times vertically movable in relation to the face of the bench, irrespective of the actuating mechanism, for operating the said head as a clamp, substantially as and for the purposes set forth.

3. In a bench hook and dog, a head provided with a hollow shank having a threaded orifice near the bottom, the said shank fitted to a hollow socket and supported by a spring, and adapted to be actuated vertically by a screw-spindle, substantially as and for the purposes set forth.

4. A bench hook or dog provided with a hollow socket and hollow shank, the sides externally interchangeably fitted to said socket, and having an independent actuating screw-spindle adapted to be operated from the bottom to adjust the said shank and its attachments vertically, the said shank and its adjusting mechanism supported by a spring, all combined substantially as and for the purposes set forth.



5. In a bench hook or dog, the combination of the hollow socket A, with shoulder a^2, the hollow shank B, provided with the threaded orifice b', and with head *c*, adapted to be inserted in said socket A, so that either side of head *c* may be presented to the work, and the spring *y* and independent screw-spindle inclosed in socket A, for adjusting the head *c* and shank B vertically, all substantially as and for the purposes set forth.

6. In a bench hook or dog, the head *c*, formed square, with undercut bevel c' upon all sides, in combination with the removable head C, provided with the opening c^2 and overlapping shoulders c^3 c^3, adapted to fit the head *c*, substantially as and for the purposes set forth.

7. In a bench hook or dog, a removable head, in combination with a fixed head attached to a shank fitted to a socket, and adapted to be depressed to the surface of the bench by means of pressure upon the said removable fixed head, and adapted to resume its former vertical elevation upon the removal of said pressure, substantially as and for the purposes set forth.

8. The combination of the bench E with the head of a bench-dog adapted to act as a clamp, and be used in either direction, the said bench-dog and head being actuated vertically by suitable mechanism, substantially as and for the purposes specified.

9. The removable head C, formed oblong in shape, with the V-shaped opening at one end, the sides of said V being beveled under from the top face to the bottom, and having suitable provision for readily securing and removing the same from the fixed head *c*, substantially as and for the purposes set forth.

10. In a bench dog or clamp, a head provided with a square hollow shank, the sides of said shank interchangeably and removably fitted to a socket, said shank supported by a spring, and adapted to be actuated vertically by means of a nut and a screw-spindle, operated from below the socket, said spindle and nut being inclosed and protected from injury and dirt by the said socket, substantially as specified and described.

11. In a bench dog or clamp, the heads C *c*, the latter provided with the shank B, spring *y*, the said shank and spring inclosed in the socket A, the said heads and shank adapted to be actuated vertically from beneath the bench by an independent screw-spindle and nut, said spindle and nut inclosed in socket A, in combination with the bench E, substantially as and for the purposes set forth.

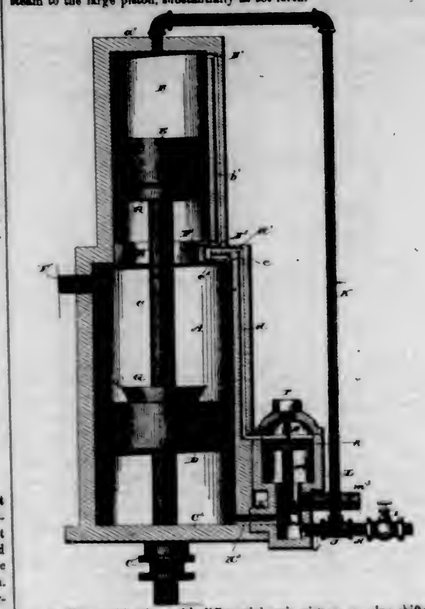
12. A removable head arranged to be attached to a bench-dog, and operated vertically in relation to the surface of the bench as a clamp by suitable mechanical means applied to the bench-dog, substantially as specified and set forth.

295,179. MOTOR. CHAS. H. KUHNS, Butler, Pa. Filed Aug. 4, 1883. (No model.)

Claim.—1. The combination, with differential main pistons and a valve shifted by said pistons, of a differential valve for regulating the exhaust, substantially as set forth.

2. The combination, with differential main pistons, a valve shifted by said pistons, and pipes for admitting steam to both pistons, of a differential valve for regulating the exhaust and cutting off the supply of steam to the main piston, substantially as set forth.

3. The combination, with differential main pistons, a valve shifted by said pistons, and pipes for admitting steam to both pistons, of a differential valve connected with the pipe which supplies steam to the larger piston, and adapted to regulate the exhaust and cut off the supply of steam to the large piston, substantially as set forth.



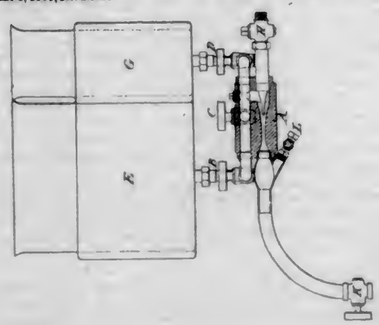
4. The combination, with differential main pistons, a valve shifted by said pistons, and pipes for supplying steam to both pistons, of a differential valve connected with the pipe which supplies steam to the large or main piston and adapted to regulate the exhaust and cut off the supply of steam in the large piston, and a throttle-valve situated beyond or outside of the two supply-pipes, substantially as set forth.

5. The combination, with differential cylinders and pistons, a sliding valve, and rings or washers for moving the valve, of a differential valve for cutting off the supply of steam in the large piston and regulating the exhaust of both cylinders, substantially as set forth.

6. The combination, with differential cylinders and pistons, the latter being provided with suitable rings or washers, the sliding valve, the steam-supply pipe, exhaust-passage F', the ports B', B, d', e^2, *e*, d^2, and d^3, and steam-passages b' *d*, of the differential valve provided with the exhaust-pipe m^3, and adapted to cut off the supply of steam in the main piston and regulate the exhaust of both cylinders, substantially as set forth.

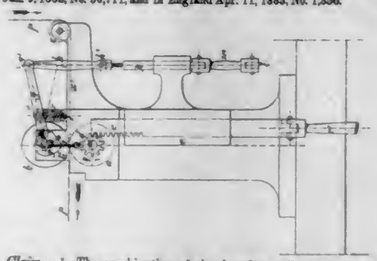
7. The combination, with the pistons and cylinders, constructed as described, and the steam-supply pipes, of the differential valve connected with the cylinders, as described, and adapted to cut off the supply of steam in the large or main piston and regulate the exhaust of both cylinders, substantially as set forth.

295,180. PROCESS OF TREATING MILK. GEORGE LAWRENCE, London, England. Filed Oct. 15, 1883. (No model.) Patented in England June 8, 1883, No. 2,869.



Claim.—The process of treating milk with fatty and other matters by passing it and them, mingled with gases, through one or more steam-ejectors, for separating and mixing the particles, substantially as described, and for the purposes set forth.

295,181. APPARATUS FOR FEEDING PAPER IN CIGARETTE MACHINES. EUGENE F. LEBLOND, Paris, France. Filed May 29, 1883. (No model.) Patented in France June 22, 1881, No. 143,549; in Belgium Jan. 9, 1882, No. 56,711, and in England Apr. 11, 1883, No. 1,830.



Claim.—1. The combination of the drawing-roller *a*, its pinion *d*, and drawing-roller *b*, with the rack *c*, mechanism, substantially as described, for reciprocating said rack, levers *g*, presser *q*, springs *r t*, and mechanism, substantially as described, for oscillating the levers *g*, all as and for the purpose specified.

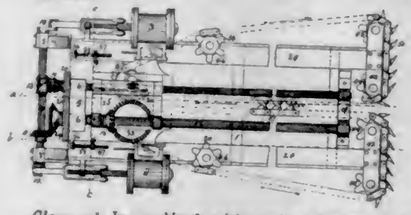
2. The combination of the drawing-rollers *a b*, and mechanism, substantially as described, for turning them and holding them together, with the presser *q*, mechanism for moving it up and down, as described, and platform *x'*, all arranged so that when the drawing-rollers are held together the presser is lifted, and when the drawing-rollers are moved apart the presser is lowered upon the platform, substantially as specified

295,182. CHRISTMAS-TREE CANDLE-HOLDER. FREDERIK LEHLER, Cleveland, Ohio. Filed Aug. 25, 1883. (No model.)



Claim.—The combination of the coiled-wire spring and candle-holder C and the leaves A A and pintle *b*, substantially as and for the purpose specified.

295,183. MINING-MACHINE. VAN AMBURGH LECHNER, Columbus, Ohio, assignor to himself and Francis M. Lechner. Filed Mar. 31, 1883. (No model.)



Claim.—1. In a machine for mining coal and like purposes, the combination of two chains provided with cutters and arranged to move in opposite directions in a plane or planes at right angles to the line of advance of the machine, substantially as and for the purposes specified.

2. The combination, in a machine for mining coal and similar substances, of two revolving chains provided with cutters mounted on suitable wheels to communicate motion to them, and moving side by side to the point of cut and then outward in opposite directions, substantially as and for the purposes described.

3. In a machine for mining coal and similar substances, two chains provided with cutters and mounted on suitable wheels for driving them side by side to the point of cut and then outward in opposite directions, in combination with a sliding carriage carrying said chains, and the mechanism for actuating the same, substantially as and for the purposes described.

4. In a machine for mining coal and similar substances, two revolving chains provided with cutters, and mechanism for moving the chains in opposite directions and at right angles to the line of advance of the machine, in combination with a sliding carriage for sustaining the chains and operating mechanism, a nut mounted on said frame, and a screw-shaft coacting with said nut to move said frame, substantially as and for the purposes described.

5. In a machine for mining coal or similar substances, two revolving chains provided with cutters, and mechanism for causing the chains to travel in reverse directions, in straight lines, and in planes at right angles to the line of advance of the machine, in combination with a stationary power-shaft, and a feather-keyed sliding pinion on said shaft, connected with and actuating the mechanism which operates the chains, substantially as and for the purposes described.

6. In a machine for mining coal and like purposes, the combination of two cutters, and mechanism, substantially as specified, for causing the cutters to move in right lines in opposite directions at right angles to the path of the machine while cutting, substantially as and for the purposes set forth.

7. The combination, in a machine for mining coal and similar substances, of a traveling carriage carrying two cutter-chains, and mechanism for causing said chains to move in a right line in opposite directions while cutting, a stationary shaft having a sliding key-seated pinion for actuating the chain-revolving mechanism, a nut on said carriage, a screw-shaft coacting with said nut to move the carriage, in order to feed the cutters to their work, and a power-shaft connected with and driving the other two shafts, substantially as and for the purposes described.

8. The two sliding bars, each provided with two loose sprocket-wheels or chain-sheaves secured at their outer ends in a cross-frame, and arranged parallel with each other, in combination with the two cutter-chains and mechanism to move the latter in opposite directions after reaching the end of the bars, substantially as and for the purposes described.

9. The cutter-chain for mining-machines, composed of a series of cutter-links arranged with the lapping ends, and support-plates arranged on the sides of the chain parallel with and opposite to each cutter-link, whereby the cutters are placed zigzag in the chain, and the sprocket-holes are in line with the cutters, substantially as and for the purposes set forth.

10. The combination, in a machine for mining coal and similar substances, of a pair of cutter-chains moving side by side to the point of impact against the rock, having projecting cutters arranged opposite to each other or at corresponding points on the two chains, substantially as and for the purposes described.

11. The combination, in a machine for mining coal and similar substances, of a pair of cutter-chains moving side by side to the point of impact, and then passing outward in opposite directions, having supporting-blocks placed on the adjacent sides of opposite links, substantially as and for the purposes described.

295,184. PROCESS OF EXTRACTING AND MELTING TALLOW AT A LOW TEMPERATURE. HENRI LESAGARAY and HIPPOLYTE LEPLAY, Paris, France. Filed July 9, 1883. (No specimens.) Patented in France Sept. 4, 1882, No. 150,936, and in England Nov. 23, 1882, No. 5,575.

Claim.—The herein-described process for extracting tallow and fats, which consists in first cutting the said tallow or fat fine and shredding it, then subjecting it to a pugging process without water and under the influence of heat to about 68° to 86° Fahrenheit, then subjecting the pugged mass to a churning operation while mixed with water and steam at a temperature of about 136° Fahrenheit, and then subjecting it to a final churning and straining operation, substantially as described, whereby the mixture of water and fat is separated from the nitrogenous substances, substantially as herein described.

295,185. FEED-REGULATING DEVICE FOR THRASHING-MACHINES. ALEXANDER WASHINGTON LOCKHART, Sacramento, Cal. Filed Apr. 23, 1883. (No model.)

Claim.—1. In a feeder for thrashing-machines, the receiving-hopper A, provided with the inclined slotted bottom B, the slotted step, and the supporting-frame, in combination with the derrick-mast D, having a semicircular fulcrum-plate, H, and the rod F, upon which it turns, substantially as described.

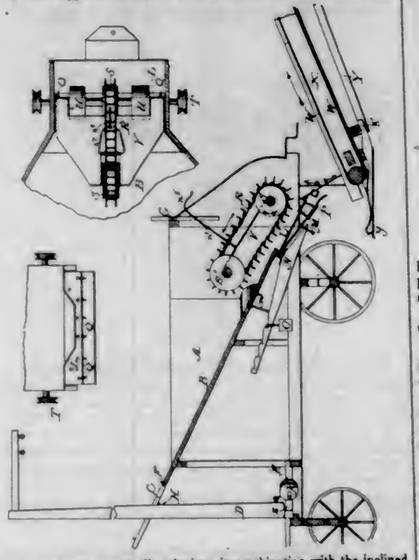
2. The receiving-hopper A, the frame provided with supporting-wheels, and a derrick-mast fulcrumed upon the front edge of the hopper, in combination with the winding-drum I upon one of the wheel-axles, and the rope J, attached to the foot of the mast and passing around the drum, substantially as shown and described.

3. The hopper A, having the inclined bottom B, the hinged adjustable extension L, and weighted lever-arm N, in combination with the bar or plate P, provided with the upwardly-projecting teeth Q, substantially as described.

4. The receiving-hopper A, having an inclined bottom, B, and the hinged adjustable extension L, in combination with the toothed feeding-belt R, the fixed rotary pulley S, the vertically-movable pulley S', and the movable frame V, substantially as described.

5. In combination with the hopper A, having an inclined bottom, B, hinged adjustable extension L, and toothed plate P beneath, the toothed chain belt R, adapted at its upper end to rise or fall with the supply of the straw beneath it, and the toothed rollers U, substantially as described.

6. The hopper A, having an inclined bottom, B, the hinged adjust-



able extension L, and feeding devices, in combination with the inclined carrying-belt W, its rollers, the frame X, the pulley *f*, the belt *e*, and the pulley T, substantially as shown and described.

7. The carrying-belt W, the pivoted frame X, and the wheel-carriage Y, provided with a shaft, *c*, having cams *b*, a crank, *d*, and the holding pawl and ratchet, in combination with the thrashing-cylinder casing having slots to receive the ends of the upper roller of the belt W, substantially as shown and described.

8. In combination with the hopper A, the feed mechanism, and the inclined carrying-belt W, the thrashing-machine having the upper part of the cylinder-case open to receive the straw from the belt W, and the movable hinged plates h and i, as and for the purpose herein described.

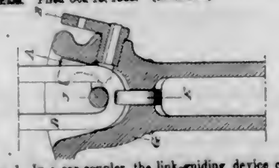
9. The hinged plates h and i, and the vibrating suspending-arm *j*, and the spring *j''*, in combination with the cranked shaft *l*, connected with the plate *h* near the hinge, substantially as herein described.

10. The hinged plates h and i, and means for imparting thereto a vibratory movement, in combination with the inclined hinged bottom *o* and the weighted lever-arm *p*, substantially as herein described.

11. The hinged and movable plates h and i, the inclined hinged floor *o*, and the weighted lever-arm *p*, in combination with the belt-shifting arm *q* and the driving-belt *n*, substantially as herein described.

12. In combination with the thrashing-machine Z, hopper A, feeding-belts R and W, pulleys T-*f*, and belt *e*, of the pulleys *t*, *w*, *v*, and *v'*, arranged with relation to each other as shown and described, the single belt *u*, passing around said last-named pulleys, substantially as herein described.

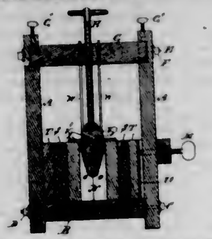
295,186. COUPLING FOR RAILWAY-CARS. ALBERT K. MANSFIELD, Boston, Mass. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a car-coupler, the link-guiding device consisting of the arm G inside the mouth of the draw-bar, and the horizontal arm B outside the same, both secured together to form a single lever pivoted on one side or cheek of the draw-bar, and so arranged that lifting vertically the free end of the arm B causes the free end of the coupling-link to rise, all substantially as described.

2. In the link-guiding device of a car-coupler, the combination of the arm G inside the bar, the horizontal arm B outside the same, the trip-tongue E, and the lifting-shaft H, having an arm near its center, all as set forth.

295,187. BOOT OR SHOE CRIMPING MACHINE. THOMAS TENNOCK MARSHALL, Jarvis, Ontario, Canada. Filed Nov. 6, 1883. (No model.) Patented in Canada Oct. 12, 1882, No. 15,514.



Claim.—1. The combination, in a crimping-machine provided with pressure-screw H, of the clamp-screws M M, halved block N, rubber plates S, filling-plates T, plate U, last-block P, and plate Y, substantially as set forth.

2. In combination with the halved block N, the inserted heel-plate Q, and toe-cushion R, as and for the purpose set forth.

3. The combination, with the notched sides A A, of the adjustable gate L, provided with block Z', pin L', and wedge 2, for holding down one end of plate Y, as set forth.

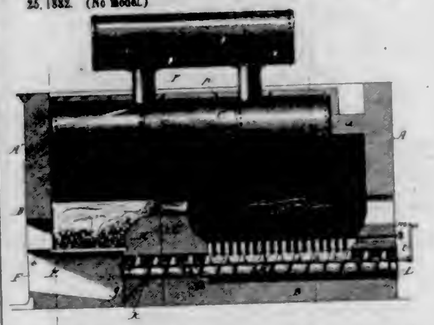
4. In combination with the halved block N, having recesses O, the correspondingly-apertured plate Y, covering said block, and removably secured to hold down the leather over the block-orifice in crimping, as set forth.

5. The combination, in a crimping-machine having pressure-screw H, of the last-block P, apertured plate Y, and halved block N, substantially as set forth.

6. The combination, with the sides A A, of the bridge G, pressure-screw H, braces W W, grooved bed V, and last-block P, as set forth, for the purpose described.

7. The combination, in a crimping-machine provided with pressure-screw H, of the clamping-screws M M, halved block N, and rubber plates S, to yield to the enforced pressure of the last-block P, whereby leather of different thicknesses may be crimped, as set forth.

295,188. FURNACE. CHARLES MCMILLAN, Chicago, Ill. Filed Oct. 25, 1882. (No model.)



Claim.—1. The combination, in a furnace, of a bridge-wall and a combustion-chamber arranged in the rear of and extending in a plane below the top of said bridge-wall, said combustion-chamber having the masonry of its longitudinal sides and bottom concaved or inclined to a uniform depth, so that the longitudinal line thereof shall be in a horizontal plane, and provided with means of access for the removal of accumulations without interrupting the operation of the furnace, substantially as described.

2. The combination, in a furnace, of a bridge-wall and a combustion-chamber arranged in the rear of and extending in a plane below the top of said bridge-wall, said combustion-chamber having the masonry of both sides and ends and its bottom concaved or inclined to a uniform depth, so that the longitudinal lines of the sides and bottom shall be in a horizontal plane, and provided with means of access for the removal of accumulations without interrupting the operation of the furnace, substantially as described.

3. The combination, in a furnace, of a bridge-wall, a combustion-chamber in the rear thereof, and a conveyer arranged in the masonry forming the bottom of said combustion-chamber, and adapted to remove the accumulations in said chamber, substantially as described.

4. The combination, in a furnace, of a combustion-chamber arranged in the rear of the fire-chamber, and a conveyer arranged within and in a plane below the bottom of said combustion-chamber, and adapted to remove the accumulations therein, substantially as described.

5. The combination of the combustion-chamber, the bottom of which is a contiguous part of the masonry of the side walls of the boiler-setting, and is grooved to receive accumulations, and means for removing such accumulations, substantially as described.

6. The combination, with the combustion-chamber, of the series of pivoted and hollow bars forming air-inlets, and means for operating said bars, substantially as described.

7. The combination, with the combustion-chamber, and with the receptacle for the accumulations, of the intermediate swinging bars and means for operating the same, substantially as described.

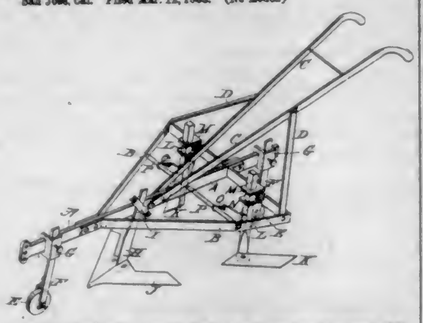
8. The combination, in a furnace, of a combustion-chamber constructed in the masonry thereof and arranged in the rear of the fire-chamber, the accumulation-receptacle in the bottom of the combustion-chamber, an air-chamber surrounding the receptacle, and air-inlets opening into said air and combustion chambers, substantially as described.

9. The combination, with a furnace, of a bridge-wall the front face of which is convex and its extremities joining the sides of the furnace concaved, as at *i*, substantially as and for the purpose described.

10. In a steam-boiler furnace, the combination, with the boiler, of a covering conforming in shape to the upper portion of and supported by the boiler, and detached from the walls of the furnace, between which the boiler is suspended, substantially as described.

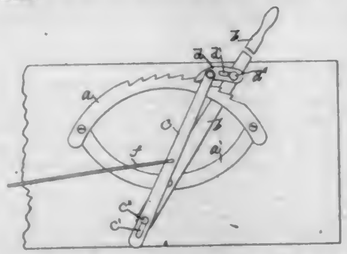
11. The combination, with the boiler, the supporting-lugs, and the side walls of the furnace, of bars supported by and connecting said lugs, and an arched covering resting on the bars, all substantially as described.

295,189. CULTIVATOR AND HORSE-HOE. CHARLES W. MEADOR, San José, Cal. Filed Mar. 12, 1883. (No model.)



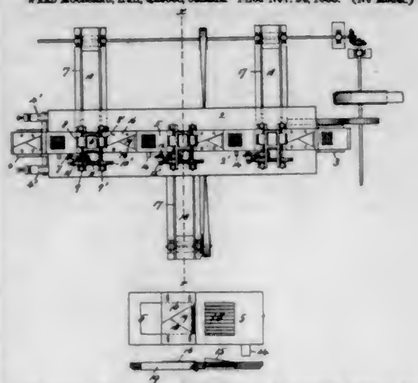
Claim.—The combination of the beam A, angular side pieces, B B, transverse rod P, the adjustable guide-rollers E E, connected to each end of the beam, the adjustable share or cutter J, carried by said beam, the adjustable shares or cutters K K, carried by the transverse portions of the side pieces, and the rods N N and links O O, for bracing the standards of the rear cutters, substantially as shown and described.

295,190. WAGON-BRAKE LEVER. EDWD. J. MILES, Kellogg, Iowa, assignor of one-half to H. M. COX, same place. Filed Nov. 24, 1883. (No model.)



Claim.—The improved wagon-brake lever and automatic lever-locking device, composed of a frame having ratchet-teeth in an arc and section of its edge, a lever of the first order, a lever of the second order, having a sliding connection with the short arm of the lever of the first order, a combined pawl, link, or bridle flexibly connected with the long arms of the two levers, and a rod connected with the central portion of the lever of the second order, to operate in the manner set forth.

295,191. MATCH-SPLINT MACHINE. GEORGE H. MILLER and EDWARD MOUSSEAU, Hull, Quebec, Canada. Filed Nov. 24, 1883. (No model.)



Claim.—1. The endless apron composed of apertured plates 5, or rectangular links hinged together having scoring-knives 15 and slicing-knives 16, alternatingly, in combination with frame 1, having rails 2 2′, wheels 3 4, and feed-boxes 6, as set forth, for the purpose described.

2. The combination, with frame 1, having parallel rails 2 2′, of the endless apron composed of plates or links 5, hinged together, having scoring-knives 15 and slicing-knives 16, alternately arranged, a series or row of feed-boxes, 6, having feed-rollers 8 8′, and ratchet-wheel and pawl intermittently operated by cams 14 on the apron, to automatically feed the splint-block to the scoring-knives, and subsequently slice the splints, as set forth.

3. The endless apron composed of apertured plates or links 5, hinged together, having alternately scoring and slicing knives, the plates having the scoring-knives provided with cams 14, in combination with feed-boxes 6 and intermediate ratchet-gear and rollers, to feed the splint-blocks by the movement of the apron, as set forth.

4. The combination, with frame 1, having rails 2 2′ and polygonal wheels 3 4, of the endless apron composed of apertured plates or links 5, hinged together, alternately having slicing-knives 16 and scoring-knives 15, feed-boxes 6, having an automatic feed-gear operated by cams 14 on the apron, and troughs 17, having an inclined end and endless-belt bottom 18, whereby the splint-blocks are automatically fed and successively scored and sliced by knives moving in a continuous plane, and the splints collected at the end of the troughs, substantially as described and set forth.

295,192. CRUPPER-COUPLING. CHAS. H. ORTS, Silver Creek, N.Y. Filed Jan. 12, 1884. (No model.)



Claim.—A crupper-coupling consisting of the flat tubular body *a*, having the flat strap-connecting portion a^2, and a plate and catch jointed thereto, and provided with a spring, a^3, in combination with the connecting-piece *c*, having the flat strap-connecting portion c^2, and a tongue, c', having a hole, c^3, substantially as and for the purposes described.

295,193. BREAST-DRILL. OBED PIKE, Rowe, Mass. Filed Oct. 5, 1881. (No model.)

Claim.—1. The breast-bearing I, combined with and attached to the frame A, and adjustable on said frame at different distances from the bearing *c* or *c′* of the gear-wheel B therein, combined with the wheel B, and a crank, E, attached to said wheel, which crank has its handle G adjustable, as described, at different distances from the axis about which it rotates.

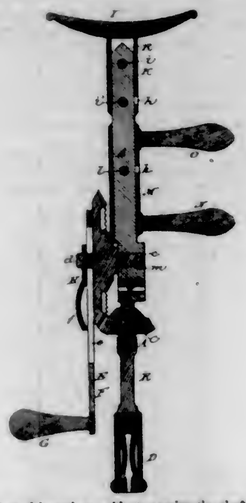
2. The breast-bearing I, combined with the frame A, and adjustable thereto in positions which form one or more radial angles with each other, as described, for the purposes described.

3. In a breast-drill, the hand-hold N, combined with the frame A, and adjustable thereto at different radial angles, as described, for the purposes described.

4. The frame of a breast-drill, having a hand-hold, N, attached, and a breast-bearing, I, and a hand-rest, O, located on and attached to said frame at a point between the hand-hold and the breast-bearing.

5. The crank E, attached to the driving-wheel B, and having its handle G adjustable, as described, at different distances from its axis of rotation, said driving-wheel having the gears *a a′*, and combined with the bevel-gear wheel C, shaft R, chuck D, and the frame A, having the

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bearings *c c′*, adapted interchangeably to receive the shaft of the wheel B in positions to bring the gear *a* or *a′* into engagement with the gear-wheel C.

295,194. ROPE OR LINE CLASP. ALBERT L. PITNEY, Washington, D.C. Filed Dec. 11, 1883. (No model.)



Claim.—1. The combination, in a bag-fastener, of an exterior casing having inclined interior sides or surfaces, with an interior wedge, and means, substantially as described, whereby the wedge is forced inward by the lateral strain of the rope upon the wedge, for the purposes shown and described.

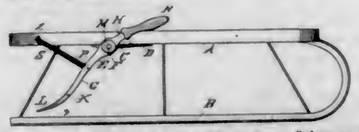
2. The combination, in a bag-fastener, of a casing, a wedge having a flange at its enlarged end, provided with perforations to receive the rope, whereby the wedge is forced into the case by lateral strain upon the rope, substantially as set forth.

3. The combination, in a bag-fastener, of a casing, with a wedge extending beyond both ends of the casing, and provided with a stop at its smaller end, substantially as set forth.

4. The combination, in a bag-fastener, of a casing with a wedge having a perforated flange at its head, and provided with a stop, substantially as set forth.

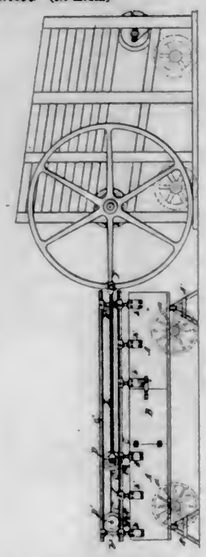
5. The combination, in a bag-fastener, of a casing having means, substantially as described, for grasping it to release the wedge, with a wedge having a flange at its head, and provided with a stop, substantially as set forth.

295,195. SLED-BRAKE. JOHN GODFREY PERCOCK, Raigelsville, N. J. Filed Dec. 9, 1882. (No model.)



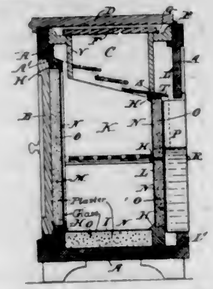
Claim.—In a hand-sled, the lateral brake-levers G, having oblique tapering spindle-form arms K, extending downward and rearward, and terminating in under convex rear extensions, L, formed without shoulder or obstruction, the forward arms, H, covered with wooden handle-sleeves N, and having the perforations P, in combination with the braced brackets C and springs S, connected each by one end to a brake-lever below its pivotal point, and by its other end to side of the body or rave in rear, all constructed and adapted to operate substantially as specified.

295,196. MORTAR-MIXER. WILHELM PROCHNOW, Milwaukee, Wis. Filed Jan. 29, 1884. (No model.)



Claim.—In a mortar-mixing machine, the box A, having the hinged door B, supports *b b′ b′ b′* for the rails *c c*, and extensions b^2 b^2 for the guard-rails *c′ c′*, in combination with the wheels C C and C′ C′, axles D and D′, bearing the knives *e e e′ e′ e′*, bars or rods *f f*, and pitmen E E of the driving mechanism, substantially as shown and described, and for the purpose set forth.

295,197. REFRIGERATOR. GEORGE ROGER PROWSE, Montreal, Quebec, Canada. Filed Nov. 23, 1883. (No model.)



Claim.—1. As a new article of manufacture, a refrigerator formed of an outer casing and inner lining or casing, said inner lining or casing consisting of sash-work, glass, and plaster or plastic compound, constructed and arranged, as described, so that when the plaster or plastic compound has set and hardened, the sash-work, glass, and plaster or plastic compound form practically one solid piece, the whole substantially as described.

2. The inner lining of a refrigerator, formed in one piece by the combination of sash-work, glass, and plaster or plastic compound, substantially as described.

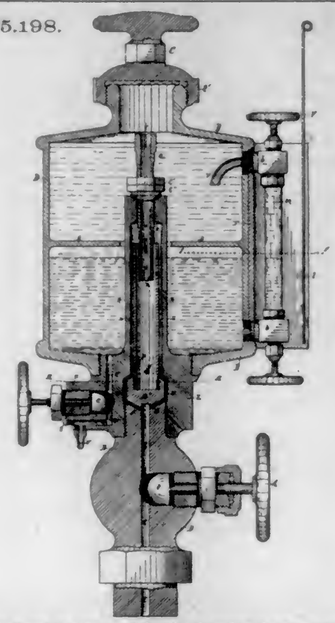
3. The combination of the outer casing, A, inner casing composed of sash-work, glass, and plaster or a plastic compound, ice-box C, and removable tank P, the whole substantially as described and shown.

295,198. LUBRICATOR. JOSEPH W. REED, Kalamazoo, Mich. Filed Dec. 11, 1883. (No model.)

Claim.—1. The combination, with a stop-cock and an oil-tube support having the integral base detachably connected with said stop-cock, of an oil-reservoir surrounding the tube-support and detachably connected with the base thereof, all substantially as set forth.

2. The combination, with an oil-reservoir having a horizontal partition, the latter adapted to admit the location of a vertical oil-tube

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through it, and the passage of the oil and condensed steam as well, of a stop-cock and an oil-tube, substantially as described.

3. The combination, with a stop-cock, vertical oil-tube, and an oil-reservoir, of the tube-support having the integral base, said base provided with the integral side extension for the location and reception of the water-passage and cock, substantially as specified and shown.

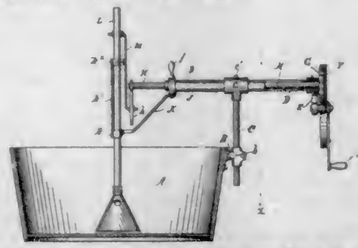
4. The combination, with a stop-cock and oil-reservoir, of an oil-tube support having the central chamber and an oil-tube located therein, substantially as specified.

5. A lubricator consisting of an oil-reservoir, a stop-cock provided with the upper small end, passages leading from the periphery of said small end into the central passage of the stop-cock, an oil-tube support having the central chamber, and oil and water passages shown, a stationary oil-tube having the perforations through the wall of its lower end, and the adjustable oil-tube having the perforations to receive the steam, all substantially as set forth.

6. The combination, with an oil-reservoir, of a gage having its upper passage which leads from the reservoir into the gage extended inward and downward for the object stated, substantially as set forth.

7. The combination, with the oil-reservoir and the gage-casing having the sliding door, of the gage provided with the screw-lugs securing the gage and the casing to the reservoir by passing through the wall of said casing, substantially as set forth.

295,199. POUNDER WASHING-MACHINE. FRANCIS T. ROUTS, Connersville, Ind. Filed June 5, 1883. (Model.)

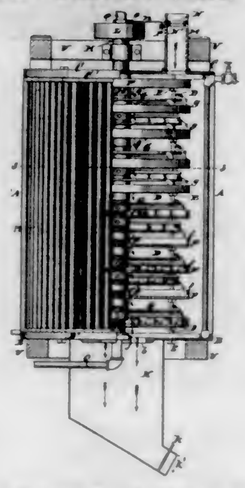


Claim.—1. The combination, substantially as specified, of the standard C, provided with a cross-head, *c*, sleeve D, movably mounted in the cross-head, and provided with guides, reciprocating plunger L, adapted to slide in said guides, pitman M, crank-shaft H, and means for rotating said shaft.

2. The combination of standard and cross-head C *c*, slotted sliding tube or sleeve D, bracket B *b*, screw *d'*, and bracket K *k' k²* with crank-shaft H, cog F, pinion G, plunger-rod L, and pitman M, arranged substantially as and for the purpose specified.

3. The combination, substantially as specified, of the bracket B *b*, the standard C *c*, adjustably secured therein, the sleeve D, adjustably secured in the cross-head *c* of the standard, and provided at one end with plunger-guides and at the other end with driving mechanism, crank-shaft H, the plunger, and means for connecting the shaft with the plunger.

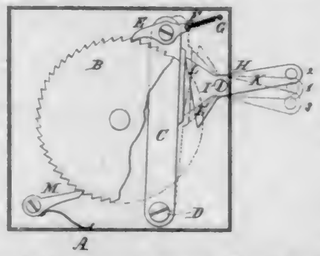
295,200. MACHINE FOR ROASTING COFFEE. ALFRED W. KOPER, St. Louis, Mo., assignor of one-half to George F. Durant and James Campbell, same place. Filed June 16, 1883. (No model.)



Claim.—1. The combination of fixed shelves or plates F G and revolving flight-rakes carried on a tubular shaft surrounding a fixed steam-pipe.

2. The combination of fixed shelves F G, rotating rakes with flights I' I², central steam-pipe, Q, outer steam-pipes, E, and inclosing-case A B C, with induction and eduction openings M K, substantially as set forth.

295,201. FARE-REGISTER. JOHN H. ROSE, Norwalk, Conn., assignor to W. Jennings Demorest, New York, N. Y. Filed Oct. 13, 1883. (No model.)

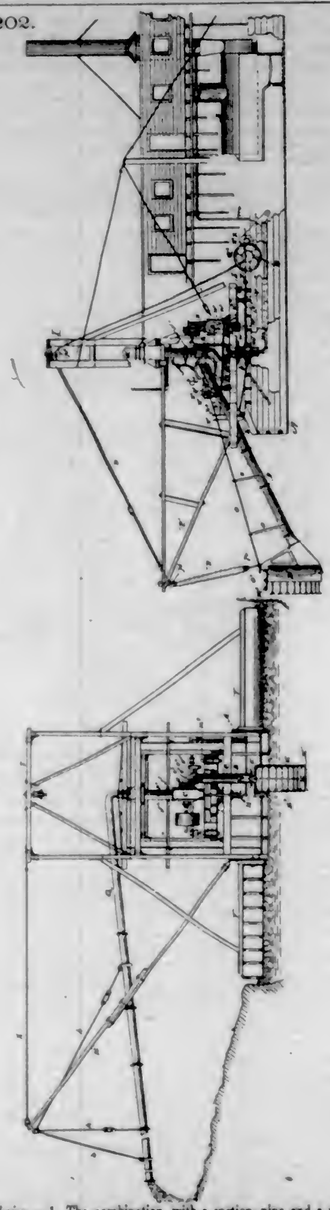


Claim.—In a fare-register, the ratchet-wheel B, rigid lever C, pivoted within the casing A and extending along the side of the said ratchet-wheel, the pawl E, spring F, and the T-headed actuating-lever K, having its pivot I wholly within the casing A, all combined and arranged as herein specified.

295,202. DREDGE. REUBEN E. ROSE, Kissimmee, Fla., assignor of three-fourths to Hamilton Disston, James M. Kreamer, and Samuel H. Grey, all of Philadelphia, Pa. Filed Oct. 5, 1883. (No model.)

Brief.—To a pump mounted on a turn-table is swiveled for vertical play a suction-pipe (with chains to a derrick) terminating below in a vertical semi-cylindrical chamber with cross-bars, between which play the knives on a revolving vertical cutter-shaft. A valve in discharge-pipe holds it charged during inaction of the pump. Propelling-capstans are controlled from the turn-table. A scow is secured on each side of the dredge, to guide and support it.

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Claim.—1. The combination, with a suction-pipe and a vertical shell or earth guide secured thereto, one side or face of said shell being open, of a vertical shaft journaled in said shell, and horizontal knives or cutters secured to the shaft, substantially as set forth.

2. The combination, with a suction-pipe and a vertical semi-cylindrical shell secured thereto, of a vertical shaft journaled to the shell, horizontal cutters secured to the shaft, and devices for imparting a rotary motion to the shaft.

3. The combination, with a semi-cylindrical earth guide or shell, and a suction-pipe connected to the lower end thereof, of revolving knives and the bars *e'*, rigidly secured to the shield between the knives, substantially as set forth.

4. In a hydraulic dredging-machine, the combination of a pump, a suction-pipe swiveled to the pump, and devices for elevating and moving the outer end of the suction-pipe laterally, substantially as set forth.

5. The combination of a turn-table, a pump mounted thereon, a suction-pipe swiveled to the pump, a discharge-pipe connected to the pump, and a valve located in the discharge-pipe, substantially as set forth.

6. The combination, with the boat and its turn-table, of the capstan-pulleys, means for turning the same, and means for controlling said capstan-pulleys from the turn-table in any position, substantially as described.

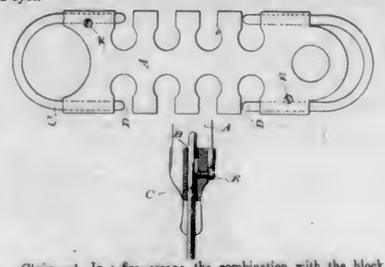
7. The combination of a turn-table, a pump mounted thereon, a derrick, P', a suction-pipe swiveled to the pump, and chains or ropes connecting the induction end of the suction-pipe with the derrick, substantially as set forth.

8. The combination of a turn-table, a pump mounted thereon, a suction-pipe swiveled to the pump and adapted to be moved laterally by turning the table, a steam-engine mounted on the table, a steam-generator independent of the turn-table, and a steam-pipe connecting the generator and engine, the said steam-pipe having a swiveled joint, substantially as and for the purpose set forth.

9. In a dredging or excavating machine, the combination, with a central hull supporting the machinery, of the pontons or scows secured to the sides of said central hull, substantially as described, and for the purpose set forth.

295,203. FIRE-ESCAPE. MICHAEL SCHOLL, San Francisco, Cal. Filed Dec. 19, 1883. (No model.)

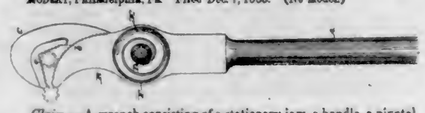
Brief.—An improvement on Letters Patent No. 284,763, dated September 11, 1883. At both ends of the friction-block adjustable spring-staples are placed, to prevent the rope from slipping from the end eyes.



Claim.—1. In a fire-escape, the combination, with the block A, having dead-eyes and transverse cuts, as shown, of the adjustable spring-staples C C, attached to the opposite ends of said block, substantially as described.

2. In a fire-escape, the combination, with the block A, having dead-eyes and transverse cuts, of the spring-staples C C and set-screws F E, substantially as shown and described.

295,204. PIPE-WRENCH. FRANZ A. SCHRAMM and AMBROSIUS MODERY, Philadelphia, Pa. Filed Dec. 7, 1883. (No model.)



Claim.—A wrench consisting of a stationary jaw, a handle, a pivotal jaw, coiled springs, and caps, the axial bolt of the pivotal jaw being extended beyond the sides of the stationary jaw, and having said caps attached to its ends, the space between the caps and stationary jaw receiving said springs, which are secured to the stationary jaw and the axial bolt, substantially as and for the purpose set forth.

295,205. PIPE-MOLDING APPARATUS. FREDERICK SEICKLE, St. Louis, Mo. Filed June 25, 1883. (No model.)

Claim.—1. The combination, in a molding-pit, of the beam H and the posts I I I, said posts being suitably braced laterally, for the purpose described.

2. The combination of the beams H L J J', the posts I I I, and the wall F, as described.

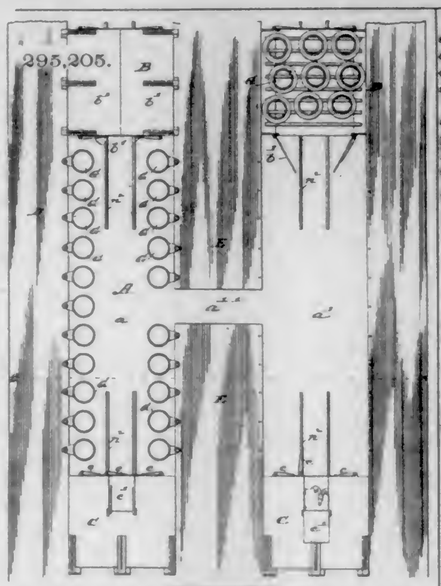
3. The combination of the pit A, the posts I' I' I', and the beams H' L' J' J², as described.

4. The combination of the beam L, the flask G, having the shoulder g^3, and the hook M, as described.

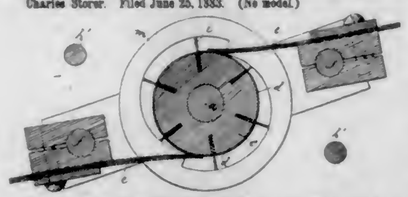
5. The oven C, having the vertically-arranged doors *c c* and the vertically-arranged reel Q, as and for the purpose described.

6. The combination of the top g^2, having the slot g^3, the core P, and the bar g^4, as and for the purpose described.

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295,206. COMMUTATOR FOR ELECTRIC GENERATORS. HENRY M. STEVENS, Boston, Mass., assignor to Wm. Greene Howe, same place, and Charles Storer. Filed June 25, 1883. (No model.)



Claim.—1. In an electric generator, the combination, with the revolving commutator having a series of insulated contact-pieces, of a series of movable pieces of insulating material interposed between the said contact-pieces, and adapted to project beyond their contact-surface, substantially as and for the purpose described.

2. The commutator-drum having insulated electric contact-pieces at its peripbery, and the contact-brushes or collectors, combined with movable wings of insulating material between the said contact-pieces, normally projecting beyond the periphery of the commutator, and means to depress them to the level of the said periphery at the point where they pass beneath the brushes, substantially as described.

295,207. ELECTRICAL CONDUCTOR. ROSS C. STONE, New York, N. Y. Filed Aug. 9, 1883. (No model.)



Claim.—1. The method herein described of constructing an electrical wire or conductor, which consists in twisting together two galvanized wires, then coating and uniting the two by a galvanized coating, substantially as stated.

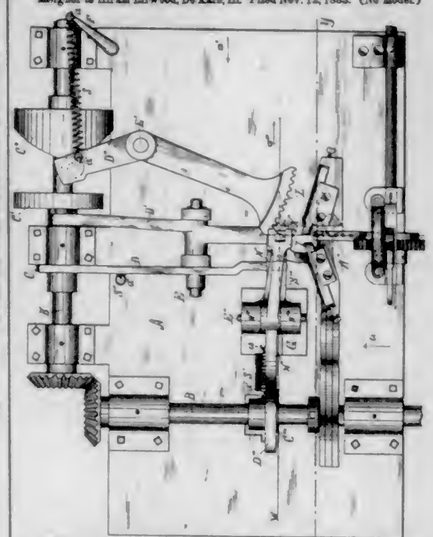
2. The method herein described of constructing an electrical wire or conductor, which consists in twisting together two galvanized wires, covering the same with a galvanic coating, then covering the whole with a coating of lead or similar metal, substantially as described.

3. The electrical wire or conductor herein described, consisting of wire A, of great strength, and wire B, of great conductivity, each wire having a separate coating, and the two stranded together and covered by a second coating of metal, substantially as described.

4. The electrical wire or conductor herein described, consisting of steel wire, as A, and copper wire, as B, both wires having a metallic coating, and the two stranded together, and having a galvanic coating over said strand, and the lead covering for the wires and their coatings, as set forth.

5. The combination, in an electric wire or conductor, of galvanized steel wire A and galvanized copper wire B, the two being twisted together and covered by a galvanic coating, and having a lead covering, E, and tin coating F, all being arranged with relation to each other, substantially as shown and described.

295,208. WIRE-BARBING MACHINE. DANIEL C. STOVER, Freeport, assignor to Hiram Ellwood, De Kalb, Ill. Filed Nov. 12, 1883. (No model.)



Claim.—1. In a wire-barbing machine, the combination of means for supporting a main wire, means for feeding a barb-wire across said main wire, means for severing the barb-wire between the barb-feeding mechanism and the main wire, and means for wrapping the severed barb about the main wire and intertwisting its ends, substantially as shown and described.

2. In a wire-barbing machine, the combination of means for supporting a main wire, means for feeding a barb-wire across said main wire, means for severing the barb-wire between the barb-feeding mechanism and the main wire, means for bending the severed barb into a staple having its legs on opposite sides of the main wire, and means for crossing and intertwisting said legs, substantially as shown and described.

3. In a wire-barbing machine, the combination of means for supporting a main wire, means for forming a barbing-staple with its middle in contact with the main wire, and its legs on opposite sides thereof, and means for crossing said legs over the main wire and intertwisting them in a flat coil from which the points of the barb project, substantially as shown and described.

4. In a wire-barbing machine, the combination of means for supporting a main wire, means for feeding a barb-wire across said main wire, means for severing the barb-wire between the feeding mechanism and the main wire, means for pressing the main wire against the middle of the severed barb, and bending it into a staple whose legs are on opposite sides of the main wire, and means for crossing and intertwisting the legs of the staple, substantially as shown and described.

5. In a wire-barbing machine, the combination of means for supporting a main wire, means for feeding a barb-wire across said main wire, means for severing the barb-wire between the feeding mechanism and the main wire, means for pressing the main wire against the middle of the severed barb and bending it into a staple having its legs on opposite sides of the main wire, a twisting-cylinder at right angles to the main wire, and provided with opposite longitudinal notches or recesses in its periphery adapted to receive the legs of the staple so formed, and means for rotating said twisting-cylinder, whereby the legs of the staple may be crossed and intertwisted, substantially as shown and described.

6. In a wire-barbing machine, the combination of means for supporting a main wire, means for feeding a barb-wire across the main wire and severing the same, a longitudinally-reciprocating punch at right angles

to the main wire, adapted to press the main wire against the middle of the severed barb and bend it into a staple having its legs on opposite sides of the main wire, a twisting-sleeve rotating freely about said punch, and provided with opposite notches in its periphery adapted to receive the legs of said staple, and means for rotating said sleeve, whereby said legs are crossed and intertwisted, substantially as shown and described.

7. The combination, with means for supporting a main wire, and means for forming a barbing-staple having its middle in contact with the main wire and its legs on opposite sides thereof, of the rotating cylinder M, provided with notches Q Q, having lips R R', formed substantially as described, whereby the rotation of the cylinder crosses the legs of the staple, and at the same time brings them into the same plane, substantially as shown and described.

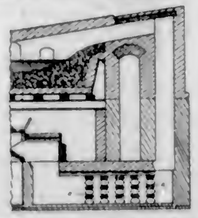
8. The combination of means for supporting a main wire, means for forming a barbing-staple having its middle in contact with the main wire, and its legs on either side thereof, a twisting-cylinder, M, provided with notches Q Q in its periphery, and two pins, i, projecting below the lower face of said twisting-cylinder, said notches being adapted to receive the legs of the staple, partly intertwist them, and bring them into the same plane, and said wrapping-pins to complete the intertwisting of said legs, substantially as shown and described.

9. The combination of the sleeve M, punch O, moving freely within said sleeve, and pivoted lever D''' and cam C''', adapted to impart reciprocal motion to said punch, substantially as shown and described, and for the purpose set forth.

10. The combination of the levers D D', supporting-spindle e, attached to the lever D, the grooved face P, attached to the lever D', and means, substantially as described, for imparting reciprocal vertical motion to said levers.

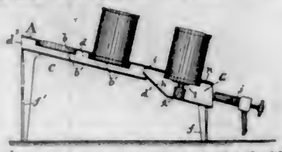
11. The combination of the punch O, sleeve M, reciprocating lever D''', reciprocating segment L, pivoted reciprocating levers D D', and means, substantially as described, for imparting reciprocal motion to said levers and segments.

295,209. REGENERATOR-FURNACE. WILLIAM SWINDELL, Allegheny, Pa. Filed Oct. 21, 1882. (No model.)



Claim.—A regenerator-chamber having a checker-work composed of a series of layers or courses of double-pointed refractory bricks, substantially as and for the purpose specified.

295,210. CAN-SOLDERING MACHINE. JOHN A. TILLERY, Baltimore, Md., assignor of two-thirds to John H. Brandt and Robert B. Carswell, both of same place. Filed Aug. 9, 1883. (No model.)



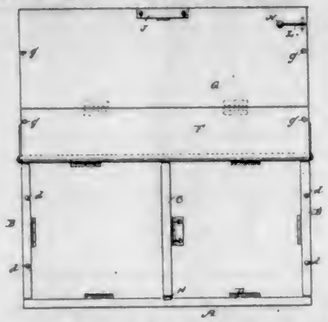
Claim.—1. A can-soldering machine embracing the following construction, to wit: an inclined top and bottom plate, with a flame-passage, d, between the two plates, a flame-receiving chamber, G, at the lower part of the top plate, having an upward-sloping rear wall, h, and a narrow horizontal opening, i, at the top of the wall, and a rotary seat, l, the plane or top of which is below the top plate and on a line direct with the narrow horizontal opening, as set forth.

2. A can-soldering machine having an inclined top and bottom plate, with a flame-passage, d, between the two plates, a flame-receiving chamber at the lower part of the top plate, having an upward-sloping rear wall, h, and an opening, i, at the top of the wall, and a separate air-opening, d', into the flame-passage at each side of the flame-receiving chamber, as set forth.

3. A can-soldering machine having an inclined top plate provided with circular recesses b, depending below the lower surface, a bottom plate with a flame-passage, d, between the two plates, a flame-receiving chamber at the lower part of the top plate, having an upward-sloping rear wall, h, and an opening, i, at the top of the wall, and a separate air-opening, d', into the flame-passage at each side of the flame-receiving chamber, as set forth.

4. A can-soldering machine having an inclined top and bottom plate, with a flame-passage, d, between the two plates, a flame-receiving chamber at the lower part of the top plate, provided with a rotary seat, l, and a detachable cover, n, for the chamber, having a circular opening, as set forth.

295,211. FOLDING EGG-CASE. SAMUEL M. TOAY and EDWARD HARRIS, Cambria, Wis. Filed July 23, 1883. (Model.)

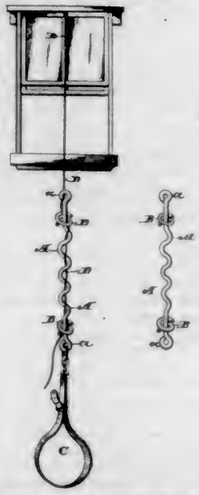


Claim.—1. The combination, with the pivoted lever-latch L, having head N at its free end, of the cover G, front board, D, and rear board, E, each provided with a transverse notch, as and for the purpose specified.

2. In a folding egg-case, the combination, with the box A, of the front and rear boards, D E, and the cover-section G, each provided with a notch, a, on the end, the latch-lever L, the cover-section, F, and the end boards, B, substantially as herein shown and described, and for the purpose set forth.

295,212. FIRE-ESCAPE. CORNELIUS A. VAN WAGENEN, Ellenville, N. Y. Filed Apr. 26, 1883. (No model.)

Brief.—A friction device consisting of a spiral provided at both ends with open loops and rings for attaching the body-strap.



Claim.—1. In a fire-escape, the combination, with the rope or wire, of a friction-holder having a spiral body, around and through which the rope or wire is wound, and provided at each end with a ring and an open loop, the ends of which latter pass each other, and a belt removably secured to the lower ring and the holder, substantially as set forth.

2. The combination, with a rope or wire, of a friction device around which the rope or wire is wound, provided at or near its opposite ends with open loops, the ends of which latter pass each other, and a belt removably secured to the lower end of the friction device.

295,213. STREET POUNDER OR RAMMER. F. AUGUST VOIGT, St. Louis, Mo. Filed Dec. 31, 1883. (No model.)

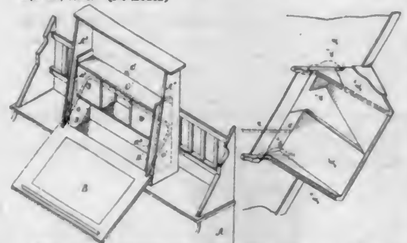
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Claim.—1. A street rammer or pounder having an iron body and steel or chilled face and cross-handle C, for the purpose set forth.

2. A street rammer or pounder having an iron body, A B, a steel or chilled face, B′, and adjustable handle C, substantially as set forth.

295,214. ORGAN-CASE. JOSEPH A. WARREN, Detroit, Mich. Filed Apr. 27, 1883. (No model.)



Claim.—1. The combination, with an organ-case and self-closing pedals, of a sealing-flange secured to said pedals, adapted to suitably close the space between said pedals and said case, substantially as described.

2. The combination, with an organ-case and self-closing pedals, of a sealing-flange secured to said pedals and suitable blocks, a^3, secured to said case, said flange and blocks adapted to suitably close the space between said pedals and said case, substantially as described.

3. The combination, with an organ-case, of a sliding panel and a rock-shaft connected with said panel, whereby the panel may be slid downward for use as a writing-desk or be slid upward out of the way, substantially as described.

4. The combination, with an organ-case and a rock-shaft having its bearings therein, and provided with arms *c* and *c′*, of a sliding panel secured at its upper end to the extremities of the said arms, and adapted to be slid upward against the case or be slid downward for use as a writing-desk, substantially as described.

5. The combination, with an organ-case provided with the side pieces, A^3 A^4, of a rock-shaft, having end bearings therein and provided with arms *c c′*, and a sliding panel secured at its upper end to the extremities of the said arms, and adapted to be slid downward for use as a writing-desk or slid upward against the case, substantially as described.

6. The combination, with an organ-case having an inclosure, C, of a rock-shaft and a sliding panel connected therewith, and adapted to slide upward to cover the inclosure, and thus serve as a book-rack, or slide downward for use as a writing-desk, one surface only of the panel being exposed to view in either adjusted position, substantially as described.

295,215. FLY-WHEEL. RUEL W. WHITNEY, Cleveland, Ohio, assignor to the Leader Sewing Machine Company, same place. Filed Jan. 4, 1884. (No model.)

Claim.—1. The combination of a fly-wheel provided with a rim or shoulder, a disk having a belt-groove, and an interior circumferential groove, with a binding device, substantially as specified.

2. The combination of a fly-wheel having a sleeve and a rim or shoulder, a disk having a belt-groove, and a sleeve adapted to rotate and to move longitudinally upon the sleeve of the wheel, with a binding device, substantially as specified.

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3. The combination of a belt-disk having a circumferential groove, and a binding device projecting into said groove and through the hub of a fly-wheel, substantially as specified.

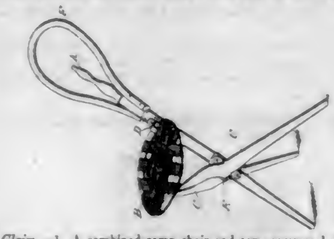
4. The disk D, having the belt-groove D′, the sleeve D^2, and the groove D^3, substantially as shown and described.

5. The combination of the disk D, having the belt-groove D′ and the groove D^3, with the bolt E, having the head E′ cut away, as at *e*, substantially as shown and described.

6. The combination of the wheel B, provided with the rim or shoulder B^3 and sleeve B′, the disk D, having the groove D^3, bolt E, having the head E′, the weight C, and nut E^2, substantially as shown and described.

7. The combination of the wheel B, having the rim or shoulder B^3 and sleeve B′, with the disk D, having the belt-groove D′, sleeve D^2, and groove D^3, and with the bolt E, having the head E′, weight C, and nut E^2, substantially as specified.

295,216. COMBINED CAMP-CHAIR AND CANE. THOMAS WRIGHT, South Norwich, County of Oxford, assignor to the Otto Sweeper Company, (Limited,) Otterville, Ontario, Canada. Filed May 10, 1882. (No model.)

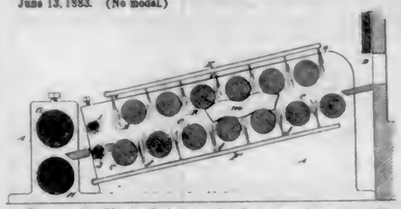


Claim.—1. A combined camp-chair and cane composed of the following elements, namely: central staff, A, loop D, clamp E, pivoted legs C C, seat B, and bow-handle F, constructed and arranged substantially as shown and described.

2. In a combined chair and cane composed, essentially, of a central staff and movable legs, the bow-handle B, also forming a back for the chair, substantially as described.

3. In a combined chair and cane, the seat B, hinged to the central staff by means of a loop, D, substantially as described.

295,217. MODE OF AND MECHANISM FOR PRODUCING SURFACES ON IRON OR STEEL. LEVI D. YORK, Portsmouth, Ohio. Filed June 13, 1883. (No model.)



Claim.—1. The method of treating iron or steel—to wit, subjecting a highly-heated mass of metal to streams of water and simultaneously bending said mass alternately in opposite directions, and then immediately reducing the thickness by reducing-rolls, as herein specified.

2. The two series of bending-rolls B C, and the two series of water-pipes E F, with their nozzles *e f*, combined and arranged to serve as herein specified.

3. The furnace D, bending-rolls B C, water pipes and nozzles E *e* F *f*, and reducing-rollers G H, combined and arranged to serve as herein specified.

4. The revolving brushes I J, in combination with the bending-rollers B C, water pipes and nozzles E *e* F *f*, and reducing-rollers G H, substantially as herein specified.

295,218. AQUARIUM. FORTONATO CLEMENTE ZANETTI, Bryan, Tex. Filed Feb. 10, 1883. (No model.)

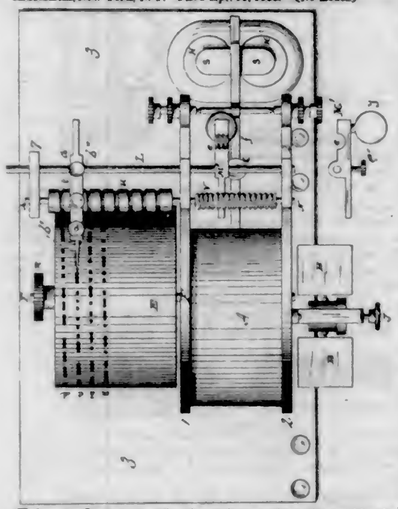
Claim.—The herein-described improved aquarium, consisting of the vase or jar with a base support, and provided at its upper edge with the thickened perforated enlargements for the suspending-chains, and having

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a re-enforced bottom provided with an aperture, and a plug inserted from within the jar and provided with an interior enlarged ornamental head, as set forth.

295,219. AUTOMATIC AND FAC-SIMILE TELEGRAPH. JOHN AMSTERDAM, New York, N. Y. Filed Apr. 18, 1883. (No model.)



Claim.—1. In an automatic-telegraph transmitter, the combination of a drum or cylinder having symbols thereon in non-conducting matter in a spiral line, and representing a telegraphic code or signals, a stylus, and means, substantially as described, for causing the stylus to contact with the drum or cylinder when in operation and take upon the drum and the lines of non-conducting symbols, substantially as set forth.

2. In an automatic-telegraph transmitter, the combination of a pen or stylus, a drum or cylinder having thereon symbols of non-conducting material in a spiral line therearound, and means for rotating such drum or cylinder, and means for causing the pen or stylus to traverse the drum or cylinder in a spiral line, substantially as set forth.

3. In an automatic-telegraph transmitter, a drum or cylinder having a series or number of symbols representing a telegraphic code or alphabet imprinted thereon in non-conducting matter, and in a spiral line therearound, to automatically control the transmission of the electrical impulses necessary for a message, substantially as set forth.

4. In an automatic-telegraph transmitter, the combination of a drum or cylinder, a stylus or pen, and a shaft provided with two different screw-threads and a guide, so that the path of travel of the stylus over the face of the drum or cylinder may be changed, substantially as set forth.

5. In an automatic-telegraphic transmitter having a drum or cylinder prepared in spiral lines of conducting and non-conducting material, to control the transmitting-circuit, the combination, with the drum or cylinder, of a motor giving motion thereto, a vibrating or governing fan for controlling the speed thereof, and means for simultaneously adjusting the position or angles of the vanes of the fan relatively to each other, and locking them positively in such position or relation, so as to readily control and regulate the speed of the motor and of rotation of the drum or cylinder, substantially as set forth.

6. A stencil-plate or series of stencil-plates, each representing an arbitrary telegraph-symbol, and provided with hooked ends adapting them to be joined together to form a message, substantially as set forth.

7. The means for holding the stencil in position upon the face of the drum or cylinder while in use, consisting of an upright and its right-angled arm and an adjustable annulus supported thereby, substantially as set forth.

8. The method of automatic transmission herein described, consisting in causing telegraphic symbols to be recorded upon a drum or cylinder in conducting and non-conducting spaces in a spiral line by transferring or stenceling thereon a suitable ink, paint, or pigment, and then using the record so made to automatically control the transmitting or line circuit, substantially as set forth.

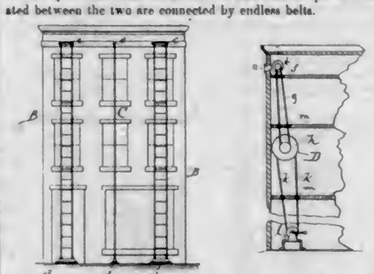
295,220. MANUFACTURE OF FLY-PAPER. EDWARD F. BAKER, Chicago, Ill., assignor to Margaret M. Baker, same place. Filed Aug. 17, 1883. (Specimens.)

Claim.—1. As an improvement in the art of manufacturing fly-paper, the method herein described, which consists of fusing the composition by means of the application of steam or other indirect heat, so as to maintain the composition at a regular degree of temperature, and finally applying the composition to the surface of the paper by means of a roller, substantially as and for the purpose set forth.

2. As a new article of manufacture, fly-paper, when prepared in the manner herein set forth.

295,221. FIRE-ESCAPE. BENJAMIN F. BENNETT, Lockport, N. Y. Filed Apr. 9, 1883. (No model.)

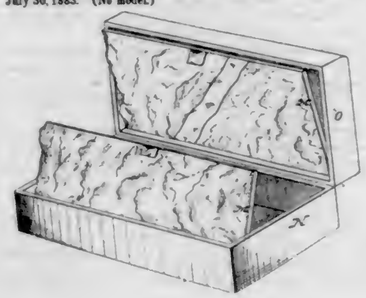
Brief.—The ladder-shaft and windlass and the power-wheel situated between the two are connected by endless belts.



Claim.—1. In combination with the ladder-shaft A, the pulley *f* thereon, the belt *g*, the power-wheel D, with its two divisions and ropes, or belts *k k′* therein, its pulley *h*, and a double windlass, *l*, all arranged and operating substantially as and for the purpose specified.

2. A fire-escape consisting of a ladder provided with a weight at the outer end, and a reel to which the ladder is attached at the inner end, and upon which it is wound, in combination with a shaft on which the reel is placed, a power-wheel, D, and windlass *l*, with belts or connections *g m*, whereby the ladder is operated.

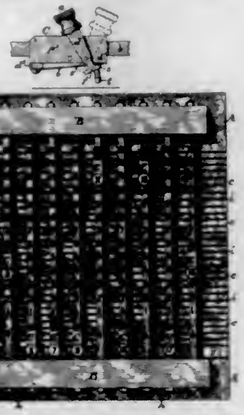
295,222. TOILET-CASE. HART O. BERG, New York, N. Y. Filed July 30, 1883. (No model.)



Claim.—1 A toilet-case provided on its interior with frames attached to one side of the body and cover, and covered with satin or any other suitable material, and removable panels inserted between the frames and the bottom of the body and cover of the case, having on their surfaces the requisite projections for holding and securing toilet articles, substantially as described.

2. In a toilet-case, the combination of the frames M, the body N, the cover O, and the removable panels K and P, substantially as described and set forth.

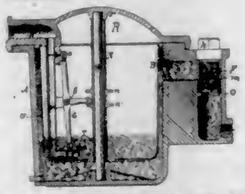
295,223. SWITCH-BOARD. FRANCIS BLAKE, Weston, Mass. Filed Aug. 6, 1883. (No model.)



Claim.—1. The combination, with two series of conducting-rods in a switch-board, one series crossing the other, of contact-pins sliding and tilting, one on each of the rods of one of the series, substantially as described, for the purpose specified.

2. The combination of two series of conducting-rods in a switch-board, one series hinged to the other, substantially as described.

295,224. STEAM-TRAP. JAMES H. BLESSING, Albany, N. Y. Filed Oct. 17, 1883. (No model.)



Claim.—1. In a steam-trap, the combination, with a floating bucket adapted to reciprocate vertically, as herein set forth, of the mechanism, substantially as described, for operating a slide-valve, so as to alternately cover and uncover a discharge-opening through which the water contained in said bucket is discharged, in the manner herein specified.

2. In a steam-trap, the combination, with a floating bucket arranged to reciprocate, as herein described, of a slide-valve adapted to cover and uncover a discharge-opening for the escape of the water contained in said bucket, and mechanism, substantially as described, for effecting the movements of said slide-valve by means of the reciprocations of the floating bucket, substantially in the manner herein specified.

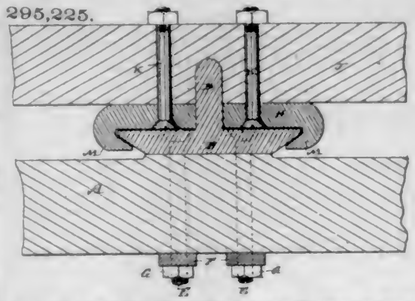
3. In a steam-trap, the combination, with a floating bucket adapted to reciprocate vertically, as herein set forth, of the mechanism, substantially as described, for the purpose of imparting alternate reciprocatory motions to a sliding valve and a loose piston, in the manner and for the purpose herein specified.

4. In a steam-trap, the combination, with a floating bucket, B, and a lever, G, connected with and vibrated by said bucket, as herein set forth, of a movable piston, *d*, adapted to reciprocate in an air-vent hole, *b*, as and for the purpose specified.

295,225. BOLSTER-PLATE FOR WAGONS. LEROY J. BRANDOW, Starkville, N. Y. Filed Aug. 25, 1883. (No model.)

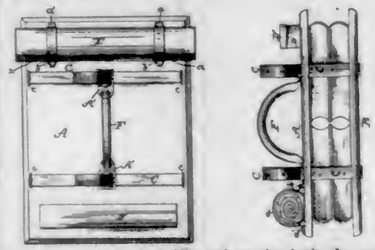
Claim.—The combination of the axle A, having a plate, B, provided with an upwardly-projecting pintle, D, secured to said axle by means of transverse bolts having interposed washers F, said plate being

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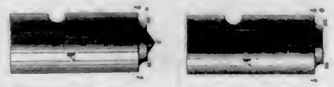
also provided with oblong recesses C, and a plate, H, secured to the under side of the bolster J by means of bolts K, said plate H having jaws M, to engage the edges of the plate B, said plate H being also provided with a transverse opening, L, through which passes the pintle D, the end of which is seated in an opening formed upon the under side of the bolster, substantially as and for the purpose set forth.

295,226. BOOK-CARRIER. PETER NAPOLEON BERTON, Montreal, Quebec, Canada. Filed Oct. 10, 1883. (No model.) Patented in Canada Sept. 10, 1883, No. 17,801.



Claim.—A device for holding and carrying books, &c., composed of two side boards or sections, A B, having slots *c* in their outer edges, securing-straps C C, handle F, box or compartment D, and short straps *a a*, adapted for holding a water-proof cover or roll when folded, said cover being constructed substantially as described, and having a slot in its top portion to receive the carrying-handle F, and adapted to be applied to cover the entire device, substantially as and for the purposes described.

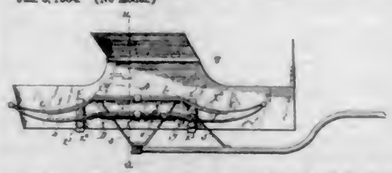
295,227. PUNCH. EDWARD W. ENGOS, Brooklyn, and JOHN D. WALTON, New York, N. Y. Filed MAR. 30, 1883. (No model.)



Claim.—1. That improvement in metal-punches which consists in forming the body with successive annular punching-edges *a b*, joined by an outwardly inclined or curved wall, *c*, as described, for the purpose set forth.

2. The metal-punch herein shown and described, having the successive annular punching-edges *a b*, joined by a curved wall, *c*, and a cone projection, *e*, having the described relation to the cutting-edge of least diameter, for the purposes specified.

295,228. VEHICLE-SPRING. JOHN P. CALLAN, Aurora, Ill. Filed Jan. 8, 1884. (No model.)

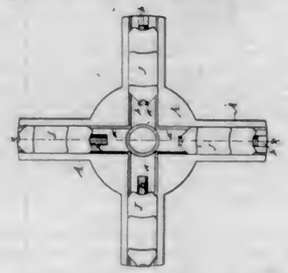


Claim.—1. The vehicle-spring constructed as described—that is, of the two parts or halves A and D, each having a central part substantially straight, terminating at each end in a curve, these parts being jointed

at their extremities, the upper half having leaves on its under side, and the lower half having leaves on its upper side—the springs being applied to the vehicle with the body or weight connected directly underneath to the lower half, D, and with the additional springs underneath the lower half, as shown and described.

2. In combination, the described spring, consisting of the parts A and D, constructed as set forth, the braces 3 and 4, connecting the upper part, A, to the axle, the braces 5, connecting the same part to the shafts, and the body supported by or upon or underneath the lower half, D, of the spring.

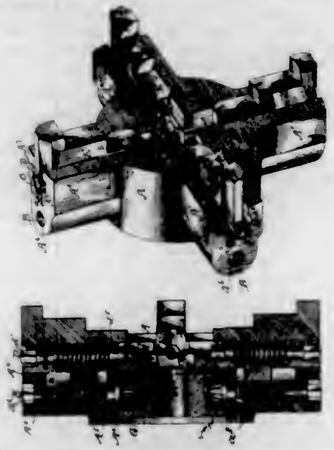
295,229. LATHE-CHUCK. GEORGE A. COLTON, Syracuse, N. Y., assignor of one-half to Henry C. Hooker, same place. Filed Mar. 21, 1883. (No model.)



Claim.—1. The jaw J and screw *b*, in combination with the carrier B, having integral with it the nut *a*, the screw *c*, pinion *d*, secured to the inner end of the screw *c*, and the gear *r*, arranged around the center of the chuck, all combined substantially in the manner described and shown.

2. In combination with the carrier B, provided with the nut *a*, screw *c*, provided at its inner end with the pinion *d*, and the rack *r*, arranged near the center of the chuck, as shown, the way *e*, extended to the periphery of the chuck, and the shoulder *s* against the back of the pinion, substantially in the manner described and shown, for the purpose set forth.

295,230. LATHE-CHUCK. GEORGE A. COLTON, Syracuse, N. Y., assignor of one-half to Henry C. Hooker, same place. Filed Jan. 25, 1884. (No model.)



Claim.—1. A chuck body or case comprising a hub and radial arms, the latter provided with ways for jaws or jaws and jaw-carriers, substantially as specified.

2. A chuck body or case comprising a hub and projecting radial jaw-supporting arms, the whole being cast in one piece, substantially as specified.

3. A chuck body or case comprising a hub, and hollow radial arms having internal bearings, as A^4 A^5, the whole being formed in one piece, substantially as specified.

4. A chuck body or case comprising in a single casting a hub, and hollow radial arms projecting therefrom and having an outer bearing, as A^4, and an inner enlarged bearing, as A^5, in combination with a jaw or jaw-carrier-operating screw having an enlarged bearing portion, as b^3, substantially as specified.

5. A chuck body or case comprising in a single casting a hub, hollow radial arms, a diaphragm or floor, jaw-ways, and thrust seats or shoulders, substantially as specified.

6. The screw B, comprising the body *b*, thread b^2, bearing b^3, gear b^4, and thrusts or shoulders b^4 b^5, substantially as shown and described.

7. The screw D, comprising the body *d*, bearing d^4, and thrusts d^6 d^7 d^8, substantially as shown and described.

8. The combination of the jaw E and screw D, having thrusts d^6 d^7 d^8, with the carrier having the bearings *c c' c²*, substantially as shown and described.

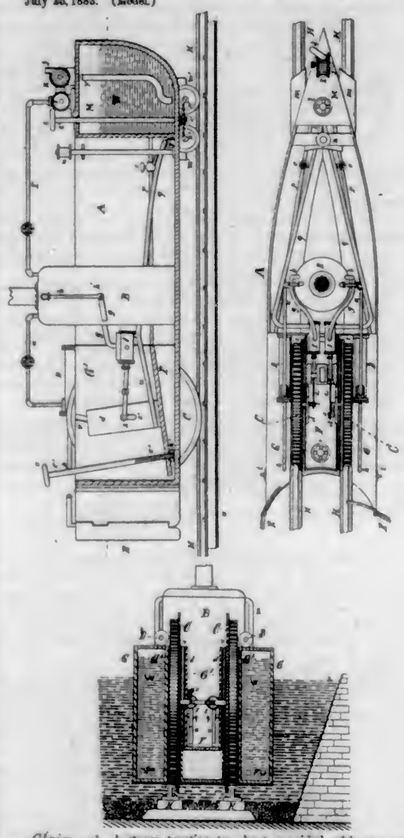
9. The combination of the arm A', having the bearings A^4 A^5, and formed as a part of the hub A, having seat A^6, the screw B, having the body *b*, enlarged portions b^3 b^4, and a jaw or a jaw-carrier, substantially as specified.

10. The combination, with the chuck-body having the hollow radial arms provided with ways, and a diaphragm or floor, A^7, of jaws or jaw-carriers adapted to said ways, and a core, as F, arranged against said diaphragm or floor, substantially as specified.

11. The screw D, having the enlarged portion d^4, forming the thrusts or shoulders d^7 d^8 at its inner end, substantially as specified.

12. The hub A, having bearings A^4 and floor A^5, in combination with the core F, having flange *f'*, and with geared ring G and bevel-gears b^3, substantially as specified.

295,231. STEAM TRACTION TUG-BOAT. DAVID W. COOKE, Franklin, Tenn. Filed Aug. 2, 1879. Renewed July 29, 1881. Again renewed July 25, 1883. (Model.)



Claim.—1. A steam traction tug-boat provided with two well-spaces open at their stern ends, and with traction-wheels therein, in combination with a vertically-swinging horizontal platform, with motor or motors thereon for driving said traction-wheels, substantially as described.

2. A steam traction tug-boat provided with a water-compartment at or near the bow end thereof, in combination with the aligning guide-trucks beneath said bow and water-compartment, as described, and for the purpose herein set forth.

3. A steam traction tug-boat provided with traction-driving wheels and aligning guide-trucks thereto, the two water traction-compartments and bow-tank therein, in combination with connecting and circulating pipes and valves thereto, substantially as described, and for the purposes herein set forth.

4. In combination with the swinging platform F, with supporting-standards *d d*, and traction-wheels C C, supported thereon and driven by engines *f f*, connected thereto and supported upon and swinging with said platform, the vertical shaft *c*, with screw *c'* thereon for elevating and depressing said traction-wheels and parts connected therewith and thereto, as and for the purpose specified.

5. The two traction water-compartments filled or partly filled with water as a means for affording additional weight and traction force, in combination with the elevating-shaft *c* and screw *c'*, swinging platform F, engines *f f*, and traction-wheels C C, connected thereto and therewith, whereby the accumulated weight derived from the water in said tanks and increased weight due to the elevation of said boat is transferred to the said traction-wheels, as described, and for the purpose herein set forth.

6. In combination with the supporting-rods *b b*, attached to boiler B, rod or bars *g g*, and jointed connection *h' h'*, in combination with the engines *f f* and platform F, substantially as arranged, and for the purpose specified.

7. In combination with the bow end of a steam traction tug-boat provided with a water-ballast compartment therein, the aligning guide-trucks *m' m'*, provided with the vertical shaft *l'*, with hand-wheel *l* thereon for elevating and depressing the bow end of said boat when more or less traction is required upon the submerged rails.

8. In combination with a steam tug-boat provided with well-spaces and traction-wheels therein, and water traction and ballast compartments within said boat, and connecting pipes therewith and valves thereto, constructed and arranged as shown and described, the pump *k*, with induction and eduction pipes *g* and *j*, and external valve, K, for opening and filling said tanks, as arranged, and for the purpose herein set forth.

9. In a steam traction tug-boat having a concave stern, the water-ballast compartments, and well-spaces with traction-wheels therein, all located at the stern end of said boat, in combination with the track on which said traction-wheels roll.

10. In a steam traction tug-boat having a concave stern and well-spaces opening through said stern, said well-spaces and traction-wheels therein, in combination with the water-ballast compartment and submerged track, for the purposes specified.

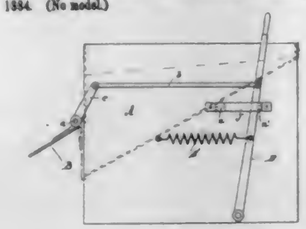
11. In a steam traction tug-boat, a frame horizontally located, or nearly so, and swinging about a pivotal point at or near one of its ends, while at or near its opposite end a traction wheel or wheels are located and caused to rise and fall with said frame by means of a screw or its equivalent, and the packed slides, which are caused to rise and fall by means of the traction-wheel axles, or by some other equivalent devices, in combination with the motive or transmitting power located upon and swinging with said frame and traction wheel or wheels.

295,232. MANUFACTURE OF ELECTRIC CONDUCTORS. ALFRED A. COWLES, New York, N. Y., assignor to the Ansonia Brass and Copper Company, Ansonia, Conn. Filed Dec. 20, 1883. (No model.)



Claim.—The method herein specified of preparing flexible adhesive water-proof tape and applying it to the conductor, consisting in rolling the tape after the same has been impregnated with such waterproofing material, and afterward heating the roll of tape to expel moisture and soften the adhesive waterproofing material, and applying such tape, while in the hot condition, to the conductor, substantially as and for the purposes set forth.

295,233. COAL-BUNK. JOHN DALL, New York, N. Y. Filed Jan. 25, 1884. (No model.)



Claim.—A receptacle, A, the sides and back of which are made slanting toward the front, closed by a hinged door, B, in combination with crank *c*, rod *b*, lever D, spring S, and guide-frame J, provided with recesses *n n'*, arranged to operate in the manner and for the purpose substantially as described.

295,234. RETAINER FOR GUN-WADS. JAMES W. DENNIS, Cincinnati, Ohio, assignor of one-half to William Hamilton, same place. Filed Oct. 3, 1883. (No model.)



Claim.—1. A metal cartridge-wad holder concaved or arched, and expansible by flattening with one or more downwardly-projecting spurs at or within its peripheral boundary, adapted to be forced into or around the wad in the flattening process, to secure the metal holder to the wad, and the latter within the shell, substantially as set forth.

2. As a new article of manufacture, an arched or concave sheet-metal wad-holder having spurs or projections upon its under surface, formed by cutting and turning down the metal within the peripheral boundary, and adapted to sink into or around the paper or felt wad in the flattening process, to engage and hold the parts in place, substantially as set forth.

295,235. GUN-WAD. JAMES W. DENNIS, Cincinnati, Ohio, assignor of one-half to William Hamilton, same place. Filed Nov. 5, 1883. (No model.)



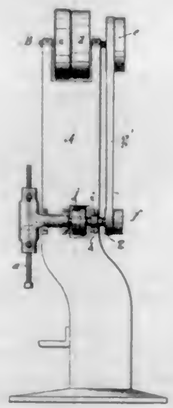
Claim.—1. A holder for gun-wads, consisting of a flat sheet-metal disk having an annular groove at or near the margin, and adapted to be secured to the wad in using, and expanded by flattening, substantially as set forth.

2. A combined gun-wad and holder, consisting of a wad of paper or soft material having united therewith a flat metal disk provided with an annular groove adapted to be expanded by the ramming process against or into the wall of the cartridge or barrel, substantially as set forth.

3. The improved gun-wad, consisting of a paper or felt wad perforated centrally or marginally, and provided with a sheet-metal disk united therewith at one of its outer surfaces, substantially as set forth.

295,236. BORING ATTACHMENT FOR MORTISING-MACHINES. WILLIAM H. DOANE and GEORGE W. BOOBER, Cincinnati, Ohio. Filed Aug. 9, 1883. (No model.)

Brief.—A boring-spindle is placed upon each side of the mortising-machine, either one of which may be driven by a belt from the main shaft. This belt runs over a pulley on the counter-shaft which drives the main boring-spindle, or over an adjacent pulley on a sleeve on this counter-shaft, which is belted to the counter-shaft of the auxiliary boring-spindle.



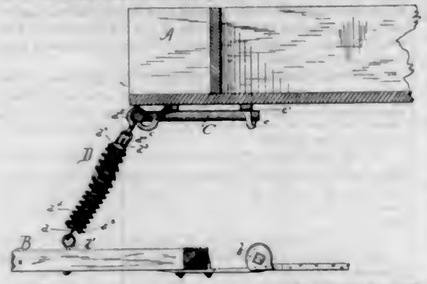
Claim.—1. In a mortising and boring machine, the main and auxiliary boring attachment arranged relatively to each other, substantially as described, driving mechanism leading from the main counter-shaft to one of the boring-shafts, and driving mechanism, substantially as described, leading therefrom to the other boring-shaft, and mechanism for throwing the latter into or out of operation, all in combination, substantially as set forth.

2. In a mortising and boring machine, the main and auxiliary boring attachments at opposite sides of the supporting-column, a belt connecting the same, means for throwing said belt into or out of operation, a counter-shaft on the main frame, and a belt connecting this with one of the boring-shafts, all combined and arranged to operate as set forth.

3. In combination, in a mortising-machine having boring attachments, a counter-shaft journaled on the main frame and connected to the main boring-spindle, a fixed pulley on said counter-shaft, an adjacent pulley secured to a loose sleeve, the auxiliary boring-tool and its counter-shaft driven from said pulley on the sleeve, and the driving-belts, all combined substantially as stated.

4. In a mortising-machine, the combination of the boring counter-shaft C, having thereon a fixed pulley, *f*, and a loose sleeve, A, carrying pulleys *g* and *j*, with a second boring counter-shaft, C', provided with fast and loose pulleys *m n*, substantially as and for the purpose specified.

295,237. WAGON-TONGUE SUPPORT. JAMES T. DOUGHS, Chicago, Ill. Filed Nov. 3, 1883. (No model.)

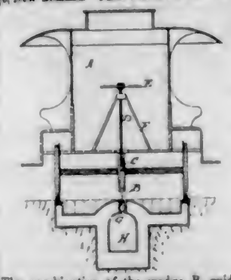


Claim.—1. In a vehicle-tongue supporter, the combination, with a curved rod or guide-rail secured to the vehicle box or body, of a connecting device suspended therefrom to the tongue, said connecting device being adapted to slide around on said curved rod as the tongue is turned, substantially as specified.

2. The combination, with a curved rod secured to the vehicle box or body, of a spring-connection to the tongue suspended from said curved rod and adapted to slide around on the same as the tongue is turned, substantially as specified.

3. The vehicle-tongue supporter, consisting of a rod secured to the vehicle, and a spring-connecting device attached to the tongue, and adapted to slide around on said rod as the tongue is turned, substantially as specified.

295,238. BRAKE FOR CABLE-RAILWAY CARS. GEORGE DUNCAN, Dunedin, Otago, New Zealand. Filed Dec. 22, 1883. (No model.)



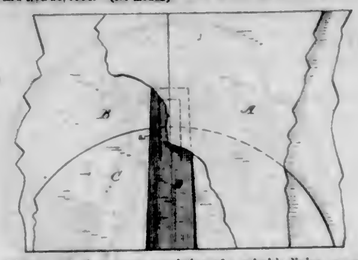
Claim.—1. The combination of the wedge B, guide C, screw D, hand-wheel E, and stand F, with the car A and the slot-irons G of an underground slotted-tube endless-cable railway, substantially as shown and described.

2. The combination of the wedge B, guide C, stand F, screw D, and hand-wheel E, with the car A.

3. The wedge B and guide C, in combination with the car A and slot-irons G.

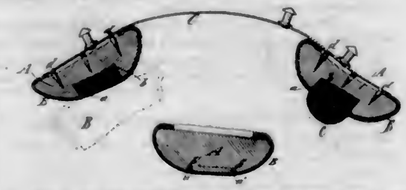
4. In an endless cable underground slotted-tube railway, the combination of a car, A, a wedge, B, and the slot-irons G of the tube, substantially as shown and described, and for the purpose set forth.

295,239. SHOE-UPPER. JAMES HENRY BOAK, Jr., St. Johnsville, N. Y. Filed Dec. 28, 1881. (No model.)



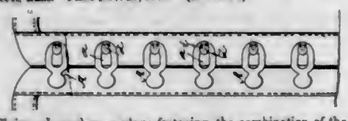
Claim.—A shoe-upper consisting of a suitable lining, an upper-leather and a stiffening-leather, and a back stay skived across its entire width and in a direction of its length, and held between them by a horizontal row of stitches across its upper end and two longitudinal rows of stitches, said stitches extending down only a portion of the length of the stay, to fasten it to the upper portion only of the stiffening-leather, substantially as and for the purposes specified.

295,240. TRUSS. JOHANNES FENERSTEIN, New York, N. Y. Filed Nov. 14, 1883. (No model.)



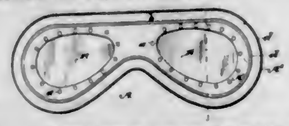
Claim.—The truss-pad consisting of a solid body or block, A, and the flexible india-rubber sheath or covering B, centered upon said body by means of a recess and projection, as herein described, the said sheath or covering conforming in shape to the face of the body or block A, fitting in contact therewith at all points and secured thereon by its elasticity, substantially as set forth.

295,241. SHOE OR GLOVE FASTENING. MATTHEW S. FOX, Fort Scott, Kans. Filed Nov. 26, 1883. (No model.)



Claim.—In a shoe or glove fastening, the combination of the plate A, having the slot *a*, notch *b*, and securing-flange *c*, button *d*, having the head notched, as at *i*, and projecting prongs *f*, the whole adapted to operate as shown, described, and for the purpose specified.

295,242. FLEXIBLE AIR-TIGHT EYE-GUARD. DAVID GENESE, Baltimore, Md. Filed July 10, 1883. (Model.)



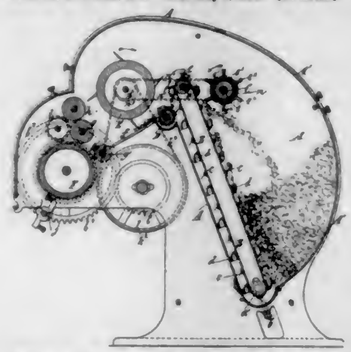
Claim.—1. A flexible air-tight eye-guard consisting of a frame of flexible metal completely surrounding the orbital space, and having plane lenses of mica or other transparent and flexible substance, and an elastic marginal body secured to said frame, in the manner and for the purpose substantially as described.

2. The combination, with the frame composed of two flexible metallic plates, A and A', of the mica lenses B, the raw rubber *a'*, and the rivets *a*, substantially as described.

3. The combination, with the frame composed of two plates lying one upon the other with the lenses interposed, as described, of an elastic margin secured to a strip which is attached to the frame by bending the edges of the plates over the margins of the strip, substantially as described.

4. The combination, with the frame composed of the plates A' A², having flanged edges *d d*, of the elastic tube C, mounted upon a strip, D, the parts being united, substantially as described.

295,243. SELF-FEEDER FOR CARDING-MACHINES. CALVIN L. GODDARD, New York, N. Y. Filed May 3, 1883. (No model.)



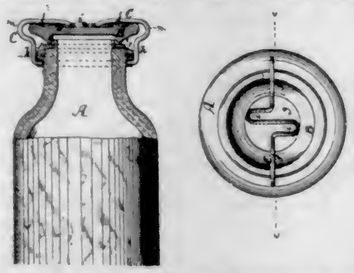
Claim.—1. The combination, with a bin for stock, of a lifting-apron provided with rows of teeth, and receptacles or buckets interposed between the teeth, and mechanism for operating said apron and for delivering the material raised by the lifting-apron to a carding-engine or other machine, substantially as specified.

2. The combination, with a bin for stock, of a lifting-apron provided with buckets or receptacles, a beater or other stripping device near the top of the apron, mechanism for operating said apron and beater or stripping device, and mechanism whereby the material raised by the lifting-apron may be delivered to a carding-engine or other machine, substantially as described.

3. The combination, with a bin for stock, of a lifting-apron provided with buckets or receptacles, and with rows of teeth independent of said buckets or receptacles, a beater or other stripping device near the top of the apron, mechanism for operating said apron and beater or stripping device, and mechanism whereby the material raised by the lifting-apron may be delivered to a carding-engine or other machine, substantially as described.

4. The combination, with a bin for stock, of a lifting-apron provided with buckets or receptacles having serrated or toothed edges, a beater or other stripping device near the top of the apron, mechanism for operating said apron and beater or stripping device, and mechanism whereby the material raised by the lifting-apron may be delivered to a carding-engine or analogous machine, substantially as described.

295,244. FRUIT-JAR. GEO. W. GOSHEN, Sybertsville, Pa., assignor to Henry W. Putnam, Bennington, Vt. Filed Dec. 31, 1883. (No model.)



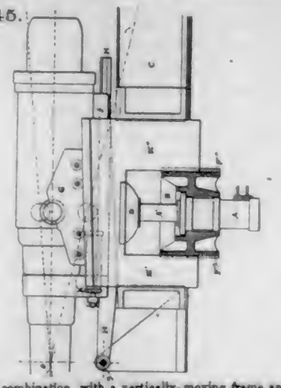
Claim.—1. The jar-fastener C, made with central springing enlargement, with spring-arms *j*, having curved portions *m*, and downwardly-extending hooks *h h*, substantially as described.

2. The combination of the lid B, having depression *g*, with the holder C, swiveled by spring enlargements *i i* in said depression, said holder having spring-arms *j*, with curved portions *m*, and hooks *h*, substantially as and for the purpose herein shown and described.

295,245. GUN-CARRIAGE. HERMANN GRUSON, Buckau, near Magdeburg, Prussia, Germany. Filed Sept. 12, 1883. (No model.) Patented in Belgium Mar. 24, 1883, No. 60,670; in France Apr. 3, 1883, No. 154,638, and in Italy June 30, 1883, XVII, 15,425.

Claim.—1. The combination, with a vertically-moving gun-carriage, of a barrel whose trunnions have bearings therein, said barrel having through intermediate connections a fixed pivotal point distant from the vertical plane of the axis of said trunnions on which it turns, as set forth.

295,245.



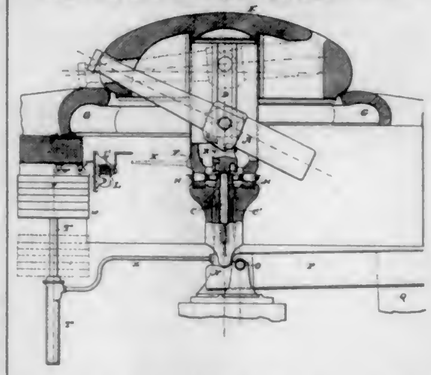
2. The combination, with a vertically-moving frame and a sliding gun-carriage mounted thereon and supporting the trunnions, of the barrel pivoted through intermediate connections to a part of the frame distant from the vertical plane of the axis of said trunnions, which is stationary as regards vertical and independent horizontal movement, as and for the purpose set forth.

3. The combination, with a vertically-moving gun-carriage affording bearings in which the trunnions work, and the barrel having through intermediate connections a fixed pivotal point distant from the vertical plane of the axis of said trunnions, of a hydraulic press for operating said carriage, as set forth.

4. The combination, with the vertically-moving frame E and carriage G, of the barrel pivotally connected to a part of the frame through the medium of the buffer K and rod H, sliding in a suitable groove in a block fixed to the under side of the barrel, as and for the purpose set forth.

5. The combination, with the vertically-moving frame E, carriage G, and the barrel, having through the medium of suitable intermediate connections a fixed pivotal point distant from the vertical plane of the axis of the trunnions, of a hydraulic press, A, as and for the purpose set forth.

295,246. ARMOR-PLATED GUN-CARRIAGE. HERMANN GRUSON, Buckau, near Magdeburg, and MAX SCHUMANN, Magdeburg, Prussia, Germany. Filed Apr. 19, 1883. (No model.) Patented in Belgium Feb. 23, 1883, No. 60,476; in England Mar. 10, 1883, No. 1,288; in Italy May 16, 1883, XXX, 434, and in France July 6, 1883, No. 154,131.



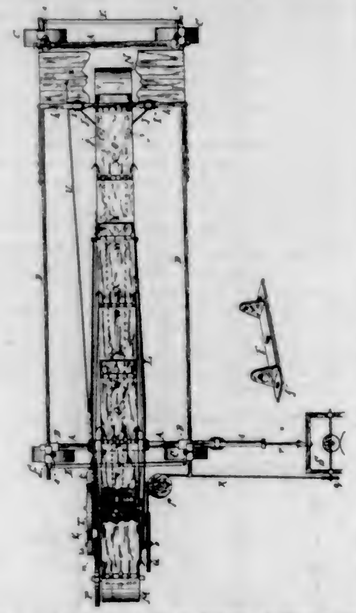
Claim.—1. The armor-plated gun-carriage adapted to be raised by hydraulic pressure and to be lowered by a winch, as described, and provided with a piston, C, to serve as a pivot-point for rotating the gun-carriage, and to rest upon the fluid of the cylinder C' when the said carriage is elevated.

2. In combination with the armor-plated gun-carriage adapted to be raised by hydraulic pressure, as described, a lowering device consisting of a winch, L L', having a cord, *v*, moving over pulleys *v'* and *v''*, for raising the weight *w* and withdrawing the hydraulic pressure and permitting the gun-carriage to descend, substantially as described.

3. The combination of the armor-plated shield having a minimum embrasure, as described, with a gun-carriage adapted to be elevated and supported by a piston, C, and to be rotated in a horizontal plane with the piston C as a pivot-point, or upon the roller-track, when the carriage has been slightly raised, in combination with the cylinder C', the connecting-pipe *x*, the cylinder T', piston T, and the superimposed weight *w*, controlled by a winch, substantially as set forth.

295,247. DITCHING AND GRADING MACHINE. ISAAC B. HAMMOND, Chicago, Ill. Filed Dec. 28, 1882. (No model.)

Brief.—A frame carrying an endless belt, having alternative claws and buckets secured (the latter by twisted straps) to cross-strips, is pivoted in the bent-up ends of a plate perforated for a king-bolt passing through an under bearing-plate secured to one of two axle-beams. These beams, with two beams connected thereto and to caster-wheel spindles (connected in pairs) by socketed sleeves, form the main frame. The upper belt-roller is geared with a pulley-shaft driven by cords running around suitable pulleys, and from an engine-truck adjusted in attachment to main frame by a sleeve and slide-rod. On a bridge transverse to the frame run two rollers, to which are secured ropes passing therefrom under pulleys on belt-frame to a drum thereon, having slide-boxes enabling it to be thrown into gear with the pulley-shaft by a lever and rod.



Claim.—1. In a ditching and grading machine, the scoops Y, rigidly connected by straps *x* to bars W, which are secured upon an endless belt, O, that is stretched over pulleys M and N, all constructed and arranged as and for the purpose set forth.

2. In a ditching and grading machine, the combination of the supporting-frame, composed of axle-trees A A' and longitudinal beams D, independently swiveled upon mandrels *b*, and the wheels C, pivoted in the bifurcated shanks of mandrel *b*, substantially as and for the purpose set forth.

3. In a ditching and grading machine, the endless belt O, stretched over pulleys M and N of swinging frame G, and having alternate plow-hooks X and scoops Y, each pulley M being driven by a gear-wheel, P, pinion *n*, and pulley Q, and from the engine S by an endless rope, R, that is guided over sheaves *p*, all constructed and arranged substantially as described, to operate as specified.

4. In a ditching and grading machine, the axle-trees A A' and longitudinal beams D, pivotally connected each to the other by mandrels *b* that have wheels C and cranks *c*, connected by bars E, all substantially as and for the purpose described and shown.

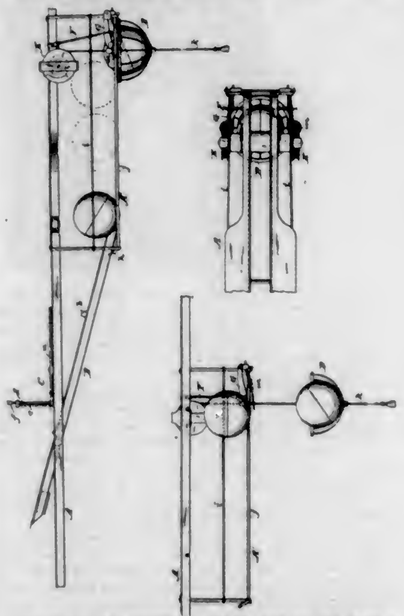
5. In a ditching and grading machine, the combination of main frame, composed of axle-trees A A' and longitudinal beam D, wheels C, pivoted in the bifurcated shanks of mandrel *b*, frame G, pivotally supported on bolt *g* upon plate F and plate *f*, all substantially as and for the purpose set forth.

6. In a ditching and grading machine, the main frame, consisting of axle-trees A and A' and longitudinal beams D, having uprights H, with bridge-tree A, and supported on wheels C, in combination with swinging frame G, pivotally supported at one end on axle-tree A, and suspended at its opposite end by ropes J, that are coupled to hangers *i* of rollers I, passed over sheaves *j*, and thence wound upon drum K, all substantially as and for the purpose set forth.

7. In a ditching and grading machine, the combination, with the main frame having axle-trees A A', longitudinal beams D, and bridge-tree A, with rollers I and hangers *i*, of swinging frame G, having sheaves *j*, drum K, having its shaft journaled in sliding boxes, with pulley T, driving-shaft o, with friction-wheel *u*, brake-shoe *t*, shifting-lever *k*, with rod U and ropes J, coupled to hangers *i*, passed over sheaves *j*, and thence winding upon drum K, all constructed and arranged to operate substantially as described, for the purpose specified.

8. In a ditching and grading machine, the combination, with frame G, of driving-pulley Q and sheaves *p*, rope or belt R, main frame having axle-tree A, having tube *s*, portable engine S, having rod *r*, adapted to enter tube *s* and be adjustably secured therein by a set-screw, all substantially as and for the purpose set forth.

295,248. STORE-SERVICE APPARATUS. HARRY H. HAYDEN, New York, N. Y. Filed Dec. 27, 1883. (No model.)



Claim.—1. The combination, with the main way and switch of a store-service apparatus, of a supplemental receiving-way and a movable receptacle arranged below the receiving-way to receive the carriers passing from the latter, substantially as set forth.

2. The combination of the main way and switch and a receiving-way having an opening whereby the carriers may descend vertically, a vertically-moving receptacle below the receiving-way, and a detent whereby the carriers are retained on the receiving-way until the receptacle is at its highest point, substantially as described.

3. The combination of the main track and switch, receiving-way having the tracks spread at the delivery end, detent, and receptacle or basket arranged below the opening in the track, and connected to cords and counterbalanced, substantially as specified.

4. The combination, with the main way and switch of a store-service apparatus, of a receiving-way arranged below the main way, and a movable receptacle arranged below the receiving-way to receive the carriers passing vertically from the latter, substantially as set forth.

5. The combination of the main track and switch, receiving-way, basket, suspension-cords, and one or more spring-drums, upon which said cords are wound, substantially as described.

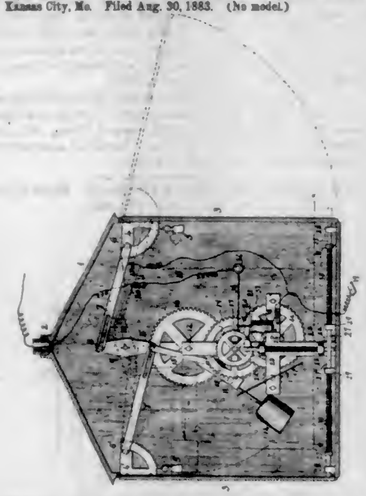
6. The combination of the main track, switch, and receiving-way, consisting of wires arranged below the main way and provided with a detent, substantially as described.

7. The combination of the receiving-way, receptacle, detent, and

locking device, whereby the detent is locked in place until the receptacle is at its highest point, substantially as described.

8. In a store-service system, a return-way provided with a series of switches and appliances whereby each switch is unlocked at its proper station, and a receiving-way adjacent to each switch, and a movable receptacle and appliances whereby the carriers on the receiving-ways may be successively carried downward to the operator's station, substantially as specified.

295,249. COMBINED FIRE AND POLICE ALARM. JOHN C. HENRY, Kansas City, Mo. Filed Aug. 30, 1883. (No model.)



Claim.—1. In a signal-box having suitable line and ground connections, and with a make-and-break device for giving the prescribed call from said box, a supplemental make and break for giving signals additional to the main call, and duplicate mechanism, both adapted to operate the main circuit-breaker, and one the supplemental circuit-breaker in addition, as set forth.

2. In a signaling apparatus, the combination, with a signal-box having means of sending, in addition to the regular call, a preliminary or subsequent impulse of some duration, of the indicator and alarm, the latter being adapted to be operated only by the supplemental call, as set forth.

3. An electric signal-box provided with two independently-hinged doors or levers, each connected with and adapted to operate the regular call through the medium of intermediate mechanism, and one of said doors or levers having a separate make-and-break device for sending additional impulse or impulses to line, substantially as set forth.

4. In a signal-box, the combination, with a weighted arm or spring and a train adapted to be driven thereby to transmit the call, of two independently-movable levers or doors so connected with such weighted arm or spring as by being lifted to set the same in position for driving the train, substantially as set forth.

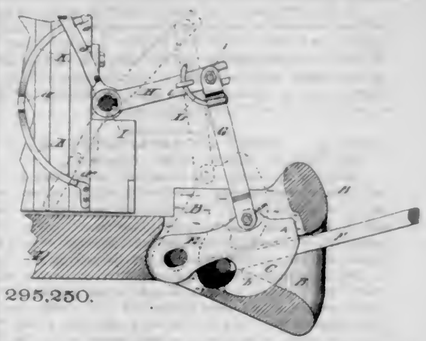
5. The combination of door or doors having means of connection to the call mechanism, with segment rack or racks fixed to such door or doors, and pawl or pawls adapted to engage with such segment-racks until the door has reached its extreme position, substantially as set forth.

6. The combination, with one or more doors or levers, 3 3', of slotted connecting-rods 7 7', rocking lever 9, connecting-rod 13, and weighted arm 11, substantially as and for the purpose set forth.

7. In combination with door or doors 3 3', the train 16 18 19, and weighted arm 11, adapted to drive such train when set by the opening of one or other of the doors, and the stop mechanism adapted to be moved by the closure of such door, and thus release the train, for the purpose set forth.

8. In combination with a make-and-break wheel having suitable means for rotating the same, and stop or pin 20, the spring-rod 22, having stop-lug 21 and plate or arm 26, and the spring rod or rods 27, adapted to release the stop mechanism when the door is closed, substantially as set forth.

295,250. CAR-COUPLING. ROBERT HITCHCOCK, Springfield, Mass. Filed Feb. 9, 1884. (No model.)



295,250.

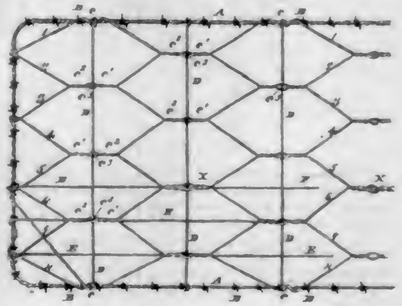
Claim.—1. The within-described improved car-coupling, consisting of a draw-head, B, having a vertical slot bisecting its mouth, a depression, *h*, in the front wall of said slot and immediately above the upper mouth-surface, a shoulder, *b*, in the lower surface of the mouth, a hook, C, hinged at its rear end within the slot of the draw-head, within an elongated opening, having an inclined front end and a hook-depression adapted to hold the link, and means, substantially as shown, for suspending the hook upon its hinge to have its front upper corner bear in the depression *h*, the upper surface of its hook-depression coincide with the upper wall of the draw-head mouth, and for swinging the hook upward and downward from said position, while permitting it an independent upward swing, all operating as shown and described.

2. In a car-coupling, the combination, with a draw-head, B, and self-coupling hook C, adapted to swing in both directions from a self-coupling position, of a shaft, I, hung in bearings across the end of the car, provided with handles, as J, upon its ends, arranged to swing upon the sides of the car, a track, K, arranged upon the side of the car and provided with stops *d d' d''*, and adapted to form a friction-surface with handle J, a toggle, G, hinged to the hook C, a crank-arm, H, hinged at one end to the toggle G and sleeved upon its other to shaft I, and a clutch formed upon the sleeve of arm H and shaft I, and adapted to permit an upward movement to hook C, to self-couple, while becoming operative to raise or depress the hook through the rotation of shaft I.

3. The combination and relative arrangement of a swinging operating-handle, J, and friction-track having stops of a car-coupling, with the end ladder of a car, whereby from the ladder the handle upon the side of the car is adapted to be operated either by one hand or one foot.

4. In a car-coupling, the release-joint consisting of the segment L and staple or eye *l*, arranged and combined with the hinged ends of toggle G and arm H, one of which is provided with a forked end, all as shown and described.

295,251. WIRE-NETTING. ARTHUR G. HULBERT, St. Louis, Mo. Filed May 3, 1883. (No model.)



Claim.—1. A wire-netting formed from continuous wires connected to the nearest wire on each side alternately by right and left twists to form elongated hexagonal meshes, as set forth.

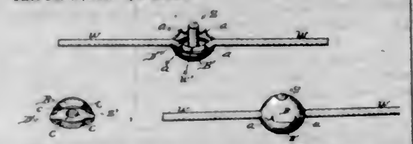
2. A wire-netting formed from continuous wires connected to the adjacent wire on each side alternately by right and left twists to form hexagonal meshes, and selvage-wires connected thereto by the outer wires passed bodily around the selvage-wires, as set forth.

3. The combination of body-wires C, connected by right and left twists c' c^2, and vertical wire D, passing through eyes c^3 in the twist.

4. The combination, in wire-netting, of body-wires C, connected by right and left twists with eyes c^3 therein, and longitudinal wires or strips passing through said eyes or twists.

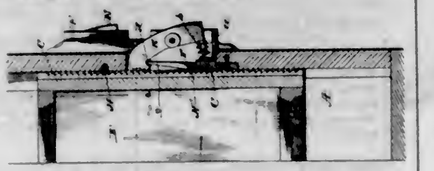
5. The combination of body-wires C, connected by right and left twists forming eyes c^3, and the vertical and longitudinal wires passing through the eyes, as set forth.

295,252. STOP FOR CHECK-ROW WIRES. THOMAS H. HUTCHINS, Joliet, Ill., assignor to the Illinois Manufacturing Company, same place. Filed Dec. 26, 1883. (No model.)



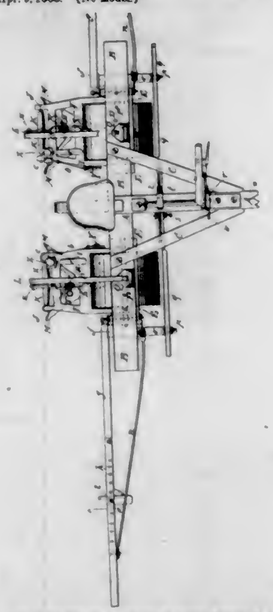
Claim.—The check-row stop described, consisting of the two semi-spheres having the cavities D', and having their meeting edges serrated or provided with the teeth *a* and corresponding notches, *c*, and the rivet S, for uniting the two halves or semi-spheres, substantially as set forth.

295,253. SASH-HOLDER. THOMAS BROWN JONES, Hiawatha, Kans., assignor of one-half to Nathan S. Grover and Delbert T. Grover, both of same place. Filed July 25, 1883. (Model.)



Claim.—The combination, with a window-sash provided with a serrated bar, of a casing secured within the window-frame, the dog E, centrally pivoted within the casing, and provided with the groove *d* and finger *a*, the spring for forcing the upper end of the dog outwardly, and an independent key, shaped substantially as shown, for disengaging the dog from the serrated bar, substantially as set forth.

295,254. LAND-MARKER. WILLIAM HANFORD KING, Little Silver, N.J. Filed Apr. 9, 1883. (No model.)

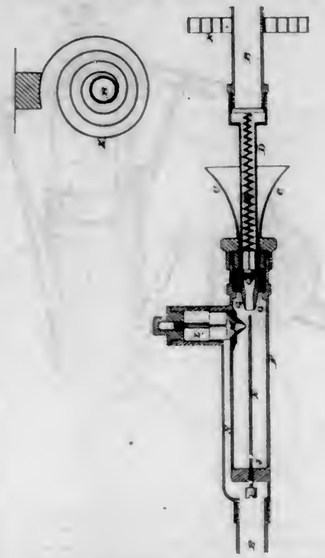


Claim.—1. The combination of the roller-plate flanges F, the frame I, pivoted to the roller-axle and carrying the plow M, whose standard is pivoted to said frame, said frame also having a spring-hook, Y, the bar O, pivoted to the plow-standard, and with its free end adapted to rest on a roller, P, of the beam B, and the hand-lever X, pivoted upon the frame I, and connected to the bar O, said lever having a supplementary lever, *a*, having means for operating the spring-hook Y, substantially as and for the purpose set forth.

2. The combination of the roller-plate flanges F, the frame I, pivoted to the roller-axle and carrying the plow M, whose standard is pivoted to said frame, said frame also having a spring-hook, Y, the bar O, pivoted to the plow-standard, and with its free end adapted to rest on a roller, P, the brace R, connected to the bar O, and having a slot, U, in its end connected to the plow-standard, and the hand-lever X, pivoted to the frame I, and provided with means for operating the spring-hook Y, substantially as and for the purpose set forth.

3. The combination of the roller-plate flanges F, the foot-plate *f*, pivoted to the latter, and having the fixed forwardly-projecting arm *o*, in turn provided with an upwardly-projecting flange having a bolt, *p*, upon which is pivoted the slotted bar *q*, the rods *g h*, and foot *k*, curved bar *r*, shaft *t*, and lever *w*, having a pawl, *v*, and catch-bar *w*, substantially as and for the purpose set forth.

295,255. COUPLING FOR CAR-HEATING APPARATUS. JOHN J. LACEY, San Francisco, assignor to the Lacey Automatic Coupling Company, Oakland, Cal. Filed Feb. 24, 1883. Renewed Feb. 13, 1884. (No model.)



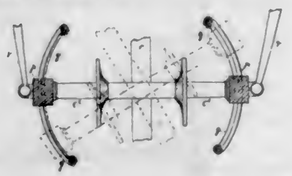
Claim.—1. The pipes B, by which steam or hot air may be conveyed beneath the cars, in combination with the tubes D and F, the bell-shaped guiding-mouth C and the coiled supporting-spring E, substantially as herein described.

2. The tube F, with the partition J, passage N, chamber L, valve M, and the stem or rod K, in combination with the tube D, the valve H, spring I, and the bell-shaped guiding-mouth C and stuffing-box G, substantially as herein described.

295,256. COMPOUND FOR COATING METAL. JOSIAH H. LEGGE, Pittsburg, assignor of one-fourth to A. A. McCarty, Allegheny, Pa. Filed Oct. 22, 1883. (No specimens.)

Claim.—The herein-described compound for coating metals, composed of lead, zinc, tin, and borax, the borax being in the proportion of one-half of one per cent. to five per cent. of the lead and zinc employed, substantially as and for the purposes set forth.

295,257. TRICYCLE. WALTER JOHN LLOYD, Harborne, Birmingham, County of Stafford, England. Filed Jan. 2, 1884. (No model.) Patented in England Aug. 31, 1882, No. 4,157.

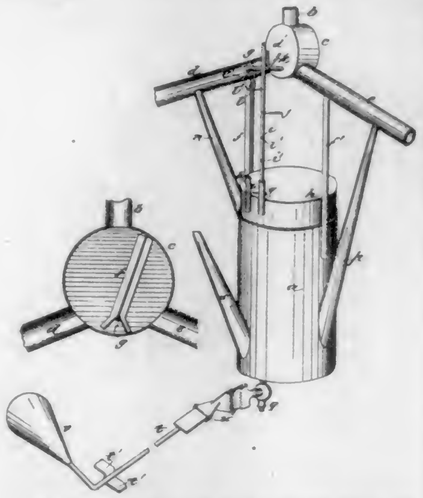


Claim.—1. In a tricycle, the steering-wheel having an elongated axle and bearings near the ends thereof, as described, in combination with the frame *d*, having two curved guide-bars at each end thereof, said guide-bars arranged to embrace the sliding bearings, as described, and connected at the ends by screw-bolts, substantially as shown and set forth.

2. The combination of the steering-rod and its pinion, a draw-bar with which said pinion engages, a lever operated by said draw-bar, and suitable connections, substantially as described, from the ends of said lever to the bearings of the steering-wheel axle, said bearings being adapted to move in curved guideways, all substantially as described.

3. The steering-wheel having elongated axle c^3, the bearings *p* of said axle having side grooves, and the curved guides *q q'*, having edge projections, which extend into said grooves, all arranged and combined to operate substantially as shown and set forth.

295,258. AUTOMATIC RAIN-WATER REGULATOR FOR CISTERNS. FREDERICK E. LORD, St. Louis, Mo. Filed Aug. 10, 1883. (No model.)

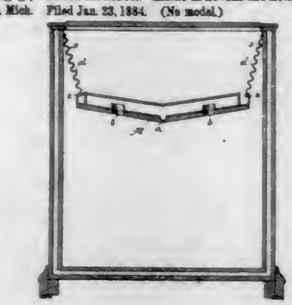


Claim.—1. The tank *a*, having upwardly-extending pipe *n*, in combination with a superposed case having water-inlet pipe *b*, waste-pipe *d*, connected with pipe *n* by a wire-gauze-covered hole, *m*, and the cistern-pipe *c*, placed on the opposite side to pipe *d*, whereby as the water passes through the waste-pipe some will pass through hole *m* and pipe *n* into the tank, to raise the float, as and for the purpose described.

2. The combination, with the tank *a*, having upwardly-projecting pipes *p s*, of the superposed case having a cistern-pipe, *c*, connected with pipe *p*, whereby the float will be maintained in a position to retain the valve tilted at its upper end on the side of pipe *b* opposite to that on which the cistern-pipe is situated, so that as long as the rain continues the water will be poured uninterruptedly into the cistern.

3. The combination, with the valve-pivot *g* and the float-stem *i*, of the arms *j k l l'*, whereby the valve will be automatically operated, as described.

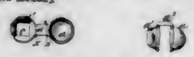
295,259. REFRIGERATOR. HENRY H. LOVELL and HOMER T. LOVELL, Ionia, Mich. Filed Jan. 23, 1884. (No model.)



Claim.—1. In a refrigerator, and in combination, an ice-box bottom fitted tightly to the sides of the refrigerator, with a space at the ends for the passage of air, and with air-passages in the bottom, and hinged end pieces perforated and connected loosely with the bottom, substantially as described.

2. The wooden bottom A, made in one piece with the groove *a*, wherein it is bent or sprung, whereby it is inclined from the ends to the grooved center, said groove also serving as a drip-trough, the whole being provided with a sheet-metal covering and combined in a refrigerator, substantially as described.

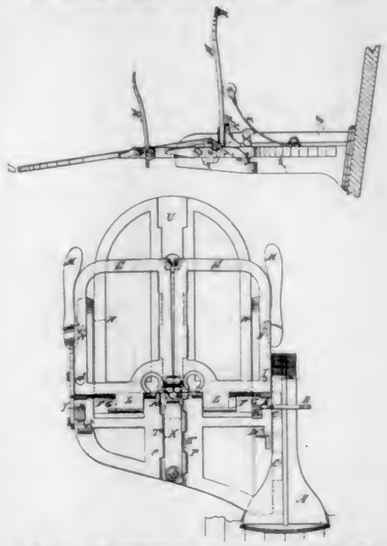
295,260. TUMBLER FOR LOCKS. CHARLES A. LUDLOW, Bridgeport, Conn., assignor of one-half to Walter Lips, New York, N. Y. Filed Jan. 18, 1884. (No model.)



Claim.—1. The lock-tumbler herein described, consisting of the hollow journals *a a'*, the journal *a* being closed at its outer end, and the journal *a'* having in it the key-socket *c*, and the wrist or connecting portion a^2, all formed integral with each other from sheet or plate metal, substantially as herein specified.

2. The method of producing a lock-tumbler from sheet or plate metal, consisting in first producing a blank having the cupped or drawn portions *a a'* and the connecting neck or portion a^2, in forming a key-socket, *c*, in one or both of said cupped or drawn portions, and in bending the said blank to bring the said portions *a a'* into line with each other and at right angles to the portion a^2, all substantially as herein described.

295,261. FOLDING CHAIR. JAMES STEELE MACKAYE, New York, N. Y. Filed May 10, 1882. (No model.)



Claim.—1. The combination, substantially as before set forth, of a single post-like standard, substantially such as described, a pair of chair-frames, both hinged at their adjacent rear corners by vertical hinges to said standard, and a folding seat for each chair-frame.

2. The combination, substantially as before set forth, of the post-like standard, substantially such as described, the chair-frame, hinged at one of its rear corners by a vertical hinge to said standard, the pivoted seat, and a spring for automatically folding the seat.

3. A chair-standard constructed substantially as described, provided with double hinge-sockets, double seat-supporting catches B B, and double chair-fastening catches D D, whereby two chairs may be supported by, folded upon, and secured to a single standard.

4. In a folding chair, bracket P, made in three parts, with hinges, admitting the folding of one section thereof upon another, and forming a support for the back and seat of the chair, substantially as described.

5. The duplex seat E, provided with free hinge H, counter-weights L L, catch-pin I, socket J, spring K, supporting-rods F F, closing-springs G G, and separator O, operating together substantially as described.

6. The combination, substantially as before set forth, of the self-folding seat and the pivoted arms, the outer ends of which are curved inward and also reach over the edges of the seat, whereby the folding of the seat causes the folding of the arms.

7. The combination of arm M on the outer section of the back, lever Y, and latch X, pivoted to such section, and catch D on the standard, all operating together substantially as set forth.

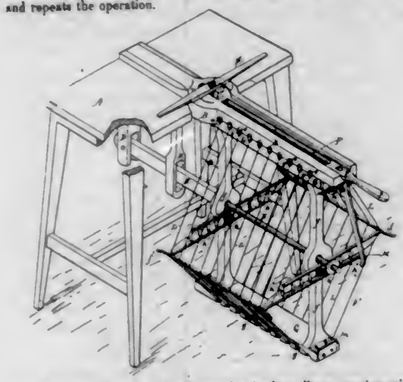
8. The combination, substantially as before set forth, of the swinging back U, provided with hinges V V, and supporting-bolts W W, and the folding seat constructed with rearward projections or weights, whereby the back is automatically inclined on turning the seat down.

9. In a folding chair, seat-separator and back-supporter O on the bracket P, constructed and operating substantially as described.

10. The combination of a standard, two supporting bars or frames pivoted vertically and independently thereto, and two folding chairs hinged to said supporting bars or frames, substantially as described, whereby said chairs may, when folded, be turned back to back and leave a passage-way between adjacent rows of double seats.

295,262. MACHINE FOR CASTING LEADS ON FISH-NET LINES. ERIK MANULA, Astoria, Oreg. Filed Dec. 4, 1883. (No model.)

Brief.—Winds the line on and tightens it on an expansible reel, each of whose bars constitutes an under part of the mold, turns the reel until one of its mold-bars comes upward and under the stationary upper part of the mold, and then clamps it at each end to that upper part, pours the metal, slides the cut-off, unclamps the under part of the mold, and repeats the operation.



Claim.—1. In a machine for casting leads on lines, a reel or winch upon which the line is wound, said reel having grooves in its circumference, in which the line lies, and forming one half the matrix, in combination with a stationary piece having corresponding grooves, forming the other half of the matrix, substantially as herein described.

2. In a machine for casting leads on lines, a reel or winch upon which the line is wound, said reel having grooves in its circumference, in which the line lied, and forming one half the matrix, in combination with a stationary piece having corresponding grooves, forming the other half of the matrix, and a means for clamping the reel and stationary piece together to form the matrix around the line, substantially as herein described.

3. In a machine for casting leads on lines, the revolving reel F, having cross-pieces G on its circumference, provided with grooves *g*, in combination with the perforated arm B, under which the reel revolves, and provided with corresponding grooves, *c*, communicating with the perforations in the arm, and forming with grooves *g* the complete matrix around the line, substantially as herein described.

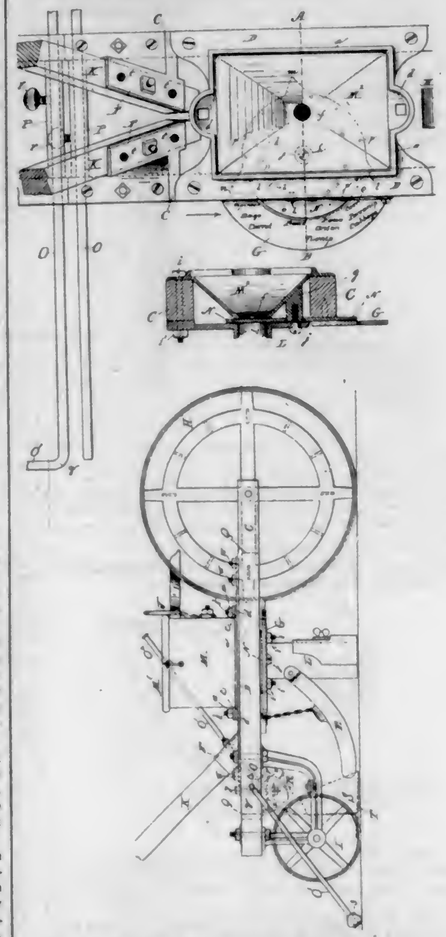
4. In a machine for casting leads on lines, the reel F, mounted on a shaft adapted to have a vertical adjustment, said reel having cross-arms G on its circumference, provided with grooves *g*, in combination with the superposed perforated arm B, having grooves *c*, and means for clamping the reel up to the arm, to bring and hold the pieces G in connection with the arm B, substantially as and for the purpose herein described.

5. In a machine for casting leads on lines, the table A, arms D, pivoted reel-shaft E, and reel F, mounted thereon, having the grooved cross-pieces G, with slotted inner ends on its circumference, in combination with the perforated arm B, having grooves *c*, and the means for clamping the reel up to the arm, consisting of the pin J, passing down through an elongated slot, *i*, in arm B, and having a head, *k*, on its lower end, and a cross-lever, H, on its upper end, adapted to move upon a cam, *j*, on said arm to vertically adjust the pin, substantially as herein described.

6. In a machine for casting leads on lines, the vertically-adjustable reel F, having the grooved cross-pieces G, with slotted inner ends in its circumference, in combination with the perforated arm B, having grooves *c*, and the means for clamping the reel up to the arm at both ends, consisting of the vertically-adjustable pin J, engaging with the inner ends of the cross-pieces, and the forked lever M, engaging with their outer ends, substantially as and for the purpose herein described.

7. In a machine for casting leads on lines, the revolving reel F, having the transversely-grooved cross-pieces G, in combination with the perforated grooved arm B, having transverse grooves *c* on its lower side, and the sliding perforated trough P, all arranged and operating substantially as herein described.

295,263. COMBINED SEED-DRILL AND CULTIVATOR. ALBERT B. MATTHEWS, Oakham, and JOSIAH B. SMALL, Somerville, Mass. Filed Oct. 17, 1883. (No model.)



Claim.—1. In a seed-drill, a horizontal perforated seed-gage plate, N, having indicator-points formed upon the edges thereof, substantially as and for the purposes set forth.

2. In a seed-drill, the combination, with the perforated gage-plate N, provided with indicator-points and hook-holes, of the seed-indicator plate G and hook *o*, substantially as shown and described.

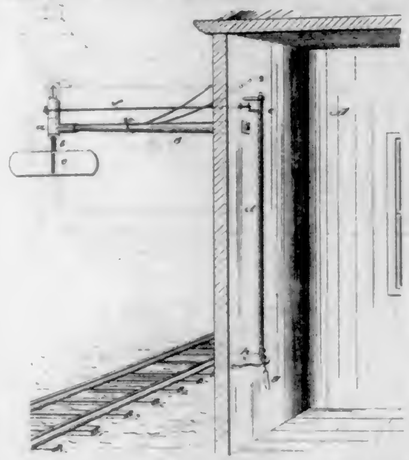
3. In a seed-drill, the combination, with side frames, C C, bottomless seed box or hopper M, and concave bed-plate D M', of seed-gage plate N, seed-indicator plate G, and holding-hook *o*, all constructed and arranged to operate substantially as shown and described.

4. In a seed-drill, the combination, with the frame parts C C, of the tubular sleeves or cylinders P P, provided with thumb-screws *r r*, and

the supporting-arms O O and markers O' O', made in one piece, as described, and adjustable laterally, and held in place in said tubular sleeves P P by the thumb-screws r r, and being also adjustable in any elevated position as to angle, and adapted to be held in any desired elevated position by the said thumb-screws r r, in the manner substantially as shown and described.

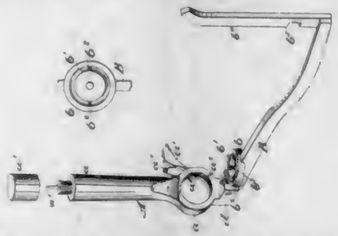
295,264. RAILROAD-SIGNAL. JOHN MAYNE, Atchison, KANS. Filed June 13, 1883. (No model.)

Brief.—This device embraces a signal supported near the track by a bracket fixed to the outside of the station-building, and means, as described, for operating the same from a hand-lever arranged within the building.



Claim.—In a railroad-signal, the combination, with the support B, having an upright box, *a*, at its outer end, and the vertical shaft *d*, bearing in a notched plate, *h*, at its lower end, and having a pivoted handle, *g*, of the shaft *b*, passing through and supported upon the box *a*, and carrying the board *c* and a lamp, and the rod *f*, connected to the shaft *b* and to a crank, *e*, of the shaft *d*, substantially as and for the purpose set forth.

295,265. CARTRIDGE IMPLEMENT. JAMES HENRY MCCABE, Jacksonville, Fla. Filed Sept. 28, 1883. (Model.)



Claim.—1. The combination of the ring *a* and die-block *b*, hinged together, the latter having annular groove *b'*, and one or more pins, *b²*, arranged in said groove, as described, whereby the cartridge may be crimped.

2. The combination, with the ring *a*, of the lever *a'*, pivoted at *a²* in a slot of the ring, having the bit *a³* on the inner edge, and supported at the rear by a spring, *a⁴*, whereby the cartridge may be creased, as described.

3. In a cartridge-reloading tool consisting of the rammer-rod A and lever B, jointed together and arranged for holding the cartridges, as described, the rod A having the cap-expelling point *a⁴*, in combination with the lever *b⁴*, jointed to lever B, and also having a removable cap, *a⁵*, forming the end of the rammer-rod and protecting the cap-expelling point, substantially as set forth.

295,266. BLANK-BOOK. JOSEPH P. MCCANDLESS, New York, N. Y. Filed July 5, 1876.

Claim.—1. The combination of the open sheets E and the short

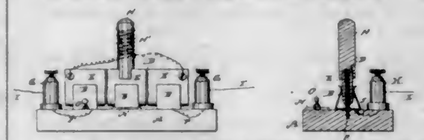


sheets C and D, provided with the recess F, substantially in the manner described and set forth.

2. In a book, the combination of the cover A, having attached to its flexible joint or back B the U-shaped wire H, constructed as described, the open sheets E, and the short sheets C and D, arranged and operating all in the manner described, and for the purposes set forth.

3. In a book, the combination of the cover A with the U-shaped wire H, constructed substantially as described and set forth.

295,267. LIGHTNING-ARRESTER FOR ELECTRIC LINES. CHAS. W. MCDANIEL, Carthage, Mo. Filed Nov. 1, 1883. (No model.)



Claim.—1. In a lightning-arrester, the combination, with clamps on an insulating-base, of an insulating-strip on which as many metal plates are secured as there are clamps on the base, which strip is adapted to be passed into the clamps, and has its end plates connected with the line-wires and to each other, and the intermediate plate or plates connected with the ground-wire, substantially as herein shown and described.

2. In a lightning-arrester, the combination, with an insulating-base, A, of the clamps B, the strip, D, of insulating material, the U-shaped metal plates E on the strip D, of which plates E those at the ends are connected with a coil, H', on the handle H of the strip D, and the strip D and the intermediate plate or plates connected with the ground-wire, substantially as herein shown and described.

3. In a lightning-arrester, the combination, with the base, A, of insulating material, of the strip D, of insulating material, the metal plates E on the same, of which those at the ends are connected with a coil, H', on the handle H of the strip D, the clamps B, the wires F, the posts G, with which posts the line-wires are connected, and a normally-open shunt connected with the posts G, substantially as herein shown and described.

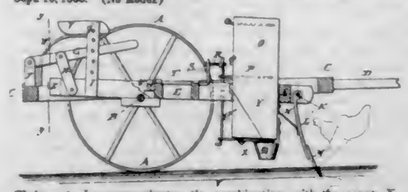
4. In a lightning-arrester, the combination, with the base A, of the clamps B, the strip D, the metal plates E on the same, the wires F, connecting the end clamps B with the binding-posts G, a wire connecting the intermediate clamp B with the ground-wire, the wires M, the plates N, and the plug O, substantially as herein shown and described.

5. The combination, with a base, A, of a series of clamps, B, a metal strip, R, connecting the middle clamps B, the ground-wire L, the insulating-strip D, and the plates E on the strip D, substantially as herein shown and described.

6. The combination, with a base, A, of the clamps B, the insulating-strip D, the U-shaped plates E on the strip D, and wires F, for connecting the end post G with the end clamps B, and a wire, J, for connecting the ground-posts K with the intermediate clamp B, substantially as and for the purpose set forth.

7. The combination, with the base A, of the clamps B and the plate Q, provided with hooks adapted to be passed between the clamps B, substantially as herein shown and described.

295,268. CORN-PLANTER. CHAS. J. MIKESH, Rathven, Iowa. Filed Sept. 10, 1883. (No model.)



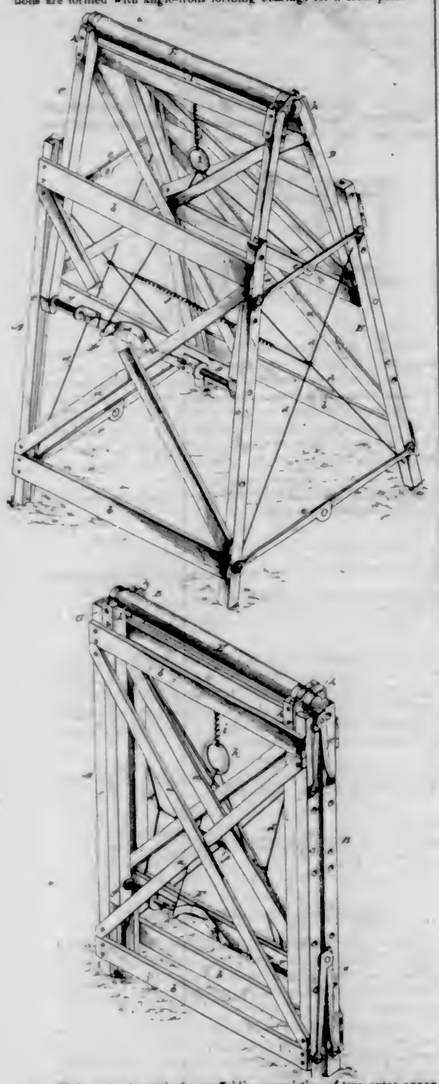
Claim.—1. In a corn-planter, the combination, with the spouts Y, the seed-dropping slides P, and the arms Q', of the inverted approximately U-shaped rod Q of the seed-dropping slides X, and the funnels Z, substantially as herein shown and described.

2. In a corn-planter, the rock-shaft T, having arm S and cross-bar U, inverted approximately U-shaped rod Q, having arms Q', and the slides P of the seed-spouts Y, in combination with the slides X and the funnels Z, substantially as and for the purpose set forth.

3. In a corn-planter, the rock-shaft T, having the upwardly-projecting arms S, link R, inverted approximately U-shaped rod Q, having downwardly-projecting arms Q', the slides P of the seed-spouts Y, the slides X, and the funnels Z, substantially as and for the purpose set forth.

295,269. TRESTLE FOR SCAFFOLDING. JOHN T. MILLER, Memphis, Mo. Filed Aug. 8, 1883. (No model.)

Brief.—Consists of two expansible outer and two hinged inner sections removably connected, the inner sliding section having spring-bolts and means for operating them simultaneously, engaging grooved and perforated standards. The outer section is braced by wire cords crossing diagonally, and is held apart by jointed spreaders. An elastic wire cord loosely connects the crossed-wire braces. The hinges of the inner sections are formed with angle-irons forming bearings for a cross-piece.



Claim.—1. A trestle for scaffolding, consisting of two outer expansible sections and two inner sections hinged together at their tops, these latter sections being removably connected to the outer sections and capable of extension in relation thereto, and when extended securely locked and supported in position by the means substantially as herein described, the entire device being adapted to fold together, as and for the purpose set forth.

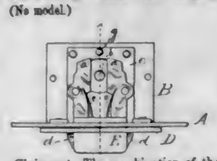
2. The two outer sections, constructed substantially as described, and provided with jointed spreaders pivotally secured at or near their upper and lower ends, said sections having their standards grooved and perforated to form guides and bearings for suitable bolts connected to the inner hinged sections, as and for the purpose specified.

3. The outer folding sections, constructed as herein described, and provided with wire cords adapted to cross each other in opposite directions, substantially as shown, to form braces when said sections are expanded and held apart by their spreaders, and a spiral spring or an elastic cord having its ends loosely secured around said wire cords at their point of crossing, as and for the purpose set forth.

4. The two inner sections, constructed substantially as described, and provided at their upper ends with suitable angle-irons which form bearings for a supporting cross-piece, and in connection therewith hinges for the sections, said sections having connected to their lower horizontal braces suitable bolts adapted to slide in grooves and engage with the perforations in the standards in the outer sections, and means for operating said bolts, substantially as and for the purpose specified.

5. The two outer sections, constructed substantially as described, having grooved and perforated standards, and provided with wire-cord braces and jointed spreaders, in combination with a spiral spring or elastic cord loosely secured to said wire braces, and the hinged inner sections having a suitable cross-piece, and provided with spring-bolts and means for operating the same, as and for the purpose set forth.

295,270. PIANO-LOCK. FRANK W. MIX, New Britain, Conn., assignor to the Corbin Cabinet Lock Company, same place. Filed Jan. 2, 1884. (No model.)

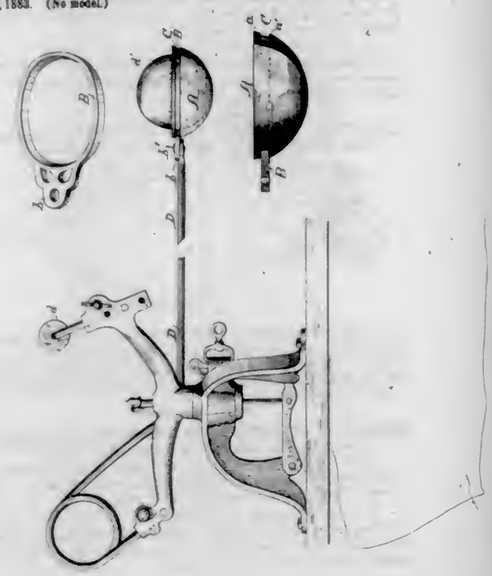


Claim.—1. The combination of the stationary hollow bolt and inclosed spring-pressed locking mechanism adapted to be operated by a key applied directly thereto, and having projections for projecting from the edges of said bolt, which are thrown outward in locking by means of the springs, substantially as described, and for the purpose specified.

2. A lock consisting of the stationary hollow bolt having the plate *e*, formed by an extension of one of its sides, the locking mechanism secured to said plate *e*, the face-plate, and lock-plate B, with the plate *e* secured to said plate B, substantially as described, and for the purpose specified.

3. A self-locking lock having a stationary hollow bolt projecting from the face-plate, and the locking mechanism partially inclosed within said projecting end, substantially as described, and for the purpose specified.

295,271. FLYING TARGET. JOHN G. MOLE, Batavia, Ill. Filed Nov. 20, 1883. (No model.)



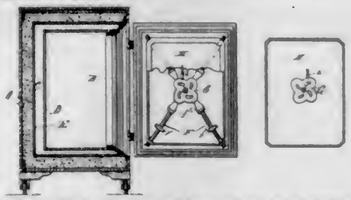
Claim.—1. A target holder or cup of a semi-globular form composed of rubber or other material of an elastic nature, and provided near the top with an annular exterior groove, substantially as and for the purpose set forth.

2. A target holder or cup of an elastic nature, the inclosing-walls whereof are thin at the bottom, and gradually increase in thickness upward, and are provided near the top with an exterior annular groove, substantially as and for the purpose set forth.

3. The combination, with a target-holding cup composed of flexible material, and provided near the top with an annular groove, of an encircling band or bracket adapted to engage with said groove, and be retained in place by means of the flange *a* and the bead *a'*, formed on said holder, substantially as set forth.

4. The combination, with a cup-shaped target-holder of an elastic nature, thin at the bottom and gradually increasing in thickness upward, and provided near the top or edge with an annular groove, of the encircling-band B, adapted to fit into said groove, and provided with the attaching projection *b* and the spring-arm D, substantially as and for the purpose set forth.

295,272. FIRE-PROOF SAFE. MAX MOSLER, Cincinnati, Ohio. Filed Oct. 30, 1883. (No model.)



Claim.—1. The combination, in a fire-proof safe, of air-chamber C, surrounding the inner receptacle, D, and the safe-door, having an inner air-chamber, which is also the receptacle for the bolt-work, with tubular bolts to communicate with the chamber C and the chamber in the door when the safe is closed.

2. The combination, in a fire-proof safe, of the safe-body A and stepped door and door-frame with the inner receptacle, D, secured upon the inner flange or step of the door-frame, and the box E upon one of its intermediate steps or flanges, so as to form two chambers within the safe-body, the outer one for the reception of a fire-proof filling, and the inner one being an air-chamber, substantially as specified.

3. The combination, with a safe having an air-chamber, and a door-frame the corners of the inner step of which are beveled and perforated opposite said air-space, of the door provided with an air-chamber, and having its inner step similarly beveled and perforated, the tubular bolts radiating from the center of the door, and adapted to be projected through the beveled corners of the door and door-frame, and means for simultaneously projecting and retracting the bolts.

4. The combination, with the safe-door having a chamber, and the bolt-work arranged within said chamber, of the inner door or plate, constructed to close said chamber, and provided with lugs adapted to be engaged by the bolt-work when the bolts are shot.

295,273. CONVERTIBLE BRIDLE AND HALTER. JOHN ADAMS NESBIT, Charlottesville, Ind. Filed Dec. 29, 1883. (No model.)



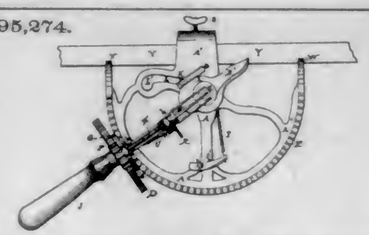
Claim.—The combination, with the ring *f* of a bridle, of the halter attachment C, consisting of rings *i k* and the strap A, the strap being secured at the middle of its length to the ring *i*, passed through ring *k*, and the ends passed through the rings *f* of the bridle and secured to the ring *k*, substantially as described.

295,274. APPLE-PARER. WM. A. C. OAKS, Antrim, N. H., assignor to the Goodell Company, same place. Filed Sept. 3, 1883. (Model.)

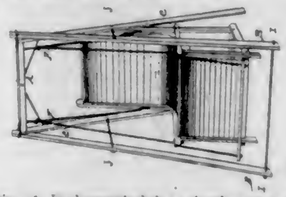
Claim.—1. In an apple-parer, the combination of the reciprocating frame B, the pivoted doffer R, the spring U, the cam-dog S, pivot *b*, stud or stop S', and spring T, substantially as set forth.

2. In an apple-parer, the combination of a reciprocating frame vibrating upon a pivot, with a doffer pivoted to said reciprocating frame, and a pivoted cam-dog attached to the main frame of the machine and retained in its normal position by a spring.

295,274.



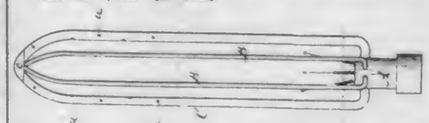
295,275. STAND OR FRAME FOR SUSPENSION OF SWINGS AND HAMMOCKS. WM. A. C. OAKS, Antrim, N. H., assignor to the Goodell Company, same place. Filed Sept. 3, 1883. (No model.)



Claim.—1. In a hammock-chair, passing the upper ends of the supporting-ropes F F together vertically through holes E E in the top bar, A, of the frame, and then hooking the looped ends over the upward extension of the forward legs, B B, substantially as shown and described.

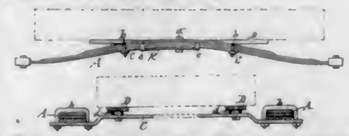
2. In a hammock-chair, the iron rods D, having their upper ends fastened to the cross-bar A, forming top of frame, and having their lower ends bent into hooks, which are hooked into staples at H on the inner or back legs, C, of the frame, for the purpose of giving stiffness.

295,276. VAGINAL IRRIGATOR. AARON PALMER, Rochester, N. Y. Filed Jan. 15, 1883. (No model.)



Claim.—A vaginal syringe consisting of the hollow nozzle A, the tubes C C', and non-heat-conducting wires B B, the wires offsetting the tubes, as described, the top of the nozzle entering the bottom of the cage, and provided with perforations *g g*, which allow the liquid to be injected up vertically the whole length of the cage, the whole arranged to operate in the manner and for the purpose specified.

295,277. SIDE SPRING FOR VEHICLES. HENRY W. PELL, Rome, N. Y. Filed Dec. 20, 1883. (No model.)



Claim.—1. In combination with side springs and cross-bars connected therewith intermediately between the ends of said springs, body-supporting plates connected to the cross-bars, and elastic cushions interposed between said plates and cross-bars, substantially as and for the purpose set forth.

2. In combination with the side springs, cross-bars connected therewith intermediately between the ends of said springs, and having their main portion raised to carry the body-supporting plates in the same plane as the top of the clip which fastens the cross-bar to the side spring, and an elastic cushion interposed between said supporting-plate and cross-bar, substantially as described and shown, and for the purpose set forth.

3. The combination of side springs having their component leaves tied together at the center only, round clips embracing the springs, cross-bars connected to the clips and having their main portion raised, longitudinal body-supporting bars mounted on the raised portion of the cross-bars, and elastic cushions interposed between said bars, all constructed and combined substantially in the manner and for the purpose shown and set forth.

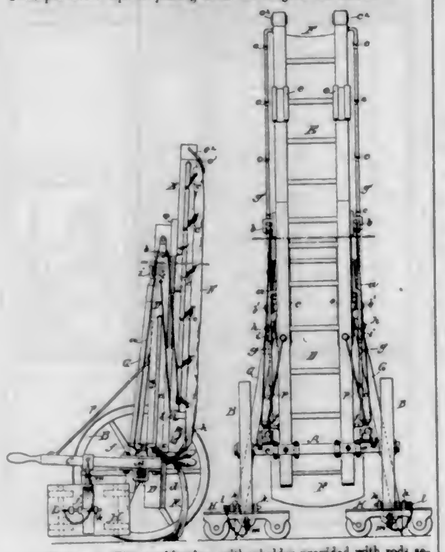
4. In combination with the side spring, a rub-iron clamped on the

under side of said spring, and provided with projections engaging the edge of the spring, substantially as set forth.

5. In combination with the side spring having a bolt passing vertically through the center thereof, a rub-iron clamped to the under side of the spring by its aforesaid bolt, and provided with lugs engaging the side of the spring to confine the rub-iron laterally in its position, substantially as described and shown.

295,278. FIRE-ESCAPE. HENRY POOLE, New York, N. Y. Filed June 1, 1883. (No model.)

Brief.—Rods are secured to the sides of the ladder-sections, and the chute is secured thereto by loops. Smaller four-wheeled trucks, grooved to receive the large truck-wheels, and provided with chains and pins for securing them therein, are attached to the main truck. The braces have U-shaped metal tops for passing under the rungs of the ladder.



Claim.—1. The combination, with a ladder provided with rods secured to its sides and staples at its upper end, of the chute F and the loops *c c'*, substantially as herein shown and described.

2. The combination, with a two-wheeled truck having a ladder secured to the axle thereof, of the four-wheeled trucks H-H, for shifting the truck and ladder sidewise, substantially as and for the purposes set forth.

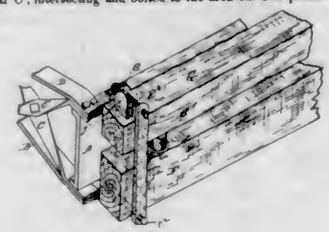
3. The handles C C of the two-wheeled ladder-truck, provided with the hooks *o o*, in combination with the four-wheeled trucks H H, adapted to be hooked thereon to be carried by the main truck, and to serve as counter-weights to the ladder, substantially as described.

4. The combination, with the section D of a ladder, of the U-shaped irons having hooks *i'*, substantially as herein shown and described.

5. The trucks H, having the grooves *j* formed in them, and provided with the eye-plates *k k*, combined with the bolts *l l*, adapted to pass through the eye-plates, for holding the wheels of the main truck in place upon the small trucks, substantially as described.

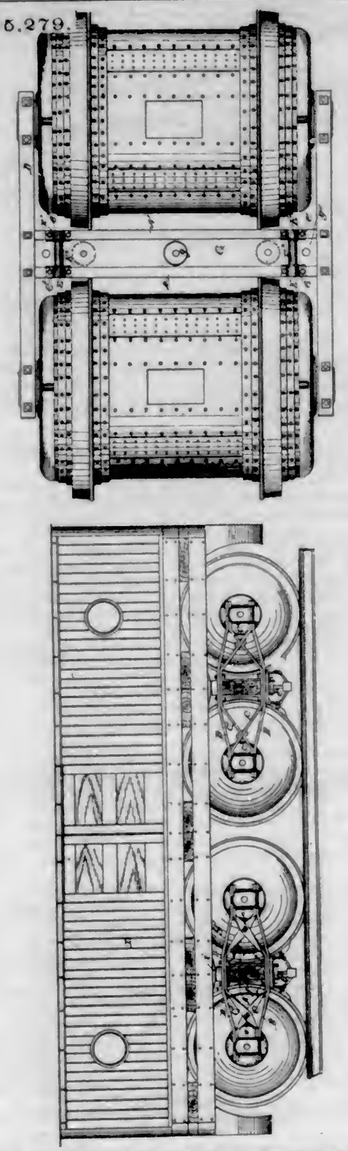
295,279. COMBINED BOX AND CYLINDER CAR. TREAT T. PROCTER, Chicago, Ill. Filed May 4, 1883. (No model.)

Claim.—1. In a car-truck, the combination, with the pedestal tie-bar B, the arch-bar D, and the inverted arch-bar C, of the supplementary arch-bar C', intersecting and bolted to the arch-bar C at points intermediate between the bolster and the axle-boxes, substantially as specified.

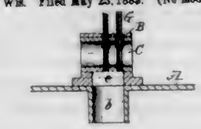


2. In a car-truck, the combination of the pedestal tie-bar B, the arch-bar D, and the inverted and supplementary arch-bars C C', each having a short section, the whole arranged substantially as specified.

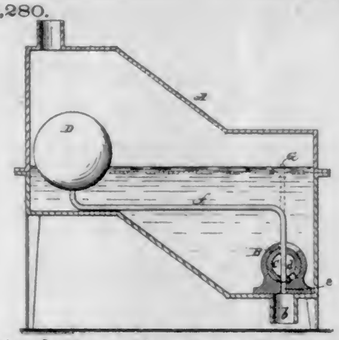
295,279.



295,280. STEAM-TRAP. WILLIAM PUFFER and WILLE D. PUFFER, Janesville, Wis. Filed May 23, 1883. (No model.)



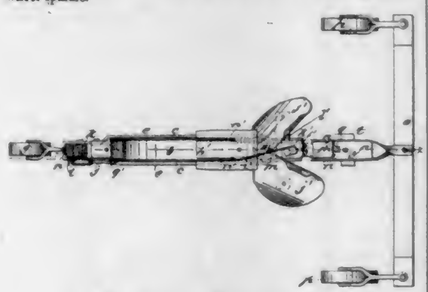
295,280.

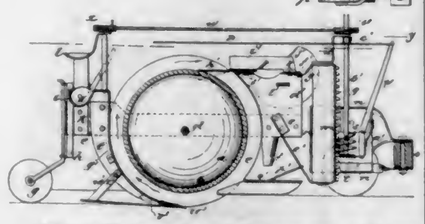


Claim.—In a steam-trap, the combination of the float D and its tubular arm *f* with the cylindrical valve C and seat B, provided with the port *e*, with which the tube *f* coincides in the normal position of the float, substantially as described.

295,281. DITCHING-MACHINE. ALONZO PURCELL, Monticello, Ill. Filed June 30, 1883. (No model.)

Brief.—A disk and rim ditching-wheel preceded by a sled-shaped guide bent out of sheet metal and provided with a plow having a lapping point detachably secured to the standard by bolts through ears is cleared by a shovel-plate delivering to a right or a left hand chute (the two connected by a bar) as a pivoted guide-board slides one or the other into position. The main frame has a front rack-bar engaging a screw (on a wheeled frame) for giving elevation, normally held in contact therewith by a spring. At the rear a sliding rod vertically adjusted by a cord and an eccentric lever pivoted on the driver's seat-standard carries a caster-wheel spindle.





Claim.—1. The combination, in a ditching-machine, of the wheel *a b c*, plow *g'*, shovel *h'*, and the shifting-board *i'*, substantially as described.

2. The combination, in a ditching-machine, of the wheel *a b c*, plow *g'*, shovel *h'*, adjusting-board *i'*, and the mold-board chutes *j''*, substantially as described.

3. The mold-board chutes *j''*, attached to bar *l'*, and connected to adjusting-board *i'* at *m'*, to shift bar *l'* with said board to discharge at either side of the ditch, substantially as described.

4. The combination of the point and shoe-plate *u'* with the plow *g'*, said plate being hooked onto the end of the plow *g'*, and secured to it detachably by the ear-points *v'*, braces *w'*, and the pin *x'*, substantially as described.

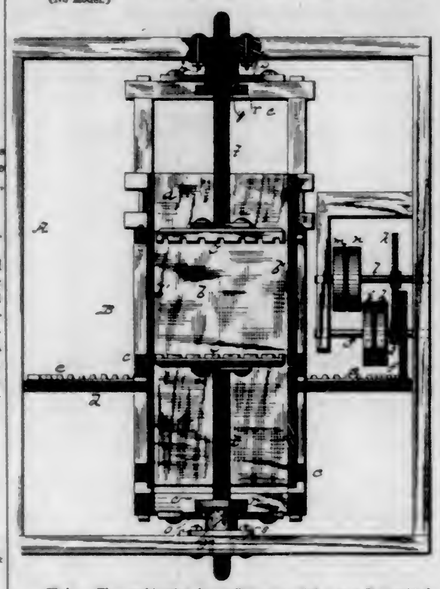
5. The combination of the guide *o'* with the plow-wheel, consisting of disks *a*, rim *b*, and the flanges *c*, substantially as described.

6. The combination, with the bars *e*, of the cord *i*, the eccentric lever *j*, the post *k* on said bars, the driver's seat L, and the vertical bar A, carrying a spindle with caster-wheel at the end, as shown and described.

7. The frame *n* of the wheel-beam *o*, having adjusting-screw *s*, in combination with the toothed post *m* of the ditching-machine frame, substantially as described.

8. The worm *z* and frame *n*, in combination with rack *q m*, said worm being fitted adjustably with relation to rack *q*, and having lever *y* and spring *a'*, substantially as described.

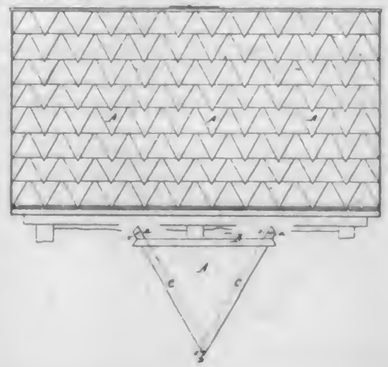
295,282. BALING-PRESS. EDGAR U. G. REAGAN, La Grange, Tex., assignor of one-half to AUGUST WARNKEN, same place. Filed Jan. 10, 1884. (No model.)



Claim.—The combination, in a baling-press, of the press B, provided with the circular platform *d*, having the gear-wheel *e*, the centrally-perforated plates *o o*, right-hand and left-hand screws *t t*, secured to the follower-blocks C C, nuts *q q*, cog-wheel *f*, pinion *j*, pulleys *h i* on the shaft *g*, gear-wheel *k*, and pulleys *m n* on the shaft *l*, the whole constructed and arranged to operate in conjuction with one another, as herein shown and described.

295,283. METALLIC ROOFING-SHINGLE. EPHRAIM R. REPP, New Windsor, Md., assignor to the Anglo-American Roofing Company, New York, N. Y. Filed Oct. 8, 1881. Renewed July 26, 1883. Again renewed Feb. 23, 1883. Again renewed Feb. 20, 1884. (No model.)

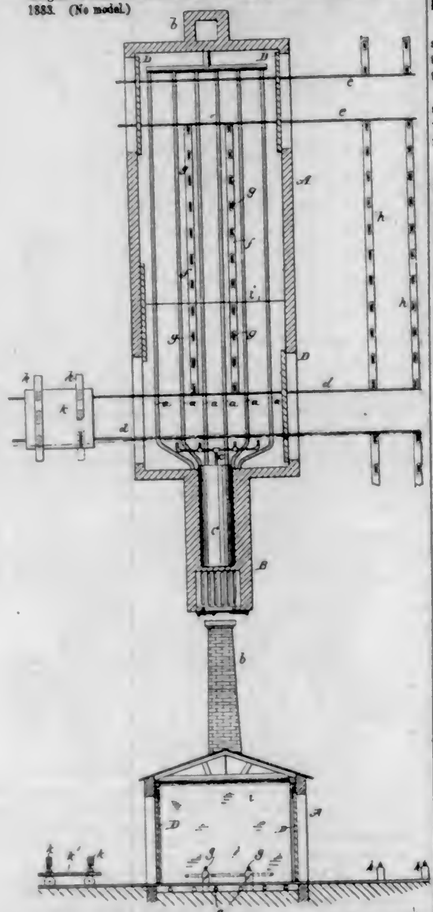
Brief.—A triangular-shaped shingle having a locking-flange on one side turned onto to the outside, and locking-flanges turned under on both of the other sides.



Claim.—1. The triangular-shaped or three-cornered shingles A, having the flanges B and C C and nail-holes *o* and *s s*, and adapted to be connected together and laid to form a roof, substantially as herein shown and specified.

2. The combination of the triangular-shaped or three-cornered shingles A, having flanges B and C C and nail-holes *o* and *s s*, with the diamond-shaped shingles E, having flanges F F and G G and nail-holes *p* and *i i*, substantially as described, for the purposes herein specified.

295,284. LUMBER-DRIER. LAFAYETTE ROLLINS, Mountain Creek, assignor to himself and Otto Stoelker, Montgomery, Ala. Filed May 14, 1883. (No model.)

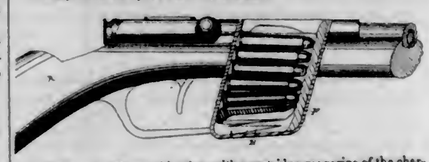


Claim.—1. The house A, provided at one end with the projection B, containing a furnace and boiler, and at the other with a chimney, *b*, in combination with the heating-pipes *a*, extending longitudinally through the house from the furnace to the chimney, substantially as herein shown and described, whereby the furnace is entirely outside of the house, and consequently all danger of fire is avoided, as set forth.

2. The combination, with the house A, provided with the projection B, containing the furnace, the longitudinal heating-pipes *a*, and the steam-pipes *c*, of the curtain or partition *i*, substantially as herein shown and described, whereby provision is made for dividing the house into steaming and drying compartments, as set forth.

3. The combination, with the house A, provided at one end with the extension B, containing a furnace and boiler, and at the other with the chimney *b*, and the steam and hot-air pipes *a c*, of the tracks *d e*, passing transversely through the house at opposite ends thereof and on a level with the floor of the same, and the elevated tracks *s* A, arranged, respectively, within and without the house, substantially as herein shown and described.

295,285. MAGAZINE-GUN. ANDREW H. RUSSELL, United States Army. Filed July 26, 1883. (No model.)



Claim.—1. The combination, with a cartridge-magazine of the character described, of a follower adapted to force the cartridges sidewise in the magazine, and mechanism, substantially such as described, to adapt the magazine for the reception of short or long cartridges, as set forth.

2. A cartridge-magazine having a spring-follower, adapted, as described, to force the cartridges sidewise in the magazine, in combination with an inserted piece to reduce the length of the magazine and adapt it for shorter cartridges, substantially as shown.

3. A cartridge-magazine having a spring-follower adapted to bear against the side of the cartridges, as described, one corner of the follower being cut away, as stated, in combination with an insertible piece to be placed in the magazine and occupy the space of the cut-away corner of the follower, for the purpose of reducing the length of the magazine, as set forth.

4. In combination with a magazine of the character described and its spring, the follower having a projection at its rear end extending some little distance down in the magazine parallel with the rear wall thereof, the follower and projection being of such length as to prevent the front end of the follower being pressed downward into inclined position, substantially as described.

5. The combination, with a magazine of the character described, of a spring-follower, having its side extending down parallel with the wall of the magazine, said side extension serving to close the opening into the receiver when the follower is elevated, and also serving to prevent the follower from tilting in the magazine, as stated.

6. The combination, with a magazine of the character described, of interior guide ribs or projections at one side thereof, and a follower having projections which engage with said ribs, substantially as set forth.

7. The combination, with a magazine of the character described, having a stop-bar at the top thereof, against which the cartridge rests when in position to be struck by the bolt, of the spring-gate, with offset, as *f''*, in its face, and spring-follower, all operating in combination, substantially as stated.

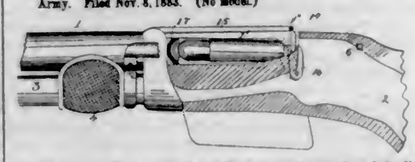
8. The combination, with a magazine of the character described, and its spring-follower, of the spring-gate having recess *t* in its face, which recess terminates in a projection, and the stop-bar *f**, recessed and beveled at *f**, substantially as described.

9. The spring composed of flat leaves, as described, the lower leaf being forked at the end, in combination with a magazine having a stud or stop at the bottom which is embraced by said fork, as shown and described.

10. The combination, with a magazine adapted, as described, to force a column of cartridges placed side by side in the direction of the receiver without the intervention of a carrier, of a bolt which reciprocates past the mouth of the magazine, and a stop mechanism, substantially as described, whereby the bolt may be stopped short of its rearmost position and serve to close the mouth of the magazine and prevent the escape of a cartridge therefrom, substantially as stated.

11. The combination, with a magazine adapted by spring-pressure to force a column of cartridges placed therein toward the receiver, and a bolt adapted to reciprocate past the mouth of the said magazine, of a pivoted stop, as D, in the receiver, adapted to engage with and stop the bolt when turned in one position and to permit a full movement of the bolt when turned in another position, as described and shown.

295,286. MAGAZINE-GUN. ANDREW H. RUSSELL, United States Army. Filed Nov. 8, 1883. (No model.)



Claim.—1. The combination, with the receiver of a breech-loading arm, of a breech-block pivoted at the rear and adapted to swing downward to open the breech of the arm, said breech-block being cut away at the side, as described, a side-push magazine arranged to feed a cartridge sidewise upon said block, and mechanism, substantially as described, for retaining the succeeding cartridges in the magazine, substantially as set forth.

2. The combination, with the receiver of a breech-loading arm, of a breech-block pivoted at the rear, so as to open the breech by swinging downward, a side-push magazine arranged to feed a cartridge upon said block, mechanism, substantially as described, for retaining the remaining cartridges in the magazine, and an inserter for carrying the cartridge into the barrel, substantially as set forth.

3. The combination, with the receiver of a breech-loading fire-arm, of a breech-block pivoted at the rear, so as to swing downward to open the breech, a side-push magazine arranged, as described, to feed a cartridge upon said block, mechanism, substantially as described, to retain the remaining cartridges in the magazine, a sliding inserter-bar, and an inserter and extractor carried by said bar, all substantially as described.

4. The combination, with the receiver of a breech-loading fire-arm, of a breech-block pivoted at the rear, so as to swing downward to open the breech, a side-push magazine arranged, as described, to feed a cartridge upon said block, mechanism, substantially as described, to retain the remaining cartridges in the magazine, an inserter and extractor carried by a reciprocating rod, and mechanism connecting the rod and operating-handle, substantially as described, whereby there is lost motion between the two, substantially as set forth.

5. The combination, with a side-push magazine having a side opening into a receiver, of a movable gate adapted, as described, to partially close said opening, and a cartridge-inserter arranged, as described, to operate said gate, substantially as stated.

6. The combination, with a side-push magazine having a side opening into the receiver, of a swinging notched gate pivoted near the rear end of said magazine, and a cartridge-inserter arranged to reciprocate, as described, and engage the notch in said gate, so as to swing the same in either direction, substantially as set forth.

7. In a magazine fire-arm, a reciprocating bar, operative mechanism, substantially as described, to reciprocate the same, and a cartridge-inserter and an extractor carried by said bar, the latter arranged to be in front of the flange of a cartridge while the inserter is behind the same, substantially as set forth.

8. The combination, in a magazine fire-arm, of a reciprocating sleeve or handle, an inserter-bar having a notch therein, and a pivoted catch in the handle adapted, as described, to engage said notch, all substantially as stated.

9. The combination, in a magazine fire-arm, of an operating sleeve or handle arranged to reciprocate, as stated, a notched inserter-bar, a pivoted catch in the handle, arranged to engage said notch, and a lug on the barrel, arranged, as described, to operate said catch, all as and for the purpose hereinbefore set forth.

10. A side-push magazine of the character described, having projections (as a' a^2 b) near the top and inside thereof, to afford a seat for a cartridge-feed case.

11. A side-push magazine of the character described, having its end walls grooved and slotted, as described, combined with a side plate (as A) made to fit said grooves and cover the tops of the slots, and a gate, m, with end pivots extending into said slots, all in combination, substantially as set forth.

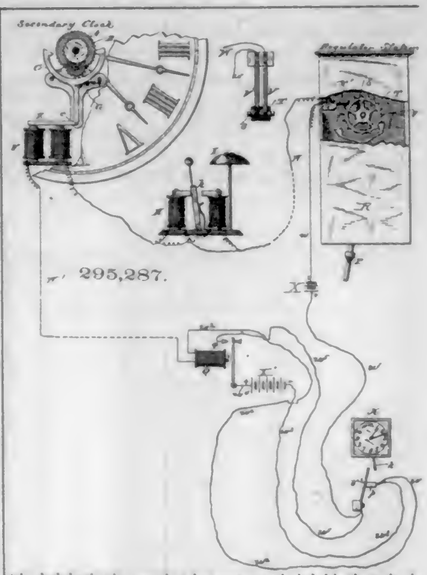
295,287. STRIKE SYSTEM FOR SECONDARY ELECTRIC CLOCKS. WILLIAM H. SAWYER, Providence, R. I. Filed Dec. 26, 1883. (No model.)

Claim.—1. In an electrical time system, the combination, with the main circuit and battery, a regulator arranged to close and break said circuit at predetermined intervals, and a secondary clock having its actuating electro-magnet included in said main circuit, of a striking device for said secondary clock, and a separate electro-magnet arranged in the main circuit for controlling said striking device, and requiring for its operation a variation of the current on the main circuit which will not operate the secondary-clock magnet, substantially as described.

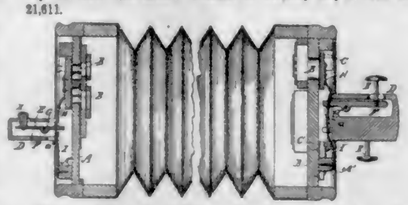
2. In an electrical time system, the combination, with the main circuit and battery, a regulator at a central station arranged to close and break the main circuit at predetermined intervals, and a secondary electric clock having its actuating electro-magnet included in said main circuit, of a striking device for said secondary clock, an electro-magnet included in the main circuit for controlling said striking device, and requiring for its operation a variation of main-line current which will not affect the secondary-clock magnet, and devices at a central station arranged to act at predetermined intervals for producing the required variations of current on the main line, substantially as described.

3. In an electrical time system, the combination, with the main circuit and battery, a regulator at a central station arranged to close and break the main circuit at predetermined intervals, and a secondary electric clock having its actuating electro-magnet included in the main circuit, of a polarized electro-magnet included in the main circuit and arranged to control a striking device, and mechanism at a central station arranged to cause reversals of current on the main line at predetermined intervals for operating said polarized electro-magnet, substantially as described.

4. In an electrical time system, the combination, with the main circuit and battery, a regulator at a central station arranged to close and break the main circuit at predetermined intervals, and a secondary electric clock having its actuating electro-magnet included in the main circuit, of a striking device for said secondary clock, a polarized electro-magnet included in the main circuit and arranged to control said striking device, an extra battery of greater strength than the regular secondary clock-operating battery, and devices for connecting said extra battery in the main circuit in opposition to the main battery, at predetermined intervals during the closing of the main-battery circuit, substantially as described.



295,288. ACCORDION. AUGUST LEOPOLD SCHAAR, Chicago, Ill., assignor of one-half to the Root & Sons Music Company, same place. Filed Sept. 27, 1883. (No model.) Patented in Germany May 6, 1883, No. 21,611.



Claim.—1. The combination, substantially as specified, of the valves, the keys E E, the arms H H, connected rigidly to the said keys, and also connected to the valves, and the external springs, I I, all arranged substantially as shown and described with relation to each other and the key-board, for the purposes set forth.

2. The combination of the valves C C, rigid angle-levers E H, connected to the valves, the parts H H passing through the parts E E and forming extensions *a a* upon the keys, the springs I I, bearing on the said extensions, and the key-board, substantially as and for the purposes set forth.

3. The combination of the top piece, A, the frame or molding A', the key-board D, valves C C, arms H H, keys E E, and springs I I, the said keys and arms forming rigid angle-levers connected to the valves, and the said springs being arranged horizontally outside of the key-board and bearing on the said levers, substantially as and for the purposes specified.

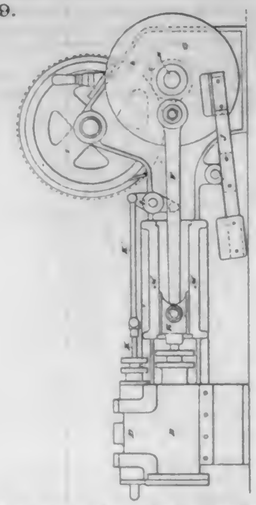
295,289. STEAM HOISTING-ENGINE. THEODORE SCHEFFLER, Paterson, N. J., assignor, by direct and mesne assignments, to Otto Flohr, Newark, N. J., and Francis M. Pierce, Brooklyn, N. Y. Filed Oct. 31, 1883. (No model.)

Claim.—1. The combination of steam-cylinder and cross-head guides, both cast in one piece, the cross-head guides being bored cylindrically from the same axis as the cylinder, substantially as and for the purposes set forth.

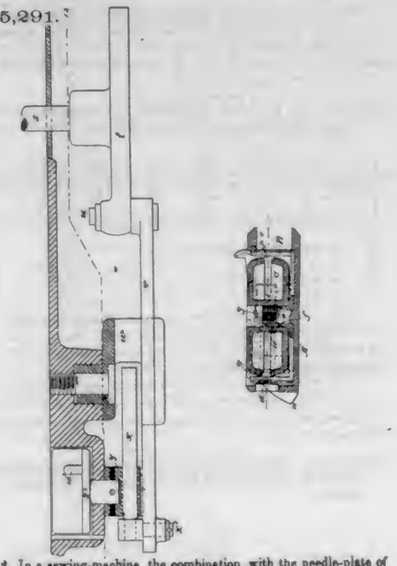
2. In a steam-engine, the combination of the engine-frame, the crank-shaft bearing, the steam-cylinder, and the cross-head guides, all cast in one piece, substantially as set forth.

3. In a steam-engine, the combination of the engine-frame, cylinder, and valve-chest, all cast in one piece, the valve-chest being tabular and having its axis parallel to the axis of the cylinder, substantially as set forth.

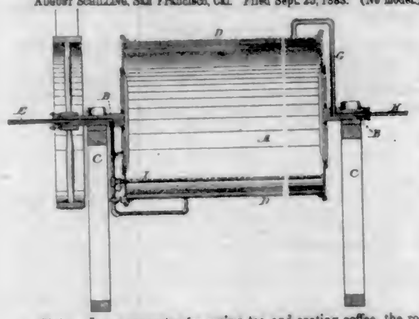
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295,290. APPARATUS FOR CURING TEA AND COATING COFFEE. AUGUST SCHILLING, San Francisco, Cal. Filed Sept. 25, 1883. (No model.)



Claim.—In an apparatus for curing tea and coating coffee, the rotating cylinder having a door-opening and a surrounding jacket, into which steam may be admitted through pipes connecting with one trunnion and be discharged through the other, in combination with a jet tube or pipe extending horizontally through the interior cylinder near its periphery, and cocks or valves through which steam may be admitted to either the jacket or cylinder, substantially as herein described.

295,291. SHUTTLE AND MECHANISM FOR OPERATING THE SAME. FERDINAND OTTO SCHMIDT, Berlin, Germany. Filed June 6, 1883. (No model.) Patented in England Nov. 13, 1882, No. 5,413; in France Nov. 14, 1882, No. 152,086, and in Germany Dec. 2, 1882, No. 23,556.

Brief.—The shuttle is given an oscillatory movement of more than a half-revolution by a connecting-rod sliding in a block pivoted to the under side of the bed-plate, and serving as a fulcrum for the connecting-rod or lever, said rod, by means of a pivoted sliding pin, engaging in a hole in another block which forms the lower extension of the shuttle-shaft, and giving said shaft the oscillatory movements. Various spring friction devices are used, the one on the thread-guide being provided with a V-shaped slide for adjusting the tension as desired.

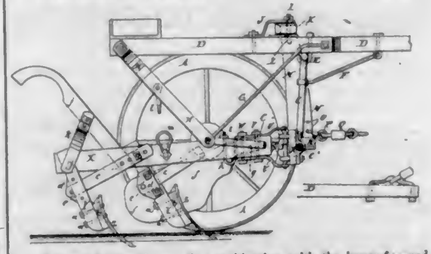
Claim.—1. The combination of the cup-like shuttle A, provided with a recess, *b*, and spindle *c*, the thread-guide B, provided with a tubular spindle, *f*, with spring *i*, a thread-tension spring, and a spring, *o'*, to press against the shuttle-wall, and the bobbin C, all substantially as set forth.

2. In a sewing-machine, the combination, with the needle-plate of a sewing-machine provided with a shoulder, *m*, of the cup-like shuttle A, provided with a recess, *b*, the thread-guide B, provided with a tension-spring, *n*, and its slide *q*, and a shoulder, *l*, to catch against the shoulder on the needle-plate, and mechanism, substantially as described, for imparting an oscillating movement to the shuttle, as described.

3. As a means for imparting an oscillatory movement to the shuttle of a sewing-machine, the combination of the shaft *s*, crank *t*, connecting-rod *v*, guide-block *w*, radially-mounted rod *x*, block *y*, and shuttle-bearing disk *y'*, provided with a shuttle-driving pin, *w'*, all arranged to operate substantially as set forth.

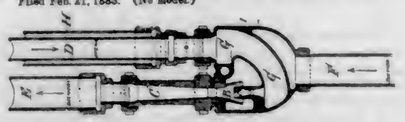
4. The combination, with a detached cup-like shuttle for a sewing-machine, of the thread-guide B, provided with a vertical ride or wall, A, a tension-spring, *n*, arranged in an opening in said wall, a ratchet, *r'*, a slide, *q*, and a spring, *r*, to engage the ratchet, all substantially as herein set forth.

295,292. CULTIVATOR. ALVAH SCHOONOVER, Jr., Elliott, Iowa. Filed Dec. 28, 1883. (No model.)



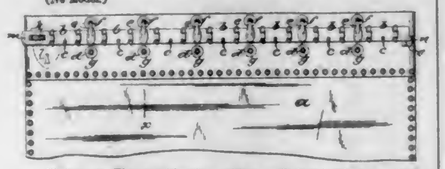
Claim.—In a cultivator, the combination, with the lower forward part, C', of the axle C, and the plow-beams X, of the coupling-bearings R, and pins T, and the adjustable clevis-straps U, substantially as herein shown and described, whereby the rear ends of the said plow-beams can have a free vertical and lateral movement, and their forward ends can be adjusted inward or outward, as set forth.

295,293. STEAM-JET EJECTOR. LOUIS SCHUTTE, Philadelphia, Pa. Filed Feb. 21, 1883. (No model.)



Claim.—In a jet-ejector, the body I, having the passage G and nozzle A therein, combined with the suction-pipe F, applied centrally to the lower side, the steam and delivery pipes applied to the top near opposite sides thereof, and the pipe H, surrounding the steam-pipe and closed at the lower end, as described.

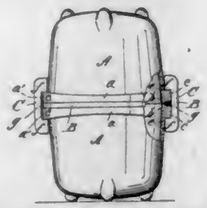
295,294. MAIL-BAG FASTENING. ROY B. SCOTT, Denton, Tex., assignor of one-fourth to John B. Nicholas, same place. Filed Oct. 18, 1883. (No model.)



Claim.—1. The combination, with a mail-bag having eyes in the upper margin of its mouth, of a chain hinged at its lower edge to the bag, and provided with fastening devices projecting through the said eyes, substantially as herein shown and described.

2. The chain *b*, pivoted to the part *a* of the bag, and having hooks *d*, in combination with the parts *a* and *i*, and with the chain A, attached to the part *i*, said parts *a* and *i* of the bag having eyes *f* and *g*, substantially as described.

295,295. BUTTER-PACKAGE. JAMES PATERSON SINCLAIR, Mottville, assignor of one-half to Birch Ellis, Moravia, N. Y. Filed Sept. 11, 1883. (Model.)



Claim.—1. The combination, with jars A A, having the cam-flanges undercut at top and bottom, of the two buttons C C, provided with correspondingly-shaped notches *f*, whereby the clamps are held in place, as described.

2. The jars A A, formed with the flanges *a a*, made rounding at their outer edges, as at *a' a'*, undercut, as at *c c*, and enlarged, as at *e e*, in combination with the buttons C C, formed with the undercut notches *f f*, and made rounding, as at *g*, substantially as and for the purposes set forth.

295,296. PENCIL-SHARPENER. ALBERT M. SMITH, Brooklyn, N. Y. Filed Oct. 24, 1883. (No model.)



Claim.—1. A pencil-sharpener, A, consisting of the cutting end C, for sharpening lead-pencils, the end D, for slate-pencils, and the intermediate file-surface, all substantially as shown and described.

2. A pencil-sharpener consisting of parts A and E, riveted together, having sharpening devices at each end, and an intermediate file-surface, all substantially as described.

3. In a pencil-sharpener, the combination of the parts A, E, and B, all arranged and operating as shown and described.

295,297. SEED-PLANTER. ASAHEL SMITH, Chatham, Ontario, Canada. Filed Nov. 24, 1883. (No model.)



Claim.—1. In a seed-planter, the combination, with the drive-wheel A and the spring-held seed-dropping slide G, of the flanged wheel J, the cam-wheel L, having interior ratchet-teeth, O, and the springs and band P Q, whereby the said seed-dropping slide will be operated with certainty, and the cam-wheel can be readily adjusted, as set forth.

2. In a seed-planter, the cam-wheel L, provided on its inner periphery with ratchet-teeth and its inner face with serrated cams M, arranged, as shown, for operating the dropper-slide, and cams N between said cams M, for jarring the dropper-slide, substantially as set forth.

295,298. ART OF MAKING TILE, &c. JOHN S. SMITH, Jackson, Mich., assignor of one-half to Theodore G. Bennett, same place. Filed Jan. 23, 1884. (No model.)

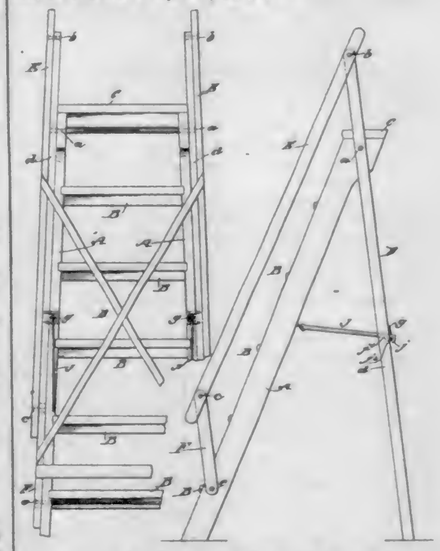


Claim.—1. The process of balling damp clay by casting it upon a rapidly-traveling plane surface, by the action of which it is gathered into rounded masses, substantially as set forth.

2. First balling and then pugging the moistened clay, substantially as set forth.

295,299. FOLDING STEP-LADDER. GEORGE ANTON SOMMER, Brooklyn, N. Y. Filed Jan. 23, 1884. (No model.)

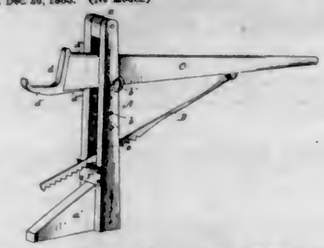
Brief.—Ladders provided with hand-rails pivoted at one end to extensions of the legs or standards and at the other to links on the side rails, and brace-rods having sliding engaging-hooks.



Claim.—1. The bars *d d* of the standard D, pivoted to the side boards, A, of the ladder and reaching above the ladder, in combination with rails E and links F, pivoted to the side boards, A, and lower ends of the rails E, the rails E being pivoted to the upper ends of the bars *d d*, substantially as and for the purposes set forth.

2. The braces J, formed with the curved edges *j''* and offset *j'*, and hook *j*, in combination with the staples *g* and the simultaneously opening and closing standard and side rails, D E, substantially as and for the purposes set forth.

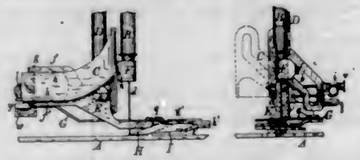
295,300. LIFTING-JACK. RALPH REED SPEARS, Wheeling, W. Va. Filed Dec. 26, 1883. (No model.)



Claim.—1. In a lifting-jack, the combination, with two uprights, of a lever pivoted between said uprights, said lever being provided with an angular bracket at one end, its other end being provided with a pivoted rack-bar to engage with a plate upon the said standards, substantially as set forth.

2. In a lifting-jack, the combination, with two uprights, of a lever pivoted between said uprights, said lever being provided with an angular bracket, *d*, having the extensions or arms d^2, to engage the ends of the lever at one end, and provided near its lower end with a pivoted rack-bar to engage a strip or plate secured to the sides of the standards or uprights, substantially as set forth.

295,301. RUFFLING ATTACHMENT FOR SEWING-MACHINES. GEORGE H. SPRING, Bath, assignor of one-half to Edward J. Sugrue, Rochester, N. Y. Filed June 23, 1883. (No model.)



Claim.—1. The combination, with a sewing-machine needle-bar carrying stud or roller *n*, of the supporting-frame E, the sliding blade-carrier G, serrated ruffling-blade H, and the swinging lever C, pivoted to the frame behind the needle-bar, and arranged to vibrate horizontally across the line of feed, and provided with the arm *j*, and the slotted plate *p*, located between the needle-bar and the presser-bar, and a suitable adjustable pivotal connection between the arm *j* and the blade-carrier, substantially as described.

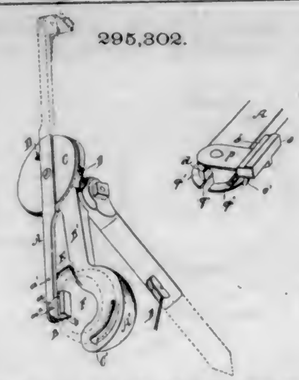
2. The combination, with a sewing-machine needle-bar carrying projection *n*, of the supporting-frame E, the sliding blade-carrier G, serrated ruffling-blade H, and the horizontally-swinging lever C, pivoted to the supporting-frame and provided with inclined slot *b*, having straight ends *o o'*, and a suitable connection between the lever and the sliding blade-carrier, substantially as and for the purposes set forth.

3. The combination, with a sewing-machine needle-bar carrying projection *n*, of the supporting-frame E, the horizontally-swinging lever C, pivoted to the supporting-frame and provided with inclined slot *b* and arm *j*, and the sliding blade-carrier G, serrated ruffling-blade H, and an adjustable pivotal connection between the lever and the blade-carrier, arranged to be adjusted at an angle with the line of feed, substantially as and for the purposes set forth.

4. The combination, with a sewing-machine needle-bar carrying projection *n*, of the supporting-frame E, the sliding blade-carrier G, provided with slot *x*, serrated ruffling-blade H, and the horizontally-swinging lever C, pivoted to the supporting-frame and provided with inclined slot *b*, adjusting-screw *i*, pivot *l*, and sliding block *w*, substantially as and for the purposes set forth.

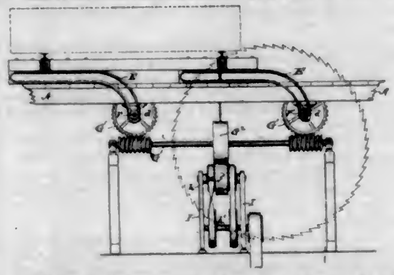
295,302. BALL-TRAP. CHARLES F. STOCK, Peoria, Ill. Filed Dec. 28, 1883. (No model.)

Claim.—1. The combination, with the throwing-arm of a target-throwing device, of a clip for holding the target, arranged to automatically drop below the upper surface of the throwing-arm for releasing the target, substantially as described.



2. The target-holding clip, consisting of the pivoted plate *p*, having the plate *o*, provided with toe *o'*, hinged to it, in combination with the slotted plate *q*, all adapted to be operated substantially as described.

295,303. SAW-MILL. JOSEPH M. STORY, Spring City, Tenn. Filed Mar. 25, 1883. Renewed Jan. 24, 1884. (No model.)



Claim.—1. The combination, substantially as before set forth, of the log-carriage and mechanism, substantially such as described, for propelling the same, whereby in feeding the log to the saw the simple horizontal movement of said carriage is preceded by a compound vertical and horizontal movement thereof.

2. In a circular saw mill, a log-carriage provided with curved supporting-yokes, adapted to be propelled and guided upon fixed shafts to give the log both a vertical and horizontal movement in relation to the saw, substantially as set forth.

3. In combination with the carriage B, the curved supporting-yokes E, having the interior face at one or both sides formed as bearing-rails, and the depressed surface between the rails formed as a rack, and the supporting-shafts F F', provided with spur-pinions and friction-rollers, substantially as specified.

4. In combination with a log-carriage provided with guide-yokes and shafts, upon which the same are guided and driven, the reversible worm and friction gear, substantially such as described, for imparting reversible motion to the carriage, as set forth.

5. The construction and arrangement, in a saw-mill, of a circular saw journaled beneath the floor, and operating upward through the same, a carriage having both a vertical and horizontal movement in relation to the saw, and mechanism, such substantially as described, for supporting, guiding, and operating the carriage under control of the attendant, substantially as set forth.

295,304. ARROW. GEORGE E. SWAN, Beaver Dam, Wis. Filed Dec. 29, 1883. (No model.)

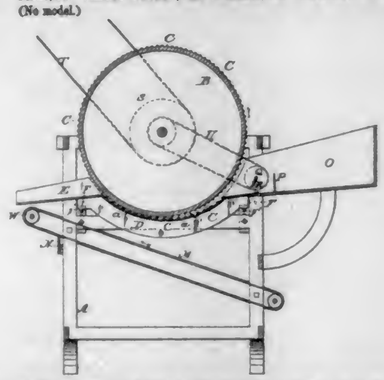


Claim.—1. As an improvement in arrows, darts, and similar projectiles, the combination, with a flexible or elastic point, of a coating of chalk or equivalent substance adapted to leave an impression upon the target, substantially as set forth.

2. An arrow or other toy projectile embodying a rod or body and an elastic-pointed head having its point coated with chalk, substantially as set forth.

295,305. MACHINE FOR THRASHING AND SEPARATING GRAIN, PEAS, &c.

ALFRED SWINGLE, San Francisco, Cal. Filed Dec. 11, 1883. (No model.)



Claim.—1. In a machine for thrashing and separating peas or grains from the outer husk or envelope, the combination of a cylinder the surface of which has an elastic covering with protuberances, a corresponding concave surface in close proximity below with similar protuberances, and a mechanism by which the concave is caused to reciprocate in a line parallel with the axis while the cylinder is rotated, substantially as herein described.

2. In a machine for thrashing and separating seeds from the outer envelope or husk, the combination of a cylinder and a reciprocating concave surface, below and through which the substances pass, said cylinder and concave having their surfaces provided with projections or protuberances and covered with sheets of elastic material, substantially as herein described.

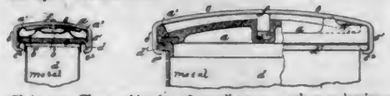
3. In a machine for thrashing and separating seeds from the outer envelope or husk, the combination of a reciprocating concave surface, into which the materials are fed, and a cylinder rotating above the concave and in close proximity thereto, the surfaces of both being provided with elastic protuberances, having rigid internal pins, *b*, substantially as herein described.

4. In a machine for thrashing and separating seeds from the outer pod or envelope, the combination of a reciprocating concave, into which the substances are fed, with elastic protuberances upon the surface and holes between them, a cylinder with similar protuberances rotating in close proximity to the concave, and an inclined upwardly-traveling belt below the concave, substantially as herein described.

5. The rotating cylinder and the reciprocating concave situated below, having surfaces provided with elastic protuberances, which move in close proximity, in combination with the supply-chute, the transverse rotating shaft Q, and radial arms R, substantially as herein described.

295,306. STOPPER FOR BOTTLES AND JARS.

NATHAN THOMPSON, Brooklyn, N. Y. Filed Nov. 1, 1883. (No model.) Patented in England Apr. 17, 1883, No. 1,943.



Claim.—1. The combination of a sealing-cap, such as *a*, having a central opening and two inclines on the outer edge of its top, a clip or strap, such as *c*, having legs *c'* and inturned ends *c²*, and a long pin occupying the central opening and securing the cap to the clip or strap in connection with the inturned ends, which project inwardly beneath the edge of the cap and limit its downward movement, as set forth.

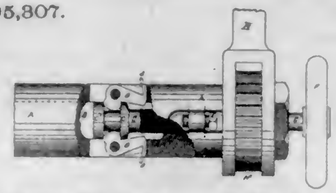
2. The combination of parts forming my improved stopper, and consisting of a sealing-cap, such as *a*, and clip or strap, such as *c*, with a stud or pin, such as *f* and a compression-plate, such as *b*, within the cap, the clip being permanently secured to the sealing-cap, substantially as herein shown and described, and for the purpose stated.

295,307. TUBE-CUTTER.

NATHAN P. TOWNE, Brooklyn, N. Y., assignor to WM. H. Moorhouse, same place. Filed Jan. 14, 1884. (No model.)

Claim.—1. The bored mandrel provided with screw-thread, the threaded rod in said mandrel having projections which engage the cutters at each side of their pivots, and the cutters pivoted in the mandrel, so as to be operated positively in either direction by means of the screw-rod engaging therewith, substantially as described.

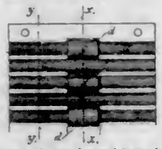
2. The mandrel A, having screw-threaded axial aperture and cross-mortise, the two cutters in shape of bell-crank levers pivoted in said mortise, the screw-rod in the mandrel constructed, as described, to engage the



ends of said lever-cutters, and mechanism, as described, for advancing and retracting said screw, all combined and arranged substantially as shown and described.

295,308. ANTI-FRICTION JOURNAL-BOX.

THOS. TRIPP, Stoughton, Mass. Filed Jan. 8, 1884. (No model.)



Claim.—1. In an anti-friction journal-box, the combination of the annular recessed journal-box and the annular recessed journal, with a series of rollers, which are unattached to one another, and consequently adapted to be independently introduced and removed, substantially as stated.

2. The combination, with the journal B and journal-box A, as herein described, of a series of separate rollers, *a a'*, &c., of diameter substantially as stated.

3. In an anti-friction journal-box, A, the combination of a series of rollers, *a a' a'*, of uniform diameter, maintained in their proper relative positions one to the other by every alternate roller *a' a'*, carrying rollers *g g*, which rotate in recesses *d e*, for the purpose hereinbefore described, and the spindle *j*, connecting the parts *a² a²* of their rollers *a' a'*, all substantially as and for purposes set forth.

4. The combination of the journal-box A, with its cap E and keyway F, for the purpose described, with the rollers *a a'*, &c., and the journal B, provided with the plate *l*, whereby end-thrusts are prevented from affecting the series of rollers, and the latter are free to rotate with said journal, substantially as stated.

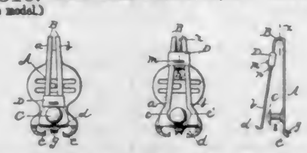
295,309. INCRUSTATION PREVENTIVE.

FREDERIK TROXEL, Danville, Ill., assignor to Norval D. Crim, Anderson, Ind. Filed Aug. 31, 1883. (No specimens.)

Claim.—A preparation or compound for extracting lime from water and removing scale from boilers, composed of concentrated lye, rosin, and alum, in substantially the proportions above set forth.

295,310. CLASP.

SIDNEY D. TUCKER, Troy, N. Y. Filed Dec. 21, 1883. (No model.)



Claim.—1. The combination, in a clasp, of a studded plate, and spring-arms provided with suitable means for spreading and closing said arms, substantially as described, and for the purposes set forth.

2. A clasp-plate provided at or near one end with hook-points *c e*, and at or near its middle portion with the inwardly-projecting arms *j k*, in combination with a mechanism, substantially as described, for attaching said plate to a garment.

3. A studded clasp-plate adapted to be secured to a piece of webbing, having that portion of the plate contiguous to the stud swaged up to occupy a plane higher than that of the general surface of the plate, in combination with a suitable clamping device, whereby a garment is secured to said stud, substantially as described, and for the purposes set forth.

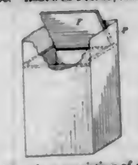
4. A studded clasp-plate, in combination with clamping-arms, and slide provided with a spreading device, *n*, substantially as described, and for the purposes set forth.

5. A studded clasp-plate, in combination with a clamping-spring provided with a thumb-rest, *d*, integral therewith, and suitable means for operating said spring, substantially as described, and for the purposes set forth.

6. A studded clasp-plate, in combination with two clamping-arms provided with recesses *c c'* and projection *d*, attached to one prong and overlapping the other, and suitable means for opening and closing said arms, substantially as described, and for the purposes set forth.

295,311. FOLDING BOX.

H. CHANNING UNDERWOOD, Kalamazoo, Mich. Filed July 17, 1883. Renewed Feb. 21, 1884. (No model.)



Claim.—1. A folding box consisting of separate pieces constituting the several inclosures of the box, all arranged in the relation to each other shown, and secured to a flexible wrapper, the engaging edges of said pieces forming joints with matched surfaces, substantially as set forth.

2. A folding box consisting of a flexible wrapper and separate pieces forming the several inclosures of the box, one end piece being adapted to brace the side inclosures, and the other end piece adapted to brace the top and bottom inclosures, substantially as described and shown.

295,312. FLYING TARGET.

HENRY VARWIG and ALBERT E. SPANGLER, Cincinnati, Ohio. Filed Aug. 9, 1883. (No model.)



Claim.—1. The target-body consisting of an inner cylindrical ring, an outer ring of easily-punctured material, and a partition arranged in a plane parallel to the edges of the inner ring, to steady the flight of the target.

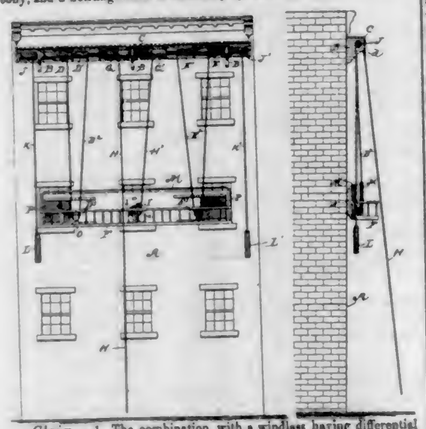
2. In a flying target, the combination, substantially as specified, of cylindrical ring A and ring C, secured around the periphery of said ring A, with an explosive material interposed between said rings.

3. The ring A, ring C, secured around the periphery thereof, fulminate B, interposed between said rings, partition D, secured within and parallel to the edges of ring A, and lug E, the whole combined and arranged substantially as hereinbefore set forth.

295,313. FIRE-ESCAPE.

AARON WALKER, Kokomo, Ind. Filed Jan. 24, 1884. (No model.)

Brief.—An improvement on Letters Patent No. 284,517, dated September 4, 1883. The balcony is suspended in the loops of the ropes, which are wound on the two differential windlasses near the top of the building, and is provided with counter-weights and their ropes and pulleys, guide-bars for the ropes, rubber buffers on the rear side of the balcony, and a hoisting-windlass stationary upon the balcony.



Claim.—1. The combination, with a windlass having differential drums, ropes attached to said drums, and a balcony hung in the bight or loop of the rope, of a counter-weight and rope, arranged as described, to oppose the unwinding of the larger drum, as and for the purpose described.

2. The combination, with the differential windlass having drums of different diameters, and one or more suspending-ropes for the balcony, of a drum, G', rigidly connected to the windlass, the rope H', the pulley I on the balcony, with crank *a*, ratchet-wheel *b*, and pawl *c*, as and for the purpose described.

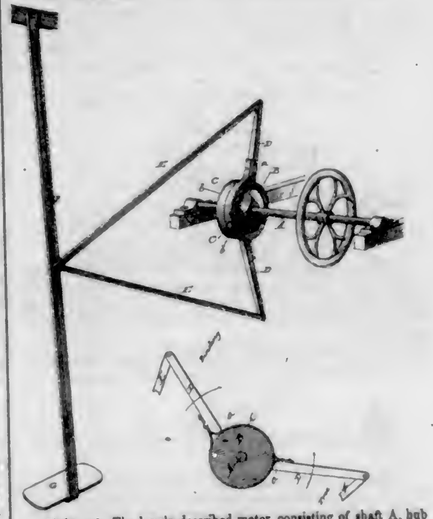
3. The combination, with the differential windlass having differential drums D D' and E E', and drums G G', arranged between them and working rigidly with the windlass, of the balcony having pulleys D² E², the two suspending-ropes D² E², and the two working-ropes H H', one of the same being extended to the ground, and the other wound about a crank-pulley on the balcony, as and for the purpose described.

4. The combination, with a windlass, a balcony, and suspending-ropes, of the two horizontal guide-rods M M', inclosing the ropes between them, and rendering the balcony stiff against tipping or rocking about its point of suspension, as described.

5. A fire-escape balcony provided with elastic cushions or buffers on its side next to the wall, in combination with hoisting-ropes and a windlass, as and for the purpose described.

295,314. MOTOR.

THOMAS WALL, Springfield, Ohio. Filed Jan. 14, 1884. (No model.)



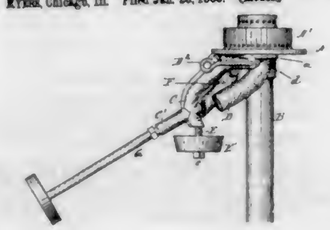
Claim.—1. The herein-described motor, consisting of shaft A, hub B, bands C C, levers D D, attached to the ends of the respective bands and extending in different directions from the hub, pitmen E E, connected with the ends of the levers D D, and a swinging lever, F, or its equivalent, connected with the pitmen, substantially as and for the purpose set forth.

2. In a motor, a clutch consisting of a hub, a flexible band encircling said hub, and a lever attached to the ends of the band and having its lower end curved, substantially as shown and described, whereby it is caused to tighten the band upon the hub when moved in one direction and to loosen it when moved in the reverse direction.

3. In a motor, a clutch consisting of a hub, a flexible band encircling the hub, and a lever, D, the ends of the band being secured to the side face of the lever, substantially as shown and described, whereby a movement of the lever in one direction is caused to bend or draw the band across its end, and thereby tighten it upon the hub, and a reverse movement of the lever is caused to loosen the band, substantially as set forth.

295,315. VAPOR-BURNER.

J. BRODETT WALLACE and GARSON MYERS, Chicago, Ill. Filed Jan. 25, 1883. (Model.)

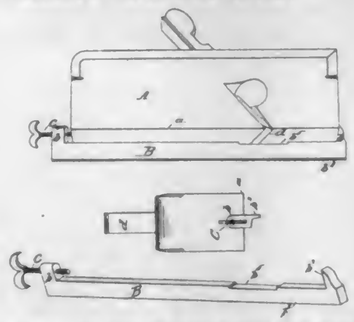


Claim.—1. In a vapor-burner, the combination, with the base-plate and laterally-arranged needle-valve, of a bent mixing-tube having its upright portion mounted to rotate in the base-plate, whereby its lower and laterally-projecting part may be swung horizontally into and out of line with the needle-valve, substantially as described.

2. In a vapor-burner, the combination, with the base-plate and laterally-arranged needle-valve, of a bent mixing-tube having its upright portion mounted to rotate in the base-plate, and its laterally-projecting lower portion provided with an external deflecting-shield, substantially as described.

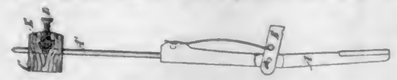
3. The combination of the base-plate A, provided with a circular aperture, the mixing-tube D, fitted to rotate therein, and the washer D', applied to the tube above the base-plate, substantially as and for the purpose set forth.

295,316. RABBET-PLANE ATTACHMENT. CHARLES A. WARFIELD, Philadelphia, Pa. Filed Sept. 18, 1883. (No model.)



Claim.—The rabbet attachment for planer herein described, consisting of bar B, having its upper or inner surface flat and transversely grooved, and provided with lugs *b b'* and a screw, C, or equivalent means for securing said attachment to the plane, substantially as shown and set forth.

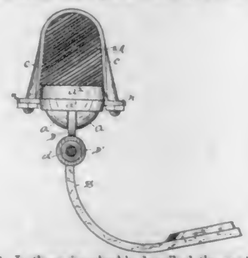
295,317. PIANO-DAMPER. OTTO WENSELL, ADAM NICKEL, and RUDOLPH GROSS, New York, N. Y. Filed Aug. 21, 1883. (No model.)



Claim.—1. The combination, with a damper-lever and a block receiving said lever through it, of a nut inserted into the block, and a set-screw engaging with the nut and bearing against said lever, substantially as and for the purpose herein described.

2. The combination, with a damper-lever and a block receiving said lever through it in a direction transverse to the grain of the block, of a nut inserted in the block in a direction also transverse to the grain of the block, and a set-screw extending through the nut and bearing on said lever, substantially as and for the purpose herein described.

295,318. SHACKLE FOR CARRIAGE-SPRINGS. HENRY WESTPAL and EDWARD DISTERLA, Chicago, Ill. Filed July 31, 1883. (No model.)



Claim.—1. In the spring-shackle described, the combination of the ball *a*, seat *a'*, cover a^2, link D, pin B^2, spring S, and clip C, all attached to the bar A, as shown, and arranged to operate as and in the manner set forth.

2. The combination of the spherical or semi-spherical body *a*, having the legs B', pin B^2, and seat *a'*, attached to the side bar, A, by the clip C, and adapted to support the body of the carriage on the springs S, in the manner and for the purpose set forth.

3. The combination of the ball *a*, seat *a'*, and link D, adapted to connect the body of the carriage to the running-gear, as and for the purpose set forth.

4. In the carriage-spring shackle described, the ball *a*, having the curved recesses B, in combination with the link D, having the legs B', and the seat or socket *a'*, as and for the purpose set forth.

295,319. BALE-TIE. LEWIS WILLIAMS, Johnstown, Pa. Filed Jan 30, 1884. (No model.)



Claim.—1. The described bale-tie, consisting of a link having one end formed as an oblong open loop for receiving and retaining one end of the baling-wire, and the opposite end thereof provided with an eye, of which the axis is substantially parallel with the plane of the said oblong loop, but lies transversely therewith, the walls of said eye constituting abutments or shoulders over which the other inserted end of the baling-wire is bent or cranked, substantially in the manner described, and for the purposes set forth.

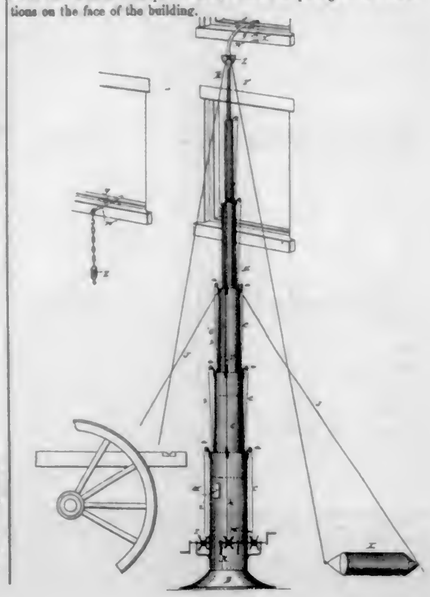
2. A link for uniting and fastening the ends of wire bale-bands, having the described loop and eye, relatively arranged and disposed substantially as shown, made from wire bent into the form described, substantially as specified.

3. The method shown of fastening the ends of a wire bale-band, which consists in connecting one end of the band by means of a loop with the loop end of the described connecting-link, doubling said connecting-link back upon the loop of the band, inserting the other end of the band endwise through the loop end of the connecting-link, then through the eye thereof, and also through the loop at the other end of the bale-band, substantially as shown, and bending the protruding end of the wire so inserted back to about a right angle, as described, and finally distending the band, so as to cause the said connecting-link to turn over or reverse its position endwise, whereby said inserted end of the bale-wire is cranked, in the manner described, and for the purposes set forth.

4. The described bale-tie, consisting of a wire bale-band having one end thereof connected by a loop with the loop end of the described connecting-link, and its other end passed through the eye of said link and confined within the loop at the opposite end of the band, said band-wire being cranked or bent at a transverse angle upon itself at the point where it traverses the eye of the connecting-link, substantially as described and set forth.

295,320. FIRE-ESCAPE. WILLIAM WEBB, Medway, Ohio. Filed Mar. 12, 1883. (No model.)

Brief.—Added to the main extension-rope and windlass, which are connected to all the sections, are supplemental ropes and windlasses, to assist in raising the lower heavier sections. The hook at the top of the column is provided with a cross-bar, to prevent its turning. The sheet-metal car has a cone-shaped bottom, to allow its passage over obstructions on the face of the building.



Claim.—1. The combination, with a tubular mast having three or more telescoping sections, of a rope attached to the inner section, pulleys on all the other sections, over which said rope runs, and means for winding said rope, in combination with another rope attached to same section outside the inner one, pulleys over which the second rope runs on sections outside of the one to which this second rope is attached, and means for winding the second rope independent of the first, as described, whereby the mast may be fully raised by the first rope, or it may be partially raised by the first rope and then the pulley raised by the action of both ropes working together independent of each other.

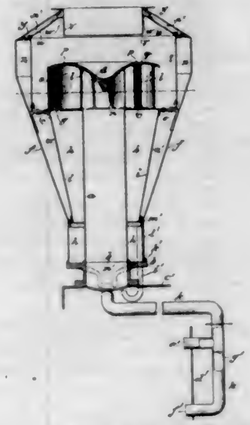
2. A sheet-metal fire-escape car having a lid completely closing its top and a bottom in the shape of a complete cone inverted, substantially as shown and described.

3. The combination, with the mast and the arm or chain provided with a hook and pulley, as described, of a cross-bar secured thereto near the hook, as and for the purpose specified.

295,321. COMPOSITION FOR FIRE-PROOF POTTERY. EDWARD P. LYONS, Milwaukee, Wis. Filed Sept. 25, 1883. (No specimens.)

Claim.—The composition for pottery, &c., consisting of alumina, silica, magnesia, potter's clay, and graphite, in about the proportions stated, when mixed and treated substantially as and for the purposes set forth.

295,322. SPARK-ARRESTER. JOHN COLUMBUS ALBRIGHT, Columbus, Ga. Filed Nov. 3, 1883. (No model.)



Claim.—1. The combination of the volute partitions *l*, having branches *p* and scrolls *o*, and horizontal partitions *c*, having passages *g*, with the cone *d* and smoke-pipe *a*, substantially as described.

2. The volute partitions *l*, having branches *p* and scrolls *o*, arranged between plate *c* and cone *d*, with passages *s* for the smoke, and with passages *q* for the cinders, said passages *q* discharging through the openings *g* of the plate *c* into the space *h* below, and the smoke-passages *s* discharging upward for the escape of the smoke, substantially as described.

3. The combination of return-pipes *k*, leading into the fire-box through the front plate, with the smoke-pipe *a*, cone *d*, and the volute partitions *l p*, scrolls *o* and plate *c*, arranged to arrest the cinders and project them down into space *h* outside of pipe *a*, and into which said return-pipes connect, substantially as described.

4. The pipe *t*, inner dome, *u*, drop-pipe *v*, and the inner flaring pipe, *i*, combined with the cone *d* and outer flaring pipe, *f*, substantially as described.

5. The pipe *t*, inner dome, *u*, drop-pipe *v*, and the inner flaring pipe, *i*, combined with the cone *d*, volute partitions *l p*, scrolls *o*, plate *c*, having passages *g*, smoke-pipe *a*, and the outer flaring pipes, *f* and *y*, substantially as described.

6. The pipe *t*, inner dome, *u*, having passages *w*, drop-pipe *v*, outer dome, *y*, and outer flaring pipe, *f*, combined with the cone *d*, said cone having means for mainly projecting the cinders down into the space *h*, substantially as described.

7. The combination of the blower-pipes *i'* with the smoke-pipe *a* and the cone *d*, and partitions arranged for causing a return-blast in the space *h*, said pipes *i'* connecting with said space *h* and returning into the smoke-pipe, substantially as described.

8. The return-pipes *k*, in combination with a smoke-stack having means for causing a return-blast in the space *h*, and being connected with the fire-box through the front plate by branches *e' f'*, and having a regulating-valve, *g'*, substantially as described.

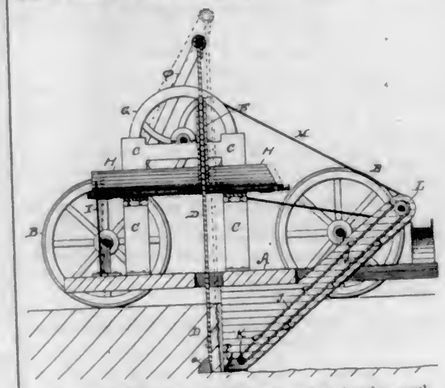
9. The saddle *b*, having the flange *k'*, supporting the base-pipe *l'*, of the pipe *i*, for inclosing an annular space, *h*, having connection with the return-pipes *k*, in combination with the return-blast pipes *i' i'*, adapted to conduct said blast from said space to the lower end of the smoke-pipe *a*, whereby the blast is utilized to accelerate the draft, substantially as set forth.

10. The saddle *b*, having the flange *k'*, supporting the base-pipe *l'* of the outer flaring pipe, *f*, also the inner flaring pipe, *i*, in combination with the smoke-pipe *a* and cone *d*, said cone *d* having means for projecting the cinders mainly into space *h* and partly into space *a'*, substantially as described.

11. The cone *d*, having partitions *l p* and scrolls *o*, in combination with smoke-pipe *a* and partition-plate *c*, and said plate having passages *g*, communicating with space *h* for the discharge of the cinders, and arranged with relation to pipe *t* for producing the space *a'*, for enabling the cinders escaping through passages *s* to fall into space *a'*, substantially as described.

295,323. TILE DITCHING-MACHINE. JOHN ARTHUR, Streator, Ill. Filed Oct. 15, 1883. (No model.)

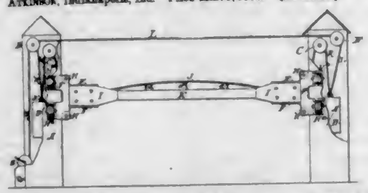
Brief.—Crank-wheels having belt-connection to drive the elevator have their cranks connected to a spade-shaft working in vertical ways which slide on longitudinal ways backward with the spade during its cut as the ditcher advances, and have a means (a spring) for returning them to advance the spade for a new cut.



Claim.—1. The combination, with a wheeled truck and an earth-elevator mounted thereon, of a spade, vertical ways for the spade, and means to reciprocate the spade therein, longitudinal ways for the spade-ways, and means for moving the spadeways forward thereon, substantially as and for the purpose specified.

2. The combination, with a wheeled truck, an earth-elevator mounted thereon, a frame supporting longitudinal ways mounted on said truck, vertical ways mounted in said longitudinal ways, a spade fitted to said vertical ways, drive-wheels provided with cranks, rods connecting said cranks with said spade, and a belt connecting one of said drive-wheels with said elevator, substantially as shown and described.

295,324. SAFETY-GATE FOR RAILROAD-CROSSINGS. BENJAMIN ATKINSON, Indianapolis, Ind. Filed Mar. 9, 1883. (No model.)

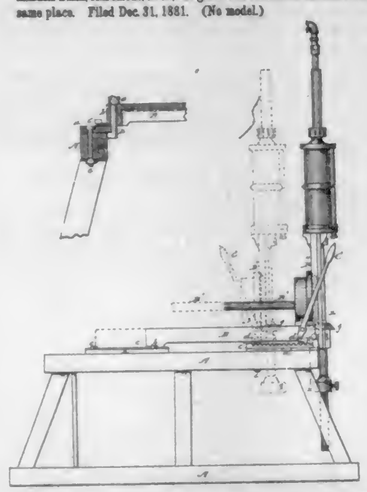


Claim.—1. The combination, with the towers, of a gate, preponderating counterbalance-weights connected to each end of the gate, a windlass, and connections from the windlass to each weight, whereby upon operating the windlass both weights may be raised and the gate allowed to fall, substantially as described.

2. The combination of the towers A A, a vertically-moving gate, the cables R, attached to said gate, the cable M, attached to the weight and windlass, with suitable pulleys for such cables, and the cable L, connecting the operating mechanism in said towers, whereby both ends of the gate may be raised or lowered simultaneously, as set forth.

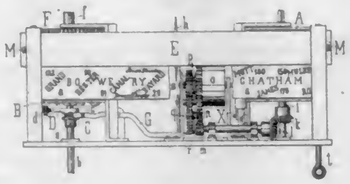
3. The combination, with the towers, of a gate provided with the end beams, G G, and having the braces J K, of the arms F, extending between said braces and the end beams, and the friction-rollers H and H, as set forth.

295,325. APPARATUS FOR SHIFTING DRILLING-MACHINES. ALBERT BALL, Claremont, N. H., assignor to the Sullivan Machine Company, same place. Filed Dec. 31, 1881. (No model.)



Claim.—In a drill-shifting apparatus, the combination, with the frame A and its guides, and rack *a a'*, supporting the drill mechanism, of the pawl *d*, and lever C, for shifting the drill, and clamp-bolt D, for adjustably securing the same, said bolt passing through the base of the drill mechanism and engaging at its lower bent end with the under side of one of the guides, substantially as described.

295,326. STATION-INDICATOR. SIMMY BALLIN, Hamburg, Germany. Filed Aug. 8, 1883. (No model.)



Claim.—1. In a station-indicator operated by a moving part of the vehicle, an indicator-apron, *a*, with the names of the stations, streets, &c., printed upon it in duplicate lines, commencing at opposite ends of the apron, in combination with drums A and B and shiftable screen E, which covers one line of names, substantially as and for the purpose set forth.

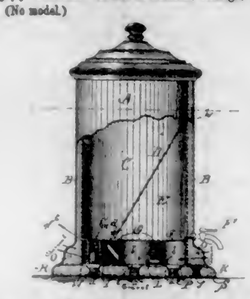
2. In a station-indicator operated by a moving part of the vehicle, an indicator-apron, *a*, with the names of the stations, streets, &c., printed upon it in duplicate lines, commencing at opposite ends of the apron, in combination with drums A and B, a coiled spring connected with the drum B, a shiftable screen, E, which covers one line of names, and a clutch device operated by a rod, *t*, which releases the drum A from its shaft and allows the apron to rewind on drum B at the end of the route, all operated and arranged substantially as and for the purpose set forth.

3. In a station-indicator, the combination, with the rollers A and B, indicator-apron *a*, and spring-drum C, suitably connected with roller A, of the crank D, carried by the collar C on the shaft of the roller B, and having a projection or spring-pin, *d*, which can engage with projections *e* on the roller B, the lever G, and the wheel *g*, having finger *r*, and geared into the pinion *p* on the spring-shaft, as described, whereby the roller B is automatically connected with its shaft when the apron has been rewound on the roller, A, substantially as set forth.

4. In a station-indicator having an indicator-band, *a*, a curtain, E, carried in front of the band by means of the arms M on the shaft L, said shaft having the lever K, in combination with the cam H and lever X, whereby the position of the screen in front of the apron can be shifted by means of any movement that may be given to the lever X, substantially as herein set forth.

5. In a station-indicator operated by a moving part of the vehicle, an indicator-apron, *a*, with the names of the stations, streets, &c., printed upon it in duplicate lines, commencing at opposite ends of the apron, in combination with drums A and B, a coiled spring connected with the drum B, an automatically-shiftable screen, E, which covers one line of names, and a clutch device and a screen-shifting device operated by a rod, *t*, which releases the drum A from its shaft and allows the apron to rewind on drum B at the end of the route, and also shifts the screen, all operated and arranged substantially as and for the purpose set forth.

295,327. FILTER. EDWIN L. BARBER, Chicago, Ill. Filed Aug. 3, 1883. (No model.)

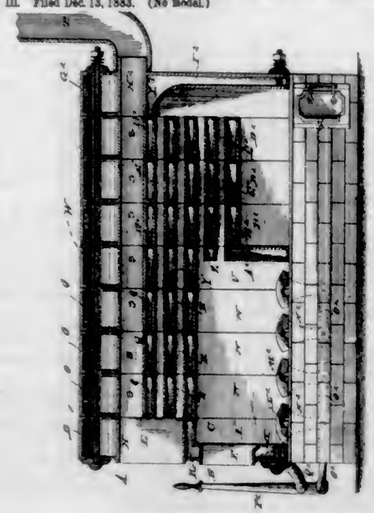


Claim.—1. A cylindrical water-vessel having a slanting partition extending from the bottom to one side thereof below the top, completely closing the chamber beneath the partition, a vent-tube in said partition extending to the top of the vessel, holes in the bottom of each compartment, one or more chambers to hold filling material connecting said holes, and a faucet entering the inclosed compartment near its bottom, substantially as and for the purpose specified.

2. The water-cooler A, the slanting partition D therein, the opening G, and a screen covering it, in combination with the tube H, having side openings near its lower end, a sponge or other filtering material in said tube, a chamber, I, surrounding the tube, filtering material in said chamber, an opening through said chamber I directly opposite the mouth of tube H, and means for conveying water from the side of chamber I to chamber E, substantially as specified.

3. The water-cooler A, the slanting partition D therein, and the openings G *g* in the bottom thereof, in combination with the filtering-chambers I J K L M N P, each having an opening in its bottom, and a removable cap therefor, and means, substantially as specified, for connecting said filtering-chambers with each other and with the openings G and *g*, as and for the purpose specified.

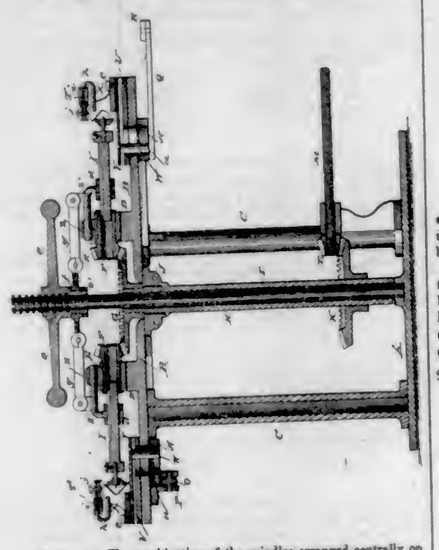
295,328. SECTIONAL STEAM-BOILER. HIRAM A. BARNARD, Moline, Ill. Filed Dec. 13, 1883. (No model.)



Claim.—1. In a sectional steam-boiler, the herein-described front sections forming the fire-box, the said sections being constructed with the rests or bearings L^2, in combination with the slotted grate-bars M^2, mounted pivotally upon the said rests, and having downwardly-extending arms N^2, the connecting-rods O^2, and the operating-lever P^2, pivoted to a bracket, Q^2, upon the front section of the boiler, as set forth.

2. As an improvement in sectional steam-boilers, the combination of the herein-described front section having the steam-dome, combustion-chamber, transverse water-pipes, and front doors, the sections having steam-domes, water-legs, transverse pipes, and horizontal flues, the section comprising the water-back of the furnace, sections forming a continuation of the boiler, and a rear section having a water-back, a smoke-stack, and a soot-door, substantially as set forth.

295,329. DRILLING-MACHINE. JOHN BARRET, Lafayette, Ind. Filed June 8, 1883. (No model.)



Claim.—1. The combination of the spindles arranged centrally on a table, the adjustable vise-chucks, and the mechanism for rotating the spindles and moving them endwise, and the hand-wheel on the vertical shaft, whereby the movement of said mechanism is controlled, substantially as specified.

2. The combination of the drill-spindles, the adjustable chucks, the screw-shaft with its hand-wheel, the link-ring and push-rods connected to the spindles, and the links connecting these rods to the said link-ring, all constructed and adapted to operate substantially in the manner and for the purposes described.

3. The combination of the adjustable vise-chucks, the dovetail guides U on table B, and pins projecting from said chucks and entering slots in a circularly-movable ring, N, and drilling-spindles, which are adjustable endwise by means described, controlled by a hand-wheel, all constructed and adapted to operate substantially in the manner and for the purposes described.

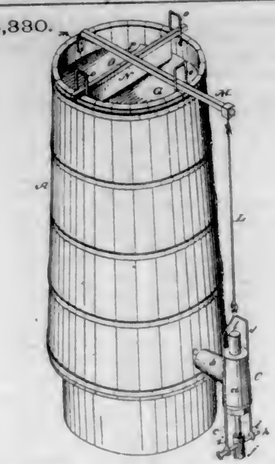
4. The combination of the endwise-adjustable spindles and adjustable chucks on a table, B, the centrally-fixed screw-shaft I, the hand screw-wheel *s*, and its connections with the spindles, the pinions F on sleeves, through which the spindles pass, and the bevel-gear on the sleeve which incloses the shaft I, all constructed and adapted to operate substantially in the manner and for the purposes described.

295,330. CISTERN. JAMES WESTFALL BARNUM, New Orleans, La. Filed Aug. 7, 1883. (No model.)

Claim.—1. The combination, with a tank and an overflow-valve at the lower end of the tank, of a float connected with said overflow-valve, and means, substantially as shown and described, for holding the float near the top of the tank when the water is below the same, as set forth.

2. The body *a*, having the hollow externally-threaded extension *b*, the top cap, *f*, and the internally-threaded lower end, the externally screw-threaded plug *e*, made conical on the inside, and the conical stopper having an upper and lower stem, in combination with a cistern-valve and suitable mechanism to connect it with the stopper-stem, for the purpose specified.

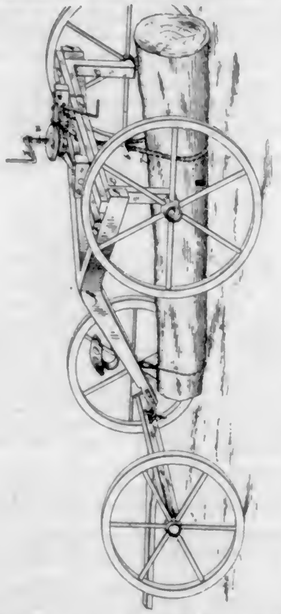
295,330.



3. The combination, with the cock-stopper *f*, having a downward stem, K, and slotted head *j*, of the cross-rod *h*, the yoke J, having eyes *i*, the pivoted rod L, the lever M, hinged at *m*, the board N, the cross-bar O, and the float G, as and for the purpose specified.

4. In a cistern, the combination, with the tank A, provided with the guides *c*, and the cock-stopper *f*, of the float G, provided with the bar O, for holding the same near the top of the tank, and the lever M, hinged to the tank, and having its free end connected to the said cock-stopper, substantially as herein shown and described, and for the purpose set forth.

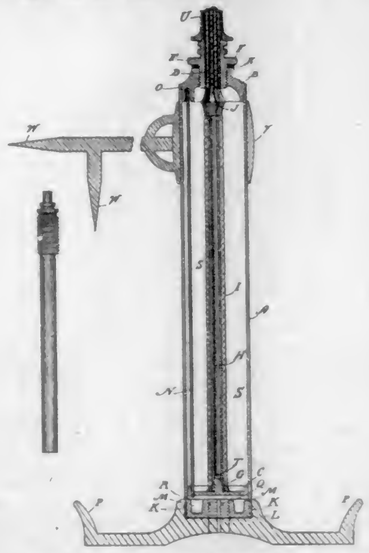
295,331. WAGON FOR MOVING HEAVY OBJECTS. ANDREW BARTHOLOMEW, Springfield, Mass. Filed Sept. 17, 1883. (No model.)



Claim.—1. The combination, with a vehicle for transporting heavy objects, of the yoke *d*, hung on trunnions, the nut-case *v*, capable of rocking on said yoke, the nut *w*, having a geared border, the screw-rod *x*, provided with hook 6, the shaft 4, having pinion 3 and the collar 13 thereon, and the stop-lever 2, substantially as set forth.

2. In combination, the reach A, the yoke *d*, hung on trunnions, the nut-case *e*, capable of a rocking motion on said yoke, the nut *w*, having a geared border, the screw-rod *x*, provided with hook 6, and the shaft 4, having pinion 3 thereon; substantially as set forth.

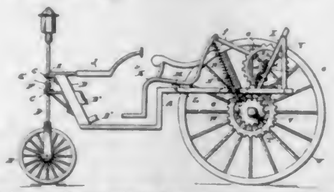
295,332. PORTABLE LAMP. LEOPOLD RADICHTER, Bridgeport, Conn. Filed July 9, 1883. (No model.)



Claim.—1. In a lamp, the casing having at its top a cap recessed as described, and at the bottom a projection, in combination with the tube N, cap L, recessed and having communication with the outside air, and tube H, substantially as set forth.

2. The casing A, having cap B and bottom C, with recess O and projection G, respectively, in combination with the tube N, cap L, with annular recess M, grooves Q, tube H, wick I, burner D, and means for regulating the flame, substantially as set forth and described.

295,333. VELOCIPEDE. LOUIS BEAUPAIN, Springfield, Ohio. Filed Jan. 17, 1884. (No model.)



Claim.—1. In a velocipede, the combination, with the oscillating seat, the standards having two sets of bearings, and the main driving-shaft having driving gear-wheels of different diameters, of the auxiliary shaft carrying gear-wheels, and adapted to operate in either set of bearings and to recive motion from the seat.

2. In a velocipede, the combination, with the boxes having brackets and anti-friction rollers mounted therein, of the main driving-shaft, upon which the said rollers rest, the rollers forming a bearing for the shaft.

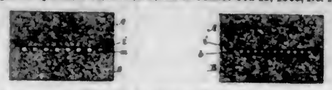
3. In a velocipede, the combination, with the oscillating seat, of the pivoted rods, and the springs which act to aid in throwing the seat upward or forward.

4. In a velocipede, the combination, with the oscillating seat, the pivoted rods, and the springs, which act to aid in throwing the seat upward or forward, of the heel and toe pieces adapted to receive the feet of the operator, whereby they are prevented from slipping, and he is enabled to exert the balance of power necessary to bring the seat forward.

5. In a velocipede, the combination, with the oscillating seat, of the transverse rock-shaft and the interposed springs, whereby the seat and shaft are yieldingly connected together.

6. In a velocipeda, the combination, with the main frame, of the standards having two sets of bearings, whereby the position of the auxiliary shaft relatively to the driving-shaft may be varied.

295,334. ARTIFICIAL PAVEMENT AND CONDUIT FOR ELECTRIC WIRES. WALTER BERRY and PETER STUART, Edinburgh, County of Mid-Lothian, Scotland. Filed Sept. 19, 1883. (No model.) Patented in England Apr. 14, 1883, No. 1,894, and in France Oct. 13, 1883, No. 156,018.



Claim.—1. Blocks or slabs of granolithic paving composition formed with conduits adapted to receive electric wires or cables.

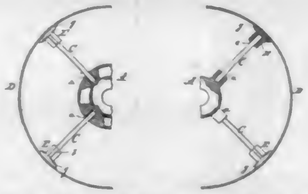
2. Blocks or slabs of granolithic paving composition having conduits beneath the surface and cemented together.

295,335. BUTTON. RICHARD B. BLACK, Experiment Mills, Pa. Filed Jan. 15, 1884. (No model.)



Claim.—An improvement in buttons, consisting of a metal shank composed of two strands bent toward each other to form a closed loop, with their ends overlapping in opposite directions, as shown, and adapted to be attached to or detached from the fastening-staple, all substantially as set forth.

295,336. MANUFACTURE OF PULLEYS, &c. HENRY H. BLAKE, Pittsburg, Pa. Filed Aug. 11, 1883. (No model.)



Claim.—1. In the manufacture of pulleys, wheels, and analogous articles, the method of securing independent arms or spokes to the hub, consisting in forming recesses in the hub larger than the spokes, and pockets beside said recesses, having overhanging walls and communicating therewith, then inserting the arms or spokes into said recesses, and pouring into said pockets and recesses a cement which shrinks in setting, substantially as described.

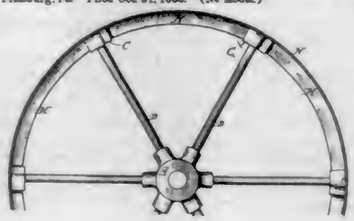
2. In a pulley, the cast hub A, having recesses *a* larger than the spokes, in combination with spokes C and cement filling the space between the spokes and recess-walls, substantially as set forth.

3. In a pulley, the cast hub A, having recesses *a* larger than the spokes, and pockets *b*, communicating therewith and having overhanging walls, in combination with the spokes C and cement filling in the space between the spokes and recess-walls and in the pockets, substantially as shown.

4. In the manufacture of pulleys, the plate I, having mandrel *p*, and adjustable centering-lugs *l*, having pockets or clamps *o*, adapted to receive and rigidly hold the independent hub and spokes of a pulley, substantially as described.

5. In a pulley, the combination of hub A, having recesses *a* and pockets *b*, spoked C, lugs E, having recesses *e* and pockets *b*, and cement filling for said recesses and pockets, substantially as described.

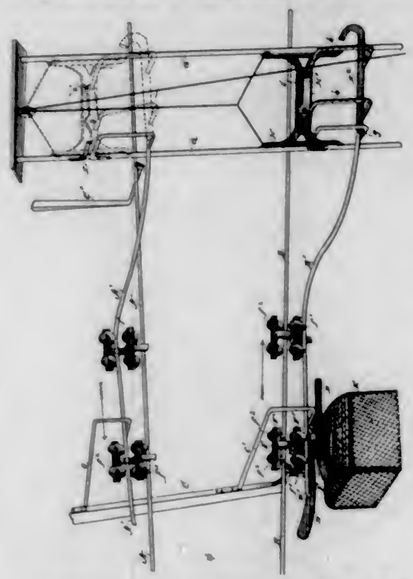
295,337. COMPOUND PULLEY OR WHEEL. HENRY H. BLAKE, Pittsburg, Pa. Filed Oct. 31, 1883. (No model.)



Claim.—1. In a compound pulley or wheel having spokes or spoke-lugs separately attachable, the combination of metallic lugs at the spoke ends, having sockets *a*, wooden rim-segments H, adapted to enter said sockets, and a metallic facing or band, N, secured outside said wooden segments, substantially as described.

2. In a compound pulley or wheel having spokes or spoke-lugs separately attachable, the combination therewith of the lugs C, having sockets *a*, wooden rim-segments fitting said sockets, and having recesses *i* and overlaps *m*, and the metallic facing-band N, secured outside said segments, substantially as described.

295,338. CONVEYER APPARATUS. GEORGE C. BLICKENDERFER and HERVEY SMITH, Erie, Pa. Filed Feb. 4, 1884. (No model.)



Claim.—1. In a conveyer apparatus, substantially as shown, the combination, with a track formed of a taut wire, of a hanger or support having thereon a clamp which grips the track below its face and holds it against vertical, lateral, and longitudinal movements, substantially as shown.

2. In a conveyer apparatus, substantially as shown, the combination, with the track, of a hanger or support having thereon the clamp formed of the parts c^2, c^3, and c^4, constructed and arranged to operate substantially as and for the purposes set forth.

3. In a conveyer apparatus, substantially as shown, the combination, with a taut wire track which passes corners or curves by angular bends, of a curved track formed of a separate piece of metal, which is clamped upon said main track, substantially as shown, and has its face in a plane above the plane of the main track.

4. In a conveyer apparatus, substantially as shown, the combination, with a taut wire track which passes curves or corners by angular bends, of the curved track-iron J, cheek-pieces *j j*, and means, substantially as shown, for clamping said parts upon said main track.

5. In a conveyer apparatus, substantially as shown, the combination, with the main track and a car having two sets of wheels—one above the other—of a switch-track having its point lying in a vertical plane with the main track, and graded at an angle to the grade of the main track, and adjusted at a distance from the main track corresponding with the distance the said sets of wheels are apart on the car, whereby the car passing said point on one set of wheels on one of said tracks will be engaged by the other track on the other set of wheels, substantially as set forth.

6. In a conveyer apparatus, substantially as shown, the combination, with a main track and a car having two sets of wheels—one above the other—of a switch-track for taking cars off the main track, which has its point lying in a vertical plane with the main track at a distance therefrom corresponding to the distance apart of the sets of wheels on the car, and adjusted so as to receive the tread of the set of wheels not in use on the main track, and which is graded at such an angle to the grade of the main track as to raise the set of wheels used on the main track sufficiently above the same to clear it as the car runs onto the curve of the switch-track, substantially as shown and described.

7. In a conveyer apparatus, substantially as shown, the combination, with a main track and a car having two sets of wheels—one above the other—of a shipping-switch for shipping cars onto said main track, which has its point lying in a vertical plane with the main track, and is at a sufficient distance therefrom at a point near the curve of said switch to carry the set of wheels not in use thereon over the main track, and from thence toward its extreme point grades sufficiently toward the main track to bring the said wheels into tread upon said main track, substantially as shown and described.

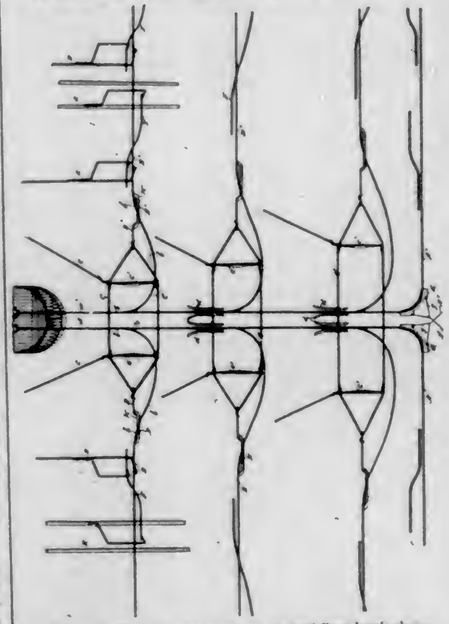
8. In a conveyer apparatus, substantially as shown, the combination of the following elements: two main tracks, one grading from and the other to the stations; two switch-tracks at each station, one, A′, for shipping cars onto the track A, which grades from the station, has its point in a vertical plane with the track A, and graded more precipitously than said track A, and the other, B′, for receiving cars from the main track B, which grades toward the station, has its point in a vertical plane with said track B, and graded less precipitously than said track B; and, finally, a car to be received at and shipped from said station, which has two sets of wheels, one above the other and distanced from each other to correspond with the distance the said switches are adjusted in a vertical line from the said main tracks, substantially as shown and described.

9. In a conveyer apparatus, substantially as shown, the combination of the following elements: two main tracks, A and B, which grade in opposite directions, and arranged one above the other; two switches at each station, one, A′, for placing cars on the track A to ship them from the station, and the other, B′, to take cars off the track B, said switches being arranged one above the other; and, finally, an elevator having a section of track, B^3, which can be brought into line with either of said switch-tracks A′ or B′ by the movement of said elevator, substantially as shown and described.

10. In a conveyer apparatus, substantially as shown, the combination, with the shipping-switch A′, of the elevator H and tilting track-section B^3, connected with said elevator, and adapted to be operated substantially as and for the purposes set forth.

11. In a conveyer apparatus, substantially as shown, the combination, with the shipping-switch A′, of the elevator H, tilting-bar H′, track-section B^3, finger I, and stop *i*, as shown, and for the purposes mentioned.

295,339. CONVEYER APPARATUS. GEORGE C. BLICKENDERFER and HERVEY SMITH, Erie, Pa. Filed Feb. 15, 1884. (No model.)



Claim.—1. In a conveyer apparatus, substantially as herein shown, the combination, with a direct or main track, of branch tracks which are connected with frames, substantially as shown and described, which span

the main track and afford an opening for the uninterrupted passage of the cars along the main line, as set forth.

2. In a conveyer apparatus, substantially as herein shown, the combination, with a direct or main track, of branch tracks having frames thereon, which span the said main track for the purposes mentioned, and transfer tracks or switches which lead from said branch tracks and connect with said main track, substantially as shown and described.

3. In a conveyer apparatus, substantially as shown, the combination of the main track A, branch track B, spanning-frame C, transfer-track *b*, and connecting-iron H.

4. In a conveyer apparatus, substantially as shown, the combination, with two or more substantially parallel tracks, of a guy for holding one or more of said tracks at their curves, which is provided with a frame or frames for spanning such of said tracks as the said guy intersects, so that cars can pass along said intersected track or tracks uninterruptedly, as set forth.

5. In a conveyer apparatus, substantially as shown, the combination, with the tracks thereof, of a spanning-frame, substantially as herein shown and described, and for the purposes set forth.

6. In a conveyer apparatus, the combination, with a track formed of a taut wire, of the angle-iron G, properly curved, and adapted, substantially as shown, to hold the track from below and leave its upper portion free for the passage of cars.

7. In a conveyer apparatus the track of which is formed of a continuous taut wire, the combination, with said track at points where it changes its direction, of a supporting-iron which is properly curved, and provided along its curve with means, substantially as shown, for grasping the said taut-wire track and holding it at a proper curve without obstructing or interfering with the tread or face of said track.

8. In a conveyer apparatus, substantially as shown, a track running in various directions, formed of a continuous taut wire, which passes angles or corners by proper curves and without break, splices, or angular bends, and at all points has its upper surface exposed as a tread or face, as shown.

9. In a conveyer apparatus, substantially as shown, the combination, with a taut-wire track, of the angle-hanger G, properly curved, and having the flange g^2 and clips g^3, as shown, and for the purposes mentioned.

10. In a conveyer apparatus, substantially as shown, the combination, with a taut-wire track, of the angle-hanger G, curved properly, and the guys *g g*, attached to said angle-hanger.

11. In a conveyer apparatus, substantially as shown, the combination, with a main track and a car having two sets of wheels, arranged side by side, of a switch-track placed by the side of the main track, so as to engage the set of wheels on the car not used on the main track, substantially as herein shown.

12. In a conveyer apparatus, substantially as shown, the combination, with a main track and a series of switches having their points arranged by the side of said main track, and successively raised at different heights above the plane of the main track, of a car having two sets of wheels, arranged side by side, one for running on the main track and the other on the switch-tracks, which latter are adjustable vertically, so as to bring them at a desired height above the tread of the set which run on the main line, as and for the purposes mentioned.

13. In a conveyer apparatus, substantially as herein shown, the combination, with a main track and switch-tracks arranged by the side of said main track, of a car having two sets of wheels, one for running on the main line, and provided with means, substantially as shown, whereby they may be tripped up off of said track, and the other for running on the switch-tracks, which are provided with means, substantially as shown, whereby they may be adjusted so as to bring their tread in different horizontal planes.

14. In the running-gear of a car for a conveyer apparatus, substantially as shown, the combination of the wheels O O and N N, arranged, respectively, on the bars K and L, the latter of which is mounted so as to be moved vertically by a spring when released from a holding-catch, substantially as and for the purposes mentioned.

15. In the running-gear of a car for a conveyer apparatus, substantially as herein shown, the combination, with the slotted post M', of the block P, bar L, carrying the wheels N, spring *p*, catch R, and trigger Q, substantially as and for the purposes mentioned.

16. In the running-gear of a car for a conveyer apparatus, substantially as herein shown, the combination, with the post M', of the bar on which the wheels are connected, pivoted to said post, and a compensating-spring attached to said post and bearing on said bar each side of said post, substantially as and for the purposes set forth.

17. In a conveyer apparatus, substantially as shown, the combination, with a main and a switch track lying side by side, and a car with two sets of wheels lying side by side, one of which sets is for use on the main track and the other on the switch-track, the former of which are adjusted upon a bar which will move up when released by the movement of a trigger, which extends above said car, as shown, of a finger, Q', adjusted above said track and in position to come in contact with said trigger when the car is opposite said switch.

18. In a conveyer apparatus in which the switch-tracks lie beside the main track and the switch-wheels on the cars lie beside the main wheels, the combination, with the said switch and car, of a friction-roller on the car, and guides *d*, at the switch-point of which guides the one opposite or across the main track from the switch extends along the track beyond the switch-curve, as shown, and for the purposes mentioned.

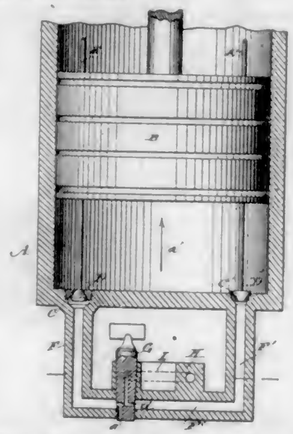
19. In a conveyer apparatus, substantially as shown, the combination, with a car having its main and its switch wheels lying side by side, and the said switch-wheels adjustable vertically, of two main tracks, one leading from and the other to the central station or cashier's desk, and switches at stations for each of said lines, which are graded in different planes above said lines successively as the said stations are serially removed from the said central station.

295,340. BALE-TIE SPLICE. FREDERICK BOMMARITO, New Orleans, La. Filed Jan. 10, 1884. (No model.)



Claim.—A bale-band formed of pieces of scrap or waste material A A', united at their adjacent ends by the longitudinal slit loops *b b*, transverse locking-lips *d d*, and a key, *c*, passing through loops *d d*, substantially as set forth.

295,341. AIR-PUMP. MIGUEL BOOM, Port au Prince, Hayti. Filed Apr. 16, 1883. (No model.)



Claim.—1. In an air-pump, the combination, with a cylinder having inlet and outlet tubes alternately opened and closed by valves operated by a piston, of a tube communicating with said inlet and outlet tubes, and provided with a pipe for connecting it with a reservoir, and a two-way cock, substantially as herein shown and described, whereby communication may be established between the outer air and the inlet and outlet tubes, and between either of the said inlet and outlet tubes and the pipe leading to the reservoir, as set forth.

2. In an air-pump, the combination, with the cylinder A, of the tubes F F', having their inner ends alternately closed by valves, and having their opposite ends united by a tube, F^2, a cock-plug, G, having channels *a d*, and the tube H, adapted to be connected with a suitable vessel for receiving the compressed air, or in which the vacuum is to be produced, which tube H forms a by-pass, substantially as herein shown and described, and for the purpose set forth.

3. In an air-pump, the combination, with a cylinder, A, provided with ports C C' in its top and bottom, and a piston, B, carrying valves D D', of the tubes F F', united by a tube, F^2, the cock-plug G, having channels *a d*, the tube H, forming a by-pass, and the channels J J', connecting the ends of the tube F^2 with the opposite ends of the cylinder A, substantially as herein shown and described, and for the purpose set forth.

295,342. CONCENTRATION AND EVAPORATION OF SIRUPS. ALFRED PEARL BOON, St. Christopher, West Indies, assignor to Charles Henry Boon, same place. Filed Feb. 21, 1884. (No specimens.)

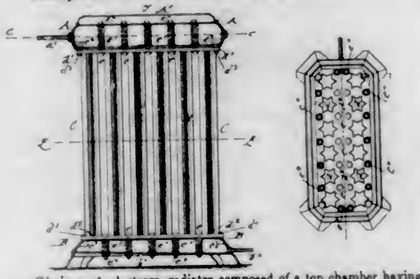
Claim.—1. The hereinbefore-described process of concentrating and evaporating sirups, consisting in pumping or injecting heated air at a high pressure and in an extremely fine state of division into the same, substantially as specified.

2. The hereinbefore-described process of concentrating and evaporating sirups, consisting in pumping or injecting heated air at a high pressure and in an extremely fine state of division into the same, and allowing the air to escape, substantially as described.

3. The hereinbefore-described process of concentrating and refining sirups, consisting in pumping or injecting heated air at a high pressure and in an extremely fine state of division into a column of the same, and allowing it to escape, substantially as specified.

4. The hereinbefore-described process of concentrating and refining sirups, consisting in pumping or injecting heated air at a high pressure and in an extremely fine state of division vertically through a column of the same, and allowing the air to escape by passing vertically up through the body of the liquid, substantially as specified.

295,343. STEAM-RADIATOR. ROBERT BRASS and JOHN CHAPMAN, Brooklyn, N. Y. Filed June 9, 1883. (No model.)



Claim.—1. A steam-radiator composed of a top chamber having bottom openings, an intermediate casting or castings, each composed of a row of circulating-pipes having top and bottom flanges cast integral therewith, a bottom chamber having openings at the upper part, and means whereby the top and bottom chambers are connected to the flanges of the intermediate casting or castings, substantially as and for the purpose set forth.

2. The combination, in a steam-radiator, of the top and bottom chambers, A and B, having openings *a a* and *b b*, and interior projecting lugs, *e e*, cast integral with said chambers, an intermediate casting, C, composed of a row of circulating-pipes, *d d*, and top and bottom flanges, *d' d^3*, cast integral therewith, said top and bottom chambers being connected to the flanges of the intermediate circulating-pipes by screw-bolts that take into the interior lugs of the chambers, substantially as set forth.

3. The combination of top and bottom chambers, A and B, having openings *a a* and *b b*, and interior side and center lugs, e^3 *e'*, intermediate castings, C C, each composed of a row of circulating-pipes, *d d*, and of top and bottom flanges, *d' d^3*, and screw-bolts e^4 and *s*, that connect the flanges of the castings with the lugs of the top and bottom chambers, substantially as set forth.

4. In a steam-radiator, the combination of the top and bottom chambers, A and B, having longitudinal openings, interior and partly-perforated side lugs cast integral with the walls of the chambers, and the intermediate castings, C C, each composed of a row of pipes having top and bottom flanges, substantially as described.

5. In a steam-radiator, the top and bottom chambers, A B, having openings *a a* and *b b*, interior and partly-perforated side lugs and perforated center lugs, said side and center lugs being cast integral with the body of said chambers, substantially as described.

6. In a steam-radiator, the combination of the top chamber, A, provided with longitudinal openings in its bottom, the steam-inlet pipe *a'*, lugs *c' c^3*, partly-perforated castings C C, nuts c^2, the top plate, A, and the bottom chamber, B, provided with lugs *c' c^3* and discharging-pipe.

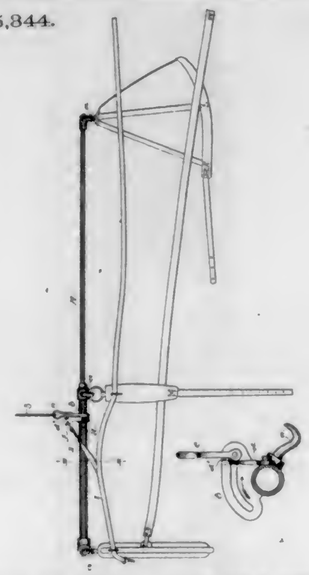
295,344. HARNESS-HOLDER. DANIEL D. BRIGGS, New Bedford, Mass., assignor of one-half to Frederick Macy, same place. Filed Jan. 18, 1884. (No model.)

Claim.—1. In a harness-holder, a rod provided at one side of its longitudinal center with a series of hooks adapted to support the collar, saddle, and rear part of a harness in position to be dropped directly upon a horse, and a supporting device for the rod, combined with a catch or latch to hold the rod with its hooks turned upward to sustain the harness, the said catch or latch, when withdrawn from contact with the said supporting device, permitting the hooks to turn down and discharge the harness, substantially as described.

2. The rod A, provided with several hooks, *a*, projecting from one side thereof, and having an attached slotted sector, combined with a supporting device adapted to engage the said slot, and with a catch or latch, adapted to operate substantially as and for the purpose set forth.

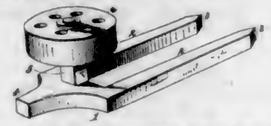
3. The balanced rod A, provided with the hooks *a*, projecting from one side thereof, and the slotted sector *b*, and the supporting device *c*, one end of which engages the slot of the said sector, and the catch or latch *d*, adapted to lock the supporting device in that end of the slot of

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the sector contiguous to the hooks *a*, and with means to operate the catch or latch to release the sector that it may turn on the supporting device, all substantially as shown and described, and for the purpose set forth.

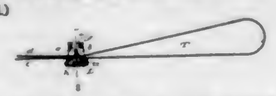
295,345. STAY-ROLLER FOR SLIDING DOORS. WARREN M. BRINKERHOFF, Auburn, N. Y., assignor of one-half to Jacob Brinkerhoff, same place. Filed Sept. 21, 1883. (No model.)



Claim.—1. A stay-roller support for sliding doors, having two or more shanks or prongs for preventing the support from turning, substantially as described.

2. A stay-roller support for sliding doors, having two or more shanks or prongs, a journal-arm, a loosely-journaled roller on said arm, and a stem or projection for driving the support, substantially as described.

295,346. METALLIC SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Jan. 16, 1884. (No model.)



Claim.—1. The combination, in a metallic seal, of a sheet-metal strip having at or near one end a lead-holder integral therewith, and at its other extremity a threading end provided with an anchoring projection on its face, and a leaden part, cast fast within said holder, and constructed with a threading-hole and a detective-aperture in its protruding face portion, substantially as herein specified, for the purposes set forth.

2. An improved metallic seal composed, as herein specified, of a sheet-metal strip having at or near one end a lead-holder, and at its other extremity a threading end provided with an anchoring projection on its face, and a leaden part, cast fast within said holder, and constructed with a threading-hole and a detective-aperture to receive said threading end and expose its anchoring projection after the seal is pressed, said holder and projection being formed by simple transverse bends, as shown, for the purpose set forth.

295,347. PIN-AND-BOX JOINT FOR STONE-DRILLS. DUNCAN CAMERON, Randolph, N. Y. Filed Aug. 3, 1883. (No model.)

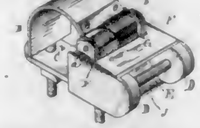
Claim.—1. In a pin-and-box joint for well-drills, the combination, with the box A, having the two female screws *a a'*, of the pin B B', with beveled shoulders *b*, said parts having a single seat, *s*, as set forth.

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2. In a pin-and-box joint for well-drills, a pin consisting of the parts B B' and beveled shoulders *b b'*, in combination with a box, A, constructed, as shown, to receive said pin, with a single seat, *s*, for the purposes mentioned.

295,348. THILL-COUPLING. ROBERT CAMERON, Burlington, Iowa. Filed Aug. 4, 1883. (No model.)

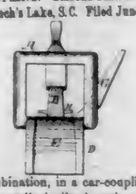


Claim.—1. The combination of the clip, the perforated cheek-pieces formed thereon, and having ears F F, the loose coupling-pin E, and the spring-actuated gate for keeping this pin in place, substantially as described.

2. The combination, with the clip and its thill-coupling, of the curved spring-plate J, covering the spring and the ends of the pivot of the gate G, substantially as described.

3. The combination of the clip, the cheek-piece and ears formed thereon, the pivoted gate actuated by a spring, *c*, the spring-plate covering this spring, and the removable pin E, substantially as described.

295,349. CAR-COUPLING. SAMUEL PARROTT CHANDLER and JAMES MALLORY CHANDLER, Lynch's Lake, S.C. Filed June 28, 1883. (No model.)



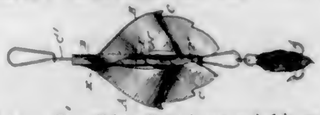
Claim.—1. The combination, in a car-coupling, with a draw-head having a fixed vertical rearwardly-inclined catch, of the hinged link-guide extending outward and downward from the lower front edge of the mouth of the draw-head, and on the same plane with the front edge of the catch, as hereinbefore described.

2. The combination, in a car-coupling having the fixed vertical rearwardly-inclined catch, of the link-lifter having a pivoted oscillating plate for lifting the link above the end of the catch and holding it in a straight position to effect this movement, as described.

3. The combination, in a car-coupling, with the draw-head formed with the fixed vertical rearwardly-extending catch or hook, of the link-guide adapted to be turned back out of the way, and the locking lever or catch resting against the top end of the hook to prevent the escape of the link, as described.

4. The combination, in a car-coupling, with the draw-head formed with a fixed vertical rearwardly-inclined catch or hook, of the pivoted link-guide on the same plane with the catch or hook, locking-lever pivoted at the top of the draw-head, and the link-raising lever, with pivoted oscillating plate pivoted at the side of the draw-head, as herein described and shown, for the purposes specified.

295,350. ARTIFICIAL FISH-BAIT. WILLIAM DUDLEY CHAPMAN, Theresa, N. Y. Filed Dec. 10, 1883. (No model.)



Claim.—1. The artificial trolling-bait, composed of the central tube, D, the curved plates A B, of gradually-increasing width toward their lower ends, having the notches C, and fastened to the central tube at the points E and F, whereby open spaces G are left on opposite sides of the tube, between it and the contiguous edges of the plates, and the lock-snood C', inserted through the tube, all constructed and combined substantially as and for the purpose set forth.

2. The artificial trolling-bait, composed of the central tube, D, having a foil envelope or wrapping, H, held in place by cords or a fine wire, I, the curved plates A B, of gradually-increasing width toward their lower ends, having the notches C, and fastened to the central tube at the points E and F, whereby open spaces G are left on opposite sides of the tube, between it and the contiguous edges of the plate, and the lock-snood C', inserted through the tube, all constructed and combined substantially as and for the purpose set forth.

295,351. UMBRELLA-RUNNER. EMILE G. CHARAGNAT, Paris, France. Filed Aug. 20, 1883. (No model.) Patented in France July 30, 1883, No. 144,232; in Belgium July 28, 1883, No. 62,165; in England July 31, 1883, No. 3,737; in Germany Aug. 2, 1883, No. 7,037, and in Italy Aug. 6, 1883, No. 259.

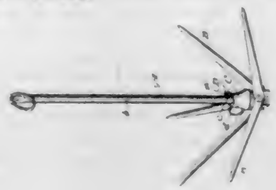


Claim.—1. The combination of the two tubes *a b*, telescopically arranged to form the runner, the flat-wire helical spring *c* in said runner, and connections *h* and *g*, respectively, from said tubes to the branches or ribs, substantially as and for the purpose described.

2. The combination of the two tubes *a b*, telescopically arranged to form the runner, the flat-wire helical spring *c* in said runner, and connections *h* and *g*, respectively, from said tubes to the branches or ribs, one of said tubes constructed with grooves, and the other provided with corresponding pins, *f*, substantially as and for the purpose described.

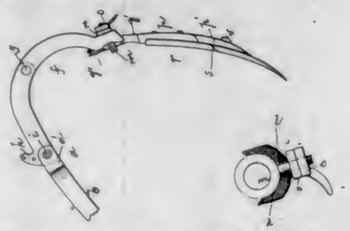
3. The combination of the spring *l*, constructed with the inclined nose *x*, the brace or connection *h*, boss *y*, and stud *k*, all substantially as and for the purpose described.

295,352. GRAPNEL. HUBBARD C. CHESTER, Noank, Conn. Filed Feb. 12, 1884. (No model.)



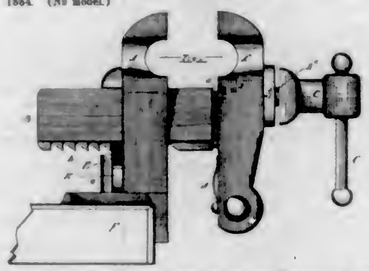
Claim.—The combination, with the shank and hinged and folding arms or flukes, of the recessed or cupped slide adapted to receive the points of the folded arms and to rest upon the unfolded or spread-apart arms, and the locking device whereby the slide is held in either of its two positions, substantially as hereinbefore set forth.

295,353. CULTIVATOR. WILLIAM H. CLARK, Harper, Kans. Filed Nov. 21, 1883. (No model.)



Claim.—In a cultivator, a sectional beam, the front portion of which is provided with a laterally-perforated bifercation near its curved rear end, in combination with a rear section pivoted to the rear end of the front section, and provided at its front end with a flat perforated head to fit the bifercation on the front section, and a securing-pin to regulate the adjustment of the sections, substantially as specified.

295,354. VISE. WILLIAM H. CLOUD, Detroit, Mich. Filed Jan. 23, 1884. (No model.)



Claim.—1. In a bench-vise, the toothed bar B, provided with an angular arm, B', and screw-cut extremity B², substantially as described.

2. In a bench-vise, the combination, with one of the jaws, of an angular toothed bar pivoted thereto, said bar constructed with a screw-cut extremity extending through said jaw, and mechanism operating upon said screw-cut extremity to operate the jaw, substantially as described.

3. In a vise, the combination, with one of the jaws, of an angular toothed bar pivoted thereto, and having a screw-cut end passing freely through said jaw, and means for reciprocating the upper end of said jaw upon said bar, substantially as described.

4. In a vise, the combination, with one of the jaws, of an angular toothed bar pivoted thereto, said bar constructed with a screw-tapped extremity passing freely through said jaw, a spring to retract the upper portion of said jaw, and means operating upon the screw-cut extremity of the bar to force said jaw into engagement with the work, substantially as described.

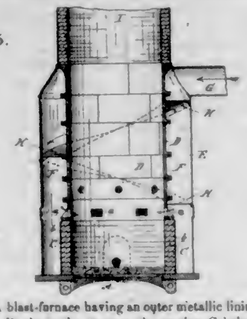
5. In a vise, an angular toothed bar pivoted in one of the jaws, and provided with a screw-cut extremity passing freely through said jaw, and means for reciprocating said jaw upon said bar and for limiting the reciprocation of the same, substantially as described.

6. The combination, in a vise, with the two jaws, of the angular toothed bar, said bar pivotally connected with one of the jaws and passing through the other, means for reciprocating one of the jaws upon said bar, and a latch adapted to be thrown into and out of operation with the toothed bar, substantially as described.

7. The combination, in a vise, with a slotted jaw adapted to be secured to a bench, of an angular toothed bar passed freely through said jaw and pivotally connected with the other jaw, said bar constructed with a screw-cut end passed freely through the latter jaw, the construction being such that the upper portion of the jaw may be reciprocated upon the bar, mechanism for giving said jaw a limited reciprocation, and a latch adapted to be thrown into and out of action with said bar, substantially as described.

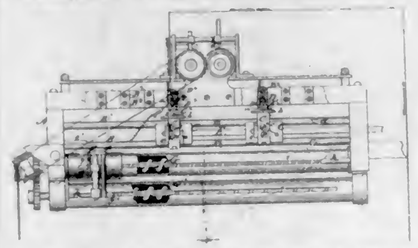
295,355. FURNACE. VICTOR COLLIAU, Detroit, Mich. Filed Oct. 16, 1883. (No model.)

295,355.



Claim.—A blast-furnace having an outer metallic lining, F, an inner metallic casing, D, above the tuyeres, the section C below the tuyeres being of fire-brick, as described, to prevent damage to the portion of the furnace where there is no circulation of air, an air-inlet, G, into which air passes under pressure, and a spiral diaphragm between the casings extending from said air-inlet to the tuyeres for compelling the air to circulate around the section above the tuyeres and gradually descend to the same, whereby the air is gradually heated before entering the tuyeres, substantially as described.

295,356. AUTOMATIC ELECTRIC SWITCH. THOMAS A. CONNOLLY, Washington, D. C. Filed Apr. 10, 1883. (No model.)



Claim.—1. In a switching apparatus for connecting independent electric lines, the combination, with a series of terminal connecting devices moving independently in right lines, of mechanism for automatically effecting said movement and electro-magnetic devices for controlling the same.

2. In a switching apparatus for connecting independent electric lines, the combination, with terminal connecting devices moving in right lines, of rigid conducting-supports upon which said devices travel, and mechanism for automatically effecting the movement of said devices and controlling the same.

3. In a switching apparatus for connecting independent electric lines, the combination of two series of connecting terminals or terminal devices moving in intersecting right lines, with mechanism for effecting the automatic movement of said devices and controlling the same.

4. In a switching apparatus for connecting independent electric lines, the combination, with a series of terminal connecting devices moving in right lines, of a sweep constructed and adapted to move to and fro and to engage with and propel said connecting devices.

5. The combination, in an automatic circuit-changer or electric switch, of slides, blocks, or carriages carrying electric connecting devices, tracks, bars, or supports for the same to travel upon, mechanism for propelling said slides, blocks, or carriages, and electro-magnetic devices for controlling the movement of the same.

6. In an automatic circuit-changer or electric switch, the combination of a rotary screw or worm, with a sweep operated thereby, and designed and adapted to be moved by said screw, substantially as described.

7. The combination of a screw or worm, a sweep geared thereto, and a sliding or moving switch-block, slide, or carrier operated upon by said sweep.

8. The combination of a pair of geared screws or worms turning in opposite directions, a sweep propelled by said screws alternately, and automatic devices for shifting the connection of said sweep from one screw or worm to the other.

9. A local-station apparatus for the control of automatic electric switches, comprising means for the transmission of an electric current to the switch and means for registering intermissions in said current produced at or by the switch.

10. In a local-station apparatus for automatic electric switches, the

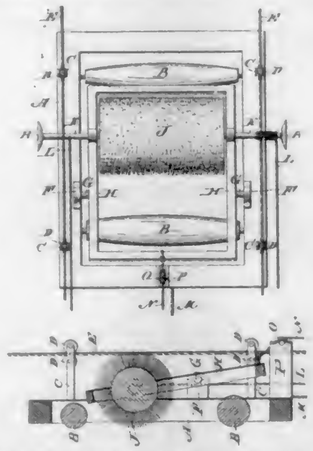
combination, with mechanism for registering intermissions in the current produced at or by the switch, of means for automatically diverting or opening the circuit when a given line is reached.

11. An electric switching apparatus provided with intersecting switch-bars, movable connecting devices to establish connection between said bars, mechanism for causing said devices to travel to and stop at given or predetermined points, devices through which an electric current coming from a distant station is caused to control the movement of said mechanism and allow said connecting devices a continuous movement between any given points, and means whereby the movement of the connecting devices effects a registration thereof at a distance.

12. The combination, in an electric switch, of a series of carriers moving in right lines, and another series of carriers moving also in right lines and intersecting the first-named lines, with mechanism for moving and stopping said carriers and connecting the same with electric lines, whereby when one of said carriers engages with another an electric circuit is established between the lines to which said engaged carriers belong, substantially as described.

13. In an automatic electric switch, a traveling connecting-block adapted to travel forward and backward in the same plane, and provided with devices in circuit with a given line for obtaining contact with and circuit to another line.

295,357. APPARATUS FOR CLEANING SHIPS' SIDES, &c. JOHN LEE COOPER, San Francisco, Cal., assignor to James Osborne Cooper, Portland, Oreg. Filed Sept. 1, 1883. (No model.)



Claim.—1. In a ship-cleaner, the combination, with a frame, of an additional frame pivoted in the same, a cylindrical scarifier journaled in the pivoted frame, and means for revolving the scarifier, substantially as herein shown and described.

2. In a ship-cleaner, the combination, with a frame having convex rollers, of an additional frame pivoted in the above frame, a cylindrical scarifier journaled in the pivoted frame, and means for revolving the scarifier, substantially as herein shown and described.

3. In a ship-cleaner, the combination, with the frame A, of the convex roller B, the frame H, pivoted in the frame A, the cylindrical scarifier J, journaled in the frame H, and the ropes L, wound in inverse directions on the ends of the scarifier-shaft, substantially as herein shown and described.

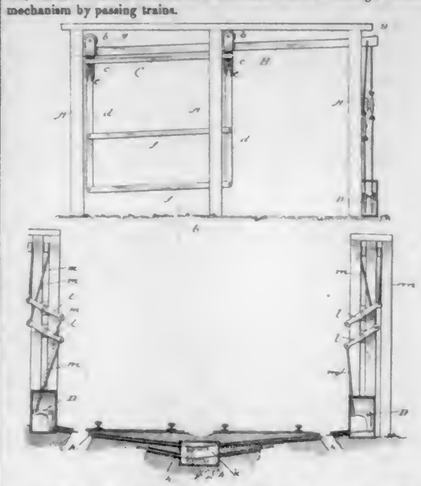
4. In a ship-cleaner, the combination, with the frame A, of the frame H, pivoted therein, the cylindrical scarifier J, journaled in the frame H, means for revolving the scarifier, and means for pressing it against the ship, substantially as herein shown and described.

5. In a ship-cleaner, the combination, with the frame A, of the frame H, pivoted therein, the cylindrical scarifier J, journaled in the frame H, means for revolving the scarifier, the rope N, the bridge P, and the pulley O, substantially as herein shown and described.

6. In a ship-cleaner, the combination, with the frame A, of the standards C, the rollers D, the ropes E, the frame H, journaled in the frame A, a cylindrical scarifier journaled in the frame H, and means for revolving the scarifier, substantially as herein shown and described.

295,358. RAILWAY-GATE. DAVID W. COPELAND, Lowville, N. Y., assignor of seven-tenths to Miles H. Bronson, same place, and William H. Cole, Leyden N. Y. Filed Oct. 30, 1883. (No model.)

Brief.—Gate adjustably suspended from hangers traversing a tilting track having inclined outer ends, said track being vibrated through rod, chain, lever, and bell-crank connections actuated through treadle mechanism by passing trains.



Claim.—1. A gate suspended from wheels, in combination with a track-bar for the wheels, pivoted at or about its center, a rod at one end of the bar connecting it to a bell-crank lever, D, and means, substantially as described, for moving the said bell-crank, whereby the gate-track is either pushed or pulled and the gate caused to slide, as set forth.

2. In combination with the sliding gate, the track-bar B, having the inclines *g* at the ends, and means for shifting said bar, substantially as described.

3. In combination, the gates—one on each side of a track—adapted to slide on a pivoted track-bar, bell-crank levers D, and connections therefrom to the ends of the bars, rods *h h*, and bell-crank levers E, with rods or ropes, and means whereby the wheels of the car operate the mechanism, all substantially as described.

4. In the described relation to the gates and their connecting-rods and levers, and in combination, the bell-crank lever G, connected lever *p*, pivoted to *q*, post *r*, and spring-treadle, all substantially as described.

5. In the described gate, the combination of the wheels *b b*, bangers *c c*, perforated, as described, bar C, and the gate-frame proper suspended from hangers *c c*, and adapted to be adjusted vertically thereon, substantially as described.

295,359. PERFUMERY-CHARGED CANE AND OTHER HANDLES. EZRA R. COWLES, HENRY A. COWLES, and MARTIN OSBORN, Westfield, Mass. Filed Jan. 21, 1884. (No model.)



Claim.—1. A knob or handle of a cane or other analogous article, made hollow, and having its shell perforated, and having within it a receptacle for perfumery and a perfume-absorbing material, said receptacle having a stopper capable, by means substantially as described, of permitting more or less of the contents of the receptacle to escape through it, substantially as set forth.

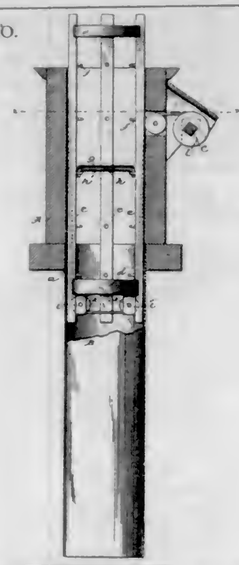
2. A knob or handle of a cane or other analogous article, made hollow, and having its shell perforated, and having within it a receptacle for perfumery, said receptacle having a stopper capable, by means substantially as described, of permitting more or less of the contents of the receptacle to escape through it, substantially as set forth.

295,360. HOISTING FOOD-COOLER. HENRY CRAWFORD and JOHN M. LONG, Virden, Ill. Filed June 29, 1883. (No model.)

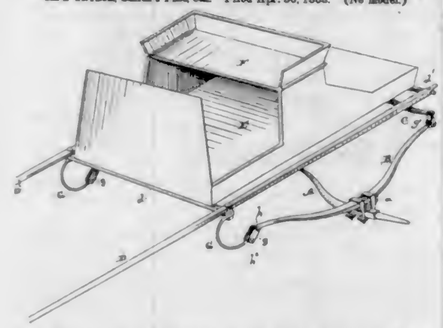
Claim.—1. Combined with an adjustable refrigerator, the wire shelves, consisting of the ring *g* and cross-bars *h h'*, constructed substantially as described.

2. The frame consisting of the stripe *e e* and *e'*, and heads *d d'*, the said stripe being provided with staples and holes, as described, in combination with the shelf, formed as described, and adapted to said stripe, as set forth.

295,360.



295,361. TWO-WHEELED VEHICLE. JAMES S. CREIGHTON and JOSEPH TAYLOR, Smith's Flat, Cal. Filed Apr. 30, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, the platform-springs B B, in combination with the shafts D D, having cross-bar *d*, and the means for connecting the springs with the cross-bar, consisting of the curved strips G G, bolted to the cross-bar, and the shackle *g*, formed of separated plates, making a link, A, pivoted by bolts at each end to the springs and to the curved strips, substantially as herein described.

2. In a two-wheeled vehicle, the axle, side springs, and rear cross-spring, in combination with the shafts having front and rear cross-bars, the latter of which is clipped to the rear cross-spring, body E, bolted at its corners to said cross-bars, and the means for connecting the shafts with the forward ends of the side springs, consisting of curved strips G G, bolted to the front cross-bar, and shackle *g*, pivoted to the springs and curved strips G G, substantially as herein described.

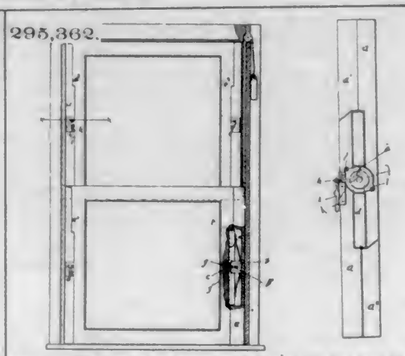
295,362. WINDOW. EBER R. CROFUT and CHARLES L. GRINNIK, Newark, N. J. Filed Aug. 1, 1883. (No model.)

Brief.—A sash horizontally pivoted in sliding stiles, and a detachable spring-locking strip whereby to connect or disconnect the sliding stile and pivoted sash.

Claim.—1. The combination, with the sash or sashes of a window, having recesses (as *r*) therein, and projections a^3, of a supplemental piece (as *a*) having a recess therein, and provided with recesses a' and a^2, adapted to receive said projections a^3, a locking-bar, *d*, and a spring, *e*, all substantially as and for the purposes set forth.

2. The combination, with the sash or sashes of a window, having a recess therein, and a cap (as *g*) provided with a thread, of a supplemental piece having a recess therein, a cylindrical piece, *b*, provided with a screw, *c*, and having a slot or opening, *b'*, therein, a locking-bar, *d*, having a depression, *d'*, said locking-bar moving within said slot *b'* in the piece *b*, and a spring secured to or within said piece *b*, all as set forth.

295,362.

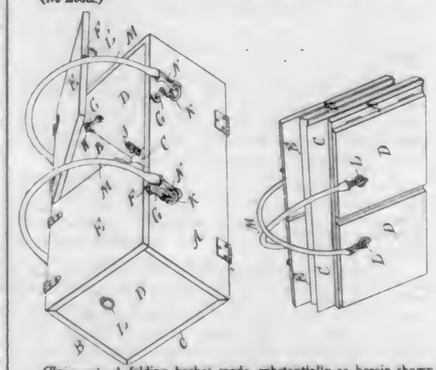


3. In a window attachment, the combination of a cylindrical piece (as *b*) having a slot, *b'*, therein, and provided with a screw, a locking-bar moving within said slot, a spring, and means for operating said locking-bar, all substantially as and for the purposes set forth.

4. In a window attachment, the combination of a cylindrical piece (as *b*) having a slot, *b'*, therein, and provided with a screw, a locking-bar moving within said slot, a spring, (as *e*,) a lever, A, pivoted or attached to the cylindrical piece *b*, a thumb-piece, (as *i*,) and a lug, *k*, all substantially as set forth.

5. In a window attachment adapted to be applied to the sashes of a window, the combination of a supplemental piece (as *a*) having a recess therein, a locking-bar, (as *d*,) a spring, (as *e*,) a device (as *b*) provided with a screw, *c*, and adapted to hold said bar and spring in operative relation, a lever, A, pivoted to said device *b*, a thumb-piece, *i*, and a cap, *g*, all substantially as and for the purposes set forth.

295,363. FOLDING BASKET. ANTHONY DAUL, Jamaica, N. Y., assignor of one-half to Carl Winckens, same place. Filed Aug. 17, 1883. (No model.)



Claim.—1. A folding basket made, substantially as herein shown and described, with the front and back hinged to the opposite edges of the bottom, the ends hinged to the ends of the front, and the cover made of two halves hinged to the upper edge of the back, as set forth.

2. A folding basket constructed with a front hinged to the front edge of the bottom and adapted to be folded against the under surface of the same, a back hinged to the rear edge of the bottom and adapted to be folded on the upper surface of the same, ends hinged to the ends of the front and adapted to be folded against the inner surface of the same, and two cover-sections hinged to the upper edge of the back and adapted to be folded against the rear surface of the same, substantially as herein shown and described.

3. In a folding basket, the combination, with the bottom C, of the front A and back B, hinged to the same, the ends D, hinged to the ends of the front, the covers E, hinged to the back, the hooks G on the ends, and the eyes or loops H on the back, substantially as herein shown and described.

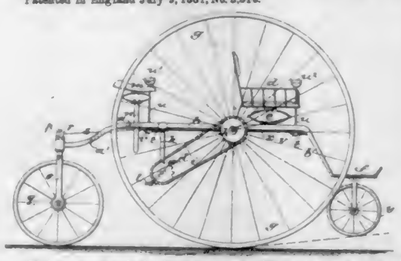
4. In a folding basket, the combination, with the bottom C, of the front A and back B, hinged to the same, the ends D, hinged to the front, the covers E, hinged to the back, the hooks G on the ends D, the loops

or eyes H on the back, and the sliding bolts J on the ends, substantially as herein shown and described.

5. In a folding basket, the combination, with the bottom C, of the front A and the back B, hinged to the same, the ends D, hinged to the front, the covers E, hinged to the back, the rings or loops L on the ends, the rings or loops L' on the covers, and the handles M, substantially as herein shown and described.

6. In a folding basket, the combination, with the bottom C, of the front A and the back B, hinged to the same, the ends D, hinged to the front, the covers E, hinged to the back, the loops or rings K on the front and back, the rings or loops L on the ends D, the rings or loops L' on the covers E, and the handles M, substantially as herein shown and described.

295,364. VELOCIPEDE. GEORGE LOUIS OUTRAM DAVIDSON, Manchester, County of Lancaster, England. Filed Jan. 2, 1884. (No model.) Patented in England July 9, 1881, No. 3,016.



Claim.—1. A velocipede constructed with a suitable frame, main wheels *g*, steering-wheel *q*, leading-wheel *y*, and a forward passenger-seat, *d*, and rear driver's seat, *m*, said seats *m d* being relatively positioned with each other and the main wheels and axle to cause the driver's weight to overbalance that of the passenger, to hold the steering-wheel to the ground and the leading-wheel therefrom, and to permit the passenger's weight to carry the leading-wheel to the ground when the driver dismounts, substantially as shown and described.

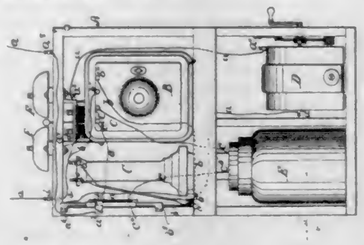
2. The velocipede-frame constructed of hollow bars bent to form a head, *a*, having extension *a'* for support of the steering-wheel, and side-bar extensions *b b*, which connect to the axle, support the seats, and are bent downward and forward at the front, where they have the connected bracing foot-board or stretcher *f*, for support of the leading-wheel, substantially as shown and described.

3. The combination, in a velocipede and with the steering-wheel *q*, its shaft-arm *r*, and rod *s*, of the slotted yoke *t*, provided on its under side with a rack, *w*, and the steering-shaft *u*, secured to the frame, and provided with a collar at its lower squared end, above the yoke, and with a pinion, *v*, below the yoke, whereby the yoke is operated and supported by the collar and pinion, substantially as set forth.

4. The combination, with the steering-wheel *q*, its shaft-arm *r*, rod *s*, yoke *t w*, pinion *v*, and handle-shaft *u u'*, arranged to be operated from the driver's seat *m*, of the rod *x* and duplicate gear *t w v u u²*, located for operation by the passenger from his seat *d*, whereby the velocipede may be guided either by the driver or passenger, substantially as shown and described.

5. The combination, in a velocipede, of a frame, *a a' b*, axle *c*, passenger-seat *d*, main wheels *g*, steering-wheel *q*, leading-wheel *y*, chain-wheels and gearing *h i j*, treadles *l*, driver's seat *m*, and the steering-gear *r s t w v u u' u²*, arranged at either or both of the seats *d m*, to be operated therefrom, and said seats *d m* being relatively positioned to have the driver's weight overbalance the passenger, the whole being constructed and arranged to operate substantially as shown and described.

295,365. TELEPHONE-BOX. AUGUSTUS G. DAVIS, Baltimore, Md. Filed Mar. 30, 1883. (No model.)

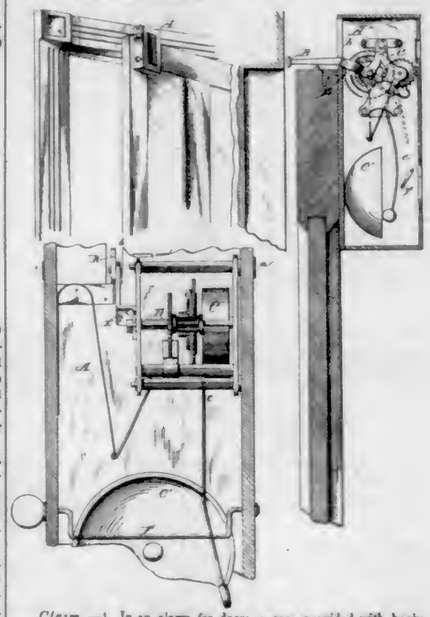


Claim.—1. The combination, in a telephone-box, of the button I, provided with contact-point a^1, and pivoted to the side of the box, the spring i^3, for pressing its upper end normally outward, the springs J and K and connections a^3 and b^3, the door G, the springs M, and the conductors *a c e*, the whole arranged to operate substantially in the manner and for the purpose specified.

2. The combination, with the box and its door, of the spring-actuated button I and the metallic plates L and M, for the purpose set forth.

3. The combination, with the box and its door, of the metallic plates J, K, L, and M, as and for the purpose set forth.

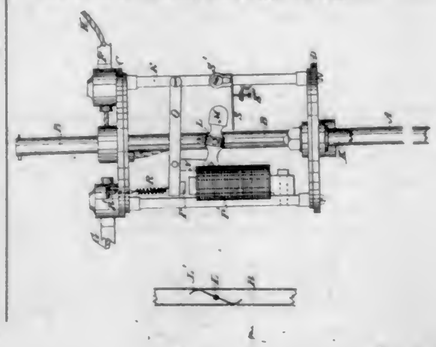
295,366. BURGLAR-ALARM. J. ARTHUR DINNEEN, Great Falls, N. H. Filed Oct. 18, 1883. (Model.)



Claim.—1. In an alarm for doors, a case provided with hooks, whereby it may be attached to a door, and provided with an alarm and spring-actuating means, said spring-actuating means being provided with a dog and arm, whereby the spring is wound up when the arm is forced within the receptacle, substantially as shown, and for the purpose set forth.

2. In combination with the case A, having an opening or slot, *b*, and inclosing an alarm-sounding mechanism, the dog E, attached to the shaft of the spring, and provided at its end with an arm, B, the parts being organized and combined substantially as shown, and for the purpose set forth.

295,367. ELECTRIC LAMP. THOMAS L. DENNE, Jersey City, N. J. Filed Dec. 19, 1881. Renewed Nov. 6, 1882. (No model.)

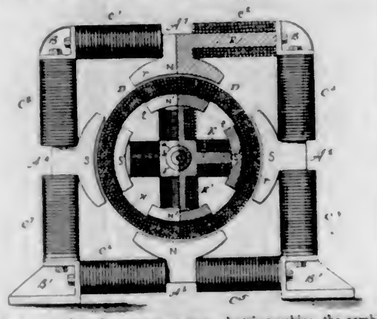


Claim.—1. In an electric lamp, the combination of the slotted tube for supporting the moving carbon with a frictional spring and its supporting-lever suspended by a second lever, which is controlled by an adjusting-spring in one direction and an electro-magnet in the opposite direction, as hereinbefore set forth.

2. The combination of the slotted tube, the spring L', and the tilting lever M, with the adjusting table or bracket S, for releasing the rod and permitting the carbon to drop, as hereinbefore set forth.

3. In an electric lamp, the combination of the reacting-spring with the shunt or high-resistance magnet for regulating and controlling the length of the arc, as hereinbefore set forth.

295,368. DYNAMO-ELECTRIC MACHINE. THOMAS L. DENNE, New York, N. Y. Filed Nov. 9, 1882. (No model.)



Claim.—1. In a dynamo or magneto electric machine, the combination of interior and exterior field-magnet systems and a hollow cylindrical armature revolving between the two, the interior field system being adjustable relatively to the exterior field system, substantially as set forth.

2. In a dynamo or magneto electric machine, a system of interior field-magnets, consisting of a hub, radial arms carrying coils, and enlarged polar extremities, all mounted upon a movable shaft and adapted to be adjusted relatively to the exterior field-magnet system, substantially as set forth.

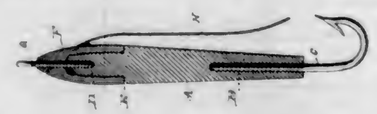
3. The combination, in a dynamo or magneto electric machine, of an exterior system of field-magnets, an interior system of field-magnets, and means for changing or varying the relative position of the two systems, substantially as set forth.

4. The combination, with a collector or commutator, of two sets of brushes or springs for each polarity, electrically connected, and means for adjusting the sets of different polarity relatively to each other, substantially as set forth.

5. In a dynamo or magneto electric machine, the combination of a fixed system of exterior field-magnets, an adjustable system of interior field-magnets rigidly attached to or mounted upon a movable shaft, and a revolving hollow cylindrical armature supported by sleeves upon the shaft and capable of rotation thereon, substantially as set forth.

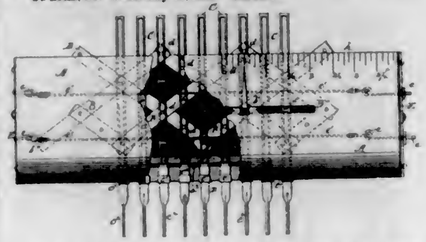
6. In a dynamo or magneto electric machine, a system of interior field-magnets, consisting of a hub, radial arms carrying coils, and polar extensions therefor, all mounted upon a movable shaft and adapted to be adjusted relatively to the exterior system of field-magnets, the movable shaft being perforated longitudinally to permit the passage therethrough to the inner field system of the requisite electrical conductors, substantially as set forth.

295,369. TROLLING-HOOK. NEWTON A. DICKINSON, Chester, Conn. Filed Oct. 4, 1883. (No model.)



Claim.—The combination of a tapering stick having its upper portion reduced to form a shoulder, and having screw-threaded sockets in the ends of the same, a hook having a screw-threaded shank inserted into the lower end of the stick, a cap of heavy metal fitting over the reduced end of the stick, an eyed screw fitting into the upper end of the stick and holding the cap in place, and a flexible or elastic rod or fender fastened into the side of the cap and extending down to near the point of the hook, as and for the purpose shown and set forth.

295,370. CLAMP FOR RULING-PENS. JOHN WILLIAM DIRBOLD, St. Louis, Mo. Filed May 18, 1883. (Model.)



Claim.—1. The combination, with the hollow body of the clamp and the system of movable levers and pen-holders, of the wires *c' c'*, which are stretched taut and support said levers and holders, as shown and described.

2. In combination with the body of the clamp, having grooves *a f* and scale A, the system of levers B, with head *b'* and pointer *g*, the slotted holders C, the screws *d*, and the securing-wires *c' c'*, as described.

295,371. TIP FOR ELECTRICAL CONDUCTORS. GEO. DOOLITTLE, Bridgeport, Conn., assignor of one-half to Henry D. Stanley, same place. Filed Dec. 10, 1883. (No model.)



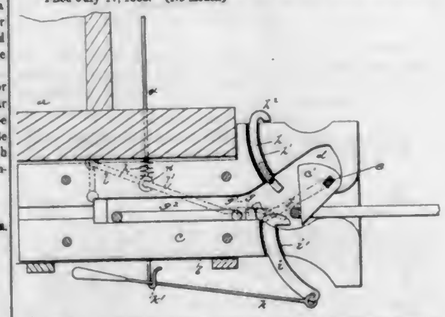
Claim.—1. In a tip for electrical conductors, a flexible metal or wire jacket arranged around the conductor and extended back beyond the rear end of the tip, substantially as set forth.

2. In an electrical conductor composed of a series of conducting-strands, a tip having its rear portion coiled around the conductor, and secured thereto by a knot at the outer extremity of the strands or core, substantially as described.

3. In an electrical conductor composed of a series of conducting-strands, a tip having its rear portion coiled around the conductor, and secured thereto by means of a knot at the outer extremity of the strands or core, in combination with a flexible sheath or jacket, substantially as and for the purpose set forth.

4. In an electrical conductor, the combination, with a tip secured to said conductor, of an independent detachable flexible jacket arranged around the outside of the conductor, and extended backward beyond the rear extremity of the tip, substantially as and for the purpose set forth.

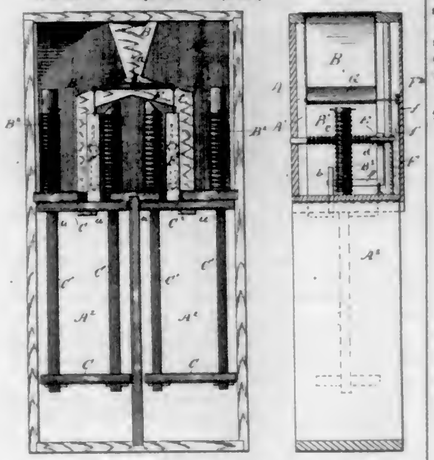
295,372. CAR-COUPLING. ROBERT H DOWLING, Newark, Ohio, assignor of two-thirds to William Baker and Charles H. Follett, same place. Filed July 17, 1883. (No model.)



Claim.—1. In an automatic car-coupling, the draw-head *c*, having the recess *d* in its upper wall, in combination with the triangular-shaped steel coupling-block *c'* on the shaft *e*, having bearings in the said walls of the draw-head, and being provided with the crank *f*, having hole *f'*, the gravitating catch-book *h*, and the crank-shaft *l*, having its arm *l'* passed through the eye *f'*, substantially as specified.

2. In a car-coupling, the combination, with the draw-head, having the steel coupling-block *c'* on the shaft *e*, provided with the crank *f f'*, the catch-book *i*, and the crank-shaft *l*, having its arm *l'* passed through the eye *f'* of the rod *n*, having the eye *n'*, through which the arm *l'* of the crank-shaft *l* passes, and the spring *p*, encircling the rod *n*, and having its bearings against the eye *n'* and in a seat in the bumper, substantially as specified.

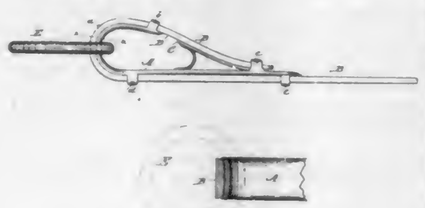
295,373. AUTOMATIC GRAIN-WEIGHER. THOMAS L. EASLEY, Laddonia, Mo. Filed Sept. 12, 1883. (Model.)



Claim.—1. In a grain-weigher, the combination of the hopper B, having valve G and spouts B', platforms C, having cross-heads C^2, springs B^2, and weights F', substantially as shown, and for the purpose described.

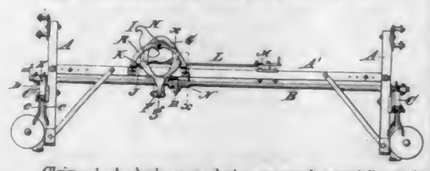
2. In a grain-weigher, the combination of the platforms C^2, notched weights F', secured to lever F, actuating-valve G, elbow-lever D, and spring-rod E, substantially as shown and described.

295,374. HARNESS-HOOK. SAMUEL BROCK EDSON, Monterey, Ind. Filed Dec. 29, 1883. (No model.)



Claim.—The hook having the curved body A formed with a concaved outer surface, and provided with pin *a*, located approximately near the end of the hook, and loops *b c d e* and guard C, substantially as shown and described.

295,375. CHECK-ROWER ATTACHMENT FOR CORN-PLANTERS. HENRY FARMER, Richmond, Ind. Filed Dec. 26, 1883. (No model.)



Claim.—1. A check-rower device composed, essentially, of the double-acting pawl G, in combination with the double-acting crank H, or its equivalent, adapted to be intermittently reciprocated, substantially as herein set forth.

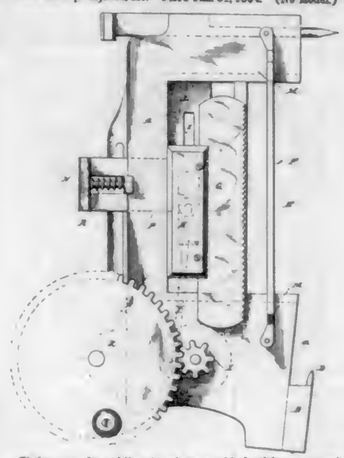
2. In a check-rower device, the combination, with the pitman L, of the shaker-bar, the double-acting crank H, adapted to be alternately oscillated by a double-acting pawl for reciprocating the pitman, substantially as herein set forth.

3. In a check-rower device, the double-acting crank H, provided with the lug J', in combination with the double-acting pawl G, whereby the pawl is brought into alternate engagement with the opposite crank-hooks, I I', substantially as herein set forth.

4. The combination of the pitman L, the oscillating crank H, the double-acting pawls G, reciprocated by means of the oscillating shaft B, substantially as herein set forth.

5. In a check-rower device, the combination, with the oscillating shaft B, of the fork C, loosely journaled thereon, with the lug E, secured to said shaft, whereby it is oscillated by engagement of one of the forked levers with said lug, substantially as herein set forth.

295,376. SIDING-BRACKET. ANDREW J. FLOWERS and MALON I. FLOWERS, Springfield, Mo. Filed Jan. 31, 1884. (No model.)



Claim.—1. In a siding-bracket provided with a saw and means for operating the same, the combination, with the frame having an inclined or beveled bearing-face and containing said saw, of the pin or spike for entering the studding of a building, and the adjustable slide provided with an adjustable knife which is adapted to fit under the siding already on said building, the whole device operating substantially as and for the purpose set forth.

2. In a siding-bracket provided with a reciprocating saw and actuating mechanism, the combination of the frame having an inclined or beveled bearing-surface, and carrying said saw and actuating mechanism, with the supporting-guide for holding the board while being sawed, all arranged to operate substantially as described.

3. The combination, with the frame and the supporting-guide, of the reciprocating saw, the adjustable frame which carries said saw and its spring and extension, and the gearing whereby the saw is reciprocated, substantially as specified.

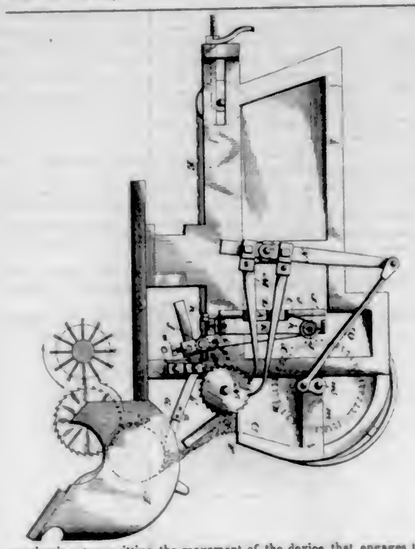
4. In a siding-bracket, the combination, with the frame having an inclined bearing-surface, of the pin or spike, the adjustable slide carrying an adjustable knife, the reciprocating saw with the adjusting and the geared driving mechanism, the supporting-guide, and the handle, all arranged to operate substantially as and for the purpose set forth.

295,377. GOVERNOR FOR COTTON-GIN FEEDERS. LYCURGUS D. FORBIS, Stranger, Tex. Filed June 25, 1883. (No model.)

Claim.—1. The combination, with the roll-box of a cotton-gin, of a device constructed and arranged to swing within the arch of the roll-box and rest upon the roll in that arc of its circumference which has passed the saws before new cotton is taken onto the roll, a feed-roll, a feeding-apron for supplying cotton to the feed-roll, and means for transmitting the motion of the device that rests on the roll, caused by the increasing or diminishing of said roll, to the feeding-apron, whereby the feed of cotton into the gin will be accelerated when the roll diminishes and retarded when the roll increases beyond a fixed size, substantially as set forth.

2. The combination, with the roll-box of a cotton-gin, of a device arranged and adapted to rest on that portion of the roll which is in rear of the point at which the cotton is delivered thereto, of a feeding apron and roll and devices for transmitting the motion of the device that engages the roll, caused by the increasing and diminishing the size of the roll, to the feeding-apron, and thereby automatically starting, stopping, and regulating the rate of speed of the feeding-apron, substantially as set forth.

3. The combination, with the roll-box of a cotton-gin, of a vertically-movable device arranged and adapted to rest on that portion of the roll which is in rear of the point at which the cotton is delivered thereto, a feed-roll, a feeding-apron for supplying cotton to the feed-roll, a ratchet-wheel for actuating the feed-apron, pawls for operating the ratchet, and



mechanism transmitting the movement of the device that engages the roll to said pawls for regulating their adjustment, and thereby regulating the rate of speed of the feeding-apron, substantially as set forth.

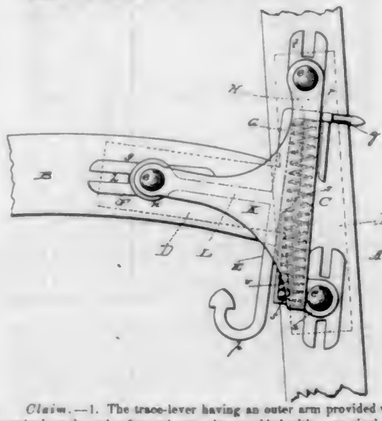
4. The combination, with the roll-box of a cotton-gin and a head-board arranged to rest on that portion of the roll which is in rear of the point at which cotton is delivered thereto, of a feed-roll and endless apron for supplying cotton to the feed-roll, a ratchet-wheel connected with one of the rollers of the feeding-apron, pawls for actuating the ratchet, devices for transmitting motion from the feed-roll to said pawls, and devices for transmitting the motion of the head-board to the pawls, and thereby regulating their adjustment and the rate of speed of the endless apron.

5. The combination, with the gin, of the head-board, arms *b b'*, slide, ratchet-wheel, holder-frame, dog-holder, dogs, vibrating lever, and devices connecting the arm *b'* to the dog-holder, substantially as set forth.

6. The combination, with the gin, of the endless apron, head-board, arms *b b'*, slide, dog-holder, dogs, and cords connecting the arm *b'* to the dog-holder, substantially as set forth.

7. The combination, with the gin, of the endless apron, head-board, arms *b b'*, ratchet-wheel, dogs, dog-holder, a screw for moving the lower dog independently of the upper one, and the cords connecting the arm *b* to the dog-holder, substantially as set forth.

295,378. TRACE-HITCH. DAVID A. FOSTER, Dublin, Ind. Filed Dec. 10, 1883. (No model.)



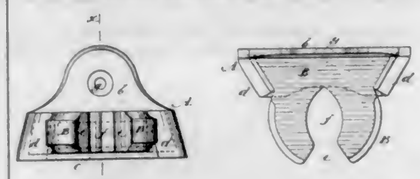
Claim.—1. The trace-lever having an outer arm provided with a terminal catch, and a forward arm, also provided with a terminal catch, substantially as specified.

2. The fulcrum-plate having a shouldered bearing for the eye of the trace-lever, substantially as specified.

3. The plate H, having a recess to receive a spring, *s*, and adapted to be connected to the fulcrum-plate F by a cover-plate, K, forming a brace at the joint between the thill and cross-bar, substantially as specified.

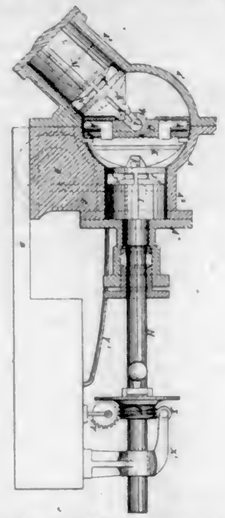
4. The combination, with a plate adapted to hold a spring, of a fulcrum-plate and a hitch-lever pivoted on said fulcrum-plate and engaging the spring, substantially as specified.

295,379. BROOM-HOLDER. ALEXANDER FRAZIER and DANIEL J COBURN, Maywood, Ill. Filed Aug. 31, 1883. (Model.)



Claim.—The box A, constructed with a clamp-holding chamber having its sides *d d* arranged to incline toward each other both in a forward and upward direction, in combination with the jaw-like rubber clamp B, arranged to fit within said chamber, and to project in front thereof, and constructed with a receiving-space, *f*, and flaring mouth *e*, substantially as and for the purposes herein set forth.

295,380. ROTARY ENGINE AND PUMP. RICHARD H. FROUDE, Kensington, County of Middlesex, England. Filed Sept. 20, 1883. (No model.)



Claim.—1. The casing A A', divided transversely to the axial line of the engine-shaft, having cylindrical extensions A^2 A^3, with steam and exhaust chests C C', ports E E' F F', and passages G G', arranged and operating substantially as herein described.

2. The cylinder I, having steam and exhaust passages J J' and ports J^2 J^3, and pressed by screws L L' or equivalent devices against the flat face of the blade K, substantially as described.

3. The round-ended cylinder M, having passages N N' and ports N^2 N^3, and pressed by screws $L L^2$ or equivalent devices against the concave face of the blade K', substantially as described.

4. In combination with the divided cylinder M, the barrel-shaped bush P, through which the dummy-shaft O passes, for allowing a certain amount of lateral play of the shaft in the cylinder, substantially as described.

5. The blades K K', with notches *k'*, operating, in combination with the ports J^2 J^3 N^2 N^3, for alternately putting the spaces in the casing A A' in communication with the steam and exhaust.

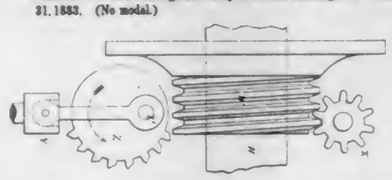
6. The blades K K', with trunnion-pins *k* formed in one piece there-

with, in combination with the disk or piston Q, having separate brasses S, for receiving the trunnion-pins fixed in gaps *q'* therein, substantially as herein described.

7. In combination with the blades K K' and piston Q, the packing-pieces R R', T, and U, arranged and operating substantially as herein described.

8. The combination of the dummy O, provided with the blade K', the shaft H, provided with the blade K, a worm on said shaft, a wheel having teeth on part of its circumference for gearing with the worm, a pump for supplying a lubricant to said parts, a crank-pin for imparting motion to said pump, and a pawl-and-ratchet connection between said wheel and crank-pin, whereby the said pump will be operated to supply a lubricant to said parts, substantially as and for the purpose set forth.

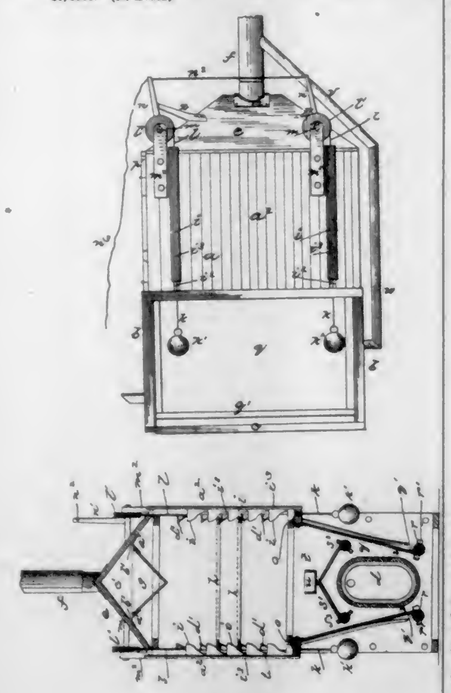
295,381. APPARATUS FOR LUBRICATING PISTONS, &c. RICHARD HURRELL FROUDE, Kensington, County of Middlesex, England. Filed Dec. 31, 1883. (No model.)



Claim.—1. In combination with a worm on a rapidly-revolving shaft, a wheel having teeth on part of its circumference for gearing with the worm, and a crank-pin for imparting motion to a lubricating-pump, the said wheel being rotated slowly by a pawl-and-ratchet motion derived from the said worm, until its teeth come into gear with the worm, whereby it receives a rapid motion for effecting the forcing-stroke of the pump, substantially as and for the purposes described.

2. The combination of the worm W, worm-wheel X, eccentric X^1, pawl X^2, ratchet-wheels Y Y^2, and wheel Z, having teeth gearing with the worm W, and a crank-pin, Z', for working a lubricating-pump, arranged and operating as herein described.

295,382. FRUIT-DRIER. CONRAD J. GEISER, Ashley, Ill. Filed July 28, 1883. (No model.)

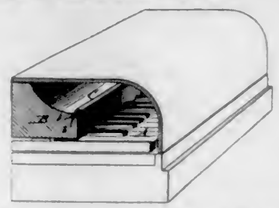


Claim.—1. In a fruit-drier, the case-wall provided with the recessed sills, the vertical openings for the rack-bars, and the recesses for the step ends of the spring-steps, in combination with rack-bars with the extended face-strips, the cords and weights at the lower ends of said rack-bars, the cords extending to the grooved wheels on the rock-shafts above the case-top, the rock-shafts having the connected lever-arms, and the operating-cord for lifting the fruit-trays within the case-wall, substantially as specified.

2. The combination, with the furnace extending the length of the drier and centrally thereof, of the flaring jacket, the lower edges of which are rodded, the ends of the rods bearing in slots in the end bearings of the furnace, and having the springs and nuts at the ends for adjusting and regulating the expansion and contraction of the metal, and the gable-shaped deflector having its edges rodded similarly to the edges of the jacket-walls, substantially as specified.

3. In a fruit-drier, the furnace-chamber *i*, provided with the drawer for containing sulphur for bleaching the fruit, substantially as specified.

295,383. KEY-RAIL FOR PIANOS AND ORGANS. PAUL GMELIN, New York, N. Y. Filed Oct. 25, 1883. (No model.)

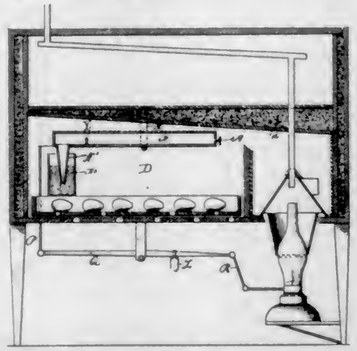


Claim.—1. The combination, with the key-rail of an upright piano or organ, of a guard-plate which covers the upper edge and projects somewhat in front of the key-rail, substantially as set forth.

2. The combination, in an upright piano or organ, of a key-rail having parallel longitudinal slits or recesses at the upper edge of its front face, with a guard-plate the ends of which are sprung into said slits, substantially as set forth.

3. The combination, in an upright piano or organ, of a key-rail having parallel longitudinal slits or recesses—one at each side of the upper edge of the front face of the key-rail—with a guard-plate the ends of which are sprung into said slits, and which project somewhat in front of the key-rail, substantially as specified.

295,384. DEVICE FOR REGULATING TEMPERATURE. JAMES M. HALSTED, Oakland, Cal., assignor to Kate K. Halsted, same place. Filed Aug. 29, 1883. (No model.)

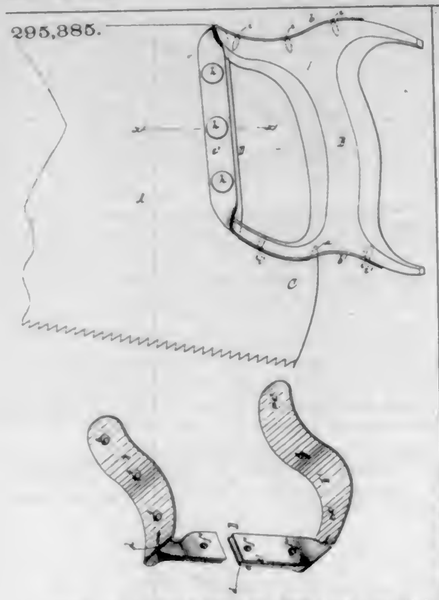


Claim.—1. The combination, in an incubator or similar structure, of a casing adapted by the expansion of air it contains to shift or move devices controlling the heat source, and an air-induction valve admitting air to the casing to effect its return to its first position, substantially as described.

2. The combination, in an incubator or similar structure, of a casing adapted by the expansion of air it contains to set on a liquid cushion contained in a cup beneath to raise said casing, for the purpose described, and an air-induction valve admitting air to the casing, substantially as set forth.

295,385. SAW. WILLIAM H. HANKIN, Jr., Brooklyn, N. Y. Filed Jan. 7, 1884. (No model.)

295,385.



Claim.—1. A frame for connecting a handle with a saw-blade, composed of a single piece of sheet metal bent to form the upper and lower flexible arms, *b b'*, and the two parallel flexible jaws *c c'*, said arms being capable of bending to conform to the upper and lower edges of the handle, and the jaws capable of yielding laterally to receive between them saws of varying thickness, substantially as described.

2. The combination, with a handle, B, and a saw-blade, A, of the sheet-metal frame D, formed integral with the upper and lower flexible arms, *b b'*, bent to conform with and attached to the upper and lower edges of the handle, and the flexible jaws *c c'*, capable of yielding laterally and clamped upon the butt-end of the saw-blade, substantially as described.

3. The combination, with a saw-handle and a slotted frame attached thereto, of a saw-blade having its butt-end secured in the slot of the frame, and constructed with a tail, C, extending back of the butt-end of the blade and supported against the handle, substantially as described.

4. The combination, with a saw-handle, of a saw-blade having its butt-end connected with the handle, and constructed with a tail extending back of the butt-end of the blade and supported by the handle, substantially as and for the purpose described.

5. The combination of a handle, B, and a sheet-metal frame, D, constructed with upper and lower flexible arms, *b b'*, bent to conform with and secured to the upper and lower edges of the handle, and with two flexible jaws, *c c'*, capable of yielding laterally, with a saw-blade, A, having its butt-end secured between the jaws, and constructed with a tail, C, extending back of the butt-end of the saw-blade and supported by the handle, substantially as described.

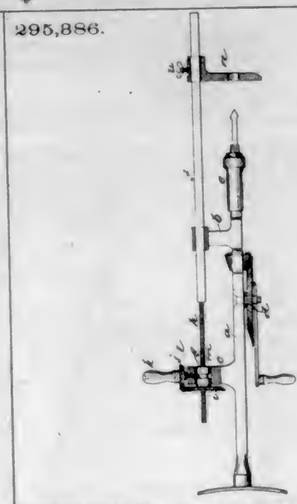
6. The combination of a handle, B, and a sheet-metal slotted frame, D, having the flexible arms *b b'* and flexible jaws *c c'*, with the saw-blade having its butt-end secured between the jaws, and constructed with a tail, C, extending back of the butt-end of the blade and entering the slot in the frame, said tail being supported by the handle, substantially as described.

7. The combination of a handle, B, and a frame, D, having flexible arms *b b'* and flexible jaws *c c'*, with a saw-blade, A, having its butt-end secured between the jaws, and constructed with a tail, C, extending back of the butt-end of the blade, and provided with a spur, *a*, entering the handle, substantially as described.

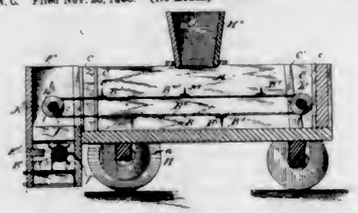
295,386. BREAST-DRILL. JOHN F. HARDWIT, Bonaparte, Iowa. Filed Oct. 19, 1883. (No model.)

Claim.—1. In a breast-drill, the combination, with the drill-stock *a*, provided with the brackets *b c*, of the feed-bar *f*, having the screw-threaded section *h*, and carrying the bracket *n*, the feed-nut *g*, arranged in the bracket *c*, and means for turning said nut, substantially as herein shown and described.

2. The feed-nut *g*, having groove *m*, and bevel-wheel *i*, thumb-bit *k*, having pinion *j*, and the stud-pin *l*, supporting the thumb-bit and securing the feed-nut, in combination with the feed-bar *f* and drill-stock *a*, substantially as described.



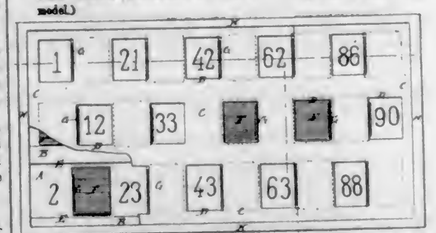
295,387. FERTILIZING-MACHINE. GEORGE W. HARKEY, Matthews, N. C. Filed Nov. 20, 1883. (No model.)



Claim.—1. A fertilizing-machine consisting of wagon A, having bopper H^2, annex-frame F, having pins *f'*, fenders D, shaft E, having pins *f*, pulverizing-bar E', chute G, adjustable by pins *m* in orifices *m'*, apron B, pulverizing-bar E', and the actuating mechanism, substantially as shown, and for the purpose described.

2. In a fertilizing-machine, the combination of the wagon A, having bopper H^2, apron B, having pins B^4, annex-frame F, having pins *f'*, fenders D, shaft E, having pins *f*, chute G, adjustable by pins *m* in orifices *m'*, pulverizing-bar E', and the actuating mechanism, substantially as shown and described.

295,388. CARD FOR PLAYING LOTO AND OTHER GAMES. HENRY HELLER HARRISON, New York, N. Y. Filed Jan. 5, 1884. (No model.)



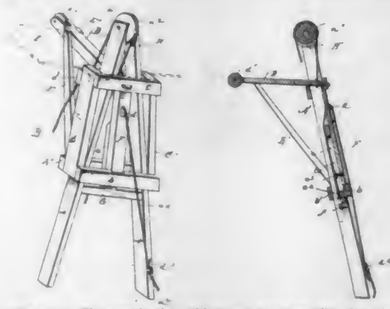
Claim.—1. A card for playing loto and other games, made substantially as herein shown and described, and consisting of the base-plate A, having numbers printed upon it, the intermediate plate, B, having slots E over the lines of numbers, the top plate, C, having openings D over the numbers, and the slides F to cover the numbers, as set forth.

2. In a card for playing loto and other games, the combination, with the base-plate A, having numbers printed upon it, of the intermediate plate, B, having slots over the rows of numbers, the top plate, C,

having openings D over the numbers, and the slides F to cover the numbers, and provided with handle-flanges G, substantially as herein shown and described, whereby the numbers can be readily covered and uncovered, as set forth.

295,389. SCAFFOLDING. JOHN THOMAS HASKELL, Norwalk, Ohio, assignor of one-half to H. E. Streator, same place. Filed Nov. 27, 1883. (No model.)

Brief.—Consists of a frame having a projecting bar with idler-wheel, said frame sliding upon two laterally-spreading uprights connected at their upper ends. Between said uprights slides a locking-bar formed of a cross-piece, and a vertical piece having a slot engaging a screw or bolt on a vertical piece of the sliding frame. Both sliding parts are controlled by cord and pulley.



Claim.—1. The combination, with two or more laterally-adjustable supporting-beams, connected at their upper ends and carrying a pulley, of a frame arranged upon said beams, and having a rope or chain adapted to engage said pulley, and a bar having a transverse locking-bar secured at its lower end, and provided with a longitudinal slot adapted to receive a bolt or screw projecting from one of the bars of said frame, substantially as set forth.

2. The combination, with the laterally-adjustable beams A A', connected at their upper ends and carrying a pulley, of a frame or scaffold adapted to slide thereon, and having a rope adapted to engage said pulley, and consisting of the side beams, C C', braces *b b'* and *c c'*, a beam, D, having an idler or roller, *d'*, bracing-beams E E', brace or bar F, having a pulley, *d*, and the locking device G, consisting of the slotted bar *s* and cross-bar *f*, and a rope or chain for operating said bars, substantially as set forth.

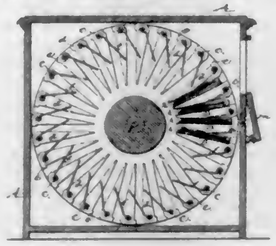
295,390. SNAP-HOOK. GEORGE HAVELL, Newark, N. J. Filed Oct. 10, 1883. (No model.)



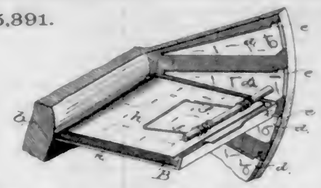
Claim.—1. A snap-hook consisting of a bar bent into a hook at one end and a loop at the other, having a shoulder near the loop, and a leaf-spring, the free end of which lies normally under the end of the hook, while the other end is provided with wings, which are bent around the bar between the shoulder and the loop for securing said spring in place, substantially as described.

2. The combination, with the hook having a shouldered shank, of the leaf-spring formed with a socket to fit upon the shank, and the swiveled loop secured to the end of the shank and bearing against the end of the socket, substantially as and for the purposes specified.

295,391. LETTER OR PAPER FILE. WILLIAM R. HAVENS, Denver, Colo. Filed Jan. 15, 1884. (No model.)



295,391.

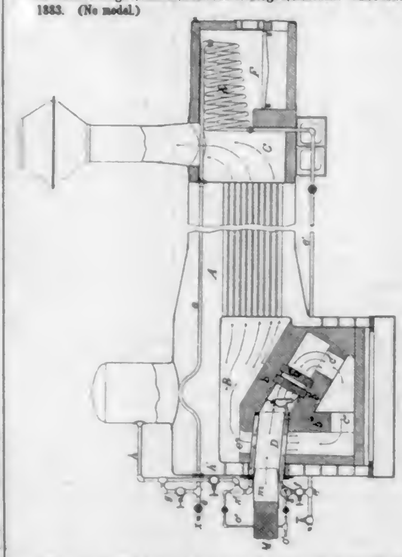


Claim.—1. In a paper and letter file, the combination, with a vertically-revolving wheel entirely inclosed within a frame, A, of the trays B, provided with the flaps *h*, which are held in position by the springs *f*, secured to the connecting-rods *c*, the said rods being secured to each of the tray-supports *d*, having a shoulder, *e*, against which each of the trays abuts, substantially as and for the purpose set forth.

2. In a paper and letter file, the frame A, adapted to inclose a vertically-revolving wheel provided with a series of trays, B, arranged in guides formed by the supports *d*, having the shoulders *e*, in combination with the connecting-pieces *c*, provided with the springs *f*, and a flap secured to the tray B, substantially as and for the purpose set forth.

3. In a paper and letter file, a vertically-revolving wheel or tray receptacle provided on its inner faces with a series of tray-supports, *d*, having shoulders *e*, as and for the purpose set forth.

295,392. VAPOR AND GAS GENERATING FURNACE FOR LOCOMOTIVES, &c. HENRY F. HAYDEN, Washington, D. C., assignor to himself, John A. Logan, Illinois, and John T. Morgan, Alabama. Filed Mar. 20, 1883. (No model.)



Claim.—1. In furnaces for locomotives, a series of vertical and cross walls of refractory material arranged within a close fire-box, forming a compact heat-storer, and also increasing the length of the flame-flues within said box, in combination with checker-work arranged at the entrance of the flame-flues to break up and intermingle the air and gas, whereby the air and gas are brought into the proper relation and maintained at a proper temperature to insure complete combustion before reaching the boiler-sheets, substantially as and for the purposes specified.

2. In furnaces for locomotives, a series of vertical and cross walls of refractory material arranged within a close fire-box, forming a compact heat-storer, and also increasing the length of the flame-flues within said box, in combination with a superheater arranged in one of said vertical or cross walls, substantially as and for the purpose specified.

3. In a furnace for locomotives, the combination of a series of vertical and cross walls of refractory material arranged within a close fire-box, forming a compact heat-storer, and also increasing the length of the flame-flues within said box, a checker-work arranged at the entrance of the flame-flues to break up and intermingle the air and gas, and a burner arranged in front of the checker-work, substantially as and for the purpose specified.

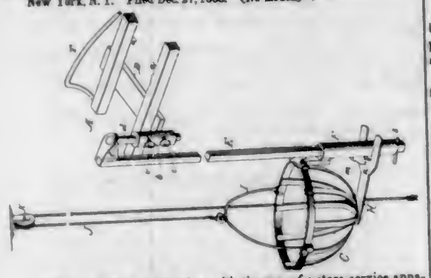
4. In a fire-box, the combination of a series of refractory walls and arches arranged to form tortuous flame-passages, an annular generator arranged across the flame-passage and projecting into the mouth of the same, and a burner connected with the generator and arranged at the entrance of the flame-passage, substantially as and for the purpose specified.

5. In a furnace for locomotive-boilers, the combination of a series of vertical and cross walls of refractory material arranged within the close fire-box, forming a compact heat-storer, and also increasing the length of the flame-flues within said box, a burner arranged at the entrance of the flame-passage, a superheater, and a pipe leading therefrom, and an oil-supply pipe for supplying oil to the burner, substantially as and for the purposes specified.

6. In a furnace for locomotive and other boilers, the combination of a fire-box having a series of refractory walls and arches, forming tortuous flame-passages, an annular generator arranged across the flame-passage, and provided with a burner which projects into the flame-passage, a superheater provided with a pipe leading to the annular generator, an auxiliary furnace for the superheater, and an oil-supply pipe leading to the annular generator, substantially as and for the purpose specified.

7. In a furnace for locomotive and other boilers, the combination of a series of refractory walls and arches, arranged to form tortuous flame-passages, an annular generator arranged across and projecting into the flame-passages, a steam-pipe leading from the boiler to the generator, and an oil-supply pipe leading into the steam-pipe, substantially as and for the purpose specified.

295,393. ELEVATOR FOR CASH-CARRIERS. HARRIS H. HAYDEN, New York, N. Y. Filed Dec. 27, 1883. (No model.)



Claim.—1. The combination, with the way of a store-service apparatus, of an elevator for the carriers, provided with a receptacle, connected and arranged, substantially as described, to discharge the carrier upon the track at an angle thereto, for the purpose set forth.

2. The combination, in an elevator for store-service apparatus, of a vertical guide, a receptacle for the carriers, pivoted to a slide moving upon said guide, to swing at an angle to the way, substantially as specified.

3. The combination of the guide-rod, slide moving thereon, basket pivoted thereto, and an elevating-cord for moving the parts vertically upon the guide, substantially as set forth.

4. The combination, with the slide and vertical basket, of a catch device for retaining the basket horizontally in connection with the slide, and a stop arranged to be struck by the catch, to release the basket and permit it to turn upon its pivot, substantially as set forth.

5. The combination of the guide, slide, pivoted basket, catch device, and cord connected to the basket, substantially as specified.

6. The combination, with the way, of a pendent guide-rod carrying a slide to which the receptacle is connected, and adjusting means for securing the rod adjustably to the way, substantially as specified.

7. The combination, with the way and device for placing the carrier thereon, of a guard, for the purpose specified.

8. The combination, with the way, of the elevator-rod, the cross-piece R, and a steadying-rod, S, adjustably connected to one or both of the ways, as and for the purpose set forth.

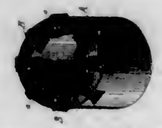
9. The guide-rod connected to a pin, *d*, capable of being turned and secured in its bearing, substantially as described.

10. The combination of the slide, carrier pivoted thereto, catch device, elevating-cord, and means for releasing the catch, substantially as described.

295,394. SETTING DIAMONDS IN TOOLS. ANTHONY HESSELS, New York, N. Y. Filed Nov. 23, 1883. (No model.)



295,394.



Claim.—1. The combination of a stock provided with a transverse recess the sides of which are slightly inclined toward the vertical and longitudinal axes of the recess, and a diamond or carbon two opposite sides of which are shaped to correspond to the recesses of the stock, substantially as set forth.

2. The combination of a stock or tool body provided with transverse dovetail recesses, said recesses being alternately tapered in opposite directions, and a series of cutting-diamonds dovetailed and tapered to fit said recesses.

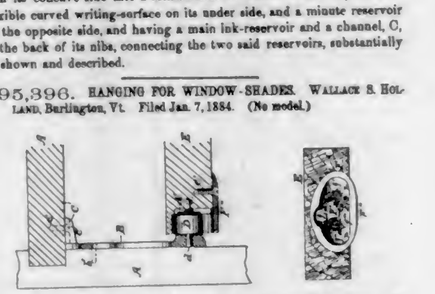
295,395. METALLIC PEN. HEZEKIAH HEWITT, Birmingham, County of Warwick, England. Filed May 16, 1883. (No model.) Patented in England Jan. 26, 1883, No. 429; in France Feb. 23, 1883, No. 141,582; in Germany Feb. 24, 1883, No. 16,738, and in Belgium Feb. 24, 1883, No. 44,123.



Claim.—1. The pen having the extreme points of its nibs bent backward from its concave side into a semicircular or hollow form, to provide a flexible curved writing surface or projection, D, substantially as shown and described.

2. The pen having the extreme points of its nibs bent backward from its concave side into a semicircular or hollow form, to provide a flexible curved writing-surface on its under side, and a minute reservoir on the opposite side, and having a main ink-reservoir and a channel, C, in the back of its nibs, connecting the two said reservoirs, substantially as shown and described.

295,396. HANGING FOR WINDOW-SHADES. WALLACE S. HOLLAND, Burlington, Vt. Filed Jan. 7, 1884. (No model.)



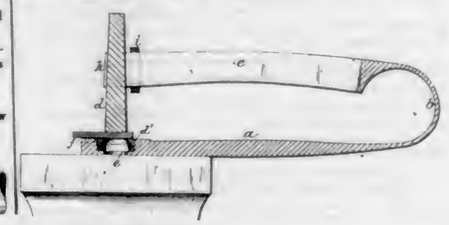
Claim.—1. The bracket B, having the right-angled flanges C, the projecting pin or axle *d*, and the roller D thereon, constructed to operate as and for the purposes described.

2. The hanger F, having the end opening, F', with arcs of circles *f f f''*, straight base *f'''* therein, and flange F'', with screw-hole *e* therein, as described.

3. The hanger F, having the opening F', and arcs of circles *f f f''*, straight base *f'''*, and flange F''', having screw-hole *e* therein, in combination with the top slat, E, of an inside window-blind, as and for the purposes described.

4. The combination of the hanging slat E and hanger F with the bracket B, having friction-roller D thereon, and operating substantially as described.

295,397. BLACKSMITH'S PUNCH. WILLIAM P. HOLMAN, Howard, Ga. Filed July 2, 1883. (No model.)





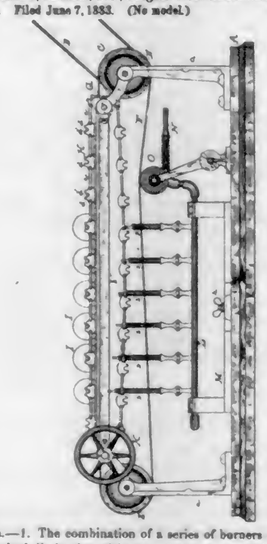
Claim.—1. The within-described punching implement, consisting of a punch-pin, *d*, tapering from its cutting to its driving end, a spring-arm, *c*, having a clamping-socket, a base-arm, *a*, joined to said spring-arm, and a die, *f*, having a downward-flaring opening, the said punch-pin being clamped directly by the spring-arm and held upon the plate to be punched by the positive action of said spring-arm, substantially as set forth.

2. The punch-pin *d*, tapering from its cutting to its driving end, in combination with a clamping-arm, *c*, therefor, a die, *f*, having a downward-flaring opening, and a base-arm, *a*, having a spring-connection with said clamping-arm, as shown and described.

3. The punch-pin *d*, tapering from its cutting to its driving end, in combination with a removable die, *f*, having a downward-flaring opening, a base-arm, *a*, having a recessed seat for the die, and an overhanging arm, *c*, having a clamping-socket for the punch-pin joined to the base by an integral plate-spring, as shown and described.

295,398. MANUFACTURE OF INCANDESCING ELECTRIC LAMPS.

WM. HOLZER, Harrison, N. J., assignor to the Edison Lamp Company, same place. Filed June 7, 1883. (No model.)



Claim.—1. The combination of a series of burners adapted to produce a gradual diminution of heat, and one or more lamp-holders arranged to travel above them, whereby a gradual cooling of said lamp is effected, substantially as set forth.

2. The combination of a series of burners arranged to produce a gradual diminution of heat, a series of lamp-holders arranged to travel above said burners, and means for revolving the lamps in their holders, substantially as set forth.

3. The combination, with the series of burners arranged substantially as described, of the series of lamp-holders, means for moving such holders a distance equal to that between the burners at each movement, and means for continually revolving the lamps in the holders, substantially as set forth.

4. The combination, with the series of burners, of the endless chains carrying the lamps, and the belt on which also the lamps rest, substantially as set forth.

5. The endless chains formed of links connecting lamp-holders together, substantially as set forth.

6. The lamp-holders, consisting of notched plates joined together by links, substantially as set forth.

7. The combination, with the lamp-holding devices, of the adjustable series of burners, substantially as set forth.

8. The combination of the series of burners arranged to produce a gradual diminution of heat, and the series of lamp-holders, the latter extending beyond the last of the burners, substantially as and for the purpose set forth.

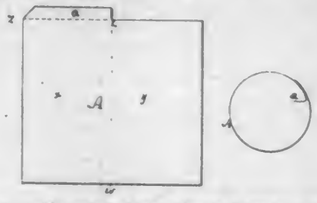
9. The combination, with the lamp-holders, of the series of burners of successively-decreasing height, substantially as set forth.

10. The method of annealing a sealed joint in an incandescing electric lamp, consisting in passing the lamp over a series of burners of gradually-diminishing intensity of heat, substantially as set forth.

11. The method of annealing a sealed joint in an incandescing electric lamp, consisting in passing the lamp over a series of burners of gradually-diminishing intensity of heat, at the same time continually revolving said lamp, substantially as set forth.

295,399. FERRULE.

GEORGE E. HOPKINS, Cincinnati, Ohio. Filed July 14, 1883. (No model.)

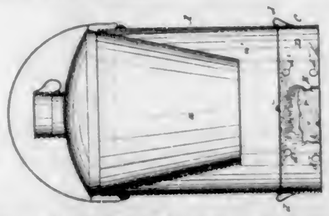


Claim.—1. The method of forming ferrules for brushes, which consists in forming the blank with a projection, *a*, on one edge, bending the projection to a position at right angles, or thereabout, to the body of the blank, then forming the ferrule with the flanged edge overlapped by the opposite edge of the blank.

2. A sheet-metal ferrule provided with one or more internally-projecting flanges, formed by bending inward a portion or portions of the plate of which the ferrule is made, for the purpose set forth.

295,400. LUNCH-HEATER.

GEORGE S. IRDELL, Philadelphia, Pa. Filed June 12, 1883. (No model.)



Claim.—A heating attachment for dinner-kettles and similar vessels, comprising a lamp having a central burner and external surrounding walls, having two series of openings, one for the admission of air to support combustion and the other higher up for the escape of the products of combustion, said walls having attached to them upwardly-extending spring-clamps or spring-jaws, whereby the kettle or vessel to be heated is supported directly on the external walls of the lamp and clamped thereto by the spring-jaws, which latter hold the lamp below the kettle when the latter is being carried, said walls also serving to protect the exterior of the vessel from contact with the flames, substantially as specified and shown.

295,401. WASHING-MACHINE.

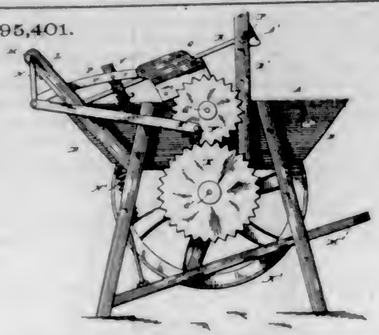
ADOLPHUS JACKSON, Frederick, Md. Filed Apr. 2, 1883. (No model.)

Claim.—1. The combination, with the tub A, provided with inclined rabbeted supports C, of the wash-board consisting of the parts *a b*, the upper one of which is provided with a slot, *d*, and a rail, *e*, the lower one being slotted and secured to the upper part by means of a bolt, G, and provided with springs H, and ledge I, and the rubber Q, and mechanism for operating the same, substantially as and for the purposes specified.

2. The combination, with the frame Q, provided with lugs T, of the concave rubbers S, perforated as described, substantially as and for the purposes specified.



295,401.



295,402. CLEVIS.

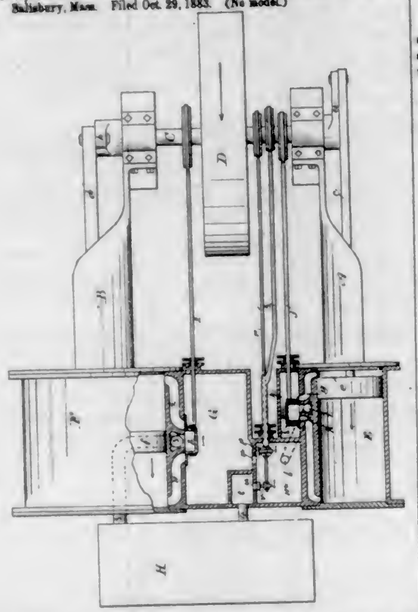
LOUDEN JAQUES, Maple Rapids, Mich. Filed Nov. 22, 1883. (No model.)



Claim.—In combination with the clevis A, provided with a perforated end, B′, having a lip, C, formed thereon, the pin D, having a slotted collar, D′, substantially as shown, and for the purpose set forth.

295,408. COMPOUND STEAM-ENGINE.

CLARENCE W. JENKINS, Salisbury, Mass. Filed Oct. 29, 1883. (No model.)



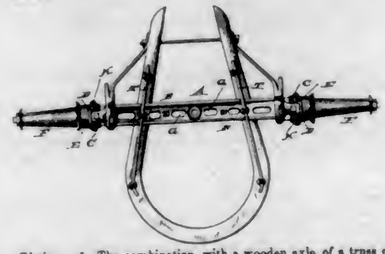
Claim.—1. In a compound or double-cylinder engine wherein the same steam acts first in the high and then in the low pressure cylinder, the combination, with said cylinders and the condenser, of suitable conduits and valvular devices, whereby the steam passing from the high to the low pressure cylinder will, without passing through said low-pressure cylinder, be diverted into the condenser at or near the point or time when the pressure of such exhaust-steam has produced an equilibrium of pressure in the two cylinders, substantially as specified.

2. In a compound or double-cylinder engine, the combination, with the high and low pressure cylinders and a condenser with suitable conduits and valvular devices, by which the steam as it is exhausted from the high-pressure cylinder enters and operates in the low-pressure cylinder, of a conduit and automatically-actuated valvular device, whereby when the piston in the high-pressure cylinder is at or near the dead-centers, and after the exhaust therefrom has produced an equal pressure in the two cylinders, the remaining exhaust-steam in said high-pressure cylinder will be conducted to the condenser without passing through the low-pressure cylinder, substantially as specified.

3. In a compound engine, the combination of high-pressure cylinder E, low-pressure cylinder F, condenser H, exhaust-pipe *l*, connected with cylinder E, steam-port *n*, and its valve *p*, arranged to admit to and exclude from cylinder F the steam issuing from said pipe, steam-port *u*, with its valve *v*, arranged to admit to and exclude from the condenser the steam issuing from said pipe, and actuating devices connected with and arranged to so actuate said valves that as the exhaust-steam intermittently escapes from pipe *l* it will, as soon as an equal pressure thereof is established in said cylinders, be shut off from cylinder F and conducted to said condenser, substantially as specified.

295,404. WAGON-AXLE.

THOMAS M. JENKINS, Moline, Ill., assignor to himself and WILLIAM UHLEMAN, same place. Filed Dec. 29, 1883. (No model.)



Claim.—1. The combination, with a wooden axle, of a truss consisting of a flat plate, A, having flanges B B, slots G, and brackets C, the skeins F, having flanges E, notches D, and flanges K, and suitable connecting-clips, as set forth.

2. The truss-plate A, having openings G, brackets C, and flanges B, provided with notches N, as and for the purpose set forth.

295,405. STATION-INDICATOR.

CHARLES H. JENNE, Indianapolis, Ind. Filed Dec. 7, 1883. (No model.)



Claim.—1. In a combined station and street indicator for railroad and street cars, the rollers *r* and *r′*, provided with journals on each end, annular grooves in which are fitted the rubbers *ru*, upon which the spring *sp* impinges, and the knobs *k* and *k′*, in combination with the canvas strip *c*, substantially in the manner and for the purpose described and set forth in the above specification.

2. In a combined station and street indicator for railroad and street cars, the brake-spring *sp*, provided with the collared adjusting-screw *as*, in combination with the friction-rubbers *ru*, fitted into the annular grooves of the rollers *r* and *r′*, substantially in the manner and for the purpose set forth.

3. In a combined station and street indicator for railroad and street cars, the face-board *f b*, with longitudinal slots *sl* and *sl′*, forming the face of an indicator, consisting of rollers *r* and *r′*, provided with annular grooves in which rest the friction-rubbers *ru* and *ru′*, adjusting-screw *as*, spring *sp*, knobs *k k′*, and canvas *c*, all in combination, substantially in the manner and for the purpose set forth.

295,406. HIGH-PRESSURE ALARM FOR STEAM-BOILERS.

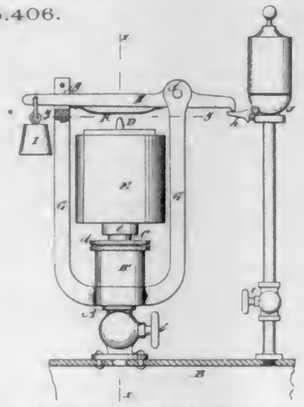
CHARLES W. JOHNSTON and PATRICK BROWN, Philadelphia, Pa. Filed July 30, 1883. (No model.)

Claim.—1. A high-pressure alarm apparatus for steam-boilers, provided with a loaded steam-plunger and with a supplementary resistance device arranged for actuation by said plunger to give or sound the alarm, whereby the plunger is kept in motion by fluctuations in pressure of the steam in the boiler, essentially as specified.

2. In high-pressure alarms for steam-boilers, the combination of the plunger C and stuffing-box B′, for connection with a pipe leading from the steam-space of the boiler, the weight E, the superposed weighted lever H, and an alarm device operated by said lever H, substantially as specified.

3. In high-pressure alarms for steam-boilers, the combination of the spring K, with the weighted lever H, and an alarm device operated by said lever, the weight E, the plunger C, and the stuffing-box B′, for con-

295,406.



nection with the steam-space of the boiler, essentially as and for the purposes herein set forth.

4. The combination of the steam pipe or connection A, the stuffing-box B', the plunger C, the rod D, the weight E, fitted to slip over said rod, the frame G, the weighted lever H, the spring K, and the steam-whistle J, for operation by the lever H, substantially as shown and described.

295,407. MANUFACTURE OF GLUCOSE OR GRAPE-SUGAR. ADOLF KATZER, Buffalo, N. Y., assignor of one-half to Albert B. Young, same place. Filed Feb. 1, 1884. (No specimens.)

Claim.—1. The herein-described improvement in the art of manufacturing glucose or grape-sugar from grain, which consists in neutralizing the acidulated converted material by sulphuret of calcium or its equivalent, substantially as described.

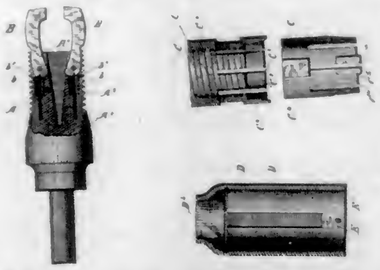
2. The herein-described improvement in the art of manufacturing glucose or grape-sugar from grain, which consists in neutralizing the acidulated converted material by a soluble sulphuret, substantially as described.

3. The herein-described improvement in the art of manufacturing glucose or grape-sugar from grain, which consists in purifying the neutralized liquid by passing an air-current through the same, substantially as described.

4. The herein-described improvement in the art of manufacturing glucose or grape-sugar from grain, which consists in neutralizing the material by a soluble sulphuret, and then purifying the neutralized liquid by passing an air-current through the same, substantially as described.

WITHDRAWN.

295,408. BRACE-CHUCK. GEO. W. KERR, Bridgeport, Conn. Filed Jan. 11, 1884. (No model.)



Claim.—1. The combination, with the jaws and the head, of an inner sleeve, screw-threaded thereon, and an outer sliding sleeve which engages with and is adapted to turn the inner sleeve, substantially as described.

2. The jaws pivoted in the head and operated by a sliding sleeve, in combination with a screw-threaded split sleeve having lugs which engage the outer sleeve and are expanded to lock said outer sleeve by an incline upon the head.

3. In a chuck, the combination, with means for gripping the tool, of a sliding sleeve which operates the gripping device, and a threaded split sleeve which, when expanded, locks the outer sleeve.

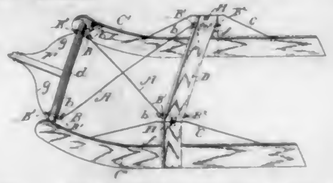
4. Head A, to which the jaws are pivoted, and which is provided with an external screw-thread, and an incline, A^3, in combination with a split sleeve, C, engaging the screw-thread, and provided with lugs which, when forced outward by the incline, engage in grooves in an outer sleeve, thus locking the two sleeves.

5. The head and the jaws, in combination with a sliding sleeve which closes the jaws, and means, substantially as described, for locking the sliding sleeve, and with it the jaws, by the rotation of said sleeve.

6. The head having an external screw-thread and an incline, and the jaws pivoted thereto, in combination with a sliding sleeve which closes the jaws, and lugs, engaging the screw-thread and operated by the incline, which lock the sliding sleeve.

7. In a chuck-head, A, a sleeve, C, having lugs C^4 C^5, in combination with sliding sleeve D, having grooves D' and shoulder D^2, and block E, secured in one of the grooves D', as described, and for the purpose set forth.

295,409. SLED. WILLIAM R. KILBURN, Petoskey, Mich. Filed Jan. 3, 1884. (No model.)



Claim.—1. A sled consisting of the brace-rods A, having hooks *b*, nutted bolts B, having eyes B', braces C, secured in straps or staples H, runners C', platform D, and shaft F, mortised in cross-bar *d*, and secured by bolts B, having eyes B', substantially as shown, and for the purpose described.

2. The combination of the brace-rods A, having hooks *b*, bolts B, having eyes B', braces C, secured in straps or staples H, platform D, and cross-bar *d*, substantially as shown, and for the purpose described.

3. In a sled, the combination of the shaft F, brace-bars *g*, cross-bar *d*, bolts B, having eyes B', brace-rods A, braces C, secured in straps or staples H, platform D, and runners C', substantially as shown, and for the purpose described.

295,410. PROCESS OF MANUFACTURING GLASS. LOUIS KNAFFL, Vienna, Austria-Hungary, assignor to Theodore M. Schleier, Nashville, Tenn. Filed June 27, 1883. (No specimens.)

Claim.—1. The process of producing a clear and transparent as well as opaque and colored glass, which consists in the action of barium or strontium or calcium oxides upon zinc phosphate, substantially as described and set forth.

2. The process of producing glass by the use of phosphoric acid, substantially as set forth and described.

3. The process of producing glass by neutralizing zinc phosphate, evaporating to dryness, and then heating to a cherry-red heat, substantially as described and set forth.

4. As a new article of manufacture, a glass produced by the use of phosphoric acid, substantially as set forth and described.

5. As a new article of manufacture, a glass produced by the action of barium or strontium or calcium oxides upon zinc phosphate, substantially as described and set forth.

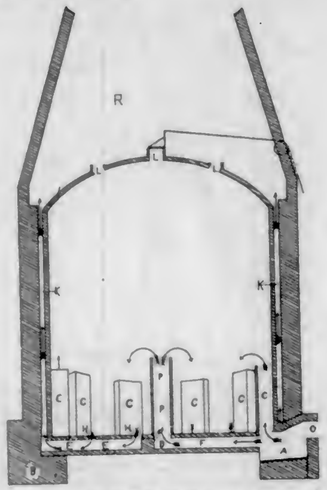
295,411. POWER-PRESS. GEORGE B. LANE, Waterbury, Conn., assignor to the Waterbury Farrel Foundry and Machine Company, same place. Filed Nov. 26, 1883. (No model.)



Claim.—1. The herein-described improvement in adjustable power-presses, consisting of the bed which carries the operative mechanism, combined with rockers upon which the bed is fixed, tracks or bearings upon which said rockers will work, and vertical arms extending upward and parallel with the sides of the rockers, said arms constructed with segment-shaped slots corresponding in shape to the path of movement of bolts in said rockers, and so that said bolts will work through the respective slots as the machine is turned to different positions, and so that said bolts through said slots will secure the machine at any desired position, substantially as described.

2. The combination of the bed A, carrying the operative mechanism, rockers C, supporting said bed and mechanism, and tracks or bearings D D, upon which said rockers work, said tracks constructed with an arm at the front and rear extending upward parallel with the sides of the rockers, and constructed with segment-shaped slots corresponding to the path of the bolts, which extend from said rockers through said slots, and by which bolts the machine may be secured at any desired position, substantially as described.

295,412. POTTERY-KILN. LEWIS LAWTON, Trenton, N. J. Filed Jan. 12, 1884. (No model.)



Claim.—1. In a kiln for firing pottery-ware, the return-flues E, in combination with the annular flue K, surrounding the inner lining of the kiln, substantially as shown and described.

2. In a kiln for firing pottery-ware, the return-flues E, provided with the downdraft-holes *A*, in combination with the annular flue K, surrounding the inner lining of the kiln, substantially as shown and described.

3. Means for firing pottery or other ware, consisting of a kiln provided with the flues F, connecting with the central well-hole, D, and the fire-bags C, and provided with the return-flues E, having downdraft-holes H, connecting with the annular flue K, surrounding the inner lining of the kiln, substantially as shown and described.

295,413. WELL-DRILLING RIG. JAMES GILLOTT MARTIN, Bradford, Pa. Filed July 9, 1883. (No model.)

Claim.—1. In a well-drilling rig, the combination of a bed-frame, A, mounted on wheels, and adapted by means, substantially as shown, to be converted into a traction-wagon, and a derrick adapted to fold down into a convenient position for transportation, substantially as shown.

2. In a well-drilling rig, the combination of a bed-frame, A, mounted on wheels and adapted to be moved by an engine mounted thereon, a band-wheel, E, having crank E', pitman *w'*, working-beam *w*, and derrick *s s*.

3. In a well-drilling rig, the combination of the bed-frame thereof and the screws *n n*, or either of them, for the purposes mentioned.

4. In a portable drilling-rig, a bed-frame widest at one end, with the wheels of one truck located inside the bed-rails, substantially as shown and described.

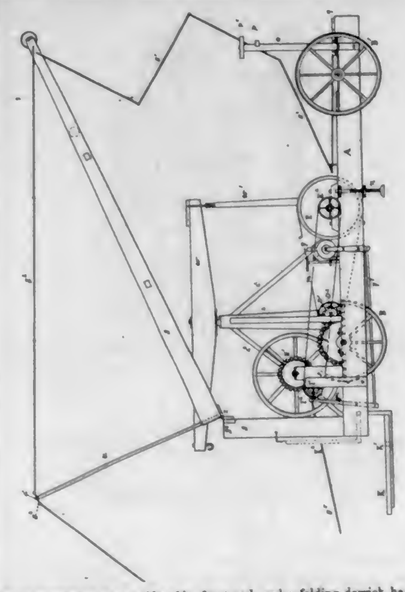
5. In a well-drilling rig, the floor K, adapted to let down into proper position for use and to fold up for transportation, substantially as shown and described.

6. In a well-drilling rig, the combination of a base or frame, A, a derrick joined to said base and having a break-joint above the base, and guys for holding the upper section of the base in position, and adapted to be folded upon each other, substantially as described, when the upper section of the derrick is folded upon the base, substantially as described.

7. In a well-drilling rig, the combination of a base and a vertical derrick formed in two parts, hinged together, the hinge on one side of the derrick being lower than on the other side, for the purpose set forth.

8. In a well-drilling rig, the combination of the derrick *s s*, swinging boom *u*, and guy *s'*, substantially as shown.

9. In a well-drilling rig, the combination of a frame or base, A, having support *o* at one side of its front end, and a folding derrick having the hinge on one side lower than on the other, substantially as described, so that when folded the upper end will rest upon the support *o*, for the purpose set forth.



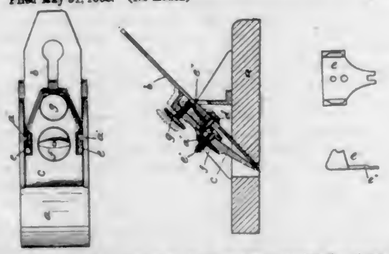
10. In a device for drilling in front of the rig, a frame having a derrick at its front end, a samson-post back of the derrick, and the bull-wheel between the samson-post and the derrick, substantially as described.

11. In a well-drilling rig, the combination of a spudding-shaft and the bull-wheel shaft by means of gear, substantially as described, and for the purpose set forth.

12. In a well-drilling rig, the combination of the band-wheel E, spudding-shaft I, and bull-wheel H.

13. In a well-drilling rig, the combination of the axle G', tiller-chains *w' w'*, and shaft of wheel *w*, substantially as described and shown.

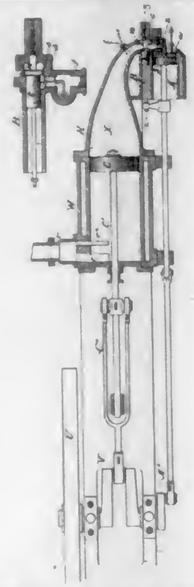
295,414. BENCH-PLANE. CHARLES A. MEKEEL, New Hartford, Conn. Filed May 31, 1883. (No model.)



Claim.—1. In combination, the plane-body bearing the pivots, the plane-iron, the cap-iron attached to the plane-iron, the longitudinally-rocking clamp-iron, adjustably connected to the cap-iron and bearing between its points of connection upon the pivots on the plane-body, all substantially as described.

2. The combination of the longitudinally-rocking clamp-iron *e*, loosely attached to cap-iron *c* by pin *c'* and nut *f*, adjusting-screw *g*, plane-iron *b*, and plane-body *a*, with pivot-bearings for the clamp-iron, all substantially as described.

295,415. GAS-ENGINE. JOHANNES A. MENCK and ALEXANDER HAMBROCK, Ottensen, near Altona, Germany, assignors, by mesne assignments, to Wm. E. Hale, Chicago, Ill. Filed Jan. 5, 1884. (No model.) Patented in Germany Apr. 25, 1879, No. 13,673, Oct. 10, 1879, No. 12,674, and Jan. 6, 1880, No. 14,763.



Claim.—1. The combination, with the working-cylinder of a gas-engine, of devices constructed to measure separately and accurately the proportions of gas and air required for each explosive charge, and operating appliances whereby said devices are operated to throw the air and gas separately from the pumps directly into the engine-cylinder prior to each explosion, substantially as described.

2. The combination of the working-cylinder of a gas-engine, an air measuring and forcing pump communicating directly with said cylinder, and a gas measuring and forcing pump, also communicating with said cylinder, and devices whereby said pumps are operated to measure off and force into the cylinder prior to each explosion the gas and air required for the charge, substantially as described.

3. The combination, with the working-clyinder and air measuring and discharging pump, of a gas-pump provided with an outlet-valve so constructed and arranged that its flat face shall make contact with the flat end of the piston, to insure the expulsion of all the contents of the cylinder, for the purpose set forth.

4. A gas-engine having a working cylinder and piston, a cylinder provided with a piston and communicating with a gas-inlet pipe, an independent cylinder provided with a piston and communicating with an air-inlet, and passages between the air and gas cylinders and the working-cylinder provided with check-valves, substantially as described.

5. A gas-engine provided with devices for measuring and injecting the explosive charge at the rear end of the cylinder as the piston moves back, and with an exhaust-port at the front end arranged to be uncovered as the piston approaches the limit of its forward motion, the piston acting as the valve controlling said port, substantially as described.

6. The cylinder provided with an exhaust-port arranged to be uncovered by the piston as it reaches its forward position, and a port communicating with the space in front of the piston, and an exhaust-pipe communicating with both ports, substantially as described.

7. The mode of facilitating the discharge of the spent gases from the cylinder of a gas-engine, which consists in producing an outward current in the exhaust-pipe prior to opening the exhaust-port, substantially as described.

8. A gas-engine provided with an inlet-port for the charge, and with a chamber at the rear of the point reached on the back-stroke of the piston, contracted at the point where it communicates with said inlet-port, and means for forcing the charge into said chamber on the back movement of the piston, for the purpose set forth.

9. The combination, with a gas-engine having a chamber at the rear of the piston, of a pump for forcing in the explosive charge, and operating devices whereby the introduction of the charge is completed at the time the gas in the chamber is at its greatest density, substantially as and for the purpose set forth.

10. The combination, with the cylinder having a chamber behind the piston, of devices for forcing in the explosive charge, and valves constructed to lift only near the termination of the stroke, for the purpose set forth.

11. The combination, with the valves controlling the passage between the air and gas measuring pumps and the chamber X, of springs and appliances whereby to regulate the pressure on the valves and the flow of gas from the pumps, for the purpose specified.

295,416. COPY-HOLDER. WILLIAM F. MILLER, New York, N. Y., assignor to the American Writing Machine Company of New York. Filed July 14, 1879.

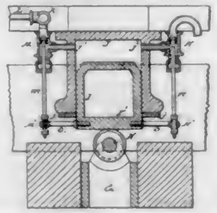


Claim.—1. In a copy-holder, the combination, with a frame pivoted to a pedestal, of shaft O at the bottom of said frame, carrying spring-clamps and handle O′, and the horizontal shaft P at the upper end of frame, carrying spring-clamps, coiled springs P², and handle P, substantially as and for the purpose described.

2. The combination, with the frame of a copy-holder, of shaft O, carrying spring-clamps, a shaft, E, carried in bearings above shaft O, a spring upon said shaft, sleeves T and T′, rod H, and marker D, substantially as and for the purpose described.

3. The combination, with the frame of a copy-holder, of shaft R, spring R′, sleeves T T′, rod H, and marker D, substantially as and for the purpose described.

295,417. CAR-TRUCK SPRING. GEORGE BAMMERMAN MILNE, Oswego, N. Y. Filed Jan. 5, 1884. (No model.)



Claim.—1. The branch pipe L, which is connected with the air-brake pipe of a train, in combination with said air-brake pipe, the transversely-arranged supply-pipe K, and the air-cushions at the sides and middle of a truck, all supplied by said pipe K, substantially as set forth.

2. In an air-cushion for car-trucks, a cylinder having at its upper and the inlet-opening j' and outlet-opening j^2, in combination with a piston fitted in said cylinder, and valves controlling said openings, and attached to said piston, so that the rising and falling of the cylinder will operate said valves, substantially as set forth.

3. A series of air-cushions attached to a car-truck and adapted to support a locomotive-body or car-body, in combination with devices for supplying compressed air to said cushions, each cushion consisting of a cylinder and a piston, and each cylinder being provided with inlet and outlet openings, which are governed by valves operated by said piston as said cushion rises and falls.

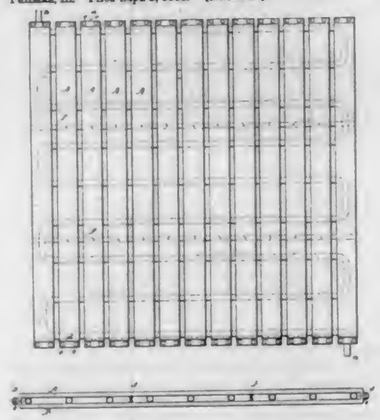
4. The cylinder J of an air-cushion, having openings j' j^2, in combination with piston I in said cylinder, valves governing said openings, horizontal arms o, and vertical valve-rods n, whereby said valves are attached to said piston, and devices for supplying air to said cylinder through opening j', substantially as set forth.

5. In combination with the transoms of a truck, two air-cushions resting on the same outside of the wheel-beams, in combination with rolls journaled in attachments of said transoms, and forming the immediate support for the lower parts of said cushions.

6. The middle cushion having a piston provided with rounded feet, in combination with the transoms on which said piston rests, and the means of supplying said cushion with compressed air, substantially as set forth.

7. The piston of an air-cushion and screw-tapped arms attached to the side thereof, in combination with inlet and outlet valves having their stems screwed into said arms, and thereby made adjustable, the cylinder in which said piston fits, and the supply-pipe connecting with the air-brake pipes, substantially as set forth.

295,418. APPARATUS FOR DRYING LUMBER. AARON S. NICHOLS, Pullman, Ill. Filed Sept. 3, 1883. (No model.)





Claim.—1. The herein-described platen for drying lumber, consisting of a flat coil of tubing combined with transverse series of bars or strips arranged on opposite sides of said flat coil of tubing, the bars of the series arranged to leave an opening between them, the said coil of tubing constructed for connection with and discharge of a supply of steam or hot water, substantially as described.

2. The combination of a coil of tubing with transverse series of strips or bars, arranged on opposite sides of said flat coil, the bars constructed with their surface next the coils flat and the outside surface rounded, the bars arranged to leave an opening between them, and the said coil constructed for connection with and discharge of a supply of steam or hot water, substantially as described.

295,419. WIRE BALE-TIE. GRANVILLE NICHOLSON, New York, N. Y., assignor to John L. Clark, same place. Filed Dec. 26, 1883. (No model.)



Claim.—1. The wire bale-tie A, having a hooked head formed by the doubled portions a a', which are twisted together in rear of the head, and are bent outward and rearward to form the hook or shoulder A′, with the recess or seat b at the base or root thereof, substantially as and for the purpose herein described.

2. The wire bale-tie having a head formed by the doubled portions a a', which are twisted together in rear of the head, and are bent to form the hook or shoulder A′ and brace A^2, the portion a' being passed through the loop a^2 at that end of the brace which is adjacent to the base or root of said hook or shoulder, substantially as herein described.

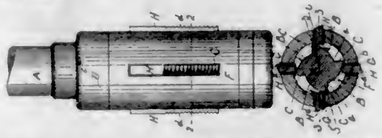
295,420. BRAN-PACKER. JOHN D. OTIS, Peoria, Ill. Filed Aug. 14, 1882. (No model.)

Claim.—In a bran-packing machine, the combination, with the packing-tube and the sectional hinged case p, of the hook-clamps pivoted to the intermediate platform, and connected by toggle-arms to a T-lever pivoted to said platform, and connected by a rod to an L-lever pivoted to the frame a, and connected to a foot-lever at one side of the frame, substantially as specified.

295,420.



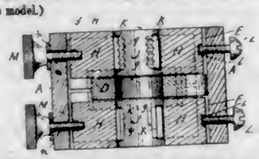
295,421. SCREW-TAP. ANDREW J. PEAVEY, Somerville, assignor to himself and Edwin B. Buckingham, Brookline, Mass. Filed May 1, 1883. (No model.)



Claim.—1. A screw-tap composed of an arbor, A, carrying a cam-slotted collar or collars, D, and of a slotted sleeve, F, having screw-cutting dies H, constructed and arranged together substantially as described, for operation as specified.

2. A screw-tap composed of an arbor, A, having scrolls B, and a cam-slotted collar or collars, D, and of a slotted sleeve, F, having screw-cutting dies H, constructed and arranged together substantially as described, for the purpose specified.

295,422. SCREW-CUTTER. ANDREW J. PEAVEY, Somerville, assignor to himself and Edwin B. Buckingham, Brookline, Mass. Filed May 1, 1883. (No model.)



Claim.—1. A screw-cutter composed of a stock having scrolls C, and two chambers separated by a partition, D, and of two die-blocks, H, one in each of said chambers, and each block provided with radial dies K K², that are arranged within said blocks, as also said die-blocks within said chambers, for the dies to be acted upon by said scrolls, substantially as described, for the purpose specified.

2. A screw-cutter composed of a stock, A, having scrolls C, and two chambers, E F, separated by a partition, D, having scroll-slots G, and of two die-blocks, H, one in each of said chambers, and each block provided with radial dies that are arranged within said blocks, as also said die-blocks within said chambers, for the dies to be acted upon by said scrolls and said slots, substantially as and for the purposes described.

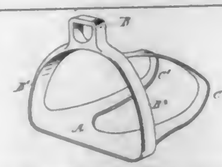
3. A die-block having peripheral groove and radial dies, in combination with a pin which enters said groove and holds said die-block against escape from, and at the same time leaves it free to turn within, a shell or stock, A, having scrolls C, to act upon said radial dies, substantially as described, for the purpose specified.

4. A die-block confined within a shell or stock, A, having scrolls C, against escape therefrom, and free to turn therein, and provided with radial sliding dies, in combination with a slot, n, and set-screw M, by which said die-block can be secured against turning, substantially as described, for the purpose specified.

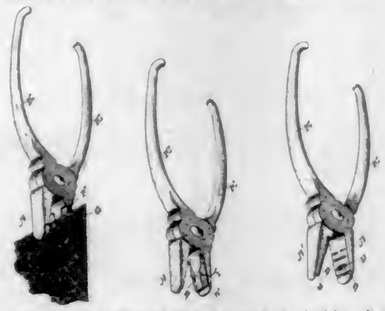
295,423. STIRRUP FOR SADDLES. CHARLES C. PHILBROOK, Boston, Mass. Filed May 23, 1883. (Model.)

Claim.—An improved stirrup having suspension-bail B′ B², sole-plate A, strap-eye B, and toe-guards C C′, of a single casting, substantially as described, in which all the interior and back surfaces are formed and fashioned as draft-planes from one direction, and all the exterior and front surfaces are formed and fashioned as draft-planes from the opposite direction, for the purpose set forth.

295,423.



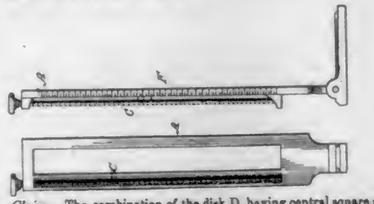
295,424. PLIERS FOR ATTACHING PIN-TICKETS. AQUILLA J. PLATT, De Graff, Ohio. Filed Aug. 10, 1883. (No model.)



Claim.—1. An improved device for attaching pin-tickets, having suitably-pivoted jaws, one of which is provided with an integral tongue, B, beneath which the ticket may be placed, all substantially as set forth and shown.

2. The combination, in an instrument for attaching pin-tickets, of the jaws A and A', one of which is provided with transverse grooves or depressions, and the other with an integral tongue, B, beneath which the ticket may be placed, all substantially as and for the purpose set forth.

295,425. SIGHT FOR FIRE-ARMS. WILLIAM PLETTNER, Trinidad, Colo. Filed Dec. 26, 1883. (No model.)



Claim.—The combination of the disk D, having central square aperture, E, and horizontal groove or recess *e*, intersecting the same, slide F, having sight-hole *f* and brackets G, constructed with the conical holders H, removable spirit-level I, and means for adjusting the slide upon the disk, substantially as shown and set forth.

295,426. INSECTICIDE COMPOUND. HENRY POOL, Westminster, Md. Filed Aug. 3, 1883. (No specimens.)

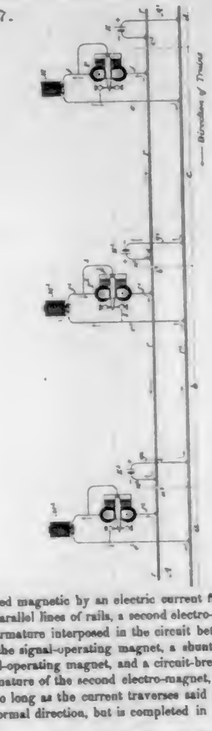
Claim.—The herein-described composition of matter to be used as an insectide, consisting of slaked lime, plaster-of-paris, ammonia, sugar, oil of worm-seed, and oil of sassafras, in the proportions specified.

295,427. ELECTRIC SIGNALING APPARATUS FOR RAILROADS. FRANK L. POPE, Elizabeth, N. J., assignor to the Union Switch and Signal Company, Pittsburg, Pa. Filed July 30, 1883. (No model.)

Brief.—Signals at "safety," except when the battery is short-circuited by a train on the section. To prevent danger from imperfect insulation, the batteries in adjacent sections have opposite poles to corresponding rails, and a polarized switch is used with each signal, whereby a current of the wrong polarity will cut the signal-magnet out of circuit.

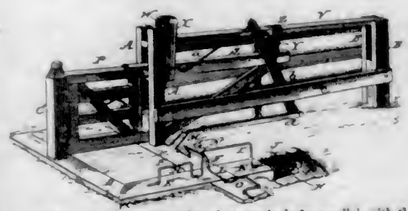
Claim.—1. A line of rails of a railroad-track divided into two or more electric sections corresponding with or constituting signaling-sections, by means of interposed insulating-joints, and having its alternate insulated sections normally traversed by electric currents of unlike polarity, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of a section of railway-track consisting of two parallel lines of rails insulated from each other, each of which constitutes a continuous electric conductor throughout said section, a battery having its opposite poles connected with the respective lines of rails, a signal-operating electro-magnet normally rendered magnetic by an electric current from said battery traversing said parallel lines of rails, a second electro-magnet provided with a polarized armature interposed in the circuit between one of said lines of rails and the signal-operating magnet, a shunt uniting the terminals of said signal-operating magnet, and a circuit-breaker controlled by the polarized armature of the second electro-magnet, whereby said shunt is interrupted so long as the current traverses said signal-operating magnet in the normal direction, but is completed in case of the reversal of said current.



3. The combination, substantially as hereinbefore set forth, of a section of railway-track consisting of two parallel lines of rails insulated from each other, each of which constitutes a continuous electric conductor throughout the section, a battery having its opposite poles connected with the respective lines of rails, a signal-operating electro-magnet normally rendered magnetic by an electric current from said battery traversing said parallel lines of rails, an electro-magnet provided with a polarized armature, interposed in the circuit between one of said lines of rails and the signal-operating magnet, a helix for polarizing said armature, included in the circuit of the battery of the adjacent signal-section, a shunt uniting the terminals of said signal-operating magnet, and a circuit-breaker controlled by said polarized armature, whereby said shunt is interrupted so long as the current traverses said signal-operating magnet in the normal direction, but is completed in case of the reversal of said current.

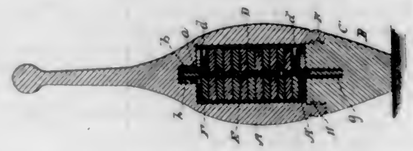
295,428. GATE. JOSEPH P. B. RAREY, Kokomo, Ind., assignor of one-half to Daniel Rarey, same place. Filed Aug. 11, 1883. (No model.)



Claim.—1. The combination of two rock-shafts parallel with the gate, each having a bail adapted to be tilted by a vehicle-wheel, a bail near its inner end in the same plane as the former, and a weight upon its end keeping it upright, with a rock-shaft parallel with the roadway, having two curved bails at each end at right angles to each other, and connecting means for operating a gate, one wheel-operated shaft being at each end of the gate-operating shaft, as and for the purpose shown and set forth.

2. The combination of an abutment-post having a slotted catch-plate, a gate sliding between two sets of posts, having an upwardly-hooked catch at its abutting end, and a roller at its center rolling upon the upper side, and a roller at its end traveling upon the lower side of a horizontail rail, a connecting-rod hinged to the gate to the rear of its center, a lever having the said connecting-rod hinged to its upper longer end, a connecting-rod hinged to the lower short end of the lever, a rock-shaft having a pair of divergently-curved bails at each end, the bails in each pair being at right angles to each other, and a double crank, to which the connecting-rod is hinged, and a pair of rock-shafts having bails adapted to be operated by a vehicle-wheel, bails straddling the rock-shaft between each pair of curved bails, and weights at their ends keeping the bails upright, as and for the purpose shown and set forth.

295,429. INDIAN CLUB. ROBERT REACH, Philadelphia, Pa. Filed Dec. 3, 1883. (No model.)



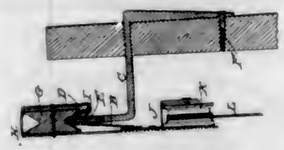
Claim.—1. An Indian club consisting of the hollow club A, having the detachable head B, and weights D, secured upon rods E by means of lock-weights F, having screw-orifices *f* for reception of set-screws *d* and *d'*, substantially as shown and described.

2. An Indian club having a cylindrical recess, A', for rod E, detachable head B, having orifice *g*, weights D, removable on orificed weight-rod E, and weight-locks F, secured by set-screws *d* and *d'*, substantially as shown, and for the purpose described.

3. In an Indian club, the combination of the handle-section having recess *a*, head B, having orifice *g*, weight-rod E, having female-screw orifices, weights D, lock-weights F, and set-screws *d* and *d'*, substantially as shown, and for the purpose described.

295,430. FIRE-ESCAPE. HORACE RESLEY, Cumberland, Md. Filed May 26, 1883. (No model.)

Brief.—A fire-escape in which the rail is formed of a strip of sheet metal bent to straddle the upper ends of the projecting brackets. The pulley-frame is bent to form a hook on its inner side to hook under the flange of the rail.



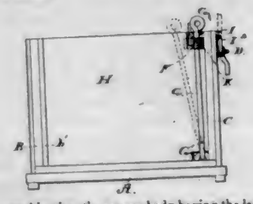
Claim.—1. In a fire-escape of the described class, the rail formed of a strip of stout sheet metal and bent at its upper portion to form a downward-bent flange adapted to straddle the upper ends of the projecting brackets and fit tightly upon them, as and for the purpose shown and set forth.

2. In a fire-escape of the described class, the combination of the rail, formed by a strip of sheet metal doubled to form a downward-bent flange, as described, with the brackets, consisting of bars of iron bent in double-L shape, inserted into the wall with their horizontal portion, and secured by anchors to the inside of the same at their inner downward-turned ends, and forming T-heads or cross-heads upon their outer upward-turned ends, as and for the purpose shown and set forth.

3. In a fire-escape of the described class, the combination of the rail, having inward and downward turned flange, with the pulley-frame, having the upper portion bent inward and downward, forming bearings for the pulley riding upon the rail, and bent inward to form a hook catching in under the flange of the rail, as and for the purpose shown and set forth.

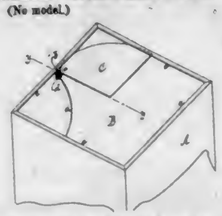
4. The herein-described fire-escape, consisting in the rail having inward and downward turned flange, the double-L-shaped brackets, the pulley-frame, having inward-bent hook upon its downward-turned upper end, and having the pulley riding the rail and the hoisting-pulleys journaled in it, the hoisting-ropes, the cage having the outward-extending bracket upon the upper edge of its outer side, the inward-opening doors, and the top frame, and the guide-ropes attached to the lower edge of the cage and to the bracket, all constructed, combined, and arranged to operate as and for the purpose shown and set forth.

295,431. END-GATE. JOHN SCHEERER, Springdale, Ohio. Filed Dec. 14, 1883. (No model.)



Claim.—In combination, the wagon-body having the latch-bar fixed to the inner side and formed with the recess *c'*, and provided with a retaining-spring, F, the swinging end-gate H, the hinged bar G, the button I, formed and arranged as described, and provided with a handle, I', at its outer end, and a cross-bar, D, the whole arranged to operate substantially as described, and for the purpose set forth.

295,432. CANISTER. AUGUST SCHILLING, San Francisco, Cal. Filed Nov. 15, 1883. (No model.)

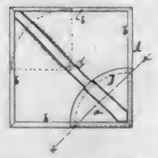


Claim.—1. The combination, substantially as described, of a canister having a corner opening in its top and inwardly-turned flanges, and a lid pivoted to swing above the top of the canister in a plane parallel to such top, and to pass beneath the flanges.

2. A canister having a top provided with a corner opening, a lid pivoted to swing above said top, means for preventing the lid moving upward when closed, and a spring for throwing the lid into its closed position, substantially as described.

3. A canister having a top provided with a corner opening, flanges projecting inwardly above said top, a lid pivoted to swing above the latter and in a plane parallel thereto, for engaging under the flanges, and a spring for throwing the lid to a closed position, to cover the opening, substantially as described.

295,433. CANISTER. AUGUST SCHILLING, San Francisco, Cal. Filed Nov. 15, 1883. (No model.)

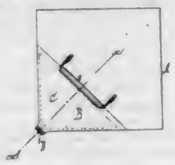


Claim.—1. The combination, substantially as hereinbefore described, with a canister having a corner opening, of a sliding lid and a guide on which said lid slides.

2. The combination, substantially as hereinbefore described, with a canister having a corner opening, *a*, and flanges *b*, of the sliding lid and the guide on which the lid slides.

3. The combination, substantially as hereinbefore described, with a canister having a corner opening, of the sliding lid and the lid-guide formed in the metal composing the top of the canister.

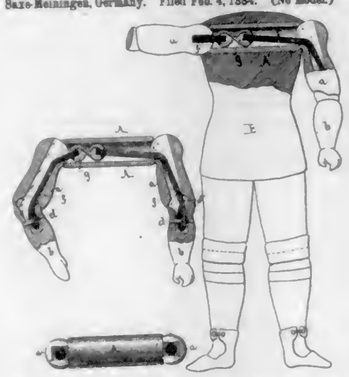
295,434. CANISTER. AUGUST SCHILLING, San Francisco, Cal. Filed Nov. 15, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with a canister having a corner opening of triangular shape, of a lid of similar shape to the opening, hinged on one of its sides to swing outward, and a catch arranged to engage the angle of the lid which is opposite to the hinged side.

2. The combination, substantially as hereinbefore described, with a canister having a corner opening of triangular shape, of a lid similar in shape to the corner opening, hinged on its inner side to swing outward, and a catch arranged to engage the angle of the lid which is opposite to the hinged side, the same being at the corner of the canister.

295,435. DOLL. STEPHAN MAX FERDINAND SCHILLING, Sonneberg, Saxe-Meiningen, Germany. Filed Feb. 4, 1884. (No model.)

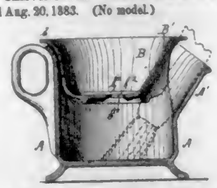


Claim.—1. The combination of a doll-body having a fixed transverse tube at the shoulder portion, with articulated arms, elastic cords secured to the arms, and means for connecting the cords within said tube, substantially as set forth.

2. The combination of a doll-body having a fixed transverse tube at the shoulder portion, perforated upper arm-sections, jointed forearms having fixed transverse pins, and elastic cords that are attached to said pins, passed through the upper arm-sections, and connected in the transverse tube, substantially as described.

3. The combination of a doll-body, a fixed transverse tube having concave end seats or sockets, upper perforated arm-sections having ball-shaped terminals, jointed forearms having recesses and fixed transverse pins, and elastic cords attached to said pins, said cords being passed through the upper arm-sections, and connected by a double wire hook within the transverse tube, substantially as specified.

295,436. SHAVING-MUG. GÜNTHER SCHOEMAN, Hüttensteinach, Germany. Filed Aug. 20, 1883. (No model.)



Claim.—1. A shaving-mug composed of a mug having a spout, and of a detachable soap-dish supported by the mug and having a convex inwardly-projecting side portion adapted to hold the shaving-brush, in connection with the spout, substantially as set forth.

2. A shaving-mug composed of a cup-shaped mug having a spout, and of a detachable soap-dish having a circumferential supporting-flange, a ribbed and perforated bottom, and a convex inwardly-projecting side portion, substantially as specified.

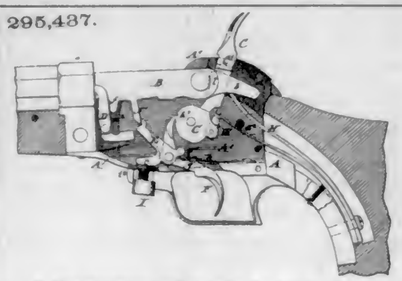
3. In a shaving-mug, a detachable soap-dish having a convex inwardly-projecting side portion, substantially as set forth.

4. In a shaving-mug, a detachable soap-dish having a circumferential supporting-flange, a ribbed and perforated bottom, a base-rim, and a convex inwardly-projecting side portion, substantially as specified.

295,437. BREECH-LOADING FIRE-ARM. FRANZ SCHRAUD, San Antonio, Tex. Filed Oct. 2, 1883. (No model.)

Claim.—1. The combination, with the fulcrumed breech-block B, having a centrally-recessed tail end and its spring H, of a hammer, C, guided in the recessed tail end, and provided with a laterally-projecting head above the tail end, whereby the breech-block is moved by the setting of the hammer, substantially as set forth.

295,437.



2. The combination, with the main and covering plates A′ A^2 of the casing, having depressions *a′ a′*, of a fulcrumed breech-block, B, having a recessed tail end and laterally-projecting abutments *b b*, a spring, H, pressing upon the tail end, and a pivoted hammer, C, having a laterally-projecting head, C′, above the tail end, substantially as set forth.

3. The combination of the fulcrumed and spring-actuated breech-block B, having a downwardly-extending front lug, *f′*, a fulcrumed and spring-pressed locking-lever, E, and a guided and spring-pressed push-button, I, below the lower arm of the locking-lever, whereby the same is released from the breech-block, substantially as set forth.

4. The combination of the fulcrumed and spring-pressed breech-block B, having downwardly-extending front lugs, *f f′*, a fulcrumed and spring-pressed locking-lever, E, a guided and spring-cushioned push-button, I, located below the lower arm of the locking-lever, and a fulcrumed elbow-shaped extractor, D, the lower arm of which is engaged by the lug *f* of the breech-block, substantially as set forth.

5. The combination of the fulcrumed and spring-pressed breech-block B, having an interior firing-pin, B′, pivoted and spring-pressed hammer C, having laterally-projecting head C′ above the tail end of the breech-block, locking-piece E, trigger F, and spring-cushioned push-button I, whereby the breech-bolt can be set into a partly-lowered position of safety, substantially as set forth.

6. The combination of the fulcrumed and spring-pressed breech-block B, having a recessed tail end, a pivoted hammer, C, a hammer-spring, G, links G′, connecting the hammer-spring and hammer-tumbler, a transverse stop-bolt with which the hammer-spring comes in connection when the hammer is at half-cock, and from which it is drawn away by means of the links when the hammer is at full-cock, and a trigger, F, substantially as described.

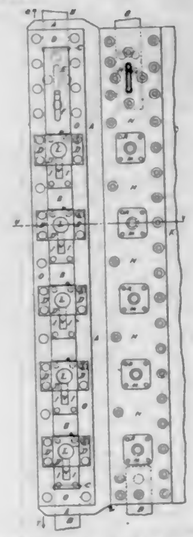
7. The combination, with the casing A, having stop *n′*, of a hammer, C, and a pivoted and spring-actuated dust-guard, L L′, that extends across the casing back of the hammer, substantially as set forth.

295,438. BUSTLE. LEO L. SCHWAB, New York, N. Y. Filed July 21, 1883. (Model.)



Claim.—A bustle consisting of a band, C, a plaited outer fabric, *a*, having a lining, *b*, with loops D, secured thereto about midway between the top and bottom of the bustle, the loops holding a large spiral spring, E, and the loops G′, securing the ends of the spring to the edges of the bustle, and the flaps H, laced together in front and independent of the spring, substantially as shown and described.

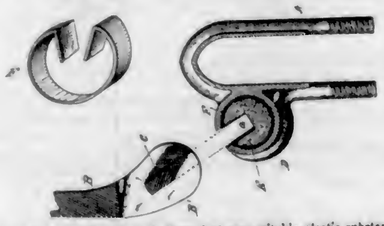
295,439. MAIL-BAG. ADAM SEVERIN, Jr., Chattanooga, Tenn. Filed Jan. 12, 1884. (No model.)



Claim.—1. The combination, in a mail-bag having a flap or overlapping portion provided with a series of perforated loops, D, adapted to engage the studs M of the front of the bag, and the slotted locking-strap B, provided with plates I J, the plate I having a lug, *a*, formed at one end thereof, as and for the purpose set forth.

2. A mail-bag having a flap provided with loops D and slots *c c* and E, in combination with the slotted strap B, provided with staple H, plates I J, and lug *a*, the bag proper having a slot, G, substantially as described, and for the purpose specified.

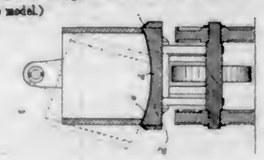
295,440. THILL-COUPLING. WINFIELD S. SHANAHAN, East Chatham, N. Y., assignor of two-thirds to Sylvester C. Hulbert, same place, and Mont G. Curtis, Troy, N. Y. Filed Jan. 14, 1884. (No model.)



Claim.—1. The block E, formed of any suitable elastic substance, and surrounded by a metallic spring, F, in combination with an axle-clip and shaft-iron of a vehicle, the several parts being constructed substantially as and for the purpose set forth.

2. The block E, provided with a rectangular opening, *a*, and surrounded with a metallic spring, the ends of which project into the said opening for the purpose of keeping the block distended, substantially as specified.

295,441. BOBBIN-TRUCK. WM. F. SHARPLES, Fall River, assignor of one-half to George Draper & Sons, Hopedale, Mass. Filed Feb. 1, 1884. (No model.)

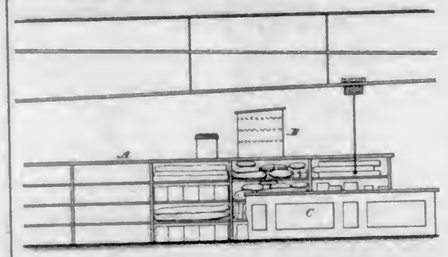


Claim.—1. The combination, with a wheeled platform and one or more boxes or compartments, of a movable box, C, consisting of two sides and ends, and open at bottom and top, and arranged above the said platform with the lower edges of the box in close relation therewith, substantially as and for the purpose specified.

2. The combination, with a wheeled platform and one or more boxes or compartments fixed thereon, of a pivoted box or frame, C, consisting of two sides and ends, the said box having its open lower side or bottom edges in close relation to the top of the said platform *d*, and with its pivotal points above the top edge of said box, substantially as set forth, and for the purpose specified.

3. The wheeled platform and the open-bottomed box C therein, the upper side of the said platform and the under sides of the said box being lined, substantially as described, with a soft or yielding lining, as and for the purposes set forth.

295,442. STORE-SERVICE APPARATUS. HENRY W. SHARPLESS, Philadelphia, Pa. Filed July 21, 1883. (No model.)

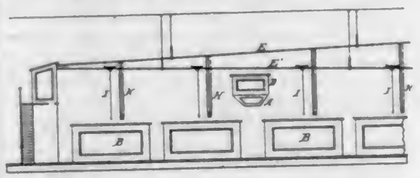


Claim.—1. The combination, with the counters and cases of a store, of stations for the receiving and packing clerks, arranged above and supported by the cases and accessible from the salesmen's stations, substantially as specified.

2. A store provided with packing-stations arranged above and supported by the cases, substantially as and for the purpose set forth.

3. The combination, with the counters of a store, of a movable case and packing desk or station above and supported thereby, for the purpose specified.

295,443. STORE-SERVICE APPARATUS. HENRY W. SHARPLESS, Philadelphia, Pa. Filed Feb. 1, 1884. (No model.)



Claim.—1. A packing-desk arranged at a point accessible to the salesmen of a store, but away from the main floor thereof, substantially as and for the purpose set forth.

2. The combination, with the counters or stations of a store, of a packing desk or platform arranged in a position above or below the main floor, substantially as set forth.

3. The combination, in a store, of the counters or stations, a store-service apparatus constructed to receive and deliver the cash at the said counters, and one or more packing-stations away from the main floor and accessible to the salesmen, substantially as specified.

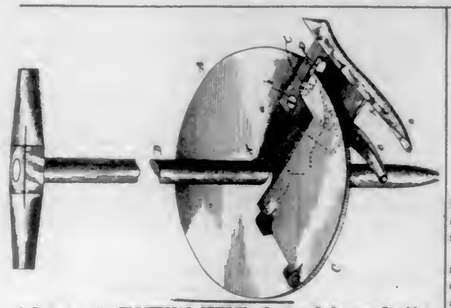
4. The combination, with the counters of a store, of a packing-desk arranged below an opening in the main floor, substantially as set forth.

295,444. EARTH-AUGER. SAMUEL S. SHERMAN and JEREMIAH G. SHERMAN, West McHenry, Ill. Filed Dec. 27, 1883. (No model.)

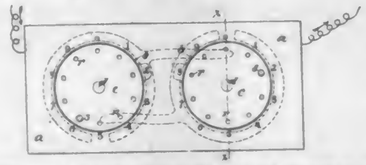
Brief.—Auger-disk having a hinged or valve section has a plate with cutting tines and edge adjusted through slots and bolts to or from the disk-center for varying the bore of cut.

Claim.—1. The adjustable plate D, provided with tines *e e*, in combination with the plate A and its handle, substantially as and for the purpose set forth.

2. The adjustable plate D, in combination with the plate A and its valve C, constructed substantially as and for the purpose set forth.



295,445. ELECTRICAL SWITCH. CHARLES S. SHIVLER, Brooklyn, N. Y. Filed Aug. 29, 1883. (No model.)



Claim.—1. A secret permutation electrical switch, consisting of one or more commutators or switches movable through a gradnated path or range and upon a seat whose continuity is interrupted at a certain point or gradnation in said path, and at which point of interruption the circuit is opened, with means, substantially as set forth, for secretly indicating the position or gradnation of said point of interruption, and means, substantially as set forth, for changing the indications or gradnation representing said points, substantially as herein set forth.

2. An electrical permutation-switch, consisting of two or more contact-makers or switches movable through a gradnated range or path and upon a seat the continuity of which is interrupted at a certain point, and at which the circuit is opened, with a contact brush or conductor connecting each switch with the seat of the other switch and with circuit-connections extending to the said seats and brushes, substantially as set forth, whereby a duplex or multiplex passage is afforded for the current through the several contacts of the said connected switches, and whereby the circuit will become opened or closed only when all the contacts are set to their position of break, substantially as herein set forth.

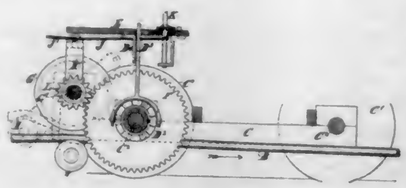
3. A secret permutation-switch for electrical circuits, consisting of two rotary contact-makers or switches, each movable through or over a gradnated circle and upon a seat which is interrupted at a certain point to interrupt the circuit, with brushes or conductors connecting each switch with the seat of the other switch and circuit-connections with said seats and brushes, substantially as and for the purpose set forth.

4. An electric switch substantially such as described, formed with the rotary contact-maker *f g*, in combination with the seat *h* and brush *i*, with circuit-connections extending to said seat and brush, substantially as herein set forth.

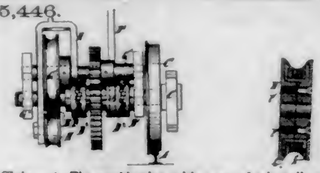
5. An electrical switch substantially such as described, having one or more plates or disks perforated with holes, in combination with changeable crank-pins adapted to be fixed in one of said holes, and with gradnations corresponding with said holes, substantially as and for the purpose set forth.

295,446. ENDLESS-ROPE RAILWAY. WM. H. H. SEUM, Brooklyn, N. Y. Filed Oct. 25, 1883. (No model.)

Brief.—The car is gradually started through grip-palleys, one of which is adjustable, the other carrying upon its axle a wheel which gears with one upon one of the car-axles. A double clutch on said car-axle adapts the grip-palleys to cables traveling in either direction.



295,446.



Claim.—1. The combination, with a car, of grip-pulleys adapted to impinge upon a rope or cable, and wheels serving to derive motion from one of the pulleys and transmit it to one of the axles of the car, so as to start the car gradually, substantially as specified.

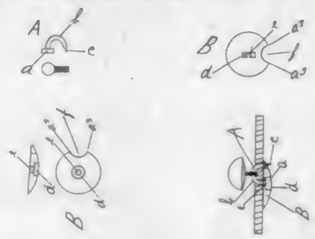
2. The combination, with a car, of a grip-pulley supported on a shaft provided with a wheel engaging with another wheel mounted on one of the axles, another grip-pulley supported on a lever adapted to be adjusted into a position which will enable it, in conjunction with the grip-pulley first named, to grip a rope or cable, substantially as specified.

3. The combination, with a car, of a grip-pulley supported on a shaft provided with a wheel engaging with another wheel mounted on one of the axles, another grip-pulley supported on a lever, and means whereby the lever may be swung in either direction to cause the grip-pulley which it supports, in conjunction with the grip-pulley first named, to grip a rope or cable, substantially as specified.

4. The combination, with a car, of grip-pulleys, means whereby the grip-pulleys may be made to grip a rope or cable, a wheel on the same shaft as one of the grip-pulleys, a wheel on one of the axles of the car, through which motion is transmitted to this axle, clutch-pieces rigidly affixed to this axle, and another clutch-piece locked to the wheel, through which motion is transmitted to this axle and adapted to be shifted into engagement with either of the clutch-pieces that are affixed to this axle, substantially as specified.

5. The combination of an axle, C^3, clutch-pieces D D' D^2, gear-wheel F, shaft G', gear-wheel L, grip-pulley G, lever H', and grip-pulley H, substantially as specified.

295,447. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Jan. 23, 1884. (No model.)



Claim.—1. The metallic fastener A, having head portion *a*, curved loop *b*, and point *c*, arranged and adapted for use as described.

2. In a button-fastener, the metallic hook A, having head *a*, loop *b*, point *c*, and the non-metallic washer B, provided with central opening, *e*, counterbored portion *d*, and recess *f*, combined, substantially as shown and described.

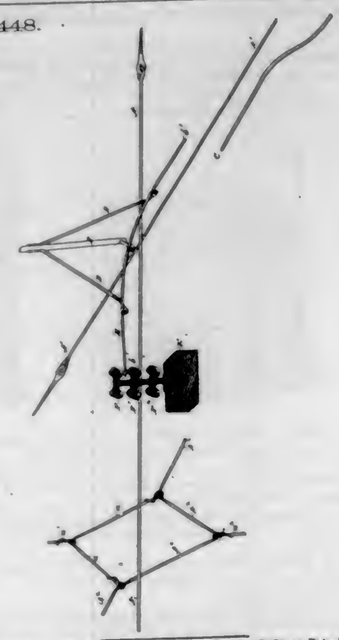
295,448. CONVEYER APPARATUS. HERVEY SMITH and GEORGE C. BLICKENSDERFER, Erie, Pa. Filed Feb. 7, 1884. (No model.)

Claim.—1. In a conveyer apparatus substantially as shown, the combination, with the main track and a car having two or more sets of wheels, arranged substantially as shown, of a transfer-switch placed at the angles or branches of said main track which will receive said car from one part of the main line upon a set of wheels not used on said line, convey it by a proper curve to the other part of said main line, and place it thereon upon a set of wheels not used on said switch, substantially as shown.

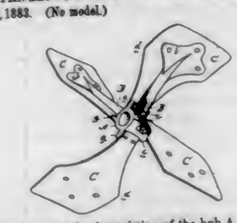
2. In a conveyer apparatus substantially as shown, the combination, with a main track having branches or intersecting lines and station-switches along said branches, of transfer-switches at the intersecting points which have their points lying removed from and in vertical planes with said lines, as shown, and a car having a separate set of wheels for the main tracks, the transfer-switches, and the station-switches, substantially as shown and described.

3. In a conveyer apparatus substantially as shown, the combination, with the main track branched or angled, as shown, of a transfer-switch, B, having its points *b* and *b'* graded with relation to the grade of said main track, in a manner substantially as shown, and for the purposes mentioned.

295,448.

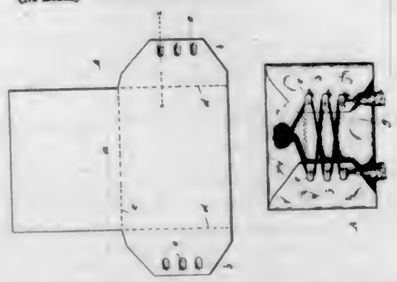


295,449. FAN-BLOWER WHEEL. WRIGHT D. SMITH, Detroit, Mich. Filed June 27, 1883. (No model.)



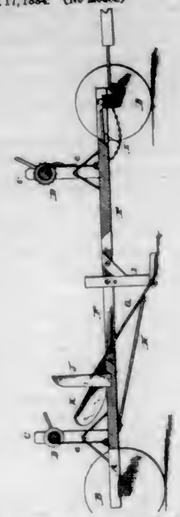
Claim.—A fan-blower wheel consisting of the hub A, provided with the radial arms B, having expanded flanges *b* at their outer ends and flanges *a* at the hub, all cast integral therewith, and radial blades C, provided with curved edges, substantially as set forth.

295,450. ENVELOPE OR FOLDING CARD. CHARLES SNEIDER, New York, N. Y., assignor to Philipp Haka, Hoboken, N. J. Filed Oct. 18, 1883. (No model.)



Claim.—An envelope or folding card provided with folding flaps having struck-up hooks near their edges, in combination with a lacing adapted to be secured around said hooks, to hold the parts of the envelope together, substantially as specified.

295,451. EXCAVATOR. ALLEN J. SNYDER and ALVIN L. KULP, Keota, Iowa. Filed Jan. 17, 1884. (No model.)



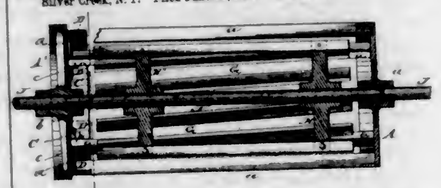
Claim.—The platform E, provided with the opening F, inclined cutting-plate G, cutter J, and wings K K, in combination with a frame on wheels, to which it is adjustably attached and rendered capable of vertical adjustment, substantially as and for the purpose set forth.

295,452. SHOE-LACE FASTENER. HELEN MARIA SNYDER, Pine Bluff, Ark. Filed July 12, 1883. (No model.)



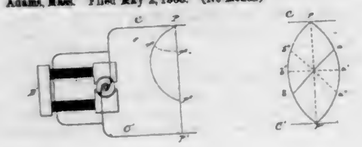
Claim.—In a shoe-lace fastener, the combination, with a shoe-tongue, of the spring *g* and piece of leather or cloth *d*, provided with the hook *e*, adapted to operate substantially as specified.

295,453. CENTRIFUGAL BOLTING-REEL. ALBERT H. SPAULDING, Silver Creek, N. Y. Filed June 20, 1883. (No model.)



Claim.—The combination, in a centrifugal flour-bolt, of the reel provided with heads A A', the tail or discharge head A' having a series of apertures through it, located at the circumference thereof, and interior wind-guards applied over said apertures, with the rotating beaters G, substantially in the manner and for the purposes described.

295,454. ELECTRO-DYNAMIC MOTOR. FRANK J. SPRAGUE, North Adams, Mass. Filed May 2, 1883. (No model.)



Claim.—1. In an electro-dynamic motor, the combination of sections of field-coils, the armature in a shunt-circuit around a variable number of said sections, and means for varying the relation between the number of sections around which the armature is shunted and the number with which said armature is in series, substantially as set forth.

2. In an electro-dynamic motor, the combination of sections of field-coils, the armature in a shunt-circuit around all or a part of said coils, means for varying the number of sections of coils around which the armature is shunted, and means for reversing the current in said armature-shunt, substantially as set forth.

3. In an electro-dynamic motor, the combination of sections of field-coils, the armature in a shunt-circuit around all or a part of said coils, means for varying the number of coils around which the armature is shunted, and supplemental field-coils connected with the armature-circuit, substantially as set forth.

4. In an electro-dynamic motor, the combination of sections of field-coils, the armature in a shunt-circuit around all or a part of said coils, means for varying the number of coils around which the armature is shunted, and supplemental field-coils in parallel circuit with the armature, substantially as set forth.

5. In an electro-dynamic motor, the combination of sections of field-coils, the armature in a shunt-circuit around all or a part of said coils, means for varying the number of coils around which the armature is shunted, means for reversing the current in said armature-circuit, and supplemental field-coils connected with said armature-circuit, substantially as set forth.

6. In an electro-dynamic motor, the combination of sections of field-coils, the armature in a shunt-circuit around all or a part of said coils, means for varying the number of coils around which the armature is shunted, and independent field-coils connected with the supplying-circuit, substantially as set forth.

7. In an electro-dynamic motor, the combination of sections of field-coils, the armature in a shunt-circuit around all or a part of said coils, means for varying the number of coils around which the armature is shunted, supplemental field-coils connected with the armature-circuit, and independent field-coils connected with the supplying-circuit, substantially as set forth.

8. In an electro-dynamic motor, the combination of two ranges of sectional field-coils, the armature in a shunt-circuit between the ranges, means for changing the connections of the armature-circuit terminals from one field-section to another, and means for reversing the currents in the armature-circuit, substantially as set forth.

9. In an electro-dynamic motor, the combination of one or more ranges of sectional field-coils, one or more ranges of contact-blocks in electrical connection with the junctions of the field-sections, and one or more movable arms in electrical contact with said blocks, said arm or arms forming part of a shunt-circuit including the armature, substantially as set forth.

10. In an electro-dynamic motor, the combination of two ranges of sectional field-coils, electrical connections from the junctions of the sections to contact-blocks, and two arms in electrical contact with said blocks and forming the terminals of the armature-circuit, substantially as set forth.

11. In apparatus for regulating electro-dynamic motors, the combination, with sections of field-coils and the armature in a shunt around all or a part of said coils, of means operating automatically upon variations in the speed of said motor for varying the number of coils around which the armature is shunted, substantially as set forth.

12. In regulating apparatus for electro-dynamic motors, the combination of mechanism operated by variations in the speed of the motor, secondary mechanically-operated apparatus thrown into action by the movements of said primary mechanism, and means operated by said secondary apparatus for varying the current supplied to the motor-armature, substantially as set forth.

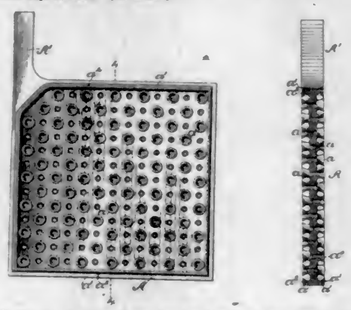
13. In an electro-dynamic motor, the combination of sections of field-coils, the armature in a shunt around such coils, means for varying the number of coils around which the armature is shunted, independent field-coils connected with the supplying-circuit, and means for varying the magnetizing effect of said independent coils, substantially as set forth.

14. The combination of sectional field-coils, a circular commutator, two movable arms, bearing on said commutator and forming terminals of a shunt-circuit, and connections from the junctions of said sectional coils to the plates of said commutator, whereby the current in the shunt is varied and reversed by the movement of said arms, substantially as set forth.

15. The combination of sections of coils, a circular commutator, two movable arms bearing on opposite blocks of said commutator and forming terminals of a shunt-circuit, and connections from the sectional coils to the commutator, as follows: (see Fig. 11,) the first and last sections connected, respectively, to opposite blocks o o^2, the second and next to last sections connected each to two blocks, o' o', and so on until the blocks meet, substantially as shown and described.

16. The method of regulating electro-dynamic motors, consisting in varying the relations between the number of field-magnet coils in series with the armature and the number around which the armature is shunted.

295,455. SECONDARY-BATTERY PLATE OR ELECTRODE. ELI T. STARR, Philadelphia, Pa., assignor of one-half to William J. Peyton, Washington, D. C., and H. M. Lewis and James W. White, Philadelphia, Pa. Filed Sept. 8, 1883. (No model.)



Claim.—1. A battery-plate having a body or back with a projecting or raised undercut, dovetailed, or shouldered retaining rim or border surrounding the edges of the plate, whereby a secure retaining-chamber is formed in the side or face of the plate for the retention of the active material thereof, substantially as described.

2. A battery-plate having perforated lugs or pins projecting from the side or face of the plate, and provided with enlarged heads or ends, as described.

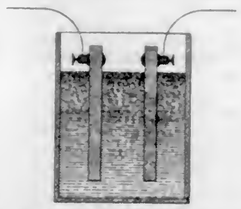
3. A battery-plate having lugs or pins projecting from the side or face thereof, and a retaining-rim extending around the edges of said plate, substantially as described.

4. A battery-plate having lugs or pins with enlarged heads or ends, and the undercut or dovetailed rim extending around its edges, substantially as described.

5. A battery-plate having a body or back and a projecting or raised retaining rim or border extending around its edges, with an active material or layer packed in the recessed or chambered side of the plate and interlocking with said retaining rim or border, substantially as described.

6. A battery-plate consisting of a body portion having lugs or pins projecting from the side or face thereof, and provided with a raised or projecting retaining rim or border extending around the edges of the plate, with an active material or layer packed in the recessed or chambered side of the plate and interlocking with said retaining rim or border, substantially as described.

295,456. SECONDARY BATTERY AND METHOD OF CONSTRUCTING ELECTRODES THEREFOR. ELI T. STARR, Philadelphia, Pa., assignor of one-half to H. M. Lewis and James W. White, both of same place, and William J. Peyton, Washington, D. C. Filed Oct. 22, 1883. (No model.)



Claim.—1. The method of constructing electric-battery electrodes hereinbefore set forth, consisting in incorporating active material in a finely-divided state with mercury, and then permitting the mixture to amalgamate and harden into a self-sustaining body, substantially as described.

2. The method of constructing electric-battery electrodes hereinbefore set forth, consisting in mixing finely-divided active matter with mercury, then subjecting the mixture to pressure in a mold to express the excess of mercury from the mixture and give shape to the electrode, and then permitting amalgamation and hardening of the mixture to take place to convert the mixture into a self-sustaining body, substantially as described.

3. The method of constructing battery-electrodes hereinbefore set forth, which consists in mixing metallic matter with mercury to form an amalgam, and then shaping the mixture in a mold while in its plastic condition.

4. The improvement in constructing electric-battery electrodes hereinbefore set forth, which consists in mixing active material with mercury to form a plastic or fluid mass, and then artificially removing a portion of the mercury.

5. The improvement in constructing and forming secondary-battery electrodes, which consists in mixing mercury with another metal or metallic compound capable of becoming active in a secondary battery to form a plastic mass, then shaping or molding said mass in a mold, and then subjecting the electrode thus formed to the action of an electric current while immersed in the electrolytic liquid of a battery-cell, substantially as described.

295,457. SHOO-FLY ROCKER. GEORGE P. STEINBACH, Baltimore, Md., assignor to himself, Trustee for Albert Steinbach, same place. Filed June 11, 1883. (No model.)



Claim.—1. The combination, substantially as described, in a rocker of two parallel horses, having a seat and back between them and rockers attached to their feet, of the table E, pivoted to one horse at e, and having the hook e' and the loop or staple e^2 attached to the other horse, as set forth.

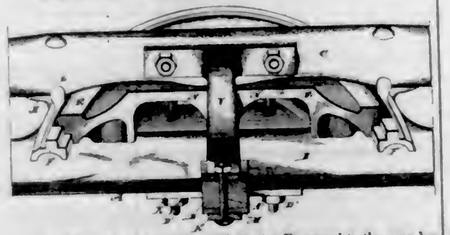
2. The combination, with a shoo-fly rocker having the usual seat, back, and rockers, as shown, of a table pivoted to the inside of one horse, and engaging, as shown, with the inside of the other horse, whereby the whole structure is braced and stiffened, and free access is provided to the seat, as set forth.

3. The combination, with a shoo-fly rocker having the ordinary seat, back, and rockers, and a pivoted table, as described, of the dovetailed stiffening-bars b, inserted in the position shown, and for the purposes set forth.

4. The combination, with a shoo-fly rocker having the ordinary seat, back, and rockers, of two pairs of wheels, each pair mounted on a bar a little longer than the distance between the horses, and links pivoted to the inner side of the rockers, and on the bars which carry the wheels at points slightly outside the plane of the inner sides of the rockers, one pair of wheels being mounted near the front end and one pair near the rear end of the rockers, for the purposes set forth.

5. The combination, with the rockers C, of pivots f', bars or links f, rods f^2, and wheels F F', the distance on the rods f^2 between the links f being slightly greater than the distance between the rockers, whereby friction is produced between the links f and the inside of the rockers, for the purposes set forth.

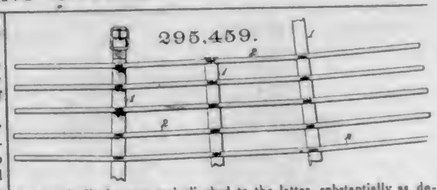
295,458. FIFTH-WHEEL. WILLIAM H. STICKLE, Terre Haute, Ind. Filed July 21, 1883. (No model.)



Claim.—The combination, with the bar F, secured to the cross-bar or bolster, said bar provided on its top and inner side with a double trackway, T, of the plate E, secured to the axle and provided with bearing-faces on its periphery, that fit the double trackway T, and the plate K, secured to the axle and pivoted to the perch, substantially as set forth.

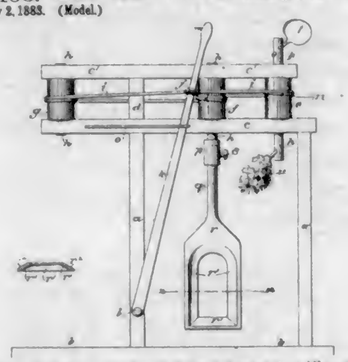
295,459. FLY-NET. ELBRIDGE G. STUDLEY, Grand Rapids, Mich. Filed Jan. 28, 1884. (No model.)

Claim.—1. A fly-net consisting of longitudinal and transverse straps, the adjacent abutting ends of the lengths composing the transverse straps being connected and attached to the former by staples, the arms of which pass, respectively, through the end portions of such lengths and through the longitudinal straps and clinched to the latter, substantially as described.



2. A fly-net consisting of longitudinal and tranverse straps held together and prevented from longitudinal displacement by staples, the arms of which pass through both the transverse and longitudinal straps, the head of the staple extending in the direction of the length of the transverse straps, substantially as described.

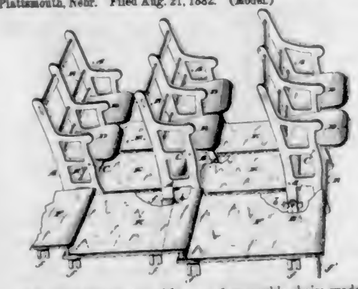
295,460. CHURN. WILLIAM H. TAWNEY, Louisburg, Kans. Filed July 2, 1883. (Model.)



Claim.—1. The combination of the cross-heads c c', an idler-roll, g, a roll, f, carrying the dasher-shaft, a roll, e, carrying the fan and brush at the opposite ends of its shaft, a cord, i, coiled about each of said rolls, the staples n, preventing slip of said cord on the rolls, and the lever k, as shown and described.

2. A churn-dasher consisting of the plate r, inwardly inclined at r' toward a central aperture, into which the cream is thus guided, and reversely inclined upon the opposite side, whereby the cream may be whipped inwardly and outwardly, as described.

295,461. SEAT FOR PUBLIC BUILDINGS. GEORGE H. THOMPSON, Plattsmouth, Nebr. Filed Aug. 21, 1882. (Model.)

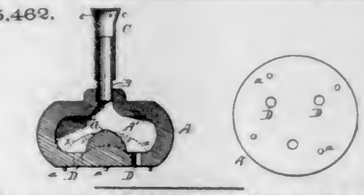


Claim.—In combination with rows of removable chairs graded from the main floor and grouped in sections, with aisles or passages between the sections, a stepped sectional aisle-platform between the sections, and supported by the end chairs of the rows, substantially as shown and described.

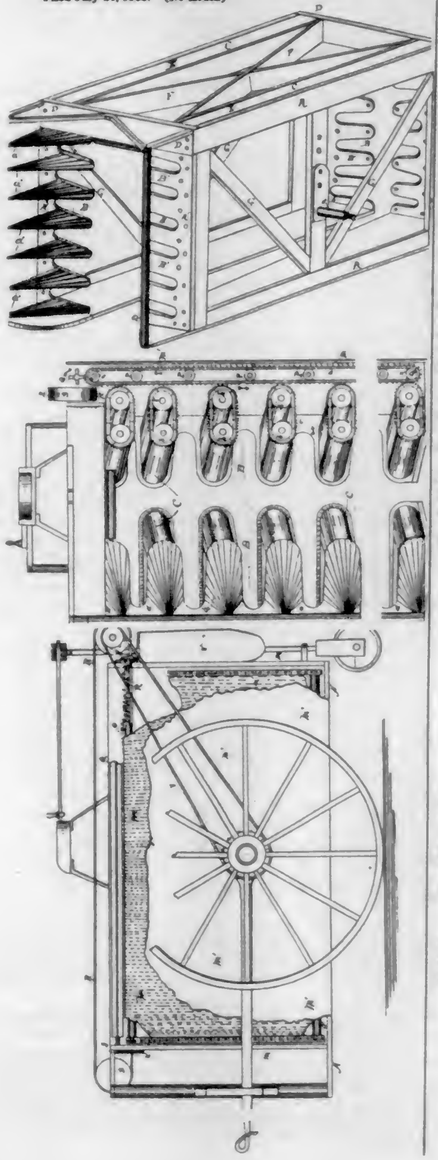
295,462. BOILER WASHING-MACHINE. WILLIAM H. THURMOND, Forsyth, Ga. Filed June 14, 1883. (Model.)

Claim.—The within-described new article of manufacture, the same consisting of the hollow body A, having supports a, perforations through its bottom, and a central elevation, G, in combination with the centrally-arranged fixed tube B and the adjustable tube C, having a closed top and perforations through its sides, substantially in the manner and for the purpose described.

295,462.



295,463. COTTON-HARVESTER. GEORGE N. TODD, Fort Smith, Ark. Filed July 26, 1883. (No model.)



Claim.—1. In a cotton-picking machine, in combination with suitable driving mechanism, a series of horizontal cylinders extending lengthwise of the machine, or nearly so, and a series of endless belts arranged on said cylinders so as to pass between the branches of the plant, substantially as described.

2. The combination of the supporting-frame, two series of horizontal cylinders extending lengthwise of said frame, or nearly so, with a passage-way between them, endless picker-belts arranged on the cylinders, substantially as described, and suitable driving mechanism, all substantially as shown and set forth.

3. The combination, with the front plates having spaces therein, as described, of the guide-fingers, arranged to guide the branches of the plant into said spaces.

4. The combination, with the plates A', having spaces B therein, of the guide-fingers *a'* in front of projections B', said guide-fingers being pointed in front, and gradually increasing in breadth and thickness toward projections B', as shown and described.

5. The combination, with the frame having front plates, A', provided with projections, as stated, of the guide-fingers of the form described, arranged in front of said projections, and the cylinders journaled in said projections and carrying endless picker-belts, substantially as described, and for the purpose stated.

6. The combination, with a series of endless picker-belts and suitable operating mechanism, of stripper-belt arranged, as described, in proximity to the picker-belts, so as to strip and convey the cotton therefrom, substantially as described.

7. The combination, with a series of picker-belts arranged horizontally, or nearly so, and operating mechanism, substantially as described, of a stripper-belt arranged in proximity thereto, and adapted to strip and convey the cotton therefrom by suitable mechanism, substantially as stated.

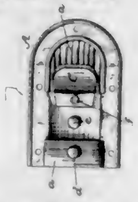
8. The combination, with the series of picker-belts, arranged as described, of a stripper-belt arranged in proximity thereto, as stated, and a screen arranged parallel with one face of the stripper-belt, whereby the cotton may be stripped from the picker-belts and carried between the stripper-belt and the screen to a point of delivery, substantially as stated.

9. The combination of a series of picker-belts, arranged as described, the stripper-belt and screen, and a revolving wiper, all arranged with reference to each other, substantially as set forth.

10. The combination of the stripper-belt, the rotating wiper, and the carrier-belt, all arranged and operating as set forth.

11. The combination of the stripper-belt, the rotating wiper, the conveyer-belt, and the scraper arranged as described, to scrape the cotton from the conveyer-belt into a suitable receptacle, substantially as described.

295,464. TRAY-BOLT FOR TRUNKS. JAMES S. TOPHAM, Washington, D.C. Filed Jan. 17, 1884. (Model.)

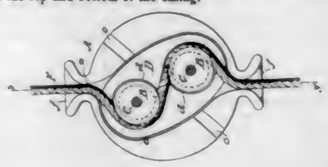


Claim.—1. The combination of the raised projections on the face plate or bed and on the bolt proper, working together to form a locking device, substantially as described.

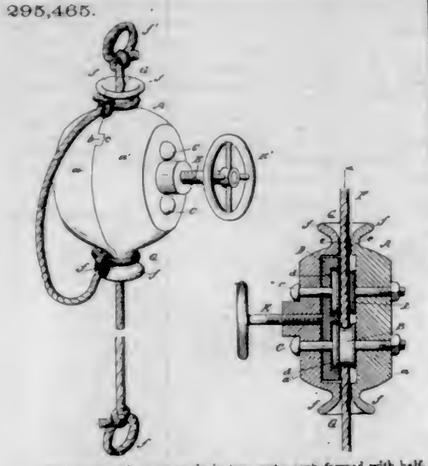
2. The combination of the main plate or bed, the bolt proper, and the thumb-piece riveted directly to the bolt between the loops, all operating together to form a perfect bolt, substantially as described.

295,465. FIRE-ESCAPE. CHARLES VON DER LINDEN, Rhinebeck, N. Y. Filed Oct. 24, 1883. (No model.)

Brief.—Two hollow castings bolted together and inclosing a brake-plate countersunk and holding the rope-pulleys, and a hand-screw for operating the brake-plate. The body belt or strap is secured to flaring necks at the top and bottom of the casing.



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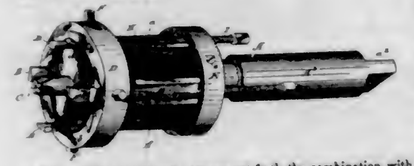


Claim.—1. The case made in two parts, each formed with half-openings *e* and diverging lips *f* at its top and bottom, and provided with the securing-bolts C, extending through the case, and having mounted thereon the pulleys and the brake, and a brake-screw, E, substantially as set forth.

2. In a fire-escape, the brake-plate D, countersunk, as shown at *d*, to receive the pulleys B, substantially as and for the purposes set forth.

3. In a fire-escape, the holder A, composed of the hollow castings *a a'*, held together by the bolts C C, in combination with the inclosed pulleys B B and brake-plate D, placed upon the said bolts, the casting *a'* being provided with the screw E, for operating the brake-plate, substantially as described.

295,466. CUTTING-TOOL. J. BENNETT WALLACE, Chicago, Ill. Filed Dec. 18, 1882. (No model.)



Claim.—1. In a tool for the purpose set forth, the combination, with the head provided with longitudinal grooves *a'*, deeper at their front than at their rear margins, of the rearwardly-beveled cutters B, and means for securing them adjustably in said grooves, substantially as described.

2. In combination with the head provided with grooves *a'*, and with the cutters fitted to lie in said grooves, a ring, D, embracing said head and provided with notches *d* opposite the cutters, gibs fitted to said notches, and set-screws F, threaded through the ring in position to bear on the gibs, substantially as described.

3. In a tool for the purpose set forth, the combination, with the head having longitudinal grooves *a'* for the cutters, of the ring or flange E, secured to the head, and the adjusting-screws I, threaded through said ring, substantially as described.

4. In a tool for the purpose set forth, the combination, with the cutters, of a longitudinally-movable burr-cutter, and means for securing it adjustably in place, substantially as described.

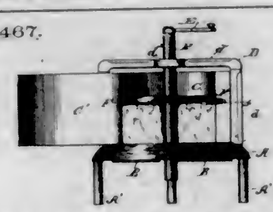
5. In a tool for the purpose set forth, the combination, with the head, of the center-post constructed as a reamer for a portion of its length, and a longitudinally-adjustable cutter or cutters, substantially as described.

295,467. ICE-SHAVER. GILBERT B. WEBB, Bell's Ferry, N. C. Filed Sept. 6, 1883. (No model.)

Claim.—1. The combination, substantially as set forth, of the base having suitable cutting-blades, the vertically-moving shaft, and the follower-plate secured on said shaft, and provided on its under face with means whereby to clutch the ice, as and for the purposes specified.

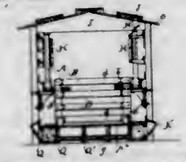
2. The ice-shaving machine, substantially as described and shown, composed of the base having slots or openings, and suitable blades secured therein, the casing having a suitable door, the arch-frame, the vertically-movable shaft, and the follower-plate secured thereon, and provided with barbs or other means whereby to clutch the ice, as set forth.

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3. In an ice-shaving machine, the combination, with the knives and the necessary framing, of a vertically-movable follower-plate provided on its under side with means to clutch the ice, and means whereby said plate is revolved, as and for the purposes set forth.

295,468. STOCK-CAR. THEODORE D. WILLIAMS, Chicago, Ill. Filed June 23, 1883. (No model.)



Claim.—1. The combination of the standards situated on vertical lines, a vertically-sliding gate or partition, connecting means which unite the gate or partition with the standards, and which have horizontal pivots or hinges uniting the gate or partition with the connecting means, substantially as set forth.

2. In a stock-car, the combination of the standards or supports A, situated vertically, sliding sleeves thereon, and the gate or partition suspended upon said sleeves by horizontal pivots or hinges, whereby the gate or partition can be moved bodily upward and can thereafter be swung upon said pivots or hinges, substantially as set forth.

3. The combination of the gate or partition arranged, substantially as set forth, to slide bodily up and down, a hinge-like support for said gate or partition, relatively to which it is adapted to swing vertically when near the top of the car, in combination with means which support it near the top of the car after it has been moved upwardly, substantially as set forth.

4. The combination of the gate or partition arranged, substantially as set forth, to move bodily up and down, a pivot rod or bar stationary relatively to the car at or near the top thereof, the gate or partition being suspended from said bar or rod loosely, whereby it can swing vertically around the rod or bar while the latter remains stationary, substantially as set forth.

5. The combination of the car, a horizontally-arranged supporting rod or bar, means for holding said rod or bar stationary relatively to the car at or near the top thereof, a gate or partition suspended from said rod or bar loosely, and adapted to bodily rise and fall and to have its lower edge swing upward toward the top of the car, and means for supporting said lower edge from the car while the other edge of the gate or partition is being supported upon said rod or bar, substantially as set forth.

6. The combination of a horizontally-arranged hinge rod or bar, means for holding said rod or bar stationary relatively to the car at or near the top thereof, a gate or partition which rises and falls bodily relatively to the car, and is suspended from said rod or bar, and adapted, substantially as set forth, to be rocked thereon into different vertical positions.

7. The combination of the rising and falling partition or gate, the supporting-standard, a sliding sleeve on the standard, the hinge or pivot interposed between the sleeve and the gate, and means engaging directly with the standard and with the sleeve for locking the latter in its uppermost position, substantially as set forth.

8. The combination of the partition or gate which both slides vertically and swings about a horizontal axis, a supporting-standard, the means which connect the gate and the standard together, and the pin which engages with the connecting means and holds the gate stationary relatively to the car after it has been bodily moved upward, substantially as set forth.

9. The combination of the gate or partition, the supporting-standard, the guide-rod in length shorter than the height of the body of the car, the inwardly-projecting metallic bracket which supports the standard or guide, and which is situated above the central horizontal line of the gate or partition when the latter is in its lowermost position, substantially as set forth.

10. The combination of the car-frame having cross-bars at the top extending from side to side, and provided with sockets or apertures, the vertically-sliding gates or partitions, and the vertical standards or sup-

ports inserted into said sockets or apertures in the top beam, means for supporting the lower ends of said standards, and a hinge-connection between the gates or partitions and the standards, substantially as set forth.

11. The combination of the supporting-standards situated on vertical lines, the gate or partition, sliding guides for the gate or partition supported on the standards, pivots connecting the guides with the gate or partition, whereby after the latter has been pushed up it can be rocked in vertical planes, and devices at or near the lower end of the gate or partition which prevent it from swinging when down, substantially as set forth.

12. In a stock-car, the combination of the gate or partition, arranged substantially as set forth, to be moved vertically and to swing vertically when in its uppermost position, and the recessed cleats or bars secured to the floor at points inside of the walls of the car, and which engage with both sides of the lower edge of the partition to hold it horizontally, and which have inclined or beveled ends, as set forth.

13. In a stock-car, the combination, with a gate or partition, of a spring interposed between the gate and an abutment secured to the car to receive the endwise thrust of the gate, substantially as set forth.

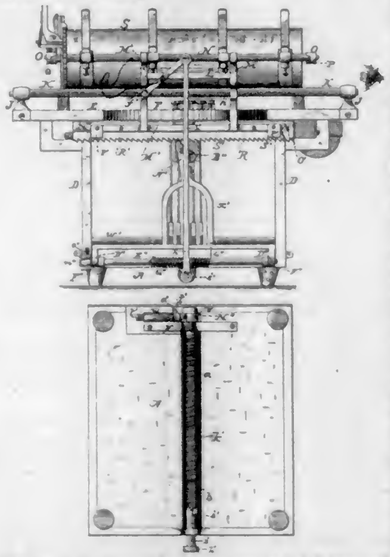
14. In a stock-car, the combination, with a gate or partition and a pivot connected to the car, of a spring carried by said pivot and arranged, substantially as set forth, to take the endwise thrust of the partition.

15. In a stock-car, the herein-described water-trough, it having its sides or vertical walls constructed of the sills or girts of the car, the bottom of the trough being secured directly to the said sills or girts, substantially as set forth.

16. In a stock-car, the combination of the apartment for the cattle, the floor of said apartment having a series of apertures, respectively, directly beneath the heads of the cattle, a water-trough constructed, substantially as hereinbefore described, with the sills or stringers of the car as parts thereof, the passage-way G' through the outer stringer or sill, a funnel by the side of said sill or stringer, whereby water may be supplied to all of the animals above said series of apertures, and the threaded stop, which, when withdrawn, will permit the escape of the water, substantially as set forth.

17. In a stock-car, the combination of the lower hinged bar, A, the upper hinged bar, A', the connecting parallel hinged bars A^2 A^3, arranged substantially as set forth, whereby the rack formed thereby can be folded up against the side of the car, the bars A^2 A^3 remaining vertical both when the rack is up and when it is down, substantially as set forth.

295,469. TYPE-WRITER. GEORGE W. N. YOST, New York, N. Y., assignor to the American Writing Machine Company, of New York. Filed June 28, 1880. (No model.)



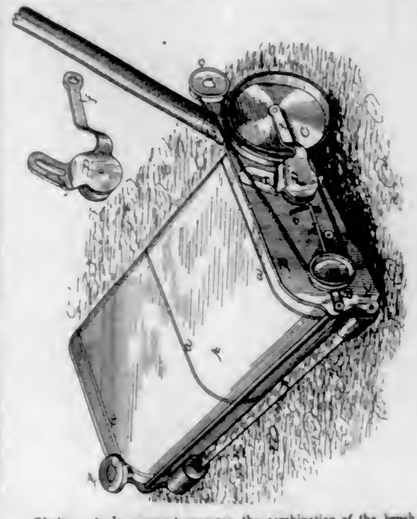
Claim.—1. In a type-writer, a lever connected at its upper end with the paper-carriage, and hinged or pivoted at its lower end upon a shaft having a spring-tension toward the left, and a means for regulating the tension.

2. A driving-power for the paper-carriage of a type-writer, consisting of an arm or lever hinged or pivoted at its lower end and having a tension toward the left, the upper end being connected with the paper-carriage and adapted to vibrate with it, substantially as shown and set forth.

3. In a type-writing machine, the lever A', having at its upper end the link or rod g', connecting it with the paper-carriage frame, while its lower end is pivoted on the end of the shaft i', provided with the spring k', substantially as set forth.

4. In a type-writer, a paper-carriage capable of lateral movement, in combination with the rod k', connected with the carriage at its upper end, and mounted at its lower end upon the shaft i', supplied with the spiral spring k' and toothed nut N'', whereby the tension of the spring may be regulated, substantially as set forth.

295,470. CARPET-SWEEPER. GEORGE W. ZIEGLER, Norwalk, Ohio. Filed June 30, 1883. (Model.)



Claim.—1. In a carpet-sweeper, the combination of the brush-driving pulley, the auxiliary pulley in rear of the drive-wheel, the drive-wheel, the belt passing around the pulleys and over the drive-wheel, the bracket having one arm pivoted to the stud-bearing of the drive-wheel, and another slotted arm adjustable on the frame by means of a set-screw, and a tightening-pulley journaled in this two-arm bracket, substantially as set forth.

2. In a carpet-sweeper, the combination, with the rotary brush, of the pivoted adjusting-lever having a long and a short arm, between which the journal of the brush is supported, said lever being adjustable on its pivot to vertically adjust the brush, substantially as set forth.

3. In a carpet-sweeper, the combination of the casing provided with vertical slots, the rotary brush having journals working in said slots, the lever pivoted to the casing and bent to form a short arm and a long arm, between which the journal of the rotary brush is received, a rack on the side of the casing, and a projection on the end of the long arm for engaging this rack, substantially as set forth.

4. In a carpet-sweeper, a case provided with a carpet-beater having friction-rolls at its ends, substantially as set forth.

5. In a carpet-sweeper, the combination, with the case carrying the rotary brush, of a carpet-beater arranged across the front lower edge of the case, and provided with friction-rollers at its ends, substantially as set forth.

6. The combination, in a carpet-sweeper having the flanged ends, as described, of the sliding bottom provided with the ring m, and the spring i, for returning the bottom and retaining it in position, substantially as set forth.

7. In a carpet-sweeper, the combination of the casing carrying the rotary brush, the mouth-pieces having the removable shoes attached to their lower ends, the rear mouth-piece being provided with teeth, the shoe H, and the removable bottom, substantially as set forth.

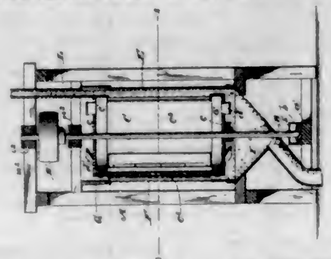
8. In carpet-sweepers, the rear mouth-piece consisting of the elongated strip H^3, slightly concave, and having on its upper edge a series of slits, the free ends of the portions between said slits being bent at right angles, substantially as and for the purpose set forth.

9. In a carpet-sweeper, the improved adjusting-spring having a long and short arm, between which the journal-bearings are to be supported, substantially as set forth.

10. In a carpet-sweeper, the improved handle-socket provided with the interior screw-threads and with a longitudinal slot, whereby it is adapted to clasp the handle and take up the wear of the same, substantially as set forth.

11. In a carpet-sweeper, the combination, with pieces forming the mouth of the sweeper, and provided with the shoulder n^3, of the removable spring-shoes sprung over said shoulder and binding against the same, substantially as and for the purpose set forth.

295,471. MACHINE FOR SCOURING AND POLISHING CEREALS. WILSON AGEE, New York, N. Y. Filed Aug. 22, 1883. (No model.)



Claim.—1. A grain scouring and decorticating apparatus, combining in its structure an outer drum having its walls constructed with an imperforate abrading-surface provided at intervals with foraminous sections, and an inner cylinder having its wall constructed with blast-openings and means for indocing air into the cylinder and driving it through the blast-openings therein and through the foraminous sections, substantially as described.

2. A grain scouring and decorticating apparatus, combining in its structure an outer drum having its wall constructed with an imperforate abrading-surface provided with gauze sections at intervals, an inner cylinder having blast-apertures, an external surface of bristles, and an air-opening at its end, and means for indocing air into the air-openings and forcing it through the blast-apertures and the gauze sections of the drum, substantially as described.

3. A grain scouring and decorticating apparatus, combining in its structure an outer drum having its wall constructed with an imperforate abrading-surface having gauze sections arranged therein at intervals, an interior cylinder, and means for driving air through the inner cylinder and the gauze sections of the imperforate abrading-surface of the outer drum, substantially as described.

4. A grain scouring and decorticating apparatus, combining in its structure an upright drum having its wall provided with vertical openings and an imperforate abrading-surface, gauze pieces arranged in the vertical openings, and an internal cylinder having vertical openings and bristles, and provided at its end with air-forcing hooded openings, substantially as described.

5. The combination, with the inner cylinder having air-forcing devices in its two heads, of the lower hopper and grain-chute having a gauze-covered air-opening to admit air to the lower end of the cylinder, substantially as described.

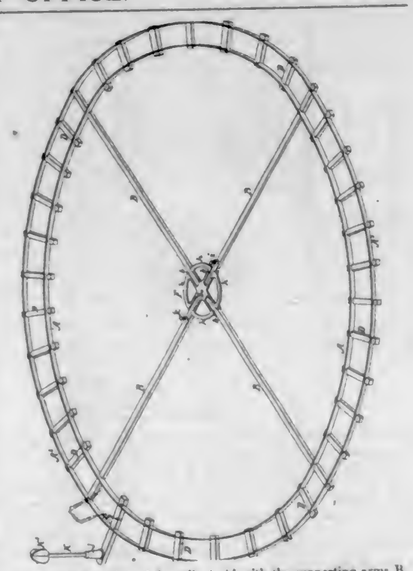
295,472. TRUSS. DAVID S. ARMER, Columbus, Ind., assignor of one-half to Thomas C. Woodburn and John N. Maring, both of same place. Filed Feb. 8, 1883. (No model.)



Claim.—In a truss, the rigid supporting-band or waist-belt flaring outward and extending only partially around the body, the two ends thereof being connected in the back by a flexible band, combined with two inwardly-curved springs pivoted near each other to the front of the supporting-band, and each spring carrying upon its outer end a loosely-pivoted pad, all substantially as and for the purpose specified.

295,473. TOY ELECTRIC RAILWAY. MURRAY BACON, Philadelphia, Pa., assignor to the Novelty Electric Company, same place. Filed Dec. 10, 1883. (No model.)

Claim.—1. A toy electric railway in which are combined the following elements, namely: a suitable generator of electricity, a central frame, a series of radial arms, B, of series a cross-ties, D, two sheet-metal strips adapted to notches in the said arms B and ties D, and two wires, i' and k', as set forth.



2. The combination of the rails A A' with the supporting-arms B, notched at the outer end for the reception of the rails, and having secured to them wires communicating with said notches, as set forth.

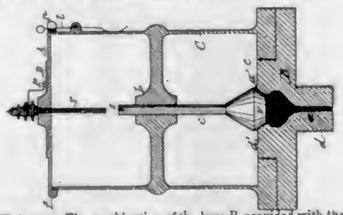
3. The gage-bar G, having a pivot-pin, n, and notches p p in its under side for adaptation to the rails A A', as set forth.

4. The combination of the frame F, having sockets b, with the bars B, having in their under sides notches d, in which the bottom bars of the sockets fit, whereby radial withdrawal or displacement of the bars is prevented, as set forth.

5. The center frame, F, having sockets b and recessed on the under side to form a cage for containing, when coiled, the strips composing the rails, as set forth.

6. The combination of the rails and their supporting structure with a short-circuiting connection between the rails and a signal device constructed to make and break said connection, as set forth.

295,474. LUBRICATOR. PETER J. BALTES, Oswego, N. Y., assignor of one-half to James B. Donnelly, same place. Filed Jan. 9, 1884. (No model.)



Claim.—1. The combination of the base B, provided with the screw-threaded bosses d d', and with the channel a and valve-seat a' in the same, the cup C, provided with the screw-threaded orifice e in its bottom, and the guide b above the bottom, and the valve v, having the stem c, sliding in the said guide, substantially as specified and shown.

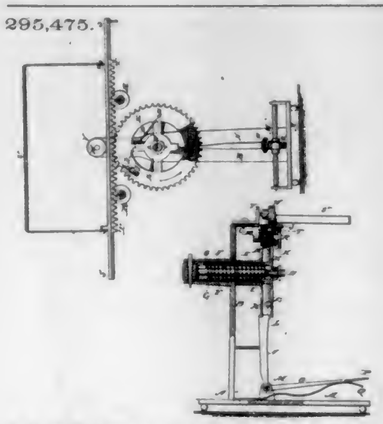
2. The combination, with the lubricant-cup, of a cap screwed onto the top thereof, and having an overhanging flange provided with a notch, and a latch connected to the exterior of the cup and adapted to engage said notch, substantially as described and shown.

3. In combination with the cup C, valve v, provided with the stem c, and the regulating-screw r, the dial D, arranged on top of the cup concentric with the regulating-screw, and the pointer p, fixed to said screw, substantially as described and shown, for the purpose set forth.

295,475. TYPE-WRITING MACHINE. WALTER J. BARRON, New York, N. Y., assignor, by mesne assignments, to the American Writing Machine Company, of New York. Filed Aug. 28, 1879.

Claim.—1. In a type-writing machine, the combination of two series of ratchet-teeth, which are adapted to move alternately in one direction, each independently of the other, for a letter-space distance at a

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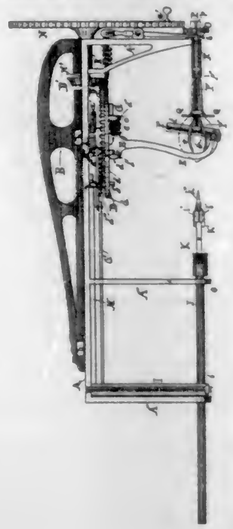
time, with the driving mechanism and carriage, and with only one letter-space ratchet, which is adapted to work alternately in both series of ratchet-teeth, first in one and then in the other.

2. In a type-writing machine, the combination of two ratchet-wheels, which are adapted to turn alternately in one direction, each independently of the other, for a letter-space distance at a time, with the driving mechanism and carriage, and with only one letter-space ratchet, which is adapted to work alternately in both ratchet-wheels, first in one and then in the other.

3. In a type-writing machine, the combination of two ratchet-wheels, which are adapted to turn alternately in one direction, each independently of the other, for a letter-space distance at a time, the first of which is attached to the driving mechanism and the second to the first, with a spring on the first ratchet-wheel, which is adapted to press against and turn the second one, with an arm or shoulder on the second ratchet-wheel, which is adapted to strike and stop against the first one, and with only one letter-space ratchet, which is adapted to work alternately in both ratchet-wheels, first in one and then in the other.

295,476. COMBINED FRUIT PARER AND SEEDER. JOSEPH O. BRADLEY and ISAAC L. MORRIS, Baltimore, Md. Filed Jan. 9, 1884. (Model.)

Brief.—This machine pares, splits, and stones the fruit at one operation. The stoning-knife is made up of two thin curved spring-metal strips. Two splitting-knives are carried on same frame with stoning-knife—one on each side of the latter. The paring-knife has a sickle-edge, with the grooves extending entirely across one face of the blade.



Claim.—1. A machine, as herein described, having a paring-knife, double splitting-knives, to pass each side of the kernel of the fruit, and two elastic coring-blades for removing the kernel, all combined and operated substantially as and for the purpose described.

2. The combination of the driving mechanism, the wheel D, with its cam-rim *d*, the pin *d'''*, sliding bar M, arm I, rod J, carrying the splitting and coring knives, the levers G G', and arm H, substantially as and for the purpose described.

3. The wheel D, with cam-rim *d*, rod R', lever S, with its yoke *s*, and sleeve and pinion O, having the hole *o''* in its inner face, in combination with the pin *r* in the side of the arm A', all substantially as and for the purpose described.

4. The splitting-knives *k'''*, pivoted to the back bar, *k*, having the spring *k'*, in combination with the bifurcated end springs, *l l*, and the spring-blades L L, all substantially as and for the purpose described.

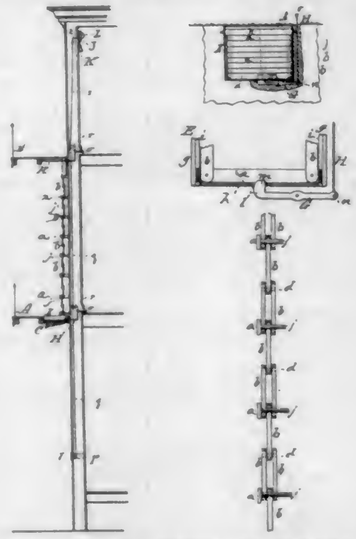
5. The spring coring-blades L L, curved as described, in combination with the bifurcated end springs, *l l*, and the binding-springs *m m*, and the bars *K''* of the splitting-knives *k'''*, and the back bar, *k''*, all substantially as and for the purpose described.

6. The combination of the spur-wheel N, pinion O, shaft P, and fruit-holder P', having an adjustable screw and nut, and tines for holding the fruit, and gage *P''* for the stone, and gages Q Q for the fruit, substantially as described.

7. The paring-knife F, having one side and the sharp edge cut into sickle-teeth, substantially as and for the purpose described.

295,477. FIRE-ESCAPE. VITAL BESSER, New York, N. Y., assignor of one-half to Henry A. Robbins, Washington, D. C. Filed Dec. 20, 1883. (No model.)

Brief.—When not in use, the ladder is folded within a three-sided frame held up by a suitable latch, and forms the flooring of the hatchway of the balcony, beside which it is hinged. A trip-rod releases the latch and sounds an alarm. The stays or struts gradually increase in length toward the bottom of the ladder, to suitably incline the same.



Claim.—1. A ladder, C, constructed to fold with its rounds side by side, and contained in a frame, E, in combination with the hatchway of a balcony-floor or other landing, whereby the said folded ladder and its frame form a close door for the said hatchway, substantially as and for the purpose herein specified.

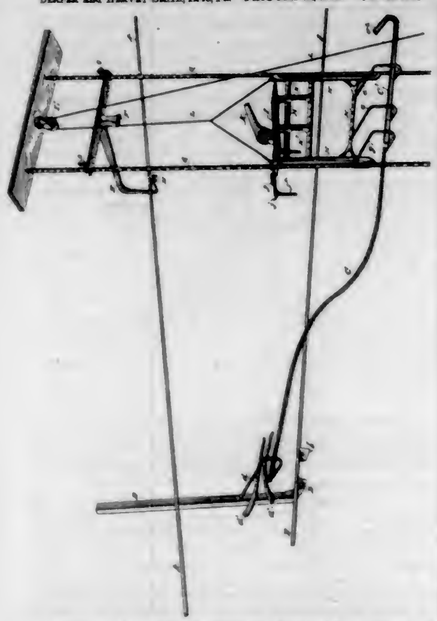
2. The combination of a closely-folding ladder, C, a three-sided frame, E, hinged at the middle side to one side of a floor-hatchway, and a catch, *m*, for sustaining the ladder shut into the hatchway, substantially as and for the purpose set forth.

3. The combination of a folding ladder, C, hinged in a balcony or landing hatchway, a sustaining lever or holder, G, and a trip rod or rods, H, reaching from the holder to one or more positions inside of the building, substantially as and for the purpose herein specified.

4. The combination of a folding ladder, C, hinged in a balcony or landing hatchway, a sustaining lever or holder, G, a trip-rod, H, a tripping-pull, *p*, accessible near the ground outside of the building, and mechanism connecting the said pull and trip-rod, substantially as and for the purpose set forth.

5. The combination of a folding ladder, C, hinged in a balcony or landing hatchway, a sustaining lever or holder, G, tripping mechanism H, an alarm, L, and mechanism connecting the alarm with the tripping mechanism, for the purpose herein specified.

295,478. CONVEYER APPARATUS. GEORGE CANFIELD BLEKKER-DERPER and HERVEY SMITH, Erie, Pa. Filed Jan. 24, 1884. (No model.)



Claim.—1. In a conveyer apparatus, substantially as shown, the combination, with a continuous taut-wire track which passes curves or corners by angular bends, of a curved track formed of another piece of metal and adjusted with relation to the main wire, substantially as shown, so as to form a continuous properly-curved track.

2. In a conveyer apparatus, substantially as shown, the combination, with a continuous taut-wire track which passes curves or corners by angular bends and a separate curved track, of an iron forming a connection for said curved track upon said main track, through which the said main track is deflected downward, so as to allow the curved track to lie in the plane of the main track, substantially as set forth.

3. In a conveyer apparatus, substantially as shown, the combination, with the curved track A' and the main track A, of the connecting-iron (R or T) which connects both tracks and deflects the main track below the end of the curved track, substantially as and for the purposes mentioned.

4. In a conveyer apparatus, substantially as shown, a car having thereon a running-gear for running on the direct line of track, which is provided with means, substantially as shown, whereby the wheels thereof may be tripped or thrown out of operative position, for the purposes mentioned.

5. In a conveyer apparatus, substantially as shown, the combination, with the main or direct track, of a switch-track, the point of which lies in a substantially vertical plane with said main track, and a car having two sets of wheels arranged one set above the other, substantially as and for the purposes mentioned.

6. In a conveyer apparatus, substantially as shown, the combination, with a main or direct track and a switch or side track, the latter of which has its point lying in a substantially vertical plane with the said direct track, of a car having two sets of wheels arranged one set above the other, one of which sets is designed to traverse the main track, and is so adjusted as to be thrown out of position for use, and the other set is designed for use upon the switch-track when the said main wheels have been thrown out of position for use.

7. In a conveyer apparatus, substantially as shown, the combination, with the tracks B and C and finger *b*, of the main car-wheels N, cross-bar N', pivoted catch-bar P, spring-bolt p^2, pin p^3, spring p^3, and the wheels O.

8. In a conveyer apparatus, substantially as shown, the combination, with the tracks B and C, arranged relatively, substantially as shown, and a car, substantially as described, of the hanger *d* and guides *d'' d''*, arranged as shown, and for the purposes mentioned.

9. In a conveyer apparatus, substantially as shown, the combination, with the side track, C, of the track C', attached to the elevator, substantially as and for the purposes shown.

10. In a conveyer apparatus, substantially as shown, the combination, with the elevator, of a sliding platform or car-holder, J, and means, substantially as shown, for sliding out said car-holder by the upward action of the elevator.

11. In a conveyer apparatus, substantially as shown, the combination, with the elevator, of the sliding platform J, adapted to hold the car, the elbow-lever K, and finger F, for the purposes mentioned.

12. In a conveyer apparatus, substantially as shown, the combination, with the elevator, of the tilting platform I and the sliding car-holder J, with hooks *j* and fingers J', for the purposes mentioned.

295,479. LAMP. CHARLES B. BOYLE, New York, N. Y., assignor to the Boyle Illuminating Company, same place. Filed Aug. 25, 1882. Renewed Aug. 23, 1883. (No model.)

Claim.—1. In combination with the vase V, having apertures *g* in its base, and exits J at top, the lamp-reservoir A, having a flange at top, to adapt it to hang on the edge of the vase and permit the circulation of air freely around the font and through the exits J, as and for the purpose set forth.

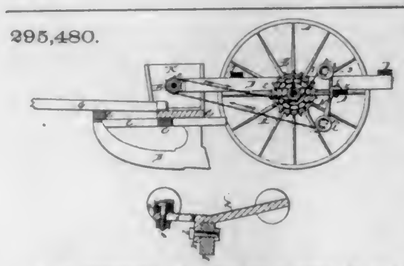
2. In combination with the vase V, having perforated base, and exits J at top, the oil-reservoir A, hung within said vase, so as to leave a free air-space, H, and central and annular air-passages, D and B, the apertures *g* in the vase being of sufficient area to provide a free supply of air to the three air-passages D, B, and H, as set forth.

3. In combination with an oil-reservoir having central air-chamber and surrounding annular wick and air passages, the removable burner and wick carrier adapted to be screwed upon the reservoir, and having corresponding central air-tube and surrounding annular wick and air passages, as set forth.

295,480. SEEDING-MACHINE. GEO. S. BRIGGS, Rockford, Ill. Filed Nov. 12, 1883. (No model.)

Claim.—1. The combination, in a seed-planting machine, of a sprocket-wheel cone made adjustable on the shaft of the supporting-wheels, a sprocket-wheel fixed on the seed-wheel shaft, a sheave-supporting bracket adjustably secured to a cross-bar of the machine and carrying adjustable idle-sheaves, and a chain-belt connecting the sprocket-wheel of the seed-shaft with one of the cone-wheels and passing around said idle-sheaves, substantially as set forth.

295,480.

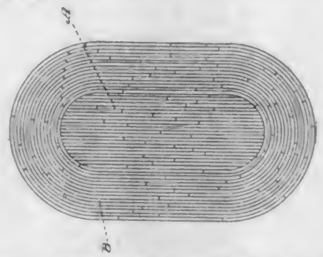


2. The combination, with a chain-belt to connect the sprocket-wheels, of adjustable idle-sheaves supported by a bracket extending both above and below the cross-bar to which it is secured, substantially as set forth.

3. The combination, with the sheave-supporting bracket N, fixed to one of the cross-bars of the frame and extending both above and below the latter, of the bracket P, adjustably secured to the bracket N, to afford a vertical adjustment for the sheave, substantially as set forth.

295,481. FLOOR. CHAS R. BROTHWELL, Bridgeport, Conn., assignor to Phineas Taylor Barnum, same place. Filed Feb. 4, 1884. (No model.)

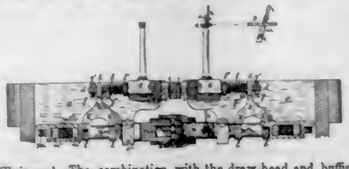
Brief.—A central section or core having strips of flooring arranged around it, so that the grain of the strips has the same general direction as the perimeter of said core, each strip being secured to the next preceding and to the floor beneath, thus forming an outer track, the grain of the strip of which being in the course most commonly traveled by the skater or rider.



Claim.—1. A floor composed of a central section or core having arranged around the same strips of flooring, each strip adapted to the contour of the outer edge of the next inside strip and securely fastened thereto and to the floor beneath, substantially as set forth.

2. In a floor, the combination of a central section composed of boards laid longitudinally and parallel with independent strips of flooring bent and secured around said central section in succeeding bands, substantially as described.

295,482. COMBINED CAR COUPLER AND BUFFER. CLINTON BROWNING, Shoustown, assignor to James H. Lindsay, Trustee, Allegheny City, Pa. Filed Jan. 3, 1884. (No model.)



Claim.—1. The combination, with the draw-head and buffing apparatus supported independently above the same, and having the resistance-plate *h*, supported in the stop-brackets *g*, of the standard or frame *k*, carrying said resistance-plate, and extending down therefrom, and so connected with the neck of the draw-head as to permit the draw-head to slide back independently in buffing, but to be drawn forward with the draw-head on draft-strain, substantially as and for the purposes set forth.

2. The combination, with the draw-head and buffing apparatus supported independently above the same, and having the resistance-plate *h*, of the standard or frame *k*, carrying said resistance-plate, and extending down therefrom, and provided with the rings *l l'*, fitting around the neck of the draw-head, the key *u*, passing through the said neck, and stop-brackets *g*, substantially as and for the purposes set forth.

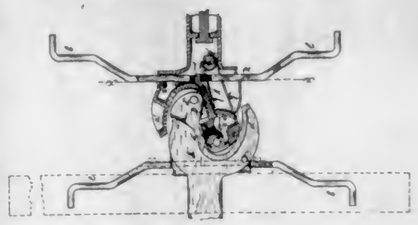
3. In combination with the buffer-platform *c*, pivoted to the buffer-bar *d*, and spring *f*, the stop-brackets *g*, and the standard or frame *k*, carrying the resistance-plate *h*, and connected to the draw-head by a sliding connection, substantially as and for the purposes set forth.

4. In combination with the draw-head having the jaws *a a'*, and the interlocking lever *b*, journaled in the entering jaw *a*, the bent or coiled spring *p*, confined in said entering jaw and pressing against said lever, substantially as and for the purposes set forth.

5. The combination of the railing *t*, having the slot *t'* and shouldered space *t²*, with the operating-lever *s* and pivoted block *u*, substantially as and for purposes set forth.

6. The combination of a bifurcated draw-head, interlocking lever journaled therein, having the arms *b'*, operating-lever *s*, and connecting-bar *b²*, having the slot *c*, substantially as and for the purposes set forth.

295,483. CAR-COUPLING. CLINTON BROWNING, Shoustown, assignor to James H. Lindsay, Trustee, Allegheny City, Pa. Filed Jan. 3, 1884. (No model.)



Claim.—1. The bifurcated draw-head having the entering jaw provided with an opening for a coupling-link, and a coupling-pin hole in the nose thereof, in combination with an interlocking lever journaled in said jaw back of said coupling-pin hole, and independent thereof, substantially as and for the purposes set forth.

2. The bifurcated draw-head having the entering jaw provided with the opening *d*, and recess *e*, having the journaling-face *c'*, and ridge *c²*, extending across said recess, in combination with the interlocking lever journaled in said recess across said face *c'*, and having grooves *b'* fitting over said ribs, substantially as and for the purposes set forth.

3. The bifurcated draw-head having the entering jaw *a*, provided with the opening *d*, and the journaling-recess *c*, having the curved faces *c'*, in combination with the interlocking lever journaled in said recess, and having the opening *d'* and shoulders *e*, substantially as and for the purposes set forth.

4. The combination of the bifurcated draw-head, the interlocking lever journaled in the entering jaw, and having the operating-arm *b*, and the spring *g*, having one or more coils, *g'*, and secured within the draw-head and pressing against said arm *b*, substantially as and for the purposes set forth.

5. The combination of the bifurcated draw-head provided with teats or lugs *h* in the back thereof, the interlocking lever journaled in the entering jaw thereof, and provided with the operating-arm *b*, and the spring *g*, having the coils *g'*, fitting over said teats and extending back of said operating-arm, substantially as and for the purposes set forth.

6. In combination with a bifurcated draw-head and an interlocking lever journaled therein, and operating-bar supported in or on said draw-head and extending out on each side thereof, and connected with said interlocking lever, substantially as and for the purposes set forth.

7. In combination with the bifurcated draw-head and an interlocking lever journaled therein, a sliding bar passing transversely through said draw-head and extending out on either side thereof, and connected with said interlocking lever, substantially as and for the purposes set forth.

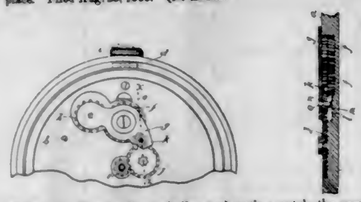
8. In combination with the bifurcated draw-head and interlocking lever journaled therein, and having the arm *b*, the sliding bar *k*, extending transversely through said draw-head, and having the slot *m*, in which said arm *b* fits, substantially as and for the purposes set forth.

9. In combination with the bifurcated draw-head and interlocking lever journaled therein, the sliding bar *k*, extending transversely through the draw-head and connected with the lever, and provided with suitable stop apparatus engaging with the draw-head to hold the lever in its uncoupled position, substantially as and for the purposes set forth.

10. In combination with the bifurcated draw-head having the shoulder *q* thereon, and the interlocking lever journaled therein, the spring *g*, and sliding bar extending through the draw-head and connected to the lever, and having the shoulder *r* on the upper edge thereof, substantially as and for the purposes set forth.

11. In combination with the bifurcated draw-head and interlocking lever journaled therein, and having the arm *b*, the sliding bar *k*, extending through the draw-head, and having the slot *m* and lug *l*, and the pin *l'*, substantially as and for the purposes set forth.

295,484. STEM WINDING AND SETTING WATCH. DUANE H. CHURCH, Waltham, Mass., assignor to the American Watch Company, same place. Filed Aug. 23, 1883. (No model.)



Claim.—1. In a pendant winding and setting watch, the combination, with the hand-setting wheels *i j* and crown-wheel *f*, rotated by the winding-arbor, of the intermediate winding-wheel adapted to move on a fixed stud or arbor in a direction at right angles with the plane of its rotation, into and out of engagement with its co-operating wheels, a spring adapted to move the intermediate wheel outwardly into engagement with said co-operating wheels, and the yoke bearing upon the intermediate wheel and adapted to control the position thereof, as set forth.

2. In a pendant winding and setting watch, the combination, with the hand-setting wheels *i j* and the crown-wheel *f*, rotated by the key-pipe, of the intermediate hand-setting wheel, *k*, adapted to move on its supporting pin or arbor in a direction at right angles with the plane of its rotation, the winding-wheel carrying yoke *g*, pivoted on the crown-wheel, and a spring which presses the hand-setting wheel *k* outwardly against the yoke, said yoke and wheel being provided, respectively, with an orifice and a projection, whereby when the yoke is in its hand-setting position the spring is allowed to force the wheel *k* outwardly into engagement with the crown-wheel and minute-wheel, and when the yoke is in its winding position the wheel *k* is forced inwardly out of engagement with said crown and minute wheels, as set forth.

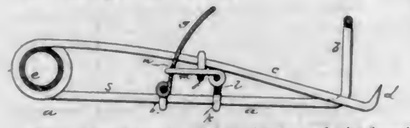
295,485. MAINSPRING FOR WATCHES. DUANE H. CHURCH, Waltham, Mass., assignor to the American Watch Company, same place. Filed Aug. 29, 1883. (No model.)



Claim.—1. The process herein described of forming ears on mainsprings, the same consisting in splitting the end of the spring, bending outwardly the parts of the split end, and trimming said outwardly-bent parts to form ears, as set forth.

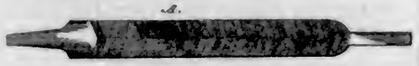
2. A mainspring having laterally-projecting ears *c c* integral with the body of the spring, as set forth.

295,486. ANIMAL-TRAP. WILLIAM L. B. COSHING and AMBROSE D VEST, San José; said Vest assignor to Thomas A. Vest, North San Juan, Cal. Filed Aug. 11, 1883. (No model.)



Claim.—The combination, with the spring-frame *a*, having the arch *b* at its front, and its arms *c c*, coiled around and secured to the tube *e*, extended forward from the coil, provided with the enlargement *i*, connected in front of the enlargement by the downwardly-curved cross-bar *f*, and provided at the points with the teeth *d d*, of the hinged and perforated trip-plate *g*, and the set-rod *m*, constructed and adapted to operate substantially as specified.

295,487. FILE. GEORGE COSTER, Whitney, Tex. Filed Nov. 2, 1883. (No model.)

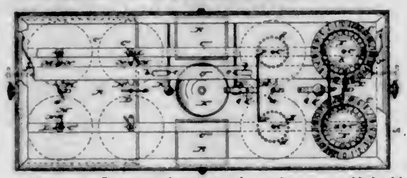


Claim.—1. A file provided with longitudinal teeth upon one or both of its edges, as described.

2. A file having the teeth upon its sides so cut that they extend only half-way across the width of the file, the inner ends of the said teeth meeting at an angle at the center of the width of the blade, as and for the purpose shown and set forth.

3. A file provided with longitudinal teeth upon one or both of its edges, and having the teeth upon its sides so cut that they extend only half-way across the width of the file, the inner ends of the said teeth meeting at an angle at the center of the width of the blade, constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

295,488. GAME BOARD AND COUNTER. TIBERIAS DOUGHERTY, Philadelphia, Pa. Filed Aug. 16, 1883. (No model.)



Claim.—1. In a game board or casing, a drawer provided with a tilting table or plate, and means for moving said plate operated by the opening of the drawer, whereby cards in the drawer may be produced, substantially as and for the purpose set forth.

2. A game-board casing or frame having a false bottom, forming a way for a chess or checker board, substantially as and for the purpose set forth.

3. A drawer in combination with a tilting table or plate, a pivoted arm with a loop and a slotted standard connected with said drawer, and a pivoted arm with a stud connected with the stationary part of the casing, substantially as and for the purpose set forth.

4. In a game-board, a connected casing having coincident register-wheels in pairs, the sides of said casing having openings, each exposing the numbers of one wheel of each pair, all arranged substantially as described, whereby the counts of opposite players may be seen on one side of the casing.

5. Register-wheels with spur or gear wheels F, and the pawl or tooth E, engaging with both wheels F, and the operating-shaft D, combined and operating substantially as and for the purpose set forth.

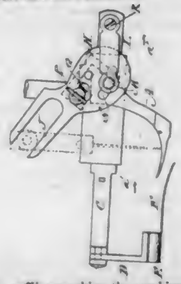
6. In a game-counter, register-wheels, in combination with the slotted slide J, the nose H thereon, the rotary tooth G, the pins *c*, bell-hammer arms K, and the bell, substantially as and for the purpose set forth.

7. The bell and bell-hammer arms, in combination with the slide J, with slots *b b*, and noses H and the springs J' at opposite ends, substantially as and for the purpose set forth.

8. In a game-counter, register-wheels having a winding-spring, I, and tooth M, the stop N, the wheels F, the locking-tooth P, and operating-rod Q', combined and operating substantially as and for the purpose set forth.

295,489. RUFFLING AND SHIRRING ATTACHMENT FOR SEWING-MACHINES. WILLIAM DUDLEY, Newark, N. J. Filed May 3, 1883. (No model.)

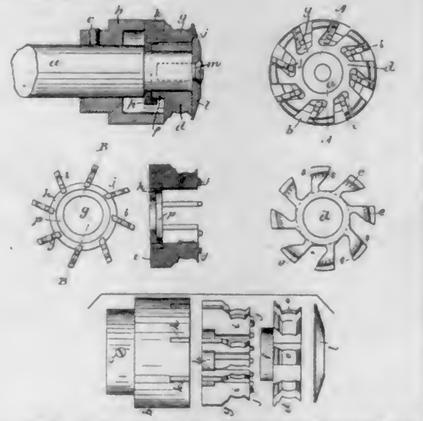
Brief.—The throw of the ruffler-blade may be increased or diminished by adjustment of an angular plate over a slot in the rock-arm. The vertical arm carrying the ruffler-blade is secured to its carrier by means of an open-ended slot and a set-screw.



Claim.—1. In a ruffling-machine, the combination, with the frame B, of the sliding bar C, the arm D, provided with a slot, D², the screw D', the ruffling-blade F, and device for reciprocating the bar C, substantially as herein shown and described, and for the purpose set forth.

2. In a ruffling attachment to a sewing-machine, the combination, with the grooved frame B, horizontally-reciprocating bar C, sliding in said frame, and provided with a pintle, K, to the outer end of which the bar L, provided with a pintle, M, is pivoted, slotted arm D, screw D', and ruffling-blade F, of the rocking plate H, forked at J, to surround a pintle on the needle-bar, and provided with the slots N Q and adjustable plate O, substantially as shown and described.

295,490. ROTARY CUTTER. JOHN B. EMERY, Lynn, Mass. Filed Jan. 14, 1884. (No model.)



Claim.—1. In combination with a rotary cutter formed with outwardly-projecting teeth, a guard formed with a ring and a series of wings radiating therefrom, and arranged to enter the spaces between the teeth of the cutter and to be adjusted in their relative distance from the front and rear faces of said teeth, substantially as specified.

2. In combination with rotary cutter *d*, having teeth *e*, guard *g*, formed with ring *h*, and wings *i*, formed upon or secured thereto, and arranged to enter between teeth *e* of the cutter, with means whereby the relative distance between said wings and the rear and front faces of said teeth may be adjusted, substantially as specified.

3. In combination, collar *b*, having radial slots *k*, cutter *d*, having the outwardly-projecting teeth *e*, a guard having ring *h*, and wings *i*, radiating and extending therefrom, and adapted to enter the spaces between teeth *e* of the cutter, and to be adjusted in relation to the front and rear faces thereof, all substantially as specified.

4. A rotary cutter-guard, *g*, formed with a centering-ring, *h*, adapted to receive the cutter-arbor *a*, and with a series of radial guard-wings, *i*, formed upon or secured thereto, and having their outer lines or faces molded or outlined to conform to and co-operate with the teeth of cutter *d*, to gage and govern the depth of cut of the teeth *e* thereof, substantially as specified.

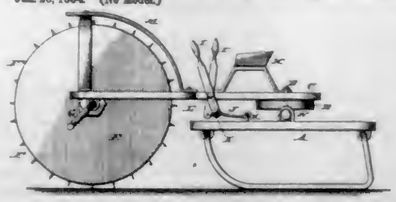
5. In combination with cutter *d* and rand-disk *l*, the guard formed with wings *i*, supported by ring *h*, and with studs *j*, arranged to enter corresponding holes, *n*, in said disk, substantially as specified.

6. In combination, slotted collar *b*, formed with an annular chamber, and having slots *k* formed in its front portion, guard *g*, formed with ring *h*, to enter the chamber in said collar, and having radial wings *i*, cutter *d*, formed with teeth *e*, with space to receive said wings *i* of the guard, and for adjustment thereof, and having sleeve-like extension *f*, adapted to enter the annular recess in ring *h* of the guard, rand-disk *l*, formed to interlock with studs *j*, and means for locking said cutter in position, all substantially as specified.

7. In combination with collar *b*, cutter *d*, and disk *l*, the guard-wings *i*, arranged between the teeth *e* of said cutter, and interlocked in said collar and disk, substantially as specified.

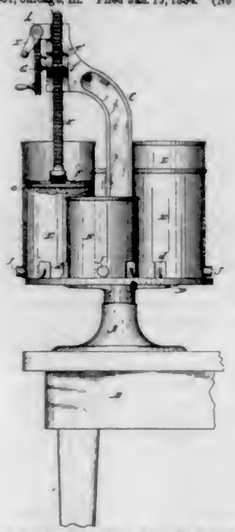
8. In combination with collar *b*, rand-disk *l*, and guard-wings *i*, interlocked in said collar and disk, the cutter *d*, arranged to receive said wings *i* between its teeth, and to be adjusted relatively thereto, substantially as specified.

295,491. ICE-VELOCIPEDE. ELLIOTT H. FUNK, Sturgis, Mich. Filed Jan. 26, 1884. (No model.)



Claim.—The chisel-point-spurred wheel E, levers I I, the iron rods J J, with their connections to staples K K, and oscillating turn-table B, in combination with sled A, as hereinabove set forth.

295,492. STAND AND PRESS FOR PAINT AND OTHER CANS. FRANK R. GROUT, Chicago, Ill. Filed Jan. 19, 1884. (No model.)



Claim.—1. A stand and press for paint and other cans, consisting of the standard C, removably secured to a suitable base, a revolving table adapted to hold the cans in positions respectively concentric with said standard, a plunger and piston for expelling the contents of the can, with the cogged crank-wheel G, worm-gear *h'*, and crank I, substantially as and for the purposes set forth.

2. In a press and stand for paint and other cans, the combination of the standard C with a suitable base, the rotary table D, plunger F F', wheel G, shaft H, and worm A', all constructed and operating substantially in the manner and for the purposes set forth.

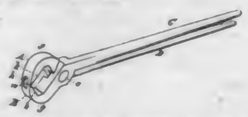
3. In a press and stand for paint and other cans, the combination of the standard C with a suitable base, the rotary table D, plunger F F', wheel G, shaft H, worm *h'*, and spring-brake *h*³, all constructed and operating substantially in the manner and for the purposes set forth.

295,493. DRIVING-CALK. GEORGE H. HATHORN, Chester, Me. Filed Jan. 3, 1884. (No model.)



Claim.—The improved driving-calk herein described, provided with the point *a*, angular in cross-section, the shoulder *b*, for resting on the boot-bottom, the round shoulder *c*, entering the leather of said bottom, and the bulging portion *c*, having an angular cross-section, substantially as herein set forth and shown.

295,494. STAPLE-EXTRACTOR. BENJAMIN HUBBELL, Afton, Iowa. Filed Feb. 4, 1884. (No model.)



Claim.—The staple-extractor consisting of a pair of lever-jaws pivoted together, and having laterally-projecting rounded fulcrum surfaces *g*, interior inclined surfaces commencing at the meeting edges of the jaws and forming with said rounded surfaces wedge-like ends *k*, and the central staple-receiving notches, *n*, made in the terminal ends of the jaws, substantially as specified.

295,495. NOISE-DEADENER FOR MILK AND OTHER CANS. JOHN H. IRWIN, Burlington, N. J., and THEODORE P. APPLE, West Chester, Pa. Filed Mar. 26, 1883. (No model.)



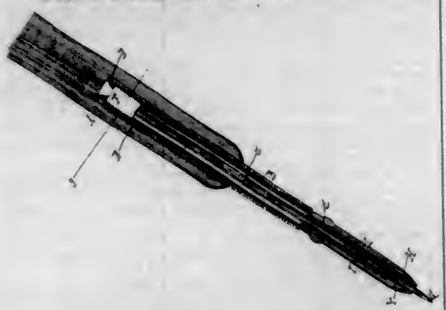
Claim.—A can-handle having a tapering opening, *a*, in combination with the rubber plug B, of tapering form, said opening *a* extending entirely through the handle and exposing the narrow end of said plug, substantially as and for the purpose set forth.

295,496. HAME-FASTENER. BENJAMIN F. JONES, Beauregard, Miss. Filed Aug. 15, 1883. (No model.)



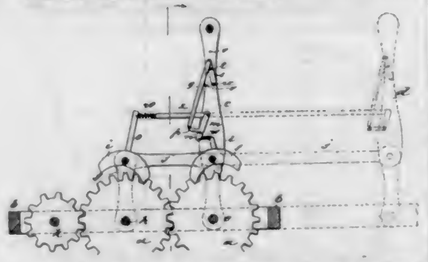
Claim.—In a hame-fastener, the combination of the bar A, having slots *a* and bifurcated end hook, B, the lever C, having a rear hook pivoted between the bifurcations of hook B, the bar D, having hook *c* and mortise *d*, and the bar E, having toggle *e* and hook *f*, substantially as shown and described.

295,497. LEAD AND CRAYON HOLDER. JOHN H. KNAPP, New York, N. Y. Filed May 17, 1883. (No model.)



Claim.—The combination, in a lead or crayon holder, of a handle provided with a screw, B, a slotted tube, C, having its inner end constructed with a laterally-projecting shoulder, D, swiveled upon the inner end of the screw, and the follower E, having a screw-head, F, projecting through the slotted tube, substantially as described.

295,498. LEVER-POWER MECHANISM. FREDERICK KUBEL, Riverside, Iowa. Filed Jan. 22, 1884. (No model.)



Claim.—1. In a lever-power consisting of two wheels, *a*, with a working-lever and ratchet-pawls, arranged as described, the pawls *f* and *i*, connected, respectively, to the arms of a rock-lever, *m*, and said lever *m* connected to a working-lever, *s*, substantially as specified.

2. In a lever-power consisting of two wheels, *a*, with a working lever and ratchet-pawls, arranged as described, the pawls *f* and *i*, connected, respectively, to the arms of a rock-lever, *m*, by rigid arms *l o* and springs *w*, and said rock-lever *m* connected to a working-lever, *s*, substantially as specified.

3. In a lever-power consisting of two wheels, *a*, with a working-lever, *c*, and ratchet-pawls, arranged as described, the pawls *f* and *i*, connected, respectively, to the arms of a rock-lever, *m*, pivoted on said lever *c*, and said rock-lever connected to a working-lever, *s*, also pivoted on the lever *c*, substantially as specified.

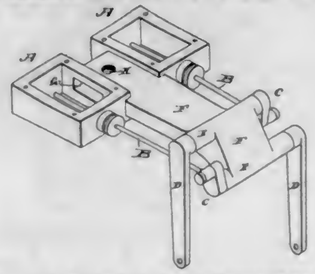
295,499. VENTILATING APPARATUS. WILLIAM LORD, Middlesbrough, County of York, England. Filed July 16, 1883. (No model.) Patented in England Mar. 23, 1883, No. 1,567.

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Claim.—A ventilator or chimney-top consisting of two or more rings or cylinders, the upper ones being of larger diameter than the lower ones and slightly overlapping the latter, which have inclined blades on the outside, substantially as described.

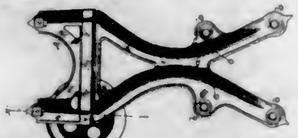
295,500. VALVE ARRANGEMENT FOR DUPLEX PUMPING-ENGINES. JAMES R. MAXWELL, Cincinnati, assignor to the Gordon & Maxwell Company, Hamilton, Ohio. Filed Sept. 15, 1883. (No model.)



Claim.—1. In the valve arrangement of duplex pumping-engines, the combination of a steam-chest, two rock-shaft bearings, and a bracket, F, joining said bearings to said steam-chest, substantially as and for the purpose specified.

2. In the valve arrangement of duplex pumping-engines, the combination of two steam-chests, a pair of rock-shaft bearings, and the bracket F, joining said bearings with said steam-chests, and extending between them to form a portway from chest to chest, substantially as and for the purpose specified.

295,501. DOOR-HANGER. EDWARD Y. MOORE, Chicago, Ill. Filed Jan. 26, 1884. (No model.)



Claim.—The combination of a wheel or roller provided with an axle and a door-hanger frame, having a short back plate and a long front plate, united by bolts and caps, and provided on the coincident sides of said plates with horizontal grooves or recesses for the axle of the wheel or roller, substantially as described.

295,502. GAS-FURNACE. JOHN T. MORGAN, Selma, Ala., and HENRY F. HAYDEN, Washington, D. C. Filed June 4, 1883. (No model.)

Claim.—1. The combination, with a reducing or smelting chamber having a central mound for the reception of the material to be treated, of one or more fires arranged to deliver tangentially into the reducing-chamber, substantially as and for the purposes specified.

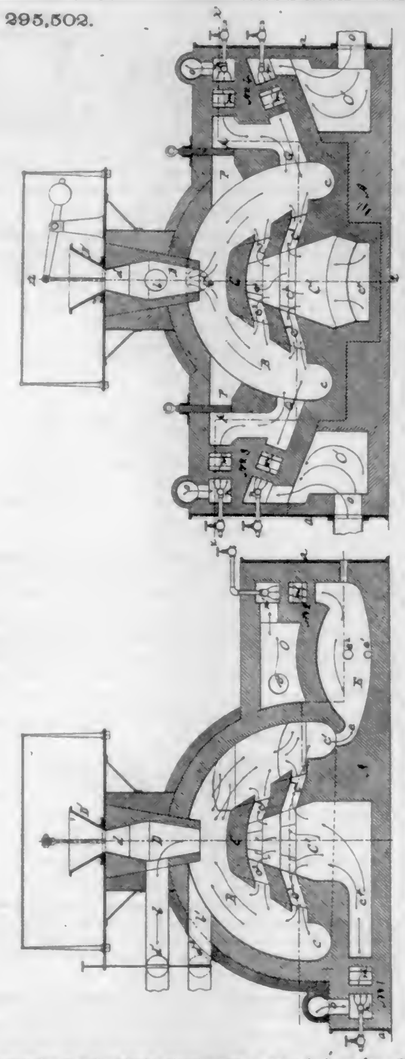
2. The combination, with a reducing-chamber having one or more fire-chambers delivering into the same, of a hollow perforated central mound for the reception of the material to be treated, substantially as and for the purposes specified.

3. The combination, with a reducing-chamber having a centrally-arranged hollow perforated mound, of a fire-chamber which delivers into the central fine of the perforated mound, and one or more fires, arranged to deliver tangentially into the reducing-chamber, substantially as and for the purposes specified.

4. In a reducing and refining furnace, the combination of a reducing-chamber having a central mound, an inclined metal channel surrounding the same, and its own fire-chamber or fire-chambers, delivering into the reducing-chamber, and a refining-chamber which connects with the inclined metal channel of the reducing-chamber, and is provided with its independent fire-chamber, so as to receive the molten metal therefrom, substantially as and for the purpose specified.

5. The combination, with a reducing-chamber having a central ore-mound, of one or more double fire-chambers arranged tangentially to and

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connecting with the reducing-chamber by an upper and a lower flue, substantially as and for the purposes specified.

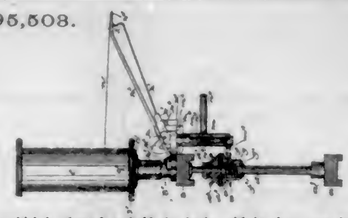
6. A reducing-chamber provided with a central ore-mound having a hollow central and curved discharge-flues, substantially as and for the purposes specified.

7. In an ore reducing and refining furnace, the combination of a reducing and smelting chamber having a central ore-mound and a series of fires arranged to deliver tangentially thereinto, with a refining hearth or chamber, which communicates with and receives the molten metal from the reducing and smelting chamber, substantially as and for the purposes specified.

295,503. STOP-MOTION DEVICE FOR SPOOLING-MACHINES. JAMES H. NORTHROP, Hopedale, Mass., assignor of one-half to the Hopedale Machine Company, same place. Filed May 19, 1883. (Model.)

Claim.—1. A spooler-spindle, a loose whirl thereon adapted to be driven continuously by a band, an opposed clutch, *c*, provided with a groove, *c'*, and a spring to force the clutch and whirl together, a drop-lever, and the oscillating brake provided with a shoe, m^2, and with a projection, 4, and a spring to move the brake, combined with a latch-

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lever which is adapted to hold the brake with its shoe away from the clutch, and to be acted upon by a drop-lever after the breaking of a thread to turn the latch-lever and release the brake, substantially as described.

2. The spooler-spindle, its loose whirl, the clutch and spring to press it into engagement with the said whirl, the drop-wires, and latch-lever, combined with the oscillating brake provided with an arm to act upon the latch-lever and move it to lift the drop-lever after the breakage of a thread, as described, and with a spring to move the brake whenever the latter is released from the latch-lever by the falling of a drop-lever, substantially as and for the purpose set forth.

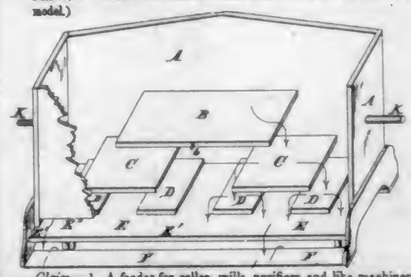
3. The spooler-spindle, its loose band-receiving whirl, grooved clutch connected with the spindle, a drop-lever, and a latch actuated by the drop-lever after the breaking of a thread, combined with an oscillating brake interposed between the said latch-lever and clutch, one part of the said brake being adapted to engage the said clutch, another part of the said brake being adapted to be engaged and held by the said latch, substantially as described.

4. The spindle *d*, its collar or shoulder, the loose whirl, and clutch, the brake provided with a shoe, and a projection, 4, means to move the brake and drop levers or wires, and a rest or support for the threads, combined with a latch-lever, one end of which engages and holds the brake with its shoe away from the clutch, while the other end of the said lever is adapted to be struck and moved at the descent of a drop-lever, substantially as described.

5. The thread rest or support, the drop levers or wires, the brake m^2, provided with the arm m^2 and shoe, and the latch-lever provided with the finger k^4, combined with the clutch, the spindle upon which it is secured, and the loose whirl, and means to hold the same in opposition to the pressure of the clutch against it, substantially as described.

6. The thread rest or support, the drop levers or wires, the brake m^2, provided with the shoe and the arm, having an incline, 3, and projection 4, and handle combined with the pivoted latch-lever adapted to be operated by the drop-levers, substantially as and for the purpose described.

295,504. FEEDING MECHANISM FOR ROLLER-MILLS, PURIFIERS, &c. HENRY CLAY POTTS, Lancaster, Ky. Filed Dec. 18, 1883. (No model.)



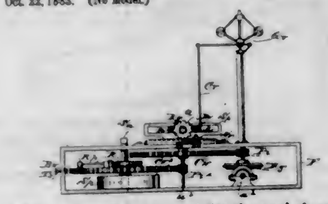
Claim.—1. A feeder for roller-mills, purifiers, and like machinery, comprising a feed-box or hopper and a series of steps constructed and arranged to pass the material to be fed over the first or upper step in two equally-divided streams or sheets, each of which is in turn received upon the next step and equally divided into two other sheets or streams, and so on, for the purpose of distributing the material evenly over an extended surface and supplying a constant and regular feed.

2. In a shake-feed, a series of steps, B C D, for evenly distributing the grain, in combination with the floor E and a feed-box or hopper having discharge-apertures E'', substantially as set forth.

3. In a shake-feed for roller-mills, the series of steps B C D, &c., floor E, and a feed-box or hopper, A, having apertures E'', in combination with the steps F, at right angles to the others, as and for the purpose described.

4. In a roller-mill or purifier-feed, the combination, with the feed-box or hopper, of a series of substantially-horizontal division-plates, arranged substantially as described, whereby the inflowing stream of grain or middlings is divided and subdivided as often as desired, in order to discharge it in one or more thin, even, and continuous sheets.

295,505. SPRING-MOTOR. JESSE B. POSH, Indianapolis, Ind., assignor of one-half to E. A. Nichols and A. S. Visiria, both of same place. Filed Oct. 22, 1883. (No model.)



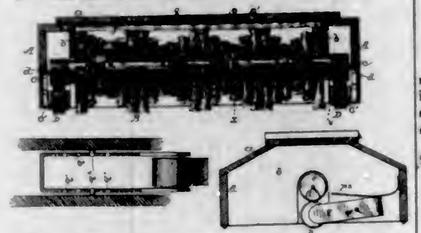
Claim.—1. In a device for regulating the speed of spring-motors, the escapement E_W, working on pallet P, mounted on shaft *a*, working in annular slot A_S of spring-plate Sp, said shaft being provided with rubber cog-wheel R_g to work in segmental rack-bar Sr, substantially in the manner and for the purpose set forth.

2. In a device for regulating the speed of spring-motors, the set-screw Sc to move the guide-block Gb in collar C, in combination with the escapement E_W, pallet P, and shaft *a*, substantially in the manner and for the purpose set forth.

3. In a device for regulating the speed of spring-motors, the inclined spring-plate Sp, with annular slot A_S, T-shaped sliding block *ap*, and adjusting-screw *as* for clamping the shaft *a*, substantially for the purpose set forth.

4. In a device for regulating the speed of spring-motors, the rubber cog-wheel B_W, mounted on spring Sp', supplied with thumb-screw Ts, in combination with cog-wheel C_W^3, substantially in the manner and for the purpose set forth.

295,506. CARPET-SWEEPER. GEORGE M. ROCKWELL, Woonsocket, R. I. Filed Jan. 17, 1883. (Model.)



Claim.—1. The combination, substantially as hereinbefore described, of carpet-sweeping mechanism and a dampener for moistening the sweeping-brush.

2. The combination, substantially as hereinbefore described, of carpet-sweeping mechanism, a dampener for moistening the sweeping-brush, and a reservoir for water or other fluid, communicating with and supplying the dampener with moisture.

3. The combination, substantially as hereinbefore described, of a suitable casing, a revolving sweeping-brush, and a suitable absorbent fabric located within the casing, and in contact with the periphery of the brush for serving, when moistened, as a dampener, as set forth.

4. The combination, substantially as hereinbefore described, of the revolving brush, the casing having a chamber for a dampener, and a removable plate for closing said chamber adjacent to said brush, as set forth.

5. The combination, with the casing of a carpet-sweeper, of a detachable dust-pan, and a pin-and-slot connection for mounting said pan in the casing, substantially as described, whereby the dust-pan can be readily removed from the sweeper-casing for dumping and as readily replaced, and also whereby the pan is firmly maintained in proper position with relation to the sweeper-brush, as set forth.

6. The combination, with the casing, of a laterally-detachable dust-pan provided with angular recesses, the studs for occupying said recesses and supporting the pan, and the cushion and button for tightly locking the pan in position, substantially as described.

7. The combination, with the casing and the revolving brush, of a friction-wheel beneath the axle of the brush for driving and supporting the same, and a longitudinally-adjustable friction-wheel frame pivoted to the casing, substantially as described, and means whereby said friction-wheel may be adjusted with relation to the axis of the brush and enable the latter to be operated in varied horizontal planes, as set forth.

8. The combination, with a carpet-sweeper casing and a friction-wheel, of a laterally-flexible tilting frame provided with pivots on which it tilts, and also with bearing-pivots for said wheel, substantially as described, whereby on expanding the outer end of said frame the friction-wheel may be removed, and on then contracting said outer end said frame may be detached from the casing, as set forth.

9. The combination, in a carpet-sweeper, of the revolving brush, a friction driving-wheel provided with oppositely-located conical center bearings, and a laterally-flexible driving-wheel frame, substantially as described.

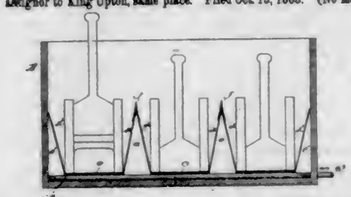
10. The combination, with a carpet-sweeper brush, of a friction driving-wheel provided with rawhide center bearings, and a laterally-flexible frame for said wheel, provided with oppositely-located conical centers or pivots, which occupy the rawhide bearings, substantially as described.

295,507. DOOR-CHECK. JOHN H. EUNYAN, Flint, Mich. Filed Aug. 27, 1883. (Model.)



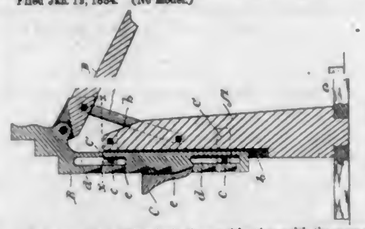
Claim.—In a door-stop, and in combination with the bracket and eccentrically-journaled wheels, constructed substantially as described, the spring-bracket D, substantially as and for the purposes set forth.

295,508. VAT OR KETTLE FOR REDUCING OR TREATING ANIMAL OR VEGETABLE MATTER. THOMAS SWANTON, Peabody, Mass., assignor to King Upton, same place. Filed Oct. 13, 1883. (No model.)



Claim.—In a vat for treating glue-stock or animal or vegetable matter or material, a perforated bottom plate, a perforated partition having an open space between its walls, and perforated ends set to leave spaces *s* between the said perforated ends and the end of the vat-case, substantially as described.

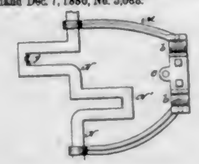
295,509. WAGON-JACK. HENRY C. TORREY, Central Village, Conn. Filed Jan. 19, 1884. (No model.)



Claim.—1. In a lifting-jack, the combination, with the support having the longitudinal front recess and staple-shaped frames, of the vertically-adjustable stepped bar having slots through which the cross-bars of the frames pass, and the lever pivoted to the angle of an upper L-shaped portion of the stepped bar, and connected by parallel links or plates to the support having an upper beveled end, substantially as described, and for the purpose set forth.

2. In a lifting-jack, the combination, with the stepped sliding bar having the T-shaped front surface, of the bracket with its lower end entering the notches of the steps of the sliding bar, and its upper end provided with arms embracing the cross or flange of said T-shaped surface of the bar, substantially as and for the purpose set forth.

295,510. HARVESTER AND BINDER. CHARLES WHITNEY and WILLIAM W. MARSH, Sycamore, Ill. Filed Dec. 13, 1883. (Model.) Patented in England Dec. 7, 1880, No. 5,068.



Claim.—1. The traversing and horizontally-swinging butter S, having its forward end at the inner divider-point and in front of the cutter-bar, whereby the machine is kept clear at that point, substantially as described.

2. The rotating and horizontally-swinging butter S, having its driving-roller S′ located in front of the cutter-bar, and at or near the inner end of the same, whereby the butter and its driving-roller serve as a rotating divider, substantially as specified.

3. The combination of the swinging traveling butter with the carrying or grain platform, the fixed platform and packing-fingers *a*, substantially as set forth.

4. The combination of the compressing-finger *f* with frame *a′*, having the springs *b b″*, shoulders *b‴*, rods *a″ a⁗*, and adjustable nuts *c′ c″ c‴*, all constructed and operating substantially as set forth.

5. The spring-connecting link, constructed substantially as described, and the compressing-finger *f*, in combination with the arms *x′* and *c″*, substantially as and for the purpose specified.

6. The combination, with the shaft *g*, carrying the compressing-finger *f*, of a trip device to automatically size the bundle, a wheel, *q*, and a single link connecting the compressing-finger shaft and the said wheel and provided with a spring or springs for actuating both the finger and the automatic bundle-sizing device, substantially as described.

7. The combination, with the shaft *g*, carrying the compressing-finger *f*, of a trip device for sizing the bundle, a driving-wheel, *q*, and a yielding link connecting the wheel and the compressing-finger shaft, and serving to actuate the latter and also the trip device, substantially as described.

8. The combination of the arm or crank *x*, the arm *x′*, shaft *g*, and compressing-finger *f*, with the adjustable spring-connecting link, whereby the required pressure against the compressing-finger is regulated for disengaging the arm *x* from the pawl *i*, substantially as specified.

9. The combination of pivoted rotating bundle-discharging fingers 27 and 29 with a fixed shield, K′, having slots 42, the inner edges of which serve to fold the fingers inward from the bundle, to strip them from the latter after it has been discharged from the binding-platform, substantially as described.

10. The combination of pivoted rotating bundle-discharging fingers, means whereby they are folded inward from the bundle, to strip them from the latter after it has been discharged from the binding-platform, and overhanging guide-rods for holding the bundle against the fingers and directing it downward toward the ground, substantially as described.

11. The discharging-arm 27, having the heel-extension 33, in combination with the disk 24 and stop 34, substantially as specified.

12. The discharging-arm 29, having the extension and pin 35, in combination with the disk 25, rod 30, the spring 31, and guide 32, substantially as described.

13. The yielding or spring-detaining fingers *f″*, in combination with the compressing-finger and shaft *g*, whereby the grain is kept in position without being compressed at the ends of the bundle, when compressed about the middle for binding, substantially as described.

14. The ejecting-fork *v*, in combination with the link or rod *u*, and the crank *t*, for discharging bundles which may have been held or caught, substantially as described.

15. The tucker-arm and binding-arm, in combination with the tucker-crank 13, and the slot *k′*, whereby the tucker is operated by the binding-arm, and the cord is brought up to the knotter, substantially as described.

16. The combination of the plate K, having the angular raised projection *k* and slot *k″*, with tucking devices operating beneath the plate and under the projection *k*, whereby the bundle is raised and a portion of the strands of cord left clear between the grain and tucking-arm, for the tucking-arm to act upon and carry to the tying device, substantially as described.

17. The combination of the plate K, having the angular projection *k* and slot *k″*, the tucker-arm 5, and tucking-crank 13, arranged to have the tucker-arm operated beneath the plate and directly under the projection and the binder-arm, whereby the bundle is raised and a portion of the strands of the cord left clear between the grain and tucking-arm, for the tucking-arm to act upon and carry to the tying device, substantially as described.

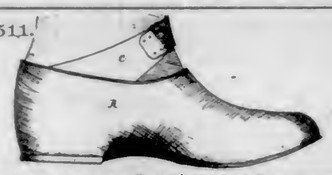
18. The horizontally-moving plate or bar 17, having the cord-guide 18 at its front edge and a cord-cutter, 44, at its back edge, in combination with the knotter 8, substantially as set forth.

19. The combination of the rubber spring 19 and adjusting-screws 20 with the jaw-roller 21, and the cord-holder 10, and knotter-jaw, substantially as specified.

295,511. RUBBER SHOE. DAVID WILKIT, Rock Island, Quebec, Canada. Filed Feb. 26, 1883. (No model.)

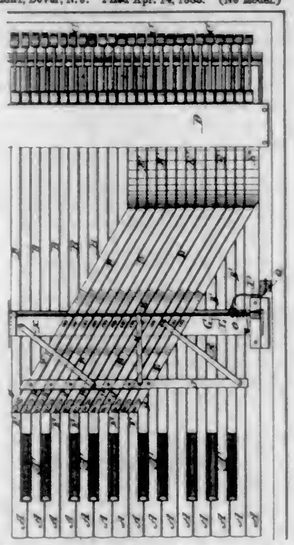
Claim.—As a new article of manufacture, a lumberman's low-quartered rubber shoe, such as herein shown and described, provided with two straps, each having a broad end or base attached to one side of the shoe at or near the top edge thereof, and substantially forward of the location of the wearer's ankle-bone, and tapered and extended forward diagonally from the said broad end or base to its outer end, where it is provided with means for securing it to the forward end of the other strap, the arrangement of

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said straps being such as to cause them, when connected over the wearer's ankle, to draw inward the sides of the shoe and cause them to bear snugly against the wearer's inner foot-covering and form a close joint therewith, and at the same time prevent the shoe from being pulled off, substantially as described.

295,512. HARMONIC COUPLER FOR PIANO-ACTIONS. WILLIAM S. WRIGHT, Dover, N. J. Filed Apr. 14, 1883. (No model.)



Claim.—1. In a piano-action, the combination, with the key-levers, of coupling-levers resting on the same and extending to other key-levers, and of slitted beveled sliding blocks for coupling the coupling-lever with another key-lever, and thus coupling the key-levers to operate together by depressing the key of one of them only, substantially as herein shown and described, and for the purpose set forth.

2. In a piano-action, the combination, with key-levers having their rear ends beveled, of diagonal coupling-levers resting on the said beveled levers, and having their front ends over other levers, and sliding blocks for coupling the front ends of the coupling-levers with the key-levers above which they rest, substantially as herein shown and described, and for the purpose set forth.

3. In a piano-action, the combination, with key-levers, of coupling-levers resting on the same, and having their front ends over other levers, slitted beveled sliding blocks for coupling the front ends of the coupling-levers to the key-levers above which they rest, and devices for adjusting all the coupling-blocks to couple simultaneously, substantially as herein shown and described, and for the purpose set forth.

4. In a piano-action, the combination, with the key-levers B, the coupling-levers resting on them and crossing to other key-levers, which coupling-levers E have slots *d* in the front ends, the sliding blocks H, resting on the coupling-levers and having their front ends provided with slits *g*, and devices for moving all the blocks H forward simultaneously, substantially as herein shown and described, and for the purpose set forth.

5. In a piano-action, the combination, with the key-levers B′, of the coupling-levers E, adapted to operate the hammers, the pins F, the sliding blocks H, having slits *g*, the rail J, the bars K, the rocking shaft L, having an arm, M, and the coupling-bar N, substantially as herein shown and described, and for the purpose set forth.

6. In a piano-action, the combination, with the key-levers B′, of the coupling-levers E, adapted to operate the hammers, the pins F, the slitted blocks H, the rail J, the bars K, the shaft L, having an arm, M, the coupling-bar N, the arm P, the rod Q, and the spring O, substantially as herein shown and described, and for the purpose set forth.

H. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

READ, EXECUTRIX, v. RAYNOR, *et al.*

Decided January 23, 1884.

1. PRACTICE IN COURTS—AMENDMENT TO BILL.

A bill was brought before the patent expired, but it was defective, and an amendment was filed after the patent had expired: *Held* that the amendment made the bill as it should have been at first, and in effect as if it had been so at first, and if a case for equitable relief is shown the bill should be retained for that and such cognate relief as is necessary to do complete justice.

2. REISSUE—CLAIM TOO BROAD.

The original patent showed certain devices to which no function was ascribed, and the position of which with reference to a particular part of the machine was not shown with accuracy. The reissue described such devices as occupying a definite position with reference to said particular part of the machine and as having a specified function: *Held* that a claim in the reissue covering the arrangement described therein embraced an invention different from that shown in the original, was too broad to be added at any time, and was therefore void.

3. REISSUE—LAPSE OF TIME.

The reissue was taken out more than three years after the original, and would seem to be for that reason unseasonable and invalid.

4. REISSUE—PARTIAL INVALIDITY.

Invalidity of one claim does not necessarily render the other claims of the reissue invalid.

5. PROCESS—FUNCTION OR MODE OF OPERATION OF A MACHINE NOT PATENTABLE.

A function or mode of operation of a machine is not patentable apart from the machinery.

6. INFRINGEMENT—EQUIVALENT.

The use by defendants of the combination of the patentee, except that an equivalent element is substituted for one of the elements of the latter's combination, is an infringement.

7. INFRINGEMENT—SILENCE NOT ESTOPPEL UNDER THE CIRCUMSTANCES.

Where it does not appear that the patentee led the defendants into any expenditure or course of conduct by his silence when he ought to have spoken which they would not have made or followed if he had spoken, an infringement will not be avoided.

8. PARTICULAR PATENTS.

Reissue Letters Patent No. 2,529, granted March 26, 1867, valid in part and invalid in part.

Mr. Arthur v. Briesen for the complainant.

Mr. Stephen D. Law and *Mr. John Van Santvoord* for the defendants.

WHEELER, *J.*:

The testator of the oratrix was the owner of Reissue Letters Patent No. 2,529, granted March 26, 1867, upon the surrender of original Letters Patent No. 39,702, granted to him August 25, 1863, for improvements in envelope-machines, which would expire August 25, 1880. The bill was brought June 12, 1880, upon the original patent, without referring to the reissue, to restrain the use of machines alleged to be infringements, and for an account. No motion was made for a preliminary injunction. An answer was filed setting forth the reissue August 19, 1880. The oratrix moved to amend the bill, and September 22, 1880, it was by stipulation amended to cover the reissue in place of the original. The defendants now move, on the authority of *Root* v. *Railway*, (105 U. S., 189,) that the bill be dismissed for want of jurisdiction in equity, because the patent had expired before the amended bill was filed upon which only the oratrix could have any equitable relief. (*Dowell* v. *Mitchell*, 105 U. S., 430.)

The infringement is solely by the use of machines made before the bill was brought and continued ever since, and would be covered by the general allegation of infringement, made in both the original and amended bills, if filed during the term of the patent; but the continued use after the expiration of the term would not be so covered by that general allegation in a bill filed after the expiration. Special allegations setting forth that the machines were infringements when made would be necessary. (*Root* v. *Railway*, 105 U. S., 189; *American Diamond Rock Boring Co.* v. *Rutland Marble Co.*, 2 Fed. Rep., 355.)

It is urged for the oratrix that the amended bill is to be considered for this purpose as if the original had been as it is amended when filed, and for the defendants that it is to be considered as if it had been filed as an original bill when it was filed. The oratrix had the reissue when she brought her original bill, and must have intended to bring her bill upon the patent which she had, and not upon one which she did not have. Under these circumstances it would have been competent for the court to allow the amendment. That which could be done by the court without consent could well be done by the parties by consent. When done it made the bill as it should have been at first, and in effect as if it had been so at first. Such amendment only was necessary as would make the bill what it should have been to be good when brought, not what would have been necessary to make it what it would have to be to be good at some other time. If the oratrix has shown a case for any equitable relief she is upon all the decided cases entitled to have the bill retained for that and such cognate relief as is necessary to do complete justice. (*Dowell* v. *Mitchell*, 105 U. S., 430.)

The defendants set up that the reissue is too broad for the original. The original showed and described two arms extending from a table in the interior of the machine, under which the envelope-blank is made to pass on its way to a creasing-box in the rear, one on each side of the box, to or nearly to a line with the rear side of the box. No use of these arms was stated. In the reissue these arms are described as applied in

such position that they extend parallel to the edges of the creasing-box with their lower edges level with or rather below the top edge of the box, so as to bear down on the ends of the blanks and hold them in position on the box to be creased, and as secured to the table or any other fixed part of the machine. No other reference to the table in connection with them is made. No claim was made in the original in respect to them. They are the subject of the new fourth claim. The original showed these arms only as extensions from the table. Their height in respect to the creasing-box was not shown with accuracy otherwise than by reference to the table. As no function was ascribed to them, their position could not be inferred from what they were to do. When they were described as in a certain position with reference to the creasing-box instead of the table, and as attachable to some other part of the machine when they would not be extensions of the table, and an office was ascribed to them, an invention different from that in the original was shown. This claim was too broad to be added at any time, and therefore void. (*Gill* v. *Wells*, 22 Wall., 1; *Russell* v. *Dodge*, 93 U. S., 460.) Besides, the reissue was taken out more than three years after the original, and would seem to be for that reason unseasonable and invalid. (*Miller* v. *Bridgeport Brass Co.*, 104 U. S., 350.) That this claim is invalid does not necessarily render the other claims of the original reproduced in the reissue invalid. (*Schillinger* v. *Greenway Co.*, 24 O. G., 495; *Gage* v. *Herring*, 107 U. S., 640.) In the first claim in both what is called a "slide" in the original is called a "carrier" in the reissue. The description of it or of its opration is not changed. The claim is in substance thee same in both. Only the first, second, fifth, seventh, tenth, and twelfth claims, besides the fourth claim of the reissue, are said to be infringed. The fifth claim is merely for feeding the blanks under the table which supports the gum-box instead of over it. The machinery described, some of which is the subject of other claims, does feed the blanks under that table. The claim is merely for that function or mode of operation of that machinery. As such this function or mode of operation does not seem to be patentable apart from the machinery. (*McKay* v. *Jackman*, 20 Blatchf., 466; XII. Fed. Rep., 615.) Want of novelty of the other claims is alleged and infringement of them is denied.

Envelope-machines were in use before this invention. This inventor was entitled to and claimed a patent only for his improvements. Slides or platforms to hold envelope blanks, lifters, or pickers to receive gum on their faces and take it to the proper place on the blank, and by its adhesiveness to lift them so they could be taken by carriers or conveyers, carriers or conveyers to take them to creasing-box, creasing-boxes to crease them, and folding apparatus to fold them were all then known. The seventh claim is for a balance-weight connected with this form of conveyer, and the twelfth for rib on the face of the plunger which works in the creasing-box and presses the envelopes after they are folded. The defendants are not found to make use of either of these devices or what is the equivalent of either in the working of this invention.

In this invention the lifters or pickers, after receiving gum on their faces, fall by their own weight upon a pack of blanks on a movable slide, which receives the pack and carries it to and holds it in the proper place, and lift the upper blank until it is disengaged by the table supporting the gum-box and taken by the conveyer under the table and steadied by it to the creasing-box. This combination of the movable slide and falling lifters and arrangement of the table and conveyer form the subjects of the first and second claims. Also a cam and roller connected with the plunger bring its face to a pressure upon the envelope to stick its folds firmly after it has been folded. This cam and roller, in combination with the plunger, are the subjects of the tenth claim. Careful and repeated examinations of the machines and patents put in evidence to show anticipations and want of novelty have failed to discover such combinations and arrangements as these covered by these three claims. The falling lifters, the arrangement of the table over the conveyer to steady the blank, and the combination of the cam and roller with the plunger appear to be new with this invention. These claims, therefore, appear to be valid. The defendant's machines have the movable slide to carry the pile of blanks to the proper position under the pickers, the falling pickers, and the conveyer arranged under the table supporting the gum-box. They also have the cam and roller pressing the support of the envelope against the folded envelope, instead of the plunger against it to press it. The support is the equivalent of the plunger for this purpose. Therefore the defendants are found to infringe these three claims by the use of the machines made during the life of the patent in violation of rights of the inventor; and it appears that they would continue the use if not restrained.

It is claimed that the inventor so conducted himself by seeing machines similar to those of the defendants made, without claiming that they infringe his patent, that neither he nor the oratrix as his personal representative could have any equitable right to restrain their use. It does not appear, however, that he led the defendants into any expenditure or course of conduct by his silence when he ought to have spoken which they would not have made or followed if he had spoken. The fact of the patent was open to them as well as known to him. They could respect it or take the risk of having what they did turn out to be an infringement. They chose the latter course, and he does not appear to have been responsible for their choice. The oratrix appears to be entitled to an injunction to restrain the use of so much of these machines as were infringements when they were made. (*Grossley* v. *Derby Gas Light Co.*, Webst. Pat. Cas., 119, 4 Law Jour. N. S. Chan. Pt. 1, 25; *American, &c., Co.* v. *Sheldon*, 18 Blatchf., 50; Curtis on Pat., Sec. 436.) The right to an account for past infringement follows.

Let there be a decree that the first, second, and tenth claims of the patent are valid and have been infringed, and for an injunction against the use of such parts of machines as were made in violation of those claims, and for an account, with costs.

—

REAY v. BERLIN & JONES ENVELOPE COMPANY.

Decided January 23, 1884.

FORMER DECISIONS AFFIRMED.

Cause upheld for the same reasons, and patent sustained to the same extent as in the case of *Oratrix* v. *Raynor et al.*

Mr. Arthur v. *Briesen* for the executrix.
Mr. Stephen D. Law for the defendant.

WHEELER, *J.*:

This suit is brought upon the same patent, in the same manner, and involving the same questions as to its maintenance as that of the *Oratrix* v. *Raynor et al.*, heard at this term. The cause is upheld for the same reasons, and the patent is sustained to the same extent upon the same grounds as in that case. Only the second, fourth, and fifth claims are said to be infringed. Of these only the second is held to be valid. The defendant appears to infringe this claim. Their machine has the arrangement of the table over the conveyer, so that the blanks are held even and in place by the table while being carried by the conveyer to the creasing-box, as described in that claim.

Let a decree be entered for the oratrix accordingly.

U. S. Circuit Court—District of Rhode Island.

MORGAN *et al.* v. ROGERS.

Decided February 12, 1884

1. TRADE-MARKS—A TRADE-MARK MAY BE CONVEYED WITH THE PROPERTY WITH WHICH IT IS ASSOCIATED.

As an abstract right, apart from the article manufactured, a trade-mark cannot be sold, the reason being that such transfer would be productive of fraud upon the public, but in connection with the article produced it may be bought and sold like other property.

2. TRADE-MARKS WILL PASS UNDER BILL OF SALE WITHOUT SPECIFIC MENTION.

For a trade-mark to pass under a bill of sale it is not necessary that it should be specifically mentioned. If a trade-mark is an asset, as it is, there is no reason why it should not pass under the term "assets" in an instrument which conveys the entire partnership property.

Mr. Nathan F. Dixon, *Mr. J. Van Santvoord*, and *Mr. A. Chester* for the complainants.
Mr. Benj. F. Thurston and *Mr. J. C. B. Woods* for the defendant.

COLT, *J.*:

It appears by the bill and evidence that the complainants had from time to time advanced large sums of money to the firm of J. Miller & Sons, who were carrying on the business, in Providence, R. I., of the manufacture and sale of certain proprietary medicines, notably the compound known as "Dr. Haynes' Arabian Balsam." To secure the complainants, Miller & Sons executed a chattel mortgage to them, dated June 1, 1875. On or about March 22, 1876, the complainants took possession under the mortgage and proceeded, through an agent, to carry on the business of the manufacture and sale of these medicines. Subsequently, on February 13, 1877, Miller & Sons conveyed to the defendant, Rogers, the exclusive right to use their trade-marks and to make and sell their medicinal compounds. The present suit is brought to restrain the defendant from using these trade-marks. The main question in the case turns upon the meaning of the following clause in the mortgage:

> The following articles of personal property, now in our possession, and now in and upon the premises known and designated as numbers (8) eight and (12) twelve High street, in said city of Providence, viz: The entire property, stock, furniture and fixtures, and other articles now in and upon said premises, together with all debts and book accounts, assets and effects of every kind and nature belonging to said firm of J. Miller & Sons.

The complainants contend that the above recital includes all trade-marks then owned and used by Miller & Sons in their business on High street, and that such was the intention of the contracting parties. The defendant claims that this description does not cover any trade-mark, but only the property, stock, accounts, &c., belonging to the firm; that such was the intention of the parties, and that the proof shows that at most, and independent of the mortgage, the complainants have a parole license to use the trade-mark until reimbursed for their advances to Miller & Sons.

The clause of conveyance in the mortgage is very broad in its terms. Clearly the language bears the construction and will bear no other than that the whole property of Miller & Sons upon the premises occupied by them, together with their assets of every kind, passed by way of mortgage to the complainants. The description plainly identifies the property and states what is conveyed. It is not a case where there is an ambiguity by reason of two inconsistent descriptions in the same instrument, nor is it a case where the instrument fails to point out the subject-matter, so that a stranger after examination might be deceived, but in plain and unequivocal language, and for the large consideration of $48,500, the entire property of the firm of Miller & Sons at their place of business and all the firm assets are conveyed by way of mortgage to the complainants.

There is no reason why a trade-mark cannot be conveyed with the property with which it is associated. As an abstract right, apart from the article manufactured, a trade-mark cannot be sold, the reason being that such transfer would be productive of fraud upon the public. In this respect it differs from a patent or a copyright; but in connection with the article produced, it may be bought and sold like other property. It constitutes a part of partnership assets, and is properly sold with the firm property. (Brown on Trade-Marks, secs. 360, 361; *Hall* v. *Barrows*, 10 Jur. N. S., 55; *Ainsworth* v. *Walmesley*, 44 L. J. R., 252; *Kidd* v. *Johnson*, 100 U. S., 617; *Walton* v. *Crowley*, 3 Blatch., 440; *Congress and Empire Spring Co.* v. *High Rock Congress Spring Co.*, 57 Barb., 526, and 4 Am. Law Times R., 168; *Dixon Crucible Co.* v. *Guggenheim*, 2 Brewster, 321.)

For a trade-mark to pass under a bill of sale it is not necessary that it should be specifically mentioned. In *Shipcright* v. *Clements* (19 Weekly Reporter, 599) there was a sale by one partner to the other of all his interest in the partnership, stock in trade, goods, chattels and effects, book-debts, moneys in the bank, and all other property not being on the premises, the defendant covenanting that he would not carry on the trade within one mile of the premises or in any way affect the business to be thereafter carried on by the purchaser, the court held that this was a sale of the business, and that a trade-mark passed under such a sale, whether specially mentioned or not. If a trade-mark is an asset, as it is, there is no reason why it should not pass under the term "assets" in an instrument which conveys the entire partnership property. To hold that the trade-mark is not included in this mortgage is to say that the most valuable part of the partnership property is not covered by the words "assets and effects of every kind and nature."

The evidence, in our opinion, strongly confirms the construction we have put upon the instrument, and shows that such was the intent of the parties. The

complainants proceeded to take possession under the mortgage of the entire property and assets of the firm, to use the trade-marks, and to manufacture and sell the medicinal compounds. At the time possession was taken one of the Millers sent for Mr. Morgan and surrendered the keys. Two of the Millers for months after this continued to sell the medicines under the direction of the agent who was carrying on the business for the complainants. The annual royalty due Dr. Haynes the complainants assumed and paid. The defendant, Rogers, as shown by his letters, understood that the complainants had succeeded to all the rights of Miller & Sons and were running the business. He says, however, that in the fall of 1876, after a consultation with the Millers, and after what they said, he took legal advice, and found that the complainants had title under the mortgage only to the goods and effects of Miller & Sons; but that his mind was not clear on the question of the trade-marks is shown by the fact that subsequently, in his conveyance from Miller & Sons, of February 13, 1877, under which he now claims the right to use these trade-marks, there is a provision that if, at the expiration of two years, he should not be in the exclusive enjoyment of the trade-marks in consequence of any act done by the Millers in conveying or encumbering them, then, at his option, the annuities to be paid to the Millers under the agreement were to cease.

The fact that the complainants agreed to turn over the property to the Millers after they had been paid cannot operate to divest them of the exclusive right to the trade-marks if they acquired such under the mortgage. With such exclusive right they, as well as Miller & Sons, might hope the debt would soon be extinguished, but without such exclusive right such a result would be most improbable.

Upon a proper construction of the clause of conveyance in the mortgage, and upon the evidence showing the intent of the parties, we are satisfied that the relief prayed for should be granted, and that the defendant should be enjoined from the use of the trade-marks.

Supreme Court of the United States.

COOK, APPELLANT, v. THE SANDUSKY TOOL COMPANY.

Decided January 21, 1884.

1. HICKS'S PATENT—HOES.
   Letters Patent No. 189,220 granted April 3, 1877, to O. H. Hicks, for an improvement in hoes, considered.
2. INFRINGEMENT.
   If an invention made and sold prior to the date of the patentee's invention is not an anticipation, it is not an infringement of it.

APPEAL from the Circuit Court of the United States for the Northern District of Ohio.

Mr. Geo. N. Howard and *Mr. H. E. Paine* for the appellant.

Mr. M. D. Leggett and *Mr. L. L. Leggett* for the appellee.

Mr. Chief Justice WAITE delivered the opinion of the Court.

The decree in this case is affirmed. If the hoe made by the Tool Company infringes the patent of the appellant, it was an anticipation of the invention, and the patent is void, for the testimony leaves no doubt whatever in our minds that the company made and sold their hoes long before the date of the invention patented. If it is not an anticipation, it is not an infringement.

Affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
Washington, March 13, 1884.

SIR: I am directed by the Secretary to inform you that the order of the Department, dated March 17, 1883, disbarring Samuel McKee, of Louisville, Kentucky, from practice as attorney before the Department and its bureaus, has this day been rescinded.

Very respectfully,
AMOS HADLEY,
Acting Chief Clerk.

The Commissioner of Patents.

Issue of March 25, 1884.

Patents	380	No. 295,513 to No. 295,892, inclusive.
Designs	28	No. 14,897 to No. 14,924, inclusive.
Trade-Marks	19	No. 11,029 to No. 11,047, inclusive.
Labels	11	No. 4,008 to No. 4,018, inclusive.
Reissues of patents	00	
Total issue	438	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	.....	Nebraska	1	.....
Arizona Territory	1	.....	Nevada	.....	.....
Arkansas	2	.....	New Hampshire	5	.....
California	11	.....	New Jersey	25	.....
Colorado	4	.....	New Mexico Territ'y	.....	.....
Connecticut	17	1	New York	78	7
Dakota Territory	.....	.....	North Carolina	1	.....
Delaware	2	1	Ohio	36	5
District of Columbia	7	.....	Oregon	.....	.....
Florida	.....	.....	Pennsylvania	34	1
Georgia	2	.....	Rhode Island	8	.....
Idaho Territory	.....	.....	South Carolina	.....	.....
Illinois	31	3	Tennessee	.....	2
Indiana	7	.....	Texas	4	.....
Indian Territory	.....	.....	Utah Territory	4	.....
Iowa	10	1	Vermont	4	.....
Kansas	3	.....	Virginia	3	.....
Kentucky	4	.....	Washington Territ'y	.....	.....
Louisiana	.....	.....	West Virginia	.....	.....
Maine	2	.....	Wisconsin	9	3
Maryland	6	.....	Wyoming Territory	.....	.....
Massachusetts	41	.....	United States Army	.....	.....
Michigan	8	1	United States Navy	.....	.....
Minnesota	.....	.....			
Mississippi	1	.....	Total to citizens of the United States	383	26
Missouri	9	1			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	11	.....
Austria	1	.....	Hawaiian Islands	.....	.....
Barbadoes	.....	.....	Hayti	.....	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	Mexico	1	.....
Brazil	.....	.....	Portugal	.....	.....
Canada	1	1	Russia	.....	.....
Chili	.....	.....	Scotland	.....	.....
Colombia, U. S. of	.....	.....	Sweden	1	.....
Cuba	.....	.....	Switzerland	1	.....
Denmark	1	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	25	4
England	7	1			
France	1	2			

DESIGNS.

14,897.—SLEEVE-BUTTON.—*Frederick F. Rivers* and *James C. Bloxam*, Newark, N. J. Application filed November 3, 1883. Term of patent 14 years.

14,898.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed February 19, 1884. Term of patent 3½ years.

14,899.—CARPET.—*Ella O. Frost*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed February 19, 1884. Term of patent 3½ years.

14,900.—CASE FOR MUSICAL INSTRUMENTS.—*Merritt Gally*, New York, N. Y. Application filed January 26, 1884. Term of patent 14 years.

14,901.—SHOE OR SLIPPER.—*Charles B. Hatfield*, Troy, N. Y., assignor to *Nathan D. Dodge*, Newburyport, Mass. Application filed December 29, 1883. Term of patent 3½ years.

14,902.—ORNAMENTATION OF TEXTILE AND OTHER FABRICS.—*Adolph Hirsch* and *Henry M. Marx*, New York, N. Y. Application filed January 19, 1884. Term of patent 7 years.

14,903 to 14,909, inclusive.—CARPET.—*Henry Horan*, East Orange, N. J., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed February 19, 1884. Term of patents 3½ years.

14,910.—MITT.—*Warren P. Jennings*, Brooklyn, N. Y. Application filed December 19, 1883. Term of patent 7 years.

14,911.—SPOON OR FORK HANDLE.—*George B. Kelley*, Rockford, Ill., assignor to *The Rockford Silver Plate Company*, same place. Application filed February 18, 1884. Term of patent 7 years.

14,912.—FURNITURE BACK FRAMES.—*Ferdinand Masset*, Chicago, Ill. Application filed December 19, 1883. Term of patent 3½ years.

14,913.—CARPET.—*John McMann*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed February 19, 1884. Term of patent 3½ years.

14,914 and 14,915.—CARPET.—*Howard North*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed February 19, 1884. Term of patents 3½ years.

14,916.—LADY'S WRAP.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed February 13, 1884. Term of patent 3½ years.

14,917.—LADY'S BASQUE.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed February 13, 1884. Term of patent 3½ years.

14,918.—LADY'S SKIRT.—*Catherine O'Hara*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed January 23, 1884. Term of patent 3½ years.

14,919.—WATCH-MOVEMENT.—*Girard Perregaux*, Chaux-de-Fonds, Neufchâtel, Switzerland. Application filed December 15, 1883. Term of patent 14 years.

14,920.—LADY'S POLONAISE.—*John Quincy Reed*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed February 13, 1884. Term of patent 3½ years.

14,921.—GIRL'S COSTUME.—*Catherine Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed February 13, 1884. Term of patent 3½ years.

14,922.—MISS'S COSTUME.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed February 13, 1884. Term of patent 3½ years.

14,923.—CARPET.—*Lucy W. Valentine*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed February 19, 1884. Term of patent 3½ years.

14,924.—EAR-RING PENDANT.—*John B. Van Houten*, Newark, N. J. Application filed February 8, 1884. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

11,029.—HAT-BRUSHES.—*Gustave Bossange*, New York, N. Y. Application filed February 13, 1884.
"A representation of the head and bust of the Statue of Liberty."

11,030.—RYE AND BOURBON WHISKY.—*Solomon C. Herbst*, Milwaukee, Wis. Application filed February 26, 1884.
"The words and letters 'JNO. E. FITZGERALD.'"

11,031.—RYE AND BOURBON WHISKY.—*Solomon C. Herbst*, Milwaukee, Wis. Application filed February 26, 1884.
"The words 'CLIFTON SPRING.'"

11,032.—CIGARS, CIGARETTES, AND SMOKING-TOBACCO.—*Kaufmann Bros. & Bondy*, New York, N. Y. Application filed February 15, 1884.
"The arbitrary words 'TOUNG TALOUNG.'"

11,033.—COUGH-REMEDIES.—*Kerry, Watson & Co.*, Montreal, Quebec, Canada. Application filed February 23, 1884.
"The figure of an Indian."

11,034.—CIGARS AND CIGARETTES.—*Herman Segnitz & Co.*, Milwaukee, Wis. Application filed February 11, 1884.
"The pictorial representation of Governor Morton."

11,035.—LIQUORS AND SPIRITS.—*E. Cusenier Fils Aîné & Co.*, Paris and Ornans, France. Application filed January 11, 1884.
"Two circular seals having escutcheons upon them, and a band connecting the said seals."

11,036.—LIQUORS AND SPIRITS.—*E. Cusenier Fils Aîné & Co.*, Paris and Ornans, France. Application filed January 11, 1884.
"Three escutcheons, the initials 'E. C. & C.,' and the facsimile of the firm-signature."

11,037.—STEEL AND CERTAIN IMPLEMENTS MADE THEREFROM.—*William Kirkby Peace* and *Hugh Kirkby Peace*, Sheffield, England. Application filed January 5, 1884.
"A fleur-de-lis-shaped figure, the letter 'P,' and the figures '17' and '10.'"

11,038.—LAUNDRY-SOAP.—*Procter & Gamble*, Cincinnati, Ohio. Application filed January 14, 1884.
"The word-symbol 'CLEAN QUICK' on a parallelogram, in white letters with a heavy dark shade, and on different imaginary lines, forming thus a diagonal whole from the upper left-hand to the lower right-hand corner of the parallelogram."

11,039.—LAUNDRY-SOAP.—*Procter & Gamble*, Cincinnati, Ohio. Application filed January 14, 1884.
"The word-symbol 'WASH WELL' on a parallelogram, in dark letters shaded in red and on a white ground, with a fanciful red bordering forming a lesser parallelogram."

11,040.—LAUNDRY-SOAP.—*Procter & Gamble*, Cincinnati, Ohio. Application filed January 16, 1884.
"The word-symbol 'CLEAN-FAST' within a parallelogram, in fanciful red letters."

11,041.—LAUNDRY-SOAP.—*Procter & Gamble*, Cincinnati, Ohio. Application filed January 16, 1884.
"The word-symbol 'WORK-WELL' within a parallelogram, in plain solid-brown lettering."

11,042.—LAUNDRY-SOAP.—*Procter & Gamble*, Cincinnati, Ohio. Application filed January 16, 1884.
"The word-symbol 'CLEAN-WELL' within a parallelogram, in fanciful black letters, the lower half of each letter being in pink shaded with black."

11,043.—WHISKIES.—*B. J. Semmes & Co.*, Memphis, Tenn. Application filed February 7, 1884.
"The word 'YANNISSEE.'"

11,044.—WHISKIES.—*B. J. Semmes & Co.*, Memphis, Tenn. Application filed February 7, 1884.
"The word 'MEMPH' in Coptic letters."

11,045.—PREPARED WHITING.—*Arthur Buel*, New York, N. Y. Application filed February 21, 1884.
"The word 'ELEKTRIK.'"

11,046.—ARTICLE OF FOOD MADE FROM GRAIN.—*Glaser, Kohn & Co.*, Chicago, Ill. Application filed February 23, 1884.
"The letters and word 'OATINE.'"

11,047.—VARNISHES, JAPANS, BLACKS, COLORS, PAINTS, WOOD-FILLINGS, AND ROUGH STUFFS.—*Valentine & Company*, New York, N. Y. Application filed February 19, 1884
"The letters composing the word 'VALENTINES' and the letter 'R' and the letters 'I S H,' so arranged with reference to each other and so proportioned in regard to size as to produce the two words 'VALENTINES' and 'VARNISHES' without duplicating the letters 'V,' 'A,' 'N,' 'E,' 'S,' which are common to both of said words, the letters 'L' and 'E' being arranged directly over the letter 'R,' after the letters 'V' and 'A,' and the letters 'T I N' directly over 'I S H,' after the letter 'N,' and all of the letters but 'V,' 'A,' 'N,' 'E,' 'S' being smaller than the latter letters. The arrangement and blending of said letters are such as to produce the following result, viz: 'VALENTINES VARNISHES.'"

LABELS.

4,008.—Title: "HEART" (FOR PLUG-TOBACCO.)—*Jas. G. Butler & Co.*, St. Louis, Mo. Application filed March 4, 1884.

4,009.—Title: "SOAP."—*Willard G. Crane*, Cambridge, Ill. Application filed February 29, 1884.

4,010.—Title: "ELY'S GLASS PAINT."—*Oscar A. Ely*, Hartford, Conn. Application filed February 28, 1884.

4,011.—Title: "FAHRNEY'S CELEBRATED BLOOD CLEANSER OR PANACEA."—*Peter Fahrney*, Chicago, Ill. Application filed February 22, 1884.

4,012.—Title: "DR. GALLAGHER'S PILE OINTMENT."—*R. F. Gallagher*, Philadelphia, Pa. Application filed March 3, 1884.

4,013.—Title: "DR. COOK'S CELERY BITTERS."—*Edward G. Jay*, Newark, Del. Application filed March 1, 1884.

4,014.—Title: "ROSCOE CONKLING" (FOR CIGARS.)—*Kirkland Brothers*, Utica, N. Y. Application filed February 29, 1884.

4,015.—Title: "DR. SHERWOOD'S KING OF PAIN."—*Randall & Mulford*, Ottumwa, Iowa. Application filed February 19, 1884.

4,016.—Title: "DUCHESS" (FOR CIGARS.)—*M. Richardson & Son*, Elmira, N. Y. Application filed February 28, 1884.

4,017.—Title: "ROASTED RYE WHISKEY."—*Henry Snyder, Jr.*, Brooklyn, N. Y. Application filed March 3, 1884.

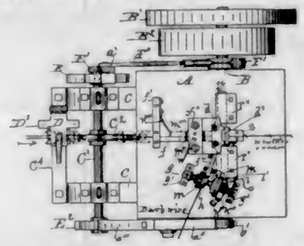
4,018.—Title: "OUR OWN FRUIT SALT" (FOR A MEDICINAL PREPARATION.)—*Frederick Stearns & Co.*, Detroit, Mich. Application filed February 15, 1884.

PATENTS

GRANTED MAR. 25, 1884.

295,513. WIRE-BARBING MACHINE. GEO. C. BAKER, Des Moines, Iowa. Filed July 16, 1883. (No model.)

Brief.—A flat metal strip is notched by the feed-rollers and fed over the upper of two main wires. A spring-actuated mandrel lies under the wire in a notch in an anvil or under die. A vertical bar descends, cuts off a barb, and bends its ends downward over the anvil, one on each side of the upper main wire. Lateral slides move inward, one shoving back the mandrel, and bend the depending ends of the barb past each other and clamp it onto the main wire. The barbed and the unbarbed main wires are then twisted and reeled.



Claim.—1. In a wire-barbing machine, a pair of feed-rollers having coinciding projections and notches in the opposite edges of their peripheries, to adapt them to notch the edges of a metal strip as it is advanced toward the barb-cutters between the rollers.

2. The driving-shaft B, having a cam, k', the rack k'', having a bridle at its lower end, and a stud-roller, k''', the spring k'''', and the feed-rolls A and A', the shaft g, having a loose pinion, l l', a pawl, l'', and a fixed ratchet, l''', arranged and combined substantially as shown and described, for the purposes specified.

3. The post G, fixed to the base A, the cutter-carrier c c' c'' d d', the cutter d'', and the driving-shaft B, having cams d''' and d'''', arranged and combined substantially as shown and described, for the purposes specified.

4. The horizontal cutter f, the barb-guide m'', the sliding bar m''', having a finger, n', the triangular-shaped bar n n''', and the vertical cutter and bender d'', having a transverse groove in its end, arranged and combined substantially as shown and described, to simultaneously cut and bend a barb double, in the manner and for the purposes specified.

5. The sliding bar m''', having a finger, n', the triangular bar n n''', the sliding barb-bender o o', having a cam, o'', and the spring n'''', arranged and combined substantially as shown and described, for the purposes specified.

6. The driving-shaft B, having cams r r, in combination with the sliding barb-benders o o', having studs r', substantially as and for the purposes set forth.

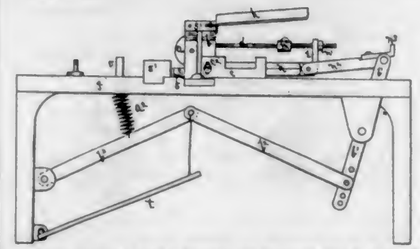
295,514. SEAL-LOCK. ANDREW B. BARNARD, St. Joseph, Mo. Filed Nov. 3, 1883. (No model.)



Claim.—1. The barrel B, having the slotted shoulder b, the face-plate D, having the loop d, and the bolt C, having the feather, and the projecting eye C', all combined and operating substantially as specified.

2. In a car seal-lock, the combination of a bolt, C, entering the door from the outside, and having an outstanding eye, C', and an outstanding loop, d, lying vertically parallel to said eye, said eye or loop, or one of them, being provided with shoulders f upon their outer edge, whereby to support a tag-seal horizontally and parallel to the car side, substantially as and for the purpose specified.

295,515. NAILING-MACHINE. EDWARD F. BARTON, Ravenna, Ohio, assignor of one-half to Theodore Grundel, same place. Filed Dec. 5, 1883. (No model.)



Claim.—1. In a nailing-machine, the oscillating carrier a, having a horizontal or nearly horizontal axis and a slot, a', provided with spring e, and formed, as shown, of sufficient dimensions to receive but one nail hanging by its head on the circumference of the carrier, in combination with trough c, substantially as described.

2. The inclined slotted conductor b, in combination with carrier a, arranged to oscillate in a vertical or nearly vertical plane, and pivoted to the conductor, the carrier being actuated by a suitable mechanism, and having slot a', provided with spring e, and formed as shown, substantially as described.

3. The driver n and trough c, in combination, by suitable means, with rod d and carrier a, having slot a', provided with spring s, and formed as shown, and suitable actuating mechanism, substantially as described.

4. The rod d, provided with collar m and nut n', in combination with driver n, carrier a, having slot a', provided with spring e, and formed as shown, trough c, and suitable actuating mechanism, substantially as described.

5. The driver n, trough c, rod d, and carrier a, having slot a', provided with spring e, and formed as shown, in combination, as shown, with pitman n^3, levers b' b^3 b^3, spring a^3, and treadle t, substantially as described.

6. Carrier a, having slot a', provided with spring e, and formed as shown, in combination with rod d, nut n', collar m, driver n, formed with lug i, rod e', and pitman n^3, provided with the pivoted cap n^3, substantially as described.

7. The oscillating carrier a, having slot a', provided with spring e, and formed as shown, in combination with conductor b, driver n, trough c, and suitable actuating mechanism, substantially as described.

8. The frame f, formed with grooves c^3 o^3, in combination with the slotted adjustable stops o o', trough c, carrier a, having slot a', provided with spring e, and formed as shown, driver n, and suitable actuating mechanism, substantially as described.

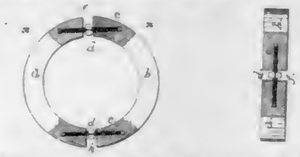
9. The adjustable trough c, formed to fit the transverse groove g in frame f, and with slotted lug c^2, in combination with conductor b and carrier a, having slot a', provided with spring e, and formed as shown, substantially as described.

10. The trough c, provided with spring s, in combination with driver n and suitable actuating mechanism, substantially as described.

11. The oscillating carrier a, having slot a', formed as shown, and provided with spring e and actuating mechanism, the carrier being piv-

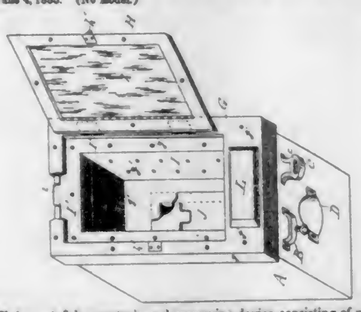
oted to conductor *b*, the driver *a*, pitman *a*², and trough *c*, in combination with a similar carrier, driver, pitman, and trough, rod *c'*, lever *b'*, and suitable actuating mechanism, substantially as described.

295,516. HOOP-NAILING MACHINE. ANDREW C. BATCHELLER, Bay City, Mich. Filed Jan. 13, 1884. (No model.)



Claim.—In a hoop-nailing machine, a circular form consisting of the semicircular parts *a* and *b*, joined together at their ends, as described, by the bolts *c*, which are provided in their centers by the rigid nuts *d*, and at one end a right-hand thread, and at the opposite end a left-hand thread, and adapted to engage with corresponding threads in the ends of the parts *a* and *b*, all in combination, substantially as set forth.

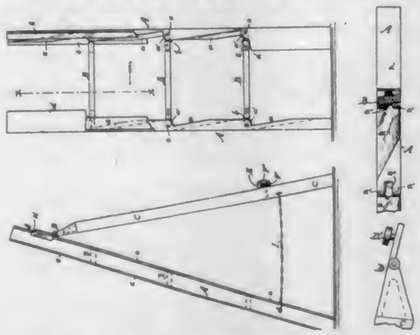
295,517. FISH-BOX. CHARLES A. BERGTOLD, New York, N. Y. Filed June 4, 1883. (No model.)



Claim.—A fish receptacle and preserving device consisting of main box A, having handles D, towel-holder B, knife-support C, removable top G, having depending edges *g*, perforations *g'*, and dressing-block L, inner box, I, having lip I', handles *i*, trap J, and perforations *g'*, the main box being provided with cleats E and F, and the whole combined and arranged to operate substantially as shown and described.

295,518. FOLDING STEP-LADDER. AUGUST BOHMAN, Chicago, Ill., assignor of one-half to Charles J. Stromberg, same place. Filed Dec. 13, 1883. (No model.)

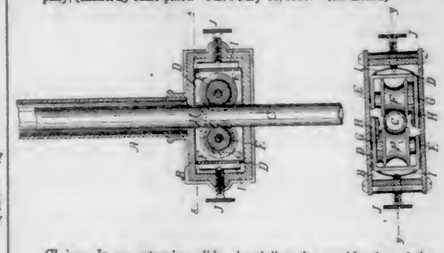
Brief.—Consists of side rails having their inner faces beveled and provided with recesses, and steps having pierced tenons which enter said recesses. Detachable brace-legs are connected with the side rails, and have a brace-bar having eyes engaging hooks on said brace-legs.



Claim.—1. A portable folding step-ladder in which are combined the side rails, A A, having on their sides or faces the beveled portions *a a*, and the recesses *a'' a''*, and the steps B B, having on their ends tenons *b b*, entering the said recesses, and there hinged or jointed to the side rails, substantially as and for the purposes set forth.

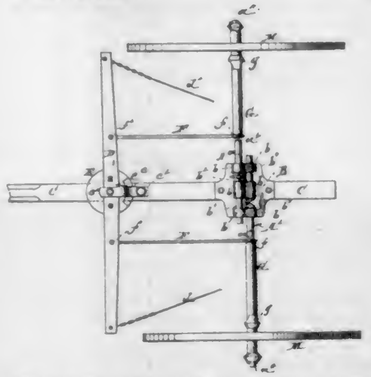
2. A portable folding ladder, combined with the brace-legs C C, and means for connecting the said legs detachably to the side rails, and the detachable brace-bar E, substantially as and for the purposes set forth.

295,519. EXTENSION-SLIDE CHANDELIER. JOHN P. BONNER, Brooklyn, N. Y., assignor to the William C. Voeburgh Manufacturing Company, (Limited,) same place. Filed July 28, 1883. (No model.)



Claim.—In an extension-slide chandelier, the combination of the following elements: a tube, A, box B, tube C, boxes D, scored wheels F, and ratchet-wheels G, journals E, pawls H, curved springs I, and regulating-screws J, constructed and operating substantially as and for the purpose specified.

295,520. CULTIVATOR. BYRON C. BRADLEY, Chicago, Ill., assignor to the First & Bradley Manufacturing Company, same place. Filed Nov. 27, 1883. (No model.)

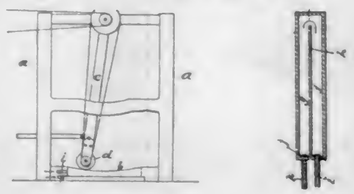


Claim.—1. The combination of the arch-sections A A', the plate B, formed with the sockets *b*, divided into sections, and the set-thimbles *b'*, encircling the arch-sections in the spaces between the sections of the sockets, to adjust and hold the arch-sections, substantially as described.

2. The combination of the arch-sections A A', plate B, formed with the sockets *b*, divided into sections, the set-thimbles *b'*, encircling the arch-sections in the spaces between the sections of the sockets, the carrying-wheels M on the arch-sections, and the plow-beams, whereby the wheels and beams can be adjusted to suit the width of row of the plants, substantially as described.

3. The double-tree D and plate E, having a central tubular stud, *d'*, and recess *e* in its periphery, in combination with the tongue C, plate E', and the hammer-strap *c*, connected with tree D and fitting in recess *e*, substantially as described.

295,521. FINISHING-MACHINE FOR PRESS-BOARDS. FREDERICK L. CASE, Chaplin, Conn. Filed Nov. 15, 1883. (No model.)



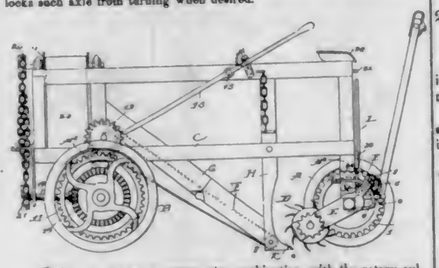
Claim.—1. In a finishing-machine for press-boards, in combination, the frame, the vibrating arm bearing the roller, and the bed-plate heated by steam, hot air, or the like, all substantially as described.

2. In a finishing-machine, the bed-plate with chambers *f* and *g*, connected by opening *g'*, having vertical web A, and inlet and outlet openings for steam, all substantially as described.

3. In a finishing-machine, the bed-plate with inlet and outlet openings for steam, the chambers with the bottom sloping to the outlet, and the vertical partition, all substantially as described.

295,522. EXCAVATING-MACHINE. THOMAS CLARK, Quincy, Ill. Filed June 22, 1883. (No model.)

Brief.—A swinging frame pivoted on the front axle of a carrying-frame and locked by pins inserted through the front cross-bar into arms on the main frame carries at its rear an excavator-roller driven from the front axle. The lower hinged section of an elevator-frame whose belt is driven from the rear riding-wheels is supported by slotted hangers vertically adjusted by bolt-and-nut connections. A forked bar passed down through brackets on both the main frame and the forward axle locks such axle from turning when desired.



Claim.—1. In an excavator, the combination, with the rotary cylinder having cutters and driven from the forward axle, of a carrier-belt driven independently from the rear axle.

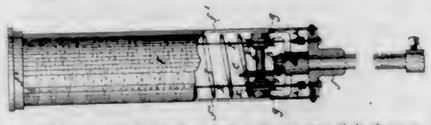
2. In combination with the axle of the forward wheels, a swinging frame mounted on such axle, and a rotary excavator journaled in the frame, and means for adjusting and locking the frame.

3. The swinging frame and the rotary excavator, in combination with the arms and pins.

4. The combination, with the hinged section of the dirt-carrier, of the slotted hangers H H, the bolt, and the described locking devices.

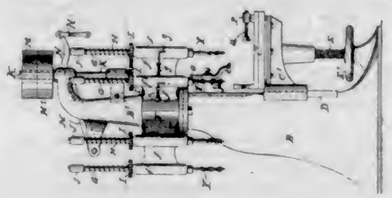
5. In a ditching-machine, a pair of swiveled guiding-wheels, in combination with the locking device, substantially as described, for holding the axle and bolster rigidly in line with the main frame.

295,523. HAND-BORER. WILLARD E. CLOUGH, Concord, N. H., assignor of one-half to Phillip Pethick, same place. Filed Sept. 24, 1883. (No model.)



Claim.—In a hand boring-tool, the hollow handle F, having a reciprocal motion upon the bit-spindle A, and containing mechanism, consisting of a spiral spring, I, and said bit-spindle A, connected by means of the bevel-gears B C to the horizontal shaft D, carried by the hanger G, and provided with grooved pulleys E, to which are attached spring-pawls K and ratchet-wheels J, all combined and arranged to be driven continuously in one direction by means of the driving-cords H, substantially as specified, and for the purposes hereinbefore set forth.

295,524. BORING-MACHINE. WILLARD E. CLOUGH, Concord, N. H., assignor of one-half to Philip Pethick, same place. Filed Oct. 29, 1883. (No model.)



Claim.—1. In a boring-machine constructed substantially as described, having a cored iron frame, B B', and an adjustable operating-table, C, a revolving turret, F, provided with arms *f*, containing bearings *f'* for the bit-spindles G, operated by suitable gearing, in the manner and for the purpose specified.

2. In a boring-machine constructed substantially as described, having a cored iron frame formed of two or more parts, and an adjustable operating-table, C, the combination of two or more bit-spindles, G, and springs H, with the revolving turret F, operating as and for the purpose described and set forth.

3. In a boring-machine constructed substantially as described, the combination, with a cored iron frame, B B', of a vertical shaft, K, carrying the pulleys M M', and a spur or friction gear, L, the spur or friction gear I, bit-spindles G, springs H, some suitable lever or levers, N, and the revolving turret F, all operating as described and set forth.

4. The combination, with the cored iron frame B B', having slot *b*, and a revolving turret, F, carrying the bit-spindles G, of suitable spring-catches, *g*, attached in some convenient manner to the arms *f*, and operating within the said slot *b*, substantially as and for the purpose set forth.

295,525. COMPOUND FOR WATERPROOFING AND PRESERVING BUILDINGS. BENJAMIN DENNE, Camden, N. J., assignor of one-fourth to Joseph Chapman, Philadelphia, Pa. Filed Feb. 21, 1884. (No specimens.)

Claim.—1. The within-described waterproofing compound, consisting of fossil wax, carnauba-wax, refined paraffine-oil, and carbolic acid, united by heat.

2. The within-described waterproofing compound, consisting of fossil wax, carnauba-wax, refined paraffine-oil, and carbonic acid, combined in about the proportions and in the manner specified.

295,526. COLLAR OR TIE ADJUSTER. WARD W. DENETON, Washington, D. C. Filed Dec. 7, 1883. (No model.)



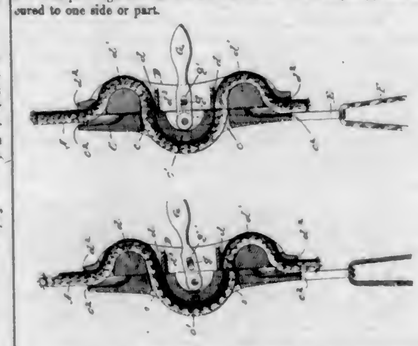
Claim.—1. A device formed of the strips A B C, the parts B C having inward end projections provided with teeth, whereby the collar may be secured to the band of the shirt, substantially as described and specified.

2. A device formed of the strips A B C, the parts B C thereof being provided with inward end projections having teeth *b c*, respectively, the part C having spurs D D upon its outer side, substantially as described, and for the purpose set forth.

3. A device for securing a collar to a shirt-band, consisting of a single piece of metal carved at *a d*, whereby the parts A B C are formed, the outer ends of the parts B C having inturned pointed ends, for the purpose of engaging or clamping the shirt-band and collar, in the manner and for the purpose set forth.

295,527. FIRE-ESCAPE. ROBERT EMLAH DOWNER, Clinton, assignor of one-half to George A. Honston, Beloit, Wis. Filed Nov. 7, 1883. (No model.)

Brief.—The friction device is composed of two independent parts with their flat sides together, and the rope is rove through perforations therein, and a lever pivoted to one side or part and having its fulcrum on the other part regulates the amount of friction. The body-support is secured to one side or part.



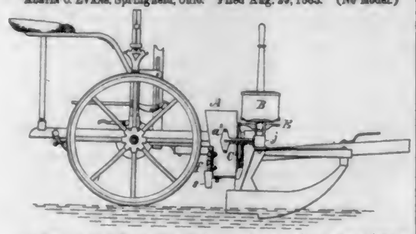
Claim.—1. In a fire-escape, a slide composed of two independent parts arranged side by side, with their inner faces flat and in contact, in combination with a suspended rope passing in and out through both parts of the slide, a carrier attached to one member of the slide, and a lever pivoted at one end to one member of the slide, and having its fulcrum on the other member, substantially as and for the purposes set forth.

2. In a fire-escape, the rope A, in combination with a slide member, C, provided with apertures *c* and boss *c'*, the companion slide member D, provided with apertures *d* and bosses *d'*, and the bail E, attached to one member of the slide, substantially as and for the purposes set forth.

3. In a fire-escape, the suspended rope A, in combination with the slide B, composed of the two members C and D, constructed substantially as specified, the bail E, attached to one of the members of the slide, and the lever G, substantially as and for the purposes set forth.

295,528. FERTILIZER-DISTRIBUTER FOR SEED-PLANTERS.

AUSTIN C. EVANS, Springfield, Ohio. Filed Aug. 29, 1883. (No model.)



Claim.—1. In a fertilizing attachment for a two-horse corn-planter, the combination, with the fertilizer-hopper and the sowing devices in the bottom of the same, of a fixed screen inclosed within said hopper over said sowing devices, for the purpose of preventing lumps of the fertilizer substance from getting into and obstructing the movement of said sowing devices.

2. In a fertilizing attachment having its dropping-disk driven from a shaft extending through the hopper, and having a ratchet-wheel on its outer end, the combination therewith of a vertical oscillating lever pivoted over said ratchet-wheel, provided with pawls adapted to engage the teeth of the latter, and having its top end engaged with a notch in the drive-frame on the slide-bar, whereby an oscillating movement is given to said lever, communicating an interrupted rotary motion to the dropping devices, substantially as set forth

3. The combination, with the dropping devices and the ratchet-wheel on the outer end of the driving-shaft, having lugs extending therefrom, of the pivoted oscillating lever formed with lateral arms having pawls pivoted thereon, engaging the teeth of said ratchet-wheel, and provided also with a stop on each of its arms, adapted to engage with the lugs on the ratchet-wheel at each throw of said lever, as and for the purpose set forth.

4. In a fertilizing attachment for a seed-planter, a vertical lever pivoted upon the front of the hopper between the slide-bar and the dropping devices, having lateral arms extending therefrom and provided with pawls and stops, engaging with the teeth and lugs of a ratchet-wheel on the end of the driving-shaft of said dropping-devices, said lever being engaged with and operated by the slide-bar, substantially as and for the purpose set forth.

5. The combination, with lever C, having the lateral arms c^3 and c^3, provided with stops i and i' on the ends of the same, of the pivoted pawls *e* and *e'*, having a tail extension between the stops, which latter govern the movement of said pawls and prevent their disengagement from the teeth of the ratchet-wheel.

6. The combination, with the rotating shaft extending through the hopper for driving the dropping devices in the latter, of the hollow metal casing extending from one side of the hopper to the other over said shaft, to protect the bearings of the latter from exposure to the fertilizer substance, as set forth.

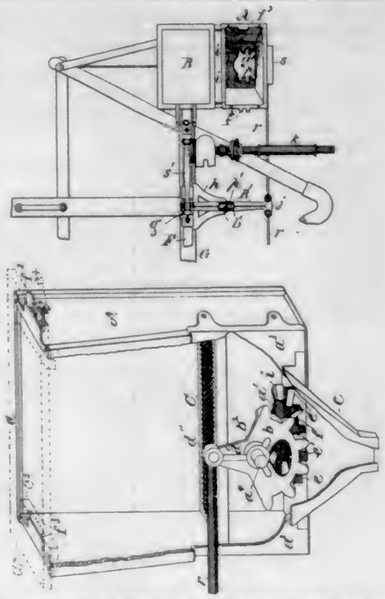
7. In an adjustable connecting-shaft having a series of gears thereon for changing the drop, the combination therewith of a series of grooves corresponding with the number of pinions, and a key for securing said shaft in adjustment, extending through the sleeve within which it is pivoted, and adapted to engage the groove corresponding with the engaging pinion.

8. In a two-horse corn-planter having a fertilizer attachment, a shield attached to the outside of the fertilizer-hopper over the discharge-wheel, between the covering-wheel and the discharge-spout, whereby dirt is prevented from dropping from off said covering-wheel into said discharge-spout with the fertilizer.

295,529. FERTILIZING ATTACHMENT FOR SEED-PLANTERS.

AUSTIN C. EVANS, Springfield, Ohio. Filed Nov. 2, 1883. (No model.)

Claim.—1. In a fertilizing attachment, a horizontal feed plate or disk having its shaft pivoted vertically through the bottom plate of the hopper, (or a hub cast thereon,) and provided with two horizontally-cutting teeth extending radially therefrom—one from either side of a space on its front edge—and having a group of filling-teeth in rear of each cutting-tooth, with inclined points extending tangentially rearward, and a rear tooth square in its cross-section dividing the two groups of filling-teeth.



2. In a fertilizing attachment, the horizontal oscillating disk *d'*, having the chisel-shaped teeth *i* on either side of a front peripheral space, their front faces inclined downward and forward from the upper to the lower surface of the disk, the raking or gullet-shaped teeth *e e e*, grouped on either side of the median line, *y*, having their longest points in line with the rear face, and the intermediate tooth, *e'*, between the two groups of teeth *e e e* on the rear of the disk.

3. In a fertilizing attachment for a seed-planter, a horizontal oscillating feed-disk, an oscillating toothed sector pivoted vertically over the same, engaging with the teeth of the latter at right angles to the plane of the disk, operating it from side to side, and discharging the fertilizer substance therefrom at the same time.

4. In a fertilizing attachment for a seed-planter, a horizontal oscillating feed-disk pivoted upon a vertical shaft, a central hub through which said shaft extends, and an elevated ring supporting the disk above the hopper-bottom, said disk being operated by a toothed sector pivoted vertically over the same, the teeth of which engage the teeth of the disk at right angles thereto.

5. The combination, with the horizontal oscillating feed-disk having teeth of the form described, of the toothed sector pivoted upon the outside of the hopper above said feed-disk and engaging therewith, said sector being connected by a rod or rods and an intermediate shaker-bar or pivoted lever with the slide-bar of the planter, whereby an oscillatory movement is transmitted to said feed-disk from said slide-bar.

6. In a disk for sowing or dropping fertilizer substance, adapted to have an oscillatory movement, the combination of the group of teeth on either side of the center of oscillation, having their ends terminating in angular points cut tangentially from front to rear perpendicular to the plane of said disk, their rear faces being longer than their front faces, to adapt them to enter the fertilizer substance more easily, and to collect it by means of the long angular points extending from their rear faces, and carry it out from within the hopper to the point of discharge.

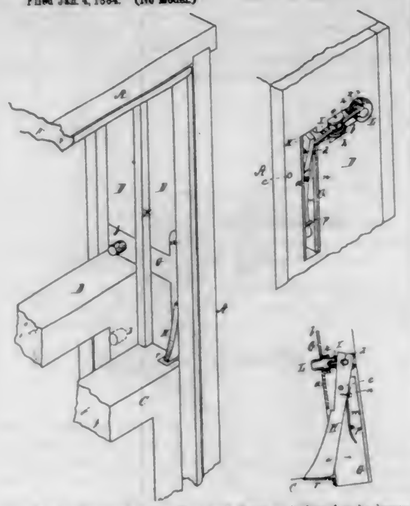
7. In a fertilizing attachment for a seed-planter, an oscillating feed-disk pivoted by a vertical shaft, a threaded hole for an oil-inlet through said disk, and a screw for capping the same, in combination with a dish-shaped cavity in the top of the hub or collar under said disk, on the bottom plate of the hopper, said cavity forming a reservoir for the oil with which the shaft of the disk is lubricated.

8. In a fertilizing attachment for a seed-planter, a metal plate, a^2, forming the lower section of the rear wall of the hopper, a journal, a^4, extending horizontally therefrom, in combination with the toothed sector *b*, pivoted on said journal, and adapted to operate the oscillating disk *a'* through its connection with the slide-bar of the planter.

9. In a seed-planter having a fertilizing attachment, the combination, with the rotary seed-disks and the slide-bar actuating the same, of the oscillating fertilizer-disks, the toothed sectors engaging therewith, and the auxiliary devices connecting the latter with said slide-bar, as and for the purpose set forth.

295,530. SASH-FASTENER.

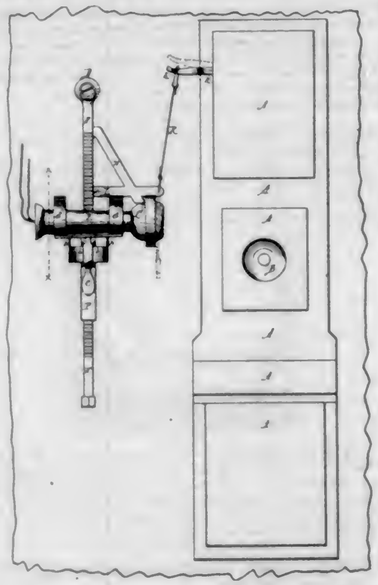
SAMUEL FARQUHAR, Newton, Mass. Filed Jan. 4, 1884. (No model.)



Claim.—The within-described sash-fastener designed to be located in the pulley-stile, consisting of the lever H, pivoted to the vertical portion *a* of the casing A, and having a slot, *d*, in its upper end, the connecting-arm I, pivoted to lugs *h h*, projecting from the horizontal portion *b* of the casing A, and the bolt L, having a slot, *i*, in its outer end, in combination with the upper sash, B, provided with recesses *l*, and the lower sash, C, all constructed and arranged as set forth.

295,531. TELEPHONE-SUPPORT.

GEORGE W. FREE, Pecatonica, Ill. Filed Dec. 5, 1883. (No model.)



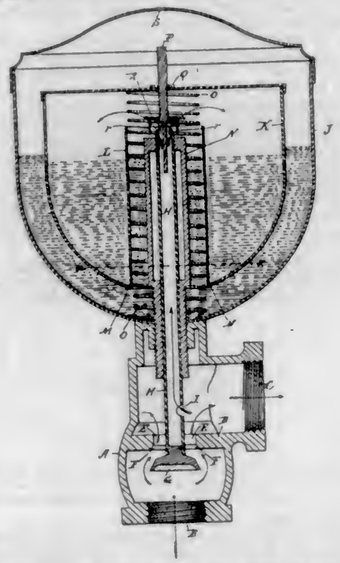
Claim.—1. The combination, with a telephone-transmitter, of a vertical support produced in toothed-ratchet form, and a receiver-supporting bracket made vertically adjustable on the tooth-ratchet support, said receiver-support having a spring-actuated pawl to engage the teeth of the vertical support, substantially as and for the purpose set forth.

2. The combination, with a telephone-tranemitter, of a receiver and a vertically-adjustable bracket-support for said receiver, arranged relatively to said transmitter, substantially in the manner as and for the purpose herein shown and described.

3. The combination, with the fixed supporting-bracket and with the switch-lever, of an elastic-link connection, substantially as and for the purpose set forth.

295,532. GAS-PRESSURE REGULATOR.

LEWIS G. FRANCIS, La Grange, and JOHN A. TIEBS, Hinsdale, Ill. Filed Dec. 13, 1883. (No model.)



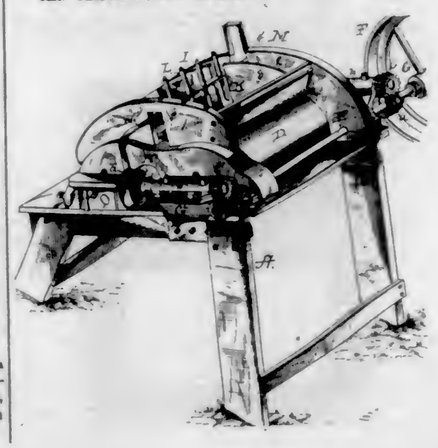
Claim.—1. The combination, in a gas-pressure regulator, of the valve G, diaphragm D, provided with an opening, E, the hollow valve-stem H, provided with an opening, I, the float K, and case J, and mechanisms for guiding the valve-stem, substantially as specified and shown.

2. In a gas-pressure regulator, the combination of the case J, float K, the tube L, and the spiral spring O, as specified and shown.

3. The combination, in a gas-pressure regulator, of the adjustable tube N, the hollow valve-stem H, the float K, and case J, as specified and shown.

295,533. CLAY-CRUSHING MACHINE.

FREDERIC E. FENT, Bucyrus, Ohio. Filed Feb. 11, 1884. (No model.)



Claim.—1. In combination with a clay-crushing machine, the rake or crusher arranged over and parallel with the rollers, and means for imparting a reciprocating motion to said rake, substantially as and for the purpose set forth.

2. In combination with a clay-crushing machine, the rake or crusher, consisting of a bar arranged over and parallel with the rollers, and provided with a plurality of fingers made vertically adjustable, and means for imparting a reciprocating motion to said rake, substantially as and for the purpose set forth.

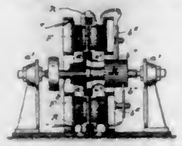
3. In combination with a hopper of a clay-crushing machine, provided with retaining-springs, the sectional partitions hinged to the ends of the hopper and adapted to be held or restored to position by the retaining-springs, substantially as described.

4. In combination, the shaft E, provided with screws *a a'*, the shafts G G', with gear-wheels *b b'* and crank-heads H, and the rake I, having tubes L and a series of vertically-adjustable fingers K, projected through the bar and into said tubes, substantially as and for the purpose stated.

5. In combination with a clay-crushing machine, a rake or crusher arranged parallel with the rollers, means for imparting a reciprocating motion to said rake, and a hopper having sectional partitions hinged to the ends of the hopper, and held or restored to position by retaining-springs, substantially as described, and for the purpose set forth.

6. In combination with a clay-crusher, the rake arranged parallel with the rollers and provided with tubes L and fingers or teeth K, projected through the bar and into the tubes, and adapted to automatical adjustment, substantially as described, and for the purpose set forth.

295,534. MAGNETO AND DYNAMO ELECTRIC MACHINE. FRIEDRICH GUSTAV FREK, Bayenthal, near Cologne, Germany. Filed Mar. 19 1883. (No model.) Patented in Germany Dec. 6, 1877, No. 3,147.



Claim.—1. In a magneto or dynamo electric machine, the combination, with the field-magnets, of a revolving armature-disk having radial wires connected in a closed circuit and to commutator-plates, substantially as set forth.

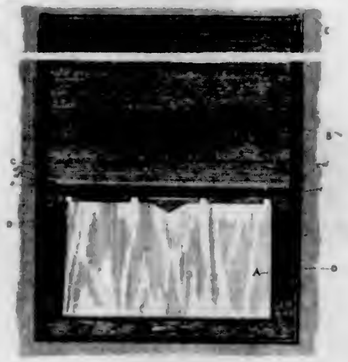
2. The combination, with the field-magnets, of a revolving armature-disk having radial wires connected to the commutator, substantially as set forth, and having a support around the outer portions of such radial wires, and means for connecting the inner portions of such wires to the revolving shaft, substantially as set forth.

3. The combination, in a dynamo or magneto electric machine, of an armature composed of radial wires connected in a closed circuit at the outer and inner portions of such radial wires alternately, as set forth.

4. The combination, in the revolving armature, of two or more layers of armature-coils having radial wires connected alternately at their outer and inner ends, and placed at progressive angles to the axis of rotation, substantially as set forth.

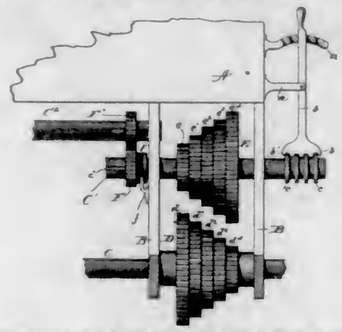
5. The combination, in an armature, of numerous coils forming loops, with the side portions of each loop in the line of the radius, substantially as set forth.

295,535. DEVICE FOR HOLDING THE CURTAINS OF CAR-WINDOWS. FRANK FURNESS, Philadelphia, Pa. Filed Dec. 6, 1883. (No model.)



Claim.—The combination of the window-curtain and the grooved beads arranged on each side thereof with the strip C, having elastic end pads, the length of said strip and pads being greater than the distance between said beads, substantially as and for the purposes specified.

295,536. GEARING FOR CHANGING SPEED. SILAS N. GALLUP, Macedon, N. Y. Filed Jan. 24, 1884. (No model.)



Claim.—1. In a device for changing speed, the cones D and E, mounted upon parallel shafts, and having a lateral adjustment one relatively to the other, in combination with the laterally-adjustable pinion I, mounted in the jointed arm H H', arranged and operating substantially as described.

2. The combination of the cone-gears D and E, fast one on the driving-shaft C and the other on the driven shaft C', one of said shafts being longitudinally adjustable in its bearings, in combination with adjustable bearing-boxes for one of said shafts, and means for effecting the adjustment of said shafts and bearing-boxes, substantially as described.

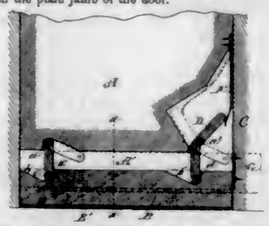
3. The combination of the cones D and E, the sliding shaft C', the pinion F, feathered to and sliding on said shaft, and means for adjusting said shaft longitudinally in its bearings, substantially as described.

4. The pinion I, for communicating motion from the cone D to the cone E, and, in combination with said pinion and cones, the jointed arm H H', provided with the knuckle or rib for limiting the movement of the part H' of said arm, rock-shaft G, to which said arm is secured, and means for adjusting said shaft and arm, all substantially as described.

5. The combination of the shafts C and C', the cones D and E, the latter adjustable laterally with its shaft, the pinion F, feathered to and sliding on the shaft C', means for adjusting said shaft C' and its cone laterally, the connecting-pinion I, and means for adjusting the latter, all substantially as and for the purpose described.

295,537. WEATHER-STRIP. EUGENE E. GILLETT, Western Union, Wis. Filed Aug. 27, 1883. (No model.)

Brief.—A weather-strip consisting of a guard inclosed, together with its link and lever, wholly in a longitudinal groove in the bottom of the door, and operated by said elbow-lever and the impact of the end of the guard with the plain jamb of the door.

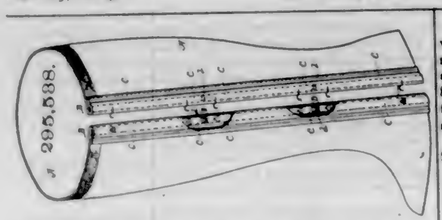


Claim.—In combination with a door provided with a longitudinal central slot or groove, A', formed in the under side of its lower edge, and a plain-surface door-jamb, the guard B, suspended by suitable links within the groove A', and with its end directly engaging the said plain jamb, and the elbow-lever D, wholly inclosed and adapted to operate in the groove of the door, substantially as set forth.

295,538. LEGGIN. JOSEPH N. GOLDBACHER, New York, N. Y. Filed Jan. 31, 1884. (No model.)

Claim.—1. An improved leggin or trousers-protector provided along each of its longitudinal edges with ribe of rigid material broken or separated at certain intervals, arranged substantially as set forth.

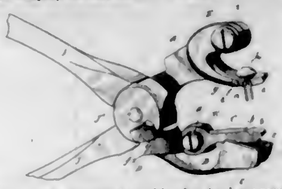
2. An improved leggin or trousers-protector provided along each of its longitudinal edges with ribe of rigid material broken or separated



at certain intervals and articulated to each other, substantially as described, and for the purpose set forth.

3. An improved leggin or trousers-protector provided with the elastic string M and the ribs C, articulated to each other, arranged substantially in the manner described, and for the purpose set forth.

295,539. IMPLEMENT FOR SETTING BUTTON-FASTENER STAPLES. JOHN H. GOODFELLOW, Troy, N. Y., assignor to the Heaton Buttor Fastener Company, Providence, R. I. Filed Sept. 28, 1883. (No model.)



Claim.—1. The combination, with a jaw having a recess to receive a staple and eye of a button, substantially as set forth, of the described button-lock pivoted to said jaw, and adapted to be moved beneath and across a button having a staple through its eye in said recess, and thereby secure the button and staple to the jaw, substantially as described.

2. The combination, with a jaw having a recess to receive a button and staple, and furnished with the described button-lock pivoted to said jaw, and adapted to secure the button and staple to the jaw, substantially as set forth, of a jaw furnished with means, substantially as described, for bending and clinching the legs of the staple by the closing of said jaws.

3. The combination, with a jaw having a recess for receiving the bow of a staple, of the described holder pivoted to said jaw, so as to move across said recess in a plane about parallel to the plane of that recess, and bear against one side of the two legs of the bow of a staple in the recess, substantially as set forth.

4. The combination, with a jaw having means for holding a button and staple, of a second jaw having the lateral dies *c' c'*, and the anvil C, mounted on said second jaw, so as to move to and fro between said dies, and connected with said other jaw by devices, substantially as described, for positively controlling the retreating movement of the anvil as the jaws are closed in bending the legs of a staple, as set forth.

5. The combination, with a jaw having means for holding a button and staple, of a second jaw having the lateral dies *c' c'*, and the anvil C, mounted on said second jaw, to move between said dies, and connected to said other jaw by devices, substantially as described, for positively controlling the retreating movement of the anvil as the jaws are closed in bending the legs of a staple, and means for returning the anvil in opening the jaws, substantially as set forth.

6. The combination, with a jaw having means for holding a button and staple, of the jaw B, jointed to said other jaw, and having the side inclines, *c' c'*, lever D, mounted on the jaw B, and furnished with the anvil C and the cam *f*, or its equivalent, on said other jaw, substantially as described.

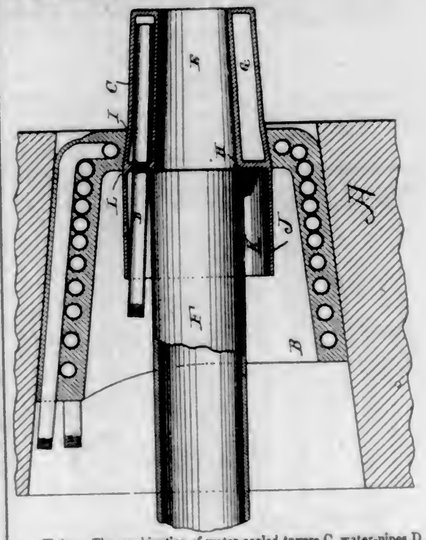
7. The combination, with a jaw having means for holding a button and staple, of a second jaw furnished with an anvil and lateral clinching-dies, having reversely-inclined faces, with guide-grooves in two parallel planes about at right angles to the plane of the bow of the staple held by said other jaw, and connecting devices, substantially as described, for bending and clinching the legs of the staple by the closing of said jaws, substantially as set forth.

8. In an instrument for attaching buttons by staples, the part A, provided with the cam *f* or equivalent, and means for holding a button and staple, in combination with a jaw, B, provided with a slot, *m*, and side inclines, *c' c'*, having guide-dies *d d*, combined with a pivoted retreating anvil, C, mounted on a lever, D, adapted to operate substantially as described.

9. In an implement for setting buttons, a jaw, A, provided with an arched recess, *n*, to receive a staple, and a slot to receive a button-eye, and furnished with the button-lock E, as described, to wedge a button and staple, in combination with the jaw B, provided with a pivoted anvil, substantially as set forth, adapted to bend and clinch a staple, substantially as described.

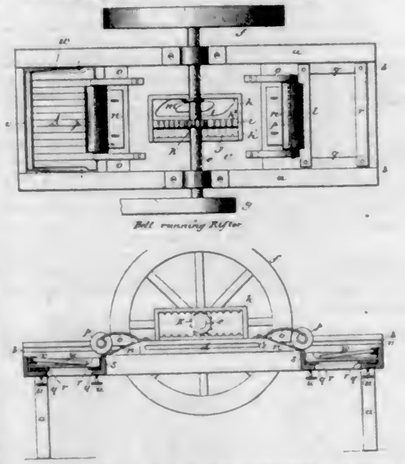
10. In an instrument for setting buttons, a member, A, provided with means for holding a button and fastener, and cam *f*, jointed to the member B, provided with a retreating anvil, C, furnished with dies *b b*, and lever D and sides *c' c'*, adapted to operate as described, of a spring, S, arranged in the fulcrum-joint J' in the manner set forth, and adapted to return the deflecting-anvil C and members A and B to their open position, substantially as described.

295,540. TUYERE. FRED. W. GORDON, Pittsburg, Pa. Filed Nov. 26, 1883. (No model.)



Claim.—The combination of water-cooled tuyere C, water-pipes D, centering-lugs H or their equivalents, and the rear shell, J, as the external periphery of the tuyere, outside of the water-pipe, substantially as set forth.

295,541. SHINGLE SHAVING AND RIFTING MACHINE. APPLETON GOULD, Bangor, Me. Filed Mar. 8, 1883. (No model.)

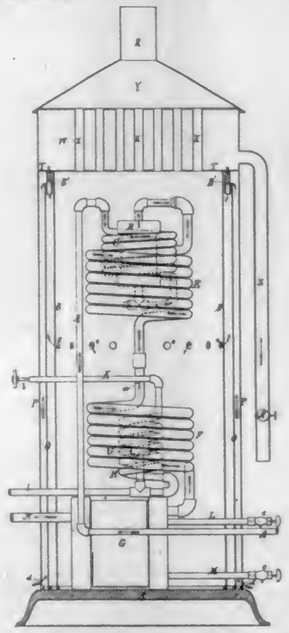


Claim.—1. The combination of the reciprocating knife-bearing table, self-adjusting pressure-rolls, and end bar, o, supported upon spring-arms *w*, said bar extending across the end of the shingle-bed beyond said bed, and operating to resist the pushing action of the shingle-shaving knife by serving as a rest for the point of the shingle, and depressible by the advancing reciprocating table, substantially as set forth and described.

2. The combination of the reciprocating knife-bearing table, self-adjusting pressure-rolls, spring end bars extending across the shingle-bed beyond its end and serving as a rest for the shingle-point, and adjustable shingle-bed, as set forth.

3. The shingle-bed formed from separate bars unattached to and independent of each other, as described, and capable of adjustment in different planes, substantially as set forth, in combination with mechanism whereby said adjustment may be effected.

295,542. STEAM-GENERATOR. DANIEL MCBRIDE GRAHAM, Chicago, Ill., assignor to the Company of Vulcan, New York, N. Y. Filed May 29, 1883. (No model.)



Claim.—1. The combination of the drums D and G and the coils C, E, and F, the coil C being within the coil E and around the drum D, and the coil F above the drum G, as described, with the heater composed of the pipes I and K, the coil H, and the deflector U, arranged with and within the coil F, as represented, the pipe K of such heater being provided with one or more jet-holes, *a*, as explained.

2. The combination of the case B, provided with one or more air-leducts, *c*, with the drums D and G, coils C, E, and F, the coil C being within the coil E and around the drum D, and the coil F above the drum G and the heater, as described, consisting of the pipes I and K, coil H, and deflector U, coil H and deflector U being within the coil F, all being adapted substantially as described, and the coil C furnished with an induct, A, for supplying it with water.

3. The combination of the air-heating chamber W, provided with the pipes X and Z, and with conduits leading from it into the air-jacket, as described, with such jacket, the case B, and the heater, the coils and drums arranged within such case, and adapted substantially and to operate as set forth.

295,543. BODY-PROTECTOR. WILLIAM GRAY, Hartford, Conn., assignor of one-half to William W. Tucker, same place. Filed Oct. 18, 1883. (No model.)

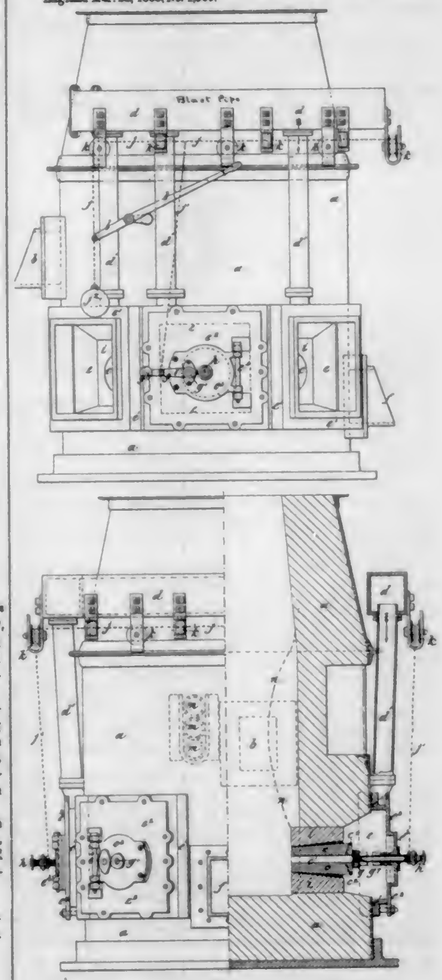


Claim.—1. As a new article of manufacture, a body-protector of the within-described class, made of air-tight material conforming in general outline to the part protected, and having a narrowed lower extremity, the whole provided with means for inflation and for securing it to the body of the wearer, all substantially as described.

2. As a body-protector, the air-cushion, of the within-described shape, having lateral corrugations, whereby the cushion is rendered flexible longitudinally, all substantially as described.

3. In combination, the air-cushion *a*, having the transverse corrugations *b* and the narrowed lower extremity, *c*, the air-valve *f*, and the strap *d* and belt *e*, all substantially as described.

295,544. CONVERTER. THOMAS GRIFFITHS, Abergavenny, County of Monmouth, England. Filed Oct. 15, 1883. (No model.) Patented in England Mar. 22, 1883, No. 1,509.



Claim.—1. The combination, in a converter having tuyeres and air-chambers arranged at the outer end of the tuyeres, of laterally-sliding valves or covers for opening and closing the tuyeres, having axes extending through the side or cover of the wind-boxes, with actuating mechanism connected to the several axes for turning the same to cause the simultaneous operation of the valves, substantially as and for the purpose described.

2. The combination, with a converter having tuyeres and external air-chambers, of sliding valve or cover *g*, axis *g'*, lever *g³*, chains *j j*, weights

j⁷ g⁴, guide-rollers *k*, and lever *l*, substantially as herein shown and described, and for the purpose stated.

3. The combination, in a converter having tuyeres and external air-chambers surrounding the tuyeres, of a laterally-sliding valve for closing the tuyeres, and an independent axially-moving stem extending through the cover or side of the air-chamber for forcing and holding the valve tightly to its seat, substantially as and for the purposes set forth.

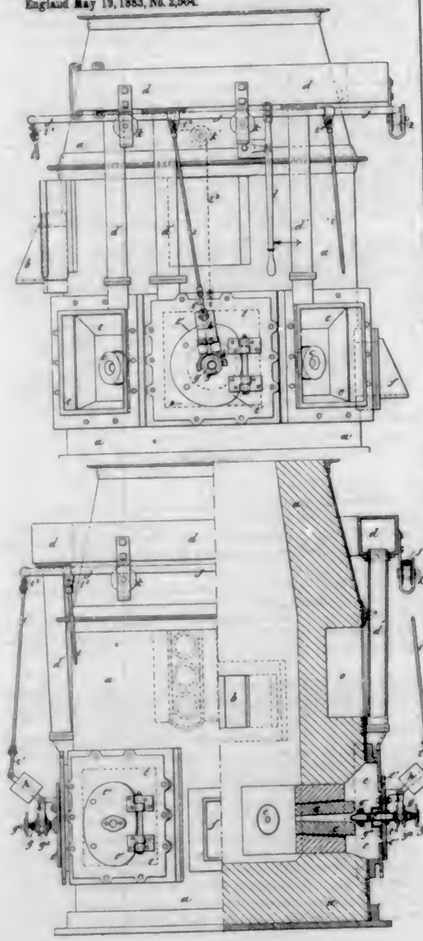
4. The combination, in a converter having tuyeres and external air-chambers, of the tuyere and its perforated valve, with a sight-tube extending through the door or side of the air-chamber, substantially as and for the purposes described.

5. The combination of the tuyere and its perforated sliding valve with a screwed sight-tube constructed to force the valve to its seat, substantially as and for the purposes described.

6. The combination, in a converter, of the tuyere-blocks *i*, tuyeres *c*, of greater length than the blocks, and provided with lateral openings connecting with the air or blast chambers *s*, and valves situated in the chamber for closing the tuyeres, substantially as and for the purposes described.

7. The combination, in a converter having tuyeres and external air-chambers, of a laterally-sliding valve arranged in the air-chambers for closing the tuyeres, each having an axis, with a weighted radial lever connected to the axis for turning it to open the valve, and means for closing the valves simultaneously, substantially as and for the purposes described.

295,545. CONVERTER. THOMAS GRIFFITHS, Abergavenny, County of Monmouth, England. Filed Nov. 3, 1883. (No model.) Patented in England May 19, 1883, No. 2,504.



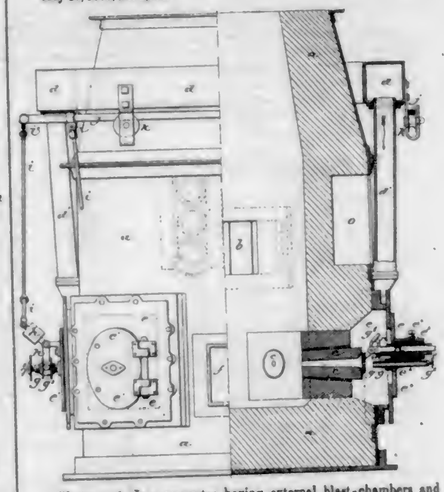
Claim.—1. The combination of stem or tube *g*, plug or stopper *g'*, grooved collar *g²*, and weighted clutch-lever *h*, connected to the rod *j*, by which all the plugs or stoppers *g'* are simultaneously operated, substantially as herein shown and described, and for the purpose stated.

2. In a converter having blast-chambers and tuyeres, the combination of the axially-moving tube *g** and stem or tube *g* with a plug or stopper *g'*, and means for adjusting the stem or tube *g* with relation to the tube *g** and to the tuyere, substantially as and for the purposes described.

3. In a converter having external air-chambers, the combination of the tuyere with its plug or stopper and one or more small grooves in their meeting faces, to admit a small stream of air to the tuyere when the valve is closed, substantially as and for the purposes described.

4. In a converter having external blast-chambers, the combination of the tuyeres and their plugs or stoppers with sliding stems for operating said plugs or stoppers from the outside of the chamber, weighted crank-levers for operating the stems in one direction, and mechanism for operating them simultaneously in the other, substantially as and for the purposes described.

295,546. CONVERTER EMPLOYED IN THE MANUFACTURE OF IRON AND STEEL. THOMAS GRIFFITHS, Abergavenny, County of Monmouth, England. Filed Jan. 28, 1884. (No model.) Patented in England May 19, 1883, No. 2,504.

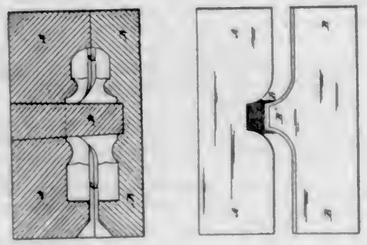


Claim.—1. In a converter having external blast-chambers and tuyeres, the combination of a hinged weighted tuyere, valve, or cover, *g'*, with a rod or pusher, *n*, grooved collar *g²*, and weighted lever *h* for operating the same, substantially as herein shown and described.

2. In a converter having external blast-chambers and tuyeres, the combination of a hinged tuyere, valve, or cover, *g'*, rod or pusher *n*, link *g³*, collar *g²*, and tube *g*, substantially as herein shown and described.

3. In a converter having external blast-chambers, the combination of the tuyeres, with hinged tuyere covers or valves arranged in said blast-chambers and operated from the outside by means of a sliding stem, tube, or pusher, substantially as and for the purposes described.

295,547. DIE FOR FORGING HAMMERS. HENRY HAMMOND, Hartford, Conn. Filed June 13, 1881. Renewed Oct. 1, 1883. (Model.)

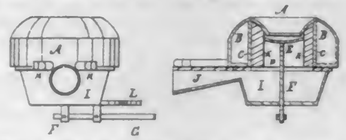


Claim.—1. The finishing-die A B, having the joint between the upper and lower parts of the form shown and described, whereby the line of junction passes along the middle portion of the ends of the hammer, and thence curves outward to the top of the eye, substantially as described.

2. In a finishing-die for hammers, of the form shown and described, the combination of the mandrel D upon one part of the die with the buttresses B' upon the other part, both extending the full length of the eye, substantially as described.

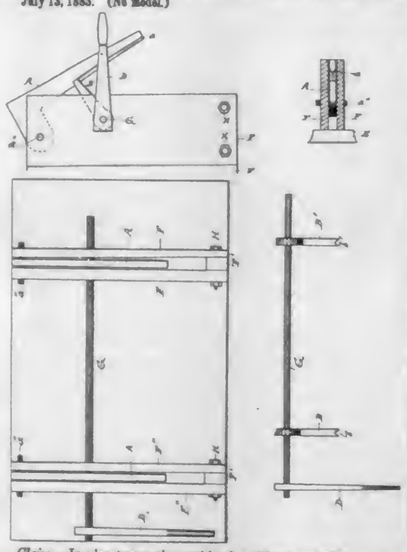
3. The die A B, of the form shown and described, having the freed portions C, jointly with the die E F, of the form shown and described, having the freed portions G at right angles to those at C, substantially as set forth.

295,548. TUYERE. JACOB F. HARLY, Kipton Station, assignor to William K. Burton, Elyria, Ohio. Filed Aug. 6, 1883. (No model.)



Claim.—A tuyere-iron constructed with a water-chamber, B, throat D, ash-box I, valve E, and pipes H and J, in combination with the lugs K, attached to the walls of the throat or passage-way D, and straight stem F, and lever G, operating the valve E, all as above set forth, and substantially as described.

295,549. LOG-TURNER. SAMUEL T. HAVILAND, Jamison, Ala. Filed July 13, 1883. (No model.)



Claim.—In a log-turner, the combination of the frames F F', mounted upon a suitable base, the arms A, having an elbow pivoted to said frames and provided with V-shaped slides *a*, the arms B B', secured to said shaft and having notches *b b'*, and the shaft G, mounted in the said frames and having a handle, D, as described, and for the purposes set forth.

295,550. PROCESS OF AND APPARATUS FOR VAPORIZING HYDROCARBON OILS. HENRY F. HAYDEN, Washington, D. C. Filed Aug. 30, 1883. (No model.)

Claim.—1. The method herein described for generating hydrocarbon vapors for immediate use as fuel and for like purposes, which consists in combining superheated steam and hydrocarbon oils under gradually-increasing pressure and heat, together with rapid and continuous expansion and compression, and conducting off the vapors from the combining-chamber in the direction of gravity and pressure, substantially as and for the purposes specified.

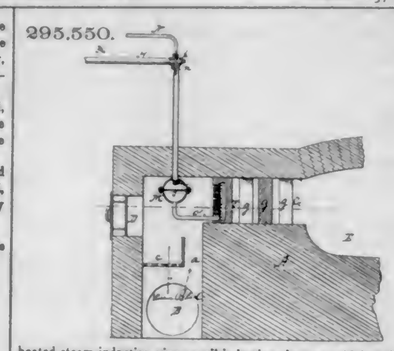
2. In apparatus for combining hydrocarbon oils and superheated steam for generating combustible vapors, the combination of a superheated-steam-induction pipe, an oil-induction pipe, a combining-chamber divided by a perforated diaphragm, the steam and oil pipes entering the combining-chamber above the diaphragm, and a vapor-eduction pipe so arranged with relation to the induction-pipes and combining-chamber that the vapors shall escape by gravity as well as pressure, substantially as and for the purposes specified.

3. In an apparatus for combining hydrocarbon oils and steam for generating combustible vapors, the combination of the superheated-steam-induction pipe, the oil-pipe delivering thereinto, the combining-chamber divided into two compartments by a perforated or a reticulated diaphragm, and a vapor-eduction pipe leading from the lower compartment of the combining-chamber, substantially as and for the purposes specified.

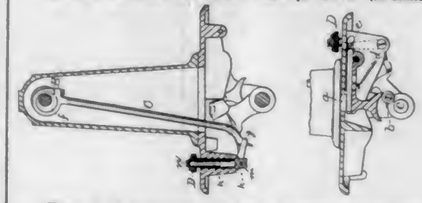
4. The combining-chamber composed of the longitudinal flanged separable sections and the interposed centrally-arranged perforated or reticulated diaphragm, substantially as and for the purposes specified.

5. The combination of a combining-chamber having a central perforated diaphragm, with oil and steam pipes delivering thereinto above the diaphragm, and eduction-pipes leading from the opposite side of the diaphragm to a series of burners, said combining-chamber being arranged in the air-well of the furnace, with a series of vertically-arranged hollow perforated burners, which deliver against the combining-chamber and toward the air-well, substantially as and for the purposes specified.

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295,551. FEEDING MECHANISM FOR SEWING-MACHINES. C. WALLACE HEALEY, Marlborough, N. H., assignor to the Companion Sewing Machine Company, New Britain, Conn. Filed Sept. 10, 1883. (No model.)



Claim.—1. In combination with feeding mechanism and the rock-shaft which drives it, having the arm *g*, mechanism for raising and lowering the end of the shaft which carries said arm, and the reciprocating rod for acting upon said arm, substantially as described, and for the purpose specified.

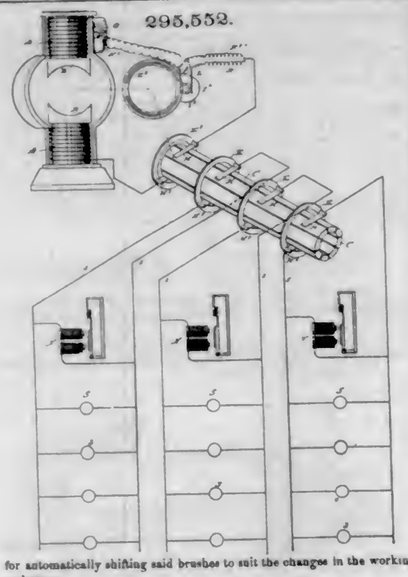
2. The combination of feeding mechanism and rock-shaft A, having arm *g*, the reciprocating rod C, for acting upon said arm, the block *k*, carrying one end of the rock-shaft, and the adjusting-screw *d*, for raising and lowering said block, substantially as described, and for the purpose specified.

295,552. APPARATUS FOR REGULATING AND DISTRIBUTING CURRENTS FROM DYNAMO-ELECTRIC MACHINES. WILLIAM HOCHHAUSEN, New York, N. Y. Filed May 4, 1883. (No model.)

Claim.—1. The combination, with a dynamo-electric machine whose field-magnetism is sustained by a derived-circuit current from the armature, and is automatically corrected, by any suitable means, to suit any change in the external or working circuit, so as to remain constant, of an automatic regulator for adjusting the current in such working-circuit to any changed resistance therein.

2. The combination, in a dynamo-electric machine having a commutator provided with two sets of brushes, of a field-magnet supplied with current from one set of brushes, means for automatically adjusting said brushes so as to correct any changes in the magnetic force induced by the current from said brushes, and keep the magnetism constant, an exterior working-circuit supplied from the other set of brushes, and means

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for automatically shifting said brushes to suit the changes in the working resistance.

3. The combination, with a dynamo-electric machine, of two supply-conductors connected in multiple arc from the armature, one including the field-magnets and the other a working resistance or resistances, means for compensating for changes in the distribution of current consequent upon changes in the working resistance, so as to keep the field constant, and regulating devices for adjusting the current supplied to the exterior circuit to suit the changes of resistance on such circuit.

4. The combination, with a dynamo-machine whose field-magnet coils are in a derived circuit, of means for automatically regulating the current flowing around the field-magnet, so as to correct any changes of magnetism produced by changes in the external or working circuit or circuits, and thus keep the magnetism constant, and an external or working circuit provided with independent regulating devices for regulating the current to suit the changes in the external resistance.

5. The combination, with a dynamo-electric machine having its field-magnetism maintained by a current derived from the armature, of means for automatically regulating the magnetizing-current, so as to correct the field-magnetism and keep it constant, despite any tendencies to variation due to variation in distribution of current in the derived circuit supplying the field and the main or working circuit, and an automatic regulator for adjusting the current in the main or working circuit to any change of working resistance.

6. The combination, with a dynamo-electric machine, of two or more sets of commutator-brushes bearing on the same commutator-cylinder, each set supplying a separate or independent circuit, and independent means for automatically adjusting said brushes.

7. The combination, with the same commutator-cylinder for a dynamo-electric machine, of two or more sets of independently-adjustable commutator-brushes, each set supplying an independent circuit.

8. The combination, with a dynamo-electric machine, of two or more working-circuits, each connected with an independent set of commutator-brushes bearing on the same commutator-cylinder, and means for automatically shifting a set of brushes in accordance with changes in the working resistance with which such set is connected.

9. The combination, with a dynamo-electric machine, of several sets of commutator-brushes bearing on the same commutator-cylinder, and means for automatically adjusting said sets of brushes independently of one another, according to changes in the resistance of their respective circuits.

10. The combination, with the commutator-cylinder, of a set of commutator-brushes mounted on a ring encircling said cylinder, and supported on friction-wheels, as and for the purpose described.

11. The combination, with the ordinary commutator-brush, of auxiliary sets of brushes mounted on independent ring or wheel supports encircling the commutator-cylinder, as and for the purpose described.

12. The combination, with a dynamo-electric machine, of two or more sets of auxiliary commutator-brushes independently adjustable, each set supplying a separate multiple-arc circuit, and a governing electro-magnet for said adjustable brushes placed in a multiple-arc branch, substantially as and for the purpose described.

13. The combination, with a dynamo-electric machine, whose field-magnetism is maintained by a local circuit from the commutator-brushes, of two or more auxiliary sets of commutator-brushes independently adjustable, each set supplying a multiple-arc circuit, and a governing electro-magnet for an auxiliary set of brushes placed in one of the multiple-arc branches.

14. The combination, with a dynamo-electric machine having its field-magnetism maintained by a local closed circuit from the commutator-brushes, of means for automatically adjusting said brushes controlled by the magnetism induced by the current in such local circuit, one or more exterior multiple-arc working-circuits, each connected to one set of a series of auxiliary adjustable commutator-brushes, and means for automatically adjusting said auxiliary sets controlled by electro-magnets in one of the several multiple-arc branches for the respective working-circuits.

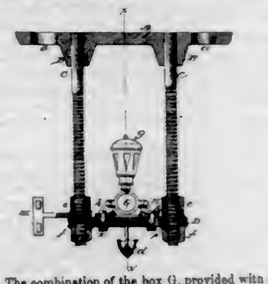
15. The combination, with the commutator for a dynamo-electric machine, of one or more auxiliary commutator-brush supports, E, consisting of rings encircling, but out of contact with, the commutator-cylinder mounted on rollers F F^2 F^3, and encircling the commutator-cylinder.

16. The combination, with the commutator-brush supports E, of the guide and supporting rollers F F^2 F^3, substantially as described.

17. The combination, with the adjusting or regulating mechanism for a dynamo-machine, of an operating lever or handle moving over a scale graduated to candle-power of the electric lamps, whose current is governed by such regulating mechanism.

18. The combination, with the retractile spring for the regulator of a dynamo-machine, of an adjusting device, and a scale over which such device moves, graduated to candle-power.

295,553. HANGER FOR SHAFTING. JOSEPH E. HOPPER, Newark, N. J. Filed Oct. 10, 1882. (No model.)

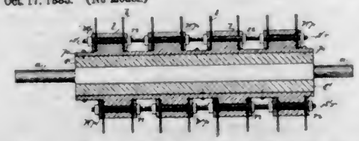


Claim.—1. The combination of the box G, provided with a convex bottom, and the plate D, provided with the concave seat held in adjustment by bolts *h h*, substantially as and for the purpose herein described.

2. The combination of the plate H and its bolts A and the plate D, provided with the slots for the engagement of said bolts, substantially as herein described.

3. The combination of the rods C, plate D, provided with the slot *j*, and the set-screws K K, as shown and described, for the purpose specified.

295,554. HOMINY-MILL. THEODORE HUDNUT, Terre Haute, Ind. Filed Oct. 17, 1883. (No model.)



Claim.—1. The wooden cylinder C, having square sides and mounted on axis *a*, the metal plates *p*, adapted to be secured to the squared sides of the cylinder, and provided with lugs *l*, integral with the plates, and set at such distances apart as to break a continuous spiral from one end of the cylinder to the other, all combined substantially as described.

2. The wooden cylinder C, having squared sides and mounted on axis *a*, the metal plates *p*, provided with lugs *l*, integral with the plates, adapted to be secured to the sides of the cylinder, and balancing devices secured at the corners of the cylinder, all combined substantially as described.

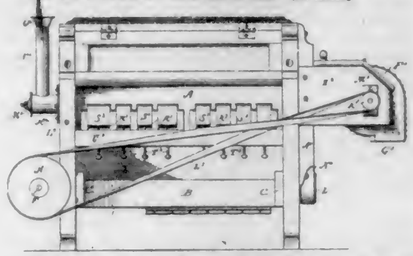
3. The plate *p* with lugs *l*, adapted to receive the rod *sr*, in combination with such rod and set-nuts *n*, substantially as described.

4. The plate *p* with lugs *l*, adapted to receive the rod *sr*, in combination with such rod, the set-nuts *n*, washer-plates *wp*, and blades *b*, substantially as described.

5. The cylinder C, mounted on axis *a*, the plates *p*, having lugs *l*, the rods *rr*, set nuts *n*, and blades *b*, all combined substantially as described.

6. The cylinder C, mounted on axis *a*, having plates *p*, provided with lugs *l*, the rods *rr*, passing through said lugs, the set-nuts *n*, washer-plates *wp*, and blades *b*, with open slots, all combined substantially as described.

295,555. BOLT FOR PURIFYING MIDDLINGS, &c. OLIVER PERRY HERFORD, Oakdale, Nebr. Filed Apr. 19, 1883. (No model.)



Claim.—1. In a rotary bolt, the combination of a reel mounted upon tubular gudgeons, cross-bars at the inner ends of said gudgeons, a shaft mounted securely in said cross-bars, and brushes mounted pivotally upon said shaft, said brushes consisting, essentially, of frames weighted at their lower ends and having vertically-adjustable brushes at their upper ends, substantially as and for the purpose set forth.

2. In a rotary bolt, the combination of the reel mounted upon tubular gudgeons, means for feeding the reel through the gudgeon at the upper end of the same, radial wings or scatterers upon the inside of the reel at the upper end of the same, and a suction-fan arranged outside and connected with the gudgeon at the lower end of the reel, as set forth.

3. The combination of the bolting-chest, the cylindrical ring or band upon the inner side of the lower end of the same, and the reel, the lower end of which is fitted within the said ring or band, substantially as and for the purpose set forth.

4. The combination of the bolting-chest, the reel hung in the same upon tubular gudgeons, the openings in the lower head of the reel beveled down to the edge of the latter, the ring or band upon the inside of the lower end of the chest surrounding the lower head of the reel, the slanting chute at the lower end of said ring or band, and the drop-valve, all arranged and operating substantially as set forth.

5. The combination of the bolting-chest, the reel, tubular gudgeons for said reel, a spider formed at the outer end of the lower gudgeon and having a spindle or journal, a box or casing secured at the lower end of the chest and having an opening into which the lower gudgeon of the reel extends, and a cross-bar upon the inner side of said opening forming a bearing for the spindle upon the lower gudgeon of the reel, as set forth.

6. The combination of the bolting-chest, the reel, tubular gudgeons for said reel, means for feeding the reel through the gudgeon at its upper end, radial wings or scatterers upon the inside of the reel at its upper end, a box or casing secured on vertical bars or brackets upon the lower end of the chest and having an opening into which the gudgeon at the lower end of the reel projects, the fan-case arranged in said box or casing, and the fan journaled transversely in the sides of the box or casing, as set forth.

7. The combination of the chest, the vents, the transverse partitions, the deflector, the reel hung upon tubular gudgeons, openings in the lower head of the reel, a band encircling the said lower end, a chute and a valve, as described, means for feeding the reel through the gudgeon at its upper end, and a suction-fan connected with the tubular gudgeon at the lower end of the reel, substantially as set forth.

8. The combination of the bolting-chest, the conveyer-shaft arranged longitudinally in the trough at the bottom of said chest, the reel mounted in the chest upon tubular gudgeons, the lower one of which extends through the casing and is formed with a spindle, a box mounted on vertical bars or brackets at the lower end of the chest and having a bearing for said spindle, a band-wheel on the lower end of the conveyer-shaft, a belt connecting the said band-wheel with the lower gudgeon, and suitable operating mechanism, all arranged and operating substantially as set forth.

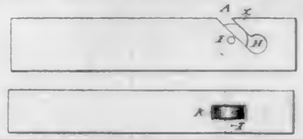
295,556. BLASTING-BARREL. GEORGE A. INGRAM, Plymouth, Pa. Filed Jan. 10, 1884. (No model.)



Claim.—1. A blasting-barrel provided with one or more perforations or slots, the latter having their upper edges beveled or formed countersunk, so that the powder may rest within and protrude a short distance through the perforations, for the purpose set forth.

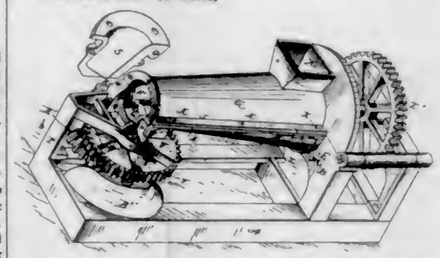
2. As an improved article of manufacture, a blasting-barrel perforated or slotted at one end, and having said end provided with a plug or cap formed with a perforation or opening, said plug or cap being removable, as desired, for the purpose set forth.

295,557. TAG. MATTHEW WHEELER KASE and JAMES DE WITT KASE, Danville, Pa. Filed Nov. 7, 1883. (No model.)



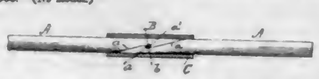
Claim.—The herein-described rotary rubber disk, applied in combination with a slotted tag, and pivoted in such slot, all substantially as set forth.

295,558. BRICK-MACHINE. PHILIP HENRY KELLS, Adrian, Mich. Filed Oct. 18, 1883. (No model.)



Claim.—In a brick-machine, the combination, with the tapering conical horizontal tempering-chamber G, provided with the nose-piece S, and rotary knives for feeding the clay to the discharge, of the mold-wheel arranged horizontally beneath the discharge-opening, provided with molds having bottom flanges to support the plungers, the plungers provided with downwardly-projecting bearings carrying friction-rollers, and a cam-track out of line with the discharge-opening, on which the friction-rollers travel to operate the plungers to expel the brick, and upon which they descend to permit the molds to be filled at the proper time, and mechanism for operating the parts, substantially as specified.

295,559. COUPLING FOR ELECTRIC WIRES. GEORGE L. KITSON, Philadelphia, Pa., assignor to William J. Philips, same place. Filed Aug. 15, 1883. (No model.)



Claim.—1. A coupling for electric wires, comprising overlapping wire ends with transverse opening or seat in the line of their junction, a sleeve with transverse opening, and a key passing through the latter and said junction-opening, substantially as shown and described.

2. A coupling for electric wires, comprising overlapping wire or conductor ends and a surrounding sleeve having a transverse opening or way for a key, which locks said parts together, substantially as shown and described.

3. In a coupling for electric wires, the combination of beveled or overlapping ends of wires A A, having transverse opening *b*, the sleeve C, with registering opening *c*, and a key, B, substantially as shown and described.

4. The combination of wires A A, having double-inclined ends *a a*, with intervening shoulders, *a' a'*, and opening *b*, the sleeve C, with registering opening *c*, and key B, substantially as shown and described.

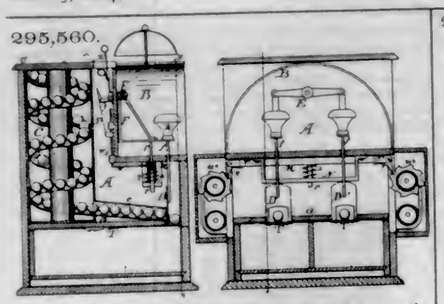
5. The combination of wires A A, having beveled ends, with opening *b*, sleeve C, with opening *c*, and key B, said parts being surface-soldered before coupled together, substantially as shown and described.

6. In a coupling for electric wires, the combination of two uniting-wires having an opening in the line of their junction, a surrounding sleeve with registering opening, and a key for locking said parts together, as set forth.

295,560. BALLOT-BOX. JOSEPH KLINGER, Cleveland, Ohio. Filed Jan. 24, 1884. (No model.)

Claim.—1. In a ballot-box, the combination, with the two cylinders C C, having spiral chambers terminating with discharge-spouts *c c*, of the mechanism constructed and arranged to eject and deposit one ball

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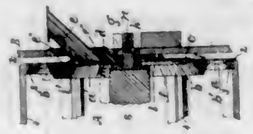
at a time, and the mechanism constructed and arranged to operate the register, and a mechanism constructed and arranged to operate the bell-signal simultaneously, as described.

2. The pivoted balance-lever E, brackets F F', supporting the rods *f f*, provided with the knobs *k k*, and carrying the gates D D', in combination with the spouts *c c* of said cylinders C C, and the traps T T, operating to eject and deposit the balls, substantially in the manner and for the purpose specified.

3. The combination, with the balance-lever E, brackets F F', and rods *f f*, provided with knobs *k k*, and carrying gates D D', of the lever M, hung in the slotted frame N, and provided with pin *p* and spring *s*, and the dog *v*, for operating the registering device, substantially as and for the purpose specified.

4. The combination, with the balance-lever E, brackets F F', and rods *f f*, provided with knobs *k k*, of the lever M, hung in the slotted frame N, and provided with pin *p* and spring *s*, and the arm W, sliding in sockets W^3, and provided with spring-catch y^3, operating the bell-hammer *r*, for sounding the bell-signal, substantially as and for the purpose specified.

295,561. BOLTING-CHEST. LAWRENCE B. KOHNLE and WILLIAM B. HAMILTON, Lima, Ohio, assignors to James Irvine, same place. Filed Oct. 25, 1883. (No model.)



Claim.—1. In a reel-head, the combination of a ring or annulus, a stationary disk within the same, an opening in said disk, and a feed-spout extending through said opening, with means for closing the latter in adjusting the reel-head.

2. In a bolting-chest, the combination of a reel-head with a revolvable annulus, a non-revolvable disk, a sleeve-opening in said disk, and a feed-spout of less vertical diameter than the opening in said sleeve extending from the head-boards of the chest through the latter, with flanges extending therefrom covering said opening, to provide for the adjustment of the reel-head, as set forth.

3. In a bolting-chest, the combination of a feed-spout, an adjustable reel, and a reel-head, a non-revolvable central circular section provided with a short sleeve extending outward therefrom to adapt it for the insertion of the feed-spout, the opening in said sleeve being of greater vertical diameter than said feed-spout, to allow of the adjustment of the reel-head, irrespective of the latter.

4. In a reel-head, a revolvable section, *a*, annulus *f*, projecting inwardly therefrom, and an inner flange, *a'*, in combination with a fixed section, *b*, sleeve *d*, opening therein, semicircular ledge *l*, block A, and ring *c* with rabbet *i'*, adapted to be bolted to section *a* over the edge of section *b* to form a groove for the latter, as and for the purpose set forth.

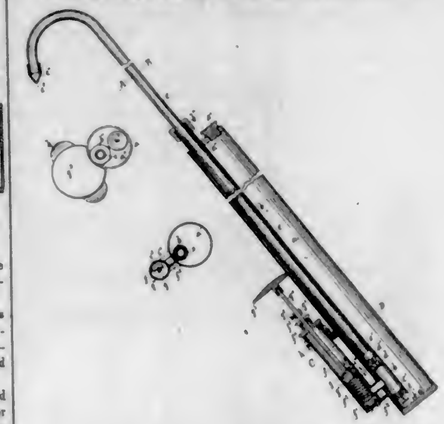
5. In a bolting-chest, a feed-spout, *e*, with upper and lower flanges, *e''*, in combination with the reel-head A, constructed as described, and adapted for adjustment vertically over said spout, as set forth.

6. In a reel-head, A, constructed as described, the combination, with section *b*, and flange *i*, projecting therefrom, of the wooden block *h*, substantially as and for the purpose set forth.

7. The combination, with the shafts *n* and concentric disk-shaped metal section *b*, having the projecting flange *i*, of the wooden block A, as and for the purpose hereinbefore set forth.

8. In a reel-head, the combination of flange 2, rib *b'*, extending at right angles inward therefrom, and head-bands 3, as and for the purpose hereinbefore set forth.

295,562. OIL-EJECTOR. GEORGE F. LAWRENCE and ALEXANDER MCDONALD, Worcester, Mass. Filed Jan. 7, 1884. (No model.)



Claim.—1. In an oil-ejector, the oil-reservoir *a*, valve-pipe *b*, with its valves *c' d'*, valve-seats *c d*, and extension-pipe *e*, having discharge-nozzle d'' e^2, combined with a pump to draw the liquid from reservoir *a* and to force it out through the delivery and discharge pipe, as and for the purpose set forth.

2. An oil-ejector consisting, essentially, of a reservoir, *a*, a valve-pipe, *b*, having valves *c' d'*, extension-pipe *e*, and a pump or pressure device, as and for the purpose set forth.

3. In an oil-ejector, the reservoir *a*, with inclosed valve-pipe *b* and valves *c' d'*, extension-pipe *e*, with discharge-nozzle d'' e^2, combined with a pump or pressure device arranged on the outside of said reservoir *a*, as and for the purpose set forth.

4. In an oil-ejector having reservoir, valve-pipe, and extension discharge-pipe, as described, the pump *e*, with its coiled spring f^4 and handle A, piston *g*, with its self-closing valve *i*, and piston-rod *g''*, having upper handle, g^2, and adjustable collar g^4, as and for the purpose set forth.

295,563. MAGAZINE FOR FIRE-ARMS. JAMES P. LEE and LOUIS P. DUBE, Ilion, N. Y., assignors to E. Remington & Sons, same place. Filed Jan. 9, 1884. (No model.)



Claim.—1. A cartridge or magazine box of the form or character substantially such as shown, composed of thin sheet metal or similar material and having its sides corrugated or indented, substantially as shown and described.

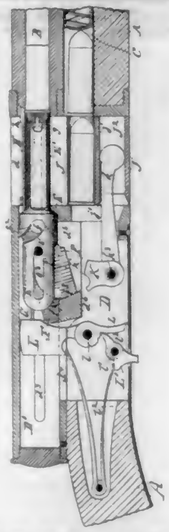
2. In a magazine for fire-arms, the combination of the box A and the spring-arm *b*, said parts being arranged to operate substantially as shown and described, whereby the spring-arm is adapted to be swung across the open end or mouth of the box to hold the cartridges therein, and when released to automatically assume a position directly over and parallel with the wall of the box, out of the way of the escaping cartridges, as set forth.

3. In combination with the box A, the spring *b*, secured to one wall of the box and having its free end provided with a hook, *c*, arranged to engage with the opposite side, substantially as and for the purpose set forth.

4. In combination with the box A, having the hole *d* and indentation *f* formed in one of its walls, the spring-arm *b*, secured to its opposite wall and provided with a hook, *c*, arranged to engage with said indented portion, substantially as and for the purpose set forth.

295,564. MAGAZINE FIRE-ARM. JULIUS LEHMANN, St. Louis, Mo., assignor of one-half to John C. Fischer, same place. Filed Nov. 30, 1883. (No model.)

295,564.



Claim.—1. In a fire-arm, the combination, with the breech-chamber D and hollow cylinder D', having side slots, d^3, of the breech-block E, having side slots at e^3, the transverse pin i' on a side bar, I', connected to a hand-slide, I, fitted to reciprocate along the stock of the arm, by means whereof the said breech-block can be made to slide longitudinally backward and forward, substantially as and for the purposes set forth.

2. In a fire-arm, the combination, with the breech-chamber D, having shoulder at d^2, and hollow cylinder D', having side slot, d^3, of the breech-block E, consisting of side arms, e e', having diagonal slots e^3 and opposite side slots, e^3, the lock-piece F, having journals f, curved slot at f^2, and shoulder at f^3, and the reciprocating hand-slide I, with its connecting mechanism, to operate the said breech-block and lock-piece, in the manner and for the purposes set forth.

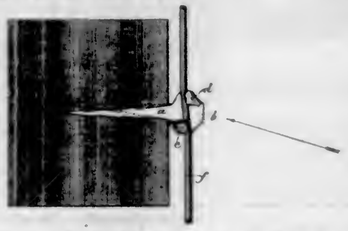
3. In a magazine fire-arm, the combination, with the breech-chamber D, hollow cylinder D', having side slot, d^3, of the breech-block E, its plunger E', carrying the extractor H, the said breech-block having opposite side slots, e^3, in which the transverse pin of the side bar, I', connects the breech-block and its said parts to a hand-slide, I, fitted to reciprocate along the magazine, barrel, or stock of the gun, by means whereof, at the same time that the breech-block is moved backward, the extractor withdraws the empty shell of cartridge.

4. In a magazine fire-arm, the combination, with the breech-chamber D, having shoulder at d^2, hollow cylinder D', having longitudinal slot d^4, of the breech-block E, forming part of which is the plunger E', extractor H, said breech-block consisting of side arms, e e', having diagonal slots at e^3, and opposite side slots, e^3, the lock-piece F, journaled in the breech-block and having the groove f'', curved slot f^2, shoulder at f^3, the needle-bar G, the hammer and trigger, the elbow-lever and elevator, and the hand-slide mechanism, having shoulder at k^2, by means whereof the complete backward pull or motion imparted to said hand-slide unlocks the breech, cocks the hammer, extracts and throws out the empty shell of cartridge, and lifts a new cartridge in line of the bore of the firing-chamber.

5. In a magazine fire-arm, the combination, with the breech-chamber D, having shoulder at d^2, hollow cylinder D', having longitudinal slot d^3, of the breech-block E, plunger E', carrying the extractor H, said breech-block consisting of the side arms, e e', having diagonal slots e^3 and opposite side slots, e^3, the lock-piece F, having journals f, curved slot f^2, shoulder at f^3, and groove f'', in which the needle-bar or percussion-stem G is seated, its forward end extending through the bore of the plunger, the hammer and trigger, the elbow-lever and elevator, and the hand-slide mechanism, having the shoulder at k^2, by means whereof the complete forward motion imparted to said hand-slide moves the breech-block and its said parts forward, thrusts the previously-elevated cartridge into the bore of the firing-chamber, locks the breech, thrusts the elevator downward, and loads the arm preparatory to its being fired or discharged.

6. In a magazine fire-arm having breech-chambers D D', with longitudinal slots d^3, shoulder at d^2, the combination of the longitudinally-moving breech-block and plunger E E', the former consisting of the side arms, e e', having diagonal slots e^3 and opposite side slots, e^3, its lock-piece F, having journals f, groove f'', curved slot f^2, and shoulder at f^3, the needle bar or stem G, with extractor H, said parts arranged within and carried by said moving breech-block, the U-shaped hand-slide capable of reciprocation, and connected by its side bar, I', and transverse pin i', to said moving breech-block and its parts, the side bar of hand-slide further having shoulders at k^2 k^3, in operative relationship to the elbow-lever K, having arms k k', the elevator J, having subdivided chambers J' J², and the further hammer and trigger parts, all operating substantially as described.

295,565. FENCE-WIRE FASTENING. EDWIN S. LENOX, Worcester, Mass. Filed June 4, 1883. (No model.)



Claim.—The fastening for fence-wire having a spike portion to be driven into the post, the studs c d on the side of the head portion, and inclined in opposite directions and at a sufficient distance apart longitudinally of the wire to allow such wire to be introduced between the studs when at an inclination to the fastening, substantially as set forth.

295,566. FENCE-WIRE FASTENING. EDWIN S. LENOX, Worcester, Mass. Filed June 4, 1883. (No model.)

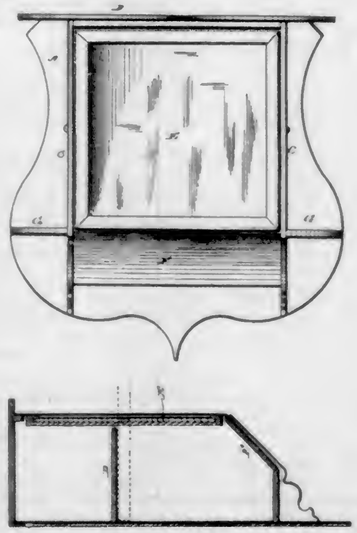


Claim.—1. A fastening for fence-wire, made of metal and having a V-shaped slot and lips, and one or more holes through the same for the nails or staples employed for attaching the fastening to the posts, substantially as set forth.

2. The fastening for fence-wire, composed of sheet metal with two V-shaped slots, folded and perforated for the reception of the attaching staple or rails, substantially as set forth.

3. The fastening for fence-wires, composed of sheet metal with two V-shaped slots with lips and perforations, in combination with the staple passing through sheet metal, and the parts galvanized, as set forth.

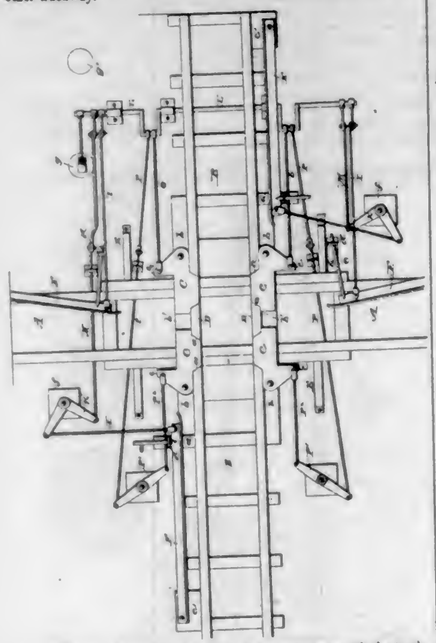
295,567. TOILET-BRACKET. CHAS. LINDNER, Carlinville, Ill. Filed June 18, 1883. (No model.)



Claim.—In a toilet-bracket case, the combination of the case A, horizontal shelf D, bracket-shelves G G, and pivoted glass E, substantially as described, whereby the glass is raised to a vertical position or dropped to a horizontal position to open and close the case, all constructed, arranged, and operating as and for the purposes set forth.

295,568. RAILROAD-CROSSING. DAVID LEPPY, Mansfield, Ohio. Filed May 19, 1883. (No model.)

Brief.—An automatic frog composed of horizontally-movable rail-sections operated by horizontally-movable bars adapted to lie diagonally across the rails of one trackway and on one side of the rails of the other trackway.



Claim.—1. In a railroad-crossing, the combination, with the trackways A and B and horizontally-movable rail-sections, of horizontally-movable bars, two of which are adapted to lie diagonally across the rails of one trackway, while the other two rails lie to one side of the rails of the other trackway, and devices connecting the said bars, whereby the movable rail-sections are operated, substantially as set forth.

2. The combination, with the trackways A and B and cross-rails, the adjacent ends of the rails of the trackway B and cross-rails being beveled, of the horizontally-movable rail-sections, provided with the beveled surfaces a and an outwardly-extending arm, c, and devices for automatically operating said movable sections on the approach of a train, substantially as set forth.

3. The combination, with the trackways A and B, the cross-rails, and the bases b and b', the adjacent ends of the rails of the trackway B and the cross-rails being beveled, of the movable rail-sections, provided with the beveled surfaces a, and devices for automatically operating the movable rail-sections on the approach of a train, substantially as set forth.

4. The combination, with the trackways A and B, cross-rails, and horizontally-movable rail-sections, of the pivoted bars F, the inner or adjacent ends of which move on suitable stands situated in the same horizontal planes with the rails of the trackways, substantially as set forth.

5. The combination, with the trackways A and B, cross-rails, and movable rail-sections, of the bars F, provided with guide-rods, standards, each provided with a slot for the passage of its respective guide-rod, and devices connecting the bars F and movable rail-sections, substantially as set forth.

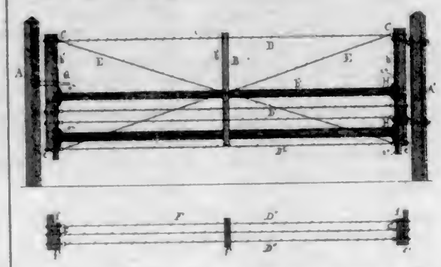
6. The combination, with the trackways A and B, the cross-rails, movable rail-sections, and bars F, of the rock or crank shaft connected indirectly to the bars F, and also to the movable rail-sections, for the purpose of moving the parts simultaneously, substantially as set forth.

7. The combination, with the trackways A and B, cross-rails, and movable rail-sections, of the bars F, crank-shaft, and rods connecting the bars F and movable rail-sections to the crank-shaft, substantially as set forth.

8. The combination, with the trackways A and B, cross-rails, and movable rail-sections, of the bars F, crank-shaft, rods and levers connecting the bars and movable rail-sections to the crank-shaft, and a weighted lever secured to one end of the said shaft, substantially as set forth.

9. The combination, with the trackways A and B, the cross-rails, and movable rail-sections, of the bars F, crank-shaft, and the rods and levers, substantially as shown, whereby the movable rail-sections and bars F are moved simultaneously, substantially as set forth.

295,569. GATE. HENRY HARRISON LOCKLING, Magnolia, Iowa. Filed Sept. 4, 1883. (No model.)



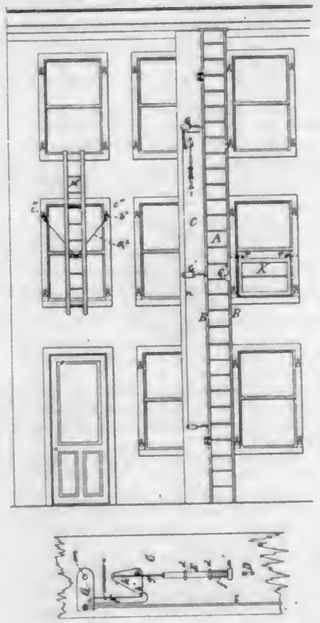
Claim.—1. The frame b b' b^2 b^3, in combination with the continuous wire-strand D D² E E, the latter held loosely to the frame, except at one end, as set forth.

2. The pieces b b' b^2 b^3 and the bolts C, having the eyes c and nuts c', in combination with the continuous strands D E D², as set forth.

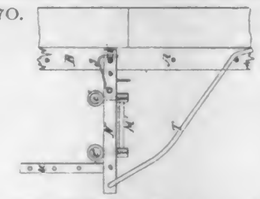
3. The section F, consisting of the vertical pieces f' f^2 f^3, horizontal wires D", and the tightening-bolts C, as set forth.

295,570. FIRE-ESCAPE. ABRAHAM W. LOHER, New York, N. Y. Filed Feb. 8, 1883. (No model.)

Brief.—A vertical ladder secured to the wall and provided with a hinged door. Simultaneously with the unlatching of the door by the pull-rod a bolt on the inner side of the door is dropped upon a percussion-cap, sounding an alarm. Hinged platforms are arranged to fold within the window-frame when not in use. A platform is also hooked to an upper rung, and is provided with a short ladder reaching the roof.



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Claim.—1. The combination, in a fire-escape, of a ladder, A, permanently fixed within a wall-casing, B, provided with the catch G'', and a door hinged to one side of said casing, with a locking device and an alarm device, both arranged upon the inner side of the said hinged door, and means, substantially such as described, for operating said locking device, arranged upon the outer side of said door, and means for protecting said operating device, substantially as described.

2. The combination, with the fixed wall-ladder A, its inclosing-case, and a door hinged to one side thereof, of a locking device, *n* G' G'', and means, substantially such as described, attached to the inner side of the door for connecting said fastening device with an alarm device attached to the inner side of the door, said connection being such that the act of unlocking the door will actuate the alarm, substantially as described.

3. The combination, with the window of a building, of a fixed inclosed wall-ladder, A, and a barred platform, K, hinged to the window-sill in such manner that when raised and fastened to form a window-guard it will prevent access to its hinges, and form a stop to limit the descent of the upper sash to prevent access through the window from the outside, and form the means whereby access is had from the inside of the building to the operating device for opening the ladder-case and giving the alarm.

4. The combination, with the horizontal rows of windows of a building, of the fixed vertical ladder A, a movable horizontal platform, N, provided with means for attachment to the fixed vertical ladder, and a horizontal supplemental ladder carried by said platform and arranged to project horizontally to the windows remote from the ladder A, all substantially as and for the purpose herein set forth.

5. The combination, with the movable platform N, having arms slotted at their inner ends, and having the hooks S, and provided at its outer end with a vertical ladder, *u*, and the braces T, of the fixed vertical wall-ladder A, all constructed and arranged for use substantially as described.

6. The combination of a nipple, D, percussion rod or striker E, spring *f*, dog *h*, hook F, lever G, and a knob or handle, *a*, with the door and inclosing-casing *n* of the fixed vertical ladder A, all substantially as and for the purpose herein set forth.

7. The adjustable platform K, hinged at its lower end to the window-sill, so as to be capable of being placed horizontally, and of vertical adjustment to cover and guard the window, and devices, substantially as described, for locking the said platform in said vertical position, substantially as and for the purpose herein set forth

8. The ladder M', detachable from the platform N, and furnished with chains and hooks, whereby it may be suspended as a scaling-ladder from hooks or pintles adjacent to the window, substantially as and for the purpose herein set forth.

9. The combination, with the platform K, hinged or attached at its lower part, of the pins *r*, saddle M, and block L, substantially as and for the purpose set forth.

10. The combination, with the platform hinged at its lower part, of the hinges T', attached to the platform, and covered thereby when the platform is in a vertical position, and suitable devices for retaining it in such position, substantially as and for the purpose herein set forth.

11. The combination, in a fire-escape, of a ladder, A, permanently fixed within a wall-casing, B, provided with a catch, G'', and a door hinged to one side of said casing, with a locking device and an alarm device, both arranged upon said door, and means, substantially such as described, whereby said locking device is actuated from the outside of said casing, for the purpose specified.

12. The combination of the movable platform N and the fixed vertical wall-ladder A with devices, substantially such as described, whereby said movable platform is suspended and braced, substantially as described, for the purpose specified.

13. The combination, with an inclosed fixed wall-ladder, A, and a door, C, of a locking device and an alarm device, connected for simultaneous operation, as described, and an outside knob, *a*, of the signal device, also actuating the locking device, substantially as set forth.

14. The combination, in a fire-escape, of the fixed wall-ladder A, the open wall-casing B B therefor, provided with a suitable catch, G'', and a door, C, hinged to one side of said wall-casing, with a locking device and an alarm device, both arranged upon the inner side of the door, and means, substantially such as described, for actuating the locking and the alarm devices from the outside of the inclosing wall-casing, substantially as set forth.

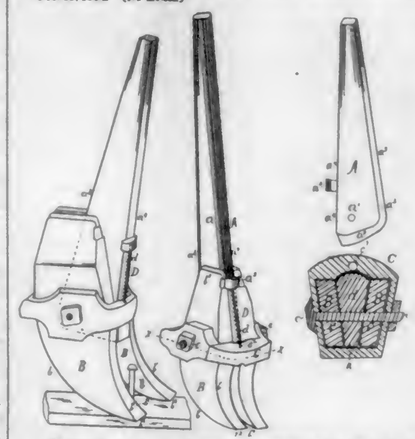
15. The combination, with the fixed wall-ladder A, of a separate attachable platform, N, provided with a vertical ladder, *u*, at its outer end, and suitable means for attaching it to and supporting it upon the rungs of the wall-ladder, the said platform having an opening, *n'*, at its inner end for access from the wall-ladder, substantially as described.

16. The combination, in a fire-escape, of an inclosed fixed wall-ladder, and a door, C, provided on its inner side with a suitable locking device and an outside knob, *a*, for actuating said door-lock, with a barred platform, K, hinged to the window-sill, adapted to form a fixed guard to the window, and means whereby the said outside lock-actuating knob may be reached from the windows, substantially as herein set forth.

17. The combination, with the fixed wall-ladder A, and an open casing, B B, therefor, with the movable platform N, having an opening, *n'*, at its inner end for access thereto from the wall-ladder, means for attaching it to the rungs of the wall-ladder, and a brace or braces, T, hinged to the outer end of said platform, and adapted to be supported against the wall upon the ladder-rung, substantially as described.

18. The combination of the fixed wall-ladder A, with a platform adapted for attachment thereto, and a supplemental ladder, M', adapted for attachment to said platform, all arranged, as described, to form a fire-escape, substantially as set forth.

295,571. CLAW-BAR. WILLIAM H. LYMAN, Springfield, Mo. Filed Feb. 13, 1884. (No model.)



Claim.—1. An improved claw-bar, composed of a lever, A, having a wedge-shaped lower end, to which are attached movable claws B by means of a yoke or collar, C, and a connecting-bolt, *c*, said yoke being held forward by a spring, D, all substantially as shown and described.

2. A lever for a claw-bar, having its lower end made wedge shape, through which is a hole, *a'*, to receive a connecting-bolt, and above which is a lug, a^3, or other equivalent device for supporting the back end of attached claws, all substantially as shown and described, for the purpose set forth.

3. The combination of movable claws B, attached to the lower end of a lever by means of a collar, C, and bolt *c*, with a spring, D, supported on a guide-rod, *d*, said rod having a free end playing in a hole, c^2, of the collar, all substantially as and for the purpose specified.

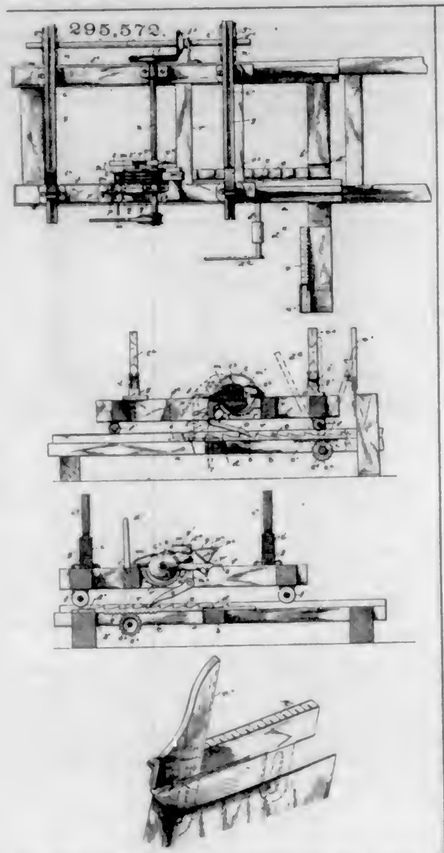
295,572. SAW-MILL HEAD-BLOCK. VAN BUREN MARTIN and CHARLES W. METCALFE, Hopkinsville, Ky.; said Martin assignor to W. J. Graham, same place. Filed Jan. 24, 1884. (No model.)

Claim.—1. In a saw-mill carriage, the combination, with the carriage-frame provided with head-block guides, and head-block provided with rack-arms adapted to work in said guides, of a shaft having pinions engaging the head-block, racks geared to a cross-shaft having a ratchet-wheel near one end, a loop-arm provided with a triple pawl engaging the ratchet-wheel, and a pivoted pawl adapted to engage a rack-bar on the track-frame, whereby the head-blocks may be operated automatically by the forward motion of the carriage-frame, to set the log forward any predetermined distance, substantially as specified.

2. In a saw-mill carriage, the combination, with the graduated rule provided with a knee-set adjustably secured thereon, secured to the sawcab, of a carriage-frame provided with head-blocks, having rack-arms working in head-block guides, and mechanism for automatically feeding the head-blocks forward by means of a set-pawl and rack-bar, when the carriage-frame is moved forward, substantially as specified.

3. In a saw-mill carriage, the combination of the ratchet-wheel on the cross-shaft *k*, provided with gearing for operating the head-blocks in

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their guides, with the triple pawl *m*, face-plates, with loop *p*, connected to the pivoted pawl *o* by an arm, the hinged detent, the double-crank lever, and hook-rod connected thereto, and the rack-bar for engaging the hinged pawl *o*, substantially as specified.

4. In a saw-mill carriage, the combination, with the longitudinal shaft having a miter-gear, and pinions engaging the rack-arms of the head-block, of the cross-shaft having a miter-gear and a ratchet-wheel and a ratchet-lever at the front end of the cross-shaft *k*, the triple lever and hinged detent, and mechanism for throwing the same out of gear, whereby the head-blocks may be moved to their starting-points by operating said ratchet-lever, substantially as specified.

5. In a saw-mill carriage, the combination, with the ratchet-wheel on the cross-shaft *k*, the curved rack and lever on said shaft, provided with the spring-pawl, the triple pawl, the pawl *o*, and pivoted detent, of the double crank and angular rod connected to its arm, and the rack-bar working in guide-boxes on the track-frame, substantially as specified.

295,573. STEAM-TRAP. GEORGE B. MCCRACKEN, Willimantic, Conn. Filed Aug. 27, 1883. (No model.)

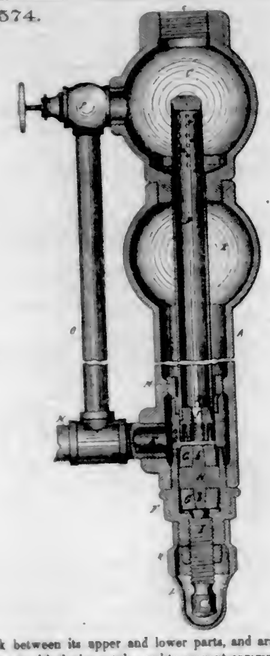
Claim.—1. In a steam-trap of the character herein set forth, the seat-disk carrier provided with the two disks, and made reversible in its holder, substantially as and for the purposes set forth.

2. The herein-described seat-disk, made conical, and arranged in the holder, substantially as explained, so as to leave a space between the two, for the purposes and objects set forth.

3. In a steam-trap of the character herein set forth, the discharge end of the expansion-tube, having the two independent edges or rings, with the annular space between them, for contact with the seat-disk, substantially as shown and described.

4. In a steam-trap, the packing-gasket combined with the inner and outer tubes, the same being reamed out at top, having a narrow connect-

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ing-neck between its upper and lower parts, and arranged to expand and contract with the inner tube, and to prevent communication between the two compartments into which it divides the outer tube, substantially as shown and described.

5. In a steam-trap, the outer tube provided with the separating-chamber, the expansion-tube extending up into said separating-chamber, and being perforated, as explained, the packing-gasket surrounding the lower end of the expansion-tube, and preventing communication between the compartments above and below it, and a valve or cut-off operated by the expansion-tube, all combined and arranged substantially as shown and described.

6. In a steam-trap of the character herein set forth, the combination of the expansion-tube, outer tube, packing-gasket, separating-chamber, cut-off operated by the expansion-tube, and the blow-off pipe provided with a valve and connecting the discharge-pipe and separating-chamber, substantially as shown and described.

295,574. SEALED GALVANIC-BATTERY CELL. WILLIAM T. MCGINNIS, New York, N. Y., assignor to James H. Shaw, same place. Filed Aug. 27, 1883. (No model.)



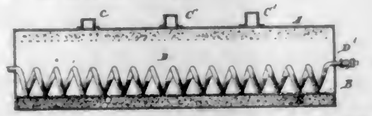
Claim.—The combination, in a galvanic battery, with a bottle-shaped vessel formed with a single contracted opening, and within which one of the battery-elements is inclosed and secured in the process of manufacture, of an elastic plug or stopper of insulating material adapted to be forced into the contracted opening, and to carry and suspend within the vessel the remaining element, substantially in the manner and for the purpose herein set forth.

295,575. BUTTON-FASTENER. MILTON H. MCNAIR, Meadville, Pa. Filed July 6, 1883. (No model.)



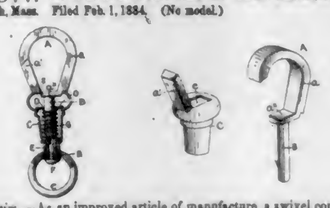
Claim.—The improved button-fastener herein described, consisting of a piece of wire bent to form the loop A, and curved pointed prongs B, adapted to underlie the material and form hooks whose points are embedded in the material when strain is brought upon the button, all substantially as described.

295,576. CHEMICAL CAR-WARMER. CLIFFORD MITCHELL, Chicago, Ill. Filed Feb. 16, 1883. (No model.)



Claim.—The combination of a case, warmth-emitting chemicals therein, openings for providing a direct circulation of air through the case in direct contact with the chemicals, and means for fusing the chemicals, substantially as described.

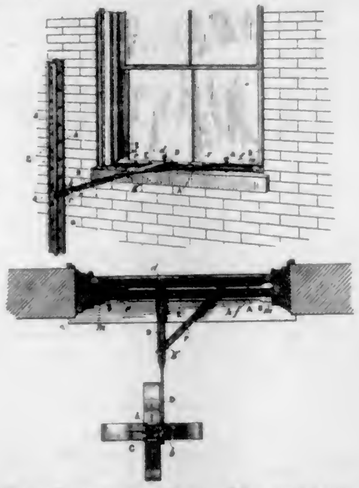
295,577. SWIVEL FOR WATCH-CHAINS. PETER NERMEY, Attleborough, MASS. Filed Feb. 1, 1884. (No model.)



Claim.—As an improved article of manufacture, a swivel composed of a stem, B, having a bow portion, *a*, rigidly secured thereto, a neck member, C, having the remaining bow portion rigidly secured to its head, and said head provided with a perforation, *c*, to receive the foot of the bow portion *a*, the bridge-piece D, secured to and within the neck member C, the swivel-sleeve F, having a ring attached thereto and secured upon the stem, as described, and the spiral spring G, mounted on the stem and bearing against bridge-piece D and the sleeve F, substantially as set forth.

295,578. ATTACHMENT FOR SCAFFOLDING. JOHN T. O'BRIEN, Philadelphia, Pa. Filed Oct. 25, 1883. (No model.)

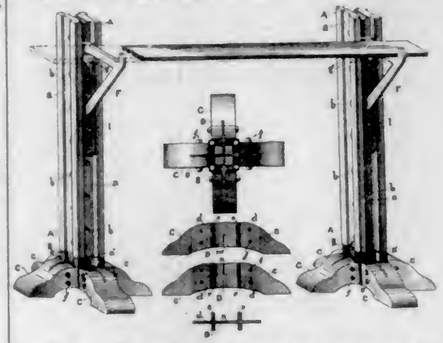
Brief.—Consists of a horizontal brace connected at one end with an upright and having its other end secured to a telescopic locking-piece having end recesses engaging the window-beads. A diagonal stay is secured to the center of said brace and to the locking-piece.



Claim.—The combination, with the scaffold-upright, of the horizontal brace D, attached thereto, the telescopic locking-piece E, having end recesses substantially of the form and for the purposes specified, the diagonal stay F, and suitable means for securing said parts together, substantially in the manner set forth.

295,579. INTERIOR AND EXTERIOR SCAFFOLDING. JOHN T. O'BRIEN, Philadelphia, Pa. Filed Oct. 25, 1883. (No model.)

Brief.—Provides an upright having vertical grooves and slotted at its base to receive the feet and flanged locking-pieces fitting in said grooves and slots. Bracket-pieces vertically adjustable at different heights in the grooves of the upright serve as supports.

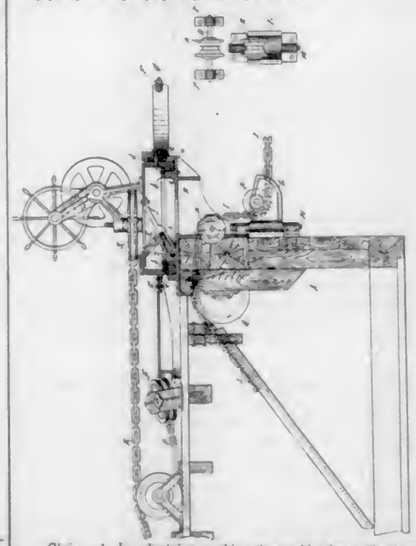


Claim.—1. The combination, with the upright A, having longitudinal grooves *a* upon its sides and slots *c* at its base, of the feet C and locking-piece D, said locking-piece being adapted and arranged with reference to the said grooves and slots substantially as set forth.

2. The combination, with the upright A, having longitudinal grooves *a* upon its sides and slots *c* at its base, of the feet C, having a locking-piece, D, adapted and arranged with reference to said grooves and slots substantially as set forth, and the bracket-pieces F, adjustable vertically in said grooves, whereby the supports of the upright may be arranged at different heights on opposite sides of the upright, as and for the purposes specified.

295,580. DREDGE. RALPH R. OSGOOD, Albany, N. Y., assignor to the Osgood Dredge Company, same place. Filed May 12, 1883. (No model.)

Brief.—The turn-table has an interior diagonally-arranged strut suitably braced, with a roller to run on an interior track on the foundation, over and around which the turn-table is arranged. The connection of swinging chains is by eyebolts running through spring-bumpers. The backing-chain is led around a pulley on a swinging bracket or crane to a slip-pulley having a play longitudinally on its shaft.



Claim.—1. In a dredging-machine, the combination, with a foundation provided with an interior track, of a turn-table arranged over and around the track, and having secured thereto a diagonally-arranged strut carrying a wheel arranged to travel upon said track of the foundation, for the purpose herein set forth.

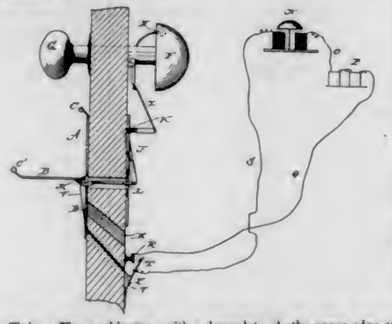
2. In a dredging-machine, the combination, with a foundation provided with an interior track, of a turn-table arranged over and around the track, and having secured thereto a diagonally-arranged strut with a wheel suitably braced and arranged to travel upon the said track of the foundation, for the purposes herein set forth.

3. In a dredging-machine, the combination of a turn-table provided at the forward end with springs or buffers F, and the swinging chains with eyebolts, the latter passed through the elastic buffers of the turn-table, substantially as shown and described.

4. In combination with the swinging crane carrying the sheave, the slip-sheave mounted above said crane, substantially as and for the purposes set forth.

5. In combination with the backing-chain, a sheave mounted in a swinging crane, L, with axial bearings above and below, adapted to move with said chain and to direct it without cramping, substantially as and for the purposes set forth.

295,581. COMBINED DOOR-PLATE AND MAIL-RECEIVER. ROBERT G. PACK and WALTER J. WEW, Lynchburg, Va. Filed Apr. 7, 1883. (No model.)



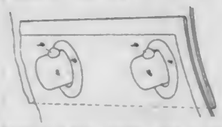
Claim.—The combination, with a door-plate, A, the upper edge of which has a catch, C, and the lower half of which has a transverse slot, D, registering with the letter-way, of a flap, B, hinged transversely across the center of said door-plate, and having a suitable catch, C', to register with the catch on the plate, by means of which the said flap may be retained in a raised position and conceal the outer surface of both plate and flap, as set forth.

295,582. HANDLE FOR DIAL-LOCK KNOBS. TRACY L. PAINE, Milwaukee, Wis. Filed July 26, 1883. (No model.)



Claim.—A detachable handle for adjustment to safe dial-plate knobs, consisting of two parts, one sliding upon the other, and having claw-shaped flanges curving outwardly and then inwardly, and provided with serrations or corrugations upon their concaved surfaces, to firmly grasp the knob between them, together with a screw-bolt and set-nut, to rigidly fasten the flanges against the knob, substantially as set forth.

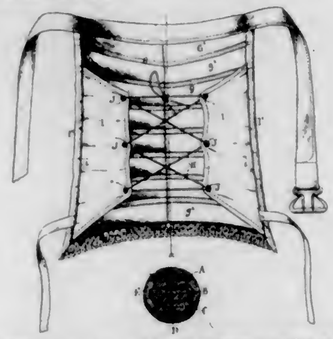
295,583. FASTENER FOR GLOVES, GAITERS, &c. CARL AUGUST PFENNING, Barmen, Germany. Filed Aug. 6, 1883. (No model.)



Claim.—1. A button for gloves, gaiters, boots, or bags, consisting of a solid body, *a*, having a radial bore, *c*, into which is fitted a movable pin and a coiled spring, the pin being provided with a knob pressed outward by the said spring, substantially as described, and for the purpose set forth.

2. The combination of a solid button, *a*, fixed to one of the two parts to be united, and having a radial bore, with a movable pin, *i*, fitted into the said bore, and a coiled spring, *f*, secured in the said bore, so as to press the pin outward, and an eyelet fixed to the other of the two parts to be united, substantially as described.

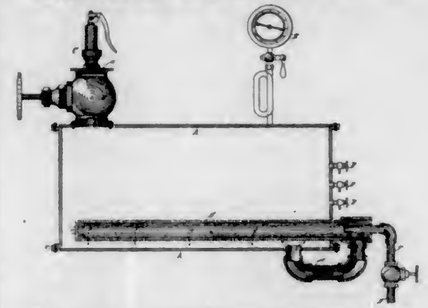
295,584. BUSTLE. JAMES B. PHILLIPS, New York, N. Y. Filed Jan. 10, 1884. (No model.)



Claim.—1. As a new article of manufacture, a spring or stiffener for wearing-apparel, consisting of straw braids, one upon the other, the braids being bound together and enveloped in a covering of unwoven fibrous material, substantially as set forth.

2. In combination with a bustle, a spring consisting of straw braids, one upon the other, the braids being united by stitches D and enveloped in a covering of cotton-batting, substantially as shown and described, for the purpose set forth.

295,585. APPARATUS FOR TESTING SAFETY-VALVES. GEO. W. RICHARDSON, Boston, Mass., assignor to the Consolidated Safety Valve Company, Hartford, Conn. Filed Feb. 21, 1883. (No model.)



Claim.—1. In an apparatus for testing safety-valves, the heater-pipe located in the lower part of the shell, perforated on its under side, and arranged to receive steam from a remote boiler, substantially as and for the purposes set forth.

2. In an apparatus for testing safety-valves, the combination, with the shell and heater-pipe, of a supplementary pipe or run-around and a nozzle upon the steam-pipe, located and arranged substantially as shown, so as to produce a circulation of water, for the purposes and objects explained.

295,586. HAND-PROTECTING ATTACHMENT FOR UMBRELLAS AND CANES. EUGENIA ROSS, New York, N. Y. Filed June 9, 1883. (No model.)

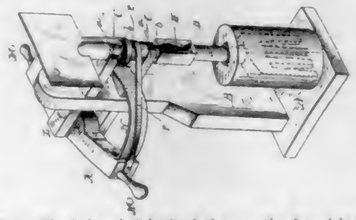


Claim.—1. The combination, with an umbrella-stick or cane, of a hand-protecting attachment composed of a bag or pooch secured to the

handle portion of the stick or cane, and adapted to receive and cover the hand that holds the stick, as set forth.

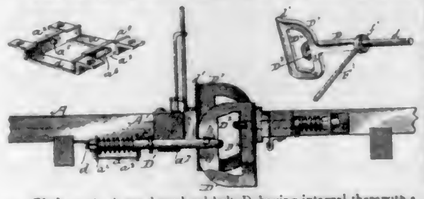
2. The combination, with an umbrella-stick or cane, of a bag or pouch secured near the end of the stick by a clamping device, substantially as described, which confines one end of the pouch to the stick, the end of the pouch not so secured having a gathering device whereby it may be drawn about the wrist and serve as a protection for the hand, as set forth.

295,587. CHURN-MOTOR. HYMENUS C. SADLER, Booneville, Ark. Filed Nov. 10, 1883. (No model.)



Claim.—The dasher-shaft having its lower section formed in two separable pieces, the upper section being provided with a dovetailed recess to receive a correspondingly-shaped projection on the lower section, and a pivoted spring-pressed flap or plate bearing against the projection and covering the joint, so as to hold the same in place, as and for the purpose set forth.

295,588. CAR-COUPLING. JOHN SHANAMAN, Annville, assignor of one-half to Jonas L. Knoll, Lebanon, Pa. Filed Feb. 9, 1884. (No model.)



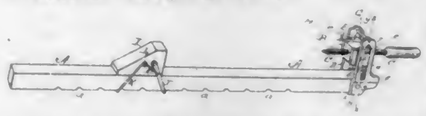
Claim.—1. A car draw-head bolt, D, having integral therewith a plate, D′, provided with a vertical slot, D^2, and a hook, D^3, projecting through said slot, substantially as and for the purpose described.

2. The combination of a draw-head bolt, its vertically-slotted draw-plate, and hook projecting through the side of said draw-plate, with the eyebolt F and spring thereon, substantially as and for the purpose described.

3. The combination of a draw-head bolt, its vertically-slotted draw-plate, and hook projecting through the side of said draw-plate, with the lever G and rod g^2, substantially as and for the purpose set forth.

4. The combination of a draw-head bolt, its vertically-slotted draw-plate, and hook projecting through the side of said draw-plate, with the lever G, rod g^2, having notch g^3, and latch-plate d^2, substantially as and for the purpose described.

295,589. CABINET-MAKER'S CLAMP. WILLIAM E. SHELDON, Jr., Medford, Mass. Filed Aug. 2, 1883. (No model.)

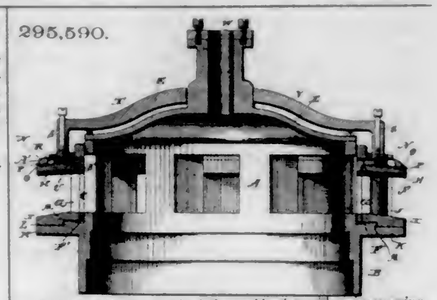


Claim.—In a cabinet-maker's clamp, the combination of the head-block, provided with the slide *d*, and suitable spring, H, and the frame E, provided with the slot *e*, substantially as and for the purpose set forth.

295,590. TURBINE WATER-WHEEL. ISAAC SHERCK, Fremont, Ohio, assignor of six-eighths to W. F. Jobbins, New York, and Geo. E. Raymond, Brooklyn, N. Y. Filed Feb. 6, 1883. (No model.)

Claim.—1. In a turbine water-wheel, the combination, with the inner casing having a series of apertures whose rear walls are beveled and whose forward walls are curved, of a rigid chute-ring surrounding it, having apertures provided with deflecting-wings, and a gate interposed between the casing and the chute, consisting of a band or ring of metal arranged to be rotated, and provided with apertures corresponding in number and position with those of the casing and chute, substantially as set forth.

295,590.



2. In a turbine water-wheel, the combination, with an inner casing, of a chute-ring surrounding the casing, a ring-gate interposed between the casing and chute, and a ring-guard located above the gate.

3. In a turbine water-wheel, the combination, with an inner casing, of a chute-ring surrounding the casing, a ring-gate interposed between the casing and chute, and a ring-guard located above the gate, and arranged to prevent the displacement of the chute-ring.

4. In a turbine water-wheel, the combination, with an inner casing, of a chute-ring surrounding the casing, a ring-gate interposed between the casing and chute, and a ring-guard located above the gate, and provided with slots to permit the gate to be attached to the mechanism which actuates it, substantially as and for the purpose set forth.

5. In a turbine water-wheel, the combination, with an inner casing, of a chute-ring surrounding the casing, of a ring-gate interposed between the casing and chute, and a guard-ring located above the gate, and arranged to inclose a space above the upper ring of the chute.

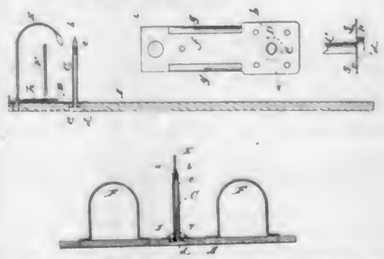
6. In a turbine water-wheel, the combination, with an inner casing, of a chute-ring surrounding the casing, a ring-gate interposed between the casing and chute, and provided with a flange having bearing upon the upper ring of the chute.

7. In a turbine water-wheel, the combination, with an inner casing, of a chute-ring surrounding the casing, a ring-gate interposed between the casing and chute, and provided with a flange having bearing upon the upper ring of the chute, and a ring-guard located above the gate, and adapted to inclose and protect the flange of the gate.

8. In a turbine water-wheel, the combination, with the inner casing having a series of apertures whose rear walls are beveled and whose forward walls are curved, of a chute-ring surrounding it, and having apertures provided with deflecting-wings, and rigidly secured to the bed of the wheel, and a gate interposed between said casing and chute, consisting of a band or ring of metal provided with apertures corresponding in number and position with those in the casing and chute, and devices, substantially as shown, for rotating the gate, as and for the purpose set forth.

9. In a turbine water-wheel, the combination, with an inner casing, of a chute-ring inclosing the casing and a ring-gate interposed between said casing and chute-ring, the said casing-ring and gate being provided with registering-apertures, the apertures of the casing, the forward side walls of which are curved, being set in advance of the apertures of the chute-ring, substantially as and for the purpose set forth.

295,591. PAPER-FILE. CALVIN W. SHERWOOD, Chicago, Ill. Filed Oct. 26, 1883. (No model.)

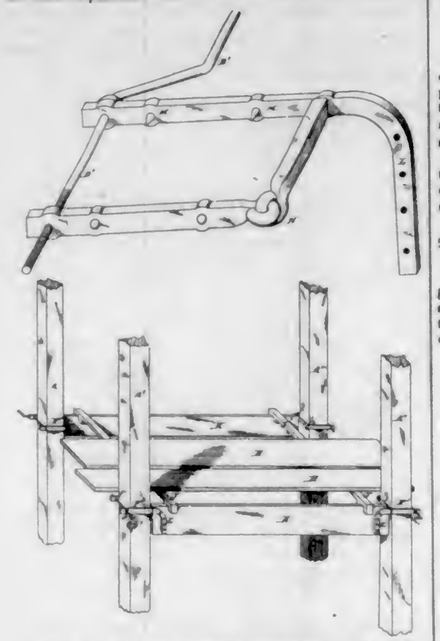


Claim.—1. A receiving-wire for a paper-file, provided with a notch at its upper end, the walls of which notch are adapted to cut a piece out from a paper when being placed on the wire, in combination with a sliding holding-wire adapted to enter said notch by its sliding movement, substantially as described.

2. In a paper-file, a sliding plate, A, and a wire, E, secured thereto, in combination with a base, A, receiving-wire C, notched at its upper end, and stops F on opposite sides of said wire and back thereof, substantially as described.

295,592. SCAFFOLDING. THOMAS N. SUBERS, Philadelphia, Pa., assignor of one-third to George E. Buckley, same place. Filed Dec. 21, 1883. (No model.)

Brief.—Hinged inwardly-pointed clamps are secured to uprights by screw-rods and to ledger-boards by bolts. Detachable cross-clamps provided with downwardly-projecting lugs ride upon said ledger-boards and receive a platform.



Claim.—1. In a building-scaffold, in combination with the uprights A A′ A″ A‴, the hinged inwardly-pointed clamps F′ F′ F′ F′, adapted to clasp around the said uprights, and provided with tightening screw-rods D′ D′ D′ D′, whereby they are firmly secured thereto, substantially as described.

2. In a building-scaffold, in combination with the uprights A A′ A″ A‴, the hinged clamps F′ F′ F′ F′, provided with tightening screw-rods D′ D′ D′ D′ and ledger-boards K K, to which said clamps are attached, substantially as and for the purposes described.

3. In a building-scaffold, in combination with the uprights A A′ A″ A‴, the hinged clamps F′ F′ F′ F′, provided with tightening screw-rods D′ D′ D′ D′, ledger-boards K K, attached to said clamps, and detachable bridging-clamps J J, resting upon said ledger-boards, and adapted to receive the working-platform H H, substantially as described.

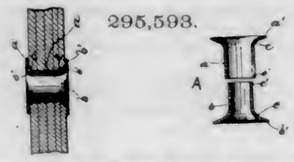
4. In a building-scaffold, in combination with the uprights A A′ A″ A‴, the hinged inwardly-pointed clamps F′ F′ F′ F′, provided with tightening screw-rods D′ D′ D′ D′, and suitable connections, K K, between said clamps to support superincumbent cross-pieces, substantially as described.

5. In a building-scaffold, in combination with the uprights A A′ A″ A‴, the hinged clamps F′ F′ F′ F′, provided with the tightening screw-rods D′ D′ D′ D′, connections K K from clamp to clamp, and bridging or cross pieces J J, provided with downwardly-projecting lugs or lips to clasp the connections between the clamps F′ F′ F′ F′, substantially as specified.

6. In a building-scaffold, in combination with the uprights thereof, a hinged clasping-clamp provided with a tightening screw-rod at one end, and terminating at its other end in a hook or bend, and a suitable tightening-screw, whereby the clamp is adapted to be attached to various parts of the building and hold the scaffolding-uprights, substantially as described.

7. In a building-scaffold, in combination with the uprights A A′, the inwardly-pointed clamp F′, composed of two clasping-bands, which are suitably joined at one end by a metallic connection and at the other end by a tightening screw-threaded rod, D′, substantially as described.

295,593. METHOD OF ATTACHING BUTTONS, &c. JAS. F. THAYER, Providence, R. I. Filed Dec. 15, 1883. (No model.)

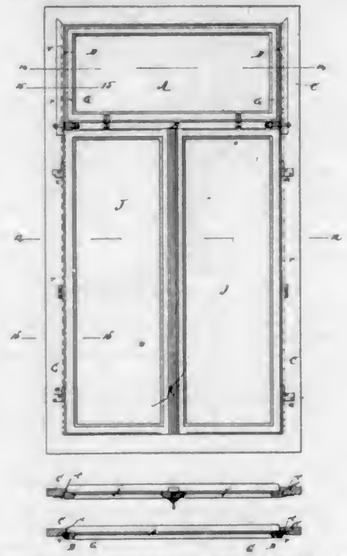


Claim.—1. That improvement in the art of securing layers of fabric or other material together which consists in perforating the same, then passing eyelets through such perforation from opposite sides, one within the other, and finally pressing together the eyelets endwise, whereby they are interlocked and the thickness of material held firmly together, all substantially as shown and set forth.

2. The combination, with layers of fabric or other material, of the flanged eyelets *a b*, one within the other, their flanged ends resting upon opposite sides of the fabric or material, and interlocked, substantially as shown and set forth.

295,594. SAFETY-WINDOW. FRIEDRICH OSKAR THIEM, Leipsic, Germany. Filed Jan. 15, 1883. (No model.)

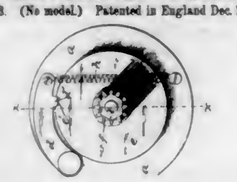
Brief.—The side edges of an upper sliding sash fit in S-shaped grooves in side strips on the main frame, said grooves connecting with similar grooves below in the window-frame. French windows fold into the latter grooves. A division-bar is located between the French windows and the upper sliding sash.



Claim.—1. In a window-frame, C, a single S-shaped groove, *r*, in each side, in combination with the sliding frame D for the upper section of the window, and the hinged or French windows J J, forming the lower section of the window, folding or closing into said S-shaped groove *r*, and the division-bar B, substantially in the manner described.

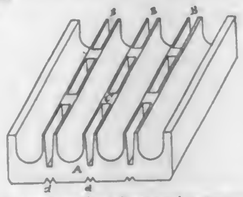
2. In combination with a window-frame, C, and sliding upper frame, D, the side strips, *v v*, in the upper part of the main window-frame, said strips, *v v* containing an S-shaped groove, *r*, forming a continuation of the S-shaped groove in the lower part of the window-frame, substantially as and for the purpose set forth.

295,595. CLUTCH-GUARD. DAVID TILTON, Hartford, Conn. Filed Aug. 27, 1883. (No model.) Patented in England Dec. 16, 1878.



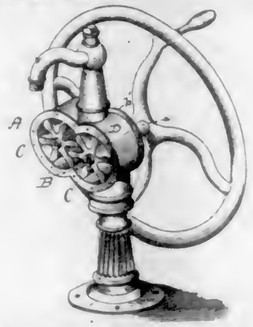
Claim.—In a guard-clutch, the combination of the rotary disk *a*, the toothed pawl *d*, pivoted on the side thereof, the peripherally-mortised disk *e*, bearing the appertenant pinion *f*, and the extension spiral spring *h*, all substantially as described, and for the purpose set forth.

295,596. STEREOTYPE-PLATE. FREDERICK K. TRACY, Chicago, Ill., assignor of one-half to Charles E. Strong, same place. Filed Apr. 2, 1883. (No model.)



Claim.—A stereotype-plate of columned matter cast type high, and with column-rules and anterior longitudinal grooves under and extending upward toward the rules, and provided with necks or bridges across and intercepting such grooves, for the purpose of diminishing the labor of subdividing such plates and preventing any bulging of the form.

295,597. ROTARY PUMP. FRANK S. TROUTMAN, Seneca Falls, N. Y. Filed Mar. 21, 1883. (No model.)



Claim.—In a double-piston rotary pump, the combination, with the casing, as described, of the pistons B, having blades C, the contact-surfaces of which are curved and their opposite surfaces flat, said pistons being so relatively arranged that at the time progressive contact is maintained between two approaching blades a retrogressive contact subsists between the two immediately receding blades of opposite pistons, and no two blades at any time lap each other their full length, the effect being to form a water-tight chamber which is never diminished in capacity, essentially as and for the purpose set forth.

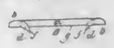
295,598. ENVELOPE. EMANUEL J. TRUM, Brooklyn, N. Y. Filed Aug. 31, 1882. (Model.)



Claim.—1. The combination of the front A and back A', provided, respectively, with flaps *b h* and *c*, with an intermediate lip, B, said lip having its end edges secured to the back A' and its bottom edge attached to the front A, whereby the lip B forms one side of the mouth of the envelope, and the flap *b h* is detached from the said lip, substantially as and for the purpose described.

2. The combination of the lip B, flap *c*, flap *b h*, provided with the slit *l*, and the swivel *i*, substantially as described.

295,599. BELT-STUD. ORRIN S. TURNER, New Vineyard, Me. Filed May 31, 1883. (No model.)

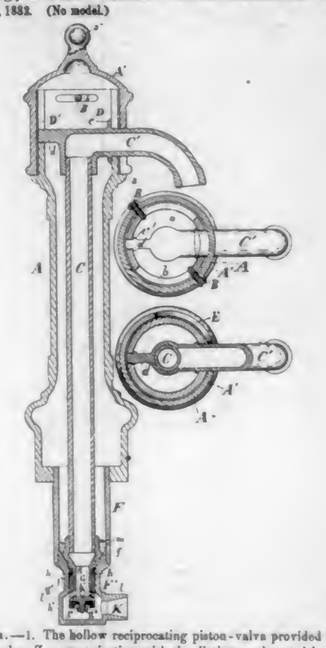


Claim.—1. As an article of manufacture, the stud B, composed of a shank, *a*, and of end cross-heads provided with elongations *d*, projecting therefrom toward the opposite head, and bent downward, substantially as described.

2. As an article of manufacture, a stud, B, composed of a shank, *a*, and of end cross-heads, *b*, provided with elongations *d*, projecting therefrom toward the opposite head, and bent and pointed at their outer ends, substantially as described.

3. As an article of manufacture, a stud, B, composed of a shank, *a*, and of cross-heads *b*, provided with elongations *d*, projecting therefrom toward the opposite head, and having tapering and pointed ends, substantially as described.

295,600. HYDRANT. BENJAMIN C. VANDUZEN, Cincinnati, Ohio. Filed July 18, 1882. (No model.)



Claim.—1. The hollow reciprocating piston-valve provided with central chamber, Z, communicating with the discharge-pipe, and having an imperforate bottom and packing-rings *h h'*, and provided with orifices *l*, located in the side of the said valve between said packing-rings, and being the only inlet-conduits to said central chamber, Z, in combination with the valve-box having constricted portion *f*, provided below with the inlet-conduit, so that when the valve is moved vertically in one direction communication is made between the inlet-conduit and orifices *l*, and when the valve is moved in the opposite direction communication between said inlet-conduit and said orifices *l* is cut off, substantially as and for the purposes specified.

2. The combination of the valve-chamber having a constricted portion, *f*, and an enlarged portion above provided with waste-orifice, and an enlarged portion below provided with supply-conduit, and the vertically-reciprocating piston-valve having an imperforate bottom and packing-rings *h h'*, and orifices located between the said packing-rings, so that when the valve is at the upper part of its movement the upper packing shall be at a distance above the constricted portion, and the lower packing engaging the latter, and when the valve is at the lower portion of its movement the lower ring shall be at a distance below the constricted portion, and the upper ring shall engage the latter, substantially as and for the purposes specified.

3. The combination of the valve-chamber having a constricted portion, *f*, and an enlarged portion above provided with waste-orifice, and an enlarged portion below provided with supply-conduit, with the vertically-reciprocating piston-valve having an imperforate bottom and packing-rings *h h'*, and orifices located between the said packing-rings, so that when the valve is at the upper part of its movement the upper packing shall be at a distance above the constricted portion, and the lower packing engaging the latter, and when the valve is at the lower portion of its movement the lower ring shall be at a distance below the constricted portion, and the upper ring shall engage the latter, and the ring *s*, for engaging upon the descent of the valve the flared portion *f* of the upper enlarged portion of the valve-chamber, substantially as and for the purposes specified.

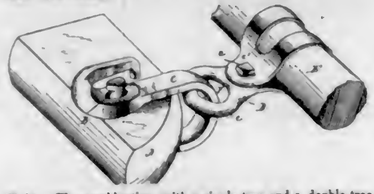
4. In a hydrant, the rotatable cap A', connected to the top of the standard and incapable of vertical movement, and provided with an inclined slot, E, receiving the non-rotatable spout connected to the vertical discharge-pipe, capable of vertical movement by means of the rotation of the cap, and the inclined slot E, substantially as and for the purposes specified.

5. The body A, provided with surrounding collar *a* and vertical slots D D' and horizontal slots *b*, in combination with the cap A', provided with inclined slot E and pins B, and the spout C', substantially as and for the purposes specified.

6. The body A, provided with slots D D', in combination with the spout C', provided with lug *d*, and guiding-flanges *e e'*, fitting against the interior of the body, and means, substantially as described, for raising and lowering the spout and its connections, substantially as and for the purposes specified.

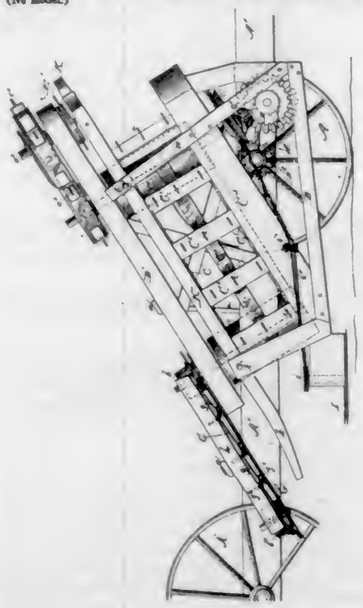
7. The combination of the cap rotatable upon (but incapable of vertical movement on) the standard, and having inclined slot E, with the reciprocating discharge-pipe provided with a projection engaging said slot, substantially as and for the purposes specified.

295,601. WHIFFLETREE-COUPLING. OLIVER VANORMAN, Racine, Wis., assignor of one-half to W. H. Johnson, same place. Filed Dec. 17, 1883. (No model.)



Claim.—The combination, with a single-tree and a double-tree, of a coupling-iron constructed of a single piece of metal and provided at one of its ends with a loop, said coupling-iron being also formed with perforations to receive a bolt or equivalent fastening, and a bail connected to the loop of said coupling-iron and secured to the double-tree by a bolt, the upper end of said bail being bent upwardly and then rearwardly to form a hook, substantially as set forth.

295,602. CORN-HARVESTER. JOHN WAGNER and HENRY DRYER, Portage, Wis., said Dryer assignor to said Wagner. Filed Feb. 17, 1883. (No model.)

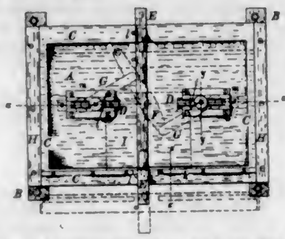


Claim.—1. In a corn-harvester, a carrier-belt composed of links, each of which is formed with an eye at each end, and having one end turned upward and the other outward, substantially as and for the purpose set forth.

2. In a corn-harvester, the combination of the chain spur-belt G, constructed as herein described, with the bar G', pulleys *b b'*, and cap H, having flanges A, whereby the chain is held always in proper position with its carrying-spurs projecting horizontally, substantially as shown and described.

3. In a corn-harvester, the combination, with the wagon A and frame B, provided with an inclined way or platform, C', of the carrier C', running over vertical rollers, the guide-belt G, delivery-belt E, spring-actuated guide-bar K, having its forward end flared outward and its rear end bent around toward the wagon, the revolving cutters I I, belt *i*, pulleys *i d'*, gear-wheels *c²* D, sprocket-wheels D' D², and chain-belt *d*, all constructed and arranged to operate substantially as and for the purpose set forth.

295,603. GLASS-CUTTING APPARATUS. WILLIAM H. WALKER, Rochester, N. Y., assignor to Walker, Reid & Inglis, same place. Filed July 25, 1883. (No model.)



Claim.—1. The combination, with the bed A, provided with a suitable support for one edge of the glass plate, of the centering-jaws D D and the rule E, substantially as and for the purposes set forth.

2. The combination, with the bed A, of the movable frame C, provided with a ledge or rest to support one edge of the glass plate, the centering-jaws D D, and the rule E, substantially as and for the purposes set forth.

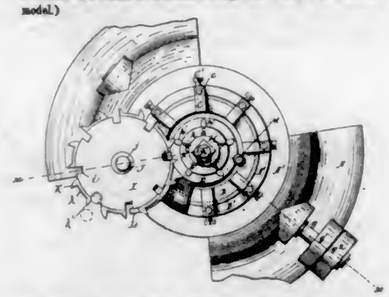
3. The herein-described cutting apparatus for glass plates, having suitable supports, whereby the plates are sustained and centered under a suitable cutting-rule, out of contact with the bed or frame of the apparatus, substantially as described.

4. The combination, with the bed A, provided with a suitable support for one edge of the glass plate, of the centering-jaws D D, adjustable supplementary jaws *s s*, having lugs *t t*, and the cutting-rule E, substantially as and for the purposes set forth.

295,604. ROOFING COMPOSITION. WELCOME WHITE, Everett, Mass., assignor of one-half to William L. Maltby, Montreal, Canada. Filed Jan. 29, 1883. (No specimens.)

Claim.—A roofing cement or composition composed of mica, asbestus, soapstone, and coal-tar, or other liquid bituminous substance, united in about the proportions herein set forth and described, for the purposes specified.

295,605. MACHINE FOR ROLLING THREADS ON METAL. JOHN S. WILSON and JAMES H. HASKINS, Chicago, Ill. Filed May 29, 1882. (No model.)



Claim.—1. In a machine for rolling threads upon metal, an annular non-revolving threaded die, in combination with a cylindrical revolving die, reversely threaded, and of less pitch than the non-revolving die, as set forth.

2. In a machine for rolling threads upon metal, an annular non-re-

volving threaded die, in combination with a cylindrical revolving die, reversely threaded, and of less pitch than the non-revolving die, the circumference of each die being a multiple of the blank circumference adapted to the space between the die-surfaces.

3. The circular threaded die D, in combination with the curved threaded die B, provided with a tongue, *b*, the block B', provided with the groove *b'*, and the set-screws *c'*, substantially as and for the purpose set forth.

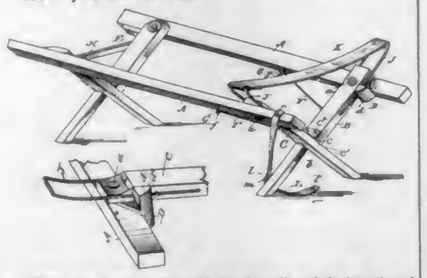
4. In a machine for rolling threads upon metal, a circular revolving die, in combination with a curved non-revolving die arranged outside the former, a feed-wheel in which the blanks are held, and a timer arranged to revolve with the circular die and to act on the feed-wheel to deliver the blanks to the opening of the space between the two dies at the proper moment, substantially as described.

5. The revolving die D, in combination with the non-revolving die B, the timer H, mounted on the shaft of the revolving die, and provided with arms *h'*, and the feed-wheel I, provided with projections K, and mounted on loose shaft, so as to be turned by the timer, substantially as described.

6. The feed-wheel I, provided with a circumferential groove, *i'*, in combination with the shoe *k*, carrying the projections K, and provided with pins entering the groove *i'*, substantially as described.

7. The shoe *k*, carrying projections K, and provided with the slot k^2, in combination with the feed-wheel I, provided with the circumferential groove *i'* and the fastening-screw k^4, substantially as and for the purposes set forth.

295,606. FOLDING COT. WILLIAM H. WOOLDRIDGE, Louisville, Ky. Filed May 26, 1883. (No model.)

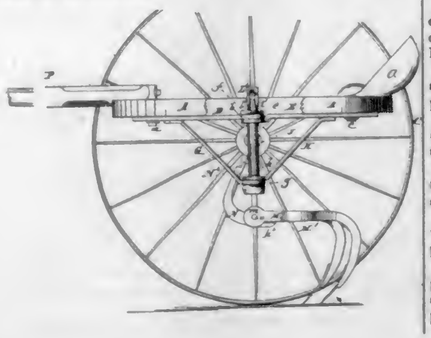


Claim.—1. In combination with the side rails and the legs pivoted thereto by the pin or bolt *a*, a T-shaped casting pivoted by said bolt, said casting having its head somewhat triangular in shape, and provided with the upper and side bearing-surfaces, d'' d^3, for the purpose set forth.

2. In a folding cot, the combination of the side rails with the legs pivoted thereto, as described, wire frames J, secured to the sides of the legs, and the pillow or head-support K, attached to the top of the wire frames, whereby said frames may fold with the legs between the side rails, while the head-support folds between the legs, as set forth.

295,607. CULTIVATOR. JOHN WOOLRIDGE, Libertyville, Ill. Filed Dec. 12, 1883. (No model.)

Brief.—The hangers for the drag-bars are swiveled in a cross-bar arranged for lateral oscillation. The longitudinal bars of the frame are in two sections, allowing the hangers and drag-bars to be moved from side by the foot. The hangers are tubular in which the drag-bar rods are raised and lowered by cam-levers, while a curved foot-lever extends under and lifts the shovels.



Claim.—1. The bars D E, pivotally connected at their inner ends to permit of side movement, for changing the travel of the plow-beams, substantially as and for the purpose specified.

2. The bars D and bars E, having slots *d* in their rear ends, in combination with a post or standard carrying the plow-beams and forming a pivot for the inner end of the bars D E, substantially as and for the purposes specified.

3. The bars D and E, in combination with the braces G and H, cross-bar F, and posts or standards J, substantially as and for the purposes specified.

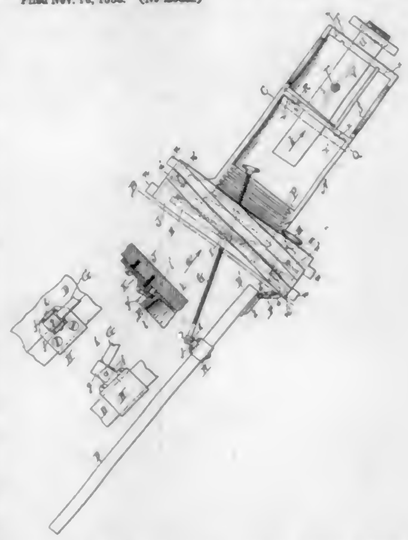
4. The bars D and E, in combination with the cross-bar F, posts or standards J, and braces G, H, and I, for forming a frame-work and support which permits of free side movement, substantially as and for the purpose specified.

5. The bars D and E, cross-bar F, posts J, and suitable bracing, in combination with the sliding shanks K and the plow-beams, for adjusting the running depth of the plows and allowing of side movement, substantially as and for the purpose specified.

6. The posts J, forming a pivot for side movement, in combination with sliding shanks K, for attaching the plow-beams and locating both movements at a common point, substantially as specified.

7. The bars D and E, cross-bar F, post J, and suitable bracing, in combination with the sliding shanks K, plow-beams, and foot-treadle, substantially as and for the purposes specified.

295,608. SOLAR CAMERA. CHARLES F. ADAMS, Worcester, Mass. Filed Nov. 16, 1883. (No model.)



Claim.—1. In a solar camera, the combination, with the reflecting-mirror D and the adjusting-gear of the camera, of an adjustable hinge for attaching said mirror to said adjusting-gear, substantially as shown and described.

2. The bent hook-piece H, having projections *f* on its top part, in combination with and attached to one side of the reflecting-mirror D, in connection with cube-piece *g* and screw G, to raise or lower said mirror D, substantially as shown and described.

3. In a solar camera, the combination, with an adjusting-gear and a screw for tipping the mirror D, of the cube-piece *g*, attached to hook-piece H on the reflecting-mirror, substantially as shown and described.

4. In a solar camera, the combination, with an adjusting-gear, of an elongated nut, I, pivoted thereto, and the adjusting mirror-screw G, substantially as shown, and for the purposes stated.

5. The combination, with the frame part J, having a slot for the mirror-tipping screw G, of the adjusting-gear E, having a flange, *k*, substantially as shown, and for the purposes stated.

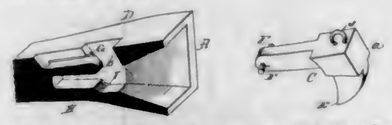
6. The combination, with the frame part J, of camera-box N, provided with shadow grooves and ridges P, and having a diaphragm or plate, Q, therein, substantially as shown and described.

7. The combination, with the camera-box N, of a wedge-shaped piece, R, used to make the lines of the picture perpendicular on the screen, and adjustable shelf S, substantially as shown, and for the purposes stated.

8. The combination, with the reflecting-mirror D, adjusting-gear E, tipping mirror-screw G, and frame part J, of the box part N and parts attached thereto, hinged or pivoted to said frame part J, and reflecting-mirror W, all to be used for a vertical camera, substantially as shown and described.

9. The combination, with the frame part J and the reflecting-mirror D, hinged to the adjusting-gear E and tipping mirror-screw G, of the camera-box N and parts attached thereto, all so constructed and arranged that the instrument may be used either as a right-hand or a left-hand camera, substantially as shown and described.

295,609. CAR-COUPLING. FRANCIS K. ADAMS, Nashotah, Wis. Filed Sept. 18, 1882. (No model.)



Claim.—In a car-coupling, the draw-bar A, provided with horizontal recess H, angular recess I, vertical slot D, and recesses G G, in combination with the latch C, provided with lugs F F, adapted to operate in said recesses G G, said latch C being adapted to be thrown upward by contact with said angular recess I as it is moved rearward by the approaching link preparatory to the link entering beneath it, said horizontal recess H being adapted to hold said link in position to enter an approaching draw-bar or coupling, substantially as and for the purpose specified.

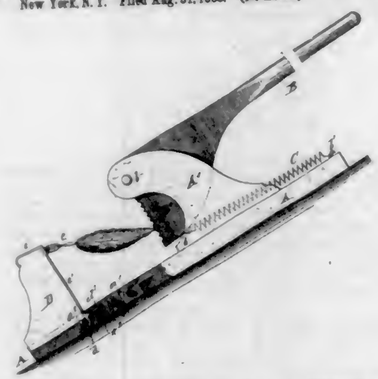
295,610. WOOD PAVEMENT. ROBERT ALBRECHT, Tilsit, Prussia, Germany. Filed Feb. 1, 1884. (No model.) Patented in England Dec. 3, 1883, No. 5,621.



Claim.—1. A pavement composed of a foundation or bed of unburned bricks and of wooden blocks laid upon said foundation and connected by interlocking metal strips inserted in side grooves of the blocks, substantially as described.

2. A pavement composed of a foundation or bed composed of unburned bricks and an outer or curb portion of burned bricks, and of wooden blocks grooved in their sides, laid upon said foundation, and connected by interlocking metallic strips.

295,611. MACHINE FOR OPENING OYSTERS. LOUIS A. AMOUROUX, New York, N. Y. Filed Aug. 31, 1883. (No model.)



Claim.—1. An oyster-opener consisting of a supporting-frame, a fulcrumed lever having a serrated jaw, an adjustable standard having a fixed and twisting knife, and means whereby the standard is rigidly locked to the base of the frame, substantially as set forth.

2. The combination of a base, A, having fixed upright standards A', and a recess with transverse rods a^2, a fulcrumed lever, B B', an adjustable standard, D, having a fixed and twisted cutting-knife, *c*, and a bottom hook, *d*, and heel, whereby the standard D may be rigidly locked to the base at varying distances from the jaw, substantially as set forth.

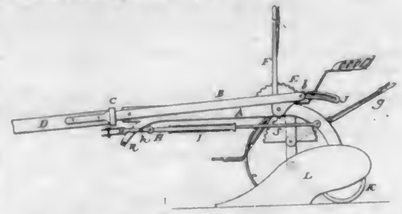
295,612. SHOE-BUTTON NEEDLE. ELLENE A. BAILEY, St. Charles, Mo. Filed Dec. 6, 1883. (No model.)



Claim.—As a new article of manufacture, a needle constructed in two parts, the main one being provided with a screw-threaded socket, and the other being rigidly secured to the thread and provided with a screw-threaded end to engage therewith, whereby the main body of the needle is adapted for use with a number of threads, as set forth.

295,613. SULKY-PLOW. SAMUEL W. BARR, Mansfield, Ohio. Filed Aug. 11, 1883. (No model.)

Brief.—Wheel-landside upon the plow-beam. A bar extends rearward from the tongue, hinged to it, and the parts are vertically rigid. A cam-lever lifts or adjusts the plow. A spring-pawl holds the tongue in line, which, when released, may swing around in turning. A spring-clevis working upon a cam projection of the plow-beam varies the height of the front end according to the power of the draft.

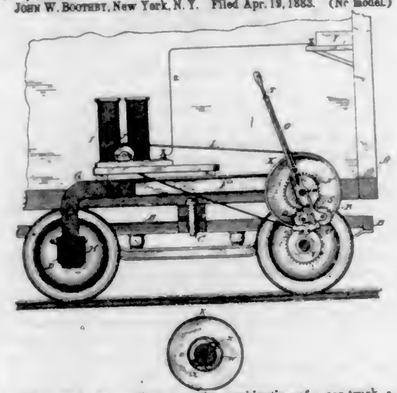


Claim.—1. The combination, in a sulky-plow, with the pivoted bar B, of the tongue D, the hinge-plate *c*, the hinged bars M N, staple O, and spring T, substantially as shown and described.

2. The plow-beam A, pivoted to the bar B, and the curved projection R, in combination with the spring draft-rod H, roller A, and draft-clevis, substantially as set forth.

3. The combination, with the pivoted bar B, having pin *b*, of the lever F, having the curved slotted arm J, the rack E, plow-beam A, and wheel K, substantially as shown and described.

295,614. DRIVING-GEAR FOR DYNAMO-ELECTRIC MACHINES. JOHN W. BOOTHBY, New York, N. Y. Filed Apr. 19, 1883. (No model.)



Claim.—1. In a railway-car, the combination of a car-truck, a tripod-frame resting upon two axles of said truck, and not connected to the car-body, a dynamo-electric machine resting upon said frame, and a system of gearing supported by said frame, and transmitting motion from one of said axles to the dynamo, substantially as described.

2. The combination of the axles D and E, tripod-frame F F' G, gear V, pivoted lever O, gears Q and R, gear N, shaft M, pulley K, belt L, and dynamo I, substantially as described.

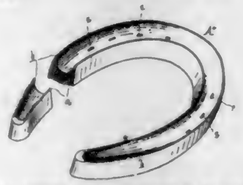
3. The combination of the axles D and E, tripod-frame F F' G, gear V, pivoted lever O, gears Q and R, gear N, shaft M, pulley K, disk W, spring-pawls X, belt L, and dynamo I, substantially as described.

295,615. PROCESS OF TREATING FIBROUS RUBBER WASTE FOR THE RECOVERY OF THE RUBBER OR CAOUTCHOUC THEREFROM. AUGUSTUS G. BOURN, Bristol, R. I. Filed Feb. 25, 1884. (No specimens.)

Brief.—Improvement on the invention in Letters Patent No. 292,891, dated February 5, 1884, to same inventor.

Claim.—The process of treating rubber waste containing cotton fiber by subjecting said waste to the action of nitric acid or muriatic acid, or compounds of both of said acids, in solutions of sufficient strength to convert the fiber into soluble matter and enable its removal from the waste with the solution, substantially as described.

295,616. HORSESHOE. MAX CASPARI, Detroit, Mich. Filed Dec. 12, 1883. (No model.)



Claim.—In a horseshoe, the combination of the two ridges *a b*, formed upon the sole of the shoe, and following the inner and outer contour thereof, with the intervening sunk portion, which is formed with sloping sides and rounding bottom, substantially as and for the purposes described.

295,617. PULVERIZING-MACHINE. LEWIS S. CHICHESTER, Jersey City, N. J., assignor to C. M. Edward Schroeder, same place. Filed Dec. 29, 1882. Renewed Dec. 27, 1883. (No model.)



Claim.—1. The combination of an inclosing-casing, means for supplying the materials, means for discharging them when pulverized, a revolving disk having curved funnel-shaped ejectors applied thereto, composed of inner and outer shells of corresponding shapes, with air-spaces between them, and means whereby compressed air is conducted to said spaces between the outer and inner shells of the ejectors, substantially as described.

2. A pulverizing-machine having a horizontal rotary shaft provided with a longitudinal air-channel, an air-receiver connected to the end of said shaft, a disk having an annular space in its hub, radial air-conducting tubes projecting from said annular spaces, ejectors composed of inner and outer shells, having air-spaces between them connected with said air-tubes, whereby currents of compressed air are made to impinge currents of dust and air at the discharge-orifices of the ejectors, and a rim or casing surrounding said disk, substantially as described.

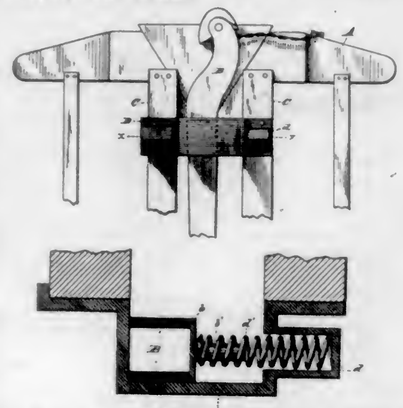
3. A pulverizing-machine having a rotary disk, an inclosing-casing provided with projections on its inner circumference, means for admitting and means for discharging the material, an ejector composed of an outer and an inner shell, which form an air-channel between them, a compressed-air receiver, and means for conducting air from said receiver to and through the air-channel of the ejector, whereby the compressed air is made to impinge a current of mingled air and dust which passes through the inner channel of the ejector and against the projections, substantially as described.

4. A pulverizing-machine, including the casing, having a horizontal rotary shaft provided with a longitudinal air-channel, an air-receiver at one end of the shaft, a disk having an annular space in its hub, radial air-conducting tubes projecting from said annular space, ejectors composed of outer and inner shells, forming an air-channel between them, and flanges *b*, provided with bolt-holes, substantially as described.

5. In a pulverizing-machine, an ejector composed of an inner and an outer shell, with an air-channel between them, said ejector having a funnel-shaped mouth and a discharge-nozzle at an angle thereto, the outer shell being provided near the mouth on the side opposite the nozzle with a tube adapted to connect with an air-pipe, substantially as described.

6. In a pulverizing-machine, an ejector having a funnel-shaped mouth and a discharge-nozzle at an angle thereto, composed of an inner and an outer shell, with an air-space between them, the outer shell being constructed with a flange whereby the device may be attached to the disk, substantially as described.

295,618. CAR-COUPLING. NEWELL P. COWELL, Cleveland, Ohio. Filed July 3, 1883. (No model.)

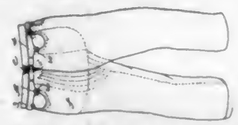


Claim.—1. In an automatic car-coupler, the part D, adapted to support the draw-head, and provided with a boss formed integral therewith, and containing a cylindrical chamber that is adapted to furnish a seat for a coiled spring that actuates the draw-head laterally, substantially as and for the purpose set forth.

2. In an automatic car-coupler, the part D, substantially as described, and provided with a hollow boss formed integral therewith, and adapted to support the spring *d''* in proper relative position to the draw-head, substantially as described, and for the purpose specified.

3. In an automatic car-coupler, the combination, with the part D, provided with the boss *d* and the spring *d''*, of the draw-head B, the plate *b*, and the pin *b'*, or projection, substantially as shown and described.

295,619. OVERALLS. WILLIAM A. DAWSON, Stony Point, Cal. Filed Dec. 13, 1883. (No model.)



Claim.—1. The inside flap, C, of the front opening of pants and overalls, formed from the lining thereof, substantially as described.

2. An auxiliary waistband for pants, made in four pieces, and arranged to be connected together by buckles in front, over the hips on each side, and at the back, substantially as and for the purpose described.

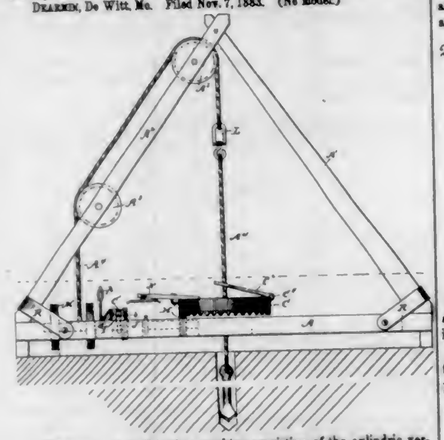
3. In combination with overalls or pants having a main waistband, the auxiliary waistband-pieces 1 2 3 4, having widened portions *w*, such widened portions forming an integral part of said waistband, substantially as and for the purpose set forth.

295,620. HORSESHOE. GEORGE A. DEAN, Dorchester, Mass. Filed Aug. 9, 1883. (No model.)



Claim.—The improved horseshoe and pad herein described, consisting of the shoe A, having a recessed front portion, and slots located near the heel of the shoe, in combination with the shoe B, having upwardly-projecting toe-piece *c* and perforated blocks *b*, and pad C, with recess *f* at the toe, and slots *a a*, the parts being adapted to be united to each other, substantially as shown, and for the purpose set forth.

295,621. WELL BORING AND DRILLING MACHINE. FRANK DEARMIN, De Witt, Me. Filed Nov. 7, 1883. (No model.)

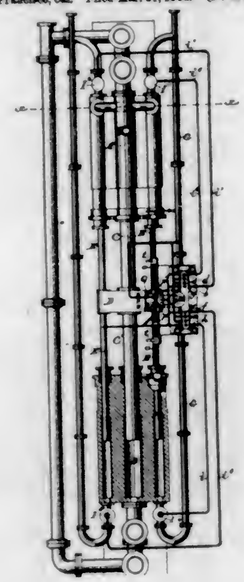


Claim.—1. A well-boring machine consisting of the cylindric vertical journal D, projecting through cog-wheel C, having notch *e* and arm N, auger-holder C', shafts G and K, cam-wheel *b*, engaging with clutch-wheel C', dog J, lever I, spring *d'*, reel M, rope A^4, auger C'', and the pulley-frame, substantially as shown and described.

2. The combination of the shafts G and K, operating in guides *j*, lever I, spring *d'*, cam-wheel *b*, clutch-wheel C', and dog J, for alternately clutching and disengaging, substantially as shown, and for the purpose described.

3. The combination of the shafts G and K, having guides *j*, lever I, spring *d'*, cam-wheel *b*, clutch-wheel C', dog J, reel M, rope A^4, guided by pulleys A^5 and secured to auger C'', and the driving mechanism, substantially as shown, and for the purpose described.

295,622. VALVE-GEAR FOR HYDRAULIC PUMPS. GEORGE W. DIXIE, San Francisco, Cal. Filed Mar. 21, 1882. (No model.)

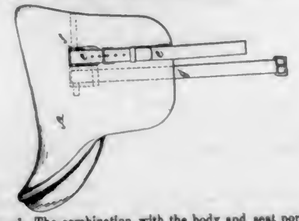


Claim.—1. In a hydraulic pumping apparatus, the main valves I, I', I^3, and I^4, in combination with auxiliary valves *a b c d e f g h*, substantially as and for the purpose herein described.

2. The time-cylinder M, with its valves, piston, and piston-rod, in combination with the rack N, pinion O, shaft K, and cams J, all constructed to operate as and for the purpose set forth.

3. The valves R, having their upper and lower ends made of different diameters, in combination with the chamber S, having openings above and below to admit the pressure of a column of water, substantially as and for the purpose set forth.

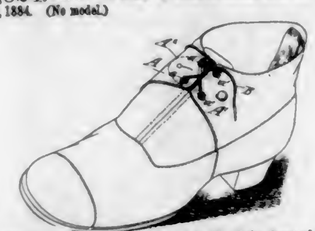
295,623. RIDING-SADDLE. WILLIAM FRAHER, West Alexander, Pa. Filed Aug. 27, 1883. (No model.)



Claim.—1. The combination, with the body and seat portion A of a saddle formed of rubber and having recesses in its sides, of the pins *f*, inserted in said recesses, substantially as herein shown and described.

2. The saddle or portion A, constructed with an under central longitudinal groove, *h*, and four bearing-points, *s*, essentially as and for the purposes herein described.

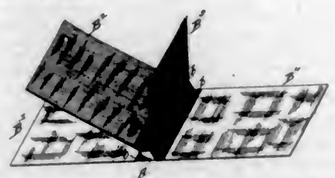
295,624. SHOE. WALTER S. FREEMAN, Bloomfield, N. J. Filed Jan. 12, 1884. (No model.)



Claim.—1. A shoe provided in each side of the front of the quarter with lace-holes and having attached to one side thereof a strap adapted to be turned in under the side of the quarter and be secured to said other side of the quarter by a fastening device, substantially as herein described.

2. The combination, with the sides A A', provided with lace-holes *a a'*, of the pocket *b* and the strap A^5, attached to the side A and adapted to be turned in within said pocket, substantially as herein described.

295,625. BLOTTER. AUGUST H. FREDERICK, St. Louis, Mo. Filed Jan. 24, 1884. (No model.)



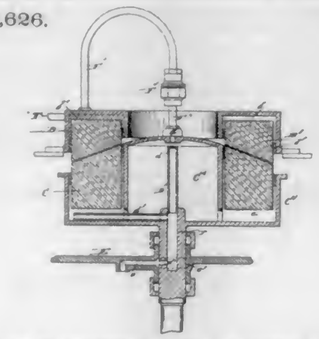
Claim.—An improved blotter, consisting of a suitable base or head having a series of blotting-leaves flexibly hinged thereto, with intermediate spaces adapted to receive a block of writing-paper and to be interchangeably used, all substantially as described.

295,626. COOLING APPARATUS FOR PAINT-MILLS. L. EUGENE FULLER and JOSEPH H. MACAULEY, Chicago, Ill. Filed Oct. 8, 1883. (No model.)

Claim.—1. In a paint-mill, the running-stone C, casing C', having a circulating-space around the stone, and the hollow spindle D, in combination with the plate E, through which the spindle passes, formed with the cored passage *e* and chamber *d'*, substantially as shown and described.

2. In a paint-mill, the running-stone C and its case C', formed with a circulating-space around the stone, and with the receptacle C', in com-

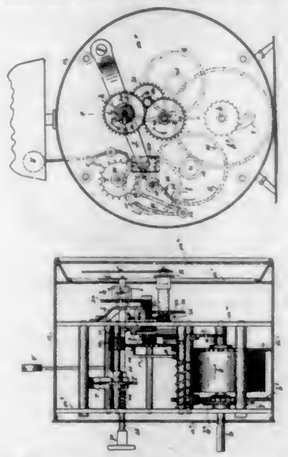
295,626.



bination with the hollow spindle D, pipes d', and extension D', formed with perforations d, substantially as and for the purpose set forth.

3. In a paint-mill, the stationary stone B', its case B, having a circulating-space, b, and the partition b^2, the supply-pipe F, connected on one side of said partition, and the pipe F' upon the other, the coupling F^2, and section F^3, in combination with the coupling G, chamber G', case C', stone C, and hollow spindle D, all constructed and arranged to operate substantially as and for the purpose set forth.

295,627. ALARM-CLOCK. JACOB GANSS, Brooklyn, assignor to himself and John Blackwood, New York, N. Y. Filed July 6, 1883. (No model.)



Claim.—1. The combination, with the time-gearing and the wheels s t, their pins 28 and 14, and the pivoted arms 25 and 12, of the arbor b, barrel b', loose on said arbor, the spring b^4, with its ends connected to the arbor and barrel, teeth upon the barrel b' for driving the time-gearing, the ratchet-wheel b^3, secured to the arbor, and the loose wheel b^5 and pawl, substantially as and for the purposes set forth.

2. The combination, with the time and alarm mechanism, of the wheel 34, notched cylinder A, notched ring i, spindle 35 and hand, pin 5 on said spindle, the gearing 43, 31, 32, and 33, and spring-lever J, substantially as and for the purposes set forth.

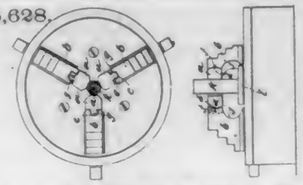
3. In an alarm mechanism, the combination of the mainspring, wheels s t, their pins 28 and 14, pinions 10, 17, and 29, escapement-wheel T and escapement, pivoted arms 12, 16, 21, and 25, spring-lever J, acting directly upon the arms 16 and 21, and automatic mechanism operating once in every twenty-four hours to allow the lever J to release the alarm mechanism, substantially as set forth.

4. The combination, with the time and alarm mechanism, of a revolving and sliding toothed wheel, 34, a notched cylinder secured to the same, a notched ring, i, within the cylinder A, a spindle upon which the wheel, cylinder, and ring turn, and a pin and hand upon said spindle, substantially as and for the purposes set forth.

295,628. LATHE-CHUCK. JAS. S. GILMORE, Philadelphia, Pa. Filed Nov. 5, 1883. (No model.)

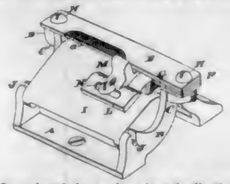
Claim.—The jaw-face a, connected to the jaw b by a tongue-and-

295,628.



groove device having a lateral tongue and groove, g h, and a fastening-stud, f, the said lateral tongue being notched for the fastening-stud, substantially as described.

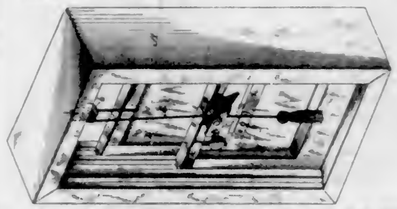
295,629. SPLITTING-GAGE. HENRY S. GUTHRIE, Olney, Ill., assignor of one-half to F. T. Phillips, same place. Filed Sept. 24, 1883. (No model.)



Claim.—1. In a chamfering-tool, a pivoted adjusting-plate, I, provided with guide M, in combination with knife G, block F, and a bar, E, the parts being constructed and supported substantially as and for the purposes described.

2. In combination with pivoted adjusting-plate I, provided with screw K and adjustable guide M, the knives E and G and a supporting-frame, substantially as and for the purposes set forth.

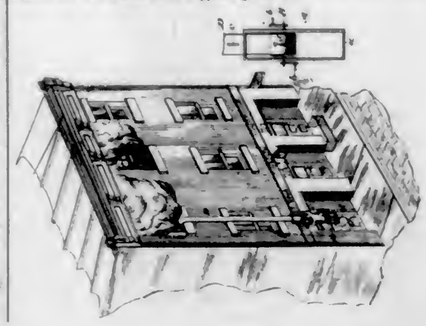
295,630. SASH-BALANCE. MARLON B. GLADMAN, Hopkins, Mo. Filed Dec. 26, 1883. (No model.)



Claim.—In a sash holder and fastener, a cord secured to the upper sash and passing over a pulley connected to the window-frame and extending down between a friction-roller and cam upon the lower sash, in combination with a spring-bolt to fasten the sashes closed, said bolt working in the same case with the cam, and having a flange extending a portion of its length, to serve both as a guide and stop, and extending through a plate with a slot projecting radially from the opening through which the bolt passes, substantially as and for the purpose set forth.

295,631. FIRE-ESCAPE. LAURA J. GOTT, La Grange, Ohio. Filed Jan. 31, 1884. (No model.)

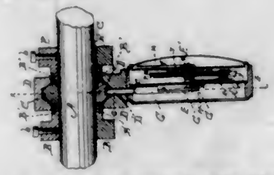
Brief.—A slotted flat spring coiled around a sprocket-drum which is provided with cranks and a supporting-frame.



Claim.—1. In a fire-escape, a frame or cage suspended by a coiled spring secured to an axle provided with a crank, by means of which persons may lower themselves from a building, and so arranged that the device will be raised to the starting-point by the recoil of the spring, substantially as set forth.

2. In a fire-escape, the combination, with the frame A, the shaft B, and attached sprocket-drum and cranks, of the spring D, provided with slots adapted to engage the said sprockets, substantially as set forth.

295,632. CYCLOMETER. GEO. H. GOULD, Somerville, Mass. Filed July 31, 1883. (No model.)



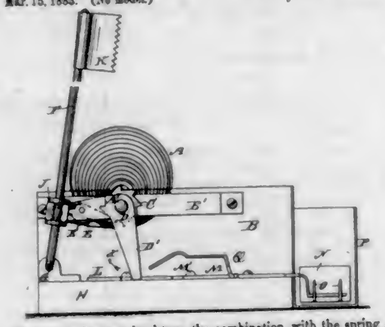
Claim.—1. In a cyclometer, the combination of the following parts, viz: the clamp B, rigidly secured to the axle, and provided with the cam C c, the pendent holder D, provided with the passage D', the rod G, the case E, and suitable mechanism, substantially as shown, by which the said rod is adapted to communicate motion to a differential gear, all substantially as and for the purpose set forth.

2. In a cyclometer, the combination of the clamp B, provided with the cam C c, the pendent holder D, provided with the passage D', and the case E, provided with the rod G, lever H, and spring I, said lever arranged to actuate a differential gear, substantially as and for the purpose described.

295,633. REMOVING OLEINE FROM LINSEED-OIL. THOMAS HENRY GRAY, Brooklyn, N. Y., assignor of one-tenth to John Leavens, same place. Filed Sept. 17, 1881. (No specimens.) Patented in England July 9, 1880, No. 2,831.

Claim.—A process of removing oleine from linseed-oil, which consists in maintaining the oil at a temperature of 110° Fahrenheit and in a state of agitation for about ten hours a day for nine to fourteen days, then mixing therewith, while hot and in a state of agitation, a saline solution, and finally drawing off the saline and oleine precipitate, and washing the purified oil with pure water until a further precipitate is obtained, as described.

295,634. ANIMAL-TRAP. CHARLES HALL, Changewater, N. J., assignor to himself, Jacob Hill, Jr., and Victor Castner, same place. Filed Mar. 15, 1883. (No model.)

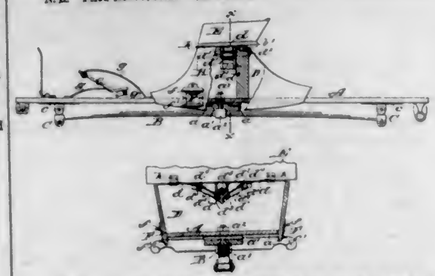


Claim.—1. In an animal-trap, the combination, with the spring A, of the shaft A', the elbow-lever D, the U-shaped piece J, the rod F, the knife K, the cross L, the lever M, provided with a bent arm, M', and devices for holding the bait on the free end of the lever M, substantially as herein shown and described, and for the purpose set forth.

2. In an animal-trap, the combination, with the spring A, of the shaft A', the elbow-lever D, the U-shaped piece J, the rod F, the knife K, the cross L, the lever M, provided with a bent arm, M', devices for holding the bait on the free end of the lever M, and of the bent lever Q, adapted to set on the lever M, substantially as herein shown and described, and for the purpose set forth.

3. In an animal-trap, the combination, with the spring A, of the shaft A', the ratchet-wheel C, the pawl E, the elbow-lever D, the pivoted U-shaped piece J, the swinging rod F, the knife K, the cross L, the lever M, provided with an arm, M', and the bent lever Q, substantially as herein shown and described, and for the purpose set forth.

295,635. SPRING-BOARD WAGON. JOHN C. F. HARRIS, Littleton, N. H. Filed Nov. 1, 1883. (No model.)

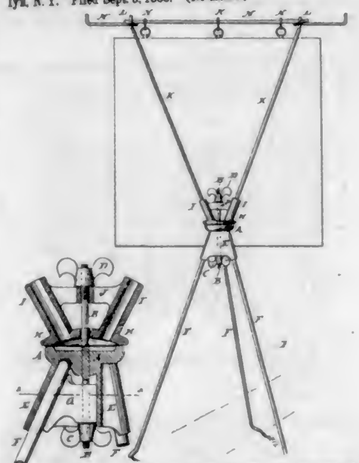


Claim.—1. The foot-rest G, connected to the spring-board A by springs g, and having rubber cushions g', substantially as described.

2. The seat E, hinged to the support H at A, and supported at the rear by springs d, and rubber cushions b' above the seat-supports, substantially as described.

3. The combination, with the hinged seat E, of springs d, supported in the frame, consisting of side bars, d', and cross-bars, as described, and attached to seat-support D by bolt d^2, substantially as specified.

295,636. REVOLVING MAP-STAND. HENRY EDWIN HAYES, Brooklyn, N. Y. Filed Sept. 8, 1883. (No model.)



Claim.—1. A revolving chart and map stand constructed substantially as herein shown and described, and consisting of the base-block A, having screw-rod B, and nuts C D, and triangular socket E, the revolving top block, H, having sockets I, the triangular wedge-block G, and the supporting and suspension rods F K M, as set forth.

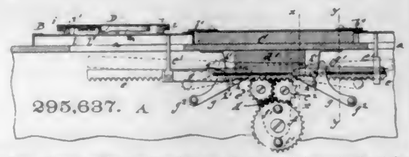
2. In a revolving map and chart stand, the combination, with the base-block A, having screw-rod B and triangular socket E, and the supporting-rods F, of the triangular wedge-block G and the nut C, substantially as herein shown and described, whereby the said block and rods can be firmly connected, as set forth.

3. In a revolving map and chart stand, the combination, with the base-block A, having screw-rod B, of the revolving block H, having sockets I, to receive the upper supporting-rods, K, and the nut D, substantially as herein shown and described, whereby the suspended map or chart can be readily turned to face in any direction, as set forth.

4. In a revolving map and chart stand, the combination, with the upper supporting-rods, K, having bent upper ends, of the suspension-rod M, having eyes L and bent ends, and provided with slide-hooks N, substantially as herein shown and described, whereby maps and charts of different sizes can be readily suspended, as set forth.

295,637. SAFETY RAILWAY-CAR. EDUARD HENN, Jersey City, N. J. Filed Nov. 10, 1883. (No model.)

Claim.—1. The combination of a car-roof having transverse escape-openings, longitudinally-sliding roof sections guided on ways of the roof, mechanism arranged in the interior of the car for moving the sliding roof-sections in opposite directions, and mechanism, substantially as de-



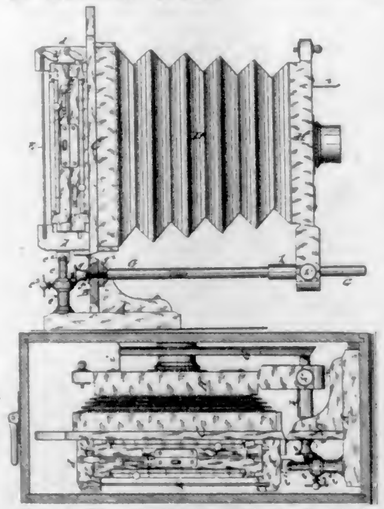
scribed, whereby either roof-section may be moved independently of the other, substantially as set forth.

2. The combination of a car-roof having transverse escape-openings, sliding roof-sections guided in ways of the roof, parallel rack-bars connected to said roof-sections, pinions turning on a fixed hanger-plate and engaging said rack-bars, a gear-wheel meshing with one of said pinions and having handles, levers pivoted to said hanger-plate and engaging grooves of said rack-bars, and check-springs which engage said levers and retain them, together with the rack-bars, in raised or lowered position, substantially as set forth.

3. In a safety attachment to railway-cars, the combination of a car-roof having transverse escape-openings, longitudinally-sliding roof-sections guided on ways of the roof, auxiliary transversely-sliding roof-sections guided on ways of the main sections, and means whereby the auxiliary roof-sections are locked to or released from the main sections, substantially as described.

4. As an improvement in safety attachments to railway-cars, the combination of a car-roof having transverse escape-openings, sliding roof-sections guided on ways of the roof, auxiliary transversely-sliding roof-section guided on ways of the main sections, a spring-actuated slide-latch for locking the auxiliary section, and a fulcrumed and weighted lever engaging said latch to open it automatically by gravity when the car is tilted, substantially as set forth.

295,638. PHOTOGRAPHIC CAMERA. AUGUST HERZOG, Guttenberg, N. J. Filed Nov. 2, 1883. (No model.)



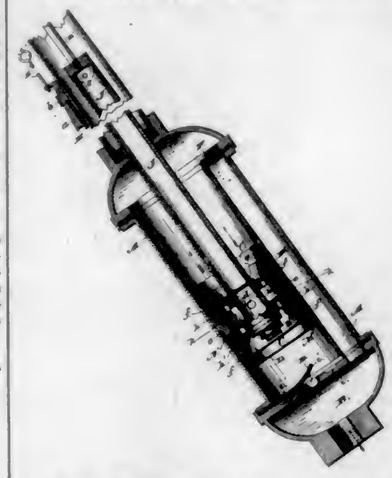
Claim.—1. The combination of a supporting base-frame having forward-extending guide-rods, a rear frame hinged to the base-frame, means for adjusting the rear frame to the proper inclination on the base-frame, an extensible camera, a lens-carrying frame, and means whereby the lens-carrying frame can be adjusted on the guide-rods, substantially as set forth.

2. In a photographic camera, the combination of a supporting base-frame, a rear frame having means for supporting the ground glass and plate-holder, said rear frame being hinged to the base-frame, a camera in front of the rear frame, a plunger pivoted to the rear frame, a fixed cylindrical socket of the base-frame for guiding the plunger, and a clamping-screw for fastening the plunger to the socket, substantially as specified.

3. In a photographic camera, the combination of a supporting base-frame, a rear frame having means for supporting the ground glass and plate-holder, horizontal guide-rods made of two hinged sections, the shorter of which is applied to the base-frame, an extensible camera having lens-carrying frame, and means whereby the lens-carrying frame is secured to the guide-rods, substantially as and for the purpose set forth.

4. In a photographic camera, the combination of a supporting base-frame, a rear frame having means for supporting the plate-holder and ground glass, horizontal guide-sections made of two hinged sections, the shorter of which is applied to the base-frame, an extensible camera having a movable lens-carrying frame, means for guiding the latter on the guide-rods, and means for retaining the longer rod-section in upright position on the lens-carrying frame, substantially as set forth.

295,639. HOLLOW-PISTON PUMP. JACOB F. HESS, FREDERICK H. SNYDER, LENERD HESS, JACOB F. SNYDER, and CHARLES F. SNYDER, Massillon, Ohio. Filed Mar. 13, 1883. (No model.)

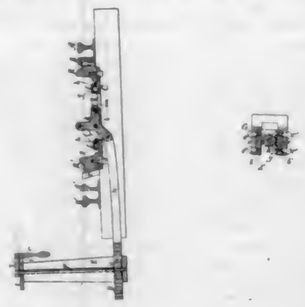


Claim.—1. The combination, with the pump-barrel having a valved opening below the piston and a valved opening above the piston, of a hollow piston-rod having openings near its lower end, and the piston consisting of a ring, *e*, having upper and lower annular flanges, the upper and lower perforated plates *f*, the flexible packing-rings held between the said flanges and plates, and the valve N between the plates, all of the said parts being combined, and adapted to operate as described.

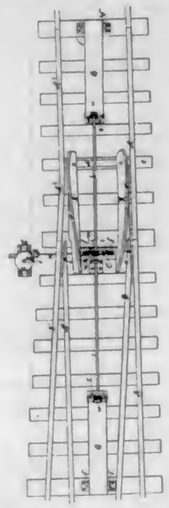
2. The combination, with a pump-cylinder and hollow piston-rod, the latter secured at its upper end to the rod K, of the piston consisting of the ring *e*, having annular flanges, the upper and lower perforated plates *f*, the flexible packing-ring, and the valve located on the piston between the perforated plates, and adapted to move above and below the opening *d*, for the purpose set forth.

295,640. MECHANISM FOR GUIDING CARS FROM ONE TRACK TO ANOTHER. JOHN ADAM HEYL, Boston, Mass. Filed Aug. 16, 1883. (No model.)

Brief.—In connection with fixed rails of main and siding, vibrating guide-rails shifted by a three-armed lever, toggle-jointed, and having a switch-stand connection, and carried by an oscillating shaft geared at each end with a removable vertical rack fixed in the jaws of a hinged lever, the two racks being on the same side of the shaft, and the two hinged levers being arranged between the rails and actuated from the locomotive, the jaws of each lever having two recesses—one on each side of the shaft—either of which may receive the rack and the other a filling-piece.



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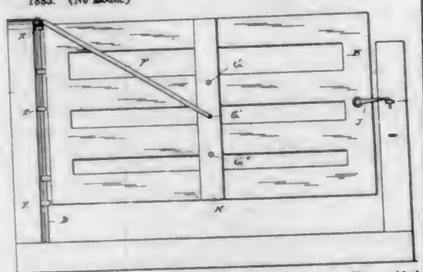
Claim.—1. The combination of a single depressor and its rack and the pinion thereof, and its shaft, with the main and turn-out tracks, the two switching-guides, the tri-armed lever, the toggles, the connection-piece provided with a rack and pinion or other suitable device, and mechanism for moving it, all being adapted to operate substantially as set forth.

2. The combination of the two depressors and their racks and the pinions thereof, and their shaft, with the main and turn-out tracks, the two switching-guides, the tri-armed lever, the toggles, the connection-piece provided with a rack and pinion or other suitable devices, and mechanism for moving it, all being adapted to operate substantially as set forth.

3. The combination of the notched head *l* and the arm, consisting of parts *q* and *r*, with the switching-guides R and R′, and with the standard E, and the upright or driving shaft *p*, its pinion *o*, the rack D, link *n*, and the toggles and tri-armed lever applied to the connection-piece of the two guides, all being adapted to operate substantially as set forth.

4. The depressor furcated, and having its prongs provided with the separable rack, and filling-piece adapted and secured thereto, substantially as represented.

295,641. GATE. NORMAN B. HUFFMAN, Grant, Ind. Filed Sept. 12, 1883. (No model.)



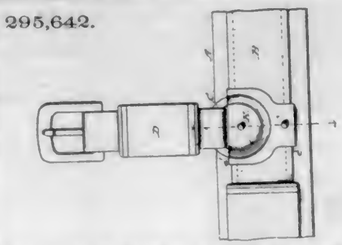
Claim.—The gate-frame having central vertical piece, H, provided with a series of perforations, G G′ G″, in combination with vertical rod D, secured to the gate-post A, and provided with swinging angled piece F, having flange F″, for engaging with the perforations G G′ G″ in the piece H, and thereby securing the vertical adjustment of the gate, substantially as specified.

295,642. HARNESS. GEORGE H. INGALLS, Warner, N. H., assignor of one-half to GUSTAVUS W. Ingalls, Worcester, Mass. Filed Jan. 23, 1884. (No model.)

Claim.—1. A face-plate provided with a curved groove for holding a neck-strap ring, in combination with said ring, a breast-strap, and means for securing said ring to the outside of said strap by clamping said face-plate against the same, substantially as set forth.

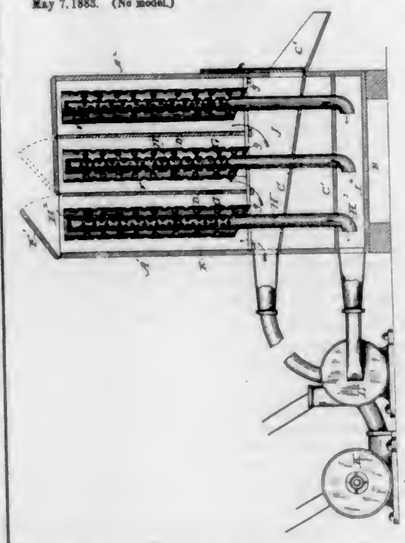
2. A breast-strap body or breast-plate body, and a supplemental layer secured to the front thereof, in combination with a face-plate provided with flanges or extensions for overlapping the upper and lower edges of said supplemental layer, a neck-strap ring secured between said face-plate and said layer, and means for clamping or fastening said face-plate against said layer, to hold said ring in place, substantially as set forth.

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3. In combination with breast-strap body A, supplemental layer B, and neck-strap ring C, the face-plate E, provided with extension F, tongues *f*, and flange *e*², said extension being bent through said ring and behind said layer, and said tongues clinched on said flange, substantially as set forth.

295,643. GRAIN-DRIER. RALPH S. JENNINGS, Boston, Mass. Filed May 7, 1883. (No model.)



Claim.—1. In a grain-drier, the combination of a perforated tube for holding the grain, surrounded by a sheet of netting or reticulated fabric, substantially as and for the purposes set forth.

2. The combination of the outer bin or casing having the drying-compartment subdivided into smaller compartments, the perforated grain-holders, situated, respectively, within the smaller compartments, the tubes within the grain-holders, and the air-chamber communicating with all of said interior tubes, substantially as set forth.

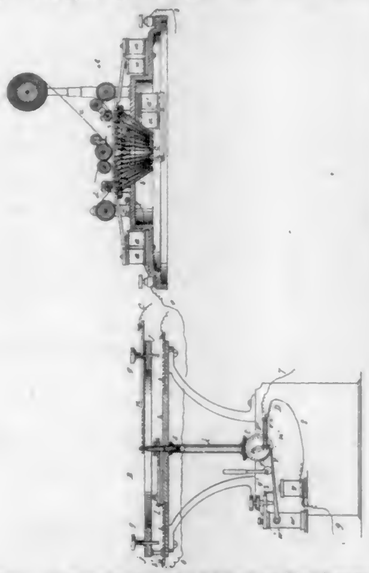
3. The combination of the outer bin or casing having the drying-chamber subdivided into smaller compartments, the perforated grain-holders, situated, respectively, within said compartments, the chamber below the drying-chamber adapted to receive the grain after treatment, and a separate exhaust-chamber communicating with the interior of the grain-holders in the drying-compartments, substantially as set forth.

4. The herein-described method for drying grain or other material in a mass or masses of small particles, it consisting in arranging said mass in a body having similar diameters at all points, allowing air to pass into said mass from one side on the lines of said diameters, and exhausting said air from the other side on the lines of said diameters by a positively-acting suction-fan, substantially as set forth.

5. The combination of the main bin or casing, the series of independently-arranged interior grain-holders, means for supplying air thereto,

means for exhausting the air therefrom, a bin or reservoir which supplies all of said holders, means for continuously introducing the material into the said holders, and means for continuously withdrawing it therefrom, substantially as set forth.

295,644. PRINTING-TELEGRAPH. ALBERT F. JOHNSON, Brooklyn, N.Y. Filed Apr. 5, 1883. (No model.)



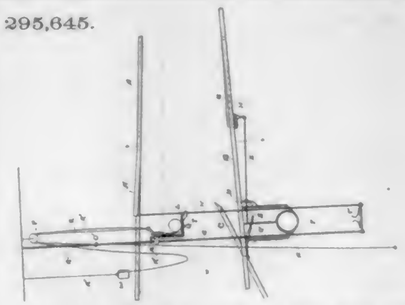
Claim.—1. In combination with a telegraph receiving-instrument in which each printing-type is actuated independently of the others, the key-boards B' B, the latter located at the receiving-station and the former at the sending-station, and connected with each other by a line-wire, C, the said key-boards being constructed substantially as described, and having needles *l*, that rotate synchronously with each other, and each provided with a series of keys, *g*, and corresponding circuit-closing plates, *i*, (one for each letter or character,) radially arranged, and traversed by a revolving needle, *l*, driven by clock-work mechanism, which closes an electric circuit whenever it makes contact with one of said plates, said key-board B having its plates *i* connected, respectively, with the several printing-magnets which print the letters represented by said plates *i*, the whole being arranged, substantially as described, with ground and battery wires forming properly-arranged electric circuits, whereby an electric impulse is transmitted along said line-wire C at each contact of any of the keys *g* with their corresponding plates, *i*, at the sending-station to the corresponding plate, *i*, at the receiving-station, and from the latter to the corresponding magnet on the printing-instrument to print the letter, as described.

2. In combination with the key-boards B and B', constructed substantially as described, the equalizing mechanisms connected therewith, one of said mechanisms being located at the sending-station and the other at the receiving-station, and each consisting of the following parts, namely: a revolving disk, *u*, provided with an insulated plate, u^2, and a ratchet-tooth, *u'*, the magnet *y*, the pivoted armature-lever *v*, forming a detent, the contact-arms *w' w²*, and the spindle *k*, carrying the needle *l*, said mechanisms being provided with ground and battery connections, substantially as described, and being operated in connection with said key-boards through the medium of electric impulses sent over the line-wire C, as and for the purpose set forth.

3. The key-board B, herein described, composed of the following parts, namely: a series of keys, *g*, each representing a particular letter, and a corresponding series of insulated contact-plates, *i*, adapted to be connected each with a printing-magnet, an insulated annular plate, *j*, carrying a ground-wire, and insulated plate *n*, carrying a line-wire, and a revolving needle, *l*, mounted upon a spindle, *k*, driven by clock-work and arranged to make metallic contact with the plates *i*, the whole being constructed substantially as described, to operate as and for the purpose set forth.

295,645. CASH-CARRIER FOR STORES. CHARLES M. JOHNSON, Peoria, Ill., assignor to William S. Lamson, Lowell, Mass. Filed Jan. 14 1884. (No model.)

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Claim.—1. In a cash-carrier, a track having several balls or other carriers of different weights thereon, in combination with traps in said track, and means whereby the weights of said balls shall each open its own trap alone.

2. In a cash-carrier, a track having a trap, and a slight elevation a short distance in front of said trap, in combination with means, substantially as described, whereby the depression of said elevation shall unlock said trap, for the purpose set forth.

3. The track B, having trap C and tongue G, in combination with the latch D, spring S, and means whereby the depression of said tongue shall release said latch, substantially as and for the purpose specified.

4. The track B, trap C, and tongue G, in combination with the angle-iron H, rod E, latch D, and spring S, substantially as set forth.

5. The track B, trap C, and laterally-curved cage F, in combination with the elevator L, having low side M, and means for raising the same.

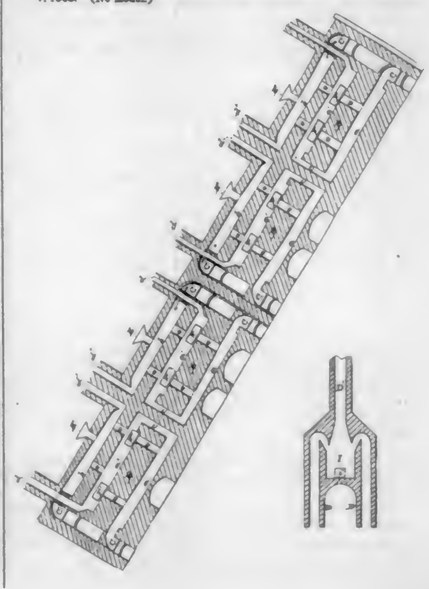
6. The track B, trap C, and laterally-curved cage F, in combination with the elevator L, having low side M, rods O N, switch-track A', and track A, substantially as described.

7. The track B, trap C, and cage F, in combination with the elevator L, having low side M, cords R and R', pulley P, and weight W, having supporting-cord R''.

8. In combination with the elevator L, rods O N, and cord R, the terminally-enlarged lag T and springs T', for the purpose set forth.

9. In combination with the track B, having trap C, curved cage F, and track A, having switch-track A', an elevator adapted to receive a ball from said cage and deliver it at said switch-track, substantially as and for the purpose described.

295,646. REVERBERATORY ORE-FURNACE. GEORGE W. JONES, Silver Creek, assignor to Adams & Carter, San Francisco, Cal. Filed Sept. 7, 1883. (No model.)



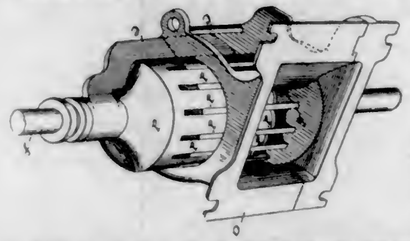
Claim.—1. In a desulphurizing, chloridizing, and chlorinating furnace, the connected hearths *a a'*, having the escape-flue *d*, and the fire-box C, in combination with the hearth *b*, having escape-flue *d'*, and fire-box C', and the traps *e*, connecting it with hearth *a'*, substantially as herein described.

2. In a desulphurizing, chloridizing, and chlorinating furnace, two or more furnaces built in one connected line, and having an arch, D, in which the escape-flues are contained, and top openings with feed-hoppers E, in combination with the track *f* on top of said furnaces and inclosed by the arch, substantially as and for the purpose herein described.

3. In a desulphurizing, chloridizing, and chlorinating furnace, the connected hearths *a a'*, having escape-flue *d*, and the top hearth, *b*, having the escape-flue *d'*, and the feed-hoppers E on top of the furnace, in combination with the arch D, inclosing the escape-flues, the stack D', and the track *f* on top of the furnace, substantially as and for the purpose herein described.

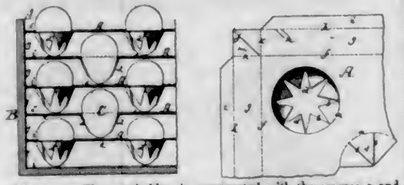
4. In a desulphurizing, chloridizing, and chlorinating furnace, the arch D, and the escape-flues *d d'* from the furnace, in combination with the dust-chamber I, formed above said arch, and the smoke-stack D', substantially as herein described.

295,647. FEED FOR SEED-DRILLS. WM. H. JULIAN, Springfield, Ohio, assignor to Thomas Wall, same place. Filed Jan. 2, 1884. (No model.)



Claim.—In a seeding-machine, the corrugated cylinder *b*, revolving in a feed-case, *a*, in combination with a sliding cut-off, *d*, that has fingers *d'*, chamfered at their free ends, and a cut-off, *e*, all substantially as and for the purpose specified.

295,648. EGG-HOLDER. WILLIAM KEARNEY, Franklin, N.J. Filed Jan. 5, 1884. (No model.)



Claim.—1. The egg-holder A, constructed with the creases *a*, and with the incisions *b*, that are embraced by said creases, and adapted to form the wings *d*, substantially as described.

2. The egg-holder A, having apertures for the reception of the eggs, and provided with creases *f*, by which it is adapted to have the edges *g* turned down, as specified.

3. The egg-holder A, having creases *f* and *h*, adapted to form the vertical walls *g*, and lower flanges, *i*, substantially as described.

4. The egg-holder A, having vertical walls *g*, and provided with corner-lapels *m* and incisions or slits *n*, substantially as and for the purpose herein shown and described.

295,649. SAW-TOOTH. ROBT. W. KELLEN, Albion, Cal. Filed June 5, 1883. (No model.)

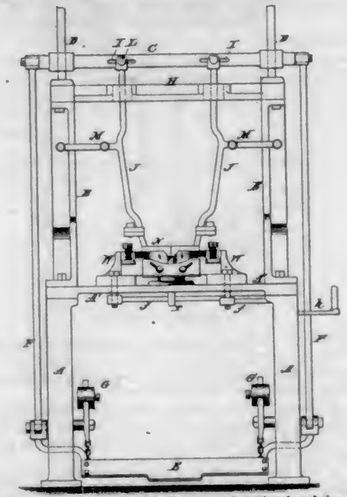


Claim.—1. The combination, with the saw-plate having spur *m*, of the saw-tooth *a*, the shank *e*, with shoulder *m'*, and the oval rivet adapted to be inserted and turned, as described, to lock the parts in place by a cam action, as set forth.

2. The combination, with the cam-plate having spur *m*, of the tooth *a*, made wider at its lower end, and having its shank-face constructed with an ogee curve, the shank having shoulder *m'* and a corresponding ogee curve next to the tooth, and the oval rivet inserted between the bearings *m* and *m'*, and turned to lock the parts by a cam action, as set forth.

295,650. HAT-SHAPING MACHINE. JOHN ROBINSON KELSEY, Bristol, England. Filed Nov. 20, 1882. (No model.)

Brief.—Improvement on the invention in Letters Patent No. 260,298, to the same inventor, dated June 27, 1882.



Claim.—1. In a machine for shaping and setting hat-brims, the two suspended presses, in combination with means for adjusting the distance between the ends to which the divided curling-ring is attached when depressed and acting upon the hat, substantially as described.

2. In a machine for shaping and setting hat-brims, the combination of the forked rod J and slotted cross-head C, bolt I, and sleeve or nut K, substantially as described.

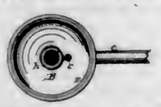
3. In a machine for shaping and setting hat-brims, the combination of the dish or mold O, reverse-threaded screw U, nut T, spring V, and table A', substantially as described.

4. In a machine for shaping and setting hats, the curling-boxes Z, adjustably attachable to the brackets W, and arranged so as to have an up-and-down motion, substantially as and for the purpose described.

5. In a machine for shaping and setting hats, the combination of the curling-boxes Z with the screw-bolts *b* and springs *c*, substantially as described.

6. In a machine for shaping and setting hat-brims, the combination, with curling-boxes, of the brackets W, pins X, levers *f f*, and lever *g*, all arranged and operated substantially as described.

295,651. SAFETY ATTACHMENT FOR VAPOR-BURNERS. ROLAND S. KELSEY, Syracuse, N.Y. Filed Aug. 24, 1883. (No model.)



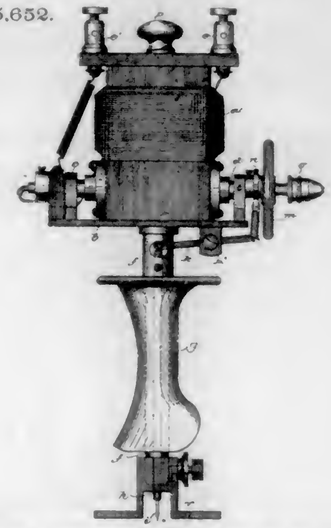
Claim.—1. The combination, with the burner and its heating-cup *a*, of a subjacent supplemental cup, a screen interposed between the two cups, and a discharge-pipe tapping the supplemental cup, substantially as and for the purpose set forth.

2. In combination with the burner and its cup *a*, the base B, provided with the cup *b*, the conduit *c*, tapping the cup *b*, and the screen *s*, interposed between the cup *a* and conduit *c*, substantially as set forth, and for the purpose specified.

295,652. ELECTRIC IMPLEMENT. ARTHUR H. KINDER, Boston, Mass., assignor to Amasa S. Barnes, same place. Filed Oct. 25, 1883. (No model.)

Claim.—1. The field-magnet and its rotary armature and shaft and supporting-platform therefor, combined with the guide-tube connected

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with the said platform, the vibrating rod for carrying a tool guided in the said tube, and the rocking lever fulcrumed on the said platform, and having one arm connected with the said rod, and its other arm connected with the armature-shaft, substantially as described.

2. The electromotor having a rotary shaft, and the guide-tube containing a vibrating rod actuated by the said rotary shaft, combined with the supporting-foot, recessed to show the operation of the tool carried by the said vibrating rod, substantially as described.

3. The electromotor having a rotary shaft and supporting-platform therefor, combined with the guide-tube fixed upon the said platform, having at its exterior a handle, and the vibrating rod operating in the said tube, and the lever pivoted upon the said platform, and having one arm connected with the said rod, and its other arm connected with the rotary shaft, substantially as described.

295,653. COLORING AND BRONZING LEATHER. LORENZ KLOPFER, Munich, Germany. Filed Sept. 4, 1883. (No specimens.)

Claim.—1. The process of treating leather preparatory to coating with metal and embossing it, consisting of first wrapping the leather in a cloth moistened with a solution of water and milk, drying it, then washing it with a mixture of white of egg, glycerine, and water, and then covering the leather first with a varnish and then with a flexible collodion compound, and finally applying a thin coating of size or other similar mixture, and applying the metal coating before the mixture has become dry, substantially as set forth.

2. In the process of treating leather preparatory to coating with metal and embossing it, the method of rendering the leather pliable and soft, consisting in wrapping the leather in a cloth moistened with boiled water and milk, then drying it, and then washing the leather with a mixture of white of egg, glycerine, and distilled water, substantially as set forth.

3. In the process of treating leather preparatory to coating with metal and embossing it, the method of forming a good adhesive surface for the reception of the metal, consisting in thoroughly drying the leather, previously rendered pliable, applying a solution of shellac, and coating the leather with a mixture of crude collodion, castor-oil, alcohol, and sulphuric ether, applying a thin coating of size or similar mixture, on which the desired color or leaf is laid, substantially as set forth.

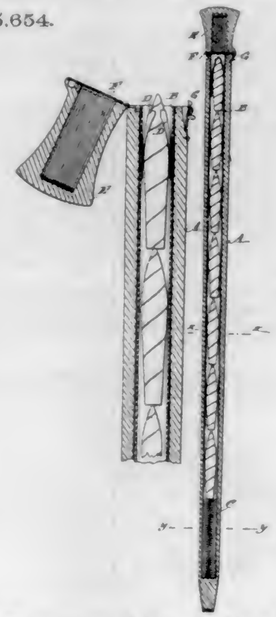
295,654. COMBINED CANE AND CIGAR-CASE. DAVID LEE, Jr., Mount Willing, Ala. Filed Nov. 16, 1883. (No model.)

Claim.—1. The combination, with a hollow cane adapted to receive cigars, of a spiral spring secured in the bottom of the hollow or recess in the cane, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with a hollow cane, of a removable tube fitting in the same, and of a spiral spring, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the cane A, of the tube B, the spiral spring C at the bottom and the springs D at the top of the tube, substantially as herein shown and described, and for the purpose set forth.

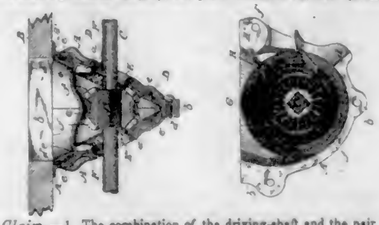
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4. The combination, with the cane A, of the tube B and the pivoted cap E, forming a match-receptacle, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the cane A, of the tube B, the hinged cap E, and the plate F, pivoted to the bottom of the said cap, substantially as herein shown and described, and for the purpose set forth.

295,655. APPARATUS FOR DISTRIBUTING GRAIN AND FERTILIZERS. ANDREW J. MARTIN, Mechanicsburg, Ohio, assignor to the Mechanicsburg Machine Company, same place. Filed Nov. 28, 1883. (Model.)



Claim.—1. The combination of the driving-shaft and the pair of feed-wheels arranged obliquely thereto, and converging from top to bottom, substantially as and for the purpose hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the feed-cup or casing, the oblique feed-wheels therein, and the driving-shaft actuating the feed-wheels.

3. The combination, substantially as hereinbefore set forth, of the feed-cup, of approximately inverted-cone shape, and the oblique feed-wheels having their bearings in the sides of the feed-cups.

4. A feed-wheel constructed with the central bearing, and the surrounding bevel-gear, substantially as and for the purpose hereinbefore set forth.

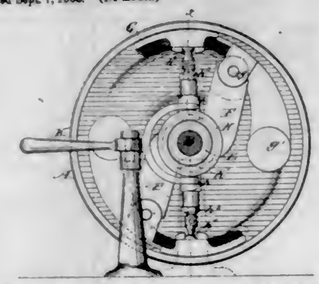
5. The combination of the feed-cup, the driving-shaft, the pinions on the driving-shaft, and the oblique feed-wheels supported in the feed-cup, and having the bevel-gears engaged by the driving-shaft pinions, substantially as and for the purpose hereinbefore set forth.

6. The combination, substantially as hereinbefore set forth, of the feed-cup, of approximately inverted-cone shape, the oblique feed-wheels having their bearings in the feed-cup sides, and the interior casing interposed between the feed-wheels.

7. A sectional feed-cup, of approximately inverted-cone shape, provided with side bearings for oblique feed-wheels, substantially as and for the purpose hereinbefore set forth.

8. The combination, substantially as hereinbefore set forth, of the feed-cup, the oblique feed-wheels supported thereby, the driving-shaft actuating the feed-wheels, and the vertical central feed-disk rotating with the driving-shaft.

295,656. FRICTION-PULLEY. VOLNEY W. MASON, Providence, R. I. Filed Sept. 7, 1883. (No model.)



Claim.—1. A friction-pulley made, substantially as herein shown and described, with one or more counterbalanced shoes, as set forth.

2. In a friction-pulley, the combination, with the shoe, of a counterbalance, substantially as herein shown and described.

3. In a friction-pulley, the shoe constructed with an attached counter-balance, and adapted to operate substantially as herein shown and described.

4. In a friction-pulley, the combination, with one or more counterbalanced shoes, of a mechanism for throwing said shoes in and out of contact with the pulley, substantially as shown and described.

5. In a friction-pulley, the arm F, attached at one end to the driving-shaft, and carrying at the other end a counterbalanced shoe, substantially as shown and described.

6. The method herein described of counteracting the centrifugal pressure of friction-pulley shoes against their pulleys, which consists in opposing the tendency to such pressure by an equal centrifugal pressure brought to bear upon the shoe in the contrary direction, substantially as set forth.

295,657. MANUFACTURE OF WOOD-GRAIN PAPER, CLOTH, &c. GEO. F. McINDOE and JAS. W. McINDOE, Everett, Mass. Filed May 23, 1883. (Specimens.)

Claim.—1. The process herein described of manufacturing wood-grain paper, cloth, or other like material, consisting in preparing the surface of natural wood, the grain or lines characteristic of which are to be transferred, by making the same level, plane, and smooth, but otherwise unfinished, then taking an impression of the grain and lines of the wood by means of wax, as described, then in preparing an electrotype from the wax impression, and then in printing by means of the electrotype upon paper, cloth, leather, or other suitable material colored or tinted to the color or tint of the body of the natural wood a fac-simile of the lines or grain of the wood, all substantially as and for the purposes described.

2. As an improved article of manufacture, a wood-grain fabric consisting of paper, cloth, or other like material colored to imitate the color or tint of the natural wood, and having printed thereon a representation of the lines or grain of the natural wood, obtained by taking an impression of the grain and lines of the wood by means of wax, then preparing an electrotype therefrom, and then printing upon the colored paper or cloth the lines or grain thus transferred to the electrotype, all substantially as and for the purposes described.

295,658. MANUFACTURE OF WOOD-GRAIN PAPER, CLOTH, &c. GEO. F. McINDOE and JAS. W. McINDOE, Everett, Mass. Filed Nov. 8, 1883. (Specimens.)

Claim.—1. The art or process of making wood-grain paper, cloth, &c., consisting, first, in obtaining from wood itself an electrotype or engraved fac-simile of the grain or natural lines thereof, in the manner described; second, in preparing a stain electrotype or engraved plate that shall represent the stain or color lines of the wood between the lines or grain; third, in taking paper, cloth, or other suitable material of a color which shall approximate the natural color of the wood; fourth, in printing in suitable color thereon the stain, by an electrotype-plate prepared as described, or representation of the wood between the grain-lines; and, fifth, in subsequently printing in proper color the grain or lines of the natural wood thereon by means of the electrotype or key plate, prepared as specified, all substantially as and for the purposes described.

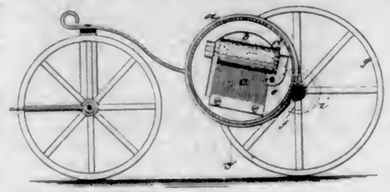
2. As a new article of manufacture, a wood-grain paper, cloth, &c., consisting, essentially, of paper, cloth, leather, or other suitable material colored to approximate the color of the natural wood, and having printed thereon the stain or middle colors of the wood and the grain or lines thereof, which represent a fac-simile of the grain and lines of the natural wood, and transferred therefrom by the process herein described, substantially as specified.

3. The art of transferring from the natural wood the stains or middle colors and the lines or grain thereof by means of an electrotype key-plate and electrotype stain-plate, prepared as specified, to a flat field of paper, cloth, or other similar material, all substantially as and for the purposes described.

4. A paper, cloth, or other similar material colored to represent the natural color of wood and printed with the stain or middle colors, substantially as specified, and with the grain or natural lines of the wood, as indicated, and varnished or finished to represent a finished wood-surface, substantially as and for the purposes described.

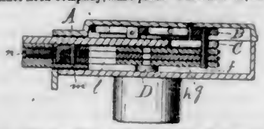
5. In the process of transferring the natural grain of the wood in the art of manufacturing wood-grain paper, &c., the preparation of the wood in the manner described, covering the same with printer's ink, and then taking an impression therefrom on white paper, and then taking a photograph from such impression, all substantially as and for the purposes described.

295,659. MUSICAL WAGON. HIRAM J. D. MINER, Dunkirk, N. Y. Filed Oct. 23, 1883. (No model.)



Claim.—The combination, with the axle *f* of a wagon, provided with the gear-wheel *i*, of the pin-drum *b* of a musical instrument, provided with the gear-wheel *d*, the worm *e*, and the pinion A on the end of the worm, and meshing with the gear-wheel *i*, substantially as herein shown and described.

295,660. LOCK. FRANK W. MIX, New Britain, Conn., assignor to the Corbin Cabinet Lock Company, same place. Filed Dec. 31, 1883. (Model.)



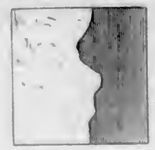
Claim.—1. The combination of a lock-bolt, the tumblers belonging thereto, the master-key bolt and its tumbler, and the pivotal post for the tumblers of the lock-bolt proper, mounted on said master-key bolt, substantially as described, and for the purpose specified.

2. The combination of a master-key bolt, means for holding it stationary, a main bolt, and tumblers thereof mounted upon and moving with the master-key bolt, substantially as described, and for the purpose specified.

3. The combination of the lock-bolt, the adjustable fence composed of a series of superposed plates, a bearing for said plates, and a clamping mechanism extending to and accessible from the front end of the bolt, substantially as described, and for the purpose specified.

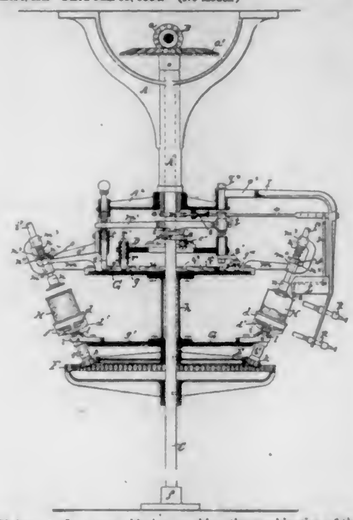
4. The combination of the lock-bolt, its fence composed of superposed plates, with flanged or shouldered ends overlapping each other, and mechanism for fastening said fence by pressure upon said flanged ends, substantially as described, and for the purpose specified.

295,661. METHOD OF MAKING LITHOGRAPHIC PRINTING-PLATES. PETER CORFITS MÖLLER, Leipsic, Saxony, Germany. Filed May 26, 1883. (No model.) Patented in Germany Feb. 10, 1883, No. 23,302; in France Mar. 19, 1883, No. 154,575; in Hungary Apr. 10, 1883, No. 22,459; in Belgium Apr. 14, 1883, No. 61,090; in Austria May 20, 1883, No. 14,129, and in Italy June 30, 1883, XVII, No. 15,586, CXXI, 77.



Claim.—The method herein described of preparing lithographic printing-plates, which consists in moistening the surface of a metal foundation-plate with a saturated solution of bicarbonate of lime, then heating said plate so as to evaporate the solution, and repeating these steps until a coating or deposit of bicarbonate of lime of sufficient thickness is formed on the plate, which is then used in the same manner as a lithographic stone, substantially as set forth.

295,662. CAN-SOLDERING MACHINE. DAVID M. MONROE, Baltimore, Md. Filed Jan. 15, 1884. (No model.)



Claim.—1. In a can-soldering machine, the combination of the rotating vertical shaft C, the rotary table G, rotating thereon freely, mechanism to impart to the table G an intermittent movement, and the hanger A, supporting the said intermittent mechanism, whereby an under supporting table or frame is dispensed with.

2. The combination of the rotary vertical shaft C, the table G, supported thereon and rotating intermittently around the rotating shaft C, and mechanism centrally supported that will move, stop, and hold the table G, whereby free access may be had to all parts of the machine.

3. The combination of the central shaft, C, can-holder *d*, wheel E, the intermitting mechanism, and the rotary table G, placed between the intermitting mechanism and the wheel E, whereby the table G is rotated from above, and the can-holders rotated from below, the table.

4. The combination of the vertical shaft C, the crank *c*, the pendulum D, the pin or pawl *r'*, and rotary table G, provided with ratchet-teeth *u*, for the purpose as herein specified.

5. The combination of the rotary table G, swiveled can-holder *d*, external gear-wheel, F, internal gear-wheel, E, and pinion *k*, for the purpose shown and described.

6. The combination of the vertical shaft C, rotary table G, hanger A, brake-shoe q^2, and stop-pin *t'*, whereby the brake steadies the forward movement of the table G when the pin *t* is disengaged therefrom.

7. The combination of the rotary central shaft, C, can-holder *d*, wheel E, the intermittent mechanism, the rotary table G, placed between the intermittent mechanism and the wheel E, and a molten-solder-applying device, whereby both ends of the can may be soldered at the same time, for the purpose and as herein specified.

8. The combination of the rotary table G, the swiveled or pivoted can-holder *d*, pinion *k*, and means that will hold the pinion *k* in contact with either of the master gear-wheels E or F, for the purpose as set forth.

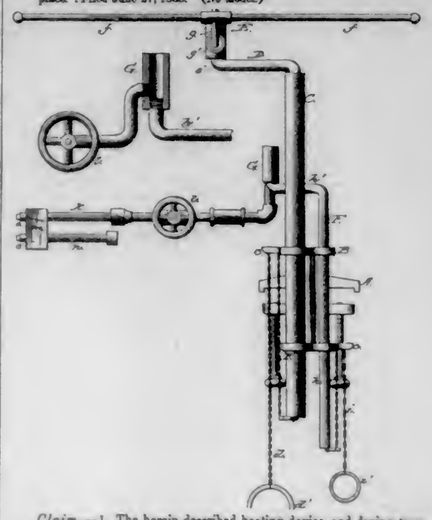
9. The combination of the rotary table G and a rotary can-holder provided with a rotating cylindrical ring, *d*, which protects the upper part of the can placed therein from the heat, for the purpose as specified.

10. The combination of a rotating cylindrical ring, *d*, and arms d^2, which will allow a portion of the can-body to project below the ring *d*, for the purpose as herein described.

11. The combination, in a rotary can-holder, of the cylindrical rings *d*, arms d^2, and the protecting-plate d^3, for the purpose as set forth.

12. The combination of the rotary table G, rotary can-holder *d*, the pinion *k*, internal gear-wheel, F, the cap-holding pin *x*, provided with the port o^3, and the molten-solder-applying device, for the purpose as herein specified.

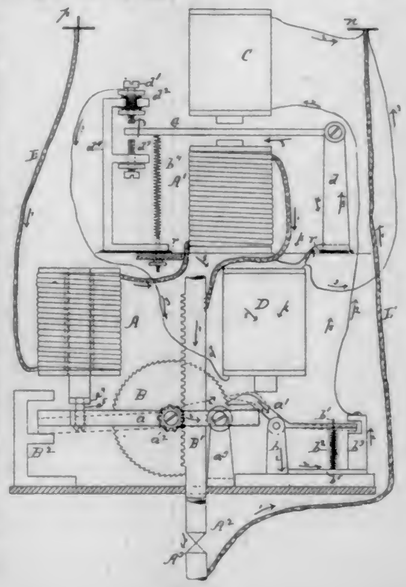
295,663. COMBINED HEATING APPARATUS AND DRYING-RACK. JACOB R. MOORE, Clayton, Mich., assignor of one-half to Henry Bovee, same place. Filed June 27, 1883. (No model.)



Claim.—1. The herein-described heating device and drying-tray combined, consisting of the supporting-frame A, provided with the plates B, having chain-holding devices *c* and circular openings *b b'*, adapted to receive the tube C, crank-rods D and F, which are adjustably secured therein by the chains *d* and *i*, and carrying the drying-frame E, and the frame of the oil or gasoline burners, all substantially as and for the purpose specified.

2. The supporting-frame A, provided with the upright A', adapted to receive the plates B, having the chain-holding devices *c* and circular openings *b b'*, in combination with the tube C, crank-rods D and F, chains *d* and *i*, and the drying-frame E, and heating device, all substantially as and for the purpose specified.

295,664. ELECTRIC LAMP. WENZEL MORAVA, Chicago, Ill. Filed May 22, 1883. (No model.)

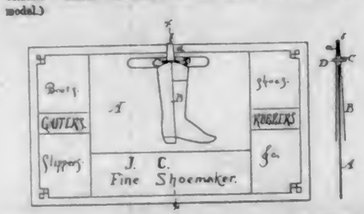


Claim.—1. In an electric-arc lamp, the combination, with a carbon-separating electro-magnet in the main circuit, a regulating electro-magnet in a closed shunt around the arc, and a feed-magnet the vitalization of which is controlled by the regulating-magnet, of a second electro-magnet in the main circuit arranged to act in opposition to the regulating-magnet, substantially as described.

2. The combination, with the toothed upper-carbon holder, the pivoted yoke, the pinion mounted on a shaft supported by the yoke, the ratchet-wheel fixed on said shaft, and the pawl arranged to engage said ratchet-wheel, of the electro-magnet in the main circuit arranged to lift the yoke, and an electro-magnet in a shunt arranged to attract the pawl, substantially as described, and for the purpose set forth.

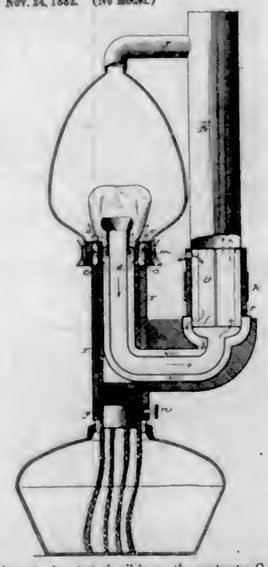
3. The combination, with the yoke, toothed carbon-holder, pinion, and ratchet-wheel on a common shaft, and the pawl, of the electro-magnet in the main circuit arranged to lift the yoke, the electro-magnet arranged to attract the pawl, and a regulating electro-magnet in a closed shunt, arranged to control the vitalization of the magnet which attracts the pawl, substantially as described.

295,665. METHOD OF ATTACHING ADVERTISING ARTICLES TO CARDS. SHELBY P. MOUNT, Cleveland, Ohio. Filed June 27, 1883. (No model.)



Claim.—The method of attaching a miniature advertising article, consisting of two portions connected by a narrow piece, *b*, to a card, A, having a slot, C, near its edge, forming a strip, *a*, consisting, first, in folding the card at its central portion; second, in sliding a ring onto the folded strip; third, in passing a part of the divided article between the folded portions of the strip, so that the connecting-piece will rest upon the upper edge of the strip, and, fourth, in moving the ring back off from the folded strip and releasing it, so that when the card is straightened out the ring will rest in the slot over the folded connecting-piece *b*, and one portion of the advertising article will be suspended in front and the other on the back of the card, as set forth.

295,666. HOT-AIR OIL-LAMP. CHARLES H. MURRAY, Leadville, Colo. Filed Nov. 24, 1882. (No model.)



Claim.—1. In a hot-air oil-lamp, the preheater O, with its divisions, chambers, and its inward draft-apertures constructed exterior to the lamp-shaft, in combination with the connecting-pipes *d* and *b*, communicating with the lamp-flame, all substantially as set forth and illustrated.

2. In a hot-air oil-lamp, the lateral openings through the top of the cylinder that bears the wick, placed below the toothed rings and between the wick-channels on the cylinder, and communicating between the interior of said cylinder and the annular hot-air space *c*, as set forth, and for the purpose specified.

3. In a hot-air oil-lamp, the annular hot-air space *c*, constructed below and exterior to the ignition-points of the wicks, supplied with air from the cylinder interior to it by the communicating apertures, as shown and specified.

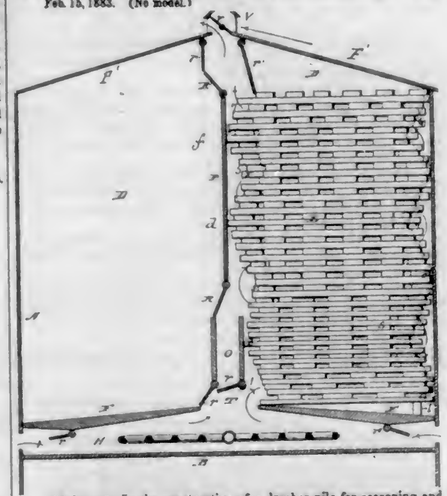
4. In a hot-air oil-lamp, the two toothed concentric rings *x x*, in combination with the termination of the annular hot-air-supply spaces, both placed in the same horizontal plane and having downward-sloping teeth which extend toward and encircle the wicks below their point of ignition, substantially as shown, and for the purpose specified.

5. In a hot-air oil-lamp, the throttle-ring *g*, made either to contract or open by the thumb-screw *n*, placed inside the shaft of the lamp, and encircling and bearing upon the wick, substantially as illustrated, and for the purpose set forth.

6. The combination of a central tube, *d*, inclosed by a much larger tube, *b*, with a free annular space between the two, constructed to begin at the top of the lamp-shaft interior to the frame, descending the shaft and terminating externally to it, in combination with the preheater O, in such manner that the tube *d* communicates through the channels *f f f f* with the chimney E, and the encircling tube *b* communicates through the channels *a a a a* with the internal openings in the preheater O, all substantially as shown, and for the purpose described.

7. In a hot-air oil-lamp, the combination of the external preheater, O, the connecting-pipe *d*, the inclosing connecting-pipe *b*, the communicating hot-air chamber *c*, the deflected toothed concentric rings *r r*, and the convolvulus-shaped flame mouth-piece *k*, arranged and operating in relation to one another as herein described with reference to the accompanying drawings.

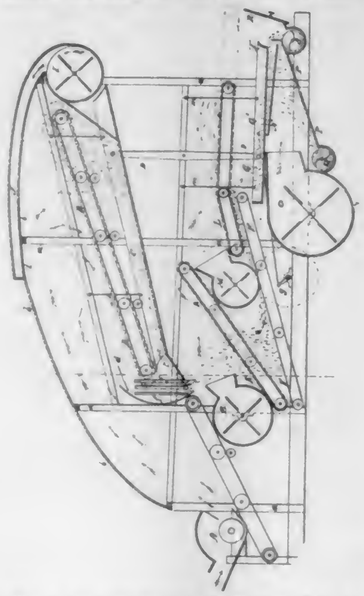
295,667. LUMBER-KILN. EPHRAIM MYERS, Suspension, Ala. Filed Feb. 15, 1883. (No model.)



Claim.—1. In the construction of a lumber pile for seasoning and drying the boards, the herein-described process of piling it upon cross-strips the ends of which engage with angular pattern guides or formers, the inclined edges of the formers coming in contact with the lumber, and their sides with the cross-strips, which are located near each end of the pile, the vertical edges of the formers abutting against the walls of the kiln, thereby forming cavities or flues between the lumber pile and the walls of the kiln, and preventing the outer air from entering the pile inside of the cross-strips and formers, for the purpose of circulating hot air through the pile, substantially as specified.

2. The combination, with the chambers D D, having the inclined floors F F and rooms F' F', and the vertical central partition, P, having the swinging valve R at its lower end and the swinging valve R' at its upper end, of the swinging valves *r' r'*, hinged to the base of the ventilator V, the flue *o* below the partition P and above the floors F F, provided at its lower end with the swinging valves adapted to engage the inner edges of the inclined floors F F, and the heating-chamber below, having cold-air inlets provided with valves *r r*, substantially as specified.

295,668. GRAIN-SEPARATOR FOR THRASHING-MACHINES. PONTALBA L. NASH, Hollister, Cal. Filed Dec. 7, 1883. (No model.)



Claim.—1. In a thrashing-machine, the thrashing-cylinder, in combination with a directing-shield, *d*, the arched top *b*, the blast-fan, and duct J, substantially as herein described.

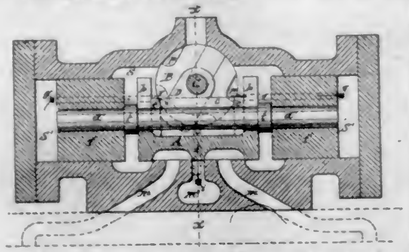
2. In a thrashing-machine, the combination, with the thrashing-cylinder, of the arched top, forming a space through which the grain and straw may be projected from the cylinder, the superposed air-duct, the blast-fan, the inclined angular grain-table, and the return-carrier B, substantially as herein described.

3. The inclined angular grain-table, the suspending-links and end-shaking mechanism, and the return straw-carrier traveling above the table, in combination with the curved shield *d*, inclined directing-strips, and the fan E, substantially as herein described.

4. The inclined angular shaking-table, the return straw-carrier, directing-shield and strips, and the fan E, in combination with the straw-carrier K and grain-belt F, substantially as herein described.

5. The combination of the inclined angular shaking-table, the return straw-carrier, directing-shield, carriers K and L, fans E and M, grain-belt F, and the screens, substantially as herein described.

295,669. STEAM-ACTUATED VALVE. DAVID F. NEWBY, Syracuse, N. Y. Filed Nov. 23, 1883. (No model.)

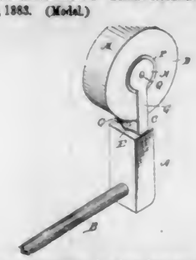


Claim.—1. In combination with a slide-valve of a steam-engine, a steam-chest having its interior formed with end-extension pistons on the ends of the valve, a rock-shaft having cams adapted to move the valve part way its stroke, a supplemental valve connected with the rock-shaft and provided with steam and exhaust passages, and auxiliary steam and exhaust channels extended from the supplemental valve, respectively, to the ends of the steam-chest extensions and to the exhaust-port of the steam-cylinder, said parts being constructed and arranged in such relation to each other that the main valve will move part way its stroke synchronous with the first movement of the supplemental valve and complete the stroke by the pressure of steam admitted to the steam-chest extensions by the supplemental valve, substantially as specified.

2. In combination with a slide-valve of a steam-cylinder, a steam-chest provided in the center of one of the sides with an annular opening, the exhaust-port of the cylinder, a rock-shaft extended through the center of said cavity, a disk mounted on the rock-shaft and fitted to the aforesaid cavity, and having in its periphery recesses adapted to communicate with the aforesaid ducts, and cams attached to the rock-shaft and adapted to carry the valve part way its stroke, substantially as described and shown.

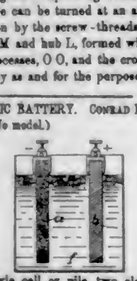
3. In combination with the main valve provided with pistons at opposite ends, the rock-shaft provided with cams D D, the supplemental valve provided with passages *r* and *p p*, and single ducts extended from the supplemental valve, respectively, to opposite ends of the steam-chest and to the exhaust-port, substantially as described and shown.

295,670. PIANO-HAMMER. EDWIN RUTHVIN OBER, Waterbury, Vt. Filed May 19, 1883. (Model.)



Claim.—As an improvement in piano-hammers, the combination of the head-block A, the forked piece C, comprising the side plates, G G, having end disks formed with conical inner surfaces, I, provided with a central perforation, and the top connecting-plate, from which projects a screw-threaded shank, F, entering a corresponding recess in the end of the block A, so that the forked piece can be turned at an angle to the block, and will be retained in position by the screw-threads, the hammer-disk D, comprising the periphery M and hub L, formed with the central perforation, N, and conical end recesses, O O, and the cross-pin Q, all arranged and operating substantially as and for the purpose set forth.

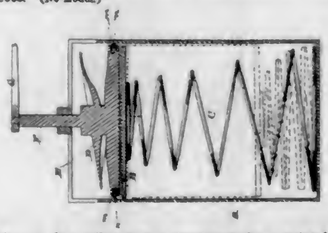
295,671. GALVANIC BATTERY. CONRAD PABST, Stettin, Germany. Filed July 5, 1883. (No model.)



Claim.—1. In a single cell or pile, two electrodes—carbon and metal—immersed in the aqueous solution of the compound consisting of chlorine, with such metals whereof there are existing two combinations with chlorine, both soluble in water, the compound corresponding to the protoxide and the oxide of the metal.

2. In a single cell or pile, two electrodes—carbon and iron—immersed in a solution of perchloride of iron, substantially as shown and described.

295,672. BALING-PRESS. JOHN D. PAGE, Sanders, Cal. Filed Sept. 25, 1883. (No model.)



Claim.—1. In a baling-press, a chamber having a spring-follower within it, in combination with a screw feeder and compressor opposing said follower, and means for rotating it, substantially as herein described.

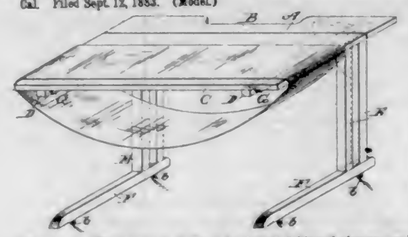
2. In a baling-press, the cylindrical chamber A, closed at one end, in combination with the feeder and compressor D, mounted in its other end, said feeder consisting of one section of screw with a double or multiplex thread, each of semi-circumference on opposite sides of the stem, whereby apertures *d* are formed, substantially as herein described.

3. In a baling-press, the cylindrical chamber A, the follower B, and spring C within it, in combination with the screw feeder and compressor D, mounted in said chamber, and means for rotating it, substantially as herein described.

4. In a baling-press, the chamber A, having a flange, *n*, at its top, in combination with the double-threaded screw feeder and compressor D, the threads of which have grooves *m* in their edges, in which the flange *n* fits, substantially as herein described.

5. In a baling-press, the cylindrical chamber A and the spring-follower B, in combination with the hinged cover M and the screw feeder or compressor D, mounted therein, and means for rotating it, substantially as herein described.

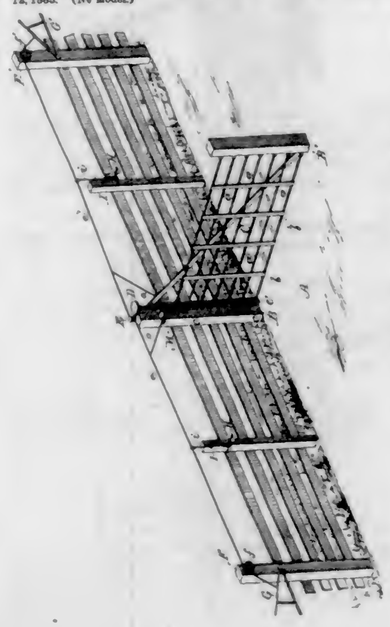
295,673. FOLDING TABLE. WILLIAM WINTER QUIGLEY, Santa Ana, Cal. Filed Sept. 12, 1883. (Model.)



Claim.—1. The board A, having the board C hinged thereto, and provided also with the fixed brackets H on its under side, in combination with the standards E, hinged to the brackets H, and provided with the top rails, G, and feet F, parallel to each other and extending to or near the outer edge of the board C, when said board is in its raised position, substantially as set forth.

2. In a skirt-board, the combination, with the board A, of the board C, hinged to the same and provided with recessed blocks or sockets D, the top rails, G, and of the standards E, hinged to brackets H, fixed to the board A, and having the feet F extending forward as far as the outer edge of said board A, substantially as herein shown and described.

295,674. GATE. EDWIN DAVIS RATHBUN, Williams, Cal. Filed June 12, 1883. (No model.)

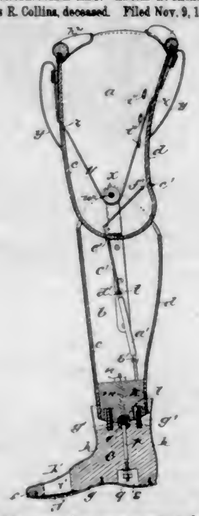


Claim.—1. The swinging gate C, having pins or plates *h* in its edge, and the means for swinging it, consisting of the pulleys D E, ropes *e e'*, and levers G G', in combination with the gravitating latches H H on posts I, engaging with projecting pin *h*, the wires or cords *i i*, connecting said latches with ropes *e e'*, and the catches *m m*, secured to post B', and constructed as shown, substantially as and for the purpose herein specified.

2. The gate-post B, the swinging gate C, loosely hinged thereto, and having pins or plates *h* in its edge, the catches *m*, with which said pins engage, consisting of spring-stripe having their ends bent back and inclined upwardly, and the means for raising said pins out of the catches and swinging the gate, consisting of the pulleys D E, the ropes *e e'*, and levers G G', all arranged substantially as herein described.

3. The gate-post B, the gate C, having frame-post *c'*, loosely hung by hinges *c* to the gate-post, and having pins *h*, the catches *m*, with which they engage, and the means for operating the gate, consisting of the pulleys D E, ropes *e e'*, and levers G G', in combination with the means for preventing the gate from being released, except by said levers G G', consisting of the guard-plate M, supported on pins *n* between the gate-post and frame-post, and connected with ropes *e e'* by cords *o*, substantially as herein described.

295,675. ARTIFICIAL LEG. EDGAR D. RICHMOND, Hart, Mich., Executor of Kins R. Collins, deceased. Filed Nov. 9, 1883. (Model.)



Claim.—1. The suspension-strap *y*, connected to the leg by passing through the sides of the thigh-socket at *z* and under the pulley *x*, mounted on the pivot-pin *w* of the knee-joint, substantially as described.

2. The extensor-spring *a'*, connected to the ankle behind the ankle-joint, and having a connection, *c'*, extended through the thigh-socket in front of the vertical line of the knee-joint, and also extended through the side of the thigh-socket, to be tied for maintaining the tension of said spring, substantially as described.

295,676. AIR-PUMP. GEORGE ROSS, Troy, N. Y. Filed Aug. 27, 1883. (No model.)

Claim.—1. In an air-compressing apparatus, the detent or latch, combined with the float and valve, and arranged for holding the float until its weight or buoyancy is sufficient to overcome the resistance of the detent or latch, and to shift the valve, substantially as shown and described.

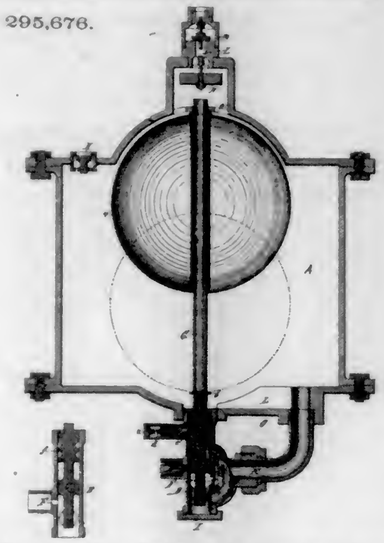
2. In an air-compressing apparatus, the water-valve balanced in its casing, said valve having its stem extended directly into the tank, and operated by a float, substantially in the manner and for the purposes set forth.

3. In combination with the valve-casing located outside of the tank, and having the valve and latch or detent therein as specified, the removable cap applied upon the bottom of the casing, the whole being arranged so as to permit withdrawal of the valve and washing of the casing, substantially as shown and described.

4. In an air-compressing apparatus, the valve-case having the inlet and outlet channels and ports therein, one above the other, the balanced valve, the latch or detent and the screw-cap, combined and arranged substantially as shown and described.

5. In combination with the tank containing the float, the boss for at-

295,676.



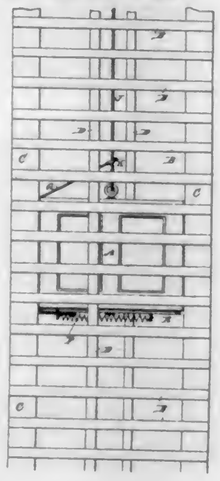
tachment of the water-conduit leading to the valve-casing, said boss being provided with a channel leading from the lowermost point of the tank to facilitate cleaning, substantially as shown and described.

295,677. BLACKING-BOX. ADDISON V. SANFORD, Elmira, assignor to Frederick Dietz, New York, and S. W. Corvin, Middletown, N. Y. Filed Nov. 9, 1883. (No model.)



Claim.—The box A, cover D, handle B, having bends *b* therein, and cover-holder C, having ends *b'* and bearing thumb-piece E, the whole combined and arranged to operate substantially as shown and described.

295,678. SAFETY-STOP FOR ELEVATORS. ELLISON SAUNDERS, Austin, Tex. Filed Sept. 10, 1883. (No model.)



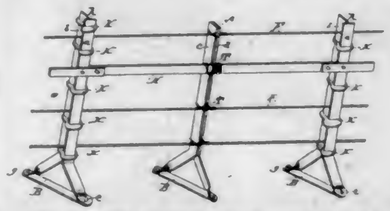
Claim.—1. The combination, with an elevator-car, of a pivoted locking-lever on its bottom, and of bars or analogous devices on the sides of the elevator-shaft, substantially as herein shown and described.

2. The combination, with an elevator-car, of a lever pivoted to its bottom, a spring acting on the lever and tending to throw it in a transverse position, and a rope or cable secured to the opposite end of the lever, and provided at its upper end with an eye or ring, through which the elevating-cable passes, substantially as herein shown and described.

3. The combination, with an elevator-car, of a lever pivoted to the bottom of the same, a spring secured to one end of the lever and to the car, a rope secured to the opposite end of the lever, and provided at its upper end with a ring through which the elevating-cable passes, and of horizontal bars or analogous devices secured to the sides of the shaft, substantially as herein shown and described.

4. The combination, with an elevator-car and a lever pivoted to the bottom of the same and acted on by a spring, of bars B B, secured to the posts C, and of the struts D, substantially as herein shown and described.

295,679. FENCE. FRANK SCHMITT, Cornell, Ill. Filed Apr. 9, 1883. (No model.)



Claim.—In a fence, the combination of the board H, wires F, keyed bars *a* and *b*, transverse bar B, and keys K, substantially as shown and described.

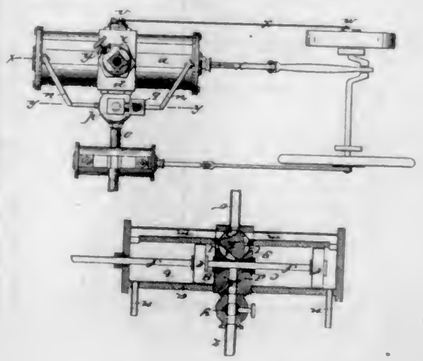
295,680. DEVICE FOR POINTING PENCILS. HENRY G. SCHRAMM, Camden, assignor to William Koufel and Herman Ebner, both of Hoboken, N. J. Filed Jan. 25, 1884. (No model.)



Claim.—1. The combination, in a device for pointing pencils, of the box A, roller or rollers B, and fixed band D, or their equivalents, substantially as set forth.

2. The combination, in a device for pointing pencils, of the box A, rollers B, or their equivalents, band D, and bridge E, substantially as set forth.

295,681. STEAM-ENGINE. GEORGE F. SIEBEL, Carrollton, Ky. Filed Dec. 17, 1883. (No model.)



Claim.—1. The combination, with the steam-cylinder *a*, having chambers *b c* and passages *m*, and the pistons *s* on the same rod, *f*, of the partition *d*, separating said chambers, and provided with the passage *k* and ports *l*, and the valve *h*, provided with the passages *i j*, substantially as herein shown and described.

2. The combination, in a steam-engine in which the live steam acts on one side of the piston only, of a valve and passage adapted to exhaust the steam from the driving side of the piston to the other side for balancing the pressure of the exhaust-steam thereon, substantially as described.

3. The combination, in a steam-engine in which the live steam acts on one side of the piston only, of a valve and passage adapted to exhaust the steam from the driving side of the piston to the other side for balancing the exhaust-steam thereon, and means for condensing the exhaust-steam in the balancing-chamber, substantially as described.

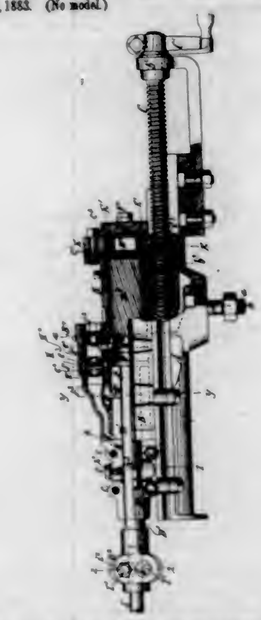
4. The combination, in a steam-engine in which the live steam acts on one side of the piston only, of a valve and passage adapted to exhaust the steam from the driving side of the piston to the other side for balancing the pressure of the exhaust-steam thereon, means for condensing the exhaust-steam in the balancing-chamber, and a valve adapted for exhausting the water from said balancing-chamber when the forward movement of the piston begins, or thereabout, substantially as described.

5. The combination, in a steam-engine in which the live steam acts on one side of the piston only, of a valve and passage adapted to exhaust the steam from the driving side of the piston to the other side for balancing the pressure of the exhaust-steam thereon, means for condensing the exhaust-steam in the balancing-chamber, a valve adapted for exhausting the water from said balancing-chamber when the forward movement of the piston begins, and a pump for receiving and delivering the water therefrom, substantially as described.

6. The combination, in a steam-engine, of the divided cylinder *a b c*, piston *s* in each chamber, distributing-valve *h* in the partition between said chambers, passages *m*, exhausting the steam into the chambers *b c* behind the pistons, distributing-valve *p h*, supply-pipe *q*, and condensing-pipes *n*, substantially as described.

7. The combination, with the cylinder *a*, having chambers *b c*, divided by partition *d*, of the water-valve case *p*, arranged at one side of the said cylinder, and the steam-distributing valve *h*, extending into said water-case and provided with way *t*, substantially as herein shown and described.

295,682. ROCK-DRILL. HENRY C. SERGEANT, Denver, Colo. Filed Dec. 4, 1883. (No model.)



Claim.—1. In a rock-drill in which the exhaust-port is controlled by the piston, the combination of the ported cylinder and the piston with a fluid-controlling valve actuated by the inflowing fluid when the compression is made on the exhaust end of the cylinder, substantially as shown and described.

2. The combination, with the cylinder B, having supply-ports *e e'* and an exhaust-port, *g'*, between said supply-ports, of the piston D, having a movement across and considerably beyond the said exhaust-port at each stroke, and the automatic valve H, movable between the valve-seats *e² e²*, for controlling the admission of a motive agent to said supply-ports *e e'*, substantially as described.

3. The combination, with the cylinder B, having supply-ports *e e'* and an exhaust-port, *g'*, between said supply-ports, of the piston D, having a movement across and considerably beyond the said exhaust-port at each stroke, and the automatic valve H, movable between the valve-seats *e² e²*, and provided with the disks *f⁴*, upon which the motive agent acts to move the valve, substantially as herein described.

4. The combination of the cylinder B, the head B', the follower F, and bolts F', connecting said head and follower, the head B², having its diameter slightly larger than the cylinder, and formed with an annular rabbet, so as to enter the cylinder, the piece E, rigidly secured to the cylinder, and forming a cylindric guide, wherein the said head B² and follower F may move, and the cushion E', arranged in said guide E between the head and follower, substantially as herein described.

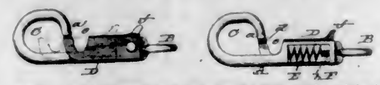
5. The combination, with the cylinder of a rock-drill, of a piston having a head or extension which is spirally grooved externally, and a spring-actuated nut-section engaging with the spiral grooves of the piston head or extension, and capable of being forced back by the action of the motive agent upon its face or inner end to free it entirely from the spiral grooves of said piston head or extension, substantially as and for the purpose herein described.

6. The combination, with the cylinder of a rock-drill, of a piston head or extension having a spirally-grooved exterior, a spring-actuated nut-section engaging with the spiral grooves of said head or extension, and capable of being forced back by the pressure of the motive agent upon its face to free it entirely from said spiral grooves, and a stop for limiting the inward movement of said nut-section, substantially as and for the purpose herein described.

7. The combination of the cylinder B, having the transverse socket or slideway B³, provided with the shoulder *d³*, the spirally-grooved piston-extension D², the movable nut-section G, engaging with the grooves of said piston-extension, and provided with the shoulder *d²*, the spring *d'*, and the plug *d*, closing the outer end of said socket or slideway B³, substantially as herein described.

8. The combination, with the piston-rod D', of the longitudinally-divided cylinder-head B', having the annular packing-groove *h* and the tangential aperture *h'*, substantially as herein described.

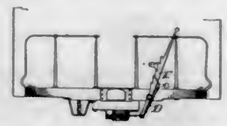
295,683. SNAP-HOOK. JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed Jan. 28, 1884. (No model.)



Claim.—1. The herein-described snap-hook, consisting of the body A, terminating at one end in a device for attachment and at the other in the hook C, its nose *a* turned downward toward the body of the hook, combined with a longitudinally-sliding spring-bolt, D, constructed at its forward end to pass beneath the nose of the hook, and with a transverse recess, *e*, in rear of its forward end, and so as to leave a space or recess in rear of the forward end of the bolt for the introduction of the engaging device, and the spring F, substantially as described.

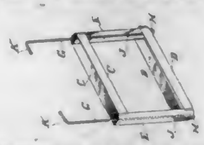
2. The combination of the body A, terminating at one end in a device for attaching the hook, and at the other end in the hook C, its nose turned downward toward the body of the hook, the body constructed with a recess, E, in rear of the hook, the longitudinally-sliding bolt D, inverted-U shape in transverse section, the legs of the U extending down over the sides of the body to cover said recess, its forward end *d* constructed to pass beneath the hook, and with the transverse recess *e* in rear of its forward end, the spring F, arranged in the recess in the body, and so as to bear rearward against the bolt, substantially as described.

295,684. CAR-COUPLING. LEANDER E. SLOAN, Milwaukee, Wis. Filed Feb. 21, 1883. (No model.)



Claim.—A draw-bar adapted to yield laterally against springs, and having a pivoted hooked head and locking-pawl, in combination with lever E, having notches *e'*, and chain having loop *e*, as and for the purpose set forth.

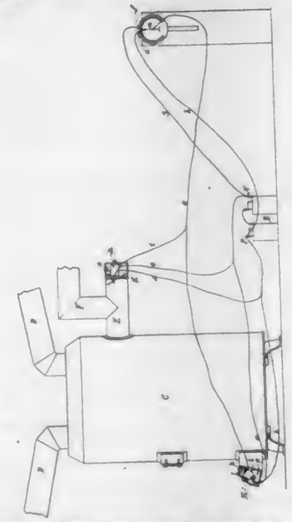
295,685. BROOM-BAND. JAMES SMITH, Boston, Mass. Filed Sept. 11, 1883. (No model.) Patented in Canada Oct. 26, 1883, No. 17,999.



Claim.—1. The improved broom-band herein described, the same consisting of the elastic strap C, non-elastic strap D, flexible straps E, and holders G, constructed, combined, and arranged to operate substantially as set forth.

2. In a broom-band substantially such as described, the wire holder G, having the inwardly-projecting hook K at its upper end, and the loop H and inwardly-projecting stud J at its lower end, substantially as shown.

295,686. ELECTRIC HOT-AIR-FURNACE REGULATOR. FRANK MILLER SPARROW, Mattapoisett, Mass., assignor, by mesne assignments, to himself and William E. Sparrow, same place. Filed June 13, 1883. (No model.)



Claim.—1. In combination with a furnace and a thermostat or thermometer, substantially as described, and with the valves G and K of the fire-place and discharge-flue of such furnace, the magnetic armatures, the two electro-magnets, the two switches, the current-wires, and battery, and abutments, as adapted and arranged substantially and to operate as set forth.

2. The combination of an electro-magnet, H, a magnetized armature, *i*, therefor, a switch, *l*, and its abutments *m* and *n*, a thermostat or dial thermometer, A, as described, a battery, B, and circuit-wires *a*, *b*, *g*, *k*, and *e*, arranged and adapted substantially as represented, whereby an electric current may be caused to pass in one and next in the opposite direction through the magnet, and such current be produced only when the armature is in movement relatively to the magnet.

295,687. CHIMNEY-COWL. EMIL R. STAHL, Corning, N. Y. Filed Sept. 3, 1883. (No model.)



Claim.—A chimney-cowl composed of a cylindrical flue, A, two downwardly-projecting hollow arms, B B, and a deflecting-shield placed directly above the flue and composed of two inclined plates, each extending into the hollow arms B B and terminating at or near the level of the top of flue A.

295,688. ART OF PRINTING AND MOUNTING PHOTOGRAPHIC PICTURES. JUAN DE M. TERREFORTE, New York, N. Y., assignor to himself and ANTONIO M. MOLINA, same place. Filed June 27, 1883. (No specimens.)

Claim.—The method herein described of taking and mounting photographic pictures, which consists in preparing upon glass or other suitable surface a film of dry collodion, then spreading upon the collodion film a sensitive coating of gelatinous or albuminous emulsion containing nitrate of silver, then drying the same, then printing and developing the picture in the ordinary manner upon said sensitized coating, then attaching paper to the picture by applying paper that is faced or coated with plain moist gelatine or albumen to the picture upon the glass, then allowing the paper to dry under pressure in contact with the picture, and then stripping the paper, and with it the picture, from the glass, all substantially as herein described.

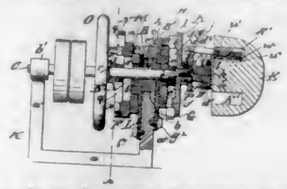
295,689. CASTER. EDDY T. THOMAS, New York, N. Y. Filed Apr. 23, 1883. (No model.)



Claim.—1. The combination, with the leg of an article, of an eccentric bearing-roller or cam, whereby the said article may be properly supported on an uneven floor, substantially as described.

2. The combination, with the main caster or roller rotating concentrically on an axis, of an auxiliary eccentric bearing-roller or cam, substantially as and for the purpose described.

295,690. HAT-POUNCING MACHINE AND LATHE. WILLET THOMPSON and JOSEPH A. GEORGE, Brooklyn, N. Y., assignors to the Brooklyn Needle Works, same place. Filed Jan. 22, 1884. (No model.)



Claim.—1. The plate K, arranged to receive irregular rotary movement from the eccentric B′, in combination with the counterbalancing-plate F, arranged to receive opposite irregular movement from the eccentric B^2, the eccentrics B′ B^2 being adapted to be turned for shifting the still-point, substantially as and for the purposes described.

2. The collar B, formed with the opposite eccentrics B′ B^2, and adapted to be turned in the openings *b* of the upright a^2 of the frame, substantially as and for the purpose described.

3. The collar B, formed with the eccentrics B′ B^2, in combination with means, substantially as described, for imparting irregular motion to the face-plate K and counterbalancing-plate F, as and for the purposes set forth.

4. The collar B, formed with the eccentrics B′ B^2, the plate G, formed with eccentric *g*, placed on eccentric B′, yoke H, placed on eccentric *g*, slotted plate I, secured to shaft C, and face-plate K, connected to yoke H and formed with blocks that move in the slots made in the plate I, in combination with the plate I, formed with eccentric *i*, placed on eccentric B^2, yoke M, counterbalancing-plate F, attached to yoke M, and slotted cross-piece N, in the slots of which the blocks *p* of the plate F move, the cross-piece being arranged to revolve with the shaft C, substantially as and for the purposes described.

5. The face-plate K, formed with the collar *j*, in combination with the cam P, placed thereon, and the chuck D, provided with the pivoted arms d^2 d^3, the arms being provided at their ends with pivoted plates, substantially as and for the purposes described.

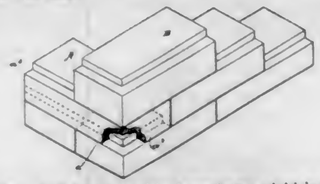
6. The chuck D, composed of head *d*′, pivoted arms d^2 d^3, provided at their ends with pivoted plates, the plate u^2 being formed with the fin u^3, in combination with the plate K, having collar *j*, and cam P, adapted to be revolved upon the said collar for operating the arms d^2 d^3, substantially as and for the purposes set forth.

295,691. WATER-CLOSET VALVE. HENRY A. TOBEY, Dayton, Ohio, assignor to the Hartford Sanitary Plumbing Company, Hartford, Conn. Filed July 30, 1883. (No model.)



Claim.—The herein-described valve, consisting of the chamber B, having an inlet, C, concentric therewith and below the outer passage, the outlet-passage from one side of the chamber, with a tubular extension therefrom into said chamber and concentric therewith, and so as to form a concentric space between the walls of said chamber and said tubular extension, with the valve G arranged to seat upon the open end of said concentric extension, and of an area substantially equal to the internal area of the chamber, but so as to leave a slight passage from that part of the chamber below to the part of the chamber above the valve, and an opening from that part of the chamber above the valve, with mechanism, substantially such as described, to open said passage above the valve for the escape of water therefrom, substantially as described.

295,692. BRICK. ALBERT TROCHSLER, Boston, Mass. Filed Jan. 7, 1884. (No model.)



Claim.—As an improved article of manufacture, a brick having projections at its under side along its longitudinal edge and across one end, and having rabbets at its upper side along one longitudinal edge and across one end, substantially as shown and described, whereby a strong and neat-appearing corner may be formed, substantially as set forth.

295,693. BEE-HIVE. JOSHUA VANLANDT, Seward, Kendall County, Ill. Filed May 11, 1883. (Model.)



Claim.—In a bee-hive, the combination, with the body A, of the open-bottomed feed-box F, resting on the edges thereof, and the feed-trough J, arranged therein on comb-frame B, leaving an open space between the feed-box and trough, as described.

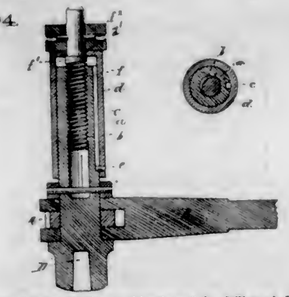
295,694. RATCHET-DRILL. JOHN H. VINTON, Boston, Mass., assignor to the Ashcroft Manufacturing Company, same place. Filed Oct. 13, 1883. (No model.)

Claim.—1. In a ratchet-drill, the combination of the post or nut *a*, having the groove or recess *c* and threaded hole *b*, with the sleeve or cap *d*, having the pin *e*, and the feeding-screw *f*, loosely secured to the sleeve, and adapted to be revolved therein, all substantially as and for the purposes described.

2. The combination of the post or nut *a*, having the screw-threaded hole *b*, with the sleeve or cap *d* and a feeding-screw, *f*, loosely attached to the sleeve or cap, and adapted to screw into the threaded hole *a*, all substantially as and for the purposes described.

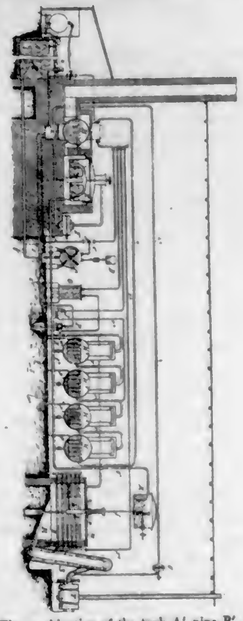
3. In a ratchet-drill, the combination of the post or nut *a*, having the screw-threaded hole *b*, the sleeve or cap *d*, and feeding-screw *f*, adapted to screw into the nut *a*, and the thumb-disk f^3, all substantially as and for the purposes described.

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4. In a ratchet-drill, the combination of the drill-stock D, ratchet-wheel A; handle B, spring-pawl C, and the feeding device described, comprising the nut *a*, the cap or sleeve *d*, feeding-screw *f*, loosely attached to the sleeve or cap *d*, and the thumb-disk f^3, all substantially as and for the purposes described.

295,695. APPARATUS FOR MAKING FERTILIZERS. ADALBERT BARON VON PODEWILS, Munich, Bavaria, Germany. Filed May 10, 1883. (No model.)



Claim.—1. The combination of the tank A′, pipe B′, communicating with a flue, revolving bell C′, and hollow arms B′ B^2, substantially as set forth.

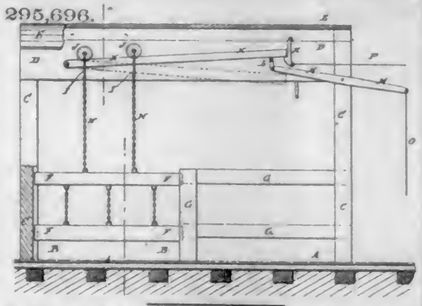
2. The combination, with the tank and its pipe B′, of the bell C′, carrying hollow arms, and appliances for raising and lowering the bell, substantially as set forth.

3. The drying-tank provided with one or more shallow steam-casings, with traveling scrapers, and with a traveling feed-pipe, substantially as set forth.

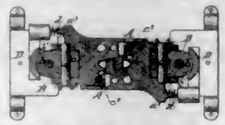
295,696. RAILWAY-GATE. LAWRENCE COOPER WALSH, Webster, Mass. Filed Oct. 22, 1883. (No model.)

Claim.—The combination, with the gate F, the pulleys, connections between said gate and pulleys, and the track K, pivoted at its outer end, and provided near its free end with a link, L, of the pivoted lever M, connected to the track by said link, and the vertical pivoted latch N, for engaging the free end of the track, cords or wires O P, secured to the free end of the lever and lower end of the latch, respectively, and a suitable frame-work for supporting the above devices, substantially as set forth.

295,696.



295,697. CAR-COUPLING. WILLIAM H. WARD, Monongahela City, Pa. Filed Feb. 14, 1883. Renewed Oct. 3, 1883. (No model.)



Claim.—1. A twin-hook coupling having the shank part A pivoted, the fixed projection *c'* extending from said shank part into the throat of the hook *c*, and having its hook end recessed to adapt it to receive the said fixed projection to be locked within the intermatching hooks, substantially as described, for the purpose specified.

2. A twin coupling having the shank of each hook part pivoted by a double flexing joint, substantially as described, for the purpose specified.

3. The combination of a suitable coupling-hook draw-head with a coupling-hook pivoted thereto by joint-pins arranged at right angles to each other, substantially as described, for the purpose specified.

4. A twin-hook coupling having the shank of each hook part pivoted to the draw-head by a horizontal butt-joint pin, *a*, and a vertical butt-joint pin, *b*, in combination with a joint-coupling, B, connecting the hook with the draw-head, substantially as described, for the purpose specified.

5. The combination, in a twin coupling, of the hooks, with their pivot-pins *a b*, the joint-coupling B, and the separate joint-head *s*, connecting said joint-coupling with the draw-head, substantially as described.

6. The combination, with the hook A, of the joint-coupling B, the joint-head *s*, the butt-joint pins *a b*, the yoke-rods *t t*, and the cushioned draw-head *p*, substantially as described, for the purpose specified.

7. The combination, with the hook having its shank part A pivoted by a double flexing joint, substantially as described, of means, substantially such as described, whereby it is adjusted and sustained both in lateral and vertical positions for automatic coupling.

8. The combination, with the hook, pivoted substantially as described, of the cranked rod *h i*, the ratchets *k*, the pawls *l*, and the chain *j*, connecting said hook and the crank *i* of said rod, substantially as described, for the purpose specified.

9. The combination, with the hook, pivoted substantially as described, of the cranked rod *f f'*, the ratchets f^2, and the pawls f^3, and the pivoted rod *a*, connecting the said cranked rod with the hook, and provided with the spring a^3, for sustaining said hook upon the pivoted rod, substantially as described, for the purpose specified.

10. The combination, with the coupling-hook, pivoted substantially as described, of the cranked rods *h i f f'*, their ratchets and pawls, and means, substantially such as described, whereby said hook is connected with the cranked rod *i* and with the cranked rods *f f'*, and sustained in horizontal position for coupling.

11. The combination, with the coupling-hook, pivoted substantially as described, of the cranked rods *h i f f'*, their ratchets and pawls, the chain *j*, the pivoted rod *a*, provided with the hook-sustaining spring a^3, and means, substantially such as described, whereby the said cranked rods are connected for operating and adjusting the coupling-hook from the top of the car.

12. The combination, in a car-coupling, of the slotted plate n^2, secured to the top of the car, the rods *m m'*, provided each with a catch, *n'*, the cranked rods *h i f f'*, their ratchets and pawls, the chain *j*, the pivoted rod *a*, provided with the hook-sustaining spring a^3, and a hook having its shank pivoted by a double joint, all constructed and arranged for coupling and for uncoupling cars from the ground and from the top of the car, substantially as described, for the purpose specified.

13. The combination of the hook A, having the interior recess, c^4, the fixed projection *c'*, extending into the throat of the hook, and a pin-hole, c^5, passing through said interior recess, with the removable locking-pin c^6, substantially as described, for the purpose specified.

295,698. PULLEY. JULIUS E. WATEROUS and JAMES N. PEEL, Brantford, Ontario, Canada. Filed Feb. 5, 1884. (No model.)



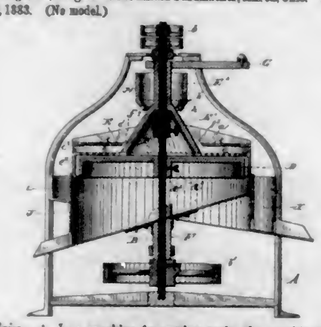
Claim.—1. The combination, with the hub A, of arms B, rigidly secured thereto, adjustable heads D, applied to the outer ends of the arms, and a rim, C, secured to the heads D, substantially as set forth.

2. The combination, with the hub A, of arms B, rigidly secured thereto, heads D, arranged at the outer ends of the arms, sleeves E, whereby the heads D are adjustably secured to the arms, and a rim, C, secured to the heads D, substantially as set forth.

3. The combination, with the hub A and rim C, of arms B, rigidly secured to the hub, and having their outer ends provided with external screw-threads, heads D, secured to the inner side of the rim, and sleeves E, constructed with internal screw-threads, and having flanges *f* at their outer ends bearing against the sleeves, substantially as set forth.

4. The combination, with the hub A, arms B, and rim C, of heads D, connecting the rim to the arms, and constructed with cavities adapted to receive counterbalancing material, substantially as set forth.

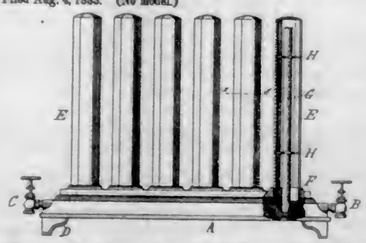
295,699. MACHINE FOR CUTTING GRAIN. ANDREW WEMPLE, Chicago, Ill., assignor to Ferdinand Schumacher, Akron, Ohio. Filed May 22, 1883. (No model.)



Claim.—1. In a machine for cutting grain, the combination, with the spider E and the covers *e'*, of the detachable feed-plates adapted to be cleaned, repaired, or removed from the machine while in operation, substantially as set forth.

2. In a machine for cutting grain, the revolving cutting-disk, segmental detachable feed-plates, and covers therefor, adapted to have one portion of the cover and feed-plates cleaned, removed, and repaired without affecting the successful operation of the machine, substantially as shown and described.

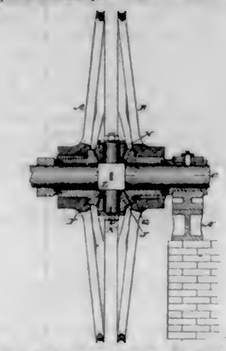
295,700. STEAM-RADIATOR. ELISHA T. WEYMOUTH, Brooklyn, N. Y. Filed Aug. 4, 1883. (No model.)



Claim.—1. In a steam-radiator of the character herein specified, the vertical octagonal radiating-pipes secured to a base-chamber, and having circulating-tubes, open at both extremities, centrally supported by the two arms, substantially as shown and described.

2. In a radiator of the character herein specified, base-chamber A, having an inlet, B, and outlet C, octagonal radiating-pipes E, and circulating-tubes G, centrally supported in pipes B by means of the two arms H, the said tubes being open at both extremities, as set forth, and the whole combined and arranged to operate substantially as shown and described.

295,701. DEVICE FOR TRANSMITTING POWER. ANDREW D. WHITTON, Philadelphia, Pa., assignor of two-thirds to George Rice and Hans P. Hougen, both of same place. Filed Dec. 3, 1883. (No model.)

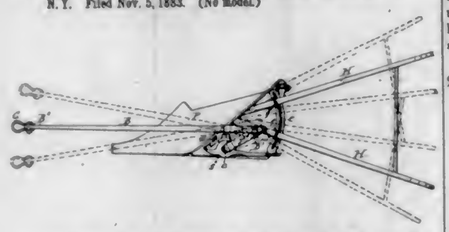


Claim.—1. The shaft C, in combination with the loose pulleys A B, the gear-wheels F G, connected with said pulleys, and gear-wheels H J, rotating with said shaft C, and gearing with the wheels F G, substantially as and for the purpose set forth.

2. A shaft, in combination with pulleys loosely fitted thereon and carrying gear-wheels, and a shaft secured to the first-named shaft at a right angle thereto and supporting loosely-fitted gear-wheels, which gear with the first-named gear-wheels, substantially as and for the purpose set forth.

3. The bevel-wheels F G H J, the driving-pulleys A B, the independent pulleys D E, and the cable, combined and operating substantially as and for the purpose set forth.

295,702. PLOW. HARRY WIARD and WILLIAM R. BULLOCK, Syracuse, N. Y. Filed Nov. 5, 1883. (No model.)



Claim.—1. In combination with a plow and handles pivoted at their forward end on said plow, as shown, a handle-supporting plate extended across the rear portion of the plow, and having its central or intermediate portion depressed or deflected downward to carry the handles at a uniform elevation in relation to each other in their lateral adjustment, substantially as specified and shown.

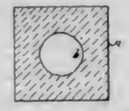
2. A plow-beam formed of a metal bar terminating at the rear end with a vertical cylindrical shank, in combination with a plow provided with a vertical cylindrical socket or step for the reception of said beam-shank, and an adjustable clamping device connected with said socket, to confine the beam at different elevations and in different angles in relation to the line of draft, substantially as described and shown.

3. In combination with the plow-beam provided with a vertical cylindrical supporting-arm and a vertical groove in said arm, the plow provided with a vertical cylindrical socket and with openings in the side of said socket, an eyebolt adapted to pass through said openings and to carry its eye in range with the socket, and provided with a feather to engage with the groove of the beam-supporting arm, and a clamping-nut on the end of the eyebolt protruding through the side of the socket, substantially as described and shown.

4. A plow-beam formed of a round bar of wrought metal bent into the shape of a vertical shank, c, at its rear end, thence rearwardly, laterally, and upwardly, and thence forwardly and downwardly, and having its forward extremity adapted for the attachment of the whiffletree for the attachment of the clevis, substantially as described and shown.

5. In combination with the plow-beam provided with a vertical cylindrical supporting arm or shank, and with a vertical groove in said shank, the plow provided with the vertical socket *s*, openings *t* and *t'* in said socket, and serrations *u* on the exterior, the eyebolt *a*, provided with the feather *b*, the serrated washer *w*, and nut *n*, all constructed and combined substantially in the manner specified and shown.

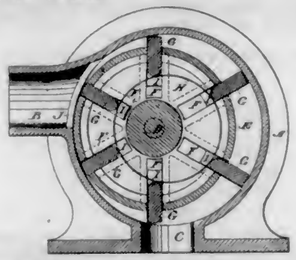
295,703. SMOOTHING THE INNER SURFACE OF WOODEN TUBING. MERRILL F. WILCOX, Bay City, Mich. Filed Sept. 10, 1883. (No model.)



Claim.—1. A method of smoothing the inner surface of wooden tubes, which consists in forcing through said tubes a rapidly rotating smooth steel plug slightly larger than the bore of the tube, as described.

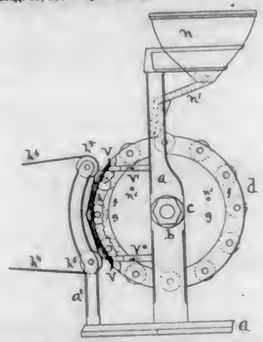
2. A method of filling cavities or open places on the inside of wooden tubes and glazing the inner surface thereof, which consists in centrifugally distributing rosin or like substance on the inner surface in advance of and from a rotary smoother, as described.

295,704. ROTARY PUMP. JOHN M. WILES, Butte City, Cal. Filed Sept. 1, 1883. (No model.)



Claim.—In a rotary pump, a cylindrical outer case and a cylindrical inner drum rotating upon axis at one side of that of the case, and having the radially-sliding buckets, in combination with an interior elastic ring fitting loosely within the drum, and pressing against the inner ends of the buckets, substantially as herein described.

295,705. BUTTON-MACHINE. GEORGE R. WILLIAMS, Ithaca, N. Y. Filed Aug. 23, 1883. (No model.)



Claim.—1. In a machine for smoothing the edges of buttons, the receptacle which holds a supply of buttons, in combination with tubes or channels, substantially as shown, which automatically separate and convey the buttons to their appropriate places in the machine.

2. An inclined channel down which the buttons roll singly in a series, provided with apertures in the base of it—one nearer one side than the other—whereby the buttons faced one way fall into the one aperture, and the buttons faced the other way pass on by the bridge left in the channel-base for their edges to roll on and fall into the other aperture.

3. A curved delivery-channel connected with one or the other aperture in the main channel through which buttons descend singly in a series, whereby buttons wrongly faced in the main channel are reversed.

4. In a button-smoothing machine, the guide-plate held in suitable relation to the lathe-holding disk or disks, and provided with U-shaped recesses or pockets, in combination with the lathes, lathe-chucks, and the clamping-spindles.

5. A lathe-wheel with a series of lathes near its circumference, in combination with a stationary concave tool held in proximity to and ad-

justable to the buttons in the lathe-chucks, whereby as the wheel revolves the edges of the buttons are rotated in contact with the tool.

6. The combination of a revolving button-finishing wheel having lathes and clamping-spindles with cams which open by means of projections on the spindles or their springs, a space between the spindles and lathes to receive the buttons before the finishing-tool is reached, and which also open said spindles from the lathes to discharge the buttons after the finishing-tool is passed.

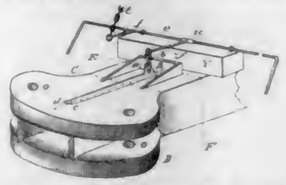
7. The combination of the main or feeding-channel having separating-exits in its base with the conveying-spouts which connect said main with the chucks of the lathes.

8. The spindle-supporting rims *f f'*, in combination with the spindle-supporting disks *g g'*, whereby a frame with rotation on the axle *c* is made.

9. The lathe-plates A A', constituting the lathe-frame, in combination with the lathes, said plates or disks being on an axle, *c*, and rotating thereon.

10. The band A', provided with pulleys in a supporting standard or part, in combination with the button-lathes, which band rotates the lathes while the buttons are passing the finishing-tool.

295,706. CAR-COUPLING. HAMLINE B. WILLIAMS, Glenwood, Iowa. Filed Feb. 7, 1883. (No model.)

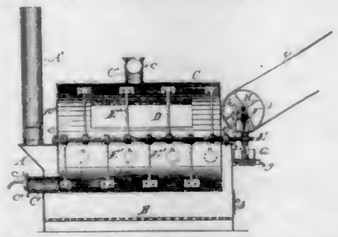


Claim.—1. The bell-mouthed draw-head, Fig. 1, with triple pin-holes *o* and beveled slot *k*, adapted to receive the lever-catch or automatic block, with beveled horseshoe-shaped groove in the lower plate, *w*, with water-hole *y*, with shoulders or projections *l* in the chamber or cavity, with the upper plate thicker than the lower, with longitudinal opening *m*, with brace Z, all constructed substantially as described.

2. The combination of the automatic pin, block, or lever-catch, Fig. 4, with the triple-slotted draw-head, Fig. 1, all constructed substantially as described.

3. The combination of the automatic pin, block, or lever-catch, Fig. 4, with the triple-slotted draw-head, Fig. 1, and uncoupling mechanism, all constructed substantially as described.

295,707. MACHINE FOR MIXING ASPHALT. GEORGE WINDING, Milwaukee, Wis. Filed Jan. 2, 1884. (No model.)



Claim.—1. In a machine for mixing asphalt, &c., the combination, with a stationary cylinder and furnace, of a horizontal stirrer-shaft having stirring-blades attached thereto, a worm-shaft, an exterior water-trough, and a worm-wheel adapted to revolve in said trough, substantially as set forth.

2. In a machine for mixing asphalt, &c., the combination of the stationary cylinder C, having ventilating-pipe C^2, with damper c^2 and outlet-pipe C', horizontal shaft E, with stirrers E', attached thereto, and furnace A, below the cylinder, having fire-bed and series of cooling-ports controlled by gates *a a*, substantially as set forth.

295,708. BOTTLE-STOPPER. AUGUST H. WIRZ, Philadelphia, Pa. Filed Oct. 15, 1883. (No model.)

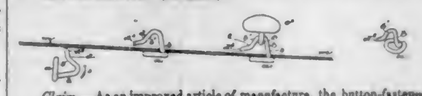


Claim.—1. A bottle-stopper provided with a valve having a flange, a valve-seat, and a cylindrical neck encompassing the valve, said neck being provided with an inwardly-projecting annular crease above the flange on the valve, and having sufficient space between the crease and the valve-seat to allow the movement of the valve, as set forth.

2. A bottle-stopper having a valve with a flange and screw-thread near its upper end, a valve-seat and cylindrical neck, formed of a single piece, the neck being provided on its inside, near the top, with screw-threads for engaging with those on the valve and a crease above the flange on the valve-seat, as and for the purpose set forth.

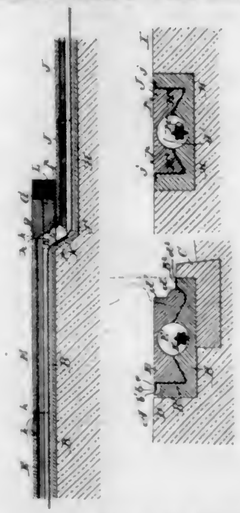
3. In a bottle-stopper, the neck B, extending up so as to cover the screw-threads on the valve-stem, and having the circular depression or crease *b*, in combination with the valve C, having central outlet, *d*, passage *d''*, and cuts *d' d'*, substantially as shown.

295,709. BUTTON-FASTENER. WILLIAM H. WOOD, Rochester, N. Y. Filed Nov. 13, 1883. (No model.)



Claim.—As an improved article of manufacture, the button-fastener herein shown and described, it consisting of a single piece of wire bent or coiled to form the base *a*, and loop-like inclined shank portions *b b'*, the part *b'* being further bent to form a foot, d^3, all being constructed and adapted to operate as set forth.

295,710. SIDEWALK-CURB AND SURFACE-CASE FOR ELECTRIC WIRES. RICHARD WYLIE, Napa, Cal. Filed Dec. 14, 1883. (No model.)



Claim.—1. In a case for electric wires, the combination, with a grooved block or casting, of a cover provided with a roller-joint for swinging the cover upward, substantially as herein shown and described.

2. In a case for electric wires, the combination, with a grooved block or casting, of a cover fitting on the said block or casting, and provided with a roller-joint, *d*, and with a shoulder, *d''*, substantially as herein shown and described.

3. In a case for electric wires, the combination, with a block or casting having a longitudinal groove in the upper surface of its bottom, which upper surface is inclined downward from the edges of the groove, of a cover fitting on the casting or block, and provided with a longitudinal groove in its under side, substantially as herein shown and described.

4. In a case for electric wires, the combination, with the block or casting B, having a flange, D, provided in its upper edge with a rabbet, *b*, of the cover E, provided with a flange, *e*, fitting in the rabbet *b*, substantially as herein shown and described.

5. In a case for electric wires, the combination, with grooved castings held along the curb of the sidewalk and grooved castings located in the street at the crossings, of a corner-block located at the corner of the sidewalk, and establishing communication between the blocks or castings of the curb and the blocks or castings of the street-crossings, substantially as herein shown and described.

6. In a case for electric wires, the combination, with the grooved castings or blocks B H and their covers E J, of corner-blocks establishing communication between the castings B and H, substantially as herein shown and described.

7. In a case for electric wires, the combination, with the grooved castings or blocks B H and their covers E J, of the fixed corner-block G and the removable corner-block L, placed between the fixed corner-block G and the cover of the first casting or block H, substantially as herein shown and described.

8. In a case for electric wires, the combination, with the grooved castings or blocks B H and their covers E J, of the fixed corner-block G and the removable corner-block L, placed between the fixed corner-block G and the cover of the first casting or block H, which corner-block L is provided with a ridge, M, substantially as herein shown and described.

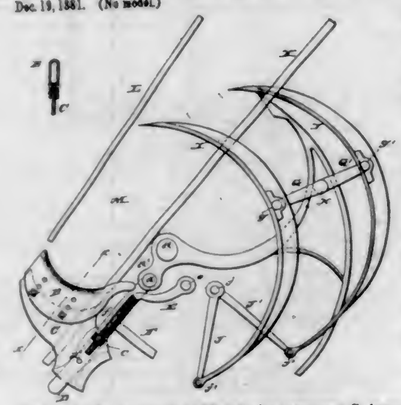
9. In a case for electric wires, the combination, with the grooved castings or blocks B H and their covers E J, of the fixed corner-block G, provided with a rabbet, *m'*, and the removable corner-block L, placed between the fixed corner-block G and the cover of the first casting or block H, which corner-block L is provided with a ridge, M, having a rabbet, *m*, substantially as herein shown and described.

10. In a case for electric wires, the combination, with the grooved castings or blocks B H and their covers E J, of the fixed corner-block G and the removable corner-block L, provided in its under surface with grooves for receiving ridges *p* on the cover J of the first casting or block H, substantially as herein shown and described.

11. In a case for electric wires, the combination, with a grooved block, B, and a grooved block, H, of the cover E, having a recess or notch, *s*, the fixed corner-block G, and the removable corner-block L, having a projection, *r*, adapted to pass into the notch *s* in the adjoining cover E, substantially as herein shown and described.

12. In a case for electric wires, the combination, with a casting or block, B, and the cover E, of a casting or block, H, and its cover J, the fixed corner-block G, and the removable corner-block L, whereby a continuous groove is formed, substantially as herein shown and described.

295,711. GRAIN-BINDER. JAS. H. ANDERSON, Newton, Kans. Filed Dec. 19, 1881. (No model.)



Claim.—1. The combination of the tripping compressor C, formed as described, with the section B, U-shaped in cross-section, and adjustably applied to said compressor, substantially as described.

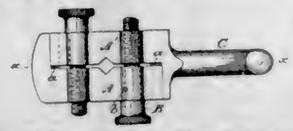
2. The adjustable compressor having the section B, U-shaped in cross-section, the main part of the compressor C entering the part B, the whole combined with the tripping-lever E, the needle A, bar D, passed through and supporting the compressor, and having pivotal connection to the same, substantially as described.

295,712. HORSE-ARMOR. JAS. H. ANDERSON, Newton, Kans. Filed Aug. 16, 1883. (No model.)



Claim.—In an armor for animals, the combination of the neck-piece D, formed wider at one end than the other, the breast-piece H, cut to fit the neck or throat of the horse, and the leg-pieces E E, all constructed of wire fabric, and each part being provided with suitable fastenings, straps, and means substantially as described for securing the said parts to the animal, all substantially as and for the purposes set forth.

295,713. LATHE-DOG. FRANK ARMSTRONG, Bridgeport, Conn. Filed June 21, 1883. (No model.)



Claim.—A lathe-dog composed of the two jaws A A', provided with the screws B B' and pin *b*, and formed with V-shaped guides or bearings *a* at either end, whereby the jaws are guided in their movements and the binding-screws are relieved from strain, substantially as hereinbefore set forth.

295,714. BUCKLE. FRANK ARMSTRONG, Bridgeport, Conn. Filed Aug. 18, 1883. (No model.)

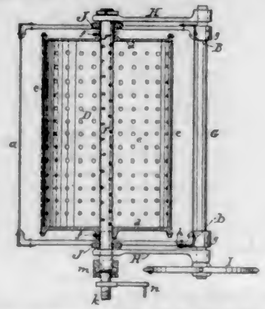


Claim.—1. A combined buckle frame and clamp consisting of the side and end bars, one or both of the latter having angular serrated flanges or projections to form clamping-jaws, the whole formed of a single piece of sheet metal doubled upon itself and provided with a slide, substantially as set forth.

2. A combined buckle frame and clamp consisting of the side and end bars, one or both of the latter having angular serrated flanges to form clamping-jaws, the whole formed of a single piece of metal doubled upon itself and provided with an operating-slide, D, in combination with the cross-bar C, substantially as and for the purpose set forth.

3. A combined buckle frame and clamp consisting of the side and end bars, one or both of the latter having angular serrated flanges or projections to form clamping-jaws, the whole formed of a single piece of metal doubled upon itself, in combination with the slide D and a connecting-hook, E, substantially as and for the purpose set forth.

295,715. FRUIT AND VEGETABLE WASHER. JOHN BAKER, Muscatine, Iowa. Filed Oct. 29, 1883. (No model.)



Claim.—1. The combination, with the tank A, of the cylinder D, mounted on a shaft arranged in circular guides, and connected with the shaft G by means of the arms H, substantially as and for the purposes described.

2. The combination, with a tank, A, cylinder D, and circular slotted guides J, of the shaft G, connecting-arms H, and operating lever or wheel I, substantially as and for the purposes set forth.

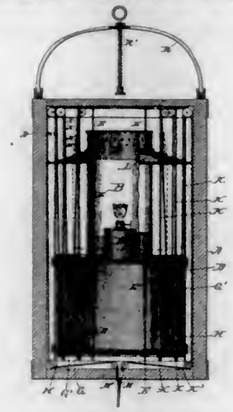
3. The combination, with the tank A, of the cylinder D, having perforated ends *d*, and sides *c*, and mounted upon the tubular perforated shaft F, the slotted curved guides J, the shaft G, connecting-arms H, and operating-levers I, substantially as and for the purposes set forth.

295,716. FRUIT, VEGETABLE, AND MEAT CAN. JOHN BAKER, Muscatine, Iowa. Filed Oct. 31, 1883. (No model.)



Claim.—The can A, constructed to be hermetically sealed, and provided with the central tube, C, closed at its inner end and open at its outer end, which is fastened to one end of the can, substantially as and for the purposes described.

295,717. MARINE-SIGNAL LIGHT. RICHARD J. BAKER and JOHN P. ROBERTS, Providence, R. I. Filed Jan. 16, 1884. (No model.)



Claim.—1. In a marine night-signaling apparatus, the combination, with a white light or lantern, of three movable concentric cylindrical shades or screens—one opaque and two of colored glass—fitted below the support for the light, and adapted to be moved upward, each independently of the other, to cover and uncover the light, substantially in the manner and for the purpose herein set forth.

2. In a marine night-signaling apparatus, the combination, with each other and with a suitable frame adapted to their support, of three separate lights, each of which is provided with three movable shades or screens—two transparent and colored and one opaque—arranged to be moved, the one independently of the other, to cover and uncover the light, by means of appliances adapted thereto, substantially in the manner and for the purpose herein set forth.

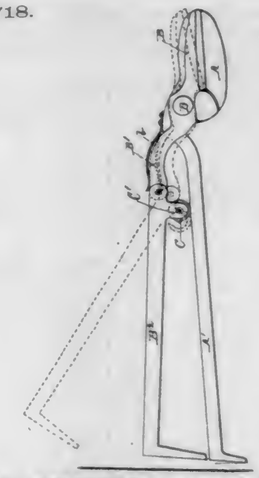
3. The combination, in a marine night-signaling apparatus, with a suitable supporting-frame, a light or lantern carried therein, and a series of movable shades adapted to cover or uncover the light, of a series of operating-cords led from each separate slide over suitable friction-pulleys in the frame, and in consecutive and systematic order through a lower bar, whereby an operator below the frame is enabled to readily and quickly actuate each slide independently of the other, as required in making signals, substantially in the manner and for the purpose herein set forth.

295,718. SCISSORS AND SHEARS. WILLIAM J. BAYNER, Southington, Conn. Filed Jan. 8, 1884. (No model.)

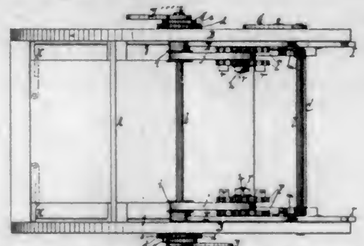
Claim.—1. In tinners' shears or analogous implements, the lever or operating portion B^2 of the handle, pivoted to the part B', which is rigidly connected with the blade or jaw, said lever or portion B^2 being provided with a bracket or arm and roller carried thereby, adapted to ride upon the opposite handle, substantially as set forth.

2. In a pair of shears or analogous implement, the combination, with the blade A and handle A' and blade B and part handle B', of the spring *b*, secured to one part, as A', and bearing upon the other, as B', and an operating-handle, B^2, pivoted to B', and having a roller, C, to bear upon the opposite side, A', as set forth.

295,718.



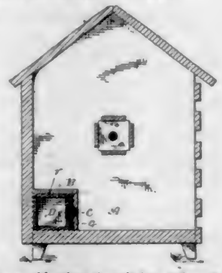
295,719. SLED-PROPELLER. CHARLES BERNHARD, New York, N. Y. Filed Jan. 7, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with a sled, of the propeller-wheels F, mounted on independent arms E, means for depressing the propeller-wheels upon the ground, the shaft *b*, connected to the propeller-wheels by belts or chains, the cog-wheels *c*, mounted on the shaft *b*, the cog-wheels *d*, gearing into the cog-wheels *c*, and the levers D, and pawls *f*, for imparting a rotary motion to the cog-wheels *d*.

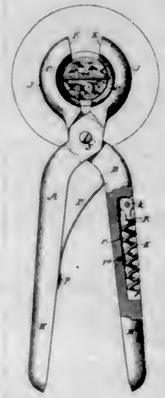
2. The combination, substantially as hereinbefore described, with a sled, of the propeller-wheels F, mounted on independent arms E, the rock-shaft *i*, lever G, and elastic fingers *m*, for depressing the propeller-wheels, and means for imparting to the said propeller-wheels a rotary motion.

295,720. RAT-TRAP FOR BUILDINGS. THOMAS M. BEVERAGE, Monterey, Va. Filed Dec. 14, 1883. (No model.)



Claim.—The combination of a suitable stationary box having openings in one of its sides with the removable trap, which is to be placed inside of this stationary box, and which is provided with a removable top and a suitable number of perforations through its side, and the perforated endwise-moving slide, substantially as shown and described.

295,721. CUTTER FOR WIRES AND CORDS OF BOTTLES. JOHN BEVINS and AMEDY PROFIT, New York, N. Y. Filed Jan. 22, 1884. (No model.)



Claim.—1. A cutter for the wires and cords of bottles, having the jaws on the opposite side of the hinge or pivot from the handles, said jaws being formed into circular sections with the cutting-edges on the inner sides of said jaws.

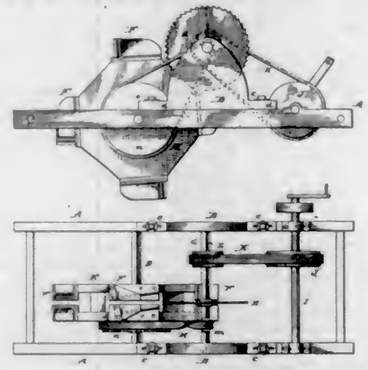
2. The combination of the handles H and H', the circular jaws J, having the cutting-edges C, the spring P, and the corkscrew K, substantially as described.

3. A cutter for the wires and cords that fasten corks to bottles, having the jaws on the opposite side of the hinge from the handles, said jaws being formed in the shape of sections of circles, and having cutting-edges removable from the said jaws.

4. The combination of the handles H and H', the pivot S, the circular jaws J, the removable cutting portion J', the pins p' and p^3, and the screws *s*, substantially as described.

5. The combination of the handles H and H', the pivot S, the circular jaws J, the removable cutting portion J', the spring P, and the corkscrew K, substantially as and for the purpose set forth.

295,722. SHINGLE-SAWING MACHINE. SAMUEL L. BITTING, Big Creek, Miss. Filed Jan. 10, 1884. (No model.)

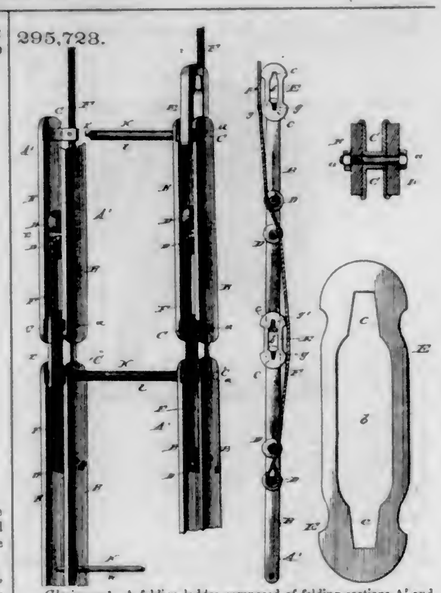


Claim.—1. The wheel E upon shaft D, having a series of divided boxes, F F, mounted upon its periphery and at a slight angle to its line of motion, in combination with a circular saw, H, duly mounted and adjustable, substantially as and for the purpose set forth.

295,723. FIRE-ESCAPE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 2, 1883. (No model.)

Brief.—The sections of the ladder-sides are coupled together by links having V-shaped recesses, into which V-shaped tenons on the said sections rest, locking the same, and forming a rigid ladder.

295,723.



Claim.—1. A folding ladder composed of folding sections A' and coupling-links E, constructed as described, in combination with self-locking and unlocking devices, constructed and adapted to operate substantially in the manner and for the purposes described.

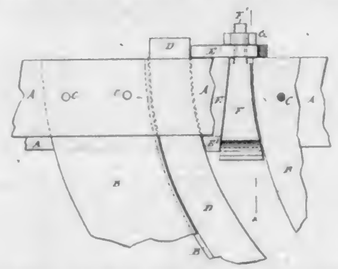
2. The combination of folding sections A', locking coupling-links E, ropes F, and pulleys D, all constructed and adapted to operate substantially in the manner and for the purposes described.

3. The combination of the folding ladder-sections A', the slotted coupling-links having V-shaped recesses *c c*, and V-shaped tenons *g g'* at the ends of the sections, all constructed and adapted to operate substantially in the manner and for the purposes described.

4. The combination of folding ladder-sections A', formed of pairs of plates B B, the V-shaped tenons *g g'*, the clasping-braces C, their tie-bolts, the pulleys D D, and the rungs K, all constructed and adapted to operate substantially in the manner and for the purposes described.

5. The combination of folding ladder-sections, locking coupling-links therefor, ropes and pulleys P, and a windlass, J, all constructed and adapted to operate substantially in the manner and for the purposes described.

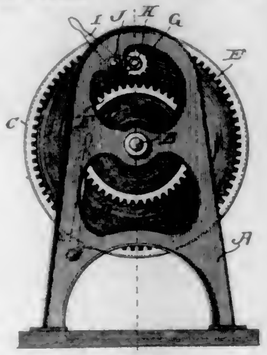
295,724. INSERTED-TOOTH FASTENING FOR ICE-PLOWS. JOHN GEORGE BODENSTEIN, Staatsburg, N. Y. Filed Jan. 9, 1884. (Model.)



Claim.—1. An inserted-tooth fastening for ice-plows constructed substantially as herein shown and described, and consisting of the stop-plate E, having a perforated L-head, E', at its upper end and a shoulder, E^2, at its lower end, and the wedge-key F, having screw F' and nut G, as set forth.

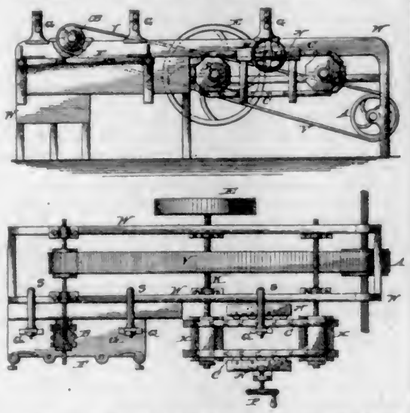
2. The combination, with the plow-beam A, the plow-plate sections B, and the inserted tooth D, of the stop-plate E, having a perforated L-head, E', at its upper end and a shoulder, E^2, at its lower end, and the wedge-key F, having screw F' and nut G, substantially as herein shown and described, whereby the inserted tooth will be securely held and can be readily adjusted and replaced, as set forth.

295,725. HOISTING-GEAR. JOHN L. BOOTH, Hamilton, Ohio. Filed Jan. 10, 1884. (No model.)



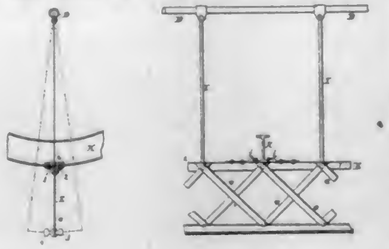
Claim.—In a hoisting-gear, the combination of a reel-shaft, an internally-toothed gear, an externally-toothed gear of the same pitch, disposed concentric to said externally-toothed gear, a toothed pinion having a pitch corresponding with said gears, a lever supporting said pinion and fitted to oscillate upon a pivot having its axis coincident with the axis of said gears, and a motor-shaft adapted to impart motion to said pinion, substantially as and for the purpose set forth.

295,726. MACHINE FOR DRESSING MOLDINGS. JOHN CLARK BRANDON, Detroit, Mich. Filed Dec. 15, 1883. (No model.)



Claim.—In a machine for dressing and forming moldings, the main frame W, the slotted standards G, the laterally arranged and adjustable endless-chain feeding device, the lateral vertically-adjustable table F, the rotary cutters or knives B, arranged above the said adjustable table, and mechanism for operating the machine, substantially as shown and described.

295,727. HOISTING AND CONVEYING MACHINE. ALEXANDER E. BROWN, Cleveland, Ohio. Filed Dec. 7, 1883. (No model.)



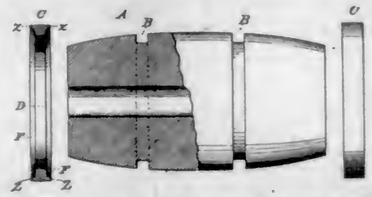
Claim.—1. In a hoisting and conveying apparatus or contrivance, the combination, with necessary piers or supports, of a cable and a rigid tramway or bridge-like roadway free to swing with the cable, all substantially as set forth.

2. In combination with a rigid roadway and a sustaining-cable and suitable piers, means for assisting in the support of the bridge directly from the pier and at the same time permitting it to swing or move laterally with reference to the pier, substantially as and for the purposes set forth.

3. A bridge tramway composed of a single narrow frame provided with laterally-projecting rails for the accommodation of the truck or carriage wheels, substantially as set forth.

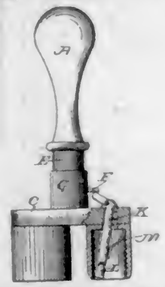
4. In combination with a bridge or rigid tramway composed of a narrow truss provided with laterally-projecting rails or tracks at or near its lower edge, a carriage or truck the wheels and wheel-frame of which are adapted to straddle the bridge, substantially as set forth.

295,728. WHEEL-HUB. ARTEMAS M. BROWN, Ottawa, Ohio. Filed Dec. 15, 1883. (No model.)



Claim.—The combination, with the wooden wheel-hub having turned into its periphery annular grooves of rectangular form in cross-section, of the metallic seamless bands C, having the interior rectangular annular rib or fillet D, and the broad outer portion, E, the said rib having a beveled flange, F, on both sides thereof, extending from its base to the point *i*, and terminating in a short and sharp bevel, Z, which joins the outer surface of the band in a sharp edge, whereby the bands can be easily forced into the grooves in the hub even with the seam, the fibers of the wood made to conform to the said short bevels Z, and the edges of the band and the fibers of the wood will fit together without breaking the fibers of the latter, substantially as and for the purposes specified.

295,729. CANCELING-STAMP. ENOCH B. BROWN, Mystic, Conn. Filed Apr. 5, 1883. (No model.)



Claim.—1. A stamp-canceler consisting of an L-shaped lever or arm pivoted to the bed-plate of the canceler, and having attached at its lower extremity a pivoted serrating piece or scratcher, in combination with mechanism, substantially as described, for operating said arm.

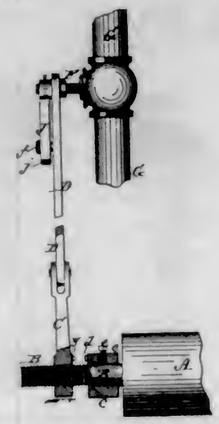
2. The handle A, constructed as described, in combination with the ferrule E having lug F, coil-spring D, bed-plate C, with sleeve G and spindle B and having slot H therein, and L-shaped arm K, pivoted to the bed-plate and having at its lower extremity the pivoted scratcher L, substantially as set forth and described.

295,730. HOISTING-MACHINE. FAYETTE BROWN, Cleveland, Ohio. Filed Nov. 12, 1883. (No model.)

Claim.—1. In combination with the drum-shaft of a hoist engine or machine and the valve or other device through which the supply of steam or other motive medium is applied to said machine, means for closing the valve (or for cutting off the supply of motive power) automatically whenever the cable-drum shall have revolved to a predetermined extent, and actuated directly from the shaft of said drum, all substantially as set forth.

2. In combination with the drum-shaft and valve-stem, a mechanism for working the valve from the drum-shaft, as specified, and adapted

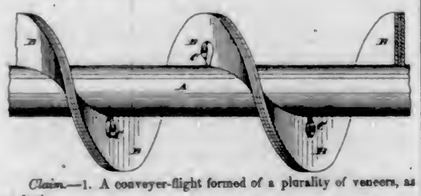
295,730.



to continue the movements of its parts after having cut off the motive power, whereby the moving parts of the machinery are permitted to continue their motions to the extent induced by momentum without any injury to or derangement thereof.

3. In combination with the drum-shaft, supply-valve, and intermediate devices for transmitting motion from the said shaft to said valve, (to open and close the latter,) means for adjusting or regulating the action of the shaft B on the intermediate mechanism so as to accomplish the working of the valve at any predetermined time desired.

295,731. SCREW-CONVEYER. FRANK C. CALDWELL, Chicago, Ill. Filed Sept. 4, 1883. (No model.)

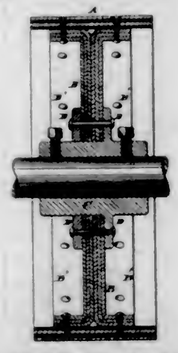


Claim.—1. A conveyer-flight formed of a plurality of veneers, as set forth.

2. A conveyer-flight formed of a plurality of veneers secured together and to the shaft, substantially as set forth.

3. In a conveyer, the combination of the shaft and the continuous flight, the latter being formed of a plurality of veneers, which are secured together and to the shaft, substantially as shown and described.

295,732. PULLEY. FRANK C. CALDWELL, Chicago, Ill. Filed Sept. 4, 1883. (No model.)

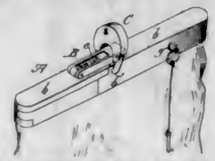


Claim.—1. As a new article of manufacture, a pulley the rim and disk or body of which consist of a plurality of veneers, substantially as set forth.

2. A pulley the rim and disk of which consist of a plurality of veneers, the periphery of the disk being turned outward, forming a flange, to which the rim is secured, substantially as set forth.

3. In a pulley, the combination of rim A, made of a plurality of veneers, disk or body B, made of a plurality of veneers, hub C, and plates D, all made, constructed, and arranged substantially as specified.

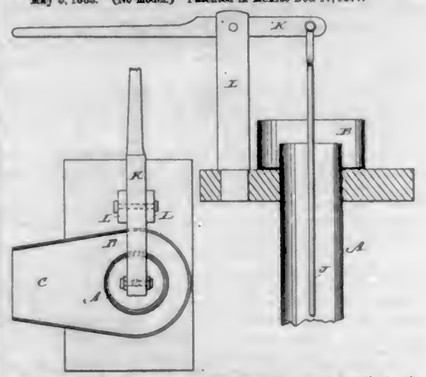
295,733. MAIL-BAG. SOLON OWEN CAMPBELL, Van Wert, Iowa, assignor of two-thirds to Adam J. Johnson and John Gemmill, both of same place. Filed Jan. 25, 1884. (No model.)



Claim.—1. In a combined mail-bag fastening and tag-holder, the combination of the frame A, composed of hinged sections, two of which are perforated for the passage of a padlock, a tag-holder, B, pivoted to the top of one of said sections, and a padlock, C, passed through the closed frame, so as to secure the same and confine one end of the tag-holder, substantially as described.

2. In a combined mail-bag fastening and tag-holder, the combination of the side pieces, *a a*, having flanges *b b*, apertures *b' b'*, and blocks *c c*, the end pieces, *a' a'*, the tag-holder B, hinged to one of the side pieces, and having lip *f*, and the padlock C, substantially as described.

295,734. PUMP. LUIS G. CARRAGA Y SAENZ, Puebla, Mexico. Filed May 5, 1883. (No model.) Patented in Mexico Dec. 17, 1877.



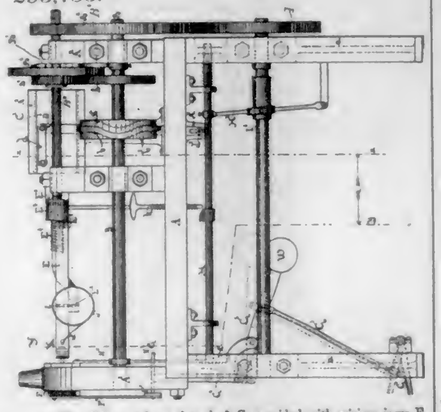
Claim.—In a pump, the combination, with a pump-barrel, A, of a sucker and rod, the apertured disk D, the circular valve F, made of rubber or leather and held on the disk D, and the bolts E, passing through the thickness of the barrel into the edge of the disk D, substantially as herein shown and described, and for the purpose set forth.

295,735. MACHINE FOR WIRING CORKS IN BOTTLES. ORAMILLE C. CARPENTER, Brooklyn, N. Y., assignor to Nathaniel B. Abbott, same place. Filed Dec. 17, 1883. (No model.)

Brief.—To put the machine in readiness for operation, twist together the ends of the four wires which are carried by the rotating shaft and the operating-jaws. Then by operating a treadle a table carrying a bottle begins to rise. A cam on the table operates a clutch and sets the machine in motion. The wire-carrying shaft advances, and the twisted ends of the wires are grasped by the nippers. The bottle on the table is lifted until its neck projects into a holder having a spring-follower, when two of the wires extend over the cork, and one extends around each side of the neck of the bottle. The twister-shaft rotates and recedes, twisting the four wires together close to the bottle-neck. Shears cut the twisted wires. On releasing the treadle the table descends, and a spring operates to release the clutch and stop the machine.

Claim.—1. In a bottle-cork-wiring machine, the combination of a pair of movable jaws with a rotating and sliding shaft to which the jaws are attached, mechanism, as described, for opening and closing the jaws, and a cam rotated by a train of gearing for moving the jaws longitudinally, whereby the sliding and rotating movements of the said jaws, together with their opening and closing movements, complete the wiring of a cork, automatically, at one operation.

295,735.



2. The sliding and rotating shaft C, provided with wiring-jaws E, in combination with the sliding collar E^3, stop E^2, and spring E^4, and the detent e^3, with means for operating the detent, whereby the movements of the jaws are controlled by the sliding shaft and the detent, as described.

3. A vertically-moving finger or wire-depresser pivoted to the transverse bar or frame of the movable jaws of a bottle-wiring machine, in combination with a sliding bar for actuating the finger, operated by the longitudinal movement of the said jaws, and a lever-connection, as described, so as to throw the wire down to the flange of the neck of the bottle at each stroke of the machine before the twisting of the wire commences.

4. The vertically-moving finger M, the sliding operating-bar M′ for moving the said finger M, and the detent or pawl m' and operating-pin m^3, in combination with the pivoted lever M^3, constructed and operated as described.

5. The cam B^2, pivoted lever D, sliding shaft C, with its attached movable jaws E, opening-spring E^4, and closing stop collar and abutment E^2 E^3, combined and arranged so that each at revolution of the cam B^2 the sliding shaft, with its attached movable jaws, shall make one forward and backward movement, with the necessary opening and closing of the said jaws, at each revolution of the cam.

6. The combination of the driving-shaft B and sliding shaft C, and its attached gears, connected together by the gearing-train B^2 B^3 B^4 C^2, whereby the sliding shaft and its attached jaws are rotated a sufficient number of times to thoroughly twist and tighten the wire on the bottle during a fractional portion of the revolution of the driving-shaft, and the forward and backward movement of the sliding shaft is effected during the remainder of the rotation of the driving-shaft.

7. The vertically-sliding table G, having cam-faced attachment 2, the sliding rod H, arranged, as described, so as to be shifted by the engagement of said attachment 2 therewith, and devices, substantially as described, connecting the sliding rod H with the jaw-operating mechanism, whereby the jaws are thrown into operation by the reciprocation of table G, all the recited elements in combination, as and for the purposes set forth.

8. The spring-clamp L, attached to bottle-mouth holder A′ K, so as to clasp the neck of bottle just below the flange thereof, and hold the bottle by the top end of its neck during the wiring operation.

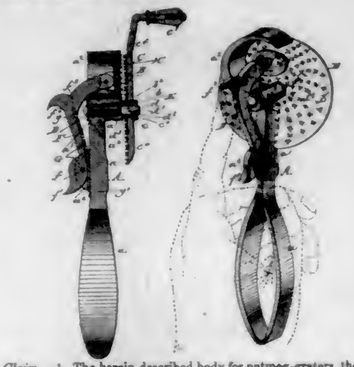
9. The automatic wire-holders F' F^3, for centering the wires over the cork, the said holders hinged to the bottom of the spring-follower of the bottle-mouth holder, and provided with springs for automatically closing the said wire-holders on the wires, and with bevel-edged lips to allow the wires to escape from the said holders when the wires are drawn down tightly on the corks of the bottles.

10. In combination with the reciprocating table, the sliding and rotating jaws and their operative mechanism, substantially as described, arranged at one side of said table, and the nippers F at the other side of said table, said nippers provided with operative mechanism, substantially as described, by which they are operated to grasp the wires projecting from said jaws and hold them during the backward movement of the jaws, substantially as set forth.

11. The automatic nippers F, their operating-cam F^2, connecting-rod F^3, and the bottle-holding table, combined substantially as described and set forth.

12. The combination of jaws E, nippers F, and shears N, with means, substantially as described, for operating the same, arranged as set forth.

295,736. NUTMEG-GRATER. LOUIS J. CHURCH, Washington, D. C. Filed Dec. 29, 1883. (No model.)



Claim.—1. The herein-described body for nutmeg-graters, the same consisting of a handle portion, a central stem, and a curved or segmental top guard-finger, all the parts being integral, substantially as set forth.

2. The combination in a nutmeg-grater, with the stem of the body provided with the lateral extension and with the curved or segmental guard-finger extending from this extension, of the bearing-bolt journaled in said extension, and the rotary disk secured to the outer end of the said bolt, substantially as set forth.

3. The combination, with the grating-disk, of an operating handle or arm connected centrally therewith, and comprising a series of bracing-arms extending radially to the periphery of the disk, substantially as set forth.

4. The combination, in a nutmeg-grater, with the feeding-lever, of a head pivoted to the lever and acting directly against the nutmeg, substantially as and for the purpose set forth.

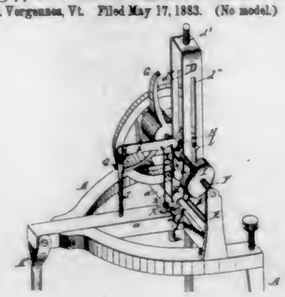
5. The combination, in a nutmeg-grater, of the body comprising the stem and the integral segmental guard-finger, the rotary grating-disk journaled at the juncture of the stem and guard-finger, and the approximately right-angular feed-lever fulcrumed to the stem, and having its head working in the guard-finger, substantially as set forth.

6. The combination of the body of the grater, comprising the handle portion, the integral stem having the lateral wings, and the integral segmental finger extending from the stem, the rotary grating-disk journaled at the vertex of the angle formed by the stem and segmental finger, the approximately right-angular feed-lever fulcrumed between the said wings, and having a pivoted head moving in the finger, and the flat actuating-spring connected with the lever, and having its free end extending between the said wings, substantially as set forth.

7. A nutmeg-grater embodying the stem, having the lateral wings, the feed-lever fulcrumed between these wings, and having the recess, and the flat spring having one end set in the recess and its other end extending down between the lever and stem, and protected from damage or displacement by the said wings, substantially as set forth.

8. A nutmeg-grater embodying a body comprising the stem and the integral segmental guard-finger, the rotary grating-disk journaled at the vertex of the angle formed by the stem and said finger, the approximately right-angular feed-lever fulcrumed to the stem and having the pivoted head working in the finger, and provided with the foot or extension below its fulcrum, by which it can be operated to draw its head from the grating-disk, and the spring engaging the lever to normally force its head toward the grating-disk, substantially as set forth.

295,737. ROCK-DRILL. FREDERICK W. COE and CHARLES A. HOFFMANN, Vergennes, Vt. Filed May 17, 1883. (No model.)

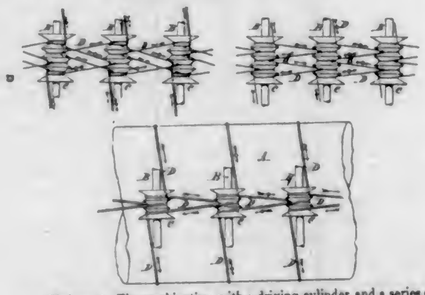


Claim.—1. The combination, in a rock-drilling machine, of the frame D, carrying the hammer, and pivoted as described, a shaft, F, suitably journaled and having keyed thereon cams G, H, and I, a pivoted latch, i, adapted to be intermittently lifted by the cam H, a jam-wrench, K, connected with the latch i, to be lifted therewith and bite the drill-rod, and a lever, N, arranged and operating, as specified, to rotate the jam-wrench, substantially as set forth.

2. The combination, in a rock-drill, of the frame D, carrying the hammer, and pivoted as described, a shaft, F, actuating means for reciprocating the drill-rod and hammer, the waved wheel I, lever N, having spring attached thereto, so as to keep the upper end of said lever in contact with the waved wheel, and a connecting-rod, n, attached to the lever N and to devices for rotating the drill-rod, substantially as set forth.

295,738. SPINNING AND TWISTING MACHINE. CHARLES A. COGGESHALL, Providence, R. I. Filed Apr. 27, 1883. (No model.)

Brief.—Each spindle is provided with a whirl having two or more grooves. A series of driving-bands extend from the cylinder to the whirl, there being two or more bands for each spindle, and each band arranged to drive two or more spindles, said band passing around the whole or nearly the whole periphery of the whirl, so that the spindles will all be driven at a uniform speed.

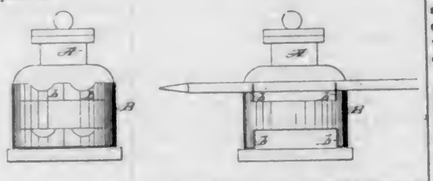


Claim.—1. The combination, with a driving-cylinder and a series of spindles carrying grooved whirls, of a series of driving-bands extending from the cylinder to the spindles, the said bands being arranged substantially as described, whereby each band shall drive two or more spindles, and the latter being each driven by two or more bands, substantially as and for the purpose set forth.

2. The combination, with a driving-cylinder and a series of spindles carrying grooved whirls, of a series of bands extending from the cylinder to the spindles, said bands being laced from one spindle to another, and surrounding or partially surrounding said spindles, each band being arranged to drive two or more spindles, and each spindle being driven by two or more bands, substantially as and for the purposes described.

295,739. INK STAND OR RECEIVER. JOHN B. DAVIDS, New Rochelle, N. Y. Filed Jan. 7, 1884. (No model.)

Brief.—The ink stand or receiver is surrounded with a belt or band having sections adapted to be turned outward to form a holding-rack for pens, &c.

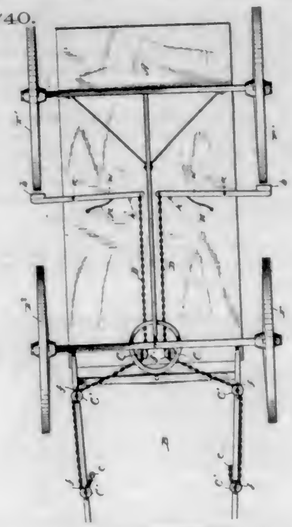


Claim.—As an article of manufacture, a bottle or receiver provided with a belt or band having divisions or sections capable of being distended or turned out into position to form racks or supports for pen-holders, pencils, and other similar instruments, substantially as shown and described.

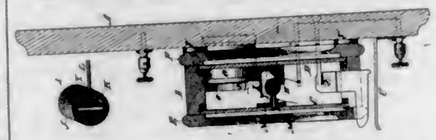
295,740. VEHICLE-BRAKE. JOHN T. DILLEHAY, Beech Grove, Ky. Filed Feb. 4, 1884. (No model.)

Claim.—The vehicle-brake herein described, consisting of the body A, having the spring-pivoted brake-levers E and pulleys C, the shafts B, having the pulleys C′ arranged at suitable intervals thereon, the chains D D, secured to the levers at their inner ends, and passing around the pulleys C and C′, and provided with hooks c at their outer ends, and the stop-pins A, as shown and described.

295,740.



295,741. TELEPHONE-TRANSMITTER. DANL. DRAWBAUGH, Eberly's Mill, Pa., assignor to the People's Telephone Company, of New York. Filed Nov. 12, 1883. (No model.)



Claim.—1. An electrode for telephone-transmitters, composed of an envelope of carbon or other conductor containing a mass or body of finely-divided conducting material, substantially as described.

2. An electrode for telephone-transmitters, consisting of an envelope of carbon or other similar conducting material containing a mass of finely-divided conducting material, and an electrode penetrating the envelope and insulated therefrom, and embedded in the finely-divided material, substantially as described.

3. An electrode for telephone-transmitters, composed of a tubular shell of carbon or other similar conducting material, closed at both ends, and containing a mass of finely-divided conducting material, substantially as described.

4. An electrode for telephone-transmitters, composed of a tubular shell of carbon or similar conducting material, closed at both ends, and containing a mass of finely-divided conducting material, in combination with an electrode passing through said shell and insulated therefrom, and embedded in the finely-divided conductor, substantially as described.

5. In a telephone, a diaphragm or sound-receiving surface, an electrode having an inclined upper surface, a second electrode consisting of a shell of conducting material containing finely-divided conducting material, and a third electrode embedded in said finely-divided material and insulated from the shell, and having its end loosely connected to the diaphragm, substantially as described.

6. In a telephone, a diaphragm, an electrode of cylindrical form loosely connected to said diaphragm, and a fixed electrode having an inclined upper surface, the loose electrode resting upon said surface by gravity, substantially as described.

7. The combination of the diaphragm C, socket-tube M, rod-electrode I, cylindrical electrode J K, inclined fixed electrode H, and a support for said last-mentioned electrode, substantially as described.

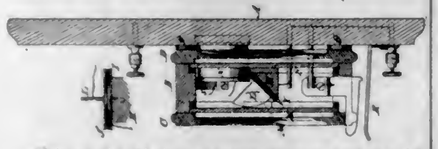
8. In a telephone, a diaphragm, a support, and three electrodes, one electrode having an inclined upper surface and rigidly attached to the support, the second electrode resting upon the inclined electrode by gravity, and containing conducting material in a finely-divided state, and the third electrode having one end embedded in said finely-divided material and the other end loosely connected to the diaphragm, substantially as described.

9. In a telephone, two diaphragms and three electrodes, one elec-

trode having an inclined upper surface and rigidly attached to one of the diaphragms, the second electrode resting upon the inclined electrode by gravity, and containing conducting material in a finely-divided state, and the third electrode having one end embedded in said finely-divided material and the other end loosely connected to the other diaphragm, substantially as described.

10. In a telephone, in combination with the vibratory diaphragm and a rear support carrying a block of conducting material, the compound electrode consisting of a metallic conductor embedded in a finely-divided conductor, which latter is inclosed in an envelope of carbon or similar conducting material, said compound electrode being supported at one end upon the fixed electrode and at the other in loose metallic contact with the diaphragm, substantially as described.

295,742. TELEPHONE-TRANSMITTER. DANL. DRAWBAUGH, Eberly's Mill, Pa., assignor to the People's Telephone Company, of New York. Filed Nov. 12, 1883. (No model.)



Claim.—1. In a telephone-transmitter, electrodes consisting of flat plates having their surfaces in contact, the said surfaces being covered with a hard, thin coating of finely-divided conducting material combined with an agglutinating substance, substantially as described.

2. An electrode or resistance-varying conductor for telephone-transmitters, consisting of a thin stratum of finely-divided conducting material, combined with an agglutinating substance, substantially as described.

3. A telephone electrode or resistance-varying conductor for telephone-transmitters, consisting of a plate covered with a hard, thin coating of finely-divided conducting material, combined with an agglutinating substance, substantially as described.

4. In a telephone-transmitter, electrodes consisting of metallic plates or surfaces provided with a hard, thin coating of finely-divided conducting material, combined with an agglutinating substance, the said coated surfaces being in contact, substantially as described.

5. In a telephone-transmitter, electrodes consisting of metallic plates having their surfaces partially covered with a hard, thin coating of finely-divided conducting material, combined with an agglutinating substance, the coated portions of said plates being in contact, substantially as described.

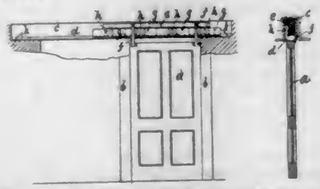
6. In a telephone-transmitter, and rigidly attached to a support, an inclined plate or surface coated with a mixture of finely-divided material and agglutinating substance, in combination with a movable plate similarly coated and pressing by gravity upon said inclined surface, and a diaphragm acting upon said movable plate, substantially as described.

7. In a telephone-transmitter, the combination of the diaphragm E, guides M, plate J, coated with a mixture of finely-divided conducting material and agglutinating substance, and having a projection, L, similarly coated plate, I, and an inclined support for said plate I, substantially as described.

8. In a telephone, the combination, with the diaphragm and the fixed support carrying the inclined electrode, of the loose plate having a surface of conducting material resting upon the fixed electrode, and a projection in contact with the diaphragm, substantially as described.

295,743. HANGING DOORS. CHARLES W. EVERSON, Charlestown, Mass. Filed Feb. 7, 1884. (No model.)

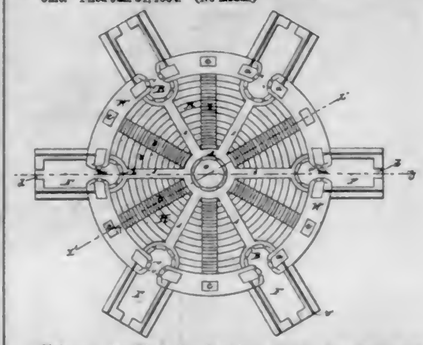
Brief.—The door-rail traverses grooved rollers which are spaced by detached bars, each recessed to embrace the axis of its roller, the rollers traveling upon a track having a central web extending up between their two treads.



Claim.—1. The combination, with a door, *a*, of the hangers *f f*, the sliding bar *e*, the grooved rollers *h*, the separate or sectional bars *g g*, recessed on their under sides, and the track *d*, provided with a central guide, all as and for the purpose specified.

2. The door *a*, having a recess in the top or upper edge, in combination with the bar *i* and rectangular hanger *f*, and the bar *e*, as and for the purpose set forth.

295,744. BRICK AND TILE KILN. WILLIAM A. EUDALY, Cincinnati, Ohio. Filed Jan. 31, 1884. (No model.)



Claim.—1. In a kiln for burning bricks, tiles, &c., a heat-distributing chamber or chambers, O, located within the kiln, closed at the bottom, and provided with a series of apertures, as and for the purpose set forth.

2. A kiln for burning bricks, tiles, &c., provided with one or more heat-distributing chambers, O, located within the kiln and closed at the bottom, and with a furnace or series of furnaces having fire-bags, substantially such as described, whereby a large portion of the heat is carried upward and then downward and distributed to the bricks in the center of the kiln, as set forth.

3. A brick-kiln the floor of which is divided into compartments by walls of solid masonry, said compartments being provided with a perforated floor, under which is a net-work of flues connecting each compartment separately with a chimney situated in or at the sides of the kiln-wall, in combination with the fire-bags B and distributing-chambers O, closed at the bottom, whereby a more equal distribution of heat to the articles to be burned is attained.

4. A brick-kiln the floor and lower part of which are divided into compartments by the walls *s s*, extending above the floor, said compartments being each provided with a flue and chimney adapted to be closed, whereby the heat is made to rise from the floor-level before being distributed to other parts of the kiln.

5. A brick-kiln the walls of which are provided with air-chambers *a*, communicating with the eye or throat of the furnace by ports or flues *c*, and with the external air by means of the flues *v'*, as set forth.

6. In a brick-kiln, the combination of the furnace F and fire-bags B with the distributing-chamber O, as and for the purposes set forth.

7. In a brick-kiln, the combination of the furnaces F, fire-bags B, distributing-chamber O, with the compartments H and chimneys *c*, as and for the purposes set forth.

8. In a brick-kiln, the combination of the walls or benches *s*, extending above the floor-level, forming compartments H, with the flues *t t'*, chimney *c*, and dampers *n*, as set forth.

9. The combination of the air-chambers *a*, located within the walls of the kiln, provided with the ducts *v*, with the throat *w*, constructed substantially as described, and the fire-bags B, as set forth.

295,745. WARPING-MACHINE. GEO. S. FOLLANSBEE, Boston, Mass. Filed July 11, 1883. (No model.)

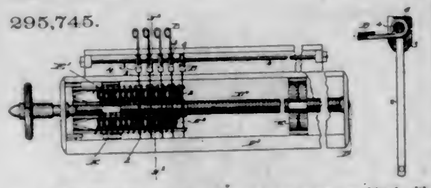
Brief.—The drop-wires are pivoted in slotted heads positively connected to dents, which are caused to be moved toward or from each other by expanding springs, which are operated by a suitable screw. A bar mounted upon pivoted arms is provided for elevating the drop-wires when necessary.

Claim.—1. The expanding springs and means to operate them, combined with a series of dents, a series of heads, 3, positively connected with the said dents, and drop-wires pivoted to turn in the heads fixed to the said dents, the said dents being adapted to be moved toward or from each other according as the expanding springs are contracted or expanded, substantially as described.

2. The comb-box, the right-and-left-hand-threaded screw, the nuts adapted to be actuated thereby, and two pairs of expanding springs at opposite sides of the said screw, combined with a series of dents held by the said springs, a series of heads positively connected with the said dents, and with drop-wires pivoted to turn with relation to the said heads, substantially as described.

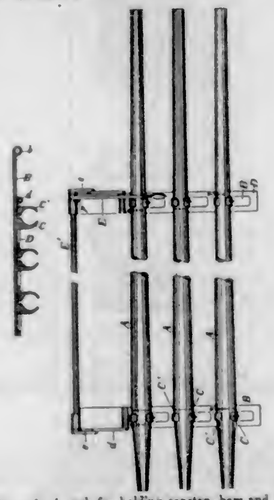
3. The dents 2 and the slotted head 3, rigidly attached to it, combined with a drop-wire pivoted in the said head, substantially as shown and described.

295,745.



4. The comb-box and series of pivoted drop-wires, combined with the bar 14 and its pivoted arms 15, to operate substantially as described.

295,746. RACK FOR HOLDING CAPSTAN-BARS AND LIKE OBJECTS. WILTON FOSTER and LEMUEL D. HANFORD, Erie, Pa. Filed Nov. 9, 1883. (No model.)



Claim.—1. A rack for holding capstan-bars and like objects on shipboard, consisting of uprights having brackets arranged substantially as shown, and clamps which operate toward said brackets, substantially as shown, and for the purposes set forth.

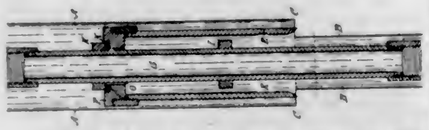
2. A rack for holding capstan-bars and like objects on shipboard, consisting of brackets arranged substantially as shown, clamps which operate toward and from said brackets, and, finally, means, substantially as shown, for moving said clamps, for the purposes mentioned.

3. A rack for holding capstan-bars and like objects on shipboard, consisting of brackets arranged substantially as shown, clamps which operate toward and from said brackets, and, finally, means, substantially as shown, for moving all said clamps simultaneously, for the purposes mentioned.

4. In a rack for holding capstan-bars and like objects on shipboard, the combination, substantially as shown, of the uprights B, brackets C, movable plates D, and clamps C', connected with said movable plates.

5. In a rack for holding capstan-bars or like objects on shipboard, the combination, substantially as shown, of the uprights B, having brackets C thereon, the movable plates D, having clamps C' thereon, and, finally, the lever E, shaft E', crank-arms *e*, and links *d*, for moving said plates and clamps simultaneously.

295,747. GAS AND WATER PACKER FOR OIL-WELLS. EUGENE B. FREW, Titusville, Pa. Filed Aug. 18, 1883. (No model.)

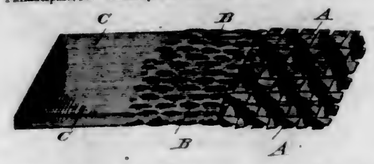


Claim.—1. The casing E, seated upon the shoulder C, and having at its top end the plug F, forming a water-tight joint between the casing E and the tubing D, as a device for shutting off the water from the bottom of an Artesian well, substantially as described.

2. In oil or Artesian wells, a combined gas and water packer, consisting of a joint of casing, and a pipe larger than the tubing of the well, the lower end of said casing being seated on a shoulder in the rock walls of the well, and the upper end being fitted with a plug or reducer to entirely fill the annular space between the top of the casing and the tubing, substantially as described.

3. A gas and water packer for oil and Artesian wells, consisting of the joint of casing E, seated at the lower end on the seat C in the rock wall of the well, and having at its upper end the plug F, said plug fitting loosely around the joint G of the tubing D, in combination with the joint G of the tubing D, said joint having the collars H and I above and below the plug F, the collar H engaging with a recess in the plug F, the joint between being packed and made water-tight by the packing-ring K, and the whole weight of the tubing resting on the plug F, the whole constructed substantially as described, and for the purposes herein set forth.

295,748. ASBESTUS JOINT-PACKING. WILLIAM ARMSTRONG FRIES, Philadelphia, Pa. Filed Apr. 30, 1883. (Model.)



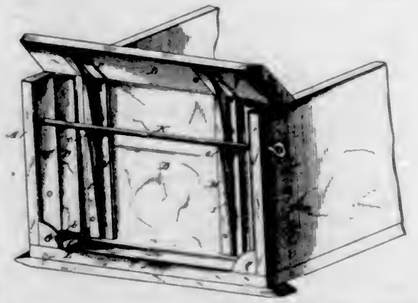
Claim.—As an article of manufacture, a gasket-packing consisting of flat woven, braided, or looped fabric made from hard-spun asbestus yarn, saturated or coated with a flexible agglutinating and flexible water-proof composition or compound, substantially as and for the purpose set forth.

295,749. ASBESTUS STEAM-PACKING. WILLIAM ARMSTRONG FRIES, Brooklyn, N. Y. Filed Jan. 31, 1883. (Model.)



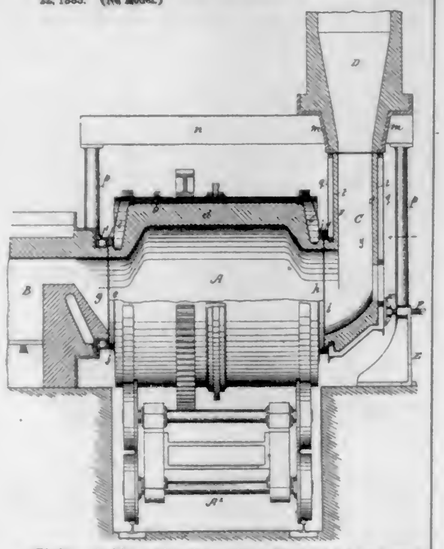
Claim.—As an improved article of manufacture, a steam-rod packing made entirely from fine hard-spun asbestus yarns inclosed in a braided covering of similar yarns, as set forth and described.

295,750. END-GATE FOR WAGONS. HENRY W. GIER and FREDERICK T. FINCKE, Sigel, Ill. Filed Jan. 11, 1884. (No model.)



Claim.—In combination with an end-gate for wagons, provided with cleats having shouldered recessed ribs and a fastening-rod, plates made with flanges to form grooves for the reception of the gate, and a bottom plate and strengthening-web, substantially as and for the purpose specified.

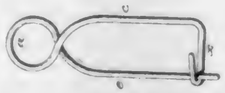
295,751. ROTARY PUDDLING-FURNACE. JESSE HALL, Jr., Phœnixville, Pa., assignor to the Phœnix Iron Company, same place. Filed June 22, 1883. (No model.)



Claim.—1. The combination of the puddler and a fixed vertical chimney, open at the bottom, with the pivoted or suspended flue structure C, having an opening at the top communicating with the said chimney, and a lateral opening communicating with the outlet of the puddler, all substantially as set forth.

2. The combination of the fixed chimney, open at the bottom, the rotary puddler, and the flue structure pivoted or loosely suspended beneath the chimney at *y*, so that there shall be a preponderance of the structure tending to keep it away from the puddler, with devices for forcing the lower portion of the structure against the outlet end of the puddler, all substantially as specified.

295,752. TAG OR LABEL HOLDER. ALEXANDER HANVEY, Steubenville, Ohio, assignor of one-half to William Scott, same place. Filed Feb. 11, 1884. (No model.)



Claim.—An improved spring tag or label holder, consisting of a single piece of wire bent to form the eye *a*, and two parallel prongs, *c c*, one of which is bent at its end to form the hook *x*, and the other extending beyond the hook and adapted to rest therein, all substantially as set forth.

295,753. GATE-LATCH. JOHN B. HASENOHR, Terre Haute, Ind. Filed Jan. 14, 1884. (No model.)

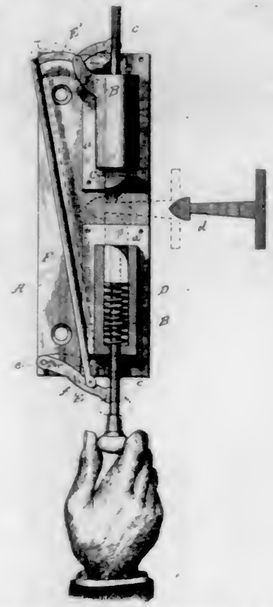
Claim.—1. The shells provided with the inwardly-closing bolts, and the springs located in said shells, for actuating the bolts toward each other, in combination with the levers E E' and rod F, connecting the outer ends of said bolts, substantially as described.

2. The upper and lower shells having the springs and bolts located and working therein, as described, the upper shell having lugs B', in combination with lever E, rod F, and the lever E', fulcrumed at said lugs, all connected substantially as and in the manner described.

3. The upper and lower shells having the springs and the bolts located therein, and formed with the slotted shanks, as described, said upper shell having the lugs B', in combination with the levers E E', having one of their ends rounded and extending through the slots in the bolt-shanks, and the rod F, connecting said levers, substantially as shown and set forth.

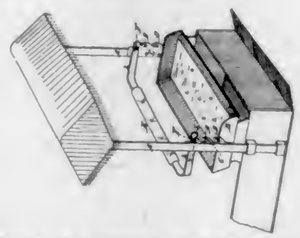
4. The plate A, having screw-holes, and the plates *a* secured thereto, the shells B, attached to said plates *a*, and formed substantially as shown, the springs and the bolts working in said shells, the lower one of which is provided with the knob, in combination with the levers E E', pivoted and connected with the bolt-shanks, as described, the rod connecting

295,753.



said levers, and the spear-shaped latch, all substantially as and for the purpose set forth.

295,754. VEHICLE-SEAT. GEORGE B. HASKELL, Salem, Mass. Filed Aug. 23, 1883. (No model.)



Claim.—1. The combination, with the seat B, of the standards A A at the ends of the seat, the back E, having the rigid arms 2 2, and means for detachably securing the said arms to the standards, whereby the back is supported independently of the seat, as set forth.

2. The combination, with the seat B, of the end standards, A A, having the plates C, containing vertical series of slots, and the back E, and means for detachably engaging the arms of the back with any of said slots, whereby the back is made vertically adjustable, as set forth.

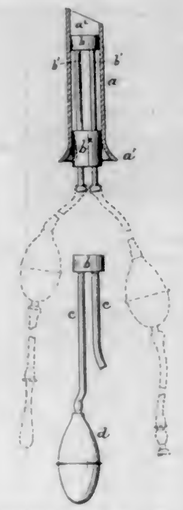
3. The combination, with the seat B, of the end standards, A A, having the slotted plates C, and the back E, having the bolts F and their clamping-nuts, whereby the back is adapted to be detachably secured at different heights to said plates, as set forth.

295,755. VAGINAL SYRINGE. JAMES A. HAWLEY, Canandaigua, N. Y. Filed Nov. 15, 1881. (Model.)

Claim.—1. The improved vaginal syringe hereinbefore described, wherein an ordinary speculum or vaginal tube is fitted with a plug inclosing two pipes of suitable lengths, in combination with compressible and expansible induction and eduction bulbs, whereby water may be injected and forcibly withdrawn as rapidly as injected, substantially as set forth.

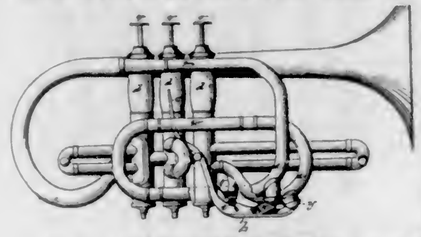
2. The combination, with a speculum or vaginal tube, of the plug *b*, fitted to the inner end of the speculum, the inflexible pipes *b' b'*, having their inner ends inclosed by and flush with the inner face of plug *b*, and having their opposite ends projected out of the opposite end of the speculum, a supporting-plug, *b²*, fitted to the outer end of the speculum and around the pipes *b' b'*, and induction and eduction bulbs, whereby water

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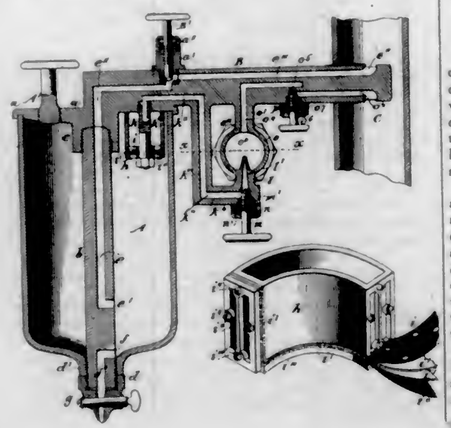
may be injected and forcibly withdrawn as rapidly as injected, substantially as described.

295,756. WATER-KEY FOR BRASS MUSICAL INSTRUMENTS. JOHN HEALD, Springfield, Mass. Filed Oct. 19, 1883. (No model.)



Claim.—In a brass musical instrument, the water-key *b*, having its shank extending upward from its pivot-point and terminating at or near the sides of the piston-tubes *d*, substantially as set forth.

295,757. LUBRICATOR. NATHAN H. HEFT, Valley, N. J. Filed Sept. 11, 1883. (No model.)



Claim.—1. The within-described method of lubricating, consisting in admitting steam under boiler-pressure to a body of oil and forcing the oil through an obstructing body or filtering medium placed in the exit-port by the difference in steam-pressure existing at the two sides of said obstructing body, as set forth.

2. The within-described method of lubrication, consisting in forcing oil to the point of application by subjecting different parts of the apparatus and its connections to unequal steam-pressures.

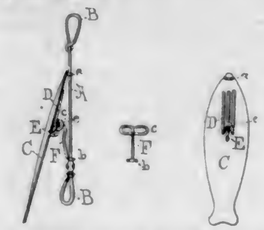
3. The combination of an oil-cup having a port leading thereto from the steam-pipe, a box, and a filtering medium, said box having a port leading therefrom to said steam-pipe, substantially as set forth.

4. The combination of an oil-cup having a port leading to its lower end from the steam-pipe, a box and filtering medium at the upper part of the cup, having a port leading therefrom, a transparent vessel in said port, and having a port leading to the steam-pipe, and suitable valves, substantially as set forth.

5. The lubricator-cup combined with the box A, having open sides, and a suitable filtering material, substantially as set forth.

6. The lubricator-cup combined with the box A, having open sides, and a filtering medium, and gauze, substantially as set forth.

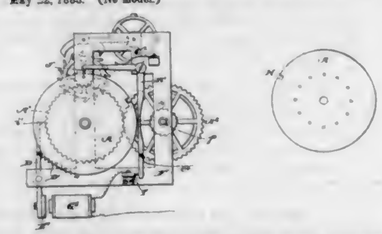
295,758. SPOON-BAIT. CHARLES B. HIBBARD, Grand Rapids, Mich. Filed June 28, 1883. (Model.)



Claim.—1. The combination of the wire A, the spoon C, the spring D, secured to the spoon, and the independent lever F, connected to the spring at one end, as described, and at the other to the wire A.

2. The combination, with the wire A and sliding lever F, of the sliding revolving spoon C, having the doubled spring-rod D and stop E, substantially as described.

295,759. ELECTRIC FIRE-ALARM. JOHN HILL, Columbus, Ga. Filed May 22, 1883. (No model.)



Claim.—1. The combination, with wires composing a single circuit, of one or more branch wires connected therewith, a series of automatic circuit-closers located at different points in the main or in the branch wires, a station-clock located in each branch, and an indicator-clock located at the point where the alarm is sounded, both set in motion by the making of the circuit, and arranged to have equal movement, the index-hand of the latter being arrested by the breaking of the circuit in the station-clock, substantially as described.

2. A station-clock for automatic electric fire-alarms, consisting of a train of clock-gearing comprising a one-minute gear, the whole being actuated by a spring and governed by the ordinary escapement, a disk divided into equal parts and having a notch in its periphery opposite one of said parts, a spring-actuated lever resting upon the periphery of said disk and making the circuit while in that position, but breaking it upon engaging with the notch in the disk, a detent-lever, which engages with and arrests the one-minute gear, and an electro-magnet, by which, when the circuit is made at any point upon the line, the armature of said detent is attracted and the gearing released, substantially as described.

3. The combination, with the gear A' and disk A, having a notch, H, of the spring-actuated lever B', having electrical contact at T, the spring-actuated detent D, having an armature, E', and the magnet G^2, substantially as described.

4. A fire-indicator clock consisting of an index mounted upon the

spindle of the one-minute hand, a train of clock-gearing driven by a spring, a spring-actuated detent-lever engaging with said gearing, an electro-magnet energized by the closing of the circuit and attracting an armature on said lever, thereby releasing the gearing, and electrical connections with a station-clock having similar and simultaneous movement, and provided with means for breaking the circuit after a predetermined portion of a revolution has been made, whereby the magnet in the indicator-clock releases the spring-detent which arrests the gearing at the instant of breaking the circuit and simultaneously with the stopping of the station-clock, substantially as described.

5. The combination, with the wires N P, of the branches 1 2 3, &c., in each of which are arranged a series of automatic circuit-closers, a device at the terminals of each branch, whereby the circuit may be broken or made at pleasure and a suitable alarm placed in circuit at any desired point, substantially as described.

6. The combination of the disk A, having a notch, H, in its periphery, and the spring-actuated lever B', having its end resting upon the disk and completing the circuit, with an electro-magnet, G², while in said position, said circuit being broken and the disk arrested by the engagement of the lever with the notch H, substantially as described.

7. The combination, with the station-clock having disk A, provided with notch H, and the spring-actuated lever B', of the fire-indicator clock having an index mounted upon the spindle of the one-minute gear, a spring-actuated detent-lever engaging with said gear, and an electro-magnet, which, when energized, attracts the armature upon said lever and releases the gear, substantially as described.

8. The combination, with the wires N P, having a series of automatic circuit-closers interposed at various points, of a relay in the primary circuit, a vibratory bell actuated by the relay-battery, the armature-lever of the relay being provided with a detent-pawl and mounted upon a notched arm, whereby it is held in engagement with the magnet, and the secondary circuit remains completed after the primary circuit is broken, substantially as described.

295,760. AUTOMATIC FIRE-ALARM. JOHN HILL, Columbus, Ga. Filed Sept. 10, 1883. (No model.)



Claim.—1. In an automatic fire-alarm, the combination of two conductors, one of which is composed of an elastic metal, with a metallic disk, means for supporting the disk in a stationary position at one side of the elastic conductor, and a fusible joint connecting the latter with the stationary disk, to hold the said elastic conductor out of contact with the other conductor, substantially as described.

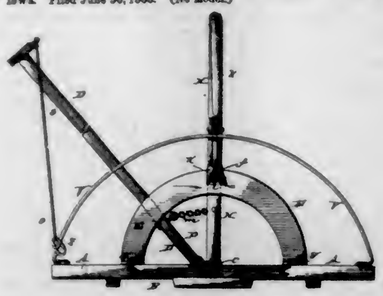
2. An automatic circuit-closer contained in a closely-sealed case, and consisting of electric connections which enter said case and are normally in contact, but which are held out of contact by a fusible plug which enters and seals an aperture in the top, from which it is exposed, substantially as described.

3. An automatic circuit-closing device, consisting of the conductors K and L, having suitable contact-points, said points being contained within a casing, *a a'*, and being held out of contact by means of a fusible plug, X, exposed upon the outside of said casing *a*, substantially as described.

4. The combination, in an automatic fire-alarm, of a case having a recess, a sensitive disk having a convex center and a flat surrounding margin, and arranged in the recess, the conductors, and a fusible joint, substantially as described.

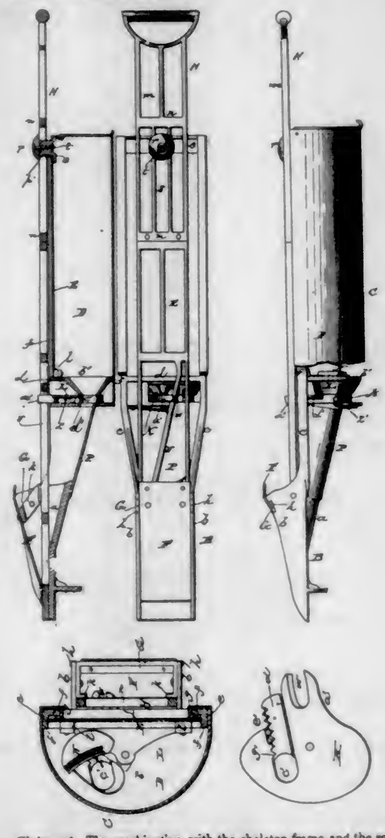
5. The combination, in an automatic fire-alarm, of a disk having a perforation, a conductor, L, having a contact-point, an elastic conductor having a contact-point on one side and a projection on the opposite side, and a fusible plug passing through the perforation in the disk for connecting the said projection with the disk, substantially as described.

295,761. LAND-MARKER. ARTHUR W. HITCHCOCK, Parkersburg, Iowa. Filed June 30, 1883. (No model.)



Claim.—The combination, with the gage-bar D, connected by a link-joint, *c*, to the bar B, to be moved freely in any direction, and connected to the arched runner-bar V by a rope, *s*, of the operating-lever H, having the spring-catch *k*, and a flexible connection with the gage-bar D and a sliding connection with the arch E, whereby the movement of the gage D, when in contact with the ground, is independent of the lever H, substantially as specified.

295,762. HAND SEED-PLANTER. ALBERT HOAG, Pearl, Vt. Filed Nov. 14, 1883. (No model.)



Claim.—1. The combination, with the skeleton frame and the seed-chamber thereon, of the open-top shoe at the lower end of the frame, and separated from the base of the seed-chamber by an interval, so that its contents can be inspected, substantially as specified.

2. The combination, with the shoe and spring-plate, of the transverse bar to which the spring-plate is riveted, having arms extending toward the back of the shoe to serve as guides for the plunger.

3. The feed-block located in the valve, and having a flat shank made with a serrated edge, in combination with a tooth of the valve-body and a holding device, whereby the feed-block can be adjusted to increase or lessen the size of the seed-chamber in the valve, substantially as specified.

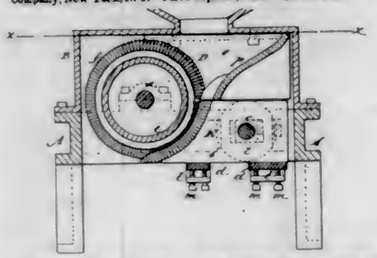
295,763. CAR-COUPLING. EDWARD HUBER and HENRY M. BARNHART, Marion, Ohio. Filed Nov. 27, 1883. (No model.)

Claim.—The combination of a draw-head having the usual vertical perforation for the pin, provided at the rear side of its upper portion with a recess, and having a longitudinal recess forming a narrower slot at its upper side, the forward end of the said slot entering the lower end of the recess in the pin-receiving perforation, a spring-actuated block having a forwardly-projecting lip and an upwardly-projecting lip upon its upper side, and a common coupling-link and pin, as and for the purpose shown and set forth

295,763.



295,764. GRINDING-MILL. HENRY HUNGERFORD, Norwalk, Conn., assignor, by mesne assignments, to the United States Cotton Seed Cleaning Company, New York, N. Y. Filed Sept. 15, 1881. (No model.)

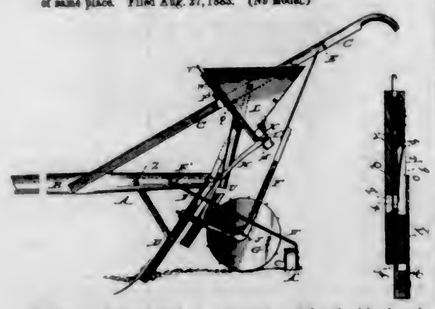


Claim.—1. The combination of the revolving grinder composed of the cylinder *e* and rings *f*, provided with grinding-faces arranged upon the cylinder and held in place by the end disks, *g*, as described, with the grinder E, composed of a series of plates bolted together with grinding-faces corresponding to those of the revolving grinder, and adjustable thereto, both horizontally and vertically, substantially as described.

2. In a grinding-mill, the revolving grinder D, in combination with the grinder E, composed of plates *b*, tied together by rod *c*, and provided with grinding-faces corresponding to the revolving grinder D, said grinding-faces being adjustable vertically by means of set-screws *m* in the hangers *l*, substantially as described.

3. In a grinding-mill, the combination of a revolving grinder, D, and the grinder E, composed of plates and tie-rod *c*, as described, the said rod *c* having its bearings in adjustable blocks in the frame, substantially as described.

295,765. SEED-PLANTER. WILLIAM LANE HUTSON, St. Lawrence, N. C., assignor of one-half to THOMAS A. BROOKS and NOAH R. HARRIS, both of same place. Filed Aug. 27, 1883. (No model.)

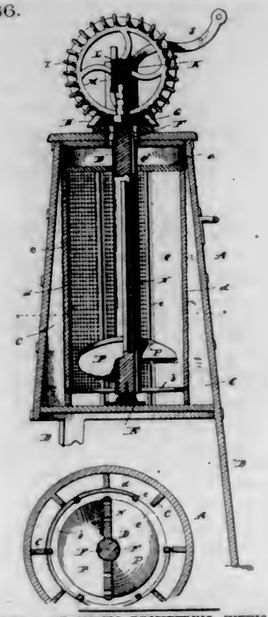


Claim.—The combination, with the plow, of the wheel having pins J, the bent lever H, having bifurcations bent outward from each other and arranged in engagement with said pins, the hopper L, the dropping-slide K, having tongues L' and M, formed as described, and the case Q and plate V, substantially as shown and described.

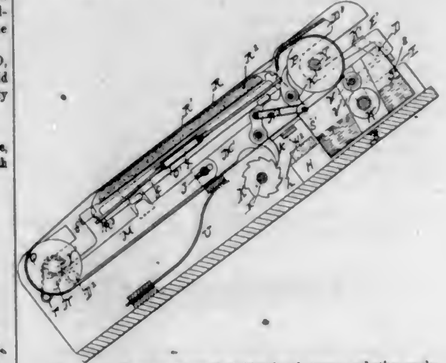
295,766. CHURN. ADOLPHUS JACKSON, Frederick, Md. Filed Oct. 10, 1883. (No model.)

Claim.—The combination, with the churn-vessel having vertical wings on the inside and a detachable foraminous cylinder located therein, of the vertical shaft provided with perforated dasher-blades, and a propeller-screw near the bottom, with suitable mechanism whereby said shaft may be rotated, substantially as and for the purposes specified.

295,766.



295,767. AUTOMATIC REGISTERING INKING APPARATUS. JOSHUA W. JONES and ALBERT COOPER, Harrisburg, Pa. Filed Aug. 13, 1883. (No model.)



Claim.—1. In an apparatus for inking hand-stamps and other analogous forms, an endless ink-distributing belt, in combination with bed having reciprocatory vertical movements arranged between stretches of said belt, and actuated by mechanism, substantially as described, by blows of an independent hand-stamp while inking it, to present successive portions of said belt freshly inked automatically from an ink-fountain, substantially as set forth.

2. In an apparatus for inking hand-stamps and other analogous forms, the combination of an endless ink-distributing belt, suspended upon rolls whose distance apart is regulated by elastic tension, a bed supported between stretches of said belt, upheld and guided to permit it to have vertical reciprocatory movements in sustaining the blows from a hand-stamp, and mechanism, substantially as described, connecting said bed and rolls, for propelling said belt automatically, driven by said imparted blows in inking said stamp, substantially as set forth.

3. In an apparatus for inking hand-stamps and other analogous forms, an endless ink-distributing belt, in combination with mechanism, substantially as described, for moving it automatically by the impulses of a hand-stamp in inking the same on said belt, with the mechanism set forth registering the number of said impulses, and with mechanism, substantially as described, connecting the belt-moving mechanism with the

registering mechanism, substantially as herein set forth.

4. The endless ink-distributing belt E and the reciprocating bed L, in combination with the drive-roll P, the yielding stretcher-roll Q, the bands N, and sleeves *p*, applied to the journals Y' of the latter roll, for holding the same, thereby to give compensative tension to said belt or belt-surface, and permit portions of it and the bed L, inclosed between stretchers of it, to move vertically without overstraining said belt, substantially as and for the purposes set forth.

5. The reciprocatory pivoted levers M', having the pawls *k'*, pivoted thereto and united by the slip-joints J' D' to the co-operating levers M, pivoted likewise to the sides A, in combination with the supporting-springs U, under said levers, the equipped bed L R' R², the belt R, the rolls Q P, the ratchets Z on the latter, and stops *h h'*, all arranged and co-operating to convert the reciprocatory vertical movements of said bed derived from impulses of a hand-stamp into rotary motion, for propelling said belt or belt-surface automatically, substantially as set forth.

6. The reciprocatory pivoted levers M M', connected in operation by the joints J' D', and connected by pawls *k k'* thereon with the ratchets Z on the drive-roll P, and with the staggered ratchets K, in combination with the reciprocatory equipped bed L R' R², the belt R, the yielding roll Q, the limiting-stops *h h'* on sides A, and shaft K', with indices, all arranged and operating to propel both said endless belt and registering device automatically and alternately, as set forth.

7. The combination of the bed L, with guides F thereon, and pad R' R², the reciprocatory supports M M', the pawls *k'*, the stops *h h'*, the springs U, the inking-belt R, the rolls Q P, the ratchet Z on the latter, all arranged in and on casing A B, and certainly coacting to propel said belt only the instant after the hand-stamp giving it impetus to move is withdrawn therefrom, substantially as set forth.

8. The combination of the bed L, having slots X in flanges thereon below and ledges *f²* on its ends, the tympan-holders *f f' f²*, having their limbs *f''* united by bands O', the blanket R², and tympan R', secured on said bed, in the manner herein set forth, for the purpose specified.

9. The combination of the endless ink-distributing belt or belt-surface R, the ink fountain or vessel S S', the duck-roller W, the distributing-roller V, and the adjustable band N', all co-operating to automatically maintain the supply of ink on said belt and to regulate the quantity distributing thereon, substantially as set forth.

10. The combination of the endless ink-distributing belt R, with the rolls P Q, with the ink-fountain S S', its rollers W V, and regulating elastic connector N', with the bed L, equipped with blanket R², tympan R', tympan-holders *f f' f²*, and bands O', and supported on the levers M M' and springs U, and with ratchets Z and pawls *k'* on the said levers, which latter are duly limited in their movements, all co-operating to propel said belt and keep ink perfectly distributed thereon automatically, as and for the purpose set forth.

11. The combination of the endless ink-distributing belt R, mounted compensatingly for stretching or contracting on rolls P Q, of variable distance apart, the ink-fountain S S', with rollers W V therein, connected by band N' of adjustable tension, to regulate the supply of ink on said belt, the equipped bed L R' R² *f f' f²*, the supports M M' U & *h'*, ratchets K Z, pawls *k k'*, shaft K', and registering-indices, all mounted and co-operating as and for the purposes set forth.

295,768. COUNTING-REGISTER. JOSHUA W. JONES and ALBERT COOPER, Harrisburg, Pa. Filed Nov. 1, 1883. (No model.)



Claim.—1. The combination, with the ratchet-wheel, driving-pawl, and units-wheel, of the back plate provided with a series of equally-inclined studs, each having a circular rib concentric therewith, with the plane of its edge at right angles to the axis of the stud, and a series of registering-wheels mounted on said studs and kept upon said ribs, substantially as and for the purposes set forth.

2. The combination, with the ratchet-wheel, driving-pawl, and units-wheel, of the back plate provided with a series of equally-inclined studs, each having a circular rib concentric therewith, with the plane of its edge at right angles to the axis of the stud, and a series of overlapping Geneva-stop registering-wheels mounted on said studs, each having its driven teeth on its under side, said teeth being kept upon the circular rib and constituting a bearing for the wheel, whereby the wheels are prevented from twisting out of line and out of gear with each other when the keeper is closed against them, substantially as and for the purposes set forth.

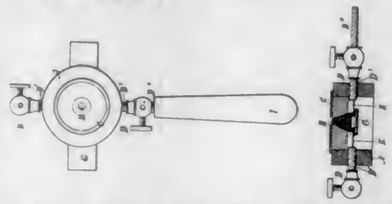
295,769. BUTTON. PHILIP KALISH, Chicago, Ill. Filed June 8, 1883. (No model.)

Claim.—1. The combination, with the shank *a* of a button, provided with parallel notches *b b*, of the fastener formed of the members *d d'*, connected by a neck, *l*, and whereof the center of the part *d* is provided with a hole, *g*, and the part *d'* with the holes *e* and slot *f*, adapted for use as set forth.



2. In combination with the shank *a*, provided with parallel notches *b b* and cone *c*, the fastener formed of the parts *d d'*, connected by a neck, *l*, and whereof the center of the part *d* is provided with a hole, *g*, and near its circumference with a hole, *e*, connected with a slot, *f*, extending to or beyond the center of the part *d'*, adapted for use as set forth.

295,770. MICROSCOPE. WILLIAM K. KIDDER, New York, N. Y. Filed Feb. 9, 1884. (No model.)

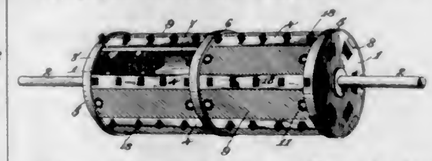


Claim.—1. The combination, substantially as hereinbefore described, with the body or frame and the lens of a microscope, of the binding-posts arranged on the body, and constructed with electrodes which project inward to a point opposite the lens, substantially as and for the purpose described.

2. The combination, as hereinbefore described, with the body and the lens of a microscope, of the binding-posts arranged on the body, and constructed with inwardly-projecting electrodes, and the handle connected to one of the posts, substantially as and for the purpose described.

3. The combination, substantially as hereinbefore described, with the body or frame A, of the binding-posts arranged on the body, and constructed with electrodes which project inward to a point opposite the lens, substantially as and for the purpose described.

295,771. CYLINDER FOR CLOVER-HULLERS. HORATIO N. LAND and HOWARD CAMPBELL, Richmond, Ind., assignors to GEAR, SCOTT & COMPANY, same place. Filed Jan. 7, 1884. (No model.)



Claim.—1. The combination, in a clover-hulling cylinder, of the cylinder-heads having lugs on their inner sides, the longitudinal lags, the detachable rubber-teeth thereon, the rubbing-plates extending longitudinally between the lags and detachably connected to the lugs, substantially as described.

2. The combination, in a clover-hulling cylinder, of the cylinder-heads having lugs on their inner sides, the longitudinal lags, the rubber-teeth having shanks projecting through the lags, the nuts holding the rubber-teeth, and the rubbing-plates extending longitudinally between the lags and detachably connected to the lugs, substantially as described.

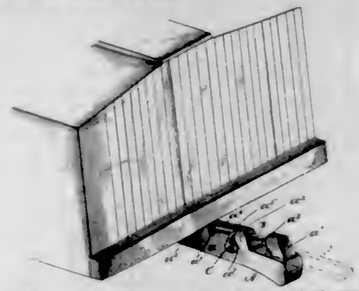
3. The combination of the cylinder-heads, having lugs on their inner sides, the lags, the rubber-teeth detachably secured in the lags, the rubber-plates extending longitudinally between the lags, and the screws connecting the plates to the lugs, substantially as described.

295,772. ORNAMENTAL CHAIN-LINK. SIGMUND L. LEDERER, New York, N. Y. Filed Oct. 19, 1883. (Model.)



Claim.—The combination, with the wire links *a a* and the links *a' a'*, of the coiled-wire spring *b*, constructed to allow the link to be extended, as described.

295,773. CAR-COUPLING. SAMUEL D. LEE, Mechanicsville, Iowa. Filed Jan. 18, 1884. (No model.)



Claim.—1. The combination, with a draw-head having top projections and provided with guide-perforations and with laterally-extending grooves, of a longitudinal coupling-pin adapted to slide longitudinally in the guide-perforations, and to turn therein, so as to engage the lateral grooves, substantially as and for the purpose set forth.

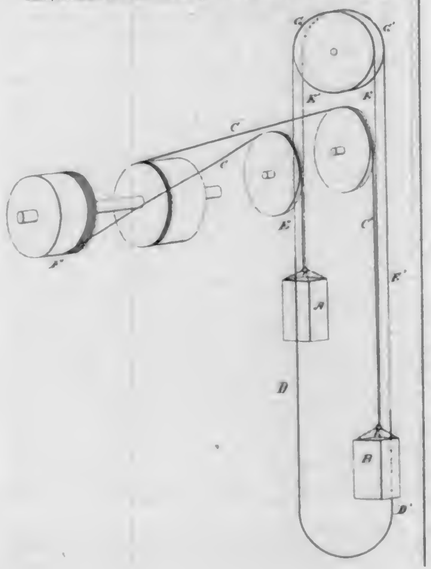
2. The combination, with a draw-head having two top projections provided with perforations on an inclined plane, of a longitudinal coupling-pin sliding in these perforations and retained thereby, substantially as set forth.

3. The combination, with a draw-head having top projections, and a guideway terminating in lateral grooves, of a longitudinally-sliding coupling-pin engaging the projections, and provided with a lateral handle engaging said grooves, substantially as and for the purpose set forth.

4. A car-coupling embodying the draw-head, provided with the front projection or head, the projection in rear of this, the groove having the lateral end grooves and the intermediate guideway, and the longitudinal coupling-pin sliding in the projections and provided with the lateral handle, substantially as set forth.

5. The combination, with the draw-head having the front head or projection, the projection in rear thereof, the rear wall, the guideway extending between the middle projection and the rear wall, and terminating in lateral grooves at each end, the cylindrical perforations extending on the same plane through the projections and into the rear wall, and the groove at one side of the guideway, of the cylindrical coupling-pin adapted to slide longitudinally in the said perforations, and to turn therein, and provided with a lateral handle engaging one of the said lateral grooves, substantially as set forth.

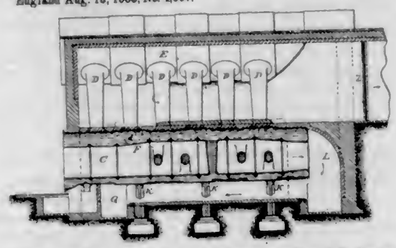
295,774. WINDING APPARATUS FOR MINES. ARTHUR LINDENBERG, Dortmund, Prussia, Germany. Filed Jan. 28, 1884. (No model.)



Claim.—1. In a winding apparatus for mines, the combination, with the counterbalance rope or chain D D', of the suspension rope or ropes E E', passing over sheaves G G', and attached to the rope or chain D D' while being brought in relation to a movable portion of the apparatus adapted to draw upon the suspension-rope attached to the part of the rope or chain D D' which is to be raised, substantially as and for the purpose described.

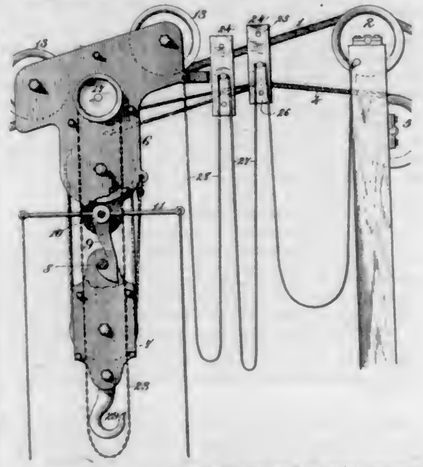
2. The combination, with the counterbalance rope or chain D D', of the suspension-ropes E and E', passing over the sheaves G and G', and attached with one of their ends to the rope or chain D D', and with their other ends respectively to the top of the cages B and A, substantially as hereinbefore specified.

295,775. STEAM-GENERATOR. FOUNTAIN LIVET, London, County of Middlesex, England. Filed Oct. 13, 1883. (No model.) Patented in England Aug. 18, 1883, No. 4,007.



Claim.—The combination of boiler-tubes A, B, and E, the latter supported by the first two, with flues N, R, T, and U, and expansion-chambers L and R, the said flues and chambers being of successively increased sectional area, substantially as described.

295,776. HOISTING AND CONVEYING APPARATUS. MILO W. LOCKE, Baltimore, Md., assignor of one-half to R. SNOWDEN ANDREWS, same place. Filed Jan. 17, 1884. (No model.)



Claim.—1. The combination, in a hoisting and conveying apparatus, of a cable, a carriage to travel thereon, gripping devices on said carriage for stopping and holding the carriage while both loading and unloading, a tackle-block, and a fall-rope connecting the carriage and the tackle-block, and serving to raise and lower the latter, and also acting as a draft medium for moving the carriage on the cable, substantially as described.

2. The combination, in a hoisting and conveying apparatus, of a cable, a carriage to travel thereon, gripping devices on said carriage for stopping and holding the carriage while both loading and unloading, a tackle-block, means whereby the tackle-block may be connected with and supported by the carriage, and a fall-rope connecting the tackle-block and carriage, and serving to raise and lower the tackle-block, and also acting as a draft medium for moving the carriage on the cable, substantially as described.

3. The combination, in a hoisting and conveying apparatus, of a cable, a carriage to travel thereon, gripping devices on said carriage for

grasping the cable and stopping and holding the carriage while both loading and unloading, a tackle-block, means for detachably connecting the tackle-block with and supporting it on the carriage, and a fall-rope acting to move the carriage on the cable, and also to raise and lower the tackle-block, substantially as described.

4. The combination of a cable, a carriage to travel thereon having a swinging hook, a tackle-block having a bolt or rod to engage and disengage the hook, gripping devices on said carriage for stopping and holding the carriage while both loading and unloading, and a fall-rope for raising and lowering the tackle-block, and also serving as a draft medium for moving the carriage on the cable, substantially as described.

5. The combination of a cable, a carriage to travel thereon, a pulley-block detachably connected with the carriage, a fall-rope for moving the carriage on the cable and raising and lowering the pulley-block, and fall-rope carriers moving on the cable, substantially as described.

6. The combination of a cable, a carriage to travel thereon, a tackle-block, means for connecting the tackle-block with and supporting it on the carriage, and a fall-rope connecting the carriage and tackle-block to raise and lower the latter, and having a branch connected with the carriage, and of such length that when the tackle-block is raised sufficiently to engage it with the carriage the draft-strain is thrown upon the branch to move the carriage on the cable, substantially as described.

7. The combination of the traveling carriage, the rock-shaft, the hook thereon, the pulley-block having means to engage the hook, and the fall-rope connecting the carriage and pulley-block, for moving the carriage on its support and raising and lowering the pulley-block, substantially as described.

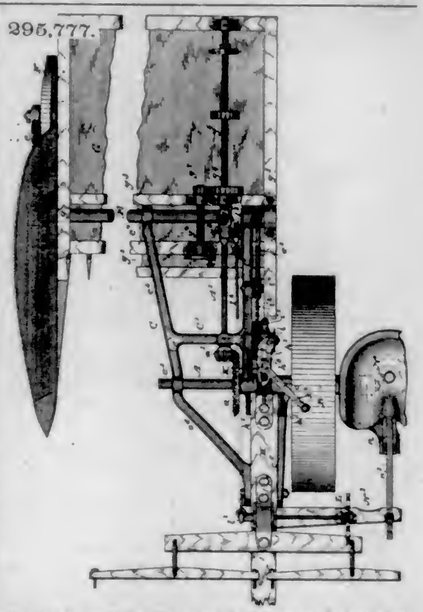
8. The combination of a cable, a carriage to travel thereon, a rock-shaft mounted in the carriage and carrying a hook, arms extending from said shaft to rock it, a tackle-block having a bolt or rod to engage and disengage the hook, and a fall-rope passing around pulleys both in the carriage and tackle-block, and acting both to raise and lower the tackle-block, and to move the carriage on the cable, substantially as described.

9. The combination of the cable, the carriage thereon, the cable-grip, the swinging hook on the carriage, the tackle-block having means to engage the hook, and the fall-rope for moving the carriage on the cable and raising and lowering the pulley-block, and having a branch connected with the carriage, and of such length that when the tackle-block is raised and engages the hook the draft is thrown upon the branch to move the carriage on the cable, substantially as described.

10. The combination of the cable, the carriage thereon, the tackle-block, means for detachably connecting the tackle-block with and supporting it on the carriage, the fall-rope connecting the carriage and tackle-block, to raise and lower the latter, and also move the carriage on the cable, the gripping-jaws pivoted directly on said carriage, the toggle-levers connecting the ends of the jaws, a screw-collar secured to the connected ends of the toggle-levers, the screw-shaft passing into the screw-collar, the grip-wheel on the screw-shaft, and means for operating the wheel, substantially as described.

11. The combination, with the cable or track way, the carriage thereon, hoisting mechanism connected with the carriage, the fall-rope, and the endless rope or cable, substantially as described.

295,777. HARVESTER. SYLVANUS D. LOCKE, Hoosick Falls, N. Y. Filed Apr. 3, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the main axle, the driving or carrying wheel thereon, the main or wheel frame mounted on the axle, a rock-shaft turning in bearings afforded by the rear end of said frame, a platform mounted upon said rock-shaft as a journal or axle, an arm extending rearward from said rock-shaft at its outer end and supporting the grain-wheel, a second arm extending forward from said rock-shaft at or toward its inner end, and a connection between said second or lever arm and adjusting mechanism upon the wheel-frame, whereby the rock-shaft may be oscillated to raise and lower the platform.

2. The combination, substantially as hereinbefore set forth, of the main axle, the drive-wheel mounted thereon, the main or wheel frame mounted on the axle, the rock-shaft journaled in the rear end of the main frame and supporting the platform, a grain wheel or caster carried by a rearwardly-extending arm at the outer end of said rock-shaft, a forwardly-extending lever-arm at or toward the inner end of said shaft, a draft-tongue hinged to the front of the main frame and extending rearwardly from the pivotal point, a bracket-casting or other means of attachment on the heel of said draft-tongue, and connections between said bracket, said lever-arm, and a common controlling instrumentality, whereby the rock-shaft may be oscillated in its bearings and the draft-tongue simultaneously flexed upon its pivot in such relation as to raise the platform, preserving its parallelism.

3. The combination, substantially as hereinbefore set forth, of the main axle, the drive-wheel mounted thereon, the main frame mounted on the axle, a rock-shaft journaled in the rear end of the main frame and supporting the platform, a grain wheel or caster carried by a rearwardly-extending arm at the outer end of said rock-shaft, a forwardly-extending lever-arm at or toward the inner end of said shaft, a draft-tongue hinged to the front of the main frame and extending rearwardly from the pivotal point, a bracket-casting or other means of attachment on the heel of said draft-tongue, chains extending from said bracket and from said lever-arm to properly-proportioned pulleys or winding-drums upon the main frame, and mechanism for rotating said pulleys to wind up or let out said chains, and thereby raise or lower the harvester-platform.

4. The combination, substantially as hereinbefore set forth, of the main axle, the drive or carrying wheel mounted thereon, a main frame sleeved upon the axle inside the carrying-wheel, a platform hinged to the main frame at its rear end, a draft-tongue hinged to said frame at its front end in advance of its connection with the axle, means for simultaneously changing the angle between draft-tongue and main frame and platform and main frame, to raise and lower said platform, a seat and its support sleeved to the axle outside of the drive-wheel, and a brace-rod extending from said seat to an adjustable connection with the tongue or a foot-rest offset therefrom.

5. The combination, substantially as hereinbefore set forth, of the main axle, the drive or carrying wheel mounted thereon, the main frame mounted on the axle, a rock-shaft borne in bearings at the rear end of the main frame, a grain-wheel mounted upon a rearwardly-extending arm from the outer end of said rock-shaft, a forwardly-extending lever-arm at or toward the inner end of said rock-shaft, a draft-tongue pivoted to said main frame in advance of the axle and extending rearwardly between guide-ears, which permit it to play in a vertical plane, and connections between the heel end of said draft-tongue, the free end of the lever-arm, and a common controlling instrumentality, by which the draft-tongue can be vibrated upon its pivot and the rock-shaft simultaneously oscillated in its bearings, to change the angle between the draft-tongue and frame and the platform and frame, and raise and lower said platform.

6. The combination, substantially as hereinbefore set forth, of the main axle, the drive or carrying-wheel mounted thereon, the main frame mounted on the axle, a rock-shaft mounted in bearings at the rear end of the frame, and having at its outer end a rearwardly-extending arm to support the grain-wheel, and at its inner end or length a forwardly-extending lever-arm, a platform supported upon said rock-shaft as a journal or axle, a tongue hinged to the main frame in advance of the main axle, and extending rearwardly from said pivot to vertical guides or keepers, between which its heel end plays and is steadied, a bracket-casting secured to said heel end, a worm-shaft extending down from about the height of the seat and turning in bearings upon the main frame, a crank at the upper end of said shaft to be operated by the driver, a worm-pinion meshing with the worm at the lower end of said shaft, and turning on a stub-axle projecting from the main frame, and properly-proportioned winding-drums fixed to said pinion to turn therewith, one receiving a chain from the bracket-arm at the rear of the tongue, and the other a chain from the lever-arm extending forwardly from the rock-shaft.

7. The combination, substantially as hereinbefore set forth, of the main axle, the drive-wheel turning loosely thereon, a clutch between said drive-wheel and axle, a main frame sleeved to the axle, a beveled gear-wheel pinned to the axle within said main frame, a platform hinged to the rear end of the main frame and carrying a transverse driving-shaft, a shaft geared with the beveled wheel by means of a beveled pinion, and extending rearwardly through the main frame to a universal-joint connection with the platform-shaft, and means for raising and lowering said platform.

8. The combination, substantially as hereinbefore set forth, of the main axle, the drive-wheel turning loosely thereon, the clutch between the wheel and axle, the main frame sleeved to the axle on the inner side of the drive-wheel, the rock-shaft mounted in bearings at the rear end of the main frame, and carrying in a crank-arm at its outer end the grain-wheel, and oscillated by means of a lever-arm at its inner end, and controlling mechanism on the main frame, the platform journaled on said rock-shaft and carrying the transverse driving-shaft, the outer crank-shaft parallel to and gearing with said driving-shaft, the beveled gear pinned or keyed to the main axle, the prime pinion with which it meshes, and the telescoping shaft extending rearwardly from said prime pinion through the main frame to a universal-joint connection with the platform driving-shaft, above or near the axis of said platform.

9. The combination, substantially as hereinbefore set forth, of the main axle, the drive-wheel mounted thereon, the main frame mounted on the axle, the rock-shaft having its bearings in the rear end of said main frame, and supporting, by means of a crank-arm at its outer end, the grain-wheel, the forwardly-extending lever-arm from said rock-shaft, a chain-connection between said lever-arm and a winding-drum on the main frame, a worm-pinion fast to said drum, and a worm-shaft controlled by the driver and meshing with said pinion, whereby the rock-shaft can be oscillated in its bearings to raise or lower the platform.

10. The combination, substantially as hereinbefore set forth, of the main axle, the drive-wheel mounted thereon, the main frame mounted on the axle, the platform hinged to the rear end of said main frame, the draft-tongue hinged to forwardly-extending arms on said frame, and steadied in rear of the pivotal point by vertical keepers, a chain-connection between the heel end of the draft-tongue and a winding-drum upon the frame, a worm-wheel fast to said winding-drum, and a worm-shaft meshing with said wheel, whereby it may be revolved by the driver, to cause the drum to take up or let out the chain and alter the angle of the draft-tongue to the frame.

11. The combination, substantially as hereinbefore set forth, of the main axle, the drive-wheel or carrying-wheel turning on said axle, the main frame sleeved upon the axle inside of the drive-wheel and abutting against its hub to support it against lateral displacement on that side, a tube or sleeve pinned to the axle on the outer side and abutting against the hub of the wheel on that side, to prevent its lateral displacement in such direction, and a sliding clutch-half feathered to said sleeve, and engaging with a clutch-face formed on the opposing hub, to clutch the wheel to the axle.

12. The combination, substantially as hereinbefore set forth, of the main axle, the drive or carrying wheel turning thereon, the main frame sleeved upon the axle on the inner side of said wheel and abutting against its hub on that side, a tube or sleeve pinned to the axle on the outer side of the wheel, and also abutting against the hub on that side, whereby the axle is secured against lateral displacement, a seat-support mounted upon the axle outside of said tube, and a seat carried thereon, a sliding clutch-half feathered to the sleeve inside of the seat-support and engaging with a clutch-face formed in the opposing wheel-hub, a standard projecting from the seat-support, and a clutch-lever pivoted to said standard, to operate the sliding clutch-half.

13. The combination, substantially as hereinbefore set forth, of the main axle, the drive or carrying wheel turning thereon, the main frame sleeved upon the axle on the inner side of said wheel and abutting against its hub on that side, a sleeve pinned to the axle on the outer side of the wheel, and also abutting against the hub on that side, whereby the axle is steadied against lateral displacement, a seat-support mounted upon the axle outside of said sleeve, and a seat carried thereon, a sliding clutch-half feathered to the sleeve inside of the seat-support and engaging with a clutch-face formed in the opposing wheel-hub, a standard projecting from the seat-support and formed with an inclined face, and the clutch-lever pivoted to said standard by a spring-seated bolt, and having on its shank a projection to travel over said incline and snap behind the edge of the standard, to lock the clutch-half out of engagement.

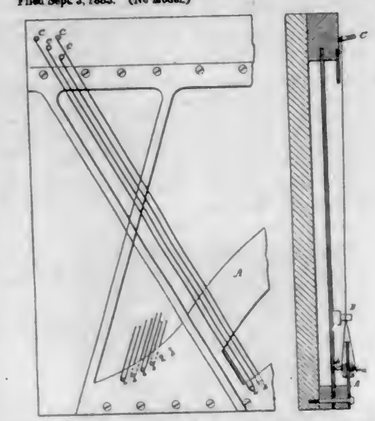
14. The combination, substantially as hereinbefore set forth, of the main axle, the drive or carrying wheel mounted thereon, the main frame mounted on the axle, the cranked rock-shaft mounted in bearings at the rear end of said frame and supporting the grain-wheel, the lever-arm from said rock-shaft, the platform mounted upon the rock-shaft as a bearing, the standard on the platform, the draft-tongue pivoted to the frame in advance of the axle and extending rearwardly from the pivotal point, connections between the lever-arm, draft-tongue, and a common controlling device, whereby said lever and draft-tongue may be simultaneously moved to change their angles with the frame and raise the platform, a lever pivoted to the draft-tongue, a segment-rack for said lever, and a link connecting the lever with the standard upon the platform, whereby said platform may be tipped and secured in the tipping adjustment.

15. The combination, substantially as hereinbefore set forth, of the main axle, the drive or carrying wheel mounted thereon, the main frame mounted on the axle, the rock-shaft mounted in bearings at the rear end of the frame and supporting the grain-wheel by a cranked arm at its outer end, a lever-arm from said rock-shaft, connected with mechanism whereby it may be vibrated to oscillate the rock-shaft, a platform mounted upon said rock-shaft as a journal or axle, and adjusted vertically as it oscillates, and means whereby said platform may be tipped and secured in any tipping adjustment independently of its vertical adjustment.

16. The cast main frame formed, substantially as described, in a single integral piece, with sleeves or bearings for the main axle, rearwardly-extending arms for the platform-connection, forwardly-extending arms for the draft-tongue connection, and vertical guides for the heel end of said tongue.

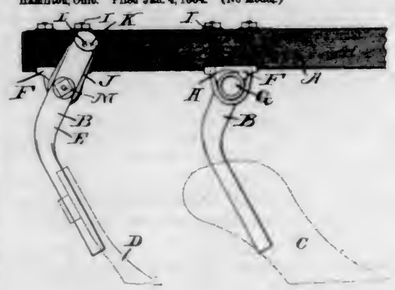
17. The main frame formed, substantially as hereinbefore described, in a single integral piece, comprising sleeves or bearings for the main axle, an arm extending rearwardly at practically right angles to said bearings, a second arm extending rearwardly at an oblique angle to said bearings to serve as a brace, a cross-arm between the two, a forwardly-extending arm at right angles to the bearings, and another forwardly-extending arm at an oblique angle, to receive the pivot-bolt of the tongue, embrace the tongue between them, and serve as bounds, vertical guides for the rear end of the tongue, and a web and ears for the attachment of the adjusting devices.

295,778. STRINGING DEVICE FOR PIANO-FORTES. JOHN E. LOMAS, New Haven, Conn., assignor of one-half to E. Shoninger, same place. Filed Sept. 3, 1883. (No model.)



Claim.—The combination of the sound-board, the frame A, arranged in a plane parallel with the sound-board, the said frame provided with pins *a* upon its outer side and pins *b* upon its under side, and so as to stand between the frame and the sound-board, the said pins *b* being intermediate between the pins *a* upon the opposite side, the agraffe B, arranged upon the sound-board, on the same side of the board as the plate, the strings attached to the pins *a* and *b*, those from the pins *a* on the one side of the frame inclining downward toward the sound-board to the agraffe, and those from the pins *b* on the opposite side inclining upward from the sound-board to the agraffe, substantially as described.

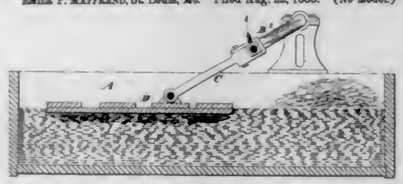
295,779. CULTIVATOR. JOHN M. LONG and CHARLES E. MCBETH, Hamilton, Ohio. Filed Jan. 4, 1884. (No model.)



Claim.—1. The combination of a tooth-shank provided with a stud of parallel form projecting at right angles from the side thereof, a beam provided with a receiving feature suited to receive said stud and permit its endwise adjustment without permitting rotation, and a clamp for drawing said stud firmly into engagement with said receiving feature, substantially as and for the purpose set forth.

2. The combination of shank B, the cylindrical ribbed sliding stud secured thereto, the saddle F, fitting said ribbed stud, the beam A, and the stirrup I, engaging the stud, the saddle, and the beam, substantially as and for the purpose set forth.

295,780. APPARATUS FOR DIPPING TOBACCO IN LICORICE. EMILE F. MAYTRAND, St. Louis, Mo. Filed Aug. 22, 1883. (No model.)

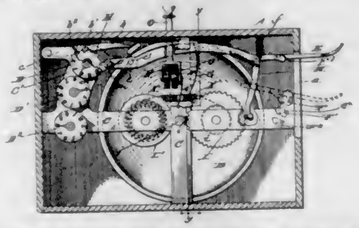


Claim.—1. The combination, with a suitable tank, of a float and means to elevate and depress the rear and of the float at the receiving end of the tank to dip the material, as set forth.

2. The combination, with a tank, of a float, a shaft having a crank supported over the receiving end of the tank, and a pitman connected to the crank and float, the whole arranged substantially as shown, whereby the float assumes an inclined position at the receiving end of the tank, and a horizontal position as it advances with the dipped material, as set forth.

3. The combination, with a tank, of a float, a crank-shaft, suitable boxes on the tank to support the crank-shaft at the receiving end thereof, and a pitman connected to the crank-shaft and float, the operating means being arranged to elevate the rear end of the float at the receiving end of the tank to form a pocket for and then dip the material, as set forth.

295,781. FARE-REGISTER. HOLMES MARSHALL, Cleveland, Ohio. Filed Oct. 31, 1883. (No model.)



Claim.—1. A register constructed substantially as described, having an inclosing-case, gong, frame C, decimal-dials, and lever E, provided with two or more graduated perforating-pins, all in combination, whereby fares paid in cash, tickets, &c., are separately registered, as and for the purpose set forth.

2. A register constructed substantially as described, having the case A, gong B, frame C, decimal-dials D D′ D², and lever E, provided with means for clearly recording each fare taken, in combination with a printing device, substantially as described, whereby each trip or half-trip may be registered.

3. In a fare-register, the case A, gong B, frame C, decimal-dials D D′ D², and lever E, provided with stud E′, having graduated needles, with the rolls I I′, paper K′, and means for causing said paper to pass from one to the other of said rolls, substantially as described.

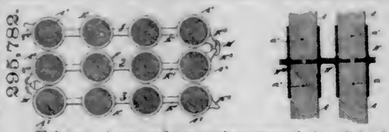
4. In a fare-register, the rod O, having bifurcated lower end, O′, and downward-projecting arm S, provided at its lower end with pawl *s*, printing-wheels N N′, pivoted between the lower bifurcated arms, O′, of the rod O, in combination with the stud R, having pawl *r*, spring *q*, paper K′, stud K, and rolls I I′, substantially as described.

5. In a register substantially such as described, the combination of the lever E, having stop F³, with the stops F F′ F², attached to the frame C, whereby the downward movement of the lever E is gaged, substantially as described.

295,782. MAT. RAFAEL MARTINEZ, New York, N. Y., assignor to Emil Gutmann and Henry Goodman, both of same place. Filed Dec. 11, 1883. (No model.)

Brief.—Consists of parallel rods of wood united in rigid sections, with flexible connections between said sections, the inner ends of the rods being received in castings.

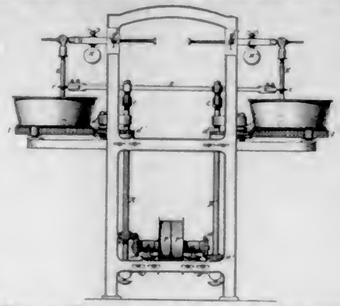
295,782.



Claim.—1. A mat or floor-covering composed of parallel rods A of wood, united in rigid sections 1 2 3, in combination with flexible connections between the several sections, all combined and arranged for joint operation substantially as herein specified.

2. In a mat, substantially as described, the parallel rods of wood, as A, made in sections, combined with the castings W, which receive the abutting ends of said sections, substantially as set forth.

295,783. MACHINE FOR SIFTING COLORS. JEAN CHARLES MATTER, Mülhausen, Germany. Filed Oct. 22, 1883. (No model.) Patented in England Sept. 25, 1883, No. 4,570, and in France Oct. 8, 1883, No. 145,527.



Claim.—1. The combination of a sieve arranged for rotation in a horizontal plane, a spindle, E, carrying a brush within the sieve, the said spindle being suitably swiveled, and mechanism, substantially such as described, for communicating rotation to the sieve in one direction and rotation to the brush in the opposite direction, substantially as described.

2. The combination of two sieves arranged for rotation in a horizontal plane, mechanism, substantially such as described, for imparting such rotation to said sieves, the two cranks C C′, the rod D, connecting said cranks and extending over the sieves, and carrying at its extreme ends the rings *c c′*, the brush-spindles E E′, carrying brushes at their lower ends, extending up through said rings *c c′*, and suspended at their upper ends by swivel-joints, substantially as described.

295,784. GAS-ENGINE. HIRAM S. MAXIM, Paris, France. Filed June 13, 1883. (No model.) Patented in France Jan. 16, 1883, No. 153,138, and in England Feb. 23, 1883, No. 999.

Claim.—1. The combination, in an engine of the kind described, of an explosion-chamber, a gas-generating chamber communicating therewith by means of a suitably-operated valve, an automatically-closed valve arranged to introduce oil into said gas-generating chamber, a spring-actuated mechanism for opening said valve, and means for setting said mechanism intermittently in operation, the action of which depends upon the movement of the engine, all as set forth.

2. The combination, with an explosion-chamber and an air-valve opening into the same, of a gas-generating chamber arranged to communicate therewith by means of a suitable valve, an oil-valve and air-inlet valve opening into said gas-generating chamber, and means for operating said valves in proper relation to each other, substantially as described.

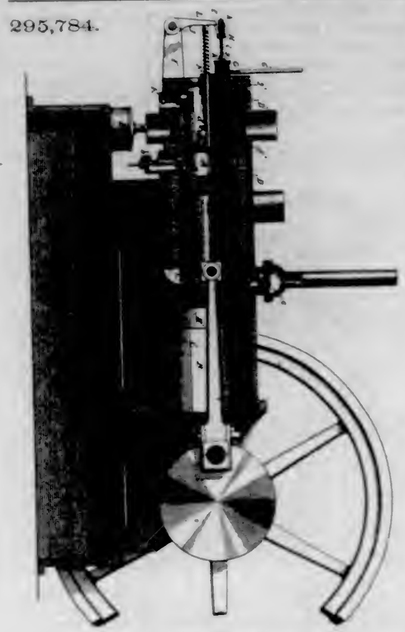
3. The combination of a vacuum or exhaust cylinder and piston, a working cylinder and piston, an automatic air-valve opening into the working-cylinder, a gas-generating chamber, a valve for controlling the admission of gas from the gas-generating chamber to the working-cylinder, and an automatic air-valve opening into the generating-chamber, all as described.

4. The combination, with the working-cylinder of an engine of the kind described, of a gas-generating chamber, a valve for admitting oil into said chamber, mechanism for opening said valve, and a governor operated by the engine for rendering said mechanism inoperative when the speed of the engine becomes too high, all as set forth.

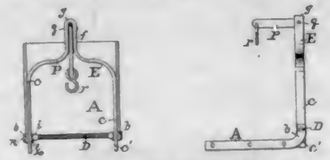
5. The combination, with the working-cylinder A and valve *b*, of the chamber *d*, valves E *a*, oil-valve G, and mechanism, substantially as described for operating the same.

6. The combination, with the working-cylinder A and valves *b a*, of the chamber *d*, air and oil valves opening into the same, and the hot-air space surrounding said chamber, all as set forth.

295,784.



295,785. FOLDING SCALE-PAN. WILLIAM MAGUIRE, Baltimore, Md. Filed Oct. 21, 1881. Renewed Dec. 20, 1883. (No model.)

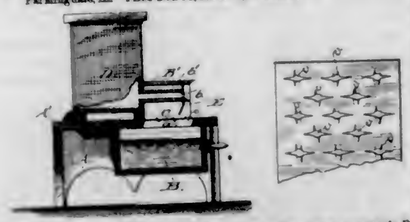


Claim.—1. In a scale-pan, the combination of a pan, a hanger consisting of two legs, the upper ends of which curve toward each other and join, and the lower ends of which are spread apart, each leg being jointed to one side of the pan, and a stop device, substantially as described, to retain the pan in proper position with respect to the hanger, as set forth.

2. In a scale-pan, the combination of a hanger to support the pan having two legs, which join at the uppermost part, and an arm pivoted between the legs by which the scale is suspended, as set forth.

3. An improved scale-pan, consisting of a pan, A, a hanger, E, hinged to one side only of the pan, a stop device to retain the pan in proper position for use, and an arm pivoted at the upper end of the hanger, as shown and described.

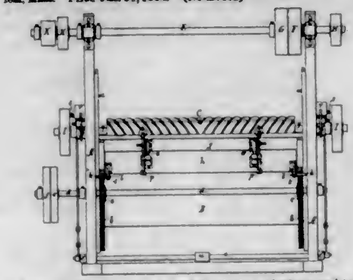
295,786. MOTH-TRAP FOR BEE-HIVES. JOHN T. MCELFRESH, Farmingdale, Ill. Filed Dec. 31, 1883. (No model.)



Claim.—1. In an attachment for bee-hives, the water-receptacle B, having located above the same the perforated plate with transverse slots having central circular portions, and upwardly and downwardly turned edges located under the bee-entrance of a hive, substantially as shown, and for the purpose set forth.

2. In combination with a bee-hive having a raised bee passage or entrance, *b*, surrounded by an outer wall, B′, and a plate, E, bent at its lower end, the base A′, provided with an opening, and perforated plate C, located above a water-tank, substantially as shown.

295,787. MACHINE FOR PUTTING OUT OR STRETCHING SKINS. BENJAMIN MCKEEN, Peabody, assignor of one-fourth to Daniel Murray, Salem, Mass. Filed Jan. 31, 1884. (No model.)

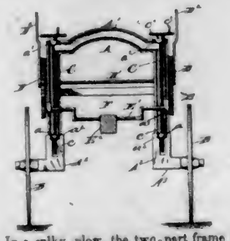


Claim.—1. The combination of the bed or platform and its guide-ways inclined to the horizon and provided with mechanism for reciprocating the said bed rectilinearly on its ways, with the screw-threaded cylinder and its weighted supporting-levers for raising it, and the mechanism for depressing it, all being adapted and to operate substantially as set forth.

2. The combination of the bed B, having the opening *g*, with the door or clamp *h* and mechanism for operating it, as and for the purpose described, during the movements of the bed, substantially as set forth, such mechanism consisting of the weighted lever *m*, link *p*, arm *i*, and bracket *k*, provided with the roller *l*, all being adapted to operate essentially as represented.

3. The combination of the inclined bed, movable, and provided with a water intercepting and deflecting lip arranged with it, as described, with the screw-threaded cylinder arranged and provided with mechanism for operating it relatively to such bed, substantially as represented.

295,788. SULKY-PLOW. WILLIAM MCNARY, Bryan, Ohio. Filed July 6, 1883. (No model.)



Claim.—1. In a sulky-plow, the two-part frame A, consisting of the upper arched or U-shaped portion, A′, and lower parts, A², the latter slotted or recessed to receive the ends of the former, in combination with the rods C, secured in bosses at their upper ends, and having their lower ends threaded to engage with threaded nuts or projections on the parts A², and means for operating said rods, as and for the purpose set forth.

2. In a sulky-plow, the combination of a two-part frame, A, constructed substantially as described, and provided with adjusting-rods C, with spur-wheels D, mounted upon the shaft D′, and having hand-levers D², pinions E, mounted upon the crank-shaft E′, having its bearings in the adjustable part of the frame, and plow-beam E², substantially as described.

295,789. ARMATURE-COIL FOR DYNAMO-ELECTRIC MACHINES. JAMES J. MCTIGHE, Pittsburg, Pa. Filed Oct. 16, 1883. (No model.)

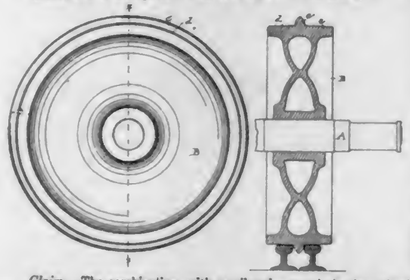


Claim.—1. A prepared armature-coil having a wedge shape in cross-section, and having its layers of wire interlocked by tying, and the whole adapted to be placed on an armature after being completed, substantially as described.

2. A prepared armature-coil, completely covered externally by an insulating band or tape wound spirally thereon, substantially as described.

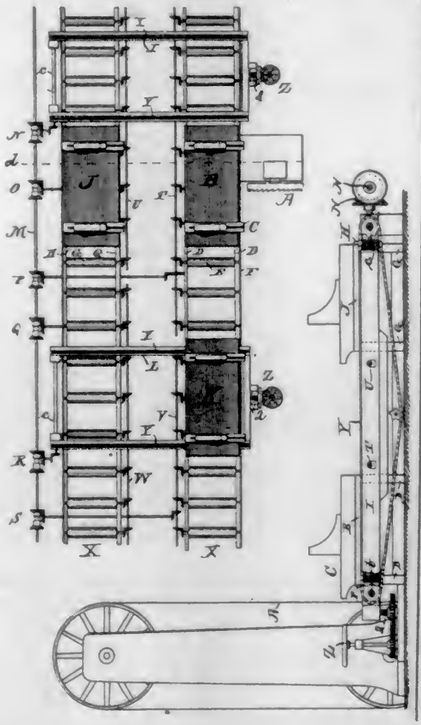
3. A prepared armature-coil having a wedge shape in cross-section, its layers of wire interlocked by tying, and covered externally with an insulating band or tape wound spirally thereon, substantially as described.

295,790. CAR-WHEEL. JOSIAH W. MELVIN and WILLIAM H. CLUTE, Houston, Tex., assignors of two-thirds to Abraham H. Swanson and James McGee, both of same place. Filed Nov. 28, 1883. (No model.)



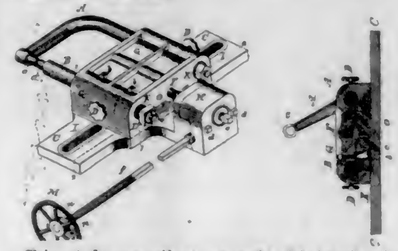
Claim.—The combination, with a railroad-car axle having wheel-bearings of equal diameters throughout their whole lengths, of wheels the peripheries of which are provided with central flanges, dividing each into two treads, said wheels adapted to be pressed on the aforesaid bearings with either side innermost, substantially as described, and for the purpose set forth.

295,791. SAW-MILL. DAVID FERGUSON MILNE, Rochester, N. Y., and JAMES THOMPSON MILNE, Clay City, Ky. Filed Dec. 22, 1883. (No model.)



Claim.—In a saw-mill, the combination of a saw, a carriage-way provided with carriage-moving mechanism, and located so as to form a carriage-pathway past the saw, a second similarly-provided carriage-way disposed parallel thereto, one or more log-carriages fitted to move on said carriage-ways, and two or more transfers located one before and one after the saw, and adapted to shift said carriage or carriages from one carriage-way to the other, substantially as and for the purposes specified.

295,792. SAW-GUIDE. THOMAS J. NEACY, Milwaukee, Wis. Filed Mar. 17, 1883. (No model.)



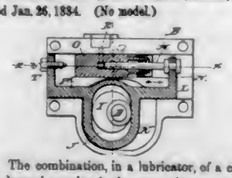
Claim.—1. In a saw-guide, the combination of the laterally-adjustable block G, right-angled arm A, pivoted in block G, straight arm B, provided with threaded adjusting-sleeve E, bed-plate C, provided with transverse dovetailed way O, gib *c*, wedges *b b*, worm P, and screw F, provided with pinion N, substantially as and for the purposes set forth.

2. In a saw-guide, the combination of the block G, adapted to move transversely upon the dovetailed way O, raised on the bed-plate C, bed-plate C, arms A and B, screw F, provided with the pinion N, worm-wheel P, and rod *f*, provided with hand-wheel M, substantially as and for the purposes set forth.

3. The combination, in a saw-guide, of the arm A, provided with the lug A, arm B, provided with the threaded sleeve E, block G, adapted to move transversely upon the dovetailed way O, raised on the top of bed-plate C, and provided with the shoulder *g*, set-screws D D, bed-plate C, with the gear-case H, inclosing the worm-wheel P and the pinion N, and the screw F, substantially as and for the purposes set forth.

4. In a saw-guide, the combination of the block G, provided with the right-angled arm A and the adjustable arm B, and capable of lateral movement upon the bed-plate C, and screw F, having a fixed bearing in an extension from the rear edge of bed-plate C, substantially as and for the purposes set forth.

295,798. LUBRICATOR. LARS CHRISTIAN NIELSEN, Copenhagen, Denmark. Filed Jan. 26, 1884. (No model.)



Claim.—1. The combination, in a lubricator, of a casing having an inlet and outlet channel opening in the same plane, a pump having a lateral aperture from its bore and reciprocating in a plane so as to bring the aperture to register with the inlet and outlet channel, a piston reciprocating in the pump, and means for reciprocating the piston and pump operated by the machinery to be lubricated, as and for the purpose shown and set forth.

2. The combination, in a lubricator, of a casing having an inlet and an outlet channel opening in the same plane in one side of the casing, a pump sliding inside the casing, having a lateral aperture opening from the inner end of its bore and sliding in a plane so as to bring the aperture to register with the inlet and outlet channel, a reciprocating frame having a piston fitting into the pump secured from one arm, and having a set-screw at its other arm adapted to strike the end of the pump, and means for reciprocating the frame, as and for the purpose shown and set forth.

3. The combination, in a lubricator, of a reservoir for the lubricant, a casing having an inlet and an outlet channel for the lubricant opening in the same plane in one side of the casing, a pump having a lateral aperture opening from the inner end of its bore and sliding in ways in the casing in a plane so as to bring the aperture to register with the inlet and outlet channel, a frame sliding in the same plane as the pump inside the casing, having two upwardly-projecting arms straddling the ends of the pump and having a downwardly-projecting slotted lug, a piston fitting in the bore of the pump and secured to one arm of the bifurcated frame, a set-screw passing inward through the other arm of the bifurcated frame, and a shaft revolved by the machinery to be lubricated, and having an

eccentric disk revolving in the slotted lug of the sliding bifurcated frame, as and for the purpose shown and set forth.

295,794. FAUCET-SCREW. MICHAEL O'CONNOR, New Brunswick, N. J. Filed Jan. 19, 1884. (No model.)



Claim.—1. The attaching-plate A, including in one piece the elevated chamber *b*, formed directly at the inner end of the screw-socket, and the valve-seat A, and having the nozzle and the threaded valve-stem and the valve arranged to play in the socket and bear upon the seat of the attaching-plate, as and for the purpose described.

2. The attaching-plate A, adapted to be secured to a can, and including in one piece of sheet metal the screw-socket, and directly at its inner end the elevated chamber *b* and the valve-seat A, and having the nozzle B, said socket containing the screw-stem, having a thumb-piece at its outer end, and a valved inner end arranged to close over the chamber *b* and bear against the seat on the attaching-plate, substantially as shown and described.

295,795. DOOR-LATCH. WILLARD F. OLIVER, Lynn, assignor of one-half to Mellen Bray, Newton, Mass. Filed Jan. 11, 1884. (No model.)



Claim.—1. A door-latch provided with a spring-actuated bolt, the forked arms of which are provided with suitable ears, in which are mounted adjusting-screws which co-operate with the arms upon a collar secured to the shank, upon which the knobs are mounted, substantially as and for the purposes described.

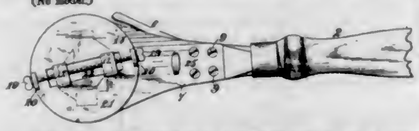
2. In a door-latch, the combination of the two-part casing A B, provided with the lug *f*, the collar C, the shank D, the forked bolt E, provided with the slot F, the spring G, the ears or projections *b b*, and the adjusting-screws *c c*, mounted in suitable ears upon the bolt E, all adapted to operate substantially as and for the purposes described.

295,796. PULLEY. OLAF R. OLSEN, Indianapolis, Ind. Filed Dec. 6, 1883. (No model.)



Claim.—The split pulley formed of a continuous rim, having one opening adapted to be drawn and secured together by suitable fastenings, in combination with a bisected hub and bisected corrugated metal web, with means for uniting the parts, substantially as described.

295,797. RATCHET-WRENCH. ADELBERT E. OSBORN, Waco, Tex., assignor to the Model Machine Company, same place. Filed Dec. 31, 1883. (No model.)



Claim.—1. The combination of the rotating head having an irregular-shaped opening, forming a series of sets of seats or recesses, with the movable jaws having shanks, and means for moving the jaws about in the said opening and adjusting them to any set of the seats or recesses, substantially as described.

2. The combination of the rotating head having an irregular-shaped opening, forming a series of sets of seats or recesses, with the movable jaws having shanks, the rotating plate at one side of the head, provided with a slot, and an adjusting-screw carried by the plate and engaging the shank of the jaws, substantially as described.

3. The combination of the rotating head held to rotate between the plates of the handle, and provided with an irregular-shaped opening, forming a series of sets of seats or recesses, with the jaws having shouldered heads, the rotating plate at one side of the head, provided with the rectilinear slot, and the screw-rod carried by the rotating plate and engaging the shouldered heads of the shanks, substantially as described.

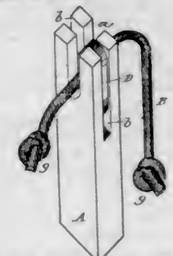
295,798. SPECULUM. GEORGE W. PAGETT, Oxford, Ind. Filed Jan. 11, 1884. (No model.)



Claim.—1. The combination of an outer speculum-tube, having a longitudinal slot in its side, with an inner tube fitting and turning in the outer tube, and having a longitudinal slot in its side, increasing in width toward one end, as and for the purpose shown and set forth.

2. The combination of an outer speculum-tube, having a rounded closed inner end, a longitudinal slot in its side, and a suitable handle at its outer flanged end, with an inner tube fitting and turning in the outer tube, and having a longitudinal slot consisting of sections decreasing in length, each of the same width as the slot in the outer tube, as described, the outer flanged end of the inner tube and the handle upon the outer tube having marks corresponding to each other, as and for the purpose shown and set forth.

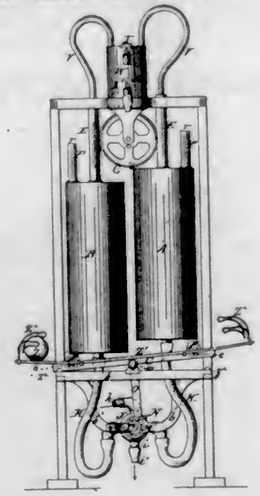
295,799. TAG OR LABEL. WILLIAM P. PATTON, Harrisburg, Pa. Filed Feb. 21, 1884. (No model.)



Claim.—1. In an address tag or label, a binding-hook pivoted forward of the longitudinal center of the bight of the hook, substantially as specified.

2. The tag or billet A, having the recess *a* cut through its end to receive an attaching-cord, and having the kerf *b* cut through its end at right angles to and of a greater depth than recess *a*, in combination with a hook, D, pivoted within the kerf *b*, so as to be entirely within the outer edges of the kerf when the hook seizes the attaching-cord, substantially as and for the purpose set forth.

295,800. HYDRAULIC AIR-COMPRESSOR. CHAS. PFANNL, Washington, D. C. Filed Dec. 27, 1883. (No model.)



Claim.—1. The combination, in a hydraulic air-compressor, of the two water-receiving and air-pumping vessels, each supported independently upon a rising and falling bearing, a suitable rocking support for sa vessels, means for maintaining and guiding said vessels in their movements in vertical parallel relation to each other, means for connecting said chambers with a water-controlling device, and means for supplying the air to and discharging it from said vessels, substantially as described.

2. The combination, in a hydraulic air-compressor, of two non-rocking water-receiving and air-pumping vessels, each supported independently upon a vertically-moving bearing, with a rocking balance-frame supporting and moving with said separate bearings, a weight adapted to travel upon said balance-frame, a suitable guide-bearing for the upper ends of said vessels, a cock and suitable means for connecting it with the said vessels, the said balance-frame, and the water-supply, substantially as described, for the purpose specified.

3. In a hydraulic air-compressor, the combination of the non-rocking vessels A B, the rocking balance-frame C, weight Z, a cock, I, the tubes H, and the arm O, with the air-storage reservoir W, having one or more hose-receiving supply-cocks, X, and the flexible tubes V, connecting it with the said vessels, substantially as described, for the purpose specified.

4. In a hydraulic air-compressor, the combination, with the vessels A B, of the cylindrical cock I, its case J, having a projecting joint-forming bearing-sleeve, K, a spring, I^2, adapted to secure said cock within its case, and suitable means for operating said cock by the movements of said vessels, substantially as described.

5. In an air-compressor, the two non-rocking water-receiving and air-pumping vessels, each having a knife-edge bearing, *c*, and a top guide, E, in combination with the rocking balance-frame C, having knife-edge bearings *a a*, the weight Z, adapted to travel upon said frame, a suitable support for said guides, and means, substantially such as described, for controlling the supply and discharge of water into and from said vessels, and to control the supply and discharge of air into and from said vessels, substantially as described.

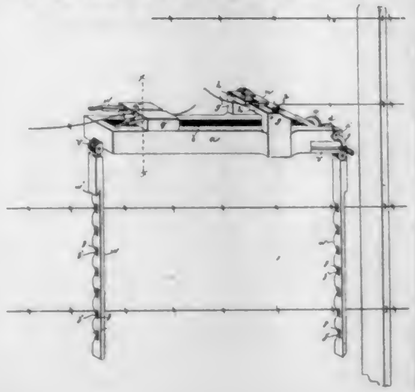
6. The combination, in a hydraulic air-compressor, of the two non-rocking vessels A and B with the cylindrical cock I, the case J, having the joint-forming bearing-sleeve K, the spring I^2, pinion M, carried by said cock, arm O, having the cogged sector N, rocking balance-frame C, the traveling weight Z, suitable connections for supplying and discharging water to and from said vessels, and suitable means for supplying and discharging air to and from said vessels, as set forth.

7. In a hydraulic air-compressor, the non-rocking vessels A and B, each having a knife-edge bearing, combined with a suitable rocking support having knife-edge bearings, and suitable means for operating said vessels by water-pressure and for pumping and supplying air from said vessels, substantially as described.

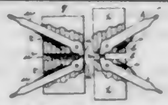
8. In a hydraulic air-compressor, the non-rocking vessels A and B, each supported independently upon a rising and falling bearing, combined with a suitable rocking support, upon and by which the said cylinders are adapted to be operated in vertical parallel relation to each other, substantially as and for the purpose stated.

9. In a hydraulic air-compressor, the combination of the vessels A and B with the chambers P, having the inlet air-valves *l*, and the chambers E, having the outlet-valves *l'*, with the tube *m*, extending from the bottom of each of said air-inlet chambers to near the bottom of each of said vessels, and means for controlling the supply and discharge of water into and from said vessels, whereby the air is caused to pass into and through the water before being discharged, substantially as set forth.

295,801. WIRE-FENCE STRETCHER AND SPLICER. JONATHAN K. PIERCE, Deming's Bridge, Tex. Filed Sept. 29, 1883. (No model.)



295,801.

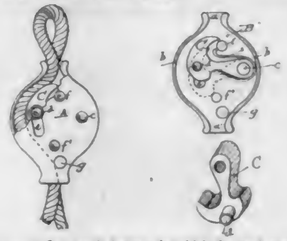


Claim.—1. The combination, with the open box *a*, stationary right-angular pieces *g g*, secured thereto, spring-pressed clamping-levers *k k* having serrated ends *m*, and notched lever *n*, of the reciprocating block *g*, having slot w^2, and provided with a projection, *r*, having a threaded orifice, *s*, spring-pressed levers *n*, having serrated ends, screw *b*, and beveled pinions *c d*, substantially as shown and described.

2. The combination, with the open box *a*, provided with the arms *v*, of the arms *w*, pivoted to the latter, and provided with the slots *z*, each having an opening, *z'*, substantially as shown and described.

3. The combination, with the box *a*, of the folding arms *w*, one of which is beveled at its end, and the other arm provided with the beveled piece *w'*, substantially as shown and described.

295,802. ROPE OR LINE CLASP. ALBERT L. PITNEY, Washington, D.C. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a cord-fastener in which the cord passes out of a direct line through the case, the combination of a case provided with a narrow throat at each end and slots on each side, with a cam lever or levers pivoted at one side of the center of the case, and provided with a stud or studs for releasing the same, substantially as set forth.

2. In a cord-fastener, the combination of a case provided with a narrow throat at each end and a pivoted cam lever or levers, with a pin located eccentric to the longitudinal center of the case, to form a guide for the cord, and also to assist in binding the two parts of the case, substantially as set forth.

3. In a cord-fastener, the combination of a case provided with a pivoted cam lever or levers with a stop-pin and a guide-pin that act as a stop to the cam lever or levers and as a guide to the cord, and also to assist in binding the two parts of the case, substantially as set forth.

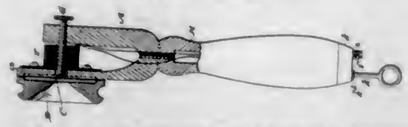
295,803. ROPE OR LINE CLASP. ALBERT L. PITNEY, Washington, D.C. Filed Feb. 18, 1884. (No model.)



Claim.—1. In a cord-fastener, the combination of a case having perforations in one of its edges, with serrated roller or rollers provided with teeth or projections that enter the said perforations, whereby the rollers are prevented from slipping, all substantially as shown and described.

2. In a cord-fastener, the combination of a case having slots, and slides for covering the same upon each side, and means, substantially as described, for preventing the roller or rollers from slipping, with serrated roller or rollers, having lugs projecting from their sides, whereby the said rollers are withdrawn and the cord released, substantially as described.

295,804. TELEPHONIC RECEIVER. CHARLES A. RANDALL, New York, N.Y. Filed May 3, 1883. (No model.)



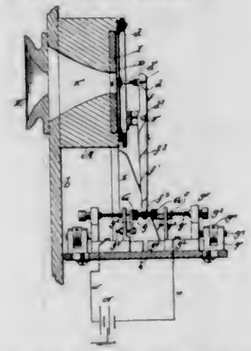
Claim.—1. In a telephonic receiver, the combination of a permanent magnet having one of its poles formed into a disk integral therewith, and provided with a rim or raised edge forming a support for the vibratory diaphragm, an elastic or vibratory diaphragm secured thereto and arranged to be acted on inductively, and a helix arranged to vary and control the inductive action of the permanent magnet upon the elastic or vibratory diaphragm, substantially as described.

2. In a telephonic receiver, the combination, with the permanent magnet A, having one of its poles flattened or laterally extended and centrally perforated, of the diaphragm secured to the outer margin of said flattened pole, the core projecting from the diaphragm through the opening in the flattened pole and close to the other pole, and the helix loosely surrounding said core, substantially as described.

3. The combination, in a telephonic receiver, of a permanent magnet having one of its poles formed into a disk integral therewith, and having a raised rim or edge for supporting the vibratory diaphragm, an elastic or vibratory diaphragm supported thereon, a soft-iron core or extension attached to or in contact with the other pole of the permanent magnet, and a helix surrounding and adapted to influence such soft-iron core or extension, the thus formed operative poles of the magnet being in magnetically operative proximity to each other, and the helix being arranged to vary and control their magnetic action on each other and the vibratory or elastic diaphragm, substantially as described.

4. The combination, with the helix and the handle, of the spring-actuated rod *k*, provided with the insulating-plate *l*, the finger-spring bearing against said rod and connected with the helix, and the binding-posts connected, respectively, with the helix and the said rod, substantially as described.

295,805. TELEPHONIC TRANSMITTER. CHARLES A. RANDALL, New York, N.Y. Filed May 3, 1883. (No model.)



Claim.—1. In a lever transmitting-telephone, the combination, with the amplifying-lever, of a motive diaphragm formed of a carbon or slate disk, substantially as described.

2. In a telephonic transmitter, the combination, with the motive diaphragm, of a mouth-piece and an air-chamber interposed between the diaphragm and mouth-piece, said air-chamber being conical in form, its greater diameter being next to and larger than the inner opening of the mouth-piece, substantially as described.

3. The combination, with the diaphragm, of the amplifying-lever loosely connected therewith, to have a slight play independently of the diaphragm, substantially as described.

4. The combination, with the amplifying-lever and its carbon or contact terminal and the battery terminals or contacts, of means, substantially such as described, for adjusting the positions of said battery-terminals relatively to each other and the lever-terminal, and separate means, substantially such as described, for adjusting their normal contact or pressure, substantially as set forth.

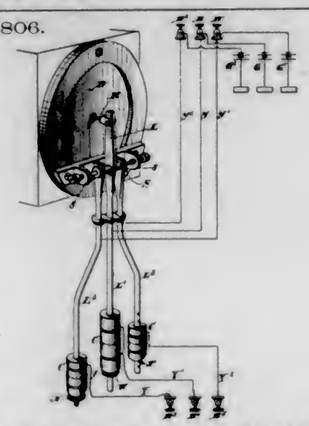
5. The combination, with a spring-seated battery-terminal, as shown and described, of a pin or equivalent means attached to the carbon and to its support, so as to prevent the carbon from turning in its seat or support, substantially as set forth.

6. The combination of the air-chamber, the metallic disk attached thereto, the diaphragm, the lever supported from the air-chamber, block and disk, a non-conducting base-plate carrying the battery-terminals, and an arm or support rising from and carrying or supporting the air-chamber block and disk, and forming a common support for the operative devices attached to or controlled by the motive diaphragm, substantially as described.

295,806. TELEPHONIC TRANSMITTER. CHARLES A. RANDALL, New York, N.Y. Filed May 3, 1883. (No model.)

Claim.—1. In a telephonic transmitter, the combination of an amplifying vibratory lever forming one electrode, and the opposite electrode mounted loosely thereon and supported thereby, so that the contact of the two electrodes may be varied, substantially as described.

295,806.



2. In a telephonic transmitter, the combination of a diaphragm or vibrator, an amplifying-lever operated thereby and forming an electrode, and an opposite or second electrode loosely mounted upon the long arm of the lever, the two electrodes being arranged and adapted to vary contact upon movement or vibration of the lever, substantially as described.

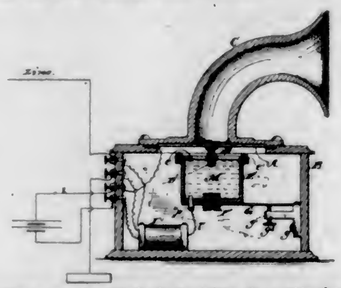
3. The combination of a lever forming one electrode, a second electrode loosely mounted thereon and carried thereby, and means, substantially as described, for adjusting or regulating the position of the second electrode upon the first, as set forth.

4. The combination, with the diaphragm and short lever-arm connected therewith, of a plurality of long lever-arms provided with electric contact-surfaces and connections, substantially as described, of the contact-blocks or electrodes mounted loosely upon said long arms and provided with electric connections, essentially as set forth.

5. The combination, with the diaphragm, connected short arm, and the shaft, of the three metallic long arms insulated from each other, and the contact-blocks mounted loosely upon said long arms, substantially as described.

6. The combination of a single diaphragm, a series of amplifying-levers controlled thereby, each lever forming one electrode loosely carrying and supporting a second electrode, a series of batteries—one for each lever and connected thereto—and connections to the line or lines from the second electrodes, substantially as described.

295,807. TELEPHONIC TRANSMITTER. CHARLES A. RANDALL, New York, N.Y. Filed Feb. 6, 1883. (No model.)



Claim.—1. In a telephonic transmitter, the combination, with a variable contact-electrode, of a body of mercury confined and under pressure and in contact with said electrode, substantially as described.

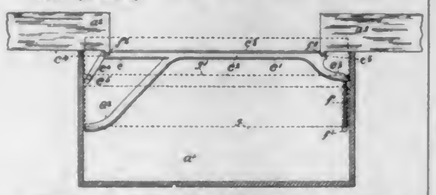
2. In a telephonic transmitter, the combination, with the electrodes, of a confined body of mercury in contact with one of said electrodes, and devices for producing and regulating the pressure of said mercury upon said electrode and its supporting elastic plate, substantially as described.

3. In a telephonic transmitter, the combination of one electrode supported and controlled by a diaphragm, a confined body of liquid whose confining-surface contains and controls a second electrode, which body of liquid is adapted to vary and control the position of the second electrode, and means for varying the pressure of said body of liquid, so as to vary and control the position of the second electrode, substantially as described.

4. In a telephonic transmitter of the class referred to, the combination, with one of the variable contact-electrodes, of an elastic plate con-

taining and supporting such electrode and a vessel adapted to contain a body of liquid, the elastic plate forming the cover thereto, the liquid therein serving the purpose of adjusting the pressure upon such plate and its tension, substantially as described.

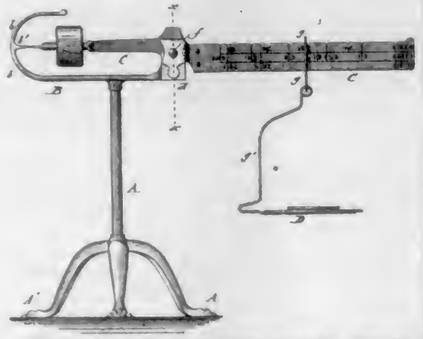
295,808. TRUNK. FRANK H. RANSOM, Buffalo, N. Y. Filed Aug. 9, 1883. (No model.)



Claim.—1. A trunk or box provided with the bars c^3, having the flange c^5, for supporting the tray a^3, as specified, when drawn out, in combination with the inclined portions c^2 c', the parts c^4 having projections or pins c^5, for supporting the tray when down in position within the trunk.

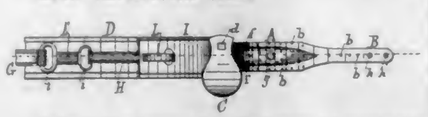
2. The combination of the tray a^3, having pins or projections f^3, with the angular flanges c^5, for supporting it when drawn out, and the angular flange c' and pin f^3, for supporting it in its movements back and forth or downward in place, substantially as described.

295,809. COIN AND LETTER SCALE. CHARLES REETMANN, New York, N. Y., assignor to H. Richtmann & Co., same place. Filed Oct. 11, 1883. (No model.)



Claim.—A scale for coins and letters, comprising a supporting-standard, a horizontal supporting-arm attached to said standard, provided with a hook-shaped guard having an inward projection or index at the center of the hook, a scale-beam pivoted in said bearings, one end of which is provided with a weight and adapted to oscillate within the hook-shaped guard, being in alignment with the index thereof when balanced, the outer end of said beam being graduated, a slide-link on said scale-beam, and a scale-pan suspended from said link, substantially as described.

295,810. HARNESS-SADDLE TREE. LEVI A. RIDGWALT, Wilmington, Del. Filed Oct. 29, 1883. (Model.)

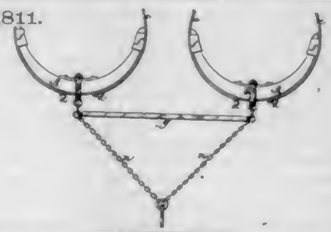


Claim.—As an improved article of manufacture, a harness-saddle tree composed of wings and skirt-stiffening projections, all formed of a single piece, said wings being hollowed out, as shown, on the upper side, for the purpose set forth, and formed with longitudinally-extending ribs, as shown, on the under side, substantially as set forth.

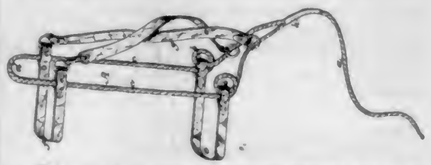
295,811. WHIFFLETREE. HENRY ROEBBEN, Paterson, N. Y. Filed June 2, 1883. (No model.)

Claim.—The wooden semicircular whiffletree A, furnished with the swing-clevis *b* and the trace-hooks *d*, near the center of the periphery of the same, to act in combination with the embracing-tugs *c*, each provided with the box-loop *f*, substantially as and for the purposes herein specified.

295,811.

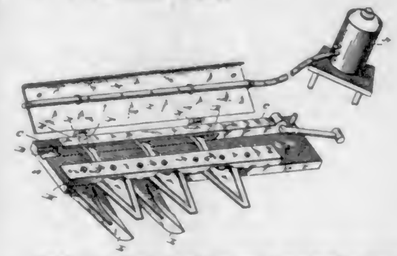


295,812. COMBINED BRIDLE AND HALTER. HENRY ROEBBEN, Parma, assignor to Andrew V. Smith, Rochester, N. Y. Filed Oct. 12, 1883. (No model.)



Claim.—An interchangeable or a combined halter and bridle, A, in which the bit-loops *b*, the cheek-cords *c*, and the headstall *d* are all formed of one and the same piece of rope, in combination with the riveted leather frontlet *f*, nose-strap *e*, and cruciform throat-latch *g*, substantially as and for the purposes specified.

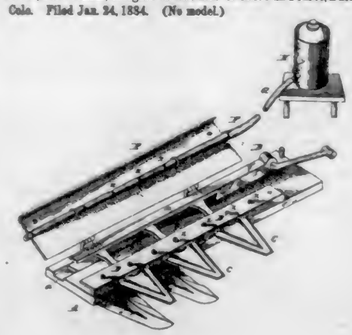
295,813. CUTTING APPARATUS FOR HARVESTERS. ELIAS D. ROTH, Fort Collins, assignor of one-half to Jacob A. Pearce, Buena Vista, Colo. Filed Apr. 14, 1883. (Model.)



Claim.—1. In a cutter-bar for a harvester, the slotted reciprocating bar with pins F, in combination with the pivoted cutters having the rear slotted ends passed into the slot of the reciprocating bar and engaging with their respective pins, whereby the slots of the cutters are protected and upward displacement obviated, as described.

2. In a cutter-bar for a harvester, the combination, with the pivoted cutters, of the tension-bar G, provided with the flange H, having recesses formed therein for the passage and operation of the pivoted cutters, substantially as and for the purposes set forth.

295,814. LUBRICATING DEVICE FOR CUTTER-BARS. ELIAS D. ROTH, Fort Collins, assignor of one-half to Jacob A. Pearce, Buena Vista, Colo. Filed Jan. 24, 1884. (No model.)



Claim.—1. The perforated pipe F, in combination with the cutting apparatus of a reaper or mower, said pipe being connected to a suitable oil-reservoir, substantially as and for the purpose set forth.

2. The hinged cap K, carrying a perforated pipe, F, in combination with the cutting apparatus of a reaper or mower, the same being connected to an oil-reservoir by a flexible connection, substantially as and for the purpose set forth.

295,815. PROCESS OF EXTRACTING METALS FROM ORES AND METALLURGICAL PRODUCTS. EDWARD HUBBARD RUSSELL, Park City, Utah. Filed Mar. 3, 1884. (No specimens.)

Claim.—1. The process of removing precious metals from ores and metallurgical products, which consists in first dissolving out therefrom with water the salts soluble therein, then subjecting the mass to the dissolving action of a hyposulphite solution, and finally to the dissolving action of a hyposulphite solution to which has been added a soluble salt or compound of copper, substantially as described.

2. The process of removing precious metals from ores and metallurgical products, which consists in subjecting the ore or product to the dissolving action of a hyposulphite solution, and then to the dissolving action of a hyposulphite solution to which has been added a soluble compound or salt of copper, substantially as described.

3. The process of separating precious metals from ores and metallurgical products, which consists in leaching the ore or product with a hyposulphite solution, and then leaching it with a hyposulphite solution to which has been added sulphate of copper, substantially as described.

4. The process of separating precious metals from ores and metallurgical products, which consists in subjecting the ore or product to the dissolving action of a hyposulphite solution, and then to the dissolving action of a solution containing the double salt of cupreous hyposulphite and sodium hyposulphite, substantially as described.

295,816. PROCESS OF EXTRACTING PRECIOUS METALS FROM ORES. EDWARD HUBBARD RUSSELL, Park City, Utah. Filed Oct. 25, 1883. (No specimens.)

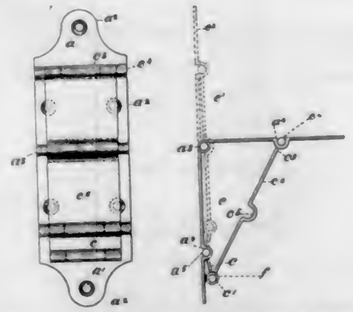
Claim.—1. The process of removing precious metals from ores and metallurgical products, which consists in subjecting the ore or product to the dissolving action of a solution containing a hyposulphite to which has been added a soluble compound or salt of copper, substantially as described.

2. The process of removing precious metals from ores and metallurgical products, which consists in subjecting the ore or product to the dissolving action of a solution containing a hyposulphite to which has been added sulphate of copper, substantially as described.

3. The process of removing precious metals from ores and metallurgical products, which consists in leaching the ore or product with a hyposulphite solution to which has been added a soluble compound or salt of copper in the proportions substantially as described.

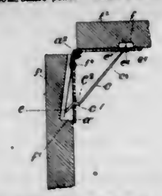
4. The process of removing precious metals from ores and metallurgical products, which consists in subjecting the ore or product to the dissolving action of a solution containing the double salt of cupreous hyposulphite and sodium hyposulphite, substantially as described.

295,817. DUPLEX BRACE-HINGE. AMOS W. SANGSTER, Buffalo, N. Y., assignor to Frank H. Ransom, same place. Filed Aug. 11, 1883. (No model.)



Claim.—A duplex brace-hinge for trunks, consisting of the jointed hinge-plates *a a'*, having the bent or grooved portion a^4, in combination with the hinged plate *e* and brace-plate e^3, provided with a bent or grooved portion, e^4, one end of which plate is jointed to the hinge-plate by a joint, e^5, and the other end to the plate *e* by a joint, e', substantially as and for the purposes described.

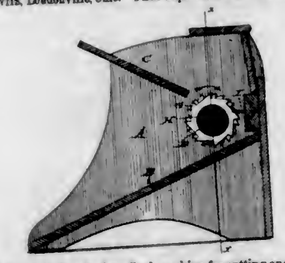
295,818. BRACE-HINGE. AMOS W. SANGSTER, Buffalo, N. Y., assignor to Frank H. Ransom, same place. Filed Dec. 10, 1883. (No model.)



Claim.—1. A trunk-hinge consisting of the jointed hinge-plates *a a'*, provided with the openings c^3 e', in combination with a brace, *c*, having the parts c^2, the bent portion c', and a spring, *e*, for the purposes described.

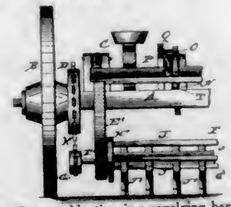
2. The hinge *a a'*, having the opening a^3, in combination with the brace-plate *c*, provided with a narrow portion, c^3, substantially as and for the purposes specified.

295,819. MACHINE FOR CUTTING CORN IN THE COB. SAMUEL F. SAVITS, Londonville, Ohio. Filed Sept. 19, 1883. (No model.)



Claim.—The herein-described machine for cutting and crushing corn in the cob, comprising the frame A, inclined feed-table C, inclined floor B, shaft D, having fly-wheel E and pulley F, circular saws or cutters G, the teeth of one saw being arranged opposite to the notches of the two saws next to it, spacing-disks H, and fixed teeth I, between which the saws G project, the whole constructed and arranged to operate substantially in the manner and for the purpose shown and described.

295,820. HARROW OR SOIL-PULVERIZER. JACOB SCHINDLER, Koeltztown, assignor of one-half to Herman Luckenhoff, Westphalia, Mo. Filed July 23, 1883. (No model.)



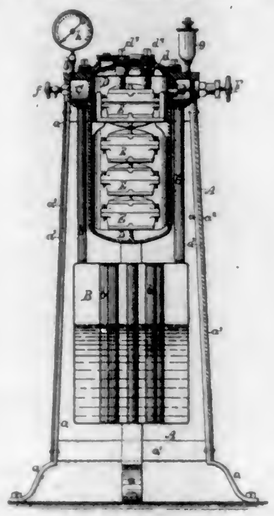
Claim.—1. The combination, in a revolving harrow, of the axle mounted upon the wheels and having vertical perforations of bearings near its ends, two uprights adapted to slide in the vertical bearings, two inclined frames hinged at their upper ends upon the uprights, and provided with revolving cutters at their lower ends, an upright secured upon the middle of the axle, and having a rack secured upon one side, a lever pivoted in the upper end of the upright, having its shorter arm hinged to the upper cross-bar of one of the frames, having a pawl engaging the rack upon the upright, and provided with a cogged segment upon its under side at its fulcrum, and a short arm pivoted in the upright below the lever, having its outer end engaging under the upper cross-bar of the other hinged frame, and having a cogged segment upon its inner end engaging the segment upon the lever, as and for the purpose shown and set forth.

2. The combination, in a revolving harrow, of the drive-wheels provided with sprocket-pulleys, two inclined frames hinged at their upper ends upon uprights upon the axle of the harrow and forming bearings at their lower ends, shafts turning in the bearings of the lower ends of the frames, disks secured upon the shafts and forming bearings in their inner faces, transverse bars pivoted at their ends in the bearings in the disks, and having curved cutters sharpened at the edges facing in the direction of the revolution of the disks, sprocket-pulleys secured upon the ends of

the shafts, the pulleys upon the forward shaft being smaller than the pulleys upon the drive-wheels, but larger than the pulleys upon the rear shaft, and sprocket-chains passing over the wheel-pulleys and over the pulleys upon the shafts, as and for the purpose shown and set forth.

3. The combination, in a revolving harrow, of the axle having vertical perforations or bearings near its ends, the drive-wheels turning upon the ends of the axle and having sprocket-pulleys secured to their hubs, uprights with their lower ends adapted to slide in the vertical bearings in the axle, inclined frames hinged at their upper ends to the upper ends of the uprights and forming bearings at their lower ends, shafts turning in the said bearings and having sprocket-pulleys at their ends, and disks inside the bearings provided with pivoted cutter-carrying bars, sprocket-chains passing over the wheel-pulleys and over the pulleys upon the shafts, an upright secured upon the axle and having a rack at one side, a lever pivoted in the upright and having its short arm hinged to the upper end of one of the inclined frames, having a cogged segment upon its under side around its fulcrum, and having a pawl engaging the rack upon its longer arm, and an arm pivoted under the lever in the upright having a cogged segment at its inner end meshing with the segment upon the lever, and having its outer end engaging under the upper cross-bar of the other inclined frame, as and for the purpose shown and set forth.

295,821. DENTAL VULCANIZER. FREDERICK W. SEABURY, Providence, R. I. Filed Oct. 19, 1883. (No model.)



Claim.—1. In a dental vulcanizer, the combination, with the oven or heater D and cover *d*, of the steam-generator B, the steam-tubes *b' b'*, the steam-valve F, and the case A, inclosing the whole, as described.

2. In a dental vulcanizer, the combination, with the case A, constructed to support the oven and steam-generator and inclose the same, of the oven D and boiler B, constructed to expose the oven to the heat of the fire externally and supply steam internally, as described.

3. The combination, in a dental vulcanizer, of the oven D, the vertical tubular boiler B, steam-tubes *b' b'*, and case A, constructed so that the heat applied will pass through the tubes of the boiler and surround the oven, as described.

4. The combination, with the case A, the oven D, constructed to receive two or more flasks successively and exert pressure on each during the process of molding, of the steam-boiler B, the tubes *b' b'*, valve F, and the case A, inclosing the whole and supporting the boiler above the burner, as described.

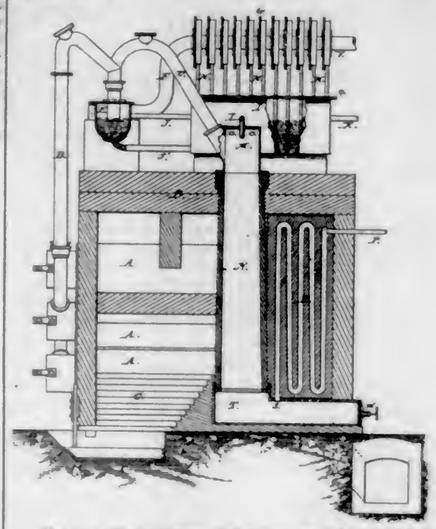
5. The combination, with the oven D, steam-boiler B, and tubes *b' b'*, of the steam-space C, partially or wholly surrounding the upper end of the oven, as described.

6. The combination, with the oven D, constructed to receive two or more flasks, of the cover *d*, provided with the glass-covered opening *d'*, the openings d^3 d^3, and the screws d^4 d^4, constructed to force the two parts of the flask together, as described.

7. The combination, with the oven D and the cover *d*, provided with the screws d^4 d^4, of a shelf constructed to support the flask during the process of molding and allow a flask to be passed below the support, as described.

295,822. APPARATUS FOR MANUFACTURING ILLUMINATING-GAS. JAMES JOHN SHEDLOCK, Barnet, County of Hertford, England. Filed Oct. 9, 1882. (No model.) Patented in Belgium June 24, 1878, No. 45,512; in England June 25, 1878, No. 2,533; in France June 25, 1878, No. 125,278, and in Germany Mar. 28, 1879, No. 7,287.

Brief.—Coal is distilled, as usual, in heated retorts and the gas conducted to the hydraulic main. The tar condensed from such gas while passing through a condenser is passed into the top of a vertical retort containing solid carbon, while superheated steam is supplied to the bottom of such retort and decomposed into hydrogen and carbonic oxide in contact with the heated carbon, and the hydrogen combines with the rich gas and vapor from the tar to form carbureted hydrogen. These gases are passed into the main and mixed with the coal-gas. Steam is superheated by passage through a coil of refractory material located in the retort-furnace.

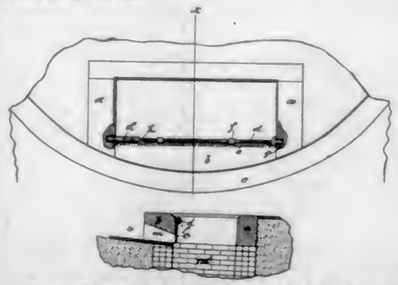


Claim.—1. The combination, with the retorts for effecting the first distillation of the tar, the condensing devices, and tar-receptacle, of a vertical retort having a feed-pipe at its upper end connected with the tar-receptacle, and also an outlet-pipe for gas leading to the mains or pipe carrying the gas of the first distillation, the said retort being adapted to be filled with coke and connected with a superheated-steam coil opening into the retort at its lower end, as and for the purpose described.

2. The combination of the retorts A, ascension-pipes D, hydraulic main E, condensers G, with pipes H, the subjacent tank I, retort N, and pipe U, the feed-pipe L, connecting the tar-tank and retort N, the waste-discharge chamber T, and the superheating-pipe R, substantially as shown and described.

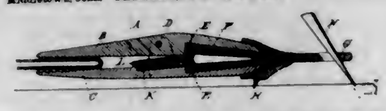
295,823. SEWER-BASIN. WILLIAM SEEVERING, Newark, N. J. Filed June 29, 1883. (No model.)

Brief.—The shutter in the mouth of the sewer-basin is mounted on an extensible pivotal bar.



Claim.—The combination, with the sewer-basin *m'*, having the mouth *m*, of the shutter *e* and extensible pivotal bar *d*, all arranged and operating substantially as and for the purposes set forth.

295,824. CARPET-STRETCHER. WILLIAM ALEXANDER SKINNER, Middletown, Conn. Filed Jan. 9, 1884. (No model.)



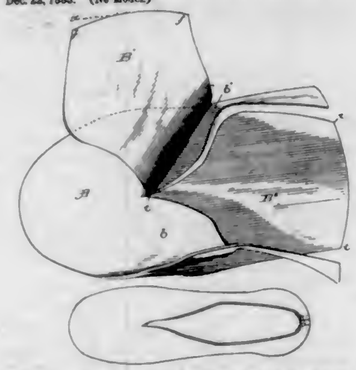
Claim.—1. A carpet-stretcher consisting of a pair of clamping jaw-levers, in combination with a wedge, substantially as specified.

2. The combination, with a wedge having an eye at its rear end and a floor-spur, of a pair of jaw-levers having guides to engage the wedge, and a spring connecting said wedge to one of the jaw-levers, substantially as specified.

295,825. MANUFACTURE OF PARACHINANISOL. ZDENKO HANNS SKRAUP, Vienna, Austria-Hungary, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Dec. 14, 1883. (Specimens.)

Claim.—As a new product, the parachinanisol hereinbefore described, and having the characteristics above set forth.

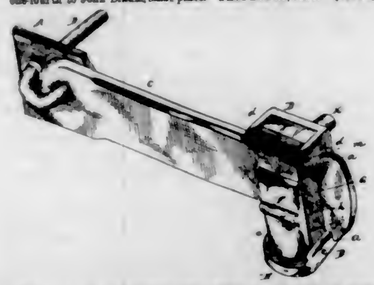
295,826. MANUFACTURE OF SHOES. GEORGE W. SLEEPER, Westborough, Mass., assignor of one-half to William A. Reed, same place. Filed Dec. 22, 1883. (No model.)



Claim.—1. The hereinbefore-described method of forming the upper of a shoe, consisting in first cutting a blank in substantially the form shown and described, then splitting the leather and forming the counter out of the split portions, all substantially as described.

2. A shoe-upper formed of one piece split in the rear portion, the split portion being cut to form the counters, substantially as described.

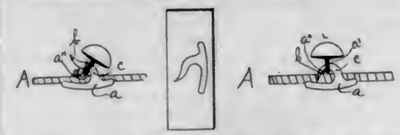
295,827. HASP-LOCK. DUNCAN SMITH, Brooklyn, N. Y., assignor of one-fourth to John Blakie, same place. Filed Dec. 20, 1883. (Model.)



Claim.—1. In combination with a flange-headed hasp, an independent locking device consisting of the box D, carrying the hinged block G, which is provided with the sliding bolt F, adapted to enter one end of the box D, all being arranged to embrace the hasp, substantially as and for the purpose set forth.

2. The combination of the hasp having a flanged head with the independent box D, carrying the hinged block G and sliding bolt F, and being provided at one end with the ears *d d*, and at the other with the ears *e e*, constructed to catch and hold the flanged head of the hasp, substantially as described.

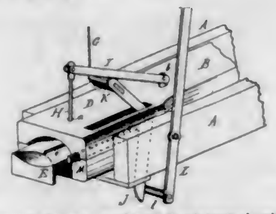
295,828. BUTTON HOOK OR FASTENING. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Jan. 14, 1884. (No model.)



Claim.—1. A button-fastener consisting of a base or head bar from which extends a hook having an upwardly-curved penetrating end, the whole being cut from sheet metal, and being in its finished condition when so cut, substantially as shown, and for the purpose specified.

2. The herein-described button-fastener A, consisting of the base-bar *a*, hook *c*, upward curved end *b*, terminating in a penetrating end, substantially as shown and described.

295,829. CAR-COUPLING. GEORGE W. SMITH, Des Arc, Ark. Filed June 21, 1883. (No model.)

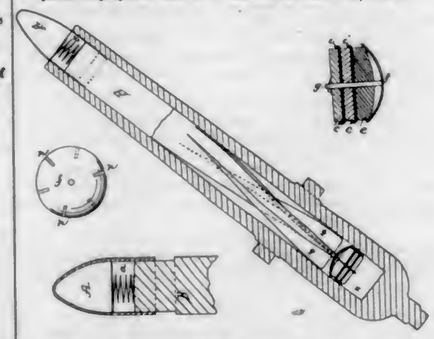


Claim.—1. In a car-coupling of the character herein specified, the combination, with coupling-pin H and arm I, of bent lever J, having projecting arm K, and lever L, bearing pin *l*, substantially as shown and described.

2. In a car-coupling of the character herein specified, the combination, with the coupling-pin H and arm I, of bent lever J, having projecting arm K, lever L, bearing pin *l*, and bar M, substantially as and for the uses and purposes set forth.

3. In an automatic car-coupling, frame A, draw-bar B, draw-head D, movable lip E, lever F, cord or chain G, coupling-pin H, pivoted to an arm, I bent lever J, having arm K, lever L, bearing pin *l*, and bar M, the whole combined and arranged to operate substantially as shown and described.

295,830. PROJECTILE FOR CARRYING HIGH EXPLOSIVES. FREDERICK H. SNYDER, Jersey City, N. J., assignor to the Dynamite Projectile Company, New York, N. Y. Filed Oct. 25, 1883. (No model.)

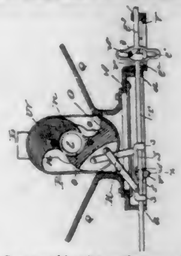


Claim.—1. In a projectile of the character herein described, the combination of a body, as B, a shell or magazine, A, for explosives, and an elastic spring cushion or buffer interposed between the body and the shell, substantially as and for the purposes described.

2. In an explosive projectile, the combination of a body, as B, a shell or magazine, as A, and elastic spiral wings upon the outside of the body, as and for the purposes set forth.

3. The sabot herein described, consisting of a series of disks, *c c* and *e*, connected by rod *g*, with interposed flexible disks *i i* and concavo-convex cap-plate *f*, in combination with the projectile-body B, shell or magazine A, and buffer *a*, interposed between the body and shell, as shown and described.

295,831. MACHINE FOR CUTTING GREEN CORN FROM THE COB. DARIUS B. SPEER, Blue Grass, Iowa. Filed Dec. 3, 1883. (No model.)



Claim.—1. In a machine for cutting corn from the cob, the combination of a hopper-feeding mechanism embodying two rolls, arranged one above the other, and provided with concave or semicircular grooves in their adjoining faces, with mechanism for rocking these rolls together, substantially as set forth.

2. In a machine for cutting corn from the cob, the combination of the herein-described hopper mechanism, comprising the two semicircular rolls, journaled one above the other, and provided with two parallel semicircular grooves in their adjoining faces, inclined feeding-boards arranged at each side of the rolls, devices connecting the rolls so that they will move positively together, and mechanism for rocking the rolls upon their bearings, substantially as set forth.

3. In a machine for cutting corn from the cob, the combination of feeding-rolls having grooves in their adjacent faces to receive the ears of corn, a reciprocating drive-rod, cross-levers connected with the drive-rod and with one of the rolls, and operative mechanism to transmit a rocking motion to the latter, substantially as set forth.

4. The combination of the feed-rolls having grooves in their adjoining faces, a drive-rod, mechanism for reciprocating the drive-rod, a lever-block connected with the drive-rod, and provided with a beveled notch, operating-levers pivoted to this block and to one of the rolls, and an automatic spring-actuated safety-pin engaging the notch, and adapted to become automatically disengaged by accidental gorge in the feed, substantially as set forth.

5. The combination of the feed-rolls having the grooves in their adjoining faces, devices connecting the rolls, a transverse reciprocating drive-rod having a vertical slot in its end, cross-levers connecting this rod and the under roll, a crank-shaft engaging the said slot, and operative mechanism, substantially as set forth.

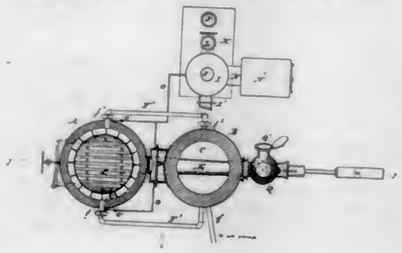
6. The combination of the frame of the machine, the main crank-shaft, the plunger connected with said shaft, the feed-rolls journaled one above the other, said having the grooves in their adjoining faces, devices connecting these rolls together, a transverse drive-rod having a vertical slot curved or expanded at its central portion, devices connecting this rod and one of the rolls, and a crank-shaft engaging the slot and connected with the main crank-shaft, substantially as set forth.

7. The combination, with the stem of the knife containing the spring or cushion, of the approximately right-angular scraper, fulcrumed at the vertex of the angle, and acting against the cushion, substantially as set forth.

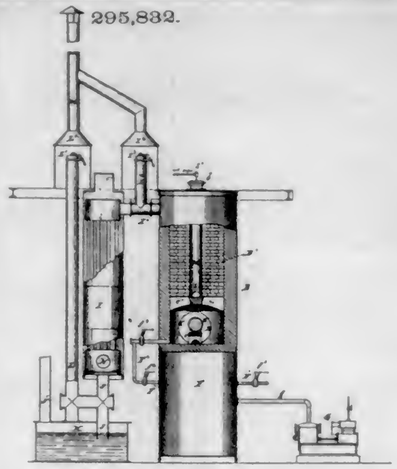
8. The combination of the cutting mechanism embodying the stem of the knife, the blade having a slotted shank, the nut, the securing-bolt passing through the stem, the shank, and the nut and the guards hinged to the said nut, substantially as set forth.

9. The combination, with the plunger-rod, of the tubular plunger-head having the annular flange at its end, the interposed spring, and devices extending from the flange to the plunger and limiting the action of said spring, substantially as set forth.

295,832. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed Mar. 23, 1883. (No model.)



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Claim.—1. The herein-described process of generating gas, which consists in raising a body of carbonaceous fuel in a generator to incandescence by an air-blast, and at the same time, by means of the resulting hot gaseous products, heating up a charge of bituminous coal in a separate chamber or retort, then shutting off the air-blast, decomposing steam by passage through the incandescent fuel, and distilling the rich gas from the coal, and reducing it to coke by passing the hot gases resulting from the decomposed steam around the outside of the coal-distilling retorts, discharging the hot coke from the retorts into the steam-decomposing chamber, and continuing the manufacture of gas by a repetition of the said steps in successive order, whereby bituminous coal is economically distilled and rich gas therefrom is mixed with the water-gas, and hot coke is supplied to the decomposing-chamber.

2. The herein-described process of generating gas, which consists in raising a body of fuel to incandescence by an air-blast, and by means of the resulting hot gaseous products heating up a charge of bituminous coal, and a fixing-chamber containing refractory material, then, after shutting off the air-blast, decomposing steam in the bed of incandescent fuel, and by means of the resulting hot hydrogen and carbonic-oxide gases distilling the rich gases from the coal by passing such gases in contact with the coal-retorts, and simultaneously vaporizing hydrocarbon oil, then combining and fixing the water-gas, the coal-gas, and the oil-vapor in the heated fixing-chamber, discharging the coke resulting from the distilled coal into the steam-decomposing chamber, and continuing the manufacture of gas by repeating the above steps in the manner described.

3. The closed generating-chamber and the connected combustion-chamber C, freely communicating therewith, in combination with the supply-pipes for air and steam, connecting as described, the horizontal coal-distilling retort extending through the combustion-chamber and opening into the generating-chamber, and the superheater placed above the combustion-chamber, for the purpose described.

4. The closed generating-chamber, the combustion-chamber opening freely into it, and the superheating or fixing chamber placed above the combustion-chamber, in combination with the coal distilling and coking retort extending horizontally through the combustion-chamber and opening into the generating-chamber, the oil-vaporizing retort located in the fixing-chamber, and having an oil-supply pipe at the top, and the steam and air supply pipes connecting with the generating and the combustion chambers, as described.

5. The closed generator, the communicating combustion-chamber, and the superheating or fixing chamber arranged above the latter, in combination with the coal-retort extending through the combustion-chamber and opening into the generator, means for gradually and continuously supplying the retort with coal, the oil-vaporizing retort arranged in the fixing-chamber, and having an oil-supply pipe, and the connected steam and air supply pipes, for the purpose described.

6. The closed generator, the communicating combustion-chamber, and the superheating or fixing chamber arranged above the latter, in combination with the coal-retort, provided with feeding mechanism and extending through the combustion-chamber, the oil-vaporizing retort arranged in the fixing-chamber, and having an oil-supply pipe, the steam-boiler, valved chimney, connecting-flues, and a washer, and the supply-pipes for air and steam connected to the generator and combustion-chamber, for the purpose described.

7. The combination of a generator provided with air and steam pipes, a coking-retort opening into and heated by the gases from said generator, air-pump G, air-chamber F, valved pipes F' F², a superheater, and a washer, substantially as and for the purpose specified.

8. The combination of a generator provided with air and steam pipes, a coking-retort opening into and heated by the gases from said generator, air-pump G, air-chamber F, valved pipes F' F², air and steam superheater A', a fixing superheater, and a washer, substantially as and for the purpose specified.

9. The generator A, provided with air and steam superheating back A', having divisions A³ and holes A⁴, constructed as shown, steam-pipes O, and air-pipes F', substantially as and for the purpose specified.

10. The combination of generator A, superheater B, retort E, plunger R, and hopper Q, substantially as and for the purpose specified.

11. The combination of generator A, superheater B, retort E, plunger R, means to reciprocate said plunger, hopper Q, and means to agitate the carbon in said hopper, substantially as and for the purpose specified.

12. The combination of generator A, having steam and air pipes, superheater B, vaporizing-retort H, oil-pipe A', and retort E, substantially as and for the purpose specified.

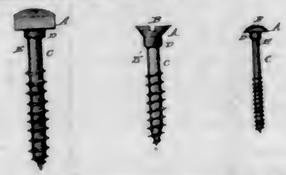
13. The combination of generator A, having steam and air pipes, superheater B, vaporizing-retort H, oil-pipe A', retort E, and means to feed coal-dust through said retort, substantially as and for the purpose specified.

14. The combination of generator A, having steam and air pipes, superheater B, vaporizing-retort H, oil-pipe A', retort E, flues I' P, valve P, boiler I, pipe J, washer K, chimney L, and valve L', substantially as and for the purpose specified.

15. The combination of two sets of generators and superheaters, pipes I', a boiler, I, having a division, I³, washer K, smoke-chimney L, valve L', and connecting-flues, substantially as and for the purpose specified.

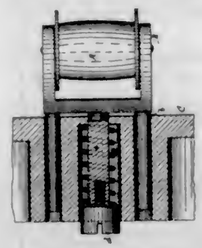
16. The herein-described method of disintegrating and fracturing the caking coal in the process of generating gas by forcing blasts of air at certain intervals or intermittently into the fuel, said blasts being of greater pressure than the regular blasts, substantially as described.

295,833. WOOD-SCREW. GEORGE A. STILES, West Gardiner, assignor of one-half to Carral Matthew Parker, Pittsburg, Mass. Filed Mar. 30, 1883. Renewed Dec. 3, 1883. (No model.)



Claim.—The improved wood-screw herein shown and described, having a reduced stem or shank, C, provided with a collar or annular enlargement, D E, at its upper end, where it connects with the head A, as a new article of manufacture.

295,834. TENSION DEVICE FOR TAPES OF PAPER-FOLDING MACHINES. JOHN H. STONEBETA, Erie, Pa. Filed June 2, 1883. (No model.)



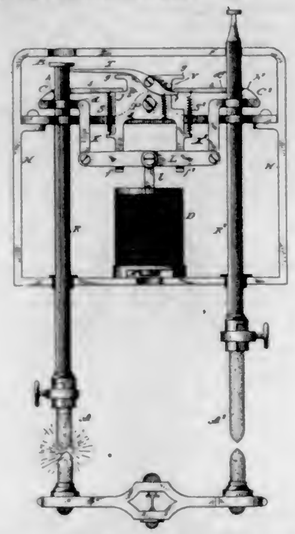
Claim.—1. The combination of a spring-pressed bracket or frame carrying a tape-spool and provided with guide-stems, with a paper-folding-machine frame adapted to receive and hold said bracket or spool frame and a conveyer-tape passing around the spool mounted in said frame, as and for the purpose set forth.

2. In a paper-folding machine, the combination of the bracket having the stems, the spool mounted in said bracket, and a retracting-spring bearing upon a stem of the bracket, substantially as herein set forth.

295,835. MANUFACTURE OF PAPER FROM GRAIN-CUTICLES. WM. L. TETER, Philadelphia, Pa. Filed Dec. 1, 1882. (Specimens.)

Claim.—The mode herein described of utilizing the outer woody skins or cuticles of grain-berries for paper-stock, the said mode consisting in removing the said cuticles from the berries in the form of fibrous scales, and then pulping the same, as set forth.

295,836. DOUBLE-CARBON ARC-LAMP. ELIHU THOMSON, New Britain, Conn., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Apr. 2, 1883. (No model.)



Claim.—1. The combination, with two carbon-carriers in an electric-arc lamp, of a movable releasing-stop for the feeding mechanism of one carrier, and suitable means for bringing said stop into releasing position upon the descent of the other carrier to a predetermined position.

2. The combination, in a double-carbon lamp, of a releasing-clutch for one of the carbon-carriers, a movable releasing-stop for said clutch, and means for bringing said stop into releasing position upon the descent of the other carrier to a predetermined position.

3. The combination, in a double-carbon lamp, of a releasing-stop for the feed mechanism of one of the carbon-carriers, mounted on a lever, and a lug or projection on the other carbon-carrier, for tilting said lever and carrying said lever into releasing position when the latter carrier has moved to a predetermined point.

4. The combination, in a double-carbon lamp, of a feed clamp or clutch for one of the carbon-carriers, a releasing-stop for said clutch, mounted on a lever placed to hold the stop out of releasing position, and a projection on or connected with the other carbon-carrier, for tilting said lever and moving stop into releasing position.

5. The combination, in a double-carbon lamp, of a releasing-stop for the feed-controlling clamp of one carrier and means connected directly or indirectly with the other carrier for controlling the position of said stop, as and for the purpose described.

6. The combination, with two carbon-carriers, of a releasing-stop for the feed clamp or clutch of one carrier, means connected with the other carrier for setting said stop into releasing position, and a stop or catch for limiting the movement of the releasing-stop in the setting operation.

7. The combination, with two carbon-carriers, of feed clamps or clutches actuated by a common magnet system, a fixed releasing-stop for the clamp or clutch of one carrier, and a movable releasing-stop for the clamp or clutch of the other, set by a button or other suitable device connected with or controlled by the first carrier.

8. The combination, with a clutch for a carbon-carrier, of a releasing-stop, *t*, mounted on or supported by one arm of a lever, and a button-stud or its equivalent, as described, upon the other carrier, which button or stud engages with the other end of the lever when the carbon is wholly or nearly consumed.

9. The combination of a carbon-carrier, R², a feed-clutch, C², a stop, *t*, a lever, T, a carbon-carrier, R, and button B.

10. In a double-carbon lamp, the combination, with the feed-controlling mechanism engaging with one carbon or carrier, of a releasing-stop, detent, or such like releasing device adapted to cause a release of

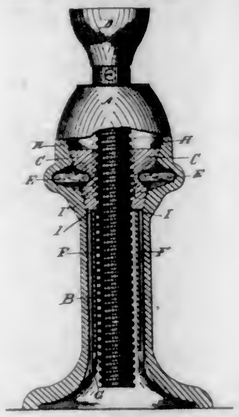
said feed mechanism whenever, through wasting of said carbon in the arc, the feed-controlling mechanism is lowered to a predetermined extent, said releasing device being mounted in a movable support, of means for holding the same out of feed-releasing position while the other of the two carbons is in action.

11. The combination, in a double-carbon lamp, of feed-regulating devices for the two carriers, and a fixed and a movable releasing-stop for the respective feed devices of said carriers, mounted on a common adjustable support, as and for the purpose described.

12. In a double-carbon electric lamp, the adjustable support P, carrying the fixed releasing-stop J for one carrier, and the movable releasing-stop *t* for the other carrier, as and for the purpose described.

13. The combination, with the two carbon-carriers R R^1, of the clutches C C^1, releasing-stops J *t*, a movable support for stop *t*, and means connected with carrier R for setting the stop *t* in releasing position.

295,837. SCREW-JACK. ALBERT R. TIFFANY, Dayton, Ohio, assignor of five-sixths to Michael Nell, Horace L. Gillette, and John J. Leland, all of same place. Filed Jan. 26, 1884. (No model.)



Claim.—1. In a screw-jack, the combination, with a standard, of a screw-stem or lifting-bar and a divided nut the parts of which are guided to and from the lifting-bar in arcs of circles, substantially as described.

2. In a screw-jack, the combination, with a screw-stem or lifting-bar, of a divided nut the parts of which are hinged to the jack-standard, substantially as described.

3. In a screw-jack, the combination, with the standard, of a screw-stem or lifting-bar and a divided nut the parts of which are hinged to the standard, and are adapted, when in engagement with the lifting-bar, to be supported against the walls of the standard, substantially as described.

4. In a screw-jack, the combination of a screw-stem or lifting-bar with the standard having inclined inner walls, and a divided nut having inclined ends, and having each of its parts connected to the standard by a hinged connection, substantially as described.

5. In a screw-jack, the combination of a screw-stem or lifting-bar with a standard, a divided nut having each of its parts connected to the standard by a hinged connection, and means, substantially as described, for raising the nut to release the lifting-bar, substantially as described.

6. In a screw-jack, the combination of a screw-stem or lifting-bar with a standard, a divided nut having each of its parts connected to the standard by a hinged connection, and means for maintaining the parts of the nut in the same horizontal plane in all positions of adjustment, substantially as described.

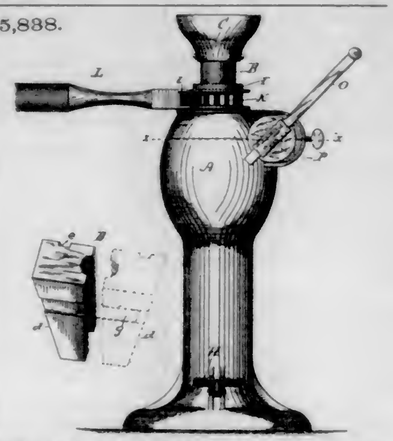
7. In a screw-jack, the combination of a screw-stem or lifting-bar with a standard having inclined inner walls, a divided nut having inclined ends, and having each of its parts connected to the standard by a hinged connection, and means, substantially as described, for simultaneously raising both parts of the nut, as set forth.

295,838. SCREW-JACK. ALBERT R. TIFFANY, Dayton, Ohio, assignor of five-sixths to Michael Nell, Horace L. Gillette, and John J. Leland, all of same place. Filed Jan. 26, 1884. (No model.)

Claim.—1. In a screw-jack, the combination of a screw-shaft and a divided gravitating nut having inclined ends with a standard or case having inclined bearing-faces for the ends of the nut to work against, substantially as described.

2. In a screw-jack, the combination of a screw-shaft, a divided gravitating nut having inclined ends, and fixed and positively-acting guides for opening and closing the parts of the nut, with a standard or case having

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inclined bearing-faces for the ends of the gravitating nut to work against, substantially as described.

3. In a screw-jack, the combination, with the screw-shaft, of a divided gravitating nut, guides for positively opening and closing it, and means for keeping its parts in the same horizontal plane at all points of adjustment, substantially as described.

4. In a screw-jack, the combination of a screw-shaft with a divided gravitating nut having inclined ends, a standard or casing having inclined bearing-faces for the ends of the gravitating nut to work against, and means for raising the nut, substantially as described.

5. In a screw-jack, the combination, with the screw-shaft, of a divided nut, the parts of which gravitate toward the screw-shaft, guides for said nut, and a lever and connections for raising it, substantially as described.

6. In a screw-jack, the combination, with the screw-shaft, of the divided nut whose parts gravitate toward the screw-shaft, operating-treadle pivoted to the base of the jack, and connections for raising the nut by the operation of the treadle, substantially as described.

7. In a screw-jack, the combination, with the screw-shaft, of the elongated hub having the feather projecting into the groove in the shaft, and having also the worm-gear and the ratchet at opposite ends for the application of the worm and the pawl-arm, respectively, substantially as described.

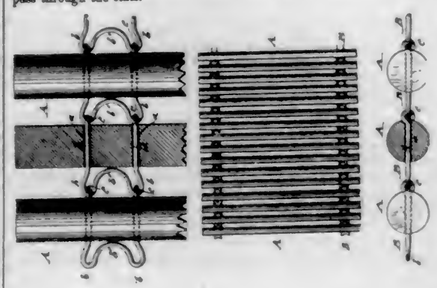
8. In a screw-jack, the combination, with the screw-shaft, of the divided gravitating nut and its guides, the elongated hub acting upon the shaft, and means for rotating said hub, substantially as described.

9. In a screw-jack, the combination, with the screw-shaft, of the divided gravitating nut and its guides, the elongated hub having the worm-gear, with the worm for engaging with the worm-gear, and the means for adjusting the said worm into or out of engagement, substantially as described.

10. In a screw-jack, the combination, with the screw-shaft, of the divided gravitating nut and its guides, the elongated hub having the upper ratchet and the lower worm-gear, the upper lever and its pawl, and the adjustable worm and means for operating it, substantially as described.

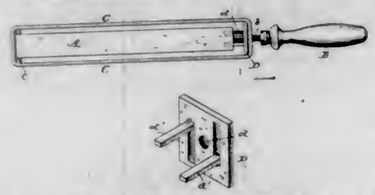
295,839. FLOOR-MAT. SIMON TOFFLER, New York, N. Y., assignor to ANNA TOFFLER and FRANK WARNECK, both of same place. Filed Dec. 13, 1883. (No model.)

Brief.—Parallel slats united by interlocking U-shaped staples which pass through the slats.



Claim.—The combination of a series of transverse slats having diametrical holes with U-shaped wire staples, the shanks of which are passed through said holes, and provided at one end with eyes and an intermediate abutment and at the other end with eyes at right angles to the plane of the shank, the eyes of the staples of one slat connecting with the eyes of the staples of the adjoining slats, substantially as and for the purpose set forth.

295,840. RAZOR-STROP. JOS. R. TORREY, Worcester, MASS. Filed Dec. 27, 1883. (No model.)



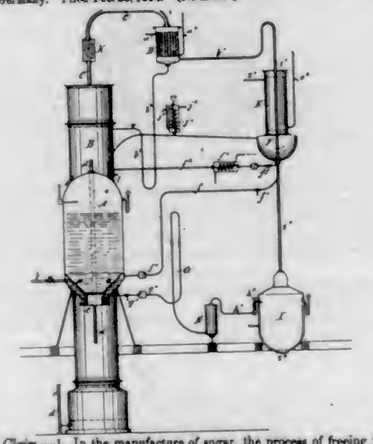
Claim.—1. A tightening-plate for razor-strops having projecting pins or lugs arranged diagonally opposite to each other on the body of the plate, substantially as described.

2. A tightening-plate for razor-strops having projecting pins or lugs struck out from the body of the plate and arranged diagonally opposite to each other, substantially as described.

3. The combination of the body A, the handle B, having the screw-threaded shank *b*, the stropping-belt C, and the tightening-plate D, having the diagonally-arranged projecting pins or lugs *d'* struck out from the body of the plate, and the threaded hole *d*, substantially as described.

4. A tightening-plate for razor-strops having projecting pins or lugs struck out from the body of the plate and connected with said body near the corners thereof, substantially as set forth.

295,841. MANUFACTURE OF SUGAR. KONRAD TROBACH, Berlin, Germany. Filed Feb. 28, 1884. (No model.)



Claim.—1. In the manufacture of sugar, the process of freeing the sugary substances of their water by means of alcohol-steam, substantially as and for the purpose set forth.

2. In the manufacture of sugar, the process of first freeing the sugary substances of their water by means of alcohol-steam, and then extracting the sugar from the said substances by means of rectified alcohol, substantially as and for the purpose specified.

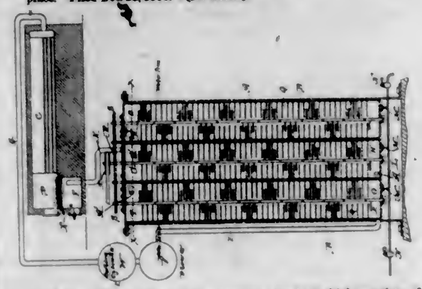
3. In the manufacture of sugar, the process of first freeing the sugary substances of their water by means of alcohol-steam, then extracting the sugar from the said substances by means of rectified alcohol, and finally passing the alcoholic solution of sugar thus obtained through a filter composed, as described, substantially as and for the purpose set forth.

4. In an apparatus for producing sugar from sugary substances, the combination, with the receptacle A, of the reservoir F, the pipe *f*, having the check-valve *f''*, the pipe *d*, the refining apparatus B, and the filter K, substantially as and for the purpose specified.

5. In an apparatus for producing sugar from sugary substances, the combination, with the receptacle A, of the reservoir F, the pipe *f''*, the air-pipe J, having the serpentine pipe *j''*, and the siphon-pipe G, substantially as and for the purpose set forth.

6. In an apparatus for producing sugar from sugary substances, the combination, with the receptacle A, of the siphon-pipe G, the filter H, and the vessel I, substantially as and for the purpose specified.

295,842. APPARATUS FOR AND PROCESS OF CONSUMING SMOKE. WILLIAM VOGEL, Chicago, Ill., assignor to G. A. Woolley, same place. Filed Dec. 28, 1883. (No model.)



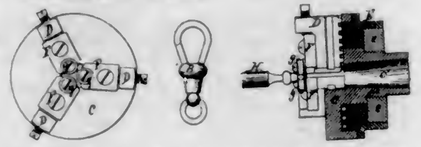
Claim.—1. The process of consuming smoke, which consists of forcing it through a series of vessels filled with water and subjecting it to the action of the beaters or agitators therein, substantially as set forth.

2. The combination of the cylinders B, water-supply pipe L, beaters P, and an inlet-pipe, substantially as described.

3. The combination of the cylinders B H, water-supply pipe L, inlet-pipe I, blower V, and an outlet-pipe, K, with beating devices that are adapted to operate within the cylinders, substantially as shown and described.

4. The combination of the cylinders B H, water-supply pipe L, inlet-pipe I, blower V, cooler W, and an outlet-pipe, K, with beating or agitating devices that are adapted to operate within the cylinders, substantially as specified.

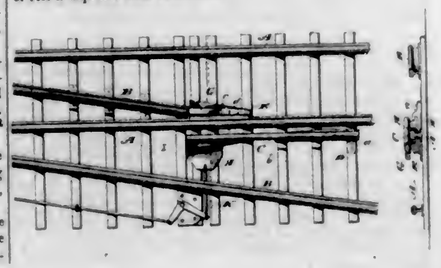
295,843. DEVICE FOR FINISHING CHAIN-SWIVELS. JAMES E WALCOTT, Providence, R. I., assignor to Frederick I. Marcy, same place. Filed Nov. 13, 1882. (No model.)



Claim.—The combination of face-plate C, having extension, as described, the ring E, having helical raised ways, the dogs D, operated by said ring, the slides F, adapted to move in ways in the face-plate, and spinning-rolls *g g*, carried by said slides, all the enumerated elements arranged to co-operate in a spinning-chuck, substantially as set forth.

295,844. RAILWAY-CROSSING. MARION WALLACK and JACOB B. ROHRER, Cambridge City, Ind.; said Wallack assignor of one-half his right to Benjamin Enbelman, East Germantown, Ind. Filed Nov. 16, 1883. (No model.)

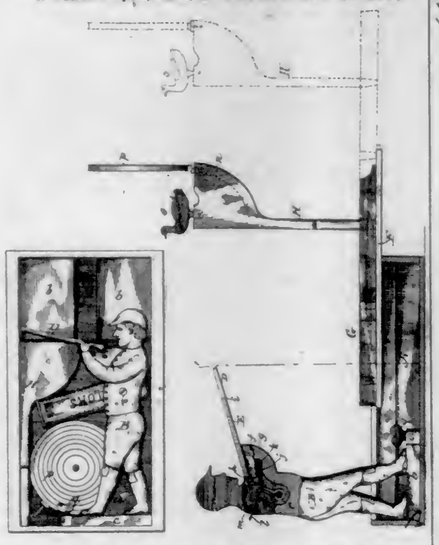
Brief.—A railway-frog the pivotal section of which has a plate bent to conform to the shape of the unbroken main rail, and which holds the pivotal section in position. A block or rest is provided with a spring-actuating cap which is moved by the pivoted section, and is returned to its normal position when the frog-rail is withdrawn, whereby the block or rest is kept free from obstructions.



Claim.—1. The combination, with the rails A A, of the rails B B, the pivoted section C, constructed as described, and the plate H, bent to conform to the shape of the rail A, and adapted to retain said pivoted section in position thereon, substantially as set forth.

2. The combination, with the rails B B, of a pivoted section connecting the ends of one of the rails B, and the block or rest E, provided with a spring-actuated cap, substantially as set forth.

295,845. TOY. JOHN ALONZO WARD, Sharpsville, assignor of one-half to William V. Byard, Sharon, Pa. Filed Jan. 24, 1884. (No model.)



Claim.—1. The combination, in a toy, of a figure, B, detachably mounted in position and provided with devices for projecting objects, and a standard carrying a target and detachably mounted in position, substantially as set forth.

2. The combination, in a toy, of a box, a figure, B, detachably mounted in said box and provided with mechanism for projecting objects, and a standard carrying a target and detachably mounted in the cover of the box, substantially as set forth.

3. The combination, in a toy, of a box, a figure, B, provided with a dovetailed base adapted to engage a dovetailed recess in the box-bottom, a device for locking said base in position, mechanism combined with said figure for projecting objects, and a target detachably mounted in position, substantially as set forth.

4. The combination, in a toy, of a box, a figure, B, detachably mounted in position and provided with means for projecting objects, and a standard carrying a target and mounted in a rod provided with a series of recesses and pivotally secured to the cover of the box, substantially as described.

5. The combination, in a toy, of the figure B, detachably mounted in position and provided with means for projecting objects, a standard mounted in position and provided with a recess in its upper portion, and a pivoted figure, *c*, on said standard, substantially as set forth and described.

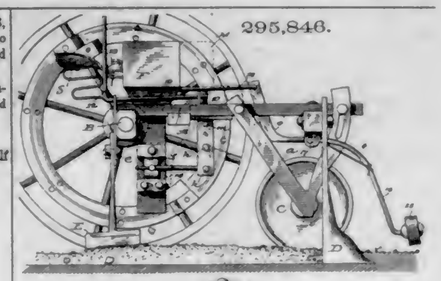
6. The combination, in a toy, of a figure, B, detachably mounted in position and provided with a tube or barrel, D, a pivoted bell-crank lever having the projecting member *l*, a headed rod playing in the tube or barrel and connected to the bell-crank lever, and a spring connected, as described, to said bell-crank lever, substantially as set forth.

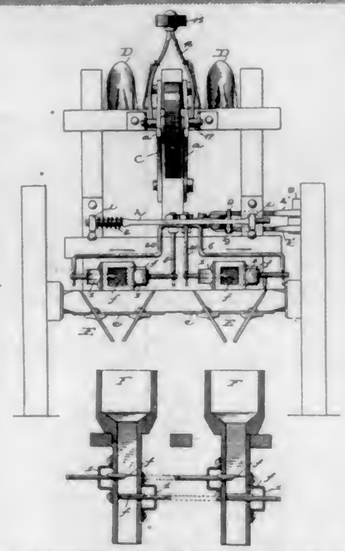
295,846. POTATO-PLANTER. JOHN P. WEIR, Parma, Ohio. Filed Nov. 21, 1883. (No model.)

Claim.—1. In a potato-planter, a seed box and tube, in combination with a stop-valve and a cutting-valve, and independent mechanism, substantially as described, for each of said valves, leading to cam-blocks on the wheel, whereby said valves are operated independently in a certain relation to each other, substantially as described.

2. In combination with the body and wheels, the seed box and tubes, the upper cutting and lower stop valve, the bars A and A', for giving independent movement to the said valves, with their springs and the bell-crank levers *k k'* and the cam-blocks, one set in advance of the other, the parts being constructed, arranged, and operating all substantially as described.

295,846.

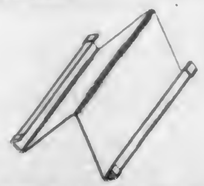




3. In combination with the bell-crank levers *k k'*, the valves, the bars *h h'*, with their springs and rods, as described, between said valves and levers, the bar *m*, having pin 9 bearing upon the levers, and a lever, 10, acting upon the rod *m*, whereby the driver may throw the bell-crank levers out of the path of the cam-blocks, all substantially as described.

295,847. SADDLE-BOARD. JOSEPH A. WILSON, Chester, Vt. Filed July 23, 1883. (No model.)

Brief.—Constructs a saddle-board with grooves in its lower edges for a preservative compound.



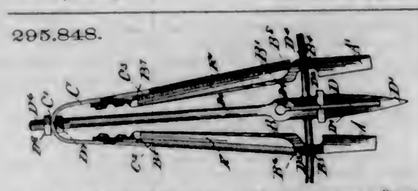
Claim.—The saddle-board, substantially as shown and described, having the grooves or channels formed upon its lower edges, as set forth.

295,848. TOOL FOR FORMING BOTTLE LIPS AND NECKS. JOS. B. WILSON, Clayton, N. J. Filed Sept. 14, 1883. (Model.)

Claim.—1. In a tool for forming the necks and lips of glassware, a shouldered plug formed of an integral piece of ductile metal, and having a slot formed therein for the purpose of facilitating the diametrical adjustment thereof, substantially as set forth.

2. In a tool for forming the necks and lips of glassware, a diametrically-adjustable slotted plug formed of an integral piece of ductile metal having lateral guides forming an integral part thereof, substantially as set forth.

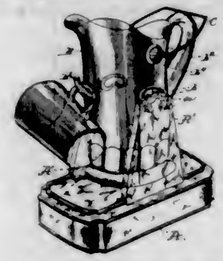
295,848.



3. In a tool for forming the necks and lips of glassware, a diametrically-adjustable slotted plug formed of an integral piece of ductile metal having a screwed shank forming an integral part thereof, and adapted to adjust the same lengthwise in relation to the jaws and spring of such tool, substantially as and for the purpose set forth.

4. An improved implement for forming the necks and lips of glassware, consisting of a diametrically-expansible slotted plug formed of an integral piece of ductile metal having lateral guides, and a screwed shaft forming an integral part thereof, in combination with jaws formed upon slotted shanks covered by slow-conducting handles, and united to said plug by cuts bearing upon a spring of metal less corrodible than the shanks and jaws, substantially as set forth and described.

295,849. TILTING VESSEL. WM. ZIMMER, Bellaire, Ohio. Filed Nov. 3, 1883. (No model.)



Claim.—1. A base for a tilting vessel composed of glass or earthenware, with vertical standards provided with double bearings for the tilting vessel, substantially as described.

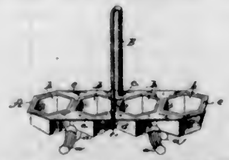
2. A pitcher, jug, pot, or other vessel composed of glass or earthenware, provided with double connected journals, substantially as described.

3. The glass or earthenware tilting pitcher, jug, pot, or other vessel provided with double connected journals, combined with the base provided with standards having double bearings, substantially as described.

4. In combination with a glass or earthenware pitcher or other vessel, a hook, *b'*, substantially as described.

5. In combination with a glass or earthenware pitcher or other vessel, the double connected journals *b b*, substantially as described.

295,850. CASTER. WM. ZIMMER, Bellaire, Ohio. Filed Nov. 3, 1883. (No model.)



Claim.—1. A glass or earthenware caster having two or more cruet-receptacles sunk into its base in the same straight line, and with supporting-feet, and all pressed complete in the same mold, substantially as described.

2. The combination, in a glass or earthenware caster having two or more cruet-receptacles sunk into its base in the same straight line, and supporting-feet, all pressed in the same mold, of a detachable handle sprung into opposite recesses in the lower part of the base, and retained in a vertical position by notches at the top of the base, substantially as described.

295,851. METAL-BENDING MACHINE. HENRY A. ADEWORTH, Moline, Ill., assignor to Williams, White & Company, same place. Filed Nov. 12, 1883. (No model.)

Claim.—1. In a bending-machine, the combination of bed A, provided with a fixed die, shaft B, provided with gear-wheels C C, having crank-pins *c c*, cross-head E, and pitmen D D, connecting the cross-head with said crank-pins, substantially as and for the purposes set forth.

295,851.

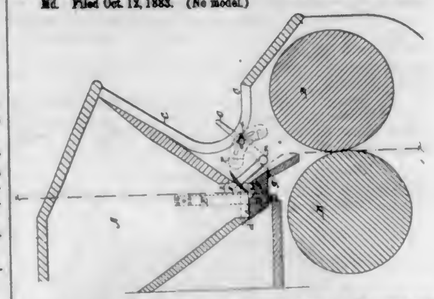


2. The herein-described bending-machine, consisting of bed A, provided with a stationary die, shaft B, provided with gear-wheels C C, cross-head E, pitmen D D, connecting the cross-head and the gear-wheels, shaft G, provided with pinions H H and gear-wheel I, and shaft K, provided with pinion J and band-wheel L, all combined and operating substantially as shown and described.

3. In a bending-machine, the combination of a bed-frame carrying a stationary die, a reciprocating cross-head arranged to move to and from said die, a shaft provided at opposite ends with gear-wheels, pitmen connecting said gear-wheels with opposite ends or sides of the cross-head, and a second shaft connected with or driven by a prime motor, and provided with pinions to mesh with and operate the gear-wheels of the first shaft, whereby the torsional strain of said shaft is avoided.

4. In an organized machine for bending metal, the combination of bed-frame A, provided with abutments *a*, upright frame F, shaft B, provided with gear-wheels C C at its ends, cross-head E, pitmen D D, connecting the cross-head and gear-wheels, shaft G, loose gear-wheel I, clutch N, pinion J, shaft K, and band-wheel L, all combined and arranged to operate substantially as set forth.

295,852. MILL-FEEDING DEVICE. JAMES B. ALLFREE, Cumberland, Md. Filed Oct. 12, 1883. (No model.)



Claim.—1. The combination, with a hopper, open at its bottom and along one side thereof and a gate therefor, of a shoe having a trough in it, as and for the purpose specified, whereby a passage will be left beneath the gate through said trough when the gate is as low or lower than the delivery-edge of said trough, as described.

2. The combination, with a hopper and a gate, of an oscillatory shoe having a gently inclined floor, a trough along the lower edge of the incline, and a steeper incline descending from said lower edge, as described.

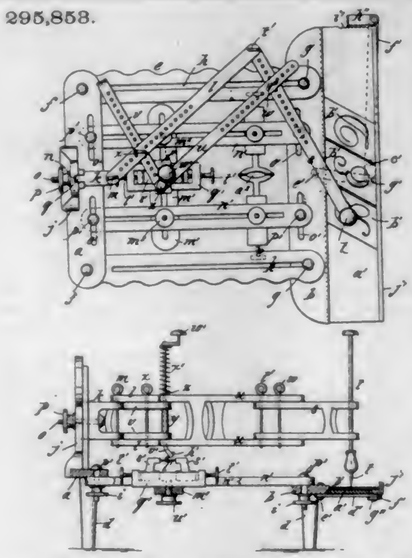
3. The combination, with a hopper having an opening at its bottom and a delivery along one edge thereof, of a shoe beneath said opening, having a trough whose bottom is lower than its delivery-edge, and means for shaking said shoe in a direction parallel with its delivery-edge, as shown and described.

295,853. ENGRAVING-MACHINE. IRA R. BEAN, Dryden, N. Y., assignor of one-third to Brown M. Barnes, same place. Filed Nov. 8, 1883. (No model.)

Claim.—1. The improved engraving-machine frame, consisting of plates *a b*, having leg or other supports, *d*, and connected by slotted cross-bars *c*, the plate *a*, having the slotted upright support *j* for the tool-frame head *k*, and the plate *b*, having the copy-table *a'*, connected to it, all substantially as described.

2. In an engraving-machine, the combination, with the head *k*, adjustably connected to its support, of the frames *l*, pivoted to the head *k*, the frame *s*, pivoted to frame *l*, and the frames *w v*, pivoted together and to the frames *s l*, respectively, the tool-staff *z* in the joints of the frames *w v*, and the style *t* in the end of the frame *s*, substantially as herein shown and described.

295,853.

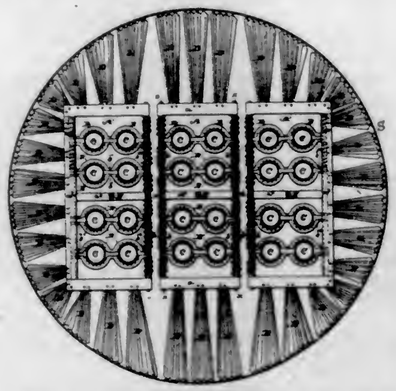


3. The adjustable vise g' d' f' and slotted adjustable supporting-bars m' and n', in combination with the bed-frame plates a b, and the parallel tool-frame and engraving-tool, substantially as described.

4. The table a', having flange j', and being pivoted on the lever f'', connected by link d'' with the bed-plate b, and having the catch-pawl h'', said table also being arranged to clamp the copy-plates b' against the edge of bed-plate b, and having notches i' for the holding-pawl, substantially as described.

5. In an engraving-machine, the combination, with the slotted plates a b, of the slotted bars n', adjustably attached to said plates a b, and the slotted plate m', for supporting adjustably a work-holding vise, substantially as described.

295,854. BOILER-SCRAPER. JOSEPH HENRY BEARE, Tombstone, Ariz. Filed July 28, 1883. (No model.)



Claim.—1. A boiler-scraper consisting of one or more frame-sections, annular internally serrated or toothed bands secured thereto and surrounding the tubes, toothed wings or shell-scrapers radiating from said frame-section to the inner circumference of the boiler, and a means for reciprocating said section or sections within the boiler, substantially as herein described.

2. In a boiler-scraper, the frame consisting of the end bars, a, side bars, a', and the springs b upon the side bars, a', in combination with the internally serrated or toothed independent semicircular bands or tube-scrapers B, having arms b^2, slotted or guided on the side bars, a', and resting on the springs b, and a means for reciprocating said frame within the boiler, substantially as and for the purpose herein described.

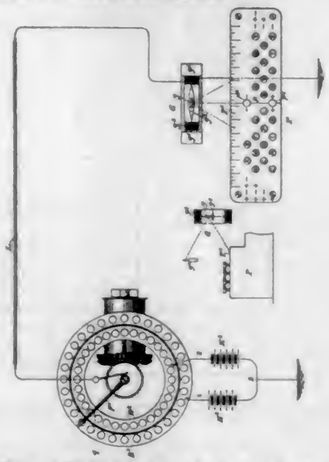
3. In a boiler-scraper and means for reciprocating it within the boiler, in combination with internally-serrated bands B, secured thereto and encircling the tubes, the toothed wings or shell-scrapers D, extending from the frame to the shell, said wings being made of spring material, substantially as and for the purposes herein described.

4. In a boiler-scraper, a frame having side and end bars and a cross-bar, a^2, the annular internally-serrated tube-scrapers B, secured within said frame, and the toothed wings or shell-scrapers D, extending therefrom, in combination with the piston or draw rod E, secured to the cross-bar a^2 and extending through the head of the boiler, whereby the frame may be reciprocated, substantially as herein described.

5. A boiler-scraper consisting of the independent frame-sections A A' A', the expanding annular internally-serrated tube-scrapers B, secured to said frames, the tapering toothed wings or shell-scrapers D, radiating from said frames, and the separate pistons or draw rods E, secured to each frame, said rods extending through the head of the boiler, whereby said frames may be reciprocated independently, substantially as herein described.

6. In a boiler-scraper, the side sections, A A', consisting of the spaced end bars, a, the inner side bars, a', and the outer spaced side bars, a^3, the springs b on said bars a', and the springs c within said spaced bars a^3, in combination with the internally serrated or toothed semicircular tube-scrapers B, having arms b^2, guided on the side bars and resting on the springs, and the radiating shell-scrapers D, bolted in the spaced bars, substantially as and for the purpose herein described.

295,855. TELEGRAPHIC SYSTEM. CHARLES G. BURKE, Richmond Hill, N. Y. Filed Dec. 17, 1883. (No model.)



Claim.—1. The hereinbefore-described method of telegraphy, which consists in distinguishing different groups of characters by an electric current, impulse, or combination of electric currents or impulses, and the individual letters contained in such groups by distinctive intervals of time occurring after the group-signal has been given and before a succeeding signal is commenced.

2. The hereinbefore-described method of telegraphically indicating different characters of a series, which consists in dividing such series into arbitrary groups, designating each of the several groups by means of electric currents possessing particular characteristics, and indicating the individual letters in the several groups by different intervals of time succeeding the group-designating currents.

3. The hereinbefore-described method of telegraphy, which consists in indicating different groups of letters or characters by electric currents of distinguishing characteristics, and indicating the individual characters by different numbers of units of time elapsing after such groups are indicated, substantially as described.

4. The hereinbefore-described method of telegraphy, which consists in designating each particular group of letters by the transmission of electric currents or impulses, and each individual letter in such group by the interval elapsing before the transmission of a succeeding current or impulse.

5. The hereinbefore-described method of indicating the individual characters of a series, which consists in indicating the groups into which said series is divided by electric currents, and assigning to each character in each group a distinctive period of time by the occurrence of which, after the group has been indicated, that character is designated.

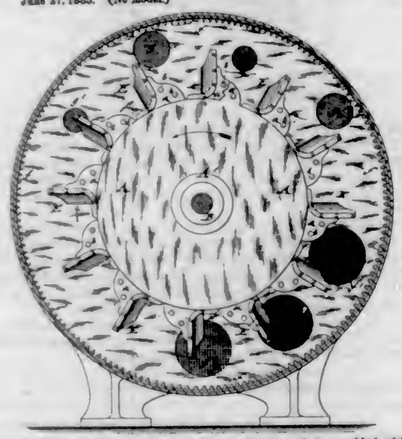
6. The hereinbefore-described method of indicating the different characters in a series, which consists in dividing such series into groups, designating each of the different groups by a characteristic signal, and indicating the individual characters in such groups by the measurements of a metronome.

7. The hereinbefore-described method of transmitting telegraphic messages, which consists in indicating different groups of character-recording keys, corresponding to the characters which constitute an embodiment of such message, by predetermined electric signals, and indicating the particular recording-key in a designated group by the interval occurring after such group has been designated before another signal is commenced.

8. The hereinbefore-described method of indicating the different keys of a character-recording key-board which correspond to the characters embodying a telegraphic message, which consists in indicating the side of such board upon which such keys are located by primal signals, the particular line of keys containing such keys by the same primal signal, or a combination therewith of other signal or signals, and the particular key in such line by the units of time measuring the intervals between the signals or combination of signals.

9. The hereinbefore-described method of indicating the different characters contained in a series, which consists in designating different groups of said series by the movements of a reflected ray of light, and indicating the different characters contained in such groups by the period during which the direction of such ray of light is unchanged.

295,856. PULVERIZING APPARATUS. LEWIS S. CHEESEMAN, Jersey City, N. J., assignor to C. M. Edward Schroeder, same place. Filed June 27, 1883. (No model.)



Claim.—1. The combination of an inclosing-casing, provided with projections on its inner circumference, a rotary disk within said casing, having tapered ejectors fixed thereto, and means for admitting and means for discharging the material, substantially as described.

2. The combination of an inclosing-casing provided with projections on its inner circumference, a rotary disk within said casing, provided with projections at its circumference, tapered ejectors provided with flanges bolted to said projections of the disk, the mouths of said ejectors being in radial lines with the center of the disk, and means for supplying and means for discharging the material, substantially as described.

3. The combination of an inclosing-casing having interior projections on its inner circumference, and a rotary disk within said casing, provided with tapered ejectors at its circumference, said casing being also provided with a supply-hopper and an enlarged chamber at one side, and screened discharge-openings at its lower part.

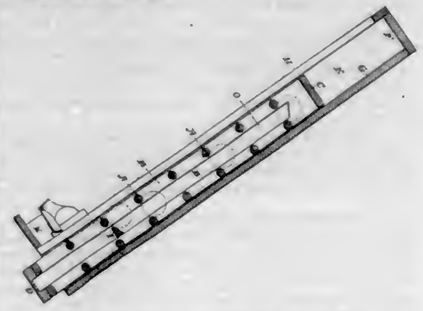
4. A detachable ejector for pulverizing-machines, consisting of a tapered body having a mouth at one side and a discharge-opening at its contracted end, said ejector being provided with attaching-flanges, substantially as described.

5. The combination of an inclosing-casing having projections on its inner circumference, and openings in its side walls, lateral pressure-relief tubes connecting said openings, a rotary disk within said casing, provided with ejectors, and means for supplying and means for discharging the material, substantially as described.

6. The combination of an inclosing-casing having projections on its inner circumference, a chamber near its center, and openings in the side walls, radial connecting-tubes that extend from said openings to said chamber, a rotary disk within said casing, provided with ejectors, and means for supplying and means for discharging the material, substantially as described.

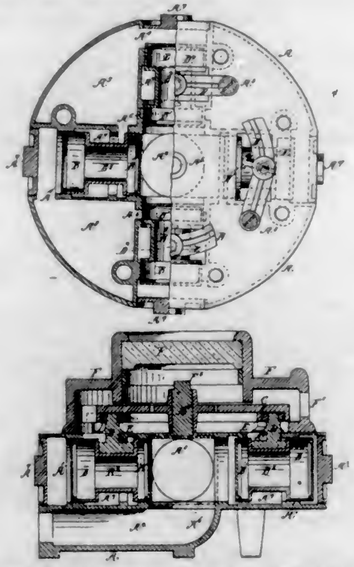
7. The combination of an inclosing-casing having projections on its inner circumference, a chamber near its center, and openings in its side walls, a rotary disk within said casing, provided with ejectors, means for supplying the material, means for discharging the same when pulverized, lateral pressure-relief tubes connecting the openings in the side walls of the casing, and radial conduit-tubes that extend from the openings in the side walls of the casing, near the circumference thereof, to the chamber near the center of the casing, substantially as described.

295,857. POOL-RACK. HUGH W. COLLENDER, New York, N. Y. Filed Feb. 13, 1884. (No model.)



Claim.—A contrivance for containing and effecting the ready discharge, into any suitable receptacle or tray, of the balls credited to the respective players in the game, composed of a sliding or descending and ascending pool-rack proper, arranged within any suitable guiding and supporting frame or case, and a stationary ball lifting and discharging bar or device, the whole arranged to operate in substantially the manner and for the purpose set forth.

295,858. MACHINE FOR MEASURING INCOMPRESSIBLE FLUIDS. JOS. E. CRISP, Somerville, assignor to John Stetson, Newton, Mass. Filed Oct. 12, 1883. (No model.)



Claim.—1. In a machine for measuring inelastic fluids under pressure, the combination of the pistons B B', the cam-disk C, the air-chamber F^2, the inlet A^2, and the outlet F^3, all substantially as described.

2. In a machine for measuring inelastic fluids under pressure, the combination of the inlet A^2, the cylinders A', the chambers A^3, connected

with the outer ends of the cylinders by the ports A^4, the chambers A^3, connected with the inlet A^2 by means of the ports A^6, the ports A^7, connecting with the chambers leading to the outlet-passage F^3, the piston-valve B B', the cam-disk C, and the pivoted connections D D', connecting the pistons with the cam-disk, all substantially as and for the purposes described.

3. In a machine using elastic or inelastic fluid, the combination of a cam, laid out and operating substantially as described, with the pistons moving in two cylinders at right angles to each other.

4. In a machine using elastic or inelastic fluid, a cam, as described, which allows the pistons periods of rest and maximum motion, substantially as and for the purpose set forth.

5. In combination with the pistons B B', cam C, and the swinging arms D, each of which is pivoted to the casing of the meter, and has the cam-pin D^2, which engages with the cam C, and an arm, D', which engages with the piston, all substantially as and for the purposes described.

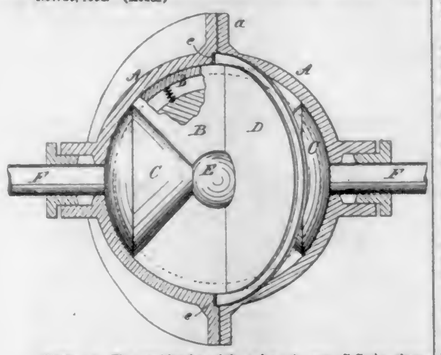
6. In a machine using elastic or inelastic fluid, the combination of a cam with single-acting pistons and piston-valves, whereby the pistons are caused to act in unison in opposite ends of the cylinders, and an automatic adjustment for wear thereof provided, all substantially as and for the purposes described.

7. The combination, in a meter or motor, of two or more cylinders, their ports A^4 A^6 A^7, chambers A^3, separate pistons B, piston-valve B', and the cam for returning the piston successively to a position to be again operated upon by the pressure, all substantially as and for the purposes described.

8. The combination, in a meter or motor, of a central chamber or pressure-supplied passage, two or more cylinders radiating therefrom, their pistons adapted by the pressure in the said central chamber or supply-passage to be moved successively outwardly in their respective cylinders, supply and exhaust ports and their valves, the outlet-passage F^3, and a cam for returning the pistons to a position to again take the pressure, all substantially as described.

9. In a motor or meter, the piston B, operated by the pressure of the fluid in one direction and by a cam in the reverse direction, and the intermediate pivoted connections, D D', connecting the piston with the cam, and shaped as described, whereby the piston is partially revolved during each complete reciprocation, all substantially as and for the purposes set forth.

295,859. ROTARY ENGINE. JOHN T. DAVIS, New York, N. Y. Filed Nov. 23, 1882. (Model.)



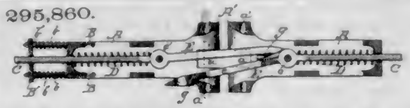
Claim.—1. The combination of the sphere A, cones C C, the piston B, and the shafts F F, all acting upon a common axis through the center of the sphere, and revolving upon a common center with the disk D, having a larger diameter than the internal diameter of the sphere, a slot of the exact diameter of the piston B, and a circular central aperture fitting the globe E of the piston B, and provided with packing *f*, which piston is set at an angle from a perpendicular, and the inlet and outlet passages *l m*, all of said parts being arranged substantially as shown, and for the purposes set forth.

2. The disk with a slot through its center and a circular aperture fitting the globe on the piston, through which the piston works in its revolutions around its axis, supported and kept in position by an outside ring or flange working in a groove turned in the case of the sphere at the point where the flanges come together.

295,860. CAR-COUPLING. JAMES F. DUFFY, South Chicago, Ill., and WILLIAM MCIVOR, Rochester, Ind., assignors of a part to Christopher C. Wolf, John B. Fraser, Daniel Jones, George W. Holman, and said McIvor, all of Rochester, Ind. Filed July 18, 1883. (No model.)

Claim.—1. A draw-head having the vertical side walls thereof cut away at or about their vertical centers, having suitable holes in the said

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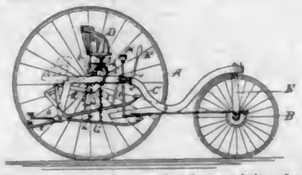


side walls and in the transverse center of said draw-head for the reception of coupling-pins, and having a catch in the mouth of the same, the outer surface of which is beveled, as set forth.

2. In a draw-bar, the combination, with a rod passing into the draw-bar from the rear, and having hinged to the end thereof, adjacent to the head of said draw-bar, a link, of a coil-spring surrounding said rod within the draw-bar, having one end preferably fastened to said bar, and the other end bearing against the closed end of said bar, substantially as set forth.

3. The combination, with a draw-bar, of a cushion consisting of four bolts secured in a suitable plate at one end and passing longitudinally into the rear of the said draw-bar, near the corners thereof, elastic rubber sleeves surrounding said bolt, and coiled springs surrounding said sleeves, substantially as and for the purpose set forth.

295,861. TRICYCLE. DAVID E. DUTROW, Washington, D. C., assignor of one-half to Charles W. Brady, Rockville, Md. Filed Dec. 26, 1883. (No model.)



Claim.—1. A motor for tricycles, &c., consisting of one or more bell-crank levers pivoted to the rear portion of the frame of the machine and back of the axle of the main driving-wheels, connected at one end to the axle or other driving mechanism, substantially such as described, by means of pitmen, and at the other end to treadles adapted to be moved in a vertical direction by the motion of the feet of the operator, as set forth.

2. As a means for propelling tricycles, one or more bent or bell-crank levers pivoted to the rear portion of the frame of the machine and back of the axle of the main driving-wheels, connected at one end to the axle of the machine by means of pitmen, and the other or free ends of the bell-crank lever or levers extended forward within reach of the rider to form treadles by which the machine is operated.

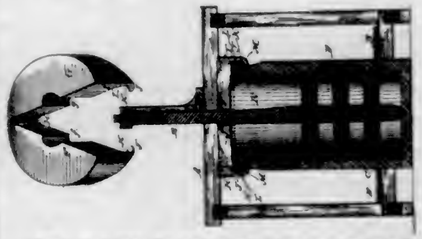
3. A tricycle adapted to be moved or propelled by treadles or levers working in a vertical direction, in combination with a seat adapted to be adjusted toward or from said treadles, as set forth.

4. In a tricycle, the levers G, provided with the extensions e or foot-rests *m*, in combination with a supplemental seat, as and for the purpose set forth.

5. In a tricycle, the bell-crank levers provided with the treadle-extensions, connected at their upper ends to the axle or other driving mechanism by means of pitmen, in combination with springs I, as and for the purpose set forth.

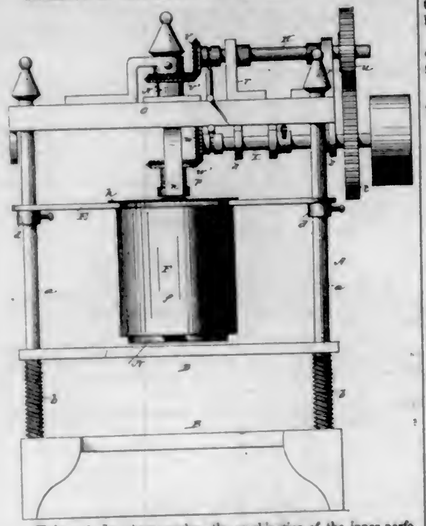
6. The combination of the bell-crank levers provided with treadles and connected to the axle, as described, with the rods *u* and hand-levers P P.

295,862. CHURN. WILLIAM HENRY DYER, Midway, Va. Filed Nov. 16, 1883. (No model.)



Claim.—In a churn, the combination of the cream-receptacle D, having flange L and gasket M, and cover consisting of the hinged parts F and G, recessed at *f* and *g*, and having grooved flanges J and fastening H, as shown and specified.

295,863. BRAN AND FEED PACKER. SOLOMON B. ELLITHORP, Rochester, N.Y. Filed Jan. 24, 1884. (No model.)



Claim.—1. In a bran-packer, the combination of the inner perforated cylinder, outer non-perforated cylinder, and horizontal perforated flange, substantially as described.

2. In a bran-packer, the combination of the two upright shafts, one running within the other, as described, and for the purpose set forth.

3. In a bran-packer, an auger constructed in two parts, as described, and for the purpose set forth.

4. The combination of the doubled-walled cylinder and the two uprights with packing devices, as described, and for the purpose set forth.

5. In a bran-packer, the combination of the adjustable auger and the two upright shafts, as described, and for the purpose set forth.

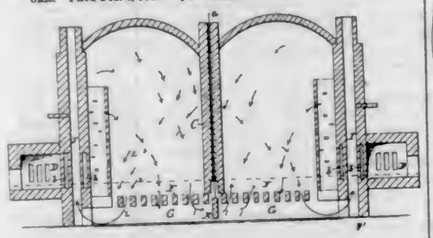
6. In a bran-packer, in combination with the vertical shafts and packing-means revolving the agitators therewith, as described and set forth.

7. In a bran-packer, the combination of the inner vertical shaft with the lower compressing-auger and the suspended cylinder supporting the bag, substantially as described.

8. In a bran-packer, the combination of the upright shafts, augers, agitators, and cylinders, for the purpose set forth.

9. In a bran or feed packer, the combination of a suspended cylinder, inside and outside upright shafts, with augers and agitators, and an automatic falling table, all as described, and for the purpose set forth.

295,864. BRICK AND TILE KILN. WILLIAM A. EUDALY, Cincinnati, Ohio. Filed Feb. 4, 1884. (No model.)



Claim.—1. A kiln provided with a partition-wall in which are located chimneys communicating with and extending from the continuous flues at the bottom of the kiln only and leading to above and beyond the kiln-roof.

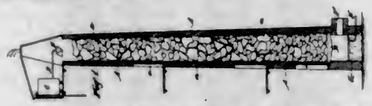
2. In a double kiln, continuous flues situated in the bottom of the kiln, and running under the partition-wall, and adapted to be divided at the partition-wall by dampers or cut-offs, as set forth.

3. In a kiln of the character described, the continuous flues, extending from side to side of the kiln, in combination with the partition-walls C and dampers K, as set forth.

4. In a kiln-wall, air-chambers situated at the sides of the eye of the kiln, and within the walls of the kiln, arranged as described, so that the escaping heat from the kiln is made to pass through said air-chambers by means of chimneys situated within said air-chambers.

5. In a brick-kiln, the combination of the flues G, provided with dampers K, with the lateral or diagonal flues L and chimneys H, as set forth.

295,865. MANUFACTURE OF PAPER-PULP. DAVID OTTO FRANCKE, Korndal Molndal, Sweden. Filed Oct. 29, 1881. (No model.) Patented in England Oct. 11, 1881, No. 4,419, and Dec. 17, 1881, No. 5,532; in France Oct. 13, 1881, No. 145,317; in Canada Nov. 12, 1881, No. 13,695, and in Italy Dec. 31, 1881, XXVII, 2,020.



Claim.—1. As a preliminary step in the manufacture of paper, the method described of producing an acid-sulphite solution of proper strength and nearly the proper temperature for use in paper-pulp manufacture by presenting hot sulphurous-acid fumes to solid alkali in the presence of a small quantity of water allowed to trickle down over the solid surfaces, as herein specified.

2. The method described of manufacturing paper-pulp at a single operation by subjecting wood or analogous vegetable matter in a divided state to gentle mechanical agitation with acid sulphite at a temperature of about 300° Fahrenheit and a strength of 4° or 5° Baumé, all substantially as herein specified.

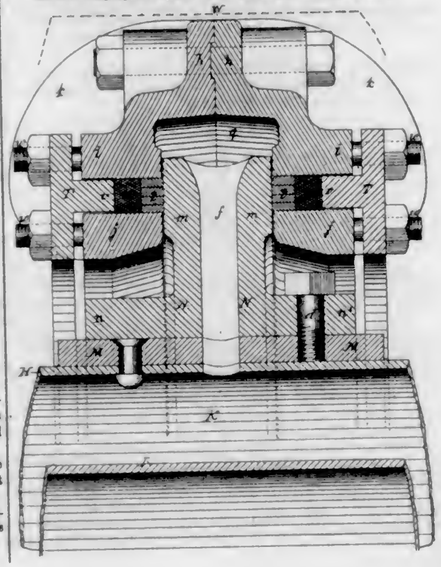
3. The process of manufacturing paper-pulp from wood and analogous vegetable fiber by subjecting the material in a divided state to the action of acid sulphite under heat and pressure at a single operation, substantially as herein specified.

295,866. WHIFFLETREE. JOHN GRAVES, Green Point, N. Y. Filed Aug. 4, 1883. (No model.)



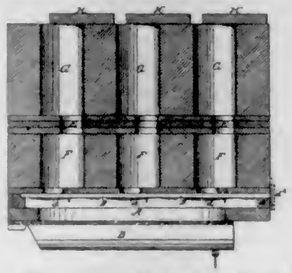
Claim.—A corrugated whiffletree made of one or more sheet-metal plates, with the sides turned up or down and the edges of the turned-up sides bent outward, as and for the purpose set forth.

295,867. WATER-JOINT FOR ROTARY PUDDLING-FURNACES. JOHN GRIFFEN and JESSE HALL, Jr., Phœnixville, Pa., assignors to the Phœnix Iron Company, same place. Filed June 22, 1883. (No model.)



Claim.—The combination of a rotary peddler and its ring *m* with the ring W, composed of two semi-annular parts, each composed of two segments, and each segment having a flange, *i*, and rib *j*, situated apart from each other, but connected together by webs *k*, all substantially as specified.

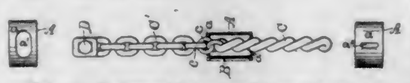
295,868. REED-ORGAN. JAMES BAILLIE HAMILTON, Hammersmith, County of Middlesex, assignor of one-third to Edward Archibald Ramsden, Isholme, England. Filed Feb. 4, 1884. (No model.)



Claim.—1. The combination of the pallets, sound-board, and reeds with cavity-boards, one above the other, the lower one containing the nostrils and the upper one the mouths, and an intermediate controlling-slide, substantially as set forth.

2. The combination of the pallets, sound-board, and reeds with cavity-boards, one above the other, the lower one containing the nostrils and the upper one the mouths, substantially as described.

295,869. WATCH-CHAIN TIP. HENRY M. HERRING, North Attleborough, Mass., assignor of one-half to Oscar M. Draper, same place. Filed Dec. 17, 1883. (No model.)



Claim.—1. An improved watch-chain tip provided with apertures to receive the chain-link, and also to receive a ring secured to said link, the said tip being secured to the chain without solder.

2. The combination, with the tip having the flaring rim provided with the apertures a' a^2, of the chain C C', the part C being provided with a ring secured thereto by solder, substantially as and for the purposes described.

3. The combination, with a watch-chain, of a tip provided with two apertures adapted to be secured to the chain by passing a ring secured to one chain through the end link of the other chain, as described.

295,870. COMBINED BOUQUET AND TICKET HOLDER. WILLIAM H. HOGAN, Boston, Mass., assignor of one-half to Edward W. Pasture, same place. Filed May 14, 1883. (No model.)



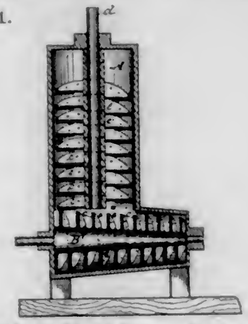
Claim.—1. A bouquet and ticket holder and cutter consisting of the shield *a*, the holder *g f f' e a*, the cutter *h*, and the hold *k i j l*, substantially as and for the purpose set forth.

2. The combination of the holder composed of the loop *g*, the bent portions *f f'*, and legs *e e* with the shield *a*, provided with the hook *d* and bent portions *b b*, the shield being of a single metal plate, all as shown and described.

295,871. BRICK AND TILE MACHINE. ABRAHAM HORROCKS, Bardolph, Ill. Filed Apr. 23, 1883. (No model.)

Claim.—1. In a brick or tile machine, a vertical chamber having therein a vertical pugging or mixing and forcing screw, said vertical chamber being joined and forming a part of a horizontal chamber, in which is placed a horizontal mixing and forcing screw, said screw being tapering and adapted to fill the space between the lower portion of the horizontal chamber and the lower end of the vertical screw, as set forth.

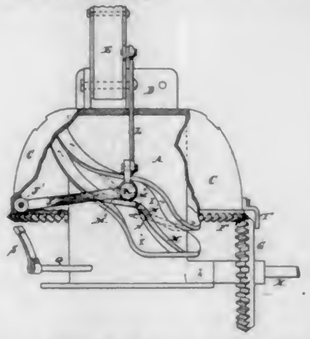
295,871.



2. The combination of the vertical screw with a tapering horizontal screw extending entirely across the horizontal chamber, as shown and described.

3. The combination, in a brick or tile machine, of the screw flanges or blades c with the steel plates *s s*, secured to their working-faces, substantially as shown and described, for the purpose set forth.

295,872. HARVESTER-RAKE. SAMUEL JOHNSTON, Brockport, N. Y. Filed Sept. 21, 1883. (No model.)



Claim.—1. A supporting-standard for the rake-head, made of large diameter, and provided on its circumferential surface with a rake-actuating camway, so shaped or formed that lines at right angles from the center of said standard through the actuating-surface of the camway shall lie in horizontal planes, substantially as and for the purpose specified.

2. A supporting-standard for the rake-head, made of large diameter, and provided on its circumferential surface with a rake-actuating camway, so formed that lines radiating at right angles from the center of said standard through the actuating-surface of said camway shall lie in horizontal planes, in combination with a rake-head, rakes, a hood carried by said rake-head, and covering said camway, rollers running in said camway and carried by said hood or rake-head, and connecting mechanism between said rollers and rakes, substantially as and for the purpose specified.

3. A supporting-standard for the rake-head, made cylindrical, provided with a journal or pin on its top and a main camway of great pitch upon its circumference, and an auxiliary camway, in combination with automatic switching devices, by which said auxiliary camway is opened or closed to the main camway, a rake-head, rakes, a hood inclosing said camways, rollers arranged to run in said camways and carried by said hood or rake-head, and links connecting said rollers with said rakes, substantially as and for the purpose specified.

4. The combination of standard A, having camway I and pin B, with hood C, rakes E, arms J, rollers K, and links L, substantially as and for the purpose specified.

5. The combination of standard A, having camway I and pin B, with hood C, having teeth F on its bottom, wheel G, rakes E, arms J, rollers K, and links L, substantially as and for the purpose specified.

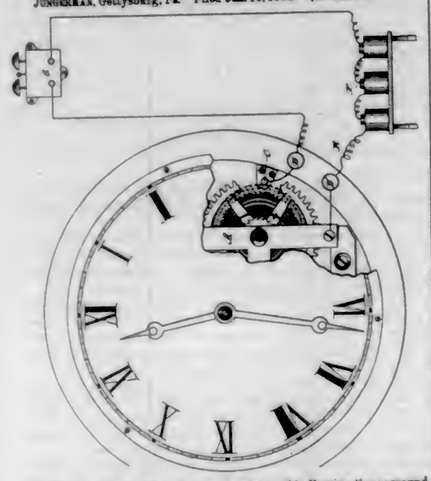
6. The combination of standard A, having camway I, camway I', switch M, having extension M', mechanism to actuate said switch, switch M^2, and pin B, with hood C, rakes E, arms J, rollers K, and links L, substantially as and for the purpose specified.

7. The combination of standard A, having camway I, camway I', switch M, having extension M', mechanism to actuate said switch, switch M^2, shaft N, having arm N', spring O, shaft Q, having arm P, spring R,

arm S, and tug T, pin B, with hood C, rakes E, arms J, rollers K, and links L, substantially as and for the purpose specified.

8. The combination of camway I, hood C, means to support said hood, rake-arms E, arms J, rollers K, and links L, substantially as and for the purpose specified.

295,873. ELECTRIC ALARM FOR SPRING-CLOCKS. EDWARD JUNGERMAN, Gettysburg, Pa. Filed Jan. 18, 1884. (No model.)

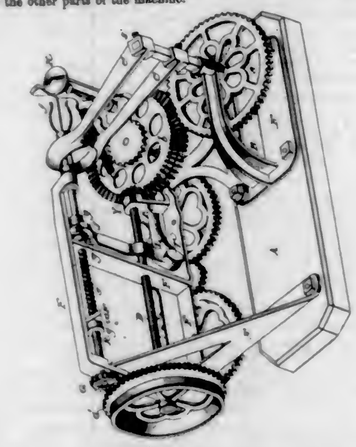


Claim.—1. The method herein described of indicating the unwound or spent condition of a spring-clock, which consists in closing an electrical circuit by the expansion of the mainspring and producing an audible or visible signal, substantially as described.

2. The combination, with a clock and its mainspring, of an electrical circuit, a battery, a signal set by the battery, and contact-points, of the circuit adapted to be closed by the expansion of the mainspring, substantially as shown and described.

295,874. FRUIT-PARER. ALBERT N. KEOWN and WILLIAM G. TALLEY, Wilmington, Del. Filed Apr. 12, 1882. (Model.)

Brief.—The rotation of the fruit-holding fork is suspended at intervals for the placing of fruit thereon without interfering with the movement of the other parts of the machine.



Claim.—1. In a fruit-paring machine, the combination of a projection, *p*, upon a cogged turn-table, *b*, operating a lever, L, through the medium of a roller, *r*, on one arm of said lever, while the other arm is in gear with the sliding spring-operated fork-rod R through the medium of the jaw J and the grooved collar *o*, all substantially as set forth.

2. The combination of the fork-rod R, capable of a rotary and a lateral sliding movement by means of the pinion G and pivoted bell-crank lever L, having a fork or yoke thereon, with the spring S on said rod R, bearing at one end against the frame F, and at the other end against a loose washer, *w'*, said washer being prevented from turning on said rod by means of a projection of said washer engaging the edge of the frame, substantially as set forth.

3. In a fruit-paring machine, the combination of the fork-rod R, having bearings in the stationary frame F, with the pinion-wheel G and spur-wheel G', these wheels having cogs tapered in the direction of their axes, respectively, and said rod R having a lateral sliding movement greater than the width of the face of the pinion-wheel G, whereby, through the medium of the lever L, a cessation in the revolution of the fork *f* is caused, while the balance of the machinery continues to operate uninterruptedly.

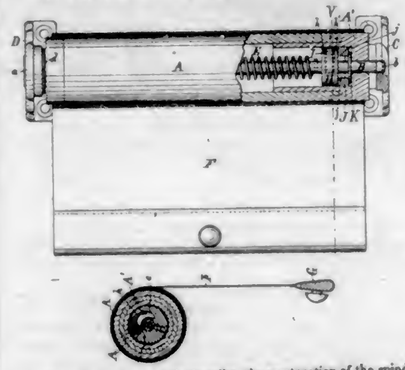
4. In a fruit-paring machine, the combination of the spur-wheel *s* with the cogged turn-table *b*, provided with spur and crown teeth, with the bracket B, the shaft *s'*, and the doffer-arms and cups *c'' c''*, all substantially as set forth and herein specified.

5. The frame F, provided with the horizontal parallel rods R D, the former carrying the pinion G, grooved collar *g*, and fruit-fork, and the latter carrying the pulley and driving gear-wheel P G', for rotating the rod R, and a pinion, Y, for rotating the turn-table *b*, in combination with the bell-crank lever L, pivoted to frame F in rear of the said rods, and engaging the grooved collar *g* with one end, and the other end bearing on the under side of the turn-table, which is provided with a cam projection, *p*, for operating said lever, whereby said lever will be rocked, causing said rod R to be thrown out of gear with the rod D, substantially as set forth.

6. The bell-crank lever L, pivoted to the frame F, one end of said lever engaging the fork-rod R, and the other end engaging the turn-table, the end engaging the turn-table being provided with slotted bearings *s* in the frame F, whereby bending of the lever is prevented, and means of support and guidance is afforded the lever, substantially as set forth.

7. An apple-parer consisting of the two parallel horizontal rods R D, mounted in frame F, and geared together by gear-wheels G G' at their outer ends, the fork *f*, collars *g g' w'*, and spring S on said rod R, the bell-crank lever L, engaging said collar *g* with one end, and the under side of the table-wheel with its other end, said table-wheel having crown-teeth on its face and spur-teeth on its periphery, the former meshing with cog-wheel *s*, whose shaft *s'* has bearings in the bracket B, and is provided with the cup-shaped doffer-arms *c'' c''*, substantially as set forth.

295,875. SPRING SHADE-ROLLER. DANIEL E. KEMPSTER, Boston, Mass. Filed Oct. 4, 1883. (No model.)



Claim.—1. In a spring shade-roller, the combination of the spindle B, provided with a lip, *b*, cam H, having legs *j j*, locking-piece I, friction-disk J, washer K, and cap A', all constructed and arranged substantially as set forth.

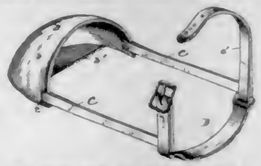
2. In a spring shade-roller having a fibrous friction-disk inside its end cap, the combination therewith of an oscillating locking-piece, operating, substantially as described, within the bore of the cap, to prevent the spring from unwinding when the roller is removed from its brackets.

3. A spring shade-roller having a spindle-cam recessed to receive entire an oscillating locking-piece whose center of motion or pivot-point is above and eccentric to the center of the spindle.

295,876. ANTISEPTIC SOLUTION. JOHN F. KENNEDY, Boston, Mass. Filed Oct. 15, 1883. (No specimens.)

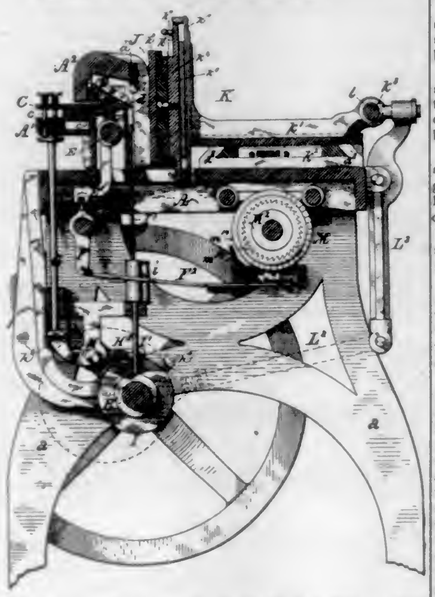
Claim.—The herein-described compound, consisting of water, alum, granulated sugar, saltpeter, and gum-arabic, for the purpose specified.

295,877. TOE-CAP FOR BOOTS OR SHOES. FREDERICK H. KENNEDY, Auburn, N. Y. Filed Jan. 18, 1884. (No model.)



Claim.—The herein-described toe-cap, formed of a single piece of metal, and consisting of the upper or toe portion, *b*, and the lower portion or strip, *b'*, said cap having slots for the attachment of straps *c*, having at their ends a plate, D, formed at its ends with slots for the attachment of cross-straps, substantially as set forth.

295,878. MACHINE FOR MAKING MATRICES. ROBERT L. KENNERLY, Philadelphia, Pa., assignor to the American Matrix Machine Company, of New York. Filed Dec. 10, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of a movable series of type or character dies, a fixed abutment, and mechanism for locating any one of said dies in a determined position relatively to said abutment.

2. The combination, substantially as set forth, of a movable series of type or character dies, a fixed abutment, a lateral guide, mechanism, substantially as described, for locating any one of said dies in determined position relatively to said abutment and guide, and mechanism for clamping the located die against said abutment and guide.

3. The combination, substantially as set forth, of a movable series of type or character dies, a fixed abutment, mechanism, substantially as described, for moving any one of said dies into and fixing it in position against said abutment, a holder or carrier adapted to receive a matrix block or blank, and mechanism, substantially as described, for moving said carrier toward the face of the die when fixed.

4. The combination, substantially as set forth, of a movable series of type or character dies, a fixed abutment, a lateral guide, mechanism, substantially as described, for moving any one of said dies into and fixing it in position against said abutment and guide, a holder or carrier adapted to receive a matrix block or blank, and mechanism, substantially as described, for moving said carrier toward the face of the die when fixed.

5. The combination, substantially as set forth, of a movable series of type or character dies, a fixed abutment, mechanism, substantially as described, for moving any one of said dies into and fixing it in position against said abutment, a holder or carrier adapted to receive a matrix block or blank, mechanism, substantially as described, for moving said carrier toward the face of the die when fixed, and a stationary plate or shield interposed between the face of the die and its abutment, and acting to limit the traverse of the matrix-block toward the latter.

6. The combination of a rigidly-held die, a reciprocating matrix-block holder, and a fixed guard or shield, substantially as described and shown.

7. The combination, substantially as set forth, of a movable series of type or character dies, members of which are of different widths of face respectively, a fixed abutment, a holder or carrier adapted to receive a matrix block or blank, mechanism for moving any one of the dies into and fixing it in position relatively to the fixed abutment, mechanism, substantially as described, for moving the matrix-block carrier toward the face of the die when located and fixed, and feed mechanism, substantially as described, connected with and actuated through the mechanism which locates each die in such manner as to impart to the matrix-block carrier a lateral traverse equal to the width of face of the located die.

8. The combination, substantially as set forth, of a sliding key-board and a series of type or character dies, each pivoted freely and independently thereon.

9. The combination, substantially as set forth, of a movable key-board, a series of type or character dies pivoted therein, and a series of operating-keys.

10. The combination, substantially as set forth, of a key-board, a series of type or character dies pivoted thereon on stems or pivots having a limited degree of movement in the line of the die-stocks, and springs bearing against the blocks or supports of said pivots.

11. The combination, substantially as set forth, of a frame or table, a stationary abutment secured thereto, impressing mechanism, substantially as described, mounted thereon, and a key-board carrying a series of type or character dies, and adapted to move longitudinally on the table and to be removed therefrom at pleasure.

12. The combination, substantially as set forth, of a frame or table, a stationary abutment secured thereto, a key-board adapted to move longitudinally thereon, a series of type or character dies journaled in said key-board, a series of operating-keys fitted in said key-board, and an opening in the table adapted to engage any one of said keys, these members being combined for joint operation, so that the engagement of any selected key with said opening shall locate a corresponding die in determined position relatively to the fixed abutment.

13. The combination, substantially as set forth, of a frame or table, an abutment fixed thereto and adapted to serve as an end bearing for the stock of a type or character die, and a shield or guard-plate formed upon or secured to the frame, and having its face parallel with the abutment and closer thereto than the distance between the end of the die-stock and the face of the die.

14. The combination, substantially as set forth, of a frame or table, a fixed abutment adapted to serve as an end bearing for the stock of a type or character die, and a lateral guide or socket adapted to serve as a side bearing for said die-stock.

15. The combination, substantially as set forth, of a frame or table, a fixed abutment and a lateral guide thereon, a key-board which is movable on said table transversely to said abutment and guide, a series of type or character dies pivoted freely and independently on said key-board, a series of operating-keys whereby any one of said dies may be located in determined position relatively to said abutment and guide, a clamping-bar actuated primarily by means of the key which locates a die, to clamp the located die in position for forming an impression, and a retracting device, substantially as described, connected to and operated by said clamping bar, to return the located die to proper position to admit of the movement of the key-board requisite for the location of another die.

16. The combination, substantially as set forth, of a frame or table, a fixed abutment thereon, mechanism for locating and holding the stock of any one of a movable series of type or character dies in position against said abutment, an intermittently-rotating driving-shaft actuated to make a single revolution in and by the location of each die-stock, a holder or carrier adapted to receive a matrix block or blank and to impart to the latter movement in three directions, a spring or weight connected to the matrix-block carrier and tending to move the same in a direction parallel with the face of the located die, mechanism, actuated by the location of each die, which permits such spring or weight to impart a determined traverse to the matrix-block carrier transversely to the face of the die, and mechanism, substantially as described, connected with and operated by the driving-shaft, for pressing the matrix-block against the face of the located die subsequent to said transverse movement of the carrier.

17. The combination, with a feed mechanism, substantially as described, of a rocking shaft adapted to be moved axially by a connection with a driving-shaft, a clutch-piece which is movable longitudinally on said rocking shaft, a sliding key-board which imparts longitudinal movement to said clutch-piece, and a series of double-armed rockers, each of which is coupled at one end to mechanism for partially rotating one of the disks of the feed mechanism, and is adapted to be engaged at the other by the clutch-piece, substantially as set forth.

18. The combination, with a feed mechanism, substantially as described, of a matrix-block carrier, a stationary abutment, a type or character die adapted to be located and fixed in position against said abutment, and mechanism, substantially as described, for pressing a matrix-block held by said carrier against the face of a die when so located, substantially as set forth.

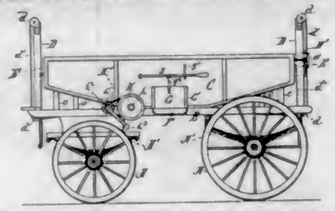
19. The combination, with a feed mechanism, substantially as described, of a matrix-block carrier, mechanism, operated by an intermittently-rotating driving-shaft, for moving said carrier toward and from the face of a fixed type or character die, and mechanism, substantially as described, operated by said driving-shaft, for intermittently relieving the disks of said feed mechanism from the tension of the spring thereof, substantially as set forth.

20. The combination, with a feed mechanism, substantially as described, of a matrix-block carrier, mechanism, substantially as described, for moving said carrier in a direction opposite to its traverse when subject to the traction of the spring of the feed mechanism, and mechanism, substantially as described, for locking the carrier against movement during adjustment of the feed-disks, substantially as set forth.

21. A matrix-block holder having a face-plate adjustable upon a central pivot to any desired angle in the plane of its face, substantially as described and shown.

22. The combination of the centrally-pivoted face-plate, the toothed wheel fast to the face-plate, and the holding-pawl, whereby the matrix-block may be set and held at any angle in the plane of its face, substantially as described and shown.

295,879. DUMPING-WAGON. WILLIAM LEONHARDT and JOHN H. LEONHARDT, Baltimore County, Md. Filed Sept. 18, 1883. (No model.)



Claim.—1. The body of a dumping wagon or cart pivoted on its longitudinal axis and provided with a door, G, on the side thereof, in combination with means, substantially as described, for dumping the body sidewise, for the purpose set forth.

2. The combination of the body, pivoted at its ends, the swinging ratchet-bars *e*, the standards D, and the pin or loop *e'*, as set forth.

3. The combination of the body C, adjustable bar d^3, having ends d^3, the base B, having standards D, and the chains and pulleys, whereby said bar d^3 may be elevated, as set forth.

4. The combination of body C, standards D, bar d^3, pulley *d*, chains *d'*, shaft *h*, and its turning mechanism, as set forth.

5. A dumping cart or wagon the body whereof is pivoted at its ends and has its bottom inclined downward from each end toward the center, as and for the purpose set forth.

295,880. IMPLEMENT FOR ATTACHING HANGERS TO CEILINGS. PIERRE LORILLARD, Jr., New York, N. Y. Filed Feb. 6, 1884. (No model.)



Claim.—1. A combination implement consisting of a handle to which are attached plates 4 5, constructed to form a holder adapted to support the head of an eye or hook and a seat for the shank thereof, an anvil to support the head of a nail or tack, and spring-jaws to embrace the same, and a hook, as 3, substantially as described.

2. In a compound implement, the combination, with the handle, of plates 4 5, set apart and provided with projections 7 8, thereby constituting a holder adapted to support the head of a hook or eye and embrace its shank, substantially as described.

3. In a compound implement, the combination, with the handle, of the anvil 9 and jaws 11 12, substantially as described.

4. In a compound implement, the combination, with the handle and with plates 4 5 and projections 7 8, of the hook 13, substantially as described.

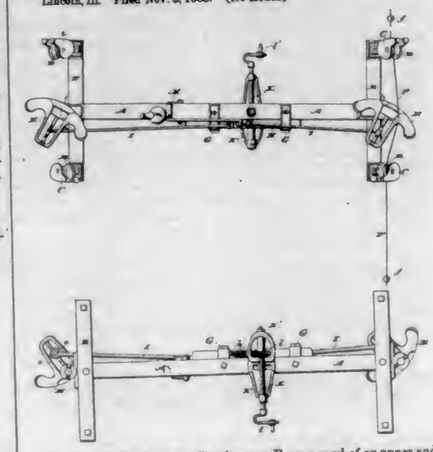
295,881. WATERPROOFING COMPOSITION. ALBERT MINK, Newark, N. J., assignor to Christian F. Mueller, same place. Filed July 23, 1883. (No specimens.)

Claim.—The waterproofing composition formed of tallow, rosin, creosote, rape-seed, and ammonia, combined substantially in the manner and proportions herein specified.

295,882. COMPOSITION FOR CLEANING TEXTILE FABRICS, WOODEN AND METALLIC SURFACES, &c. FRANCES S. MONROE, Oakland, assignor to Isabel M. Somers, San Francisco, Cal. Filed June 13, 1883. Renewed Jan. 25, 1884. (No specimens.)

Claim.—The herein-described composition of matter, to be used for cleansing textile fabrics, wooden and metallic surfaces, consisting of water, aqua-ammonia, white castile-soap, borax, and nitrate of potash, in the proportions specified.

295,883. CHECK-ROWER FOR CORN-PLANTERS. JOHN P. MOOS, Lincoln, Ill. Filed Nov. 5, 1883. (No model.)

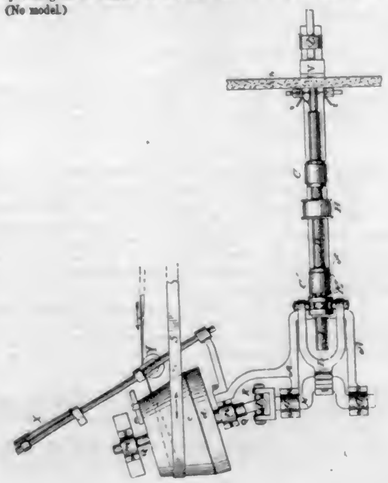


Claim.—1. The pivoted vibrating cam E, composed of an upper and a lower section, between which is a space for the check-row line, and provided at each side with guide-bars *e*, pocket e^2 at the rear of the cam, and post *e'*, connecting the rear ends of the bars, and situated outside of and opposite the pocket, in combination with the check-row line F, provided with balls *f*, substantially as shown and described.

2. In combination with the pivoted vibrating cams E, the rack-bar H A, connections I, shaft L, pinion *l*, crank *l'*, and reciprocating corn-dropping mechanism, substantially as and for the purpose set forth.

3. The rack-bar H, reciprocated through suitable connecting mechanism by the vibrating cam, in combination with the shaft L, carrying pinion *l* and crank *l'*, the lever M, provided with weighted portion *m*, and the rod *n*, connected with the rack-bar H, substantially as and for the purpose described.

295,884. CORK-CUTTING MACHINE. FREDERICK J. NUTTING, Brooklyn, assignor to Truslow & Co., New York, N. Y. Filed Mar. 29, 1883. (No model.)



Claim.—1. The combination, substantially as described, of a bench, a knife-cylinder arranged transversely to said bench and at an incline thereto, provided with a cylindrical knife, and means for imparting rotary and reciprocatory motion to said cylinder.

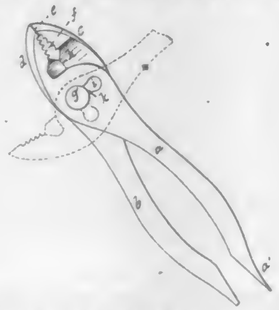
2. The combination, substantially as described, of a reciprocatory rotary knife-cylinder provided with a cylindrical knife, a cylindrical driving-pulley, a cone-pulley the shaft of which is at an angle to the shaft of the driving-pulley, whereby the outer or belt-bearing face of the cone-pulley is parallel with the face of the cylindrical pulley, a belt stretched between said pulleys, and mechanism between the shaft of said cone-pulley and said cylinder for converting the rotary motion of the former into the reciprocatory rotary motion of the latter.

3. The combination, substantially as described, of a reciprocatory knife-cylinder, a crank-shaft at a right angle thereto, means for connecting the crank of said shaft with said cylinder, a shaft arranged at an obtuse angle to said crank-shaft, a universal joint connecting said shafts, and a cone-pulley on said inclined shaft, the belt-bearing face of which is parallel, or nearly so, with the face of the driving-pulley.

4. The combination, substantially as set forth, of a reciprocatory knife-cylinder, a crank-shaft at an angle thereto, means for connecting the crank of said shaft with said cylinder, a shaft arranged at an obtuse angle to said crank-shaft, a universal joint connecting said shafts, a cone-pulley on said inclined shaft, the belt-bearing surface of which is parallel, or nearly so, with the face of the driving-pulley, an adjustable belt-shifting pulley between said driving and cone pulleys, a treadle, and means for connecting said belt-shifter therewith.

5. The combination, substantially as described, of a reciprocatory rotary knife-cylinder provided with a cylindrical knife, a crank-shaft, means for connecting the crank of said shaft with said cylinder, a shaft at an obtuse angle to said crank-shaft, a universal joint connecting said shafts, a cone-pulley on said inclined shaft, provided with a spring-stop, and a belt-shifting device provided with a stop, with which said spring-stop comes in contact.

295,885. PIPE-TONGS. HERBERT S. PULLMAN, Rockville, assignor to Charles E. Billings, Hartford, Conn. Filed Feb. 6, 1884. (No model.)



Claim.—1. As an improved article of manufacture, pivoted lever-handles with jaws substantially as described, one handle bearing a stud, with a shank of oblong section, and the other handle having a plural number of socket-bearings joined by a narrowed slot, all substantially as described.

2. The combination of lever-handles *a* and *b*, having jaws *c* and *d*, the handle *a* bearing the pivot-stud *g*, with oblong shank, and the handle *b* having a plural number of sockets, *i i'*, joined by the slot *k*, whereby the jaws may be adjusted, all substantially as described.

295,886. PROCESS OF PURIFYING HYPOSULPHITE SOLUTIONS USED IN LEACHING ORES. EDWARD HUBBARD RUSSELL, Park City, Utah. Filed Aug. 23, 1882. Renewed Feb. 27, 1884. (No specimens.)

Claim.—1. In the art of leaching ores with hyposulphite solutions wherein the solutions are reused after the precipitation of the precious metals therefrom, the process of neutralizing the alkaline impurities, which consists in adding an acid to the solution substantially in the proportion and manner described.

2. In the art of leaching ores with hyposulphite solutions, the process of restoring the solutions after they have been used, consisting in introducing into the solutions sulphuric acid to neutralize the impurities therein, substantially as described.

295,887. PROCESS OF SEPARATING METALS FROM ORES AND METALLURGICAL PRODUCTS. EDWARD HUBBARD RUSSELL, Park City, Utah. Filed Dec. 10, 1881. (No specimens.)

Claim.—1. The process of removing precious metals and lead from their ores or metallurgical products and separating them from each other, consisting in dissolving them both out of the ore or product with a hyposulphite solution, and then adding to the resulting solution a soluble carbonate to precipitate the lead, substantially as set forth.

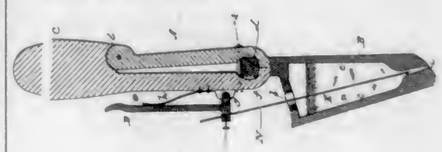
2. The process of removing precious metals and lead from their ores and from metallurgical products and separating them from each other, consisting in leaching the ore or product with a hyposulphite solution, and then adding to the solution containing the precious metals and lead a soluble carbonate to precipitate the lead, substantially as described.

3. The process of separating precious metals and lead from ores and metallurgical products and from each other, consisting in leaching the ore or product with a hyposulphite solution, to dissolve out both the precious metals and lead, then adding to the resulting solution a soluble carbonate to precipitate the lead, and finally removing the remaining solution and precipitating therefrom the precious metals, substantially as described.

4. As an improvement in the art of extracting metals from their ores or from metallurgical products, the process consisting in leaching the ore or product with a hyposulphite solution, to dissolve out both the precious metals and the lead, and subsequently precipitating the lead and precious metals separately from the solution, substantially as described.

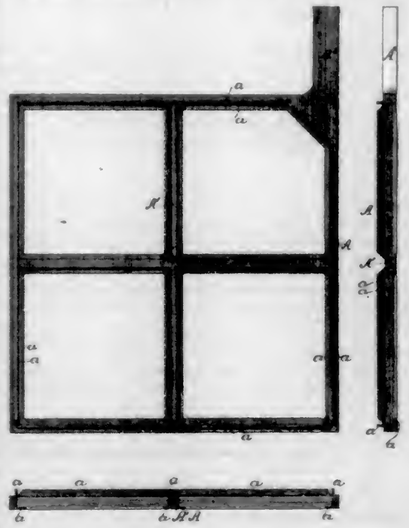
5. The process of separating metals from their ores and from each other, consisting in treating the ore with a hyposulphite solution, to dissolve the precious metals and the lead, then adding a soluble carbonate to precipitate the lead, and finally treating the solution separately to precipitate the precious metals.

295,888. SOLDERING-TOOL. WILLIAM M. RYAN, Shenandoah, Iowa. Filed July 30, 1883. (No model.)

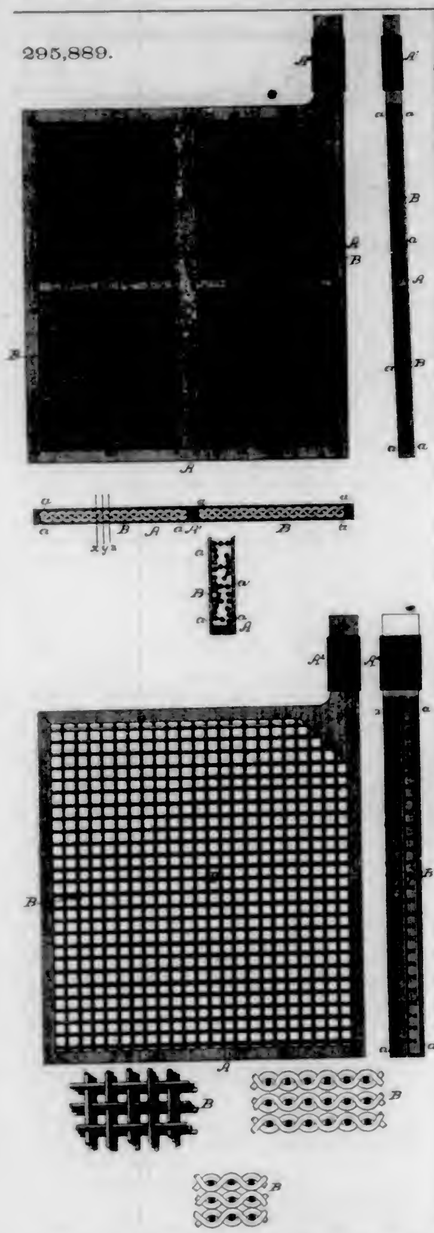


Claim.—The soldering-tool described, consisting of the iron B, having the filling and discharge apertures, and provided with the receptacle E, having its inner walls converging to the discharge-aperture, and the upward loop-extension *d*, the handle C, having the hooked shank-extension *e* and shoulder *i*, the pivoted hooked arm A, spring *h*, fulcrum-bearing *g*, lever D, stopper-rod N, set-screw 3, and rod and nut for securing the handle to the iron, substantially as shown and described.

295,889. BATTERY ELECTRODE OR ELEMENT. ELI T. STARR, Philadelphia, Pa., assignor of one-half to H. M. Lewis and James W. White, both of same place, and William J. Peyton, Washington, D. C. Filed Oct. 30, 1883. (No model.)



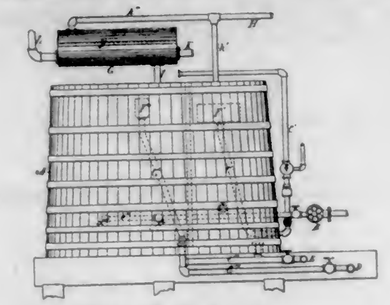
295,889.



Claim.—1. An electrode having two or more sheets or strips of interlaced or woven wire placed with the broad sides of said sheets or strips facing each other, and surrounded at their edges and united thereat to an open-sided frame, substantially as described.

2. A secondary-battery electrode consisting of an open-sided frame having set therein layers or folds of woven or interlaced wire in the form of a flat plaited or braided strip or strips, said frame surrounding the edges of the plate formed by said folds or layers and being firmly united thereto, substantially as described.

295,890. PURIFYING WATER. WM. TWEEDDALE, Topeka, Kans. Filed July 31, 1883. (No model.)



Claim.—1. The combination of the tank A and its compartments *a' a'' a'''* with the agitator B, the discharge-pipes C' and D, the waste-pipe E, the floating filters F' F'' F''', and heater G, all constructed, arranged, and operated substantially as and for the purpose hereinbefore described.

2. The process of eliminating carbonates and sulphates from water, consisting in introducing into and thoroughly mixing with a quantity of water sufficient milk of lime to make an oversaturated solution of lime-water, which, after precipitation, is inducted into the water to be treated, which, having already been highly heated, is thoroughly agitated and allowed more or less time to settle, when carbonate of soda is added, the water being kept highly heated and the mixture again agitated and allowed to settle, substantially as hereinbefore described.

295,891. FEED-WATER HEATER. BENJAMIN WEBSTER, Bridgeport, Conn., assignor of one-half to the Belknap Manufacturing Company, same place. Filed Nov. 15, 1883. (No model.)



Claim.—1. In a feed-water heater, the combination, with the exhaust-steam-inlet pipe, of the water-exit arranged at right angles to said pipe, substantially as set forth.

2. In a feed-water heater, the water-chamber constructed with a rectangular lower portion, in combination with the steam-inlet pipe extending downward at right angles to said portion and forming the upper wall thereof, substantially as described.

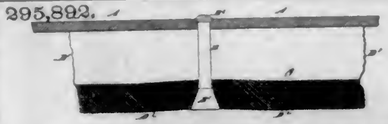
3. In a feed-water heater, the combination, with the neck or upper portion of the reservoir, of the steam-inlet pipe extending within said portion in such manner that a water-chamber is formed whose exit is at right angles to said pipe, whereby the water is discharged in a sheet directly across the current of the steam, substantially as shown and described.

295,892. RUNNER FOR SCRAPERS. LEVI D. YORK, Portsmouth, Ohio, assignor to the York Manufacturing Company, of Ohio. Filed Sept. 10, 1883. (No model.)

Brief.—Hollow scraper-runners are made with a thick bottom and sides flaring upward and outward therefrom.



295,892.



Claim.—1. The hollowed runners for scrapers herein described, having a thick bottom, D^2, with inclined sides D', adapted to serve as herein specified.

2. A scraper having hollow runners D' D^2, applied and secured substantially as herein specified.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE DEMMING.

Decided March 12, 1884.

No matter whether an inventor is a pioneer in his line or not, he cannot make a valid claim the scope of which is so extensive as to include means substantially different from those described, even though the same result may be produced by such different means.

An inventor may, however, employ language sufficiently comprehensive to include colorable variations of his invention, mechanical equivalents thereof, and (if the state of the art will justify it) modifications differing in form but embodying the same principles.

Claims which depend upon such words as "means" and "mechanism" to express their patentable difference over the prior state of the art are too broad.

And it is not sufficient that the claims contain words of reference to the specification where the invention is described, for under the statute it is the *office of the claims* to set forth specifically and definitely the actual invention covered by the patent.

APPEAL from the Primary Examiner.

LOCKS.

Application of Bernard Demming filed June 22, 1883.

Messrs. Baldwin, Hopkins & Peyton for the applicant.

BUTTERWORTH, *Commissioner:*

Three claims are presented in this case, which are as follows:

1. The combination, substantially as set forth, of a lock, bolt, tumbler or tumblers, a dog or dogs for locking one or more of the tumblers in an abnormal position when it has been moved past the proper point to permit the movement of the bolt, and means for acting directly on the dog or dogs with the key to restore the lock to its normal position.

2. The combination, substantially as set forth, of the bolt, the pivoted tumbler or tumblers notched on their rear ends, and detents or dogs which engage with one or more of the tumblers when they are moved past the proper point to permit the passage of the bolt, and the extended ends of the dogs by which the dogs may be thrown out of engagement with the tumblers, as described.

3. The combination, substantially as set forth, of a lock, bolt, tumbler or tumblers, a detent or detents for locking one or more of the tumblers in an abnormal position when it has been moved past the proper point to permit the movement of the bolt, and mechanism by which the detents may be acted directly upon and tripped by the proper key only.

Of these claims only the first and third are involved in this appeal. The first claim depends upon the words "and means for acting directly on the dog or dogs with the key to restore the lock to its normal position" to express its patentable difference over the prior state of the art. Were it not for such words said claim would be substantially answered by a British patent cited in reference. The words "*mechanism* by which the detents may be *acted directly upon* and tripped by the *proper key only*" are employed to distinguish between the combination covered by the third claim and said British patent.

An examination of the description and the drawings of the application shows a certain specific mechanism which acts directly in conjunction with the proper key (and can act with no other form of key) for tripping the dogs or detents and permitting the tumblers to return to their normal position. A portion of such mechanism is definitely expressed in the second claim by the words "*extended ends* of the dogs;" but the first and third claims, as we have seen, use such vague and indefinite terms as "means" and "mechanism," with no limitation except the function or result intended to be performed or accomplished.

If construed literally, the portions of the first and third claims upon which they depend for novelty embrace all construction or arrangements whereby a certain desired result can be attained, and if allowed and upheld would involve a departure from the settled practice, which very properly restricts a claim to the particular device mentioned and described or its palpable equivalent.

The limit to the scope of a patent which may be obtained by an inventor is clearly prescribed by the Supreme Court in *O'Reilly* v. *Morse*, (15 Howard, 62.) They say:

> Whoever discovers that a certain useful result will be produced in any art, machine, manufacture, or composition of matter by the use of *certain means* is entitled to a patent *for it*. * * * The patent confers on him the exclusive right to use the means *he specifies* to produce the result or effect he describes, and *nothing more*, and it makes no difference in this respect whether the effect is produced by chemical agency or combination, or by the application of discoveries or principles in natural philosophy known or unknown before his invention, or by machinery acting altogether upon mechanical principles. In either case he must describe the manner and process as above mentioned and the end it accomplishes; and any one may lawfully accomplish the same end without infringing the patent if he uses *means substantially different from those described*.

And in *Tilghman* v. *Proctor* (19 O. G., 859) the same court quote the language used in *O'Reilly* v. *Morse* above recited, and then say:

> It seems to us that this clear and exact summary of the law affords the key to almost every case that can arise.

This latter case was decided so recently as 1881, and therefore is the more valuable.

It follows from these decisions that, no matter whether an inventor is a pioneer in his line or not, he cannot make a valid claim the scope of which is so extensive as to include "means substantially different from those described," even though the same result may be produced by such "different" means. He is not entitled to cover every means for effecting the exact purpose his invention is designed to accomplish. (See *Burr* v. *Duryee*, 1 Wall., 531; *Case* v. *Brown*, 2 Wall., 230; *Marsh* v. *Dodge*, Fisher, 502, and others.) By the foregoing, however, it is not meant that an inventor may not employ language sufficiently comprehensive to include colorable variations of his invention, mechanical equivalents thereof, and (if the state of the art will justify

it) modifications differing in form, but embodying the same principles, for this he may properly do without coming in conflict with the rule announced by the courts.

In the first and third claims of the present application the terms employed to define the gist of the invention are too broad. They cover not only variations, equivalents, and modifications of the invention described, but also "means substantially different" therefrom, if such should in the future be invented. Indeed, the claims, having specified the desired result, indicate a purpose to monopolize everything that can accomplish such result. It may be urged because the specification clearly describes a particular mechanism for effecting the result, and the claims specify "means" and "mechanism," and contains words of reference to the specification, that the courts would construe them by the specification and sustain them. It is true the courts have been very liberal in this respect, and have in some instances upheld patents containing claims of a similar character, but even then they have commented unfavorably upon the form of the claims.

In the case of *Case* v. *Brown*, *supra*, the Supreme Court says:

> We have had occasion to remark in a late case (*Burr* v. *Duryee*, 1 Wall., 535; see also *McCormick* v. *Talcott*, 20 How., 405) on this new art of expanding machines into patents for a mode of operation, a function, a principle, an effect, or result, so that by an equivocal use of the term "equivalent" a patentee of an improved machine may suppress all further improvements. It is not necessary again to expose the fallacy of the arguments by which these attempts are sought to be supported, *though we cannot hinder their repetition.*

In *Merrill* v. *Yeomans* (11 O. G., 972) the same Court says:

> The developed and improved condition of the patent law and of the principles which govern the exclusive rights conferred by it leave no excuse for ambiguous language or vague descriptions. The public should not be deprived of rights supposed to belong to it without being clearly told what it is that limits these rights. The genius of the inventor constantly making improvements in existing patents, a process which gives to the patent system its greatest value, should not be restrained by *vague* and *indefinite* descriptions of claims in existing patents from the salutary and necessary rights of improving on that which has already been invented.

Without citing other cases in which the Court used similar language, I may add that it is clear the allowance of claims of the character under consideration finds no favor whatever with the Supreme Court, and is in terms condemned, which indicates the purpose of the Court to require that the claims shall be so framed as to point out distinctly and unequivocally the actual invention, and not resort to the specification to limit or extend the scope of the claims. I am confirmed in this view by observing the course of the decisions of the Supreme Court in the last few years in regard to reissues, and also by their ruling in the case of *Lehigh Valley Railroad Company* v. *Mellon*, (20 O. G., 1881.) At any rate, this should be the practice of the Patent Office. It is not sufficient under the statute to merely set forth an invention in the description, but it must be supplemented by a specific and well-defined claim to the part, improvement, or combination which the inventor regards as his property. The purpose of the description is to describe the manner of making, constructing, and using the invention, while the office of the claim is to define and accurately describe it.

The Examiner will be governed in this and similar cases by the suggestions contained herein.

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EX PARTE DERBY.

Decided March 13, 1884.

Abandonment of an invention is not to be presumed from the fact that it is shown and described, though not technically claimed, in a patent, if there is coupled with such description and disclaimer a notice and reservation of the right and declaration of the purpose to claim such invention in a subsequent application, which is in fact filed with reasonable diligence. *Ex parte Rohn* (O. G., vol. 25, p. 113) overruled.

The notice and reservation mentioned above must be followed by diligence in filing an application for such invention. Each day's delay tends to prove abandonment, and is at the peril of the applicant. Both the law and public policy demand vigilance.

It is not intended to sanction *the practice* of incorporating in patents declarations of reservation of particular inventions not claimed therein. Such practice is of doubtful propriety, and ought only to be permitted in exceptional cases and on considerations not discussed in this decision.

Where an invention is described, but not claimed, in a patent, and no notice of an intention to claim it in a subsequent application is contained therein, if the inventor is justly entitled to claim such invention, and has inadvertently omitted to insert it in his patent, the appropriate remedy is a reissue, and not a subsequent application. Rule 91 authorizes this course, and it is sustained by the decisions of the Office and the courts in cases where application is made without unreasonable delay.

ROCK-DRILLS.

INTERLOCUTORY APPEAL.

Application of George McC. Derby filed June 20, 1883.

Messrs. Pope, Edgecomb & Butler and *Mr. F. Jannus* for the applicant.

BUTTERWORTH, *Commissioner:*

On May 29, 1883, there was granted to applicant Patent No. 278,517. The specification of said patent contains the following paragraph:

> I do not herein broadly claim a tubular rock-drill attached to a tubular shank, in combination with mechanism for communicating a positive to and fro motion thereto, and for forcing a stream of air or water therethrough, as I contemplate embodying the same in an application to be hereafter filed by me.

Twenty-two days after the grant of the patent above mentioned the present application was filed. It contains two claims covering the invention shown and described in said patent, but not claimed therein. The first of these claims is in substance identical with the disclaimer, which is coupled with notice and reservation contained in said patent; but the second is for a different invention, and more nearly resembles the second claim of said patent, but is much broader. The Examiner, following the case of *ex parte Rohn*, (O. G., vol. 25, p. 113,) rejected both the claims, because their subject-matter "was shown in a patent previously granted to applicant." Undoubtedly applicant had shown the subject-matter of both these claims in the patent granted to him as aforesaid without making technical claim thereto; but there is indicated a purpose to do so in a subsequent application, which has now been filed and is before me, and the question presented is whether applicant is debarred from having his claim allowed by reason of the facts hereinbefore recited. In other words, what effect does the description and showing of the device, the disclaimer, reservation, and notice contained in the patent granted have upon his right to prosecute an application containing claims to said device so as aforesaid in said patent mentioned, shown, described, and disclaimed in connection with reservation of right and notice of purpose to claim said invention in subsequent application?

Section 4886 Revised Statutes provides that—

> Any person who has invented or discovered any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof, not known or used by others in this country, and not patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is found to have been abandoned, may, upon payment of the fees required by law and other due proceedings had, obtain a patent therefor.

The applicant has invented, so far as appears, a new and useful improvement in machines for drilling rocks. It is not shown that his invention was "known or used by others in this country," or "patented or described in any printed publication in this or any foreign country before his invention or discovery thereof;" nor is it shown that such invention was in "public use or on sale for more than two years prior to his application."

He has, therefore, satisfied the conditions prescribed by the statute, unless it is shown that said invention has been abandoned. Has that been shown, and if so, how?

It is a well-settled principle that abandonment is not to be presumed. It must be affirmatively established by satisfactory proof. An inventor, if he so elects, may, by express declaration, abandon or dedicate his invention to the public. But in the case at bar there is no evidence that the invention has been abandoned by the expressed intention of the inventor. On the contrary, the reverse appears in the very evidence relied upon to prove abandonment. Has the invention been abandoned by the acts of the inventor?

In the case of *Shaw* v. *Cooper* (7 Peters, 292) the Supreme Court say:

> No matter by what means an invention may be communicated to the public before a patent is obtained, any acquiescence in the public use by the inventor will be an abandonment of his right. If the right were asserted by him who fraudulently obtained it, perhaps no lapse of time could give it validity. But the public stand in an entirely different relation to the inventor. The invention passes into the possession of innocent persons who have no knowledge of the fraud, and at a considerable expense, perhaps, they appropriate it to their own use. The inventor or his agent has full knowledge of these facts, but *fails to assert* his right. Shall he afterward be permitted to assert it with effect? Is not this such evidence of acquiescence in the public use on his part as justly forfeits his right?
>
> If an individual witness a sale and transfer of real estate under certain circumstances, in which he has an equitable lien or interest, and does not make known this interest, he shall not afterward be permitted to assert it. On *this principle* it is that a discoverer abandons his right if before the attainment of his patent his discovery goes into public use. His right would be *secured by giving public notice* that he was the inventor of the thing used, and that he *should apply for a patent.*

And further on in the same decision the following language is employed:

> Whatever may be the intention of the inventor, if he suffers his invention to go into public use *through any means whatsoever*, without an immediate *assertion* of his right, he is not entitled to a patent, nor will a patent obtained under such circumstances protect his right.

In this decision, rendered more than fifty years ago, in the infancy of the patent system of this country, we find a clear and accurate exposition of the principle underlying the doctrine of constructive abandonment.

In whatever manner the public gains a knowledge of the invention, the right to the use of this knowledge becomes absolute, unless the inventor immediately assert his right. The manner pointed out in the decision for asserting his right is "by giving *public notice* that he was the inventor of the thing used, and that he *should apply for a patent.*"

The facts before the Court in *Shaw* v. *Cooper* were that the invention had been publicly used, and thereby the public had gained a knowledge of it; but the language of the Court and the principle upon which the decision rests cover a case where information of the invention was communicated to the public through the medium of a patent.

In *The Suffolk Co.* v. *Hayden* (3 Wall., 315) the point was raised that a description of an invention in a patent and *omission to claim it therein* operated as an abandonment or dedication of it to the public, and for that reason a subsequent patent claiming the said invention was void. The court said:

> But the answer to this ground of defense is that it appeared that Hayden, the patentee, had pending before the Commissioner of Patents an application for the same improvement at the time he described it in the specification of the 17th of March, which was doubtless the reason for not claiming it in this patent. The description in no sense affected this application thus pending before the Commissioner, and while it remained before him repelled any inference of abandonment or dedication from the omission to again claim it.

Here the principle announced in *Shaw* v. *Cooper*, *supra*, is again recognized, and applied to the extent called for by the facts; for abandonment or dedication to the public was held not to result from a description of an invention in a patent, even though it was not claimed therein, in case *another application claiming such invention was pending before the Commissioner at the time the patent was issued.* In other words, the pending application negatived the idea of abandonment of the inventor's right to the invention which was described though not claimed in the patent.

In the case of *O'Reilly* v. *Morse* (15 How., 62) the Court said:

> It is said, however, that this alleged improvement is not new, and is embraced in his former specification, and that if some portion of it is new it is not so described as to distinguish the new from the old. * * * All that we think is useful or necessary to say is that after a careful examination of the patents we think the objection on this ground is not tenable.

In this case, though the point now in controversy was raised, yet the decision seems to have turned on the correctness of the counsel's apprehension of the facts upon which the point was based, and as the Court found an error in the statement of the facts it was unnecessary to examine the legal proposition involved.

In the case of *Campbell* v. *James* (21 O. G., 337) the following language is used:

> The same combination of post-marker and blotter was also exhibited in Norton's patent of August 9, 1859. As he did not *then reserve* the process of stamping letters with such an instrument, nor the combination of a post-marker and a blotter, and did not make any simultaneous application therefor, he could not afterward obtain a patent for such process and combination, but would be restricted to such particular combination or process as might be exhibited in a new device or apparatus.

The rule suggested by this decision is, that to secure protection for an invention exhibited, but not claimed in a patent, the inventor must at the time of the issuance of the patent signify in his disclaimer an intention to reserve it for a future application, or he must evidence such intention by filing an application claiming such device prior to the issuance of the patent in which it is shown. The decision of *Campbell* v. *James* is therefore perfectly consistent with the decisions of the Supreme Court before mentioned. Indeed, it referred to the several proceedings recounted in *Shaw* v. *Cooper* and *Suffolk Company* v. *Hayden* as disproving constructive abandonment, and determined the case before the Court by reference thereto.

In *Singer* v. *Braunsdorf*, (7 Blatchf., 521,) *Graham* v. *McCormick*, (21 O. G., 1533,) *McMillen* v. *Rees*, (17 O. G., 1357,) *Hatch* v. *Moffitt*, (15 Fed. Rep., 252,) and other circuit court decisions, views are expressed which are even more liberal than those announced by the Supreme Court; but it is unnecessary to consider them in the present case.

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It being determined that the inference of abandonment which might result from a description of an invention in a patent without a technical claim thereto would be repelled by an assertion of right by the inventor to said invention, the question remains as to the extent of the effect of such assertion of right. The answer is that abandonment then becomes a question of fact to be determined by the circumstances of each particular case. A compliance with the requirements suggested in *Shaw* v. *Cooper* and other cases cited, makes a *prima facie* case against the plea of abandonment, and this *prima facie* case can only be overcome by proof. Laches tend to establish abandonment, vigilance in the prosecution of the claim being required both by the letter and policy of the law.

It is clear that applicant cannot be permitted to rest in supine inaction upon the notice that he has an invention as yet formally unclaimed but which he intends in the future to claim. Every day's delay is at his peril. A similar doctrine is announced by the courts in regard to the prosecution of applications already filed, and, indeed, the statute limits a time within which they must be prosecuted. The first claim in the application under consideration is in terms identical with the subject-matter mentioned and described in the disclaimer, notice, and reservation which appear in the patent granted to applicant. In pursuance of said notice and reservation applicant did, in twenty-two days after the issuance of said patent, file his application, in which he makes claim to the device which is a part of the subject-matter of this controversy. While in my judgment the better practice would have been to file an application before the issuance of the patent, nevertheless, I cannot find that the right to file the application and prosecute the claim has been lost by laches, or that there is what I can regard as actual or constructive abandonment. There appears to be no statutory bar to the grant of a patent embracing the first claim. I am of the opinion that the grant can properly be predicated upon the application presented.

It is not intended by this decision to sanction the practice of incorporating in patents declarations of reservation of particular inventions not claimed therein. Such practice is of doubtful propriety, and ought only to be sustained in exceptional cases and on consideration not discussed herein.

I come now to consider whether the second claim in the present application can be sustained. It is substantially shown and described in the patent, but is not included in the reservation clause thereof. As presented, it operates to enlarge and broaden the second claim of said patent. The effect of permitting the issuance of a patent covering said claim as it appears in the application would be practically to extend the life of the original patent in derogation of the rights of the general public, and possibly embrace those who have acquired rights in the premises without notice.

As before stated, since no reservation clause or equivalent notice in regard to such broad claim is contained in the patent already granted, it may be doubted whether an independent valid patent can be granted for such claim; but it is not necessary to decide this point. If the applicant is justly entitled to such broad claim, and has inadvertently omitted to insert it in his patent, the appropriate remedy is a reissue. Rule 91 presents this course, and it is authorized and sustained, not only by the decisions of this Office, but by the courts, provided application is made without unreasonable delay.

The decision of the Examiner is affirmed as to the second claim and overruled as to the first.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

TRUSS *v.* SHUTER *et al.*

Decided March 12, 1884.

GEORGE—BOX-TOE FOR BOOTS AND SHOES.

Letters Patent No. 95,894, granted to H. W. George, October 19, 1869, for an improvement in box-toes for boots and shoes, anticipated by Letters Patent No. 69,082, granted to Alfred B. Ely, September 24, 1867.

Messrs. P. & D. Mitchell and *Messrs. Frost & Coe* for the complainant.

Messrs. Henry & P. McCloskey and *Mr. John Van Santvoord* for the defendants.

WALLACE, *J.*:

In view of the shoe-tip patented by Ely, September 24, 1867, there is no novelty in the box-toe patented by George, October 19, 1869. The two articles are exactly alike, and the uses to which they are applied are so analogous that there was no invention by George in placing Ely's tip inside the toe of the shoe, instead of outside, where it was placed by Ely.

The bill is dismissed.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—January—March, 1884.

DIGEST OF DECISIONS.

[Decisions of U. S. court cases are designated by an asterisk, (*,) of the Secretary of the Interior by a dagger, (†,) and of State courts by a double dagger, (‡.)]

ABANDONMENT.

ABANDONMENT BY PUBLICATION INURES TO THE BENEFIT OF THE PUBLIC.

1. A novel thing, the invention of a patentee, fully shown and published in the drawing of his patent, even though not belonging exclusively to him as not being included in his claims, and even if estopped from being set up in a claim upon reissue, may not be donated to an individual. If the patentee has lost it—if it is abandoned—it has gone to the public, and is the property of the public.

[*Ex parte* Borden, 439.

2. What the causes were that led to a long silence on the part of the patentee are not so material as the fact itself that he made public the knowledge and use of his invention, and then for four years remained wholly silent and took no action for the procurement of a patent. *Held*, that under the circumstances the invention must be regarded as dedicated or abandoned to the public.

[*Andrews *et al.* v. Hovey, 1011.

3. Abandonment of an invention is not to be presumed from the fact that it is shown and described, though not technically claimed, in a patent, if there is coupled with such description and disclaimer a notice and reservation of the right and declaration of the purpose to claim such invention in a subsequent application, which is in fact filed with reasonable diligence. *Ex parte Rohn* (O. G., vol. 25, p. 113) overruled.

[*Ex parte* Derby, 1208.

4. The notice and reservation mentioned above must be followed by diligence in filing an application for such invention. Each day's delay tends to prove abandonment, and is at the peril of the applicant. Both the law and public policy demand vigilance.

[Id.

ABANDONED INVENTIONS.

(See Invention Shown but not Claimed, 1.)

ACQUIESCENCE.

(See Infringement, 3, 6.)

ADMINISTRATOR.

(See Parties to Suit.)

ADMISSIBILITY OF EVIDENCE.

(See Evidence, 1, 2.)

AGGREGATION.

(See Particular Patents: 19, Nation and Little.)

AMENDMENT TO BILL.

(See Practice in the Courts, 3.)

AMENDMENTS.

(See Power of Attorney to Amend; Reissues, 4.)

ANALOGOUS DEVICES.

(See Particular Patents: 2, Bing; 5, Burdett; 8, Bussey; 11, Green; 21, Zwickl.)

ANNULMENT OF PATENT.

(See Invalid Patents, 1, 2.)

ANTICIPATION.

(See Particular Patents: 5, 6, Burdett; 9, George; 11, Green; 15, Jenkins; 19, Nation and Little.)

ANSWER TO BILL.

(See Practice in the Courts, 2.)

APPEALS.

APPEALS—PERTINENCY OF A REFERENCE APPEALABLE TO EXAMINERS-IN-CHIEF.

Whether or not a reference cited by the Examiner is entirely different from the invention claimed by an applicant is a question affecting the merits of the case, and as such is appealable in the first instance to the Examiners-in-Chief, and not to the Commissioner direct.

[*Ex parte* Borden, 439.

APPLICATIONS.

(See Divisional Application, 1, 2; Employé of the Patent Office, 1, 2, 3; Priority of Invention.)

ASSETS.

(See Trade-Mark, 2.)

ASSIGNMENTS.

(See Trade-Mark, 1, 2.)

ATTORNEYS.

(See Power of Attorney to Amend.)

BILL IN EQUITY.

(See Invalid Patents, 1, 2; Practice in the Courts, 3.)

BILL OF SALE.

(See Trade-Mark, 2.)

CANADIAN PATENTS.

1. MANUFACTURE AND CONSTRUCTION WITHIN TWO YEARS.

The Canadian patent law requiring "construction or manufacture of the invention or discovery patented within two years of the date of the patent" does not contemplate forcing, on penalty of forfeiture, the patentee to actually fabricate his invention with his own capital within specific establishments, with his own tools, and to keep stock for every moment of the existence of his privilege throughout the Dominion.

[‡Barter *v.* Smith, 197.

2. SAME.
The real meaning of the law is that the patentee must be ready either to furnish the article himself or to give license of using on reasonable terms to any person desiring to use it. The words "carry on in Canada the construction or manufacture," with their context, mean that any citizen of the Dominion has a right to exact from the patentee a license for using the invention patented, or obtain the article patented for its use at the expiration of the two years' delay, on condition of applying to the owner for it and on payment of a fair royalty.
[§197.

3. IMPORTATION.
The words "imports or causes to be imported into Canada," section 28 of the patent act of 1872, mean the importation of patented inventions to the injury of home labor, and do not cover the actual importation of a few machines as models or for the purpose of bringing the usefulness of the invention before the Canadian public.
[§197.

CHANGE OF MATERIAL.

(See Infringement, 1.)

CHANGE OF PROCESS.

(See Infringement, 1, 2.)

CHANGE OF STRUCTURE.

(See Infringement, 5: Particular Patents: 2, Bing; 3, Bull; 5, 6, Burdett.)

CLAIMS.

1. No matter whether an inventor is a pioneer in his line or not, he cannot make a valid claim the scope of which is so extensive as to include means substantially different from those described, even though the same result may be produced by such different means.
Ex parte Demming, 1207.

2. An inventor may, however, employ language sufficiently comprehensive to include colorable variations of his invention, mechanical equivalents thereof, and (if the state of the art will justify it) modifications differing in form but embodying the same principles.
[Id.

3. Claims which depend upon such words as "means" and "mechanism" to express their patentable difference over the prior state of the art are too broad.
[Id.

4. And it is not sufficient that the claims contain words of reference to the specification where the invention is described, for under the statute it is the *office of the claims* to set forth specifically and definitely the actual invention covered by the patent.
[Id.

COMBINATIONS.

(See Infringement, 5; Joinder of Inventions; Particular Patents: 1, 2, Bing; 3, Bull; 16, 17, 19, Nation and Little.)

COMMISSIONER OF PATENTS.

(See Appeals: Former Decisions Affirmed, 1.)

COMMON USE.

(See Abandonment, 1, 2.)

COMPOUNDS.

(See Joinder of Inventions.)

CONSENT OF INVENTOR TO USE OF INVENTION.

(See Abandonment, 1; Invention Shown but not Claimed, 1, 3.)

CONSTRUCTION OF RULES.

(See Disclaimer under Rule 42; Invention Shown but not Claimed, 3.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Canadian Patents, 1, 2, 3; Particular Patents; Reissues.)

PROCESS—PROCESS OF OPERATING A MECHANISM NOT PATENTABLE.
A party having invented effective means for giving circular direction to a feed mechanism is entitled to a patent for said means, but not for merely giving such direction apart from the mechanism, nor to the process of operation of his mechanism for giving such direction.
[*Dryfoos v. Wiese, 639.

CONSTRUCTION OF STATUTES.

(See Employé of the Patent Office, 1, 2, 3; Oath of Inventor, 1, 2, 3.)

CONTEMPT.

(See Evidence, 2.)

INJUNCTIONS—MOTIONS FOR CONTEMPT.
Motions for contempt for violation of injunctions are not granted unless the violation of the injunction is plain and free from doubt. Doubted in this case whether there is a violation.
[*Smith v. Halkyard *et al.*, 1029.

CONTINUOUS APPLICATION.

(See Invention Shown but not Claimed, 1.)

CONVEYANCE.

(See Trade-Mark, 1, 2.)

COPYRIGHT.

1. PRINTED COPY OF TITLE OF BOOK, &c.
The "printed" copy of the title of a book or other article required by section 4956 of the Revised Statutes to be delivered or mailed to the Librarian of Congress, may be "printed" with a pen as well as type, with or without the aid of tracing paper.
[*Chapman v. Ferry *et al.*, 274.

2. DEPOSIT OF COPIES OF WORK WITH LIBRARIAN.
The copies of a copyright work required by section 4959 of the Revised Statutes to be deposited with the Librarian of Congress within ten days after publication, may be so deposited after the printing of the work and before its formal publication.
[*Id.

3. COPYRIGHT OF MAP—INFRINGEMENT OF.
It is difficult to say in some cases what constitutes an infringement of the copyright of a map; but where the subsequent map appears to have been substantially copied from the prior one, without alteration or revision except in scale and color, there is clearly an infringement, which authorizes a court of equity to enjoin the sale of such infringing map, and to require the publisher to account for the profits arising from the sale thereof.
[*Id.

COSTS.

COSTS.
Where the defendants infringe only one of two patents sued upon, neither party should recover costs as against the other.
[*Adams v. Howard *et al.*, 825.

COURTS OF EQUITY.

(See Bill in Equity: Infringement, 4.)

CROSS-EXAMINATIONS.

(See Evidence, 1, 2.)

DAMAGES AND PROFITS.

(See Infringement, 3, 4.)

1. PROFITS.
In view of the former decision of this Court in these cases, (reported under the name of the Cawood patent, 94 U. S., 695,) nothing was left open for further inquiry but the amounts of the former recoveries for the use of the non-infringing machines, and the true way of determining this clearly was to find out what part of the profits for which the original decrees were rendered had been made by the use of the non-infringing machines.
[*Illinois Central Railroad Company v. Turrell, 917.

2. PROFITS—WHEN INTEREST IS ALLOWABLE.
As a general rule, a patentee is not entitled to interest on profits made by an infringer, because profits are regarded in the light of unliquidated damages; but where a case was sent back to ascertain how much should be deducted from decrees for errors in the accounting as then stated, it seems not at all inequitable to allow interest on the corrected amounts from the date of the master's report. The cases are entirely different in this particular from what they would have been if the original decrees had been reversed for error in the principles of the accounting. The decrees in the present cases may be considered as affirmed in part and reversed in part, the new reference being had only to find out the exact extent of the reversals.
[*Id.

DATE OF FILING APPLICATION.

(See Divisional Application, 1, 2.)

DEATH OF PATENTEE.

(See Parties to Suit.)

DECREE.

(See Infringement, 4; Practice in the Courts, 2.)

DEDICATION TO THE PUBLIC.

(See Abandonment, 1, 2.)

DEFECTS.

(See Invention Shown but not Claimed, 3.)

DEFENSES.

(See Priority of Invention.)

DELAY.

(See Abandonment, 2; Infringement, 3. Invention Shown but not Claimed, 3; Reissues, 1, 2, 5, 6, 7, 8.)

DELAY IN APPLYING FOR REISSUE.

(See Reissues, 8.)

DEMURRER.

(See Practice in the Courts, 3.)

DESCRIPTION.

(See Claims, 1, 2, 3, 4.)

DEVIATION.

(See Invention.)

DIFFERENT INVENTIONS.

(See Invention 1.)

DILIGENCE.

(See Abandonment, 2, 3, 4; Invention Shown but not Claimed, 3; Reissues, 2.)

DISCLAIMERS.

(See Abandonment, 3, 4; Invention Shown but not Claimed, 1, 2; Reservation for Subsequent Patent.)

DISCLAIMER UNDER RULE 42.

DISCLAIMER UNDER RULE 42—SPECIFIC REFERENCES REQUIRED.
Rule 42 contemplates such specific reference as will clearly identify the particular application referred to, and this would seem to be best accomplished by stating the date of filing and the serial number of the application.
[*Ex parte* Finch, 273.

DISCLOSURE OF INVENTION.

(See Abandonment, 1; Prior Publication.)

DIVISIONAL APPLICATION.

(See Invention Shown but not Claimed, 1, 2, 3; Joinder of Inventions.)

1. PRACTICE IN PATENT OFFICE—DUTY OF EXAMINER IN DIVISIONAL APPLICATIONS.
When an application is filed as a division of a former application, the first duty of the Examiner is to determine whether the one is a continuation of the other application under the law.
[*Ex parte* Buell, 437.

2. PRACTICE—DIVISIONAL APPLICATION CANNOT BE BASED ON NEW MATTER.
An application based upon matter unwarrantably introduced into a former application cannot be considered as a division of the prior application.
[Id.

DRAWINGS.

(See Abandonment, 1; Prior Application.)

DUTY OF EXAMINERS.

(See Divisional Application, 1.)

EMPLOYÉ OF THE PATENT OFFICE.

1. SECTION 480 R. S. CONSTRUED.
Under Section 480 R. S. officers and employés of the Patent Office are prohibited from acquiring, directly or indirectly, any interest whatever in a patent, and are also prohibited from filing an *application* for a patent.
2. SAME—APPLICATION EVIDENCE OF A PARTY'S TITLE.
An application is the evidence of an applicant's title to the exclusive right or privilege sought, and since he can acquire no interest in the thing itself, to say that he might nevertheless take steps to establish his title thereto would be to pronounce an absurdity.
3. SAME—APPLICATION AND FEE TO BE RETURNED.
Applications filed in contravention of the statute as construed by this decision will be returned to the party filing the same, and the fee will also be returned.
[Opinion Touching the Right of Employés of the Patent Office to File an Application for a Patent, 637.

ENLARGEMENT OF ORIGINAL CLAIMS IN REISSUES.

(See Particular Patents: 3, Bull; 10, Green, Reissues, 1, 7.)

ENTRIES ON FILE-WRAPPERS.

(See Practice with Patent Office, 1, 2.)

ESTOPPEL.

(See Injunction.)

EQUIVALENTS.

(See Claims, 2; Infringement, 1.)

EVIDENCE.

1. Infringement — Compelling Defendant to Give Name of Customer.
In a suit for the infringement of a patent, where the validity of the patent and the infringement are denied, the complainant cannot, as part of his preliminary proof, compel the defendant to disclose the names of his confidential customers to whom he has furnished articles alleged to be covered by the patent, but he may be required to give the name of one person to whom he has furnished such articles.
[*Roberts v. Walley, 107.

2. Contempts—Power of Examiner to Rule on Evidence.
The examiner has no power to rule on the admissibility of evidence, and defendant, when a witness before him, has a right, upon a question not free from doubt, to take the opinion of the court; and when he refuses to answer under advice of counsel and apparently in good faith he should not be punished for contempt of court, even though he acted mistakenly.
[*Id.

EXAMINATION OF WITNESSES.

(See Evidence, 1, 2.)

EXAMINER NOT BOUND BY OPINION EXPRESSED BY HIS PREDECESSOR.

(See Practice with Patent Office, 1, 2.)

EXAMINERS.

(See Appeals; Divisional Application, 1, 2; Practice with Patent Office, 1, 2.)

EXAMINERS-IN-CHIEF.

(See Appeals.)

EXPIRATION OF PATENT DURING PENDING OF SUIT.

(See Infringement, 4; Practice in the Courts, 3.)

FEES.

(See Employé of the Patent Office, 3.)

FOREIGN PATENTS.

(See Canadian Patents, 1, 2, 3.)

FORMER DECISIONS AFFIRMED.

(See Damages and Profits, 1.)

1. Former Decision Affirmed.
Decision of the Commissioner of Patents in *ex parte* Hatchman (reported in 25 O. G., 979) affirmed.
[*In re* Hatchman, 738.

2. Former Decisions Affirmed.
Cause upheld for the same reasons and patent sustained to the same extent as in the case of *Oratrix* v. *Raynor et al.*
[*Reay v. Berlin & Jones Envelope Company, 1112.

FORMER DECISIONS REVERSED.

(See Abandonment, 3.)

FRAUD.

(See Invalid Patents, 1, 2.)

FRAUDULENT PATENTS.

(See Invalid Patents, 1, 2.)

FUNCTION.

(See Non-Patentability; Reissues, 7.)

GOVERNMENT RIGHT TO VACATE A PATENT.

(See Invalid Patents.)

HEIRS OF PATENTEE.

(See Parties to Suit.)

IMMATERIAL VARIATIONS.

(See Infringement, 1; Particular Patents: 2, Bing; 6, Burdett; 18, Nation and Little.

IMPORTATION OF PATENTED ARTICLES INTO CANADA.

(See Canadian Patents, 1, 2, 3.)

INADVERTENCE.

(See Invention Shown but not Claimed, 3; Reissues, 4.)

INFRINGEMENT.

(See Copyright, 3; Costs, 1; Damages and Profits, 1, 2; Evidence, 1, 2; Particular Patents: 2, Bing; 3, Bull; 6, Burdett; 8, Bussey; 21, Zwicki.)

1. Process—Infringement.
Defendants treated tobacco in a method similar to the process patented by plaintiffs, except that defendants made use of an equivalent for the gum-arabic used by the plaintiffs to produce the same effect as that rendered by plaintiffs' process. *Held*, that this was infringement.
[*Kimball v. Hess, 107.

2. Infringement.
The accomplishment of the same result, but by different means, does not constitute infringement.
[*Dryfoos v. Wiese, 639.

3. Defenses—Infringements of Patent Without Knowledge of Patentee Does Not Work an Abandonment.
Where infringements by various parties and for considerable periods have been shown to have taken place during the life of the patent, but the circumstances fail to establish acquiescence in the instances when the infringement was known to the owners of the patent, there exists no such laches as would defeat an accounting.
[*Adams v. Howard *et al.*, 825.

4. Practice in Courts—Court will Determine the Whole Controversy, even if Patent Expires Pending Suit.
There is no doubt of the propriety of decreeing an accounting, although the patent has expired since the commencement of the suit, and although for that reason there should not be an injunction. The jurisdiction of a court of equity having been legitimately invoked by the complainant, he will not be sent away without redress because all the redress to which he was originally entitled cannot now be awarded to him. The court will retain the cause in order to completely determine the controversy.
[*Id.

5. Infringement—Equivalent.
The use by defendants of the combination of the patentee, except that an equivalent element is substituted for one of the elements of the latter's combination, is an infringement.
[*Reay v. Raynor *et al.*, 1111.

6. Infringement—Silence not Estoppel under the Circumstances.
Where it does not appear that the patentee led the defendants into any expenditure or course of conduct by his silence when he ought to have spoken which they would not have made or followed if he had spoken, an infringement will not be avoided.
[*Id.

7. Infringement.
If an invention made and sold prior to the date of the patentee's invention is not an anticipation, it is not an infringement of it.
[*Id.

INJUNCTION.

(See Contempt; Practice in the Courts, 1.)

Preliminary Injunction—Granted where Defendants are Estopped.
A party having induced a complainant to acquire a patent and to engage in making and selling articles under it, is estopped from contesting the validity of it for the purposes of a motion for a preliminary injunction, and a second party who was cognizant of all the facts and seems to have been the principal promoter of the transaction occupies no better position.
[*The Time Telegraph Company v. Carey *et al.*, 826.

INTEREST.

(See Damages and Profits, 2.)

INTERFERENCE.

(See Appeals; Priority of Invention.)

INVALID APPLICATIONS.

(See Oath of Inventor, 1, 3.)

INVALIDITY OF PATENTS.

(See Non-Patentability; Reissues, 1, 9.)

INVALID PATENTS.

(See Particular Patents: 3, Bull; 5, 6, Burdett; 9, George; 10, Green; 16, 17, 18, 19, Nation and Little.)

1. Patents Obtained through Fraud—Right of Government to Vacate.
There is no distinction between letters patent for an invention and for land as regards the rights and remedies for vacating them when obtained by fraud. The right is the same as that which a State has to annul the charter of a corporation created by its legislature if obtained by fraud.
[*United States v. Gunning *et al.*, 356.

2. Same—Proper Remedy.
The appropriate remedy in behalf of the United States when a patent for an invention has been obtained by fraud is by a bill in equity.
[*Id.

INVENTION.

(See Particular Patents: 6, Burdett; 11, Green; 16, 17, 18, 19, Nation and Little; 22, Zwickl.)

Invention—Simple Change Remedying Defects Sufficient.
A simple change, which others failed to discover, and which remedied a grave defect, *Held* to constitute a patentable difference.
[*Adams v. Howard *et al.*, 825.

INVENTION SHOWN BUT NOT CLAIMED.

(See Abandonment, 1, 3, 4; Disclaimer under Rule 42; Reservation for Subsequent Patents.)

1. An application was filed December 11, 1882, certain claims of which were put into interference. Under Rule 125 matter not in interference was withdrawn from the *first* and made the basis of a second application, upon which second application a patent was granted February 20, 1883. Said patent contained a disclaimer covering all features shown but not claimed therein, and also a clause reserving the right to claim such features in an application filed previously. During the pendency of the first application, and after the patent had issued on the second, a third application was filed with claims covering the matter described in both the first application and the patent. *Held* that under the circumstances the third must be regarded as a division of the first application, and therefore the invention claimed in the latter cannot be deemed to have been abandoned by reason of its being described in the patent.
[*Ex parte* Clarke, 824.

2. Neither of the applications above referred to should be allowed until amended so as to disclaim the invention shown but not claimed therein, with proper cross-reference to the application in which such claim *is* made.
[Id.

3. Where an invention is described, but not claimed, in a patent, and no notice of an intention to claim it in a subsequent application is contained therein, if the inventor is justly entitled to claim such invention, and has inadvertently omitted to insert it in his patent, the appropriate remedy is a reissue, and not a subsequent application. Rule 91 authorizes this course, and it is sustained by the decisions of the Office and the courts in cases where application is made without unreasonable delay.
[*Ex parte* Derby, 1208.

JOINDER OF INVENTIONS.

Joinder of Invention—Several Claims to a "Composition" Permissible.
If several claims to a "composition of matter," though distinct, cover associations of elements which contribute to the production of a single beneficial result, and do not fall under different classes, they, properly speaking, cover but a single invention, and hence may be included in the same application.
[*Ex parte* Hentz, 437.

JUDGMENT OF THE EXAMINER.

(See Practice in the Patent Office, 1, 2.)

LACHES.

(See Delay.)

LICENSEES.

(See Practice in the Courts, 2.)

LIMITED PATENT.

(See Reissues, 4.)

MACHINE AND PROCESS.

(See Construction of Specifications and Patents; Non-Patentability.)

MECHANICAL CHANGE.

(See Infringement, 2, 5; Particular Patents: 2, Bing; Reissues, 7.)

MECHANICAL SKILL.

(See Particular Patents: 6, Burdett; 19, Nation and Little.)

MERITS OF THE CASE.

(See Appeals.)

MISTAKES.

(See Reissues, 4.)

MODE OF OPERATION.

(See Non-Patentability.)

MODIFICATIONS.

(See Claims, 2.)

NEW APPLICATIONS.

(See Invention Shown but not Claimed.)

NEW CLAIMS.

(See Abandonment, 1; Invention Shown but not Claimed, 3.)

NON-PATENTABILITY.

(See Particular Patents: 6, Burdett; 11, Green; 16, 17, 18, Nation and Little.)

PROCESS—FUNCTION OR MODE OF OPERATION OF A MACHINE NOT PATENTABLE.

A function or mode of operation of a machine is not patentable apart from the machinery.

[*Reay v. Raynor *et al.*, 1111.

NOTARY PUBLIC.

(See Oath of Inventor, 1.)

OATH OF INVENTOR.

1. OATH—SECTION 4892 REVISED STATUTES CONSTRUED.

Section 4892 Revised Statutes does not authorize an applicant who is a resident of a foreign country to make oath to his application before any officer other than those designated in said section. They are "any minister, *chargé d'affaires*, consul, or commercial agent holding commission under the Government of the United States, or any notary public of the foreign country in which the applicant may be."

[*Ex partes* Gruson and Schumann, 274.

2. SAME—AUTHORITY TO ADMINISTER OATHS DERIVED FROM UNITED STATES STATUTE ALONE.

Such designated officials in administering the oath act by virtue of the authority conferred by the statute of the United States, and not by virtue of any power or authority conferred by the foreign government.

[Id.

3. SAME—OFFICER NOT AUTHORIZED.

An oath taken before a judge of the royal Prussian court is not sufficient.

[Id.

OFFICE OF THE CLAIMS.

(See Claims, 4.)

OLD DEVICES.

(See Particular Patents: 5, 6, Burdett; 9, George; 11, Green; 16, 17, 18, 19, Nation and Little.)

OMISSIONS.

(See Invention Shown but not Claimed, 3.)

OPINION OF THE EXAMINER.

(See Practice with Patent Office, 1, 2.)

PARTICULAR PATENTS.

1. BING'S PATENT—SHOES FOR CAR-BRAKES—CONSTRUED AND LIMITED.

In this case it was held that on the record herein claim 2 of Letters Patent No. 40,156, granted to James Bing, October 6, 1863, for an improved shoe for car-brakes—namely, "The combination of shoe A, sole B, clevis D, and bolt G, the whole being constructed and arranged substantially as specified"—does not embody any lateral rocking motion in the shoe as an element of the combination.

[*Lake Shore and Michigan Southern Railway Company *v.* National Car Brake Shoe Company, 915.

2. SAME—INFRINGEMENT—COMBINATIONS—MECHANICAL CHANGES.

On such a construction, there was on the record herein patentable novelty in said claim, and a structure having the same four parts in combination, with merely formal, and not substantial, mechanical differences, infringes said claim.

[*Id.

3. BULL—APPARATUS FOR CLEANING PRIVIES—CLAIMS 1 AND 3 DECLARED INVALID FOR ENLARGEMENT.

Claims 1 and 3 of Reissue Letters Patent No. 6,902, granted to Lewis R. Keizer, February 29, 1876, for an improvement in apparatus for cleaning privies, the original Patent No. 115,565 having been granted June 6, 1871, to Henry C. Bull and Joseph M. Lowenstein, on the invention of said Bull, and the application for the reissue having been filed January 11, 1876—namely, "1. A privy-vault-cleaning apparatus consisting of an air-pump, a deodorizer, and suitable tubular connections, in combination with an independently-movable receiving-cask having an induction passage or opening, and also an air-opening for connection with the air-pump, and provided with screw-necks at each opening for receiving sealing caps or covers, substantially as described, whereby the movable cask may be located in any desired position with relation to the vault and privy, and the pump and deodorizer located in any desired position with relation to the vault, privy, and cask, and also whereby the casks, when filled, may be handled as is usual with filled casks, as set forth; 3. The combination, with a portable night-soil cask, of a float-valve located at the air-passage substantially as described, whereby the fluid matter is prevented from entering the air-passage and clogging the suction air-pipe and pump, as set forth"—are invalid, because they are for inventions not indicated in the original patent as inventions, being for sub-combinations in combinations claimed in the original, and were made for the purpose of covering features described in patents issued to others during the interval between the granting of the original and the application for the reissue. Those features are contained in the defendant's apparatus, and that apparatus does not infringe any claim in the original patent.

[*Clements *v.* Odorless Excavating Apparatus Company, 353.

4. BURDETT—REED-ORGANS—CLAIM 1 CONSTRUED AND DEFINED.

Claim 1 of Letters Patent No. 87,241, granted February 23, 1869, to Riley Burdett, as inventor, for seventeen years from August 24, 1868, for an improvement in reed-organs—namely, "The arrangement, in a reed musical instrument, of the reed-board A, having the diapason set *a* and its octave set *b* and the additional set L extending from about at tenor F upward through the scale, substantially as and to the effect set forth"—defined and construed.

[*Estey *et al. v.* Burdett, 637.

5. SAME—ANTICIPATION.

A reed-board with two sets of reeds and a third partial set was made and put into an organ by one Dayton prior to the invention of Burdett, and, such organ being put in evidence, it was held that the alleged infringing organs contained nothing which, so far as said claim 1 was concerned, was not found in such prior organ.

[*Id.

6. SAME—CLAIM 2 CONSTRUED—ANTICIPATION—NON-INVENTION.

As to claim 2—namely, "The reed-board A and foundation-board G, constructed with the contracted valve-openings D F F, and the reeds arranged in relation thereto, all in the manner described"—it was held that, in view of the state of the art, there was no invention in making the length and size of the valve-opening greater or less in a reed-board of a given width, or where the reed-board was made wider or narrower, or had more or less sets of reeds in it, either full or partial; and that the vibrating ends of the lowest and longest reeds in such prior organ were as near together as they were in the reed-boards of the alleged infringing organs. On these views a decree was entered in favor of the defendant.

[*Id.

7. BUSSEY'S COOKING-STOVE PATENTS—FIRST FOUR CLAIMS OF SECOND REISSUE CONSTRUED AND LIMITED.

The first four claims of Reissue Letters Patent No 3,815, granted to Esek Bussey and Charles A. McLeod, February 1, 1870, for a cooking-stove, the original patent, No. 56,686, having been granted to said Bussey, as inventor, July 24, 1866, and reissued to him, as No. 3,649, September 28, 1869—namely "1. A diving-flue cooking-stove with the exit-flue so constructed as to inclose on the sides and bottom the culinary boiler or hot-water reservoir B; 2. A diving-flue cooking-stove with the exit-flue constructed across the bottom and up the rear upright side of the culinary boiler or hot-water reservoir B; 3. A diving-flue cooking-stove constructed with an exit-passage, F, below the top of the oven, and an exit-flue, E E', in combination with an incased reservoir, B, attached to the rear of the stove, and placed just above such exit-passage, and so arranged that the gases of combustion, in passing through such exit-flue, will impinge upon or come in direct contact with said reservoir, substantially as and for the purposes hereinbefore specified; 4. An exit passage, F, constructed in the rear of a diving-flue cooking-stove and below the top of the oven, in combination with an incased reservoir, B, attached to the rear of the stove, the bottom of which reservoir is also below the top of the oven, and so arranged that the gases of combustion will come in contact with and heat such reservoir by a direct draft from the fire-box to the smoke-pipe"—are limited to a structure in which the front of the reservoir has no air-space in front of it, and in which the exit-flue does not expand into a chamber at the bottom of the reservoir, and in which the vertical part of the exit-flue does not pass up through the reservoir.

[*Bussey *et al. v.* Excelsior Manufacturing Company, 733.

8. SAME—NOT INFRINGED.

Hence, those claims are not infringed by a stove in which, although there are three flues, and an exit-passage below the top of the oven, and a reservoir the bottom of which is below the top of the oven, no part of the rear end vertical plate is removed, so as to allow the gases of combustion to come into direct contact with the front of the reservoir, nor is any such plate employed as the plate *w w* of the patent, but there is a dead-air space between the rear plate of the flue and the front of the reservoir, and the exit-flue is not a narrow one, carried across the middle of the bottom of the reservoir, as in the patent, but the products of combustion, on leaving the flue-space, pass into a chamber beneath the reservoir, the area of which is coextensive with the entire surface of the bottom of the reservoir, and the vertical passage out of such chamber is not one outside of the rear of the reservoir, but is one in and through the body of the reservoir, and removable with it.

[*Id.

9. GEORGE—BOX-TOE FOR BOOTS AND SHOES.

Letters Patent No. 95,894, granted to H. W. George, October 19, 1869, for an improvement in box-toes for boots and shoes, anticipated by Letters Patent No. 60,082, granted to Alfred B. Ely, September 24, 1867.

[*Truss *v.* Slinter *et al.*, 1210.

10. GREEN—DRIVEN WELL.

Patent No. 73,425, January 14, 1868, and Reissue No. 4,372, May 9, 1871, granted to Nelson W. Green, construed, compared, and the reissue held to cover an invention different from that embraced in the original patent, and to be therefore void.

[*Andrews *et al. v.* Hovey, 1011.

11. SAME—ANTICIPATION.

It being true that in 1849 and 1850 wells were driven at Milwaukee by a process not distinguishable from that devised by the patentee in 1861, and those wells were driven, not as mere experiments, nor for the purpose of exhibition, but for public and continuous use, it is held that the defense of want of novelty is sustained.

[*Id.

12. HICKS—HOES.

Letters Patent No. 189,220, granted April 3, 1877, to O. H. Hicks, for an improvement in hoes, considered.

[*Cook *v.* Sandusky Tool Company, 1114.

13. IRWIN—LANTERNS.

Patents Nos. 47,551 and 50,591, granted, respectively, May 2 and October 24, 1865, to John H. Irwin, for improvements in lanterns, construed.

[*Adams *v.* Howard *et al.*, 825.

14. JENKINS—SELF-CLOSING FAUCETS.

Letters patent granted to Nathaniel Jenkins, June 27, 1865, for an improvement in self-closing faucets, construed.

[*Zane *et al. v.* Soffe, 737.

15. SAME—CONSTRUED AND LIMITED.

In view of the fact that certain mechanical equivalents of a device claimed were previously used, the patent was construed to cover only the specific device mentioned in the claim.

[*Id.

16. NATION AND LITTLE—COOKING-STOVE—PATENT NO. 142,933 VOID FOR WANT OF NOVELTY.

The claim of Letters Patent No. 142,933, granted to David H. Nation and Ezekiel C. Little, as inventors, September 16, 1873, for an improvement in reservoir cooking-stoves—namely, "1. The combination, with the back-plate I of the cooking-stove A, of the reservoir C, arranged on a support about midway between the top and bottom plates of the stove, and the air-chamber *b*, between the stove-back and reservoir-front, open at the top, and communicating with the air in the room, substantially as and for the purposes set forth; 2. The combination, with the stove A and reservoir C, of the small opening *a*, the sheet-flue G under the entire bottom of the reservoir, and the small exit passage or pipe E, all substantially as and for the purposes herein set forth"—are void for want of novelty.

[*Bussey *et al. v.* Excelsior Manufacturing Company, 733.

17. NATION AND LITTLE—COOKING-STOVE—PATENT NO. 142,934 VOID FOR WANT OF NOVELTY.

The claims of Letters Patent No. 142,934, granted to David H. Nation and Ezekiel C. Little, September 16, 1873, for an improvement in reservoir cooking-stoves—namely "1. The detachable base-pan or flue-shell D, attached to the body at a point near the center of the back-plate of the stove, by means of hooks *a a*, cast on the base-pan, and pins *b b* on the stove-body, substantially for the purposes herein set forth; 2. The portable reservoir F, with the flue E in the rear side, in combination with the portable base-pan or flue-shell D, substantially as and for the purposes herein set forth; 3. The combination, with a three-flue stove having damper H, arranged as described, of the portable base-pan or flue-shell D, and warming-closet G, all substantially as and for the purposes herein set forth"—are void for want of novelty.

[*Id.

18. SAME—NON-INVENTION—OLD DEVICES.

There was no invention in claim 1 in using, to attach the base pan, an old mode used in attaching other projecting parts of the stove.

[*Id.

19. SAME—SAME—AGGREGATION.

Claims 2 and 3 are merely for aggregations of parts and not for patentable combinations.

[*Id.

20. REAY AND NEGBOUR—ENVELOPE-MACHINE.

Reissue Letters Patent No. 2,529, granted March 26, 1867, to George H. Reay and Lewis Negbour, for an improvement in envelope-machines, declared valid in part and invalid in part.

[Reay *v.* Raynor *et al.*, 1111.

21. ZWICKI—LOOMS.

The second and third claims of Patent No. 63,353, granted March 26, 1867, to James J. Walworth and Gustavus E. Buschick, assignees of Caspar Zwicki, for an improvement in looms, construed, and held not to have been infringed by the defendants.

[*Taft *v.* Steere *et al.*, 1030.

22. UTILITY OF INVENTION.

Doubted whether there is any utility in the cam mentioned in the third claim, supposing the nose-piece to be attached to the cam exactly as shown in the model, and it not appearing that any looms embodying the improvements claimed have ever been put in operation.

[*Id.

PARTIES TO SUIT.

(See Injunction; Practice in the Courts, 2.)

PRACTICE IN THE COURTS—DEATH OF PATENTEE AFTER APPEAL DOES NOT ABATE THE SUIT.

The death of the patentee since the appeals were taken does not prevent the suits from being further prosecuted in the name of the legal representatives.

[*Illinois Central Railroad Company *v.* Turrill, 917.

PATENTABILITY.

(See Construction of Specifications and Patents, 1; Invention; Non-Patentability; Particular Patents: 6, Burdett; 11, Green; 16, 17, 18, 19, Nation and Little; 22, Zwicki.

PATENT OFFICE.

(See Employé of the Patent Office, 1, 2, 3.)

PATENTS CAN INCLUDE BUT A SINGLE INVENTION.

(See Joinder of Inventions.)

PATENTS OBTAINED BY FRAUD.

(See Invalid Patents, 1, 2.)

PERMISSIBLE CHANGES IN REVISING PATENTS.

(See Invention Shown but not Claimed, 3.)

POWER OF ATTORNEY TO AMEND.

(See Reissues, 4.)

ATTORNEY—PARTY BOUND BY ACTS OF HIS ATTORNEY.

In legal effect the action of an applicant or his attorney is the same.

[*In re* Hatchman, 748.

PRACTICE IN THE COURTS.

(See Contempt; Costs, 1; Damages and Profits, 2; Evidence, 1, 2; Infringement, 3, 4, 6; Injunction.

1. UNITED STATES SUPREME COURT RULES.

Rule 30 of Supreme Court rules applies only to cases appealed before its adoption, and is practically obsolete.

[*White *et al. v.* Dunbar *et al.*, 352.

2. PARTIES TO SUIT—NO OBJECTION BEING TAKEN TO NON-JOINDER, DECREE GIVES.

A complainant being owner of an undivided third interest in a license, and no objection having been taken by demurrer or the answer to the non-joinder of the other two owners of the license, such non-joinder cannot be insisted on to defeat a decree.

[*Adams *v.* Howard *et al.*, 825.

3. PRACTICE IN COURTS—AMENDMENT TO BILL.

A bill was brought before the patent expired, but it was defective, and an amendment was filed after the patent had expired: *Held* that the amendment made the bill as it should have been at first, and in effect as if it had been so at first, and if a case for equitable relief is shown the bill should be retained for that and such cognate relief as is necessary to do complete justice.

[*Reay *v.* Raynor *et al.*, 1111.

PRACTICE IN THE PATENT OFFICE.

(See Abandonment, 3, 4; Appeals: Claims, 1, 2, 3, 4; Disclaimer under Rule 42; Divisional Application, 1, 2; Employé of the Patent Office, 3; Power of Attorney to Amend; Invention Shown but not Claimed, 1, 2, 3; Joinder of Invention; Prior Publications; Reissues, 4; Reservation for Subsequent Patent.)

1. PRACTICE—FAVORABLE JUDGMENT OF EXAMINER EXPRESSED BY FORWARDING CASE TO ISSUE DIVISION.
It is not until the Examiner signs the file-wrapper and forwards the application to the Issue Division that he can be considered as having rendered a favorable judgment upon it. He may have formed an opinion in its favor, or expressed an oral or even a written suggestion in the same direction; but these do not constitute his formal favorable judgment.
[*Ex parte* Buell, 437.

2. PRACTICE—EXAMINER NOT BOUND BY CONCLUSIONS OF HIS PREDECESSOR.
An Examiner is not obliged to adhere to a favorable conclusion which his predecessor formed or expressed in regard to the admission of certain matter into a particular application, unless such expression took the form of a favorable judgment.
[Id.

PRIORITY OF INVENTION.

(See Particular Patents: 5, 6, Bing; 9, George; Prior Publications.)

PRIOR USE—PRIOR APPLICATION ALONE NOT SUFFICIENT.
A prior application for a patent alone, without evidence to show that such a lantern as is described therein was ever constructed, is not sufficient to defeat a patent.
[*Adams *v.* Howard *et al.*, 825.

PRIOR PUBLICATIONS.

(See Abandonment, 1.)

PRIOR PUBLICATION—A DRAWING OF A PATENT A PUBLICATION.
Even without any description, if a published drawing fully and clearly exhibits and discloses an invention sought to be patented, it is an adequate and complete reference of itself alone. It is to be considered as a publication.
[*Ex parte* Borden, 439.

PROCESS.

(See Construction of Specifications and Patents; Non-Patentability.)

PROCESS AND PRODUCT.

(See Infringement, 2.)

PRODUCT.

(See Joinder of Inventions.)

PROPERTY RIGHTS.

(See Employé of the Patent Office, 1, 2, 3.)

PUBLICATION.

(See Abandonment, 1; Prior Publications.)

PUBLIC USE.

(See Abandonment, 2; Infringement, 7.)

REDUCTION TO PRACTICE.

(See Priority of Invention.)

REFERENCES.

(See Appeals; Disclaimer under Rule 42; Invention Shown but not Claimed, 2; Prior Publications.)

REFUNDMENT OF FEES.

(See Employé of the Patent Office, 3.)

REISSUES.

(See Invention Shown but not Claimed, 3.)

1. REISSUE—BROADENING OF THE INVENTION BEYOND THAT ORIGINALLY PRESENTED NOT PERMISSIBLE.
A claim in a reissue which covers an invention clearly beyond that shown in the original is invalid, whether the time elapsing between the reissue and original patent is great or not.
[*Dry Goss *v.* Weise, 639.

2. SAME—LAPSE OF A FEW MONTHS NOT TOO GREAT.
A reissue granted within a few months of the date of the original patent, and before others appear to have done anything in that region of invention, is looked upon favorably.
[*Id.

3. SAME—INVALIDITY OF ONE DOES NOT AVOID ANOTHER CLAIM.
A claim valid in a first reissue is valid in a second reissue, notwithstanding the latter contains an invalid claim.
[*Id.

4. REISSUE—INADVERTENCE, ACCIDENT, OR MISTAKE.
Where one of the claims in an original application was rejected upon reference to certain patents and the applicant, by his attorney, orders the same to be erased, and thus obtains and accepts a patent for the residue of his claims, there has been no inadvertence, accident, or mistake within the meaning of the patent law, and the patentee is not entitled to a reissue covering the claim before erased.
[*In re* Hatchman, 738.

5. REISSUE—RULE OF LACHES MORE RIGID WHEN INVENTION IS BROADENED THAN WHEN LIMITED.
Unreasonable delay a bar to reissue, although it is sought to narrow and restrict the claims; but the rule as to laches is more rigid in cases where applicant seeks to broaden claims.
*[*Ex parte* Matthews and Race, 823.

6. REISSUE—NO LACHES UNDER THE CIRCUMSTANCES.
After litigation lasting twelve years the Supreme Court of the United States held that the patent of Matthews and Race covered a broader invention than they had a right to claim as new. Matthews and Race thereupon apply for reissue with claims restricted: *Held* that they might do so, and that six months was not in the particular case unreasonable delay.
[Id.

7. REISSUE—CLAIM TOO BROAD.
The original patent showed certain devices to which no function was ascribed, and the position of which with reference to a particular part of the machine was not shown with accuracy. The reissue described such devices as occupying a definite position with reference to said particular part of the machine and as having a specified function: *Held* that a claim in the reissue covering the arrangement described therein embraced an invention different from that shown in the original, was too broad to be added at any time, and was therefore void.
[*Reay *v.* Raynor *et al.*, 1111.

8. REISSUE—LAPSE OF TIME.
The reissue was taken out more than three years after the original, and would seem to be for that reason unseasonable and invalid.
[*Id.

9. REISSUE—PARTIAL INVALIDITY.
Invalidity of one claim does not necessarily render the other claims of the reissue invalid.
[*Id.

REJECTED CLAIMS.

(See Reissues, 4.)

REMEDY.

(See Invalid Patents, 1, 2; Invention Shown but not Claimed, 3.)

RESERVATION FOR SUBSEQUENT PATENTS.

(See Abandonment, 3, 4; Disclaimer under Rule 42; Invention Shown but not Claimed, 1, 2, 3.)

It is not intended to sanction *the practice* of incorporating in patents declarations of reservation of particular inventions not claimed therein. Such practice is of doubtful propriety, and ought only to be permitted in exceptional cases and on considerations not discussed in this decision.
[*Ex parte* Derby, 1208.

RESTRICTIONS OF CLAIMS.

(See Reissues, 4, 5.)

REVIEW OF FORMER DECISIONS.

(See Practice in the Patent Office, 1, 2.)

RULES OF PRACTICE.

(See Disclaimer under Rule 42.)

SCOPE OF A PATENT.

(See Claims, 1, 2, 4.)

SECOND APPLICATION.

(See Abandonment, 3; Invention Shown but not Claimed; Reservation for Subsequent Patent.)

SEPARATE APPLICATION.

(See Joinder of Inventions.)

SEPARATE PATENTS.

(See Non-Patentability; Reservation for Subsequent Patent.)

SINGLE INVENTION.

(See Joinder of Inventions.)

SPECIFICATIONS.

(See Claims, 1, 2, 4.)

STATE OF THE ART.

(See Claims, 2, 3.)

SUBSEQUENT PATENTS.

(See Abandonment, 3, 4; Invention Shown but not Claimed, 3; Reservation for Subsequent Patents.)

SUBSTITUTION OF MATERIAL.

(See Infringement, 1.)

SUBSTITUTION OF PARTS.

(See Infringement, 5.)

SUIT FOR ANNULMENT OF A PATENT.

(See Invalid Patents, 1, 2.)

SUITS IN EQUITY.

(See Parties to Suit.)

TITLE TO PATENT.

(See Employé of the Patent Office, 1, 2, 3.)

TRADE-MARK.

(See Copyright.)

1. TRADE-MARKS—A TRADE-MARK MAY BE CONVEYED WITH THE PROPERTY WITH WHICH IT IS ASSOCIATED.
As an abstract right, apart from the article manufactured, a trade-mark cannot be sold, the reason being that such transfer would be productive of fraud upon the public, but in connection with the article produced it may be bought and sold like other property.
[Morgan *et al.* *v.* Rogers, 1113.

2. TRADE-MARKS WILL PASS UNDER BILL OF SALE WITHOUT SPECIFIC MENTION.
For a trade-mark to pass under a bill of sale it is not necessary that it should be specifically mentioned. If a trade-mark is an asset, as it is, there is no reason why it should not pass under the term "assets" in an instrument which conveys the entire partnership property.
[Id.

UNITARY RESULT.

(See Joinder of Inventions.)

U. S. SUPREME COURT RULES.

(See Practice in the Courts, 1.)

UTILITY.

(See Particular Patents: 22, Zwicki.)

VACATION OF PATENTS.

(See Invalid Patents, 1, 2.)

VALID IN PART.

(See Particular Patents: 20, Reay and Neglour; Reissues, 9.)

VALIDITY OF PATENTS.

(See Reissues, 1, 3.)

VALID PATENTS.

(See Particular Patents: 1, 2, Bing; 7, 8, Bussey; 12, Hicks, 13, Irwin; 14, 15, Jenkins; 20, Reay and Neglour; 21, Zwicki.)

VIOLATION OF INJUNCTION.

(See Contempt.)

VOID PATENTS.

See Particular Patents: 3, Bull; 5, 6, Burdett; 9, George; 10, Green; 16, 17, 18, 19, Nation and Little; Reissues, 7, 8.)

WITNESSES.

(See Evidence, 2.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING MARCH 31, 1884.

[Claims and drawings of Designs do not appear in the Monthly Volumes or the Gazette. Separate indexes for Designs, Trade-Marks, Labels, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
Abbe, John R. (See Carpenter, Ward B., assignor.)						
Abbott, Everett L., South Bend, Ind. Case for operating stop-cocks for water and gas pipes.	294,749	Mar. 11	497	139	26	921
Abbott, James G. (See Burleigh and Abbott.)						
Abbott, Leonard G. (See Alward, Samuel W., assignor.)						
Abbott, Nathaniel B. (See Carpenter, Oramille C., assignor.)						
Abdank-Abakanowicz, Bruno, Paris, France. Apparatus for transmitting electric signals.	292,193	Jan. 22	1471	413	26	287
Absterdarn, John, New York, N. Y. Automatic and fac-simile telegraph	295,219	Mar. 18	1109	307, 308	26	1041
Ackley, William A., Hackettstown, N. J. Car-seat	291,263	Jan. 1	311	88	26	57
Adair, William, Liverpool, county of Lancaster, England. Steering-gear for vessels	292,611	Jan. 29	2035	566	26	393
Adams, Albert J., Cleveland, Ohio. Manufacture of linseed-oil	294,425	Mar. 4	112	.....	26	648
Adams & Carter. (See Jones, George W., assignor.)						
Adams, Charles. (See Francke, Ernst O. and C., assignors.)						
Adams, Charles F., Worcester, Mass. Solar camera	295,608	Mar. 25	1615	447	26	1140
Adams, Dewey F., Providence, R. I. Breastpin	291,564	Jan. 8	692	195	26	130
Adams, Francis K., Nashotah, Wis. Car-coupling	295,609	Mar. 25	1618	447	26	1141
Adams, Hiram R., Boston, Mass., assignor to Adams Manufacturing Company, Portland, Me. Apparatus for operating upon the uppers of boots and shoes	291,016	Jan. 1	1	1	26	3
Adams, Hiram R., Boston, Mass., assignor to Adams Manufacturing Company, Portland, Me. Crimping apparatus for boots and shoes	291,017	Jan. 1	2	1	26	3
Adams, John. (See Stockham and Adams.)						
Adams, John Q., Marseilles, Ill. Grinding-mill	292,612	Jan. 29	2036	566	26	393
Adams, John S., Elgin, Ill. Tower	294,343	Feb. 26	2027	556	26	819
Adams, John S., Elgin, Ill. Skeleton iron tower	294,344	Feb. 26	2030	556	26	820
Adams, Joseph. (See Gross and Adams.)						
Adams Manufacturing Company. (See Adams, Hiram R., assignor.)						
Adams, Marcus W. (See Harper, Nathan, assignor.)						
Adams, Nelson B. (See Orvis and Adams.)						
Adams, Paul, *et al.* (See Harrison, Frank G., assignor.)						
Adams, Robert A., Grand Rapids, Mich. Panel	294,838	Mar. 11	611	169	26	940
Adams, Samuel H. (See Scheffler, Charles A., assignor.)						
Adams, William D., assignor to H. Vogt, Brooklyn, N. Y. Steam-boiler	293,697	Feb. 19	1170	326	26	663
Adams, William H., Chicago, Ill. Apparatus for the manufacture and delivery of heating and illuminating gas	291,860	Jan. 15	1069	299	26	207
Adams, William T., Baltimore, Md. Ash-sifter	292,598	Jan. 29	1922	538	26	374
Adamson, Andrew J., Sabetha, Kans. Making sirup and sugar from sorghum-cane	291,565	Jan. 8	693	.....	26	130
Adamson, Charles E. (See Maddox and Adamson.)						
Addie, James. (See Addie, John and J.)						
Addie, John and J., Glasgow, Scotland. Obtaining ammonia from furnace-gases	291,264	Jan. 1	312	88	26	57
Addison, Joseph L., Quaker City, assignor to himself and M. R. Patterson, Cambridge, Ohio. Sheep-shearing table	293,839	Feb. 19	1370	379	26	696
Adt, John, New Haven, Conn. Machine for making staples	291,659	Jan. 8	825	231	26	154
Ager, Wilson, New York, N. Y. Roller grinding-mill	291,018	Jan. 1	3	1, 2	26	3
Ager, Wilson, New York, N. Y. Machine for scouring and polishing cereals	295,471	Mar. 18	1425	394	26	1101
Agnew, Franklin H., Beaver, Pa. Nut-lock	293,295	Feb. 12	685	183	26	566
Ahlgrim, Max J., Rose Lawn, Ind. Calf-weaner	291,660	Jan. 8	827	231	26	154
Ahrens, Christopher, assignor to Ahrens Manufacturing Company, Cincinnati, Ohio. Pump-valve	292,396	Jan. 22	1740	485	26	335
Ahrens, Henry. (See Beroud and Walsh, assignors.)						
Ahrens Manufacturing Company. (See Ahrens, Christopher, assignor.)						
Aikin, William, and W. W. Drummond, Louisville, Ky. Machine for molding in sand	291,124	Jan. 1	139	39, 40, 41	26	27
Ainsworth, Henry A., assignor to Williams, White & Company, Moline, Ill. Metal-bending machine	295,851	Mar. 25	1919	531	26	1195
Akins, John, assignor to O. A. Crandall, Buffalo, N. Y. Protector for book-leaves	295,141	Mar. 18	1011	279	26	1023
Albach, W. Harrison, assignor of one-half to J. F. Stine, Mansfield, Ohio. Combined seed-planter and fertilizer-distributer	292,460	Jan. 29	1827	509	26	359
Albany Agricultural Company. (See Strong, Levi C., assignor.)						
Albaugh, William, *et al.* (See Russell, Martin L., assignor.)						
Albin, Joseph T. (See Krieg and Albin.)						
Albrecht, John C., Columbus, Ga. Spark-arrester	295,322	Mar. 18	1242	344	26	1065

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Albrecht, Robert, Oneida, N. Y. Advertising-toy	293,394	Feb. 12	818	220	26	592
Albrecht, Robert, Tilsit, Prussia, Germany. Wood pavement	295,610	Mar. 25	1618	447	26	1141
Albright, Andrew. (See Smith, Presler, and Fox, assignors.)						
Alderman, Ell M., assignor of two-thirds to E. J. Benedict and P. Maroney, Sr., Tucson, Ariz. Ter. Fume-condensing attachment for ore-furnaces	291,462	Jan. 1	559	158	26	100
Aldersley, John, New York, assignor of one-half to W. N. Milsted, Brooklyn, N. Y. Gas-stove	293,698	Feb. 19	1170	326 / 327	26	663
Aldrich, Hosea P. (See Wight and Aldrich.)						
Aldrich, Samuel N. (See Wight and Aldrich, assignors.)						
Alexander, C. Madison, Brightwood, D. C. Cuff-holder	295,091	Mar. 11	945	257	26	998
Alexander, Eliza H., New York, N. Y. Apparatus for and method of embroidering	293,840	Feb. 19	1371	379	26	696
Alexander, Marcellus S., Moorefield, W. Va. Cartridge implement	294,176	Feb. 26	1921	497	26	782
Alexander, Marcellus S., Moorefield, W. Va. Gun-wad	294,177	Feb. 26	1922	497	26	782
Alexander, Robert E., Niagara, Pa. Car-replacer	293,996	Feb. 26	1567	433	26	741
Alinder, Gustaf E., Athol, Dak. Ter. Corn-harvester	294,715	Mar. 4	455	127	26	907
Allaky, Charles A., Portland, Oreg. Table for the manufacture of candy	293,931	Feb. 19	1486	409	26	717
Allison, Charles, San Francisco, Cal. Fruit cutting and pitting machine	293,841	Feb. 19	1372	379	26	696
Allaire, Hal. (See Pitman and Allaire.)						
Allan, Robert I. (See Duff and Allan.)						
Allbright, Andrew. (See Anketell, Oliver, assignor.)						
Allen, Arthur M., assignor, by mesne assignments, to L. L. Allen, New York, N. Y. Velocipede	294,178	Feb. 26	1923	497 / 498	26	782
Allen, Cornelius C., *et al.* (See Schaffer, Charles M., assignor.)						
Allen Cycle Non-Chemical Refrigerating Company *et al.* (See Reynolds and Allen, assignors.)						
Allen, Eben S. (See Hofele, Ferdinand W., assignor.)						
Allen, Edwin. (See Morrison and Allen.)						
Allen, Frank H., Norwich, Conn. Cylinder-stop for revolvers	294,950	Mar. 11	742	207	26	964
Allen, George W., *et al.* (See Schaffer, Charles M., assignor.)						
Allen, Henry F., New York, N. Y. Steam-boiler covering	294,951	Mar. 11	743	207	26	964
Allen, Horace R., Indianapolis, Ind. Cutter-bar, &c., for mowing and reaping machines	291,019	Jan. 1	4	2	26	4
Allen, Horace R., Indianapolis, Ind. Mowing-machine	291,020	Jan. 1	7	2	26	4
Allen, Isaiah J. (See Hopper and Allen.)						
Allen, John C., South Sulphur, Tex. Cotton-press	292,274	Jan. 22	1589	444	26	306
Allen, Leicester. (See Reynolds and Allen.)						
Allen, Leonora L. (See Allen, Arthur M., assignor.)						
Allen, Orren, Denver, Colo. Expansible drill	294,302	Feb. 26	1973	359	26	809
Allen, Richard N., Cleveland, Ohio. Car-wheel	293,211	Feb. 12	569	151	26	547
Allen, Willie R. D., Hardman, Oreg. Vehicle-seat spring	292,151	Jan. 22	1415	397	26	279
Allen, Willis A., assignor of one-half to N. Willis, Palmyra, Wis. Harness-buckle	294,561	Mar. 4	278	75, 76	26	876
Alley, Stephen, Glasgow, county of Lanark, Scotland. Device for welding boilers, &c	294,179	Feb. 26	1927	498	26	783
Allfree, James B., Cumberland, Md. Mill-feeding device	295,852	Mar. 25	1921	531	26	1195
Allis & Co., Edward P. (See Hinkley, George M., assignor.)						
Altmeyer, Jacob, Benwood, W. Va. Metallurgical furnace	293,131	Feb. 5	455	121 / 122	26	521
Alves, John, Dunedin, New Zealand, assignor of one-half to C. Naef, New York, N. Y. Steam-boiler	292,613	Jan. 29	2039	567	26	393
Alward, Samuel W., assignor of one-half to L. G. Abbott, Boston, Mass. Roller-skate	294,426	Mar. 4	112	30	26	848
Amberg, William A., Chicago, Ill. Combined wood and broken-stone pavement	291,422	Jan. 8	589	167	26	113
American Bell Telephone Company. (See Farnham, Isaiah H., assignor.)						
American Combination Door Lock Company. (See Atkinson and Foster assignors.)						
American Electro-Gas Telephone Company. (See Rogers, James H., assignor.)						
American Matrix Machine Company. (See Kimberly, Robert L., assignor.)						
American Ship Windlass Company. (See Winter, Herman, assignor.)						
American Watch Company. (See Church, Duane H., assignor.)						
American Writing Machine Company. (See Barron, Walter J., assignor.)						
American Writing Machine Company. (See Miller, William F., assignor.)						
American Writing Machine Company. (See Yost, George W. N., assignor.)						
Ames, Joshua F., Rockland, Mass. Stitching-jack for boots or shoes	291,661	Jan. 8	927	232	26	155
Amet, Edward H., La Grange, assignor of one-half to H. A. Streeter, Chicago, Ill. Regulator for dynamo-electric machines	292,397	Jan. 22	1741	485	26	335
Amis, Wilbourn D., Farragut, Iowa. Wire-stretcher	294,716	Mar. 4	456	127	26	907
Ammons, William H., Little Rock, S. C. Plow gage and guide	291,662	Jan. 8	929	232	26	155
Amouroux, Louis A., New York, N. Y. Machine for opening oysters	295,611	Mar. 25	1619	448	26	1141
Andersen, Stephen. (See Mortensen, Laurids J. M., assignor.)						
Anderson, Abraham, assignor to G. D. Colton & Co., Galesburg, Ill. Corn-planter check-rower	293,395	Feb. 12	819	220 / 221	26	599
Anderson, James H., Newton, Kans. Grain-binder	295,711	Mar. 25	1746	485	26	1163
Anderson, James H., Newton, Kans. Horse-armor	295,712	Mar. 25	1746	485	26	1163
Anderson, John H., Shelby, Nebr. Hydraulic dredge	294,303	Feb. 26	1974	540	26	810
Anderson, Louis T., Carroll, Iowa. Trace-carrier	294,352	Mar. 11	743	208	26	965
Anderson, Robert, Memphis, Tenn. Well-digger	292,614	Jan. 29	2039	567	26	393
Anderson, Robert C., Bayonne, N. J. Can-nozzle	294,427	Mar. 4	113	30	26	848
Anderson, Robert C., Bayonne, and F. Winterhalter, Bergen Point, N. J. Can-soldering machine	294,428	Mar. 4	114	30	26	848
Andrews Bros. & Co. (See Haas, Philip M., assignor.)						
Andrews & Co., A. H. (See Doubler, John W. H., assignor.)						
Andrews, R. Snowden. (See Locke, Milo W., assignor.)						
Andrews, William H., and H. H. Sparks, assignors to Mallory, Wheeler & Co., New Haven, Conn. Lock	291,663	Jan. 8	830	232	26	155
Angell, Horace B., San Francisco, Cal. Dredger	293,932	Feb. 19	1487	409 / 410	26	717
Anger, John E., and D. Porter, Schenectady, N. Y. Car-coupling	293,132	Feb. 5	457	122	26	522
Angle, William, Welsh Run, Pa. Mail-bag catcher	292,975	Feb. 5	247	68	26	488
Anglo American Roofing Company. (See Repp, Ephraim B., assignor.)						
Ångström, Carl, Worcester, Mass. Machine for straightening wire	293,212	Feb. 12	570	151	26	547
Ångström, Carl, Worcester, Mass. Machine for straightening wire	293,213	Feb. 12	572	151	26	547
Anisz, Herman. (See Price and Anisz.)						
Anketell, Oliver, assignor of one-half to A. Allbright, Newark, N. J. Process of and apparatus for baling bran	293,699	Feb. 19	1174	327	26	664
Ansonia Brass and Copper Company. (See Cowles, Alfred A., assignor.)						
Ansonia Rubber Company. (See Davies, Henry J., assignor.)						
Anthony, Edgar W., Boston, Mass. Stove-grate	293,206	Feb. 12	686	183	26	566

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Antle, Sidney D., Salisbury, Ill. Car-coupling	295,092	Mar. 11	946	258	26	998
Appert, Adrien A. and L. A., Paris, France. Press for molding glass	291,265	Jan. 1	313	88	26	57
Appert, Adrien A. and L. A., Paris, France. Apparatus for the application of compressed air to the manufacture of glass	292,730	Jan. 29	2181	608	26	418
Appert, Léon A. (See Appert, Adrien A. and L. A.)						
Apple, Theodore P. (See Irwin and Apple.)						
Appleby, Charles J., Southwark, county of Surrey, England. Shaft-bearing for traveling cranes	291,861	Jan. 15	1073	299	26	207
Appleby, Remsen, New York, N. Y. Cigar-mold	292,398	Jan. 22	1743	485	26	336
Applegate, William H., Atlantic, Iowa. Grain-drier	293,133	Feb. 5	458	122	26	522
Appleton, William, Jr. (See Shepard, Charles T., assignor.)						
Arens, August, assignor to P. & F. Corbin, New Britain, Conn. Window and door button	292,152	Jan. 22	1415	397	26	279
Arkell, James, assignor to Arkell & Smiths, Canajoharie, N. Y. Paper-feeding device	291,829	Jan. 8	1017	284	26	187
Arkell & Smiths. (See Arkell, James, assignor.)						
Armer, David S., assignor of one half to T. C. Woodburn and J. N. Maring, Columbus, Ind. Truss	295,472	Mar. 18	1496	394	26	1101
Armington & Sims Engine Company. (See Sims, Gardiner C., assignor.)						
Armstrong, Arthur H., Plainville, Conn. Car-coupling	294,345	Mar. 4	1	1	26	829
Armstrong, Festus S., Secor, Ill. Combined seeder, plow, and harrow	291,125	Jan. 1	141	41	26	28
Armstrong, Frank, Bridgeport, Conn. Die-stock	291,268	Jan. 1	317	89	26	58
Armstrong, Frank, Bridgeport, Conn. Lathe-dog	295,713	Mar. 25	1747	485	26	1163
Armstrong, Frank, Bridgeport, Conn. Buckle	295,714	Mar. 25	1748	486	26	1163
Armstrong, Frank, and N. W. Vandegrift, Bridgeport, Conn.; said Vandegrift assignor to said Armstrong. Pipe-wrench	291,266	Jan. 1	315	88	26	57
Armstrong, Frank, and N. W. Vandegrift, Bridgeport, Conn.; said Vandegrift assignor to said Armstrong. Pipe-wrench	291,267	Jan. 1	316	89	26	57
Armstrong, W. J., *et al.* (See Nugent, Richard C., assignor.)						
Arnold, Horace L., Middletown, Conn., assignor to T. W. Hall. Machine for barbing metallic fencing	294,105	Feb. 26	1715	472	26	765
Arnold, William N., Omen, Tex. Combined corn-planter and fertilizer-distributer	293,615	Feb. 19	1065	295	26	643
Arthur, John, Streator, Ill. Tile ditching-machine	295,323	Mar. 18	1244	345	26	1065
Arthur, Thomas, assignor to himself and R. J. Nagle, Bangor, Pa. Apparatus for raising water	293,997	Feb. 26	1568	433	26	741
Artz, George L., Columbus, Ohio. Vehicle-spring	291,664	Jan. 8	831	233	26	155
Ashcroft, Charles E., Lynn, Mass. Pressure-gage-testing apparatus	295,093	Mar. 11	946	258	26	998
Ashcroft Manufacturing Company. (See MacGregor, William H., assignor.)						
Ashcroft Manufacturing Company. (See Vinton, John H., assignor.)						
Ashley, James A., Washington, D. C. Coffee-pot	292,089	Jan. 15	1340	376	26	258
Ashton, Henry G., Somerville, Mass. Safety-valve	291,126	Jan. 1	142	41	26	28
Ashworth, Stanley, New York, N. Y. Builder's hod	293,551	Feb. 12	988	271	26	622
Asimont, Henry H., assignor to A. H. Hartson, Duluth, Minn. Sash-fastener	295,142	Mar. 18	1011	279	26	1023
Atkins, David F. (See Rose, Reuben M., assignor.)						
Atkins, Elias C. (See Black, George S., assignor.)						
Atkins, Elias C., Indianapolis, Ind. Crosscut-saw	292,194	Jan. 22	1473	414	26	287
Atkins, Elias C., Indianapolis, Ind. Machine for dipping saws	294,346	Mar. 4	2	1	26	829
Atkins, Roswell. (See Winslow and Atkins.)						
Atkinson, Benjamin, Indianapolis, Ind. Safety-gate for railway-crossings	295,324	Mar. 18	1245	345	26	1065
Atkinson, William B., and J. H. Foster, assignors to American Combination Door Lock Company, Franklin, Ky. Permutation-lock	291,665	Jan. 8	833	233	26	155
Atwood, Anson, Dunellen, N. J., assignor to Atwood Hemp Car Wheel Company, New York, N. Y. Car-wheel	294,750	Mar. 11	498	139	26	921
Atwood Hemp Car Wheel Company. (See Atwood, Anson, assignor.)						
Atwood, John E., Stonington, Conn. Metal-turning lathe	291,971	Jan. 15	1202	336	26	232
Atwood, John E., Stonington, Conn. Crank	291,972	Jan. 15	1204	336	26	232
Augur, William H. (See Sine, Samuel G., assignor.)						
Austin, Alexander W., Fort Wayne, Ind. Shoe-maker's sewing-needle	292,195	Jan. 22	1473	414	26	288
Austin, James, Detroit, Mich. Tile or block for finishing inside walls	292,887	Feb. 5	132	36	26	467
Austin, John, Chicago, Ill. Rotary plow	291,127	Jan. 1	143	41, 42	26	28
Averell, William W., Bath, N. Y. Asphaltic-concrete conduit	293,214	Feb. 12	574	151	26	547
Avery, John G. (See Jarolimek, Anthony, assignor.)						
Avery, Richard B., Washington, D. C., assignor of one-fourth to D. Stearns, Albuquerque, N. Mex. Ter. Hydrocarbon-furnace	291,830	Jan. 8	1019	284	26	188
Ayer, Alton E. (See Ayer, Henry L., assignor.)						
Ayer, Henry L., East Wilton, Me., assignor to himself and A. E. Ayer, Boston, Mass. Tag-holder for cotton-bales	292,196	Jan. 22	1474	414	26	288
Ayer, John M., Chicago, Ill. Ventilator	291,666	Jan. 8	834	234	26	155
Ayres, James, and A. C. Decker, Bushnell, Ill., assignors to Washburn & Moen Manufacturing Company, Worcester, Mass. Wire-twisting machine	294,748	Mar. 4	489	137	26	913
Ayres, Saxton T., assignor of one-half to C. D. Williamson, Philadelphia, Pa. Luminous guide-plate	292,090	Jan. 15	1341	376	26	258
Ayrton, William E., and J. Perry, London, England. Electrical traction-motor	292,529	Jan. 29	1923	538 / 539	26	375
Ayrton, William E., and J. Perry, London, England. System of electrical haulage	295,094	Mar. 11	947	258	26	998
Baar, N. Robert, C. J. and I. R. Coe, Lowville, N. Y. Fire-escape	293,215	Feb. 12	577	152	26	548
Babcock, Charles M., assignor of one-half to J. C. Stewart, Galesburg, Ill. Check-row corn-planter	294,839	Mar. 11	611	169	26	940
Babcock, Holland C., assignor of one-half to P. Jewell & Sons, Hartford, Conn. Harness-covering	293,700	Feb. 19	1175	328	26	664
Babcock, O. P. (See Plumb, Charles, assignor.)						
Babcock, Paul, Jr., Montclair, N. J. Can for kerosene, &c	291,802	Jan. 15	1074	299	26	207
Backus, Absalom, Jr., Detroit, Mich. Boiler-furnace	293,933	Feb. 19	1489	410	26	718
Bacon, Earle C., Brooklyn, assignor to Copeland & Bacon, New York, N. Y. Friction-drum for inclined-plane cable-railways	294,953	Mar. 11	744	208	26	965
Bacon, Murray, assignor to Novelty Electric Company, Philadelphia, Pa. Electric motor	294,717	Mar. 4	456	127	26	907
Bacon, Murray, assignor to Novelty Electric Company, Philadelphia, Pa. Toy electric railway	295,473	Mar. 18	1427	394 / 395	26	1101
Badische Anilin and Soda Fabrik. (See Skraup, Zdenko H., assignor.)						
Baggs, John, assignor of one-half to C. Shipley, Baltimore, Md. Sofa-bedstead	294,954	Mar. 11	745	208	26	965
Bagley, Hiram A. (See Hobson and Bagley.)						
Bagley, Moses F., and J. C. Dawson, Mount Vernon, Ill. Steam-pump	291,021	Jan. 1	9	3	26	4
Bahn, Gus A., Austin, Tex. Napkin ring and holder	293,396	Feb. 12	821	221	26	592
Bailey, Ellene A., St. Charles, Mo. Shoe-button needle	295,612	Mar. 25	1630	448	26	1141
Bailey, Fortune L., Freeport, Ind. Saw-set	291,269	Jan. 1	318	89	26	58

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bailey, Gilbert L., Portland, Me. Reel-fastening for fishing-rods	294,429	Mar. 4	116	30	26	849
Bailey, John W., Denver, and B. B. Wat.field, Holy Cross, Colo. Ore-concentrating machine	291,270	Jan. 1	319	89	26	58
Bailey, Lyman C., Calais, Me. Store-window	293,216	Feb. 12	578	152	26	548
Bailey, Samuel R., Amesbury, Mass. Sleigh-dasher screen	292,275	Jan. 22	1500	444	26	306
Bain Electric Company. (See Bain, Forée, assignor.)						
Bain, Forée, assignor to Bain Electric Company, Chicago, Ill. Regulator for dynamo or magneto electric machines	291,566	Jan. 8	693	196	26	131
Baird, George D., Washington, Ill. Grain weigher and register	295,095	Mar. 11	950	259	26	998
Baker, Benjamin R., Northfield, Minn. Saw-buck	294,718	Mar. 4	457	128	26	908
Baker, Bernard N. (See Price, George W., assignor.)						
Baker, Charles A., Moline, Ill. Wheel-cultivator	293,616	Feb. 19	1066	295	26	643
Baker, Clarence E. (See Baker, Morris C. and C. E.)						
Baker, Delos R., Ludlow, Ky. Carburetor	291,128	Jan. 1	144	42	26	28
Baker, Edward F., assignor to M. M. Baker, Chicago, Ill. Manufacture of fly-paper	295,220	Mar. 18	1115	.....	26	1041
Baker, Elijah E., assignor of one-half to M. Sharp, Providence, R. I. Car-brake	295,096	Mar. 11	951	259	26	998
Baker, George C., Des Moines, Iowa. Wire-barbing machine	295,513	Mar. 25	1487	411	26	1117
Baker, George W., Wilmington, Del. Boring-tool	293,397	Feb. 12	822	221	26	592
Baker & Hamilton. (See Robinson, Alexander, assignor.)						
Baker, Jacob, Greenville, Ohio. Book and file case	293,701	Feb. 19	1176	328	26	664
Baker, James H., New York, N. Y. Pump-regulating device	291,271	Jan. 1	360	90	26	58
Baker, John, Muscatine, Iowa. Fruit and vegetable washer	295,715	Mar. 25	1740	486	26	1163
Baker, John, Muscatine, Iowa. Fruit, vegetable, and meat can	295,716	Mar. 25	1750	486	26	1164
Baker, John S., *et al.* (See Burns and Buckman, assignors.)						
Baker, Joseph H. (See Boynton, George W., assignor.)						
Baker, Leroy A., Elmira, N. Y. Fence	294,106	Feb. 26	1718	472	26	766
Baker, Margaret M. (See Baker, Edward F., assignor.)						
Baker, Morris C. and C. E., Mitchell, Dak. Ter. Machine for operating drills	292,888	Feb. 5	133	36	26	468
Baker, Nelson R., Greene, N. Y. Thill-coupling	294,107	Feb. 26	1718	472	26	766
Baker, Richard J., and J. P. Roberts, Providence, R. I. Marine-signal light	295,717	Mar. 25	1750	486, 487	26	1164
Baker, Thomas H., *et al.* (See Poole, Samuel, assignor.)						
Baker, William, *et al.* (See Dowling, Robert H., assignor.)						
Baker, William H. (See Knight, John K., assignor.)						
Baker, William H., Brooklyn, N. Y. Electrical indicator and alarm	291,483	Jan. 8	590	167	26	113
Baker, William H., Brooklyn, N. Y. Electrical indicator and alarm	291,484	Jan. 8	592	167	26	113
Baker, William S. G., Baltimore, Md. Car-axle box	292,390	Jan. 22	1743	486	26	336
Baker, Wilson M. (See Parker and Baker.)						
Baker, Wilson M., Urbana, Ohio. Knockdown crate	294,751	Mar. 11	500	139	26	921
Baldwin, A. C. (See Trier, Frank, assignor.)						
Baldwin, Benjamin L., *et al.* (See Crandall, Charles M., assignor.)						
Baldwin, George, assignor of one-half to T. Clark, Buckland, Conn. Tension-regulating device for loom-shuttles	291,831	Jan. 8	1021	285	26	188
Baldwin, James A., Jr., East Jaffrey, N. H. Pipe and other joints	294,562	Mar. 4	279	76	26	876
Baldwin, James S., assignor of twenty-one twenty-fifths to S. A. Farrand, Newark, N. J., and B. W. Bradford, New York, N. Y. Hot-air engine	292,400	Jan. 22	1744	486	26	336
Baldwin, William F., Grayville, Ill. Fire-engine	292,276	Jan. 22	1591	444	26	306
Ball, Addison W. (See Ball, William W., assignor.)						
Ball, Albert, Canton, Ohio. Plow	291,667	Jan. 8	836	234	26	156
Ball, Albert, assignor to Sullivan Machine Company, Claremont, N. H. Apparatus for shifting drilling-machines	295,325	Mar. 18	1246	345	26	1066
Ball, Benjamin E., Denver, Colo. Wire cutter and shaper	293,134	Feb. 5	460	122, 123	26	522
Ball, Charles E., Philadelphia, Pa. Dynamo-electric machine	291,973	Jan. 15	1205	336	26	232
Ball, Charles E., Philadelphia, Pa. Regulator for dynamo-electric machines	294,180	Feb. 26	1629	498	26	783
Ball, Charles E., Philadelphia, and C. S. Bradford, Jr., West Chester, Pa., assignors to said Ball. Electric gas-generator	291,463	Jan. 1	560	158	26	100
Ball, Clinton M., Troy, assignor of two-thirds to J. McKenzie, West Troy, and J. A. Powers, Lansingburg, N. Y. Dynamo-electric machine	294,719	Mar. 4	458	128, 129	26	908
Ball, James A. (See Moore, Jonathan J., assignor.)						
Ball, William, Lynchburg, Ohio. Filter	291,863	Jan. 15	1075	300	26	207
Ball, William W., assignor of one-half to A. W. Ball, Indianapolis, Ind. Buggy-seat	295,143	Mar. 18	1013	279	26	1023
Ballard, Andrew J., assignor to Cohoes Iron Foundry and Machine Company, Cohoes, N. Y. Self-closing hatch-cover	294,108	Feb. 26	1719	473	26	766
Ballard, Levi. (See Port, Go Hin, assignor.)						
Ballin, Moritz, New York, and F. Hoff, Brooklyn, N. Y. Coffee-pot attachment	294,347	Mar. 4	4	1	26	899
Ballin, Semmy, Hamburg, Germany. Station indicator	295,336	Mar. 18	1247	346	26	1066
Ballou, Walter, North Attleborough, Mass. Ornamental chain	292,815	Jan. 29	2040	567	26	393
Baltes, Peter J., assignor of one-half to J. B. Donnelly, Oswego, N. Y. Lubricator	295,474	Mar. 18	1429	395	26	1101
Bangs, David E., Medford, Mass. Vapor-burner	292,616	Jan. 29	2041	567	26	394
Bangs, Frederick E. (See Dibble, Chauncey G., assignor.)						
Banker, George W., Brooklyn, N. Y. Composite oil for lubricating, &c	294,752	Mar. 11	501	.....	26	921
Banning, Walter E., Syracuse, N. Y. Sign	293,702	Feb. 19	1177	328	26	664
Bannister, Lemuel, Philadelphia, Pa. Grate	291,864	Jan. 15	1076	300	26	208
Bannister, Thomas M., Lone Pine, Cal. Brick-cutting machine	295,097	Mar. 11	952	259, 260	26	999
Barber Asphalt Paving Company. (See Knight, William H. H., assignor.)						
Barber, Edwin L., Chicago, Ill. Filter	295,327	Mar. 18	1249	346	26	1066
Barber, J. B., *et al.* (See Charbonean, Pascal B., assignor.)						
Barbour, Charles S., New Haven, Conn. Extension fruit-dish holder	292,197	Jan. 22	1475	414, 415	26	288
Barclay, Charles. (See Miner, Henry M., assignor.)						
Barclay, William P., Chicago, Ill. Abrading-tool	293,398	Feb. 12	823	221, 222	26	593
Barcus, Willard E., Vineland, N. J. Measuring-tank	294,181	Feb. 26	1630	499	26	783
Bardo, Peter N., Newport, Ky., assignor to Bourbon Copper and Brass Works, Cincinnati, Ohio. Still	291,833	Jan. 8	1022	285	26	188
Barenfanger, Christian W., assignor of one-half to J. H. Mesker, Evansville, Ind. Vehicle-spring	291,832	Jan. 8	1021	285	26	188
Barger, Nathaniel S., Hampton, Iowa. Wheel landside-plow	292,401	Jan. 22	1747	486	26	337
Barker, James, Philadelphia, Pa. Mechanism for converting rotary into vibrating motion	292,461	Jan. 29	1829	509, 510	26	350
Barker, Samuel L. (See Barker, Silas and S. L.)						
Barker, Silas and S. L., Hartford, Conn. Self-closing faucet	291,668	Jan. 8	836	234	26	156
Barlet, Herrman, Nüremberg, Bavaria, Germany. Paste for cleaning metals	293,998	Feb. 26	1569	.....	26	741

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Barlow, Charles O., Nevada City, and G. T. Emery, San Francisco, assignors of one-fourth to J. W. Sprague, Nevada City, Cal. Rock-drill	294,430	Mar. 4	117	31	26	849
Barlow, Edward C., *et al.* (See Thompson and Rice, assignors.)						
Barlow, John H., New Haven, Conn. Cartridge implement	293,297	Feb. 12	688	184	26	567
Barlow, John H., New Haven, Conn. Cartridge implement	294,955	Mar. 11	747	208	26	965
Barlow, John H., New Haven, Conn. Cartridge implement	293,399	Feb. 12	824	222	26	593
Barmore, Albert K., Benton, Tex. Adding-machine	295,514	Mar. 25	1489	411	26	1117
Barnard, Andrew B., St. Joseph, Mo. Seal-lock						
Barnard, Charles. (See Seavey, Lafayette W., assignor.)						
Barnard, Edward, Rome, N. Y. Halter	293,999	Feb. 26	1569	433	26	741
Barnard, Heman A., Moline, Ill. Sectional steam-boiler	295,328	Mar. 18	1250	346, 347	26	1066
Barnes, Amasa S. (See Kinder, Arthur H., assignor.)						
Barnes, Brown M. (See Beam, Ira R., assignor.)						
Barnes, Leander P., Oreana, Ill. Belt-reel for thrashing-machines	292,530	Jan. 29	1925	539	26	375
Barnet, John, Lafayette, Ind. Machine for milling off the hub ends of wheel-spokes	293,934	Feb. 19	1491	410	26	718
Barnet, John, Lafayette, Ind. Drilling-machine	295,329	Mar. 18	1251	347	26	1067
Barney, Everett H., Springfield, Mass. Roller-skate and skate-fastening	293,298	Feb. 12	689	184	26	567
Barney, Everett H., Springfield, Mass. Roller-skate	293,299	Feb. 12	691	184	26	567
Barney, Everett H., Springfield, Mass. Skate-fastening	294,182	Feb. 26	1632	499	26	783
Barnhart, Henry M. (See Huber and Barnhart.)						
Barnum, James W., New Orleans, La. Cistern	295,330	Mar. 18	1252	347	26	1067
Barnum, Phineas T. (See Brothwell, Charles R., assignor.)						
Barr, Samuel W., Mansfield, Ohio. Sulky-plow	295,613	Mar. 25	1621	448	26	1141
Barr, William C., Jersey City, N. J. Vehicle-wheel	292,617	Jan. 29	2042	568	26	394
Barrett, Josiah, Allegheny, Pa. Lifting-jack	293,460	Feb. 12	825	222	26	593
Barron, Walter J., New York, N. Y., assignor, by mesne assignments, to American Writing Machine Company, of New York. Type-writing machine	295,475	Mar. 18	1430	395	26	1101
Barrows, Francis A., Castleton, Vt. Clevis for reversible plows	294,431	Mar. 4	119	31	26	849
Barrows, William N., Philadelphia, Pa. Sand-molding machine	293,401	Feb. 12	826	223	26	593
Barry, George M., Boston, Mass. Skirt-supporter	292,402	Jan. 22	1748	487	26	337
Barry, Nicholas, Jr., Muscatine, Iowa. Water closet	293,935	Feb. 19	1492	411	26	719
Barry, William H., New York, N. Y. Hat-hanging attachment	291,485	Jan. 8	594	167	26	113
Barstow, William S., Brooklyn, N. Y. Heliostat or porte lumière	292,198	Jan. 22	1477	415	26	288
Barth, Ernst, Stanchitz, and O. Spilger, Döbeln, Germany. Vegetable-cutter	293,300	Feb. 19	692	185	26	568
Bartholomew, Andrew, Springfield, Mass. Wagon for moving heavy objects	295,331	Mar. 18	1254	348	26	1067
Bartlett, Andrew J., Elk Flat, Oreg. Fire-escape ladder	292,531	Jan. 29	1926	539	26	375
Bartlett, Bnel F., Dunkirk, N. Y. Lubricating compound	294,840	Mar. 11	613	.....	26	940
Bartlett, Frank K., Springfield, Mass. Safety-gate for elevators	292,402	Jan. 29	1830	510	26	359
Bartlett, Frederick W., Buffalo, N. Y. Protecting buildings from vermin, fire, &c	293,617	Feb. 19	1068	296	26	643
Bartlett, Wallace A., Washington, D. C. Pneumatic cannon	294,348	Mar. 4	5	2	26	899
Bartlett, Wallace A., Washington, D. C. Pneumatic cannon	294,349	Mar. 4	7	2	26	899
Bartlett, Wallace A., Washington, D. C. Pneumatic cannon	294,350	Mar. 4	9	3	26	831
Bartlett, Wallace A., Washington, D. C. Pneumatic cannon	294,351	Mar. 4	11	3	26	831
Bartlett, Wallace A., Washington, D. C. Pneumatic cannon	294,352	Mar. 4	13	3, 4	26	831
Bartlett, Wallace A., Washington, D. C. Pneumatic cannon	294,353	Mar. 4	15	4	26	832
Bartlett, Wallace A., Washington, D. C. Pneumatic cannon	294,183	Feb. 26	1632	499	26	783
Bartliff, Charles A., Bartlett, Tenn. Beer-cooler	292,889	Feb. 5	134	37	26	468
Barton, Abner W., East Hampton, Conn. Call-bell	295,515	Mar. 25	1490	411, 412	26	1117
Barton, Edward F., assignor of one-half to T. Grundel, Ravenna, Ohio. Nailing-machine	294,184	Feb. 26	1633	500	26	783
Barton, William E., East Hampton, Conn. Bell	292,618	Jan. 29	2043	568	26	394
Basinger, James M., assignor of one-fourth to Pratt & Letchworth, Buffalo, N. Y. Harness-loop	291,129	Jan. 1	147	43	26	29
Baskin, William C., Red Elephant, assignor of one-half to F. W. Best and E. N. Green, Denver, Colo. Wrench	292,463	Jan. 29	1831	510, 511	26	360
Bassett, Milton H., New Britain, Conn. Gage for adjusting locks						
Bastien, Joseph. (See Long, John S., assignor.)						
Batcheller, Alfred H. (See Barbank, Jotham H., assignor.)						
Batcheller, Andrew C., Bay City, Mich. Hoop-nailing machine	295,516	Mar. 25	1492	412	26	1118
Bate, William T., Conshohocken, Pa. Low-water alarm	291,272	Jan. 1	321	90	26	59
Bates, Theodore C. (See Essex, David, assignor.)						
Bates, Theodore C. (See Hill, Lucian, assignor.)						
Bates, Theodore C. (See Latlin, Perley, assignor.)						
Baude, Emil, Cincinnati, Ohio. Water-closet	294,185	Feb. 26	1634	500	26	784
Bauer, Jacob C., Philadelphia, Pa. Match-box	295,098	Mar. 11	953	260	26	999
Baum, W. Z., *et al.* (See Dusenbury, Philip S., assignor.)						
Baumeister, Leopold, Bridgeport, Conn. Portable lamp	295,332	Mar. 18	1255	348	26	1068
Blumle, John, Milwaukee, Wis. Hoop-flaring machine	291,273	Jan. 1	322	90	26	59
Bausch, Edward, Rochester, N. Y. Binocular microscope	293,317	Feb. 12	579	152	26	548
Bausch, John J., Rochester, N. Y. Machine for grinding spectacle-lenses	291,130	Jan. 1	148	43	26	29
Baxter, Duke F., assignor of one-fourth to F. A. Baxter, Rochester, N. Y. Button or stud fastener	293,301	Feb. 12	693	185	26	568
Baxter, Frances A. (See Baxter, Duke F., assignor.)						
Baxter, William, Jersey City, N. J., assignor to Hydrodynamic Transmitter Company, New York, N. Y. Reciprocating hydro-transmitter	292,779	Feb. 5	1	1	26	443
Bayles, Thomas S., assignor of two-thirds to T. R. Wood and A. J. Somerville, Toronto, Ontario, Canada. Wire-spooling machine	293,842	Feb. 19	1374	380	26	697
Bayrer, William J., Southington, Conn. Scissors and shears	295,718	Mar. 25	1752	487	26	1164
Bazill, Joseph F., Christiansburg, Ohio. Lifting-jack	293,703	Feb. 19	1178	328	26	664
Beach, Alexander H., Flint, Mich. Clip for securing irregular surfaces together	291,134	Jan. 1	152	44	26	29
Beach, Alexander H. and R. H., Flint, Mich. Wagon-pole	291,131	Jan. 1	150	43	26	29
Beach, Allen J., Flint, Mich. Wagon running-gear	291,132	Jan. 1	150	44	26	29
Beach, Allen J., Flint, Mich. Wagon running-gear	291,133	Jan. 1	151	44	26	29
Beach, Allen J., Linden, Mich. Thimble-skein for wagons	294,000	Feb. 26	1570	433	26	741
Beach, Ralph H. (See Beach, Alexander H. and R. H.)						
Beach, William W., New York, N. Y. Insulator for electric wires	294,563	Mar. 4	280	76	26	876
Beach, William W., New York, assignor of one-half to C. V. Goddard, Brooklyn, N. Y. Button	292,780	Feb. 5	2	1	26	443
Beach, William W., Brooklyn, assignor to Standard Oil Company, New York, N. Y. Barrel-cleaning machine	293,843	Feb. 19	1375	380	26	697
Beal, Ezra F., assignor, by mesne assignments, to himself and S. Snow, Everett, Mass. Lasting-machine. (Reissue)	10,454	Feb. 26	2037	558	26	821
Beal, George, Gilman, Iowa. Flaxseed-cleaner	294,841	Mar. 11	613	169, 170	26	940

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Beam, Ira R., assignor of one-third to B. M. Barnes, Dryden, N. Y. Engraving-machine	295,853	Mar. 25	1922	531	26	1195
Beaman, Charles F., Chicago, Ill., assignor to Wellsville Plate and Sheet Iron Company, Wellsville, Ohio. Machine for wiring sheet-metal pans	291,834	Jan. 8	1023	285 286	26	188
Beams, James E., Cold Water, Ohio. Sulky-harrow	293,621	Feb. 19	1072	297	26	644
Bean, Rufus E. (See Poor and Bean.)						
Bear, John H., West Manchester, Pa. Grinding-mill	294,956	Mar. 11	749	209	26	966
Beard, Cornelius. (See Turner, William B., assignor.)						
Beard, Thomas, assignor of one-half to A. B. Walker, Kokomo, Ind. Saw-buck	291,669	Jan. 8	837	234	26	156
Beardslee, William F., Boston, Mass. Sewing-machine trimmer	294,432	Mar. 4	120	32	26	850
Beardsley, William H., assignor of one-half to J. E. Campbell, Hamilton, Ohio. Chair	294,433	Mar. 4	123	32	26	850
Beare, Joseph H., Tombstone, Ariz. Ter. Boiler-scraper	295,854	Mar. 25	1923	531 532	26	1196
Beatty, Alvin O. (See Beatty, William L., H. L., and A. O.)						
Beatty, Harvey L. (See Beatty, William L., H. L., and A. O.)						
Beatty, William L., H. L., and A. O., Welland, Ontario, Canada. Hoisting-machine	292,781	Feb. 5	2	1, 2	26	443
Beaty, William D., Mannington, W. Va. Car-signal	295,144	Mar. 18	1013	280	26	1023
Beaupain, Louis, Springfield, Ohio. Velocipede	295,333	Mar. 18	1256	348	26	1068
Beaupied, Joseph, San Juan, Porto Rico, West Indies. Cover for culinary and other receptacles	291,022	Jan. 1	10	3	26	5
Beaupied, Joseph, San Juan, Porto Rico, West Indies. Car-wheel and axle	291,274	Jan. 1	324	91	26	59
Beazley, Joseph O., and I. L. Morris, Baltimore, Md. Combined fruit parer and seeder	295,476	Mar. 18	1431	396	26	1102
Beazley, Robert H., Fayette, Mo. Shading-pen	292,782	Feb. 5	5	2	26	444
Bechtel, George M., Reading, Pa. Shutter-bolt	291,023	Jan. 1	11	3	26	5
Becker, Emil. (See Garland and Becker.)						
Becker, George, Mansfield, Ohio. Wagon end-gate	295,099	Mar. 11	954	260	26	999
Becker, Theodore H., Central City, Colo. Amalgamator	293,936	Feb. 19	1403	411 412	26	719
Beckmann, August, St. Louis, Mo. Chain-pump	294,434	Mar. 4	124	32	26	850
Beckwith, Leonard F., New York, N. Y., assignor to Fire Proof Building Company of New Jersey. Conduit for steam pipes	294,354	Mar. 4	16	4, 5	26	832
Beebe, Charles S., Racine, Wis. Road-cart	292,277	Jan. 22	1592	445	26	307
Beegen, Georg, Detroit, Mich. Mug	294,564	Mar. 4	281	76	26	876
Beeler, Presley, Jefferson County, Ky. Cultivator	292,091	Jan. 15	1349	377	26	259
Beeman, Joseph S., London, England. Support for filaments of incandescent lamps	291,464	Jan. 1	561	158	26	100
Beeman, Joseph S., London, England. Reflector for incandescent lamps	292,403	Jan. 22	1748	487	26	337
Beeman, Joseph S., W. Taylor, and F. King, London, England. Secondary-battery regulator	291,465	Jan. 1	561	158	26	100
Beers, John H. (See Ridge, Joseph, assignor.)						
Beetle, James C., New Bedford, Mass. Button-hook	294,186	Feb. 26	1836	500	26	784
Beggs, Eugene, Paterson, N. J. Liquid or water gage	292,532	Jan. 29	1927	539 540	26	375
Behrens, Charles B., *et al.* (See Boorman, William, assignor.)						
Behrens, Sigmund, *et al.* (See Boorman, William, assignor.)						
Belermeister, Fredrick, Jr., Troy, N. Y. Button-hole	291,486	Jan. 8	594	168	26	114
Belle, Charles, Brooklyn, assignor to Belle & Sulzer, New York, N. Y. Electric door-pull	294,842	Mar. 11	615	170	26	940
Belle & Sulzer. (See Belle, Charles, assignor.)						
Belcher, Frank S. and J. B., Charlotte, Mich. Buckle	291,275	Jan. 1	324	91	26	59
Belcher, John B. (See Belcher, Frank S. and J. B.)						
Beldam, Asplan, London, county of Middlesex, England. Packing for stuffing-boxes	292,783	Feb. 5	6	2	26	444
Belford, George W., Princeville, Ill. Wire-carrier	294,843	Mar. 11	616	170	26	941
Belknap Manufacturing Company. (See Webster, Benjamin, assignor.)						
Bell, Edwin C., Titusville, Pa. Type-holder	294,353	Mar. 4	19	5	26	833
Bell, Enos, Minneapolis, Minn. Platform-scale	291,276	Jan. 1	325	91, 92	26	59
Bell, John H. (See Brock, William E., assignor.)						
Bell, Thomas, Shelby City, Ky. Corn-planter	292,619	Jan. 29	2044	568	26	394
Bell, William. (See Lipsey, Andrew B., assignor.)						
Bellamy, Charles L., Arlington, N. J. Tool-handle	292,620	Jan. 29	2045	569	26	394
Bellinger, Robert M., Blissfield, Mich. Fruit-drying rack	292,199	Jan. 22	1478	415	26	288
Bellows, Stephen H., Athol, Mass. Combined bevel and T-square	295,109	Mar. 11	955	260	26	999
Belt, Benjamin F. (See Graves and Belt.)						
Bendy, Napoleon B., Galveston, Tex. Sash-fastener	294,435	Mar. 4	125	32	26	850
Benecia Agricultural Works. (See Robinson, Alexander, assignor.)						
Benedict, E. J., *et al.* (See Alderman, Eli M., assignor.)						
Benedict, Marsena, New York, N. Y. Seat	291,487	Jan. 8	596	168	26	114
Benjamin, Edwin, South Evanston, Ill. Planer-knife	293,135	Feb. 5	461	123	26	522
Benjamin, Edwin, South Evanston, Ill. Wood-planing machine	294,001	Feb. 26	1571	434	26	742
Benjamin, Edwin, South Evanston, Ill. Jointing attachment for planing-machines	295,101	Mar. 11	957	261	26	999
Benjamin, Park, New York, N. Y. Telephone-case	293,136	Feb. 5	462	123	26	523
Benjamin, William A., Cleveland, Ohio. Car-coupling	294,565	Mar. 4	282	77	26	877
Bennett, Anthony A., West Stratford, Conn. Faucet	291,135	Jan. 1	152	44, 45	26	30
Bennett, Benjamin F., Lockport, N. Y. Fire-escape	295,221	Mar. 18	1116	308	26	1041
Bennett, Charles H., Blossburg, Pa. Lamp	291,024	Jan. 1	13	4	26	5
Bennett, Daniel, assignor of one-third to S. G. Bennett, Logan, Ohio. Fire-escape	293,137	Feb. 5	463	123	26	523
Bennett, George S. (See Finch, John M., assignor.)						
Bennett, John F., Pittsburg, Pa. Apparatus for the manufacture of ingot iron and steel	294,002	Feb. 26	1572	434	26	742
Bennett, John F., Pittsburg, Pa. Hot-blast apparatus for blast-furnaces	294,003	Feb. 26	1574	434	26	742
Bennett, John H. H, Springfield, Ill. Thread-guide for sewing-machines	293,402	Feb. 12	898	223	26	594
Bennett, Sewell G. (See Bennett, Daniel, assignor.)						
Bennett, Theodore G. (See Smith, John S., assignor.)						
Bennett, Thomas G., assignor to Winchester Repeating Arms Company, New Haven, Conn. Primer	291,974	Jan. 15	1206	337	26	232
Bennett, Thomas G., assignor to Winchester Repeating Arms Company, New Haven, Conn. Primer	294,566	Mar. 4	283	77	26	877
Bennett, Thomas G., assignor to Winchester Repeating Arms Company, New Haven, Conn. Primer	294,957	Mar. 11	750	209	26	966
Bennett, William A., Dallas, Tex. Drag-saw	291,277	Jan. 1	327	92	26	60
Bennett, William T., Newport, Ind. Ditching-machine	294,567	Mar. 4	284	77	26	877
Bensmann, Hermann, Minster, Ohio. Windmill	293,704	Feb. 19	1178	329	26	664
Benson, Benjamin S., Baltimore, Md. Sulky-plow	291,975	Jan. 15	1208	337	26	232
Benson, Henry, Nottingham, England. Internal stopper for bottles	295,102	Mar. 11	958	261	26	1000
Bentham, Harry, San Francisco, Cal. Can-opener	291,567	Jan. 8	695	196	26	131
Bentz, Harry. (See Bentz, W. Stuart and H.)						
Bentz, W. Stuart and H., York, Pa. Device for checking horses	294,187	Feb. 26	1836	501	26	784

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bentzen, Charles A., New York, N. Y. Mechanical movement	292,976	Feb. 5	245	68	26	488
Benway, James K., Albany, N. Y. Dadoing-machine	291,865	Jan. 15	1077	300 301	26	208
Beranek, J. K., *et al.* (See Bilan, Louis, assignor.)						
Berdanier, Adam F. (See Berdanier, Anthony and A. F.)						
Berdanier, Anthony and A. F., Philadelphia, Pa. Stock-car	291,136	Jan., 1	153	45	26	30
Berens, Charles J., Washington, Ind. Refrigerator	291,278	Jan. 1	328	92, 93	26	60
Berg, Hart O., New York, N. Y. Toilet-case	295,222	Mar. 18	1117	308	26	1041
Berg, Herman C., College Point, N. Y. Broom-holder	292,621	Jan. 29	2047	569	26	395
Bergmann & Co. (See Bergmann, Sigmund, assignor.)						
Bergmann, Sigmund, assignor to Bergmann & Co., New York, N. Y. Socket for electric lamps	293,552	Feb. 12	989	271	26	623
Bergmann, Sigmund, assignor to Bergmann & Co., New York, N. Y. Combined gas and electric lamp fixture	293,553	Feb. 12	991	271	26	623
Berguer, Theodore. (See Lefeldt and Lentsch, assignors.)						
Bergner, Theodore. (See Lefeldt and Lentsch, assignors.) (Reissue.)						
Bergtold, Charles A., New York, N. Y. Fish-box	295,517	Mar. 25	1493	412	26	1118
Berkshire, John H., Muscatine, Iowa, assignor to Kennedy & Berkshire Feed Water Heater and Filter Manufacturing Company. Feed-water heater and purifier	293,622	Feb. 19	1073	297	26	645
Berliner, Emile, Boston, Mass. Telephone-transmitter	291,866	Jan. 15	1079	301	26	208
Bernhard, Charles, New York, N. Y. Sled-propeller	295,719	Mar. 25	1753	487	26	1164
Bernstein, Sam. G., and M. Simonson, New York, N. Y. Show-box for trimmings	293,844	Feb. 19	1377	380	26	697
Berolzheimer, Henry. (See Butterfield, William L., assignor.)						
Berolzheimer, Henry. (See Hoffman, Joseph, assignor.)						
Berond, Louis, and E. Walsh; said Walsh assignor of one-half to H. Ahrens, Elizabeth, N. J. Elevator	291,835	Jan. 8	1025	286	26	189
Berry, John M., Farmington, N. H. Upper for shoes	292,464	Jan. 29	1834	511	26	300
Berry, Joseph N., Boston, Mass. Anti-rattler for thill-couplings	293,218	Feb. 12	580	152	26	548
Berry, Walter, and P. Stuart, Edinburgh, county of Mid-Lothian, Scotland. Artificial pavement and conduit for electric wires	295,334	Mar. 18	1257	348	26	1068
Bertemes, Philipp. (See Klentoff and Bertemes.)						
Bertemes, Philipp.	294,356	Mar. 4	19	5	26	833
Bery, Hans H. E., Brooklyn, N. Y. Whiffletree						
Bessler, Vetal, New York, N. Y., assignor of one-half to H. A. Robbins, Washington, D. C. Fire-escape	295,477	Mar. 18	1433	396	26	1102
Best, Frederick W., *et al.* (See Baskin, William C., assignor.)						
Best, William H., Eastport, Mich. Whiffletree-hook	294,958	Mar. 11	751	209	26	966
Bevans, Thomas R., Kalamazoo, Mich. Carriage-spring	292,200	Jan. 22	1479	415	26	288
Beverage, Thomas M., Monterey, Va. Rat-trap for buildings	295,720	Mar. 25	1754	487	26	1164
Bevins, John, and A. Propst, New York, N. Y. Cutter for wires and cords of bottles	295,721	Mar. 25	1755	488	26	1165
Bias, James L., Guyandotte, W. Va. Car-coupling	293,618	Feb. 19	1069	296	26	644
Bickford, Charles R., assignor of one-half to W. W. Massey, Elyria, Ohio. Door-check	291,466	Jan. 1	562	159	26	101
Bieber, Ernst H., New York, N. Y. Device for drilling square holes	291,137	Jan. 1	155	45	26	30
Biese, Alfred, Berlin, and K. G. Zierold, Leipsic, Germany. Piano-action	294,004	Feb. 26	1575	435 436	26	742
Bigger, Robert M., Hughesville, Pa. Portable steam-engine	291,279	Jan. 1	329	93	26	60
Bignall, M. C. (See Whitman, George W., assignor.)						
Bignell, Frank B., Smyrna, Mich. Removable boss for horse-power transmitters	294,568	Mar. 4	285	78	26	877
Bilan, Louis, assignor of one-half to F. J. Horak and J. K. Beranek, Iowa City, Iowa. Permutation-lock	291,467	Jan. 1	563	159	26	101
Bilgram, Hugo, Philadelphia, Pa. Bevel-gear cutter	294,844	Mar. 11	617	171	26	941
Bill, Earl, Cleveland, Ohio. Automatic street-railway switch	291,138	Jan. 1	155	46	26	30
Billings, Charles E. (See Pullman, Herbert S., assignor.)						
Billings, Charles E., Hartford, Conn. Holder for cutting-off tools	292,784	Feb. 5	6	2	26	444
Billings, George W., Cleveland, Ohio. Apparatus for producing gas	292,622	Jan. 29	2047	569	26	395
Binford, Ballard W., Richmond, Va. Potato digger and ridger	293,403	Feb. 12	899	224	26	594
Bingham, Charles F. (See Bookman and Bingham.)						
Bingham, John H., Hartford, Conn., assignor to J. and E. McLoughlin, New York, N. Y. Printer's damping-roller	294,436	Mar. 4	125	33	26	851
Birch, George A., East Greenbush, N. Y. Snow-scraper	293,620	Feb. 19	1071	296	26	644
Birch, John S., New York, N. Y. Center-board for vessels	292,890	Feb. 5	135	37	26	468
Bird, Charles S., Elyria, Ohio. Combined tobacco box and cutter	293,404	Feb. 12	830	224	26	594
Bird, George M., Boston, Mass. Fire-escape	293,845	Feb. 19	1378	380	26	698
Birgé, Isidore, Philadelphia, Pa. Store-service apparatus	291,280	Jan. 1	330	93	26	60
Bishop, Richard T., assignor of one-half to T. Hunt, St. Louis, Mo. Wheel	293,619	Feb. 19	1070	296	26	644
Bissell, Frank S., Pittsburg, Pa. Adjustable blower for fire-places and stoves	294,569	Mar. 4	286	78	26	877
Bissell, John H. (See Cope, Henry P., assignor.)						
Bissett, Jean, assignor of one-half to T. Imflinger, Houston, Tex. Lubricator	294,720	Mar. 4	461	129	26	908
Bissland, Sarah. (See Lathrop, Charles D., assignor.)						
Bitting, Samuel L., Big Creek, Miss. Shingle-sawing machine	295,722	Mar. 25	1757	488	26	1165
Black, George S., assignor of one-half to E. C. Atkins, Indianapolis, Ind. Sawyer's gage	292,465	Jan. 29	1834	511	26	360
Black, Richard B., Experiment Mills, Pa. Button	295,335	Mar. 18	1258	349	26	1068
Blacker, Francis W., Worcester, Mass. Sealed binding-strap	291,025	Jan. 1	14	4	26	5
Blackman, William W., administrator. (See Bradford, Addison.)						
Blackwell, Richard C., assignor of one-half to G. Delker, Henderson, Ky. Wagon running-gear	291,468	Jan. 1	565	159	26	101
Blackwell, Willis B., *et al.* (See Britton, Samuel H., assignor.)						
Blackwood, John. (See Ganss, Jacob, assignor.)						
Blaine, George E., Ringgold, Ga. Vehicle-spring	293,219	Feb. 12	581	153	26	549
Blaine, Joseph L. (See Ryder, Stephen, assignor.)						
Blair, John J., Tacoma, Wash. Ter., assignor to himself and R. R. Blair, Aurora, Ind. Revolving-cylinder engine	294,304	Feb. 26	1975	540	26	810
Blair, Robert R. (See Blair, John J., assignor.)						
Blair, Thomas H., assignor to Blair Tourograph Company, Boston, Mass. Plate-holder	294,959	Mar. 11	752	210	26	966
Blair Tourograph Company. (See Blair, Thomas H., assignor.)						
Blake, Francis, Weston, Mass. Switch-board	295,223	Mar. 18	1118	309	26	1042
Blake, Henry H., Pittsburg, Pa. Manufacture of pulleys, &c.	295,336	Mar. 18	1259	349	26	1068
Blake, Henry H., Pittsburg, Pa. Compound pulley or wheel	295,337	Mar. 18	1260	349	26	1068
Blake, Henry T., Cañon City, Colo. Neckscarf	292,623	Jan. 29	2048	569	26	395
Blake, Joseph H. (See Deeds and Blake.)						
Blake, Theodore A., New Haven, Conn. Pig-iron breaker	293,405	Feb. 12	831	225	26	594
Blakely, John, Brooklyn, N. Y. Knockdown box	291,291	Jan. 1	331	94	26	60
Blakeslee, Harvey D., *et al.* (See Latta, Emmit G., assignor.)						
Blakeslee, Harvey D. (See Schoenthaler, Daniel, assignor.)						
Blamires, Thomas B., Huddersfield, county of York, England. Electric lamp	291,867	Jan. 15	1080	301	26	209

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Blanchard, Alonzo E. (See Fitts, Rice, and Blanchard.)						
Blanchard, Virgil W., New York, N. Y. Fire-escape	295,723	Mar. 25	1757	488	26	1165
Blaum, John. (See Smith, Duncan, assignor.)						
Bleike, William T., Jr., Galveston, Tex. Poultry-coop	293,138	Feb. 5	464	124	26	523
Bleoo, John H. (See Greives and Bleoo.)						
Blessing, James H., Albany, N. Y. Stop-valve	294,357	Mar. 4	20	5	26	833
Blessing, James H., Albany, N. Y. Check-valve	294,960	Mar. 11	753	210	26	966
Blessing, James H., Albany, N. Y. Steam-trap	295,224	Mar. 18	1119	309	26	1042
Bleuler, Henry J., Boston, Mass. Guard to hatchways	292,092	Jan. 15	1343	377	26	250
Blickensderfer, George C. (See Smith and Blickensderfer.)						
Blickensderfer, George C., and H. Smith, Erie, Pa. Conveyer apparatus	295,338	Mar. 18	1261	349, 350	26	1069
Blickensderfer, George C., and H. Smith, Erie, Pa. Conveyer apparatus	295,339	Mar. 18	1264	350, 351	26	1069
Blickensderfer, George C., and H. Smith, Erie, Pa. Conveyer apparatus	295,478	Mar. 18	1436	396, 397	26	1103
Bligh, Samuel L., Custard's, Pa. Harness	294,005	Feb. 26	1576	436	26	742
Bliss, Jeremiah W. (See Bliss, William H. and J. W.)						
Bliss, William H., Norwich, Conn. Revolver	294,188	Feb. 26	1837	501	26	784
Bliss, William H. and J. W., Hamilton, Mo. Wire-stretcher	293,406	Feb. 12	832	225	26	594
Bloch, David, and P. E. Malmstrom, New York, N. Y. Window-shade fixture and roller	294,358	Mar. 4	21	6	26	833
Block, Joseph H. (See Hoffman, Lloyd, and Block.)						
Blodgett, Henry L., assignor to Goforth Window Company, Chicago, Ill. Sash-cord fastener	293,554	Feb. 12	992	272	26	623
Bloodgood, George W., Wyandotte, Mich. Fastening railway-rails to metallic ties	293,302	Feb. 12	694	185	26	568
Bloom, John C., assignor to H. B. Miller, Kalamazoo, Mich. Drive-chain	293,407	Feb. 12	833	225	26	595
Bline, William H., Grafton, W. Va. Lathe-mandrel	291,222	Jan. 1	332	94	26	60
Blüthgen, Victor, Freienwalde-on-the-Oder, Prussia, Germany. Ornamentation of glassware, &c.	293,408	Feb. 12	834	225	26	595
Blythe, Walter A., and J. Henderson, Dunbar, Pa. Coke-oven door	294,845	Mar. 11	619	171, 172	26	941
Boardman, William H. (See Greenough and Boardman.)						
Bodenstein, John G., Staatsburg, N. Y. Inserted-tooth fastening for ice-plows	295,724	Mar. 25	1758	489	26	1165
Bodge, Joseph G., Waterville, Me. Machine for forming hollow ware from paper-pulp	293,220	Feb. 12	582	153	26	549
Body, Michel, Liege, Belgium. Process of and apparatus for obtaining gold and silver from their ores by combined electrolytic and amalgamating processes	291,670	Jan. 8	838	235	26	156
Bofinger, Augustus G., *et al.* (See Johnson, Perry, assignor.)						
Bogart, A. Livingston, Jamaica, N. Y. Apparatus for operating electrical devices	292,785	Feb. 5	8	3	26	444
Bogart, A. Livingston, assignor to A. L. Bogart, Jamaica, N. Y. Electric gas-lighting attachment for burglar-alarms	292,786	Feb. 5	10	3	26	444
Bogart, Abraham L. (See Bogart, A. Livingston, assignor.)						
Bohlig, Martin, Dubuque, Iowa. Hobby-horse	293,139	Feb. 5	465	124	26	523
Bohm, William U., San Francisco, Cal. Pilot or guard for cars of cable-roads	292,624	Jan. 29	9050	570	26	395
Bohman, August, assignor of one-half to C. J. Stromberg, Chicago, Ill. Folding step-ladder	295,518	Mar. 25	1494	412	26	1118
Boleyn, Mathew. (See Griffin, John S., assignor.)						
Bolte, Frank H., assignor to Egelhoff Manufacturing Company, Milwaukee, Wis. Hay-carrier	293,937	Feb. 19	1495	412	26	719
Bolzano, André, Markt Redwitz, Bavaria, Germany. Car-brake	294,570	Mar. 4	287	78	26	877
Bommarius, Frederick, New Orleans, La. Bale-tie splice	295,340	Mar. 18	1268	351	26	1070
Bond, Charles W., Toledo, Ohio. Car-coupling	292,278	Jan. 22	1563	445	26	307
Bond, Ephraim W., *et al.* (See Howson, Henry, assignor.)						
Bond, Hiram, Haverhill, Mass. Heel-burnishing machine	292,787	Feb. 5	12	3	26	445
Bond, Lorenzo D., Washington, D. C. Tag-attaching device	292,093	Jan. 15	1345	377	26	250
Bond, William H. (See Wood and Bond.)						
Bone, Frank A., Lebanon, Ohio. Fire-escape	294,109	Feb. 26	1720	473	26	766
Bonnell, James A., assignor to National Interlocking Switch and Signal Company, New York, N. Y. Detecting-bar for railway-switches	291,868	Jan. 15	1082	302	26	209
Bonner, John P., assignor to W. C. Vosburgh Manufacturing Company, (limited,) Brooklyn, N. Y. Extension-slide chandelier	295,519	Mar. 25	1495	413	26	1118
Bonzano, Maximilian F., Philadelphia, Pa. Device for arresting locomotives and cars	293,846	Feb. 19	1380	381	26	608
Booker, Samuel, assignor of one-half to R. Tschumy, Tiffin, Ohio. Rake	295,103	Mar. 11	958	261	26	1000
Bookman, Morris, and C. F. Bingham, East New York, N. Y. Street-car sand-box	294,846	Mar. 11	621	172	26	942
Bookah, Samuel W., Baton Rouge, La. Breeching attachment for carriage-shafts	294,189	Feb. 26	1838	501	26	784
Boom, Miguel, Port au Prince, Hayti. Air-pump	295,341	Mar. 18	1269	352	26	1070
Boomer, George B., Tarrytown, N. Y. Defecating saccharine liquids	293,409	Feb. 12	835	226	26	595
Boomer, George B., Tarrytown, N. Y. Press	294,571	Mar. 4	287	79	26	878
Boon, Alfred P., assignor to C. H. Boon, St. Christopher, West Indies. Concentration and evaporation of sirups	295,342	Mar. 18	1270	.....	26	1070
Boon, Charles H. (See Boon, Alfred P., assignor.)						
Boone, Robert, Jr., Philadelphia, Pa. Guard for wire fencing	294,572	Mar. 4	289	80	26	878
Boorman, William, assignor to C. R. Behrens, T. Shorman, Philadelphia, Pa., and S. Behrens, New York, N. Y. Fluid-actuated valve	294,359	Mar. 4	23	6	26	833
Booth, Henry W., Windsor, Ontario, Canada. Cinder-sifter	291,671	Jan. 8	839	235	26	156
Booth, John L., Hamilton, Ohio. Hoisting-gear	295,725	Mar. 25	1759	489	26	1166
Boothby, John W., New York, N. Y. Driving-gear for dynamo-electric machines	295,614	Mar. 25	1622	448, 449	26	1141
Borchardt, Hugo, assignor to Parsons Hand Rock Drill Company, New York, N. Y. Rock-drill	291,568	Jan. 8	696	196	26	131
Borden, James S., Terre Haute, Ind. Holder for mechanics' rules	293,693	Feb. 19	1074	297	26	645
Borden, William H. (See Wiegleb, Emil F., assignor.)						
Boren, Charles B. and J. S., Booneville, Miss. Horse-power	291,283	Jan. 1	333	94	26	61
Boren, John S. (See Boren, Charles B. and J. S.)						
Borgfeldt, Nicholas H., New York, N. Y. Fire-escape	294,360	Mar. 4	25	7	26	833
Börner, Franz, Cologne, Germany. Vine and flower stake	291,569	Jan. 8	697	196	26	131
Bosch, Andreas, Prairie du Chien, Wis. Guard-fence for draw-bridges	295,104	Mar. 11	959	261, 262	26	1000
Bostwick, Edward E., Union City, Mich. Harrow	291,869	Jan. 15	1083	302	26	210
Boswell, St. George J., Quebec, Quebec, Canada. Whip-holder	293,303	Feb. 12	695	185	26	568
Bourbon Copper and Brass Works. (See Bardo, Peter N., assignor.)						
Bourke, Martin, Youngstown, Ohio. Sash-holder	291,672	Jan. 8	840	235	26	156
Bourn, Augustus O., Bristol, R. I. Treating fibrous rubber waste	292,891	Feb. 5	136	.....	26	468
Bourn, Augustus O., Bristol, R. I. Treating fibrous rubber-waste for the recovery of the rubber or caoutchouc therefrom	295,615	Mar. 25	1624	.....	26	1141

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Bouton, Georges T. (See De Dion, Bouton, and Trépardoux.)						
Bovee, Henry. (See Moore, Jacob E., assignor.)						
Bowen, Robert J. (See Stedman, David R., assignor.)						
Bowen, William J., Norwalk, assignor to himself, T. T. Keckeler, Cincinnati, Ohio, and Z. C. Thwing, Marshall, Mich. Magneto-electric generator	292,153	Jan. 22	1416	397	26	279
Bowers, David H., *et al.* (See Brindle, Daniel B., assignor.)						
Bowers, George W., and T. J. Thompson, Beaver Falls, Pa. Carpet-stretcher	293,410	Feb. 12	836	226	26	595
Bowers, John, Brookville, Ill. Draft-equalizer	291,976	Jan. 15	1209	337	26	233
Bowers, Levi, Martinsburg, Pa. Straw-stacker	292,279	Jan. 22	1593	445	26	307
Bowers, William H. H., Salt Lake City, Utah Ter., assignor of one-half to S. P. M. Tasker, Philadelphia, Pa. Crushing-roll	294,361	Mar. 4	25	7	26	834
Bowles, Thomas H. (See Halkyard, William, assignor.) (Reissue.)						
Bowles, Thomas H., Atlanta, Ga. Traveling sign for cars	293,555	Feb. 12	993	272	26	623
Bown, Albert, Streator, Ill. Tricycle	294,753	Mar. 11	501	140	26	921
Boyd, Dan, Manchester, England, assignor to Domestic Electrical Manufacturing Company, Boston, Mass. Electric call-bell	293,938	Feb. 19	1496	412	26	720
Boyhan, Patrick, New York, N. Y. Latitude-indicator	291,570	Jan. 8	698	197	26	131
Boyle, Charles B., assignor to Boyle Illuminating Company, New York, N. Y. Lamp	295,479	Mar. 18	1439	398	26	1103
Boyle, George. (See Shugg and Boyle.)						
Boyle Illuminating Company. (See Boyle, Charles B., assignor.)						
Boyle, James E., Brooklyn, N. Y. Flushing apparatus for water-closets	291,139	Jan. 1	156	46	26	30
Boyle, James E., Brooklyn, N. Y. Water-closet and other bowls and pipe-connection therefor	291,140	Jan. 1	159	46, 47	26	31
Boynton, Edward S., Bridgeport, Conn. Signature-presenting mechanism for book-sewing machines	294,961	Mar. 11	754	210, 211	26	966
Boynton, George W., assignor of one-half to J. H. Baker, West Oakland, Cal. Window-screen	291,836	Jan. 8	1027	286	26	189
Boynton, Horace S., Oshkosh, Wis. Cutter-head	294,006	Feb. 26	1577	436	26	742
Bozell, John E., Tipton, Ind. Fastening device for doors	294,573	Mar. 4	289	80	26	878
Brackett, Gilbert A., Springfield, Mass. Embroidery-frame	291,870	Jan. 15	1084	302	26	210
Bradbury, Charles J., Boston, assignor of one-half to J. H. Horne, Lawrence, Mass. Device for grinding roll-bars	291,469	Jan. 1	566	160	26	101
Bradbury, Walter, assignor to G. S. Calhoun, St. Louis, Mo. Electric motor	293,556	Feb. 12	995	273	26	624
Bradford, Addison, deceased; W. W. Blackman administrator, and assignor of five-sixteenths to T. C. Wiggins, Brooklyn, A. R. Smith, New Brighton, and A. S. Comstock, New York, N. Y. Lubricator	293,705	Feb. 19	1180	329	26	665
Bradford, Addison, deceased; W. W. Blackman administrator, and assignor of five-sixteenths to T. C. Wiggins, Brooklyn, A. R. Smith, New Brighton, and A. S. Comstock, New York, N. Y. Lubricator	293,706	Feb. 19	1182	329	26	665
Bradford, Benjamin W., *et al.* (See Baldwin, James S., assignor.)						
Bradford, Charles K., Lynnfield, assignor to G. H. P. Flagg, Boston, Mass. Brush-holder and tube for cementing shoe-soles	292,466	Jan. 29	1835	512	26	360
Bradford, Charles S., Jr. (See Ball and Bradford.)						
Bradford, Joseph P., assignor of one-half A. J. Walters, Weston, Mich. Cultivator-tooth	292,404	Jan. 22	1749	487	26	337
Bradley, Byron C., Chicago, Ill. Bed-plate for sulky-plow beams	293,939	Feb. 19	1497	412	26	720
Bradley, Byron C., assignor to Furst & Bradley Manufacturing Company, Chicago, Ill. Cultivator	293,557	Feb. 12	996	273	26	624
Bradley, Byron C., assignor to Furst & Bradley Manufacturing Company, Chicago, Ill. Cultivator	295,520	Mar. 25	1495	413	26	1118
Bradley, Charles S., New York, N. Y. System of electrical distribution	291,141	Jan. 1	161	47	26	31
Bradley, Christopher C., Syracuse, N. Y. Vehicle-spring	294,190	Feb. 26	1838	502	26	784
Bradley, Frederick A., New Haven, Conn. Whip-socket	292,977	Feb. 5	250	68	26	488
Bradley, Henry A., New York, N. Y. Coal-dust feeder	295,145	Mar. 18	1015	280	26	1024
Bradley, Robert W., Denver, Colo. Fire-escape	293,707	Feb. 19	1183	329	26	665
Brady, Elmina, Portlandville, N. Y. Composition of matter for molding fruits, fancy-topped tables, birds, &c	291,284	Jan. 1	334	.....	26	61
Brady, Henry M., Dalton, Ill. Smoke and gas consuming furnace	294,007	Feb. 26	1577	436, 437	26	743
Brainard, Curtis B., Joliet, Ill. Wire-barbing machine	292,467	Jan. 29	1836	512	26	360
Brammer, Henry F. C. (See Schmidt and Brammer.)						
Brandon, John C., Detroit, Mich. Machine for dressing moldings	295,726	Mar. 25	1760	489	26	1166
Brandow, Leroy J., Starkville, N. Y. Bolster-plate for wagons	295,225	Mar. 18	1121	309	26	1042
Brandt, John H., *et al.* (See Tillery, John A., assignor.)						
Brass, Robert, and J. Chapman, Brooklyn, N. Y. Steam-radiator	295,343	Mar. 18	1271	352	26	1071
Braun, Franz, Berlin, Germany. Friction-coupling for shafts	291,673	Jan. 8	842	235	26	157
Braun, John, Philadelphia, Pa. Shaft-coupling	292,978	Feb. 5	250	68	26	488
Braun, John, Philadelphia, Pa. Pulley	294,110	Feb. 26	1721	473	26	766
Brauninger, George M., Janesville, Wis. Boiler-water purifier	294,754	Mar. 11	502	140	26	922
Bray, Mellen. (See Oliver, Willard F., assignor.)						
Bray, Mellen, Newton, Mass. Reed-board	293,558	Feb. 12	997	273	26	624
Brayton, George B., Boston, Mass. Steam-boiler	292,134	Jan. 22	1417	397	26	279
Bready, Charles W. (See Dutrow, David E., assignor.)						
Brede, William, Honolulu, Hawaiian Islands. Ratchet-drill	292,280	Jan. 22	1564	445	26	307
Breed, Judson W., assignor to Emerson & Fisher Company, Cincinnati, Ohio. Road-cart	291,488	Jan. 8	597	168, 169	26	114
Breen, Thomas, Knowlton, Pa. Railway-tie	294,191	Feb. 26	1839	502	26	784
Breese, John H., Davenport, Iowa. Floating filter	291,285	Jan. 1	335	94	26	61
Brekke, Lewis O., assignor of one-half to L. E. Davidson, Decorah, Iowa. Lamp	293,559	Feb. 12	998	273	26	624
Bremer, Heinrich, Chicago, Ill. Wash-bench	293,847	Feb. 19	1381	381	26	608
Brenzinger, Carl A., New York, N. Y. Chuck for drilling-machines, &c	294,755	Mar. 11	503	141	26	922
Breton, Peter N., Montreal, Quebec, Canada. Book-carrier	295,226	Mar. 18	1121	310	26	1042
Brett, Friend N., Sparta, Wis. Mechanical motor	293,624	Feb. 19	1075	297, 298	26	645
Brewer, Horatio J., New York, N. Y. Zinc for batteries	291,286	Jan. 1	336	95	26	61
Brewer, Horatio J., New York, N. Y. Galvanic battery	291,871	Jan. 15	1085	302	26	210
Brewster, Francis W., Bloomsbury, county of Middlesex, England. Buoyant life-line	292,281	Jan. 22	1595	446	26	307
Breyfogle, William L. (See Van Dusen, Charles, assignor.)						
Brice, William S., Liverpool, county of Lancaster, England. Floating elevator	293,625	Feb. 19	1077	298, 299	26	645
Bridgeport Automatic Safety Ladder and Hardware Company. (See Stever, Jeremiah, assignor.)						
Bridgeport Brass Company. (See Stanley, Henry D., assignor.)						
Bridgford, John, Albany, N. Y. Apparatus for deoxidizing iron ores	292,788	Feb. 5	13	4	26	445
Brierley, John, Easthampton, Mass. Card-sharpening apparatus	294,962	Mar. 11	756	211	26	967

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Brigel, Leo H., *et al.* (See Mueller, Michael, assignor.) (Reissue.)						
Briggs, Daniel D., assignor of one-half to F. Macy, New Bedford, Mass. Harness-holder	295,344	Mar. 18	1273	353	26	1071
Briggs, Edward W., Brooklyn, and J. D. Walton, New York, N. Y. Punch	295,227	Mar. 18	1123	310	26	1042
Briggs, George S., Rockford, Ill. Seeding-machine	295,420	Mar. 18	1440	398	26	1103
Briggs, J. Smith, Kankakee, Ill. Flying target	291,287	Jan. 1	336	95	26	61
Briggs, Richard H., and C. Prichard, Whistler, Ala. Car	294,574	Mar. 4	290	80	26	878
Brill, Henry C., assignor to Southington Cutlery Company, Southington, Conn. Curry-comb	294,305	Feb. 26	1977	540	26	810
Brinckerhoff, George E. (See Brock, William E., assignor.)						
Brindle, Daniel B., assignor of two-thirds to J. Fitz and D. H. Bowers, Martinsburg, W. Va. Lubricator	294,437	Mar. 4	126	33	26	851
Bringier, Louis A., Donaldsonville, La. Cultivator	293,221	Feb. 12	584	153	26	549
Brinkerhoff, Jacob. (See Brinkerhoff, Warren M., assignor.)						
Brinkerhoff, Warren M., assignor of one-half to J. Brinkerhoff, Auburn, N. Y. Stay-roller for sliding doors	295,345	Mar. 18	1274	353	26	1071
Brintnall, Thomas M., Kansas City, Mo. Safe	292,155	Jan. 22	1419	{398 {399	26	279
Brintnell, Archibald H., Belleville, Ontario, Canada. Machinery for manufacturing cheese	293,140	Feb. 5	466	124	26	523
Briscoe, William. (See Schulze, Louis, assignor.)						
Britton, Samuel H., Hoboken, N. J., assignor to A. Green and W. B. Blackwell, New York, N. Y. Candy	294,575	Mar. 4	291	80	26	878
Brix, Dominicus, Geneseo, Ill. Cultivator	292,979	Feb. 5	252	69	26	488
Broadbent, Charles F., Baltimore, Md. Soap	292,980	Feb. 5	252	.....	26	488
Broadbent, Sidney, Scranton, Pa. Milling-cutter	294,192	Feb. 26	1841	502	26	785
Brobston, Dan. (See Richberg and Brobston.)						
Brock, Francis M. (See Clipp and Brock.)						
Brock, William E., New York, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Barbed-metal-strip fencing	293,411	Feb. 12	837	226	26	595
Brock, William E., New York, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Barbed-wire fencing	293,412	Feb. 12	838	226	26	595
Brock, William E., Dunellen, N. J., assignor to J. H. Bell, Brooklyn, N. Y. Apple corer, parer, and slicer	293,940	Feb. 19	1499	413	26	720
Brock, William E., Dunellen, N. J., assignor to G. E. Brinckerhoff, Brooklyn, N. Y. Vegetable parer and slicer	294,362	Mar. 4	26	7	26	834
Brock, William E., New York, N. Y., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Barbed fence	294,963	Mar. 11	757	211	26	967
Brock, William H., Corona, N. Y. Nail-strip	294,111	Feb. 26	1722	473	26	766
Brockett, Atwater E., assignor to L. H. Brockett, Branford, Conn. Base for paints	291,142	Jan. 1	163	.....	26	31
Brockett, Lemira H. (See Brockett, Atwater E., assignor.)						
Bronson, Miles H., *et al.* (See Copeland, David W., assignor.)						
Brooke, Thomas, Des Moines, Iowa. Fire-escape	292,981	Feb. 5	252	69	26	488
Brooklyn Needle Works. (See Thompson and George, assignors.)						
Brooks, Byron A. (See Knowles, Edward R., assignor.)						
Brooks & Co., E. J. (See Brooks, Edward J., assignor.)						
Brooks, David F., Lampasas, Tex. Wool-press	293,941	Feb. 19	1500	413	26	720
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Lead-and-wire seal	294,193	Feb. 26	1842	503	26	785
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Metallic seal	294,576	Mar. 4	292	81	26	878
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Metallic seal	294,577	Mar. 4	294	81	26	879
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Metallic seal	295,346	Mar. 18	1275	353	26	1071
Brooks, Henry P. (See Hanscom and Brooks.)						
Brooks, Herbert E. (See Hanscom and Brooks.)						
Brooks, Milton G. (See Webb and Brooks.)						
Brooks, Thomas A., *et al.* (See Hutson, William L., assignor.)						
Brooks, William H., West Point, N. Y. Steam-radiator	291,026	Jan. 1	15	4	26	5
Brooks, William H., New York, N. Y. Hydrocarbon-furnace	293,560	Feb. 12	999	{274 {275 {276	26	624
Broome, Joseph B., Oswego, N. Y. Letter-box	292,533	Jan. 29	1929	540	26	375
Brotherhood, Fred. (See Rigby, John S., assignor.)						
Brotherhood, Peter, Lambeth, county of Surrey, England. Coupling for shafting	293,141	Feb. 5	467	125	26	523
Brothwell, Charles R., assignor to P. T. Barnum, Bridgeport, Conn. Floor	295,481	Mar. 18	1441	398	26	1104
Brott, George F., Washington, D. C. Steam-generator	293,222	Feb. 12	584	{153 {154	26	549
Brounscombe, John P., Wilkes-Barré, Pa. Stone-saw rack	293,942	Feb. 19	1501	{413 {414	26	720
Brown, Albert, Mendocino, Cal. Paper-bag holder	291,489	Jan. 8	108	109	26	114
Brown, Alexander E., Cleveland, Ohio. Hoisting and conveying machine	295,727	Mar. 25	1761	{489 {490	26	1166
Brown, Alexander T., assignor of one-half to L. C. Smith, Syracuse, N. Y. Electric fire-arm	291,288	Jan. 1	338	95	26	61
Brown, Artemas M., Ottawa, Ohio. Wheel-hub	295,728	Mar. 25	1763	490	26	1166
Brown, Charles R., Imperial, assignor of one-half to W. McCreery, Pittsburg, Pa. Cable-motor	291,144	Jan. 1	165	48	26	31
Brown, Charles W., Philadelphia, Pa. Lead and crayon holder	294,756	Mar. 11	504	141	26	922
Brown, Daniel S., Burdette, N. Y. Pipe-wrench	293,848	Feb. 19	1382	381	26	698
Brown, David W., Buckhannon, W. Va. Rotary harrow	294,112	Feb. 26	1724	474	26	767
Brown, E. Parmly, Flushing, N. Y. Artificial tooth	291,978	Jan. 15	1211	338	26	233
Brown, Emanuel F., and S. M. Miller, Nebraska, assignors of one-third to W. S., F. P., and C. Dresbach, East Ringold, Ohio. Straw-stacker	291,674	Jan. 8	843	236	26	157
Brown, Enoch B., Mystic, Conn. Canceling-stamp	295,729	Mar. 25	1764	490	26	1166
Brown, Fayette, Cleveland, Ohio. Hoisting-machine	295,730	Mar. 25	1765	491	26	1166
Brown, Francis R., Boulder, Colo. Ore-separator	291,872	Jan. 15	1066	303	26	210
Brown, Frank, Chagrin Falls, Ohio. Earth-auger	291,977	Jan. 15	1210	338	26	233
Brown, George H., and H. J. Welteroth, Blossburg, Pa. Apparatus for adjusting the beat of pendulum-clocks	292,282	Jan. 22	1506	446	26	308
Brown, George W., Galesburg, Ill. Corn-planter check-rower	294,964	Mar. 11	758	211	26	967
Brown, Hamer T. (See Smyth, Charles A., assignor.)						
Brown, Henry G., Pittsburg, Pa. Manufacture of T-plates	294,757	Mar. 11	506	141	26	922
Brown, Irvin M., Covington, Ind. Fence	294,721	Mar. 4	402	129	26	908
Brown, James T., Indianapolis, Ind. Vehicle-wheel hub	291,873	Jan. 15	1088	303	26	210

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Brown, John R., Jamestown, N. Y. Piano-forte bridge	291,143	Jan. 1	164	47	26	31
Brown, John S. (See Lucas, Thomas P., assignor.)						
Brown, Joseph K. (See Mustin, Charles T., assignor.)						
Brown, Mordecai, assignor to himself, R. T. Oney, and C. Yetter, Huntington, W. Va. Lifting-jack	295,105	Mar. 11	960	262	26	1000
Brown, Patrick. (See Johnston and Brown.)						
Brown, Patrick, and C. W. Johnston, Philadelphia, Pa. Feed-water regulator and alarm	292,435	Jan. 22	1796	502	26	346
Brown, Robert M. G., U. S. Navy. Steering apparatus	295,106	Mar. 11	961	262	26	1000
Brown & Sharpe Manufacturing Company. (See Carlton, Cyrus, assignor.)						
Brown, T. Wistar, *et al.* (See Feldmann, Hermann B., assignor.)						
Brown, Theophilus P., *et al.* (See Stewart, George W., assignor.)						
Brown, Truman B., New York, N. Y. Device for guiding tongued and grooved sheathing-planks	293,223	Feb. 12	587	154	26	549
Brown, William E., Elbridge, N. Y. Well-drilling machine	291,537	Jan. 8	1028	287	26	189
Brown, William H. (See Seymour, Frederick J., assignor.)						
Browne, Arthur W. (See Johnston and Browne.)						
Browne, Arthur W., Pleasant Plains, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Dental-engine hand-piece	291,571	Jan. 8	700	197	26	131
Browne, John A., Philadelphia, Pa. Supporting-rod for window and door curtains	292,982	Feb. 5	253	69	26	489
Brownell, Frederick B., St. Louis, Mo. Car-door	294,194	Feb. 26	1844	503	26	785
Brownell, George L., Worcester, Mass. Machine for making wire cordage	291,979	Jan. 15	1211	338	26	233
Browning, Clinton, Shousetown, assignor to J. H. Lindsay, trustee, Allegheny City, Pa. Combined car coupler and buffer	295,482	Mar. 18	1442	398	26	1104
Browning, Clinton, Shousetown, assignor to J. H. Lindsay, trustee, Allegheny City, Pa. Car-coupling	295,483	Mar. 18	1445	399	26	1104
Bruce, Wallace, Elk Grove, Cal. Gate	292,405	Jan. 22	1750	487	26	337
Bruderer, John, New York, N. Y., assignor to G. W. Fowkes, Harrisburg, Pa. Bolt-heading machine	292,534	Jan. 29	1929	{540 {541	26	376
Bruff, John W. (See Merrill, William E. T., assignor.)						
Brugger, Oscar, Washington, D. C. Safety automatic stop attachment for elevators	291,838	Jan. 8	1030	{287 {288	26	190
Brumble, William, Baltimore, Md. Car-brake	294,306	Feb. 26	1977	540	26	810
Brunet, Pierre, Toronto, Ontario, Canada. Snow-plow	291,675	Jan. 8	843	236	26	157
Brush, Charles F., Cleveland, Ohio. Metal-mold-lubricating material	293,708	Feb. 19	1184	.....	26	666
Brush, Charles F., Cleveland, Ohio. Casting metals	293,709	Feb. 19	1185	330	26	666
Brush, Charles F., Cleveland, Ohio. Mold for casting metals	293,710	Feb. 19	1188	330	26	666
Brush, Charles F., Cleveland, Ohio. Apparatus for manipulating molds in casting	293,711	Feb. 19	1192	331	26	667
Brush, Charles F., Cleveland, Ohio. Device for extracting castings from molds	293,712	Feb. 19	1196	331	26	667
Brush, Charles F., Cleveland, Ohio. Device for extracting castings from molds	293,713	Feb. 19	1198	332	26	667
Bryan, George, assignor of one-half to A. Goodrich, Chicago, Ill. Car-coupling	291,289	Jan. 1	339	95	26	62
Bryan, John C., Holly Springs, Ark. Car-coupling	291,572	Jan. 8	703	197	26	132
Bryan, John C., Holly Springs, Ark. Car-coupling	293,849	Feb. 19	1382	382	26	698
Bryant, Charles A., Wakefield, Mass. Knife-scourer	292,983	Feb. 5	254	69	26	489
Bryant, Reuben T. (See Turly and Bryant.)						
Bryce, Stephen T., Dayton, Ohio. Fire-pot and lining	291,490	Jan. 8	599	169	26	114
Buch, George C., Eureka, Mo. Boot or shoe						
Buck, D. Azro A., assignor to Waterbury Watch Company, Waterbury, Conn. Watch-movement	293,143	Feb. 5	468	125	26	524
Buck, Daniel A. A., assignor to Waterbury Watch Company, Waterbury, Conn. Main-spring-barrel for watches	293,142	Feb. 5	468	125	26	524
Buck, George N., Mattoon, Ill. Stocking-supporter	292,406	Jan. 22	1751	488	26	338
Buck, Henry C., Somerville, assignor to F. M. Holmes, Boston, Mass. Telephone-transmitter	293,561	Feb. 12	1002	276	26	625
Buckingham, Charles L. (See Townsend and Buckingham.)						
Buckingham, Charles L., New York, N. Y. Regulator for dynamo-electric machines	294,307	Feb. 26	1978	541	26	810
Buckingham, Charles L., and H. C. Townsend, New York, N. Y. Cut-out for electric lamps	293,943	Feb. 19	1502	414	26	721
Buckingham, Charles L., and H. C. Townsend, New York, N. Y. Electric-arc lamp	293,944	Feb. 19	1504	414	26	721
Buckingham, Edwin B. (See Peavey, Andrew J., assignor.)						
Buckley, George E. (See Subers, Thomas N., assignor.)						
Buckley, James. (See Morton, James, assignor.)						
Buckley, William F., Cleveland, Ohio. Dynamo-electric machine	292,625	Jan. 29	2051	570	26	395
Buckman, Alexander. (See Burns and Buckman.)						
Buckman, Alexander. (See Seeley and Buckman.)						
Budd, William E., Chatham, N. J. Breech-loading fire-arm	291,980	Jan. 15	1213	339	26	234
Budd, William E., Chatham, N. J. Harrow	293,304	Feb. 12	606	186	26	568
Buell, Augustine C., *et al.* (See Gamble, Henry E., assignor.)						
Buell, Charles E., New Haven, Conn. Electric fire-alarm and fire-extinguisher system	294,008	Feb. 26	1578	{437 {438	26	743
Buell, Charles E., New Haven, Conn. Fire-extinguisher and fire-alarm	294,308	Feb. 26	1980	541	26	811
Buening, Jobst H., and H. Klug, Milwaukee, Wis. Draft attachment for wagons	291,573	Jan. 8	705	198	26	132
Bueno, Tacito, Jr., New York, N. Y. Wagon for transporting sugar-cane	295,107	Mar. 11	963	263	26	1001
Buffalo Curtain Fixture Company. (See Miller, Charles H., Jr., assignor.)						
Buffinger, Tobias. (See Blasett, Jean, assignor.)						
Bugbee, Charles R., assignor to Burrows, Thompson & Short, Attleborough, Mass. Bracelet	295,108	Mar. 11	964	263	26	1001
Bugbee, George W. (See Doane and Bugbee.)						
Bulcroft, William H., assignor of one-half to A. Charbonneau, Cleveland, Ohio. Hose-coupling	295,109	Mar. 11	965	263	26	1001
Bullard, Frank F. (See Stevens, Amasa W., assignor.)						
Bullivant, John T. (See Cox, Arthur W., assignor.)						
Bullock, Thomas L., *et al.* (See Poole, Samuel, assignor.)						
Bullock, William R. (See Wiard and Bullock.)						
Bunker, Augustus S., Lawrence, Mass. Electric bell-pull	293,626	Feb. 19	1079	299	26	646
Burbank, Abner J., and H. D. Page, Harvard, Ill. Hay-carrier	291,874	Jan. 15	1089	303	26	211
Burbank, Jotham H., North Brookfield, assignor of one-half to A. H. Batcheller, Boston, Mass. Boot-tree	293,945	Feb. 19	1506	415	26	722
Burdick, Alvin R., Aurora, Ill. Ticket-case	292,789	Feb. 5	15	4	26	445
Burdick, John R., and W. H. Davis, Minneapolis, Minn. Sewer-pipe machine	292,535	Jan. 29	1932	541	26	376
Burdon, Levi L., Providence, R. I. Ingot for gold-plated wire	294,722	Mar. 4	462	130	26	908
Burger, Louis, *et al.* (See Mueller, Michael, assignor.) (Reissue.)						
Burke, Charles G., Richmond Hill, N. Y. Telegraphic system	295,855	Mar. 25	1925	532	26	1196
Burke, John, Niles, Mich. Refrigerator	295,110	Mar. 11	965	264	26	1001
Burkhardt, Gustav, assignor of one-half to C. E. Wolfkill, Homer, Ill. Weather-strip	293,413	Feb. 12	838	227	26	595
Burlingame, John, and J. G. Abbott, Lawrence, Mass. Hand-truck	292,790	Feb. 5	16	4	26	445
Burleigh, John, and J. G. Abbott, Lawrence, Mass. Hand-truck	291,145	Jan. 1	166	48	26	32
Burling, John, Millburn, N. J. Slate-cleaner	293,305	Feb. 12	607	186	26	569
Burnett, Luther H., Chicago, Ill. Attachment for water-closets						

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Burnham, Edgar S., Buffalo, N. Y. Clothes-pounder	291,929	Jan. 1	19	5	26	19
Burns, Henry S., assignor to Winchester Repeating Arms Company, New Haven, Conn. Primer	291,981	Jan. 15	1217	339	26	234
Burns, James, Chicago, Ill. Cash and parcel carrier	291,928	Jan. 1	17	5	26	6
Burns, James, Brooklyn, and A. Buckman, Schodack Depot, assignors of twenty-two forties to A. L. Schermerhorn, J. S. Baker, Stuyvesant, J. R. Downer, and F. P. Harder, Castleton, N. Y. Cigarette-machine	294,113	Feb. 26	1725	474, 475	26	767
Burns, James, Brooklyn, and A. Buckman, Schodack Depot, assignors of twenty-two forties to A. L. Schermerhorn, J. S. Baker, Stuyvesant, J. R. Downer, and F. P. Harder, Castleton, N. Y. Machine for making cigarettes	294,114	Feb. 26	1729	475, 476, 477	26	767
Burns, John, Chicago, Ill. Knockdown coop	291,927	Jan. 1	17	4, 5	26	6
Burridge, Thomas H., assignor of two-thirds to W. L. Reynolds and J. W. Govier, St. Louis, Mo. Machine for cleaning wire	294,847	Mar. 11	622	172	26	942
Burrows, Thompson & Short. (See Bugbee, Charles R., assignor.)						
Burrows, William F., Boston, Mass. Apparatus for carbureting air	291,676	Jan. 8	844	236, 237	26	157
Burton, William K. (See Harly, Jacob F., assignor.)						
Bush, Clark T., Maryland, N. Y. Hop-training device	294,723	Mar. 4	463	130	26	908
Bush, Robert A., Brockville, Ontario, Canada. Fire-escape	294,848	Mar. 11	623	173	26	942
Bush, Thomas J., Lexington, Ky. Boring-gage	293,144	Feb. 5	469	125	26	524
Butler, George W., Knoxville, Tenn. Car-coupling	291,290	Jan. 1	340	96	26	62
Butler, H. S. (See Hopkins, Charles H., assignor.)						
Butler, Paul, Lowell, Mass. Machine for drawing metallic cartridge-shells	294,115	Feb. 26	1736	477	26	768
Butler, Paul, Lowell, Mass. Machine for weighing and assorting cartridges	294,363	Mar. 4	27	7, 8	26	834
Butler, Spencer D., Marshfield, Oreg. Fire-escape	293,627	Feb. 19	1080	299	26	646
Butler, Thomas H., *et al.* (See Conly, Mahlon S., assignor.)						
Butterfield, William L., Providence, R. I., assignor to H. Berolzheimer, New York, N. Y. Lead and crayon holder	291,839	Jan. 8	1032	288	26	190
Butterworth, John, Jr. (See Butterworth, William H. and J., Jr.)						
Butterworth, William H. and J., Jr., Trenton, N. J. Thrashing-machine	292,731	Jan. 29	2183	609	26	419
Buttner, Henry A., San Quentin, Cal. Button-card	291,982	Jan. 15	1218	340	26	234
Buys, Bert, assignor of one-third to F. Wilcox, Reese, Mich. Railway-signal	294,116	Feb. 26	1737	478	26	769
Buzick, William F. (See Wishart and Buzick.)						
Buzolich, Antonio, North Carlton, and T. K. Smith, Prahran, Victoria. Paint	291,677	Jan. 8	846	.....	26	158
Buzolich, Antonio, North Carlton, and T. K. Smith, Prahran, Victoria. Paint	291,678	Jan. 8	847	.....	26	158
Byard, William V. (See Ward, John A., assignor.)						
Byrn, Edward W., Washington, D. C. File-box	291,574	Jan. 8	705	198	26	132
Byrne, John, Cleveland, Ohio. Cock and tank for drawing fluids of varying temperatures	292,094	Jan. 15	1345	378	26	259
Byrnes, Francis, Liverpool, county of Lancaster, England. Construction of boats	293,714	Feb. 19	1198	332	26	668
Byron, Ulderic D., assignor of one-half to A. E. Dike, Chicago, Ill. Heel trimming and breasting machine	293,628	Feb. 19	1081	300	26	646
Cabell, Flora B., *et al.* (See Cabell, Samuel G., assignor.)						
Cabell, Samuel G., assignor to C. Pelham and F. B. Cabell, Washington, D. C. Seal-padlock	292,407	Jan. 22	1752	488	26	338
Cable, Austin D. (See Wilson, Thomas L., assignor.)						
Cabot, John, Lawrence, Mass. Gas-purifier screen or grid	292,984	Feb. 5	255	70	26	489
Caddick, George, Allegheny, Pa. Sounding-board for pianos	293,414	Feb. 12	839	227	26	596
Cadwell, Lydia J., Chicago, Ill. Method of and apparatus for desiccating eggs, &c	294,849	Mar. 11	624	173	26	942
Cady, Frank E., Auburn, N. Y. Combined water filter and cooler	293,502	Feb. 12	1003	276, 277	26	625
Cady, Frank P., Chicago, Ill., assignor, by mesne assignments, to Cambria Iron Company, of Pennsylvania. Machine for making barb-link fencing	292,408	Jan. 22	1754	488, 489	26	338
Cady, George M. (See Weeks and Cady.)						
Cahn, Maier A. (See Wyns, John H., assignor.)						
Cain, Thomas J. (See Taylor, Sharp, and Cain.)						
Caine, James E. (See Curtis and Caine.)						
Caldwell, Edwin V., Harpersville, Ala. Harrow	292,985	Feb. 5	256	70	26	489
Caldwell, Emily L. (See Edson, Jacob, assignor.)						
Caldwell, Frank C., Chicago, Ill. Screw-conveyor	295,731	Mar. 25	1767	491	26	1167
Caldwell, Frank C., Chicago, Ill. Pulley	295,732	Mar. 25	1767	491	26	1167
Caldwell, John O., Goshen, Ga. Plow attachment	294,578	Mar. 4	296	81	26	879
Calhoun, George S. (See Bradbury, Walter, assignor.)						
Calhoun, William. (See Gaunt, Poleaz, Calhoun, and Danbmann.)						
Calkins, Gary G. (See Taylor, Edward T., assignor.)						
Callan, John P., Aurora, Ill. Vehicle-spring	295,228	Mar. 18	1124	310	26	1042
Calmar, Sören A., and H. W. Carr, Arlington, N. J. Machine for labeling spools	291,291	Jan. 1	341	96, 97, 98	26	62
Calver, William, Washington, D. C. Solar reflector	291,146	Jan. 1	166	48	26	32
Calver, William, Washington, D. C. Controlling the temperature of solar heaters	291,147	Jan. 1	167	48	26	32
Calver, William, Washington, D. C. Utilizing the rays of the sun	291,491	Jan. 8	600	169	26	115
Calver, William, Washington, D. C. Condensing solar rays	294,117	Feb. 26	1738	478	26	769
Cambria Iron Company. (See Cady, Frank P., assignor.)						
Cambria Iron Company. (See Riale, Robert E., assignor.)						
Cambry, William H., East Saginaw, Mich. Grate-bar	291,292	Jan. 1	348	98	26	63
Cameron, Duncan, Randolph, N. Y. Pin-and-box joint for stone-drills	295,347	Mar. 18	1276	353	26	1071
Cameron, Robert, Burlington, Iowa. Thill-coupling	295,348	Mar. 18	1277	354	26	1072
Camp Brothers. (See Camp, David C., assignor.)						
Camp, David C., assignor to Camp Brothers, Athens, Ga. Mechanical motor	294,850	Mar. 11	625	173	26	943
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Electrically-actuated sheet-stop for printing-presses	291,675	Jan. 8	706	198, 199	26	133
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Air cushion for the reciprocating beds of printing-presses	291,875	Jan. 15	1090	304	26	211
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Shell or cover for printers' rollers	294,438	Mar. 4	127	33	26	851
Campbell, Edward H. (See White, Thomas, assignor.)						
Campbell, Frederick F., Newark, N. J. Hat-pouncing machine	292,892	Feb. 5	138	37	26	468
Campbell, Frederick F., Newark, N. J. Hat-pouncing machine	293,715	Feb. 19	1199	332	26	668
Campbell, Gertrude, Chicago, Ill. Stocking-supporter	295,146	Mar. 18	1015	280	26	1024
Campbell, Henry F., Concord, N. H. Band-saw mill	291,492	Jan. 8	601	170	26	115
Campbell, Henry F., Concord, N. H. Machine for lap-shaving hoops	293,224	Feb. 12	588	155	26	550
Campbell, Howard. (See Land and Campbell.)						
Campbell, James, *et al.* (See Roper, Alfred W., assignor.)						
Campbell, James E. (See Beardsley, William H., assignor.)						
Campbell, Mark, Chicago, Ill. Hair-crimper	294,309	Feb. 26	1982	541	26	811

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Campbell, Robert, Allegheny, Pa. Gearing	292,791	Feb. 5	17	5	26	445
Campbell, Solon O., assignor of two-thirds to A. J. Johnson and J. Gemmill, Van Wert, Iowa. Mail-bag	295,733	Mar. 25	1768	491	26	1167
Canfield, Frederick A., Thomaston, Conn. Curry-comb	293,415	Feb. 12	841	227	26	596
Canning, James H., Danbury, Conn. Hat lining and cover	291,679	Jan. 8	847	237	26	158
Capell, George M., Passenham, county of Northampton, and G. S. Macbean, The Grove Bishopstoke, county of Hants, England. Blast or exhaust fan	291,493	Jan. 8	603	170	26	115
Capewell, George J. (See Plumb, Salmon R., assignor.)						
Capewell, George J., Cheshire, Conn. Horseshoe-nail machine	292,201	Jan. 22	1480	416, 417	26	288
Carbaugh, William H., Columbus, Ohio. Dinner-pail	291,680	Jan. 8	848	237	26	158
Card, Lucinda S., *et al.* (See Dane, Joseph C., assignor.)						
Cardy, Joseph, Tampa, Fla. Operating butting-saws	291,148	Jan. 1	169	49	26	32
Carraga y Saenz, Luis G., Puebla, Mexico. Pump	295,734	Mar. 25	1769	492	26	1167
Carleton, Cyrus, assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Micrometer-calipers	292,409	Jan. 22	1758	490	26	339
Carleton, William E., Boston, Mass. Brick	293,716	Feb. 19	1200	332	26	668
Carley, Harvey, and T. McKenna, Long Branch, N. J.; said Carley assignor to said McKenna. Electric alarm for steam-gages	294,195	Feb. 26	1845	503	26	785
Carlough, Daniel, Paterson, N. J. Car-coupling	291,149	Jan. 1	169	49	26	32
Carlson, Andrew M. (See King and Carlson.)						
Carlson, Charles P., McKeesport, Pa., assignor to himself and National Tube Works Company, Boston, Mass. Coupling for shafts or rolls	292,095	Jan. 15	1346	378	26	259
Carly, John W., Mexia, Tex. Advertising device	293,850	Feb. 19	1383	362	26	699
Carnes, Serena M., New York, N. Y. Sad-iron holder	294,196	Feb. 26	1846	503	26	786
Carpenter, Alexis C. (See Holman, Charles T., assignor.)						
Carpenter, Alice P. (See Wilson, Eugene M., assignor.)						
Carpenter, George O., *et al.* (See Simonds, George W., assignor.)						
Carpenter, Israel C., Cherry Creek, N. Y. Paper-perforating machine	291,293	Jan. 1	349	98, 99	26	63
Carpenter, James W. (See Maxon, Thomas, assignor.)						
Carpenter, Oramille C., assignor to N. B. Abbott, Brooklyn, N. Y. Machine for wiring corks in bottles	295,735	Mar. 25	1770	492, 493, 304, 305	26	1167, 211
Carpenter, Robert K., Medford, Mass. Drilling-machine	291,876	Jan. 15	1092			
Carpenter, Ward B., West Topsham, Vt., assignor of one-half to J. R. Abbe, Manchester, N. H. Lifting-jack	293,946	Feb. 19	1507	415	26	722
Carpenter, William L. (See Penney, Mark A., assignor.)						
Carr, Henry W. (See Calmar and Carr.)						
Carr, Robert S., assignor to J. W. Sohn, Hamilton, Ohio. Cup for seeding-machines	292,893	Feb. 5	139	37	26	469
Carroll, James J., Baltimore, Md. Decorated plate-glass	293,947	Feb. 19	1508	415	26	722
Carson, Robert J., Dixon, assignor of one-half to E. Rutz, Belleville, Ill. Iron or steel fence-post	293,225	Feb. 12	589	155	26	550
Carter, George W. L., New York, N. Y. Magnetic ore-separating machine	292,096	Jan. 15	1343	378	26	259
Carter, Henry C., Fairfield, N. C. Excavating-machine	292,408	Jan. 29	1838	513	26	361
Carter, Henry C., Fairfield, N. C. Dredging-machine	292,732	Jan. 29	2166	610	26	419
Carter, James H. (See Turner and Carter.)						
Carter, Martha J., *et al.* (See Foster, Marion J., assignor.)						
Carter, Wallace H., Farmingdale, Me. Scuttle-hinge	293,416	Feb. 12	842	228	26	596
Carter, William H., *et al.* (See Foster, Marion J., assignor.)						
Carver Cotton Gin Company. (See Strong, Frederick S., assignor.)						
Carver, Reading L., Pre-emption, Ill. Sulky-cultivator	293,717	Feb. 19	1201	333	26	668
Case, Frederick, L. Chaplin, Conn. Finishing-machine for press-boards	295,521	Mar. 25	1497	413	26	1118
Case, George, assignor to A. Dillman and E. R. Knowlton, Joliet, Ill. Take-up for wire-barbing machines	292,733	Jan. 29	2188	610	26	420
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Roll for crushing grain	293,306	Feb. 12	698	186	26	569
Case Manufacturing Company. (See Case, John M., assignor.)						
Case, Willard E., Auburn, N. Y. Secondary-battery element	292,469	Jan. 29	1840	.....	26	361
Casebolt, Johnathan B., San Francisco, Cal. Cable railway	295,147	Mar. 18	1016	281	26	1024
Casebolt, Johnathan B., San Francisco, Cal. Cable railway	295,148	Mar. 18	1017	281	26	1024
Caspari, Max, Detroit, Mich. Horseshoe	295,616	Mar. 25	1624	440	26	1142
Castleman, David R., Louisville, Ky. Fertilizer	292,470	Jan. 29	1841	.....	26	361
Castner, Victor, *et al.* (See Hall, Charles, assignor.)						
Castor, Lewis F., Philadelphia, Pa. Two-wheeled vehicle	294,009	Feb. 26	1582	438	26	744
Caswell, Robert B., *et al.* (See Tillery, John A., assignor.)						
Catlin, Charles A., Providence, R. I. Disinfectant	294,758	Mar. 11	507	141	26	922
Catlin, Charles A., Providence, R. I. Disinfectant	294,759	Mar. 11	508	.....	26	922
Catlin, Eli, Post Oak, Tex. Device for converting motion	292,471	Jan. 29	1841	513	26	361
Caughell, Robert N., Shedd, Oreg. Spoke-extractor	293,307	Feb. 12	699	186	26	569
Cavanaugh, James, trustee. (See Pearson, Augustus W., assignor.)						
Cavett & McKnight *et al.* (See Thomas, William D., assignor.)						
Cebrian, John C. (See Molera and Cebrian.)						
Center, Robert, New York, N. Y. Center-board for vessels	293,226	Feb. 12	590	155	26	550
Cerf-Lanzenberg, Adolphe, Paris, France. Machine for polishing leather	293,308	Feb. 12	700	187	26	569
Chadwick, Joseph H., agent. (See Sloan, Elisha C., assignor.)						
Chalfant, Samuel J., Albion, Cal. Saw-tooth swage	292,097	Jan. 15	1350	379	26	260
Chamberlain, Henry A., and W. L. Martin, Middletown, Conn. Apparatus for die-shaping	291,681	Jan. 8	849	237, 238	26	158
Chamberlain, Henry A., and W. L. Martin, Middletown, Conn. Die-shaping	291,682	Jan. 8	852	239	26	159
Chamberlain, Washington S. (See Wallis, John N. and T., assignors.)						
Chambers, James, assignor to Kempshall Manufacturing Company, New Britain, Conn. Sash-fastening	292,202	Jan. 22	1487	418	26	289
Chandler, Clarence A. (See Kincaid and Chandler.)						
Chandler, James M. (See Chandler, Samuel P. and J. M.)						
Chandler, John M., Cleveland, Ohio. Bracelet-fastening	291,150	Jan. 1	170	49	26	33
Chandler, Samuel P. and J. M., Lynch's Lake, S. C. Car-coupling	295,349	Mar. 18	1278	354	26	1072
Chandler Water Motor Company. (See Silver, Samuel N., assignor.)						
Chapin, Henry A., *et al.* (See Nickerson, Fred. A., assignor.)						
Chapin, Lucius D., assignor to Chapin Pneumatic Iron Company, Chicago, Ill. Making wrought-iron	291,470	Jan. 1	566	.....	26	101
Chapin Pneumatic Iron Company. (See Chapin, Lucius D., assignor.)						
Chapman, Addison E., Olean, N. Y. Spokeshave	294,197	Feb. 26	1846	504	26	786
Chapman, Genry A., Strawberry Point, Iowa. Compressor for compressing bran and other substances into packages	291,683	Jan. 8	854	239	26	159

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Chapman, Genry A., Strawberry Point, Iowa. Egg-carrier	292,986	Feb. 5	257	71	26	489
Chapman, Henry P. (See Plummer and Chapman.)						
Chapman, John. (See Brass and Chapman.)						
Chapman, William D., Theresa, N. Y. Artificial fish-bait	295,350	Mar. 18	1279	354	26	1072
Chappell, Robert W., Waverly, Va. Row-guide	293,629	Feb. 19	1083	300	26	647
Charageat, Emile G., Paris, France. Umbrella-runner	295,351	Mar. 18	1280	354 355	26	1072
Charbonean, Pascal B., assignor of two-thirds to H. A. Fraser and J. B. Barber, Bay City, Mich. Saw-swaging machine	294,439	Mar. 4	128	33, 34	26	851
Charbonneau, Alfonso. (See Bnlcroft, William H., assignor.)						
Charcot, Frank, Paterson, N. J. Mechanism for delivering pile-warps in looms for weaving double pile fabrics	294,965	Mar. 11	759	212	26	967
Charnley, Charles F. (See Charnley, James A. and C. F.)						
Charnley, James A. and C. F., Providence, R. I. Plated-edge band-bracelet	294,010	Feb. 26	1582	439	26	744
Charter, John, Sterling, Ill. Gas-engine	292,894	Feb. 5	140	38	26	469
Chase, Andrew J., Boston, Mass. Butter-dish	295,111	Mar. 11	966	264	26	1001
Chase, Frank, Boston, Mass. Boot and shoe fastening	293,145	Feb, 5	470	126	26	524
Chase, Frank, Boston, Mass. Lasting-jack for boots and shoes	293,146	Feb. 5	471	126	26	524
Chase, Frank, Boston, Mass. Machine for uniting the soles and uppers of boots and shoes	293,147	Feb. 5	473	126	26	524
Chase, Josiah B., Newton, Mass. Glove-fastening	291,577	Jan. 15	1093	305	26	212
Chase, Lewis C., Wanpun, Wis. Hay-carrier	292,098	Jan. 15	1350	379	26	260
Cheever, John O., Boston, Mass. Safety-valve	293,948	Feb. 19	1509	416	26	722
Cheever, Joseph H., Somerville, Mass. Telephone	291,684	Jan. 8	856	230	26	159
Cheever, Joseph H., Somerville, Mass. Telephone-transmitter	292,303	Jan. 22	1488	418	26	299
Cheney, Joseph W., assignor of one-half to R. C. Newell, Palmer, Mass. Regulating speed of driven shafts	294,760	Mar. 11	509	142	26	922
Cheney, Joseph W., assignor of one-half to R. C. Newell, Palmer, Mass. Converting motion	294,761	Mar. 11	510	142	26	923
Chesnut, James M., Muncy, Pa. Fire-escape	295,112	Mar. 11	967	264	26	1001
Chess, Harvey B. (See Chess, Henry and H. B.)						
Chess, Harvey B., Pittsburg, Pa. Device for cleaning nails and tacks	294,440	Mar. 4	130	34	26	851
Chess, Harvey B., Pittsburg, Pa. Shearing-machine	294,966	Mar. 11	760	212	26	968
Chess, Henry and H. B., Pittsburg, Pa. Apparatus for scaling and pickling metal plates	294,441	Mar. 4	131	34	26	852
Chester, Hubbard C., Noank, Conn. Anchor	291,983	Jan. 15	1219	340	26	234
Chester, Hubbard C., Noank, Conn. Grapnel	295,352	Mar. 18	1281	355	26	1072
Chichester, Lewis S., assignor to C. M. E. Schroeder, Jersey City, N. J. Pulverizing machine	295,617	Mar. 25	1625	449 450	26	1142
Chichester, Lewis S., assignor to C. M. E. Schroeder, Jersey City, N. J. Pulverizing apparatus	295,856	Mar. 25	1920	533	26	1197
Child, Brainerd W. (See Wemple and Child.)						
Childs, Albert F. (See Conover, Jacob A., assignor.)						
Childs, James W., Cedar Run, Pa. Car-coupling	292,895	Feb. 5	144	38	26	469
Childs, William A., Englewood, N. J., and F. Shaw, New York, N. Y. Tip for electric conductors	294,851	Mar. 11	626	174	26	943
Childs, William H. H., Brooklyn, N. Y. Felt and gravel roof	294,579	Mar. 4	297	81	26	879
Chillingworth, Felix. (See Sweetland, William L., assignor.)						
Choate, William B., Aurora, Ill. Soldering-iron	294,364	Mar. 4	30	8	26	834
Christensen, James P. (See Hanson and Christensen.)						
Christian, John B., and W. D. Hanson, Hamburg, Iowa. Tongueless cultivator	292,283	Jan. 22	1597	446	26	308
Christiansen, Lars, Council Bluffs, Iowa. Washing-machine	292,734	Jan. 29	2189	610	26	420
Christie, Andrew J. and J. J., Camden, N. J. Glass-mold	292,156	Jan. 22	1422	399	26	240
Christie, Henry P., San Francisco, Cal. Self-shipping belt-pulley	292,987	Feb. 5	258	71	26	489
Christie, James J. (See Christie, Andrew J. and J. J.)						
Christman, Augustus G., Litiz, Pa. Plow	293,309	Feb. 12	701	187	26	569
Christopher, Charles H. (See McAlvay, Charles B., assignor.)						
Christy, George H., *et al.*, trustees. (See Gassett, Oscar, assignor.) (Reissue.)						
Christy, John H., Cowden, Ill. Harrow	294,011	Feb. 26	1583	439	26	744
Church, Duane H., assignor to American Watch Company, Waltham, Mass. Stem winding and setting watch	295,484	Mar. 18	1449	399	26	1105
Church, Duane H., assignor to American Watch Company, Waltham, Mass. Mainspring for watches	295,485	Mar. 18	1450	399	26	1105
Church, Henry A., Providence, R. I. Ornamental chain	293,417	Feb. 12	843	228	26	596
Church, Henry A., Providence, R. I. Chain-bracelet	293,418	Feb. 12	844	228	26	596
Church, Henry A., Providence, R. I. Clasp for roller-chain bracelets	293,419	Feb. 12	845	228	26	596
Church, Henry A., Providence, R. I. Ornamental chain	294,580	Mar. 4	298	82	26	879
Church, Louis J., Washington, D. C. Nutmeg-grater	295,736	Mar. 25	1774	493	26	1168
Cilley, William H. (See Maynadier, Gustavus B., assignor.)						
Cilley, William H. (See Maynadier and Cilley.)						
Clad, Valentine, Philadelphia, Pa. Ice-cream freezer	291,685	Jan. 8	857	230	26	159
Clapp, William J., Nantyglo, and T. Griffiths, Blaenavon, county of Monmouth, England, assignors to J. P. Witherow and H. W. Oliver, Jr., Pittsburg, Pa. Cupola-furnace. (Reissue)	10,432	Jan. 1	583	164	26	104
	291,000	Jan. 1	20	6	26	6
Clapper, George A., Wooster, Ohio. Printer's dry-rack						
Clark, Aaron T. (See Lee, Edward, assignor.)						
Clark, Alexander H., Fond du Lac, Wis. Thrasher	291,151	Jan. 1	171	49, 50	26	33
Clark, Alfred L., Dubuque, Iowa. Window-screen	292,410	Jan. 22	1759	490	26	339
Clark, Alfred L., Dubuque, Iowa. Fire-escape	292,411	Jan. 22	1761	490	26	339
Clark, Allison N., Plainville, Conn. Pocket implement	293,718	Feb. 19	1202	333	26	669
Clark, Amasa C., Manchester, Iowa. Butter-worker	293,148	Feb. 5	474	127	26	525
Clark, Byron, assignor of one-half to O. Hull, Greenwood, Nebr. Harrow for cultivating listed corn	293,227	Feb. 12	501	156	26	550
Clark, Charles W., Philadelphia, Pa. Shade-pull	293,311	Feb. 12	703	188	26	569
Clark, Elijah C., and A. Dewey, Cannelton, Ind. Feed mechanism for grinding-mills	291,031	Jan. 1	21	6	26	6
Clark, Freeman P., New Haven, Conn. Lock	291,686	Jan. 8	857	240	26	159
Clark, George D., Plainville, Conn. Furniture-caster	291,494	Jan. 8	604	170	26	115
Clark, George H., Boston, Mass., assignor to Clark Glove Fitting Boot and Shoe Company, Portland, Me. Mold for molding the uppers of boots and shoes	293,631	Feb. 19	1085	301	26	647
Clark Glove Fitting Boot and Shoe Company. (See Clark, George H., assignor.)						
Clark, James M., Greeley, Colo. Horse hay-rake	292,988	Feb. 5	259	71	26	489
Clark, John K., Buffalo, N. Y. Door-knob	291,687	Jan. 8	859	240	26	159
Clark, John L. (See Nicholson, Granville, assignor.)						
Clark, Melville, Chicago, Ill. Reed-organ	292,099	Jan. 15	1351	379 380	26	260
Clark, Milton, assignor to Continental Cash Car Company of Baltimore, Baltimore, Md. Store-service system	293,949	Feb. 19	1510	416 417	26	722

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Clark, Myron J., Washington, D. C. Chain-lock or baggage-guard	294,012	Feb. 26	1583	439	26	744
Clark, Robert P., Philadelphia, Pa. Fire-escape	292,989	Feb. 5	259	71, 72	26	490
Clark, Thomas. (See Baldwin, George, assignor.)						
Clark, Thomas, Quincy, Ill. Excavating-machine	295,522	Mar. 25	1498	414	26	1119
Clark, William A., San Francisco, Cal. Sofa-bed	294,198	Feb. 26	1847	504	26	786
Clark, William B., *et al.* (See Ferguson, Robert W., assignor.)						
Clark, William H., Harper, Kans. Cultivator	295,353	Mar. 18	1282	355	26	1073
Clark, William J. (See Seldomridge, William C., assignor.)						
Clark, William P., Belmont, N. Y. Circular saw mill	294,442	Mar. 4	132	34, 35	26	852
Clarke, Alexander D., New York, N. Y. Ore-concentrator	291,984	Jan. 15	1220	340	26	235
Clarke, C. Frederick, *et al.* (See Ewing, Thomas, assignor.)						
Clarke, Charles J., Mount Crawford, Va. Tire for vehicle-wheels	293,630	Feb. 19	1084	300	26	647
Clarke, Charles L., and J. Leigh, Manchester, county of Lancaster, England, assignors to Domestic Electric Manufacturing Company, New York, N. Y. Electric battery	293,563	Feb. 12	1004	277	26	625
Clarke, Joseph H., Springfield, Ohio. Syringe	291,090	Jan. 8	863	241	26	160
Clarke, Thomas, Truro, Nova Scotia, Canada. Permanent fire-escape	291,686	Jan. 8	860	240	26	160
Clarke, Thomas, Truro, Nova Scotia, Canada. Portable fire-escape	291,689	Jan. 8	862	241	26	160
Clarke, Thomas, Truro, Nova Scotia, Canada, W. H. Paulding, Peekskill, and G. Reinl, New York, N. Y. Sleeping-car	294,331	Feb. 26	2008	551	26	816
Clarkson, Joseph T., Amesbury, Mass. Harness	293,050	Feb. 19	1512	417	26	723
Clarkson, William R., Buffalo, N. Y. Ratchet bit-brace	294,702	Mar. 11	510	142	26	923
Clausen, Adler C., assignor of one-half to J. C. Slafter, Minneapolis, Minn. Watch-regulator	293,420	Feb. 12	846	229	26	596
Clayton, Henry, Dayton, Ohio. Harvester-truck	291,578	Jan. 8	1094	305	26	212
Clayton, Herbert, Cincinnati, Ohio. Sifter	291,576	Jan. 8	708	199	26	133
Cleland, A. V. (See Williams and Harder, assignors.)						
Cleland, Isaac G. S., New Hartford, N. Y. Manufacture of solid wood corners	291,032	Jan. 1	22	6	26	7
Cleland, James, Wales Centre, N. Y. Door-check	293,951	Feb. 19	1513	417	26	723
Clement, Nelson, Chicago, Ill. Ore-reducing apparatus	291,294	Jan. 1	350	99	26	63
Clements, George P., assignor of one-half to J. C. McConnell, New Milford, Pa. Sash-holder	293,310	Feb. 12	702	188	26	569
Cliff, Alfred. (See King and Cliff.)						
Clifford, William H. (See Foos, Charles S., assignor.)						
Clipp, Hamilton, Leipsic, and F. M. Brock, New Providence, Ind. Mail-bag	291,152	Jan. 1	173	50	26	33
Clisham, Joseph J., San Diego, Cal. Single-cable-track railway	291,691	Jan. 8	864	241	26	160
Clond, John W., Altoona, Pa. Device for stopping railway-trains	291,495	Jan. 8	605	171	26	115
Clond, William H., Detroit, Mich. Vise	295,354	Mar. 18	1283	355	26	1073
Clough, Jefferson M., assignor to Winchester Repeating Arms Company, New Haven, Conn. Magazine fire-arm	294,581	Mar. 4	299	82	26	879
Clough, Willard E., assignor of one-half to P. Pethick, Concord, N. H. Hand-borer	295,523	Mar. 25	1499	414	26	1119
Clough, Willard E., assignor of one-half to P. Pethick, Concord, N. H. Boring-machine	295,524	Mar. 25	1500	414	26	1119
Clough, Willard E., assignor of one-half to P. Pethick, Concord, N. H. Boring-machine	294,199	Feb. 26	1848	504	26	786
Cloyes, Granville H., Portland, Me. Ladder	294,582	Mar. 4	301	83	26	880
Clute, Frank N., Lee's Summit, Mo. Sulky-plow						
Clute, William H. (See Melvin and Clute.)						
Cobb, Henry B., Wilmington, Del. Machine for laying electric conducting-wires	293,632	Feb. 19	1086	301	26	647
Cobb, Henry B., Wilmington, Del. Conduit for undergronnd electric wires	294,365	Mar. 4	30	8, 9	26	835
Cobb, Samuel C., and N. A. Wheeler, assignors to Janesville Machine Company, Janesville, Wis. Harvester	291,295	Jan. 1	351	99 100	26	63
Coble, Thomas H. (See Woodley, Jacob, assignor.)						
Coburn, Daniel J. (See Frazier and Coburn.)						
Cochran, Samuel H., Everett, Mass. Cooler for uniting oils in the manufacture of lard, &c.	291,692	Jan. 8	865	241	26	160
Coe, Calvin J. (See Baar and Coe.)						
Coe, Frederick W., and C. A. Hoffnagle, Vergennes, Vt. Rock-drill	295,737	Mar. 25	1776	494	26	1168
Coe, Ira R. (See Baar and Coe.)						
Coffield, Peter T. (See Paxson, Charles H., assignor.)						
Coffin, George W., Pittsburg, Pa. Car-brake	294,013	Feb. 26	1584	439	26	744
Coffman, Adam, Warsaw, Ohio. Harness-loop	293,421	Feb. 12	846	229	26	596
Coggeshall, Charles A., Providence, R. I. Spinning and twisting machine	295,738	Mar. 25	1777	494	26	1169
Cogswell, Mortimer C., Brooklyn, N. Y. Process of and apparatus for mixing and cooling sugar	292,100	Jan. 15	1353	380	26	260
Cohn, Abraham E., assignor of one-third to L. and E. S. Simon, Philadelphia, Pa. Regulator for gas and water	292,536	Jan. 29	1937	541	26	377
Cohn, Philip, New Laredo, Tamaulipas, Mexico. Machine for extracting and cleaning the fibers of plants	293,422	Feb. 12	847	229	26	597
Cohoes Iron Foundry and Machine Company. (See Ballard, Andrew J., assignor.)						
Cohoon, James A. (See Wood, Alanson, assignor.)						
Colahan, Charles. (See Rosback, Fredrick P., assignor.)						
Colby, Clarence L., Fairmont, Minn. Cream gage for milk-cans	291,296	Jan. 1	354	100	26	64
Colby, Eben D. (See Worden, Taylor, Power, and Colby.)						
Colby, Harlan P., assignor of one-half to F. L. Elms, Charlotte, Mich. Vehicle-body	294,852	Mar. 11	628	174	26	943
Coldwell, Thomas, Newburg, N. Y. Brush-trimming machine	294,583	Mar. 4	302	83, 84	26	880
Cole, David S., Columbus Junction, Iowa. Fire-arm	291,153	Jan. 1	173	51	26	33
Cole, Henry S., Spencerport, N. Y. Rope-clamp	291,693	Jan. 8	866	242	26	161
Cole, William H., *et al.* (See Copeland, David W., assignor.)						
Coleman, Frederick, Ilion, N. Y. Two-wheeled vehicle	292,896	Feb. 5	145	38, 39	26	470
Coleman, James R. (See Hanagen and Coleman.)						
Coleman, Nathan, Oneida, Kans. Cultivator	291,577	Jan. 8	709	199	26	133
Coleman, Pressley, Hayesville, Pa. Switch-stand	292,897	Feb. 5	146	39	26	470
Collard, Richard M., assignor to L. W. Fairchild, New York, N. Y. Pencil	291,297	Jan. 1	354	101	26	64
Collard, Richard M., assignor to L. W. Fairchild, New York, N. Y. Combined pen-holder, pencil, and tooth-pick	291,879	Jan. 15	1095	305	26	212
Collender, Hugh W., New York, N. Y. Billiard-table cushion	292,990	Feb. 5	261	72	26	490
Collender, Hugh W., New York, N. Y. Pool triangle and box	294,200	Feb. 26	1849	504	26	786
Collender, Hugh W., New York, N. Y. Pool-rack	295,857	Mar. 25	1931	534	26	1197
Collender, Hugh W., and S. De Gaetano, New York, N. Y.; said De Gaetano assignor to said Collender. Pool-rack	294,584	Mar. 4	304	84	26	880
Colliau, Victor, Detroit, Mich. Furnace	295,355	Mar. 18	1284	356	26	1073
Collins, Charles E., Baltimore, Md. Lubricator	291,154	Jan. 1	175	51	26	33
Collins, Cornelious, Ormanville, assignor of two-thirds to J. B. and W. W. Ennis, Ottumwa, Iowa. Bag-fastener	293,564	Feb. 12	1006	277	26	626
Collins, Dennis, New Hampton, Iowa. Gate	294,853	Mar. 11	629	174	26	943
Collins, Kins R., deceased, (E. D. Richmond, Hart, Mich., executor.) Artificial leg	295,675	Mar. 25	1698	470	26	1155
Collins, William, Perham, Minn. Bundle-carrier for grain-binders	291,985	Jan. 15	1223	341	26	235
Colton & Co., G. D. (See Anderson, Abraham, assignor.)						
Colton, George A., assignor of one-half to H. C. Hooker, Syracuse, N. Y. Lathe-chuck	295,229	Mar. 18	1125	310	26	1043

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Colton, George A., assignor of one-half to H. C. Hooker, Syracuse, N. Y. Lathe-chuck	295,230	Mar. 18	1126	311	26	1043
Columbus Hay Tool Company. (See Grosscup, Fred P., assignor.)						
Comeaux, Jules, Plaquemine, La. Plow attachment	295,149	Mar. 18	1018	282	26	1024
Comings, William R., Norwalk, Ohio. Apparatus for indicating temperatures of distant rooms	294,291	Feb. 26	1851	505	26	786
Commercial Telegram Company. (See Field, Stephen D., assignor.)						
Companion Sewing Machine Company. (See Healey, C. Wallace, assignor.)						
Company of Vulcan. (See Graham, Daniel M., assignor.)						
Compton, William A., Liberty Corner, N. J. Machine for planing and printing wood	291,155	Jan. 1	175	51	26	33
Comstock, Albert S., *et al.* (See Bradford, Addison, assignor.)						
Comstock, Charles J. (See Comstock, Eben C., assignor.)						
Comstock, Chester, New Canaan, Conn. Steam-radiator	294,854	Mar. 11	630	175	26	944
Comstock, Eben C., assignor to himself and C. J. Comstock, Springport, Mich. Spring-tooth harrow	291,840	Jan. 8	1033	288	26	190
Comstock, William T., New York, N. Y. Leveling-instrument	294,014	Feb. 26	1585	440	26	745
Conde, Alonzo B., Albany, N. Y. Hame-fastener	294,202	Feb. 26	1851	505	26	787
Condit, Ezekiel C., Kansas City, Mo. Furnace-joint	292,537	Jan. 29	1938	542	26	377
Condit, Israel D., Jr., Millburn, N. J. Retort deoxidizing-furnace	291,298	Jan. 1	357	101	26	64
Congdon, Isaac H., Omaha, Nebr. Water-closet funnel of railway-cars	292,472	Jan. 29	1842	513	26	361
Conklin, Linley H., Willow Creek, Minn. Grain-spout for thrashing-machines	291,966	Jan. 15	1225	341	26	236
Conly, Mahlon S., assignor of two-thirds to T. H. Butler and O. R. Weaver, Indianapolis, Ind. Condenser for ammonia ice-making apparatus	294,763	Mar. 11	512	{142 143}	26	923
Connell, John, Rochester, N. Y. Machine for lapping hoops	292,157	Jan. 22	1424	399	26	280
Conner & Co., Lewis D. (See Sanker, Curtis J., assignor.)						
Conner, James M., New York, N. Y. Type-casting mold	293,633	Feb. 19	1088	301	26	647
Connolly, Anthony A., Washington, D. C. Protector for telephonic and telegraphic instruments	291,299	Jan. 1	357	101	26	65
Connolly, Thomas A., Washington, D. C. Automatic electric switch	295,356	Mar. 18	1225	{356 357}	26	1073
Conover, Jacob A., New York, N. Y., assignor to A. F. Childs, Washington, D. C. Leaf-table	293,565	Feb. 12	1006	277	26	626
Conrad, Adam, Chicago, Ill., assignor of one-half to A. Dickinson. Elevator for bags, &c.	294,015	Feb. 26	1586	{440 441}	26	745
Conrad, Christopher F., Adrian, Mich. Pump for fire-extinguishers, &c	293,952	Feb. 19	1514	418	26	723
Conrath, George T., Warren, Pa. Device for lowering coffins into graves	294,366	Mar. 4	32	9	26	835
Consolidated Electric Light Company. (See Knowles and Idell, assignors.)						
Consolidated Safety Valve Company. (See Richardson, George W., assignor.)						
Contant, Paul, Reims, France. Sampling-tube	293,423	Feb. 12	848	230	26	597
Continental Cash Car Company of Baltimore. (See Clark, Milton, assignor.)						
Continental Glycerine Company. (See Michand, Edmond F. and E. N., assignors.)						
Converse, Lyman P., Chicago, Ill., assignor to Water-Proof Fabric Company, of New York. Substance for rendering fabrics water-proof	295,113	Mar. 11	909	.....	26	1002
Converse, Morton E., Winchendon, Mass. Machine for cutting heads of boxes	292,991	Feb. 5	263	72	26	490
Cook, Charles. (See Meinikheim, Bernard G., assignor.)						
Cook, Egbert C., Chicago, Ill. Portable hammock-support	292,204	Jan. 22	1489	418	26	290
Cook, Henry, Leadville, Colo. Inhaler for anæsthetics	294,585	Mar. 4	306	85	26	880
Cook, Sheldon P., Minneapolis, Minn. Grain-drier	294,367	Mar. 4	35	10	26	835
Cooke, David W., Franklin, Tenn. Steam traction tug-boat	295,231	Mar. 18	1129	{311 312}	26	1043
Cooley, Albert, Osceola, Iowa. Hay-stacker	294,768	Mar. 11	518	144	26	924
Coombs, John, assignor to Southwestern Implement Company, Springfield, Mo. Hay-stacker	291,694	Jan. 8	867	{242 243}	26	161
Coon, James H., Des Moines, Iowa. Applying barbs to fence-wire	292,205	Jan. 22	1490	419	26	290
Coon, James H., Des Moines, Iowa. Wire-barbing machine	292,206	Jan. 22	1491	{419 420}	26	290
Cooper, Albert. (See Jones and Cooper.)						
Cooper, James O. (See Cooper, John L., assignor.)						
Cooper, John L., San Francisco, Cal., assignor to J. O. Cooper, Portland, Oreg. Apparatus for cleaning ships' sides, &c	295,357	Mar. 18	1289	357	26	1074
Cooper, William, New York, N. Y. Game apparatus, calendar, and clock	294,586	Mar. 4	306	85	26	880
Cope, Henry P., assignor of one-half to J. H. Bissell, Detroit, Mich. Router-plane	294,724	Mar. 4	464	130	26	908
Copeland & Bacon. (See Bacon, Earle C., assignor.)						
Copeland, Brommie, and F. Wright, Salem, N. Y. Extensible latch	293,424	Feb. 12	849	230	26	597
Copeland, David W., assignor of seven-tenths to M. H. Bronson, Lowville, and W. H. Cole, Leyden, N. Y. Railway-gate	295,358	Mar. 18	1290	357	26	1074
Copithorn, John T., assignor of one-half to E. H. Studley, Boston, Mass. Mold	293,953	Feb. 19	1514	418	26	724
Coppel, Alexander. (See Kaldenbach, Friedrich W., assignor.)						
Coram, George B. (See Dennis and Coram.)						
Coram, Joseph A., *et al.* (See Dennis and Coram, assignors.)						
Corbett, Philip F., Boston, Mass. Clamp	292,207	Jan. 22	1404	420	26	290
Corbin Cabinet Lock Company. (See Mix, Frank W., assignor.)						
Corbin Cabinet Lock Company. (See Mix, Frank W., assignor.) (Reissue.)						
Corbin, P. & F. (See Arens, August, assignor.)						
Corcoran, Mathew, Sterling, Ill. Machine for trussing tubs	294,764	Mar. 11	513	143	26	923
Corey, George D., assignor of one-half to Woods, Sherwood & Co., Lowell, Mass. Bottle-stopper	294,443	Mar. 4	133	35	26	852
Cormack, George H., Rockford, Ill. Millstone-adjusting mechanism	292,026	Jan. 29	2059	571	26	396
Cormack, Hamilton M., Malden, Mass. Gang-plow	291,156	Jan. 1	177	51, 52	26	34
Cormack, Hamilton M., Malden, Mass. Traction-engine	291,300	Jan. 1	359	102	26	65
Cornelius, Oliver H. P., and G. H. Turner, Turner, Oreg. Alarm-signal for hot journals	292,902	Feb. 5	265	73	26	491
Cornely, Emil, Paris, France. Embroidering-machine	292,284	Jan. 22	1508	{446 447}	26	308
Cornely, Emil, Paris, France. Embroidering-machine	292,285	Jan. 22	1600	447	26	308
Coronet Corset Company. (See Weeks and Cady, assignors.)						
Cortis, Frank A., Meriden, Conn. Transom-lifter	291,095	Jan. 8	868	243	26	161
Costa Corrêa Leite, Henrique da, Lisbon, Portugal. Paper manufacture from the plant galega	293,566	Feb. 12	1008	.....	26	626
Coté, Louis, St. Hyacinthe, Quebec, Canada. Heel-stiffener-shaping machine	294,444	Mar. 4	134	35	26	852
Cottle, Julius O., and R. Ivie, St. Jo, Tex. Hopple for horses	293,312	Feb. 12	704	188	26	569
Cottle, Melvin, Scipio, Kans. Shutter	292,101	Jan. 15	1354	380	26	261
Cottrell, Calvert B., Westerly, R. I. Printing-press	293,313	Feb. 12	704	{188 189}	26	570
Cottrell, Herbert, Newark, N. J. Ice-creeper	291,880	Jan. 15	1097	306	26	212
Coty, Joseph, Joliet, Ill. Railway-crossing gate	294,765	Mar. 11	514	143	26	923

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Couch, Albert C., Boston, Mass. Flexible mirror for hat-tips and other purposes	291,033	Jan. 1	23	6	26	7
Couch, Albert C., Boston, Mass. Hat-tip	291,034	Jan. 1	23	7	26	7
Couch, Albert C., Boston, Mass. Sweat-band for hats	291,157	Jan. 1	180	52	26	34
Couch, John P., *et al.* (See Evans, George R., assignor.)						
Coup, John, D. McCurdy, Cleveland, Ohio, and W. B. Rice, New York, N. Y. Car-coupling	292,538	Jan. 29	1939	542	26	377
Copland, Charles, Seymour, Conn. Loom for weaving double pile fabrics	294,967	Mar. 11	761	212	26	968
Copland, Charles, Seymour, Conn. Loom for weaving double pile fabrics	294,968	Mar. 11	763	212	26	968
Copland, Charles, Seymour, Conn. Spindle and bearing for rotary cutters of machines for cutting double pile fabrics	294,969	Mar. 11	765	213	26	968
Copland, Charles, Seymour, Conn. Machine for cutting double pile fabrics	294,970	Mar. 11	767	{213 214 215}	26	969
Couvin, S. W., *et al.* (See Sanford, Addison V., assignor.)						
Covell, Edward T., New Bedford, Mass. Book-mark and pencil-holder	292,412	Jan. 22	1762	490	26	339
Cowdery, Warren H., assignor of one-half to S. R. Harris, Ashtabula, Ohio. Hay-fork	294,587	Mar. 4	308	86	26	881
Cowell, Newell P., Cleveland, Ohio. Car-coupling	295,618	Mar. 25	1627	450	26	1142
Cowen, William E., Defiance, Ohio. Car-ventilator	294,016	Feb. 26	1588	441	26	745
Cowie, Thomas J., U. S. Navy. Sailor's jackknife	293,634	Feb. 19	1089	301	26	648
Cowing & Gleason Manufacturing Company. (See Cowing, Philo, assignor.)						
Cowing, Philo, assignor to Cowing & Gleason Manufacturing Company, (limited,) Seneca Falls, N. Y. Core-box	292,102	Jan. 15	1355	381	26	261
Cowles, Alfred A., New York, N. Y., assignor to Ansonia Brass and Copper Company, Ansonia, Conn. Electric conductor	292,539	Jan. 29	1940	542	26	377
Cowles, Alfred A., New York, N. Y., assignor to Ansonia Brass and Copper Company, Ansonia, Conn. Tinning sheet-copper	292,540	Jan. 29	1942	.....	26	377
Cowles, Alfred A., New York, N. Y., assignor to Ansonia Brass and Copper Company, Ansonia, Conn. Manufacture of electric conductors	295,232	Mar. 18	1132	312	26	1044
Cowles, Alfred H. (See Cowles, Edwin and A. H.)						
Cowles, Edwin and A. H., Cleveland, Ohio. Stereotype-backing powder or filling	294,588	Mar. 4	308	.....	26	881
Cowles, Ezra R. and H. A., and M. Osborn, Westfield, Mass. Perfumery-charged cane and other handles	295,359	Mar. 18	1291	358	26	1074
Cowles, Henry A. (See Cowles and Osborn.)						
Cowles, Wilber F., St. Mary's, and J. Woolworth, Sandusky, Ohio. Wooden-stirrup machine	294,203	Feb. 26	1853	505	26	787
Cox, Arthur W., Auburn, Me., assignor of one-half to J. T. Bullivant, Newark, N. J. Last	292,792	Feb. 5	18	5	26	446
Cox, Daniel O., Mannsville, N. Y. Horse-checker	294,445	Mar. 4	136	36	26	852
Cox, H. M. (See Miles, Edward J., assignor.)						
Coy, Frederick W., Boston, Mass. Abrading-machine	294,766	Mar. 11	516	{143 144}	26	924
Coyle, Hugh B., Philadelphia, Pa. Awning	294,767	Mar. 11	517	144	26	924
Crabb, William, Newark, N. J. Comb	294,204	Feb. 26	1854	506	26	787
Crabtree, Thomas A., East Surry, assignor of one-half to E. Hale, Ellsworth, Me. Check-rein hook	294,310	Feb. 26	1983	542	26	811
Cragin, Ida L. (See Cragin, Samuel B., assignor.)						
Cragin, Samuel B., assignor of one-third to I. L. Cragin, Ada, Minn. Nut-lock	292,627	Jan. 29	2053	571	26	396
Craig, Warren H., Lawrence, Mass. Lubricator for steam-engines	291,696	Jan. 8	869	243	26	161
Craig, William, Brooklyn, N. Y. Steam-actuated valve	292,541	Jan. 29	1943	{542 543}	26	377
Craig, William, Brooklyn, N. Y. Producing circulation in steam-boilers	294,118	Feb. 26	1739	478	26	769
Craighead, Robert B., Milton, Ohio. Snap-hook	292,103	Jan. 15	1357	381	26	261
Cramer, Anthony, Detroit, Mich. Brick-machine	294,368	Mar. 4	35	10	26	836
Cramer, Charles H., Lake Mills, Wis. Wind-engine	294,369	Mar. 4	36	10	26	836
Cramp, Jacob P., Finedon, county of Northampton, England. Kiln	292,413	Jan. 22	1763	491	26	339
Crandal, George L., Binghamton, N. Y. Protecting button-holes	294,446	Mar. 4	137	36	26	853
Crandall, Charles M., assignor to F. W. Crandall and B. L. Baldwin, Montrose, Pa. Toy building-block	294,589	Mar. 4	309	86	26	881
Crandall, Charles M., assignor to F. W. Crandall and B. L. Baldwin, Montrose, Pa. Toy building-block	294,590	Mar. 4	310	86	26	881
Crandall, Fred W., *et al.* (See Crandall, Charles M., assignor.)						
Crandall, Orville A. (See Akins, John, assignor.)						
Crandell, James H., assignor of one-half to J. Flint, Upper Marlborough, Md. Sewing-machine motor	293,149	Feb. 5	475	127	26	525
Crane, Walter E., Waseca, Minn. Harvesting-machine	291,987	Jan. 15	1225	{341 342}	26	236
Crane, Winthrop M., Dalton, Mass. Machinery for manufacturing ornamental paper	293,229	Feb. 12	593	156	26	551
Crane, Winthrop M., Dalton, Mass., assignor to A. G. Goodall, New York, N. Y. Manufacture of ornamental paper	293,228	Feb. 12	592	156	26	551
Cratty, Joslah. (See Terman, James W., assignor.)						
Crawford, Alexander, Evansville, Ind. Double-acting force-pump	291,859	Jan. 8	1057	296	26	195
Crawford, Charles W., Brazil, Ind. Preventing condensation in steam-cylinders	292,104	Jan. 15	1357	381	26	261
Crawford, Charles W., Davenport Centre, N. Y. Siding and ceiling for buildings	294,855	Mar. 11	631	175	26	944
Crawford, George W., Davenport Centre, N. Y. Siding and ceiling for buildings	295,360	Mar. 18	1292	358	26	1074
Crawford, Henry, and J. M. Long, Virden, Ill. Hoisting food-cooler						
Cree, James. (See Marsh and Cree.)	291,158	Jan. 1	180	52	26	34
Cregier, Dewitt C., Chicago, Ill. Water-supply for cities	291,159	Jan. 1	182	53	26	34
Cregier, Dewitt C., Chicago, Ill. Water-supply for cities and towns	295,361	Mar. 18	1293	358	26	1075
Creighton, James S., and J. Tayler, Smith's Flat, Cal. Two-wheeled vehicle	291,881	Jan. 15	1098	306	26	212
Creighton, Millard, Marblehead, Mass. Work-bench						
Crim, Norval D. (See Troxel, Fredrick, assignor.)						
Crisp, Joseph E., Somerville, assignor to J. Stetson, Newton, Mass. Machine for measuring incompressible fluids	295,858	Mar. 25	1933	534	26	1197
Crockett, Charles E., Waupun, Wis. Refrigerating-counter for bar-rooms	293,425	Feb. 12	850	{230 231}	26	597
Croft, Wilbur & Co. (See Smith, John, assignor.)						
Crofut, Eber R., and C. L. Gribbin, Newark, N. J. Window	295,302	Mar. 18	1294	358	26	1075
Crompton, George, and H. Wyman, Worcester, Mass., assignors to G. Crompton. Mechanical movement. (Reissue)	10,433	Jan. 1	586	165	26	105
Crooke, Henry S. and L., New York, N. Y. Making rolled metallic foil	294,725	Mar. 4	465	.....	26	909
Crooke, Lewis. (See Crooke, Henry S. and L.)						
Crosby, Nathan, *et al.* (See Dennis and Coram, assignors.)						
Cross, Frank J. (See McDonald, William A., assignor.)						
Cross, William C., Boston, Mass. Necktie	291,301	Jan. 1	361	102	26	65
Cross, William C., Boston, Mass. Necktie	294,726	Mar. 4	466	130	26	909
Crossley, Louis J., W. Emmott, Halifax, and J. F. Harrison, Bradford, county of York, England. Electric signaling apparatus	292,542	Jan. 29	1945	543	26	378

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Crow, Austin M. (See Thompson, Melchesedeck Y., assignor.)						
Crowell, Chauncy L., Peoria, Ill. Horse-detacher	292,908	Jan. 29	1495	421	26	291
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Sheet-delivery apparatus for printing-machines	292,993	Feb. 5	266	73	26	491
Crowfoot, Joseph, Bridgeport, Conn. Machine for making coiled-wire ferrules	291,496	Jan. 8	607	171	26	116
Crowley, Daniel, Boston, Mass. Velocipede	295,150	Mar. 18	1018	282	26	1025
Crowley, George G., Little Falls, N. Y. Harvester	292,209	Jan. 29	1496	421 / 422	26	291
Crowley, Jeremiah J., Savannah, Ga., assignor of two-thirds to J. D. Richardson, Brooklyn, and F. L. Manchester, New York, N. Y. Metallic packing for stuffing-boxes	291,160	Jan. 1	184	53	26	35
Crowley, John H., and B. M. Temple, Galveston, Tex. Railway-switch	291,988	Jan. 15	1227	342	26	236
Crowther, George W. (See Starkey and Crowther.)						
Cruné, Edward F., Newark, N. J. Preparation of glue-stock from bones, hornpiths, &c	291,302	Jan. 1	302	.....	26	65
Crutsinger, Charles W., St. Louis, Mo. Inking-pad	294,856	Mar. 11	632	175	26	944
Culbertson, William W. (See Roberts, Edward J., assignor.)						
Cummings, Daniel M., Enfield, N. H. Straw-cutter	293,150	Feb. 5	476	127	26	525
Cummins, James, Janesville, Minn. Hose-coupling	295,151	Mar. 18	1020	282	26	1025
Cunningham, Patrick, New Bedford, Mass. Bomb-gun	294,017	Feb. 26	1500	441	26	745
Currie, Stanley C., C. (See Timmis and Currie.)						
Currier, Augustus S., assignor of two-thirds to J. T. Maddux and G. W. Paisley, Hillsborough, Ill. Fire-escape	292,414	Jan. 22	1764	491	26	340
Curry, Burwell J., assignor of one-sixth to J. H. Rennoker, Huntsville, Ala. Fruit-press	293,635	Feb. 19	1089	302	26	648
Curry, George W., St. Louis, Mo. Sash-fastener	291,303	Jan. 1	363	102	26	65
Curtis, Cyrus J., and J. E. Caine, Logan City, Utah Ter.; said Caine assignor to said Curtis. Lifting-pump	292,105	Jan. 15	1358	381	26	261
Curtis, Dexter, Madison, Wis. Horse-collar pad	294,769	Mar. 11	519	145	26	924
Curtis, Emma M. (See Letton, Theodore P., assignor.)						
Curtis, Frank E., and W. H. Helfrich, Minneapolis, Minn. Grain-cleaning machine	294,205	Feb. 26	1856	506	26	787
Curtis, Mont G., *et al.* (See Shanahan, Winfield S., assignor.)						
Curtis, Uriah, Concord, Minn. Instrument for calculating interest, &c	295,152	Mar. 18	1021	282 / 283	26	1025
Curtis, William W., Stanberry, Mo. Well-boring machine	292,735	Jan. 29	2190	611	26	490
Cushing, Alvin M. (See Wells, Charles S., assignor.)						
Cushing, Frederick W., New York, N. Y. Measuring velocity by electricity	293,426	Feb. 19	852	231	26	598
Cushing, Harry C., New London, Conn. Sighting attachment for fire-arms	294,770	Mar. 11	520	145	26	924
Cushing, William L. B., and A. D. Vest, San José; said Vest assignor to T. A. Vest, North San Juan, Cal. Animal-trap	295,486	Mar. 18	1451	399	26	1105
Cnasons, John, Glen Allen, Va. Calendar	292,106	Jan. 15	1359	382	26	262
Custer, George, Whitney, Tex. File	295,487	Mar. 18	1452	400	26	1105
Custer, George M., Mattoon, Ill. Gate	294,971	Mar. 11	778	215	26	970
Cutting, Henry, assignor of one-half to T. J. De Laney, Buffalo, N. Y. Sash-holder	291,697	Jan. 8	870	244	26	162
D'Andrée, Louis, Riga, Prussia, assignor to himself and L. Loewe & Co., Berlin, Germany. Rotary steam-engine	292,898	Feb. 5	148	39	26	470
Dager, William B., Canton, Ohio. Door-check	294,018	Feb. 26	1501	442	26	746
Daheney, Thomas L., Boston, Mass. Table for leather-scouring machines	291,882	Jan. 15	1009	306	26	212
Dailey, Joseph W., Detroit, Mich. Fastening device for draft-pins	291,304	Jan. 1	365	103	26	66
Dake, William F., and J. H. Seek, Grand Haven, Mich. Shingle-sawing machine	292,107	Jan. 15	1359	382	26	262
Dakin, Montgomery, Leslie, Mich. Neck-yoke	294,447	Mar. 4	138	36	26	853
Dale, John H., assignor of two-thirds to A. S. Jenks, Philadelphia, Pa. Steam-generating apparatus	294,119	Feb. 26	1741	478 / 479	26	769
Dall, John, New York, N. Y. Coal-bank	295,233	Mar. 18	1133	312	26	1044
Dalley, Alfred E., Quincy, Mich. Boiler	294,448	Mar. 4	139	36	26	853
Dames, Peter J., St. Louis, Mo. Machine for cutting vegetables	291,305	Jan. 1	366	103	26	66
Dandurand, Cyprien, and L. M. Lafrance, Virginia City, Nev.; said Lafrance assignor of one-third to said Dandurand. Quartz-crushing machine	292,543	Jan. 29	1947	543	26	378
Dane, Joseph C., assignor of two-thirds to L. S. Card and F. J. Smith, La Crosse, Wis. Automatic car-brake	292,736	Jan. 29	2191	611	26	490
Dane, Joseph C., assignor of two-thirds to L. S. Card and F. J. Smith, La Crosse, Wis. Car-brake	292,793	Feb. 5	19	5	26	446
Danforth, George E., Chelsea, Mass. Clasp or fastening for gloves, &c	294,019	Feb. 26	1502	442	26	746
Daniell, James H., Prescott, Ark. Churn	291,306	Jan. 1	367	103	26	66
Daniell, William P., Girardville, Pa. Device for lubricating wheels and pulleys	291,307	Jan. 1	368	103	26	66
Daniels, Fred H., Worcester, Mass. Apparatus for making wire rods	292,794	Feb. 5	21	6	26	446
Daniels, Fred H., Worcester, Mass. Furnace for heating billets	294,370	Mar. 4	37	11	26	836
Daniels, Wolcott O., Westfield, Mass. Whip mount or button	293,954	Feb. 19	1516	418	26	724
Dankhoff, Louis, Passaic, N. J. Faucet attachment	291,161	Jan. 1	185	53	26	35
Danner, John, Canton, Ohio. Revolving book case and stand	293,151	Feb. 5	477	128	26	525
Dardenne, Auguste, Mariemburg, Belgium. Self-winding clock	292,108	Jan. 15	1361	382	26	262
Dare, Benjamin A. (See Horne, George W., assignor.)						
Darling, Fenner, Franklin, Mass. Pitman-box	292,994	Feb. 5	269	73	26	491
Darling, Orlando G., and H. A. Schuls, Brooklyn, N. Y. Truss	293,230	Feb. 12	595	156	26	551
Darling, Orlando G., and H. A. Schuls, Brooklyn, N. Y. Truss	293,231	Feb. 12	595	157	26	551
Darling, Samuel, Providence, R. I. Comparator	292,415	Jan. 22	1765	491 / 492	26	340
Darlington, Hillborn, Concord, Pa. Device for connecting and stretching fence-wire	295,114	Mar. 11	970	264	26	1002
Dathis, Léon, Paris, France. Portable oven	292,544	Jan. 29	1948	543 / 544	26	378
Daubmann, Jacob C. (See Gaunt, Poiesz, Calhoun, and Daubmann.)						
Daugherty, Creet H., Fremont, Ind. Cabinet for watch-crystals	291,308	Jan. 1	369	104	26	66
Daul, Anthony, assignor of one-half to C. Winckens, Jamaica, N. Y. Folding basket	295,363	Mar. 18	1295	359	26	1075
Davey, William H. (See Podger and Davey.)						
Davey, William H., and H. Fabian, London, England. Ironing-machine	291,035	Jan. 1	94	7	26	7
David, Jacob, Brooklyn, N. Y. Vessel having divided hull	295,153	Mar. 18	1024	283	26	1025
Davids, John B., New Rochelle, N. Y. Inkstand or receiver	295,739	Mar. 25	1779	494	26	1169
Davidson, George L. O., Manchester, county of Lancaster, England. Velocipede	295,364	Mar. 18	1296	359	26	1076
Davidson, L. E. (See Brekke, Lewis O., assignor.)						
Davidson, Marshall T. (See Hamilton, Robert W., assignor.)						
Davies, Henry J., Brooklyn, assignor to Ansonia Rubber Company, New York, N. Y. Clock-dial	291,989	Jan. 15	1228	342	26	236
Davies, John W. (See Davies, Jonathan M. and J. W.)						
Davies, Jonathan M. and J. W., Bryan, Ohio. Coal-drilling machine	291,578	Jan. 8	710	199 / 200	26	133
Davies, Thomas, Poughkeepsie, N. Y. Game apparatus	292,899	Feb. 5	148	40	26	470
Davis, Augustus G., Baltimore, Md. Telephone-box	295,365	Mar. 18	1298	359	26	1076

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Davis, Charles W., assignor to C. W. Williams Manufacturing Company, Montreal, Quebec, Canada, and Rouse's Point, N. Y. Sewing-machine	291,309	Jan. 1	370	104	26	67
Davis, George W., Freeport, Me. Watchman's electric time-recording system	294,371	Mar. 4	38	11	26	836
Davis, Henry M. (See Tower, Oscar, assignor.)						
Davis, Isaac B., and W. L. Shepard, Hartford, Conn. Cut-off valve	294,857	Mar. 11	633	176	26	944
Davis, John, Allegheny, Pa. Astronomical apparatus	291,698	Jan. 8	871	244 / 245	26	162
Davis, John, Allegheny, Pa. Globe and globe-support	292,158	Jan. 22	1425	400	26	280
Davis, John F., Altoona, Pa. Heating and ventilating drum for stoves	294,771	Mar. 11	521	145	26	925
Davis, John T., New York, N. Y. Rotary engine	295,859	Mar. 25	1936	534	26	1198
Davis, Kansas D., Cole City, Ga. Balloon-propeller	291,990	Jan. 15	1229	342 / 343	26	236
Davis, Lelan A., Newark, Md. Door-check	294,972	Mar. 11	779	216	26	971
Davis, Nathan R., Frectown, Mass. Breech-loading fire-arm	293,719	Feb. 19	1203	333	26	669
Davis, Nathan R., Frectown, Mass. Barrel-lock for breakdown guns	294,772	Mar. 11	521	145	26	925
Davis, Riley L., Mooresville, N. C. Elevator	292,995	Feb. 5	270	74	26	491
Davis, William H. (See Burdick and Davis.)						
Davis, William H., Syracuse, N. Y. Refrigerator	291,036	Jan. 1	25	7	26	7
Davis, William H., Glens Falls, N. Y. Bicycle	292,545	Jan. 29	1950	544	26	379
Dawson, George W., *et al.* (See Dixon, Joseph L., assignor.)						
Dawson, Joseph C. (See Bagley and Dawson.)						
Dawson, Joseph W., Auburn, Ala. Seed-planter	291,579	Jan. 8	712	200	26	134
Dawson, William A., Stony Point, Cal. Overalls	295,619	Mar. 25	1628	450	26	1142
Dawson, William A., assignor of one-fourth to E. K. Evans, Stony Point, Cal. Running-gear for vehicles	292,900	Feb. 5	149	40, 41	26	470
Dawson, William N., Adel, Iowa. Railway-signaling apparatus	294,206	Feb. 26	1857	506 / 507	26	787
Dawson, William S., Cisco, Ill. Device for holding bolts	291,037	Jan. 1	26	8	26	7
Day, George W., Haverhill, Mass. Last	291,991	Jan. 15	1230	343	26	237
Day, George W., Haverhill, Mass. Manufacture of boots or shoes	291,992	Jan. 15	1231	343	26	237
Day, John, Brooklyn, N. Y. Window-shade pull	294,449	Mar. 4	140	37	26	853
De Berry, Jesse D., Smithville, Mo. Folding egg-case	291,699	Jan. 8	874	245	26	162
De Castro, Jacob W., New York, N. Y. Electric safety device for elevators	293,851	Feb. 19	1383	382 / 383	26	699
De Dion, Albert, G. T. Bouton, and C. Trépardoux, Paris, France. Steam-boiler	291,580	Jan. 8	713	200	26	134
De Festetics, Gyula, Perth Amboy, N. J. Artistic tile	293,636	Feb. 19	1090	302	26	648
De Gaetano, Stephen. (See Collender and De Gaetano.)						
De Guinon, Richard V. F., Chicago, assignor of one-half to J. W. Parmelee, Englewood, Ill. Placer-mining machine	293,852	Feb. 19	1384	383	26	699
De Laney, Thomas J. (See Cutting, Henry, assignor.)						
De Laval, Gustaf, Stockholm, Sweden. Centrifugal creamer	293,314	Feb. 12	707	189	26	570
De Maine, Oscar, Alexandria, Va. Door-fastener	291,162	Jan. 1	186	54	26	35
De Nise, Benjamin, Camden, N. J. Compound for waterproofing and preserving buildings	295,525	Mar. 25	1502	.....	26	1119
De Smedt, Edward J., Washington, D. C. Apparatus for refining asphaltum for paving, &c	292,417	Jan. 22	1771	493	26	341
De Vigne, Georges, Lille, France. Manufacture of ferro-cyanides	291,163	Jan. 1	187	.....	26	35
De Vos, Cornelius, Battle Creek, Mich. Combined paper-holder, calendar, and blotter	291,499	Jan. 8	612	172	26	117
De Vry, J. Vital. (See McCall and De Vry.)						
Deal, Josiah J., assignor of two-thirds to W. M. Johnston, Wilmot, Ohio. Spittoon	292,286	Jan. 22	1601	447	26	309
Dean, Albert H., and C. A. Hotchkiss, assignors to Ives, Blakeslee & Co., Bridgeport, Conn. Toy pistol	294,450	Mar. 4	140	37	26	853
Dean, George A., Dorchester, Mass. Horseshoe	295,620	Mar. 25	1629	450	26	1142
Deane, Erasmus M., St. Paul, Minn. Grain-binder	291,497	Jan. 8	608	171 / 172	26	116
Dearmin, Frank, De Witt, Mo. Well-boring and drilling machine	295,621	Mar. 25	1630	451	26	1143
Decker, Alexander C. (See Ayres and Decker.)						
Decker, William, and J. A. Marshall, Darlington, Ind. Straw-stacker	292,698	Jan. 29	2054	571	26	396
Decombe, Joseph, San Francisco, Cal. Hinge	292,416	Jan. 22	1770	493	26	340
Deeds, John B., and J. H. Blake, Terre Haute, Ind.; said Deeds assignor to said Blake. Alarm-signal for railway-crossings	294,207	Feb. 26	1858	507	26	788
Delamater, Cornelius H., *et al.* (See Reynolds and Allen, assignors.)						
Delamater, William, *et al.* (See Reynolds and Allen, assignors.)						
Delker, George. (See Blackwell, Richard C., assignor.)						
Dellenbaugh, Frederick S., New York, N. Y. Combined reservoir and palette	294,591	Mar. 4	311	86	26	881
Demarest, John, assignor to J. L. Mott Iron Works, New York, N. Y. Water-closet valve	292,159	Jan. 22	1428	400	26	281
Demarest, John, assignor to J. L. Mott Iron Works, New York, N. Y. Cistern for water-closets	292,160	Jan. 22	1429	401	26	281
Demarest, John, assignor to J. L. Mott Iron Works, New York, N. Y. Cistern for water-closets	292,901	Feb. 5	150	41	26	471
Demers, J. Arthur, Great Falls, N. H. Burglar-alarm	295,366	Mar. 18	1299	360	26	1076
Demorest, W. Jennings. (See Rose, John H., assignor.)						
Dempsey, James, Lewiston, Me. Draft-regulator	292,287	Jan. 22	1601	447 / 448	26	309
Demuth, John A., Toledo, Ohio. Duplex-check scale-beam	293,637	Feb. 19	1091	302	26	648
Deniston, Ward W., Washington, D. C. Collar or tie adjuster	295,526	Mar. 25	1502	414	26	1119
Dennen, Charles O., W. C. Gray, and H. C. Nellis, Piqua, Ohio. Rake shoe or runner	293,210	Feb. 5	560	149	26	540
Dennett Harvesting Machine Company. (See Schulte and Martincourt, assignors.)						
Dennis, Edward P., assignor of one-half to J. S. Ludlam, Lowell, Mass. Mechanism for stripping the flats of carding-engines	291,471	Jan. 1	568	160	26	101
Dennis, James W., assignor of one-half to W. Hamilton, Cincinnati, Ohio. Retainer for gun-wads	295,234	Mar. 18	1133	312	26	1044
Dennis, James W., assignor of one-half to W. Hamilton, Cincinnati, Ohio. Gun-wad	295,235	Mar. 18	1135	313	26	1044
Dennis, John, and G. B. Coram, assignors to J. A. Coram and N. Crosby, Lowell, Mass. Press for pressing and stamping	294,311	Feb. 26	1984	542	26	811
Dennis, Thomas L., Jersey City, N. J. Electric lamp	295,367	Mar. 18	1300	360	26	1076
Dennis, Thomas L., New York, N. Y. Dynamo-electric machine	295,368	Mar. 18	1301	360 / 361	26	1077
Deplanty, Fabiens, Hastings, Mich. Fruit-canning device	291,581	Jan. 8	715	200	26	134
Depoully, Paul. (See Garnier and Depoully.)						
Deppen, Isaac, Hyde Park, Pa. Reclining-chair	294,973	Mar. 11	781	216	26	971
Desmoyers, Jerome B., and C. Sinning, St. Louis, Mo. Brake mechanism for sewing-machines	291,700	Jan. 8	875	245	26	163
Desmoyers, Jerome B., and C. Sinning, St. Louis, Mo. Button-hole sewing-machine	291,701	Jan. 8	876	246	26	163
Detamble, Henry, Aurora, Ill. Bob-sleigh	293,152	Feb. 5	478	128	26	525

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Detrick, Calvin, *et al.* (See Howson, Henry, assignor.)						
Detrick, Jacob S., and W. T. Smith, Baltimore, Md. Combined saw filing and setting machine	295,115	Mar. 11	971	265 266	26	1002
Detroit Casket Company. (See Froschl, Alfred, assignor.)						
Deupree, John E., Edinburg, Ind. Animal-poke	291,702	Jan. 8	877	246	26	163
Devine, Edward, Detroit, Mich. Pipe-bending machine	292,418	Jan. 22	1772	493 494	26	341
Devlin, Charles, Pembroke, Ontario, Canada. Car-coupling	291,498	Jan. 8	611	172	26	116
Dewey, Alvah. (See Clark and Dewey.)						
Dibble, Chauncey G., Farmington, Iowa, assignor of one-half to F. E. Bangs, New Haven, Conn. Bridge	293,427	Feb. 12	853	231	26	598
Dick, Dundas, New York, N. Y. Paper wrapper	294,859	Mar. 11	634	176	26	945
Dick, Joseph, Jr., Canton, Ohio. Horse-power	294,372	Mar. 4	42	11	26	837
Dickey, William H., Jackson, Mich. Drive-chain	294,373	Mar. 4	44	12	26	837
Dickie, George W., San Francisco, Cal. Valve-gear for hydraulic pumps	295,622	Mar. 25	1631	451 452	26	1143
Dickie, George W., assignor to Risdon Iron and Locomotive Works, San Francisco, Cal. Apparatus for draining mines	294,859	Mar. 11	635	176 177 178	26	945
Dickinson, Albert. (See Conrad, Adam, assignor.)						
Dickinson, Frederick. (See Getty and Dickinson.)						
Dickinson, Newton A., Chester, Conn. Trolling-hook	295,369	Mar. 18	1303	361	26	1077
Dickson, William F., Mosaville, Ill. Cultivator-shovel	292,795	Feb. 5	25	6	26	447
Dickman, August, and M. Heintz, Detroit, Mich. Veneer	291,164	Jan. 1	188	.....	26	35
Dickson, Lucias E., Brazil, Ind. Quilting-frame	293,638	Feb. 19	1093	303	26	648
Dickson, Silas, assignor of one-third to S. Myers, Marcy, Ohio. Saw-mill-feed mechanism	294,208	Feb. 26	1859	507	26	788
Dieckmann, George, New York, N. Y. Method of and apparatus for generating steam	292,546	Jan. 29	1951	545	26	379
Dieterla, Edward. (See Westphal and Dieterla.)						
Dieterich, Fred G., and E. C. Walford, Washington, D. C. Cigar-dealer's knife	292,473	Jan. 29	1843	514	26	302
Dietrich, Franz, Munich, Germany. Manufacture of cream of tartar	294,592	Mar. 4	312	.....	26	882
Dietz, Frederick, *et al.* (See Sanford, Addison V., assignor.)						
Dietz, Frederick, New York, N. Y. Lantern-globe holder	292,288	Jan. 22	1602	448	26	309
Dight, William M. (See Ferguson, Harvey W., assignor.)						
Dignam, John S., London, Ontario, Canada. Decorating glassware	293,639	Feb. 19	1094	303	26	649
Dignam, John S., London, Ontario, Canada. Jug	293,640	Feb. 19	1095	303	26	649
Dike, Albert E. (See Byron, Ulderic D., assignor.)						
Dilatush, Walter S., and J. R. Drake, Lebanon, Ohio. Three-wheeled vehicle	295,154	Mar. 18	1025	283	26	1026
Dillard, Gregory M., Macon, Miss. Vehicle-wheel	291,165	Jan. 1	189	54	26	35
Dillehay, John T., Beech Grove, Ky. Vehicle-brake	295,740	Mar. 25	1780	495	26	1169
Dillman, Andrew, *et al.* (See Case, George, assignor.)						
Dillon, Benjamin F., Savannah, Ga. Combined burglar-alarm and telephone system	291,310	Jan. 1	371	104	26	67
Dillon, Ira B., Visalia, Cal. Hen's nest	294,974	Mar. 11	781	216	26	971
Dimond, William, Huntington, Ind. Ice-tongs	294,975	Mar. 11	782	216	26	971
Dimpfl, Anton, Munich, Bavaria, Germany, assignor to M. Poletti, Hoboken, N. J. Manufacture of bricks, tiles, &c	291,582	Jan. 8	715	201 202	26	134
Dirhold, John W., St. Louis, Mo. Clamp for ruling-pens	295,370	Mar. 18	1304	361	26	1077
Diss, Louis P. (See Lee and Diss.)						
Disston, Hamilton, *et al.* (See Rose, Rufus E., assignor.)						
Divors, Joseph, Peru, Ill. Cultivator	292,996	Feb. 5	271	74	26	491
Dixon, Charles, Weedsport, N. Y. Pitman-box connection for mowers and reapers	292,289	Jan. 22	1603	448	26	309
Dixon, John W., Philadelphia, Pa. Apparatus for recovering soda used in manufacture of paper-pulp	291,993	Jan. 15	1232	343	26	237
Dixon, Joseph L., assignor of two-thirds to G. W. Dawson, Falmouth, and H. A. Hatcher, Guthrie, Ky. Twin-bed-spring connector	294,593	Mar. 4	313	87	26	882
Doane, Charles J., Old Gilroy, Cal. Farm-gate	291,994	Jan. 15	1234	344	26	237
Doane, William H., and G. W. Bugbee, Cincinnati, Ohio. Boring attachment for mortising-machines	295,236	Mar. 18	1136	313	26	1044
Dobbin, Robert O., Waterloo, Ontario, Canada. Barrel-finishing machine	292,737	Jan. 29	2192	611 612 613	26	421
Dobson, Henry C., New York, N. Y. Banjo	294,451	Mar. 4	141	37	26	853
Dockstader, James, Syracuse, N. Y. Billiard-table attachment	292,547	Jan. 29	1954	545	26	379
Dodd, Alexander, Baltimore, Md. Salesman's sample-trunk	294,594	Mar. 4	313	87	26	882
Dodge, Edward H., *et al.* (See Tyler and Smith, assignors.)						
Dodge, Frances A., Brady, Tex. Refrigerating apparatus	291,166	Jan. 1	190	54	26	35
Dodge, Henry B., East Somerville, Mass. Spring-hinge	292,210	Jan. 22	1503	422	26	292
Dodge, Richard S., *et al.* (See Harrison, Frank G., assignor.)						
Dodge, Theodore A., trustee. (See Heffernan, William J., assignor.)						
Dodge, Wallace H., Mishawaka, Ind. Band-saw machine	294,452	Mar. 4	142	37	26	854
Doersch, George M., Antigo, Wis. Bung-extractor	293,232	Feb. 12	596	157	26	551
Doherty, Fisher, and E. L. Sles, Crawfordsville, Ind. Two-wheeled vehicle	293,720	Feb. 19	1204	333	26	609
Doig, William S. (See Smith and Doig.)						
Dolbeer, John, San Francisco, Cal. Portable railway	293,853	Feb. 19	1387	383	26	699
Dolman, William H., New York, N. Y. Fire-proof timber	293,721	Feb. 19	1205	334	26	669
Dolton, George E., assignor to C. C. Nitzsche, St. Louis, Mo. Carriage-spring	292,419	Jan. 22	1774	494	26	341
Domestic Electric Manufacturing Company. (See Clarke and Leigh, assignors.)						
Domestic Electrical Manufacturing Company. (See Boyd, Dan, assignor.)						
Donaldson, William, Ambleside, county of Westmoreland, England. Hydraulic machinery	293,641	Feb. 19	1095	303 304	26	649
Donnelly, Charles J. and J. M., Philadelphia, Pa. Match-making machine	292,474	Jan. 29	1844	514	26	302
Donnelly, James B. (See Baltes, Peter J., assignor.)						
Donnelly, John M. (See Donnelly, Charles J. and J. M.)						
Doolittle, George. (See Ritchel and Doolittle.)						
Doolittle, George, assignor of one-half to H. D. Stanley, Bridgeport, Coun. Tip for electrical conductors	295,371	Mar. 18	1305	362	26	1077
Doolittle, Thomas B. (See Ritchel and Doolittle, assignors.)						
Doremus, Willard D., assignor to himself, T. F. Swayze, Washington, D. C., S. R. and J. T. Stratton, Strattonville, Pa. Apparatus for lighting and extinguishing lamps	291,995	Jan. 15	1235	344 345	26	238
Doren, Henry E., Grand Rapids, Mich. Fire-escape	292,548	Jan. 29	1956	545	26	379
Dorgan, Joseph H., Plattsburg, N. Y. Faucet	291,883	Jan. 15	1099	306 307	26	212
Dormitzer, Anna, New York, N. Y. Window-cleaning chair	293,428	Feb. 12	854	231	26	598
Dornfeld, John F., Watertown, Wis. Clay-tempering machine	292,997	Feb. 5	272	75	26	491
Dorr, Herbert C., San Francisco, Cal. Compound for preserving wood	293,955	Feb. 19	1517	.....	26	724

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Dorr, John P., Neenah, Wis. Ventilating-damper	294,773	Mar. 11	532	146	26	925
Dorsett, Daniel H., J. E. Morris, and B. Williams, Chicago, Ill. Apparatus for molding the sections of electrical conduits	291,996	Jan. 15	1237	345 346	26	238
Dorward, William B., Marion, Ohio. Construction of cisterns from concrete	292,420	Jan. 22	1775	495	26	342
Dotterweich, Andrew. (See Heintz and Dotterweich.)						
Doty, W. Mark, Biggs' Station, Cal. Combined can-holder and funnel	292,629	Jan. 29	2055	571	26	396
Doubler, John W. H., Rockford, assignor to A. H. Andrews & Co., Chicago, Ill. Map-holder	292,902	Feb. 5	151	41, 42	26	471
Dougherty, Tiberias, Philadelphia, Pa. Game board and counter	295,488	Mar. 18	1452	400	26	1105
Doughty, William H., New York, N. Y. Refrigerating apparatus for cars, &c	294,209	Feb. 26	1860	508	26	788
Dougine, James T., Chicago, Ill. Wagon-tongue support	295,237	Mar. 18	1137	313	26	1045
Douglas, Joseph W., assignor to himself and W. & B. Douglas, Middletown, Conn. Pump	294,210	Feb. 26	1861	508	26	788
Douglas, R. John, *et al.* (See Underwood, Henry M., assignor.)						
Douglas, W. & B. (See Douglas, Joseph W., assignor.)						
Douglass, William H., Philadelphia, Pa., assignor to North American Petroleum Gas Company, New York, N. Y. Apparatus for the manufacture of illuminating-gas	293,854	Feb. 19	1388	383	26	700
Dowling, Robert H., assignor of two-thirds to W. Baker and C. H. Follett, Newark, Ohio. Car-coupling	295,372	Mar. 18	1306	302	26	1077
Downer, James R., *et al.* (See Burns and Buckman, assignors.)						
Downie, Robert E., Clinton, assignor of one-half to G. A. Houston, Beloit, Wis. Fire-escape	295,527	Mar. 25	1503	415	26	1119
Downing, Arnold M., Oneida, N. Y. Fire-escape ladder	293,153	Feb. 5	479	128	26	526
Downing, Elizabeth M., Grant City, Pa. Dress-protector	293,722	Feb. 19	1206	334	26	669
Downing, James L., Richmond, Ill. Hand-truck	294,211	Feb. 26	1863	508 509	26	789
Doyle, John E., Richmond, Ind. Globe-valve grinder	293,723	Feb. 19	1207	334	26	669
Doyle, Joseph, Mount Liberty, Ind. Piano-forte	293,855	Feb. 19	1390	384 385	26	700
Doyle, William H., Bantam Falls, Conn. Vehicle-spring	294,374	Mar. 4	45	12	26	838
Drake, John R. (See Dilatush and Drake.)						
Draper, Oscar M. (See Herring, Henry M., assignor.)						
Draper & Sons, George. (See Sharples, William E., assignor.)						
Draper, Virgil, North Attleborough, Mass. Ornamental chain-link	294,595	Mar. 4	314	87	26	882
Drawbaugh, Daniel, Eberly's Mill, Pa. Telephone-transmitter	291,472	Jan. 1	570	160	26	102
Drawbaugh, Daniel, Eberly's Mill, Pa. Telephone	293,154	Feb. 5	479	128	26	526
Drawbaugh, Daniel, Eberly's Mill, Pa., assignor to People's Telephone Company, of New York. Telephone-transmitter	291,311	Jan. 1	373	105	26	67
Drawbaugh, Daniel, Eberly's Mill, Pa., assignor to People's Telephone Company, of New York. Telephone-transmitter	291,312	Jan. 1	374	105	26	67
Drawbaugh, Daniel, Eberly's Mill, Pa., assignor to People's Telephone Company, of New York. Telephone-transmitter	295,741	Mar. 25	1780	495	26	1169
Drawbaugh, Daniel, Eberly's Mill, Pa., assignor to People's Telephone Company, of New York. Telephone-transmitter	295,742	Mar. 25	1782	495	26	1170
Dresbach, Charles, *et al.* (See Brown and Miller, assignors.)						
Dresbach, Frank P., *et al.* (See Brown and Miller, assignors.)						
Dresbach, Wilson S., *et al.* (See Brown and Miller, assignors.)	293,155	Feb. 5	480	129	26	526
Driller, Bannad, St. Charles, Mo. Band-cutter and feeder for thrashing-machines	292,290	Jan. 22	1604	448	26	309
Dronsfield, Joseph S. Oldham, county of Lancaster, England. Grinding apparatus						
Drown, Ann M., *et al.* (See Drown, Otis E., assignor.)						
Drown, Otis E., assignor to A. M. Drown, Lincoln, W. F. and F. C. Sayles, Pawtucket, R. I. Tentering-machine	295,155	Mar. 18	1026	283 284	26	1026
Druecker, John, Chicago, Ill. Kiln and furnace	294,453	Mar. 4	143	38	26	854
Drummond, Alexander, Edinburgh, Scotland. Skylight	293,429	Feb. 12	856	232	26	598
Drummond, William W. (See Alkin and Drummond.)						
Dryer, Henry. (See Wagner and Dryer.)						
Dryfoos, Louis, New York, N. Y. Skirt	294,596	Mar. 4	315	88	26	882
Dryfoos, Nathan L., Fremont, Ohio. Necktie-fastener	294,597	Mar. 4	316	88	26	882
Du Bois, James J., Springtown, N. Y. Railway-tie	292,421	Jan. 22	1777	495	26	349
Dubois, Alexandre N., Philadelphia, Pa. Dyeing-machine	293,856	Feb. 19	1392	385	26	700
Dublin Agricultural Company. (See Tenant, Hanson P., assignor.)						
Dudley, Charles B., Altoona, Pa. Purifying water	291,167	Jan. 1	192	.....	26	36
Dudley, Charles B., Altoona, Pa. Purifying water for boiler use	291,168	Jan. 1	193	.....	26	36
Dudley, William, Newark, N. J. Ruffling and shirring attachment for sewing-machines	295,489	Mar. 18	1454	400	26	1105
Dueber, John C., Newport, Ky. Making watch-case centers	295,156	Mar. 18	1027	284	26	1026
Duff, James B. (See Duff, Samuel K. and J. B.)						
Duff Manufacturing Company. (See Duff, Samuel K. and J. B., assignors.)						
Duff, Samuel K., Allegheny, and J. B. Duff, assignors to Duff Manufacturing Company, (limited,) Pittsburg, Pa. Pipe-lifter for oil-wells	292,630	Jan. 29	2056	572	26	396
Duff, Thomas C., and R. I. Allan, San Francisco, Cal. Machine for hooping barrels	291,583	Jan. 8	717	202	26	134
Duffy, James F., South Chicago, Ill., and W. McIvor assignors of part to C. C. Wolf, J. B. Fraser, D. Jones, G. W. Holman, and said McIvor, Rochester, Ind. Car-coupling	295,860	Mar. 25	1938	535	26	1198
Dunbar & Son, R. (See Gardner, Frederick A., assignor.)						
Duncan, George, Dunedin, Otago, New Zealand. Brake for cable-railway cars	295,238	Mar. 18	1138	314	26	1045
Duncan, Walter, assignor of one-fourth to Union Brass Manufacturing Company, Chicago, Ill. Spring-hinge	291,169	Jan. 1	194	54	26	36
Dunham, Charles C. (See Stedman, Mortimer D., assignor.)						
Dunlap, John S., Peoria, Ill. Stool-seat	292,211	Jan. 22	1504	422	26	292
Dunn, Thomas C., *et al.* (See Tyler and Smith, assignors.)						
Durant, Edward G., and E. Shupe, Racine, Wis.; said Shupe assignor to T. Kane, Chicago, Ill. Opera-chair	293,724	Feb. 19	1207	334	26	670
Durant, Edward G., and E. Shupe, Racine, Wis.; said Shupe assignor to T. Kane, Chicago, Ill. Opera-chair	294,454	Mar. 4	146	39	26	854
Durant, George F., *et al.* (See Roper, Alfred W., assignor.)						
Durel, Justin, New Orleans, La. Filter	292,631	Jan. 29	2056	572	26	396
Durkee, Edward W., Mason, Ill. Wire-coiling machine	291,500	Jan. 8	613	173	26	117
Durkee, George B., Chicago, assignor to Joliet Wire Check Rower Company, Joliet, Ill. Machine for forming check-rower wires	291,584	Jan. 8	718	202 203 204	26	135
Durnin, John A. (See Germeyer and Durnin.)						
Duryea, Charles E., assignor of one-half to R. Garvey, St. Louis, Mo. Bicycle-saddle	293,725	Feb. 19	1209	335	26	670
Dusenbury, Philip S., assignor of one-half to W. Z. Baum and A. H. Randall, Sedalia, Mo. Railway frog and switch guard	294,598	Mar. 4	316	88	26	882
Dutrow, David E., Washington, D. C., assignor of one-half to C. W. Bready, Rockville, Md. Tricycle	295,861	Mar. 25	1939	535	26	1198

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Duvall, Henry R., *et al.* (See Wagner, John L., assignor.)						
Duvall, William C. (See Peterson, Samuel S., assignor.)						
Dwenger, George W., Brooklyn, N. Y. Mail-sack tag	292,632	Jan. 29	2057	572	26	396
Dwight, William M. (See Roberts, James A., assignor.)						
Dwinell, Byron L. (See Williams, Edwin O., assignor.)						
Dworsky, Abraham J., M. B. Kramer, and S. Phillips, New York, N. Y. Picture-exhibitor	294,976	Mar. 11	783	217	26	971
Dwyer, Christopher S., Spencer, Mass. Heel-trimmer	292,633	Jan. 29	2058	572	26	396
Dyckman, Frank H. (See Wetstein and Dyckman.)						
Dye, Elam, San Francisco, Cal. Fire-escape	294,860	Mar. 11	641	178	26	945
Dyer, Josiah W., Philadelphia, Pa. Protector for electric circuits	292,786	Feb. 5	26	7	26	447
Dyer, Lucius. (See Young and Dyer.)						
Dyer, William H., Midway, Va. Churn	295,862	Mar. 25	1941	536	26	1198
Dynamite Projectile Company. (See Snyder, Frederick H., assignor.)						
Earl, John H., assignor to National Roll Wrapping Paper Company, Chicago, Ill. Device for holding and cutting paper from rolls	294,312	Feb. 26	1986	543	26	812
Earle, Daniel D. (See Williams, Eben B., assignor.)						
Earle, Hardman A., London, England, and E. Goltstein, Hanover, Prussia, Germany. Electric-arc lamp	294,455	Mar. 4	147	39	26	851
Earle, John E. (See Shute, Edwin L., assignor.)						
Easley, Thomas L., Laddonia, Mo. Automatic grain-weigher	295,373	Mar. 18	1307	362	26	1078
Easthope, Henry, and G. C. Schneider, St. Louis, Mo. Billiard-cue tip	291,703	Jan. 8	877	246	26	163
Eastman, Benjamin N., and C. F. Finkbeiner, Geddes, N. Y. Gate	294,861	Mar. 11	643	179	26	946
Eastman, George C., assignor to I. C. Merrill, Lewiston, Me. Tug	293,642	Feb. 19	1097	304	26	649
Eastwick, Edward P., New York, N. Y. Apparatus for revivifying bone-black	293,430	Feb. 12	857	232	26	598
Eaton, Asahel K., Brooklyn, N. Y. Galvanometer	292,161	Jan. 22	1430	401	26	281
Eaton, Benjamin F. (See Newbury, Millard F., assignor.)						
Eaton, Benjamin F., Coxsackie, N. Y. Spring harrow-tooth	291,038	Jan. 1	27	8	26	7
Easton, John, Stockport, county of Chester, England. Apparatus for stretching hat-bodies	292,634	Jan. 29	2059	573	26	397
Eaton, Milton H., Wilton Junction, Iowa. Making mole-ditches	291,313	Jan. 1	375	105	26	68
Ebbert, John, Rockaway Beach, N. Y., assignor to P. A. Hall, Chicago, Ill. Spike-extractor	293,431	Feb. 12	858	232	26	599
Eberhardt, William, Allegheny, Pa. Cooler or refrigerator for ice-machines	294,977	Mar. 11	784	217	26	971
Eberle, August, Hamilton, Ohio. Caster	292,797	Feb. 5	28	7	26	447
Eberlein, Frederick, Chicago, Ill. Sash-fastener	294,774	Mar. 11	523	146	26	925
Eberly, Cyrus, Columbus, Ohio. Curtain-pole	293,643	Feb. 19	1098	305	26	649
Eckert, John, Madison, Ind. Stove	292,475	Jan. 29	1946	514	26	362
Eckert, William H., New York, N. Y. Telephonic transmission	292,212	Jan. 22	1505	423	26	292
Eckles, Samuel H. (See Mitchell, Pentecost J., assignor.)						
Eddy, Walton A., Randolph, N. Y. Carriage-seat	292,291	Jan. 29	1606	449	26	310
Edelheim, Carl. (See Von Dartein, Wilhelm, assignor.)						
Edgell, Aaron, Newport, Ohio. Nut-lock	291,039	Jan. 1	28	8	26	8
Edison Electric Light Company. (See Edison, Thomas A., assignor.)						
Edison Lamp Company. (See Holzer, William, assignor.)						
Edison, Thomas A., Menlo Park, N. J. Electrical generator or motor	293,432	Feb. 12	859	233	26	599
Edison, Thomas A., Menlo Park, N. J., assignor, by mesne assignments, to Electric Railway Company of the United States, of New York. Insulation of railway-tracks used for electric circuits	293,433	Feb. 12	861	233	26	599
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Incandescent electric lamp	293,434	Feb. 12	862	233	26	599
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Electrical meter	293,435	Feb. 12	862	234	26	599
Edlund, Claudius, Brooklyn, N. Y. Combined implement for tailors' use	293,857	Feb. 19	1393	385	26	700
Edmonds, Edmund C. (See Garton, David B., assignor.)						
Edmunds, Henry, Jr., New York, N. Y., assignor to T. J. Montgomery, Boston, Mass. Case for electric conductors	291,170	Jan. 1	195	55	26	36
Edmunds, Henry, Jr., New York, N. Y., assignor to T. J. Montgomery, Boston, Mass. Bracket for electric lamps	291,171	Jan. 1	196	55	26	36
Edson, Jacob, Boston, assignor of one-half to E. L. Caldwell, Hyde Park, Mass. Rowlock	293,858	Feb. 19	1394	386	26	701
Edson, Samuel B., Monterey, Ind. Harness-hook	295,374	Mar. 18	1308	363	26	1078
Edwards, Charles D., Albert Lea, Minn. Ditching-machine	291,040	Jan. 1	28	8, 9	26	8
Edwards, John A., Columbiana, Ala. Charcoal-oven	292,635	Jan. 29	2060	573	26	397
Edwards, Madison. (See Massey, John W., assignor.)						
Egan, James H., Jr., St. Johnsville, N. Y. Shoe-upper	295,239	Mar. 18	1139	314	26	1045
Egelhoff Manufacturing Company. (See Bolte, Frank H., assignor.)						
Eggleston, Charles H., Marshall, assignor of one-half to E. O. Ely, Grand Rapids, Mich. Button-fastener	293,233	Feb. 12	597	157	26	551
Eggleston, Charles H., Marshall, assignor of one-half to E. O. Ely, Grand Rapids, Mich. Button-setting instrument	293,234	Feb. 12	598	157	26	551
Ehrhardt, John, assignor of two-thirds to H., Sr., and C. Hopmann, St. Louis, Mo. Skylight	292,738	Jan. 29	2200	613	26	422
Ella, Bette E. J., Washington, D. C. Quadruplex telegraph	293,956	Feb. 19	1518	418, 419	26	724
Elseman, Solomon M., New York, N. Y. Treating volatile and inflammable fluids and oils	294,978	Mar. 11	786	.....	26	972
Elsendrath, Benjamin D. (See Elsendrath, William N., assignor.)						
Elsendrath, William N., assignor to himself and B. D. Elsendrath, Chicago, Ill. Lumberman's sock	294,020	Feb. 26	1592	442	26	746
Elam, William E., Americus, Ga. Temporary binder	294,775	Mar. 11	524	146	26	925
Elcock, Joseph, Mechanicsburg, Pa. Plow	292,636	Jan. 29	2061	573, 574	26	397
Elder, John V. (See Lindley and Elder.)						
Electric Railway Company of the United States. (See Edison, Thomas A., assignor.)						
Ellicott, H. William, Baltimore, Md. Superheater	292,292	Jan. 22	1607	449	26	310
Elliot, William H., New York, N. Y. Magazine fire-arm	293,315	Feb. 12	708	189	26	570
Elliott, James, Montreal, Quebec, Canada. Apparatus for consuming smoke in furnaces	293,436	Feb. 12	864	234	26	600
Ellis, Birch. (See Sinclair, James P., assignor.)						
Ellis, George A., Gardner, Mass., assignor to S., H., and G. Heywood, A. M. Greenwood, and A. Morrill, New York, N. Y. Canopy-standard for children's carriages	295,116	Mar. 11	973	266	26	1002
Ellis, Quincy A., Gatesville, Tex. Shot-case	293,437	Feb. 12	865	234	26	600
Ellithorp, Solomon B., Rochester, N. Y. Bran and feed packer	295,863	Mar. 25	1942	536	26	1199
Ellrich, Robert C., Plantsville, Conn. Pawl and ratchet	293,957	Feb. 19	1519	419	26	724
Ellwood, Hiram. (See Stover, Daniel C., assignor.)						
Ellwood, Isaac L., *et al.* (See Lord, Tyler C., assignor.)						
Ellwood, Isaac L., *et al.* (See Upham, Andrew J., assignor.)						
Ellyson, John T., Pleasant Plain, Iowa. Plow	292,998	Feb. 5	274	75	26	492

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Elms, F. L. (See Colby, Harlan P., assignor.)						
Elrod, Eugene L. (See Moore, Frank A., assignor.)						
Elson, William K., Martin's Ferry, Ohio. Caster	293,156	Feb. 5	481	129	26	526
Elterich, Charles, New York, N. Y. Die and die-stock	291,884	Jan. 15	1100	307	26	213
Ely, Edward O. (See Eggleston, Charles H., assignor.)						
Ely, William I., Detroit, Mich. Match-splint machine	291,314	Jan. 1	377	105	26	68
Emanuel, Henry, assignor to D. Heineman and S. Lorsch, New York, N. Y. Overcoat	294,599	Mar. 4	317	88	26	883
Emerson, Charles W., Charlestown, Mass. Hanging doors	295,743	Mar. 25	1784	495	26	1170
Emerson & Fisher Company. (See Breed, Judson W., assignor.)						
Emerson & Fisher Company. (See Ransom, Hiram W., assignor.)						
Emerson, James F., *et al.* (See Simonds, George W., assignor.)						
Emerson, Ralph, *et al.* (See Whitney, Charles, assignor.)						
Emery, George T. (See Barlow and Emery.)						
Emery, John B., Lynn, Mass. Cutter-head	292,422	Jan. 22	1777	495	26	342
Emery, John B., Lynn, Mass. Rotary cutter	295,490	Mar. 18	1455	401	26	1106
Emery, William G. (See Small, George D. B., assignor.)						
Emmert, Ezra, Dixon, Ill. Lifting-jack	292,739	Jan. 29	2201	613	26	422
Emmett, Walter. (See Crossley, Emmott and Harrison.)						
Emmett, Walter. (See Crossley, Emmott and Harrison.)	293,644	Feb. 19	1099	305	26	650
Emry, David L., Carthage, Mo. Device for securing the splice-joints of railway-rails	291,585	Jan. 8	726	204	26	136
Endicott, Charles, Kingsburg, Cal. Dirt-scraper	291,473	Jan. 1	571	161	26	102
Engels, Hugo F., Dorchester, assignor of one-half to G. Fera, Boston, Mass. Pantaloons	292,740	Jan. 29	2201	613, 614	26	422
Englehart, Phillip, Modesto, Cal. Spring-vehicle	293,438	Feb. 12	866	234	26	600
English, James W. (See Lockett, English, and Murphey.)						
English, William J., Cohoes, N. Y. Water-trap						
Ennis, John B., *et al.* (See Collins, Cornelious, assignor.)						
Ennis, William W., *et al.* (See Collins, Cornelious, assignor.)						
Eppler, Andrew, Jr., Boston, Mass. Rivet	294,979	Mar. 11	788	218	26	972
Equitable Water Meter Company. (See Park, William R., assignor.)						
Erdwins, John. (See Erdwins, William and J.)						
Erdwins, William and J., Compromise, assignors to C. B. Smith, Champaign City, Ill. Check-rower	292,100	Jan. 15	1363	382	26	262
Ernsting, Diedrich W., Bremen, Germany. Device for clamping cords, &c.	291,172	Jan. 1	197	55	26	36
Erric, Henry, Philadelphia, Pa. Mechanical movement	291,885	Jan. 15	1102	307	26	213
Eschenhorn, E. Gustav. (See Krossing, August, assignor.)						
Eshelman, Benjamin. (See Wallack and Rohrer, assignors.)						
Esser, Herman, *et al.* (See Schramm, Henry G., assignor.)						
Essex, David, Corona, N. J., assignor, by mesne assignments, to T. C. Bates, North Brookfield, Mass. Corset-busk fastening	293,567	Feb. 12	1009	278	26	626
Essig, Ozia A., Canton, Ohio. Plow	292,549	Jan. 29	1957	545	26	380
Esty, William, Laconia, N. H. Stocking and knitting the same	291,173	Jan. 1	198	56	26	37
Eton, George H. (See Lytle, Albert E., assignor.)						
Etzensperger, John, North Attleborough, Mass. Ornamental chain	295,117	Mar. 11	974	266	26	1003
Eudaly, William A., Cincinnati, Ohio. Brick and tile kiln	295,744	Mar. 25	1785	496	26	1170
Eudaly, William A., Cincinnati, Ohio. Brick and tile kiln	295,864	Mar. 25	1943	537	26	1199
Eureka Brick Machine Manufacturing Company. (See Ross, Robert N., assignor.)						
Evans, Austin C., Springfield, Ohio. Harrow	291,174	Jan. 1	199	56	26	37
Evans, Austin C., Springfield, Ohio. Combined drill and fertilizer-distributer for one-horse planters	294,313	Feb. 26	1987	543	26	812
Evans, Austin C., Springfield, Ohio. Fertilizer-distributer for seed-planters	295,528	Mar. 25	1505	415	26	1120
Evans, Austin C., Springfield, Ohio. Fertilizing attachment for seed-planters	295,529	Mar. 25	1507	415, 416	26	1120
Evans, E. K. (See Dawson, William A., assignor.)						
Evans Fiber Manufacturing Company. (See Evans, G. Frank, assignor.)						
Evans, G. Frank, Mechanic Falls, assignor to Evans Fiber Manufacturing Company, Saco, Me. Machine for reducing wood to pulp and fiber	293,235	Feb. 12	599	158	26	552
Evans, George R., assignor to J. P. Couch and W. T. Oncale, San Francisco, Cal. Concentrator and amalgamator	291,997	Jan. 15	1240	346	26	239
Evans, H. Clay, and G. Jones, Chattanooga, Tenn. Mail-bag	291,501	Jan. 8	614	173	26	117
Evans, John W., Cleveland, Ohio. Extracting naphtha from oil	291,175	Jan. 1	200	56	26	37
Evans, John W., and A. H. Vernay, Baltimore, Md. Thill-holder	291,315	Jan. 1	378	106	26	68
Evans, Theodore C., Ludington, Mich. Horseshoe	293,439	Feb. 12	867	235	26	600
Evans, William F., and J. B. Fielding, Prescott, Ark. Churn-motor	294,120	Feb. 26	1744	479, 480	26	770
Everitt, James. (See Vero and Everitt.)						
Evesson, Henry, Hempstead, N. Y. Folding coop or kennel	294,600	Mar. 4	318	89	26	883
Ewart Manufacturing Company. (See Ewart, William D., assignor.) (Reissue.)						
Ewart, William D., assignor to Ewart Manufacturing Company, Chicago, Ill. Drive-chain. (Reissue)	10,444	Feb. 5	561	149	26	540
Ewing, Thomas, assignor to C. F. Clarke and G. M. Spencer, Philadelphia, Pa. Composition for cleaning and renovating fabrics	294,727	Mar. 4	467	.....	26	909
Eybel, Bernhard, New York, N. Y. Pencil-holder	291,998	Jan. 15	1241	347	26	239
Eynon, William R., *et al.* (See Rhodes, Ezra, assignor.)						
Faas, Gustav A., assignor of one-fourth to A. P. Usher, Lawrence, Kans. Machine for making and sticking match-splints	292,423	Jan. 22	1779	495, 496, 497	26	343
Faber, Charles, Brooklyn, N. Y. Magnetic-iron-ore separator	294,021	Feb. 26	1593	442, 443	26	746
Fabian, Henry. (See Davey and Fabian.)						
Fahrney, Peter S. (See Rife, Henry A., assignor.)						
Fairbairn, William U., Hyde Park, Mass. Steam-boiler and furnace	291,041	Jan. 1	31	9	26	8
Fairbairn, William U., Hyde Park, Mass. Lubricator	291,042	Jan. 1	32	9	26	8
Fairbanks, Harlan, assignor to New England Patent Fire Escape Company, Boston, Mass. Protector and supporter for fire-escapes	291,586	Jan. 8	727	204	26	136
Fairbanks, Lorenzo S., Boston, Mass. Signaling apparatus for telephonic and telegraphic circuits	292,999	Feb. 5	275	75	26	492
Fairchild, Leroy W. (See Collard, Richard M., assignor.)						
Fairchild, Le Roy W., New York, N. Y. Pen and pencil case	291,886	Jan. 15	1103	307	26	213
Fairfield, Hadley P. (See McKay and Fairfield.)						
Fairfield, Hadley P., West Medford, Mass. Ore-separator	292,637	Jan. 29	2063	574	26	397
Fairfield, Hadley P., West Medford, Mass. Ore-separator	292,638	Jan. 29	2064	574	26	397
Fairfield, Hadley P., West Medford, Mass. Ore-separator	292,550	Jan. 29	1958	546	26	380
Fairly, John S., Charleston, S. C. Separator and conveyer	291,999	Jan. 15	1242	347	26	239
Fairman, J. Yale, Middletown, Conn. Ice-crushing machine						
Fairman, Simon, assignor of one-half to J. G. Mitchell and W. S. Taylor, Baltimore, Md. Car-brake	291,841	Jan. 8	1034	288, 289	26	191

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Faison, F. Leonidas, and G. M. Newell, Wake Forest College, N. C. Cotton-press	292,000	Jan. 15	1244	347, 348	26	239
Falkenau, Morris, assignor to Falkenau, Oppenheimer & Co., New York, N. Y. Ear-ring	293,958	Feb. 19	1520	419	26	724
Falkenau, Oppenheimer & Co. (See Falkenau, Morris, assignor.)						
Fallon, Louis F., St. Louis, Mo. Toy	292,798	Feb. 5	28	7	26	447
Fancher, Roman L., Baldwinsville, N. Y. Wooden plug	293,726	Feb. 19	1211	335	26	670
Fargo, Samuel M. (See Lapham, Paul J., assignor.)						
Farley, Henry W., Oswego, Ill. Turning-lathe	294,601	Mar. 4	310	89	26	883
Farley, Patrick W., and A. L. Trowbridge, Cazenovia, N. Y. Pool-rack	292,903	Feb. 5	153	42	26	471
Farlin, Dudley. (See Gorman, Thomas C., assignor.)						
Farmer, Charles H., Boston, Mass. Bias tape and making the same	293,440	Feb. 12	868	235	26	600
Farmer, Henry, Richmond, Ind. Check-rower attachment for corn-planters	295,375	Mar. 18	1309	363	26	1078
Farmers Friend Manufacturing Company. (See Runstetler, Andrew, assignor.)						
Farnham, Isaiah H., Portland, Me., assignor to American Bell Telephone Company, of Massachusetts. Electric annunciator	294,212	Feb. 26	1864	509	26	789
Farquhar, Samuel, Newton, Mass. Sash-fastener	295,530	Mar. 25	1509	416	26	1121
Farrand, Samuel A., *et al.* (See Baldwin, James S., assignor.)						
Farrell, John, *et al.* (See Nugent, Richard C., assignor.)						
Farrell, Ralph D. (See Sargent and Farrell.)						
Fate, John D., and E. M. Freese, Plymouth, Ohio. Combined clay-crusher and tile-machine	293,000	Feb. 5	276	75, 76, 77	26	492
Fatio, Louis U. (See Roux and Fatio.)						
Faught, Nelson, Pittsborough, assignor of one-half to R. R. Miles, Indianapolis, Ind. Wagon-bolster	292,424	Jan. 22	1785	497	26	344
Faulkner, Eliza T. (See Faulkner, James J. and E. T.)						
Faulkner, James J. and E. T., McMinnville, Tenn. Machine for treating middlings	293,236	Feb. 12	602	158, 159	26	552
Fawcett, John J., Springfield, Ohio. Oil-cup	294,022	Feb. 26	1595	443	26	746
Fay, Alpheus, Columbia, assignor of one-fourth to Z. Smith, Maury County, Tenn. Car-coupling	293,727	Feb. 19	1211	335	26	670
Fay Gas Fixture Company. (See Huntly, Charles H., assignor.)						
Felber, Isidor, Nyack, N. Y. Button-fly clamp	291,316	Jan. 1	379	106	26	68
Felch, George E., Ayer, Mass. Knife holder and package	291,704	Jan. 8	878	246	26	163
Feldmann, Hermann B., assignor to S. P. M. Tasker, C. Wheeler, and T. W. Brown, Philadelphia, Pa. Apparatus for screw-threading tubes	291,842	Jan. 8	1036	289, 290	26	191
Feldmann, Hermann B., assignor of one-half to S. P. M. Tasker, Philadelphia, Pa. Hopper for pulverizing-machines	294,375	Mar. 4	46	12	26	838
Felker, William H., Dayton, Ohio. Harness-pad	291,887	Jan. 15	1104	308	26	213
Felldin, Lawrence, San Francisco, Cal. Fire-proof compound	291,176	Jan. 1	201	.....	26	37
Felt, Sumner D., Jackson, Mich. Shepherd's crook	291,177	Jan. 1	202	56	26	37
Felton, Anthony K., Stoyestown, Pa. Convertible carriage	292,001	Jan. 15	1245	348	26	240
Fenerstein, Johannes, New York, N. Y. Truss	295,240	Mar. 18	1140	314	26	1045
Fenety, John H., Boston, Mass. Gage	292,551	Jan. 29	1958	546	26	340
Fenn, George N., Prophetstown, Ill. Paper-bag holder	293,728	Feb. 19	1212	335	26	670
Fenn, William B., assignor to Foster, Merriam & Co., Meriden, Conn. Plane	291,178	Jan. 1	203	57	26	37
Fera, George. (See Engels, Hugo F., assignor.)						
Ferguson, Harvey W., North's Mills, assignor of one-half to W. M. Dight, Mercer, Pa. Cultivator	292,639	Jan. 29	2065	574	26	398
Ferguson, James, Bridgewater, Mass. Press-platen	291,179	Jan. 1	205	57	26	37
Ferguson, Lorenzo D., Nashville, Tenn. Clay-pulverizer	293,001	Feb. 5	278	77	26	492
Ferguson, Robert W., assignor to W. B. Clark and F. W. Nevius, Decatur, Ill. Ironing-board	292,904	Feb. 5	155	43	26	472
Ferguson, Robert W., assignor to W. B. Clark and F. W. Nevius, Decatur, Ill. Plaiting-machine	292,905	Feb. 5	155	43	26	472
Ferguson, William H., Voorheesville, N. Y. Rack for cider-presses	294,023	Feb. 26	1596	443	26	746
Fernald, Augustine S. (See Ilsley and Fernald.)						
Ferrall, Thomas R., Boston, Mass. Anti-friction bearing. (Reissue)	10,455	Mar. 4	490	137, 138	26	913
Ferrall, Thomas R., Boston, assignor to H. Loud, Everett, Mass. Self-lubricating bearing. (Reissue)	10,456	Mar. 4	491	138	26	914
Ferris, Henry L., Alden, Ill. Pulley-block for hay-elevators	292,476	Jan. 29	1847	515	26	362
Fest, Charles P., Philadelphia, Pa. Air-ship	295,157	Mar. 18	1028	284	26	1026
Fibrous Buff Company. (See Fowler, Herbert E., assignor.)						
Ficke, Franz, New York, N. Y. Toilet-case	293,568	Feb. 12	1010	278	26	626
Fickett, William S., Rochester, N. Y. Bubble-blower	294,728	Mar. 4	468	131	26	909
Fidler, John J., *et al.* (See Jewell, James, assignor.)						
Field, Edwin S., Springfield, Mass. Bed-bottom	291,888	Jan. 15	1104	308	26	213
Field, Franklin A., Everett, assignor to H. C. Miller, Cambridge, and A. F. Miller, Winchester, Mass. Burial-casket	294,456	Mar. 4	148	39	26	855
Field, George I., Fall River, Mass. Gaff-support for vessels	294,980	Mar. 11	789	218	26	972
Field, James W., *et al.* (See Rhodes, Ezra, assignor.)						
Field, Stephen D., New York, N. Y. Underground-telegraph system	291,317	Jan. 1	380	106	26	68
Field, Stephen D., New York, N. Y. Duplex telegraph	291,318	Jan. 1	381	106	26	69
Field, Stephen D., New York, N. Y. Unison mechanism for printing-telegraphs	293,950	Feb. 19	1521	419	26	724
Field, Stephen D., assignor to Commercial Telegram Company, New York, N. Y. Escapement and unison mechanism for printing-telegraphs	291,705	Jan. 8	879	247	26	163
Fielding, James B. (See Evans and Fielding.)						
Filbert, Isaac S., Washington, D. C. Snow-plow	293,569	Feb. 12	1011	278	26	626
Finch, James B., Newark, N. J. Spring-roller for curtain-fixtures	291,502	Jan. 8	615	173	26	117
Finch, John M., assignor of one-half to G. S. Bennett, Jackson, Mich. Automatic grain and flour sampler	291,474	Jan. 1	571	161	26	102
Fincke, Friderich T. (See Gler and Fincke.)						
Finckel, M. Luther. (See La Tour, Thomas, assignor.)						
Findlay, Charles F., Liverpool, England. Traction-rope railway	294,213	Feb. 26	1865	509	26	789
Finkbeiner, Charles F. (See Eastman and Finkbeiner.)						
Finley, John E., Memphis, Tenn. Churn-dasher	294,024	Feb. 26	1599	444	26	747
Fire Proof Building Company of New Jersey. (See Beckwith, Leonard F., assignor.)						
Fischer, Adolph Ravenswood, assignor to himself and L. Franke, New York, N. Y. Fire-escape	291,319	Jan. 1	382	107	26	69
Fischer, John C. (See Leemann, Julius, assignor.)						
Fischer, Max. (See Hedtmann, Henkels, Schmiedel, and Fischer.)						
Fish, Frank L. P., East Saginaw, Mich. Vehicle-wheel	294,025	Feb. 26	1600	444	26	747
Fish, George W., Pecatonica, Ill. Telephone-support	295,531	Mar. 25	1510	416, 417	26	1121

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Fish, Samuel H., Hinsdale, Ill. Bill and letter file	294,214	Feb. 26	1867	510	26	789
Fisher, George W. (See Nevel and Fisher.)						
Fisher, Harvey L., and A. J. Hassell, Toledo, Iowa. Portable reservoir for stoves	294,215	Feb. 26	1868	510	26	790
Fisher, Robert A., San Francisco, Cal. Oil-cup	293,237	Feb. 12	603	159	26	552
Fisher, Sarah T., Springfield, Ohio. Dust-pan	292,213	Jan. 22	1507	423	26	292
Fisher, William M., Attleborough, Mass. Split ring	295,158	Mar. 18	1029	284	26	1026
Fishering, George W., Allegheny, Pa. Machine for forming conical wire springs	292,799	Feb. 5	29	8	26	448
Fisk, Clark & Flagg. (See Heath, Henry, assignor.)						
Fisk, Quincy A., Springfield, Ill. Apparatus for transporting and dumping earth, gravel, &c	291,587	Jan. 8	728	205	26	137
Fiske, Allen, Boston, Mass. Filter for water-coolers	291,889	Jan. 15	1105	308	26	213
Fitch, Arden S., New York, N. Y. Canopy-holder for children's carriages	294,376	Mar. 4	48	12	26	838
Fitch, Frederick K., New York, N. Y. Electric-arc lamp	292,293	Jan. 22	1607	449	26	310
Fitch, Frederick K., New York, N. Y. Dynamo-electric machine	293,441	Feb. 12	869	235	26	601
Fitch, Nelson. (See Slater, Jacob G., assignor.)						
Fitts, Abraham, H. M. Rice, and A. E. Blanchard, Worcester, Mass. Press	295,159	Mar. 18	1030	285	26	1026
Fitts, Benaiah, Worcester, Mass. Rotary meter	294,026	Feb. 26	1601	444, 445	26	747
Fitts, Harrison, Rollin, Mich. Fruit-drier	291,320	Jan. 1	383	107	26	69
Fitts, Morton B., Great Bend, Kans. Hay and straw stacker	294,981	Mar. 11	790	218, 219	26	973
Fitz, John, *et al.* (See Brindle, Daniel B., assignor.)						
Fitzgerald, Daniel P., and W. Lyon, Newark, N. J. Automatic tension for sewing-machines	291,706	Jan. 8	881	247	26	164
Fitzpatrick, John T., Monticello, Ohio. Ditching-machine	291,043	Jan. 1	34	10	26	9
Flagg, George H. P. (See Bradford, Charles K., assignor.)						
Flanagen, James I., Philadelphia, Pa. Dust-pan	292,477	Jan. 29	1847	515	26	363
Flanders, William G., Troy, N. Y. Egg-beater	294,890	Jan. 15	1106	308	26	214
Flannery, Joseph, Philadelphia, Pa. Hydrocarbon-gas generator	294,602	Mar. 4	321	89	26	883
Flannery, Joseph, Philadelphia, Pa. Hydrocarbon-gas generator	294,862	Mar. 11	644	179	26	946
Fleck, John C., and W. Herring, Stewartsville, Ind. Flue and pipe welder and fitter	291,707	Jan. 8	882	248	26	164
Flemmings, Robert F., Jr., assignor of one-half to C. L. Sprague, Melrose, Mass. Tuning-peg for musical instruments	293,729	Feb. 19	1213	336	26	671
Flenniken, Theodore M., deceased, (W. McGregor, administrator,) Rockford, Ill., and T. W. Graham, Dubuque, Iowa. Water-wheel	293,238	Feb. 12	604	159, 160	26	552
Fletcher, Robert H., Brooklyn, N. Y. Balanced rotary valve	294,216	Feb. 26	1868	510	26	790
Fletcher, Thomas, Warrington, county of Lancaster, England. Gas-burner for heating purposes	291,475	Jan. 1	573	161	26	102
Flint, James. (See Crandell, James H., assignor.)						
Flint, Mason M. (See Rockwood, Levi R., assignor.)						
Flohr, Otto, *et al.* (See Scheffler, Theodore, assignor.)						
Florence Machine Company. (See Keith, Jeremiah, assignor.)						
Flowers, Andrew J. and M. I., Springfield, Mo. Siding-bracket	295,376	Mar. 18	1310	363	26	1078
Flowers, Malon I. (See Flowers, Andrew J. and M. I.)						
Flynn, Cornelius, Brooklyn, N. Y. Car-coupling	293,442	Feb. 12	870	235	26	601
Focke, Gustav, Brooklyn, N. Y. Device for transmitting rotary motion and power	291,321	Jan. 1	385	107	26	69
Fogg, Jeremiah R., Salisbury, Mass. Weather-strip	294,776	Mar. 11	526	146	26	926
Foley, John B., New Haven, Conn. Plaiting-machine	293,239	Feb. 12	607	161	26	553
Foley, Moses F. and T. A., Waveland, Ind. Grain-drill	294,603	Mar. 4	323	90	26	884
Foley, Thomas A. (See Foley, Moses F. and T. A.)						
Follansbee, George S., Boston, Mass. Warping-machine	295,745	Mar. 25	1787	490	26	1170
Follett, Charles H., *et al.* (See Dowling, Robert H., assignor.)						
Folmer, John F., Philadelphia, Pa. Air-port for vessels	292,640	Jan. 29	2065	575	26	398
Fontayne, Albert, assignor to himself, I. Pflaum, Chicago, and J. S. Williams, Hyde Park, Ill. Axle-attaching device	293,960	Feb. 19	1522	420	26	725
Foos, Albert A., Brooklyn, N. Y. Dinner-pail	294,217	Feb. 26	1870	511	26	790
Foos, Charles S., assignor of one-half to W. H. Clifford, Baltimore, Md. Ventilating bow-windows	291,322	Jan. 1	385	107	26	69
Foote, George D., Pittsfield, Mass. Bicycle	291,323	Jan. 1	386	108	26	70
Foote, Mark S., Burlington, Iowa. Method of and apparatus for steam-heating	294,982	Mar. 11	791	219	26	973
Forbes, George F., Hyde Park, Mass. Automatic railway-gate	292,641	Jan. 29	2067	575	26	398
Forbes, John, San Francisco, Cal. Wood-worker's dog	294,777	Mar. 11	527	147	26	926
Forbes, Lycurgus D., Stranger, Tex. Governor for cotton-gin feeders	295,377	Mar. 18	1311	364	26	1078
Forbes, William H. (See Osborne, John W., assignor.)						
Ford, Benjamin, Middlesbrough-on-Tees, and J. Moncur, Distington, England. Regenerative hot-blast stove for blast-furnaces	294,314	Feb. 26	1988	543, 544	26	812
Ford, Charles R., Boston, Mass. Organ-action	292,478	Jan. 29	1848	515	26	363
Ford, Samuel D., and F. M. Spencer, South Abington, Mass. Box-fastener	294,778	Mar. 11	528	147	26	926
Forrester, Isaac N., Camden, N. J. Swing	294,983	Mar. 11	793	219	26	973
Fort, Marion S., Greenfield, Iowa. Horse-collar	294,218	Feb. 26	1871	511	26	790
Fortier, Anna M. and S. M. A., San Francisco, Cal. Stamp-canceler	293,443	Feb. 12	871	236	26	601
Fortier, Shadrach M. A. (See Fortier, Anna M. and S. M. A.)						
Fosbery, George V., and H. Pieper, Liege, Belgium. Metallic patch for bullets	291,891	Jan. 15	1107	309	26	214
Foss, Charles S. (See Sawyer and Foss.)						
Foss, George F., deceased; L. Foss, East Boston, Mass., administratrix. Take-up mechanism for sewing-machines	291,708	Jan. 8	884	248	26	164
Foss, Louisa, administratrix. (See Foss, George F.)						
Foss, Newman A., and J. M. Gray, Clendenin, Montana Ter. Roasting-furnace	293,092	Feb. 5	279	77, 78	26	493
Foss, Newman A., and J. M. Gray, Dublin, Ind. Trace-hitch	295,378	Mar. 18	1314	365	26	1079
Foster, David A., Dublin, Ind. Trace-hitch	293,444	Feb. 12	872	236	26	601
Foster, James H., Era, Tex. Steam-boiler cleaner						
Foster, John H. (See Atkinson and Foster.)						
Foster, John K. J., Bolton, county of Lancaster, England. Apparatus for extinguishing fires	291,324	Jan. 1	387	108	26	70
Foster, John T., Arlington, N. J. Towel-rack and clothes-bar	292,294	Jan. 22	1609	450	26	310
Foster, Marion J., assignor, by mesne assignments, of one-half to W. H. and M. J. Carter, Ashley, and W. T. Moore, Richview, Ill. Thrashing-machine	293,570	Feb. 12	1012	278	26	627
Foster, Merriam & Co. (See Fenn, William B., assignor.)						
Foster, Walter K., Stoneham, Mass. Pencil-sharpener holder	292,102	Jan. 22	1432	401	26	282
Foster, William H., assignor to C. Joseph, Jeffersonville, Ind. File-holder	293,645	Feb. 19	1100	305	26	650
Foster, Wilton, and L. D. Hanford, Erie, Pa. Rack for holding capstan-bars and like objects	295,746	Mar. 25	1788	496	26	1171
Fottrell, John, assignor to T. S. Leigh, trustee, Philadelphia, Pa. Composition for electrical insulation	294,457	Mar. 4	140	.....	26	855
Fountain, Seth H., Amite City, La. Cotton scraper and cultivator	294,604	Mar. 4	325	90	26	884

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fowkes, George W. (See Bruderer, John, assignor.)						
Fowle, William B., Newton, assignor to R. M. Morse, Jr., Boston, Mass. Clinical metallic thermometer	294,729	Mar. 4	469	131	26	909
Fowler, Herbert E., New Haven, assignor to Fibrous Buff Company, Hartford, Conn. Buffing-wheel	291,709	Jan. 8	885	248	26	164
Fox, Edward. (See Smith, Presler, and Fox.)						
Fox, Ivan, Philadelphia, Pa. Eyeglasses	292,479	Jan. 29	1849	515	26	363
Fox, James E. (See Loewenstine and Fox.)						
Fox, Matthew S., Fort Scott, Kans. Shoe or glove fastening	295,241	Mar. 18	1141	314	26	1045
Francis, Lewis G., La Grange, and J. A. Tibbs, Hinsdale, Ill. Gas-pressure regulator	295,532	Mar. 25	1511	417	26	1121
Francke, Carl. (See Francke, Ernst O. and C.)						
Francke, David O., Korndal Mölndal, Sweden. Manufacture of paper-pulp	295,865	Mar. 25	1945	537	26	1199
Francke, Ernst O., Tupiza, Bolivia, and C. Francke, Cassel, Germany, assignors of one-third to C. Adams, Manitou, Colo. Roasting and amalgamating gold and silver ores	293,157	Feb. 5	492	.....	26	526
Francke, Phillip E., San Francisco, Cal. Ornamentation of frame-moldings	292,592	Jan. 29	1959	546	26	380
Franke, Louis. (See Fischer, Adolph, assignor.)						
Frary, James D., Bridgeport, Conn. Pocket-knife	292,002	Jan. 15	1247	349	26	240
Frary, James D., Bridgeport, Conn. Manufacture of scissors	294,605	Mar. 4	326	90	26	884
Fraser, Donald, and V. L. Rice, Minneapolis, Minn. Car-coupling	294,984	Mar. 11	794	220	26	973
Fraser, H. A., *et al.* (See Charbonean, Pascal B., assignor.)						
Frayssé, Auguste, Antwerp, Belgium. Machine for cleaning wool	292,295	Jan. 22	1610	450, 451	26	310
Frazer, Fred, Syracuse, N. Y. Hame	291,395	Jan. 1	388	108	26	70
Frazer, George, *et al.* (See Jewell, James, assignor.)						
Frazier, Alexander, and D. J. Coburn, Maywood, Ill. Broom-holder	295,379	Mar. 18	1315	365	26	1079
Frazier, William, West Alexander, Pa. Riding-saddle	295,623	Mar. 25	1632	453	26	1143
Freaney, William H. (See Travis and Freaney.)						
Frederick, Augnst H., St. Louis, Mo. Blotter	295,625	Mar. 25	1634	453	26	1143
Freed, William H., *et al.* (See Hoffman, Edward J., assignor.)						
Freeman, Walter S., Bloomfield, N. J. Shoe	295,624	Mar. 25	1633	453	26	1143
Freeman, Warren P., assignor to W. F. Jobbins, Brooklyn, N. Y. Electric-arc lamp	294,027	Feb. 26	1602	445	26	747
Freese, Egbert M. (See Fate and Freese.)						
French, William S., Jackson, Mich. Fire escape and alarm	291,326	Jan. 1	389	109	26	70
Freschl, Alfred, Detroit, Mich., assignor to Detroit Casket Company. Application of fabrics to moldings and other articles	293,158	Feb. 5	484	129	26	526
Frese, Bernard, Chicago, Ill. Apparatus for operating railway-trains	291,180	Jan. 1	206	57, 58, 59	26	38
Fresor, John B., *et al.* (See Duffy and McIvor, assignors.)						
Freund, George, Durango, Colo. Safety-shell for blasting	292,642	Jan. 29	2072	576	26	399
Frew, Eugene B., Titusville, Pa. Gas and water packer for oil-wells	295,747	Mar. 25	1789	497	26	1171
Frew, Robert, *et al.* (See Smith, William D., assignor.)						
Frew, Robert, Pittsburg, Pa. Seal-lock	292,296	Jan. 22	1612	451	26	311
Frey, Francis E., assignor of one-half to J. W. McRoberts, Springfield, Ohio. Mail-box	292,741	Jan. 29	2202	614	26	423
Frey, Frederic E., Bucyrus, Ohio. Clay-crushing machine	295,533	Mar. 25	1513	417, 418	26	1121
Frey, William, Zoar Station, Ohio. Log-turner	293,316	Feb. 19	710	189, 190	26	571
Frick, Abraham O., Waynesborough, Pa. Spark-arrester	293,445	Feb. 12	872	236	26	601
Frick, Friedrich G., Bayenthal, near Cologne, Germany. Magneto and dynamo electric machine	295,534	Mar. 25	1514	418	26	1122
Friend, Augustus F., Gravesend, N. Y. Skewer-puller	292,643	Jan. 29	2074	576	26	399
Fries, William A., Philadelphia, Pa. Asbestus joint-packing	295,748	Mar. 25	1790	497	26	1171
Fries, William A., Brooklyn, N. Y. Asbestus steam-packing	295,749	Mar. 25	1791	497	26	1171
Frits, Milton C., La Harpe, Ill. Truss-bridge	294,606	Mar. 4	327	90	26	884
Frost, Charles W., Philadelphia, Pa. Toy building-block	294,607	Mar. 4	328	91	26	884
Frost, Daniel W., Keokuk, Iowa. Crock-cover	292,110	Jan. 15	1365	383	26	263
Frost, Herbert, Manchester, county of Lancaster, England. Fluid-meter	293,317	Feb. 12	711	190, 191	26	571
Froude, Richard H., Kensington, county of Middlesex, England. Rotary engine and pump	295,380	Mar. 18	1316	365, 366	26	1079
Froude, Richard H., Kensington, county of Middlesex, England. Apparatus for lubricating pistons, &c	295,381	Mar. 18	1318	367	26	1080
Fruhling, William, Sr., San José, Cal. Grape and orchard cultivator	292,297	Jan. 22	1614	451	26	311
Fry, Jacob R., Jr., Springfield, Ohio. Fork for hay-tedders	292,425	Jan. 22	1766	498	26	344
Fry, John W., New York, N. Y. Bicycle-support	292,163	Jan. 22	1433	402	26	282
Frysinger, Benjamin C. (See Frysinger, Jacob and B. C.)						
Frysinger, George P. (See Frysinger, Jacob and B. C., assignors.)						
Frysinger, Jacob and B. C., Rock Island, assignors of one-third to G. P. Frysinger, Rockford, Ill. Packer for flour, bran, &c	293,859	Feb. 19	1395	386	26	701
Fuchs, August, Cannstadt, Würtemberg, Germany. Wood-splitting machine	292,644	Jan. 29	2074	576	26	399
Fuller, George H., Norwich, Conn. Dynamo-electric machine	294,458	Mar. 4	149	40, 41	26	855
Fuller, John, Sr., Seneca, Kans. Gage attachment for boring-bits, &c	294,985	Mar. 11	795	220	26	974
Fuller, L. Eugene, and J. H. Macauley, Chicago, Ill. Cooling apparatus for paint-mills	295,626	Mar. 25	1634	453, 454	26	1143
Fuller, Rathbun. (See Houlehan, James, assignor.)						
Fulton, Harmon H., assignor to Indianapolis Machine and Bolt Works, Indianapolis, Ind. Wheel or pulley	294,730	Mar. 4	470	131	26	910
Fulton, John M., Roanoke, Ind. Automatic grain measure, register, and sacker	294,459	Mar. 4	152	41, 42	26	855
Fulton, John M., assignor of two-thirds to J. H. McCahon and E. E. Richards, Roanoke, Ind. Thill-coupling	291,568	Jan. 8	729	205	26	137
Funderburk, David A. C. and J. L., Bainbridge, Ga. Plow	294,986	Mar. 11	796	220	26	974
Funderburk, Jefferson L. (See Funderburk, David A. C. and J. L.)						
Funk, Elliott H., Sturgis, Mich. Ice-velocipede	295,491	Mar. 18	1457	401	26	1106
Funk, Samuel, Decatur, Ill. Harness	292,742	Jan. 29	2203	614	26	423
Funk, Samuel, Decatur, Ill. Tug-buckle	294,028	Feb. 26	1604	445	26	748
Furby, Jesse L., assignor of one-half to J. Y. Nelson, Nashville, Ill. Sulky-plow	292,496	Jan. 22	1786	498	26	344
Furness, Frank, Philadelphia, Pa. Device for holding the curtains of car-windows	295,535	Mar. 25	1516	419	26	1122
Furrer, Joseph, Toledo, Ohio. Artificial leg	292,800	Feb. 5	30	8	26	448
Furrow, George L. (See Neer, Henry C., assignor.)						
Furst & Bradley Manufacturing Company. (See Bradley, Byron C., assignor.)						
Ga Nun, Gilbert E., assignor of one-half to A. Young, Mount Kisco, N. Y. Combined sofa and bath-tub	294,460	Mar. 4	153	42	26	856

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Gaar, Scott & Company. (See Land and Campbell, assignors.)						
Gage, Charles, Somerville, assignor to L. B. Russell, Lynn, Mass. Drill-chuck	294,121	Feb. 26	1745	480	26	770
Gairing, Adolf, and H. Lehmann, Cleveland, Ohio. Carburetor	294,863	Mar. 11	645	179	26	946
Galloway, James A., Spring Hill, assignor of one-half to E. J. Rembert, Rembert's, S. C. Flood-gate	291,327	Jan. 1	390	109	26	71
Galloway, William H. (See McDonald, John P., assignor.)						
Gallup, Silas N., Macedon, N. Y. Gearing for changing speed	295,536	Mar. 25	1517	419	26	1122
Gally, Merritt, New York, N. Y. Printing-press	291,843	Jan. 8	1038	290	26	191
Galt, Thomas A., *et al.* (See Packer, Harvey, assignor.)						
Gamble, Henry E., assignor to O. H. Mann and A. C. Buell, Evanston, Ill. Thill-coupling	295,160	Mar. 18	1032	285	26	1027
Gannon, Joseph M. (See Williams and Gannon.)						
Gano, Garrett B., Easton, Md. Car-coupling	294,987	Mar. 11	797	220	26	974
Ganss, Jacob, Brooklyn, assignor to himself and J. Blackwood, New York, N. Y. Alarm-clock	295,627	Mar. 25	1636	454	26	1144
Gardinier, David S., Hudson, N. Y. Compensating device for signals	292,553	Jan. 29	1960	546	26	380
Gardner, Eleazar S., assignor of two-thirds to J. H. Gould, Philadelphia, Pa., and O. L. Gardner, New York, N. Y. Traction-rope railway	291,589	Jan. 8	731	205, 206	26	137
Gardner, Frederick A., Buffalo, N. Y. Valve-gear	291,476	Jan. 1	574	161, 162	26	102
Gardner, Frederick A., assignor of one-half to R. Dunbar & Son, Buffalo, N. Y. Cut-off-valve gear	291,181	Jan. 1	212	59	26	38
Gardner, Henry, Bordentown, N. J. Motion-transmitter	294,608	Mar. 4	329	91	26	884
Gardner, Oliver L., *et al.* (See Gardner, Eleazar S., assignor.)						
Gardner, Onslow K. (See Rhule, Jacob, assignor.)						
Garland, Howard P., San Quentin, Cal. Two-wheeled vehicle	292,480	Jan. 29	1849	516	26	363
Garland, John W., Allegheny City, and E. Becker, assignors to Oliver & Roberts Wire Company, (limited,) Pittsburg, Pa. Bale-tie	294,609	Mar. 4	330	91	26	885
Garnier, Claude, Lyons, and P. Depoully, Paris, France. Manufacture of embossed fabrics	294,731	Mar. 4	471	.....	26	910
Garretson Ruffler Company. (See Grotz, Charles, assignor.)						
Garretson, William C., Oskaloosa, Iowa. Corner-brace	292,003	Jan. 15	1248	349	26	240
Garrett, Elisabeth S., Downeyville, Ind. Flood-fence	293,003	Feb. 5	280	78	26	493
Garrett, Henry. (See Oram, Sutton, and Garrett.)						
Garrick, Thomas, Providence, R. I. Check or water hook	294,864	Mar. 11	647	179	26	946
Garrigus, Culberson S., assignor of one-half to J. H. Pittenger, Tiffin, Ohio. Bale-tie fastener	292,004	Jan. 15	1248	349	26	240
Garrood, John C., Boston, Mass. Sliding seat for boats	294,029	Feb. 26	1604	446	26	748
Garrood, John C., Boston, Mass. Bearing for velocipedes	295,161	Mar. 18	1033	285	26	1027
Garsed, Robert P., Norristown, Pa. Pneumatic signal	292,481	Jan. 29	1850	516, 517	26	363
Garth, Walter G., Lodebar, Va. Wire-stretcher	291,710	Jan. 8	885	248	26	165
Garton, David B., Barrie, Ontario, Canada, assignor of one-half to E. C. Edmonds, Albany, N. Y. Snow-plow	291,182	Jan. 1	213	59	26	38
Garvey, Owen F., Pawtucket, R. I. Lock-nut	291,328	Jan. 1	390	109	26	71
Garvey, Richard. (See Durrvea, Charles E., assignor.)						
Gary, Wesley W., Boston, Mass. Magneto-electric railway-signal	291,590	Jan. 8	732	206	26	138
Gaskill, Harvey F., Lockport, N. Y. Steam and hydraulic pumping-engine	291,622	Jan. 15	1108	309	26	214
Gasmire, Henry, Wellsburg, W. Va. Glass-furnace	294,122	Feb. 26	1746	480	26	770
Gassett, Oscar, Boston, Mass. Electric bell-ringing apparatus	293,571	Feb. 12	1012	279	26	627
Gassett, Oscar, Boston, Mass., assignor, by mesne assignments, to R. Pitcairn and G. H. Christy, trustees, Pittsburg, Pa. Hydraulic and electric interlocking apparatus. (Reissue)	10,434	Jan. 8	1058	296, 297	26	195
Gassett, Oscar, Boston, Mass., assignor, by mesne assignments, to R. Pitcairn and G. H. Christy, trustees, Pittsburg, Pa. Hydraulic and electric interlocking apparatus. (Reissue)	10,435	Jan. 8	1062	297	26	196
Gassett, Oscar, Boston, Mass., assignor to Union Switch and Signal Company, Pittsburg, Pa. Interlocking-switch apparatus	292,743	Jan. 29	2204	614, 615	26	423
Gassett, Oscar, Boston, Mass., assignor to Union Switch and Signal Company, Pittsburg, Pa. Electric signaling apparatus for railway-crossings	292,744	Jan. 29	2208	615	26	423
Gassett, Oscar, Boston, Mass., assignor to Union Switch and Signal Company, Pittsburg, Pa. Railway-signal	294,030	Feb. 26	1605	446	26	748
Gates, George S., Athol, Mass. Handle for trunks, &c	294,988	Mar. 11	798	221	26	974
Gates, George S., Athol, Mass. Machine-shaft and its bearings	294,989	Mar. 11	798	221	26	974
Gates, Horatio, Worcester, Mass. Reversible plow	291,503	Jan. 8	617	174	26	117
Gates, Horatio, Worcester, Mass. Weeding-hoe	291,504	Jan. 8	619	174	26	118
Gates, Prescott C. (See Graves and Gates.)						
Gannt, John, Gloucester, N. J., W. F. Polcaz, Philadelphia, Pa., W. Calhoun and J. C. Danbmann, Camden, N. J. Machine for making paving blocks, bricks, &c	291,505	Jan. 8	620	174, 175	26	118
Gay, George E., and J. H. Parsons, Augusta, Me. Screw-driver	292,298	Jan. 22	1615	452	26	311
Gay, William A., Tonawanda, N. Y. Musical toy	292,645	Jan. 29	2075	577	26	399
Gedney, James W., New York, N. Y. Feed-bag	293,004	Feb. 5	281	78	26	493
Geer, George, Peterborough, N. H. Potato-parer	292,554	Jan. 29	1961	547	26	380
Geiger, Conrad J., Ashley, Ill. Fruit-drier	295,382	Mar. 18	1319	367	26	1080
Gemmill, John, *et al.* (See Campbell, Solon O., assignor.)						
Gendron Iron Wheel Company. (See Gendron, Peter, assignor.)						
Gendron, Peter, assignor to Gendron Iron Wheel Company, Toledo, Ohio. Tire for wagon-wheels	294,461	Mar. 4	154	42	26	856
Genese, David, Baltimore, Md. Flexible air-tight eye-guard	295,242	Mar. 18	1142	315	26	1045
George, Emanuel M., Three Rivers, Mich. Mechanical movement	291,893	Jan. 15	1109	309, 310	26	214
George, Joseph A. (See Thompson and George.)						
Gerald, Amos F., Fairfield, Me., assignor to Gerald Sewing Machine Cabinet Company, New York, N. Y. Sustaining dowel-pins or hinge-pins	293,646	Feb. 19	1101	305	26	650
Gerald Sewing Machine Cabinet Company. (See Gerald, Amos F., assignor.)						
Gere, Theodore D., Owego, N. Y. Grain-drill	291,183	Jan. 1	215	59, 60	26	39
Gere, Theodore D., Owego, N. Y., and B. Maltby, Cleveland, Ohio. Wheel-harrow	292,214	Jan. 22	1508	423	26	293
Germeyer, William S., and J. A. Durnin, Carlisle, Pa. Lubricator	294,315	Feb. 26	1990	544	26	812
Gerry, Allston, trustee. (See Rapp, Almire H., assignor.)						
Getty, Fred L., and F. Dickinson, Geneva, Ohio. Machinist's tool	293,647	Feb. 19	1102	306	26	650
Gibbons, John, assignor to Union Hardware Manufacturing Company, West Troy, N. Y. Snap-hook	292,164	Jan. 22	1434	402	26	282
Gibbs, William E., Elizabeth, N. J., and C. G. Otis, Brooklyn, N. Y. Manufacture of soap	291,329	Jan. 1	391	109	26	71
Gibson, Hannah Z., Oberlin, Ohio. Egg-beater	293,648	Feb. 19	1103	306	26	650

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Gibson, James R. (See Grounds and Gibson.)						
Gibson, William, Adamsville, Quebec, Canada. Tie for securing bags, bales, &c	291,184	Jan. 1	216	60	26	39
Giddings, Thomas, Williamsport, Pa. Arm and finger guide for pianos and organs	291,330	Jan. 1	392	110	26	71
Gier, Henry W., and F. T. Fincke, Sigel, Ill. End-gate for wagons	295,750	Mar. 25	1792	497	26	1171
Gilfard, Falconer, assignor of three-fourths to W. Penrose and S. McNeill, Burlington, Iowa. Cartridge decapper, recapper, and reloader	294,865	Mar. 11	647	180	26	947
Gilbert, Charles M., Milwaukee, Wis., assignor to Richmond Manufacturing Company, Lockport, N. Y. Grain-scourer	293,159	Feb. 5	485	130	26	527
Gilbert, John O., Houston, Tex. Oscillating engine	294,219	Feb. 26	1871	511	26	790
Gilbert, Thomas S., assignor to Mayer, Strouse & Co., New Haven, Conn. Corset	293,446	Feb. 12	873	236	26	601
Giles, Charles K., Chicago, Ill. Watch-case	293,860	Feb. 19	1396	386	26	701
Giles, Charles K., Chicago, Ill. Lining for watch-cases	293,861	Feb. 19	1398	387	26	701
Giles, Edwin L. (See Hayden and Giles.)						
Giles, J. Edwin, Hazleton, Pa. Electrical extension-bracket	293,318	Feb. 12	713	191	26	571
Gilfillan, Essington N., and S. P. McKelvey, St. Louis, Mo.; said McKelvey assignor to said Gilfillan. Stone-dressing machine	294,866	Mar. 11	648	180	26	947
Gilfillan, William, assignor to Sargent & Co., New Haven, Conn. Hinge	292,005	Jan. 15	1249	349	26	240
Gillett, Eugene E., Western Union, Wis. Weather-strip	295,537	Mar. 25	1519	419	26	1122
Gillette, Horace L., *et al.* (See Tiffany, Albert R., assignor.)						
Gillette, King C., assignor to J. L. Spofford, New York, N. Y. Combined faucet and tap valve	294,610	Mar. 4	331	92	26	885
Gilliland, Ezra T., Indianapolis, Ind., assignor to Western Electric Company, Chicago, Ill. Driving-gear for magneto-electric machines	293,160	Feb. 5	487	130	26	527
Gilliland, Ezra T., Indianapolis, Ind., assignor to Western Electric Company, Chicago, Ill. Telephone apparatus	293,161	Feb. 5	488	131	26	527
Gilliland, Ezra T., Indianapolis, Ind., assignor to Western Electric Company, Chicago, Ill. Telephone apparatus	293,162	Feb. 5	491	131	26	528
Gilmore, Albert W., Chicago, Ill. Car-roofing	293,447	Feb. 12	875	237	26	602
Gilmore, George W., Webster, Pa. Bilge-water alarm	294,711	Jan. 8	886	249	26	165
Gilmore, James S., Philadelphia, Pa. Lathe-chuck	295,628	Mar. 25	1638	454	26	1144
Gilson, Henry E., Somerville, Mass. Trunk	293,005	Feb. 5	2892	78	26	493
Ginther, Henry S., assignor of one-half to F. T. Phillips, Olney, Ill. Splitting-gage	295,629	Mar. 25	1638	455	26	1144
Gjers, John, Middlesbrough, in the North Riding, county of York, England. Apparatus for equalizing the temperature of steel ingots	291,044	Jan. 1	35	10, 11	26	9
Gjers, John, Middlesbrough, in the North Riding, county of York, England. Apparatus for equalizing the temperature of steel ingots	291,045	Jan. 1	37	11	26	9
Gjers, John, Middlesbrough, in the North Riding, county of York, England. Apparatus for equalizing the temperature of steel ingots	291,046	Jan. 1	38	11	26	10
Gjers, John, Middlesbrough, in the North Riding, county of York, England. Apparatus for equalizing the temperature of steel ingots	291,047	Jan. 1	39	12	26	10
Gjers, John, Middlesbrough, in the North Riding, county of York, England. Apparatus for equalizing the temperature of steel ingots	291,048	Jan. 1	40	12	26	10
Gjers, John, Middlesbrough, in the North Riding, county of York, England. Apparatus for equalizing the temperature of steel ingots	291,331	Jan. 1	393	110	26	71
Gladman, Mahlon B., Hopkins, Mo. Sash-balance	295,630	Mar. 25	1639	455	26	1144
Gleason, Albert H., Wabash, Ind. Wagon-tongue support	291,332	Jan. 1	394	110	26	71
Gleason, Franklin A., Brooklyn, assignor of one-half to J. H. Swartz, Oyster Bay, N. Y. Dynamometer	294,377	Mar. 4	49	13	26	808
Glenn, James M., Cincinnati, Ohio. Iron paving-brick	294,611	Mar. 4	332	92	26	885
Glenn, William H., Kirksville, Mo. Fire-escape	291,333	Jan. 1	395	111	26	72
Glines, Horace, Bridgeport, Conn. Device for stretching boots and shoes	293,448	Feb. 12	876	237	26	602
Globe Manufacturing Company. (See Hewson, Robert, assignor.)						
Glover, Carlos W., Boston, Mass., assignor, by mesne assignments, to J. T. Waring Hat Sizing Machine Company, Newark, N. J. Roller for hat-body felting and sizing machines	292,111	Jan. 15	1366	383	26	263
Glover, Joseph, Paterson, N. J. Beef-cutter	294,031	Feb. 26	1608	446	26	748
Glover, Robert, Leominster, Mass. Machine for bending boot and shoe counters	292,646	Jan. 29	2676	577	26	400
Gmehlin, Paul, New York, N. Y. Key-rail for pianos and organs	295,383	Mar. 18	1321	367	26	1060
Goddard, Calvin L., New York, N. Y. Self-feeder for carding-machines	295,343	Mar. 18	1143	315	26	1046
Goddard, Charles V. (See Beach, William W., assignor.)						
Goddard, Silas W. (See Layng, George, assignor.)						
Goddard, William, Newark, N. J. Article of knitted or woven wear	294,779	Mar. 11	529	147	26	926
Godes, Nicholas. (See Koch, Philippe, assignor.)						
Godfrey, Nicholas W., Northport, N. Y. Sand and gravel excavator, separator, and assorter	294,867	Mar. 11	640	180, 181	26	947
Godley, George F. (See Whittaker and Godley.)						
Goetz, Henry. (See Liljeholm, Nils P., assignor.)						
Goffe, Henry A., Albany, N. Y. Toy doll	294,868	Mar. 11	651	181	26	947
Goforth Window Company. (See Blodgett, Henry L., assignor.)						
Goldbacher, Joseph N., New York, N. Y. Leggin	295,538	Mar. 25	1590	430	26	1122
Golding & Co. (See Wiley, Philip W., assignor.)						
Golding, William H., Chelsea, Mass. Composing-stick	294,378	Mar. 4	52	13	26	808
Goldman, Isaac S., Pasadena, Cal. Alarm-clock	294,220	Feb. 26	1872	512	26	790
Goldman, Moses, Pittsfield, Mass. Sprinkler and atomizer	293,730	Feb. 19	1215	336	26	671
Goldmann, Philipp, New York, N. Y. Cap or other head-covering	293,402	Feb. 19	1399	387	26	701
Goldsborough, Arthur T., Washington, D. C. Bench-plane	293,863	Feb. 19	1400	387	26	702
Goldsborough, Arthur T., Washington, D. C. Bench-plane	293,864	Feb. 19	1401	388	26	702
Goldsmith, J. Mortimer, Boston, Mass. Valve	291,506	Jan. 8	622	175	26	118
Goldsmith, J. Mortimer, Boston, Mass. Valve	293,240	Feb. 12	607	161	26	553
Goltstein, Ewald. (See Earle and Goltstein.)						
Gomber, George W., Sybertsville, Pa., assignor to H. W. Putnam, Bennington, Vt. Fruit-jar	295,244	Mar. 18	1145	315	26	1046
Goodall, Albert G. (See Crane, Winthrop M., assignor.)						
Goodell, Albert D., assignor to Millers Falls Company, Miller's Falls, Mass. Spoke-shave	293,651	Feb. 19	1107	307	26	651
Goodell Company. (See Oaks, William A. C., assignor.)						
Goodfellow, John H., Troy, N. Y. Implement for setting button-fasteners	292,482	Jan. 29	1852	517	26	363
Goodfellow, John H., Troy, N. Y., assignor to Heaton Button Fastener Company, Providence, R. I. Implement for setting button-fastener staples	295,539	Mar. 25	1590	430	26	1123
Goodhue, George J., Jr., Stevens Point, Wis. Invalid-lift	292,601	Feb. 5	31	8	26	448
Goodloe, Green C., Washington, D. C. Horseshoe	294,990	Mar. 11	799	221	26	974
Goodman, Charles R., Hammond, Ind. Apparatus for laying railway-tracks	291,049	Jan. 1	40	13	26	10
Goodman, George H., and J. B. Hunt, Otego, N. Y. Punch	294,991	Mar. 11	800	221	26	974
Goodman, Henry, *et al.* (See Martinez, Rafael, assignor.)						
Goodman, Isaac, and L. F. Winter, New York, N. Y. Cake and cracker machine	292,906	Feb. 5	157	43	26	472

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Goodrich, Alphonso. (See Bryan, George, assignor.)						
Goodridge, James F., Boston, Mass. Fare-box	294,462	Mar. 4	155	42	26	856
Goodwillie, David, Oak Park, Ill. Lumber-drier	293,961	Feb. 19	1524	420	26	725
Goodwin, Levi H., Cincinnati, Ohio. Iron wheel	293,006	Feb. 5	283	79	26	493
Goodwin, Levi H., assignor to Mosier Manufacturing Company, Cincinnati, Ohio. Folding wheelbarrow	293,007	Feb. 5	283	79	26	494
Goodyear, Watson A., New Haven, Conn. Heat and fire resisting valve	292,745	Jan. 29	2212	616	26	424
Goodyear, Watson A., New Haven, assignor of one-half to L. Ketchum, Sangatuck, Conn. Apparatus for heating water, &c., for domestic and other purposes	294,992	Mar. 11	801	222	26	975
Gonne, William H., assignor of one-half to C. H. Wood, Chatham, Ontario, Canada. Knob attachment	291,712	Jan. 8	887	249	26	165
Gordon, Edward F., and H. Hobbs, Concord, N. H. Steam-generator	291,185	Jan. 1	217	60	26	39
Gordon, Fred. W., Pittsburg, Pa. Hot-blast stove	291,186	Jan. 1	218	61	26	39
Gordon, Fred. W., Pittsburg, Pa. Pig-carrier for blast-furnaces	291,507	Jan. 8	624	176	26	119
Gordon, Fred. W., Pittsburg, Pa. Tuyere-pipe	294,123	Feb. 26	1746	481	26	770
Gordon, Fred. W., Pittsburg, Pa. Tuyere	295,540	Mar. 25	1523	421	26	1123
Gordon, John H., Rochester, N. Y. Grain-binder	293,649	Feb. 19	1104	306, 307	26	650
Gordon & Maxwell Company. (See Maxwell, James R., assignor.)						
Gordon, Upton M. (See Mills and Gordon.)						
Gore, Willis K., Johnstown, Pa. Barbed fence	294,612	Mar. 4	333	92	26	885
Gorman, Thomas C., assignor of one-half to D. Farlin, Albany, N. Y. Pen-cleaner	293,650	Feb. 19	1106	307	26	651
Gorrell, John B., and J. Miller, La Otto, Ind. Circular saw mill	294,221	Feb. 26	1875	512, 513	26	791
Gorsuch, Thomas, Huntingdon, Pa. Bee-hive	293,449	Feb. 12	876	237	26	602
Gorton, James S., assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Scissors for cutting felt on a bevel	291,591	Jan. 8	733	206	26	138
Gorton, William E., Chicago, Ill. Grinding-mill	292,746	Jan. 29	2214	616, 617	26	425
Gott, Laura J., La Grange, Ohio. Fire-escape	295,631	Mar. 25	1640	455	26	1144
Gottheimer, Philipp, Omaha, Nebr. Pants or drawers	294,032	Feb. 26	1609	447	26	749
Gould, Andrew J., Quincy, Cal. Jet water-wheel	291,894	Jan. 15	1110	310	26	215
Gould, Appleton, Bangor, Me. Shingle shaving and rifting machine	295,541	Mar. 25	1524	421	26	1123
Gould, George H., Somerville, Mass. Cyclometer	295,632	Mar. 25	1641	455	26	1145
Gould, John C., Chicago, Ill. Nail-plate feeder	292,299	Jan. 22	1615	452	26	311
Gould, John C., Chicago, Ill. Nail-plate feeder	292,300	Jan. 22	1618	453	26	312
Gould, John H., *et al.* (See Gardner, Eleazar S., assignor.)						
Govier, John W., *et al.* (See Burridge, Thomas H., assignor.)						
Gowdy, Edrick, and C. B. Russell, Birmingham, Conn. Paper box	292,802	Feb. 5	32	9	26	448
Gowland, John, Philipsburg, Pa. Carriage-axle	294,222	Feb. 26	1876	513	26	791
Grace, John M., assignor of one-half to F. R. Murphy, Chicago, Ill. Car-brake	293,319	Feb. 12	714	191	26	572
Graf, Henry, Sebewaing, Mich. Plastering composition	291,508	Jan. 8	625	.....	26	119
Graff, Andrew. (See Kerr, Hugh, assignor.)						
Graham, Daniel M., Chicago, Ill. Grate	292,215	Jan. 22	1509	424	26	293
Graham, Daniel M., Chicago, Ill., assignor to Company of Vulcan, New York, N. Y. Steam-generator	295,542	Mar. 25	1525	421	26	1124
Graham, Neil F., Falls Church, and H. H. Young, Carlin's Springs, Va. Propulsion of street-cars and other vehicles	292,483	Jan. 29	1854	517	26	364
Graham, Thomas W. (See Fleaniken and Graham.)						
Graham, W. J. (See Martin and Metcalfe, assignors.)						
Gramme, Zénobe T., Paris, France. Commutator for magneto or dynamo electric machines	294,613	Mar. 4	334	93	26	885
Grand Rapids Electric Light and Power Company. (See Thomas, William M., assignor.)						
Granger, Arthur O., Philadelphia, Pa. Gas apparatus	295,118	Mar. 11	974	267	26	1003
Granger Automatic Car Coupling Company. (See Granger, Edward L., assignor.)						
Granger, Edward L., South Manchester, Conn., assignor, by mesne assignments, to Granger Automatic Car Coupling Company, of New York. Car-coupling	294,124	Feb. 26	1747	481	26	770
Grannis, William P., Wolcottville, Ind. Draft-equalizer	293,008	Feb. 5	284	79	26	494
Grant, Charles, Jr., Boston, Mass. Cash and parcel carrier	293,241	Feb. 12	608	161	26	553
Grant, Charles, Jr., and D. Lawrence, Boston, Mass., assignors to said Grant. Cash and parcel carrier	291,895	Jan. 15	1111	310	26	215
Grassler, William F., Williamsport, Pa. Draft-regulator	291,713	Jan. 8	888	249	26	165
Gratz, John, and P. Hagedorn, Chicago, Ill. Cigar-cutter	291,509	Jan. 8	626	176, 177	26	119
Graves, H. D. (See Graves, Oriel M., assignor.)						
Graves, Isabella S., Fishkill-on-the-Hudson, N. Y. Insecticide	293,300	Feb. 12	716	.....	26	572
Graves, Jesse T., and B. F. Belt, Colo, Iowa. Tile-laying machine	295,119	Mar. 11	975	267	26	1003
Graves, John, Green Point, N. Y. Whiffletree	295,866	Mar. 25	1947	537	26	1190
Graves, Marshall E., and P. C. Gates, assignors to Shorey Spring Bed and Shade Roller Company, Lowell, Mass. Spring shade-roller	294,316	Feb. 26	1992	544	26	813
Graves, Oriel M., Dayton, Wash. Ter., assignor of one-half to H. D. Graves, Portland, Oreg. Necktie-fastener	294,869	Mar. 11	651	181	26	948
Graves, William D., Jr., Presque Isle, Me. Oiler for loose pulleys	291,334	Jan. 1	396	111	26	72
Graves, Willis N., assignor of one-half to Hydraulic Press Brick Company, St. Louis, Mo. Brick-kiln	292,427	Jan. 22	1787	498, 499	26	344
Graves, Willis N., assignor of one-half to Hydraulic Press Brick Company, St. Louis, Mo. Brick-kiln	294,223	Feb. 26	1877	513	26	791
Gray, Alexander L., East Monmouth, Me. Band sawing machine	293,163	Feb. 5	494	132	26	528
Gray, John. (See Hubbard, Nathan B., assignor.)						
Gray, John M. (See Foss and Gray.)						
Gray, Lawrence B., *et al.* (See Murphy, Edward J., assignor.)						
Gray, Thomas H., assignor of one-tenth to J. Leavens, Brooklyn, N. Y. Removing oleine from linseed-oil	295,633	Mar. 25	1642	.....	26	1145
Gray, William, assignor of one-half to W. W. Tucker, Hartford, Conn. Body-protector	295,543	Mar. 25	1526	421	26	1124
Gray, William C. (See Dennen, Gray, and Nellis.)						
Green, Albert, *et al.* (See Britton, Samuel H., assignor.)						
Green, Alonzo W., Spencer, Mass. Jointed plow-beam	292,606	Jan. 15	1250	350	26	240
Green, Daniel A., Scott, N. Y. Medical compound	291,714	Jan. 8	888	.....	26	165
Green, Edgar N., *et al.* (See Baskin, William C., assignor.)						
Green, Monroe, Brooklyn, N. Y. Ruler	294,870	Mar. 11	652	181	26	948
Green, William W., Chicago, Ill. Mortising-machine	295,102	Mar. 18	1034	286	26	1027
Greenberg, Jacob, and E. E. Lucas, Peoria, Ill. Device for raising and lowering awnings	292,216	Jan. 22	1510	424	26	293
Greene, Darwin A., New York, N. Y. Wood-bundling machine	294,125	Feb. 26	1748	481	26	771
Greene, George A., Taylor, Tex. Treadle-power	294,224	Feb. 26	1878	513	26	792

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Greenfield, Harry, Harrison, N. J., assignor to Hincks & Johnson, Bridgeport, Conn. Two-wheeled vehicle	293,572	Feb. 12	1014	279	26	627
Greenleaf, Frank C., Apulia, N. Y. Compensating pendulum	293,865	Feb. 19	1402	388	26	702
Greenlees, Robert D., Watertown, N. Y. Hat	294,379	Mar. 4	54	13	26	839
Greenman, Harvey H., Cortlandville, N. Y. Positive shuttle-motion for looms	291,844	Jan. 8	1040	290	26	191
Greenough, Arthur T., and W. H. Boardman, Franklin, N. J., assignors to A. Peck and W. I. Snyder, New York, N. Y. Tennis-racquet	293,573	Feb. 12	1015	279	26	627
Greenwood, Alvin M., *et al.* (See Ellis, George A., assignor.)						
Gregg, William L., Philadelphia, Pa. Hydrocarbon-burner	294,614	Mar. 4	336	93	26	885
Gregory, James. (See Hargrave, William, assignor.)						
Greig, George, Edinburgh, Scotland. Steam-plow. (Reissue)	10,438	Jan. 22	1822	508	26	352
Greiner, Otto. (See Witte and Greiner.)						
Greives, John, Paterson, N. J. Electrical insulating material	291,716	Jan. 8	891	.....	26	166
Greives, John, Paterson, N. J. Electrical insulating material	291,717	Jan. 8	892	.....	26	166
Greives, John, Paterson, N. J. Electrical insulating material	291,718	Jan. 8	893	.....	26	166
Greives, John, and J. H. Bleoo, Paterson, N. J. Underground electrical conductor	291,715	Jan. 8	889	250	26	165
Grell, Johann H., Sr., Hamburg, Germany. Fender for ships	293,321	Feb. 12	716	191 192	26	572
Grey, Samuel H., *et al.* (See Rose, Rufus E., assignor.)						
Gribbie, Charles L. (See Crofut and Gribbie.)						
Grier, R. Monroe, St. Louis, Mo. Granary	293,574	Feb. 12	1016	279	26	627
Griffen, John, and J. Hall, Jr., assignors to Phœnix Iron Company, Phœnixville, Pa. Water-joint for rotary puddling-furnaces	295,867	Mar. 25	1947	538	26	1199
Griffin, John H., Hartford, Conn. Sewing-machine	291,719	Jan. 8	894	250	26	166
Griffin, John H., Brockton, Mass., assignor to Standard Trimmer Company, Portland, Me. Presser foot and guide for use with sewing-machine trimmers	292,747	Jan. 29	2220	617	26	496
Griffin, John S., Cleveland, assignor to himself and M. Boleyn, Newburg, Ohio. Machine for drawing bars	293,450	Feb. 12	878	238	26	602
Griffin, Louis P., Providence, R. I. Suspensory-bandage	291,592	Jan. 8	734	206	26	138
Griffin, Seth, New York, N. Y., assignor of one-half to W. Halkyard, Providence, R. I. Track or road bed	294,126	Feb. 26	1750	481	26	771
Griffith, Charles E., Storm Lake, Iowa. Fastener for fence wires and boards	293,609	Feb. 5	285	79	26	494
Griffith, Charles E., Storm Lake, Iowa. Wire-fence fastener	294,615	Mar. 4	336	93	26	886
Griffiths, Richard H., Janesville, Wis. Grain scourer and cleaner	294,225	Feb. 26	1879	514	26	792
Griffiths, Thomas. (See Clapp and Griffiths.) (Reissue.)						
Griffiths, Thomas, Abergavenny, county of Monmouth, England. Converter	295,544	Mar. 25	1527	422 423	26	1124
Griffiths, Thomas, Abergavenny, county of Monmouth, England. Converter	295,545	Mar. 25	1529	423 424	26	1125
Griffiths, Thomas, Abergavenny, county of Monmouth, England. Converter employed in the manufacture of iron and steel	295,546	Mar. 25	1531	424	26	1125
Grimm, Henry, Quincy, Ill. Lifting-jack for starting cars	294,380	Mar. 4	54	14	26	839
Grimshaw, George, Jr., Paterson, N. J. Skein lacing and tying attachment for reels	293,164	Feb. 5	495	132	26	528
Griscom, John P., Pottsville, Pa. Crank-pin slide of direct-acting steam-pumps	291,720	Jan. 8	995	250	26	166
Griswold, Catharine A., New York, N. Y. Corset	291,335	Jan. 1	396	111	26	72
Griswold, Catharine A., New York, N. Y. Corset	291,336	Jan. 1	397	112	26	72
Griswold, Catharine A., New York, N. Y. Corset-clasp	291,337	Jan. 1	397	112	26	72
Griswold, Catharine A., New York, N. Y. Corset	291,338	Jan. 1	398	112	26	73
Griswold, William N., New York, N. Y. Fire-escape	293,322	Feb. 12	717	192	26	572
Groat, Edwin. (See Wright, Aaron, assignor.)						
Groff, Joseph G., Connersville, Ind. Saw-guard	291,187	Jan. 1	219	61	26	39
Gross, Elam A., Camden, N. J. Transplanter	293,652	Feb. 19	1108	308	26	651
Gross, John, Ottawa, Ill. Extension-file	292,484	Jan. 29	1856	518	26	364
Gross, Lewis T., and J. Adams, Philadelphia, Pa. Knitting-machine	294,381	Mar. 4	55	14	26	839
Gross, Rudolph. (See Wessell, Nickel, and Gross.)						
Grosscup, Fred P., assignor to Columbus Hay Tool Company, Columbus, Ohio. Hay-carrier	293,451	Feb. 12	880	238	26	603
Grosscup, Fred P., assignor to Columbus Hay Tool Company, Columbus, Ohio. Hay-carrier	293,452	Feb. 12	881	238	26	603
Grote, Ferdinand, Evansville, Ind. Force-pump	291,845	Jan. 8	1041	290	26	192
Grotz, Charles, assignor to Garretson Ruffler Company, Oskaloosa, Iowa. Ruffling attachment for sewing-machines	291,050	Jan. 1	42	13	26	11
Grotz, Charles, assignor to Garretson Ruffler Company, Oskaloosa, Iowa. Ruffling and shirring attachment for sewing-machines	291,051	Jan. 1	44	13	26	11
Grotz, Charles, assignor to Garretson Ruffler Company, Oskaloosa, Iowa. Ruffling and shirring attachment for sewing-machines	291,052	Jan. 1	45	13	26	11
Gronnds, Daniel A., and J. R. Gibson, Hope, Ark. Car-coupling	294,127	Feb. 26	1751	482	26	771
Grout, Frank R., Chicago, Ill. Stand and press for paint and other cans	295,492	Mar. 18	1457	401	26	1106
Grove, John A., Bluffton, Ind. Fence	293,575	Feb. 12	1017	280	26	627
Grove, John A., Bluffton, Ind. Window-screen	295,163	Mar. 18	1035	280	26	1027
Grover, Delbert T., *et al.* (See Jones, Thomas B., assignor.)						
Grover, Nathan S., *et al.* (See Jones, Thomas B., assignor.)						
Grundel, Theodore. (See Barton, Edward F., assignor.)						
Gruson, Hermann, Buckau, near Magdeburg, Prussia, Germany. Gun-carriage	295,245	Mar. 18	1146	315 316	26	1046
Gruson, Hermann, Buckau, near Magdeburg, and M. Schumann, Magdeburg, Prussia, Germany. Armor-plated gun-carriage	295,246	Mar. 18	1147	316 317	26	1046
Guenther, John E., Fort Wayne, Ind. Steam-engine	294,226	Feb. 26	1880	514	26	792
Guerber, Frederick S., assignor to Union Switch and Signal Company, Pittsburg, Pa. Fluid-pressure signaling apparatus	292,748	Jan. 29	2221	617	26	496
Guerne, George E., Santa Rosa, Cal. Two-wheeled vehicle	293,323	Feb. 12	718	192	26	572
Guillow, Jehiel D. (See Guillow, Nicola M., assignor.)						
Guillow, Nicola M., Chicago, Ill., assignor of one-half to J. D. Guillow, Boston, Mass. Carriage-shade holder	292,112	Jan. 15	1367	383	26	263
Guiloz, John F., and J. D. Perry, Detroit, Mich. Milk-bucket	292,217	Jan. 22	1511	424	26	293
Guilmann, Christopher. (See Ilker, Carroll L., assignor.)						
Gumlich, Charles, Jr., Cleveland, Ohio. Hose attachment for street-washers	295,164	Mar. 18	1036	286	26	1028
Gunther, George A., New Utrecht, and H. W. Hubbard, Brooklyn, N. Y. Snow-plow	294,382	Mar. 4	56	14	26	839
Gustaveson, Charles J., Salt Lake City, Utah, Ter. Device for destroying insects	294,616	Mar. 4	337	94	26	886
Guth, Henry, New York, N. Y. Thermometer	294,732	Mar. 4	472	132	26	910
Guthrie, James T., Leesburg, Ohio. Fire-escape	292,803	Feb. 5	33	9	26	449
Gutmann, Emil, *et al.* (See Martinez, Rafael, assignor.)						
Guyer, Henry, and L. F. King, Polo, Ill. Grain-binder	292,907	Feb. 5	158	43	26	472
Gyles, James F., Chicago, Ill. Street-car heater	293,962	Feb. 19	1596	420	26	725

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Haag, John C., Lansing, Mich. Support for boilers	294,871	Mar. 11	653	182	26	948
Haas, Levi, Chester, Pa. Building-wall compound	293,010	Feb. 5	286	80	26	494
Haas, Philip M., assignor of one-half to Andrews Bros. & Co., Youngstown, Ohio. Rolling-mill	293,165	Feb. 5	496	132 133	26	528
Haas, Philip M., assignor of one-half to Andrews Bros. & Co., Youngstown, Ohio. Metal-drawing dog	293,166	Feb. 5	501	133	26	529
Haas, Philip M., assignor of one-half to Andrews Bros. & Co., Youngstown, Ohio. Machine for drawing metal bars	293,167	Feb. 5	503	133	26	529
Haas, Samuel H., Chicago, Ill., assignor to C. J. Wright. Harness-tug	294,872	Mar. 11	653	182	26	948
Haas, Samuel H., Chicago, Ill., assignor to C. J. Wright. Rowlock	294,993	Mar. 11	802	222	26	975
Habberstad, Nickolas M., St. Paul, Minn. Trace fastener	291,896	Jan. 15	1113	310	26	215
Habeck, Ludwig, Town Lake, Wis. Potato-digger	292,804	Feb. 5	35	10	26	449
Hacker, Georg, assignor to G. Schwanhaeusser, Nuremberg, Bavaria, Germany. Pencil and analogous articles	294,317	Feb. 26	1093	545	26	813
Hacklander, William, Ehrenfeld, Germany. Car-brake	294,994	Mar. 11	803	222	26	975
Hadden, William, Brooklyn, N. Y. Railway signal system	291,721	Jan. 8	896	251	26	166
Hadley, Charles F., Chicopee, Mass., and A. H. Overman, assignors to Overman Wheel Company, Hartford, Conn. Velocipede	292,908	Feb. 5	159	44	26	473
Haerter, Hugo, New York, N. Y. Spring-balance	294,227	Feb. 26	1881	514	26	792
Haff, Edward P., and J. H. Walbridge, Brooklyn, N. Y. Machine for attaching and setting metallic bangers to coats or other garments	294,033	Feb. 26	1609	447	26	749
Hagan, John A., assignor, by mesne assignments, to Hagan Steel Car Wheel Company, Three Rivers, Mich. Car-wheel	294,995	Mar. 11	804	223	26	975
Hagan, John A., assignor, by mesne assignments, to Hagan Steel Car Wheel Company, Three Rivers, Mich. Car-wheel	294,996	Mar. 11	806	223	26	976
Hagan, John A., assignor, by mesne assignments, to Hagan Steel Car Wheel Company, Three Rivers, Mich. Car-wheel	294,997	Mar. 11	808	223	26	976
Hagan Steel Car Wheel Company. (See Hagan, John A., assignor.)						
Hagedorn, Peter. (See Gratz and Hagedorn.)						
Haggit, George. (See Hulburt, James H., assignor.)						
Hagler, Thomas, *et al.* (See Wheeler, James, assignor.)						
Hague, Benjamin M., Wild Flower, Cal. Excavator and land-leveler	292,555	Jan. 29	1963	547	26	381
Haid, Alfred, Rahway, N. J. Battery	294,463	Mar. 4	156	43	26	856
Haid, Alfred, Rahway, assignor to Haids Electrical Storage Company, Newark, N. J. Secondary battery	294,464	Mar. 4	157	43	26	856
Haid, Alfred, Rahway, assignor to Haids Electrical Storage Company, Newark, N. J. Secondary battery	294,465	Mar. 4	158	43	26	856
Haid's Electrical Storage Company. (See Haid, Alfred, assignor.)						
Haight, George E., Milford, W. H. Wood, Hartford, Conn., and W. E. Winsor, assignors to J. N. H. Patrick, New York, N. Y. Heating and controlling gases for motors	292,428	Jan. 22	1789	499	26	345
Hainsworth, Frederick, Chicago, Ill. Snow-plow attachment to locomotives	294,383	Mar. 4	58	14	26	840
Hako, Philipp. (See Sneider, Charles, assignor.)						
Hale, Albert W., Plainfield, N. J. Insulator for electric wires	293,242	Feb. 12	609	161	26	553
Hale, Albert W., Plainfield, N. J. Insulator for electric conductors	294,384	Mar. 4	59	15	26	840
Hale, Benjamin F., Rochester, N. Y. Apparatus for drying photographic papers	291,722	Jan. 8	897	251	26	166
Hale, Eugene. (See Crabtree, Thomas A., assignor.)						
Hale, William E. (See Menck and Hambrock, assignors.)						
Haley, John W., North Hartland, Vt. Nut-lock	292,301	Jan. 22	1619	453	26	312
Haley, William, Ravenna, Ohio. Mold for pressed glassware	292,007	Jan. 15	1250	350	26	241
Halkyard, William. (See Griffin, Seth, assignor.)						
Halkyard, William, Providence, R. I., assignor to T. H. Bowles, Fulton County, Ga.; said Bowles assignor of nineteen one-thousandths to said Halkyard. Panoramic sign for cars. (Reissue)	10,445	Feb. 5	562	150	26	540
Hall, Albert E., Quincy, Minn. Horseshoe	292,302	Jan. 22	1619	453	26	312
Hall, Charles, assignor to himself, J. Hill, Jr., and V. Castner, Changewater, N. J. Animal-trap	295,634	Mar. 25	1643	456	26	1145
Hall, Charles S., and E. J. Watson, Worcester, Mass. Making wire	293,011	Feb. 5	287	80	26	494
Hall, Jesse, Jr. (See Griffen and Hall.)						
Hall, Jesse, Jr., assignor to Phœnix Iron Company, Phœnixville, Pa. Rotary puddling-furnace	295,751	Mar. 25	1793	498	26	1172
Hall, John D., Orrville, Ohio. Device for welding steel calks to horseshoes	293,866	Feb. 19	1464	388	26	702
Hall, Joseph J., assignor to Hall's Automatic Feed Boiler Furnace Company, Chicago, Ill. Boiler-furnace	294,998	Mar. 11	810	224	26	976
Hall, Osborn B., Malden, Mass. Cash-conveyer	293,012	Feb. 5	288	80	26	494
Hall, Phillip A. (See Ebbert, John, assignor.)						
Hall, Thomas G., Brooklyn, N. Y. Cutting-pliers	294,034	Feb. 26	1610	447	26	749
Hall, Thomas W. (See Arnold, Horace L., assignor.)						
Hall, William, and J. Midgley, assignors of one-half to W. F. and F. C. Sayles, Pawtucket, R. I. Machine for combing fibrous materials	295,165	Mar. 18	1037	287	26	1028
Hall, William H., Tiffin, Ohio. Horse hay-rake	292,218	Jan. 22	1512	424	26	293
Hall, William P. (See Shipp, Henry A., assignor.)						
Halliwell, Jane. (See Sackett, Joseph S., assignor.)						
Halliwell, Samuel, assignor of one-half to J. S. Sackett & Co., New Haven, Conn. Presser-foot for sewing-machines	293,867	Feb. 19	1405	388	26	702
Hall's Automatic Feed Boiler Furnace Company. (See Hall, Joseph J., assignor.)						
Halsey, Frederic A., assignor to Rand Drill Company, New York, N. Y. Steam rock-drill	294,999	Mar. 11	811	224	26	976
Halsey, Frederic A., assignor to Rand Drill Company, New York, N. Y. Steam rock-drill	295,000	Mar. 11	815	225	26	977
Halsey, Frederic A., assignor to Rand Drill Company, New York, N. Y. Steam rock-drill	295,001	Mar. 11	817	225	26	977
Halsey, Frederic A., assignor to Rand Drill Company, New York, N. Y. Valve-gear for rock-drills	295,002	Mar. 11	820	226	26	977
Halsey, Frederic A., assignor to Rand Drill Company, New York, N. Y. Valve-gear for rock-drills	295,003	Mar. 11	825	226	26	977
Halsey, James T., Richmond, Va. Valve-gear	294,873	Mar. 11	654	182	26	948
Halsey, John S., Buena Vista, Colo. Pen-holder	291,723	Jan. 8	898	251	26	167
Halsted, James M., assignor to K. K. Halsted, Oakland, Cal. Device for regulating temperature	295,384	Mar. 18	1321	368	26	1080
Halsted, Kate K. (See Halsted, James M., assignor.)						
Ham, Joseph, *et al.* (See Murphy, Edward J., assignor.)						
Hambrock, Alexander. (See Menck and Hambrock.)						
Hamer, Samuel, Salt Lake City, Utah. Hose-coupling	293,453	Feb. 12	882	238	26	603
Hamilton, Hobart. (See McDougall, Isaac, assignor.)						
Hamilton, James B., Hammersmith, county of Middlesex, England. Reed-organ	293,454	Feb. 12	883	239	26	603
Hamilton, James B., Hammersmith, county of Middlesex, assignor of one-third to E. A. Ramsden, Inholms, England. Reed-organ	295,868	Mar. 25	1948	539	26	1200

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Hamilton, James E., assignor to Hamilton & Katz, Two Rivers, Wis. Interchangeable chart-frame	293,731	Feb. 19	1215	336	26	671
Hamilton & Katz. (See Hamilton, James E., assignor.)						
Hamilton, Robert, *et al.* (See Miller, William M., assignor.)						
Hamilton, Robert, Franklin, Ind. Clevis	291,053	Jan. 1	47	14	26	12
Hamilton, Robert, Franklin, Ind. Harvester-truck	292,219	Jan. 22	1513	425	26	294
Hamilton, Robert W., Hartford, Conn., assignor of two-thirds to M. T. Davidson, Brooklyn, N. Y. Direct-acting duplex pumping engine	293,243	Feb. 12	610	162	26	553
Hamilton, William. (See Dennis, James W., assignor.)						
Hamilton, William B. (See Kohnle and Hamilton.)						
Hamilton, William J., New Boston, Iowa. Gate	291,724	Jan. 8	899	252	26	167
Hamilton, William M., assignor of two-thirds to F. B. Tracy and F. H. Oviatt, Euclid, Ohio. Two-wheeled vehicle	291,725	Jan. 8	900	252	26	167
Hamlin, Charles A., Greenbush, assignor to Ransom Stove Company, Albany, N. Y. Stove	292,805	Feb. 5	35	10	26	449
Hammerstein, Malvine. (See Hammerstein, Oscar, assignor.)						
Hammerstein, Oscar, assignor to M. Hammerstein, New York, N. Y. Machine for manipulating cigar-wrappers	293,732	Feb. 19	1217	336	26	671
Hammerstein, Oscar, assignor to M. Hammerstein, New York, N. Y. Machine for cutting and piling cigar-wrappers	293,733	Feb. 19	1218	337	26	672
Hammett, James W., Grant, W. Va. Apparatus for boring wells	292,485	Jan. 29	1856	{518 519	{26	364
Hammond, Henry, Hartford, Conn. Die for forging hammers	295,547	Mar. 25	1532	495	26	1125
Hammond, Isaac B., Chicago, Ill. Ditching and grading machine	295,247	Mar. 18	1148	317	26	1047
Hammond, Wyatt A. (See La Rock, Gilbert, assignor.)						
Hand, John E., Philadelphia, Pa. Alidade	293,013	Feb. 5	290	80	26	495
Hand, Peter, Glen, N. Y. Bill-holder	291,339	Jan. 1	399	112	26	73
Hanford, Lemuel D. (See Foster and Hanford.)						
Hankin, William H., Jr., Brooklyn, N. Y. Saw	295,395	Mar. 18	1323	368	26	1080
Hanlon, William, New York, N. Y. Theater appliance	293,324	Feb. 12	719	192	26	572
Hanlon, William B., Bridgeport, Ohio. Bag-fastener	294,228	Feb. 26	1882	515	26	793
Hanna, Hiram, Columbus, Ohio. Kitchen-cabinet	295,120	Mar. 11	976	{267 268	{26	1003
Hanscom, George H., Brooklyn Village, H. P. and H. E. Brooks, Cleveland, Ohio. Safety-guard for molding-machines	291,897	Jan. 15	1113	311	26	215
Hanscom, William W., San Francisco, Cal. Cable-railway propulsion	291,898	Jan. 15	1114	311	26	215
Hanscom, William W., San Francisco, Cal. Cable-railway propulsion	292,165	Jan. 22	1435	402	26	292
Hansen, August, San Francisco, Cal. Bed-lounge	292,556	Jan. 29	1964	{547 548	{26	381
Hanagen, Charles A., and J. R. Coleman, Rock Island, Ill. Car-coupling	293,325	Feb. 12	721	193	26	573
Hanson, Herman L., Medford, and F. J. Johnston, Boston, Mass. Siphon-bottle	293,014	Feb. 5	290	81	26	495
Hanson, James P., Oshkosh, Wis. Log-loader	293,244	Feb. 12	612	{162 163	{26	554
Hanson, James P., Oshkosh, Wis. Log-jacking mechanism for saw-mills	293,245	Feb. 12	613	163	26	554
Hanson, James P., and J. P. Christensen, Chicago, Ill. Electric burglar-alarm	292,806	Feb. 5	37	10	26	449
Hanson, James P., and J. P. Christensen, Chicago, Ill. Electric burglar-alarm	292,807	Feb. 5	38	10	26	449
Hanson, William D. (See Christian and Hanson.)						
Hanvey, Alexander, assignor of one-half to W. Scott, Steubenville, Ohio. Tag or label holder	295,752	Mar. 25	1794	498	26	1172
Harder, Frank P., *et al.* (See Burns and Buckman, assignors.)						
Harder, James E. (See Williams and Harder.)						
Harding, Josiah. Antofagasta, Chili. Car-brake	293,455	Feb. 12	884	240	26	603
Harding, Thomas W., Leeds, county of York, England. Speed-indicator	292,808	Feb. 5	39	11	26	450
Hardisty, John F., Bonaparte, Iowa. Breast-drill	295,386	Mar. 18	1324	368	26	1081
Hargitt, Jervis. (See Hunter and Hargitt.)						
Hargrave, William, assignor of one-half to J. Gregory, New York, N. Y. Screw-cutting implement	293,868	Feb. 19	1405	389	26	702
Haring, John C., Jersey City, N. J. Case for pencils	292,909	Feb. 5	161	44	26	473
Harkey, George W., Matthews, N. C. Fertilizing-machine	295,387	Mar. 18	1324	369	26	1081
Harly, Jacob F., Kipton Station, assignor to W. K. Burton, Elyria, Ohio. Tuyere	295,548	Mar. 25	1533	425	26	1126
Harman, C. Wesley, and H. G. Skidmore, Cincinnati, Ohio. Watch-case	293,869	Feb. 19	1407	389	26	703
Harman, C. Wesley, and H. G. Skidmore, Cincinnati, Ohio. Watch-winding device	294,466	Mar. 4	158	43	26	856
Harper, John A. (See Hough, John T., assignor.)						
Harper, John A. (See Hough and Harper.)						
Harper, John M., Colfax, Wash. Ter. Car-coupling	292,910	Feb. 5	162	44	26	473
Harper, Nathan, assignor to M. W. Adams, Newark, N. J. Hat-sizing apparatus	293,015	Feb. 5	292	81	26	495
Harral, E. W. (See Hawley, Theodore, assignor.)						
Harrington, George W., Plainview, Minn. Draft-equalizer	291,899	Jan. 15	1116	311	26	216
Harrington, John C., Providence, R. I. Bracelet	291,900	Jan. 15	1117	312	26	216
Harrington, John C., Providence, R. I. Bracelet	293,016	Feb. 5	295	81	26	496
Harris, Edward. (See Tony and Harris.)						
Harris, Enoch, Quincy, Ill. Saw-tooth	292,809	Feb. 5	40	11	26	450
Harris, John C. F., Littleton, N. H. Spring-board wagon	295,635	Mar. 25	1644	456	26	1145
Harris, John J., Wilmington, Del. Paper-making machine	293,870	Feb. 19	1408	389	26	703
Harris, Julius, Ridgeway, N. Y. Cover for fruit-packages	293,456	Feb. 12	885	240	26	604
Harris, Noah R., *et al.* (See Hutson, William L., assignor.)						
Harris, Richard H., Petersburg, Va. Egg-carrier	292,303	Jan. 22	1020	453	26	312
Harris, Samuel R. (See Cowdery, Warren H., assignor.)						
Harris, Willard M., Wyoming, Del. Cultivator	293,017	Feb. 5	295	81, 82	26	496
Harrison, Charles, New York, N. Y. Water-closet	293,734	Feb. 19	1221	337	26	672
Harrison, Charles R., Fond du Lac, Wis. Postal-bag rack	292,911	Feb. 5	163	44, 45	26	473
Harrison, Frank G., assignor of one-half to R. S. Dodge and P. Adams, Newburyport, Mass. Guard for harness-buckles	291,846	Jan. 8	1041	291	26	192
Harrison, Henry H., New York, N. Y. Card for playing loto and other games	295,388	Mar. 18	1325	369	26	1081
Harrison, John F. (See Crossley, Emmott, and Harrison.)						
Harrison Machine Works. (See Stout, James A., assignor.)						
Harrison, Thomas T., Anbrey, Kans. Sulky-plow	292,304	Jan. 22	1021	454	26	312
Hart, Charles E., assignor to Stanley Works, New Britain, Conn. Hinge	294,035	Feb. 26	1611	447	26	749
Hart, Charles N., assignor of one-half to C. S. Smith, Pittsford, Vt. Hame-fastener	292,008	Jan. 15	1251	350	26	241
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Watch-plate	293,018	Feb. 5	297	82	26	496
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Stem-winding watch	293,168	Feb. 5	506	134	26	530
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Compensation watch-balance	293,169	Feb. 5	507	134	26	530
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Watch-dial	293,170	Feb. 5	508	134	26	530

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Hart, Henry K., *et al.* (See Robburts, George W., assignor.)						
Hart, John A., H. Scott, and B. F. Pancoast, Iola, Kans. Motor	295,121	Mar. 11	977	268	26	1003
Harter, Marcus L. (See Miller, Thomas J., assignor.)						
Hartford Sanitary Plumbing Company. (See Tobey, Henry A., assignor.)						
Hartley, Henry C., and J. L. Rodgers, Springfield, Ohio. Button-hole attachment for sewing-machines	292,647	Jan. 29	2077	578	26	400
Hartman, Charles F., Keller's Church, Pa. Rail-joint	292,223	Jan. 22	1520	426	26	294
Hartman, John M., Philadelphia, Pa. Preventing chilling of blast-furnaces	292,305	Jan. 22	1623	454	26	313
Hartmann, Bernhard, New York, N. Y. Ear-ring	292,810	Feb. 5	41	11	26	450
Hartmann, Ignatz, St. Louis, Mo. Buckle	291,726	Jan. 8	901	252	26	167
Hartshorn, Stewart, Millburn, N. J. Spring shade-roller	293,457	Feb. 12	886	240	26	604
Hartshorn, Stewart, Millburn, N. J. Spring shade-roller	293,871	Feb. 19	1409	389	26	703
Hartson, Alfred H. (See Asimont, Henry H., assignor.)						
Hartzoke, Abel C., Lincolnton, N. C. Flour-packing machine	291,593	Jan. 8	735	207	26	138
Harvey, Alfred, *et al.* (See Thurber, Milton R., assignor.)						
Harvey, Alvey C., Lone Pine, Cal. Water-motor	291,340	Jan. 1	400	113	26	73
Harwood, William A., Montclair, N. J. Mortar	291,054	Jan. 1	47	14	26	12
Haselton, Daniel B., Charleston, S. C. Saw for cotton-gins, &c	293,576	Feb. 12	1018	280	26	627
Hasenohr, John B., Terre Haute, Ind. Gate-latch	295,753	Mar. 25	1794	498	26	1172
Haskell, George B., Salem, Mass. Vehicle-seat	295,754	Mar. 25	1795	499	26	1172
Haskell, John T., assignor of one-half to H. E. Streator, Norwalk, Ohio. Scaffolding	295,389	Mar. 18	1326	369	26	1082
Haskins, Charles D., New York, N. Y., assignor, by mesne assignments, to Western Electric Company, Chicago, Ill. Telephone circuit-changer	293,171	Feb. 5	508	{134 135	{26	530
Haskins, James H. (See Wilson and Haskins.)						
Hassell, Angell J. (See Fisher and Hassell.)						
Hatch, George T., and F. W. Riesenberg, Peoria, Ill. Cut-off-valve gear	294,036	Feb. 26	1612	448	26	749
Hatcher, Henry A., *et al.* (See Dixon, Joseph L., assignor.)						
Hathaway, George H., Fairhaven, Mass. Sand-box for street-cars	291,341	Jan. 1	401	113	26	73
Hathaway, George M., assignor of one-half to C. C. Keeler, New York, N. Y. Car starter and brake	291,594	Jan. 8	736	207	26	139
Hathaway, George M., assignor of one-half to C. C. Keeler, New York, N. Y. Car-brake	292,429	Jan. 22	1790	499	26	345
Hathorn, George A., Johnstown, N. Y. Die for cutting gloves	293,872	Feb. 19	1410	390	26	703
Hathorn, George H., Chester, Me. Driving-calk	295,493	Mar. 18	1459	401	26	1106
Hatton, William E., Clarksburg, Ind. Bee-hive	293,873	Feb. 19	1411	390	26	704
Hausman, Jacob S., New York, N. Y. Ball-rack for pool-playing	293,458	Feb. 12	888	240	26	604
Havell, George, Newark, N. J. Snap-hook	295,390	Mar. 18	1327	370	26	1082
Havens, William R., Denver, Colo. Letter or paper file	295,391	Mar. 18	1327	370	26	1082
Haviland Samuel T., Jamison, Ala. Log-turner	295,549	Mar. 25	1534	425	26	1126
Hawkey, John R., Park Hill, Ontario, Canada. Spring-gear for buggies	292,811	Feb. 5	42	11	26	450
Hawley, Andrew T., Alton, Ill. Thrashing-machine	293,019	Feb. 5	296	82	26	496
Hawley, Benjamin R., Chicago, Ill. Joint for air-pipes	292,306	Jan. 22	1624	454	26	313
Hawley, Clark P., Johnstown, N. Y. Pillow-sham holder	292,224	Jan. 22	1521	426	26	295
Hawley, James A., Canandaigua, N. Y. Vaginal syringe	295,755	Mar. 25	1796	499	26	1172
Hawley, Theodore, assignor of one-half to E. W. Harral, Fairfield, Conn. Stay-press for rubber clothing	294,318	Feb. 26	1994	545	26	813
Hawn, William, Knoxville, Tenn. Shutter-worker	292,225	Jan. 22	1523	426	26	295
Hawn, William, Knoxville, Tenn. Mail-bag	293,459	Feb. 12	889	241	26	604
Hawthorn, William A., Hawthorn, Nev. Water-cooler	291,595	Jan. 8	737	207	26	139
Hayden, Alfred P., and F. Pickup, Brooklyn, N. Y. Clamp for sheet-holders	292,307	Jan. 22	1624	455	26	313
Hayden, Harris H., New York, N. Y. Store-service apparatus	295,248	Mar. 18	1151	318	26	1047
Hayden, Harris H., New York, N. Y. Elevator for cash-carriers	295,393	Mar. 18	1331	371	26	1083
Hayden, Harris H., New York, N. Y., and E. L. Giles, Lowell, assignors to Lamson Cash Railway Company, Boston, Mass. Store-service apparatus	292,812	Feb. 5	42	12	26	450
Hayden, Henry F. (See Morgan and Hayden.)						
Hayden, Henry F., Washington, D. C. Process of and apparatus for vaporizing hydrocarbon oils	295,550	Mar. 25	1535	426	26	1126
Hayden, Henry F., Washington, D. C., assignor to himself, J. A. Logan, Illinois, and J. T. Morgan, Alabama. Vapor and gas generating furnace for locomotives, &c	295,392	Mar. 18	1328	{370 371	{26	1082
Hayden, Marshall, New Milford, Pa. Car-coupling	292,430	Jan. 22	1791	499	26	345
Haydock, Thomas T. (See Rogers, Michael J., assignor.)						
Hayes, Charles H., assignor to Wallace & Sons, Ansonia, Conn. Electric-arc lamp	292,113	Jan. 15	1368	{383 384	{26	263
Hayes, George, Girardville, Pa. Miner's squib	291,343	Jan. 1	402	114	26	73
Hayes, George, New York, N. Y. Cross-clip for metallic skylights and glazed roofs	291,342	Jan. 1	402	114	26	73
Hayes, George, New York, N. Y. Skylight	292,486	Jan. 29	1859	{519 520	{26	365
Hayes, George, New York, N. Y. Skylight	295,166	Mar. 18	1038	287	26	1028
Hayes, George, New York, N. Y. Skylight	295,167	Mar. 18	1040	287	26	1028
Hayes, George, New York, N. Y. Ventilating-skylight	295,168	Mar. 18	1042	288	26	1028
Hayes, George, New York, N. Y. Revolving map-stand	295,636	Mar. 25	1645	456	26	1145
Hayes, Henry E., Brooklyn, N. Y. Tubular cutter-lathe	291,727	Jan. 8	901	{252 253	{26	167
Hayes, Lewis S., Cortland, N. Y. Tubular cutter-lathe	295,169	Mar. 18	1044	288	26	1029
Hayes, Martin P., Seaforth, Ontario, Canada. Evaporating apparatus	295,004	Mar. 11	827	227	26	978
Hayes, Timothy, Anderson's Ferry, Ohio. Apparatus for mashing grain	295,005	Mar. 11	830	227	26	978
Hayes, Timothy, Anderson's Ferry, Ohio. Apparatus for cooling mash, &c	292,648	Jan. 29	2078	{578 579	{26	400
Hayman, Michael, Buffalo, N. Y. Bag-holder	294,229	Feb. 26	1883	515	26	793
Haynes, Frank, Monticello, Ark. Back-hand hook	295,756	Mar. 25	1797	499	26	1173
Heald, John, Springfield, Mass. Water-key for brass musical instruments	295,551	Mar. 25	1537	426	26	1126
Healey, C. Wallace, Marlborough, N. H., assignor to Companion Sewing Machine Company, New Britain, Conn. Feeding mechanism for sewing-machines						
Healy, Clarence L. (See Rae and Healy.)						
Healy, Olive, assignor of one-half to J. Inglis, Paterson, N. Y. Lighting sewing-machines	294,128	Feb. 26	1752	482	26	771
Heard, William, Paterson, N. J. Polisher and cleaner for metal and other surfaces	292,640	Jan. 29	2079	579	26	400
Heath, Henry, assignor to Fisk, Clark & Flagg, New York, N. Y. Retainer for necktie	292,308	Jan. 22	1625	455	26	313
Heath, John E., assignor of one-half to H. L. Smith, Albany, N. Y. Water-filter	292,912	Feb. 5	164	45	26	473
Heath, Wilbur F., Fort Wayne, Ind. Two-wheeled vehicle	294,617	Mar. 4	338	94	26	886
Heaton Button Fastener Company. (See Goodfellow, John H., assignor.)						
Heberling, John, Mount Pleasant, Ohio. Sewing-machine ruffler	292,813	Feb. 5	44	12	26	451
Hecklinger, Charles. (See Hecklinger, George B., assignor.)						
Hecklinger, George B., Streator, Ill., assignor of one-half to C. Hecklinger, New York, N. Y. Shading-pencil	292,650	Jan. 29	2080	579	26	400

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Hedtmann, Wilhelm, E. Henkels, A. Schmiedel, Langerfeld, near Barmen, and M. Fischer, Berlin, assignors to A. Henkels, Langerfeld, near Barmen, Prussia, Germany. Braiding-machine	293,020	Feb. 5	299	82, 83	26	496
Heeb, Henry H., and J. F. Schonert, Fayetteville, Ind. Two-wheeled vehicle	292,913	Feb. 5	167	45	26	474
Heer, David, Philadelphia, Pa. Machine for making tassel-blanks, &c	292,009	Jan. 15	1252	350	26	241
Heer, David, Philadelphia, Pa. Machine for making tassel-blanks	292,010	Jan. 15	1253	351	26	241
Heffernan, William J., Lynn, Mass., assignor to T. A. Dodge, trustee. Burnishing-machine	294,129	Feb. 26	1754	482	26	771
Heft, Nathan H., Valley, N. J. Lubricator	295,757	Mar. 25	1798	499	26	1173
Hegeman, John, and B. Thackrah, Amsterdam, N. Y. Sewing-machine attachment for sewing buttons on fabrics	294,037	Feb. 26	1613	448	26	749
Heikel, Otto. (See Lubke, Adolph E. G., assignor.)						
Heineman, David, *et al.* (See Emannel, Henry, assignor.)						
Heinig, Frederick E., and F. Stitzel, assignors to T. H. Sherley, Louisville, Ky. Bottle	293,460	Feb. 12	890	241	26	604
Heintz, Christian and G. M., Buffalo, and A. Dotterweich, Dunkirk, N. Y. Air-pressure apparatus for beer-kegs, &c	294,230	Feb. 26	1884	515	26	793
Heintz, George M. (See Heintz and Dotterweich.)						
Heintz, Michel. (See Dickman and Heintz.)						
Helsey, Augustus H., Idlewood, Pa. Glass water-tray	294,231	Feb. 26	1885	515	26	793
Heizer, John S., Rushville, Ind. Apparatus for warming the upper rooms of buildings	291,510	Jan. 8	627	177	26	119
Heilig, Charles A., Indianapolis, Ind. Hat-protector	292,487	Jan. 29	1802	520	26	365
Held, Charles W., and R. B. Locke, Brooklyn, N. Y. Life-guard and track-clearer	293,653	Feb. 19	1109	308	26	652
Helfrich, William H. (See Curtis and Helfrich.)						
Helm, J. Henry, Allegheny, Pa. Hardening and straightening iron and steel rods	294,130	Feb. 26	1755	483	26	771
Helmbacher Forge and Rolling Mills Company. (See McInnes, Alexander, assignor.)						
Hemenway, Nathan, Napa City, Cal. Pump	293,461	Feb. 12	891	241	26	605
Hemmenway, Eugene S., Boston, Mass. Bracket	294,385	Mar. 4	60	15	26	840
Henderson, James. (See Blythe and Henderson.)						
Henderson, John C., New York, N. Y. Marine electric messenger	293,735	Feb. 19	1222	338	26	672
Henderson, John C., New York, N. Y. Grip for electric cars	294,618	Mar. 4	339	94	26	886
Henderson, Robert T., Shawnectown, Mo. Churn	291,901	Jan. 15	1117	312	26	216
Henderson, William J., Naylor, Ga. Stave and shingle sawing machine	292,309	Jan. 22	1626	455	26	313
Hendrick, Obadiah, Macon, Miss. Tenon-extractor	295,170	Mar. 18	1045	288	26	1029
Hendricks, D. Brodhead, Glasco, N. Y. Baling-press	295,122	Mar. 11	978	268, 269	26	1004
Hendricks, William H., White Hall, Ind. Shoe for hoof-bound horses	291,655	Jan. 1	48	14	26	12
Hendry, John C., Boston, Mass. Steam-trap	292,914	Feb. 5	167	46	26	474
Henkels, Albert. (See Hedtmann, Henkels, Schmiedel, and Fischer, assignors.)						
Henkels, Ernst. (See Hedtmann, Henkels, Schmiedel, and Fischer.)						
Henkle, Leonard, Rochester, N. Y. Lamp	292,114	Jan. 15	1370	384	26	264
Henn, Eduard, Jersey City, N. J. Safety railway-car	295,637	Mar. 25	1646	456	26	1145
Henrich, Heinrich, New York, N. Y. Finger-ring	293,874	Feb. 19	1413	390	26	704
Henrich, Heinrich, New York, N. Y. Finger-ring	293,875	Feb. 19	1414	391	26	704
Henry, Fred H., Wakefield, Mass. Reversible seat	294,874	Mar. 11	655	182	26	948
Henry, John C., Kansas City, Mo. Combined fire and police alarm	295,249	Mar. 18	1153	318, 319	26	1048
Henry, Orrin, Port Andrew, Wis. Churn	292,915	Feb. 5	169	46	26	474
Henry, Remi, and H. B. Taylor, New Rochelle, N. Y. Upright tubular boiler	294,875	Mar. 11	656	183	26	949
Hentschke, Albert, Philadelphia, Pa. Refuse attachment for table-plates	292,651	Jan. 29	2081	579	26	401
Herman, John C., St. Louis, Mo. Vehicle-brake	295,123	Mar. 11	980	269	26	1004
Hermite, Eugene, Paris, France. Bleaching of paper-pulp or other fibrous or textile materials or fabrics	294,619	Mar. 4	340	94	26	886
Herottzky, Gustav M., Hamburg, Germany. Electric clock	293,613	Feb. 12	1060	293	26	635
Herrick, Lewis, New Haven, Conn. Drilling-machine	293,246	Feb. 12	645	163	26	554
Herring, Henry M., assignor to O. M. Draper, North Attleborough, Mass. Watch-chain attachment	294,733	Mar. 4	473	132	26	910
Herring, Henry M., assignor of one-half to O. M. Draper, North Attleborough, Mass. Ornamental chain-link	294,734	Mar. 4	474	132	26	910
Herring, Henry M., assignor of one-half to O. M. Draper, North Attleborough, Mass. Watch-chain tip	295,869	Mar. 25	1940	539	26	1200
Herring, Wilson. (See Fleck and Herring.)						
Herriott, Thomas M., *et al.* (See Thomas, William D., assignor.)						
Herrmann, Henry, Brooklyn, N. Y. Malt-drier	294,232	Feb. 26	1886	516	26	793
Herrmann, Jonas, Columbus, Ohio. Bracket	292,011	Jan. 15	1254	351	26	241
Herron, James P. (See Morrison and Herron.)						
Herron, James P., Washington, D. C. Street-sweeper	293,209	Feb. 5	550	149	26	539
Herron, William A. (See Hunzeker, Rudolph S., assignor.)						
Herzog, August, Guttenberg, N. J. Photographic camera	295,638	Mar. 25	1648	457	26	1146
Herzog, F. Benedict, New York, N. Y. Telephone-exchange system	292,115	Jan. 15	1372	384, 385	26	264
Hess, Daniel, Atlanta, Ga. Grinding-mill	294,735	Mar. 4	474	132, 133	26	910
Hess, Jacob F., F. H. Snyder, L. Hess, J. F. and C. F. Snyder, Massillon, Ohio. Hollow-piston pump	495,639	Mar. 25	1649	457	26	1146
Hess, Lenerd. (See Hess and Snyder.)						
Hessels, Anthony, New York, N. Y. Setting diamonds in tools	295,394	Mar. 18	1333	371	26	1063
Hessler, Jacob, assignor to W. W. Kimball, Chicago, Ill. Organ-treadle	293,462	Feb. 12	893	241	26	605
Hester, Ebenezer, Unionville, Conn. Joiner's marking-gage	291,728	Jan. 8	902	253	26	167
Hewett, Ellis B., and G. F. James, Tenino, Wash. Ter. Shingle-machine	295,006	Mar. 11	832	228	26	978
Hewitt, Hezekiah, Birmingham, county of Warwick, England. Metallic pen	295,395	Mar. 18	1334	371	26	1063
Hewitt, William, assignor to Trenton Iron Company, Trenton, N. J. Wire bale-tie	294,386	Mar. 4	61	15	26	840
Hewson, Robert, assignor to Globe Manufacturing Company, San Francisco, Cal. Water-wheel	292,431	Jan. 22	1792	500	26	345
Hexamer, Charles J., Philadelphia, Pa. Construction of malt and grain mills	292,488	Jan. 29	1862	520	26	365
Heyl, John A., Boston, Mass. Mechanism for guiding cars from one track to another	295,640	Mar. 25	1650	457	26	1146
Heywood, Benjamin, Brooklyn, N. Y., and J. Jones, Jersey City, N. J. Hose-reel	292,226	Jan. 22	1594	427	26	295
Heywood, George, *et al.* (See Ellis, George A., assignor.)						
Heywood, Henry, *et al.* (See Ellis, George A., assignor.)						
Heywood, Seth, *et al.* (See Ellis, George A., assignor.)						
Hiatt, Edwin, New Castle, Ind. Post-driver	293,021	Feb. 5	301	83	26	497
Hibbard, Angus S., Milwaukee, Wis., assignor to Western Electric Company, Chicago, Ill. Time-signal for toll-lines of telephone-exchanges	293,736	Feb. 19	1224	338, 339	26	672
Hibbard, Charles B., Grand Rapids, Mich. Spoon-bait	295,758	Mar. 25	1799	500	26	1173

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Hicks, Charles R. (See Hoit, David, assignor.)						
Hicks, George C., Chicago, Ill. Covering for steam-boilers, &c	294,780	Mar. 11	530	147	26	926
Higby, Charles W., Jackson, Mich. Corset	294,620	Mar. 4	341	95	26	887
Higgins, Charles L., Montreal, Quebec, Canada, assignor to J. E. Wheeler, trustee, Lynn, Mass. Device for expanding the uppers of boots and shoes	291,188	Jan. 1	220	61	26	39
Higgins, Charles L., Montreal, Quebec, Canada., assignor to J. E. Wheeler, trustee, Lynn, Mass. Exhibiting boots and shoes	291,729	Jan. 8	903	253	26	167
Hilburn, Frank P. (See Hoehn and Hilburn.)						
Hilgner, Robert, New Orleans, La. Binding attachment for sewing-machines	293,022	Feb. 5	302	83, 84	26	497
Hill, Alexander H., Oskaloosa, Iowa. Window-blind	294,233	Feb. 26	1887	516	26	794
Hill, Almon F. (See Huff, Orison, assignor.)						
Hill, Charles H., Scranton, Pa. Hydraulic air-compressor	292,814	Feb. 5	46	12	26	451
Hill, Christian C., Chicago, Ill. Barb-fence machine	291,902	Jan. 15	1116	312, 313	26	216
Hill, Christian C., Chicago, Ill. Manufacturing barbed fence-wire	291,903	Jan. 15	1123	313	26	217
Hill, Jacob, Jr., *et al.* (See Hall, Charles, assignor.)						
Hill, James, Providence, R. I. Galvanized or metal-coated bucket	291,904	Jan. 15	1124	313	26	217
Hill, John, Columbus, Ga. Electric fire-alarm	295,759	Mar. 25	1800	500, 501	26	1173
Hill, John, Columbus, Ga. Automatic fire-alarm	295,760	Mar. 25	1804	501	26	1174
Hill, John C., Fayetteville, N. Y. Press for stencil-printing	291,905	Jan. 15	1125	313	26	218
Hill, Jonathan, New York, N. Y. Folding chair	294,234	Feb. 26	1888	516	26	794
Hill, Lucian, assignor to T. C. Bates, North Brookfield, Mass. Fastening-clasp	293,247	Feb. 12	616	164	26	555
Hill, Lucian, assignor to T. C. Bates, North Brookfield, Mass. Corset-steel fastening	295,171	Mar. 18	1046	288	26	1029
Hill, Lucian, assignor to T. C. Bates, North Brookfield, Mass. Corset-steel fastening	293,963	Feb. 19	1528	421	26	725
Hill, Milton B., assignor of one-half to G. W. D. Upton, Springfield, Mass. Curtain-fixture						
Hill, Warren. (See Stiles, George A., assignor.)						
Hill, Warren S., Boston, Mass. Cash and parcel carrying system	295,172	Mar. 18	1047	289	26	1029
Hill, Warren W., Texas, Mich. Rudder for harrows	291,906	Jan. 15	1125	314	26	218
Hill, William E., Kalamazoo, Mich. Lath-sawing machine	295,173	Mar. 18	1048	289	26	1029
Hillard, Smith M. (See Jordan and Powers, assignors.)						
Hills Company. (See Marcil, Michel, assignor.)						
Hilsabeck, Frederick L., assignor to himself and J. Ward, Shelbyville, Ill. Cultivator	291,730	Jan. 8	904	253	26	167
Hiltawski, Arthur R. B., Zaborze, Upper Silesia, Germany. Coking-furnace	293,023	Feb. 5	304	84	26	497
Hilts, George S., Batavia, N. Y. Divided screw-nut	294,781	Mar. 11	531	148	26	926
Himmer, Ida C., New York, N. Y. Electric battery	292,310	Jan. 22	1627	456	26	314
Himmer, Vitalis, New York, N. Y., assignor, by mesne assignments, to J. Koenigsberg, St. Louis, Mo. Secondary electric clock	294,131	Feb. 26	1756	483	26	771
Himmer, Vitalis, New York, N. Y., assignor, by mesne assignments, to J. Koenigsberg, St. Louis, Mo. Electric device for synchronizing clock-pendulums	294,132	Feb. 26	1759	483	26	772
Hinch, James H., Laconia, assignor of three-fourths to W. H. Philbrick, Belmont, N. H. Hydraulic motor	291,189	Jan. 1	221	61	26	40
Hinckley & Egery Iron Company. (See Shaw, Thaxter, assignor.)						
Hincks & Johnson. (See Greenfield, Harry, assignor.)						
Hinds, Charles H., New York, N. Y. Insulating-connection for electric-light fixtures	291,731	Jan. 8	904	255	26	168
Hine, Willis T., West Meredith, N. Y. Whiffletree-coupling	292,012	Jan. 15	1254	351	26	241
Hinkley, George M., Milwaukee, Wis. Saw-mill set-works	291,344	Jan. 1	403	114, 115	26	73
Hinkley, George M., assignor to E. P. Allis & Co., Milwaukee, Wis. Truck-box for saw-mill carriages	291,345	Jan. 1	405	115	26	74
Hinman, Edgar R., Ilion, N. Y. Table	295,007	Mar. 11	833	228	26	979
Hinton, Joseph R. H., assignor to Viaduct Manufacturing Company of Baltimore City, Baltimore, Md. Magneto-electrical alarm	292,311	Jan. 22	1629	456	26	314
Hitchcock, Arthur W., Parkersburg, Iowa. Land-marker	295,761	Mar. 25	1807	501	26	1174
Hitchcock, James W., New Richmond, Wis. Sand-band for vehicle-wheels	294,782	Mar. 11	532	148	26	927
Hitchcock, Robert, Springfield, Mass. Car-coupling	295,250	Mar. 18	1155	319	26	1048
Hitchon, Alfred, Barrowford, near Burnley, county of Lancaster, England. Apparatus for pressing or leveling yarn on weavers' beams in warp-sizing machines	294,235	Feb. 26	1889	517	26	794
Hitt, Marcellus M., Luray, Va. Bridle	291,596	Jan. 8	739	208	26	139
Hoag, Albert, Pearl, Vt. Hand seed-planter	295,762	Mar. 25	1807	502	26	1174
Hoag, Andrew J., assignor to Nichols, Shepard & Company, Battle Creek, Mich. Thrashing-machine	293,876	Feb. 19	1415	391	26	704
Hobbs, Brocknnier & Co. (See Russell, William F., assignor.)						
Hobbs, Horatio. (See Gordon and Hobbs.)						
Hobson, John L., *et al.* (See Hobson and Bagley, assignors.)						
Hobson, William P., and H. A. Bagley, assignors of one-half to J. L. Hobson and F. B. Kingsbury, Haverhill, Mass. Cutting boot and shoe uppers	293,964	Feb. 19	1530	421	26	726
Hochhausen, William, New York, N. Y. Regulator for dynamo-electric machines	294,038	Feb. 26	1615	449	26	749
Hochhausen, William, New York, N. Y. Regulator for dynamo-electric machines	294,039	Feb. 26	1617	449	26	750
Hochhausen, William, New York, N. Y. Regulator for dynamo-electric machines	294,040	Feb. 26	1620	450	26	750
Hochhausen, William, New York, N. Y. Automatic brake for electric motors	294,041	Feb. 26	1624	450	26	751
Hochhausen, William, New York, N. Y. Double electric-arc lamp	294,042	Feb. 26	1626	450, 451	26	751
Hochhausen, William, New York, N. Y. Dynamo-electric machine	294,043	Feb. 26	1629	451, 452	26	752
Hochhausen, William, New York, N. Y. Incandescent electric lamp	294,044	Feb. 26	1631	452	26	752
Hochhausen, William, New York, N. Y. Hanger-board for electric lamps	294,045	Feb. 26	1633	452	26	752
Hochhausen, William, New York, N. Y. Apparatus for regulating and distributing currents from dynamo-electric machines	295,552	Mar. 25	1538	426, 427	26	1126
Hocking, James, Denton, Nebr. Wagon-brake	295,008	Mar. 11	834	228	26	979
Hodgen, William, Vincennes, Ind. Flood-fence	291,346	Jan. 1	406	115	26	74
Hodges, Charles C., *et al.* (See Hodges, Clarence B. and C. H., assignors.)						
Hodges, Charles H. (See Hodges, Clarence B. and C. H.)						
Hodges, Clarence B. and C. H., assignors of one-half to H. C. and C. C. Hodges, Detroit, Mich. Lubricator for locomotives	291,847	Jan. 8	1042	291	26	192
Hodges, Henry C., *et al.* (See Hodges, Clarence B. and C. H., assignors.)						
Hodgson, John. (See Stone, Edward, assignor.)						
Hodgson, John G. (See Norton and Hodgson.)						
Hoe & Co., R. (See Crowell, Luther C., assignor.)						
Hoehn, George L., and F. P. Hilburn, Mount Vernon, Ind. Tile-ditching machine	291,511	Jan. 8	627	177	26	119
Hofele, Ferdinand W., New York, assignor to E. S. Allen, Larchmont, N. Y. Folding fire-escape ladder	294,319	Feb. 26	1995	545, 546	26	813
Hofer, William, assignor to B. Shoninger, New Haven, Conn. Bell attachment for pianos	292,815	Feb. 5	48	12	26	451
Hofer, William, assignor to B. Shoninger, New Haven, Conn. Reed-organ attachment	294,621	Mar. 4	342	95	26	887
Hofer, William L., Manhattan, Kans. Musical game	292,312	Jan. 22	1631	456	26	314

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Hoff, Frans. (See Ballin and Hoff.)						
Hoffman, Arthur H., W. F. Lloyd, East New York, and J. H. Block, Brooklyn, N. Y. Toy target	292,652	Jan. 29	2081	580	26	401
Hoffman, Charles, Republic, Mo. Washing-machine	291,512	Jan. 8	628	177, 178	26	119
Hoffman, Edward J., Sioux City, Iowa. Life-protector for railways-rails	293,024	Feb. 5	305	84	26	497
Hoffman, Edward J., assignor of two-thirds to W. H. Freed, Sioux City, and W. H. Ransom, Missouri Valley, Iowa. Preventing incrustation in steam-boilers	293,172	Feb. 5	509	135	26	530
Hoffman, Horace J., Neillsville, Wis. Adjustable shelving	291,513	Jan. 8	629	178	26	120
Hoffman, Joseph, assignor to H. Berolzheimer, New York, N. Y. Pencil-sharpener	291,597	Jan. 8	739	208	26	139
Hoffman Manufacturing Company, J. G. (See Rowlands, John R., assignor.)						
Hoffnagle, Charles A. (See Coe and Hoffnagle.)						
Hogan, Philip J., Negaunee, Mich. Bottle-filling device	295,009	Mar. 11	835	229	26	979
Hogan, William H., assignor of one-half to E. W. Pasture, Boston, Mass. Combined bouquet and ticket holder	295,870	Mar. 25	1950	539	26	1200
Hogeboom, Franklin R., Brooklyn, N. Y. Tree-protector	293,463	Feb. 12	893	242	26	605
Hogg, James, Chicago, Ill. Can-machine	294,783	Mar. 11	533	148	26	927
Hohelsen, Carl, Pforzheim, Baden, Germany. Charm-telescope	294,467	Mar. 4	150	44	26	856
Holt, David, West Albany, assignor of one-half to C. R. Hicks, Troy, N. Y. Spring-buffer	292,166	Jan. 22	1436	402	26	292
Holbrook, Frederick H., Boston, Mass. Raised embroidery	293,677	Feb. 19	1416	391	26	704
Holbrook, Frederick H., Boston, Mass. Compound fabric	293,678	Feb. 19	1417	391	26	705
Holbrook, Henry R., Pueblo, Colo. Railway-tie	291,514	Jan. 8	632	179	26	120
Holden, Daniel L., Cincinnati, Ohio, assignor of two-thirds to P. T. Miller and T. E. Livezey. Ice and refrigerating machine	291,477	Jan. 1	576	162	26	103
Holl, Jacob. (See Myers, William H., assignor.)						
Holland, Anderson D., Newport, Ark. Combined lock and latch	293,248	Feb. 12	617	164	26	555
Holland, Edmund, *et al.* (See Stewart, George W., assignor.)						
Holland, John, Cincinnati, Ohio. Lead-holder for pencils	292,313	Jan. 22	1632	457	26	314
Holland, John J., New Orleans, La. Combined shovel and shield	291,732	Jan. 8	905	254	26	168
Holland, Wallace S., Burlington, Vt. Hanging for window-shades	295,396	Mar. 18	1335	372	26	1083
Hollen, William H. H., assignor, by mesne assignments, to R. S. Seeds, Tyrone, Pa. Knitting-machine	294,784	Mar. 11	534	148, 149	26	927
Hollingsworth, Joseph, Jonesborough, Ind. Washing-machine	292,314	Jan. 22	1632	457	26	314
Holloway, Robert A. (See Withers, James E., assignor.)						
Holman, Charles T., Lincoville, Pa., assignor of one-half to A. C. Carpenter, Rochester, N. Y. Horse hay-rake	292,013	Jan. 15	1256	351, 352	26	242
Holman, George W., *et al.* (See Duffy and McIvor, assignors.)						
Holman, William P., Howard, Ga. Blacksmith's punch	295,397	Mar. 18	1336	372	26	1083
Holmes, Britain. (See Holmes, Edward and B.)						
Holmes, Charles. (See Sager, Frank, assignor.)						
Holmes, Edward and B., Buffalo, N. Y. Machine for planing barrel-heads	292,816	Feb. 5	49	13	26	452
Holmes, Edward and B., Buffalo, N. Y. Windlass for compressing barrels	292,817	Feb. 5	50	13	26	452
Holmes, Francis M. (See Buck, Henry C., assignor.)						
Holmes, Philip H., Gardiner, Me. Machine for making wood fiber	291,848	Jan. 8	1043	291, 292	26	192
Holt, Alden, Boston, Mass. Heater for steam and water	291,347	Jan. 1	406	116	26	74
Holt, Mathew S., Weston, W. Va. Recording table or desk	292,749	Jan. 29	2222	618	26	426
Holt, Noah W., Buffalo, N. Y. Feed mechanism for roller-mills	293,464	Feb. 12	894	242	26	605
Holt, Noah W., Buffalo, N. Y. Roller-mill	294,236	Feb. 26	1890	517	26	795
Holtzbaugh, Adam. (See Mitchell, Barnard W., assignor.)						
Holwell, W. Antrobus, Quebec, Quebec, Canada. Door-closing device	293,336	Feb. 12	722	193	26	573
Holzer, William, Harrison, N. J. Manufacture of incandescing electric lamps	293,879	Feb. 19	1418	392	26	705
Holzer, William, assignor to Edison Lamp Company, Harrison, N. J. Manufacture of incandescing electric lamps	295,398	Mar. 18	1337	372	26	1084
Homrighous, Ervin, Shelbyville, Ill. Jeweling-machine	293,249	Feb. 12	618	164	26	555
Hönінger, Michael, assignor of one-half to J. C. Pickelmann, Buffalo, N. Y. School-bag	294,622	Mar. 4	344	96	26	887
Hood, Cyrus S., Corning, N. Y. Radiator for hot-air furnaces	293,025	Feb. 5	306	84, 85	26	498
Hoof, Julius H., Quincy, Dak. Ter. Rotary harrow	291,515	Jan. 8	633	179	26	120
Hooker, Henry C. (See Colton, George A., assignor.)						
Hooper, Lorenzo D., Coffeyville, Kans. Car-coupling	293,466	Feb. 12	896	242	26	606
Hooper, Nicholas B., Brooklyn, N. Y. Machine for froning hats	291,598	Jan. 8	740	208	26	140
Hooper, William, *et al.* (See Miller, William M., assignor.)						
Hopedale Machine Company. (See Northrop, James H., assignor.)						
Hopkins, Charles H., De Soto, assignor of one-half to H. S. Buller, Des Moines, Iowa. Attaching plant-shields to cultivators	293,465	Feb. 12	895	242	26	605
Hopkins, Egbert C., Rockford, Ill. Vapor-stove	292,315	Jan. 22	1633	457	26	314
Hopkins, George E., Cincinnati, Ohio. Ferrule	295,399	Mar. 18	1339	373	26	1084
Hopkins, George W. (See Roberts, Morris, assignor.)						
Hopkins, Lewis G., *et al.* (See Johnson, Perry, assignor.)						
Hopmann, Charles, *et al.* (See Ehrhardt, John, assignor.)						
Hopmann, Herman, Sr., *et al.* (See Ehrhardt, John, assignor.)						
Hoppen, Joseph E., Newark, N. J. Hanger for shafting	295,553	Mar. 25	1542	427	26	1127
Hopper, William, and I. J. Allen, Jefferson, Iowa. Corn-planter	294,623	Mar. 4	345	96	26	887
Horack, Carl L., Brooklyn, N. Y., assignor to Providence Steam and Gas-Pipe Company, Providence, R. I. Automatic fire-extinguisher	292,492	Jan. 22	1793	500	26	346
Horak, F. J., *et al.* (See Bilan, Louis, assignor.)						
Horn, William S., Mill Green, Md. Corn-silking machine	293,737	Feb. 19	1226	339	26	673
Horne, George W., assignor of one-fourth to B. A. Dare, New York, N. Y. Railway-switch mover	293,026	Feb. 5	308	85	26	498
Horne, George W., assignor to A. A. Knudson, New York, N. Y. Feed-bag for horses	293,250	Feb. 12	619	165	26	555
Horne, John H. (See Bradbury, Charles J., assignor.)						
Horne, John H., Lawrence, Mass. Securing the knives in paper-pulp-grinding engines	294,387	Mar. 4	61	15	26	840
Horner, Joseph W., New York, N. Y. Sectional compound telegraph-wire protector	291,478	Jan. 1	577	162	26	103
Horning, George H. (See Stedman, David R., assignor.)						
Horrall, William A., Washington, Ind. Spring bed-bottom	292,818	Feb. 5	52	13	26	452
Horrocks, Abraham, Bardolph, Ill. Brick and tile machine	295,871	Mar. 25	1951	540	26	1200
Horsman, Edward I. (See Stranders, Walter, assignor.)						
Horton, James A., Reading, Mass. Drop-press	294,237	Feb. 26	1892	518	26	795
Hortop, Henry, Rutherford, Cal. Road-cart	291,733	Jan. 8	906	254	26	168
Hoskins, Leander M., Evansville, Wis. Shifting apparatus for windmills	294,624	Mar. 4	346	96	26	888
Hosler, William W., Petoskey, Mich. Machine for boring tenons	293,880	Feb. 19	1419	392	26	705
Hotchkiss, Charles A. (See Dean and Hotchkiss.)						
Hougen, Hans P., *et al.* (See Whitton, Andrew D., assignor.)						
Hough, John T., Chicago, Ill., assignor of one-half to J. A. Harper, Pittsburg, Pa. Safe-lock	294,625	Mar. 4	348	97	26	888

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hough, John T., Chicago, Ill., and J. A. Harper, Pittsburg, Pa. Bank-vault	294,626	Mar. 4	349	97	26	888
Houghton, Darius, Skowhegan, Me. Lathe-center-grinding machine	292,227	Jan. 22	1525	427	26	295
Houlehan, James, assignor of one-half to R. Fuller, Toledo, Ohio. Unloading platform-cars	293,467	Feb. 12	897	243	26	606
House, James A., Bridgeport, Conn. Apparatus for forming and shaping corsets	294,046	Feb. 26	1634	453	26	753
Houser, George H. (See Voorhis and Houser.)						
Houston, George A. (See Downie, Robert E., assignor.)						
Hovey, John H., assignor of one-half to E. L. Shaw & Co., Woburn, Mass. Leather-stoning machine	294,320	Feb. 26	1997	547	26	814
Howard, George F., London, England. Apparatus for checking and registering the number of games or deals played at cards, &c	291,056	Jan. 1	49	14, 15	26	12
Howard, Hiram. (See Nelson, Nels, assignor.)						
Howard, John P. (See Thorpe, David H., assignor.)						
Howard, Stanton M., Wheeling, W. Va. Water-closet	295,010	Mar. 11	836	229	26	979
Howard, Stephen C., New York, N. Y. Sleeve-button, &c	294,468	Mar. 4	160	44	26	857
Howard, Stephen C., New York, N. Y., and J. C. Schott, Providence, R. I. Sleeve-button	294,469	Mar. 4	161	44	26	857
Howarth, John H., Jr., New Haven, Conn. Leggin	292,819	Feb. 5	52	14	26	452
Howe, Asa A., Ulysses, Pa. Stump-machine	292,014	Jan. 15	1257	352	26	242
Howe, Elbridge, Peterborough, N. H. Truss	294,321	Feb. 26	1999	547	26	814
Howe, Warren B., Chicago, Ill. Wrapper-folding machine	294,470	Mar. 4	162	44, 45	26	857
Howe, Warren H., Marlborough, Mass. Watering apparatus for hot-houses	293,577	Feb. 12	1019	280	26	628
Howe, William G., *et al.* (See Stevens, Henry M., assignor.)						
Howell, George W., Covington, Ky. Wheel	293,251	Feb. 12	620	165	26	555
Howell, Lewis O., Jr., Philadelphia, Pa. Combined stop-box and fresh-air conduit	293,027	Feb. 5	309	85	26	498
Howell, Thomas J., London, county of Surrey, England. Galvanic battery	292,433	Jan. 22	1794	500	26	346
Howell, William. (See Thorpe, David H., assignor.)	291,734	Jan. 8	907	.....	26	168
Howell, William, Philadelphia, Pa. Artificial stone						
Howson, Henry, Philadelphia, Pa., assignor to C. Detrick, New York, N. Y., and E. W. Bond, Springfield, Mass. Mode of and mechanism for forming underground conduits	291,840	Jan. 8	1047	293	26	193
Hoxie, Elias, Red Creek, N. Y. Heel-plate	291,599	Jan. 8	742	209	26	140
Hoxie, Elias, Red Creek, N. Y. Thill-coupling	293,173	Feb. 5	510	135	26	530
Hoyt, Francis A., assignor of two-thirds to L. H. Ware and J. W. Moore, West Cleveland, Ohio. Car-coupling	292,557	Jan. 29	1966	548	26	381
Hoyt, Frank S., and P. L. Storch, Chicago, Ill. Broom-machine	291,735	Jan. 8	907	254	26	168
Hubbard, H. Wilber. (See Gunther and Hubbard.)						
Hubbard, Moses G., Norristown, Pa. Road-wagon	295,011	Mar. 11	837	229	26	979
Hubbard, Nathan B., assignor of one-half to J. Gray, Chicago, Ill. Mucilage-bottle and holder	292,116	Jan. 15	1374	385	26	264
Hubbard, William B., Greenville, Ill. Draft-equalizer	295,174	Mar. 18	1049	289	26	1030
Hubbard, Benjamin, Afton, Iowa. Staple-extractor	295,494	Mar. 18	1459	402	26	1106
Hubbell, Oliver C., Cleveland, Ohio. Skylight	291,057	Jan. 1	50	15	26	12
Huebel, Frederick A., Detroit, Mich. Machine for cutting off gelatine capsules. (Reissue)	10,437	Jan. 15	1412	396	26	271
Huebel, Frederick A., Detroit, Mich. Capsule-machine	292,434	Jan. 22	1795	500, 501	26	346
Huber, Edward, and H. M. Barnhart, Marion, Ohio. Car-coupling	295,763	Mar. 25	1808	502	26	1174
Huber, Edward, and F. Strobel, Marion, Ohio. Straw-carrier for thrashing-machines	293,881	Feb. 19	1420	392, 393	26	705
Huckins, Irving W. (See Proctor and Huckins.)						
Hudnut, Theodore, Terre Haute, Ind. Hominy-mill	295,554	Mar. 25	1543	427	26	1127
Hudson, John W., Wellington, Ill. Hame	295,012	Mar. 11	839	229	26	980
Huehn, Conrad, Rochester, N. Y. Plow	293,252	Feb. 12	621	165	26	555
Huff, Orison, Lyman, assignor to himself and A. F. Hill, Woodford's, Me. Pocket-knife	294,471	Mar. 4	165	45	26	857
Huff, Peter, New York, N. Y. Faucet	292,489	Jan. 29	1864	521	26	366
Huffman, Norman B., Grant, Ind. Gate	295,641	Mar. 25	1652	458	26	1147
Huggins, Manlius, Waynesborough, Miss. Ointment for tetter	294,876	Mar. 11	657	.....	26	949
Hughes, Henry R. (See Wiard, Norman, assignor.)						
Hughes, Robert, Waterford, assignor to T. A. Knickenbacker, Troy, N. Y. Straight-way valve	291,479	Jan. 1	579	163	26	103
Huguuin, Robert B., Hartford, Conn. Sash-fastener	292,117	Jan. 15	1375	385	26	264
Hulbert, Arthur G., St. Louis, Mo. Wire-netting	295,251	Mar. 18	1157	319	26	1048
Hulbert, Sylvester C., *et al.* (See Shanahan, Winfield S., assignor.)						
Hulburt, James H., assignor of one-half to G. Haggit, Millbrook, Mich. Spoke-setting machine	293,174	Feb. 5	511	136	26	531
Hull, Nicholas A., Peru, Ind. Desk	294,388	Mar. 4	63	16	26	840
Hull, Obidiah. (See Clark, Byron, assignor.)						
Hull, Wesley, Fort Wayne, Ind. Gate-latch	293,253	Feb. 12	622	165	26	556
Hull, Wesley, Fort Wayne, Ind. Automatic gate-hinge	293,397	Feb. 12	723	193	26	573
Hummel, James H., New York, N. Y. Weather-strip	293,738	Feb. 19	1227	339	26	673
Humphrey, Daniel W. G., Chelsea, Mass., assignor to Rapid Button-Hole Machine Company. Button-hole stitching-machine	291,736	Jan. 8	908	255, 256	26	169
Humphreys, David, Norfolk, Va. Self-opening and self-closing hatchway	291,737	Jan. 8	915	256	26	169
Humphreys, Edward J., Millbury, Mass. Mortising-machine	294,389	Mar. 4	65	16, 17	26	841
Humphreys, Joseph. (See Rice and Humphreys.)						
Hungerford, George S., assignor, by mesne assignments, to H. E. Hungerford, New York, N. Y. Machine for cleaning and grading coffee, &c	292,750	Jan. 29	2224	618	26	427
Hungerford, Helen E. (See Hungerford, George S., assignor.)						
Hungerford, Henry, Norwalk, Conn., assignor, by mesne assignments, to United States Cotton Seed Cleaning Company, New York, N. Y. Grinding-mill	295,764	Mar. 25	1809	502	26	1175
Hunt, Edmund, Glasgow, county of Lanark, Scotland. Device for driving a helical sewing-needle	294,627	Mar. 4	351	98	26	889
Hunt, Franklin B., assignor to Richmond Sulky Plow Company, Richmond, Ind. Sulky-plow	295,175	Mar. 18	1051	290	26	1030
Hunt, James B. (See Goodman and Hunt.)	291,738	Jan. 8	916	256	26	169
Hunt, Samuel, Lockport, N. Y. Vehicle-spring						
Hunt, Theodore. (See Bishop, Richard T., assignor.)						
Hunter, George D., Terre Haute, assignor of two-thirds to M. C. Hunter and T. C. Van Nüys, Bloomington, Ind. Spark-arrester	293,965	Feb. 19	1531	421	26	726
Hunter, James, Camden, N. J. Shield for fire-arms	295,013	Mar. 11	840	230	26	980
Hunter, Morton C., *et al.* (See Hunter, George D., assignor.)						
Hunter, William, Grindstone City, Mich. Car-coupling	292,820	Feb. 5	53	14	26	452
Hunter, William H. H., Cincinnati, and J. Hargitt, Hamilton, Ohio. Marine-railway carriage	295,014	Mar. 11	841	230	26	980
Hunter, William L. (See Smith and Hunter.)						
Huntington, Charles P. (See Perrin, Thomas J., assignor.)						
Huntly, Charles H., assignor of one-half to Fay Gas Fixture Company, St. Louis, Mo. Gasoline-stove	291,348	Jan. 1	408	116	26	74

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hunzeker, Rudolph S., assignor to himself and W. A. Herron, Pittsburg, Pa. Vehicle-spring	295,176	Mar. 18	1052	291	26	1030
Hunzeker, Rudolph S., assignor to himself and W. A. Herron, Pittsburg, Pa. Vehicle-spring	295,177	Mar. 18	1053	291	26	1030
Hurd, George H., Cleveland, Ohio. Inhaler for anæsthetics	294,047	Feb. 26	1635	453	26	753
Hurd, James C., Springfield, Mass. Paper box	292,298	Jan. 22	1396	427	26	295
Hurford, Oliver P., Oakdale, Nebr. Bolt for purifying middlings, &c	295,555	Mar. 25	1544	428 / 429	26	1128
Huse, Ralph C., Georgetown, Mass. Carriage	292,558	Jan. 29	1966	548	26	381
Huse, Warren D., Lacoula, assignor to O. Twombley, Lake Village, N. H., and T. S. Nowell, Boston, Mass. Knitting-machine	292,490	Jan. 29	1865	521	26	366
Husted, Jethro B., Vergennes, Vt. Nail-machine	291,058	Jan. 1	51	15	26	12
Huston, Harvey E., Monticello, Ill. Acoustic telephone	294,238	Feb. 26	1893	518	26	795
Hutchins, Thomas H., assignor to Illinois Manufacturing Company, Joliet, Ill. Stop for check-row wires	295,252	Mar. 18	1158	320	26	1040
Hutson, William L., assignor of one-half to T. A. Brooks and N. R. Harris, St. Lawrence, N. C. Seed-planter	295,765	Mar. 25	1810	503	26	1175
Hyatt, Frank T., Norwalk, Conn. Relining rubber dental plates	293,739	Feb. 19	1227	339	26	673
Hyatt, George W., New York, N. Y. Game register and trump-indicator	291,349	Jan. 1	410	116	26	75
Hyatt, Isaiah S., Morristown, N. J. Purifying water	293,740	Feb. 19	1228	340	26	673
Hyatt, Isaiah S., Morristown, N. J. Filtering material	293,741	Feb. 19	1229	340	26	673
Hyatt, John W., Newark, N. J. Filter	293,742	Feb. 19	1230	340 / 341	26	673
Hyatt, John W., Newark, N. J. Filter	293,743	Feb. 19	1231	341	26	673
Hyatt, John W., Newark, N. J. Filter	293,744	Feb. 19	1233	342	26	674
Hyatt, John W., Newark, N. J. Filter	293,745	Feb. 19	1234	342	26	674
Hyatt, John W., Newark, N. J. Filtration	293,746	Feb. 19	1235	342	26	674
Hyatt, John W., Newark, N. J. Filtration	293,747	Feb. 19	1238	342	26	675
Hyatt, John W., Newark, N. J. Filtration	293,748	Feb. 19	1240	343 / 344	26	675
Hyatt, John W., Newark, N. J. Filtration	293,749	Feb. 19	1245	344	26	675
Hyatt, John W., Newark, N. J. Apparatus for filtering	293,750	Feb. 19	1246	344 / 345	26	676
Hyatt, John W., Newark, N. J. Filtering water	293,882	Feb. 19	1420	393	26	705
Hyatt, John W., Newark, N. J. Filtering water	293,883	Feb. 19	1421	393	26	706
Hyatt, Thaddeus, New York, N. Y. Concrete and concreted pavement and roof-pavement, and substructure for the same	292,559	Jan. 29	1967	549	26	381
Hyde, Albe F., Boston, Mass. Printing-press	294,048	Feb. 26	1636	453	26	753
Hydraulic Press Brick Company. (See Graves, Willis N., assignor.)						
Hydrodynamic Transmitter Company. (See Baxter, William, assignor.)						
Hyle, Henry A., Redwood, N. Y. Vise	294,736	Mar. 4	475	133	26	910
Hyndman, Samuel E., Cincinnati, Ohio. Ventilated show-window	293,098	Feb. 5	310	85	26	498
Idell, Frank E. (See Knowles and Idell.)						
Illinois Manufacturing Company. (See Hutchins, Thomas H., assignor.)						
Imler, John W., and D. W. Snowden, Imlertown, Pa. Straw-stacker carriage	291,350	Jan. 1	410	117	26	75
Indianapolis Cabinet Company of Indiana. (See Recker, John P., assignor.)						
Indianapolis Machine and Bolt Works. (See Fulton, Harmon H., assignor.)						
Indianapolis Machine and Bolt Works. (See Stiles, Norman C., assignor.)						
Ingalls, George H., Warner, N. H., assignor of one-half to G. W. Ingalls, Worcester, Mass. Harness	295,642	Mar. 25	1652	458	26	1147
Ingalls, Gustavus W. (See Ingalls, George H., assignor.)						
Inglis, John. (See Healy, Oliver, assignor.)						
Ingram, George A., Plymouth, Pa. Blasting-barrel	295,556	Mar. 25	1547	429	26	1128
Iredell, George S., Philadelphia, Pa. Lunch-heater	295,400	Mar. 18	1339	373	26	1084
Iron Clad Manufacturing Company. (See Milligan, Henry C., assignor.)						
Irvin, George C. (See Irvin, William, assignor.)						
Irvin, James C., Sand Spring, Iowa. Staple-puller	291,739	Jan. 8	916	256	26	169
Irvin, William, Anoka, Minn., assignor, by mesne assignments, to himself and G. C. Irvin, Boston, Mass. Boot	291,516	Jan. 8	634	179	26	120
Irvine, James. (See Kohnle and Hamilton, assignors.)						
Irwin, John H., Burlington, N. J., and T. P. Apple, West Chester, Pa. Noise-deadener for milk and other cans	295,495	Mar. 18	1460	402	26	1106
Isbell, Charles W., New York, N. Y. Gas-purifying box	291,190	Jan. 1	222	62	26	40
Isbell, Charles W., New York, N. Y. Gas-scrubber	292,491	Jan. 29	1867	522	26	366
Isbell, Charles W., New York, N. Y. Condenser-scrubber for gas	293,884	Feb. 19	1422	393 / 394	26	706
Isbell, Robert H., New York, N. Y. Railway-switch	291,908	Jan. 15	1128	315	26	218
Isley, Frederick J., and A. S. Fernald, Portland, Me. Machine for making buttons	291,907	Jan. 15	1126	314 / 315	26	218
Ittner, Anthony, St. Louis, Mo. Clay-pulverizer	291,191	Jan. 1	225	62	26	40
Ives, Blakeslee & Co. (See Dean and Hotchkiss, assignors.)						
Ivie, Rufus. (See Cottle and Ivie.)						
Jackson, Adolphus, Frederick, Md. Washing-machine	295,401	Mar. 18	1240	373	26	1084
Jackson, Adolphus, Frederick, Md. Churn	295,766	Mar. 25	1811	503	26	1175
Jackson, Andrew, San Francisco, Cal., assignor of two-thirds to A. B. Pullman and M. E. Ward, Chicago, Ill. Indicator-padlock. (Reissue)	10,440	Jan. 29	2267	627	26	434
Jackson, Henry A., Brooklyn, N. Y. Folding baby-carriage	291,351	Jan. 1	411	117	26	75
Jackson, James W., Denver, Colo. Roller-mill	291,517	Jan. 8	634	179 / 180	26	120
Jackson, John W., Sharpsville, Pa. Oil-can	293,468	Feb. 12	898	243	26	606
Jackson, Milton, Philadelphia, Pa. Lock	293,885	Feb. 19	1424	394	26	706
Jackson, Peter H., San Francisco, Cal. Support for beams and girders	291,192	Jan. 1	226	63	26	41
Jackson, William W., Bethany, La. Huller, cleaner, and separator	293,029	Feb. 5	310	86	26	499
Jackson, William W., Chicago, Ill. Door-spring	294,785	Mar. 11	536	149	26	927
Jacobi, Otto, Dresden, Saxony, Germany. Manufacturing material for making trunks, portmanteaus, &c	295,015	Mar. 11	843	.....	26	980
Jaeger, Gustav L., New York, N. Y. Paper box	292,653	Jan. 29	2082	580	26	401
Jaeger, Gustav L., New York, N. Y. Paper box	292,654	Jan. 29	2084	580	26	401
James, Galen F. (See Hewett and James.)						
James, Kerwin, Adair, Iowa. Tile-ditcher	294,049	Feb. 26	1637	453	26	753
Janesville Machine Company. (See Cobb and Wheeler, assignors.)						
January & Wood. (See Jaquith, Gilman, assignor.)						
Jaques, John M., Sr., Thorntown, Ind. Insecticide mixture	292,015	Jan. 15	1258	.....	26	242
Jaquish, Louden, Maple Rapids, Mich. Clevis	295,402	Mar. 18	1342	374	26	1085

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Jaquith, Eben O., Weymouth, Mass. Channel-opener for sole-sewing machines	292,016	Jan. 15	1259	352	26	242
Jaquith, Gilman, assignor to Jannary & Wood, Maysville, Ky. Clothing for pulleys	293,469	Feb. 12	900	243	26	606
Jarolimek, Anthony, Hainburg-a-Donau, Austria-Hungary, assignor of one-half to J. G. Avery, Spencer, Mass. Metallic band for transmitting power	294,472	Mar. 4	166	46	26	858
Jarvis Engineering Company. (See Jarvis, Kingsbury M., assignor.)						
Jarvis, Kingsbury M., Malden, assignor to Jarvis Engineering Company, Boston, Mass. Furnace	293,966	Feb. 19	1532	421	26	726
Jarvis, Samuel E., Lansing, Mich. Traction-engine	294,877	Mar. 11	657	183	26	949
Jenkins, Charles, Boston, Mass. Check-valve	293,328	Feb. 12	725	194	26	573
Jenkins, Charles, Boston, Mass. Valve	293,329	Feb. 12	725	194	26	574
Jenkins, Clarence W., Salisbury, Mass. Compound steam-engine	295,403	Mar. 18	1342	374	26	1065
Jenkins, Edwin M., Browning, Mo. Felly-boring and spoke-tenoning machine	294,628	Mar. 4	353	98	26	889
Jenkins, Evans H., Richmond, Ind. Electro-magnetic gas-lighter	293,330	Feb. 12	726	194	26	574
Jenkins, Evans H., Richmond, Ind. Watch-case spring	294,390	Mar. 4	66	17	26	841
Jenkins, Evans H., Richmond, Ind. Watch-case spring	294,629	Mar. 4	354	98	26	889
Jenkins, George R., Weston, Ky. Fire-escape	291,193	Jan. 1	227	63	26	41
Jenkins, Samuel H., New York, N. Y. Bung-bush wrench	291,194	Jan. 1	228	63	26	41
Jenkins, Samuel H., New York, N. Y. Bushing for bung-holes and bung for use therewith	295,404	Mar. 18	1344	374	26	1085
Jenkins, Thomas M., assignor to himself and W. Uhleman, Moline, Ill. Wagon-axle	295,405	Mar. 18	1344	374	26	1085
Jenks, Abraham S. (See Dale, John H., assignor.)	291,195	Jan. 1	229	63, 64	26	41
Jenne, Charles H., Indianapolis, Ind. Station-indicator	295,643	Mar. 25	1654	458 / 459	26	1147
Jennings, Ralph S., Boston, Mass. Fish-package	294,239	Feb. 26	1894	518	26	795
Jennings, Ralph S., Boston, Mass. Grain-drier	295,016	Mar. 11	843	230	26	980
Jensen, William, Victoria, British Columbia, Canada. Fire-escape	293,254	Feb. 12	624	166	26	556
Jeralds, Silas E., and E. R. Lawton, West Cheshire, Conn. Manufacture of cutlery-handles	294,878	Mar. 11	658	183	26	949
Jerauld, Edwin, Jr., Bristol, R. I. Thread cutter and holder	291,909	Jan. 15	1129	315	26	218
Jerome, S. Bryan, New Haven, Conn. Shaft for steamships	293,175	Feb. 5	512	136	26	531
Jessup, Nathan C., Southampton, N. Y. Boat	291,352	Jan. 1	413	117 / 118	26	75
Jewell, James, assignor of one-half to G. Frazer and J. J. Fidler, Grandville, Mich. Pipe-wrench	295,644	Mar. 25	1656	459 / 460	26	1148
Jewell & Sons, P. (See Babcock, Holland C., assignor.)	295,178	Mar. 18	1655	291	26	1030
Jewett, Charles A., Maraballtown, Iowa. Seal-lock	295,017	Mar. 11	845	231	26	981
Jewett, George M., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Sash-balance	295,645	Mar. 25	1659	460	26	1148
Jewett, Thomas B., Steubenville, Ohio. Tongueless wheel-cultivator	293,470	Feb. 12	901	243	26	606
Jewett, Thomas B., Steubenville, Ohio. Tongueless wheel-cultivator	292,316	Jan. 22	1635	458	26	315
Jobbins, W. F., *et al.* (See Sherck, Isaac, assignor.)	294,879	Mar. 11	659	184	26	940
Jobbins, William F. (See Freeman, Warren P., assignor.)	294,880	Mar. 11	663	185	26	950
Jobin, Joseph B., St. Louis, Mo. Automatic bilge-pump	293,031	Feb. 5	313	86	26	499
Johnsen, Nels E. (See Johnson and Johnsen.)	294,133	Feb. 26	1761	483 / 484	26	772
Johnson, Adam J., *et al.* (See Campbell, Solon O., assignor.)	291,910	Jan. 15	1131	315	26	219
Johnson, Albert F., Brooklyn, N. Y. Printing-telegraph	293,332	Feb. 12	730	195	26	575
Johnson, Charles C., Springfield, Vt., assignor to Miller's Falls Company, Miller's Falls, Mass. Combined bench dog and clamp	293,333	Feb. 12	730	195	26	575
Johnson, Charles H., Busti, N. Y. Fruit-basket fastener	294,737	Mar. 4	477	133	26	911
Johnson, Charles M., Peoria, Ill., assignor to W. S. Lamson, Lowell, Mass. Cash-carrier for stores	292,229	Jan. 22	1527	427 / 428	26	296
Johnson, Daniel L., Kalamazoo, Mich. Exterminating ground-burrowing animals	293,751	Feb. 19	1249	345	26	676
Johnson, Edward W., Waterbury, Conn. Mandrel attachment for circular saws	293,654	Feb. 19	1110	308	26	652
Johnson, Ezra R., Buchanan, Mich. Fire-escape	293,032	Feb. 5	314	86	26	499
Johnson, Hastings H. (See White, Clarence O., assignor.)	292,655	Jan. 29	2085	580	26	401
Johnson, Henry, Eccles, county of Lancaster, England. Railway-signal	293,655	Feb. 19	1111	308	26	652
Johnson, J. Roach. (See Travis and Stibolt, assignors.)	292,821	Feb. 5	54	14	26	453
Johnson, James H., Greencastle, Mo. Hay-stacker	293,176	Feb. 5	513	136 / 137	26	531
Johnson, John, Brooklyn, N. Y. Water-filter	293,033	Feb. 5	314	87	26	499
Johnson, John A., Chicago, Ill. Fire-escape	295,406	Mar. 18	1345	375	26	1085
Johnson, Josee, assignor, by mesne assignments, to Norfolk Storage Company, Norfolk, Va. Device for cleaning and separating peanuts	294,134	Feb. 26	1763	484	26	772
Johnson, Josee, assignor, by mesne assignments, to Norfolk Storage Company, Norfolk, Va. Table for assorting beans, nuts, fruits, &c	293,034	Feb. 5	315	87	26	499
Johnson, Larence A., and N. E. Johnsen, Portland, Oreg. Apparatus for loosening up and removing sand-bars, &c., in rivers and harbors	295,872	Mar. 25	1952	540	26	1200
Johnson, Moses C., assignor to W. N. Woodruff, Hartford, Conn. Machine for sharpening drills	291,196	Jan. 1	231	64	26	41
Johnson, Nathaniel, Harrisburg, Ill. Wagon-tongue support	295,496	Mar. 18	1460	402	26	1107
Johnson, Perry, assignor of one-half to A. G. Bofinger and L. G. Hopkins, Cincinnati, Ohio. Steam-boiler furnace	291,518	Jan. 8	635	180	26	121
Johnson, Thomas, St. Louis, Mo. Gasoline-vapor burner						
Johnson, Tom L., Indianapolis, Ind. Railway T-rail						
Johnson, William H. (See Vanorman, Oliver, assignor.)						
Johnson, William H., De Lancy, assignor of one-half to G. E. Marvine, Delhi, N. Y. Hame-fastener						
Johnson, Willis, assignor of one-half to J. Shaw, Cincinnati, Ohio. Egg-beater						
Johnston, Allen, Ottumwa, Iowa. Metal-screw machine						
Johnston, Charles C., Jackson, Miss. Coin-holder						
Johnston, Charles W. (See Brown and Johnston.)						
Johnston, Charles W., and P. Brown, Philadelphia, Pa. High-pressure alarm for steam-boilers						
Johnston, Frederick J. (See Hannon and Johnston.)						
Johnston, Henry L., Palmetto, Ga. Oil-cup						
Johnston, Larkin F., Springdale, Ark. House-cleaning implement						
Johnston, Osmond M. (See Kilpatrick and Johnston.)						
Johnston, Samuel, Brockport, N. Y. Harvester-rake						
Johnston, William A., Clifton, and A. W. Browne, Pleasant Plains, N. Y., assignors to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Inhaler						
Johnston, William M. (See Deal, Josiah J., assignor.)						
Joliet Wire Check Rower Company. (See Durkee, George B., assignor.)						
Jones, Benjamin F., Beauregard, Miss. Hame-fastener						
Jones, Daniel, *et al.* (See Duffy and Melvor, assignors.)						
Jones, Daniel N., Johnstown, Pa. Hot-blast stove						

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Jones, Daniel S., Kortright, N. Y. Butter-package	293,035	Feb. 5	316	87	26	500
Jones, Ernest, London, England. Safety appliance for bracelets	291,519	Jan. 8	637	180, 181	26	121
Jones, George. (See Evans and Jones.)						
Jones, George W., Silver Creek, assignor to Adams & Carter, San Francisco, Cal. Reverberatory ore-furnace	295,646	Mar. 25	1660	460	26	1148
Jones, Horace K., Hartford, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Knob-spindle attachment	294,881	Mar. 11	666	186	26	950
Jones, James C., Chicago, Ill. Self-clearing furnace-grate	292,230	Jan. 22	1329	428	26	296
Jones, John. (See Heywood and Jones.)						
Jones, John, Portsmouth, Ohio Coal-screen	292,560	Jan. 29	1970	549	26	382
Jones, John B., Brooklyn, N. Y. Alloy for coating metals	293,886	Feb. 19	1426	.....	26	706
Jones, Joshua W., and A. Cooper, Harrisburg, Pa. Automatic registering inking apparatus	295,767	Mar. 25	1812	503, 504	26	1175
Jones, Joshua W., and A. Cooper, Harrisburg, Pa. Counting-register	295,768	Mar. 25	1815	504	26	1176
Jones, Mary E., St. Paul, Minn. Bed-spring fire-escape	294,882	Mar. 11	667	186	26	950
Jones, Milton C., Green Island, N. Y. Furnace-grate	292,492	Jan. 29	1969	522	26	367
Jones, N. A. T., Plymouth, Mass. Feed-water heating and purifying apparatus	294,786	Mar. 11	537	149	26	927
Jones, Owen H., Hartford, Conn., assignor of one-half to F. C. Smith, New York, N. Y. Car-ventilator	293,578	Feb. 12	1020	280	26	628
Jones, Owen H., Hartford, Conn., assignor of one-half to F. C. Smith, New York, N. Y. Car-ventilator	293,967	Feb. 19	1533	422	26	726
Jones, Richard W., Syracuse, N. Y. Safety hitching loop and strap	292,561	Jan. 29	1971	550	26	382
Jones, Samuel E. (See Jones, William R. and S. E.)						
Jones, Thomas B., assignor of one-half to N. S. and D. T. Grover, Hiawatha, Kans. Sash-holder	295,253	Mar. 18	1159	320	26	1049
Jones, Thomas C., Willows, Cal. Car-coupling	293,579	Feb. 12	1021	281	26	628
Jones, Thomas E., Cincinnati, Ohio. Boiler-furnace	292,751	Jan. 29	2226	619	26	427
Jones, Thomas E., Fairfield, Iowa. Rotary steam-engine	293,887	Feb. 19	1427	394	26	706
Jones, William H., Martinsburg, Iowa. Car-coupling	291,911	Jan. 15	1132	316	26	219
Jones, William R. and S. E., Toccoa, Ga. Carpenter's square	292,017	Jan. 15	1260	352	26	242
Jones, Woodruff & Co. (See Shaffer, Charles H., assignor.)						
Jonte, Pierre F., Cincinnati, Ohio. Operating mechanism for sewing-machines, lathes, &c.	292,436	Jan. 22	1798	502	26	346
Jopling, James, Oskaloosa, Iowa. Flying target	292,118	Jan. 15	1377	385	26	264
Jopling, Jesse, deceased, near Longwood, Mo.; M. Jopling, executor. Submarine boat	292,916	Feb. 5	170	46	26	474
Jopling, Monroe, executor. (See Jopling, Jesse.)						
Jopson, George W., Meriden, Conn. Key-ring	292,231	Jan. 22	1530	429	26	296
Jordan, Ambrose L., assignor of one-half to R. C. Jordan, Ottawa, Ill. Check-rower	293,888	Feb. 19	1428	395	26	707
Jordan, Elijah B. (See McDonald, John P., assignor.)						
Jordan, Jesse, and A. P. Powers, assignors of one-half to S. M. Hillard, Macon, Ga. Seal-lock	291,354	Jan. 1	415	118	26	76
Jordan, Richard C. (See Jordan, Ambrose L., assignor.)						
Joseph, Charles. (See Foster, William H., assignor.)						
Joseph, Frank, Portland, Me. Swivel-clevis for chain cables, &c	292,493	Jan. 29	1870	522	26	367
Joseph, Thomas B., Alpena, Mich., assignor of one-third to W. H. Patten, Philadelphia, Pa. Electric distress-signal	292,317	Jan. 22	1636	458	26	315
Journal Bearing Mica Company. (See Traylor, Robert W., assignor.)						
Jowitt, Josiah, Stanley, N. J. Apparatus for making roofing-felt and similar fabrics	291,600	Jan. 8	742	209	26	140
Joy, Thaddeus C., Titusville, Pa. Steam-generator	292,822	Feb. 5	55	14	26	453
Joyce, Samuel J., New York, N. Y. Fire-escape	293,177	Feb. 5	518	137	26	532
Judd, Hubert L., Brooklyn, N. Y. Window-shade bar	291,197	Jan. 1	233	64	26	41
Judd, Hubert L., Brooklyn, N. Y. Shade-bar	291,741	Jan. 8	919	257	26	170
Judd, John, Cherry Valley, N. Y. Trellis-hook	294,240	Feb. 26	1895	518	26	795
Judge, George, Chicago, Ill. Mechanism for carrying wire-cables around curves	294,322	Feb. 26	1999	547	26	814
Julian, William H., assignor to T. Wall, Springfield, Ohio. Feed for seed-drills	295,647	Mar. 25	1662	461	26	1149
Jungerman, Edward, Gettysburg, Pa. Electric alarm for spring-clocks	295,873	Mar. 25	1953	540	26	1201
Justice, Philip J. (See King and Cliff, assignors.)						
Kahler, Conrad, Chicago, Ill. Delivery apparatus for printing-machines	291,912	Jan. 15	1133	316	26	219
Kahler, Conrad, Chicago, Ill. Paper-folding machine	294,473	Mar. 4	168	46	26	858
Kaemp, Reinhold H. (See Nagel, Kaemp, and Linnenbrügge.)						
Kaffenberger, Gustav, Hamilton, Ohio. Drive for paper-making machines	293,471	Feb. 12	901	244	26	606
Kafka, Hugo, New York, N. Y. Fire-escape	291,198	Jan. 1	234	64, 65	26	42
Kahnweiler, David, New York, N. Y. Cotton-seed-hulling machine	294,241	Feb. 26	1896	519	26	796
Kaldenbach, Friedrich W., assignor to A. Coppel, Solingen, Prussia, Germany. Pocket-knife	292,917	Feb. 5	172	47	26	475
Kalish, Philip, Chicago, Ill. Button	293,472	Feb. 12	902	244	26	607
Kalish, Philip, Chicago, Ill. Button	295,769	Mar. 25	1816	505	26	1176
Kane, Louis E., assignor of one-half to G. J. Murray, Cincinnati, Ohio. Loose-pulley lubricator	293,036	Feb. 5	317	88	26	500
Kane, Thomas. (See Durant and Shupe, assignors.)						
Kanouse, John G., and R. Miller, Appleton, Wis. Hay-fork	294,050	Feb. 26	1639	454	26	753
Karns, William E., Parker's Landing, Pa. Reversing-link for engines	292,018	Jan. 15	1260	353	26	242
Kase, James D. (See Kase, Matthew W. and J. D.)						
Kase, Matthew W. and J. D., Danville, Pa. Tag	295,557	Mar. 25	1549	429	26	1128
Kasschau, Jürgen, New York, N. Y. Reflector for gas-burners	291,199	Jan. 1	235	65	26	42
Kantz, George J., Emporium, Pa. Circular sawing machine	293,037	Feb. 5	318	88	26	500
Kayser, Adolf, assignor of one-half to A. B. Young, Buffalo, N. Y. Evaporator	291,580	Jan. 8	630	181	26	121
Kayser, John, Kaiserslautern, Bavaria, Germany. Treadle-motion	291,200	Jan. 1	236	65	26	42
Kearney, William, Franklin, N. J. Egg-holder	295,648	Mar. 25	1662	461	26	1149
Keckeler, T. T., *et al.* (See Bowen, William J., assignor.)						
Keeler, Charles A., *et al.* (See Russell, Martin L., assignor.)						
Keeler, Charles C. (See Hathaway, George M., assignor.)						
Keen, Henry H. (See Shallus, William W., assignor.)						
Kehl, Henry, Mason City, Ill. Oat-drill	291,356	Jan. 1	417	119	26	76
Kehr, Cyrus, Chicago, Ill. Fire-escape	291,601	Jan. 8	745	210	26	140
Keibler, Samuel M., Saltsburg, Pa. Dumper	291,355	Jan. 1	416	118	26	76
Keigwin, Albert N., and W. G. Talley, Wilmington, Del. Fruit-parer	295,874	Mar. 25	1954	540, 541	26	1201
Keith, Jeremiah, assignor to Florence Machine Company, Florence, Mass. Sewing-machine	291,602	Jan. 8	740	211	26	141
Kellen, Robert W., Albion, Cal. Saw-tooth	295,649	Mar. 25	1663	461	26	1149
Keller, Isidor, Milwaukee, Wis. Scholar's shoulder-brace	294,323	Feb. 26	2000	548	26	814
Keller, John F., Martinsburg, W. Va. Feed-roller for grass-sowers	293,968	Feb. 19	1533	423	26	726
Keller, Louis, New York, N. Y. Cartridge-loader and cap-expeller	294,630	Mar. 4	355	99	26	890
Keller, Peter, Philadelphia, Pa. Gas regulator	292,459	Jan. 22	1922	508	26	351

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Kelley, William S., assignor to H. B. Smith Machine Company, Smithville, N. J. Wire spoke	292,562	Jan. 29	1971	550	26	382
Kells, Philip H., Adrian, Mich. Tile-machine	293,473	Feb. 12	903	244	26	607
Kells, Philip H., Adrian, Mich. Brick-machine	295,559	Mar. 25	1549	430	26	1128
Kelsey, James C., Middletown, Conn. Carpet-stretcher	295,018	Mar. 11	846	231	26	981
Kelly, George, assignor to Kelly Scroll Section Manufacturing Company, Chicago, Ill. Non-conducting covering	292,318	Jan. 22	1637	458	26	315
Kelly, John, Peoria, Ill. Coupling for propeller and other shafts	292,823	Feb. 5	56	15	26	453
Kelly, John, Chicago, Ill. Water-closet	292,918	Feb. 5	173	47	26	475
Kelly, John P., Saco, Me. Device for connecting loom-harnesses with their actuating mechanism	293,334	Feb. 12	731	195	26	575
Kelly Scroll Section Manufacturing Company. (See Kelly, George, assignor.)						
Kelsey, John R., Bristol, England. Hat-shaping machine	295,650	Mar. 25	1664	461, 462	26	1149
Kelsey, Roland S., Syracuse, N. Y. Safety attachment for vapor-burners	295,651	Mar. 25	1666	462	26	1149
Kemble, Clay, Philadelphia, Pa. Pulley	293,235	Feb. 12	625	166	26	556
Kempshall, Eleazer, New Britain, Conn. Window and door button	294,474	Mar. 4	169	47	26	858
Kempshall, Eleazer, New Britain, Conn. Sash-fastener	294,787	Mar. 11	539	150	26	928
Kempshall Manufacturing Company. (See Chambers, James, assignor.)						
Kempster, Daniel E., Boston, Mass. Spring shade-roller	295,875	Mar. 25	1955	541	26	1201
Kendall, J. Blake. (See Mead, James M., assignor.)						
Kenna, Joseph W., Chicago, Ill. Tilting chair	294,301	Mar. 4	67	17	26	841
Kennan, Sidney T., Menasha, Wis. Machine for planing felloes	292,752	Jan. 29	2227	619	26	427
Kennedy & Berkshire Feed Water Heater and Filter Manufacturing Company. (See Berkshire, John H., assignor.)						
Kennedy, Frederick H., Auburn, N. Y. Toe-cap for boots or shoes	295,877	Mar. 25	1957	542	26	1202
Kennedy, George W., Garnavillo, Iowa. Burglar-proof safe	294,631	Mar. 4	356	99	26	890
Kennedy, James L., Sioux City, Iowa. Hitching device	291,357	Jan. 1	419	119	26	77
Kennedy, John F., Boston, Mass. Antiseptic solution	295,876	Mar. 25	1957	.....	26	1201
Kennedy, John H., Cleveland, Ohio. Stop and waste cock	292,824	Feb. 5	57	15	26	453
Kennedy, Lewis B., Keokuk, Iowa. Brick-machine	295,019	Mar. 11	846	231	26	981
Kennedy, Simon, Auburn, N. Y., and S. G. Warner, Wilmington, Del., assignors to A. E. Smith and Warner Axle Company, of Delaware. Vehicle-axle	294,632	Mar. 4	357	99	26	890
Kerr, George W., Bridgeport, Conn. Two-wheeled vehicle	293,474	Feb. 12	904	245	26	607
Kerr, George W., Bridgeport, Conn. Brace-chuck	295,408	Mar. 18	1348	375	26	1086
Kerr, Hugh, New York, N. Y. Annealing wire	291,358	Jan. 1	420	.....	26	77
Kerr, Hugh, assignor of one-half to A. Graff, New York, N. Y. Leather belting	293,178	Feb. 5	519	138	26	532
Kessler, Johann K., assignor of two-thirds to M. Roth and G. Sylvester, Milwaukee, Wis. Making white lead	292,119	Jan. 15	1378	.....	26	264
Kessler, Johann K., assignor to himself, M. Roth, and G. Sylvester, Milwaukee, Wis. Making sponge-lead	292,753	Jan. 29	2229	.....	26	428
Kessler, Johann K., Milwaukee, Wis., assignor to Wisconsin Chemical Company, of Wisconsin, and G. Sylvester, Milwaukee, Wis. Making copper salts by the aid of electricity	294,051	Feb. 26	1640	454	26	754
Kester, John H. (See Pegram and Kester.)						
Ketchum, Landon. (See Goodyear, Watson A., assignor.)						
Keufel, William, *et al.* (See Schramm, Henry G., assignor.)						
Kidder, Frank L., Terre Haute, Ind. Separator for grain, &c	292,656	Jan. 29	2087	581	26	402
Kidder Press Manufacturing Company. (See Kidder, Wellington P., assignor.)						
Kidder, Wellington P., Malden, assignor to Kidder Press Manufacturing Company, Boston, Mass. Printing-machine	291,521	Jan. 8	641	181, 182	26	121
Kidder, William K., New York, N. Y. Microscope	295,770	Mar. 25	1817	505	26	1176
Kiekhefer, August, Milwaukee, Wis. Elevator	293,038	Feb. 5	319	88	26	500
Kieker, William C., Mequon, Wis. Farm-gate	291,059	Jan. 1	53	15, 16	26	13
Kieley, Timothy J., New York, N. Y. Regulator-valve	292,232	Jan. 22	1531	429	26	296
Kientoff, William F., and P. Bertemes, Englewood, Ill. Fire-escape	291,060	Jan. 1	54	16	26	13
Kihlgren, Carl A., Boston, Mass. Manikin, automaton, or jointed doll	292,919	Feb. 5	175	47	26	475
Kilborn, William R., Petoskey, Mich. Sled	295,409	Mar. 18	1349	375	26	1086
Killer, John. (See Long and Killer.)						
Killough, John N., Aurora, Tex. Machine for stretching and removing fence-wires	291,743	Jan. 8	920	258	26	170
Kilpatrick, Worth, Connellsville, and O. M. Johnston, Brownsville, Pa. Burial-casket	292,319	Jan. 22	1638	458	26	315
Kim, George M., Allegheny, Pa. Fire-escape	292,825	Feb. 5	57	15, 16	26	453
Kimball, Charles M. (See Kimball, Ephraim M. and C. M.)						
Kimball, Ephraim M. and C. M., Toledo, Ohio. Motor	291,522	Jan. 8	644	183	26	122
Kimball, Samuel P., Woodstock, Ohio. Nut-lock	291,913	Jan. 15	1135	316	26	220
Kimball, William H. (See Martine, Charles F., assignor.)						
Kimball, William W. (See Hessler, Jacob, assignor.)						
Kimberly, Robert L., Philadelphia, Pa., assignor to American Matrix Machine Company, of New York. Machine for making matrices	295,878	Mar. 25	1958	542, 543, 544, 545	26	1202
Kimplen, Cornelius, assignor to himself and North Western Fertilizing Company, Chicago, Ill. Press	292,920	Feb. 5	176	48	26	475
Kincaid, Frank G., Somerville, and C. A. Chandler, East Bridgewater, Mass. Faucet-socket	291,603	Jan. 8	751	212	26	141
Kinder, Arthur H., assignor to A. S. Barnes, Boston, Mass. Electric implement	295,652	Mar. 25	1667	462	26	1149
King, Charles W., Manchester, and A. Cliff, London, assignors to P. M. Justice, Chancery Lane, London, England. Gas-engine	293,179	Feb. 5	520	138	26	532
King, Frank. (See Beeman, Taylor, and King.)						
King, James M., Rochester, N. Y. Cockle-separator	293,039	Feb. 5	321	89	26	501
King, John A., St. Louis, Mo. Tool-handle	294,633	Mar. 4	358	99	26	890
King, Julia A., Chicago, Ill. Leggin	293,475	Feb. 12	905	245	26	607
King, Luranus F. (See Guyer and King.)						
King, Peter O., and A. M. Carlson, Valley City, Dak. Ter. Scrubber	294,634	Mar. 4	358	100	26	890
King, William H., Little Silver, N. J. Land-marker	295,254	Mar. 18	1160	320, 321	26	1049
Kingsbury, Fred B., *et al.* (See Hobson and Bagley, assignors.)						
Kingston, Paul, Hastings, Minn. Extensible fire-escape	294,635	Mar. 4	359	100	26	890
Kinney, Francis S., New Brighton, N. Y. Cigarette-case	291,201	Jan. 1	237	66	26	43
Kinsey, Oliver. (See Lee, Thomas, assignor.)						
Kirby, Josiah, Cincinnati, Ohio. Bung	292,826	Feb. 5	60	16	26	454
Kirk, Alva H., Minneapolis, Minn. Cigar-cutter	293,580	Feb. 12	1022	281	26	628
Kirk, Joseph H., Brady, assignor to himself and M. A. Kirk, Bellefonte, Pa. Bob-sled	294,883	Mar. 11	668	186	26	951
Kirk, Miles A. (See Kirk, Joseph H., assignor.)						
Kirkpatrick, Edward C. D., Camden, N. J. Folding table	292,657	Jan. 29	2088	581	26	402

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Kiser, Samuel. (See Shelley and Kiser.)						
Kiser, William S., Albion, Ind. Tax, interest, and percentage calculator	292,658	Jan. 29	2089	581	26	402
Kissell, Emanuel M., assignor of one-half to P. P. Mast & Co., Springfield, Ohio. Fertilizer-sower	292,320	Jan. 22	1639	459	26	316
Kitson, George L. (See Philips and Kitson.)						
Kitson, George L., assignor to W. J. Philips, Philadelphia, Pa. Coupling for electric wires	295,559	Mar. 25	1550	430	26	1128
Kitson Machine Company. (See Kitson, Richard, assignor.)						
Kitson, Richard, assignor to Kitson Machine Company, Lowell, Mass. Cotton-lap	292,921	Feb. 5	178	49	26	476
Kizer, William R., Hammond, Ill. Weather-strip	292,130	Jan. 15	1378	386	26	265
Klein, Josef, New York, N. Y. Scaffold and fire-escape	292,321	Jan. 22	1641	459	26	316
Kline, William. (See Wagner, Christopher H., assignor.)						
Klinger, Joseph, Cleveland, Ohio. Ballot-box	295,560	Mar. 25	1551	430	26	1128
Kloffenstein, John C. (See Krichbaum, John G., assignor.)						
Klöpfer, Lorenz, Munich, Germany. Coloring and bronzing leather	295,653	Mar. 25	1668	.....	26	1150
Kling, Herman. (See Buening and Kling.)						
Knafl, Louis, Vienna, Austria-Hungary, assignor to T. M. Schleier, Nashville, Tenn. Manufacturing glass	295,410	Mar. 18	1350	.....	26	1086
Knapp, Charles R., San Francisco, Cal. Vacuum-press percolator	293,335	Feb. 12	733	195	26	575
Knapp, Jacob, Cincinnati, Ohio. Shifting-rail for vehicles	294,788	Mar. 11	540	150	26	908
Knapp, John H., New York, N. Y. Lead and crayon holder	295,497	Mar. 18	1461	402	26	1107
Knapp, Judson N., Syracuse, N. Y. Faucet	292,233	Jan. 22	1532	429	26	296
Knauer, Cyrus A., Pottstown, Pa. Fire-escape	292,322	Jan. 22	1642	459	26	316
Kneedler, John A., Grant, Pa. Plow	291,359	Jan. 1	420	119	26	77
Knickenbacker, Thomas A. (See Hughes, Robert, assignor.)						
Knight, Edgar, Bridgeport, Conn., assignor to S. P. Stoddard, trustee, New York, N. Y. Hasp-lock	292,323	Jan. 22	1643	459	26	316
Knight, John C., assignor of one-half to Meriden Malleable Iron Company, Meriden, Conn. Extension-chandelier	295,020	Mar. 11	848	232	26	981
Knight, John K., New York, N. Y., assignor to W. H. Baker. Railway block signal	291,360	Jan. 1	421	119 120	26	77
Knight, Mark N., Skowhegan, Me. Scaffolding-bracket	293,040	Feb. 5	322	89	26	501
Knight, William C. (See Oldroyd, Thomas, assignor.)						
Knight, William H. H., assignor to Barber Asphalt Paving Company, Washington, D. C. Asphalt-mixing machine	293,180	Feb. 5	522	139	26	533
Knoll, Jonas L. (See Shanaman, John, assignor.)						
Knowles, Edward R., assignor of one-half to B. A. Brooks, Brooklyn, N. Y. Storage-battery	291,850	Jan. 8	1048	293	26	193
Knowles, Edward R., Brooklyn, N. Y., and F. E. Idell, Hoboken, N. J., assignors to Consolidated Electric Light Company, of New York. Dynamo-electric machine	292,121	Jan. 15	1379	386	26	265
Knowles, Edward R., Brooklyn, N. Y., and F. E. Idell, Hoboken, N. J., assignors to Consolidated Electric Light Company, of New York. Incandescent electric lamp	292,324	Jan. 22	1644	460	26	316
Knowles, Thomas B., Toledo, assignor of one-third to R. Moffett, Cleveland, Ohio. Ink-stand	291,604	Jan. 8	752	212	26	141
Knowlton, Edward R., *et al.* (See Case, George, assignor.)						
Knox, John L. L., Allegheny, Pa. Method of and tool for blasting rock	291,606	Jan. 8	754	212	26	142
Knox, Josiah N., Evansville, Ind. Bier or coffin stool	291,605	Jan. 8	753	212	26	142
Knox, Salathiel H. (See Mendenhall, James E., assignor.)						
Knox, William C. (See Rankin and Knox.)						
Knudson, A. A. (See Horne, George W., assignor.)						
Koch, Ambrose E., assignor of one-half to D. Koch, Fleetwood, Pa. Nut-lock	292,234	Jan. 22	1534	429	26	297
Koch, Daniel. (See Koch, Ambrose E., assignor.)						
Koch, Philippe, Neuss-on-the-Rhine, Germany, assignor to N. Godes, Preston, Iowa. Belt-fastener	291,202	Jan. 1	238	66	26	43
Koeberle, John M., Philadelphia, Pa. Rod for saw-frames	292,404	Jan. 29	1871	522	26	367
Koehler, Conrad A., Brooklyn, N. Y., and C. Vogel, Fort Lee, N. J. Instrument for attaching buttons	292,437	Jan. 22	1801	501	26	347
Koeller, Hermann H., St. Louis, Mo. Grain-drill	292,235	Jan. 22	1534	430	26	297
Koenigsberg, Joseph. (See Himmer, Vitalis, assignor.)						
Koepfer, Herman. (See Koepfer, Pirmin and H.)						
Koepfer, Pirmin and H., Fond-du-Lac, Wis. Bob-sled	291,744	Jan. 8	921	258	26	170
Kohnle, Lawrence B., and W. B. Hamilton, assignors to J. Irvine, Lima, Ohio. Bolting-chest	295,561	Mar. 25	1553	431	26	1129
Kolb, Edward, Lockport, N. Y. Corn-planter and fertilizer-distributer	294,636	Mar. 4	360	101	26	891
Koplin, Lebbeus A., Akron, Ohio. Rein-holder	293,476	Feb. 12	906	245	26	607
Korte, Frank J., Zanesville, Ohio. Feed-water heater	293,899	Feb. 19	1429	395	26	707
Kortüm, Charles, Berlin, Germany. Clamp for attaching ropes	294,392	Mar. 4	69	17	26	841
Kraemer, Theophila F., New York, N. Y. Cover for upright pianos. (Reissue)	10,450	Feb. 26	2032	557	26	890
Krahenbeihl, Edward, and P. Rice, Allegheny, Pa. Covering for steam-boilers, pipes, and other heated surfaces	293,752	Feb. 19	1250	345	26	676
Kramer, Friedrich, St. Louis, Mo. Cap for wheel-hubs	291,361	Jan. 1	426	120	26	78
Kramer, Marcus B. (See Dworsky, Kramer, and Phillips.)						
Kreamer, James M., *et al.* (See Rose, Rufus E., assignor.)						
Kreisel, Otto, Baltimore, Md. Knit jacket	294,637	Mar. 4	361	101	26	891
Kressly, Wilson, Washington, Lehigh county, Pa. Foot-rest for velocipedes	293,581	Feb. 12	1023	281	26	628
Krichbaum, John G., assignor of one-half to J. C. Kloffenstein, Youngstown, Ohio. Railway-track	291,523	Jan. 8	645	183	26	122
Krieckhaus, Charles. (See Krieckhaus, Louis and C.)						
Krieckhaus, Louis and C., St. Louis, Mo. Folding crate	294,789	Mar. 11	541	150	26	928
Krieg, William C., and J. T. Albin, Decatur, Ill. Washing-machine	293,890	Feb. 19	1430	395	26	707
Krieger, Andrew, Columbus, Ohio. Saw-tooth	292,659	Jan. 29	2090	582	26	402
Krizik, Franz. (See Piette and Krizik.)						
Kroesing, August, assignor of one-half to E. G. Eschenhorn, Berlin, Germany. Trunk	291,607	Jan. 8	755	213	26	142
Krum, Charles L., Minneapolis, Minn. Beer-cooler	294,864	Mar. 11	669	186	26	951
Kruse, Charles. (See Weiss, Charles W., assignor.)						
Kubeo, Frederick, Riverside, Iowa. Mechanical movement	291,745	Jan. 8	921	258	26	170
Kubeo, Frederick, Riverside, Iowa. Lever-power mechanism	295,498	Mar. 18	1462	403	26	1107
Kuehn, William, Cincinnati, Ohio. Paint-can	294,790	Mar. 11	542	150	26	928
Kuen, George, Eureka Springs, Ark. Shoe-maker's jack	292,754	Jan. 29	2231	619	26	498
Kuhne, Charles H., Butler, Pa. Motor	295,179	Mar. 18	1057	291	26	1031
Kulp, Alvin L. (See Snider and Kulp.)						
Kuns, Frida, Donaueschingen, Germany. Process of and apparatus for preparing fiber for the manufacture of brushes and brooms	295,021	Mar. 11	850	232	26	981
La Dow, Charles, Albany, N. Y. Spring-tooth cultivator and drill	294,791	Mar. 11	543	151	26	928

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La Dow, Charles, Albany, N. Y. Harrow or cultivator	294,792	Mar. 11	546	151	26	929
La Dow, John, Albany, N. Y. Duplex baling-press	294,638	Mar. 4	362	101 102	26	891
La Du, John T. (See Moore, Willis L., assignor.)						
La Rock, Gilbert, assignor to W. A. Hammond, Adams, N. Y. Wagon-jack	295,022	Mar. 11	851	232	26	981
La Tour, Thomas, assignor of one-half to M. L. Finckel, Philadelphia, Pa. Thread-guide for sewing-machines	292,406	Jan. 29	1873	523	26	367
Laass, Emil. (See Schmid, Joseph E., assignor.)						
Lacey Automatic Coupling Company. (See Lacey, John J., assignor.)						
Lacey, John J., San Francisco, assignor to Lacey Automatic Coupling Company, Oakland, Cal. Coupling for car-heating apparatus	295,255	Mar. 18	1162	321	26	1049
Ladd, Daniel E. and E. J. B. Whitaker; said Ladd assignor to W. T. Whittaker, Baltimore, Md. Show-case	293,582	Feb. 12	1024	282	26	628
Ladd, James E., Bristol, Conn. Trunk-stay	291,203	Jan. 1	240	66	26	43
Ladewig, Herrman, Camden, N. J. Combined folding carriage and cradle	291,204	Jan. 1	240	66	26	43
Laemle, Joseph A., Stapleton, N. Y. Device for cutting off the flow of gas, &c., in case of fire	291,061	Jan. 1	55	16	26	13
Lafin, Perley, Warren, assignor to T. C. Bates, North Brookfield, Mass. Fastening for wearing-apparel	293,041	Feb. 5	323	89	26	501
Lafrance, Louis M. (See Dandurand and Lafrance.)						
Lahne, Moses M. (See Sawyer and Foss, assignors.)						
Lamb, Charles B., Plainwell, Mich. Boot-strap	291,746	Jan. 8	922	258	26	170
Lamb, George R., assignor to Waterbury Farrel Foundry and Machine Company, Waterbury, Conn. Power-press	295,411	Mar. 18	1351	375	26	1086
Lambert, John D., Sr., and J. G. Wiggins, Monroeville, Ala. Cotton-worm destroyer, sprinkler, &c	294,135	Feb. 26	1764	484	26	772
Lambie, Edward L. (See Tower, George B. N., assignor.)						
Lampe, Otto, Hamburg, Germany. Trace-hook	292,922	Feb. 5	179	49	26	476
Lampert, William, Crestline, assignor to H. Peuster, Galion, Ohio. Bretzel-machine	293,336	Feb. 12	733	196	26	575
Lamplugh, James A., Birmingham, county of Warwick, England. Saddle for bicycles	293,656	Feb. 19	1112	309 310	26	652
Lampton, William R., assignor of one-half to W. O. Winn, Terre Haute Ind. Device for converting motion	293,477	Feb. 12	907	245	26	608
Lamson Cash Railway Company. (See Hayden and Giles, assignors.)						
Lamson, Warren H., Lynn, Mass. Pen-staff and hand-support	292,495	Jan. 29	1872	523	26	367
Lamson, William S. (See Johnson, Charles M., assignor.)						
Lamson, William S., Lowell, Mass. Stove-service apparatus	292,923	Feb. 5	180	49	26	476
Lance, Shields D., Columbus, Ohio. Vehicle-spring	294,242	Feb. 26	1897	519	26	796
Land, Horatio N., and H. Campbell, assignors to Gaar, Scott & Company, Richmond, Ind. Cylinder for clover-hullers	295,771	Mar. 25	1818	505	26	1176
Landis, Frank F., Waynesborough, Pa. Traction-engine bearing	294,793	Mar. 11	547	151 152	26	929
Landis, Frank F., Waynesborough, Pa. Traction-engine	294,794	Mar. 11	548	152	26	929
Landis, Israel L., Lancaster, Pa. Gate	291,205	Jan. 1	241	67	26	43
Landis, Israel L., Lancaster, Pa. Gate	291,206	Jan. 1	242	67	26	44
Landt, Henry. (See Leslie, Oscar S., assignor.)						
Lane, John W., Portland, Me. Rice hulling and cleaning machine	291,362	Jan. 1	426	120 121	26	78
Lane, Thomas W. (See Lockwood and Lane.)						
Lane, William J., Poughkeepsie, N. Y. Attaching the grinding-plates of mills	294,738	Mar. 4	478	133	26	911
Lang, George P., and P. Lanster, Allegheny, Pa. Jug-top	292,660	Jan. 29	2091	582	26	403
Langbein, Charles. (See Woodrich and Langbein.)						
Langdon, James R. *et al.* (See Smith, George, Jr., assignor.)						
Langdon, Nelson M., Chester, N. J. Ore-roasting furnace	294,795	Mar. 11	551	153	26	930
Langdon, Nelson M., Chester, N. J. Gas-producing furnace	294,796	Mar. 11	553	153 154	26	930
Languereau, Jean, Paris, France. Holder for incandescent electric lamps	293,256	Feb. 12	926	166	26	556
Lanscha, Theodore A., assignor of one-half to H. Locker, Flanagan, Ill. Plow	291,524	Jan. 8	646	183	26	122
Lansing, Gustavus G., *et al.* (See Stewart, George W., assignor.)						
Lanz, Fred, Monroe, Wis. Wagon-box	292,019	Jan. 15	1261	353	26	242
Lapham, Paul J., Ionia, Mich., assignor to himself and S. M. Fargo, Chicago, Ill. Heel burnishing and milling machine	291,608	Jan. 8	756	213	26	142
Lappin, Frank, Baltimore, Md., assignor of one-half to V. Walker, Philadelphia, Pa. Safety-door for railway-car platforms	291,363	Jan. 1	427	121	26	78
Lappin, John J., Toronto, Ontario, Canada. Brake-shoe	292,827	Feb. 5	61	16	26	454
Laraway, George W., assignor of one-fourth to F. C. Rockwell, Hartford, Conn. Car-coupling	294,797	Mar. 11	554	154	26	930
Largey, Patrick A. (See Platt, George, assignor.)						
Larkin, Frank J., Kenosha, Wis. Sleigh-runner	294,136	Feb. 26	1765	485	26	773
Larkin, John B., Pittsburg, Pa. Threaded casting	294,639	Mar. 4	367	102	26	892
Larmanjat, Jean, Paris, France. Manufacture of mosaic and other tiles	294,475	Mar. 4	170	47	26	858
Lasar, Godfrey H., St. Louis, Mo. Barb-wire machine	294,885	Mar. 11	670	187	26	951
Laskey, Philip B., Marblehead, Mass. Syringe	291,364	Jan. 1	428	121	26	78
Lathrop, Charles D., Newark, N. J., assignor to himself and S. Bissland, Mount Vernon, N. Y. Umbrella-frame	292,325	Jan. 22	1646	460	26	317
Latour, Pierre, Ottawa, Ontario, Canada. Folding joint for camp-furniture	291,062	Jan. 1	56	16	26	13
Latta, Adrian C., *et al.* (See Latta, Emmit G., assignor.)						
Latta, Adrian C. (See Latta, Emmit G. and A. C.)						
Latta, Emmit G., assignor of two-thirds to A. C. Latta, Friendship, and H. D. Blakeslee, Buffalo, N. Y. Hame-tug	294,243	Feb. 26	1897	520	26	796
Latta, Emmit G., assignor of one-half to A. C. Latta, Friendship, N. Y. Bicycle	294,640	Mar. 4	368	102 103	26	892
Latta, Emmit G. and A. C., Friendship, N. Y. Velocipede	294,641	Mar. 4	372	103 104	26	892
Laufersick, William H. (See Meyer and Laufersick.)						
Laughlin, John L., Louisville, Ky. Harrow	294,393	Mar. 4	70	18	26	842
Lauhoff, William, Detroit, Mich. Machine for trimming or smutting wheat, &c. (Reissue.)	10,451	Feb. 26	2033	557	26	891
Laurent, L. C., *et al* (See Smith, Fannie S., assignor.)						
Lanster, Peter. (See Lang and Lanster.)						
Law, Jesse L., Mount Vernon, N. Y. Domino	295,023	Mar. 11	851	232	26	982
Lawlor, Michael J., Poughkeepsie, N. Y. Mechanical movement	292,828	Feb. 5	62	17	26	454
Lawrence, David. (See Grant and Lawrence.)						
Lawrence, Frederick W., *et al.* (See Schmidt, George L., assignor.)						
Lawrence, George, London, England. Treating milk	295,180	Mar. 18	1058	292	26	1031
Lawrence, George F., and A. McDonald, Worcester, Mass. Oil-ejector	295,562	Mar. 25	1554	431	26	1129

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Lawton, Edwin R. (See Jeralds and Lawton.)						
Lawton, Lewis, Trenton, N. J. Pottery-kiln	295,412	Mar. 18	1352	376	26	1087
Layng, George, assignor to S. W. Goddard, Worcester, Mass. Yarn-reel	292,438	Jan. 22	1801	502	26	347
Leach, Charles J., and A. Olds, Hartford, Mich. Combined grain scale, bagger, and register	292,326	Jan. 22	1647	460	26	317
Leach, Charles J., and A. Olds, Hartford, Mich. Traction-engine	292,924	Feb. 5	180	49,50	26	476
Leader Sewing Machine Company. (See Whitney, Ruel W., assignor.)						
Leavens, John. (See Gray, Thomas H., assignor.)						
Lebkicher, Edwin M., Philadelphia, Pa. Ventilated hat	295,024	Mar. 11	853	233	26	992
Leblond, Eugène F., Paris, France. Apparatus for feeding paper in cigarette-machines	295,181	Mar. 18	1050	292	26	1032
Lechler, Frederik, Cleveland, Ohio. Christmas-tree candle-holder	295,182	Mar. 18	1060	292	26	1032
Lechner, Francis M. (See Lechner, Van Amburgh, assignor.)						
Lechner, Van Amburgh, Columbus, Ohio, assignor to himself and F. M. Lechner. Mining-machine	295,183	Mar. 18	1060	{292 293}	26	1032
Lederer, Sigmund L., New York, N. Y. Ornamental chain-link	295,772	Mar. 25	1819	505	26	1176
Ledochowski, Zenone, La Salle, Ill. Corset-pad	292,929	Feb. 5	65	17	26	455
Lee, Charles B., Galveston, Tex. Refrigerating-machine	292,925	Feb. 5	181	50	26	476
Lee, David, Jr., Mount Willing, Ala. Combined cane and cigar-case	295,654	Mar. 25	1669	462	26	1150
Lee, Edward, Dannemora, N. Y., assignor of one-half to A. T. Clark, Warnerville, Mass. Window blind and awning	294,324	Feb. 26	2001	548	26	815
Lee, James P., and L. P. Diss, assignors to E. Remington & Sons, Ilion, N. Y. Magazine for fire-arms	295,563	Mar. 25	1556	431	26	1129
Lee, Joseph, Cleveland, Ohio. Rotary pump	292,122	Jan. 15	1380	386	26	965
Lee, Orlando A., Mansfield, Ohio. Wrench	294,649	Mar. 4	375	104	26	893
Lee, Samuel D., Mechanicsville, Iowa. Car-coupling	295,773	Mar. 25	1819	506	26	1177
Lee, Samuel W., Litchfield, Pa. Wagon-brake	291,747	Jan. 8	923	239	26	170
Lee, Thomas, assignor of one-half to O. Kinsey, Cincinnati, Ohio. Car-door	293,181	Feb. 5	524	139	26	533
Leede, Julius, Washington, D. C., assignor of one-half to G. H. Oury, Florence, Ariz. Ter. Mixing and consuming hydrocarbon with pulverized earth	292,236	Jan. 22	1536	430	26	297
Leede, Julius, Washington, D. C., assignor of one-half to G. H. Oury, Florence, Ariz. Ter. Apparatus for feeding and consuming fine fuel	292,237	Jan. 22	1537	{430 431}	26	297
Leeds, Albert R., Hoboken, N. J. Lactometer	294,052	Feb. 26	1643	454	26	754
Leemann, Julius, assignor of one-half to J. C. Fischer, St. Louis, Mo. Magazine fire-arm	295,564	Mar. 25	1557	432	26	1129
Leet, C. L. (See Northall, William H., assignor.)						
Leet, Charles S., and W. H. Northall, Bridgeport, Conn.; said Northall assignor to said Leet. Cartridge-closing machine	291,207	Jan. 1	243	67	26	44
Lefeldt, Wilhelm C. L., and C. G. O. Lentsch, Schöningen, Germany, assignors to T. Bergner, Philadelphia, Pa. Centrifugal machine for creaming milk. (Reissue)	10,441	Jan. 29	2368	628	26	435
Lefeldt, Wilhelm C. L., and C. G. O. Lentsch, Schöningen, Brunswick, Germany, assignors to T. Bergner, Philadelphia, Pa. Centrifugal creamer	292,661	Jan. 29	2092	582	26	403
Lefeldt, Wilhelm C. L., and C. G. O. Lentsch, Schöningen, Brunswick, Germany, assignors to T. Bergner, Philadelphia, Pa. Centrifugal creamer	292,662	Jan. 29	2095	{582 583}	26	403
Leger, Claudius D., assignor to Waterbury Watch Company, Waterbury, Conn. Watch	293,042	Feb. 5	323	89	26	501
Legge, Josiah H., Pittsburg, assignor of one-fourth to A. A. McCarty, Allegheny, Pa. Compound for coating metal	295,256	Mar. 18	1163	.....	26	1049
Lehmann, Henry. (See Gairing and Lehmann.)						
Lehr, Joseph W. (See Lehr, Nicholos P. and J. W.)						
Lehr, Nicholos P. and J. W., Fremont, Ohio. Feed mechanism	294,739	Mar. 4	479	134	26	911
Leigh, John. (See Clarke and Leigh.)						
Leigh, Thomas S., trustee. (See Fottrell, John, assignor.)						
Leigh, Walter, New Haven, Conn. Adjustable clothing-form	295,025	Mar. 11	853	233	26	992
Leighton, William, Jr., Wheeling, W. Va. Manufacture of spangled glassware	292,663	Jan. 29	2100	583	26	404
Leis, Theodore. (See Stettheimer and Leis.)						
Leitch, Albert E., assignor of one-half to C. A. Phillips, Dayton, Ohio. Electrical annunciator	291,063	Jan. 1	57	17	26	13
Leland, John J., *et al.* (See Tiffany, Albert R., assignor.)						
Lemassena, Lillian. (See Stanley and Lemassena, assignors.)						
Lemassena, Theodore F. (See Stanley and Lemassena.)						
Lemon, Isaac, assignor of one-half to W. Nelson, Nebraska City, Nebr. Harrow	295,124	Mar. 11	981	269	26	1004
Lemry, Edward, Plattsburg, N. Y. Mallet	292,327	Jan. 22	1648	460	26	317
Lenhart, Lewis Y., Red Wing, Minn. Draft-regulator for pipes, flues, and ventilators	293,043	Feb. 5	324	90	26	502
Lenhart, William H., Defiance, Ohio. Lathe for turning eccentric or polygonal forms	293,891	Feb. 19	1431	396	26	707
Lennards, Nicholas, Harvard, Ill. Fire-escape	292,328	Jan. 22	1648	461	26	317
Lenox, Edwin S., Worcester, Mass. Fence-wire fastening	295,565	Mar. 25	1561	432	26	1130
Lenox, Edwin S., Worcester, Mass. Fence-wire fastening	295,566	Mar. 25	1561	432	26	1130
Lenril, Marshal E., Homestead, Pa. Writing-table	294,886	Mar. 11	673	188	26	952
Lentsch, Carl G. O. (See Lefeldt and Lentsch.)						
Lentsch, Carl G. O. (See Lefeldt and Lentsch.) (Reissue.)						
Leonard, Elmer, Bridgeport, assignor to L. H. and A. F. Loomer, Birmingham, Conn. Corset	293,969	Feb. 19	1534	422	26	727
Leonard, John B. H., Naubuc, Conn. Grinding-machine	291,609	Jan. 8	759	{213 214}	26	143
Leonard, John N., Northampton, Mass. Silk-cleaning machine	292,830	Feb. 5	66	18	26	455
Leonhardt, John H. (See Leonhardt, William and J. H.)						
Leonhardt, William and J. H., Baltimore County, Md. Dumping-wagon	295,879	Mar. 25	1968	545	26	1203
Leplay, Hippolyte. (See Lissagaray and Leplay.)						
Lesley, Robert W., and J. M. Willcox, Philadelphia, Pa. Manufacture of Portland cement	292,329	Jan. 22	1649	.....	26	317
Leslie, Oscar S., assignor of one-half to H. Landt, Milwaukee, Wis. Shield for posts	291,208	Jan. 1	244	68	26	44
Letton, Theodore P., assignor to himself and E. M. Curtis, Parsons, Kans. Fire-escape	294,887	Mar. 11	674	188	26	952
Leuf, Alexander H. P., Brooklyn, N. Y. Hanging doors	294,476	Mar. 4	172	48	26	858
Lever, Charles, Bowdon, county of Chester, England. Exciting-circuit for dynamo-electric machines	291,209	Jan. 1	245	68	26	44
Levett, Alexander. (See Levett, Louis, assignor.)						
Levett, Louis, assignor of one-half to A. Levett, New York, N. Y. Manufacture of buffing and polishing devices	291,610	Jan. 8	761	214	26	143
Levy, Sally M., and A. J. Sedmihradsky, Milwaukee, Wis., assignors to said Levy. Machine for sewing loops to the surface of fabrics	293,478	Feb. 12	908	246	26	608
Levy, Solomon, Ware, Mass. Sole and heel plate	291,611	Jan. 8	762	214	26	143
Levison, Chancellor G., assignor to T. B. Mills, Brooklyn, N. Y. Fishing-fly book	294,888	Mar. 11	675	188	26	952
Lewis, Charles S., Waterbury, Conn. Knob or handle	294,643	Mar. 4	376	105	26	893
Lewis, Charles S., assignor to Waterbury Clock Company, Waterbury, Conn. Alarm-clock	293,583	Feb. 12	1025	282	26	629
Lewis, Fredrique R., Troy, N. Y., assignor to Wood, Lewis & Hawley. Collar	293,753	Feb. 19	1250	346	26	676
Lewis, H. M., *et al.* (See Starr, Eli T., assignor.)						
Lewis, James T. A., and C. A. Wolff, Boston, Mass. Filter	294,244	Feb. 26	1899	520	26	796

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Lewis, Mortimer G., Lowville, N. Y. Bench-vise	294,137	Feb. 26	1765	485	26	773
Lewis, Tompkins A., *et al.* (See Wagner, John L., assignor.)						
Lewkowitz, Benjamin, New York, N. Y. Adjustable finger-ring	293,044	Feb. 5	325	90	26	502
Lhuissier, Michel A., Buffalo, N. Y. Device for indicating the temperature in annealing-furnaces	292,497	Jan. 29	1874	523	26	368
Libbey, Edward D., *et al.* (See Locke, Joseph, assignor.) (Reissue.)						
Libbey, William L., *et al.* (See Locke, Joseph, assignor.) (Reissue).						
Libby, Frederic M., Portland, Me. Pen-holder	294,477	Mar. 4	173	48	26	859
Libby, Frederic M., Portland, Me. Pen-holder	294,478	Mar. 4	174	48	26	859
Libby, Frederick M., Portland, Me. Pen-holder	292,330	Jan. 22	1651	461	26	318
Liddell, Walter J. F., Charlotte, N. C. Saw-mill set-works	292,331	Jan. 22	1654	461	26	318
Liddell, Walter J. F., Charlotte, N. C. Saw-guide	294,644	Mar. 4	377	105	26	893
Liddy, Dennis H., Monticello, Iowa. Coupling-plate for whiffletrees						
Lightcap, William H. (See Looney, John J., assignor.)						
Lightfoot, Francis, Media, Pa. Method of and die for forming rail-joints	294,053	Feb. 26	1644	454	26	754
Lightfoot, Francis, Media, Pa. Railway-rail	294,245	Feb. 26	1900	520	26	796
Lightthill, August P. (See Prince, Jerome, assignor.)						
Lighthouse, John C., Rochester, N. Y. Halter	291,365	Jan. 1	430	122	26	78
Liljeholm, Nils P., assignor of one-third to H. Goetz, St. Louis, Mo. Railway freight-car door	293,479	Feb. 12	910	246	26	608
Lilley, Hugh H. V., Milford, Mass. Shoe-lace fastener	294,054	Feb. 26	1646	455	26	754
Lillibridge, Froeman, Cedar Rapids, Iowa. Saddle for bicycles	294,645	Mar. 4	377	105	26	893
Lillie, S. Morris, Philadelphia, Pa. Centrifugal filtering or straining apparatus. (Reissue)	10,457	Mar. 4	493	138	26	914
Lillie, S. Morris, Philadelphia, Pa. Process of and apparatus for separating raw sugar liquor from the scum and mechanical impurities contained therein	294,798	Mar. 11	555	154	26	931
Lilliendahl, Gustavus A., Greenville, assignor to H. T. Lilliendahl, Jersey City, N. J. Game apparatus	292,563	Jan. 29	1973	550	26	382
Lilliendahl, Henry T. (See Lilliendahl, Gustavus A., assignor.)						
Lincoln, William O., Fairhaven, Mass. Convertible milling and slotting machine	293,892	Feb. 19	1433	{396 397}	26	708
Lindenberg, Arthur, Dortmund, Prussia, Germany. Winding apparatus for mines	295,774	Mar. 25	1820	506	26	1177
Lindenberg, Herman, Jersey City, N. J. Liquid-cooler	294,889	Mar. 11	676	189	26	929
Lindley, Jacob Z., and J. V. Elder, Lamar, Mo. Stove-pipe	293,893	Feb. 19	1436	397	26	708
Lindner, Charles, Carlinville, Ill. Toilet-bracket	295,567	Mar. 25	1562	433	26	1130
Lindsay, James H., trustee. (See Browning, Clinton, assignor.)						
Lindsay, Richard A., Baltimore, Md. Live-box for fish	292,123	Jan. 15	1381	387	26	965
Lindsay, William L., Cleveland, Ohio. Car-wheel	294,890	Mar. 11	677	189	26	953
Linn, James R., Toledo, Ohio. Chair	291,366	Jan. 1	431	122	26	79
Linn, Samuel H., New York, N. Y. Method of and apparatus for preserving and transporting food	291,914	Jan. 15	1136	317	26	220
Linnenbrügge, Adolph. (See Nagel, Kaemp, and Linnenbrügge.)						
Linsley, Joel, Burlington, Vt. Refrigerator	292,926	Feb. 5	183	50	26	477
Lintner, Daniel H., Lancaster, Pa. Machine for mincing meat	293,754	Feb. 19	1251	346	26	676
Lipe, Charles E., Syracuse, N. Y. Index-head for milling-machines	292,927	Feb. 5	184	51	26	477
Lipe, Charles E., Syracuse, N. Y. Universal milling-machine	292,928	Feb. 5	186	51, 52	26	477
Lipe, Walter. (See Ludlow, Charles A., assignor.)						
Lippy, David, Mansfield, Ohio. Thrashing-machine	293,755	Feb. 19	1252	{346 347}	26	676
Lippy, David, Mansfield, Ohio. Railway-crossing	295,568	Mar. 25	1563	433	26	1131
Lipsey, Andrew B., West Hoboken, N. J., assignor to W. Bell, New York, N. Y. Gas-burner	291,480	Jan. 1	580	163	26	103
Lissagaray, Henri, and H. Leplay, Paris, France. Extracting and melting tallow at a low temperature	295,184	Mar. 18	1064	.....	26	1032
Lister, Samuel C., and J. Relxach, Manningham, near Bradford, county of York, England. Loom for weaving double pile fabrics	292,664	Jan. 29	2101	{583 584 585}	26	404
Little, Howard, Deckertown, N. J. Mixed paint	293,045	Feb. 5	326	.....	26	502
Little, Nelson B., Chicago, Ill. Key-fastener	293,756	Feb. 19	1253	347	26	677
Livet, Fountain, London, county of Middlesex, England. Steam-generator	295,775	Mar. 25	1821	{506 507}	26	1177
Liversey, T. E., *et al.* (See Holden, Daniel L., assignor.)						
Lloyd, John J., Streator, Ill. Car-coupling	293,757	Feb. 19	1254	347	26	677
Lloyd, Samuel, Birmingham, county of Warwick, England. Apparatus for generating and purifying gaseous fuel	294,646	Mar. 4	379	105	26	893
Lloyd, Walter J., Harborne, Birmingham, county of Stafford, England. Tricycle	295,257	Mar. 18	1164	{321 322}	26	1049
Lloyd, William F. (See Hoffman, Lloyd, and Block.)						
Lobdell, Henry, Troy, N. Y. Curtain-stick	292,332	Jan. 22	1655	462	26	318
Lobdell, Henry, Troy, N. Y. Curtain-stick	292,333	Jan. 22	1656	462	26	319
Lobdell, Henry, Troy, N. Y. Curtain-stick	292,334	Jan. 22	1658	462	26	319
Lochman, Julius, New York, N. Y. Necktie-fastener	292,929	Feb. 5	192	53	26	478
Locke, Charles S., Joliet, Ill. Reel for check-row wires	292,831	Feb. 5	67	18	26	455
Locke, Charles S., Joliet, Ill. Anchor for check-row wires	292,832	Feb. 5	68	19	26	455
Locke, Edward A., assignor to Waterbury Watch Company, Waterbury, Conn. Watch-movement box	293,046	Feb. 5	326	90	26	502
Locke, Joseph, Somerville, assignor to W. L. Libbey, Newton, (S. C. Libbey administratrix of said W. L. Libbey, deceased,) and E. D. Libbey, Boston, Mass. Glass globe. (Reissue)	10,446	Feb. 5	563	150	26	540
Locke, Milo W., assignor of one-half to R. S. Andrews, Baltimore, Md. Hoisting and conveying apparatus	295,770	Mar. 25	1822	{507 508}	26	1177
Locke, Richard B. (See Held and Locke.)						
Locke, Sylvanus D., Hoosic Falls, N. Y. Harvester-reel	292,238	Jan. 22	1539	{431 432}	26	297
Locke, Sylvanus D., Hoosic Falls, N. Y. Harvester	295,777	Mar. 25	1825	{508 509}	26	1178
Locker, Harmon. (See Lanscha, Theodore A., assignor.)						
Lockett, Benjamin G., J. W. English, and J. W. Murphey, Atlanta, Ga. Brick-drying kiln	295,026	Mar. 11	854	{233 234}	26	992
Lockhart, Alexander W., Sacramento, Cal. Feed-regulating device for thrashing-machines	295,185	Mar. 18	1066	{293 294}	26	1032
Lockling, Henry H., Magnolia, Iowa. Gate	295,569	Mar. 25	1565	433	26	1131
Lockwood, Charles S., Newburg, N. Y. Combined boiler, fire-regulator, and alarm	291,064	Jan. 1	58	17	26	14
Lockwood, George A., and D. Orrill, Chariton, Iowa. Sewing-machine treadle	295,027	Mar. 11	855	235	26	983
Lockwood, Thomas D., Malden, Mass. Telephone circuit and apparatus	291,915	Jan. 15	1139	318	26	220
Lockwood, Thomas D., Malden, and T. W. Lane, Boston, Mass. Magneto-electric telephone	292,335	Jan. 22	1650	463	26	319

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lockwood, William, Madrid, N. Y. Buckboard-wagon	294,891	Mar. 11	678	189	26	953
Loetzer, Christian E. (See Reed and Loetzer.)						
Loewe & Co., Ludwig. (See D'Andrée, Louis, assignor.)						
Loewenstine, David C., and J. E. Fox, Minneapolis, Minn. Show-case	291,612	Jan. 8	763	214, 215	26	144
Logan, David, Hartstown, Pa. Dust exhauster and conveyer for thrashing-machines	292,498	Jan. 29	1875	523	26	368
Logan, John A., *et al.* (See Hayden, Henry F., assignor.)						
Lomas, John R., assignor of one-half to B. Shoninger, New Haven, Conn. Stringing device for piano-fortes	295,778	Mar. 25	1831	509	26	1179
Lombard, George W., Westminster, Mass. Working rattan	292,239	Jan. 22	1543	432	26	298
Long, Amos M., Monroe, Mich. Apparatus for administering anæsthetic gases	294,479	Mar. 4	174	48	26	859
Long, Dennis M., and J. Killer, Louisville, Ky. Pipe-molding pit	293,480	Feb. 12	911	247	26	608
Long, John M. (See Crawford and Long.)						
Long, John M., and C. E. McBeth, Hamilton, Ohio. Cultivator	295,779	Mar. 25	1832	509	26	1179
Long, John S., assignor to himself and J. Bastien, Murphysborough, Ill. Saw-set	292,755	Jan. 29	2232	620	26	428
Long, Nathan H., Muncie, Ind. Folding table	291,525	Jan. 8	647	184	26	123
Longcor, Leonard S., Belvidere, Ill. Bridle-bit	295,028	Mar. 11	857	235	26	983
Longsworth, Miron V., Delphos, Ohio. Neck-yoke	291,748	Jan. 8	924	250	26	171
Loockerman, Francis S., Manokin, Md. Ripping attachment for scissors	293,182	Feb. 5	525	139	26	533
Look & Lincoln. (See Morrison, Benjamin P., assignor.)						
Loomer, Andrew F., *et al.* (See Leonard, Elmer, assignor.)						
Loomer, L. Harvey, *et al.* (See Leonard, Elmer, assignor.)						
Loomis, Arthur, Jeffersonville, Ind. Wall-bracket extension-shelf	293,894	Feb. 19	1437	397	26	708
Looney, John J., assignor of one-fourth to W. H. Lightcap, Hazel Green, Wis. Neck-yoke	293,970	Feb. 19	1535	423	26	727
Lord, Frederick E., St. Louis, Mo. Automatic rain-water regulator for cisterns	295,258	Mar. 18	1165	322	26	1050
Lord, Tyler C., Joliet, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Barb for fence-wire	293,584	Feb. 12	1096	282	26	629
Lord, William, Middlesbrough, county of York, England. Ventilating apparatus	295,499	Mar. 18	1463	403	26	1107
Lorenz, Wilhelm, Carlsruhe, Baden, Germany. Cartridge-case	293,257	Feb. 12	627	166	26	556
Lorenz, Wilhelm, Carlsruhe, Baden, Germany. Machine for treating cartridge-shells	294,055	Feb. 26	1647	455	26	754
Lorillard, Pierre, Jr., New York, N. Y. Implement for attaching hangers to ceilings	295,880	Mar. 25	1969	545	26	1203
Loring & Blake Organ Company. (See Loring, Elmer H., assignor.)						
Loring, Elmer H., assignor to Loring & Blake Organ Company, Worcester, Mass. Tremolo for reed-organs	292,439	Jan. 22	1802	502	26	347
Loring, Samuel. (See Morton, Ephraim S., assignor.)						
Lorsch, Solomon, *et al.* (See Emanuel, Henry, assignor.)						
Loud, Herbert. (See Ferrall, Thomas R., assignor.) (Reissue.)						
Loughrey, John. (See Robson, Robert S., assignor.)						
Loveland, Horace W., Topeka, Kans. Furnace fire-grate and frame	293,258	Feb. 12	628	167	26	557
Lovell, William A., Bingen, Ark. Lubricator	294,480	Mar. 4	177	49	26	859
Lovell, Henry H. and H. T., Ionia, Mich. Refrigerator	295,259	Mar. 18	1166	322	26	1050
Lovell, Homer T. (See Lovell, Henry H. and H. T.)						
Lovell Manufacturing Company. (See Miller, Charles H., assignor.)						
Low, Joshua, Steubenville, Ohio. Car-coupling	295,029	Mar. 11	858	235	26	983
Lowe, E. Louis, Jr., Brooklyn, N. Y. Machine for obtaining fibers from fiber-bearing substances	292,240	Jan. 22	1545	432, 433	26	299
Lowe, Frank W. (See Wilbur, Henry A., assignor.)						
Lowe, John R., Anderson, Cal. Gate	294,481	Mar. 4	177	49	26	859
Lowrie, Harvey C., Denver, Colo. Track and road-bed for railways	291,613	Jan. 8	767	215	26	144
Lozier, Abraham W., New York, N. Y. Fire-escape	295,570	Mar. 25	1566	434	26	1131
Lubke, Adolph E. G., New York, N. Y. Dynamo-electric machine	293,758	Feb. 19	1255	347, 348	26	677
Lubke, Adolph E. G., New York, N. Y., assignor of one-half to O. Heikel, Jersey City, N. J. Electric motor	292,930	Feb. 5	193	53	26	478
Lucas, Emil E. (See Greenberg and Lucas.)						
Lucas, George C., and J. A. Patterson, Cleveland, Ohio. Filling for railway-frogs	291,749	Jan. 8	925	250	26	171
Lucas, John, Hawk's Nest, W. Va. Coal-mining machine	291,916	Jan. 15	1142	318	26	221
Lucas, Thomas P., assignor of one-half to J. S. Brown, Galveston, Tex. Locking-pawl for anchor-chains	293,657	Feb. 19	1114	310	26	652
Luckenbach, Frederic A., New York, N. Y. Apparatus for pulverizing ores, &c	291,367	Jan. 1	431	122, 123	26	79
Luckenbach, Frederic A., assignor to Pneumatic Pulverizer Company, New York, N. Y. Pulverizing, desulphurizing, and otherwise treating metalliferous ores	295,125	Mar. 11	981	269	26	1004
Ludlam, J. S. (See Dennis, Edward P., assignor.)						
Ludlow, Charles A., Bridgeport, Conn., assignor of one-half to W. Lipe, New York, N. Y. Tumbler for locks	295,260	Mar. 18	1167	323	26	1050
Ludlow, William H. D., La Porte City, Iowa. Crutch	291,750	Jan. 8	926	250	26	171
Lueckenhoff, Herman. (See Schindler, Jacob, assignor.)						
Lufkin, Richard H., Chelsea, Mass. Leather-folding machine	294,394	Mar. 4	71	18	26	842
Luker, James, New York, N. Y. Case for hats	293,183	Feb. 5	526	139	26	533
Lum, Nettie A., Carneiro, Kans. Medical compound	291,751	Jan. 8	926	.....	26	171
Lundy, Charles L. (See Lundy, Hugh E. and C. L.)						
Lundy, Hugh E. and C. L., Cincinnati, Ohio. Mail-bag cord-fastener and label-holder combined	294,799	Mar. 11	561	155	26	931
Lungren, Charles M., New York, N. Y. Dynamo-electric machine	294,892	Mar. 11	679	189	26	953
Lusty, George, Brooklyn, N. Y. Folding box	292,833	Feb. 5	69	19	26	455
Lux, John H. and P., Earlville, Iowa. Hay elevator and carrier	291,368	Jan. 1	434	123	26	79
Lux, Philip. (See Lux, John H. and P.)						
Lydall & Foulds, H. (See Merrill, Oliver H., assignor.)						
Lyford, Francis, Boston, Mass. Laundry jack or bracket	293,971	Feb. 19	1536	423	26	727
Lyman, Chester C., Cleveland, Ohio. Steam-derrick	294,395	Mar. 4	73	18, 19	26	842
Lyman, Fordyce A., Cleveland, Ohio. Vapor-stove	293,259	Feb. 12	629	167	26	557
Lyman, George N. (See Robinson, William W., assignor.)						
Lyman, William H., Springfield, Mo. Claw-bar	295,571	Mar. 25	1569	434	26	1132
Lynch, Edward P., Davenport, Iowa. Carriage-wheel	294,056	Feb. 26	1650	456	26	754
Lynch, John, New Haven, Mich. Safety-guard for railway-frogs	292,834	Feb. 5	70	19	26	455
Lyon, William. (See Fitzgerald and Lyon.)						
Lyon, William, Sheffield, county of York, England. Fluid-pressure governor	292,241	Jan. 22	1547	433	26	299
Lytle, Albert E., Chicago, Ill. Combination-tool	292,168	Jan. 22	1438	403	26	283
Lytle, Albert E., Des Plaines, assignor of one-half to G. H. Eton, Chicago, Ill. Expanding mandrel	292,167	Jan. 22	1437	403	26	282
Lytle, Felton M., and J. A. McCoy, Baltimore, Md., assignors to H. B. Lytle, Boston, Mass., trustee. Telephone central-office apparatus	294,482	Mar. 4	178	49, 50	26	859

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lytle, Henry B., trustee. (See Lytle and McCoy, assignors.)						
MacGregor, William H., East Braintree, assignor to Ashcroft Manufacturing Company, Boston, Mass. Pressure-gage	292,169	Jan. 22	1439	403, 404	26	283
Macauley, Joseph H. (See Fuller and Macauley.)						
Macbean, George S. (See Capell and Macbean.)						
Mack, Josiah D., Salem, assignor of one-half to G. H. Redway, Albany, N. Y. End-gate for wagons	292,931	Feb. 5	195	53	26	478
Mackaye, James S., New York, N. Y. Folding chair	295,261	Mar. 18	1168	323	26	1050
Mackenzie, Oscar C., Chicago, Ill. Letter or bill file	291,752	Jan. 8	927	260	26	171
Mackey, Frank M., La Porte, Ind., assignor to himself, E. and G. B. Morf, Chicago, Ill. Milling apparatus	293,047	Feb. 5	327	90, 91	26	502
Macomber, William I., assignor to G. L. Vose, Providence, R. I. Automatic stop-motion for punching and forming presses	292,756	Jan. 29	2234	620	26	428
Macy, Frederick. (See Briggs, Daniel D., assignor.)						
Maddox, John W., Wheeling, and C. E. Adamson, Muncie, Ind. Land-marker	294,138	Feb. 26	1767	485	26	773
Maddux, John T., *et al.* (See Currier, Augustus S., assignor.)						
Madeheim, Hermann, Brooklyn, N. Y. Fountain-pen	293,759	Feb. 19	1257	348	26	677
Madeira, John D., Chillicothe, Ohio. Coal-car	292,336	Jan. 22	1660	463	26	319
Madra, Andrew J., Fort Smith, Ark. Seed-planter	294,800	Mar. 11	563	155	26	932
Madsen, Peter, Berlin, Germany. Car-coupling	291,753	Jan. 8	928	260	26	171
Maedel, Charles B., Kansas City, Mo. Button-fastener	293,658	Feb. 19	1115	310	26	653
Maffrand, Emile F., St. Louis, Mo. Apparatus for dipping tobacco in licorice	295,780	Mar. 25	1833	510	26	1180
Magill, Robert, Pittsburg, Pa. Hand rock-drilling machine	292,665	Jan. 29	2104	585	26	404
Magowan, Frank A., Trenton, N. J. Utilizing discarded rubber belting	292,020	Jan. 15	1263	353	26	243
Magowan, Frank A., Trenton, N. J. Utilizing discarded rubber hose	292,021	Jan. 15	1263	353	26	243
Magowan, Frank A., Trenton, N. J. Flexible tube for air-brakes, &c	293,481	Feb. 12	912	247	26	609
Maguire, William, Baltimore, Md. Folding scale-pan	295,785	Mar. 25	1841	512	26	1181
Maller, John, San Francisco, Cal. Grate-bar	292,337	Jan. 22	1661	463	26	319
Main, Oscar F., Marion, Iowa. Attachment for watch-makers' lathes	291,754	Jan. 8	929	260	26	172
Maine, Hiram, Chicago, Ill. Sound-muffler for telephones	292,022	Jan. 15	1264	354	26	243
Maitland, Bligh S., London, England. Apparatus for use in studying harmony	294,139	Feb. 26	1768	485, 486	26	773
Maize, Charles F., Philadelphia, Pa. Letter-box	294,483	Mar. 4	182	50	26	860
Major, Thomas, Jackson township, Clinton county, Ind. Straw-stacker	291,755	Jan. 8	930	261	26	172
Malin, Arthur B., assignor of one-half to G. W. Malin, Cleveland, Ohio. Spooled market-wire	294,740	Mar. 4	480	134	26	911
Malin, George W. (See Malin, Arthur B., assignor.)						
Mallery, Wheeler & Co. (See Andrews and Sparks, assignors.)						
Malmedie, Charles H., New Bedford, Mass. Reamer	294,484	Mar. 4	184	50	26	860
Malmstrom, Peter E. (See Bloch and Malmstrom.)						
Malone, Thomas H., Milwaukee, and G. A. Whiting, Neenah, Wis. Car-seal	292,499	Jan. 29	1875	524	26	368
Maltby, Benjamin. (See Gere and Maltby.)						
Maltby, Frank D., New York, N. Y. Oscillating steam pumping-engine	293,585	Feb. 12	1027	282, 283	26	629
Maltby, William L. (See White, Welcome, assignor.)						
Manchester, Francis L. (See Richardson, John D., assignor.)						
Manchester, Francis L., *et al.* (See Crowley, Jeremiah J., assignor.)						
Mandel, Philip H., Astoria, N. Y. Making copies of tracings	294,485	Mar. 4	185	.....	26	860
Manlove, Joseph L., Milton, Ind. Fence	292,023	Jan. 15	1265	354	26	243
Mann, Henry, Milwaukee, Wis. Detachable barrel-cover	294,057	Feb. 26	1651	456	26	755
Mann, Henry A., Jr., Balston Spa, N. Y. Envelope-machine	291,614	Jan. 8	768	215, 216	26	144
Mann, Henry F., Pittsburg, Pa. Projectile	293,337	Feb. 12	734	196	26	576
Mann, Oscar H., *et al.* (See Gamble, Henry E., assignor.)						
Manneck, Charles H., Brooklyn, N. Y., and W. Witte, New Haven, Conn. Box making and covering machine	294,486	Mar. 4	186	50, 51, 52	26	861
Manny, James H., Chicago, Ill., assignor to Richardson & Boynton Company, of New York. Apparatus for heating and ventilating buildings	293,260	Feb. 12	631	168, 169	26	557
Mansfield, Albert K., Boston, Mass. Coupling for railway-cars	295,186	Mar. 18	1069	294	26	1033
Mansfield, Benjamin F., Centerville, Oreg. Lifting-jack	292,666	Jan. 29	2106	585	26	405
Mansfield, Samuel M., Galveston, Tex. Hydraulic excavating-machine	292,024	Jan. 15	1266	354	26	243
Manula, Erick, Astoria, Oreg. Machine for casting leads on fish-net lines	295,262	Mar. 18	1170	324	26	1051
Manwaring, Moses W. (See Scott and Manwaring.)						
Many, Charles M., Brooklyn, N. Y. Magnet	293,338	Feb. 12	736	196	26	576
Manz, William F., and C. H. Swab, Cedar Rapids, Iowa. Milk-can	292,440	Jan. 22	1803	502	26	347
Marass, Emill E., St. Louis, Mo. Device for checking the flow of gas	291,369	Jan. 1	435	123	26	79
Marburg, Theodore, Baltimore, Md., assignor to E. B. and H. S. Munson, New Haven, Conn. Paper box	291,615	Jan. 8	771	216	26	145
Marchand, Henry E., Allegheny City, Pa. Motor	293,895	Feb. 19	1438	398	26	709
Marcil, Michel, assignor of one-half to Hills Company, Amherst, Mass. Straw-braid-sewing machine	292,124	Jan. 15	1381	387	26	265
Marcus, Morris, Chicago, Ill. Suspenders	294,396	Mar. 4	75	19	26	842
Marcus, Morris H. (See Moore and Marcus.)						
Marcus, Solomon, New York, N. Y. Neckscarf	293,896	Feb. 19	1440	398	26	709
Marcy, Frederick I. (See Walcott, Jabez E., assignor.)						
Maring, John N., *et al.* (See Armer, David S., assignor.)						
Mark, Jacob, New York, N. Y. Illuminating-tile	294,647	Mar. 4	381	106	26	894
Marker, Stephen A., Newark, N. J. Button for driving-reins	293,760	Feb. 19	1258	349	26	677
Markle, John R., Chicago, Ill., and J. B. Wayne, Detroit, Mich. Mechanism for driving dynamo-electric machines	293,482	Feb. 12	913	247, 248	26	609
Markoe, John A., St. Paul, Minn. Carpet-fastener	294,397	Mar. 4	76	19	26	842
Marks, Frank R. (See Poolman and Marks.)						
Markwick, Edwin, Pinckney, Cal. Adjustable step-ladder	292,932	Feb. 5	197	54	26	478
Maroney, Paul, Sr., *et al.* (See Alderman, Eli M., assignor.)						
Marot, Clément, Troyes, France. Carrier for paintings and other analogous works of art	295,030	Mar. 11	859	236	26	983
Marqua, Philip, Cincinnati, Ohio. Device for suspending carriage-tops	293,497	Feb. 19	1440	398	26	709
Marsh, C. W., *et al.* (See Whitney, Charles, assignor.)						
Marsh, George A., Brunswick, Me. Soldering-tool	294,648	Mar. 4	382	106	26	894
Marsh, Lewis F., Bristol, county of Gloucester, and J. Cree, Denton, county of Lancaster, England. Apparatus for paring the brims of silk and felt hats, &c	294,246	Feb. 26	1901	520, 521	26	796
Marsh, W. W., *et al.* (See Whitney, Charles, assignor.)						
Marsh, William W. (See Whitney and Marsh.)						
Marshall, Flavius H. (See Marshall, Joseph A. and F. H.)						
Marshall, Holmes, Cleveland, Ohio. Fare-register	295,781	Mar. 25	1833	510	26	1180

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Marshall, Joseph A. (See Decker and Marshall.)						
Marshall, Joseph A. and F. H., Darlington, Ind. Band-cutter and feeder for thrashing-machines	292,867	Jan. 29	2106	586	26	405
Marshall, Thomas, Ripon, Wis. Oar-lock	294,893	Mar. 11	680	190	26	953
Marshall, Thomas T., Jarvis, Ontario, Canada. Boot or shoe crimping machine	295,187	Mar. 18	1069	294	26	1033
Marshall, William P., Ingart Grove, Iowa. Corn-planter	291,757	Jan. 8	932	261 / 262	26	172
Marshall, William P., Cambridge, Mass. Shutter bower and fastener	294,894	Mar. 11	681	190	26	953
Marshman, Newman R., assignor to Mechanical Orguinette Company, New York, N. Y. Mechanical musical instrument	293,184	Feb. 5	527	140	26	533
Marstall, Hermann, Evansville, Ind. Saw-setting machine	291,917	Jan. 15	1143	319	26	221
Martel, Jean B., Newark, N. J. Mechanical movement	293,483	Feb. 12	914	248	26	609
Martens, August F., Hamburg, Germany. Padlock	294,058	Feb. 26	1652	456	26	755
Martin, Alexander H., Oskaloosa, Iowa. Milk-cooler	294,487	Mar. 4	190	53	26	861
Martin, Andrew J., assignor to Mechanicsburg Machine Company, Mechanicsburg, Ohio. Apparatus for distributing grain and fertilizers	295,655	Mar. 25	1669	463	26	1150
Martin, Bruno, East Saginaw, Mich. Attachment to hydrocarbon-vapor burners	291,918	Jan. 15	1145	319	26	221
Martin, Bruno, East Saginaw, Mich. Hydrocarbon-burner	293,972	Feb. 19	1536	423	26	727
Martin, Edward W., assignor to H. Martin, Lansingburg, N. Y. Roller-track mechanism for pendent sliding doors	293,339	Feb. 12	736	196 / 197	26	576
Martin, Enoch P. H., Wilmington, Del. Tuyere	292,668	Jan. 29	2107	586	26	405
Martin, Henry. (See Martin, Edward W., assignor.)						
Martin, Jacob M., Sterling, Ill. Automatic carrier system	293,898	Feb. 19	1441	399	26	709
Martin, James G., Bradford, Pa. Well-drilling rig	295,413	Mar. 18	1352	376	26	1087
Martin, John, Knight's Ferry, Cal. Car-coupling	293,899	Feb. 19	1442	399	26	709
Martin, Samuel W., Springfield, Ohio. Changeable-speed gearing	293,761	Feb. 19	1260	349	26	678
Martin, Van Buren, and C. W. Metcalfe; said Martin assignor to W. J. Graham, Hopkinsville, Ky. Saw-mill head-block	295,572	Mar. 25	1570	435	26	1132
Martin, William L. (See Chamberlain and Martin.)						
Martincourt, Charles. (See Schulte and Martincourt.)						
Martine, Charles F., assignor of one-half to W. H. Kimball, Boston, Mass. Lens attachment for lampe	293,586	Feb. 12	1028	283	26	609
Martinez, Rafael, assignor to E. Gutmann and H. Goodman, New York, N. Y. Mat	295,782	Mar. 25	1635	510	26	1160
Marvine, George E. (See Johnson, William H., assignor.)						
Mason, Charles T., Jr., Sumter, S. C., assignor to Southern Cotton Harvesting Company, of South Carolina. Cotton-picker stem	293,484	Feb. 12	915	248	26	609
Mason, Charles T., Jr., Sumter, S. C., assignor to Southern Cotton Harvesting Company, of South Carolina. Cotton-picker stem	293,485	Feb. 12	916	249	26	609
Mason, Edward R., Des Moines, Iowa. Grindstone	292,242	Jan. 22	1548	433	26	299
Mason, Isaac, *et al.* (See Thompson and Rice, assignors.)						
Mason, James E., Blanchard, Pa. Car-truck	294,140	Feb. 26	1772	486	26	774
Mason, John T., Streator, Ill. Lifting-jack	294,398	Mar. 4	77	19	26	843
Mason, Robert E., Vernon County, Mo. Gate	293,650	Feb. 19	1116	310	26	653
Mason, Volney W., Providence, R. I. Friction-pulley	295,656	Mar. 25	1672	464	26	1151
Mason, William, assignor to Winchester Repeating Arms Company, New Haven, Conn. Magazine fire-arm	295,031	Mar. 11	861	236	26	983
Massey, John, Salem, Mo. Circle-iron for wagons	293,340	Feb. 12	739	197	26	576
Massey, John W., Gholson, assignor of one-half to M. Edwards, Noxubee County, Miss. Power-jack	291,370	Jan. 1	436	123	26	79
Massey, William W. (See Bickford, Charles R., assignor.)						
Matcham, George D., Pittsfield, Ohio. Blank for road-scrapers	293,261	Feb. 12	634	169	26	558
Mast & Co., P. P. (See Kissell, Emanuel M., assignor.)						
Mathes, Philip, Idlewood, Pa. Device for saving the waste from emery-wheels	294,141	Feb. 26	1773	486	26	774
Mathews, Daniel A. (See Smith, Thomas L., assignor.)						
Mathews, Samuel R. C. (See Race and Mathews.) (Reissue.)						
Matlock, David B., Red Bluff, Cal. Gate	294,649	Mar. 4	382	106 / 107	26	894
Matter, Jean C., Mulhausen, Germany. Machine for sifting colors	295,783	Mar. 25	1637	511	26	1160
Matthews, Albert H., Oakham, and J. B. Small, Somerville, Mass. Combined seed-drill and cultivator	295,263	Mar. 18	1171	324 / 325	26	1051
Matthews, John W. (See Nye and Matthews.)						
Matthews, Luther, Paris, Tex. Corn-sheller	294,488	Mar. 4	191	53	26	861
Matthews, William F., Dallas, Tex. Combined ventilator and chimney	291,919	Jan. 15	1146	319	26	221
Matthews, William H., Livingston, Tex. Button	295,032	Mar. 11	863	237	26	984
Mattice, Christopher, Delhi, N. Y. Stove	293,973	Feb. 19	1538	423 / 424	26	728
Mattison, James D., New York, N. Y. Stopper-lock for bottles	291,990	Jan. 15	1147	320	26	222
Mauck, Alfred. (See Williams, Mauck, and Williams.)						
Mavor, Warwick C., Forlorn Hope, La. Truck	294,142	Feb. 26	1774	486	26	774
Maxim, Hiram S., Paris, France. Gas-motor	291,065	Jan. 1	59	17	26	14
Maxim, Hiram S., Paris, France. Hot-air or gas engine	293,185	Feb. 5	529	140	26	534
Maxim, Hiram S., Paris, France. Gas-motor	293,769	Feb. 19	1261	349 / 350	26	678
Maxim, Hiram S., Paris, France. Gas-engine	295,784	Mar. 25	1638	511	26	1160
Maxim, Hudson, Pittsfield, Mass. Steam-cooker	293,048	Feb. 5	331	91	26	503
Maxon, Thomas, assignor of one-half to J. W. Carpenter, Dayton, Ohio. Wagon-jack	292,441	Jan. 22	1404	403	26	348
Maxwell, James R., Cincinnati, Ohio. Valve and union	291,066	Jan. 1	62	18	26	14
Maxwell, James R., Cincinnati, assignor to Gordon & Maxwell Company, Hamilton, Ohio. Valve arrangement for duplex pumping-engines	295,500	Mar. 18	1464	403	26	1107
Mayall, Thomas J., Reading, Mass. Box for laying lines of telegraph-wire	291,371	Jan. 1	437	124	26	79
Mayer, Strouse & Co. (See Gilbert, Thomas S., assignor.)						
Mayes, Thomas, Albany, N. Y. Wave-power	291,758	Jan. 8	933	262	26	172
Maynadier, Gustavus B., assignor of one-half to W. H. Cilley, Boston, Mass. Attrition-mill	292,338	Jan. 22	1662	464	26	319
Maynadier, Gustavus B., and W. H. Cilley, Boston, Mass. Attrition-mill	292,170	Jan. 22	1441	404	26	283
Maynard, Fredrick T., Detroit, Mich. Pillow-sham holder	293,900	Feb. 19	1444	399	26	710
Maynard, George H., Brooklyn, N. Y. Folding bed-bottom	293,486	Feb. 12	917	249	26	610
Mayne, John, Atchison, Kans. Railway-signal	295,264	Mar. 18	1174	325	26	1052
Maynz, Theodor, *et al.* (See Teller, Carl F., assignor.)						
Mayor, Paul H., Owego, N. Y. Operating trains on cable railways	293,049	Feb. 5	332	91	26	503
Mayrand, Pierre, Montreal, Quebec, Canada. Car-coupling	291,210	Jan. 1	246	68, 69	26	44
McAdoo, Thomas, New York, N. Y. Elevator	293,050	Feb. 5	334	91	26	503
McAlvay, Charles B., assignor of three-eighths to C. H. Christopher, Jackson, Mich. Lubricator	294,399	Mar. 4	77	20	26	843
McArthur, Alexander W., Arroyo Grande, Cal. Frame for diplomas and credit-cards	291,921	Jan. 15	1149	320	26	222

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
McArthur, Cassius, South Shenango, Pa. Car-coupling	292,339	Jan. 22	1663	464	26	320
McBeth, Charles E. (See Long and McBeth.)						
McBrien, Francis J., Brooklyn, N. Y. Clothes-clamp	292,243	Jan. 22	1549	433	26	300
McCabe, James H., Jacksonville, Fla. Cartridge implement	295,265	Mar. 18	1175	325	26	1052
McCahon, James H., *et al.* (See Fulton, John M., assignor.)						
McCall, William, and J. V. De Vry, San Francisco, Cal. Device for transmitting power from a central station	292,025	Jan. 15	1267	354 / 355	26	244
McCalmont, James F., Wayne, Nebr. Water-elevator	291,759	Jan. 8	934	262	26	173
McCandless, Joseph P., New York, N. Y. Blank-book	295,266	Mar. 18	1175	325	26	1052
McCandless, Joseph P., New York, N. Y. Blank-book	292,340	Jan. 22	1664	464	26	320
McCannon, Elmer E., Barnhart's Mills, Pa. Globe-valve	294,650	Mar. 4	384	107	26	894
McCarter, Marshall J., Norristown, Pa. Cut-off-valve gear						
McCarthy, Daniel, assignor to P. J. O'Connor, Norwich, Conn. Railway switch and crossing	293,660	Feb. 19	1117	311	26	653
McCartney, Elizabeth F., Omaha, Nebr. Sewing-thimble	293,262	Feb. 12	634	169	26	558
McCarty, A. A. (See Legge, Josiah H., assignor.)						
McCarty, William F. M., Aix-la-Chapelle, Germany. Solidifying liquid or semi-liquid fatty acids	292,669	Jan. 29	2108	.....	26	405
McCarty, William F. M., Moscow, Russia, assignor to J. F. Pierce, trustee, New York, N. Y. Multiple circuit-controller	293,974	Feb. 19	1539	424	26	728
McCausland, John, Providence, R. I. Paper-piping	291,372	Jan. 1	438	124	26	80
McCay, Spencer, Topeka, Kans. Machine for sharpening mowing-machine knives	292,244	Jan. 22	1550	434	26	300
McCloskey, George M., Brooklyn, N. Y. Removable bottle-trap	294,489	Mar. 4	192	53	26	862
McCloskey, Riley, and A. E. Tozier, Walla Walla, Wash. Ter. Combined tire-tightener and jack	294,895	Mar. 11	682	190	26	953
McColib, Henry, *et al.* (See Wilson, Michael H., assignor.)						
McConnell, Alexander E., New Orleans, La. Car-truck	293,763	Feb. 19	1264	350	26	678
McConnell, John C. (See Clements, George P., assignor.)						
McCord, Luther A., Clinton, S. C. Paper-file	294,651	Mar. 4	386	107	26	894
McCormack, William J., Paignton, county of Devon, England. Screw stock and die	294,143	Feb. 26	1774	487	26	775
McCormick, Charles G., assignor of one-half to G. L. and J. N. McCormick, Cincinnati, Ohio. Car-coupling	292,564	Jan. 29	1973	550	26	382
McCormick, George L., *et al.* (See McCormick, Charles G., assignor.)						
McCormick Harvesting Machine Company. (See Pridmore, Henry E., assignor.)						
McCormick, John. (See Stone, Marvin C., assignor.)						
McCormick, John N., *et al.* (See McCormick, Charles G., assignor.)						
McCoy, John A. (See Little and McCoy.)	295,573	Mar. 25	1572	435	26	1133
McCracken, George B., Willimantic, Conn. Steam-trap						
McCreery, William. (See Brown, Charles R., assignor.)	294,896	Mar. 11	683	190	26	954
McCudden, Thomas, St. Louis, Mo. Brush for flour-bolts						
McCurdy, David. (See Conp, McCurdy, and Rice.)	295,267	Mar. 18	1176	326	26	1052
McDaniel, Charles W., Carthage, Mo. Lightning-arrester for electric lines	292,245	Jan. 22	1551	434	26	300
McDermott, Walter, Orange, N. J. Ore-concentrator						
McDole, George H., assignor of one-half to H. L. Merriman, Jackson, Mich. Trace-cock-eye attachment	292,171	Jan. 22	1442	405	26	283
McDonald, Alexander. (See Lawrence and McDonald.)						
McDonald, James H., Worden, Ill. Mining-machine	294,247	Feb. 26	1903	521	26	197
McDonald, John P., assignor to himself and E. B. Jordan, Litchfield, Ill. Burial-windlass	291,760	Jan. 8	935	262	26	173
McDonald, John P., assignor to himself and W. H. Galloway, Litchfield, Ill. Baling-press	294,897	Mar. 11	683	191	26	954
McDonald, John S., New Orleans, La. Hydraulic pressure-regulator	292,026	Jan. 15	1268	355	26	244
McDonald, William A., assignor of one-half to F. J. Cross, Minneapolis, Minn. Sash-holder	292,670	Jan. 29	2109	586	26	405
McDongall, Isaac, assignor of one-half to H. Hamilton, Petersburg, Ill. Flood-fence	292,757	Jan. 29	2235	620 / 621	26	429
McDongall, James T., No. 52 Granville Park, Blackheath, county of Kent, England. Purification of coal-gas	292,341	Jan. 22	1665	.....	26	320
McDougall, William L., New York, N. Y. Device for locking wheels	293,051	Feb. 5	335	92	26	503
McDowell, Frank D., Salem, Oreg. Finger-ring gage	291,373	Jan. 1	438	124	26	80
McElfresh, John T., Farmingdale, Ill. Moth-trap for bee-hives	295,786	Mar. 25	1642	512	26	1161
McElheny, William C. (See Satch and McElheny.)						
McElhiney, Haskell H., Nebraska City, Nebr. Photographer's retouching-point	294,050	Feb. 26	1653	456	26	755
McElroy, Charles A., Delaware, Ohio. Harrow attachment	294,652	Mar. 4	386	107	26	895
McEwen, James, and S. Spencer, Manchester, county of Lancaster, England. Apparatus for bottling and straping aerated beverages	292,565	Jan. 29	1975	551	26	383
McFadden, Patrick, Philadelphia, Pa. Shaft-tug for harness	293,052	Feb. 5	336	92	26	504
McGavin, John, and E. C. Sandford, New York, N. Y. Manufacture of oil-cloth	293,487	Feb. 12	918	249	26	610
McGee, James, *et al.* (See Melvin and Clute, assignors.)						
McGillis, John J., Marinette, Wis. Saw-mill dog	293,186	Feb. 5	531	141	26	534
McGinnis, William T., assignor to J. H. Shaw, New York, N. Y. Sealed galvanic-battery cell	295,574	Mar. 25	1574	435	26	1133
McGonigle, James A. (See McKnight, Thomas, assignor.)						
McGrath, Joseph, Newton, Kans. Sofa-bedstead	293,488	Feb. 12	919	249	26	610
McGraw, John H., Oswego, N. Y. Tube-expander	292,027	Jan. 15	1269	355	26	244
McGregor, William, administrator. (See Flenniken and Graham.)						
McGrory, Thomas, Philadelphia, Pa. Lock wire insulator	293,901	Feb. 19	1444	400	26	710
McGuire, Patrick W., Lacon, Ill. Tire and felly for wheels	292,028	Jan. 15	1271	355	26	244
McGuire, Thomas R. (See Purnell, Richard H., assignor.)						
McHugh, Timothy, Cambridge, Mass. Ball-cock	291,374	Jan. 1	439	124	26	80
McIndoe, George F. and J. W., Everett, Mass. Manufacture of wood-grain paper, cloth, &c.	295,657	Mar. 25	1673	.....	26	1151
McIndoe, George F. and J. W., Everett, Mass. Manufacture of wood-grain paper, cloth, &c.	295,658	Mar. 25	1674	.....	26	1151
McIndoe, James W. (See McIndoe, George F. and J. W.)						
McInnes, Alexander, assignor to Helmbacher Forge and Rolling Mills Company, St. Louis, Mo. Link-welding die	294,060	Feb. 26	1654	457	26	755
McIntire, Charles, Newark, N. J. Telegraph-wire joint	291,211	Jan. 1	247	60	26	44
McIntyre, John M., Lockport, N. Y. Method of and apparatus for separating dust from air	294,248	Feb. 26	1905	522	26	797
McIvor, William. (See Duffy and McIvor.)						
McKay, Gordon, Newport, R. I., and H. P. Fairfield, West Medford, Mass. Ore-separator	291,067	Jan. 1	63	18	26	15
McKean, Adelbert H., Trumansburg, N. Y. Bung-extractor	293,661	Feb. 19	1118	311	26	653
McKeen, Benjamin, Peabody, assignor of one-fourth to D. Murray, Salem, Mass. Machine for putting out or stretching skins	295,787	Mar. 25	1643	512	26	1161
McKelvey, Samuel P. (See Gilfillan and McKelvey.)						
McKenna, Thomas. (See Carley and McKenna.)						
McKenzie, John, *et al.* (See Ball, Clinton M., assignor.)						
McKenzie, Joseph C., Adrian, Mich. Cutting-table for tile and brick machines	291,616	Jan. 8	772	216	26	145
McKinney, Robert M., Elizabeth, Pa. Air or liquid brake	293,764	Feb. 19	1265	350	26	678

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McKnight, Thomas, Denver, Colo., assignor of one-half to J. A. McGonigle, Leavenworth, Kans. Child's carriage	292,933	Feb. 5	198	54, 55	26	479
McLaughlin, Thomas J., Chicago, Ill. Smoke-consumer	293,765	Feb. 19	1267	350, 351	26	679
McLean, Edwin D., Marissa, Ill. Reversing-valve gear	295,033	Mar. 11	864	237	26	984
McLoughlin, Edmund, *et al.* (See Bingham, John H., assignor.)						
McLoughlin, Edmund, *et al.* (See Campbell, Andrew, assignor.)						
McLoughlin, John, *et al.* (See Bingham, John H., assignor.)						
McLoughlin, John, *et al.* (See Campbell, Andrew, assignor.)						
McMillan, Charles, Chicago, Ill. Furnace	295,188	Mar. 18	1071	295	26	1033
McMillan, James R., Philadelphia, Pa. Combined vise and lathe	292,342	Jan. 22	1667	465	26	320
McNair, Milton H., Meadville, Pa. Button-fastener	295,575	Mar. 25	1575	436	26	1133
McNary, William, Bryan, Ohio. Sulky-plow	295,788	Mar. 25	1844	513	26	1181
McNaughton, Henry, assignor to R. Wood, Erin, Ontario, Canada. Surgical splint	291,617	Jan. 8	773	217	26	145
McNeill, Solomon, *et al.* (See Gifford, Falconor, assignor.)						
McPherron, Edwin N., Greenfield, Ill. Needle-threader for sewing-machines	294,061	Feb. 26	1655	457	26	755
McQuiston, Frank L., Greencastle, Iowa. Car-coupling	293,053	Feb. 5	336	92	26	504
McRoberts, James W. (See Frey, Francis E., assignor.)						
McTammany, Alexander. (See McTammany, John, Jr., assignor.)						
McTammany, John, Jr., assignor to A. McTammany, Worcester, Mass. Automatic musical instrument	292,671	Jan. 29	2110	586, 587	26	406
McTighe, James J., Pittsburg, Pa. Armature-coil for dynamo-electric machines	295,789	Mar. 25	1845	513	26	1181
Mead, Solomon, New Haven, Conn. Dredging-machine	294,400	Mar. 4	78	20	26	843
Meador, Charles W., San José, Cal. Cultivator and horse-hoe	295,189	Mar. 18	1074	295	26	1034
Meatyard, Edward B., Geneva, Wis. Combined car brake and coupler	293,263	Feb. 12	635	170	26	558
Meatyard, Edward B., Lake Geneva, Wis. Combined car brake and coupler	293,264	Feb. 12	638	170, 171	26	558
Meatyard, Edward B., Lake Geneva, Wis. Railway-car	293,265	Feb. 12	641	171, 172, 173	26	559
Mechanical Orguinette Company. (See Marshman, Newman R., assignor.)						
Mechanicsburg Machine Company. (See Martin, Andrew J., assignor.)						
Mee, Isaac T., Cedartown, Ga. Can-nozzle	291,375	Jan. 1	439	125	26	80
Meekins, Charles A., New Hartford, Conn. Bench-plane	295,414	Mar. 18	1355	377	26	1087
Meers, Stephen, Brooklyn, N. Y. Album	293,054	Feb. 5	337	92	26	504
Mehren, Jacob F., Chicago, Ill. Apparatus for telephonic transmission	292,835	Feb. 5	71	20	26	456
Mehnrin, Oscar C., Newark, Ohio. Thill-coupling	293,341	Feb. 12	739	197	26	577
Meikle & Co., Thomas. (See Meikle, Thomas, assignor.)						
Meikle, Thomas, assignor to T. Meikle & Co., Louisville, Ky. Cultivator	293,266	Feb. 12	646	173	26	559
Meinikheim, Bernard G., Newtown, assignor to himself and C. Cook, New York, N. Y. Bolster-spring for wagons	294,249	Feb. 26	1907	522	26	797
Meisel, Francis, Boston, Mass. Machine for dressing stone	294,401	Mar. 4	80	20, 21	26	843
Mekenney, Aleudo, Middleborough, Mass. Fertilizer-distributer	292,672	Jan. 29	2112	587	26	406
Melcher, William H., Philadelphia, Pa. Brick-kiln	293,489	Feb. 12	930	250	26	610
Melville, George W., Philadelphia, Pa. Artificial horizon	294,653	Mar. 4	387	108	26	895
Melvin, Josiah W., and W. H. Clute, assignors of two-thirds to A. H. Swanson and J. McGee, Houston, Tex. Car-wheel	295,790	Mar. 25	1846	513	26	1182
Menck, Johannes A., and A. Hambrock, Ottensen, near Altona, Germany, assignors, by mesne assignments, to W. E. Hale, Chicago, Ill. Gas-engine	295,415	Mar. 18	1355	377	26	1087
Mendel, Alfred, Dresden, Saxony, Germany. Means for carrying knapsacks	292,566	Jan. 29	1976	551	26	383
Mendenhall, James E., assignor of one-half to S. H. Knox, Springfield, Ohio. Mowing-machine	295,126	Mar. 11	983	270	26	1005
Menge, Joseph, New Orleans, La. Dredging-bucket	294,250	Feb. 26	1907	523	26	797
Menzel, Edmund R., Jersey City, N. J. Strap-clamp	292,934	Feb. 5	200	55	26	479
Mercer, William H., Mercer, S. C. Stalk-chopper	293,035	Feb. 5	338	93	26	504
Meredith, John T., Milwaukee, Wis. Limekiln	291,212	Jan. 1	248	69, 70	26	44
Meriden Malleable Iron Company. (See Knight, John C., assignor.)						
Merino Shoe Company. (See Messer, Daniel F., assignor.)						
Merrell, Isaac L., San Francisco, Cal. Steam-boiler furnace	294,654	Mar. 4	388	108	26	895
Merriam, Joseph B., assignor of one-third to E. B. Richmond, Meriden, Conn. Blind-hinge	295,634	Mar. 11	865	237	26	984
Merrifield, Charles E., Indianapolis, Ind. Straw-stacking machine	292,500	Jan. 29	1876	524	26	308
Merrihew, Phineas E. (See Shorey, John, assignor.)						
Merrill, Freeman C., South Paris, Me. Harrow-tooth	292,836	Feb. 5	72	20	26	456
Merrill, Isaac C. (See Eastman, George C., assignor.)						
Merrill, Nelson, New York, N. Y. Tricycle	291,376	Jan. 1	440	125	26	80
Merrill, Oliver H., assignor to H. Lydall & Fonda, North Manchester, Conn. Horseshoe	294,062	Feb. 26	1656	457	26	755
Merrill, William E. T., assignor to J. W. Bruff, Philadelphia, Pa. Suspender-buckle	295,035	Mar. 11	866	237	26	984
Merriman, George E., Terryville, Conn. Die-press. (Reissue)	10,461	Mar. 11	1009	278	26	1009
Merriman, Howard L. (See McDole, George H., assignor.)						
Merritt, Charles E. (See Merritt, Henry W., M. G., and C. E.)						
Merritt, Henry W., M. G., and C. E., Springfield, Mass. Machinery for and process of finishing buttons	294,490	Mar. 4	193	54	26	802
Merritt, Mortimer G. (See Merritt, Henry W., M. G., and C. E.)						
Merrow, Joseph M., Merrow, Conn. Knitting-machine	291,377	Jan. 1	443	125, 126	26	81
Mershon, Samuel D., Rahway, N. J. Valve-oiler	294,898	Mar. 11	684	191	26	934
Mesker, John H. (See Barenfanger, Christian W., assignor.)						
Messenger, John W., Senterfitt, Tex. Fence	293,342	Feb. 12	740	198	26	577
Messer, Daniel F., Baltimore, Md., assignor to Merino Shoe Company, Kennebunk, Me. Machine for forming felt boots or shoes	293,766	Feb. 19	1268	351	26	679
Mettler, John R., Corpus Christi, Tex. Pistol-game apparatus	294,491	Mar. 4	195	54	26	802
Metcalfe, Charles W. (See Martin and Metcalfe.)						
Metcalfe, Gilson W., Baltimore, Md. Railway torpedo-placer	292,029	Jan. 15	1272	356	26	244
Meyer, Carl, and W. H. Laufersick, Cincinnati, Ohio. Hydrant	291,068	Jan. 1	65	18	26	15
Meyer, Frederick, Jr., Newark, N. J. Balance	292,935	Feb. 5	201	55	26	479
Meyer, Heinrich A., Hamburg, Prussia, Germany. Machine for working rattan	293,343	Feb. 12	741	198	26	577
Meyers, Fredrick, Brooklyn, N. Y. Safety-pin	295,636	Mar. 11	868	238	26	984
Michaëlis, Victor, Luxemburg, Germany. Manufacturing vinegar	292,125	Jan. 15	1383	388	26	266
Michaud, Edmond F. and E. N., Anbervilliers, France, assignors, by mesne assignments, to Continental Glycerine Company, New York, N. Y. Extracting glycerine from fatty matters	293,344	Feb. 12	742	.....	26	577
Michaud, Ernest N. (See Michaud, Edmond F. and E. N.)						
Mickle, John, *et al.* (See Tatum, C. Albert, assignor.)						
Middleton, Edward H., Philadelphia, Pa. Screw-jack	292,567	Jan. 29	1977	551	26	383

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Middleton, Edward H., Philadelphia, Pa. Screw-jack	292,568	Jan. 29	1978	552	26	383
Midgley, John. (See Hall and Midgley.)						
Miers, Thomas M. (See Miller, John D., assignor.)						
Mikesh, Charles J., Rathbven, Iowa. Corn-planter	295,268	Mar. 18	1178	326	26	1052
Mikkelsen, Niels, Chicago, Ill. Motor	291,069	Jan. 1	66	19	26	15
Miles, Edward J., assignor of one-half to H. M. Cox, Kellogg, Iowa. Wagon-brake lever	295,190	Mar. 18	1074	295	26	1034
Miles, George, Wellesley Hills, Mass. Pneumatic dispatch apparatus or mechanism	294,899	Mar. 11	685	191	26	954
Miles, John E., Marlin, Tex. Post-auger	293,490	Feb. 12	921	250	26	610
Miles, Richard R. (See Faught, Nelson, assignor.)						
Millen, George H., and E. Mousseau, Hull, Quebec, Canada. Match-splint machine	295,191	Mar. 18	1075	296	26	1034
Millen, James T., Thomasville, Ga. Plow	292,343	Jan. 22	1669	465	26	321
Miller, Abraham S., Republic, Ohio. Fire-escape	291,378	Jan. 1	447	126, 127	26	81
Miller, Alexander W., Bellefontaine, Ohio. Device for holding the stem in the pendant of stem-winding watches	293,267	Feb. 12	647	173	26	559
Miller, Allen F., *et al.* (See Field, Franklin A., assignor.)						
Miller, Andrew R. (See Paul, George D., assignor.)						
Miller, Charles H., assignor to Lovell Manufacturing Company, (limited,) Erie, Pa. Monkey-wrench	291,213	Jan. 1	249	70	26	45
Miller, Charles H., assignor to E. S. Warren, Buffalo, N. Y. Curtain-roller	293,187	Feb. 5	532	141	26	535
Miller, Charles H., Jr., assignor to Buffalo Curtain Fixture Company, Buffalo, N. Y. Curtain-fixture	293,188	Feb. 5	533	141	26	535
Miller, Edward C., Bellefontaine, Ohio. Watchmaker's sign	295,037	Mar. 11	868	238	26	984
Miller, Ezra, Hohokus, N. J. Sweeping carpets	293,902	Feb. 19	1445	.....	26	710
Miller, Fred E., Lincoln, Nebr. Well-bucket	295,038	Mar. 11	869	238	26	984
Miller, Fredrick C., Newport, Ky. Cigar-cutter	291,379	Jan. 1	451	127	26	81
Miller, George W., Clarinda, Iowa. Attachment to windmills	292,030	Jan. 15	1273	356	26	245
Miller, Harvey Cincinnati, Ohio. Hinge-tip	293,662	Feb. 19	1119	311	26	654
Miller, Henry C., *et al.* (See Field, Franklin A., assignor.)						
Miller, Henry F., New York, N. Y. Necktie holder and fastener	292,837	Feb. 5	73	20	26	456
Miller, Hiram B. (See Bloom, John C., assignor.)						
Miller, John. (See Gorrell and Miller.)						
Miller, John, La Otto, Ind. Saw-swage	294,251	Feb. 26	1908	523	26	798
Miller, John A., Newark, N. J. Cooking or heating stove	293,056	Feb. 5	339	93	26	504
Miller, John A., Newark, N. J. Stove	293,057	Feb. 5	340	93	26	504
Miller, John D., Big Sandy, assignor of one-third to T. M. Miers, Dallas, Tex. Automatic car-brake	292,246	Jan. 22	1553	435	26	300
Miller, John G., Champaign, Ill. Harness-tug slide	293,903	Feb. 19	1446	400	26	710
Miller, John T., Memphis, Mo. Trestle for scaffolding	295,269	Mar. 18	1179	326	26	1053
Miller, Lewis, Akron, Ohio. Harvester	293,345	Feb. 12	743	198	26	577
Miller, Lewis, Akron, Ohio. Pawl-and-ratchet mechanism for harvesters	293,767	Feb. 19	1269	351	26	679
Miller, P. T., *et al.* (See Holden, Daniel L., assignor.)						
Miller, Richard. (See Kanouse and Miller.)						
Miller, Samuel M. (See Brown and Miller.)						
Miller, Thomas J., assignor of one-half to M. L. Harter, North Manchester, Ind. Car-coupling	292,126	Jan. 15	1385	388	26	266
Miller, William, Boston, Mass. Store-service apparatus	293,587	Feb. 12	1029	283	26	620
Miller, William F., New York, N. Y., assignor to American Writing Machine Company, of New York. Copy-holder	295,416	Mar. 18	1357	377	26	1088
Miller, William M., assignor of two-thirds to R. Hamilton and W. Hooper, New Cumberland, W. Va. Fire-escape	295,127	Mar. 11	984	270	26	1005
Miller's Falls Company. (See Goodell, Albert D., assignor.)						
Miller's Falls Company. (See Johnson, Charles C., assignor.)						
Millett, Daniel C., Milwaukee, Wis. Wall-protector	292,247	Jan. 22	1554	435	26	301
Milligan, Henry C., South Orange, N. J., assignor to Iron Clad Manufacturing Company, New York, N. Y. Handle-covering	294,492	Mar. 4	195	55	26	802
Milligan, Joseph H., assignor of one-half to W. Newsome, Boston, Mass. Self-leveling berth for ships	291,070	Jan. 1	67	19	26	15
Milloy, Nevin, Cincinnati, Ohio. Drafting implement	291,380	Jan. 1	452	127	26	82
Mills, Daniel, Philadelphia, Pa., assignor to United States Automatic Buttonhole Sewing Machine Company, of New Jersey. Friction-clutch	292,172	Jan. 22	1443	405	26	283
Mills, George L., and U. M. Gordon, San Rafael, Cal. Adjustable center-board for vessels	292,031	Jan. 15	1274	356	26	245
Mills, Thomas B. (See Levison, Chancellor G., assignor.)						
Mills, William M., Dayton, Ohio. Turbine water-wheel	293,904	Feb. 19	1446	400, 401	26	710
Milne, David F., Rochester, N. Y., and J. T. Milne, Clay City, Ky. Saw-mill	295,791	Mar. 25	1846	513, 514	26	1182
Milne, George B., Oswego, N. Y. Car-truck spring	295,417	Mar. 18	1358	377	26	1088
Milne, James T. (See Milne, David F. and J. T.)						
Milsted, William N. (See Aldersley, John, assignor.)						
Miltimore, George W., Chicago, Ill. Car-wheel	291,618	Jan. 8	773	217	26	145
Miner, Elijah D., Dayton, Wash. Ter. Fence-post	294,493	Mar. 4	196	55	26	802
Miner, Henry M., assignor to C. Barclay, Philadelphia, Pa. Roofing fabric	293,491	Feb. 12	922	250	26	611
Miner, Henry M., assignor to C. Barclay, Philadelphia, Pa. Manufacture of roofing fabrics	293,492	Feb. 12	922	251	26	611
Miner, Hiram J. D., Dunkirk, N. Y. Musical wagon	295,659	Mar. 25	1676	464	26	1151
Mink, Albert, assignor to C. F. Mueller, Newark, N. J. Waterproofing composition	295,881	Mar. 25	1971	.....	26	1203
Minshall, William E., Minonk, Ill. Dash-board	292,032	Jan. 15	1275	357	26	245
Mitchell, Albion L. F., Lawrence, and J. R. Mitchell, Danvers, Mass. Sole and heel burnishing machine	292,033	Jan. 15	1276	357	26	246
Mitchell, Alexander, Wilkes-Barré, Pa. Locomotive	294,252	Feb. 26	1909	523, 524	26	798
Mitchell, Barnard W., assignor of one-third to A. Holtzbaugh, Hubbard, Ohio. Apparatus for lighting streets, &c	292,127	Jan. 15	1386	388	26	266
Mitchell, Barnard W., assignor of one-third to A. Holtzbaugh, Hubbard, Ohio. Apparatus for lighting streets	292,128	Jan. 15	1387	388	26	266
Mitchell, Charles L., Boston, Mass. Device for aid in vocal culture	291,071	Jan. 1	68	19	26	16
Mitchell, Clifford, Chicago, Ill. Chemical car-warmer	295,576	Mar. 25	1575	436	26	1134
Mitchell, Harvey J., Philadelphia, Pa. Car-spring	292,248	Jan. 22	1555	435	26	301
Mitchell, J. Henry, Philadelphia, Pa. Cake and confectionery machine	291,381	Jan. 1	453	128	26	82
Mitchell, James R. (See Mitchell, Albion L. F. and J. R.)						
Mitchell, John G., *et al.* (See Fairman, Simon, assignor.)						
Mitchell, Jonas L., Logan, Ohio. Automatic spring-valve cut-off	292,758	Jan. 29	2236	621	26	420

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mitchell, Lewis & Co. (See Swensen, Hans P., assignor.)						
Mitchell, Nathaniel, Sailor Springs, Ill. Hen's nest	291,214	Jan. 1	249	70	26	45
Mitchell, Oliver M., Providence, R. I. Spring for bicycle-saddles	294,655	Mar. 4	389	108	26	895
Mitchell, Pentecost J., assignor of one-half to S. H. Eckles, Dragoon Summit, Ariz. Ter. Hoisting apparatus	292,344	Jan. 22	1670	465	26	321
Mitchell, Randolph, St. Louis, Mo. Garter	294,656	Mar. 4	390	109	26	895
Mitchell, Robert F., New Haven, Conn. Watch-winding mechanism	292,838	Feb. 5	74	20	26	456
Mitchell, Robert F., assignor to Winchester Repeating Arms Company, New Haven, Conn. Primer	294,657	Mar. 4	390	109	26	895
Mix, Frank W., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Cabinet-lock. (Reissue)	10,460	Mar. 11	1007	278	26	1009
Mix, Frank W., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Piano-lock	295,270	Mar. 18	1180	327	26	1053
Mix, Frank W., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Lock	295,660	Mar. 25	1676	464	26	1151
Mobberley, William T., and R. Taylor, Allegheny, Pa. Core-barrel	295,039	Mar. 11	870	238	26	985
Model Machine Company. (See Osborn, Adelbert E., assignor.)						
Modery, Ambrosius. (See Schramm and Modery.)						
Moffett, Robert. (See Knowles, Thomas B., assignor.)						
Mole, John G., Batavia, Ill. Flying target	295,271	Mar. 18	1181	327	26	1053
Molecular Telephone Company. (See Waite, Henry E., assignor.)						
Molera, Eusebius J., and J. C. Cebrian, San Francisco, Cal.; said Molera assignor to said Cebrian. Secondary battery	291,526	Jan. 8	647	184	26	123
Molera, Eusebius J., and J. C. Cebrian, San Francisco, Cal.; said Molera assignor to said Cebrian. Secondary battery	292,034	Jan. 15	1277	357	26	246
Molina, Antonio M. (See Terreforte, Juan de M., assignor.)						
Möller, Peter C., Leipsic, Saxony, Germany. Making lithographic printing-plates	295,661	Mar. 25	1678	464	26	1151
Moneur, John. (See Ford and Moneur.)						
Moneyment, Matthew, Philadelphia, Pa. Decorating walls, &c.	291,215	Jan. 1	250	71	26	45
Monroe, Adam G. (See Morgan, David E., assignor.)						
Monroe, David M., Baltimore, Md. Can-soldering machine	293,346	Feb. 12	745	198 / 199	26	578
Monroe, David M., Baltimore, Md. Can-soldering machine	295,662	Mar. 25	1679	465	26	1152
Monroe, Edwin P., New York, N. Y. Slide-valve	293,975	Feb. 19	1541	425	26	728
Monroe, Edwin P., New York, N. Y., assignor to United States Metallic Packing Company, Philadelphia, Pa. Metallic rod packing	293,189	Feb. 5	534	142	26	535
Monroe, Francis S., Oakland, assignor to I. M. Somers, San Francisco, Cal. Composition for cleaning textile fabrics, wooden and metallic surfaces, &c.	295,882	Mar. 25	1971	.....	26	1203
Monson, Charles W., La Gro, Ind. Boot or shoe	294,253	Feb. 26	1910	524	26	798
Montague, Charles C., Augusta, Ark. Bale-band tightener	292,240	Jan. 22	1556	435	26	301
Montgomery, Frank P., San José, Cal. Folding map-rack	294,254	Feb. 26	1911	524	26	798
Montgomery, Samuel, New York, N. Y. Wood-screw	294,255	Feb. 26	1912	524	26	799
Montgomery, Thomas J. (See Edmunds, Henry, Jr., assignor.)						
Montross, Levi H., and J. C. West, assignors of one-third to J. Peachey, Simcoe, Ontario, Canada. Metallic shingle	294,256	Feb. 26	1913	525	26	799
Montz, William H., Lehighton, Pa. Car-truck	291,382	Jan. 1	456	128	26	92
Moody, Nathan C., assignor of one-half to C. H. Richardson, Newburyport, Mass. Rein-holder	294,325	Feb. 26	2002	548	26	815
Moore, Baldwin S., Austin, Tex. Propelling vehicles	293,347	Feb. 12	746	199	26	578
Moore, Edward L., Knoxville, Tenn., assignor to himself and T. J. Smith, Chicago, Ill. Drinking-glass	293,190	Feb. 5	536	142	26	535
Moore, Edward Y., Chicago, Ill. Door-hanger	295,501	Mar. 18	1464	404	26	1107
Moore, Emilie S., New York, N. Y. Shirt	294,741	Mar. 4	480	134	26	912
Moore, Frank A., Louisville, Ky. Fruit-picker	292,936	Feb. 5	202	55	26	479
Moore, Frank A., assignor of one-half to E. L. Elrod, Louisville, Ky. Screw-clamp	293,058	Feb. 5	342	94	26	505
Moore, Frank W., Wanpun, Wis. Ear-ring	293,268	Feb. 12	647	174	26	560
Moore, Frederic H., Boston, Mass. Combined dust-excluder and window-fastener	292,839	Feb. 5	75	21	26	456
Moore, George C., East Hampton, Mass. Elastic fabric	291,527	Jan. 8	649	184	26	123
Moore, Henry L., near Dawson, Ga. Plow	292,501	Jan. 29	1678	524	26	309
Moore, J. W., *et al.* (See Hoyt, Francis A., assignor.)						
Moore, Jacob, Albany, N. Y. Mail-bag fastener	291,384	Jan. 1	458	129	26	92
Moore, Jacob R., assignor of one-half to H. Bovee, Clayton, Mich. Combined heating apparatus and drying-rack	295,663	Mar. 25	1681	466	26	1152
Moore, Jonathan J., assignor of one-half to J. A. Ball, Thorntown, Ind. Stake for guy-ropes	292,129	Jan. 15	1388	389	26	266
Moore, Joseph, Greeley, Colo. Rake	294,658	Mar. 4	391	109	26	895
Moore, Otis G., and M. H. Marcus, Edenburg, Pa. Fire-escape	291,756	Jan. 8	932	261	26	179
Moore, Seth, Salem, Ohio. Wagon-seat	291,383	Jan. 1	457	129	26	92
Moore, William T., *et al.* (See Foster, Marion J., assignor.)						
Moore, Willis L., assignor of one-half to J. T. La Du, Rochester, Minn. Nut-lock	294,900	Mar. 11	686	191	26	954
Moorhouse, William H. (See Towne, Nathan P., assignor.)						
Moos, John P., Lincoln, Ill. Check-rower for corn-planters	295,883	Mar. 25	1972	545 / 546	26	1203
Moran, Joseph F., Detroit, Mich. Combined lunch-box and drinking-flask	292,502	Jan. 29	1879	525	26	309
Morava, Wensel, Chicago, Ill. Electric lamp	295,664	Mar. 25	1682	466	26	1152
Morehead, James M., The Plains, Va., assignor of one-half to J. B. Kendall, Washington, D. C. Saw-set	293,588	Feb. 12	1030	283	26	629
Morehouse, Edward H., Plover, Wis. Bag-holder	294,659	Mar. 4	393	109	26	896
Morey, Amos F., Winfield, Kans. Car-coupling	294,801	Mar. 11	564	156	26	932
Morey, Charles L., Comac, N. Y. Preparing medicated court-plaster	291,922	Jan. 15	1150	.....	26	222
Morf, Edward, *et al.* (See Mackey, Frank M., assignor.)						
Morf, Gustav B., *et al.* (See Mackey, Frank M., assignor.)						
Morgan, Abbott, Philadelphia, Pa. Spring shade-roller	294,494	Mar. 4	197	55	26	863
Morgan, Alonzo R., New York, N. Y. Open-fire stove and heater	292,937	Feb. 5	203	56	26	479
Morgan, Barzillai S., *et al.* (See Poole, Samuel, assignor.)						
Morgan, David E., assignor of one-half to A. G. Monroe, Detroit, Mich. Car-coupling	291,385	Jan. 1	459	129	26	83
Morgan, Doctor F., and J. Robb, Akron, Ohio. Steam-radiator	295,040	Mar. 11	872	239	26	985
Morgan, Elias M., Belleville, Ill. Drive-chain	293,493	Feb. 12	924	251	26	611
Morgan, Isaac G., Des Moines, Iowa. Fire-escape and hook-and-ladder carriage	291,481	Jan. 1	581	163 / 164	26	104
Morgan, James, Pittsburg, Pa. Bolt or rivet machine	293,348	Feb. 12	748	200	26	578
Morgan, John T., *et al.* (See Hayden, Henry F., assignor.)						
Morgan, John T., Selma, Ala., and H. F. Hayden, Washington, D. C. Gas-furnace for metallurgic and other purposes, and operating the same	291,386	Jan. 1	460	129 / 130	26	83
Morgan, John T., Selma, Ala., and H. F. Hayden, Washington, D. C. Gas-furnace	295,502	Mar. 18	1465	404	26	1107

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Morgan, Thomas R., Sr., Alliance, Ohio. Combined brake and speed-regulating mechanism	293,059	Feb. 5	343	94	26	505
Morgan, Thomas R., Sr., Alliance, Ohio. Clutch	293,060	Feb. 5	345	94, 95	26	505
Morgenstern, Louis. (See Stranp and Morgenstern.)						
Moritz, William, Philadelphia, Pa. Ratchet-drill	292,345	Jan. 22	1671	466	26	321
Morrill, Amos, *et al.* (See Ellis, George A., assignor.)						
Morrill, George P., Canterbury, N. H. Ax and tool handle guard	291,216	Jan. 1	251	71	26	45
Morris, David, assignor to himself and N. Wright, Log Cabin, Ohio. Lock	294,901	Mar. 11	687	192	26	954
Morris, Francis. (See Walsh, Michael J., assignor.)						
Morris, Isaac L. (See Beazley and Morris.)						
Morris, Joseph E. (See Dorsett, Morris, and Williams.)						
Morris, William, Oakengates, county of Salop, England. Apparatus for rolling wire rods	291,923	Jan. 15	1150	321	26	222
Morrison, Benjamin P., Abingdon, assignor of one-third to Look & Lincoln, Marion, Va. Carriage-spring	291,761	Jan. 8	936	263	26	173
Morrison, Ebenezer, and J. P. Herron, Washington, D. C. Machine for testing fabrics	292,130	Jan. 15	1388	389	26	266
Morrison, Ebenezer, and J. P. Herron, Washington, D. C. Thickness-gage	292,131	Jan. 15	1391	389	26	267
Morrison, J. Henry, and E. Allen, Norwich, Conn. Cutter-head	293,494	Feb. 12	924	251	26	611
Morrison, Robert B., Vincennes, Ind. Tile, pipe, and sewer protector	292,035	Jan. 15	1278	358	26	246
Morrison, Robert H. D., assignor of one-half to M. Toye, Winona, Minn. Pipe-return	293,976	Feb. 19	1542	425	26	728
Morrow, Frederick C., Wallaceburg, Ark. Device for hiving bees	293,905	Feb. 19	1448	401	26	710
Morse, Charles H. (See Thayer, John C., assignor.)						
Morse, James. (See Waterhouse, George R., assignor.)						
Morse, Robert M., Jr. (See Fowle, William B., assignor.)						
Morse, Stephen A., and C. Tyson, Philadelphia, Pa. Hoisting-machine	291,217	Jan. 1	252	71	26	45
Morstatt, George W., New York, N. Y. Blind	291,924	Jan. 15	1152	321	26	222
Mortenson, Laurids J. M., assignor of one-half to S. Andersen, Racine, Wis. Machine for forming eyebolts	291,387	Jan. 1	463	130	26	83
Morton, Edwin W., White Plains, N. Y. Stylographic fountain-pen	291,925	Jan. 15	1153	321	26	223
Morton, Ephraim S., Plymouth, assignor of one-half to S. Loring, Duxbury, Mass. Door-latch	294,396	Feb. 26	2002	549	26	815
Morton, James, Norwich, assignor to J. Buckley, Grosvenordale, Conn. Governor for water-wheels	292,673	Jan. 29	2114	588	26	406
Morton, William S., Edinburg, county of Mid-Lothian, Scotland. Machine for embossing and backing wall-decorating materials	294,257	Feb. 26	1914	525	26	799
Moses, Otto A., New York, N. Y. Voltaic-arc lamp	292,840	Feb. 5	76	21	26	457
Moses, Otto A., New York, N. Y. Voltaic-arc lamp	293,495	Feb. 12	925	251	26	611
Mosler Manufacturing Company. (See Goodwin, Levi H., assignor.)						
Mosler, Max, Cincinnati, Ohio. Fire-proof safe	295,272	Mar. 18	1182	327	26	1054
Moss, Erasmus D., Defiance, Ohio. Tool-holder	292,938	Feb. 5	205	56	26	480
Mott, Garrett S., *et al.* (See Vassar, Robert G., assignor.)						
Mott Iron Works, J. L. (See Demarest, John, assignor.)						
Mottram, William K., and J. A. Mundy, Ottawa, Kans. Wagon-jack	294,660	Mar. 4	393	110	26	896
Moulton, Claudius B., North Cambridge, Mass. Combined shafting-box and oil-reservoir	292,841	Feb. 5	78	21	26	457
Mount, Seeley P., Cleveland, Ohio. Attaching advertising articles to cards	295,605	Mar. 25	1684	467	26	1153
Mouseau, Edward. (See Millen and Mouseau.)						
Mowbray, George M., North Adams, Mass. Plastic compound from pyroxyline and mica	294,661	Mar. 4	394	.....	26	896
Moxham, Arthur J., and J. R. Tranter, Louisville, Ky. Roll for rolling car-rails	292,759	Jan. 29	2238	621 / 622	26	429
Moyer, Harvey A., Syracuse, N. Y. Spring-vehicle	292,036	Jan. 15	1279	358	26	246
Moyer, Harvey A., Syracuse, N. Y. Corner-iron for carriage-seats	293,663	Feb. 19	1120	312	26	654
Moyer, Harvey A., Syracuse, N. Y. Pleasure-cart	293,664	Feb. 19	1121	312	26	654
Mueller, Christian F. (See Mink, Albert, assignor.)						
Mueller, Michael, assignor, by mesne assignments, of part to L. A. Brigel and L. Burger, Cincinnati, Ohio. Brewing. (Reissue)	10,447	Feb. 5	564	150	26	540
Mulhern, Francis. (See Seneff, Albert, assignor.)						
Mullane, Denis A., New Orleans, La. Cane-mill	294,902	Mar. 11	688	192	26	955
Müller, Edward A., Louisville, Ky. Striking mechanism for eight-day clocks	293,589	Feb. 12	1031	284	26	630
Müller, Friedrich C. G. (See Pielsticker and Müller.)						
Mulvihill, Michael J., Warren County, and J. D. Tinney, Vicksburg, Miss. Earth-excavator and embankment-builder	295,128	Mar. 11	985	270 / 271	26	1005
Mundy, James A. (See Mottram and Mundy.)						
Munn, William H., Milwaukee, Wis. Window-screen	291,926	Jan. 15	1154	321	26	223
Munson, Edward B., *et al.* (See Marburg, Theodore, assignor.)						
Munson, Harvey S., *et al.* (See Marburg, Theodore, assignor.)						
Munson, Harvey S., New Haven, Conn. Paper box	293,061	Feb. 5	347	95	26	505
Munthe, Thonr., Rockford, Ill. Mitten	294,063	Feb. 26	1657	457 / 458	26	756
Munton, James, Chicago, Ill. Indicator for tire-rolling apparatus	293,768	Feb. 19	1271	351 / 352	26	679
Murch, Chauncey M., Cincinnati, Ohio. Running-gear for vehicles	294,742	Mar. 4	481	134	26	912
Murdock, Charles, New Rochelle, N. Y. Fire-escape bracket	293,191	Feb. 5	536	142	26	535
Murdock, Charles F., Detroit, Mich. Stop-valve	291,218	Jan. 1	255	72	26	46
Murphey, John W. (See Lockett, English, and Murphey.)						
Murphy, Daniel H., assignor of one-half to J. S. Smiledge, Hartford, Conn. Securing tools to handles	291,851	Jan. 8	1040	293	26	193
Murphy, Edward J., assignor to L. B. Gray and J. Ham, Boston, Mass. Press for molding glass insulators	291,072	Jan. 1	60	20	26	16
Murphy, Francis R. (See Grace, John M., assignor.)	291,619	Jan. 8	774	217	26	145
Murphy, John, Springfield, Mass. Ring-extractor for cartridges	292,509	Jan. 29	1979	.....	26	384
Murray, Andrew M., Richmond, Ind. Artificial slate	292,442	Jan. 22	1805	503	26	348
Murray, Charles E., Brandt, Ohio. Sash-holder	294,258	Feb. 26	1915	525	26	799
Murray, Charles E., Brandt, Ohio. Spindle for vehicles	295,666	Mar. 25	1685	467	26	1153
Murray, Charles H., Leadville, Colo. Hot-air oil-lamp						
Murray, Daniel. (See McKeen, Benjamin, assignor.)						
Murray, George J. (See Kane, Louis E., assignor.)						
Murray, Patrick. (See Murray, Peter, assignor.)						
Murray, Peter, Indianapolis, Ind., assignor of one-half to P. Murray, Alma Mine, Evanston, Wyoming Ter. Spark-arrester	292,760	Jan. 29	2242	622	26	430
Musgrove, Charles W., Lock Haven, Pa. Station-indicator	291,073	Jan. 1	70	20	26	16
Musgrove, Charles W., Lock Haven, Pa. Indicator	292,132	Jan. 15	1393	390	26	267
Musser, Frank P., Beaver Falls, Pa. Thill-coupling	293,906	Feb. 19	1450	402	26	711
Mustin, Charles T., Pittsburg, Pa., assignor to J. K. Brown, Canton, Ohio. Manufacture of articles from glass	293,977	Feb. 19	1543	425	26	728
Myers, Aaron, Hamilton, Ohio. Refrigerating-chamber	291,074	Jan. 1	71	20	26	16

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Myers, Andrew G., *et al.* (See Schmidt, George L., assignor.)						
Myers, Charles L., New Hamburg, N. Y. Cupping glass	291,388	Jan. 1	464	130	26	83
Myers, Edwin D. (See Rickey and Myers.)						
Myers, Ephraim, Suspension, Ala. Lumber-kiln	295,667	Mar. 25	1687	467, 468	26	1153
Myers, Garson. (See Wallace and Myers.)						
Myers, Jesse, *et al.* (See Warriner, William A., assignor.)						
Myers, John W., Lincoln, Ind. Device for fastening school-desks	291,219	Jan. 1	256	72	26	46
Myers, Philip A., Ashland, Ohio. Hay-carrier	291,852	Jan. 8	1050	293, 294	26	193
Myers, Samuel. (See Dickson, Silas, assignor.)						
Myers, William H., assignor of one-half to J. Holl, Reading, Pa. Cigar-cutter	293,665	Feb. 19	1122	313	26	654
Naef, Caroline. (See Alves, John, assignor.)						
Nafziger, Joseph, Hopedale, Ill. Grain-measuring machine	292,346	Jan. 22	1672	466	26	321
Nagel, August C., R. H. Kaemp, and A. Linnenbrügge, assignors to Nagel & Kaemp, Hamburg, Germany. Machine for breaking or reducing grain	293,496	Feb. 12	927	252	26	611
Nagel, Junius, Vienna, Austria-Hungary. Fire-proof sheet	292,037	Jan. 15	1280	358	26	246
Nagel & Kaemp. (See Nagel, Kaemp, and Linnenbrügge, assignors.)						
Nagle, Robert J. (See Arthur, Thomas, assignor.)						
Nash, Pontalba L., Hollister, Cal. Grain-separator for thrashing-machines	295,668	Mar. 25	1689	468	26	1154
Nash, Wiley N., Starkville, Miss. Rule and try-square	293,497	Feb. 12	930	252	26	612
Nason, Carleton W., Montclair, N. J. Noiseless steam-nozzle	291,762	Jan. 8	937	263	26	173
National Interlocking Switch and Signal Company. (See Bonnell, James A., assignor.)						
National Roll Wrapping Paper Company. (See Earl, John H., assignor.)						
National Tube Works Company. (See Carlson, Charles P., assignor.)						
Neacy, Thomas J., Milwaukee, Wis. Saw-guide	295,792	Mar. 25	1848	514	26	1182
Neer, Henry C., assignor of one-half to G. L. Furrow, Breckenridge, Ill. Churn	292,133	Jan. 15	1394	300	26	267
Neff, Joseph B., Burlington, Iowa. Wheel	293,498	Feb. 12	931	252	26	612
Neiding, Julius, Dyer, Ind. Circuit-closer for telegraphic instruments	294,259	Feb. 26	1916	525	26	799
Neil, Michael, *et al.* (See Tiffany, Albert R., assignor.)						
Neill, George W., Boston, Mass. Piano-forte-damper action	291,598	Jan. 8	650	184	26	123
Neill, George W., Boston, Mass. Piano-damper attachment	291,599	Jan. 8	651	185	26	123
Neill, George W., Boston, Mass. Piano-damper attachment	291,530	Jan. 8	652	185	26	123
Neitzel, John F. W., Arago, Nebr. Seed-planter	293,666	Feb. 19	1123	313	26	654
Nellis, Homer C. (See Dennen, Gray, and Nellis.)						
Nelson, Charles. (See Pilgrim, Conrad, assignor.)						
Nelson, Charles. (See Wittmann, Rudolf C., assignor.)						
Nelson, John Y. (See Furby, Jesse L., assignor.)						
Nelson, Nels, assignor to H. Howard, Providence, R. I. Button or stud	294,495	Mar. 4	198	55	26	863
Nelson, Nels, assignor to H. Howard, Providence, R. I. Button or stud	294,496	Mar. 4	199	56	26	863
Nelson, William. (See Lemon, Isaac, assignor.)						
Nerney, Peter, Attleborough, Mass. Swivel for watch-chains	295,577	Mar. 25	1576	436	26	1134
Nesbit, John A., Charlottesville, Ind. Convertible bridle and halter	295,273	Mar. 18	1183	327	26	1054
Neumeyer, Horace F., Macungie, Pa. Window-bead fastener	294,497	Mar. 4	200	56	26	863
Nevel, William A., and G. W. Fisher, Will's Point, Tex. Churn-motor	294,064	Feb. 26	1659	458	26	756
Nevins, Frazier W., *et al.* (See Ferguson, Robert W., assignor.)						
Nevins, Frazier W., Decatur, Ill. Tool for driving staples	292,842	Feb. 5	78	21	26	457
Nevins, Frazier W., Decatur, Ill. Horse-collar	292,843	Feb. 5	80	22	26	457
New England Patent Fire Escape Company. (See Fairbanks, Harlan, assignor.)						
New Jersey Wire Cloth Company. (See Roebling and Orr, assignors.)						
New, Tobias. (See Russell, John C., assignor.)						
Newacheck, Frank J., Green Spring, Ohio. Vehicle-seat lock	291,389	Jan. 1	465	131	26	83
Newbury, Millard F., assignor to B. F. Eaton, Coxsackie, N. Y. Paper-holder	293,349	Feb. 12	751	200	26	579
Newcomb, Horatio C. (See Rockwood, William E., assignor.)						
Newell, George M. (See Faison and Newell.)						
Newell, Roscius C. (See Cheney, Joseph W., assignor.)						
Newman, Isaac, New Haven, Conn. Corset	295,041	Mar. 11	873	239	26	985
Newsome, William. (See Milligan, Joseph H., assignor.)						
Newson, William S., Manistee, Mich. Shingle-band	292,443	Jan. 22	1805	503	26	348
Newth, William H. D., Detroit, Mich. Locomotive ash-pan	293,350	Feb. 12	752	200	26	579
Newton, John, Clifford, Ind. Post-base	291,927	Jan. 15	1154	322	26	223
Nial, Matthew, Troy, N. Y. Device for attaching the ribs and braces of umbrella-frames	295,042	Mar. 11	874	239	26	985
Nicholas, John B. (See Scott, Roy B., assignor.)						
Nichols, Aaron S., Pullman, Ill. Apparatus for drying lumber	295,418	Mar. 18	1360	378	26	1089
Nichols, E. A., *et al.* (See Pugh, Jesse B., assignor.)						
Nichols, Eugene C., Bangor, Me. Indicating-lock	292,939	Feb. 5	205	56	26	480
Nichols, Shepard & Company. (See Hoag, Andrew J., assignor.)						
Nicholson, Granville, assignor to J. L. Clark, New York, N. Y. Wire bale-tie	295,419	Mar. 18	1361	378	26	1089
Nicholson, William H., *et al.* (See Tatum, C. Albert, assignor.)						
Nickel, Adam. (See Wessell, Nickel, and Gross.)						
Nickerson, Fred. A., assignor of two-thirds to C. M. Shedd and H. A. Chapin, Springfield, Mass. Safety attachment for traveling-bags	292,940	Feb. 5	206	56	26	480
Nielsen, Lars C., Copenhagen, Denmark. Lubricator	295,793	Mar. 25	1849	514	26	1182
Niles, John O., Saratoga Springs, N. Y. Trunk	294,260	Feb. 26	1917	526	26	799
Niles Tool Works. (See Reiss, George T., assignor.)						
Nisbet, David F., Syracuse, N. Y. Steam-actuated valve	295,669	Mar. 25	1691	468	26	1154
Nissen, Christian F. (See Nissen, John I. and C. F.)						
Nissen & Co., C. F. (See Nissen, John I. and C. F., assignors.)						
Nissen, John I. and C. F.; said C. F. Nissen assignor to C. F. Nissen & Co., Salem, N. C. Vehicle running-gear	293,907	Feb. 19	1451	402	26	711
Nitzsche, Caroline C. (See Dolton, George E., assignor.)						
Nixon, Thomas L., New Tacoma, Wash. Ter. Surveyor's and engineer's transit	293,667	Feb. 19	1124	313, 314	26	654
Nobes, George, 27 Dudley Grove, Harrow Road, county of Middlesex, assignor to J. W. Raines, Acaster, Malbis, England. Deodorizing and disinfecting apparatus	294,327	Feb. 26	2004	549	26	815
Noble, George, Pittsburg, Pa. Dress-pillow	293,499	Feb. 12	932	253	26	612
Noe, Marsh, Davenport, Iowa. Hame-fastener	291,390	Jan. 1	465	131	26	83
Nolan, Michael. (See Smith, John S., assignor.)						
Nolen, Stephen A., Searcy, Ark. Saddle-stirrup	295,129	Mar. 11	986	271	26	1006
Noone, Joseph F., Peterborough, N. H. Truss	291,391	Jan. 1	466	131	26	84
Nordeman, John H. D. (See Smoot, George W., assignor.)						
Norden, Philipp, Leipsic, Germany. Muff	293,769	Feb. 19	1273	352	26	680
Norfolk Storage Company. (See Johnson, Josee, assignor.)						
Norman, Lawrence F., Boston, Mass. Manufacture of boots and shoes	292,503	Jan. 29	1880	525	26	309

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Norrell, Hansford D., Richmond, Va. Reversible sectional lap-joint railway-rail	294,743	Mar. 4	482	135	26	912
Norris, Albert N., Rushville, Ind. Grain-drill	293,002	Feb. 5	348	95	26	506
Norris, Albert N., and H. D. Spangler, assignors to Norris & Brother, Rushville, Ind. Seeding-machine	294,328	Feb. 26	2005	550	26	816
Norris & Brother. (See Norris and Spangler, assignors.)						
Norris & Brother. (See Spangler, Harrison D., assignor.)						
Norris, Daniel G., 2d, assignor to J. Norris, Glen's Falls, and G. E. Norris, Troy, N. Y. Neckband-shaping device for bosom-boards	295,130	Mar. 11	987	271	26	1006
Norris, George E., *et al.* (See Norris, Daniel G., 2d, assignor.)						
Norris, George S., Baltimore, Md. Bottle-stopping device	293,269	Feb. 12	648	174	26	560
Norris, Julia, *et al.* (See Norris, Daniel G., 2d, assignor.)						
Norris, Samuel, Halifax, Nova Scotia, Canada. Fire-escape	292,134	Jan. 15	1395	300	26	268
North American Petroleum Gas Company. (See Donglass, William H., assignor.)						
North, George S., South Norwalk, Conn. Photographic camera. (Reissue)	10,448	Feb. 5	565	150	26	540
North Western Fertilizing Company. (See Kimplen, Cornelius, assignor.)						
Northall, William H. (See Leet and Northall.)						
Northall, William H., assignor to C. S. Leet, Bridgeport, Conn. Sliding jaw-vise	292,135	Jan. 15	1396	391	26	268
Northcutt, Edmond R., Columbus, Ohio. Harness-loop	292,844	Feb. 5	81	22	26	457
Northey, George V. (See Parson and Northey.)						
Northrop, James H., assignor of one-half to Hopedale Machine Company, Hopedale, Mass. Stop-motion device for spooling-machines	295,503	Mar. 18	1467	405	26	1108
Northrup, Byron E., Broadalbin, N. Y. Driving cuff and wristlet	293,500	Feb. 12	932	253	26	612
Northrup, Devillo W., Utica, N. Y. Manufacturing felted mittens from woven or knitted fabric	292,250	Jan. 22	1557	436	26	301
Norton, Edwin, and J. G. Hodgson, assignors to said Norton and O. W. Norton, Chicago, Ill. Can ending and seaming machine	294,065	Feb. 26	1660	458, 459	26	756
Norton, John B., Philadelphia, Pa. Belt-fastener	292,173	Jan. 22	1444	405	26	283
Norton, Lewis C., and J. A. Sherman, Boston, Mass.; said Sherman assignor to said Norton. Automatically operating doors and gates	292,845	Feb. 5	81	22	26	457
Norton, Oliver W. (See Norton and Hodgson, assignors.)						
Norton, Reuben C., assignor to Union Foundry and Machine Company, Rockford, Ill. Cultivator	292,674	Jan. 29	2115	588	26	406
Norwood, Jesse W., Greenville, S. C. Dental plugger	293,501	Feb. 12	933	253	26	612
Norwood, Jesse W., Greenville, S. C. Dental-engine attachment	293,502	Feb. 12	934	253, 254	26	613
Norwood, Joseph, Brooklyn, N. Y. Screen	291,220	Jan. 1	257	72	26	47
Noteman, Alonzo, Toledo, Ohio. Lubricator	293,590	Feb. 12	1033	285	26	630
Novelty Electric Company. (See Bacon, Murray, assignor.)						
Nowell, T. S., *et al.* (See Hase, Warren D., assignor.)						
Noyes, Ashbel A., Steamboat Rock, Iowa. Hay-stacker	294,062	Mar. 4	395	110	26	896
Nugent, Richard C., assignor of five-eighths to W. J. Armstrong, T. T. Wightman, J. Farrell, and J. G. Wainwright, Pittsburg, Pa. Flanging-machine	291,620	Jan. 8	775	217, 218	26	145
Nunnelley, Dudley, Keene, Ky. Buggy-top	292,941	Feb. 5	207	57	26	480
Nutting, Frederick J., Brooklyn, assignor to Truslow & Co., New York, N. Y. Cork-cutting machine	295,884	Mar. 25	1973	546	26	1203
Nye, Fred E. and W. E., and J. W. Matthews, Monmouth, Ill. Cartridge-shell creaser	292,846	Feb. 5	83	23	26	458
Nye, William E. (See Nye and Matthews.)						
Nystrom, John W., Philadelphia, Pa. Electro-magnetic machine	294,066	Feb. 26	1663	459	26	757
Nyswonger, Elijah, Hanford, Cal. Locking-latch	291,392	Jan. 1	467	131	26	84
O'Brien, John T., Philadelphia, Pa. Attachment for scaffolding	295,578	Mar. 25	1577	436	26	1134
O'Brien, John T., Philadelphia, Pa. Interior and exterior scaffolding	295,579	Mar. 25	1578	437	26	1134
O'Brien, Timothy, Boston, Mass. Furnace-mouth	291,763	Jan. 8	938	263	26	173
O'Connor, Patrick, Tallman, Mich. Shingle-sawing machine	292,347	Jan. 22	1674	466, 467	26	322
O'Connor, Patrick J. (See McCarthy, Daniel, assignor.)						
O'Connor, Michael, New Brunswick, N. J. Faucet-screw	295,794	Mar. 25	1850	514	26	1183
O'Haver, E. Frank, Murphysborough, Ill. Wheel-plow	294,261	Feb. 26	1918	526	26	800
O'Shea, William, Lincoln, Nebr. Perforated paper tablet	294,803	Mar. 11	567	150	26	932
Oakman, Samuel, Melrose, Mass. Basket-splint machine	292,942	Feb. 5	208	57	26	480
Oaks, William A. C., assignor to Goodell Company, Antrim, N. H. Apple-parer	295,274	Mar. 18	1184	328	26	1054
Oaks, William A. C., assignor to Goodell Company, Antrim, N. H. Stand or frame for suspension of swings and hammocks	295,275	Mar. 18	1185	328	26	1054
Oates, Richard H., Port Clinton, Pa. Puddling-furnace	293,770	Feb. 19	1273	352	26	680
Ober, Edwin R., Waterbury, Vt. Piano-hammer	295,670	Mar. 25	1692	469	26	1154
Ogden, Floyd, Fisherville, Ky. Water-gate	293,503	Feb. 12	935	254	26	613
Oglesby, James W. and Z. W., Kingston, Ga. Self-feeding cotton-cleaner and gin-feeder	293,771	Feb. 19	1274	352, 353	26	680
Oglesby, James W. and Z. W., Kingston, Ga. Cotton-gin feeder	293,772	Feb. 19	1276	353	26	680
Oglesby, Zenos W. (See Oglesby, James W. and Z. W.)						
Oldroyd, Thomas, Tewksbury, assignor to W. C. Knight, Lowell, Mass. Roundabout	291,621	Jan. 8	777	218	26	146
Olds, Allen. (See Leach and Olds.)						
Olds, Henry H., New Haven, Conn. Machine for rolling pie-crust	293,504	Feb. 12	936	254, 255	26	613
Oliver, D. Franklin, Huntsville, Mo. Hay-ricker	292,038	Jan. 15	1281	358, 359	26	247
Oliver, David B., Allegheny, Pa. Rolling-mill	292,943	Feb. 5	208	57	26	481
Oliver, Henry W., Jr., *et al.* (See Clapp and Griffiths, assignors.) (Reissue.)						
Oliver & Roberts Wire Company. (See Garland and Becker, assignors.)						
Oliver, Willard F., Lynn, assignor of one-half to M. Bray, Newton, Mass. Door-latch	295,795	Mar. 25	1851	515	26	1183
Oliver, William H. (See Warren and Oliver.)						
Olmsted Electric Light and Power Company. (See Olmsted, Joseph, assignor.)						
Olmsted, Joseph, assignor to Olmsted Electric Light and Power Company, New York, N. Y. Alarm for electric lamps	292,761	Jan. 29	2043	622	26	430
Olsen, Olaf R., Indianapolis, Ind. Pulley	295,796	Mar. 25	1852	515	26	1183
Onderdonk, John P., Philadelphia, Pa. Recoil mechanism for fire-arms	294,402	Mar. 4	82	21	26	843
Onderdonk, John P., Philadelphia, Pa. Paper bag	294,403	Mar. 4	83	22	26	843
Oneale, William T., *et al.* (See Evans, George R., assignor.)						
Oney, Robert T., *et al.* (See Brown, Mordecai, assignor.)						
Oram, John M., H. M. Sutton, and H. Garrett, Dallas, Tex. Telephone call-box	292,570	Jan. 29	1979	552	26	384
Orr, William, Jr. (See Roebling and Orr.)						
Orrill, Don. (See Lockwood and Orrill.)						
Orser, Levi, Mobile, Ala. Clock-pendulum	293,063	Feb. 5	349	96	26	506
Ortman, Barnim F., Buffalo, assignor of one-half to G. Urban, Jr., Cheektowaga, N. Y. Feed mechanism for roller-mills	295,043	Mar. 11	875	240	26	985

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Orts, Charles H., Silver Creek, N. Y. Crupper-coupling	295,192	Mar. 18	1077	296	26	1034
Orvis, Orel D., and N. B. Adams, New York, N. Y. Street-sweeper	293,908	Feb. 19	1452	402	26	711
Osborn, Adelbert E., assignor to Model Machine Company, Waco, Tex. Ratchet-wrench	295,797	Mar. 25	1853	515	26	1183
Osborn, George R., New York, N. Y. Suspending attachment for plaques, frames, &c.	291,221	Jan. 1	258	72	26	47
Osborn, Martin. (See Cowles and Osborn.)						
Osborn, Sylvester, Davenport, Iowa. Cutter-head for wood-working machines	294,067	Feb. 26	1664	459 460	26	757
Osborne & Co., D. M. (See Young, Calvin, assignor.)						
Osborne, Henry F., Newark, N. J. Hand-press	294,802	Mar. 11	586	156	26	932
Osborne, John W., Washington, D. C., assignor to W. H. Forbes, Boston, Mass. Color-printing press	293,668	Feb. 19	1126	314	26	655
Osgood, Byron A. and E. P., Boston, Mass. Cash-car system	293,192	Feb. 5	537	142	26	535
Osgood Dredge Company. (See Osgood, Ralph R., assignor.)						
Osgood, Edwin P. (See Osgood, Byron A. and E. P.)						
Osgood, Edwin P., Malden, Mass. Railway passenger-car	291,764	Jan. 8	930	263	26	173
Osgood, Ralph R., assignor to Osgood Dredge Company, Albany, N. Y. Dredge	295,580	Mar. 25	1579	437	26	1134
Otis, Charles G. (See Gibbs and Otis.)						
Otis, Frederic W., Ansonia, Conn. Sash-fastener	294,329	Feb. 26	2006	550	26	816
Otis, John D., Peoria, Ill. Bran-packer	295,420	Mar. 18	1362	378	26	1089
Otterman, John W., Port Byron, and C. A. R. L. Ver Genins, Galesburg, Ill.; said Ver Genius assignor to said Otterman. Road grading and ditching machine	294,330	Feb. 26	2007	550	26	816
Oury, Granville H. (See Leede, Julius, assignor.)						
Outram, Frederick, Montreal, Quebec, Canada. Sliding bed for machinery	293,591	Feb. 19	1034	285	26	630
Overman, Albert H. (See Hadley and Overman.)						
Overman Wheel Company. (See Hadley and Overman, assignors.)						
Oviatt, Fred H., *et al.* (See Hamilton, William M., assignor.)						
Owen, George B., Winsted, Conn. Striking mechanism for clocks	294,262	Feb. 26	1990	526 527	26	800
Owings, Wilson S., Collier's Station, W. Va. Traction-engine	291,075	Jan. 1	73	21	26	17
Pabst, Conrad, Stettin, Germany. Galvanic battery	295,671	Mar. 25	1693	469	26	1154
Pace, Jeff. D., Arcadia, La. Combination-plow	293,505	Feb. 19	939	295	26	614
Pace, Richard R., Linoville, Ala. Ax	294,144	Feb. 26	1775	487	26	774
Pace, Robert G., and W. J. Wev, Lynchburg, Va. Combined door-plate and mail-receiver	295,581	Mar. 25	1581	437	26	1135
Packard, Frank S., Rockville, Conn. Axle-repairing tool	292,039	Jan. 15	1283	359	26	247
Packard, Fredrick, Brockton, Mass. Shoe	293,064	Feb. 5	350	96	26	506
Packer, Harvey, Rock Falls, assignor to T. A. Galt and G. S. Tracy, Sterling, Ill. Corn-sheller	293,669	Feb. 19	1128	314 315	26	655
Paddack, Charles E., Richmond, Ind. Fire-kindler mold	293,773	Feb. 19	1277	353	26	681
Paddock, Ira, Greeley, Kans. Weather-strip	292,040	Jan. 15	1284	359	26	247
Page, Calvin S., Champaign, Ill. Corn-planter and check-row attachment	291,393	Jan. 1	469	132	26	84
Page, Dudley, Frederick, Md. Step-ladder	292,041	Jan. 15	1284	360	26	247
Page, Henry D. (See Burbank and Page.)						
Page, John D., Sanders, Cal. Baling-press	295,672	Mar. 25	1695	469	26	1154
Page, La Fayette W., Shreveport, La. Attachment for locomotives	292,504	Jan. 29	1891	525	26	369
Page, Louis, and L. Weber, Brooklyn, N. Y. Curtain-fixture	291,928	Jan. 15	1155	322	26	223
Pagett, George W., Oxford, Ind. Speculum	295,798	Mar. 25	1854	515	26	1183
Paige, Austin B., Chicago, Ill. Amalgamator	294,263	Feb. 26	1922	527	26	800
Paige, Austin B., Chicago, Ill. Amalgamator	294,264	Feb. 26	1923	527	26	800
Paige, William H., Cleveland, Ohio. Railway passenger-car	291,622	Jan. 8	777	218	26	146
Paige, William H., Cleveland, Ohio. Car-roofing	292,675	Jan. 29	2116	588	26	406
Paine, Tracy L., Milwaukee, Wis. Handle for dial-lock knobs	295,582	Mar. 25	1582	438	26	1135
Paine, William H., Barnstable, Mass. Broom	293,670	Feb. 19	1129	315	26	655
Painter, John L., Bellevue, Ohio. Foot-power hammer	292,348	Jan. 22	1678	467	26	322
Paisley, George W., *et al.* (See Currier, Augustus S., assignor.)						
Palmenberg, Joseph R., New York, N. Y. Dummy for displaying clothing	291,076	Jan. 1	74	21	26	17
Palmer, Aaron, Rochester, N. Y. Vaginal irrigator	295,276	Mar. 18	1186	328	26	1054
Palmer, J. Forman, assignor to himself, J. Seymour, and S. W. Palmer, Auburn, N. Y. Traction-engine	293,065	Feb. 5	351	96, 97	26	506
Palmer, J. Forman, assignor to himself, J. Seymour, and S. W. Palmer, Auburn, N. Y. Traction-engine	293,066	Feb. 5	354	97	26	507
Palmer, J. Forman, assignor to himself, J. Seymour, and S. W. Palmer, Auburn, N. Y. Traction-engine	293,067	Feb. 5	357	97	26	507
Palmer, Melvin H., St. Louis, Mo. Door-latch	292,042	Jan. 15	1286	360	26	248
Palmer, Sidney W., *et al.* (See Palmer, J. Forman, assignor.)						
Pancoast, Benjamin F. (See Hart, Scott, and Pancoast.)						
Paradise, Norman J., Aurora, Ill. Cock for air-brakes	293,774	Feb. 19	1278	354	26	681
Park, James A., assignor of one-half to P. E. Park, Lansing, Mich. Buckle	293,978	Feb. 19	1544	425	26	728
Park, James A., assignor of one-half to P. E. Park, Lansing, Mich. Harness-snap	294,145	Feb. 26	1776	487	26	775
Park, James A., assignor of one-half to P. E. Park, Lansing, Mich. Loop-buckle for harness	295,044	Mar. 11	876	240	26	986
Park, James R., La Vergne, Tenn. Railway-signal	291,929	Jan. 15	1157	322	26	223
Park, Puella E. (See Park, James A., assignor.)						
Park, William R., Taunton, assignor to Equitable Water Meter Company, Boston, Mass. Piston water-meter	293,506	Feb. 12	940	256	26	614
Parker, Abijah S., Cincinnati, Ohio. Clamp-fastening for carriage-curtains	292,571	Jan. 29	1981	552	26	384
Parker, Carmi M. (See Stiles, George A., assignor.)						
Parker, Edwin V., Strafford, Vt. Book-holder and rest	294,498	Mar. 4	200	56	26	863
Parker, Fred D., Denver, Colo. Well-drill	295,045	Mar. 11	877	240	26	986
Parker, James H., Milford, Mass. Instep-holder for lasting boots and shoes	291,077	Jan. 1	75	21	26	17
Parker, James H., Milford, assignor to J. L. Parker, Worcester, Mass. Machine for pebbling or embossing boot or shoe uppers	292,572	Jan. 29	1982	553	26	384
Parker, John L. (See Parker, James H., assignor.)						
Parker, Josephus S., and W. M. Baker, Urbana, Ohio; said Parker assignor to said Baker. Reshipping packing-box	295,046	Mar. 11	878	241	26	986
Parker, S. Oscar, Littleton, N. H. Glove	293,068	Feb. 5	350	97, 98	26	508
Parker, Washington L., Chicago, Ill. Steam-cylinder lubricator	294,068	Feb. 26	1666	460	26	757
Parkes, John F., assignor of one-half to C. W. Watkins, North Tonawanda, N. Y. Tool-holder	291,531	Jan. 8	653	185	26	124
Parks, Joseph L., Wanseon, Ohio. Embroidery-machine	294,499	Mar. 4	901	56	26	863
Parlin, William H., Canton, Ill. Cultivator	291,930	Jan. 15	1158	323	26	223
Parmelee, John W. (See De Guinon, Richard V. F., assignor.)						
Parmelee, William L., Ansonia, Conn. Screw-driver	294,663	Mar. 4	396	110	26	896
Parmenter, Isaac W., New York, N. Y. Mustache-spoon	291,394	Jan. 1	470	132	26	84
Parmerlee, James C., Sedalia, Mo. Ball-trap	292,043	Jan. 15	1287	360	26	248

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Parrott, Robert B., Indianola, Iowa. Fire-escape	295,047	Mar. 11	879	241	26	986
Parson, Henry E., and G. V. Northey, New York, N. Y., assignors, by mesne assignments, to T. J. Powers, trustee. Desulphurizing-furnace	292,944	Feb. 5	210	57	26	481
Parsons Hand Rock Drill Company. (See Borchardt, Hugo, assignor.)						
Parsons, James R., La Porte, Ind. Jewveling-tool	292,676	Jan. 29	2117	589	26	407
Parsons, John H. (See Gay and Parsons.)						
Passfield, John, Sedgley, county of Stafford, England. Treadle mechanism	292,573	Jan. 29	1983	553	26	384
Pasture, Edward W. (See Hogan, William H., assignor.)						
Patrick, Horatio N., *et al.* (See Thurber, Milton R., assignor.)						
Patrick, John N. H. (See Haight, Wood, and Winsor, assignors.)						
Patten, Daniel, Calistoga, Cal. Hypotenuse calculator and indicator	293,069	Feb. 5	360	98	26	508
Patten, William H. (See Joseph, Thomas B., assignor.)						
Patterson, James, assignor of one-half to H. C. Wright, Brooklyn, N. Y. Railway-rail lock	293,592	Feb. 12	1035	285	26	630
Patterson, John A. (See Lucas and Patterson.)						
Patterson, Marie E., St. Louis, Mo. Tuning-peg for musical instruments	295,048	Mar. 11	881	242	26	987
Patterson, Melanethon R. (See Addison, Joseph L., assignor.)						
Patterson, William, San Francisco, Cal. Hinge	292,574	Jan. 29	1985	553	26	385
Patterson, William R., assignor, by mesne assignments, to Western Electric Company, Chicago, Ill. Aerial cable	292,847	Feb. 5	84	23	26	458
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Terminal-box for telegraph-cables	292,848	Feb. 5	84	23	26	458
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Telephone-cable terminal	292,849	Feb. 5	85	24	26	458
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Telegraph-cable	293,775	Feb. 19	1280	354	26	681
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Apparatus for drawing telegraph-cables into pipes	294,500	Mar. 4	202	57	26	863
Patton, William P., Harrisburg, Pa. Tag or label	295,799	Mar. 25	1855	516	26	1183
Paul, George D., Orange, assignor of one-half to A. R. Miller, East Orange, N. J. Brake for children's carriages	293,351	Feb. 12	753	200	26	579
Paulding, William H. (See Clarke, Paulding, and Reinl.)						
Paulus, Charles H., Irvington, N. J. Chamber-pail	293,776	Feb. 19	1981	354	26	681
Paxson, Charles H., Springfield, assignor of one-half to P. T. Cofield, New Carlisle, Ohio. Lawn-mower	293,507	Feb. 12	941	256	26	614
Payne, David W., and C. R. Williams, assignors to B. W. Payne & Sons, Corning, N. Y. Steam-governor or shifting eccentric	294,069	Feb. 26	1668	460	26	757
Payne, David W., and C. R. Williams, assignors to B. W. Payne & Sons, Corning, N. Y. Governor or shifting eccentric	294,070	Feb. 26	1669	460	26	758
Payne, David W., and C. R. Williams, Elmira, assignors to B. W. Payne & Sons, Corning, N. Y. Shifting eccentric	294,071	Feb. 26	1671	461	26	758
Payne & Sons, B. W. (See Payne and Williams, assignors.)						
Payne, Walter S., Titusville, Pa. Service-cock	292,349	Jan. 22	1679	467	26	323
Peachey, James. (See Montross and West, assignors.)						
Peacock, George, Selma, Ala. Lubricating device for wheels	293,070	Feb. 5	362	98	26	508
Peacock, George, Selma, Ala. Hub for car-wheels	293,071	Feb. 5	362	98	26	508
Peacock, Thomas B., Topeka, Kans. Fire-escape	293,072	Feb. 5	364	99	26	508
Pearce, Jacob A. (See Roth, Elias D., assignor.)						
Pearce, Truman J., Oakland, Cal. Fruit-drier	293,073	Feb. 5	364	99	26	509
Peare, George R., Lynn, Mass. Child's carriage	292,174	Jan. 22	1444	405	26	283
Peare, George R., Lynn, Mass. Wagon-lock	292,175	Jan. 22	1446	406	26	283
Pearson, Augustus W., Nyack, assignor to J. Cavanaugh, trustee, Brooklyn, N. Y. Last-ing-machine	292,575	Jan. 29	1985	553 554	26	385
Pearson, Fred S. (See Taylor and Pearson.)						
Pearsons, Harrison C., Ferrysburg, Mich. Screw-propeller	293,777	Feb. 19	1282	354 355	26	681
Peaslee, Charles R., Louisville, Ky. Oil-can	294,072	Feb. 26	1673	461	26	758
Peavey, Andrew J., Somerville, assignor to himself and E. B. Buckingham, Brookline, Mass. Screw-tap	295,421	Mar. 18	1363	378	26	1089
Peavey, Andrew J., Somerville, assignor to himself and E. B. Buckingham, Brookline, Mass. Screw-cutter	295,422	Mar. 18	1364	379	26	1089
Peck, Abel, *et al.* (See Stevenson, Robert, assignor.)						
Peck, Andrew, *et al.* (See Greenough and Boardman, assignors.)						
Peck, Obed, Rowe, Mass. Breast-drill	295,193	Mar. 18	1077	296 297	26	1034
Pecor, Alfred C., Baltimore, Md. Refrigerating dish-cover	293,074	Feb. 5	367	99 100	26	509
Peel, James N. (See Waterous and Peel.)						
Peggs, Henry, Windham, Ohio. Combined potato scoop and riddle	291,395	Jan. 1	471	132	26	84
Pegram, Thomas H. and J. H. Kester, Winston, N. C.; said Kester assignor to said Pegram. Car-coupling	294,501	Mar. 4	204	57	26	864
Pelham, Charles, *et al.* (See Cabell, Samuel G., assignor.)	295,277	Mar. 18	1187	329	26	1054
Pell, Henry W., Rome, N. Y. Side spring for vehicles	294,903	Mar. 11	680	192	26	955
Pelzer, Edward N., Ionia, Mich. Vehicle top-prop	294,502	Mar. 4	205	58	26	864
Pendexter, Edward F., Milford, Mass. Car-coupling						
Pendleton, Olin B., *et al.* (See Warriner, William A., assignor.)	292,251	Jan. 22	1558	436	26	301
Penfield, James W., Willoughby, Ohio. Tile-machine	292,576	Jan. 29	1988	554	26	385
Penfield, James W., Willoughby, Ohio. Clay-crushing roller	292,577	Jan. 29	1989	554	26	385
Penfield, James W., Willoughby, Ohio. Clay-crushing roller	293,270	Feb. 12	649	174	26	560
Penfield, James W., Willoughby, Ohio. Clay-crushing roller	294,904	Mar. 11	690	192	26	955
Pennell, William W., Nashville, Ohio. Railway-switch						
Penney, Mark A., assignor to W. L. Carpenter, Des Moines, Iowa. Wire-twisting machine	291,765	Jan. 8	940	264	26	174
Penney, Mark A., assignor to W. L. Carpenter, Des Moines, Iowa. Barb-wire-fence machine	293,778	Feb. 19	1282	355 356	26	681
Pennock, William H., Wilmington, Del. Corn-coverer	291,396	Jan. 1	471	133	26	85
Penrod, John F., Derry, Pa. Railway-frog	294,664	Mar. 4	396	110	26	896
Penrose, William, *et al.* (See Giffard, Falconor, assignor.)						
People's Telephone Company. (See Drawbaugh, Daniel, assignor.)	292,578	Jan. 29	1990	554	26	385
Perine, John J., Plainfield, N. J. Machine for felting and sizing hat-bodies	292,579	Jan. 29	1991	555	26	386
Perine, John J., Plainfield, N. J. Machine for sizing or felting hats	294,905	Mar. 11	692	193	26	955
Perkins, Gustavus S., Hartford, Conn. Pneumatic door-check	291,078	Jan. 1	76	21, 22	26	17
Perkins, Wheeler, Methuen, Mass. Stone-dressing machine	294,073	Feb. 26	1674	461	26	759
Perkins, Willis J., Grand Rapids, Mich. Refuse-conveyer for saw-mills						

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Perkins, Willis J., Grand Rapids, Mich. Drag-saw elevator	294,804	Mar. 11	567	156, 157, 158	26	932
Perpente, Kossuth, New York, N. Y. Collar	293,508	Feb. 12	942	256	26	614
Perret, David, Neuchatel, Switzerland. Watch	293,779	Feb. 19	1284	356	26	682
Perrin, Thomas J., assignor to C. P. Huntington, New York, N. Y. Underground electric-conductor system	294,906	Mar. 11	692	193	26	955
Perry, John. (See Ayrton and Perry.)						
Perry, John F., Chicago, Ill. Roofing composition	294,665	Mar. 4	397	.....	26	897
Perry, John T., La Grange, Ga. Portable counter	294,907	Mar. 11	695	194	26	956
Perry, Joseph R., Wilkes-Barré, Pa. Piano	292,580	Jan. 29	1902	555	26	386
Perry, Judson D. (See Guilloz and Perry.)						
Persson, Johannes, New York, N. Y. Waste-pipe ventilator	294,503	Mar. 4	207	58	26	864
Peters, Charles H., Cincinnati, Ohio. Coffee-urn	294,666	Mar. 4	398	111	26	897
Petersen, Christian L., Boston, Mass. Feathering paddle-wheel	291,766	Jan. 8	941	264	26	174
Petersen, Christian L., Boston, Mass. Feathering paddle-wheel	293,509	Feb. 12	943	257	26	614
Petersen, Eduard A. C., Chicago, Ill. Fire-escape	294,908	Mar. 11	696	194	26	956
Petersen, Nicolai, Chicago, Ill. Chimney-top	292,505	Jan. 29	1882	525	26	360
Peterson, Samuel S., Wyandotte, Kans., assignor of one-half to W. C. Duvall, Kansas City, Mo. Sliding-door lock	293,593	Feb. 12	1036	285	26	631
Pethick, Phillip. (See Clough, Willard E., assignor.)						
Pettit, Elihu R., Philadelphia, Pa., assignor, by mesne assignments, to S. S. White Dental Manufacturing Company, of Pennsylvania. Dental engine	294,667	Mar. 4	399	111	26	897
Peuster, Henry. (See Lampert, William, assignor.)						
Peyton, William J. (See Starr, Eli T., assignor.)						
Pfaendler, Adolf, Brooklyn, N. Y. Toy work-bench	292,350	Jan. 22	1679	468	26	323
Pfanne, Charles, Washington, D. C. Hydraulic air-compressor	295,800	Mar. 25	1856	516, 517	26	1183
Pfandler, Casper, Rochester, N. Y. Process of and apparatus for preparing beer and other fermented liquids for the market	293,909	Feb. 19	1454	403	26	711
Pfeifer, Gus., Galveston, Tex. Cotton-marking brush	293,075	Feb. 5	369	100	26	509
Pfeifer, Peter, Durhamville, N. Y. Canceling-stamp	293,510	Feb. 12	944	257	26	615
Pfeiffer, Louis E. (See Purvis, William B., assignor.)						
Pfenning, Carl A., Barmen, Germany. Fastener for gloves, gaiters, &c.	295,583	Mar. 25	1582	438	26	1135
Pflaum, Isaac, *et al.* (See Fontayne, Albert, assignor.)						
Phelps, Elnathan, Hartford, Mich. Grain-cleaner	292,044	Jan. 15	1200	361	26	249
Phelps, James H., Sharon, Wis. Rotary engine	293,511	Feb. 12	945	257	26	615
Philbrick, Andrew J., Salem, Mass., assignor to Pope Manufacturing Company, Hartford, Conn. Velocipede-pedal	292,351	Jan. 22	1680	468	26	323
Philbrick, Walter H. (See Hinch, James H., assignor.)						
Philbrook, Charles C., Boston, Mass. Stirrup for saddles	295,423	Mar. 18	1366	379	26	1089
Philippart, Gustave, Paris, France. Electric accumulator	292,762	Jan. 29	2244	623	26	430
Philips, William J. (See Kitson, George L., assignor.)						
Philips, William J., and G. L. Kitson, Philadelphia, Pa., assignors to said Philips. Method of and apparatus for laying branch underground electrical conductors	293,271	Feb. 12	650	174, 175	26	560
Phillips, Charles A. (See Leitch, Albert E., assignor.)						
Phillips, Elwood C., Richmond, Ind. Roller-skate	292,850	Feb. 5	86	24	26	450
Phillips, F. T. (See Ginther, Henry S., assignor.)						
Phillips, James B., New York, N. Y. Bustle	295,584	Mar. 25	1583	438	26	1135
Phillips, John F. (See Sutton, Lyman W., Jr., assignor.)						
Phillips, John W., Oakdale, Nebr. Combined extension saw-horse and scaffold	292,352	Jan. 22	1681	468	26	323
Phillips, Joseph E., West Ashford, Conn. Window-shade	291,222	Jan. 1	259	73	26	47
Phillips, Simon. (See Dworsky, Kramer, and Phillips.)						
Phillips, William, Coos Bay, Oreg. Ventilating mining shafts and tunnels	294,805	Mar. 11	570	158	26	933
Phœnix Iron Company. (See Griffen and Hall, assignors.)						
Phœnix Iron Company. (See Hall, Jesse, Jr., assignor.)						
Platt, Aquilla J., De Graff, Ohio. Pliers for attaching pin-tickets	295,424	Mar. 18	1366	379	26	1090
Pickelmann, John C. (See Höninger, Michael, assignor.)						
Pickles, Charles K., St. Louis, Mo. Eyelet	294,965	Feb. 26	1924	527	26	800
Pickup, Francis. (See Hayden and Pickup.)						
Pidcock, Hiram, Burlington Junction, Mo Car-coupling	294,966	Feb. 26	1924	528	26	801
Pielsticker, Carl M., London, county of Middlesex, England, and F. C. G. Müller, Brandenburgh, Prussia, Germany. Process of and apparatus for the production of dense metal castings	291,223	Jan. 1	260	73	26	47
Pieper, Henry. (See Fosbery and Pieper.)						
Pierce, Charles W., Oak Hill, N. Y. Door-latch	293,512	Feb. 12	946	257	26	615
Pierce, Denison C., Chicago, Ill. Fire-escape	291,532	Jan. 8	654	185, 186	26	124
Pierce, Denison C., Chicago, Ill. Fire-escape	293,352	Feb. 12	754	201	26	579
Pierce, Francis M., *et al.* (See Scheffler, Theodore, assignor.)						
Pierce, James F., trustee. (See McCarty, William F. M., assignor.)						
Pierce, Jonathan E. Deming's Bridge, Tex. Wire-fence stretcher and splicer	295,801	Mar. 25	1860	517	26	1184
Pierron, Jean, Elizabethport, N. J. Polishing machine	292,677	Jan. 29	2119	589	26	407
Pies, John P., near New Washington, Ohio Car-coupling adjuster	293,506	Jan. 29	1883	526	26	370
Piette, Ludwig, and F. Krizik, Pilsen, Austria-Hungary. Electric lamp	293,076	Feb. 5	370	100	26	509
Pilgrim, Conrad, East New York, N. Y. Torpedo	291,853	Jan. 8	1052	294	26	194
Pilgrim, Conrad, assignor to C. Nelson, East New York, N. Y. Folding slate	292,678	Jan. 29	2120	589	26	407
Pilling, Franklin A, Colesville, Md. Ventilating buildings	292,444	Jan. 22	1806	503	26	348
Pinkham, Charles S., assignor of one-half to J. J. Seal, Philadelphia, Pa. Automatic electrical cut-out	294,404	Mar. 4	84	22	26	844
Pistor, Philip, assignor to Southwark Foundry and Machine Company, Philadelphia, Pa. Cut-off governor for engines	295,131	Mar. 11	988	271	26	1006
Pitcairn, Robert, *et al.*, trustees. (See Gassett, Oscar, assignor.) (Reissue.)						
Pitman, Charles P., Freehold, and H. Allaire, Allaire, N. J. Manufacture of boats from celluloid, &c	291,533	Jan. 8	656	186	26	124
Pitney, Albert L., Washington, D. C. Rope or line clasp	295,194	Mar. 18	1079	297	26	1035
Pitney, Albert L., Washington, D. C. Rope or line clasp	295,802	Mar. 25	1860	517	26	1184
Pitney, Albert L., Washington, D. C. Rope or line clasp	295,803	Mar. 25	1861	517	26	1184
Pittenger, J H. (See Garrigus, Culberson S., assignor.)						
Pintti, Max, Aurora, N. Y. Piano-stool	291,931	Jan. 15	1150	323	26	224
Planck, William H. (See Strayer and Planck.)						
Platt, Andrew M., New Haven, Conn. Shipping-case	293,513	Feb. 12	947	258	26	615
Platt, Benjamin G., Bayonne, N. J. Lead and crayon holder	292,136	Jan. 15	1397	391	26	268
Platt, Butler R., Plainwell, Mich. Spring bed-bottom	293,077	Feb. 5	371	101	26	510

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Platt, George, assignor of one-half to P. A. Largey, Butte, Mont. Ter. Rubber clothing	291,854	Jan. 8	1052	294	26	194
Plattner, William, Trinidad, Colo. Sight for fire-arms	295,425	Mar. 18	1367	379	26	1090
Plimpton, Albert M., Hornellsville, N. Y. Vehicle-seat	292,945	Feb. 5	211	58	26	481
Plumb, Charles, assignor of one-half to O. P. Babcock, Buffalo, N. Y. Telegraph-key	293,979	Feb. 19	1545	426	26	728
Plumb, Fawcett, Streator, Ill. Ditching-machine	293,780	Feb. 19	1285	356	26	682
Plumb & Marcus. (See Welsh, George B., assignor.)						
Plumb, Salmon R., assignor of one-half to G. J. Capewell, Cheshire, Conn. Scissors and shears	291,623	Jan. 8	779	219	26	146
Plummer, James L., Douglas, Kans. Shoveling-board for wagons	291,767	Jan. 8	942	264	26	174
Plummer, John F., and H. P. Chapman, Essex, Conn. Nut-lock	292,507	Jan. 29	1884	526	26	370
Pneumatic Pulverizer Company. (See Luckenbach, Frederic A., assignor.)						
Podger, Henry, Bromley, county of Kent, and W. H. Davey, Highgate, county of Middlesex, England. Ironing-machine	293,514	Feb. 12	949	258	26	615
Poiesz, William F. (See Gaunt, Poiesz, Calhoun, and Daubmann.)						
Poindexter, Robert E., Indianapolis, Ind. Saw-set	291,224	Jan. 1	262	73	26	48
Poindexter, Robert E., Indianapolis, Ind. Saw-handle	292,946	Feb. 5	212	58	26	481
Poletti, Michel. (See Dimpfl, Anton, assignor.)						
Polk, John E., *et al.* (See Robburts, George W., assignor.)						
Pond, William, Kansas City, Mo. Boot and shoe last	294,146	Feb. 26	1777	487	26	775
Pool, Henry, Westminster, Md. Insecticide compound	295,426	Mar. 18	1368	.....	26	1090
Poole, Eliza W., *et al.* (See Poole, Samuel, assignor.)						
Poole, Henry, New York, N. Y. Fire-escape	295,278	Mar. 18	1188	329	26	1055
Poole, Samuel, Denver, assignor of three-fourths to B. S. Morgan and T. H. Baker, Leadville, Colo. Powder-warming apparatus	291,932	Jan. 15	1160	324	26	224
Poole, Samuel, assignor to E. W. Poole, Brooklyn, and T. L. Bullock, New York, N. Y. Tongs for pickles, fruits, &c	294,147	Feb. 26	1777	488	26	775
Poolman, James, and F. R. Marks, New York, N. Y. Child's carriage	294,668	Mar. 4	401	111	26	897
Poor, John O., and R. E. Bean, Franklin, N. H. Paper or pamphlet holder	292,581	Jan. 29	1994	555	26	386
Pope, Charles F., assignor to Waterbury Manufacturing Company, Waterbury, Conn. Screw-pulley	293,078	Feb. 5	372	101	26	510
Pope, Charles F., assignor to Waterbury Manufacturing Company, Waterbury, Conn. Screw hook or ring	293,079	Feb. 5	373	101	26	510
Pope, Frank L., Elizabeth, N. J. Automatic feeding apparatus for voltaic batteries	293,272	Feb. 12	651	175	26	560
Pope, Frank L., Elizabeth, N. J. Automatic cut-out for electro-magnetic helices	294,669	Mar. 4	402	111	26	896
Pope, Frank L., Elizabeth, N. J., assignor to Postal Telegraph and Cable Company, of New York. Electrical conductor	294,148	Feb. 26	1778	488	26	775
Pope, Frank L., Elizabeth, N. J., assignor to Union Switch and Signal Company, Pittsburg, Pa. Electric signaling apparatus for railways	295,427	Mar. 18	1368	380	26	1090
Pope Manufacturing Company. (See Philbrick, Andrew J., assignor.)						
Porsch, John, Jr., Erie, Pa. Stop-cock	293,515	Feb. 12	950	259	26	616
Port, Ge Hu, Seventh District, Coweta county, assignor to himself and L. Ballard, Palmetto, Ga. Cotton-seed planter	291,768	Jan. 8	942	265	26	174
Porter, Daniel R., Randolph, Mass. Wrench	291,933	Jan. 15	1161	324	26	224
Porter, Daniel R., Revere, Mass. Wrench	291,934	Jan. 15	1162	324	26	224
Porter, David. (See Anger and Porter.)						
Porter, Henry H., Littleton, N. H. Lace-fastening	294,909	Mar. 11	697	194	26	956
Porter, Horatica A. (See Porter, James T. and H. A.)						
Porter, James T. and H. A., Holyoke, Mass. Paper-pulp-saving machine	292,947	Feb. 5	212	58	26	481
Porter, O. V. (See Woodward, Anderson, assignor.)						
Porter, Wheelock W., Kempton, Ill. Wire-stretcher for check-rowers	292,679	Jan. 29	2121	589	26	407
Portillo, Augustus, Lowell, Mass. Steam gage and alarm	291,769	Jan. 8	943	265	26	175
Post, Charles W., Springfield, Ill. Cultivator	294,806	Mar. 11	571	158	26	934
Post, George B., New York, N. Y. Envelope	291,079	Jan. 1	77	22	26	17
Post, John W., New York, N. Y. Sewing-machine	292,045	Jan. 15	1291	361	26	249
Postal Telegraph and Cable Company. (See Pope, Frank L., assignor.)						
Postal Telegraph Company. (See Smith, Luther L., assignor.)						
Potter, Addison A., South Otselic, N. Y. Tack-hammer and tack-holder	293,516	Feb. 12	951	259	26	616
Potter, Arthur E., Joliet, Ill. Harvester-truck	292,851	Feb. 5	88	24	26	459
Potter, Devolco C., and J. Stone, Pittsburg, Pa. Weather-strip	294,267	Feb. 26	1925	528	26	801
Potter, James, Chicago, Ill. Universal lubricator	293,781	Feb. 19	1286	356, 357	26	682
Potter, Thomas O., Boston, Mass. Buckle	291,225	Jan. 1	263	74	26	48
Potts, Henry C., Lancaster, Ky. Feeding mechanism for roller-mills, purifiers, &c.	295,504	Mar. 18	1469	405	26	1108
Powell, John B., assignor to Powell Motor Company, (limited,) Philadelphia, Pa. Spring-motor	293,193	Feb. 5	538	143	26	535
Powell, John F., *et al.* (See Underwood, Henry M., assignor.)						
Powell Motor Company. (See Powell, John B., assignor.)						
Power, John. (See Worden, Taylor, Power, and Colby.)						
Powers, Abner P. (See Jordan and Powers.)						
Powers, Daniel D., Ozark, Kans. Apparatus for evaporating sirups, &c., and for clarifying the same	293,782	Feb. 19	1288	357	26	682
Powers, James J., Brooklyn, N. Y. Disinfecting-tank for the disposal of sewage	292,046	Jan. 15	1293	361	26	249
Powers, Joseph A., *et al.* (See Ball, Clinton M., assignor.)						
Powers, Thomas J., trustee. (See Parson and Northey, assignors.)						
Praddex, William, Lawrence, Mass. Spoon	294,910	Mar. 11	697	194	26	956
Pratt & Cady Company. (See Pratt, Rufus N., assignor.)						
Pratt, Fred. W., Washington, D. C. Paper-file box	294,268	Feb. 26	1926	528	26	801
Pratt, Henry C., Canandaigua, N. Y. Wire-reel	294,670	Mar. 4	404	112	26	898
Pratt & Letchworth. (See Basinger, James M., assignor.)						
Pratt, Henry L., Brooklyn, N. Y. Saw fastening and frame	292,176	Jan. 22	1447	406	26	284
Pratt, Ronello F., Everett, Mass. Shutter-worker	292,354	Jan. 22	1684	469	26	324
Pratt, Rufus N., assignor to Pratt & Cady Company, Hartford, Conn. Steam-valve	291,770	Jan. 8	946	265	26	175
Pratt, Rufus N., assignor to Pratt & Cady Company, Hartford, Conn. Steam-valve	292,353	Jan. 22	1683	468, 469	26	324
Pratt, Samuel L., Hingham, Mass. Apparatus for setting buttons	291,534	Jan. 8	658	186	26	124
Precour, John G., Reigelsville, N. J. Sled-brake	295,195	Mar. 18	1081	297	26	1035
Prentice, George W., Providence, R. I. Button-fastener	291,080	Jan. 1	78	22	26	18
Prentice, George W., Providence, R. I. Button-fastener	291,081	Jan. 1	79	23	26	18
Prentice, George W., Providence, R. I. Button-fastener	291,935	Jan. 15	1162	325	26	224
Prentice, George W., Providence, R. I. Button and fastening	293,517	Feb. 12	952	259	26	616
Prentice, George W., Providence, R. I. Button-fastener	293,910	Feb. 19	1455	403	26	712
Prentice, George W., Providence, R. I. Button-fastener	294,504	Mar. 4	208	58	26	865
Prentice, George W., Providence, R. I. Button-setting instrument	294,744	Mar. 4	483	135	26	912

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Presler, Charles A. (See Smith, Presler, and Fox.)						
Preston, William A. (See Williams and Preston.)						
Price, George W., assignor to B. N. Baker, Baltimore, Md. Fountain attachment for pens	292,137	Jan. 15	1399	391	26	208
Price, John A., Scranton, Pa. Furnace-grate	293,273	Feb. 12	655	175	26	561
Price, John A., and D. Wright, Scranton, Pa.; said Wright assignor to said Price. Furnace-grate	293,274	Feb. 12	656	176	26	561
Price, Solomon, and H. Anisz, Chicago, Ill. Suspenders	294,074	Feb. 26	1675	462	26	759
Prichard, Cleveland. (See Briggs and Prichard.)						
Pridmore, Henry E., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Grain-binder	292,262	Jan. 22	1561	437	26	302
Prieto, Demetrio, Mexico, Mexico. Music-leaf turner	291,397	Jan. 1	472	133	26	85
Prince, Jerome, Milford, assignor to A. P. Lighthill, Boston, Mass. Electrically locating and following veins of metal in the earth	293,519	Feb. 12	953	259	26	616
Prior, George W., Boeger's Store, Mo. Millstone-dresser	294,911	Mar. 11	698	195	26	956
Prior, Thomas, Westmoreland, N. Y. Shade for hop-boxes	294,332	Feb. 26	2011	552	26	817
Prochnow, Wilhelem, Milwaukee, Wis. Mortar-mixer	295,196	Mar. 18	1062	297 298	26	1035
Proctor, Josiah K., assignor to J. Smith Woolen Machinery Company, Philadelphia, Pa. Friction-clutch	294,671	Mar. 4	405	112	26	898
Proctor, Josiah K., and I. W. Huckins, assignors to J. Smith Woolen Machinery Company, Philadelphia, Pa. Friction-coupling for shafts	294,672	Mar. 4	406	112	26	898
Propst, Amedy. (See Bevins and Propst.)						
Prosser, Treat T., Chicago, Ill. Combined box and cylinder car	295,279	Mar. 18	1190	329 330	26	1055
Prosser, Willard F., Mystic Bridge, Conn., assignor of one-half to W. R. Wells, Hopkinton, R. I. Apparatus for producing roping for making variegated or clouded yarn	292,582	Jan. 29	1995	555 556	26	386
Prothero, William M., New York, N. Y. Ventilator for hats	294,149	Feb. 26	1779	488	26	775
Providence Steam and Gas-Pipe Company. (See Horack, Carl L., assignor.)						
Prowse, George R., Montreal, Quebec, Canada. Refrigerator	295,197	Mar. 18	1062	298	26	1035
Pruim, Hiram P., Grand Haven, Mich. Unlocking attachment for time-locks	292,583	Jan. 29	1997	556	26	387
Puffer, Wills D. (See Puffer, William and W. D.)						
Puffer, William and W. D., Janesville, Wis. Steam-trap	295,280	Mar. 18	1191	330	26	1055
Pugh, Jesse B., Indianapolis, Ind. Automatic grain-shoveler	294,333	Feb. 26	2011	552	26	817
Pugh, Jesse B., assignor of one-half to E. A. Nichols and A. S. Vieiria, Indianapolis, Ind. Spring-motor	295,505	Mar. 18	1471	405	26	1109
Pugsley, Henry S., Brooklyn, N. Y. Vapor and atmospheric valve for steam-pumps	292,177	Jan. 22	1448	406	26	284
Pullman, Albert B., *et al.* (See Jackson, Andrew, assignor.) (Reissue.)						
Pullman, Albert B., Chicago, Ill. Urinal	293,275	Feb. 12	657	176	26	561
Pullman, Herbert S., Rockville, assignor to C. E. Billings, Hartford, Conn. Pipe-tongs	295,885	Mar. 25	1975	547	26	1204
Pumphrey, Jesse E., Columbus, Ohio. Snap-hook	291,226	Jan. 1	264	74	26	48
Purcell, Alonzo, Monticello, Ill. Ditching-machine	295,281	Mar. 18	1191	330	26	1056
Purdy, James H., and C. T. Welch, Bellona, N. Y. Seed-drill	293,671	Feb. 19	1130	315	26	656
Purdy, John H., Chicago, Ill. Brooch-pin	294,075	Feb. 26	1676	462	26	759
Purnell, Richard H., assignor of one-half to T. R. McGuire, Rosedale, Miss. Grain-sacker	293,594	Feb. 12	1037	286	26	631
Purnelle, Edward C., Seneca, Kans. Combined letter-scale and coin-tester	292,763	Jan. 29	2246	623	26	430
Purvis, William B., assignor of one-half to L. E. Pfeiffer, Philadelphia, Pa. Paper-bag machine	293,353	Feb. 12	756	201	26	579
Putnam, Henry W. (See Gomber, George W., assignor.)						
Putnam, Salmon W., Fitchburg, Mass. Lathe-bed	291,398	Jan. 1	475	134	26	85
Quigley, William W., Santa Ana, Cal. Folding table	295,673	Mar. 25	1696	469	26	1155
Quincy, Edmund W., Peoria, Ill. Check-row corn-planter	294,360	Feb. 26	1927	528	26	801
Raber, Charles G., Washington, Ind. Coin-counter for money-drawers	292,584	Jan. 29	1998	556	26	387
Race, Nancy, administratrix. (See Race and Mathews.) (Reissue.)						
Race, Washburn, deceased, (N. Race, Volney, N. Y., administratrix,) and S. R. C. Mathews, assignors, by mesne assignments, to S. R. C. Mathews, R., E. R., G., R., and W. Wood, Philadelphia, Pa. Hydrant. (Reissue)	10,452	Feb. 26	2034	557	26	821
Rae, Frank B., and C. L. Healy, San Francisco, Cal. Commutator for dynamo or magneto electric machines	294,270	Feb. 26	1929	529	26	801
Raimes, John W. (See Nobes, George, assignor.)						
Rall, Henry, St. Louis, Mo. Lard and oil tank	291,535	Jan. 8	659	187	26	125
Ramaden, Edward A. (See Hamilton, James B., assignor.)						
Rand Drill Company. (See Halsey, Frederic A., assignor.)						
Randall, A. H., *et al.* (See Dusenbury, Philip S., assignor.)						
Randall, Charles A., New York, N. Y. Telephonic receiver	295,804	Mar. 25	1862	518	26	1184
Randall, Charles A., New York, N. Y. Telephonic transmitter	295,805	Mar. 25	1864	518	26	1185
Randall, Charles A., New York, N. Y. Telephonic transmitter	295,806	Mar. 25	1866	518	26	1185
Randall, Charles A., New York, N. Y. Telephonic transmitter	295,807	Mar. 25	1868	519	26	1185
Randall, Henry E., Northampton, county of Northampton, England. Boot or shoe	293,354	Feb. 12	757	202	26	580
Randall, Le Roy D. (See Wilcox, Stephen C., assignor.)						
Randall, Nelson, Jersey City, N. J. Conduit for electric wires	291,399	Jan. 1	476	134	26	85
Randle, William, Sr., Fort Werth, Tex. Combined hay-press and horse-power	291,082	Jan. 1	80	23	26	18
Rankin, John D., and W. C. Knox, Groesbeck, Tex. Soil-pulverizer	293,080	Feb. 5	374	101	26	510
Ransom, Frank H. (See Sangster, Amos W., assignor.)						
Ransom, Frank H., Buffalo, N. Y. Trunk	295,808	Mar. 25	1869	519	26	1186
Ransom, Hiram W., assignor of one-half to Emerson & Fisher Company, Cincinnati, Ohio, Rack for wheels	293,783	Feb. 19	1290	357 358	26	683
Ransom, John, Williamsport, Pa. Bathing apparatus	294,150	Feb. 26	1781	488 489	26	775
Ransom Stove Company. (See Hamlin, Charles A., assignor.)						
Ransom, William H., *et al.* (See Hoffman, Edward J., assignor.)						
Raphael, Meyer, Wadsworth, Nev. Sand-band for vehicle-wheels	291,936	Jan. 15	1164	325	26	225
Rapid Button Hole Machine Company. (See Humphrey, Daniel W. G., assignor.)						
Rapp, Almire H., Paris, France, assignor to A. Gerry, trustee, New York, N. Y. Device for securing tools in stone-channeling machines	291,227	Jan. 1	265	74	26	48
Rappold, Albert, Titusville, Pa. Stop-valve	293,355	Feb. 12	759	202	26	580
Rarey, Daniel. (See Rarey, Joseph P. B., assignor.)						
Rarey, Joseph P. B., assignor of one-half to D. Rarey, Kokomo, Ind. Gate	295,428	Mar. 18	1370	380	26	1090
Rasgorshek, Gabriel, Plattsmouth, Nebr. Cover for openings in stove-pipes	291,771	Jan. 8	947	266	26	175
Rathbun, Edwin D., Williams, Cal. Gate	295,674	Mar. 25	1696	470	26	1155
Rausch, George H., Boston, Mass. Hand-truck	292,080	Jan. 29	2121	590	26	408
Ravenscroft, Walter S. (See Ravenscroft, William H. and W. S.)						
Ravenscroft, Walter S., Parkersburg, W. Va. Pulp caster-wheel	293,784	Feb. 19	1293	.....	26	683
Ravenscroft, William H. and W. S., Parkersburg, W. Va. Manufacture of articles from wood pulp	293,785	Feb. 19	1293	358	26	683

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Raymond, Albert. (See Raymond, George and A.)						
Raymond, Cyrus, 2d, Danbury, Conn. Hat-lining	291,536	Jan. 8	661	187	26	125
Raymond, George and A., Chicago, Ill. Machine for reducing ores, &c	293,786	Feb. 19	1295	358 359	26	683
Raymond, George and A., Chicago, Ill. Machine for reducing ores, &c	293,787	Feb. 19	1297	359 360	26	684
Raymond, George and A., assignors of one-half to O. H. Tobey, Chicago, Ill. Grinding-mill	295,049	Mar. 11	882	242	26	987
Raymond, George E., *et al.* (See Sherck, Isaac, assignor.)						
Raymond, George W., Seneca, Ill. Ditching-machine	291,772	Jan. 8	948	266 267	26	175
Rea, Hugh, Village Green, Pa. Combined plow and cultivator	294,271	Feb. 26	1930	529	26	802
Reach, Robert, Philadelphia, Pa. Racket	295,429	Mar. 18	1371	380	26	1091
Reach, Robert, Philadelphia, Pa. Indian club						
Reading Iron Works. (See Wolfe, Edward W., assignor.)						
Reagan, Edgar U. G., assignor of one-half to A. Warnken, La Grange, Tex. Baling-press	295,282	Mar. 18	1193	330 331	26	1056
Reamy, Thomas J., Richmond, Va. Saw-mill-feed mechanism	294,272	Feb. 26	1931	329	26	802
Reaney, John, New Orleans, La. Machine for cleaning coffee and other grain	292,681	Jan. 29	2122	590	26	408
Reaser, Warren T., Rockford, Ill. Balance slide-valve. (Reissue)	10,449	Feb. 12	1062	294	26	635
Recker, John P., Indianapolis, Ind., assignor to Indianapolis Cabinet Company of Indiana. Flexible shutter	292,047	Jan. 15	1294	362	26	249
Record, George J., Conneaut, Ohio. Jacketed shipping-can	291,937	Jan. 15	1164	325	26	225
Redding, Harvey, Everett, assignor to himself and J. Redding, Malden, Mass. Machine for forming annular surfaces and cutting screw-threads thereon	293,911	Feb. 19	1456	403	26	712
Redding, Jerome. (See Redding, Harvey, assignor.)						
Redding, Jerome, Malden, Mass. Electric gong	293,980	Feb. 19	1546	426	26	729
Redway, George H. (See Mack, Josiah D., assignor.)						
Reed, Charles F., Brooklyn, N. Y. Apparatus for holding and moving invalids	292,048	Jan. 15	1294	362	26	250
Reed, James H., Brooklyn, N. Y. Grinding-machine	291,537	Jan. 8	662	187 188	26	125
Reed, Joseph W., Kalamazoo, Mich. Lubricator	295,198	Mar. 18	1064	298	26	1035
Reed, Robert, and C. E. Loetzer, Williamsport, Pa. Automatic cylinder-cock	294,334	Feb. 26	2013	552	26	817
Reed, Theodore J., Leavenworth, Kans. Carriage-top	294,912	Mar. 11	699	195	26	957
Reed, William A. (See Sleeper, George W., assignor.)						
Reed, William S., Leominster, Mass. Mechanical toy	294,076	Feb. 26	1677	462	26	759
Reese, Evan L., Newark, Cal. Operating valves of steam-cylinders	294,807	Mar. 11	573	159	26	934
Reese, Jacob, Pittsburg, Pa. Manufacture of non-calcareous linings for metallurgical furnaces	292,508	Jan. 29	1895	.....	26	370
Reger, Augustine, Somerville, N. J. Fertilizer-distributer	292,852	Feb. 5	88	24	26	459
Reid, Alexander. (See Seybold, Charles, assignor.)						
Reid, Charles H., Danbury, Conn. Hat-manufacturing machine	292,356	Jan. 22	1686	469 470 471	26	324
Reid, Charles H., Danbury, Conn. Hat trimming and curling machine	292,357	Jan. 22	1691	471	26	325
Reid, Charles H., Danbury, Conn. Machine for curling and finishing hat-brims	292,358	Jan. 22	1694	472	26	326
Reid, John, Wheeling, W. Va. Water-filter	291,083	Jan. 1	81	23	26	18
Reid, Samuel, Chicago, Ill. Lubricator	294,151	Feb. 26	1783	489	26	776
Reid, Samuel, Chicago, Ill. Lubricator	294,152	Feb. 26	1787	489	26	776
Reid, Samuel, Chicago, Ill. Lubricator	294,153	Feb. 26	1788	489	26	776
Reid, Samuel, Chicago, Ill. Lubricator	291,400	Jan. 1	477	135	26	86
Reid, William A., St. Louis, Mo. Lubricator	291,773	Jan. 8	950	267	26	176
Reilly, Robert M., Baltimore, Md. Pipe-coupling	294,808	Mar. 11	574	159	26	934
Reindel, Frederech, York, Pa. Step-ladder chair						
Reinecke, John P., Pittsburg, Pa. Preventing the accumulation of inflammable gases in oil-tanks	291,084	Jan. 1	82	24	26	18
Reinecke, John P., Pittsburg, Pa. Safety apparatus for oil-tanks	291,085	Jan. 1	84	24	26	18
Reinl, George. (See Clarke, Paulding, and Reinl.)						
Reiss, George T., assignor to Niles Tool Works, Hamilton, Ohio. Pulley-lathe	292,948	Feb. 5	213	58, 59	26	482
Reist, John, Philadelphia, Pa. Ice-creeper	292,509	Jan. 29	1886	526	26	370
Reitmeyer, William, Brooklyn, N. Y. Hat	292,049	Jan. 15	1297	362	26	250
Reixach, José. (See Lister and Reixach.)						
Rembert, Edward J. (See Galloway, James A., assignor.)						
Remington, Carver, Ilion, N. Y. Animal-trough	292,853	Feb. 5	89	25	26	459
Remington & Sons, E. (See Lee and Diss, assignors.)						
Renchard, John J., Detroit, Mich. Lubricator	292,050	Jan. 15	1298	363	26	250
Renner, Francis C., New Midway, Md. Portable fence	292,138	Jan. 15	1399	391 392	26	268
Rennoker, John H. (See Curry, Burwell J., assignor.)						
Rennyson, William, Norristown, Pa. Bicycle	293,081	Feb. 5	375	102	26	510
Repp, Ephraim B., New Windsor, Md., assignor to Anglo American Roofing Company, New York, N. Y. Metallic roofing-shingle	292,585	Jan. 29	2001	557	26	387
Repp, Ephraim B., New Windsor, Md., assignor to Anglo-American Roofing Company, New York, N. Y. Metallic roofing-shingle	295,283	Mar. 18	1194	331	26	1056
Resley, Horace, Cumberland, Md. Fire-escape	295,430	Mar. 18	1372	380 381	26	1091
Reusch, Carl, New York, N. Y. Manufacture of enameled sheet-metal ware	292,051	Jan. 15	1299	363	26	250
Reven, John, Lancaster, Pa. Preventing railway-tracks from spreading	293,194	Feb. 5	539	143	26	536
Reynolds, Earl H., Prophetstown, Ill. Check-row corn-planter	293,672	Feb. 19	1132	316	26	656
Reynolds, Edwin, Milwaukee, Wis. Cut-off-valve gear	293,356	Feb. 12	759	202 203	26	580
Reynolds, George A., Utica, N. Y. Last	293,913	Feb. 19	1459	404	26	712
Reynolds, George H., and L. Allen, assignors of one-half to C. H. Delamater, G. H. Robinson, W. Delamater, and Allen Cycle Non-Chemical Refrigerating Company, New York, N. Y. Apparatus for ice-making and refrigerating	291,774	Jan. 8	950	267 268	26	176
Reynolds, George L., Orange Valley, N. J. Window-screen	293,082	Feb. 5	376	102	26	510
Reynolds, George L., Orange Valley, N. J. Chamber-pail	293,912	Feb. 19	1459	403	26	712
Reynolds, John M., Chicago, Ill. Shell ornament	291,401	Jan. 1	477	135	26	86
Reynolds, William L., *et al.* (See Burridge, Thomas H., assignor.)						
Rhodes, Ezra, assignor of two-thirds to W. R. Eynon, and J. W. Field, Cleveland, Ohio. Grinding-mill	294,673	Mar. 4	407	112 113	26	898
Rhodes, Thomas H., Brooklyn, N. Y. Electrical circuit-breaker for annunciators and gas-lighting apparatus	292,586	Jan. 29	2003	557	26	388
Rhule, Jacob, assignor to himself and O. K. Gardner, Pittsburg, Pa. Car-door fastening	293,083	Feb. 5	377	103	26	511
Riale, Robert E., Johnstown, Pa., assignor to Cambria Iron Company. Bale-tie	291,228	Jan. 1	266	74	26	48

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Ribot, Antonio C. y, Los Angeles, Cal. Kiosk	293,595	Feb. 12	1039	286	26	631
Rice, Bernard, Brooklyn, N. Y. Blinder for horses	291,229	Jan. 1	266	75	26	48
Rice, Byron, West Schuyler, N. Y. Railway-switch	291,624	Jan. 8	780	219	26	146
Rice, George, *et al.* (See Whitton, Andrew D., assignor.)						
Rice, George H. (See Thompson and Rice.)						
Rice, Herbert M. (See Fitts, Rice, and Blanchard.)						
Rice, James N., Chicago, and J. Humphreys, Austin, Ill. Combination-lock	292,253	Jan. 22	1563	437	26	302
Rice, Nathaniel B., assignor to C. Wahl, Chicago, Ill. Apparatus for condensing or drying liquids	292,949	Feb. 5	216	59	26	482
Rice, Nathaniel B., assignor to C. Wahl, Chicago, Ill. Apparatus for condensing or drying liquids	292,950	Feb. 5	217	60	26	482
Rice, Nicholas J., Vernon, Pa. Compound metal-working machine	291,775	Jan. 8	955	208	26	177
Rice, Paul. (See Krahenbeihl and Rice.)						
Rice, Vietts L. (See Fraser and Rice.)						
Rice, William B. (See Coup, McCurdy, and Rice.)						
Rice, William E., Worcester, Mass. Coating for wire preparatory to drawing	291,938	Jan. 15	1166	.....	26	225
Rich, Edwin S., Jersey City, N. J. Filter-case	293,519	Feb. 12	954	260	26	616
Rich, George W., Chicago, Ill. Tester	292,254	Jan. 22	1565	437	26	302
Rich, Solomon, Joplin, Mo. Machine for cutting out garments	291,776	Jan. 8	956	208	26	177
Richards, Ervin E., *et al.* (See Fulton, John M., assignor.)						
Richards, Lewis, Dowlais, county of Glamorgan, England. Apparatus for straightening rails	294,273	Feb. 26	1932	{529 {530	26	802
Richards, Philip, Wilkes-Barre, Pa. Furnace-blower	293,064	Feb. 5	378	103	26	511
Richardson & Boynton Company. (See Manny, James H., assignor.)						
Richardson, Charles H. (See Moody, Nathan C., assignor.)						
Richardson, Christopher, Newark, N. J. Saw-handle	292,951	Feb. 5	218	60	26	483
Richardson, George W., Boston, Mass., assignor to Consolidated Safety Valve Company, Hartford, Conn. Apparatus for testing safety-valves	295,585	Mar. 25	1584	438	26	1135
Richardson, Henry B., Amherst, Mass. Type-writing machine	292,854	Feb. 5	91	25, 26	26	459
Richardson, John D., *et al.* (See Crowley, Jeremiah J., assignor.)						
Richardson, John D., Brooklyn, assignor of one-half to F. L. Manchester, New York, N. Y. Bit and drill brace	292,587	Jan. 29	2004	557	26	388
Richardson, Robert R., Laramie City, Wyo. Ter. Clothes-drier	292,052	Jan. 15	1299	363	26	250
Richardson, William, Buffalo, Mo. Salve	292,255	Jan. 22	1566	.....	26	302
Richberg, John C., and D. Brobston, Chicago, Ill. Fire-escape	292,855	Feb. 5	94	26	26	466
Richeson, Frank, assignor of one-half to C. Stafford, Chicago, Ill. Harness-loop	292,053	Jan. 15	1300	363	26	251
Richmond, Charles C., Boston, Mass. Double hinge	294,899	Mar. 11	575	159	26	934
Richmond, Edgar D., executor. (See Collins, Kins R.)						
Richmond, Everett B. (See Merriam, Joseph B., assignor.)						
Richmond, George. (See Wood and Richmond.)						
Richmond Manufacturing Company. (See Gilbert, Charles M., assignor.)						
Richmond Sulky Plow Company. (See Hunt, Franklin B., assignor.)						
Richmond, William H., Mount Pleasant, Mich. Clothes-reel	292,350	Jan. 22	1695	472	26	326
Richter, Charles, Camden, N. J. Dynamo-electric machine	294,913	Mar. 11	700	195	26	957
Richter, Joseph, Cincinnati, Ohio. Water and steam cock or faucet	294,674	Mar. 4	408	113	26	899
Richter, Joseph, Cincinnati, Ohio. Hose-nozzle	294,675	Mar. 4	409	113	26	899
Richtmann, Charles, assignor to H. Richtmann & Co., New York, N. Y. Coin and letter scale	295,809	Mar. 25	1870	519	26	1186
Richtmann & Co., H. (See Richtmann, Charles, assignor.)						
Rickey, Alonzo C., Boone, Iowa, and E. D. Myers, Wooster, Ohio. Harness-saddle	292,360	Jan. 22	1696	{472 {473	26	327
Ricour, Théophile, Tours, France. Locomotive steam-engine	292,588	Jan. 29	2006	558	26	388
Ridenour, Cyrus J., Springfield, Ohio. Machine for compressing plastic material	294,274	Feb. 26	1933	530	26	802
Rider, Alexander K., Walden, N. Y. Explosive-gas engine	292,178	Jan. 22	1450	407	26	284
Rider, Alexander K., Walden, N. Y. Thermostat	294,405	Mar. 4	86	22	26	844
Ridge, Joseph, assignor to J. H. Beers, Chicago, Ill. Muffler for school-slates	294,154	Feb. 26	1790	490	26	777
Ridley, Joseph C., St. Louis, Mo. Combined spark-arrester and flue-supporter	293,357	Feb. 12	762	203	26	581
Riesenberg, Frank W. (See Hatch and Riesenberg.)						
Riesenfeld, Edward R., assignor to C. H. Wight, New York, N. Y. Shelf oil-cloth	291,939	Jan. 15	1167	325	26	225
Rife, Henry A., assignor of one-half to P. S. Fahrney, Timberville, Va. Machine for dressing stone	292,361	Jan. 22	1697	{473 {474	26	327
Rigby, John S., Beaufort, assignor of one-half to F. Brotherhood, Charleston, S. C. Apparatus for making sulphuric acid	292,054	Jan. 15	1301	364	26	251
Rigler, Washington B. (See Wallich and Rigler.)						
Riker, Carroll L., Brooklyn, assignor to C. Gullmann, New York, N. Y. Combined trap and overflow for wash-basins, water-closets, sinks, &c	292,055	Jan. 15	1302	364	26	251
Riley, Christian F., Philadelphia, Pa. Velocipede	292,179	Jan. 22	1452	407	26	284
Riley, John H., Indianapolis, Ind. Saw	293,276	Feb. 12	659	176	26	502
Ringer, Edward H., Bradenville, Pa. Nut-lock	293,085	Feb. 5	379	103	26	511
Ringer, Joseph G., Oakland Cross-Roads, Pa. Seed-planter and fertilizer-distributer	291,402	Jan. 1	478	135	26	86
Ringwalt, Levi A., Wilmington, Del. Harness-saddle tree	295,810	Mar. 25	1871	519	26	1186
Ripley, Daniel C., Pittsburg, Pa. Glass caster	291,086	Jan. 1	85	24	26	19
Risdon Iron and Locomotive Works. (See Dickie, George W., assignor.)						
Rishel, George P., Hornellsville, N. Y., assignor of one-half to T. B. Welch & Son, Philadelphia, Pa. Vulcanizing and celluloid apparatus. (Reissue)	10,442	Jan. 29	2271	628	26	435
Ritchel, Charles F., and G. Doolittle, assignors of one-third to T. B. Doolittle, Bridgeport, Conn. Method of and apparatus for treating pelts	295,050	Mar. 11	885	243	26	987
Ritchie, Edward S., Brookline, Mass. Mariner's compass	291,403	Jan. 1	479	136	26	86
Ritchie, Frederic G., Wallingford, Vt. Machine for the reduction of wood and other materials to paper-pulp	291,777	Jan. 8	957	{268 {269	26	177
Ritchie, James T., *et al.* (See Schaffer, Charles M., assignor.)						
Robb, John. (See Morgan and Robb.)						
Robbins, David F., Berlin, Minn. Draft-equalizer	293,086	Feb. 5	379	103	26	511
Robbins, Henry A. See Bessler, Vetal, assignor.)						
Robbins, John A. (See Weathers, James, assignor.)						
Robbins, Lewis, Parkersburg, W. Va. Portable house for sheep	291,625	Jan. 8	780	219	26	146
Robburts, George W., assignor of two-thirds to J. E. Polk and H. K. Hart, Elmo, Tex. Baling-press	292,952	Feb. 5	219	60	26	483
Roberts, Aaron A., Quitman, Ark. Plow	291,087	Jan. 1	86	25	26	19
Roberts, Charles, *et al.* (See Tatum, C. Albert, assignor.)						
Roberts, Chester A., Caledonia, N. Y. Fire-escape	294,275	Feb. 26	1935	531	26	803
Roberts, Edward J., assignor of one-fourth to W. W. Culbertson, Ashland, Ky. Car-coupling	294,810	Mar. 11	577	160	26	934
Roberts, Frank K., Philadelphia, Pa. Spectacles	291,778	Jan. 8	959	209	26	177

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Roberts, James A., assignor of one-half to W. M. Dwight, Detroit, Mich. Planing-machine	294,914	Mar. 11	701	195	26	957
Roberts, John P. (See Baker and Roberts.)						
Roberts, Morris, assignor of one-half to G. W. Hopkins, Philadelphia, Pa. Window-screen	293,277	Feb. 12	660	177	26	502
Robertson, James B., Kingston, N. Y. Fire-escape and self-preserver	291,940	Jan. 15	1167	326	26	225
Robie, Henry W., Portsmouth, Va. Reversing-valve for steam-engines	294,155	Feb. 26	1791	490	26	777
Robinson, Alexander, Benicia, assignor to Baker & Hamilton, San Francisco, Cal. Horse-power	293,087	Feb. 5	380	104	26	511
Robinson, Alexander, Benecia, assignor to Benecia Agricultural Works, San Francisco, Cal. Harvester	293,358	Feb. 12	763	203	26	581
Robinson, Alexander, Benicia, assignor to Baker & Hamilton, San Francisco, Cal. Bag-holder	294,505	Mar. 4	208	58	26	865
Robinson, Dulaney E., Roanoke, Ill. Gate	294,077	Feb. 26	1678	462	26	759
Robinson, Francis W., Richmond, Ind. Straw-stacker	291,088	Jan. 1	87	25	26	19
Robinson, George H., *et al.* (See Reynolds and Allen, assignors.)						
Robinson, J. Watts, Boston, Mass. Machine for computing interest	294,079	Feb. 26	1680	463	26	700
Robinson, John E., Baltimore, Md. Construction and operation of caissons	294,078	Feb. 26	1679	463	26	759
Robinson, Samuel P., Plainfield, Conn. Molder's flask	294,406	Mar. 4	87	23	26	844
Robinson, William W., Ida Grove, Iowa. Check-row attachment for corn-planters	292,056	Jan. 15	1303	364	26	251
Robinson, William W., Ripon, assignor of one-half to G. N. Lyman, Milwaukee, Wis. Preserving wood	294,676	Mar. 4	410	.....	26	899
Robson, Robert S., Cambridgeport, assignor, by mesne assignments, to himself and J. Loughrey, East Cambridge, Mass. Composing-stick	294,677	Mar. 4	410	113	26	899
Rockwell, Fred C. (See Laraway, George W., assignor.)						
Rockwell, George M., Woonsocket, R. I. Carpet-sweeper	295,506	Mar. 18	1472	404	26	1109
Rockwell, Robert N., Peabody, Kans. Wind-wheel	293,037	Jan. 15	1304	364	26	252
Rockwood, Levi R., assignor to M. M. Flint, Worcester, Mass. Stencil ink or color fountain	292,856	Feb. 5	95	26	26	460
Rockwood, William E., assignor of one-half to H. C. Newcomb, Indianapolis, Ind. Pulley	291,779	Jan. 8	960	209	26	177
Rodgers, James L. (See Hartley and Rodgers.)						
Rodgers & Sons, Joseph. (See Wingfield, Charles, assignor.)						
Rodler, Louis C., Detroit, Mich. Radiator	292,302	Jan. 22	1703	474	26	328
Roebling, Ferdinand W., and W. Orr, Jr., assignors to New Jersey Wire Cloth Company, Trenton, N. J. Wire-cloth scenery	293,981	Feb. 19	1547	496	26	729
Roede, Bernhard, Jersey City, N. J. Shirt-stud	292,038	Jan. 15	1305	365	26	252
Rogers, Andrew W., Salem, Mass. Shoe-form	292,682	Jan. 29	2123	590	26	408
Rogers, Charles E., Boston, Mass. Stringing pianos	293,088	Feb. 5	381	104	26	511
Rogers, Ebenezer, H., Jr., New York, N. Y. Bottle-register	293,089	Feb. 5	382	104	26	511
Rogers Fence Company. (See Rogers, Timothy, assignor.)						
Rogers Flexible Shoe Company, Warner. (See Rogers, Warner, assignor.)						
Rogers, Lebbens H. (See Shaw, William A., assignor.)						
Rogers, James H., Washington, D. C., assignor to American Electro-Gas Telephone Company, of New Jersey. Gas and magnetic telephone system	292,857	Feb. 5	96	26, 27	26	460
Rogers, James H., Washington, D. C., assignor to American Electro-Gas Telephone Company, of New Jersey. Pipe-telephone	292,858	Feb. 5	97	27	26	461
Rogers, John P. (See Upham and Rogers.)						
Rogers, Josiah W., Beverly, Mass., assignor to Winslow Beating-Out Shoe Machinery Company, Saco, Me. Beating-out machine for boot or shoe soles	294,506	Mar. 4	209	59	26	865
Rogers, Michael J., assignor to T. T. Haydock, Cincinnati, Ohio. Fifth-wheel	294,915	Mar. 11	702	196	26	957
Rogers, Timothy, assignor to Rogers Fence Company, Springfield, Ohio. Latching device for gates for iron fences	292,510	Jan. 29	1886	526	26	370
Rogers, Timothy, assignor to Rogers Fence Company, Springfield, Ohio. Iron fence	292,859	Feb. 5	98	27	26	461
Rogers, Timothy, assignor to Rogers Fence Company, Springfield, Ohio. Iron fence	292,860	Feb. 5	99	28	26	461
Rogers, Timothy, assignor to Rogers Fence Company, Springfield, Ohio. Iron fence	293,673	Feb. 19	1133	{316 {317	26	656
Rogers, Timothy, assignor to Rogers Fence Company, Springfield, Ohio. Iron fence	293,674	Feb. 19	1137	317	26	657
Rogers, Warner, assignor to W. Rogers Flexible Shoe Company, Cincinnati, Ohio. Shoe	293,982	Feb. 19	1548	496	26	729
Rogers, Warner, assignor to W. Rogers Flexible Shoe Company, Cincinnati, Ohio. Device for lasting boots and shoes	294,276	Feb. 26	1937	531	26	803
Rohrer, Jacob B. (See Wallack and Rohrer.)						
Rollar, William, deceased, Chicago, Ill.; R. Tarrant, executor. Feed-water heater	291,538	Jan. 8	663	188	26	125
Rollhaus, George, Pittsburg, Pa. Boot or shoe	293,359	Feb. 12	764	203	26	581
Rollins, Lafayette, Mountain Creek, assignor to himself and O. Stoelker, Montgomery, Ala. Lumber-drier	295,284	Mar. 18	1194	332	26	1057
Romadka, Anthony V., Wauwatosa, Wis. Trunk-roller and corner-piece	291,230	Jan. 1	267	75	26	49
Romaine, Robert, Ottawa, Ontario, Canada. System and apparatus for farm cultivation and harvesting	292,511	Jan. 29	1887	{527 {528 {529	26	370
Rooney, Henry F., Randolph, Mass. Machine for filing shoe-heels	292,363	Jan. 22	1703	{474 {475	26	328
Root, John B., Port Chester, N. Y. Machine for riveting sheet-metal pipe	292,364	Jan. 22	1704	475	26	328
Root & Sons Music Company. (See Schaar, August L., assignor.)						
Roots, Francis T., Connersville, Ind. Pounder washing-machine	295,109	Mar. 18	1085	298	26	1036
Roper, Alfred W., St. Louis, Mo. Separator	293,983	Feb. 19	1549	427	26	729
Roper, Alfred W., assignor of one-half to G. F. Durant and J. Campbell, St. Louis, Mo. Machine for roasting coffee	295,200	Mar. 18	1086	299	26	1036
Roper, Charles F., Boston, Mass. Metal-screw machine	292,683	Jan. 29	2124	{590 {591	26	408
Rorebeck, Henry, Parma, N. Y. Whiffletree	295,811	Mar. 25	1872	520	26	1186
Rorebeck, Henry, Parma, assignor to A. V. Smith, Rochester, N. Y. Combined bridle and halter	295,812	Mar. 25	1873	520	26	1186
Rosback, Fredrick P., Chicago, Ill., assignor to C. Colahan, Cleveland, Ohio. Metal-planer	293,675	Feb. 19	1139	{317 {318	26	657
Rose, John H., Norwalk, Conn., assignor to W. J. Demorest, New York, N. Y. Fare-register	295,901	Mar. 18	1087	299	26	1036
Rose, Renben M., Brooklyn, N. Y. Punch	295,039	Mar. 11	890	244	26	988
Rose, Renben M., assignor to D. F. Atkins, Brooklyn, N. Y. Fare register or recorder	295,051	Mar. 11	888	243	26	988
Rose, Rufus E., Kissimmee, Fla., assignor of three-fourths to H. Disston, J. M. Kreamer, and S. H. Grey, Philadelphia, Pa. Dredge	295,202	Mar. 18	1088	{299 {300 {301	26	1036
Rosebrook, Frank, Elmira, N. Y. Coffee and tea pot	291,941	Jan. 15	1169	326	26	225
Rosenthal, Sophie, Baltimore, Md. Under-garment	294,507	Mar. 4	210	59	26	865
Rosquist, John, Park City, Utah Ter. Car for inclines in mines	292,366	Jan. 22	1707	476	26	329
Ross, Donald G., Hatton, Mich. Machine for forming paving-blocks	292,365	Jan. 22	1706	475	26	329
Ross, Eugenia, New York, N. Y. Hand-protecting attachment for umbrellas and canes	295,586	Mar. 25	1586	439	26	1135
Ross, George, Troy, N. Y. Air-pump	295,676	Mar. 25	1699	470	26	1165

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Ross, George B., Buffalo, N. Y. Brake-shoe	292,801	Feb. 5	101	28	26	461
Ross, James B., Union City, Ind. Fence-post	294,508	Mar. 4	211	59	26	865
Ross, Owen C. D., 50 Trafalgar Road, county of Surrey, England. Galvanic battery	294,335	Feb. 26	2014	552 553	26	817
Ross, Robert N., St. Louis, Mo., assignor to Eureka Brick Machine Manufacturing Company, Louisville, Ky. Brick-machine	293,506	Feb. 12	1040	286 287	26	631
Rosse, Salisbury F., Sedalia, Mo. Car-door fastening	291,404	Jan. 1	480	136	26	86
Rossheim, Louis. (See Rossheim, Wolf and L.)						
Rossheim, Wolf and L., New York, N. Y. Heel for shoes	295,053	Mar. 11	891	244	26	988
Roth, Elias D., Fort Collins, assignor of one-half to J. A. Pearce, Buena Vista, Colo. Cutting apparatus for harvesters	295,813	Mar. 25	1874	620	26	1186
Roth, Elias D., Fort Collins, assignor of one-half to J. A. Pearce, Buena Vista, Colo. Lubricating device for cutter-bars	295,814	Mar. 25	1875	620	26	1186
Roth, Ludwig, Wetzlar, Prussia, Germany. Manufacture of cement	294,080	Feb. 26	1684	.....	26	760
Roth, Morris, *et al.* (See Kessler, Johann K., assignor.)						
Rotsten, Christoph, Cuero, Tex. Wheel or felly screw	291,626	Jan. 8	781	220	26	146
Roux, Ernest J., and L. U. Fatio, assignors to Vacheron & Constantin, Geneva, Switzerland. Watch-regulator	291,780	Jan. 8	960	270	26	178
Rowan, William, Belfast, county of Antrim, Ireland. Piston	292,445	Jan. 22	1807	504	26	348
Rowbottom, John M. (See Rowbottom, William and J. M.)						
Rowbottom, William and J. M., Allegheny, Pa. Cesspool-well	292,953	Feb. 5	220	61	26	483
Rowlands, John R., assignor, by mesne assignments, to J. G. Hoffman Manufacturing Company, New York, N. Y. Driving mechanism for fan-blowers	293,360	Feb. 12	765	204	26	581
Rowlett, Jacob V., Richmond, Ind. Roller-skate	292,802	Feb. 5	101	28	26	462
Roy, Joseph, Montreal, Quebec, and E. Waldt, Toronto, Ontario, Canada. Halter-weight	294,081	Feb. 26	1684	463	26	760
Royster, William H., Midway, Va. Churn	293,195	Feb. 5	540	143	26	536
Rudulph, Allan W. (See Yeber, William F., assignor.)						
Ruegenberg, Aloys, Philadelphia, Pa. Device for stopping runaway horses	292,589	Jan. 29	2007	558	26	389
Rueter, Henry A., Boston, Mass. Tap-hole bushing and plug	293,278	Feb. 12	669	177	26	592
Rumble, Frank L., Lowell, Ohio. Wheel-harrow	293,520	Feb. 12	935	260	26	616
Runsettler, Andrew, assignor to Farmers Friend Manufacturing Company, Dayton, Ohio. Walking corn-planter and fertilizer-distributer	295,132	Mar. 11	989	272 273	26	1006
Runyan, George A., Augusta, Kans. Cornstalk-rake	295,054	Mar. 11	892	244	26	988
Runyan, John H., Flint, Mich. Door-check	295,507	Mar. 18	1476	406	26	1109
Rush, David M., Louisburg, Mo. Adding-machine	292,256	Jan. 22	1566	438	26	392
Russell, Andrew H., U. S. Army. Magazine-gun	295,285	Mar. 18	1196	332	26	1057
Russell, Andrew H., U. S. Army. Magazine-gun	295,286	Mar. 18	1199	333	26	1057
Russell, Charles B. (See Gowdy and Russell.)						
Russell, Edward H., Park City, Utah Ter. Extracting metals from ores and metallurgical products	295,815	Mar. 25	1875	.....	26	1187
Russell, Edward H., Park City, Utah Ter. Extracting precious metals from ores	295,816	Mar. 25	1877	.....	26	1187
Russell, Edward H., Park City, Utah Ter. Purifying hyposulphite solutions used in leaching ores	295,886	Mar. 25	1976	.....	26	1204
Russell, Edward H., Park City, Utah Ter. Separating metals from ores and metallurgical products	295,887	Mar. 25	1976	.....	26	1204
Russell & Erwin Manufacturing Company. (See Jones, Horace K., assignor.)						
Russell, James D., North Hamden, N. Y. Wagon-brake	292,130	Jan. 15	1400	392	26	268
Russell, John C., Boston, Mass., assignor to T. Now, New York, N. Y. Key-tag	292,954	Feb. 5	221	61	26	483
Russell, Lewis B. (See Gage, Charles, assignor.)						
Russell, Luther, Evart, Mich. Stove-pipe thimble	294,811	Mar. 11	577	160	26	935
Russell, Martin L., Renfrew, Ontario, Canada, assignor of two-thirds to W. Albaugh, Ovid, and C. A. Keeler, Rochester, N. Y. Belt-tightener	294,678	Mar. 4	411	114	26	899
Russell, Philip G., Washington, D. C. Meter for electric circuits	291,405	Jan. 1	481	136 137	26	86
Russell, Philip G., Washington, D. C. Balanced thermometer	292,764	Jan. 29	2246	623	26	430
Russell, William F., Peabody, Mass. Pocket	293,597	Feb. 12	1041	287	26	632
Russell, William F., assignor to Hobbs, Brocknnier & Co., Wheeling, W. Va. Manufacture of ornamental glassware	292,765	Jan. 29	2250	623	26	431
Rutan, Charles M., Paterson, N. J. Cooling-casket for preserving the bodies of children	293,361	Feb. 12	766	204	26	582
Rutz, Edward. (See Carson, Robert J., assignor.)						
Ryan, John, Salt Lake City, Utah Ter. Miner's combination-tool	291,627	Jan. 8	782	220	26	147
Ryan, William M., Shenandoah, Iowa. Soldering-tool	295,888	Mar. 25	1978	547	26	1204
Ryder, Martin H., Stamford, assignor to A. Solmans, South Norwalk, Conn. Device for flanging hat-bodies	294,745	Mar. 4	484	135 136	26	912
Ryder, Stephen, North Attleborough, Mass. Chain	294,812	Mar. 11	578	160	26	935
Ryder, Stephen, assignor of one-half to J. L. Blaine, North Attleborough, Mass. Electrical connector	292,180	Jan. 22	1453	408	26	285
Ryerson Lucius L., Boston, Mass. Roller-skate	294,082	Feb. 26	1685	464	26	760
Sabold, John, Jr., Little Oler, Pa. Machine for bending shanks of sad-iron handles	294,509	Mar. 4	211	59, 60	26	865
Sachs, Edward, assignor to Sachs, Pruden & Co., Dayton, Ohio. Cap for bottle-stoppers	292,367	Jan. 22	1708	476	26	329
Sachs, Pruden & Co. (See Sachs, Edward, assignor.)						
Sackett, Augustine, New York, N. Y. Roofing-felt and mechanism for making the same	291,628	Jan. 8	782	220	26	147
Sackett & Co., J. S. (See Halliwell, Samuel, assignor.)						
Sackett, Joseph S., assignor of one-half to J. Halliwell, New Haven, Conn. Needle-case	292,059	Jan. 15	1306	365	26	252
Sackett, Joseph S., assignor of one-half to J. Halliwell, New Haven, Conn. Hemstitch attachment for sewing-machines	292,060	Jan. 15	1307	365	26	252
Sackett, Joseph S., assignor of one-half to J. Halliwell, New Haven, Conn. Ruffling attachment for sewing-machines	293,090	Feb. 5	383	104 105	26	512
Sackett, Joseph S., assignor of one-half to J. Halliwell, New Haven, Conn. Ruffling attachment for sewing-machines	293,091	Feb. 5	385	105	26	512
Sackett, Joseph S., assignor of one-half to J. Halliwell, New Haven, Conn. Tuck-marker for sewing-machines	293,092	Feb. 5	387	105	26	512
Sackett, Joseph S., assignor to himself and J. Halliwell, New Haven, Conn. Ruffling attachment for sewing-machines	293,521	Feb. 12	956	260	26	617
Sackett, Joseph S., assignor of one-half to J. Halliwell, New Haven, Conn. Cord attachment for sewing-machines	295,055	Mar. 11	893	244	26	989
Sackett, Sherman G., Denver, Colo. Revolving cylinder for furnaces	293,676	Feb. 19	1140	312	26	658
Sadler, Hymenus C., Booneville, Ark. Churn-motor	295,587	Mar. 25	1587	439	26	1126
Sage, Carlton E. (See Shaffer, Abraham, assignor.)						
Sage, John, Lockport, N. Y. Carriage-curtain fastening	293,522	Feb. 12	957	261	26	617
Sager, Frank, assignor of one-third to C. Holmes, Pittsburg, Pa. Belt-tightener	292,368	Jan. 22	1708	476	26	330
Saladee, Cyrus W., Torrington, Conn. Two-wheeled vehicle	294,679	Mar. 4	412	114 115	26	899
Sallade, William, Philadelphia, Pa. Latch	291,539	Jan. 8	664	188	26	125

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Sampson, Warner J., Marcellus, Mich. Cloth-measuring device	293,914	Feb. 19	1460	404	26	713
Sanderson, J. Gardner, Scranton, Pa. Gas-burner	292,766	Jan. 29	2252	624	26	431
Sandford, E. Crawford. (See McGavin and Sandford.)						
Sandilands, John, San Francisco, Cal. Scarf-retainer	293,093	Feb. 5	389	105	26	512
Sanford, Addison V., Elmira, assignor to F. Dietz, New York, and S. W. Couvin, Middletown, N. Y. Blacking-box	295,677	Mar. 25	1700	471	26	1156
Sanford, Gelston, Brooklyn, N. Y. Machine for cutting and grinding cornstalks, &c	291,231	Jan. 1	268	75	26	49
Sanger, Herbert, Franklin, N. H. Device for protecting the ends and corners of rolls of paper in shipment	291,406	Jan. 1	490	137	26	87
Sangster, Amos W., assignor to F. H. Ransom, Buffalo, N. Y. Duplex brace-hinge	295,817	Mar. 25	1878	521	26	1187
Sangster, Amos W., assignor to F. H. Ransom, Buffalo, N. Y. Brace-hinge	295,818	Mar. 25	1879	521	26	1187
Sanker, Curtis J., assignor to L. D. Conner & Co., Cleveland, Ohio. Bag-holder	293,279	Feb. 12	662	177	26	592
Sankey, Richard J., South Hill, near Ashford, county of Kent, England. Stoppering bottles for containing aerated or gaseous liquids	294,156	Feb. 26	1792	490	26	777
Sargeant, Samuel S., Newark, N. J. Combined buckle and swivel	291,407	Jan. 1	491	137	26	87
Sargent, Adelbert F., and R. D. Farrell, Genesco, Ill. Two-wheeled vehicle	293,094	Feb. 5	389	106	26	512
Sargent, Allan C. (See Sargent, Frederick G. and A. C.)						
Sargent & Co. (See Gilfillan, William, assignor.)						
Sargent & Co. (See Sargent, Henry B., assignor.)						
Sargent & Co. (See Shaw, John H., assignor.)						
Sargent, Frederick G. and A. C., Graniteville, Mass. Wool-washing machine	291,089	Jan. 1	88	25, 26	26	19
Sargent, Frederick G. and A. C., Graniteville, Mass. Squeeze-roll	292,257	Jan. 22	1568	438	26	303
Sargent, Frederick G. and A. C., Graniteville, Mass. Machine for cleaning wool	293,788	Feb. 19	1299	360	26	684
Sargent, Frederick G. and A. C., Graniteville, Mass. Wool-washing machine	293,789	Feb. 19	1300	360	26	685
Sargent, Frederick G. and A. C., Graniteville, Mass. Fiber-drying machine	294,510	Mar. 4	213	60	26	866
Sargent, Henry B., assignor to Sargent & Co., New Haven, Conn. Animal-trap	295,056	Mar. 11	894	245	26	989
Saunders, Ellison, Austin, Tex. Safety-stop for elevators	295,678	Mar. 25	1701	471	26	1156
Santer & Co., L. (See Staiger, Christoph, assignor.)						
Savits, Samuel F., Loudonville, Ohio. Machine for cutting corn in the cob	295,819	Mar. 25	1879	521	26	1187
Sawyer, Orren A., and C. S. Foss, assignors of three-fourths to M. M. Lahne, Lowell, Mass. Picker-staff check for looms	294,680	Mar. 4	413	115	26	900
Sawyer, William H., Providence, R. I. Machine for coloring covered wire	293,095	Feb. 5	390	106 107	26	513
Sawyer, William H., Providence, R. I. Strike system for secondary electric clocks	295,287	Mar. 18	1201	333 334	26	1058
Saxe, George G., New York, N. Y. Umbrella-catch	291,090	Jan. 1	89	26	26	19
Saxer, George A., New Brighton, N. Y. Elevator	292,664	Jan. 29	2125	591	26	408
Sayles, Frederic C., *et al.* (See Drown, Otis E., assignor.)						
Sayles, Frederic C., *et al.* (See Hall and Midgley, assignors.)						
Sayles, William F., *et al.* (See Drown, Otis E., assignor.)						
Sayles, William F., *et al.* (See Hall and Midgley, assignors.)						
Scales, Hannah E., Newton, Mass. Plastering compound	291,408	Jan. 1	492	.....	26	88
Scammell, Henry B., St. Louis, Mo. Self-sharpening pencil and eraser combined	293,280	Feb. 12	662	177	26	592
Schaar, August L., assignor of one-half to Root & Sons Music Company, Chicago, Ill. Accordion	295,288	Mar. 18	1205	334	26	1058
Schaefer, Charles M., Cincinnati, Ohio. Back-stay fastener	294,083	Feb. 26	1686	464	26	760
Schaffer, Charles M., assignor to himself, J. T. Ritchie, C. C. and G. W. Allen, Louisville, Ky. Velocipede	291,781	Jan. 8	961	270	26	178
Schaffer, John H., Blue River, Ind. Mechanical power	294,681	Mar. 4	414	115 116	26	900
Schafhaus, Jean, New York, N. Y. Beer-finings spreader	292,590	Jan. 29	2008	558	26	389
Scheaffer, Andrew, Detroit, Mich. Wheel-harrow	292,955	Feb. 5	221	61	26	483
Scheerer, John, Springdale, Ohio. End-gate	295,431	Mar. 18	1373	381	26	1091
Scheffler, Charles A., assignor to himself and S. H. Adams, Chicago, Ill. Sewer-gas check	294,511	Mar. 4	214	60	26	866
Scheffler, Theodore, Paterson, assignor to O. Flohr, Newark, N. J., and F. M. Pierce, Brooklyn, N. Y. Friction-clutch	292,140	Jan. 15	1401	392 393	26	269
Scheffler, Theodore, Paterson, assignor to O. Flohr, Newark, N. J., and F. M. Pierce, Brooklyn, N. Y. Steam hoisting-engine	295,289	Mar. 18	1206	335	26	1058
Schelp, Fred., Jr., Ballwin, Mo. Two-wheeled vehicle	291,942	Jan. 15	1169	326	26	225
Schenck, Marcus P., Fulton, N. Y. Cider-mill	293,362	Feb. 12	767	204 205	26	582
Schermerhorn, Abram L., *et al.* (See Burns and Buckman, assignors.)						
Schilling, August, San Francisco, Cal. Apparatus for curing tea and coating coffee	295,290	Mar. 18	1207	335	26	1059
Schilling, August, San Francisco, Cal. Canister	295,432	Mar. 18	1374	381	26	1091
Schilling, August, San Francisco, Cal. Canister	295,433	Mar. 18	1375	381	26	1091
Schilling, August, San Francisco, Cal. Canister	295,434	Mar. 18	1375	382	26	1091
Schilling, August, San Francisco, Cal. Stocking and manufacturing the same	293,363	Feb. 12	769	205	26	582
Schilling, Edward, Louisville, Ohio. Stocking and manufacturing the same	295,435	Mar. 18	1376	382	26	1092
Schilling, Stephan M. F., Sonneberg, Saxe-Meiningen, Germany. Doll	293,523	Feb. 12	958	261	26	617
Schillinger, John J., New York, N. Y. Fire-proof building	293,524	Feb. 12	959	261	26	617
Schillinger, John J., New York, N. Y. Building-block	293,525	Feb. 12	959	261	26	617
Schillinger, John J., New York, N. Y. Machine for making building-blocks	293,677	Feb. 19	1141	318	26	658
Schimper, Frederick, Union, N. J. Barrel or cask for liquid and similar articles	294,377	Feb. 26	1938	532	26	803
Schindler, Franz J., New York, N. Y. Lock for adjusting finger-rings, bracelets, &c	295,820	Mar. 25	1880	521	26	1187
Schindler, Jacob, Koeltztown, assignor of one-half to H. Lneckenhoff, Westphalia, Mo. Harrow or soil-pulverizer						
Schleier, Theodore M. (See Knaffl, Louis, assignor.)						
Schlüchtner, Frederick, East New York, N. Y. Saw-envelope	292,369	Jan. 22	1709	476	26	329
Schmackers, Anton, Birmingham, Ala. Window-shade fixture	294,278	Feb. 26	1939	532	26	803
Schmeelk, Herman M., Rockaway Beach, N. Y. Anchor	294,813	Mar. 11	579	160	26	935
Schmid, Jacob, New Brunswick, N. J. Music-box attachment for clocks	293,096	Feb. 5	393	107	26	513
Schmid, Joseph E., Buffalo, assignor of one-half to E. Laass, Syracuse, N. Y. Door-hanger	293,508	Feb. 12	1042	287 288	26	632
Schmidt, Christian A., Hoboken, N. J. Chain for draperies	294,682	Mar. 4	416	116	26	900
Schmidt, Ernest H., and H. F. C. Brammer, Davenport, Iowa. Cover-fastening for churns	294,683	Mar. 4	416	116	26	900
Schmidt, Ferdinand O., Berlin, Germany. Shuttle and mechanism for operating the same	295,291	Mar. 18	1208	336	26	1059
Schmidt, Fredericke M. H., *et al.* (See Schmidt, George L., assignor.)						
Schmidt, George L., assignor to A. G. Myers, F. M. H. Schmidt, New York, and F. W. Lawrence, Brooklyn, N. Y. Manufacture of tube or vessels of hydraulic cement	291,091	Jan. 1	90	26	26	19
Schmidt, John, Burlington, Iowa. Dovetailing-machine	293,097	Feb. 5	395	108	26	513
Schmidt, Theodore, Dayton, Ohio. Package-box	292,663	Feb. 5	103	28	26	462
Schmiedel, August. (See Heidtmann, Henkels, Schmiedel, and Fischer.)						
Schmitz, Frank, Cornell, Ill. Fence	295,679	Mar. 25	1702	471	26	1156
Schnadel, Louis, Chicago, Ill. Tanning hides	293,364	Feb. 12	771	206	26	582
Schnarr, Henry, Nora Springs, Iowa. Combined heel-plate and counter-support	291,943	Jan. 15	1170	326	26	226

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Schneider, George C. (See Easthope and Schneider.)						
Schoenan, Günther, Huttensteinach, Germany. Shaving-mug	295,436	Mar. 18	1377	382	26	1092
Schoenthaler, Daniel, Akron, assignor of one-half to H. D. Blakeslee, Buffalo, N. Y. Trace-buckle	291,540	Jan. 8	664	188	26	126
Schofield, Ellen. (See Schofield, William, assignor.)						
Schofield, Silas C., Freeport, Ill. Grinding-mill	292,258	Jan. 22	1569	438	26	303
Schofield, William, Philadelphia, assignor to E. Schofield, Manayunk, Pa. Automatic reversing mechanism for lapping-machines	293,790	Feb. 19	1301	360	26	685
Scholl, Michael, San Francisco, Cal. Chimney-cap	293,526	Feb. 12	960	262	26	617
Scholl, Michael, San Francisco, Cal. Fire-escape	295,303	Mar. 18	1091	301	26	1037
Scholl, Nicholas, Chillicothe, Ohio. Reversible sleeve-board	291,029	Jan. 8	784	220	26	147
Schonert, John F. (See Heeb and Schonert.)						
Schooley, Augustus C., Chicago, Ill. Paper-file holder	294,279	Feb. 26	1940	532	26	804
Schoonover, Alvah, Jr., Elliott, Iowa. Cultivator	295,292	Mar. 18	1209	336	26	1059
Schott Button Hole Attachment Company. (See Schott, William, assignor.)						
Schott, John C. (See Howard and Schott.)						
Schott, William, assignor, by mesne assignments, to Schott Button Hole Attachment Company, New York, N. Y. Button-hole attachment for sewing-machines	292,591	Jan. 29	2009	559	26	389
Schowe & Thoms. (See Schowe, William F., assignor.)						
Schowe, William F., assignor to Schowe & Thoms, Indianapolis, Ind. Saw-mill dog	291,409	Jan. 1	492	138	26	88
Schrader, Henry C., Wheeling, W. Va. Snap for holding glass articles	292,685	Jan. 29	2126	591	26	409
Schram, Bernhard, *et al.* (See Vogel, William, assignor.)						
Schramm, Frank A., and A. Modery, Philadelphia, Pa. Pipe-wrench	295,204	Mar. 18	1092	301	26	1037
Schramm, Henry G., Camden, assignor to W. Kenffel and H. Esser, Hoboken, N. J. Device for pointing pencils	295,680	Mar. 25	1703	471	26	1156
Schraud, Franz, San Antonio, Tex. Breech-loading fire-arm	295,437	Mar. 18	1378	{382 / 383}	26	1092
Schreyer, Ernst, Hamburg, assignor to W. Spaethe, Gera, Germany. Accordion	291,782	Jan. 8	962	270	26	178
Schrock, Eli J., Goshen, Ind. Windmill	291,783	Jan. 8	963	270	26	178
Schroder, Henry W., Springfield, Ohio. Window-sash	293,527	Feb. 12	961	262	26	617
Schroeder, C. M. Edward. (See Chichester, Lewis S., assignor.)						
Schullian, Frank X., Quincy, Ill. Gate	294,814	Mar. 11	580	161	26	935
Schulte, George H., and C. Martincourt, assignors to Dennett Harvesting Machine Company, (limited,) Milwaukee, Wis. Cutting apparatus for harvesters	292,370	Jan. 22	1710	477	26	330
Schultz, Augustus, New York, N. Y. Tawing hides and skins	291,784	Jan. 8	964	.....	26	179
Schultz, Augustus, New York, N. Y. Tawing hides and skins	291,785	Jan. 8	965	.....	26	179
Schulz, Henry A. (See Darling and Schulz.)						
Schulze, Louis, assignor of one-half to W. Briscoe, Philadelphia, Pa. Snow-clearer for tracks, &c	294,084	Feb. 26	1687	464	26	760
Schulze-Berge, Hermann, Rochester, Pa. Bessemer converter	294,624	Mar. 4	417	116	26	900
Schumacher, Ferdinand. (See Wemple, Andrew, assignor.)						
Schumann, Charles W., New York, N. Y. Show-case for jewels	294,685	Mar. 4	418	117	26	900
Schumann, Max. (See Gruson and Schumann.)						
Schupp, Fred J., Marshall, Mo. Elevator	294,815	Mar. 11	581	161	26	935
Schutte, Louis, Philadelphia, Pa. Steam-boiler	291,092	Jan. 1	91	26	26	20
Schutte, Louis, Philadelphia, Pa. Jet-condenser	293,791	Feb. 19	1303	361	26	685
Schutte, Louis, Philadelphia, Pa. Hydraulic rams arranged in series	294,085	Feb. 26	1688	{464 / 465}	26	761
Schutte, Louis, Philadelphia, Pa. Steam-jet ejector	295,293	Mar. 18	1211	337	26	1059
Schutz, Joseph M., Minneapolis, Minn. Flour-dressing machine	292,259	Jan. 22	1571	439	26	303
Schütz, Max, Fort Lee, N. J. Compound for preserving the soles of boots and shoes	292,956	Feb. 5	222	.....	26	463
Schutz, Samuel, New York, N. Y. Glass-top counter for stores	294,512	Mar. 4	215	61	26	866
Schuyler, Daniel A., and A. G. Waterhouse, assignors to Schuyler Electric Light Company, New York, N. Y. Dynamo-electric machine	291,944	Jan. 15	1171	327	26	226
Schuyler Electric Light Company. (See Schuyler and Waterhouse, assignors.)						
Schuyler Electric Light Company. (See Waterhouse, Addison G., assignor.)						
Schwab, Leo L., New York, N. Y. Bustle	295,438	Mar. 18	1380	383	26	1092
Schwars, Charles P., Corona, N. Y. Soldering-iron	294,407	Mar. 4	88	23	26	844
Schwarzwalder, Henry, New York, N. Y. Nut-lock	291,945	Jan. 15	1173	327	26	226
Schwanhaeusser, Gustavus. (See Hacker, Georg, assignor.)						
Schweizer, Jakob, Soleure, Switzerland. Gas-motor engine	292,864	Feb. 5	103	29	26	462
Schweizer, Jakob, Soleure, Switzerland. Apparatus for producing compressed air	292,957	Feb. 5	223	61	26	463
Scooneas, Frank, Detroit, Mich. Elevator stop mechanism	292,686	Jan. 29	2127	592	26	409
Scott Benjamin, Bloomington, Ill. Corn-planter	293,365	Feb. 12	772	{206 / 207}	26	583
Scott, Charles A., Boston, Mass. Railway-switch circuit-closer	292,687	Jan. 29	2128	592	26	409
Scott, Harmon. (See Hart, Scott, and Pancoast.)						
Scott, Lanphear H., Newark, N. J. Apple-parer	292,593	Jan. 29	2013	560	26	389
Scott, Roy B., assignor of one-fourth to J. B. Nicholas, Denton, Tex. Mail-bag fastening	295,294	Mar. 18	1211	337	26	1060
Scott, Walter, Plainfield, N. J. Printing-press	293,678	Feb. 19	1142	{318 / 319}	26	658
Scott, Walter, Plainfield, N. J. Stop-cylinder printing-machine	295,057	Mar. 11	895	245	26	989
Scott, Walter, Hoosic Falls, N. Y., and M. W. Manwaring, Bridgeport, Conn. Self-extinguishing lamp	291,630	Jan. 8	785	221	26	147
Scott, William. (See Harvey, Alexander, assignor.)						
Scribner, Charles E., Chicago, Ill. Telephone-circuit	294,336	Feb. 26	2015	553	26	817
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Condenser and test-circuit for multiple switch-boards	292,865	Feb. 5	106	29	2	462
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Testing apparatus for multiple switch-boards	292,866	Feb. 5	106	29	26	462
Scribner, Charles E., assignor, by mesne assignments, to Western Electric Company, Chicago, Ill. Night-signal circuit for telephone-exchanges	293,196	Feb. 5	541	143	26	536
Scribner, Charles E., assignor, by mesne assignments, to Western Electric Company, Chicago, Ill. Annunciator-switch and telephone-circuit	293,197	Feb. 5	542	144	26	536
Scribner, Charles E., assignor, by mesne assignments, to Western Electric Company, Chicago, Ill. Telephone-switch	293,198	Feb. 5	543	144	26	537
Scribner, Octavus F., Belle Fountain, Wis. Churn	293,528	Feb. 12	961	262	26	618
Scully, Benjamin B., Lynn, Mass. Necktie-supporter	293,792	Feb. 19	1305	361	26	685
Scutt, Hiram B., Joliet, Ill. Strand-wire for barbed fences	292,688	Jan. 29	2130	592	26	409
Seabrook, Isaac D., St. Helena Island, S. C. Rock-dredge	292,371	Jan. 22	1711	477	26	330
Seabury, Frederick W., Providence, R. I. Dental vulcanizer	295,821	Mar. 25	1881	522	26	1188
Seal, James J. (See Pinkham, Charles S., assignor.)						
Sealey, James, Chase, Mich. Lumber-binder	291,736	Jan. 8	906	271	26	179
Searls, Anson, Newark, N. J. Nut-lock	291,541	Jan. 8	665	199	26	126

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Searls, Anson, Newark, N. J. Whip-socket	292,061	Jan. 15	1308	365	26	252
Sears, George A., Syracuse, N. Y. Carriage-seat	294,916	Mar. 11	703	196	26	957
Seaton, Benjamin C., Cowan, Tenn. Vehicle running-gear	291,542	Jan. 8	666	189	26	126
Seavey, Lafayette W., assignor of one-half to C. Barnard, New York, N. Y. Changeable scenery for theaters	292,689	Jan. 29	2130	593	26	409
Sébillot, Amédée M. G., Paris, France. Blast-furnace for zinc ores	291,410	Jan. 1	493	138	26	88
Sébillot, Amédée M. G., Paris, France. Marine vessel	293,793	Feb. 19	1306	362	26	686
Sébillot, Amédée M. G., Paris, France, assignor to United States Ore Separating Company, New York, N. Y. Furnace for treating ores continuously	292,690	Jan. 29	2132	593	26	410
Sebold, Georg, Carlsruhe, Germany. Machine for making match-splints	293,794	Feb. 19	1307	{362 / 363}	26	686
Sedmihradsky, Adolf J. (See Levy and Sedmihradsky.)						
Seebold, Charles C., Middleburg, Pa. Ruffling attachment for sewing-machines	292,867	Feb. 5	107	29	26	463
Seeds, Robert S. (See Hollen, William H. H., assignor.)						
Seek, James H. (See Dake and Seek.)						
Seeley, David W., Albany, and A. Buckman, Schodack, N. Y.; said Buckman assignor to said Seeley. Baling-press	292,593	Jan. 29	2015	560	26	389
Selb, Frank. (See Selb, Simon and F.)						
Selb, Simon and F., Newark, N. J. Automatic rope-buckle	294,408	Mar. 4	90	23	26	845
Selb, Simon and F., Newark, N. J. Medical compound	294,687	Mar. 4	420	.....	26	901
Seibert, George, Wheeling, W. Va. Medical compound	294,280	Feb. 26	1941	532	26	804
Seibold, Otto F., Brooklyn, N. Y. Cartridge-shell	295,681	Mar. 25	1703	472	26	1156
Seiser, George F., Carrollton, Ky. Steam-engine	291,093	Jan. 1	93	27	26	20
Selby, William G., Princeville, Ill. Corn-planter	291,094	Jan. 1	94	27	26	20
Selden, Charles, St. Louis, Mo. Mechanical telephone	291,095	Jan. 1	95	27	26	20
Selden, Charles, St. Louis, Mo. Railway-train signal apparatus	291,096	Jan. 1	98	28	26	21
Selden, Charles, St. Louis, Mo. Static neutralizer for telegraphs	291,097	Jan. 1	100	28	26	21
Selden, Charles, St. Louis, Mo. Static neutralizer for telegraphs						
Seldomridge, William C., assignor of one-half to W. J. Clark, Coal City, Ind. Revolving book-case	294,337	Feb. 26	2016	553	26	818
Sellers, George H. (See Sellers, William and G. H.)						
Sellers, John, Jr. (See Sellers, William and G. H., assignors.)						
Sellers, William, Philadelphia, and G. H. Sellers, Ridley Park; said G. H. Sellers assignor to J. Sellers, Jr., Philadelphia, Pa. Upsetting and shaping metal bars	291,098	Jan. 1	102	28, 29	26	21
Sellon, Henry B., *et al.* (See Watt, John A., assignor.)						
Sellon, John S., Hatton Garden, county of Middlesex, England. Dynamo-electric machine	292,691	Jan. 29	2133	{593 / 594}	26	410
Sells, Hugh, Toronto, Ontario, Canada. Cider-press	293,795	Feb. 19	1309	363	26	687
Selwig, Johannes, Brunswick, Germany. Centrifugal governor	292,512	Jan. 29	1999	530	26	371
Semper, Conrad, Philadelphia, Pa. Utilizing waste calcium chloride and sulphate	292,260	Jan. 22	1572	.....	26	303
Seneff, Albert, assignor to himself and F. Mulhern, Laramie City, Wyo. Ter. Ore drier and separator	294,157	Feb. 26	1793	491	26	777
Senter, Fernando M., Columbus, Ohio. File-box	292,692	Jan. 29	2135	595	26	410
Senter, George F., New York, N. Y. Journal-lubricating box	293,614	Feb. 12	1061	293	26	635
Sergeant, Henry C., Denver, Colo. Rock-drill	295,682	Mar. 25	1704	472	26	1157
Servis, David, Sennett, assignor to Servis Railroad Tie Plate Company, New York, N. Y. Wear-plate for railway-ties	294,816	Mar. 11	582	161	26	935
Servis Railroad Tie Plate Company. (See Servis, David, assignor.)						
Severin, Adam, Jr., Chattanooga, Tenn. Mail-bag	295,439	Mar. 18	1381	383	26	1093
Seybold, Charles, assignor of one-half to A. Reid, Cincinnati, Ohio. Paging and numbering machine	293,199	Feb. 5	544	145	26	537
Seymour, Frederick J., Wolcottville, Conn., assignor of one-half to W. H. Brown, New York, N. Y. Obtaining aluminium	291,631	Jan. 8	787	221	26	148
Seymour, John, *et al.* (See Palmer, J. Forman, assignor.)						
Shaffer, Abraham, Cassopolis, Mich., assignor of one-fourth to C. E. Sage, Elkhart, Ind. Seeding-machine	294,158	Feb. 26	1795	491	26	777
Shaffer, Charles H., assignor of one-half to Jones, Woodruff & Co., Rockford, Ill. Re-touching-machine	294,817	Mar. 11	583	{161 / 162}	26	936
Shaffer, Edward P., Rochester, N. Y. Carpet-stretcher	292,693	Jan. 29	2136	595	26	411
Shaffer, William T., Evanston, Wyo. Ter. Broom-support	292,062	Jan. 15	1309	366	26	252
Shailer, N. Emory, Pullman, Ill. Lock-nut	292,513	Jan. 29	1901	530	26	371
Shailer, Nathen E., Pullman, Ill., assignor of two-thirds to S. W. and W. W. Shailer, Ivoryton, Conn. Lock-nut	292,063	Jan. 15	1310	366	26	252
Shailer, Simeon W., *et al.* (See Shailer, Nathen E., assignor.)						
Shailer, W. W., *et al.* (See Shailer, Nathen E., assignor.)						
Shakespeare, Benjamin F., Chester, Pa. Method of and apparatus for refrigerating paraffine and other oils	291,632	Jan. 8	788	221	26	148
Shaler, Ira W., Brooklyn, N. Y. Burner	294,409	Mar. 4	91	24	26	845
Shallus, William W., assignor of one-half to H. H. Keen, Lancaster, Pa. Car-door	291,411	Jan. 1	495	138	26	88
Shanahan, Winfield S., assignor of two-thirds to S. C. Hulbert, East Chatham, and M. G. Curtis, Troy, N. Y. Thill-coupling	295,440	Mar. 18	1382	383	26	1093
Shanaman, John, Annville, assignor of one-half to J. L. Knoll, Lebanon, Pa. Car-coupling	295,588	Mar. 25	1588	439	26	1136
Shannon, Lewis. (See Whaples, Ella, assignor.)						
Sharkey, James, Honey Creek, Ind. Car-door lock	294,513	Mar. 4	216	61	26	866
Sharp, Dennis P., Ithaca, N. Y. Vehicle-spring	291,412	Jan. 1	495	138	26	89
Sharp, Frank, Los Angeles, Cal. Can-opener. (Reissue)	10,443	Jan. 29	2273	628	26	435
Sharp, Mark. (See Baker, Elijah E., assignor.)						
Sharp, Richard B. (See Taylor, Sharp, and Cain.)						
Sharples, William E., Fall River, assignor of one-half to G. Draper & Sons, Hopedale, Mass. Bobbin-truck	295,441	Mar. 18	1382	384	26	1093
Sharpless, Henry W., Philadelphia, Pa. Store-service apparatus	295,442	Mar. 18	1383	384	26	1093
Sharpless, Henry W., Philadelphia, Pa. Store-service apparatus	295,443	Mar. 18	1384	384	26	1093
Sharpneck, Eliel L., Denver, Colo. Rotary drilling-engine	294,514	Mar. 4	216	61	26	866
Shaw & Co., E. L. (See Hovey, John H., assignor.)						
Shaw, Frank. (See Childs and Shaw.)						
Shaw, Frank E., South Attleborough, Mass. Clothes-pole	291,633	Jan. 8	790	221	26	148
Shaw, Hamlin J., Somerville, Mass. Mechanism for operating doors of buildings	294,917	Mar. 11	704	196	26	957
Shaw, Henry F., Boston, Mass. Slide-valve	292,261	Jan. 22	1573	439	26	303
Shaw, Jacob. (See Johnson, Willis, assignor.)						
Shaw, James H. (See McGinnis, William T., assignor.)						
Shaw, John H., assignor to Sargent & Co., New Haven, Conn. Snap-hook	295,683	Mar. 25	1706	472	26	1157
Shaw, Sumner, Boston, Mass. Railway-joint and fastening device	291,232	Jan. 1	270	76	26	49
Shaw, Thaxter, assignor of one-half to Hinckley & Egery Iron Company, Bangor, Me. Apparatus for preparing hides	294,410	Mar. 4	92	24	26	845

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Shaw, William A., Nottingham, England. Locking buckle	292,372	Jan. 22	1712	477	26	330
Shaw, William A., Pittsburg, Pa., assignor of one-half to L. H. Rogers, New York, N. Y. Insulated conductor of electricity	292,604	Jan. 29	2137	595	26	411
Shealy, Noah R., Pine Ridge, S. C. Horse-detacher	291,787	Jan. 8	967	271	26	179
Shedd, Charles M., *et al.* (See Nickerson, Fred. A., assignor.)						
Shedlock, James J., Barnet, county of Hertford, England. Apparatus for manufacturing illuminating-gas	295,822	Mar. 25	1883	522	26	1188
Sheehy, Robert J., New York, N. Y. Dynamo-electric machine	294,688	Mar. 4	420	117	26	901
Sheehy, Robert J., New York, N. Y. Electric-light regulator and cut-out	295,058	Mar. 11	897	246	26	989
Shelby, Christopher C., New York, N. Y. Stocking-supporter and sleeve-adjuster	291,233	Jan. 1	271	76	26	49
Sheldon, Richard B., Shortsville, N. Y. Spring-hoe for seeding-machines	292,568	Feb. 5	109	30	26	463
Sheldon, William E., Jr., Medford, Mass. Cabinet-maker's clamp	295,589	Mar. 25	1589	439	26	1136
Shelley, Frank W., and S. Kiser, Anderson, Ind. Brick-machine	291,413	Jan. 1	496	139	26	89
Shellman, Abraham, Charleston, Mich. Spring-tooth	291,946	Jan. 15	1174	327	26	226
Shepard, Charles T., assignor of one-half to W. Appleton, Jr., Albany, N. Y. Folding bedstead and crib	293,796	Feb. 19	1310	{363 364	26	687
Shepard, James W. (See Stein, Philip H., assignor.)						
Shepard, Wilbur L. (See Davis and Shepard.)						
Shepherd, Francis H., Davenport, Iowa. Wall-paper exhibitor	291,099	Jan. 1	105	29	26	22
Shepherd, Henry F., Philadelphia, Pa. Case printing and embossing machine	293,797	Feb. 19	1312	364	26	687
Shepherd, William H., Pittston, Pa. Coal-cleaner	291,788	Jan. 8	967	271	26	179
Shepler, John B., Toledo, Ohio. Machine for grinding paper-pulp	294,669	Mar. 4	423	118	26	901
Sherck, Isaac, Fremont, Ohio, assignor of six-eighths to W. F. Jobbins, New York, and G. E. Raymond, Brooklyn, N. Y. Turbine water-wheel	295,590	Mar. 25	1589	440	26	1136
Sheridan, Edwin R., Brooklyn, N. Y. Paper-cutting machine	293,200	Feb. 5	547	145	26	537
Sherley, Thomas H. (See Heinig and Stitzel, assignors.)						
Sherman, Alanson H., Somerville, Mass. Fog-alarm	294,918	Mar. 11	705	197	26	958
Sherman, George B., Danbury, Conn. Wire frame for hat-brims	294,515	Mar. 4	217	61	26	866
Sherman, Jeremiah G. (See Sherman, Samuel S. and J. G.)						
Sherman, John A. (See Norton and Sherman.)						
Sherman, Samuel S. and J. G., West McHenry, Ill. Earth-auger	295,444	Mar. 18	1385	384	26	1093
Sherman, Thomas, *et al.* (See Boorman, William, assignor.)						
Sherman, Wallace D., Grand Haven, Mich. Hanging circular saws	292,594	Jan. 29	2016	560	26	390
Sherwood, Calvin W., Chicago, Ill. Paper-file	295,591	Mar. 25	1591	440	26	1136
Sherwood, Will, Chicago, Ill. Automatic chalk-holder for billiard-tables	294,516	Mar. 4	218	62	26	867
Shickle, Frederick, St. Louis, Mo. Pipe-molding apparatus	295,205	Mar. 18	1093	{301 302	26	1037
Shillcock, Thomas, Paterson, N. J. Shedding mechanism for looms	293,798	Feb. 19	1313	{364 365	26	687
Shimer, George J., Freemansburg, assignor to S. J. Shimer, Milton, Pa. Cutter-head	293,529	Feb. 12	962	{262 263	26	618
Shimer, Samuel J. (See Shimer, George J., assignor.)						
Shinnick, William, Shelbyville, Ky. Side spring for vehicles	291,789	Jan. 8	968	271	26	179
Shipley, Charles. (See Baggs, John, assignor.)						
Shipp, Henry A., Fresno City, assignor of one-half to W. P. Hall, Dublin, Cal. Sheep-enumerator	292,373	Jan. 22	1712	{477 478	26	330
Shive, Robert R., Oxford, Miss., assignor of one-half to W. U. Shive, Ripley, Tenn. Churn	292,695	Jan. 29	2137	595	26	411
Shive, W. U. (See Shive, Robert R., assignor.)						
Shivler, Charles S., Brooklyn, N. Y. Electrical switch	295,445	Mar. 18	1386	385	26	1094
Shoemaker, George G., Edenburg, Pa. Apparatus for the manufacture of carbon-black	292,696	Jan. 29	2138	596	26	411
Shoemaker, Samuel, Nokomis, Ill. Harrow	291,414	Jan. 1	498	139	26	89
Sholder, Louis H., Cleveland, Ohio. Shovel and scoop	291,234	Jan. 1	272	76	26	49
Shoninger, B. (See Hofer, William, assignor.)						
Shoninger, B. (See Lomas, John R., assignor.)						
Shorey, Frank P., assignor of one-half to S. S. Wood, Auburn, N. Y. Shoe-lace, &c	293,590	Feb. 12	1043	288	26	632
Shorey, John, Lowell, assignor of two-thirds to P. E. Merrihew, Fairhaven, Mass. Sleeping-car	292,595	Jan. 29	2017	561	26	390
Shorey Spring Bed and Shade Roller Company. (See Graves and Gates, assignors.)						
Shortt, Edward G., Carthage, N. Y. Steam pumping-engine	292,697	Jan. 29	2140	{596 597	26	411
Showers, William G., Ridgway, Ill. Self-adjusting stove	292,064	Jan. 15	1312	366	26	253
Shreffler, Andrew H. (See Van Fleet, Alfred, assignor.)						
Shriver, Joseph K. (See Squires and Shriver.)						
Shugg, Proctor R., and G. Boyle, New York, N. Y. Making relief-printing plates or blocks	292,131	Jan. 22	1454	.....	26	282
Shupe, Eli. (See Durant and Shupe.)						
Shur, Milton M., Washington, D. C. Car-coupling	292,698	Jan. 29	2145	597	26	412
Shute, Edwin L., Ansonia, assignor to J. E. Earle, New Haven, Conn. Electric gas-lighter	295,059	Mar. 11	901	{246 247	26	990
Shuttleworth, Charles J., Springville, N. Y. Governor for water-wheels	295,060	Mar. 11	902	247	26	990
Sibley, Willard E., Weston, Mass. Pencil-sharpener	291,235	Jan. 1	273	77	26	50
Sichel, Albert, New York, N. Y. Finisher-plate for plug-tobacco presses	294,690	Mar. 4	424	118	26	901
Sichel, Albert, New York, N. Y. Tag for plug-tobacco, &c	294,691	Mar. 4	425	118	26	901
Sickels, Frederick E., New York, N. Y. Steam-engine	294,086	Feb. 26	1692	{465 466	26	762
Siegfried, John P., Toledo, Ohio. Combined punching and forging machine	292,262	Jan. 22	1574	{439 440	26	303
Siegley, Jacob, Wilkes-Barré, Pa. Bench-plane	294,919	Mar. 11	706	197	26	958
Sies, Enos L. (See Doherty and Sies.)						
Sievering, William, Newark, N. J. Sewer-basin	295,823	Mar. 25	1884	522	26	1188
Sigafoos, Russel B., Mendota, Ill. Plow	294,281	Feb. 26	1042	533	26	804
Silberman, Samuel J., New York, N. Y. Memorandum-book and pad	294,920	Mar. 11	707	197	26	958
Silver, Samuel N., Auburn, Me. Velocipede	293,366	Feb. 12	775	{207 208	26	583
Silver, Samuel N., Auburn, assignor to Chandler Water Motor Company, Lewiston, Me. Engine	291,543	Jan. 8	667	189	26	126
Simkin, George B., Chicago, Ill. Protection-belt and attachment	293,799	Feb. 19	1315	365	26	687
Simmons, Calvin H., Munford, Ala. Pea-thrasher and cotton-opener	293,098	Feb. 5	396	108	26	514
Simon, Edwin S., *et al.* (See Cohn, Abraham E., assignor.)						
Simon, Julius, New York, N. Y. Shirt	294,921	Mar. 11	708	197	26	958
Simon, Levi, *et al.* (See Cohn, Abraham E., assignor.)						
Simonds, George W., Boston, assignor of two-thirds to J. F. Emerson, Wakefield, and G. O. Carpenter, Boston, Mass. Brick	293,800	Feb. 19	1315	365	26	687

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Simonds, Nathan J., Woburn, Mass. Molding stiffeners for boots or shoes	292,514	Jan. 29	1902	{530 531 532 533	26	371
Simonson, Michael. (See Bernatein and Simonson.)						
Simpson, George, assignor of one-half to S. M. Titus, Moravia, N. Y. Whipping-guide for sewing-machines	291,100	Jan. 1	107	29	26	22
Sims, Albert C., Burlington, Kans. Machine for rounding straps	291,790	Jan. 8	969	272	26	179
Sims, Gardiner C., assignor to Armington & Sims Engine Company, Providence, R. I. Lubricator	292,446	Jan. 22	1808	504	26	348
Sinclair, Allen G., Brooklyn, N. Y. Canister-shot	292,065	Jan. 15	1312	366	26	253
Sinclair, James E., Baltimore, Md. Machine for washing, scouring, and burring wool	292,669	Feb. 5	110	30	26	463
Sinclair, James P., Mottville, assignor of one-half to B. Ellis, Moravia, N. Y. Butter-package	295,295	Mar. 18	1212	337	26	1060
Sinclair, John E., Worcester, Mass. Ratchet-drill	294,282	Feb. 26	1943	533	26	804
Sine, Samuel G., assignor of one-half to W. H. Augur, Peru, Ind. Combined crib and cradle	293,530	Feb. 12	964	263	26	618
Sinning, Charles. (See Desnoyers and Sinning.)						
Sinsel, William A., Waukesha, Wis. Window-sash	293,099	Feb. 5	397	108	26	514
Sinsel, William A., Waukesha, Wis. Sash-cord fastener	293,100	Feb. 5	398	109	26	514
Sisson, Asa C., Easton, Mass. Shutter worker and fastener	291,101	Jan. 1	108	30	26	22
Sisum, William H. H., Brooklyn, N. Y. Endless-rope railway	295,446	Mar. 18	1389	385	26	1098
Sjoberg, Carl J. A., Bridgeport, Conn. Machine for stitching eyelets	291,855	Jan. 8	1053	{294 295	26	194
Skidmore, Horace G. (See Harman and Skidmore.)						
Skidmore, James H., New York, N. Y. Roller-fixture	292,699	Jan. 29	2146	597	26	412
Skillen, Charlie M., Pasadena, Cal. Irrigating apparatus	291,947	Jan. 15	1174	327	26	226
Skinner, William A., Middletown, Conn. Carpet-stretcher	295,824	Mar. 25	1884	523	26	1189
Skraup, Zdenko H., Vienna, Austria-Hungary, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Manufacture of parachinanisol	295,825	Mar. 25	1885	.....	26	1189
Slafter, J. C. (See Clausen, Adler C., assignor.)						
Slater, Jacob G., assignor of one-half to N. Fitch, Albany, N. Y. Ventilator	295,061	Mar. 11	904	248	26	991
Slattery, Patrick, Charleston, S. C. Screw-driving mechanism for baling-presses and other uses	291,791	Jan. 8	970	272	26	179
Slaughenhaup, John N., Chambersburg, Pa. Straw-cutter	292,263	Jan. 22	1575	440	26	304
Sleeper, George W., assignor of one-half to W. A. Reed, Westborough, Mass. Manufacture of shoes	295,826	Mar. 25	1886	523	26	1189
Sloan, Elisha C., assignor to J. H. Chadwick, agent, Boston, Mass. Lead ribbon for metallic seals	293,600	Feb. 12	1044	288	26	632
Sloane, Leander E., Milwaukee, Wis. Car-coupling	295,664	Mar. 25	1709	473	26	1157
Sloane, Thomas O., Brooklyn, N. Y. Photometer	292,515	Jan. 29	1905	533	26	372
Small, Dexter M., Providence, R. I. Gas-generator	291,948	Jan. 15	1175	328	26	226
Small, George D. B., Chelsea, assignor of one-half to W. G. Emery, Boston, Mass. Device for holding open the leaves of books	294,087	Feb. 26	1695	466	26	762
Small, Josiah B. (See Matthews and Small.)	292,182	Jan. 22	1455	{408 409	26	285
Smalley, Clarence C., Manitowac, Wis. Feed-cutter						
Smiledge, John S. (See Murphy, Daniel H., assignor.)						
Smith, Aaron R., *et al.* (See Bradford, Addison, assignor.)	292,374	Jan. 22	1714	478	26	331
Smith, Adolph T., New York, N. Y. Tip for electric gas-burners	294,922	Mar. 11	709	198	26	958
Smith, Albert B., Fairfield, Nebr. Cold-air-blast centrifugal sirup-cooler	295,296	Mar. 18	1213	337	26	1060
Smith, Albert M., Brooklyn, N. Y. Pencil-sharpener	293,984	Feb. 19	1551	427	26	729
Smith, Alphonso B., San Francisco, Cal. Adjustable wrench	295,297	Mar. 18	1214	338	26	1060
Smith, Andrew V. (See Rorebeck, Henry, assignor.)						
Smith, Asahel, Chatham, Ontario, Canada. Seed-planter	10,453	Feb. 26	2035	558	26	821
Smith, C. B. (See Erdwins, William and J., assignors.)						
Smith, Charles F., West Bay City, Mich. Ash-pan for locomotives. (Reissue)						
Smith, Charles S. (See Hart, Charles N., assignor.)						
Smith, Daniel S. (See Tyler and Smith.)						
Smith, Dewitt C., Cincinnati, Ohio. Mosquito-bar and canopy-holder	294,088	Feb. 26	1696	466	26	762
Smith, Duncan, assignor of one-fourth to J. Blaum, Brooklyn, N. Y. Hasp-lock	295,827	Mar. 25	1887	523	26	1189
Smith, Edward S., Ovid, Mich. Vehicle-spring	293,801	Feb. 19	1316	366	26	688
Smith & Egge Manufacturing Company. (See Jewett, George M., assignor.)	294,923	Mar. 11	710	198	26	959
Smith, Eugene, San Francisco, Cal. Belt-hinge	292,141	Jan. 15	1402	393	26	269
Smith, Fannie S., assignor to H. and W. F. Thomas, Topeka, and L. C. Laurent, Shawnee County, Kans. Fence-post						
Smith, Forrest J., *et al.* (See Dane, Joseph C., assignor.)						
Smith, Frank C. (See Jones, Owen H., assignor.)	292,516	Jan. 29	1907	534	26	372
Smith, Franklin A., Jr., Providence, R. I. Staple or fastener	293,531	Feb. 12	964	263	26	619
Smith, Franklin A., Jr., Providence, R. I. Button	293,802	Feb. 19	1317	366	26	688
Smith, Franklin A., Jr., Providence, R. I. Combined button and fastener	294,089	Feb. 26	1697	467	26	762
Smith, Franklin A., Jr., Providence, R. I. Button-fastener	294,411	Mar. 4	93	24	26	845
Smith, Franklin A., Jr., Providence, R. I. Button-fastener	294,517	Mar. 4	219	62	26	867
Smith, Franklin A., Jr., Providence, R. I. Button-fastener	295,447	Mar. 18	1390	385	26	1098
Smith, Franklin A., Jr., Providence, R. I. Button-fastener	295,828	Mar. 25	1887	523	26	1189
Smith, Franklin A., Jr., Providence, R. I. Button hook or fastening	294,090	Feb. 26	1698	467	26	762
Smith, Frederick H., Baltimore, Md. Car-wheel	292,264	Jan. 22	1576	{440 441	26	304
Smith, George, Jr., New York, N. Y. Steam-engine	293,281	Feb. 12	663	178	26	502
Smith, George, Jr., assignor of one-fourth to L. H. Thorn and J. R. Langdon, New York, N. Y. Differential pulley	294,518	Mar. 4	220	62	26	867
Smith, George F., Bridgeport, Conn. Gage for pipe-threading machines						
Smith, George H., Chelsea, county of Middlesex, England. Apparatus for producing colors or designs on surfaces	292,220	Jan. 22	1514	425	26	294
Smith, George H., Chelsea, county of Middlesex, England. Apparatus for staining and coloring	292,221	Jan. 22	1517	{425 426	26	294
Smith, George H., Chelsea, county of Middlesex, England. Producing and fixing colors and designs on surfaces	292,222	Jan. 22	1519	.....	26	294
Smith, George W., *et al.* (See Stewart, George W., assignor.)						
Smith, George W., Milford, Mich. Damper regulator	293,367	Feb. 12	778	208	26	564
Smith, George W., Des Arc, Ark. Car-coupling	295,829	Mar. 25	1888	524	26	1189
Smith, Gerritt, Astoria, N. Y. Quadruplex telegraph	291,236	Jan. 1	274	77	26	50
Smith, Gilbert A., Davenport Centre, N. Y. Fruit-picker	291,792	Jan. 8	971	272	26	180
Smith, Gray & Co. (See Spence, Charles D., assignor.)						
Smith, Hamilton E., New York, N. Y. Roller for ironing-machines	292,958	Feb. 5	225	62	26	484

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Smith, Henry, Newark, N. J. Button	292,700	Jan. 29	2146	598	26	412
Smith, Henry L. (See Heath, John E., assignor.)						
Smith, Hervey. (See Blickensderfer and Smith.)						
Smith, Hervey, and G. C. Blickensderfer, Erie, Pa. Conveyer apparatus	295,448	Mar. 18	1392	385	26	1094
Smith, Ira A., East Berkshire, Vt. Chimney-protector	292,701	Jan. 29	2147	598	26	412
Smith, Isaac A., Dexter City, Mo. Cultivator	294,091	Feb. 26	1699	467	26	702
Smith, James. (See Stumpp, Joseph, assignor.)						
Smith, James, Boston, Mass. Broom-band	295,685	Mar. 25	1710	473	26	1158
Smith, James G., *et al.* (See Vassar, Robert G., assignor.)						
Smith, James G., Cleveland, Ohio. Grate	295,063	Mar. 11	907	248	26	991
Smith, Jefferson D. (See West, John C., assignor.)						
Smith, John, assignor to Croft, Wilbur & Co., Philadelphia, Pa. Candy-dropping machine	293,803	Feb. 19	1318	366	26	688
Smith, John B., Chicago, Ill. Steam-engine	291,794	Jan. 8	973	273	26	180
Smith, John B., C. A. Preseler, Newark, N. J., and E. Fox, Brooklyn, N. Y., assignors to themselves and A. Albright, Newark, N. J. Furnace for steam-boilers	294,924	Mar. 11	711	198, 199	26	959
Smith, John C., Miamisburg, Ohio. Binder-truck	293,292	Feb. 12	665	178	26	563
Smith, John S., assignor of one-half to T. G. Bennett, Jackson, Mich. Tile-machine	291,703	Jan. 8	972	272	26	180
Smith, John S., assignor of one-half to T. G. Bennett, Jackson, Mich. Tile-machine	293,804	Feb. 19	1320	366	26	688
Smith, John S., assignor of one-half to T. G. Bennett, Jackson, Mich. Making tile, &c.	295,298	Mar. 18	1215	338	26	1060
Smith, John S., Jackson, Mich., assignor to M. Nolan, Rushville, Ind. Table for tile-mills	294,519	Mar. 4	222	63	26	667
Smith, John T., Rockfall, Conn. Revolver	295,064	Mar. 11	907	248	26	991
Smith, Julius G., Margaretville, N. Y. Milk-cooler	293,805	Feb. 19	1321	367	26	688
Smith, Lewis, Wallace, Ill. Shipper's dry-goods box	292,066	Jan. 15	1313	367	26	253
Smith, Luther L., Ansonia, Conn., assignor to Postal Telegraph Company, New York, N. Y. Manufacture of compound electrical wire	293,532	Feb. 12	965	264	26	619
Smith, Lyman, Malta, Ill. Road-scraper	292,375	Jan. 22	1714	478	26	331
Smith, Lyman C. (See Brown, Alexander T., assignor.)						
Smith Machine Company, H. B. (See Kelley, William S., assignor.)						
Smith, Margret, New York, N. Y. Paper-file	291,237	Jan. 1	277	78	26	50
Smith, Nicholas, Perry, N. Y. Wagon-jack	293,806	Feb. 19	1323	367	26	689
Smith, Orson J., Farmer City, Ill. Screen for screening potatoes	293,368	Feb. 12	779	209	26	584
Smith, Ransom, Cottage Grove, Oreg. Washing-machine	295,065	Mar. 11	909	249	26	992
Smith, Robert P., *et al.* (See Tatum, C. Albert, assignor.)						
Smith, Stephen N., Providence, R. I. Method of and machine for making lacing-hooks	291,795	Jan. 8	975	274	26	181
Smith, T. King. (See Bozolich and Smith.)						
Smith, Thomas J. (See Moore, Edward L., assignor.)						
Smith, Thomas L., assignor of one-half to D. A. Mathews, New York, N. Y. Underground wire-conduit	293,533	Feb. 12	966	264	26	619
Smith, Thomas L., and W. S. Doig, Brooklyn, N. Y. Can-seaming machine	294,530	Mar. 4	223	63	26	667
Smith and Warner Axle Company, Alfred E. (See Kennedy and Warner, assignors.)						
Smith, William, Tomah, Wis. Windlass	292,376	Jan. 22	1716	478	26	331
Smith, William A. (See Speers, Noah W., Sr., assignor.)						
Smith, William A., Wilmington, Del. Book-case	293,101	Feb. 5	399	109	26	514
Smith, William C., and W. L. Hunter, Lone Pine, Cal.; said Smith assignor to said Hunter. Pack-saddle	294,925	Mar. 11	712	199	26	959
Smith, William D., assignor to himself, E. G. Stuckey, and R. Frew, Pittsburg, Pa. Alarm apparatus for clocks	294,338	Feb. 26	2016	553, 554	26	818
Smith, William T. (See Detrick and Smith.)						
Smith Woolen Machinery Company, James. (See Proctor, Josiah K., assignor.)						
Smith Woolen Machinery Company, James. (See Proctor and Huckins, assignors.)						
Smith, Wright D., Detroit, Mich. Fan-blower wheel	295,449	Mar. 18	1393	386	26	1095
Smith, Zillmon. (See Fay, Alphens, assignor.)						
Smither, William M., Keene, Ky. Trace-carrier	293,807	Feb. 19	1324	368	26	689
Smitten, Thomas W. F., Brooklyn, N. Y. Manufacture of buttons and studs	293,102	Feb. 5	400	109	26	515
Smoot, George W., assignor of one-half to J. H. D. Nordeman, Washington, D. C. Tobacco-pipe	295,066	Mar. 11	910	249	26	992
Smyth, Charles A., assignor of one-half to H. T. Brown, Hoopeston, Ill. Secondary battery	292,142	Jan. 15	1403	393	26	909
Sneider, Charles, New York, N. Y., assignor to P. Hake, Hoboken, N. J. Envelope or folding card	295,450	Mar. 18	1393	386	26	1095
Snell, Irving B., Philadelphia, Pa. Coloring photographs	291,544	Jan. 8	669	....	26	126
Snelus, George J., Workington, England. Apparatus for treating steel ingots	294,283	Feb. 26	1943	533	26	804
Snider, Allen J., and A. L. Kulp, Keota, Iowa. Excavator	295,451	Mar. 18	1394	386	26	1095
Snow, Stephen. (See Beal, Ezra F., assignor.) (Reissue.)						
Snowden, Daniel W. (See Imler and Snowden.)						
Snyder, Abraham B., Louisville, Ohio. Railway-signal	291,545	Jan. 8	670	189	26	127
Snyder, Charles F. (See Hess and Snyder.)						
Snyder, Frederick H. (See Hess and Snyder.)						
Snyder, Frederick H., Jersey City, N. J., assignor to Dynamite Projectile Company, New York, N. Y. Projectile for carrying high explosives	295,830	Mar. 25	1889	524	26	1189
Snyder, Helen M., Pine Bluff, Ark. Shoe-lace fastener	295,452	Mar. 18	1395	386	26	1095
Snyder, Jacob F. (See Hess and Snyder.)						
Snyder, W. Irving, *et al.* (See Greenough and Boardman, assignors.)						
Snyder, William D., Columbia City, Ind. Wardrobe-bedstead	293,808	Feb. 19	1324	368	26	689
Snyder, William H., Waynesborough, Pa. Saw-mill dog	294,692	Mar. 4	426	118	26	902
Sohn, John W. (See Carr, Robert S., assignor.)						
Solmans, Alden. (See Ryder, Martin H., assignor.)						
Solmans, Alden, South Norwalk, Conn. Manufacture of hat-linings	292,596	Jan. 29	2018	562	26	390
Somers, Isabel M. (See Monroe, Francis S., assignor.)						
Somerville, Andrew J., *et al.* (See Bayles, Thomas S., assignor.)						
Somes, Morton B., Fennville, Mich. Railway-jack	292,702	Jan. 29	2148	598	26	412
Sommer, George A., Brooklyn, N. Y. Folding step-ladder	295,299	Mar. 18	1215	338	26	1060
Sommer, John L., Newark, N. J. Shoe-buttoner	294,284	Feb. 26	1945	534	26	805
Sornborger, Martin M., Millville, Cal. Hay-loading machine	294,693	Mar. 4	427	119	26	902
Sottiaux, Amour, Strepy-Bracquegnies, Belgium. Pneumatic coal-cleaner	293,103	Feb. 5	401	109	26	515
Soulé, George W., Meridian, Miss. Device for wiring blind-slats	291,546	Jan. 8	670	190	26	127
Southern Cotton Harvesting Company. (See Mason, Charles T., Jr., assignor.)						
Southington Cutlery Company. (See Brill, Henry C., assignor.)						
Southwark Foundry and Machine Company. (See Pistor, Philip, assignor.)						
Southwestern Implement Company. (See Coombs, John, assignor.)						
Spaethe, Wilhelm. (See Schrever, Ernst, assignor.)						
Spalding, Cyrus G., Springfield, Mass. Adding-machine	293,809	Feb. 19	1325	368	26	689
Spangler, Albert E. (See Varwig and Spangler.)						
Spangler, David F., Santa Ana, Cal. Spading-machine	293,104	Feb. 5	402	110	26	515

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Spangler, Harrison D. (See Norris and Spangler.)						
Spangler, Harrison D., assignor to Norris & Brother, Rushville, Ind. Seeding-machine	294,694	Mar. 4	428	119, 120	26	902
Sparks, Henry H. (See Andrews and Sparks.)						
Sparrow, Frank M., assignor, by mesne assignments, to himself and W. E. Sparrow, Mattapoisett, Mass. Electric hot-air-furnace regulator	295,686	Mar. 25	1711	473	26	1158
Sparrow, William E. (See Sparrow, Frank M., assignor.)						
Spaulding, Albert H., Silver Creek, N. Y. Centrifugal bolting-reel	295,453	Mar. 18	1395	387	26	1095
Speaks, Charles W., Canal Winchester, Ohio. Rein-guard	294,581	Mar. 4	224	63	26	668
Spears, Henry H., Paris, Ky. Clover-seed harvester	292,377	Jan. 22	1717	479	26	331
Spears, Ralph R., Wheeling, W. Va. Lifting-jack	295,300	Mar. 18	1216	338	26	1061
Speer, Darius B., Blue Grass, Iowa. Machine for cutting green corn from the cob	295,831	Mar. 25	1891	524	26	1190
Speer, John M., Jr., Fort Branch, Ind. Grain-breaker and grinding-mill	291,634	Jan. 8	790	222	26	148
Speers, Noah W., Sr., assignor of one-half to W. A. Smith, Memphis, Tenn. Baling-press	294,818	Mar. 11	586	162	26	936
Speers, Noah W., Sr., assignor of one-half to W. A. Smith, Memphis, Tenn. Combined friction and cog gear	294,819	Mar. 11	587	163	26	936
Spence, Charles D., assignor to Smith, Gray & Co., Brooklyn, N. Y. Garment attachment	294,686	Mar. 4	419	117	26	901
Spence, William. (See Thompson and Spence.)						
Spencer, Albert H., Boston, Mass. Pen-holder	291,416	Jan. 1	500	140	26	89
Spencer, Francis M. (See Ford and Spencer.)						
Spencer, Gustavus M., *et al.* (See Ewing, Thomas, assignor.)						
Spencer, James I., Celaca, Mass. Fly-screen	293,915	Feb. 19	1462	404	26	713
Spencer, John S., New York, N. Y. Eyeglasses	292,959	Feb. 5	225	62	26	484
Spencer, Mary J., Brooklyn, N. Y. Scholar's companion	291,415	Jan. 1	499	140	26	89
Spencer, Simeon. (See McEwen and Spencer.)						
Sperry, Elmer A., assignor to J. Van Denburgh, Cortland, N. Y. Machine for cutting screw-threads	294,092	Feb. 26	1700	467	26	763
Spicer, William. (See Werts and Spicer.)						
Spiel, Johannes, Berlin, Germany. Gas-motor	291,102	Jan. 1	109	30, 31	26	22
Spilger, Otto. (See Barth and Spilger.)						
Spoerl, William H., Hamilton, Ohio. Furniture-caster	291,238	Jan. 1	277	78	26	50
Spofford, Joseph L. (See Gillette, King C., assignor.)						
Spooner, Horace, New York, N. Y. Child's carriage	291,949	Jan. 15	1177	328	26	227
Sprague, Charles L. (See Flemmings, Robert F., Jr., assignor.)						
Sprague, Edwin L., Boston, Mass. Manufacture of boots and shoes	291,796	Jan. 8	977	275	26	181
Sprague, Frank J., North Adams, Mass. Electro-dynamic motor	295,454	Mar. 18	1396	387	26	1095
Sprague, Joseph W. (See Barlow and Emery, assignors.)						
Spring, George H., Bath, assignor of one-half to E. J. Sogru, Rochester, N. Y. Ruffling attachment for sewing-machines	295,301	Mar. 18	1217	339	26	1061
Spross, George A., Toledo, Ohio. Bucket	292,703	Jan. 29	2149	598	26	412
Sprout, A. Rensselaer, Picture Rocks, Pa. Hoop	293,916	Feb. 19	1463	404	26	713
Sprout, A. Rensselaer, Picture Rocks, Pa. Machine for bending and scoring hoops	293,917	Feb. 19	1464	405	26	713
Sprout, A. Rensselaer, Pictnre Rocks, Pa. Machine for applying fasteners to hoops	293,918	Feb. 19	1465	405	26	713
Sprout, A. Rensselaer, Pictnre Rocks, Pa. Machine for applying fasteners to hoops	293,919	Feb. 19	1466	405	26	713
Sprout, A. Rensselaer, Picture Rocks, Pa. Hoop-fastener	291,797	Jan. 8	978	275	26	181
Spurgeon, Samuel J., Honstonia, Mo. Rein-protector	293,105	Feb. 5	404	110	26	515
Spurgeon, Samuel J., Honstonia, Mo. Circuit-closer for telegraph-keys						
Squier, George L. (See Stevens, Henry B., assignor.)						
Squires, John O., and J. K. Shriver, Baltimore, Md. Guard for molding-machines	293,534	Feb. 12	968	264	26	619
St. Amant, Francis, Boston, Mass. Piano-action	293,369	Feb. 12	780	209	26	584
Stafford, Charles. (See Richeson, Frank, assignor.)						
Stafford, Hiram P., Decatur, Ill. Drain-tile-perforating machine and perforated drain-tile	293,106	Feb. 5	405	110	26	515
Stafford, Marshall B., New York, N. Y. Ventilation	294,820	Mar. 11	587	163	26	936
Stahl, Henry, Cherry Mills, Pa. Hay-fork	292,378	Jan. 22	1718	479	26	331
Stahlberg, Charles, Corsicana, Tex. Escapement for torsion-pendulums	292,870	Feb. 5	112	30	26	464
Stalger, Christoph, Brooklyn, assignor to L. Sauter & Co., New York, N. Y. Finger-ring	293,983	Feb. 19	1552	427	26	729
Stamm, Anton, Leadville, Colo. Process of and apparatus for making coal-gas	291,417	Jan. 1	501	140	26	89
Stamp, William, Susquehanna Depot, Pa. Car-coupling	292,704	Jan. 29	2149	599	26	412
Standard Oil Company. (See Beach, William W., assignor.)						
Standard Trimmer Company. (See Griffin, John H., assignor.)						
Stanley, Henry D. (See Doolittle, George, assignor.)						
Stanley, Henry D., assignor to Bridgeport Brass Company, Bridgeport, Conn. Apparatus for covering electric conductors	291,239	Jan. 1	278	78	26	51
Stanley, Ira N., Brooklyn, N. Y., and W. A. Stedman, Newport, R. I. Gas-retort furnace	293,107	Feb. 5	406	110	26	516
Stanley, James, and T. F. Lemassena, assignors, by mesne assignments, to L. Lemassena, Newark, N. J. Manufacture of portions of a harness	293,535	Feb. 12	968	264	26	619
Stanley, James, and T. F. Lemassena; said Lemassena assignor to L. Lemassena, Newark, N. J. Saddle or saddle-tree	293,601	Feb. 12	1045	288	26	632
Stanley, William, Jr., Englewood, N. J. Air-pump	294,412	Mar. 4	94	24	26	845
Stanley Works. (See Hart, Charles E., assignor.)						
Stansbury, Alfred D., Colliers, W. Va. Car-coupling	294,695	Mar. 4	429	120	26	902
Stansbury, Joseph A., Chicago, Ill. Automatic advertising device	291,103	Jan. 1	111	31, 32	26	23
Stanton, Judson A., Sauk Rapids, Minn. Wrench	294,413	Mar. 4	95	25	26	845
Staples, John M., Rose Mills, Va. Velocipede	293,536	Feb. 12	970	265	26	619
Stark, William F., New York, N. Y. Voltaic plaster	293,679	Feb. 19	1144	319	26	658
Starkey, Nahum, and G. W. Crowther, Amesbury, Mass. Two-wheeled vehicle	294,926	Mar. 11	713	199	26	959
Starr, Eli T., Philadelphia, Pa., assignor of one-half to W. J. Peyton, Washington, D. C. Conduit for underground electric conductors	291,798	Jan. 8	979	275, 276	26	181
Starr, Eli T., Philadelphia, Pa., assignor of one-half to W. J. Peyton, Washington, D. C., H. M. Lewis and J. W. White, Philadelphia, Pa. Secondary-battery plate or electrode	295,423	Mar. 18	1402	388	26	1096
Starr, Eli T., assignor of one-half to H. M. Lewis, J. W. White, Philadelphia, Pa., and W. J. Peyton, Washington, D. C. Secondary battery and constructing electrodes therefor	295,456	Mar. 18	1404	388	26	1096
Starr, Eli T., assignor of one-half to H. M. Lewis, J. W. White, Philadelphia, Pa., and W. J. Peyton, Washington, D. C. Battery electrode or element	295,889	Mar. 25	1978	547, 548	26	1204
Staach, Emil R., Corning, N. Y. Chimney-cowl	295,667	Mar. 25	1712	474	26	1158
Stearns, Dewitt. (See Avery, Richard B., assignor.)						
Stearns, George E., New York, N. Y. Dovetailed grooved brick for building purposes	295,067	Mar. 11	911	249	26	992
Stedman, David R., assignor of one-half to G. H. Horning, Elizabeth, N. J. Permutation-lock	293,810	Feb. 19	1326	368	26	689
Stedman, David R., assignor of one-half to R. J. Bowen, Elizabeth, N. J. Shade-roller	294,414	Mar. 4	97	25	26	846
Stedman, Mortimer D., assignor to C. C. Dunham, Unionville, Conn. Conveyer for nut-machines	293,370	Feb. 12	781	209	26	584
Stedman, William A. (See Stanley and Stedman.)						
Steel, Joseph W., Goshen, Ind. Draft-equalizer	293,983	Feb. 12	666	178	26	563
Steele, Edward D., Waterbury, Conn. Button-fastener	292,960	Feb. 5	226	62	26	484

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Steffen, Carl, Vienna, Austria-Hungary. Extracting sugar from molasses, sirups, and the juices of plants	294,159	Feb. 26	1790	.....	26	778
Stein, Philip H., assignor of one-half to J. W. Shepard, Austin, Tex. Vehicle-wheel	292,143	Jan. 15	1404	393	26	269
Steinbach, George P., assignor to himself as trustee, Baltimore, Md. Shoo-fly rocker	295,457	Mar. 18	1405	388	26	1097
Steinbrecher, William H., Detroit, Mich. Shifting seat for sleighs	291,635	Jan. 8	792	222	26	149
Steinwender, Johan, Allegheny, Pa. Fire-escape	293,680	Feb. 19	1145	319	26	659
Stelzner, Julius A., Alt Chemnitz, Saxony, Germany. Process of and apparatus for the production of highly-purified alcohol	294,285	Feb. 26	1945	534	26	805
Stemmerich, Hermann W., Pittsburg, Pa. Oil-cup	293,681	Feb. 19	1146	320	26	659
Stenger, Andrew, Brooklyn, N. Y. Harness-rosette, door-plate, &c.	291,418	Jan. 1	502	141	26	90
Stephen, Joseph S., Joliet, Ill. Machine for making barb-wire	295,068	Mar. 11	912	{249 250 251}	26	992
Stephens, Richard, Neganmee, Mich. Ratchet-drill	291,419	Jan. 1	502	141	26	90
Stephenson, John, New York, N. Y. Car-axle box	292,379	Jan. 22	1719	479	26	331
Stephenson, John S., Ashburnham, Ontario, Canada. Construction of canoes	292,183	Jan. 22	1457	409	26	285
Stetson, John. (See Crisp, Joseph E., assignor.)						
Stettheimer, Jacques R., and T. Leis, Rochester, N. Y. Veterinary medicine-spoon	291,050	Jan. 15	1180	328	26	227
Steudel, George, Chilton, Wis. Plow	295,069	Mar. 11	916	251	26	993
Stevens, Alonzo C., Elmira, N. Y. Car-coupling	294,696	Mar. 4	430	120	26	903
Stevens, Amasa W., East Brookfield, assignor to F. F. Bullard, Palmer, Mass. Barbed fence-wire	291,420	Jan. 1	503	141	26	90
Stevens, Amos and A. L., Philadelphia, Pa. Steam rock-drill	293,371	Feb. 12	782	210	26	585
Stevens, Arthur L. (See Stevens, Amos and A. L.)						
Stevens, Asher B., Stapleton, N. Y., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Convertible nursery-chair	291,951	Jan. 15	1181	329	26	228
Stevens, Asher B., Stapleton, N. Y., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Convertible chair	291,952	Jan. 15	1182	329	26	228
Stevens, Asher B., Stapleton, N. Y., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Child's chair	292,067	Jan. 15	1315	367	26	253
Stevens, Asher B., Stapleton, N. Y., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Child's chair	292,068	Jan. 15	1315	367	26	253
Stevens, Benjamin D., Burlington, Vt. Combined reflector and globe for lamps and lanterns	292,871	Feb. 5	113	30, 31	26	464
Stevens, Henry B., assignor to G. L. Squier, Buffalo, N. Y. Centrifugal machine	292,705	Jan. 29	2150	599	26	413
Stevens, Henry M., assignor to W. G. Howe, Boston, Mass., and C. Storer. Commutator for electric generators	295,206	Mar. 18	1094	303	26	1038
Stevens, John, Woodstown, N. J. Can-filling machine	291,799	Jan. 8	984	276	26	182
Stevens, Joseph, San Francisco, Cal. Steam-boiler	294,967	Mar. 11	714	199	26	950
Stevens, William K., Mansfield, Ohio. Feed-water purifier	293,537	Feb. 12	971	265	26	610
Stevens, William X., Washington, D. C. Bicycle-brace	293,284	Feb. 12	667	179	26	563
Stevenson, George B., Upper Sandusky, Ohio. Connecting-rod	292,380	Jan. 22	1720	479	26	332
Stevenson, Robert, assignor of part to C. Stroebe, Ferrysburg, Mich., and A. Peck, Newburg, N. Y. Fire-escape	292,767	Jan. 29	2254	624	26	431
Stevenson, Thomas S., St. Louis, Mo. Electric-wire connector	294,928	Mar. 11	715	200	26	960
Stever, Jeremiah, assignor to Bridgeport Automatic Safety Ladder and Hardware Company, Bridgeport, Conn. Fire-escape	294,522	Mar. 4	225	63, 64	26	868
Stever, Jeremiah, assignor to Bridgeport Automatic Safety Ladder and Hardware Company, Bridgeport, Conn. Fire-escape	294,523	Mar. 4	226	64	26	868
Steward, Charles. (See Ulm, Samuel B., assignor.)						
Stewart, George W., assignor to E. Holland, Atlanta, Ga., G. G. Lansing, New York, N. Y., T. P. Brown, Toledo, Ohio, and G. W. Smith, Lafayette, Ind. Bearing for car-axle journals	291,547	Jan. 8	673	191	26	127
Stewart, George W., Atlanta, Ga., assignor to J. F. Wenman, New York, N. Y. Car-axle	293,201	Feb. 5	548	145	26	538
Stewart, John C. (See Babcock, Charles M., assignor.)						
Stewart, John L., Philadelphia, Pa. Apparatus for manufacturing gas. (Reissue)	10,436	Jan. 8	1064	297	26	196
Stewart, John L., Philadelphia, Pa. Process of and apparatus for manufacturing gas	291,421	Jan. 1	504	{141 142}	26	90
Stewart, John L., Philadelphia, Pa. Process of and apparatus for manufacturing gas	295,832	Mar. 25	1893	525	26	1190
Stewart, Robert, Pittsfield, Ill. Steam-boiler cleaner	295,070	Mar. 11	917	251	26	993
Stewart, Thomas S., Saltsburg, Pa. Car-dumper	291,801	Jan. 8	986	277	26	182
Stewart, Thomas S., Saltsburg, Pa. Dumping-wagon	295,071	Mar. 11	918	252	26	993
Stewart, Thomas S., Saltsburg, Pa. Automatic end-gate	295,072	Mar. 11	919	252	26	993
Stewart, Timothy B., Hartford, Conn. Fare-box	293,811	Feb. 19	1330	369	26	689
Stewart, William W., Brooklyn, N. Y. Fountain stylus-pen	291,800	Jan. 8	985	276	26	182
Stewart, William W., Brooklyn, N. Y. Band-fastening	293,812	Feb. 19	1331	369	26	690
Stibolt, Casper H. (See Travis and Stibolt.)						
Stickle, Charles S., Pekin, Ill. Harvester	293,202	Feb. 5	549	146	26	538
Stickle, William H., Terre Haute, Ind. Fifth-wheel	295,458	Mar. 18	1406	{388 389}	26	1097
Stiemke, Edward, Milwaukee, Wis. Capped wood-screw	294,524	Mar. 4	227	64	26	868
Stier, Heinrich, Zwickau, Saxony, Germany. Coke-oven	291,422	Jan. 1	506	{142 143}	26	91
Stieringer, Luther, New York, N. Y. Combined gas and electric-light fixture	294,607	Mar. 4	431	120	26	903
Stiles, Edmund P., Austin, Tex. Dental chair	294,286	Feb. 26	1948	534	26	805
Stiles, George A., West Gardner, assignor to W. Hill, Boston, Mass. Syringe	292,381	Jan. 22	1721	480	26	332
Stiles, George A., West Gardner, assignor of one-half to C. M. Parker, Fitchburg, Mass. Wood-screw	295,833	Mar. 25	1896	525	26	1191
Stiles, Luther R., Chicago, Ill. Stock-car	293,285	Feb. 12	669	179	26	563
Stiles, Norman C., Middletown, Conn., assignor to Indianapolis Machine and Bolt Works, Indianapolis, Ind. Die for forming pulley-centers	294,698	Mar. 4	434	121	26	903
Stine, John F. (See Albach, W. Harrison, assignor.)						
Strickler, Albert E., Worcester, Mass. Heel-burnishing tool	292,597	Jan. 29	2019	562	26	390
Stitzel, Frederick. (See Heinig and Stitzel.)						
St. John, Garland B., Cedar Rapids, Iowa. Chair	293,813	Feb. 19	1333	370	26	690
St. John, Garland B., Jackson, Mich. Plow	294,699	Mar. 4	435	121	26	903
Stock, Charles F., Peoria, Ill. Ball-trap	293,814	Feb. 19	1334	370	26	690
Stock, Charles F., Peoria, Ill. Ball-trap	295,302	Mar. 18	1219	339	26	1061
Stockham, Henry C., and J. Adams, Germany, Ohio. Fire-escape	291,240	Jan. 1	280	78	26	51
Stockmann, Henry, Brooklyn, N. Y. Fountain-pen	294,700	Mar. 4	436	121	26	904
Stockwell, Emory and H. C., assignors to Yale & Towne Manufacturing Company, Stamford, Conn. Time-lock	293,815	Feb. 19	1336	371	26	690
Stockwell, Emory and H. C., assignors to Yale & Towne Manufacturing Company, Stamford, Conn. Time-lock	293,816	Feb. 19	1337	371	26	690
Stockwell, Emory, assignor to Yale & Towne Manufacturing Company, Stamford, Conn.) Permutation-lock	294,701	Mar. 4	437	{121 122}	26	904

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Stockwell, Emory, assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Safe-lock	294,821	Mar. 11	588	163	26	936
Stockwell, Herbert C. (See Stockwell, Emory and H. C.)						
Stockwell, Levi W., Cleveland, Ohio. Electric motor	291,636	Jan. 8	793	223	26	149
Stockwell, Levi W., Cleveland, Ohio. Regulator for electric motors	292,382	Jan. 22	1722	480	26	332
Stockwell, Levi W., Cleveland, Ohio. Regulator for electric motors	292,265	Jan. 22	1578	441	26	304
Stoddard, Joshua C., Springfield, Mass. Fire-escape	294,822	Mar. 11	589	163	26	937
Stoddard, Oscar, Detroit, Mich. Knob attachment						
Stoddard, Solomon P., trustee. (See Knight, Edgar, assignor.)						
Stoelker, Otto. (See Rollins, Lafayette, assignor.)						
Stofer, Samuel J., North Liberty, Ind. Fire-escape	291,423	Jan. 1	508	143	26	91
Stone, Albert H., New York, N. Y. Depilating hides and skins	291,953	Jan. 15	1183	.....	26	228
Stone, Edward, assignor of one-half to J. Hodgson, Cortland, N. Y. Railway-switch	292,144	Jan. 15	1405	394	26	269
Stone, Edward, assignor of one-half to J. Hodgson, Cortland, N. Y. Railway-switch	292,145	Jan. 15	1406	394	26	270
Stone, Edward, assignor of one-half to J. Hodgson, Cortland, N. Y. Railway-switch						
Stone, John. (See Potter and Stone.)						
Stone, Marvin C., assignor of one-half to J. McCormick, Washington, D. C. Umbrella	291,104	Jan. 1	113	32	26	23
Stone, Marvin C., assignor of one-half to J. McCormick, Washington, D. C. Umbrella	295,073	Mar. 11	919	252	26	993
Stone, Ross C., New York, N. Y. Telegraph-wire supporter	295,074	Mar. 11	920	252	26	993
Stone, Ross C., New York, N. Y. Telegraphic transmitter	295,075	Mar. 11	922	253	26	994
Stone, Ross C., New York, N. Y. Telegraphic transmitter	295,207	Mar. 18	1095	303	26	1038
Stone, Ross C., New York, N. Y. Electrical conductor	295,634	Mar. 25	1897	525	26	1191
Stonemetz, John H., Erie, Pa. Tension device for tapes of paper-folding machines						
Storch, Peter L. (See Hoyt and Storch.)						
Storer, Charles, *et al.* (See Stevens, Henry M., assignor.)						
Storm, Alfred W., *et al.* (See Worcester, J. Warren, assignor.)						
Storm, Edwin R., *et al.* (See Worcester, J. Warren, assignor.)	291,637	Jan. 8	796	223	26	149
Story, John, Castle Shannon, Pa. Glass bottle-stopper	291,638	Jan. 8	797	223	26	149
Story, John, Castle Shannon, Pa. Bottle and stopper	295,303	Mar. 18	1220	339	26	1061
Story, Joseph M., Spring City, Tenn. Saw-mill	295,062	Mar. 11	906	248	26	991
Stout, Elisha, Lambertville, N. J. Manufacture of rubber boots or shoes						
Stout, James A., assignor to Harrison Machine Works, Belleville, Ill. Superheating attachment for steam-boilers	292,146	Jan. 15	1407	394	26	270
Storer, Daniel C., Freeport, assignor to H. Ellwood, De Kalb, Ill. Wire-barbing machine	295,208	Mar. 18	1096	{303 304}	26	1038
Storer, Daniel C., Freeport, assignor to H. Ellwood, De Kalb, Ill. Wire-barbing machine	293,986	Feb. 19	1552	428	26	730
Sfover, David, La Motte, Iowa. Cream-skimming apparatus	291,105	Jan. 1	115	32	26	23
Stow, Lorenzo, Rome, Tenn. Hopple	292,517	Jan. 29	1908	534	26	372
Strait, E. Smith, Troy, N. Y. Combined collar-stud and cravat-holder	292,961	Feb. 5	227	62	26	484
Strait, Hiram, Troy, N. Y. Bicycle	291,639	Jan. 8	798	224	26	149
Stranders, Walter, New York, assignor to E. I. Horsman, Brooklyn, N. Y. Sliced picture	292,598	Jan. 29	2020	562	26	390
Stranders, Walter, New York, assignor to E. I. Horsman, Brooklyn, N. Y. Sliced picture	292,266	Jan. 22	1579	441	26	304
Strater, Herman, Jr., Boston, Mass. Pipe-coupling for beer-kettles						
Stratton, John T., *et al.* (See Doremus, Willard D., assignor.)						
Stratton, Samuel R., *et al.* (See Doremus, Willard D., assignor.)						
Straup, Thomas P., and L. Morgenstern, Easton, Pa.; said Morgenstern assignor to said Straup. Lock-hinge	294,746	Mar. 4	486	136	26	912
Strayer, William H., North Manchester, and W. H. Planck, Logansport, Ind. Vehicle-runner	292,383	Jan. 22	1723	480	26	332
Streator, H. E. (See Haskell, John T., assignor.)						
Streeter, Herbert A. (See Amet, Edward H., assignor.)	294,525	Mar. 4	228	65	26	868
Stremel, Charles F., Cresco, Iowa. Hand-truck						
Strobel, Fredrick. (See Huber and Strobel.)						
Stroebe, Charles, *et al.* (See Stevenson, Robert, assignor.)						
Stromberg, Charles J. (See Bohman, August, assignor.)						
Strong, Charles E. (See Tracy, Frederick K., assignor.)						
Strong, Frederick S., assignor to Carver Cotton Gin Company, East Bridgewater, Mass. Leather-splitting machine	291,641	Jan. 8	800	224	26	150
Strong, Levi C., Greenfield, Mass., assignor to Albany Agricultural Company, Albany, N. Y. Animal-power	291,640	Jan. 8	799	224	26	150
Strong, William, Kalamazoo, Mich. Picture-case for tombstones	291,106	Jan. 1	116	32	26	24
Stuart, Peter. (See Berry and Stuart.)						
Stubbs, Elbridge W., Lincolnton, N. C. Turbine water-wheel	294,929	Mar. 11	717	200	26	960
Stuckey, Emil G., *et al.* (See Smith, William D., assignor.)						
Studley, Edward H. (See Copithorn, John T., assignor.)						
Studley, Elbridge G., Grand Rapids, Mich. Fly-net	295,459	Mar. 18	1407	389	26	1097
Stultz, Henry P., Santa Fé, N. Mex. Ter. Hair-dressing and wash for silks, laces, embroidery, and woolen goods	293,372	Feb. 12	785	210	26	585
Stumpp, Joseph, assignor to himself and J. Smith, Brooklyn, N. Y. Folding kite	294,526	Mar. 4	228	65	26	869
Sturtevant, Thomas L., Framingham, Mass. Attrition-mill	291,954	Jan. 15	1184	329	26	228
Subers, Thomas N., assignor of one-third to G. E. Buckley, Philadelphia, Pa. Scaffolding	295,592	Mar. 25	1593	441	26	1137
Sugru, Edward J. (See Spring, George H., assignor.)						
Sullivan Machine Company. (See Ball, Albert, assignor.)						
Sunderland, Leslie E., Joliet, Ill. Wire-stretcher	291,955	Jan. 15	1185	{329 330}	26	228
Sunderland, Leslie E., Joliet, Ill. Machine for making barbed wire	293,538	Feb. 12	972	266	26	620
Sundquist, Henning, Chicago, Ill. Locking-latch	293,987	Feb. 19	1553	428	26	730
Sutch, John B., and W. C. McElheny, Pittsburg, Pa. Nut-lock	291,642	Jan. 8	801	225	26	150
Sutherland, Mosher A., New York, N. Y. Grain-drier	294,987	Feb. 26	1951	535	26	806
Suthpen, Josephus J., Washington, D. C. Attachment for bridles	293,108	Feb. 5	409	111	26	516
Sutton, Henry M. (See Oram, Sutton, and Garrett.)						
Sutton, Lyman W., Jr., Newton, assignor to J. F. Phillips, Jersey City, N. J. Receiving-telephone	291,802	Jan. 8	987	277	26	182
Sutton, William A., New York, N. Y. Skate	293,373	Feb. 12	786	210	26	586
Svenson, Fritz S., Lund, Skåne, Sweden. Compasses	295,076	Mar. 11	924	253	26	994
Svenson, Fritz S., Lund, Skåne, Sweden. Lock	295,077	Mar. 11	925	253	26	994
Swab, Charles H. (See Manz and Swab.)						
Swab, Joseph F., Cedar Rapids, Iowa. Shipping milk-can	293,682	Feb. 19	1147	320	26	659
Swallow, Isaac W., Kingston, Pa. Locomotive-grate	293,602	Feb. 12	1046	289	26	632
Swan, Alfred, Gateshead, county of Durham, England. Holder for incandescent electric lamps	292,447	Jan. 22	1809	504	26	349
Swan, George E., Beaver Dam, Wis. Arrow	295,304	Mar. 18	1222	340	26	1061
Swan, Henry C., Swanville, Pa. Toy whistle	291,548	Jan. 8	673	191	26	127
Swanson, Abraham H., *et al.* (See Melvin and Clute, assignors.)						
Swanton, Thomas, assignor to K. Upton, Peabody, Mass. Vat or kettle for reducing or treating animal or vegetable matter	295,508	Mar. 18	1477	406	26	1109
Swartz, John H. (See Gleason, Franklin A., assignor.)						
Swayze, Theodore F., *et al.* (See Doremus, Willard D., assignor.)	294,160	Feb. 26	1797	492	26	778
Sweeney, John M., Wheeling, W. Va. Metallic steam-pipe connection						

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Sweeper Company, Otto. (See Wright, Thomas, assignor.)						
Sweet, Dexter B., Englewood, Ill. Photographic shutter	292,707	Jan. 29	2153	600	26	413
Sweet, Newton H., Stephentown Centre, N. Y. Butter-cutter	292,706	Jan. 29	2152	599	26	413
Sweet, Parker H., Jr., Washington, D. C. Instrument for attaching buttons to fabrics, &c.	292,518	Jan. 29	1908	534	26	372
Sweet, Thomas A., Cambria, Cal. Fastening for tool-handles	291,956	Jan. 15	1187	330	26	229
Sweetland, Jerome B., Pontiac, Mich. Ore-pulverizer	292,384	Jan. 22	1723	481	26	332
Sweetland, William L., assignor of one-half to F. Chillingworth, New Haven, Conn. Pipe-cutter	294,339	Feb. 26	2023	554	26	819
Swenson, Hans P., assignor to Mitchell, Lewis & Co., Racine, Wis. Wagon end-gate	292,385	Jan. 22	1726	481	26	333
Swift, Charles N., New York, N. Y. Cigar-stand	293,374	Feb. 12	786	210	26	586
Swift, George P., Columbus, Ga. Plow-point	292,448	Jan. 22	1810	505	26	349
Swindell, William, Allegheny, Pa. Regenerator-furnace	295,209	Mar. 18	1099	304	26	1039
Swingle, Alfred, San Francisco, Cal. Machine for thrashing and separating grain, peas, &c	295,305	Mar. 18	1222	340	26	1062
Switzer, David, Mt. Pleasant, Mich. Device for removing mainsprings from clocks	291,803	Jan. 8	988	277	26	182
Sylvester, George, *et al.* (See Kessler, Johann K., assignor.)						
Symonds, John L., Detroit, Mich. Rat-trap	293,683	Feb. 19	1148	320	26	659
Taber, Loyal C., Syracuse, N. Y. Traction-engine	294,930	Mar. 11	718	200 201	26	960
Talbot, Charles N., Flushing, N. Y. Device for synchronizing clocks	292,962	Feb. 5	228	63	26	484
Talcott, William A., *et al.* (See Whitney, Charles, assignor.)						
Talley, William G. (See Kelgwin and Talley.)						
Talmage, Charles H., Atchison, Kans. Railway switch-stand	291,804	Jan. 8	988	277	26	182
Tannehill, Edward H., Malvern Junction, Ark. Tag-holder	294,931	Mar. 11	720	201	26	960
Tappeiner, John C., Bisbee, Ariz. Ter. Poultry-fountain	294,932	Mar. 11	720	201	26	961
Tarbox, James E., Lynn, Mass. Watchman's time-detector	293,684	Feb. 19	1149	321	26	659
Tarr, Daniel, Wellsville, Ohio. Baling-machine	292,872	Feb. 5	114	31	26	464
Tarrant, Robert, executor. (See Rollar, William.)						
Tasker, Joseph R. (See Tasker, Stephen P. M., assignor.)						
Tasker, Stephen P. M. (See Bowers, William H. H., assignor.)						
Tasker, Stephen P. M., *et al.* (See Feldmann, Hermann B., assignor.)						
Tasker, Stephen P. M., Philadelphia, Pa. Chuck for holding fittings	292,509	Jan. 29	2021	562 563	26	391
Tasker, Stephen P. M., Philadelphia, Pa. Automatic stopper for bottles, jars, &c.	294,415	Mar. 4	98	25	26	846
Tasker, Stephen P. M., assignor to J. R. Tasker, Philadelphia, Pa. Bottle-stopper	292,440	Jan. 22	1811	505	26	349
Tatum, C. Albert, assignor to himself and F. M. Underhill, New York, N. Y., J. Whitall, R. P. Smith, C. Roberts, W. H. Nicholson, Philadelphia, Pa., and J. Mickle, Millville, N. J. Fastening for fruit-jar caps, &c	292,366	Jan. 22	1727	481	26	333
Tatum & Co., S. C. (See Tatum, Samuel C., Jr., assignor.)						
Tatum, John W., Chester, Pa. Paper box	291,805	Jan. 8	989	278	26	183
Tatum, Samuel C., Jr., assignor to S. C. Tatum & Co., Cincinnati, Ohio. Sewing-machine frame	293,109	Feb. 5	410	111	26	516
Tawney, William H., Louisburg, Kans. Churn	295,460	Mar. 18	1408	389	26	1097
Taylor, Alfred, Jr., Bridgeport, Conn. Corset-busk	294,933	Mar. 11	721	201	26	961
Taylor, Charles F., Springfield, Mass. Method of and machinery for treating rags for paper-stock	292,573	Feb. 5	115	31, 32	26	464
Taylor, Edward T., assignor to G. G. Calkins, Chicago, Ill. Lock-trimming	294,934	Mar. 11	722	202	26	961
Taylor, Frederick, Lowell, Mass. Horse-hitching bar	292,519	Jan. 29	1910	534	26	373
Taylor, George. (See Worden, Taylor, Bower, and Colby.)						
Taylor, George, Everett, Mass. Ice-machine	294,693	Feb. 26	1701	468	26	763
Taylor, George, Redding, Cal. Medical compound	294,288	Feb. 26	1953	.....	26	806
Taylor, George, Everett, and F. S. Pearson, Medford, Mass. Ice-making machine	294,935	Mar. 11	723	202	26	961
Taylor, George W. and S., Smyrna, Del. Cultivator	293,920	Feb. 19	1467	406	26	714
Taylor, Harrison G., Toronto, Ontario, Canada. Car-wheel	291,807	Jan. 8	992	278	26	183
Taylor, Henry, R. B. Sharp, and T. J. Cain, Cleveland, Ohio; said Cain assignor to said Sharp and Taylor. Stop and waste cock	291,808	Jan. 8	993	278	26	183
Taylor, Hiram B. (See Henry and Taylor.)						
Taylor, Joseph. (See Creighton and Taylor.)						
Taylor, Robert. (See Mobberley and Taylor.)						
Taylor, Samuel. (See Taylor, George W. and S.)						
Taylor, Theodore F., Chicago, Ill. Automatic telegraph	293,110	Feb. 5	411	111	26	516
Taylor, Theodore F., Brooklyn, N. Y. Automatic-telegraph system	293,111	Feb. 5	414	111	26	517
Taylor, Theodore F., Brooklyn, N. Y. Marking-stylus for automatic telegraphs	293,112	Feb. 5	418	112	26	517
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Lock	294,702	Mar. 4	436	122	26	904
Taylor, William. (See Beeman, Taylor, and King.)						
Taylor, William S., *et al.* (See Fairman, Simon, assignor.)						
Taylor, William T., Whitaker's, N. C. Seed-cotton elevator and cleaner	291,806	Jan. 8	990	278	26	183
Teeter, Charles E. (See Teeter, William P. and C. E.)						
Teeter, William P. and C. E., Trotwood, Ohio. Gate	294,823	Mar. 11	590	164	26	937
Teeters, Elisha P., Alliance, Ohio. Lock	293,375	Feb. 12	787	211	26	586
Tegg, George W., Peoria, Ill. Nut-lock	293,113	Feb. 5	419	112	26	517
Teller, Carl F., assignor to C. O. Weber and T. Maynz, Offenbach-on-the-Main, Germany. Combined letter-box and mail-bag	292,069	Jan. 15	1317	368	26	254
Temple, Bernard M. (See Crowley and Temple.)						
Tenant, Hanson P., assignor to Dublin Agricultural Company, Dublin, Ind. Grain-drill	291,809	Jan. 8	994	279	26	183
Tennent, John C., Glyndon, Md. Velocipede	292,708	Jan. 29	2154	600	26	413
Tenney, Cornelius, Brooklyn, N. Y. Handsaw	291,424	Jan. 1	509	143	26	91
Terman, James W., assignor to J. Cratty, Peoria, Ill. Corn harvester and husker	291,643	Jan. 8	802	225	26	150
Terreforte, Juan de M., assignor to himself and A. M. Molina, New York, N. Y. Printing and mounting photographic pictures	295,688	Mar. 25	1713	.....	26	1158
Terrell, Henry D., Starrsville, Ga. Cultivator	292,070	Jan. 15	1318	368	26	254
Terry, Thomas J., Ashland, Mo. Open-link	293,817	Feb. 19	1338	372	26	691
Teter, William L., Philadelphia, Pa. Manufacture of paper from grain-cuticles	295,835	Mar. 25	1598	.....	26	1191
Tewksbury, Andrew J., Haverhill, Mass. Manufacture of turned shoes	291,810	Jan. 8	995	279	26	184
Thackrah, Benjamin. (See Hegeman and Thackrah.)						
Thalheimer, Albert, Reading, Pa. Cigar-maker's board	291,644	Jan. 8	804	225	26	151
Thatcher, Edward C., Kansas City, Mo. Remedy for hernia	295,078	Mar. 11	926	.....	26	995
Thatcher, Lewis C., Chicago, Ill. Nut-lock	291,811	Jan. 8	995	279	26	184
Thayer, James F., Providence, R. I. Button	293,539	Feb. 12	975	267	26	620
Thayer, James F., Providence, R. I. Combined staple and die	293,540	Feb. 12	976	267	26	620
Thayer, James F., Providence, R. I. Attaching buttons, &c	295,593	Mar. 25	1594	442	26	1137
Thayer, John C., Chicago, Ill. Lubricator	294,161	Feb. 26	1788	492	26	778
Thayer, John C., assignor of one half to C. H. Morse, Chicago, Ill. Automatic lubricator	294,163	Feb. 26	1803	493	26	779
Thayer, Wales B., Brockton, Mass. Sewing-machine guide	295,079	Mar. 11	927	254	26	995

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Theberath, Charles M., Newark, N. J. Sleigh-bell	291,957	Jan. 15	1187	330	26	229
Thie, Otto, Union, N. J. Finger-ring	292,963	Feb. 5	229	63	26	484
Thiem, Friedrich O., Leipsic, Germany. Safety-window	295,594	Mar. 25	1595	442	26	1137
Thoens, Burchard, New Orleans, La. Housing for sugar and other mills	291,425	Jan. 1	510	144	26	91
Thomas, Charles L., Hornellsville, N. Y. Spring for vehicles	292,147	Jan. 15	1408	394	26	270
Thomas, Eddy T., New York, N. Y. Caster	295,689	Mar. 25	1714	474	26	1158
Thomas, Eleazer, Pawtucket, R. I. Machine for making molds for castings	293,541	Feb. 12	977	267	26	620
Thomas, H., *et al.* (See Smith, Fannie S., assignor.)						
Thomas, Richard J., Milwaukee, Wis. Safety-valve	293,685	Feb. 19	1150	321	26	660
Thomas, Theodore, New York, N. Y. Car-wheel	292,267	Jan. 22	1580	442	26	305
Thomas, Thomas, Cardiff, county of Glamorgan, England. Machine for lifting or hoisting	293,114	Feb. 5	419	112 113	26	517
Thomas, W. F., *et al.* (See Smith, Fannie S., assignor.)						
Thomas, William, Pittston, Pa. Speaking-tube mouth-piece	292,387	Jan. 22	1728	482	26	333
Thomas, William D., assignor of one-half to T. M. Herriott and Cavett & McKnight, Pittsburg, Pa. Steam-engine valve-gear	293,686	Feb. 19	1152	321 322	26	660
Thomas, William M., assignor of one-half to Grand Rapids Electric Light and Power Company, Grand Rapids, Mich. Electric cut-out	291,958	Jan. 15	1188	330	26	229
Thompson, Arthur, and G. H. Rice, assignors to themselves, L. Mason, and E. C. Barlow, Brooklyn, N. Y. Caster	291,426	Jan. 1	510	144	26	91
Thompson, Charles R., Fort Omaha, Nebr. Hive-cart	293,115	Feb. 5	422	113	26	517
Thompson, Edward W., Lowell, Mass. Tag	291,813	Jan. 8	996	280	26	184
Thompson, George A., Brooklyn, N. Y. Window-screen	291,549	Jan. 8	675	191	26	128
Thompson, George H., Plattsmouth, Nebr. Seat for public buildings	292,071	Jan. 15	1319	368	26	254
Thompson, George H., Plattsmouth, Nebr. Seat for public buildings	295,461	Mar. 18	1409	389	26	1097
Thompson, Green, New Salem, Ind. Harness	291,812	Jan. 8	996	279	26	184
Thompson, Jacob B., New Cross, county of Kent, England. Process of and apparatus for bleaching	293,376	Feb. 12	789	211	26	586
Thompson, Melchesedeck Y., assignor of one-half to A. M. Crow, Arkadelphia, Ark. Press for wheat-bran, &c	293,603	Feb. 12	1047	289	26	632
Thompson, Nathan, Brooklyn, N. Y. Stopper for bottles and jars	295,306	Mar. 18	1224	341	26	1062
Thompson, Perley & Waite. (See Stevens, Asher B., assignor.)						
Thompson, Richard C., Brixton, and W. Spence, Surbiton, county of Surrey, England. Bicycle	293,377	Feb. 12	791	212	26	586
Thompson, Robert A., Montrose, Mo. Wheel-plow	293,816	Feb. 19	1339	372	26	691
Thompson, Thomas E., Chicago, Ill. Steam-generator	291,959	Jan. 15	1190	331	26	229
Thompson, Thomas J. (See Bowers and Thompson.)						
Thompson, Willet, and J. A. George, assignors to Brooklyn Needle Works, Brooklyn, N. Y. Hat-pouncing machine and lathe	295,690	Mar. 25	1715	474	26	1158
Thompson, William G., Brooklyn, N. Y. Combination-tool	292,184	Jan. 22	1458	409	26	285
Thomson, Elihu, New Britain, Conn. Dynamo-electric machine	294,094	Feb. 26	1702	468	26	763
Thomson, Elihu, New Britain, Conn. Electric-power-distribution system	294,095	Feb. 26	1705	469	26	763
Thomson, Elihu, New Britain, Conn., assignor to Thomson-Houston Electric Company, of Connecticut. Double-carbon arc-lamp	295,836	Mar. 25	1898	526	26	1191
Thomson-Houston Electric Company. (See Thomson, Elihu, assignor.)						
Thomson, John, Brooklyn, N. Y. Bench-vise	292,874	Feb. 5	116	32	26	464
Thomson, John, Hartford, Conn. Tension device for sewing-machines	292,964	Feb. 5	229	63	26	484
Thomson, Judson L., Syracuse, N. Y. Rein-holder	293,819	Feb. 19	1340	372	26	691
Thomson, Judson L., Syracuse, N. Y. Whip-socket	294,824	Mar. 11	593	164	26	937
Thomson, Judson L., Syracuse, N. Y. (See Smith, George, Jr., assignor.)						
Thorn, Leander H., *et al.* (See Smith, George, Jr., assignor.)						
Thorpe, David H., Somerville, assignor to himself and J. P. Howard, Boston, Mass. Steam-valve	292,185	Jan. 22	1450	410	26	286
Thrush, Levi, and L. Wilson, Brookville, Pa. Timber and lumber stamp	294,936	Mar. 11	723	202	26	961
Thurber, Milton R., assignor of two-thirds to A. Harvey and H. N. Patrick, Scranton, Pa. Car-coupling	291,960	Jan. 15	1191	331	26	230
Thurmond, William H., Forsyth, Ga. Boiler-washing machine	295,462	Mar. 18	1410	390	26	1097
Thuraton, James B., assignor to J. A. White, Concord, N. H. Crank adjustment for balance-wheels	291,645	Jan. 8	805	225	26	151
Thwing, Z. C., *et al.* (See Bowen, William J., assignor.)						
Tibbs, John A. (See Francis and Tibbs.)						
Tice, David, Lockport, N. Y. Wheel	292,072	Jan. 15	1320	369	26	254
Tice, Dudley L., Reading, Pa. Eyeglasses	292,073	Jan. 15	1320	369	26	254
Tidland, William H., Oakwood, Dak. Ter. Road-making machine	291,427	Jan. 1	512	144 145	26	91
Tiffany, Albert R., assignor of five-sixths to M. Nell, H. L. Gillette, and J. J. Leland, Dayton, Ohio. Screw-jack	295,837	Mar. 25	1901	526	26	1192
Tiffany, Albert R., assignor of five-sixths to M. Nell, H. L. Gillette, and J. J. Leland, Dayton, Ohio. Screw-jack	295,838	Mar. 25	1902	526 527	26	1192
Tillery, John A., assignor of two-thirds to J. H. Brandt and R. B. Caswell, Baltimore, Md. Can-soldering machine	295,210	Mar. 18	1100	304	26	1039
Tilton, David, Hartford, Conn. Clutch-guard	295,505	Mar. 25	1596	442	26	1137
Timberlake, John R., Jackson, Mich. Detachable handle for glass and earthenware dishes	294,289	Feb. 26	1953	535	26	806
Timmis, Illins A., London, county of Middlesex, England. Vehicle-spring	291,814	Jan. 8	997	280	26	184
Timmis, Illins A., and S. C. C. Currie, London, England. Electro-magnet and armature	293,116	Feb. 5	423	113	26	518
Tinkham, Samuel M., Taunton, Mass. Sash-fastener	293,820	Feb. 19	1341	372	26	691
Tinney, John D. (See Mulvihill and Tinney.)						
Tinsley, Charles G., Grand Rapids, Mich. Line-indicator for type-writing machines	293,687	Feb. 19	1154	322	26	660
Tirrill, Oakes, New York, N. Y., and J. P. Wilson, Newark, N. J. Carbureting-machine	294,527	Mar. 4	229	65	26	809
Titus, Stephen M. (See Simpson, George, assignor.)						
Toay, Samuel M., and E. Harris, Cambria, Wis. Folding egg-case	295,211	Mar. 18	1101	305	26	1039
Tobey, Henry A., Dayton, Ohio, assignor to Hartford Sanitary Plumbing Company, Hartford, Conn. Water-closet valve	295,691	Mar. 25	1717	474	26	1159
Tobey, Orville H. (See Raymond, George and A., assignors.)						
Tobin, James L., Newark, N. J. Electric battery	291,241	Jan. 1	280	79	26	51
Tobin, Michael, Baldwinsville, N. Y. Apparatus for heating and moistening tobacco-houses	292,965	Feb. 5	230	63	26	484
Tobin, Richard F., South Boston, assignor to C. C. Walworth, Boston, Mass. Hose-nozzle attachment	291,107	Jan. 1	117	33	26	24
Todd, Andrew B., Cheshire, Conn. Lock	291,646	Jan. 8	807	226	26	151
Todd, Edward, Madison, N. J. Show box and tray	292,875	Feb. 5	118	33	26	465
Todd, George N., Fort Smith, Ark. Cotton-harvester	295,463	Mar. 18	1411	390 391	26	1098
Todt, A. Henry, Lapeer, Mich. Wagon running-gear	292,600	Jan. 29	2022	563	26	391
Toffler, Anna, *et al.* (See Toffler, Simon, assignor.)						
Toffler, Simon, assignor to A. Toffler and F. Warneck, New York, N. Y. Floor-mat	295,839	Mar. 25	1904	527	26	1192

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Toland, John, Boston, Mass. Filter	291,550	Jan. 8	676	192	26	128
Toomey, Samuel, Canal Dover, Ohio. Two-wheeled vehicle	294,528	Mar. 4	234	66	26	869
Topham, James S., Washington, D. C. Tray-bolt for trunks	295,464	Mar. 18	1413	391	26	1098
Torrey, Henry C., Central Village, Conn. Wagon-jack	295,509	Mar. 18	1477	406	26	1109
Torrey, Joseph R., Worcester, Mass. Razor-strop	295,840	Mar. 25	1905	527	26	1193
Totten, Charles A. L., U. S. Army. Manufacture and proportioning of weights and measures	293,117	Feb. 5	424	.....	26	518
Tower, Augustus C. and J. D., Mendota, Ill. Cultivator	295,060	Mar. 11	928	254	26	995
Tower, George B. N., New York, N. Y., assignor of one-half to E. L. Lambie, Washington, D. C. Ore-furnace	293,378	Feb. 12	792	212, 213	26	587
Tower, George B. N., New York, N. Y., assignor of one-half to E. L. Lambie, Washington, D. C. Furnace for burning garbage, roasting ores, &c.	293,821	Feb. 19	1342	373	26	691
Tower, John J., Brooklyn, N. Y. Police-club	291,242	Jan. 1	282	79	26	51
Tower, Justus D. (See Tower, Augustus C. and J. D.)						
Tower, Oscar, assignor of one-half to H. M. Davis, Wilson, N. Y. Thill-coupling	293,379	Feb. 12	794	213	26	587
Towle, George W., Jr., San Rafael, Cal. Hose-patch	294,937	Mar. 11	724	202	26	961
Towne, Nathan P., assignor to W. H. Moorhouse, Brooklyn, N. Y. Tube-cutter	295,307	Mar. 18	1226	341	26	1062
Towner, Hiram S., Dutton, Mich. Checker and base-ball combination game	292,709	Jan. 29	2156	600	26	414
Townsend, Henry C. (See Buckingham and Townsend.)						
Townsend, Henry C., and C. L. Buckingham, New York, N. Y. Cut-out for electric-arc lamps	293,921	Feb. 19	1468	406	26	714
Townsend, Louis, Evansville, Ind. Telephone-call-bell switch	293,118	Feb. 5	430	113	26	518
Townsend, Thomas C., New York, N. Y. Antomatic device for stopping steam-pumps	294,929	Mar. 4	225	66	26	870
Toye, M. (See Morrison, Robert H. D., assignor.)						
Tozier, Albert E. (See McCloskey and Tozier.)						
Tracy, Frank B., *et al.* (See Hamilton, William M., assignor.)						
Tracy, Frederick K., assignor of one-half to C. E. Strong, Chicago, Ill. Stereotype-plate	295,506	Mar. 25	1597	443	26	1138
Tracy, George S., *et al.* (See Packer, Harvey, assignor.)						
Tranter, John R. (See Moxham and Tranter.)						
Trask, Charles H., Lynn, Mass. Underground electric-wire conduit	293,688	Feb. 19	1155	322	26	660
Trant, Justus A., New Britain, Conn. Bench-plane	291,815	Jan. 8	999	280	26	184
Trant, Justus A., New Britain, Conn. Gage for plane-bits	293,922	Feb. 19	1344	373	26	691
Trant, Justus A., New Britain, Conn. Bench-plane	294,925	Mar. 11	594	164	26	937
Traver, Augustus, New York, N. Y. Folding case	294,938	Mar. 11	725	203	26	961
Traver, Harriet A., Toledo, Ohio. Abdominal supporter	291,551	Jan. 8	677	192	26	128
Travis, Charles L., assignor to Wilton Manufacturing Company, Minneapolis, Minn. Carpet-sweeper	293,988	Feb. 19	1554	428	26	730
Travis, Charles L., assignor to Wilton Manufacturing Company, Minneapolis, Minn. Carpet-sweeper	293,989	Feb. 19	1556	429	26	730
Travis, Charles M., and C. H. Stibolt, assignors of one-third to J. R. Johnson, Crawfordsville, Ind. Fire-escape	292,148	Jan. 15	1409	395	26	270
Travis, James F., and W. H. Freaney, New York, N. Y. Friction-clutch for drop-lights	291,816	Jan. 8	999	280	26	184
Travis, Jerome, North Adams, Mich. Combined map case and holder	294,162	Feb. 26	1801	492, 493	26	778
Traylor, Robert W., Richmond, Va., assignor to Journal Bearing Mica Company, New York, N. Y. Journal box and bearing	291,243	Jan. 1	282	79	26	51
Tregoning, Charles, Lead City, Dak. Ter. Car-brake	293,823	Feb. 19	1345	374	26	692
Tregoning, Charles, Lead City, Dak. Ter. Combination-lock	294,290	Feb. 26	1955	535	26	806
Trenton Iron Company. (See Hewitt, William, assignor.)						
Trenton Iron Company. (See Withington, James, assignor.)						
Trépardoux, Charles. (See De Dion, Bouton, and Trépardoux.)						
Trier, Frank, Westminster, England, assignor to A. C. Baldwin, Boston, Mass. Machine for truing grindstones	293,203	Feb. 5	550	146, 147	26	538
Trier, Frank, Westminster, England, assignor to A. C. Baldwin, Boston, Mass. Machine for dressing grindstones	295,081	Mar. 11	931	254, 255	26	996
Trigg, Wilton, Cairo, Ill. Cutter-head	292,388	Jan. 22	1729	482	26	333
Tripp, Thomas, Stoughton, Mass. Anti-friction journal-box	295,308	Mar. 18	1227	341	26	1062
Trobach, Konrad, Berlin, Germany. Manufacture of sugar	295,841	Mar. 25	1906	527	26	1193
Trochsler, Albert, Boston, Mass. Brick	295,692	Mar. 25	1719	475	26	1159
Trotter, Charles W., Rochester, assignor to Tuttle & Bailey Manufacturing Company, New York, N. Y. Frame for hot-air registers	291,428	Jan. 1	513	145	26	92
Trontman, Frank S., Seneca Falls, N. Y. Rotary pump	295,597	Mar. 25	1598	443	26	1138
Trouttet, Amédée, assignor to M. A. Trouttet, New York, N. Y. Glove-fastener	292,450	Jan. 22	1812	505	26	349
Trouttet, Mary A. (See Trouttet, Amédée, assignor.)						
Trowbridge, A. Lucas. (See Farley and Trowbridge.)						
Trowbridge, Newton, Council Grove, Kans. Wheel-cultivator	295,062	Mar. 11	933	255	26	996
Troxell, Fredrick, Danville, Ill., assignor to N. D. Crim, Anderson, Ind. Incrustation-preventive	295,309	Mar. 18	1229	.....	26	1062
True, David, Salisbury, Mass. Carriage-wrench	291,961	Jan. 15	1192	331	26	230
True, David, Salisbury, Mass. Carriage-wrench	292,186	Jan. 22	1460	410	26	286
True, Moses E., Batavia, N. Y. Saw-handle	291,108	Jan. 1	118	33	26	24
True, Moses E., Batavia, N. Y. Saw-handle	294,164	Feb. 26	1805	493	26	779
Trum, Emanuel J., Brooklyn, N. Y. Envelope	295,598	Mar. 25	1599	443	26	1138
Trumbull, James A. (See Willis, Robert L., assignor.)						
Trunk, Anton, Bridgeport, Conn. Toy	295,063	Mar. 11	934	255	26	996
Truslow & Co. (See Nutting, Frederick J., assignor.)						
Trussell, Wilburt C., Boston, Mass. Car-starter	293,119	Feb. 5	431	114	26	518
Tschumy, Robert. (See Booker, Samuel, assignor.)						
Tucker, Sidney D., Troy, N. Y. Clasp	295,310	Mar. 18	1230	342	26	1062
Tucker, Stephen D., New York, N. Y. Sheet-delivery apparatus for printing-machines	293,120	Feb. 5	432	114, 115, 116	26	518
Tucker, Stephen D., New York, N. Y. Sheet-delivery apparatus for printing-machines	293,121	Feb. 5	438	117, 118	26	519
Tucker, Stephen D., New York, N. Y. Sheet folding and delivery apparatus	293,122	Feb. 5	443	118, 119	26	520
Tucker, Sylvester J., Richmond, Va. Percentage-calculator	291,817	Jan. 8	1000	281	26	184
Tucker, William, East Brookfield, Mass. Saw-filing machine	295,133	Mar. 11	992	273, 274	26	1007
Tucker, William W. (See Gray, William, assignor.)						
Tudor, Frederic, Boston, Mass. Steam-heating apparatus	291,818	Jan. 8	1001	281	26	185
Tuerk, Frederick W., Jr., Chicago, Ill. Hydraulic sausage-stuffing machine	294,926	Mar. 11	596	165	26	938
Tunelins, Charles E., Chicago, Ill. Rotary fan	293,286	Feb. 12	670	179	26	564
Turly, Marshall, and R. T. Bryant, Council Bluffs, Iowa. Car-brake	291,109	Jan. 1	118	33	26	24

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Turnbull, Walter, New Orleans, La. Car-coupling	292,268	Jan. 22	1582	442	26	305
Turner, Edward R. and F., Ipswich, county of Suffolk, and J. H. Carter, London, England. Roller-mill	293,990	Feb. 19	1558	429, 430	26	730
Turner, Edward M., Knoxville, Tenn. Oil-can	291,962	Jan. 15	1192	332	26	230
Turner, Frederick. (See Turner and Carter.)						
Turner, George H. (See Cornelius and Turner.)						
Turner, Orrin S., New Vineyard, Me. Belt-stud	295,599	Mar. 25	1600	443	26	1138
Turner, Robert R., West Middlesex, Pa. Machine for rolling coupling-pins	291,110	Jan. 1	119	33	26	24
Turner, Robert W., Thornton, Tex. Steam-heated evaporator	292,768	Jan. 29	2255	624	26	432
Turner, William B., assignor of one-half to C. Beard, New York, N. Y. Car-brake	294,939	Mar. 11	726	203	26	961
Turrell, George B., South Orange, N. J., assignor to Union Hardware Company, Torrington, Conn. Coupling for rods	291,819	Jan. 8	1004	281	26	185
Tuttle & Bailey Manufacturing Company. (See Trotter, Charles W., assignor.)						
Tuttle, George F., Newark, N. J. Graduated scale	291,429	Jan. 1	514	145	26	92
Tweeddale, William, Topeka, Kans. Purifying water	295,890	Mar. 25	1980	548	26	1205
Tweedy, Edmund, Danbury, Conn. Apparatus for trimming hat-bodies	293,380	Feb. 12	795	213, 214	26	587
Twombley, O., *et al.* (See Huse, Warren D., assignor.)						
Tyler, Charles C., New York, N. Y. Cotton-batting	292,187	Jan. 22	1460	410	26	286
Tyler, Merrill A., and D. S. Smith, Rockland, assignors of seven-twelfths to T. C. Dunn and E. H. Dodge, Boston, Mass. Machine for finishing heel-bottoms	293,604	Feb. 12	1048	289, 290	26	633
Tyrer, Sarah P. (See Tyrer, Theodore W., assignor.)						
Tyrer, Theodore W., Stillwater, Minn., assignor to S. P. Tyrer, Los Angeles, Cal. Constructing buildings of artificial stone	292,149	Jan. 15	1410	393	26	271
Tyrrell, Edward, Cincinnati, Ohio. Fountain-pen	294,340	Feb. 26	2024	554	26	819
Tyson, Charles. (See Morse and Tyson.)						
Uebinger, Charles, St. James, Ind. Car-coupling	292,074	Jan. 15	1321	369	26	254
Uhleman, William. (See Jenkins, Thomas M., assignor.)						
Ulm, Samuel B., assignor of one-half to C. Steward, Ashville, Ohio. Thill-coupling	291,552	Jan. 8	678	192	26	128
Underhill, Francis M., *et al.* (See Tatum, C. Albert, assignor.)						
Underhill, William W., Brooklyn, N. Y. Manufacturing starch	294,530	Mar. 4	236	.....	26	870
Underhill, William W., Brooklyn, N. Y. Manufacturing starch	294,531	Mar. 4	237	.....	26	870
Underwood, Flavius J., North Springfield, Mo. Fire-escape	292,769	Jan. 29	2255	624	26	432
Underwood, H. Channing, Kalamazoo, Mich. Folding box	295,311	Mar. 18	1231	342	26	1063
Underwood, Henry M., assignor of one-half to J. F. Powell and R. J. Douglas, Waukegan, Ill. Windmill	295,064	Mar. 11	935	255	26	996
Underwood, William T., *et al.* (See Vogel, William, assignor.)						
Union Brass Manufacturing Company. (See Duncan, Walter, assignor.)						
Union Foundry and Machine Company. (See Norton, Reuben C., assignor.)						
Union Hardware Company. (See Turrell, George B., assignor.)						
Union Hardware Manufacturing Company. (See Gibbons, John, assignor.)						
Union Switch and Signal Company. (See Gassett, Oscar, assignor.)						
Union Switch and Signal Company. (See Gnerber, Frederick S., assignor.)						
Union Switch and Signal Company. (See Pope, Frank L., assignor.)						
United States Automatic Buttonhole Sewing Machine Company. (See Mills, Daniel, assignor.)						
United States Cotton Seed Cleaning Company. (See Hungerford, Henry, assignor.)						
United States Electric Lighting Company. (See Weston, Edward, assignor.)						
United States Metallic Packing Company. (See Monroe, Edwin P., assignor.)						
United States Ore Separating Company. (See Sébillot, Amédée M. G., assignor.)						
Updegraff, Horace, Hampton, Kans. Breech-loading fire-arm	291,111	Jan. 1	120	34	26	24
Upham, Andrew J., Sycamore, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Barbed wire	294,827	Mar. 11	599	165	26	938
Upham, Andrew J., Sycamore, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Machine for making barbed fence-wire	295,134	Mar. 11	997	274, 275	26	1007
Upham, James C., North Sydney, and J. P. Rogers, Elmsdale, Nova Scotia, Canada. Electric railway-signal	293,381	Feb. 12	797	214	26	588
Upson, James E. (See Upson, James W., assignor.)						
Upson, James W., Cleveland, assignor to J. E. Upson, Shawnee, Ohio. Steam-generator	294,291	Feb. 26	1956	536	26	806
Upson, Lyman A., Thompsonville, Conn. Machine for scouring and cleansing woolen yarn. (Reissue)	10,439	Jan. 29	2266	627	26	434
Upton, George W. D. (See Hill, Milton B., assignor.)						
Upton, King. (See Swanton, Thomas, assignor.)						
Urbahn, Alwill, Paterson, N. J. Machine for making ornamental looped cord	293,605	Feb. 12	1049	290, 291	26	633
Urban, George, Jr. (See Ortman, Barnim F., assignor.)						
Usborne, John, Arnprior, Ontario, Canada. Fire-escape	293,680	Feb. 19	1156	323	26	661
Usher, Arthur P. (See Faas, Gustav A., assignor.)						
Vacheron & Constantin. (See Roux and Fatio, assignors.)						
Vaile, John H., Dayton, Ohio. Oil-press	291,112	Jan. 1	122	34, 35	26	25
Valentine, George, Monticello, Ill. Drag-saw	294,096	Feb. 26	1707	469	26	764
Van Alstine, Charles W., Chelsea, Mass. Water-meter	291,647	Jan. 8	808	226	26	151
Van Anden, William, New York, N. Y. Vehicle-spring	293,824	Feb. 19	1347	374	26	692
Van Auken, Sidney, Oswego, N. Y. Mortise-cleaner	294,097	Feb. 26	1708	470	26	764
Van Auken, Sidney, Oswego, N. Y. Wiring blind-stiles	294,098	Feb. 26	1709	470	26	764
Van Benthuysen, Henry B., Phœnixville, Pa. Puddling-machine	291,963	Jan. 15	1193	332, 333	26	230
Van Bibber, James D., Springfield, Mo. Fence-staple driver	293,287	Feb. 12	671	180	26	564
Van Camp, Will A., Milton, Ind. Mail-bag	293,123	Feb. 5	444	119	26	520
Van Denburgh, Jesse. (See Sperry, Elmer A., assignor.)						
Van Depoele, Charles J., Chicago, Ill. Electric-arc lamp	291,553	Jan. 8	678	192, 193	26	128
Van Depoele, Charles J., Chicago, Ill. Regulator for dynamo-electric machines	291,554	Jan. 8	681	193	26	129
Van Depoele, Charles J., Chicago, Ill. Electric-circuit closer	291,648	Jan. 8	809	226	26	151
Van Depoele, Charles J., Chicago, Ill. Electric safety cut-out	291,649	Jan. 8	810	226	26	152
Van Depoele, Charles J., Chicago, Ill. Current-regulator for electric motors	291,650	Jan. 8	812	227	26	152
Van Depoele, Charles J., Chicago, Ill. Electric lamp	291,651	Jan. 8	814	227	26	152
Van Depoele, Charles J., Chicago, Ill. Safety cut-out for series of electric lamps	291,652	Jan. 8	817	228	26	153
Van Depoele, Charles J., Chicago, Ill. Electric-arc lamp	291,653	Jan. 8	819	228	26	153
Van Depoele, Charles J., Chicago, Ill. Motor for electric regulators	294,165	Feb. 26	1805	494	26	779
Van Depoele, Charles J., Chicago, Ill. Electric-arc lamp	294,532	Mar. 4	238	67	26	870
Van Depoele, Charles J., Chicago, Ill. Electric lamp	294,533	Mar. 4	240	67, 68	26	870
Van Dusen, Charles, New Albany, Ind., assignor of one-half to W. L. Breyfogle, Louisville, Ky. Nut-lock	292,601	Jan. 29	2023	563	26	391

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Van Fleet, Alfred, assignor to A. H. Shreffler, Joliet, Ill. Check-row attachment for seed-planters	292,771	Jan. 29	2257	625	26	432
Van Hoevenbergh, Henry, Elizabeth, N. J. Printing-telegraph	292,966	Feb. 5	231	64	26	485
Van Hoevenbergh, Henry, Elizabeth, N. J. Printing-telegraph	293,922	Feb. 19	1470	406	26	714
Van Hoevenbergh, Henry, Elizabeth, N. J. Electro-mechanical movement	293,923	Feb. 19	1471	406	26	714
Van Hoevenbergh, Henry, Elizabeth, N. J. Electro-mechanical movement	293,924	Feb. 19	1472	407	26	715
Van Hoevenbergh, Henry, Elizabeth, N. J. Electro-mechanical escapement	293,925	Feb. 19	1475	407	26	715
Van Hoevenbergh, Henry, Elizabeth, N. J. Printing-telegraph	293,926	Feb. 19	1477	407	26	715
Van Hoevenbergh, Henry, Elizabeth, N. J. Page-printing telegraph	293,927	Feb. 19	1480	407 / 408	26	716
Van Hoevenbergh, Henry, Elizabeth, N. J. Printing from either of two type-wheels in printing-telegraphs	293,928	Feb. 19	1482	408	26	717
Van Hoevenbergh, Henry, Elizabeth, N. J., assignor to R. S. Waring, Pittsburg, Pa. Compound electric cable	292,772	Jan. 29	2259	625	26	433
Van Horn, William, Piqua, Ohio. Machine for making wire and slat fences	293,382	Feb. 12	800	215	26	588
Van Name, George, St. Louis, Mo. Roller for grinding-mills	291,654	Jan. 8	820	229	26	153
Van Ness, Orrin C., Pomme de Terre, Minn. Grain-feeder and band-cutter for thrashing-machines	291,430	Jan. 1	515	145	26	92
Van Nest, Lewis C., Plainfield, N. J. Lounge and sofa	291,244	Jan. 1	283	79	26	52
Van Nüys, Thomas C., *et al* (See Hunter, George D., assignor.)						
Van Orden, Charles H., Catskill, N. Y. Metallic railway-tie	294,166	Feb. 26	1807	494	26	779
Van Slyke, Alexander, Fort Plain, N. Y. Combined jar-wrench and can-opener	292,710	Jan. 29	2157	601	26	414
Van Steenberg, Burhans, Goshen, N. Y. Apparatus for manufacturing gas	294,534	Mar. 4	242	68	26	871
Van Wagener, Cornelius A., Ellenville, N. Y. Fire-escape	295,212	Mar. 18	1102	305	26	1039
Van Wormer, Matthew, Melrose, Mass. Dumping-car	291,113	Jan. 1	124	35, 36	26	25
Van Zandt, John B., New York, N. Y. Combined cane and burglar-alarm	292,389	Jan. 22	1730	492	26	334
Vandegrift, Nathaniel W. (See Armstrong and Vandegrift.)						
Vander Weyde, Peter H., New York, N. Y. Manufacturing a rot-proof covering for underground telegraph-cables	292,770	Jan. 29	2256	.....	26	432
Vanduzen, Benjamin C., Cincinnati, Ohio. Hydrant	295,600	Mar. 25	1601	444	26	1138
Vanduzen, Ezra W., Newport, Ky. Rumble for scouring castings, washing ores, &c	292,075	Jan. 15	1322	370	26	255
Vanduzen, Ezra W., Newport, Ky. Water-purifier for steam-boilers	292,076	Jan. 15	1325	370	26	255
Vanorman, Oliver, assignor of one-half to W. H. Johnson, Racine, Wis. Whiffletree-coupling	295,601	Mar. 25	1604	444	26	1139
Vanzandt, Joshua, Seward, Ill. Bee-hive	295,693	Mar. 25	1719	475	26	1159
Varwig, Henry, and A. E. Spangler, Cincinnati, Ohio. Flying target	295,312	Mar. 18	1232	342	26	1063
Vassar, Robert G., New York, N. Y., assignor of two-thirds to G. S. Mott, Philadelphia, Pa., and J. G. Smith, Hackensack, N. J. Alarm-lock	293,690	Feb. 19	1157	323	26	661
Veber, William F., assignor of one-half to A. W. Rudulph, Bowling Green, Ohio. Over-seaming attachment for sewing-machines	292,451	Jan. 22	1815	506	26	349
Veline, Nels A., Villisca, Iowa. Carpet-stretcher	291,535	Jan. 8	682	193	26	129
Venable, William E., Nicholson, Ga. Plow	292,876	Feb. 5	120	33	26	465
Ver Genius, Christian A. R. L. (See Otterman and Ver Genius.)						
Verharen, Frank T., Spencer, Iowa. Cultivator	292,877	Feb. 5	120	33	26	465
Vernay, Albert H. (See Evans and Vernay.)						
Vero, Charles, and J. Everitt, Atherstone, county of Warwick, England. Manufacture of smooth-faced napless felt bodies	291,431	Jan. 1	516	.....	26	93
Verstraete, Edemond, Chicago, Ill. Underground conduit for electric conductors	294,703	Mar. 4	439	122	26	804
Vest, Americus D. (See Cushing and Vest.)						
Vest, Thomas A. (See Cushing and Vest, assignors.)						
Viaduct Manufacturing Company of Baltimore City. (See Hinton, Joseph R. H., assignor.)						
Viaduct Manufacturing Company of Baltimore City. (See Welsh, Alexander, assignor.)						
Victor, Robert J., Hudsondale, Pa. Mincing-knife	293,542	Feb. 12	978	268	26	621
Vieira, A. S., *et al.* (See Pugh, Jesse B., assignor.)						
Viele, Platt B., Rochester, N. Y. Harrow-tooth	294,292	Feb. 26	1958	537	26	807
Vinton, John H., assignor to Ashcroft Manufacturing Company, Boston, Mass. Ratchet-drill	295,604	Mar. 25	1720	475	26	1159
Vinton, John J., Youngstown, Ohio. Weighing attachment for baby-carriages, &c	292,878	Feb. 5	122	33	26	466
Vogel, Charles. (See Koehler and Vogel.)						
Vogel, William, assignor of one-half to W. T. Underwood and B. Schram, Chicago, Ill. Electric railway-signal	291,556	Jan. 8	683	193	26	129
Vogel, William, assignor to G. A. Woolley, Chicago, Ill. Apparatus for and process of consuming smoke	295,842	Mar. 25	1910	528	26	1193
Vogelius, Peter C., Gloucester, Mass. Extracting oils and fats from fish	294,940	Mar. 11	730	.....	26	962
Vogt, Henry. (See Adams, William D., assignor.)						
Voigt, F. August, St. Louis, Mo. Street pounder or rammer	295,213	Mar. 18	1103	305	26	1039
Voigt, Frederick W., Hicksville, Ohio. Fire-escape	291,245	Jan. 1	284	80	26	52
Von Darteln, Wilhelm, Bremerhaven, Germany, assignor to C. Edelheim, Philadelphia, Pa. Box and similar receptacle	293,288	Feb. 12	672	180	26	564
Von der Heydt, Hermann, Chicago, Ill. Self-winding watch	293,691	Feb. 19	1159	323	26	661
Vonder Linden, Charles, Rhinebeck, N. Y. Fire-escape	295,465	Mar. 18	1414	391	26	1098
Von Podewils, Adalbert, Munich, Bavaria, Germany. Apparatus for making fertilizers	295,695	Mar. 25	1721	476 / 477 / 478 / 479	26	1159
Voorhis, Winfield S., and G. H. Houser, Chicago, Ill. Sliding door	293,991	Feb. 19	1560	430	26	731
Vosburgh Manufacturing Company, William C. (See Bonner, John P., assignor.)						
Vose, George L. (See Macomber, William I., assignor.)						
Vose, Richard, New York, N. Y. Car-spring	292,773	Jan. 29	2260	625	26	433
Vose, Richard, New York, N. Y. Car-spring	292,774	Jan. 29	2261	626	26	433
Vose, Richard, New York, N. Y. Car-spring	292,775	Jan. 29	2261	626	26	433
Votti, Carl, Philadelphia, Pa. Escapement-wheel	291,432	Jan. 1	517	146	26	93
Waddell, John C., Union City, Tenn. Broadcast seed-sower	291,433	Jan. 1	518	146	26	93
Wadleigh, Joseph, Milk's Grove, Ill. Building-block	291,114	Jan. 1	126	36	26	25
Waggoner, George E., New Hampton, Mo. Pitman-rod connection	292,077	Jan. 15	1327	371	26	255
Wagner, Carl, Columbus, Ind. Method of and machine for ornamenting wood	291,436	Jan. 1	520	147	26	94
Wagner, Christopher H., Elkhart, Ind., assignor of one-third to W. Kline, Toledo, Ohio. Device for attaching cross-bars to telegraph-poles	291,435	Jan. 1	520	146	26	93
Wagner, Edward W., Cherokee, Cal. Key-fastener	291,434	Jan. 1	519	146	26	93
Wagner, Hubert, Sr., Burlington, Wis. Friction-brake for harvesters	294,416	Mar. 4	100	25	26	846
Wagner, John, and H. Dryer, Portage, Wis.; said Dryer assignor to said Wagner. Corn-harvester	295,602	Mar. 25	1604	444 / 445	26	1139
Wagner, John L., Terre Haute, assignor of two-thirds to T. A. Lewis, Indianapolis, Ind., and H. R. Duvall, New York, N. Y. Car-door fastener	293,124	Feb. 5	445	120	26	520

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Wagner, Johnston, Moorhead, Minn. Endless carrier for harvesters	293,383	Feb. 12	803	216	26	588
Wahl, Christian. (See Rice, Nathaniel B., assignor.)						
Wainwright, Joseph G., *et al.* (See Nugent, Richard C., assignor.)						
Waite, Henry E., assignor to Molecular Telephone Company, New York, N. Y. Telephone-receiver	292,602	Jan. 29	2024	563	26	391
Waite, Henry E., assignor to Molecular Telephone Company, New York, N. Y. Telephone-transmitter	292,603	Jan. 29	2025	564	26	391
Wakefield, John E., Worcester, Mass. Screen	291,246	Jan. 1	285	80	26	52
Wakefield, John E., Worcester, Mass. Folding seat	293,384	Feb. 12	804	216	26	589
Walbridge, John H. (See Hall and Walbridge.)						
Walch, John P., Sutro, Nev. Combined cigar and match holder for tables	294,293	Feb. 26	1959	537	26	807
Walcott, Jabez E., assignor to F. I. Marcy, Providence, R. I. Device for finishing chain-swivels	295,843	Mar. 25	1911	528	26	1193
Waldt, Emile. (See Roy and Waldt.)						
Wales, Walter H., Providence, R. I. Fountain-pen	291,964	Jan. 15	1195	333	26	230
Walford, Edgar C. (See Dieterich and Walford.)						
Walker, Aaron, Kokomo, Ind. Fire-escape	295,313	Mar. 18	1233	342	26	1063
Walker, Alfred B. (See Beard, Thomas, assignor.)						
Walker, Edwin, Erie, Pa. Combination-tool	291,820	Jan. 8	1006	281	26	186
Walker, James T., Baltimore, Md. Packing-can	291,557	Jan. 8	685	194	26	129
Walker, John, Cleveland, Ohio. Shaft-hanger	292,879	Feb. 5	123	34	26	466
Walker, Reid & Inglis. (See Walker, William H., assignor.)						
Walker, Robert L., assignor to Walker Smokeless Furnace Company, Boston, Mass. Damper	293,543	Feb. 12	979	268	26	621
Walker, Robert L., assignor to Walker Smokeless Furnace Company, Boston, Mass. Steam-boiler fire-box	293,544	Feb. 12	980	268	26	621
Walker Smokeless Furnace Company. (See Walker, Robert L., assignor.)						
Walker, Virgil. (See Lappin, Frank, assignor.)						
Walker, William H., assignor to Walker, Reid & Inglis, Rochester, N. Y. Glass-cutting apparatus	295,603	Mar. 25	1606	445	26	1139
Walker, William M., Fulton, Ky. Horse-detacher	293,125	Feb. 5	446	120	26	520
Wall, George, Fall River, Mass. Reversible scraper for ships' spars	293,992	Feb. 19	1561	430	26	731
Wall, Stephen A., Newark, N. J. Tug-clip	294,704	Mar. 4	440	122	26	904
Wall, Thomas. (See Julian, William H., assignor.)						
Wall, Thomas, Springfield, Ohio. Motor	295,314	Mar. 18	1235	343	26	1063
Wallace, Eliza L. (See Witt, Charles N., assignor.)						
Wallace, Howard D., St. George, New Brunswick, Canada. Stone-dressing machine	292,880	Feb. 5	125	34	26	466
Wallace, J. Bennett, Chicago, Ill. Cutting-tool	295,466	Mar. 18	1415	391	26	1099
Wallace, J. Bennett, and G. Myers, Chicago, Ill. Vapor-burner	295,315	Mar. 18	1236	343	26	1063
Wallace, John, assignor of one-half to G. T. Weaver, Albany, N. Y. Brass for car-axle bearings	292,452	Jan. 22	1816	506	26	350
Wallace, Lorenzo, Kansas City, Mo. Sickle bar and knife	294,099	Feb. 26	1710	470	26	764
Wallace & Sons. (See Hayes, Charles H., assignor.)						
Wallach, Samuel, New York, N. Y. Clasp for bracelets	293,825	Feb. 19	1340	374	26	692
Wallack, Marion, and J. B. Rohrer, Cambridge City; said Wallack assignor of one-half to B. Eshelman, East Germantown, Ind. Railway-crossing	295,844	Mar. 25	1912	528	26	1193
Wallen, Alfred D., Mendham, N. J. Screw-driver	294,928	Mar. 11	600	165	26	938
Wallich, Levi J., and W. B. Rigler, Arenzville, Ill. Egg-carrier	293,606	Feb. 12	1051	291	26	633
Wallis, John N., Fleming, and T. Wallis, Scipio, assignors of one-half to W. S. Chamberlain, Auburn, N. Y. Horse hay-rake	292,776	Jan. 29	2263	626	26	433
Wallis, Theodore. (See Wallis, John N. and T.)						
Walrath, Jesse, Racine, Wis. Gage for saw-mills	291,558	Jan. 8	686	194	26	129
Walsh, Emma. (See Berond and Walsh.)						
Walsh, Francis A., Milwaukee, Wis. Construction of packing vessels or cans	291,437	Jan. 1	522	147	26	94
Walsh, Francis A., Chicago, Ill. Seam for sheet-metal vessels	294,167	Feb. 26	1808	494	26	780
Walsh, Lawrence C., Webster, Mass. Railway-gate	295,696	Mar. 25	1723	479	26	1159
Walsh, Maurice J., New York, N. Y. Vessel or reservoir for liquids or other materials	291,655	Jan. 8	821	229	26	153
Walsh, Michael J., assignor of one-half to F. Morris, Amsterdam, N. Y. Stop-motion for knitting-machines	291,965	Jan. 15	1196	333 / 334	26	230
Walsh, Moses A., Camden, N. J. Concentrating sulphuric acid	291,821	Jan. 8	1007	282	26	186
Walsh, Moses A., Camden, N. J. Glover tower	292,078	Jan. 15	1328	371	26	255
Walter, David C., Toledo, Ohio. Feed-water regulator	294,705	Mar. 4	441	123	26	904
Walter, Edward P. and H. C., Bridgeport, Conn. Metal-planing machine	293,289	Feb. 12	673	180	26	564
Walter, Henry C. (See Walter, Edward P. and H. C.)						
Walter, John T., Easton, Pa. Feed-hopper	293,126	Feb. 5	447	120	26	520
Walter, Joseph, New York, N. Y. Speaking-tube annunciator	294,535	Mar. 4	244	68	26	871
Walter, William, Latrobe, Pa. Rack for holding barrels	295,085	Mar. 11	938	256	26	996
Walters, Andrew J. (See Bradford, Joseph P., assignor.)						
Walton, John D. (See Briggs and Walton.)						
Walworth, Caleb C. (See Tobin, Richard P., assignor.)						
Wamich, Alexander, Philadelphia, Pa. Balance puppet-valve	292,604	Jan. 29	2026	564	26	392
Ward, James. (See Hilsabeck, Frederick L., assignor.)						
Ward, John A., Sharpsville, assignor of one-half to W. V. Byard, Sharon, Pa. Toy	295,845	Mar. 25	1913	528 / 529	26	1194
Ward, Morris E., *et al.* (See Jackson, Andrew, assignor.) (Reissue.)						
Ward, William H., Monongahela City, Pa. Car-coupling	295,697	Mar. 25	1724	479 / 480	26	1160
Ware, Francis, Boston, Mass. Speaking-telephone	292,881	Feb. 5	126	35	26	466
Ware, L. H., *et al.* (See Hoyt, Francis A., assignor.)						
Ware, Simeon A., Danburg, Ga. Plow	292,390	Jan. 22	1731	492	26	334
Ware, Walter, Waverly, N. Y. Jewel-support for the balance-staffs of watches	294,168	Feb. 26	1809	494	26	780
Warfield, Burgess B. (See Bailey and Warfield.)						
Warfield, Charles A., Philadelphia, Pa. Rabbet-plane attachment	295,316	Mar. 18	1237	343	26	1064
Waring Hat Sizing Machine Company, John T. (See Glover, Carlos W., assignor.)						
Waring, Richard S. (See Van Hoevenbergh, Henry, assignor.)						
Waring, Richard S., Pittsburg, Pa. Compound electric cable	294,536	Mar. 4	245	68	26	871
Waring, Richard S., Pittsburg, Pa. Mandrel for cable-presses	294,537	Mar. 4	246	69	26	871
Waring, Richard S., Pittsburg, Pa. Compound electric cable	294,538	Mar. 4	248	69	26	871
Waring, Richard S., Pittsburg, Pa. Mandrel for cable-presses	294,539	Mar. 4	250	69	26	872
Waring, Richard S., Pittsburg, Pa. Mandrel for cable-presses	294,540	Mar. 4	251	70	26	872
Waring, Richard S., Pittsburg, Pa. Electric cable	294,541	Mar. 4	253	70	26	872
Waring, Richard S., Pittsburg, Pa. Mandrel for cable-presses	294,542	Mar. 4	254	70	26	872
Waring, Richard S., Pittsburg, Pa. Electric cable	294,543	Mar. 4	255	70	26	872
Waring, Richard S., Pittsburg, Pa. Mandrel and die for cable-presses	294,544	Mar. 4	257	71	26	872

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Waring, Richard S., Pittsburg, Pa. Electric cable	294,545	Mar. 4	258	71	26	873
Waring, Richard S., Pittsburg, Pa. Making joint-connections in electric cables	294,546	Mar. 4	260	71	26	873
Waring, Richard S., Pittsburg, Pa. Mandrel for cable-presses	294,547	Mar. 4	261	71	26	873
Waring, Richard S., Pittsburg, Pa. Mandrel for cable-presses	294,548	Mar. 4	263	72	26	873
Waring, Richard S., Pittsburg, Pa. Repairing defects in the conductors of lead cables	294,549	Mar. 4	264	72	26	873
Waring, Richard S., Pittsburg, Pa. Mandrel for cable-presses	294,550	Mar. 4	265	72, 73	26	874
Waring, Richard S., Pittsburg, Pa. Compound electric cable	295,096	Mar. 11	939	256	26	997
Waring, Richard S., Pittsburg, Pa. Uniting electric cables. (Reissue)	10,458	Mar. 11	1005	277	26	1009
Waring, Richard S., Pittsburg, Pa. Branching electric cables. (Reissue)	10,459	Mar. 11	1006	278	26	1009
Warneck, Frank, *et al.* (See Toffler, Simon, assignor.)						
Warner, Fernando L., Memphis, Tenn. Cotton-harvester	291,438	Jan. 1	522	147, 148	26	94
Warner, Samuel G. (See Kennedy and Warner.)						
Warnken, August. (See Reagan, Edgar U. G., assignor.)						
Warnock, David, Olathe, Kans. Weather-strip	293,385	Feb. 12	805	216	26	589
Warren, Columbus C., and W. H. Oliver, Beauregard, Miss. Baling-press	291,439	Jan. 1	523	148	26	94
Warren, Cyrus M., Brookline, Mass. Roofing fabric and applying the same	291,440	Jan. 1	524	149	26	94
Warren, Edward S. (See Miller, Charles H., assignor.)						
Warren, Joseph A., Detroit, Mich. Organ-case	295,214	Mar. 18	1104	305	26	1040
Warriner, William A., Franklin, N. J., assignor of one-half to O. B. Pendleton, Brooklyn, N. Y., and J. Myers, Towanda, Pa. Spring car-starter	293,204	Feb. 5	532	147	26	538
Washburn & Moen Manufacturing Company. (See Ayres and Decker, assignors.)						
Washburn & Moen Manufacturing Company. (See Brock, William E., assignor.)						
Washburn & Moen Manufacturing Company *et al.* (See Lord, Tyler C., assignor.)						
Washburn & Moen Manufacturing Company *et al.* (See Upham, Andrew J., assignor.)						
Washburn, Nathan, Allston, Mass. Car-wheel	292,882	Feb. 5	190	35	26	466
Waterbury Clock Company. (See Lewis, Charles S., assignor.)						
Waterbury Farrel Foundry and Machine Company. (See Lamb, George B., assignor.)						
Waterbury Manufacturing Company. (See Pope, Charles F., assignor.)						
Waterbury Watch Company. (See Buck, D. Azro A., assignor.)						
Waterbury Watch Company. (See Buck, Daniel A. A., assignor.)						
Waterbury Watch Company. (See Hart, George E., assignor.)						
Waterbury Watch Company. (See Leger, Clandius D., assignor.)						
Waterbury Watch Company. (See Locke, Edward A., assignor.)						
Waterhouse, Addison G. (See Schuyler and Waterhouse.)						
Waterhouse, Addison G., assignor, by mesne assignments, to Schuyler Electric Light Company, New York, N. Y. Regulator for dynamo-electric machines	294,169	Feb. 26	1810	495	26	780
Waterhouse, Addison G., assignor, by mesne assignments, to Schuyler Electric Light Company, New York, N. Y. Automatic regulator for dynamo-electric machines	294,170	Feb. 26	1813	495	26	780
Waterhouse, Addison G., assignor, by mesne assignments, to Schuyler Electric Light Company, New York, N. Y. Double electric-arc lamp	294,294	Feb. 26	1950	537	26	807
Waterhouse, George K., assignor to himself and J. Morse, Boston, Mass. Oiler for car-axle boxes	291,247	Jan. 1	286	80	26	52
Waterman, Lewis E., Brooklyn, N. Y. Fountain-pen	293,545	Feb. 12	981	269	26	621
Water-Proof Fabric Company. (See Converse, Lyman P., assignor.)						
Waterous, Julius E., and J. N. Peel, Brantford, Ontario, Canada. Pulley	295,698	Mar. 25	1727	480	26	1160
Waters, George F., Boston, Mass. Pruning implement	291,996	Jan. 15	1197	334	26	231
Waters, William T., Atlanta, Ga. Electric motor	293,929	Feb. 19	1484	408	26	717
Wathler, Joseph P., Chicago, Ill. Gage for hair-spring studs	293,127	Feb. 5	450	120	26	521
Watkins, Caleb W. (See Parkes, John F., assignor.)						
Watson, Edwin J. (See Hall and Watson.)						
Watson, James, London, England. Baling-press	294,551	Mar. 4	267	73	26	874
Watson, Lewis H., Chicago, Ill. Ironing-machine	293,290	Feb. 12	674	180, 181	26	56
Watt, John A., Boston, assignor of one-fourth to H. B. Sellon and J. L. Whitaker, Somerville, Mass. Street-car-curtain fixture	293,291	Feb. 12	680	181	26	565
Wattles, Joseph W., Canton, Mass. Composition for sizing yarn	292,269	Jan. 22	1583	.....	26	305
Watts, George W., Brooklyn, N. Y. Fire-escape	291,441	Jan. 1	526	149	26	95
Watts, Jeremiah, Racine, Wis. Optical attachment for sewing-machines	294,171	Feb. 26	1815	496	26	780
Wattson, Henry A., Granite, Colo. Sole for rubber boots and shoes	292,711	Jan. 29	2158	601	26	414
Way, Pennock M., Thurlow, Pa. Bell-ringing attachment for locomotives	292,712	Jan. 29	2158	601	26	414
Way, William O., Newington, Conn. Burnishing machinery	293,926	Feb. 19	1349	374, 375	26	692
Wayland, James, Newark, N. J. Trunk-catch	292,967	Feb. 5	233	64	26	485
Wayne, James B. (See Markle and Wayne.)						
Weathers, James, assignor of one-half to J. A. Robbins, Indianapolis, Ind. Whip-socket	291,856	Jan. 8	1055	295	26	195
Weaver, George T. (See Wallace, John, assignor.)						
Weaver, Orange R., *et al.* (See Conly, Mahlon S., assignor.)						
Weaver, Solomon F., Portis, Kans. Horse hay-rake	292,520	Jan. 29	1911	535	26	373
Webb, Albert L., Clinton, Iowa. Cigar-holder	291,115	Jan. 1	127	36	26	26
Webb, George B., Bell's Ferry, N. C. Ice-shaver	295,467	Mar. 18	1417	392	26	1099
Webb, George B., assignor of one-half to Plumb & Marcus, Newark, N. J. Electric clock	294,552	Mar. 4	268	73	26	874
Webb, George H., Pawtucket, R. I. Furnace for heating blanks	291,967	Jan. 15	1198	335	26	231
Webb, John W., Union Springs, Ala. Seed-cotton cleaner	291,442	Jan. 1	526	149	26	95
Webb, Justice. (See Welling, John E., assignor.)						
Webb, Robert, and M. G. Brooks, Elk Falls, Kans. Churn-dasher	294,706	Mar. 4	442	123	26	904
Webber, Charles G., assignor to S. A. Webber, Flushing, N. Y. Lamp-burner	294,417	Mar. 4	101	26	26	846
Webber, Sarah A. (See Webber, Charles G., assignor.)						
Weber, Carl O., *et al.* (See Teller, Carl F., assignor.)						
Weber, Louis. (See Page and Weber.)						
Webster, Benjamin, assignor of one-half to Belknap Manufacturing Company, Bridgeport, Conn. Feed-water heater	295,291	Mar. 25	1982	548	26	1205
Webster, William R., Athens, Pa. Hydraulic riveting-machine	292,521	Jan. 29	1912	535	26	373
Wechsler, Charles, Minneapolis, Minn. Ratchet-wrench	293,128	Feb. 5	451	121	26	521
Weeks, Eugene J., and G. M. Cady, assignors to Coronet Corset Company, Jackson, Mich. Bustle	292,453	Jan. 22	1816	506	26	350
Weeks, George, East Oakland, Cal. Railway-rail chair	293,546	Feb. 12	983	269	26	622
Weeks, Horace, Boston, Mass. Nailing-machine	291,443	Jan. 1	527	149, 150	26	95
Wegmann, Friedrich, Zurich, Switzerland. Roller-mill	294,418	Mar. 4	102	26, 27	26	846
Weikert, John, Indianapolis, Ind. Rotary coal-sifter	294,553	Mar. 4	271	73	26	874
Weil, Joseph, New York, N. Y. Neck-wear fastener	291,444	Jan. 1	528	150	26	95
Weiller, Lazare, Angoulême, France. Alloy for and process of the manufacture of silicious copper and silicious bronze	293,927	Feb. 19	1351	.....	26	692

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Weimer, Peter L., Lebanon, Pa. Regenerative hot-blast stove	292,188	Jan. 22	1461	410, 411	26	286
Weir, Fredric C., Cincinnati, Ohio. Switch-stand	294,100	Feb. 26	1710	470	26	764
Weir, Fredric C., Cincinnati, Ohio. Railway-rail joint	294,101	Feb. 26	1711	471	26	764
Weiser, John W., Chicago, Ill. Clamp for cabinet-makers	292,391	Jan. 22	1731	483	26	334
Weiss, Charles W., Brooklyn, assignor of one-half to C. Kruse, New York, N. Y. Thermostatic electric registering apparatus	293,898	Feb. 19	1352	375	26	692
Welch, Charles T. (See Purdy and Welch.)						
Welch, Henry J., Carthage, N. Y. Shovel	294,419	Mar. 4	106	28	26	847
Welch & Son, Thomas B. (See Rishel, George P., assignor.) (Reissue.)						
Welling, John E., assignor of one-half to J. Webb, Georgetown, Ky. Water-cooler	291,857	Jan. 8	1056	295	26	195
Wells, Charles S., assignor to himself and A. M. Cushing, Boston, Mass. Buckle	292,777	Jan. 29	2263	627	26	433
Wells, Walter S., New York, N. Y. Apparatus for tanning	294,420	Mar. 4	107	28	26	847
Wells, Williams R. (See Prosser, Willard F., assignor.)						
Wellsville Plate and Sheet Iron Company. (See Beaman, Charles F., assignor.)						
Welsh, Alexander, St. Denis, Md., assignor to Viaduct Manufacturing Company of Baltimore City. Holder for the carbons of incandescing electric lamps	295,087	Mar. 11	940	256	26	997
Welsh, Alexander, St. Denis, Md., assignor to Viaduct Manufacturing Company of Baltimore City. Electric lamp	295,088	Mar. 11	941	257	26	997
Welteroth, Henry J. (See Brown and Welteroth.)						
Wemple, Andrew, Chicago, Ill., assignor to F. Schumacher, Akron, Ohio. Machine for cutting grain	295,689	Mar. 25	1729	481	26	1160
Wemple, George W., and B. W. Child, Boston, Mass. Foot-weight	293,692	Feb. 19	1162	324	26	602
Wenman, James F. (See Stewart, George W., assignor.)						
Wenström, Jonas, Orebro, Sweden. Dynamo-electric machine	292,079	Jan. 15	1329	371, 372	26	256
Wentworth, George W., Boonville, N. Y. Tag or label for mail-bags	294,707	Mar. 4	443	123	26	905
Werner, Emil, Philadelphia, Pa. Easel	294,941	Mar. 11	731	204	26	963
Werner, Hellmuth F., Milwaukee, Wis. Case for holding pencils, &c	292,270	Jan. 22	1583	442	26	305
Werts, Nelson, and W. Spicer, Mendon, Ohio. Fence	293,547	Feb. 12	983	269	26	622
Werts, William, Camden, N. J. Machine for threading sheet-metal screws	291,656	Jan. 8	892	229, 230	26	153
Werum, Phillip, Stryker, Ohio. Hay-elevator	291,822	Jan. 8	1008	282	26	186
Wessell, Otto, A. Nickel, and R. Gross, New York, N. Y. Piano-damper	295,317	Mar. 18	1238	343	26	1064
Wesselmann, Bruno, Hamburg, Germany. Door-lock	293,548	Feb. 12	984	270	26	622
West, Byron D., Chicago, Ill. Hasp-lock	293,693	Feb. 19	1163	324	26	602
West, Frank M., Mohawk, N. Y. Ice-creeper	294,829	Mar. 11	601	165	26	938
West, John C. (See Montross and West.)						
West, John C., assignor of one-half to J. D. Smith, Clarksville, Mo. Ironing-board	294,708	Mar. 4	444	123	26	905
West, Jonathan B., Rochester, N. Y. Apparatus for slitting embroidery	291,116	Jan. 1	128	37	26	26
West, Nathaniel W., Alna, Me. Roofing-clamp	291,248	Jan. 1	287	80	26	52
Westbrook, Frank A., Port Jervis, N. Y. Hand corn-planter	294,709	Mar. 4	445	124	26	905
Westcott, John D., Union City, Pa. Cutter-head for handle-turning lathes	293,829	Feb. 19	1354	375	26	693
Western Electric Company. (See Gilliland, Ezra T., assignor.)						
Western Electric Company. (See Haskins, Charles D., assignor.)						
Western Electric Company. (See Hibbard, Angus S., assignor.)						
Western Electric Company. (See Patterson, William R., assignor.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Westlake, Andrew, Leadville, Colo. Car-truck	292,454	Jan. 22	1817	506, 507	26	350
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Method of and apparatus for regulating the electrical transmission of power	291,445	Jan. 1	529	150	26	95
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Fusible safety-strip for electric circuits	292,713	Jan. 29	2159	601	26	415
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electrical indicator	292,714	Jan. 29	2160	602	26	415
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Regulator for dynamo-electric machines	292,715	Jan. 29	2162	602	26	415
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Device for connecting safety-strips in electric circuits	292,716	Jan. 29	2163	602	26	416
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Conductor for electric circuits	292,717	Jan. 29	2164	603	26	416
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric circuit	292,718	Jan. 29	2165	603, 604	26	416
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electrical generator or motor	292,719	Jan. 29	2168	604	26	416
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Incandescent lamp	292,720	Jan. 29	2169	604	26	417
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. System for the electrical transmission of power	292,721	Jan. 29	2170	604, 605	26	417
Weston, Thomas A., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Reversing mechanism for rolling-mills	292,968	Feb. 5	235	645	26	485
Westphal, Henry, and E. Dieterle, Chicago, Ill. Shackle for carriage-springs	295,318	Mar. 18	1239	344	26	1064
Wetmore, Jerome W., Erie, Pa. Vehicle-spring	291,968	Jan. 15	1190	335	26	231
Wetstein, Ferdinand, and F. H. Dyckman, Sleepy Eye, Minn. Trace-buckle	294,942	Mar. 11	732	204	26	963
Wetzler, Sigmund, Hoboken, N. J. Cloak	293,386	Feb. 12	806	217	26	589
Wey, Walter J. (See Pace and Wey.)						
Weymouth, Elisha T., Brooklyn, N. Y. Steam-radiator	295,700	Mar. 25	1730	481	26	1160
Whaples, Ella, assignor of one-half to L. Shannon, Jackson, Mich. Attachment for dresses	293,387	Feb. 12	807	217	26	589
Wharry, John R., Moundsville, W. Va. Hobby-horse	291,657	Jan. 8	824	231	26	154
Wharton, Joseph. (See Wilson, Joseph B., assignor.)						
Wheaton, Frank, Brooklyn, N. Y. Ventilator for feed-bags	294,421	Mar. 4	108	28	26	847
Wheeler, Charles, *et al.* (See Feldmann, Hermann B., assignor.)						
Wheeler, James. (See Wheeler, Ransom S. and J.)						
Wheeler, James, assignor of two-thirds to T. Hagler and J. T. Williams, Red Oak, Mo. Gate	292,455	Jan. 22	1818	507	26	350
Wheeler, John E., trustee. (See Higgins, Charles L., assignor.)						
Wheeler, John M., Toledo, Ohio. Match-safe	293,694	Feb. 19	1164	324	26	602
Wheeler, Nellie J., West Winfield, N. Y. Purse	291,447	Jan. 1	532	151	26	96
Wheeler, Nelson A. (See Cobb and Wheeler.)						
Wheeler, Ransom S. and J., Red Oak, Mo. Car-coupling	291,446	Jan. 1	531	150	26	96
Wheeler, Richard, San Francisco, Cal. Canning apparatus	292,080	Jan. 15	1331	372	26	256
Wheelock, Jerome, Worcester, Mass. Cut-off valve and gear	291,249	Jan. 1	288	81	26	53

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Whelan, Frances G., Philadelphia, Pa. Hook-and-eye fastening	294,554	Mar. 4	272	74	26	875
Wherry, John, Jr., Putnam, Ill. Automatic register for grains, seeds, and other substances.	293,129	Feb. 5	452	121	26	521
Whipple, John P., Milwaukee, Wis. Paint-distributer	292,189	Jan. 22	1465	412	26	226
Whitaker, Elijah J. B. (See Ladd and Whitaker.)						
Whitaker, James L., *et al.* (See Watt, John A., assignor.)						
Whitall, James, *et al.* (See Tatum, C. Albert, assignor.)						
White, Alfred R., Stevens Point, Wis. Sad-iron	292,722	Jan. 29	2172	605	26	417
White, Angeline, London, Ohio. Wash-board	294,102	Feb. 26	1712	471	26	765
White, Archibald W., San José, Cal. Pump	291,250	Jan. 1	290	82	26	53
White, Charles W., Santa Rosa, Cal. Windmill	294,943	Mar. 11	733	204	26	963
White, Clarence O., assignor of one-half to H. H. Johnson, Minneapolis, Minn. Ironing-machine	292,883	Feb. 5	127	35	26	467
White Dental Manufacturing Company, S. S. (See Browne, Arthur W., assignor.)						
White Dental Manufacturing Company, S. S. (See Johnston and Browne, assignors.)						
White Dental Manufacturing Company, S. S. (See Pettit, Elihu R., assignor.)						
White, Emory B., Clarion, Iowa. Check-row corn-planter	294,535	Mar. 4	272	74	26	875
White, James, Canton, Ohio. Safe-lock	293,388	Feb. 12	808	217, 218	26	589
White, James W., *et al.* (See Starr, Eli T., assignor.)						
White, John A. (See Thurston, James B., assignor.)						
White, John G., Pensacola, Fla. Show-box cover	291,450	Jan. 1	536	152	26	97
White, John H., North East, Md. Razor-strop	294,830	Mar. 11	602	166	26	938
White, Joseph J., New Lisbon, N. J. Hoisting-machine	291,251	Jan. 1	291	82	26	53
White, Josiah, Toledo, Ill. Car-coupling	294,831	Mar. 11	602	166	26	938
White, Samuel K., Chicago, Ill. Geometric lathe	291,451	Jan. 1	537	152, 153	26	97
White, Thomas, Cleveland, Ohio, assignor of one-half to E. H. Campbell, Chicago, Ill. Garment-supporter	291,252	Jan. 1	292	82	26	53
White, Welcome, Everett, Mass., assignor of one-half to W. L. Maltby, Montreal, Canada. Roofing composition	295,604	Mar. 25	1607	.....	26	1139
Whitehead, Benjamin S., Newark, N. J. Inking attachment for printing-presses	291,969	Jan. 15	1200	335	26	231
Whiting, Albert, Rochester, N. Y. Apparatus for scouring and fleshing hides	292,723	Jan. 29	2173	605	26	417
Whiting, George A. (See Malone and Whiting.)						
Whiting, Henry, Cedar Rapids, Iowa. Piston-valve	292,778	Jan. 29	2265	627	26	434
Whiting, Henry A., Brooklyn, and W. J. Winghart, New York, N. Y. Combined cane and umbrella	293,830	Feb. 10	1355	375	26	693
Whiting, William M., Elizabeth, N. J. Slate-eraser	294,295	Feb. 26	1963	538	26	808
Whitman, Charles E., St. Louis, Mo. Baling-press	295,089	Mar. 11	942	257	26	997
Whitman, George W., assignor to M. C. Bignall, St. Louis, Mo. Device for punching metal tubes	295,090	Mar. 11	944	257	26	997
Whitney, Charles, assignor of three-fourths to C. W. and W. W. Marsh, Sycamore, R. Emerson and W. A. Talcott, Rockford, Ill. Harvester-platform	291,448	Jan. 1	533	151	26	96
Whitney, Charles, Sycamore, assignor of three-fourths to R. Emerson and W. A. Talcott, Rockford, C. W. and W. W. Marsh, Sycamore, Ill. Grain-harvester frame	291,449	Jan. 1	535	151, 152	26	96
Whitney, Charles, and W. W. Marsh, Sycamore, Ill. Grain-binding harvester	291,452	Jan. 1	541	153, 154, 155	26	98
Whitney, Charles, and W. W. Marsh, Sycamore, Ill. Harvester and binder	295,510	Mar. 18	1478	407, 408	26	1109
Whitney, James H., Brooklyn, N. Y. Device for poising treadle and crank movements	292,909	Feb. 5	238	65	26	486
Whitney, Pardon A., Cleveland, Ohio. Ratchet-drill	292,522	Jan. 29	1912	535	26	373
Whitney, Rael W., assignor to Leader Sewing Machine Company, Cleveland, Ohio. Fly-wheel	295,215	Mar. 18	1105	306	26	1040
Whiton, David E. and L. E., West Stafford, Conn. Lathe-chuck	294,296	Feb. 26	1964	538	26	808
Whiton, Lucius E. (See Whiton, David E. and L. E.)						
Whittaker, Henry B., and G. F. Godley, Philadelphia, Pa. Spring-motor	292,970	Feb. 5	239	65, 66	26	486
Whittaker, William T. (See Ladd and Whitaker, assignors.)						
Whitton, Andrew D., assignor of two-thirds to G. Rice and H. P. Hougen, Philadelphia, Pa. Device for transmitting power	295,701	Mar. 25	1731	482	26	1161
Wiard, Harry, and W. R. Bullock, Syracuse, N. Y. Plow	295,702	Mar. 25	1731	482	26	1161
Wiard, Norman, assignor to H. R. Hughes, Washington, D. C. Carpet-stretcher	293,205	Feb. 5	553	147	26	538
Wichard, Frank F., St. Louis, Mo. Cithern	294,832	Mar. 11	604	166	26	938
Wick, John P., Parma, Ohio. Potato-planter	295,840	Mar. 25	1914	529	26	1194
Wickers, William H., Indianapolis, Ind. Ring for securing finger-cots in position	293,831	Feb. 19	1356	376	26	693
Wickes, Edward N. (See Wickes, Henry D. and E. N.)						
Wickes, Henry D. and E. N., East Saginaw, Mich. Press-roller mechanism for gang-saw mills	291,823	Jan. 8	1009	282	26	186
Wickham, James E., Hartford, Conn. Bracket, shelf, or picture support	292,523	Jan. 29	1914	535	26	373
Wicks, William A., Baltimore, Md. Method of and device for filling and draining food-cans	291,117	Jan. 1	129	37	26	26
Widman, Herman G., San Francisco, Cal. Refrigerating-car and apparatus for shipping meat	293,832	Feb. 19	1357	376, 377	26	693
Widmayer, Louis, Chicago, Ill. Pool-rack	294,422	Mar. 4	109	29	26	847
Wiggins, John G. (See Lambert and Wiggins.)						
Wiggins, Theodore C., *et al.* (See Bradford, Addison, assignor.)						
Wight, Charles H. (See Riesenfeld, Edward R., assignor.)						
Wight, Henry F., Boston, and H. P. Aldrich, Somerville, assignors of one-half to S. N. Aldrich, Marboro, Mass. Railway gate and signal	294,172	Feb. 26	1816	496	26	781
Wightman, Thomas T., *et al.* (See Nugent, Richard C., assignor.)						
Wiegleb, Emil F., assignor to himself and W. H. Borden, Milton, Wis. Razor-strop attachment	294,944	Mar. 11	734	204	26	963
Wilber, Thomas L., Scio, N. Y. Floor-jack	291,824	Jan. 8	1010	283	26	186
Wilbur, Henry A., Cambridge, assignor of one-half to F. W. Lowe, Boston, Mass. Mortising-machine	293,607	Feb. 12	1052	291	26	633
Wilcox, Frank. (See Buys, Bert, assignor.)						
Wilcox, Merrill F., Bay City, Mich. Smoothing the inner surface of wooden tubing	295,703	Mar. 25	1733	482	26	1161
Wilcox, Stephen C., assignor to L. D. Randall, Dubuque, Iowa. Salt-cellar	294,341	Feb. 26	2025	535	26	810
Wiles, John M., Butte City, Cal. Rotary pump	295,704	Mar. 25	1734	482, 483	26	1161
Wiley, Philip W., Raleigh, N. C., assignor to Golding & Co., Boston, Mass. Supplementary cell for type-cases	292,392	Jan. 22	1733	483	26	334
Wilhelmi, Valentin, Paterson, N. J. Beer-cooler	292,971	Feb. 5	243	66, 67	26	487
Wilkey, David, Rock Island, Quebec, Canada. Rubber shoe	295,511	Mar. 18	1463	409	26	1110
Wilkin, Theodore S., Milwaukee, Wis. Gang-saw-mill frame	291,255	Jan. 1	296	83, 84	26	54

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Wilkin, Theodore S., Milwaukee, Wis. Gang-saw mill	291,256	Jan. 1	297	84	26	54
Wilkin, Theodore S., Milwaukee, Wis. Gang-saw mill	291,257	Jan. 1	298	84	26	54
Wilkin, Theodore S., Milwaukee, Wis. Gang-saw mill	291,258	Jan. 1	301	85	26	55
Wilkin, Theodore S., Milwaukee, Wis. Saw-mill head-block	291,453	Jan. 1	548	155	26	98
Wilkin, Theodore S., Milwaukee, Wis. Saw-mill set-works	292,271	Jan. 22	1584	442, 443	26	305
Wilkin, William M., East Saginaw, Mich. Saw-mill dog	294,710	Mar. 4	446	124	26	905
Wilkin, William M., Erie, Pa. Saw-mill dog	294,711	Mar. 4	448	124	26	905
Wilkins, George A., Philadelphia, Pa. Telephone-support	294,297	Feb. 26	1965	538	26	808
Willcox & Gibbs Sewing Machine Company. (See Gorton, James S., assignor.)						
Willcox, James M. (See Lesley and Willcox.)						
Williams, Austin, and J. M. Gannon, Negaunee, Mich. Cut-out for telephones	291,825	Jan. 8	1011	283	26	186
Williams, Benezette. (See Dorsett, Morris, and Williams.)						
Williams, Charles P., Philadelphia, Pa. Extracting gold by means of alkaline sulphides	292,605	Jan. 29	2027	.....	26	392
Williams, Charles R. (See Payne and Williams.)						
Williams, Eben B., Forestdale, assignor, by mesne assignments, of part to D. D. Earle, North Smithfield, R. I. Thread-guide for spooling-machines	294,712	Mar. 4	449	125	26	906
Williams, Edwin O., assignor to himself and B. L. Dwinell, Taunton, Mass. Drill-making machine	293,292	Feb. 12	681	181, 182	26	566
Williams, Edwin S., Howard, and J. E. Harder, assignors of one-third to A. V. Cleland, Niles, Mich. Sheaf-carrier for harvesters	291,118	Jan. 1	130	37	26	26
Williams, Frederick C., Arlington, N. J. Machine for spinning metals	291,253	Jan. 1	293	83	26	53
Williams, George R., Ithaca, N. Y. Button-machine	295,705	Mar. 25	1735	483	26	1161
Williams, George W., Portis, Kans. Steam cooking apparatus	294,945	Mar. 11	734	205	26	963
Williams, Hamline B., Glenwood, Iowa. Car-coupling	295,706	Mar. 25	1738	483	26	1162
Williams, Henry A. (See Williams, Manck, and Williams.)						
Williams, Isaac F., Bristol, R. I. Rubber boot or shoe	294,173	Feb. 26	1818	496	26	781
Williams, Isaac F., Bristol, R. I. Rubber boot or shoe	294,174	Feb. 26	1819	496	26	781
Williams, James T., *et al.* (See Wheeler, James, assignor.)						
Williams, John, Kalamazoo, Mich. Cherry-pitter	292,393	Jan. 22	1735	483	26	335
Williams, John R., Newark, N. J. Machine for cutting cigar-wrappers	291,559	Jan. 8	687	194	26	130
Williams, John S., *et al.* (See Fontayne, Albert, assignor.)						
Williams, Joseph, San José, Cal. Window-blind	291,254	Jan. 1	295	83	26	53
Williams, Lewis, Johnstown, Pa. Bale-tie	295,319	Mar. 18	1240	344	26	1064
Williams Manufacturing Company, C. W. (See Davis, Charles W., assignor.)						
Williams, Theodore D., Chicago, Ill. Stock-car	295,468	Mar. 18	1418	392	26	1099
Williams, Thomas, and W. A. Preston, Princeton, Ind.; said Williams assignor to said Preston. Gate	291,858	Jan. 8	1057	296	26	195
Williams, Thomas, A. Manck, and H. A. Williams, Princeton, Ind. Elevator	295,135	Mar. 11	999	275, 276	26	1008
Williams, White & Company. (See Ainsworth, Henry A., assignor.)						
Williams, William, Huntingdon, Pa. Base-ball bat	292,190	Jan. 22	1468	412	26	227
Williamson, Charles D. (See Ayres, Saxton T., assignor.)						
Williamson, Henry C., Michigan City, Ind. Furnace	294,536	Mar. 4	273	74	26	875
Willis, Nelson. (See Allen, Willis A., assignor.)						
Willis, Robert L., assignor of one-half to J. A. Trumbull, Sherman, Tex. Bale-band tightener	291,560	Jan. 8	688	194	26	130
Wills, George W., Portland, Oreg. Saw	293,130	Feb. 5	454	121	26	521
Wilmer, Theodore, Millhousen, Ind. Programme-clock	292,456	Jan. 22	1819	507	26	351
Wilms, Charles A., St. Louis, Mo. Hair-spring for watches	294,833	Mar. 11	605	167	26	939
Wilson, Alfred, Handsworth, county of Stafford, England. Apparatus for making gas	292,081	Jan. 15	1332	372, 373	26	256
Wilson, Alfred, Handsworth, county of Stafford, England. Apparatus for making gas	292,082	Jan. 15	1333	373, 374	26	257
Wilson, Arthur G., New York, N. Y. Paper box	292,606	Jan. 29	2028	564	26	392
Wilson, Clara L., *et al.* (See Wilson, Michael H., assignor.)						
Wilson, Eugene M., Worcester, Mass., assignor of one-half to A. P. Carpenter, Foxcroft, Me. Looping-in mechanism and operator's apparatus for telephone-exchanges	293,206	Feb. 5	554	148	26	539
Wilson, Frank, assignor of two-thirds to J. L. and J. E. Wilson, Easton, Pa. Grinding-mill	292,524	Jan. 29	1914	536	26	373
Wilson, James, Philadelphia, Pa. Packing condenser-tubes	295,136	Mar. 11	1000	276	26	1008
Wilson, James B., Philadelphia, Pa. Umbrella-runner	293,549	Feb. 12	985	270	26	922
Wilson, James E., *et al.* (See Wilson, Frank, assignor.)						
Wilson, James P. (See Tirrill and Wilson.)						
Wilson, John L., *et al.* (See Wilson, Frank, assignor.)						
Wilson, John S., and J. H. Haskins, Chicago, Ill. Machine for rolling threads on metal	295,605	Mar. 25	1608	445	26	1139
Wilson, Joseph A., Chester, Vt. Saddle-board	295,847	Mar. 25	1916	530	26	1194
Wilson, Joseph B., Clayton, N. J. Tool for forming bottle lips and necks	295,848	Mar. 25	1916	530	26	1194
Wilson, Joseph B., Clayton, N. J., assignor of one-half to J. Wharton, Philadelphia, Pa. Clamp for holding bottles	294,946	Mar. 11	736	205	26	963
Wilson, Leonard. (See Thrush and Wilson.)						
Wilson, Michael H., assignor of one-fourth to C. L. Wilson, Brooklyn, and H. McCobb, New York, N. Y. Autographic telegraph	292,607	Jan. 29	2030	564	26	392
Wilson, Robert J., Pittsburg, Pa. Fluid-pressure car-brake	291,826	Jan. 8	1012	283	26	187
Wilson, Thomas L., Port Hope, Ontario, assignor of one-half to A. D. Cable, Montreal, Canada. Railway-car	293,608	Feb. 12	1053	291	26	634
Wilson, William V., Jubilee Street, Mile End, county of Middlesex, England. Manufacture of material for electric insulation	294,557	Mar. 4	274	.....	26	875
Wilton Manufacturing Company. (See Travis, Charles L., assignor.)						
Winchester, George C., New York, N. Y. Chair	292,833	Feb. 19	1359	377	26	694
Winchester Repeating Arms Company. (See Bennett, Thomas G., assignor.)						
Winchester Repeating Arms Company. (See Burns, Henry S., assignor.)						
Winchester Repeating Arms Company. (See Clough, Jefferson M., assignor.)						
Winchester Repeating Arms Company. (See Mason, William, assignor.)						
Winchester Repeating Arms Company. (See Mitchell, Robert F., assignor.)						
Winckens, Carl. (See Daul, Anthony, assignor.)						
Winding, George, Milwaukee, Wis. Machine for mixing asphalt	295,707	Mar. 25	1740	484	26	1162
Windt, Henry T., Toronto, Ontario, Canada. Vermin-trap	293,609	Feb. 12	1055	292	26	634
Wineman, Parker, Chicago, Ill. Car-coupling	292,724	Jan. 29	2174	606	26	417
Winger, Elam B. (See Winger, Oswald E., assignor.)						
Winger, Oswald E., assignor of one-half to E. B. Winger, Freeport, Ill. Windmill	293,834	Feb. 19	1362	377	26	694
Winger, Oswald E., assignor of one-half to E. B. Winger, Freeport, Ill. Windmill	293,835	Feb. 19	1364	378	26	695
Winger, Oswald E., assignor of one-half to E. B. Winger, Freeport, Ill. Windmill	293,836	Feb. 19	1365	378	26	695

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Wingfield, Charles, assignor to J. Rodgers & Sons, (limited,) Sheffield, county of York, England. Knife	294,558	Mar. 4	275	74	26	875
Winghart, William J. (See Whiting and Winghart.)						
Winn, Willis O. (See Lampton, William R., assignor.)						
Winne, William H., Meridian, N. Y. Sleigh	292,972	Feb. 5	245	67	26	487
Winnea, John L., San Francisco, Cal. Cryptographal table	294,175	Feb. 26	1820	497	26	781
Winslow, Alonzo P., Cleveland, Ohio. Railway-car stove	293,695	Feb. 19	1165	324, 325	26	662
Winslow Beating-Out Shoe Machinery Company. (See Rogers, Josiah W., assignor.)						
Winslow, John, Jr., and R. Atkins, Bristol, Conn. Lathe-dog	293,293	Feb. 12	684	182	26	566
Winsor, William E. (See Haight, Wood, and Winsor.)						
Winter, Herman, Brooklyn, N. Y., assignor of one-half to American Ship Windlass Company, Providence, R. I. Hawse-pipe	293,610	Feb. 12	1056	292	26	634
Winter, John, Neosho, Mo. Motive-power machine	291,119	Jan. 1	132	37, 38	26	26
Winter, Louis P. (See Goodman and Winter.)						
Winterbotham, Joseph, Joliet, Ill. Hoop-pole-splitting machine	292,973	Feb. 5	246	67	26	487
Winterhalter, Fredrick. (See Anderson and Winterhalter.)						
Wirz, August H., Philadelphia, Pa. Bottle-stopper	295,708	Mar. 25	1741	484	26	1162
Wisconsin Chemical Company *et al.* (See Kessler, Johann K., assignor.)						
Wisdom, Samuel J., Montgomery, Ala. Jack	292,725	Jan. 29	2175	606	26	417
Wise, William, Medway, Ohio. Fire-escape	295,320	Mar. 18	1241	344	26	1064
Wishart, James M., Topeka, Kans. Horse hay-rake	292,457	Jan. 22	1820	508	26	351
Wishart, James M., and W. F. Buzick, Topeka, Kans. Roller attachment to grain-drills	293,389	Feb. 12	811	218	26	590
Wiskocil, Ferdenand, Prairie du Sac, Wis. Machine for gathering insects from plants	292,083	Jan. 15	1334	374	26	257
Witherow, James P., *et al.* (See Clapp and Griffiths, assignors.) (Reissue.)						
Withers, James E., assignor to R. A. Holloway, Henderson, Ky. Electro-magnetic car-brake	293,993	Feb. 19	1561	430, 431	26	731
Withington, James, Chambersburg, assignor to Trenton Iron Company, Trenton, N. J. Hammer-die	292,608	Jan. 29	2032	565	26	392
Withington, Richard H., Sacramento, Cal. Washing-soap	291,827	Jan. 8	1013	.....	26	187
Witt, Charles N., assignor of one-half to E. L. Wallace, Springfield, Mass. Table	292,084	Jan. 15	1335	374	26	257
Witte, Gustav, and O. Greiner, Berlin, Germany. Extension fire-ladder	291,259	Jan. 1	302	85, 86, 87	26	55
Witte, William. (See Manneck and Witte.)						
Wittman, John M., St. Mary's, Pa. Music-leaf turner	294,298	Feb. 26	1968	538	26	809
Wittmann, Rudolf C., New York, assignor to himself, and C. Nelson, East New York, N. Y. Manufacture of artificial stone	293,207	Feb. 5	557	.....	26	539
Wittmann, Rudolf C., assignor to himself and C. Nelson, New York, N. Y. Writing-tablet	295,137	Mar. 11	1001	276	26	1008
Woerd, Charles V., Waltham, Mass. Machine for threading sectional leading-screws	293,930	Feb. 19	1485	408	26	717
Wold, Peter S., Chicago, Ill. Razor-strop	293,994	Feb. 19	1563	431	26	731
Wolf, Abraham N., Allentown, Pa. Roller flour-mill	294,947	Mar. 11	737	205, 206	26	964
Wolf, Christopher C., *et al.* (See Duffy and McIvor, assignors.)						
Wolf, Frederick W., Chicago, Ill. Fermenting-room in distilleries	293,294	Feb. 12	684	182	26	566
Wolf, John, Allegheny City, Pa. Boot-cleaner	294,834	Mar. 11	605	167	26	939
Wolf, Leopold, New York, N. Y. Combined toilet-mirror and photographic album	292,884	Feb. 5	129	35	26	467
Wolfe, Edward W., assignor to Reading Iron Works, Reading, Pa. Mechanism for introducing tubes into furnaces	291,454	Jan. 1	549	155	26	98
Wolff, Arthur J., Brooklyn, N. Y. Tobacco-pipe	291,561	Jan. 8	689	195	26	130
Wolff, Charles A. (See Lewis and Wolff.)						
Wolff, Ferdinand, Hoboken, N. J. Cap for mustard-bottles	294,835	Mar. 11	606	167	26	939
Wolfkill, Charles E. (See Burkhardt, Gustav, assignor.)						
Wölner, Eugen, Liverpool, county of Lancaster, England. Weighing-machine	294,713	Mar. 4	450	125, 126	26	906
Wood, Alanson, assignor of one-half to J. A. Cohoon, Toledo, Ohio. Circular gravity-railway	291,261	Jan. 1	308	87	26	56
Wood, Aurin, Worcester, Mass. Latho	291,455	Jan. 1	550	156	26	99
Wood, Aurin, Worcester, Mass. Shaft-centering lathe	291,456	Jan. 1	553	156	26	99
Wood, Charles H. (See Gonno, William H., assignor.)						
Wood, Edmund M., Natick, Mass. Greenhouse	293,696	Feb. 19	1166	325, 326	26	602
Wood, Edward R., *et al.* (See Race and Mathews, assignors.) (Reissue.)						
Wood, George, *et al.* (See Race and Mathews, assignors.) (Reissue.)						
Wood, John D. (See Wood, Twentyman, assignor.)						
Wood, Lewis & Hawley. (See Lewis, Fredrique R., assignor.)						
Wood, Melville J., and W. H. Bond, Athens, Mich. Boot	291,658	Jan. 8	824	231	26	154
Wood, Randolph, *et al.* (See Race and Mathews, assignors.) (Reissue.)						
Wood, Richard, *et al.* (See Race and Mathews, assignors.) (Reissue.)						
Wood, Robert. (See McNaughton, Henry, assignor.)						
Wood, Samuel S. (See Shorey, Frank P., assignor.)						
Wood, Thomas H., Philadelphia, Pa. Combined automatic floor and safety-clutch for elevators	293,390	Feb. 12	812	218	26	591
Wood, Thomas R., *et al.* (See Bayles, Thomas S., assignor.)						
Wood, Twentyman, assignor of one-half to J. D. Wood, Westport, Conn. Bag-lock	294,299	Feb. 26	1969	539	26	809
Wood, Valentine, Peru, Ind. Attachment for plows	292,272	Jan. 22	1586	443	26	306
Wood, W. Dewees, Pittsburg, Pa. Manufacturing planished sheet-iron	291,260	Jan. 1	306	.....	26	56
Wood, W. Dewees, Pittsburg, Pa. Feed-table for hammering-machines	293,611	Feb. 12	1057	292	26	634
Wood, W. Dewees, Pittsburg, Pa. Apparatus for treating sheet-iron	294,559	Mar. 4	275	75	26	875
Wood, Walter, *et al.* (See Race and Mathews, assignors.) (Reissue.)						
Wood, Walter A., Hoosick Falls, N. Y. Harvester-reel	294,103	Feb. 26	1713	471	26	765
Wood, William, Philadelphia, Pa. Carding and spinning machinery for the manufacture of asbestus yarn, &c	293,391	Feb. 12	814	219	26	591
Wood, William H. (See Haight, Wood, and Winsor.)						
Wood, William H., Rochester, N. Y. Attaching buttons	291,562	Jan. 8	690	195	26	130
Wood, William H., Rochester, N. Y. Button-fastener	295,709	Mar. 25	1742	484	26	1162
Wood, William H., and G. Richmond, New York, N. Y. Apparatus for separating liquids from gases and steam	294,360	Feb. 26	1970	539	26	809
Woodard, Albert P. (See Woodard, Stephen, assignor.)						
Woodard, Alonzo B., Hornellsville, N. Y. Vehicle-wheel	291,457	Jan. 1	554	156	26	99
Woodard, Isaac P., Richmond, Ind. Combined fodder-cutter, corn-sheller, and feed-mill	294,423	Mar. 4	110	29	26	848
Woodard, Stephen, assignor of one-half to A. P. Woodard, Delano, Minn. Shingling-bracket	292,458	Jan. 22	1921	508	26	351

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Woodason, Thomas, Chicago, Ill. Bellows attachment for insect-powder, &c	292,085	Jan. 15	1336	375	26	257
Woodburn, Thomas C., *et al.* (See Armer, David S., assignor.)						
Woodley, Jacob, assignor of one-half to T. H. Coble, Hampton, Iowa. Cutting apparatus for reapers and mowers	291,563	Jan. 8	691	195	26	130
Woodrich, Rndolf E., New York, and C. Langbein, Brooklyn, N. Y. Lock	294,560	Mar. 4	277	75	26	875
Woodruff, John W., Wise, W. Va. Velocipede	293,637	Feb. 19	1368	378	26	695
Woodruff, William N. (See Johnson, Moses C., assignor.)						
Woods, Andrew M., Shiloh, S. C. Machine for scraping and cleaning intestines	293,392	Feb. 12	816	220	26	591
Woods, Harry E., West Somerville, Mass. Tap and reamer wrench	294,104	Feb. 26	1714	471	26	765
Woods, Sherwood & Co. (See Corey, George D., assignor.)						
Woodward, Anderson, Cameron, assignor of one-half to O. V. Porter, Monmouth, Ill. Check-row corn-planter	292,273	Jan. 22	1588	443	26	306
Woodward, Delbert K., Lordstown, Ohio. Easel	292,086	Jan. 15	1337	375	26	258
Wooldridge, William H., Louisville, Ky. Folding cot	295,606	Mar. 25	1611	446	26	1140
Woolley, G. A. (See Vogel, William, assignor.)						
Woolley, Leonidas G., Indianapolis, Ind. Lightning-diffuser	293,612	Feb. 12	1058	292	26	634
Woolley, William J., Hilliard, Ohio. Tile-machine	294,342	Feb. 26	2026	555	26	819
Woolner, Jacob, Peoria, Ill. Apparatus for cooling mash	292,885	Feb. 5	130	36	26	467
Woolridge, John, Libertyville, Ill. Cultivator	295,607	Mar. 25	1612	446, 447	26	1140
Woolworth, James. (See Cowles and Woolworth.)						
Wootten, John E., Philadelphia, Pa. Locomotive-boiler	291,120	Jan. 1	133	38	26	26
Worcester, J. Warren, assignor of one-half to A. W. and E. R. Storm, New York, N. Y. Toy	295,138	Mar. 11	1002	276	26	1008
Worch, Christian, Washington, D. C. Propulsion of vessels	292,736	Jan. 29	2170	607	26	418
Worden, Edwin E., Somerville, G. Taylor, Everett, J. Power and E. D. Colby, Boston, Mass. Machine for corking bottles	291,458	Jan. 1	555	156, 157	26	99
Work, Charles G., Lancaster, Ohio. Ladder	292,150	Jan. 15	1411	399	26	271
Wormuth, Charles, Little Falls, N. Y. Door and gate latch	292,727	Jan. 29	2177	607	26	418
Worthington, Charles C., Irvington, N. Y. Duplex pumping-engine	292,525	Jan. 29	1916	536, 537	26	374
Wren, Christopher, Plymouth, Pa. Expanding reamer	294,714	Mar. 4	453	127	26	907
Wren, George. (See Wren, William C., assignor.)						
Wren, William C., assignor to G. Wren, Brooklyn, N. Y. Hand-truck	292,609	Jan. 29	2033	565	26	393
Wright, Aaron, assignor of one-half to E. Groat, Phœnix Mills, N. Y. Device for sharpening the blades of fabric-seam trimmers	291,459	Jan. 1	557	157	26	100
Wright, Aaron, assignor of one-half to E. Groat, Phœnix Mills, N. Y. Device for trimming fabrics	295,139	Mar. 11	1003	277	26	1008
Wright, Charles J. (See Haas, Samuel H., assignor.)						
Wright, Duncan. (See Price and Wright.)						
Wright, Edmund, Philadelphia, Pa. Carriage-umbrella	295,140	Mar. 11	1004	277	26	1008
Wright, Frank. (See Copeland and Wright.)						
Wright, Fredrick M., Fern Ridge, Mo. Car-coupling	293,995	Feb. 19	1563	431	26	732
Wright, Henry C. (See Patterson, James, assignor.)						
Wright, James A., Rockingham, N. C. Spring-motor	291,970	Jan. 15	1201	336	26	232
Wright, James N., Quincy, Ill. Press	294,747	Mar. 4	487	136	26	913
Wright, Nehemiah. (See Morris, David, assignor.)						
Wright, Samuel, Egremont, county of Chester, England. Barrel-making machine	292,728	Jan. 29	2178	607	26	418
Wright, Thomas, South Norwich, county of Oxford, assignor to O. Sweeper Company, (limited,) Otterville, Ontario, Canada. Combined camp-chair and cane	295,216	Mar 18	1106	306	26	1040
Wright, William S., Dover, N. J. Harmonic coupler for piano-actions	295,512	Mar. 18	1485	409	26	1110
Wuerfel, Ernest, Brooklyn, N. Y. Button	292,729	Jan. 29	2180	608	26	418
Wyeth, Henry M., Salt Lake City, Utah Ter. Force-pump	291,121	Jan. 1	134	38	26	27
Wygant, John H., Hackensack, N. J. Mast-hoop	292,191	Jan. 22	1468	412	26	287
Wylie, Richard, Napa, Cal. Sidewalk-curb and surface-case for electric wires	295,710	Mar. 25	1743	484, 485	26	1162
Wyman, Horace. (See Crompton and Wyman.) (Reissue.)						
Wyman, Richard H., Evanston, Ill. Railway-car	292,192	Jan. 22	1469	413	26	287
Wyms, John H., assignor of one-half to M. A. Cahn, Oakland, Cal. Grass-collecting attachment for lawn-mowers	293,208	Feb. 5	558	148	26	539
Yale, Richard H., New Orleans, La. Bagasse-drier	294,836	Mar. 11	607	167, 168	26	939
Yale, Thomas B., Columbia, Tex. Process of and apparatus for extracting crystallized sugar from bagasse	293,838	Feb. 19	1269	379	26	606
Yale & Towne Manufacturing Company. (See Stockwell, Emory, assignor.)						
Yale & Towne Manufacturing Company. (See Stockwell, Emory and H. C., assignors.)						
Yale & Towne Manufacturing Company. (See Taylor, Warren H., assignor.)						
Yale & Towne Manufacturing Company. (See Weston, Thomas A., assignor.)						
Yarger, John A., New Hampton, Iowa. Reversible sad-iron	292,087	Jan. 15	1338	375	26	258
Yeatman, Samuel, Marietta, Ga. Peg-cutter	291,460	Jan. 1	558	157	26	100
Yeomans, George, Wayne, Mich. Mechanical movement	292,974	Feb. 5	246	67	26	487
Yetter, Chris, *et al.* (See Brown, Mordecai, assignor.)						
Yonley, Harvey W., Denver, Colo. Device for closing carriage-doors	292,526	Jan. 29	1921	537	26	374
York, Levi D., Portsmouth, Ohio. Jail-bar	292,527	Jan. 29	1921	537	26	374
York, Levi D., Portsmouth, Ohio. Apparatus for producing and burning gas	294,301	Feb. 26	1971	539	26	809
York, Levi D., Portsmouth, Ohio. Mode of and mechanism for producing surfaces on iron or steel	295,217	Mar. 18	1107	306	26	1040
York, Levi D., Portsmouth, Ohio, assignor to York Manufacturing Company, of Ohio. Runner for scrapers	295,892	Mar. 25	1983	548	26	1206
York Manufacturing Company. (See York, Levi D., assignor.)						
Yost, George W. N., New York, N. Y., assignor to American Writing Machine Company, of New York. Type-writer	295,409	Mar. 18	1420	393	26	1100
Young, Albert B. (See Kayser, Adolf, assignor.)						
Young, Asa. (See Ga Nun, Gilbert E., assignor.)						
Young, Calvin, Auburn, N. Y., assignor of one-half to D. M. Osborne & Co., of New York. Harvesting-machine	294,837	Mar. 11	609	168	26	939
Young, Edmund L., and L. Dyer, Millbridge, Me. Machine for making wire or other solder	291,828	Jan. 8	1014	283, 284	26	187
Young, Franklin E., Canton, Ohio. Reclining and folding chair	293,393	Feb. 12	817	220	26	592
Young, Howard H. (See Graham and Young.)						
Young, John W., Fort Maroni, Ariz. Ter. Gripping mechanism for traction-cable railways	294,948	Mar. 11	739	207	26	964
Young, Joseph M., Johnstown, Pa. Reel-spool for wire	292,610	Jan. 29	2034	565	26	393
Young, William H., Wilmington, Del. Hoisting mechanism for pianos, &c	291,122	Jan. 1	135	38	26	27

Alphabetical list of patentees, January to March, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Zahniser, George M. (See Zahniser, William F. and G. M.)						
Zahniser, William F. and G. M., North's Mills, Pa. Fence	294,424	Mar. 4	111	29	26	848
Zanetti, Fortonato C., Bryan, Tex. Aquarium	295,218	Mar. 18	1108	306 to 307	26	1040
Zeigler, George W., Norwalk, Ohio. Carpet-sweeper	295,470	Mar. 18	1423	393 to 394	26	1100
Zeller, Melancthon E., Bluffton, Ohio. Buckle	291,461	Jan. 1	558	157	26	100
Zellner, Columbus D., Delta, Ohio. Neck-yoke	292,886	Feb. 5	131	36	26	467
Zellweger, John, Chicago, Ill. Gas-producer	292,394	Jan. 22	1736	484	26	335
Zellweger, John, Chicago, Ill. Gas-producer	292,395	Jan. 22	1738	484	26	335
Ziegler, Charles W., Scranton, Pa. Machine for separating slate from coal	291,123	Jan. 1	137	39	26	27
Ziegler, Enos. (See Ziegler, Henry, assignor.)						
Ziegler, Henry, assignor to himself and E. Ziegler, North Lima, Ohio. Gate-operating apparatus	293,550	Feb. 12	987	270	26	622
Zierold, Karl G. (See Biese and Zierold.)						
Zimmer, William, Bellaire, Ohio. Tilting vessel	295,849	Mar. 25	1917	530	26	1195
Zimmer, William, Bellaire, Ohio. Caster	295,850	Mar. 25	1918	530	26	1195
Zinna, Edward F., Milwaukee, Wis. Composition for fire-proof pottery	295,321	Mar. 18	1242	.....	26	1065
Zinsmaier, Robert, Gallon, Ohio. Alarm-lock	292,088	Jan. 15	1339	375 to 376	26	258
Zubee, Peter, Ashburnham, Mass. Stump-puller	291,269	Jan. 1	309	87	26	56
Zug, Christopher, Pittsburg, Pa. Manufacture of wrought-iron	294,949	Mar. 11	741	.....	26	964

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette.	
			Volume.	Page.
Adams, Peter, Jr. (See Shepard and Adams.)				
Alcock, Henry, Cobridge, county of Stafford, England. Vegetable-dish	14,640	Feb. 12	26	546
Alpaugh, Spencer M. (See Barlow and Alpaugh.)				
Arel, Joan B., and J. Chapman, Brooklyn, N. Y. Steam-radiator pipe	14,883	Mar. 18	26	1021
Barlow, James, and S. M. Alpaugh, Trenton, N. J. Table-ware	14,528	Jan. 1	26	1
Barlow, James, and J. Moses, assignors to Mercer Pottery Company, Trenton, N. J. Dinner or tea set	14,808	Feb. 26	26	740
Barnhart, Alson E., *et al.* (See Guildenstine Julius, assignor.)				
Barnhart, Arthur M., *et al.* (See Guildenstine, Julius, assignor.)				
Bassett, Julius W., Brooklyn, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	14,836	Mar. 4	26	827
	14,551 to 14,554	Jan. 22	26	277
Beaumont, Albert, Philadelphia, Pa. Carpet	14,884	Mar. 18	26	1021
Beebe, Charles H., Norwich, Conn. Ornamentation of builders' hardware	14,564	Jan. 29	26	357
Beeler, Charles H., Jr., assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-type				
Bigelow Carpet Company. (See Campbell, Jacob B., assignor.)				
Bigelow Carpet Company. (See Halliday, Arthur L., assignor.)				
Bigelow Carpet Company. (See Halliday and McCallum, assignors.)				
Bigelow Carpet Company. (See Loudon, Milton R., assignor.)				
Bigelow Carpet Company. (See McCallum, William, assignor.)				
Bigelow Carpet Company. (See Merry, John, assignor.)				
Bigelow Carpet Company. (See Smith, Frank E., assignor.)				
Billingham, Francis, Brooklyn, assignor to E. P. Gleason Manufacturing Company, New York, N. Y. Lantern	14,865	Mar. 11	26	919
Bioren, Frederick F. and J. C., Newark, N. J. Sleeve-button	14,897	Mar. 25	26	1115
Bioren, James C. (See Bioren, Frederick F. and J. C.)				
Boda, Abia Z., Washington, D. C., assignor to C. Devries, M. A. Vogeler, and H. D. Umbstaetter, Baltimore, Md. Statue	14,809	Feb. 26	26	740
Boston Watch Case Company. (See Boyer, Jean F., assignor.)				
Bound Brook Woolen Mills. (See Einstein, Henry L., assignor.)				
Bowers, James, Newark, N. J. Corset	14,535	Jan. 8	26	111
Boyer, Jean F., assignor to Boston Watch Case Company, Boston, Mass. Watch-case	14,866	Mar. 11	26	919
Bradley & Hubbard Manufacturing Company. (See Patitz, Albert, assignor.)				
Bromley Brothers. (See Ricker, Fred F., assignor.)				
Brotz, Robert, *et al.* (See Eavenson, Edwin R., assignor.)				
Butterick Publishing Company. (See O'Hara, Catherine, assignor.)				
Butterick Publishing Company. (See Reed, John Q., assignor.)				
Butterick Publishing Company. (See Shiels, Catherine, assignor.)				
Butterick Publishing Company. (See Shiels, Sarah J., assignor.)				
Butterick Publishing Company. (See Tully, Louise, assignor.)				
Butterick Publishing Company. (See Turner, Mary, assignor.)				
Campbell, Jacob B., Yonkers, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	14,677	Feb. 19	26	641
Casper, Charles, Meriden, Conn. Salt and pepper box	14,545	Jan. 15	26	205
Casper, Louis, Meriden, Conn. Salt and pepper box	14,565	Jan. 29	26	357
Cassler, William. (See Reynolds, Edward H., assignor.)				
Caterson, James H., *et al.* (See Eavenson, Edwin R., assignor.)				
Chalvin, Henry A., assignor to Cook & Bernheimer, New York, N. Y. Bottle	14,837	Mar. 4	26	827
Chapman, John. (See Arel and Chapman.)				
Charnley, James A., Providence, R. I. Bracelet	14,566	Jan. 29	26	357
Chatellier, Joseph F., New York, N. Y. Rosettes for jewelry	14,704	Feb. 19	26	641
Christesen, Rodolphe, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lamp-bracket	14,838	Mar. 4	26	827
Cochran, Andrew, assignor to W. E. Montague and T. E. White, Philadelphia, Pa. Carpet	14,529 14,330	Jan. 1	26	1
Collender, H. W. (See Wagner, Albert, assignor.)				
Cook & Bernheimer. (See Chalvin, Henry A., assignor.)				
Corbin, P. & F. (See Langerfeld, Arthur, assignor.)				
Cory, Florence E., assignor to Vandeventer & Horne, New York, N. Y. Carpet	14,839 14,840	Mar. 4	26	827
Crowe, Eugene A., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,678 to 14,703	Feb. 19	26	641
Devries, Christian, *et al.* (See Boda, Abia Z., assignor.)				
Dini, Vincenzo, Brooklyn, N. Y. Center-piece	14,550	Jan. 15	26	206
Dodge, Nathan D. (See Hatfield, Charles B., assignor.)				
Donato, Peter L., Newark, N. J. Sewing-machine cover	14,602	Feb. 5	26	441
Dornan Bros. & Co. (See Righter, Oscar, assignor.)				
Dreyfus, Bernhard, New York, N. Y. Pendant	14,567	Jan. 29	26	357
Dwyer, James, assignor to Peninsular Stove Company, Detroit, Mich. Stove	14,555	Jan. 22	26	277
Eavenson, Edwin R., assignor to J. H. Caterson and R. Brotz, Philadelphia, Pa. Back of a playing-card	14,810 to 14,816	Feb. 26	26	740
Einstein, Henry L., assignor to Bound Brook Woolen Mills, Bound Brook, N. J. Cloth	14,568	Jan. 29	26	357
Eldridge, Eli H. and J. H., Taunton, Mass. Coffin-plate	14,641	Feb. 12	26	546
Eldridge, John H. (See Eldridge, Eli H. and J. H.)				
Fairchild, Le Roy C., New York, N. Y. Cigar-cutter case	14,817	Feb. 26	26	740
Fajon, Etienne, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,531	Jan. 1	26	1

Alphabetical list of patentees of designs, January to March, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Fisher, Edwin, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,705 to 14,716	Feb. 19	26	641
Fisher, Edwin, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,898	Mar. 25	26	1115
Folsom, James L., Brooklyn, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet.	14,642 to 14,663	Feb. 12	26	546
Folsom, James L., Brooklyn, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet.	14,717 to 14,755	Feb. 19	26	641
Folsom, James L., Brooklyn, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet.	14,841	Mar. 4	26	827
Frost, Ella C., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,899	Mar. 25	26	1115
Gadaby, Walter J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,569	Jan. 29	26	357
Gadaby, Walter J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,664	Feb. 12	26	546
Gadaby, Walter J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,867	Mar. 11	26	919
Gelly, Merritt, New York, N. Y. Case for musical instruments	14,900	Mar. 25	26	1115
Ghee, Henry, Syracuse, N. Y. Spoons and table-ware	14,603	Feb. 5	26	441
Gieseeke, George, Leipsic, Saxony, Germany. Font of printing-type	14,885	Mar. 18	26	1021
Gieseeke, George F., Leipsic, Saxony, Germany. Font of type-ornaments	14,570	Jan. 29	26	357
Gieseeke, George F., Leipsic, Saxony, Germany. Font of printing-type	14,571	Jan. 29	26	357
Gleason Manufacturing Company, E. P. (See Billingham, Francis, assignor.)				
Gminder, George F., New York, N. Y. Trimming	14,665 to 14,666	Feb. 12	26	546
Gottschalk, Charles G. (See Reyssier and Gottschalk.)				
Graham, John, assignor to Marder, Luse & Co., Chicago, Ill. Font of printing-type	14,667	Feb. 12	26	546
Greene, J. Ashton, Brooklyn, N. Y. Wrench	14,756	Feb. 19	26	641
Gridley, John W., assignor to Southington Cutlery Company, Southington, Conn. Curry-comb	14,572	Jan. 29	26	357
Griscom, William, Jr., Philadelphia, Pa. Block of magnesia	14,842	Mar. 4	26	827
Guildenstine, Julius, New York, N. Y., assignor to A. M. and A. E. Barnhart and C. E. Spindler. Font of printing-type	14,757	Feb. 19	26	641
Halliday, Arthur L., Yonkers, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet.	14,573 14,574	Jan. 29	26	357
Halliday, Arthur L., Yonkers, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet.	14,668 to 14,671	Feb. 12	26	546
Halliday, Arthur L., Yonkers, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet.	14,843 14,844	Mar. 4	26	827
Halliday, Arthur L., and W. McCallum, Yonkers, N. Y., assignors to Bigelow Carpet Company, Clinton, Mass. Carpet	14,882	Mar. 11	26	919
Hartford Carpet Company. (See Bassett, Julius W., assignor.)				
Hartford Carpet Company. (See Folsom, James L., assignor.)				
Hartford Carpet Company. (See Heinigke, Otto, assignor.)				
Hartford Carpet Company. (See Hunt, Henry, assignor.)				
Hartford Carpet Company. (See Jacobs, Winthrop L., assignor.)				
Hartford Carpet Company. (See Meyer, Julius S., assignor.)				
Hartford Carpet Company. (See Pegel, Julius, assignor.)				
Hatfield, Charles B., Troy, N. Y., assignor to N. D. Dodge, Newburyport, Mass. Shoe or slipper	14,901	Mar. 25	26	1115
Haviland, Charles E., Limoges, France. Dish	14,758	Feb. 19	26	641
Heap, Joseph, assignor to M. Taylor & Co., Burslem, county of Stafford, England. Covered dish	14,604	Feb. 5	26	441
Heidelberger, David. (See Langfeld, Morris F., assignor.)				
Heinigke, Otto, New Utrecht, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	14,868 to 14,873	Mar. 11	26	919
Hill, William H., Chicago, Ill. Cover for a harvester	14,575	Jan. 29	26	357
Hiller, Michael L., New York, N. Y. Slipper-nipper	14,605	Feb. 5	26	441
Hirsch, Adolph, and H. M. Marx, New York, N. Y. Ornamentation of textile and other fabrics	14,902	Mar. 25	26	1115
Hogg, William J. (See Wright, George C., assignor.)				
Horan, Henry, East Orange, N. J., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,759	Feb. 19	26	641
Horan, Henry, East Orange, N. J., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet.	14,903 to 14,909	Mar. 25	26	1115
Horner Brothers. (See Meagher, Thomas E., assignor.)				
Horner Brothers. (See Smith, Stephen, assignor.)				
House, William M., New York, N. Y. Clock-front	14,886	Mar. 18	26	1021
Hunt, Henry, Greenville, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	14,843	Mar. 4	26	827
Hunt, Henry, Greenville, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	14,887	Mar. 18	26	1021
Ihlenburg, Herman, assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-type	14,576 14,577	Jan. 29	26	357
Jackson, William W., assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-type	14,578	Jan. 29	26	357
Jacobs, Winthrop L., East Orange, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	14,874 to 14,881	Mar. 11	26	919
Jennings, Abraham G., Brooklyn, N. Y. Mitt	14,579	Jan. 29	26	357
Jennings, Warren P., Brooklyn, N. Y. Mitt	14,580 14,581	Jan. 29	26	357
Jennings, Warren P., Brooklyn, N. Y. Lady's mitt	14,672	Feb. 12	26	546
Jennings, Warren P., Brooklyn, N. Y. Mitt	14,910	Mar. 25	26	1115
Johnson, Seth W., New York, N. Y. Banner	14,846	Mar. 4	26	827
Judd, Hubert L., Brooklyn, N. Y. Shade-pull	14,847	Mar. 4	26	827
Judd, Mortimer N., assignor to North & Judd Manufacturing Company, New Britain, Conn. Buckle	14,606	Feb. 5	26	441
Keller, John H., New Orleans, La. Cake of soap	14,607	Feb. 5	26	441
Kelley, George R., assignor to Rockford Silver Plate Company, Rockford, Ill. Spoon or fork handle	14,911	Mar. 25	26	1115
Kennedy, John J., Branford, Conn. Ornamentation of hardware	14,536	Jan. 8	26	111
Kinsley, Myron H., Niagara Falls, N. Y. Spoon or fork handle	14,608	Feb. 5	26	441
Langfeld, Morris F., assignor to himself and D. Heidelberger, Chicago, Ill. Satchel	14,760	Feb. 19	26	641
Langerfeld, Arthur, assignor to P. & F. Corbin, New Britain, Conn. Ornamentation of builders' hardware	14,888	Mar. 18	26	1021
Lauber, Carl F., Philadelphia, Pa. Dish	14,609	Feb. 5	26	441
Loudon, Milton R., Jersey City, N. J., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet.	14,610	Feb. 5	26	441
Loudon, Milton R., Jersey City, N. J., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet.	14,761	Feb. 19	26	641

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Lowell Manufacturing Company. (See Crowe, Eugene A., assignor.)				
Lowell Manufacturing Company. (See Fisher, Edwin, assignor.)				
Lowell Manufacturing Company. (See Frost, Ella C., assignor.)				
Lowell Manufacturing Company. (See Horan, Henry, assignor.)				
Lowell Manufacturing Company. (See McMann, John, assignor.)				
Lowell Manufacturing Company. (See North, Howard, assignor.)				
Lowell Manufacturing Company. (See Poole, Edward, assignor.)				
Lowell Manufacturing Company. (See Sauer, Emil G., assignor.)				
Lowell Manufacturing Company. (See Swapp, Charles W., assignor.)				
Lowell Manufacturing Company. (See Valentine, Lucy W., assignor.)				
MacKellar, Smiths & Jordan. (See Beeler, Charles H., Jr., assignor.)				
MacKellar, Smiths & Jordan. (See Ihlenburg, Herman, assignor.)				
MacKellar, Smiths & Jordan. (See Jackson, William W., assignor.)				
MacKellar, Smiths & Jordan. (See Ruthven, Edwin C., assignor.)				
Mace, Romaine, New York, N. Y. Calendar	14,582	Jan. 29	26	357
Manhattan Brass Company. (See White, James H., assignor.)				
Marcus, Herman, Brooklyn, N. Y. Lace-pin	14,583	Jan. 29	26	357
Marder, Luse & Co. (See Graham, John, assignor.)				
Marx, Henry M. (See Hirsch and Marx.)				
Massot, Ferdinand, Chicago, Ill. Furniture back frame	14,912	Mar. 25	26	1115
Maxwell, Henry C., Rome, N. Y. Harness-breeching ring	14,584	Jan. 29	26	357
McCallum, William, Yonkers, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet.	14,611 14,612 14,762	Feb. 5	26	441
McCallum, William, Yonkers, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet.	14,763	Feb. 19	26	641
McCallum, William. (See Halliday and McCallum.)				
McCarty, John B., New York, N. Y. Clock-case	14,532	Jan. 1	26	1
McLean, John, Brooklyn, N. Y. Gate	14,546	Jan. 15	26	205
McMann, John, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,764 14,765	Feb. 19	26	641
McMann, John, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,913	Mar. 25	26	1115
McNair, David, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,533	Jan. 1	26	1
Meagher, Thomas E., assignor to Horner Brothers, Philadelphia, Pa. Carpet	14,766	Feb. 19	26	641
Melville, David G., Medford, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,585	Jan. 29	26	358
Melville, David G., Medford, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,673	Feb. 12	26	546
Melville, David G., Medford, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,848	Mar. 4	26	827
Mercer Pottery Company. (See Barlow and Moses, assignors.)				
Merrill, Sylvester K., Auburn, R. I. Gem-setting	14,818	Feb. 26	26	740
Merry, John, Brooklyn, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	14,767	Feb. 19	26	641
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth.	14,537 to 14,542	Jan. 8	26	111
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth.	14,556 14,557	Jan. 22	26	277
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth.	14,613 to 14,616	Feb. 5	26	441
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth.	14,850 to 14,852	Mar. 4	26	827
Meyer, Julius S., New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet.	14,547	Jan. 15	26	205
Meyer, Julius S., New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet.	14,849	Mar. 4	26	827
Meyer, Victor E. (See Meyer, Charles T. and V. E.)				
Miles, William H., Jr., Brooklyn, N. Y. Wall-pocket	14,768	Feb. 19	26	642
Minchin, George, Shakespeare, Ontario, Canada. Spoke-socket	14,558	Jan. 22	26	277
Montague, William E., *et al.* (See Cochran, Andrew, assignor.)				
Moore, Edward Y., Chicago, Ill. Sliding-door hanger	14,889	Mar. 18	26	1021
Morris, Edward L., Boston, Mass. Toy	14,835	Feb. 26	26	740
Moses, James. (See Barlow and Moses.)				
Nathan, Clarence S., New York, N. Y. Calendar	14,819	Feb. 26	26	740
North, Howard, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,769	Feb. 19	26	642
North, Howard, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,914 14,915	Mar. 25	26	1115
North & Judd Manufacturing Company. (See Judd, Mortimer N., assignor.)				
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Girl's costume	14,548	Jan. 15	26	206
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's polonaise	14,559	Jan. 22	26	277
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Child's costume	14,586	Jan. 29	26	358
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's walking-skirt	14,617	Feb. 5	26	442
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Child's coat	14,618	Feb. 5	26	442
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	14,820	Feb. 26	26	740
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's wrap	14,916	Mar. 25	26	1115
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's basque	14,917	Mar. 25	26	1115
O'Hara, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's skirt	14,918	Mar. 25	26	1116
Oakman, Samuel, Melrose, Mass. Insulator	14,674	Feb. 12	26	546
Patitz, Albert, assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Sconce-frame	14,619	Feb. 5	26	442
Patterson, William J., Beaver, Pa. Lamp-chimney	14,587	Jan. 29	26	358
Patterson, William J., Beaver, Pa. Lamp	14,821	Feb. 26	26	740
Peck, Stow & Wilcox Company. (See Walkley, Webster R., assignor.)				
Pegel, Julius, New York, N. Y., assignor to Hartford Carpet Company, Hartford, Conn. Carpet.	14,853 14,854	Mar. 4	26	827
Peninsular Stove Company. (See Dwyer, James, assignor.)				
Perreganx, Girard, Chaux-de-Fonds, Neufchâtel, Switzerland. Watch-movement	14,919	Mar. 25	26	1116
Piebes, Frederick, Jersey City, N. J. Collar and cuff	14,675	Feb. 12	26	546
Pine, Charles S., Providence, R. I. Charm	14,549	Jan. 15	26	206

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Poe, Isaac N., Toledo, Ohio. Sewing-machine stand	14,543	Jan. 8	26	111
Poole, Edward, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,770 to 14,773	Feb. 19	26	642
Preston, Everett B., Chicago, Ill. Rubber shoe	14,774	Feb. 19	26	642
Reed, Henry F., New York, N. Y. Foundation-frame for floral ornaments	14,620	Feb. 5	26	442
Reed, John Q., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lambrequin	14,621	Feb. 5	26	442
Reed, John Q., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	14,622	Feb. 5	26	442
Reed, John Q., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	14,890	Mar. 18	26	1021
Reed, John Q., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's polonaise	14,920	Mar. 25	26	1116
Reynolds, Edward H., assignor to himself and W. Cassler, Cadillac, Mich. Fire-escape clamp	14,560	Jan. 22	26	277
Reyssier, Emile, New York, N. Y., and C. G. Gottschalk, Jersey City, N. J. Glove	14,588	Jan. 29	26	358
Ricker, Fred F., assignor to Bromley Brothers, (limited,) Philadelphia, Pa. Carpet	14,623 to 14,629	Feb. 5	26	442
Ricker, Fred F., assignor to Bromley Brothers, (limited,) Philadelphia, Pa. Carpet	14,775	Feb. 19	26	642
Righter, Oscar, assignor to Dornan Bros. & Co., Philadelphia, Pa. Carpet	14,589 to 14,593	Jan. 29	26	358
Righter, Oscar, assignor to Dornan Bros. & Co., Philadelphia, Pa. Carpet	14,630 to 14,634	Feb. 5	26	442
Rockford Silver Plate Company. (See Kelley, George B., assignor.)				
Rogers, John, New Canaan, Conn. Group of statuary	14,594	Jan. 29	26	358
Roxbury Carpet Company. (See Fajon, Etienne, assignor.)				
Roxbury Carpet Company. (See Gadsby, Walter J., assignor.)				
Roxbury Carpet Company. (See McNair, David, assignor.)				
Roxbury Carpet Company. (See Melville, David G., assignor.)				
Roxbury Carpet Company. (See Stearns, Thomas J., assignor.)				
Russell & Erwin Manufacturing Company. (See Christesen, Rodolphe, assignor.)				
Ruthven, Edwin C., assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-type	14,891	Mar. 18	26	1021
Sampson, Edward C. (See Meyer, Charles T. and V. E., assignors.)				
Saner, Emil G., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,776	Feb. 19	26	642
Shepard, Charles G., and P. Adams, Jr., Buffalo, N. Y. Blind-hinge	14,595	Jan. 29	26	358
Shiels, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Girl's cloak	14,635	Feb. 5	26	442
Shiels, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Girl's costume	14,822	Feb. 26	26	740
Shiels, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Child's costume	14,824	Feb. 26	26	740
Shiels, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Girl's costume	14,921	Mar. 25	26	1116
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's wrap	14,561	Jan. 22	26	277
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's walking-skirt	14,562	Jan. 22	26	278
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's walking-skirt	14,823	Feb. 26	26	740
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's walking-skirt	14,825	Feb. 26	26	740
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's walking-skirt	14,826	Feb. 26	26	740
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's dress	14,827	Feb. 26	26	740
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	14,828 to 14,829	Feb. 26	26	740
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's costume	14,830	Feb. 26	26	740
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's wrap	14,855	Mar. 4	26	828
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's costume	14,892	Mar. 18	26	1021
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's costume	14,922	Mar. 25	26	1116
Smedes, Levi K., Mount Vernon, assignor to Taylor & Co., New York, N. Y. Burial-casket	14,563	Jan. 22	26	278
Smith, Frank E., New York, N. Y., assignor to Bigelow Carpet Company, Clinton, Mass. Carpet	14,636 to 14,637	Feb. 5	26	442
Smith, John H., assignor to Withington & Cooley Manufacturing Company, Jackson, Mich. Agricultural fork	14,544	Jan. 8	26	111
Smith, Stephen, assignor to Horner Brothers, Philadelphia, Pa. Carpet	14,777 to 14,778	Feb. 19	26	642
Smith, William, Philadelphia, Pa. Molding	14,893	Mar. 18	26	1022
Southington Cutlery Company. (See Gridley, John W., assignor.)				
Spindler, Charles E., *et al.* (See Guildenstine, Julius, assignor.)				
Stearns, Thomas J., assignor to Roxbury Carpet Company, Boston, Mass. Carpet	14,596 to 14,597	Jan. 29	26	358
Stewartson, William B., Pittsburg, Pa. Shade-holder	14,638	Feb. 5	26	442
Swapp, Charles W., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,779 to 14,781	Feb. 19	26	642
Swapp, Charles W., New York, N. Y. Carpet	14,782	Feb. 19	26	642
Swapp, Charles W., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,783 to 14,801	Feb. 19	26	642
Taylor & Co. (See Smedes, Levi K., assignor.)				
Taylor & Co., Mellor. (See Heap, Joseph, assignor.)				
Tetlow & Brother, Henry. (See Tetlow, Daniel, assignor.)				
Tetlow, Daniel, assignor to H. Tetlow & Brother, Philadelphia, Pa. Atomizer	14,598	Jan. 29	26	358

Alphabetical list of patentees of designs, January to March, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's overskirt	14,639	Feb. 5	26	442
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's jacket	14,802	Feb. 19	26	642
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's costume	14,803	Feb. 19	26	642
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's polonaise	14,804	Feb. 19	26	642
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Girl's costume	14,805	Feb. 19	26	642
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's coat	14,833	Feb. 26	26	740
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	14,894	Mar. 18	26	1022
Turner, Mary, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's polonaise	14,534	Jan. 1	26	1
Turner, Mary, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Child's wrap	14,831	Feb. 26	26	740
Turner, Mary, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's costume	14,832	Feb. 26	26	740
Turner, Mary, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	14,895	Mar. 18	26	1022
Umbstaetter, Herman D., *et al.* (See Boda, Abia Z., assignor.)				
Valentine, Lucy W., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,806	Feb. 19	26	642
Valentine, Lucy W., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,923	Mar. 25	26	1116
Van Houten, John B., Newark, N. J. Ear-ring	14,856 to 14,857	Mar. 4	26	828
Van Houten, John B., Newark, N. J. Ear-ring pendant	14,858	Mar. 4	26	828
Van Houten, John B., Newark, N. J. Ear-ring	14,859 to 14,862	Mar. 4	26	828
Van Houten, John B., Newark, N. J. Ear-ring pendant	14,863 to 14,864	Mar. 4	26	828
Van Houten, John B., Newark, N. J. Ear-ring pendant	14,924	Mar. 25	26	1116
Vandeventer & Horne. (See Cory, Florence E., assignor.)				
Vogeler, Minnie A., *et al.* (See Boda, Abia Z., assignor.)				
Wagner, Albert, assignor to H. W. Collender, New York, N. Y. Billiard-table	14,834	Feb. 26	26	740
Walkley, Webster R., Brooklyn, N. Y., assignor of one-half to Peck, Stow & Wilcox Company, Southington, Conn. Inkstand-frame	14,807	Feb. 19	26	642
White, James H., assignor to Manhattan Brass Company, New York, N. Y. Fender	14,676	Feb. 12	26	546
White, Thomas E., *et al.* (See Cochran, Andrew, assignor.)				
Wilson, Houghton W., Kingston, Ontario, Canada. Packing-case	14,896	Mar. 18	26	1022
Withington & Cooley Manufacturing Company. (See Smith, John H., assignor.)				
Wright, George C., assignor to W. J. Hogg, Worcester, Mass. Carpet	14,599 to 14,601	Jan. 29	26	358

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abel & Co., C. C., New York, N. Y. Safety-matches	11,017	Mar. 18	26	1022
Academic Pharmaceutic Company, New York, N. Y. Preparation for disguising the bitterness of quinine, &c	10,986	Mar. 11	26	919
	10,987	Mar. 11	26	920
Adams, Charles L., Lynchburg, Va. Plug-tobacco	10,870	Jan. 22	26	278
Ansonia Brass and Copper Company, Ansonia, Conn. Conducting-wires for electrical purposes	10,958	Feb. 26	26	740
Apfelbaum, Elias, Gloversville, N. Y. Gloves	10,871	Jan. 22	26	278
Bates, Reed & Cooley, New York, N. Y. Carpets, rugs, oil-cloths, and mattings				
Beckmann, Friedrich W., Solingen, Prussia, Germany. Cutlery and cutting implements for manual use	10,909	Feb. 5	26	442
Bell, Elizabeth H., Philadelphia, Pa. Compound oil of gaultheria	10,858	Jan. 22	26	278
Benton Hair Grower Company, Cleveland, Ohio. Hair-grower	10,882	Jan. 22	26	358
Bernheimer, Adolph, New York, N. Y. Drilling and sheeting	11,010	Mar. 18	26	1022
Block & Sons, Elias, Cincinnati, Ohio, assignors to M. and K. Gottstein, Seattle, Wash. Ter. Whisky	10,960	Feb. 26	26	740
Bolling, Ada L. (See Sparks and Bolling.)				
Bolling, Sanford C., Fort Smith, Ark. Ague-medicines	10,972	Mar. 4	26	898
Bossange, Gustave, New York, N. Y. Hat-brushes	11,029	Mar. 25	26	1116
Bothin Manufacturing Company, San Francisco, Cal. Baking-powder	10,973	Mar. 4	26	898
Brainard, David, New York, N. Y. Whole winter-wheat	10,851	Jan. 15	26	206
Brainard, David, New York, N. Y. Family flour	10,883	Jan. 29	26	358
Bruce & Co., Edward B., Baltimore, Md. Rye whisky	10,884	Jan. 29	26	358
Buel, Arthur, New York, N. Y. Prepared whiting	11,045	Mar. 25	26	1116
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. Bottled malt liquors	10,859	Jan. 22	26	278
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. Rum, whisky, and gin	10,893	Jan. 29	26	358
Burt, William H., New York, N. Y. Bitters	10,924	Feb. 12	26	546
Butler & Co., James G., St. Louis, Mo. Smoking and chewing tobacco, cigars, and cigarettes	10,988	Mar. 11	26	920
Butler Hard Rubber Company, New York, N. Y. Fancy articles manufactured from hard rubber	10,822	Jan. 1	26	1
Butler, John E., Golconda, Ill. Remedy for piles	10,834	Jan. 8	26	111
California Fig Syrup Company, San Francisco, Cal. Liquid purgative compounds	10,974	Mar. 4	26	898
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	10,998	Mar. 11	26	920
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	10,999	Mar. 11	26	920
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,000	Mar. 11	26	920
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,001	Mar. 11	26	920
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,002	Mar. 11	26	920
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,003	Mar. 11	26	920
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,004	Mar. 11	26	920
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,005	Mar. 11	26	920
Christian, Robert J., Richmond, Va. Plug, twist, fine-cut, and smoking tobacco, cigars, and cigarettes	10,941	Feb. 19	26	642
Christian, Robert J., Richmond, Va. Plug, twist, fine-cut, and smoking tobacco, cigars, and cigarettes	10,942	Feb. 19	26	642
Clark & Warren, Corry, Pa. Refined hydrocarbon oil	10,943	Feb. 19	26	642
Collier & Sons, James, Spitalfields, London, county of Middlesex, England. Cocoa	10,894	Jan. 29	26	358
Collier & Sons, James, Spitalfields, London, county of Middlesex, England. Chocolate	10,895	Jan. 29	26	358
Collier & Sons, James, Spitalfields, London, county of Middlesex, England. Mustard	10,910	Feb. 5	26	442
Cook & Bernheimer, New York, N. Y. Whisky or its compounds	10,833	Jan. 8	26	111
Cook & Bernheimer, New York, N. Y. Whisky or beverages compounded of whisky	10,852	Jan. 15	26	206
Cook & Bernheimer, New York, N. Y. Whisky or beverages compounded of whisky	10,853	Jan. 15	26	206
Cook & Bernheimer, New York, N. Y. Distilled liquors	10,879	Jan. 29	26	358
Cook & Bernheimer, New York, N. Y. Whisky or beverages compounded of whisky	10,880	Jan. 29	26	358
Cook & Bernheimer, New York, N. Y. Bitters	10,881	Jan. 29	26	358
Cornwell, Clark, Ypsilanti, Mich. Mineral water	10,944	Feb. 19	26	642
Crofnt, Charles H. (See Woodward and Crofut.)				
Curtis's & Harvey, London, England. Gunpowder	11,006	Mar. 11	26	920
Cusenier Fils Aîné & Co., E., Paris and Ornans, France. Liquors and spirits	11,035	Mar. 25	26	1116
Cusenier Fils Aîné & Co., E., Paris and Ornans, France. Liquors and spirits	11,036	Mar. 25	26	1116
Davis, Augustus G., Baltimore, Md. Telegraphic call-boxes	11,011	Mar. 18	26	1022
De Kuyper & Son, John, Rotterdam, Netherlands. Gin	10,828	Jan. 1	26	2
De Kuyper & Son, John, Rotterdam, Netherlands. Gin	10,917	Feb. 5	26	442
Denis, Henry Mounié & Co., J., Cognac, France. Cognac brandy	10,989	Mar. 11	26	920
Devereux, Oren C., Providence, R. I. Certain kind of jewelry	10,959	Feb. 26	26	740
Dobson, George C., Boston, Mass. Banjos	10,969	Mar. 4	26	898
Dollfus-Mieg & Co., Mülhausen, Alsace-Lorraine, Germany. Cotton yarns and braids	10,835	Jan. 8	26	112
Earhart, George W., Columbus, Ohio. Coffee and coffee-extract preparations	11,012	Mar. 18	26	1022
Elsing & Co., E., New York, N. Y. Bitters	10,975	Mar. 4	26	898
Estabrook & Eaton, Boston, Mass. Cigars	10,980	Mar. 4	26	898
Everts, Louis H., Philadelphia, Pa., and Chicago, Ill. Feathers in a clean and odorless condition	10,911	Feb. 5	26	442
Ferré, Jules, Paris, France. Mixtures of meat, iron, and quinquinia	10,836	Jan. 8	26	112
Ferré, Jules, Paris, France. Mixtures of meat, iron, and quinquinia	10,837	Jan. 8	26	112
Ferré, Jules, Paris, France. Mixture of meat and quinquinia	10,838	Jan. 8	26	112
Finlayson, Bousfield & Co., Johnstone, county of Renfrew, Scotland. Linen thread	10,860	Jan. 22	26	278
Finlayson, Bousfield & Co., Johnstone, county of Renfrew, Scotland. Linen thread	10,861	Jan. 22	26	278

Alphabetical list of registrants of trade-marks, January to March, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Finlayson, Bousfield & Co., Johnstone, county of Renfrew, Scotland. Linen thread	10,862	Jan. 22	26	278
Finlayson, Bousfield & Co., Johnstone, county of Renfrew, Scotland. Linen thread	10,863	Jan. 22	26	278
Finlayson, Bousfield & Co., Johnstone, county of Renfrew, Scotland. Linen thread	10,872	Jan. 22	26	278
Fitzpatrick & Draper, Troy, N. Y. Cigars	10,823	Jan. 1	26	1
Follett & Schorn, Norwich, N. Y. Cigars	10,824	Jan. 1	26	1
Forster, Müller & Co., Baltimore, Md. Whisky	10,945	Feb. 19	26	642
Fowler Brothers, Providence, R. I. Jewelry	10,918	Feb. 5	26	442
Frankenberg, Henry E., New York, N. Y. Embroidery-cotton	10,839	Jan. 8	26	112
Frary & Son Co., James D., Bridgeport, Conn. Composition as a substitute for hard rubber	10,842	Jan. 8	26	112
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	10,990	Mar. 11	26	920
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	10,991	Mar. 11	26	920
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,013	Mar. 18	26	1022
Gang, John, New York, N. Y. Playing-cards	11,046	Mar. 25	26	1116
Glaser, Kohn & Co., Chicago, Ill. Article of food made from grain	10,912	Feb. 5	26	442
Goldsmith & Co., Martin M., New York, N. Y. Prune-juice extract or prune-juice	10,976	Mar. 4	26	828
Goodwin & Thurston, Minneapolis, Minn. Skin-lotion				
Gottstein, M. and K. (See Block & Sons, Elias, assignors.)				
Grezier, Marcel M., Grande Chartreuse, France. Liqueur or cordial	10,897	Jan. 29	26	358
Grezier, Marcel M., Grande Chartreuse, France. Liqueur or cordial	10,898	Jan. 29	26	358
Hagstoz & Co., T. B., Philadelphia, Pa. Articles usually sold under the general name of jewelry	10,854	Jan. 15	26	206
Hancock, William T., Richmond, Va. Plug, twist, fine-cut, and smoking tobacco, cigars, and cigarettes	10,925	Feb. 12	26	546
Hancock, William T., Richmond, Va. Plug, twist, fine-cut, and smoking tobacco, cigars, and cigarettes	10,926	Feb. 12	26	546
Hanf, Frederick S., Jersey City, N. J. Dentifrice	10,840	Jan. 8	26	112
Harris' Sons, Joel H., Quincy, Ill. Smoking and chewing tobacco	10,899	Jan. 29	26	358
Herbst, Solomon C., Milwaukee, Wis. Rye and bourbon whisky	11,030	Mar. 25	26	1116
Herbst, Solomon C., Milwaukee, Wis. Rye and bourbon whisky	11,031	Mar. 25	26	1116
Hickman, Charles H., New York, N. Y. Certain veterinary medicines	10,825	Jan. 1	26	2
Hickson, Stephen, New York, N. Y. Gold-leaf	10,961	Feb. 26	26	740
Hollender & Co., Fred., New York, N. Y. Natural mineral waters	10,946	Feb. 19	26	642
Holmes & Coutts, New York, N. Y. Biscuit, wafers, and crackers	10,873	Jan. 22	26	278
Horn & Co., H. J., Baltimore, Md. Canned fish, oysters, fruits, meats, and vegetables	10,826	Jan. 1	26	2
Hurd, William C., New York, N. Y. Bitters	10,841	Jan. 8	26	112
Jacobs & Co., Lewis, Talladega, Ala. Medicine to purify the blood	10,940	Feb. 19	26	642
Jennings, Astley C., New York, N. Y. Certain proprietary medicines	10,874	Jan. 22	26	278
Jennings, Astley C., New York, N. Y. Certain proprietary medicines	10,875	Jan. 22	26	278
Jennings & Sons, A. G., Brooklyn, N. Y. Hair-nets and reticulated fabrics	10,843	Jan. 8	26	112
Jennings & Sons, A. G., Brooklyn and New York, N. Y. Hair-nets and other reticulated fabrics	10,885	Jan. 29	26	358
Johnston & Co., William M., Chicago, Ill. Sauer-kraut	10,886	Jan. 29	26	358
Johnston, Sarah L., Brooklyn, N. Y. Compound extract of stillingia and sarsaparilla	10,887	Jan. 29	26	358
Jones & Co., C. L., Boston, Mass. Laundry and toilet soap	11,036	Mar. 18	26	1022
Kaercher, Albert J., Allegheny, Pa. Certain medical and toilet preparations	10,827	Jan. 1	26	2
Kaufmann Bros. & Bondy, New York, N. Y. Cigars, cigarettes, and smoking-tobacco	11,032	Mar. 25	26	1116
Kelley, Theodore Y., London, England, and New York, N. Y. Boot-polish	11,027	Mar. 18	26	1022
Kennedy Company, F. A., Chicago, Ill. Crackers, biscuits, wafers, and cakes	11,007	Mar. 11	26	920
Kerry, Watson & Co., Montreal, Quebec, Canada. Cough-remedies	11,033	Mar. 25	26	1116
Kinney Tobacco Company, New York, N. Y. Cigarettes and smoking-tobacco	10,913	Feb. 5	26	442
Kinney Tobacco Company, New York, N. Y. Cigarettes	10,914	Feb. 5	26	442
Kinney Tobacco Company, New York, N. Y. Cigarettes	10,915	Feb. 5	26	442
Knowles & Anderson, Camden, N. J. Canned raspberries, strawberries, cherries, and other fruits	10,844	Jan. 8	26	112
Knowles & Anderson, Camden, N. J. Canned fruit and vegetables	11,021	Mar. 18	26	1022
Kreiss, Adolphe, Schiltigheim, Germany. Beer	10,845	Jan. 8	26	112
Krieg & Co., J. K., New York, N. Y. Button-fasteners	11,014	Mar. 18	26	1022
Larrabee & Co., E. J., New York, N. Y. Biscuits or crackers	10,950	Feb. 19	26	642
Lanta Brothers & Co., Buffalo, N. Y. Laundry-soap	10,981	Mar. 4	26	828
Leidersdorf & Co., B., Milwaukee, Wis. Smoking-tobacco	10,992	Mar. 11	26	920
Leonard, Elmer, Bridgeport, Conn. Flexible hip-corsets	10,829	Jan. 1	26	2
Levi, Emil S., New York, N. Y. Velveteens	10,876	Jan. 22	26	278
Liggett & Myers Tobacco Company, St. Louis, Mo. Plug-tobacco	10,927	Feb. 12	26	546
Lightbill, August P., Boston, Mass. Magnetic body-wear, bedding, and medical appliances generally	10,846	Jan. 8	26	112
Luyties Brothers, New York, N. Y. Cordials and liquors	10,933	Feb. 12	26	546
Marburg Brothers, Baltimore, Md. Smoking and chewing tobacco, snuff, cigars, and cigarettes	10,900	Jan. 29	26	358
Marburg Brothers, Baltimore, Md. Smoking and chewing tobacco, snuff, cigars, and cigarettes	10,901	Jan. 29	26	358
Marburg Brothers, Baltimore, Md. Smoking and chewing tobacco, snuff, cigars, and cigarettes	10,902	Jan. 29	26	358
Martin, Henry, Pittsburg, Pa. Glass bottles	11,022	Mar. 18	26	1022
Massé & Anglade, A., Paris, France. Certain embossed metal articles	10,993	Mar. 11	26	920
Mathey Brothers & Mathez, New York, N. Y. Watch-movements	10,902	Feb. 26	26	740
McGill, John A., South Bend, Ind. Remedy for female weaknesses	10,831	Jan. 1	26	2
Meyer, Cord, Jr., Newtown, N. Y. Fertilizers	10,928	Feb. 12	26	546
Meyer, Henry C., New York, N. Y. Periodical publications	10,855	Jan. 15	26	206
Meyer Sniffen Company, (limited,) New York, N. Y. Grease-traps	10,903	Jan. 29	26	358
Meyer Sniffen Company, (limited,) New York, N. Y. Water-closet	10,904	Jan. 29	26	358
Meyer Sniffen Company, (limited,) New York, N. Y. Water-closets, water-closet cisterns, and their fittings and appliances	10,905	Jan. 29	26	358
Meyer Sniffen Company, (limited,) New York, N. Y. Self-closing faucets, bibs, cocks, stops, &c.	10,906	Jan. 29	26	358
Meyer Sniffen Company, (limited,) New York, N. Y. Lock gas-cocks	10,907	Jan. 29	26	358
Miami Stove Works, Lawrenceburg, Ind. Cook-stoves	10,830	Jan. 1	26	2
Minaldi, Antonio, New York, N. Y. Oranges and lemons	10,951	Feb. 19	26	642
Minaldi, Antonio, New York, N. Y. Oranges and lemons	10,952	Feb. 19	26	642
Minaldi, Antonio, New York, N. Y. Oranges and lemons	10,953	Feb. 19	26	642
Minaldi, Antonio, New York, N. Y. Oranges and lemons	10,963	Feb. 26	26	740
Mix & Co., G. I., Yalesville, Conn. Tinned spoons and forks	10,957	Feb. 19	26	642
Needham's Sons, D., Chicago, Ill. Pressed clover-blossoms and fluid and solid extracts therefrom	11,015	Mar. 18	26	1022
New York Textile Filter Company, New York, N. Y. Prepared tea and coffee	10,847	Jan. 8	26	112
Novelty Rubber Company, New Brunswick, N. J. Rubber buttons	11,023	Mar. 18	26	1022
Oberteuffer, Abegg & Daeniker, New York, N. Y. Ribbons and silk textures	10,982	Mar. 4	26	828
Oberteuffer, Abegg & Daeniker, New York, N. Y. Kid gloves	11,024	Mar. 18	26	1022
Oesting, William C., New York, N. Y. Bitters	10,877	Jan. 22	26	278
Palacio & Co., Celestino, New York, N. Y. Cigars	10,964	Feb. 26	26	740
Parkison, Johnston S., Ossian, Ind. Burning-fluid	10,856	Jan. 15	26	206
Paulsen, Gustave, Chicago, Ill. Cigars	10,929	Feb. 12	26	546
Peace, Hugh K. (See Peace, William K. and H. K.)				
Peace, William K. and H. K., Sheffield, England. Files, straw-knives, grass-hooks, saws, sickles, and scythes	11,018	Mar. 18	26	1022

Alphabetical list of registrants of trade-marks, January to March, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Peace, William K. and H. K., Sheffield, England. Steel and certain implements made therefrom	11,037	Mar. 25	26	1116
Peacock, Elijah P., Chicago, Ill. Animal-trap	10,947	Feb. 19	26	642
Peacock, Elijah P., Chicago, Ill. Rat-traps	10,965	Feb. 26	26	740
Peters, Henry E., Allentown, Pa. Liver-pellets	10,994	Mar. 11	26	920
Pingree & Smith, Detroit, Mich. Men's heavy boots and shoes	10,848	Jan. 8	26	112
Platt & Co., Baltimore, Md. Oysters put up in cans or other packages	10,857	Jan. 15	26	206
Platt & Co., Baltimore, Md. Canned provisions	10,888	Jan. 29	26	358
Porter, Thomas, New York, N. Y. Toilet-pins	10,919	Feb. 5	26	442
Porter, Thomas, New York, N. Y. Toilet-pins	10,948	Feb. 19	26	642
Post, Will R., Catskill, N. Y. Pile-ointment	10,930	Feb. 12	26	546
Procter & Gamble, Cincinnati, Ohio. Laundry-soap	11,038	Mar. 25	26	1116
Procter & Gamble, Cincinnati, Ohio. Laundry-soap	11,039	Mar. 25	26	1116
Procter & Gamble, Cincinnati, Ohio. Laundry-soap	11,040	Mar. 25	26	1116
Procter & Gamble, Cincinnati, Ohio. Laundry-soap	11,041	Mar. 25	26	1116
Procter & Gamble, Cincinnati, Ohio. Laundry-soap	11,042	Mar. 25	26	1116
Ransom, Frank A., Dunellen, N. J. Package dyes	10,934	Feb. 12	26	546
Ransom, Frank A., Dunellen, N. J. Package dyes	10,935	Feb. 12	26	546
Ransom, Frank A., Dunellen, N. J. Package dyes	10,936	Feb. 12	26	546
Ransom, Frank A., Dunellen, N. J. Package dyes	10,937	Feb. 12	26	546
Ransom, Frank A., Dunellen, N. J. Package dyes	10,938	Feb. 12	26	546
Ransom, Frank A., Dunellen, N. J. Package dyes	10,939	Feb. 12	26	546
Ransom, Frank A., Dunellen, N. J. Package dyes	10,983	Mar. 4	26	828
Reid, Murdoch & Fischer, Chicago, Ill. Cigars	10,995	Mar. 11	26	920
Renouard & Co., Henry, Paris, France. Melissa-water	10,996	Mar. 11	26	920
Renouard & Co., Henry, Paris, France. Melissa-water	10,878	Jan. 22	26	278
Richardson, Joseph C., St. Louis, Mo. Sheep-dip	10,899	Jan. 29	26	358
Richter, Friedrich A., Rudolstadt, Germany. Perfumery and perfumed soap	10,849	Jan. 8	26	112
Ripke, Theodor, Hamburg, Germany. Bitters	10,970	Mar. 4	26	828
Rogers & Co., J. H., Maysville, Ky. Whisky	10,864	Jan. 22	26	278
Rothe & Lipa, New York, N. Y. Sumac and other leaves, tree-barks, and extracts thereof	10,954	Feb. 19	26	642
Ruger & Sons, John B., Lafayette, Ind. Crackers	10,850	Jan. 8	26	112
Saginaw Manufacturing Company, Saginaw, Mich. Spring shade-rollers	11,008	Mar. 11	26	920
Samms, C. C., Baltimore, Md. Cigars	10,931	Feb. 12	26	546
Schindler-Escher, C., Zurich, Switzerland. Bolting-cloth				
Schulze, Paul, Manchester, county of Lancaster, England. Yarn and thread composed of an admixture of wool and silk	10,891	Jan. 29	26	358
Scollay Meat Packing Company, New York, N. Y. Canned provisions	10,890	Jan. 29	26	358
Segnitz & Co., Herman, Milwaukee, Wis. Cigars and cigarettes	11,034	Mar. 25	26	1116
Semmes & Co., B. J., Memphis, Tenn. Whiskies	11,043	Mar. 25	26	1116
Semmes & Co., B. J., Memphis, Tenn. Whiskies	11,044	Mar. 25	26	1116
Siebe Bros. & Plagemann, San Francisco, Cal. Whisky	10,832	Jan. 1	26	2
Simmons, James D., Hagerstown, Md. Fertilizer	11,016	Mar. 18	26	1022
Simonson, Albert, New York, N. Y. Hair-bleaching compound	11,028	Mar. 18	26	1022
Sparks, James M., and A. L. Bolling, Fort Smith, Ark. Pills	10,977	Mar. 4	26	828
Speicher Dandruff Cure Company, Philadelphia, Pa. Dandruff-cure	10,978	Mar. 4	26	828
Spencer, Shepherd, Knoxville, Tenn. Liniment and inhalent	10,932	Feb. 12	26	546
Starke, Arabella G., Richmond, Va. Plows	11,025	Mar. 18	26	1022
Stratton, John F., Brooklyn, N. Y. Banjos, banjo cases and strings, and other trimmings	11,009	Mar. 11	26	920
Sullivan, John C., Detroit, Mich. Cigars and cigarettes	10,985	Mar. 4	26	828
Sussfeld, Lorsch & Co., New York, N. Y. Spectacles, eyeglasses, and optical goods	10,966	Feb. 26	26	740
Thomas Clock Company, Seth, Thomaston, Conn., and New York, N. Y. Time-keeping instruments	10,984	Mar. 4	26	828
Union Metallic Cartridge Company, Bridgeport, Conn. Caps, cartridges, primers, wads, and shells for small-arms	10,967	Feb. 26	26	740
United States Medicine Co., New York, N. Y. Certain proprietary medicines	10,997	Mar. 11	26	920
Valentine & Company, New York, N. Y. Varnishes, japans, blacks, colors, paints, wood-fillings, and rough stuffs	11,047	Mar. 25	26	1116
Violet Frères, Thuir, (Pyrénées Orientales,) France. Wine and liquors	10,896	Jan. 29	26	358
Vogeler Company, Charles A., Baltimore, Md. Fluid preparation for use either internally as a medicine or externally as a liniment	10,885	Jan. 22	26	278
Wagner, Wilhelm, Jr., Plettenberg, Prussia. Tuning-pins	11,019	Mar. 18	26	1022
Waterbury Watch Company, Waterbury, Conn. Watches and clocks	10,920	Feb. 5	26	442
Waterbury Watch Company, Waterbury, Conn. Watches and clocks	10,921	Feb. 5	26	442
Waterbury Watch Company, Waterbury, Conn. Watches and clocks	10,922	Feb. 5	26	442
Waterbury Watch Company, Waterbury, Conn. Watches and clocks	10,923	Feb. 5	26	442
Webster & Co., H., New York, N. Y. Pure rye and bourbon whiskies	10,866	Jan. 22	26	278
Wells, Ephraim S., Jersey City, N. J. Certain proprietary remedies and compounds	10,971	Mar. 4	26	828
Werner, August, New York, N. Y. Unfermented grape-juice	10,908	Jan. 29	26	358
Werman, B. Frank, Pittsburg, Pa. Smoking-tobacco	11,020	Mar. 18	26	1022
Whiting Paper Company, Holyoke, Mass. Writing and card paper and envelopes	10,955	Feb. 19	26	642
Wilkens & Co., H., Baltimore, Md. Smoking-tobacco, chewing-tobacco, and snuff	10,867	Jan. 22	26	278
Williamsburgh Brewing Company, (limited,) Brooklyn, N. Y. Lager-beer	10,956	Feb. 19	26	642
Wilson, Walter G., Philadelphia, Pa. Biscuits, crackers, or cakes	10,892	Jan. 29	26	358
Wirt, Aaron P., Lebanon, Pa. Lung-medicine	10,940	Feb. 12	26	546
Woodward, Ira C., and C. H. Crofut, Cleveland, Ohio. Cornmeal	10,979	Mar. 4	26	828
Worth, William E., Brooklyn, N. Y. Substitute for lard	10,968	Feb. 26	26	740
Wright & Sons, Peter, Dudley, county of Worcester, England. Anvils	10,916	Feb. 5	26	442
Youmans, Daniel D., New York, N. Y. All hats or head-coverings for males	10,868	Jan. 22	26	278
Ysasi & Co., Jerez de la Frontera, Spain. Sherry-wine	10,869	Jan. 22	26	278
Ysasi & Co., Jerez de la Frontera, Spain. Sherry-wine				

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abrams, Lyman H., Philadelphia, Pa. "Chemical Parlor Illuminator"	3,883	Feb. 12	26	546
Alsing, Johan R., New York, N. Y. "Flint Pebbles"	3,838	Jan. 22	26	278
Ballard, Harry H., Washington, Ohio. "Cura Reumatico"	3,990	Mar. 18	26	1022
Baum, L. Frank, Syracuse, N. Y. "Baum's Ever-Ready Castorine," (for an Axle Oil)	3,807	Jan. 8	26	119
Benton Hair Grower Company, Cleveland, Ohio. "Benton's Hair Grower, Single Strength"	3,853	Jan. 29	26	358
Benton Hair Grower Company, Cleveland, Ohio. "Benton's Hair Grower, Double Strength"	3,854	Jan. 29	26	358
Benton Hair Grower Company, Cleveland, Ohio. "Benton's Hair Grower, Triple Strength"	3,855	Jan. 29	26	358
Bernheimer, Adolph, New York, N. Y. "Barnsley Duck"	3,884	Feb. 12	26	546
Bernheimer, Adolph, New York, N. Y. "Belfast Fancy Drill"	3,885	Feb. 12	26	546
Bernheimer, Adolph, New York, N. Y. "Barnsley Drill"	3,886	Feb. 12	26	546
Brooklyn Shield Company, Brooklyn, N. Y. "R. S. Repellent Shields Warranted"	3,924	Feb. 26	26	740
Brown & Co., R. C., New York, N. Y. "La Rosita" (for Cigars)	3,946	Mar. 4	26	928
Brown & Co., R. C., New York, N. Y. "La Mule" (for Cigars)	3,947	Mar. 4	26	928
Bruce, Matthew, New York, N. Y. "Brucedine" (for a Hair Restorer)	3,925	Feb. 26	26	740
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. "Burke's Light Sparkling Pale Ale"	3,839	Jan. 22	26	278
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. "Extra Foreign Stout"	3,840	Jan. 22	26	278
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. "Allsopp's India Pale Ale"	3,841	Jan. 22	26	278
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. "Nonpareil Old Tom Gin"	3,842	Jan. 22	26	278
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. "Burke's Fine Old Irish Whisky"	3,843	Jan. 22	26	278
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. "Garnkirk Finest Scotch Malt"	3,844	Jan. 22	26	278
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. "Burke's Finest Old Jamaica Rum"	3,845	Jan. 22	26	278
Burke, Edward & John, New York, N. Y., Dublin, Ireland, and Liverpool, England. "E. & J. B. Dublin," (for Guinness' Extra Foreign Stout)	3,868	Feb. 5	26	442
Burwell, George, Boston, Mass. "Cupid's Tears" (for Capsules)	3,926	Feb. 26	26	740
Butler & Co., James G., St. Louis, Mo. "Heart" (for Plug Tobacco)	4,008	Mar. 25	26	1116
California Fig Syrup Company, Reno, Nev., and San Francisco, Cal. "Syrup of Figs" (for a Medical Compound)	3,791	Jan. 1	26	2
Carney, George J., Lowell, Mass. "Massachusetts Standard." (for Paper)	3,856	Jan. 29	26	358
Chamberlain & Co., Des Moines, Iowa. "Chamberlain's Eye and Skin Ointment"	3,927	Feb. 26	26	740
Chapman, Smith & Co., Chicago, Ill. "Lemon." (for an Extract)	3,928	Feb. 26	26	740
Chapman, Smith & Co., Chicago, Ill. "Vanilla" (for an Extract)	3,929	Feb. 26	26	740
Chappelear & Sons, William M., Zanesville, Ohio. "Chappelear's Bronchini." (for a Medicine)	3,967	Mar. 11	26	920
Chiles, John W., Dayton, Ohio. "Dr. J. W. Chiles' Lightning Liniment"	3,846	Jan. 22	26	278
Chiles, John W., Dayton, Ohio. "Dr. J. W. Chiles' Wonderful Spasmodic Colic and Water Cure"	3,847	Jan. 22	26	278
Clark & Warren, Corry, Pa. "C. & W." (for Hydrocarbon Oil)	3,808	Jan. 8	26	112
Clarke, Ben S., Ashland, Nebr. "Every Man his own Tinker." (for Out-Fits for Soldering)	3,792	Jan. 1	26	2
Coan, Henry, St. Louis, Mo. "Greenbacks the People's Choice" (for Cigars)	3,887	Feb. 12	26	546
Commoss, Joseph T., New York, N. Y. "Excelsior Advertising Sign Company." (for Banners, Flags and Sign Boards)	3,793	Jan. 1	26	2
Commoss, Joseph T., New York, N. Y. "Campaign Banner and Outfit Company." (for Banners, Flags and Sign Boards)	3,794	Jan. 1	26	2
Conner, W. E. (See Richards and Conner.)	3,948	Mar. 4	26	928
Cook & Co., O. B., Detroit, Mich. "Sour Mash Tonic." (for Medicines)	4,009	Mar. 25	26	1116
Crane, Willard G., Cambridge, Ill. "Soap"	3,991	Mar. 18	26	1022
Crawford, Walter W., New York, N. Y. "Buchu Gin" (for a Medical Preparation)	3,899	Feb. 19	26	642
Dickey, John R., Goodson, Va. "Dickey's Indian Blood and Liver Pills"	3,969	Mar. 11	26	920
Dort & Chandler, Keene, N. H. "Clark's Extract of Jamaica Ginger, Concentrated"	3,949	Mar. 4	26	928
Drake, Reason, La Grange, Ind. "The Imperial Blood and Liver Tonic, The King of all Tonics"	3,950	Mar. 4	26	928
Duffin, Willard D. W., Mount Carroll, Ill. "Duffin's Fountain Bitters"	3,992	Mar. 18	26	1022
Dunavan & Son, A. F., Dayton, Ill. "Pennypacker" (for Horse Collars)	3,795	Jan. 1	26	2
Dunbar's Sons, G. W., New Orleans, La. "Orange Dripa." (for Cordials)	3,968	Mar. 11	26	920
Dunker, Hermann, Milwaukee, Wis. "The Leader" (for Cigars)	3,993	Mar. 18	26	1022
Durvin, Benjamin F., Richmond, Va. "B. F. Durvin's Eureka Salve"	3,951	Mar. 4	26	928
Earl & Wilson, New York and Troy, N. Y. "Earl & Wilson's Collar and Cuff"	3,970	Mar. 11	26	920
Elmore, Carlos H., and W. M. Whitelaw, Kansas City, Mo. "Murray's Specific"	4,010	Mar. 25	26	1116
Ely, Oscar A., Hartford, Conn. "Ely's Glass Paint"	3,994	Mar. 18	26	1022
Erskine & Co., John, New York, N. Y. "Elite" (for Silk Ribbons)	3,995	Mar. 18	26	1022
Erskine & Co., John, New York, N. Y. "J. E." (for Silk Ribbons)	3,996	Mar. 18	26	1022
Erskine & Co., John, New York, N. Y. "Gold Medal" (for Silk Ribbons)	3,997	Mar. 18	26	1022
Erskine & Co., John, New York, N. Y. "Cressa" (for Silk Ribbons)	3,998	Mar. 18	26	1022
Erskine & Co., John, New York, N. Y. "Orcilla Mills" (for Tailor, Dress, and Broad Silks)	4,011	Mar. 25	26	1116
Fahrney, Peter, Chicago, Ill. "Fahrney's Celebrated Blood Cleanser or Panacea"	3,930	Feb. 26	26	740
Farley, Bernard, San Francisco, Cal. "B. Farley's Wonderful Discovery" (for a Medicine)	3,999	Mar. 18	26	1022
Farmers' Fertilizer Company, Syracuse, N. Y. "Bird Island Guano"	3,796	Jan. 1	26	2
Farmers' Fertilizing Company, Syracuse, N. Y. "Velvet Green" (for Chemical Fertilizers)				
Ferguson, George E. (See Houghtaling and Ferguson.)	3,810	Jan. 8	26	112
Fish, Charles F., Saratoga Springs, N. Y. "Compound Quinine Plaster"	3,869	Feb. 5	26	442
Fish, Charles F., Saratoga Springs, N. Y. "Compound Quinine Liniment"	4,000	Mar. 18	26	1022
Fleming, James A., Ticonderoga, N. Y. "Fleming's Wonderful Cure"	3,900	Feb. 19	26	642
Fleming, Joseph T., Princeton, Ind. "Dr. Wilder's Vegetable Liver Remedy"	3,971	Mar. 11	26	920
Flint & Co., J. T., Derby Line, Vt. "Flint's Saponaceous Tooth Powder the Peerless Dentifrice"	3,952	Mar. 4	26	928
Gail & Ax, G. W., Baltimore, Md. "P. V." (for Manufactured Tobacco)	4,012	Mar. 25	26	1116
Gallagher, B. F., Philadelphia, Pa. "Dr. Gallagher's Pile Ointment"				

Alphabetical list of registrants of labels, January to March, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Garner, William T., deceased; J. A. Lawrence, Islip, and W. E. Thorn, Cohoes, N. Y., executors. "Belfast Lawns"	3,831	Jan. 15	26	206
Garvey, Henry E. (See Hitchcock and Garvey.)				
Gauche, Jules A., New Orleans, La. "Right Bower, Pure Old Rye"	3,953	Mar. 4	26	828
Gauche, Jules A., New Orleans, La. "Southern Belle, Fine Old Rye"	3,954	Mar. 4	26	828
Gauche, Jules A., New Orleans, La. "Serenade, Pure Old Rye"	3,955	Mar. 4	26	828
Germania Lead Works, San Francisco, Cal. "Germania Lead Works, Perfectly Pure White Lead"	4,001	Mar. 18	26	1022
Gillingham, Henry R., Washington, D. C. "Magic Cleaner and Polish"	3,857	Jan. 29	26	358
Goode, John, and J. M. Kelso, Magnolia, Ark. "Dr. John Goode's Celebrated Chill and Fever Tonic"	3,956	Mar. 4	26	828
Goodwin & Thurston, Minneapolis, Minn. "Dr. Goodwin's Faciel-Lotio. (Face Lotion")	3,848	Jan. 22	26	278
Grebe, Conrad, Chestnut Hill, Philadelphia, Pa. "Grebe's Sage Hair Tonic"	3,901	Feb. 19	26	642
Grinnell, Marcus, Mount Pleasant, Mich. "Grinnell's Universal Balsam"	3,840	Jan. 22	26	278
Halle & Mower, Atlanta, Ga. "Halle's Elixir Mandrake and Buchu and M B"	3,830	Jan. 15	26	206
Hanson, Francis G., Brooklyn, N. Y. "P. B. B." (for Tip-Linings of Hats)	3,811	Jan. 8	26	112
Hanson, Francis G., Brooklyn, N. Y. "Standard Time" (for Tip-Linings of Hats)	3,812	Jan. 8	26	112
Hanson, Francis G., Brooklyn, N. Y. "For Goodness sake don't say I told you" (for Tip-linings for Hats)	3,902	Feb. 19	26	642
Haring, Henry G., Philadelphia, Pa. "Neutraline." (for a Preparation for the Feet)	3,888	Feb. 12	26	546
Harris, Joseph W., Chicago, Ill. "Japanese Furniture Renewer"	3,957	Mar. 4	26	828
Harrison, Apollos W., Philadelphia, Pa. "Harrison's Golden Cologne Water"	3,813	Jan. 8	26	112
Hecht, Georg, New York, N. Y. "Nuremberg Corn Remedy"	3,797	Jan. 1	26	2
Hecht, Georg, New York, N. Y. "The Old Celebrated Nuremberg Corn Remedy"	3,798	Jan. 1	26	2
Helmann & Co., J., New York, N. Y. "Saengerbund" (for Cigars)	3,870	Feb. 5	26	442
Heinz, F. & J., Pittsburg, Pa. "Pint English" (for Pickles)	3,903	Feb. 19	26	642
Henion, John B., Rochester, N. Y. "Dr. Von Bieber's Sure Cure for Malaria"	3,972	Mar. 11	26	920
Herrmann & Grossman, New Orleans, La. "Old Hickory," (for Bitters)	3,889	Feb. 12	26	546
Hess & Co., S. F., Rochester, N. Y. "Art Club" (for Cigars)	3,904	Feb. 19	26	642
Hickman, William M., Jefferson, Pa. "Hickman's Reliable Hair and Scalp Remedy"	3,931	Feb. 26	26	740
Hier & Aldrich, Syracuse, N. Y. "Trophy" (for Cigars)	3,932	Feb. 26	26	740
Higbee, Edwin W., Northampton, Mass. "Dr. Von Breemberg's Local and Constitutional Zymotic Catarrh Antidote"	3,858	Jan. 29	26	358
Higbee, Edwin W., Northampton, Mass. "Dr. Von Breemberg's Zymotic Malaria Antidote"	3,905	Feb. 19	26	642
Higbee, Edwin W., Northampton, Mass. "Dr. Von Breemberg's Homeopathic Bilious Powders"	3,906	Feb. 19	26	642
Higgins, Walter, Brooklyn, N. Y. "Higgins Crown Laundry Soap"	3,973	Mar. 11	26	920
Hill & Co., Charles D., Richmond, Va. "The Silver King" (for Manufactured Tobacco)	3,933	Feb. 26	26	740
Hitchcock, James, and H. E. Garvey, Chicago, Ill. "James' Imperial Pepsin Bitters"	4,002	Mar. 18	26	1022
Holbrook, George H., Portland, Oreg. "Holbrook's Enameline." (for a Cosmetic)	3,934	Feb. 26	26	740
Houghtaling, Charles E., and G. B. Ferguson, Albany, N. Y. "Dr. Day's Blood Compound." (for a Medicine)	3,958	Mar. 4	26	828
Haber & Wack Milling & Live Stock Co., St. Louis, Mo. "Western Delight," (for Flour)	3,974	Mar. 11	26	920
Hughes, Benjamin L., Jacksonville, Fla. "Florida Water"	3,935	Feb. 26	26	740
Hulman, Herman, Terre Haute, Ind. "Delicious Sips" (for Roasted Coffee)	3,907	Feb. 19	26	642
Hurd, William C., New York, N. Y. "Red Pills"	3,814	Jan. 8	26	112
Hurlburt, Charles T., New York, N. Y. "Hurlburt's Tracheal Drops"	3,799	Jan. 1	26	2
Ilsley, Doubleday & Co., New York, N. Y. "Luz Divina" (for Kerosene Oil)	3,809	Jan. 8	26	112
Irvine, Samuel L., Newville, Pa. "Irvine's Indigotique"	3,908	Feb. 19	26	642
Isted & Halsted, Milwaukee, Wis. "Red Cross Engine Oil"	3,975	Mar. 11	26	920
Isted & Halsted, Milwaukee, Wis. "Red Cross Cylinder Oil"	3,976	Mar. 11	26	920
Ithaca Cigar Manufacturing Co., Ithaca, N. Y. "Grand Duplex" (for Cigars)	3,959	Mar. 4	26	828
Jackson, Edwin A. and W. M., New York, N. Y. "The Jackson Ventilating Grate"	3,837	Jan. 15	26	206
Jackson, William M. (See Jackson, Edwin A. and W. M.)				
Jacobs, William C., Brooklyn, N. Y. "Cherry-Malt Phosphites"	3,800	Jan. 1	26	2
Jay, Edward G., Newark, Del. "Dr. Cook's Celery Bitters"	4,013	Mar. 25	26	1116
Jones, Lewis, Bristol, Pa. "Ribbed Hose"	3,815	Jan. 8	26	112
Keber, Louis. (See Page and Keber.)				
Kelso, John M. (See Goode and Kelso.)				
Keppler, Christian L., New Orleans, La. "Carbonated Lithia Water." (for a Medicine)	3,890	Feb. 12	26	546
Keppler, Christian L., New Orleans, La. "Carbonated-Iodine-Lithia Water"	3,936	Feb. 26	26	740
Kinsey, Z. B., Rochester, Pa. "Kinsey's Fine Graham Breakfast Cake Flour"	3,909	Feb. 19	26	642
Kirk & Co., James S., Chicago, Ill. "Zenithia Toilet Soap"	3,816	Jan. 8	26	112
Kirk & Co., James S., Chicago, Ill. "Zenithia Cologne"	3,817	Jan. 8	26	112
Kirk & Co., James S., Chicago, Ill. "Bermuda Water" (for a Toilet Preparation)	3,818	Jan. 8	26	112
Kirk & Co., James S., Chicago, Ill. "Juvenile" (for Soap)	3,819	Jan. 8	26	112
Kirkland Brothers, Utica, N. Y. "Roscoe Conkling" (for Cigars)	4,014	Mar. 25	26	1116
Knop, Otto, Berlin, Germany. "William Lasson's Hair Elixir"	3,820	Jan. 8	26	112
Kronsbein, Fred, Rochester, N. Y. "Jack Rose" (for Cigars)	3,872	Feb. 5	26	442
Lappe, Julius, Neudietendorf, Thuringia, Germany. "Aechter Aromatique Feinster Magen-Liqueur"	3,891	Feb. 12	26	546
Lappe, Julius, Neudietendorf, Thuringia, Germany. "Aechter Aromatique Feinster Magen-Liqueur"	3,892	Feb. 12	26	546
Lawrence, John A., *et al.*, executors. (See Garner, William T.)				
Lewenberg, Clara, New York, N. Y. "Madame C. Lewenberg's Opaline" (for the cure of Chapped Hands, &c)	3,893	Feb. 12	26	546
Liggett & Myers Tobacco Company, St. Louis, Mo. "Star" (for Plug Tobacco)	3,832	Jan. 15	26	206
Lippincott, Oglevee & Co., Philadelphia, Pa. "Snn Mackinaw" (for Hat Tips or Linings)	3,937	Feb. 26	26	740
Lippincott, Oglevee & Co., Philadelphia, Pa. "Chinese Mackinaw" (for Hat Tips or Linings)	3,938	Feb. 26	26	740
Lucas, William E., New York, N. Y. "Centennial" (for Paints, Leads, Zincs, &c)	3,894	Feb. 12	26	546
Luthin, Ferdinand, Hoboken, N. J. "Pinocle" (for Playing Cards)	3,873	Feb. 5	26	442
Luyties Brothers, New York, N. Y. "Grand Royal Sec." (for Champagne)	3,910	Feb. 19	26	642
McCreary, E. Don, Easton, Mo. "Cyclone Elixir or Bottled Life Sleep, and Beauty," (for a Medicine)	3,960	Mar. 4	26	828
Meade & Hyland, Penn Yan, N. Y. "Golden Spike" (for Cigars)	3,961	Mar. 4	26	828
Meagley, Rosell H., Binghamton, N. Y. "Spoon Soap"	3,859	Jan. 29	26	358
Meier, Henry F., Mount Clemens, Mich. "Mount Clemens Sprudel Water"	3,911	Feb. 19	26	642
Mensing & Stecher, Rochester, N. Y. "The White Elephant." (for Cigars)	3,977	Mar. 11	26	920
Merrill, Eben B., Wellston, Ohio. "Hope for the Invalid." (for a Medical Compound)	3,821	Jan. 8	26	112
Meserve, Charles H., Boston, Mass. "Harris' Corn Salve"	3,962	Mar. 4	26	828
Meyer & Co., A. C., Baltimore, Md. "Victoria Pills"	3,978	Mar. 11	26	920
Meyer & Co., A. C., Baltimore, Md. "Caution." (for a Medical Compound)	3,979	Mar. 11	26	920
Meyer & Co., A. C., Baltimore, Md. "Day's Horse and Cattle Powder"	3,980	Mar. 11	26	920
Michaelis & Son, M., New York, N. Y. "Michaelis & Son's Extract of Cream Ginger Ale"	3,822	Jan. 8	26	112
Miller, Henry F., New York, N. Y. "Miller's Necktie Holder and Fastener"	3,895	Feb. 12	26	546
Morton, Isaac N., New York, N. Y. "The Optimus" (for a Vaginal Douche)	4,003	Mar. 18	26	1022

Alphabetical list of registrants of labels, January to March, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Mowrer, Martin L., Newark, N. J. "New Process Hominy"	3,896	Feb. 12	26	546
Mowry & Co., A. J., Milan, Ohio. "Geneva Rubber Top Enamel." (for Carriage Tops, &c)	3,860	Jan. 29	26	358
Murphy, John J., New York, N. Y. "Speptine." (for a Medical Remedy)	3,874	Feb. 5	26	442
New York Crayon Company, New York, N. Y. "The New York Crayon Co.'s Enameled School Crayon"	3,862	Jan. 29	26	358
Newton, W. D., Victor, N. Y. "Master Mason," (for Cigars)	3,861	Jan. 29	26	358
Nilsson Bros., St. Paul, Minn. "Vega" (for Cigars)	3,912	Feb. 19	26	642
O'Lalor, David R., Boston, Mass. "Lalor's Antidote for Intoxication or Alcoholic Poisoning"	3,875	Feb. 5	26	442
Oblinger, Benjamin F., Philadelphia, Pa. "Banner Tip" (for Shoes)	3,913	Feb. 19	26	642
Page, Louis, and L. Keber, Brooklyn, N. Y. "Royal Curtain Fixture"	3,939	Feb. 26	26	740
Parker, Frank, A. L. Vandewater, and T. G. Talmage, Islip, N. Y. "Bait" (for a Perfume for the Breath)	3,823	Jan. 8	26	112
Parsons, William E., Jr., New York, N. Y. "Parsons' Specials." (for Cigars)	4,004	Mar. 18	26	1022
Pemberton, John S., Atlanta, Ga. "Dr. Pemberton's Indian Queen Magic Hair Dye"	3,863	Jan. 29	26	358
Pierce, Henry L., Boston, Mass. "Baker's Vanilla Chocolate"	3,864	Jan. 29	26	358
Potter, Ira A., Watertown, N. Y. "I. A. Potter's New American Strengthening Plaster"	3,981	Mar. 11	26	920
Pratt, Samuel, New York, N. Y. "Pratt's Aromatic Geneva Gin"	3,824	Jan. 8	26	112
Provident Chemical Works, St. Louis, Mo. "Rhorer's Bread Raising"	3,982	Mar. 11	26	920
Quee, James, Brooklyn, N. Y. "Balmy Sleep." (for a Medicinal Preparation)	4,005	Mar. 18	26	1022
Randall & Mulford, Ottumwa, Iowa. "Dr. Sherwood's King of Pain"	4,015	Mar. 25	26	1116
Raymond, Benjamin F., Essex, Mass. "Old Mother Hubbard a Throat and Lung Balsam"	3,876	Feb. 5	26	442
Rend, W. Robert, Oshkosh, Wis. "Dr. Rends Actinic Spectacles and Eyeglasses"	3,914	Feb. 19	26	642
Rice, J. Allen, Milford, Mass. "Williams' Liniment"	3,915	Feb. 19	26	642
Richards, A. J., and W. E. Conner, Marietta, Ohio. "Snaps for the Breath"	3,825	Jan. 8	26	112
Richardson & Son., M., Elmira, N. Y. "Duchess" (for Cigars)	4,016	Mar. 25	26	1116
Robinson, Harry, St. Joseph, Mo. "Professor Harry Robinson's Specific Lotion." (For the Hair)	3,801	Jan. 1	26	2
Rothfuss, Albert F., Fort Scott, Kans. "General Crook" (for Cigars)	3,850	Jan. 22	26	278
Runkel Brothers, New York, N. Y. "The Nickel Sweet Chocolate Package"	3,916	Feb. 19	26	642
Russell, William, Jr., Providence, R. I. "White Drops" (for a Medicinal Preparation)	3,826	Jan. 8	26	112
Russell, William, Jr., Providence, R. I. "Russell's White Drops" (for a Medicinal Preparation)	3,827	Jan. 8	26	112
Sackett, Wilhelms & Betzig, New York, N. Y. "The Winner." (for Cigars)	3,835	Jan. 15	26	206
Salter, M. T., Atlanta, Ga. "Dr. Salter's Eye Lotion"	3,940	Feb. 26	26	740
Sayre, Lucius E., Philadelphia, Pa. "Sunshine Metal Polish"	3,941	Feb. 26	26	740
Schwarzwald, Gustav, New York, N. Y. "Thymoline Children & Adults Health Protector"	3,983	Mar. 11	26	920
Scott, E. M. B., Ottumwa, Iowa. "Infallible Corn Cure. E. M. B. Scott, Manufacturing Chemist, Sole Proprietor, Ottumwa, Iowa"	3,897	Feb. 12	26	546
Simon, R. & H., Weehawken, N. J. "Regatta." (for Dress Silks)	3,963	Mar. 4	26	828
Smith & Case, Salt Lake City, Utah Ter. "Way Up Baking Powder"	3,942	Feb. 26	26	740
Snyder, Henry, Jr., Brooklyn, N. Y. "Roasted Rye Whiskey"	4,017	Mar. 25	26	1116
Spalding, Hugh M., New York, N. Y. "Dazzleine Gold and Silver Polish. (Produces a dazzling brilliancy, which it retains)"	3,917	Feb. 19	26	642
Standiford, Harry, Washington, D. C. "Nourse's Elixir of Yerba Santa Compound"	3,877	Feb. 5	26	442
Stearns & Co., Frederick, Detroit, Mich. "Our Own Fruit Salt" (for a Medicinal Preparation)	4,018	Mar. 25	26	1116
Stewart, David B., Ithaca, N. Y. "Nabob" (for Cigars)	3,943	Feb. 26	26	740
Stewart, Fred W., Oswego, N. Y. "Stewart's Gipsy Pile Ointment"	3,836	Jan. 15	26	206
Stieb, Peter, New York, N. Y. "Artophylax" (for a Preparation for the Hair)	3,898	Feb. 12	26	546
Stitt & Co., William J., New York, N. Y. "Pearlioca" (for Food Prodncts)	3,944	Feb. 26	26	740
Strauss, Pritz & Co., Cincinnati, Ohio. "J. M. Walker's Anderson County hand made sour mash. Distilled Spring 1860"	3,878	Feb. 5	26	442
Strauss, Pritz & Co., Cincinnati, Ohio. "Durham Distilling Company, Rye"	3,964	Mar. 4	26	828
Straw & Murphy, Watertown, Wis. "Brilliant Illuminator" (for Carbon Oil)	3,865	Jan. 29	26	358
Strong & Tucker, Washington, D. C. "The Washington Market Brand." (for Canned Tomatoes)	3,802	Jan. 1	26	2
Sullivan & Ravekes, San Francisco, Cal. "Acme Rubber Paint"	4,006	Mar. 18	26	1022
Sutphen & Co., Noblesville, Ind. "Hydrargyrum Saccharratum." ("Sugar or Sweet Powder")	3,803	Jan. 1	26	2
Sutton, John, Tower City, Pa. "Dandelion Bitters"	3,828	Jan. 8	26	112
Synnott, Thomas W., Wenonah, N. J. "Glassboro' Improved" (for Preserve Jars)	3,879	Feb. 5	26	442
Talmage, Thomas G. (See Parker, Vandewater, and Talmage.)				
Thallon, John, New York, N. Y. "Solid Gold" (for Cheese)	3,984	Mar. 11	26	920
Thallon, John, New York, N. Y. "Solid Silver," (for Cheese)	3,985	Mar. 11	26	920
Thallon, John, New York, N. Y. "Finest Selected Dairy" (for Butter)	3,986	Mar. 11	26	920
Thomas, Charles A., Rushville, Ohio. "Great Vegetable Pain Conqneror"	3,851	Jan. 22	26	278
Thorn, William E., *et al.*, executors. (See Garner, William T.)				
Thornburgh, John M., St. Louis, Mo. "French Cook Baking Powder"	3,987	Mar. 11	26	920
Towne, L. E., Brodhead, Wis. "Dr. L. E. Towne's Cough King"	3,804	Jan. 1	26	2
United States Dairy Butter Label Company, Boston, Mass. "Dairy Butter Label"	3,880	Feb. 5	26	442
Vandewater, Albertus L. (See Parker, Vandewater, and Talmage.)				
Wadsworth, Howland & Co., Boston, Mass. "Bay State Paints"	3,866	Jan. 29	26	358
Walker, William, Richmond, Va. "Virginia Nine" (for Cigars)	3,805	Jan. 1	26	2
Wambach, Frederick, Philadelphia, Pa. "High Flyer." (for Cigars and Tobacco)	4,007	Mar. 18	26	1022
Warren, Asa, Bangor, Me. "Brown's Sarsaparilla"	3,965	Mar. 4	26	828
Warren, George T., Flint, Mich. "A No. One Smoke" (for Cigars)	3,918	Feb. 19	26	642
Warren, George T, Flint, Mich. "The Flint" (for Cigars)	3,919	Feb. 19	26	642
Wear, W. D., Tarrent, and A. M. Womack, Bosque, Tex. "Womack's Specific"	3,920	Feb. 19	26	642
Weber, John M., Norristown, Pa. "The Arabian Heave Remedy for Horses"	3,966	Mar. 4	26	828
Wells & Church, San Francisco, Cal. "Silver Pills"	3,921	Feb. 19	26	642
Wentworth, David W. and J. P., Great Falls, N. H. "Turkish Bath" (for a Liniment)	3,922	Feb. 19	26	642
Wentworth, Jared P. (See Wentworth, David W. and J. P.)				
Westcott Son & Co., H., Binghamton, N. Y. "Sentinel" (for Cigars)	3,833	Jan. 15	26	206
Westcott Son & Co., H., Binghamton, N. Y. "Our Bob" (for Cigars)	3,834	Jan. 15	26	206
Westcott Son & Co., H., Binghamton, N. Y. "Twenty-Four O'Clock" (for Cigar Boxes)	3,988	Mar. 11	26	920
Westfield Cigar Company, Westfield, Mass. "Cady's Original Bag-Dad Cigar"	3,829	Jan. 8	26	112
White, A. J., New York, N. Y. "The Shaker" (for a Curative Sirup)	3,852	Jan. 22	26	278
White, Charles C., Brooklyn, N. Y. "The White's Tar Medicated Toilet Papers"	3,881	Feb. 5	26	442
Whitelaw, William M. (See Elmore and Whitelaw.)				
Whiting, Frederic A., Wellesley Hills, Mass. "Whiting's Impervious Drafting Inks"	3,945	Feb. 26	26	740
Whittaker, J. H., Jr., Jersey City, N. J. "Yankee Polish"	3,867	Jan. 29	26	358
Williams, Arthur E., Belvidere, N. Y. "Diamond Brand Mixed Paints"	3,806	Jan. 1	26	2
Wilson Brothers, Chicago, Ill. "Bi-Metallic" (for Men's Furnishing Goods)	3,882	Feb. 5	26	442
Winslow & Co., W. H., Boston, Mass. "Pâte Rouge Metallique." (for a Paste for Polishing Metals)	3,989	Mar. 11	26	920
Womack, A. M. (See Wear and Womack.)				
Woodruff, E. Delavan, Auburn, N. Y. "New Process Yeast"	3,923	Feb. 19	26	642

DISCLAIMERS.

Name, residence, and invention.	No.	Filed.	Official Gazette. Vol.	Page.
Bryson, Michael, St. Louis, Mo.: disclaimer filed by patentee. Pannier. (Reissue)	9,178	Jan. 19, 1884	26	358
Johnston, George, and Edwin G. Smith, Auburn, Cal., assignor to True Vanning Machine Company, Sydney D. Miller, President; disclaimer filed by assignee. Amalgamator and concentrator	66,499	Jan. 31, 1884	26	546
Smalley, William W., Bound Brook, assignor to Graphite Lubricating Company, Jersey City, N. J.; disclaimer filed by assignee. Journal bearing	209,064	Feb. 23, 1884	26	828

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Drawing.	Official Gazette. Volume.	Page.
Abdominal supporter	H. A. Traver	291,551	Jan. 8	677	192	26	128
Abrading-machine	F. W. Coy	294,766	Mar. 11	516	143 144	26	924
Abrading-tool	W. P. Barclay	293,398	Feb. 12	823	221 222	26	593
Accordion	A. L. Schaar	295,288	Mar. 18	1205	334	26	1058
Accordion	E. Schreyer	291,782	Jan. 8	962	270	26	178
Accordion	J. S. Rigby	292,054	Jan. 15	1301	364	26	251
Acid. Apparatus for making sulphuric	M. A. Walsh	291,821	Jan. 8	1007	282	26	186
Acid. Concentrating sulphuric	A. K. Barmore	293,399	Feb. 12	824	222	26	593
Adding-machine	D. M. Rush	292,256	Jan. 22	1566	438	26	302
Adding-machine	C. G. Spalding	293,809	Feb. 19	1325	368	26	689
Adding-machine	A. B. Smith	293,954	Feb. 19	1551	427	26	729
Adjustable wrench	S. P. Mount	295,665	Mar. 25	1684	467	26	1153
Advertising articles to cards. Attaching	J. W. Carly	293,850	Feb. 19	1383	382	26	699
Advertising device	J. A. Stansbury	291,103	Jan. 1	111	31, 32	26	23
Advertising device. Automatic	W. R. Patterson	292,847	Feb. 5	84	23	26	458
Aerial cable	J. Schweizer	292,957	Feb. 5	223	61	26	483
Air. Apparatus for producing compressed	N. J. Paradise	293,774	Feb. 19	1278	354	26	681
Air-brake cock	F. A. Magowan	293,481	Feb. 12	912	247	26	609
Air-brakes, &c. Flexible tube for	C. H. Hill	292,814	Feb. 5	46	12	26	451
Air-compressor. Hydraulic	C. Pfanne	295,800	Mar. 25	1656	516 517	26	1183
Air-compressor. Hydraulic	R. M. McKinney	293,764	Feb. 19	1265	350	26	678
Air or liquid brake	C. and G. M. Heintz and A. Dotterweich.	294,230	Feb. 26	1884	515	26	793
Air-pressure apparatus for beer-kegs, &c	C. P. Fest	295,157	Mar. 18	1028	284	26	1026
Air-ship	R. G. Vassar	293,690	Feb. 19	1157	323	26	661
Alarm: *See* Bilge-water alarm. Burglar-alarm. Fire-alarm. Fire and police alarm. Fog-alarm. Lamp-alarm. Low-water alarm. Magneto-electrical alarm.							
Alarm-lock	R. Zinsmaier	292,088	Jan. 15	1339	375 376	26	258
Alarm-lock	S. Meers	293,054	Feb. 5	337	92	26	504
Album	J. A. Stelzner	294,285	Feb. 26	1945	334	26	805
Alcohol. Process of and apparatus for the production of highly-purified	J. E. Hand	293,013	Feb. 5	290	80	26	495
Alidade	J. B. Jones	293,886	Feb. 19	1426	.....	26	706
Alloy for coating metals	F. J. Seymour	291,631	Jan. 8	787	221	26	148
Aluminium. Obtaining	T. H. Becker	293,936	Feb. 19	1493	411 412	26	719
Amalgamator	A. B. Paige	294,263	Feb. 26	1922	527	26	800
Amalgamator	A. B. Paige	294,264	Feb. 26	1923	527	26	800
Amalgamator	J. and J. Addie	291,264	Jan. 1	312	88	26	57
Ammonia from furnace-gases. Obtaining	A. M. Long	294,479	Mar. 4	174	48	26	859
Anæsthetic gases. Apparatus for administering	H. C. Chester	291,963	Jan. 15	1219	340	26	294
Anchor	H. M. Schmeelk	294,813	Mar. 11	579	160	26	935
Anchor	T. P. Lucas	293,657	Feb. 19	1114	310	26	652
Anchor-chains. Locking-pawl for	L. C. Strong	291,640	Jan. 8	799	224	26	150
Animal-power	W. L. B. Cushing and A. D. Vest	295,486	Mar. 18	1451	399	26	1105
Animal-trap	C. Hall	295,634	Mar. 25	1643	456	26	1145
Animal-trap	H. B. Sargent	295,056	Mar. 11	894	245	26	989
Animal-trap	C. Remington	292,853	Feb. 5	89	24	26	459
Animal-trough	D. L. Johnson	293,470	Feb. 12	901	243	26	606
Animals. Exterminating ground-burrowing	H. Redding	293,911	Feb. 19	1456	403	26	712
Annular surfaces and cutting screw-threads thereon. Machine for forming	I. H. Farnham	294,212	Feb. 26	1864	509	26	789
Annunciator. Electric	A. E. Leitch	291,063	Jan. 1	57	17	26	13
Annunciator. Electrical	J. Walter	294,535	Mar. 4	244	68	26	871
Annunciator. Speaking-tube	C. E. Scribner	293,197	Feb. 5	542	144	26	536
Annunciator-switch and telephone-circuit	J. F. Kennedy	295,876	Mar. 25	1957	.....	26	1201
Antiseptic solution	W. E. Brock	293,940	Feb. 19	1499	413	26	720
Apple corer, parer, and slicer	F. C. Zanetti	295,218	Mar. 18	1108	306 307	26	1040
Aquarium	G. E. Swan	295,304	Mar. 18	1222	340	26	1061
Arrow	G. Winding	295,707	Mar. 25	1740	484	26	1162
Asphalt. Machine for mixing	W. H. H. Knight	293,180	Feb. 5	522	138 139	26	533
Asphalt-mixing machine	E. J. De Smedt	292,417	Jan. 22	1771	493	26	341
Asphaltum for paving, &c. Apparatus for refining	J. Davis	291,698	Jan. 8	871	244 245	26	102
Astronomical apparatus	G. B. Maynadier	292,338	Jan. 22	1662	464	26	319
Attrition-mill	G. B. Maynadier and W. H. Cilley	292,170	Jan. 22	1441	404	26	283
Attrition-mill	T. L. Sturtevant	291,954	Jan. 15	1184	329	26	228
Auger. Earth-	F. Brown	291,977	Jan. 15	1210	338	26	233
Auger. Earth-	S. S. and J. G. Sherman	295,444	Mar. 18	1385	384	26	1093

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Anger. Post	J. E. Miles	293,490	Feb. 12	921	250	26	610
Automatic lubricator	J. C. Thayer	294,163	Feb. 26	1803	493	26	779
Automatic register for grains, seeds, &c	J. Wherry, Jr	293,129	Feb. 5	452	121	26	521
Awning	H. B. Coyle	294,767	Mar. 11	517	144	26	924
Awnings. Device for raising and lowering	J. Greenberg and E. E. Lucas	292,216	Jan. 22	1510	424	26	293
Ax	R. R. Pace	294,144	Feb. 26	1775	487	26	774
Axle-attaching device	A. Fontayne	293,960	Feb. 19	1522	420	26	725
Axle bearings. Brass for car	J. Wallace	292,452	Jan. 22	1215	506	26	350
Axle box. Car	W. S. G. Baker	292,399	Jan. 22	1743	486	26	336
Axle box. Car	J. Stephenson	292,379	Jan. 22	1719	479	26	331
Axle. Car	G. W. Stewart	293,201	Feb. 5	548	145	26	538
Axle. Carriage	J. Gowland	294,222	Feb. 26	1876	513	26	791
Axle journals. Bearing for car	G. W. Stewart	291,547	Jan. 8	673	191	26	127
Axle-repairing tool	F. S. Packard	292,039	Jan. 15	1283	350	26	247
Axle. Vehicle	S. Kennedy and S. G. Warner	294,632	Mar. 4	357	99	26	890
Axle. Wagon	T. M. Jenkins	295,404	Mar. 18	1344	374	26	1085
Back-band hook	F. Haynes	294,229	Feb. 26	1883	515	26	793
Back-stay fastener	C. M. Schaefer	294,083	Feb. 26	1686	464	26	760
Bag: *See* Feed-bag. Paper bag. Mail-bag. School-bag.							
Bag-fastener	C. Collins	293,564	Feb. 12	1006	277	26	626
Bag-fastener	W. B. Hanlon	294,228	Feb. 26	1882	515	26	793
Bag-holder	M. Hayman	292,648	Jan. 29	2078	578, 579	26	400
Bag-holder	E. H. Morehouse	294,659	Mar. 4	393	109	26	896
Bag-holder	A. Robinson	294,505	Mar. 4	208	58	26	865
Bag-holder	C. J. Sanker	293,079	Feb. 12	602	177	26	562
Bag-lock	T. Wood	294,299	Feb. 26	1960	539	26	809
Bagasse-drier	R. H. Yale	294,836	Mar. 11	607	167, 168	26	939
Bait. Artificial fish	W. D. Chapman	295,350	Mar. 18	1279	354	26	1072
Bait. Spoon	C. B. Hibbard	295,758	Mar. 25	1799	500	26	1173
Balance	F. Meyer, Jr	292,935	Feb. 5	201	55	26	479
Balance. Spring	H. Haerter	294,227	Feb. 26	1881	514	26	792
Balance-wheels. Crank adjustment for	J. B. Thurston	291,645	Jan. 8	805	225	26	151
Bale-band tightener	C. C. Montague	292,249	Jan. 22	1556	435	26	301
Bale-band tightener	R. L. Willis	291,560	Jan. 8	688	194	26	130
Bale-tie	J. W. Garland and E. Becker	294,609	Mar. 4	330	91	26	885
Bale-tie	R. E. Rialo	291,228	Jan. 1	266	74	26	48
Bale-tie	L. Williams	295,319	Mar. 18	1240	344	26	1064
Bale-tie fastener	C. S. Garrigus	292,004	Jan. 15	1248	349	26	240
Bale-tie aplice	F. Bonmarius	295,340	Mar. 18	1268	351	26	1070
Bale-tie. Wire	W. Hewitt	294,386	Mar. 4	61	15	26	840
Bale-tie. Wire	G. Nicholson	295,419	Mar. 18	1361	378	26	1089
Baling bran. Process of and apparatus for	O. Anketell	293,699	Feb. 19	1174	327	26	664
Baling-machine	D. Tarr	292,872	Feb. 5	114	31	26	464
Baling-press	D. B. Hendricks	295,122	Mar. 11	978	268, 269	26	1004
Baling-press	J. P. McDonald	294,697	Mar. 11	683	191	26	954
Baling-press	J. D. Page	295,672	Mar. 25	1695	469	26	1154
Baling-press	E. U. G. Reagan	295,282	Mar. 18	1193	330, 331	26	1054
Baling-press	G. W. Robburts	292,952	Feb. 5	219	60	26	483
Baling-press	D. W. Seeley and A. Buckman	292,593	Jan. 29	2015	560	26	389
Baling-press	N. W. Speers, Sr	294,818	Mar. 11	586	162	26	936
Baling-press	C. C. Warren and W. H. Oliver	291,439	Jan. 1	523	148	26	94
Baling-press	J. Watson	294,551	Mar. 4	267	73	26	874
Baling-press	C. E. Whitman	295,089	Mar. 11	949	257	26	997
Baling-press. Duplex	J. La Dow	294,638	Mar. 4	302	101, 102	26	891
Baling-presses, &c. Screw-driving mechanism for	P. Slattery	291,791	Jan. 8	970	272	26	179
Ball-trap	J. C. Parmerlee	292,043	Jan. 15	1287	360	26	248
Ball-trap	C. F. Stock	293,814	Feb. 19	1334	370	26	690
Ball-trap	C. F. Stock	295,302	Mar. 18	1219	339	26	1061
Balloon-propeller	K. D. Davis	291,990	Jan. 15	1229	342, 343	26	236
Ballot-box	J. Klioger	295,560	Mar. 25	1551	430	26	1128
Band-fastening	W. W. Stewart	293,812	Feb. 19	1331	369	26	690
Bandage. Suspensory	L. P. Griffin	291,502	Jan. 8	734	206	26	138
Banjo	H. C. Dobson	294,451	Mar. 4	141	37	26	853
Bar: *See* Hitching-bar. Jail-bar.							
Barrel-cleaning machine	W. W. Beach	293,843	Feb. 19	1375	380	26	697
Barrel-cover. Detachable	H. Mann	294,057	Feb. 26	1651	456	26	755
Barrel-finishing machine	R. O. Dobbin	292,737	Jan. 29	2192	611, 612, 613	26	421
Barrel-heads. Machine for planing	E. and B. Holmes	292,816	Feb. 5	49	13	26	452
Barrel-hooping machine	T. C. Duff and R. I. Allan	291,583	Jan. 8	717	202	26	134
Barrel-making machine	S. Wright	292,728	Jan. 29	2178	607	26	418
Barrel or cask for liquid and similar articles	F. Schimper	293,677	Feb. 19	1141	318	26	658
Barrels. Rack for holding	W. Walter	295,085	Mar. 11	938	256	26	996
Barrels. Windlass for compressing	E. and B. Holmes	292,817	Feb. 5	50	13	26	452
Bars. Machine for drawing	J. S. Griffin	293,450	Feb. 12	878	238	26	602
Basket. Folding	A. Daul	295,363	Mar. 18	1295	359	26	1075
Basket-splint machine	S. Oakman	292,942	Feb. 5	208	57	26	480
Bat. Base-ball	W. Williams	292,190	Jan. 22	1468	412	26	287
Bathing apparatus	J. Ransom	294,150	Feb. 26	1781	488, 489	26	775
Battery: *See* Electric battery. Secondary battery. Galvanic battery. Storage-battery.							
Battery	A. Haid	294,463	Mar. 4	156	43	26	856

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Batting. Cotton	C. C. Tyler	292,187	Jan. 22	1460	410	26	286
Beam and girder support	P. H. Jackson	291,192	Jan. 1	226	63	26	41
Beans, nuts, fruits, &c. Table for assorting	J. Johnson	293,333	Feb. 12	730	195	26	575
Bearing. Anti-friction	T. R. Ferrall. (Reissue)	10,455	Mar. 4	490	137, 138	26	913
Bearing. Self-lubricating	T. R. Ferrall. (Reissue)	10,456	Mar. 4	491	138	26	914
Bed-bottom	E. S. Field	291,868	Jan. 15	1104	308	26	213
Bed-bottom. Folding	G. H. Maynard	293,496	Feb. 12	917	249	26	610
Bed-bottom. Spring	W. A. Horrall	292,818	Feb. 5	52	13	26	452
Bed-bottom. Spring	B. R. Platt	293,077	Feb. 5	371	101	26	510
Bed-lounge	A. Hansen	292,556	Jan. 29	1964	547, 548	26	381
Bed. Sofa	W. A. Clark	294,198	Feb. 26	1847	504	26	786
Bed-spring connector. Twin	J. S. Dixon	294,593	Mar. 4	313	87	26	882
Bedstead and crib. Folding	C. T. Shepard	293,796	Feb. 19	1310	363, 364	26	687
Bedstead. Sofa	J. Bagge	294,954	Mar. 11	745	208	26	965
Bedstead. Sofa	J. McGrath	293,488	Feb. 12	919	249	26	610
Bedstead. Wardrobe	W. D. Snyder	293,806	Feb. 19	1324	368	26	689
Bee-hive	T. Gorsuch	293,449	Feb. 12	876	237	26	602
Bee-hive	W. E. Hatton	293,873	Feb. 19	1411	390	26	704
Bee-hive	J. Vanzandt	295,693	Mar. 25	1719	475	26	1159
Bee-hives. Moth-trap for	J. T. McElfresh	295,786	Mar. 25	1842	512	26	1181
Bees. Device for hiving	F. C. Morrow	293,905	Feb. 19	1448	401	26	710
Beef-cutter	J. Glover	294,031	Feb. 26	1608	446	26	748
Beer and other fermented liquids for the market. Process of and apparatus for preparing	C. Pfaudler	293,909	Feb. 19	1454	403	26	711
Beer-cooler	C. A. Bartliff	294,183	Feb. 26	1832	499	26	783
Beer-cooler	C. L. Krum	294,884	Mar. 11	669	186	26	951
Beer-cooler	V. Wilhelmi	292,971	Feb. 5	243	66, 67	26	487
Beer-cooler	J. Schafhaus	292,590	Jan. 29	2008	558	26	389
Beer-finings spreader	H. Strater, Jr	292,266	Jan. 22	1579	441	26	304
Beer-kettles. Pipe-coupling for	W. E. Barton	294,184	Feb. 26	1833	500	26	783
Bell	A. W. Barton	292,889	Feb. 5	134	37	26	468
Bell. Call	D. Boyd	293,938	Feb. 19	1496	412	26	720
Bell. Electric call	A. S. Bunker	293,626	Feb. 19	1079	299	26	646
Bell-pull. Electric	O. Gassett	293,571	Feb. 12	1012	279	26	627
Bell-ringing apparatus. Electric	C. M. Theberath	291,957	Jan. 15	1187	330	26	229
Bell. Sleigh	T. Woodason	292,085	Jan. 15	1336	375	26	257
Bellows attachment for insect-powder, &c	G. B. Simkin	293,799	Feb. 19	1315	365	26	687
Belt and attachment. Protection	P. Koch	291,202	Jan. 1	238	66	26	43
Belt-fastener	J. B. Norton	292,173	Jan. 22	1444	405	26	283
Belt-hinge	E. Smith	294,923	Mar. 11	710	198	26	959
Belt-stud	O. S. Turner	295,509	Mar. 25	1606	443	26	1138
Belt-tightener	M. L. Russell	294,678	Mar. 4	411	114	26	899
Belt-tightener	F. Sager	292,308	Jan. 22	1708	476	26	329
Belt-tightener	H. Kerr	293,178	Feb. 5	519	138	26	532
Belting. Leather							
Bench: *See* Wash-bench. Work-bench.							
Bench dog and clamp. Combined	C. C. Johnson	295,178	Mar. 18	1055	291	26	1030
Berth for ships. Self-leveling	J. H. Milligan	291,070	Jan. 1	67	19	26	15
Bessemer converter	H. Schulze-Berge	294,684	Mar. 4	417	116	26	900
Bevel and T-square. Combined	S. H. Bellows	295,100	Mar. 11	955	260	26	999
Bicycle	W. H. Davis	292,545	Jan. 29	1950	544	26	379
Bicycle	G. D. Foote	291,323	Jan. 1	386	108	26	70
Bicycle	E. G. Latta	294,640	Mar. 4	368	102, 103	26	892
Bicycle	W. Rennyson	293,081	Feb. 5	375	102	26	510
Bicycle	H. Strait	292,961	Feb. 5	227	62	26	484
Bicycle	R. C. Thompson and W. Spence	293,377	Feb. 12	791	212	26	586
Bicycle-brace	W. X. Stevens	293,284	Feb. 12	667	179	26	563
Bicycle-saddle	C. E. Duryea	293,725	Feb. 19	1209	335	26	676
Bicycle-saddle	J. A. Lamplugh	293,656	Feb. 19	1112	309, 310	26	652
Bicycle-saddle	F. Lillibridge	294,645	Mar. 4	377	105	26	893
Bicycle-saddle spring	O. M. Mitchell	294,655	Mar. 4	389	108	26	895
Bicycle-support	J. W. Fry	292,163	Jan. 22	1433	402	26	282
Bier or coffin stool	J. N. Knox	291,605	Jan. 8	753	212	26	142
Bilge-water alarm	P. Hand	291,711	Jan. 8	886	249	26	165
Bill-holder	H. Easthope and G. C. Schneider	291,339	Jan. 1	399	142	26	73
Billiard-cue tip	J. Dockstader	291,703	Jan. 8	877	246	26	163
Billiard-table attachment	H. W. Collender	292,547	Jan. 29	1954	545	26	379
Billiard-table cushion	W. Sherwood	292,990	Feb. 5	261	72	26	490
Billiard-tables. Automatic chalk-holder for	W. E. Elam	294,516	Mar. 4	218	62	26	867
Binder. Temporary		294,775	Mar. 11	524	146	26	925
Bit: *See* Bridle-bit.							
Bit and drill brace	J. D. Richardson	292,587	Jan. 29	2004	557	26	388
Bit-brace. Ratchet	W. R. Clarkson	294,762	Mar. 11	510	142	26	923
Blacking-box	A. V. Sanford	295,677	Mar. 25	1700	471	26	1156
Blast-furnace for zinc ores	A. M. G. Sébillot	291,410	Jan. 1	493	138	26	88
Blast-furnaces. Hot-blast apparatus for	J. P. Bennett	294,003	Feb. 26	1574	434	26	742
Blast-furnaces. Preventing chilling of	J. M. Hartman	292,305	Jan. 22	1623	454	26	313
Blast-furnaces. Regenerative hot-blast stove for	B. Ford and J. Moncur	294,314	Feb. 26	1988	543, 544	26	815
Blasting-barrel	G. A. Ingram	295,556	Mar. 25	1547	429	26	1128
Blasting rock. Method of and tool for	J. L. L. Knox	291,606	Jan. 8	754	212	26	142
Bleaching. Process of and apparatus for	J. B. Thompson	293,376	Feb. 12	789	211	26	586
Blind	G. W. Morstatt	291,924	Jan. 15	1159	321	26	229
Blind and awning. Window	E. Lee	294,324	Feb. 26	2001	548	26	815
Blind-slats. Device for wiring	G. W. Soule	291,546	Jan. 8	670	190	26	127
Blind-stiles. Wiring	S. Van Auken	294,698	Feb. 26	1709	470	26	764
Blind. Window	A. H. Hill	294,233	Feb. 26	1887	516	26	794
Blind. Window	J. Williams	291,254	Jan. 1	295	83	26	53

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Block:							
See Building-block. Toy building-block. Saw-mill head-block.							
Blotter	A. H. Frederick	295,625	Mar. 25	1634	453	26	1143
Blower for fire-places and stoves. Adjustable	F. S. Bissell	294,569	Mar. 4	286	78	26	877
Blower. Furnace	P. Richards	293,084	Feb. 5	378	103	26	511
Blower wheel. Fan-	W. D. Smith	295,449	Mar. 18	1393	386	26	1065
Blowers. Driving mechanism for fan-	J. R. Rowlands	293,360	Feb. 12	765	204	26	581
Board:							
See Cigar-maker's board. Sleeve-board. Ironing-board.							
Boat:							
See Submarine boat.							
Boat	N. C. Jessup	291,909	Jan. 15	1129	315	26	218
Boats. Construction of	F. Byrnes	293,714	Feb. 19	1198	332	26	668
Boats from celluloid, &c. Manufacture of	C. P. Pitman and H. Allaire	291,533	Jan. 8	656	166	26	124
Boats. Sliding seat for	J. C. Garrood	294,029	Feb. 26	1604	446	26	748
Bobbin-truck	W. E. Sharples	295,441	Mar. 18	1382	384	26	1093
Body-protector	W. Gray	295,543	Mar. 25	1526	421	26	1124
Boiler:							
See Locomotive-boiler. Tubular boiler. Steam-boiler.							
Boiler	A. E. Dalley	294,448	Mar. 4	139	36	26	853
Boiler, fire-regulator, and alarm. Combined	C. S. Lockwood	291,064	Jan. 1	58	17	26	14
Boiler-furnace	A. Backus, Jr	293,933	Feb. 19	1499	410	26	718
Boiler-furnace	J. J. Hall	294,998	Mar. 11	810	224	26	976
Boiler-furnace	T. E. Jones	292,751	Jan. 29	2226	619	26	427
Boiler furnace. Steam-	P. Johnson	293,654	Feb. 19	1110	308	26	652
Boiler furnace. Steam-	I. L. Merrell	294,654	Mar. 4	388	108	26	895
Boiler furnace. Steam-	J. B. Smith, C. A. Presler, and E. Fox.	294,924	Mar. 11	711	198; 199	26	959
Boiler-scraper	J. H. Beare	295,854	Mar. 25	1923	531; 532	26	1196
Boiler-support	J. C. Haag	294,871	Mar. 11	653	182	26	948
Boiler use. Purifying water for	C. B. Dudley	291,168	Jan. 1	193	.....	26	36
Boiler-water purifier	G. M. Brauninger	294,754	Mar. 11	502	140	26	922
Bolt:							
See Shutter-bolt. Trunk-tray bolt.							
Bolt-heading machine	J. Bruderer	292,534	Jan. 29	1029	540; 541	26	376
Bolt-holding device	W. S. Dawson	291,037	Jan. 1	26	8	26	7
Bolt or rivet machine	J. Morgan	293,348	Feb. 12	748	200	26	578
Bolts. Machine for making eye-	L. J. M. Mortenson	291,387	Jan. 1	463	130	26	83
Bolting-chest	L. B. Kohnle and W. B. Hamilton	295,561	Mar. 25	1553	431	26	1129
Bolting-reel. Centrifugal	A. H. Spaulding	295,453	Mar. 18	1395	387	26	1095
Bone-black. Apparatus for revivifying	E. P. Eastwick	293,430	Feb. 12	857	232	26	598
Book and file case	J. Baker	293,701	Feb. 19	1176	328	26	664
Book and pad. Memorandum-	S. J. Silberman	294,920	Mar. 11	707	197	26	958
Book. Blank-	J. P. McCandless	295,266	Mar. 18	1175	325	26	1052
Book-carrier	P. N. Breton	295,226	Mar. 18	1121	310	26	1042
Book-case	W. A. Smith	293,101	Feb. 5	399	109	26	514
Book case or stand. Revolving	J. Danner	293,151	Feb. 5	477	128	26	525
Book-case. Revolving	W. C. Seldomridge	294,337	Feb. 26	2016	553	26	818
Book holder and rest	E. V. Parker	294,496	Mar. 4	200	56	26	863
Book-leaf protector	J. Akins	295,141	Mar. 18	1011	279	26	1023
Book-mark and pencil-holder	E. T. Covell	292,412	Jan. 22	1762	490	26	339
Books. Device for holding open the leaves of	G. D. B. Small	294,067	Feb. 26	1605	466	26	762
Boot	W. Irvin	291,516	Jan. 8	634	179	26	120
Boot	M. J. Wood and W. H. Bond	291,658	Jan. 8	824	231	26	154
Boot and shoe counters. Machine for bending	R. Glover	292,646	Jan. 29	2076	577	26	400
Boot and shoe crimping apparatus	H. R. Adams	291,017	Jan. 1	2	1	26	3
Boot and shoe fastening	F. Chase	293,145	Feb. 5	470	126	26	524
Boot and shoe last	W. Pond	294,146	Feb. 26	1777	487	26	775
Boot and shoe lasting device	W. Rogers	294,276	Feb. 26	1937	531	26	803
Boot and shoe lasting-jack	F. Chase	293,146	Feb. 5	471	126	26	524
Boot and shoe sole. Rubber	H. A. Wattson	292,711	Jan. 29	2158	601	26	414
Boot and shoe soles. Compound for preserving	M. Schütz	292,956	Feb. 5	222	.....	26	483
Boot and shoe uppers. Apparatus for operating upon	H. R. Adams	291,016	Jan. 1	1	1	26	3
Boot and shoe uppers. Cutting	W. P. Hobson and H. A. Bagley	293,964	Feb. 19	1530	421	26	726
Boot and shoe uppers. Device for expanding	C. L. Higgins	291,188	Jan. 1	220	61	26	39
Boot and shoe uppers. Mold for molding	G. H. Clark	293,631	Feb. 19	1585	301	26	647
Boot-cleaner	J. Wolf	294,934	Mar. 11	605	167	26	939
Boot or shoe	G. C. Buch	291,490	Jan. 8	599	169	26	114
Boot or shoe	C. W. Monson	294,253	Feb. 26	1910	524	26	798
Boot or shoe	H. E. Randall	293,354	Feb. 12	757	202	26	580
Boot or shoe	G. Rollhaus	293,350	Feb. 12	764	203	26	581
Boot or shoe crimping machine	T. T. Marshall	295,187	Mar. 18	1069	294	26	1033
Boot or shoe. Rubber	I. F. Williams	294,173	Feb. 26	1818	496	26	781
Boot or shoe. Rubber	I. F. Williams	294,174	Feb. 26	1819	496	26	781
Boot or shoe soles. Beating-out machine for	J. W. Rogers	294,506	Mar. 4	209	59	26	865
Boot or shoe stiffeners. Molding	N. J. Simonds	292,514	Jan. 29	1902	530; 531; 532; 533	26	371
Boot or shoe stitching-jack	J. F. Ames	291,661	Jan. 8	827	232	26	155
Boot or shoe toe-cap	F. H. Kennedy	295,877	Mar. 25	1957	542	26	1202
Boot or shoe upper. Machine for pebbling or embossing	J. H. Parker	292,572	Jan. 29	1992	553	26	384
Boot-strap	C. B. Lamb	291,746	Jan. 8	922	258	26	170
Boot-tree	J. H. Barbank	293,945	Feb. 19	1506	415	26	722
Boots and shoes. Device for stretching	H. Glines	293,448	Feb. 12	876	237	26	602
Boots and shoes. Exhibiting	C. L. Higgins	291,729	Jan. 8	903	253	26	167
Boots and shoes. Instep-holder for lasting	J. H. Parker	291,077	Jan. 1	75	21	26	17

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Boots and shoes. Machine for uniting the soles and uppers of	F. Chase	293,147	Feb. 5	473	126	26	524
Boots and shoes. Manufacture of	L. F. Norman	292,503	Jan. 29	1880	525	26	369
Boots and shoes. Manufacture of	E. L. Sprague	291,796	Jan. 8	977	275	26	181
Boots or shoes. Machine for forming felt	D. F. Messer	293,766	Feb. 19	1268	351	26	679
Boots or shoes. Manufacture of	G. W. Day	291,992	Jan. 15	1231	343	26	237
Boots or shoes. Manufacture of rubber	E. Stout	295,062	Mar. 11	906	248	26	991
Borer. Hand-	W. E. Clough	295,523	Mar. 25	1499	414	26	1119
Boring-gage	T. J. Bush	293,144	Feb. 5	469	125	26	524
Boring-machine	W. E. Clough	295,524	Mar. 25	1500	414	26	1119
Boring-tool	G. W. Baker	293,397	Feb. 12	822	221	26	592
Bosom-boards. Neckband-shaping device for	D. G. Norris, 2d	295,130	Mar. 11	987	271	26	1006
Bottle	F. E. Heinig and F. Stitzel	293,460	Feb. 12	890	241	26	604
Bottle and jar stopper	N. Thompson	295,306	Mar. 18	1224	341	26	1062
Bottle and stopper	J. Story	291,638	Jan. 8	797	223	26	149
Bottle cap. Mustard-	F. Wolff	294,835	Mar. 11	606	167	26	939
Bottle-filling device	P. J. Hogan	295,009	Mar. 11	835	229	26	979
Bottle-holding clamp	J. B. Wilson	294,946	Mar. 11	736	205	26	963
Bottle lips and necks. Tool for forming	J. B. Wilson	295,848	Mar. 25	1916	530	26	1194
Bottle-register	E. H. Rogers, Jr	293,089	Feb. 5	382	104	26	511
Bottle. Siphon	H. L. Hanson and F. J. Johnston	293,014	Feb. 5	290	81	26	495
Bottle-stopper	G. D. Corey	294,443	Mar. 4	133	35	26	852
Bottle-stopper	S. P. M. Tasker	292,449	Jan. 22	1811	505	26	349
Bottle-stopper	A. H. Wirz	295,708	Mar. 25	1741	484	26	1162
Bottle-stopper	E. Sachs	292,367	Jan. 22	1708	476	26	329
Bottle-stopper cap	J. Story	291,637	Jan. 8	796	223	26	149
Bottle-stopper. Glass	H. Benson	295,102	Mar. 11	958	261	26	1000
Bottle-stopper. Internal	J. D. Mattison	291,920	Jan. 15	1147	320	26	222
Bottle-stopper lock	G. S. Norris	293,269	Feb. 12	648	174	26	560
Bottle-stopping device	G. M. McCloskey	294,499	Mar. 4	192	53	26	862
Bottle-trap. Removable	J. Bertius and A. Propst	295,721	Mar. 25	1755	488	26	1165
Bottles. Cutter for wires and cords of	R. J. Sankey	294,156	Feb. 26	1792	490	26	777
Bottles for containing aerated or gaseous liquids. Stoppering	S. P. M. Tasker	294,415	Mar. 4	98	25	26	846
Bottles, jars, &c. Automatic stopper for	O. C. Carpenter	295,735	Mar. 25	1770	492; 493	26	1167
Bottles. Machine for wiring corks in	J. McEwen and S. Spencer	292,565	Jan. 29	1975	551	26	383
Bottling and sirruping aerated beverages. Apparatus for	W. H. Hogan	295,870	Mar. 25	1950	539	26	1200
Bouquet and ticket holder. Combined							
Box:							
See Ballot-box. Knockdown box. Blacking-box. Letter-box. Dry-goods box. Mail-box. Fare-box. Match-box. File-box. Package-box. Fish-box. Packing-box. Folding box. Shoe-box.							
Box and similar receptacle	W. Von Darteln	293,288	Feb. 12	672	180	26	564
Box-fastener	S. D. Ford and F. M. Spencer	294,778	Mar. 11	928	147	26	926
Box-heads. Machine for cutting	M. E. Converse	292,991	Feb. 5	963	72	26	490
Box making and covering machine	C. H. Manneck and W. Witte	294,486	Mar. 4	186	50; 51; 52	26	861
Brace:							
See Bit-brace. Corner-brace. Bit and drill brace.							
Bracelet	C. R. Bugbee	295,108	Mar. 11	964	263	26	1001
Bracelet	J. C. Harrington	291,900	Jan. 15	1117	312	26	216
Bracelet	J. C. Harrington	293,016	Feb. 5	295	81	26	496
Bracelet	H. A. Church	293,418	Feb. 12	844	228	26	596
Bracelet. Chain-	S. Wallach	293,825	Feb. 19	1349	374	26	692
Bracelet-clasp	J. M. Chandler	291,150	Jan. 1	170	49	26	33
Bracelet-fastening	J. A. and C. F. Charnley	294,010	Feb. 26	1582	439	26	744
Bracelet. Plated-edge band-	E. Jones	291,519	Jan. 8	637	180; 181	26	121
Bracelet safety appliance	H. A. Church	293,419	Feb. 12	845	228	26	596
Bracelets. Clasp for roller-chain							
Bracket:							
See Electrical extension-bracket. Scaffolding-bracket. Shingling-bracket. Fire-escape bracket. Siding-bracket. Lamp-bracket. Toilet-bracket.							
Bracket	E. S. Hemmenway	294,385	Mar. 4	60	15	26	840
Bracket	J. Herrmann	292,011	Jan. 15	1254	351	26	241
Bracket, shelf, or picture support	J. E. Wickham	292,523	Jan. 29	1914	535	26	373
Braiding-machine	W. Hedtmann, E. Henkels, A. Schmiedel, and M. Fischer.	293,020	Feb. 5	299	82, 83	26	496
Brake:							
See Air or liquid brake. Sled-brake. Car-brake. Vehicle-brake. Carriage-brake. Wagon-brake.							
Brake and speed-regulating mechanism. Combined	T. R. Morgan, Sr	293,059	Feb. 5	343	94	26	505
Brake-shoe	J. J. Lappin	292,827	Feb. 5	61	16	26	454
Brake-shoe	G. B. Ross	292,861	Feb. 5	101	28	26	461
Brake-shoe	S. B. Ellithorp	295,863	Mar. 25	1942	536	26	1199
Bran and feed packer	J. D. Otis	295,420	Mar. 18	1302	378	26	1089
Bran-packer	J. F. Hardisty	295,386	Mar. 18	1324	368	26	1081
Breast-drill	O. Peck	295,193	Mar. 18	1077	296; 297	26	1034
Breastpin	D. F. Adams	291,564	Jan. 8	692	195	26	130
Bre'zel-machine	W. Lampert	293,336	Feb. 12	733	196	26	575
Brewing	M. Mueller. (Reissue)	10,447	Feb. 5	504	150	26	540
Brick	W. E. Carleton	293,716	Feb. 19	1200	332	26	608
Brick	G. W. Simonds	293,800	Feb. 19	1315	365	26	687
Brick	A. Trochsler	295,692	Mar. 25	1719	475	26	1159

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Brick and tile kiln	W. A. Endaly	295,744	Mar. 25	1785	496	26	1170
Brick and tile kiln	W. A. Endaly	295,864	Mar. 25	1943	537	26	1199
Brick and tile machine	A. Horrocks	295,871	Mar. 25	1951	540	26	1200
Brick-cutting machine	T. M. Bannister	295,097	Mar. 11	952	259	26	999
					260		
Brick-drying kiln	B. G. Lockett, J. W. English, and J. W. Murphey.	295,026	Mar. 11	854	233	26	982
					234		
Brick for building purposes. Dovetailed grooved	G. E. Stearns	295,067	Mar. 11	911	249	26	992
Brick. Iron paving	J. M. Glenn	294,611	Mar. 4	332	92	26	885
Brick-kiln	W. N. Graves	292,427	Jan. 22	1787	498	26	344
					499		
Brick-kiln	W. N. Graves	294,223	Feb. 26	1877	513	26	791
Brick-kiln	W. H. Melcher	293,489	Feb. 12	920	250	26	610
Brick-machine	A. Cramer	294,368	Mar. 4	35	10	26	836
Brick-machine	P. H. Kells	295,558	Mar. 25	1549	430	26	1128
Brick-machine	L. B. Kennedy	295,019	Mar. 11	846	231	26	981
Brick-machine	R. N. Ross	293,506	Feb. 12	1040	286	26	631
					287		
Brick-machine	F. W. Shelley and S. Kiser	291,413	Jan. 1	496	139	26	89
Bricks, tiles, &c. Manufacture of	A. Dimpfl	291,582	Jan. 8	715	201	26	134
					202		
Bridge	C. G. Dibble	293,427	Feb. 12	853	231	26	598
Bridge. Truss	M. C. Frita	294,606	Mar. 4	327	90	26	884
Bridges. Guard-fence for draw	A. Bosch	295,104	Mar. 11	959	261	26	1000
					262		
Bridle	M. M. Hitt	291,596	Jan. 8	739	208	26	139
Bridle and halter. Combined	H. Rorebeck	295,812	Mar. 25	1873	520	26	1186
Bridle and halter. Convertible	J. A. Nesbit	295,273	Mar. 18	1183	327	26	1054
Bridle attachment	J. J. Sutphen	293,108	Feb. 5	409	111	26	516
Bridle-bit	L. S. Longcor	295,028	Mar. 11	857	235	26	983
Brooch-pin	J. H. Purdy	294,075	Feb. 26	1676	462	26	759
Broom	W. H. Paine	293,670	Feb. 19	1129	315	26	655
Broom-band	J. Smith	295,685	Mar. 25	1710	473	26	1158
Broom-holder	H. C. Berg	292,021	Jan. 29	2047	569	26	395
Broom-holder	A. Frazier and D. J. Coburn	295,379	Mar. 18	1315	365	26	1079
Broom-machine	F. S. Hoyt and P. L. Storch	291,735	Jan. 8	907	254	26	168
Broom-support	W. T. Shaffer	292,062	Jan. 15	1309	366	26	252
Brush. Cotton-marking	G. Pfeifer	293,075	Feb. 5	369	100	26	509
Brush-trimming machine	T. Coldwell	294,583	Mar. 4	302	83, 84	26	880
Brushes and brooms. Process of and apparatus for preparing fiber for the manufacture of	F. Kunz	295,021	Mar. 11	850	232	26	981
Bubble-blower	W. S. Fickett	294,728	Mar. 4	468	131	26	909
Bucket	G. A. Sproes	292,703	Jan. 29	2149	598	26	412
Bucket. Galvanized or metal-coated	J. Hill	291,904	Jan. 15	1124	313	26	217
Bucket. Milk	J. F. Guilloz and J. D. Perry	292,217	Jan. 22	1511	424	26	293
Bucket. Well	F. E. Miller	295,038	Mar. 11	860	238	26	984
Buckle	F. Armstrong	295,714	Mar. 25	1748	486	26	1161
Buckle	F. S. and J. B. Belcher	291,275	Jan. 1	324	91	26	50
Buckle	I. Hartmann	291,726	Jan. 8	901	252	26	167
Buckle	J. A. Park	293,973	Feb. 19	1544	425	26	728
Buckle	T. O. Potter	291,225	Jan. 1	263	74	26	48
Buckle	C. S. Wells	292,777	Jan. 29	2263	627	26	433
Buckle	M. E. Zeller	291,461	Jan. 1	558	157	26	100
Buckle and swivel. Combined	S. S. Sargeant	291,407	Jan. 1	491	137	26	87
Buckle. Automatic rope	S. and F. Seib	294,408	Mar. 4	90	23	26	845
Buckle for harness. Loop	J. A. Park	295,044	Mar. 11	876	240	26	986
Buckle guard. Harness	F. G. Harrison	291,846	Jan. 8	1041	291	26	192
Buckle. Harness	W. A. Allen	294,561	Mar. 4	278	75, 76	26	876
Buckle. Locking	W. A. Shaw	292,372	Jan. 22	1719	477	26	330
Buckle. Suspender	W. E. T. Merrill	295,035	Mar. 11	866	237	26	984
Buckle. Trace	D. Schoenthaler	291,540	Jan. 8	664	188	26	126
Buckle. Trace	F. Wetstein and F. H. Dyokman	294,942	Mar. 11	732	204	26	963
Buckle. Tug	S. Funk	294,028	Feb. 26	1604	445	26	748
Buffer. Spring	D. Hoit	292,166	Jan. 22	1496	402	26	292
Buffing and polishing devices. Manufacture of	L. Levett	291,610	Jan. 8	761	214	26	143
Buffing-wheel	H. E. Fowler	291,709	Jan. 8	885	248	26	164
Buggy-seat	W. W. Ball	295,143	Mar. 18	1013	279	26	1023
Buggy spring-gear	J. R. Hawkey	292,811	Feb. 5	42	11	26	450
Buggy-top	D. Nunnelley	292,941	Feb. 5	207	57	26	480
Building-block	J. J. Schillinger	293,524	Feb. 12	959	261	26	617
Building-block	J. Wadleigh	291,114	Jan. 1	196	56	26	25
Building-blocks. Machine for making	J. J. Schillinger	293,525	Feb. 12	959	261	26	617
Building. Fire-proof	J. J. Schillinger	293,523	Feb. 12	958	261	26	617
Building-wall compound	L. Haas	293,010	Feb. 5	386	80	26	494
Buildings from vermin, fire, &c. Protecting	F. W. Bartlett	293,617	Feb. 19	1068	296	26	643
Buildings of artificial stone. Constructing	T. W. Tyrer	292,149	Jan. 15	1410	395	26	271
Bullet-patch. Metallic	G. V. Fosbery and H. Pieper	291,891	Jan. 15	1107	309	26	214
Bung	J. Kirby	292,926	Feb. 5	90	16	26	454
Bung-bush wrench	S. H. Jenkins	291,193	Jan. 1	227	63	26	41
Bung-extractor	G. M. Doersch	293,232	Feb. 12	596	157	26	551
Bung-extractor	A. H. McKean	293,661	Feb. 19	1118	311	26	653
Burglar-alarm	J. A. Demers	295,366	Mar. 18	1299	360	26	1076
Burglar-alarm and telephone system. Combined	B. F. Dillon	291,310	Jan. 1	371	104	26	67
Burglar-alarm. Electric	J. P. Hanson and J. P. Christensen	292,806	Feb. 5	37	10	26	449
Burglar-alarm. Electric	J. P. Hanson and J. P. Christensen	292,807	Feb. 5	38	10	26	449
Burglar-alarms. Electric gas-lighting attachment for	A. L. Bogart	292,786	Feb. 5	10	3	26	444
Burial-casket	F. A. Field	294,456	Mar. 4	148	39	26	855
Burial-casket	W. Kilpatrick and O. M. Johnston	292,319	Jan. 22	1638	458	26	315
Burial-windlass	J. P. McDonald	291,760	Jan. 8	988	262	26	173
Burner: *See* Gas-burner. Vapor-burner. Hydrocarbon-burner.							
Burner	I. W. Shaler	294,409	Mar. 4	91	24	26	845
Burnishing-machine	W. J. Heffernan	294,129	Feb. 26	1754	482	26	771

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Burnishing machinery	W. O. Way	293,826	Feb. 19	1349	374	26	692
					375		
Bushing and plug. Tap-hole	H. A. Rueter	293,278	Feb. 12	660	177	26	502
Bushing for bung-holes and bung for use therewith	S. H. Jenkins	291,194	Jan. 1	228	63	26	41
Bustle	J. B. Phillips	295,584	Mar. 25	1583	438	26	1135
Bustle	L. L. Schwab	295,438	Mar. 18	1380	383	26	1092
Bustle	E. J. Weeks and G. M. Cady	292,453	Jan. 22	1816	506	26	350
Bustle	N. H. Sweet	292,706	Jan. 29	2152	599	26	413
Butter-cutter	D. S. Jones	293,035	Feb. 5	316	87	26	500
Butter-package	J. P. Sinclair	295,295	Mar. 18	1212	337	26	1060
Butter-package	A. C. Clark	293,148	Feb. 5	474	127	26	525
Butter-worker	W. W. Beach	292,790	Feb. 5	2	1	26	443
Button	R. B. Black	295,335	Mar. 18	1258	349	26	1068
Button	P. Kalish	293,472	Feb. 12	902	244	26	607
Button	P. Kalish	295,769	Mar. 25	1816	505	26	1176
Button	P. Kalish	295,032	Mar. 11	863	237	26	984
Button	W. H. Matthews	293,531	Feb. 12	964	263	26	619
Button	F. A. Smith, Jr	292,700	Jan. 29	2146	598	26	412
Button	H. Smith	293,539	Feb. 12	975	267	26	620
Button	J. F. Thayer	292,729	Jan. 29	2180	608	26	418
Button	E. Wnerfel	293,802	Feb. 19	1317	366	26	688
Button and fastener. Combined	F. A. Smith, Jr	293,517	Feb. 12	952	239	26	616
Button and fastening	G. W. Prentice	292,437	Jan. 22	1801	501	26	347
Button-attaching instrument	C. A. Koehler and C. Vogel	291,992	Jan. 15	1218	340	26	234
Button-card	H. A. Buttner	293,233	Feb. 12	597	157	26	551
Button-fastener	C. H. Eggleston	293,658	Feb. 19	1115	310	26	653
Button-fastener	C. B. Maedel	295,575	Mar. 25	1575	436	26	1133
Button-fastener	M. H. McNair	291,080	Jan. 1	78	22	26	18
Button-fastener	G. W. Prentice	291,081	Jan. 1	79	23	26	18
Button-fastener	G. W. Prentice	291,935	Jan. 15	1162	325	26	224
Button-fastener	G. W. Prentice	293,910	Feb. 19	1455	403	26	712
Button-fastener	G. W. Prentice	294,504	Mar. 4	208	58	26	865
Button-fastener	G. W. Prentice	294,089	Feb. 26	1697	467	26	702
Button-fastener	F. A. Smith, Jr	294,411	Mar. 4	93	24	26	845
Button-fastener	F. A. Smith, Jr	294,517	Mar. 4	219	62	26	867
Button-fastener	F. A. Smith, Jr	295,447	Mar. 18	1390	385	26	1094
Button-fastener	F. A. Smith, Jr	292,960	Feb. 5	226	62	26	484
Button-fastener	E. D. Steele	295,709	Mar. 25	1742	484	26	1162
Button-fastener	W. H. Wood	295,539	Mar. 25	1520	420	26	1123
Button-fastener staples. Implement for setting	J. H. Goodfellow	292,482	Jan. 29	1852	517	26	363
Button-fasteners. Implement for setting	J. H. Goodfellow	291,316	Jan. 1	379	106	26	68
Button-fly clamp	I. Felber	291,486	Jan. 8	594	168	26	114
Button-hole	F. Bakermeister, Jr	291,736	Jan. 8	908	255	26	168
					256		
Button-hole stitching-machine	D. W. G. Humphrey	294,446	Mar. 4	137	36	26	853
Button-holes. Protecting	G. L. Crandal	294,186	Feb. 26	1836	500	26	784
Button-hook	J. C. Beetle	295,828	Mar. 25	1887	523	26	1189
Button hook or fastening	F. A. Smith, Jr	295,765	Mar. 25	1735	483	26	1161
Button-machine	G. R. Williams	294,495	Mar. 4	198	55	26	863
Button or stud	N. Nelson	294,496	Mar. 4	199	56	26	863
Button or stud	N. Nelson	293,301	Feb. 12	693	185	26	568
Button or stud fastener	D. F. Baxter	291,534	Jan. 8	658	180	26	124
Button-setting apparatus	S. L. Pratt	293,234	Feb. 12	598	157	26	551
Button-setting instrument	C. H. Eggleston	294,744	Mar. 4	483	135	26	912
Button-setting instrument	G. W. Prentice	294,468	Mar. 4	160	44	26	857
Button, &c. Sleeve	S. C. Howard	294,469	Mar. 4	161	44	26	857
Button. Sleeve	S. C. Howard and J. C. Schott	293,102	Feb. 5	400	109	26	515
Buttons and studs. Manufacture of	T. W. F. Smitten	295,593	Mar. 25	1594	442	26	1137
Buttons, &c. Attaching	J. F. Thayer	291,562	Jan. 8	690	195	26	130
Buttons. Attaching	W. H. Wood	291,907	Jan. 15	1126	314	26	218
					315		
Buttons. Machine for making	F. J. Ilsley and A. S. Fernald	294,490	Mar 4	193	54	26	862
Buttons. Machinery for and process of finishing	H. W., M. G., and C. E. Merritt	292,518	Jan. 29	1908	534	26	379
Buttons to fabrics, &c. Instrument for attaching	P. H. Sweet, Jr.	294,284	Feb. 26	1845	534	26	805
Buttoner. Shoe	J. L. Sommer	10,460	Mar. 11	1007	278	26	1009
Cabinet-lock	F. W. Mix. (Reissue)	295,589	Mar. 25	1589	439	26	1136
Cabinet-maker's clamp	W. E. Sheldon, Jr	291,144	Jan. 1	165	48	26	31
Cable-motor	C. R. Brown	294,322	Feb. 26	1999	547	26	814
Cables around curves. Mechanism for carrying wire	G. Judge	294,540	Mar. 4	264	72	26	873
Cables. Repairing defects in the conductors of lead	K. S. Waring	294,078	Feb. 26	1679	463	26	759
Caissons. Construction and operation of	J. E. Robinson	291,381	Jan. 1	453	128	26	82
Cake and confectionery machine	J. H. Mitchell	292,906	Feb. 5	157	43	26	472
Cake and cracker machine	I. Goodman and L. F. Winter	292,260	Jan. 22	1572		26	303
Calcium chloride and sulphate. Utilizing waste	C. Semper	295,152	Mar. 18	1021	282	26	1025
					283		
Calculating interest, &c. Instrument for	U. Curtis	291,817	Jan. 8	1000	281	26	184
Calculator. Percentage	S. J. Tucker	292,658	Jan. 29	2089	581	26	402
Calculator. Tax, interest, and percentage	W. S. Kiser	292,106	Jan. 15	1359	382	26	262
Calendar	J. Cussons	292,409	Jan. 22	1758	490	26	339
Calipers. Micrometer	C. Carleton	295,493	Mar. 18	1459	401	26	1106
Calk. Driving	G. H. Hathorn						
Camera: *See* Photographic camera. Solar camera.							
Camp-chair and cane. Combined	T. Wright	295,216	Mar. 18	1106	306	26	1040
Can: *See* Fruit, vegetable, and meat can. Packing-can. Milk-can. Paint-can. Oil-can. Shipping-can.							
Can ending and seaming machine	E. Norton and J. G. Hodgson	294,065	Feb. 26	1660	458	26	756
					459		
Can-filling machine	J. Stevens	291,799	Jan. 8	984	276	26	182
Can for kerosene, &c.	P. Babcock, Jr	291,862	Jan. 15	1074	299	26	207
Can-holder and funnel. Combined	W. M. Doty	292,629	Jan. 29	2055	571	26	396

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Can-machine	J. Hogg	294,783	Mar. 11	533	148	26	927
Can-nozzle	R. C. Anderson	294,427	Mar. 4	113	30	26	848
Can-nozzle	I. T. Mee	291,575	Jan. 1	439	125	26	80
Can-opener	H. Bentham	291,567	Jan. 8	695	196	26	131
Can-opener	F. Sharp. (Reissue)	10,443	Jan. 29	2273	628	26	435
Cans. Method of and device for filling and draining food-	W. A. Wicks	291,117	Jan. 1	129	37	26	26
Cans. Noise-deadener for milk and other	J. H. Irwin and T. P. Apple	295,495	Mar. 18	1460	402	26	1106
Candy	S. H. Britton	294,575	Mar. 4	291	80	26	878
Candy-dropping machine	J. Smith	293,603	Feb. 19	1318	366	26	688
Candy. Table for the manufacture of	C. A. Alisky	293,931	Feb. 19	1486	409	26	717
Cane and burglar-alarm. Combined	J. B. Van Zandt	292,389	Jan. 22	1730	492	26	334
Cane and cigar-case. Combined	D. Lee, Jr	295,654	Mar. 25	1669	462	26	1150
Cane and umbrella. Combined	H. A. Whiting and W. J. Winghart	293,830	Feb. 19	1355	375	26	693
Cane-mill	D. A. Mullane	294,902	Mar. 11	698	192	26	955
Canister	A. Schilling	295,432	Mar. 18	1374	381	26	1091
Canister	A. Schilling	295,433	Mar. 18	1375	381	26	1091
Canister	A. Schilling	295,434	Mar. 18	1375	382	26	1091
Canning apparatus	R. Wheeler	292,080	Jan. 15	1331	372	26	256
Canning device. Fruit	F. Deplanty	291,581	Jan. 8	715	200	26	134
Cannon. Pneumatic	W. A. Bartlett	294,348	Mar. 4	5	2	26	829
Cannon. Pneumatic	W. A. Bartlett	294,349	Mar. 4	7	2	26	830
Cannon. Pneumatic	W. A. Bartlett	294,350	Mar. 4	9	3	26	831
Cannon. Pneumatic	W. A. Bartlett	294,351	Mar. 4	11	3	26	831
Cannon. Pneumatic	W. A. Bartlett	294,352	Mar. 4	13	3, 4	26	831
Cannon. Pneumatic	W. A. Bartlett	294,353	Mar. 4	15	4	26	832
Canoes. Construction of	J. S. Stephenson	292,183	Jan. 22	1457	409	26	285
Cap and other head-covering	P. Goldmann	293,662	Feb. 19	1399	387	26	701
Capstan-bars, &c. Rack for bolding	W. Foster and L. D. Hanford	295,746	Mar. 25	1788	496	26	1171
Capsule-machine	F. A. Hubel	292,434	Jan. 22	1795	500 501	26	346
Capsules. Machine for cutting off gelatine	F. A. Hnbel. (Reissne)	10,437	Jan. 15	1412	396	26	271
Car	R. H. Briggs and C. Prichard	294,574	Mar. 4	290	80	26	878
Car-brake	E. E. Baker	295,096	Mar. 11	951	259	26	998
Car-brake	A. Bolzano	294,570	Mar. 4	287	78	26	877
Car-brake	W. Brumble	294,306	Feb. 26	1977	540	26	810
Car-brake	G. W. Coffin	294,013	Feb. 26	1584	439	26	744
Car-brake	J. C. Dane	292,793	Feb. 5	19	5	26	446
Car-brake	S. Fairman	291,841	Jan. 8	1034	288 289	26	191
Car-brake	J. M. Grace	293,319	Feb. 12	714	191	26	579
Car-brake	W. Hackländer	294,994	Mar. 11	803	222	26	975
Car-brake	J. Harding	293,455	Feb. 19	984	240	26	663
Car-brake	G. M. Hathaway	292,429	Jan. 22	1790	499	26	345
Car-brake	C. Tregoning	293,823	Feb. 19	1345	374	26	692
Car-brake	M. Turly and R. T. Bryant	291,109	Jan. 1	118	33	26	24
Car-brake	W. B. Turner	294,939	Mar. 11	726	203	26	961
Car brake and coupler. Combined	E. B. Meatyard	293,263	Feb. 12	635	170	26	558
Car brake and coupler. Combined	E. B. Meatyard	293,264	Feb. 12	638	170 171	26	558
Car-brake. Automatic	J. C. Dane	292,736	Jan. 29	2191	611	26	420
Car-brake. Automatic	J. D. Miller	292,246	Jan. 22	1553	435	26	300
Car brake. Cable-railway	G. Duncan	295,238	Mar. 18	1138	314	26	1045
Car-brake. Electro-magnetic	J. E. Withers	293,993	Feb. 19	1561	430 431	26	731
Car-brake. Fluid-pressure	R. J. Wilson	291,826	Jan. 8	1019	283	26	187
Car. Coal-	J. D. Madeira	292,336	Jan. 22	1660	463	26	319
Car. Combined box and cylinder	T. T. Prosser	295,279	Mar. 18	1190	329 330	26	1055
Car coupler and buffer. Combined	C. Browning	295,482	Mar. 18	1442	398	26	1104
Car-coupling	F. K. Adams	295,609	Mar. 25	1618	447	26	1141
Car-coupling	J. E. Anger and D. Porter	293,132	Feb. 5	457	122	26	562
Car-coupling	S. D. Antle	295,092	Mar. 11	946	258	26	998
Car-coupling	A. H. Armstrong	294,345	Mar. 4	1	1	26	829
Car-coupling	W. A. Benjamin	294,565	Mar. 4	292	77	26	877
Car-coupling	J. L. Bias	293,618	Feb. 19	1069	296	25	644
Car-coupling	C. W. Bond	292,278	Jan. 22	1563	445	26	307
Car-coupling	C. Browning	295,483	Mar. 18	1445	399	26	1104
Car-coupling	G. Bryan	293,713	Feb. 19	1108	332	26	667
Car-coupling	J. C. Bryan	291,289	Jan. 1	326	95	26	62
Car-coupling	J. C. Bryan	291,572	Jan. 8	703	197	26	132
Car-coupling	G. W. Butler	291,290	Jan. 1	340	96	26	62
Car-coupling	D. Carlough	291,149	Jan. 1	169	49	26	32
Car-coupling	S. P. and J. M. Chandler	295,349	Mar. 18	1278	354	26	1072
Car-coupling	J. W. Childs	292,895	Feb. 5	144	38	26	469
Car-coupling	J. Coup, D. McCurdy, and W. B. Rice.	292,538	Jan. 29	1939	542	26	377
Car-coupling	N. P. Cowell	295,618	Mar. 25	1627	450	26	1142
Car-coupling	C. Devlin	291,498	Jan. 8	611	172	26	116
Car-coupling	R. H. Dowling	295,372	Mar. 18	1306	362	26	1077
Car-coupling	J. F. Duffy and W. McIvor	295,860	Mar. 25	1938	535	26	1198
Car-coupling	A. Fay	293,727	Feb. 19	1211	335	26	670
Car-coupling	C. Flynn	293,442	Feb. 12	870	235	26	601
Car-coupling	D. Fraser and Y. L. Rice	294,984	Mar. 11	794	220	26	973
Car-coupling	G. B. Gano	294,987	Mar. 11	797	220	26	974
Car-coupling	E. L. Granger	294,124	Feb. 26	1747	481	26	770
Car-coupling	D. A. Grounds and J. R. Gibson	294,127	Feb. 26	1751	482	26	771
Car-coupling	C. A. Hansgen and J. R. Coleman	293,325	Feb. 12	721	193	26	573
Car-coupling	J. M. Harper	292,940	Feb. 5	102	44	26	473
Car-coupling	M. Hayden	292,430	Jan. 22	1791	499	26	345
Car-coupling	R. Hitchcock	295,250	Mar. 18	1155	319	26	1048
Car-coupling	L. D. Hooper	293,466	Feb. 12	896	249	26	606
Car-coupling	F. A. Hoyt	292,537	Jan. 29	1966	548	26	321
Car-coupling	E. Huber and H. M. Barnhart	295,763	Mar. 25	1809	502	26	1174

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Car-coupling	W. Hunter	292,820	Feb. 5	53	14	26	452
Car-coupling	T. C. Jones	293,579	Feb. 12	1021	281	26	628
Car-coupling	W. H. Jones	291,911	Jan. 15	1132	316	26	219
Car-coupling	G. W. Laraway	294,797	Mar. 11	554	154	26	930
Car-coupling	S. D. Lee	295,773	Mar. 25	1819	506	26	1177
Car-coupling	J. J. Lloyd	293,757	Feb. 19	1254	347	26	677
Car-coupling	J. Low	295,029	Mar. 11	858	235	26	983
Car-coupling	P. Madsen	291,753	Jan. 8	928	260	26	171
Car-coupling	J. Martin	293,899	Feb. 19	1442	399	26	709
Car-coupling	P. Mayrand	291,210	Jan. 1	246	68, 69	26	44
Car-coupling	C. McArthur	292,339	Jan. 22	1663	464	26	320
Car-coupling	C. G. McCormick	292,564	Jan. 29	1973	550	26	382
Car-coupling	F. L. McQuiston	293,053	Feb. 5	336	92	26	504
Car-coupling	T. J. Miller	292,126	Jan. 15	1385	388	26	266
Car-coupling	A. F. Morey	294,801	Mar. 11	564	156	26	932
Car-coupling	D. E. Morgan	291,385	Jan. 1	459	129	26	83
Car-coupling	T. H. Pegram and J. H. Kester	294,501	Mar. 4	204	57	26	864
Car-coupling	E. F. Pendexter	294,502	Mar. 4	205	58	26	864
Car-coupling	H. Pidcock	294,266	Feb. 26	1924	528	26	801
Car-coupling	E. J. Roberts	294,810	Mar. 11	577	160	26	934
Car-coupling	J. Shanaman	295,588	Mar. 25	1588	439	26	1136
Car-coupling	M. M. Shur	292,698	Jan. 29	2145	597	26	412
Car-coupling	L. E. Sloan	295,684	Mar. 25	1709	473	26	1157
Car-coupling	G. W. Smith	295,829	Mar. 25	1888	524	26	1189
Car-coupling	W. Stamp	292,704	Jan. 29	2140	599	26	413
Car-coupling	A. D. Stansbury	294,695	Mar. 4	429	120	26	902
Car-coupling	A. C. Stevens	294,696	Mar. 4	430	120	26	903
Car-coupling	M. R. Thurber	291,960	Jan. 15	1191	331	26	230
Car-coupling	W. Turnbull	292,268	Jan. 22	1582	442	26	305
Car-coupling	C. Uebinger	292,074	Jan. 15	1321	369	26	254
Car-coupling	W. H. Ward	295,697	Mar. 25	1724	479 480	26	1160
Car-coupling	R. S. and J. Wheeler	291,446	Jan. 1	531	150	26	96
Car-coupling	J. White	294,831	Mar. 11	602	166	26	938
Car-coupling	H. B. Williams	295,706	Mar. 25	1738	483	26	1162
Car-coupling	P. Wineman	292,724	Jan. 29	2174	606	26	417
Car-coupling	F. M. Wright	293,995	Feb. 19	1563	431	26	732
Car-coupling adjuster	J. P. Pics	292,506	Jan. 29	1883	526	26	370
Car coupling. Railway	A. K. Mansfield	295,186	Mar. 18	1069	294	26	1033
Car-curtain fixture. Street	J. A. Watt	293,291	Feb. 12	680	181	26	565
Car-door	F. B. Brownell	294,194	Feb. 26	1844	503	26	785
Car-door	T. Lee	293,181	Feb. 5	524	139	26	533
Car-door	W. W. Shallus	291,411	Jan. 1	495	138	26	88
Car-door	J. L. Wagner	293,124	Feb. 5	445	120	26	520
Car-door fastener	J. Rhule	293,083	Feb. 5	377	103	26	511
Car-door fastening	S. F. Rosse	291,404	Jan. 1	480	136	26	86
Car-door fastening	J. Sharkey	294,513	Mar. 4	216	61	26	866
Car-door lock	N. P. Liljeholm	293,479	Feb. 12	910	246	26	608
Car door. Railway-freight	T. S. Stewart	291,801	Jan. 8	986	277	26	182
Car-dumper	M. Van Wormer	291,113	Jan. 1	124	35, 36	26	25
Car. Dumping	J. Rosquist	292,366	Jan. 22	1707	476	26	329
Car for inclines in mines	P. Mayrand	294,618	Mar. 4	339	94	26	886
Car-grip. Electric	J. C. Henderson	293,963	Feb. 19	1526	420	26	725
Car heater. Street	J. F. Gyles	295,255	Mar. 18	1102	321	26	1049
Car-heating apparatus. Coupling for	J. J. Lacey	291,363	Jan. 1	427	121	26	78
Car platforms. Safety-door for railway	F. Lappin	293,265	Feb. 12	641	171 172 173	26	559
Car. Railway	E. B. Meatyard	293,608	Feb. 12	1053	291	26	634
Car. Railway	T. L. Wilson	292,192	Jan. 22	1469	413	26	287
Car. Railway	R. H. Wyman	291,764	Jan. 8	939	263	26	173
Car. Railway passenger	E. P. Osgood	291,622	Jan. 8	777	218	26	146
Car. Railway passenger	W. H. Paige	293,996	Feb. 26	1567	433	26	741
Car-replacer	R. E. Alexander	293,447	Feb. 12	875	237	26	602
Car-roofing	A. W. Gilmore	292,675	Jan. 29	2116	588	26	406
Car-roofing	W. H. Paige	295,637	Mar. 25	1646	456	26	1145
Car. Safety railway	E. Henn	294,846	Mar. 11	621	173	26	942
Car sand-box. Street	M. Bookman and C. F. Bingham	291,341	Jan. 1	401	113	26	73
Car sand-box. Street	G. H. Hathaway	291,263	Jan. 1	311	88	26	57
Car-seat	W. A. Ackley	295,144	Mar. 18	1013	280	26	1023
Car-signal	W. D. Beaty	294,331	Feb. 26	2008	551	26	816
Car. Sleeping	T. Clarke, W. H. Paulding, and G. Reinl.						
Car. Sleeping	J. Shorey	292,595	Jan. 29	2017	561	26	390
Car-spring	H. J. Mitchell	292,248	Jan. 22	1555	435	26	301
Car-spring	R. Vose	292,773	Jan. 29	2260	625	26	433
Car-spring	R. Vose	292,774	Jan. 29	2261	626	26	433
Car-spring	R. Vose	292,775	Jan. 29	2261	626	26	433
Car-starter	W. C. Trussell	293,119	Feb. 5	431	114	26	518
Car starter and brake	G. M. Hathaway	291,504	Jan. 8	736	207	26	139
Car-starter. Spring	W. A. Warriner	293,204	Feb. 5	552	147	26	538
Car. Stock	A. and A. F. Berdanier	291,136	Jan. 1	153	45	26	30
Car. Stock	L. R. Stiles	293,285	Feb. 12	669	179	26	563
Car. Stock	T. D. Williams	295,468	Mar. 18	1418	392	26	1099
Car-ventilator	W. E. Cowen	294,016	Feb. 26	1588	441	26	745
Car-ventilator	O. H. Jones	293,578	Feb. 12	1020	280	26	628
Car-ventilator	O. H. Jones	293,967	Feb. 19	1533	422	26	726
Car-warmer. Chemical	C. Mitchell	295,576	Mar. 25	1575	436	26	1134
Car-wheel	R. N. Allen	293,211	Feb. 12	569	151	26	547
Car-wheel	A. Atwood	294,750	Mar. 11	498	139	26	921
Car-wheel	J. A. Hagan	294,995	Mar. 11	804	223	26	975
Car-wheel	J. A. Hagan	294,996	Mar. 11	806	223	26	976
Car-wheel	J. A. Hagan	294,997	Mar. 11	808	223	26	976
Car-wheel	W. I. Lindsay	294,890	Mar. 11	677	189	26	953
Car-wheel	J. W. Melvin and W. H. Cluto	295,790	Mar. 25	1846	513	26	1192

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car-wheel	G. W. Miltimore	291,618	Jan. 8	773	217	26	145
Car-wheel	F. H. Smith	294,090	Feb. 26	1698	467	26	762
Car-wheel	H. G. Taylor	291,807	Jan. 8	992	278	26	183
Car-wheel	T. Thomas	292,987	Jan. 22	1580	442	26	305
Car-wheel	N. Washburn	292,892	Feb. 5	126	35	26	466
Car-wheel and axle	J. Beampied	291,274	Jan. 1	324	91	26	59
Car-wheel hub	G. Peacock	293,071	Feb. 5	362	98	26	508
Car-window curtains. Device for holding	F. Furness	295,535	Mar. 25	1516	419	26	1122
Cars from one track to another. Mechanism for guiding	J. A. Heyl	295,640	Mar. 25	1650	457	26	1146
Cars of cable-roads. Pilot or guard for	W. U. Bohm	292,624	Jan. 29	2050	570	26	395
Cars. Panoramic sign for	W. Halkyard. (Reissue)	10,445	Feb. 5	562	150	26	540
Cars, &c. Propulsion of street	N. F. Graham and H. H. Young	292,483	Jan. 29	1854	517	26	364
Cars. Unloading platform	J. Houlehan	293,467	Feb. 12	897	243	26	606
Carbon-black. Apparatus for the manufacture of	G. G. Shoemaker	292,696	Jan. 29	2138	596	26	411
Carbureting apparatus. Air	W. F. Burrows	291,676	Jan. 8	844	236 / 237	26	157
Carbureting-machine	O. Tirrill and J. P. Wilson	294,527	Mar. 4	229	65	26	869
Carburetor	D. R. Baker	291,128	Jan. 1	144	42	26	98
Carburetor	A. Gairing and H. Lehmann	294,863	Mar. 11	645	179	26	946
Card for playing lote and other games	H. H. Harrison	295,388	Mar. 18	1325	369	26	1081
Card-sharpening apparatus	J. Brierley	294,902	Mar. 11	756	211	26	967
Carding and spinning machinery for the manufacture of asbestus yarn, &c.	W. Wood	293,391	Feb. 12	814	219	26	591
Carding-engines. Mechanism for stripping the flats of	E. P. Dennis	291,471	Jan. 1	568	160	26	101
Carding-machines. Self-feeder for	C. L. Goddard	295,243	Mar. 18	1143	315	26	1046
Carpet-fastener	J. A. Markoe	294,397	Mar. 4	76	19	26	842
Carpet-stretcher	G. W. Bowers and T. J. Thompson	293,410	Feb. 12	836	226	26	595
Carpet-stretcher	J. C. Kellsey	295,018	Mar. 11	846	231	26	981
Carpet-stretcher	E. P. Shaffer	292,693	Jan. 29	2136	595	26	411
Carpet-stretcher	W. A. Skinner	295,824	Mar. 25	1884	523	26	1189
Carpet-stretcher	N. A. Veline	291,555	Jan. 8	682	193	26	129
Carpet-stretcher	N. Wiard	293,205	Feb. 5	553	147	26	538
Carpet-sweeper	G. M. Rockwell	295,506	Mar. 18	1472	406	26	1109
Carpet-sweeper	C. L. Travis	293,988	Feb. 19	1554	428	26	730
Carpet-sweeper	C. L. Travis	293,989	Feb. 19	1556	429	26	730
Carpet-sweeper	G. W. Zeigler	295,470	Mar. 18	1423	393 / 394	26	1100
Carpet. Sweeping	E. Miller	293,902	Feb. 19	1445	.....	26	710
Carriage	R. C. Huse	292,558	Jan. 29	1966	548	26	381
Carriage and cradle. Combined folding	H. Ladewig	291,204	Jan. 1	240	66	26	43
Carriage brake. Child's	G. D. Paul	293,351	Feb. 12	753	200	26	579
Carriage. Child's	T. McKnight	292,933	Feb. 5	198	54, 55	26	479
Carriage. Child's	G. R. Peare	292,174	Jan. 22	1444	405	26	283
Carriage. Child's	J. Poolman and F. R. Marks	294,668	Mar. 4	401	111	26	897
Carriage. Child's	H. Spooner	291,940	Jan. 15	1177	328	26	227
Carriage. Convertible	A. K. Felton	292,001	Jan. 15	1245	348	26	240
Carriage-curtain fastening	J. Sage	293,522	Feb. 12	957	261	26	617
Carriage-curtains. Clamp-fastening for	A. S. Parker	292,571	Jan. 29	1981	552	26	384
Carriage-doors. Device for closing	H. W. Yonley	292,526	Jan. 29	1921	537	26	374
Carriage. Folding baby	H. A. Jackson	291,351	Jan. 1	411	117	26	75
Carriage-seat	W. A. Eddy	292,291	Jan. 22	1606	449	26	310
Carriage-seat	G. A. Sears	294,916	Mar. 11	703	196	26	957
Carriage-seat corner-iron	H. A. Moyer	293,663	Feb. 19	1130	312	26	654
Carriage-shade holder	N. M. Guillow	292,119	Jan. 15	1367	383	26	263
Carriage-spring	T. R. Bevans	292,200	Jan. 22	1479	415	26	288
Carriage-spring	G. E. Dolton	292,419	Jan. 22	1774	494	26	341
Carriage-spring	B. P. Morrison	291,761	Jan. 8	936	263	26	173
Carriage-spring shackle	H. Westphal and E. Dieterla	295,318	Mar. 18	1239	344	26	1064
Carriage-top	T. J. Reed	294,912	Mar. 11	699	195	26	957
Carriage-tops. Device for suspending	P. Marqua	293,897	Feb. 19	1440	398	26	709
Carriage-wheel	E. P. Lynch	294,056	Feb. 26	1650	456	26	754
Carriage-wrench	D. True	291,961	Jan. 15	1192	331	26	230
Carriage-wrench	D. True	292,186	Jan. 22	1460	410	26	286
Carriages. Canopy-holder for children's	A. S. Fitch	294,376	Mar. 4	48	12	26	838
Carriages. Canopy-standard for children's	G. A. Ellis	295,116	Mar. 11	973	269	26	1002
Carriages, &c. Weighing attachment for baby-	J. J. Vinton	292,878	Feb. 5	122	33	26	406
Carrier: *See* Book-carrier. Cash-carrier. Cash and parcel carrier. Egg-carrier. Hay-carrier. Trace-carrier. Wire-carrier.							
Carrier system. Automatic	J. M. Martin	293,898	Feb. 19	1441	399	26	709
Cart. Hive	C. R. Thompson	293,115	Feb. 5	422	113	26	517
Cart. Pleasure	H. A. Moyer	293,664	Feb. 19	1121	312	26	654
Cart. Road	C. S. Beebe	292,277	Jan. 22	1592	445	26	307
Cart. Road	J. W. Breed	291,488	Jan. 8	597	168 / 169	26	114
Cart. Road	H. Hertop	291,733	Jan. 8	906	254	26	168
Cartridge-case	W. Lorenz	293,257	Feb. 12	627	166	26	556
Cartridge-closing machine	C. S. Leet and W. H. Northall	291,207	Jan. 1	243	67	26	44
Cartridge decapper, recapper, and reloader	F. Gilfard	294,865	Mar. 11	647	180	26	947
Cartridge implement	M. S. Alexander	294,176	Feb. 26	1821	497	26	782
Cartridge implement	J. H. Barlow	293,297	Feb. 12	688	184	26	567
Cartridge implement	J. H. Barlow	294,955	Mar. 11	747	208	26	965
Cartridge implement	J. H. McCabe	295,265	Mar. 18	1175	325	26	1052
Cartridge-loader and cap-expeller	L. Keller	294,630	Mar. 4	355	99	26	890
Cartridge ring-extractor	J. Murphy	291,619	Jan. 8	774	217	26	145
Cartridge-shell	O. F. Selbold	294,280	Feb. 26	1941	532	26	804
Cartridge-shell creaser	F. E. and W. E. Nye and J. W. Mathews.	292,846	Feb. 5	83	23	26	458
Cartridge-shells. Machine for drawing metallic	P. Butler	294,115	Feb. 26	1736	477	26	768
Cartridge-shells. Machine for treating	W. Lorenz	294,055	Feb. 26	1647	455	26	754

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cartridge weighing and assorting machine	P. Butler	294,363	Mar. 4	27	7, 8	26	834
Case: *See* Book-case. Cartridge-case. Cigarette-case. Egg-case. Electric-conductor case. Filter-case. Folding case. Map-case. Needle-case. Organ-case. Pen and pencil case. Shipping-case. Shot-case. Show-case. Ticket-case. Toilet-case. Tombstone picture-case.							
Case for holding pencils, &c	H. F. Werner	292,270	Jan. 22	1583	442	26	305
Cash and parcel carrier	J. Berns	291,028	Jan. 1	17	5	26	6
Cash and parcel carrier	C. Grant, Jr	293,241	Feb. 12	608	161	26	553
Cash and parcel carrier	C. Grant, Jr., and D. Lawrence	291,895	Jan. 15	1111	310	26	215
Cash and parcel carrying system	W. S. Hill	295,172	Mar. 18	1047	289	26	1029
Cash-car system	B. A. and E. P. Osgood	293,192	Feb. 5	537	142	26	535
Cash-carrier elevator	H. H. Hayden	295,393	Mar. 18	1331	371	26	1083
Cash-carrier for stores	C. M. Johnson	295,645	Mar. 25	1659	460	26	1148
Cash-conveyer	O. B. Hall	293,012	Feb. 5	288	80	26	494
Casket for preserving the bodies of children. Cooling	C. M. Rutan	293,361	Feb. 12	766	204	26	592
Caster	A. Eberle	292,797	Feb. 5	28	7	26	447
Caster	W. K. Elson	293,156	Feb. 5	481	129	26	526
Caster	E. T. Thomas	295,689	Mar. 25	1714	474	26	1158
Caster	A. Thompson and G. H. Rice	291,426	Jan. 1	510	144	26	91
Caster	W. Zimmer	295,850	Mar. 25	1918	530	26	1195
Caster. Furniture	G. D. Clark	291,494	Jan. 8	604	170	26	115
Caster. Furniture	W. H. Spoerl	291,238	Jan. 1	277	76	26	50
Caster. Glass	D. C. Ripley	291,086	Jan. 1	85	24	26	19
Casting. Apparatus for manipulating molds in	C. F. Brush	293,711	Feb. 19	1192	331	26	667
Casting metals	C. F. Brush	293,709	Feb. 19	1185	330	26	666
Casting metals. Mold for	C. F. Brush	293,710	Feb. 19	1188	330	26	666
Casting mold. Type	J. M. Conner	293,633	Feb. 19	1088	301	26	647
Casting. Threaded	J. B. Larkin	294,639	Mar. 4	367	102	26	892
Castings from molds. Extracting	C. F. Brush	293,712	Feb. 19	1196	331	26	667
Castings. Machine for making molds for	E. Thomas	293,541	Feb. 12	977	267	26	620
Castings. Process of and apparatus for the production of dense metal	C. M. Pielsticker and F. C. G. Müller	291,223	Jan. 1	260	73	26	47
Cement. Manufacture of	L. Roth	294,080	Feb. 26	1684	.....	26	760
Cement. Manufacture of Portland	R. W. Lesley and J. M. Willcox	292,329	Jan. 22	1649	.....	26	317
Cement. Manufacture of tubs or vessels of hydraulic	G. L. Schmidt	291,091	Jan. 1	90	26	26	19
Center-board for vessels	J. S. Birch	292,890	Feb. 5	135	37	26	468
Center-board for vessels	R. Center	293,226	Feb. 12	590	155	26	550
Center-board for vessels. Adjustable	G. L. Mills and U. M. Gordon	292,031	Jan. 15	1274	356	26	245
Centrifugal machine	H. B. Stevens	292,705	Jan. 29	2150	599	26	413
Cereals. Machine for scouring and polishing	W. Ager	295,471	Mar. 18	1425	392	26	1101
Cesspool-well	W. and J. M. Rowbottom	292,953	Feb. 5	220	61	26	453
Chain	S. Ryder	294,812	Mar. 11	578	160	26	935
Chain attachment. Watch	H. M. Herring	294,733	Mar. 4	473	132	26	910
Chain. Drive	J. C. Bloom	293,407	Feb. 12	833	225	26	595
Chain. Drive	W. H. Dickey	294,373	Mar. 4	44	12	26	837
Chain. Drive	W. D. Ewart. (Reissue)	10,444	Feb. 5	561	149	26	540
Chain. Drive	E. M. Morgan	293,493	Feb. 12	924	251	26	611
Chain for draperies	C. A. Schmidt	294,682	Mar. 4	416	116	26	900
Chain-link. Ornamental	V. Draper	294,595	Mar. 4	314	87	26	892
Chain-link. Ornamental	H. M. Herring	294,734	Mar. 4	474	132	26	910
Chain-link. Ornamental	S. L. Lederer	295,772	Mar. 25	1819	505	26	1176
Chain-lock or baggage-guard	M. J. Clark	294,012	Feb. 26	1583	439	26	744
Chain. Ornamental	W. Ballon	292,615	Jan. 29	2040	567	26	393
Chain. Ornamental	H. A. Church	293,417	Feb. 12	843	228	26	596
Chain. Ornamental	H. A. Church	294,580	Mar. 4	298	82	26	879
Chain. Ornamental	J. Etzensperger	295,117	Mar. 11	974	266	26	1003
Chain tip. Watch	H. M. Herring	295,869	Mar. 25	1940	539	26	1200
Chair: *See* Camp-chair. Child's chair. Dental chair. Folding chair. Nursery-chair. Opera-chair. Reclining and folding chair. Tilting chair. Window-cleaning chair.							
Chair	W. H. Beardsley	294,433	Mar. 4	123	32	26	850
Chair	J. R. Linn	291,366	Jan. 1	431	122	26	79
Chair	G. B. St. John	293,813	Feb. 19	1333	370	26	690
Chair	G. C. Winchester	293,833	Feb. 19	1359	377	26	694
Chandelier. Extension	J. C. Knight	295,020	Mar. 11	848	232	26	981
Chandelier. Extension-slide	J. P. Bonner	295,519	Mar. 25	1495	413	26	1118
Charcoal-oven	J. A. Edwards	292,635	Jan. 29	2060	573	26	397
Charm-telescope	C. Hohelsen	294,467	Mar. 4	159	44	26	856
Chart-frame. Interchangeable	J. E. Hamilton	293,731	Feb. 19	1215	336	26	671
Check or water hook	T. Garrick	294,864	Mar. 11	647	179	26	946
Check-row wires. Anchor for	C. S. Locke	292,832	Feb. 5	68	19	26	455
Check-row wires. Reel for	C. S. Locke	292,831	Feb. 5	67	18	26	455
Check-row wires. Stop for	T. H. Hutchins	295,252	Mar. 18	1158	320	26	1049
Check-rower	W. and J. Erdwins	292,109	Jan. 15	1363	382	26	262
Check-rower	A. L. Jordan	293,888	Feb. 19	1428	395	26	707
Check-rower wires. Machine for forming	G. B. Durkee	291,584	Jan. 8	718	292 / 293 / 294	26	135
Check-rowers. Wire-stretcher for	W. W. Porter	292,679	Jan. 29	2121	589	26	407
Cheese. Machinery for manufacturing	A. H. Brintnell	293,140	Feb. 5	466	124	26	523
Cherry-pitter	J. Williams	292,393	Jan. 22	1735	483	26	335
Child's chair	A. B. Stevens	292,067	Jan. 15	1315	367	26	253
Child's chair	A. B. Stevens	292,068	Jan. 15	1315	367	26	253
Chimney-cap	M. Scholl	293,526	Feb. 12	960	262	26	617
Chimney-cowl	E. R. Stasch	295,687	Mar. 25	1712	474	26	1158

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Chimney-protector	I. A. Smith	292,701	Jan. 29	2147	598	26	412
Chimney-top	N. Petersen	292,505	Jan. 29	1882	525	26	369
Chopper:							
See Stalk-chopper.							
Christmas-tree candle-holder	F. Lechler	295,199	Mar. 18	1060	292	26	1032
Chuck. Brace-	G. W. Kerr	295,408	Mar. 18	1348	375	26	1086
Chuck. Drill-	C. Gage	294,121	Feb. 26	1745	480	26	770
Chuck for drilling-machines, &c	C. A. Brenzinger	294,755	Mar. 11	503	141	26	922
Chuck for holding fittings	S. P. M. Tasker	292,599	Jan. 29	2021	502 / 503	26	391
Chuck. Lathe-	G. A. Colton	295,229	Mar. 18	1125	310	26	1043
Chuck. Lathe-	G. A. Colton	295,230	Mar. 18	1126	311	26	1043
Chuck. Lathe-	J. S. Gilmore	295,628	Mar. 25	1638	454	26	1144
Chuck. Lathe-	D. E. and L. E. Whiton	294,296	Feb. 26	1904	538	26	808
Chuck. Lathe-	J. H. Daniell	291,306	Jan. 1	367	103	26	66
Churn	W. H. Dyer	295,862	Mar. 25	1941	536	26	1198
Churn	R. T. Henderson	291,901	Jan. 15	1117	312	26	216
Churn	O. Henry	292,915	Feb. 5	169	46	26	474
Churn	A. Jackson	295,766	Mar. 25	1811	503	26	1175
Churn	H. C. Neer	292,133	Jan. 15	1204	290	26	267
Churn	W. H. Royster	293,195	Feb. 5	540	143	26	636
Churn	O. F. Scribner	293,598	Feb. 12	961	262	26	618
Churn	R. R. Shive	292,695	Jan. 29	2137	595	26	411
Churn	W. H. Tawney	295,460	Mar. 18	1408	389	26	1097
Churn	E. H. Schmidt and H. F. C. Brammer	294,683	Mar. 4	416	116	26	900
Churn-cover fastening	J. E. Finley	294,024	Feb. 26	1599	444	26	747
Churn-dasher	R. Webb and M. G. Brooks	294,706	Mar. 4	442	123	26	904
Churn-dasher	W. F. Evans and J. B. Fielding	294,120	Feb. 26	1744	479 / 480	26	770
Churn-motor	W. A. Nevel and G. W. Fisher	294,064	Feb. 26	1659	458	26	756
Churn-motor	H. C. Sadler	295,587	Mar. 25	1587	439	26	1136
Cider-mill	M. P. Schenck	293,302	Feb. 12	767	204	26	582
Cider-press	H. Sells	293,795	Feb. 19	1309	363	26	687
Cider-press rack	W. H. Ferguson	294,023	Feb. 26	1596	443	26	746
Cigar and match holder for tables. Combined	J. E. Walch	294,293	Feb. 26	1959	537	26	807
Cigar-cutter	J. Grats and P. Hagedorn	291,509	Jan. 8	626	176 / 177	26	119
Cigar-cutter	A. H. Kirk	293,580	Feb. 12	1022	281	26	628
Cigar-cutter	F. C. Miller	291,379	Jan. 1	451	127	26	81
Cigar-cutter	W. H. Myers	293,665	Feb. 19	1122	313	26	654
Cigar-dealer's knife	F. G. Dieterich and E. C. Walford	292,473	Jan. 29	1843	514	26	362
Cigar-holder	A. L. Webb	291,115	Jan. 1	127	36	26	26
Cigar-maker's board	A. Thalheimer	291,644	Jan. 8	604	225	26	151
Cigar-mold	R. Appleby	292,398	Jan. 22	1743	485	26	336
Cigar-stand	C. N. Swift	293,374	Feb. 12	786	210	26	586
Cigar-wrappers. Machine for cutting	J. R. Williams	291,559	Jan. 8	687	194	26	130
Cigar-wrappers. Machine for cutting and piling	O. Hammerstein	293,733	Feb. 19	1218	337	26	672
Cigar-wrappers. Machine for manipulating	O. Hammerstein	293,732	Feb. 19	1217	336	26	671
Cigarette-case	F. S. Kinney	291,201	Jan. 1	237	66	26	43
Cigarette-machine	J. Burns and A. Buckman	294,113	Feb. 26	1725	474 / 475	26	767
Cigarette-machine	J. Burns and A. Buckman	294,114	Feb. 26	1729	475 / 476 / 477	26	767
Cigarette-machines. Apparatus for feeding paper in	E. F. Leblond	295,181	Mar. 18	1059	292	26	1032
Circuit-controller. Multiple	W. F. M. McCarty	293,974	Feb. 19	1539	424	26	728
Cistern	J. W. Barnum	295,330	Mar. 18	1252	347	26	1067
Cisterns. Automatic rain-water regulator for	F. E. Lord	295,258	Mar. 18	1165	322	26	1050
Cisterns from concrete. Construction of	W. B. Dorward	292,490	Jan. 22	1775	495	26	342
Cithern	F. F. Wichard	294,832	Mar. 11	604	166	26	938
Clamp:							
See Bottle-holding clamp. Roofing-clamp. Button-fly clamp. Rope-clamp. Cabinet-maker's clamp. Screw-clamp. Strap-clamp. Clothes-clamp.							
Clamp	P. F. Corbett	292,207	Jan. 22	1494	420	26	290
Clamp for cabinet-makers	J. W. Welser	292,391	Jan. 22	1731	483	26	334
Clamp for sheet-holders	A. P. Hayden and F. Pickup	292,307	Jan. 22	1624	455	26	313
Clamping cards, &c. Device for	D. W. Ernsting	291,172	Jan. 1	197	55	26	36
Clasp:							
See Bracelet-clasp. Fastening-clasp. Corset-clasp. Rope or line clasp.							
Clasp	S. D. Tucker	295,310	Mar. 18	1230	342	26	1062
Clasp for fastening gloves, &c	G. E. Danforth	294,019	Feb. 26	1592	442	26	746
Claw-bar	W. H. Lyman	295,571	Mar. 25	1569	434	26	1132
Clay-crusher and tile-machine. Combined	J. D. Fate and E. M. Freese	293,000	Feb. 5	276	75 / 76 / 77	26	492
Clay-crushing machine	F. E. Frey	295,533	Mar. 25	1513	417 / 418	26	1121
Clay-crushing roller	J. W. Penfield	292,576	Jan. 29	1988	554	26	385
Clay-crushing roller	J. W. Penfield	292,577	Jan. 29	1989	554	26	385
Clay-crushing roller	J. W. Penfield	293,270	Feb. 12	649	174	26	560
Clay-pulverizer	L. D. Ferguson	293,001	Feb. 5	278	77	26	492
Clay-tempering machine	J. F. Dornfeld	292,997	Feb. 5	272	75	26	491
Cleaner:							
See Boot-cleaner. Seed-cleaner. Coal-cleaner. Slate-cleaner. Cotton-cleaner. Steam-boiler cleaner. Grain-cleaner.							
Cleaning and renovating fabrics. Composition for	T. Ewing	294,727	Mar. 4	467	.....	26	909
Cleaning textile fabrics, wooden and metallic surfaces, &c. Composition for	F. S. Monroe	295,882	Mar. 25	1971	.....	26	1203
Clevis	R. Hamilton	291,053	Jan. 1	47	14	26	12

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Clevis	L. Jaquish	295,402	Mar. 18	1342	374	26	1085
Clevis for chain cables, &c. Swivel-	F. Joseph	292,493	Jan. 29	1870	522	26	367
Clevis for reversible plows	F. A. Barrows	294,431	Mar. 4	119	31	26	849
Clip:							
See Tug-clip.							
Clip for securing irregular surfaces together	A. H. Beach	291,134	Jan. 1	152	44	26	29
Cloak	S. Wetzler	293,386	Feb. 12	806	217	26	589
Clock. Alarm-	J. Ganss	295,627	Mar. 25	1636	454	26	1144
Clock. Alarm-	I. S. Goldman	294,220	Feb. 26	1872	512	26	790
Clock. Alarm-	C. S. Lewis	293,583	Feb. 12	1025	282	26	629
Clock-alarm apparatus	W. D. Smith	294,338	Feb. 26	2016	553 / 554	26	818
Clock-dial	H. J. Davies	291,989	Jan. 15	1228	342	26	236
Clock. Electric	G. M. Herotizky	293,613	Feb. 12	1060	293	26	635
Clock. Electric	G. B. Webb	294,552	Mar. 4	268	73	26	874
Clock-pendulum	L. Orser	293,063	Feb. 5	349	96	26	506
Clock-pendulums. Electric device for synchronizing	V. Himmer	294,132	Feb. 26	1759	483	26	772
Clock. Programme-	T. Wilmer	292,456	Jan. 22	1819	507	26	351
Clock. Secondary electric	V. Himmer	294,131	Feb. 26	1756	483	26	771
Clock. Self winding	A. Dardenne	292,108	Jan. 15	1361	382	26	262
Clock-striking mechanism	G. B. Owen	294,262	Feb. 26	1920	526 / 527	26	800
Clocks. Apparatus for adjusting the beat of pendulum-	G. H. Brown and H. J. Welteroth	292,282	Jan. 22	1596	446	26	308
Clocks. Device for removing mainsprings from	D. Switzer	291,803	Jan. 8	988	277	26	192
Clocks. Device for synchronizing	C. N. Talbot	292,902	Feb. 5	228	63	26	484
Clocks. Electric alarm for spring-	E. Jungerman	295,873	Mar. 25	1953	540	26	1201
Clocks. Music-box attachment for	J. Schmid	293,096	Feb. 5	393	107	26	513
Clocks. Strike system for secondary electric	W. H. Sawyer	295,287	Mar. 18	1201	333 / 334	26	1058
Clocks. Striking mechanism for eight-day	E. A. Müller	293,589	Feb. 12	1031	284	26	630
Clothes-clamp	F. J. McBrien	292,243	Jan. 22	1549	433	26	300
Clothes-drier	R. R. Richardson	292,052	Jan. 15	1299	363	26	250
Clothes-pounder	E. S. Burnham	291,029	Jan. 1	19	5	26	6
Clothes-reel	W. H. Richmond	292,359	Jan. 22	1695	472	26	326
Clover-huller cylinder	H. N. Land and H. Campbell	295,771	Mar. 25	1818	505	26	1176
Club. Indian	R. Reach	295,429	Mar. 18	1371	380	26	1019
Club. Police	J. J. Tower	291,949	Jan. 1	282	79	26	51
Clutch	T. R. Morgan, Sr	293,060	Feb. 5	345	94, 95	26	505
Clutch. Friction-	D. Mills	292,172	Jan. 22	1443	405	26	283
Clutch. Friction-	J. K. Proctor	294,671	Mar. 4	405	112	26	898
Clutch. Friction-	T. Scheffler	292,140	Jan. 15	1401	392 / 393	26	269
Clutch-guard	D. Tilton	295,595	Mar. 25	1596	442	26	1137
Coal-bunk	J. Dall	295,233	Mar. 18	1133	312	26	1044
Coal-cleaner	W. H. Shepherd	291,788	Jan. 8	667	271	26	179
Coal-cleaner. Pneumatic	A. Sottiaux	293,103	Feb. 5	401	109	26	515
Coal-drilling machine	J. M. and J. W. Davies	291,578	Jan. 8	710	199 / 200	26	133
Coal-dust feeder	H. A. Bradley	295,145	Mar. 18	1015	280	26	1024
Coal. Machine for separating slate from	C. W. Ziegler	291,123	Jan. 1	137	39	26	27
Coal-screen	J. Jones	292,560	Jan. 29	1970	549	26	382
Cock and tank for drawing fluids of varying temperatures.	J. Byrne	292,094	Jan. 15	1345	378	26	259
Cock. Automatic cylinder-	R. Reed and C. E. Loetzer	294,334	Feb. 26	2013	552	26	817
Cock. Ball-	T. McHugh	291,374	Jan. 1	439	124	26	80
Cock or faucet. Water and steam	J. Richter	294,674	Mar. 4	408	113	26	899
Cock. Service-	W. S. Payne	292,340	Jan. 22	1679	467	26	323
Cock. Stop-	J. Porsch, Jr	293,515	Feb. 12	950	259	26	616
Cock. Stop and waste	J. H. Kennedy	292,894	Feb. 5	57	15	26	453
Cock. Stop and waste	H. Taylor, R. B. Sharp, and T. J. Cain.	291,808	Jan. 8	993	278	26	183
Cocks for water and gas pipes. Case for operating stop-	E. L. Abbott	294,749	Mar. 11	497	139	26	921
Cockle-separator	J. M. King	293,039	Feb. 5	321	89	26	501
Coffee and other grain. Machine for cleaning	J. Reaney	292,681	Jan. 29	2122	590	26	408
Coffee and tea pot	F. Rosebrook	291,941	Jan. 15	1169	326	26	225
Coffee, &c. Machine for cleaning and grading	G. S. Hungerford	292,750	Jan. 29	2224	618	26	427
Coffee-pot	J. A. Ashley	292,089	Jan. 15	1340	376	26	258
Coffee-pot attachment	M. Ballin and F. Hoff	294,347	Mar. 4	4	1	26	829
Coffee-roasting machine	A. W. Roper	295,200	Mar. 18	1086	299	26	1036
Coffins into graves. Device for lowering	G. T. Conrath	294,366	Mar. 4	32	9	26	835
Coin-counter for money-drawers	C. G. Raber	292,584	Jan. 29	1998	556	26	387
Coin-holder	C. C. Johnston	293,033	Feb. 5	314	87	26	499
Coke-oven	H. Stier	291,422	Jan. 1	506	142 / 143	26	91
Coke-oven door	W. A. Blythe and J. Henderson	294,845	Mar. 11	619	171 / 172	26	941
Coking-furnace	A. R. B. Hiltawski	293,023	Feb. 5	304	84	26	497
Collar	F. R. Lewis	293,753	Feb. 19	1250	346	26	676
Collar	K. Perpento	293,508	Feb. 12	942	256	26	614
Collar. Horse-	M. S. Fort	294,218	Feb. 26	1871	511	26	790
Collar. Horse-	F. W. Nevins	292,843	Feb. 5	80	22	26	457
Collar or tie adjuster	W. W. Denlston	295,526	Mar. 25	1502	414	26	1119
Collar pad. Horse-	D. Curtis	294,769	Mar. 11	519	145	26	924
Colors and designs on surfaces. Producing and fixing	G. H. Smith	292,222	Jan. 22	1519	.....	26	294
Colors. Machine for sifting	J. C. Matter	295,783	Mar. 25	1837	511	26	1150
Colors or designs on surfaces. Apparatus for producing	G. H. Smith	292,220	Jan. 22	1514	425	26	294
Comb	W. Crabb	294,204	Feb. 26	1854	506	26	787
Combination-lock	J. N. Rice and J. Humphreys	292,253	Jan. 22	1563	437	26	302
Combination-lock	C. Tregoning	294,290	Feb. 26	1955	535	26	806
Combing fibrous material. Machine for	W. Hall and J. Midgley	295,165	Mar. 18	1037	287	26	1028

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Comparator	S. Darling	292,415	Jan. 22	1765	491, 492	26	340
Compass. Mariner's	E. S. Ritchie	291,463	Jan. 1	479	136	26	86
Compasses	F. S. Svenson	295,076	Mar. 11	924	253	26	994
Composing-stick	W. H. Golding	294,378	Mar. 4	52	13	26	838
Composing-stick	R. S. Robson	294,677	Mar. 4	410	113	26	899
Compressing plastic material. Machine for	C. J. Ridenour	294,274	Feb. 26	1933	530	26	802
Compressor for compressing bran, &c., into packages	G. A. Chapman	291,683	Jan. 8	854	239	26	159
Concentrator and amalgamator	G. R. Evans	291,997	Jan. 15	1240	346	26	239
Condensing or drying liquids. Apparatus for	N. B. Rice	292,940	Feb. 5	216	59	26	482
Condensing or drying liquids. Apparatus for	N. B. Rice	292,950	Feb. 5	217	60	26	482
Condenser. Jet-	L. Schutte	293,791	Feb. 19	1303	361	26	685
Conduit. Asphaltic-concrete	W. W. Averell	293,214	Feb. 12	574	151	26	547
Connecting-rod	G. B. Stevenson	292,380	Jan. 22	1720	479	26	332
Converter	T. Griffiths	295,544	Mar. 25	1527	422, 423	26	1124
Converter	T. Griffiths	295,545	Mar. 25	1529	423, 424	26	1125
Converter employed in the manufacture of iron and steel.	T. Griffiths	295,546	Mar. 25	1531	424	26	1125
Convertible chair	A. B. Stevens	291,952	Jan. 15	1182	329	26	228
Conveyer apparatus	G. C. Blickensderfer and H. Smith	295,338	Mar. 18	1261	349, 350	26	1069
Conveyer apparatus	G. C. Blickensderfer and H. Smith	295,339	Mar. 18	1264	350, 351	26	1069
Conveyer apparatus	G. C. Blickensderfer and H. Smith	295,478	Mar. 18	1436	396, 397	26	1103
Conveyer apparatus	H. Smith and G. C. Blickensderfer	295,448	Mar. 18	1392	385	26	1094
Conveyer. Screw	F. C. Caldwell	295,731	Mar. 25	1767	491	26	1167
Cooker. Steam	H. Maxim	293,048	Feb. 5	331	91	26	503
Cooking apparatus. Steam	G. W. Williams	294,945	Mar. 11	734	205	26	963
Cooler: *See* Beer-cooler. Milk-cooler. Food-cooler. Syrup-cooler. Ice-machine cooler. Water-cooler. Liquid-cooler.							
Cooler for uniting oils in the manufacture of lard, &c.	S. H. Cochran	291,692	Jan. 8	865	241	26	160
Coop. Knockdown	J. Burns	291,037	Jan. 1	17	4, 5	26	6
Coop or kennel. Folding	H. Evesson	294,600	Mar. 4	318	89	26	883
Coop. Poultry-	W. T. Bleike, Jr	293,138	Feb. 5	464	124	26	523
Copper and bronze. Alloy for and process of the manufacture of silicious	L. Weiller	293,827	Feb. 19	1351	.....	26	692
Copper salts by the aid of electricity. Making	J. K. Kessler	294,051	Feb. 26	1640	454	26	754
Copper. Tinning sheet-	A. A. Cowles	292,540	Jan. 29	1942	.....	26	377
Copy-holder	W. F. Miller	295,416	Mar. 18	1357	377	26	1088
Core-barrel	W. T. Mobberley and R. Taylor	295,039	Mar. 11	870	238	26	985
Core-box	P. Cowing	292,102	Jan. 15	1355	381	26	261
Cord. Machine for making ornamental looped	A. Urbahn	293,605	Feb. 12	1049	290, 291	26	633
Cork-cutting machine	F. J. Nutting	295,884	Mar. 25	1973	546	26	1203
Corking machine. Bottle-	E. E. Worden, G. Taylor, J. Power, and E. D. Colby.	291,458	Jan. 1	535	156, 157	26	99
Corn-coverer	W. H. Pennock	291,396	Jan. 1	471	133	26	85
Corn from the cob. Machine for cutting green	D. B. Speer	295,831	Mar. 25	1891	524	26	1190
Corn in the cob. Machine for cutting	S. F. Savits	295,819	Mar. 25	1879	521	26	1187
Corn-sheller	L. Matthews	294,488	Mar. 4	191	53	26	861
Corn-sheller	H. Packer	293,669	Feb. 19	1198	314, 315	26	655
Corn-silking machine	W. S. Horn	293,737	Feb. 19	1226	339	26	673
Cornstalk-rake	G. A. Runyan	295,054	Mar. 11	892	244	26	988
Cornstalks, &c. Machine for cutting and grinding	G. Sanford	291,231	Jan. 1	268	75	26	49
Corner-brace	W. C. Garretson	292,003	Jan. 15	1248	340	26	240
Corset	T. S. Gilbert	293,446	Feb. 12	573	236	26	601
Corset	C. A. Griswold	291,335	Jan. 1	396	111	26	72
Corset	C. A. Griswold	291,336	Jan. 1	397	112	26	72
Corset	C. A. Griswold	291,338	Jan. 1	398	112	26	73
Corset	C. W. Higby	294,620	Mar. 4	341	95	26	887
Corset	E. Leonard	293,969	Feb. 19	1534	422	26	727
Corset	I. Newman	295,041	Mar. 11	873	239	26	985
Corsets. Apparatus forming and shaping	J. A. House	294,046	Feb. 26	1634	453	26	753
Corset-busk	A. Taylor, Jr	294,933	Mar. 11	721	201	26	961
Corset-busk fastening	D. Essex	293,567	Feb. 12	1009	278	26	626
Corset-clasp	C. A. Griswold	291,337	Jan. 1	397	112	26	72
Corset-pad	Z. Ledochowski	293,829	Feb. 5	65	17	26	455
Corset-steel fastening	L. Hill	295,171	Mar. 18	1046	288	26	1029
Cot. Folding	W. H. Wooldridge	295,606	Mar. 25	1611	446	26	1140
Cotton-cleaner and gin-feeder. Self-feeding	J. W. and Z. W. Oglesby	293,771	Feb. 19	1274	352, 353	26	680
Cotton cleaner. Seed-	J. W. Webb	291,442	Jan. 1	526	149	26	95
Cotton elevator and cleaner. Seed-	W. T. Taylor	291,806	Jan. 8	990	272	26	183
Cotton-gin feeder	J. W. and Z. W. Oglesby	293,772	Feb. 19	1276	353	26	680
Cotton-gin feeders. Governor for	L. D. Forbes	295,377	Mar. 18	1311	364	26	1078
Cotton-gins, &c. Saw for	D. B. Haselton	293,576	Feb. 12	1018	280	26	628
Cotton-lap	R. Kitson	292,921	Feb. 5	178	49	26	476
Cotton-picker stem	C. T. Mason, Jr	293,484	Feb. 12	915	248	26	609
Cotton-picker stem	C. T. Mason, Jr	293,485	Feb. 12	916	249	26	609
Cotton-press	J. C. Allen	292,274	Jan. 22	1589	444	26	306
Cotton-press	F. L. Falson and G. M. Newell	292,000	Jan. 15	1244	347, 348	26	230
Cotton scraper and cultivator	S. H. Fountain	294,604	Mar. 4	325	90	26	884
Cotton-worm destroyer, sprinkler, &c.	J. D. Lambert, Sr., and J. G. Wiggins	294,135	Feb. 26	1764	484	26	772
Counter for stores. Glass-top	S. Schutz	294,512	Mar. 4	215	61	26	866
Counter. Portable	J. T. Perry	294,907	Mar. 11	695	194	26	956
Counting-register	J. W. Jones and A. Cooper	295,768	Mar. 25	1815	504	26	1176

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Coupling: *See* Car-coupling. Rod-coupling. Crupper-coupling. Shaft friction-coupling. Electric-wire coupling. Shaft or roll coupling. Shafting-coupling. Hose-coupling. Thill-coupling. Pipe-coupling. Whiffletree-coupling.							
Coupling for propeller and other shafts	J. Kelly	292,823	Feb. 5	56	15	26	453
Court-plaster. Preparing medicated	C. L. Morey	291,922	Jan. 15	1150	.....	26	222
Cover. Crock-	D. W. Frost	292,110	Jan. 15	1365	383	26	263
Cover for culinary and other receptacles	J. Beaupied	291,029	Jan. 1	10	3	26	5
Covering for steam boilers, pipes, and other heated surfaces	E. Krahenbehl and P. Rice	293,752	Feb. 19	1250	345	26	676
Covering. Non-conducting	G. Kelly	292,318	Jan. 22	1637	458	26	315
Cranes. Shaft-bearing for traveling	C. J. Appleby	291,861	Jan. 15	1073	299	26	207
Crank	J. E. Atwood	291,972	Jan. 15	1204	336	26	232
Crate. Folding	L. and C. Krieckhaus	294,789	Mar. 11	541	150	26	928
Crate. Knockdown	W. M. Baker	294,751	Mar. 11	500	139	26	921
Cream-gage for milk-cans	C. L. Colby	291,296	Jan. 1	354	100	26	64
Cream of tartar. Manufacture of	F. Dietrich	294,592	Mar. 4	312	.....	26	882
Cream-skimming apparatus	D. Stover	293,986	Feb. 19	1552	426	26	730
Creamer. Centrifugal	G. De Laval	293,314	Feb. 12	707	189	26	570
Creamer. Centrifugal	W. C. L. Lefeldt and C. G. O. Lentsch	292,661	Jan. 29	2092	582	26	403
Creamer. Centrifugal	W. C. L. Lefeldt and C. G. O. Lentsch	292,662	Jan. 29	2095	582, 583	26	403
Creaming milk. Centrifugal machine for	W. C. L. Lefeldt and C. G. O. Lentsch (Reissue.)	10,441	Jan. 29	2268	628	26	435
Crib and cradle. Combined	S. G. Sine	293,530	Feb. 12	964	263	26	618
Crupper-coupling	C. H. Orts	295,192	Mar. 18	1077	296	26	1034
Crusher: *See* Clay-crusher.							
Crushing-roll	W. H. H. Bowers	294,361	Mar. 4	25	7	26	834
Crutch	W. H. D. Ludlow	291,750	Jan. 8	926	259	26	171
Cryptographial table	J. L. Winnes	294,175	Feb. 26	1820	497	26	781
Cuff and wristlet. Driving	B. E. Northrup	293,500	Feb. 12	932	253	26	612
Cuff-holder	C. M. Alexander	295,091	Mar. 11	945	257	26	998
Cultivation and harvesting. System and apparatus for farm	R. Romaine	292,511	Jan. 29	1887	527, 528, 529	26	370
Cultivator	P. Beeler	292,091	Jan. 15	1342	377	26	259
Cultivator	B. C. Bradley	293,557	Feb. 12	996	273	26	624
Cultivator	B. C. Bradley	295,520	Mar. 25	1495	413	26	1118
Cultivator	L. A. Bringier	293,221	Feb. 12	584	153	26	549
Cultivator	D. Brix	292,979	Feb. 5	252	69	26	488
Cultivator	W. H. Clark	295,353	Mar. 18	1292	355	26	1073
Cultivator	N. Coleman	291,577	Jan. 8	709	199	26	133
Cultivator	J. Divora	292,996	Feb. 5	271	74	26	491
Cultivator	H. W. Ferguson	292,639	Jan. 29	2065	574	26	398
Cultivator	W. M. Harris	293,017	Feb. 5	295	81, 82	26	496
Cultivator	F. L. Hilsabeck	291,730	Jan. 8	904	253	26	167
Cultivator	J. M. Long and C. E. McBeth	295,779	Mar. 25	1832	509	26	1179
Cultivator	T. Meikle	293,266	Feb. 12	646	173	26	550
Cultivator	R. C. Norton	292,674	Jan. 29	2115	588	26	406
Cultivator	W. H. Parlin	291,930	Jan. 15	1158	323	26	223
Cultivator	C. W. Post	294,906	Mar. 11	571	158	26	934
Cultivator	A. Schoonover, Jr	295,292	Mar. 18	1209	336	26	1059
Cultivator	I. A. Smith	294,091	Feb. 26	1699	467	26	762
Cultivator	G. W. and S. Taylor	293,920	Feb. 19	1467	406	26	714
Cultivator	H. D. Terrell	292,070	Jan. 15	1318	368	26	254
Cultivator	A. C. and J. D. Tower	295,080	Mar. 11	928	254	26	995
Cultivator	F. T. Verharen	292,877	Feb. 5	120	33	26	465
Cultivator	J. Woolridge	295,607	Mar. 25	1612	446, 447	26	1140
Cultivator and drill. Spring-tooth	C. La Dow	294,791	Mar. 11	543	151	26	928
Cultivator and horse-hoe	C. W. Meador	295,189	Mar. 18	1074	295	26	1034
Cultivator. Grape and orchard	W. Fruhling, Sr	292,297	Jan. 22	1614	451	26	311
Cultivator-shovel	W. F. Dickison	292,705	Feb. 5	25	6	26	447
Cultivator. Sulky-	R. L. Carver	293,717	Feb. 19	1201	333	26	668
Cultivator. Tongueless	J. B. Christian and W. D. Hanson	292,283	Jan. 22	1597	446	26	308
Cultivator. Tongueless wheel-	T. B. Jewett	293,030	Feb. 5	311	86	26	499
Cultivator. Tongueless wheel-	T. B. Jewett	293,331	Feb. 12	728	194	26	574
Cultivator-tooth	J. P. Bradford	292,404	Jan. 22	1749	487	26	337
Cultivator. Wheel-	C. A. Baker	293,616	Feb. 19	1066	295	26	643
Cultivator. Wheel-	N. Trowbridge	295,082	Mar. 11	933	255	26	996
Cultivators. Attaching plant-shields to	C. H. Hopkins	293,465	Feb. 12	895	242	26	605
Cupola-furnace	W. J. Clapp and T. Griffiths. (Reissue.)	10,432	Jan. 1	583	164	26	104
Cupping-glass	C. L. Myers	291,388	Jan. 1	464	130	26	83
Curry-comb	H. C. Brill	294,305	Feb. 26	1977	540	26	810
Curry-comb	F. A. Canfield	293,415	Feb. 12	841	227	26	586
Curtain-fixture	M. B. Hill	293,963	Feb. 19	1528	421	26	725
Curtain-fixture	C. H. Miller, Jr	293,188	Feb. 5	533	141	26	535
Curtain-fixture	L. Page and L. Weber	291,928	Jan. 15	1155	322	26	223
Curtain-fixture	J. B. Finch	291,702	Jan. 8	615	173	26	117
Curtain-fixtures. Spring-roller for	C. Eberly	293,643	Feb. 19	1098	305	26	640
Curtain-pole	C. H. Miller	293,187	Feb. 5	532	141	26	535
Curtain-roller	H. Lobdell	292,332	Jan. 22	1655	462	26	318
Curtain-stick	H. Lobdell	292,333	Jan. 22	1656	462	26	319
Curtain-stick	H. Lobdell	292,334	Jan. 22	1658	462	26	319
Curtain-stick	H. Lobdell	292,992	Feb. 5	253	69	26	489
Curtains. Supporting-rod for window and door	J. A. Browne	294,758	Jan. 29	2236	621	26	429
Cut-off. Automatic spring-valve	J. L. Mitchell	295,131	Mar. 11	888	271	26	1006
Cut-off governor for engines	P. Pistor	294,857	Mar. 11	633	176	26	944
Cut-off valve	I. B. Davis and W. L. Shepard	291,240	Jan. 1	288	81	26	53
Cut-off valve and gear	J. Wheelock						

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cut-off-valve gear	F. A. Gardner	291,181	Jan. 1	212	59	26	38
Cut-off-valve gear	G. T. Hatch and F. W. Riesenberg	294,036	Feb. 26	1612	448	26	749
Cut-off-valve gear	M. J. McCarter	294,650	Mar. 4	384	107	26	894
Cut-off-valve gear	E. Reynolds	293,356	Feb. 12	759	202, 203	26	580
Cutlery-handles. Manufacture of	S. E. Jeralds and E. R. Lawton	295,016	Mar. 11	843	230	26	980
Cutter: *See* Beef-cutter. Butter-cutter. Cigar-cutter. Feed-cutter. Fodder-cutter. Milling-cutter. Peg-cutter. Pipe-cutter. Rotary cutter. Straw-cutter. Thread-cutter. Tube-cutter. Vegetable-cutter. Wire-cutter.							
Cutter-head	H. S. Boynton	294,006	Feb. 26	1577	436	26	742
Cutter-head	J. B. Emery	292,422	Jan. 22	1777	495	26	342
Cutter-head	J. H. Morrison and E. Allen	293,494	Feb. 12	924	251	26	611
Cutter-head	G. J. Shimer	293,529	Feb. 12	962	262, 263	26	618
Cutter-head	W. Trigg	292,388	Jan. 22	1729	482	26	333
Cutter-head for wood-working machines	S. Osborn	294,067	Feb. 26	1664	459, 460	26	757
Cutting double pile fabrics. Machine for	C. Coupland	294,970	Mar. 11	767	213, 214, 215	26	969
Cutting double pile fabrics. Spindle and bearing for rotary cutters of machines for	C. Coupland	294,969	Mar. 11	765	213	26	968
Cutting out garments. Machine for	S. Rich	291,776	Jan. 8	956	268	26	177
Cutting-tool	J. B. Wallace	295,466	Mar. 18	1415	391	26	1099
Cyclometer	G. H. Gould	295,632	Mar. 25	1641	455	26	1145
Cylinder engine. Revolving	J. J. Blair	294,304	Feb. 26	1975	540	26	810
Dadoing-machine	J. K. Benway	291,865	Jan. 15	1077	300, 301	26	208
Damper	R. L. Walker	293,543	Feb. 12	979	268	26	621
Damper-regulator	G. W. Smith	293,367	Feb. 12	778	208	26	584
Damper. Ventilating	J. P. Dorr	294,773	Mar. 11	522	146	26	925
Dash-board	W. E. Minshall	292,032	Jan. 15	1275	357	26	245
Decorating walls, &c	M. Monoyment	291,215	Jan. 1	250	71	26	45
Dental chair	E. P. Stiles	294,226	Feb. 26	1948	534	26	805
Dental engine	E. R. Pettit	294,667	Mar. 4	399	111	26	897
Dental-engine attachment	J. W. Norwood	293,502	Feb. 12	934	253, 254	26	613
Dental-engine hand-piece	A. W. Browne	291,571	Jan. 8	700	197	26	131
Dental plates. Refining rubber	F. T. Hyatt	293,739	Feb. 19	1227	339	26	673
Dental plugger	J. W. Norwood	293,501	Feb. 12	933	253	26	612
Dental vulcanizer	F. W. Seabury	295,821	Mar. 25	1881	522	26	1188
Deodorizing and disinfecting apparatus	G. Nobes	294,327	Feb. 26	2004	549	26	815
Deoxidizing-furnace. Retort	I. D. Condit, Jr	291,298	Jan. 1	357	101	26	64
Deoxidizing iron ores. Apparatus for	J. Bridgford	292,788	Feb. 5	13	4	26	445
Derrick. Steam	C. C. Lyman	294,395	Mar. 4	73	18, 19	26	842
Desk	N. A. Hull	294,388	Mar. 4	63	16	26	840
Desks. Device for fastening school	J. W. Myers	291,219	Jan. 1	256	72	26	46
Desiccating eggs, &c. Method of and apparatus for	L. J. Cadwell	294,849	Mar. 11	624	173	26	942
Desulphurizing-furnace	H. E. Parson and G. V. Northey	292,944	Feb. 5	210	57	26	481
Detachable handle for glass and earthenware dishes	J. B. Timberlake	294,229	Feb. 26	1953	535	26	806
Diamonds in tools. Setting	A. Hessels	295,394	Mar. 18	1333	371	26	1088
Die: *See* Hammer-die.							
Die and die-stock	C. Elterich	291,884	Jan. 15	1100	307	26	213
Die-press	G. E. Merriman. (Reissue.)	10,461	Mar. 11	1009	278	26	1009
Die-shaping	H. A. Chamberlain and W. L. Martin	291,682	Jan. 8	851	239	26	150
Die-shaping apparatus	H. A. Chamberlain and W. L. Martin	291,681	Jan. 8	849	237, 238	26	158
Die-stock	F. Armstrong	291,268	Jan. 1	317	89	26	58
Digger: *See* Potato-digger. Well-digger.							
Dish. Butter	A. J. Chase	295,111	Mar. 11	906	264	26	1001
Dish holder. Extension fruit	C. S. Barbour	292,197	Jan. 22	1475	414, 415	26	988
Disinfectant	C. A. Catlin	294,758	Mar. 11	507	141	26	922
Disinfectant	C. A. Catlin	294,759	Mar. 11	508		26	922
Disinfecting-tank for the disposal of sewage	J. J. Powers	292,046	Jan. 15	1293	361	26	249
Distress-signal. Electric	T. B. Joseph	292,317	Jan. 22	1636	458	26	315
Ditcher. Tile	K. James	294,049	Feb. 26	1637	453	26	753
Ditches. Making mole	M. H. Eaton	291,313	Jan. 1	375	105	26	68
Ditching and grading machine	I. B. Hammond	295,247	Mar. 18	1148	317	26	1047
Ditching-machine	W. T. Bennett	294,567	Mar. 4	284	77	26	877
Ditching-machine	C. D. Edwards	291,040	Jan. 1	28	8, 9	26	8
Ditching-machine	J. T. Fitzpatrick	291,043	Jan. 1	34	10	26	9
Ditching-machine	F. Plumb	293,780	Feb. 19	1285	356	26	692
Ditching-machine	A. Purcell	295,281	Mar. 18	1191	330	26	1056
Ditching-machine	G. W. Raymond	292,355	Jan. 22	1685	469	26	324
Ditching-machine. Tile	J. Arthur	295,323	Mar. 18	1244	345	26	1065
Ditching machine. Tile	G. L. Hoehn and F. P. Hilburn	291,511	Jan. 8	627	177	26	119
Doll	S. M. F. Schilling	295,435	Mar. 18	1376	382	26	1092
Domino	J. L. Law	295,023	Mar. 11	851	232	26	982
Door-check	C. R. Bickford	291,466	Jan. 1	502	159	26	101
Door-check	J. Cleland	293,951	Feb. 19	1513	417	26	723
Door-check	W. B. Dager	294,018	Feb. 26	1591	442	26	746
Door-check	L. A. Davis	294,972	Mar. 11	779	216	26	971
Door-check	J. H. Runyan	295,507	Mar. 18	1476	406	26	1109
Door-check. Pneumatic	G. S. Perkins	294,905	Mar. 11	692	193	26	955
Door-closing device	W. A. Holwell	293,326	Feb. 12	722	193	26	573
Door-fastener	O. De Maine	291,162	Jan. 1	186	54	26	35

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Door-fastening device	J. E. Bozell	294,573	Mar. 4	289	80	26	878
Door-hanger	E. Y. Moore	295,501	Mar. 18	1464	404	26	1107
Door-hanger	J. E. Schmid	293,598	Feb. 12	1042	287, 288	26	632
Door-lock	B. Wesselmann	293,548	Feb. 12	984	270	26	622
Door-lock. Sliding	S. S. Peterson	293,593	Feb. 12	1036	285	26	631
Door-plate and mail-receiver. Combined	R. G. Pace and W. J. Wey	295,581	Mar. 25	1581	437	26	1135
Door-pull. Electric	C. Belle	294,642	Mar. 11	615	170	26	940
Door. Sliding	W. S. Voorhis and G. H. Houser	293,991	Feb. 19	1560	430	26	731
Door-spring	W. W. Jackson	294,785	Mar. 11	536	149	26	927
Doors and gates. Automatically operating	L. C. Norton and J. A. Sherman	292,845	Feb. 5	81	22	26	457
Doors. Hanging	C. W. Emerson	295,743	Mar. 25	1784	495	26	1170
Doors. Hanging	A. H. P. Leuf	294,476	Mar. 4	172	78	26	858
Doors of buildings. Mechanism for operating	H. J. Shaw	294,917	Mar. 11	704	196	26	957
Doors. Roller-track mechanism for pendent sliding	E. W. Martin	293,339	Feb. 12	736	196, 197	26	576
Doors. Stay-roller for sliding	W. M. Brinkerhoff	295,345	Mar. 18	1274	353	26	1071
Dovetailing-machine	J. Schmidt	293,097	Feb. 5	395	108	26	513
Dowel-pins or hinge-pins. Sustaining	A. F. Gerald	293,646	Feb. 19	1101	305	26	650
Draft-equalizer	J. Bowers	291,976	Jan. 15	1209	337	26	223
Draft-equalizer	W. P. Grannis	293,008	Feb. 5	284	79	26	494
Draft-equalizer	G. W. Harrington	291,899	Jan. 15	1116	311	26	216
Draft-equalizer	W. B. Hubbard	295,174	Mar. 18	1049	289	26	1030
Draft-equalizer	D. F. Robbins	293,086	Feb. 5	379	103	26	511
Draft-equalizer	J. W. Steel	293,283	Feb. 12	666	178	26	563
Draft-equalizer	J. W. Dalley	291,304	Jan. 1	365	103	26	66
Draft-pins. Fastening device for	J. Dempsey	292,287	Jan. 22	1601	447, 448	26	309
Draft-regulator	W. F. Grassler	291,713	Jan. 8	888	249	26	165
Draft-regulator	L. Y. Lenhart	293,043	Feb. 5	324	90	26	502
Draft-regulator for pipes, flues, and ventilators	J. H. Mitchell	291,380	Jan. 1	452	127	26	62
Drafting implement	R. R. Osgood	295,580	Mar. 25	1579	437	26	1134
Dredge	R. E. Rose	295,202	Mar. 18	1068	299, 300, 301	26	1036
Dredge. Hydraulic	J. H. Anderson	294,303	Feb. 26	1974	540	26	810
Dredge. Rock	I. D. Seabrook	292,371	Jan. 22	1711	477	26	330
Dredger	H. B. Angell	293,932	Feb. 19	1487	409, 410	26	717
Dredging-bucket	J. Menge	294,250	Feb. 26	1907	523	26	797
Dredging-machine	H. C. Carter	292,732	Jan. 29	2180	610	26	419
Dredging-machine	S. Mead	294,400	Mar. 4	78	20	26	843
Dress attachment	E. Whaples	293,387	Feb. 12	807	217	26	589
Dress-protector	E. M. Downing	293,722	Feb. 19	1206	334	26	669
Drier: *See* Bagasse-drier. Clothes-drier. Fruit-drier. Grain-drier. Lumber-drier. Malt-drier. Ore-drier.							
Drill: *See* Breast-drill. Expansible drill. Grain-drill. Oat-drill. Ratchet-drill. Rock-drill. Seed-drill. Well-drill.							
Drill-making machine	E. O. Williams	293,292	Feb. 12	681	181, 182, 427, 428	26	566
Drill-sharpening machine	M. C. Johnson	292,229	Jan. 22	1527		26	296
Drills. Machine for operating	M. C. and C. E. Baker	292,888	Feb. 5	133	36	26	468
Drilling-engine. Rotary	E. L. Sharpneck	294,514	Mar. 4	216	61	26	866
Drilling-machine	J. Barnet	295,329	Mar. 18	1251	347	26	1067
Drilling-machine	R. K. Carpenter	291,876	Jan. 15	1092	304, 305	26	211
Drilling-machine	L. Herrick	293,246	Feb. 12	615	163	26	554
Drilling-machines. Apparatus for shifting	A. Ball	295,395	Mar. 18	1246	345	26	1066
Drilling square holes. Device for	E. H. Bieber	291,137	Jan. 1	155	45	26	30
Drinking-glass	E. L. Moore	293,190	Feb. 5	536	142	26	535
Drop-lights. Friction-clutch for	J. F. Travis and W. H. Freaney	291,816	Jan. 8	999	280	26	184
Drop-press	J. A. Horton	294,237	Feb. 26	1892	518	26	795
Dry-goods box. Shipper's	L. Smith	292,066	Jan. 15	1313	367	26	253
Dummy for displaying clothing	J. R. Palmenberg	291,076	Jan. 1	74	21	26	17
Dumper	S. M. Keibler	291,355	Jan. 1	416	118	26	76
Dust-excluder and window-fastener. Combined	F. H. Moore	292,839	Feb. 5	75	21	26	456
Dust from air. Method of and apparatus for separating	J. M. McIntyre	294,248	Feb. 26	1905	522	26	797
Dust-pan	S. T. Fisher	292,213	Jan. 22	1507	423	26	292
Dust-pan	J. I. Flanagen	292,477	Jan. 29	1847	515	26	363
Dyeing-machine	A. N. Dubois	293,856	Feb. 19	1392	385	26	700
Dynamometer	F. A. Gleason	294,377	Mar. 4	49	13	26	838
Ear-ring	M. Falkenau	293,958	Feb. 19	1520	419	26	724
Ear-ring	B. Hartmann	292,810	Feb. 5	41	11	26	450
Ear-ring	F. W. Moore	293,366	Feb. 12	647	174	26	560
Earth, gravel, &c. Apparatus for transporting and dumping	Q. A. Fisk	291,587	Jan. 8	728	205	26	137
Easel	E. Werner	294,941	Mar. 11	731	204	26	963
Easel	D. K. Woodward	292,086	Jan. 15	1337	375	26	258
Eccentric. Shifting	D. W. Payne and C. R. Williams	294,071	Feb. 26	1671	461	26	758
Egg-beater	W. G. Flanders	291,890	Jan. 15	1106	308	26	214
Egg-beater	H. Z. Gibson	293,648	Feb. 19	1103	306	26	650
Egg-beater	W. Johnson	292,821	Feb. 5	54	14	26	453
Egg-beater	G. A. Chapman	292,986	Feb. 5	257	71	26	499
Egg-carrier	R. H. Harris	292,303	Jan. 22	1490	453	26	312
Egg-carrier	L. J. Wallich and W. B. Rigler	293,606	Feb. 12	1051	291	26	633
Egg-carrier	J. D. De Berry	291,699	Jan. 8	874	245	26	169
Egg-case. Folding							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Egg-case. Folding	S. M. Toay and E. Harris	295,211	Mar. 18	1101	305	26	1039
Egg-holder	W. Kearney	295,648	Mar. 25	1602	461	26	1149
Ejector. Oil-	G. F. Lawrence and A. McDonald	295,502	Mar. 25	1554	431	26	1129
Ejector. Steam-jet	L. Schutte	295,293	Mar. 18	1211	337	26	1059
Elastic fabric	G. C. Moore	291,527	Jan. 8	649	184	26	123
Electric accumulator	G. Philippart	292,762	Jan. 29	2244	623	26	430
Electric battery	C. L. Clarke and J. Leigh	293,563	Feb. 12	1004	277	26	625
Electric battery	I. C. Himmer	292,310	Jan. 22	1627	456	26	314
Electric battery	J. L. Tobin	291,241	Jan. 1	280	79	26	51
Electric cable	R. S. Waring	294,541	Mar. 4	253	70	26	872
Electric cable	R. S. Waring	294,543	Mar. 4	255	70	26	872
Electric cable	R. S. Waring	294,545	Mar. 4	258	71	26	873
Electric cable. Compound	H. Van Hoevenbergh	292,772	Jan. 29	2259	625	26	433
Electric cable. Compound	R. S. Waring	294,536	Mar. 4	245	68	26	871
Electric cable. Compound	R. S. Waring	294,538	Mar. 4	248	69	26	871
Electric cable. Compound	R. S. Waring	295,086	Mar. 11	939	256	26	997
Electric cables. Branching	R. S. Waring. (Reissue.)	10,459	Mar. 11	1006	278	26	1009
Electric cables. Making joint-connections in	R. S. Waring	294,546	Mar. 4	260	71	26	873
Electric cables. Uniting	R. S. Waring. (Reissue.)	10,458	Mar. 11	1005	277	26	1009
Electric circuit	E. Weston	292,718	Jan. 29	2165	603	26	416
					604		
Electric-circuit closer	C. J. Van Depoele	291,648	Jan. 8	809	226	26	151
Electric-circuit conductor	E. Weston	292,717	Jan. 29	2164	603	26	416
Electric-circuit meter	P. G. Russell	291,405	Jan. 1	481	136	26	86
					137		
Electric-circuit protector	J. W. Dyer	292,706	Feb. 5	26	7	26	447
Electric circuits. Device for connecting safety-strips in	E. Weston	292,716	Jan. 29	2163	602	26	416
Electric circuits. Fusible safety-strip for	E. Weston	292,713	Jan. 29	2159	601	26	415
Electric conducting-wires. Machine for laying	H. B. Cobb	293,632	Feb. 19	1086	301	26	647
Electric conductor	A. A. Cowles	292,539	Jan. 29	1940	542	26	377
Electric-conductor case	H. Edmunds, Jr	291,170	Jan. 1	195	55	26	36
Electric-conductor conduit. Undeground	E. T. Starr	291,708	Jan. 8	979	275	26	181
					276		
Electric-conductor system. Underground	T. J. Perrin	294,906	Mar. 11	892	193	26	955
Electric-conductor tip	W. A. Childs and F. Shaw	294,851	Mar. 11	696	174	26	943
Electric conductors. Apparatus for covering	H. D. Staaley	291,239	Jan. 1	278	78	26	51
Electric conductors. Manufacture of	A. A. Cowles	295,232	Mar. 18	1132	312	26	1044
Electric conductors. Underground conduit for	E. Verstraete	294,703	Mar. 4	430	122	26	904
Electric cut-out	W. M. Thomas	291,958	Jan. 15	1168	330	26	229
Electric gas-burners. Tip for	A. T. Smith	292,374	Jan. 22	1714	478	26	331
Electric-generator commutator	H. M. Stevens	295,206	Mar. 18	1094	303	26	1038
Electric implement	A. H. Kinder	295,652	Mar. 25	1667	462	26	1140
Electric-light regulator and cut-out	R. J. Sheehy	295,058	Mar. 11	897	246	26	989
Electric machine. Dynamo-	C. E. Ball	291,973	Jan. 15	1205	336	26	232
Electric machine. Dynamo-	C. M. Ball	294,719	Mar. 4	458	128	26	908
					129		
Electric machine. Dynamo-	W. F. Buckley	292,625	Jan. 29	2051	570	26	395
Electric machine. Dynamo-	T. L. Dennis	295,368	Mar. 18	1301	360	26	1077
					361		
Electric machine. Dynamo-	F. K. Fitch	293,441	Feb. 12	869	235	26	601
Electric machine. Dynamo-	G. W. Fuller	294,458	Mar. 4	149	40, 41	26	855
Electric machine. Dynamo-	W. Hochhausen	294,643	Feb. 26	1629	451	26	752
					452		
Electric machine. Dynamo-	E. R. Knowles and F. E. Idell	292,121	Jan. 15	1379	386	26	265
Electric machine. Dynamo-	A. E. G. Lubke	293,758	Feb. 19	1255	347	26	677
					348		
Electric machine. Dynamo-	C. M. Lungren	294,892	Mar. 11	879	189	26	953
Electric machine. Dynamo-	C. Richter	294,913	Mar. 11	700	195	26	957
Electric machine. Dynamo-	D. A. Schuyler and A. G. Waterhouse.	291,944	Jan. 15	1171	327	26	226
Electric machine. Dynamo-	J. S. Sellon	292,601	Jan. 29	2133	593	26	410
					594		
Electric machine. Dynamo-	R. J. Sheehy	294,688	Mar. 4	420	117	26	901
Electric machine. Dynamo-	E. Thomson	294,094	Feb. 26	1702	468	26	763
Electric machine. Dynamo-	J. Wenström	292,079	Jan. 15	1329	371	26	256
					372		
Electric-machine regulator. Dynamo-	E. H. Amet	292,397	Jan. 22	1741	485	26	335
Electric-machine regulator. Dynamo-	C. E. Ball	294,180	Feb. 26	1829	498	26	783
Electric-machine regulator. Dynamo-	C. L. Buckingham	294,307	Feb. 26	1978	541	26	810
Electric-machine regulator. Dynamo-	W. Hochhausen	294,038	Feb. 26	1615	449	26	749
Electric-machine regulator. Dynamo-	W. Hochhausen	294,039	Feb. 26	1617	449	26	750
Electric-machine regulator. Dynamo-	W. Hochhausen	294,040	Feb. 26	1620	450	26	750
Electric-machine regulator. Dynamo-	C. J. Van Depoele	291,554	Jan. 8	681	193	26	129
Electric-machine regulator. Dynamo-	A. G. Waterhouse	294,169	Feb. 26	1810	495	26	780
Electric-machine regulator. Dynamo-	R. Weston	292,715	Jan. 29	2162	602	26	415
Electric-machine regulator. Dynamo or magneto	F. Bain	291,566	Jan. 8	693	196	26	131
Electric machines. Apparatus for regulating and distributing currents from dynamo-	W. Hochhausen	296,559	Mar. 25	1538	426	26	1126
					427		
Electric machines. Armature-coil for dynamo-	J. J. McTighe	295,789	Mar. 25	1845	513	26	1181
Electric machines. Automatic regulator for dynamo-	A. G. Waterhouse	294,170	Feb. 26	1813	495	26	780
Electric machines. Commutator for dynamo or magneto	F. B. Rae and C. L. Healy	294,270	Feb. 26	1929	529	26	801
Electric machines. Driving-gear for dynamo-	J. W. Boothby	295,614	Mar. 25	1622	448	26	1141
					449		
Electric machines. Exciting-circuit for dynamo-	C. Lever	291,309	Jan. 1	245	68	26	46
Electric machines. Mechanism for driving dynamo-	J. R. Markle and J. B. Wayne	293,482	Feb. 12	913	247	26	609
					248		
Electric messenger. Marine	J. C. Henderson	293,735	Feb. 19	1222	338	26	672
Electric motor	M. Bacon	294,717	Mar. 4	456	127	26	907
Electric motor	W. Bradbury	293,356	Feb. 12	995	273	26	624
Electric motor	A. E. G. Lubke	292,930	Feb. 5	193	53	26	478
Electric motor	L. W. Stockwell	291,636	Jan. 8	793	223	26	149
Electric motor	W. T. Waters	293,929	Feb. 19	1484	408	26	717

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electric-motor regulator	L. W. Stockwell	292,382	Jan. 22	1722	480	26	332
Electric motors. Automatic brake for	W. Hochhausen	294,041	Feb. 26	1624	450	26	751
Electric motors. Current-regulator for	C. J. Van Depoele	291,650	Jan. 8	812	227	26	152
Electric-power-distribution system	E. Thomson	294,095	Feb. 26	1705	469	26	763
Electric-regulator motor	C. J. Van Depoele	294,165	Feb. 26	1805	494	26	779
Electric safety cut-out	C. J. Van Depoele	291,649	Jan. 8	810	226	26	152
Electric signals. Apparatus for transmitting	B. Abdank-Abakanowicz	292,193	Jan. 22	1471	413	26	287
Electric signaling apparatus	L. J. Crossley, W. Emmott, and J. F. Harrison.	292,542	Jan. 29	1945	543	26	378
Electric switch. Automatic	T. A. Connolly	295,356	Mar. 18	1285	356	26	1073
					357		
Electric-wire conduit	N. Randall	291,399	Jan. 1	476	134	26	85
Electric-wire conduit. Underground	C. H. Trask	293,688	Feb. 19	1155	322	26	660
Electric-wire connector	T. S. Stevenson	294,928	Mar. 11	715	200	26	960
Electric wire coupling	G. L. Kitson	295,559	Mar. 25	1550	430	26	1128
Electric wires. Artificial pavement and conduit for	W. Berry and P. Stuart	295,374	Mar. 18	1257	348	26	1068
Electric wires. Conduit for underground	H. B. Cobb	294,365	Mar. 4	30	8, 9	26	835
Electric wires. Sidewalk-curb and surface-case for	R. Wylie	295,710	Mar. 25	1743	484	26	1162
					485		
Electrical circuit-breaker for annunciators and gas-lighting apparatus	T. H. Rhodes	292,586	Jan. 29	2003	557	26	388
Electrical conductor	F. L. Pope	294,148	Feb. 26	1778	488	26	775
Electrical conductor	R. C. Stone	295,207	Mar. 18	1095	303	26	1038
Electrical conductor	G. Doolittle	295,371	Mar. 18	1305	362	26	1077
Electrical-conductor tip	J. Greives and J. H Bloco	291,715	Jan. 8	889	250	26	165
Electrical conductor. Underground	W. J. Philips and G. L. Kitson	293,271	Feb. 12	650	174	26	560
					175		
Electrical conductors. Method of and apparatus for laying branch underground							
Electrical conduits. Apparatus for molding the sections of	D. H. Dorsett, J. E. Morris, and B. Williams.	291,996	Jan. 15	1237	345	26	938
					346		
Electrical connector	S. Ryder	292,180	Jan. 22	1453	408	26	286
Electrical cut-out. Automatic	C. S. Pinkham	294,404	Mar. 4	84	22	26	844
Electrical devices. Apparatus for operating	A. L. Bogart	292,785	Feb. 5	8	3	26	444
Electrical distribution. System of	C. S. Bradley	291,141	Jan. 1	161	47	26	31
Electrical extension-bracket	J. E. Giles	293,318	Feb. 19	713	191	26	571
Electrical generator or motor	T. A. Edison	293,432	Feb. 12	859	233	26	599
Electrical generator or motor	E. Weston	292,719	Jan. 29	2168	604	26	416
Electrical haulage. System of	W. E. Ayrton and J. Perry	295,094	Mar. 11	947	258	26	998
Electrical indicator	E. Weston	292,714	Jan. 29	2160	602	26	415
Electrical indicator and alarm	W. H. Baker	291,483	Jan. 8	590	167	26	113
Electrical indicator and alarm	W. H. Baker	291,484	Jan. 8	592	167	26	113
Electrical meter	T. A. Edison	293,435	Feb. 12	862	234	26	599
Electrical switch	C. S. Shivler	295,445	Mar. 18	1386	385	26	1094
Electrical transmission of power. Method of and apparatus for regulating the	E. Weston	291,445	Jan. 1	529	150	26	92
Electrical transmission of power. System for the	E. Weston	292,721	Jan. 29	2170	604	26	417
					605		
Electrical wire. Manufacture of compound	L. L. Smith	293,532	Feb. 12	965	264	26	619
Electro-dynamic motor	F. J. Sprague	295,454	Mar. 18	1396	387	26	1095
Electro-magnetic helices. Automatic cut-out for	F. L. Pope	294,669	Mar. 4	402	111	26	897
Electro-magnetic machine	J. W. Nystrom	294,066	Feb. 26	1663	459	26	757
Electro-mechanical escapement	H. Van Hoevenbergh	293,925	Feb. 19	1475	407	26	715
Electro-mechanical movement	H. Van Hoevenbergh	293,923	Feb. 19	1471	406	26	714
Electro-mechanical movement	H. Van Hoevenbergh	293,924	Feb. 19	1472	407	26	715
Electrode or element. Battery	E. T. Starr	295,889	Mar. 25	1978	547	26	1204
					548		
Elevator:							
See Cash-carrier elevator. Cotton-elevator. Floating elevator. Hay-elevator. Saw-elevator. Water-elevator.							
Elevator	L. Beroud and E. Walsh	291,835	Jan. 8	1025	286	26	189
Elevator	R. L. Davis	292,995	Feb. 5	270	74	26	491
Elevator	A. Kieckhefer	293,038	Feb. 5	310	88	26	501
Elevator	T. McAdoo	293,050	Feb. 5	334	91	26	503
Elevator	G. A. Saxer	292,684	Jan. 29	2125	591	26	408
Elevator	F. J. Schupp	294,815	Mar. 11	581	161	26	935
Elevator	T. Williams, A. Mauck, and H. A. Williams.	295,135	Mar. 11	999	275	26	1008
					276		
Elevator for bags, &c	A. Conrad	294,015	Feb. 26	1586	440	26	745
					441		
Elevator safety-gate	F. K. Bartlett	292,402	Jan. 29	1830	510	26	350
Elevator safety-stop	E. Saunders	295,678	Mar. 25	1701	471	26	1156
Elevator stop mechanism	F. Scooneas	292,686	Jan. 29	2127	592	26	409
Elevators. Combined automatic floor and safety-clutch for	T. H. Wood	293,390	Feb. 12	812	218	26	591
Elevators. Electric safety device for	J. W. De Castro	293,851	Feb. 19	1383	382	26	699
					383		
Elevators. Safety automatic stop attachment for	O. Brugger	291,838	Jan. 8	1030	287	26	190
					288		
Embossed fabrics. Manufacture of	C. Garnier and P. Depoully	294,731	Mar. 4	471	.....	26	910
Embossing and backing wall-decorating materials. Machine for	W. S. Morton	294,257	Feb. 26	1914	525	26	799
Embroidery-frame	G. A. Brackett	291,870	Jan. 15	1084	302	26	210
Embroidery-machine	J. L. Parks	294,499	Mar. 4	201	56	26	863
Embroidery. Raised	F. H. Holbrook	293,877	Feb. 19	1416	391	26	704
Embroidery-slitting apparatus	J. B. West	291,116	Jan. 1	128	37	26	96
Embroidering. Apparatus for and method of	E. H. Alexander	293,840	Feb. 19	1371	379	26	696
Embroidering-machine	E. Cornely	292,284	Jan. 22	1598	446	26	808
					447		
Embroidering-machine	E. Cornely	292,285	Jan. 22	1600	447	26	809
Emery-wheels. Device for saving the waste from	P. Mathes	294,141	Feb. 26	1773	486	26	774
End-gate	J. Scherer	295,431	Mar. 18	1373	381	26	1091
End-gate. Automatic	T. S. Stewart	295,072	Mar. 11	919	252	26	993
End-gate. Wagon	G. Becker	293,009	Mar. 11	954	260	26	999

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End-gate. Wagon	H. W. Gier and F. T. Fincke	295,750	Mar. 25	1792	497	26	1171
End-gate. Wagon	J. D. Mack	292,931	Feb. 5	195	53	26	478
End-gate. Wagon	H. P. Swensen	292,385	Jan. 22	1726	481	26	333
Engine: *See* Cylinder-engine. Dental engine. Fire-engine. Gas-engine. Gas-motor engine. Hot-air engine. Hot-air or gas engine. Locomotive steam-engine. Oscillating engine. Pumping-engine. Rotary engine. Rotary steam-engine. Steam-engine. Traction-engine. Wind-engine.							
Engine	S. N. Silver	291,543	Jan. 8	667	189	26	126
Engine reversing-link	W. E. Karns	292,018	Jan. 15	1260	353	26	242
Engraving-machine	I. R. Beam	295,853	Mar. 25	1922	531	26	1195
Envelope	G. B. Post	291,079	Jan. 1	77	22	26	17
Envelope	E. J. Trum	295,598	Mar. 25	1599	443	26	1138
Envelope-machine	H. A. Mann, Jr.	291,614	Jan. 8	768	215, 216	26	144
Envelope or folding card	C. Sneider	295,450	Mar. 18	1393	386	26	1095
Eraser. Slate-	W. M. Whiting	294,295	Feb. 26	1963	538	26	808
Escapement-wheel	C. Votti	291,432	Jan. 1	517	146	26	93
Evaporating apparatus	M. P. Hayes	295,169	Mar. 18	1044	288	26	1029
Evaporating sirups, &c., and for clarifying the same. Apparatus for	D. D. Powers	293,782	Feb. 19	1288	357	26	682
Evaporator	A. Kayser	291,520	Jan. 8	639	181	26	121
Evaporator. Steam-heated	R. W. Turner	292,768	Jan. 29	2255	624	26	432
Excavating-machine	H. C. Carter	292,468	Jan. 29	1838	513	26	361
Excavating-machine	T. Clark	295,592	Mar. 25	1498	414	26	1119
Excavating-machine. Hydraulic	S. M. Mansfield	292,024	Jan. 15	1266	354	26	243
Excavator	A. J. Snider and A. L. Kulp	295,451	Mar. 18	1394	386	26	1095
Excavator and embankment-builder. Earth-	M. J. Mulvihill and J. D. Tinney	295,128	Mar. 11	985	270, 271	26	1005
Excavator and land-leveler	B. M. Hague	292,535	Jan. 29	1963	547	26	381
Excavator, separator, and assorter. Sand and gravel	N. W. Godfrey	294,867	Mar. 11	649	180, 181	26	947
Expansible drill	O. Allen	294,302	Feb. 26	1973	539	26	809
Extractor: *See* Cartridge ring-extractor. Spike-extractor. Staple-extractor. Tenon-extractor.							
Eye-guard. Flexible air-tight	D. Genese	295,242	Mar. 18	1142	315	26	1045
Eyeglasses	I. Fox	292,479	Jan. 29	1849	515	26	363
Eyeglasses	J. S. Spencer	292,959	Feb. 5	225	62	26	494
Eyeglasses	D. L. Tice	292,073	Jan. 15	1320	369	26	254
Eyelet	C. K. Pickles	294,265	Feb. 26	1924	527	26	800
Eyelet-stitching machine	C. J. A. Sjoberg	291,855	Jan. 8	1053	294, 295	26	194
Fabric. Compound	F. H. Holbrook	293,878	Feb. 19	1417	391	26	705
Fan. Blast or exhaust	G. M. Capell and G. S. Macbean	291,493	Jan. 8	603	170	26	115
Fan. Rotary	C. E. Tunelius	293,286	Feb. 12	670	179	26	564
Fare-box	J. F. Goodridge	294,462	Mar. 4	155	42	26	856
Fare-box	T. B. Stewart	293,811	Feb. 19	1330	369	26	689
Fare-register	H. Marshall	295,781	Mar. 25	1833	510	26	1180
Fare-register	J. H. Rose	295,201	Mar. 18	1087	299	26	1036
Fare register or recorder	R. M. Rose	295,051	Mar. 11	888	243	26	988
Farm-gate	C. J. Doane	291,994	Jan. 15	1234	344	26	237
Farm-gate	W. C. Kleker	291,059	Jan. 1	53	15, 16	26	13
Fastening-clasp	L. Hill	293,247	Feb. 12	616	164	26	555
Fastening for wearing-apparel	P. Ladin	293,041	Feb. 5	323	89	26	501
Fatty acids. Solidifying liquid or semi-liquid	W. F. M. McCarty	292,609	Jan. 29	2108	.....	26	405
Faucet	A. A. Bennett	291,135	Jan. 1	152	44, 45	26	30
Faucet	J. H. Dorgan	291,883	Jan. 15	1099	306, 307	26	212
Faucet	P. Huff	292,489	Jan. 29	1864	521	26	366
Faucet	J. N. Knapp	292,273	Jan. 22	1532	429	26	296
Faucet and tap valve. Combined	K. C. Gillette	294,610	Mar. 4	331	92	26	885
Faucet attachment	L. Dankhoff	291,161	Jan. 1	185	53	26	35
Faucet-screw	M. O'Connor	295,794	Mar. 25	1850	514	26	1183
Faucet. Self-closing	S. and S. L. Barker	291,668	Jan. 8	836	234	26	156
Faucet-socket	F. G. Kincaid and C. A. Chandler	291,603	Jan. 8	751	212	26	141
Feed-bag	J. W. Gedney	293,004	Feb. 5	281	78	26	493
Feed-bag for horses	G. W. Horne	293,250	Feb. 12	619	165	26	555
Feed-bag ventilator	F. Wheaton	294,421	Mar. 4	108	28	26	847
Feed-cutter	C. C. Smalley	292,192	Jan. 22	1455	408, 409	26	285
Feed mechanism	N. P. and J. W. Lehr	294,739	Mar. 4	479	134	26	911
Feed-water heater	F. J. Korte	293,889	Feb. 19	1429	395	26	707
Feed-water heater	W. Rollar	291,538	Jan. 8	663	188	26	125
Feed-water heater	B. Webster	295,891	Mar. 25	1982	548	26	1205
Feed-water heater and purifier	J. H. Berkshire	293,692	Feb. 19	1073	297	26	645
Feed-water heating and purifying apparatus	N. A. T. Jones	294,786	Mar. 11	537	149	26	927
Feed-water purifier	W. K. Stevens	293,537	Feb. 12	971	265	26	619
Feed-water regulator	D. C. Walter	294,705	Mar. 4	441	123	26	904
Feed-water regulator and alarm	P. Brown and C. W. Johnston	292,435	Jan. 22	1796	501	26	346
Felly-boring and spoke-tenoning machine	E. M. Jenkins	294,628	Mar. 4	353	98	26	889
Felly-planing machine	S. T. Kennan	292,752	Jan. 29	2227	619	26	427
Felt bodies. Manufacture of smooth-faced napless	C. Vero and J. Everitt	291,431	Jan. 1	516	.....	26	93
Fence	L. A. Baker	294,106	Feb. 26	1718	472	26	766
Fence	I. M. Brown	294,721	Mar. 4	402	129	26	908
Fence	J. A. Grove	293,575	Feb. 12	1017	280	26	627
Fence	J. L. Manlove	292,823	Jan. 15	1205	354	26	243
Fence	J. W. Messenger	293,342	Feb. 12	740	198	26	577
Fence	F. Schmitz	295,679	Mar. 25	1702	471	26	1156

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fence	N. Werts and W. Spicer	293,547	Feb. 12	983	269	26	622
Fence	W. F. and G. M. Zahniser	294,494	Mar. 4	111	29	26	848
Fence. Barbed	W. E. Brock	294,963	Mar. 11	757	211	26	967
Fence. Barbed	W. K. Gore	294,612	Mar. 4	333	92	26	885
Fence fastener. Wire-	C. E. Griffith	294,615	Mar. 4	336	93	26	886
Fence. Flood-	E. S. Garrett	293,003	Feb. 5	280	78	26	493
Fence. Flood-	W. Hodgen	291,346	Jan. 1	406	115	26	74
Fence. Flood-	I. McDougall	292,757	Jan. 29	2235	620, 621	26	429
Fence. Iron	T. Rogers	292,859	Feb. 5	98	27	26	461
Fence. Iron	T. Rogers	292,860	Feb. 5	99	28	26	461
Fence. Iron	T. Rogers	293,673	Feb. 19	1133	316, 317	26	656
Fence. Iron	T. Rogers	293,674	Feb. 19	1137	317	26	657
Fence machine. Barb-	C. C. Hill	291,902	Jan. 15	1118	312, 313, 355, 356	26	216
Fence machine. Barb-wire	M. A. Penney	293,778	Feb. 19	1282	391, 392	26	681
Fence. Portable	F. C. Renner	292,138	Jan. 15	1399	391, 392	26	268
Fence-post	E. D. Miner	294,493	Mar. 4	196	55	26	862
Fence-post	J. B. Ross	294,508	Mar. 4	211	59	26	865
Fence-post	F. S. Smith	292,141	Jan. 15	1402	393	26	269
Fence-post	R. J. Carson	293,225	Feb. 12	549	155	26	550
Fence-post. Iron or steel	J. D. Van Bibber	293,267	Feb. 12	671	180	26	564
Fence-staple driver	J. E. Pierce	295,501	Mar. 25	1860	517	26	1184
Fence stretcher and splicer. Wire-	J. H. Coon	292,205	Jan. 22	1490	419	26	290
Fence-wire. Applying barbs to	T. C. Lord	293,584	Feb. 12	1026	289	26	629
Fence-wire barb	A. W. Stevens	291,420	Jan. 1	503	141	26	90
Fence-wire. Barbed	H. Darlington	295,114	Mar. 11	970	264	26	1002
Fence-wire. Device for connecting and stretching	E. S. Lenox	295,565	Mar. 25	1561	432	26	1130
Fence-wire fastening	E. S. Lenox	295,566	Mar. 25	1561	432	26	1130
Fence-wire. Machine for making barbed	A. J. Upham	295,134	Mar. 11	997	274, 275	26	1007
Fence-wire. Manufacturing barbed	C. C. Hill	291,903	Jan. 15	1123	313	26	217
Fence wires and boards. Fastener for	C. E. Griffith	293,009	Feb. 5	285	79	26	494
Fence-wires. Machine for stretching and removing	J. N. Killough	291,743	Jan. 8	920	258	26	170
Fences. Machine for making wire and slat	W. Van Horn	293,382	Feb. 12	800	215	26	588
Fences. Strand-wire for barbed	H. B. Scott	292,688	Jan. 29	2130	592	26	400
Fencing. Barbed metal-strip	W. E. Brock	293,411	Feb. 12	837	226	26	595
Fencing. Barbed-wire	W. E. Brock	293,412	Feb. 12	838	226	26	595
Fencing. Guard for wire	R. Boone, Jr.	294,572	Mar. 4	929	80	26	878
Fencing. Machine for barbing metallic	H. L. Arnold	294,105	Feb. 26	1715	472	26	765
Fencing. Machine for making barb-link	F. P. Cady	292,406	Jan. 22	1754	480	26	338
Fermenting-room in distilleries	F. W. Wolf	293,294	Feb. 12	684	182	26	566
Ferro-cyanides. Manufacture of	G. De Vigne	291,163	Jan. 1	187	.....	26	35
Ferrule	G. E. Hopkins	295,399	Mar. 18	1339	373	26	1084
Ferrules. Machine for making coiled-wire	J. Crowfoot	291,496	Jan. 8	607	171	26	116
Fertilizer	D. R. Castleman	292,470	Jan. 29	1841	.....	26	361
Fertilizer-distributer	A. Mekenney	292,672	Jan. 29	2119	587	26	406
Fertilizer-distributer	A. Reger	292,852	Feb. 5	88	24	26	459
Fertilizers. Apparatus for making	A. Von Podewils	295,695	Mar. 25	1721	476, 477, 478, 479	26	1159
Fertilizing-machine	G. W. Harkey	295,387	Mar. 18	1324	369	26	1081
Fiber-drying machine	F. G. and A. C. Sargent	294,510	Mar. 4	213	60	26	866
Fibers from fiber-bearing substances. Machine for obtaining	E. L. Lowe, Jr	292,240	Jan. 22	1545	432, 433	26	299
Fibers of plants. Machine for extracting and cleaning	P. Cohn	293,422	Feb. 12	847	229	26	597
Fifth-wheel	M. J. Rogers	294,915	Mar. 11	702	196	26	957
Fifth-wheel	W. H. Stickle	295,458	Mar. 18	1406	388, 389	26	1097
File	G. Custer	295,487	Mar. 18	1452	400	26	1105
File. Bill and letter	S. H. Fish	294,214	Feb. 26	1867	510	26	789
File-box	E. W. Byrn	291,574	Jan. 8	705	198	26	132
File-box	F. M. Senter	292,692	Jan. 29	2135	595	26	410
File box. Paper-	F. W. Pratt	294,268	Feb. 26	1926	528	26	801
File. Extension-	J. Gross	292,484	Jan. 29	1856	518	26	364
File-holder	W. H. Foster	293,645	Feb. 19	1100	305	26	650
File holder. Paper-	A. C. Schooley	294,279	Feb. 26	1940	532	26	804
File. Letter or bill	O. C. Mackenzie	291,752	Jan. 8	927	260	26	171
File. Letter or paper	W. R. Havens	295,391	Mar. 18	1327	370	26	1092
File. Paper-	L. A. McCord	294,651	Mar. 4	386	107	26	894
File. Paper-	C. W. Sherwood	295,591	Mar. 25	1591	440	26	1136
File. Paper-	M. Smith	291,237	Jan. 1	277	78	26	50
File. Paper-	W. Ball	291,863	Jan. 15	1075	300	26	207
Filter	E. L. Barber	295,327	Mar. 18	1249	346	26	1066
Filter	J. Durel	292,631	Jan. 29	2056	572	26	396
Filter	J. W. Hyatt	293,742	Feb. 19	1230	340, 341	26	673
Filter	J. W. Hyatt	293,743	Feb. 19	1231	341	26	673
Filter	J. W. Hyatt	293,744	Feb. 19	1233	342	26	674
Filter	J. W. Hyatt	293,745	Feb. 19	1234	342	26	674
Filter	J. T. A. Lewis and C. A. Wolff	294,244	Feb. 26	1899	520	26	796
Filter	J. Toland	291,550	Jan. 8	676	192	26	128
Filter and cooler. Combined water	F. E. Cady	293,562	Feb. 12	1003	276, 277	26	625
Filter-case	E. S. Rich	293,519	Feb. 12	954	260	26	616
Filter. Floating	J. H. Breese	294,285	Jan. 1	335	94	26	61
Filter for water-coolers	A. Fiske	291,889	Jan. 15	1105	308	26	213
Filter. Water-	J. E. Heath	292,912	Feb. 5	164	45	26	473
Filter. Water-	J. Johnson	294,133	Feb. 26	1761	483, 484	26	772

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Filter. Water	J. Reid	291,083	Jan. 1	81	23	26	18
Filtering apparatus	J. W. Hyatt	293,750	Feb. 19	1246	{344 345}	26	676
Filtering material	I. S. Hyatt	293,741	Feb. 19	1229	340	26	673
Filtering or straining apparatus. Centrifugal	S. M. Lillie. (Reissue)	10,457	Mar. 4	493	138	26	914
Filtering water	J. W. Hyatt	293,892	Feb. 19	1420	393	26	705
Filtering water	J. W. Hyatt	293,893	Feb. 19	1421	393	26	706
Filtration	J. W. Hyatt	293,746	Feb. 19	1235	342	26	674
Filtration	J. W. Hyatt	293,747	Feb. 19	1238	342	26	675
Filtration	J. W. Hyatt	293,748	Feb. 19	1240	{343 344}	26	675
Filtration	J. W. Hyatt	293,749	Feb. 19	1245	344	26	675
Finger-ring	H. Henrich	293,874	Feb. 19	1413	390	26	704
Finger-ring	H. Henrich	293,875	Feb. 19	1414	391	26	704
Finger-ring	C. Staiger	293,985	Feb. 19	1552	427	26	729
Finger-ring	O. Thie	292,963	Feb. 5	229	63	26	484
Finger-ring. Adjustable	B. Lewkowitz	293,044	Feb. 5	325	90	26	502
Finger-ring gage	F. D. McDowell	291,373	Jan. 1	438	124	26	80
Finger-rings, bracelets, &c. Lock for adjusting	F. J. Schindler	294,277	Feb. 26	1938	532	26	803
Fire-alarm and fire-extinguisher system. Electric	C. E. Buell	294,008	Feb. 26	1578	{437 438}	26	743
Fire-alarm. Automatic	J. Hill	295,760	Mar. 25	1804	501	26	1174
Fire-alarm. Electric	J. Hill	295,759	Mar. 25	1800	{500 501}	26	1173
Fire and police alarm. Combined	J. C. Henry	295,249	Mar. 18	1153	{318 319}	26	1048
Fire-arm	D. S. Cole	291,153	Jan. 1	173	51	26	33
Fire-arm. Breech-loading	W. E. Budd	291,980	Jan. 15	1213	339	26	234
Fire-arm. Breech-loading	N. R. Davis	293,719	Feb. 19	1203	333	26	669
Fire-arm. Breech-loading	F. Schrand	295,437	Mar. 18	1378	{382 383}	26	1092
Fire-arm. Breech-loading	H. Updegraff	291,111	Jan. 1	120	34	26	24
Fire-arm. Electric	A. T. Brown	291,288	Jan. 1	338	95	26	61
Fire-arm magazine	J. P. Lee and L. P. Dias	295,563	Mar. 25	1556	431	26	1129
Fire-arm. Magazine	J. M. Clough	294,581	Mar. 4	299	82	26	879
Fire-arm. Magazine	W. H. Elliot	293,315	Feb. 12	708	189	26	570
Fire-arm. Magazine	J. Leemann	295,564	Mar. 25	1557	432	26	1129
Fire-arm. Magazine	W. Mason	295,031	Mar. 11	861	236	26	983
Fire-arm shield	J. Hunter	295,013	Mar. 11	840	230	26	980
Fire-arm sight	W. Plettner	295,425	Mar. 18	1367	379	26	1050
Fire-arm sighting attachment	H. C. Cushing	294,770	Mar. 11	520	145	26	924
Fire-arms. Recoil mechanism for	J. P. Onderdonk	294,402	Mar. 4	82	21	26	843
Fire. Device for cutting off the flow of gas, &c., in case of	J. A. Laemle	291,061	Jan. 1	55	16	26	13
Fire-engine	W. F. Baldwin	292,276	Jan. 22	1591	444	26	306
Fire-escape	N. R. Baar, C. J. and I. R. Coe	293,215	Feb. 12	577	152	26	548
Fire-escape	B. F. Bennett	295,221	Mar. 18	1116	308	26	1041
Fire-escape	D. Bennett	293,137	Feb. 5	463	123	26	523
Fire-escape	V. Bessier	295,477	Mar. 18	1433	396	26	1102
Fire-escape	G. M. Bird	293,845	Feb. 19	1378	380	26	698
Fire-escape	Y. W. Blanchard	295,723	Mar. 25	1757	488	26	1165
Fire-escape	F. A. Bone	294,109	Feb. 26	1720	473	26	766
Fire-escape	N. H. Borgfeldt	294,360	Mar. 4	25	7	26	833
Fire-escape	R. W. Bradley	293,707	Feb. 19	1183	329	26	665
Fire-escape	T. Brooke	292,981	Feb. 5	252	69	26	488
Fire-escape	R. A. Bush	294,848	Mar. 11	623	173	26	942
Fire-escape	S. D. Butler	293,627	Feb. 19	1060	299	26	646
Fire-escape	J. M. Chesnut	295,112	Mar. 11	967	264	26	1001
Fire-escape	A. L. Clark	292,411	Jan. 22	1761	490	26	339
Fire-escape	R. P. Clark	292,969	Feb. 5	259	71, 72	26	490
Fire-escape	A. S. Carrier	292,414	Jan. 22	1764	491	26	340
Fire-escape	H. E. Doren	292,548	Jan. 29	1956	545	26	379
Fire-escape	R. E. Downie	295,527	Mar. 25	1503	415	26	1119
Fire-escape	E. Dyre	294,860	Mar. 11	641	178	26	945
Fire-escape	A. Fischer	291,319	Jan. 1	382	107	26	69
Fire-escape	W. H. Glenn	291,333	Jan. 1	395	111	26	72
Fire-escape	L. J. Gott	295,631	Mar. 25	1640	455	26	1144
Fire-escape	W. N. Griswold	293,322	Feb. 12	717	192	26	572
Fire-escape	J. T. Guthrie	292,903	Feb. 5	33	9	26	449
Fire-escape	G. R. Jenkins	294,629	Mar. 4	354	98	26	899
Fire-escape	W. Jensen	294,239	Feb. 26	1894	518	26	795
Fire-escape	E. R. Johnson	294,879	Mar. 11	650	184	26	949
Fire-escape	J. A. Johnson	291,910	Jan. 15	1131	315	26	219
Fire-escape	S. J. Joyce	293,177	Feb. 5	518	137	26	532
Fire-escape	H. Kafka	291,198	Jan. 1	234	64, 65	26	42
Fire-escape	C. Kehr	291,601	Jan. 8	745	210	26	140
Fire-escape	W. F. Kientoff and P. Bertemes	291,060	Jan. 1	54	16	26	13
Fire-escape	G. M. Kiu	292,925	Feb. 5	57	15, 16	26	459
Fire-escape	C. A. Knauer	292,322	Jan. 22	1642	459	26	316
Fire-escape	N. Lennards	292,328	Jan. 22	1648	461	26	317
Fire-escape	T. P. Letton	294,887	Mar. 11	674	188	26	952
Fire-escape	A. W. Lozier	295,570	Mar. 25	1566	434	26	1131
Fire-escape	A. S. Miller	291,378	Jan. 1	447	{126 127}	26	81
Fire-escape	W. M. Miller	295,127	Mar. 11	984	270	26	1005
Fire-escape	O. G. Moore and M. H. Marcus	291,756	Jan. 8	932	261	26	172
Fire-escape	S. Norris	292,134	Jan. 15	1395	390	26	268
Fire-escape	R. B. Parrott	295,047	Mar. 11	879	241	26	986
Fire-escape	T. B. Peacock	293,072	Feb. 5	364	99	26	508
Fire-escape	E. A. C. Petersen	294,908	Mar. 11	696	194	26	956
Fire-escape	D. C. Pierce	291,532	Jan. 8	654	{185 186}	26	124
Fire-escape	D. C. Pierce	293,352	Feb. 12	754	201	26	579
Fire-escape	H. Poole	295,278	Mar. 18	1188	329	26	1055

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fire-escape	H. Resley	295,430	Mar. 18	1372	{380 381}	26	1091
Fire-escape	J. C. Richberg and D. Brobston	292,855	Feb. 5	94	26	26	460
Fire-escape	C. A. Roberts	294,275	Feb. 26	1935	531	26	803
Fire-escape	M. Scholl	295,203	Mar. 18	1091	301	26	1037
Fire-escape	J. Steinwender	293,680	Feb. 19	1145	319	26	659
Fire-escape	R. Stevenson	292,767	Jan. 29	2254	624	26	431
Fire-escape	J. Stever	294,522	Mar. 4	225	63, 64	26	868
Fire-escape	J. Stever	294,523	Mar. 4	226	64	26	868
Fire-escape	H. C. Stockham and J. Adams	291,240	Jan. 1	280	78	26	51
Fire-escape	J. C. Stoddard	292,265	Jan. 22	1578	441	26	304
Fire-escape	S. J. Stofer	291,423	Jan. 1	508	143	26	91
Fire-escape	C. M. Travis and C. H. Stibolt	292,148	Jan. 15	1409	395	26	270
Fire-escape	F. J. Underwood	292,769	Jan. 29	2255	624	26	432
Fire-escape	J. Usborne	293,689	Feb. 19	1156	323	26	661
Fire-escape	C. A. Van Wagener	295,212	Mar. 18	1102	305	26	1039
Fire-escape	F. W. Voigt	291,245	Jan. 1	284	80	26	52
Fire-escape	C. Von der Linden	295,405	Mar. 18	1414	391	26	1098
Fire-escape	A. Walker	295,313	Mar. 18	1233	342	26	1063
Fire-escape	G. W. Watts	291,441	Jan. 1	536	149	26	95
Fire-escape	W. Wise	295,320	Mar. 18	1241	344	26	1064
Fire-escape	W. S. French	291,326	Jan. 1	389	109	26	70
Fire-escape and alarm	I. G. Morgan	291,481	Jan. 1	581	{163 164}	26	104
Fire-escape and hook-and-ladder carriage	J. B. Robertson	291,940	Jan. 15	1167	326	26	225
Fire-escape and self-preserver	M. E. Jones	294,892	Mar. 11	667	186	26	950
Fire-escape. Bed-spring	C. Murdock	293,191	Feb. 5	536	142	26	535
Fire-escape bracket	P. Kingston	294,625	Mar. 4	359	100	26	890
Fire-escape. Extensible	A. J. Bartlett	292,531	Jan. 29	1926	539	26	375
Fire-escape ladder	A. M. Downing	293,153	Feb. 5	479	128	26	526
Fire-escape ladder. Folding	F. W. Hofele	294,319	Feb. 26	1995	{545 546}	26	813
Fire-escape. Permanent	T. Clarke	291,688	Jan. 8	860	240	26	160
Fire-escape. Portable	T. Clarke	291,689	Jan. 8	862	241	26	160
Fire-escape protector and supporter	H. Fairbanks	291,586	Jan. 8	727	204	26	136
Fire extinguisher and alarm	C. E. Buell	294,308	Feb. 26	1980	541	26	811
Fire-extinguisher. Automatic	C. L. Horack	292,432	Jan. 22	1793	500	26	346
Fire-extinguishing apparatus	J. K. J. Foster	291,324	Jan. 1	387	108	26	70
Fire-kindler mold	C. E. Paddock	293,773	Feb. 19	1277	353	26	681
Fire-pot and lining	S. T. Bryce	292,983	Feb. 5	254	69	26	489
Fire-proof compound	L. Felldin	291,176	Jan. 1	201	.....	26	37
Fire-proof sheet	J. Nagel	292,037	Jan. 15	1280	358	26	246
Fish-box	C. A. Bergtold	295,517	Mar. 25	1493	412	26	1118
Fish. Live-box for	R. A. Lindsay	292,123	Jan. 15	1381	387	26	265
Fish-net lines. Machine for casting leads on	E. Mannis	295,262	Mar. 18	1170	324	26	1051
Fish-package	R. S. Jennings	291,195	Jan. 1	229	63, 64	26	41
Fishing-fly book	C. G. Levison	294,888	Mar. 11	675	188	26	952
Fishing-rod reel-fastening	G. L. Bailey	294,429	Mar. 4	116	30	26	849
Flanging-machine	R. C. Nugent	291,620	Jan. 8	775	{217 218}	26	145
Flask: *See* Molder's flask.							
Floating elevator	W. S. Brice	293,625	Feb. 19	1077	{298 299}	26	645
Flood-gate	J. A. Galloway	291,327	Jan. 1	390	109	26	71
Floor	C. R. Brothwell	295,461	Mar. 18	1441	398	26	1104
Floor-jack	T. L. Wilber	291,824	Jan. 8	1010	283	26	186
Floor-mat	S. Toffier	295,839	Mar. 25	1904	527	26	1192
Flour-bolt brush	T. McCudden	294,896	Mar. 11	683	190	26	954
Flour, bran, &c. Packer for	J. and B. C. Frysinger	293,859	Feb. 19	1395	386	26	701
Flour-dressing machine	J. M. Schutz	292,259	Jan. 22	1571	439	26	303
Flour-packing machine	A. C. Hartzoke	291,593	Jan. 8	735	207	26	138
Flue and pipe welder and fitter	J. C. Fleck and W. Herring	291,707	Jan. 8	882	248	26	164
Fluid-meter	H. Frost	293,317	Feb. 12	711	{190 191}	26	571
Fluids and oils. Treating volatile and inflammable	S. M. Eiseman	294,978	Mar. 11	786	.....	26	972
Fly-paper. Manufacture of	E. F. Baker	295,220	Mar. 18	1115	.....	26	1041
Fly-screen	J. I. Spencer	293,915	Feb. 19	1462	404	26	713
Fly-wheel	R. W. Whitney	295,215	Mar. 18	1105	306	26	1040
Fodder-cutter, corn-sheller, and feed-mill. Combined	I. P. Woodard	294,423	Mar. 4	110	29	26	848
Fog-alarm	A. H. Sherman	294,918	Mar. 11	705	197	26	958
Foil. Making rolled metallic	H. S. and L. Crooke	294,725	Mar. 4	465	.....	26	909
Folding box	G. Lusby	292,833	Feb. 5	69	19	26	455
Folding box	H. C. Underwood	295,311	Mar. 18	1231	342	26	1063
Folding case	A. Traver	294,938	Mar. 11	725	203	26	961
Folding chair	J. Hill	294,234	Feb. 26	1868	516	26	794
Folding chair	J. S. Mackaye	295,261	Mar. 18	1168	323	26	1050
Folding seat	J. E. Wakefield	293,384	Feb. 12	804	216	26	589
Folding table	E. C. D. Kirkpatrick	292,657	Jan. 29	2068	581	26	402
Folding table	N. H. Long	291,525	Jan. 8	647	184	26	123
Folding table	W. W. Quigley	295,673	Mar. 25	1696	469	26	1155
Folding table	H. Crawford and J. M. Long	295,360	Mar. 18	1292	358	26	1074
Food-cooler. Hoisting	G. W. Wemple and B. W. Child	293,692	Feb. 19	1162	324	26	662
Foot-weight	H. Hammond	295,547	Mar. 25	1532	425	26	1125
Forging hammers. Die for							
Fork: *See* Hay-fork. Hay-tedder fork.							
Form. Adjustable clothing	W. Leigh	295,025	Mar. 11	853	233	26	982
Frame: *See* Chart-frame. Hot-air-register frame. Embroidery-frame. Quilting-frame. Harvester frame. Saw-mill frame.							
Frame for diplomas and credit-cards	A. W. McArthur	291,921	Jan. 15	1149	320	26	922
Fruit and vegetable washer	J. Baker	295,715	Mar. 25	1749	486	26	1163
Fruit-basket fastener	C. H. Johnson	295,017	Mar. 11	845	231	26	981

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fruit cutting and pitting machine	C. Allison	293,841	Feb. 19	1372	379	26	696
Fruit-drier	H. Fitts	291,320	Jan. 1	383	107	26	69
Fruit-drier	C. J. Geiger	295,382	Mar. 18	1319	367	26	1080
Fruit-drier	T. J. Pearce	293,073	Feb. 5	364	99	26	509
Fruit-drying rack	E. M. Bellinger	292,199	Jan. 22	1473	415	26	288
Fruit-jar	G. W. Gomber	295,244	Mar. 18	1145	315	26	1046
Fruit-package cover	J. Harris	293,456	Feb. 12	885	240	26	604
Fruit-picker	F. A. Moore	292,936	Feb. 5	202	55	26	479
Fruit-picker	G. A. Smith	291,792	Jan. 8	971	272	26	180
Fruit-press	B. J. Curry	293,635	Feb. 19	1089	302	26	648
Fruit, vegetable, and meat can	J. Baker	295,716	Mar. 25	1750	486	26	1164
Fuel. Apparatus for feeding and consuming fine	J. Leede	292,237	Jan. 22	1537	430, 431	26	297
Furnace: *See* Blast-furnace. Boiler-furnace. Coking-furnace. Cupola-furnace. Desulphurizing-furnace. Gas-furnace. Gas-producing furnace. Gas-retort furnace. Glass-furnace. Hydrocarbon-furnace. Metallurgical furnace. Ore-furnace. Ore-roasting furnace. Puddling-furnace. Regenerator-furnace. Retort deoxidizing-furnace. Roverberatory ore-furnace. Roasting-furnace. Smoke and gas consuming furnace. Vapor and gas generating furnace.							
Furnace	V. Colllau	295,355	Mar. 18	1284	356	26	1073
Furnace	K. M. Jarvis	293,906	Feb. 19	1532	421	26	726
Furnace	C. McMillan	295,188	Mar. 18	1071	295	26	1033
Furnace	H. C. Williamson	294,556	Mar. 4	273	74	26	875
Furnace fire-grate and frame	H. W. Loveland	293,258	Feb. 12	608	167	26	557
Furnace for burning garbage, roasting ores, &c	G. B. N. Tower	293,821	Feb. 19	1342	373	26	691
Furnace for heating billets	F. H. Daniels	294,370	Mar. 4	37	11	26	836
Furnace for heating blanks	G. H. Webb	291,967	Jan. 15	1198	335	26	231
Furnace for treating ores continuously	A. M. G. Sébillot	292,690	Jan. 29	2132	593	26	410
Furnace-grate	M. C. Jones	292,492	Jan. 29	1869	522	26	367
Furnace-grate	J. A. Price	293,273	Feb. 12	655	175	26	561
Furnace-grate	J. A. Price and D. Wright	293,274	Feb. 12	656	176	26	561
Furnace-grate. Self-clearing	J. C. Jones	292,230	Jan. 22	1529	426	26	296
Furnace-joint	E. C. Condit	292,537	Jan. 29	1938	542	26	377
Furnace-month	T. O'Brien	291,763	Jan. 8	938	263	26	173
Furnaces. Apparatus for consuming smoke in	J. Elliott	293,496	Feb. 12	864	234	26	600
Furnaces. Device for indicating the temperature in annealing	M. A. Lhuissier	292,497	Jan. 29	1874	523	26	368
Furnaces. Fume-condensing attachment for ore-	E. M. Alderman	291,462	Jan. 1	559	158	26	100
Furnaces. Manufacture of non-calcareous linings for metallurgical	J. Reese	292,508	Jan. 29	1885	.....	26	370
Furnaces. Mechanism for introducing tubes into	E. W. Wolfe	291,454	Jan. 1	549	155	26	98
Furnaces. Pig-carrier for blast-	F. W. Gordon	291,507	Jan. 8	624	176	26	119
Furnaces. Revolving cylinder for	S. G. Sackett	293,676	Feb. 19	1140	318	26	658
Furniture. Folding-joint for camp-	P. Latour	291,069	Jan. 1	56	16	26	13
Gaff-support for vessels	G. I. Field	294,980	Mar. 11	789	218	26	972
Gage: *See* Boring-gage. Finger-ring gage. Liquid or water gage. Pipe-threading-machine gage. Plane-bit gage. Plow-gage. Pressure-gage. Saw-mill gage. Sawyer's gage. Splitting-gage. Steam-gage. Thickness-gage.							
Gage	J. H. Fenety	292,551	Jan. 29	1958	546	26	380
Gage attachment for boring-bits, &c	J. Fuller, Sr	294,985	Mar. 11	795	220	26	974
Galvanic battery	H. J. Brewer	291,871	Jan. 15	1085	302	26	310
Galvanic battery	T. J. Howell	292,433	Jan. 22	1794	500	26	346
Galvanic battery	C. Pabst	295,671	Mar. 25	1693	469	26	1154
Galvanic battery	O. C. D. Ross	294,335	Feb. 26	2014	552, 553	26	817
Galvanic-battery cell. Sealed	W. T. McGinnis	295,574	Mar. 25	1574	435	26	1133
Galvanometer	A. K. Eaton	292,161	Jan. 22	1430	401	26	281
Game apparatus	T. Davies	292,899	Feb. 5	148	40	26	470
Game apparatus	G. A. Lilliendahl	292,563	Jan. 29	1973	550	26	382
Game apparatus, calendar, and clock	W. Cooper	294,586	Mar. 4	306	85	26	880
Game apparatus. Pistol-	J. R. Mestier	294,491	Mar. 4	195	54	26	862
Game board and counter	T. Dougherty	295,488	Mar. 18	1432	400	26	1105
Game. Checker and base-ball combination	H. S. Towner	292,709	Jan. 29	2156	600	26	414
Game. Musical	W. L. Hofer	292,312	Jan. 22	1631	456	26	314
Game-register and trump-indicator	G. W. Hyatt	291,349	Jan. 1	410	116	26	75
Games or deals played at cards, &c. Apparatus for checking and registering the number of	G. F. Howard	291,656	Jan. 1	49	14, 15	26	12
Garment attachment	C. D. Spence	294,686	Mar. 4	419	117	26	901
Garment-supporter	T. White	291,252	Jan. 1	292	82	26	53
Garter	R. Mitchell	294,656	Mar. 4	390	109	26	895
Gas and electric-light fixture. Combined	L. Stieringer	294,697	Mar. 4	431	120	26	903
Gas and water regulator	A. E. Cohn	292,536	Jan. 29	1937	541	26	377
Gas apparatus	A. O. Granger	295,118	Mar. 11	974	267	26	1003
Gas. Apparatus for making	A. Wilson	292,081	Jan. 15	1332	372, 373	26	256
Gas. Apparatus for making	A. Wilson	292,082	Jan. 15	1333	373, 374	26	257
Gas. Apparatus for manufacturing	J. L. Stewart. (Reissue)	10,436	Jan. 8	1064	297	26	196
Gas. Apparatus for manufacturing	B. Van Steenbergh	294,534	Mar. 4	242	68	26	871

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gas. Apparatus for manufacturing illuminating	J. J. Shedlock	295,922	Mar. 25	1883	522	26	1188
Gas. Apparatus for producing and burning	L. D. York	294,301	Feb. 26	1971	539	26	809
Gas. Apparatus for the manufacture and delivery of heating and illuminating	W. H. Adams	291,860	Jan. 15	1069	299	26	207
Gas. Apparatus for the manufacture of illuminating	W. H. Douglass	293,854	Feb. 19	1388	383	26	700
Gas. Apparatus for producing	G. W. Billings	292,622	Jan. 29	2047	569	26	395
Gas-burner	A. B. Lipsey	291,480	Jan. 1	580	163	26	103
Gas-burner	J. G. Sanderson	292,766	Jan. 29	2252	624	26	431
Gas-burner for heating purposes	T. Fletcher	291,475	Jan. 1	573	161	26	102
Gas. Condenser-scrubber for	C. W. Isbell	293,884	Feb. 19	1422	393, 394	26	706
Gas. Device for checking the flow of	E. E. Marass	291,369	Jan. 1	435	123	26	79
Gas-engine	J. Charter	292,894	Feb. 5	140	38	26	469
Gas-engine	C. W. King and A. Cliff	293,179	Feb. 5	520	138	26	532
Gas-engine	H. S. Maxim	295,784	Mar. 25	1838	511	26	1180
Gas-engine	J. A. Menck and A. Hambrock	295,415	Mar. 18	1355	377	26	1087
Gas-engine	A. K. Rider	292,178	Jan. 22	1450	407	26	284
Gas engine. Explosive	J. T. Morgan and H. F. Hayden	295,502	Mar. 18	1465	404	26	1107
Gas-furnace	J. T. Morgan and H. F. Hayden	291,386	Jan. 1	460	129, 130	26	83
Gas-furnace for metallurgic and other purposes, and operating the same	D. M. Small	291,948	Jan. 15	1175	328	26	226
Gas-generator	C. E. Ball and C. S. Bradford, Jr	291,463	Jan. 1	560	158	26	100
Gas generator. Electric	J. Flannery	294,602	Mar. 4	321	89	26	883
Gas generator. Hydrocarbon	J. Flannery	294,802	Mar. 11	644	179	26	940
Gas-lighter. Electric	E. L. Shute	295,059	Mar. 11	901	246, 247	26	990
Gas-lighter. Electro-magnetic	E. H. Jenkins	293,330	Feb. 12	726	194	26	574
Gas-motor	H. S. Maxim	291,065	Jan. 1	59	17	26	14
Gas-motor	H. S. Maxim	293,762	Feb. 19	1961	349, 350	26	678
Gas-motor	J. Spiel	291,102	Jan. 1	109	30, 31	26	22
Gas-motor engine	J. Schweizer	292,864	Feb. 5	103	29	26	462
Gas-pressure regulator	L. G. Francis and J. A. Tibbs	295,532	Mar. 25	1511	417	26	1121
Gas. Process of and apparatus for making coal	A. Stamm	291,417	Jan. 1	501	140	26	89
Gas. Process of and apparatus for manufacturing	J. L. Stewart	291,421	Jan. 1	504	141, 142	26	90
Gas. Process of and apparatus for manufacturing	J. L. Stewart	295,832	Mar. 25	1893	525	26	1190
Gas-producer	J. Zellweger	292,394	Jan. 22	1736	484	26	335
Gas-producer	J. Zellweger	292,395	Jan. 22	1738	484	26	335
Gas-producing furnace	N. M. Langdon	294,796	Mar. 11	553	153, 154	26	930
Gas. Purification of coal	J. T. McDougall	292,541	Jan. 22	1665	.....	26	320
Gas-purifier screen or grid	J. Cabot	292,984	Feb. 5	255	70	26	489
Gas-purifying box	C. W. Isbell	291,190	Jan. 1	222	62	26	40
Gas-regulator	P. Keller	292,459	Jan. 22	1822	508	26	351
Gas-retort furnace	I. N. Stanley and W. A. Stedman	293,107	Feb. 5	406	110	26	516
Gas-scrubber	C. W. Isbell	292,491	Jan. 29	1867	522	26	361
Gases and steam. Apparatus for separating liquids from	W. H. Wood and G. Richmond	294,300	Feb. 26	1970	539	26	809
Gases for motors. Heating and controlling	G. E. Haight, W. H. Wood, and W. E. Winsor	292,428	Jan. 22	1789	499	26	345
Gaseous fuel. Apparatus for generating and purifying	S. Lloyd	294,646	Mar. 4	379	105	26	893
Gasoline-vapor burner	T. Johnson	293,032	Feb. 5	314	86	26	499
Gate: *See* End-gate. Farm-gate. Flood-gate. Railway-gate. Railway-crossing gate. Railway-crossing safety-gate. Water-gate.							
Gate	W. Bruce	292,405	Jan. 22	1750	487	26	337
Gate	D. Collins	294,853	Mar. 11	629	174	26	943
Gate	G. M. Custer	294,971	Mar. 11	778	215	26	970
Gate	B. N. Eastman and C. F. Finkbeiner	294,861	Mar. 11	643	179	26	946
Gate	W. J. Hamilton	291,724	Jan. 8	899	252	26	167
Gate	N. B. Huffman	295,641	Mar. 25	1652	458	26	1147
Gate	I. L. Landis	291,205	Jan. 1	241	67	26	43
Gate	I. L. Landis	291,206	Jan. 1	242	67	26	44
Gate	H. H. Lockling	295,569	Mar. 25	1505	433	26	1131
Gate	J. R. Lowe	294,481	Mar. 4	177	49	26	859
Gate	R. E. Mason	293,659	Feb. 19	1116	310	26	653
Gate	D. B. Matlock	294,649	Mar. 4	382	106, 107	26	894
Gate	J. P. B. Rarey	295,428	Mar. 18	1370	380	26	1090
Gate	E. D. Rathbun	295,674	Mar. 25	1696	470	26	1155
Gate	D. E. Robinson	294,077	Feb. 26	1678	462	26	759
Gate	F. X. Schullian	294,814	Mar. 11	580	161	26	935
Gate	W. P. and C. E. Teeter	294,823	Mar. 11	590	164	26	937
Gate	J. Wheeler	292,455	Jan. 22	1818	507	26	350
Gate	T. Williams and W. A. Preston	291,858	Jan. 8	1057	296	26	195
Gate-operating apparatus	H. Ziegler	293,550	Feb. 12	987	270	26	622
Gear. Combined friction and cog	N. W. Speers, Sr	294,819	Mar. 11	587	163	26	936
Gear cutter. Bevel-	H. Bilgram	294,844	Mar. 11	617	171	26	941
Gearing	R. Campbell	292,791	Feb. 5	17	5	26	445
Gearing. Changeable-speed	S. W. Martin	293,761	Feb. 19	1260	349	26	678
Gearing for changing speed	S. N. Gallup	295,536	Mar. 25	1517	419	26	1122
Generator: *See* Electrical generator. Steam-generator. Gas-generator. Magneto-electric generator.							
Glass: *See* Cupping-glass. Drinking-glass.							
Glass. Apparatus for the application of compressed air to the manufacture of	A. A. and L. A. Appert	292,730	Jan. 29	2161	608	26	118
Glass articles. Snap for holding	H. C. Schrader	292,685	Jan. 29	2126	591	26	409
Glass-cutting apparatus	W. H. Walker	295,603	Mar. 25	1606	445	26	1139

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Glass. Decorated plate	J. J. Carroll	293,947	Feb. 19	1508	415	26	722
Glass-furnace	H. Gasmire	294,122	Feb. 26	1746	480	26	770
Glass globe	J. Locke. (Reissue)	10,446	Feb. 5	563	150	26	540
Glass inanlators. Press for molding	E. J. Murphy	291,072	Jan. 1	69	20	26	16
Glass. Manufacture of articles from	C. T. Mustin	293,977	Feb. 19	1543	425	26	728
Glass. Manufacturing	L. Knafft	295,410	Mar. 18	1350	.....	26	1066
Glass-mold	A. J. and J. J. Christie	292,156	Jan. 22	1422	399	26	280
Glass-molding press	A. A. and L. A. Appert	291,265	Jan. 1	313	88	26	57
Glassware. Decorating	J. S. Dignam	293,639	Feb. 19	1094	303	26	649
Glassware. Manufacture of ornamental	W. F. Russell	292,765	Jan. 29	2250	623	26	431
Glassware. Manufacture of spangled	W. Leighton, Jr	292,663	Jan. 29	2100	583	26	404
Glassware. Mold for pressed	W. Haley	292,007	Jan. 15	1250	350	26	241
Glassware, &c. Ornamentation of	V. Blithgen	293,408	Feb. 12	834	225	26	595
Globe and globe-support	J. Davis	292,158	Jan. 22	1425	400	26	280
Glove	S. O. Parker	293,068	Feb. 5	359	97, 98	26	508
Glove-fastener	A. Trouttet	292,450	Jan. 22	1812	505	26	349
Glove-fastening	J. B. Chase	291,877	Jan. 15	1093	305	26	212
Gloves. Die for cutting	G. A. Hathorn	293,872	Feb. 19	1410	390	26	703
Gloves, gaiters, &c. Fastener for	C. A. Pfenning	295,583	Mar. 25	1582	438	26	1135
Glover tower	M. A. Walsh	292,078	Jan. 15	1328	371	26	255
Glue-stock from bones, horn-pitbs, &c. Preparation of	E. F. Cruaé	291,302	Jan. 1	362	.....	26	65
Glycerine from fatty matters. Extracting	E. F. and E. N. Michaud	293,344	Feb. 12	742	.....	26	577
Gold and silver from their ores by combined electrolytic and amalgamating processes. Process of and apparatus for obtaining	M. Body	291,670	Jan. 8	838	235	26	156
Gold and silver ores. Roasting and amalgamating	E. O. and C. Francke	293,157	Feb. 5	492	.....	26	526
Gold by means of alkaline sulphides. Extracting	C. P. Williams	292,605	Jan. 29	2027	.....	26	392
Gong. Electric	J. Redding	293,980	Feb. 19	1546	426	26	729
Governor. Centrifugal	J. Selwig	292,512	Jan. 29	1899	530	26	371
Governor or shifting eccentric	D. W. Payne and C. R. Williams	294,070	Feb. 26	1669	460	26	758
Governor or shifting eccentric. Steam	D. W. Payne and C. R. Williams	294,069	Feb. 26	1668	460	26	757
Governor. Water-wheel	C. J. Shuttleworth	295,060	Mar. 11	902	247	26	990
Grading and ditching machine. Road	J. W. Otterman and C. A. R. L. Ver Genina.	294,330	Feb. 26	2007	550	26	816
Grain and fertilizer distributing apparatus	A. J. Martin	295,655	Mar. 25	1669	463	26	1150
Grain and flour sampler. Automatic	J. M. Finch	291,474	Jan. 1	571	161	26	102
Grain-binder	J. H. Anderson	295,711	Mar. 25	1746	485	26	1163
Grain-binder	E. M. Deane	291,497	Jan. 8	608	{171, 179}	26	116
Grain-binder	J. H. Gordon	293,649	Feb. 19	1104	{306, 307}	26	650
Grain-binder	H. Guyer and L. F. King	292,907	Feb. 5	158	43	26	472
Grain-binder	H. E. Pridmore	292,259	Jan. 22	1561	437	26	302
Grain-binder bundle-carrier	W. Collins	291,985	Jan. 15	1223	341	26	235
Grain-breaker and grinding-mill	J. M. Speer, Jr	291,634	Jan. 8	790	222	26	148
Grain-cleaner	E. Phelps	292,044	Jan. 15	1290	361	26	249
Grain-cleaning machine	F. E. Curtis and W. H. Helfrich	294,295	Feb. 26	1656	506	26	787
Grain-crushing roll	J. M. Case	293,306	Feb. 12	698	186	26	569
Grain-cutting machine	A. Wemple	295,699	Mar. 25	1729	481	26	1160
Grain-drier	W. H. Applegate	293,133	Feb. 5	458	122	26	522
Grain-drier	S. P. Cook	294,367	Mar. 4	35	10	26	835
Grain-drier	R. S. Jennings	295,643	Mar. 25	1654	{458, 459}	26	1147
Grain-drier	M. A. Sutherland	294,287	Feb. 26	1951	535	26	806
Grain-drill	M. F. and T. A. Foley	294,603	Mar. 4	323	90	26	884
Grain-drill	T. D. Gere	291,183	Jan. 1	215	59, 60	26	39
Grain-drill	H. H. Koeller	292,235	Jan. 22	1534	430	26	297
Grain-drill	A. N. Norris	293,062	Feb. 5	348	95	26	506
Grain-drill	H. P. Tenant	291,809	Jan. 8	994	279	26	183
Grain-drill roller attachment	J. M. Wishart and W. F. Buzick	293,389	Feb. 12	811	218	26	590
Grain. Machine for breaking or reducing	A. C. Nagel, E. H. Kaemp, and A. Linnenbrügge.	293,496	Feb. 12	927	252	26	611
Grain-sacker	R. H. Purnell	293,504	Feb. 12	1037	286	26	631
Grain-scourer	C. M. Gilbert	293,159	Feb. 5	485	130	26	527
Grain scourer and cleaner	R. H. Griffiths	294,225	Feb. 26	1879	514	26	792
Grain, &c. Separator for	F. L. Kidder	292,656	Jan. 29	2087	581	26	402
Grain-shoveler. Automatic	J. B. Pugh	294,333	Feb. 26	2011	552	26	817
Granary	R. M. Grier	293,574	Feb. 19	1016	279	26	627
Grapnel	H. C. Chester	295,359	Mar. 18	1281	355	26	1072
Grate	L. Baunister	291,864	Jan. 15	1076	300	26	208
Grate	D. M. Graham	292,215	Jan. 22	1509	424	26	293
Grate	J. G. Smith	295,063	Mar. 11	907	248	26	991
Grate-bar	W. H. Cambry	291,292	Jan. 1	348	98	26	63
Grate-bar	J. Mailer	292,337	Jan. 22	1661	463	26	319
Grater. Nutmeg	L. J. Church	295,736	Mar. 25	1774	493	26	1168
Greenhouse	E. M. Wood	293,696	Feb. 19	1166	{325, 326}	26	662
Grinding apparatus	J. S. Dronsfield	292,290	Jan. 22	1604	448	26	309
Grinding-machine	J. B. H. Leonard	291,609	Jan. 8	759	{213, 214}	26	143
Grinding-machine	J. H. Reed	291,537	Jan. 8	602	{187, 188}	26	125
Grinding-mill	J. Q. Adams	292,612	Jan. 29	2036	566	26	393
Grinding-mill	J. H. Bear	294,956	Mar. 11	749	209	26	966
Grinding-mill	W. E. Gorton	292,746	Jan. 29	2214	{616, 617}	26	425
Grinding-mill	D. Hess	294,735	Mar. 4	474	{132, 133}	26	910
Grinding-mill	H. Hungerford	295,764	Mar. 25	1809	502	26	1175
Grinding-mill	G. and A. Raymond	295,049	Mar. 11	882	242	26	987
Grinding-mill	E. Rhodes	294,673	Mar. 4	407	{112, 113}	26	898
Grinding-mill	S. C. Schofield	292,238	Jan. 22	1509	438	26	303
Grinding-mill	F. Wilson	292,524	Jan. 29	1914	536	26	373
Grinding-mill feed mechanism	E. C. Clark and A. Dewey	291,031	Jan. 1	21	6	26	6

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Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
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Grinding-mill. Roller	W. Ager	291,018	Jan. 1	3	1, 2	26	3
Grinding-mill roller	G. Van Name	291,654	Jan. 8	920	229	26	153
Grinding roll-bars. Device for	C. J. Bradbury	291,469	Jan. 1	566	160	26	101
Grindstone	E. R. Mason	292,242	Jan. 22	1548	433	26	299
Grindstone-dressing machine	F. Trier	295,081	Mar. 11	931	{254, 255}	26	996
Grindstone-truing machine	F. Trier	293,203	Feb. 5	550	{146, 147}	26	538
Guard: *See* Buckle-guard. Clutch-guard. Handle-guard. Hatchway-guard. Life-guard. Molding-machine guard. Molding-machine safety-guard. Rein-guard. Saw-guard.							
Guide-plate. Luminous	S. T. Ayres	292,090	Jan. 15	1341	376	26	258
Gun. Bomb	P. Cunningham	294,017	Feb. 26	1590	441	26	745
Gun-carriage	H. Gruson	295,245	Mar. 18	1146	{315, 316}	26	1046
Gun-carriage. Armor-plated	H. Gruson and M. Schumann	295,246	Mar. 18	1147	{316, 317}	26	1046
Gun. Magazine	A. H. Russell	295,285	Mar. 18	1196	332	26	1057
Gun. Magazine	A. H. Russell	295,286	Mar. 18	1199	333	26	1057
Gun-wad	M. S. Alexander	294,177	Feb. 26	1622	497	26	782
Gun-wad	J. W. Dennis	295,235	Mar. 18	1135	313	26	1044
Gun-wad	J. W. Dennis	295,234	Mar. 18	1133	312	26	1044
Gun-wad retainer	N. R. Davis	294,772	Mar. 11	921	145	26	925
Guns. Barrel-lock for breakdown	M. Campbell	294,309	Feb. 26	1982	541	26	811
Hair-crimper	H. P. Stultz	293,372	Feb. 12	785	210	26	585
Hair-dressing and wash for silks, laces, &c	J. P. Wathier	293,127	Feb. 5	450	120	26	521
Hair-spring studs. Gage for	E. Barnard	293,999	Feb. 26	1569	433	26	741
Halter	J. C. Lighthouse	291,365	Jan. 1	430	122	26	78
Halter	J. Roy and E. Waldt	294,061	Feb. 26	1684	463	26	760
Halter-weight	F. Frazer	291,325	Jan. 1	388	108	26	70
Hame	J. W. Hudson	295,012	Mar. 11	839	229	26	980
Hame	A. B. Conde	294,302	Feb. 26	1851	505	26	787
Hame-fastener	C. N. Hart	292,008	Jan. 15	1251	350	26	241
Hame-fastener	W. H. Johnson	293,655	Feb. 19	1111	308	26	652
Hame-fastener	B. F. Jones	295,496	Mar. 18	1460	402	26	1107
Hame-fastener	M. Noe	291,390	Jan. 1	465	131	26	83
Hame-fastener	A. A. Potter	293,516	Feb. 12	951	259	26	616
Hammer and tack-holder. Tack	J. Withington	292,608	Jan. 29	2032	565	26	392
Hammer-die	J. L. Painter	292,348	Jan. 22	1678	467	26	322
Hammer. Foot-power	W. D. Wood	293,611	Feb. 12	1057	292	26	634
Hammering-machine feed-table	E. C. Cook	292,204	Jan. 22	1489	418	26	290
Hammock-support. Portable	H. F. Osborne	294,802	Mar. 11	566	156	26	932
Hand-press							
Handle: *See* Detachable handle. Tool-handle. Saw-handle.							
Handle-covering	H. C. Milligan	294,492	Mar. 4	195	55	26	862
Handle for trunks, &c	G. S. Gates	294,988	Mar. 11	798	221	26	974
Handle guard. Ax and tool	G. P. Morrill	291,216	Jan. 1	251	71	26	45
Hanger: *See* Shafting-hanger.							
Hangers to ceilings. Implement for attaching	P. Lorillard, Jr	295,880	Mar. 25	1969	545	26	1203
Hangers to coats, &c. Machine for attaching and setting metallic	E. P. Haff and J. H. Walbridge	294,033	Feb. 26	1609	447	26	749
Harmony. Apparatus for use in studying	B. S. Maitland	294,139	Feb. 26	1768	{485, 486}	26	773
Harness	S. L. Bligh	294,005	Feb. 26	1576	436	26	742
Harness	J. T. Clarkson	293,950	Feb. 19	1512	417	26	723
Harness	S. Funk	292,742	Jan. 29	2203	614	26	423
Harness	G. H. Ingalls	295,642	Mar. 25	1652	458	26	1147
Harness	G. Thompson	291,812	Jan. 8	996	279	26	184
Harness	H. C. Babcock	293,700	Feb. 19	1175	328	26	664
Harness-covering	D. D. Briggs	295,344	Mar. 18	1273	353	26	1071
Harness-holder	S. B. Edson	295,374	Mar. 18	1308	363	26	1078
Harness-hook	J. M. Basinger	292,618	Jan. 29	2043	568	26	394
Harness loop	A. Coffman	293,421	Feb. 12	846	229	26	596
Harness-loop	E. R. Northcutt	292,844	Feb. 5	81	22	26	457
Harness-loop	F. Richeson	292,053	Jan. 15	1300	363	26	251
Harness-loop	J. Stanley and T. F. Lemassena	293,535	Feb. 12	968	264	26	619
Harness. Manufacture of portions of a	W. H. Felker	291,887	Jan. 15	1104	308	26	213
Harness-pad	A. Stenger	291,418	Jan. 1	502	141	26	90
Harness-rosette, door-plate, &c	E. E. Bostwick	291,869	Jan. 15	1083	302	26	210
Harrow	W. E. Budd	293,304	Feb. 12	696	186	26	568
Harrow	E. Y. Caldwell	292,985	Feb. 5	956	70	26	489
Harrow	J. H. Christy	294,011	Feb. 26	1583	439	26	744
Harrow	A. C Evans	291,174	Jan. 1	199	56	26	37
Harrow	J. L. Laughlin	294,393	Mar. 4	70	18	26	842
Harrow	I. Lemon	295,124	Mar. 11	981	269	26	1004
Harrow	S. Shoemaker	291,414	Jan. 1	498	139	26	89
Harrow	C. A. McElroy	294,652	Mar. 4	386	107	26	895
Harrow attachment	B. Clark	293,227	Feb. 12	591	156	26	550
Harrow for cultivating listed corn	C. La Dow	294,792	Mar. 11	546	151	26	929
Harrow or cultivator	J. Schindler	295,820	Mar. 25	1880	521	26	1187
Harrow or soil-pulverizer	D. W. Brown	294,112	Feb. 26	1724	474	26	767
Harrow. Rotary	J. H. Hoof	291,515	Jan. 8	633	179	26	120
Harrow. Rotary	W. W. Hill	291,906	Jan. 15	1125	314	26	218
Harrow-rudder	E. C. Comstock	291,840	Jan. 8	1033	288	26	190
Harrow. Spring-tooth	J. E. Beams	293,621	Feb. 19	1072	297	26	644
Harrow. Sulky	F. C. Merrill	292,836	Feb. 5	72	20	26	456
Harrow-tooth	P. B. Viele	294,292	Feb. 26	1958	537	26	807
Harrow-tooth	B. F. Eaton	291,038	Jan. 1	27	8	26	7
Harrow-tooth. Spring	T. D. Gere and B. Maltby	292,214	Jan. 22	1508	423	26	293
Harrow. Wheel	F. L. Rumble	293,520	Feb. 12	955	260	26	616
Harrow. Wheel							

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Harrow. Wheel	A. Scheaffer	292,955	Feb. 5	221	61	26	483
Harvester	S. C. Cobb and N. A. Wheeler	291,295	Jan. 1	351	99	26	63
					100		
Harvester	G. G. Crowley	292,209	Jan. 22	1496	421	26	291
					422		
Harvester	S. D. Locke	295,777	Mar. 25	1825	508	26	1178
					509		
Harvester	L. Miller	293,345	Feb. 12	743	198	26	577
Harvester	A. Robinson	293,358	Feb. 12	763	203	26	581
Harvester	C. S. Stickle	293,202	Feb. 5	549	146	26	538
Harvester and binder	C. Whitney and W. W. Marsh	295,510	Mar. 18	1478	407	26	1109
					408		
Harvester and husker. Corn	J. W. Terman	291,643	Jan. 8	802	226	26	150
Harvester. Clover-seed	H. H. Spears	292,377	Jan. 22	1717	479	26	331
Harvester. Corn	G. E. Allinder	294,715	Mar. 4	455	127	26	907
Harvester. Corn	J. Wagner and H. Dryer	295,602	Mar. 25	1604	444	26	1139
					445		
Harvester. Cotton	G. N. Todd	295,463	Mar. 18	1411	390	26	1099
					391		
Harvester. Cotton	F. L. Warner	291,438	Jan. 1	522	147	26	94
					148		
Harvester-cutting apparatus	E. D. Roth	295,813	Mar. 25	1874	520	26	1186
Harvester cutting apparatus	G. H. Schulte and C. Martincourt	292,370	Jan. 22	1710	477	26	330
Harvester frame. Grain	C. Whitney	291,449	Jan. 1	535	151	26	96
					152		
Harvester. Grain-binding	C. Whitney and W. W. Marsh	291,452	Jan. 1	541	153	26	98
					154		
					155		
Harvester pawl-and-ratchet mechanism	L. Miller	293,767	Feb. 19	1269	351	26	679
Harvester-platform	C. Whitney	291,448	Jan. 1	533	151	26	96
Harvester-rake	S. Johnston	295,872	Mar. 25	1952	540	26	1200
Harvester-reel	S. D. Locke	292,238	Jan. 22	1539	431	26	297
					432		
Harvester-reel	W. A. Wood	294,103	Feb. 26	1713	471	26	765
Harvester sheaf-carrier	E. S. Williams and J. E. Harder	291,118	Jan. 1	130	37	26	26
Harvesters. Endless carrier for	J. Wagner	293,383	Feb. 12	803	216	26	588
Harvesters. Friction-brake for	H. Wagner, Sr.	294,416	Mar. 4	100	25	26	846
Harvesting-machine	W. E. Crane	291,987	Jan. 15	1225	341	26	236
					342		
Harvesting-machine	C. Young	294,837	Mar. 11	609	168	26	939
Hasp-lock	E. Knight	292,323	Jan. 22	1643	459	26	316
Hasp-lock	D. Smith	295,927	Mar. 25	1837	523	26	1189
Hasp-lock	B. D. West	293,693	Feb. 19	1163	324	26	662
Hat	R. D. Greenlees	294,379	Mar. 4	54	13	26	839
Hat	W. Reitmeyer	292,049	Jan. 15	1227	362	26	250
Hat-bodies. Apparatus for stretching	J. Eaton	292,634	Jan. 29	2059	573	26	397
Hat-bodies. Apparatus for trimming	E. Tweedy	293,380	Feb. 12	795	213	26	587
					214		
Hat-bodies. Device for flanging	M. H. Ryder	294,745	Mar. 4	484	135	26	912
					136		
Hat-bodies. Machine for felting and sizing	J. J. Perine	292,578	Jan. 29	1990	554	26	385
Hat-body felting and sizing machines. Roller for	C. W. Glover	292,111	Jan. 15	1366	383	26	263
Hat-brim curling and finishing machine	C. H. Reid	292,358	Jan. 22	1694	472	26	326
Hat-brims. Wire frame for	G. B. Sherman	294,515	Mar. 4	217	61	26	866
Hat-case	J. Linker	293,183	Feb. 5	526	139	26	533
Hat-hanging attachment	W. H. Barry	291,485	Jan. 8	594	167	26	113
Hat-ironing machine	N. B. Hooper	291,598	Jan. 8	740	208	26	140
Hat-lining	C. Raymond, 2d	291,536	Jan. 8	661	187	26	125
Hat lining and cover	J. H. Canning	291,679	Jan. 8	847	237	26	158
Hat-linings. Manufacture of	A. Solmans	292,596	Jan. 29	2018	502	26	390
Hat-manufacturing machine	C. H. Reid	292,356	Jan. 22	1686	469	26	324
					470		
					471		
Hat-pouncing machine	F. F. Campbell	292,892	Feb. 5	138	37	26	468
Hat-pouncing machine	F. F. Campbell	293,715	Feb. 19	1199	332	26	668
Hat-pouncing machine and lathe	W. Thompson and J. A. George	295,690	Mar. 25	1715	474	26	1158
Hat-protector	C. A. Helbig	292,487	Jan. 29	1862	520	26	365
Hat-shaping machine	J. R. Kelsey	295,650	Mar. 25	1664	461	26	1149
					462		
Hat-sizing apparatus	N. Harper	293,015	Feb. 5	202	81	26	495
Hat sizing or felting machine	J. J. Perine	292,579	Jan. 29	1991	555	26	386
Hat sweat-band	A. C. Couch	291,157	Jan. 1	180	52	26	34
Hat-tip	A. C. Couch	291,034	Jan. 1	23	7	26	7
Hat trimming and curling machine	C. H. Reid	292,357	Jan. 22	1691	471	26	325
Hat. Ventilated	E. M. Lebkicher	295,024	Mar. 11	853	233	26	992
Hat-ventilator	W. M. Protheroe	294,149	Feb. 26	1779	488	26	775
Hats, &c. Apparatus for paring the brims of silk and felt	L. F. Marsh and J. Cree	294,246	Feb. 26	1901	521	26	796
Hatch-cover. Self-closing	A. J. Ballard	294,108	Feb. 26	1719	473	26	766
Hatchway-guard	H. J. Bleuler	292,092	Jan. 15	1343	377	26	259
Hatchway. Self opening and closing	D. Humphreys	291,737	Jan. 8	915	256	26	169
Hawse-pipe	H. Winter	293,610	Feb. 12	1056	292	26	634
Hay and straw stacker	M. B. Fitts	294,981	Mar. 11	790	218	26	973
					219		
Hay-carrier	F. H. Bolte	293,937	Feb. 19	1495	412	26	719
Hay-carrier	A. J. Burbank and H. D. Page	291,874	Jan. 15	1089	303	26	211
Hay-carrier	L. C. Chase	292,098	Jan. 15	1350	379	26	260
Hay-carrier	F. P. Grosscup	293,451	Feb. 12	880	238	26	603
Hay-carrier	F. P. Grosscup	293,452	Feb. 12	881	238	26	603
Hay-carrier	P. A. Myers	291,852	Jan. 8	1050	293	26	193
					294		
Hay-elevator	P. Werum	291,892	Jan. 8	1008	289	26	186
Hay elevator and carrier	J. H. and P. Lux	291,368	Jan. 1	434	123	26	79
Hay-fork	W. H. Cowdery	294,587	Mar. 4	308	86	26	881
Hay-fork	J. G. Kanouse and R. Miller	294,050	Feb. 26	1639	454	26	753

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Hay-fork	H. Stahl	292,378	Jan. 22	1718	479	26	331
Hay-loading machine	M. M. Sornborger	294,693	Mar. 4	497	119	26	902
Hay-press and horse-power. Combined	W. Randle, Sr	291,092	Jan. 1	80	23	26	18
Hay-rake. Horse	J. M. Clark	292,988	Feb. 5	259	71	26	489
Hay-rake. Horse	W. H. Hall	292,218	Jan. 22	1512	424	26	293
Hay-rake. Horse	C. T. Holman	292,013	Jan. 15	1256	351	26	242
					352		
Hay-rake. Horse	J. M. Wishart	292,457	Jan. 22	1820	508	26	351
Hay-rake. Horse	J. N. and T. Wallis	292,776	Jan. 29	2263	626	26	433
Hay-rake. Horse	S. F. Weaver	292,520	Jan. 29	1911	535	26	373
Hay-ricker	D. F. Oliver	292,038	Jan. 15	1281	358	26	247
					359		
Hay-stacker	A. Cooley	294,768	Mar. 11	518	144	26	924
Hay-stacker	J. Coombs	291,694	Jan. 8	867	242	26	161
					243		
Hay-stacker	J. H. Johnson	293,031	Feb. 5	313	86	26	499
Hay-stacker	A. A. Noyes	294,602	Mar. 4	395	110	26	896
Hay-tedder fork	J. R. Fry, Jr	292,425	Jan. 22	1786	498	26	344
Heat and fire resisting valve	W. A. Goodyear	292,745	Jan. 29	2212	616	26	494
Heater: *See* Car-heater. Steam and water heater. Feed-water heater.	J. H. Manny	293,260	Feb. 12	631	168	26	557
					169		
Heating and ventilating buildings. Apparatus for	J. R. Moore	295,663	Mar. 25	1681	466	26	1152
Heating apparatus and drying-rack. Combined	F. Tudor	291,818	Jan. 8	1001	281	26	185
Heating apparatus. Steam	M. S. Foote	294,982	Mar. 11	791	219	26	973
Heating. Method of and apparatus for steam	W. A. Goodyear	294,992	Mar. 11	801	222	26	975
Heating water, &c., for domestic and other purposes. Apparatus for	M. A. Tyler and D. S. Smith	293,604	Feb. 12	1048	289	26	533
					290		
Heel-bottoms. Machine for finishing	P. J. Lapham	291,608	Jan. 8	756	213	26	142
Heel burnishing and milling machine	H. Bond	292,787	Feb. 5	12	3	26	445
Heel-burnishing machine	A. F. Stirckler	292,597	Jan. 29	2019	562	26	390
Heel-burnishing tool	E. Hoxie	291,599	Jan. 8	742	209	26	140
Heel-plate	H. Schnarr	291,943	Jan. 15	1170	326	26	226
Heel-plate and counter-support. Combined	L. Coté	294,444	Mar. 4	134	35	26	852
Heel-stiffener-shaping machine	C. S. Dwyer	292,633	Jan. 29	2058	572	26	696
Heel-trimmer	U. D. Byron	293,628	Feb. 19	1081	300	26	646
Heel trimming and breasting machine	W. S. Barstow	292,198	Jan. 22	1477	415	26	288
Heliostat or porte lumière	A. Whiting	292,723	Jan. 29	2173	605	26	417
Hide scouring and fleshing apparatus	A. H. Stone	291,953	Jan. 15	1183	.....	26	228
Hides and skins. Depilating	A. Schultz	291,784	Jan. 8	964	.....	26	179
Hides and skins. Tawing	A. Schultz	291,785	Jan. 8	965	.....	26	179
Hides and skins. Tawing	T. Shaw	294,410	Mar. 4	92	24	26	845
Hides. Apparatus for preparing	J. Decombe	292,416	Jan. 22	1770	493	26	340
Hinge	W. Gilfillan	292,005	Jan. 15	1249	349	26	240
Hinge	C. E. Hart	294,035	Feb. 26	1611	447	26	749
Hinge	W. Patterson	292,574	Jan. 29	1985	553	26	385
Hinge	W. Hull	293,327	Feb. 12	723	193	26	573
Hinge. Automatic gate	J. B. Merriam	295,634	Mar. 11	865	237	26	984
Hinge. Blind	A. W. Sangster	295,816	Mar. 25	1879	521	26	1187
Hinge. Brace	C. C. Richmond	294,809	Mar. 11	575	159	26	934
Hinge. Double	A. W. Sangster	295,817	Mar. 25	1878	521	26	1187
Hinge. Duplex brace	T. P. Straup and L. Morgenstern	294,746	Mar. 4	486	136	26	912
Hinge. Lock	W. H. Carter	293,416	Feb. 12	842	228	26	506
Hinge. Scuttle	H. B. Dodge	292,210	Jan. 22	1503	422	26	292
Hinge. Spring	W. Duncan	291,169	Jan. 1	194	54	26	36
Hinge. Spring	H. Miller	293,662	Feb. 19	1119	311	26	654
Hinge-tip	F. Taylor	292,519	Jan. 29	1910	534	26	373
Hitching bar. Horse	J. L. Kennedy	291,357	Jan. 1	419	119	26	77
Hitching device	R. W. Jones	292,561	Jan. 29	1971	550	26	382
Hitching loop and strap. Safety	M. Bohlig	293,130	Feb. 5	465	124	26	523
Hobby-horse	J. R. Wharry	291,657	Jan. 8	824	231	26	154
Hobby-horse	S. Ashworth	293,551	Feb. 12	988	271	26	622
Hod. Builder's	H. Gates	291,504	Jan. 8	619	174	26	118
Hoe. Weeding	M. W. Locke	295,776	Mar. 25	1822	507	26	1177
					508		
Hoisting and conveying apparatus	A. E. Brown	295,727	Mar. 25	1761	489	26	1166
					490		
Hoisting and conveying machine	P. J. Mitchell	292,344	Jan. 22	1670	465	26	321
Hoisting apparatus	T. Scheffler	295,289	Mar. 18	1206	335	26	1058
Hoisting-engine. Steam	J. L. Booth	295,725	Mar. 25	1759	489	26	1166
Hoisting-gear	W. L., H. L., and A. O. Beatty	292,781	Feb. 5	2	1, 2	26	443
Hoisting-machine	F. Brown	295,730	Mar. 25	1765	491	26	1166
Hoisting-machine	S. A. Morse and C. Tyson	291,217	Jan. 1	252	71	26	45
Hoisting-machine	J. J. White	291,251	Jan. 1	291	82	26	53
Hoisting mechanism for pianos, &c	W. H. Young	291,122	Jan. 1	135	38	26	27
Holder: *See* Bag-holder. Bill-holder. Bouquet and ticket holder. Broom-holder. Cigar-holder. Cuff-holder. Dish-holder. Egg-holder. File-holder. Harness-holder. Knife-holder. Lamp-holder. Lantern-globe holder. Lead and crayon holder. Map-holder. Paper-holder. Paper-bag holder. Pen-holder. Pencil-holder. Pillow-sham holder. Rein-holder. Rule-holder. Sash-holder. Tag-holder. Tag or label holder. Tool-holder. Type-holder. Whip-holder.							
Hominy-mill	T. Hudnut	295,554	Mar. 25	1543	427	26	1127

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Hook: *See* Back-band hook. Button-hook. Harness-hook. Rein-hook. Snap-hook. Screw-hook. Trace-hook. Trellis-hook. Trolling-hook. Whiffletree-hook.							
Hook-and-eye fastening	F. G. Whelan	294,554	Mar. 4	272	74	26	875
Hoop: *See* Mast-hoop.							
Hoop	A. R. Sprout	293,916	Feb. 19	1463	404	26	713
Hoop bending and scoring machine	A. R. Sprout	293,917	Feb. 19	1464	405	26	713
Hoop-fastener	A. R. Sprout	293,919	Feb. 19	1466	405	26	713
Hoop-fasteners. Machine for applying	A. R. Sprout	293,918	Feb. 19	1465	405	26	713
Hoop-flaring machine	J. Bäumle	291,273	Jan. 1	322	90	26	59
Hoop-lapping machine	J. Connell	292,157	Jan. 22	1424	399	26	280
Hoop-nailing machine	A. C. Batcheller	295,516	Mar. 25	1492	412	26	1118
Hoop-pole-splitting machine	J. Winterbotham	292,973	Feb. 5	246	67	26	487
Hoops. Machine for lap-shaving	H. F. Campbell	293,224	Feb. 12	588	155	26	550
Hop-box shade	T. Prior	294,332	Feb. 26	2011	552	26	817
Hop-training device	C. T. Bush	294,723	Mar. 4	463	130	26	908
Hopper. Feed-	J. T. Walter	293,126	Feb. 5	447	120	26	520
Hopple	L. Stow	291,105	Jan. 1	115	32	26	23
Hopple for horses	J. O. Cottle and R. Ivie	293,312	Feb. 12	704	188	26	569
Horizon. Artificial	G. W. Melville	294,653	Mar. 4	387	108	26	895
Horse-armor	J. H. Anderson	295,712	Mar. 25	1746	485	26	1163
Horse-blinder	B. Rice	291,229	Jan. 1	266	75	26	48
Horse-checker	D. O. Cox	294,445	Mar. 4	136	36	26	852
Horse-checking device	W. S. and H. Bentz	294,187	Feb. 26	1836	501	26	784
Horse-detacher	C. L. Crowell	292,268	Jan. 22	1495	421	26	291
Horse-detacher	N. R. Shealy	291,757	Jan. 8	967	271	26	179
Horse-detacher	W. M. Walker	293,125	Feb. 5	446	120	26	520
Horse-power	C. B. and J. S. Boren	291,223	Jan. 1	333	94	26	61
Horse-power	J. Dick, Jr	294,372	Mar. 4	42	11	26	837
Horse-power	A. Robinson	293,087	Feb 5	380	104	26	511
Horse-power transmitters. Removable post for	F. B. Bignell	294,568	Mar. 4	285	78	26	877
Horses. Device for stopping runaway	A. Knegenberg	292,589	Jan. 29	2007	558	26	389
Horses. Shoe for hoof-bound	W. H. Hendricks	291,055	Jan. 1	48	14	26	12
Horseshoe	M. Caspari	295,616	Mar. 25	1624	449	26	1142
Horseshoe	G. A. Dean	295,620	Mar. 25	1629	450	26	1142
Horseshoe	T. C. Evans	293,439	Feb. 12	867	235	26	600
Horseshoe	G. C. Goodloe	294,990	Mar. 11	790	221	26	974
Horseshoe	A. E. Hall	292,302	Jan. 22	1619	453	26	312
Horseshoe	O. H. Merrill	294,062	Feb. 26	1656	457	26	755
Horseshoe-nail machine	G. J. Capewell	292,201	Jan. 22	1480	416, 417	26	288
Horseshoes. Device for welding steel calks to	J. D. Hall	293,266	Feb. 19	1404	388	22	702
Hose-coupling	W. H. Bulcroft	295,109	Mar. 11	965	263	26	1001
Hose-coupling	C. Cummins	295,151	Mar. 18	1020	282	26	1025
Hose-coupling	S. Hamer	293,453	Feb. 12	882	238	26	603
Hose-nozzle	J. Richter	294,675	Mar. 4	400	113	26	899
Hose-nozzle attachment	R. F. Tobin	291,107	Jan. 1	117	33	26	24
Hose-patch	G. W. Towle, Jr	294,937	Mar. 11	794	202	26	961
Hose-reel	B. Heywood and J. Jones	292,226	Jan. 22	1524	427	26	295
Hot-air engine	J. S. Baldwin	292,400	Jan. 22	1744	486	26	336
Hot-air-furnace regulator. Electric	F. M. Sparrow	295,686	Mar. 25	1711	473	26	1158
Hot-air or gas engine	H. S. Maxim	293,185	Feb. 5	529	140	26	534
Hot-air-register frame	C. W. Trotter	291,498	Jan. 1	513	145	26	92
Hot-houses. Watering apparatus for	W. H. Howe	293,577	Feb. 12	1019	280	26	628
House: *See* Sheep-house.							
House-cleaning implement	L. F. Johnston	293,034	Feb. 5	315	87	26	499
Housing for sugar and other mills	B. Thoens	291,435	Jan. 1	510	144	26	91
Hub cap. Wheel-	F. Kramer	291,361	Jan. 1	496	120	26	78
Hub. Vehicle-wheel	J. T. Brown	291,873	Jan. 15	1068	303	26	210
Hub. Wheel-	A. M. Brown	295,728	Mar. 25	1763	490	26	1166
Huller, cleaner, and separator	W. W. Jackson	293,029	Feb. 5	310	86	26	499
Hydrant	C. Meyer and W. H. Lanfersick	291,068	Jan. 1	65	18	26	15
Hydrant	W. Race and S. R. C. Mathews. (Reissue.)	10,452	Feb. 26	2034	557	26	821
Hydrant	B. C. Vanduzen	295,600	Mar. 25	1601	444	26	1138
Hydraulic machinery	W. Donaldson	293,641	Feb. 19	1095	303, 304	26	649
Hydraulic motor	J. H. Hinch	291,189	Jan. 1	221	61	26	40
Hydro-transmitter. Reciprocating	W. Baxter	292,779	Feb. 5	1	1	26	443
Hydrocarbon-burner	W. L. Gregg	294,614	Mar. 4	336	93	26	885
Hydrocarbon-burner	B. Martin	293,973	Feb. 19	1536	423	26	727
Hydrocarbon-furnace	R. B. Avery	291,530	Jan. 8	1019	284	26	188
Hydrocarbon-furnace	W. H. Brooks	293,560	Feb. 12	999	274, 275, 276	26	624
Hydrocarbon-vapor burners. Attachment to	B. Martin	291,918	Jan. 15	1145	319	26	221
Hydrocarbon with pulverized earth. Mixing and consuming	J. Leede	292,236	Jan. 22	1536	430	26	297
Hypotenuse calculator and indicator	D. Patten	293,069	Feb. 5	360	98	26	508
Ice and refrigerating machine	D. L. Holden	291,477	Jan. 1	576	162	26	103
Ice-cream freezer	V. Clad	291,685	Jan. 8	857	239	26	159
Ice-creeper	H. Cottrell	291,880	Jan. 15	1097	306	26	212
Ice-creeper	J. Reist	292,509	Jan. 29	1886	526	26	370
Ice-creeper	F. M. West	294,929	Mar. 11	601	165	26	938
Ice-crushing machine	J. Y. Fahrman	291,999	Jan. 15	1242	347	26	239
Ice-machine	G. Taylor	294,093	Feb. 26	1701	468	26	763
Ice-machine cooler or refrigerator	W. Eberhardt	294,977	Mar. 11	784	217	26	971
Ice-making and refrigerating apparatus	G. H. Reynolds and L. Allen	291,774	Jan. 8	950	267, 268	26	176

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ice-making apparatus. Condenser for ammonia	M. S. Conly	294,763	Mar. 11	512	142, 143	26	923
Ice-making machine	G. Taylor and F. S. Pearson	294,935	Mar. 11	723	202	26	961
Ice-plows. Inserted-tooth fastening for	J. G. Bodenstein	295,724	Mar. 25	1758	489	26	1165
Ice-shaver	G. B. Webb	295,467	Mar. 18	1417	392	26	1099
Ice-tongs	W. Dimond	294,975	Mar. 11	782	216	26	971
Incrustation preventive	F. Troxel	295,309	Mar. 18	1229	.....	26	1062
Indicating-lock	E. C. Nichols	292,939	Feb. 5	205	56	26	480
Indicator: *See* Electrical indicator. Speed-indicator. Latitude-indicator. Station-indicator.							
Indicator	C. W. Musgrove	292,132	Jan. 15	1393	390	26	267
Ingots. Apparatus for equalizing the temperature of steel	J. Gjers	291,044	Jan. 1	35	10, 11	26	9
Ingots. Apparatus for equalizing the temperature of steel	J. Gjers	291,045	Jan. 1	37	11	26	9
Ingots. Apparatus for equalizing the temperature of steel	J. Gjers	291,046	Jan. 1	38	11	26	10
Ingots. Apparatus for equalizing the temperature of steel	J. Gjers	291,047	Jan. 1	39	12	26	10
Ingots. Apparatus for equalizing the temperature of steel	J. Gjers	291,048	Jan. 1	40	12	26	10
Ingots. Apparatus for equalizing the temperature of steel	J. Gjers	291,331	Jan. 1	393	110	26	71
Inhaler	W. A. Johnston and A. W. Browne	291,196	Jan. 1	231	64	26	41
Inhaler for anæsthetics	H. Cook	294,585	Mar. 4	306	85	26	880
Inhaler for anæsthetics	G. H. Hurd	294,047	Feb. 26	1635	453	26	750
Ink or color fountain. Stencil	L. R. Rockwood	292,856	Feb. 5	95	26	26	460
Inking apparatus. Automatic registering	J. W. Jones and A. Cooper	295,767	Mar. 25	1812	503, 504	26	1175
Inking-pad	C. W. Crutsinger	294,856	Mar. 11	632	175	26	944
Inkstand	T. B. Knowles	291,604	Jan. 8	752	212	26	141
Ink stand or receiver	J. B. Davids	295,739	Mar. 25	1779	494	26	1169
Insect-destroying device	C. J. Gustaveson	294,616	Mar. 4	337	94	26	886
Insecticide	I. S. Graves	293,330	Feb. 12	716	.....	26	572
Insecticide compound	H. Pool	295,426	Mar. 18	1368	.....	26	1060
Insecticide mixture	J. M. Jaques, Sr	292,015	Jan. 15	1256	.....	26	242
Insects from plants. Machine for gathering	F. Wiskocil	292,083	Jan. 15	1334	374	26	257
Insulated conductor of electricity	W. A. Shaw	292,694	Jan. 29	2137	595	26	411
Insulating connection for electric-light fixtures	C. H. Hinds	291,731	Jan. 8	904	254	26	168
Insulating material. Electrical	J. Greives	291,716	Jan. 8	891	.....	26	166
Insulating material. Electrical	J. Greives	291,717	Jan. 8	892	.....	26	166
Insulating material. Electrical	J. Greives	291,718	Jan. 8	893	.....	26	166
Insulation. Composition for electrical	J. Fottrell	294,457	Mar. 4	149	.....	26	855
Insulation of railway-tracks used for electric circuits	T. A. Edison	293,433	Feb. 12	861	233	26	599
Insulation. Manufacture of material for electric	W. V. Wilson	294,557	Mar. 4	274	.....	26	875
Insulator for electric conductors	A. W. Hale	294,384	Mar. 4	59	15	26	840
Insulator for electric wires	W. W. Beach	294,563	Mar. 4	280	76	26	876
Insulator for electric wires	A. W. Hale	293,242	Feb. 12	609	161	26	553
Insulator. Lock-wire	T. McGrory	293,901	Feb. 19	1444	400	26	710
Interest. Machine for computing	J. W. Robinson	294,079	Feb. 26	1680	463	26	760
Interlocking apparatus. Hydraulic and electric	O. Gassett. (Reissue)	10,434	Jan. 8	1058	296, 297	26	195
Interlocking apparatus. Hydraulic and electric	O. Gassett. (Reissue)	10,435	Jan. 8	1062	297	26	196
Interlocking-switch apparatus	O. Gassett	292,743	Jan. 29	2204	614, 615	26	423
Intestines. Machine for scraping and cleaning	A. M. Woods	293,392	Feb. 12	816	220	26	591
Invalid-lift	G. J. Goodhue Jr	292,801	Feb. 5	301	8	26	448
Invalids. Apparatus for holding and moving	C. F. Reed	292,048	Jan. 15	1294	362	26	250
Iron: *See* Sad-iron.							
Iron and steel. Apparatus for the manufacture of ingot	J. F. Bennett	294,002	Feb. 26	1572	434	26	742
Iron and steel rods. Hardening and straightening	J. H. Helm	294,130	Feb. 26	1755	483	26	771
Iron. Apparatus for treating sheet	W. D. Wood	294,559	Mar. 4	275	75	26	875
Iron breaker. Pig	T. A. Blake	293,405	Feb. 12	831	225	26	594
Iron. Making wrought	L. D. Chapin	291,470	Jan. 1	566	.....	26	101
Iron. Manufacturing planished sheet	W. D. Wood	291,260	Jan. 1	306	.....	26	56
Iron. Manufacture of wrought	C. Zug	294,949	Mar. 11	741	.....	26	964
Iron or steel. Mode of and mechanism for producing surfaces on	L. D. York	295,217	Mar. 18	1107	306	26	1040
Iron wheel	L. H. Goodwin	293,006	Feb. 5	283	79	26	493
Ironing-board	R. W. Ferguson	292,904	Feb 5	155	43	26	472
Ironing-board	J. C. West	294,708	Mar. 4	444	123	26	905
Ironing-board	W. H. Davey and H. Fabian	291,035	Jan. 1	24	7	26	7
Ironing-machine	H. Podger and W. H. Davey	293,514	Feb. 12	949	258	26	615
Ironing-machine	L. H. Watson	293,290	Feb. 12	674	180, 181	26	564
Ironing-machine	C. O. White	292,883	Feb. 5	127	35	26	467
Ironing-machine roller	H. E. Smith	292,958	Feb. 5	225	62	26	484
Irrigating apparatus	C. M. Skillen	291,947	Jan. 15	1174	327	26	226
Jack: *See* Boot and shoe last-ing jack. Boot or shoe stitch-ing-jack. Floor-jack. Lifting-jack. Power-jack. Railway-jack. Screw-jack. Shoe-maker's jack. Wagon-jack.							
Jack	S. J. Wisdom	292,725	Jan. 29	2175	606	26	417
Jackknife. Sailor's	T. J. Cowie	293,634	Feb. 19	1089	301	26	648
Jacket. Knit	O. Kreisel	294,637	Mar. 4	361	101	26	891
Jail-bar	L. D. York	292,527	Jan. 29	1921	537	26	374
Jar: *See* Fruit-jar.							
Jar caps, &c. Fastening for fruit	C. A. Tatum	292,396	Jan. 22	1727	481	26	333

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Jar-wrench and can-opener. Combined	A. Van Slyke	292,710	Jan. 29	2157	601	26	414
Jewel show-case	C. W. Schnmann	294,685	Mar. 4	418	117	26	909
Jeweling-machine	E. Homrighous	293,249	Feb. 12	618	164	26	555
Jeweling-tool	J. R. Parsons	292,676	Jan. 29	2117	589	26	407
Joiner's marking-gage	E. Hester	291,728	Jan. 8	902	253	26	167
Joint: *See* Furnace-joint. Railway-rail joint. Rail-joint. Telegraph-wire joint. Railway-joint.							
Journal box and bearing	R. W. Traylor	291,243	Jan. 1	282	79	26	51
Journal-box. Anti-friction	T. Tripp	295,308	Mar. 18	1227	341	26	1062
Journals. Alarm-signal for hot	O. H. P. Cornelius and G. H. Turner	292,992	Feb. 5	265	73	26	491
Jug	J. S. Dignam	293,640	Feb. 19	1065	303	26	649
Jug-top	G. P. Lang and P. Lauster	292,660	Jan. 29	2091	582	26	403
Key-fastener	N. B. Little	293,756	Feb. 19	1253	347	26	677
Key-fastener	E. W. Wagner	291,434	Jan. 1	519	146	26	93
Key-ring	G. W. Jopson	292,231	Jan. 22	1530	429	26	296
Kiln: *See* Brick-kiln. Lumber-kiln. Brick and tile kiln. Pottery-kiln. Lime-kiln.							
Kiln	J. P. Cramp	292,413	Jan. 22	1763	491	26	339
Kiln and furnace	J. Druecker	294,453	Mar. 4	143	38	26	854
Kiosk	A. C. y Ribot	293,595	Feb. 12	1039	286	26	631
Kitchen-cabinet	H. Hanna	295,120	Mar. 11	976	{267 268}	26	1003
Kite. Folding	J. Stumpp	294,526	Mar. 4	228	65	26	869
Knapsacks. Means for carrying	A. Mendel	292,566	Jan. 29	1976	551	26	383
Knife: *See* Cigar-dealer's knife. Planer-knife. Jackknife. Pocket-knife. Mincing-knife.							
Knife	C. Wingfield	294,558	Mar. 4	275	74	26	875
Knife holder and package	G. E. Felch	291,704	Jan. 8	878	246	26	163
Knife-scourer	C. A. Bryant	293,840	Feb. 19	1382	382	26	698
Knitted or woven wear. Article of	W. Goddard	294,779	Mar. 11	529	147	26	926
Knitting-machine	L. T. Gross and J. Adams	294,381	Mar. 4	55	14	26	839
Knitting-machine	W. H. H. Hollen	294,784	Mar. 11	534	{148 149}	26	927
Knitting-machine	W. D. Huse	292,490	Jan. 29	1865	521	26	366
Knitting-machine	J. M. Merrow	291,377	Jan. 1	443	{125 126}	26	81
Knitting-machine. Stop-motion	M. J. Walsh	291,965	Jan. 15	1196	{333 334}	26	230
Knob attachment	W. H. Gonne	291,712	Jan. 8	887	240	26	165
Knob attachment	O. Stoddard	294,822	Mar. 11	589	163	26	937
Knob. Door	J. K. Clark	291,687	Jan. 8	859	240	26	159
Knob or handle	C. S. Lewis	294,643	Mar. 4	376	105	26	893
Knob-spindle attachment	H. K. Jones	294,881	Mar. 11	666	186	26	950
Knobs. Handle for dial-lock	T. L. Paine	295,589	Mar. 25	1582	478	26	1135
Knockdown box	J. Blakely	291,281	Jan. 1	331	94	26	60
Labeling machine. Spool	S. A. Calmar and H. W. Carr	291,291	Jan. 1	341	{96 97 98}	26	62
Lace fastener. Shoe	H. H. V. Lilley	294,054	Feb. 26	1646	455	26	754
Lace fastener. Shoe	H. M. Snyder	295,452	Mar. 18	1395	386	26	1095
Lace-fastening	H. H. Porter	294,909	Mar. 11	697	194	26	956
Lace, &c. Shoe	F. P. Shorey	293,599	Feb. 12	1043	288	26	632
Lacing-hooks. Method of and machine for making	S. N. Smith	291,795	Jan. 8	975	274	26	181
Lactometer	A. R. Leeds	294,052	Feb. 26	1643	454	26	754
Ladder	G. H. Cloyes	294,199	Feb. 26	1848	504	26	786
Ladder	C. G. Work	292,150	Jan. 15	1411	396	26	271
Ladder. Adjustable step	E. Markwick	292,032	Feb. 5	197	54	26	478
Ladder chair. Step	F. Reindel	294,808	Mar. 11	574	159	26	934
Ladder. Extension fire	G. Witte and O. Greiner	291,259	Jan. 1	302	{85 86 87}	26	55
Ladder. Folding step	A. Bohman	295,518	Mar. 25	1494	412	26	1118
Ladder. Folding step	G. A. Sommer	295,299	Mar. 18	1215	338	26	1060
Ladder. Step	D. Page	292,041	Jan. 15	1284	360	26	247
Lamp	C. H. Bennett	291,024	Jan. 1	13	4	26	5
Lamp	C. B. Boyle	295,479	Mar. 18	1439	398	26	1103
Lamp	L. O. Brekke	293,559	Feb. 12	998	273	26	624
Lamp	L. Henkle	292,114	Jan. 15	1370	384	26	264
Lamp alarm. Electric	J. Olmsted	292,761	Jan. 29	2243	622	26	430
Lamp bracket. Electric	H. Edmunds, Jr	291,171	Jan. 1	196	55	26	36
Lamp-burner	C. G. Webber	294,417	Mar. 4	101	26	26	846
Lamp. Double carbon-arc	E. Thomson	295,836	Mar. 25	1898	526	26	1191
Lamp. Double electric-arc	W. Hochhausen	294,042	Feb. 26	1626	{450 451}	26	751
Lamp. Double electric-arc	A. G. Waterhouse	294,294	Feb. 26	1659	537	26	807
Lamp cut-out. Electric	C. L. Buckingham and H. C. Townsend.	293,943	Feb. 19	1502	414	26	721
Lamp cut-out. Electric-arc	H. C. Townsend and C. L. Buckingham.	293,921	Feb. 19	1468	406	26	714
Lamp. Electric	T. H. Blamires	291,867	Jan. 15	1080	307	26	209
Lamp. Electric	T. L. Dennis	295,367	Mar. 18	1300	360	26	1076
Lamp. Electric	W. Morava	295,664	Mar. 25	1622	466	26	1152
Lamp. Electric	L. Piette and F. Krizik	293,076	Feb. 5	370	100	26	509
Lamp. Electric	C. J. Van Depoele	291,651	Jan. 8	814	227	26	152
Lamp. Electric	C. J. Van Depoele	294,533	Mar. 4	240	67, 68	26	870
Lamp. Electric	A. Welsh	295,088	Mar. 11	941	257	26	997
Lamp. Electric-arc	C. L. Buckingham and H. C. Townsend.	293,944	Feb. 19	1504	414	26	721
Lamp. Electric-arc	H. A. Earle and E. Goltstein	294,455	Mar. 4	147	39	26	854

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lamp. Electric-arc	F. K. Fitch	292,293	Jan. 22	1607	449	26	310
Lamp. Electric-arc	W. P. Freeman	294,027	Feb. 26	1602	445	26	747
Lamp. Electric-arc	C. H. Hayes	292,113	Jan. 15	1368	{383 384}	26	263
Lamp. Electric-arc	C. J. Van Depoele	291,553	Jan. 8	678	{192 193}	26	128
Lamp. Electric-arc	C. J. Van Depoele	291,653	Jan. 8	819	228	26	153
Lamp. Electric-arc	C. J. Van Depoele	294,532	Mar. 4	238	67	26	870
Lamp fixture. Combined gas and electric	S. Bergmann	293,553	Feb. 12	991	271	26	623
Lamp holder. Incandescent-electric	J. Languereau	293,256	Feb. 12	626	166	26	556
Lamp holder. Incandescent-electric	A. Swan	292,447	Jan. 22	1809	504	26	349
Lamp. Hot-air oil	C. H. Murray	295,660	Mar. 25	1685	467	26	1153
Lamp. Incandescent	E. Weston	292,720	Jan. 29	2169	604	26	417
Lamp. Incandescent	T. A. Edison	293,434	Feb. 12	862	233	26	599
Lamp. Incandescent electric	W. Hochhausen	294,044	Feb. 26	1631	452	26	752
Lamp. Incandescent electric	E. R. Knowles and F. E. Idell	292,324	Jan. 22	1644	460	26	316
Lamp. Incandescent electric	C. F. Martine	293,586	Feb. 12	1028	283	26	629
Lamp-lens attachment	W. D. Doremus	291,995	Jan. 15	1235	{344 345}	26	238
Lamp lighting and extinguishing apparatus	L. Banmeister	295,332	Mar. 18	1255	348	26	1068
Lamp. Portable	W. Scott and M. W. Manwaring	291,630	Jan. 8	785	221	26	147
Lamp. Self-extinguishing	S. Bergmann	293,552	Feb. 12	989	271	26	623
Lamp-socket. Electric	O. A. Moses	292,840	Feb. 5	76	21	26	457
Lamp. Voltaic-arc	O. A. Moses	293,495	Feb. 12	925	251	26	611
Lamp. Voltaic-arc	W. Hochhausen	294,045	Feb. 26	1633	452	26	752
Lamps. Hanger-board for electric	A. Welsh	295,087	Mar. 11	940	256	26	997
Lamps. Holder for the carbons of incandescing electric	W. Holzer	293,879	Feb. 19	1418	392	26	705
Lamps. Manufacture of incandescing electric	W. Holzer	295,398	Mar. 18	1337	372	26	1084
Lamps. Manufacture of incandescing electric	C. J. Van Depoele	291,652	Jan. 8	817	228	26	153
Lamps. Safety cut-out for series of electric	J. S. Beeman	291,464	Jan. 1	561	158	26	100
Lamps. Support for filaments of incandescent	F. Dietz	292,288	Jan. 22	1602	448	26	309
Lantern-globe holder	W. Schofield	293,790	Feb. 19	1301	361	26	685
Lapping-machines. Automatic reversing mechanism for	H. Rall	291,535	Jan. 8	659	187	26	125
Lard and oil tank	A. W. Cox	292,792	Feb. 5	18	5	26	446
Last	G. W. Day	291,991	Jan. 15	1230	343	26	237
Last	G. A. Reynolds	293,913	Feb. 19	1459	404	26	712
Last	E. F. Beal. (Reissue)	10,454	Feb. 26	2037	558	26	821
Lasting-machine	A. W. Pearson	292,575	Jan. 29	1985	{553 554}	26	385
Latch	W. Sallade	291,539	Jan. 8	664	188	26	125
Latch. Door	E. S. Morton	294,326	Feb. 26	2002	549	26	815
Latch. Door	W. F. Oliver	295,795	Mar. 25	1851	515	26	1183
Latch. Door	M. H. Palmer	292,042	Jan. 15	1286	360	26	248
Latch. Door	C. W. Pierce	293,512	Feb. 12	946	257	26	615
Latch. Door and gate	C. Wornuth	292,727	Jan. 29	2177	607	26	418
Latch. Extensible	B. Copeland and F. Wright	293,424	Feb. 12	849	230	26	597
Latch. Gate	J. B. Hasenohr	295,753	Mar. 25	1794	498	26	1172
Latch. Gate	W. Hull	293,253	Feb. 12	622	165	26	556
Latch. Locking	E. Nyswonger	291,392	Jan. 1	467	131	26	84
Latch. Locking	H. Sundquist	293,987	Feb. 19	1553	428	26	730
Latch. Locking	T. Rogers	292,510	Jan. 29	1886	526	26	370
Latching device for gates for iron fences	W. E. Hill	295,173	Mar. 18	1048	289	26	1029
Lath-sawing machine	A. Wood	291,455	Jan. 1	550	156	26	99
Lathe	O. F. Main	291,754	Jan. 8	929	260	26	172
Lathe attachment. Watch-maker's	S. W. Putnam	291,398	Jan. 1	475	134	26	85
Lathe-bed	D. Houghton	292,227	Jan. 22	1525	427	26	295
Lathe-center-grinding machine	F. Armstrong	295,713	Mar. 25	1747	485	26	1163
Lathe-dog	J. Winslow, Jr., and R. Atkins	293,293	Feb. 12	684	192	26	566
Lathe-dog	W. H. Lenhart	293,801	Feb. 19	1431	396	26	707
Lathe for turning eccentric or polygonal forms	S. K. White	291,451	Jan. 1	537	{152 153}	26	97
Lathe-mandrel	W. H. Bine	291,282	Jan. 1	332	94	26	60
Lathe. Metal-turning	J. E. Atwood	291,971	Jan. 15	1202	336	26	232
Lathe. Pulley	G. T. Reiss	292,948	Feb. 5	213	58, 59	26	492
Lathe. Shaft-centering	A. Wood	291,456	Jan. 1	553	156	26	99
Lathe. Tubular cutter	L. S. Hayes	291,727	Jan. 8	901	{252 253}	26	167
Lathe. Turning	H. W. Farley	294,601	Mar. 4	319	89	26	883
Lathes. Cutter-head for handle-turning	J. D. Westcott	293,829	Feb. 19	1354	375	26	693
Latitude-indicator	P. Boyhan	291,570	Jan. 8	698	197	26	131
Laundry jack or bracket	F. Lyford	293,971	Feb. 19	1536	423	26	727
Lead and crayon holder	C. W. Brown	294,756	Mar. 11	504	141	26	922
Lead and crayon holder	W. L. Butterfield	291,539	Jan. 8	1032	288	26	100
Lead and crayon holder	J. H. Knapp	295,497	Mar. 18	1461	402	26	1107
Lead and crayon holder	B. G. Platt	292,136	Jan. 15	1397	391	26	268
Lead. Making sponge	J. K. Kessler	292,753	Jan. 29	2229	.....	26	428
Lead. Making white	J. K. Kessler	292,119	Jan. 15	1378	.....	26	264
Leaf-table	J. A. Conover	293,565	Feb. 12	1006	277	26	626
Leather. Coloring and bronzing	L. Klöpfer	295,653	Mar. 25	1668	.....	26	1150
Leather-folding machine	R. H. Lufkin	294,394	Mar. 4	71	18	26	842
Leather-polishing machine	A. Cerf-Lanzenberg	293,308	Feb. 12	700	187	26	569
Leather-scouring-machine table	T. L. Daheney	291,892	Jan. 15	1099	306	26	212
Leather-splitting machine	F. S. Strong	291,641	Jan. 8	800	224	26	150
Leather-staining machine	J. H. Hovey	294,320	Feb. 26	1997	547	26	814
Leg. Artificial	K. R. Collins	295,675	Mar. 25	1698	470	26	1155
Leg. Artificial	J. Furrer	292,800	Feb. 5	30	8	26	448
Leggin	J. N. Goldbacher	295,538	Mar. 25	1520	420	26	1122
Leggin	J. H. Howarth, Jr	292,819	Feb. 5	52	14	26	452
Leggin	J. A. King	293,475	Feb. 12	905	245	26	607
Letter-box	J. B. Broome	292,533	Jan. 29	1929	540	26	375
Letter-box	C. F. Maize	294,483	Mar. 4	182	50	26	860
Letter-box and mail-bag. Combined	C. F. Teller	292,069	Jan. 15	1317	368	26	254

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Leveling-instrument	W. T. Comstock	294,014	Feb. 26	1585	440	26	745
Lever-power mechanism	F. Kubec	295,498	Mar. 18	1462	403	26	1107
Life-guard and track-clearer	C. W. Held and R. B. Locke	293,653	Feb. 19	1109	308	26	652
Life-line. Buoyant	F. W. Brewster	292,281	Jan. 22	1595	446	26	307
Life-protector for railway-rails	E. J. Hoffman	293,024	Feb. 5	905	84	26	497
Lifter: *See* Transom-lifter.							
Lifting-jack	J. Barrett	293,400	Feb. 12	825	222	26	593
Lifting-jack	J. F. Bazill	293,703	Feb. 19	1178	328	26	664
Lifting-jack	M. Brown	295,105	Mar. 11	960	262	26	1000
Lifting-jack	W. B. Carpenter	293,946	Feb. 19	1507	415	26	722
Lifting-jack	E. Emmert	292,739	Jan. 29	2201	613	26	422
Lifting-jack	B. F. Mansfield	292,666	Jan. 29	2106	585	26	405
Lifting-jack	J. T. Mason	294,398	Mar. 4	77	19	26	843
Lifting-jack	R. R. Spears	295,300	Mar. 18	1216	338	26	1061
Lifting-jack for starting cars	H. Grimm	294,380	Mar. 4	54	14	26	839
Lifting or hoisting machine	T. Thomas	293,114	Feb. 5	419	112, 113	26	517
Light: *See* Marine-signal light. Skylight.							
Lighting streets, &c. Apparatus for	B. W. Mitchell	292,127	Jan. 15	1386	388	26	266
Lighting streets. Apparatus for	B. W. Mitchell	292,128	Jan. 15	1387	388	26	266
Lightning-arrester for electric lines	C. W. McDaniel	295,267	Mar. 18	1176	326	26	1052
Lightning-diffuser	L. G. Woolley	293,612	Feb. 12	1058	292	26	634
Limekiln	J. T. Meredith	291,212	Jan. 1	248	69, 70	26	44
Link. Open	T. J. Terry	293,817	Feb. 19	1338	372	26	691
Link-welding die	A. McInnes	294,060	Feb. 26	1654	457	26	755
Liquid-cooler	H. Lindenberg	294,889	Mar. 11	676	189	26	952
Liquid or water gage	E. Beggs	292,532	Jan. 29	1927	539, 540	26	375
Lock: *See* Alarm-lock. Bag-lock. Bottle-stopper lock. Cabinet-lock. Car-door lock. Chain-lock. Combination-lock. Door-lock. Hasp-lock. Indicating-lock. Nut-lock. Oar-lock. Permutation-lock. Piano-lock. Railway-rail lock. Safe-lock. Seal-lock. Time-lock. Vehicle-seat lock. Wagon-lock.							
Lock	W. H. Andrews and H. H. Sparks	291,663	Jan. 8	830	232	26	155
Lock	F. P. Clark	291,686	Jan. 8	857	240	26	159
Lock	M. Jackson	293,885	Feb. 19	1424	394	26	706
Lock	F. W. Mix	295,660	Mar. 25	1676	464	26	1151
Lock	D. Morris	294,901	Mar. 11	987	192	26	954
Lock	P. S. Svenson	295,077	Mar. 11	995	253	26	994
Lock	W. H. Taylor	294,702	Mar. 4	438	122	26	904
Lock	E. P. Teeters	293,375	Feb. 12	787	211	26	586
Lock	A. B. Todd	291,646	Jan. 8	807	226	26	151
Lock	R. E. Woodrich and C. Langbein	294,560	Mar. 4	277	75	26	875
Lock and latch. Combined	A. D. Holland	293,248	Feb. 12	617	164	26	555
Lock-nut	O. F. Garvey	291,328	Jan. 1	390	109	26	71
Lock-nut	N. E. Shaller	292,063	Jan. 15	1310	366	26	252
Lock-nut	N. E. Shaller	292,513	Jan. 29	1901	530	26	371
Lock-trimming	E. T. Taylor	294,934	Mar. 11	722	202	26	961
Lock-tumbler	C. A. Ludlow	295,260	Mar. 18	1167	323	26	1050
Locks. Gage for adjusting	M. H. Bassett	292,463	Jan. 29	1831	510, 511, 523, 524	26	360
Locomotive	A. Mitchell	294,252	Feb. 26	1909	532	26	798
Locomotive ash-pan	W. H. D. Newth	293,350	Feb. 12	752	200	26	579
Locomotive ash-pan	C. F. Smith. (Reissue)	10,453	Feb. 26	2035	558	26	921
Locomotive attachment	L. W. Page	292,504	Jan. 29	1881	525	26	369
Locomotive bell-ringing attachment	P. M. Way	292,712	Jan. 29	2158	601	26	414
Locomotive-boiler	J. E. Wootten	291,120	Jan. 1	133	38	26	26
Locomotive-grate	I. W. Swallow	293,602	Feb. 12	1046	289	26	632
Locomotive-lubricator	C. B. and C. H. Hodges	291,847	Jan. 8	1042	291	26	192
Locomotive snow-plow attachment	F. Halnsworth	294,383	Mar. 4	58	14	26	840
Locomotive steam-engine	T. Ricour	292,588	Jan. 29	2006	558	26	388
Locomotives and cars. Device for arresting	M. F. Bonzano	293,846	Feb. 19	1380	381	26	698
Log-loader	J. P. Hanson	293,244	Feb. 12	612	162, 163, 189, 190	26	554
Log-turner	W. Frey	293,316	Feb. 12	710	190	26	571
Log-turner	S. T. Haviland	295,549	Mar. 25	1534	425	26	1126
Loom for weaving double pile fabrics	C. Coupland	294,967	Mar. 11	761	212	26	968
Loom for weaving double pile fabrics	C. Coupland	294,968	Mar. 11	763	212	26	968
Loom for weaving double pile fabrics	S. C. Lister and J. Reixach	292,664	Jan. 29	2101	583, 584, 585	26	404
Loom-harnesses with their actuating mechanism. Device for connecting	J. P. Kelly	293,334	Feb. 12	731	195	26	575
Loom-picker-staff check	O. A. Sawyer and C. S. Foss	294,680	Mar. 4	413	115	26	900
Loom shedding mechanism	T. Shillcock	293,798	Feb. 19	1313	364, 365	26	687
Loom-shuttles. Tension-regulating device for	G. Baldwin	291,831	Jan. 8	1021	285	26	188
Looms for weaving double pile fabrics. Mechanism for delivering pile-warps in	F. Charcot	294,965	Mar. 11	759	212	26	967
Looms. Positive shuttle-motion for	H. H. Greenman	291,844	Jan. 8	1040	290	26	191
Lounge and sofa	L. C. Van Nest	291,244	Jan. 1	283	79	26	59
Low-water alarm	W. T. Bate	291,272	Jan. 1	291	90	26	59
Lubricating box. Journal	G. F. Senter	293,614	Feb. 12	1061	293	26	635
Lubricating compound	B. F. Bartlett	294,840	Mar. 11	613	.....	26	940

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lubricating device for cutter-bars	E. D. Roth	295,814	Mar. 25	1875	520	26	1186
Lubricating device for wheels	G. Peacock	293,070	Feb. 5	362	98	26	508
Lubricating material. Metal-mold	C. F. Brush	293,708	Feb. 19	1184	.....	26	665
Lubricating pistons, &c. Apparatus for	R. H. Fronde	295,381	Mar. 18	1318	367	26	1060
Lubricating wheels and pulleys. Device for	W. P. Daniell	291,307	Jan. 1	368	103	26	66
Lubricator: *See* Automatic lubricator. Locomotive-lubricator. Pulley-lubricator. Steam-cylinder lubricator. Steam-engine lubricator. Universal lubricator.							
Lubricator	P. J. Baltes	295,474	Mar. 18	1429	395	26	1101
Lubricator	J. Bissett	294,720	Mar. 4	461	129	26	908
Lubricator	A. Bradford	293,705	Feb. 19	1180	329	26	665
Lubricator	A. Bradford	293,706	Feb. 19	1182	329	26	665
Lubricator	D. B. Brindle	294,437	Mar. 4	126	33	26	851
Lubricator	C. E. Collins	291,154	Jan. 1	175	51	26	33
Lubricator	W. U. Fairbairn	291,042	Jan. 1	32	9	26	8
Lubricator	W. S. Germeyer and J. A. Durnin	294,315	Feb. 26	1990	544	26	812
Lubricator	N. H. Heft	295,757	Mar. 25	1798	499	26	1173
Lubricator	W. A. Lovelis	294,480	Mar. 4	177	49	26	859
Lubricator	C. B. McAlvay	294,399	Mar. 4	77	20	26	843
Lubricator	L. C. Nielsen	295,793	Mar. 25	1849	514	26	1182
Lubricator	A. Noteman	293,590	Feb. 12	1033	285	26	630
Lubricator	J. W. Reed	295,198	Mar. 18	1084	298	26	1035
Lubricator	S. Reid	294,151	Feb. 26	1783	489	26	776
Lubricator	S. Reid	294,152	Feb. 26	1787	489	26	776
Lubricator	S. Reid	294,153	Feb. 26	1788	489	26	776
Lubricator	W. A. Reid	291,400	Jan. 1	477	135	26	86
Lubricator	J. J. Renchard	292,050	Jan. 15	1298	363	26	250
Lubricator	G. C. Sims	292,446	Jan. 22	1808	504	26	348
Lubricator	J. C. Thayer	294,161	Feb. 26	1798	492	26	778
Lubricator	J. Sealey	291,796	Jan. 8	966	271	26	179
Lumber-binder	D. Goodwillie	293,961	Feb. 19	1524	420	26	725
Lumber-drier	L. Rollins	295,284	Mar. 18	1194	332	26	1057
Lumber-drier	A. S. Nichols	295,418	Mar. 18	1360	378	26	1089
Lumber-drying apparatus	E. Myers	295,667	Mar. 25	1687	467, 468	26	1153
Lunch-box and drinking-flask. Combined	J. F. Moran	292,502	Jan. 29	1879	525	26	369
Lunch-heater	G. S. Iredell	295,400	Mar. 18	1339	373	26	1084
Machinery. Sliding bed for	F. Outram	293,591	Feb. 12	1034	285	26	630
Magnet	C. M. Many	293,338	Feb. 12	736	196	26	576
Magnet and armature. Electro-	I. A. Timmis and S. C. C. Currie	293,116	Feb. 5	423	113	26	518
Magneto and dynamo electric machine	F. G. Frick	295,534	Mar. 25	1514	414	26	1122
Magneto-electric generator	W. J. Bowen	292,153	Jan. 22	1416	397	26	279
Magneto-electric machines. Driving-gear for	E. T. Gilliland	293,160	Feb. 5	487	130	26	527
Magneto-electrical alarm	J. R. H. Hinton	292,311	Jan. 22	1629	456	26	314
Magneto or dynamo-electric machines. Commutator for	Z. T. Grammo	294,613	Mar. 4	334	93	26	885
Mail-bag	S. O. Campbell	295,733	Mar. 25	1768	491	26	1167
Mail-bag	H. Clipp and F. M. Brock	291,152	Jan. 1	173	50	26	33
Mail-bag	H. C. Evans and G. Jones	291,501	Jan. 8	614	173	26	117
Mail-bag	W. Hawn	293,459	Feb. 12	889	241	26	604
Mail-bag	A. Severin, Jr	295,439	Mar. 18	1381	383	26	1093
Mail-bag	W. A. Van Camp	293,123	Feb. 5	444	119	26	590
Mail-bag	W. Angle	292,975	Feb. 5	247	68	26	488
Mail-bag catcher	H. E. and C. L. Lundy	294,799	Mar. 11	561	155	26	931
Mail-bag cord-fastener and label-holder combined	J. Moore	291,384	Jan. 1	458	129	26	82
Mail-bag fastener	R. B. Scott	295,294	Mar. 18	1211	337	26	1060
Mail-bag fastening	G. W. Wentworth	294,707	Mar. 4	443	123	26	905
Mail-bags. Tag or label for	F. E. Frey	292,741	Jan. 29	2202	614	26	423
Mail-box	E. Lemry	292,327	Jan. 22	1648	460	26	317
Mallet	C. J. Hexamer	292,488	Jan. 29	1862	520	26	365
Malt and grain mills. Construction of	H. Herrmann	294,232	Feb. 26	1886	516	26	793
Malt-drier	R. S. Waring	294,544	Mar. 4	257	71	26	872
Mandrel and die for cable-presses	A. E. Lytle	292,167	Jan. 22	1437	403	26	282
Mandrel. Expanding	R. S. Waring	294,537	Mar. 4	246	69	26	871
Mandrel for cable-presses	R. S. Waring	294,539	Mar. 4	250	69	26	872
Mandrel for cable-presses	R. S. Waring	294,540	Mar. 4	251	70	26	872
Mandrel for cable-presses	R. S. Waring	294,542	Mar. 4	254	70	26	872
Mandrel for cable-presses	R. S. Waring	294,547	Mar. 4	261	71	26	873
Mandrel for cable-presses	R. S. Waring	294,548	Mar. 4	263	72	26	873
Mandrel for cable-presses	R. S. Waring	294,550	Mar. 4	265	72, 73	26	874
Manikin, automaton, or jointed doll	C. A. Kihlgren	292,919	Feb. 5	175	47	26	475
Map case and holder. Combined	J. Travis	294,162	Feb. 26	1801	492, 493	26	778
Map-holder	J. W. H. Doubler	292,902	Feb. 5	151	41, 42	26	471
Map-rack. Folding	F. P. Montgomery	294,254	Feb. 26	1911	524	26	798
Map-stand. Revolving	H. E. Hayes	295,636	Mar. 25	1645	456	26	1145
Marine-signal light	R. J. Baker and J. P. Roberts	295,717	Mar. 25	1750	486, 487	26	1164
Marker. Land-	A. W. Hitchcock	295,761	Mar. 25	1807	501	26	1174
Marker. Land-	W. H. King	295,254	Mar. 18	1160	320, 321	26	1049
Marker. Land-	J. W. Maddox and C. E. Adamson	294,138	Feb. 26	1767	485	26	773
Mash, &c. Apparatus for cooling	T. Hayes	295,005	Mar. 11	830	227	26	978
Mash-cooling apparatus	J. Woelner	292,885	Feb. 5	130	36	26	467
Mashing apparatus. Grain-	T. Hayes	295,004	Mar. 11	827	227	26	978
Mast-hoop	J. H. Wygant	292,191	Jan. 22	1468	412	26	287
Mat: *See* Floor-mat.							
Mat	R. Martinez	295,782	Mar. 25	1835	510	26	1180
Match-box	J. C. Baner	295,098	Mar. 11	953	260	26	999
Match-making machine	C. J. and J. M. Donnelly	292,474	Jan. 29	1844	514	26	362
Match-safe	J. M. Wheeler	293,694	Feb. 19	1164	324	26	662

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Match-splint machine	W. I. Ely	291,314	Jan. 1	377	105	26	68
Match-splint machine	G. H. Millen and E. Mousseau	295,191	Mar. 18	1075	296	26	1034
Match-splints. Machine for making	G. Sebold	293,794	Feb. 19	1307	362, 363	26	686
Match-splints. Machine for making and sticking	G. A. Faas	292,423	Jan. 22	1779	495, 496, 497	26	343
Matrices. Machine for making	R. L. Kimberly	295,878	Mar. 25	1958	542, 543, 544, 545	26	1202
Measure, register and sacker. Automatic grain	J. M. Fulton	294,459	Mar. 4	152	41, 42	26	855
Measuring incompressible fluids. Machine for	J. E. Crisp	295,858	Mar. 25	1933	534	26	1197
Measuring device. Cloth-	W. J. Sampson	293,914	Feb. 19	1460	404	26	713
Measuring machine. Grain-	J. Nafziger	292,346	Jan. 22	1672	466	26	321
Measuring-tank	W. E. Barcus	294,181	Feb. 26	1630	499	26	763
Measuring velocity by electricity	F. W. Cushing	293,426	Feb. 12	852	231	26	398
Meat-mincing machine	D. H. Lintner	293,754	Feb. 19	1251	346	26	676
Mechanical motor	F. N. Brett	293,624	Feb. 19	1075	297, 298	26	645
Mechanical motor	D. C. Camp	294,850	Mar. 11	695	173	26	943
Mechanical movement	C. A. Bentzen	292,976	Feb. 5	248	68	26	488
Mechanical movement	G. Crompton and H. Wyman. (Reissue.)	10,433	Jan. 1	586	165	26	105
Mechanical movement	H. Errio	291,885	Jan. 15	1102	307	26	213
Mechanical movement	E. M. George	291,893	Jan. 15	1109	309, 310	26	214
Mechanical movement	F. Knbec	291,745	Jan. 8	921	258	26	170
Mechanical movement	M. J. Lawlor	292,828	Feb. 5	62	17	26	454
Mechanical movement	J. B. Martel	293,483	Feb. 12	914	248	26	609
Mechanical movement	G. Yeomans	292,974	Feb. 5	246	67	26	487
Mechanical power	J. H. Schaffer	294,681	Mar. 4	414	115, 116	26	900
Medical compound	D. A. Green	291,714	Jan. 8	888	.....	26	165
Medical compound	N. A. Lum	291,751	Jan. 8	926	.....	26	171
Medical compound	G. Seibert	294,687	Mar. 4	420	.....	26	901
Medical compound	G. Taylor	294,288	Feb. 26	1953	.....	26	806
Metal bars. Machine for drawing	P. M. Haas	293,167	Feb. 5	503	133	26	529
Metal bars. Upsetting and shaping	W. and G. H. Sellers	291,098	Jan. 1	102	28, 29	26	21
Metal-bending machine	H. A. Ainsworth	295,851	Mar. 25	1919	531	26	1195
Metal-coating compound	J. H. Legge	295,256	Mar. 18	1163	.....	26	1049
Metal drawing dog	P. M. Haas	293,166	Feb. 5	501	133	26	529
Metal in the earth. Electrically locating and following veins of	J. Prince	293,518	Feb. 12	953	259	26	616
Metal plates. Apparatus for scaling and pickling	H. and H. B. Chess	294,441	Mar. 4	131	34	26	852
Metal-spinning machine	F. C. Williams	291,253	Jan. 1	293	83	26	53
Metal-working machine. Compound	N. J. Rice	291,775	Jan. 8	955	268	26	177
Metals from ores and metallurgical products. Extracting	E. H. Russell	295,815	Mar. 25	1875	.....	26	1187
Metals from ores and metallurgical products. Separating	E. H. Russell	295,887	Mar. 25	1976	.....	26	1204
Metallurgical furnace	J. Altmeyer	293,131	Feb. 5	455	121, 122	26	521
Meter: *See* Electric-circuit meter. Fluid-meter. Water-meter. Electrical meter.							
Microscope	W. K. Kidder	295,770	Mar. 25	1817	505	26	1176
Microscope. Binocular	E. Bausch	293,217	Feb. 12	579	152	26	548
Middlings, &c. Bolt for purifying	O. P. Hurford	295,535	Mar. 25	1544	428, 429	26	1128
Middlings. Machine for treating	J. J. and E. T. Faulkner	293,236	Feb. 12	602	158, 159	26	552
Milk-can	W. F. Manz and C. H. Swab	292,440	Jan. 22	1803	502	26	347
Milk-can. Shipping	J. F. Swab	293,682	Feb. 19	1147	320	26	659
Milk-cooler	A. H. Martin	294,467	Mar. 4	100	53	26	861
Milk-cooler	J. G. Smith	293,805	Feb. 19	1321	367	26	698
Milk. Treating	G. Lawrence	295,180	Mar. 18	1058	292	26	1031
Mill: *See* Attrition-mill. Roller-mill. Cane-mill. Roller flour-mill. Cider-mill. Rolling-mill. Grinding-mill. Saw-mill. Hominy-mill. Windmill.							
Mill-feeding device	J. B. Allfree	295,859	Mar. 25	1921	531	26	1195
Mills. Attaching the grinding-plates of	W. J. Lane	294,738	Mar. 4	478	133	26	911
Milling and slotting machine. Convertible	W. O. Lincoln	293,892	Feb. 19	1433	396, 397	26	708
Milling apparatus	F. M. Mackey	293,047	Feb. 5	327	90, 91	26	502
Milling-cutter	S. Broadbent	294,192	Feb. 26	1941	502	26	785
Milling-machine. Universal	C. E. Lipe	292,928	Feb. 5	186	51, 52	26	477
Milling-machines. Index-head for	C. E. Lipe	292,927	Feb. 5	184	51	26	477
Millstone-adjusting mechanism	G. H. Cormack	292,626	Jan. 29	2052	571	26	396
Millstone-dress	G. W. Prior	294,911	Mar. 11	698	195	26	956
Mincing-knife	R. J. Victor	293,542	Feb. 12	978	268	26	621
Mine-draining apparatus	G. W. Dickie	294,859	Mar. 11	635	176, 177, 178	26	945
Mines. Winding apparatus for	A. Lindenberg	295,774	Mar. 25	1899	506	26	1177
Miner's combination-tool	J. Ryan	291,627	Jan. 8	782	220	26	147
Mining-machine	V. Lechner	295,183	Mar. 18	1060	292, 293	26	1032
Mining-machine	J. H. McDonald	294,247	Feb. 26	1903	521	26	797
Mining machine. Coal-	J. Lucas	291,916	Jan. 15	1142	318	26	221

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mining machine. Placer-	R. V. F. De Guinon	293,852	Feb. 19	1384	383	26	699
Mirror and photographic album. Combined toilet-	L. Wolf	292,884	Feb. 5	129	35	26	467
Mirror for hat-tips, &c. Flexible	A. C. Couch	291,033	Jan. 1	23	6	26	7
Mitten	T. Munthe	294,063	Feb. 26	1657	457, 458	26	756
Mittens from woven or knitted fabric. Manufacturing felted	D. W. Northrup	292,250	Jan. 22	1557	436	26	301
Mold: *See* Casting-mold. Fire-kindler mold. Cigar-mold. Glass-mold.							
Mold	J. T. Copithorn	293,953	Feb. 19	1514	418	26	724
Molder's flask	S. P. Robinson	294,406	Mar. 4	87	23	26	844
Molding fruits, fancy-topped tables, birds, &c. Composition of matter for	E. Brady	291,284	Jan. 1	334	.....	26	61
Molding in sand. Machine for	W. Aikin and W. W. Drummond	291,124	Jan. 1	139	39, 40, 41	26	27
Molding-machine guard	J. O. Squires and J. K. Shriver	293,534	Feb. 12	968	264	26	619
Molding-machine safety-guard	G. H. Hanscom and H. P. and H. E. Brooks.	291,897	Jan. 15	1113	311	26	215
Molding-machine. Sand	W. N. Barrows	293,401	Feb. 12	826	223	26	593
Moldings, &c. Application of fabrics to	A. Freschl	293,158	Feb. 5	484	120	26	526
Moldings. Machine for dressing	J. C. Brandon	295,726	Mar. 26	1760	489	26	1166
Moldings. Ornamentation of frame-	P. E. Francke	292,532	Jan. 29	1959	546	26	380
Monkey-wrench	C. H. Miller	291,213	Jan. 1	249	70	26	45
Mortar	W. A. Harwood	291,054	Jan. 1	47	14	26	12
Mortar-mixer	W. Prochnow	295,196	Mar. 18	1062	297, 298	26	1035
Mortise-cleaner	S. Van Auken	294,097	Feb. 26	1708	470	26	764
Mortising-machine	W. W. Green	295,162	Mar. 18	1034	286	26	1027
Mortising-machine	E. J. Humphreys	294,389	Mar. 4	65	16, 17	26	841
Mortising-machine	H. A. Wilbur	293,607	Feb. 12	1052	291	26	633
Mortising-machine	W. H. Doane and G. W. Bugbee	295,236	Mar. 18	1136	313	26	1044
Mortising-machine boring attachment	D. C. Smith	294,088	Feb. 26	1696	466	26	702
Mosquito bar and canopy holder	G. Focke	291,321	Jan. 1	385	107	26	69
Motion and power. Device for transmitting rotary	J. W. Cheney	294,761	Mar. 11	710	142	26	923
Motion. Converting	E. Catlin	292,471	Jan. 29	1841	513	26	301
Motion. Device for converting	W. R. Lampton	293,477	Feb. 12	907	245	26	608
Motion. Device for converting	J. Barker	292,461	Jan. 29	1829	509, 510	26	359
Motion. Mechanism for converting rotary into vibrating	H. Gardner	294,608	Mar. 4	329	91	26	884
Motion-transmitter	J. Winter	291,119	Jan. 1	132	37, 38	26	26
Motive-power machine	J. A. Hart, H. Scott, and B. F. Pancoast.	295,121	Mar. 11	977	268	26	1003
Motor: *See* Cable-motor. Hydraulic motor. Churn-motor. Mechanical motor. Electric motor. Sewing-machine motor. Electro-dynamic motor. Spring-motor. Traction-motor. Gas-motor. Water-motor.							
Motor	E. M. and C. M. Kimball	291,522	Jan. 8	644	183	26	122
Motor	C. H. Kuhne	295,179	Mar. 18	1057	291	26	1031
Motor	H. E. Marchand	293,895	Feb. 19	1438	398	26	709
Motor	N. Mikkelsen	291,069	Jan. 1	66	19	26	15
Motor	T. Wall	295,314	Mar. 18	1235	343	26	1063
Motor	C. H. Paxson	293,507	Feb. 12	941	256	26	614
Mower. Lawn-	C. Dixon	292,289	Jan. 22	1603	448	26	309
Mowers and reapers. Pitman-box connection for	J. H. Wyms	293,208	Feb. 5	558	148	26	539
Mowers. Grass-collecting attachment for lawn-	H. R. Allen	291,019	Jan. 1	4	2	26	4
Mowing and reaping machines. Cutter-bar, &c., for	H. R. Allen	291,020	Jan. 1	7	2	26	4
Mowing-machine	J. E. Mendenhall	295,126	Mar. 11	983	270	26	1005
Mowing-machine	S. McCay	292,244	Jan. 22	1550	434	26	300
Mowing-machine knives. Machine for sharpening	N. B. Hubbard	292,116	Jan. 15	1374	385	26	264
Mucilage-bottle and holder	P. Norden	293,769	Feb. 19	1273	352	26	680
Muff	G. Beegen	294,564	Mar. 4	281	76	26	876
Mug	D. Prieto	291,397	Jan. 1	472	133	26	85
Music-leaf turner	J. M. Wittman	294,298	Feb. 26	1968	538	26	809
Music-leaf turner	J. McTammany, Jr	292,671	Jan. 29	2110	586, 587	26	406
Musical instrument. Automatic	N. R. Marshman	293,184	Feb. 5	527	140	26	533
Musical instrument. Mechanical	R. F. Flemminge, Jr	293,729	Feb. 19	1213	336	26	671
Musical instruments. Tuning-peg for	M. E. Patterson	295,048	Mar. 11	881	242	26	987
Musical instruments. Tuning-peg for	J. Heald	295,756	Mar. 25	1797	499	26	1173
Musical instruments. Water-key for brass	H. J. D. Miner	295,659	Mar. 25	1676	464	26	1151
Musical wagon	J. R. Husted	291,059	Jan. 1	51	15	26	12
Nail-machine	J. C. Gould	292,299	Jan. 22	1615	452	26	311
Nail-plate feeder	J. C. Gould	292,300	Jan. 22	1618	453	26	312
Nail-plate feeder	W. H. Brock	294,111	Feb. 26	1722	473	26	766
Nail-strip	E. F. Barton	295,515	Mar. 25	1490	411, 412	26	1117
Nailing-machine	H. Weeks	291,443	Jan. 1	527	140, 150	26	95
Nails and tacks. Device for cleaning	H. B. Chess	294,440	Mar. 4	130	34	26	851
Naphtha from oil. Extracting	J. W. Evans	291,175	Jan. 1	200	56	26	37
Napkin ring and holder	G. A. Bahn	293,396	Feb. 12	821	221	26	592
Neck-wear fastener	J. Weil	291,444	Jan. 1	528	150	26	95
Necktie	W. C. Cross	291,301	Jan. 1	361	102	26	65
Necktie	W. C. Cross	294,726	Mar. 4	466	130	26	909
Necktie-fastener	N. I. Dryfoos	294,507	Mar. 4	316	88	26	882
Necktie-fastener	O. M. Graves	294,869	Mar. 11	651	181	26	948
Necktie-fastener	J. Lochman	292,929	Feb. 5	192	53	26	478
Necktie-fastener	H. F. Miller	292,837	Feb. 5	73	20	26	456
Necktie holder and fastener	H. Heath	292,308	Jan. 22	1625	455	26	313
Necktie-retainer							

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Necktie-supporter	B. B. Scully	293,792	Feb. 19	1305	361	26	685
Needle-case	J. S. Sackett	292,050	Jan. 15	1306	365	26	252
Needle. Shoe-button	E. A. Bailey	295,612	Mar. 25	1620	448	26	1141
Needle. Shoe-maker's sewing	A. W. Austin	292,195	Jan. 22	1473	414	26	288
Neat. Hen's	I. B. Dillon	294,974	Mar. 11	781	216	26	971
Neat. Hen's	N. Mitchell	291,214	Jan. 1	249	70	26	45
Net. Fly	B. G. Sindley	295,459	Mar. 18	1407	389	26	1097
Nursery-chair. Convertible	A. B. Stevens	291,951	Jan. 15	1181	329	26	228
Nut. Divided screw	G. S. Hilts	294,781	Mar. 11	531	148	26	926
Nut-lock	F. H. Agnew	293,295	Feb. 12	685	183	26	566
Nut-lock	S. B. Cragin	292,627	Jan. 29	2053	571	26	396
Nut-lock	A. Edgell	291,039	Jan. 1	28	8	26	8
Nut-lock	J. W. Haley	292,301	Jan. 22	1619	453	26	312
Nut-lock	S. P. Kimball	291,913	Jan. 15	1135	316	26	220
Nut-lock	A. E. Koch	292,234	Jan. 22	1534	429	26	297
Nut-lock	W. L. Moore	294,900	Mar. 11	686	191	26	954
Nut-lock	J. F. Plummer and H. P. Chapman	292,507	Jan. 29	1884	526	26	370
Nut-lock	E. H. Ringer	293,085	Feb. 5	379	103	26	511
Nut-lock	H. Schwarzwalder	291,945	Jan. 15	1173	327	26	226
Nut-lock	A. Searls	291,541	Jan. 8	605	169	26	126
Nut-lock	J. B. Snteh and W. C. McElheny	291,642	Jan. 8	801	225	26	150
Nut-lock	G. W. Tegg	293,113	Feb. 5	419	112	26	517
Nut-lock	L. C. Thatcher	291,811	Jan. 8	995	279	26	184
Nut-lock	C. Van Dusen	292,601	Jan. 29	2027	563	26	391
Nut-machine conveyer	M. D. Stedman	293,370	Feb. 12	781	209	26	584
Oar-lock	T. Marshall	294,893	Mar. 11	680	190	26	953
Oat-drill	H. Kehl	291,356	Jan. 1	417	119	26	76
Oil-can	J. W. Jackson	293,468	Feb. 12	898	243	26	606
Oil-can	C. R. Peaslee	294,072	Feb. 26	1673	461	26	758
Oil-can	E. M. Turner	291,902	Jan. 15	1192	332	26	230
Oil-cloth. Manufacture of	J. McGavin and E. C. Sandford	293,487	Feb. 12	918	249	26	610
Oil-cloth. Shelf	E. R. Riesenfeld	291,939	Jan. 15	1167	325	26	225
Oil-cup	J. J. Fawcett	294,022	Feb. 26	1595	443	26	746
Oil-cup	R. A. Fisher	293,237	Feb. 12	603	159	26	552
Oil-cup	H. L. Johnston	294,134	Feb. 26	1763	484	26	772
Oil-cup	H. W. Stemmerich	293,681	Feb. 19	1146	320	26	659
Oil for lubricating, &c. Composite	G. W. Banker	294,752	Mar. 11	501	.....	26	921
Oil. Manufacture of linseed	A. J. Adams	294,425	Mar. 4	112	.....	26	848
Oil-press	J. H. Valle	291,112	Jan. 1	122	34, 35	26	25
Oil. Removing oleine from linseed	T. H. Gray	295,633	Mar. 25	1642	.....	26	1145
Oil-tank safety apparatus	J. P. Reinecke	291,085	Jan. 1	84	24	26	18
Oil-tanks. Preventing the accumulation of inflammable gases in	J. P. Reinecke	291,084	Jan. 1	82	24	26	18
Oils and fats from fish. Extracting	P. C. Vogelius	294,940	Mar. 11	730	.....	26	962
Oiler for car-axle boxes	G. K. Waterhouse	291,247	Jan. 1	286	80	26	52
Oiler for loose pulleys	W. D. Graves, Jr	291,334	Jan. 1	396	111	26	72
Oiler. Valve	S. D. Mershon	294,898	Mar. 11	684	191	26	954
Ointment for tetter	M. Huggins	294,876	Mar. 11	657	.....	26	949
Opera-chair	E. G. Durant and E. Shupe	293,724	Feb. 19	1207	334	26	670
Opera-chair	E. G. Durant and E. Shupe	294,454	Mar. 4	146	39	26	854
Ore-concentrating machine	J. W. Bailey and B. B. Warfield	291,270	Jan. 1	319	89	26	58
Ore-concentrator	A. D. Clarke	291,984	Jan. 15	1220	340	26	235
Ore-concentrator	W. McDermott	292,245	Jan. 22	1551	434	26	300
Ore drier and separator	A. Seneff	294,157	Feb. 26	1793	491	26	777
Ore-furnace	G. B. N. Tower	293,378	Feb. 12	792	{212 / 213}	26	587
Ore-pulverizer	J. B. Sweetland	292,384	Jan. 22	1723	481	26	332
Ore-reducing apparatus	N. Clement	291,294	Jan. 1	350	99	26	63
Ore-roasting furnace	N. M. Langdon	294,795	Mar. 11	551	153	26	930
Ore-separating machine. Magnetic	G. W. L. Carter	292,096	Jan. 15	1348	378	26	259
Ore-separator	F. R. Brown	291,872	Jan. 15	1086	303	26	210
Ore-separator	H. P. Fairfield	292,637	Jan. 29	2063	574	26	397
Ore-separator	H. P. Fairfield	292,638	Jan. 29	2064	574	26	397
Ore-separator	G. McKay and H. P. Fairfield	291,067	Jan. 1	63	18	26	15
Ore separator. Magnetic-iron	C. Faber	294,021	Feb. 26	1593	{442 / 443}	26	746
Ores, &c. Apparatus for pulverizing	F. A. Luckenbach	291,367	Jan. 1	431	{122 / 123}	26	79
Ores, &c. Machine for reducing	G. and A. Raymond	293,786	Feb. 19	1295	{358 / 359}	26	683
Ores, &c. Machine for reducing	G. and A. Raymond	293,787	Feb. 19	1297	{359 / 360}	26	684
Ores. Pulverizing, desulphurizing, and otherwise treating metalliferous	F. A. Luckenbach	295,125	Mar. 11	981	269	26	1004
Ores. Purifying hyposulphite solutions used in leaching	E. H. Russell	295,886	Mar. 25	1976	.....	26	1204
Organ-action	C. R. Ford	292,478	Jan. 29	1848	515	26	363
Organ attachment. Reed	W. Hofer	294,021	Mar. 4	340	95	26	887
Organ-case	J. A. Warren	295,214	Mar. 18	1104	305	26	1040
Organ. Reed	M. Clark	292,099	Jan. 15	1351	{379 / 380}	26	260
Organ. Reed	J. B. Hamilton	293,454	Feb. 12	883	239	26	603
Organ. Reed	J. B. Hamilton	295,868	Mar. 25	1948	539	26	1200
Organ-treadle	J. Hessler	293,462	Feb. 12	893	241	26	605
Organs. Tremolo for reed	E. H. Loring	292,439	Jan. 22	1802	502	26	347
Oscillating engine	J. O. Gilbert	294,219	Feb. 26	1871	511	26	790
Oven. Portable	L. Dathis	292,544	Jan. 29	1948	{543 / 544}	26	378
Overalls	W. A. Dawson	295,619	Mar. 25	1628	450	26	1142
Overcoat	H. Emanuel	294,599	Mar. 4	317	88	26	892
Oysters. Machine for opening	L. A. Amouroux	295,611	Mar. 25	1619	448	26	1141
Package-box	T. Schmidt	292,863	Feb. 5	103	28	26	462
Packer for oil-wells. Gas and water	E. B. Frew	295,747	Mar. 25	1789	497	26	1171
Packing. Asbestus joint	W. A. Fries	295,748	Mar. 25	1790	497	26	1171

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Packing. Asbestus steam	W. A. Fries	295,749	Mar. 25	1791	497	26	1171
Packing-box. Reshipping	J. S. Parker and W. M. Baker	295,046	Mar. 11	878	241	26	986
Packing-can	J. T. Walker	291,557	Jan. 8	685	194	26	129
Packing condenser-tubes	J. Wilson	295,136	Mar. 11	1000	276	26	1008
Packing for stuffing-boxes	A. Beldam	292,783	Feb. 5	6	2	26	444
Packing for stuffing-boxes. Metallic	J. J. Crowley	291,160	Jan. 1	184	53	26	35
Packing. Metallic rod	E. P. Monroe	293,189	Feb. 5	534	142	26	535
Packing vessels or cans. Construction of	F. A. Walsh	291,437	Jan. 1	522	147	26	94
Pad: *See* Corset-pad. Inking-pad. Harness-pad.							
Paddle-wheel. Feathering	C. L. Petersen	291,766	Jan. 8	941	264	26	174
Paddle-wheel. Feathering	C. L. Petersen	293,509	Feb. 12	943	257	26	614
Paddle-wheel. Feathering	A. F. Martens	294,058	Feb. 26	1652	456	26	755
Padlock	A. Jackson. (Reissue)	10,440	Jan. 29	2267	627	26	434
Padlock. Indicator	S. G. Cabell	292,407	Jan. 22	1752	486	26	338
Paging and numbering machine	C. Seybold	293,199	Feb. 5	544	{144 / 145}	26	537
Pail. Chamber	C. H. Paulus	293,776	Feb. 19	1281	354	26	681
Pail. Chamber	G. L. Reynolds	293,912	Feb. 19	1459	403	26	712
Pail. Dinner	W. H. Carbaugh	291,680	Jan. 8	848	237	26	158
Pail. Dinner	A. A. Foos	294,217	Feb. 26	1870	511	26	790
Paint	A. Buzolich and T. K. Smith	291,677	Jan. 8	846	.....	26	158
Paint	A. Buzolich and T. K. Smith	291,678	Jan. 8	847	.....	26	158
Paint and other cans. Stand and press for	F. R. Gront	295,402	Mar. 18	1457	401	26	1106
Paint-can	W. Knehn	294,790	Mar. 11	542	150	26	928
Paint-distributer	J. P. Whipple	292,189	Jan. 22	1465	412	26	286
Paint-mills. Cooling apparatus for	L. E. Fuller and J. H. Macauley	295,626	Mar. 25	1634	{453 / 454}	26	1143
Paint. Mixed	H. Little	293,045	Feb. 5	326	.....	26	502
Paints. Base for	A. E. Brockett	291,142	Jan. 1	163	.....	26	31
Paintings and other analogous works of art. Carrier for	C. Marot	295,030	Mar. 11	859	236	26	983
Panel	R. A. Adams	294,838	Mar. 11	611	169	26	940
Pantaloons	H. F. Engels	291,473	Jan. 1	571	161	26	102
Pants or drawers	P. Gottheimer	294,032	Feb. 26	1609	447	26	749
Paper bag	J. P. Onderdonk	294,403	Mar. 4	83	22	26	843
Paper-bag holder	A. Brown	294,489	Jan. 8	598	169	26	114
Paper-bag holder	G. N. Fenn	293,728	Feb. 19	1212	335	26	670
Paper-bag machine	W. B. Purvis	293,353	Feb. 12	756	204	26	579
Paper box	E. Gowdy and C. B. Russell	292,892	Feb. 5	32	9	26	448
Paper box	J. C. Hurd	292,228	Jan. 22	1596	427	26	295
Paper box	G. L. Jaeger	292,653	Jan. 29	2082	580	26	401
Paper box	G. L. Jaeger	292,654	Jan. 29	2084	580	26	401
Paper box	T. Marburg	291,615	Jan. 8	771	216	26	145
Paper box	H. S. Manson	293,061	Feb. 5	347	95	26	505
Paper box	J. W. Tatum	291,805	Jan. 8	989	278	26	183
Paper box	A. G. Wilson	292,606	Jan. 29	2028	564	26	392
Paper, cloth, &c. Manufacture of wood-grain	G. F. and J. W. McIndoe	295,657	Mar. 25	1673	.....	26	1151
Paper, cloth, &c. Manufacture of wood-grain	G. F. and J. W. McIndoe	295,658	Mar. 25	1674	.....	26	1151
Paper-cutting machine	E. R. Sheridan	293,200	Feb. 5	547	145	26	537
Paper-feeding device	J. Arkell	291,829	Jan. 8	1017	284	26	187
Paper-folding machine	C. Kahler	294,473	Mar. 4	108	46	26	858
Paper-folding machines. Tension device for tapes of	J. H. Stonemetz	295,634	Mar. 25	1607	525	26	1191
Paper from grain-enticles. Manufacture of	W. L. Teter	295,635	Mar. 25	1608	.....	26	1191
Paper from rolls. Device for holding and cutting	J. H. Earl	294,312	Feb. 26	1986	543	26	812
Paper-holder	M. F. Newbury	293,340	Feb. 12	751	200	26	579
Paper-holder, calendar, and blotter. Combined	C. De Vos	291,409	Jan. 8	612	172	26	117
Paper in shipment. Device for protecting the ends and corners of rolls of	H. Sanger	291,406	Jan. 1	490	137	26	87
Paper. Machinery for manufacturing ornamental	W. M. Crane	293,229	Feb. 12	593	156	26	551
Paper-making machine	J. J. Harris	293,870	Feb. 19	1408	389	26	703
Paper-making machines. Drive for	G. Kaffenberger	293,471	Feb. 12	901	244	26	606
Paper manufactnre from the plant gaiega	H. da Costa Corrêa Leite	293,566	Feb. 12	1008	.....	26	636
Paper. Manufactnre of ornamental	W. M. Crane	293,228	Feb. 12	592	156	26	551
Paper or pamphlet holder	J. O. Poor and R. E. Bean	292,581	Jan. 29	1994	535	26	386
Paper-perforating machine	I. C. Carpenter	291,293	Jan. 1	349	98, 99	26	63
Paper piping	J. McCausland	291,372	Jan. 1	438	124	26	80
Paper-pulp, &c. Bleaching	E. Hermite	294,619	Mar. 4	340	94	26	886
Paper-pulp-grinding engines. Securing the knives in	J. H. Horne	294,387	Mar. 4	61	15	26	840
Paper-pulp. Machine for forming hollow ware from	J. G. Bodge	293,220	Feb. 12	582	153	26	549
Paper-pulp. Machine for grinding	J. B. Shepler	294,689	Mar. 4	423	118	26	901
Paper-pulp. Machine for the reduction of wood, &c., to	F. G. Ritchie	291,777	Jan. 8	957	{268 / 269}	26	177
Paper-pulp. Manufacture of	D. O. Francke	295,865	Mar. 25	1945	537	26	1199
Paper-pulp-saving machine	J. T. and H. A. Porter	292,947	Feb. 5	212	58	26	481
Paper-stock. Method of and machinery for treating rags for	C. F. Taylor	292,873	Feb. 5	115	31, 32	26	464
Paper wrapper	D. Dick	294,858	Mar. 11	634	176	26	945
Parachinanisol. Manufacture of	Z. H. Skraup	295,925	Mar. 25	1885	.....	26	1189
Parer and seeder. Combined fruit	J. O. Beazley and L. L. Morris	295,476	Mar. 18	1431	396	26	1102
Parer and slicer. Vegetable	W. E. Brock	294,362	Mar. 4	26	7	26	834
Parer. Apple	W. A. C. Oaks	295,274	Mar. 18	1184	328	26	1054
Parer. Apple	L. H. Scott	292,592	Jan. 29	2013	560	26	389
Parer. Fruit	A. N. Keigwin and W. G. Talley	295,874	Mar. 25	1954	541	26	1201
Parer. Potato	G. Geer	292,554	Jan. 29	1961	547	26	390
Paste for cleaning metals	H. Barlet	293,998	Feb. 26	1569	.....	26	741
Pavement and roof-pavement and sub-structures for the same. Concrete and concreted	T. Hyatt	292,559	Jan. 29	1967	549	26	381
Pavement. Combined wood and broken-stone	W. A. Amberg	291,482	Jan. 8	589	167	26	113
Pavement. Wood	R. Albrecht	295,610	Mar. 25	1618	447	26	1141
Paving-blocks, bricks, &c. Machine for making	J. Gaunt, W. F. Poleaz, W. Calhoun, and J. C. Daubmann.	291,505	Jan. 8	620	{174 / 175}	26	118
Paving-blocks. Machine for forming	D. G. Ross	292,365	Jan. 22	1706	475	26	329

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pawl and ratchet	R. C. Ellrich	293,957	Feb. 19	1519	419	26	724
Peanut cleaning and separating device	J. Johnson	293,332	Feb. 12	730	195	26	575
Peg-cutter	S. Yeatman	291,460	Jan. 1	558	157	26	100
Pelts. Method of and apparatus for treating	C. F. Ritchel and G. Doolittle	295,050	Mar. 11	885	243	26	987
Pen and pencil case	L. W. Fairchild	291,886	Jan. 15	1103	307	26	213
Pen-cleaner	T. C. Gorman	293,650	Feb. 19	1106	307	26	651
Pen. Fountain-	H. Madeheim	293,759	Feb. 19	1257	348	26	677
Pen. Fountain-	H. Stockmann	294,700	Mar. 4	436	121	26	904
Pen. Fountain-	E. Tyrrell	294,340	Feb. 26	2024	554	26	819
Pen. Fountain-	W. H. Wales	291,964	Jan. 15	1195	333	26	230
Pen. Fountain-	L. E. Waterman	293,545	Feb. 12	981	269	26	621
Pen fountain attachment	G. W. Price	292,137	Jan. 15	1399	391	26	268
Pen. Fountain stylus-	W. W. Stewart	291,800	Jan. 8	965	276	26	182
Pen-holder	J. S. Halsey	291,723	Jan. 8	898	251	26	167
Pen-holder	F. M. Libby	294,477	Mar. 4	173	48	26	859
Pen-holder	F. M. Libby	294,478	Mar. 4	174	48	26	859
Pen-holder	A. H. Spencer	291,416	Jan. 1	500	140	26	89
Pen-holder, pencil, and tooth-pick. Combined	R. M. Collard	291,879	Jan. 15	1095	305	26	212
Pen. Metallic	H. Hewitt	295,395	Mar. 18	1334	371	26	1083
Pen. Shading-	R. H. Beazley	292,782	Feb. 5	5	2	26	444
Pen-staff and hand-support	W. H. Lamson	292,495	Jan. 29	1872	523	26	367
Pen. Stylographic fountain-	E. W. Morton	291,925	Jan. 15	1153	321	26	223
Pens. Clamp for ruling-	J. W. Dirbold	295,370	Mar. 18	1304	361	26	1077
Pencil	R. M. Collard	291,297	Jan. 1	354	101	26	64
Pencil and analogous articles	G. Hacker	294,317	Feb. 26	1993	545	26	813
Pencil and eraser combined. Self-sharpening	H. B. Scammell	293,280	Feb. 12	662	177	26	562
Pencil-case	J. C. Haring	292,909	Feb. 5	161	44	26	473
Pencil-holder	B. Eybel	291,998	Jan. 15	1241	347	26	239
Pencil-pointing device	H. G. Schramm	295,680	Mar. 25	1703	471	26	1156
Pencil. Shading-	G. B. Hecklinger	292,650	Jan. 29	2080	579	26	400
Pencil-sharpener	J. Hoffman	291,597	Jan. 8	739	208	26	139
Pencil-sharpener	W. E. Sibley	291,235	Jan. 1	273	77	26	50
Pencil-sharpener	A. M. Smith	295,296	Mar. 18	1213	337	26	1060
Pencil-sharpener holder	W. K. Foster	292,102	Jan. 22	1432	401	26	282
Pencils. Lead-holder for	J. Holland	292,313	Jan. 22	1632	457	26	314
Pendulum. Compensating	F. C. Greenleaf	293,865	Feb. 19	1402	388	26	702
Pendulum escapement. Torsion-	C. Stahlberg	292,870	Feb. 5	112	30	26	464
Percolator. Vacuum-press	C. R. Knapp	293,335	Feb. 12	733	195	26	575
Perfumery-charged cane and other handles	E. R. and H. A. Cowles and M. Osborn	295,359	Mar. 18	1291	358	26	1074
Permutation-lock	W. B. Atkinson and J. H. Foster	291,665	Jan. 8	833	233	26	155
Permutation-lock	L. Bilau	291,467	Jan. 1	563	159	26	101
Permutation-lock	D. R. Stedman	293,810	Feb. 19	1328	368	26	689
Permutation-lock	E. Stockwell	294,701	Mar. 4	437	{121 122	26	904
Photographer's retouching-point	H. H. McElhiney	294,059	Feb. 26	1653	456	26	755
Photographic camera	A. Herzog	295,638	Mar. 25	1648	457	26	1146
Photographic camera	G. S. North. (Reissue)	10,448	Feb. 5	565	150	26	540
Photographic paper. Apparatus for drying	B. F. Hale	291,722	Jan. 8	897	251	26	166
Photographic pictures. Printing and mounting	J. D. Terreforte	295,668	Mar. 25	1713	.....	26	1158
Photographic shutter	D. B. Sweet	292,707	Jan. 29	2153	600	26	413
Photographs. Coloring	I. B. Snell	291,544	Jan. 8	669	.....	26	126
Photometer	T. O. Sloane	292,515	Jan. 29	1905	533	26	372
Piano	J. R. Perry	292,580	Jan. 29	1992	555	26	386
Piano-action	F. St. Amant	293,369	Feb. 12	780	209	26	584
Piano-action	A. Biese and K. G. Zierold	294,004	Feb. 26	1575	{435 436	26	742
Piano-actions. Harmonic coupler for	W. S. Wright	295,512	Mar. 18	1485	409	26	1110
Piano or organ key-rail	P. Gmehlin	295,383	Mar. 18	1321	367	26	1080
Piano bell attachment	W. Hofer	292,815	Feb. 5	48	12	26	451
Piano cover. Upright	T. F. Kraemer. (Reissue)	10,450	Feb. 26	2039	557	26	820
Piano-damper	O. Wessell, A. Nickel, and R. Gross	295,317	Mar. 18	1238	343	26	1064
Piano-damper attachment	G. W. Neill	291,529	Jan. 8	651	185	26	123
Piano-damper attachment	G. W. Neill	291,530	Jan. 8	652	185	26	123
Piano-forte	J. Doyle	293,855	Feb. 19	1390	{384 385	26	700
Piano-forte bridge	J. R. Brown	291,143	Jan. 1	164	47	26	31
Piano-forte-damper action	G. W. Neill	291,528	Jan. 8	650	184	26	123
Piano-forte stringing device	J. R. Lomas	295,778	Mar. 25	1831	509	26	1179
Piano-hammer	E. R. Ober	295,670	Mar. 25	1692	469	26	1154
Piano-lock	F. W. Mix	295,270	Mar. 18	1180	327	26	1053
Piano sounding-board	G. Caddick	293,414	Feb. 12	839	227	26	586
Pianos and organs. Arm and finger guide for	T. Giddings	291,330	Jan. 1	392	110	26	71
Pianos. Stringing	C. E. Rogers	293,088	Feb. 5	381	104	26	511
Picker: *See* Fruit-picker.							
Picture-exhibitor	A. J. Dworsky, M. B. Kramer, and S. Phillips	294,976	Mar. 11	783	217	26	971
Picture. Sliced	W. Stranders	291,639	Jan. 8	798	224	26	149
Picture. Sliced	W. Stranders	292,598	Jan. 29	2020	562	26	390
Pie-crust. Machine for rolling	H. H. Olds	293,504	Feb. 12	936	{254 255	26	613
Pillow. Dress-	G. Noble	293,499	Feb. 12	932	253	26	612
Pillow-sham holder	C. P. Hawley	292,224	Jan. 22	1521	426	26	295
Pillow-sham holder	F. T. Maynard	293,900	Feb. 19	1444	399	26	710
Pin: *See* Safety-pin.							
Pipe: *See* Hawse-pipe. Tuyere-pipe. Tobacco-pipe.							
Pipe and other joints	J. A. Baldwin, Jr.	294,592	Mar. 4	279	76	26	876
Pipe-bending machine	E. Devine	292,418	Jan. 22	1772	{483 484	26	341
Pipe connection. Metallic steam-	J. M. Sweeney	294,160	Feb. 26	1797	492	26	778

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pipe-coupling	R. M. Reilly	291,373	Jan. 8	950	267	26	176
Pipe-cutter	W. L. Sweetland	294,339	Feb. 26	2023	554	26	819
Pipe joint. Air-	B. R. Hawley	292,306	Jan. 22	1624	454	26	313
Pipe machine. Sewer-	J. R. Burdick and W. H. Davis	292,535	Jan. 29	1932	541	26	376
Pipe-molding apparatus	F. Shickle	295,205	Mar. 18	1093	302	26	1037
Pipe-molding pit	D. M. Long and J. Killer	293,480	Feb. 12	911	247	26	608
Pipe-return	R. H. D. Morrison	293,976	Feb. 19	1542	425	26	728
Pipe-threading-machine gage	G. F. Smith	294,518	Mar. 4	220	62	26	867
Pipe-wrench	F. Armstrong and N. W. Vandegrift	291,266	Jan. 1	315	89	26	57
Pipe-wrench	F. Armstrong and N. W. Vandegrift	291,267	Jan. 1	316	89	26	57
Pipe-wrench	D. S. Brown	293,848	Feb. 19	1382	381	26	698
Pipe-wrench	J. Jewell	293,175	Feb. 5	512	136	26	531
Pipe-wrench	F. A. Schramm and A. Modery	295,204	Mar. 18	1092	301	26	1037
Pipe-wrench	W. Rowan	292,445	Jan. 22	1807	504	26	348
Piston	F. Darling	292,994	Feb. 5	269	73	26	491
Pitman-box	G. E. Waggoner	292,077	Jan. 15	1327	371	26	255
Pitman-rod connection	R. W. Ferguson	292,905	Feb. 5	155	43	26	472
Plaiting-machine	J. B. Foley	293,939	Feb. 12	607	161	26	553
Plaiting-machine	W. B. Fenn	291,178	Jan. 1	203	57	26	37
Plane	C. A. Warfield	295,316	Mar. 18	1237	343	26	1004
Plane attachment. Rabbet	A. T. Goldsborough	293,863	Feb. 19	1400	387	26	702
Plane. Bench-	A. T. Goldsborough	293,864	Feb. 19	1401	388	26	702
Plane. Bench-	C. A. Meekins	295,414	Mar. 18	1355	377	26	1087
Plane. Bench-	J. Siegley	294,919	Mar. 11	706	197	26	958
Plane. Bench-	J. A. Trant	291,815	Jan. 8	999	280	26	184
Plane. Bench-	J. A. Trant	294,825	Mar. 11	594	164	26	937
Plane. Bench-	J. A. Trant	293,822	Feb. 19	1344	373	26	691
Plane-bit gage	H. P. Cope	294,724	Mar. 4	464	130	26	908
Planer-knife	E. Benjamin	293,135	Feb. 5	461	123	26	522
Planer. Metal-	F. P. Rosback	293,675	Feb. 19	1139	{317 318	26	657
Planing and printing wood. Machine for	W. A. Compton	291,155	Jan. 1	175	51	26	33
Planing-machine	J. A. Roberts	294,914	Mar. 11	701	195	26	957
Planing-machine jointing attachment	E. Benjamin	295,101	Mar. 11	957	261	26	999
Planing machine. Metal-	E. P. and H. C. Walter	293,289	Feb. 12	673	180	26	564
Planing machine. Wood-	E. Benjamin	294,001	Feb. 26	1571	434	26	742
Planter and check-row attachment. Corn-	C. S. Page	291,393	Jan. 1	469	132	26	84
Planter and fertilizer-distributer. Combined corn-	W. N. Arnold	293,615	Feb. 19	1065	295	26	643
Planter and fertilizer-distributer. Combined seed-	W. H. Albach	292,460	Jan. 29	1827	509	26	359
Planter and fertilizer-distributer. Corn-	E. Kolb	294,636	Mar. 4	300	101	26	891
Planter and fertilizer-distributer. Seed-	J. G. Ringer	291,402	Jan. 1	478	135	26	86
Planter and fertilizer-distributer. Walking corn-	A. Runstetler	295,132	Mar. 11	989	{272 273	26	1006
Planter check-row attachment. Corn-	H. Farmer	295,375	Mar. 18	1309	363	26	1078
Planter check-row attachment. Corn-	W. W. Robinson	292,056	Jan. 15	1303	364	26	251
Planter check-row attachment. Seed-	A. Van Fleet	292,771	Jan. 29	2257	625	26	432
Planter. Check-row corn-	C. M. Babcock	294,839	Mar. 11	611	169	26	940
Planter. Check-row corn-	E. W. Quincy	294,269	Feb. 26	1927	528	26	801
Planter. Check-row corn-	E. H. Reynolds	293,672	Feb. 19	1132	316	26	656
Planter. Check-row corn-	E. B. White	294,555	Mar. 4	272	74	26	875
Planter. Check-row corn-	A. Woodward	292,273	Jan. 22	1568	443	26	306
Planter check-rower. Corn-	A. Anderson	293,395	Feb. 12	819	{220 221	26	592
Planter check-rower. Corn-	G. W. Brown	294,964	Mar. 11	758	211	26	967
Planter check-rower. Corn-	J. P. Moos	295,883	Mar. 25	1972	{545 546	26	1203
Planter. Corn-	T. Bell	292,619	Jan. 29	2044	568	26	394
Planter. Corn-	W. Hopper and I. J. Allen	294,023	Mar. 4	345	96	26	887
Planter. Corn-	W. P. Marshall	291,757	Jan. 8	932	{261 262	26	172
Planter. Corn-	C. J. Mikesh	295,268	Mar. 18	1178	326	26	1052
Planter. Corn-	B. Scott	293,365	Feb. 12	772	{206 207	26	583
Planter. Corn-	W. G. Selby	291,093	Jan. 1	93	27	26	20
Planter. Cotton-seed	G. H. Port	291,768	Jan. 8	942	265	26	174
Planter fertilizer distributer. Seed-	A. C. Evans	295,528	Mar. 25	1505	415	26	1120
Planter fertilizing attachment. Seed-	A. C. Evans	295,529	Mar. 25	1507	{415 416	26	1120
Planter. Hand corn-	F. A. Westbrook	294,709	Mar. 4	445	124	26	905
Planter. Hand seed-	A. Hoag	295,762	Mar. 25	1807	502	26	1174
Planter. Potato-	J. P. Wick	295,846	Mar. 25	1914	529	26	1194
Planter. Seed-	J. W. Dawson	291,579	Jan. 8	712	200	26	134
Planter. Seed-	W. L. Hutson	295,765	Mar. 25	1810	503	26	1175
Planter. Seed-	A. J. Madra	294,800	Mar. 11	563	155	26	932
Planter. Seed-	J. F. W. Neltzel	293,666	Feb. 19	1123	313	26	654
Planter. Seed-	A. Smith	295,297	Mar. 18	1214	338	26	1060
Planters. Combined drill and fertilizer-distributer for one-horse	A. C. Evans	294,313	Feb. 26	1987	543	26	812
Plaques, frames, &c. Suspending attachment for	G. R. Osborn	291,221	Jan. 1	258	72	26	47
Plaster. Voltaic	W. F. Stark	293,679	Feb. 19	1144	319	26	658
Plastering composition	H. Graf	291,508	Jan. 8	625	.....	26	119
Plastering compound	H. E. Scales	291,408	Jan. 1	492	.....	26	88
Plate-holder	T. H. Blair	294,959	Mar. 11	752	210	26	966
Plates. Refuse attachment for table	A. Hentschke	292,651	Jan. 29	2081	579	26	401
Pliers. Cutting-	T. G. Hall	294,034	Feb. 26	1610	447	26	749
Pliers for attaching pin-tickets	A. J. Platt	295,424	Mar. 18	1366	379	26	1090
Plow	A. Ball	291,667	Jan. 8	836	234	26	156
Plow	A. G. Christman	293,309	Feb. 12	701	187	26	569
Plow	J. Elcock	292,636	Jan. 29	2061	{573 574	26	397
Plow	J. T. Ellyson	292,998	Feb. 5	274	75	26	492
Plow	O. A. Essig	292,549	Jan. 29	1957	545	26	380
Plow	D. A. and J. L. Funderburk	294,980	Mar. 11	796	220	26	974
Plow	C. Huehn	293,252	Feb. 12	621	165	26	555

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Plow	J. A. Kneedler	291,339	Jan. 1	420	119	26	77
Plow	T. A. Lanacha	291,524	Jan. 8	646	183	26	122
Plow	J. T. Millen	292,343	Jan. 22	1609	465	26	321
Plow	H. L. Moore	292,501	Jan. 29	1878	524	26	369
Plow	A. A. Roberts	291,087	Jan. 1	86	25	26	19
Plow	R. B. Sigafoos	294,281	Feb. 26	1942	533	26	804
Plow	G. B. St. John	294,699	Mar. 4	435	121	26	903
Plow	G. Stendel	295,009	Mar. 11	916	251	26	993
Plow	W. E. Venable	292,876	Feb. 5	120	33	26	465
Plow	S. A. Ware	292,300	Jan. 22	1731	492	26	334
Plow	H. Wiard and W. R. Bullock	295,702	Mar. 25	1731	492	26	1161
Plow and cultivator. Combined	H. Rea	291,772	Jan. 8	948	266, 267	26	175
Plow attachment	J. O. Caldwell	294,578	Mar. 4	296	81	26	879
Plow attachment	J. Comeaux	295,149	Mar. 18	1018	289	26	1024
Plow attachment	V. Wood	292,272	Jan. 22	1586	443	26	306
Plow-beam. Jointed	A. W. Green	292,006	Jan. 15	1250	350	26	240
Plow beams. Bed-plate for sulky	B. C. Bradley	293,930	Feb. 19	1497	412	26	720
Plow. Combination	J. D. Pace	293,505	Feb. 12	999	255	26	614
Plow gage and guide	W. H. Ammons	291,602	Jan. 8	829	232	26	155
Plow. Gang	H. M. Cormack	291,156	Jan. 1	177	51, 52	26	34
Plow-point	G. P. Swift	292,448	Jan. 22	1810	505	26	349
Plow. Reversible	H. Gates	291,503	Jan. 8	617	174	26	117
Plow. Rotary	J. Austin	291,127	Jan. 1	143	41, 42	26	28
Plow. Steam	G. Greig. (Reissue)	10,438	Jan. 22	1892	508	26	352
Plow. Sulky	S. W. Barr	295,613	Mar. 25	1621	448	26	1141
Plow. Sulky	B. S. Benson	291,975	Jan. 15	1208	337	26	232
Plow. Sulky	F. N. Clute	294,582	Mar. 4	301	83	26	880
Plow. Sulky	J. L. Furby	292,426	Jan. 22	1786	498	26	344
Plow. Sulky	T. T. Harrison	292,304	Jan. 22	1621	454	26	312
Plow. Sulky	F. B. Hunt	295,175	Mar. 18	1051	290	26	1030
Plow. Sulky	W. McNary	295,788	Mar. 25	1844	513	26	1181
Plow. Wheel	E. F. O'Haver	294,261	Feb. 26	1918	526	26	800
Plow. Wheel	R. A. Thompson	293,518	Feb. 19	1339	372	26	691
Plow. Wheel-landside	N. S. Barger	292,401	Jan. 22	1747	486	26	337
Pneumatic dispatch apparatus or mechanism	G. Miles	294,299	Mar. 11	685	191	26	954
Pneumatic signal	R. P. Garsed	292,481	Jan. 29	1850	516, 517	26	363
Pocket	W. F. Russell	293,597	Feb. 12	1041	287	26	632
Pocket implement	A. N. Clark	293,718	Feb. 19	1202	333	26	660
Pocket-knife	J. D. Frary	292,002	Jan. 15	1247	349	26	240
Pocket-knife	O. Huff	294,471	Mar. 4	165	45	26	857
Pocket-knife	F. W. Kaldenbach	292,917	Feb. 5	172	47	26	475
Pocket-knife	J. E. Deupree	291,702	Jan. 8	877	246	26	163
Poke. Animal	F. E. Shaw	291,633	Jan. 8	790	221	26	148
Pole. Clothes	A. H. and R. H. Beach	291,131	Jan. 1	150	43	26	29
Pole. Wagon	W. Heard	292,640	Jan. 29	2079	579	26	400
Polisher and cleaner for metal and other surfaces	J. Pierron	292,677	Jan. 29	2119	589	26	407
Polishing-machine	J. S. Hanaman	293,458	Feb. 12	888	240	26	604
Pool-playing. Ball-rack for	H. W. Collender	295,857	Mar. 25	1931	534	26	1197
Pool-rack	H. W. Collender and S. De Gaetano	294,584	Mar. 4	304	84	26	880
Pool-rack	P. W. Farly and A. L. Trowbridge	292,903	Feb. 5	153	42	26	471
Pool-rack	L. Widmayer	294,422	Mar. 4	109	29	26	847
Pool triangle and box	H. W. Collender	294,200	Feb. 26	1849	504	26	786
Post: *See* Fence-post.							
Post-base	J. Newton	291,927	Jan. 15	1154	322	26	223
Post-driver	E. Hiatt	293,021	Feb. 5	301	83	26	497
Post-shield	O. S. Leslie	291,308	Jan. 1	244	68	26	44
Postal-bag rack	C. R. Harrison	292,911	Feb. 5	163	44, 45	26	473
Pot: *See* Coffee-pot.							
Potato-digger	L. Habeck	292,804	Feb. 5	35	10	26	449
Potato digger and ridger	B. W. Binford	293,403	Feb. 12	899	224	26	594
Potato-screen	O. J. Smith	293,368	Feb. 12	779	209	26	584
Pottery. Composition for fire-proof	E. F. Zinns	295,321	Mar. 18	1242	.....	26	1065
Pottery-kiln	L. Lawton	295,419	Mar. 18	1352	376	26	1087
Poultry-fountain	J. C. Tappeiner	294,932	Mar. 11	720	201	26	961
Powder-warming apparatus	S. Poole	291,932	Jan. 15	1160	324	26	224
Power: *See* Animal-power. Treadle-power. Horse-power. Wave-power. Mechanical power.							
Power. Device for transmitting	A. D. Whitton	295,701	Mar. 25	1731	482	26	1161
Power from a central station. Device for transmitting	W. McCall and J. V. De Vry	292,025	Jan. 15	1267	354, 355	26	244
Power-jack	J. W. Massey	291,370	Jan. 1	436	123	26	79
Power. Metallic band for transmitting	A. Jarolimek	294,472	Mar. 4	166	46	26	858
Power-press	G. B. Lamb	295,411	Mar. 18	1351	375	26	1086
Preciona metals from ores. Extracting	E. H. Russell	295,816	Mar. 25	1877	.....	26	1187
Preserving and transporting food. Method of and apparatus for	S. H. Linn	291,914	Jan. 15	1136	317	26	220
Press: Baling-press. Hand-press. Cider-press. Hay-press. Cotton-press. Oil-press. Die-press. Power-press. Drop-press. Printing-press. Fruit-press. Wool-press. Glass-molding press.							
Press	G. B. Boomer	294,571	Mar. 4	287	79	26	878
Press	A. Fitts, H. M. Rice, and A. E. Blanchard.	295,159	Mar. 18	1030	285	26	1026
Press	C. Kimplen	292,920	Feb. 5	176	48	26	473

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Press	J. N. Wright	294,747	Mar. 4	487	136	26	913
Press-board finishing-machine	F. L. Case	295,321	Mar. 25	1497	413	26	1118
Press for pressing and stamping	J. Dennis and G. B. Coram	294,311	Feb. 26	1984	542	26	811
Press for wheat-bran, &c	M. Y. Thompson	293,603	Feb. 12	1047	289	26	632
Press-platen	J. Ferguson	291,179	Jan. 1	205	57	26	37
Pressure-gage	W. H. MacGregor	292,169	Jan. 22	1439	403, 404	26	283
Pressure-gage-testing apparatus	C. E. Ashcroft	295,093	Mar. 11	946	258	26	998
Pressure governor. Fluid	W. Lyon	292,941	Jan. 22	1547	433	26	299
Pressure-regulator. Hydraulic	J. S. McDonald	292,026	Jan. 15	1268	355	26	244
Primer	T. G. Bennett	291,974	Jan. 15	1206	337	26	232
Primer	T. G. Bennett	294,566	Mar. 4	283	77	26	877
Primer	T. G. Bennett	294,957	Mar. 11	750	209	26	966
Primer	H. S. Burns	291,981	Jan. 15	1217	339	26	234
Primer	R. F. Mitchell	294,657	Mar. 4	390	109	26	895
Printer's damping-roller	J. H. Bingham	294,436	Mar. 4	125	33	26	851
Printer's dry-rack	G. A. Clapper	291,030	Jan. 1	20	6	26	6
Printers' rollers. Shell or cover for	A. Campbell	294,438	Mar. 4	127	33	26	851
Printing and embossing machine. Case	H. F. Shepherd	293,797	Feb. 19	1312	364	26	687
Printing-machine	W. P. Kidder	291,521	Jan. 8	641	181, 182	26	121
Printing-machine delivery apparatus	C. Kahler	291,912	Jan. 15	1133	316	26	219
Printing-machine sheet-delivery apparatus	L. C. Crowell	292,993	Feb. 5	266	73	26	491
Printing-machine sheet-delivery apparatus	S. D. Tucker	293,120	Feb. 5	432	114, 115, 116	26	518
Printing-machine sheet-delivery apparatus	S. D. Tucker	293,121	Feb. 5	438	117, 118	26	519
Printing-machine. Stop-cylinder	W. Scott	295,057	Mar. 11	895	245	26	989
Printing-plates. Making lithographic	P. C. Möller	295,661	Mar. 25	1678	464	26	1151
Printing plates or blocks. Making relief	P. R. Shugg and G. Boyle	292,181	Jan. 22	1454	.....	26	285
Printing-press	C. R. Cottrell	293,313	Feb. 12	704	188, 189	26	570
Printing-press	M. Gally	291,843	Jan. 8	1038	290	26	191
Printing-press	A. F. Hyde	294,048	Feb. 26	1636	453	26	753
Printing-press	W. Scott	293,678	Feb. 19	1142	318, 319	26	658
Printing press. Color	J. W. Osborne	293,668	Feb. 19	1126	314	26	655
Printing-press inking attachment	B. S. Whitehead	291,969	Jan. 15	1200	335	26	231
Printing press. Stencil	J. C. Hill	291,905	Jan. 15	1125	313	26	218
Printing-presses. Air cushion for the reciprocating beds of	A. Campbell	291,875	Jan. 15	1090	304	26	211
Printing-presses. Electrically-actuated sheet-stop for	A. Campbell	291,575	Jan. 8	706	198, 199	26	133
Projectile	H. F. Mann	293,337	Feb. 12	734	196	26	576
Projectile for carrying high explosives	F. H. Snyder	295,830	Mar. 25	1889	524	26	1189
Propeller. Screw	H. C. Pearsons	293,777	Feb. 19	1282	354, 355, 606, 607	26	681
Propulsion of vessels	C. Worch	292,726	Jan. 29	2176	.....	26	418
Protector: *See* Book-leaf protector. Tree-protector.							
Pruning implement	G. F. Waters	291,966	Jan. 15	1197	334	26	231
Puddling-furnace	R. H. Oates	293,770	Feb. 19	1273	352	26	680
Puddling-furnace. Rotary	J. Hall, Jr	295,751	Mar. 25	1793	498	26	1172
Puddling-furnaces. Water-joint for rotary	J. Griffen and J. Hall, Jr	295,867	Mar. 25	1947	538	26	1199
Puddling-machine	H. B. Van Benthuysen	291,963	Jan. 15	1193	332, 333	26	230
Puller: *See* Staple-puller. Stump-puller.							
Pulley	J. Braun	294,110	Feb. 26	1721	473	26	766
Pulley	F. C. Caldwell	295,732	Mar. 25	1767	491	26	1167
Pulley	C. Kemble	293,255	Feb. 12	625	166	26	556
Pulley	O. R. Olsen	295,796	Mar. 25	1852	515	26	1183
Pulley	W. E. Rockwood	291,779	Jan. 8	960	269	26	177
Pulley	J. E. Waterous and J. N. Peel	295,698	Mar. 25	1727	480	26	1160
Pulley-block for hay-elevators	H. L. Ferris	292,476	Jan. 29	1847	515	26	362
Pulley-centers. Die for forming	N. C. Stiles	294,698	Mar. 4	434	121	26	903
Pulley-clothing	G. Jaquith	293,469	Feb. 12	900	243	26	606
Pulley. Differential	G. Smith, Jr	293,281	Feb. 12	663	178	26	562
Pulley. Friction	V. W. Mason	295,656	Mar. 25	1672	464	26	1151
Pulley lubricator. Loose	L. E. Kane	293,036	Feb. 5	317	88	26	500
Pulley or wheel. Compound	H. H. Blake	295,337	Mar. 18	1260	349	26	1068
Pulley. Screw	C. F. Pope	293,078	Feb. 5	372	101	26	510
Pulley. Self-shipping belt	H. P. Christie	292,987	Feb. 5	258	71	26	489
Pulleys, &c. Manufacture of	H. H. Blake	295,336	Mar. 18	1259	349	26	1068
Pulp and fiber. Machine for reducing wood to	G. F. Evans	293,235	Feb. 12	599	158	26	552
Pulp caster-wheel	W. S. Ravenscroft	293,784	Feb. 19	1293	.....	26	683
Pulp. Manufacture of articles from wood	W. H. and W. S. Ravenscroft	293,785	Feb. 19	1293	358	26	683
Pulverizer. Clay	A. Ittner	291,191	Jan. 1	225	62	26	40
Pulverizer. Soil	J. D. Rankin and W. C. Knox	293,080	Feb. 5	374	101	26	510
Pulverizing apparatus	L. S. Chichester	295,856	Mar. 25	1920	533	26	1197
Pulverizing-machine	L. S. Chichester	295,617	Mar. 25	1625	449, 450	26	1142
Pulverizing-machine hopper	H. B. Feldmann	294,375	Mar. 4	46	12	26	838
Pump	L. G. Carcaga y Saenz	295,734	Mar. 25	1769	492	26	1167
Pump	J. W. Douglas	294,210	Feb. 26	1861	508	26	788
Pump	N. Hemenway	293,461	Feb. 12	891	241	26	605
Pump	A. W. White	291,250	Jan. 1	290	82	26	53
Pump. Air	M. Boom	295,341	Mar. 18	1269	352	26	1070
Pump. Air	G. Ross	295,676	Mar. 25	1699	470	26	1155
Pump. Air	W. Stanley, Jr	294,412	Mar. 4	94	24	26	845
Pump. Automatic bilge	J. R. Jobin	291,333	Jan. 1	414	116	26	76
Pump. Chain	A. Beckmann	294,434	Mar. 4	124	32	26	850

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pump. Double-acting force	A. Crawford	291,859	Jan. 8	1057	296	26	195
Pump for fire-extinguishers, &c	C. F. Conrad	293,952	Feb. 19	1514	418	26	723
Pump. Force	F. Grote	291,845	Jan. 8	1041	290	26	192
Pump. Force	H. M. Wyeth	291,121	Jan. 1	134	38	26	27
Pump. Hollow-piston	J. F. Hess, F. H. Snyder, L. Hess, J. F. and C. F. Snyder.	295,639	Mar. 25	1649	457	26	1146
Pump. Lifting	C. J. Curtis and J. E. Caine	292,105	Jan. 15	1358	381	26	261
Pump-regulating device	J. H. Baker	291,271	Jan. 1	320	90	26	58
Pump. Rotary	J. Lee	292,192	Jan. 15	1380	386	26	265
Pump. Rotary	F. S. Troutman	295,597	Mar. 25	1598	443	26	1138
Pump. Rotary	J. M. Wiles	295,704	Mar. 25	1734	482 / 483	26	1161
Pump. Steam	M. F. Bagley and J. C. Dawson	291,021	Jan. 1	9	3	26	4
Pump-valve	C. Ahrens	292,306	Jan. 22	1740	485	26	335
Pumps. Automatic device for stopping steam	T. C. Townsend	294,529	Mar. 4	235	66	26	870
Pumps. Crank-pin slide of direct-acting steam	J. P. Griscom	291,720	Jan. 8	895	250	26	166
Pumps. Valve-gear for hydraulic	G. W. Dickie	295,692	Mar. 25	1631	451 / 452	26	1143
Pumps. Vapor and atmospheric valve for steam	H. S. Pugsley	292,177	Jan. 22	1448	406	26	284
Pumping-engine. Direct-acting duplex	R. W. Hamilton	293,243	Feb. 12	610	169	26	353
Pumping-engine. Duplex	C. C. Worthington	292,525	Jan. 29	1916	536 / 537	26	374
Pumping-engine. Oscillating steam	F. D. Maltby	293,585	Feb. 12	1027	282 / 283	26	699
Pumping-engine. Steam	E. G. Shortt	292,697	Jan. 29	2140	596 / 597	26	411
Pumping-engine. Steam and hydraulic	H. F. Gaskill	291,892	Jan. 15	1108	309	26	214
Pumping-engines. Valve arrangement for duplex	J. R. Maxwell	295,500	Mar. 18	1464	403	26	1107
Punch	E. W. Briggs and J. D. Walton	295,227	Mar. 18	1123	310	26	1042
Punch	G. H. Goodman and J. B. Hunt	294,991	Mar. 11	800	221	26	974
Punch	R. M. Rose	295,052	Mar. 11	890	244	26	988
Punch. Blacksmith's	W. P. Holman	295,397	Mar. 18	1336	372	26	1083
Punching and forging machine. Combined	J. P. Siegfried	292,262	Jan. 22	1574	439 / 440	26	303
Punching and forming presses. Automatic stop-motion for	W. I. Macomber	292,756	Jan. 29	2234	620	26	428
Punching metal tubes. Device for	G. W. Whitman	295,090	Mar. 11	944	257	26	997
Purse	N. J. Wheeler	291,447	Jan. 1	532	151	26	96
Pyroxyline and mica. Plastic compound from	G. M. Mowbray	294,661	Mar. 4	394	.....	26	896
Quartz-crushing machine	C. Dandnrand and L. M. Lafrance	292,543	Jan. 29	1947	543	26	378
Quilting-frame	L. E. Dickson	293,638	Feb. 19	1093	303	26	648
Rack: *See* Fruit-drying rack. Map-rack. Pool-rack. Postal-bag rack. Towel-rack. Wheel-rack.							
Racket	R. Reach	294,271	Feb. 26	1930	529	26	802
Radiator	L. C. Rodier	292,302	Jan. 22	1703	474	26	328
Radiator for hot-air furnaces	C. S. Hood	293,025	Feb. 5	306	84, 85	26	498
Radiator. Steam	R. Brass and J. Chapman	295,343	Mar. 18	1271	352	26	1071
Radiator. Steam	W. H. Brooks	291,026	Jan. 1	15	4	26	5
Radiator. Steam	C. Comstock	294,854	Mar. 11	630	175	26	944
Radiator. Steam	D. F. Morgan and J. Robb	295,040	Mar. 11	872	239	26	985
Radiator. Steam	E. T. Weymouth	295,700	Mar. 25	1730	481	26	1160
Rail-joint	C. F. Hartman	292,223	Jan. 22	1590	426	26	294
Rail-joints. Method of and die for forming	F. Lightfoot	294,053	Feb. 26	1644	454	26	754
Rail-straightening apparatus	L. Richards	294,273	Feb. 26	1932	529 / 530	26	802
Railway block signal	J. K. Knight	291,360	Jan. 1	421	119 / 120	26	77
Railway. Cable	J. B. Casebolt	295,147	Mar. 18	1016	281	26	1024
Railway. Cable	J. B. Casebolt	295,148	Mar. 18	1017	281	26	1024
Railway carriage. Marine	W. H. H. Hunter and J. Hargitt	295,014	Mar. 11	841	230	26	980
Railway. Circular gravity	A. Wood	291,261	Jan. 1	308	87	26	56
Railway-crossing	D. Lippy	293,568	Mar. 25	1563	433	26	1131
Railway-crossing	M. Wallack and J. B. Rohrer	295,844	Mar. 25	1912	528	26	1193
Railway-crossing gate	J. Coty	294,765	Mar. 11	514	143	26	923
Railway-crossing safety-gate	B. Atkinson	295,324	Mar. 18	1245	345	26	1065
Railway-crossings. Alarm-signal for	J. B. Deeds and J. H. Blake	294,207	Feb. 26	1858	507	26	788
Railway-crossings. Electric signaling apparatus for	O. Gassett	292,744	Jan. 29	2208	615	26	423
Railway. Endless rope	W. H. H. Sisum	295,446	Mar. 18	1389	385	26	1094
Railway-frog	J. F. Penrod	294,664	Mar. 4	396	110	26	896
Railway frog and switch guard	P. S. Dusenbury	294,598	Mar. 4	316	88	26	882
Railway-frog safety-guard	J. Lynch	292,834	Feb. 5	70	19	26	453
Railway-frogs. Filling for	G. C. Lucas and J. A. Patterson	291,749	Jan. 8	925	259	26	171
Railway-gate	D. W. Copeland	295,358	Mar. 18	1290	357	26	1074
Railway-gate	L. C. Walsh	295,696	Mar. 25	1723	479	26	1159
Railway-gate	H. F. Wight and H. P. Aldrich	294,172	Feb. 26	1816	496	26	781
Railway gate and signal	G. F. Forbes	292,641	Jan. 29	2067	575	26	398
Railway-gate. Automatic	M. B. Somes	292,702	Jan. 29	2148	598	26	412
Railway-jack	S. Shaw	291,232	Jan. 1	270	76	26	40
Railway-joint and fastening device	J. Dolbeer	293,853	Feb. 19	1387	383	26	699
Railway. Portable	W. W. Hanscom	291,898	Jan. 15	1114	311	26	215
Railway propulsion. Cable	W. W. Hanscom	292,165	Jan. 22	1435	402	26	292
Railway propulsion. Cable	F. Lightfoot	294,245	Feb. 26	1900	520	26	796
Railway-rail	G. Weeks	293,540	Feb. 12	983	269	26	602
Railway-rail chair	F. C. Weir	294,101	Feb. 26	1711	471	26	764
Railway-rail joint	J. Patterson	293,592	Feb. 12	1035	285	26	630
Railway-rail lock	H. D. Morrell	294,743	Mar. 4	482	135	26	912
Railway-rail. Reversible sectional lap-joint	D. L. Emry	293,644	Feb. 19	1099	305	26	650
Railway-rails. Device for securing the splice-joints of	G. W. Bloodgood	293,302	Feb. 12	694	185	26	508
Railway-rails to metallic ties. Fastening	B. Buys	294,116	Feb. 26	1737	478	26	769
Railway-signal	O. Gassett	294,030	Feb. 26	1605	446	26	748
Railway-signal	H. Johnson	294,880	Mar. 11	663	185	26	950

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Railway-signal	J. Mayne	295,264	Mar. 18	1174	325	26	1052
Railway-signal	J. R. Park	291,929	Jan. 15	1157	322	26	223
Railway-signal	A. B. Snyder	291,545	Jan. 8	670	189	26	127
Railway-signal. Electric	J. C. Upham and J. P. Rogers	293,381	Feb. 12	797	214	26	588
Railway-signal. Electric	W. Vogel	291,556	Jan. 8	683	193	26	129
Railway-signal. Magneto-electric	W. W. Gary	291,590	Jan. 8	732	206	26	138
Railway-signal system	W. Hadden	291,721	Jan. 8	896	251	26	166
Railway signaling apparatus	W. N. Dawson	294,206	Feb. 26	1857	506 / 507	26	787
Railway signaling apparatus. Electric	F. L. Pope	295,427	Mar. 18	1368	390	26	1090
Railway. Single-cable-track	J. J. Clisham	291,691	Jan. 8	864	241	26	160
Railway-switch	J. H. Crowley and B. M. Temple	291,988	Jan. 15	1327	349	26	236
Railway-switch	R. H. Isbell	291,906	Jan. 15	1128	315	26	218
Railway-switch	W. W. Pennell	294,904	Mar. 11	690	192	26	955
Railway-switch	B. Rice	291,694	Jan. 8	780	219	26	146
Railway-switch	E. Stone	292,144	Jan. 15	1405	394	26	268
Railway-switch	E. Stone	292,145	Jan. 15	1406	394	26	270
Railway-switch	D. McCarthy	293,660	Feb. 19	1117	311	26	653
Railway switch and crossing	E. Bill	291,138	Jan. 1	155	46	26	30
Railway switch. Automatic street	C. A. Scott	292,687	Jan. 29	2128	592	26	409
Railway-switch circuit-closer	G. W. Horne	293,096	Feb. 5	308	85	26	498
Railway-switch mover	C. H. Talmage	291,804	Jan. 8	988	277	26	182
Railway-switch stand	J. A. Bonnell	291,868	Jan. 15	1092	302	26	209
Railway-switches. Detecting-bar for	T. L. Johnson	292,655	Jan. 29	2085	580	26	401
Railway T-rail	T. Breen	294,191	Feb. 26	1836	509	26	784
Railway-tie	J. J. Du Bois	292,421	Jan. 22	1777	495	26	342
Railway-tie	H. R. Holbrook	291,514	Jan. 8	632	179	26	120
Railway-tie	C. H. Van Orden	294,166	Feb. 26	1807	494	26	779
Railway-tie. Metallic	D. Servis	294,816	Mar. 11	592	161	26	935
Railway-ties. Wear-plate for	J. G. Krichbaum	291,523	Jan. 8	645	183	26	122
Railway-track	H. C. Lowrie	291,613	Jan. 8	767	215	26	144
Railway-track and road-bed	C. R. Goodman	291,049	Jan. 1	40	13	26	10
Railway-tracks. Apparatus for laying	J. Reven	293,194	Feb. 5	539	143	26	536
Railway-tracks from spreading. Preventing	C. F. Findlay	294,213	Feb. 26	1865	509	26	789
Railway. Traction-rope	E. S. Gardner	291,589	Jan. 8	731	205 / 206	26	137
Railway. Traction-rope	C. Selden	291,095	Jan. 1	95	27	26	20
Railway-train signal apparatus	B. Frese	291,180	Jan. 1	206	57 / 58 / 59	26	38
Railway-trains. Apparatus for operating	J. W. Cloud	291,495	Jan. 8	605	171	26	115
Railway-trains. Device for stopping	E. C. Bacon	294,953	Mar. 11	744	208	26	965
Railways. Friction-drum for inclined-plane cable	J. W. Young	294,948	Mar. 11	739	207	26	964
Railways. Gripping mechanism for traction-cable	P. H. Mayor	293,049	Feb. 5	332	91	26	503
Railways. Operating trains on cable							
Rake: *See* Cornstalk-rake. Hay-rake.							
Rake	S. Booker	295,103	Mar. 11	958	261	26	1000
Rake	J. Moore	294,658	Mar. 4	391	109	26	895
Rake shoe or runner	C. O. Dennen, W. C. Gray, and H. C. Nellis.	293,210	Feb. 5	560	149	26	540
Rams arranged in series. Hydraulic	L. Schutte	294,085	Feb. 26	1688	464 / 465	26	761
Rat-trap	J. L. Symonds	293,683	Feb. 19	1148	320	26	659
Rat-trap for buildings	T. M. Beverage	295,720	Mar. 25	1754	487	26	1164
Ratchet-drill	W. Brede	292,290	Jan. 22	1594	445	26	307
Ratchet-drill	W. Moritz	292,345	Jan. 22	1671	466	26	321
Ratchet-drill	J. E. Sinclair	294,292	Feb. 26	1943	533	26	804
Ratchet-drill	R. Stephens	291,419	Jan. 1	502	141	26	90
Ratchet-drill	J. H. Vinton	295,694	Mar. 25	1720	475	26	1159
Ratchet-drill	P. A. Whitney	292,522	Jan. 29	1912	535	26	373
Ratchet-drill	A. E. Osborn	295,797	Mar. 25	1853	515	26	1183
Ratchet-wrench	C. Wechsler	293,128	Feb. 5	451	121	26	521
Ratchet-wrench	G. W. Lombard	292,239	Jan. 22	1543	432	26	298
Rattan. Working	H. A. Meyer	293,343	Feb. 12	741	198	26	577
Rattan-working machine	J. R. Torrey	295,840	Mar. 25	1905	527	26	1193
Razor-strop	J. H. White	294,830	Mar. 11	602	166	26	938
Razor-strop	P. S. Wold	293,994	Feb. 19	1563	431	26	731
Razor-strop attachment	E. F. Wiegleb	294,944	Mar. 11	734	204	26	963
Reamer	C. H. Malmedie	294,494	Mar. 4	184	50	26	860
Reamer. Expanding	C. Wren	294,714	Mar. 4	453	127	26	907
Reapers and mowers. Cutting apparatus for	J. Woodley	291,563	Jan. 8	691	195	26	130
Reclining and folding chair	F. E. Young	293,393	Feb. 12	817	220	26	592
Reclining-chair	I. Deppen	294,973	Mar. 11	780	216	26	971
Recording table or desk	M. S. Holt	292,749	Jan. 29	2223	618	26	426
Reed-board	M. Bray	293,558	Feb. 12	997	273	26	624
Reel: *See* Bolting-reel. Clothes-reel. Harvester-reel. Hose-reel. Thrashing-machine belt-reel. Wire-reel. Yarn-reel.							
Reels. Skein lacing and tying attachment for	G. Grimshaw, Jr	293,164	Feb. 5	495	132	26	528
Reflector and globe for lamps and lanterns. Combined	B. D. Stevens	292,871	Feb. 5	113	30, 31	26	464
Reflector for gas-burners	J. Kaaschan	291,199	Jan. 1	235	65	26	42
Reflector for incandescent lamps	J. S. Beeman	292,403	Jan. 22	1748	487	26	337
Reflector. Solar	W. Calver	291,146	Jan. 1	166	48	26	32
Refrigerating apparatus	F. A. Dodge	291,166	Jan. 1	190	54	26	35
Refrigerating apparatus for cars, &c	W. H. Doughty	294,209	Feb. 26	1860	508	26	788
Refrigerating-car and apparatus for shipping meat	H. G. Widman	293,832	Feb. 19	1357	376 / 377	26	693
Refrigerating-chamber	A. Myers	291,074	Jan. 1	71	20	26	16
Refrigerating-counter for bar-rooms	C. E. Crockett	293,425	Feb. 12	850	230 / 231	26	597
Refrigerating dish-cover	A. C. Pecor	293,074	Feb. 5	367	99 / 100	26	509

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Refrigerating-machine	C. B. Lee	292,925	Feb. 5	181	50	26	476
Refrigerating paraffine and other oils. Method of and apparatus for	B. F. Shakespeare	291,632	Jan. 8	788	221	26	148
Refrigerator	C. J. Berens	291,278	Jan. 1	328	92, 93	26	60
Refrigerator	J. Burke	295,110	Mar. 11	965	264	26	1001
Refrigerator	W. H. Davis	291,036	Jan. 1	25	7	26	7
Refrigerator	J. Linsley	292,926	Feb. 5	183	50	26	477
Refrigerator	H. H. and H. T. Lovell	295,259	Mar. 18	1166	322	26	1050
Refrigerator	G. R. Prowse	295,197	Mar. 18	1092	296	26	1035
Regenerator-furnace	W. Swindell	295,209	Mar. 18	1099	304	26	1039
Register: *See* Automatic register. Fare-register. Bottle-register. Game-register. Counting-register.							
Registering apparatus. Thermostatic electric	C. W. Weiss	293,828	Feb. 19	1352	375	26	692
Regulator: *See* Automatic regulator. Gas-regulator. Gas and water regulator. Damper-regulator. Gas-pressure regulator. Draft-regulator. Pressure-regulator. Electric-machine regulator. Secondary-battery regulator. Feed-water regulator. Watch-regulator.							
Rein button. Driving	S. A. Marker	293,760	Feb. 19	1258	349	26	677
Rein-guard	C. W. Speaks	294,521	Mar. 4	224	63	26	868
Rein-holder	L. A. Koplin	293,476	Feb. 12	906	245	26	607
Rein-holder	N. C. Moody	294,325	Feb. 26	2002	548	26	815
Rein-holder	J. L. Thomson	293,819	Feb. 19	1340	372	26	691
Rein hook. Check	T. A. Crabtree	294,310	Feb. 26	1983	542	26	811
Rein-protector	S. J. Spurgeon	291,797	Jan. 8	978	275	26	181
Remedy for hernia	E. C. Thatcher	295,078	Mar. 11	926	.....	26	995
Reservoir and palette. Combined	F. S. Dellenbaugh	294,591	Mar. 4	311	86	26	881
Retouching-machine	C. H. Shaffer	294,817	Mar. 11	583	161, 162	26	936
Reverberatory ore-furnace	G. W. Jones	295,646	Mar. 25	1660	460	26	1148
Reversible seat	F. H. Henry	294,874	Mar. 11	655	182	26	948
Revolver	W. H. Bliss	294,188	Feb. 26	1837	501	26	784
Revolver	J. T. Smith	295,064	Mar. 11	907	248	26	991
Revolvers. Cylinder-stop for	F. H. Allen	294,950	Mar. 11	742	207	26	964
Rice hulling and cleaning machine	J. W. Lane	291,302	Jan. 1	426	120, 121	26	78
Ring: *See* Ear-ring. Key-ring. Finger-ring. Split ring.							
Ring for securing finger-cots in position	W. H. Wickers	293,831	Feb. 19	1356	376	26	693
Rivet	A. Eppler, Jr.	294,979	Mar. 11	788	218	26	972
Riveting-machine. Hydraulic	W. R. Webster	292,521	Jan. 29	1912	535	26	373
Riveting sheet-metal pipe. Machine for	J. B. Root	292,364	Jan. 22	1704	475	26	328
Road-making machine	W. H. Tidland	291,427	Jan. 1	512	144, 145	26	91
Roasting-furnace	N. A. Foss and J. M. Gray	293,002	Feb. 5	279	77, 78	26	483
Rock-drill	C. O. Barlow and G. T. Emery	294,430	Mar. 4	117	31	26	849
Rock-drill	H. Borchardt	291,568	Jan. 8	696	196	26	131
Rock-drill	F. W. Coe and C. A. Hoffnagle	295,737	Mar. 25	1776	494	26	1168
Rock-drill	H. C. Sergeant	295,682	Mar. 25	1704	472	26	1157
Rock-drill. Steam	F. A. Halsey	294,999	Mar. 11	811	224	26	976
Rock-drill. Steam	F. A. Halsey	295,000	Mar. 11	815	225	26	977
Rock-drill. Steam	F. A. Halsey	295,001	Mar. 11	817	225	26	977
Rock-drill. Steam	A. and A. L. Stevens	293,371	Feb. 12	792	210	26	585
Rock-drill valve-gear	F. A. Halsey	295,002	Mar. 11	820	226	26	977
Rock-drill valve-gear	F. A. Halsey	295,003	Mar. 11	825	226	26	977
Rock-drilling machine. Hand	R. Magill	292,605	Jan. 29	2104	585	26	404
Rocker. Shoo-fly	G. P. Steinbach	295,457	Mar. 18	1405	388	26	1097
Rod-coupling	G. B. Turrell	291,819	Jan. 8	1004	281	26	185
Roller: *See* Clay-crushing roller. Shade-roller. Grinding-mill roller. Trunk-roller.							
Roller flour-mill	A. N. Wolf	294,947	Mar. 11	737	205, 206	26	964
Roller-fixture	J. H. Skidmore	292,699	Jan. 29	2146	597	26	412
Roller-mill	N. W. Holt	294,236	Feb. 26	1890	517	26	795
Roller-mill	J. W. Jackson	291,517	Jan. 8	634	179, 180	26	120
Roller-mill	E. R. and F. Turner and J. H. Carter	293,990	Feb. 19	1558	429, 430	26	730
Roller-mill	F. Wegmann	294,418	Mar. 4	102	26, 27	26	846
Roller-mill feed mechanism	N. W. Holt	293,464	Feb. 12	894	242	26	605
Roller-mill feed mechanism	B. F. Ortman	295,043	Mar. 11	875	240	26	985
Roller-mills, purifiers, &c. Feeding mechanism for	H. C. Potts	295,504	Mar. 18	1469	405	26	1108
Rolling apparatus. Indicator for tire	J. Munton	293,768	Feb. 19	1271	351, 352	26	679
Rolling car-rails. Roll for	A. J. Moxham and J. R. Tranter	292,759	Jan. 29	2238	621, 622	26	429
Rolling coupling-pins. Machine for	R. R. Turner	291,110	Jan. 1	119	33	26	24
Rolling-mill	P. M. Haas	293,165	Feb. 5	496	132, 133	26	528
Rolling-mill	D. B. Oliver	292,943	Feb. 5	208	57	26	481
Rolling-mill reversing mechanism	T. A. Weston	292,968	Feb. 5	235	64, 65	26	485
Rolling threads on metal. Machine for	J. S. Wilson and J. H. Haskins	295,605	Mar. 25	1608	445	26	1139
Roof. Felt and gravel	W. H. H. Childs	294,579	Mar. 4	297	81	26	879
Roofing-clamp	N. W. West	291,248	Jan. 1	287	80	26	52
Roofing composition	J. F. Perry	294,665	Mar. 4	397	.....	26	897
Roofing composition	W. White	295,604	Mar. 25	1607	.....	26	1139

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Roofing fabric	H. M. Miner	293,491	Feb. 12	922	250	26	611
Roofing fabric and applying the same	C. M. Warren	291,440	Jan. 1	524	149	26	94
Roofing fabrics. Manufacture of	H. M. Miner	293,492	Feb. 12	922	251	26	611
Roofing-felt and mechanism for making the same	A. Sackett	291,628	Jan. 8	792	220	26	147
Roofing-felt, &c. Apparatus for making	J. Jowitt	291,600	Jan. 8	742	209	26	140
Rope-clamp	H. S. Cole	291,693	Jan. 8	866	242	26	161
Rope or line clasp	A. L. Pitney	295,194	Mar. 18	1079	297	26	1035
Rope or line clasp	A. L. Pitney	295,802	Mar. 25	1860	517	26	1184
Rope or line clasp	A. L. Pitney	295,803	Mar. 25	1861	517	26	1184
Ropes. Clamp for attaching	C. Kortüm	294,392	Mar. 4	69	17	26	841
Rotary cutter	J. B. Emery	295,490	Mar. 18	1455	401	26	1106
Rotary engine	J. T. Davis	295,859	Mar. 25	1936	534	26	1198
Rotary engine	J. H. Phelps	293,511	Feb. 12	*945	257	26	615
Rotary engine and pump	R. H. Froude	295,380	Mar. 18	1316	365, 366	26	1079
Rotary meter	B. Fitts	294,026	Feb. 26	1601	444, 445	26	747
Rotary steam-engine	L. D'Andrée	292,898	Feb. 5	148	39	26	470
Rotary steam-engine	T. E. Jones	293,887	Feb. 19	1427	394	26	706
Roundabout	T. Oldroyd	291,621	Jan. 8	777	218	26	146
Row-guide	R. W. Chappell	293,636	Feb. 19	1393	390	26	647
Rowlock	J. Edson	293,858	Feb. 19	1394	390	26	701
Rowlock	S. H. Haas	294,903	Mar. 11	802	222	26	975
Rubber belting. Utilizing discarded	F. A. Magowan	292,020	Jan. 15	1263	353	26	243
Rubber clothing	G. Platt	291,854	Jan. 8	1052	294	26	194
Rubber clothing. Stay-press for	T. Hawley	294,318	Feb. 26	1994	545	26	813
Rubber hose. Utilizing discarded	F. A. Magowan	292,021	Jan. 15	1263	353	26	243
Rubber waste for the recovery of the rubber or caoutchouc therefrom. Treating fibrous	A. O. Bourn	295,615	Mar. 25	1624	.....	26	1141
Rubber waste. Treating fibrous	A. O. Bourn	292,891	Feb. 5	136	.....	26	468
Rule and try-square	W. N. Nash	293,497	Feb. 12	930	252	26	612
Rule-holder. Mechanic's	J. S. Borden	293,623	Feb. 19	1074	297	26	645
Ruler	M. Green	294,870	Mar. 11	652	181	26	948
Rumble for scouring castings, washing ores, &c	E. W. Vanduzen	292,075	Jan. 15	1292	370	26	255
Saccharine liquids. Defecating	G. B. Boomer	293,409	Feb. 12	835	226	26	595
Sad-iron	A. R. White	292,782	Jan. 29	2179	605	26	417
Sad-iron handles. Machine for bending shanks of	J. Sabold, Jr.	294,509	Mar. 4	211	59, 60	26	865
Sad-iron holder	S. M. Carnes	294,196	Feb. 26	1846	503	26	786
Sad-iron. Reversible	J. A. Yarger	292,087	Jan. 15	1338	375	26	258
Saddle-board	J. A. Wilson	295,847	Mar. 25	1916	530	26	1194
Saddle. Harness	A. C. Rickey and E. D. Myers	292,360	Jan. 22	1696	472, 473	26	327
Saddle or saddle-tree	J. Stanley and T. F. Lemassena	293,601	Feb. 12	1045	288	26	632
Saddle. Pack	W. C. Smith and W. L. Hunter	294,925	Mar. 11	712	199	26	950
Saddle. Riding	W. Frazier	295,623	Mar. 25	1632	453	26	1143
Saddle tree. Harness	L. A. Ringwalt	295,810	Mar. 25	1871	519	26	1186
Safe	T. M. Brintnall	292,155	Jan. 22	1419	398, 399	26	279
Safe. Burglar-proof	G. W. Kennedy	294,631	Mar. 4	356	99	26	890
Safe. Fire-proof	M. Mosler	295,272	Mar. 18	1182	327	26	1054
Safe-lock	J. T. Hough	294,625	Mar. 4	348	97	26	888
Safe-lock	E. Stockwell	294,821	Mar. 11	588	163	26	936
Safe-lock	J. White	293,388	Feb. 12	808	217, 218	26	589
Safety-pin	F. Meyers	295,036	Mar. 11	868	238	26	984
Salt-cellar	S. C. Wilcox	294,341	Feb. 26	2025	555	26	819
Salve	W. Richardson	292,255	Jan. 22	1566	.....	26	302
Sampling-tube	P. Contant	293,423	Feb. 12	848	230	26	597
Sand-bars, &c., in rivers and harbors. Apparatus for loosening up and removing	L. A. Johnson and N. E. Johnson	294,737	Mar. 4	477	133	26	911
Sash-balance	M. B. Gladman	295,630	Mar. 25	1639	455	26	1144
Sash-balance	G. M. Jewett	291,740	Jan. 8	917	257	26	169
Sash-cord fastener	H. L. Blodgett	293,554	Feb. 12	902	272	26	623
Sash-cord fastener	W. A. Sinsel	293,100	Feb. 5	396	109	26	514
Sash-fastener	H. H. Aelmont	295,142	Mar. 18	1011	279	26	1023
Sash-fastener	N. B. Beady	294,435	Mar. 4	125	32	26	850
Sash-fastener	G. W. Curry	291,303	Jan. 1	303	102	26	65
Sash-fastener	F. Eberlein	294,774	Mar. 11	523	146	26	925
Sash-fastener	S. Farquhar	295,530	Mar. 25	1509	416	26	1121
Sash-fastener	R. B. Hinguin	292,117	Jan. 15	1375	385	26	264
Sash-fastener	E. Kempshall	294,787	Mar. 11	530	150	26	928
Sash-fastener	F. W. Otis	294,329	Feb. 26	2006	550	26	816
Sash-fastener	S. M. Tinkham	293,820	Feb. 19	1341	372	26	691
Sash-fastening	J. Chambers	292,202	Jan. 22	1487	418	26	289
Sash-holder	M. Bourke	291,672	Jan. 8	840	235	26	156
Sash-holder	G. P. Clements	293,310	Feb. 12	702	188	26	569
Sash-holder	H. Cutting	291,697	Jan. 8	870	244	26	169
Sash-holder	T. B. Jones	295,253	Mar. 18	1159	320	26	1049
Sash-holder	W. A. McDonald	292,670	Jan. 29	2109	586	26	405
Sash-holder	C. E. Murray	292,442	Jan. 22	1805	503	26	348
Sash-holder	H. W. Schroder	293,527	Feb. 12	961	262	26	617
Sash. Window	W. A. Sinsel	293,099	Feb. 5	397	108	26	514
Sash. Window	F. W. Tuerk, Jr.	294,826	Mar. 11	596	165	26	938
Sausage-stuffing machine. Hydraulic	W. H. Hankin, Jr.	295,385	Mar. 18	1323	368	26	1080
Saw	J. H. Riley	293,276	Feb. 12	659	176	26	562
Saw	G. W. Wills	293,130	Feb. 5	454	121	26	521
Saw-buck	B. R. Baker	294,718	Mar. 4	457	128	26	908
Saw-buck	T. Beard	291,669	Jan. 8	837	234	26	156
Saw. Crosscut	E. C. Atkins	292,194	Jan. 22	1473	414	26	287
Saw-dipping machine	E. C. Atkins	294,346	Mar. 4	2	1	26	829
Saw. Drag	W. A. Bennett	291,277	Jan. 1	327	92	26	60
Saw. Drag	G. Valentine	294,096	Feb. 26	1707	469	26	764
Saw elevator. Drag	W. J. Perkins	294,804	Mar. 11	567	156, 157, 158	26	932

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Saw-envelope	F. Schlüchtner	292,369	Jan. 22	1709	476	26	329
Saw fastening and frame	H. L. Pratt	292,176	Jan. 22	1447	406	26	284
Saw filing and setting machine	J. S. Detrick and W. T. Smith	295,115	Mar. 11	971	265 / 266	26	1002
Saw-filing machine	W. Tucker	295,133	Mar. 11	992	273 / 274	26	1007
Saw-frame rod	J. M. Koeberle	292,494	Jan. 29	1871	522	26	367
Saw-guard	J. G. Groff	291,187	Jan. 1	219	61	26	39
Saw-guide	W. J. F. Liddell	292,331	Jan. 22	1654	461	26	318
Saw-guide	T. J. Neacy	295,792	Mar. 25	1848	514	26	1192
Saw. Hand-	C. Tenney	291,424	Jan. 1	509	143	26	91
Saw-handle	R. E. Poindexter	292,946	Feb. 5	212	58	26	461
Saw-handle	C. Richardson	292,951	Feb. 5	218	60	26	483
Saw-handle	M. E. True	291,108	Jan. 1	118	33	26	24
Saw-handle	M. E. True	294,164	Feb. 26	1805	493	26	779
Saw-handle	J. W. Phillips	292,352	Jan. 22	1681	468	26	323
Saw-horse and scaffold. Combined extension	W. H. Dodge	294,452	Mar. 4	142	37	26	854
Saw machine. Band-	D. F. and J. T. Milne	295,791	Mar. 25	1846	513 / 514	26	1192
Saw-mill	J. M. Story	295,303	Mar. 18	1220	339	26	1061
Saw mill. Band-	H. F. Campbell	291,402	Jan. 8	601	170	26	115
Saw-mill carriages. Truck-box for	G. M. Hinkley	291,345	Jan. 1	405	115	26	74
Saw mill. Circular	W. P. Clark	294,442	Mar. 4	132	34, 35	26	852
Saw mill. Circular	J. B. Gorrell and J. Miller	294,221	Feb. 26	1875	512 / 513	26	791
Saw-mill dog	J. J. McGillis	293,186	Feb. 5	531	141	26	534
Saw-mill dog	W. F. Schowe	291,409	Jan. 1	492	138	26	88
Saw-mill dog	W. H. Snyder	294,692	Mar. 4	426	118	26	902
Saw-mill dog	W. M. Wilkin	294,710	Mar. 4	446	124	26	905
Saw-mill dog	W. M. Wilkin	294,711	Mar. 4	448	124	26	905
Saw-mill-feed mechanism	S. Dickson	294,208	Feb. 26	1859	507	26	788
Saw-mill-feed mechanism	T. J. Reamy	294,272	Feb. 26	1931	529	26	802
Saw-mill frame. Gang-	T. S. Wilkin	291,255	Jan. 1	296	83, 84	26	54
Saw-mill gage	J. Walrath	291,758	Jan. 8	686	194	26	129
Saw mill. Gang-	T. S. Wilkin	291,256	Jan. 1	297	84	26	54
Saw mill. Gang-	T. S. Wilkin	291,257	Jan. 1	298	84	26	54
Saw mill. Gang-	T. S. Wilkin	291,258	Jan. 1	301	85	26	55
Saw-mill head-block	V. Martin and C. W. Metcalfe	295,572	Mar. 25	1570	435	26	1132
Saw-mill head-block	T. S. Wilkin	291,453	Jan. 1	548	155	26	98
Saw-mill-refuse conveyor	W. J. Perkins	294,073	Feb. 26	1674	461	26	759
Saw-mill set-works	G. M. Hinkley	291,344	Jan. 1	403	114 / 115	26	73
Saw-mill set-works	W. J. F. Liddell	292,330	Jan. 22	1651	461	26	318
Saw-mill set-works	T. S. Wilkin	292,271	Jan. 22	1584	442 / 443	26	305
Saw-mills. Log-jacking mechanism for	J. P. Hanson	293,245	Feb. 12	613	163	26	554
Saw mills. Press-roller mechanism for gang-	H. D. and E. N. Wickes	291,823	Jan. 8	1009	282	26	186
Saw-set	F. L. Bailey	291,269	Jan. 1	318	89	26	58
Saw-set	J. S. Long	292,755	Jan. 29	2232	620	26	428
Saw-set	J. M. Morehead	293,588	Feb. 12	1030	283	26	629
Saw-set	R. E. Poindexter	291,224	Jan. 1	262	73	26	48
Saw-setting machine	H. Marstall	291,917	Jan. 15	1143	319	26	221
Saw-swage	J. Miller	294,251	Feb. 26	1908	523	26	798
Saw-swaging machine	P. B. Charbonean	294,439	Mar. 4	128	33, 34	26	851
Saw-tooth	E. Harris	292,809	Feb. 5	40	11	26	450
Saw-tooth	R. W. Kellen	295,649	Mar. 25	1663	461	26	1149
Saw-tooth	A. Krieger	292,659	Jan. 29	2090	582	26	402
Saw-tooth swage	S. J. Chalfant	292,907	Jan. 15	1350	379	26	260
Saws. Hanging circular	W. D. Sherman	292,594	Jan. 29	2016	560	26	390
Saws. Mandrel attachment for circular	E. W. Johnson	292,316	Jan. 22	1635	458	26	315
Saws. Operating butting-	J. Cardy	291,148	Jan. 1	169	49	26	32
Sawing machine. Band	A. L. Gray	293,163	Feb. 5	494	132	26	528
Sawing machine. Circular	G. J. Kautz	293,037	Feb. 5	318	88	26	500
Sawyer's gage	G. S. Black	292,465	Jan. 29	1834	511	26	360
Scaffold and fire-escape	J. Klein	292,321	Jan. 22	1641	459	26	316
Scaffolding	J. T. Haskell	295,389	Mar. 18	1326	369	26	1082
Scaffolding	T. N. Subers	295,592	Mar. 25	1503	441	26	1137
Scaffolding attachment	J. T. O'Brien	295,578	Mar. 25	1577	436	26	1134
Scaffolding-bracket	M. N. Knight	293,040	Feb. 5	322	89	26	501
Scaffolding. Interior and exterior	J. T. O'Brien	295,579	Mar. 25	1578	437	26	1134
Scaffolding-trestle	J. T. O'Brien	295,369	Mar. 18	1179	326	26	1053
Scale and coin-tester. Combined letter	E. C. Purnelle	292,763	Jan. 29	2246	623	26	430
Scale, bagger, and register. Combined grain	C. J. Leach and A. Olds	292,326	Jan. 22	1647	460	26	317
Scale-beam. Duplex-check	J. A. Demuth	293,637	Feb. 19	1091	302	26	648
Scale. Coin and letter	C. Richtmann	295,809	Mar. 25	1870	519	26	1166
Scale. Graduated	G. F. Tuttle	291,429	Jan. 1	514	145	26	92
Scale-pan. Folding	W. Maguire	295,795	Mar. 25	1841	512	26	1161
Scale. Platform-	E. Bell	291,276	Jan. 1	325	91, 92	26	59
Scarf. Neck-	H. T. Blake	292,623	Jan. 23	2048	569	26	395
Scarf. Neck-	S. Marcus	293,896	Feb. 19	1440	398	26	709
Scarf-retainer	J. Sandilands	293,093	Feb. 5	389	105	26	512
Scenery. Wire-cloth	F. W. Roebling and W. Orr, Jr.	293,991	Feb. 19	1547	426	26	728
Scholar's companion	M. J. Spencer	291,415	Jan. 1	499	140	26	89
School-bag	M. Höninger	294,692	Mar. 4	344	96	26	887
Scissors and shears	W. J. Bayrer	295,718	Mar. 25	1732	487	26	1164
Scissors and shears	S. R. Plumb	291,623	Jan. 8	779	219	26	146
Scissors for cutting felt on a bevel	J. S. Gorton	291,591	Jan. 8	733	206	26	138
Scissors. Manufacture of	J. D. Frary	294,605	Mar. 4	326	90	26	884
Scissors. Ripping attachment for	F. S. Loockerman	293,122	Feb. 5	525	139	26	533
Scoop and riddle. Combined potato	H. Peggs	291,395	Jan. 1	471	132	26	84
Scourer: *See* Knife-scourer.							
Scraper. Dirt-	C. Endicott	291,585	Jan. 8	726	204	26	136
Scraper. Road-	L. Smith	292,375	Jan. 22	1714	478	26	331
Scraper-runner	L. D. York	295,892	Mar. 25	1983	548	26	1206

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Scrapers. Blank for road-	G. D. Matcham	293,261	Feb. 12	634	169	26	558
Screen: *See* Coal-screen. Fly-screen. Potato-screen. Sleigh-dasher screen. Window-screen.							
Screen	J. Norwood	291,220	Jan. 1	257	72	26	47
Screen	J. E. Wakefield	291,246	Jan. 1	285	80	26	52
Screen	E. Stiemke	294,524	Mar. 4	227	64	26	868
Screw. Capped wood-	F. A. Moore	293,058	Feb. 5	342	94	26	505
Screw-clamp	A. J. Peavey	295,422	Mar. 18	1364	379	26	1069
Screw-cutter	W. Hargrave	293,868	Feb. 19	1405	389	26	702
Screw-cutting implement	G. E. Gay and J. H. Parsons	292,298	Jan. 22	1615	452	26	311
Screw-driver	W. L. Parmelee	294,663	Mar. 4	396	110	26	896
Screw-driver	A. D. Wallen	294,828	Mar. 11	600	165	26	938
Screw-driver	C. F. Pope	293,079	Feb. 5	373	101	26	510
Screw hook or ring	E. H. Middleton	292,567	Jan. 29	1977	551	26	383
Screw-jack	E. H. Middleton	292,568	Jan. 29	1978	552	26	383
Screw-jack	A. R. Tiffany	295,837	Mar. 25	1901	526	26	1192
Screw-jack	A. R. Tiffany	295,838	Mar. 25	1902	526 / 527	26	1192
Screw machine. Metal-	A. Johnston	293,176	Feb. 5	513	136 / 137	26	531
Screw machine. Metal-	C. F. Roper	292,683	Jan. 29	2124	590 / 591	26	408
Screw stock and die	W. J. McCormack	294,143	Feb. 26	1774	487	26	774
Screw-tap	A. J. Peavey	295,421	Mar. 18	1363	378	26	1069
Screw-threading machine. Sheet-metal	W. Werts	291,656	Jan. 8	822	229 / 230	26	153
Screw-threads. Machine for cutting	E. A. Sperry	294,099	Feb. 26	1700	467	26	763
Screw. Wheel or felly	C. Rotzien	291,626	Jan. 8	781	220	26	146
Screw. Wood-	S. Montgomery	294,255	Feb. 26	1912	524	26	799
Screw. Wood-	G. A. Stiles	295,833	Mar. 25	1896	525	26	1191
Screw. Wood-	C. V. Woerd	293,930	Feb. 19	1485	408	26	717
Screws. Machine for threading sectional leading-	P. O. King and A. M. Carlson	294,634	Mar. 4	358	100	26	890
Scrubber	T. H. Malone and G. A. Whiting	292,499	Jan. 29	1875	524	26	368
Seal. Car-	E. J. Brooks	294,193	Feb. 26	1842	503	26	785
Seal. Lead-and-wire	A. B. Barnard	295,514	Mar. 25	1489	411	26	1117
Seal-lock	R. Frew	292,296	Jan. 22	1612	451	26	311
Seal-lock	C. A. Jewett	291,352	Jan. 1	413	117 / 118	26	75
Seal-lock	J. Jordan and A. P. Powers	291,354	Jan. 1	415	118	26	76
Seal-lock	E. J. Brooks	294,576	Mar. 4	292	81	26	878
Seal. Metallic	E. J. Brooks	294,577	Mar. 4	294	81	26	879
Seal. Metallic	E. J. Brooks	295,346	Mar. 18	1275	353	26	1071
Seal. Metallic	E. C. Sloan	293,600	Feb. 12	1044	288	26	632
Seals. Lead ribbon for metallic	F. A. Walsh	294,167	Feb. 26	1808	494	26	780
Seam for sheet-metal vessels	A. Wright	291,459	Jan. 1	557	157	26	100
Seam trimmers. Device for sharpening the blades of fabric-	T. L. Smith and W. S. Doig	294,520	Mar. 4	223	63	26	867
Seaming machine. Can-	M. Benedict	291,467	Jan. 8	596	168	26	114
Seat: *See* Car-seat. Folding seat. Reversible seat. Wagon-seat.							
Seat	G. H. Thompson	292,071	Jan. 15	1319	368	26	254
Seat for public buildings	G. H. Thompson	295,461	Mar. 18	1409	389	26	1097
Seat for public buildings	A. Haid	294,464	Mar. 4	157	43	26	856
Secondary battery	A. Haid	294,465	Mar. 4	158	43	26	856
Secondary battery	E. J. Molera and J. C. Cebrian	291,598	Jan. 8	647	184	26	123
Secondary battery	E. J. Molera and J. C. Cebrian	292,034	Jan. 15	1277	357	26	246
Secondary battery	C. A. Smyth	292,142	Jan. 15	1403	393	26	269
Secondary battery and constructing electrodes therefor.	E. T. Starr	295,456	Mar. 18	1404	388	26	1096
Secondary-battery element	W. E. Case	292,469	Jan. 29	1840	.....	26	361
Secondary-battery plate or electrode	E. T. Starr	295,455	Mar. 18	1402	388	26	1096
Secondary-battery regulator	J. S. Beeman, W. Taylor, and F. King	291,465	Jan. 1	561	158	26	100
Seed-cleaner. Flax-	G. Beal	294,841	Mar. 11	613	169 / 170	26	940
Seed-drill	J. H. Purdy and C. T. Welch	293,671	Feb. 19	1130	315	26	656
Seed drill and cultivator. Combined	A. H. Matthews and J. B. Small	295,263	Mar. 18	1171	324 / 325	26	1051
Seed-drill feed	W. H. Jullan	295,647	Mar. 25	1662	461	26	1149
Seed-hulling machine. Cotton-	D. Kahnweiler	294,241	Feb. 26	1896	519	26	796
Seeder, plow, and harrow. Combined	F. S. Armstrong	291,125	Jan. 1	141	41	26	26
Seeding-machine	G. S. Briggs	295,480	Mar. 18	1440	398	26	1103
Seeding-machine	A. N. Norris and H. D. Spangler	294,328	Feb. 26	2005	550	26	816
Seeding-machine	A. Shaffer	294,158	Feb. 26	1795	491	26	777
Seeding-machine	H. D. Spangler	294,694	Mar. 4	428	119 / 120	26	902
Seeding-machine cup	R. S. Carr	292,893	Feb. 5	139	37	26	469
Seeding-machines. Spring-hoe for	R. B. Sheldon	292,868	Feb. 5	109	30	26	463
Separator: *See* Cockle-separator. Ore-separator.							
Separator	A. W. Roper	293,983	Feb. 19	1549	427	26	729
Separator and conveyer	J. S. Fairly	292,550	Jan. 29	1958	546	26	380
Sewer-basin	W. Sievering	295,823	Mar. 25	1884	522	26	1188
Sewer-gas check	C. A. Scheffler	294,511	Mar. 4	214	60	26	866
Sewing loops to the surface of fabrics. Machine for	S. M. Levy and A. J. Sedmihradsky	293,478	Feb. 12	908	246	26	609
Sewing-machine	C. W. Davis	291,309	Jan. 1	370	104	26	67
Sewing-machine	J. H. Griffin	291,719	Jan. 8	894	250	26	166
Sewing-machine	J. Keith	292,005	Jan. 8	749	211	26	141
Sewing-machine	J. W. Post	292,045	Jan. 15	1291	361	26	249
Sewing-machine	J. Hegeman and B. Thackrah	294,037	Feb. 26	1613	448	26	749
Sewing-machine attachment for sewing buttons on fabrics	R. Hilgner	293,022	Feb. 5	302	83, 84	26	497
Sewing-machine binding attachment							

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machine brake mechanism	J. B. Desnoyers and C. Sinning	291,700	Jan. 8	875	245	26	163
Sewing-machine. Button-hole	J. B. Desnoyers and C. Sinning	291,701	Jan. 8	876	246	26	163
Sewing-machine button-hole attachment	H. C. Hartley and J. L. Rodgers	292 647	Jan. 29	2077	578	26	400
Sewing-machine button-hole attachment	W. Schott	292,591	Jan. 29	2009	559	26	389
Sewing-machine cord attachment	J. S. Sackett	295,055	Mar. 11	893	244	26	989
Sewing-machine feeding mechanism	C. W. Healey	295,551	Mar. 25	1537	426	26	1126
Sewing-machine frame	S. C. Tatum, Jr	293,109	Feb. 5	410	111	26	516
Sewing-machine guide	W. B. Thayer	295,079	Mar. 11	927	254	26	995
Sewing-machine hemstitch attachment	J. S. Sackett	292,060	Jan. 15	1307	365	26	252
Sewing-machine motor	J. H. Crandell	293,149	Feb. 5	475	127	26	525
Sewing-machine needle-threader	E. N. McPherron	294,061	Feb. 26	1655	457	26	755
Sewing-machine optical attachment	J. Watts	294,171	Feb. 26	1815	496	26	780
Sewing-machine overseaming attachment	W. F. Weber	292,451	Jan. 22	1814	506	26	349
Sewing-machine presser-foot	S. Halliwell	293,867	Feb. 19	1405	388	26	702
Sewing-machine ruffler	J. Heberling	292,813	Feb. 5	44	12	26	451
Sewing-machine ruffling and shirring attachment	W. Dudley	295,489	Mar. 18	1454	400	26	1105
Sewing-machine ruffling and shirring attachment	C. Grotz	291,051	Jan. 1	44	13	26	11
Sewing-machine ruffling and shirring attachment	C. Grotz	291,052	Jan. 1	45	13	26	11
Sewing-machine ruffling attachment	C. Grotz	291,050	Jan. 1	42	13	26	11
Sewing-machine ruffling attachment	J. S. Sackett	293,090	Feb. 5	383	104 / 105	26	512
Sewing-machine ruffling attachment	J. S. Sackett	293,091	Feb. 5	385	105	26	512
Sewing-machine ruffling attachment	J. S. Sackett	293,521	Feb. 12	956	260	26	617
Sewing-machine ruffling attachment	C. C. Seebold	292,867	Feb. 5	107	29	26	463
Sewing-machine ruffling attachment	G. H. Spring	295,301	Mar. 18	1217	339	26	1061
Sewing machine. Straw-braid	M. Marelli	292,194	Jan. 15	1381	387	26	265
Sewing-machine take-up mechanism	G. F. Foss	291,708	Jan. 8	884	248	26	164
Sewing-machine tension device	J. Thomson	292,964	Feb. 5	229	63	26	484
Sewing-machine thread-guide	J. H. H. Bennett	293,402	Feb. 12	828	223	26	594
Sewing-machine thread-guide	T. La Tour	292,496	Jan. 29	1873	523	26	367
Sewing-machine treadle	G. A. Lockwood and D. Orrill	295,027	Mar. 11	855	235	26	983
Sewing-machine trimmer	W. F. Beardslee	294,432	Mar. 4	120	32	26	850
Sewing-machine trimmers. Presser-foot and guide for use with	J. H. Griffin	292,747	Jan. 29	2230	617	26	426
Sewing-machine tuck-marker	J. S. Sackett	293,092	Feb. 5	387	105	26	512
Sewing-machine whipping-guide	G. Simpson	291,100	Jan. 1	107	29	26	22
Sewing-machines. Automatic tension for	D. P. Fitzgerald and W. Lyon	291,706	Jan. 8	881	247	26	164
Sewing machines. Channel-opener for sole	E. O. Jaquith	292,016	Jan. 15	1259	359	26	242
Sewing-machines, lathes, &c. Operating mechanism for	P. F. Jonte	292,436	Jan. 22	1798	501	26	346
Sewing-machines. Lighting	O. Healy	294,128	Feb. 26	1752	482	26	771
Sewing machines. Signature-presenting mechanism for book-	E. S. Boynton	294,061	Mar. 11	754	210 / 211	26	966
Sewing-needle. Device for driving a helical	E. Hunt	294,627	Mar. 4	351	98	26	889
Shade-bar	H. L. Judd	291,741	Jan. 8	919	257	26	170
Shade-pull	C. W. Clark	293,311	Feb. 12	703	188	26	569
Shade-roller	D. R. Stedman	294,414	Mar. 4	97	25	26	846
Shade-roller. Spring	M. E. Graves and P. C. Gates	294,316	Feb. 26	1992	544	26	813
Shade-roller. Spring	S. Hartshorn	293,457	Feb. 12	886	240	26	604
Shade-roller. Spring	S. Hartshorn	293,871	Feb. 19	1409	389	26	703
Shade-roller. Spring	D. E. Kempster	295,875	Mar. 25	1955	541	26	1201
Shade-roller. Spring	A. Morgan	294,494	Mar. 4	197	55	26	863
Shaft and its bearings. Machine	G. S. Gates	294,989	Mar. 11	798	221	26	974
Shaft-coupling	J. Brann	292,978	Feb. 5	250	68	26	498
Shaft-coupling. Friction	J. K. Proctor and I. W. Huckins	294,672	Mar. 4	406	112	26	898
Shaft friction-coupling	F. Brann	291,673	Jan. 8	842	235	26	157
Shaft-hanger	J. Walker	292,879	Feb. 5	123	34	26	466
Shaft or roll coupling	C. P. Carlson	292,095	Jan. 15	1346	373	26	259
Shafts. Breeching attachment for carriage	E. B. Repp	294,189	Feb. 26	1838	501	26	784
Shafting-box and oil-reservoir. Combined	C. B. Moulton	292,841	Feb. 5	78	21	26	457
Shafting-coupling	P. Brotherhood	293,141	Feb. 5	467	124	26	523
Shafting-hanger	J. E. Hoppen	295,553	Mar. 25	1542	427	26	1127
Shaving-mug	G. Schoenan	295,436	Mar. 18	1377	382	26	1092
Shearing-machine	H. B. Chess	294,066	Mar. 11	760	212	26	968
Shearing table. Sheep	J. L. Addison	293,839	Feb. 19	1370	379	26	696
Sheathing-planks. Device for guiding tongued and grooved	T. B. Brown	293,223	Feb. 12	587	154	26	549
Sheep-enumerator	H. A. Shipp	292,373	Jan. 22	1712	477 / 478	26	330
Sheep-house. Portable	L. Robbins	291,625	Jan. 8	780	219	26	146
Sheet folding and delivery apparatus	S. D. Tucker	293,122	Feb. 5	443	118 / 119	26	520
Sheet-metal pans. Machine for wiring	C. F. Beaman	291,834	Jan. 8	1023	285 / 286	26	198
Sheet-metal ware. Manufacture of enameled	C. Renach	292,051	Jan. 15	1299	363	26	250
Shelf. Wall-bracket extension	A. Loomis	293,894	Feb. 19	1437	397	26	708
Shell for blasting. Safety	G. Freund	292,642	Jan. 29	2072	576	26	399
Shell ornament	J. M. Reynolds	291,401	Jan. 1	477	135	26	86
Sheller: *See* Corn-sheller.							
Shelving. Adjustable	H. J. Hoffman	291,513	Jan. 8	629	178	26	120
Shepherd's crook	S. D. Felt	291,177	Jan. 1	202	56	26	37
Shingle-band	W. S. Newson	292,443	Jan. 22	1805	503	26	348
Shingle-machine	E. B. Hewett and G. F. James	295,006	Mar. 11	802	228	26	978
Shingle. Metallic	L. H. Montrose and J. C. West	294,256	Feb. 26	1913	525	26	799
Shingle. Metallic roofing	E. B. Repp	292,585	Jan. 29	2001	557	26	387
Shingle. Metallic roofing	E. B. Repp	295,283	Mar. 18	1194	331	26	1056
Shingle-sawing machine	S. L. Bitting	295,722	Mar. 25	1757	488	26	1165
Shingle-sawing machine	W. F. Dake and J. H. Seek	292,107	Jan. 15	1359	382	26	262
Shingle-sawing machine	P. O'Conner	292,347	Jan. 22	1674	466 / 467	26	322
Shingle shaving and rifting machine	A. Gould	295,541	Mar. 25	1524	421	26	1123
Shingling-bracket	S. Woodard	292,458	Jan. 22	1921	508	26	351
Shipping-can. Jacketed	G. J. Record	291,937	Jan. 15	1164	325	26	225

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Shipping-case	A. M. Platt	293,513	Feb. 12	947	258	26	615
Ship's fender	J. H. Grell, Sr	293,321	Feb. 12	716	191 / 192	26	572
Ships. Shaft for steam	S. B. Jerome	294,878	Mar. 11	658	183	26	949
Ships' sides, &c. Apparatus for cleaning	J. L. Cooper	295,357	Mar. 18	1289	357	26	1074
Ship's spars. Reversible scraper for	G. Wall	293,992	Feb. 19	1561	430	26	731
Shirt	E. S. Moore	294,741	Mar. 4	490	134	26	913
Shirt	J. Simon	294,921	Mar. 11	706	197	26	958
Shoe	W. S. Freeman	295,024	Mar. 25	1633	453	26	1143
Shoe	P. Packard	293,064	Feb. 5	350	96	26	506
Shoe	W. Rogers	293,982	Feb. 19	1548	426	26	729
Shoe	A. W. Rogers	292,692	Jan. 29	2123	590	26	408
Shoe-form	W. and L. Rossheim	295,053	Mar. 11	891	244	26	988
Shoe-heel	H. F. Rooney	292,363	Jan. 22	1703	474 / 475	26	328
Shoe-heel-filing machine	M. S. Fox	295,241	Mar. 18	1141	314	26	1045
Shoe or glove fastening	D. Wilkey	295,511	Mar. 18	1483	409	26	1110
Shoe. Rubber	C. K. Bradford	292,466	Jan. 29	1835	512	26	360
Shoe-soles. Brush-holder and tube for cementing	J. M. Berry	292,464	Jan. 29	1834	511	26	360
Shoe-upper	J. H. Eagan, Jr	295,239	Mar. 18	1139	314	26	1045
Shoe-upper	G. W. Sleeper	295,826	Mar. 25	1886	523	26	1189
Shoes. Manufacture of	A. J. Tewksbury	291,810	Jan. 8	995	279	26	184
Shoes. Manufacture of turned	J. S. Kuen	292,754	Jan. 29	2231	619	26	428
Shoe-maker's jack	A. G. Sinclair	292,065	Jan. 15	1312	366	26	253
Shot. Canister	Q. A. Ellis	293,437	Feb. 12	865	234	26	600
Shot-case	I. Keller	294,323	Feb. 26	2000	548	26	814
Shoulder-brace. Scholar's	H. J. Welch	294,419	Mar. 4	106	28	26	847
Shovel	L. H. Sholder	291,234	Jan. 1	272	76	26	49
Shovel and scoop	J. J. Holland	291,732	Jan. 8	905	254	26	168
Shovel and shield. Combined	J. G. White	291,450	Jan. 1	536	152	26	97
Show-box cover	E. Todd	292,875	Feb. 5	118	33	26	465
Show box and tray	D. E. Ladd and E. J. B. Whitaker	293,582	Feb. 12	1024	292	26	628
Show-case	D. C. Loewenstine and J. E. Fox	291,612	Jan. 8	763	214 / 215	26	144
Shutter	M. Cottle	292,101	Jan. 15	1354	380	26	261
Shutter-bolt	G. M. Bechtel	291,023	Jan. 1	11	8	26	5
Shutter bower and fastener	W. P. Marshall	294,894	Mar. 11	681	190	26	953
Shutter. Flexible	J. P. Recker	292,047	Jan. 15	1294	362	26	249
Shutter-worker	W. Hawn	292,225	Jan. 22	1523	426	26	295
Shutter-worker	R. F. Pratt	292,354	Jan. 22	1684	469	26	324
Shutter-worker	A. C. Sisson	291,101	Jan. 1	108	30	26	22
Shutter worker and fastener	F. O. Schmidt	295,291	Mar. 18	1208	336	26	1059
Shuttle and mechanism for operating the same	L. Wallace	294,099	Feb. 26	1710	470	26	764
Sickle bar and knife	G. W. Crawford	294,855	Mar. 11	631	175	26	944
Siding and ceiling for buildings	A. J. and M. I. Flowers	295,376	Mar. 18	1310	363	26	1078
Siding-bracket	H. Clayton	291,576	Jan. 8	708	199	26	133
Sifter	W. T. Adams	292,598	Jan. 29	1922	538	26	374
Sifter. Ash	H. W. Booth	291,671	Jan. 8	839	235	26	156
Sifter. Cinder	J. Weikert	294,553	Mar. 4	271	73	26	874
Sifter. Rotary coal	W. E. Banning	293,702	Feb. 19	1177	328	26	664
Sign	T. H. Bowles	293,555	Feb. 12	993	272	26	623
Sign for cars. Traveling	E. C. Miller	295,037	Mar. 11	868	238	26	984
Sign. Watchmaker's							
Signal: *See* Car-signal. Railway-signal. Distress-signal. Railway block signal. Pneumatic signal.							
Signals. Compensating device for	D. S. Gardinier	292,553	Jan. 29	1960	546	26	380
Signaling apparatus. Fluid-pressure	F. S. Gnerber	292,748	Jan. 29	2221	617	26	426
Silk-cleaning machine	J. N. Leonard	292,830	Feb. 5	66	18	26	455
Sirup and sugar from sorghum-cane. Making	A. J. Adamson	291,565	Jan. 8	693	.....	26	130
Sirup-cooler. Cold-air-blast centrifugal	A. B. Smith	294,922	Mar. 11	709	198	26	958
Sirups. Concentration and evaporation of	A. P. Boon	295,342	Mar. 18	1270	.....	26	1070
Sizing composition. Yarn	J. W. Wattles	292,260	Jan. 22	1583	.....	26	305
Sizing machines. Apparatus for pressing or leveling yarn on weavers' beams in warp	A. Hitchon	294,235	Feb. 26	1889	517	26	794
Skate	W. A. Sutton	293,373	Feb. 12	786	210	26	586
Skate and skate-fastening. Roller	E. H. Barney	293,298	Feb. 12	689	184	26	567
Skate-fastening	E. H. Barney	294,182	Feb. 26	1832	499	26	783
Skate. Roller	S. W. Alward	294,426	Mar. 4	112	30	26	848
Skate. Roller	E. H. Barney	293,299	Feb. 12	691	184	26	567
Skate. Roller	E. C. Phillips	292,850	Feb. 5	86	24	26	459
Skate. Roller	J. V. Rowlett	292,862	Feb. 5	101	28	26	462
Skate. Roller	L. L. Ryerson	294,082	Feb. 26	1685	464	26	760
Skate. Roller	A. F. Friend	292,643	Jan. 29	2074	576	26	399
Skewer-puller	R. McKeen	295,767	Mar. 25	1843	512	26	1181
Skins. Machine for putting out or stretching	L. Dryfoos	294,596	Mar. 4	315	88	26	882
Skirt	G. M. Barry	292,402	Jan. 22	1748	487	26	337
Skirt-supporter	A. Drummond	293,429	Feb. 12	856	232	26	598
Skylight	J. Ehrhardt	292,738	Jan. 29	2200	613	26	422
Skylight	G. Hayes	292,486	Jan. 29	1859	519 / 520	26	365
Skylight	G. Hayes	295,166	Mar. 18	1038	287	26	1028
Skylight	G. Hayes	295,167	Mar. 18	1040	287	26	1028
Skylight	O. C. Hubbell	291,057	Jan. 1	50	15	26	12
Skylight	G. Hayes	295,168	Mar. 18	1042	288	26	1028
Skylight. Ventilating	G. Hayes	291,342	Jan. 1	402	114	26	73
Skylights and glazed roofs. Cross-clip for metallic	A. M. Murray	292,569	Jan. 29	1979	.....	26	384
Slate. Artificial	J. Burling	291,145	Jan. 1	166	48	26	32
Slate-cleaner	C. Pilgrim	292,678	Jan. 29	2120	589	26	407
Slate. Folding	J. Ridge	294,154	Feb. 26	1790	490	26	777
Slate muffler. School	W. R. Kilborn	295,409	Mar. 18	1349	375	26	1086
Sled	J. H. Kirk	294,883	Mar. 11	668	186	26	951
Sled. Bob	P. and H. Koepfer	291,744	Jan. 8	921	258	26	170
Sled. Bob	J. G. Precour	295,195	Mar. 18	1081	297	26	1035
Sled-brake							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sled-propeller	C. Bernhard	295,719	Mar. 25	1753	487	26	1164
Sleeve-board. Reversible	N. Scholl	291,629	Jan. 8	784	230	26	147
Sleigh	W. H. Winne	292,972	Feb. 5	245	67	26	487
Sleigh. Bob-	H. Detamble	293,152	Feb. 5	478	128	26	525
Sleigh-dasher screen	S. R. Bailey	292,275	Jan. 22	1590	444	26	306
Sleigh-runner	F. J. Larkin	294,136	Feb. 26	1765	485	26	773
Sleigh shifting seat	W. H. Steinbrecher	291,635	Jan. 8	792	222	26	149
Smoke and gas consuming furnace	H. M. Brady	294,007	Feb. 26	1577	436, 437	26	743
Smoke. Apparatus for and process of consuming	W. Vogel	295,842	Mar. 25	1910	528	26	1193
Smoke-consumer	T. J. McLaughlin	293,765	Feb. 19	1267	350, 351	26	679
Snap. Harness-	J. A. Park	294,145	Feb. 26	1776	487	26	775
Snap-hook	R. B. Craighead	292,103	Jan. 15	1357	381	26	261
Snap-hook	J. Gibbons	292,164	Jan. 22	1434	402	26	282
Snap-hook	G. Havell	295,390	Mar. 18	1327	370	26	1082
Snap-hook	J. E. Pumphrey	291,226	Jan. 1	264	74	26	48
Snap-hook	J. H. Shaw	295,663	Mar. 25	1708	472	26	1157
Snow-clearer for tracks, &c	L. Schulze	294,084	Feb. 26	1687	464	26	760
Snow-plow	P. Brunet	291,675	Jan. 8	843	236	26	157
Snow-plow	I. S. Filbert	293,569	Feb. 12	1011	278	26	626
Snow-plow	D. B. Garton	291,182	Jan. 1	213	59	26	38
Snow-plow	G. A. Gunther and H. W. Hubbard	294,382	Mar. 4	56	14	26	839
Snow-scraper	G. A. Birch	293,630	Feb. 19	1071	296	26	644
Soap	C. F. Broadbent	292,980	Feb. 5	252	.....	26	488
Soap. Mannfacture of	W. E. Gibbs and C. G. Otis	291,329	Jan. 1	391	109	26	71
Soap. Washing-	R. H. Wiltbington	291,827	Jan. 8	1013	.....	26	187
Sock. Lumberman's	W. N. Eisendrath	294,020	Feb. 26	1592	442	26	746
Soda used in manufacture of paper-pulp. Apparatus for recovering	J. W. Dixon	291,993	Jan. 15	1232	343	26	237
Sofa and bath-tub. Combined	G. E. Ga Nun	294,460	Mar. 4	153	42	26	856
Solar camera	C. F. Adams	295,608	Mar. 25	1615	447	26	1140
Solar heaters. Controlling the temperature of	W. Calver	291,147	Jan. 1	167	48	26	32
Solar rays. Condensing	W. Calver	294,117	Feb. 26	1738	478	26	769
Solder. Machine for making wire or other	E. L. Young and L. Dyer	291,828	Jan. 8	1014	283, 284	26	187
Soldering-iron	W. B. Choate	294,364	Mar. 4	30	8	26	834
Soldering-iron	C. F. Schwarz	294,407	Mar. 4	88	23	26	844
Soldering machine. Can-	R. C. Anderson and F. Winterhalter	294,428	Mar. 4	114	30	26	848
Soldering machine. Can-	D. M. Monroe	293,346	Feb. 12	745	198, 199	26	578
Soldering machine. Can-	D. M. Monroe	295,662	Mar. 25	1679	465	26	1152
Soldering machine. Can-	J. A. Tillery	295,210	Mar. 18	1100	304	26	1039
Soldering-tool	G. A. Marsh	294,648	Mar. 4	382	106	26	894
Soldering-tool	W. M. Ryan	295,888	Mar. 25	1978	547	26	1204
Sole and heel burnishing machine	A. L. P. and J. R. Mitchell	292,033	Jan. 15	1276	357	26	246
Sole and heel plate	S. Levy	291,611	Jan. 8	762	214	26	143
Sower. Broadcast seed-	J. C. Waddell	291,433	Jan. 1	518	146	26	93
Sower. Fertilizer-	E. M. Kissell	292,320	Jan. 22	1639	459	26	316
Sowers. Feed-roller for grass-	J. F. Keller	293,968	Feb. 19	1533	422	26	726
Spading-machine	D. F. Spangler	293,104	Feb. 5	402	110	26	515
Spark-arrester	J. C. Albrecht	295,322	Mar. 18	1242	344	26	1065
Spark-arrester	A. O. Frick	293,445	Feb. 12	872	236	26	601
Spark-arrester	G. D. Hunter	293,965	Feb. 19	1531	421	26	726
Spark-arrester	P. Murray	292,760	Jan. 29	2242	622	26	430
Spark-arrester and flue-supporter. Combined	J. C. Ridley	293,357	Feb. 12	762	203	26	581
Speaking-tube mouth-piece	W. Thomas	292,387	Jan. 22	1728	482	26	333
Spectacle-lenses. Machine for grinding	J. J. Bausch	291,130	Jan. 1	148	43	26	29
Spectacles	F. K. Roberts	291,778	Jan. 8	959	269	26	177
Specnlum	G. W. Pagett	295,798	Mar. 25	1854	515	26	1183
Speed-indicator	T. W. Harding	292,808	Feb. 5	39	11	26	450
Speed of driven shafts. Regulating	J. W. Cheney	294,760	Mar. 11	509	142	26	922
Spike-extractor	J. Ebbert	293,431	Feb. 12	858	233	26	599
Spindle: *See* Vehicle-spindle.							
Spinning and twisting machine	C. A. Coggeshall	295,738	Mar. 25	1777	494	26	1169
Spittoon	J. J. Deal	292,286	Jan. 22	1601	447	26	309
Split ring	W. M. Fisher	295,158	Mar. 18	1029	284	26	1026
Splitting-gage	H. S. Ginther	295,620	Mar. 25	1638	455	26	1144
Spoke-extractor	R. N. Canghell	293,307	Feb. 12	699	186	26	569
Spoke-setting machine	J. H. Hulburt	293,174	Feb. 5	511	136	26	531
Spoke. Wire	W. S. Kelley	292,502	Jan. 29	1971	550	26	382
Spokes. Machine for milling off the hub ends of wheel-	J. Barnet	293,934	Feb. 19	1491	410	26	718
Spokeshave	A. E. Chapman	294,197	Feb. 26	1846	504	26	786
Spokeshave	A. D. Goodell	293,651	Feb. 19	1107	307	26	651
Spooling-machine stop-motion device	J. H. Northrop	295,503	Mar. 18	1467	405	26	1108
Spooling-machine thread-guide	E. B. Williams	294,712	Mar. 4	449	125	26	906
Spoon	W. Praddex	294,910	Mar. 11	697	194	26	956
Spoon. Mustache-	I. W. Parmenter	291,394	Jan. 1	470	132	26	84
Spoon. Veterinary medicine	J. R. Stettheimer and T. Leis	291,950	Jan. 15	1180	328	26	227
Spring: *See* Bicycle-saddle spring. Car-spring. Carriage-spring. Door-spring. Truck-spring. Vehicle-spring. Vehicle-seat spring. Vehicle side spring. Wagon-bolster spring. Watch-case spring. Watch hair-spring.							
Spring-motor	J. B. Powell	293,193	Feb. 5	538	143	26	535
Spring-motor	J. B. Pugh	295,505	Mar. 18	1471	405	26	1109
Spring-motor	H. B. Whittaker and G. F. Godley	292,970	Feb. 5	239	65, 66	26	486
Spring-motor	J. A. Wright	291,970	Jan. 15	1201	336	26	232
Sprinkler and atomizer	M. Goldman	293,730	Feb. 19	1215	336	26	671
Square. Carpenter's	W. R. and S. E. Jones	292,017	Jan. 15	1260	352	26	242

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Squeeze-roll	F. G. and A. C. Sargent	292,257	Jan. 22	1568	438	26	303
Squib. Miner's	G. Hayes	291,343	Jan. 1	402	114	26	73
Staining and coloring. Apparatus for	G. H. Smith	292,221	Jan. 22	1517	425, 426	26	294
Stake for guy-ropes	J. J. Moore	292,129	Jan. 15	1386	349	26	266
Stake. Vine and flower	F. Börner	291,569	Jan. 8	697	196	26	131
Stalk-chopper	W. H. Mercer	293,055	Feb. 5	338	93	26	504
Stamp-canceler	A. M. and S. M. A. Fortier	293,443	Feb. 12	871	236	26	601
Stamp. Canceling-	E. B. Brown	295,729	Mar. 25	1764	490	26	1166
Stamp. Canceling-	P. Pfeifer	293,510	Feb. 12	944	257	26	615
Stand: *See* Map-stand.							
Staple and die. Combined	J. F. Thayer	293,540	Feb. 12	976	267	26	620
Staple-extractor	B. Hubbell	295,494	Mar. 18	1459	402	26	1106
Staple or fastener	F. A. Smith, Jr.	292,516	Jan. 29	1907	534	26	372
Staple-puller	J. C. Irvin	291,739	Jan. 8	916	256	26	169
Staples. Machine for making	J. Adt	291,659	Jan. 8	825	231	26	154
Staples. Tool for driving	F. W. Nevins	292,842	Feb. 5	78	21	26	457
Starch. Manufacturing	W. W. Underhill	294,530	Mar. 4	236	.....	26	870
Starch. Manufacturing	W. W. Underhill	294,531	Mar. 4	237	.....	26	870
Station-indicator	S. Ballin	295,326	Mar. 18	1247	346	26	1066
Station-indicator	C. H. Jenne	295,405	Mar. 18	1344	374	26	1085
Station-indicator	C. W. Musgrove	291,073	Jan. 1	70	20	26	16
Stave and shingle sawing machine	W. J. Henderson	292,309	Jan. 22	1626	455	26	313
Steam and water heater	A. Holt	291,347	Jan. 1	406	116	26	74
Steam-boiler	W. D. Adams	293,697	Feb. 19	1170	326	26	663
Steam-boiler	J. Alves	292,613	Jan. 29	2039	567	26	393
Steam-boiler	G. B. Brayton	292,154	Jan. 22	1417	397	26	279
Steam-boiler	A. De Dion, G. T. Bonton, and C. Trépardoux.	291,580	Jan. 8	713	200	26	134
Steam-boiler	L. Schutte	291,092	Jan. 1	91	26	26	20
Steam-boiler	J. Stevens	294,927	Mar. 11	714	199	26	959
Steam boiler and furnace	W. U. Fairbairn	291,041	Jan. 1	31	9	26	8
Steam-boiler cleaner	J. H. Foster	293,444	Feb. 12	872	236	26	601
Steam-boiler cleaner	R. Stewart	295,070	Mar. 11	917	251	26	993
Steam-boiler covering	H. F. Allen	294,951	Mar. 11	743	207	26	964
Steam-boiler fire-box	R. L. Walker	293,544	Feb. 12	980	268	26	621
Steam-boiler. Sectional	H. A. Barnard	295,328	Mar. 18	1250	346, 347	26	1066
Steam-boiler superheating attachment	J. A. Stout	292,146	Jan. 15	1407	394	26	270
Steam-boilers, &c. Covering for	G. C. Hicks	294,780	Mar. 11	530	147	26	926
Steam-boilers. High-pressure alarm for	C. W. Johnston and P. Brown	295,406	Mar. 18	1345	375	26	1085
Steam-boilers. Preventing incrustation in	E. J. Hoffman	293,172	Feb. 5	509	135	26	530
Steam-boilers. Producing circulation in	W. Craig	294,118	Feb. 26	1739	478	26	769
Steam-boilers. Water-purifier for	E. W. Vandusen	292,076	Jan. 15	1325	370	26	255
Steam-cylinder lubricator	W. L. Parker	294,068	Feb. 26	1666	460	26	757
Steam-cylinders. Preventing condensation in	C. W. Crawford	292,104	Jan. 15	1357	381	26	261
Steam-engine	J. E. Guenther	294,296	Feb. 26	1880	514	26	792
Steam-engine	G. F. Selser	295,681	Mar. 25	1703	472	26	1156
Steam-engine	F. E. Sickels	294,066	Feb. 26	1692	465, 466, 440, 441	26	762
Steam-engine	G. Smith, Jr	292,264	Jan. 22	1576	153, 154	26	304
Steam-engine	J. B. Smith	291,784	Jan. 8	973	273	26	180
Steam-engine. Compound	C. W. Jenkins	295,403	Mar. 18	1342	374	26	1085
Steam-engine lubricator	W. H. Craig	291,686	Jan. 8	869	243	26	161
Steam-engine. Portable	R. M. Bigger	291,279	Jan. 1	329	93	26	60
Steam gage and alarm	A. Portillo	291,769	Jan. 8	943	265	26	175
Steam-gages. Electric alarm for	H. Carley and T. McKenna	294,195	Feb. 26	1845	503	26	785
Steam-generating apparatus	J. H. Dale	294,119	Feb. 26	1741	478, 479	26	769
Steam-generator	G. F. Brott	293,222	Feb. 12	584	153, 154	26	549
Steam-generator	E. F. Gordon and H. Hobbs	291,185	Jan. 1	217	60	26	39
Steam-generator	D. M. Graham	295,542	Mar. 25	1525	421	26	1124
Steam-generator	T. C. Joy	292,822	Feb. 5	55	14	26	453
Steam-generator	F. Livet	295,775	Mar. 25	1821	506, 507	26	1177
Steam-generator	T. E. Thompson	291,959	Jan. 15	1190	331	26	229
Steam-generator	J. W. Upson	294,291	Feb. 26	1956	536	26	806
Steam. Method of and apparatus for generating	G. Dieckmann	292,546	Jan. 29	1951	544, 545	26	379
Steam-nozzle. Noiseless	C. W. Nason	291,762	Jan. 8	937	263	26	173
Steam-pipe condnit	L. F. Beckwith	294,354	Mar. 4	16	4, 5	26	832
Steam-trap	J. H. Blessing	295,224	Mar. 18	1119	309	26	1042
Steam-trap	J. C. Hendry	292,914	Feb. 5	167	46	26	474
Steam-trap	G. B. McCracken	295,573	Mar. 25	1572	435	26	1133
Steam-trap	W. and W. D. Pfaffer	295,280	Mar. 18	1191	330	26	1055
Steel ingots. Apparatus for treating	G. J. Snelus	294,263	Feb. 26	1943	533	26	804
Steering apparatus	R. M. G. Brown	295,106	Mar. 11	961	262	26	1000
Steering-gear for vessels	W. Adair	292,611	Jan. 29	2035	566	26	393
Stereotype-backing powder or filling	E. and A. H. Cowles	294,588	Mar. 4	308	.....	26	881
Stereotype-plate	F. K. Tracy	295,596	Mar. 25	1597	443	26	1138
Still	P. N. Bardo	291,833	Jan. 8	1022	285	26	188
Stirrup machine. Wooden-	W. F. Cowles and J. Woolworth	294,203	Feb. 26	1853	505	26	787
Stirrup. Saddle-	S. A. Nolen	295,129	Mar. 11	986	271	26	1006
Stirrup. Saddle-	C. C. Philbrook	295,423	Mar. 18	1366	379	26	1089
Stocking and knitting the same	W. Estv	291,173	Jan. 1	198	56	26	37
Stocking and manufacturing the same	E. Schilling	293,363	Feb. 12	769	205	26	582
Stocking-supporter	G. N. Buck	292,406	Jan. 22	1751	488	26	338
Stocking-supporter	G. Campbell	295,146	Mar. 18	1015	280	26	1024
Stocking-supporter and sleeve adjuster	C. C. Shelby	291,233	Jan. 1	271	76	26	49
Stone. Artificial	W. Howell	291,734	Jan. 8	907	.....	26	168

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stone-channeling machines. Device for securing tools in	A. H. Rapp	291,227	Jan. 1	985	74	26	48
Stone-dressing machine	E. N. Gilfillan and S. P. McKelvey.	294,866	Mar. 11	648	180	26	947
Stone-dressing machine	F. Meisel	294,401	Mar. 4	80	20, 21	26	843
Stone-dressing machine	W. Perkins	291,078	Jan. 1	76	21, 22	26	17
Stone-dressing machine	H. A. Rife	292,361	Jan. 22	1697	{473 {474	26	327
Stone-dressing machine	H. D. Wallace	292,880	Feb. 5	125	34	26	466
Stone-drills. Pin-and-box joint for	D. Cameron	295,347	Mar. 18	1276	353	26	1071
Stone. Manufacture of artificial	R. C. Wittmann	293,207	Feb. 5	557	.....	26	539
Stone-saw rack	J. P. Brounscombe	293,942	Feb. 19	1501	{413 {414	26	790
Stool. Piano	M. Piatti	291,031	Jan. 15	1159	323	26	224
Stool-seat	J. S. Dunlap	292,211	Jan. 22	1504	422	26	292
Stop-box and fresh-air conduit. Combined	L. O. Howell, Jr	292,027	Feb. 5	309	85	26	498
Stopper: *See* Bottle-stopper. Bottle and jar stopper.							
Storage-battery	E. R. Knowles	291,850	Jan. 8	1048	293	26	193
Store-service apparatus	I. Birgé	291,280	Jan. 1	330	93	26	60
Store-service apparatus	H. H. Hayden	295,248	Mar. 18	1151	318	26	1047
Store-service apparatus	H. H. Hayden and E. L. Giles	292,812	Feb. 5	42	12	26	450
Store-service apparatus	W. S. Lamson	292,923	Feb. 5	180	49	26	476
Store-service apparatus	W. Miller	293,587	Feb. 12	1029	283	26	629
Store-service apparatus	H. W. Sharpless	295,442	Mar. 18	1383	384	26	1093
Store-service apparatus	H. W. Sharpless	295,443	Mar. 18	1384	384	26	1093
Store-service system	M. Clark	293,949	Feb. 19	1510	{416 {417	26	792
Stove	J. Eckert	292,475	Jan. 29	1846	514	26	362
Stove	C. A. Hamlin	292,805	Feb. 5	35	10	26	449
Stove	C. Mattice	293,973	Feb. 19	1538	{423 {424	26	728
Stove	J. A. Miller	293,057	Feb. 5	340	93	26	504
Stove and heater. Open-fire	A. R. Morgan	292,937	Feb. 5	303	56	26	479
Stove. Cooking or heating	J. A. Miller	293,056	Feb. 5	339	93	26	504
Stove. Gas	J. Aldersley	293,698	Feb. 19	1170	{326 {327	26	663
Stove. Gasoline	C. H. Huntly	291,348	Jan. 1	408	116	26	74
Stove-grate	E. W. Anthony	293,286	Feb. 12	686	183	26	566
Stove. Hot-blast	F. W. Gordon	291,186	Jan. 1	218	61	26	39
Stove. Hot-blast	D. N. Jones	291,518	Jan. 8	635	180	26	121
Stove-pipe	J. Z. Lindley and J. V. Elder	293,993	Feb. 19	1436	397	26	708
Stove-pipe thimble	L. Russell	294,811	Mar. 11	577	160	26	935
Stove-pipes. Cover for openings in	G. Raagorshek	291,771	Jan. 8	947	266	26	175
Stove. Railway-car	A. P. Winslow	293,695	Feb. 19	1165	{324 {325	26	662
Stove. Regenerative hot-blast	P. L. Weimer	292,188	Jan. 22	1461	{410 {411	26	286
Stove. Self-adjusting	W. G. Showers	292,064	Jan. 15	1312	366	26	253
Stove. Vapor	E. C. Hopkins	292,315	Jan. 22	1633	457	26	314
Stove. Vapor	F. A. Lyman	293,259	Feb. 12	629	167	26	557
Stoves. Heating and ventilating drum for	J. F. Davis	294,771	Mar. 11	521	145	26	925
Stoves. Portable reservoir for	H. L. Fisher and A. J. Hassell	294,215	Feb. 26	1868	510	26	790
Strap-clamp	E. R. Menzel	292,934	Feb. 5	200	55	26	479
Strap-rounding machine	A. C. Sims	291,790	Jan. 8	969	272	26	179
Strap. Sealed binding	F. W. Blacker	291,025	Jan. 1	14	4	26	5
Straw-cutter	D. M. Cummings	293,150	Feb. 5	476	127	26	525
Straw-cutter	J. N. Slaughenhaup	292,263	Jan. 22	1575	440	26	304
Straw-stacker	L. Bowers	292,279	Jan. 22	1593	445	26	307
Straw-stacker	E. F. Brown and S. M. Miller	291,674	Jan. 8	843	236	26	157
Straw-stacker	W. Decker and J. A. Marshall	292,628	Jan. 29	2054	571	26	396
Straw-stacker	T. Major	291,755	Jan. 8	930	261	26	172
Straw-stacker	F. W. Robinson	291,088	Jan. 1	87	25	26	19
Straw-stacker carriage	J. W. Imler and D. W. Snowden	291,350	Jan. 1	410	117	26	75
Straw stacking machine	C. E. Merrifield	292,500	Jan. 29	1876	524	26	368
Street pounder or rammer	F. A. Voigt	295,213	Mar. 18	1103	305	26	1039
Street-sweeper	J. P. Herron	293,909	Feb. 5	559	149	26	539
Street-sweeper	O. D. Orvis and N. B. Adams	293,908	Feb. 19	1452	402	26	711
Street-washer hose attachment	C. Gumlich, Jr	295,164	Mar. 18	1036	286	26	1023
Stud and cravat-holder. Combined collar	E. S. Strait	292,517	Jan. 29	1906	534	26	372
Stud. Shirt	B. Roede	292,058	Jan. 15	1305	365	26	259
Stump-machine	A. A. Howe	292,014	Jan. 15	1257	352	26	242
Stump-puller	P. Zubee	291,262	Jan. 1	309	87	26	56
Submarine boat	J. Jopling	292,916	Feb. 5	170	46	26	474
Sugar from bagasse. Process of and apparatus for extracting crystallized	T. B. Yale	293,938	Feb. 19	1369	379	26	694
Sugar from molasses, sirups, and the juices of plants. Extracting	C. Steffen	294,159	Feb. 26	1796	.....	26	778
Sugar liquor from the scum and mechanical impurities contained therein. Process of and apparatus for separating raw	S. M. Lillie	294,798	Mar. 11	555	154	26	931
Sugar. Manufacture of	K. Trobach	295,841	Mar. 25	1906	527	26	1193
Sugar. Process of and apparatus for mixing and cooling	M. C. Cogswell	292,100	Jan. 15	1353	380	26	260
Sun. Utilizing the rays of the	W. Calver	291,491	Jan. 8	600	169	26	115
Superheater	H. W. Ellicott	292,292	Jan. 22	1607	449	26	310
Supporter: *See* Abdominal supporter. Skirt-supporter. Stocking-supporter.							
Surgical splint	H. McNaughton	291,617	Jan. 8	773	217	26	145
Suspenders	M. Marcus	294,396	Mar. 4	75	19	26	842
Suspenders	S. Price and H. Aniss	294,074	Feb. 26	1675	462	26	759
Swing	I. N. Forrester	294,983	Mar. 11	793	219	26	973

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Swings and hammocks. Stand or frame for suspension of	W. A. C. Oaks	295,275	Mar. 18	1185	328	26	1054
Switch-board	F. Blake	295,223	Mar. 18	1118	309	26	1042
Switch-boards. Condenser and test-circuit for multiple	C. E. Scribner	292,865	Feb. 5	106	29	26	462
Switch-boards. Testing apparatus for multiple	C. E. Scribner	292,866	Feb. 5	106	29	26	462
Switch-stand	P. Coleman	292,897	Feb. 5	146	39	26	470
Switch-stand	F. C. Weir	294,100	Feb. 26	1710	470	26	764
Swivel for watch-chains	P. Nerney	295,577	Mar. 25	1576	436	26	1134
Swivels. Device for finishing chain	J. E. Walcott	295,843	Mar. 25	1911	528	26	1193
Syringe	J. H. Clarke	291,690	Jan. 8	863	241	26	160
Syringe	P. B. Laskey	291,364	Jan. 1	428	121	26	78
Syringe	G. A. Stiles	292,381	Jan. 22	1721	480	26	332
Syringe	J. A. Hawley	295,755	Mar. 25	1796	499	26	1172
Syringe. Vaginal	H. G. Brown	294,757	Mar. 11	506	141	26	922
T-plates. Manufacture of							
Table: *See* Folding table. Recording-table. Leaf-table. Writing-table. Leather-scouring-machine table.							
Table	E. R. Hinman	295,007	Mar. 11	833	228	26	979
Table	C. N. Witt	292,084	Jan. 15	1335	374	26	257
Table	W. O'Shea	294,803	Mar. 11	567	156	26	932
Tablet. Perforated paper	R. C. Wittmann	295,137	Mar. 11	1001	276	26	1008
Tablet. Writing	M. W. and J. D. Kase	295,557	Mar. 25	1549	429	26	1128
Tag	J. C. Russell	292,954	Feb. 5	221	61	26	483
Tag. Key	E. W. Thompson	291,813	Jan. 8	996	280	26	184
Tag	L. D. Bond	292,093	Jan. 15	1345	377	26	259
Tag-attaching device	A. Sichel	294,691	Mar. 4	425	118	26	901
Tag for plug-tobacco, &c	E. H. Tannehill	294,931	Mar. 11	790	201	26	960
Tag-holder	H. L. Ayer	292,196	Jan. 22	1474	414	26	288
Tag-holder for cotton bales	W. P. Patton	295,799	Mar. 25	1855	516	26	1183
Tag or label	A. Hanvey	295,752	Mar. 25	1794	498	26	1178
Tag or label holder	G. W. Dwenger	292,639	Jan. 29	2057	572	26	396
Tag. Mail-sack	C. Edlund	293,857	Feb. 19	1393	385	26	700
Tailor's nae. Combined implement for	H. Lissagaray and H. Leplay	295,184	Mar. 18	1064	.....	26	1032
Tallow at a low temperature. Extracting and melting							
Tank: *See* Lard and oil tank. Measuring-tank.							
Tanning apparatus	W. S. Wells	294,490	Mar. 4	107	28	26	847
Tanning hides	L. Schnadel	293,364	Feb. 12	771	206	26	582
Tap and reamer wrench	H. E. Woods	294,104	Feb. 26	1714	471	26	765
Tape and making the same. Bias	C. H. Farmer	293,440	Feb. 12	868	235	26	600
Target. Flying	J. S. Briggs	291,287	Jan. 1	336	95	26	61
Target. Flying	J. Jopling	292,118	Jan. 15	1377	385	26	264
Target. Flying	J. G. Mole	295,271	Mar. 18	1181	327	26	1053
Target. Flying	H. Yarwig and A. E. Spangler	295,312	Mar. 18	1202	342	26	1063
Target. Flying	D. Heer	292,009	Jan. 15	1252	350	26	241
Tassel-blanks, &c. Machine for making	D. Heer	292,010	Jan. 15	1253	351	26	241
Tassel-blanks. Machine for making	A. Schilling	295,220	Mar. 18	1207	335	26	1059
Tea-curing and coffee-roasting apparatus	G. W. Rich	292,254	Jan. 22	1565	437	26	302
Teeter	M. H. Wilson	292,607	Jan. 29	2030	564	26	392
Telegraph. Autographic	T. F. Taylor	293,110	Feb. 5	411	111	26	516
Telegraph. Automatic	J. Abterdam	295,219	Mar. 18	1109	{307 {308	26	1041
Telegraph. Automatic and fac-simile	W. R. Patterson	293,775	Feb. 19	1580	354	26	681
Telegraph-cable	W. R. Patterson	294,500	Mar. 4	202	57	26	863
Telegraph-cables into pipes. Apparatus for drawing	P. H. Vander Weyde	292,770	Jan. 29	2256	.....	26	432
Telegraph-cables. Manufacturing a rot-proof covering for underground	W. R. Patterson	292,848	Feb. 5	84	23	26	458
Telegraph-cables. Terminal-box for	S. D. Field	291,318	Jan. 1	381	106	26	69
Telegraph. Duplex	C. Plumb	293,979	Feb. 19	1545	426	26	728
Telegraph-key	S. J. Spurgeon	293,105	Feb. 5	404	110	26	515
Telegraph-keys. Circuit-closer for	H. Van Hoevenbergh	293,927	Feb. 19	1480	{407 {408	26	716
Telegraph. Page-printing	C. H. Wagner	291,435	Jan. 1	520	146	26	93
Telegraph-poles. Device for attaching cross-bars to	A. F. Johnson	295,644	Mar. 25	1656	{459 {460	26	1148
Telegraph. Printing	H. Van Hoevenbergh	292,966	Feb. 5	231	64	26	485
Telegraph. Printing	H. Van Hoevenbergh	293,922	Feb. 19	1470	406	26	714
Telegraph. Printing	H. Van Hoevenbergh	293,926	Feb. 19	1477	407	26	715
Telegraph. Quadruplex	B. E. J. Ells	293,956	Feb. 19	1518	{418 {419	26	724
Telegraph. Quadruplex	G. Smith	291,236	Jan. 1	274	77	26	50
Telegraph system. Automatic	T. F. Taylor	293,111	Feb. 5	414	111	26	517
Telegraph system. Underground	S. D. Field	291,317	Jan. 1	380	106	26	68
Telegraph-wire joint	C. McIntire	291,211	Jan. 1	247	69	26	44
Telegraph-wire protector. Sectional compound	J. W. Horner	291,478	Jan. 1	577	162	26	103
Telegraph-wire supporter	R. C. Stone	295,073	Mar. 11	919	252	26	993
Telegraph-wires. Box for laying lines of	T. J. Mayall	291,371	Jan. 1	437	124	26	79
Telegraphs. Escapement and unison mechanism for printing	S. D. Field	291,705	Jan. 8	879	247	26	163
Telegraphs. Marking-stylus for automatic	T. F. Taylor	293,112	Feb. 5	418	112	26	517
Telegraphs. Printing from either of two type-wheels in printing	H. Van Hoevenbergh	293,928	Feb. 19	1482	408	26	717
Telegraphs. Static neutralizer for	C. Selden	291,096	Jan. 1	98	28	26	21
Telegraphs. Static neutralizer for	C. Selden	291,097	Jan. 1	100	28	26	21
Telegraphs. Unison mechanism for printing	S. D. Field	293,959	Feb. 19	1521	419	26	724
Telegraphic instruments. Circuit-closer for	J. Neifing	294,259	Feb. 26	1916	525	26	799
Telegraphic system	C. G. Burke	295,855	Mar. 25	1925	532	26	1196
Telegraphic transmitter	R. C. Stone	295,074	Mar. 11	920	252	26	993
Telegraphic transmitter	R. C. Stone	295,075	Mar. 11	922	253	26	994
Telephone	J. H. Cheever	291,684	Jan. 8	856	239	26	159
Telephone	D. Drawbaugh	293,154	Feb. 5	479	128	26	526

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Telephone. Acoustic	H. E. Huston	294,238	Feb. 26	1893	518	26	795
Telephone apparatus	E. T. Gilliland	293,161	Feb. 5	488	131	26	527
Telephone apparatus	E. T. Gilliland	293,162	Feb. 5	491	131	26	528
Telephone-box	A. G. Davis	295,365	Mar. 18	1298	359	26	1076
Telephone-cable terminal	W. R. Patterson	292 849	Feb. 5	85	24	26	458
Telephone-call-bell switch	L. Townsend	293,118	Feb. 5	430	113	26	518
Telephone call-box	J. M. Oram, H. M. Sutton, and H. Garrett.	292,570	Jan. 29	1979	552	26	384
Telephone-case	P. Benjamin	293,136	Feb. 5	462	123	26	523
Telephone central-office apparatus	F. M. Lytle and J. A. McCoy	294,482	Mar. 4	178	49, 50	26	859
Telephone-circuit	C. E. Scribner	294,336	Feb. 26	2015	553	26	817
Telephone circuit and apparatus	T. D. Lockwood	291,915	Jan. 15	1139	318	26	220
Telephone circuit-changer	C. D. Haskins	293,171	Feb. 5	508	134, 135	26	530
Telephone cut-out	A. Williams and J. M. Gannon	291,825	Jan. 8	1011	283	26	186
Telephone-exchange system	F. B. Herzog	292,115	Jan. 15	1372	384, 385	26	264
Telephone-exchanges. Looping-in mechanism and operator's apparatus for	E. M. Wilson	293,206	Feb. 5	554	148	26	539
Telephone-exchanges. Night-signal circuit for	C. E. Scribner	293,196	Feb. 5	541	143	26	536
Telephone-exchanges. Time-signal for toll-lines of	A. S. Hibbard	293,736	Feb. 19	1224	338, 339	26	672
Telephone. Magneto-electric	T. D. Lockwood and T. W. Lane	292,335	Jan. 22	1659	463	26	319
Telephone. Mechanical	C. Selden	291,994	Jan. 1	94	27	26	20
Telephone. Pipe-	J. H. Rogers	292,858	Feb. 5	97	27	26	461
Telephone-receiver	H. E. Waite	292,602	Jan. 29	2024	563	26	391
Telephone. Receiving-	L. W. Sutton, Jr	291,802	Jan. 8	987	277	26	182
Telephone sound-muffler	H. Maine	292,022	Jan. 15	1264	354	26	243
Telephone. Speaking-	F. Ware	292,881	Feb. 5	126	35	26	466
Telephone-support	G. W. Fish	295,531	Mar. 25	1510	416, 417	26	1121
Telephone-support	G. A. Wilkins	294,207	Feb. 26	1905	538	26	808
Telephone-switch	C. E. Scribner	293,198	Feb. 5	543	144	26	537
Telephone system. Gas and magnetic	J. H. Rogers	292,857	Feb. 5	96	26, 27	26	460
Telephone-transmitter	E. Berliner	291,866	Jan. 15	1079	301	26	208
Telephone-transmitter	H. C. Buck	293,561	Feb. 12	1092	276	26	695
Telephone-transmitter	J. H. Cheever	292,203	Jan. 22	1488	418	26	290
Telephone-transmitter	D. Drawbaugh	291,311	Jan. 1	373	105	26	67
Telephone-transmitter	D. Drawbaugh	291,312	Jan. 1	374	105	26	67
Telephone-transmitter	D. Drawbaugh	291,472	Jan. 1	570	160	26	102
Telephone-transmitter	D. Drawbaugh	295,741	Mar. 25	1780	495	26	1169
Telephone-transmitter	D. Drawbaugh	295,742	Mar. 25	1782	495	26	1170
Telephone-transmitter	H. E. Waite	292,603	Jan. 29	2025	564	26	391
Telephonic and telegraphic circuits. Signaling apparatus for	L. S. Fairbanks	292,999	Feb. 5	275	75	26	492
Telephonic and telegraphic instruments. Protector for	A. A. Connolly	291,299	Jan. 1	357	101	26	65
Telephonic receiver	C. A. Randall	295,804	Mar. 25	1862	518	26	1184
Telephonic transmission	W. H. Eckert	292,212	Jan. 22	1505	423	26	292
Telephonic transmission. Apparatus for	J. F. Mehren	292,835	Feb. 5	71	20	26	456
Telephonic transmitter	C. A. Randall	295,805	Mar. 25	1864	518	26	1185
Telephonic transmitter	C. A. Randall	295,806	Mar. 25	1866	518	26	1185
Telephonic transmitter	C. A. Randall	295,807	Mar. 25	1868	519	26	1185
Temperature. Device for regulating	J. M. Halsted	295,384	Mar. 18	1321	368	26	1080
Temperatures of distant rooms. Apparatus for indicating	W. R. Comings	294,201	Feb. 26	1851	505	26	786
Tennis-racquet	A. T. Greenough and W. H. Boardman	293,573	Feb. 12	1015	279	26	627
Tenon-boring machine	W. W. Hosler	293,880	Feb. 19	1419	392	26	705
Tenon-extractor	O. Hendrick	295,170	Mar. 18	1045	288	26	1029
Tentering-machine	O. E. Drown	295,155	Mar. 18	1026	283, 284	26	1026
Testing fabrics. Machine for	E. Morrison and J. P. Herron	292,130	Jan. 15	1388	389	26	266
Theater appliance	W. Hanlon	293,324	Feb. 12	719	192	26	572
Theaters. Changeable scenery for	L. W. Seavey	292,689	Jan. 29	2130	593	26	409
Thermometer	H. Guth	294,732	Mar. 4	472	132	26	910
Thermometer. Balanced	P. G. Russell	292,764	Jan. 29	2246	623	26	430
Thermometer. Clinical metallic	W. B. Fowle	294,729	Mar. 4	468	131	26	909
Thermostat	A. K. Rider	294,405	Mar. 4	96	23	26	844
Thickness-gage	E. Morrison and J. P. Herron	292,131	Jan. 15	1391	389	26	267
Thill-coupling	N. R. Baker	294,107	Feb. 26	1718	472	26	766
Thill-coupling	R. Cameron	295,348	Mar. 18	1277	354	26	1072
Thill-coupling	J. M. Fulton	291,588	Jan. 8	729	205	26	137
Thill-coupling	H. E. Gamble	295,160	Mar. 18	1032	285	26	1027
Thill-coupling	E. Hoxie	293,173	Feb. 5	510	135	26	530
Thill-coupling	O. C. Meburin	293,341	Feb. 12	739	197	26	577
Thill-coupling	F. P. Musser	293,906	Feb. 19	1450	402	26	711
Thill-coupling	W. S. Shanahan	295,440	Mar. 18	1382	383	26	1093
Thill-coupling	O. Tower	293,379	Feb. 12	704	913	26	567
Thill-coupling	S. B. Ulm	291,592	Jan. 8	678	192	26	198
Thill-couplings. Anti-rattler for	J. N. Berry	293,218	Feb. 12	580	152	26	542
Thill-holder	J. W. Evans and A. H. Vernay	291,315	Jan. 1	378	106	26	68
Thimble. Sewing-	E. F. McCartney	293,262	Feb. 12	634	169	26	558
Thrasher	A. H. Clark	291,151	Jan. 1	171	49, 50	26	33
Thrasher and cotton-opener. Pea-	C. H. Simmons	293,098	Feb. 5	396	108	26	514
Thrashing and separating grain, peas, &c. Machine for	A. Swingle	295,305	Mar. 18	1222	340	26	1062
Thrashing-machine	W. H. and J. Butterworth, Jr	292,731	Jan. 29	2183	609	26	419
Thrashing-machine	M. J. Foster	293,570	Feb. 12	1012	278	26	627
Thrashing-machine	A. T. Hawley	293,019	Feb. 5	298	82	26	496
Thrashing-machine	A. J. Hoag	293,876	Feb. 19	1415	391	26	704
Thrashing-machine	D. Lippy	293,755	Feb. 19	1232	346, 347	26	676
Thrashing-machine band-cutter and feeder	B. Driller	293,155	Feb. 5	480	129	26	526
Thrashing-machine band-cutter and feeder	J. A. and F. H. Marshall	292,667	Jan. 29	2106	586	26	405

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Thrashing-machine belt-reel	L. P. Barnes	292,530	Jan. 29	1925	539	26	375
Thrashing-machine dust exhauster and conveyer	D. Logan	292,498	Jan. 29	1875	523	26	368
Thrashing-machines. Feed-regulating device for	A. W. Lockhart	295,185	Mar. 18	1064	293, 294	26	1032
Thrashing-machine grain-feeder and band-cutter	O. C. Van Ness	291,430	Jan. 1	515	145	26	92
Thrashing-machine grain-separator	P. L. Nash	295,668	Mar. 25	1699	468	26	1154
Thrashing-machine grain-spout	L. H. Conklin	291,986	Jan. 15	1295	341	26	236
Thrashing-machine straw-carrier	E. Huber and F. Strobel	293,881	Feb. 19	1420	392, 393	26	705
Thread cutter and holder	E. Jerauld, Jr	293,254	Feb. 12	624	166	26	556
Ticket-case	A. R. Burdick	292,789	Feb. 5	15	4	26	445
Tie: *See* Bale-tie. Railway-tie. Necktie.							
Tie for securing bags, bales, &c	W. Gibson	291,184	Jan. 1	216	60	26	39
Tile and brick machines. Cutting-table for	J. C. McKenzie	291,616	Jan. 8	772	216	26	145
Tile. Artificial	G. De Festetics	293,636	Feb. 19	1090	302	26	648
Tile. Illuminating	J. Mark	294,647	Mar. 4	381	106	26	894
Tile-laying machine	J. T. Graves and B. F. Belt	295,119	Mar. 11	975	267	26	1003
Tile-machine	P. H. Kelly	293,473	Feb. 12	903	244	26	607
Tile-machine	J. W. Penfield	292,251	Jan. 22	1558	436	26	301
Tile-machine	J. S. Smith	291,793	Jan. 8	972	272	26	180
Tile-machine	J. S. Smith	293,804	Feb. 19	1320	366	26	688
Tile-machine	W. J. Woolley	294,342	Feb. 26	2026	555	26	819
Tile-machine	J. S. Smith	295,298	Mar. 18	1215	338	26	1060
Tile, &c. Making	J. S. Smith	294,519	Mar. 4	222	62	26	867
Tile-mill table	J. Austin	292,887	Feb. 5	132	36	26	467
Tile or block for finishing inside walls	H. P. Stafford	293,106	Feb. 5	405	110	26	515
Tile-perforating machine and perforated drain-tile. Drain-	R. B. Morrison	292,035	Jan. 15	1278	358	26	246
Tile, pipe, and sewer protector	J. Larmanjat	294,475	Mar. 4	170	47	26	858
Tiles. Manufacture of mosaic and other	J. W. Kenna	294,391	Mar. 4	67	17	26	841
Tilting chair	L. Thrush and L. Wilson	294,936	Mar. 11	723	202	26	961
Timber and lumber stamp	W. H. Dolman	293,721	Feb. 19	1205	334	26	669
Timber. Fire-proof	J. E. Tarbox	293,684	Feb. 19	1149	321	26	659
Time-detector. Watchman's	E. and H. C. Stockwell	293,815	Feb. 19	1336	371	26	690
Time-lock	E. and H. C. Stockwell	293,816	Feb. 19	1337	371	26	690
Time-lock	H. P. Pruiin	292 583	Jan. 22	1997	556	26	387
Time-locks. Unlocking attachment for	G. W. Davis	294,371	Mar. 4	38	5	26	836
Time-recording system. Watchman's electric	P. W. McGuire	292,028	Jan. 15	1271	355	26	244
Tire and felly. Wheel	R. McCloskey and A. E. Torier	294,895	Mar. 11	662	190	26	953
Tire-tightener and jack. Combined	C. J. Clarke	293,630	Feb. 19	1084	300	26	647
Tire. Vehicle-wheel	P. Gendron	294,461	Mar. 4	154	42	26	856
Tire. Wagon-wheel	C. S. Bird	293,404	Feb. 12	890	224	26	594
Tobacco box and cutter. Combined	M. Tobin	292,965	Feb. 5	230	63	26	484
Tobacco-houses. Apparatus for heating and moistening	E. F. Maffrand	295,780	Mar. 25	1833	510	26	1180
Tobacco in licorice. Apparatus for dipping	G. W. Smoot	295,066	Mar. 11	910	249	26	992
Tobacco-pipe	A. J. Wolff	291,561	Jan. 8	689	195	26	130
Tobacco-pipe	A. Siehel	294,690	Mar. 4	424	118	26	901
Tobacco presses. Finisher-plate for plug	C. Lindner	295,567	Mar. 25	1562	433	26	1130
Toilet-bracket	H. O. Berg	295,222	Mar. 18	1117	308	26	1041
Toilet-case	F. Ficke	293,568	Feb. 12	1010	278	26	626
Toilet-case	W. Strong	291,106	Jan. 1	116	32	26	24
Tombstone picture-case	S. Poole	294,147	Feb. 26	1777	488	26	775
Tongs for pickles, fruits, &c	H. S. Pullman	295,885	Mar. 25	1975	547	26	1204
Tongs. Pipe-	J. T. Dongine	295,237	Mar. 18	1137	313	26	1045
Tongue support. Wagon-	A. H. Gleason	291,332	Jan. 1	394	110	26	71
Tongue support. Wagon-	N. Johnson	293,751	Feb. 19	1249	345	26	676
Tongue support. Wagon-	A. E. Lytle	292,168	Jan. 22	1438	403	26	293
Tool. Combination-	W. G. Thompson	292,184	Jan. 22	1458	409	26	295
Tool. Combination-	E. Walker	291,820	Jan. 8	1006	281	26	186
Tool. Combination-	C. L. Bellamy	292,620	Jan. 29	2045	569	26	394
Tool-handle	J. A. King	294,633	Mar. 4	358	99	26	890
Tool-handle	T. A. Sweet	291,956	Jan. 15	1187	330	26	229
Tool-handle fastening	E. D. Moss	292,938	Feb. 5	205	56	26	480
Tool-holder	J. F. Parkes	291,531	Jan. 8	653	185	26	124
Tool-holder	C. E. Billings	292,784	Feb. 5	6	2	26	444
Tool holder. Cutting-off-	F. I. Getty and F. Dickinson	293,647	Feb. 19	1102	306	26	650
Tool. Machinist's	D. H. Murphy	291,851	Jan. 8	1049	293	26	193
Tools to handles. Securing	E. P. Brown	291,978	Jan. 15	1211	338	26	233
Tooth. Artificial	A. Shellman	291,946	Jan. 15	1174	327	26	226
Tooth. Spring-	C. Pilgrim	291,853	Jan. 8	1052	294	26	194
Torpedo	G. W. Metcalfe	292,009	Jan. 15	1272	356	26	244
Torpedo placer. Railway-	J. T. Foster	292,204	Jan. 22	1609	450	26	310
Towel-rack and clothes-bar	J. S. Adams	294,343	Feb. 26	2027	556	26	819
Tower	J. S. Adams	294,344	Feb. 26	2030	556	26	820
Tower. Skeleton iron	C. M. Crandall	294,590	Mar. 4	310	86	26	881
Toy	L. F. Fallon	292,798	Feb. 5	28	7	26	447
Toy	A. Trunk	295,083	Mar. 11	934	255	26	996
Toy	J. A. Ward	295,845	Mar. 25	1913	528, 529	26	1194
Toy	J. W. Worcester	295,138	Mar. 11	1002	276	26	1008
Toy. Advertising-	R. Albrecht	293,394	Feb. 12	818	220	26	592
Toy building-block	C. M. Crandall	294,589	Mar. 4	310	86	26	881
Toy building-block	C. W. Frost	294,607	Mar. 4	328	91	26	884
Toy doll	H. A. Goffe	294,868	Mar. 11	651	181	26	947
Toy electric railway	M. Bacon	295,473	Mar. 18	1427	394, 395	26	1101
Toy. Mechanical	W. S. Reed	294,076	Feb. 26	1677	462	26	759
Toy. Musical	W. A. Gay	292,645	Jan. 29	2075	577	26	399
Toy pistol	A. H. Dean and C. A. Hotchkiss	294,450	Mar. 4	140	37	26	853
Toy target	A. H. Hoffman, W. F. Lloyd, and J. H. Block.	292,652	Jan. 29	2061	580	26	401
Toy whistle	H. C. Swan	291,548	Jan. 8	673	191	26	127

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Toy work-bench	A. Pfaendler	292,350	Jan. 22	1679	468	26	323
Trace-carrier	L. T. Anderson	294,952	Mar. 11	743	208	26	965
Trace-carrier	W. M. Smither	293,807	Feb. 19	1324	368	26	689
Trace-cockeye attachment	G. H. McDole	292,171	Jan. 22	1442	405	26	283
Trace-fastener	N. M. Habberstad	291,896	Jan. 15	1113	310	26	215
Trace-hitch	D. A. Foster	295,378	Mar. 18	1314	365	26	1079
Trace-hook	O. Lampe	292,929	Feb. 5	170	49	26	476
Tracings. Making copies of	P. H. Mandel	294,485	Mar. 4	185	.....	26	860
Track or road-bed	S. Griffin	294,126	Feb. 26	1750	481	26	771
Traction-engine	H. M. Cormack	291,300	Jan. 1	339	102	26	65
Traction-engine	S. E. Jarvis	294,877	Mar. 11	657	183	26	940
Traction-engine	F. F. Landis	294,794	Mar. 11	548	152	26	929
Traction-engine	C. J. Leach and A. Olds	292,924	Feb. 5	180	49, 50	26	476
Traction-engine	W. S. Owings	291,075	Jan. 1	73	21	26	17
Traction-engine	J. F. Palmer	293,065	Feb. 5	351	96, 97	26	506
Traction-engine	J. F. Palmer	293,066	Feb. 5	354	97	26	507
Traction-engine	J. F. Palmer	293,067	Feb. 5	357	97	26	507
Traction-engine	L. C. Taber	294,930	Mar. 11	718	200, 201	26	960
Traction-engine bearing	F. F. Landis	294,793	Mar. 11	547	151, 152	26	929
Traction-motor. Electrical	W. E. Ayrton and J. Perry	292,529	Jan. 29	1923	538, 539	26	375
Transit. Surveyor's and engineer's	T. L. Nixon	293,667	Feb. 19	1124	313, 314	26	654
Transom-lifter	F. A. Cortis	291,695	Jan. 8	868	243	26	161
Transplanter	E. A. Gross	293,652	Feb. 19	1108	308	26	651
Trap: *See* Animal-trap. Steam-trap. Ball-trap. Vermin-trap. Bottle-trap. Water-trap. Rat-trap.							
Trap and overflow for wash-basins, water-closets, &c. Combined	C. L. Riker	292,055	Jan. 15	1302	364	26	251
Traveling-bags. Safety attachment for	F. A. Nickerson	292,940	Feb. 5	206	56	26	480
Tray. Glass water	A. H. Heisey	294,231	Feb. 26	1885	515	26	793
Treadle and crank movements. Device for poising	J. H. Whitney	292,969	Feb. 5	238	65	26	486
Treadle mechanism	J. Pasfield	292,573	Jan. 29	1963	553	26	384
Treadle-motion	J. Kayser	291,200	Jan. 1	236	65	26	42
Treadle-power	G. A. Greene	294,224	Feb. 26	1878	513	26	792
Tree-protector	F. R. Hogeboom	293,463	Feb. 12	893	242	26	605
Trellis-hook	J. Judd	294,240	Feb. 26	1895	518	26	795
Tricycle	A. Brown	294,753	Mar. 11	501	140	26	921
Tricycle	D. E. Dutrow	295,861	Mar. 25	1939	535	26	1198
Tricycle	W. J. Lloyd	295,257	Mar. 18	1164	321, 322	26	1049
Tricycle	N. Merrill	291,376	Jan. 1	440	125	26	80
Trimmer: *See* Heel-trimmer. Sewing-machine trimmer.							
Trimming fabrics. Device for	A. Wright	295,139	Mar. 11	1003	277	26	1008
Trimming show-box	S. G. Bernstein and M. Simonson	293,844	Feb. 19	1377	380	26	697
Trolling-hook	N. A. Dickinson	295,369	Mar. 18	1303	361	26	1077
Trough: *See* Animal-trough.							
Truck	W. C. Mayor	294,142	Feb. 26	1774	486	26	774
Truck. Binder-	J. C. Smith	293,282	Feb. 12	665	178	26	563
Truck. Car-	J. E. Mason	294,140	Feb. 26	1772	486	26	774
Truck. Car-	A. E. McConnell	293,763	Feb. 19	1264	350	26	678
Truck. Car-	W. H. Montz	291,382	Jan. 1	456	128	26	82
Truck. Car-	A. Westlake	292,454	Jan. 22	1617	506, 507	26	350
Truck. Hand-	J. Burleigh and J. G. Abbott	292,790	Feb. 5	16	4	26	445
Truck. Hand-	J. L. Dowing	294,211	Feb. 26	1863	508, 509	26	789
Truck. Hand-	G. H. Rausch	292,680	Jan. 29	2121	590	26	408
Truck. Hand-	C. F. Stremel	294,525	Mar. 4	928	65	26	908
Truck. Hand-	W. C. Wren	292,609	Jan. 29	2033	565	26	393
Truck. Harvester-	H. Clayton	291,578	Jan. 15	1094	305	26	212
Truck. Harvester-	R. Hamilton	292,219	Jan. 22	1513	425	26	294
Truck. Harvester-	A. E. Potter	292,851	Feb. 5	88	24	26	459
Truck spring. Car-	G. B. Milne	295,417	Mar. 18	1358	377	26	1088
Trunk	H. E. Gilson	293,065	Feb. 5	282	78	26	493
Trunk	A. Kroesing	291,607	Jan. 8	755	213	26	142
Trunk	J. O. Niles	294,260	Feb. 26	1917	526	26	799
Trunk	F. H. Ransom	295,808	Mar. 25	1869	519	26	1186
Trunk	J. Wayland	292,967	Feb. 5	233	64	26	485
Trunk-catch	A. V. Romadka	291,230	Jan. 1	267	75	26	49
Trunk-roller and corner-piece	A. Dodd	294,564	Mar. 4	313	87	26	892
Trunk. Salesman's sample-	J. E. Ladd	291,303	Jan. 1	940	66	26	43
Trunk-stay	J. S. Topham	295,464	Mar. 18	1413	391	26	1098
Trunk tray-bolt	O. Jacobi	295,015	Mar. 11	843	.....	26	980
Trunks, portmanteaus, &c. Manufacturing material for making	D. S. Armer	295,472	Mar. 18	1426	394	26	1101
Truss	O. G. Darling and H. A. Schulz	293,230	Feb. 12	595	156	26	551
Truss	O. G. Darling and H. A. Schulz	293,231	Feb. 12	595	157	26	551
Truss	J. Feneratein	295,240	Mar. 18	1140	314	26	1045
Truss	E. Howe	294,321	Feb. 26	1909	547	26	814
Truss	J. F. Noone	291,391	Jan. 1	466	131	26	84
Tub-trussing machine	M. Corcoran	294,764	Mar. 11	513	143	26	923
Tube: *See* Sampling-tube.							
Tube-cutter	N. P. Towne	295,307	Mar. 18	1236	341	26	1062
Tube-expander	J. H. McGraw	292,027	Jan. 15	1069	355	26	244
Tubes. Apparatus for screw threading	H. B. Feldmann	291,842	Jan. 8	1036	289, 290	26	191

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tubular boiler. Upright	R. Henry and H. B. Taylor	294,875	Mar. 11	656	183	26	949
Tug	G. C. Eastman	293,642	Feb. 19	1097	304	26	649
Tug-boat. Steam-traction	D. W. Cooke	295,231	Mar. 18	1129	311, 312	26	1043
Tug-clip	S. A. Wall	294,704	Mar. 4	440	122	26	904
Tug for harness. Shaft-	P. McFaddin	293,052	Feb. 5	336	92	26	504
Tug. Hame-	E. G. Latta	294,243	Feb. 26	1897	520	26	796
Tug. Harness-	S. H. Haas	294,572	Mar. 11	653	182	26	948
Tug slide. Harness-	J. G. Miller	293,903	Feb. 19	1446	400	26	710
Tuyere	F. W. Gordon	295,540	Mar. 25	1523	421	26	1123
Tuyere	J. F. Harly	295,548	Mar. 25	1533	425	26	1126
Tuyere	E. P. H. Martin	292,668	Jan. 29	2107	586	26	405
Tuyere	F. W. Gordon	294,123	Feb. 26	1746	481	26	770
Tuyere-pipe	P. W. Wiley	292,302	Jan. 22	1733	483	26	334
Type-cases. Supplementary cell for	E. C. Bell	294,355	Mar. 4	19	5	26	833
Type-holder	G. W. N. Yost	295,469	Mar. 18	1420	393	26	1100
Type-writer	W. J. Barron	295,475	Mar. 18	1430	395	26	1101
Type-writing machine	H. B. Richardson	292,854	Feb. 5	91	25, 26	26	459
Type-writing machine	C. G. Tinsley	293,687	Feb. 19	1154	322	26	660
Type-writing machines. Line-indicator for	M. C. Stone	291,104	Jan. 1	113	32	26	23
Umbrella	E. Wright	295,140	Mar. 11	1004	277	26	1008
Umbrella. Carriage-	C. G. Saxe	291,090	Jan. 1	89	26	26	19
Umbrella-catch	C. D. Lathrop	292,325	Jan. 22	1646	460	26	317
Umbrella-frame	M. Nial	295,042	Mar. 11	874	239	26	985
Umbrella-frames. Device for attaching the ribs and braces of	E. G. Charagent	295,351	Mar. 18	1920	354, 355	26	1072
Umbrella-runner	J. B. Wilson	293,549	Feb. 12	985	270	26	622
Umbrella-runner	E. Ross	295,586	Mar. 25	1586	439	26	1135
Umbrellas and canes. Hand-protecting attachment for	S. Rosenthal	294,507	Mar. 4	910	59	26	865
Under-garment	H. Howson	291,849	Jan. 8	1047	293	26	193
Underground conduits. Mode of and mechanism for forming	T. L. Smith	293,533	Feb. 12	966	264	26	619
Underground wire-conduit	J. Potter	293,781	Feb. 19	1286	356, 357	26	692
Universal lubricator	C. H. Peters	294,666	Mar. 4	398	111	26	897
Urn. Coffee-	A. B. Pullman	293,275	Feb. 12	657	176	26	561
Urinal	A. Palmer	295,276	Mar. 18	1186	328	26	1054
Vaginal irrigator	J. M. Goldsmith	291,506	Jan. 8	622	175	26	118
Valve	J. M. Goldsmith	293,240	Feb. 12	607	161	26	553
Valve	C. Jenkins	293,398	Feb. 12	725	194	26	574
Valve	J. R. Maxwell	291,066	Jan. 1	62	18	26	14
Valve and union	A. Wanich	292,604	Jan. 29	2026	564	26	392
Valve. Balance puppet-	W. T. Reasor. (Reissue)	10,449	Feb. 12	1062	294	26	635
Valve. Balance slide-	R. H. Fletcher	294,216	Feb. 26	1868	510	26	790
Valve. Balanced rotary	J. H. Blessing	294,960	Mar. 11	753	210	26	966
Valve. Check-	C. Jenkins	293,398	Feb. 12	725	194	26	573
Valve. Check-	W. Boorman	294,359	Mar. 4	23	6	26	833
Valve. Fluid-actuated	F. A. Gardner	291,476	Jan. 1	574	161, 162	26	102
Valve-gear	J. T. Halsey	294,873	Mar. 11	654	182	26	948
Valve-gear. Reversing	E. D. McLean	295,033	Mar. 11	864	237	26	964
Valve-gear. Steam-engine	W. D. Thomas	293,686	Feb. 19	1152	321, 322	26	660
Valve. Globe-	E. E. McCannon	292,340	Jan. 22	1664	464	26	320
Valve grinder. Globe-	J. E. Doyle	293,723	Feb. 19	1207	334	26	609
Valve. Piston-	H. Whiting	292,778	Jan. 29	2065	627	26	434
Valve. Regulator-	T. J. Kieley	292,232	Jan. 22	1531	429	26	296
Valve. Safety-	H. G. Ashton	291,126	Jan. 1	142	41	26	28
Valve. Safety-	J. O. Cheever	293,948	Feb. 19	1509	416	26	722
Valve. Safety-	R. J. Thomas	293,685	Feb. 19	1150	321	26	660
Valve. Safety-	E. P. Monroe	293,975	Feb. 19	1541	425	26	728
Valve. Slide-	H. F. Shaw	292,261	Jan. 22	1573	439	26	303
Valve. Slide-	R. N. Pratt	291,770	Jan. 8	946	265	26	175
Valve. Steam-	R. N. Pratt	292,353	Jan. 22	1683	468, 469	26	324
Valve. Steam-	D. H. Thorpe	292,185	Jan. 22	1459	410	26	286
Valve. Steam-actuated	W. Craig	292,541	Jan. 29	1943	542, 543	26	377
Valve. Steam-actuated	D. F. Nisbet	295,669	Mar. 25	1691	468	26	1154
Valve. Steam-engine reversing-	H. W. Robie	294,155	Feb. 26	1791	490	26	777
Valve. Stop-	J. H. Blessing	294,357	Mar. 4	20	5	26	833
Valve. Stop-	C. F. Murdock	291,218	Jan. 1	255	72	26	46
Valve. Stop-	A. Rappold	293,355	Feb. 12	759	202	26	580
Valve. Stop-	R. Hughes	291,479	Jan. 1	579	163	26	103
Valve. Straight-way	G. W. Richardson	295,585	Mar. 25	1584	438	26	1135
Valves. Apparatus for testing safety-	E. L. Reese	294,807	Mar. 11	573	159	26	934
Valves of steam-cylinders. Operating	H. F. Hayden	295,392	Mar. 18	1328	370, 371	26	1082
Vapor and gas generating furnace for locomotives, &c.	D. E. Bangs	292,616	Jan. 29	2041	567	26	394
Vapor-burner	J. B. Wallace and G. Myers	295,315	Mar. 18	1236	343	26	1063
Vapor-burner safety attachment	R. S. Kelsey	295,651	Mar. 25	1666	462	26	1149
Vaporizing hydrocarbon oils. Process of and apparatus for	H. F. Hayden	295,550	Mar. 25	1535	426	26	1126
Vat or kettle for reducing or treating animal or vegetable matter.	T. Swanton	295,508	Mar. 18	1477	406	26	1109
Vault. Bank-	J. T. Hough and J. A. Harper	294,626	Mar. 4	349	97	26	888
Vegetable-cutter	E. Barth and O. Spilger	293,300	Feb. 12	692	185	26	568
Vegetable-cutting machine	P. J. Dames	291,305	Jan. 1	366	103	26	66
Vehicle-body	H. P. Colby	294,852	Mar. 11	628	174	26	943
Vehicle-brake	J. T. Dillehay	295,740	Mar. 25	1780	495	26	1169
Vehicle-brake	J. C. Herman	295,123	Mar. 11	980	269	26	1004
Vehicle-runner	W. H. Strayer and W. H. Planck	292,383	Jan. 22	1723	480	26	332

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Vehicle running-gear	W. A. Dawson	292,900	Feb. 5	149	40, 41	26	470
Vehicle running-gear	C. M. March	294,742	Mar. 4	481	134	26	912
Vehicle running-gear	J. I. and C. F. Nissen	293,907	Feb. 19	1451	402	26	711
Vehicle running-gear	B. C. Seaton	291,542	Jan. 8	666	189	26	196
Vehicle running-gear	G. B. Haskell	295,754	Mar. 25	1705	499	26	1172
Vehicle-seat	A. M. Plimpton	292,945	Feb. 5	211	58	26	481
Vehicle-seat	F. J. Newacheck	291,389	Jan. 1	465	131	26	83
Vehicle-seat spring	W. R. D. Allen	292,151	Jan. 29	1415	397	26	279
Vehicle shifting-rail	J. Knapp	294,788	Mar. 11	540	150	26	928
Vehicle side spring	H. W. Pell	295,277	Mar. 18	1157	329	26	1054
Vehicle side spring	W. Shinnick	291,789	Jan. 8	968	271	26	179
Vehicle-spindle	C. E. Murray	294,258	Feb. 26	1915	525	26	799
Vehicle-spring	G. L. Artz	291,664	Jan. 8	831	233	26	155
Vehicle-spring	C. W. Barenfanger	291,852	Jan. 8	1021	285	26	188
Vehicle-spring	G. E. Blaine	293,219	Feb. 12	581	153	26	549
Vehicle-spring	C. C. Bradley	294,190	Feb. 26	1838	502	26	784
Vehicle-spring	J. P. Callan	295,228	Mar. 18	1124	310	26	1042
Vehicle-spring	W. H. Doyle	294,374	Mar. 4	45	12	26	838
Vehicle-spring	S. Hnnt	291,738	Jan. 8	916	256	26	169
Vehicle-spring	R. S. Hnnzeker	295,176	Mar. 18	1052	291	26	1030
Vehicle-spring	R. S. Hnnzeker	295,177	Mar. 18	1053	291	26	1030
Vehicle-spring	S. D. Lance	294,342	Feb. 26	1897	519	26	796
Vehicle-spring	D. P. Sharp	291,412	Jan. 1	1195	138	26	88
Vehicle-spring	E. S. Smith	293,801	Feb. 19	1316	366	26	688
Vehicle-spring	C. L. Thomas	292,147	Jan. 15	1408	394	26	270
Vehicle-spring	I. A. Timmis	291,814	Jan. 8	997	280	26	184
Vehicle-spring	W. Van Anden	293,824	Feb. 19	1347	374	26	692
Vehicle-spring	J. W. Wetmore	291,908	Jan. 15	1199	335	26	231
Vehicle. Spring	P. Englehart	292,740	Jan. 29	2201	{613 {614	26	422
Vehicle. Spring	H. A. Moyer	292,036	Jan. 15	1279	358	26	246
Vehicle. Three-wheeled	W. S. Dllatnsh and J. R. Drake	295,154	Mar. 18	1025	283	26	1026
Vehicle top-prop	E. N. Pelzer	294,903	Mar. 11	689	192	26	955
Vehicle. Two-wheeled	L. F. Castor	294,009	Feb. 26	1522	438	26	744
Vehicle. Two-wheeled	F. Coleman	292,896	Feb. 5	145	38, 39	26	470
Vehicle. Two-wheeled	J. S. Creighton and J. Taylor	295,361	Mar. 18	1293	358	26	1075
Vehicle. Two-wheeled	F. Doherty and E. L. Sies	293,730	Feb. 19	1264	353	26	669
Vehicle. Two-wheeled	H. P. Garland	292,480	Jan. 29	1849	516	26	363
Vehicle. Two-wheeled	H. Greenfield	293,572	Feb. 12	1014	279	26	627
Vehicle. Two-wheeled	G. E. Gnerne	293,323	Feb. 12	718	192	26	572
Vehicle. Two-wheeled	W. M. Hamilton	291,725	Jan. 8	900	252	26	167
Vehicle. Two-wheeled	W. F. Heath	294,617	Mar. 4	338	94	26	886
Vehicle. Two-wheeled	H. H. Heeb and J. F. Schonert	292,913	Feb. 5	167	45	26	474
Vehicle. Two-wheeled	G. W. Kerr	293,474	Feb. 12	904	245	26	607
Vehicle. Two-wheeled	C. W. Saladee	294,679	Mar. 4	412	{114 {115	26	899
Vehicle. Two-wheeled	A. F. Sargent and R. D. Farrell	293,094	Feb. 5	389	106	26	512
Vehicle. Two-wheeled	F. Schelp, Jr	291,942	Jan. 15	1169	326	26	225
Vehicle. Two-wheeled	N. Starkey and G. W. Crowther	294,926	Mar. 11	713	199	26	959
Vehicle. Two-wheeled	S. Toomey	294,528	Mar. 4	234	66	26	869
Vehicle-wheel	W. C. Barr	292,617	Jan. 29	2042	568	26	394
Vehicle-wheel	G. M. Dillard	291,165	Jan. 1	189	54	26	35
Vehicle-wheel	F. L. P. Fish	294,025	Feb. 26	1600	444	26	747
Vehicle-wheel	P. H. Stein	292,143	Jan. 15	1404	393	26	269
Vehicle-wheel	A. B. Woodard	291,457	Jan. 1	554	156	26	99
Vehicle-wheel sand-band	J. W. Hitchcock	294,792	Mar. 11	532	148	26	927
Vehicle-wheel sand-band	M. Raphael	291,936	Jan. 15	1164	325	26	225
Vehicle-wheel sand-band	B. S. Moore	293,347	Feb. 12	746	199	26	578
Vehicles. Propelling	A. M. Allen	294,178	Feb. 26	1823	{497 {498	26	792
Velocipede	L. Beaupain	295,333	Mar. 18	1256	348	26	1068
Velocipede	D. Crowley	295,150	Mar. 18	1018	292	26	1025
Velocipede	G. L. O. Davidson	295,364	Mar. 18	1296	359	26	1076
Velocipede	C. F. Hadley and A. H. Overman	292,908	Feb. 5	159	44	26	473
Velocipede	E. G. and A. C. Latta	294,641	Mar. 4	372	{103 {104	26	892
Velocipede	C. F. Riley	292,179	Jan. 22	1452	407	26	284
Velocipede	C. M. Schaffer	291,781	Jan. 8	961	270	26	178
Velocipede	S. N. Silver	293,366	Feb. 12	775	{207 {208	26	583
Velocipede	J. M. Staples	293,536	Feb. 12	970	265	26	619
Velocipede	J. C. Tennent	292,708	Jan. 29	2154	600	26	413
Velocipede	J. W. Woodruff	293,837	Feb. 19	1368	378	26	695
Velocipede-bearing	J. C. Garrood	295,161	Mar. 18	1033	285	26	1027
Velocipede foot-rest	W. Kressly	293,581	Feb. 12	1023	291	26	628
Velocipede. Ice-	E. H. Funk	295,491	Mar. 18	1457	401	26	1106
Velocipede-pedal	A. J. Philbrick	292,351	Jan. 22	1680	468	26	323
Veneer	A. Dickman and M. Heintz	291,164	Jan. 1	188	.....	26	35
Ventilating apparatus	W. Lord	295,499	Mar. 18	1463	403	26	1107
Ventilating bow-windows	C. S. Foos	291,322	Jan. 1	385	107	26	69
Ventilating buildings	F. A. Pilling	292,444	Jan. 22	1806	503	26	348
Ventilating mining shafts and tunnels	W. Phillips	294,805	Mar. 11	570	158	26	933
Ventilation	M. B. Stafford	294,920	Mar. 11	557	163	26	936
Ventilator: *See* Car-ventilator. Waste-pipe ventilator. Feed-bag ventilator.							
Ventilator	J. M. Ayer	291,606	Jan. 8	834	{233 {234	26	155
Ventilator	J. G. Slater	295,061	Mar. 11	904	248	26	991
Ventilator and chimney. Combined	W. F. Matthews	291,919	Jan. 15	1146	319	26	221
Vermin-trap	H. T. Windt	293,609	Feb. 12	1055	292	26	634
Vessel having divided hull	J. David	295,153	Mar. 19	1024	283	26	1025
Vessel. Marine	A. M. G. Sébillot	293,793	Feb. 19	1306	362	26	686
Vessel or reservoir for liquids or other materials	M. J. Walsh	291,655	Jan. 8	821	229	26	153

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Vessel. Tilting	W. Zimmer	295,849	Mar. 25	1917	530	26	1195
Vessels. Air-port for	J. F. Folmer	292,640	Jan. 29	2065	575	26	398
Vinegar. Manufacturing	V. Michaëlis	292,125	Jan. 15	1383	388	26	266
Vise	W. H. Cloud	295,354	Mar. 18	1283	355	26	1073
Vise	H. A. Hyle	294,736	Mar. 4	475	133	26	910
Vise and lathe. Combined	J. R. McMillan	292,342	Jan. 22	1667	465	26	390
Vise. Bench-	M. G. Lewis	294,137	Feb. 26	1765	485	26	773
Vise. Bench-	J. Thomson	292,874	Feb. 5	116	32	26	464
Vise. Bench-	W. H. Northall	292,135	Jan. 15	1396	391	26	268
Vise. Sliding-jaw	C. L. Mitchell	291,071	Jan. 1	68	19	26	16
Vocal culture. Device for aid in	F. L. Pope	293,272	Feb. 12	651	175	26	560
Voltaic batteries. Automatic feeding apparatus for	G. P. Rishel. (Reissue)	10,442	Jan. 29	2271	628	26	435
Vulcanizing and celluloid apparatus	N. Faught	292,424	Jan. 22	1785	497	26	344
Wagon-bolster	L. J. Brandow	295,225	Mar. 18	1121	309	26	1042
Wagon bolster-plate	B. G. Meinikheim	294,249	Feb. 26	1907	522	26	797
Wagon-bolster spring	F. Lanz	292,019	Jan. 15	1261	353	26	242
Wagon-box	J. Hocking	295,008	Mar. 11	834	228	26	979
Wagon-brake	S. W. Lee	291,747	Jan. 8	923	259	26	170
Wagon-brake	J. D. Rnssell	292,139	Jan. 15	1400	392	26	268
Wagon-brake	E. J. Miles	295,190	Mar. 18	1074	295	26	1034
Wagon-brake lever	W. Lockwood	294,891	Mar. 11	678	189	26	953
Wagon. Buckboard-	J. Massey	293,340	Feb. 12	739	197	26	576
Wagon circle-iron	J. H. Buening and H. Klug	291,573	Jan. 8	705	198	26	132
Wagon draft attachment	W. and J. H. Leonhardt	295,879	Mar. 25	1968	545	26	1203
Wagon. Dumping-	T. S. Stewart	295,071	Mar. 11	918	252	26	993
Wagon. Dumping-	A. Bartholomew	295,331	Mar. 18	1254	348	26	1067
Wagon for moving heavy objects	T. Bueno, Jr.	295,107	Mar. 11	963	263	26	1001
Wagon for transporting sugar-cane	G. La Rock	295,022	Mar. 11	851	239	26	981
Wagon-jack	T. Maxon	292,441	Jan. 22	1804	503	26	348
Wagon-jack	W. K. Mottram and J. A. Mundy	294,060	Mar. 4	393	110	26	896
Wagon-jack	N. Smith	293,866	Feb. 19	1323	367	26	689
Wagon jack	H. C. Torrey	295,509	Mar. 18	1477	406	26	1109
Wagon-jack	G. R. Peare	292,175	Jan. 22	1446	406	26	283
Wagon-lock	M. G. Hubbard	295,011	Mar. 11	837	229	26	979
Wagon. Road-	A. J. Beach	291,132	Jan. 1	150	44	26	29
Wagon running-gear	A. J. Beach	291,133	Jan. 1	151	44	26	29
Wagon running-gear	R. C. Blackwell	291,468	Jan. 1	565	159	26	101
Wagon running-gear	A. H. Todt	292,600	Jan. 29	2022	563	26	391
Wagon running-gear	S. Moore	291,383	Jan. 1	457	129	26	89
Wagon-seat	J. I. Plummer	291,767	Jan. 8	942	264	26	174
Wagon shoveling-board	J. C. F. Harris	295,635	Mar. 25	1644	456	26	1145
Wagon. Spring-board	A. J. Beach	294,060	Feb. 26	1570	433	26	741
Wagon-thimble skein	F. H. Shepherd	291,099	Jan. 1	105	29	26	22
Wall-paper exhibitor	D. C. Millett	292,247	Jan. 22	1554	435	26	301
Wall-protector	J. S. Heizer	291,510	Jan. 8	627	177	26	119
Warming the upper rooms of buildings. Apparatus for	G. S. Follansbee	295,745	Mar. 25	1767	496	26	1170
Warping-machine	H. Bremer	293,847	Feb. 19	1381	381	26	698
Wash-bench	A. White	294,102	Feb. 26	1712	471	26	765
Wash-board	L. Christiansen	292,734	Jan. 29	2189	610	26	420
Washing-machine	C. Hoffman	291,512	Jan. 8	628	{177 {178	26	119
Washing-machine	J. Hollingsworth	292,314	Jan. 22	1632	457	26	314
Washing-machine	A. Jackson	295,401	Mar. 18	1340	373	26	1084
Washing-machine	W. C. Krieg and J. T. Albin	293,890	Feb. 19	1430	395	26	707
Washing-machine	R. Smith	295,065	Mar. 11	900	249	26	999
Washing-machine	W. H. Thurmond	295,402	Mar. 18	1410	390	26	1097
Washing-machine. Boiler	F. T. Roots	295,199	Mar. 18	1085	298	26	1036
Washing-machine. Pounder	J. Persson	294,503	Mar. 4	207	58	26	864
Waste-pipe ventilator	C. D. Leger	293,042	Feb. 5	323	89	26	501
Watch	D. Perret	293,779	Feb. 19	1284	356	26	682
Watch	G. E. Hart	293,169	Feb. 5	507	134	26	530
Watch-balance. Compensation	C. K. Giles	293,860	Feb. 19	1396	386	26	701
Watch-case	C. W. Harman and H. G. Skidmore.	293,869	Feb. 19	1407	389	26	703
Watch-case centers. Making	J. C. Dueber	295,156	Mar. 18	1027	284	26	1026
Watch-case lining	C. K. Giles	293,861	Feb. 19	1398	387	26	701
Watch-case spring	E. H. Jenkins	294,390	Mar. 4	60	17	26	841
Watch-crystal cabinet	C. H. Daugherty	291,308	Jan. 1	369	104	26	66
Watch-dial	G. E. Hart	293,170	Feb. 5	508	134	26	530
Watch hair-spring	C. A. Wilms	294,833	Mar. 11	605	167	26	939
Watch-mainspring	D. H. Church	295,485	Mar. 18	1450	399	26	1105
Watch mainspring-barrel	D. A. A. Buck	293,142	Feb. 5	468	125	26	524
Watch-movement	D. A. A. Buck	293,143	Feb. 5	468	125	26	524
Watch-movement box	E. A. Locke	293,046	Feb. 5	326	90	26	502
Watch-plate	G. E. Hart	293,018	Feb. 5	297	82	26	496
Watch-regulator	A. C. Clausen	293,420	Feb. 12	846	229	26	596
Watch-regulator	E. J. Roux and L. U. Fatio	291,780	Jan. 8	960	270	26	178
Watch. Self-winding	H. Von der Heydt	293,691	Feb. 19	1159	323	26	661
Watch. Stem-winding	G. E. Hart	293,168	Feb. 5	506	134	26	530
Watch. Stem winding and setting	D. H. Church	295,484	Mar. 18	1449	399	26	1105
Watch-winding device	C. W. Harman and H. G. Skidmore.	294,446	Mar. 4	158	43	26	856
Watch-winding mechanism	R. F. Mitchell	292,838	Feb. 5	74	20	26	456
Watches. Device for holding the stem in the pendant of stem-winding	A. W. Miller	293,267	Feb. 12	647	173	26	559
Watches. Jewel-support for the balance-staffs of	W. Ware	294,168	Feb. 26	1809	494	26	780
Water-closet	N. Barry, Jr.	293,935	Feb. 19	1492	411	26	719
Water-closet	E. Bande	294,185	Feb. 26	1834	500	26	784
Water-closet	C. Harrison	293,734	Feb. 19	1221	337	26	672
Water-closet	S. M. Howard	295,010	Mar. 11	836	229	26	979
Water-closet	J. Kelly	292,918	Feb. 5	173	47	26	475

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Water-closet and other bowls and pipe-connections therefor	J. E. Boyle	291,140	Jan. 1	150	46, 47	26	31
Water-closet attachment	L. H. Burnett	293,305	Feb. 12	697	186	26	568
Water-closet cistern	J. Demarest	292,160	Jan. 22	1429	401	26	281
Water-closet cistern	J. Demarest	292,901	Feb. 5	150	41	26	471
Water-closet flushing apparatus	J. E. Boyle	291,139	Jan. 1	156	46	26	30
Water-closet funnel of railway-cars	I. H. Congdon	292,472	Jan. 29	1842	513	26	361
Water-closet valve	J. Demarest	292,159	Jan. 22	1428	400	26	281
Water-closet valve	H. A. Tobey	295,691	Mar. 25	1717	474	26	1159
Water-cooler	W. A. Hawthorn	291,595	Jan. 8	737	207	26	139
Water-cooler	J. E. Welling	291,857	Jan. 8	1056	295	26	195
Water-elevator	J. F. McCalmont	291,759	Jan. 8	934	262	26	173
Water-gate	F. Ogden	293,503	Feb. 12	935	254	26	613
Water-meter	C. W. Van Alstine	291,647	Jan. 8	808	226	26	151
Water-meter. Piston	W. R. Park	293,506	Feb. 12	940	256	26	614
Water-motor	A. C. Harvey	291,340	Jan. 1	400	113	26	73
Water. Purifying	C. B. Dudley	291,167	Jan. 1	102	.....	26	36
Water. Purifying	I. S. Hyatt	293,740	Feb. 19	1228	340	26	673
Water. Purifying	W. Tweeddale	295,890	Mar. 25	1980	548	26	1205
Water-raising apparatus	T. Arthur	293,997	Feb. 26	1568	433	26	741
Water-supply for cities	D. C. Cregier	291,158	Jan. 1	180	52	26	34
Water-supply for cities and towns	D. C. Cregier	291,159	Jan. 1	182	53	26	34
Water-trap	W. J. English	293,438	Feb. 12	866	234	26	600
Water-wheel	T. M. Flenniken and T. W. Graham	293,238	Feb. 12	604	159, 160	26	552
Water-wheel	R. Hewson	292,431	Jan. 22	1792	500	26	345
Water-wheel governor	J. Morton	292,673	Jan. 29	2114	588	26	406
Water-wheel. Jet	A. J. Gould	291,894	Jan. 15	1110	310	26	215
Water-wheel. Turbine	W. M. Mills	293,964	Feb. 19	1446	400, 401	26	710
Water-wheel. Turbine	I. Sherck	295,590	Mar. 25	1589	440	26	1136
Water-wheel. Turbine	E. W. Stubbs	294,929	Mar. 11	717	200	26	960
Water-proof. Substance for rendering fabrics	L. P. Converse	295,113	Mar. 11	969	.....	26	1002
Waterproofing and preserving buildings. Compound for	B. De Nise	295,525	Mar. 25	1502	.....	26	1119
Waterproofing composition	A. Mink	295,881	Mar. 25	1971	.....	26	1203
Wave-power	T. Mayes	291,758	Jan. 8	933	262	26	172
Weaner. Calf-	M. J. Ahlgrim	291,660	Jan. 8	827	231	26	154
Weather-strip	G. Burkhardt	293,413	Feb. 12	838	227	26	595
Weather-strip	J. R. Fogg	294,776	Mar. 11	526	146	26	926
Weather-strip	E. E. Gillett	295,537	Mar. 25	1519	419	26	1122
Weather-strip	J. H. Hummel	293,738	Feb. 19	1227	339	26	673
Weather-strip	W. R. Kizer	292,120	Jan. 15	1378	386	26	265
Weather-strip	I. Paddock	292,040	Jan. 15	1284	359	26	247
Weather-strip	D. C. Potter and J. Stone	294,267	Feb. 26	1925	528	26	801
Weather-strip	D. Warnock	293,385	Feb. 12	805	216	26	589
Weigher and register. Grain	G. D. Baird	295,095	Mar. 11	950	259	26	998
Weigher. Automatic grain-	T. L. Easley	295,373	Mar. 18	1307	362	26	1078
Weighing-machine	E. Wölner	294,713	Mar. 4	450	125, 126	26	906
Weights and measures. Manufacture and proportioning of	C. A. L. Totten	293,117	Feb. 5	494	.....	26	518
Welding boilers, &c. Device for	S. Alley	294,179	Feb. 26	1827	498	26	783
Well-boring and drilling machine	F. Dearmin	295,621	Mar. 25	1630	451	26	1143
Well-boring apparatus	J. W. Hammett	292,485	Jan. 29	1856	518, 519	26	364
Well-boring machine	W. W. Curtis	293,735	Jan. 29	2190	611	26	420
Well-digger	R. Anderson	292,614	Jan. 29	2039	567	26	393
Well-drill	F. D. Parker	295,045	Mar. 11	877	240	26	986
Well-drilling machine	W. E. Brown	291,537	Jan. 8	1028	287	26	169
Well-drilling rig	J. G. Martin	295,413	Mar. 18	1359	376	26	1087
Wells. Pipe-lifter for oil-	S. K. and J. B. Duff	292,630	Jan. 29	2056	572	26	396
Wheat, &c. Machine for trimming or smutting	W. Lauhoff. (Reissue)	10,451	Feb. 26	2033	557	26	821
Wheel: *See* Buffing-wheel. Car-wheel. Carriage-wheel. Escapement-wheel. Fifth-wheel. Fly-wheel. Iron wheel. Paddle-wheel. Vehicle-wheel. Water-wheel.							
Wheel	R. T. Bishop	293,619	Feb. 19	1070	296	26	644
Wheel	G. W. Howell	293,251	Feb. 12	620	165	26	555
Wheel	J. B. Neff	293,408	Feb. 12	731	202	26	612
Wheel	D. Tice	292,672	Jan. 15	1320	369	26	254
Wheel-locking device	W. L. McDougall	293,051	Feb. 5	335	92	26	503
Wheel or pulley	H. H. Fulton	294,730	Mar. 4	470	131	26	910
Wheel-rack	H. W. Ransom	293,783	Feb. 19	1290	357, 358	26	683
Wheelbarrow. Folding	L. H. Goodwin	293,007	Feb. 5	283	79	26	494
Whiffletree	H. H. E. Bery	294,356	Mar. 4	19	5	26	833
Whiffletree	J. Graves	295,866	Mar. 25	1947	537	26	1199
Whiffletree	H. Rorebeck	295,811	Mar. 25	1872	520	26	1186
Whiffletree	W. T. Hine	292,012	Jan. 15	1254	351	26	241
Whiffletree-coupling	O. Vanorman	295,601	Mar. 25	1604	444	26	1139
Whiffletree coupling-plate	D. H. Liddy	294,644	Mar. 4	377	105	26	893
Whiffletree-hook	W. H. Best	294,958	Mar. 11	751	209	26	966
Whip-holder	S. J. Boswell	293,303	Feb. 12	695	185	26	568
Whip mount or button	W. O. Daniels	293,954	Feb. 19	1516	418	26	724
Whip-socket	F. A. Bradley	292,977	Feb. 5	250	68	26	488
Whip-socket	A. Searls	292,661	Jan. 15	1308	365	26	252
Whip-socket	J. L. Thomson	294,924	Mar. 11	593	164	26	937
Whip-socket	J. Weathers	291,856	Jan. 8	1055	295	26	195
Wind-engine	C. H. Cramer	294,369	Mar. 4	36	10	26	836
Wind-wheel	R. N. Rockwell	292,057	Jan. 15	1304	364	26	252

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Windlass	W. Smith	292,376	Jan. 22	1716	478	26	331
Windmill	H. Bensmann	293,704	Feb. 19	1178	329	26	664
Windmill	E. J. Schrock	291,783	Jan. 8	963	270	26	178
Windmill	H. M. Underwood	295,084	Mar. 11	895	255	26	990
Windmill	C. W. White	294,943	Mar. 11	733	204	26	963
Windmill	O. E. Winger	293,834	Feb. 19	1362	377	26	694
Windmill	O. E. Winger	293,835	Feb. 19	1364	378	26	695
Windmill	O. E. Winger	293,836	Feb. 19	1365	378	26	695
Windmill	G. W. Miller	292,030	Jan. 15	1273	356	26	245
Windmill attachment	L. M. Hoskins	294,624	Mar. 4	346	96	26	888
Windmill shifting apparatus	E. R. Crofut and C. L. Gribbie	295,362	Mar. 18	1294	358	26	1075
Window	A. Arens	292,152	Jan. 22	1415	397	26	279
Window and door button	E. Kempshall	294,474	Mar. 4	169	47	26	858
Window and door button	H. F. Neumeyer	294,497	Mar. 4	200	56	26	863
Window-bead fastener	A. Dormitzer	293,428	Feb. 12	854	231	26	598
Window-cleaning chair	F. O. Thiem	295,594	Mar. 25	1595	442	26	1137
Window. Safety-	G. W. Boynton	291,836	Jan. 8	1027	286	26	189
Window-screen	A. L. Clark	292,410	Jan. 22	1750	490	26	330
Window-screen	J. A. Grove	295,163	Mar. 18	1035	286	26	1027
Window-screen	W. H. Munn	291,926	Jan. 15	1154	321	26	223
Window-screen	G. L. Reynolds	293,082	Feb. 5	376	102	26	510
Window-screen	M. Roberts	293,277	Feb. 12	660	177	26	562
Window-screen	G. A. Thompson	291,549	Jan. 8	675	191	26	128
Window-screen	J. E. Phillips	291,222	Jan. 1	259	73	26	47
Window-shade	H. L. Judd	291,197	Jan. 1	233	64	26	41
Window-shade bar	A. Schmackers	294,278	Feb. 26	1939	532	26	803
Window-shade fixture	D. Bloch and P. E. Malmstrom	294,358	Mar. 4	21	6	26	833
Window-shade fixture and roller	W. S. Holland	295,396	Mar. 18	1335	372	26	1083
Window-shade hanging	J. Day	294,449	Mar. 4	140	37	26	853
Window-shade pull	L. C. Bailey	293,216	Feb. 12	578	152	26	548
Window. Store-	S. E. Hyndman	293,028	Feb. 5	310	85	26	498
Window. Ventilated show-	H. Kerr	291,358	Jan. 1	420	.....	26	77
Wire. Annealing	A. J. Upham	294,827	Mar. 11	599	165	26	938
Wire. Barbed	G. C. Baker	295,513	Mar. 25	1487	411	26	1117
Wire-barbing machine	C. B. Brainard	292,467	Jan. 29	1836	512	26	360
Wire-barbing machine	J. H. Coon	292,206	Jan. 22	1491	419, 420	26	290
Wire-barbing machine	D. C. Stover	295,208	Mar. 18	1096	303, 304	26	1038
Wire-barbing machines. Take-up for	G. Case	292,733	Jan. 29	2188	610	26	420
Wire-carrier	G. W. Belford	294,843	Mar. 11	616	170	26	941
Wire-cleaning machine	T. H. Burridge	294,847	Mar. 11	622	172	26	942
Wire-coiling machine	E. W. Durkee	291,500	Jan. 8	613	173	26	117
Wire cordage. Machine for making	G. L. Brownell	291,979	Jan. 15	1211	338	26	233
Wire cutter and shaper	B. E. Ball	293,134	Feb. 5	460	122, 123	26	522
Wire. Ingot for gold-plated	L. L. Burdon	294,722	Mar. 4	462	130	26	908
Wire machine. Barb-	G. H. Lasar	294,885	Mar. 11	670	187	26	951
Wire. Machine for coloring covered	W. H. Sawyer	293,095	Feb. 5	300	106, 107	26	513
Wire. Machine for making barb-	J. S. Stephen	295,068	Mar. 11	912	249, 250, 251	26	992
Wire. Machine for making barbed	L. E. Sunderland	293,538	Feb. 12	972	266	26	620
Wire. Making	C. S. Hall and E. J. Watson	293,011	Feb. 5	287	80	26	494
Wire-netting	A. G. Hulbert	295,251	Mar. 18	1157	319	26	1048
Wire preparatory to drawing. Coating for	W. E. Rice	291,938	Jan. 15	1166	.....	26	225
Wire-reel	H. C. Pratt	294,670	Mar. 4	404	112	26	898
Wire-reel spool	J. M. Young	292,610	Jan. 29	2034	565	26	393
Wire rods. Apparatus for making	F. H. Daniels	292,794	Feb. 5	21	6	26	446
Wire rods. Apparatus for rolling	W. Morris	291,923	Jan. 15	1150	321	26	222
Wire. Spooled market-	A. B. Malin	294,740	Mar. 4	480	134	26	911
Wire-spooling machine	T. S. Bayles	293,842	Feb. 19	1374	380	26	697
Wire springs. Machine for forming conical	G. W. Fishering	292,799	Feb. 5	29	8	26	448
Wire-straightening machine	C. Ångström	293,212	Feb. 12	570	151	26	547
Wire-straightening machine	C. Ångström	293,213	Feb. 12	572	151	26	547
Wire-stretcher	W. D. Amis	294,716	Mar. 4	456	127	26	907
Wire-stretcher	W. H. and J. W. Bliss	293,406	Feb. 12	932	225	26	594
Wire-stretcher	W. G. Garth	291,710	Jan. 8	885	248	26	165
Wire-stretcher	L. E. Sunderland	291,955	Jan. 15	1185	329, 330	26	228
Wire-twisting machine	J. Ayres and A. C. Decker	294,748	Mar. 4	489	137	26	913
Wire-twisting machine	M. A. Penney	291,765	Jan. 8	940	264	26	174
Wood-bundling machine	D. A. Greene	294,125	Feb. 26	1748	481	26	771
Wood corners. Manufacture of solid	I. G. S. Cleland	291,032	Jan. 1	22	6	26	7
Wood fiber. Machine for making	P. H. Holmes	291,848	Jan. 8	1043	291, 292	26	192
Wood. Method of and machine for ornamenting	C. Wagner	291,436	Jan. 1	520	147	26	94
Wood. Preserving	W. W. Robinson	294,676	Mar. 4	410	.....	26	899
Wood-preserving compound	H. C. Dorr	293,955	Feb. 19	1517	.....	26	724
Wood-splitting machine	A. Fuchs	292,644	Jan. 29	2074	576	26	399
Wood-worker's dog	J. Forbes	294,777	Mar. 11	527	147	26	926
Wooden plug	R. I. Fancher	293,726	Feb. 19	1211	335	26	670
Wooden tubing. Smoothing the inner surface of	M. F. Wilcox	295,703	Mar. 25	1733	482	26	1161
Wool-cleaning machine	A. Frayssé	292,295	Jan. 22	1610	450, 451	26	310
Wool-cleaning machine	F. G. and A. C. Sargent	293,788	Feb. 19	1299	360	26	684
Wool-press	D. F. Brooks	293,941	Feb. 19	1500	413	26	720
Wool-washing machine	F. G. and A. C. Sargent	291,089	Jan. 1	88	25, 26	26	19
Wool-washing machine	F. G. and A. C. Sargent	293,789	Feb. 19	1300	360	26	685
Wool washing, scouring, and burring machine	J. E. Sinclair	292,869	Feb. 5	110	30	26	463
Work-bench	M. Creighton	291,881	Jan. 15	1098	306	26	212
Wrapper-folding machine	W. B. Howe	294,470	Mar. 4	102	44, 45	26	857

Alphabetical list of inventions, January to March, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Wrench: *See* Adjustable wrench. Monkey-wrench. Bung-bush wrench. Pipe-wrench. Carriage-wrench. Ratchet-wrench. Jar-wrench. Tap and reamer wrench.							
Wrench	W. C. Baskin	291,129	Jan. 1	147	43	26	29
Wrench	O. A. Lee	294,642	Mar. 4	375	104	26	893
Wrench	D. R. Porter	291,933	Jan. 15	1161	324	26	224
Wrench	D. R. Porter	291,934	Jan. 15	1162	324	26	224
Wrench	J. A. Stanton	294,413	Mar. 4	95	25	26	845
Writing-table	M. E. Lenril	294,886	Mar. 11	673	188	26	932
Yarn. Apparatus for producing roping for making variegated or clouded	W. F. Prosser	292,582	Jan. 29	1995	555 556	26	386
Yarn. Machine for scouring and cleansing woolen	L. A. Upson. (Reissue)	10,439	Jan. 29	2266	627	26	434
Yarn-reel	G. Layng	292,438	Jan. 22	1801	502	26	347
Yoke. Neck-	M. Dakin	294,447	Mar. 4	138	36	26	853
Yoke. Neck-	M. V. Longsworth	291,748	Jan. 8	924	259	26	171
Yoke. Neck-	J. J. Looney	293,970	Feb. 19	1535	423	26	727
Yoke. Neck-	C. D. Zellner	292,886	Feb. 5	131	36	26	467
Zinc for batteries	H. J. Brewer	291,286	Jan. 1	336	95	26	61

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Design.	Name.	No.	Date.	Official Gazette.	
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Agricultural fork	J. H. Smith	14,544	Jan. 8	26	111
Atomizer	D. Tetlow	14,598	Jan. 29	26	358
Banner	S. W. Johnson	14,846	Mar. 4	26	827
Basque, Lady's	C. O'Hara	14,917	Mar. 25	26	1115
Billiard-table	A. Wagner	14,834	Feb. 26	26	740
Bottle	H. A. Chalvin	14,837	Mar. 4	26	827
Bracelet	J. A. Charnley	14,566	Jan. 29	26	357
Buckle	M. N. Judd	14,606	Feb. 5	26	441
Burial-casket	L. K. Smedes	14,563	Jan. 22	26	279
Button. Sleeve-	F. F. and J. C. Bioren	14,897	Mar. 25	26	1115
Calendar	R. Mace	14,582	Jan. 29	26	357
Calendar	C. S. Nathan	14,819	Feb. 26	26	740
Card. Back of a playing	E. R. Eavenson	14,810 to 14,816	Feb. 26	26	740
Carpet	J. W. Bassett	14,836	Mar. 4	26	827
Carpet	A. Beanmont	14,551 to 14,554	Jan. 22	26	277
Carpet	J. B. Campbell	14,677	Feb. 19	26	641
Carpet	A. Cochran	14,529 14,530	Jan. 1	26	1
Carpet	F. E. Cory	14,838 14,840	Mar. 4	26	827
Carpet	E. A. Crowe	14,678 to 14,703	Feb. 19	26	641
Carpet	E. Fajon	14,531	Jan. 1	26	1
Carpet	E. Fisher	14,705 to 14,716	Feb. 19	26	641
Carpet	E. Fisher	14,898	Mar. 25	26	1115
Carpet	J. L. Folsom	14,642 to 14,663	Feb. 12	26	546
Carpet	J. L. Folsom	14,717 to 14,755	Feb. 19	26	641
Carpet	J. L. Folsom	14,841	Mar. 4	26	827
Carpet	E. C. Frost	14,899	Mar. 25	26	1115
Carpet	W. J. Gadsby	14,569	Jan. 29	26	357
Carpet	W. J. Gadsby	14,664	Feb. 12	26	546
Carpet	W. J. Gadsby	14,867	Mar. 11	26	919
Carpet	A. L. Halliday	14,573 14,574	Jan. 29	26	357
Carpet	A. L. Halliday	14,668 to 14,671	Feb. 12	26	546
Carpet	A. L. Halliday	14,843 14,844	Mar. 4	26	827
Carpet	A. L. Halliday and W. McCallum	14,882	Mar. 11	26	919
Carpet	O. Heinigke	14,868 to 14,873	Mar. 11	26	919
Carpet	H. Horan	14,759	Feb. 19	26	641
Carpet	H. Horan	14,903 to 14,909	Mar. 25	26	1115
Carpet	H. Hunt	14,845	Mar. 4	26	827
Carpet	H. Hunt	14,887	Mar. 18	26	1021
Carpet	W. L. Jacobs	14,874 to 14,881	Mar. 11	26	919
Carpet	M. R. London	14,610	Feb. 5	26	442
Carpet	M. R. London	14,761	Feb. 19	26	641
Carpet	W. McCallum	14,611 14,612	Feb. 5	26	441
Carpet	W. McCallum	14,762 14,763 14,764	Feb. 19	26	641
Carpet	J. McMann	14,765	Feb. 19	26	641
Carpet	J. McMann	14,913	Mar. 25	26	1115
Carpet	D. McNair	14,533	Jan. 1	26	1
Carpet	T. E. Meagher	14,766	Feb. 19	26	641
Carpet	D. G. Melville	14,585	Jan. 29	26	358
Carpet	D. G. Melville	14,673	Feb. 12	26	546
Carpet	D. G. Melville	14,848	Mar. 4	26	827
Carpet	J. Merry	14,767	Feb. 19	26	641
Carpet	J. S. Meyer	14,547	Jan. 15	26	205
Carpet	J. S. Meyer	14,849	Mar. 4	26	827
Carpet	H. North	14,769	Feb. 19	26	642

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Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Carpet	H. North	14,914 to 14,915	Mar. 25	26	1115
Carpet	J. Pegel	14,853 to 14,854	Mar. 4	26	827
Carpet	E. Poole	14,770 to 14,773	Feb. 19	26	642
Carpet	F. F. Ricker	14,623 to 14,629	Feb. 5	26	442
Carpet	F. F. Ricker	14,775	Feb. 19	26	642
Carpet	O. Righter	14,589 to 14,593	Jan. 29	26	358
Carpet	O. Righter	14,630 to 14,634	Feb. 5	26	442
Carpet	E. G. Saner	14,776	Feb. 19	26	642
Carpet	F. E. Smith	14,636 to 14,637	Feb. 5	26	442
Carpet	S. Smith	14,777 to 14,778	Feb. 19	26	642
Carpet	T. J. Stearns	14,596 to 14,597	Jan. 29	26	358
Carpet	C. W. Swapp	14,779 to 14,801	Feb. 19	26	642
Carpet	L. W. Valentine	14,806	Feb. 19	26	642
Carpet	L. W. Valentine	14,923	Mar. 25	26	1116
Carpet	G. C. Wright	14,599 to 14,601	Jan. 29	26	358
Center-piece	V. Dini	14,550	Jan. 15	26	206
Charm	C. S. Pine	14,549	Jan. 15	26	206
Cigar-cutter case	L. C. Fairchild	14,817	Feb. 26	26	740
Cloak. Girl's	C. Shiels	14,635	Feb. 5	26	442
Clock-case	J. B. McCarty	14,532	Jan. 1	26	1
Clock-front	W. M. House	14,886	Mar. 18	26	1021
Cloth	H. L. Einstein	14,568	Jan. 29	26	357
Coat. Child's	C. O'Hara	14,618	Feb. 5	26	442
Coat. Lady's	L. Tully	14,833	Feb. 26	26	740
Coffin-plate	E. H. and J. H. Eldridge	14,641	Feb. 12	26	546
Collar and cuff	F. Plebes	14,675	Feb. 12	26	546
Corset	J. Bowers	14,535	Jan. 8	26	111
Costume. Child's	C. O'Hara	14,586	Jan. 29	26	358
Costume. Child's	C. Shiels	14,824	Feb. 26	26	740
Costume. Girl's	C. O'Hara	14,548	Jan. 15	26	206
Costume. Girl's	C. Shiels	14,822	Feb. 26	26	740
Costume. Girl's	C. Shiels	14,921	Mar. 25	26	1116
Costume. Girl's	L. Tully	14,805	Feb. 19	26	642
Costume. Lady's	C. O'Hara	14,820	Feb. 26	26	740
Costume. Lady's	J. Q. Reed	14,622	Feb. 5	26	442
Costume. Lady's	J. Q. Reed	14,890	Mar. 18	26	1021
Costume. Lady's	S. J. Shiels	14,828 to 14,829	Feb. 26	26	740
Costume. Lady's	L. Tully	14,804	Mar. 18	26	1022
Costume. Lady's	M. Turner	14,895	Mar. 18	26	1022
Costume. Miss's	S. J. Shiels	14,830	Feb. 26	26	740
Costume. Miss's	S. J. Shiels	14,892	Mar. 18	26	1021
Costume. Miss's	S. J. Shiels	14,922	Mar. 25	26	1116
Costume. Miss's	L. Tully	14,803	Feb. 19	26	642
Costume. Miss's	M. Turner	14,832	Feb. 26	26	740
Curry-comb	J. W. Gridley	14,572	Jan. 29	26	357
Dinner or tea set	J. Barlow and J. Moses	14,808	Feb. 26	26	740
Dish	C. E. Havilland	14,758	Feb. 19	26	641
Dish	C. F. Lauber	14,609	Feb. 5	26	441
Dish. Covered	J. Heap	14,604	Feb. 5	26	441
Dish. Vegetable	H. Alcock	14,640	Feb. 12	26	546
Door hanger. Sliding	E. Y. Moore	14,889	Mar. 18	26	1021
Dress. Lady's	S. J. Shiels	14,827	Feb. 26	26	740
Ear-ring	J. B. Van Houten	14,856 to 14,857	Mar. 4	26	828
Ear-ring	J. B. Van Houten	14,859 to 14,862	Mar. 4	26	828
Ear-ring pendant	J. B. Van Houten	14,858	Mar. 4	26	828
Ear-ring pendant	J. B. Van Houten	14,863 to 14,864	Mar. 4	26	828
Ear-ring pendant	J. B. Van Houten	14,924	Mar. 25	26	1116
Fender	J. H. White	14,676	Feb. 12	26	546
Fire-escape clamp	E. H. Reynolds	14,560	Jan. 22	26	277
Floral ornaments. Foundation-frame for	H. F. Reed	14,620	Feb. 5	26	442
Furniture back frame	F. Masset	14,912	Mar. 25	26	1115
Gate	J. McLean	14,546	Jan. 15	26	205
Gem-setting	S. K. Merrill	14,818	Feb. 26	26	740
Glove	E. Reyssier and C. G. Gottschalk	14,588	Jan. 29	26	358
Hardware. Ornamentation of	J. J. Kennedy	14,536	Jan. 8	26	111
Hardware. Ornamentation of builders'	C. H. Beebe	14,884	Mar. 18	26	1021
Hardware. Ornamentation of builders'	A. Langerfeld	14,888	Mar. 18	26	1021
Harness-breeching ring	H. C. Maxwell	14,584	Jan. 29	26	357
Harvester-cover	W. H. Hill	14,575	Jan. 29	26	357
Hinge. Blind	C. G. Shepard and P. Adams, Jr	14,595	Jan. 29	26	358
Inkstand-frame	W. R. Walkley	14,807	Feb. 19	26	642
Insulator	S. Oakman	14,674	Feb. 12	26	546

Alphabetical list of designs, January to March, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Jacket. Miss's	L. Tully	14,802	Feb. 19	26	642
Jewelry-rosette	J. F. Chatellier	14,764	Feb. 19	26	641
Lace-pin	H. Marcus	14,583	Jan. 29	26	357
Lambrequin	J. Q. Reed	14,621	Feb. 5	26	442
Lamp	W. J. Patterson	14,821	Feb. 26	26	740
Lamp-bracket	R. Christesen	14,838	Mar. 4	26	827
Lamp-chimney	W. J. Patterson	14,587	Jan. 29	26	358
Lantern	F. Billingham	14,865	Mar. 11	26	919
Magnesia block	W. Griscom, Jr	14,842	Mar. 4	26	827
Mitt	A. G. Jennings	14,579	Jan. 29	26	357
Mitt	W. P. Jennings	14,580 to 14,581	Jan. 29	26	357
Mitt	W. P. Jennings	14,910	Mar. 25	26	1115
Mitt	W. P. Jennings	14,672	Feb. 12	26	546
Mitt. Lady's	W. Smith	14,893	Mar. 18	26	1022
Molding	M. Gally	14,900	Mar. 25	26	1115
Musical-instrument case	C. T. and V. E. Meyer	14,537 to 14,542	Jan. 8	26	111
Oil-cloth	C. T. and V. E. Meyer	14,556 to 14,557	Jan. 22	26	277
Oil-cloth	C. T. and V. E. Meyer	14,613 to 14,616	Feb. 5	26	441
Oil-cloth	C. T. and V. E. Meyer	14,850 to 14,852	Mar. 4	26	827
Ornamentation of textile and other fabrics	A. Hirsch and H. M. Marx	14,902	Mar. 25	26	1115
Overskirt. Lady's	L. Tully	14,639	Feb. 5	26	442
Packing-case	H. W. Wilson	14,896	Mar. 18	26	1022
Pendant	B. Dreyfus	14,567	Jan. 29	26	357
Polonaise. Lady's	C. O'Hara	14,550	Jan. 22	26	277
Polonaise. Lady's	J. Q. Reed	14,920	Mar. 25	26	1116
Polonaise. Lady's	M. Turner	14,534	Jan. 1	26	1
Polonaise. Lady's	L. Tully	14,804	Feb. 19	26	642
Polonaise. Miss's	J. B. Arci and J. Chapman	14,883	Mar. 18	26	1021
Radiator pipe. Steam	C. Casper	14,545	Jan. 15	26	205
Salt and pepper box	L. Casper	14,565	Jan. 29	26	357
Salt and pepper box	M. F. Langfeld	14,760	Feb. 19	26	641
Satchel	A. Patitz	14,619	Feb. 5	26	442
Sconce-frame	P. L. Donato	14,602	Feb. 5	26	441
Sewing-machine cover	I. N. Poe	14,543	Jan. 8	26	111
Sewing-machine stand	W. B Stewartson	14,638	Feb. 5	26	442
Shade-holder	H. L. Judd	14,847	Mar. 4	26	827
Shade-pull	C. B. Hatfield	14,901	Mar. 25	26	1115
Shoe or slipper	E. B. Preston	14,774	Feb. 19	26	642
Shoe. Rubber	C. O'Hara	14,918	Mar. 25	26	1116
Skirt. Lady's	C. O'Hara	14,617	Feb. 5	26	442
Skirt. Lady's walking	S. J. Shiels	14,562	Jan. 22	26	278
Skirt. Lady's walking	S. J. Shiels	14,823	Feb. 26	26	740
Skirt. Lady's walking	S. J. Shiels	14,826	Feb. 26	26	740
Skirt. Lady's walking	S. J. Shiels	14,825	Feb. 26	26	740
Skirt. Miss's walking	M. L. Hilier	14,605	Feb. 5	26	441
Slipper-upper	J. H. Keller	14,607	Feb. 5	26	441
Soap. Cake of	G. Minchin	14,558	Jan. 22	26	277
Spoke-socket	G. B. Kelley	14,911	Mar. 25	26	1115
Spoon or fork handle	M. H. Kinsley	14,608	Feb. 5	26	441
Spoon or fork handle	H. Ghee	14,603	Feb. 5	26	441
Spoons and table-ware	J. Rogers	14,594	Jan. 29	26	358
Statuary. Group of	A. Z. Boda	14,809	Feb. 26	26	740
Statue	J. Dwyer	14,555	Jan. 22	26	277
Stove	J. Barlow and S. M. Alpaugh	14,528	Jan. 1	26	1
Table-ware	E. L. Morris	14,835	Feb. 26	26	740
Toy	G. F. Gminder	14,665 to 14,666	Feb. 12	26	546
Trimming	C. H. Beeler, Jr	14,564	Jan. 29	26	357
Type. Font of printing	G. Giesecke	14,885	Mar. 18	26	1021
Type. Font of printing	G. F. Giesecke	14,571	Jan. 29	26	357
Type. Font of printing	J. Graham	14,667	Feb. 12	26	546
Type. Font of printing	J. Gnildenstine	14,757	Feb. 19	26	641
Type. Font of printing	H. Ihlenburg	14,576 to 14,577	Jan. 29	26	357
Type. Font of printing	W. W. Jackson	14,578	Jan. 29	26	357
Type. Font of printing	E. C. Rathven	14,891	Mar. 18	26	1021
Type-ornaments. Font of	G. F. Giesecke	14,570	Jan. 29	26	357
Wall-pocket	W. H. Miles, Jr	14,768	Feb. 19	26	642
Watch-case	J. F. Boyer	14,866	Mar. 11	26	919
Watch-movement	G. Perregaux	14,919	Mar. 25	26	1116
Wrap. Child's	M. Turner	14,831	Feb. 26	26	740
Wrap. Lady's	C. O'Hara	14,916	Mar. 25	26	1115
Wrap. Lady's	S. J. Shiels	14,561	Jan. 22	26	277
Wrap. Lady's	S. J. Shiels	14,855	Mar. 4	26	828
Wrench	J. A. Greene	14,756	Feb. 19	26	641

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette.	
				Volume.	Page.
Animal-trap	E. P. Peacock	10,947	Feb. 19	26	642
Anvils	P. Wright & Sons	10,968	Feb. 26	26	740
Baking-powder	Bothin Manufacturing Company	10,973	Mar. 4	26	828
Banjos	G. C. Dobson	10,969	Mar. 4	26	828
Banjos, banjo cases and strings, and other trimmings	J. F. Stratton	11,009	Mar. 11	26	920
Beer	A. Kreiss	10,845	Jan. 8	26	112
Beer. Lager-	Williamsburgh Brewing Company	10,867	Jan. 22	26	278
Biscuit, wafers, and crackers	Holmes & Coutts	10,873	Jan. 22	26	278
Biscuits, crackers, or cakes	W. G. Wilson	10,956	Feb. 19	26	642
Biscuits or crackers	E. J. Larrabee & Co	10,950	Feb. 19	26	642
Bitters	W. H. Burt	10,924	Feb. 12	26	546
Bitters	Cook & Bernheimer	10,881	Jan. 29	26	358
Bitters	E. Elsing & Co	10,975	Mar. 4	26	828
Bitters	W. C. Hurd	10,841	Jan. 8	26	112
Bitters	W. C. Oesting	10,877	Jan. 29	26	278
Bitters	T. Ripke	10,849	Jan. 8	26	112
Bolting-cloth	C. Schindler-Escher	10,931	Feb. 12	26	546
Boot-polish	T. Y. Kelley	11,027	Mar. 18	26	1022
Boots and shoes. Men's heavy	Pingree & Smith	10,848	Jan. 8	26	112
Bottles. Glass	H. Martin	11,022	Mar. 18	26	1022
Brandy. Cognac	J. Denis, H. Monnié & Co	10,989	Mar. 11	26	920
Brushes. Hat-	G. Bossange	11,029	Mar. 25	26	1116
Burning-fluid	J. S. Parkison	10,856	Jan. 15	26	206
Button-fasteners	J. K. Krieg & Co	11,014	Mar. 18	26	1022
Buttons. Rubber	Novelty Rubber Company	11,023	Mar. 18	26	1022
Canned fish, oysters, fruits, meats, and vegetables	H. J. Horn & Co	10,826	Jan. 1	26	2
Canned fruit and vegetables	Knowles & Anderson	11,021	Mar 18	26	1022
Canned provisions	Pratt & Co	10,888	Jan. 29	26	358
Canned provisions	Scollay Meat Packing Company	10,890	Jan. 29	26	358
Canned raspberries, strawberries, cherries, and other fruits	Knowles & Anderson	10,844	Jan. 8	26	112
Caps, cartridges, primers, wads, and shells for small-arms	Union Metallic Cartridge Company	10,967	Feb. 26	26	740
Cards. Playing-	J. Gang	11,013	Mar. 18	26	1022
Carpets, rugs, oil-cloths, and mattings	Bates, Reed & Cooley	10,871	Jan. 22	26	278
Chocolate	J. Collier & Sons	10,895	Jan. 29	26	358
Cigarettes	Kinney Tobacco Company	10,914	Feb. 5	26	442
Cigarettes	Kinney Tobacco Company	10,915	Feb. 5	26	442
Cigarettes and smoking-tobacco	Kinney Tobacco Company	10,913	Feb. 5	26	442
Cigars	Estabrook & Eaton	10,980	Mar. 4	26	828
Cigars	Fitzpatrick & Draper	10,823	Jan. 1	26	1
Cigars	Follett & Schorn	10,824	Jan. 1	26	1
Cigars	C. Palacio & Co	10,964	Feb. 26	26	740
Cigars	G. Paulsen	10,929	Feb. 12	26	546
Cigars	Reid, Murdoch & Fischer	10,983	Mar. 4	26	828
Cigars	C. C. Sauma	11,006	Mar. 11	26	920
Cigars and cigarettes	H. Segnitz & Co	11,034	Mar. 25	26	1116
Cigars and cigarettes	J. C. Sullivan	10,985	Mar. 4	26	828
Cigars, cigarettes, and smoking-tobacco	Kaufmann Bros. & Bondy	11,032	Mar. 25	26	1116
Clover-blossoms and fluid and solid extracts therefrom. Pressed	D. Needham's Sons	11,015	Mar. 18	26	1022
Cocoa	J. Collier & Sons	10,894	Jan. 29	26	358
Coffee and coffee-extract preparations	G. W. Earhart	11,012	Mar. 18	26	1022
Compound. Liquid purgative	California Fig Syrup Company	10,974	Mar. 4	26	828
Cordials and liquors	Luyties Brothers	10,933	Feb. 12	26	546
Cornmeal	I. C. Woodward and C. H. Crofut	10,940	Feb. 12	26	546
Corsets. Flexible hip-	E. Leonard	10,829	Jan. 1	26	2
Cotton yarns and braids	Dolliffe-Mieg & Co	10,835	Jan. 8	26	112
Cough-remedies	Kerry, Watson & Co	11,033	Mar. 25	26	1116
Crackers	J. B. Ruger & Sons	10,954	Feb. 19	26	642
Crackers, biscuits, wafers, and cakes	F. A. Kennedy Company	11,007	Mar. 11	26	920
Cutlery and cutting implements for manual use	F. W. Beckmann	10,909	Feb. 5	26	442
Dandruff-cure	Speicher Dandruff Cure Company	10,978	Mar. 4	26	828
Dentifrice	F. S. Hanf	10,840	Jan. 8	26	112
Drilling and sheeting	A. Bernheimer	11,010	Mar. 18	26	1022
Dyes. Package-	F. A. Ransom	10,934	Feb. 12	26	546
Dyes. Package-	F. A. Ransom	10,935	Feb. 12	26	546
Dyes. Package-	F. A. Ransom	10,936	Feb. 12	26	546
Dyes. Package-	F. A. Ransom	10,937	Feb. 12	26	546
Dyes. Package-	F. A. Ransom	10,938	Feb. 12	26	546
Dyes. Package-	F. A. Ransom	10,939	Feb. 12	26	546
Electrical purposes. Conducting-wires for	Ansonia Brass and Copper Company	10,870	Jan. 22	26	278
Embroidery-cotton	H. E. Frankenberg	10,830	Jan. 8	26	112
Extract of stillingia and sarsaparilla. Compound	S. I. Johnston	10,887	Jan. 29	26	358
Faucets, bibs, cocks, stops, &c. Self-closing	Meyer Sniffen Company	10,906	Jan. 29	26	358
Feathers in a clean and odorless condition	L. H. Everts	10,911	Feb. 5	26	442
Fertilizer	J. D. Simmons	11,016	Mar. 18	26	1022
Fertilizers	C. Meyer, Jr.	10,928	Feb. 12	26	546
Files, straw-knives, grass-hooks, saws, sickles, and scythes	W. K. and H. K. Peace	11,018	Mar. 18	26	1022
Flour. Family	D. Brainard	10,883	Jan. 29	26	358
Fluid preparation for use either internally as a medicine or externally as a liniment	C. A. Vogeler Company	10,865	Jan. 22	26	278
Food made from grain. Article of	Glaser, Kohn & Co	11,046	Mar. 25	26	1116

Alphabetical list of trade-marks, January to March, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Gas-cocks. Lock	Meyer Sniffen Company	10,997	Jan. 29	26	358
Gin	J. De Kuyper & Son	10,828	Jan. 1	26	2
Gin	J. De Kuyper & Son	10,917	Feb. 5	26	442
Gloves	E. Apfelbaum	10,958	Feb. 26	26	740
Gloves. Kid	Oberteuffer, Abegg & Daeniker	11,024	Mar. 18	26	1022
Gold-leaf	S. Hickson	10,961	Feb. 26	26	740
Grease-traps	Meyer Sniffen Company	10,993	Jan. 29	26	358
Gunpowder	Curtis & Harvey	11,006	Mar. 11	26	920
Hair-bleaching compound	A. Simonson	11,028	Mar. 18	26	1022
Hair-grower	Benton Hair Grower Company	10,882	Jan. 29	26	358
Hats or head-coverings for males. All	D. D. Youmans	10,916	Feb. 5	26	442
Jewelry	Fowler Brothers	10,918	Feb. 5	26	442
Jewelry. Articles usually sold under the name of	T. B. Hagstoz & Co	10,854	Jan. 15	26	206
Jewelry. Certain kind of	O. C. Devereux	10,959	Feb. 26	26	740
Lard substitute	W. E. Worth	10,979	Mar. 4	26	828
Liniment and inhalent	S. Spencer	10,902	Feb. 12	26	546
Liqueur or cordial	M. M. Grézier	10,897	Jan. 29	26	358
Liqueur or cordial	M. M. Grézier	10,898	Jan. 29	26	358
Liquors and spirits	E. Cusenier Fils Aîné & Co	11,035	Mar. 25	26	1116
Liquors and spirits	E. Cusenier Fils Aîné & Co	11,036	Mar. 25	26	1116
Liquors. Bottled malt	E. & J. Burke	10,859	Jan. 22	26	278
Liquors. Distilled	Cook & Bernheimer	10,879	Jan. 29	26	358
Lotion. Skin	Goodwin & Thurston	10,976	Mar. 4	26	828
Magnetic body-wear, bedding, and medical appliances generally.	A. P. Lighthill	10,846	Jan. 8	26	112
Matches. Safety	C. C. Abel & Co	11,017	Mar. 18	26	1022
Meat and quinquinia. Mixture of	J. Ferré	10,838	Jan. 8	26	112
Meat, iron, and quinquinia. Mixture of	J. Ferré	10,836	Jan. 8	26	112
Meat, iron, and quinquinia. Mixture of	J. Ferré	10,837	Jan. 8	26	112
Medical and toilet preparations. Certain	A. J. Kaercher	10,827	Jan. 1	26	2
Medicine. Ague	S. C. Bolling	10,972	Mar. 4	26	828
Medicine. Certain proprietary	A. C. Jennings	10,874	Jan. 22	26	278
Medicine. Certain proprietary	A. C. Jennings	10,875	Jan. 22	26	278
Medicine. Certain proprietary	United States Medicine Co	10,997	Mar. 11	26	920
Medicine. Certain veterinary	C. H. Hickman	10,825	Jan. 1	26	2
Medicine. Lung	A. P. Wirt	10,892	Jan. 29	26	358
Medicine to purify the blood	L. Jacobs & Co	10,949	Feb. 19	26	642
Melissa-water	H. Renouard & Co	10,995	Mar. 11	26	920
Melissa-water	H. Renouard & Co	10,996	Mar. 11	26	920
Metal articles. Certain embossed	A. Massé & Anglade	10,993	Mar. 11	26	920
Mineral water	C. Cornwell	10,944	Feb. 19	26	642
Mineral waters. Natural	F. Hollender & Co	10,946	Feb. 19	26	642
Mustard	J. Collier & Sons	10,910	Feb. 5	26	442
Nets and other reticulated fabrics. Hair	A. G. Jennings & Sons	10,885	Jan. 29	26	358
Nets and reticulated fabrics. Hair	A. G. Jennings & Sons	10,843	Jan. 8	26	112
Oil of gaultheria. Compound	E. H. Bell	10,858	Jan. 22	26	278
Oil. Refined hydrocarbon	Clark & Warren	10,943	Feb. 19	26	642
Ointment. Pile	W. R. Post	10,930	Feb. 12	26	546
Oranges and lemons	A. Minaldi	10,951	Feb. 19	26	642
Oranges and lemons	A. Minaldi	10,952	Feb. 19	26	642
Oranges and lemons	A. Minaldi	10,953	Feb. 19	26	642
Oranges and lemons	A. Minaldi	10,963	Feb. 26	26	740
Oysters put up in cans or other packages	Platt & Co	10,857	Jan. 15	26	206
Paper and envelopes. Writing and card	Whiting Paper Company	11,020	Mar. 18	26	1022
Pellets. Liver	H. E. Peters	10,994	Mar. 11	26	920
Perfumery and perfumed soap	F. A. Richter	10,889	Jan. 29	26	358
Pills	J. M. Sparks and A. L. Bolling	10,977	Mar. 4	26	828
Plows	A. G. Starke	11,025	Mar. 18	26	1022
Preparation for disguising the bitterness of quinine, &c	Academic Pharmaceutic Company	10,966	Mar. 11	26	919
Prune-juice extract or prune-juice	M. M. Goldsmith & Co	10,912	Feb. 5	26	442
Publications. Periodical	H. C. Meyer	10,855	Jan. 15	25	206
Rat-traps	E. P. Peacock	10,965	Feb. 26	26	740
Remedies and compounds. Certain proprietary	E. S. Wells	10,866	Jan. 22	26	278
Remedy for female weaknesses	J. A. McGill	10,831	Jan. 1	26	2
Remedy for piles	J. E. Butler	10,834	Jan. 8	26	111
Ribbons and silk textures	Oberteuffer, Abegg & Daeniker	10,982	Mar. 4	26	828
Rubber. Composition as a substitute for hard	J. D. Frary & Son Co	10,842	Jan. 8	26	112
Rubber. Fancy articles manufactured from hard	Butler Hard Rubber Company	10,822	Jan. 1	26	1
Rum, whisky, and gin	E. & J. Burke	10,893	Jan. 29	26	358
Saner-kraut	W. M. Johnston & Co	10,886	Jan. 29	26	358
Shade-roller. Spring	Saginaw Manufacturing Company	10,850	Jan. 8	26	112
Sheep-dip	J. C. Richardson	10,878	Jan. 22	26	278
Soap. Laundry	Lantz Brothers & Co	10,981	Mar. 4	26	828
Soap. Laundry	Procter & Gamble	11,038	Mar. 25	26	1116
Soap. Laundry	Procter & Gamble	11,039	Mar. 25	26	1116
Soap. Laundry	Procter & Gamble	11,040	Mar. 25	26	1116
Soap. Laundry	Procter & Gamble	11,041	Mar. 25	26	1116
Soap. Laundry	Procter & Gamble	11,042	Mar. 25	26	1116
Soap. Laundry and toilet	C. L. Jones & Co	11,026	Mar. 18	26	1022
Spectacles, eyeglasses, and optical goods	Sussfeld, Lorsch & Co	10,966	Feb. 26	26	740
Spoons and forks. Tinned	G. I. Mix & Co	10,957	Feb. 19	26	642
Steel and certain implements made therefrom	W. K. and H. K. Peace	11,037	Mar. 25	26	1116
Stoves. Cook	Miami Stove Works	10,830	Jan. 1	26	2
Sumac and other leaves, tree-barks, and extracts thereof	Rothe & Lips	10,864	Jan. 22	26	278
Tea and coffee. Prepared	New York Textile Filter Company	10,847	Jan. 8	26	112
Telegraphic call-boxes	A. G. Davis	11,011	Mar. 18	26	1022
Thread. Linen	Finlayson, Bousfield & Co	10,860	Jan. 22	26	278
Thread. Linen	Finlayson, Bousfield & Co	10,861	Jan. 22	26	278
Thread. Linen	Finlayson, Bousfield & Co	10,862	Jan. 22	26	278
Thread. Linen	Finlayson, Bousfield & Co	10,863	Jan. 22	26	278
Thread. Linen	Finlayson, Bousfield & Co	10,872	Jan. 22	26	278
Time-keeping instruments	S. Thomas Clock Company	10,984	Mar. 4	26	828
Tobacco and snuff. Smoking and chewing	H. Wilkens & Co	10,955	Feb. 19	26	642
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	10,998	Mar. 11	26	920

Alphabetical list of trade-marks, January to March, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	10,999	Mar. 11	26	920
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,000	Mar. 11	26	920
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,001	Mar. 11	26	920
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,002	Mar. 11	26	920
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,003	Mar. 11	26	920
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,004	Mar. 11	26	920
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,005	Mar. 11	26	920
Tobacco, cigars, and cigarettes. Plug, twist, fine-cut, and smoking	R. J. Christian	10,941	Feb. 19	26	642
Tobacco, cigars, and cigarettes. Plug, twist, fine-cut, and smoking	R. J. Christian	10,942	Feb. 19	26	642
Tobacco, cigars, and cigarettes. Plug, twist, fine-cut, and smoking	W. T. Hancock	10,925	Feb. 12	26	546
Tobacco, cigars, and cigarettes. Plug, twist, fine-cut, and smoking	W. T. Hancock	10,926	Feb. 12	26	546
Tobacco, cigars, and cigarettes. Smoking and chewing	J. G. Butler & Co	10,988	Mar. 11	26	920
Tobacco. Plug	C. L. Adams	10,987	Mar. 11	26	920
Tobacco. Plug	Liggett & Myers Tobacco Company	10,927	Feb. 12	26	546
Tobacco. Smoking	B. Leidersdorf & Co	10,992	Mar. 11	26	920
Tobacco. Smoking	B. F. Weyman	10,008	Jan. 29	26	358
Tobacco. Smoking and chewing	G. W. Gail & Ax	10,990	Mar. 11	26	920
Tobacco. Smoking and chewing	G. W. Gail & Ax	10,991	Mar. 11	26	920
Tobacco. Smoking and chewing	J. H. Harris' Sons	10,899	Jan. 29	26	358
Tobacco, snuff, cigars, and cigarettes. Smoking and chewing	Marburg Brothers	10,900	Jan. 29	26	358
Tobacco, snuff, cigars, and cigarettes. Smoking and chewing	Marburg Brothers	10,901	Jan. 29	26	358
Tobacco, snuff, cigars, and cigarettes. Smoking and chewing	Marburg Brothers	10,902	Jan. 29	26	358
Toilet-pin	T. Porter	10,919	Feb. 5	26	442
Toilet-pins	T. Porter	10,948	Feb. 19	26	642
Tuning-pins	W. Wagner, Jr	11,019	Mar. 18	26	1022
Unfermented grape-juice	A. Werner	10,971	Mar. 4	26	828
Varnishes, japans, blacks, colors, paints, wood-fillings, and rough stuffs.	Valentine & Company	11,047	Mar. 25	26	1116
Velveteens	E. S. Levi	10,876	Jan. 22	26	278
Watch-movements	Mathey Brothers & Mathez	10,962	Feb. 26	26	740
Watches and clocks	Waterbury Watch Company	10,920	Feb. 5	26	442
Watches and clocks	Waterbury Watch Company	10,921	Feb. 5	26	442
Watches and clocks	Waterbury Watch Company	10,922	Feb. 5	26	442
Water-closet	Meyer Sniffen Company	10,904	Jan. 29	26	358
Water-closets, water-closet cisterns, and their fittings and appliances.	Meyer Sniffen Company	10,905	Jan. 29	26	358
Wheat. Whole winter	D. Brainard	10,851	Jan. 15	26	206
Whiskies. Pure rye and bourbon	H. Webster & Co	10,923	Feb. 5	26	442
Whisky	E. Block & Sons	10,960	Feb. 26	26	740
Whisky	Forster, Müller & Co	10,945	Feb. 19	26	642
Whisky	J. H. Rogers & Co	10,970	Mar. 4	26	828
Whisky	B. J. Semmes & Co	11,043	Mar. 25	26	1116
Whisky	B. J. Semmes & Co	11,044	Mar. 25	26	1116
Whisky	Siebe Bros. & Plagemann	10,832	Jan. 1	26	2
Whisky or beverages compounded of whisky	Cook & Bernheimer	10,852	Jan. 15	26	206
Whisky or beverages compounded of whisky	Cook & Bernheimer	10,853	Jan. 15	26	206
Whisky or beverages compounded of whisky	Cook & Bernheimer	10,880	Jan. 29	26	358
Whisky or its compounds	Cook & Bernheimer	10,833	Jan. 8	26	111
Whisky. Rye	E. B. Bruce & Co	10,884	Jan. 29	26	358
Whisky. Rye and bourbon	S. C. Herbst	11,030	Mar. 25	26	1116
Whisky. Rye and bourbon	S. C. Herbst	11,031	Mar. 25	26	1116
Whiting. Prepared	A. Buel	11,045	Mar. 25	26	1116
Wine and liquors	Violet Frères	10,896	Jan. 29	26	358
Wine. Sherry	Ysasi & Co	10,868	Jan. 22	26	278
Wine. Sherry	Ysasi & Co	10,869	Jan. 22	26	278
Yarn and thread composed of an admixture of wool and silk	P. Schulze	10,891	Jan. 29	26	358

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A No. One Smoke." (for Cigars)	G. T. Warren	3,918	Feb. 19	26	642
"Acme Rubber Paint"	Sullivan & Ravekes	4,006	Mar. 18	26	1022
"Aechter Aromatique Feinster Magen-Liqueur"	J. Lappe	3,891	Feb. 12	26	546
"Aechter Aromatique Feinster Magen-Liqueur"	J. Lappe	3,892	Feb. 12	26	546
"Allsopp's India Pale Ale"	E. & J. Burke	3,841	Jan. 22	26	278
"Art Club" (for Cigars)	S. F. Hess & Co	3,904	Feb. 19	26	642
"Artophylax" (for a Preparation for the Hair)	P. Stieb	3,898	Feb. 12	26	546
"B. Farley's Wonderful Discovery" (for a Medicine)	B. Farley	3,930	Feb. 26	26	740
"Bait" (for a Perfume for the Breath)	F. Parker, A. L. Vandewater, and T. G. Talmage.	3,823	Jan. 8	26	112
"Baker's Vanilla Chocolate"	H. L. Pierce	3,864	Jan. 29	26	358
"Balmy Sleep." (for a Medicinal Preparation)	J. Quee	4,005	Mar. 18	26	1022
"Banner Tip" (for Shoes)	B. F. Oblinger	3,913	Feb. 19	26	642
"Barnsley Drill"	A. Bernheimer	3,886	Feb. 12	26	546
"Barnsley Duck"	A. Bernheimer	3,884	Feb. 12	26	546
"Baum's Ever-Ready Castorine," (for an Axle Oil)	L. F. Baum	3,807	Jan. 8	26	112
"Bay State Paints"	Wadsworth, Howland & Co	3,866	Jan. 29	26	358
"Belfast Fancy Drill"	A. Bernheimer	3,885	Feb. 12	26	546
"Belfast Lawns"	W. T. Garner	3,831	Jan. 15	26	206
"Benton's Hair Grower, Double Strength"	Benton Hair Grower Company	3,854	Jan. 29	26	358
"Benton's Hair Grower, Single Strength"	Benton Hair Grower Company	3,853	Jan. 29	26	358
"Benton's Hair Grower, Triple Strength"	Benton Hair Grower Company	3,855	Jan. 29	26	358
"Bermuda Water" (for a Toilet Preparation)	J. S. Kirk & Co	3,818	Jan. 8	26	112
"Bi-Metallic." (for Men's Furnishing Goods)	Wilson Brothers	3,882	Feb. 5	26	442
"Bird Island Guano"	Farmers' Fertilizer Company	3,999	Mar. 18	26	1022
"Brilliant Illuminator" (for Carbon Oil)	Straw & Murphy	3,865	Jan. 29	26	358
"Brown's Sarsaparilla"	A. Warren	3,965	Mar. 4	26	828
"Bruceline" (for a Hair Restorer)	M. Bruce	3,925	Feb. 26	26	740
"Buchu Gin" (for a Medical Preparation)	W. W. Crawford	3,991	Mar. 18	26	1022
"Burke's Fine Old Irish Whisky"	E. & J. Burke	3,843	Jan. 22	26	278
"Burke's Finest Old Jamaica Rum"	E. & J. Burke	3,845	Jan. 22	26	278
"Burke's Light Sparkling Pale Ale"	E. & J. Burke	3,839	Jan. 22	26	278
"C. & W." (for Hydrocarbon Oils)	Clark & Warren	3,908	Jan. 8	26	112
"Cady's Original Bag-Dad Cigar"	Westfield Cigar Company	3,829	Jan. 8	26	112
"Campaign Banner and Outfit Company." (for Banners, Flags and Sign Boards.)	J. T. Commoss	3,794	Jan. 1	26	2
"Carbonated-Iodine-Lithia Water"	C. L. Keppler	3,936	Feb. 26	26	740
"Carbonated Lithia Water." (for a Medicine)	C. L. Keppler	3,890	Feb. 12	26	546
"Caution." (for a Medical Componnd)	A. C. Meyer & Co	3,979	Mar. 11	26	920
"Centennial" (for Paints, Leads, Zincs, &c)	W. E. Lucas	3,894	Feb. 12	26	546
"Chamberlain's Eye and Skin Ointment"	Chamberlain & Co	3,927	Feb. 26	26	740
"Chappelear's Bronchini" (for a Medicine)	W. M. Chappelear & Sons	3,967	Mar. 11	26	920
"Chemical Parlor Illuminator"	L. H. Abrams	3,883	Feb. 12	26	546
"Cherry-Malt Phosphites"	W. C. Jacobs	3,800	Jan. 1	26	2
"Chinese Mackinaw" (for Hat Tips or Linings)	Lippincott, Odlevee & Co	3,938	Feb. 26	26	740
"Clark's Extract of Jamaica Ginger, Concentrated"	Dort & Chandler	3,969	Mar. 11	26	920
"Compound Quinine Liniment"	C. F. Fish	3,869	Feb. 5	26	442
"Compound Quinine Plaster"	C. F. Fish	3,810	Jan. 8	26	112
"Cresns" (for Silk Ribbons)	J. Erskine & Co	3,997	Mar. 18	26	1022
"Cupid's Tears" (for Capsules)	G. Burwell	3,926	Feb. 26	26	740
"Cura Reumatico"	H. H. Ballard	3,990	Mar. 18	26	1022
"Cyclone Elixir or Bottled Life, Sleep and Beauty." (for a Medicine.)	E. D. McCrary	3,960	Mar. 4	26	828
"Dairy Butter Label"	United States Dairy Butter Label Company.	3,880	Feb. 5	26	442
"Dandelion Bitters"	J. Sutton	3,898	Jan. 8	26	112
"Day's Horse and Cattle Powder"	A. C. Meyer & Co	3,980	Mar. 11	26	920
"Dazzleine Gold and Silver Polish. (Produces a dazzling brilliancy, which it retains.")	H. M. Spalding	3,917	Feb. 19	26	642
"Delicious Sips" (for Roasted Coffee)	H. Hulman	3,907	Feb. 19	26	642
"Diamond Brand Mixed Paints"	A. E. Williams	3,806	Jan. 1	26	2
"Dickey's Indian Blood and Liver Pills"	J. R. Dickey	3,899	Feb. 19	26	642
"Dr. Cook's Celery Bitters"	E. G. Jay	4,013	Mar. 25	26	1116
"Dr. Day's Blood Compound." (for a Medicine)	C. E. Houghtaling and G. E. Ferguson.	3,958	Mar. 4	26	828
"Dr. Gallagher's Pile Ointment"	B. F. Gallagher	4,012	Mar. 25	26	1116
"Dr. Goodwin's Faciel Lotio. (Face Lotion")	Goodwin & Thurston	3,848	Jan. 22	26	278
"Dr. J. W. Chiles' Lightning Liniment"	J. W. Chiles	3,846	Jan. 22	26	278
"Dr. J. W. Chiles' Wonderful Spasmodic Colic and Water Cure."	J. W. Chiles	3,847	Jan. 22	26	278
"Dr. John Goode's Celebrated Chill and Fever Tonic"	J. Goode and J. M. Kelso	3,956	Mar. 4	26	828
"Dr. L. E. Towne's Cough King"	L. E. Towne	3,804	Jan. 1	26	2
"Dr. Pemberton's Indian Queen Magic Hair Dye"	J. S. Pemberton	3,863	Jan. 29	26	358
"Dr. Rend's Actinic Spectacles and Eyeglasses"	W. R. Rend	3,914	Feb. 19	26	642
"Dr. Salter's Eye Lotion"	M. T. Salter	3,940	Feb. 26	26	740
"Dr. Sherwood's King of Pain"	Randall & Mulford	4,015	Mar. 25	26	1116
"Dr. Von Bieber's Sure Cure for Malaria"	J. B. Henion	3,972	Mar. 11	26	920
"Dr. Von Breemberg's Homeopathic Billous Powders"	E. W. Higbee	3,906	Feb. 19	26	642
"Dr. Von Breemberg's Local and Constitutional Zymotic Catarrh Antidote."	E. W. Higbee	3,858	Jan. 29	26	358
"Dr. Von Breemberg's Zymotic Malaria Antidote"	E. W. Higbee	3,905	Feb. 19	26	642

Alphabetical list of labels, January to March, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Dr. Wilder's Vegetable Liver Remedy"	J. T. Fleming	3,900	Feb. 19	26	642
"Duchess" (for Cigars)	M. Richardson & Son	4,016	Mar. 25	26	1116
"Duffin's Fountain Bitters"	W. D. W. Duffin	3,950	Mar. 4	26	828
"Durham Distilling Company, Rye"	Strauss, Fritz & Co	3,964	Mar. 4	26	828
"Durvin's Eureka Salve"	B. F. Durvin	3,993	Mar. 18	26	1022
"E. & J. B. Dublin." (for Guinness' Extra Foreign Stout)	E. & J. Burke	3,868	Feb. 5	26	442
"Earl & Wilson's Collar and Cuff"	Earl & Wilson	3,951	Mar. 4	26	828
"Elite" (for Silk Ribbons)	J. Erskine & Co	3,994	Mar. 18	26	1022
"Ely's Glass Paint"	O. A. Ely	4,010	Mar. 25	26	1116
"Every Man his own Tinker." (for Out-Fits for Soldering)	B. S. Clarke	3,792	Jan. 1	26	2
"Excelsior Advertising Sign Company." (for Banners, Flags and Sign Boards)	J. T. Commoss	3,793	Jan. 1	26	2
"Extra Foreign Stout"	E. & J. Burke	3,840	Jan. 22	26	278
"Fahrney's Celebrated Blood Cleanser or Panacea"	P. Fahrney	4,011	Mar. 25	26	1116
"Finest Selected Dairy" (for Butter)	J. Thallon	3,986	Mar. 11	26	920
"Fleming's Wonderful Cure"	J. A. Fleming	4,000	Mar. 18	26	1022
"Flint Pebbles"	J. R. Alsing	3,838	Jan. 22	26	278
"Flint's Saponaceous Tooth Powder the Peerless Dentifrice"	J. T. Flint & Co	3,971	Mar. 11	26	920
"Florida Water"	B. L. Hughes	3,935	Feb. 26	26	740
"For Goodness sake don't say I told you" (for Tip-linings for Hats.)	F. G. Hanson	3,902	Feb. 19	26	642
"French Cook Baking Powder"	J. M. Thornburgh	3,987	Mar. 11	26	920
"Garnkirk Finest Scotch Malt"	E. & J. Burke	3,844	Jan. 22	26	278
"General Crook" (for Cigars)	A. F. Rothfuss	3,850	Jan. 22	26	278
"Geneva Rubber Top Enamel." (for Carriage Tops, &c)	A. J. Mowry & Co	3,860	Jan. 29	26	358
"Germania Lead Works, Perfectly Pure White Lead"	Germania Lead Works	4,001	Mar. 18	26	1022
"Glassboro' Improved" (for Preserve Jars)	T. W. Synnott	3,879	Feb. 5	26	442
"Gold Medal" (for Silk Ribbons)	J. Erskine & Co	3,996	Mar. 18	26	1022
"Golden Spike" (for Cigars)	Meade & Hyland	3,961	Mar. 4	26	828
"Grand Duplex" (for Cigars)	Ithaca Cigar Manufactoring Company.	3,959	Mar. 4	26	828
"Grand Royal Sec." (for Champagne)	Luytles Brothers	3,910	Feb. 19	26	642
"Great Vegetable Pain Conqueror"	C. A. Thomas	3,851	Jan. 22	26	278
"Grebe's Sage Hair Tonic"	C. Grebe	3,901	Feb. 19	26	642
"Greenbacks, the People's Choice" (for Cigars)	H. Coan	3,887	Feb. 12	26	546
"Grinnell's Universal Balsam"	M. Grinnell	3,849	Jan. 22	26	278
"Hallo's Elixir Mandrake and Buchu and M B"	Hallo & Mower	3,830	Jan. 15	26	206
"Harris' Corn Salve"	C. H. Meserve	3,902	Mar. 4	26	828
"Harrison's Golden Cologne Water"	A. W. Harrison	3,813	Jan. 8	26	112
"Heart" (for Ping Tobacco)	J. G. Butler & Co	4,008	Mar. 25	26	1116
"Hickman's Reliable Hair and Scalp Remedy"	W. M. Hickman	3,931	Feb. 26	26	740
"Higgins Crown Laundry Soap"	W. Higgins	3,973	Mar. 11	26	920
"High Flyer." (for Cigars and Tobacco)	F. Wambach	4,007	Mar. 18	26	1022
"Holbrook's Enameline." (for a Cosmetic)	G. A. Holbrook	3,934	Feb. 26	26	740
"Hope for the Invalid." (for a Medical Compound)	E. B. Merrill	3,821	Jan. 8	26	112
"Hurlburt's Tracheal Drops"	C. T. Hurlburt	3,749	Jan. 1	26	2
"Hydrargyrum Saccharratum." ("Sugar or Sweet Powder")	Sutphen & Co	3,803	Jan. 1	26	2
"I. A. Potter's New American Strengthening Plaster"	I. A. Potter	3,961	Mar. 11	26	920
"Infallible Corn Cure. E. M. B. Scott, Manufacturing Chemist, Sole Proprietor, Ottumwa, Iowa."	E. M. B. Scott	3,897	Feb. 12	26	546
"Irvine's Indigotique"	S. I. Irvine	3,908	Feb. 19	26	642
"J. E." (for Silk Ribbons)	J. Erskine & Co	3,995	Mar. 18	26	1022
"J. M. Walker's Anderson County hand made sour mash, Distilled Spring 1869."	Strauss, Fritz & Co	3,878	Feb. 5	26	442
"Jack Rose" (for Cigars)	F. Kronsbein	3,872	Feb. 5	26	442
"James' Imperial Pepsin Bitters"	J. Hitchcock and H. E. Garvey	4,002	Mar. 18	26	1022
"Japanese Furniture Renewer"	J. W. Harris	3,957	Mar. 4	26	828
"Juvenile" (for Soap)	J. S. Kirk & Co	3,819	Jan. 8	26	112
"Kinsey's Fine Graham Breakfast Cake Flour"	Z. B. Kinsey	3,909	Feb. 19	26	642
"La Mulo" (for Cigars)	R. C. Brown & Co	3,947	Mar. 4	26	828
"La Rosita" (for Cigars)	R. C. Brown & Co	3,946	Mar. 4	26	828
"Lalor's Antidote for Intoxication or Alcoholic Poisoning"	D. R. O'Lalor	3,875	Feb. 5	26	442
"Lemon." (for an Extract)	Chapman, Smith & Co	3,928	Feb. 26	26	740
"Luz Divina" (for Kerosene Oil)	Ilsley, Doubleday & Co	3,809	Jan. 8	26	112
"Madame C. Lewenberg's Opaline" (for the cure of Chapped Hands, &c.)	C. Lewenberg	3,893	Feb. 12	26	546
"Magic Cleaner and Polish"	H. R. Gillingham	3,857	Jan. 29	26	358
"Massachusetts Standard." (for Paper)	G. J. Carney	3,856	Jan. 29	26	358
"Master Mason." (for Cigars)	W. D. Newton	3,861	Jan. 29	26	358
"Michaelis & Son's Extract of Cream Ginger Ale"	M. Michaelis & Son	3,822	Jan. 8	26	112
"Miller's Necktie Holder and Fastener"	H. F. Miller	3,895	Feb. 12	26	546
"Mount Clemens Sprudel Water"	H. F. Meier	3,911	Feb. 19	26	642
"Murray's Specific"	C. H. Elmore and W. M. Whitelaw	3,970	Mar. 11	26	920
"Nabob" (for Cigars)	D. B. Stewart	3,943	Feb. 26	26	740
"Neutraline," (for a Preparation for the Feet)	H. G. Haring	3,888	Feb. 12	26	546
"New Process Hominy"	M. L. Mowrer	3,896	Feb. 12	26	546
"New Process Yeast"	E. D. Woodruff	3,923	Feb. 19	26	642
"Nonpareil Old Tom Gin"	E. & J. Burke	3,842	Jan. 22	26	278
"Nourae's Elixir of Yerba Santa Compound"	H. Standiford	3,877	Feb. 5	26	442
"Nuremberg Corn Remedy"	G. Hecht	3,797	Jan. 1	26	2
"Old Hickory," (for Bitters)	Herrmann & Grossman	3,889	Feb. 12	26	546
"Old Mother Hubbard's Throat and Lung Balsam"	B. F. Raymond	3,876	Feb. 5	26	442
"Orange Drips." (for Cordials)	G. W. Dunbar's Sons	3,795	Jan. 1	26	2
"Orcilla Mills" (for Tailor, Dress, and Broad Silks)	J. Erskine & Co	3,998	Mar. 18	26	1022
"Our Bob" (for Cigars)	H. Westcott Son & Co	3,834	Jan. 15	26	206
"Our Own Fruit Salt." (for a Medicinal Preparation)	F. Stearns & Co	4,018	Mar. 25	26	1116
"P. B. B." (for Tip-Linings of Hats)	F. G. Hanson	3,811	Jan. 8	26	112
"P. V." (for Manufactured Tobacco)	G. W. Gail & Ax	3,952	Mar. 4	26	828
"Parsons' Specials." (for Cigars)	W. E. Parsons, Jr	4,004	Mar. 18	26	1022
"Pâte Rouge Metallique" (for a Paste for Polishing Metals)	W. H. Winslow & Co	3,989	Mar. 11	26	920
"Pearlioca" (for Food Products)	W. J. Stitt & Co	3,944	Feb. 26	26	740
"Pennypacker" (for Horse Collars)	A. F. Dunavan & Son	3,992	Mar. 18	26	1022
"Pinocle" (for Playing Cards)	F. Lathin	3,873	Feb. 5	26	442
"Pint English" (for Pickles)	F. & J. Heinz	3,903	Feb. 19	26	642

Alphabetical list of labels, January to March, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Pratt's Aromatic Geneva Gin"	S. Pratt	3,824	Jan. 8	26	112
"Professor Harry Robinson's Specific Lotion." (For the Hair.)	H. Robinson	3,801	Jan. 1	26	2
"R. S. Repellent Shields Warranted"	Brooklyn Shield Company	3,924	Feb. 26	26	740
"Red Cross Cylinder Oil"	Isted & Halsted	3,976	Mar. 11	26	920
"Red Cross Engine Oil"	Isted & Halsted	3,975	Mar. 11	26	920
"Red Pills"	W. C. Hurd	3,814	Jan. 8	26	112
"Regatta." (for Dress Silks)	R. & H. Simon	3,963	Mar. 4	26	828
"Rhorer's Bread Raising"	Provident Chemical Works	3,982	Mar. 11	26	920
"Ribbed Hose"	L. Jones	3,815	Jan. 8	26	112
"Right Bower, Pure Old Rye"	J. A. Gauche	3,953	Mar. 4	26	828
"Roasted Rye Whiskey"	H. Snyder, Jr	4,017	Mar. 25	26	1116
"Roscoe Conkling" (for Cigars)	Kirkland Brothers	4,014	Mar. 25	26	1116
"Royal Curtain Fixture"	L. Page and L. Keber	3,939	Feb. 26	26	740
"Russell's White Drops" (for a Medicinal Preparation)	W. Russell, Jr	3,827	Jan. 8	26	112
"Saengerbund" (for Cigars)	J. Helmann & Co	3,870	Feb. 5	26	442
"Sentinel" (for Cigars)	H. Westcott Son & Co	3,833	Jan. 15	26	206
"Serenade, Pure Old Rye"	J. A. Gauche	3,955	Mar. 4	26	828
"Silver Pills"	Wells & Church	3,921	Feb. 19	26	642
"Snaps for the Breath"	A. J. Richards and W. E. Conner	3,825	Jan. 8	26	112
"Soap"	W. G. Crane	4,009	Mar. 25	26	1116
"Solid Gold" (for Cheese)	J. Thallon	3,984	Mar. 11	26	920
"Solid Silver" (for Cheese)	J. Thallon	3,985	Mar. 11	26	920
"Sour Mash Tonic." (for Medicine)	O. B. Cook & Co	3,948	Mar. 4	26	828
"Southern Belle, Fine Old Rye"	J. A. Gauche	3,954	Mar. 4	26	828
"Speptine." (for a Medical Remedy)	J. J. Murphy	3,874	Feb. 5	26	442
"Spoon Soap"	R. H. Meagley	3,859	Jan. 29	26	358
"Standard Time" (for Tip-Linings of Hats)	F. G. Hanson	3,812	Jan. 8	26	112
"Star" (for Plug Tobacco)	Liggett & Myers Tobacco Company	3,832	Jan. 15	26	206
"Stewart's Gipsy Pile Ointment"	F. W. Stewart	3,836	Jan. 15	26	206
"Sun Mackinaw" (for Hat Tips or Linings)	Lippincott, Oglevee & Co	3,937	Feb. 26	26	740
"Sunshine Metal Polish"	L. E. Sayre	3,941	Feb. 26	26	740
"Syrup of Figs" (for a Medical Compound)	California Fig Syrup Company	3,791	Jan. 1	26	2
"The Arabian Heave Remedy for Horses"	J. M. Weber	3,966	Mar. 4	26	828
"The Flint" (for Cigars)	G. T. Warren	3,919	Feb. 19	26	642
"The Imperial Blood and Liver Tonic, The King of all Tonics."	R. Drake	3,949	Mar. 4	26	828
"The Jackson Ventilating Grate"	E. A. and W. M. Jackson	3,837	Jan. 15	26	206
"The Leader" (for Cigars)	H. Dunker	3,968	Mar. 11	26	920
"The New York Crayon Co.'s Enameled School Crayon"	New York Crayon Company	3,862	Jan. 29	26	358
"The Nickel Sweet Chocolate Package"	Runkel Brothers	3,916	Feb. 19	26	642
"The Old Celebrated Nuremberg Corn Remedy"	G. Hecht	3,798	Jan. 1	26	2
"The Optimus" (for a Vaginal Douche)	I. N. Morton	4,003	Mar. 18	26	1022
"The Shaker" (for a Curative Sirup)	A. J. White	3,852	Jan. 22	26	278
"The Silver King" (for Manufactured Tobacco)	C. D. Hill & Co	3,933	Feb. 26	26	740
"The Washington Market Brand." (for Canned Tomatoes)	Strang & Tucker	3,802	Jan. 1	26	2
"The White Elephant" (for Cigars)	Mensing & Stecher	3,977	Mar. 11	26	920
"The White's Tar Medicated Toilet Papers"	O. C. White	3,881	Feb. 5	26	442
"The Winner." (for Cigars)	Sackett, Wilhelms & Betzig	3,835	Jan. 15	26	206
"Thymoline Children & Adults Health Protector"	G. Schwarzwald	3,983	Mar. 11	26	920
"Trophy" (for Cigars)	Hier & Aldrich	3,932	Feb. 26	26	740
"Turkish Bath" (for a Liniment)	D. W. and J. P. Wentworth	3,922	Feb. 19	26	642
"Twenty-Four O'Clock" (for Cigar-Boxes)	H. Westcott, Son & Co	3,988	Mar. 11	26	920
"Vanilla" (for an Extract)	Chapman, Smith & Co	3,929	Feb. 26	26	740
"Vega" (for Cigars)	Nilsson Bros	3,912	Feb. 19	26	642
"Velvet Green" (for Chemical Fertilizers)	Farmers' Fertilizing Company	3,796	Jan. 1	26	2
"Victoria Pills"	A. C. Meyer & Co	3,978	Mar. 11	26	920
"Virginia Nine" (for Cigars)	W. Walker	3,805	Jan. 1	26	2
"Way Up Baking Powder"	Smith & Case	3,942	Feb. 26	26	740
"Western Delight" (for Flour)	Huber & Wack Milling & Live Stock Co.	3,974	Mar. 11	26	920
"White Drops" (for a Medicinal Preparation)	W. Russell, Jr	3,826	Jan. 8	26	112
"Whiting's Impervious Drafting Inks"	F. A. Whiting	3,945	Feb. 26	26	740
"William Lasson's Hair Elixir"	O. Knop	3,820	Jan. 8	26	112
"Williams' Liniment"	J. A. Rice	3,915	Feb. 19	26	642
"Womack's Specific"	W. D. Wear and A. M. Womack	3,920	Feb. 19	26	642
"Yankee Polish"	J. H. Whittaker, Jr	3,867	Jan. 29	26	358
"Zenithia Cologne"	J. S. Kirk & Co	3,817	Jan. 8	26	112
"Zenithia Toilet Soap"	J. S. Kirk & Co	3,816	Jan. 8	26	112

DISCLAIMERS.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Vol.	Page.
Amalgamator and concentrator	George Johnston and Edwin G. Smith.	66,499	July 9, 1867	Jan. 31, 1884	26	546
Journal bearing	William W. Smalley	209,084	Oct. 15, 1878	Feb. 23, 1884	26	828
Pannier	Michael A. Bryson. (Reissue)	9,178	Apr. 27, 1880	Jan. 19, 1884	26	358

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DIGEST OF DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

APRIL–JUNE, 1884.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 27—No. 1. TUESDAY, APRIL 1, 1884. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of April 1, 1884.

Patents	411	No. 295,893 to No. 296,303, inclusive.
Designs	19	No. 14,925 to No. 14,943, inclusive.
Trade-marks	22	No. 11,048 to No. 11,069, inclusive.
Labels	20	No. 4,019 to No. 4,038, inclusive.
Reissues of patents	3	No. 10,462 to No. 10,464, inclusive
Total issue	475	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	5	1
Austria-Hungary	3	.....	Hayti	.....	.....
Barbadoes	.....	.....	Holland	.....	.....
Belgium	.....	.....	Mexico	.....	.....
Bermuda	.....	.....	New Zealand	.....	.....
Brazil	.....	.....	Russia	2	.....
Canada	6	.....	Scotland	.....	.....
Chili	.....	.....	Spain	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Cuba	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	26	1
England	8	.....			
France	1	.....			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	2	.....	New Hampshire	3	.....
California	11	.....	New Jersey	22	5
Colorado	3	1	New Mexico Territ'y	.....	.....
Connecticut	14	.....	New York	81	7
Dakota Territory	.....	.....	North Carolina	1	1
Delaware	.....	.....	Ohio	35	.....
District of Columbia	8	1	Oregon	.....	.....
Florida	.....	.....	Pennsylvania	45	6
Georgia	.....	.....	Rhode Island	8	.....
Idaho Territory	1	.....	South Carolina	1	.....
Illinois	31	4	Tennessee	.....	1
Indiana	17	.....	Texas	3	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	9	.....	Vermont	4	1
Kansas	4	.....	Virginia	2	5
Kentucky	5	.....	Washington Territ'y	1	.....
Lonisiana	.....	.....	West Virginia	4	.....
Maine	.....	1	Wisconsin	2	4
Maryland	5	1	Wyoming Territory	.....	.....
Massachusetts	45	2	United States Army	.....	.....
Michigan	17	1	United States Navy	.....	.....
Minnesota	7	.....			
Mississippi	1	.....	Total to citizens of the United States	404	41
Missouri	8	.....			
Montana Territory	.....	.....			

DESIGNS.

14,925.—BOTTLE OR FLASK.—*John K. Cummings*, St. Louis, Mo. Application filed February 1, 1884. Term of patent 7 years.

14,926 and 14,927.—CARPET.—*Arthur Danby*, Philadelphia, Pa., assignor to *Schofield, Mason & Co.*, same place. Applications filed February 23, 1884. Term of patents 3½ years.

14,928.—ORNAMENTATION OF BUILDERS' HARDWARE.—*Francis Keil*, New York, N. Y. Application filed November 7, 1883. Term of patent 7 years.

14,929 and 14,930.—KNIFE-HANDLE.—*George W. Kern*, New York, N. Y. Applications filed October 25, 1883. Term of patents 7 years.

14,931.—CARPET.—*Herbert Mitchell*, Philadelphia, Pa., assignor to *Schofield, Moson & Co.*, same place. Application filed February 23, 1884. Term of patent 3½ years.

14,932 and 14,933.—CARPET.—*Edward Poole*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed February 19, 1884. Term of patents 3½ years.

14,934.—COFFEE-POT.—*Henry C. Rice*, Louisiana, Mo. Application filed October 5, 1883. Term of patent 14 years.

14,935.—AX BOX OR CASE.—*Oscar Stephen Rixford*, East Highgate, Vt. Application filed February 14, 1884. Term of patent 14 years.

14,936 and 14,937.—CARPET.—*Emil G. Sauer*, Brooklyn, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed February 19, 1884. Term of patents 3½ years.

14,938.—CARPET.—*Stephen Smith*, Philadelphia, Pa., assignor to *Horner Brothers*, same place. Application filed February 27, 1884. Term of patent 3½ years.

14,939 to 14,942, inclusive.—CARPET.—*Frederick C. Swann*, Philadelphia, Pa., assignor to *Schofield, Mason & Co.*, same place. Applications filed February 23, 1884. Term of patents 3½ years.

14,943.—NEWEL-POST.—*Henry Textor*, Brooklyn, N. Y. Application filed January 2, 1884. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

11,048.—PEGS FOR BOOTS AND SHOES.—*Wyman Flint*, Bellows Falls, Vt. Application filed February 18, 1884.
"The representation or symbol of a blue star."

11,049.—SHEEP-DIP.—*Alfred Mitchell*, Whitestone, N. Y. Application filed February 28, 1884.
"The word 'INCARNATIVE.'"

11,050.—BITTERS.—*Theodor Ripke*, Hamburg, Germany. Application filed February 15, 1884.
"The word 'BOLIVAR.'"

11,051.—FINE DAIRY AND TABLE SALT.—*The Warsaw Salt Company*, Warsaw, N. Y. Application filed February 18, 1884.
"The letters 'W S C O' arranged in monogram."

11,052.—PERFUMERY AND COLOGNE MIXTURE.—*James R. Weaver and Harry Schandein*, Philadelphia, Pa. Application filed February 12, 1884.
"The combined letters 'W' and 'S.'"

11,053.—SMOKING-TOBACCO.—*The Wellman & Dwire Tobacco Company*, Quincy, Ill. Application filed February 16, 1884.
"The word 'ANVIL.'"

11,054.—SMOKING-TOBACCO.—*The Wellman & Dwire Tobacco Company*, Quincy, Ill. Application filed February 16, 1884.
"The word 'ARAB.'"

11,055.—SMOKING-TOBACCO.—*The Wellman & Dwire Tobacco Company*, Quincy, Ill. Application filed February 16, 1884.
"The word 'FIRESIDE,' with a home scene.'

11,056.—CIGARS AND CIGARETTES.—*John C. Sullivan*, Detroit, Mich. Application filed January 21, 1884.
"A balcony scene, in the foreground of which is represented a sitting figure of a man in Turkish costume smoking and caressing or dallying with a female figure dressed in a similar costume, and with a fez upon her head and supporting a fan in her left hand. To the right of these figures is the reclining figure of a female attendant engaged in playing upon a musical instrument."

11,057.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The word 'SIGNET.'"

11,058.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The words 'OUR GAME.'"

11,059.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"A pictorial representation of Puck girdling the globe with a cable, and the word 'CABLE.'"

11,060.—PLUG, TWIST, AND SMOKING TOBACCO AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 20, 1884.
"The arbitrary word 'ECHO.'"

11,061.—PLUG, TWIST, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Alexander Cameron & Co.*, Richmond, Va. Application filed February 15, 1884.
"The pictorial representation of an officer standing on watch, and the words 'LOOK OUT.'"

11,062.—PROPRIETARY MEDICINES.—*Edwin W. Higbee*, Northampton, Mass. Application filed January 3, 1884.
"A cut of a block of buildings and a monument."

11,063.—LUMBER-DRIVERS' CALKS.—*Lumber Drivers Calk Company*, Bingham, Me. Application filed August 9, 1883.
"The capital script letters 'L. D. C. C.,' with the letter 'o,' lower case, at the right of said script letters, and a fac-simile of a lumber-driver's calk horizontally across said script letters and above the letter 'o.'"

11,064.—CIGARS.—*George Hobart Harvey and Osmyn Schuyler Parker*, Denver, Colo. Application filed February 28, 1884.
"The word 'BURRO' or the picture of a burro, or both the word and picture."

11,065.—CIGARS.—*Joseph Porcell*, New York, N. Y. Application March 4, 1884.
"The arbitrary word-symbol 'EL CAPITAN GENERAL.'"

11,066.—CIGARS.—*Reid, Murdoch & Fischer*, Chicago, Ill. Application filed March 1, 1884.
"The words 'RIFORD'S TURKOMA' and the representation of the head of a Turk smoking a cigar."

11,067.—CIGARS AND CIGARETTES.—*Herman Segnitz & Co.*, Milwaukee, Wis. Application filed February 26, 1884.
"The words 'TOM BENTON.'"

11,068.—CIGARS AND CIGARETTES.—*Herman Segnitz & Co.*, Milwaukee, Wis. Application filed February 26, 1884.
"The words 'HARD NO. 1.'"

11,069.—CIGARS AND CIGARETTES.—*Herman Segnitz & Co.*, Milwaukee, Wis. Application filed February 26, 1884.
"The word 'RACOON.'"

LABELS.

4,019.—Title: "THE GREAT SKIN CURE SUBACURA."—*P. L. Bannen*, Verona, Pa. Application filed March 8, 1884.

4,020.—Title: "ST. PATRICK'S OIL."—*P. L. Bannen*, Verona, Pa. Application filed March 8, 1884.

4,021.—Title: "JUMBO" (FOR TONIC BITTERS.)—*P. L. Bannen*, Verona, Pa. Application filed March 8, 1884.

4,022.—Title: "BEE-HIVE COUGH SYRUP."—*M. Block & Co.*, Chattanooga, Tenn. Application filed March 10, 1884.

4,023.—Title: "CASINO" (FOR WHISKY.)—*Charles C. Bryan*, Washington, D. C. Application filed March 11, 1884.

4,024.—Title: "TAU-A-QUIT-SAH CORDIAL" (FOR A MEDICINE.)—*William C. Chattin*, Key East, N. J. Application filed March 6, 1884.

4,025.—Title: "OREGON INDIAN AGUE CURE AND MALARIAL SPECIFIC."—*William C. Chattin*, Key East, N. J. Application filed March 6, 1884.

4,026.—Title: "CAMA CURA" (FOR A LINIMENT.)—*Martin L. Fornwalt*, Newark, N. J. Application filed March 10, 1884.

4,027.—Title: "SOUTH AMERICAN LIGHTNING ERADICATOR."—*Hubert H. Hull*, New York, N. Y. Application filed March 11, 1884.

4,028.—Title: "RED CROSS TALLOW COMPOUND."—*Ichabod B. S. Isted and William O. Halsted*, Milwaukee, Wis. Application filed March 11, 1884.

4,029.—Title: "DR. L. BURDICK'S NEVER-FAILING KIDNEY CURE."—*J. Elmer Jackson*, Mullica Hill, N. J. Application filed March 6, 1884.

4,030.—Title: "GLUCO PEPSINE." (FOR A MEDICINE.)—*Martin Lappe*, Baltimore, Md. Application filed March 7, 1884.

4,031.—Title: "CRINOLINE LINING."—*MacLea, Austin & Wellington*, New York, N. Y. Application filed March 11, 1884.

4,032.—Title: "NAPHEYS, PRATT & CO., CHOICE FAMILY LARD."—*William D. Napheys and James D. Pratt, Jr.*, Philadelphia, Pa. Application filed March 7, 1884.

4,033.—Title: "FOXHALL WORSTEDS," (FOR MIXED COTTON AND WOOLEN FABRICS.)—*Oberly & Newell*, New York, N. Y. Application filed March 8, 1884.

4,034.—Title: "PRICE'S OIL PREPARATION" (FOR RENOVATING THE OUTSIDE OF HOUSES.)—*James H. Price*, Newark, N. J. Application filed March 8, 1884.

4,035.—Title: "CRAMER'S GERMAN IRON BEER."—*Edward Russell*, Newton, and *Max Cramer*, Boston, Mass. Application filed March 6, 1884.

4,036.—Title: "RAPÉ DE GAMBETTA," (FOR SNUFF.)—*Simon Scharlins*, New York, N. Y. Application filed March 7, 1884.

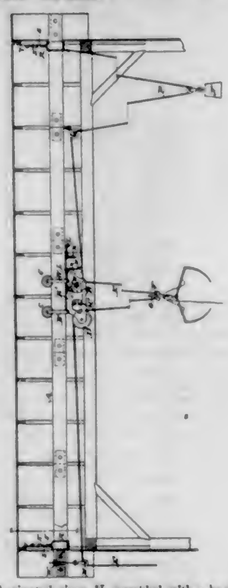
4,037.—Title: "TRULL'S SCOTCH SOAP POWDER."—*Benjamin R. Trull*, Hominy Creek, N. C. Application filed March 11, 1884.

4,038.—Title: "GARWOOD'S STANDARD PERFUMES."—*James R. Weaver and Harry Schandein*, Philadelphia, Pa. Application filed February 23, 1884.

PATENTS

GRANTED APR. 1, 1884.

295,893. HAY AND OTHER ELEVATORS. CHARLES S. ANSBURSTER, Yorktown, N. J., assignor of one-half to Jeremiah S. Watson, same place. Filed Dec. 20, 1883. (No model.)



Claim.—1. A pivoted piece, H, provided with a hook, H', and attached to the carrier of an elevator for hay or other material, in combination with a pivoted coupling-piece, J, and an immovable vertically-slotted fork, K, said coupling-piece being adapted to engage with said piece H, and being locked by said fork for the purpose of holding the traveler stationary until the pieces H and J are thrown into proper position for disengagement by the contact of the eye G with the hook H', substantially as set forth.

2. The pivoted piece H, provided with hook H', in combination with devices for holding and releasing the same, the eye G, which engages with said hook, and affords a means of suspension for a hay-fork or other device, and the spring Q, which bears at the back of piece H at either the top or bottom thereof, according to the position of the latter.

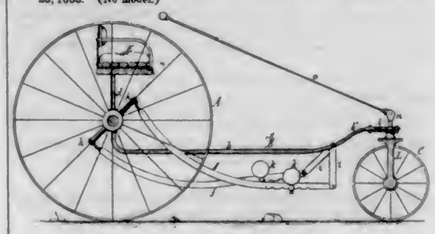
3. The fixed arm L and its roller, in combination with the pivoted and coupled pieces H and J, mounted in a traveler, and the fixed fork K, adapted to engage piece J and lock said traveler, said piece J being provided with a projection, *b*, which is engaged by said arm or its roller, so as to force the said piece J into engagement with said fork.

4. In an elevator, a traveler having a pivoted hook and a pivoted coupling-piece, in combination with a spring adapted to hold the hook in raised and lowered positions, substantially as and for the purpose set forth.

5. In an elevator, a hanger for the rail or beam of the traveler, formed with a slot, in combination with a T-headed pin, and means for securing the latter to the place of suspension, substantially as and for the purpose set forth.

6. The hanger R R', pin S, eye T, and hooks V, combined and operating substantially as and for the purpose set forth.

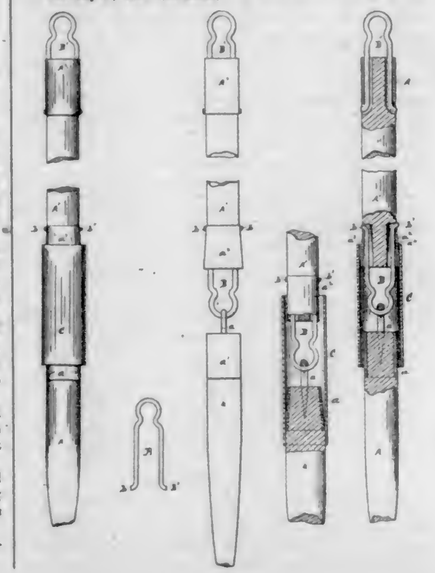
295,894. TRICYCLE. FISHER C. ATHERTON, Buffalo, N. Y. Filed Apr. 23, 1883. (No model.)



Claim.—1. The combination, with the driving-wheels A, crank-shaft *c*, and steering-wheel C, of an open frame, B, hangers *i*, pivoted to the side portions of the frame, near the front thereof, connecting-rods *f f*, arranged between the side pieces of the open frame and extending from said hangers to the crank-shaft, and pedals *k*, attached to the connecting-rods, substantially as set forth.

2. The combination, with the steering-wheel C and a frame, B, having side pieces *b'* and a connecting front piece *b²*, of a fork, L, and a bearing, *l*, constructed with laterally-extending arms *m*, secured to said side pieces and a forwardly-extending arm, *m'*, secured to said front piece of the frame, whereby the bearing is secured at three points and firmly held in place, substantially as set forth.

295,895. CLOTHES-LINE POLE. MARY BARTLETT, Detroit, Mich. Filed May 31, 1883. (No model.)



Claim.—1. The combination, in a clothes-line pole, of the two sections A A', flexibly connected together at their adjoining ends, whereby the upper section can sway with a device for limiting the swaying motion of the upper section, substantially as described.

2. The combination, in a clothes-line pole composed of two sections, A A', of a staple, *a*, secured in the end of one of the sections, a spring-staple, B, engaging the staple *a*, and connected with the end of the other section to flexibly join the two sections and permit the upper section to sway, and a device for limiting the swaying motion of the upper section, said spring-staple being constructed substantially as described, whereby it may be detached from the section with which it is connected, as set forth.

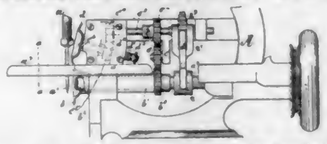
3. A clothes-line pole constructed with two sections flexibly and detachably connected at their adjoining ends, and one of said sections provided with a tapering ferrule, combined with a movable ferrule capable of being adjusted over the flexible and detachable connection of the two sections, substantially as described.

4. The combination, in a clothes-line pole, of two sections flexibly and detachably connected together at their adjoining ends, with a sliding ferrule capable of sliding over the said flexible and detachable connection, and having one end of a larger diameter than one of the sections, to permit a limited swaying movement of the upper section, substantially as described.

5. A clothes-line pole consisting of two sections, A A', flexibly and detachably connected, and the upper section having a detachable line-securing spring, B', at its upper end, and a sliding ferrule, C, capable of being adjusted over the flexible and detachable connection, and having one end of a larger diameter than one of the sections, to permit a limited swaying motion of the upper section, substantially as described.

295,896. TRIMMING ATTACHMENT FOR SEWING-MACHINES.

WM. F. BEARDSLEE, Boston, Mass. Filed Sept. 17, 1883. (No model.)



Claim.—1. In a sewing-machine, the upper rotating cutting-disk, *d*, combined with the cutting-disk *b*, having its axis of rotation coincident with that of the shaft a^3 and turning on the said shaft, to operate substantially as described.

2. The rotating cutting-disk *d* and the disk *b*, having its axis of rotation coincident with that of the shaft a^3, the said disks having their cutting-edges placed close to and substantially opposite the needle to trim the material substantially at the stitching-point, and means to connect and rotate the said disks in unison, combined with a suitable spring to hold the overlapping edges of the said disks together at their cutting-point, to effect the sharpening of the said disks, substantially as described.

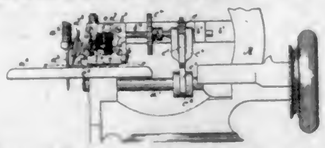
3. The rotating hook-shaft a^3, provided with an eccentric or cam, the shaft c^3, a pawl and ratchet to actuate the said shaft intermittingly, and the upper rotating disk, *d*, moved intermittingly by the said shaft, substantially as described, but at a different speed, combined with the disk *b*, its carrying-sleeve having its axis of rotation coincident with that of, and serving as a bearing for, the hook-shaft, and with means to actuate the said sleeve from the said shaft, to operate all as set forth.

4. The needle and needle-bar of a sewing-machine combined with a trimming mechanism having a disk, *d*, the face of which is concaved and set at an inclination to the line of reciprocation of the needle-bar and needle, substantially as described.

5. In a sewing-machine, the hook-shaft combined with the sleeve *b'* thereon, and its attached cutter *b*, having its outer face concaved for the reception of part of the hook, substantially as described.

295,897. TRIMMING ATTACHMENT FOR SEWING-MACHINES.

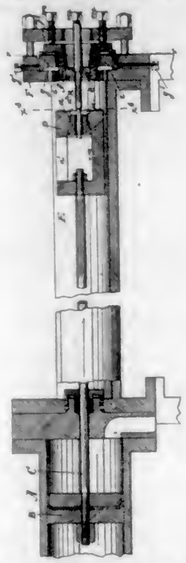
WM. F. BEARDSLEE, Boston, Mass. Filed Sept. 17, 1883. (No model.)



Claim.—The improved trimming attachment for sewing-machines, the same comprising a frame for connection with the frame of the machine, a substantially circular blunt or non-cutting trimming-disk, a shaft therefor driven from the sewing-machine, a fabric-support beneath said disk, and gearing connecting the shaft of the said disk and the fabric-support, to impart rotary motion to the same, substantially as shown and described.

295,898. MACHINE FOR COLD-DRAWING RODS, &c.

CHARLES C. BILLINGS, Boston, Mass. Filed Sept. 3, 1883. (No model.)



Claim.—1. In a machine for cold-drawing rods, &c., a clutch to hold the rod or article to be drawn, a die, a movable or tipping die-seat to receive and hold the said die, and bearing-points to support the die-seat externally, and permit it with its inclosed die to be adjusted to tip or turn the die-seat and place the center of the die in proper relation to the line of draft of the clutch, combined with means, substantially as described, to act upon the die-seat at that side of it opposite the side acted upon by the said bearing-points, to thereby adjust the said die-seat, and with its inclosed die, to operate as and for the purposes set forth.

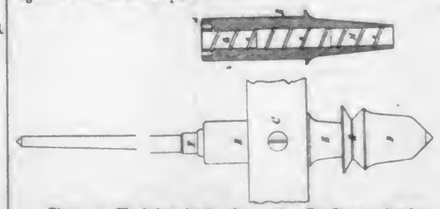
2. The movable clutch, the die *a*, die-seat, and holder, and center screws and bearings or points, *h i*, combined with means, substantially as described, to adjust the die-seat and die-holder with relation to the frame of the machine and the draft of the clutch, substantially as described.

3. The piston and its piston-rod, combined with the herein-described clutch consisting of the hollow head open at *a'* and a^3, the walls surrounding the opening *a'*, converging from within outward and affording beveled or inclined seats, and jaws having inclined backs to fit in said seats, substantially as and for the purpose set forth.

295,899. SPINNING-FRAME SPINDLE AND BOLSTER.

JOHN BIRKENHEAD, Mansfield, Mass. Filed May 15, 1883. (No model.)

Brief.—The spindle has no step, but is provided with a flange or collar that rests and revolves upon a bearing-sleeve arranged in the upper part of the bolster, and a combined whirl and oil-cup is attached to the lower end of the spindle. The lower end of the bolster extends down the spindle within the whirl and oil-cup, and the bore of the bolster and the spindle-bearing is spirally grooved, to admit of the free passage of oil to lubricate the parts.



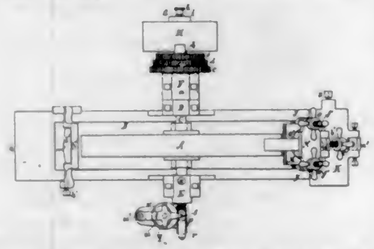
Claim.—1. The bolster having the spindle collar flange or bearing and the surrounding oil-intercepting chamber in its upper part, as set forth, in combination with the spindle extended down through the bolster, and provided not only with the flange or collar to rest on and encompass the aforesaid bearing, but with a combined whirl and oil-cup adapted to the said spindle at its lower part, having a mouth or passage opening into the said cup, and arranged with the bolster, as represented, the bore of the bolster having a spiral groove, as and for the purpose explained.

2. The bolster provided with the separate bearing-sleeves arranged in it as represented, in combination with the spindle extending through and above such sleeves, and having not only the flange or collar to rest and revolve on the top of the upper of such sleeves, but the combined whirl and oil-cup adapted to it, the said spindle having a mouth or passage opening into the said cup, and arranged with the bolster, all being substantially as set forth.

3. The bolster provided with the separate bearing-sleeves and with their yielding packings or surrounding sleeves, in combination with the spindle extending through and above the said bearing-sleeves, and having not only the flange or collar to rest and revolve on the top of the upper of such bearing-sleeves, but the combined whirl and oil-cup adapted to it the said spindle, and arranged with the bolster, all being substantially as represented.

295,900. MACHINERY FOR GRINDING CHISELS OR TOOLS OF VARIOUS KINDS.

JOHN BIRKENHEAD, Mansfield, Mass. Filed Sept. 19, 1883. (No model.)



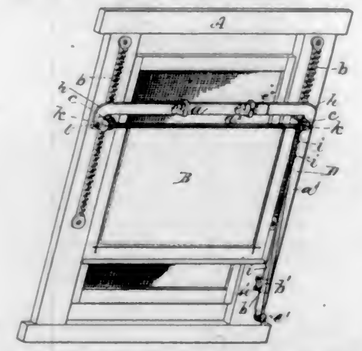
Claim.—1. The combination, substantially as described, for effecting reciprocating lateral movements of the grindstone, such combination consisting of the screw-threaded shaft C, worm-gear *q*, arms *r* and *t*, and the heart-cam *u*, arranged and adapted essentially as set forth.

2. The combination of the sleeve *b* with the grindstone and its shaft, the two sets of gears, each set consisting of several wheels of different diameters, as set forth, the driving-shaft, the locking devices *i l*, and the mechanism, substantially as described, for effecting reciprocating lateral movements of the grindstone, such mechanism consisting of the screw-thread of the shaft C, the worm-gear *q*, arms *r* and *t*, and the heart-cam *u*, all being arranged and adapted essentially as represented.

3. The adjustable tool-supporter, substantially as described, consisting of the plate M, provided with the concavity *d'*, and the screws *f' f'*, and the adjustable convex seat *s'*, and the clamp N, and hand-nuts O O, all being arranged and adapted essentially as explained, and such plate M being supported and having means of moving it, as specified, relatively to the grindstone.

295,901. DEVICE FOR OPERATING WINDOW-SHADES.

VALENTINE BRANK and THOMAS J. ANTHONY, Springfield, Ohio. Filed Jan. 14, 1884. (No model.)



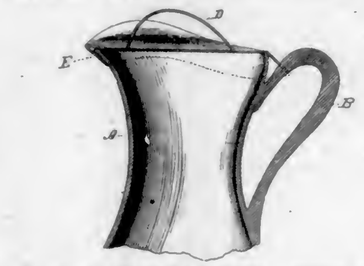
Claim.—1. A device for operating window-shades, consisting of an (inverted) L-shaped bar, extending across the window and down one side of the same, and having the shade-roller pivoted thereto, said roller being provided with a toothed pinion loosely pivoted upon its journals at either end, which engage with vertical toothed racks on the window-frame as the shade is raised and lowered by said bar, said pinions being held in engagement by means of brackets, through which said racks extend, said brackets being adapted to slide over the rack-bars when the shade is raised and lowered by said bar, substantially as set forth.

2. In a device for operating window-shades, the L-shaped bar D, having the horizontal arm *a*, extending across the window, and means for adjusting the length of said arm, and the vertical limb a^2, provided with notches *i i* therein, the shade-roller a^2, pivoted in bearings in said bar D upon either side of the window, and having the loose pinions *c* upon its journals, the brackets or keepers *k*, through which the journals of said roller extend, the vertical toothed racks *b*, said brackets inclosing said pinions and racks, and adapted to slide freely over the latter, (when the shade is operated,) and the guideway *b'*, provided with the dog *e*, and means for operating the same, whereby it is engaged with the notches *i i i* in bar D when the shade is raised or lowered by means of the latter, substantially as set forth.

3. In a device for operating window-shades, a shade-roller provided with pinions loosely pivoted upon its journals, toothed racks with which said pinions engage on either side of the window-frame, brackets through which the journals of said roller extend inclosing the racks, and adapted to slide over the same and to hold the pinions of the roller in engagement therewith, and a carrier-bar, of L shape, extending across the window and down one side of the same, said roller being pivoted to said carrier-bar upon either side of the window, and a guideway through which the vertical limb of the carrier-bar extends, having a spring-dog adapted to engage with notches in the vertical limb of the carrier-bar in raising and lowering the shade by means of the latter, as set forth.

295,902. PITCHER-COVER.

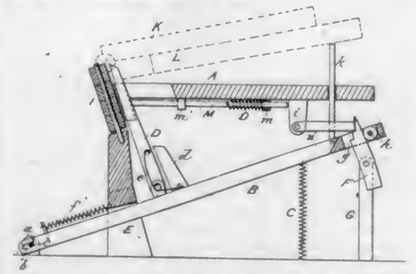
ISAAC BLUMENTHAL, Chicago, Ill. Filed Sept. 25, 1883. (No model.)



Claim.—As a new article of manufacture, a removable pitcher-cover provided with a downwardly-projecting flange extending to either side of the handle, whereby an opening is provided for the reception of the same, as described and shown.

295,903. MACHINE FOR MAKING HOES.

RICHARD E. BREED, Pittsburg, Pa. Filed June 13, 1883. (No model.)



Claim.—1. The combination, with the slotted bar B, pivoted by means of an elongated slot, *b*, engaging pin *c*, of the tumbler F, latch H, and spring *f*, whereby a vibratory and sliding movement may be imparted to said bar, substantially as described.

2. The combination, with the bar B, pivoted by means of an elongated slot, *b*, and having a slotted end, *g*, carrying a roller, *h*, of the pivoted tumbler F, latch H, and spring *f*, whereby said bar is capable of a vibratory and sliding movement, substantially as described.

3. The combination, with the folde G, of a mandrel, D, pivoted to a bar, B, having a vibratory and sliding movement, substantially as described.

4. The combination of the vibratory and sliding bar B, the mandrel D, pivoted thereto, the folder I, and the guide-frame M, having grooved heads N N, substantially as described.

5. The combination, with the folder I and mandrel D, of the spring-actuated guide-frame M, having grooved heads N N, provided with guide-plates *n n*, substantially as described.

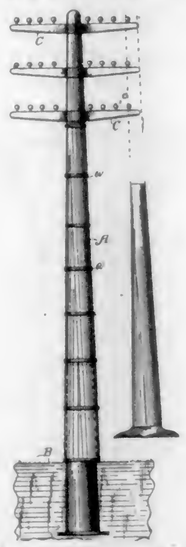
295,904. TAP-WRENCH. MERRITT S. BROOKS, Chester, Conn. Filed Jan. 30, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a tap-wrench consisting of a wrench-stock having an angular socket, and bearing clamp-screws, whose clamping-faces are of different widths, within the socket, all substantially as described.

2. The combination of a wrench-stock, *a*, having socket *b*, and bearing the clamp-screws *d* and *e*, whose clamping-faces are of different widths, all substantially as described.

295,905. TELEGRAPH OR OTHER POLES. GEORGE F. BROTT, Washington, D. C. Filed Aug. 24, 1883. (No model.)



Claim.—1. A telegraph or other pole or post made of an admixture of tarred paper or paper made of straw pulp with tar, residuum of petroleum, asphaltum, or other resinous substances, substantially as described.

2. A telegraph or other pole composed of the composition herein described, and made hollow and slightly conical, and with circumferential flanges or rims thereon at suitable distances apart, also provided each with a flange at its base, substantially as described.

3. A telegraph or other pole made of the composition herein described, and made hollow and slightly conical, in combination with a hollow base-shell for supporting the same, and made of the same material, said shell formed with base *b*, and said pole being adapted to be erected and held thereon when the same is placed in the ground, substantially as described.

4. In telegraph or other poles, the base-shell B, in combination with the pole A, both shell and pole being hollow and slightly conical, and made from an admixture of tar-paper or straw pulp with tar or resinous substances, which are placed into molds or in cylinders and subjected to pressure, substantially as described.

5. In telegraph or other poles made of the composition herein described, a conical pole made of two or more sections of length, the lower section made solid, the upper hollow, and designed to be slipped partly over another when constructed and erected substantially as described.

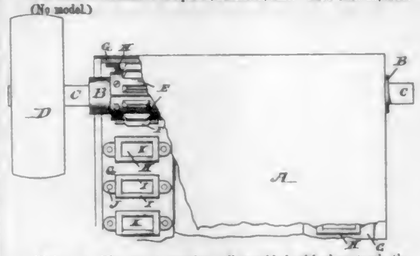
6. A telegraph or other pole made of an admixture of tarred paper or paper made of straw pulp with resinous substances, and coated with silicate of potash or red lead or equivalent, substantially as described.

7. A telegraph or other pole made of an admixture of tar-paper or paper made of straw pulp with resinous substances into tapering sections designed to fit one upon the other, as described.

8. A telegraph or other pole made of tarred paper or paper made of straw pulp with resinous substances and kaolin or black peaty substances, substantially as described.

9. The composition herein described, consisting, essentially, of straw, reed-grass, or their equivalents, the straw or grass being first relieved of its silica and softened to a pliable condition, then adding tar, residuum of petroleum, kaolin, shellac, pasty peat, either in suitable quantities, then compressing the mass into suitable shapes for poles, railroad-ties, &c., then covering or painting the article with heat and water protecting material, whereby it is preserved, substantially as described.

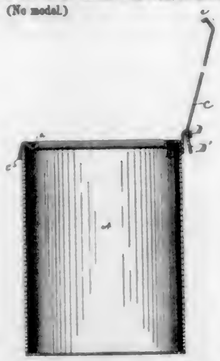
295,906. APRON-GEARING. GEORGE N. CLAPP, Seven Mile, assignor of one-half to Pleasant R. Shepherd, Hamilton, Ohio. Filed June 13, 1883. (No model.)



Claim.—1. The apron-carrying roll provided with short teeth, the canvas apron, and the metallic teeth formed in independent pairs and secured to the interior of the apron, all combined substantially as specified.

2. The combination of the apron-carrying roll provided with short teeth, the apron, the re-enforcing draft-straps, and the metallic teeth arranged in sections and secured independently to the strap, substantially as and for the purpose set forth.

295,907. FRUIT-CAN. ELLIOT COGSWELL, Mourerville, N. J. Filed Oct. 10, 1883. (No model.)



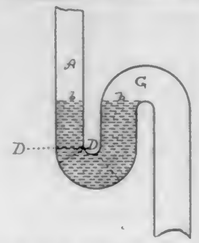
Claim.—1. The combination, with a can provided with a hooked lug, D, and stud c^3, and having its top edge bent inwardly, and creased to form a groove, of a cover, B, having a downwardly-extending flange to fit said groove, and having a convex recessed center portion, b', and a lever, C, having a slot, c^3, and hook *a*, substantially as set forth.

2. The combination, with a can provided with a hooked lug, D, and stud c^3, and having its top edge bent inwardly, and creased to form a groove, of a cover, B, having a downwardly-extending flange to fit said groove, and having a convex recessed center portion, b', and a lever, C, having a slot, c^3, extension D', and hook *a*, substantially as set forth.

295,908. PLUMBER'S TRAP. THOMAS DARE, Buffalo, N. Y. Filed Apr. 11, 1883. (No model.)

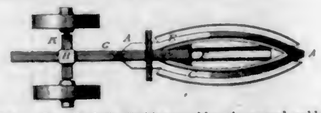
Claim.—A stench-trap for water-closets, sewer-sinks, &c., formed of two sizes of pipes, each having the same thickness of wall, a smaller size adapted to extend from the closet or other part to be drained to a point,

295,908.



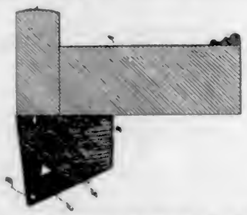
D, and a larger size adapted to extend from that point to the outlet at the sewer or larger pipe, as set forth.

295,909. TILE-DRAIN DITCHING-MACHINE. WILLIAM P. B. DECKER, Franklin Grove, Ill. Filed Sept. 6, 1882. (Model.)



Claim.—In a tile-drain ditching-machine, the curved mold-board A, having the central longitudinal slit or opening to receive the delivery-spout, in combination with guards B O D E, curved backward and outward from the front to the longitudinal center of the mold-board, thence backward and inward to the rear or meeting point, whereby the soil raised by said mold-board will be conducted to the rear of the machine and deposited in the ditch in rear of the delivery-spout, as set forth.

295,910. BILLIARD-CUSHION. MATTHEW DELANEY, New York, N. Y. Filed Aug. 14, 1883. (No model.)



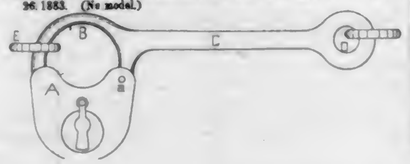
Claim.—In combination with the cushion of a billiard-table, an elastic resisting-coil extending longitudinally along the operative edge of the cushion, and a wire stretched through the central opening of said coil, thereby adding to the resistance of the cushion and at the said time protecting the cushion against the cutting effect of the wire, substantially as described.

295,911. NUT-LOCK. GEORGE C. DITTLER, Union, Ind. Filed Feb. 11, 1884. (No model.)



Claim.—A nut-lock consisting of the parts A and B, the former provided with the orifice *a* and the slotted end *a'*, and the latter provided with the tongue *b*, offset in the manner shown, and adapted to engage the orifice *a*, and the two parts applied and operated as described.

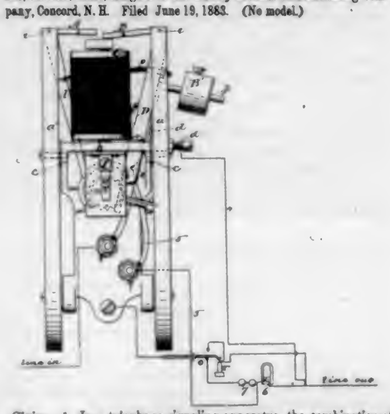
295,912. HASP-LOCK. THERON S. K. DIXON, Chicago, Ill. Filed Nov. 26, 1883. (No model.)



Claim.—1. As an improved article of manufacture, a lock the shackle or link of which is provided with a projecting arm for the purpose of a hasp, substantially as described.

2. As an improved article of manufacture, a lock the shackle or link of which is provided with an arm for the purpose of a hasp, and also a projection or offset upon its rear side, substantially as described.

295,913. TELEPHONE SIGNALING APPARATUS. WALTER J. DUDLEY, Everett, Mass., assignor to the Dudley Electric Manufacturing Company, Concord, N. H. Filed June 19, 1883. (No model.)



Claim.—1. In a telephone signaling apparatus, the combination of an electro-magnet, two polarized armatures, A B, provided with operating-levers and adapted to be simultaneously attracted and repelled, the armature A being provided with a retractile spring and the other being poised lightly, an arbor adapted to be rotated step by step by the lever of armature A, and switching devices, substantially as described, operated by the lever of armature B, whereby, when the instruments are at unison and repellent currents are sent to line, the bell of the station or office where the instrument is located is thrown out of circuit, as set forth.

2. The combination of an electro-magnet, the polarized armatures A B and their operating-levers, the arbor adapted to be rotated step by step, as described, means whereby the armature B is prevented from making contact with the electro-magnet when the central office is being called, and switching devices operated by the lever of armature B, whereby the entire telephonic resistance at the calling station is cut out and the full strength of the current is applied to rotating the arbor to the office-number, as set forth.

3. The combination of an electro-magnet, the polarized armatures A B and their operating-levers, an insulated contact-point and a spring therefor on the lever of armature B, normally short-circuiting the bell at the station where the apparatus is located, the arbor adapted to be rotated step by step, as described, and provided with a stop or pin adapted to separate said spring from its contact-point, and thereby circuit the bell and permit the latter to be rung by a magneto-current, as set forth.

4. The combination of an electro-magnet, the polarized armatures A B and their operating-levers *l* and D, the latter having a projection, *f*, the arbor adapted to be rotated step by step, and provided with a pin, *f'*, adapted to co-operate with the projection *f* and arrest the arbor near the zero-point, as set forth.

5. The combination of an electro-magnet, the polarized armatures A B and their operating-levers, the arbor adapted to be rotated step by step, and means whereby the movement of the armature B and its lever is arrested when the arbor is rotated to the office-number, as set forth.

6. The combination of the arbor rotated step by step, as described, and provided with the pin *r* and notched disk *h*, and the weighted armature-lever D, provided with the springs *e* and *i*, adapted to act, respectively, on the pin *r* and the periphery of the disk *h*, whereby the influence of the weight of the armature-lever is partially counteracted and the armature is enabled to respond to weak currents, as set forth.

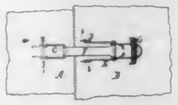
7. The combination, with the step-by-step rotated arbor *j*, having a shoulder, *v'*, of the spring *v*, bearing against the end of said arbor, and pressing the shoulder thereof against a bearing-surface, as set forth.

8. The combination, with the arbor *j* and its adjusting-spring *v*, of means for varying the pressure of said spring, as set forth.

295,914. FASTENER FOR GLOVES, SHOES, &c. WILLIAM LAWRENCE ENDERS, Franklin, Mass. Filed Feb. 4, 1884. (No model.)

Claim.—1. The fastener substantially as described, composed of the eye C, hook F, bow-shaped lever E, and its fulcrum support-piece D, arranged and applied in manner and to operate essentially as set forth.

295,914.

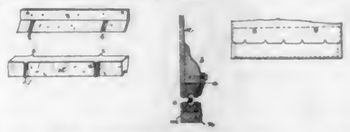


2. The lever-fulcrum support-piece D, provided with one or more spurs, *c*, and the pivotal ears *b b*, in combination with the bow-shaped lever E, fulcrumed to such ears, and with the hook F, pivoted to such lever, and to operate with an eye, C, all being substantially and for use as set forth.

3. The combination of the elastic loop G with the part B and the fastener-lever E, its support-piece D, and hook F, and with the eye C, adapted to the part A and to engage with the said hook, all being substantially as set forth.

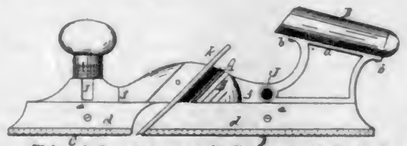
295,915. GRIPPING DEVICE FOR CABLE-WAYS. RICHARD K. EVANS, Washington, D. C., assignor to the Cable Railway Company, San Francisco, Cal. Filed Aug. 13, 1883. (No model.)

Brief.—The grip shoe or block is secured in its holder in such manner that when a predetermined strain is passed it is stripped therefrom, and injury to the cable thereby prevented.



Claim.—The combination of a grip for cable-ways, a removable shoe or shoes, and intermediate fastening devices adapted to rupture at a predetermined strain, substantially as described.

295,916. VARIABLE BENCH-PLANE. AMOS FALES, Denver, Colo. Filed Mar. 31, 1883. (Model.)



Claim.—1. In a bench-plane, a handle, B, made of cylindrical form, flattened on one side, in combination with an inclined plane-faced flange, *a*, on the plane-stock, substantially as and for the purpose herein specified.

2. The combination of the main stock A, having the lower edge of its body *f* and cutter-bracket E in one straight line, and its flange *e* provided with a dado-spur, *g*, and the form-plates C D, having vertical attaching-flanges *d d* bearing against the straight lower edge of the said stock-body and bracket, and adapted to have their lower surfaces flush with the lower edge of the said stock-flange, substantially as and for the purpose herein specified.

3. The reversible fence H, in combination with the stock G, the points of attachment being to one side of the middle longitudinal line of the fence, whereby two positions are given thereto fulfilling two purposes, substantially as herein specified.

4. The combination of the main stock A, having a downwardly-extended flange, *e*, on its lower edge, and a cutter extending laterally beyond the stock, and the auxiliary stock G, cut away at the top to allow the main-stock cutter to project over it, and having a flange, *h*, bent laterally, substantially as and for the purpose herein specified.

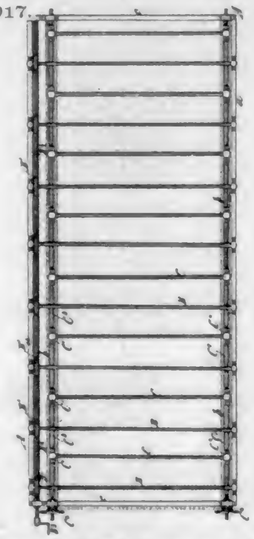
295,917. EMBROIDERING-MACHINE. ROBERT FREITAG, Jersey City, N. J. Filed Sept. 29, 1883. (No model.)

Claim.—1. The combination, with a frame for an embroidery-machine, of a number of pairs of rollers journaled therein, and means for connecting the rollers of the several pairs so that they may be rotated simultaneously to unwind the fabric from one roller of each pair and wind it upon the other roller of each pair, substantially as described.

2. The combination, with a frame for an embroidery-machine, of a number of pairs of rollers, means whereby corresponding rollers of the several pairs may be simultaneously rotated to wind the fabric upon them, and means whereby the other rollers of the several pairs may be moved bodily to put tension on the fabric, substantially as described.

3. The combination, with the frame A, of the several pairs of rollers B C, the rollers B being provided with worm-wheels B', and the worm

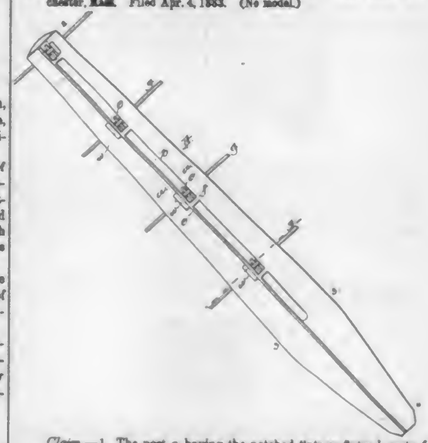
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or screw B², engaging with all said worm-wheels, substantially as described.

4. The combination, with the frame A, of the several pairs of rollers B C, the bearings C' C² for the rollers C, the longitudinal bars *b*, the rods C³ C⁴, connecting said bearings, and the nuts C⁵, substantially as described.

295,918. METAL POST FOR WIRE FENCES. LOUIS GODDU, Winchester, Mass. Filed Apr. 4, 1883. (No model.)



Claim.—1. The post *a*, having the notched flute or flutes *b*, rests *f*, and rib *c*, in combination with the wires *g* and pins *e*, for retaining the wires in the notched post, substantially as shown and described.

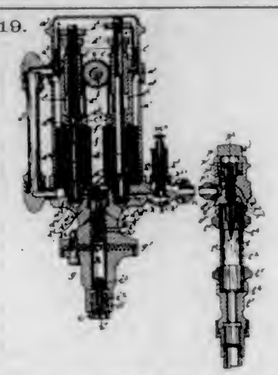
2. A post composed of the part *a a*, the notched wire-receiving flute, and the backwardly-extended rib *c*, substantially as described.

295,919. LUBRICATOR. CUSHING C. HARLOW, Brockton, Mass. Filed Nov. 30, 1883. (No model.)

Claim.—1. In a lubricator, the reservoir having two or more outlet-passages, combined with a series of independent forcing devices actuated in common, by means of which different quantities of the lubricant may be forced from each outlet as desired, substantially as described.

2. In a lubricator, the reservoir and forcing-rod therein, combined with the actuating rock-shaft and pinion thereon, and rack meshing with

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the said pinion and connected with the said forcing-rod, substantially as described.

3. The reservoir for the lubricant and the actuating rock-shaft, pinion, and rack, combined with the forcing-rod *d*, adjustable longitudinally in the said rack, substantially as and for the purpose described.

4. The reservoir and internal threaded actuating-rack, combined with the threaded forcing-rod connected with the said rack, and the gaging upright co-operating with the said rod to indicate its effective movement, substantially as described.

5. The oil-reservoir and forcing device, consisting of a longitudinally-movable nipple and independent actuating-rod adapted to seat on the end of the said nipple, close the passage through it, and then move the said nipple longitudinally, substantially as and for the purpose described.

6. The oil-reservoir having a chambered base provided with a bushing, combined with the spring-pressed forcing-nipple, longitudinally movable in the said bushing, and provided with a stop limiting its movement caused by the spring, and the actuating-rod seating on the end of the said nipple and moving it therewith, substantially as described.

7. In a lubricator, the reservoir provided with a foot adapted to be attached to a steam chest or cylinder, combined with non-conducting material interposed between the main portion of the reservoir and its foot, whereby the said reservoir and its contents are protected from the heat of the steam chest or cylinder, substantially as described.

8. The forcing-rod having a spring-held portion adapted to yield when the flow of the forced liquid is obstructed, as and for the purpose described.

9. In a lubricator, the reservoir and forcing device thereon, combined with the strainer, consisting of a gauze cylinder, *f*, provided at its ends with rings *f'*, the said strainer surrounding the said forcing device, substantially as described.

10. The reservoir having a chambered base provided with an outlet-passage, combined with a forcing device for expelling the liquid from the chamber of the base, and a valve controlling the flow through the outlet-passage, provided with a tubular stem and spring within the said stem, which is provided with inlet-openings admitting the lubricant to the interior thereof, substantially as described.

11. The reservoir having its base provided with a chamber, d^3, and outlet-passage *h*, combined with the tube h^2 and valve *k* therein, and the screw h^1, closing the upper end of the passage *h*, which communicates with the chamber *d*, substantially as described.

12. The lubricator having a forcing device, combined with the sight-feed device having a chamber connected with the outlet-passage from the forcing device, a drop-forming nozzle, and a retarding device between the said chamber and nozzle, whereby the lubricant entering the chamber intermittingly is delivered uniformly to the nozzle, substantially as described.

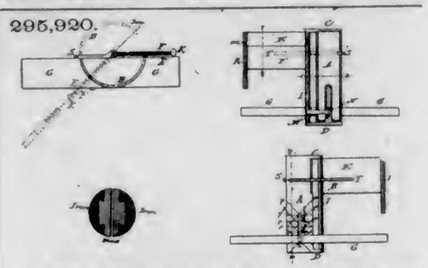
13. The lubricator having a forcing device, and the sight-feed device having a receiving-chamber at its upper end, an outlet-passage therefrom terminating in a drop-forming nozzle, combined with fibrous material interposed between said receiving-chamber and nozzle, substantially as described.

14. The combination of the valve-seat k^2, valve k^{20}, and device for rotating the said valve with relation to its seat, substantially as described.

295,920. MITER-GAGE. EXPERIDION HIPOLITO, San Jose, assignor of one-half to James D. Campbell, Los Angeles, Cal. Filed June 6, 1883. (Model.)

Claim.—1. The miter-gage consisting of a base, a vertical adjustable standard, a slotted rotating post, a guiding-wing having two leaves with a passage-way between them, and a curved graduated arm, all in combination substantially as and for the purpose set forth.

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2. In a miter-gage, a broad upright saw-guide-supporting standard, adjustably mounted, substantially as shown, upon a base having a straight, flat upper surface, said standard being flat and plain upon the face or side next to the base, and having linear markings crossing said face at various angles, and corresponding with the surface of the base at the line of contact as the standard is adjusted at different angles of inclination, all being substantially as shown and described, whereby the saw-guiding apparatus may be accurately adjusted to guide the saw at various angles with the base.

3. In a miter-gage, two longitudinally-slotted saw-guiding posts or rods connected by plates attached to the respective halves of the rods, substantially as shown, so that the inner faces of the plates form a passage for the saw continuous with the slots in the rods, each rod having its separate halves connected by a set-screw, substantially as shown, whereby the width of the passage through the slots in the rods and between the plates may be regulated.

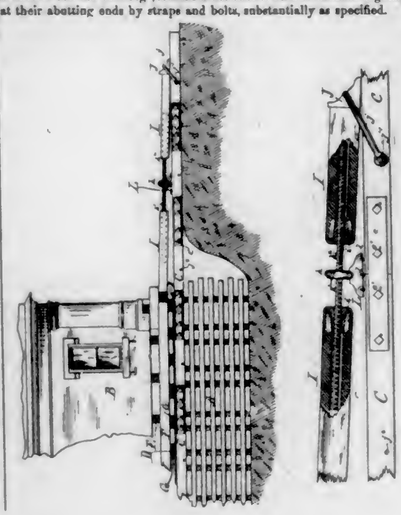
4. In a miter-gage, slotted saw-guiding posts or rods having a separate lining of wood, substantially as set forth, whereby the lining may be replaced when worn out, and the saw will not be dulled by contact with the rod.

5. In a miter-gage, a saw-guide-supporting standard having a longitudinal slot therein, and being in combination with the base, bolt, and spanner, substantially as shown, whereby the guiding apparatus may be elevated and lowered, and may be given any vertical angle desired.

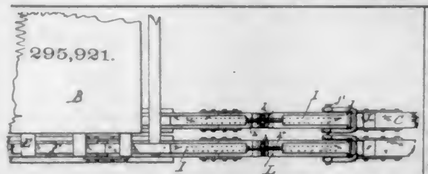
295,921. APPARATUS FOR MOVING HOUSES. JAMES HOLLINGSWORTH, Chicago, Ill., assignor to Hollingsworth & Coughlin, same place. Filed Oct. 1, 1883. (No model.)

Brief.—Continuous ways composed of lengths of timber, fastenings for securing them detachably together end to end, and anchoring devices secured directly to the timbers forming the ways. Motive force is applied to the sill-timbers by screws. The screws have a center boss fitting in a movable rest, which supports the screw against the deflecting force of the actuating-lever.

Claim.—1. In combination with the power-supplying screws and their anchorage devices, the continuous ways herein described, on which to slide or roll the buildings, formed of sections of timbers secured together at their abutting ends by straps and bolts, substantially as specified.



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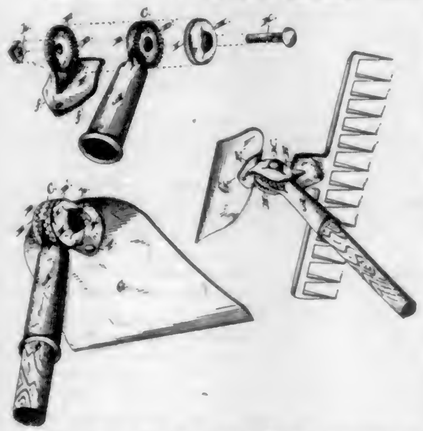
2. The continuous ways herein described, composed of lengths of timber and fastenings for securing them detachably together end to end, substantially as specified.

3. The ways upon which to move buildings, in combination with the screws and their anchoring devices, the latter being secured directly to the timbers forming the ways, substantially as specified.

4. The combination, with the way and the power-supplying screws, of the anchor device consisting of the block, the strap, and the holding-pin, substantially as specified.

5. The combination, with the screw, of the supporting-rest L, substantially as specified.

295,922. HANDLE-ATTACHING DEVICE FOR TOOLS. JOSEPH R. HOOD, Philadelphia, Pa. Filed Apr. 2, 1883. (No model.)



Claim.—The combination, with the handle-socket A, provided with the disk C, having a series of teeth on its opposite sides, of toothed disks E, attached to a hoe or other implement, whereby two implements may be adjustably secured to the single disk C, and a toothed disk, H, for protecting the series of teeth on one side of the disk C when only one implement is secured thereto, substantially as set forth.

295,923. PENCIL. THOMAS M. KENNEY, Cambridge, Mass., assignor to Francis Edgar Mason, same place. Filed Mar. 12, 1883. (No model.)



Claim.—1. In a pencil, the combination, with the pencil-body, of a lead-feeding device longitudinally movable in the said body, having a series of projections or shoulders to successively operate upon the lead, and the holding device, resisting without positively preventing the longitudinal movement in either direction of the said feeding device and lead under moderate pressure, substantially as described.

2. The pencil-body having a lead-holding tip, combined with the longitudinally-movable lead-feeding device, having a series of yielding projections or shoulders to successively operate upon the lead, and a frictional clamp to resist and stops to positively limit the longitudinal movement in either direction of the propelling device relative to the pencil-body, substantially as described.

3. The pencil-body consisting of an outer tube, a split lead-holding tip, and inner lead-receiving tube slotted longitudinally, all fixed with relation to one another, combined with the longitudinally-movable and frictionally-held feeding device, having a knob outside the end of the said outer tube, and a series of yielding lead-feeding projections or shoulders normally pressed into the said slot, substantially as described.

4. The combination of the pencil-body with a longitudinally-movable lead-feeding device having a series of projections or shoulders, and its removable cap or knob provided with a plunger, substantially as described.

5. The body consisting of the tubes *a* and *d* and tip *b*, combined with the feeding device having a series of projections, *f*, and a clamp or friction device, *m*, substantially as described.

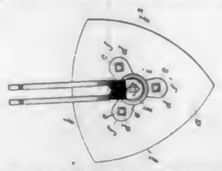
295,924. HAME. JACOB F. KNORR, Orange, N. J. Filed Aug. 18, 1883. (No model.)



Claim.—1. A hame consisting of a trough-shaped body, A, the draft-plate D, sunken into the edges of the body and rivited to such edges, and the strap-loop F, having its ends inserted between the body and draft-plate and secured thereto, substantially as described.

2. The combination of the trough-shaped hame-body A, having offsets B at its edges, with the draft-plate D sunken into the hame-body, and rivets attaching the edges of the draft-plate to the offsets, substantially as described.

295,925. PLOW ATTACHMENT. JOHN LAWRIE, Brookston, Ind., assignor of one-half to John W. Heltzman, same place. Filed Aug. 18, 1883. (No model.)



Claim.—1. The standard-sheth or auxiliary standard *k*, provided in its front face, at its lower extremity, with the hexagonal matrix *l*, and the central perforation, *m*, from front to rear, in combination with the tri-arm bracket *o*, having the arms *f f* and *f''*, the hexagonal boss *n* on the rear face of its central portion, and the central perforation, *h*, and the pivot-bolt and nut *i*, substantially as specified.

2. A plow-standard having a hexagonal matrix in its front face near its lower end, in combination with a tri-arm bracket having a central hexagonal boss to fit the matrix, and a bolt and nut for connecting the two together, substantially as specified.

295,926. FILTER. JAMES M. LEARNED, Boston, assignor to Dexter F. Bennett, Somerville, Mass. Filed June 26, 1883. (No model.)



Claim.—In a filter, the combination, with the shell or casing A, having a chamber, *b*, of the perforated discharge-tube B, closed at its inner end, and extending up centrally within the casing in line with the inlet-aperture thereof, and surrounded by a piece of wire-gauze, *f*, secured in place by a perforated cap or sleeve, C, fitting thereover, all constructed and arranged to operate substantially in the manner and for the purpose described.

295,927. COMPRESSIBLE GAGE. CHAS. A. LIEB, New York, N. Y. Filed Aug. 7, 1883. (No model.)

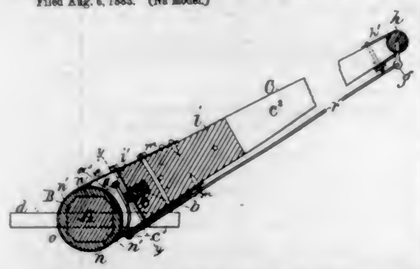


Claim.—1. A compressible gage formed by combining a single series of links, which are united at their ends, and form an unbroken surface against which the paper or other material to be cut can be placed, as set forth.

2. The links A, united at their ends by the rods B, in combination with the springs C around such rods, and bearing on the links, as set forth.

3. The combination of a series of inclined links, A, journals B, helical springs C, and the rubber cushion D, constructed and operating substantially as and for the purposes specified.

295,928. HORSE HAY-RAKE. DAVID W. LONG, Springfield, Ohio. Filed Aug. 6, 1883. (No model.)



Claim.—In combination with the rake-head, the bearing-collar cast in a single piece, and having a central band provided with notches, the side bars, c^2, pivoted on said collar, the block *i*, interposed between said side bars, and having a cavity, *b*, in the forward end, the spiral spring located in said cavity, the pawl *a*, pivoted in the space a^2, and having the stud a', extending within said spring, the broad flat spring *e*, extending over said space a^2, and the operating devices connected with said pawl *a*, substantially as set forth.

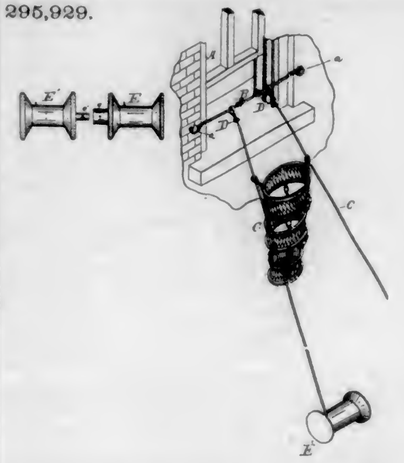
295,929. FIRE-ESCAPE. THOS. MACDONOUGH, Benton, Mich. Filed Dec. 8, 1883. (No model.)

Brief.—The lowering-ropes are wound on a double reel, which may be easily separated when to be used, or secured together when to be stored. An escape basket or cage made of telescoping sections secured together by light chains is provided.

Claim.—1. A collapsible basket, F, made in sections, as described, the sections being secured together by light chains, in combination with two lift wires or cables, C C, adapted to pass through the handles of the basket, and suitable mechanism to retain said cables in position for a fire-escape, substantially as described.

2. A fire-escape consisting of two spools or reels connected together substantially as described, so as to be readily separated, a lift-cable wound

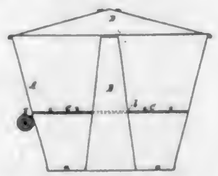
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on each reel, a basket or cage, through the handle of which the cables pass, and mechanism, substantially as described, for securing the cables to a window, the whole constructed and adapted to operate in combination substantially as set forth.

3. The combination of the cable B, supported on its hooks, as described, the cables C C, secured to said cable B by hooks D, the basket F, having handles through which the cables C C pass, and the spools E E', secured to the cables, and having mechanism, substantially as described, whereby said spools may be readily attached together or taken apart, all constructed and operating substantially as and for the purpose set forth.

295,930. VEGETABLE-STEAMER. LLEWELLYN MASTERS MARR, Boston, Mass. Filed Sept. 29, 1883. (No model.)



Claim.—A vegetable-steamer consisting of the body A, increasing in diameter from the bottom up, and having the central open tapering tube, B, increasing in diameter from the top down, the perforated disk C, having the central hole, *b*, and the conical cover D, whereby the bodies of several steamers can be packed together, and also their covers with the disks, as set forth.

295,931. MANUFACTURE OF ARTIFICIAL STONE. MONROE MCNAMARA, Mexico, Mo. Filed Dec. 26, 1883. (No specimens.)

Claim.—The herein-described composition of matter, consisting of Portland cement, sand, ground or pulverized or comminuted glass, plaster-of-paris, pitch, paper-pulp, sal-soda, litharge, and alum, in or about in the proportions set forth.

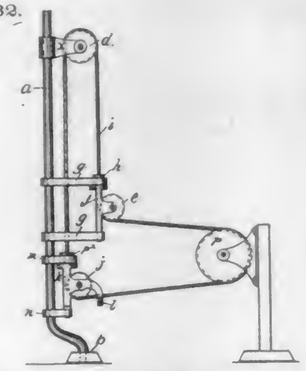
295,932. BELT-GUIDE. JONATHAN J. MOORE and JAMES A. BALL, Thorntown, Ind. Filed Jan. 19, 1884. (No model.)

Claim.—1. The combination, with a shaft in a fixed position, a pulley on said shaft, a shaft mounted on a turning support, a pulley on said shaft, and a round belt passing over said pulleys, of a pair of pivoted frames, each carrying a sheave-pulley, and secured to said turning support, and arranged substantially as and for the purpose specified.

2. In a belt-guide, frame *f*, carrying pulley *e*, and having a hollow pivot, *h*, all substantially as specified.

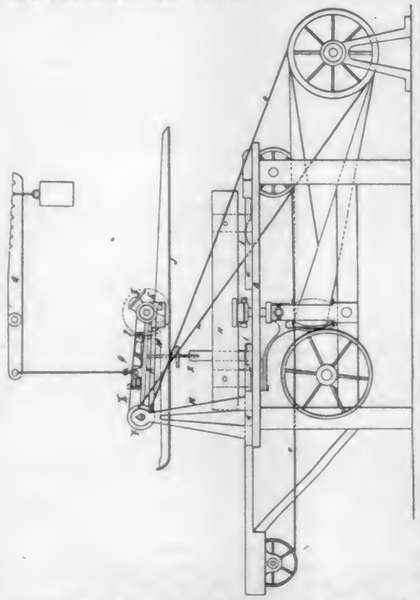
3. In a belt-guide, frame *k*, having hollow pivot p^3 and guard *l*, and carrying a sheave-pulley, *j*, all substantially as specified.

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295,933. PACKING-BOX-TRIMMING MACHINE. FREDK. MYERS, New York, N. Y. Filed Dec. 9, 1881. Renewed July 18, 1883. (No model.) Patented in England Jan. 28, 1882, No. 432.

Brief.—The box is passed between the usual side cutter-heads, and is leveled by springs bearing on the bottom. A gage-bar rests on the upper ends of the box, and counter-weighted cutter-heads controlled by the gage trim the upper edges of the sides.



Claim.—1. The combination, in a box-trimming machine, of the table, endless carrier, guideways, and a guide-shoe and top-edge planers, said guide-shoe and top-edge planers overhanging said table, carrier, and guideways for the box to pass under them, the shoe being located between the planers to ride on the ends of the box, and the planers being suitably located to dress the edges of the sides of the box even with the ends of the box, substantially as described.

2. The combination, with the suspended and partially-balanced overhanging top-edge cutters and guide-shoe, of the adjustable rest R, the arrangement being such that the cutters and guide-shoe drop and rest thereon when not resting on the boxes, substantially as described.

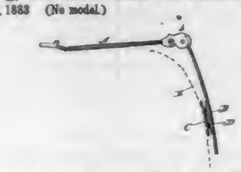
3. The combination, with the guideways and carrier, of the gaging-shoe, top-edge planers, counter-balance, and the supporting-standard R substantially as described.

4. The combination, in a box-trimming machine, of the vertically-adjustable gaging-shoe and the vertically-adjustable top-edge planers with the guideways and carrier, the said shoe being located between the planers to ride on the ends of the box, and the cutters arranged to dress the side edges of the box even with the box ends, said planers and shoe being adjustable together on pivot L relatively to the boxes, and the said shoe being adjustable on pivot O relatively to the planers, substantially as described.

5. The rest S, in combination with the gaging-shoe J and the top-edge planers I, said shoe being adjustable upon the planer-supports and relatively to said planers by arm N and pivot O, substantially as described.

6. The combination, in a machine for dressing the top edges of boxes, and with the planers, guide, and carrier therefor, of a springway, *i*, along one side of the carrier, substantially as described.

295,934. SPECTACLE-FRAME. JOB H. NICHOLS, Peoria, Ill. Filed Mar. 17, 1883. (No model.)

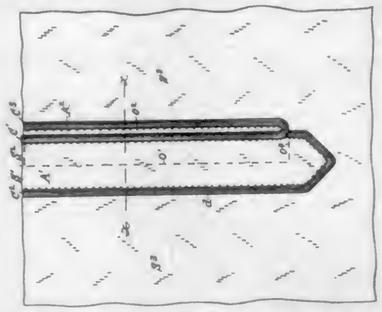


Claim.—1. In a frame for eyeglasses, an elastic plate attached to each of the rear-extending arms of the frame, as and for the purpose intended, substantially as described.

2. In a frame for eyeglasses, an elastic plate attached to each of the inner sides of its rear-extending arms at or near the parts where the arms pass the temples, as and for the purpose intended, substantially as described.

3. In a frame for eyeglasses, the combination of the elastic plates C, the metal strap D, and arms B, as and for the purpose intended, substantially as described.

295,935. STAYING-PIECE FOR GARMENTS. GEORGE E. NORRIS, Troy, assignor of one-half to James K. P. Pine, Lansingburg, N. Y. Filed June 20, 1883. (No model.)



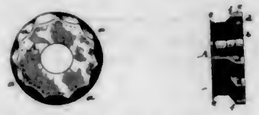
Claim.—1. In an overlapping fly for a garment-slit opening, the combination of a strip having a uniform width for attachment to the slit, and which strip is sewed on one of its edges to one edge of the slit reversely placed, is then turned over and down frontwardly, and longitudinally folded to produce a fly-edge subtending the slit, with the other edge of the strip sewed to the shirt-body exteriorly, so as to cover and subtend the inner union of the strip and slit, and a corded edge upon the subtending vertical edge of the fly, as shown and described.

2. In an overlapping fly for a garment-slit opening, the combination of a strip having a uniform width for attachment to the slit, and which strip is sewed on one of its edges to one edge of the slit reversely placed, is then turned over and down frontwardly, and longitudinally folded to produce a fly-edge that subtends the slit, with the other edge of the strip sewed to the shirt-body exteriorly, so as to cover and subtend the inner union of the strip and slit, a corded edge upon the fly, and a corded edge upon the exterior of the strip where attached to the shirt-body, as shown and described.

3. In an underlap for a garment-slit opening, the combination of a strip of uniform width reversely placed with reference to the edge of the slit beneath the fly, and sewed thereto, turned over and down outwardly and frontwardly, and on its outer edge attached to the shirt-body and corded, as shown and described.

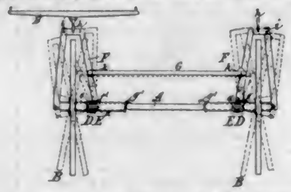
4. In combination with a garment-slit opening, an overlap or fly made from a strip of material that is on one of its edges, as shown, attached to one edge of the garment-slit, and on its other edge exteriorly attached to the shirt-body, to subtend the inner union of the strip and slit, and where folded longitudinally to oppositely subtend the slit and produce the fly, a corded edge on fly and strip, an underlap made of a strip that on one edge is sewed to the edge of the slit, as shown, and folded over and down exteriorly, and on its outer edge attached to the shirt-body, with its lower end transversely sewed to the overlap, and the outer edge of the piece forming the underlap corded, as herein described.

295,936. ROTARY SOLE-EDGE CUTTER. WILLIAM D. ORCUTT, Boston, Mass., assignor of one-half to James H. Bunell, same place. Filed Apr. 7, 1882. (No model.)



Claim.—The improved cutter for trimming sole-edges above described, having a series of teeth, each of which has not only a flat front face, *c*, and is molded on its outer end the counterpart of the sole-edge, so that its heel acts as a guard, but each also has the radii of a polygon, whereby both the desired clearance and rankness can be obtained, as set forth.

295,937. CULTIVATOR. WM. S. PATES, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Jan. 11, 1884. (No model.)



Claim.—1. In a tongueless cultivator, the frame consisting of the arched axle provided with horizontal arms, the spindles provided with the perforated head and the lug, the swivel E, the draft-bar, constructed U-shaped, one leg thereof attached to the outer end of the spindle, and the other leg attached to the said lug, and the axle-bar G, in combination, all substantially as and for the purpose set forth.

2. The spindle D, provided with the perforated head and the lug, in combination with the arched axle provided with horizontal arms, the said spindle connected to the said axle by a swivel, permitting the said spindle to swing, as shown, and with the draft-bar, the said lug attached to the said draft-bar with a bolt, all substantially as and for the purpose set forth.

3. The swivel E, constructed with the open-mouthed eye or collar, with perforated lips adapted to be drawn together by means of a bolt and nut, the shoulder and the rounded extension screw-threaded, as shown, in combination with the arched axle provided with horizontal arms, and spindles provided with the perforated head, substantially as and for the purpose set forth.

4. The draft-bar, constructed U-shaped, its legs straddling the wheel, in combination with the spindle provided with the perforated head and the lug, one leg of the said draft-bar attached to the outer end of the said spindle, the other leg attached to the said lug, as shown, and for the purpose specified.

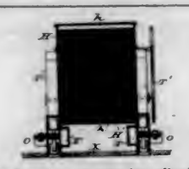
5. The stop-lock I, constructed with an eye, *m*, and provided with the arm *g'*, in combination with the sleeve J and the axle A, the said eye clasped to the sleeve with the bolt *g*, and the said arm adapted to stop and abut against the said axle, as specified, and for the purpose set forth.

6. In a tongueless cultivator, the combination of the axle A, wheels B, spindle D, swivel E, draft-bar F, axle-bar G, sleeve J, stop-lock I, and plow C, substantially as and for the purpose set forth.

295,938. MACHINE FOR OPENING, CLEANING, AND CONDENSING TEXTILE FIBERS. HAVEN C. PERRAN and ALFRED CLARKE, Lowell, Mass. Filed June 18, 1883. (No model.)

Brief.—Two exhaust-fans—one on each side of the machine and operated independently of each other—exhaust the air from the lap-cages, with which they communicate by suitable pipes. Said cages are divided through their center by sheet-metal plates placed at right angles to the shafts.

Claim.—1. The combination of one or more lap-collecting cages, and independent means at each end of such cage or cages for exhausting air from the ends thereof, as and for the purpose specified.



2. The combination of one or more lap-collecting cages, and separate exhaust-pipes—one at each end of said cages—and separate air-exhausting means for each of said pipes, as and for the purpose specified.

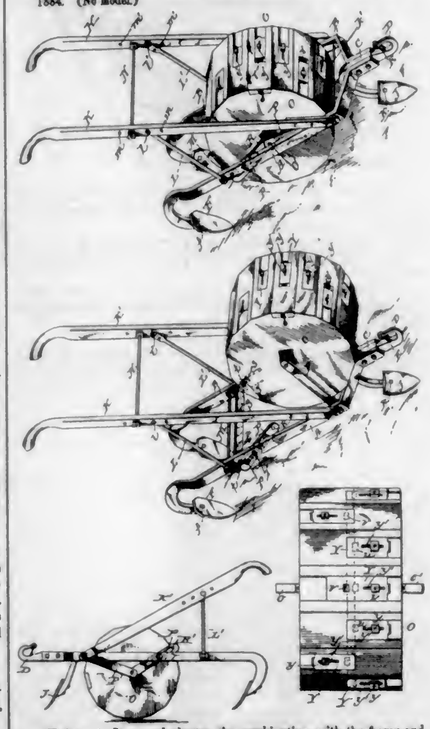
3. The combination of one or more lap-collecting cages, and separate exhaust-pipes—one at each end of said cages—and separate exhaust-fans for each of said pipes, as and for the purpose specified.

4. The combination of one or more lap-collecting cages, each provided with a central vertical partition, and independent means at each end of such cage or cages for exhausting air from the ends thereof, as and for the purpose specified.

5. The combination of one or more lap-collecting cages, each provided with a vertical central partition, separate exhaust-pipes—one at each end of said cages—and separate air-exhausting means for each of said pipes, as and for the purpose specified.

6. The combination of one or more lap-collecting cages, each provided with a central vertical partition, and separate exhaust-pipes—one at each end of said cages—and separate exhaust-fans for each of said pipes, as and for the purpose specified.

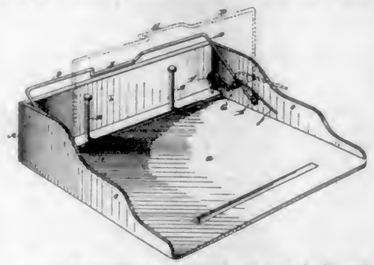
295,939. COMBINED SEED-PLANTER AND FERTILIZER-DISTRIBUTER. WILLIAM CHESLEY PICKLE, Nechesville, Tex. Filed Jan. 16, 1884. (No model.)



Claim.—1. In a seed-planter, the combination, with the frame and shovel-points and seed-drum, of the hinged arms P P', and the arms R R', provided with slots *p*, whereby said frame and shovels may be raised or lowered, as and for the purposes set forth.

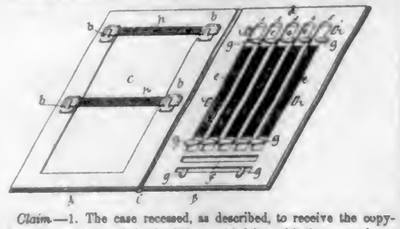
2. The combination, with the frame and the seed-drum, of the arms P P', hinged to the rod *k'*, and the arms R R', having slots *p*, whereby said drum may be allowed a free vertical motion or be rigidly set at a given height, substantially as shown and described.

295,940. LETTER AND BILL FILE. GEORGE W. PLUMMER, Brooklyn, N. Y., assignor to Andrew Jacobs. Filed Jan. 24, 1883. (Model.)



Claim.—The combination, substantially as described, of a cradle or box, A, having end boards, *c*, a swinging bail, D, having bent ends pivoted to the said end boards, and provided with studs or knobs G between its pivot and its horizontal or cross-bar portion, and a spring, F, secured to the cradle or box independently of the swinging bail, and having a forwardly-projecting arm, *f*, bearing upon the upper side of the stud or knob G, substantially as described.

295,941. COPY-BOOK, COPY-CASE, AND MOVABLE COPY-PLATE. DANIEL A. RADLEY, Lawrenceburg, Mo. Filed Apr. 3, 1883. (Model.)

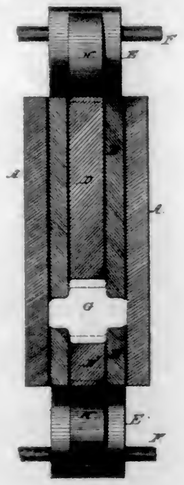


Claim.—1. The case recessed, as described, to receive the copy-book, and provided with hooks *b*, in combination with the copy-plates, by which the paper is held down smoothly.

2. The case consisting of the flexibly-connected leaves A B, provided with recesses *c e f i*, hooks *b*, and buttons *g*, all substantially as described.

3. The copy-plate consisting of a rigid supporting-plate having secured to it, as described, the copy-slips, which leave exposed the ends of said plates, as and for the purpose described.

295,942. CASTER-WHEEL AND DIE FOR MAKING THE SAME. WALTER S. RAVENSCROFT, Parkersburg, W. Va. Filed June 7, 1883. (No model.)

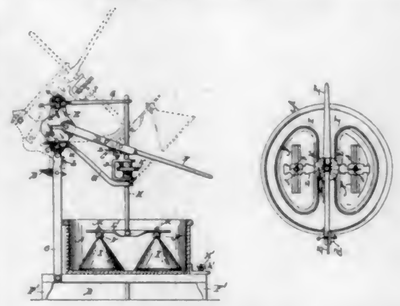


Claim.—1. The combination of the mold A, having a suitable bottom or dies at one end, the die B, formed in one piece, having a cylindrical bore of uniform diameter, and the die D, fitting said bore and free to move in the same from one end to the other, substantially as specified.

2. The combination of the mold or cylinder A, the dies B B′, made free to move toward and from each other, and the dies D D′, adapted to move toward and from each other in the dies B B′ and independently of the latter, substantially as shown and described.

3. The caster-wheel formed of woody fiber or any pulp, having its central portion additionally compressed, substantially as and for the purpose specified.

295,943. WASHING-MACHINE. JAMES WILLIAM REOADE, Churubusco, Ind. Filed Aug. 10, 1883. (No model.)



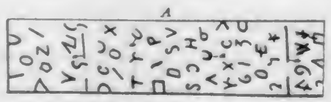
Claim.—1. In a washing-machine, the combination of a plunger and its shaft and lever for operating the shaft, longitudinally-adjustable guide-rods for the shaft to move in, a supporting-arm recessed for the reception of the guide-rods, and provided at its lower end with a flange to engage with its supporting-standard, clips and nuts thereto for securing the guide-rods to said arm, a standard to which said arm is hinged, and a gravitating pawl to engage with the end of the hinged arm, substantially as and for the purpose set forth.

2. In a washing-machine, the combination of a plunger and its shaft, a hinged arm having its lower end tapering, substantially as shown, guide-rods connecting the hinged arm and plunger-shaft, a standard to which said arm is hinged, and a gravitating pawl pivoted to said standard and having a notch, substantially as described, whereby the tapering end of the hinged arm will strike against the head of the pawl and depress the latter and engage the notch of the pawl for holding the arm against movement in one direction, and means, substantially as described, for holding the arm against movement in the other direction, for the purposes set forth.

3. In a washing-machine, the combination of a two-part plunger, a cross-bar for connecting the two parts having slotted ends and serrated edges, pins or lugs connected with the plunger to engage with the serrations of the cross-bar, a nut and bolt for clamping the cross-bar to the plunger, and an operating-shaft connected to the cross-bar, substantially as set forth.

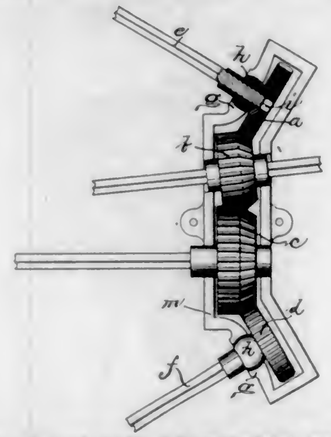
4. In a washing-machine, the combination of a two-part plunger, a cross-bar connecting the two parts having slotted ends and serrated edges, flanged plates fitting to the apices of the two-part plunger, and provided with cross-flanges or shoulders to form a seat for the cross-bar, and with pins or lugs to engage with the serrations of the bar, a nut and bolt for clamping the cross-bar, plunger, and flanged plate together, and an operating-shaft connected with the cross-bar, substantially as set forth.

295,944. BEER-CHIP. BERNARD REE, Brooklyn, N. Y. Filed Aug. 6, 1883. (No model.)



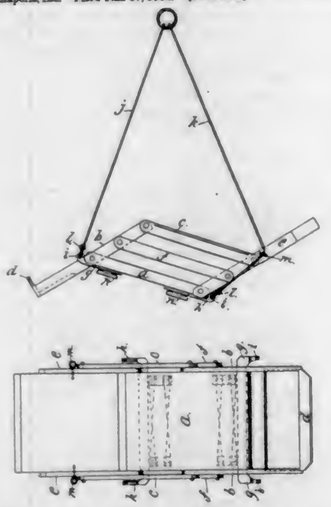
Claim.—As an improved article of manufacture, a beer-chip having lines, grooves, recesses, or figures of any desired design burned or branded in it, substantially as and for the purpose set forth.

295,945. SEEDING-MACHINE. JOHN L. RITER, Brownsville, assignor to Norris & Brother, Rushville, Ind. Filed Jan. 30, 1883. (No model.)



Claim.—In a seeding-machine of the class specified, the combination, with the other gears of the driving-train, of the outside gears, each having a journal in the form of a spherical zone, and a bearing fitting the same and adapted to permit oscillation of the gears, but to prevent improper displacement of the same.

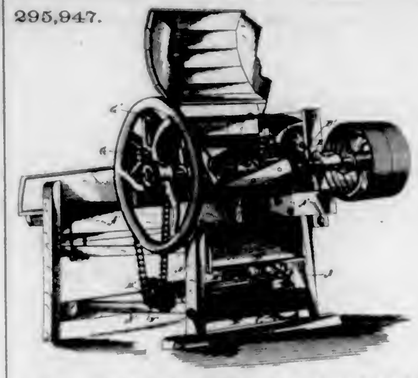
295,946. COMBINED SWING AND CHAIR. FRANCIS ROBINSON, Indianapolis, Ind. Filed Jan. 17, 1884. (No model.)



Claim.—1. The combination, with a folding reclining-chair having a hinged back and cords for suspending the same, of two eyebolts secured to opposite edges of said back, and two of the said suspending-cords passing through said eyes, arranged to slide therein, and attached to a fixed support on the seat of the chair, all substantially as and for the purpose specified.

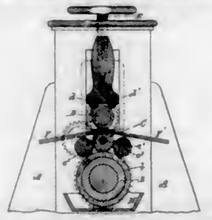
2. In a folding reclining-chair, the combination, with seat *a*, uprights *b* and *c*, pivoted thereto, as described, and arm *e*, pivoted to said uprights, of bar *f*, also pivoted to said uprights, substantially as and for the purpose specified.

295,947. STRAW-CUTTER. ELMORE W. ROSS, Fulton, N. Y. Filed Mar. 1, 1883. (No model.)



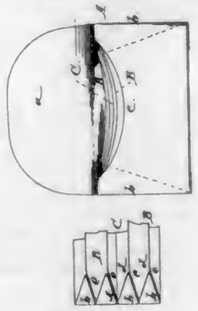
Claim.—The combination, with the driving and feed-roller shafts, of the interposed parallel shafts connected by the spur-gears E and E′, and the sprocket-wheels and chains connecting the driving-shaft with the feed-roller shaft through said parallel shafts, arranged and operating substantially as described.

295,948. LEATHER DRYING AND PRESSING MACHINE. WM. ARTHUR SAWYER, Derbyport, Mass. Filed Mar. 23, 1883. (No model.)



Claim.—In a leather drying and pressing machine, the combination, with a pressing-roller and an elastic roller, of a roller consisting of a number of rings or disks, each adapted to operate independently of the others, and mounted between the pressure-roller and the elastic roller, and provided with retaining-rolls, substantially as and for the purposes set forth.

295,949. PAPER WALLET. ALFRED L. SEWELL, Evanston, Ill. Filed Jan. 12, 1884. (No model.)

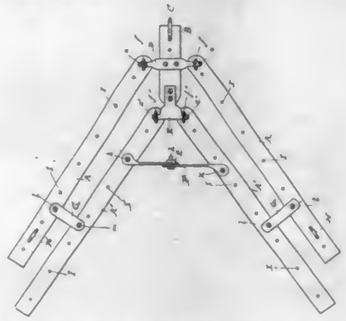


Claim.—1. The blank A of a paper wallet, having the flap *a* and the crimped ends *b*, substantially as specified.

2. The blank A, having the folded flap *a* and crimped ends *b*, in combination with one or more independent division-sections, constructed and inserted substantially as described.

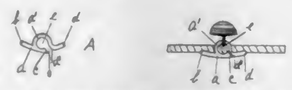
3. In a paper wallet, one or more pocket-divisions having its ends inserted within the wallet and attached to the crimped portions *b*, and the edges successively cut away at lower lines, so as to expose each of the separate pocket-divisions, substantially as set forth.

295,950. HARROW. HUGH M. SHERWOOD, Linton, Ind. Filed Oct. 11, 1883. (No model.)



Claim.—In a harrow, the draft-beam B, provided with the plate D, having curved hooks *e*, and the plate E, approximately of T shape, having hooks *e'*, in combination with eyebolts *f f'*, and beams A A', connected to each other by the pivoted plates G and the adjustable and pivoted plates F, having perforations *g* and bolt *h*, adapted to swing on a line with the axis of said beams, substantially as described, and for the purposes set forth.

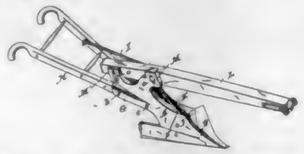
295,951. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Jan. 23, 1884. (No model.)



Claim.—1. The herein-described button-fastener A, consisting of the curved arm *a*, and double-curved tongue *a'*, arranged and adapted for use substantially as described.

2. The herein-described button-fastener A, consisting of the curved arm *a*, rounded at one end and angled at the other, from the cut edge of which extends the double-curved tongue *a'*, cut to a uniform width its entire length, and adapted for use substantially as shown and described.

295,952. PLOW. EDWIN D. STARKE, Richmond, Va. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a plow, the combination of the standard, slotted for the passage of a bolt and provided with transverse ratchets at both the front and rear portions of its upper end, and the vertically-adjustable ratchet-plates adapted to engage with the front and rear ratchets of the standard, substantially as and for the purpose set forth.

2. In a plow, the combination of the standard, having at both the front and rear portions of its upper and grooved ways slotted for the passage of a bolt and provided with transverse ratchet-teeth, the flanged ratchet-plates fitting in said grooved ways and vertically adjustable therein, the flange of one plate fitting above and the flange of the other beneath the beam, and bolts for securing the parts together, substantially as and for the purpose set forth.

295,953. CORN-PLANTER. GEORGE WALTER TARBELL, Sheffield, Vt. Filed Dec. 6, 1883. (No model.)

Claim.—1. In a corn or seed planter, the combination, with a supporting-frame, of an axle mounted in bearings of said frame, wheels loosely mounted on the ends of said axle, and having gear-teeth arranged on their inner faces, adapted to mesh with gear-wheels secured upon the axle, substantially as set forth.

2. In a corn or other planter, the combination, with a supporting-frame, of an axle mounted in bearings of said frame, wheels loosely mounted on the ends of said axle, and having gear-teeth arranged on their inner faces, adapted to mesh with gear-wheels mounted upon said axle, the seed-box having suitable feed-spouts, slides, or cut-offs arranged between said box and spouts, plates connecting said slides with the axle, which is recessed to form an eccentric portion, whereby the corn or seed is dropped intermittingly, substantially as set forth.

295,954. IMPLEMENT FOR ATTACHING BUTTONS. JAMES F. THAYER, Providence, R. I. Filed Jan. 23, 1884. (No model.)

Brief.—The button and fastener are automatically released when the jaws are closed and before the prong of the fastener is clinched by the die.

Claim.—1. In an implement for attaching buttons to fabric, the member A, provided with a button-holding device and curved bent pin *m'*, in combination with the member B, provided with the spring-lever *m*, arranged and adapted for use substantially as described.

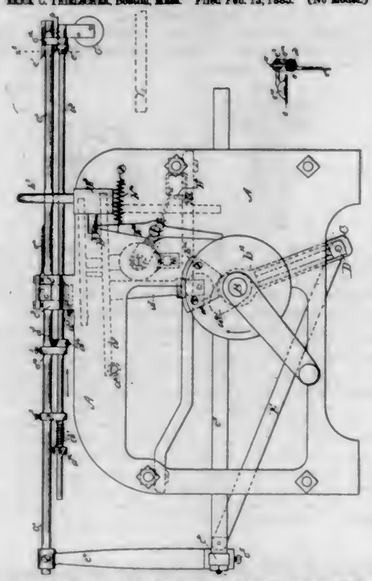
2. In an implement for attaching buttons to fabric, the member B, provided with a tack-holding device and cam-lever *z*, in combination with the member A, provided with the plate *d* and die *b*, arranged and adapted for use substantially as described.

3. In an implement for attaching buttons to fabric, the herein-described button-holding device D, consisting of the plate *d*, having slot *a'*, pin *c'*, and forked spring *c*, in combination with the slotted cam-lever *z*, arranged and adapted for use substantially as described.

4. In an implement for attaching buttons to fabric, the herein-described tack-holding device, consisting of the spring-lever *m*, having recesses *p* and *o*, in combination with the curved and bent pin *m'*, arranged and adapted for use substantially as described.

5. The herein-described button-attaching implement, consisting of member A, having die *b*, button-holding device D, and bent pin *m'*, and the member B, provided with tack-holding device *m*, indentation *v*, and cam-lever *z*, the whole combined and arranged substantially as shown, and for the purpose set forth.

295,955. APPARATUS FOR FEEDING SHEETS OF PAPER. FREDERICK C. THIELSCHER, Boston, Mass. Filed Feb. 13, 1883. (No model.)



Claim.—1. In a paper-feeding machine, the bed *a*, to support sheets of paper in a pile, the plate a^2, by which it is carried, and means, substantially as described, to lift the said plate and bed, combined with the suction-tubes to pick up and hold the sheets, one by one, from the pile, the two pairs of nippers arranged at opposite sides of the bed, means, as specified, to actuate said nippers to engage the side edges of the lifted sheet held by the suction-tube, and means, as set forth, to reciprocate said nippers and their actuating devices to convey such sheet to the place of deposit and return for another sheet, substantially as shown and described.

2. The nipper member *c* and the slide-rod and its attached hangers, combined with the rocking rod and its connected nipper member *c'*, substantially as described.

3. The nipper member *c*, its slide-rod, the attached hangers, the rod *d*, supported in said hangers, and the nipper member *c'* on said rocking rod, combined with the pin or projection d^4 and a stationary incline with which in the reciprocation of the slide-rod the projection comes in contact to rock the rod *d* to open the nippers, substantially as described.

4. The nipper member *c*, its slide-rod, the attached hangers, the rod *d*, supported in said hangers, and the nipper member *c'* on said rocking rod, combined with the pin or projection d^4, a stationary incline with which in the reciprocation of the slide-rod the projection comes in contact to rock the rod *d* to open the nippers, and the spring *d'*, connecting the rod *d* and one of the hangers, to automatically and normally close the nippers, substantially as described.

5. The combination, substantially as shown and described, of the rod c^3, rocking rod *d*, and nipper members *c c'*, with the notched collar *e* and latch *e'*.

6. The combination, substantially as shown and described, of the sliding rod c^3, the connected rocking rod *d*, and the nipper members *c c'*, with the notched collar *e*, latch *e'*, and latch-opener e^3, as and for the purpose described.

7. Two pairs of rods, c^3 and *d*, and connected nipper members *c c'*, combined with adjustable guides in which the said rods are reciprocated, to permit the nippers to be adjusted to adapt them to sheets of paper of different widths, substantially as described.

8. The slide-rods c^3 and *d* and nippers *c c'*, combined with a reciprocating carriage for moving the said rods, and with means, substantially as described, for rocking the rod *d* to open and close the said nippers, as set forth.

9. The bed *a*, the plate a^2, by which it is carried, and means, substantially as described, to lift the said plate and bed, combined with the suction-tubes and two pairs of nippers, *c c'*, to operate as set forth.

295,956. CAR-COUPLING. ISAAC H. TRABUE, Louisville, Ky. Filed July 3, 1883. (No model.)

295,956.

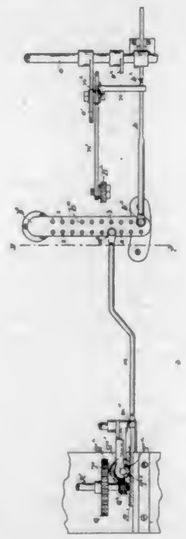


Claim.—1. In a car-coupler, the combination of a head having pin-holes and a bolt-hole, a pin, and a catch suspended from said draw-head by a bolt passing through the bolt-hole in the draw-head.

2. In a car-coupler, the combination of a head having pin-holes and a bolt-hole provided with a recess, *c*, a pin, and a catch suspended from said draw-head by a bolt passing through the bolt-hole in the draw-head, substantially as described.

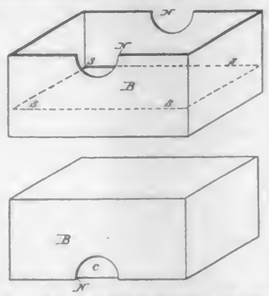
295,957. SELF-OPERATING JACK OR MULE. WILLIAM F. TURNBULL, North Andover, Mass., assignor to the Davis & Furbur Machine Company, same place. Filed Mar. 30, 1883. (No model.)

Brief.—The rod by which the carriage is first run in to allow for the twist on the yarn is divided near the middle, and the severed ends adjustably secured to a radius-bar pivoted to the floor, whereby the speed (as well as the distance) at which said initial run is effected is regulated to suit different numbers of yarn.



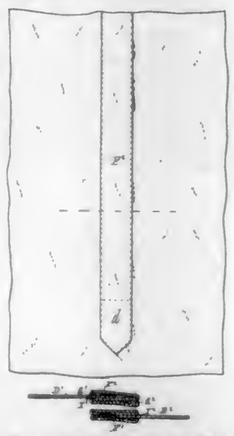
Claim.—The radius-bar and the part *b*, adapted to engage a stud made movable with the carriage, combined with the part *a*, connected with the said radius-bar, and with suitable means to draw the said part *a* toward the head-stock, the point of connection of the radius-bar with one or both of the said parts being adjustable, whereby the speed of the inward movement of the carriage while twisting the yarn may be regulated according to the size of the yarn, substantially as described.

295,958. CUFF-BOX. ISAAC P. TURNER, Troy, assignor to James K. P. Pine, Lansingburg, N. Y. Filed Aug. 26, 1881. (No model.)



Claim.—As a new article of manufacture, a cuff-box composed of the cover B, having the side recesses, N, and stop S at a distance from its open bottom equal to the depth of the tray, and the tray C, of less vertical depth than the cover, the tray being adapted to be inserted in the cover inverted for displaying the cuffs placed therein above the edge of the tray, as shown and described.

295,959. STAYING-PIECE FOR GARMENT SLIT-OPENINGS. ISAAC P. TURNER, Troy, N. Y., assignor to George W. Pine, same place. Filed Nov. 23, 1883. (No model.)



Claim.—1. In a staying-piece for garment slit-openings, the combination of the rectilinear plackets or pieces F' and F², each made with two equidistantly-arranged longitudinal fold-lines and with oppositely turned-in side edges, the vertically-separated stay-flaps *i*, cut in each of said plackets or pieces, the transverse seam S', centrally uniting said stay-flaps when laid one over the other and folded transversely, a crotch-fold made in said united stay-flaps on the line of their transverse union, and the stitching S' and S², separately uniting oppositely at one side the coincident edges of each of said plackets or pieces after each has on its longitudinal fold-lines been folded back on itself to include the edges of the transversely-united stay-flaps, as shown and described.

2. The combination, with a garment slit-opening, of the rectilinear plackets or pieces F' F², each cut to have the blank-form stay-flaps *i*, the transverse seam S', centrally uniting said flaps when laid one over the other, folded over and down to be doubled transversely, a crotch-fold made in said united stay-flaps transversely and in the line of their sewed union, and the said plackets or pieces folded longitudinally to include and cover the edges of said united stay-flaps, and each attach to one of the sides of the garment slit-opening, as herein shown and described.

295,960. NUT AND BOLT LOCK. CHAS. VAN DUREN, New Albany, Ind., assignor of one-half to William L. Breyfogle, Louisville, Ky. Filed Nov. 26, 1883. (No model.)



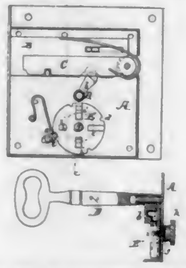
Claim.—1. A nut or bolt lock consisting of a piece, plate, or ring of metal having a plurality of lever members partly severed and turned from its body at an angle or incline to its plane, and edged or toothed and adapted by a blow or force to be driven into the substance of the bolt or rod, substantially as and for the purpose described.

2. In a nut or bolt lock, a plate or ring of metal adapted to be placed around a bolt or rod, and having a plurality of toothed lever members, partly severed from its substance, projecting into its opening for the bolt or rod, and turned out from the body of the plate or ring at an angle or incline to its plane, and adapted to be forced home into the substance of the rod or bolt, substantially as and for the purpose described.

3. The combination of the ring, plate, or piece of metal having the bolt or rod opening, the plurality of toothed lever members partly severed therefrom, and turned out from and at an angle or incline to its body to engage a bolt or rod, and the partly-severed edge pieces, arranged to be turned down upon the sides of a nut to lock said nut after it has been run down from the plate in tightening up a loosened fastening or joint, substantially as shown and described.

295,961. LOCK. MAX VOIGT, New York, N. Y., assignor of one-half to Robert G. Schmidt, same place. Filed Feb. 2, 1884. (Model.)

Brief.—A movable plate having a series of ward projections for guiding the bit of the key to the tumblers is attached to the interior of a lock-case, the set of projections for one key being different from the set for other keys with which the same lock may be opened. The said plate has notches or apertures at or near its edge, into one of which notches enters a spring-bolt, of which the handle extends through the lock-case. The axle or pin of said plate also extends through the lock-case and has a button or handle at its outer end.



Claim.—1. In a lock, the combination of its case, tumblers, and bolt with the movable plate E, having series of projections *i i*, by which the lock, upon moving said plate, can be fitted for different keys, substantially as specified.

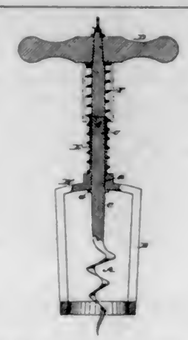
2. The combination of the lock-case A with the movable plate E, having series of projections *i* for different keys, and having notches or apertures *d*, with the holding-bolt *e*, and means for moving the same, substantially as specified.

295,962. CORKSCREW. ALOM J. WALTER, Philadelphia, Pa. Filed Dec. 20, 1883. (No model.)

Claim.—1. A cork-extractor having a screw, a handle and a yoke or frame, and a spring bearing against said frame and handle, whereby, as the screw is driven into the cork, said spring is compressed and exerts its resultant increased pressure to cause the automatic withdrawal of the cork, as stated.

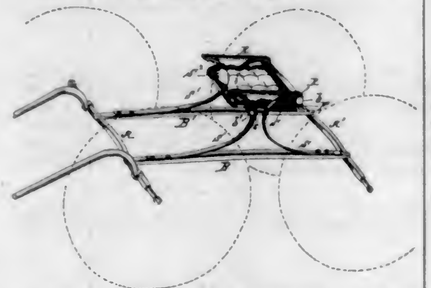
2. A frame, screw, spring, and handle, combined and operating as described, forming an improvement in cork-extractors for automatically withdrawing corks, substantially in the manner and for the purpose set forth.

295,962.



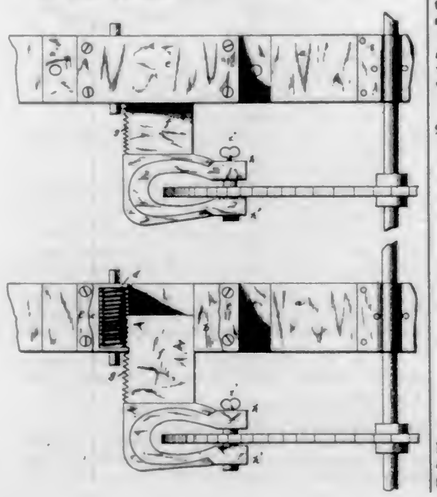
3. The screw, handle, and spring, in combination with the yoke or frame having an upwardly-projecting tube, E, substantially as and for the purpose described.

295,963. SPRING-SEAT FOR VEHICLES. LEWIS WARREN, McGrawville, N. Y. Filed Dec. 15, 1883. (No model.)



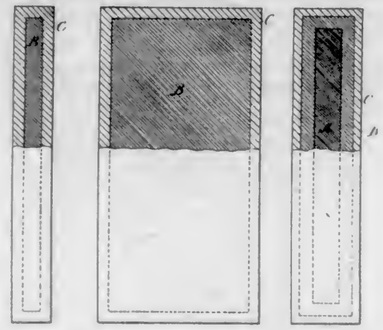
Claim.—The combination, with the side bars of a vehicle and the side bars of a seat thereof, of the curved wooden springs S S', their lower ends being secured to the side bars, arranged in reverse directions in the line of travel, and their upper ends being secured to the side bars, *b* and *b'*, of seat S², as and for the purposes specified.

295,964. SAW-GUIDE. WARREN WILLIAMS, Lumberton, N. C. Filed Feb. 7, 1884. (No model.)



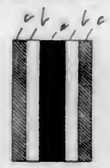
Claim.—In a saw-guide, the combination, with the main plate formed with suitable bearings, the screw *d*, journaled in the bearings, the reversible rack-stem *f*, working between shoulders of the main plate, and carrying the guide-jaws, said screw engaging with the teeth of the rack-stem, for the purpose set forth.

295,965. COMBINING OF STEELS. JOHN J. WILLIAMSON, Boston, Mass. Filed July 22, 1882. (No model.)



Claim.—As a process for the manufacture of steel shapes, the two following manipulations: first manipulation, the formation of the ingot by casting from converters or hearths of two or more different qualities of steel in a manner that shall leave the steel of high and hard quality enveloped in the steel of low or soft quality; second manipulation, forging, rolling, or working this composite ingot at the welding-heat of the mild steel, substantially as and for the purposes described.

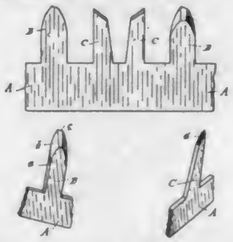
295,966. MANUFACTURE OF COMPOUND-ELECTRIC WIRE. JOHN J. WILLIAMSON, Boston, Mass. Filed July 23, 1883. (No model.)



Claim.—1. The improved electrical conductor herein described, consisting of a combined iron and steel core, of which steel is the central thread, with a copper envelope, substantially as and for the purposes described.

2. The improved electrical conductor herein described, consisting of a combined iron and steel core, of which steel is the center thread, plated with zinc, tin, or other proper material, and provided with a copper envelope, substantially as and for the purposes described.

295,967. SAW. JOHN D. ABBOTT, Reading, Mich., assignor of one-third to Andrew M. R. Fitzsimmons and J. Wellington Chapman, both of same place. Filed Feb. 2, 1884. (No model.)



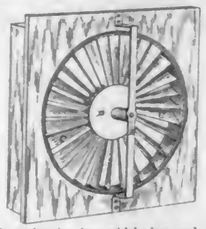
Claim.—In a crescent-saw, the teeth formed with parallel sides leading to curved cutting-edges on either side, and approaching each other toward the point, which latter is a chisel-point formed at an obtuse angle to the parallel edges of said teeth, substantially as described.

295,968. COFFEE SUBSTITUTE AND PROCESS OF PREPARING THE SAME. CLARK ALVORD, Syracuse, N. Y. Filed July 26, 1883. (Specimens.)

Claim.—1. The dry roasted mixture composed of the extract of willow-bark or tulip-tree bark with corn, barley, wheat, rye, peas, or other amylaceous substance, as above set forth.

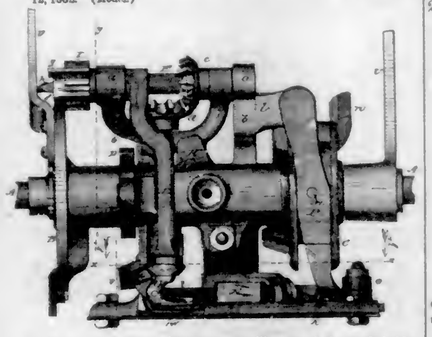
2. The process used for effecting such combination—viz., producing the extract by boiling the bark in water, and then saturating the corn, barley, wheat, rye, peas, or other amylaceous substance by boiling them in such extract until they are well cooked, then removing and drying the same and roasting it in a coffee-roaster until it is brown as roasted coffee, as above set forth.

295,969. AIR AND DUST SEPARATOR. JOHN P. ANDERSON, San Francisco, Cal., assignor of one-half to Spivalo & Forman, same place. Filed Jan. 7, 1884. (No model.)



Claim.—A dust-chamber into which dust and air are forced by a blast apparatus, and a chimney, B, closed at the top, and having a circular opening in one side, in combination with a fan having inclined vanes, and constructed to rotate in the said opening, substantially as herein described.

295,970. GRAIN-BINDER. JOHN F. APPLEBY, Minneapolis, Minn., assignor, by direct and mesne assignments, to the Minneapolis Harvester Works, of Minnesota, and James F. Gordon, Rochester, N. Y. Filed Aug. 12, 1882. (Model.)



Claim.—A knotter which moves bodily toward the cord-holder during its revolution, (and the tying operation,) substantially as set forth.

295,971. CAMP-CHAIR AND COT. WILLIAM H. BAKEWELL, Allegheny City, Pa. Filed Aug. 27, 1883. (No model.)

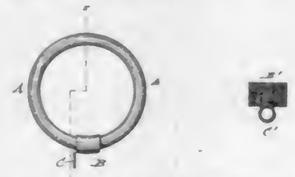


Claim.—1. The combination, in a combined convertible chair and cot, of the rear frame composed of the side bars a' a^2 and cross-bars a^3, the side bars being provided with eyes g g' and hooks h h' at the ends and crossing points of the frame, the front frame composed of the side bars b' b^2 and cross-bars b^3, the side bars being provided with the pins i' i and i^2 i^3, to engage with the hooks and eyes of the rear frame, and an extensible sacking which connects the front and rear frames, substantially as and for the purposes specified.

2. In a combined convertible chair and cot, the combination of two cross-frames adjustable on each other, an extensible sacking which connects the two cross-frames, and a cross-bar whose length exceeds the distance between the side bars of the rear cross-frame, said cross-bar secured to the sacking at or near the front third thereof, whereby the cross-bar may be made to engage with the rear cross-frame, or may be disengaged therefrom, substantially as and for the purposes specified.

3. In combination with a folding chair, an arm pivoted or hinged at one end to the frame of the chair, a support pivoted or hinged to the arm, a sliding ring to which the arm-support is pivoted or hinged, and a locking device for holding the sliding ring, substantially as and for the purposes specified.

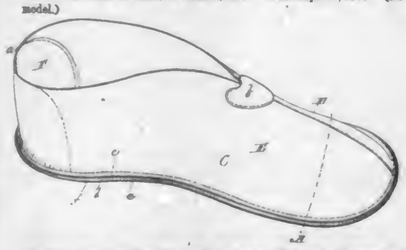
295,972. CURTAIN-POLE RING. JULIUS BERBECKER, New York, N. Y. Filed Feb. 13, 1884. (No model.)



Claim.—1. A curtain-pole ring consisting of a ring-shaped tube and of a clamping-sleeve applied to the abutting ends of the tube, said clamping-sleeve being provided with an eye extending at right angles therefrom, and being made integral therewith, substantially as set forth.

2. A clamping-sleeve for curtain-pole rings made from a blank, having an eye made integral therewith, and bent outwardly at right angles to the sleeve, substantially as described.

295,973. BUCK SLIPPER. JOHN C. BECKFORD, Berlin, assignor to himself, and Edward M. Bliss, Worcester, Mass. Filed Sept. 17, 1883. (No model.)



Claim.—The combination, with the upper of a buck slipper, of a cork sole, *f*, sheep-skin bottom *e*, and an inner cloth covering, *d*, substantially as shown and described, and for the purpose set forth.

295,974. FLIER FOR SPINNING-MACHINES. LEDDRAN BIDGE, Paterson, N. J., assignor of one-half to William T. Ryle, same place. Filed Apr. 17, 1883. (No model.)

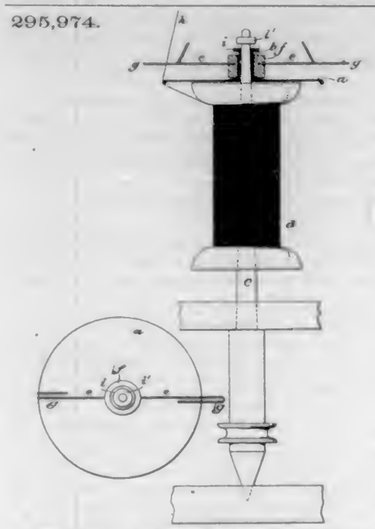
Brief.—The arms of the flier are provided with elongated loops or eyes, formed by bending the ends of the wires composing the arms backward upon themselves, and then upward at an angle. The hub to which the flier is attached rotates upon a sleeve adapted to be slipped upon the upper end of a spindle, and to the lower end of which is secured an eccentric plate. The thread passes from the bobbin upward around the edge of the plate and through the loop or eye of one of the flier-arms, being caused by the eccentric plate, as it passes around the same in unwinding from the bobbin, to travel over different portions of the loop or eye. By this means the loop is prevented from becoming notched or worn in one spot.

Claim.—1. The combination, with a flier, of an eccentric plate for causing the thread to have a traversing movement, substantially as and for the purposes set forth.

2. The eccentric plate *a*, in combination with the loose button *f*, provided with the flier-arms *e*, substantially as set forth.

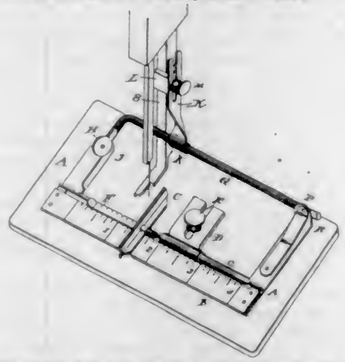
3. The flier-arms *e*, having the elongated loops *g*, in combination with means, substantially as described, for changing the point of contact of the thread with the flier, substantially as and for the purposes set forth.

295,974.



4. The eccentric plate *a*, having the hollow sleeve *b*, in combination with the flier-button *f*, held loosely upon the sleeve, substantially as and for the purposes set forth.

295,975. TUCK-CREASER FOR SEWING-MACHINES. EDWARD BOSTOCK, New York, N. Y. Filed July 14, 1883. (Model.)



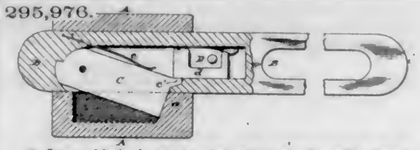
Claim.—1. The main plate A, having two lateral arms, one of which bears the creasing-blade J, and the creasing-arm G, pivoted at its rear end to the other arm of plate A, and bearing at its front end the creasing-roller H, in combination with the clamp D, provided with the slot, as shown, adapted to clamp the plate A to the bed-plate of a sewing-machine in such a manner that the said plate can be adjusted longitudinally beneath the clamp, and means for connecting the creaser-arm to the presser-bar, substantially as shown and described.

2. The main plate A, having two lateral arms, one of which bears the creasing-blade J, and the creasing-arm G, pivoted at its rear end to the other arm of plate A and bearing at its front end the creasing-roller H, in combination with the clamp D, slotted as shown, adapted to clamp the plate A to the bed-plate of a sewing-machine in such a manner that said plate can be longitudinally adjusted beneath the clamp, and the slotted bar K and set-screw M, substantially as set forth.

295,976. SEAL-LOCK. JOHN W. BURD, Jr., St. Louis, Mo. Filed July 30, 1883. (No model.)

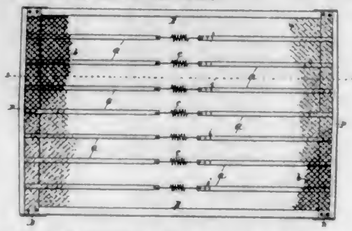
Claim.—1. In a seal-lock, the combination, with the latching mechanism A *a* B *b* C, of spring-plate E, having opening *d'*, seal-card F, and front plate, A', all constructed and arranged substantially as herein described, and for the purpose set forth.

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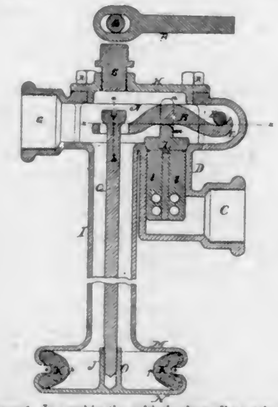
2. In a seal-lock, the combination, with a suitable sealing device, of the casing A, abutment-shoulder *a*, pivoted spring-latch C, stop-lug *c'*, and lock-bar B, recessed out to receive the spring-latch C, as described, and for the purpose set forth.

295,977. MATTRESS-SUPPORT. THEODORE BURDICK, Kalamazoo, Mich. Filed Sept. 4, 1883. (No model.)



Claim.—The combination, with the supporting-frame and a wire mattress, of the attachable supports, consisting of the metal straps, and the springs and tension means interposed between the inner ends of said straps, substantially as described, for the objects set forth.

295,978. PRESSURE-REGULATOR. WILLIAM BURNETT, New York, assignor of one-half to James Reilly, Brooklyn, N. Y. Filed July 12, 1883. (No model.)

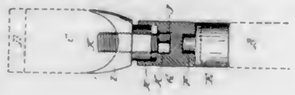


Claim.—1. In combination with the depending casing D, the pressure-reducing valve I, having a vertical movement in the casing, the lever B in chamber A, the depending connecting-pipe I, with pressure-chamber J, and the screw-rod Q, as and for the purpose described.

2. The pressure-chamber J, having top and bottom plates of metal and a circumferential wall of elastic material, the latter serving the double purpose of a packing and a spring.

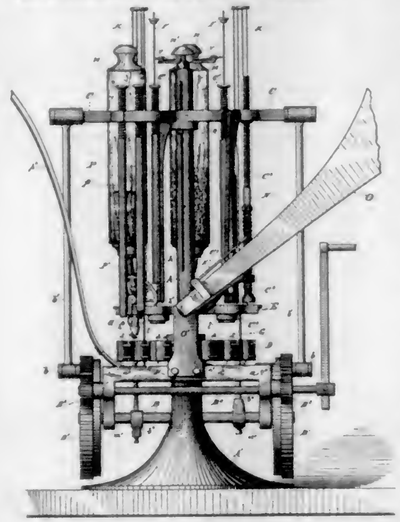
3. In combination with the top and bottom plates of the pressure-chamber, the V-shaped annular wall of rubber K, substantially as and for the purpose described.

295,979. TIRE-TIGHTENER. WILLIAM CANFIELD, Detroit, Mich. Filed Aug. 27, 1883. (No model.)



Claim.—The combination of the cap E, intermediate cap, G, clip I, and screw K, the parts being constructed and operating substantially as and for the purposes described.

295,980. CARTRIDGE-LOADING MACHINE. FRANKLIN L. CHAMBERLIN, Cleveland, Ohio. Filed Apr. 17, 1883. (No model.)



Claim.—1. In a machine for filling cartridges, the combination, with a shell-feeder and an intermittently-rotating device carrying shell-holders, of a powder-container, a wad-feeder, and a shot-feeder, and means for automatically actuating the same, whereby the shells are fed and filled, substantially as set forth.

2. In a machine for filling cartridges, the combination, with the main structure thereof, and a cross-head arranged to reciprocate upon said structure, of a rotary crimper-rod carried upon said cross-head, and provided at its lower end with devices for automatically embracing the sides of the shell, substantially as and for the purposes set forth.

3. In a machine for filling cartridges, the combination, with the main structure thereof, of a reciprocating cross-head and a yielding marker adapted to be actuated thereby, and means for holding the shell during the operation of marking, substantially as shown and described.

4. In a machine for filling cartridges, the combination of the main structure thereof with the reciprocating cross-head, a punch adapted to be actuated thereby, and a support for the shell, the said punch being adapted to enter the shell and force the prime therefrom, substantially as shown and described.

5. In a machine for filling cartridges, the combination, with the main structure thereof, an actuating cross-head or equivalent device, and means for operating the same, of the shell-feeder, the punch adapted to enter the shell and remove the prime, the prime-set adapted to enter the shell, the automatic prime-feed tube, the yielding seat to receive the shell, whereby the prime is fixed thereto, the automatically-discharging powder-container, the wad-feeder, the automatically-discharging shot-container, the crimper mechanism adapted to act upon the periphery of the shell to crimp the same, the wad-marking device, and devices for discharging the completed cartridge, the said several devices here named being arranged and adapted to be automatically operated in proper order, substantially as shown and described.

6. In a machine for filling cartridges, the combination, with the main structure, a reciprocating cross-head or equivalent device mounted thereon, and the connections for actuating the same, of a rammer, adjustably connected to said cross-head, and arranged to adjust the pressure and maintain the uniformity of the same, substantially as set forth.

7. In a machine for filling cartridges, the combination, with the main structure thereof and a reciprocating cross-head or equivalent device, of the adjustable rammer, provided with the slip-joint and springs, whereby any excess of pressure upon the parts may be relieved, substantially as and for the purpose set forth.

8. In a cartridge-filling machine, wad-holders the cases of which are provided with elastic parts adapted to expand or open sufficiently to receive wads, singly or in quantities, thrust in at the sides of the holder, substantially as and for the purpose shown and described.

9. In a cartridge-filling machine, wad-holders adapted to receive wads in quantities through the sides by means of the elasticity of the parts, and so constructed and arranged that the wads in the holder are always exposed to the view of the operator, substantially as described, and for the purpose specified.

10. In a cartridge-loading machine provided with wad-holders, adjustable passage-ways through which wads may be pushed from the holders in desired quantities, substantially as and for the purpose set forth.

11. In wad-holders for a cartridge-loading machine, provided with adjustable passage-ways, through which wads are pushed from the wad-holder, movable collars, gates, or equivalent devices adapted to adjust the said passage-way to a desired size, substantially as described, and for the purpose set forth.

12. In a cartridge-filling machine, the combination, with the wad-holders and the wad-rammers, of the yielding fingers for holding the wads in position to be operated upon by the rammers, and the wad-pushing slide provided with an extension for operating beneath the wad-holders, substantially as described.

13. In a cartridge-filling machine, the combination, with the yielding wad-starting tube, of the wad-rammer, whereby the wad is accurately conveyed to and forced into the shell, substantially as described.

14. In a cartridge-filling machine, the combination of the wad-holder with the slide provided with an extension constituting a wad-pusher, and mechanism for operating the same, substantially as set forth.

15. In a cartridge-filling machine, the combination, with the wad-pushers, of the slotted levers connected therewith, the spindles to which said levers are attached, and the levers mounted upon said spindles and arranged to be engaged by the passing cartridge-shells contained in the holders, whereby the slotted levers are actuated to move the slides or pushers when the shells are in the holders contiguous to the respective levers, substantially as described, and for the purpose specified.

16. In a cartridge-filling machine provided with gates or valves for measuring and discharging powder and shot, the secondary chamber provided with elastic filling, substantially as shown and described.

17. In a machine for filling cartridges, the combination, with the shot or powder container and the means for automatically opening and closing the same, of the lever secured to the said container and adapted to be actuated by the shell to be filled, whereby the devices which open the cut-off valve in the container are made to engage each other and the valve opened, substantially as described.

18. In a machine for filling cartridges, the combination, with the main structure thereof, of the intermittently-rotating disk mounted upon a suitable column, and adapted to support the holders and to receive the said motion through the action of a rotating shaft provided with arms or levers which engage recesses or holes in the under side of the said disk, substantially as described.

19. In a machine for filling cartridges, the combination, with the intermittently-rotating disk provided with holes or notches on the under side thereof, of the rotating shaft provided with radial levers or arms, and the cam for actuating and stopping the said disk, substantially as shown and described.

20. In a machine for filling cartridges, the combination, with the main structure thereof, of the spider mounted upon the central column of the main structure, and provided with radial arms or levers arranged to support the powder and shot discharging devices, and the wad-pushers, substantially as shown and described.

21. In a machine for filling cartridges, the combination, with the main structure thereof, the hollow shaft, the bolt therein, and the nut connecting the two together, of the spider and the device for connecting the same with the bolt, substantially as shown and described.

22. In a machine for filling cartridges, the combination, with the cartridge-carrier provided with a cut-off arranged to receive, retain, and discharge the cartridges one at a time, of a cartridge-guiding tube arranged to receive the cartridges from the carrier and to deliver them to the cartridge-holders, substantially as shown and described.

23. In a machine for filling cartridges, the combination, with the cartridge-carrier provided with a cut-off and means for actuating the cut-off, of a cartridge-guiding tube adapted to receive them from the carrier and to deliver them to the holders, substantially as shown and described.

24. In a machine for filling cartridges, the combination of the inclined cartridge-carrier with the transverse rock-shaft, having arms extending therefrom and the cut-off device secured thereto, and means for automatically actuating the same, substantially as described.

25. In a machine for filling cartridges, the combination of the slotted actuating-rod, the rock-shaft, its extending arms, and the cut-off device secured thereto, with the two-part guiding-tube adapted to engage one of said arms, and the intermittently-rotating disk provided with shell-holders, the said devices being constructed and arranged so as to co-operate and properly conduct, discharge, and receive the shells, substantially as shown and described.

26. In a cartridge-filling machine, the combination, with the main structure and a reciprocating cross-head mounted thereon, of the crimper-rod provided with the spiral bead, the thimble E^2, situated above the bead, and a coiled spring depending from the thimble and arranged to engage said bead, substantially as set forth.

27. In a cartridge-filling machine, the combination, with the main structure and a reciprocating cross-head mounted thereon, of the crimper-spindle provided with a slip-joint, a spiral spring attached thereto, and jam-nuts arranged to bear upon said spring so as to adjust its tension, substantially as described.

28. In a cartridge-filling machine, the combination, with the main structure and a reciprocating cross-head mounted thereon, of a crimping device provided at one end with a recess of the proper configuration to crimp the cartridge-shell, and at its opposite ends with quick threads, which latter engage with similar threads in the cross-head, substantially as set forth.

29. In a cartridge-filling machine, the combination of the main supporting structure, a crimping device having a quick thread upon its spindle, a thimble, E^2, a worm-bead upon said spindle below the thimble, a spiral spring depending from the thimble and engaging said bead, and a reciprocating cross-head or equivalent device provided with quick threads adapted to register with the quick threads in the crimper-spindle, substantially as set forth.

30. In a cartridge-filling machine, the combination, with the table provided with the orifice a^4 and the incline a', of the disk D, provided with the holders d, substantially as shown and described.

31. In a cartridge-filling machine, the combination, with the intermittently-rotating disk, the cartridge-holders, and the crimping device, of the pivoted toothed lever and the fixed dog, whereby the shell is prevented from revolving during the operation of crimping, substantially as shown and described.

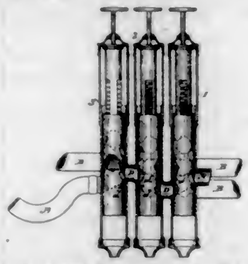
32. In a cartridge-filling machine, the combination, with the intermittently-rotating disk, devices for operating the same, and cartridge-holders attached to said disk, of the pivoted toothed lever and the fixed dog, said lever and dog being arranged to receive the cartridge-shell between them and to prevent said shell from revolving during the operation of crimping, substantially as shown and described.

33. In a cartridge-filling machine, the combination, with the main structure, of a rotating disk mounted upon said structure and provided with a series of recesses, a pivoted spring-actuated lever arranged to engage by its free end with said recesses, and devices for throwing said lever out of engagement with said recesses, for the purpose set forth.

34. In a machine for filling cartridges, the combination, with the main structure and a table mounted thereon and provided with an aperture, of a reciprocating cross-head and a punch attached thereto, arranged to enter the cartridge-shell and to force the priming therefrom through the aperture in the table, substantially as shown and described.

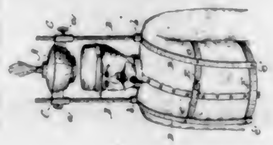
35. In a cartridge-filling machine, the table provided with a recess, an anvil located in said recess, a feeding device for conducting the primings to the anvil, and a yielding bearing for said feeder, in combination with the reciprocating primer-setting punch, arranged to enter the cartridge-shells and affix the primings thereto, substantially as shown and described.

295,981. CORNET. CHARLES G. CONN, Elkhart, Ind. Filed July 14 1883. (No model.)

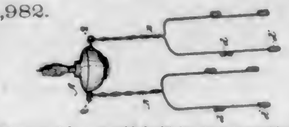


Claim.—In a cornet, the connecting-pipes D between the valves, curved or bent in the plane of the valves, as and for the purposes set forth.

295,982. BAND LAMP AND TORCH SUPPORT. JAS. S. CONWELL, Evanston, Ill. Filed Nov. 28, 1883. (No model.)



295,982.



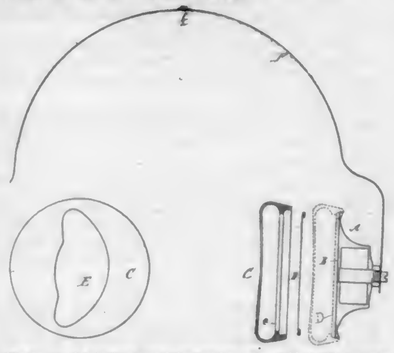
Claim.—1. A lamp provided with brackets, in combination with supporting-rods, shoulder-straps, and means for securing the latter in position, substantially as specified.

2. A band lamp or torch support comprising shoulder-straps and lamp-supporting rods formed of a single piece of material, substantially as specified.

3. The supporting-rods B and shoulder-straps D, having loops d, formed of a single piece of material, substantially as specified.

4. The combination of the lamp A, reflector B', rods B, shoulder-straps D, and retaining strap or straps E and F, substantially as shown and described.

295,983. TELEPHONE. FRANK B. COOK and FRANK F. GRAVES, Toledo, Ohio. Filed July 14, 1883. (No model.)



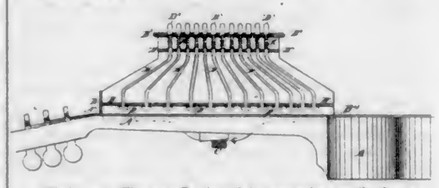
Claim.—1. A telephone receiving implement provided with a cover in front of the diaphragm, adapted to receive and embrace the ear of the operator, substantially as described.

2. In combination with a telephone receiving implement provided with a cover adapted to receive and embrace the ear of the operator, a supplemental diaphragm adapted to prevent said ear from coming in contact with the acting diaphragm, substantially as described.

3. In combination with a telephone receiving implement, a cap adapted to be detachably secured to such implement, and provided in its outer end with an opening adapted to embrace the ear of the operator, substantially as and for the purposes set forth.

4. In combination with a telephone receiving device provided with a supplemental diaphragm, and the cap having an opening to receive and embrace the ear, as herein described, a spring secured to such receiver, adapted to support the same upon the head, substantially as set forth.

295,984. GUITAR. JAMES C. COOKE, Orange, N. J. Filed Apr. 17, 1883. (No model.)



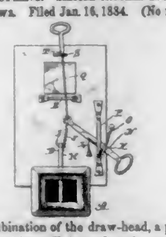
Claim.—1. The case B, adapted for convenient application to a guitar or analogous stringed instrument, knobs or keys D^2, arranged near each other, the depressors D, arranged along the case in the required positions to act on the several strings of the instrument, and divergent connecting means D', in combination with each other and with means, C G, for engaging firmly with the instrument, all substantially as herein specified.

2. The keys D^2, arranged close together, extensions D', and string-depressors D, arranged wide apart, in combination with each other and with the springs E, plates or guiding means B' B^2 B^3, and with a stringed

musical instrument, A A', as herein specified.

3. The detachable case B, having a lower plate or guide, B', and second plate or guide, B^2, for the depressor-connections D', and a top plate, B^3, keys D^2, and springs E, in combination with each other and with the cross-bar or fastening means C, pivot c, and knob c', adapted to serve on a guitar or analogous stringed instrument, as herein specified.

295,985. CAR-COUPLING. SAMUEL CROCKER and STEPHEN CROCKER, Columbus Junction, Iowa. Filed Jan. 16, 1884. (No model.)



Claim.—1. The combination of the draw-head, a pivoted coupling-pin, the spring J, the slotted lever K, lever Q, and a means of supporting the lever in position, substantially as shown.

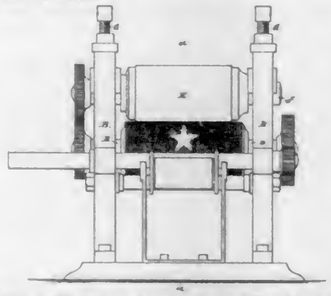
2. In a car-coupling, the combination of the draw-head, the pivoted coupling-pin, the spring, the frame P, the ratchet-bar O, which is pivoted upon the frame, and the lever K, which engages with the ratchet-bar, substantially as described.

3. The combination of the draw-head, the coupling-pin, a means of connection, the lever Q, provided with a shoulder, and a support for the shoulder to catch over, and thus hold the pin in a raised position, substantially as set forth.

4. The combination of the lever Q, a suitable means of connection at its lower end, and the pivoted coupling-pin, with a spiral support at its upper end for its shoulder T to catch upon, substantially as specified.

5. In a car-coupling, the combination of the frame P and the ratchet-bar O, which is pivoted thereon, the bar O being adapted to drop down out of the way when not needed to hold the lever K in position, substantially as shown and described.

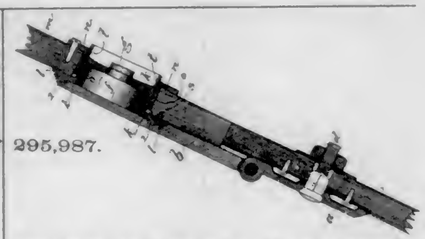
295,986. MANUFACTURE OF ORNAMENTAL METALLIC FOIL. HENRY SUYDAM CROOKE and LEWIS CROOKE, New York, N. Y. Filed July 15, 1880. (No model.)



Claim.—1. The method of ornamenting metallic foil by passing it between two rollers, one of which has all of its surface, except what corresponds with or is the counterpart of that to be produced burnished or bright on the surface of the foil, or the reverse, striated, grained, matted, or stippled, while those portions the counterpart of that to be produced burnished or bright on the surface of the foil are smooth, and the other of which is a counter-roller to press the foil in contact therewith, substantially as described.

2. The combination of a main roller having its surface the counterpart of that to appear burnished or bright on the tin-foil smooth, while that portion that is to appear dead or white on the tin-foil is grained, striated, matted, or stippled, with a counter-roller, substantially as described.

295,987. HASP-LOCK. GEORGE CROUCH, New York, N. Y. Filed Nov. 5, 1883. (No model.)



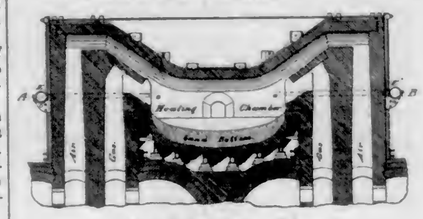
295,987.

Claim.—1. The combination, with the lock *f* and hasp *b*, having an annular recess around the lock, of the lock-cup *k*, flange *l*, and annular rib for entering the said annular recess, substantially as and for the purpose set forth.

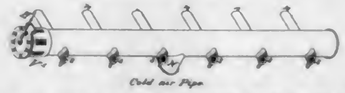
2. The combination, with the lock *f* and hasp *b*, having beveled edges, and an annular recess around the lock, of the lock-cup *k* and flange *l*, having a beveled edge, and the rib 2 upon the surface of the said flange to enter the recess in the hasp, substantially as set forth.

3. In combination with a hasp and circular lock-case, a lock-cap having an opening in the bottom for the locking-bolt to pass through, and a cylindrical extension behind such bottom for the reception of such bolt, and for preventing the contact of the same with the lining or contents of the trunk, substantially as specified.

295,988. METALLURGICAL GAS-FURNACE. WILLIAM F. DURFEE, Bridgeport, Conn., and THOMAS EGLESTON, New York, N. Y. Filed June 27 1882. Renewed Mar. 6, 1884. (No model.)



Vertical section on line C D.

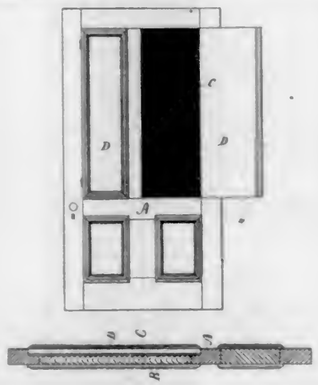


Claim.—1. In a metallurgical furnace having gas and air ducts communicating with the heating-chamber, the pipes E E', provided with nozzles N n n, for the purpose of introducing air, steam, or other vapor or gas to said furnace, substantially as described.

2. In a metallurgical furnace, the pipes E E', having valves V V', nozzles N n n, and spy-holes s s, substantially as and for the purpose described.

295,989. VENTILATING-DOOR. HENRY W. EASTMAN, Baltimore, Md. Filed Sept. 10, 1883. (No model.)

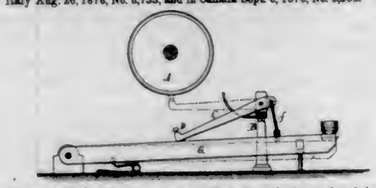
Brief.—A door having a slatted opening covered with a screen, and imperforate doors to close said opening.



Claim.—1. A ventilating-door having a slatted opening, and one or more imperforate doors adapted to close the said opening, substantially as specified.

2. A ventilating-door having a slatted opening covered with a screen, and one or more imperforate doors adapted to close the said opening, all combined substantially as specified.

295,990. TYPE-WRITER. THOMAS A. EDISON, Menlo Park, N. J. Filed Dec. 9, 1878. Renewed May 25, 1883. (Model.) Patented in England Oct. 29, 1878, No. 3,762; in France May 6, 1878, No. 112,719; in Belgium May 8, 1878, No. 39,502; in Austria Aug. 23, 1878, No. 26,935; in Italy Aug. 26, 1878, No. 8,733, and in Canada Sept. 6, 1878, No. 6,508.



Claim.—The method herein specified of producing printed impressions in duplicate, consisting in impressing upon paper types in succession, each of which has a surface of points, so as to perforate the paper, and then forcing ink through the perforations upon the sheet to be printed, substantially as set forth.

295,991. CIRCULAR-SAW MILL. CHAS. ESPLIN, Minneapolis, Minn. Filed Dec. 10, 1883. (No model.)

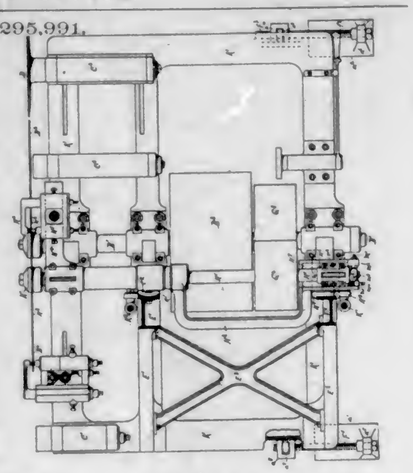
Claim.—1. In a circular-saw mill, the combination of the laterally-adjustable husk-frame A', supporting the saw or saws B^2 H^2, stationary bed-plates a' a', on which the said husk-frame is supported, and by which it is held in position, and means for laterally adjusting the said frame upon the said bed-plates, substantially as and for the purpose herein specified.

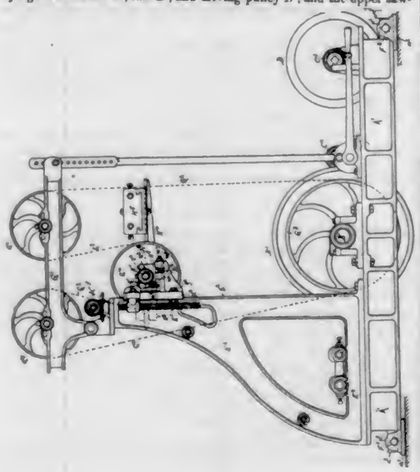
2. The combination of the laterally-adjustable husk-frame A', having the mandrel B', saw B^2, lumber-supporting rollers C' C^2 C^3, and wedge-plate D, mounted thereon, stationary bed-plates a' a', on which the said husk-frame is supported and by which it is held in position, and means for laterally adjusting the said frame upon the said bed-plates, substantially as and for the purpose herein specified.

3. The combination of the laterally-movable husk-frame A', having the mandrel B', saw B^2, lumber-supporting rollers C' C^2 C^3, wedge-plate D, and upper saw-supporting frame, E' E^2 E^3, mounted thereon, stationary bed-plates a' a', on which the said husk-frame is supported and by which it is held in position, adjusting-screws F' F^2, nuts a^3 a^3, and sockets a^2 a^{10}, substantially as and for the purpose herein specified.

4. In a circular-saw mill, the combination of the husk-frame A', carrying the lower saw, B^2, the upper saw-supporting frame, E' E^2 E^3, mounted on the husk-frame, fixed bed-plates a' a^2, and frame-adjusting screws F' F^2, substantially as herein specified.

5. In a circular-saw mill, the combination of the husk-frame A', carrying the mandrel B', saw B^2, and driving-pulley B^3, and the upper saw-supporting frame, E' E^2 E^3, attached to the said husk-frame, located entirely at one side of the said mandrel B', substantially as and for the purpose herein specified.





6. In a circular-saw mill, the combination of the husk-frame A', carrying the lower mandrel, B', saw B^2, and saw-driving pulley B^3, the upper saw-supporting frame, E' E^2 E^3, the yoke-frame H^2, carrying the upper saw-mandrel, H', and adapted to swing laterally and vertically around the center of one mandrel-bearing, and means, substantially as described, for adjusting it at the other mandrel-bearing both horizontally and vertically, for the purpose herein specified.

7. In a circular-saw mill, the husk-frame A', carrying the lower saw, upper saw-frame having concave face e', yoke-frame H^2, carrying the upper saw-mandrel and saw, and having convex face e^2, and means for adjusting said yoke-frame, substantially as shown.

8. The combination of the frame E' E^2 E^3, having concave face e', yoke-frame H^2, carrying the upper saw-mandrel, H', and having convex face e^2, journal-box H^6, bracket H^5, and means for adjusting said yoke and mandrel, substantially as specified.

9. The combination of the frame E' E^2 E^3, having the concave face e', yoke-frame H^2, having convex face e^2, guide-arm H^4, guide H^3, mandrel H', saw H^1, journal-box H^6, bracket H^5, and means for adjusting said yoke-frame, substantially as described.

10. The combination of the frame E' E^2 E^3, having the concave face e', yoke-frame H^2, having convex face e^2, and carrying the mandrel H' and saw H^1, journal-box H^6, bracket H^5, and screws K' K^2, substantially as and for the purpose specified.

295,992. ORE-SEPARATOR. HADLEY P. FAIRFIELD, West Medford, Mass., and LOUIS A. SHEAD, Alameda, Cal., assignors to Gordon McKay, Trustee. Filed May 10, 1883. (No model.)

Claim.—1. In a sluice for separating materials of different specific gravity, movable bottom plates, the edges of which form the sides of narrow transverse slits of different widths through the sluice-bottom, substantially as described.

2. In a sluice for separating ore, movable bottom plates arranged to form narrow transverse slits of different widths, each of said bottom pieces being pivoted to turn on an axis in the plane of its edges, whereby the slits may be cleared of intruding particles, substantially as set forth.

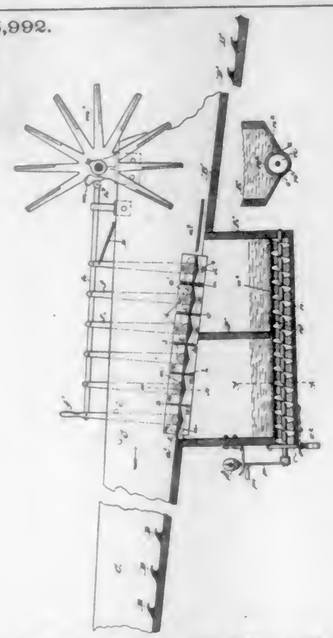
3. A sluice having a portion of its bottom provided with narrow transverse slits, and made of varied inclination or steepness, whereby a varied speed is imparted to the stream flowing over it, substantially as described.

4. A sluice having a portion of its bottom of varied inclination or steepness, and provided with slits of different widths, substantially as and for the purpose described.

5. A sluice having a portion of its bottom composed of plates having narrow transverse slits of different widths between them, the said plates being bodily adjustable with relation to one another for regulating the width of the slits, substantially as described.

6. In a sluice for separating materials of different specific gravity, pivotal adjustable bottom plates, the edges of which form the sides of narrow transverse slits of different widths through the sluice-bottom, combined with mechanism, substantially as described, to rock said plates to dislodge particles from the slits to keep said slits in operative condition, as set forth.

295,992.



7. In a sluice for separating materials of different specific gravity, pivotal bottom plates, the edges of which form the sides of narrow transverse slits of different widths through the sluice-bottom, combined with mechanism, substantially as described, to rock said plates to dislodge particles from the slits to keep said slits in operative condition, as set forth.

8. A sluice having openings through its bottom and a receptacle, E, arranged below it, combined with an ejecting-worm, s, and lock therefor, to prevent the same from being operated, substantially as described.

9. The sluice having a series of openings through its bottom, and a receptacle below it, having a discharge-passage provided with a suitable opening, 6, combined with an ejecting device consisting of a worm adapted to rotate in the said passage, substantially as described.

10. The sluice having a series of openings through its bottom, and a receptacle below it, having a discharge-passage provided with a suitable opening, 6, combined with an ejector to clear the said passage from material deposited therein through the said opening 6, substantially as described.

11. The sluice provided with movable bottom pieces arranged therein to form slits of different widths, and arms connected with said plates, combined with means to actuate the said arms, substantially as described.

12. The sluice and receptacle below it, having a discharge-passage provided with openings 6, the bottom of said receptacle being inclined toward said passage, to facilitate the entrance of the concentrate into the said passage, combined with an ejector to clear the said passage of concentrate, substantially as described.

13. The sluice and the receptacle E, and the fixed plate a^3, located a short distance above the bottom of the sluice, and with its upper edge located above the said receptacle, combined and in line with a movable bottom plate, the edge of which co-operates with the edge of the said fixed plate to form a slit, substantially as described.

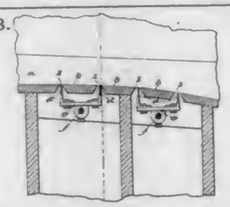
14. The sluice and movable bottom pieces and their bearing-blocks, combined with packing to close the spaces between the adjacent ends of the said bearing-blocks, substantially as described.

15. The sluice, the receptacle having a discharge-passage, and an ejector operating in the said passage, combined with a door or cover, e, for the said passage, and a lock for the said door, substantially as described.

295,993. ORE-SEPARATOR. HADLEY P. FAIRFIELD, West Medford Mass., and LOUIS A. SHEAD, Alameda, Cal., assignors to Gordon McKay, Trustee. Filed Dec. 17, 1883. (No model.)

Claim.—1. In an ore-separating apparatus, a sluice having a portion of its bottom provided with narrow transverse slits of different widths, whereby particles of heavy material of various sizes may be separated from particles of lighter materials of various sizes, substantially as described.

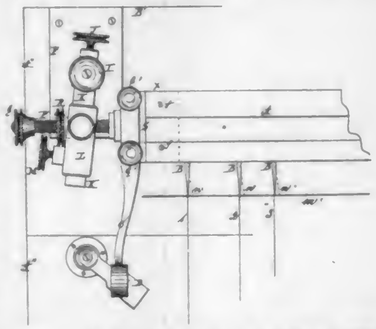
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2. A sluice having a transverse slit through its bottom, combined with a clearing device below the said slit, and supporting and operating mechanism for the said clearing device, outside of and removed from the action of the stream passing through the sluice, the said clearing device acting on substantially the whole length of the slit, substantially as described.

3. The combination of the sluice having a transverse slit through its bottom with a clearing device, and means to move the said clearing device longitudinally in the said slit, the said clearing device having inclined edges, whereby the particles are lifted out of the said slits, substantially as and for the purpose described.

295,994. PAPER-RULING MACHINE. JONATHAN C. FORMAN, Cleveland, Ohio. Filed Aug. 10, 1883. (No model.)



Claim.—1. In paper-ruling machines, the standard A', consisting of a post provided with an annular and vertically-adjustable sleeve, having projecting therefrom an arm fitted with a movable sleeve bearing an annular movable head carrying the adjusting-screw of the pen-beam, said arm being adaptable to an oblique or angular relation to the pen-beam, for adjusting the pens to the head-line drawn on the paper being ruled and to the points or places on said head-line from which the column-lines are to be drawn, substantially as herein set forth, and for the purposes specified.

2. In paper-ruling machines, an annular movable arm provided with an adjustable sleeve supporting a socket in which is fitted an annular movable head in which is inserted the adjusting-screw of the pen-beam, and susceptible of being arranged at various angles in respect to the pen-beam, for adjusting the pens of the beam to the head-line on the paper being ruled, substantially as herein described.

3. The combination of the adjusting-screw P, provided with a collar, c', bushing, washer, and set-screw, plate angle-iron S, having a socket, T, and set-screw m, for securing the said bushing to the socket of the plate angle-iron, substantially as set forth, and for the purpose specified.

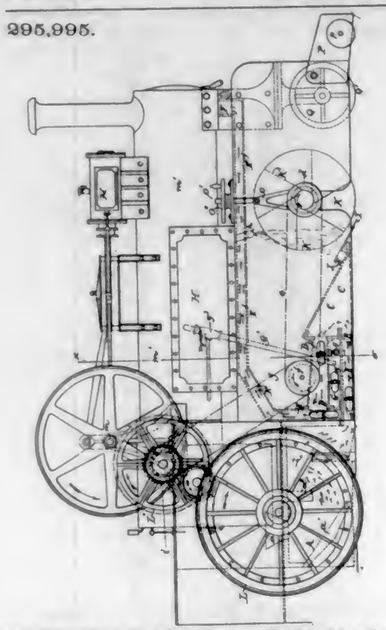
295,995. SNOW-CLEARER. JOHN FORSTER, St. Helen's, County of Lancaster, England. Filed Dec. 31, 1883. (No model.)

Brief.—The snow is thrown by the rotary drum upon a yielding scraper back upon the upper inclined surface of the lower heated chamber into a tank heated by a peculiar arrangement of flues, from which it is raised into an upper reservoir. A perforated pipe connected to the upper reservoir sprays the snow, as it is being carried up said heated inclined surface, with water.

Claim.—1. In a snow-plow, a chamber located near the surface of the road, and having its upper surface inclined in a forward and downward direction, a rotary drum whereby the snow is delivered directly from the road over said surface, and means, substantially as described, for heating said chamber internally.

2. In combination with a wheeled frame, a furnace, a forward chamber, through which the heated products of combustion are conducted from

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the furnace, and a rotary drum, whereby snow is delivered from the road directly to the top of said chamber.

3. A wheeled frame, in combination with the furnace A, the chamber C, communicating with said furnace by the passage B, the returning-flue D, and the flue E, extending forward above the snow-passage.

4. In a snow-plow, a heated under flue or chamber, a heated upper flue, and means, substantially as described, for delivering the snow backward between said flues.

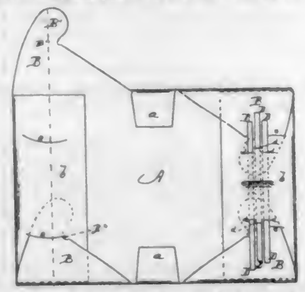
5. In combination with the wheeled frame, its furnace, the passage B, chamber C, flues D, water-receptacle G, elevated reservoir H, and means, substantially as described, for elevating the water thereto.

6. In combination with the heating-chamber C, having the inclined top, the yielding scraper in advance thereof, and the rotary drum.

7. In combination with the wheeled frame, provided with means, substantially as described, for melting the snow, the forward plows, P, pivoted to the arm, and provided with the sustaining-wheels p, as described.

8. In a track-clearer, the combination of the artificial means, substantially as described, for heating and melting the snow, with means for spraying the snow with water.

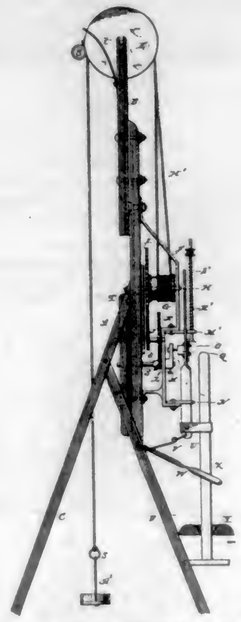
295,996. BOOK-COVER. ELLEN S. GITCHELL, Boston, Mass., assignor to Anna M. Coudrey, same place. Filed July 9, 1883. (Model.)



Claim.—1. The herein-described improved book-cover, consisting, essentially, of the main portion A, side flaps, b, provided with the slits c, and hooked flaps B B' B'', the hooks B' on said flaps being all cut and arranged, as shown, to project inwardly toward the center of the book-cover, all constructed substantially as and for the purpose set forth.

2. The combination, in a book-cover, of the main portion A, provided with the side flap, b, said side flap having the slits d and slot e, and the numbered stripe D, constructed and arranged substantially as and for the purpose described.

295,997. MOTOR FOR LIGHT MACHINERY. JAMES WILLIAM GILBERT, Hoboken, Ala. Filed Dec. 27, 1882. Renewed Dec. 19, 1883. (No model.)



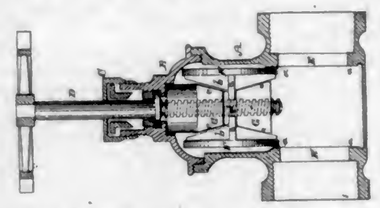
Claim.—1. In a motor, the combination of the pulley, the cords passing over it, and a perforated spring-holder, t, which catches over the pulley and prevents displacement of the cord, substantially as shown.

2. The combination of the reciprocating rod O, to which the churn-dasher is connected, with the slotted plate Q, the guide N, the rod R', and spring S', substantially as set forth.

3. The combination, in a motor for churns and other light machines, of a fly-wheel provided with a weight upon one of its arms, the slotted plate, the rod O, the rod R', spring S', and guides N M, the parts being combined and arranged to operate as shown and described.

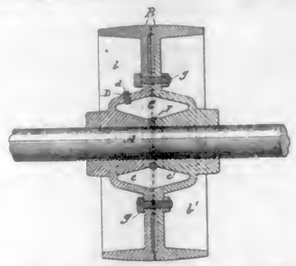
4. The combination of the vertically-moving rod O and a suitable guide with the fan W and its connections U V and the dasher-rod, substantially as specified.

295,998. GATE OR VALVE. PHILIP GIOVANNINI, San Francisco, Cal. Filed Apr. 30, 1883. (No model.)



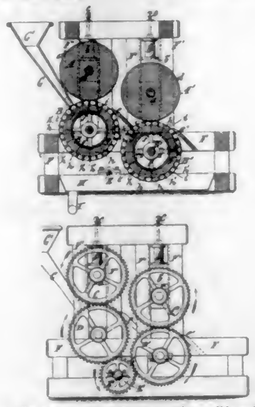
Claim.—The combination, with the stem D, mounted in the casing A B C, and carrying upon it screw-threaded lower portion the block G, formed with the reversely-inclined faces e e, and grooves d, of the disks F, provided at their inner sides with the reversely-inclined faces b, for engaging with the said inclined faces e, and with the lugs c, for entering the said grooves d, substantially as and for the purposes set forth.

295,999. SELF-LUBRICATING LOOSE PULLEY. EDWD. F. GORDON, Concord, N. H., assignor of one-half to Horatio Hobbs, same place. Filed Oct. 8, 1883. (No model.)



Claim.—In a self-lubricating loose pulley, B, the central porous washer, F, clamped between the sections *b b'*, for the purpose of conducting oil from the chamber C to the shaft, substantially as and in the manner described and set forth.

296,000. APPARATUS FOR SEPARATING SOLID AND LIQUID PORTIONS OF STARCH REFUSE, &c. PAUL H. GRIMM, Glen Cove, N. Y., assignor to the Glen Cove Manufacturing Company, same place. Filed Dec. 31, 1883. (No model.)



Claim.—1. In an apparatus for separating solid and liquid substances, the combination of a lower roll, having in its periphery gutters or channels extending lengthwise of the roll, and also having a reticulated or perforated covering, an upper roll for operating in conjunction with said lower roll, and means for delivering the wet substance upon said lower roll near its point of contact with said upper roll, substantially as herein described.

2. In an apparatus for separating solid and liquid substances, the combination of a lower roll, having in its periphery gutters or channels which are oblique to the axis of the roll, and also having a reticulated or perforated covering, an upper roll for operating in conjunction with said lower roll, and means for delivering the wet substance upon the said lower roll near its point of contact with said upper roll, substantially as herein described.

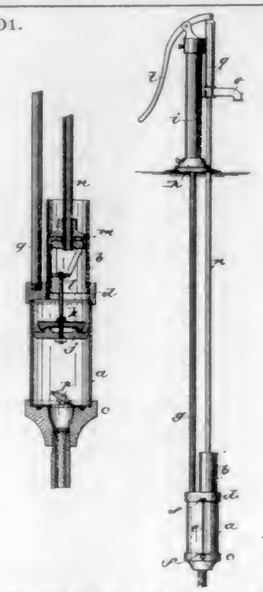
3. The combination of the lower roll, B, having gutters or channels *h*, which extend obliquely in opposite directions toward its ends, and also having a covering, *i*, of reticulated or perforated material, the upper roll, A, and the feeding-chute G, substantially as herein described.

4. The combination of the lower rolls, B B', each having gutters or channels *h* in its periphery, and each having a covering, *i*, of reticulated or perforated material, the upper rolls, A A', the scraper *e*, for delivering material from the roll B to the roll B', the scraper *e'*, for delivering material from the roll B', and the feeding-chute G, all arranged and adapted for operation substantially as herein described.

296,001. PUMP. ORLIN W. HAMMOND, Belmont, N. Y. Filed Sept. 1, 1883. (No model.)

Claim.—1. In a lift and force pump having a hollow piston-rod for the delivery of the water, and a cylinder consisting of two sections which are offset, as described, for the connection of the supporting-rod, the piston *j*, suspended from the piston *m* by a hanger, *l*, having the point of

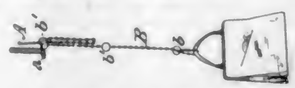
296,001.



connection offset from the center of said piston *m*, as specified.

2. In a lift and force pump, the cylinder constructed of a larger and a smaller section, which are connected by a cap, said cap having the smaller section, and offset from the center of the larger section, to allow for the connection to said cap of a suspending or supporting rod, substantially as and for the purpose set forth.

296,002. SAFETY ATTACHMENT. ELIZABETH G. HARLEY, Philadelphia, Pa. Filed Jan. 18, 1884. (No model.)

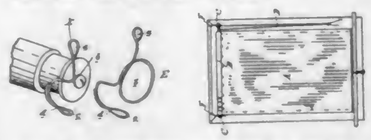


Claim.—1. A suspending-hook for safety attachments, having two U-shaped bends turned in opposite directions, and a cross-piece or retainer at the end of one of said bends, in combination with a cord or chain provided with means for attachment to said hook and to the article to be carried, substantially as set forth.

2. The combination of a suspending-hook such as described, and a cord or chain connected at one end to said hook, and having a connecting piece, ring, or slide at the other, substantially as set forth.

3. The combination of a suspending-hook such as described, a cord or chain attached thereto, a connecting-piece attached to the opposite end of said cord or chain, and one or more adjusting-pieces attached to the cord or chain between the hook and the connecting-piece, substantially as set forth.

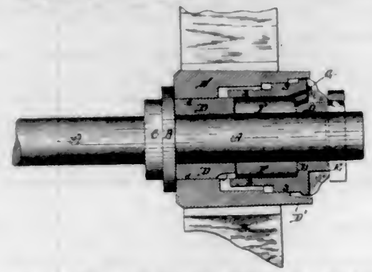
296,003. CURTAIN-ROLLER FIXTURE. JONATHAN HARRIS, Grand Ledge, Mich. Filed Dec. 19, 1883. (No model.)



Claim.—1. In combination with a curtain roller and cord, a wire support forming a bearing which carries the end of said roller, supports the same from a fixed point, and furnishes a spring locking loop and slot, substantially as and for the purposes described.

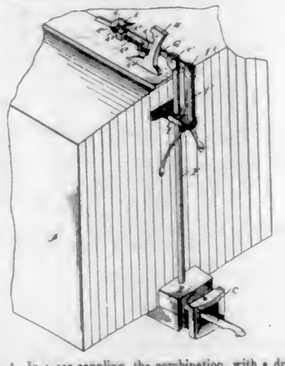
2. In combination with a curtain cord and roller, the locking-support E, bent from one piece of wire, forming the loops *b c* and the slot *d*, substantially as and for the purposes described.

296,004. CAR-WHEEL HUB. JOHN V. HAWKEY, Irwin's Station, Pa. Filed Nov. 22, 1883. (No model.)



Claim.—The protector D, having shoulders 1 and 3, intermediate shoulder, 2, chamber F, opening G, and channel J, in combination with the axle A and hub D', substantially as shown and described.

296,005. CAR-COUPLING. FRANK JOHN HETZNER, Rochester, Ind. Filed Jan. 15, 1884. (No model.)

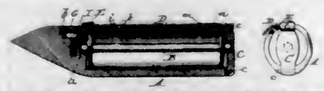


Claim.—1. In a car-coupling, the combination, with a draw-head, of a coupling-latch provided at its front end with a hooked portion, and a spring-pressed rod extending upwardly from the under side of the car and passing through the rear end of said latch, substantially as set forth.

2. The combination, with the draw-head having a coupling-latch secured therein, of a rod mounted in a bracket secured to the outer side of the car, a standard secured to said bracket having arms, between which is pivoted one end of a lever, said lever being also connected to the coupling-rod, a standard, H, having teeth A, a bell-crank lever, I, pivoted near the rear end of the lever G, a rod, h^3, connected with said bell-crank lever, and a block, h^3, secured to the end of the rod h^3, said rod being provided with a coil-spring, which bears against the block h^3 at one end and against the block h^3 at the other end, substantially as set forth.

296,006. SEWING-MACHINE SHUTTLE. JOHN HOEFLER, Ilion, N. Y. Filed July 24, 1883. (No model.)

Brief.—Improvement upon shuttle embraced in applicant's patent of April 25, 1882, No 256,896. A volute spring surrounds the screw and presses against the under side of the plate to which the tension-spring is pivoted.



Claim.—1. In combination with the tubular shuttle, the non-rotating plate E, the adjusting-screw G, and the external tension-spring, D, pivoted to said plate and arranged to swing in a plane parallel with the side of the body.

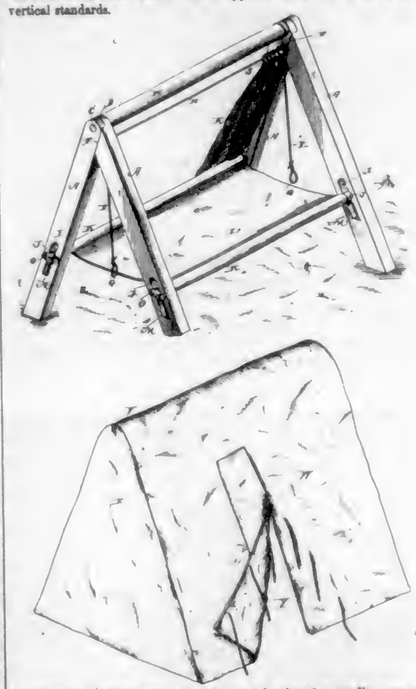
2. In combination with the tubular shuttle-body, the spring I, the plate E, seated in a recess in the body and fixed against rotation, the adjusting-screw G, and the external tension-spring, D, pivoted to the plate and arranged to swing in the direction described and shown.

3. In combination with the tubular shuttle-body, the heel-plate C, hinged at one end to the said body and having its free end provided with the transverse open-ended groove, and the external tension-spring, D, pivotally connected at one end with said body to swing in a plane parallel to its side, and provided at the opposite end with a hook, *e*, adapted to be slid longitudinally into the groove of the heel-plate by the swinging movement of the spring, as described, whereby the spring is caused to retain the heel-plate in a closed position and the heel-plate caused to maintain the spring under tension.

4. In combination with a shuttle-body having the hole or depression *k*, and the groove extending laterally therefrom, and having also the depression or cavity *n*, the hinged and grooved heel-plate, and the external spring pivoted at one end, adapted to engage at the opposite end with the heel-plate, and provided at an intermediate point in its length with a stud or projection.

296,007. SPRING-BOTTOM CAMP-BED. WILLIAM GREEN HOLDEN, Corpus Christi, Tex., assignor of one-half to Lee F. Cowan, same place. Filed Sept. 25, 1883. (No model.)

Brief.—A folding camp-bed is provided with a fabric bottom mounted on side rails, which rails are supported by springs in slots in the vertical standards.



Claim.—1. The combination of the end pairs of upwardly-convergent supports provided with longitudinally-disposed slots near their lower ends and with perforations at their top ends, the longitudinal top connecting-bar, the ends of which are received by said perforations, the longitudinal side bars, the ends of which project in the said slots, pivoted retaining-buttons on the ends of these side bars, the coiled springs seated in the slots, and the bed-bottom, substantially as set forth.

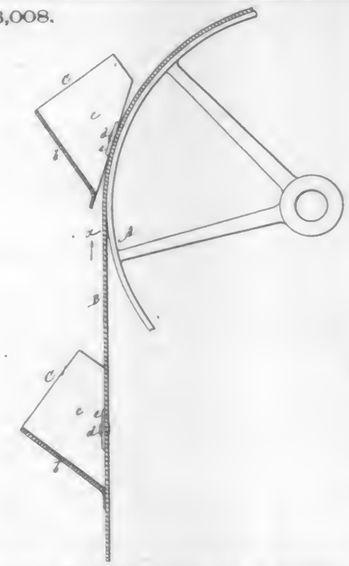
2. The combination, with the frame comprising end supports having longitudinally-disposed slots, of the side bars having their ends projecting in these slots, friction-rollers journaled in said ends, pivoted retaining-buttons on the said ends, the flexible bed-bottom, and the coiled springs seated in the bottom portion of the said slots, substantially as set forth.

3. A camp-bed embodying the frame comprising end supports, the pendent looped cords Q at each end of the frame, the side pieces removably connected to end supports, and the flexible bed-bottom, substantially as and for the purpose set forth.

296,008. ELEVATOR-BUCKET. JOSEPH A. HOLMES, Greenland, N. H. Filed Feb. 27, 1884. (No model.)

Claim.—1. In buckets of endless belt or band elevators, having open bottoms and raised sides and back, the bucket constructed or provided with means for attaching it in front of its back, at or near the cen-

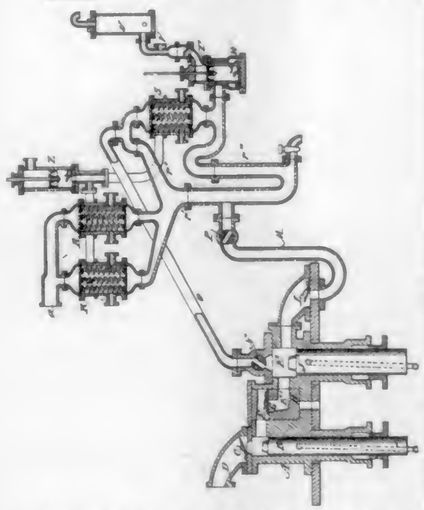
296,008.



ter of the length of its sides, to the exterior of the band, substantially as and for the purpose herein set forth.

2. In endless belt and bucket elevators, the combination, with the endless belt B, of the buckets C, constructed with a back, *b*, and sides *a c*, but left open at their tops, bottoms, and mouths or delivery ends, and attached at or near the center of the length of their sides, in front of their backs, to the outside of the belt or band, substantially as shown and described.

296,009. COMBINED FEED-PUMP AND CONDENSING APPARATUS FOR ENGINES. JOHN HOUPT, Springtown, Pa. Filed Jan. 10, 1884. (No model.)



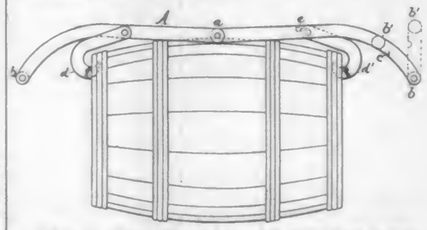
Claim.—1. In condensing and boiler-feeding apparatus for steam-engines, in which a primary and a secondary condenser are used, the combination, with the primary condenser or moderator for direct application to or connection with the engine-cylinder, and arranged intermediately of said cylinder and the secondary condenser, and with a feed or force pump in controllable connection with the duct which passes off the hot water of condensation from the primary condenser, of a pipe or duct in controllable connection with said force or feed pump and with the secondary condenser, for drawing off accumulated hot pure vapor from the pump, substantially as specified.

2. The combination of a compound condensing apparatus in which a primary condenser or moderator and a secondary condenser are used, and a compound plunger, force, or feed pump adapted to supply to the boiler or boilers of an engine hot fresh water of condensation from the primary condenser, essentially as and for the purposes herein set forth.

3. The combination, with the pipes M O and valves L N P, with the pump barrel or chamber F, of a compound-plunger pump, the primary condenser or moderator R R, pipes *r' r'' r'''*, the secondary condenser or save-all S, the air-pump T, and hot-well W below, substantially as shown and described.

4. In a combined condensing and boiler-feeding apparatus, the combination, with the cylinder A of the pump, the elongated plunger B, and the outlet and check valves C G, of the auxiliary pump-cylinder F, elongated plunger J, and valve L, the plungers B and J being adapted both to work from the same side of the pump, and to make their strokes simultaneously in opposite directions, essentially as specified.

296,010. BARREL LIFTER AND CARRIER. WM. HENRY IDELLE, New Britain, Conn., assignor of one-half to Robert J. Vance, same place. Filed Feb. 4, 1884. (No model.)



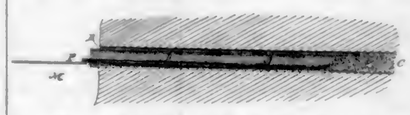
Claim.—1. A barrel-lifter consisting of the frame having grapples or hooks at or near the respective ends thereof, substantially as described, and for the purpose specified.

2. A barrel-lifter consisting of the frame having hooks or grapples at or near the respective ends thereof, and the folding secondary handle, substantially as described, and for the purpose specified.

3. In a barrel-lifter, the jointed folding frame having the curved ends, handles, and grapples, substantially as described, and for the purpose specified.

4. The combination of the jointed and folding frame having handles *b b'* and the stop *c*, substantially as described, and for the purpose specified.

296,011. MINER'S SQUIB. GEORGE A. INGRAM, Plymouth, Pa. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a mining-squib, the shells filled with powder or other explosive agent and having heads or stoppers at each end, said heads being formed of a mixture of suitable ingredients to make a paste which will stick or adhere to the shells, and yet be readily combustible, as set forth.

2. A mining-squib having the shell saturated or coated with a composition to make it combustible, preparatory to filling the same, an explosive filling, and combustible heads or stoppers at the ends of the shell, said heads being composed of a composition of ingredients to make a paste which will adhere to the shells, and yet be readily combustible, as set forth.

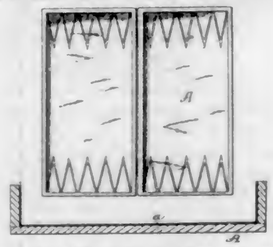
3. As an improved article of manufacture, the herein-described mining-squib, comprising the shells saturated or coated with a composition to make them combustible, preparatory to filling the same, a filling for the shells, composed of some explosive agent, heads or stoppers at the ends of the shell, made of ingredients to form a paste which will adhere to the shells, and yet be readily combustible, and the combustible match, as set forth.

4. As an improved article of manufacture, the herein-described mining-squib, comprising the shells saturated or coated with a mixture to make them combustible, preparatory to filling the same, a filling for the shells, composed of some explosive agent, heads or stoppers at the ends, made of ingredients to form a paste which will adhere to the shells, and yet be readily combustible, and the match independent of the shell and formed of a flat piece of material coated with a combustible composition, as and for the purpose set forth.

5. As an improvement in mining-squibs, the shells saturated or immersed in a composition to make them combustible, and having an explosive filling, combustible heads or stoppers at the ends of the shell to retain the filling, and the combustible match independent of the shell, as set forth.

6. As an improvement in mining-squibs, the shells saturated or immersed in a composition to render them combustible, and having an explosive filling, combustible heads or stoppers at the ends of the shell to retain the filling, and the match formed of a flat piece of suitable material independent of the shell and coated with a composition to make it combustible, as set forth.

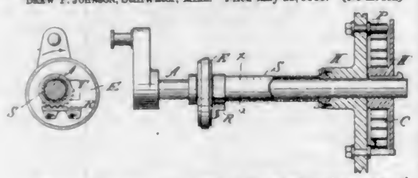
296,012. GAME-BOARD, DICE-BOX, &c. ARRIE AMELIA JACKSON, New York, N. Y. Filed Jan. 22, 1884. (No model.)



Claim.—1. A muffled game-board and dice-box, substantially as herein described.

2. In devices for recreative amusement, the combination, with the shell, frame, or body of the box or board, of soft or non-resonant lining or interior covering, substantially as specified.

296,013. REVERSING AND CUT-OFF GEAR FOR ENGINES. ANDREW F. JOHNSON, Stillwater, Minn. Filed May 23, 1883. (No model.)



Claim.—1. The combination, with a crank-shaft having a squared portion, an eccentric having a rectangular slot and mounted on said squared portion, and a rack adjustably secured to said eccentric, of a sleeve mounted on said crank-shaft and provided with gear engaging with the rack, and means, substantially as shown and described, for operating the sleeve, whereby a positive transverse movement is imparted to the eccentric and its throw varied, as set forth.

2. In reversing and cut-off mechanism, the combination, with the crank-shaft A, the slotted eccentric E, and the sleeve S, fitted for moving the eccentric, of the pinion K, the rack J, and the sleeve L², substantially as described, for adjustment of the eccentric, as specified.

3. In reversing and cut-off mechanism, the combination, with the eccentric E and the sleeve S, connected to the eccentric, of the mechanism, substantially as described, for operation by hand to move the sleeve S for adjustment of the eccentric to vary the cut-off, as specified.

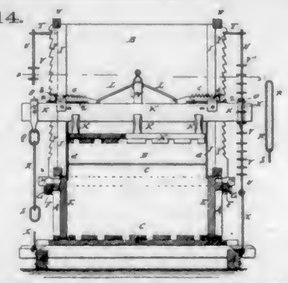
296,014. BALING-PRESS. ANDREW JOHNSON, Greensborough, Ala. Filed Dec. 13, 1883. (No model.)

Claim.—1. A baling-press constructed substantially as herein shown and described, and consisting of the press-box having slotted ends and provided with ratchet-bars Y and fulcrum-bars U, the follower K, having truss L M and provided with spring-held catch-bars Z, and bands N, having ribs O and rings Q, and the levers P, having slotted and recessed forward ends, as set forth.

2. In a baling-press, the combination, with the press-frame A and the center bar of the follower K, of the fulcrum-bars U, the bands N, having ribs O and rings Q, and the levers P, substantially as herein shown and described, whereby the said levers can be applied below and above the said ends successively, as set forth.

3. In a baling-press, the combination, with the press-frame A, the center bar of the follower K, the fulcrum-bars U, the bands N, having

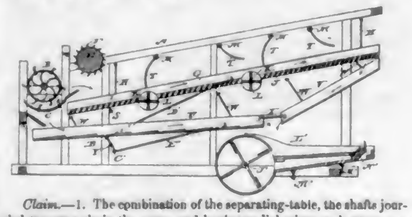
296,014.



ribs O and rings Q, and the levers P, of the separable links and rings R S, substantially as herein shown and described, whereby the levers can be applied at a distance below the said center bar of the follower when beginning the pressing operation, as set forth.

4. In a baling-press, the combination, with the slotted ends of the press and the center bar of the follower, of the ratchet-bars Y, on both sides of the slots, and the T-shaped catch-bars Z, sliding in bearings on the ends of the center bar of the follower K, and springs *c*, secured to the follower and slides, substantially as herein shown and described, whereby the follower will be held in place while adjusting the levers for another stroke, as set forth.

296,015. THRASHING-MACHINE. JOHN M. C. JONES, London, Ohio. Filed Aug. 4, 1883. (No model.)



Claim.—1. The combination of the separating-table, the shafts journaled transversely in the same, and having radial wings or beaters, one end of said shafts extending through the frame or casing of the machine, pulleys upon the said projecting ends, a belt or band connecting the said pulleys, and mechanism for conveying motion to one of the said shafts from the fan-shaft, substantially as set forth.

2. In a thrashing-machine and separator, the combination of the separating-table having the bottom formed of inclined slats and provided with the revolving beaters, the revolving picker-cylinder and the vibrating pickers, all co-operating to loosen and separate the straw in its passage through the machine, substantially as set forth.

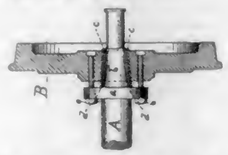
3. In a thrashing-machine and separator, the combination of the shoe mounted upon crank-shafts, as described, a crank upon one of the said shafts extending beyond the side of the casing, an eccentric secured upon the fan-shaft, a collar working upon the said eccentric and having an arm, a bell-crank lever pivoted to the side of the casing, and a link working upon the extending crank and connecting pivotally one arm of the bell-crank lever with the arm of the eccentric-collar, whereby the stroke or movement of the shoe may be regulated, substantially as set forth.

296,016. LAST. VALERIAN K. JONES, Lynn, Mass. Filed Oct. 29, 1883. (No model.)



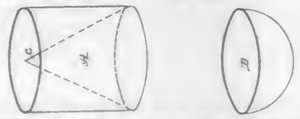
Claim.—A last for boots and shoes, having a recess or recesses formed in the surface thereof upon the side, substantially as described, and for the purpose set forth.

296,017. CAR WHEEL AND AXLE. MICHAEL JORDAN, Scranton, Pa., assignor of one-fourth to Otto Schreifer and John F. Connolly, both of same place. Filed July 27, 1883. (No model.)



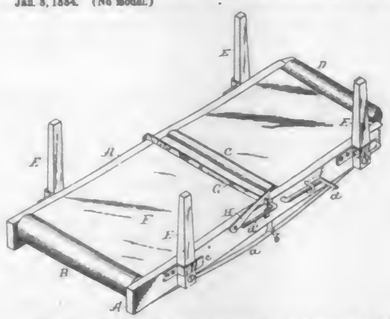
Claim.—The combination, with a car-axle having recesses or grooves in its wheel-bearings, and wheels having tongues corresponding in number and position to the grooves in the axle, and co-operating together, so as to interlock the wheel upon the axle, of fixed abutments on the axle, and bolts or analogous devices extending between the latter and the wheels for drawing and securing the wheels upon the axle, substantially as and for the purpose specified.

296,018. EDUCATIONAL APPLIANCE. ALBERT H. KENNEDY, Rockport, Ind. Filed Oct. 29, 1883. (No model.)



Claim.—An illustrative apparatus for showing the volume of symmetrical solids, consisting of a hollow cylinder and cone of the same diameter and height, the cone being secured inside of the cylinder, and a hollow hemisphere of the same diameter as the other parts, all adapted to be used together, for the purpose described.

296,019. LUMBER-WAGON. OWEN KINSLEY, Clinton, Iowa. Filed Jan. 8, 1884. (No model.)



Claim.—1. The combination, in a wagon-bed or lumber-wagon rack, with the end rollers, B D, of the middle roller, C, the upper surface of which middle roller is slightly above the plane of the upper surfaces of the end rollers, the crank *d*, attached to the end of the middle roller, and the adjustable locking-staple *f*, substantially as and for the purposes described.

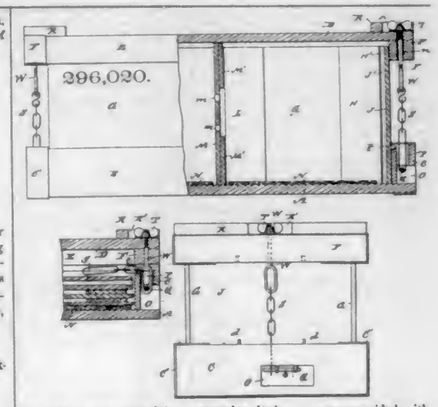
2. The combination, in a lumber-wagon rack, of the rollers B C D, the crank *d*, the adjustable locking-staple *f*, and the pivoted standards E, adapted to fold down automatically, substantially as and for the purposes described.

3. The combination, in a lumber-wagon rack, of the rollers B C D, the crank *d*, the adjustable staple *f*, the pivoted standards E, the angular lock-bar G, and the dog H, substantially as and for the purposes described.

296,020. FOLDING BOX. HENRY KROG, Sr., Washington, Mo. Filed Jan. 4, 1884. (No model.)

Claim.—1. In a folding box, the combination, with the bottom section and cover, of removable sides and ends, a chain, screw-bolt, and nut for pressing the bottom and cover against the bottom and top edges of the said sides and ends, and a fastening device in the end pieces of the bottom section, for the purpose of holding the lower end of the chain, substantially as herein shown and described.

2. In a folding box, the combination, with removable sides and ends, of a bottom having end pieces, each provided with a vertical aperture,

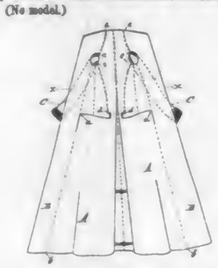


296,020.

and with a recess containing a fastening device, a cover provided with end pieces having vertical apertures, the chain S, the screw-bolt W, provided with a loop or eye at its lower end, and of the nut T, screwed on the end of the bolt, substantially as herein shown and described.

3. In a folding box, the combination, with removable sides and ends, of the bottom A, having end pieces, C, provided with recesses O, sliding bolts Q in said recesses, apertures P, and notches *t*, and the cover D, provided with end pieces, F, the chain S, the screw-bolt W, and the nut T, substantially as herein shown and described.

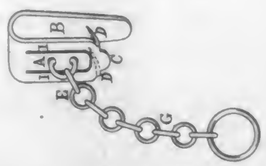
296,021. CLOAK. JACOB LANDESMANN, Cleveland, Ohio. Filed Aug. 11, 1883. (No model.)



Claim.—1. In a garment known as the "Russian circular," the parts A and B, nearly equal in length, the part B being secured to the part A, so as to loosely fit the wearer from the lower edge thereof to the waist, and then joining the outer part, A, at the back seams, forming a tight-fitting garment from the waist up, leaving the outer part in loose or flowing lines, substantially as set forth.

2. A garment consisting, essentially, of the parts A and B, nearly equal in length, the part B being secured to the part A and forming a tight-fitting garment from the waist up, leaving the outer part, B, in loose and flowing lines, and sleeves situated between the outer and inner parts and connected to the latter.

296,022. GUARD CHAIN AND HOOK. EWALD LANGEFELD, New York, N. Y. Filed Jan. 14, 1884. (No model.)



Claim.—1. The combination of the rigid hook and tongue A B and flexible grip I C I with teeth D D, substantially as described.

2. The rigid hook and tongue A B, with guard-chain E G, attached to the middle of the tongue A, for the purpose specified.

296,023. DEVICE FOR KEEPING FISH, MEAT, FRUIT, AND OTHER PRESERVING CANS CLEAN WHILE BEING FILLED. THOMAS LEVI, New Westminster, British Columbia, Canada. Filed Mar. 12, 1883. (No model.)



Claim.—The combination of the case or cylinder B with the preserving-can A, when applied as shown in the Fig. C, substantially as described.

296,024. FEED-REGULATOR. JOHN LUCAS, Hastings, Minn. Filed June 23, 1883. (No model.)

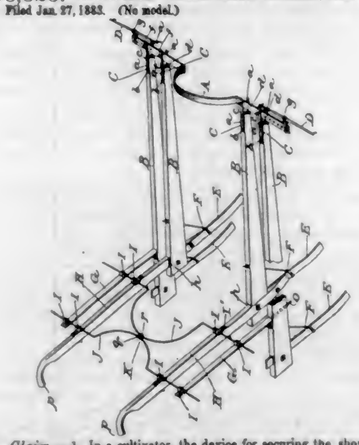


Claim.—1. In a grain-feed for separating-machines, the combination, substantially as hereinbefore set forth, of the hopper having suitable bottom discharge-opening, the rollers arranged in front and rear of said hopper, the apron passed around said rollers and moving flush with the under side of the hopper, the cone-pulley secured on one of said rollers, a suitable drive-shaft arranged parallel with said rollers, a cone-pulley secured on said drive-shaft in line with and arranged opposite to the pulley on the roller, and the drive-belt passed around said cones, all substantially as described and shown, and for the purposes specified.

2. In a grain-feed for separating-machines, the combination of the hopper, the rollers, the feed-apron, the cone-pulleys, the drive-belt, and the shifting mechanism composed of a roller-shifter bearing against the driving-belt, and provided with end flanges projected on opposite sides of said belt, and the boxing supporting said roller-shifter, and means for adjusting the shifting mechanism laterally, substantially as described, whereby the feed is regulated, substantially as set forth.

3. The combination, in a grain-feed for separating-machines, of the hopper *f*, having open bottom and discharge-opening *g*, the rollers *d d'*, arranged the one in advance and the other in rear of the hopper, the apron passed around said rollers and close against the bottom of the hopper, the supporting-board arranged close under the upper section of the apron and directly below or opposite the open bottom of the hopper, the cone-pulley *a*, secured on roller *d*, the drive-shaft, the cone-pulley a^2, secured thereon, the drive-belt *b*, and the shifting device $e\ e'\ e^3\ e^4$, all substantially as described and shown, and for the purposes specified.

296,025. CULTIVATOR. ANDREW JACKSON MAHERRY, Cabot, Ark. Filed Jan. 27, 1883. (No model.)



Claim.—1. In a cultivator, the device for securing the shovel to the shank and holding it in any desired position by means of a yoke, *i*, bent around the shank from the rear, the forward ends provided with wings or flanges to receive the concave side of the shovel, and secured by means of bolts, and arranged for throwing the soil either to the right or left, substantially as herein set forth.

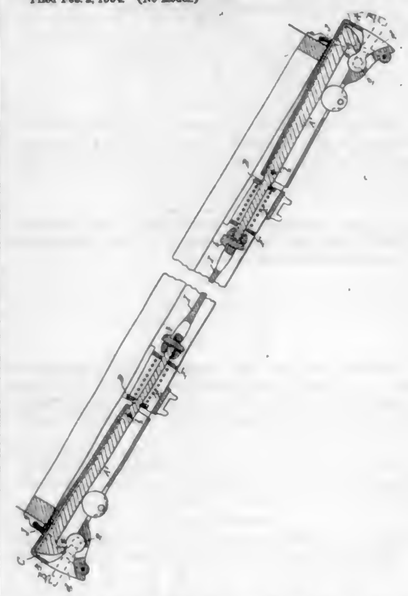
2. The combination, in a cultivator, of the yoke, the adjusting holes and bolts, and the shovel arranged on the shank so as to rock thereon laterally and adjust vertically, as and for the purpose substantially as herein set forth.

3. The combination of the gage-rods J J, bowed centrally to be used as cranks in moving the plows inwardly or outwardly, as desired, with the ring and hook to secure said rods in position, substantially as herein set forth.

4. The combination of the eyebolts provided with stems, as shown, and the plates G H, with the gage-rods having right and left hand screw-threads, substantially as herein set forth.

5. The combination, in a cultivator, of a double-tree, A, provided at each end with a series of oblong slots, the central part bowed as described, and the clevis formed of two plates connected by means of bolts to the beam, with the plates G H, the eyebolts I, and the gage-rods J, the whole arranged and combined substantially as herein set forth.

296,026. CAR-COUPLING. CHARLES EDGAR MARK, Flint, Mich. Filed Feb. 2, 1884. (No model.)



Claim.—1. As a means of supporting the fulcra in a continuous draw-bar composed of two end coupling-sections and an intermediate connecting-section, the ends of such outer sections having a vertical radial movement for the purposes of coupling or uncoupling, the boxes G, let into and secured to the coincident faces of the supporting-timbers, and constructed to allow of a horizontal movement of the fulcra and prevent a vertical movement of the same, substantially as described.

2. In combination with a continuous draw-bar consisting of three sections, as described, the followers D F, inclosing between them the buffer-spring E, and the boxes G, secured to the supporting-timbers H, and having their upper and lower sides, *h*, cut away for a portion of their length, whereby the follower F forms a fulcrum, and is prevented from any motion except a horizontal reciprocating one, while the follower D has a vertical movement, substantially as and for the purposes set forth.

3. In a car-coupling, and in combination with the follower-plates thereof, a three-side box, G, having flanges *e*, for securing it to the timbers, and provided with upper and lower sides, *h*, to retain one of the followers, and parts cut away for a portion of their length, to allow a vertical motion of the other follower, substantially as described.

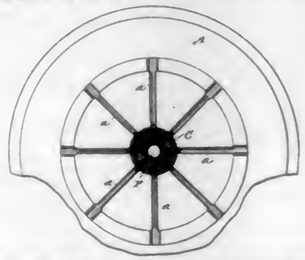
296,027. COUPLING. CHARLES EDGAR MARK, Flint, Mich., assignor of one-half to Josiah W. Bigelo, David S. Fox, and George L. Walker, all of same place. Filed Feb. 2, 1884. (No model.)

296,027.



Claim.—A coupling made of gas-pipe, outwardly cylindrical in form and provided with ears, while its bore is D-shaped in cross-section, substantially as described.

296,028. FLOWER-POT. DANL. OLIVER MARTIN, Marshall, Ill. Filed Aug. 24, 1883. (No model.)



Claim.—The combination of the centrally-apertured bottom B of a flower-pot, the plug D in a recess, C, thereof, the screw *b*, fitting a central hole in the bottom of the plug, and a stand, E, into which the screw works, whereby the pot may be secured to its stand without preventing the escape of surplus water, as described.

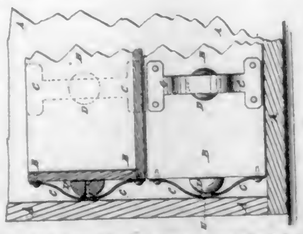
296,029. WASHER FOR VEHICLE-WHEELS. BARTHOLOMEW MARTERSON, Milford, Mass., assignor to himself and John W. Eldredge, same place. Filed Oct. 8, 1883. (No model.)



Claim.—1. A spoke-tenon washer made of two parts hinged together and rabbeted on opposite sides at their adjacent ends, to bring all parts in the same plane, as shown, whereby they may be made of metal or other non-flexible material, and yet may be applied without removing the tire or felly.

2. A jointed washer formed of the flat half-ring A', provided at its free end with a beveled stud, B, and the flat half-ring A^2, provided at its free end with a slot, C, the half-rings A' A^2 being pivoted to each other, substantially as herein shown and described.

296,030. SAMPLE TRUNK OR CASE. HENRY W. MATTONI, New York, N. Y., assignor to Bawo & Dotter, same place. Filed Feb. 6, 1884. (No model.)

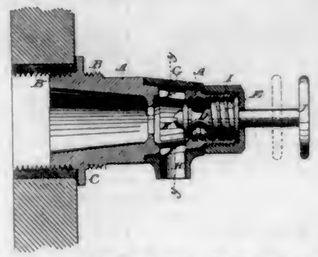


Claim.—1. A sample trunk or case constructed, substantially as herein shown and described, with stop-springs interposed between the ends and sides and the ends and sides of its trays, as set forth.

2. In a sample trunk or case, the combination, with the trunk or case body A and its tray B, of arched metal springs C, substantially as herein shown and described, whereby the said tray is kept in place and protected against sudden jars, as set forth.

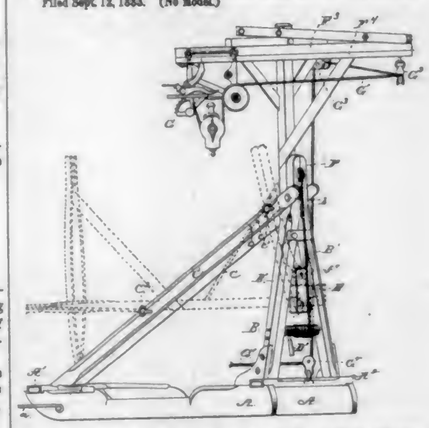
3. In a sample trunk or case, the combination, with the trunk or case body A, its tray B, and the arched metal springs C, of the re-enforcing rubber springs D, substantially as herein shown and described, whereby the said metal springs are strengthened against sudden jars, as set forth.

296,031. FAUCET. HUGO MATTULLATH, San Francisco, Cal., assignor to the Security Package Company, same place. Filed Sept. 17, 1883. (No model.)



Claim.—In a screw-faucet, the valve D, moving within it to close or open the outlet, and having screw-threads E, stem and operating-wheel J, and chambered sleeve G, fitting the exterior of the body A, in combination with the screw-cap I, through which the valve-stem passes, all substantially as shown and described.

296,032. HAY-STACKER. WILLIAM GLENN MCCOMAS, Colerain, Ohio. Filed Sept. 12, 1883. (No model.)



Claim.—1. In a hay carrier, derrick, or stacker, a pivoted standard provided on its upper end with a carrier-track and the necessary ropes and pulleys, whereby the carrier is operated, substantially as and for the purposes specified.

2. In a hay-stacker, the combination, substantially as set forth, of the supporting-frame, a standard pivotally supported thereon, and a carrier-track formed on the upper or free end of the standard, together with the necessary operating mechanism, substantially as described.

3. In a hay-stacker, the combination of the supporting-frame, a pivoted standard, means whereby this standard may be secured at any suitable angle in vertical plane with its pivot, and the necessary operating mechanism, substantially as set forth.

4. In a hay-stacker, the combination, with the supporting-frame, of the standard pivoted thereto, means whereby this standard may be adjusted to any desired angle radial to its pivot and laterally thereto, and the necessary operating mechanism, substantially as set forth.

5. In a hay-stacker, the combination, substantially as set forth, of the base or supporting frame, the upright frame mounted at one end thereof, the inclined guides extended from the upright frame to the opposite end of the base-frame and separated, as described, the standard suitably pivoted and movable in a vertical plane between the inclined guides, the rail secured on the upper end of the standard, and the necessary operating mechanism, substantially as set forth.

6. In a hay-stacker, the combination of the supporting-frame, a vertical standard, a pivot or trunnion bar journaled in the supporting-frame, and means connecting the standard and trunnion-bar, whereby the standard may be adjusted laterally, substantially as set forth.

7. In a hay-stacker, the combination, with the necessary framing, of the standard constructed with transverse mortise having its upper and lower walls rounded, as described, the trunnion-bar secured within this mortise and journaled in the framing, and the clamping-plate placed over

the mouth of the mortise and bearing against the trunnion-bar, substantially as set forth.

8. In a hay-stacker, the combination, with the supporting-frame, of the standard mounted thereon and provided with the track, a hay elevating and carrying device, and the necessary operating mechanism, substantially as specified.

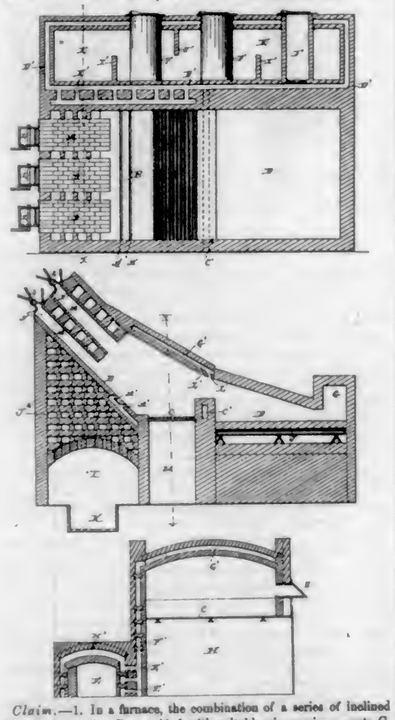
9. The hay-stacker, substantially as described and shown, composed of the movable base-frame, the windlass journaled in the upright frame, the inclined guides, the pivoted standard adjustable in a vertical plane and laterally, as described, ropes connecting the windlass and the standard, the track mounted on the standard, an elevating and carrying device, and the necessary operating mechanism, substantially as set forth.

10. A portable hay-stacker provided with the standard having a track formed thereon and adapted to receive a hay elevating and carrying device, substantially as specified.

11. In a hay-stacker, the combination, substantially as hereinbefore set forth, of the upright frame, the trunnion, the standard, the clamping-plate, the plate f^4, and clip f^7, all arranged and operating substantially as set forth.

12. The combination, in a hay-stacker, of the supporting-frame, a standard, a track supported on and extended in advance of the standard, and the guy-ropes secured to and extended laterally from the forward end of the track, substantially as set forth.

296,033. REVERBERATORY GAS-FURNACE. WILLIAM I. MCNAIR, Golden, Colo. Filed July 25, 1883. (No model.) Patented in Canada Nov 2, 1883, No. 18,015, and in England Nov. 27, 1883, No. 5,551.



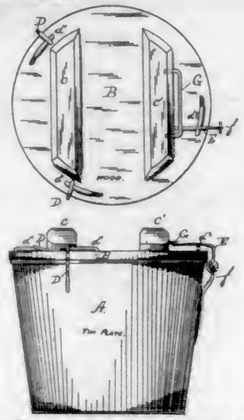
Claim.—1. In a furnace, the combination of a series of inclined muffles, A, the incline B, provided with suitable air-openings, grate C, hearth D, and the heating-chamber E, provided with retorts, substantially as described.

2. In a furnace, the combination of the muffles A, the incline B, provided with openings A', grate C, hearth D, the heating-chamber E, provided with the retorts, flues D' F', valve M^2, hollow bridge-wall C', and a means for regulating the admission of the air thereto, substantially as specified.

3. In a reverberatory furnace, the combination of a series of inclined muffles, A, the plane B, provided with air-openings A', grate C, hollow bridge-wall C', hearth D, flue G, and the heating-chamber E, the bridge-wall being provided with means for regulating the admission of air thereto, substantially as shown.

4. In a reverberatory furnace, the combination of a series of inclined muffles, the incline B, provided with air-openings A', the grate C, hollow bridge-wall provided with means for regulating the admission of air thereto, the hearth D, flue G, heating-chamber E, retorts F, flues D' E' F' G' H', as described, and openings L' above the bridge-wall, and valve M^2, substantially as described.

296,034. BUTTER-PAIL. ISAAC MESEROLE, Springville, Pa. Filed Jan. 21, 1884. (No model.)

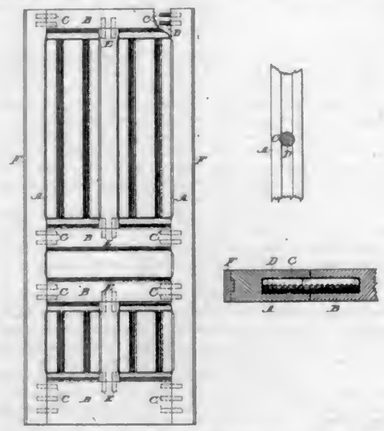


Claim.—1. The combination, in a butter or other package, of the metallic body and wooden cover, the body provided with hooks and a latch and the cover with the inclined lugs and rack, substantially as and for the purpose described.

2. The cover of a package provided with a cleat and rack and a bearing, such as d^2, in combination with the body provided with a suitable latch adapted to engage with said rack, substantially as described.

296,035. DOOR AND PANEL WORK. WILLIAM N. MILLER, Oakland, Cal. Filed Dec. 26, 1883. (No model.)

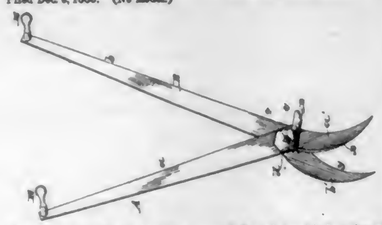
Brief.—A door the rails and stiles of which are united by tongues, grooves, and dowel-pins having longitudinal grooves for the reception of surplus glue made in one side, the exterior edges of the door being faced with strips of harder wood.



Claim.—1. In a door, the rails B, in combination with the stiles united by dowel-pins, said pins having longitudinal grooves or channels made in one side, substantially as herein described.

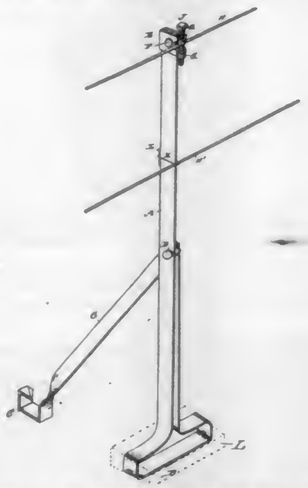
2. A door composed of stiles and rails united by dowel-pins and tongues and grooves, as shown, in combination with exterior edge strips of harder wood, substantially as herein described.

296,036. HAY-SHEARS. WILLIAM MILLSPAUGH, Middletown, N. Y. Filed Dec. 6, 1883. (No model.)



Claim.—Hay-shears consisting, essentially, of two blades pivoted together, hand-levers secured to the blades, and a step depending from the pivotal bolt which secures the blades together, substantially as set forth.

296,037. FENCE-POST. GEORGE MOLL and FREDERICK HOTTES, Macoutah, Ill. Filed Jan. 12, 1884. (Model.)



Claim.—1. The combination, with the fence-post A, of the U-shaped clip E, pivotally secured at the upper end thereof and provided with the loops or eyes G, and of the nail J, whereby the fence-wire may be secured to either side of the post by swinging the clip in the desired direction, substantially as herein shown and described.

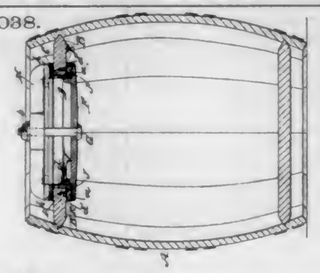
2. The combination, with the fence-post A, of the pivoted brace C, formed with an angular pocket at its lower end, and the U-shaped clip E, loosely secured to the upper end of the fence-post, whereby the clip and brace may be swung to the opposite side of the post without removing the post, substantially as described.

3. In a fence-post, the combination, with a piece of bar or band iron bent to form a loop at the lower end, and then bent upward to about the middle of the post, of a brace pivoted between the upper end of the upwardly-bent part and the post, substantially as herein shown and described.

4. In a fence-post, the combination, with a piece of bar or band iron bent to form a loop at the lower end, then bent upward to about the middle of the post, of a brace pivoted at its upper end between the upper end of the upwardly-bent part and the post, and having a loop formed on its lower end, substantially as herein shown and described.

5. In a fence-post, the combination, with a post made of bar or band iron bent to form a loop at the lower end, of a bar pivoted to the post and bent to form a loop at its lower end, substantially as herein shown and described.

296,038.

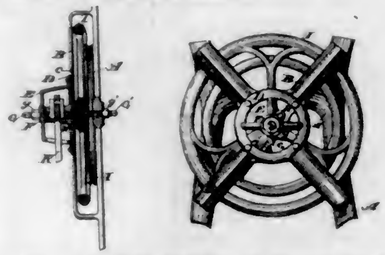


296,088. HEAD FOR BARRELS, CASKS, &c. PATRICK MORAN, New York, N. Y. Filed Jan. 26, 1884. (No model.)

Claim.—1. The head B, formed with the opening C, in combination with the carb D, fitted therein, and the shifting plate F, cross-piece H, and bolt G, all arranged to operate substantially as and for the purposes set forth.

2. The carb D, formed of flanges *d d'*, and held in the opening C of the head B, with the packing E placed between the head and flange *d'*, and the shifting plate F, formed with flange *f*, and provided with packing J and screw-bolt G, in combination with the plate I and cross-piece H, for receiving the bolt G, for holding plate F in place for closing the package, substantially as described.

296,039. SEWING-MACHINE TABLE. ISRAEL E. MYERS, Cleveland, Ohio. Filed Feb. 28, 1884. (No model.)



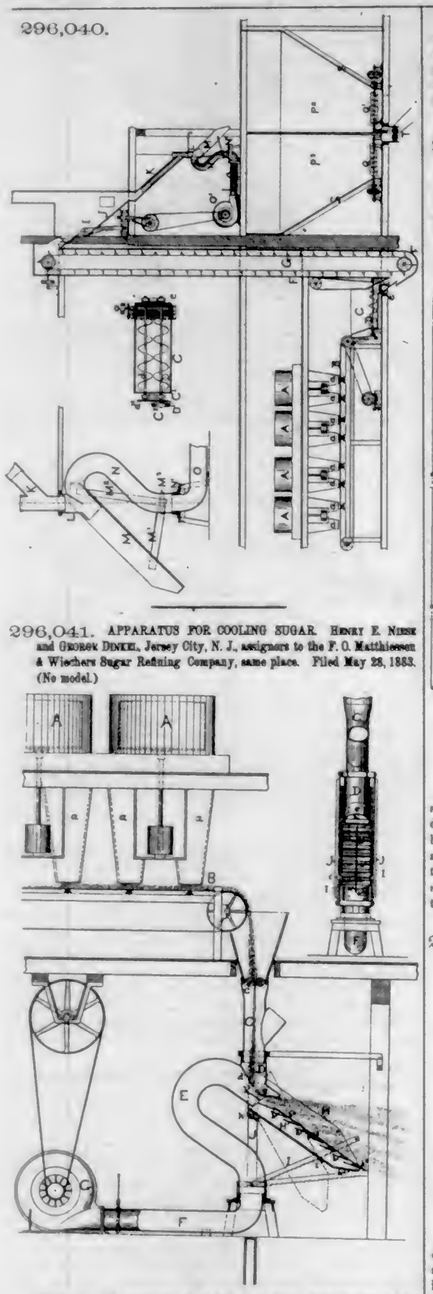
Claim.—1. In a sewing-machine table, the combination, with the frame provided with an adjustable pivotal bearing, of a spider with offset arms joining the frame on different sides and provided with an adjustable pivotal bearing arranged on the same axial line with the pivotal bearing of the frame, and the two bearings adapted to support the crank-shaft of the machine, substantially as set forth.

2. In a sewing-machine table, as a support for pivoted bearings for the crank-shaft, the combination, with the frame A, the spider B, provided with offset arms joined by the ring C, and the three parts, preferably integral with each other, of the ring D, detachably secured to the ring C, and provided with the offset arms E and the hub F, substantially as set forth.

296,040. APPARATUS FOR COOLING SUGAR. HENRY E. NIESS and GEORGE DINKEL, Jersey City, N. J., assignors to the F. O. Matthiessen & Wiechers Sugar Refining Company, same place. Filed May 28, 1883. (No model.)

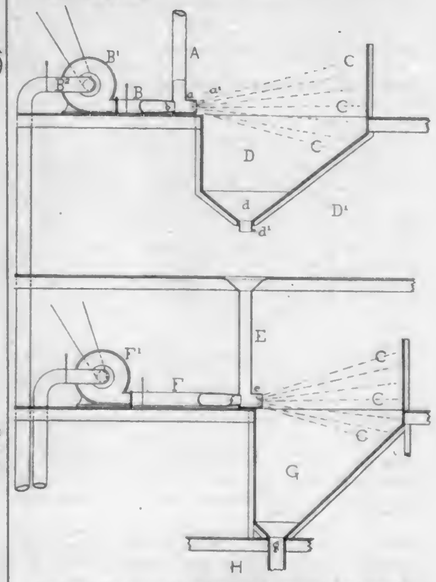
Claim.—1. In apparatus for cooling soft sugar, substantially of the character described, a universal distributing-chute, H, in combination with a pipe or conveyer for conducting sugar into the upper end of the chute, and means for directing a downwardly-inclined blast of air into the upper end of the chute, substantially as and for the purposes set forth.

296,040.



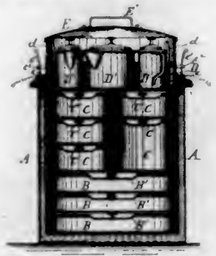
2. The chute H, provided with a perforated false bottom, H^3, in combination with the nozzle of an air-blast pipe, so arranged as to discharge a stream of air in a downward direction from the top both over and under the false bottom of the chute, and a conveyer or pipe for conveying or conducting sugar into the upper end of the chute, as and for the purposes set forth.

296,042. PROCESS OF COOLING AND DRYING SUGAR. HENRY E. NIESS and GEORGE DINKEL, Jersey City, N. J., assignors to the F. O. Matthiessen & Wiechers Sugar Refining Company, same place. Filed Nov. 6, 1883. (No model.)



Claim.—The process of cooling and drying soft sugar herein described, which consists in so guiding a moving mass of such sugar as to direct it into or near the mouth of a nozzle, from which issues a strong blast of suitably cool air, which performs the mechanical function of separating the particles of sugar from each other and scattering them, and thus fully exposing them to direct contact with the cool air, whereby such air carries off their heat and absorbs the moisture from them, and thus cools and dries them.

296,043. DINNER-TRAY. FRANZ NEUWÜLLER and JAMES F. WHEDON, New York, and EMIL M. PERRÉCOS, Brooklyn, N. Y. Filed Aug. 24, 1883. (No model.)



Claim.—1. A dinner-tray consisting of an exterior casing, bottom dishes or platters of a shape and size to fit the interior of the casing, and smaller dishes above the same, the diameter of which is equal to half the length of the longer axis of the bottom dishes, substantially as set forth.

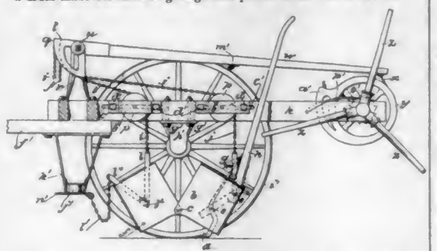
2. A dinner-tray consisting of an exterior jacketed casing, larger bottom dishes fitting the interior of the casing, smaller dishes above the same, having a diameter equal in length to one-half of the longer axis of the bottom dishes, a top tray fitting the interior of the casing, and a detachable cover, substantially as specified.

3. A dinner-tray consisting of an exterior jacketed casing, larger bottom dishes or platters, intermediate smaller dishes, a top tray, a cover, and means for attaching the cover, substantially as set forth.

4. A dinner-tray consisting of an exterior casing, interior dishes or platters having covers with depressed knobs, and means to retain said covers, a top tray, a detachable cover, and means for attaching the cover, substantially as specified.

296,044. EARTH-SCRAPER. JOHN F. O'CONNOR and STERLING M. WILLIAMS, Davenport, Iowa. Filed June 30, 1883. (No model.)

Brief.—Two hinged sections of a scraper-box are locked together by side hook-levers, which are unhooked by the scraper-handle striking a cross-rod between them when it is tilted to discharge the load. The scraper-chains run over suitable pulleys to segmental pulleys on a common shaft. The segmental pulleys are eccentrically arranged to tilt the scraper up at front. The shaft is turned by a lever and a chain run to a drum made eccentric to give greater power at the end of the lift.

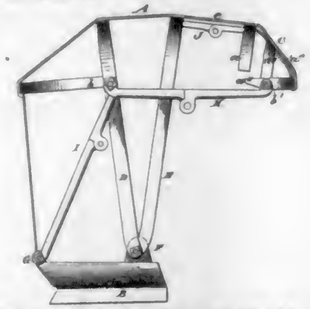


Claim.—1. The combination, with the scraper *a b*, suspended by chains *i j* from the truck, of the guide-pulleys *p*, segmental pulleys *q t* on a shaft, *u*, the segmental pulleys *q*, to which the front end of the scraper is connected, being eccentric to the shaft *u*, and having a longer sweep than the pulleys *t*, and the adjusting-lever *w*, substantially as described.

2. The combination, with the lever *w*, segmental pulleys *q t*, the former being arranged eccentrically to the shaft *u*, and having a longer sweep than the pulleys *t*, and chains *i j*, of the drum *y*, having an eccentric extension, *a'*, cord *x*, levers *z*, and a scraper suspended from a truck, substantially as described.

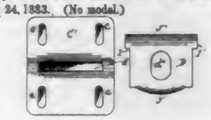
3. The combination, with a truck, of a scraper consisting of two parts, *a* and *b*, jointed together, and provided with fastening-catches *d*, connecting-bar *g*, and lever *h*, and being suspended from the truck by the chains *i j*, substantially as described.

296,045. BUGGY-TOP. JAMES C. OLIVER, Louisville, Ky. Filed Jan. 16, 1884. (No model.)

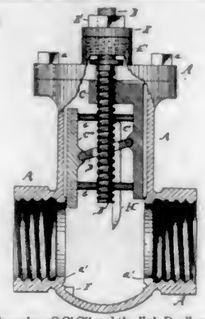


Claim.—In a buggy-top, the hood provided with the extension-joints J and curved slats *a*, *b'*, and *a''*, substantially as shown, in combination with the pivoted flexible joints H and I, the pivoted bows D and E, and rear extension, *b*, the parts being constructed substantially as shown, for the purpose set forth.

296,046. STRAIGHT-WAY VALVE. PETER B. PAGE, Lorain, Ohio. Filed July 24, 1883. (No model.)

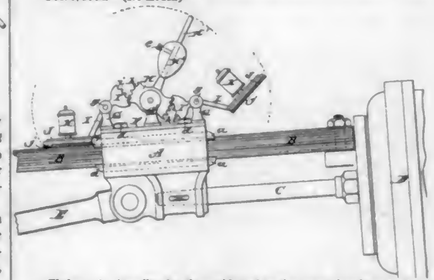


296,046.



Claim.—The valves C C' C'' and the link D, all constructed as shown, in combination with the shell A, having inner ribs, H H, lug F, and spindle B, substantially as specified, and for the purpose set forth.

296,047. OILER. JOHN S. PARK, Rockport, Ind., assignor of three-fourths to Taylor C. Basye and Ferdinand Weil, both of same place. Filed Feb. 6, 1884. (No model.)



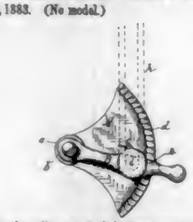
Claim.—1. An oiler for the guides of engine cross-heads and other reciprocating parts of machinery, constructed with a pair of opposite pivoted oiling-heads carrying or connected with an oil cup or cups, and having a weighted stem adapted to be thrown to either side of a vertical line for bringing the oiling-heads in contact with the guide bar or bars by the inertia and momentum of the parts on reversal of the motion at the limits of the stroke of the cross-head in either direction, substantially as shown and described.

2. In an oiler, the combination, with a weighted stem pivoted to the reciprocating cross-head, of an oiling-head actuated by the swing of the stem to either side, so as to bear the oiling-head on the cross-head guide in advance of the moving cross-head, substantially as shown and described.

3. The combination, in an oiler, and with the reciprocating cross-head A and guide B, of the pivoted head H, carrying a weighted stem, H', and pivoted arms I, swung by the stem and provided with oil cups or reservoirs and absorbent wipers J *j*, receiving the oil and distributing it on the guide, substantially as shown and described.

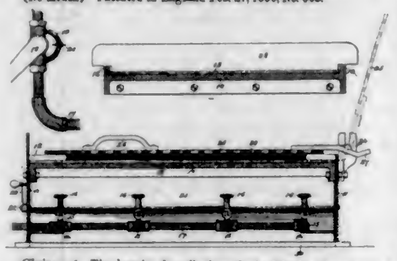
4. The combination, with the cross-head A^3 and its side guides, *a' a'*, of the pivoted heads G^3, carrying oil cups or reservoirs and weighted stem H^3, the hollow arms I^3, and the oiler-heads J^3 j^3, working between the guides *a' a'*, substantially as shown and described.

296,048. CURTAIN-FIXTURE. THOMAS J. PARKINSON, Pittsburg, Pa. Filed Dec. 29, 1883. (No model.)



Claim.—The described cord-tightener, consisting of the perforated plate A, having ratchet-rim *d* raised upon its front, rigid lever B, having eye *e*, grooved knob *i*, and undercut knife-edge *k*, and pivot-screw *b*, said lever B adapted to a slight rocking motion on its pivot, substantially as described.

296,049. METHOD OF AND APPARATUS FOR DRYING MATRICES FOR STEREOTYPE-PLATES. GEORGE PEARCE, Riversdale Road, Highbury New Park, Islington, County of Middlesex, and EDWARD HUGHES, Anstey Road, Camberwell, County of Surrey, England, assignors to Stephen Davis Tucker and Robert Hoe, Jr., New York, N.Y. Filed Apr. 10, 1883. (No model.) Patented in England Feb. 27, 1880, No. 863.



Claim.—1. The herein-described method of drying the matrix for a stereotype-plate, which consists in removing said matrix from the face of the form while in a moist condition, and then confining the same between a heated surface and one or more thicknesses of blanket, substantially as described.

2. The herein-described method of drying the matrix for a stereotype-plate, which consists in removing said matrix from the face of the form while in a moist condition, and then confining the same between a layer of heated pulverulent material and one or more thicknesses of blanket, substantially as described.

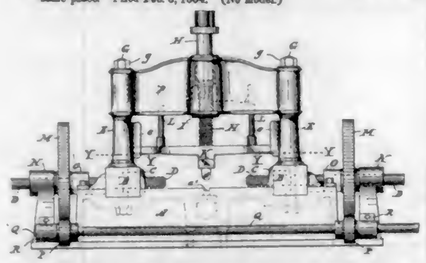
3. In an apparatus for drying matrices, the combination, with the plate 10 and means for heating the same, of the blanket 29 and perforated plate 25, all substantially as described.

4. In an apparatus for drying matrices, the combination, with the plate 10 and means for heating the same, of the blanket 29 and layer of pulverulent material 13, substantially as described.

5. In an apparatus for drying matrices, the combination, with the plate 10 and means for heating the same, of the blanket 29, layer of pulverulent material 13, and perforated plate 25, all substantially as described.

6. In an apparatus for drying matrices, the combination, with the plate 10 and solid plates 11, of the movable plates 21 and the burners 16, substantially as described.

296,050. MACHINE FOR FORMING AND STAMPING LOOPS. CHAR. PELLSTER, Concord, N. H., assignor of one-half to George H. Emery, same place. Filed Feb. 8, 1884. (No model.)



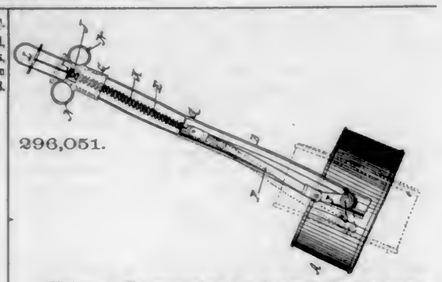
Claim.—1. In a press constructed substantially as described, having a vertical screw-shaft, H, follower K, and bed A, the chamber A', air-vent a^3, and transverse slot *a'*, as and for the purpose specified.

2. In a press constructed substantially as described, having a vertical screw-shaft, H, the horizontal screw-shaft D, rotated simultaneously by means of the gears M M, pinions P P, and shaft Q, operating in the manner and for the purpose set forth.

3. In a press having a vertical screw, H, follower K, and horizontal screw D, the combination of the die-plates T U, and blocks W, with the screws D, all constructed and operating substantially as described, and for the purpose set forth.

4. In a press having a vertical screw, H, follower K, and horizontal screw D, the combination of the dies T U, end blocks, V, and blocks W, having springs X, all constructed and operating substantially in the manner and for the purpose set forth.

296,051. DIPPER. GEORGE T. PETERS, Jersey City, N. J. Filed Feb. 7, 1884. (No model.)



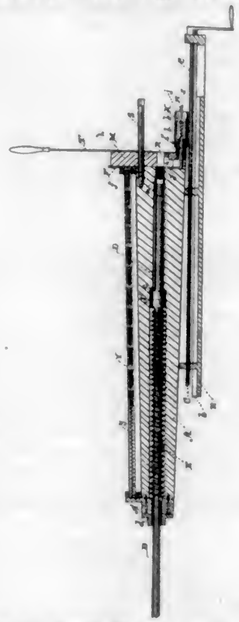
Claim.—1. The combination, in a dipper, of a bowl and handle pivoted together to render the bowl capable of rotating, a means, substantially such as herein described, for rotating the bowl, and a spring operating to sustain the bowl in a normal position.

2. The combination, in a dipper, of a bowl and handle pivoted together by means of a shaft which is fixed to the bowl, a slide-rod arranged on the handle to engage such pivot-shaft for rotating the bowl, and a spring operating to sustain the bowl in a normal position.

3. The combination, in a dipper, of a bowl and handle pivoted together by means of a shaft which is fixed to the bowl, a crank on such pivot-shaft, a slide-rod arranged on the handle, a link connecting the slide-rod to the crank of the pivot-shaft, and a spring coiled on the slide-rod to act thereon with a tendency to sustain the bowl in a normal position.

4. The combination, in a dipper, of a bowl and handle pivoted together by means of a shaft which is fixed to the bowl, a slide-rod arranged on the handle to engage such pivot-shaft for rotating the bowl, a spring operating to sustain the bowl in a normal position, a thumb-piece on the upper end of the slide-rod, and finger-rests projecting from the handle below such thumb-piece.

296,052. ROCK-DRILL. WILLIAM E. PEYTON, San Francisco, Cal., assignor of part to James M. Thompson, same place, and Conrad Shenfield, Albuquerque, N. Mex. Filed Nov. 5, 1883. (No model.)

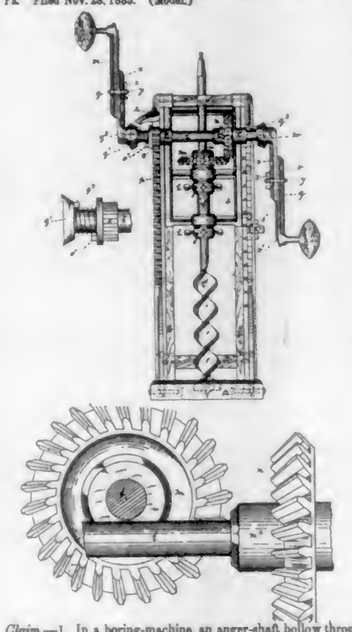


Claim.—1. In a rock-drill, a barrel having a bore with an exhaust, and a breech to receive an explosive cartridge or shell, and a firing mechanism to explode said shell, in combination with a piston or drill holding spindle fitted within the bore, and adapted to be driven forward by the explosion of the shell, and a spring around said spindle within the barrel for returning the spindle, substantially as herein described.

2. In a rock-drill, the barrel A, having a bore, with an exhaust, U, and a cartridge-chamber in its breech, a mechanism for feeding the cartridge to said chamber, exploding it, and ejecting the shell, in combination with the spring piston or drill holding spindle fitted within the bore, and behind which the cartridge explodes, substantially as herein described.

3. In a rock-drill, the barrel A, having a bore, with a shoulder, *c*, a perforated cap, A′, on its forward end, a cartridge-chamber, *e*, in its breech, and an exhaust for its bore, and a mechanism on its breech for feeding a cartridge to its chamber, firing it, and ejecting the shell, in combination with the piston or drill holding spindle D, fitted in the bore of the barrel, and having a shoulder, *d′*, within the bore, and flange *d* on its forward end, and the spring E around the spindle between the cap A′ of the barrel and the shoulder or collar *d′* of the spindle, substantially as herein described.

296,053. BORING-MACHINE. ZACHARIAH C. PHILLIPS, Allegheny, Pa. Filed Nov. 23, 1883. (Model.)

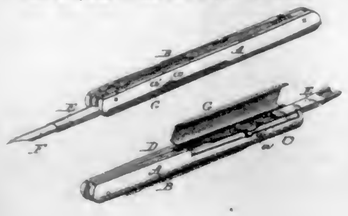


Claim.—1. In a boring-machine, an anger-shaft bollow throughout its length, in combination with a crank-shaft geared to the anger-shaft and situated on a different vertical plane, substantially as and for the purpose specified.

2. In a boring-machine, a crank-shaft capable of receiving a longitudinal as well as an axial movement, and mounted in bearings on a sliding frame, a pinion and rack, a clutch for connecting the shaft with the pinion, and devices for imparting an automatic longitudinal movement to the shaft, substantially as and for the purpose specified.

3. In a boring-machine, the combination of a crank-shaft capable of receiving a longitudinal as well as an axial movement, a pinion and rack, a clutch and stops, one of which is adjustable, having inclined faces arranged to move the shaft longitudinally, so as to connect and disconnect the shaft and pinion, substantially as and for the purpose specified.

296,054. COMBINED KNIFE AND PEN-HOLDER. ISAAC PHILLIPS, Silver City, Idaho. Filed Dec. 17, 1883. (No model.)

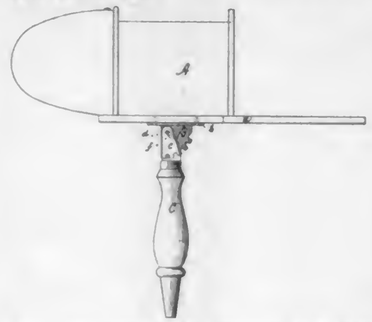


Claim.—1. A combined knife and pen-holder, consisting of a handle provided with knife-blades, said handle having a chamber formed in its back, and a pen-holder carrying a pen pivoted in its back, and adapted to lie within said chamber and be opened out therefrom, substantially as herein described.

2. A combined knife and pen-holder, consisting of the handle A, provided with blades, the back springs, D, cut out or narrowed down near one end to form a chamber, C, the walls of which are the sides of the handle, and the pen-holder E, said pen-holder being pivoted to the back of the handle and adapted to lie within the chamber when closed, and to be opened out therefrom, substantially as herein described.

3. A combined knife and pen-holder, consisting of the handle A, fitted with blades B, said handle having a chamber, C, formed in its back near one end, the pen-holder E, adapted to carry pen F, pivoted in the back of the handle and adapted to lie in and to be opened out of said chamber, and the hinged lid or cover G, adapted to cover said holder and pen in said chamber when closed, and to hold it when opened out, substantially as herein described.

296,055. STEREOSCOPE. HOMER E. PIERCE, Brooklyn, N. Y. Filed Jan. 14, 1884. (No model.)



Claim.—The combination, with a stereoscope and its handle or standard C, of the described lock-joint formed of the jaws *c c′*, provided with the slots *f* and stop-pin *e*, and the toothed segment B, pivoted in the said slot between the said jaws, as and for the purpose described.

296,056. PRINTER'S QUOIN. JOHN POLHEMUS, New York, N. Y. Filed Apr. 26, 1883. (No model.)



Claim.—As a new and improved article of manufacture, a printer's quoin having the following characteristics: a wedge-shaped body, with vertical concave ends, and recesses with curved ends on each of its parallel sides, substantially as shown, and for the purpose set forth.

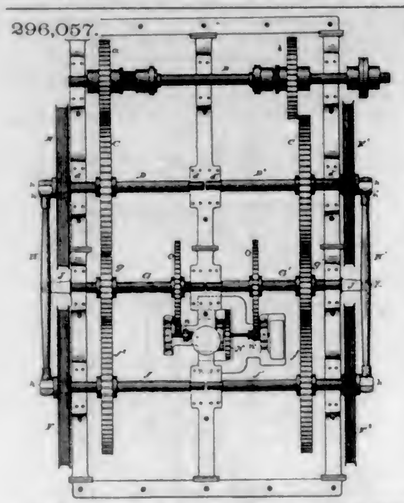
296,057. MACHINE FOR DRIVING ENDLESS ROPES FOR THE PROPULSION OF STREET-CARS. GEORGE POOLE, Baltimore, Md. Filed Jan. 25, 1884. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of a main driving-shaft, two sets of driving-drums, shafts upon which the respective drums are independently mounted, gears upon said shafts, idle-shafts having pinions, each engaging two gears upon the drum-shafts, and adjustable pinions on the driving-shaft for engaging the gears upon the adjacent drum-shafts, for the purpose described.

2. The combination, substantially as hereinbefore set forth, of two sets of driving-drums, each set for actuating an endless rope independently of the other, a main driving-shaft, gearing by which the respective sets of driving-drums may be independently connected with and disconnected from said shaft, a supplementary motor, and connecting mechanism by means of which to independently actuate the respective sets of driving-drums from said motor, for the purpose described.

3. The combination of two sets of drums for independently actuating endless ropes, the main driving mechanism by which the two sets of drums may be independently connected with and disconnected from their main motor, the supplementary motor-shaft, and mechanism for independently connecting it with the respective sets of driving-drums, substantially as and for the purpose hereinbefore set forth.

296,057.

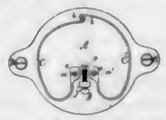


4. The combination of the main driving-shaft, adjustable pinions, the two drum-shafts adjacent thereto, and provided with gears for engaging said pinions, the driving-drums on these two drum-shafts, the main idle-shafts, their pinions engaging the gears of said drum-shafts, the additional drum-shafts provided with gears also engaging the pinions on the idle-shafts, the supplementary motor-shaft, the idle-shaft geared therewith, the shifting pinions on this idle-shaft, and the gears on the main idle-shafts for engaging said pinions to independently actuate the respective sets of driving-drums from the supplementary motor, substantially as and for the purpose hereinbefore set forth.

5. The combination of the frame, the drum-shafts, the driving-drums mounted upon the overhanging ends of their shafts, and the struts provided with adjustable boxes for the overhanging ends of the drum-shafts, substantially as and for the purpose hereinbefore set forth.

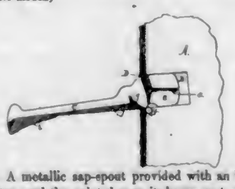
6. The combination of the frame, a set of driving-drums, their shafts overhanging the frame at their outer ends to support the drums outside of the frame, the strut for making bracing connection between said shafts, the adjustable boxes at the ends of the strut, and means for adjustably supporting the strut about midway its length, substantially as and for the purpose hereinbefore set forth.

296,058. THERMOSTAT. MAJOR DANE PORTER, Boston, Mass. Filed Dec. 11, 1883. (No model.)



Claim.—In a thermostat, the two springs C C′, having their abutments *b b* near each other, and one spring provided with a tooth, in combination with an adjusting-screw, D, having a groove, *e*, which groove engages the tooth on the spring, as set forth.

296,059. SAP-SPOUT. CHARLES C. POST, Burlington, Vt. Filed Nov. 10, 1883. (No model.)

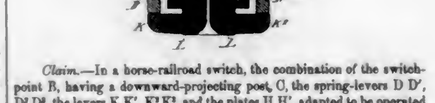


Claim.—1. A metallic sap-spout provided with an inclined shoulder, D, upon its top, and the point *d* upon its lower part, whereby, when the spout is being driven into the hole B, the inclined shoulder D will force the point *d* downward into the bark, substantially as shown.

2. A sap-spout having its end closed or partially closed, and provided with a trap, *g*, and the opening *f*, substantially as described.

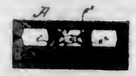
3. In a sap-spout, the combination of the trap *g*, the partially-closed end having the opening *f* through it, and the fins *e*, which project into the hole in the tree, substantially as set forth.

296,060. BARBED METALLIC FENCING. ALBERT POTTS, Philadelphia, Pa. Filed Oct. 16, 1883. (Model.)



Claim.—As an improved article of manufacture, a metallic fencing-strip, notched upon its edges, combined with pointed wire staples, the said staples being secured in place in the notches by twisting their pointed ends together, substantially as shown and described, whereby barbs are formed upon the metallic strip.

296,061. DEVICE FOR LOCKING REMOVABLE STEREOTYPES. EDWIN E. PRATT, Chicago, Ill., assignor to the A. N. Kellogg Newspaper Company, same place. Filed Aug. 9, 1883. (No model.)



Claim.—1. The combination, with the plate and block, of an independent and detached collapsible fastening, substantially such as shown.

2. The combination, with the plate and block, of an independent and detached collapsible and self-adjusting fastening, substantially as specified.

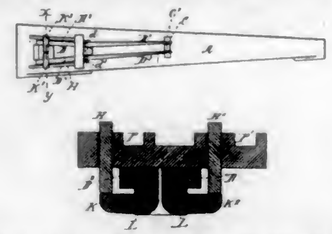
3. The fastening or locking device herein shown, consisting of the two pairs of wings or arms, hinged together and operating substantially as specified.

4. The fastening or locking device consisting of the two pairs of wings or arms hinged together, and the spring for automatically spreading the wings, substantially as specified.

5. The collapsible or hinged locking device provided with the eye or handle *f*, substantially as specified.

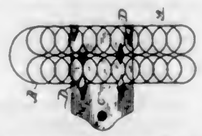
296,062. HORSE-RAILROAD SWITCH. BELLVILLE L. RANDALL, Boston, Mass. Filed July 13, 1883. (No model.)

Brief.—Spring-levers operated by projecting plates and the flange of the wheel move the downwardly-projecting post secured to the switch-point.



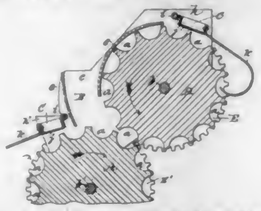
Claim.—In a horse-railroad switch, the combination of the switch-point B, having a downward-projecting post, C, the spring-levers D D′, D^2 D^3, the levers K K′, K^2 K^3, and the plates H H′, adapted to be operated upon by the tread of the passing wheels, substantially as described, and for the purpose set forth.

296,063. STAY FOR CORSETS. HENRY REILY, Rixford, Pa. Filed June 11, 1883. (Model.)



Claim.—A double-coiled flattened spring, A, in combination with the plate C, the plate C being provided with points D, which are bent down over the spring to secure the two parts together, substantially as shown and described.

296,064. CHEESE PRESS OR MOLD. LEWIS ANDREW RITER, Chester, N. Y. Filed Aug. 2, 1883. (No model.)



Claim.—1. In a cheese press or mold, the combination, with the recessed compressing-rollers A A, of the hopper B, formed of the side plates *c c* and the curved plates *e e*, substantially as and for the purposes set forth.

2. The salt-trays C C, with perforated bottoms, in combination with the recessed compressing-rollers A A, substantially as described.

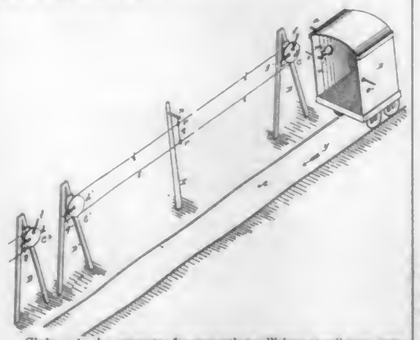
3. The salt-trays C C, formed with the arms *k k*, in combination with the recessed compressing-rollers A A, substantially as described.

4. The cheese-press made substantially as herein shown and described, consisting of the correspondingly-recessed compressing-rollers A A, cog-wheels E E', pivoted salt-trays C C, and hopper B, as set forth.

5. The correspondingly-recessed compressing-rollers A A for compressing the cheese, arranged diagonally to each other in the frame, to facilitate the feeding in of the curd and the dropping out of the compressed rolls, substantially as described.

296,065. APPARATUS FOR PREVENTING ACCIDENTS ON RAILWAYS. DAVID ROBERGE and DAVID ROBERGE, Jr., New York, N. Y. Filed Mar 9, 1883. (No model.)

Brief.—A signal-operating device consisting of two drums connected by belt-connection, so as to rotate simultaneously, one drum being situated at one end of a section of railroad and the other drum at the other end, the first-named drum being provided with two arms, and the second drum with one arm, one of the two arms upon the first drum being arranged in the path of a projection on a passing train, so that the arm is moved thereby, whereupon the drums are rotated through a part of a circle, and the other arms are brought into position to operate a bell-ringing device arranged for the purpose on the trains to be signaled when passing the drums. The second drum is provided with a spring-catch, which holds the drums in the position named, and is adapted, as shown, to be tripped by the first-named train as it passes from the section, whereupon both drums are returned to their former position by a spring arranged in one of the drums.

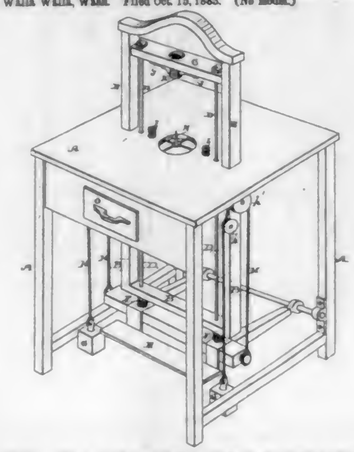


Claim.—1. An apparatus for preventing collisions on railways, composed of the pulleys *d* and *d'*, placed at suitable distances apart along the side of the track and connected by a belt or wire, so as to be moved in unison with each other by contact with the passing trains, as described, the said pulley *d* being provided with the arms *f* and *g* and spring *h*, and said pulley *d'* provided with the arm *g'* and spring *h'* and catch *k l*, and the whole constructed substantially as described, to operate in the manner set forth.

2. The device C', composed of the following parts in combination, namely: the pulley *d'*, fitted to rotate on the pin or arm *d'* and provided with the spring *h'* and arm *g'*, the spring-catch *k l*, and mechanism, substantially as described, for operating the device from a passing train, as and for the purpose set forth.

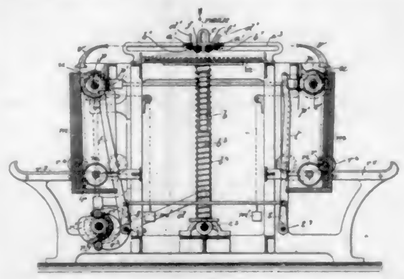
3. In combination with the pulleys *d* and *d'*, connected by a belt or wire, as described, and provided with the arms *f* and *g* and *g'*, respectively, the spring-catch *k l* and the alarm device *m n o*, attached to the engine-cab B, as and for the purpose set forth.

296,066. GREEN-CORN-CUTTING MACHINE. GEORGE W. ROBERTS, Walla Walla, Wash. Filed Oct. 15, 1883. (No model.)



Claim.—In a green-corn-cutting machine, the stand or table A, having spring-cushions I, supplementary frame B, central impaling-pin, N, and underlying drawer O, in combination with the cross-head C, having depending rods D, the pivoted treadle E, and cushion-springs F, the counter-weights G, and the expanding annular cutter or knife K on said cross-head, substantially as herein described.

296,067. MACHINE FOR FOLDING FABRICS AND INSERTING PRESSING-BOARDS BETWEEN THE FOLDS THEREOF. PAUL HEINRICH ERNST RÖMER and MORITZ PAUL MEISSNER, Chemnitz, Saxony, Germany, assignors to (the firm) C. H. Weisbach, same place. Filed Jan. 25, 1883. (No model.)



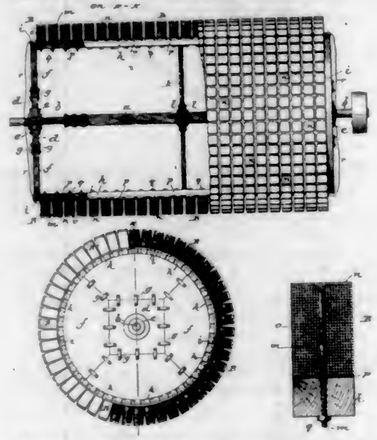
Claim.—1. The combination, with the table which is adapted to descend by the weight of fabric upon it, of the traveling rollers and pinchers, the movable vertical side boxes containing the pressing-boards, constructed so as to support or carry the pressing-boards in a vertical position, and mechanism for operating said pinchers and for raising said boards automatically and alternately from the vertical boxes, and for changing their position from a vertical to a horizontal one in order to be seized by the pinchers, substantially as set forth.

2. The combination, with the table for the fabric, the traveling carriage and rollers, and means, substantially as described, for moving the same, of the pinchers composed of fixed and moving jaws, the bars *b'*, springs *d'*, bolts *d'*, fingers *h*, cam-shaped arms *i*, rocker-shaft *k*, spring-studs *l l'*, and cams *g g'*, whereby the pinchers are alternately opened and shut and the sheets of pressing-board alternately grasped and deposited, substantially as set forth.

3. The combination, with the boxes *m*, for holding the pressing-boards, the weights for moving the same, and the ways upon which said boxes are supported, of the rollers *n*, disks *o*, bevel-wheels *p p'*, rods *r* the levers *s* and *t*, and means, substantially as described, for operating the same, whereby the sheets of pressing-board are raised and delivered substantially as set forth.

4. The combination, with the vertical boxes for holding the pressing-boards, constructed so as to support or carry the pressing-boards in a vertical position, and means, substantially as described, for raising and delivering said pressing-boards, of the curved guide *e*, through which the boards are transmitted from a perpendicular to a horizontal position, and means, substantially as set forth, for grasping said boards, conveying them forward, and depositing them upon the fabric, as set forth.

296,068. MAGNETIC ORE SEPARATOR. FELIX VICTORIEN ROULEAU, Isle Verte, Quebec, Canada. Filed Oct. 16, 1883. (No model.)



Claim.—1. A cylinder for a magnetic ore separator, having its entire outer surface provided with radially-arranged electro-magnets, having the enlarged polar extremities of rectangular form arranged in close proximity to each other, both longitudinally and circumferentially of the cylinder.

2. The central shaft consisting of the wooden body and the metallic extremities, combined with the circular end plates mounted thereon, the wooden bars mounted upon the end plates, and the series of electro-magnets mounted upon said bars and electrically connected with each other and with the extremities of the shaft, substantially as described and shown.

3. In a cylinder for a magnetic separator, the combination of the shaft consisting of a wooden body and angular metal extremities, the angular metal plates *d*, the circular wooden heads *f*, attached thereto, the longitudinal wooden bars *h*, and the series of magnets mounted upon said bars and electrically connected with each other and with the extremities of the shaft, as described and shown.

4. In combination with the cylinder having the longitudinal wooden bars *h*, the electro-magnets having their cores *n* extended inward through said bars and secured by nuts upon the inner ends.

5. In a cylinder for a magnetic separator, the longitudinal wooden bars *h*, in combination with the helix *o*, and the core *m*, having its outer end provided with the polar enlargement *n*, and having its inner end passed directly through the supporting-bar and secured by a nut at the inner end.

296,069. FENCE-POST. EDWARD RITZ, Chicago, Ill. Filed Oct. 9, 1883. (No model.)

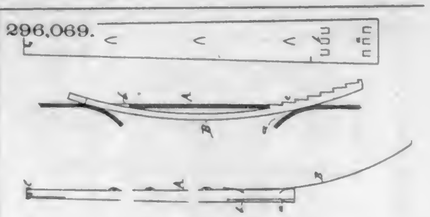
Claim.—1. A tubular fence-post provided with two series of openings, in combination with suitable strips adapted each to pass through one opening of each series, as and for the purpose set forth.

2. A tubular fence-post provided with two series of openings, in combination with strips adapted each to be passed through one opening of each series, and said strips provided on their upper ends each with a suitable head, as and for the purpose set forth.

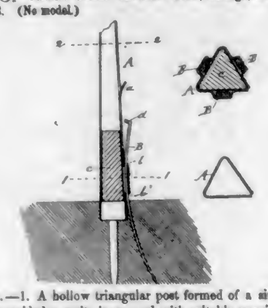
3. A tubular fence-post provided with two series of openings, in combination with strips notched, as described, and adapted each to be passed through one opening of each series, as described and shown.

4. A tubular fence-post provided with two series of openings, in combination with strips adapted each to be passed through one opening of each series, and said strips provided with heads and notches, as described and shown.

5. A tapering tubular fence-post slotted at its upper end, in combination with a ring provided with inward projections adapted to enter the groove of the post, whereby the top wire or tape is held in position, as described and shown.



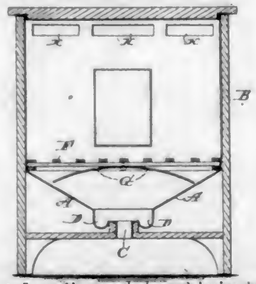
296,070. FENCE-POST. EDWARD RITZ, Chicago, Ill. Filed Nov. 27, 1883. (No model.)



Claim.—1. A hollow triangular post formed of a single sheet of metal, and provided near its lower end with suitable openings, in combination with metal strips passed through said openings, and provided with inwardly-projecting lugs or heads for forcing the edges of the metal sheet together, as set forth.

2. A hollow triangular post formed of a single sheet of metal, and having its lower end filled with suitable material, in combination with metal strips passed through openings in said post, and provided with inwardly-projecting lugs or heads for forcing the edges of the sheet together and holding the filling material in place, as set forth.

296,071. AIR-COOLING REFRIGERATOR. DAVID SANDERSON, Ottawa, Ill. Filed Jan. 24, 1884. (No model.)



Claim.—1. In a refrigerator, the ice-rack having the curved plate or deflector affixed at about its central upper portion to the under side of said rack, in combination with the hopper-shaped ice-bed having a central oblong air-passage in its lower convergent portion, substantially as and for the purpose set forth.

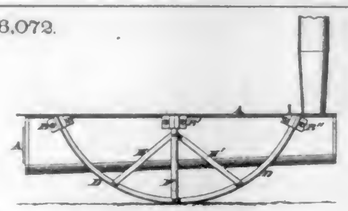
2. In a refrigerator, the ice-rack having the curved plate or deflector affixed at about its central upper portion to the under side of said rack, and the hopper-shaped ice-bed having a central oblong air-passage and a drip-gutter around said passage, in combination with the case or inclosure having air-passages in its upper portion, the tube forming the ice-bed air-passage extending through the bottom of said case or inclosure, substantially as and for the purpose set forth.

296,072. EVAPORATOR-FURNACE. THOMAS SCANTLIN and JAMES M. SCANTLIN, Evansville, Ind. Filed May 24, 1883. (No model.)

Claim.—1. The combination, with an evaporator-furnace, of a pair of rockers readily detachable from each other, and also from the furnace, for the purpose of being stowed within the latter, as herein described.

2. The combination, with an evaporator-furnace, of a pair of rockers readily detachable from each other, and also from sockets fastened to the sides of the furnace, for the purpose of permitting said rockers to

296,072.

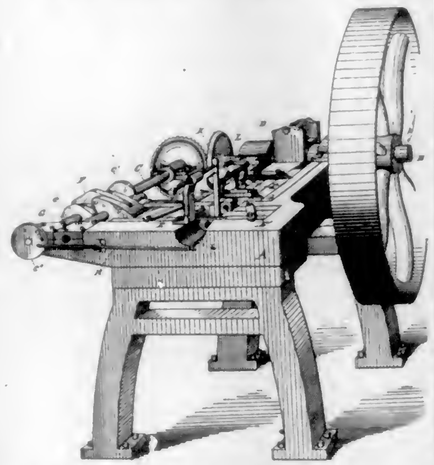


be stowed within said furnace, as herein described.

3. The combination of furnace A, sockets B B′ B″ C C′ C″, rockers D E, and vertical braces F G, said rockers and braces being inserted in said sockets, substantially as herein described.

4. The combination of furnace A, sockets B B′ B″ C C′ C″, rockers D E, vertical braces F G, inclined stays H H′ I I′, and crossed rods J J′, which latter are attached to said braces F G, substantially as herein described.

296,073. BOLT-HEADING MACHINE. CHARLES S. SEATON, Cleveland, Ohio. Filed Mar. 14, 1883. (No model.)



Claim.—1. In a machine for heading bolts or rivets, the combination, with a movable die carrying a cutter, and a fixed bar carrying a cutter and provided with openings of unequal sizes, as described, of a stationary die, a heading-die, a hammer working through the smaller opening in the fixed bar, and connections for actuating the movable and heading dies and the hammer, substantially as and for the purpose set forth.

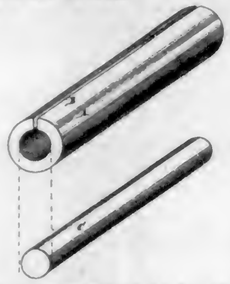
2. In a machine for heading bolts or rivets, the combination, with the gage K, suspended between the heading-die and the grasping-dies, the screw engaging the upper end thereof, and the supporting-arm provided with a downwardly-extending foot, of the heading-die having an inclined surface adapted to engage the foot as it advances toward the blank, and to raise the said arm and gage, substantially as set forth.

3. In a bolt or rivet heading machine, the combination of the arm L and the lever K with the spring i and the set-screw k, causing the lower end of the said lever to recede from the blank as it rises, substantially as described, and for the purpose specified.

4. In a bolt or rivet heading machine, the combination, with the die E and the slide e, of the toggle-joint lever and cam operating the same, and the cam c′ and the arm g, substantially as and for the purpose set forth.

5. In a machine for heading bolts or rivets, the combination, with the dies E and E′, the suspended gage and its supporting-lever, having a foot extending therefrom, a heading-die having an inclined surface, and the bar J, having the cutting-plate secured thereto, and provided with a bolt and hammer-pin openings, of the pivoted lever having a pin extending therefrom, and the rotating flange having an inclined lug, substantially as described, whereby the bolt or rivet is dislodged from the die, substantially as described.

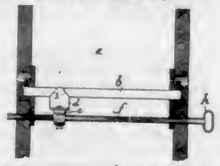
296,074. MANUFACTURE OF ELECTRICAL CONDUCTORS. THOS. SHAW, Newark, N. J., assignor to William H. Ritter, New York, N. Y. Filed Jan. 31, 1883. (No model.)



Claim.—1. The method herein described of forming a compound wire, consisting in forming a slotted cylinder of one metal or alloy, inserting a core or rod of another metal or alloy, and inserting solder between them through the slot, forming a solid ingot or blank for wire-drawing, substantially as set forth.

2. The process of manufacturing a compound wire, consisting in forming a slotted cylinder of one metal or alloy and inserting a core or rod of another metal or alloy, and uniting them with solder inserted through the slot, forming a solid ingot or blank, and then passing the ingot through rolls or dies, producing a finished compound wire.

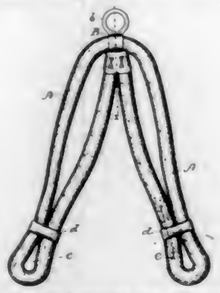
296,075. ORE-SEPARATOR. LOUIS A. SHEAD, Alameda, Cal., and HADLEY P. FAIRFIELD, West Medford, Mass., assignors to Gordon McKay, Trustee. Filed May 23, 1883. (No model.)



Claim.—1. The combination, with a sluice having a transverse slit through its bottom, of the horizontally-movable clearing device and support therefor, arranged wholly below the bottom of the sluice, and means to operate the clearing device in the slit, whereby the regularity of the stream remains undisturbed, substantially as set forth.

2. The combination, with a sluice having a transverse slit through its bottom, of the clearing device having inclined edges movable longitudinally in the said slit, the support for said clearing device, arranged wholly below the bottom of the sluice, and means to operate the said clearing device, whereby intruding particles are lifted out of the slits and the action of the stream left undisturbed.

296,076. SUSPENDER-END. CHRISTOPHER C. SHELBY, New York, N. Y. Filed Jan. 15, 1884. (No model.)

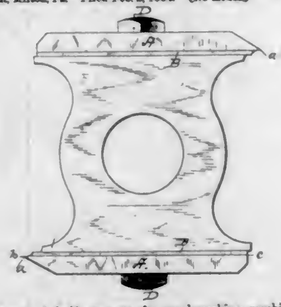


Claim.—1. The clasp B, provided with the depending portions b' and b^2, the latter having the wings b^2 b^2, in combination with the webbing held at its middle between the parts b' b^2, and at its extremities by the parts b' b^2 and wings b^2, substantially as described.

2. The clasp B, consisting of the eye b, the parts b' b^2, wings b^2 b^2, and prongs or points b^4, substantially as described.

3. The combination, with the webbing, of the bands, of concavo-convex form in cross-section, and adapted, when clasped upon the webbing, to receive in their concave inner sides a portion of the webbing, so as to prevent slipping, substantially as described.

296,077. KNIFE FOR WOOD-WORKING MACHINES. SAMUEL J. SHIMER, Milton, Pa. Filed Feb. 2, 1884. (No model.)



Claim.—1. A knife or cutter for wood-working machines, consisting of a steel body having rigidly secured to one of its faces a coating of soft metal, substantially as and for the purpose set forth.

2. A knife or cutter for wood-working machines, consisting of a steel body having soldered or otherwise rigidly secured thereto a thin layer or coating of soft metal, substantially as and for the purpose set forth.

296,078. DENTAL-DRILL HAND-PIECE. JOHN H. SIDDALL, Canton, Ohio. Filed July 22, 1883. (No model.)



Claim.—1. In a hand-piece for chucks or drill-holders for dental engines, the combination, with the revolving drill provided with a pulley or belt-holder, of a belt-guide formed in two parts, each having jaws arranged oppositely to those on the other, the parts carrying the jaws being separable from each other, and means for clamping them together, substantially as set forth.

2. In a drill-holder for dental engines, the combination of the revolving drill-holder, the pulley B, the stationary pulley-support H, having the pulleys G G, and the pulley-support H′, adapted to be withdrawn from and to be forced up against the pulley-holder H, to clamp the belt in place between the pulleys, substantially as set forth.

296,079. METALLIC FASTENING. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Jan. 17, 1884. (No model.)



Claim.—The herein-described metallic tack or fastener A, consisting of the base a, having a rounded lower and substantially straight upper edge, from the center of which projects the prong b, terminating in point c, substantially as shown and described.

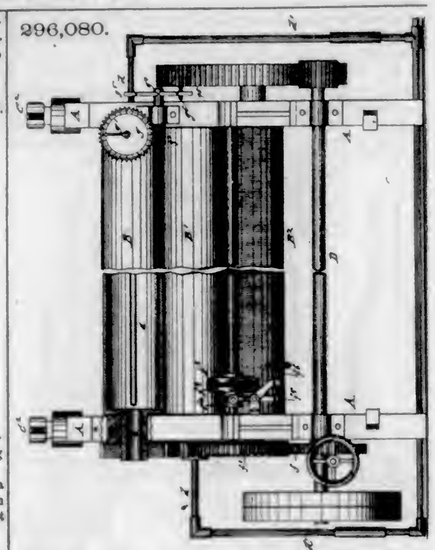
296,080. MACHINE FOR CALENDERING PAPER. MOSES SOLINGER, New York, N. Y. Filed Feb. 1, 1884. (No model.)

Claim.—1. In a paper-calendering machine, the combination of a heated pressure-roll, intermediate heated roll, and a lower paper-roll, with means for unwinding and with means for winding up the paper, whereby the paper may be finished at one or both sides, according as the same is passed between the lower and intermediate rolls, or between the upper and intermediate rolls, substantially as and for the purpose set forth.

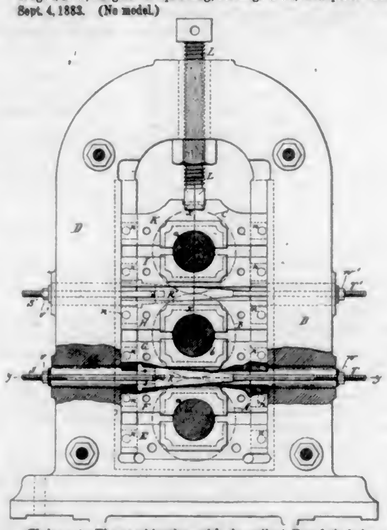
2. In a paper-calendering machine, the combination of an upper heated pressure-roll, an intermediate heated roll, a lower paper-roll, means for unwinding the paper, means for winding up the paper, and friction-brakes applied to the unwinding and winding-up shafts, whereby the paper is moved at a properly-regulated speed through the calendering-rolls, substantially as set forth.

3. The combination, with the calendering-rolls, of a sheet-registering mechanism consisting of a feed-table having revolving feed-rolls, deflecting-plate back of the feed-rolls, tension-roller supported on oscillating and spring-acted levers, and means whereby the oscillations of the levers are transmitted to a registering dial and hand, substantially as set forth.

296,080.



296,081. BEARING FOR ROLLING-MILLS. WALTER STEEL, West Bergen, N. J., assignor to Spaulding, Jennings & Co., same place. Filed Sept. 4, 1883. (No model.)



Claim.—1. The combination, with the rolls A B and their journals or shafts a b, bearing-blocks E G, and cap-blocks F H, of the wedge R, introduced between the cap F and block G, the surfaces being inclined, so that the block G will be raised or lowered by an endwise movement of the wedge R, substantially as and for the purposes set forth.

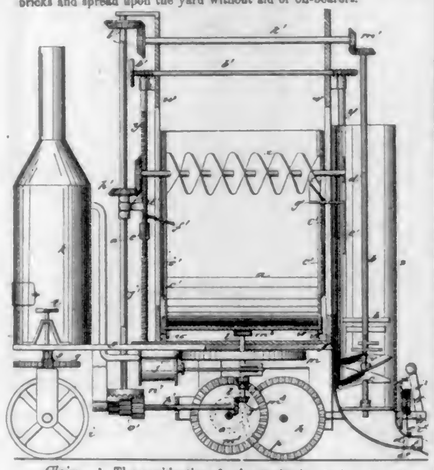
2. The cap-block F, having an inclined upper surface, with ribs 3 3, in combination with the bearing-block G, with ribs 4 4, and the wedge R, introduced between said blocks, and the rolls and end frames and screws for moving the wedges endwise and holding the same, substantially as set forth.

3. In combination with the rolls A B C and their journals a b c, the end frames, D, the bearing-blocks E G I, and cap-blocks F H K, with the ribs upon the respective edges of the blocks F G H I, the single wedge

R between the blocks F G, and the single wedge R' between the blocks H I, and the screws for moving and holding the wedges, substantially as set forth.

296,082. TRAVELING BRICK-MACHINE. HENRY STELKMANN, Leech Lake, Minn. Filed June 26, 1883. (No model.)

Brief.—The whole machine carrying a tank of clay is propelled forward by steam, the clay mixed, pressed, and issues in a sheet cut into bricks and spread upon the yard without aid of off-bearers.



Claim.—1. The combination of a clay-tank, clay-feeder, clay-mixer, clay-presser, brick-former, clay-cutters, and dischargers, substantially as herein described, with a locomotive-machine, substantially as specified.

2. The combination, in a brick-machine, of a locomotive-truck, a removable clay-tank, and feeding, mixing, pressing, cutting, and discharging apparatus, substantially as described.

3. The clay-tank having slotted sides and removable plates c', in combination with the locomotive-truck having vertically-adjustable feeding-screw x and clay mixing, pressing, cutting, and discharging mechanism, substantially as described.

4. The combination of vertically-adjustable feed-screw x, adjusting-screws y, and cross-heads d' with the clay-tank a, having slotted sides and removable plates c', and being mounted on the truck, together with the mixing, pressing, cutting, and delivering apparatus, substantially as described.

5. The combination of the vertically-adjustable feed-screw x, cross-heads d', and chutes f' g' with the clay-tank a, having slotted sides and removable plates c', substantially as described.

6. The combination of clay-tank a, having rollers u, with the locomotive-truck g, having rails v, uprights w, and feed-screw x, substantially as described.

7. The combination of the vertical clay-mixing hopper z, mixer b, clay-tank a, and feed-screw x with a locomotive-truck, said mixer and feed-screw being geared with the motive apparatus, substantially as described.

8. The combination of the vertical clay-mixing hopper z, mixer b, pressing-screw c, tank a, and feed-screw x, with a locomotive-truck, said presser, mixer, and feed-screw being geared with the motive apparatus, substantially as described.

9. In a brick-machine, the connected series of sliding cutters e, arranged in a cross-head, u', and actuated by suitable mechanism to descend when sufficient clay for a brick has passed them, and to rise when said clay has arrived within an inch or so of the preceding brick, as described.

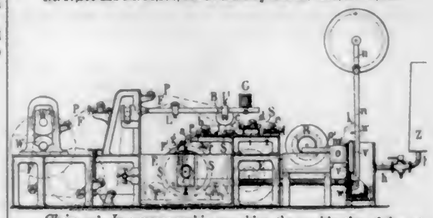
10. The combination of tappet-wheels c^3, rock-shaft c^2, arms d^3, cross-head u', and cutters e with dischargers f, substantially as described.

11. The combination of a steam-jet pipe, a^4, with the cutters e, having connection with the boiler or other source of steam-supply, and arranged to lubricate the cutters and the clay by steam-jets, substantially as described.

12. The combination of the vertical clay-mixing hopper z, mixer b, pressing-screw c, pressing-chamber d, dischargers f, and cutters e with a locomotive-truck having a clay tank and feeder, and said mixer, presser, cutters, and feeder being geared with the motive apparatus, substantially as described.

13. The combination of abutments v' with the clay-pressing screw, said abutment being movable along the screw, and the screw having a slot or opening, y', substantially as described.

296,088. PAPER-MAKING MACHINE. JOHN VALENTIN STENGER, Frohnleiten, Styria, Austria-Hungary, assignor to the Maschinenbauanstalt Golsern, (vormals Gottschald & Nützli,) Golsern, Germany. Filed Jan. 31, 1884. (No model.) Patented in Austria-Hungary Aug. 30, 1881, No. 17,265 and No. 31,172, and in Germany Jan. 13, 1882, No. 19,193.



Claim.—1. In a paper-making machine, the combination of the cylinder A, a coarse-wire covering, and rubber bands or straps upon the same, and the belt of fine-wire fabric S, substantially as set forth.

2. In a paper-making machine, the combination, with the cylinder A and belt of felt F, of the belt of fine-wire fabric S, the rollers a b f, the rollers d e and their screws, for regulating the tension upon the wire fabric S, and the rollers B C, between which the web of paper-pulp is pressed before passing off upon the felt fabric, substantially as specified.

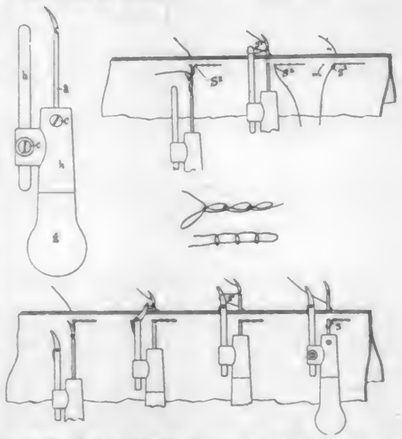
3. The rubber bands or straps upon the cylinder A, in combination with the coarse-wire covering to said cylinder A, and the belt of fine-wire cloth S, whereby the width of the deposited web of paper-pulp is regulated, as set forth.

4. In a machine for making paper, the combination, with the cylinder A, belt of wire fabric S, and rollers around which said belt passes, of the rubber bands upon the cylinder A, and the water-pipes g i, whereby water is discharged downward, the water from pipe g cleansing the coarse-wire covering upon cylinder A and washing away surplus paper-pulp opposite to the rubber bands, and the water from pipe i cleansing the fine-wire belt on its return movement, substantially as specified.

5. The vats for holding paper-pulp and water, and the vat L and pipe K, in combination with the pair of buckets C D, a connecting-rod, n, for lifting said buckets, a pin and slide, V, for tilting the same and discharging the pulp and water, substantially as specified.

6. The buckets C D, constructed with side walls, l, adjustable in height by small removable bars, whereby the quantity of pulp and water to be raised at each upward movement is regulated, substantially as set forth.

296,084. HAND APPARATUS FOR FORMING STITCHES. CONRAD STICKEL, Ditzingen, Würtemberg, assignor to Fr. Schumacher, Aachen, Germany. Filed Dec. 15, 1883. (No model.) Patented in Germany Feb. 6, 1883, No. 24,157; in Belgium Sept. 21, 1883, No. 62,660, and in France Sept. 21, 1883, No. 157,665.

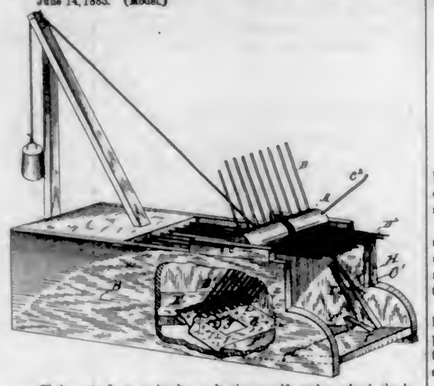


Claim.—1. A hand stitching device consisting of a hooked needle-awl secured to a handle provided with means forming a loop-holder, substantially as described.

2. The combination, substantially as shown and described, of the handle g, socket h, provided with the projecting parts, set-screws c c, cylindrical loop-holder b', and the hooked needle-awl a, the whole forming a complete hand stitching device.

3. The combination consisting of the hooked needle-awl a, socket A, loop-holder b', finger d, fulcrumed on the guide-spring f, and handle g, substantially as shown and described.

296,085. ANIMAL-TRAP. HIRAM B. SWARTS, Wooster, Ohio. Filed June 14, 1883. (Model.)



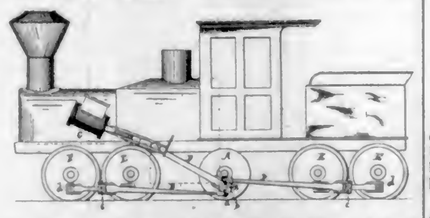
Claim.—1. In an animal-trap having a self-setting wheel, the inclined floor F, connected to the floor F' by means of a pivoted platform having an opening formed therein, so as to provide a bait-receptacle and a bait-hook, the parts being organized and combined substantially as shown.

2. In an animal-trap, a wheel having spoke-arms, the raised floor F, and hinged platform G, provided with a retaining-spring and catches, in combination with a pivoted bait-hook which extends under the floor F, and is adapted to depress the platform G when drawn forward, substantially as shown.

3. In an animal-trap having a rotary spoked wheel, and means for setting and holding the same, the hinged platform G, which is held in a raised position by means of a spring, and provided with an opening through which passes a bait-hook, said platform adapted to be operated either by the weight of the animal or the movement of the bait-hook, the parts being combined and organized substantially as shown, and for the purpose set forth.

4. In a self-setting animal-trap, a rotating axle provided with means for operating the same, said axle having two series of spokes, D D' D^2 and C C' C^2, of different lengths projecting from the axle, as shown, the longer spokes being adapted to engage with a catch located upon the end of a raised platform, which catch is disengaged by the depression of a pivoted platform with a central opening, through which passes a bait-hook, l, the rear end of which bears upon the upper end of the pivoted platform, and the pivoted floor I, provided with an arm, I', with catch i and triangular stop J and spring-latch H, the parts being organized and combined substantially as shown, and for the purpose set forth.

296,086. LOCOMOTIVE. THOMAS S. TEW, Big Rapids, Mich. Filed June 9, 1883. (No model.)

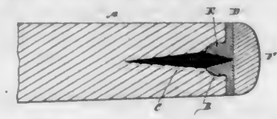


Claim.—1. The combination, with the main driving-wheel and crank-pin of a locomotive, of the double-crank arm a, pivotally connected therewith, and the rods b b, connected with opposite ends of said arm, and having their opposite ends connected to driving-wheels on opposite sides of the main driving-wheel, substantially as described.

2. The combination, with the centrally-located driving-wheels of a locomotive, connected in the usual way to the steam-cylinders, of the double-crank a, upon the end of the wrist-pin B, connecting-rods b, the joint c, the parallel rods d, and the traction-wheels E, the parts being constructed, arranged, and operating substantially as and for the purposes specified.

3. The combination, with the main and secondary driving-wheels of a locomotive, of the connecting-rod b, having one end provided with a joint, c, adapted to yield laterally, and connected at its opposite ends with said main and secondary driving-wheels, substantially as described.

296,087. BILLIARD-CUE TIP. WARREN H. THOMAS and CHARLES B. CORE, Peoria, Ill. Filed Oct. 26, 1883. (No model.)

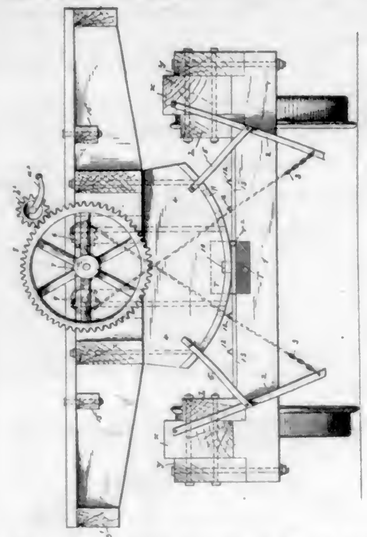


Claim.—1. The combination, with a cue, of a screw tapered toward both ends and screwed in the end of the cue, a butt-piece held on the end of the cue by the screw, and of a tip glued on the butt-piece, substantially as herein shown and described.

2. The combination, with a cue having a recess in its end, of a screw screwed in the end of the cue and projecting through the cavity, a butt-piece held on the projecting end of the screw, and provided with a neck fitting in the cavity in the end of the cue, and of a tip secured on the butt-piece, substantially as herein shown and described.

3. The combination, with a cue provided in its end with a cavity having a concave bottom, of a screw screwed in the end of the cue and projecting through the cavity, a butt-piece held on the projecting end of the screw, and provided with a neck fitting in the cavity, and of a tip secured on the butt-piece, substantially as herein shown and described.

296,088. DUMPING-CAR. MATTHEW VAN WORMER, Melrose, Mass. Filed Aug. 30, 1883. (No model.)



Claim.—1. In combination, the stirrups C, as made with the single cross-bar e, and hung on the sills of the car-bed to swing in directions lengthwise of the car, the tapering catches D, fixed on the car-truck, and having their under sides straight, and the connections f and g and hand-lever A, all substantially as and for the purpose set forth.

2. The combination, substantially as shown and described, of the central draft-timber, r, on the truck, the block s thereon, the draw-bar resting on said block, and the straddle-block o of yoke t, within which the draw-bar works, the draft-timber block and yoke being bolted together.

3. In combination, the draft-timber r on the truck-block s, yoke t, and a platform, u, hinged above said yoke, as and for the purpose set forth.

4. In combination with the blocks x, bolted to the outside sills, y, of the truck, and resting on its end beam, 1, the levers 2, chain 3, link-levers 5, rocker 4, and the system of toothed gears on the car-body, the combination operating to tilt the body by pushing either of the link-levers 5 upward against the rocker.

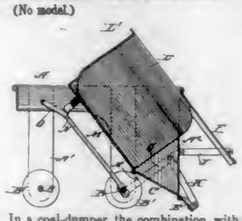
5. In combination with the rockers of a dump-car, the central draft-

timber, *r*, on the truck-frame, made, as described, with reduced ends, on which the rockers bear, and with a greater height or thickness between the rockers, as and for the purposes set forth.

6. In a four-wheeled side-dumping car, the combination, with a center bolster, a^2, of a central draft-timber, *r*, centrally supported on and bolted at its center to the center of said bolster, said draft-timber being at its ends let into and secured to the rocker-bolsters, and forming a portion of the bed for the rockers.

7. In combination, the levers 2, links 5, chain 3, toothed gears 6 and 9 on the car-body, large gear-wheel 8, having the toothed gear 7 on its axis, and driving-gear b^2, these parts being arranged for joint operation substantially as and for the purposes set forth.

296,089. COAL-DUMPER. THOMAS WALLWORK, Litchfield, Ill. Filed Jan. 30, 1884. (No model.)



Claim.—1. In a coal-dumper, the combination, with a frame, of a swinging box hinged in the same, and of gates hinged to the top and bottom of the frame, the said gates being connected to open and close together, substantially as herein shown and described.

2. In a coal-dumper, the combination, with a frame having an inclined bottom at its front, of a box hinged in the frame, and of gates hinged to the top and bottom of the front end of the frame, the said gates being connected to open and close together, substantially as herein shown and described.

3. The combination, with a frame, of a box hinged in the same at one end of the bottom of said box, substantially as herein shown and described.

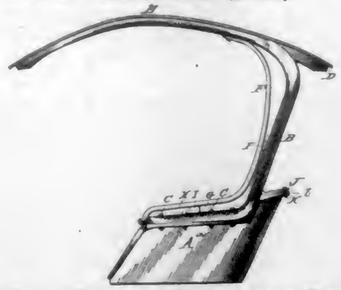
4. The combination, with the frame A, of the box L, hinged in the same at one end of the bottom of the said box, and of the frame M, hinged in the frame A, under the box L, substantially as herein shown and described.

5. The combination, with the frame A, of the box L, hinged in the same at one end of the bottom of the said box L, the frame M, hinged on the frame A, under the box L, and of the spring N on the frame M, substantially as herein shown and described.

6. The combination, with the frame A, of the hinged box L, the gates F and E, hinged to the top and bottom of the ends of the frame A, the swinging arms G, and the connecting-rods J K, extending from the arms G to the gates F and E, substantially as herein shown and described.

7. The combination, with the frame A, having the sides A^2 at the front, and an inclined bottom, C, between the sides A^2, of the hinged box L, the gates F and E, hinged to the top and bottom of the frame A, the swinging arms G, and the connecting-rods J and K, extending from the arm G to the gates F and E, substantially as herein shown and described.

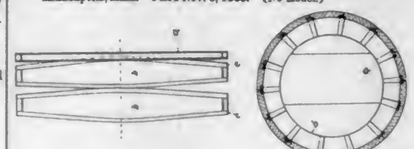
296,090. VEHICLE-TOP. EDWARD WARREN, Ligonier, Ind. Filed Nov. 13, 1882. Renewed Aug. 24, 1883. (No model.)



Claim.—1. The removable vehicle-top constructed with uprights B, having forward-bent lower parts, G, adapted to be secured to the side flanges, *a*, of the seat by bolts C, brace-bars F, secured at their lower ends to the front ends of parts G of the uprights, and at the other end to the top-frame in front of uprights B, and bent to form arm-supports H and braces for the top, and connecting-bar J, secured to the back flange, *b*, by means of notted bolts K, as and for the purpose shown and set forth.

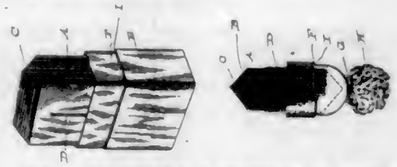
2. The combination of the vehicle-seat A, having side flanges, *a*, and back flange, *b*, with the removable top consisting of top D E, uprights B, having forward-bent lower parts, G, braces F H, and connecting-bar J, and adapted to be removably secured upon the seat-flanges *a b* by bolts C and K, as and for the purpose shown and set forth.

296,091. MANUFACTURE OF BARRELS. CALEB B. WASHBURN, Minneapolis, Minn. Filed Nov. 5, 1883. (No model.)



Claim.—The combination, in a barrel, of staves having their inner edges cut away to form dovetail grooves, with strips of wood beveled suitably to fit into and fill such cavities flush with the inner surface of the staves, while permitting their outer edges to meet.

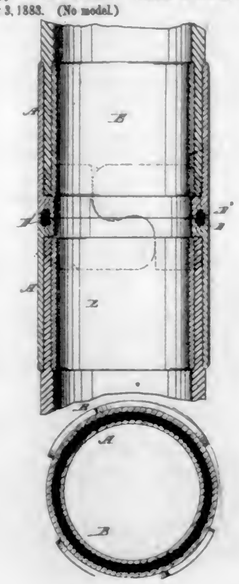
296,092. SLATE-WASHER. HOWARD L. WEED, Grass Valley, Cal. Filed Jan. 21, 1884. (No model.)



Claim.—1. In a slate-washer, an interchangeable pad beveled at both ends to form a point or wiper, C, made compact and held together by a cord or clamp, substantially in the manner specified.

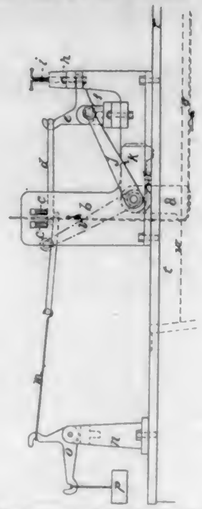
2. In a slate-washer and wiper, the hollow trough or cap to receive and hold the pad or wiper, with its lower end provided with clamp or hooks to receive and hold a sponge or washer, in combination with a box or holder for said washer, constructed and arranged in the manner as herein set forth and described.

296,093. HOSE-COUPLING. THOMAS E. WELLS, Sandy Hill, N. Y. Filed May 3, 1883. (No model.)



Claim.—The combination, with hose-sections, of the collar A, having hook-prongs B, projecting beyond the end, and annular groove C, the metallic rings D E, and the packing-ring D', as and for the purpose specified.

296,094. APPARATUS FOR COATING WIRE WITH METAL. LEWIS WILLIAMS, Johnstown, Pa., assignor to the Cambria Iron Company, of Pennsylvania. Filed Oct. 5, 1883. (No model.)

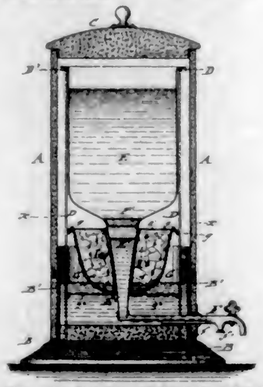


Claim.—1. The combination, in a wire-wiping machine, of the wire-wiping coils *d d* with the bars *c c*, substantially as described.

2. In a wire-wiping machine, the combination of the wire coils *d d* with the levers *o e*, weights *p*, and screws *i*, substantially as described, and for the purpose set forth.

3. In a wire-wiping machine, the combination of the wire-wiping coils *d d*, the bars *c c*, and levers *o a*, with sinker *a*, shaft *u*, and lever *j*, substantially as described, and for the purpose set forth.

296,095. WATER-COOLER. CHARLES F. WELCH, New York, N. Y. Filed Jan. 25, 1884. (No model.)

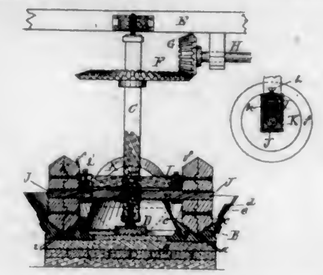


Claim.—1. The combination of an exterior body, an interior water-receptacle having a funnel-shaped end, an interior supporting-frame for the water-receptacle, an ice-receptacle arranged around the funnel of the water-receptacle, and a discharge-faucet connected to the lower end of the funnel, substantially as set forth.

2. The combination of an exterior body, A, an interior water-receptacle, E, having a funnel, E', an interior supporting-frame, D D', for the water-receptacle, an ice receptacle or net, G, arranged around the funnel E', a guard-cone, E^2, arranged around the funnel, and a discharge-faucet, F, connected to the lower end of the funnel, substantially as specified.

3. The combination of the body A, made of an upper detachable and a lower fixed section, a base, B, having a cylinder, B', an interior water-receptacle, E, having a bottom filter, F', and funnel E', a supporting-frame, D D', an ice-supporting net, G, a guard-cone, E^2, around the funnel E', and a discharge-faucet, F, connected to the lower end of the funnel E', substantially as specified.

296,096. ORE-CRUSHER. JACOB CHARLES WENWELL, Medford, Mass. Filed Nov. 8, 1883. (No model.)



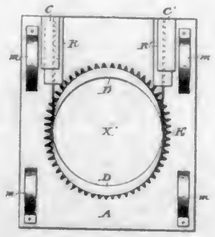
Claim.—The combination of a series of crushing-rollers having V-shaped peripheries, and horizontal shafts on which said rollers are mounted, with a carriage in which said shafts are journaled at their outer bearing-points, a vertical shaft in which the inner ends of said horizontal shafts are journaled, springs which are interposed between said carriage and said horizontal shafts, and a stationary bed having a circular V-shaped groove in which said rollers travel, substantially as set forth.

296,097. POTTER'S MOLD. AMOS WOEBER, Cincinnati, Ohio, assignor, by direct and mesne assignments, to the Cincinnati Target Ball and Trap Manufacturing Company, same place. Filed Sept. 19, 1882. (No model.)



Claim.—An improved potter's mold consisting of the bed-plate A *a*, flasks B, pistons E, lifting-bar F, elevating devices G G' *g* H H' *h* J, and readily-removable followers N, which latter are connected to a bar, L, and are operated directly by hand, substantially as herein described.

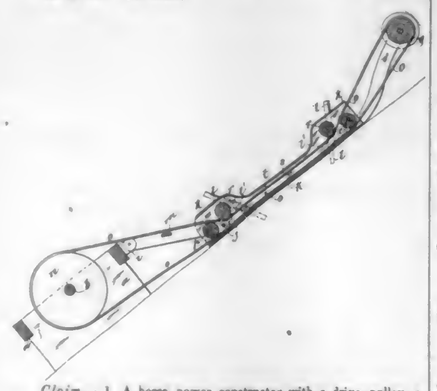
296,098. CAR-AXLE PACKING. WILLIAM H. WRIGHT, Tarrytown, N. Y. Filed Aug. 16, 1883. (No model.)



Claim.—1. A compressible impervious packing, *n*, such as felt or other similar material, applied, attached, or affixed to the face of a supporting metallic plate, A, and articulating sliding clip B, provided with vertical guides or ways, such packing presenting a continuous impermeable surface in contact with the inner wall, K, of a packer-chamber and around a car-axle shaft in such chamber by means of such supporting-plate and clip, tension-spring E, and pressure-springs *m*, operating substantially in the manner and for the purposes described.

2. In a shaft-packing, the metallic supporting-plate A, its articulating sliding clip B, pressure-springs *m*, and projecting crescent-shaped articulating seat with tension-spring E, substantially operating in the manner and for the purposes described.

296,099. HORSE-POWER. AUGUST ZASTROW, La Harpe, Ill. Filed Jan. 26, 1884. (No model.)

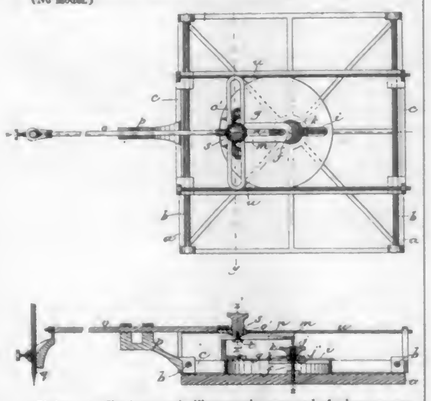


Claim.—1. A horse-power constructed with a drive-pulley, *n*, mounted on the main power-shaft *b*, and a belt-casing, *k*, pivot-jointed by bars *h* to the frame *a*, and said belt-casing being depressed along its central portion, as at *t*, substantially as shown and described.

2. The combination, with the frame *a*, its drive-shaft *b*, having pulley *n*, and the belt *o*, of the casing *k*, hinged to frame *a* by the bars *h*, and anchored in place by stakes *l*, driven into the ground in reverse ways at opposite sides of the casing, substantially as shown and described.

3. The belt-casing *k* of a horse-power, having idlers *p r* journaled therein at opposite ends, depressed centrally at *t*, and having fixed inclined sockets *l'*, through which stakes *l* may be driven reverse ways for anchoring the casing to the ground, substantially as shown and described.

296,100. ELLIPSOGRAPH. LEVI ABBOTT, Cambridgeport, assignor to E. T. Snow and H. P. Stevens, both of Chelsea, Mass. Filed Feb. 4, 1884. (No model.)

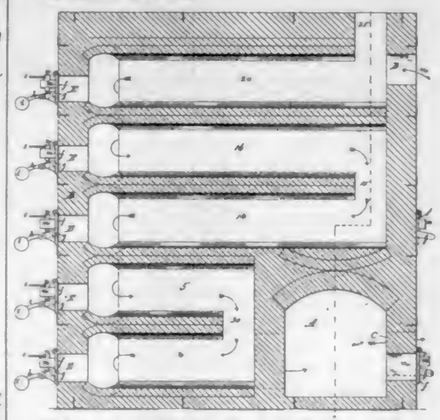


Claim.—1. The improved ellipsograph composed of a base or support, a disk adjustably pivoted thereto, a frame, *c*, adapted to slide on guides on the base and inclosing the disk *g*, a marker-carrying arm adapted to slide in a guide formed on the frame *c* and provided with a transverse slotted head, and an adjustable crank-pin connecting said head with the disk or with an attachment thereof, as set forth.

2. The combination of the base or support *a*, having a fixed pivot-pin, *f*, the threaded socket on said pivot, the slotted disk adjustable on said socket, means for positively securing said disk to the socket in any position to which the disk may be adjusted, the slotted arm secured to said disk, the sliding frame *c*, surrounding said disk, the marker-carrying arm having the slotted transverse head, and the adjustable crank-pin, all arranged and operating substantially as described.

3. The combination of the frame *c*, having the guide-rods *s s*, the marker-carrying arm *o*, adapted to slide in guides formed on said frame, and provided with the slotted transverse head supported and guided by said rods, and means, substantially as described, for reciprocating said frame and arm each in a direction at right angles to the reciprocating movement of the other, as set forth.

296,101. HOT-BLAST STOVE. JOSEPH J. AIREY, Pittsburg, Pa. Filed Sept. 13, 1883. (No model.)

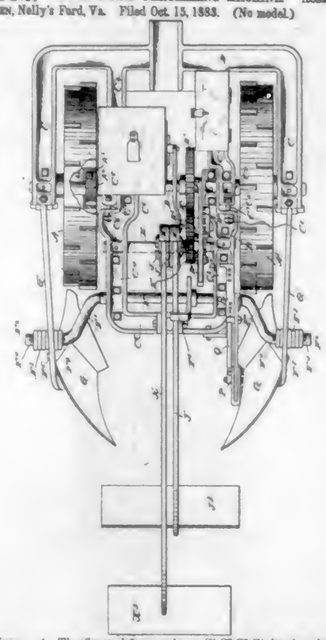


Claim.—1. In a hot-blast stove, the combination of a series of horizontal flues communicating each at its end with the flue next adjacent, the last flue of the series communicating by a vertical flue with a second series of similar flues above, substantially as described.

2. In a hot-blast stove, the combination of a horizontal combustion-chamber with a series of communicating flues arranged side by side and running in a direction at right angles to the direction of said combustion-chamber, substantially as described.

3. In a hot-blast stove, one or more wall-openings communicating with the heating-flues, provided with swinging doors *f*, having tubes *m*, and plugs *n*, having openings *p* and partition *r*, substantially as described.

296,102. HILLING AND FERTILIZING MACHINE. ROBERT W. ALLEN, Nelly's Ford, Va. Filed Oct. 15, 1883. (No model.)

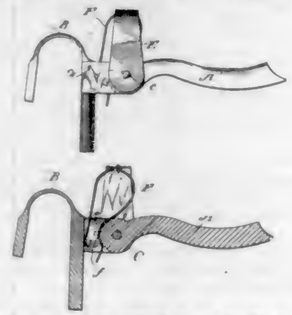


Claim.—1. The flanged frame-pieces $C' C^2 C^3 C^4$, having the lapped hinged ends, as specified, in combination with the bolts C^7 and nuts C^8, whereby the lapped ends of the frame are adjustable, substantially as described, and for the purpose set forth.

2. The lifting-crank arms $F' F^3$, washers F^7, and means whereby the washers may be secured, in combination with the beam G' and right-angled arm F^5, substantially as described, and for the purpose set forth.

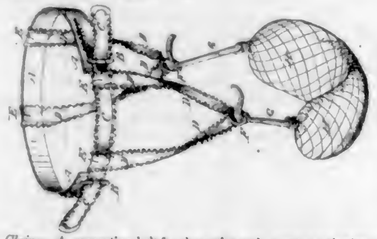
3. The boxes H H', provided with two side parallel toothed racks, said boxes being open on one side and provided on the other with an inner annular flange, in combination with a mutilated pinion, substantially as described, and for the purpose set forth.

296,103. THILL-COUPLING. CYRUS W. AMENT, Anthony, Kans. Filed Jan. 3, 1884. (No model.)



Claim.—A thill-coupling consisting of the headless thill bolt or pin C, with tapered ends *c*, bail or approximately U-shaped spring-metal guard E, having apertures or indentations *e*, to receive the ends of the headless bolt C, and looped spring F, arranged between axle-clip B and thill-iron A, and connected to guard E, substantially as shown, and for the purpose described.

296,104. CATAMENIAL SACK. NANNETTE AMIA, Brooklyn, N. Y. Filed Dec. 3, 1883. (Model.)



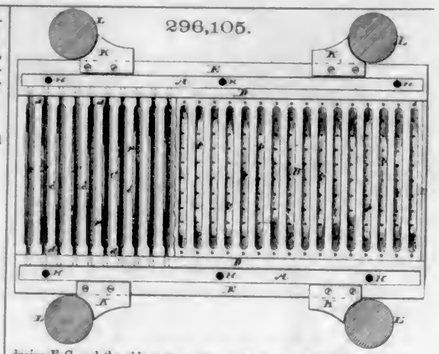
Claim.—A supporting-belt for absorptive pads, constructed substantially as herein shown and described, and consisting of the piece of webbing A, having a buckle, B, at each end, the elastic webbing C, buckled into the said buckles, and the elastic hangers D, having end loops, E, to receive the webbings A C and slide thereon, and provided with rings F, free to slide upon the said hangers, to receive the fastening-strings of an absorptive pad to be tied thereto, as set forth.

296,105. DIVISION-PLATE FOR OIL-PRESSES. LOUIS ANDREWS, Arkansas City, Ark. Filed Sept. 17, 1883. (No model.)

Claim.—1. In a press for extracting oil from cotton-seed meal or other substance, the herein-described division-plate C, constructed with the corrugations *c c'*, top side flanges, D D, and top side gutters, A, outside of said flanges, the cross-depressions *c* in the top of the plate opening into shallow-bottom drain-channels F, which, extending across the plate at the bottom of said depressions, open through said side flanges, D, into the side channels, A, and the said side flanges having drains G, opening above said corrugations *c* into said side gutters, whereby the oil is drained from the said division-plate through its side flanges, D D, both from the top and from the bottom of the cake while under compression, substantially as shown and described.

2. In a press for extracting oil from cotton-seed meal and other substances, the division-plate C, constructed with top side flanges, D D, and bottom extension, C', the latter being adapted to fit within the former when the plates are brought together, substantially as shown, and for the purpose described.

3. In a press for extracting oil from cotton-seed meal and other substances, the division-plate C, constructed with top side flanges, D D, and bottom extension, C', the latter being adapted to fit within the former when the plates are brought together, the top and bottom surfaces of said division-plate being formed with cross-corrugations, the drains F G and the side gutters, A, on the upper side of said plate being arranged at different levels, all constructed substantially as shown and described.



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4. In a press for extracting oil from cotton-seed meal and other substances, the division-plate C, constructed with top cross-corrugations, *c c'*, the top side flanges, D D, the drains F G, and the side gutters, A, in combination with a copper sheet, B, formed with cross-corrugations corresponding with those in the division-plate, and having perforations *b*, arranged in line over the cross drain-channels F, whereby said copper plate forms a permanent corrugated seat for the mat, conforming to the corrugations of the division-plate, substantially as described, for the purpose specified.

5. The combination, in a press for extracting oil from cotton-seed meal and other substances, of the division-plate C, constructed with top and bottom cross-corrugations, the top side flanges, D D, the top drains, A G F, and the bottom extension, C', the latter adapted to fit within the former when the plates are brought together, with a permanent perforated copper sheet, B, conforming to the corrugations in the top and bottom of the division-plates, forming a mat-seat placed within and between the said side flanges, whereby the plates will match with solid surfaces on a level when brought together, as shown and described.

6. The herein-described division-plate, constructed with top side flanges and a bottom extension, the latter adapted to fit between the former when the plates are brought together, the cross-corrugations in the top and bottom surfaces, the top drains, A G F, and the top end cross-rib, I, joining the said side flanges, D D, whereby to form a stop to limit the placing of the sack of meal upon said plates, as shown and described.

296,106. SEWING-MACHINE. GEORGE A. ANNETT, Sutherlands Corners, Ontario, Canada. Filed Mar. 13, 1883. (Model.)

Claim.—1. A sewing-machine hinged to a support which is adjustably attached to the table, substantially as herein shown and described.

2. The combination, with a sewing-machine and its supporting-table, of the screw *d*, hinged to the machine and passing through an aperture in the table, substantially as herein shown and described.

3. In sewing-machines, the combination, with the hollow arm B, the oblique arm D, and driving-shafts, of the looping mechanism with the supporting and adjusting screw *d*, substantially as described, for the purpose of adjusting the arm above the table, as specified.

4. In a sewing-machine, the combination, with the driving-wheel C^2, of the hinged arm D, and the bobbin-winder d^2 on said arm, substantially as herein shown and described.

5. In a sewing-machine, the combination, with the hollow arm B and the oblique hollow arm D, of the drive-shaft *a*, the oblique shaft *b*, the hook *n*, attached directly to the end of the said oblique shaft, and the eccentric gearing *b'*, substantially as herein shown and described.

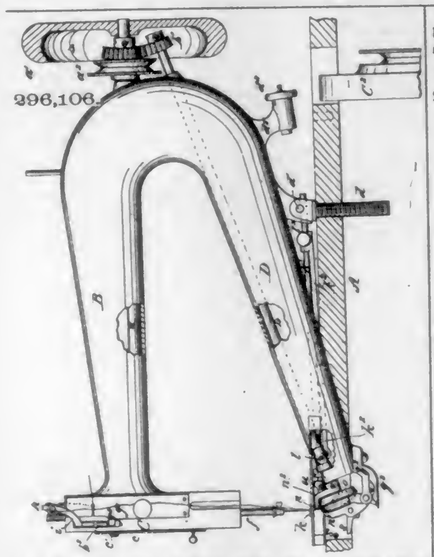
6. In a sewing-machine feed mechanism, the combination of rod *k'*, roller l', bar k^2, adjustable sleeve l^2, and conical eccentric *l*, substantially as shown and described.

7. In a sewing-machine, the combination, with the arm D, having a projection on its under surface, and the driving-shaft *b*, provided with an eccentric, of the spring-rod *k'*, secured to the projection of the arm D, and feed-bar *k* on the end of said rod, substantially as herein shown and described.

8. In a sewing-machine, the combination, with the arm D, having a projection on its under surface, and the drive-shaft *b*, provided with the conical eccentric *l*, of the spring-rod *k'*, secured to the projection on the arm D and carrying the feed-bar *k*, the roller l', and means for adjusting the same on the spring-rod, substantially as herein shown and described.

9. In a sewing-machine, the combination, with the presser-bar *e*, provided with the arm f^2, and the eccentric *g*, for operating the presser-

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bar, of the tension-plate g', provided with the arm g^2, projecting over to the eccentric, substantially as herein shown and described, whereby the tension-plate will be operated by direct contact of its arm with the eccentric, as set forth.

10. In a sewing-machine, the combination, with the head C, having an opening in its face, and the presser-bar e, provided with the arm f^2, of the pivoted plate c, and the eccentric g, fitted upon the pivot of said plate, substantially as herein shown and described, whereby the plate serves the double purpose of closing the opening in the head and a means for operating the eccentric, as set forth.

11. In a sewing-machine, the combination, with the head C, having an opening in its face, the presser-bar e, provided with the arm f^2, and the tension-plate g', provided with the arm g^2, of the pivoted plate c and the eccentric g, fitted upon the pivot c' of the said plate, substantially as herein shown and described.

12. In a sewing-machine, the combination, with the head C, provided with the hub a^2 and the presser-bar e, of the nut d', provided with the hub a', and the spring c^2, substantially as herein shown and described.

13. In a sewing-machine, the combination, with the hinged shuttle-bed q, of the non-rotating disk o, secured to the hinged arm s', substantially as herein shown and described.

14. The combination of hinged arm s', disk o, hinged shuttle-bed q, and springs s^4 q^2, substantially as described.

15. The combination of hinged disk o, attached at one side to its supporting-arm s', the shuttle-bed q, and the shuttle m, held by a pin, o^2, at one side of and below the center of the disk o, substantially as described.

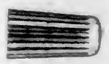
16. The shuttle m, formed with bulge m' and aperture m^2, combined with hook n, disk o, and bed q, substantially in the manner described.

17. In a sewing-machine, the combination, with the oblique arm D, hinged to the table A, provided with the pin s', of the hinged disk o, provided with the tripper s, and the hinged shuttle-bed q, substantially as herein shown and described.

18. In a sewing-machine, the combination, with the head C, provided with the pin i^2, and the presser-bar e, of the tilter-arm i, pivoted to the presser-bar, and having a slot to receive the pin of the head, substantially as herein shown and described.

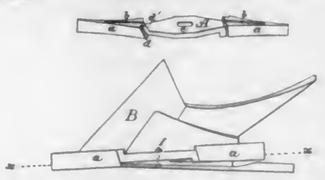
19. In a sewing-machine, the combination, with the presser-bar e, of the tilter i, pivotally connected to the same, and the take-up A, made in one piece with the connection h', that connects the needle-bar with the eccentric, substantially as herein shown and described.

296,107. SHAFT-TIP FOR CARRIAGES. WALTER S. ATWOOD, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company same place. Filed Jan. 17, 1884. (No model.)



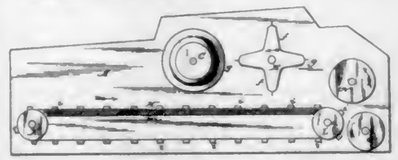
Claim.—The tip or ferrule for carriages, shafts, or similar articles, having the metal at the closed end thicker than the sides, and the said sides tapering and corrugated, substantially as set forth.

296,108. PLOW. SILAS W. BALL, Canton, Ohio. Filed Jan. 30, 1884. (No model.)



Claim.—The interchangeable point A, provided with the heads a, the grooves b, the shoulders $d\,d'$, and the slot e, in combination with the standard C, provided with the notch or recess E, and the slot F, and the share B, substantially as and for the purpose specified.

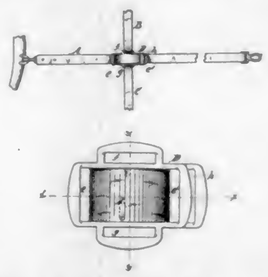
296,109. SELF-FEEDING AND BAND-CUTTING ATTACHMENT FOR THRASHING-MACHINES. SAMUEL SAMUELS BARR, Waukon, Iowa. Filed July 11, 1882. (No model.)



Claim.—1. The belt H and spreader E, having double pulley e' e^2 and belt r, in combination with rollers L N O, the roller L having double pulley l l^2 and gearing l^3, and the gearing n, s, and o, by which the relative speed of the parts and feeding of grain are regulated, all as and for the purpose set forth.

2. The band-cutter shaft C, having cutter-disks d, and spreader E, having ribs f and teeth g, in combination with rotating carrier-apron H, and rollers N L O, double pulleys, bands, and gears, substantially as set forth, whereby the relative speed of the parts and the feeding of grain are regulated, as set forth.

296,110. TRACE-TRIMMING. JAMES M. BASINGER, Buffalo, N. Y., assignor of one-fourth to Pratt & Letchworth, same place. Filed Dec. 14, 1883. (No model.)

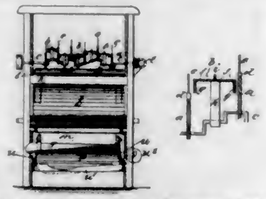


Claim.—1. The trimming D, consisting of a convex bed, d, raised end loops, $e\,e'$, through which the trace can be passed, an upper loop, f, for the attachment of the back-band, and a lower loop, g, for the attachment of the belly-band, substantially as set forth.

2. The combination, with a trace, of a trimming, D, composed of a convex bed, d, and raised loops $e\,e'$, through which the trace is passed, and a lower loop, g, to which the belly-band is attached, substantially as set forth.

3. The combination, with the trace A, back-band B, and belly-band C, of a trimming, D, composed of a convex plate, d, provided with raised end loops, $e\,e'$, through which the trace is passed, an upper loop, f, to which the back-band is attached, and a lower loop, g, to which the belly-band is attached, substantially as set forth.

296,111. THRASHING-MACHINE. JOHN A. BEAN, Baden, Ontario, Canada. Filed July 9, 1883. (No model.) Patented in Canada June 2, 1882, No. 14,893.

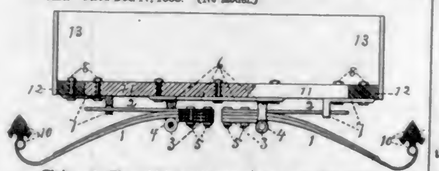


Claim.—The crank-shafts c and rakes a, having teeth e and notches d, in combination with perforated plates b, having flanges g, said rakes and plates being mounted on the crank-shafts, the rakes having greater throw than the plates, substantially as described.

296,112. POLISHING COMPOUND. HENRY H. BECKER, Chicago, Ill. Filed Sept. 24, 1883. (No specimens.)

Claim.—The polishing compound herein described, consisting of bone, ashes, and slate, compounded in substantially the manner and proportions herein specified.

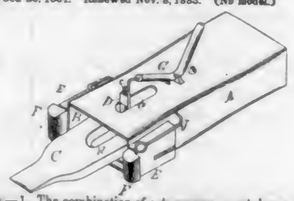
296,113. VEHICLE-SPRING. CHARLES AUGUSTUS BEHLEN, Cincinnati, Ohio. Filed Dec. 17, 1883. (No model.)



Claim.—1. The vehicle-spring consisting of the combination of the branch 1, having the construction set forth, with the branch 2, the branch 2 being rigidly attached to the end of the branch 1, as set forth, and having its other end free to slide in a suitable bearing in a bracket attached to the spring bar or body, and the connected ends of the said two spring branches being hinged to a bracket projecting from the bottom of the vehicle-body, and being free to oscillate on the hinge-bolt, as set forth.

2. The vehicle-spring consisting of the combination of the branch 1, having the construction set forth, with the branch 2, having the construction set forth, and with the strip 3, having a hinge-eye and secured to the connected ends of the branches 1 and 2, as set forth, and with a bracket attached to the under side of the vehicle-body, and having downward projections, with eyes and a hinge-bolt for hinging the connected ends of the spring branches 1 and 2 to the said bracket, and with a bracket attached to the bottom of the vehicle-body and provided with a slot for guiding the free end of the spring branch 2.

296,114. CAR-COUPLING. JACOB H. BEIDLER, Mount Pulaski, Ill. Filed Oct. 20, 1881. Renewed Nov. 8, 1883. (No model.)



Claim.—1. The combination of a depressing crank-lever, J, a coupling-link and fulcrum-ridges on this link, substantially as described.

2. The combination, in a car-coupling, of a lever, G, of angular form, having a hook on one end, of a coupling-pin hung from said hook, substantially as described.

3. The combination of the sheath E, arranged on the sides of the draw-bar, with the sliding buffers and their springs b, substantially as described.

296,115. OVERSHOE OR ARCTIC. JOHN B. BELCHER, Charlotte, Mich. Filed Dec. 21, 1883. (No model.)

Claim.—1. In a rubber, cloth, or arctic overshoe, the U-shaped piece of wire A, having center bar, a, and hooks C, for the reception of the lacing-string, substantially as shown, and for the purpose described.

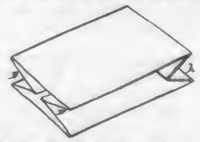
2. In a rubber, cloth, or arctic overshoe, the lace hook and eyelet consisting of the U-shaped piece of wire B, having center bar, a, eye e, and hook C, substantially as shown, and for the purpose described.



296,116. PROCESS OF ROASTING AND DISINTEGRATING GOLD, SILVER, AND COPPER ORES. DAVID WALTON BIRMINGHAM, Clifton, N. Y. Filed Nov. 6, 1883. (No specimens.)

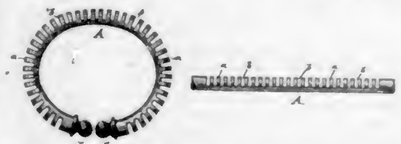
Claim.—The process herein described of preparing refractory ores for amalgamation, consisting in combining therewith lime, carbon, and common salt, or equivalents, roasting the mixture, and then subjecting the same to a suitable bath, substantially as described.

296,117. PAPER BAG. GEO. O. BLOWERS, Canajoharie, N. Y., assignor to William J. Arkell, same place. Filed July 12, 1883. (No model.)



Claim.—A bag having bellows sides, and also a bellows bottom at the middle of the blank, all substantially as shown and described.

296,118. MANUFACTURE OF JEWELRY. HENRY C. BONIFACE, New York, N. Y., assignor to Rice & Brother, same place. Filed Feb. 21, 1884. (No model.)



Claim.—1. The method herein described of making rubber and other jewelry, which consists in cutting a series of transverse recesses into a tube of suitable material, and then bending the continuous foundation portion into the proper shape, substantially as set forth.

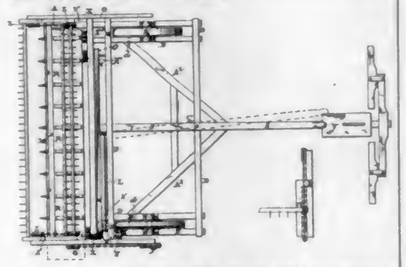
2. An article of jewelry formed of a continuous foundation portion, and of a series of narrow ring-shaped strips, separated by intermediate transverse recesses, said strips being arranged along a part or the entire length of the article, substantially as set forth.

296,119. RUBBER BOOT. AUGUSTUS O. BOURN, Bristol, R. I. Filed Jan. 4, 1884. (No model.)



Claim.—A rubber boot or shoe having a longitudinally-ribbed upper, composed of the usual sheet of vulcanizable-gum compound, and a foundation fabric having integral longitudinal ribs on its front or outer surface and a plain or smooth inner surface or back, substantially as described.

296,120. HARVESTER. DAVID WILLIAM BOYER, Richland Centre, Wis. Filed Mar. 31, 1883. (No model.)



Claim.—1. In a reaper, an apron or carrier frame, in combination with means for giving it an endwise movement or adjustment, so that it can be moved toward either side of the main frame, substantially as shown.

2. In a reaper, the combination of a carrier or apron frame having an endwise movement with means for moving it, and a mechanism at each end for reversing the motion of the apron, substantially as described.

3. In a reaper, the combination of the main frame, supported upon wheels at its rear end, with a carrier or apron frame having an endwise movement or adjustment, and a lever which serves both to adjust the apron and to raise the main frame at its front end, substantially as set forth.

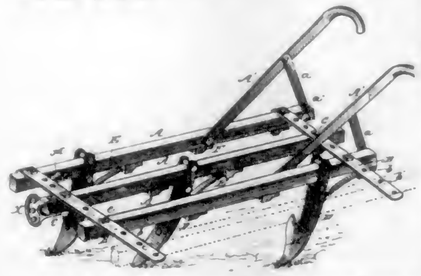
4. The combination of the main frame supported upon suitable driving-wheels, a mechanism connected to one of the wheels for both operating the cutter and driving the endless carrier or apron, and a second mechanism placed upon the opposite side of the frame and made to move in an opposite direction from the one that is connected directly with the driving-wheel, and the carrier-frame having an endwise movement or adjustment and provided with a driving pinion or wheel at each end, substantially as specified.

5. The combination of the frame D, the toothed driving-wheel E, shaft I, provided at its ends with pinions H K and crank J, and the driving-pulley K², with the cross-belt N, pulley O, shaft Q, pinion K', the carrier-frame provided with apron, rollers having the pinions T T', and the lever for moving the carrier-frame, substantially as shown.

6. In a combined rake and reel, the chains A, the rake-heads C', attached thereto, and provided with guide-arms at their ends, in combination with the supporting-frame, the pulleys Z, and the guides B', arranged at the corner of said frame, substantially as set forth.

7. In a combined rake and reel, the combination of the triangular frames, the guides attached to their front and lower sides, the endless chains, and the rake-heads attached thereto, and having the arms adapted to engage said guides, whereby the teeth of the rake-heads are made to enter vertically into the grain, substantially as shown.

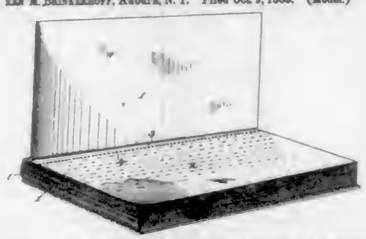
296,121. CULTIVATOR. DANIEL W. BRANCH, Troy, Ala. Filed Jan. 19, 1884. (No model.)



Claim.—1. In combination with the parallel adjustable beams A, having a series of pocket-blocks arranged in transverse and diagonal rows, the plow-standards having interchangeable plows, and the braces E, operating between the pocket blocks and standards, as and for the purposes set forth.

2. In combination with the parallel adjustable beams A, as shown, the standards or feet D, having interchangeable plows H, the braces E, and the blocks F, having pockets f^2 and holding-nibs f, the said blocks being arranged in transverse and diagonal rows, and the whole adapted to serve as and for the purposes set forth

296,122. RECEIPT, CHECK, DRAFT, AND SIMILAR BOOKS. WARREN M. BRINKERHOFF, Auburn, N. Y. Filed Oct. 9, 1883. (Model.)

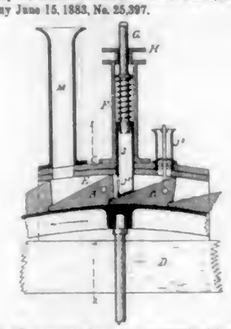


Claim.—1. A series of superposed leaves secured in substantially the form of a book and having weakened lines of separation, the line of succeeding leaves being in advance of the line of preceding leaves, substantially as described.

2. A receipt, check, draft, or similar book having its sheets provided with weakened lines of separation, the line of each succeeding sheet being in advance of the preceding one, substantially as described.

3. A series of superposed leaves connected with stubs in book form by weakened lines of separation, each succeeding line being in advance of the preceding one, substantially as described.

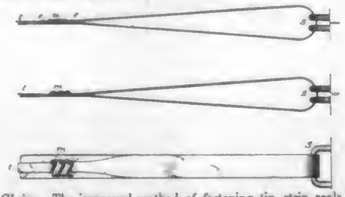
296,123. ROTARY ENGINE. SQUIRE BROADBENT and SQUIRE BROADBENT the younger, Tong, near Bradford, County of York, England. Filed June 11, 1883. (No model.) Patented in England Dec. 1, 1882, No. 5,735; in Belgium May 31, 1883, No. 61,556; in France June 1, 1883, No. 155,799, and in Germany June 15, 1883, No. 25,397.



Claim.—1. The combination of a rotary wheel having a series of inclined teeth, B, an inclosing-bracket, and valve-casing, with an inlet-pipe, G, stuffing-box H, hollow sliding valve J, into which the inlet-pipe extends, and a spring interposed between said valve and a collar on the pipe, substantially as set forth.

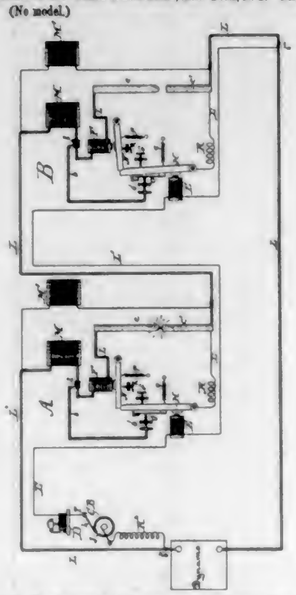
2. The combination of the rotary toothed wheel with a bracket, C, carrying inlet-pipe, sliding valve, exhaust-pipe, and valve J^2, as and for the purpose set forth.

296,124. FASTENING TIN-STRIP SEALS. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Jan. 31, 1884. (No model.)



Claim.—The improved method of fastening tin-strip seals herein specified, consisting in interthreading their ends by threading one end through slots in the other, bringing the ends together flatwise, one over or upon the other, and then stamping said ends over and across said slots or one of them, with indentations and projections in the shape of distinguishing-marks formed simultaneously in both ends from one and the same side of the seal, said projections on one end being thereby made to fit into and interlock with said indentations in the other end, substantially as shown and described.

296,125. AUTOMATIC CUT-OUT FOR ELECTRIC LAMPS. CHARLES L. BUCKINGHAM and HENRY C. TOWNSEND, New York, N. Y. Filed Nov. 19, 1883. (No model.)



Claim.—1. In an electric lighting system, the combination of a series of electric lamps, each having a shunt or by-path around the arc, and an electro-magnet for closing the same, and a second line-circuit, which embraces the coils of the electro-magnets, for closing said shunts or by-paths.

2. The combination of a main line including the carbons of electric lamps and a normally-open shunt or by-path, an electro-magnet in the arc branch of the lamp, a secondary circuit including an electro-magnet, an armature-lever controlled by the electro-magnet in the secondary circuit, for closing the shunt or by-path, and an armature-lever which is controlled by the electro-magnet in the arc branch, to lock the armature-lever in a position to hold the by-path continually closed.

3. The combination of a main line including the carbons of a series of electric lamps, and a by-path at each lamp, a secondary or main-line circuit which includes the coils of an electro-magnet at each lamp for closing said by-path, and a circuit-closer for said secondary circuit.

4. The combination of main line L, having an arc branch and a by-path at a lamp, electro-magnet F, armature-lever N, secondary circuit L', electro-magnet E, armature-lever H, forming a part of the by-path, and circuit-closer C B.

5. The combination of an arc branch for an electric lamp, a by-path, armature-lever H, forming a part of the by-path, spring O and contact O', and means for locking armature-lever H at or near front contact.

6. The combination of an arc branch and a by-path for an electric lamp, an armature-lever, H, and spring O, forming a part of the by-path, locking armature-lever N, and electro-magnet F in the arc branch.

7. The combination of an arc branch and a by-path for an electric lamp, a lever forming a part of the by-path, and a locking-lever controlled by an electro-magnet in the arc branch, for locking the by-path lever to permanently close the by-path.

8. The combination of an arc branch and a by-path for an electric lamp, an armature-lever forming a part of the by-path, and a locking-lever controlled by an electro-magnet in the arc branch for holding the lever forming a part of the by-path in a position to close said by-path.

9. The combination of a normally-open and intermittently-closed main line, L', including an electro-magnet, E, at each lamp, a circuit-closer at the central station, and a main line, L, including an arc branch and a by-path at each electric lamp, controlled by said electro-magnet.

10. A circuit-closing wheel and an electrical circuit to be closed and broken by said wheel, in combination with means for operating the same, as described, consisting of a continuously-rotating shaft or wheel, and means whereby said wheel only intermittently or periodically gears with the circuit-closing wheel, substantially as described.

11. The combination of a motor-pulley, P, a gear-train, a sector gear-wheel, U, circuit-closing wheel C B, pinion V, and an electric circuit which is closed and opened by said circuit-closing wheel.

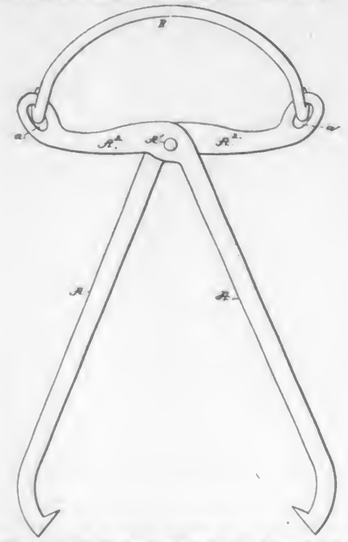
12. The combination of a periodically-rotating circuit-closing wheel, C B, pinion V, gear-sector U, attached to a constantly-rotating train or motor, and an electric circuit which is opened and closed by said circuit-closing wheel.

13. The combination of a circuit-closing wheel, C B, loaded with a weight, K, conducting-spring I, pinion V, gear-sector U, and a driving-train.

14. In an electric lamp, the combination of an arc branch, a by-path, means for closing the same by a periodic circuit-closer, and auxiliary means independent of the periodic circuit-closer for closing a by-path, substantially as specified.

15. The combination of a line-circuit, a periodic circuit closer or breaker therefor, an electro-magnet in the line-circuit for closing a by-path at each lamp of an electric lighting system, and a top or alarm bell at the central station, placed in said circuit.

296,126. ICE-HOOK. DAVID F. BURGESS, Lockport, N. Y., assignor to Anna Burgess, same place. Filed Nov. 4, 1882. (No model.)



Claim.—1. The ice-tongs, substantially as described and shown, composed of the arms pivoted together and adapted at their lower ends to grasp the ice, and a flexible spring-bail connecting the upper ends of said arms, substantially as set forth.

2. In an ice-tongs, substantially as described and shown, the combination, with the grappling-arms pivoted together, of a spring bail or rod having its opposite ends connected with the upper ends of the grappling-arms, as and for the purposes set forth.

296,127. CURTAIN-LOOP. BENJAMIN F. BURNETT, Brooklyn, assignor to H. L. Judd & Co., New York, N. Y. Filed Dec. 24, 1883. (No model.)



Claim.—1. The curtain or upholstery loop composed of wires braided together to form tubes, and provided with loops or links at the ends, substantially as set forth.

2. The curtain or upholstery loop composed of three or more tubes of braided wires braided together and provided with the end pieces, c, substantially as set forth.

3. The curtain or upholstery loop composed of two or more tubes of wire laid together, each tube being formed of wires braided together, substantially as set forth.

4. The combination, in a curtain-loop or similar article, of two or

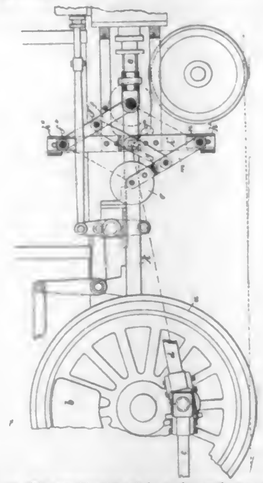
more tubes of braided wires laid together and provided with end pieces, e, substantially as set forth.

296,128. SAW-VISE. GEORGE W. BURTON, Bordentown, N. J. Filed Nov. 13, 1883. (No model.)



Claim.—A saw-vise consisting of jaws A, having recesses *e*, adjustable feet B and B', hinged together, and each having a projecting arm, C', headed thumb-screws C, and clamps D, to clamp the device to a bench and to close the jaws, substantially as shown and described.

296,129. LOCOMOTIVE. EDWARD BUSS, St. Gallen, and RUDOLF KUHN, Rorschach, Switzerland. Filed Oct. 8, 1883. (No model.) Patented in France Jan. 8, 1883.



Claim.—1. The combination of the reciprocating parts of an engine with the counterbalancing-weight and connecting mechanism between the said weight and reciprocating parts, whereby the weight is caused to move in the opposite direction to the said reciprocating parts, and with substantially the same relative velocity in the different parts of the movements, substantially as described.

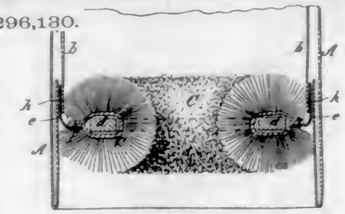
2. The combination of the piston-rod of a reciprocating engine with a counter-weight and connecting-levers between the said rod and weight, constituting a parallel-motion device, whereby the said rod and weight are guided in straight paths in opposite directions, and with the same relative velocity in the different parts of their movements, substantially as described.

3. The combination of the piston-rod of an engine with levers connected at one end with the said rod, and having their other ends movable in guides at right angles to the said rod, supporting-levers connected with the said levers at an intermediate point, and themselves pivoted at an intermediate point to the frame-work, and a third set of levers connected at an intermediate point with the supporting-levers, and having one end movable in guides and the other end provided with weights, substantially as described.

296,130. SLEEVE FOR COATS. CHARLES FREDRICK BUTTERWORTH, Troy, N. Y. Filed Mar. 16, 1883. (No model.)

Claim.—The combination, with an ordinary coat-sleeve, of the elastic wristlet C, consisting of a hollow annular fur band and a spring, *d*, within it, and the securing-strip *e*, having one edge secured to the wristlet and its other edge interposed between the turned-in portion of the sleeve and its lining, and the whole secured together and to the outer portion of the sleeve, substantially as herein shown and described.

296,130.



296,131. PAVING-BLOCK. ROBERT CAMPBELL, Wheeling, W. Va., assignor to himself and George Baird, same place, and John Porter, New Cumberland, W. Va. Filed Dec. 5, 1883. (No model.)



Claim.—A pavement composed of a series of fire-clay blocks and an interposed binder of asphaltum or cement, substantially as and for the purposes specified.

296,132. UMBRELLA-TIE. WILLIAM J. CHAMBERS, Marchantville, N. J. Filed Nov. 6, 1883. (No model.)



Claim.—1. An umbrella or parasol tie consisting of a band having a connected hook and eye on opposite faces, within the ends thereof, substantially as and for the purpose set forth.

2. An umbrella or parasol tie consisting of a band with doubled ends and a connected hook and eye on opposite faces, near the ends thereof, one of its ends overlapping said hook and eye, substantially as and for the purpose set forth.

3. An umbrella or parasol tie consisting of a band with concealed fastenings.

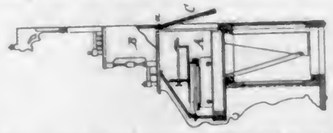
296,133. BRACELET. HENRY A. CHURCH, Providence, R. I. Filed Jan. 2, 1884. (No model.)



Claim.—1. The box-bracelet A, herein described, consisting of inner and outer plates, *a b*, bent to form upper and lower edges, *h*, adapted to be united at *h'*, and further consisting of the joint or seam covering *c*, or its equivalent, adapted to be secured to said joint, substantially as shown and specified.

2. The box-bracelet herein described, consisting of inner and outer plates, *a b*, provided with edges *h*, said plates being secured together at *h'* and terminating at *a' b'*, in combination with a piece of bent stock or hollow wire adapted to cover said ends and joint, all substantially as shown and set forth.

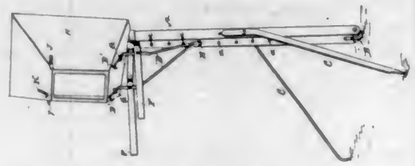
296,134. REED-ORGAN CASE. MELVILLE CLARK, Chicago, Ill. Filed June 12, 1883. (No model.)



Claim.—A reed-organ case consisting of the lower or body part, A, the top or shelf part, B, and the lid C, such shelf part B and lid C being connected by hinges *a*, and being detachably secured to the body part,

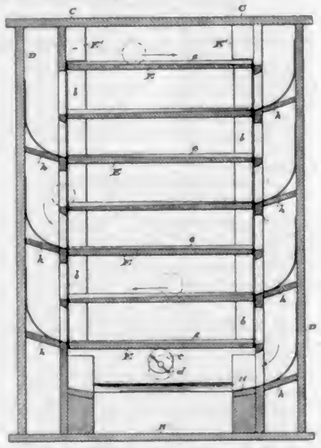
respectively, by screws *b* and *c*, all substantially as and for the purpose set forth.

296,135. BAG-HOLDER. PERCY COLE, Pipestone, Minn. Filed Sept. 11, 1883. (No model.)



Claim.—The combination, with the post A and a hopper having staples G G, of two upwardly-extending rods, D D, having each a bend to form a rest for the hopper end, and an end hook, D', to catch on the staple, whereby the hopper may be turned up, slid back, and caused to rest with its rear end upon the rods and the post, or drawn out to the end of said rods and turned down into a working position, as described.

296,136. POOL-RACK. HUGH W. COLLENDER, New York, N. Y. Filed Feb. 13, 1884. (No model.)



Claim.—In combination with a set or gang of bodily-movable shelves, the ball supporting surfaces of which are inclined toward opposite ends of the successive shelves, side passages or conduits forming communications between the adjacent ends of alternate pairs of shelves only when said shelves are set in a proper position designed to effect the automatic discharge of their contents, substantially as hereinbefore set forth.

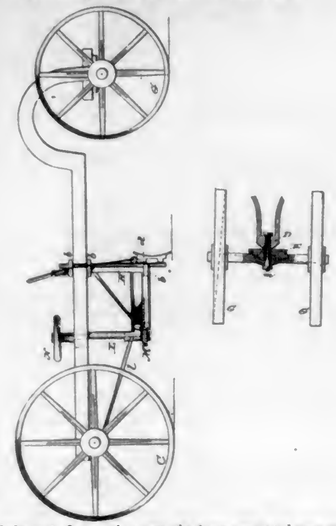
296,137. POOL-RACK. HUGH W. COLLENDER, New York, N. Y. Filed Feb. 13, 1884. (No model.)



Claim.—In combination with a rack provided with stationary ball-supporting shelves or their equivalents, a carriage or device adapted to support any suitable ball-receptacle, and provided with suitable means for discharging the balls from the shelves or their equivalents whenever said carriage may be moved upwardly, substantially as hereinbefore set forth.

296,138. ROAD-SCRAPER. MARCUS E. COOK, Wallingford, Conn. Filed Nov. 10, 1883. (No model.)

Brief.—An abutment vertically pivoted for horizontal adjustment sustains the back-pressure of a scraper vertically adjustable independently through levers pivoted on the abutment. A toothed segment on the rear of the abutment plays through a segmental support braced from the rear axle, and engages a pinion on a vertical shaft journaled below in such support. The main frame has a "longitudinal rocker" or narrow block, with its bearing-face on the front axle rounded off.



Claim.—1. In a road-scraper, the frame supported upon an axle carrying wheels at the rear, and an axle carrying wheels at the front, a transverse abutment arranged upon said frame on a vertical axis, and made adjustable on said axis to change the angle of the abutment with relation to the direction in which the apparatus is drawn, a scraper in front of and so as to bear against said abutment and partake of its adjustment in a horizontal plane, said scraper adjustable vertically independent of said abutment, substantially as described.

2. In a road-scraper, the combination of the frame supported upon wheels at the front and rear, an abutment hung to the frame between the front and rear wheels upon a vertical axis, a toothed segment in connection with said abutment, a shaft and pinion working into said segment, whereby said segment and abutment may be turned to varying angles, a scraper arranged in front of said abutment and made adjustable thereon, substantially as described.

3. In a road-scraper, the combination of the frame supported upon wheels at the rear and front, an abutment arranged upon a vertical axis in said frame between the front and rear wheels, a toothed segment in connection with said abutment, a shaft and pinion working into the teeth of the segment, a scraper arranged in front of and so as to bear against said abutment, with a lever hung upon said abutment at each side, each lever in connection with its respective end of the scraper, substantially as described.

4. In a road-scraper, the combination of a frame supported upon an axle carrying wheels at the rear, and an axle carrying wheels at the front, a transverse abutment hung upon a vertical axis in said frame and made adjustable on said axis to different angles to the direction in which the apparatus is drawn, but held in its bearings to prevent change of elevation with relation to the frame, a fixed segment, *i*, in rear of said abutment, the axis on which the abutment turns being the center of said segment, said segment supported by braces *l l*, substantially as described.

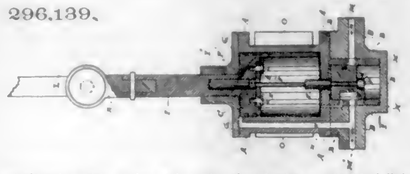
5. In a road-scraper, the combination of a frame arranged upon wheels at the rear and front, and carrying an adjustable scraper between said front and rear wheels, the frame at the front provided with a longitudinal rocker, D, resting in a longitudinal central line upon the fifth-wheel of the forward axle, and the king-bolt through said rocker, fifth-wheel, and axle, said rocker rounded upon its under surface, substantially as and for the purpose described.

296,139. STEAM BELL-RINGER. ALLEN COOKE, Danville, Ill. Filed Jan. 9, 1884. (No model.)

Claim.—1. In a steam bell-ringer, the combination of a cylinder with one head cast solid, having central aperture for valve-stem, of valve-chest secured thereto, of slide-valve therein, of valve-stem, of hollow piston and plate secured thereto, as described, and for the purposes set forth.

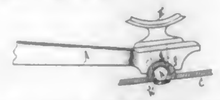
2. In a steam bell-ringer, a cylinder having one head cast solid, in

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combination with a valve and a valve-chest having a cylindrical lining provided with a stud, for the purposes described and set forth.

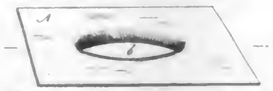
296,140. HARNESS-PAD TREE. EDWARD A. COOPER, Buffalo, N. Y. Filed June 7, 1883. (No model.)



Claim.—1. The combination, with the yoke A, provided on its under side with concave bearings *f*, of the pad-plate C, provided on its upper side with convex supports *g*, engaging in the bearings *f*, and having recesses *h'* on their under side, a nut, H, provided with pivots *h*, engaging in the recesses *h'*, and a pad-screw, *d*, whereby said nut is attached to the yoke, substantially as set forth.

2. The combination, with the plate C, provided with a lip, *k*, of the plate B, having an opening, *k'*, and a stud, *m*, and the fastening-screw *l*, substantially as set forth.

296,141. COVER FOR WATER-CLOSET SEATS. DALE O. COWEN, Batavia, Ohio. Filed June 21, 1883. (No model.)



Claim.—As an improved article of manufacture, a water-closet-seat cover consisting of a sheet of paper, A, provided with a hole, *b*, having a downwardly-projecting flange, *c*, extending around said hole, the said flange being integral with the body of the sheet, as set forth.

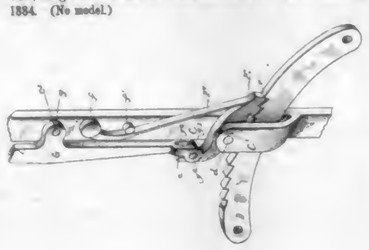
296,142. HORSE-DETACHER. DANIEL D. DANTZLER, Chester, S. C. Filed Nov. 14, 1883. (No model.)



Claim.—1. In a horse-detaching device, the end clip, A, consisting of the thimble B, having secured thereto the spring E, the barrel C, provided at its outer end with a trace-hole and perforation, substantially as described, and the notched bar D, in combination with the casing F, provided with holes *h h'*, pulleys G G', inclosed within said casing, and the cords arranged to operate substantially as shown, and for the purpose set forth.

2. The casing F, provided with the clip-flanges to embrace the single-tree, and having holes *h h'* for the cord, in combination with the inclosed pulleys G and G', mounted upon a common pin passing through the casing, substantially as described, and for the purpose set forth.

296,143. WAGON-BRAKE LEVER. THOMAS J. DAVIES, Newark, Ohio, assignor of one-half to Daniel Thomas, same place. Filed Jan. 21, 1884. (No model.)



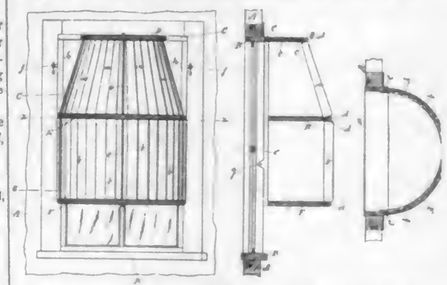
Claim.—1. The combination, in a wagon-brake, of a hand-lever, a toothed sector, a spring-actuated pawl, which is pivoted to the said hand-lever, and an auxiliary lever also pivoted to said hand-lever, and having an anti-friction roller on its lower end adapted to bear against the upturned end of the pawl, all constructed and adapted to operate substantially as described.

2. The V-shaped wagon-body brace having formed on its acute-angular portion a stud, the hand-lever fulcrumed on this stud, as described, the toothed sector serving as a tie between the arms of the brace, the main hand-lever, the spring-actuated pawl, and the independent pawl-tripping lever, substantially as described.

3. In combination with a toothed sector, secured rigidly to a wagon-body, a hand-lever connected to the brakes, the spring-actuated pawl having an upturned extension or tail, and an auxiliary lever having at its lower bifurcated end an anti-friction roll adapted to trip the said pawl and release the brake, substantially as described.

296,144. HOUSE-BLIND. HORACE R. DAVIS, Lexington, Mass. Filed Aug. 23, 1883. (No model.)

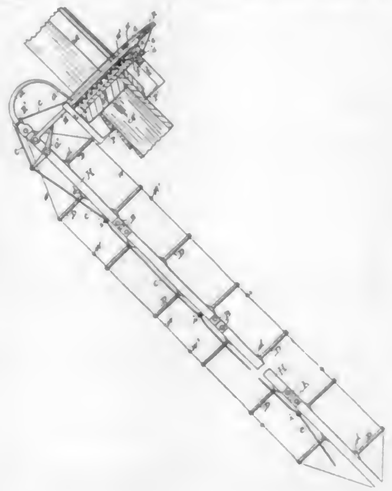
Brief.—A house-blind consisting of a projecting frame with slats arranged vertically and independently movable.



Claim.—An improved house-blind, comprising a projecting front frame provided with vertical shades pivoted so as to be turned in any direction to ward off the rays of the sun, while those not in use for said purpose can be so placed as to let in light and air, all substantially as and for the purpose set forth.

296,145. FIRE-ESCAPE LADDER. SAMUEL E. DAVIS, Joliet, Ill., assignor of one-half to Edward A. Boaz, same place. Filed June 6, 1883. (No model.)

Brief.—A jointed standard having rungs pivoted to two sides, and having a rack-bar and hook at its top. The securing-hooks which slide on the bar are connected by a spiral spring. A pawl on the inner hook engages with the rack, and has a releasing-cord which extends to the ground.



Claim.—1. The combination of the folding bar H, rounds D, wire *w*, and hook *a*, all adapted to operate as and for the purpose set forth.

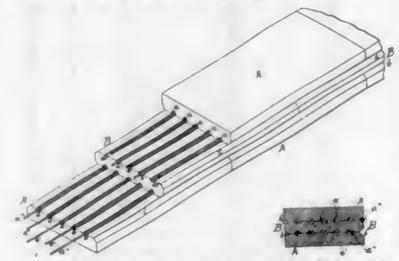
2. The combination of the folding bar H, rounds D, cords *w*, having knots *w²* and loops *w'*, locking-latch B³, and hook *a*, all adapted to operate as and for the purpose set forth.

3. The combination of the bar H, cord *c*, pivoted bar *s*, vertical sliding bars *t* and *t'*, having the prods P and P', and pawl and ratchet P², all adapted to operate as and for the purpose set forth.

4. In the fire-escape ladder described, the cord *c*, adapted to extend the bar *s* and separate the grappling-bars *t t'*, in the manner and for the purpose set forth.

5. The combination of the folding bar H, bar *s*, cord *c*, and grappling-bars *t t'*, having the hooks P and P', all adapted to operate as and for the purpose set forth.

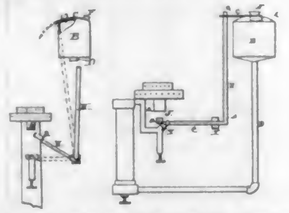
296,146. INSULATOR FOR ELECTRIC CONDUCTORS. WILLIAM HOPE DAVIS, Springfield, Ill. Filed May 5, 1883. (No model.)



Claim.—1. In an insulator of the character described, the impermeable and non-conducting plates A A, grooved upon their meeting surfaces, and each beveled upon one edge of its outer ends to form a V-shaped groove at the junction of the two plates for the reception of cement or other plastic material, by which said plates are secured together independently of other means, substantially as set forth.

2. In an insulator of the character described, the combination, with the grooved and beveled plates A A, of the intermediate plate, B, grooved upon its upper and lower surfaces, and beveled upon both edges of its outer ends to form two V-shaped grooves at the junction of the three plates, for the reception of cement or other plastic material, by which said plates are secured together independently of other means, substantially as set forth.

296,147. VAPOR-BURNER. ZEBULON DAVIS, Canton, Ohio. Filed Dec. 8, 1882. (No model.)



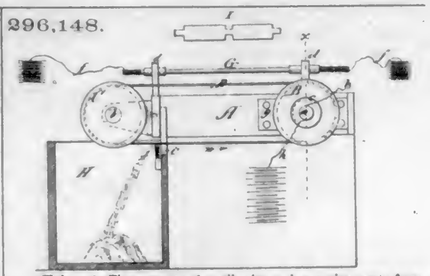
Claim.—1. The combination of the cover of the reservoir of a vapor-burner with an operating rod or lever which is connected at its upper end to the cover and at its lower end to suitable means, whereby the movement of the cover will cause the rod to shut off or turn on the flow of vapor, substantially as shown.

2. The combination of the reservoir of a vapor-burner and cover loosely placed thereon, which cover is provided at one end with an opening or funnel, through which the reservoir is filled, and having an arm or projection extending from it to connect with an operating rod or lever, by means of which a valve is applied for stopping or turning on the flow of vapor when the cover is moved, substantially as set forth.

296,148. APPARATUS FOR COLLECTING AND REMOVING WASTE FROM SPINNING-MACHINES. WILLIAM ALBERT DELMAGE, Lowell, Mass. Filed Dec. 14, 1882. (No model.)

Brief.—The roller-beam is cleared of the waste which usually collects thereon by means of an electrical rod employed in connection with a belt more strongly charged with electricity than said rod. In operation the rod collects all loose fibers, which are in turn transferred to the belt, and from thence brushed into a receptacle underneath.

296,148.



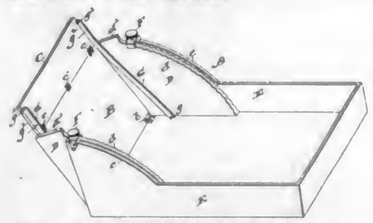
Claim.—1. The apparatus for collecting and removing waste from spinning-machines, consisting of the rod G, belt D, the pulleys B C, the studs *a b*, and insulator *g*, combined with means for electrifying said rod and belt and operating the belt, substantially as shown and described.

2. The combination, with the beam A and the belt D, of the arms *d*, the rod G, supported by said arms over the belt, and means for electrifying said rod and belt and operating the belt, substantially as herein shown and described.

3. The combination of the pulleys B C, means for operating the same, the belt D, rod G, and electrical connections, substantially as described, with the roller-beam A of a mule spinning-frame, for the purpose specified.

4. The combination, with the drawing-roll of a spinning or roving frame, of devices arranged in relation to said drawing-roll, and mechanism for electrifying said devices, whereby the waste is collected and removed, substantially as shown and described.

296,149. CHILD'S CARRIAGE. BRANDT V. B. DIXON, St. Louis, Mo., assignor of one-half to Amos F. Hoffer and John H. Lawrence, both of same place. Filed Dec. 14, 1883. (No model.)



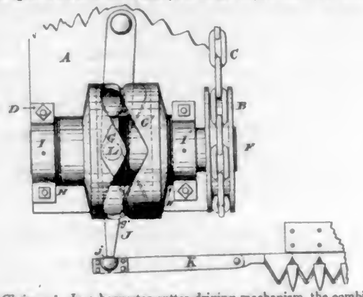
Claim.—1. The combination of the part B, the part C, and the rods G G with the fixed part of the carriage-body A.

2. The combination of the part B, the part C, the side pieces, D D, and the rods G G with the fixed part of the carriage-body A, as described.

3. The combination, in the carriage-body A, of the hinged part C and the rods G G, as described.

4. The combination, in the carriage-body A, of the parts B C, the side pieces, D D, the sides E E, having the parts *e e*, the clamps F F, and the rods G G, as described.

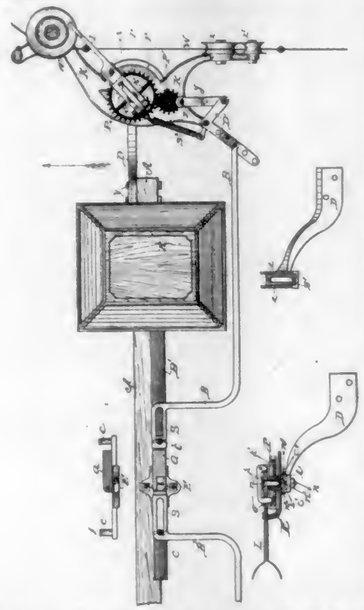
296,150. MECHANISM FOR DRIVING HARVESTER-CUTTERS. ANDREW M. DUNCAN and MILTON LACRONE, Springfield, Ohio; said Duncan assignor to Albert K. Hahn, same place. Filed July 23, 1883. (No model.)



Claim.—1. In a harvester-cutter-driving mechanism, the combination of the splined counter-shaft F, the adjustable serrated or grooved disks G G', the washers H, and the removable caps I I', as set forth.

2. In combination with the shaft F, disks G G', and washers H, the lever J, provided with the roller L, engaging the sinuous space *g'* between said disks, as set forth.

296,151. CHECK-ROW ATTACHMENT FOR SEED-PLANTERS. LLOYD EBERHART and IRVING D. STEVENS, Joliet, Ill. Filed Dec. 6, 1883. (No model.)



Claim.—1. The combination of the beam A of a planter, the arm D, having the slot S' and flanges *e e'*, head *k*, having the flanges *n'' n''*, sheaves *w'*, *x*, and *x'*, pinion P, having the radial vertical offsets *r'*, pinion P', having the wrist-pin *z*, stud *n*, forked lever L, having the latch *r*, coil-spring S', link *y*, bell-crank D', and connecting-rod B, having the slot S, as and for the purpose set forth.

2. In the check-rower described, the pinion P, having the radial vertical offsets *r'*, in combination with the forked lever L, having the latch *r*, pinion P', having the wrist-pin *z*, coil-spring S', stud *n*, and bell-crank D', as and for the purpose set forth.

3. In the check-rower described, the combination of the beam A, arm D, having the slot S' and flanges *e e*, head *k*, having the flanges *n'' n''* and bolt *n*, and nuts *c'* and *c*, as and for the purpose set forth.

4. In the check-rower described, the head *k*, adapted to have horizontal adjustment forward and backward on the arm D, as and for the purpose set forth.

5. In the check-rower described, the combination of the pinions P and P', link *y*, bell-crank D', and connecting-rod B, the said pinions set in the described relation to each other, so that at each half-revolution of pinion P' its wrist-pin *z* and link *y* will be left in line with the axes of said pinions, to lock the seed-slide B' in either direction, as set forth.

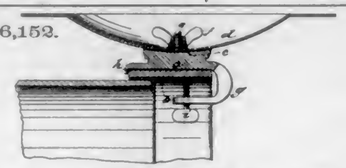
6. In the check-rower described, the combination of the seed-slide B', plate E, having the studs *c c* and centrally-pivoted swinging arm *a*, connecting-rods B and B', having the slots S S, bell-crank D', link *y*, pinions P and P', and oscillating forked lever L, having the latch *r*, all adapted to operate as and for the purpose set forth.

7. In the check-rower described, the bolt or stud *n*, having the lock-nut *c'* and nut *c*, and adapted to secure the forked lever L and pinion P in position on the head *k*, and to secure the head *k* to the arm D, as and for the purpose set forth.

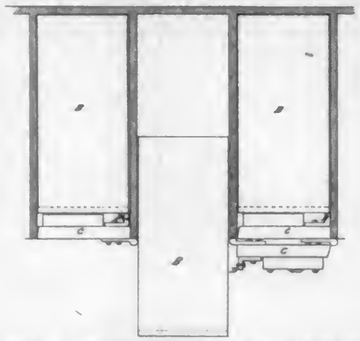
296,152. DRUM AND CYMBAL CLAMP. PERRY WILLIAM FAIR, De Kalb, Ind. Filed Oct. 20, 1883. (No model.)

Claim.—The improved clamp for attaching a cymbal to a drum, consisting of plate *a*, adapted to rest on the hoop *b*, and having seat *c* and stud-screw *e*, for connecting the cymbal to it, and also having the bracket-arm *g* and the flange *k*, all constructed and arranged substantially as described.

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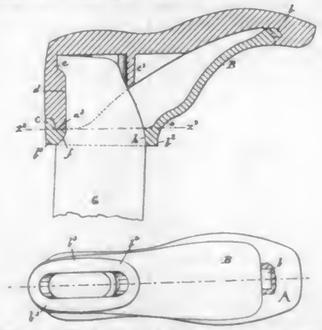
296,153. SAFE-DEPOSIT BOX. JOHN FARREL, New York, N. Y. Filed Oct. 20, 1882. (Model.)



Claim.—1. The combination, with the door of a safe-deposit box, of a lug fixed to the door near the hinged side, and adapted to strike solidly against the inside of the box or safe, so as to bring the door to a full stop or limit in closing, as set forth.

2. In combination, the safe-deposit box, the removable box B, the stop-piece or lug F, adapted to the inside of the door for bringing the same to a fixed limit in closing, and provided with the stud E, for adjustment, as set forth.

296,154. LAST OR HOLDER FOR LASTING BOOTS OR SHOES. JOHN W. D. FIFIELD, North Brookfield, assignor to Alfred H. Batcheller, Boston, Mass. Filed Dec. 11, 1883. (No model.)



Claim.—1. The body A of the last, combined with a last-block provided with an extension, b^3, as and for the purposes set forth.

2. The body A of the last, combined with a removable last-block provided with a backward extension, b^3, to cover the neck a^3 of the body of the last and prolong the same, substantially as set forth.

3. The body A of the last, combined with the last-block provided with the extension b^3 in loop form, to receive between it a standard, substantially as described.

4. The body A of the last, provided at its rear end with a recess, c^3, combined with the last-block provided at its outer end with a lug, *c*, to enter the said recess, substantially as described.

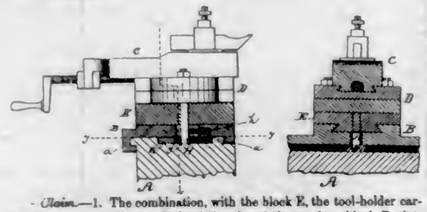
5. The standard G, provided with the hook *e*, combined with the last having a recess to be engaged by the said projection and with a projection, e^3, to bear upon the standard at its side opposite the said hook, to hold the last while the boot or shoe is pulled from it, substantially as described.

296,155. BUTTON-FASTENING. GEORGE W. FISH, Pecatonica, Ill. Filed Sept. 29, 1883. (No model.)



Claim.—The herein-described button-fastening, of spider or star form, having the central opening, and the long and short radiating arms for fixing buttons of various sizes to their respective packages or to sampling-cards, substantially as specified.

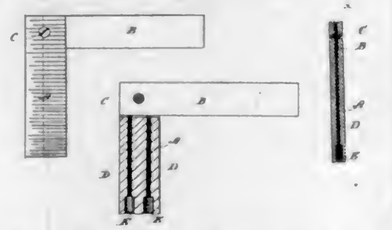
296,156. SLIDE-REST. JACOB FITZ, Hanover, Pa. Filed Nov. 2, 1883. (No model.)



Claim.—1. The combination, with the block E, the tool-holder carried thereby, and the pin H fixed therein, of the carriage-block B, slotted for pin H, the shoe *g* on pin H, the former G, fixed behind shoe *g*, and the latheway A, substantially as shown and described.

2. The combination, with the interposed slide-block, the pin fixed therein, and the fixed former described, of a shoe upon said pin, to slide upon the former, and a spring acting between a laterally-fixed portion of the longitudinally-sliding carriage and said pin, as shown and described, for the purpose specified.

296,157. TRY-SQUARE. WILLIAM A. GABRIEL, Bridgeport, Conn. Filed Aug. 30, 1883. (No model.)

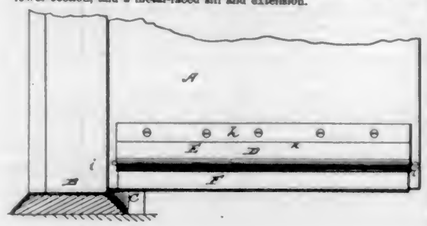


Claim.—1. In a try-square, the blade pivoted within the arm, in combination with the independent wires passed longitudinally through said arm, and set-screws abutting against said wires, substantially as set forth.

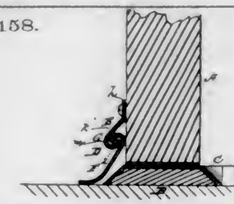
2. In a try-square, the combination of the arm A, wires D, set-screws E, and blade B, pivoted within said arm, substantially as shown and described.

296,158. WEATHER-STRIP. DAVID GIBBONS, Jeppa, Ind., assignor of two-thirds to Albert Hagre and Edmund Thompson, both of same place. Filed Dec. 15, 1883. (No model.)

Brief.—A weather-strip consisting of upper and lower sections having interlocking edges, pins to prevent the lateral displacement of the lower section, and a metal-faced sill and extension.

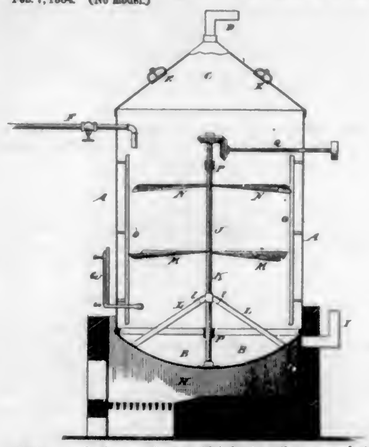


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Claim.—The combination, with the door-sill having the metal facing, and provided with the extension C on the inner side thereof, near the hinged side of the door, of the door and weather-strip consisting of the upper section having the straight portion *h*, the oblique portion *k*, and the inward hook *z*, and the lower section having the upper outward hook, *m*, and the lower outwardly-concave portion, F, the said lower section being prevented from lateral displacement with the upper hooked section by means of the pins *i i*, which are driven in the door at the respective ends of the strip-hinge, substantially as set forth.

296,159. LUBRICATING-OIL. JOHN E. GILL, Franklin, Pa. Filed Feb. 7, 1884. (No model.)



Claim.—1. In the manufacture of lubricating-oils composed of mineral oil added to a compound of animal or vegetable oil and an oxide or a carbonate of lead, the process of first raising said compound to and holding it at a temperature of about 480° Fahrenheit, and then, by adding a flow of mineral oil, reducing said temperature about 20°, and then raising same to the said high temperature, then holding the mixture at said high temperature for several minutes, for the purpose set forth.

2. A lubricating-oil composed of a compound of mineral or vegetable oil, and either an oxide or a carbonate of lead to which mineral oil is subsequently added, said compound being first raised to a temperature of about 480° to 500° Fahrenheit, then reduced by adding mineral oil about 20°, and then raised again to the first high temperature before the rest of the mineral oil to be added is introduced.

3. In the manufacture of lubricating-oils composed of the elements named, the said compound being subjected to heat which will raise its temperature by regulating the applied heat to 475° to 500° Fahrenheit, and of holding it at that high temperature for fifteen minutes or more, according to the consistency desired, all before the mineral oil is introduced, and as and for the purposes set forth.

4. A lubricating-oil composed of a compound of animal or vegetable oil and an oxide or a carbonate of lead, said compound being forced to a temperature of 475° to 500° Fahrenheit, and held at that high temperature for fifteen minutes or more, according to the consistency desired, and then united with mineral oil, substantially as and for the purpose described.

5. In the manufacture of lubricating-oils from the elements named, the process of treating said compound with a strong inflow of mineral oil of a temperature of 80° to 150° Fahrenheit, substantially as and for the purpose described.

6. In the manufacture of lubricating-oils from the elements named, the process of stopping said inflow of previously-heated mineral oil when the temperature of said compound and added oil shall have been reduced to 340° to 320° Fahrenheit, and maintaining about said temperature

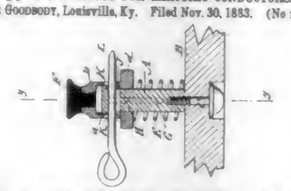
for about ten or fifteen minutes, substantially as and for the purpose set forth.

7. The improvement in the process of preparing lubricating-oils which consists in maintaining the fire during the addition of the cooling oil, whereby the cooling of the mixture is effected gradually.

8. In the manufacture of lubricating-oils from a compound of animal or vegetable oil with an oxide or a carbonate of lead, to which, after treatment, mineral oil is added, the process of first forcing the temperature of said compound to 475° to 500° Fahrenheit, of holding it at that high temperature for fifteen minutes or more, according to the consistency desired, then adding a strong inflow of mineral oil previously heated to 80° to 150° Fahrenheit, until, the fire being maintained and regulated, the temperature shall be reduced to 340° to 320° Fahrenheit, and maintaining said last-mentioned temperature for about ten or fifteen minutes, and then adding mineral oil as desired, all substantially as and for the purpose set forth.

9. A lubricating-oil composed of animal or vegetable oil and an oxide or carbonate of lead and mineral oil, produced by the following processes, substantially as herein described, to wit: making a compound of the animal or vegetable oil with the oxide or carbonate of lead, and, by regulating the applied heat, forcing the temperature thereof to 475° to 500° Fahrenheit, and holding the mixture at that high temperature for fifteen minutes or more, according to the consistency desired in the resulting oil, and then treating said compound, before it is allowed to cool to any considerable extent, with a strong flow of mineral oil at a low temperature, the applied heat being retained until the temperature shall be reduced to 340° to 320° Fahrenheit, and stopping said inflow and maintaining said last-mentioned temperature for about ten or fifteen minutes, and in then introducing the desired quantity of mineral oil, the cooling of the compound and mixture being made gradual, and being regulated substantially as and for the purpose described.

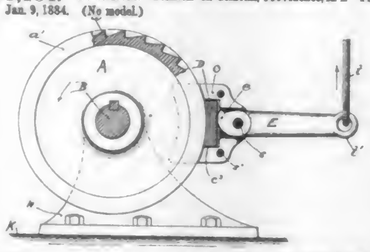
296,160. BINDING-POST FOR ELECTRIC CONDUCTORS. ALBERT GEORGE GOODBODY, Louisville, Ky. Filed Nov. 30, 1883. (No model.)



Claim.—1. The combination, with the binding-post A, provided with the peripheral longitudinal groove G, of the spring-pressed cap D, provided with the perforated flange *d*, and pin H, passing through the perforation in the flange, and having its end resting in the groove G, to prevent the cap from turning, substantially as shown and described.

2. The combination, with the base B, screw C, binding-post A, provided with the peripheral longitudinal groove G, aperture J, and top annular flange, *a*, of the loose cap D, having the perforated bottom flange, *d*, apertures K, insulated button F, pin H, spring E, and pin L, substantially as shown and described.

296,161. WINDLASS. FRANCIS A. GRATER, Providence, R. I. Filed Jan. 9, 1884. (No model.)



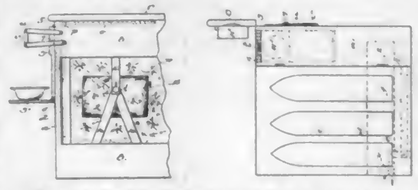
Claim.—1. The combination, in the clamp C, provided with a pocket or recess, C^3, of the friction-block D and lever E, all arranged and adapted to be secured together substantially as shown and set forth.

2. The combination, with a windlass provided with one or more chain-wheels and driving-wheels, of the friction device herein described, adapted to engage with said driving-wheel, and consisting of the recessed or apertured clamp C, lever E, and friction-block D, substantially as shown and set forth.

3. The combination, with a windlass provided with a double-faced wheel, A', of the clamps C, having pocket C^3, lever E, and friction-block D, the latter being interposed between the toe of said lever and the driving-face of the wheel, substantially as shown and set forth.

4. The friction device herein described, consisting of the recessed or apertured clamps C, lever E, pivoted to said clamp, and friction-block D, the latter being pivoted at d^2 within said recess, the whole combined, arranged, and adapted to engage with the driving-wheel of a windlass or machine, substantially as shown and set forth.

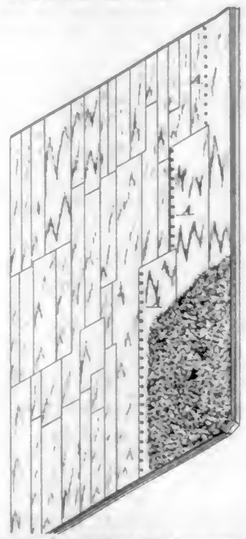
296,162. FOLDING BED. ALBERT F. GUE, Denver, Colo. Filed June 6, 1883. (No model.)



Claim.—1. The pivoted bed-frame and inclosing-case therefor, combined with the folding wash-stand composed of the slide-piece *r*, portion *s*, hinged thereto, and the shelf *s'*, hinged to said portion *s*, the whole constructed to be slid into the top of the case when not in use and to hang at the side of the case when in use, substantially as shown and described.

2. The pivoted bed, the folding wash-stand, and inclosing-case therefor, combined with the towel-rack consisting of the pivoted arms *u*, provided with a shoulder or catch, 7, to engage the corner of the case, whereby it may be held in position for use, substantially as described.

296,163. FELT ROOFING. LEVI HAAS and DENNIS HOWARTH, Chester, Pa. Filed Jan. 7, 1884. (No model.)



Claim.—1. A roofing consisting of the tarred-paper strips A, having perforated longitudinal edges cemented to the sheathing, the first sheet being laid flat upon the sheathing, and the second lapped over the perforations thereof, the third being in like manner lapped over the perforations of the second, and so continuously *seriatim*, and a surface or finishing coat, substantially as shown, and for the purpose described.

2. In a roofing, the tarred and perforated strips A, cemented to the sheathing and coated with a mixture of broken pebbles and gravel, for the purpose described.

296,164. SECONDARY BATTERY. ALFRED HAID, Rahway, assignor to Haid's Electrical Storage Company, Newark, N. J. Filed Dec. 29, 1883. (No model.)

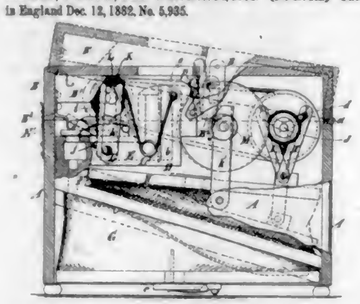
Claim.—1. An electrode for secondary batteries, composed of an assemblage of strands consisting of threads or cords of fibrous material, coated or covered with lead or its equivalent, as set forth.

2. The method herein described of manufacturing the electrodes for secondary batteries, which consists in coating twine or cord with an oxidizable conductor, cutting the same into the required lengths, and binding them together, substantially as set forth.

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296,165. MECHANICAL MUSICAL INSTRUMENT. ANDREW H. HAMMOND, Worcester, Mass. Filed Nov. 14, 1882. (No model.) Patented in England Dec. 12, 1882, No. 5,935.



Claim.—1. In a mechanical musical instrument, the combination of a driving-shaft, a music-sheet, a take-up roller for the music-sheet capable of movement toward and from the driving-shaft, a wheel on the driving-shaft, a wheel on the take-up roller, a movable cover or section of the case, and means whereby, when the said cover or section is closed, one of the said wheels will be forced against the other with a yielding pressure for the purpose of causing the music-sheet to be wound up on the take-up roller when the driving-shaft is rotated, and so that when the cover or section is opened the said wheels will be released from operative engagement, substantially as specified.

2. In a mechanical musical instrument, the combination of a music-sheet, music and take-up rollers for the music-sheet, having movable bearings, a driving-shaft, a wheel on the driving-shaft, a wheel on the take-up roller for deriving motion from the wheel on said driving-shaft, a pulley on the driving-shaft, a pulley connected to the music-roller, a belt passing around these pulleys, and a movable cover or top section, and push-pieces on the same adapted to act upon the movable bearings of said rollers, substantially as and for the purpose described.

3. In a mechanical musical instrument wherein a traveling music-sheet is employed, the combination of a roller, M, on which the music-sheet is wound, the wheel M', the bearing-block *k'*, the driving-shaft J, the wheel J', and a cover or top section provided with the block B^3, and the spring *p*, substantially as specified.

4. In a mechanical musical instrument wherein a traveling music-sheet is employed, the combination of a music-roller on which the music-sheet is rewound after playing, and which is supported in movable bearings, a driving-shaft, a belt for transmitting motion from the driving-shaft to said roller, and a cover or top section provided with means whereby, on being adjusted into its place, it will effect the movement of the bearings of said roller to slacken the belt, and on being removed will cause the tightening of the belt, substantially as specified.

5. In a mechanical musical instrument wherein a traveling music-sheet is employed, the combination of a roller on which the music-sheet is rewound after playing, a driving-shaft, a belt for transmitting motion from the driving-shaft to the said roller, the movable bearings L', in which the said roller is supported, the springs L^2, and the blocks B' on a cover or top section, substantially as specified.

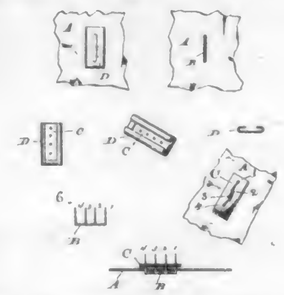
6. In a mechanical musical instrument wherein a traveling music-sheet is employed, the combination of a roller, M, on which the music-sheet is wound, the wheel M', the bearing-block *k'*, the driving-shaft J, the wheel J', the wind-chest E, the valve E', and a cover or top section provided with the block H^2, the push-piece B^3, and the spring *p*, substantially as specified.

7. In a mechanical musical instrument, the combination of a valve, E', a spring for opening the same, and a cover or top section provided with a push-piece for closing the valve, substantially as specified.

8. In a mechanical musical instrument, the combination of an equalizer the upper board of which is fixed in the case of the instrument, bellows mounted on the top of said fixed board, a wind-chest communicating with the equalizer, supported at one end on said fixed board and extending over said bellows, and a reed-board extending upward from the inner end of the wind-chest, substantially as specified.

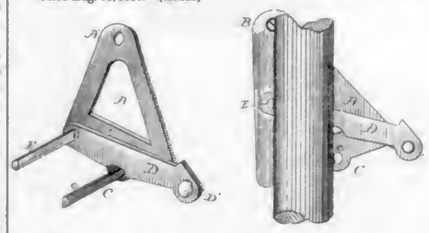
9. In a mechanical musical instrument, the combination of an equalizer the upper board of which is fixed in the case of the instrument, bellows mounted on the top of said fixed board, a wind-chest communicating with the equalizer, supported at one end by said fixed board and extending over said bellows, a reed-board extending upward from the inner end of said wind-chest, a music-roller supported above the wind-chest, at one side of the reed-board, a take-up roller arranged beyond the reed-board and wind-chest over the bellows, and a driving-shaft arranged beyond the wind-chest and reed-board over the bellows, substantially as specified.

296,166. METALLIC FASTENING. HENRY HARRIS, Suisun, Cal. Filed Dec. 26, 1883. (No model.)



Claim.—In a metallic fastener, the combination of a perforated plate, a staple having several sharp points adapted to be passed through said plate, and a cap for concealing the turned-over points of said staple, substantially as shown and described.

296,167. TOOL-HOLDER. COLUMBUS D. HAWLEY, Bridgeport, Conn. Filed Aug. 10, 1883. (Model.)



Claim.—1. A vibrating tool-holder consisting of a loosely-pivoted plate having a pin, as shown, and a lever pivoted to said plate, and having a pin at its opposite end, between which and the pin upon the plate the article to be held is tightly gripped.

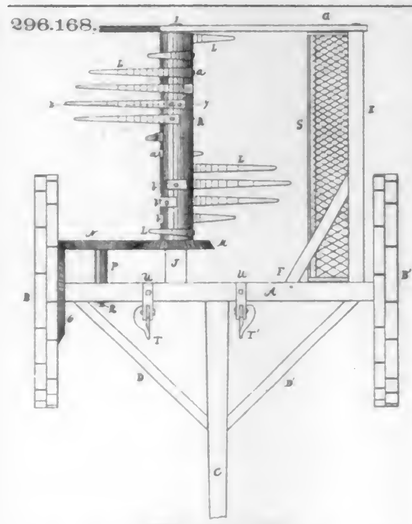
2. A plate adapted at its upper edge to be pivoted to the wall, and having a pin midway of the length of its lower edge, in combination with a lever pivoted to one of its outer edges, and a pin at the opposite end of said lever, whereby an article placed between said pins is firmly gripped and held.

3. Plate A and pin C, having edge *c*, in combination with lever D, pivoted to said plate and resting upon pin C, said lever being provided with a pin, E, as described, and for the purpose set forth.

296,168. POTATO-DIGGING MACHINE. ASA L. HIGLEY, Troy, N. Y., assignor of one-half to John Mathews, same place. Filed Apr. 30, 1883. (No model.)

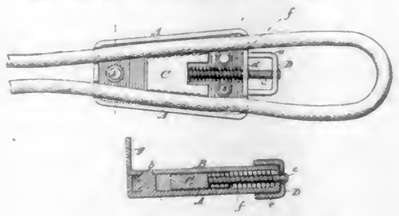
Claim.—In a potato-digging machine, the combination of the following organized parts, to wit: the axle A, with the transporting-wheels, gearing O N M, the revolving digger K, arranged in the line of draft, the adjustable folding screen arranged in a plane parallel with the revolving digger, a pivoted lever for adjusting the revolving digger, and the plows T T', attached to axle A, to loosen the earth upon both sides of the row of potatoes to be dug, the combination being and having the mode of operation substantially as hereinbefore set forth.

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Claim.—In a watch, the combination of front plate, A, rear plate, B, shield or cap C, formed with recesses *a d' f*, two mainsprings' drums, D D', having spur-wheels H H' in the same plane, intermediate pinion, I, with which the drum spur-wheels engage, spur-wheel J on the intermediate pinion-shaft, hour-hand pinion engaged by the spur-wheel J, mainsprings' shafts *d d'*, journaled in the cap, spur-wheels E E' on the springs' shafts, occupying the recesses *a d'*, winding-arbor G, extending through the rear plate and cap, spur-wheel F on the arbor, occupying the recess *f* and meshing with the springs' spur-wheels E E', a ratchet-wheel, M, on the arbor, and a spring ratchet-pawl to engage the ratchet, as set forth.

296,169. MAIL-BAG FASTENER. SAMUEL C. HILL and SAMUEL D. WEBB, Washington, D.C. Filed Feb. 6, 1884. (No model.)

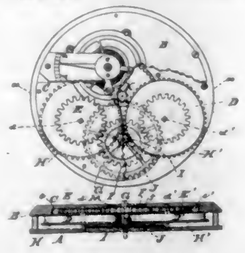


Claim.—1. The shell A, having the interior of its sides tapered in one direction from end to end, with a correspondingly-tapered wedge, C, arranged therein, and provided with a rod or pin, *c*, extending from the large end of said wedge through the shell, in combination with a spring, *f*, arranged around the rod or pin, the whole adapted to operate substantially as and for the purpose set forth.

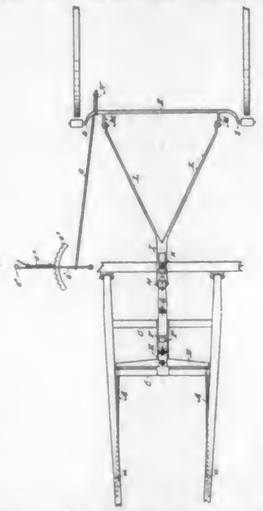
2. The combination, in a bag-tie, of the shell formed of the two parts A and B, the former having formed therewith the pins *b* and the perforated portion *d*, and the latter provided with the right-angular portion *g*, the spring-block, and the pin, substantially as described.

3. The combination, in a bag-tie, of the shell made in two parts, as described, the spring-block, and the pin secured to said block, and provided with the swivel D, having the arms *e*, substantially as described.

296,170. WATCH-WINDING MECHANISM. ORREN E. HINKLEY, Milford Centre, Ohio, assignor, by direct and mesne assignments, of two-thirds to Albert B. Roots, same place, and Walter Allen, Washington, D.C. Filed Jan. 2, 1883. (No model.)



296,171. WAGON-BRAKE. JAMES HOCKING and CLEMENT R. JONES, Denton, Nebr. Filed Dec. 31, 1883. (No model.)

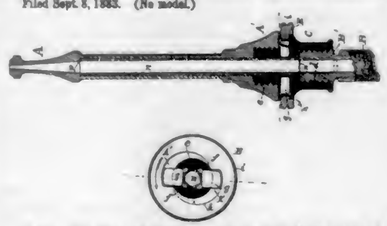


Claim.—1. The combination, with the rock-shaft R, having downwardly-projecting arms S, bearing brake-shoes, and downwardly-projecting arm M, of the branched brake-rod I L, slotted and guided by a vertical bolt, and means, substantially as described, for forcing the same backward, as set forth.

2. The combination, with the shafts of a vehicle, of the rods A, having loops *a*, and guided beneath the shafts, the single-trees B B, guide-irons F F, bifurcated bar G, and a brake-bar connecting with the brakes, and adapted to apply the same when the rods A A are forced back, as set forth.

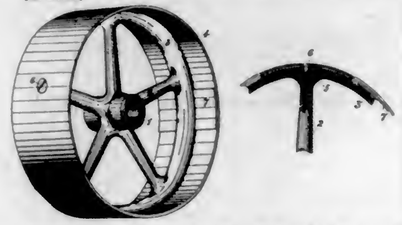
3. The combination of rock-shaft R, having brake-shoe arms S and arm M, the brake-rod I L, the bifurcated bar G, connected to brake-rod by a universal joint, H, the single-trees B D, and the shaft-rods A A, as and for the purpose described.

296,172. CUT-OFF NOZZLE. CHARLES T. HOLLOWAY, Baltimore, Md. Filed Sept. 8, 1883. (No model.)



Claim.—A liquid-discharging nozzle having a flexible tube-lining extending through it, a laterally-projecting flat flange, A, with a circular rim, A', a neck, *e*, above the flange, provided with two holes, *f*, a block, *g*, to slide in and out each hole, and a loose collar, E, provided with a recess on the side, having a circular wall, A^2, and with its center entirely cut out, forming two internal eccentric rims, *k*, which bear on the outside of the said blocks, as shown and described.

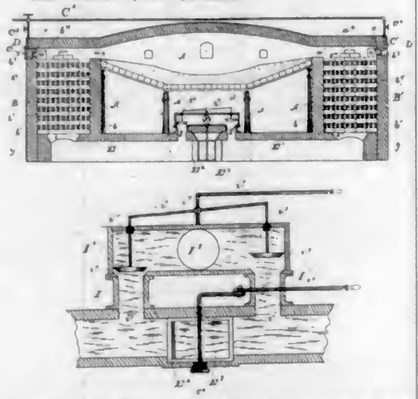
296,173. BELT-PULLEY. ALEXANDER T. IRWIN, Pittsburg, Pa., assignor to Jones & Laughlins, (Limited,) same place. Filed Feb. 25, 1884. (No model.)



Claim.—1. In a belt-pulley, the hub 1, spokes 2, having enlarged ends, and the fellies 3, said parts being cast in one piece, in combination with the wrought-iron rim 4, suitably secured to the spokes and fellies, substantially as set forth.

2. In a belt-pulley, the hub 1, spokes 2, having enlarged ends, and the fellies 3, in combination with the wrought-iron rim 4, secured to the said spokes and fellies by screws, substantially as set forth.

296,174. REGENERATOR-FURNACE. GOMER JONES, Washington, D.C., assignor to the Standard Vapor Fuel Iron and Steel Company of New York. Filed Nov. 9, 1883. (No model.)



Claim.—1. The combination of a furnace having openings or throats at each end, air-regenerators having their top layer of bricks near the said throats or openings, bricks resting upon said top layer to form transverse passages in front of the throats or openings of said furnace, and a gas-supplier in the front wall of the regenerators at a point opposite the bricks.

2. The combination of a furnace having openings or throats at each end, air-regenerators having the top layer of bricks near the said throats or openings, and provided with a series of rows of brick resting upon the top layer to form passages leading to the furnace, and a gas-supplier in the front walls of the regenerators, and having jets which register with the passages formed by said brick, substantially as described.

3. The combination of a furnace open at each end, regenerators of the same size from top to bottom at each end of the furnace, gas-suppliers in the front wall of the regenerators, and truncated wedge-shape flues having their base joined to the regenerators, substantially as described.

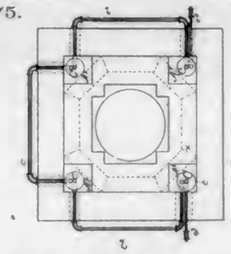
4. In a furnace, the combination of the regenerators, flues E and E', having a valve-box leading to the chimney, and provided with a valve for alternately shutting each flue, and an air-box connected with each of the flues at a point between the inlets to the valve-box and the regenerators, substantially as described.

296,175. SUPERHEATER. GOMER JONES, Washington, D.C., assignor to the Standard Vapor Fuel Iron and Steel Company of New York. Filed Jan. 4, 1884. (No model.)

Claim.—1. The combination of a combustion-chamber having a port in its upper part, a superheater located in said combustion-chamber, a downflue connected with said combustion-chamber by said port, and a superheater located in said downflue, substantially as described.

2. The combination of the downflues of a furnace and superheaters

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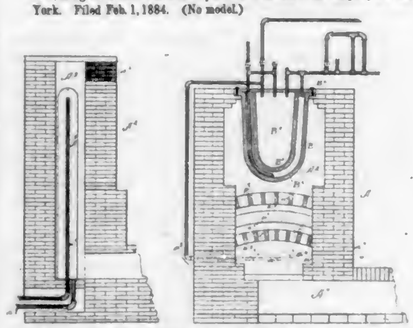


in said downflues, and connected together substantially as described.

3. The combination of the downflues of a furnace and superheaters in said flues, consisting of drums connected with each other, and having inlet-pipes terminating near the top of the drums and outlet-pipes near the bottom of the drums, substantially as described.

4. In a furnace, a series of downflues having superheating-drums located therein, said drums connected together by pipes, the exit-pipe of one drum being the inlet-pipe of the next drum, substantially as described.

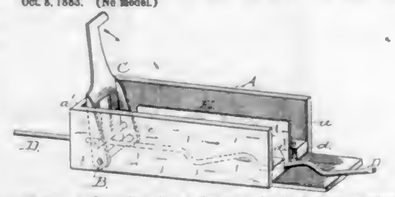
296,176. SUPERHEATING-FURNACE. GOMER JONES, Washington, D.C., assignor to the Standard Vapor Fuel Iron and Steel Company of New York. Filed Feb. 1, 1884. (No model.)



Claim.—1. The combination of a gas-and-air-mixing chamber and a combustion-chamber, said mixing-chamber having a series of arches each formed of rows of brick, with spaces between each row, and the rows in the upper arch being directly over the spaces between the rows in the lower arch, substantially as described.

2. The combination of a gas-and-air-mixing chamber and a combustion-chamber, said mixing-chamber having a series of arches formed of rows of bricks, one arch being separated from the other by retaining-bricks, and the rows of one arch being directly over the retaining-bricks of the lower arch, and the retaining-bricks of the upper arch arranged in a staggered manner relatively to the retaining-bricks of the arch below, substantially as described.

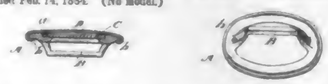
296,177. WIRE-CRIMPER. MATTHEW M. JONES, Kokomo, Ind. Filed Oct. 8, 1883. (No model.)



Claim.—1. In a wire-crimper, the box A, having its front end closed and perforated for the free passage of the wire, and provided with the transverse bar B, in combination with the hinged or pivoted lever-handle C, bifurcated at its lower end and provided with the transverse cross-bar *c*, all constructed to operate substantially as and for the purpose set forth.

2. The box A, provided with the transverse bar B, in combination with the bifurcated lever-handle C, provided with the cross-bar *c*, and the crimp-guards *d d*, substantially as and for the purpose set forth.

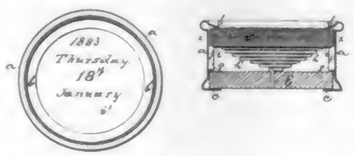
296,178. HARNESS-ROSETTE. RICHARD W. JONES, Syracuse, N. Y. Filed Feb. 14, 1884. (No model.)



Claim.—1. A harness-rosette consisting of the annular base-piece, having a peripheral groove on its under side, and provided with an attaching-loop and an ornamental cap or face piece, with a circumferential flange upset in the groove in the base-piece, substantially as described.

2. In a harness-rosette, the combination of the base-piece A, having an annular recess on its upper surface, a peripheral groove on its under side, and an attaching-loop cast integral therewith, with the disk C and the cap or face D, the circumferential flange on the latter being upset in the groove on the under side of the base, as set forth.

296,179. COMBINED CALENDAR AND PAPER-WEIGHT. LOUIS KELLER, New York, N. Y. Filed Feb. 9, 1883. (No model.)



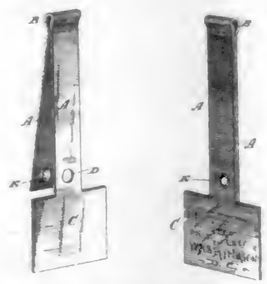
Claim.—1. As a new article of manufacture, a combined calendar and advertising device, consisting of the case *a*, having continuous or unbroken sides or walls, an open top surrounded by an inwardly-projecting and continuous flange, *b*, a pressure-plate, *i'*, adapted to move within the case, and an interior spring, *h*, secured centrally to the bottom, all arranged substantially as and for the purpose set forth.

2. As a new article of manufacture, a combined calendar, paper-weight, and advertising device, consisting of a case, *a*, having an annular flange, *b*, on its upper edge, adapted to hold the edges of contained pieces of paper *i'*, a pressure-plate, *i*, adapted to move within the case, an interior spring, *h*, secured centrally to the bottom, and a weighted bottom, E, substantially as and for the purposes set forth.

3. The combination, in a calendar, of the case *a*, the spring *h*, attached at one end to the removable bottom E, and supporting the plate *i* at the other end, the plate *i*, the independent advertising-ring *k*, and the pieces of paper *i'*, separate and independent from each other and piled on each other in numerical sequence, substantially as and for the purposes set forth.

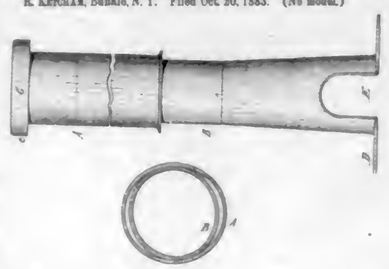
4. The combination, in a calendar, of the case *a*, the spring *h*, the plate *i*, the pieces of paper *i'*, having calendar designations, and arranged on top of each other in proper sequence, and provided with notches in their edges, and the posts *j*, adapted to fit into the notches in the pieces of paper, substantially as and for the purposes set forth.

296,180. METALLIC TAG. MARXELL KERSTEN, Garfield, Iowa. Filed Dec. 22, 1883. (No model.)



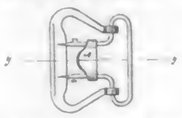
Claim.—As an article of manufacture, a metallic tag consisting of a strip of sheet metal doubled upon itself, and having at the free end of one of its legs an eyelet punched in the metal, and at the free end of its other leg a plate integral with it, adapted to be marked with the address, &c., and an eyelet-hole adapted to fit the eyelet, whereby the two legs or parts of the tag-strip may be clinched together, substantially as shown and set forth.

296,181. STOP-COCK BOX FOR WATER OR GAS PIPES. ALONZO R. KETCHAM, Buffalo, N. Y. Filed Oct. 20, 1883. (No model.)



Claim.—An extensible box or casing composed of two telescopic parts constructed with elliptical contiguous surfaces, substantially as set forth.

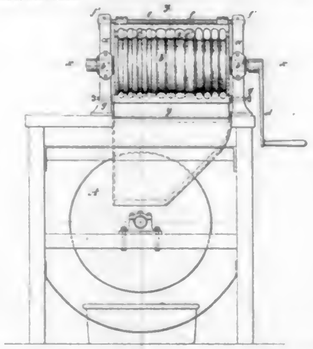
296,182. BUCKLE. WILLIAM A. KEYS and JARED LOCKWOOD, New York, N. Y. Filed Nov. 2, 1883. (No model.)



Claim.—1. A buckle for use in textile fabrics, having a pivoted tongue provided with points *a* and the lifting-piece A, projecting above the plane of the tongue and arranged between the points and pivot of the tongue, substantially as shown and described.

2. The combination, with the prongs of a buckle, of the attached lifting-piece A, substantially as shown and described.

296,183. MACHINE FOR SHAPING PLASTIC MATERIALS. WILHELM KILIAN, Berlin, assignor to Gebr Stollwerck, Cologne-on-the-Rhine, Germany. Filed Feb. 13, 1884. (No model.) Patented in Germany Apr. 9, 1880, No. 12,165.



Claim.—In a machine for shaping plastic material, the combination, with the rotating cylinder *b*, having the grooves *c*, of the segment *e*, arranged as described, and having the grooves *c'*, corresponding with the grooves *c*, and forming therewith tubular passages when the said grooves are brought together, substantially as and for the purpose set forth.

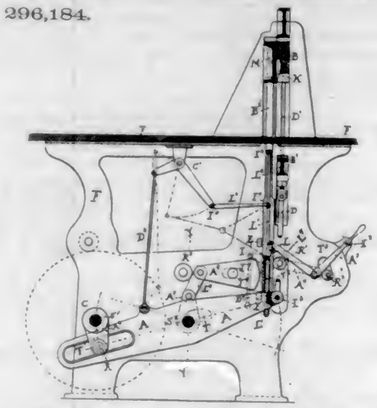
296,184. PAPER-CUTTING MACHINE. HERMAN T. C. KRAUS, Brooklyn, N. Y., assignor to George E. Sanborn, Chicago, Ill. Filed Feb. 23, 1883. (No model.)

Claim.—1. In a paper-cutting machine, the clamp supported by the clamp-bar B^3, and the links L' and L^3, resting upon the pins I, in combination with the link L and arm A^3, for the purpose of controlling the preliminary adjustment of the clamp, substantially as shown and described.

2. The arm A, connecting-rod D^3, crank-lever C', arm L^3, toggle-links L' and L^2, and the clamp-bar B^3, in combination, for the purpose of controlling the adjustment of the clamp.

3. In a paper-cutting machine, the arm A and shaft S^3, in combination with the arm A^3, link L^4, roller R^3, and the toothed segment-arm A^4.

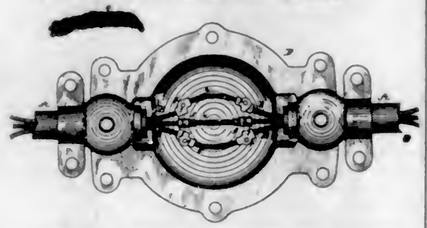
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4. The combination of the arm A, connecting-rod D^3, arm A^4, rollers R' and R^3, the latter working in the inclined slot T^3, and clamp-bar B^3, as set forth.

5. In a paper-cutting machine, arm A, arm A^3, link L^4, toothed segment-arm A^4, pin I', and toothed clamp-bar B^3, in combination, as and for the purpose set forth.

296,185. ELECTRICAL CONDUCTOR AND CONNECTING DEVICE THEREFOR. JOHN KRUESI, Brooklyn, assignor to the Electric Tube Company, New York, N. Y. Filed Oct. 20, 1883. (No model.)



Claim.—1. The combination of two or more electrical conductors, an inclosing-tube, a single insulating-support wound spirally upon each conductor, and an insulating material of the character described filling the tube, substantially as set forth.

2. The combination, with two or more electrical conductors and an inclosing-tube, of an insulating-support wound spirally around each conductor, and an insulating-support wound spirally around all the conductors, and sustaining them centrally in the tube, substantially as set forth.

3. The combination, with two or more electrical conductors and an inclosing-tube, of a spiral insulating-support around each conductor, a spiral insulating-support around all the conductors, and an insulating material of the character described filling the tube, substantially as set forth.

4. The combination, with two or more insulated electrical conductors and an inclosing-tube, of a spiral insulating-support around each conductor, a spiral insulating-support around all the conductors, and an insulating material of the character described filling the tube, substantially as set forth.

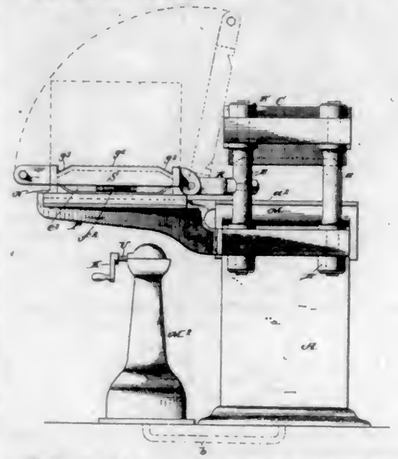
5. The combination, with two parts of an electrical conductor, of a device for permanently connecting them, consisting of a bent flexible conductor having end pieces brazed or soldered thereto, the ends of the joined conductor being attached to such end pieces, substantially as set forth.

6. The combination, with two parts of an electrical conductor, of a device for permanently connecting them, consisting of a bent flexible conductor formed of a number of wires massed together, and having solid end pieces soldered or brazed thereto, to which the ends of the joined conductor are connected, substantially as set forth.

7. The combination of a junction-box filled with fusible insulation, conductors entering the same, and connecting-pieces of less conductivity than the conductors, substantially as set forth.

8. The combination of a junction-box filled with fusible insulation conductors entering the same, and flexible connecting-pieces of less conductivity than the conductors, substantially as set forth.

296,186. APPARATUS FOR PRESSING OIL-CAKES. WM. KRUTZSCH, Dayton, Ohio, assignor to the Buckeye Iron and Brass Works, same place. Filed Dec. 3, 1883. (No model.)



Claim.—1. In an apparatus for pressing oil-cake, a press box or plate capable of sliding upon the ram-block and brackets attached to the frame, substantially as described.

2. In an apparatus for pressing oil-cake, the combination, with a press box or plate capable of sliding upon the ram-block and upon brackets forming a support continuous therewith, of end platforms for engaging with said box or plate, and having their upper surfaces formed to approximate the shape of the upper half of the pressed cake, substantially as described.

3. The combination, with the press box or plate capable of sliding from the ram-block upon brackets outside the press, of end platforms for engaging the ends of said box or plate, and having their upper surfaces approximating the form of the pressed cake, and a receptacle adapted to traverse said platforms and press box or plate, to deposit the meal upon the latter and shape the upper portion of the mass for the press, substantially as described.

4. The method herein described of pressing oil-cake, said method consisting in laying a cloth upon a press box or plate, depositing the meal thereon, forming the mass into a shape approximating that imparted by the press, folding the two ends of said cloth over thereupon, and submitting the whole to the action of the press, substantially as described.

5. The combination of the ram-block having a flange at each end, of the press-plate constructed of such shape as to form the lower half of the cake and having ends which overhang the ram-block, with grooves formed therein to receive the flanges, substantially as described.

6. The combination, with the press constructed as described, of the end platforms hinged to brackets upon each end of the press, and connected by a rod attached to lugs projecting from the outer ends of said platforms, substantially as specified.

7. The combination, with the press having supporting-brackets P P and sliding press-plate N, of the end platforms, S S, formed as set forth and hinged to the studs R R, and the receptacle traversing said end platforms and supplying the meal to and shaping it upon the press-plate, substantially as described.

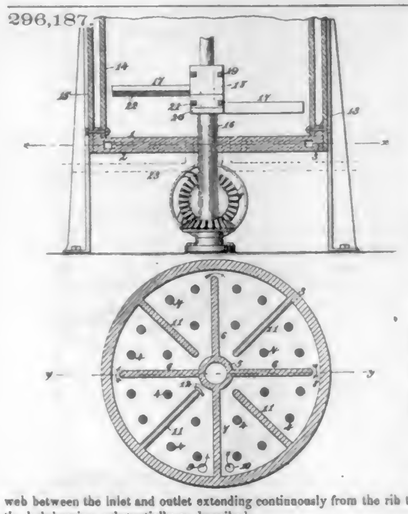
8. The end platform, S, having a plain top surface with sides beveled at an angle, g^2 g^2, approximating the form of the upper half of the pressed cake, substantially as described.

296,187. APPARATUS FOR EXTRACTING OIL FROM OLEAGINOUS SUBSTANCES. WM. KRUTZSCH, Dayton, Ohio, assignor to the Buckeye Iron and Brass Works, same place. Filed Dec. 18, 1883. (No model.)

Claim.—1. In an apparatus for heating or cooking oleaginous substances for the extraction of oil, the kettle-heating bottom consisting of the upper and lower walls, and the radiating webs formed integral with the walls and creating steam-passages adjacent to the center of the bottom and its outer edge, the said bottom having a steam inlet and outlet arranged on opposite sides, respectively, of a web which extends from the hub-bearing to its outer edge, substantially as described.

2. In an apparatus for heating or cooking oleaginous substances for the extraction of oil, the kettle-heating bottom composed of a hollow casting comprising the upper and lower separated wheels creating the steam-space, the outer connecting-rib, the hub-bearing, the radiating webs terminating adjacent to the hub-bearing and the outer rib, and the

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web between the inlet and outlet extending continuously from the rib to the hub-bearing, substantially as described.

3. In an apparatus for heating or cooking oleaginous substances for the extraction of oil, the kettle-heating bottom consisting of the hollow casting forming the steam-chamber, and provided with a surrounding vertical flange to which the kettle-cylinder and exterior cylinder are secured to create the intervening air-space of a width equal to that of the flange, substantially as described.

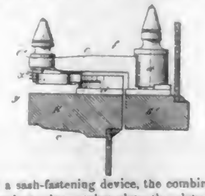
4. In an apparatus for heating or cooking oleaginous substances for the extraction of oil, the kettle-heating bottom composed of a casting comprising the separated walls, the hub-bearing, the outer connecting-rib, the radiating webs joining the walls and arranged to create steam-passages, and the flange rising from the outer edge of the upper wall to which the flange is secured, the inner and outer cylinders, substantially as described.

5. In an apparatus for heating or cooking oleaginous substances for the extraction of oil, the combination, with the heads secured to the shaft and having flanges, of the agitating-arms having one end secured to said flanges, substantially as described.

6. In an apparatus for heating or cooking oleaginous substances for the extraction of oil, the combination, with the vertical shaft, of the heads grooved to receive the shaft and having inclined flanges, and the agitating-arms secured to the flanges to stand oblique to the axis of the shaft, substantially as described.

7. In an apparatus for heating or cooking oleaginous substances for the extraction of oil, the combination, with the shaft, of the grooved heads clamped to the shaft by screw-bolts, and provided with inclined flanges and the agitating-arms having one end bolted to the flanges, substantially as described.

296,188. FASTENER FOR THE MEETING-RAILS OF SASHES. EDWARD O. LADD, Everett, Mass. Filed Apr. 21, 1883. (Model.)



Claim.—1. In a sash-fastening device, the combination of an edge cam-bearing plate and an edge ratchet-plate, the plates or edge surfaces being independent of each other but coincident in curvature, and adapted to operate in connection with the fastening mechanism, substantially as and for the purposes set forth.

2. The sash-fastening device consisting of the plate *b*, provided with the arm *c*, pivoted thereto, the said arm adapted to be actuated by the spring x^3, inclosed in the spring-case *a*, in combination with the plate *e*, provided with a circular-edge cam-plate, *g*, and the circular-edge ratchet-plate *f*, formed coincident with each other, and adapted to operate in combination with a projecting shoulder cam and pawl arranged on the outer end of the arm *c*, all substantially as specified and set forth.

3. In a sash-fastening device, the combination of a projecting revolving shoulder cam and pawl, each adapted to co-operate with independent edge cam and edge ratchet plates, said plates being formed coincident with each other upon the plate *d*, substantially as and for the purposes set forth.

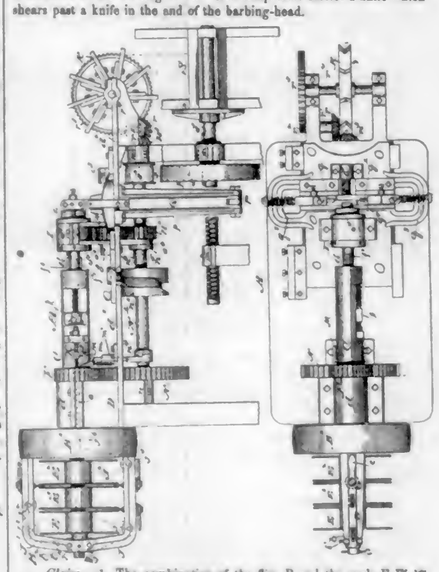
296,189. DEVICE FOR TESTING CHEESE-CURD. EDWARD V. LARHAM, Union Grove, Ill. Filed Dec. 6, 1882. (No model.)



Claim.—As an improved article of manufacture for testing curd in cheese-making, the herein-described cylindrical iron chimney, adapted to be fitted upon a lamp-burner or gas-jet, substantially as specified.

296,190. BARBED-WIRE MACHINE. GODFREY H. LAHAR, St. Louis, Mo. Filed Mar. 2, 1883. (No model.)

Brief.—The barbing-head, the barb-compressors, and the mechanism for operating the compressors are all mounted on a reciprocating slide. The barbing-head is rotated continuously by the flier, being carried by a barrel which is splined to the stock of the flier. The barrel rotates with the stock and reciprocates in it. A reciprocating barb-feed is mounted on the rotating stock. One compressor carries a knife which shears past a knife in the end of the barbing-head.



Claim.—1. The combination of the flier B and the reels E E' E², said reels being arranged centrally in the flier, and said flier and reels being perforated centrally to admit the strand-wires.

2. The combination of the flier B, the stock C, and the tubes b' b^2, and core b^4, substantially as described.

3. The combination of the flier B, the stock C, the tubes b' b^2, the core b^4, and the reels E E' E², substantially as described.

4. The combination of the flier B, the reel E', and the tension device E², substantially as described.

5. The combination of the flier B, the stock C, the tubes b' b^2, the core b^4, the barrel G, and the core-bar H, substantially as described.

6. The combination of the flier B, the grooved core b^4, and the catch b^5, as and for the purpose described.

7. The combination of the flier B, the reels E E', pulleys j j' j^2 j^3 j^4, and the grooved core b^4, as and for the purpose described.

8. The combination of the rotating stock C, the tube K, the dogs k' k', the parts k^2 k^3, and the inclined plane M, and spring k^4, substantially as described.

9. The combination of the stock C, the tube K, the dogs k' k', the parts k^2 k^3, and the inclined plane M, said inclined plane having a reciprocating movement, as and for the purpose described.

10. The combination of the inclined plane M, the arm *m*, the guide m', the shaft N', and the cam n^4, as and for the purpose described.

11. The combination of the stock C, the tube K, the inclined plane M, the arm *m*, the guide m', the shaft N', the cam n^4, and the spring k^4 substantially as described.

12. The head I, perforated at *i*, and provided with the removable tube L, said tube being an extension of said perforation, but entirely beyond it, substantially as and for the purpose described.

13. The combination of the head I and the pivoted dog l^4, as and for the purpose described.

14. The combination of the reciprocating slide O, the hanger o^4, the pinions n^2 o', and the shafts N' o^3, substantially as described.

15. The combination of the reciprocating slide O, the head I, the barrel G, the core H, and the compressors q q', the compressor q' having the knife q^4, the knife l^2 on the head I, and the two compressors acting to compress the barb closely upon the strand-wires, substantially as described.

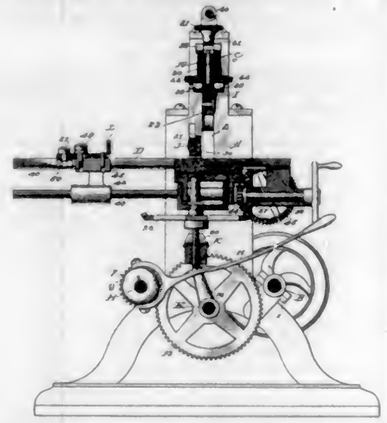
16. The combination of the head I, having a knife, l^2, the barrel G, core H, the swinging arms Q Q and the compressors q q', the compressor q' having the knife q^4, and the two compressors acting to compress the barb upon the strand-wires, substantially as described.

17. The combination of a pair of reciprocating compressors, q q', the knife on one of these compressors, the head I, and the knife on the end of same, substantially as described.

18. The combination of the shaft o^3, the cams o^2 o', the straps q^2 q^3, and the hinged arms Q Q, as and for the purpose described.

19. The combination of the shaft o^3, the cams o^2 o', the straps q^2 q^3, the arms Q Q, and the springs q^5 q^5, substantially as described.

296,191. PAPER-CUTTER AND DIE-PRESS. JOHN H. LAWLOR, Baltimore, Md. Filed Jan. 15, 1883. (No model.)



Claim.—1. In a paper-cutting machine, the combination of a cross-head adapted to slide vertically in the frame without lateral movement, and a removable cutter connected to said cross-head, and adapted to reciprocate laterally by the vertical movement of the cross-head, substantially as described.

2. In a paper-cutting or die press, a vertically-reciprocating and slotted cross-head, in combination with interchangeable cutters and dies.

3. The combination, with the sliding cross-head and its connecting-rods, having the described opening, of the removable cutter-head and cutter.

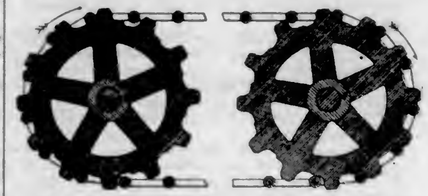
4. The slotted cross-head, in combination with the open connecting-rods, the cutter-head and cutter, and the screws 20.

5. The combination of the sliding cross-head having the slot 19, the cutter-head, having the inclined slot, the pin 26, the screws 20, and the roller-trucks.

6. Combined with the pivoted sliding follower, the removable guide-block 50, substantially as described.

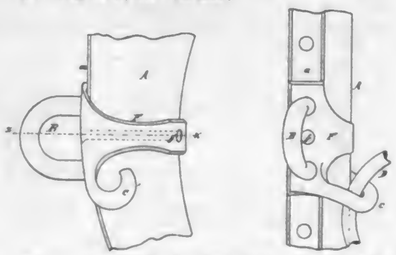
7. In combination with the frame-work of the machine, substantially as described, the main driving-shaft provided with fast and loose pulleys and fly-wheel, the pinion fixed upon said shaft, the central shaft connected by wrist-pins to the connecting-rods of the cross-head, the loose-gear wheel 4 and pinion 5 on said central shaft, the rear shaft and its fixed-gear wheel 6, meshing into the loose gear, and the clutch mechanism and loose pinion on the rear shaft, and a fixed-gear wheel, 13, on the central shaft.

296,192. SPROCKET-WHEEL. BENJAMIN A. LEGG, Columbus, Ohio, assignor to Joseph A. Jeffrey, same place. Filed Feb. 14, 1884. (No model.)



Claim.—The herein-described sprocket-wheel, having the working-faces of its teeth curved, and provided upon opposite sides with curved seats adapted to receive the anti-friction rollers of the driving-chain, the seat upon one side being nearer to the center of the wheel than the seat upon the opposite side of the tooth, substantially as set forth.

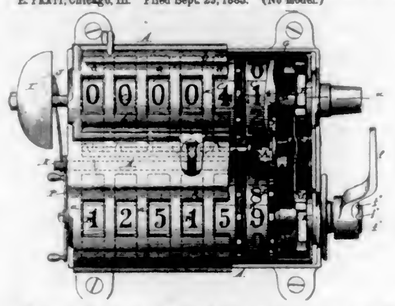
296,193. HAME ATTACHMENT. ODDEN P. LETCHWORTH, Buffalo, N. Y. Filed Oct. 30, 1883. (No model.)



Claim.—1. The combination, with a hame, of a hame staple or loop, a frame or clasp extending from the base of the hame staple or loop to the opposite side of the hame, and a bolt or rivet whereby said frame and staple or loop are secured to the hame, substantially as set forth.

2. The combination, with a hame, of a hame staple or loop, a frame or clasp extending from the base of the staple or loop to the opposite side of the hame, a hook adapted to receive the breast-strap ring, and cast on said clasp or frame, and a bolt or rivet whereby said clasp and staple or loop are secured to the hame, substantially as set forth.

296,194. REGISTER AND ALARM. JOHN G. LETTELIER and EDWIN E. PRATT, Chicago, Ill. Filed Sept. 29, 1883. (No model.)



Claim.—1. In a registering mechanism, the combination, with intermediate connecting and operating devices, substantially as described, of a series of wheels to register increasing numbers, and a series of wheels to indicate decreasing numbers, said series being adjustable independently of each other.

2. In combination with the alarm and the devices, substantially as shown, for operating the same, the series of notched indicator-wheels C, the bar O, provided with studs to enter said notches, and intermediate mechanism whereby said bar is caused to hold the alarm out of action, substantially as described.

3. In combination with a series of register-wheels and an alarm mechanism, a bar for holding said alarm mechanism out of action, extending across and acted upon by the entire series of wheels, substantially

as described, whereby the bar is prevented from releasing the alarm, except when all the registered wheels stand at the zero-point.

4. In combination with the wheels B, the oscillating head E, having the arm *d*, wheels C, and the oscillating head H, provided with the arm *c*.

5. In combination with the indicator-wheels C, the bar O, bar N, and rotary plate M, and the alarm mechanism connected with said plate, substantially as described.

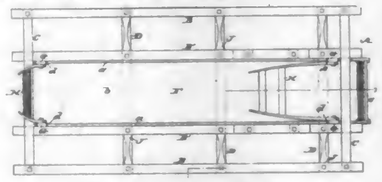
6. In combination with the indicator-wheels C and the bar O, controlled thereby, the rotary plate M, acted upon by the bar O, and bar N, provided with means to throw the operating-pawl G out of action, substantially as described.

7. In a registering mechanism, the oscillating collar E, provided with a pawl by which the registering devices are operated, in combination with the arm *f*, provided with a series of notches and a locking-pin, whereby a rotary adjustment of said arm with respect to the head is permitted.

8. The bell, its striker, the rock-shaft and spring to operate said striker, the arm upon said rock-shaft, and the wheel to actuate the same, combined with the wheels C, bar O, rotary plate M, and intermediate devices connecting said plate with the bar O, substantially as described.

9. In combination with the indicator-wheel C, its operating-pawl *c*, and detent *u*, the rotary plate M, constructed as described, to disengage both the pawl and detent.

296,195. HAY AND GRAIN RACK. WILLIAM H. LOVE, Constantine, Mich. Filed Nov. 30, 1883. (No model.)





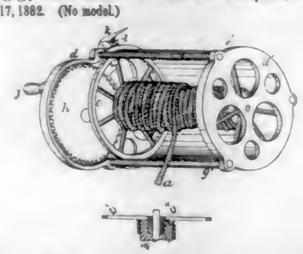
Claim.—1. The combination, with the frame of a rack, of metallic braces J, of spreading form, the bends or angles and ends of the limbs thereof being firmly connected with said frame, substantially as and for the purpose set forth.

2. A rack having a body formed of a loose bottom and loose side pieces, the same being fitted centrally in the frame of the rack, substantially as and for the purpose set forth.

3. The rack-frame having longitudinally-extending pieces M on opposite sides of the reach, the same being secured to the parallel transverse bars D' L, substantially as and for the purpose set forth.

4. The guards H, pivoted to blocks G, which are connected with the pieces or bars B' of the frame, in combination with the body F, having removable side pieces which are formed with shoulders *d*, which engage with said block, substantially as and for the purpose set forth.

296,196. LINE-REEL. WM. N. LOCKWOOD, Campville, Conn. Filed Apr. 17, 1882. (No model.)



Claim.—1. In a line-reel, the combination, with the shaft *b*, of the plain flange *c*, secured to one end thereof, and the flange *c'*, secured to the other end, and provided with a lug, c^2, projecting inwardly therefrom adjacent to the shaft *b*, and to which is attached one end of the line, substantially as and for the purpose hereinbefore set forth.

2. In combination, the inclosing-case *d d' f*, the gear-wheel *h*, provided with the crank-handle *j*, the line-reel *b c c'*, provided with the pinion, and the bell-crank spring-catch *k*, having its outer end lying along the inclosing-case, substantially as and for the purpose set forth.

296,197. LIQUID FOR AND PROCESS OF GENERATING A COMPOUND VAPOR AS A MOTOR POWER. WILLIAM L. LOWREY, Boston, Mass. Filed Nov. 12, 1883. (No specimens.)

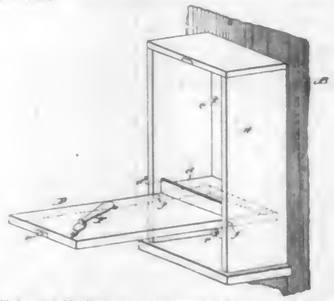
Claim.—1. A compound liquid to be used in engine-boilers to generate a vapor for a motor power, consisting of alcohol, either absolute, methylic, the alcohol of commerce, or of any other kind or name, either jointly or separately, their mixtures or compounds, and water in the following proportions, viz: for small boilers—*i. e.*, boilers of from two (2) to twenty (20) horse-power—equal parts of water and alcohol or alcohols, their mixtures or compounds, and for large boilers—*i. e.*, boilers of twenty (20) horse-power and upward—six (6) parts water and four (4) parts alcohol or alcohols, their mixtures or compounds, and the modifications and variations of said proportions, substantially as described.

2. The process of generating a compound vapor as a motor power, which consists in mixing absolute and methylic alcohols, their compounds or mixtures, or either of said alcohols or their mixtures or compounds, jointly or separately, with water in equal proportions for small boilers, and for large boilers six (6) parts water to four (4) parts absolute or methylic alcohols, their mixtures or compounds, and modifications and variations of such proportions, and subjecting the same to heat in engine-boilers the same as water is heated to generate steam, substantially as described.

3. A compound vapor generated by heat in boilers from water and alcohol, either absolute, methylic, the alcohol of commerce, or of any other kind or name, either jointly or separately, their mixtures or compounds, mixed in the following proportions: in small boilers—*i. e.*, boilers of from two (2) to twenty (20) horse-power—equal parts of water and alcohol or alcohols, their mixtures or compounds; in large boilers—*i. e.*, boilers of twenty (20) horse-power and upward—six (6) parts water and four (4) parts alcohol or alcohols, their mixtures or compounds, and the modifications and variations of said proportions, substantially as set forth and described.

4. The improved method or process of operating steam or vapor engines, which consists in applying thereto the compound vapor herein described and claimed, substantially as set forth.

296,198. BLACKING-CASE. GEORGE T. MARTIN, Somerville, assignor to the Boston Fancy Cabinet Company, Boston, Mass. Filed May 15, 1883. (No model.)



Claim.—A blacking-case composed of the box A and strong shelf *d* therein, and the door D, having the foot-rest F thereon, the said door being pivoted immediately below the front edge of the shelf, so that the entire surface of its lower end rests horizontally against the under side of the said shelf to thereby afford a strong and extended support for the projecting end of said door when in use, substantially as shown and described.

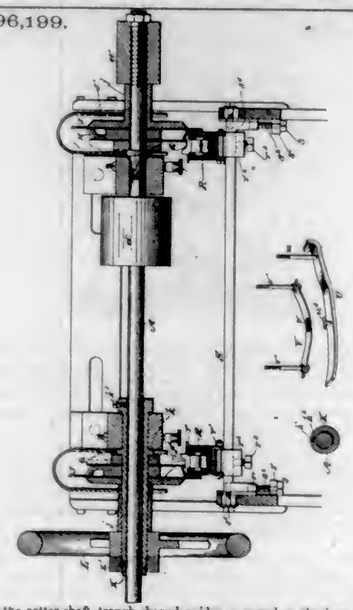
296,199. MACHINE FOR CROZING STAVES. SAMUEL F. MAXWELL, Clifton, W. Va. Filed May 17, 1883. (No model.)

Brief.—The crozing-cutters are fixed upon a shaft transversely arranged, one of them being longitudinally adjustable thereon. The staves are fed by lag-chains which run in trough-shaped guides. Said guides are supported upon cross-bars having hooks, which pass under the bars, and set-screws for securing them in place. Thus the guides and lag-chains are laterally adjustable independently of the cutters.

Claim.—1. In a machine for crozing and chamfering barrel-staves, the combination of a revolving shaft having rigidly-attached cutters at one end and longitudinally-movable cutters at the other end, with traveling carriers for moving the staves past the cutters, mechanism for adjusting the movable cutters along the shaft, and devices for adjusting one of the carriers toward and from the other carrier independently of the adjustment of the longitudinally-movable cutters, substantially as described.

2. In a machine for crozing and chamfering staves, the combination of a revolving shaft having rigidly-attached cutters at one end and longitudinally-movable cutters at the other end, horizontal bars supported

296,199.



below the cutter-shaft, trough-shaped guides arranged on the bars, carriers traveling in the guides to move the staves past the cutters, mechanism for adjusting the movable cutters along the shaft, and devices for adjusting one of the guides and its carrier along the bar independently of the longitudinal adjustment of the movable cutters, substantially as described.

3. In a machine for crozing and chamfering staves, the combination of a revolving shaft having cutters rigidly attached thereto at one end, a sliding sleeve arranged on the other end of the shaft, and carrying attached cutters, mechanism for adjusting the sleeve along the shaft, horizontal bars arranged beneath the shaft, trough-shaped guides supported on the bars, carriers traveling in the guides, and devices for adjusting one trough and its carrier along the bar independently of the longitudinal adjustment of the same on the revolving shaft, substantially as described.

4. In a machine for crozing and chamfering staves, the combination of a revolving shaft having at one end rigidly-attached cutters and at the opposite end longitudinally-movable cutters, with trough-shaped guides, carriers traveling in the guides, and independent mechanism for adjusting the movable cutters and one of the guides and its carrier independently of the adjustment of each other, whereby the guide can be first adjusted and the movable cutters subsequently adjusted to coincide with the adjustment of the trough and its carrier, substantially as described.

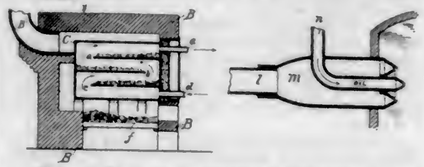
5. In a machine for crozing and chamfering staves, the combination of the revolving shaft having rigidly-attached cutters at one end and longitudinally-movable cutters at the other end, with mechanism for adjusting the movable cutters along the shaft, the horizontal bars beneath the shaft, the trough-shaped guides having hooks on their under sides which engage the bars, the carriers traveling in the guides, and devices for clamping the hooks to the bars and permitting the guides and carriers to be adjusted independently of the longitudinal adjustment of the movable cutters on the shaft, substantially as described.

6. The combination, with the revolving shaft having croze-cutters at each end, and those at one end capable of longitudinal adjustment, of stave-carriers, carrier-guides, and means such substantially as described for adjusting both guides vertically and one guide toward or from the other guide to correspond to the lateral adjustment of the cutters at one end of the shaft, substantially as described.

7. The combination of the revolving shaft having crozing-cutters at each end, those at one end being capable of longitudinal adjustment, the carriers, the carrier-guides having hooks on their under sides, the transverse bars with which said hooks engage, and set-screws clamping the hooks on the bars and permitting the guides to be adjusted thereon independently of the longitudinal adjustment of the cutters on the shaft, substantially as described.

8. In combination with the carriers and guides, the presser-feet U, each having a threaded arm, *u*, and locking-guide arm u^2, and the spring V, having slot *v*, threaded arms *v'*, and adjusting-nuts, substantially as described.

296,200. PROCESS OF MANUFACTURING HYDROCARBON GAS. WILLIAM FITZ CHARLES MASON MCCARTY, St. Petersburg, Russia, assignor of one-half to Henry Levis, Philadelphia, Pa. Filed Dec. 21, 1883. (No model.)

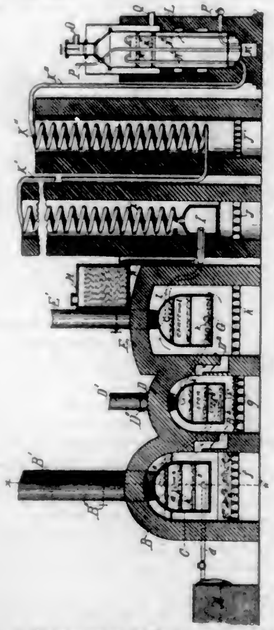


Claim.—1. The process of manufacturing hydrocarbon gas, which consists in passing superheated steam through or in contact with heated sulphate of lime and through or in contact with heated finely-divided metallic iron or copper, then mixing the gas so obtained with a liquid hydrocarbon, and converting the mixture into a fixed gas by heat, as specified.

2. The process of manufacturing hydrocarbon gas, which consists in passing superheated steam through or in contact with heated sulphate of lime, through or in contact with heated finely-divided metallic iron or copper, and through or in contact with a mass of charcoal, then mixing the gas so obtained with a liquid hydrocarbon, and converting the mixture into a fixed gas by heat, as specified.

3. The process of manufacturing hydrocarbon gas, which consists in passing superheated steam through or in contact with heated sulphate of lime, through or in contact with heated finely-divided metallic iron or copper, and through or in contact with a mass of charcoal, then mixing the gas so obtained with a liquid hydrocarbon and converting the mixture into a fixed gas by heat, and then purifying said gas by passing the same through a washer, as specified.

296,201. APPARATUS FOR THE MANUFACTURE OF HYDROCARBON GAS. WILLIAM FITZ CHARLES MASON MCCARTY, St. Petersburg, Russia, assignor of one-half to Henry Levis, Philadelphia, Pa. Filed Dec. 21, 1883. (No model.)



Claim.—1. In an apparatus for the manufacture of hydrocarbon gas, in combination, three or more furnaces, the combustion-chamber of each being provided with a closed muffle containing, respectively, lime, iron, (or copper in a finely-divided state,) and charcoal, a mixing-chamber provided with a hydrocarbon-injector, and a heating or fixing coil or chamber, the arrangement being such that superheated steam introduced to the first-named muffle may pass over or through the heated

lime therein, and thence over or through the heated iron or copper in the second muffle, and thence over or through the charcoal in the third muffle, and thence into the mixing-chamber and become mixed with the hydrocarbon therein, and thence into or through the heating or fixing coil or chamber, as specified.

2. In an apparatus for the manufacture of hydrocarbon gas, in combination, a steam boiler or superheater, A, furnaces B, D, and E, provided, respectively, with muffles C, F, and G, said superheater and muffles being connected by pipes *d*, *e*, and *k*, respectively, a mixing-chamber, I, provided with a hydrocarbon-supply tube, *n*, and with a hydrogen-gas-supply tube, *l*, leading from the muffle G, and a fixing chamber or coil, K, as specified.

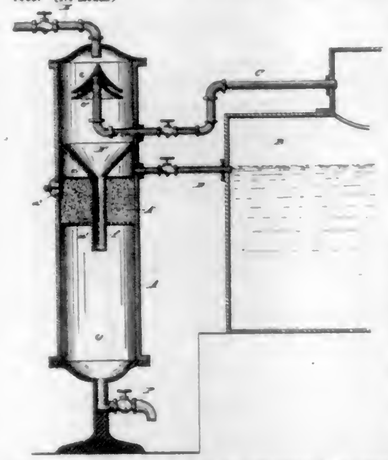
3. In an apparatus for the manufacture of hydrocarbon gas, in combination, a steam boiler or superheater, A, furnaces B, D, and E, provided, respectively, with muffles C, F, and G, said superheater and muffles being connected by pipes *d*, *e*, and *k*, respectively, a mixing-chamber, I, provided with a hydrocarbon-supply tube, *n*, and with a hydrogen-gas-supply tube, *l*, leading from the muffle G, one or more fixing chambers or coils, K, and a washer, L, as specified

296,202. CHURN. MAC N. MCKINNEY, Jackson, Miss. Filed Feb. 13, 1882. Renewed Feb. 5, 1884. (No model.)



Claim.—The dasher composed of the staff G, cut away or tapered on opposite sides, *g*, at its lower end, cross-head *h*, of even width with the lower end of staff, and parallel solid arms *k k*, of increasing width from the cross-head *h* toward the top, and cut off to form inclines *k' k'*, slanting in opposite directions, the whole made in one piece, as and for the purpose herein shown and described.

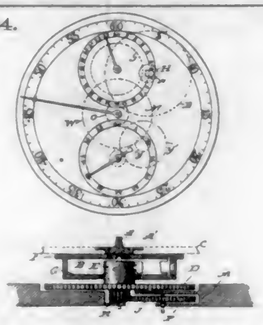
296,208. FEED-WATER PURIFIER. JOHN T. MEAD, Cleveland, Ohio, assignor to himself and John Thomson, same place. Filed Nov. 9, 1883. (No model.)



Claim.—1. In a feed-water purifier, the combination of two conical disks, with a steam-pipe arranged to admit steam between the disks, and a feed-water-supply pipe arranged to discharge the feed-water upon the apex of the upper conical disk, substantially as set forth.

2. The combination, with a cylinder divided into two parts by two perforated diaphragms, between which is packed suitable filtering material, the funnel located above the upper diaphragm, and the pipe connected to the funnel and terminating below the lower diaphragm, of the steam-inlet pipe and the conical disks secured thereto, respectively, above and below the escape-openings, the water-supply pipe terminating directly above the center of the upper conical disk, and a water-discharge pipe situated below the upper edge of the funnel, substantially as set forth.

296,204. WATCH-MOVEMENT. HIRAM B. MEARS, Dubuque, Iowa, assignor of one-half to Asa Herr, same place. Filed Nov. 15, 1883. (No model.)

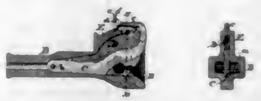


Claim.—1. In combination, the winding-post, disk A' in a sink or recess in the face of the bridge and attached to the stationary barrel, said barrel being provided with ratchet F beneath the bridge, the driving-wheel D, having an arbor, E, with bearing in the barrel, the spring, and the lower bearing for the wheel D, all these parts being arranged in a watch substantially as described.

2. In combination, the winding-post, disk A' in a sink or recess in the face of the bridge and attached to the stationary barrel, said barrel being provided with ratchet F beneath the bridge, and with a head, G, the driving-wheel D, having an arbor, E, with bearing in the barrel, the spring, and the lower bearing for the wheel D, all these parts being arranged in a watch substantially as described.

3. In combination, the stationary barrel and ratchet F and winding-arbor, the spring, the wheel D, having its upper bearing in the barrel, the pinion H, and the hour-wheel J, with its bearing in bridge P, its hour-hand and dial, said hour-pinion being arranged to revolve once in twenty-four hours, a minute-hand driven by the central pinion from the main drive-wheel, and the second-hand pinion driven from the central gear, W, through intermediate lantern-wheel and pinion, the pivots of said hands being all in line, all substantially as described.

296,205. CAR-COUPLING. PIERRE E. MIGNAULT, Acton Vale, Quebec, Canada, and PETER DION, Salem, Mass., assignors, by direct and mesne assignments, to the Union Car Coupler Company, Boston, Mass. Filed Oct. 4, 1883. (No model.)



Claim.—1. In a car-coupling, the draw-head B, provided with a suitable recess to receive the coupling-link, and the slot D, inclosed by the projecting portion E, in combination with the coupling-hook C, pivoted within said draw-head, and provided with the nose *g*, and the extension *e*, projecting backward from the front end of said hook above the portion E, all adapted to operate substantially as and for the purposes described.

2. In a car-coupling, the combination of the draw-head B, the coupling-hook C, pivoted therein, and provided with the nose *g*, the short arm A, connected to said hook, and the shaft *i*, provided at each end with a lever, *k*, adapted to operate substantially as and for the purposes described.

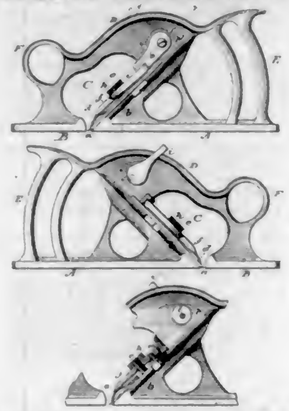
3. In a car-coupling, the combination of the draw-head B, the coupling-hook C, pivoted therein, and provided with the nose *g*, the arm A, connected to said hook, the shaft *i*, provided at each end with a lever, *k*, and the stops *l l*, adapted to operate substantially as and for the purposes described.

4. In a car-coupling, the combination of the draw-head B, the coupling-hook C, pivoted therein, and provided with the nose *g*, the rod *m*, provided with the projection *n*, and the weighted stop *o*, all adapted to operate substantially as and for the purposes described.

296,206. PROCESS OF ENAMELING IRON-WARE. HENRY C. MILLIGAN, South Orange, N. J. Filed Sept. 6, 1883. (No specimens.)

Claim.—The process of enameling iron with a thin enamel, so as to produce a surface of uniform color and free from the usual spots or mottles, which consists in adding to the paste, after it has been prepared in any of the usual and well-known ways, an additional supply of alkali solution sufficient to neutralize any acid which may be present in the paste, and then applying said paste to the chemically-clean surface of the iron and fusing the same in a muffle, substantially as herein set forth.

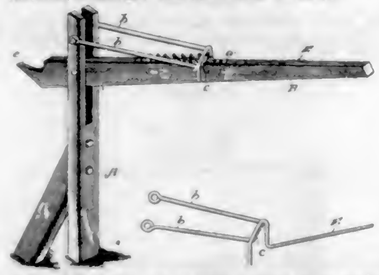
296,207. JOINER'S PLANE. GEORGE D. MOSHER and WILLIAM H. FORD, Birmingham, Conn. Filed Jan. 21, 1884. (No model.)



Claim.—1. A cast-metal plane having the front and rear portions separated by the mouth and throat, whereby said mouth and throat are open from side to side, the front and rear portions connected over the throat, the rear portion constructed with a seat, *b*, for the cutter, said seat provided with a fixed screw-threaded stud, *e*, the cutter *d*, the clamp *f*, and nut *h*, substantially as described.

2. A cast-metal plane having the throat and mouth open from side to side, the rear and front portions of the stock connected centrally over the throat above the cutter, the rear portion constructed with a seat to receive and support the cutter, the adjusting-lever *i*, arranged above the cutter in the connection which unites the rear and front portions, and a link in connection with the cutter and in eccentric connection with the hub of said lever, substantially as described.

296,208. LIFTING-JACK. WILLIAM K. MOTTRAM and JAMES ARCHIBALD MUNDY, Ottawa, Kans. Filed Feb. 15, 1884. (No model.)



Claim.—1. The lifting-jack described, consisting of the standard, having its upper end bifurcated, the lever pivoted therein, and provided on its upper surface with the ratchet-plate, the loop-dog, having its arms secured to the upper arms of the bifurcated standard, and the loop end, provided with means for engaging the ratchet-teeth, and the rearwardly-extending rod secured to the said loop, whereby the same may be made to engage and disengage the teeth of the ratchet, substantially as shown and described.

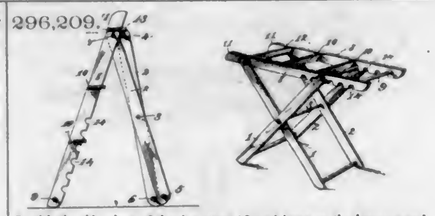
2. In a lifting-jack, the combination, with the loop-dog, of the operating-rod E, constructed substantially as shown and described, and welded to the upper side of the engaging end of the loop, substantially as specified.

296,209. WASH-BENCH AND STEP-LADDER. JAMES S. NELSON, Springfield, Ohio. Filed Aug. 18, 1883. (No model.)

Claim.—1. The combination of the pairs of pivoted legs 1 and 2, provided at their extremities, respectively, with the bars or rounds 4 and 7, with the notched side pieces, 8, having steps 10, and hung on the bar or round 7 to form the extension 11, said extension being constructed substantially as made by applicant, whereby said bar or round 4 may interlock with such extension for holding the parts in position to form a step-ladder, substantially as shown and specified.

2. The combination of the pairs of pivoted supporting-legs 1 and 2, provided at their extremities, respectively, with the bars or rounds 4 and

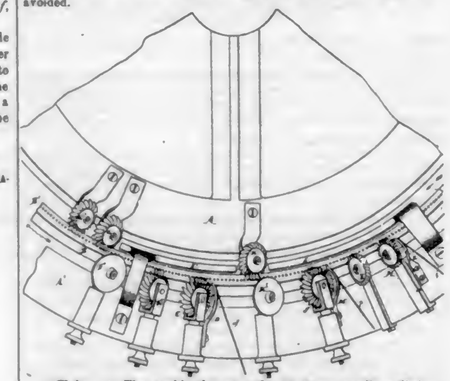
296,209.



7, with the side pieces, 8, having steps 10, and hung on the bar or round 7 to form the extension 11, which is provided with the step 12, extending beyond the inner edges of the side pieces to provide the offset 13, under which the bar or round 4 of the legs is capable of engaging to support the parts in position for a step-ladder.

296,210. KNITTING-MACHINE. WILLIAM OSBORNE, Philadelphia, Pa., assignor of one-half to John H. Osborne, same place. Filed Oct. 15, 1883. (No model.)

Brief.—An improvement on Kent and Leeson's machine, described in Letters Patent No. 160,685, dated March 9, 1875. Instead of the "blending-wheel" shown and described in said patent, a presser-wheel and landing-wheel of ordinary character, arranged between two push-backs, are employed. By this means the fabric is permitted to rise at the point where the plush-threads are caused to pass up on the beards of the needles, and the difficulty of the blending-wheel previously employed catching irregularities and lumps in the fabric within its reach, by which action the needles are bent and broken and the machine stopped, is avoided.



Claim.—1. The combination of stationary frame, needle-cylinder, and needles, with the plush-looping wheel H, wheel J, presser-wheel K', landing-wheel K, push-backs S S', wheels F G G', and looping-wheel C, located on one side of said landing-wheel K, and wheels H and J on the other side, substantially as and for the purpose specified.

2. The combination of stationary frame, needle-cylinder, and needles, with the plush-looping wheel H, wheels I and J, presser-wheel K', landing-wheel K, push-back S, a push-back, S', looping-wheel C, and devices for raising the knitted web and throwing it off the needles, substantially as and for the purpose specified.

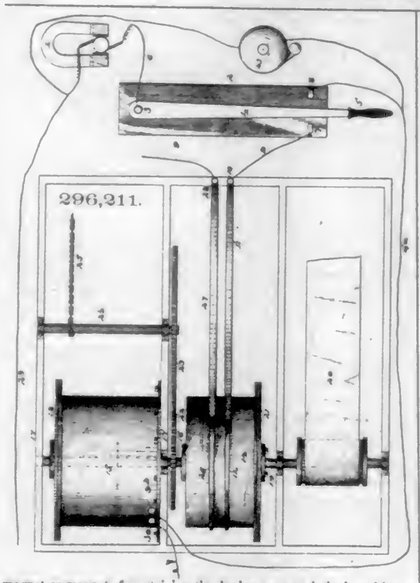
3. The combination of stationary frame, needle-cylinder, and needles, with the plush-looping wheel H, wheels I and J, presser-wheel K', landing-wheel K, wheels C E, presser F, landing-wheel G, knock-over wheel G', push-back S, and a push-back, S', substantially as and for the purpose specified.

4. The combination of a stationary frame, needle-head, and needles, with looping-wheels for inserting, respectively, the plush-thread, the binding-thread, and the fabric face-thread upon said needles, presser-wheel, landing and knock-over wheels, and devices, substantially as set forth, for raising the fabric and the plush-thread, for the purpose of placing said plush-thread upon the beards of the needles and then depressing the said fabric, the said devices being located between the looping-wheels for inserting the binding-thread and fabric face-thread, substantially as and for the purpose specified.

296,211. ELECTRO-MAGNETIC CAR-BRAKE. HARVEY S. PARK, Henderson, Ky. Filed June 14, 1883. (No model.)

Claim.—1. In an electro-magnetic car-brake, the combination, with a circuit including the braking magnet or magnets, of a circuit including

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magnet or magnets for retaining the brakes to any desired position to which they have been set.

2. In combination with a magnet or magnets mechanically connected with the brake-chain and a clutch-disk arranged to revolve in face thereof, the second magnet or set of magnets fixed to the supporting-frame and adapted to actuate a second armature-disk to arrest the motion of the braking system, substantially as explained.

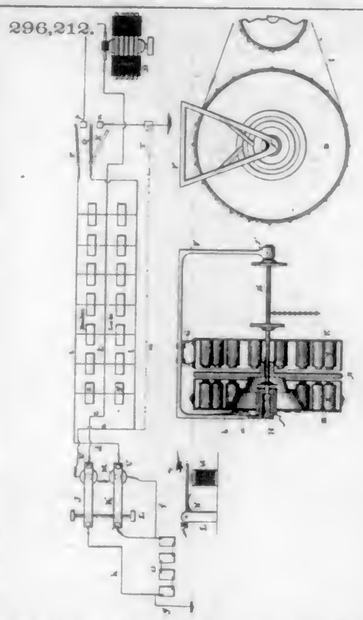
3. In combination with two circuits through the braking and retaining magnets, respectively, a switch-board adapted to be operated at will to throw in either of the said circuits to put on or set the brakes, as described.

4. In an electro-magnetic braking apparatus, the combination of the two coupling members, each having three ways for the current, arranged to automatically complete the circuits, whether separate or joined, substantially as set forth.

5. In combination with the electrical system of a railway-car brake, the coupling member consisting of contact-box 32 and conducting-springs 33 36, adapted to make contact automatically with said box on the uncoupling of the cars, substantially as set forth.

6. The combination of the first coupling member, having contact-box 32 and springs 33 36, with the second member having insulating-wedge 38, conducting-plates 39 40, and spring 41, suitable insulating material, 34, upon the box 32 or spring 41, and a system of electrical conductors, arranged substantially in the manner and for the purposes set forth.

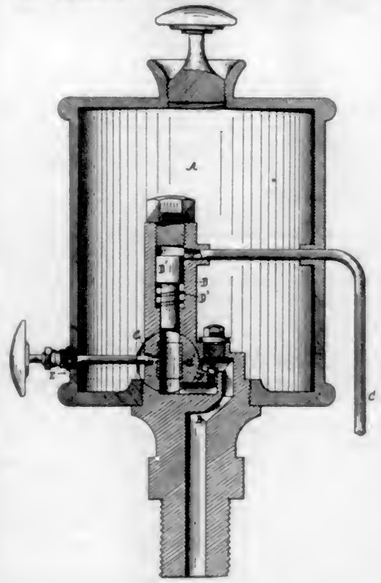
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of the brakes, outgoing and return conductors, and an additional conductor of relatively high resistance for operating a make and break in the main circuit, substantially as set forth.

6. The combination, with the frame or sleepers of a car, of hangers F, boxes f', and an electro-magnetic clutch apparatus supported thereby, substantially as set forth.

296,213. LUBRICATOR. CHARLES H. PARSHALL, Detroit, Mich., assignor to the Michigan Lubricator Company, same place. Filed Oct. 17, 1883. Renewed Feb. 21, 1884. (No model.)



296,212. ELECTRO-MAGNETIC CAR-BRAKE. HARVEY S. PARK, Henderson, Ky. Filed Nov. 22, 1883. (No model.)

Claim.—1. The combination of a system of electric brakes on a train, a dynamo-electric generator having an operative connection with the brake-magnets, and a supplementary secondary battery, which has also an operative connection with the brake-magnets.

2. The combination of a system of electric brakes on a train, a dynamo-electric generator having an operative connection with the brake-magnets, and a supplementary secondary battery, which has also an operative connection with the brake-magnets, and an electro-magnetic device controlling the battery-circuit.

3. The combination of a system of electric brakes on a train, a secondary battery operating the same, and an electro-magnetic device controlling the battery-circuit, and having its own circuit extending the length of the train.

4. An electro-magnetic severance braking system consisting of a secondary battery having connection in two circuits of relatively high and low resistance, the high-resistance circuit containing means, when traversed by a current of electricity, for breaking the circuit of low resistance, and braking-magnets in such low-resistance circuit, having means for winding up the brake-chain.

5. In an electro-magnetic braking-system, the combination, of a generator placed upon one end of the train, a secondary battery upon the other end, electro-magnets on the cars for effecting the application

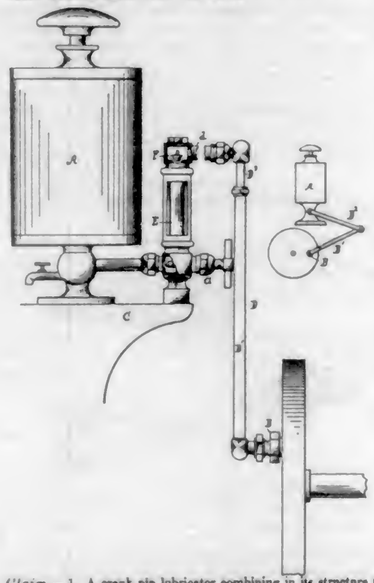
Claim.—1. A lubricator for steam-cylinders, consisting of a stem by which the lubricator may be connected with a steam-chest, and through which the oil is fed, a plunger-cylinder and plunger located within the reservoir, an orifice beneath the plunger for the inflow of oil, and a steam pipe or conduit leading from the plunger-cylinder above the plunger to a steam-port, substantially as described.

2. In a lubricator, the combination of an oil-reservoir, A, a plunger-cylinder, D, rising upward from the bottom of the reservoir, a plunger, D', arranged therein, a pipe, C, for connecting the upper portion of the plunger-cylinder with a source of steam for actuating the plunger, an orifice in the cylinder below the plunger which connects the same with the reservoir, and the regulating-valve E, controlling said orifice and extending outside the reservoir, substantially as described.

3. The combination, with the reservoir and interior plunger-cylinder, of a glass disk or plate located in the outer wall of the reservoir, and a similar plate located in the wall of the plunger-cylinder, substantially as described.

4. The combination, with the reservoir, the inner plunger-cylinder, its plunger, and the steam-pipe C, of a valve, F, adapted to close with pressure up through the stem, and with or without a regulating-valve, E, substantially as described.

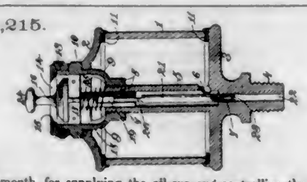
296,214. CRANK-PIN OILER. CHARLES H. PARSHALL, Detroit, Mich., assignor to the Michigan Lubricator Company, same place. Filed Oct. 17, 1882. Renewed Feb. 21, 1884. (No model.)



Claim.—1. A crank-pin lubricator combining in its structure the following elements, to wit: a stationary oil-reservoir, a transparent chamber located outside of the reservoir at the side of the same, and connected therewith at one end, and flexible metallic tubes connected with the other end of the transparent chamber by a joint, the said chamber being interposed between the reservoir and the upper portion of the tubes, substantially as and for the purpose described.

2. The combination, substantially as hereinbefore described, of a stationary oil-reservoir, a transparent chamber located outside of but adjacent to the side of the reservoir, and connected at one end with the latter, a neck or tube attached to and communicating with the other end of the transparent chamber, and flexible metallic tubes connected with the said neck or tube by a joint, the transparent chamber being located between the reservoir and the tubes, substantially as and for the purpose described.

296,215. LUBRICATOR. CHARLES E. PEASE, Dayton, Ohio, assignor to the Buckeye Iron and Brass Works, same place. Filed Jan. 7, 1884. (No model.)



Claim.—1. The combination, with an oil-cup having a feed-regulating device, of a sliding and rotating valve to the mouth of the cup, for supplying the cup with oil and adjusting the feed-regulating device substantially as described.

2. The combination, with an oil-cup having an oil-receiving mouth, of a feed-regulating device and a sliding and rotating valve to the receiving-mouth, for supplying the oil-cup and controlling the feed-regulating device, substantially as described.

3. The combination, with an oil-cup having a feed-regulating device and an oil-receiving mouth, of a sliding and rotating valve to the receiving-mouth, having a loose connection with the feed-regulator, whereby the valve can be slid to open the receiving-mouth without moving the regulator, and rotated to adjust the regulator, substantially as described.

4. The combination, with an oil-cup having a feed-regulating device, of a vertically-movable and rotating valve having a slotted stem, substantially as described.

5. The combination, with an oil-cup having a feed-regulating device, of a vertically-movable and rotating valve having a slotted stem and radial guide wings or flanges, substantially as described.

6. The combination, with an oil-cup having a feed-regulator, and a ring provided with an oil-receiving orifice and a surrounding valve-seat, of the vertically-movable and rotating valve for engaging the feed-regulator, and having means by which it can be depressed and rotated, substantially as described.

296,216. BUTTON. IRVING G. PLATT, Waterbury, Conn. Filed Mar. 10, 1883. (No model.)

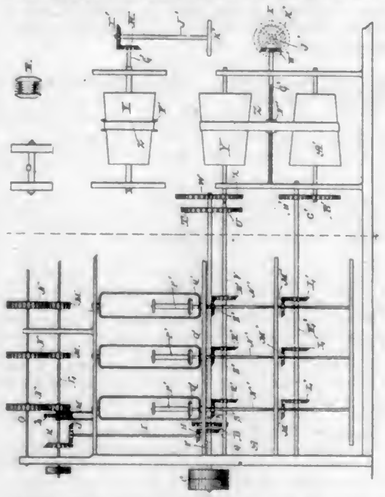


Claim.—1. A button constructed with an eyelet loosely secured within the hub of the button, in combination with a rivet within the eyelet, as and for the purpose described.

2. The combination, with a button-head constructed with a countersunk perforated hub, of an eyelet loosely secured therein, and a hollow rivet upset in the eyelet, as and for the purpose described.

3. The button-head constructed with a recessed hub, combined with an eyelet upset within said hub, and having a flange formed on its outer end, and a rivet with its end upset over the upset end of the eyelet and within the recessed hub, as and for the purpose described.

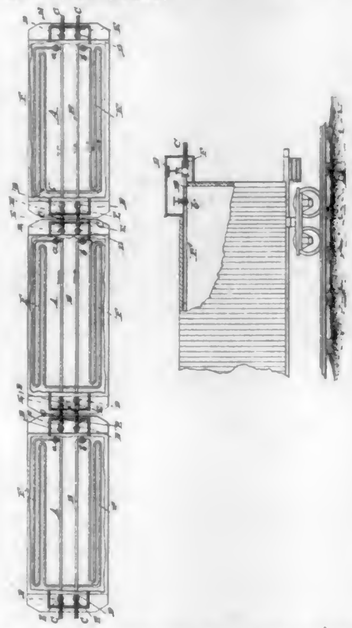
296,217. SPEEDER FOR THE MANUFACTURE OF ROVINGS, COARSE YARNS, &c. JOSEPH F. RANDALL, Warren, Ohio, assignor of one-half to S. D. Randall, same place. Filed Oct. 23, 1880. (No model.)



Claim.—The combination of the top rolls, porcupine or other gills, fliers, driving-shaft, the spindle-shaft, the two cones Y A', a connecting-belt, and mechanism whereby said belt may be shifted, one of the cones

being operated by the driving-shaft, and the other cone serving to operate the spindle-shaft, whereby the speed of the spindles can be decreased as the bobbins become filled with yarn, substantially as described.

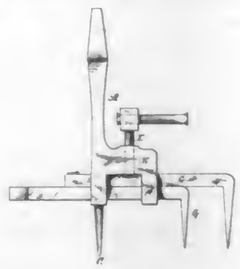
296,218. REFRIGERATOR-CAR. THOS. L. RANKIN, New York, N. Y. Filed Dec. 15, 1883. (No model.)



Claim.—1. The combination, with a railroad car or cars, of refrigerating apparatus comprising the pipes A B, extending longitudinally through said car or cars, flexible connecting-tubes C, valves *a b*, and a pipe, F, connecting the said valves *a b*, as set forth.

2. In a refrigerator-car, the combination of a supply-pipe, A, having valve *a*, a return-pipe, B, having valve *b*, a pipe, F, connecting the valves *a* and *b*, flexible pipe-connections C, and valves D E, as and for the purpose set forth.

296,219. WASHER-CUTTER. JOSEPH RATH, Columbus, Ohio. Filed Feb. 12, 1884. (No model.)

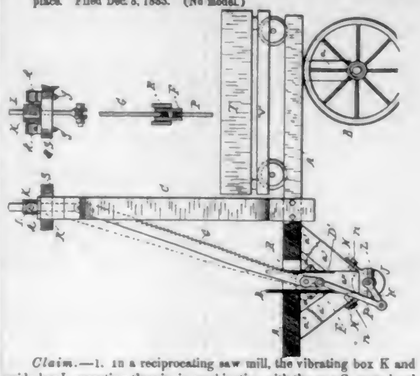


Claim.—1. A washer-cutter having two separate bearings for each of the cutters, substantially as shown.

2. A washer-cutter having two separate bearings for each of the cutters, and a screw which is applied to the cutters midway between the bearings, substantially as set forth.

3. The combination of the shank provided with the arm or extension upon one side, with the cutters, and a screw for clamping the cutters in position, both the shank and the arm being perforated for the cutters to pass through laterally, substantially as described.

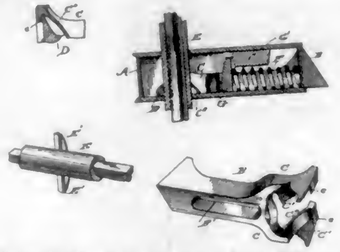
296,220. PORTABLE SAW-MILL. WILLIAM GRIFFINGTON RODGERS, Owlet Green, Tex., assignor of one-half to Franklin P. Lybrand, same place. Filed Dec. 8, 1883. (No model.)



Claim.—1. In a reciprocating saw mill, the vibrating box K and guide-bar I, operating therein, in combination with the saw G, cross-head E, having pendent links F, for connecting with driving-shaft through pitman P and crank H, and the cross-head arbor formed of the plates D D′, all constructed and arranged to operate substantially as specified.

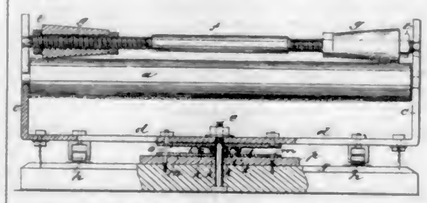
2. The mounted frame A, provided with upright beam C and projection S, perpendicular beams *a″*, brace-beams *a′*, and embracing-plates N, in combination with the vibrating box K, guide-bar I, saw G, cross-head E, having pendent links F, and the cross-head arbor D D′, pitman P, and driving-shaft M, substantially as specified, for the purpose set forth.

296,221. DOOR-LATCH. JOHN ROHDE, Millinburg, Pa. Filed Jan. 10, 1884. (Model.)



Claim.—In a door-latch of substantially the described construction, the combination of the latch-bolt B, having a longitudinal slot, B′, and rearwardly-extending arms C, the lower sides of which are provided with triangular or V-shaped recesses C′, and are cut away at C, spindle E, having wings E′, anti-friction block D, constructed as described, and spiral spring F, bearing with its inner end against a suitable lug on the outer case, A, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

296,222. AUTOMATIC FELT-GUIDE FOR PAPER-MACHINES. BENJAMIN ALBERT SCHUMBER, Montoursville, Pa., assignor to himself, William Starr, and Kirk & Starr, same place. Filed Dec. 27, 1883. (No model.)



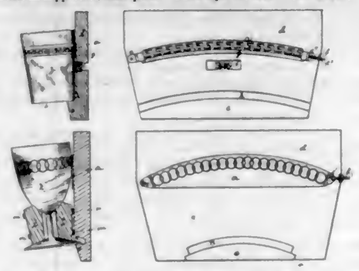
Claim.—1. The guide-roll *a* and cone-guides *g*, in combination with a paper-machine felt, *b*, and mounted on a supporting-bar, *d*, having a center pivot, *e*, and carrying-rolls *h* on opposite ends of the bar for supporting said ends, substantially as described.

2. The guide-roll *a* and cone-guide *g*, in combination with a paper-machine felt, *b*, and mounted on a supporting-bar, *d*, having a central pivot, *e*, carrying-rolls *h* on opposite ends of the bar, and stop-chains *j*, whereby the ends of the bar will be supported and the play of the bar limited, substantially as described.

3. The combination, with the roll of a paper-machine carrying a felt, and said roll being mounted in a swiveled frame, of a rod having screw-threaded ends and mounted in said frame above the said roll, and carrying cones adapted to bear upon the felt passing over the roll, and nuts on the rod at each end of the cones for securing said cones in place, substantially as specified.

4. The combination of the frame supporting the guide-roll and cone-guides, and having the rollers *h h* on its inner side at each end, and the centrally-perforated flanged plate *o l*, with the base or frame *p q*, provided with the centrally-apertured and flanged plate *m k*, the flanges of the plate *m* fitting within those of the plate *o*, and a connecting-pivot, *e*, substantially as set forth.

296,223. APPARATUS FOR DECORATING CHINA AND GLASS WARE. HERMANN SCHULZE-BERGE, Pittsburg, Pa., assignor to himself and Jesse H. Lippincott, same place. Filed Apr. 19, 1883. (No model.)



Claim.—1. The device for printing on tapering articles of china or glass by rolling contact of the article with the printing-surface, consisting of a plane-surfaced bed having a projecting ledge, *c*, an elastic printing-plate, *a*, and means, substantially as described, for attaching the printing-plate to the bed and stretching it relatively thereto, substantially as and for the purposes described.

2. The device for printing on tapering articles of china or glass by rolling contact of the article with the printing-surface, consisting of a plane-surfaced bed, *d*, having a projecting curved guide, *c*, and an elastic printing-plate, *a*, substantially as and for the purposes described.

3. The device for printing on tapering articles of china and glass, consisting of bed *d*, provided with a recess, *n*, printing-plate *a*, and curved guide *c*, substantially as and for the purposes described.

4. In an apparatus for printing on china and glass ware, the combination of such articles with filling-pieces of suitable shape to furnish a bearing-surface of conical form, to enable the article to be rolled over in contact with a printing-surface, substantially as and for the purposes described.

296,224. MACHINERY FOR DECORATING GLASSWARE. HERMANN SCHULZE-BERGE, Pittsburg, Pa., assignor to himself and Jesse H. Lippincott, same place. Filed Apr. 19, 1883. (No model.)

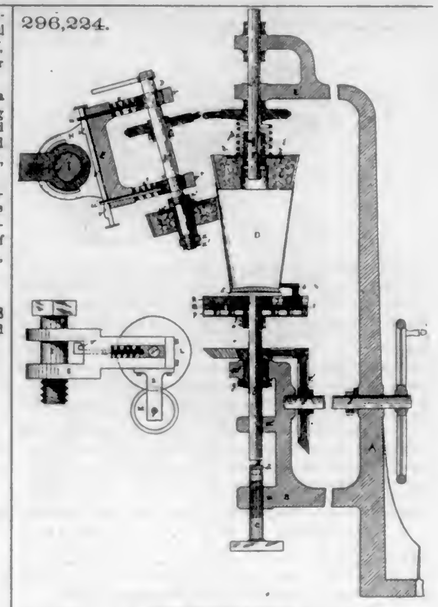
Claim.—1. In machines for printing on glassware and similar articles, the combination of a lathe for holding and revolving the article to be printed on, with a revoluble shaft and printing-roller adjustable at various angles to the axis of rotation of the lathe, substantially as and for the purposes described.

2. The apparatus for printing on revolving articles of glass or china ware, consisting of a frame capable of adjustment on a pivot at any required angle, in combination with a spindle carrying a printing-roller, such spindle being held by yielding bearings, so that the printing-roll shall be capable of conforming to the irregularities of the surfaces of articles upon which it prints.

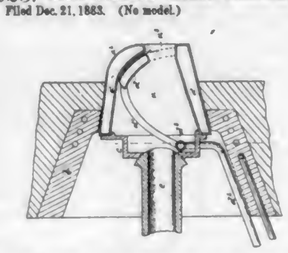
3. In machines for printing on glass and similar articles, the combination of a lathe for centering and holding the article at both ends and revolving it to be printed on, with a tapering printing-roller mounted on a revoluble shaft, so as to be in printing contact with the surface of the article held between the centers of the lathe, substantially as and for the purposes described.

4. In a machine for printing on glassware and similar objects, having a revoluble printing-roller and a lathe for holding the article to be printed on, the combination, with such roller and lathe, of radially-arranged holding and centering jaws caused to act toward a common center by the pressure of a common spring, substantially as and for the purposes described.

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296,225. BLAST-FURNACE. HERMANN SCHULZE-BERGE, Rochester, Pa. Filed Dec. 21, 1883. (No model.)



Claim.—1. A blast-furnace for smelting ores, provided with tuyeres having stoppers for regulating the size of the nozzle-openings, substantially as and for the purpose described.

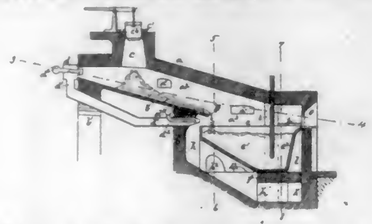
2. A water-cooled tuyere having a water-cooled sliding stopper for regulating the size of the discharge-opening, substantially as and for the purposes described.

296,226. METHOD OF APPLYING FUSIBLE METALLIC COLORS TO CHINA AND GLASS WARE. HERMANN SCHULZE-BERGE, Rochester, assignor to himself and Jesse H. Lippincott, Pittsburg, Pa. Filed Jan. 11, 1884. (No specimens.)

Claim.—1. The herein-described method of applying coloring-matter to the surface of glass or china ware for purposes of decoration, by first tracing or printing the design or pattern with a semi-fluid sticky substance—such as varnish or boiled linseed oil—and then dusting a single ground color of fusible enamel in a dry and finely-powdered condition over the surface, and then, after the first or ground color has been absorbed, applying the other color or colors in the like pulverized condition to such parts of the surface as may be desired, and rubbing them in, and, lastly, burning or fusing the colors in the usual way, substantially as described.

2. The herein-described method of applying two or more colors to the surface of glass or china ware, by first tracing or printing the desired design or pattern with a sticky semi-fluid substance—such as varnish or boiled linseed-oil—and then applying the several fusible enamel colors in a finely-powdered condition to the printed surface and rubbing them, so as to blend the outer edge of one color into the adjoining color, and, lastly, burning or fusing the colors in in the usual way, substantially as described.

296,227. GLASS-MELTING FURNACE. HERMANN SCHULZE-BERGE, Rochester, Pa. Filed Jan. 16, 1884. (No model.)



Claim.—1. A glass-melting furnace having a fusing floor or chamber for fusing the batch, a projecting edge or precipice disconnected from the side walls, over which the melted batch falls, a vertical free space through which the melted batch falls freely, and in which it is exposed to the action of the heated gases during its fall, a pot or receptacle arranged on a lower level directly under the precipice, so as to receive the freely-falling glass for farther treatment, to clear it and complete the melting operation, and a working-chamber separated from the clearing-chamber by a dependent trap, the lower end of which is immersed in the glass, substantially as and for the purpose described.

2. A glass-melting furnace having a fusing chamber or floor, with a discharging end or precipice disconnected from the side walls, projecting over a vertical space in the furnace, so that the molten batch flowing over the same from the fusing-floor shall have a free fall through the heated gases of the furnace into a pot or receptacle arranged in the furnace at a lower level, substantially as and for the purpose described.

3. A glass-melting furnace provided with a fusing-floor, a pot or receptacle arranged below the fusing-floor, a projecting precipice from which the molten glass falls through the heated air of the furnace into the pot, and means for projecting a supplemental flame on the glass as it falls through the space, substantially as and for the purpose described.

4. The combination, in a glass-melting furnace, of a fusing-floor having a precipice or discharging end cooled by water or other suitable medium, with a pot or receptacle arranged under the precipice to receive the glass falling therefrom for further treatment, substantially as and for the purposes described.

5. A glass-melting furnace having a fusing floor or chamber provided with a discharging edge or precipice projecting into a vertical space in the furnace, so that the molten glass may have a free fall therefrom, a pot or receptacle arranged below it, so as to receive the falling glass, and a bridge, break, or arch arranged across the chamber below the precipice and above the pot, so as to intercept, retard, or break the fall of the glass, substantially as and for the purpose described.

6. The combination, in a glass-melting furnace, of a fusing-floor having a precipice, and a pot or receptacle arranged under the precipice, with a reversely-inclined bridge or arch, and tuyeres arranged to blow against the downward flow of glass on the bridge, substantially as and for the purposes described.

7. The combination, in a glass-melting furnace, of a fusing-floor having a precipice, with a trap or dam-plate arranged over it, at or near its edge, to prevent the unfused ingredients from being carried over the precipice with the molten glass, substantially as and for the purposes described.

8. A glass-melting furnace having a feed-hole arranged over the fusing-floor, provided with channels or pipes for the passage of a cooling medium, substantially as and for the purposes described.

9. The combination of a glass fusing floor or chamber with a glass pot or furnace lined with graphite for receiving the molten glass from the fusing-floor, substantially as and for the purposes described.

10. The method of melting glass, consisting of fusing the ingredients in a suitable chamber or floor, whence it falls to a second chamber, pot, or receptacle for further treatment, and in its descent is subjected to the action of a supplementary blast of heated gas or flame projected against or through it, substantially as and for the purposes described.

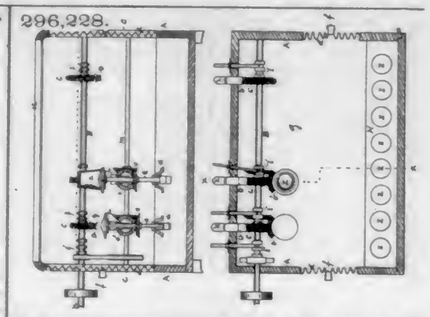
296,228. APPARATUS FOR APPLYING POWDERED SUBSTANCES TO SURFACES OF GLASS. HERMANN SCHULZE-BERGE, Rochester, assignor to himself and Jesse H. Lippincott, Pittsburg, Pa. Filed Jan. 17, 1884. (No model.)

Claim.—1. The method hereinbefore described of applying pulverized substances to the surface of glassware, china, &c., by revolving the article in front of a stream of a pulverized substance projected against it, substantially as and for the purpose described.

2. The apparatus hereinbefore described for applying pulverized substances to the surface of glass, chinaware, &c., consisting of the combination of a revolving bristle brush, a hopper, and a revolving shaft or holder placed in front of the revolving brush, substantially as and for the purpose described.

3. The combination of the revolving brush and hopper or receptacle

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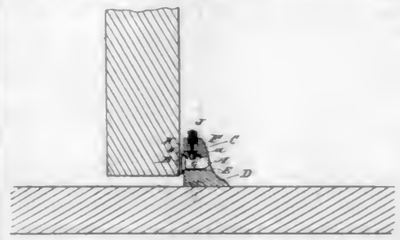
for pulverized substances, a revolving holder placed in front of the revolving brush, a shelf placed over the holder with an opening to allow of the passage of the revolving holder, and devices for raising and lowering the shelf in relation to the revolving holder, substantially as and for the purposes described.

4. The close chamber A, in combination with a series of revolving brushes, and a receptacle or receptacles for pulverized substances, within or upon which the brushes revolve, and a series of revolving holders for articles to which the pulverized substance is to be applied, substantially as and for the purpose described.

5. A close chamber, A, having openings covered with elastic fulled covering, and a hand-aperture closed with a removable stopper for the purpose of conducting operations requiring a practical exclusion of access to the atmosphere outside of the chamber, substantially as described.

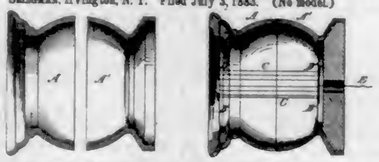
6. The combination, in a machine for applying powdered substances to the surfaces of glass and other articles, of a hopper or receptacle, with a revolving brush arranged at or near the end of the hopper, so that its bristles may catch the dry pulverulent substance as it is fed down by the hopper and project it in a shower from the nose or edge of the hopper, substantially as and for the purposes described.

296,229. DOOR-CHECK. FRANK MUNFORD SEARS, East Saginaw, Mich. Filed Jan. 12, 1884. (No model.)



Claim.—In a door-check, the block C, provided with the transverse aperture E and the vertical aperture F, combined with the pin or bolt G, held in the aperture E, the spring K, resting on the bolt or pin G, and the screw J, screwed in the upper part of the aperture F, substantially as herein shown and described.

296,230. MECHANICAL TELEPHONE. HENRY SELIGMAN and EMMA SELIGMAN, Irvington, N. Y. Filed July 3, 1883. (No model.)



Claim.—1. The combination, in a mechanical telephone, of two diaphragms, a line-wire attached to one of said diaphragms, and filamentary connections between them, as set forth.

2. The combination, in a mechanical telephone, of an inclosing shell or case, two diaphragms on opposite sides of said shell or casing, filamentary connections between said diaphragms, and a line-wire connected with one of the said diaphragms, for the purpose described.

3. A mechanical telephone formed of a globe-like chamber or case having two diaphragms on opposite sides thereof, one of the diaphragms

being connected to the line-wire, and the two diaphragms being connected to each other by one or more threads, as set forth.

4. A mechanical telephone consisting of two hollow hemispheres, connected, as described, each hemisphere being provided with a diaphragm, a thread or threads connecting the two diaphragms, and a line-wire attached to one of the diaphragms, as and for the purpose set forth.

5. The combination, in a mechanical telephone, of two diaphragms, a line-wire connected with one of the diaphragms, two rings connected respectively, to the two diaphragms, and a thread or threads connecting the two rings, substantially as and for the purposes set forth.

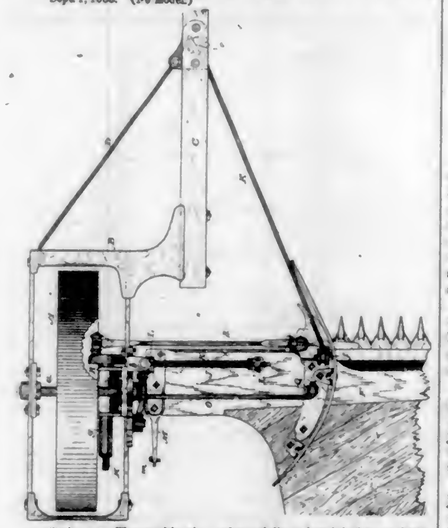
6. The combination, in a mechanical telephone, of two diaphragms, a line-wire connected with one of the diaphragms, two rings connected, as described, to the two diaphragms, and a single continuous thread passing back and forth over the rings, as and for the purpose set forth.

7. The combination, in a mechanical telephone, of an inclosing case or shell, two diaphragms on opposite sides of the same, rings supported in the center of the diaphragms, filamentary connections between the rings, and a line-wire connected to one of the diaphragms, as set forth.

8. The combination, in a mechanical telephone, of two diaphragms, one or both being non-metallic, filamentary connections between the same, and a line-wire connected to one of the diaphragms, as set forth.

9. The combination, in a mechanical telephone, of two diaphragms, one or both being non-metallic, a ring in the center of each diaphragm, filamentary connections between the rings, and a line-wire connected to one of the diaphragms, as set forth.

296,231. HARVESTER. JAMES R. SEVERANCE, Fremont, Ohio. Filed Sept. 1, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the main frame, the adjustable finger-beam, and means by which the beam has vertically and horizontally sliding connection at its heel with the frame, for the purpose described.

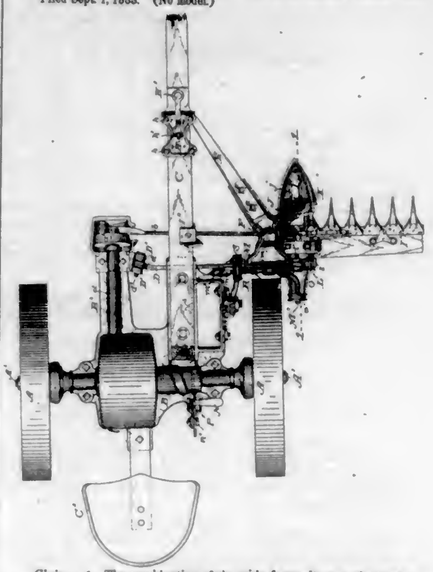
2. The combination, substantially as hereinbefore set forth, of the main frame, the stiff tongue, the finger-beam having the vertically and horizontally sliding connection with the frame, and the brace-rod having pivotal connection with the tongue and beam, for the purpose described.

3. The combination, substantially as hereinbefore set forth, of the main frame, the finger-beam having the vertically and horizontally sliding connection with the frame, and the controlling-rod having jointed connection with the frame and beam, for the purpose described.

4. The combination of the main frame provided with the bearings, the finger-beam, the supporting-bracket sliding in the frame-bearings, and with which the beam has sliding connection, and the controlling-rod having jointed connection with the frame and beam, substantially as and for the purpose hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the main frame, the tongue, the supporting-bracket sliding in the frame-bearings, the finger-beam having sliding connection with the bracket, the crank-wheel and pitman for actuating the cutters, the controlling-rod having jointed connection with the beam and frame, and parallel, or nearly so, to the pitman when its crank is on the dead-center, the brace-rod having pivotal connection with the tongue and beam, and means for raising and lowering the beam.

296,232. MOWING-MACHINE. JAMES R. SEVERANCE, Fremont, Ohio. Filed Sept. 1, 1883. (No model.)



Claim.—1. The combination of the main frame, its arm, the tongue, the cutting apparatus, the drag-bar having jointed connection at its outer end with the cutting apparatus, the hanger-bracket secured to the tongue, and to which the inner end of the drag-bar is jointed, the coupling-arm having jointed connection at its outer end with the cutting apparatus, and the joint connecting the inner end of the coupling-arm with the main-frame arm, and by which the coupling-arm is caused to vibrate about an axis in line with that about which the drag-bar vibrates, substantially as and for the purpose hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the main frame, the tongue, the coupling-frame, the shoe, the double joint by which the shoe has connection at the rear with the coupling-frame, and the joint by which the shoe has vertically-adjustable connection at front with the coupling-frame, for the purpose described.

3. The combination, substantially as hereinbefore set forth, of the main frame, the tongue, the coupling-frame, the shoe, the double joint by which the shoe has connection at rear with the coupling-frame, the joint by which the shoe has vertically-adjustable connection at front with the coupling-frame, and the rock-shaft engaging the heel of the shoe, for the purpose described.

4. The combination of the coupling-frame, the shoe, the double joint by which the shoe has connection at rear with the coupling-frame, and the vertically-sliding bearing and pivot by which the coupling-frame is connected with the guide-yoke of the shoe at front, substantially as and for the purpose hereinbefore set forth.

5. The shoe provided with a front guide-yoke and the rear pivot-bearings, substantially as and for the purpose hereinbefore set forth.

6. The shoe having the heel projection, provided with the slot, substantially as and for the purpose hereinbefore set forth.

7. The combination, substantially as hereinbefore set forth, of the main frame, the tongue, the coupling-frame jointed to the main frame and tongue, the shoe having doubly-jointed connection at rear with the coupling-frame, and vertically-adjustable jointed connection at front therewith, the lifting-lever having connection with the coupling-frame, the rock-shaft acting upon the heel of the shoe, and the lever connected with the rock-shaft, for the purpose described.

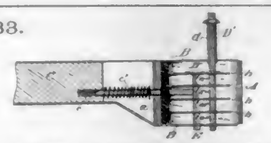
8. The combination of the hinged shoe, having the slotted heel-projection, the coupling-arm, and the rock-shaft mounted in bearings on the coupling-arm, and provided with the cranked end passing through the slot in the shoe-heel, substantially as and for the purpose hereinbefore set forth.

296,233. CAR-COUPLING. NATHANIEL B. SHELDON, Rochester, N. Y. Filed Oct. 20, 1883. (No model.)

Claim.—1. A draw-head having the side pieces, A, provided with grooves a a', in combination with the end piece, a', fitted in the groove a, and spring-plates b, as and for the purpose set forth.

2. A series of spring-plates, b, having slots for the passage of the

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coupling-pin, and rigidly secured to the end plates, *a'*, and having their edges bearing in grooves which pass transversely through vertical ribs in the draw-head, as set forth.

3. The bar E, having a series of transverse grooves, *e'*, in combination with the spring-bolt, perforated plate *a'*, and spring-plates, as and for the purpose set forth.

4. The combination of a series of slotted spring-plates with the bar E, having a sliding piece at its upper end, and a series of transverse grooves, *a'*, arranged centrally between said plates, spring-bolt *c'*, coupling-pin, and means for raising the latter, as and for the purpose set forth.

296,234. GEM-SETTING. JOHN H. SHOEMAKER, Newark, N. J., assignor to Shoemaker & Co., same place. Filed Dec. 6, 1883. (No model.)



Claim.—A piece of jewelry having an ornamental re-enforcing plate secured on the outer or exposed face of the body-plate, said re-enforcing plate being centrally recessed and holding the stone, all substantially as set forth.

296,235. BLOTTER. ALFRED N. SELL, Philadelphia, Pa. Filed Apr. 14, 1883. (No model.)



Claim.—1. The combination of the curved elastic plate A, carrying the blotting-surface, with a handle, B, having a longitudinally-yielding connection with said plate, whereby on pressing the handle downward the plate A is at liberty to flatten out, as set forth.

2. The combination of an elastic plate, A, carrying the blotting-surface, and provided at one or each end with a slot or groove, with a handle, B, having a T-head adapted to said slot or groove, substantially as described.

3. The combination of a handle and plate, A, with a blotting-surface, and spring-clamps at each end of the plate A, as specified.

4. The combination of a plate, A, having a hooked end, *a*, with a plate, E, having a hook, *b*, and bearing *d*, substantially as set forth.

5. The combination of a sheet-metal plate, A, having a hooked end, *a*, with the plate E, having a hook, *b*, and adapted to be applied to the hooked end of the plate A laterally, substantially as described.

296,236. FEEDER FOR TILE AND SEWER-PIPE MACHINES. JOHN S. SMITH, Jackson, Mich. Filed Jan. 23, 1884. (No model.)

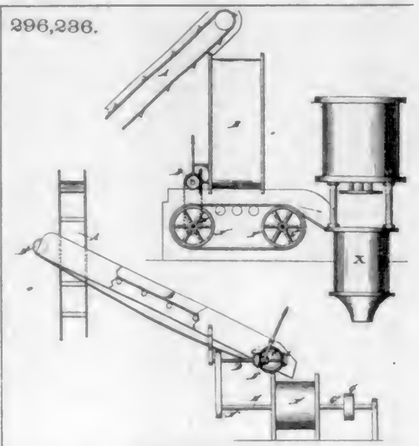
Claim.—1. In combination with the pressure-cylinder of a tile or sewer-pipe machine, a rapidly-rotating endless belt arranged in such relation to the cylinder of the press that when the apron descends around its pulley the clay carried on the face of the apron shall be hurled by its centrifugal force into the open mouth of the cylinder, substantially as set forth.

2. In combination with the cylinder of a tile-machine, the endless apron F, feeding-apron B, and reversible drum carrying the upper section of the latter alternately toward and from the former apron, substantially as set forth.

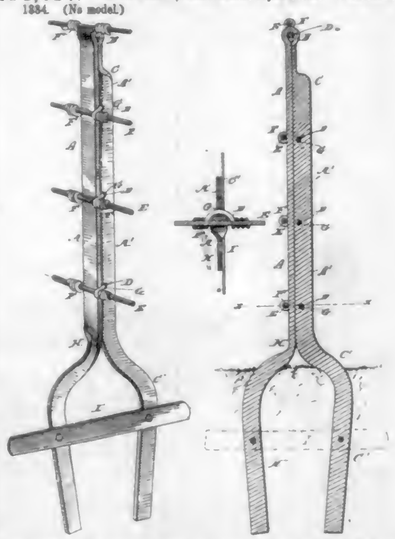
3. In combination, the cylinder or chamber to be fed, the rapidly-rotating apron F, and the apron B, supplying clay to the apron F, and mechanism imparting an intermittent motion to the apron B, substantially as set forth.

4. The combination of the endless apron B, the bevel-wheel C upon the shaft of its driving-drum, bevel-pinions C' C', and double clutch D', for reversing the movement of the apron or stopping the same, substantially as set forth.

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296,237. FENCE-POST. TRUE J. SMITH, Topeka, Kans. Filed Jan. 10, 1884. (No model.)



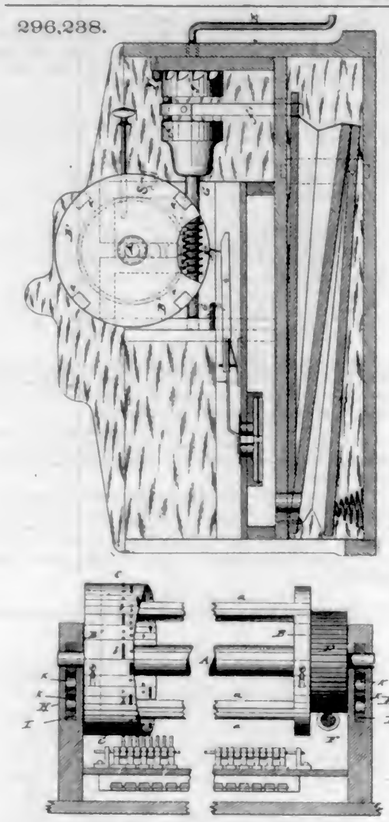
Claim.—The metallic fence-post herein shown and described, consisting of the parts A and A', doubled upon and at right angles to each other, and bent or twisted to form the flat loop B at the top of the post, and the diverging legs C' and H, curved so as to lie in the same plane with one another, and connected by a cross-brace, I, in combination with the twisted binding-wires D F and the fence-wires E, as shown and specified.

296,238. MECHANICAL MUSICAL INSTRUMENT. OTTO SPARTHE, Gera, Germany. Filed June 9, 1883. (No model.)

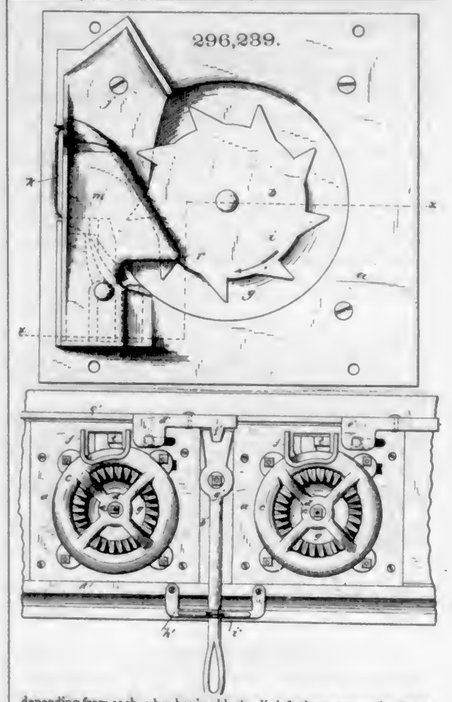
Claim.—1. In a mechanical musical instrument, a detachable sheet-metal cylinder having raised portions of greater or smaller size, made integral with the body of the sheet, in combination with wooden heads, to which the cylinder is detachably applied, stiffening-strips *a*, shaft of the cylinder-heads, a gear-wheel, a crank-rod, a worm-wheel, and a ratchet-wheel and pawl, substantially as described.

2. In mechanical musical instruments, the combination of a shaft, A, cylinder C, attached to heads B B' of said shaft, supporting-standards H H, having vertical recesses *h*, transverse slides I, having vertical slots *i*, with horizontal recesses *k*, so that cylinders of different diameters can be supported without shifting in any direction, substantially as specified.

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296,239. FERTILIZER-DISTRIBUTER. JACOB W. SPANGLER, York, Pa. Filed May 6, 1882. (No model.)

Claim.—1. In a fertilizer-distributer, a force-feed wheel having a discous base, and a superposed toothed disk in a parallel plane with an intervening wall, whereby material to be distributed may be fed.

2. In a fertilizer-distributer, a force-feed wheel having a discous base, a superposed toothed disk in a parallel plane, and an intervening wall, whereby material to be distributed may be fed, combined with a bed-plate having a discharge-throat, and a stationary scraper to throw the load of the wheel into the discharge-throat.

3. In a fertilizer-distributer, a force-feed wheel having a discous base, and a superposed toothed disk in a parallel plane with an intervening wall, whereby material to be distributed may be fed, combined with a discharge-throat, a cap therefor, and a stationary scraper projecting between the two disks and hugging the intervening wall to discharge the load of the wheel.

4. In a fertilizer-distributer, a force-feed wheel having a discous base, and a superposed toothed disk in a parallel plane with an intervening wall, whereby material to be distributed may be fed, combined with a discharge-throat, a stationary scraper, a clearer, and a sliding gate under said clearer to regulate the quantity of the discharge.

5. A feed-wheel composed of a discous base suitably supported, combined with a toothed disk overlying but elevated above the same, substantially as shown and described.

6. The combination, substantially as shown and described, of a rotating toothed feed-wheel, a stationary scraper, *l*, a stationary clearer, *r*, a bed-plate having a discharge throat or opening, and a sliding gate to regulate the size of the opening and the quantity of material fed.

7. The combination, with the bed-plate having a discharge-orifice and a cap thereover, of the sliding gate *t*, arranged in guides in the bed-plate, to regulate the size of opening in said orifice to control the quantity fed, substantially as described.

8. The combination, with the feeders, of their sliding gates, a lug, *u*, depending from each, a bar having blocks *d' e'*, for loose connection therewith to operate them, and a lever to move said bar, substantially as shown and described.

9. As an improvement in the art of sowing or distributing fertilizing material, the combination, as herein described, of a horizontal rotary feed-wheel arranged within a hopper and its content of fertilizer, and working over a covered discharge-throat, and provided with a clearer, a sliding or adjustable gate to regulate the size of opening in said discharge-throat, and means for varying the rapidity of rotation of said feed-wheel in proportion to the increase or decrease of the area of feed-opening in accordance with the quantity to be distributed, whereby injurious agitation of the mass of fertilizer is diminished, if not wholly prevented, strain upon the gearing is reduced, the draft is lightened, and the fertilizer distributed regularly, substantially as set forth.

296,240. CARRIAGE-TOP-PROP BLOCK. JAMES STANLEY, Newark, N. J., assignor to Lillian Lemassena. Filed May 9, 1883. (No model.)



Claim.—1. A prop-block cylindrical in shape, with a longitudinal projecting ridge, *d*, thereon, formed of pieces of leather pressed and pasted into shape, and having a rubber core-piece, *c*, arranged in the projection thereof, substantially as and for the purposes set forth and shown.

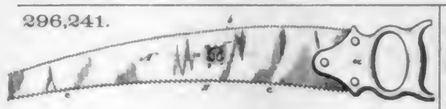
2. In combination with the top-prop *a*, having the raised portion *d*, the tacks *n*, arranged and operating substantially as set forth and shown.

3. In combination, the leather top-prop *a*, having the raised portion *d*, a series of tacks, *n*, secured in said leather, and covered by a coating of patent-leather or hard-rubber finish.

296,241. PRUNING-SAW. WM. K. STANSBURY, Middletown, N. Y. Filed Feb. 9, 1884. (No model.)

Claim.—1. A pruning-saw provided with a convex line of teeth constructed to cut when the saw is thrust, and with a concave line of teeth constructed to cut when the saw is drawn, substantially as set forth.

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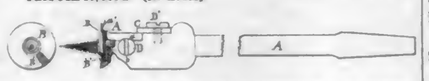


2. A pruning-saw provided with a convex line of teeth and with a concave line of teeth, the convex and concave lines having a uniform curve, substantially as set forth.

3. As a new article of manufacture, a saw provided with a convex line of teeth constructed to cut when the saw is thrust, and with a concave line of teeth constructed to cut when the saw is drawn, the convex and concave lines having the same curve, substantially as set forth.

4. A pruning-saw having a curved row of teeth on one edge and a curved row of teeth on its opposite edge, substantially as set forth.

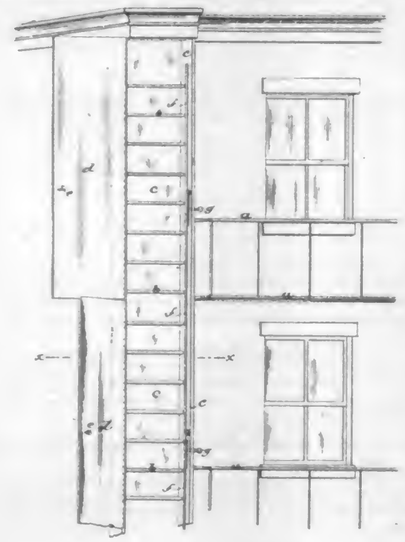
296,242. EXTENSION-BIT. WILLIAM STEERS, Brattleborough, Vt. Filed Jan. 19, 1884. (No model.)



Claim.—A center-bit stock having a continuation of the feeding-threads of the gimlet-point around the cylindrical part of the cutter, a tangent-screw secured by a neck and pin, a clamping device, and a dovetailed groove, in combination with an extension-blade having on its back a dovetailed ridge, and screw-threads to match the threads of the tangent-screw, substantially as and for the purpose described.

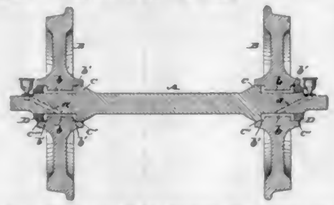
296,243. FIRE-ESCAPE. ROBT. STEVENSON, Muskegon, Mich. Filed Jan. 29, 1884. (No model.)

Brief.—An improvement on Letters Patent No. 257,867, dated May 16, 1882. A sliding bar having handles which project through the case and latches for engaging catches upon the door is provided.



Claim.—In a fire-escape, the incased ladder, with its case provided with catches, in combination with the sliding bar provided with latches engaging with said catches, and with handles projecting through slots in said case, substantially as and for the purpose set forth.

296,244. CAR WHEEL AND AXLE. SAMUEL J. STEVENSON, Philadelphia, Pa. Filed Nov. 15, 1883. (No model.)

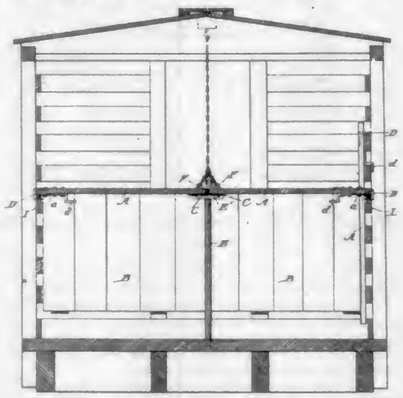


Claim.—1. An axle having lubricant-ducts, in combination with wheels fitted independently on said axle and formed with pockets which extend transversely on the inner faces of the hubs from end to end thereof, substantially as and for the purpose set forth.

2. In a car-axle lubricator, a wheel having pockets which extend radially on the ends of the hub thereof, and collars connected with the axle fitted in recesses in the ends of the hub, substantially as and for the purpose set forth.

3. An axle having a lubricant-duct, a loosely-fitted wheel, and collars connected with the axle fitted in recesses in the ends of the hub, said wheel having pockets which extend transversely on the inner face of the hub, and pockets which extend radially on the ends of the hub and join said transversely-extending pockets, substantially as and for the purpose set forth.

296,245. STOCK-CAR. LUTHER R. STILES, Chicago, Ill. Filed Jan. 24, 1884. (No model.)



Claim.—1. The main portion of the second deck described, composed of four equal and like sections, A, detachable and portable, adapted to be supported in position by the side walls of the car on their outer sides, and on their inner sides by posts or chains, or both, substantially as described.

2. The detachable sections A, provided each with a series of rectangular hooks, *d*, adapting it to be suspended upon the side bars of the car and out of the way when not in use, substantially as described.

3. The detachable sections A, each provided with a series of bars, D, as a means of attachment to the walls of the car when in use, and of holding the walls thereof against spreading, substantially as described.

4. The described end sections, composed of sub-sections B and B', hinged together, and the whole hinged to the side walls by means of the hinge composed of the tube G, fastened to the sub-section B, and the rod *g*, having its bearings in the side walls of the car, substantially as and for the purpose described.

5. The supporting-post E, provided with a suitable platform or cap, E', on its top, and containing a suitable number and arrangement of pins, *e*, adapted, when socketed upon the first floor, to support adjacent edges and corners of sections A and B B', and hold them against yielding in any direction, and adding strength to the car itself, substantially as described.

6. The described hinges for the end sections, composed of the tube G and the rod *g*, resting on the side bars of the car, adapted to hold the posts sufficiently distant from the end wall, substantially as and for the purpose described.

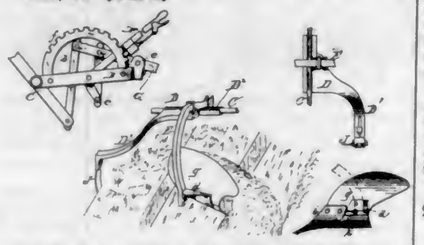
7. The described end sections, composed of sub-sections B and B', hinged together, and also hinged to the side walls of the car in such a manner as to leave space for sub-section B' to fold upon sub-section B, and both together to fold against the end wall out of the way, substantially as shown and described.

8. The four equal and like sections A, having each a projection, *b*, sufficiently long to extend out to the outer face of the side walls of the car, and wide enough to fill one-half the doorway, as shown in Figs. 9 and 10, substantially as described.

9. The plate C, bent into the form of an angle-iron fastened to the inner edges of all the sections and acting as a girder, and serving to render few supports necessary, substantially as described.

10. The sections A, provided with staples or eyebolts F upon their inner corners or edges, in combination with chains suspended from the roof, and provided with hooks at their lower ends, as and for the purpose described.

296,246. PLOW. GARLAND R. ST. JOHN, Cedar Rapids, Iowa. Filed Oct. 23, 1883. (No model.)



Claim.—1. In a plow, the arch B and tongue-iron G, pivoted at *e*, in combination with lever F, bail C, and connections *b* and *c*, or their equivalents, substantially in the manner and for the purposes set forth.

2. In a wheel-plow, the clamp-iron D, provided with an arm, D', and a groove, D^2, and adapted to the two uses of securing the plow-beam to the bail and furnishing a support for a coltsr, substantially as described.

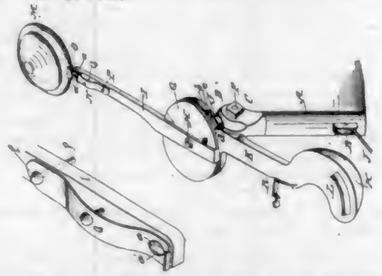
3. The combination, with a plow, E, and bail C, of a clamp-iron, D, having a laterally-extended arm, with a colter-blade, which is rigidly but adjustably secured to the outer end of said arm, and adapted to operate substantially as described.

4. The combination, with a wheel-plow, of a clamp-iron, D, provided with an arm, D', and a groove, of a colter rigidly secured to said arm D', and means for securing the clamp-iron to the plow-beam, substantially as described.

5. The combination of the plow E, the clamp-iron and its extension D', pivotally secured to said bail and to the plow-beam, and a colter rigidly secured to the said extension and inclining downward and forward, substantially as described.

6. In a plow without a landside, the combination, with mold-board and share, of a strengthening-plate, *i*, secured under and along the front edge of the share and projecting upward under the mold-board, and adapted to form a seat and be bolted to said mold-board.

296,247. BALL-TRAP. CHARLES F. STOCK, Peoria, Ill. Filed Dec. 24, 1883. (No model.)



Claim.—1. A throwing-arm for target-throwing traps, consisting of the arm and a curved spring-clamp on the outer end of said arm, the said spring-clamp being secured at one end to the arm, and provided at or near its center with an adjusting-screw, and at its forward under side with a holding spur or tooth, substantially as set forth.

2. A throwing-arm for target-throwing traps, consisting of the arm and a curved spring-clamp on the outer end of said arm, the said spring-clamp being secured at one end to the arm, and provided at or near its curved central part with an adjusting-screw, and at its forward under side with a depression, a portion of the depression being cut away to form a holding-support, substantially as set forth.

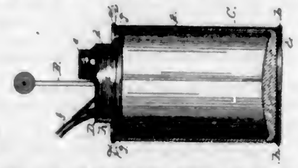
3. The body portion for holding the target, pivoted to a suitable standard or base, and provided with a weight at its free end, on the upper face of which is secured a curved lip for the target to rest against, in combination with a throwing-arm constructed to engage said target and remove it from said weighted portion and lip.

4. The combination of the body portion E, hinged to a suitable standard, and provided near its outer end with a holding-spring, R, with the pivoted throwing-arm I, provided with the spring-clamp N near its outer upper end, and with a pin or lug on its under side to engage the holding-spring R, and mechanism for releasing and throwing said throwing-arm, substantially as set forth.

5. The combination of the body portion E, hinged to a standard, A, and having its outer end weighted at K, a lip, L, above said weight, and a holding-spring, R, with the throwing-arm I, pivoted to the body E, and provided with the spring-clamp N, secured at one end to the arm by a bolt, P, which passes through the arm to engage the holding-spring R, and said spring-clamp provided with an adjusting-screw near its center, and constructed to hold the target between its outer end and the throwing-arm, and mechanism for releasing and throwing said throwing-arm, substantially as set forth.

6. The combination of the body portion E, hinged to a suitable standard, and provided with flange *b*, cut away at *c* to form a shoulder, *d*, with the throwing-arm I and pulley G, pivoted to the flanged end of the body portion by bolt H, and a cord, J, secured to said pulley and passing through said cut-away portion of the flange, whereby a stop for the cord and throwing-arm is provided.

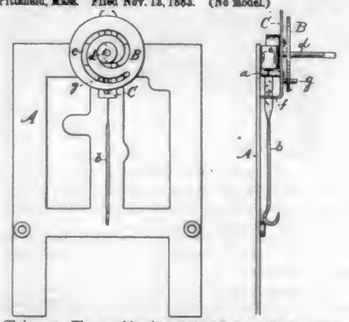
296,248. INCASED OIL-CAN. CHARLES H. TALLMAN, Bellaire, Ohio. Filed June 1, 1883. (No model.)



Claim.—1. A cylindrical glass vessel, C, having a top recessed between the shoulder *i* and the bottom of a neck, *d*, the top of said shoulder and the bottom of the neck being on about the same horizontal plane, substantially as described.

2. In an incased oil-can, a cylindrical vessel having a top recessed between the shoulder *i* and the bottom of a neck, *d*, and an incasing-jacket, A, rising vertically above such shoulder and the bottom of such neck, substantially as and for the purpose described.

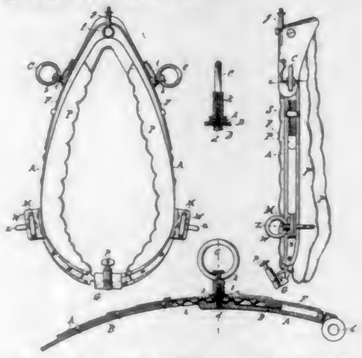
296,249. PENDULUM-REGULATOR FOR CLOCKS. SOLON M. TERRY, Pittsfield, Mass. Filed Nov. 12, 1883. (No model.)



Claim.—1. The combination of the slit arm, the movement-plate A, the bridge *c*, mounted on said plate, the slide C, the cam B, and cam-shaft *d*, disconnected from the clock-train, said slide and shaft both mounted upon the said bridge, and the shaft having its front end provided with means for rotating it by hand, substantially as described, and for the purpose specified.

2. The combination of plate A, the pendulum *b*, mounted on a fixed stud, *a*, attached to said plate, the bridge *c*, the slide C, having the slit arm *f*, the cam B, and the cam-shaft *d* for operating said slide and split arm, substantially as described, and for the purpose specified.

296,250. HORSE-COLLAR. CARL ROBERT TESCH and CARL CHRIST. FRANK, Leipsic, Saxony, Germany. Filed July 1, 1882. (No model.) Patented in GERMANY Aug. 17, 1880, No. 13,367, and Feb. 1, 1881, No. 15,962; in AUSTRIA Apr. 10, 1881, No. 6,753, and Oct. 19, 1881, No. 23,760; in FRANCE Apr. 19, 1881, No. 141,230; in BELGIUM Sept. 12, 1881, No. 55,713, and in ITALY May 26, 1882, No. 14,231.



Claim.—1. In combination with the frame A and plate B, the plates D, provided with lugs *h*, at one end and suitable teeth or projections at the other end engaging with corresponding teeth, *b*, made in the frame A or plates B, the bolt *d*, and the rein-ring hub *k*, arranged to operate in the manner and for the purpose substantially as described.

2. In combination with the plates B, the bar E, provided with teeth *s*, and the bar E', with hub G, bolt *l*, rod *m*, spring *q*, and head or knob *p*, arranged to operate in the manner and for the purpose substantially as specified.

3. In combination with the frame A and plate B, the frame M, provided with three or more holes, *u*, the hook-bolt Z, and the draft-ring W, substantially as and for the purpose set forth.

4. In combination with the frame A of a horse-collar, recessed and strengthened by plates B, the plates D, with outside guiding-plates, F, bolt *d*, hubs *k* for rein-rings, plates E and E', bolt *l*, frame M, hook-bolt Z, and draft-rings W, the whole being constructed and arranged to operate substantially in the manner and for the purpose herein described.

296,251. APPARATUS FOR TREATING ORES AND FOR OTHER PURPOSES. THEODORE ROGELIM TIBBY, Nyack, N. Y. Filed Dec. 13, 1883. (No model.)



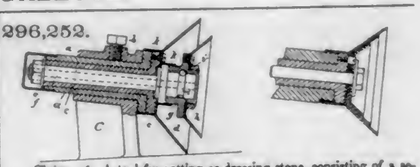
Claim.—1. A jacketed cylinder mounted on radial and longitudinal trunnions with movable bearings, to permit the optional use of either pair of trunnions for the rotation of the cylinder in either direction, substantially as and for the purposes set forth.

2. A cylinder mounted on trunnions supported by sliding bearings which may be withdrawn to permit the rotation of the cylinder, substantially as described.

3. The combination of the cylinder 3, having radial trunnions 4 and axial trunnions 5, the supporting-frame 1, and the retractible bearings 6 and 8, substantially as and for the purposes set forth.

296,252. CUTTER FOR DRESSING STONE. FRANK TESCH, London, England. Filed Nov. 6, 1883. (No model.) Patented in England Jan. 20, 1883, No. 341.

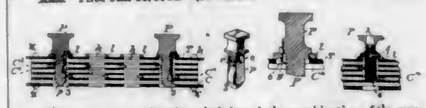
296,252.



Claim.—1. A tool for cutting or dressing stone, consisting of a series of cone-shaped metallic cutters of different diameters, arranged one within or partially within, but not in contact with, the other, and mounted on a common axis, as set forth, whereby each cutter is adapted to act on the stone at a different depth from the others.

2. A tool for cutting or dressing stone, consisting of a series of cone-shaped metallic cutters of different diameters, arranged one within or partially within, but not in contact with, the other, mounted on a common axis, and adapted to be independently rotated in substantially the manner set forth.

296,253. ELECTRIC SWITCH-BOARD. THEODORE N. VAIL, Boston, Mass. Filed Jan. 30, 1884. (No model.)



Claim.—1. In an electric switch-board, the combination of the non-conducting separating-plates, perforated as described, the conducting crossing strips or wires overlapping the edge of the holes through the non-conducting plates, all of the said strips on the same horizontal plane being united electrically, and the line-plates resting upon the uppermost non-conducting plate, as set forth.

2. A switch-board consisting of a series of non-conducting insulating-plates perforated for the reception of plugs, a series of conducting strips or wires interleaved between each two non-conducting plates, and disposed so as to overlap an arc of the holes through the said non-conducting plates, all the strips of each layer being electrically united, a series of line-plates surmounting the whole, and a series of plug-connectors, each adapted to make contact with the line-plates, and arranged in pairs with respect to the conducting-strips, so that each pair of plugs is adapted to present a contact-point and to make contact with its own connecting-strip and with no other, substantially as described.

3. The combination of the interleaved non-conducting perforated plates and conducting connecting-strips, the latter crossing the former and overlapping the edge of the holes perforating the same, with the hereinbefore-described plug-connectors, consisting of a handle and shank, a conducting portion adapted to make contact and interlock with the line-plate, and a spring projection or cam adapted to make contact with the connecting-strip and interlock with the overlapping part thereof, whereby the plug may be inserted and slightly turned to simultaneously make the required contact and to lock itself in position, as specified.

4. The combination, in a switch-board of the character hereinbefore described, of the line-plates provided with line and ground connections, the conducting connecting-strips, the several strips of each layer being united, the interleaved non-conducting plates adapted to insulate the several layers of connecting-strips from one another and from the line-plates, plug-connectors for connecting any wire-plate with any connecting-strip, and means, as indicated, whereby signals may be sent and conversation maintained over the main line, either through the line-plates direct or through the connecting-strip and plug-connector, as and for the purposes described.

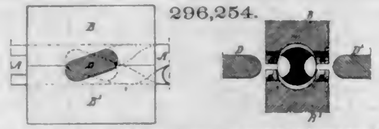
5. In a switch-board of the character hereinbefore described, the combination of the line-plates and connection strips or wires insulated in layers by interleaved non-conducting plates, the line-plates and non-conducting plates being perforated with plug-holes, and the connection-strips arranged to cross the edge of the said plug-holes, and provided with extension-wires (one for each layer) leading to studs at the surface of the board, with a signaling bar and keys, the said keys being all connected with the bar and extending over the said studs, together with an electrical generator and a telephone set, and a switch for connecting the signaling-bar with either telephones or generator, as described, whereby upon the pressure of the keys signals may be sent to line or conversation maintained through the connecting-strips, as specified.

296,254. MANUFACTURE OF DRILLS. CLAUS VAN HAAGEN, Philadelphia, Pa. Filed Aug. 6, 1883. (No model.)

Claim.—1. The mode herein described of forging drills, said mode consisting in feeding the drill-rod longitudinally and subjecting the same to the action of a reciprocating hammer or hammers while it is confined, so as to prevent lateral spreading, as set forth.

2. The mode described of forging drills, said mode consisting in simultaneously turning and longitudinally feeding the drill-rod and subjecting the same to the action of a reciprocating hammer or hammers while it is confined, so as to prevent lateral spreading, as set forth.

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3. The combination, with the clock-hand-adjusting levers E, of the crank-shaft G, connected with such levers, means, substantially as shown, for operating said shaft, and the controlling-lever I, the whole adapted to operate substantially as described, for the purpose set forth.

3. The combination, with the clock-hand-adjusting levers E, of the crank-shaft G, connected with such levers, means for operating said shaft, the lever I, for controlling it, the armature K, and the electro-magnet L, the whole adapted to operate substantially as described, for the purpose set forth.

4. The combination, with the clock-hand-adjusting levers E, of the crank-shaft G, connected with such levers, means, substantially as described, for operating said shaft, the lever I, and the revolving indicator geared with the crank-shaft, the whole adapted to operate substantially as described, for the purpose set forth.

5. The combination, with the clock-hand-adjusting levers E, of the crank-shaft G, connected with such levers, means for operating said shaft, the lever I, the indicating-disk M, geared with the crank-shaft, and the clock-dial having the display-opening *o*, the whole adapted to operate substantially as described, for the purpose set forth.

6. The combination, with the clock-hand-adjusting levers E, of the shaft G, connected with such levers and provided with the key *s*, the lever I, having at one end the anchor H, to engage with such key, and a means, substantially as described, for imparting a revolving motion to said shaft.

7. The combination, with the clock-hand-adjusting levers E, of the crank-shaft G, connected with such levers and provided with the key *s*, the lever I, having at one end the anchor H, to engage with such key, the drum or windlass H' on the crank-shaft, and the weight G', attached to the cord of the windlass, the whole adapted to operate substantially as described, for the purpose set forth.

8. The combination, with a synchronizing mechanism comprising the levers E, shaft G, connected therewith, and the lever I, of the supplemental arm R on such lever, having the spur *i*, and the revolving disk N, having the peripheral notch *j*, the whole adapted to operate substantially as described, for the purpose set forth.

9. The combination, with a synchronizing mechanism comprising the levers E, shaft G, connected therewith, and the lever I, of the armature on such lever, the electro-magnet, the revolving metallic disk N, having a peripheral insulator, P, and notch *j*, the contact-springs *m*, forming the terminals of the wires in the shunt-circuit, and the supplemental arm R on the lever, having the spur *i*, the whole adapted to operate substantially as described, for the purpose set forth.

ing the same to the action of a reciprocating hammer or hammers while it is confined, so as to prevent lateral spreading, as set forth.

3. The combination of a pair of clamping-dies, mechanism for feeding a drill-rod longitudinally through the same, a hammer arranged at an angle to the longitudinal axis of the drill-rod, and mechanism for reciprocating the hammer, as set forth.

4. The combination of the clamping-dies B B', the hammers D D', and a drill-rod-holding chuck, with mechanism, substantially as described, for operating the dies, reciprocating the hammers, and spirally feeding the chuck, as set forth.

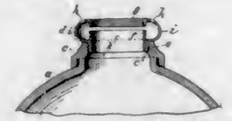
5. The combination of the hammer or hammers, the clamping-dies B B', having recesses *d* for the reception thereof, and mechanism, substantially as described, for reciprocating said hammer or hammers, opening and closing the dies, and feeding a drill-rod longitudinally through the same, as set forth.

6. The combination of the upper clamping-die, B, and its wedge-block *n*, partly inclined and partly straight, the hammer-slide *a'* and its wedge-block *m*, adapted to the block *n*, and a spring, *i*, adapted to elevate the die B and maintain the wedge-blocks in contact with each other, as set forth.

7. The combination of the hammer-slide, the hammer adjustable therein, and having a threaded stem, nut adapted to said stem, a longitudinal shaft, *g*, and mechanism, substantially as described, whereby said shaft *g* is geared to the nut, as set forth.

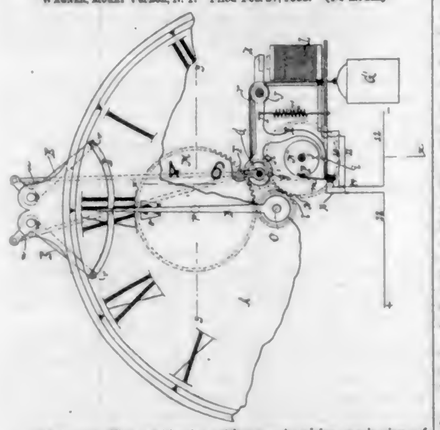
8. The combination of the carriage K, threaded chuck-stem, nut *q*, shaft P, and mechanism for rotating said shaft and nut, as set forth.

296,255. LAMP-COLLAR. AMBROSE D. VEST, San José, Cal. Filed Sept. 7, 1883. (No model.)



Claim.—In an oil-lamp, the combination, with the collar c, of the attachment *d*, having the outer wall of the oil-chamber perforated near its upper end, the inner wall, *f*, slotted near its upper end for the escape of gas from the lamp, and perforated at *k* for the return of oil to the lamp, the inner wall internally threaded at its upper end to receive the burner, and provided at its lower end with a threaded flange to engage the threads of the collar, substantially as specified.

296,256. CLOCK-SYNCHRONIZING APPARATUS. GUSTAVUS G. WAGNER, Mount Vernon, N. Y. Filed Feb. 27, 1883. (No model.)



Claim.—1. The combination, with a synchronizing mechanism, of the indicator connected with such mechanism, substantially as described, to be set automatically in each operation thereof, for the purpose set forth.

2. The combination, with the clock-hand-adjusting levers E, of the crank-shaft G, connected with such levers, means, substantially as described, for operating said shaft, and the controlling-lever I, the whole adapted to operate substantially as described, for the purpose set forth.

296,257. PAPER-BOX-COVERING MACHINE. LON WESTON, Brockton, Mass. Filed Aug. 20, 1883. (No model.)

Brief.—The covering-strips have paste applied to their lower surfaces, are overlapped, united, and then forwarded to the box-form by a rotating pneumatic cylinder, the end of the covering material, when it reaches the form, being blown from the cylinder to the box by the reversal of the exhaust mechanism. When the proper amount of material has been fed to the box, a cutter operating against the cylinder severs the strips. The box-form is mounted on a hollow shaft connected with pneumatic mechanism that holds the box on the form by the exhaustion of air while being covered, and automatically expels it from the form when the box is finished by compressing the air. The covering is pressed on the box, laid over the bottom, and brushed across and within the open end of the box by rolls and rotating brushes.

Claim.—1. In a paper-box-covering machine, the reel *d'*, loosely supported on top of paste-roller *c*, for the purpose of transferring the paste from said roller to the paper strip or strips, as described.

2. In a paper-box-covering machine, the reels *d' f'* and paste-distributer *c*, combined with guide-rolls *d⁴ f⁴*, for dividing the strips *e f*, and oblique paste-spreading roll *c³*, as and for the purpose set forth and described.

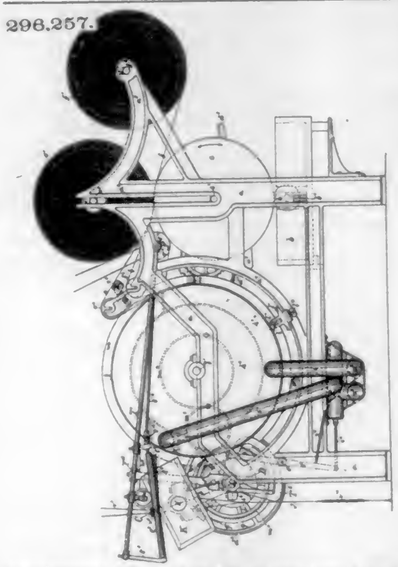
3. In a paper-box-covering machine, the intermittently-rotating perforated conveyor *g*, in combination with the internal stationary cylinder, *h*, its pneumatic chambers h^1 h^2, and mechanism, substantially as described, for exhausting the air from chamber h^1 and intermittently exhausting and compressing the air in chamber h^2, as and for the purpose set forth.

4. In a paper-box-covering machine, the combination, with the perforated cylinder *g*, of the laterally-movable bar *l'* and cutter *l'*, and means, substantially as described, for operating the bar and cutter and automatically cutting off the strips on the cylinder at the proper times, as and for the purposes set forth.

5. The box-former *k*, chambered or recessed at its end, secured to the hollow box-former shaft *k''*, and automatic pneumatic mechanism, substantially as described, for intermittently exhausting and compressing the air in said shaft and its former, for the purpose set forth.

6. The combination, with the revolving box-former *k*, of the shaft *l*, the parallel rods T T', hinged at their rear ends to said shaft, the cross-braces T'', T³, and T⁴, connecting the parallel rods, and constituting a hinged frame having its fulcrum on said shaft, and the revolving smoothing-roller *u'*, having annular flange u^3, and mounted in bearings *u*, lat-

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erally adjustable on the cross-brace T^2 of the hinged frame, substantially as described.

7. The combination, with the revolving box-former *k*, of the shaft *i*, the parallel rods T T', hinged at their rear ends to said rods, the cross-braces T'', T^3, and T^4, connecting the parallel rods, the bearings i^2 and i^3, laterally adjustable, respectively, on the cross-braces T'' and T^4, and the roller i^4, mounted in said bearings, and provided with the spiral brush i^5, substantially as and for the purpose described.

8. In combination with the box-former and its hollow shaft, the templet *v*, grooved shoe *v'*, having the inward-projecting arm forming a bearing-piece, rotary brush v'', resting on said bearing-piece, and guiding mechanism, substantially as described, for retaining the said shoe onto its templet for the purpose of automatically laying and pasting the inner edge of the paper on the inside of the paper box, as described.

9. The combination of frame T T', the smoothing-roller *u'*, roller i^4, spiral wing i^5, the cam T^5, the driving-shaft *d*, and the forked arm T^6, having pin and roll T^7, and hinged in its upper end to the swinging frame T T', substantially as described.

10. In a paper-box-covering machine, the intermittently-rotating perforated conveyer *g*, in combination with a paper-cutting-off mechanism, substantially as described, concentrically adjustable in relation to said conveyer *g*, as and for the purpose set forth.

11. In a paper-box-covering machine, the rotating conveyer *g*, in combination with the box-former and its shaft, and means, substantially as described, for adjusting said box-former shaft to and from the conveyer *g*, as and for the purpose set forth.

296,258. RUBBER-SURFACED FABRIC AND COMPOSITION THEREFOR. NELSON S. WHITE, Canton, MASS. Filed Dec. 3, 1883. (Specimens.)

Claim.—1. A close-textured fabric surface-coated with a composition consisting of dissolved india-rubber and gutta-percha and a filling of zinc-white, sulphur, or sulphide and coloring pigments of the character and in the proportion described, all substantially as set forth, and for the purpose described.

2. A close-textured fabric surface-coated with a gutta-percha composition containing gum-dammar, all substantially as and for the purpose described.

3. The aniline pigment consisting of aniline, china-clay, and precipitated silicate of soda, in the proportions named, all substantially as and for the purpose described.

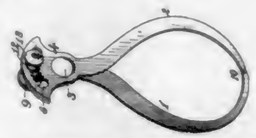
4. In the manufacture of rubber or gutta-percha surfaced fabric, the zinc mordant described, obtained by coloring by attrition while dry, zinc oxide with suitable pigments, all substantially as and for the purposes described.

5. In the manufacture of india-rubber or gutta-percha fabrics, the use of zinc oxide in substantially the proportions named, to gradually cure the composition with which the fabric is coated, all substantially as and for the purposes described.

6. In a rubber or gutta-percha surfaced fabric, a close-textured cloth coated with an elastic and flexible solution, which, in turn, is covered by a surfacing of a less elastic composition, all substantially as and for the purposes described.

7. The combination, in an india-rubber and gutta-percha surfaced fabric, of a close-textured cloth, a coating of colored rubber or other similar elastic and flexible composition, and a surfacing coat of colored gutta-percha composition applied to the surface of the rubber composition, all substantially as and for the purposes described.

296,259. CALIPERS. WILLIAM A. WHITE, Athol, MASS., assignor of one-half to Daniel Appleton Newton, same place. Filed Feb. 4, 1884. (No model.)



Claim.—1. A measuring-instrument composed of two limbs connected by a pivot, and having shanks projecting beyond the pivot and in contact with each other, and provided with a rack-and-pinion mechanism for adjusting the limbs, said pinion having its axis arranged parallel to the axis of the pivot connecting the limbs, and at right angles to the limbs themselves, substantially as described.

2. A measuring-instrument composed of two limbs connected by a pivot, and having shanks projecting beyond the pivot and in contact with each other, combined with rack-and-pinion mechanism on said shanks for adjusting the limbs, and means whereby the shanks may be clamped upon each other for holding the limbs in their adjusted position, substantially as described.

3. A measuring-instrument consisting of two limbs connected by a pivot, and having shanks projecting beyond the pivot and in contact with each other, a rack-and-pinion mechanism on the shanks for adjusting the limbs, said pinion having its axis parallel to the axis of the pivot connecting the limbs, and at right angles to the limbs themselves, and means for clamping the said shanks into frictional contact for holding the limbs in their adjusted position, substantially as described.

4. A measuring-instrument consisting of two limbs connected by a pivot, and having shanks projecting beyond the pivot and in direct contact with each other, a rack-and-pinion mechanism on the shanks for adjusting the limbs, and pinion having its axis parallel to the axis of the pivot connecting the limbs, and a screw nut and pin for clamping the shanks together to hold the limbs in their adjusted position, substantially as described.

5. A measuring-instrument consisting of two limbs connected by a pivot, and having shanks projecting beyond the pivot and in direct contact, a rack-and-pinion mechanism for adjusting the limbs, and a screw nut and pin for clamping the shanks together to hold the limbs in their adjusted position, said pinion and screw nut and pin having their axes arranged parallel to the axis of the pivot connecting the limbs, substantially as described.

6. A measuring-instrument consisting of two limbs connected by a pivot, with shanks beyond the pivots provided with slots having teeth at their edges, a pinion arranged in said slots and engaging the teeth, and a finger-piece for rolling the pinion to adjust the limbs, substantially as described.

7. A measuring-instrument consisting of two pivoted limbs, with shanks beyond the limbs provided with slots having teeth at their edges, a pinion in said slots and engaging the teeth, a finger-piece for rolling the pinion to adjust the limbs, and means for holding the limbs in position after their adjustment, substantially as described.

296,260. APPARATUS FOR THE MANUFACTURE OF BICARBONATE OF SODA. CHARLES WIGG, Liverpool, County of Lancaster, England. Filed Sept. 18, 1883. (No model.) Patented in England July 3, 1882, No. 3,125.

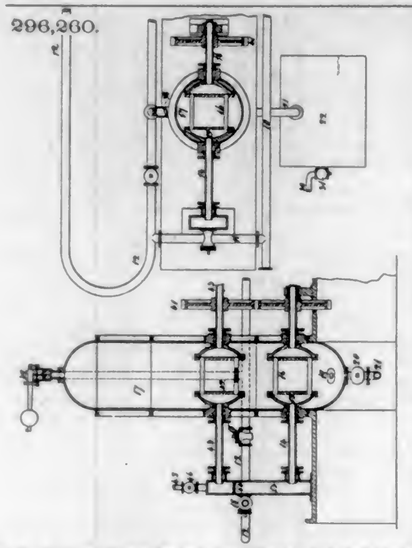
Claim.—1. In a plant or apparatus for the manufacture of bicarbonate of soda, the combination, with the absorber, of a carbonic-acid-generating chamber, connected therewith by suitable pipes, and provided with a vertically-adjustable cage for the material from which the gas is generated, substantially as and for the purposes specified.

2. In a plant or apparatus for the manufacture of bicarbonate of soda, the combination, with the absorbers, of a brine-purifying chamber connected therewith by a brine-delivery and a gas-inlet pipe, said purifying-chamber having a perforated plate or diaphragm arranged over the gas-inlet pipe, substantially as and for the purposes specified.

3. The combination, with an absorber for the manufacture of bicarbonate of soda, of a transversely-arranged hollow perforated rotating agitator and gas-distributer, substantially as and for the purposes specified.

4. In a plant or apparatus for the manufacture of bicarbonate of soda, the combination of absorbers 17 with hollow beaters 42, adapted

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for the circulation of water, for the purpose and substantially in the manner set forth.

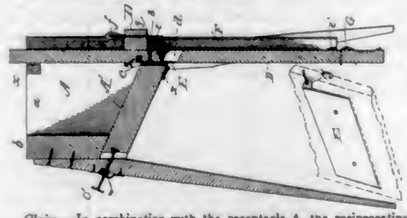
5. The combination of absorbers 17 with hollow distributers 16 and beaters 42, for the purposes set forth.

6. In a plant or apparatus for the manufacture of bicarbonate of soda, the filter-chambers 22, inlet-way 21, filter-bed 23, door 25, outlet-ways 27 and 28, pipe 29, and cock 31.

7. In a plant or apparatus for the manufacture of bicarbonate of soda, the combination of a series of absorbers, each provided with rotating perforated gas-distributers and rotating cooling-beaters, said absorbers connected by circulating-pipes, a brine-purifying tank provided with a perforated diaphragm and connected with the absorbers by a brine-delivery pipe and a gas-inlet pipe, a carbonic-acid-gas generator provided with a vertically-adjustable cage and connected with the absorbers by suitable gas-delivery pipes, and a series of filters, each connected with its respective absorber, and with an exhaust-pump for maintaining a partial vacuum in the filters, substantially as and for the purposes specified.

8. In a plant for the manufacture of bicarbonate of soda, the combination of an absorber having hollow perforated rotating gas-distributers, a brine-purifier having a perforated diaphragm, the absorber and purifier being connected by a brine-pipe and a gas-pipe, and a carbonic-acid generator of the character herein described, said generator being connected with the rotating perforated beaters and distributers of the absorber, substantially as and for the purposes specified.

296,261. VEGETABLE-CUTTER. CHARLES L. WILLIAMS, South Whitley, Ind. Filed Oct. 18, 1883. (No model.)

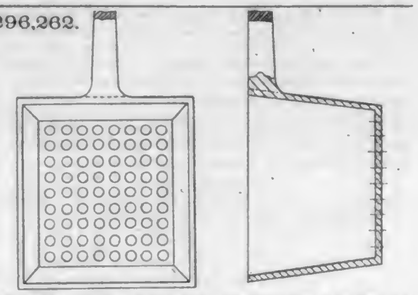


Claim.—In combination with the receptacle A, the reciprocating slide provided with transverse handles and a spout removably attached to said slide in front of the cutting means, substantially as set forth.

296,262. MANUFACTURE OF SPONGY LEAD. FRANK TAMELIN WILLIAMS and JOHN CHARLES HOWELL, Llanelly, County of Carmarthen, England. Filed Nov. 12, 1883. (No model.) Patented in England May 23, 1883, No. 2,573; in France Nov. 6, 1883, No. 158,403, and in Belgium Nov. 7, 1883, No. 63,133.

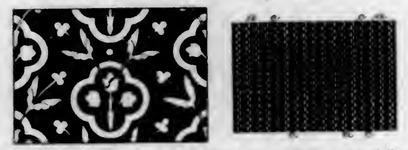
Claim.—The method of making porous blocks or plates of lead or

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alloy of lead, consisting in inserting a perforated mold of the size and pattern of the block or plate required into a bath of the crystallized and molten metal, then removing said mold from the bath and allowing the liquid metal to drain through the perforations, leaving in the mold a plate or block of crystalline porous or spongy metal, substantially as and for the purposes described.

296,263. WATERPROOFED TEXTILE FABRIC. ISAAC F. WILLIAMS, Bristol, R. I. Filed June 24, 1882. (Specimens.)



Claim.—1. The waterproofed knit or woven fabric, substantially as hereinbefore described, the same having raised ribs or figures free from waterproofing matter, and its rear surface and the recessed background for said raised ribs or figures charged or coated with said waterproofing matter, as set forth.

2. The waterproofed knit or woven fabric, substantially as hereinbefore described, the same having raised ribs or figures on its front surface, and charged or coated with vulcanizable waterproofing material at the rear surface of said fabric and at the recessed portions only of the front surface, as set forth.

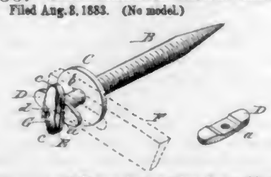
296,264. RUBBER BOOT. ISAAC F. WILLIAMS, Bristol, R. I. Filed Apr. 7, 1883. (No model.)



Claim.—1. The combination, with a rubber boot, of a molded rubber heel having a forwardly-projecting lip for affording a reliable union of said heel with the main sole of the boot, substantially as described.

2. The molded rubber boot heel provided with the integral forwardly-projecting lip, substantially as described, whereby an extended area of adhesive contact with the sole of a rubber boot is afforded, and also whereby the front portion of the heel can be durably united to said sole, as set forth.

296,265. WHIFFLETREE-HOOK. JAMES B. WILLIAMS, Glastonbury, Conn. Filed Aug. 8, 1883. (No model.)

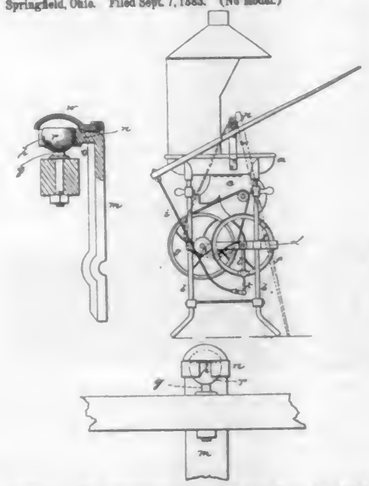


Claim.—1. A whiffletree-hook having, in combination outside of its trace-bearing, a stationary and a movable recessed button and a flat spring to keep the buttons in contact, one of said buttons having a flange or lug at each end or around its edge, for the purpose of keeping in position and protecting the spring, substantially as shown and described.

2. In a whiffletree-hook, a flat spring rotating on its center, in combination with a recessed or flanged button, substantially as shown and described.

3. The combination, with the whiffletree A, provided with a spindle, B, having a partly-elliptical trace-bearing, *b*, and a recessed button, D, fixed to the spindle at the outer end of said bearing, of the movable recessed button E, having lugs or bearings *c c*, the spring G, arranged on the spindle at the outer side of the trace-bearing, and the cap C, having wings *g g* and provided with an end opening corresponding with the form of the trace-bearing, substantially as described.

296,266. DETACHABLE LEVER FOR FORGES. JAS. P. WINCHELL, Springfield, Ohio. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination, with a portable forge, of a lever and detachable connections forming the fulcrum thereof, whereby the lever is made capable of universal motion, and is immediately detachable from its bearing, substantially as specified.

2. A forge having a lever connected thereto by a ball-and-socket fulcrum in which the ball portion is detachable from the socket, substantially as specified.

3. The combination, with a forge, of a lever having an open socket-seat, and a ball-and-stem portion attached to the lever and removable from the socket-seat, substantially as specified.

4. In a forge, a lever connected at its weight end to the mechanism to be driven, and provided with a ball-and-socket fulcrum, in which the ball-and-stem portion is removable from the socket-seat, substantially as specified.

5. In a forge, a lever provided with a separable fulcrum, whereby the lever may be given an elliptical motion, substantially as specified.

6. In a forge, the combination of the bracket *m*, having the horizontal arm *n*, with the open socket-seat *o p*, with a lever having a ball-and-stem portion adapted to fit the socket-seat.

7. In a forge, the combination of the bracket *m*, having arm *n*, and open socket-seat *o p*, with the hinged cap adapted to cover the ball portion of the ball-and-socket fulcrum in the socket-seat, substantially as specified.

296,267. HAY-PRESS. THOMAS D. AYLSWORTH, Oswego, Kans. Filed Aug. 30, 1883. (No model.)

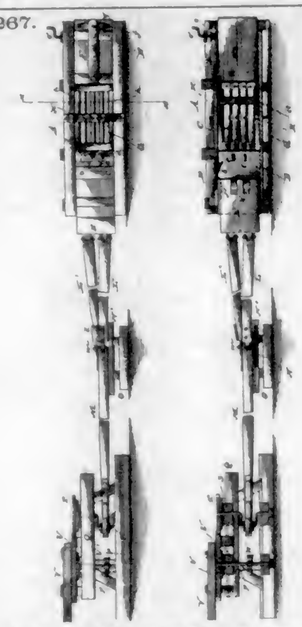
Claim.—1. The combination, in a horizontal baling-press, of the spring-actuated beveled stops *c*, passed freely through the press-frame, with the spring-holding boxes outside of this frame, and a follower having bevels K, and a spring, *b*, on door D, substantially as described.

2. The combination, in a baling-press, of removable side frames having separated ribbed bars with the adjustable bolts J and the arched braces H, bolted to the press-frame, substantially as described.

3. The combination of the plunger, the plunger-rod pivoted to it below its center, the brace-rod pivoted to it above its center and connected to the plunger-rod by its sheath, the pitman-rod pivoted to the plunger-rod, and the slide working in the guides of a jack, all constructed and adapted to operate substantially in the manner and for the purposes described.

4. The combination of the plunger, the plunger-rods, the slide guided as described, in ways on a jack-frame, the bell-crank, the pinion thereof, the master-wheel engaging with said pinion, the sweep secured to the

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master-wheel, the spring W on the shaft of this wheel, and the vertical arresting-rods *p p* for said spring, all constructed and adapted to operate substantially in the manner and for the purposes described.

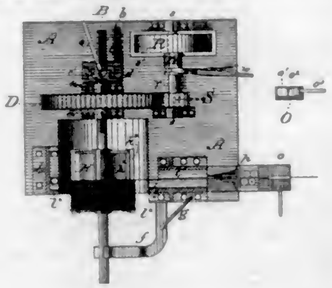
296,268. MACHINE-BRACE. SAMUEL BEAL, Elyria, Ohio, assignor of one-half to W. Lamartine Fay, same place. Filed Dec. 15, 1882. Renewed Nov. 8, 1883. (No model.)



Claim.—1. The combination of the braces A A, heads B B, and screw E E, the whole to be constructed and operated in the manner and for the purpose substantially as described.

2. The combination of the braces A A, heads B B, ways C C, bearings D D, screw E E, and ratchet F, the whole to be constructed and operated in the manner and for the purpose substantially as described.

296,269. MACHINE FOR BENDING WIRE. CHARLES F. BEAMAN, Chicago, Ill., assignor to the Wellsville Plate and Sheet Iron Company, Wellsville, Ohio. Filed Feb. 9, 1884. (No model.)



Claim.—1. In a machine for bending wire, a rotating former, in combination with a drop-hammer, said parts being so constructed and arranged that the wire is made to conform to the shape of the former by a series of blows, substantially as set forth.

2. In a machine for bending wire, a rotating and longitudinally-movable former, in combination with a drop-hammer, substantially as described.

3. In a machine for bending wire, the former H and the shaft B, threaded and grooved at one end, in combination with the gear-wheel D, splined to said shaft, divided nut C, and means for opening and closing the divided nut, substantially as set forth.

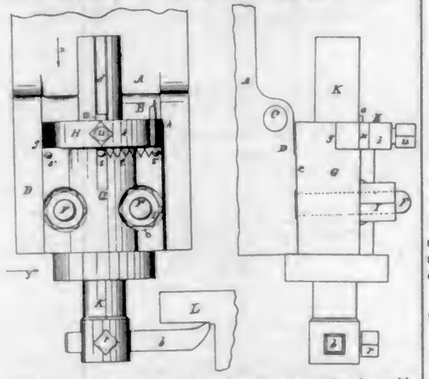
4. In a machine for bending wire, the former H, detachably secured to the shaft B, in combination with the swinging bearing-arm *f*, substantially as set forth.

5. In a machine for bending wire, the former H, secured to the rotating and longitudinally-movable shaft B, in combination with the tension device *o* and the straightening device *p*, substantially as set forth.

6. In a machine for bending wire, the rotating and longitudinally-movable former H, in combination with the drop-hammer L, having the wings *m*, the guide-standards *l l*, having the flanges *l*², and the arms *n*, substantially as set forth.

7. In a machine for bending wire, the drop-hammer L, having side wings, *m*, in combination with the standards *l l*, so arranged as to allow a slight horizontal movement to the hammer during its vertical reciprocation, the arms *n*, pivotally connected to the hammer and the standard *l*, and the former, substantially as set forth.

296,270. ATTACHMENT FOR METAL-PLANERS. EDWIN R. BETANY, Rochester, N. Y., assignor to the Rochester Machine Tool Works, (Limited,) same place. Filed Aug. 27, 1883. (No model.)



Claim.—1. An attachment for an iron-planer, consisting, in combination with the swinging slide A, of a block, G, rigidly secured to the swinging slide, provided with a stock, K, for holding the cutter, said stock being fitted in a circular bearing within the block, for the purpose of permitting it to turn within the latter to bring the point of the tool in position to take a cut, or be turned to relieve the point of the tool from the work during the reverse motion of the planer, substantially as described.

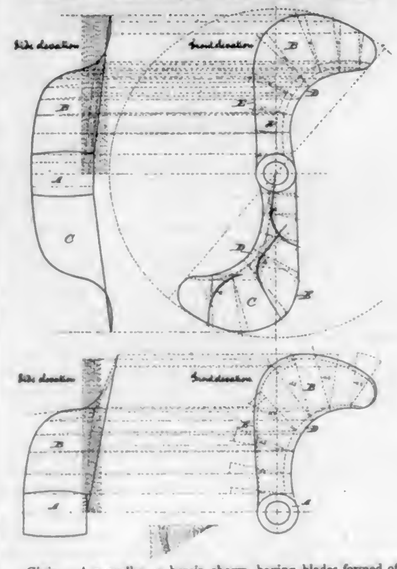
2. An attachment for an iron-planer, consisting, in combination with the swinging slide, of a block, G, rigidly secured to the swinging slide, provided with a stock, K, for holding the cutter, fitted to a circular bearing within the block, for the purpose of permitting it to be turned within the latter at each forward and backward motion of the planer, to bring the point of the tool, respectively, in position to take a cut or relieve it from the work, said stock K being longitudinally adjustable within the block, substantially as described.

3. The attachment for iron-planers, consisting of a block, G, rigidly secured to the swinging slide A, stock K, for holding the cutter *b*, fitted to a circular bearing within the block G, for the purpose set forth, collar H, secured to the stock K, and stop *h*, to limit the distance the stock may be turned within the block, substantially as set forth.

4. In combination with the swinging slide A of an iron-planer, a block, G, rigidly attached thereto, provided with a tool-stock, K, for holding the cutting-tool, said stock fitted to circular bearings within the block, for the purpose of permitting it to be turned therein to bring the point of the tool either to or away from the work, with automatic means to turn said stock in position to bring the point of the tool to the work, substantially as specified.

5. In combination with the swinging slide A of an iron-planer, a block, G, rigidly attached thereto, provided with a tool-stock, K, for holding the cutting-tool, said tool-stock being fitted to a circular bearing within the block, for the purpose of permitting it to be turned therein to bring the point of the cutting-tool either to or away from the work, said tool-stock being held by the block in an inclined position, for the purpose of allowing the point of the tool to deviate from a horizontal plane when the stock K is turned in its bearings, as stated, for the purpose set forth.

296,271. SCREW-PROPELLER. ADOLF GRAF VON BOGNACORSI DI PISTOJA, Vienna, Austria-Hungary. Filed Oct. 31, 1882. (Model.)



Claim.—A propeller, as herein shown, having blades formed of a series of cross-sections of parabolic shape from the hub to the periphery, and the blades gradually bent to be at right angles to the center of axis of the hub, substantially as specified.

296,272. CRANK. JESSE H. BURKE, Los Angeles, Cal. Filed Dec. 6, 1883. (No model.)



Claim.—1. In a crank, the combination of a suitable casing and the arm held to the casing, substantially in the manner described, whereby when not in use it may be stored entirely within the casing, substantially as and for the purposes specified.

2. The combination, as set forth, of a suitable casing, the arm having one end movable out of said casing, and provided with a handle, and means whereby said arm is held from detachment from said casing, substantially as set forth.

3. In a crank, the combination of the casing, the arm, the handle held to one end of the arm in position to be turned down against the same, and a spring whereby the arm and handle, when incased, are forced apart and bind the walls of the casing, as set forth.

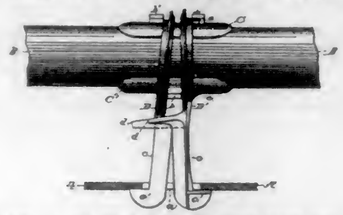
4. In a crank, the combination of the casing, the arm having one end movable out of, and its other end provided with means whereby it is held in, the casing, and formed with a head approximating in diameter that of the casing, and the handle pivoted to the outer end of the arm, and provided in the rear of said pivot with a cap or head fitted to the casing, substantially as and for the purposes specified.

5. In a crank, the casing provided at or near one end with a transverse rod, combined with the arm having a hook formed on one end, adapted to engage said transverse rod in the operation of the device, substantially as set forth.

6. The crank, substantially as hereinbefore described, consisting, in connection with a suitable casing, of the arm, the handle pivoted at one end of said arm, means whereby the arm and casing are held from detachment, said arm and handle being constructed and arranged substan-

tially as described, whereby when not in use they may be stored within the casing, substantially as set forth.

296,273. DEVICE FOR HANDLING SPOOLED BARB-WIRE. WM. T. BURROWS, East Dubuque, Ill. Filed Sept. 6, 1883. (No model.)



Claim.—1. In a device for handling spooled barbed wire, hooks loosely suspended from a single bar, and appliances attached to said bar, whereby the said hooks are opened and closed by the action of said bar, substantially as described.

2. In a device of the character described, a pair of hooks cast upon rings loosely encircling a handle-bar provided with means which open and close said hooks by the action of said bar, substantially as described.

3. In a device of the character described, the combination, with a handle-bar, of a pair of hooks cast upon rings loosely encircling said bar, and which rings are provided with means whereby said hooks are prevented from separating in any direction other than that in which they open and close by the action of said bar, substantially as described.

4. In a device of the character described, the combination, with a handle-bar and a pair of hooks cast upon rings loosely encircling said bar, of means provided upon the said bar, and rings to engage with each other and prevent the bar from turning beyond the opening and closing limit of the hooks, substantially as described.

5. In a device of the character described, the combination, with the handle-bar and a pair of hooks cast upon rings loosely encircling said bar, of means provided upon the said bar and rings to prevent the handle-bar from turning in either direction while carrying the spool, substantially as described.

6. In a device of the character described, the combination, with a handle-bar, of a pair of rings loosely encircling the same, and provided each with a depending arm and a hook upon the end of said arm, substantially as and for the purpose set forth.

7. In a device of the character described, the combination, with a handle-bar, of a pair of rings loosely encircling said bar, and provided each with a depending arm, a hook upon the end of said arm, and two ears cast upon one of said arms and embracing the other arm, substantially as and for the purpose set forth.

8. In a device of the character described, the combination, with a pair of rings provided each with a depending arm and hook, of a handle-bar passing loosely through said rings, and provided with studs or projections, two of which embrace said rings and one separates the same, substantially as described and shown.

9. In a device of the character described, the combination, with a handle-bar and a pair of rings encircling said bar, and provided each with a depending arm and hook, of a stud or elevation located upon said bar, and adapted to engage with a notch cut in the inner circumference of one of said rings, substantially as and for the purpose set forth.

10. In a device of the character described, the combination, with a handle-bar provided with three studs or projections, arranged as described, of a pair of rings loosely encircling said bar, and provided each with a depending arm and hook, and two lugs cast upon one of said rings, and adapted to engage with one of the handle-bar studs, substantially as and for the purpose set forth.

296,274. CAR-BRAKE. JOSEPH P. CHOTNER, Pittsburg, Pa. Filed Aug. 24, 1883. (No model.)

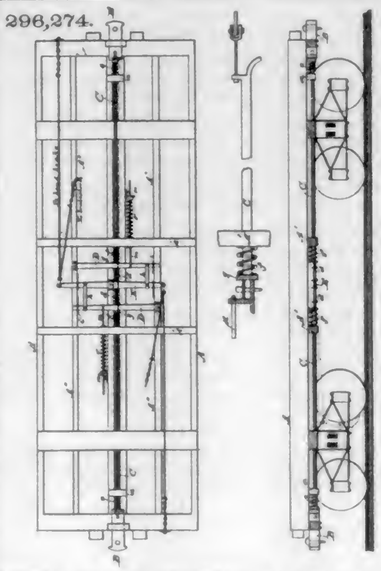
Claim.—1. In railway-car brakes, the combination of the draw-bars C, provided with springs *e* and *f*, with a central lever, E, connected by links A to the levers D, having attached to them the rods *d d*, arranged substantially as specified.

2. The combination of the draw-bars C, provided with springs *e* and *f*, with a central lever, E, connected by links A to the levers D, having attached to them the rods *d d* and spring-rods *m*, arranged as shown, and for the purpose set forth.

3. The combination of the draw-bar C, provided with springs *e* and *f*, a central lever, E, connected by links A to the levers D, having attached to them the rods *d d* and spring-rods *m*, with the rods and chains *p* and *p'*, for operating the brakes by steam or hand power, substantially as shown and herein specified.

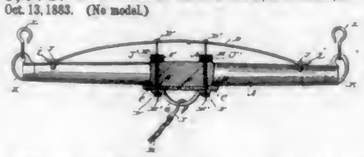
4. The brake herein described, consisting of the bumpers B, draw-bars E, with springs *e* and *f*, the central lever, E, side levers, D, links

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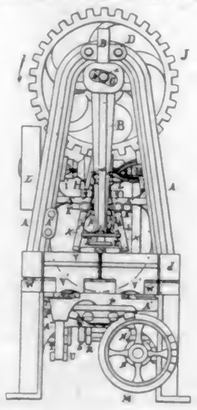
k, rods *d a*, spring-rods *m*, rods and chains *p p*, springs *o*, angle-pieces *n*, and suitable frame, all constructed and arranged substantially as described and shown.

296,275. WHIFFLETREE. HARDING CLARK, East Canton, Pa. Filed Oct. 13, 1883. (No model.)



Claim.—The whiffletree herein described, consisting of the body A, having the loops J, the spring D, having the hooks *l* secured in said loops, the openings A' in the body, the packing J', the bolts D', passing through said packing and openings, and the draft-bar G, with its attachments for operating said spring, as shown and described.

296,276. BRICK-MACHINE. FRANCIS M. COMSTOCK, Keokuk, Iowa, assignor to Felix T. Hughes, Wells M. Irwin, Charles S. Whitney, and Frederick M. Stafford, all of same place. Filed Jan. 3, 1884. (No model.)



Claim.—1. The method herein described of pressing brick, the same consisting in raising the mold with the clay therein upward and in contact with the main compression-plunger, by which a partial compacting of the clay in the upper portion of the mold is effected, then permitting the mold to be slid down over the clay a short distance by the compression-plunger, and finally subjecting the clay within the mold to the upward pressure of the follower or mold bottom and the downward pressure of the plunger, as set forth.

2. The method herein described of making brick, the same consisting in continuously moving or changing the position of the clay within vertically-movable molds by the devices, substantially such as described, during the pressing or forming process, whereby the particles of clay are more evenly arranged to form a solid and compact brick and the brick rendered more easily ejected from the mold, as set forth.

3. In a brick-machine, a rotary mold-table provided with movable molds adapted to be held in position from lateral displacement by pins, in combination with devices, substantially such as described, for raising and holding said mold from the mold-table during a portion of the time the brick is being compressed.

4. In a brick-machine, a series of molds movably mounted on a mold-table, said molds being provided with movable bottoms and adapted to be raised with the charge of clay therein, and to be depressed or carried down by the compression-plunger, as set forth.

5. In a brick-machine, a series of vertically-moving molds mounted on a mold-table, said molds being adapted to be carried down on the mold-table and held there during the final pressure of the brick and during the withdrawal of the plunger, as set forth.

6. In a brick-machine of the character described, the arms K, pivoted to the sides of the machine and adapted to be operated by suitable devices on the plunger-bar, in combination with the movable molds, as set forth, whereby the molds are held down while the compression-plunger is being withdrawn or separated from the newly-formed brick.

7. The arms K, pivoted to the cross-bar A'', and provided with the spring arms or extensions L and wedge-shaped cams *p'*, in combination with the plunger-bar B and wedge-shaped cams *p*, as and for the purpose set forth.

8. In a brick-machine, the plunger bar or bars provided with a plunger-head adapted to fit within the mold-cavity and a supplemental head or flange adapted to impinge upon the top of the mold and force the said mold down, as set forth.

9. In a brick-machine, the plunger-bar B, provided with the plunger-head E and supplemental head or flange B'', in combination with the vertically-movable mold provided with a movable bottom, and the mold-table W, provided with the pins W'', as set forth.

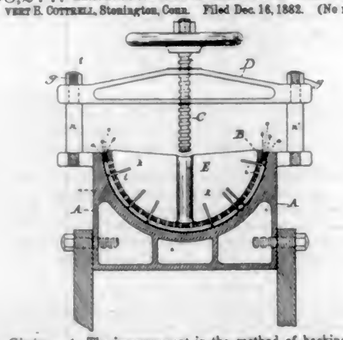
10. In a brick-machine, a vertically-movable mold provided with a vertically-movable mold-bottom, and devices, substantially such as described, for moving the mold and mold-bottom upward, in combination with the plunger-heads E and B'', as set forth.

11. The plunger-bars B, mounted in guides, as described, and provided with a diagonal slot, G, in combination with the shaft E and crank-arms *a*, whereby the plungers are quickly raised and a period of rest given the plungers before the downward movement is given the plungers, as set forth.

12. In a brick-machine, a mold-table provided with projections adapted to fit within cavities formed in the sides of the mold, in combination with the mold V and follower X, as set forth.

13. The mold-table W, provided with a central shaft, on the power end of which is secured a pin or crown wheel, in combination with the wheel M, having the mutilated gear, as described, whereby the molds are turned one-third of a revolution, as set forth.

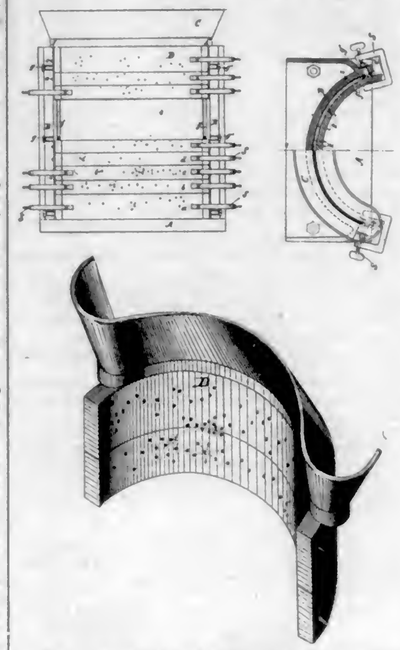
296,277. ELECTROTYPE AND STEREOTYPE CASTING PAN. CALVERT B. COTTRELL, Stonington, Conn. Filed Dec. 16, 1882. (No model.)



Claim.—1. The improvement in the method of backing curved electrotype-plates which consists in perfecting the form of the shell and holding the same in position by pins inserted through perforations in the lid during the introduction of the molten metal, substantially as described.

2. The combination, with the pan A, of the perforated lid B and the pins *k k*, substantially as described.

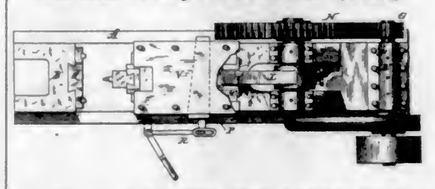
296,278. ELECTROTYPE AND STEREOTYPE CASTING-MOLD. CALVERT B. COTTRELL, Stonington, Conn. Filed Mar. 15, 1883. (No model.)



Claim.—1. A mold for casting electrotype or stereotype plates, in which the cover is made up or composed of sections which are provided with perforations adapted to receive pins, substantially as described, and for the purpose specified.

2. The herein-described improvement in the art of casting electrotype or stereotype plates, which consists in perfecting the curve of the shell or matrix, section by section, and holding such perfected portions in position until after the introduction of the molten metal, substantially as described.

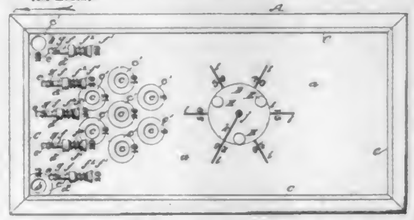
296,279. STRAIGHTENING, BENDING, AND PUNCHING MACHINE. JAMES CROSSROVE, Pittsburg, Pa. Filed Oct. 31, 1883. (No model.)



Claim.—1. In a straightening, bending, or punching machine, the combination, with the moving head M, of the supplementary head N, sliding therein, an interposed wedge, P, between said heads, and adapted to move transversely thereof and give them positive adjustment to and from one another, and a pivoted lever, R, connected to said wedge, substantially as described, whereby the necessary adjustments may be readily made between the strokes.

2. The combination of head M, having top groove, *o*, and head N, having top groove, *o*, the adjacent faces of one or both heads being inclined, the solid wedge-block P, having the angularly-set overhanging tenons *q*, fitting said grooves *o*, and a pivoted lever, R, substantially as described.

296,280. GAME-TABLE. FRANK R. DE FOY, Dannemora, N. Y., assignor to himself and C. H. Stackpole, same place. Filed Nov. 14, 1883. (No model.)



Claim.—1. The game-table herein shown and described, formed with the central revolving wheel, D, cluster of pockets *c*, spring-buffers *f*, and corner pockets, *b*, the spring-buffers being attached to gong-levers *g*, and the wheel D, provided with pegs E, and index-line *k*, and surrounded by the radial numbered lines *l*, substantially as set forth.

2. In a game-table, the revolving wheel D, having the guard-pegs E, substantially as and for the purposes described.

3. In a game-table, the cluster of pockets *c*, arranged beyond the wheel D that has pegs E, substantially as set forth.

4. In a game-table, the spring-buffers *f*, arranged on the surface of the table beyond the revolving wheel E, substantially as set forth.

5. In a game-table, the combination, with the spring-buffers *f*, of the levers *g*, and gongs *h*, arranged substantially as described.

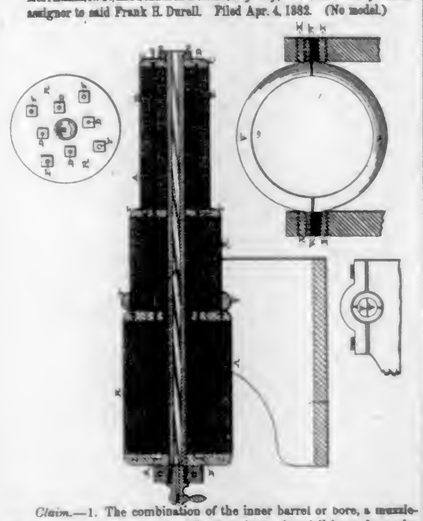
6. In a game-table, the series of spring-buffers *f*, arranged beyond the cluster of pockets *c*, substantially as set forth.

7. In a game-table, the series of spring-buffers arranged beyond the cluster of pockets *c* and beyond the wheel D that has the guard-pegs E, substantially as set forth.

8. In a game-table, the wheel D, provided with pegs E, and index-mark *k*, in combination with the radial marks *l*, substantially as set forth

9. In a game-table, the pockets *c*, made of hard rubber, with flange c', set in a countersunk recess, c^2, for forming the pocket and at the same time holding the baize *a* around the recess at opening c^2, substantially as shown and described.

296,281. BREECH-LOADING ORDNANCE. HENRY DURELL, West Morrisania, N. Y., and FRANK H. DURELL, Bay City, Mich.; said Henry Durell assignor to said Frank H. Durell. Filed Apr. 4, 1882. (No model.)



Claim.—1. The combination of the inner barrel or bore, a muzzle-plate secured to the front end of the barrel, a series of disks, and a series of draw-bolts with a metallic plate placed at the beginning of the re-enforcement, and a second series of disks and draw-bolts, the second set of draw-bolts being passed from the metallic plate through the rear series of disks, a breech-plate, and a nut which is passed over the rear end of the barrel, substantially as set forth.

2. A trunnion composed of two pieces of iron, which are bent so as to conform to the shape of the gun, and which have their ends turned outward, so as to receive a screw collar or sleeve, substantially as described.

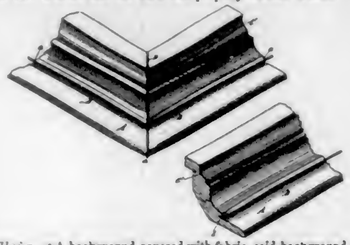
296,282. HAT-BINDING RING. RUDOLF EICKEMEYER, Yonkers, N. Y. Filed Feb. 4, 1884. (No model.)



Claim.—The adjustable hat-binding ring composed of a strip of flexible non-elastic material overlapped at its ends, and provided with a thumb-piece and a clamp, substantially as described, whereby hats of various sizes may be circumferentially confined upon a hat-block and prevented from undue expansion during the curling and rounding of brims, or other similar operations.

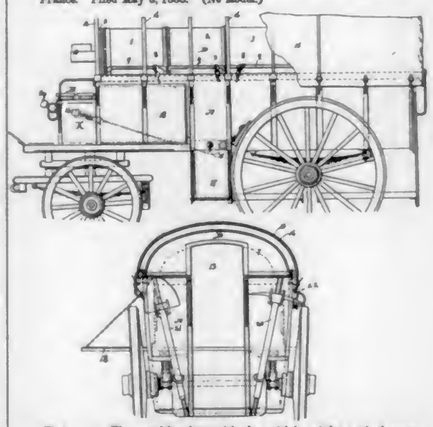
296,283. APPLICATION OF FABRICS TO A BACKGROUND. ALFRED FRESCHL, Detroit, Mich. Filed Feb. 18, 1884. (No model.)

Brief.—The edges of the fabric are secured in saw-kerfs, and a cord or fillet then inserted into the kerfs and properly secured therein.



Claim.—A background covered with fabric, said background provided with one or more kerfs or grooves, the edges of the fabric pressed into said grooves, and in combination therewith a cord or fillet secured in said groove over said edges, substantially as described.

296,284. PORTABLE BAKE-OVEN. EUGENE PAUL GHEERTS, Paris, France. Filed May 8, 1883. (No model.)



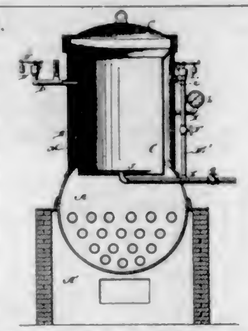
Claim.—1. The combination, with the vehicle, of the arched oven-sections adapted to rest on the sides of the said vehicle, and removably secured thereto, whereby room is obtained in the vehicle beneath the oven for carrying men, bread-making utensils, and other articles, substantially as described.

2. The traveling bread-factory comprising, in combination with the vehicle constructed substantially as described, and carrying the bread-making utensils, and being provided, further, with seats for men, the arched oven-sections adapted to rest on the sides of the said vehicle, and removably secured thereto, room being left beneath the same for the said utensils and for the men to be carried, substantially as described.

296,285. PROCESS APPARATUS. NATHAN G. GURNEY, Baltimore, Md., assignor of one-half to Francis Clark, same place. Filed Mar. 6, 1883. (No model.)

Claim.—1. In a processing apparatus, a jacketed kettle having a connection with a steam-generator and surrounded by a steam-space having open connection with said steam-generator, and means for automatically relieving pressure within said kettle when a predetermined point of pressure has been reached, as set forth.

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2. In a process apparatus, the combination, with a steam-boiler, of a vertical cylinder having its lower open end in direct communication with the steam-space of the boiler, and secured to the boiler-casing by a steam-tight joint, a can receiving and supporting vessel secured within the cylinder by flanges, to form a seat for the removable cover, and a steam-supply pipe for delivering steam into the vessel, upon the cans therein, substantially as described.

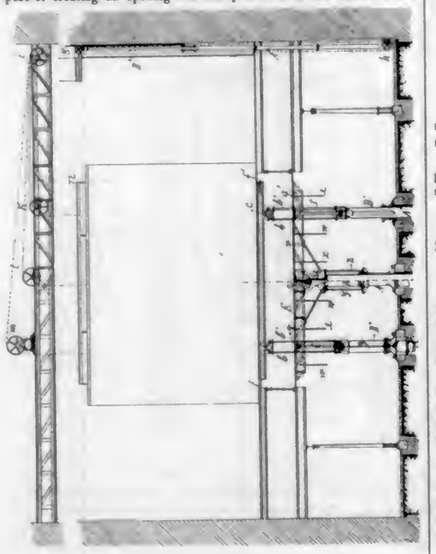
3. In a processing apparatus, and in combination with the boiler A, jacketed kettle and cover, as described, a steam-pipe, E, connecting with the interior of the vessel or kettle, and having a branch, E', connecting with the steam-space exterior to the said kettle, and with proper valves, as and for the purposes set forth.

296,286. HYDRAULIC THEATER APPLIANCE. ROBERT GWINNER, JOHANN KAUDSKY, CARL DENGG, and FRANZ ROTH, Vienna, Austria-Hungary. Filed Jan. 9, 1883. (No model.) Patented in Germany June 6, 1882; in England June 19, 1882, No. 2,889; in France June 24, 1882, No. 149,754, and in Austria-Hungary Aug. 11, 1882, No. 18,384 and No. 31,163.

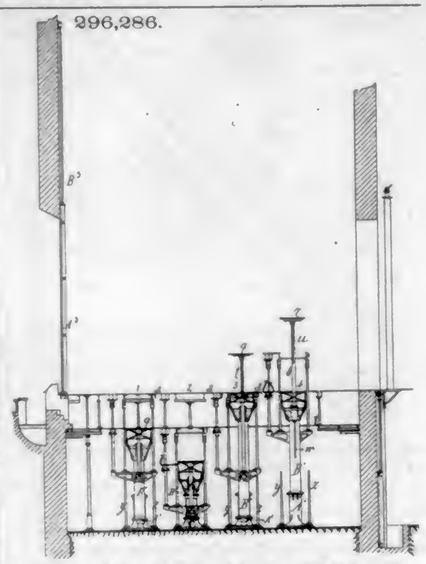
Claim.—1. In stage apparatus, the combination of a hydraulic cylinder, A', located below the stage-floor, and the plungers B', with parts of the stage, for the purpose of raising or lowering the said parts, the same being supported upon and by said plungers.

2. In stage apparatus, the combination of hydraulic cylinders A' with the sections of the stage-platform, the trap E, the hanging scenes, and the fire-curtain, substantially as and for the purpose described.

3. The two longitudinal flaps *f f'* in the stage-platform, for the purpose of creating an opening sufficiently wide to enable a scene to be



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raised by hydraulic means from beneath the stage-platform, in combination with suitable hydraulic appliances for effecting the elevation of the scene, for the purpose set forth.

4. In hydraulic theater appliances, the combination, with the hydraulic cylinders A', of the plungers B', for moving the stage-platform, and the pistons *i*, for moving the traps, substantially as described.

5. In stage apparatus, the combination of the hydraulic cylinder A with the piston B' and the pulleys *g*, *h*, *i*, *k*, *l*, and *m*, for moving the hanging scenes, substantially as described.

6. In stage apparatus, the combination of a hydraulic cylinder, A^3, in the middle of a fire-curtain, a hollow plunger, B^3, branch escape-pipes, and a fire-curtain, substantially as and for the purpose set forth.

296,287. TABLE-CASTER OR OTHER ARTICLE OF TABLE-SERVICE. GURDON W. HULL and CHARLES B. YALE, Wallingford, Conn., assignors to Simpson, Hall, Miller & Co., same place. Filed Feb. 18, 1884. (No model.)



Claim.—1. Metal articles of table and like service, provided with means, substantially such as described, for removably and interchangeably attaching initials, monograms, &c., substantially as specified.

2. Metal articles of table and like service, constructed with the grooved parallel bars *a b* and fitted to receive letters, monograms, &c., substantially as specified.

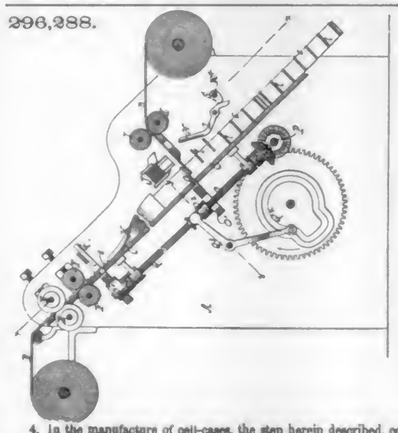
296,288. MANUFACTURE OF CELL-CASES. GUSTAV L. JAEGER, New York, N. Y., and ADOLF FABER DU FAUR, Newark, N. J., assignors to said Jaeger. Filed June 26, 1883. (No model.)

Claim.—1. In the manufacture of cell-cases from continuous longitudinal strips and from cross-strips, the step herein described, consisting in presenting such continuous longitudinal strips with an intermittent motion and interlocking therewith the cross-strips while said longitudinal strips are stationary.

2. In the manufacture of cell-cases from continuous longitudinal strips and from cross-strips, the step herein described, consisting in presenting such longitudinal strips with an intermittent motion, and between the periods of such motion, and while said longitudinal strips are stationary, both interlocking therewith the cross-strips and forming therein cross cuts or slots to receive the cross-strips.

3. The within-described method of making cell-cases, which consists in presenting a series of longitudinal strips with an intermittent motion varying in extent, interlocking therewith successive cross-strips, and severing the longitudinal strips between the periods of such motion previous to each variation therein.

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4. In the manufacture of cell-cases, the step herein described, consisting in feeding to and partially interlocking in its place the leading end of a continuous web before cutting it.

5. The within-described method of making cell-cases, which consists in presenting a series of continuous longitudinal strips, interlocking therewith the leading end of a continuous web, severing the latter at the proper point to form a cross-strip, bottoming the cross-strip, and severing the longitudinal strips into the proper length for a case.

6. In a machine for making cell-cases from a series of continuous longitudinal strips and cross-strips, a mechanism, substantially as described, for presenting the longitudinal strips with an intermittent motion of varying extent at regular intervals, in combination with a mechanism, substantially as described, for interlocking the cross-strips with the longitudinal stripe at similar intervals, substantially as and for the purpose described.

7. In a machine for making cell-cases from a series of continuous longitudinal stripe and cross-strips, the combination of intermittingly-operating mechanism for forming and presenting the longitudinal strips, and similar mechanism for forming and interlocking the cross-strips while said longitudinal strips are stationary, substantially as and for the purpose described.

8. In a machine for making cell-cases from a series of continuous longitudinal stripe and cross-strips, the combination of intermittingly-operating mechanism, substantially as described, for presenting the longitudinal strips, similar mechanism for interlocking the cross-strips with the longitudinal strips, guides for turning the longitudinal strips from a flat to an upright position, and reciprocating cutters, arranged at a point intermediate of the strip-interlocking mechanism and the guides, to act on the longitudinal strips, substantially as and for the purpose described.

9. In a machine for making cell-cases from a series of continuous longitudinal stripe and cross-strips, the combination of rotary cutters for producing the longitudinal strips, intermittingly-operating feed-rollers for advancing the longitudinal strips, guides for turning the longitudinal stripe from a flat to an upright position, and a reciprocating die, arranged at a point intermediate of the feed-rollers and guides, to act on the longitudinal strips, substantially as and for the purpose described.

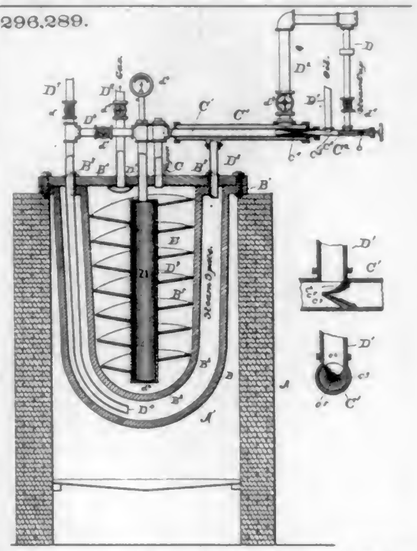
10. In a machine for making cell-cases from a series of continuous longitudinal stripe and cross-strips, the combination of intermittingly-operating mechanism, substantially as described, for presenting the longitudinal stripe, similar mechanism for interlocking the cross-stripe with the longitudinal strips, and a bottoming mechanism, substantially as described, arranged at a point in rear of such interlocking mechanism, to act on the cross-stripe between the periods at which the strip-presenting mechanism operates, substantially as and for the purpose described.

296,289. PROCESS OF GENERATING GAS. GOMER JONES, Washington, D. C., assignor to the Standard Vapor Fuel Iron and Steel Company of New York. Filed Jan. 11, 1884. (No model.)

Claim.—1. In the art of generating gas from petroleum, the method herein described, consisting, first, in feeding the oil in a small stream before a blast of superheated steam; second, applying heat at the moment of vaporization to prevent condensation; and, third, projecting said vapor against a current of superheated steam coming from the opposite direction and under less pressure than the vapor, substantially as described.

2. In the art of generating gas from petroleum, the method herein described, consisting, first, in feeding the oil in a small stream before a blast of superheated steam; second, applying heat at the moment of vaporization to prevent condensation; and, third, projecting and whirling

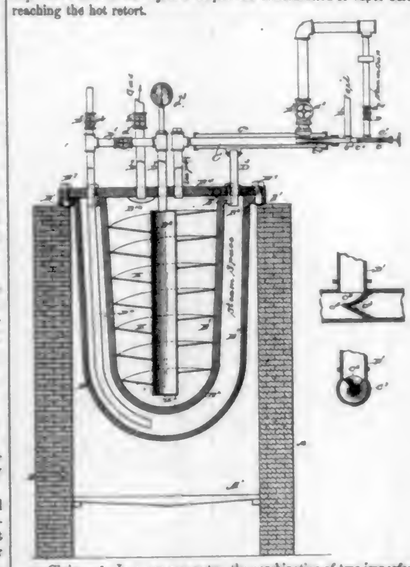
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said vapor against a whirling current of superheated steam coming from the opposite direction and under less pressure than the vapor, substantially as described.

296,290. GAS-GENERATOR. GOMER JONES, Washington, D. C., assignor to the Standard Vapor Fuel Iron and Steel Company of New York. Filed Jan. 29, 1883. Renewed Jan. 11, 1884. (No model.)

Brief.—Oil is vaporized by steam, and oil-vapor is mixed with steam in a hot retort. The oil-vapor pipe leading from the spraying injector is provided with a steam-jacket to prevent condensation of vapor before reaching the hot retort.



Claim.—1. In a gas-generator, the combination of two imperforate jackets, one within the other, forming a steam-space, having inlet and outlet pipes which enter through the cover for said jackets, said cover having supply and exhaust pipes opening into the mixing-chamber formed by said cover and the inner jacket, substantially as described, and for the purpose set forth.

2. In a gas-generator, the combination of imperforate jackets B′ B², cover B⁴, pipes C, D², D⁴, D⁷, and D⁸, passing through said cover, and a pipe, D⁴, connecting pipes D⁴ and D⁸, substantially as described.

3. In a gas-generator, the combination of a mixing-chamber having a vapor-supply pipe and a vapor-exhaust pipe, a drum suspended within said mixing-chamber and connected with a steam-supply pipe, and having an opening connecting its interior with the mixing-chamber and a spiral interposed between the walls of the jacket and drum and between the opening in said drum and vapor-exhaust pipe, substantially as described.

4. In a gas-generator, the combination of two imperforate jackets, one within the other, and forming a chamber, and an exhaust-pipe extending down through said chamber below the bottom of the inner jacket for the purpose set forth.

5. In a gas-generator, the combination of two imperforate jackets one within the other, a cover for said jackets, a steam-supply pipe passing through said cover into the space between the jackets, an exhaust-pipe extending through the cover and between the jackets, a pipe connected to said exhaust-pipe and passing through the cover to near the bottom of the mixing-chamber, and an exit-pipe extending through the cover from said mixing-chamber, for the purpose set forth.

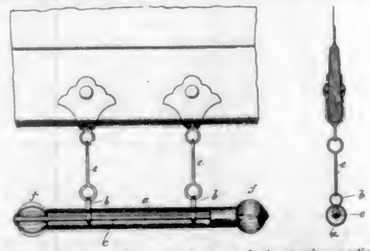
6. In a gas-generator, the combination of two imperforate jackets one within the other, a cover for said jackets, a steam-supply pipe passing through said cover, an exhaust-pipe extending through the cover and between the jackets, a pipe-connection through said exhaust-pipe and extending through the cover to near the bottom of the mixing-chamber, a vapor-supply pipe passing through the cover into the mixing-chamber, and an exit-pipe extending through said cover from said mixing-chamber, substantially as described.

7. In a gas-generator, a steam-supply pipe provided with a needle-valve and a diaphragm having a perforation and a fan-shaped groove which terminates at the perforation, in combination with an oil-supply pipe arranged, substantially as described, to drop the oil in said groove, for the purpose set forth.

8. In a generator, the combination of a mixing-chamber having a steam-inlet pipe, a vapor-inlet pipe, and an exhaust-pipe, a vapor-generator outside of the mixing-chamber, and consisting of a steam-supply pipe, an oil-supply pipe opening into the steam-supply pipe, a vapor-pipe connected to the vapor-inlet pipe of the mixing-chamber and to the steam-supply pipe, and in which the vapor is formed by the commingling of the steam and oil, and means, substantially as described, for heating the vapor in said vapor-pipe at the moment of vaporization, for the purpose set forth.

9. In a gas-generator, the combination of a mixing-chamber, a steam-supply pipe having a needle-valve, an oil-supply pipe, in connection with the needle-valve, a vapor-pipe in which the oil and steam are commingled, and which leads to the mixing-chamber, and a steam-jacket surrounding the vapor-pipe, and having an outlet which leads to said mixing-chamber, substantially as described, and for the purpose set forth.

296,291. WINDOW-SHADE BAR. HERBERT L. JUDD, Brooklyn, N. Y. Filed Feb. 15, 1884. (No model.)



Claim.—1. The combination, with the shade-bar having mortises in it, of eyes, loops, or links passing through such mortises, and a rod or wire within the shade-bar for securing the parts together, substantially as set forth.

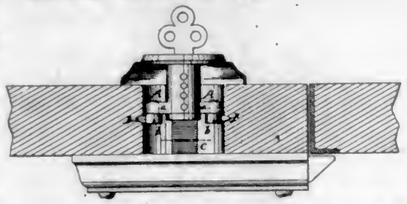
2. The combination, with the shade-bar, of ornamental ends, and a rod passing through the shade-bar and holding the parts together, substantially as set forth.

3. The combination, with the shade-bar, of eyes or loops passing into mortises in the bar, a rod or wire within the bar for holding the same, and end pieces to the bar, also secured by the rod or wire, substantially as specified.

4. The combination, in a shade-bar, of a tube, end pieces to the tube, a wire or rod extending from one end piece to the other, and suspending devices passing through mortises and connected with the wire or rod, substantially as set forth.

5. The combination, with the tubular shade-bar, of ornamental end pieces, and a rod or wire passing through the end pieces and the shade-bar and secured at the ends by riveting or solder, substantially as set forth.

296,292. MEANS FOR ATTACHING LOCKS. JOHN KUSTER, Jr., Stamford, Conn. Filed Feb. 19, 1883. (Model.)



Claim.—The lock-case provided at or near its inner end with the external lateral projections, a, having screw-threaded holes therein, combined with the screws A, positively engaging the screw-threaded holes in said lugs, and having slotted heads b, and the sharpened wings or lugs B, made directly on said head to enter the wood of the door to hold the lock in place, as shown and described.

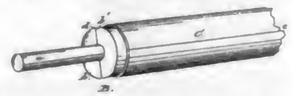
296,293. BUTTER-DISH. JOSEPH D. LUCAS, Toronto, Ontario, Canada. Filed Feb. 18, 1884. (No model.) Patented in Canada Mar. 6, 1884, No. 16,803.



Claim.—1. In combination with a dish of any suitable design, a divided ring, B, designed to fit the edge of the dish, and provided with claws b, arranged to grasp the edge of the dish when the ends of the divided ring are clamped together, as specified.

2. A divided ring, B, having the knife-holder E, handle C, and claws b, attached to it, in combination with lugs c, formed on the ends of the ring and clamped together, substantially as and for the purpose specified.

296,294. INSULATED CONDUCTOR. THEODORE MINER, Brooklyn, N. Y. Filed May 17, 1882. (No model.)



Claim.—1. In an insulated electric conductor, the combination of a metallic conductor or conductors, grooved sections of wood inclosing the same, and a longitudinally-folded strip of sheet metal around the wooden sections, forming a protection thereto, substantially as set forth.

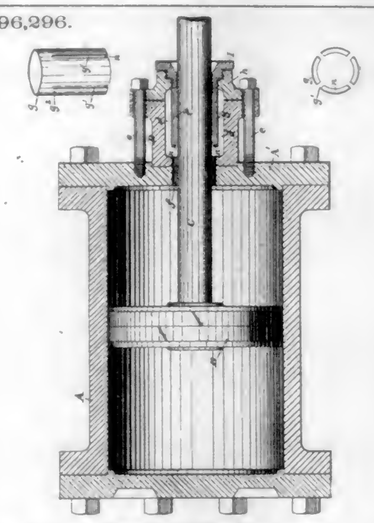
2. An insulated conductor, consisting of one or more conductors, a wooden insulation thereabout formed of grooved sections, inclosing the wires, and an exterior metallic protection inclosing and protecting the wooden insulation, substantially as set forth.

296,295. PISTON-ROD PACKING. THEODORE A. MYERS, Wheeling, W. Va. Filed Nov. 30, 1883. (No model.)

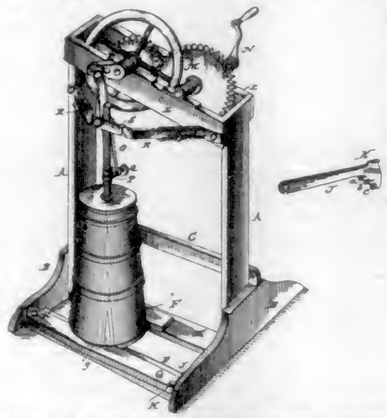
Claim.—1. The herein-described improvement in packing for piston-rods and stems of valves, consisting of a chamber having an annular space, d, and a hole through which passes the rod, and which allows the steam to enter the annular space, and a packing-tube, g, within the chamber, having divisions made by longitudinal slits g′, and one end of the tube being secured to the cap of the chamber, whereby steam entering the annular space around the packing-tube causes it to contract and the exhaust of the steam allows it to expand, as set forth.

2. A packing-tube for piston-rods and stems of valves, having divisions made by longitudinal slits g′ and inward projections n on the expansible ends of the several divisions, as set forth.

296,296.



296,296. CHURN. SAMUEL C. PYLE, Centreville, Iowa. Filed Dec. 5, 1883. (No model.)



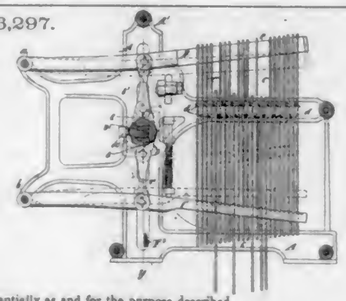
Claim.—The combination of the frame having the motor mechanism and fixed recessed cleat F, the adjustable guide-box composed of the extensible arms E and latch-piece S, the hinged recessed cleat or lock-bar G, and the latch J K, having steps or offsets *a b c*, adapted to engage the free end of the lock-bar, substantially as and for the purpose shown and set forth.

296,297. SHEDDING MECHANISM FOR LOOMS. VERNON ROYLE and JOHN ROYLE Jr., Paterson, N.J. Filed Dec. 6, 1882. (No model.)

Claim.—1. The combination, with the lifting-bar or knife, the lower bar or grid, lifting-wires and needles connected with said wires, a pattern-cylinder, and means for operating the same, of a rock-shaft extending between said bars, mechanism connected directly with said rock-shaft, for imparting an oscillating motion thereto, and toggle-like connections between opposite sides of the rock-shaft and said bars, through which both bars are operated by the rock-shaft, substantially as and for the purpose described.

2. The combination, with the upper bar or knife, the lower bar or grid, the lifting-wires, the needles connected with the lifting-wires, a pattern-cylinder, and means for operating it, of a hollow rock-shaft and connections for operating said bars, bearings for holding the rock-shaft against longitudinal movement, an inner shaft of square or analogous transverse section, fitted to and capable of adjustment lengthwise through said hollow rock-shaft, and mechanism for oscillating said inner shaft, substantially as and for the purpose described.

296,297.



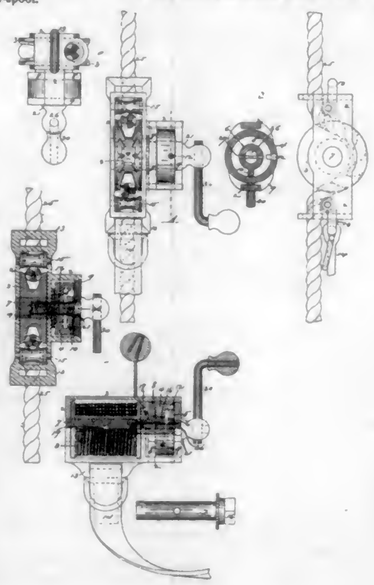
3. The combination, with the bars B C, the lifting-wires *c*, and needles *d*, the pattern-cylinder, and means for operating it, of the hollow rock-shaft D, provided with the arms *e*, the links *e'*, the sliding inner shaft, D', and mechanism for oscillating it, the pivoted bearing *f*, the sleeve *f*³, the yoke E, the support E', wherein said yoke is vertically adjustable, and the set-screw *f*³, all substantially as described.

4. The combination, with the bars B C and means for operating them, the lifting-wires *c*, and the horizontally-arranged needles *d*, of the cylinder F, provided with two sets of holes, a vibrating frame carrying said cylinder, means for operating said frame, and devices whereby said frame, and with it the cylinder, may be shifted in a direction lengthwise of the cylinder and retained in position after shifting, substantially as and for the purpose described.

5. The combination, with the bars B C, means for operating them, the lifting-wires *c*, and the needles *d*, of the cylinder F, provided with two sets of holes, a vibrating frame carrying said cylinder, mechanism for operating said frame, the bracket or bearing G', provided with the reverse inclines *i i'*, and the pivoted latch H, provided with arms *j j'*, substantially as and for the purpose described.

296,298. FIRE-ESCAPE. EDWIN F. SHERMAN, Springfield, Mass. Filed Aug. 22, 1883. (No model.)

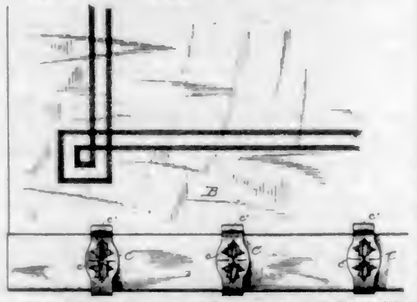
Brief.—A fire-escape in which the turning of the rope-spool turns it onto the screw, binding the friction plates and disk tightly together, preventing the disk, which is rigid upon the rope-spool shaft, and the rope-spool from rotating. By turning the crank secured to the screw the screw is turned out of the spool just enough to loosen the plates and disk and permit the rotation of the spool. A lug formed on the collar secured to the screw comes in contact with a projection within the groove in the friction-disk, preventing the screw from turning too far out of the rope-spool.



Claim.—1. The combination, with a frame, of a shaft having a spool secured thereto or made thereon, adapted to receive a rope or cord and to revolve in bearings in said frame, a recessed disk secured to said shaft or spool to revolve therewith, a screw adapted to be turned in a threaded hole in said shaft or spool, and provided with a projecting lug to impinge against a projection or pin in said disk, and a movable plate secured in said frame, and adapted to be forced against said disk by said screw to stop the rotation of the spool and disk when the spool is turned onto said screw, and to release the disk and spool and permit their rotation when the screw is turned out of the spool, substantially as described.

2. The combination, with a frame, of a shaft having a spool secured thereto or made thereon, adapted to receive a rope or cord and to revolve in bearings in said frame, a recessed disk secured to said shaft or spool to revolve therewith, a screw adapted to be turned in a threaded hole in said shaft or spool, and provided with a projecting lug to impinge against a projection or pin in said disk, and two plates, one movable and secured in said frame, and adapted with a movement to clamp said disk between them when the spool is turned onto said screw, and to release the disk and spool and permit their rotation when the screw is turned out of the spool, substantially as described.

296,299. CURTAIN-FIXTURE. GEORGE E. SWAN, Beaver Dam, Wis. Filed Jan. 23, 1884. (No model.)



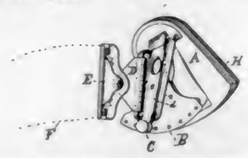
Claim.—1. As an improvement in securing curtains to their weight-sticks, the combination, with the weight-stick and the curtain fabric having its end folded around the same and unsecured thereto, of a series of spring-clasps binding this folded end securely to the stick, said clasps being adapted to be removed when it is desired to disconnect the curtain from the stick, substantially as set forth.

2. The combination of the weight-stick, the curtain fabric folded around the same, with its edge within the fold, as set forth, and unsecured to the stick, and the approximately U-shaped securing-clasps formed with convex spring side portions, and having the outwardly-curved top ends, whereby the fabric is bound to the stick, substantially as set forth.

3. The combination of the weight-stick, the curtain fabric having its end folded around the stick to retain the same, and unsecured to the stick, and approximately U-shaped securing-clasps binding the folded end permanently to the stick and against any movement or disengagement, the stick and curtain being disconnected when the clasps are removed, substantially as and for the purpose set forth.

4. As an improved article of manufacture, the herein-described clasp for weight-sticks, bent up into approximately U shape, with convexed spring side portions, and having its ends curved outwardly, whereby the clasp may be pressed onto the stick or disengaged therefrom without engaging or injuring the curtain fabric, substantially as set forth.

296,300. HERNIAL TRUSS. WILLIAM L. TUCKER, Syracuse, N. Y. Filed Oct. 29, 1883. (Model.)

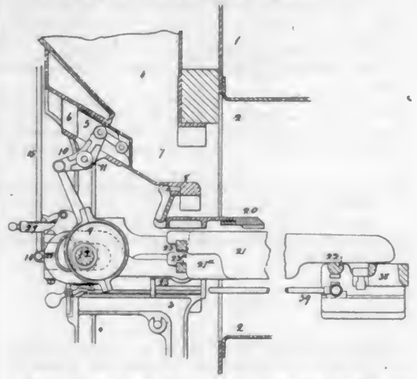


Claim.—1. In a hernial truss, a swiveled hook connecting the belt to the pad, constructed substantially as above described.

2. In a hernial truss, a face-plate constructed with converging slots, substantially as and for the purposes specified.

3. The combination of the swiveled hook D and face-plate C, provided with converging slots, and together creating a hinge between the belt and pad, constructed and operating together, substantially as described, for the purposes specified.

296,301. APPARATUS FOR FEEDING FUEL TO AND IN FURNACES. THOMAS VEARS the elder, JOHN VEARS the elder, THOMAS VEARS the younger, and JOHN VEARS the younger, Liverpool, County of Lancaster, England. Filed Nov. 21, 1883. (Model.)



Claim.—1. In a grate, the combination of a series of fire-bars with a rotating shaft provided with cams for imparting a conjoint forward motion and a serial return motion to said bars, retaining-pawls 36, and releasing-cam 37, substantially as and for the purposes specified.

2. The combination of fire-bars 21ª, carrier 23ª, pulleys 24ª, guides 25, straps 26ª, forks 27ª, shaft 12, cams 35, abutments 34, pawls 36, and releasing-cams 37.

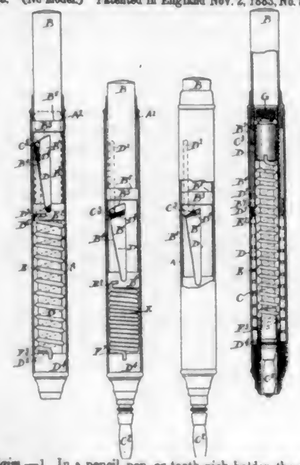
3. The combination of fire-bars 21 21ª with grooved carrier 22 and carriers 23 23ª, supported on guides 25 by pulleys 24 24ª.

4. The combination of a steam-jet pipe, 39, bearing-bar 22, and fire-bars moved conjointly and in series by means of a shaft, 12, and cams.

5. The combination of a steam-jet pipe, 39, with fire-bars moved conjointly and in series, a bearing-bar, 22, and a perforated bridge, 38.

6. The combination of fire-bars moved conjointly and in series, when provided with retaining-pawls 36 and releasing-cams 37, with hopper-feed apparatus, as illustrated and described.

296,302. PENCIL, PEN, OR TOOTH-PICK CASE. ALFRED HAVILAH WOODWARD, Birmingham, County of Warwick, England. Filed Dec. 12, 1883. (No model.) Patented in England Nov. 2, 1883, No. 5,224.



Claim.—1. In a pencil, pen, or tooth-pick holder, the combination, with an exterior casing and a movable cap, of a movable mount adapted to be projected from the holder, and means, as set forth, whereby said mount is automatically locked in such projected position by depressing said cap, and to be released from such locked position by revolving the cap, substantially as described.

2. In a pencil, pen, or tooth-pick holder, the combination of an exterior casing and a movable cap, with a movable mount capable of independent movement with relation to said cap, by means substantially as set forth, and adapted to be projected from the casing and automatically locked in such projected position by depressing said cap, and a coiled spring, which will retract said mount when the cap is revolved, substantially as described.

3. In a pencil, pen, or tooth-pick holder, the combination of exterior casing, a slotted interior casing, and a slotted movable cap, with a movable mount having a pin which projects through the slots in the cap and the interior casing, and, when the mount is projected, engages with a lateral slot opening into said slot in the interior casing, substantially as described.

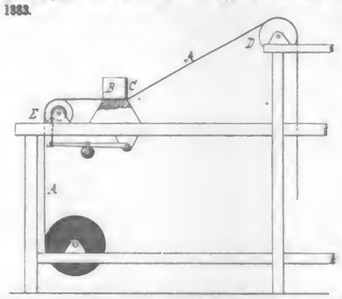
4. In a pencil, pen, or tooth-pick holder, the combination of exterior casing, A, and movable cap B, having a triangular slot, B^2, and spring E, with the interior casing or tube, D, having bayonet-slot D^2 D^3, and mount C, having pin C^2 and spring F, substantially as described.

296,303. POLISHING-LIQUID. EUGEN LUDWIG, Hoboken, N. J. Filed June 9, 1883. (No specimens.)

Claim.—A polishing-liquid composed of Vienna lime, oil of turpentine, linseed-oil, and gasoline, prepared substantially in the manner and for the purpose set forth.

REISSUES.

10,462. MANUFACTURE OF OIL-CLOTH. ALEXANDER F. BUCHANAN, Montrose, N. Y. Filed Mar. 3, 1884. Original No. 276,765, dated May 1, 1883.



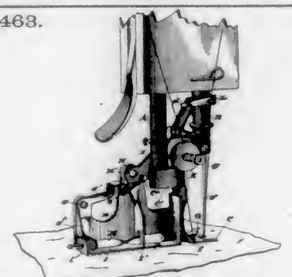
Claim.—1. The within-described process for decorating oil-cloth, which consists in exposing a traveling web of cloth to the action of a series of daubing devices containing colors of different shades, thus coating the web in parallel lines or sections with such colors, then drying the colors and graining the entire coated surface of the web, by a suitable color, in imitation of wood, then drying the graining-color, and, finally, varnishing the coated and grained surface.

2. The open-bottom daubing-troughs arranged side by side, and each expanded horizontally toward the rear edge, where the troughs meet, in combination with the spreading-blade common to the series of troughs, and suitable rollers for guiding and impelling a web of cloth under said troughs and blade.

3. As a new or improved article of manufacture, the oil-cloth herein described, having its surface decorated in imitation of stripe of wood of different shades.

10,468. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. GEORGE W. BAKER, Cleveland, Ohio, assignor to the White Sewing Machine Company, same place. Filed Nov. 26, 1883. Original No. 274,548, dated Mar. 27, 1883.

10,468.



Claim.—1. In a sewing-machine embroidering attachment, the combination, with a shaft provided with a looper having an eye for the passage of the embroidery-thread, of means actuated by the needle-bar and adapted to engage the looper-shaft and reciprocate the same and move the looper away from the needle, and also rotate the looper through a half-circle, and then move the looper toward the needle and rotate it back to its original position, substantially as set forth.

2. In a sewing-machine embroidering attachment, a rotary reciprocating spiral shaft arranged horizontally and operated by the needle-bar, and carrying a looper provided with arms adapted to engage the embroidering-thread, one of said arms being provided with an eye, substantially as set forth.

3. In a sewing-machine embroidering attachment, a horizontal spiral shaft provided with a looper having arms adapted to loop the embroidering-thread, said shaft being operated from the needle-bar by bell-cranks to allow the needle of the machine to pass through the loop of said thread, substantially as set forth.

4. In a sewing-machine embroidering attachment, the combination, with a looping device, of a spiral shaft and bifurcated bell-cranks engaging the shaft, substantially as set forth.

5. In a sewing-machine embroidering device, the combination, with a spiral shaft and a bell-crank adapted to impart a reciprocating motion to said shaft, of a second bell-crank adapted to engage with the first and also with the shaft, whereby the said shaft is moved forward in a horizontal direction, substantially as and for the purpose set forth.

10,464. CURTAIN-PIN. JOHN DAY, Brooklyn, N. Y. Filed Feb. 13, 1884. Original No. 275,160, dated Apr. 3, 1883.



Claim.—1. The improved curtain-pin comprehending the ornamental head *a*, the metal back plate, *c*, the clamping-rim, *b*, the screw-stem *f*, riveted at one end to the metal back plate, and the hollow ornamental shank surrounding the screw-stem, substantially as set forth.

2. The curtain-pin having an ornamental head, a metallic back, and a screw-stem fastened to such metallic back, a wooden shank, A, with an ornamental exterior surface, and a central hole through which passes the screw-stem, substantially as and for the purposes set forth.

3. The curtain-pin having an ornamental head and a metallic back, a screw-stem attached to the metallic back, a tubular shank passed over the screw-stem, and a feather or projection to prevent the tubular shank being rotated upon the screw-stem, substantially as specified.

PHOTO-LITH. NORRIS PETERS WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE UPTON.

Decided March 21, 1884.

1. PARAGRAPH 1 OF RULE 93 AND THE BEGINNING OF RULE 94 CONSTRUED—CONFLICT IN CLAIMS DEFINED.

The spirit of the rule of interference is not that claims must conflict in terms in order to constitute an interference, but that the subject-matter claimed must conflict.

It is not essential that the claims should be so alike that the claim in any one case will apply just to the matter or device of the other or others.

If the claim of one party will include that of another, there is an interference in fact.

It should be settled in the Patent Office who is entitled to the broad claim, and this should appear as the result of an interference proceeding.

2. SUBSEQUENT PATENTS WITH BROADER CLAIMS.

Neither the spirit of the law nor public policy sanctions the granting of patents with specific claims while applications with generic claims are still pending, the objection being that, whether the application with the generic claim belongs to the same party who has a specific claim under the genus, or is an application of a different party, a patent covering by a generic claim, if a subsequent patent, improperly extends the monopoly.

APPEAL from the Primary Examiner.

LIGHTNING-CONDUCTORS.

Application filed June 25, 1883.

Messrs. Dyer & Seely for the applicant.

BUTTERWORTH, *Commissioner:*

The Examiner says:

This appeal is taken from the action of the Primary Examiner refusing a patent to the applicant, in view of Patent No. 282,449 to T. H. Dodge, July 31, 1883, and involves a question of practice as to the right of the Examiner to cite as a reference a patent granted on an application pending at the same time with the application under consideration.

The facts are as follows:

The application at issue was filed June 25, 1883. That of the patentee, Dodge, was filed December 15, 1879, and a patent accordingly issued as above July 31, 1883. No question is here raised as to the pertinency of the reference from lack of identity of subject-matter. In fact, it is acknowledged to be generically the same in both. Dodge, the patentee, made one very limited claim to the construction shown and described. The applicant makes broad claims to the genus, and denies the right of the Examiner to cite said patent, holding that under the rules either an interference should be declared or both patents allowed to issue, and cites Rule 74 as sustaining his views. No interference exists nor has at any time existed.

The Examiner is in error as to there being no interference. An interference does and did exist. The spirit of the interference rule is not that claims must conflict in terms in order to constitute an interference, but that the subject-matter claimed must conflict. It is not necessary that the claims should be so alike that the claim in either case will apply just to the matter or device of the other. If the claim of one party will include that of the other, there is an interference in fact. The Dodge case having got to issue, the Examiner was right in citing the patent to the applicant. It should be settled in the Patent Office who is entitled to the broad claim, and this should appear as the result of an interference proceeding.

Neither the spirit of the law nor public policy sanctions the granting of patents with specific claims while applications with generic claims which include the specific claim allowed, are still pending, the objection being that whether the application with the generic claim pending belongs to the same party who has a specific claim under the genus, or is an application of a different party, a patent covering by a generic claim, if a subsequent patent, improperly extends the monopoly.

The applicant in the present case will either stand rejected on the patent of Dodge or make the affidavit required by the Examiner and request an interference.

The Examiner will be guided in other cases by the construction of the rule herein announced.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of California.

THE GIANT POWDER COMPANY *v.* THE SAFETY NITRO POWDER COMPANY *et al.*

Decided February 18, 1884.

1. If a patent is inoperative so far as not to cover all that the party is entitled to claim, it is inoperative within the meaning of the provisions of the statute relating to reissues.
2. The question whether there is a fraud in the surrender and application for a reissue is for the officers of the Patent Office alone to decide, and their determination is conclusive in a collateral proceeding. The court can only examine and pass upon what appears upon the face of the patent, and see whether there is anything to indicate its invalidity or render it void upon its face. All questions of fact behind the patent are to be examined, heard, and conclusively determined by the Commissioner of Patents.
3. Where an original patent is valid, but the reissue based thereon is invalid, there is no good reason why a second reissue embracing the valid claim alone of the original patent would not be valid.
4. The object of a plea, where there is some certain single issue requiring but little evidence that will dispose of the whole case, if sustained, is to try that issue without putting the parties to the expense of the trial of the case at large, and pleas are limited to a single defense or issue, unless by permission of the court the defendants are allowed to plead double. *Held* that the plea in this case does not conform to this rule, and besides comes too late.
5. Reissued Letters Patent No. 10,267, issued January 9, 1883, upon the application of Alfred Nobel, to the Giant Powder Company as assignee, for an improvement in explosive compounds, examined and sustained.

Mr. George Harding and *Mr. Hall McAllister* for the complainant.

Mr. M. A. Wheaton for the defendants.

SAWYER, *C. J.:*

In the case of *The Giant Powder Company* v. *The Safety Nitro Powder Company*, a motion for leave to file an amended plea setting up several distinct defenses has been argued in connection with the argument as to the sufficiency of the plea already filed. The Giant Powder Company was the owner of the original patent, No. 78,317. This patent was surrendered and reissued as Patent No. 5,619. Afterward for the purpose of correcting a clerical error, Patent No. 5,619 was surrendered and reissued as Patent No. 5,799. A suit upon this last patent was decided by Mr. Justice Field in this court, in which it was held that the reissue was broader in its scope than the original invention as described in the patent, the original patent, No. 78,317, being for a combination of nitro-glycerine with some non-explosive absorbent material, while the reissue embraced explosive as well as inexplosive absorbents; and Mr. Justice Field held that in that particular the reissue was broader than the original patented invention, and for that reason void. (*Giant Powder Co.* v. *Cal. Vigorit P. Co.*, 6 Sawyer, 509.) This being so, Patent No. 5,799 was surrendered and reissued again in Patent No. 10,267; and in Patent No. 10,267 both the specifications and the claim are identical with those of the original patent, No. 78,317, which had before been surrendered and reissued in the patents before mentioned. These facts are set up in the plea, and it is claimed that Patent No. 10,267 is void, it being identical with the original surrendered patent, No. 78,317. That patent was surrendered as being inoperative, and as a reissue can only be had where the patent is inoperative it is claimed that the original patent must have been held to be wholly inoperative. I think counsel are mistaken in that proposition. A patent may be inoperative, in my judgment, when it is inoperative in part. I do not think it must be absolutely inoperative in its entirety. If it is inoperative so far as not to cover all that the party is entitled to claim, and what he is entitled to claim appears in the specifications, it being inoperative to that extent, I think it would be inoperative within the meaning of the provisions of the statute, and entitle the party to a reissue. It does not necessarily follow that Patent No. 78,317 was wholly inoperative or void or useless. I am not aware that it has ever been held to be utterly invalid in all its parts. The question of fraud in procuring the reissue, in my opinion, does not arise on this plea, because the question as to whether a mistake has been innocently made in not covering by the patent all that the party was entitled to cover. The question whether there is a fraud in the surrender and application for a reissue is for the officers of the Patent Office alone to decide, and their determination is conclusive in a collateral proceeding. This court can only examine and pass upon what appears upon the face of the patent, and see whether there is anything to indicate its invalidity or render it void upon its face. All questions of fact behind the patent are to be examined, heard, and conclusively determined by the Commissioner of Patents.

This principle has been affirmed over and over again by the Supreme Court. I do not think the fact that the patent was reissued in the indentical terms of the original patent, No. 78,317, renders it void. The specifications of the patent last surrendered were amended by omitting the objectionable parts. Patents are constantly reissued for portions of the specifications and claims in the identical language of the original patent. Each claim in its nature substantially and in effect covers a distinct and separate invention, and is an independent patent in substance and effect. It might be the subject of an independent patent, and if in any reissue, so far as the patents are identical, those claims are valid in the reissued patent having another or additional valid claim, or a modified claim, or some other change in the specifications. I do not perceive why they would not be valid in a patent limited to them alone. If they can all stand together, I do not see why a reissued patent covering the identical claims by themselves may not stand and be valid.

Patents may be reissued in divisions. It is not necessary that all claims in the reissue should be included in one patent. They are often issued in divisions, and I suppose a patent might be reissued in divisions in the identical language as to some of the claims, the changes being included in another and separate division or patent—that is to say, all claims or inventions which are fully covered and operative may be reissued by themselves in one division in the identical language of the original surrendered patent, and all other claims, or the amendments to the specifications, and covering the invention shown by the amended specifications, in another division or patent. I do not see why a part of the original claims may not be reissued in one division in identically the same language as in the original patent, and the rest in another. If this can be done without affecting the validity of the reissue, and a party finds that he has made a mistake and surrendered a valid patent and obtained a void reissue, I do not perceive why he may not fall back upon his old patent and have it reissued or newly-amended specifications embodying that portion which is valid. If parts which are identical are valid in connection with other parts in a reissue, I do not perceive why they should not be valid in a reissue containing no additional matter. Now, in this particular class of cases it is quite extensively claimed by the bar, I think, that the Supreme and some of the circuit courts have made something of a departure in some of their late decisions upon reissues, including the reissue in question. Mr. Justice Field held Patent No. 5,799 to be void, while several of the circuit judges at the East held it to be valid.

Where courts make a mistake, it may very properly be conceded that a party may very well make an honest mistake himself. On the argument of the plea, my attention has been called for the first time to the case of *Gage* v. *Herring*, (107 U. S., 646,) in which, I think, the principle involved in the plea is distinctly determined.

The court says:

> The invalidity of the new claim in the reissue does not indeed impair the validity of the original claim, which is repeated and separately stated in the reissued patent. Under the provisions of the patent act, whenever through inadvertence, accident, or mistake, and without any willful default or intent to defraud or mislead the public, a patentee in his specification has claimed more than that of which he was the original and first inventor or discoverer, his patent is valid for all that part which is truly and justly his own, provided the same is a material and substantial part of the thing patented and definitely distinguishable from the parts claimed without right; and the patentee, upon seasonably recording in the Patent Office a disclaimer in writing of the parts which he did not invent or to which he has no valid claim, may maintain a suit upon that part which he is entitled to hold, although in a suit brought before the disclaimer he cannot recover costs. (Rev. Stats., secs. 4917, 4922; *O'Reilly* v. *Morse*, 15 How., 62, 120, 121; *Vance* v. *Campbell*, above cited.) A reissued patent is within the letter and the spirit of these provisions.

If a reissued patent is within the letter and spirit of these provisions, as stated, and "the invalidity of the new claim in the reissue does not indeed impair the validity of the original claim, which is repeated and separately stated in the reissued patent," it is not apparent to my comprehension why a second reissue embracing the valid claim alone of the original patent would not be valid. I cannot, therefore, say that the Patent No. 10,267 is void by reason of anything asserted in the plea upon the grounds set forth. The plea must, therefore, be overruled.

With reference to the filing of the proposed so-called amended plea, I think it is not within the reasonable discretion of the court to allow it to be filed at this late day. In view of the circumstances of this case, as they appeared before this court in the various stages of the proceedings, I think it would be an abuse of its discretion to allow the plea to be filed, if it were otherwise a proper plea. In fact, the proposed amended plea sets up all the defenses that can be made to a patent, and it would involve the trial of the whole case with the exception of the single question of infringement.

The object of a plea, where there is some certain, single issue requiring but little evidence that will dispose of the whole case if sustained, is to try that issue without putting the parties to the expense of the trial of the case at large, and pleas are limited to a single defense or issue, unless by permission of the court the defendants are allowed to plead double. If the court allows this so-called amended plea to be filed, it would allow parties to try all the issues in the case with the exception of the one issue as to infringement, and it would be necessary to try the whole case on the merits by piecemeal. Besides, it comes too late. After this plea was originally filed it was stipulated that it stand for an answer, so far as it was available as a defense. An answer and replications were filed, and the parties commenced taking testimony.

In the course of taking the testimony the attorney for the defendant ascertained the importance of having the case decided on his plea, provided it was good, and thought he was at a disadvantage in his then position. He therefore moved upon the affidavits to be relieved from the stipulation, taking the plea for an answer. He claimed, among other things, to have misunderstood the practice of the court. After argument the court, thinking there might be something in the plea, as this exact point had never been decided so far as it was aware, and, if good, it would save the expense of a trial, relieved the party from the stipulations and allowed the plea to be set down for argument. I did not think the exact question had ever been presented before, and when the argument was made upon the stipulation I had not seen the case of *Gage* v. *Herring*, *supra*, which I think decides the principle. I thought there was perhaps something in the plea. At all events I thought it was worthy of being carefully considered, for, if the plea is good, and the patent absolutely void upon its face, I saw no occasion for putting the parties to a great expense of going to a trial of all the issues in the case. I therefore set aside the stipulation and allowed the defendant to withdraw its answer in the case and set the plea down for a hearing. It was set down for a hearing and continued from time to time, until finally it came up for argument, counsel from Philadelphia coming on to argue the case on the validity of the plea. When the plea was called for argument, it was found that there had been a change of attorneys, and an application was made by the substituted attorney at the moment for leave to file the proposed so-called amended plea, which presents all the issues in the case with the exception of the one issue of infringement. I think, under the circumstances, it would be improper, and it would be an abuse of discretion, to allow this so-called amended plea to be filed at this late day.

Leave to file the proposed amended plea is therefore denied.

U. S. Circuit Court—Western District of Pennsylvania.

LLOYD *v.* MILLER *et al.*

Decided February 12, 1884.

LLOYD—PUDDLING-FURNACES.

Letters Patent No. 135,650, granted February 11, 1873, to E. Lloyd, for an improvement in puddling-furnaces, construed and sustained, but held not to be infringed by the defendants.

Mr. D. F. Patterson and *Mr. E. C. Cotton* for the complainant.

Messrs. Bakewell & Kerr for the defendants.

ACHESON, *J.:*

The plaintiff's Letters Patent No. 135,650, dated February 11, 1873, are for an improvement in furnaces for boiling, heating, and puddling iron. The objects to be attained thereby, as stated in the specification, are the prevention of the rapid burning out of the hearth-plate and the base of the chimney or stack and the facilitating of the combustion of the inflammable gases in the furnace by supplying air thereto, thereby utilizing fuel and preventing largely the escape of smoke.

The furnace described in the specification and accompanying drawing, aside from the plaintiff's improvement, is a puddling-furnace of the well-known kind, having the ordinary exit-flue leading into the high chimney or stack.

The invention is thus described: "Beneath the hearth-plate *c* and a plate, *c*," (which is merely the continuation of the hearth-plate under the neck,) "is an air-conduit, G, which extends from the ash-pit opening E to the back wall of the stack C, and communicates with this stack at its base by means of an opening, *g*. This will allow" (the specification proceeds to declare) "a current of air induced by the draft of the stack C to enter the stack at its junction with the flue *h*."

The resulting advantages thereby secured (as is affirmed) are the following: First, the current of air so entering the stack will "violently turn back the flames rushing through the flue *h*," retard the escape of inflammable gases, and, mixing therewith, promote their combustion in the furnace; second, the air in its passage through the conduit G will absorb heat from the hearth-plate and plate *c*, and, keeping down their temperature, preserve them; third, "and as the air impinges on the walls of the chimney at its base, these walls will be protected from the intense heat to which they are subjected in other puddling-furnaces."

The claim is in these words:

> The air-conduit G, arranged beneath the hearth and communicating with the chimney or stack at the base thereof, for the purposes and in the manner substantially as described.

It was not a new thing to let air circulate underneath the hearth of a puddling-furnace to cool and preserve it; and it is shown that for many years prior to the plaintiff's invention such furnaces were constructed with a passage-way or conduit for air beneath the hearth and extending from the ash-pit opening to the back-wall of the stack, with an aperture through that wall outwardly into the external air, so that this conduit was supplied with air from both ends, the fresh air coming in at the stack-end passing underneath the base of the stack on its way to the ash-pit. Nor was it new to promote combustion in the furnace by a supply of heated air drawn from underneath the puddling-hearth. I incline, however, to think that the plaintiff's method of construction, whereby communication is secured between the air-conduit G and the base of the stack by means of an opening into the stack, is new, at least in puddling-furnaces; and, assuming that the defense of anticipation has not been made out successfully, I address myself to the inquiry whether the defendants infringe the plaintiff's patent.

The distinguishing feature of the plaintiff's invention is the opening *g* into the stack at its base, whereby a current of air induced by the draft of the stack is permitted "to enter the stack." Great prominence is given to that opening in the specification and accompanying drawing, and, although not expressly mentioned in the claim, it is necessarily implied. It is, indeed, indispensable, for without the opening *g* there would be no communication whatever between the air-conduit G and the chimney or stack. Every advantage specified or contemplated is altogether due to that opening, which, in my judgment, is of the essence of the invention.

The alleged infringing furnaces were constructed by William Swindell, under three patents, for improvements in metallurgic furnaces, granted to him in the years 1875 and 1878. In the defendants' furnaces the gas from the producer, where the fuel is consumed, is admitted to the bed through a number of ports arranged below an equal number of hot-air ports. A series of air-flues pass under the bed, but not in contact with the bottom, and over the crown or arch of the furnace to the end where the gas enters, and the gas and air there meeting pass together into the combustion-chamber, which contains the iron to be worked. The ingoing air is heated, and becomes more and more heated as it passes over the arch toward the discharge-ports by reason of the flues through which it courses being in contact with alternate flues which conduct the waste-heat from the combustion-chamber. Combustion begins when the gas from the producer meets the hot air, and, uniting, they enter the bed. The waste and heated products of combustion pass out of the opposite end of the bed into flues which extend over the crown or arch of the furnace and lead to the stack. No part of the air enters the waste-flues without first passing through the combustion-chamber, and it reaches the stack altogether through the waste-flues.

It cannot be pretended, and, indeed, it is not urged, that the method of construction found in the defendant's furnaces secures the first two above-enumerated advantages which appertain to the plaintiff's invention. Swindell's air-conduits have no tendency to cool the hearth-plate or bottom of the furnace, and he does not conduct into the stack a current of air to retard the escape of inflammable gases or promote their consumption in the furnace. There is, indeed, no connection or direct communication between his air-flues and the stack, the air, as we have seen, reaching the stack through the waste-flues after it has fully served its purpose in the combustion-chamber. It is however earnestly contended that Swindell, by a mere structural or formal change, has secured, and that the defendants enjoy, the third advantage due to the plaintiff's invention—viz., protection to "the walls of the chimney at its base" from the intense heat to which they are subjected in other puddling-furnaces.

The plaintiff's theory is that the arched waste-flues of the defendants' furnace are part of the chimney or stack, which, he insists, begins at the point where these flues leave the combustion-chamber, and, as at that point the air passing in through the air-flues absorbs heat from and tends to preserve the walls of the waste flues, he maintains that there is an infringement of his patent.

I have great difficulty in accepting the hypothesis that the arched waste-flues are part of the chimney or stack within the meaning of the plaintiff's patent. It is plain to me that when his specification speaks of the chimney it means the high stack, the two words being used as equivalents. Now, I do not see that the defendants' arched waste-flues are any more a part of the chimney or stack than is the flue *h* in the plaintiff's furnace. The function of each is to convey the waste heat, smoke, &c., from the combustion-chamber to the stack; but if the arched waste-flues be considered as part of the chimney or stack, the fact remains that there is no communication between the air-flues and waste-flues by means of an opening. In truth, there is no communication whatever between them. They alternate and are built side by side up, over, and around the arch of the furnace; but they are completely separated from each other by brick walls four and one-half inches thick.

It is also an assumption of the plaintiff that the defendants' arched air-flues are "compartments of the chimney;" but surely they come not within his own counsel's definition of a chimney—viz., "the flue which leads from the combustion-chamber to conduct waste heat and smoke away." They perform no such service. Their function is to supply the working-chamber with hot air to promote a vivid combustion. Incidentally the ingoing air does absorb heat from the common division-walls between the two sets of flues, and thus tends to the preservation of these walls; but this is not effected by any means disclosed by the plaintiff's patent, nor by any method analogous thereto or suggested thereby.

In no possible view of the case can the plaintiff's pretentions be sustained without holding that the opening *g* into the chimney or stack for the admission thereto of a current of air is non-essential, and that external contact with the walls of the chimney or stack at its base is "communication" within the meaning of his specification. But such constructive expansion of the specification is, it seems to me, utterly inadmissible. Moreover, a claim so comprehensive could scarcely stand, in view of the prior state of the art.

Let a decree be drawn dismissing the bill, with costs.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., March 28, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Charles Koerner, of Alton, Illinois, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., March 29, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Samuel J. R. Wilson, of Fairfield, Wayne county, Illinois, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., March 29, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that David McWilliams, of Monticello, Piatt county, Illinois, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., March 29, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Frederick E. Abbott, of Worcester, Massachusetts, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., March 29, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Henry Eatherton, of Monticello, Piatt county, Illinois, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., April 1, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that G. H. Chandler, of Karns City, Butler county, Pennsylvania, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., April 3, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Albert T. Summers, of Decatur, Illinois, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., April 1, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that J. G. Bigelow, of Washington, D. C., be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., April 3, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that William H. Woodward, of Carbondale, Jackson county, Illinois, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
AMOS HADLEY,
Acting Chief Clerk.
The Commissioner of Patents.

Issue of April 8, 1884.

Patents	412—	No. 296,304 to No. 296,715	inclusive.
Designs	13—	No. 14,944 to No. 14,956	inclusive.
Trade-Marks	16—	No. 11,070 to No. 11,085	inclusive.
Labels	12—	No. 4,039 to No. 4,050	inclusive.
Reissues of patents	3—	No. 10,465 to No. 10,467	inclusive.
Total issue	456		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	.....	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	6	1	New Hampshire	3	.....
California	5	.....	New Jersey	17	1
Colorado	1	.....	New Mexico Territ'y	.....	.....
Connecticut	18	.....	New York	77	10
Dakota Territory	1	.....	North Carolina	2	.....
Delaware	.....	.....	Ohio	25	.....
District of Columbia	10	.....	Oregon	1	.....
Florida	.....	.....	Pennsylvania	46	2
Georgia	5	.....	Rhode Island	15	.....
Idaho Territory	.....	.....	South Carolina	3	.....
Illinois	27	.....	Tennessee	4	.....
Indiana	12	1	Texas	4	.....
Indian Territory	.....	.....	Utah Territory	2	.....
Iowa	9	.....	Vermont	1	.....
Kansas	3	.....	Virginia	2	2
Kentucky	3	.....	Washington Territ'y	1	.....
Louisiana	3	.....	West Virginia	.....	.....
Maine	5	.....	Wisconsin	10	2
Maryland	3	4	Wyoming Territory	.....	.....
Massachusetts	39	.....	United States Army	.....	.....
Michigan	19	1	United States Navy	.....	.....
Minnesota	3	.....			
Mississippi	1	.....	Total to citizens of		
Missouri	21	1	the United States	408	25
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	2	.....
Austria-Hungary	1	.....	Hawaiian Islands	.....	.....
Barbadoes	.....	.....	Hayti	.....	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	Mexico	1	.....
Brazil	.....	.....	New Zealand	1	.....
Canada	5	.....	Russia	.....	.....
Chili	.....	.....	Scotland	.....	.....
Colombia, U. S. of	.....	.....	Sweden	.....	.....
Cuba	.....	.....	Switzerland	1	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of		
England	5	.....	foreign countries	17	3
France	1	.....			

DESIGNS.

14,944.—ORNAMENTATION OF AN UMBRELLA OR PARASOL.—*William A. Drowen*, Philadelphia, Pa. Application filed January 2, 1884. Term of patent 7 years.

14,945.—COOKING-STOVE.—*William M. Gartshore*, London, Ontario, Canada. Application filed March 3, 1884. Term of patent 7 years.

14,946 and 14,947.—FORK.—*Hubert C. Hart*, Unionville, Conn. Applications filed February 7, 1884. Term of patents 7 years.

14,948.—EARTHENWARE DISH.—*Edwin Haviland*, Plainfield, N. J. Application filed December 4, 1883. Term of patent 3½ years.

14,949.—FONT OF PRINTING-TYPE.—*Charles E. Heyer*, Chicago, Ill., assignor to *Arthur M.* and *Alson E. Barnhart*. Application filed February 15, 1884. Term of patent 14 years.

14,950.—FONT OF PRINTING-TYPE.—*William W. Jackson*, Philadelphia, Pa., assignor to *MacKellar, Smiths & Jordan*, same place. Application filed February 28, 1884. Term of patent 14 years.

14,951.—CARPET.—*Winthrop L. Jacobs*, East Orange, N. J., assignor to *The Hartford Carpet Company*, Hartford, Conn. Application filed July 23, 1883. Term of patent 3½ years.

14,952.—GIMP.—*Isaac H. Lester*, New York, N. Y. Application filed January 25, 1884. Term of patent 3½ years.

14,953.—TOY MONEY-BOX.—*William S. Reed*, Leominster, Mass. Application filed December 10, 1883. Term of patent 3½ years.

14,954.—CHENILLE.—*Christian A. Schmidt*, Hoboken, N. J. Application filed January 17, 1884. Term of patent 14 years.

14,955.—CLOCK-FRAME.—*Joseph Schweizer*, New York, N. Y., assignor to *The Ansonia Clock Company*, Ansonia, Conn. Application filed January 7, 1884. Term of patent 3½ years.

14,956.—OIL-STOVE.—*George W. Scott*, Lansingburg, assignor to *Scott, Quimby & Co.*, Troy, N. Y. Application filed December 17, 1883. Term of patent 7 years.

TRADE-MARKS.

11,070.—WOVEN FABRICS, CARPETS, RUGS, OIL-CLOTHS, AND MATTINGS.—*Martin I. Cooley*, North Plainfield, N. J. Application filed January 21, 1884.

"The words 'GLOBE MANUFACTURING CO.'"

11,071.—CANNED SOUPS, MEATS, AND FISH.—*Germania Packing Co.*, New York, N. Y. Application filed February 7, 1884.

"The representation of the statue of Germania."

11,072.—CERTAIN PICKLES, TABLE-SAUCES, AND CONDIMENTS.—*Globe Pickle Company*, St. Louis, Mo., and Chicago, Ill. Application filed December 14, 1883.

"The representation of a globe crossed by parallel and meridian lines upon a circular background, upon which are the words 'ST. LOUIS & CHICAGO' and the words 'GLOBE PICKLE COMPANY.'"

11,073.—PERFUMERY.—*Hatfield Brothers*, Philadelphia, Pa. Application filed February 20, 1884.

"The word 'PANSY.'"

11,074.—ROLLER-SKATES.—*Micajah C. Henley*, Richmond, Ind. Application filed February 18, 1884.

"The representation of a sun or disk with lines radiating from the periphery thereof, said lines and sun forming a background, a side view of the roller-skate in the foreground, the words 'HENLEY' and 'SKATE' being above and below said figure, respectively, and the words 'RICHMOND ROLLER SKATE' above the foregoing words and figures."

11,075.—RYE AND OTHER WHISKY.—*Whits, Hentz & Co.*, Philadelphia, Pa. Application filed February 27, 1884.

"The monogram of the letters 'W. H. & Co.'"

11,076.—CIGARETTES.—*Kinney Tobacco Company*, New York, N. Y. Application filed December 21, 1883.

"The figure of a woman, a Turkish fez, a radiance of light, the words 'LA FAVORITA,' and the fac-simile signature 'KINNEY BROS.'"

11,077.—SMOKING-TOBACCO.—*B. Leidersdorf & Co.*, Milwaukee, Wis. Application filed February 13, 1884.

"The word-symbol 'MINERS AND PUDDLERS,' arranged in one or more lines, and irrespective of the question whether the word 'AND' is printed in full or represented by the commonly-used character '&.'"

11,078.—PLUG-TOBACCO.—*Lawrence Lottier*, Richmond, Va. Application filed December 26, 1883.

"The word-symbol 'POLICE.'"

11,079.—SAFETY-MATCHES.—*Trummer & Co.*, London, England. Application filed March 3, 1884.

"The representation of a leaping horse inclosed within an oval line."

11,080.—MATCHES.—*Trummer & Co.*, London, England. Application filed March 3, 1884.

"The arbitrary symbol of a reindeer."

11,081.—MATCHES.—*Trummer & Co.*, London, England. Application filed March 3, 1884.

"The word 'GIRAFFE' or the arbitrary symbol giraffe, either one alone or both together."

11,082.—REED-ORGANS.—*Whitney Organ Company*, Detroit, Mich. Application filed February 26, 1884.

"The word 'CENTURY.'"

11,083.—HOLLANDS.—*H. B. Wiggin's Sons*, New York, N. Y. Application filed February 25, 1884.

"The word 'ROCKSONIA.'"

11,084.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed February 29, 1884.

"The word-symbol 'FORGET-ME-NOT' and the pictorial representation of a bunch of forget-me-nots."

11,085.—TWIST AND PLUG TOBACCO.—*Inge & Mahone*, Petersburg, Va. Application filed March 12, 1884.

"The word-symbol 'SWEET HOME.'"

LABELS.

4,039.—Title: "ANGOSTURA AROMATIC BITTERS."—*C. W. Abbott & Co.*, Baltimore, Md. Application filed March 3, 1884.

4,040.—Title: "DR. ALLING'S TRIUMPH INHALER AND INHALANT."—*C. P. Alling*, Buffalo, N. Y. Application filed March 15, 1884.

4,041.—Title: "DR. EMPET'S OIL" (FOR A MEDICAL COMPOUND.)—*Liston B. Bassett*, Norwich, N. Y. Application filed March 12, 1884.

4,042.—Title: "SWEET LULLABY BOUQUET."—*Philip L. Fisher*, New York, N. Y. Application filed March 12, 1884.

4,043.—Title: "MRS. FLEMING'S HOT SPRINGS BEAUTIFIER" (FOR THE COMPLEXION.)—*Sarah Alice Fleming*, Hot Springs, Ark. Application filed March 13, 1884.

4,044.—Title: "DREW'S MANILLA PLAIN PAPER BAGS."—*F. L. Hooper & Co.*, Baltimore, Md. Application filed March 12, 1884.

4,045.—Title: "SUCCESS," (FOR FLOUR.)—*John B. A. Kern*, Milwaukee, Wis. Application filed March 13, 1884.

4,046.—Title: "SPEAR HEAD" (FOR CIGARS.)—*Mensing & Stecher*, Rochester, N. Y. Application filed March 13, 1884.

4,047.—Title: "TWENTY-FOUR O'CLOCK" (FOR CIGARS.)—*Mensing & Stecher*, Rochester, N. Y. Application filed March 14, 1884.

4,048.—Title: "OMINICO," (FOR A MEDICAL AND TOILET PREPARATION.)—*Stanley W. Neuer*, New York, N. Y. Application filed March 13, 1884.

4,049.—Title: "IRON TONIC & BLOOD PURIFIER."—*C. C. F. Schroeder & Co.*, Berrett, Md. Application filed March 14, 1884.

4,050.—Title: "ROCHESTER'S EXCELSIOR," (FOR CIGARS.)—*Hiram Wood*, Rochester, N. Y. Application filed March 13, 1884.

PATENTS

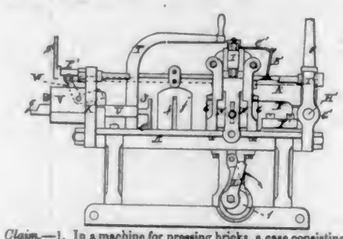
GRANTED APR. 8, 1884.

296,304. HAY-KNIFE. LEVI O. ALLEN, Gardiner, Me. Filed Dec. 31, 1883. (No model.)



Claim.—The combination, with a blade provided with perforations or openings at its end, of a handle having perforations at its end to register with the perforations of said blade, and a slot to receive the end of same, a U-shaped bolt for securing the blade to the said handle, said bolt being screw-threaded at one end to receive a thumb-screw, and at its other end to receive an interiorly screw-threaded handle, as set forth.

296,305. BRICK-MACHINE. JOHN BAILEY, Salem, Ohio. Filed Feb. 20, 1884. (No model.)



Claim.—1. In a machine for pressing bricks, a case consisting of the adjustable ends G and H and adjustable top, in combination with the sliding carriage consisting of a bed-plate having thereon a fixed plate, 4, and an adjustable plate, 3, arranged to operate on one side of said case conjointly with a movable compressing side, E', on the opposite side, substantially as herein described, and for the purpose specified.

2. In combination with the movable ends of the case herein described, the blocks M M, provided with inclined ribs adapted to fit and move in corresponding grooves in the sides or wings of the ends G and H of the case, substantially as described, and for the purpose specified.

3. In combination with the cross head or beam I and screw-bolts connecting said beam to the top of the case and to the blocks M, the eccentrics 1 and 2, constructed and arranged to operate substantially as described, and for the purpose set forth.

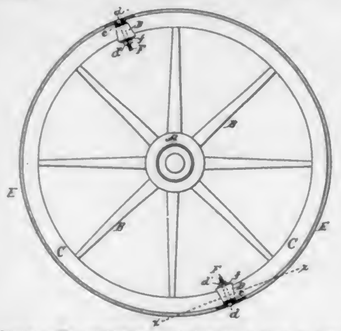
4. The combination of the eccentrics G' and compressing side E', jointed thereto for operating said side co-operative with the case and brick-carriage, substantially as and for the purpose specified.

5. In combination with the brick-carriage and bar U, provided with a shouldered end, a pawl, connecting-rods Y Y, and link suspending the end A' of said bars, substantially as described, and for the purpose set forth.

6. In a machine for pressing bricks, the combination of the carriage, the movable plate 3, and handle for operating said plate and carriage, in the manner substantially as described, and for the purpose specified.

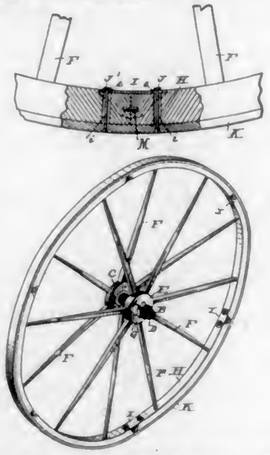
7. Arranged in relation to the brick-carriage herein described, the push-plate *j*, operated by the links R' R' and *n n*, arms *m m*, standard-shaft P', and lever constructed and co-operating for the purpose set forth, and substantially as described.

296,306. TIRE-TIGHTENER. HENRY C. BATES, Miles, assignor of one-half to Zachariah De Groat, Preston, Iowa. Filed Jan. 10, 1884. (No model.)



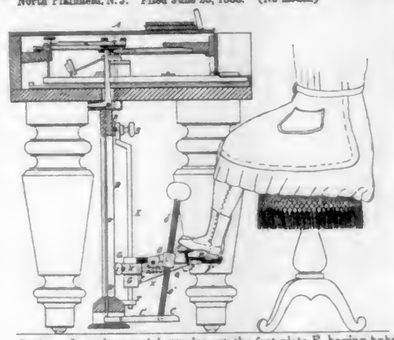
Claim.—The combination, with the tapered block D, having its sides *a a* depressed to fit the felly ends *b b*, of the elastic packing *c*, inserted in the space between the ends of the fellies and between the end of the block and the tire, substantially as and for the purposes described.

296,307. VEHICLE-WHEEL. JOHN EDWARD BELL, Nashville, Tenn., assignor to James W. Cole and Robert L. Armistead, both of same place. Filed Aug. 20, 1883. (No model.)



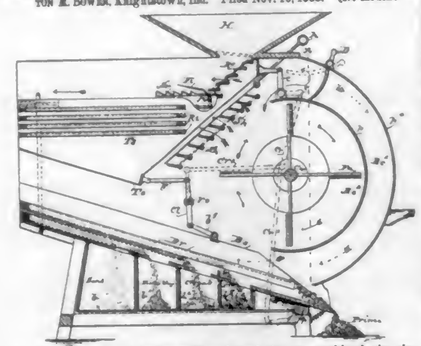
Claim.—In a vehicle-wheel, the rim H, formed with passages *i*, and provided at one end with a dowel-pin, M, entering a recess in the other end, a joint-plate, I, formed with slots *e*, and the bolts J, connecting with the tire, and passing through the passages *i* and slots *e*, and held in position, as set forth.

296,308. PEDAL ATTACHMENT FOR PIANOS. JOHN M. BETTMAN, North Plainfield, N. J. Filed June 25, 1883. (No model.)



Claim.—In a piano-pedal attachment, the foot-plate F, having hubs G, pedal O, and bolt K, in combination with the collar H on rod E, having cavities *h h'* and the rod O', for connecting the pedal O with the pedals of the piano, as set forth.

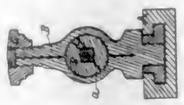
296,309. COMBINED FANNING-MILL AND SEED-CLEANER. NEWTON M. BOWEN, Knightstown, Ind. Filed Nov. 10, 1883. (No model.)



Claim.—1. In a fanning-mill and seed-cleaner combined, the air-chamber Ac', formed by the partition *p* and the wall *p'*, and provided with damper D, in combination with drum Ac², shutters *sh*, fan Fs, top shoe, Ts, and bottom shoe Bs, substantially in the manner and for the purpose set forth.

2. In a fanning-mill and seed-cleaner, the combination of the top shoe, Ts, riddles Rs, slotted riddle-shoe Rs, whippers Fi, feed-fingers Sr, and mechanism for operating the same, substantially in the manner and for the purpose set forth.

296,310. ADJUSTABLE TOOL-HOLDER. FRANCIS BROOKS BOWMAN, Waltham, Mass. Filed Sept. 3, 1883. (No model.)

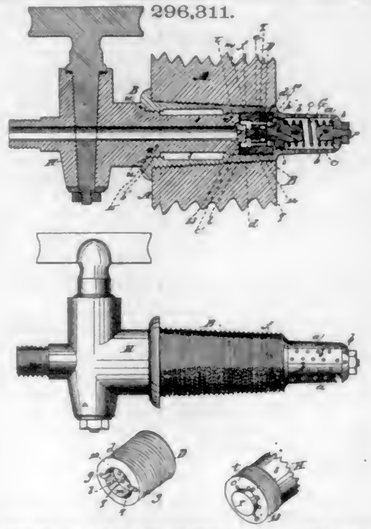


Claim.—The herein-described tool-holder, composed of the ball and the socketed post encompassing the ball, which is pierced axially to receive the tool, the post being split partially or entirely to permit of insertion of the ball, and clamped about such ball by nuts suitably applied, substantially as explained.

296,311. DEVICE FOR TAPPING BEER. JEREMIAH H. BRENNAN, Boston, Mass. Filed Nov. 3, 1883. (No model.)

Claim.—1. In a barrel-tapping device, the externally-threaded bushing B, having at its inner end the perforated chamber *c*, and provided with an internal thread, *e*, and shoulder 10, in combination with the removable screw-plug D, adapted to be inserted into and taken out from the front end of the bushing, and having the valve-seat *h* and a web,

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12, provided with a series of perforations, *q*, arranged around the central aperture, *l*, in front of the valve-seat, the valve *i*, with its stud *n*, the spiral spring G, and the stud *p*, projecting inward from the rear end of the chamber *c*, and the faucet H, adapted to be brought into contact with and press back the stem of the valve *i* as it is screwed into the bushing, the whole constructed and arranged to co-operate substantially in the manner and for the purpose set forth.

2. In a barrel-tapping device, the combination, with the bushing B, removable screw-plug D, having a recess, *m*, in its front side, and a series of perforations, *q*, the valve *i*, with its stem *k*, projecting into said recess *m*, and the spring G, of the faucet H, provided with an external thread, *t*, and having its inner end closed and provided with a protuberance, *r*, surrounded by a strainer formed of a series of perforations, *c'*, all constructed and arranged to operate substantially in the manner and for the purpose described.

3. In a barrel-tapping device, the combination, with the bushing B, provided with an internal thread, *e*, and a second internal thread, *b'*, at its mouth, of larger diameter, the removable screw-plug D, valve *i*, and spring G, of the faucet H, having its stem *s* provided at its rear end with a thread, *t*, and at the opposite end with a shoulder, *u*, and a second thread, *a'*, of larger diameter, with a smooth or non-threaded portion between them, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

296,312. FINGER-RING. JOSEPH BULOVA, New York, N. Y. Filed Jan. 30, 1884. (No model.)



Claim.—The combination of ring A, having perforated head *b* and stone *c*, with the ornament *d*, having screw-pins *e e*, and with the perforated nuts *f*, fitting over pins *e*, substantially as specified.

296,313. BRACING THE PILES OF PIERS. AARON B. BURTON, New York, N. Y., assignor, by mesne assignments, to the Driven Screw Post and Pile Company, same place. Filed Aug. 4, 1883. (No model.)

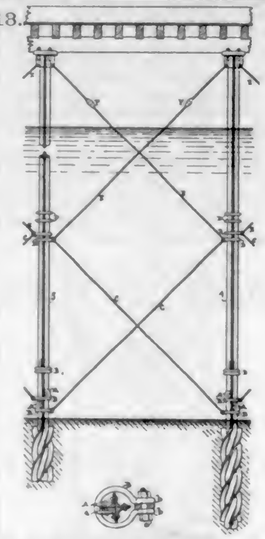
Brief.—Loose rings at the lower ends of the bracing engage brackets on the piles, and free rings midway connect the bracing with the piles.

Claim.—1. The combination, with a pile, of an anchor-ring and attached bracing, substantially as specified.

2. The combination, with a pile, of a bracket, anchor-ring, and bracing, substantially as specified.

3. The combination, with two piles, of a bracket, anchor-ring, free ring, and bracing, substantially as specified.

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4. The combination, with two or more piles, of two or more brackets, two or more anchor-rings, two or more free rings, and bracing, substantially as specified.

296,314. FOOT-COVERING. WILLIAM CARTER, Highlandville, Mass. Filed Mar. 15, 1883. (No model.)



Claim.—1. As an improved article of manufacture, a foot-covering composed of a knitted fabric seamed substantially as shown and described, fulled, shaped to a last, and toeseled, and provided with an elastic anklet or top, as set forth.

2. The herein-described blank for a shoe-upper, it having selvage-edges to be joined in the formation of the seam at the top of the foot, and also for the attachment to it of the anklet or top, substantially as described.

296,315. ELEVATOR. HENRY CHANDLER, Buffalo, N. Y. Filed July 17, 1883. (No model.)

Claim.—1. The combination, with the elevator platform or cage, of an endless hoisting-rope, a counterbalancing-weight provided with a pulley, differential pulleys, and guide-pulleys around which the hoisting-rope runs, substantially as set forth.

2. In a hoisting-machine, the combination, with differential pulleys, of an eccentric support upon which the pulleys can adjust themselves, substantially as set forth.

3. In a hoisting-machine, the combination, with differential pulleys mounted on an eccentric support, of an endless hoisting-rope and a counterbalancing-weight, substantially as set forth.

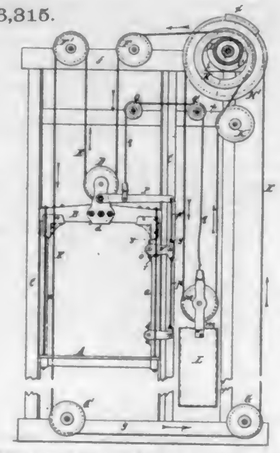
4. The combination, with the differential pulleys H H', having a central opening, *i*, of a supporting-roller, I, made smaller in diameter than the opening *i*, substantially as set forth.

5. The combination, with the elevator platform or cage provided with a pulley, D, of an endless hoisting-rope, E, guide-pulleys F F' and G G', arranged, respectively, above and below said platform, differential pulleys H H', and a counterbalancing-weight, L, provided with a pulley, M, substantially as set forth.

6. The combination, with an elevator platform or cage, of a safety-catch attached thereto, an endless hoisting-rope, a counterbalancing-weight having a pulley around which the endless hoisting-rope passes, and a rope or chain, whereby the counterbalancing-weight is connected with the safety-catch, substantially as and for the purpose set forth.

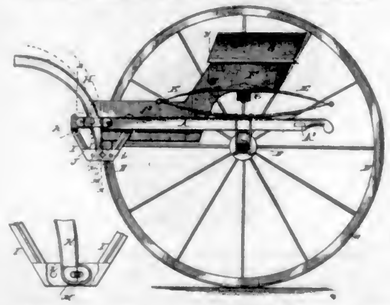
7. The combination, with an elevator platform or cage, of friction-rollers *n*, mounted on levers N, pivoted to the cage or platform, an end-

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less hoisting-rope, and a counterbalancing-weight suspended by the same, and connected by a slack rope with the lever N, substantially as set forth.

296,316. TWO-WHEELED VEHICLE. LEVI STARR CLARK, ORRIN G. FRANKS, and GEORGE T. HAUGHMAN, Doylestown, assignors to themselves, and John H. Warren, Lodi, Ohio. Filed Nov. 30, 1883. (No model.)



Claim.—1. As an improvement in two-wheeled vehicles, the combination, with the frame, of the thills having their ends connected to the side bars of the frame at their front ends by a longitudinally-sliding bearing, and pivoted directly to the frame above and over this sliding bearing, substantially as set forth.

2. As an improvement in two-wheeled vehicles, the combination, with the frame of the vehicle, of brackets disposed on the same horizontal plane as the front ends of the side bars of the frame and depending therefrom, and the thills having their ends provided with a longitudinally-sliding bearing in the horizontal brackets, and also pivoted to the frame above and over the said brackets, substantially as set forth.

3. The combination, in a two-wheeled vehicle, with the brackets, of the thills pivoted to the frame of the vehicle, and having an elongated eye at their lower ends, and cross-pins engaging the eyes and the brackets, substantially as set forth.

4. The combination, with the frame of the vehicle having horizontal brackets depending therefrom and provided with elastic or spring devices, of the thills pivoted to the frame over the brackets, and having their ends retained between the said spring and acting in both directions against the same, substantially as set forth.

5. The combination of the frame, the thills pivoted thereto and having the thill-irons provided with the enlarged eye at their ends, the cross-pin passing through this eye, and cushions disposed in said eye at each side the said pin, substantially as set forth.

6. The combination of the frame, the brackets depending therefrom and comprising the side plates provided with perforations, the thills pivoted to the frame above the brackets and provided with an enlarged end eye inclosed between the plates of the brackets, the cross-pin passing through the perforations and the eye, and the cushions inclosed with the eye, substantially as set forth.

7. The combination, with the frame having depending brackets embodying side plates provided with a series of perforations, of the thills pivoted to the frame, and having the eye at their lower ends received within the said brackets, and a cross-pin, substantially as set forth.

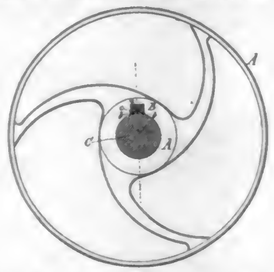
8. The combination of the main frame supported at its rear portion upon the axle, the springs secured on the frame over the axle, the body supported at its front end on the frame, and thills pivotally connected with the front portion of the frame, and having their lower ends acting against springs or cushions, to equalize the weight on the springs, substantially as set forth.

9. The combination of the main frame supported at its rear portion upon the axle, the main springs secured on the frame over the axle, the body supported at its rear portion upon the springs and pivotally connected at its front portion to the frame, the depending shackles at the front end of the frame, and thills pivoted to the frame and having their ends connected to the shackles, substantially as set forth.

10. The combination, with the frame carrying the springs at its rear end and having the body supported on said springs and pivotally connected therewith, and with the shackles depending at the front end of the frame, of the thills pivoted to the frame and having their ends connected to the shackles, springs or cushions being provided at the sides of this connection to receive the action of the lower ends of the thills, substantially as set forth.

11. The combination, in a two-wheeled vehicle, with the sides of the body and the horizontal links pivoted thereto at one of their ends, of the seat resting upon the top edge of the said sides, and the vertical bars or links depending from the seat and pivoted to the free ends of the horizontal links, whereby the seat may be lifted and shifted by causing the horizontal links to turn over upon their pivots, substantially as set forth.

296,317. MEANS OF KEYING WHEELS, PULLEYS, &c., TO SHAFTING. GODFREY DAWE, Eau Claire, Wis. Filed Feb. 28, 1884. (No model.)

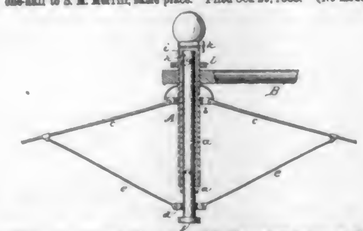


Claim.—1. A key for fastening a pulley, wheel, cam, eccentric, or other analogous part of machinery to shafting, consisting of a tapered bar having parallel sharp ridges or edges separated by a concave surface in relief from the shaft, substantially as and for the purpose described.

2. The combination, with a hub provided with a tapered key-seat, *a*, of a tapered key provided with parallel sharp ridges or edges separated by a concave surface in relief from the shaft to which the hub is to be keyed, substantially as and for the purpose described.

3. The key having its edges beveled downward and its under surface made with the concave *c*, substantially as and for the purpose described.

296,318. PARASOL. FRANK C. DIEHER, New York, N. Y., assignor of one-half to S. M. Merrill, same place. Filed Oct. 29, 1883. (No model.)



Claim.—1. An umbrella or parasol having a stem composed of two or more telescopic sections arranged to slide into each other, the upper one of which is tubular and projects above the ribs or bows, substantially as described.

2. An umbrella or parasol stem composed of two or more telescopic sections, having a collar or runner rigidly attached to one of the sections, and a spring-catch arranged at the top of the stem for holding the parasol when opened, substantially as described.

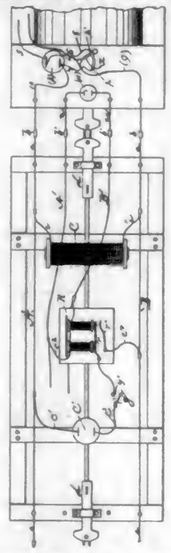
3. A parasol-stem composed of two or more telescopic sections having a spring-catch for holding the umbrella open arranged at the top of the stem, whereby the catch may be operated from the outside to collapse the parasol, substantially as described.

4. In a parasol-stem composed of two or more sections, a spring-catch located at the top of the stem comprising the spring *i*, the lug *h*, and the thumb-piece *k*, arranged diametrically opposite the spring, substantially as set forth.

5. The spring-catch consisting of spring *i*, lug *h*, and thumb-piece *k*, arranged at the top of the stem, in combination with one of the telescopic sections having the notch or equivalent, substantially as described.

6. The combination of the spring *i* with collar *l*, the latter being mortised to limit the play of spring when the thumb-piece is operated to close the parasol, substantially as described.

296,319. ELECTRO-MAGNETIC-BRAKE SYSTEM. AUGUSTUS L. DOWNING, Cincinnati, Ohio. Filed Nov. 5, 1881. (No model.)



Claim.—1. The combination, with the main source of electricity and the main system of apparatus for the direct application of electro-magnetism to railway-brakes, of an auxiliary source of electricity, and devices for automatically connecting the same with the conductors of the main system when said conductors become disconnected from the main source of electricity, substantially as described.

2. The combination, with the main conductors A B, electro-magnetic-brake mechanism C, and a main source of electricity and connections for supplying a current over said main conductors, of the auxiliary conductors A' B', auxiliary generator 11, magnet R, the auxiliary secondary battery C', the electrical connections, and the circuit breaking and closing devices, substantially as and for the purpose set forth.

296,320. GAS-BURNER FOR HEATING AND LIGHTING ROOMS. BENJAMIN F. ENOCK, Philadelphia, Pa. Filed Jan. 12, 1883. (No model.)

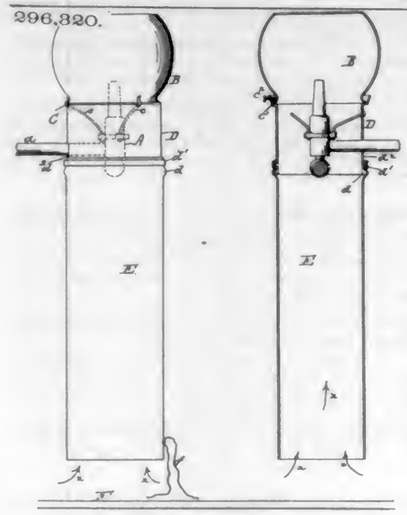
Claim.—1. The combination of a gas-burner, a globe or shade therefor, and a tube inclosing said burner below the shade or globe and hanging pendent therefrom and supported thereby, substantially as shown, and for the purpose set forth.

2. In combination with a gas-burner, a globe or shade, a balcony for the globe inclosing the burner, and a flexible tube supported thereby and depending therefrom to near the floor of the apartment wherein such fixtures are located for use, substantially as described.

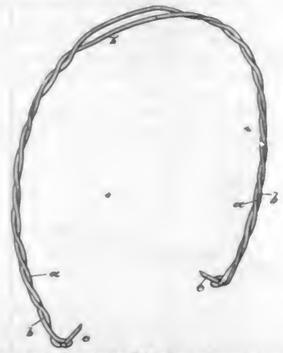
3. The tube D, having slot d^3, and provided with means for attaching it to a gas-burner, and a beaded or flaring edge, *d*, in combination with pipe or hose E, and means for attaching it to said tube, substantially as shown and described.

4. In a heating attachment for gas-burners, the combination of a tube, D, provided with means for attaching it to a gas-burner, a flexible pipe, E, and means for contracting the lower opening of said pipe, substantially as set forth.

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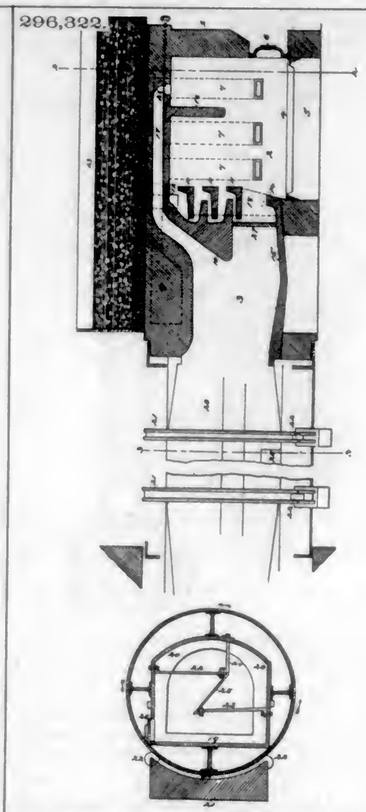


296,321. ICE-HOOK. JAMES W. EVERDEN, Rome, N. Y. Filed Mar. 3, 1884. (No model.)



Claim.—As an improved article of manufacture, a pair of ice-hooks consisting of two steel wires twisted together to form the main portions of the hooks, and provided with the hook-points passed through the eyes at the ends of one of the wires which form the ice-hooks, and having the curved handle formed from plain portions of the two wires separated from each other between the twisted portions, substantially as specified.

296,322. INCINERATING-FURNACE. HENRY S. FIRMAN, New York, N. Y., assignor to the Universal Concentrating Company, Camden, N. J. Filed May 3, 1883. (No model.)



Claim.—1. A calcining-furnace formed of contiguous chambers, substantially as hereinbefore described, which consists, first, of a fire-chamber, then an igniting-hearth at the rear end of said fire-chamber, and, finally, a calcining-chamber at the rear of the igniting-hearth, whereby the material is subjected to a furnace-heat gradually diminishing in intensity from the point of admission to the point of delivery, as and for the purposes set forth.

2. A calcining-furnace consisting of a stationary fire-chamber, a stationary igniting-hearth, and a revolving calcining-chamber, all arranged and adapted to graduate the intensity of the furnace-heat from a maximum at the point of admission to a minimum at the point of delivery, substantially as shown, and for the purposes set forth.

3. A calcining-furnace formed of contiguous chambers, substantially as herein described, which consist of a fire-box and igniting-hearth, located in such position relatively to each other as to cause the products of combustion to be discharged through the material during its descent, and a calcining-chamber located at the rear of the igniting-hearth, as and for the purposes set forth.

4. A calcining-furnace having a suitable supply-tank connected with a series of evaporating-trays located in the fire-chamber, and adapted to effect a partial evaporation of the material during its descent to the incineration-hearth, as set forth.

5. The combination of fire-chamber having at back suitable heating-trays, igniting-hearth to the rear of the fire-chamber, and a flue for leading pure or nearly pure air in a heated state onto the igniting-hearth, substantially as set forth.

6. The combination of fire-chamber having the pendent curtain near its front, the igniting-hearth to the rear of the fire-chamber, and the flue leading from the front of the fire-chamber and discharging pure or nearly pure air onto the material on the igniting-hearth, substantially as set forth.

7. The combination of fire-chamber having the pendent curtain near its front or center, the igniting-hearth to the rear of the fire-chamber, and a flue leading from the front of the fire-chamber and discharging pure or nearly pure air onto the material on the igniting-hearth, substantially as set forth.

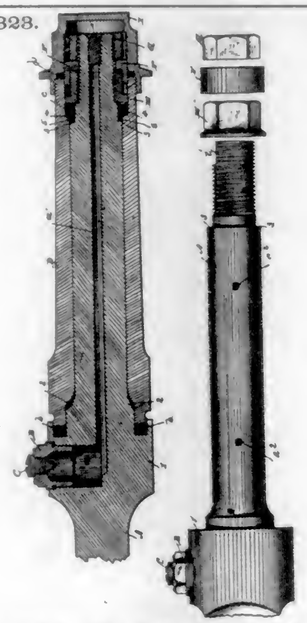
8. The combination, in the calcining-furnace, of two or more open hearths on the sides thereof, and having a screen or sifter stretching between the same, as specified.

296,323. SELF-OILING AXLE FOR VEHICLES. LEWIS H. FISHER, Walpole, Mass. Filed Aug. 3, 1883. (No model.)

Claim.—1. In combination with the axle having a valveless oil-chamber in its collar, and an axial and lateral oil-feeding passage, substantially as shown and described, the inner adjustable nut, E, and the washer *c*, applied relatively to the axle and the box D, substantially as and for the purposes described.

2. In combination with the axle A, and with the adjustable nut E and washer *c*, the D-shaped cap F, adapted, as described, to fit upon the polygonal end of the inner nut, E, and also at its outer end to fit the D-shaped end of the axle, the combination being substantially as and for the purposes set forth.

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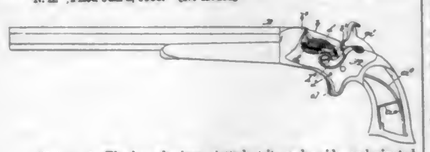
3. In combination with an axle, the inner nut, E, cap F, made as described, the nut G, and the exterior cap, I, applied to the box D, the whole constituting a complete locking arrangement to prevent the nuts coming off.

4. In combination with the axle having an oil-chamber in its collar, and the axial and outlet passages therefrom, box D and washer *b*, adjustable inner nut, E, and washer *c*, the cap F, made as described, the outermost nut, G, and the cap-nut I, applied to the box B, all substantially as and for the purposes set forth.

296,324. FIRE AND WATER PROOF PAINT. MARION O. FISHER, Allen's Hill, N. Y. Filed Jan. 9, 1884. (No specimens.)

Claim.—The fire and water proof paint compound herein described, consisting of coal-tar, yellow ocher, mineral paint, sulphur, alum, and talc, compounded in the manner and proportions substantially as herein set forth.

296,325. BREECH-LOADING FIRE-ARM. JAMES E. GAGE, Concord, N. H. Filed Jan. 2, 1883. (No model.)



Claim.—1. The breech-piece, slotted at its under side, and pivoted at its rear end and reduced in thickness where the screw or pivot passes through it, and the firing-pin, combined with the hammer shaped to extend forward over the pivot of the breech-piece, and with the finger to swing the breech-piece, substantially as described.

2. The pivoted breech-piece, slotted at its lower side, and provided with a firing-pin, the frame, a tumbler provided with two faces, the finger to enter the slot of the breech-piece, and a thumb-piece or lever to turn the tumbler, combined with a spring to hold the tumbler in its different positions, substantially as described.

3. The pivoted breech-piece, provided with a firing-pin, the frame, and the sliding extractor, combined with the tumbler and its attached finger to operate the breech-piece and extractor, substantially as described.

4. The extractor, slotted as shown, and provided with a shoulder, 16, and the frame to guide the said extractor, the tumbler having an irregular face, and the finger and thumb-piece or lever, combined with a spring co-operating with the said tumbler to cause the finger to rebound, as described, and leave the extractor free to be moved forward by the cartridge, as set forth.

5. The breech-piece, pivoted at its rear end and provided with a diagonal slot in its base, combined with a vertically-vibrating finger engaging said slot, and means to move said finger to throw or swing the breech-piece, substantially as described.

6. The frame, combined with the pivoted hammer, and the breech-piece having its pivot at right angles to that of the hammer and in the plane of the same, and a spring bearing against the lower edge of the hammer in the rear of its pivot, whereby a rebound is secured for the hammer after firing, substantially as described.

296,326. DEPURATED COMPOSITE SUGAR, &c. JOSEPH GANDOLFO, New York, N. Y. Filed Mar. 13, 1883. (No specimens.)

Claim.—1. As a new article of manufacture, the depurated composite sugar above described, compounded of cane-sugar and grape-sugar which has been liberated of its deliquescent salt and then reduced by shaving, substantially as specified.

2. The process of manufacturing composite sugar, substantially as before set forth, consisting of the shaving of grape-sugar, the sifting it, the drying it, and the mixing it with cane-sugar.

3. The process of manufacturing composite sugar, substantially as before set forth, consisting of the shaving of grape-sugar, the sifting it, the drying it, the artificially cooling it, and the mixing it with cane-sugar.

296,327. STENCIL-PLATE. ROMEO E. GUERRI, New York, N. Y. Filed July 10, 1883. (Model.)



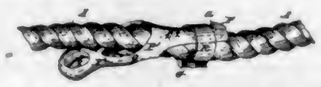
Claim.—A stencil-plate having upon its upper face, and on each side of spaces *b*, the raised brush-guides *c c*, placed at some distance from the edges of said spaces, whereby each letter may be stenciled separately, and the spaces between the letters regulated, as described.

296,328. ROPE-HALTER BUCKLE. JOHN GIBBONS, West Troy, N. Y. assignor to the Union Hardware Manufacturing Company, same place. Filed Jan. 21, 1884. (No model.)



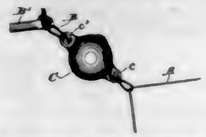
Claim.—In a halter-rope buckle or fastener, the combination of a body part made with a rounded-out interior surface and convex exterior surface, a spur projected out from said interior surface, a beveled extension projected from the end of said body, as shown, and constructed with an elongated opening adapted for the threaded passage of the rope, a feather projected from the body part on its exterior rounded surface, and a ring made with a connecting-eye projected therefrom and a groove on its inner face, and said ring constructed to be passed on over said feather, body part, and included rope to connect said parts, as and for the purposes herein set forth.

296,329. ROPE-HALTER BUCKLE. JOHN GIBBONS, West Troy, N. Y., assignor to the Union Hardware Manufacturing Company, same place. Filed Jan. 21, 1884. (No model.)



Claim.—In a halter-rope buckle, the combination of a plate having an interior concave and an exterior convex surface, a spur on the concave interior of the plate, an elongated extension of said plate that is beveled obtusely from the rounded-out part thereof on its projection therefrom, an eye on the end of said extension, an elongated opening in said extension adapted for the passage of the halter-rope, a feather made with an abrupt termination and constructed on the exterior of the rounded-out part, and a ring made with a groove for the passage of said ring over said feather, plate, and included rope, in the manner and for the purposes herein set forth.

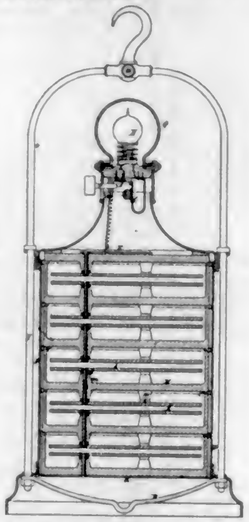
296,330. INSULATOR FOR LINE-WIRES OF MECHANICAL TELEPHONES. JAMES F. GILLILAND, Indianapolis, Ind., assignor to John R. Bennett and August R. Meyer, both of same place. Filed June 26, 1883. (No model.)



Claim.—1. The combination, with a mechanical-telephone line-wire and the structures by which it is supported, of a hanger composed of wire or cord running from said line-wire to said structure, and an insulator secured to said wire in close contact therewith, substantially as set forth.

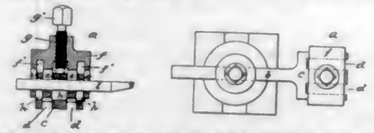
2. The combination of the wire A, the structures by which the same is supported, and the hangers by which said wire is connected to said structures, said hangers being composed of wires B and insulators C, having eyes *c' c'*, through which said wires pass, substantially as shown and specified.

293,331. PORTABLE ELECTRIC BATTERY AND LAMP. CHARLES GODFREY GUNTEL, Leicester Square, County of Middlesex, England. Filed Mar. 7, 1883. (No model.) Patented in England June 12, 1882, No. 2,756, and in France Dec. 8, 1882, No. 152,526.



Claim.—A portable secondary electric battery consisting of a suspending-frame and a number of dishes piled one on the other within a case or frame, with their junctions made tight against leakage of liquid, each dish having tubular projecting bosses, through which pass rivets or their equivalents, electrically connecting an electrode-plate above the dish with a plate below, substantially as herein described.

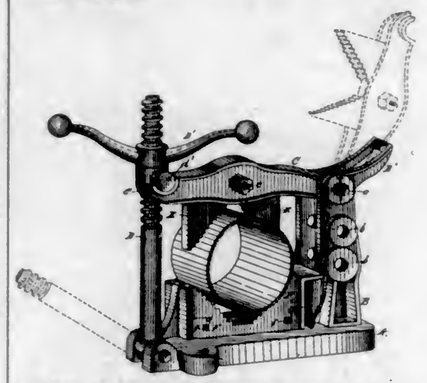
296,332. TOOL-HOLDER. ERNEST L. HARTMANN, Hartford, Conn. Filed Aug. 11, 1883. (No model.)



Claim.—1. In combination, the shank *b*, having the body part *c*, with mortises *d* and tool-socket *a*, body part *f*, having corresponding intermeshing parts, and clamp-screw *g'* or its equivalent, all substantially as described.

2. The combination, in a tool-holder, of the body part having a shank and a forked extremity with a V-shaped tool-socket, the body part with projections bearing a tool-socket and fitting between the forks of the main body part and the clamp device, whereby a tool is held in a line at right angles with the axis of the shank, all substantially as described.

296,333. PIPE-VISE. ALBERT H. JARECKI, Erie, Pa. Filed Apr. 12, 1883. (No model.)



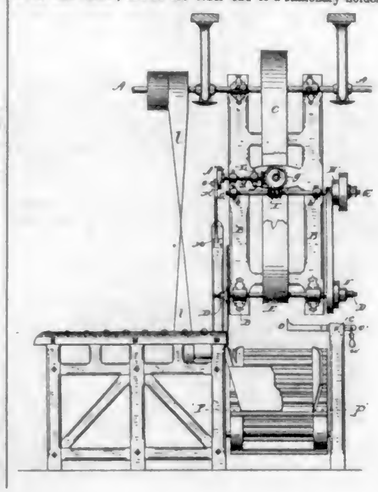
Claim.—In a pipe-vise, the combination, substantially as shown, of the base A with upright B, having the horn B', and pivot-pin holes *b b b* and the jaw-faces G G, the pivoted jaw C with claw *c'*, and the pivoted screw D with movable block *d'* and armed nut D'.

296,334. CIRCULAR SAWING MACHINE. JOEL H. JONES, Lynchburg, Va. Filed Nov. 26, 1883. (No model.)

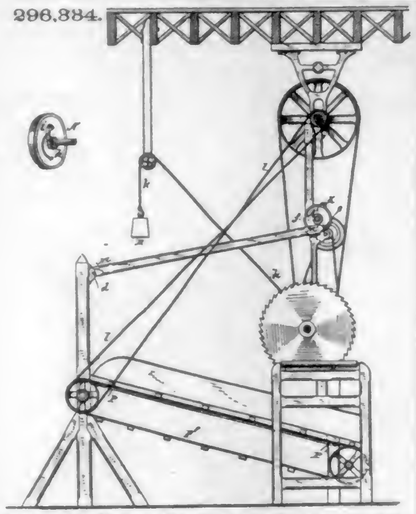
Claim.—1. The combination of a feed-operating shaft, G G', mounted on the swinging saw-frame, worm I on the said shaft, worm-wheel K, geared into the worm, disk-crank A', having its shaft geared to the shaft of the worm-wheel, and pitman M M', pivoted at one end of the disk-crank, and at the other end to a stationary holder, for the purpose of imparting a vibratory feed movement to saw-frame, as set forth.

2. The combination of the saw-arbor D D' on a vibrating saw-frame, feed-operating shaft G G', mounted on the saw-frame, differential pulleys F H, respectively, on the saw-arbor and feed-shaft, and their connecting-belt, worm I on the said shaft, worm-wheel K, geared into the worm, disk-crank A', having its shaft geared to the shaft of the worm-wheel, and pitman M M', pivoted at one end to the disk-crank, and at the other end to a stationary holder, substantially as and for the purpose herein specified.

3. The combination of a swinging saw-frame, a disk-crank, A', adapted to turn on a revolving shaft on the saw-frame, and to be coupled to the shaft by a ratchet and pawl, a pitman, M M', pivoted at one end to the disk-crank, and at the other end to a stationary holder, and a



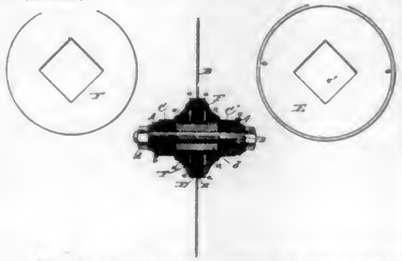
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counter-weight, R, connected by a cord or chain with the saw-frame, and adapted to swing the same backward, whereby the forward feed vibration of the saw-frame is made positive and gradual, and its return vibration is made free and instantaneous, substantially as herein specified.

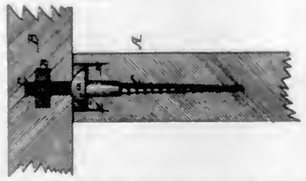
4. In combination with a saw mounted on a suspended swinging saw-frame, as specified, a tilting gage, O, located opposite to the saw and the material being sawed, and a counter-weight, *w*, on the gage, substantially as and for the purpose herein specified.

296,335. COLTER. ROBT. KLOSS, Shabonier, Ill. Filed May 8, 1883. (No model.)



Claim.—In a plow-colter, the combination of the blade B, provided with flanges *a a*, the plate E, provided with peripheral flange *e* and central opening, *d'*, the washer F, the disks C C', provided on their outer sides with projections *c c*, the hub *b*, bolt D, having its center plane and ends screw-threaded, the lock-nut *d*, and yoke A, substantially as described and shown.

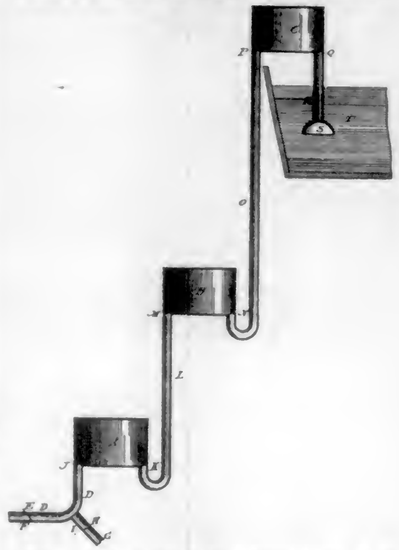
296,336. CHAIR-LEG FASTENER. SIGMUND KOHN, Vienna, Austria-Hungary, assignor to the firm of Jacob & Josef Kohn, same place. Filed Oct. 29, 1883. (No model.)



Claim.—1. The combination of the screw C, having shoulder *a*, with the hollow cap E and nut D, substantially as herein shown and described.

2. The combination of the wooden chair-leg A, which is recessed at its upper end, with the hollow cap E, screw C, having shoulder *a*, and with the nut D and seat B, substantially as herein shown and described.

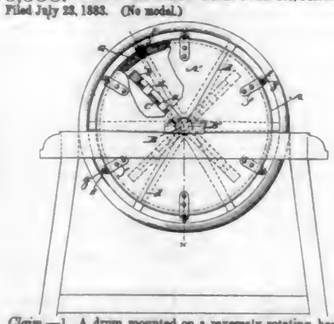
296,337. APPARATUS FOR THE PURIFICATION OF WATER. ALBERT R. LEEDS, Hoboken, N. J. Filed Sept. 17, 1883. (No model.)



Claim.—1. In an apparatus for the purification of water, the supply-pipe D, having the valve E, and the supply-pipe G, having valve H, and adapted to be connected to a suitable air-pump, combined with the chamber A, reservoir T, and outlet-pipe between said chamber and reservoir, substantially as and for the purpose described.

2. In an apparatus for the purification of water, a series of pressure-chambers, as A B, connected by the pipes, as L O, in combination with the water-supply pipe D and the air-supply pipe G, substantially as described.

296,338. MIXING-MACHINE. DAVID H. LEVETT, Philadelphia, Pa. Filed July 23, 1883. (No model.)



Claim.—1. A drum mounted on a reversely-rotating beater-shaft, in combination with a bevel-wheel rigidly connected with the head of said drum, and freely encircling said shaft, a bevel-wheel rigidly connected with said shaft, and an intermediate idler, the two bevel-wheels thus being on the same shaft, substantially as and for the purpose set forth.

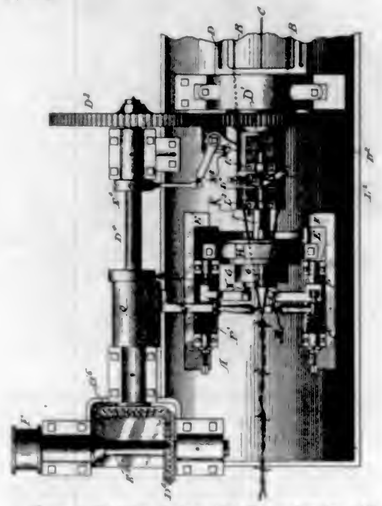
2. A drum mounted on a reversely-rotating beater-shaft, and having one head divided, in combination with ears connected with said head, bolts secured to the drum, and nuts fitted on said bolts, substantially as and for the purpose set forth.

3. A drum mounted on a reversely-rotating beater-shaft, and having at one end a divided head with the fastening bolts, eyes, and nuts, in combination with two bevel-wheels and an idler, both bevel-wheels being on the beater-shaft, one fixed thereto, and the other loose thereon, and fixed to the head of the drum, substantially as and for the purpose set forth.

4. A mixing-machine having a drum mounted on a reversely-rotating beater-shaft, and beaters formed with cross-bars and end heads, the cross-bars alternating in adjacent beaters, substantially as and for the purpose set forth.

296,339. BARBED-WIRE MACHINE. ADELBERT MATTESON, Chicago, Ill. Filed Jan. 7, 1884. (No model.)

Brief.—Improvement on Letters Patent No. 273,765, dated March 13, 1883.



Claim.—1. In a wire-barb machine, the combination, with a rotary twister having passages through it for the barb and cable wires, and carrying a cutter, and means for bending the free end of the barb-wire, of a combined cutter and bender, substantially as described, and means for operating it to sever the barb-wire just before the completion of the barb, and then to bend one end of the unfinished barb and complete the latter, substantially in the manner set forth.

2. In a wire-barb machine, the combination, with the rotary twister, and means for bending the free end of the barb-wire, of a pivoted lever provided with a cutter operating in front of the twister to sever the barb-wire, and a cam timed to act upon the lever, and turn the same so as to raise the cutter, and cause it during its rising movement to sever the barb-wire, and then bend one end of the latter to complete the barb, substantially as described.

3. In a wire-barb machine in which the barbs are formed from a single wire, the revolving twister provided with passages for the cable-wires, a single tube for guiding the barb-wire, and a cutter, in combination with a pair of levers pivotally mounted on a carriage carrying the revolving twister, the bender M, carried by one lever, and the combined cutter and bender N, carried by the remaining one of said levers, substantially as described.

4. The combination, in a barb-wire machine, of the rotary twister carrying a knife, and provided with means for guiding the cable-wires, and a single barb-wire, with the levers pivoted on a carriage carrying the rotary twister, the bender M, adjustably secured on one lever, and the combined cutter and bender adjustably secured on the other lever in position to rise and meet the cutter on the rotary twister at one side of the barb, substantially as described.

296,340. GAS-ENGINE. HIRAM S. MAXIM, Brooklyn, N. Y. Filed Oct. 31, 1883. (No model.)

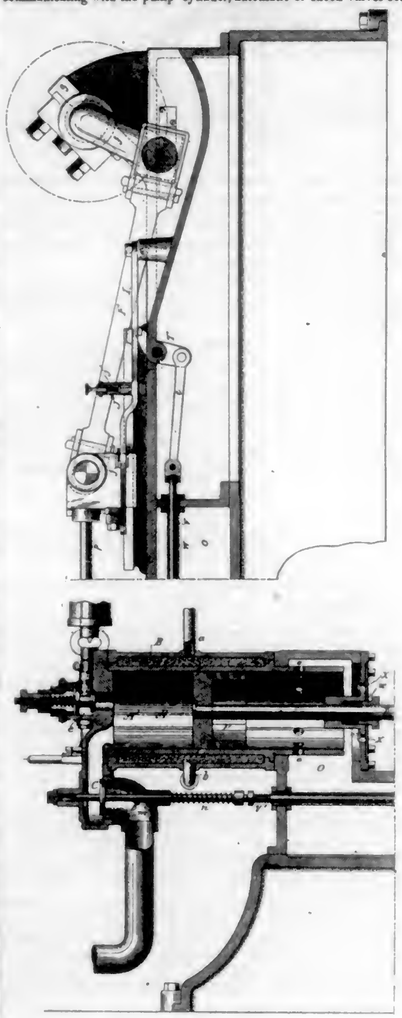
Claim.—1. In an air or gas engine containing a valve for permitting the escape or exhaust from the cylinder of the products of combustion and a moving part for operating or controlling the said valve, the combination, with such moving part, of a locking device constructed or arranged to maintain the exhaust-valve open beyond the normal limit of time, whereby too great compression in the cylinder is avoided, as and for the purpose specified.

2. In a gas-engine, the combination of a working-cylinder, piston, piston-rod, and cross-head, an exhaust-valve for permitting the escape of the products of combustion from the cylinder, a lever in the path of movement of the cross-head, and intermediate connections for opening the exhaust-valve, and a locking device for maintaining the exhaust-valve open beyond the normal limit of time when the engine is starting up, the said device being actuated or controlled by the moving cross-head, as and for the purpose specified.

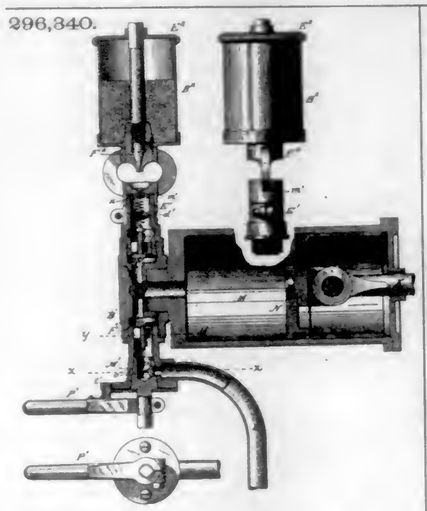
3. In a gas-engine, the combination of a working-cylinder, piston, piston-rod, and cross-head, an exhaust-valve for permitting the escape of the products of combustion from the cylinder, a lever for operating the exhaust-valve, and a spring-actuated lever for locking or holding the same open beyond the normal limit of time when the engine is starting up, the valve controlling and locking levers being both in the path of movement of the cross-head, but arranged to be encountered by the same at different portions of the stroke, all as set forth.

4. In a gas-engine, the combination, with the exhaust-valve, a lever for operating or controlling the same, and a lever for locking or maintaining the valve open beyond the normal limit of time, constructed and arranged for operation in substantially the manner described, of a retaining-pin or locking device for engaging with and preventing from action the locking-lever, as and for the purpose set forth.

5. The combination, with the working-cylinder of a gas-engine, of a pump forcing explosive charges into the same, air and gas passages communicating with the pump-cylinder, automatic or check valves con-



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tained therein, and an adjustable or index valve for controlling the supply of gas, as and for the purpose specified.

6. In a gas-engine of the kind described, the combination, with the piston and cross-head, of the lever T and devices connected therewith for operating the exhaust-valve, the pivoted locking-lever I, and the spring or spring-actuated pin i, all substantially as described.

7. The combination, with the piston and cross-head in an air and gas engine, of the lever T and devices connected therewith for operating the exhaust-valve, the pivoted locking-lever I, spring i, and retaining-pin J, as described.

8. In a gas-engine, the combination, with the pump for forcing explosive charges into the working-cylinder, of the pipe B', for admitting air and gas into the pump-cylinder, and an oil-cup for dropping oil into the pipe B' through the air-port, as and for the purpose set forth.

9 In a gas-engine, the combination, with the pump for forcing explosive charges into the working-cylinder, of a vertical pipe, B', having a valve or port for the admission of gas below, and a valve for the admission of air above, the perforated cover, an oil-cup secured above the same, and means for regulating the amount of oil supplied from the cup, as described.

296,341. ELECTRICAL IGNITING DEVICE FOR GAS-ENGINES. HIRAM S. MAXIM, Brooklyn, N. Y. Filed Jan. 12, 1884. (No model.) Patented in France Oct. 6, 1883.

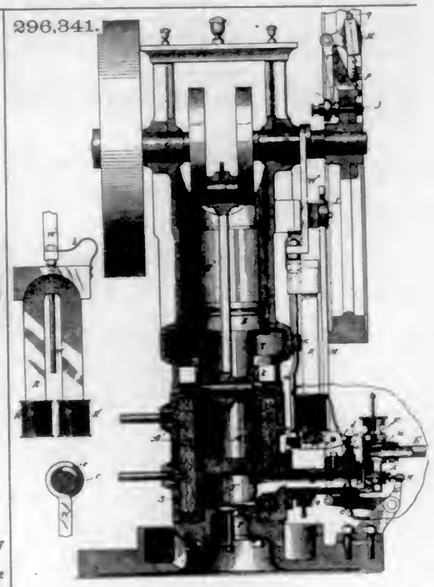
Claim.—1. The combination, with a gas-engine, of a magnet and movable armature-coils upon the magnet, a circuit carried through the chamber or space for containing the explosive charge, and mechanism connected with a moving part of the engine and operated thereby for causing a sudden movement of the armature and breaking the circuit within the explosion-chamber, all substantially as set forth.

2. The combination, with a gas-engine, of separable contact-pins arranged within the chamber or space for containing the charge, a magnet with coils in circuit with said pins, a movable armature connected with one of the pins, and mechanism connected with a moving part of the engine and operated thereby for effecting the retraction of the armature from the magnet and the separation of the pins within the explosion-chamber, all substantially as set forth.

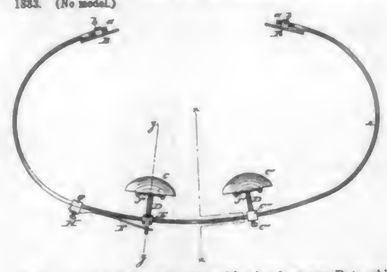
3. The combination, with a gas-engine, of separable contact-pins arranged within the chamber or space for containing the charge, a magnet with coils in circuit with said pins, a movable armature connected with one of the pins, and a rod operated by a cam on the shaft of the engine for effecting the withdrawal of the armature from the magnet and the separation of the pins within the explosion-chamber, all substantially as set forth.

4. The combination, with a gas-engine, of separable contact-pins arranged within the chamber or space for containing the charge, a magnet with coils in circuit with said pins, a movable armature connected with one of the pins, and a spring-actuated rod operated by a cam on the shaft of the engine for effecting the withdrawal of the armature from the magnet and the separation of the pins within the explosion-chamber, all substantially as set forth.

296,341.



296,342. TRUSS. JOHN B. MAYER, Philadelphia, Pa. Filed Oct. 17, 1883. (No model.)



Claim.—1. A pad, in combination with a band, an arm, D, to which said pad is attached, a jointed elbow-lever mounted on said band and having said arm attached to it, a torsional spring operating on said elbow-lever and a clamping device for attaching said spring to said band.

2. A pad, in combination with a band, a journaled elbow-lever, a torsional spring, and a slide and screw, said slide being arranged and adapted to regulate the tension of said spring, substantially as set forth.

3. A pad, in combination with a detachable arm, D, screw D', elbow-lever E, torsional spring F, and the band, substantially as and for the purpose set forth.

4. A pair of serrated interlocking plates, J J', in combination with a truss-pad which is attached to one of said plates, a supporting-arm to which the other plate is attached, screws for connecting said plates together, an elbow-lever to which said arm is attached, and a spring attached to said arm and bearing on said elbow-lever, the latter being pivoted on said band, substantially as set forth.

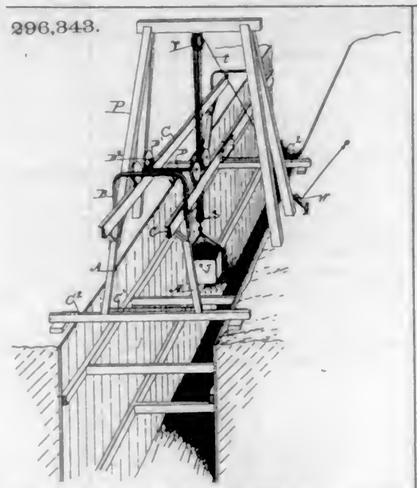
296,343. APPARATUS FOR HOISTING AND CONVEYING GROUND, MINERALS, &c. PATRICK H. MCCARLEY, Des Moines, Iowa. Filed Feb. 1, 1884. (No model.)

Claim.—1. An elevated railway-track composed of posts A, a yoke, B, and rails C, substantially as shown and described, for the purposes specified.

2. A carriage composed of a single axle, D, having T ends D', stub-axles D^2, and four wheels, substantially as shown and described, for the purposes specified.

3. A bucket having an open top and rigid arched handle and hinged bottom sections, A, connected with a revolving shaft, J, by means of chains, and a shaft-locking device to retain the hinged bottom sections

296,343.

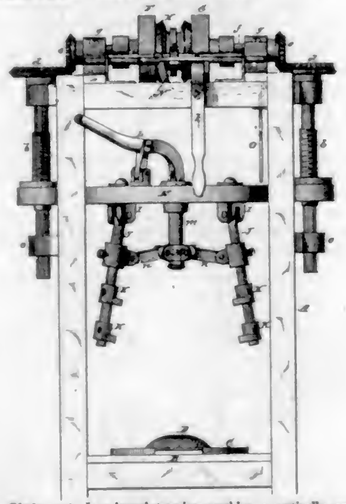


closed, substantially as and for the purposes stated.

4. An improved elevator or hoisting box or bucket composed of a vessel having an open top, two hinged bottom sections, h, chains i i k, shaft J, perforated disk m, lever n, carrying a pin, n', and a suitable handle by which it can be suspended from a rope or chain, for the purposes set forth.

5. A hoisting and conveying apparatus composed of the following elements, arranged and combined as set forth, to wit: an elevated railway-track, A B C, a carriage, D D' D^2, a bucket having an open top and hinged bottom, a derrick or elevator frame, and pulleys and rope, substantially as shown and described, to operate in the manner set forth.

296,344. BARREL-TRUSSING MACHINE. THOMAS W. MCGREGOR, Rushford, Minn. Filed Sept. 25, 1883. (Model.)

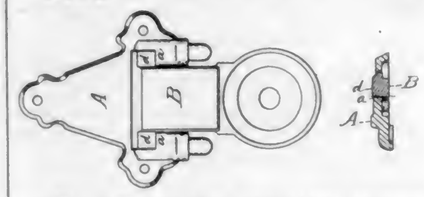


Claim.—1. In a barrel-trussing machine, a vertically-operating trussing-head provided with the usual pivoted driving-arms and dogs, in combination with a vertically-sliding rod extending centrally through the head, and connected at its lower end to the driving-arms by spider and pivoted links, and at its upper end to a hand-lever pivoted to the trussing-head, and adapted to operate to automatically throw the arms outward by the weight of the rod and spider, and brought against the barrel by the pivoted lever, substantially as and for the purpose set forth.

2. In an upright barrel-trussing machine, a suitable trussing-head, in combination with an adjustable depending lever extending over the trussing-head, and connected to the mechanism for reversing the motion of the counter-shaft or stopping it by a pivoted arm and a bell-crank lever, substantially as and for the purpose specified.

3. In an upright barrel-trussing machine, the combination, with a flanged ring detachably connected to the base of the machine, of a centering-cone, said ring having a central opening equal to the greatest diameter of the cone within which it rests, and a horizontal flange to form a space between the flange and cone, substantially as and for the purpose set forth.

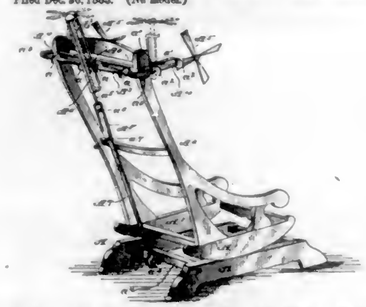
296,345. TRUNK-LOCK. FRANK W. MIX, New Britain, Conn., assignor to the Corbin Cabinet Lock Company, same place. Filed Jan. 11, 1884. (No model.)



Claim.—1. The improved hasp, consisting of the base-plate having the opening with bearing-shoulders *a a* at each end, and the hasp B, having the lateral projections *d* for engaging said bearing-shoulders, said hasp being also connected with the base-plate by means of a suitable pintle, substantially as described, and for the purpose specified.

2. The improved hasp, consisting of the base-plate having the opening and connecting-bar *f*, with bearing-shoulders *a a* at each end thereof, and the hasp B, having the lateral projections *d* for engaging said bearing-shoulders, said hasp being also connected with the base-plate by means of a suitable pintle, and extended therefrom in front of the bar *f* toward the keeper, substantially as described, and for the purpose specified.

296,346. FAN ATTACHMENT. ARTHUR H. MOORE, Chicago, Ill. Filed Dec. 26, 1883. (No model.)



Claim.—1. In combination with fans A^3, the shafts A^5 and A^4, rack and pinion A^6 A^7, hinged shaft A^7, and flexible coupling a^3, or its equivalent, substantially as and for the purpose set forth.

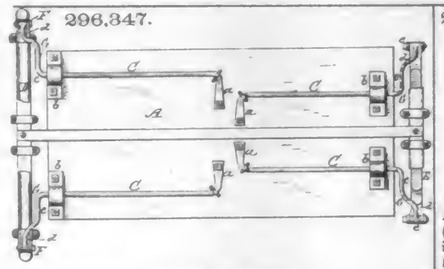
2. The combination of fans A^3, shafts A^5 and A^4, rack and pinion A^6 and A^7, flexible coupling a^3, or its equivalent, tubular hinged shaft A^7, and the connecting-sleeve A^8, substantially as and for the purpose specified.

3. In combination with fans A^3, the shafts A^5 and A^4, flexible coupling a^3, rack and pinion A^6 A^7, hinged shaft A^7, and the hinged arms a', substantially as and for the purpose described.

296,347. VEHICLE-SPRING. RICHARD MULHOLLAND, Dunkirk, N. Y. Filed May 31, 1883. (No model.)

Claim.—In a vehicle-spring, the combination, with the body and end leaf-springs or bars, of the torsion-springs having their outer arms bent at right angles (or nearly so) to their length, which arms are provided with an additional bend nearer their ends so in a line with the length of the torsion-springs, or substantially so, and with a short bend in the direction of the length of the leaf-spring or bar, so that the ends of the arms are connected under the center of the leaf-springs, thereby allowing the body of the vehicle to move downward and upward, and pass the plane of the leaf-springs or bars, substantially as and for the purposes described.

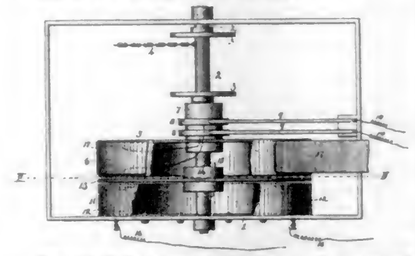
296,347.



296,348. PROCESS OF HAND-PAINTING PORTRAITS, FIGURES, AND LANDSCAPES. OTHO H. ORTON, Madison, Wis. Filed Dec. 3, 1883. (No specimens.)

Claim.—The process of hand-painting in oil-colors in landscape, portrait, animal, and figure painting, which consists in preparing flock-paper with any desired color; secondly, applying to the colored side thereof, by means of a brush, the pigments or oil-colors, as and for the purpose set forth.

296,349. ELECTRO-MAGNETIC CAR-BRAKE. HARVEY S. PARK, Henderson, Ky. Filed Sept. 1, 1883. (No model.)

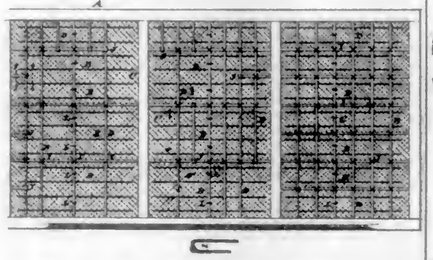


Claim.—1. In an electro-magnetic car-brake, in combination with a braking and a locking circuit and two separate sets of electro-magnets in said circuits, the armature-disk upon the braking-shaft, placed between the faces of such electro-magnets, and adapted to be operated thereby to effect the application or locking of the brakes, substantially as set forth.

2. The combination, with the shaft 2, of the continuously-revolving series of electro-magnets 6 loose on said shaft, having hubs 7, with conducting-rings and brushes and a clutch-disk placed opposite the faces of such electro-magnets for the purpose of applying the brakes.

3. The combination, with a revolving series of magnets and a fixed series of magnets whose poles are opposite each other, of an armature-disk fixed to its shaft between said magnets by a spline and groove, and adapted to be attracted by either, as and for the purposes set forth.

296,350. TYPE-CASE. WILLIAM PIHL, St. Louis, Mo. Filed Sept. 23, 1883. (No model.)



Claim.—1. A type-case having slots formed in its bottom, and wire-gauze covering the bottom, for the purpose set forth.

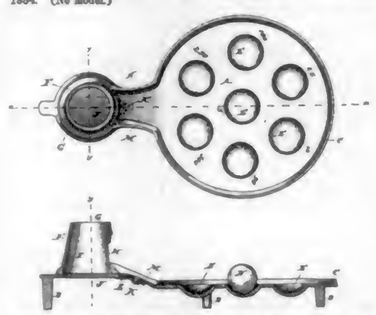
2. In a type-case, the combination, with the division-strips, of the four-prong fastening, two of the prongs extending down through the bottom of the case, and the other two being quite short, substantially as set forth.

296,351. TOY. MICHAEL RAUGHTIGAN, Norwich, Conn., assignor to Edwin Oldfield, Edwin A. Tracy, and Emma J. Raughtigan, all of same place. Filed Sept. 15, 1883. (No model.)



Claim.—The within-described toy, consisting of the plugged tube A, having hole *c*, the supporting-frame C, bent substantially as shown, (fitting tightly on tube A,) and the wind-wheel B, hung in suitable bearings in frame C, all in combination, the position of C and B relative to the perforated tube being such that, as a current of air is forced through said tube, it engages the wings of wheel B, causing it to revolve, for the purpose specified.

296,352. GAME. ALFRED C. REX, Philadelphia, Pa. Filed Jan. 26, 1884. (No model.)



Claim.—1. The horizontal plate A, having depressions E, in combination with tube F, located at the periphery of said plate, and having aperture H facing said plate, substantially as and for the purpose specified.

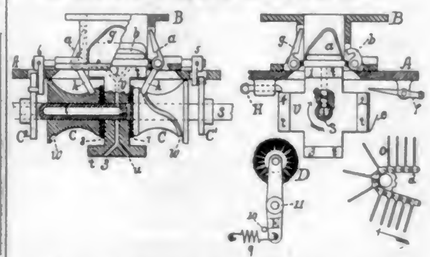
2. The plate A, having depressions E, in combination with tube F, having aperture H facing said plate, and neck M, connecting said tube with said plate, substantially as and for the purpose specified.

3. The plate A, having depressions E, in combination with tube having closed bottom, and aperture H, facing said plate, and inclined neck M, connecting said tube with said plate, substantially as and for the purpose specified.

4. The combination of plate A, having depressions E, tube F, having apertures I H, and plate J, substantially as and for the purpose specified.

5. The combination of plate A, having depressions E, tube F, having apertures I H, neck M, and plate J, substantially as and for the purpose specified.

296,353. ENVELOPE-FOLDING MECHANISM. FRANCIS H. REHARDS, Cleveland, Ohio. Filed Mar. 29, 1883. (No model.)



Claim.—1. In an envelope-folding mechanism, in combination, the folding-box B and a series of plates, *t*, adapted to have envelopes folded thereon, arranged substantially as described, to each successively form the bottom of box B.

2. In an envelope-folding mechanism, the box B, having folding-wings *a a b g*, and a series of plates, *t*, adapted to have envelopes folded thereon and arranged to be revolved about an axis, all in combination and arranged to operate substantially as described.

3. In an envelope-folding mechanism, in combination, the plate *t*, arranged for envelopes to be folded thereon, folding-wing *a*, having an arm adapted to move in a groove in cam C, and cam C, arranged to rotate upon an axis at right angles to the axis of wing *a*, all arranged to operate substantially as shown and described.

4. In an envelope-folding mechanism, in combination, the box B, with its folding-wings, cams C C′ C², and shaft S, and series of plates *t*, supported by and arranged to revolve about said shaft.

5. In an envelope-machine, in combination, a folding mechanism having a series of plates, *t*, adapted to each successively have envelopes folded thereon, and endless apron *d*, to receive the folded envelopes therefrom.

6. In an envelope-machine, in combination, a series of plates, *t*, adapted to have envelopes folded thereon, endless apron *d*, and mechanism, substantially as described, adapted to transfer folded envelopes from said plates to said apron.

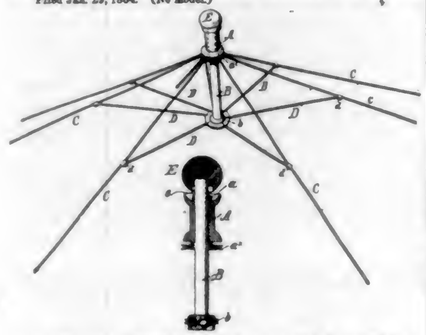
7. In an envelope-folding mechanism, in combination, a series of plates, *t*, mechanism adapted to move said plates successively into position for envelopes to be folded thereon by the same folding devices, and mechanism, substantially such as described, to arrest the motion of said plates *t* at the proper time and place for envelopes to be folded thereon.

8. In an envelope-machine, in combination, a series of plates, *t*, adapted to have envelopes folded thereon, supported upon a rotating shaft, S, and a wiping roll or mechanism, D, adapted to operate upon the surface of said plates, substantially for the purpose described.

9. In an envelope-folding mechanism, in combination, a folding-wing, *b* or *g*, provided with arm 5 or 6, adapted to be operated directly by cam C′ or C², upon shaft S, parallel to the axis of said folding-wing, and cam C′ or C², all constructed and arranged substantially as described.

10. In an envelope-folding mechanism, plates *t*, adapted to have envelopes folded thereon, and having air-passages therein, substantially as described, in combination with hollow shaft S, supporting said plates, and having passage *i*, arranged to operate substantially as described.

296,354. PARASOL-FRAME. HENRY M. RICHARDSON, Boston, Mass. Filed Jan. 29, 1884. (No model.)



Claim.—1. The combination, to form a parasol-frame which can be opened or closed from the outside, of a thimble or hollow sleeve, to which the upper ends of the main ribs are connected, a sliding stem adapted to slide through the thimble, to the lower portion of which stem are connected the inner ends of the supplemental ribs, and supplemental ribs attached to the stem and to the main ribs, substantially as set forth.

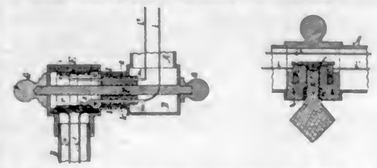
2. The combination, to form a parasol-frame which can be opened or closed from the outside, of a thimble or hollow sleeve, to which the upper ends of the main ribs are connected, a sliding stem adapted to slide through the thimble, to the lower portion of which stem are connected the inner ends of the supplemental ribs, supplemental ribs attached to the stem and to the main ribs, and means for fixedly connecting the stem with the thimble, substantially as set forth.

3. As a means for connecting the stem with the thimble and for securing additional tension to the expanded frame in a parasol-frame of the class herein recited, the combination of the threaded boss upon the thimble and the threaded socket connected with the stem, substantially as set forth.

4. The combination of the thimble, the rotatable stem, the main ribs, the supplemental ribs, the boss upon the thimble, and the socket within the head of the stem, substantially as set forth.

5. In a parasol-frame, the combination of a thimble, main ribs pivoted at their upper extremities to said thimble and connected intermediately of their length to the respective outer extremities of auxiliary ribs, a stem adapted to slide within said thimble, and auxiliary ribs at their respective inner extremities, pivoted to a collar carried by the stem, and within which said stem swivels, substantially as and for the purposes set forth.

296,355. SWINGING BRACKET FOR ELECTRIC LAMPS. JOHN RITCHIE, Brookline, Mass. Filed Dec. 26, 1883. (No model.)

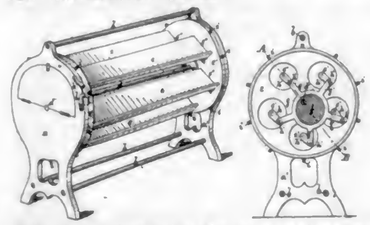


Claim.—1. The combination of the rotary key of insulating material, provided with the switch fulcrumed to it, and also with the depressing-spring, with the concentric or surrounding insulating-block, its metallic studs, and curved rails, all being adapted in manner and for use with electric-circuit wires, substantially as set forth.

2. The lower joint-section, D, provided with the insulator *m* in its neck, and the spring circuit-wires *n o*, extending through and above such insulator, in combination with the upper joint-section, E, and its tubular insulator *u*, and metallic rings *r s*, arranged in and adapted to it, all being substantially and to operate as represented.

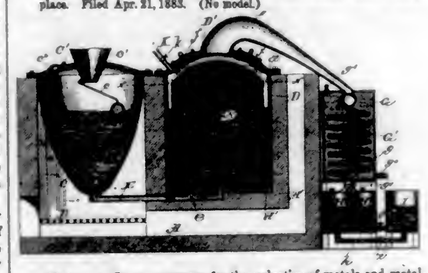
3. The combination of the joint-sections D and E, having the insulators *m u*, electric wires *n o*, and metallic rings *r s*, arranged as set forth, with the circuit-wires *i i′ i²*, and the part A, provided with the rotary key *a*, switch *f*, spring *c*, insulating-block *b* and its metallic studs *h*, and curved rails *g*, all being adapted and to operate substantially as represented.

296,356. REVOLVING BOOK-REST. SIMON ROSEN, Cambridgeport, Mass. Filed June 11, 1883. (No model.)



Claim.—In a revolving book or other rest, the stationary supports *a a′*, the revolving heads *c c′*, journaled on said supports, and the shelves *e e e*, journaled on said heads and provided with cranks A A A, combined with the stationary eccentric *f* and the movable ring *g*, having arms *g′ g′*, hinged in their outer ends, respectively, to cranks A A A, as and for the purpose set forth.

296,357. PROCESS OF AND APPARATUS FOR REDUCING METALS BY ELECTROLYSIS. AUGUSTUS J. ROGERS, Milwaukee, Wis., assignor of two-thirds to Henry Mann and Julius Koebig, both of same place. Filed Apr. 21, 1883. (No model.)

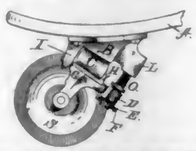


Claim.—1. In an apparatus for the reduction of metals and metalloids by electrolysis of their salts or ores in a melted condition, the combination of a melting-pot located over a suitable fire-bed, and an independent decomposing-tank provided with electrodes, and a close-fitting cover having gas-tight passages leading therefrom, and a condensing apparatus and receptacles, together with suitable connecting-pipes and cocks, all arranged and adapted to operate substantially as set forth.

2. The process of separating sodium or potassium from sodium chloride or potassium chloride, substantially as described, consisting in heating the salt to the point of fusion in a suitable vessel, conveying the liquid thus obtained to a separate independent decomposing-tank pro-

vided with electrodes, and passing an electric current through the liquid to separate the chlorine therefrom, and then conducting the gaseous chlorine and vaporized sodium or potassium into separate receptacles, that for the latter containing coal-oil, and the passage which conducts the vaporized sodium or potassium into the said receptacle being supplied with hydrogen or other suitable gas, to prevent contact of oxygen with its contents at the commencement of the process of separation, substantially as set forth.

296,358. ROLLER-SKATE. JACOB V. ROWLETT, Richmond, Ind. Filed Mar. 10, 1884. (No model.)

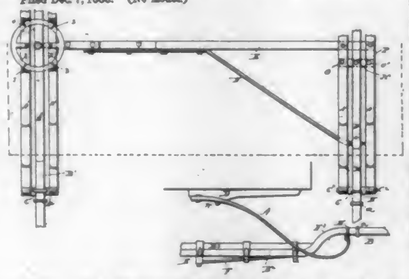


Claim.—1. The adjustable post O, in combination with the bracket B, eye-pivot D, and pin F, substantially as set forth.

2. The adjustable post O, in combination with bracket B, eye-pivot D, pin F, and washer E, with lug K, holding the pin in position, substantially as set forth.

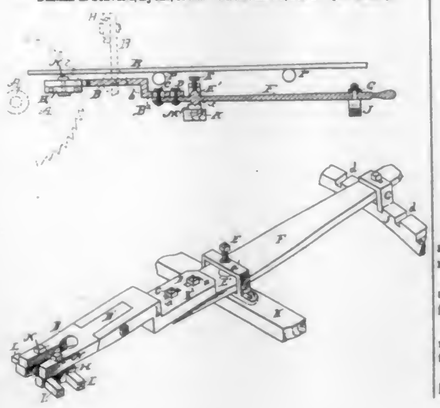
3. In a roller-skate, the combination of the foot-piece A, the bracket B, having post I, and adjustable post O, and flanges M M, with hanger G, having flange H, the elastic spring C, pivot N, eye-pivot D, washer E, having lug K, and pin F, all constructed substantially as and for the purpose set forth.

296,359. VEHICLE-SPRING. CYRUS W. SALADEE, Torrington, Conn. Filed Dec. 7, 1883. (No model.)



Claim.—In combination with the axle of a road-wagon, the self-compensating duplex spring A A, the latter being curved downwardly from or near its center to the requisite point, then bent upwardly to a direct connection with the trunnions B B, substantially as specified.

296,360. SAW-SHIFTING MECHANISM FOR GANG-EDGERS. DANIEL L. STEVENS, Lyons, Iowa. Filed Jan. 15, 1884. (No model.)



Claim.—1. The combination of the bifurcated head B, plate B^2, lever F, and the guide-pin blocks H, pivoted centrally to the bifurcated head, substantially as and for the purposes described.

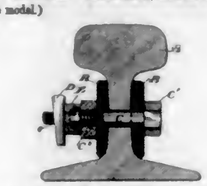
2. The combination of the plate B^2, lever F, pivoted blocks H guide-pins L, and the bifurcated head B, connected to the plate B^2 by a joint adapted to enable the entire head to be raised away from the saw, substantially as and for the purposes set forth.

3. The combination of the hinged bifurcated head B, the pivoted blocks H, having the guide-pins L, the lever F, and the plate B^2, jointed to the bifurcated head and to the lever, and provided with the offset *b*, substantially as and for the purposes described.

4. The combination, with the lever-plate F, having the transverse slot O, of the bifurcated jointed head B, pivoted blocks H, guide-pins L, and the plate B^2, provided with the longitudinal slots *a a*, substantially as and for the purposes set forth.

5. The combination of the pivoted blocks H, pins L, bifurcated jointed head B, plate B^2, provided with longitudinal slots *a a*, the lever F, provided with the transverse slot O, and pivotal studs E' *c*, the yoke *d'*, provided with the set-screw E, the dog G, and the notched gage-bar J, substantially as and for the purposes described.

296,361. NUT-LOCK. HIRAM STONE, Cleveland, Ohio. Filed Jan. 31, 1884. (No model.)

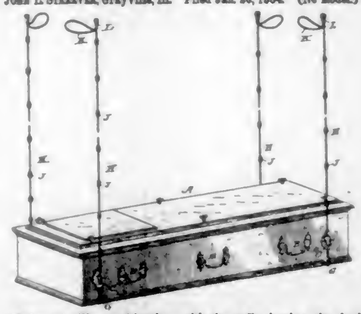


Claim.—1. In a nut-lock, the combination, with a bolt provided with a head, a threaded portion, and a smooth portion of reduced diameter, having a diagonal slot formed therein, of a tapering key adapted to fit within the diagonal slot in the bolt, and a sleeve located on the bolt between the key and nut, said sleeve being chambered at one end to pass over the threaded portion of the bolt, the opposite end of the sleeve engaging the smooth portion of the bolt, substantially as set forth.

2. In a nut-lock, a bolt provided with a longitudinal slot beyond the threaded part, in combination with the washer E and the key D, and the parts so arranged that the nut may be successively tightened and locked, as may be required from time to time, as the parts wear or stretch, substantially as set forth.

3. In a nut-lock, the bolt C, provided with the nut C^2 and the sleeve E, in combination with the key D, of such width, length, and taper as required to "follow up" the nut and sleeve for some distance, and of such thickness and flexibility that the key may be bent to prevent its "backing out" or becoming loosened, substantially as set forth.

296,362. DEVICE FOR LOWERING OR RAISING COFFINS, &c. JOHN L. STREEVER, Grayville, Ill. Filed Jan. 26, 1884. (No model.)



Claim.—1. The combination, with the coffin having the device C attached thereto, and formed with a dependent hook, of the lowering-rope arranged to be connected to the device, as set forth.

2. As an article of manufacture, the coffins provided with the ornamental devices C, in which the handles are pivoted, for the purpose set forth.

3. As an article of manufacture, the coffins provided with the ornamental devices C, consisting of a body having a hook, ring, or lug formed therewith, and a dependent hook, as set forth.

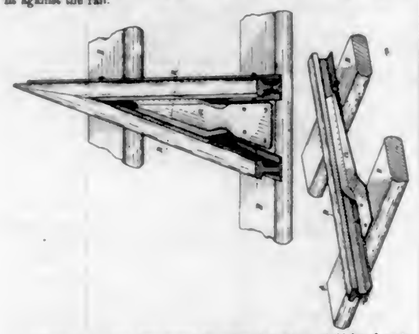
4. A device for lowering or raising coffins, &c., consisting of a body having a hook, lug, or ring formed therewith and provided with a dependent hook, in combination with a rope having a ring or hook attached thereto, as set forth.

5. A device for raising or lowering coffins, &c., consisting of a raised or bulged body formed with a central U-shaped slot, attaching-flanges, a projecting hook or lug, and a depending hooked rod, as described, in combination with the rope, as set forth.

6. A device for lowering or raising coffins, &c., consisting of a raised or bulged body having attaching-flanges, a central U-shaped slot, a projecting hook or lug, and a depending hooked rod, in combination with the rope having hand-holds at suitable intervals, a ring at one end of the rope, and a loop at the other end, as set forth.

296,363. FOOT-GUARD FOR RAILWAYS. HERVEY SULLINGS, Kalamazoo, Mich. Filed Aug. 23, 1883. (No model.)

Brief.—A foot-guard consisting of a rigid level plate secured at one end to the tie, and having upward and outward extending flanges to fit against the rail.



Claim.—1. In a foot-guard for railroad-tracks, a rigid level plate having upward and outward extending flanges fitting up against the under edge of the upper part of the rail, substantially as set forth and described.

2. In a foot-guard for railroad-tracks, a rigid plate with the point turned to fit into the groove and resting on the base of the rail, with opposite end depressed suitable for resting on and spiking to the tie, substantially as specified and described.

3. In a foot-guard for railroad-track, a rigid plate provided with upward and outward extending flanges to fit against the under edge of the upper part of the rail, with the point turned downward and outward, fitting into the groove, and resting on the base of the rail, with opposite end depressed for resting on and spiking to the tie, holding it firmly in position, substantially as set forth and described.

296,364. CHAIN-HOIST. CHAS. A. TEAL, Philadelphia, Pa., assignor to Martha R. P. Teal, same place. Filed Feb. 15, 1884. (No model.)



Claim.—1. The combination, substantially as herein described, with a frame-work, of a shaft carrying a hand chain-wheel and a pinion, and two gear-wheels engaging with said pinion and operating the chain-pulleys.

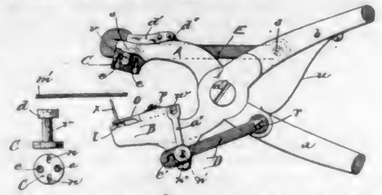
2. The combination, substantially as herein described, with the frame, of a pinion-shaft carrying the hand chain-wheel, a shaft on each side thereof having gears meshing with said pinion, and chain-pulleys upon said shafts, the arrangement being such that one chain-pulley will move faster than the other.

3. A chain-hoist consisting of a frame, A, shaft B, carrying a pinion and hand chain-wheel, shafts F G, carrying gears F' G' and chain-pulleys F^2 G^2, chain H, passing over said pulleys, and a pulley-block, the whole adapted to form a differentially-acting hoisting apparatus, as set forth.

296,365. GALVANIC BATTERY. HENRY TRANK, Windsors Road, High Street, Battersea, County of Surrey, England. Filed Aug. 13, 1883. (No specimens.) Patented in England Feb. 3, 1883, No. 598.

Claim.—As the liquid for charging the carbon-cells of galvanic batteries, chloro-chromic acid, known otherwise as "oxydichloride of chromium," "chloro-chromic anhydride," or as "oxychloride of chromium," "(CrO_2Cl_2) substantially as and for the purposes described herein.

296,366. BUTTON-SETTING INSTRUMENT. JAMES F. THAYER, Providence, R. I. Filed Feb. 15, 1884. (No model.)



Claim.—1. A button-setting instrument composed of two members, one of said members being provided with means for holding a fastener, and the other member provided with a rotary die containing a series of openings and dies adapted to be automatically operated, the whole combined and arranged substantially as described.

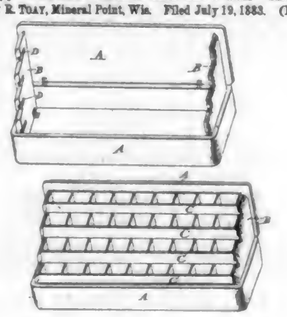
2. In a button-setting instrument, the combination, with one member thereof, of a rotary die having on its surface an alternate series of openings and dies arranged to be operated by means of a ratchet-wheel and connections, substantially as described.

3. In a button-setting instrument, the herein-described rotary die C, consisting of the openings *e*, dies *n*, stem *v*, and ratchet-wheel *d*, in combination with the spring *d'* and connection E, attached to the opposite member of instrument back of pivot *a'*, arranged and adapted for use substantially as shown and described.

4. In a button-setting instrument, the herein-described fastener-holding device, consisting of the plate *o* and spring *p*, in combination with the lever *a''* and link D, attached to the opposite member of instrument back of the pivot *a'*, arranged and adapted for use substantially as shown and described.

5. The herein-described button-setting instrument, consisting of member A, having rotary die C, spring *d'*, and connection E, and the member B, provided with the seat *t*, forked plate *o*, spring *p*, lever *a''*, and link D, the whole combined and arranged substantially as shown and described.

296,367. COMBINED PACKING AND SHOW BOX. SIMON TOAY and JOHN R. TOAY, Mineral Point, Wis. Filed July 19, 1883. (Model.)



Claim.—1. In a combined packing and show box, A, the raisers B B, fastened at their ends to the bottom of the box, on the inside, and having grooves D D on their inside, adapted to receive the tongues E E of the trays C when opened, as described and shown, for the purpose set forth.

2. In a box, the raisers B B, having grooves D D on the inside and groove *a* on the outside, the raisers attached to the bottom and ends of the box on the inside, and adapted to be folded down to receive the trays C C in the box, or raised to support the tongues E E of the trays, as shown and described, and for the purpose set forth.

296,368. TEDDER-CRANK. FULLER TRUMP, Springfield, Ohio. Filed Nov. 20, 1883. (No model.)



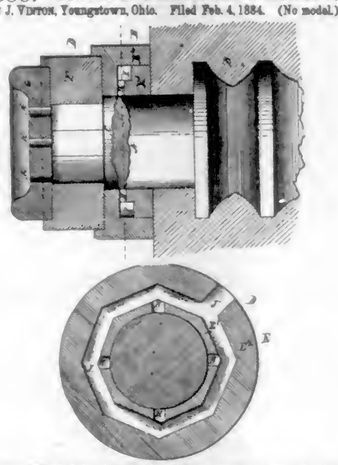
Claim.—1. A crank-shaft consisting of two or more crank-pieces and intermediate coupling-pieces, constructed for connection to form a rigid shaft, and also to be readily separated, substantially as set forth.

2. The combination, in a crank-shaft, of crank-pieces and coupling-pieces, with corresponding recesses and projections upon the crank-arm or coupling-pieces, to permit the continuous connection of the parts without interfering with their ready detachment, substantially as set forth.

3. The combination of the crank-pieces and coupling-pieces, having corresponding recesses and projections, the coupling-pieces adapted to the bearings, substantially as specified.

4. The coupling-pieces adapted to unite adjacent crank-pieces, and with projections or recesses at opposite ends arranged at different angles, for the purpose set forth.

296,369. MOLD FOR REPAIRING BROKEN ROLLS, SHAFTS, &c. JOHN J. VIDTON, Youngstown, Ohio. Filed Feb. 4, 1884. (No model.)



Claim.—The herein-described mold for repairing broken rolls and shafts, consisting of the lower portion, E, made in two parts, with the central opening for the broken end of the broken roll or shaft, and the radial passages and circumferential channel having the outlet J, the central or wabbler section, F, and the upper or basin section, G, provided with the gates K, leading to the wabbler and neck sections, substantially as specified.

296,370. IMPLEMENT FOR SMOOTHING OR POLISHING METALLIC SURFACES. WILLIAM JAMES WALKER, Franklin, Mass. Filed Jan. 18, 1884. (No model.)

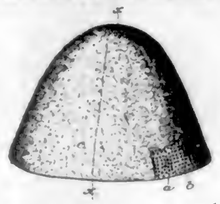


Claim.—1. The combination of the tubular and flanged screw c and the disk *f* with the nut *e*, screwed upon and extended beyond the said screw, all being substantially as represented.

2. The combination of the tubular and flanged screw c and the disk *f* with the nut *e*, screwed on and extended beyond the screw, as set forth, and with the screw *h* and packing *g* arranged in the said nut, and with respect to the said screw *c*, all being substantially as represented.

3. The combination of the screw-threaded tubular shank *c*, having the disk-shaped flange *d*, screw-threaded nut *e*, and disk *f*, as described, with the cock C, extended into the nut *e* and tubular screw *c*, and with the water-proof and elastic vessel *a*, applied to such neck, all being substantially as represented.

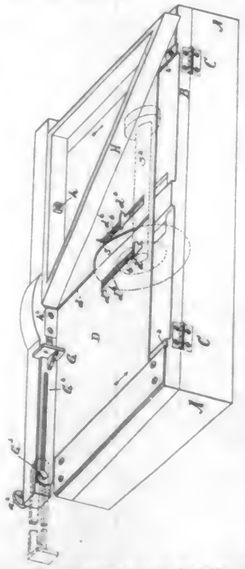
296,371. HEAD-COVERING AND METHOD OF MAKING THE SAME. ARTHUR B. WARING, Boston, Mass. Filed Feb. 13, 1882. (No model.)



Claim.—1. As an improved article of manufacture, a head-covering composed of a perforated felt body having a nap deposited upon and incorporated with it, the holes in the body serving to receive the accumulation of fine fibers through the body at different spots, all substantially as and for the purpose described.

2. That step in the art or method of covering a perforated fibrous or felt body with a nap of fur which consists in depositing the said fur nap upon the body and through the perforations of the said fibrous or felt body while held upon a perforated exhausted former, substantially as described.

296,372. APPARATUS FOR SAWING PRINTERS' BLOCKS. GEO. WILLIAMSON, Cambridge, assignor to J. O. Hayden, Somerville, Mass. Filed July 30, 1883. (No model.)



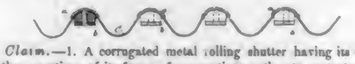
Claim.—1. The bed-plate, saw, and the sliding rule or work support, provided with the rest E and a slit for the saw, combined with an adjustable stop to determine the distance between the edge of the saw and the said rest when a rule is to be but partially cut through, substantially as described.

2. In an apparatus for cutting printers' rules, the top, the saw, the bed-plate, sliding rule or work support provided with rest E, saw-slit *d*, and slot d^4, and the adjustable gage connected therewith, combined with the adjustable stop d^4, substantially as described.

3. In an apparatus for sawing printers' rules, the sliding rule or work support provided with the rest E, combined with the gage G, having a slotted shank and made reversible, substantially as described.

296,373. CORRUGATED METAL ROLLING SHUTTER. JAMES G. WILSON, New York, N. Y., assignor to Francis Forbes, same place. Filed Dec. 22, 1883. (No model.)

Brief.—Corrugated metal rolling shutters have their edges strengthened by metal shields fitted individually to their crowns, and the shutters are prevented from catching, in rolling and unrolling, by pads secured in the concavities of the corrugations.



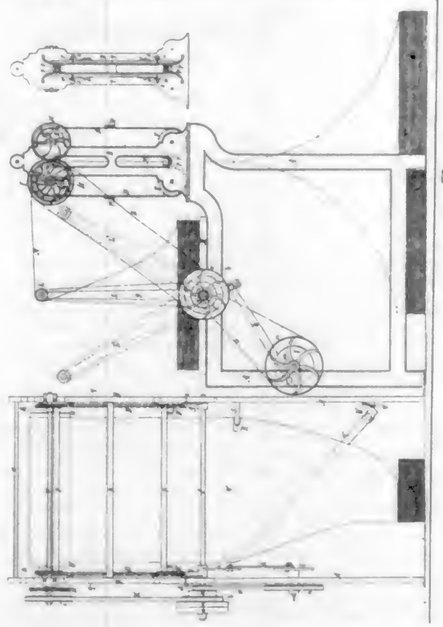
Claim.—1. A corrugated metal rolling shutter having its edges and those portions of its face or faces contiguous thereto protected and strengthened by means of superposed metal shields fitted to the crowns of individual corrugations and individually attached, substantially as shown and described.

2. A corrugated metal rolling shutter having washers or pads fixed in the concavities of its corrugations, but not projecting beyond the crowns of its convex surfaces, substantially as shown and described.

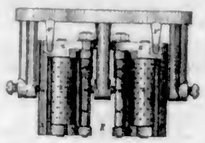
3. The combination, with a corrugated metal rolling shutter, of metal shields and pads, substantially as described.

296,374. CLOTH-FOLDING MACHINE. JOHN EMORY WINDLE, Worcester, Mass. Filed Mar. 5, 1883. (No model.)

Brief.—A pair of roller-temples and a distender are attached to one side of the frame. The two selvages of the cloth are passed through the two temples, the cloth at its middle being forced away from them by the distender in a manner to distend the cloth opposite to where it is held by the temples, which folds the cloth once lengthwise. It is then passed upward between two pairs of endless chains provided with a series of bars, which bars of the two pairs of endless chains come together, so as to grasp and hold between them the cloth folded lengthwise at its middle. It then passes partly about a roller fixed on one of the standards that support the endless chains and their actuating mechanism, thence to and partly around a roller of the vibrator and down onto a platform, where it is crosswise folded and laid regularly by the oscillation of the vibrator.



296,374.



Claim.—1. The cloth-folding machine or combination, substantially as described, consisting of the two sets of endless chains, their bars and yielding jaws, the cloth-roller, the receiving-platform, the vibrator, the distender, and the two temples, all arranged and provided with mechanism for operating the said chains, jaws, vibrator, and distender, essentially as set forth.

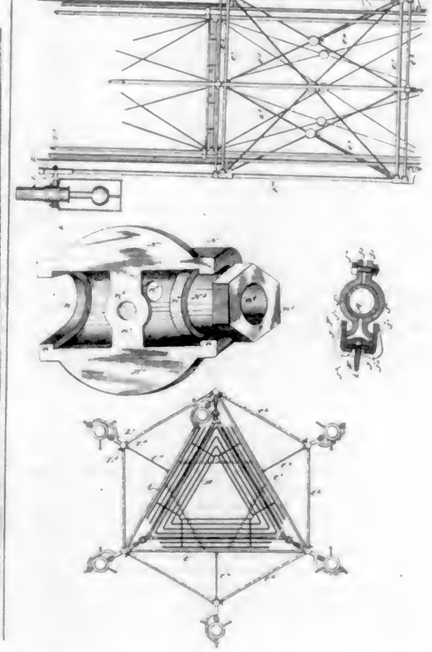
2. The carrier-frame S, having the bent stop *v*, in combination with the roller-temples R R, pivoted to such frame, as set forth.

3. A roller-temple provided with a yielding presser, in combination with and pivoted to a carrier-frame, as set forth.

4. A roller-temple, R, consisting of the toothed roller *z*, presser *y*, rod *w*, spring *a'*, and case *x*, as set forth.

296,375. TOWER. JOHN S. ADAMS and FREDERICK U. ADAMS, Elgin, Ill. Filed May 31, 1883. (No model.)

Brief.—A vertically-moving lamp-carriage exterior to the tower is operated by endless ropes passing over pulleys and provided with a counter-weight. The lower pulleys are mounted in a radial frame adjusted by means of a tension-rod. The supports for the lamps extend above the lamp-carriage and project above a rail on the top of the tower. The rails for the carriage are supported from the uprights in adjustable brackets. The latter consists of a chair clutching the rail connected by a clamp adjustable on the upright by a nut and bolt. The lamp-carriage has brackets with wheels traveling on the rails, and with an eye for the hoisting-rope. The tower is triangular and the lamp-carriage hexagonal, having posts located opposite the angles of the tower and joined by horizontal girts parallel with the sides of the tower, and intermediate posts with girts and braces. A clamp for the diagonals consists of a recessed junction-plate with semicircular end openings and flanges, and a nut with a collar and exterior squared head. It also has an apertured cross-bar for the tie-bar. The junction-plates close each other.



Claim.—1. The combination, with a skeleton tower, pulleys for supporting the hoisting-ropes arranged radially to said tower at the top thereof, and an exterior lamp-carriage, of two or more suspending-ropes trained over said pulleys and severally connected at both ends with the carriage, pulleys suspended by the several ropes at the lower end of the tower, means for holding the suspended pulleys upright, and a weight or weights connected with the ropes for counterbalancing the carriage, substantially as described.

2. In combination with the external lamp-carriage, the upper and lower pulleys, and the endless suspension-ropes connected with the carriage, as described, a frame, H^4, to which the several lower pulleys are attached, and a central tension device for tightening the suspension-ropes, substantially as described.

3. In combination with the duplex tower-uprights, Fig. 7, the pulley-frame H^4, having its arms extended between the members A' of said duplex uprights, and the pulleys H^2, connected with said frame, substantially as described.

4. In combination with the radial pulley-frame H^4 in the structure described, the tension-rod h^3, applied centrally to said frame, substantially as described, and for the purpose described.

5. In combination with the tower-uprights A, external rails or ways, F, and adjustable brackets F', for supporting said rails from the uprights, substantially as described.

6. In combination with the prismatic tower, the external lamp-carriage and guides therefor, and supports for the lamps extending above the carriage-frame, whereby the lamps are supported above the top of the tower, substantially as described.

7. In combination with a prismatic tower having a polygonal platform or rail at its top, the lamp-carriage having upwardly-extended posts for supporting the lamps, said posts being arranged in position to rise above said rail or platform opposite its sides, substantially as shown.

8. In combination with the tower uprights A and rails F, a chair, J, immediately secured to the rail, a clamp attached to the upright, and means for adjusting the rail-chair with reference to the clamp and upright, substantially as described.

9. The combination, with a skeleton tower and a lamp-carriage capable of moving up and down exteriorly to said tower, of a supporting-post, E^2, attached to said moving carriage, and a bracket for immediately supporting the lamp, constructed to rotate upon said post, whereby said lamp may be caused to swing within reach of the attendant standing within the tower.

10. The combination, with a skeleton tower and a lamp-carriage adapted to move up and down exteriorly to said tower, provided with upwardly-extended posts E^2, of the lamps L, brackets L', tubes L^2, and set-screws L^3, whereby the lamps are supported above the frame-work of the carriage, may be swung inwardly within reach of the attendant standing upon the platform M, and may be adjusted and fastened in any position desired.

11. In combination with the external lamp-carriage, rails F, exteriorly secured to the tower, and with the hoisting-ropes, the brackets E', provided with wheels *e*, fitted to the rails, and with the eyes E^2, to give attachment to the hoisting-ropes, substantially as described.

12. In combination with a triangular tower, the exterior hexagonal lamp-carriage consisting of posts E^2, located opposite the angles of the tower and directly joined by horizontal girts *d'*, parallel with the tower-sides, and intermediate posts, E^2, supported in the same circle with those first mentioned by girts d^2 and necessary braces, substantially as described.

13. In combination with the two-part diagonal braces of a skeleton tower, the recessed junction-plate N, provided with flanges *n* and the nuts N^2, having the collar n^4, and constructed to project outside the junction-plate to give attachment for a wrench, substantially as described.

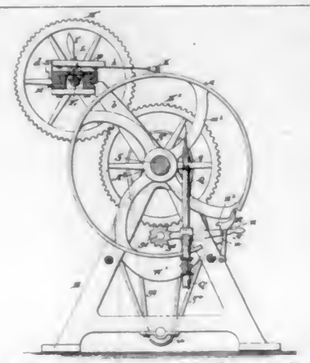
14. In combination with the two-part diagonal braces of a skeleton tower, the recessed junction-plates N, constructed to mutually close each other when in position, and provided with apertured cross-bars *n'*, whereby the tie-bolt holds said plates more accurately in position opposite each other, substantially as shown.

15. In combination with the junction-plate N, having the semicircular end openings and flanges, *n*, the cylindrical nut N^2, provided with the collar n^4, and exterior squared head n^5 to receive the wrench, substantially as described.

296,376. AUTOMATIC TELEGRAPH. RUFUS ANDERSON, Peekskill, N. Y. Filed Mar. 17, 1883. (No model.)

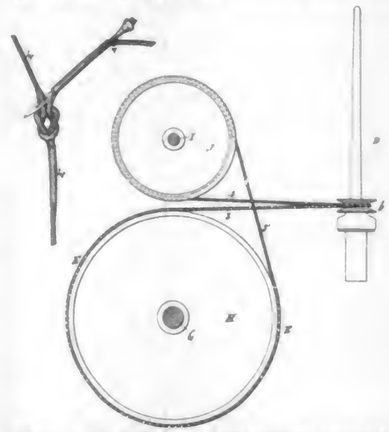
Claim.—1. The combination, with the drum, the sliding carriage and contact-roller carried thereby, and the screw-shaft, of mechanism for engaging the carriage with said screw-shaft and simultaneously bringing the contact-roller in contact with the drum, substantially as described.

2. The combination, with the drum, the carriage-support, the sliding carriage, and the screw-shaft, of the pivoted arm D, having the spring *k* secured thereto, and carrying the contact-roller, the knife-edge plate F, secured to said arm and extending downward through the carriage, and the pivoted disk L, provided with a suitable handle, and having the eccentric pin l^3 extending loosely through said arm D, substantially as described.



3. In an automatic telegraph-transmitter, the combination, with a drum for the reception of a message in non-conducting spaces, and actuated at will by one of two sets of gearing, one of which is adapted to give the drum a much greater rate of speed than the other, of the gear-wheel E^3, mounted upon the drum-shaft and intermediately connected with the screw-shaft, the short shaft S^2, carried by the lever N, the pinion S^4, mounted on the short shaft and arranged to mesh with said gear-wheel, the belt-wheel W', also mounted on said short shaft, and means for transmitting motion to said belt-wheel, substantially as described.

296,377. SPINNING-FRAME AND METHOD OF UNITING THE ENDS OF BANDS THEREOF. JOHN E. ATWOOD and EUGENE ATWOOD, Stonington, Conn. Filed July 19, 1879.



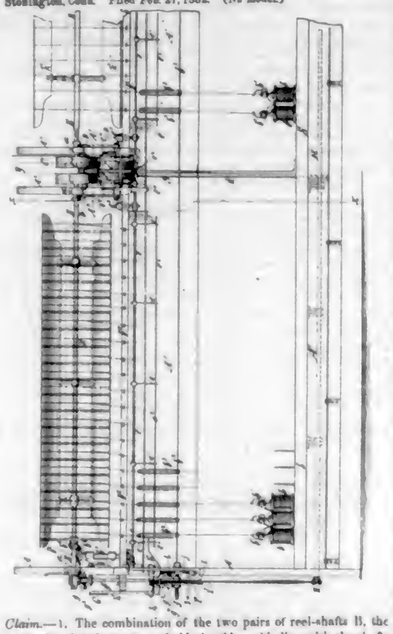
Claim.—1. The combination of a driving-pulley and a guide-pulley having parallel axes, and arranged one over the other, a spindle arranged at one side of said pulleys, with its whirl in a horizontal plane about midway vertically between said pulleys, and a driving-band encircling both of said pulleys and said whirl, and comprising two portions extending horizontally between the whirl and adjacent sides of the two pulleys, and a portion extending directly from one pulley to the other and passing between the said horizontal portions, substantially as described.

2. The combination of a driving-pulley and a guide-pulley having parallel axes, and arranged one over the other, two spindles arranged on opposite sides of said pulleys, with their whirls in a horizontal plane about midway vertically between said pulleys, and two driving-bands, each encircling both of said pulleys and the whirl of a spindle, and each comprising two portions extending horizontally between the whirl around which it passes and the adjacent sides of said pulleys, and a portion extending directly from one pulley to the other and passing between said two horizontal portions, substantially as herein described.

3. The combination of the driving-pulley H and the flanged guide-pulley J and their shafts, arranged parallel with each other and one over the other, the spindle D and its whirl *b*, arranged as described, and the driving-band E, encircling both of said pulleys and said whirl, and comprising the horizontally-extending portions S S and the portion S', passing between the portions S S, all substantially as herein described.

4. The method of uniting the ends of the bands, which consists in looping the end portions into each other so as to lock or engage each with the other, and then sheathing the ends each within the portion of the band from which it proceeds, substantially as herein described.

296,378. MACHINE FOR REELING SILK, &c. JOHN E. ATWOOD, Stonington, Conn. Filed Feb. 27, 1882. (No model.)



Claim.—1. The combination of the two pairs of reel-shafts B, the shafts of each pair being arranged side by side and in line with the shafts of the other pair, friction-wheels c^4 upon the adjacent inner ends of said shafts, with friction driving-wheels c^3, on which the wheels c^4 rest, means for raising any one of the reel-shafts independently of the others, to carry its wheels c^4 out of contact with its driving-wheel c^3, a driving-pulley, C, arranged between the pairs of shafts and midway between the shafts of each pair, and mechanism for transmitting motion from this pulley C to all of the friction driving-wheels c^3, all substantially as and for the purpose specified.

2. The combination of the two pairs of reel-shafts B, provided with friction-wheels c^4, and arranged, as herein described, with two friction driving-wheels, c^3, and an interposed gear-wheel, c^3, connected together and arranged below the shafts, which are in line on each side of the machine, the friction-wheels c^4 of the reel-shafts resting on the friction driving-wheels c^3, the hand-levers D, whereby any one of said reel-shafts may be raised independently of the others to carry its wheel c^4 out of contact with its friction driving-wheel c^3, the single driving-pulley C and pinion *c*, and the gear-wheels *c'*, for transmitting motion from the pinion *c* to the interposed gear-wheels c^3, all substantially as specified.

3. The combination, with the rod b^{10}, of the drop-wires b^3, each composed of a single piece coiled at about the middle of its length to form an eye, and having two parallel portions extending from said eye to and coiled around said rod b^{10}, substantially as herein described.

4. The combination, with one or more reels and driving mechanism therefor, of a separate stop-motion for each reel, a rotary counter or trip for each reel, and a separate drop-lever adapted to be released by said counter or trip and to act upon the stop-motion to stop the reels, substantially as herein described.

5. The combination, with a reel and a stop-motion for automatically stopping the same when a thread breaks or runs out, of a counting device, which operates through said stop-motion to stop the reel when a sufficient quantity of material is wound thereon, and a target or indicator operated by the counting device, and adapted to show by its position whether the stoppage of the reel is due to a sufficient quantity of material being wound thereon or to a thread breaking or running out, substantially as herein described.

6. The combination, with one or more reels, driving mechanism therefor, and independent stop-motions of a separate rotary counter or trip and a separate drop-lever for each reel, mechanism for advancing the counters with a step-by-step motion, and mechanism for turning the counter or counters backward when released, substantially as herein described.

7. The combination, with the two pairs of reels and their common driving mechanism, of separate stop-motions for the several reels, the ratchet-wheel counters F and their attached pulleys I, the belts I' and means for driving them, the screw-threaded studs *f*, the drive-pawls g^3, and the drop-levers G, having pins h^3, and adapted to act upon the stop-motions to stop any one of the reels, substantially as herein described.

8. The combination, with two pairs of reels and their common interposed driving mechanism, of separate stop-motions for the several reels, the ratchet-wheel counters F, their attached pulleys I, belts I' and means for driving said belts, the screw-threaded studs *f*, the drive-pawls g^3, the drop-levers G, having pins h^3, and adapted to act on the several stop-motions, and the adjustable stops for arresting the backward movement of said counters F, substantially as herein described.

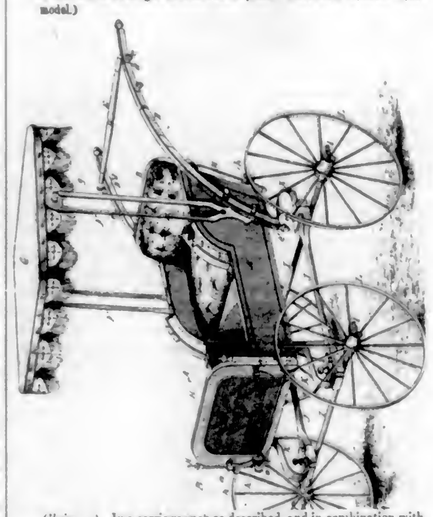
9. The combination, with a rotary counter, F, of a drop-lever, G, fulcrumed at one end, and a rest, A', for supporting the free end of said lever, substantially as specified.

10. The combination, with a rotary counter, F, of a drop-lever, G, fulcrumed at one end, a rest, A', for supporting the free end of said lever, and a stop, *a*, for arresting said lever in its fall, substantially as specified.

11. The combination, with a rotary counter, F, of a drop-lever, G, a fulcrum stud or pin, A, providing for the adjustment of said lever toward and from said counter, and a rest, A', for supporting the free end of said lever, and also adjustable, substantially as specified.

12. The combination, with the frame A and a rotary counter, F, of a drop-lever, G, a fulcrum-stud, A, screwed into said lever and adapted to be turned in said frame, and an adjustable rest, A', for supporting the free end of said lever, substantially as specified.

296,379. CHILD'S CARRIAGE. CLEM BAILEY, Kinston, N.C., assignor of one-half to Oettinger Brothers, same place. Filed Nov. 16, 1883. (No model.)



Claim.—1. In a carriage such as described, and in combination with the running-gear, the detachable body mounted directly upon the springs and provided with folding legs, substantially as described.

2. In a carriage such as described, and in combination with the running-gear thereof, the removable body mounted directly upon the springs, and provided with folding legs and the separable rockers, substantially as described.

3. In a carriage such as described, the combination, with the body, of curved handle-bar supports adapted to serve as rockers for the cradle.

4. In combination with the body, removably secured to the running-gear, as described, the folding legs attached to the body, and provided with means for securing them in position when folded, substantially as described.

5. As a means for uniting the handle-bars to the body of the carriage, and in combination therewith, the hook-joint, key-plate, and thumb-screws, arranged and applied substantially as described.

6. In combination with the carriage-body, handle-bar supports, and top standards, the hook-joints, key-plates, and thumb-screws for fastening the handle-bar supports and standards to the body, as set forth.

7. In combination with the standards and the pivoted top or canopy, the spring-brake to sustain the top in position on the rod.

8. The combined carriage-seat and chair, constructed, substantially as described, in sections, with the back rest removably connected to the seat, and the front support hinged to the latter.

9. In a carriage such as described, the removable seat and back rest constructed in sections, united as described, and adapted to form a chair when removed from the carriage-body.

10. In a carriage such as described, the detachable running-gear consisting of the axles provided with sockets for the reception of the side bars, in combination with the springs and thumb-screws.

11. In combination with a carriage-body such as described, the folding legs and detachable rockers.

12. In a carriage such as described, the S-shaped springs provided with a base-plate and interlocking ears for attachment to the axle, and with perforated ears for attachment to the body.

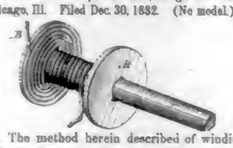
13. In a carriage such as described, the combination, with the sectional body, of the springs attached to the body by the thumb-screws for securing the sections together.

14. In combination with the removable curved handle-bar supports, the detachable handle-bar provided with pins for attachment to the handle-bar supports, as set forth.

15. In combination with the carriage-body provided with detachable legs, and adapted to be applied to the running-gear, the curved handle-bar supports provided with means for attachment to the legs, as and for the purpose set forth.

16. In a carriage such as described, and in combination with the body thereof, the detachable running-gear, the folding legs, and the curved handle-bar supports, whereby the carriage may be converted into a cradle.

296,380. ELECTRIC HELIX AND METHOD OF WINDING THE SAME. FORBE BAIN, Minneapolis, Minn., assignor to the Bain Electric Company, Chicago, Ill. Filed Dec. 30, 1882. (No model.)

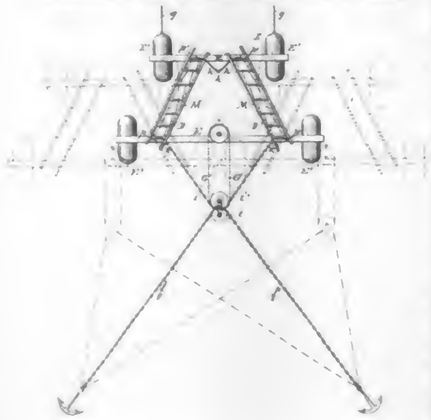


Claim.—1. The method herein described of winding an electric helix, consisting in winding a small portion of the helix from the core outward until said portion is completed and the end of the wire lies at the top, and then winding the remaining portion of the helix with the other end of the wire from the core outward, and leaving said final or second end also on top, substantially as and for the purpose set forth.

2. The method, substantially as hereinbefore described, of winding an electric helix, which consists in winding one coil with the layers superposed and leaving the end of the wire on top, and then winding the remaining coils and leaving the end of the wire on top.

3. An electric helix composed of a continuous wire, one coil of which has the consecutive layers of wire superposed and the end left on top, and the remainder of the wire wound in the usual way with the end left outside the coils, substantially as described.

296,381. HYDRAULIC MOTOR. HERMANN BAUMOTTE, Vossnaiken, (near Kupferdreh,) Prussia, Germany, assignor to himself and Rudolph Noggerath, St. Johann on Saar. Filed Nov. 19, 1883. (No model.)



Claim.—1. In a hydraulic motor, the combination of a floating main frame, converging auxiliary frames arranged symmetrically to the direction of the current, and endless paddle-chains mounted on sprocket-wheels of said auxiliary frames, the paddles of said chains being arranged diagonally to the axis of the chain and at right angles to the direction of the current, substantially as set forth.

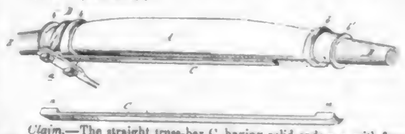
2. In a hydraulic motor arranged at an angle to the direction of the current, the combination of a supporting-frame, longitudinal guide-ways, a paddle-chain mounted on sprocket-wheels of said frame, and lateral paddle-bars having anti-friction rollers at the ends, one roller being made larger and the second roller being arranged with a cavity at its end, the second roller being arranged in said cavity and at right angles to the axis of the larger roller, substantially as described.

3. In a hydraulic motor, the combination of two symmetrically-arranged converging paddle-chain motors with forward-extending water gates or deflectors located between the rear ends of the motors, said water-gates being connected to each other, so as to divide the current, substantially as set forth.

4. In a hydraulic motor, the combination of floating paddle-chain motors and an intermediate chain attached to two points at the front of the motor-frame and connected at its center point to an anchoring-chain, substantially as set forth.

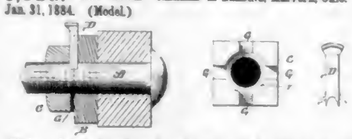
5. In a hydraulic motor, the combination of two floating paddle-chain motors supported on a connecting main frame, an intermediate front chain attached to two points of said frame, an anchoring-chain connected to the said center of the intermediate chain and anchored at both ends, a steering or adjusting chain extending from the motor-frame to the point of connection of the intermediate and anchoring chains, a sprocket-wheel at the outer end of said steering-chain, and motion-transmitting gearing, by which the sprocket-wheel is caused to travel along the anchoring-chain, so as to shift the motor to one side or the other from its normal position, substantially as specified.

296,382. AXLE-TRUSS. ALLEN J. BEACH, Linden, Mich. Filed Dec. 1, 1881. (No model.)



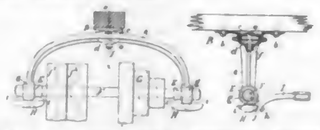
Claim.—The straight truss-bar C, having solid ends *a a*, with faces corresponding to the surface of the skeins, combined with the skeins B, having flanges *b*, and with the securing-clips D, whereby the truss-bar extends in substantially a straight line from skein to skein, so as to give the axle a limited amount of spring, and yet arrest the movement of the same under unusual strain, substantially as described.

296,383. NUT-LOCK. CHARLES E. BELDING, Malvern, Ohio. Filed Jan. 31, 1884. (Model.)



Claim.—In a nut-lock, the combination of the bolt, a nut, a forked key, and a plate or washer, the plate or washer and the nut being provided with grooves, so that when the key is driven into position its forked ends will be expanded around the sides of the bolt, substantially as shown.

296,384. SHAFT-HANGER. THEODORE BERGNER, Philadelphia, Pa. Filed Feb. 23, 1884. (No model.)

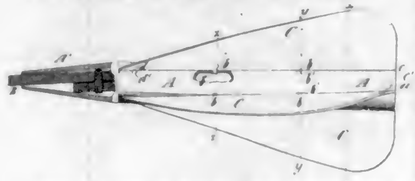


Claim.—1. A duplex hanger for counter-shafts mounted and universally adjustable upon a stationary foot-plate, substantially as and for the purposes described.

2. In combination with the frame, single or duplex, of a hanger, the journal-box, oil-dish, and clamping set-screw, substantially as and for the purposes set forth.

3. The combination, in a single or duplex hanger, of a reversible journal-box, reversible oil-dish, and reversible belt-shifter arm, substantially as and for the purposes described.

296,385. ROTATOR FOR SHIPS' LOGS. JOHN BLISS and GEORGE H. BLISS, Brooklyn, N. Y. Filed Feb. 18, 1884. (No model.)



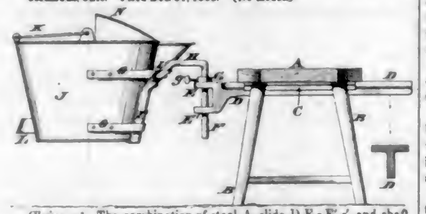
Claim.—1. A rotator for ships' logs, having an approximately cylindric body with a tapering forward end, and having spiral wings or blades which taper from their rear ends forward and form helicoidal surfaces radial throughout their length to the longitudinal center or axis of the body, substantially as herein described.

2. A rotator for ships' logs, having an approximately cylindric body with a forwardly-tapering end, and having spiral wings or blades which have a gradual taper from the place of largest diameter to the forwardly-tapering end, the taper of said end forming an approximate continuation of the taper of said wings or blades, and which form helicoidal surfaces radial throughout their length to the longitudinal center or axis of the body, substantially as herein described.

3. The combination, with the rotator-body A, of the wings or blades C, provided between their ends with teats or projections *b*, which enter holes *b'* in the body, and maintain the said wings or blades in spiral alignment on the body, substantially as herein described.

4. The combination, with the rotator-body A, of the wings or blades C, provided with tongues *c d*, and projections *b*, entering slots and holes *c' d' b'* in said body, and serving to preserve the spiral alignment of the said wings or blades, substantially as herein described.

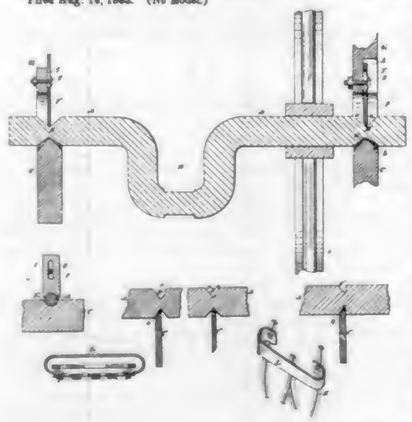
296,386. COMBINED MILK BUCKET AND STOOL. GEO. C. BOVEY, Columbus, Ohio. Filed Dec. 21, 1883. (No model.)



Claim.—1. The combination of stool A, slide D E e F *e'*, and shaft F, to which latter is fastened the milk-bucket J, said shaft being provided with a shiftable collar, G *g*, for the purpose described.

2. As a new article of manufacture, a milk-bucket having attached to it the shaft F, provided with a bend, H, socket I, and shiftable collar G *g*, as and for the purpose specified.

296,387. SHAFT-SUPPORT. ANDREW J. BRILL, Cincinnati, Ohio. Filed Aug. 16, 1883. (No model.)



Claim.—1. The shaft having a groove at right angles to its length and diminishing in cross-section as its approaches the center of the shaft, and the lower bearing-piece having a sharp edge engaging the bottom of the groove, the edge being curved in the direction of its length to fit the convexity of the shaft, substantially as and for the purposes specified.

2. A shaft having an annular groove in cross-section diminishing in size toward the center of the shaft, in combination with the lower bearing, the sides of the upper edge of which are beveled to form a knife-edge, the bottom of the annular groove resting on said knife-edge, and the sides of said groove being free from the beveled upper edge of said lower bearing, substantially as and for the purposes specified.

3. A shaft having an annular groove in cross-section diminishing in size toward the center of the shaft, in combination with the lower bearing, the sides of the upper edge of which are beveled to form a knife-edge, the bottom of the annular groove resting on said knife-edge, and being curved in the direction of its length to fit the convexity of the shaft, the sides of the groove being free from the beveled upper edge of said lower bearing, substantially as and for the purposes specified.

4. In combination, the shaft having annular groove in cross-section diminishing in size as it approaches the center of the shaft, and a lower bearing-piece having a substantially sharp edge engaging the bottom of said groove, the sides of the groove being free from the beveled sides of said bearing, substantially as and for the purposes specified.

5. In combination, the shaft having annular groove in cross-section diminishing in size as it approaches the center of the shaft, and a bearing-piece having a sharp edge engaging with the bottom only of said groove at one side of the shaft, and an upper bearing-piece having a sharp edge engaging the bottom only of said groove at the opposite side of said shaft, substantially as and for the purposes specified.

6. In combination, the shaft having annular groove provided with beveled sides, and a lower bearing-piece having beveled sides terminating in a sharp edge engaging said groove, and the upper bearing-piece having beveled sides terminating in a sharp edge engaging said groove, substantially as and for the purposes specified.

7. The shaft having annular groove and meeting beveled sides, in combination with two opposite bearing-pieces located at substantially opposite sides of its periphery, and each having a sharp edge engaging the bottom of said groove, and curved in the direction of its length to fit the periphery of the shaft at the bottom of the groove, substantially as and for the purposes specified.

8. The mechanism of annular beveled edge bearings and a knife-edge support, in combination with a knife-edge upper support, substantially as and for the purposes specified.

9. In combination, the shaft having annular groove provided with beveled sides and narrow bottom, and lower bearing-piece provided with sharp edge engaging the bottom of said groove, and the upper bearing-piece provided with slot and setting-screw device, substantially as and for the purposes specified.

10. In combination with the shaft having annular groove, substantially as herein described, the knife-edge lower bearing, and the upper bearing having a knife-edge and slot and set screw or bolt, substantially as and for the purposes specified.

11. In combination, a machine-stand having the yoke cast to the leg, the yoke carrying a knife-edge bearing, and the leg carrying a knife-edge bearing, and the shaft, crank, and slotted bearing-pieces, substantially as and for the purposes specified.

12. In combination, a machine-stand having the yoke cast to the leg, the yoke carrying a knife-edge bearing, and the leg carrying a knife-edge bearing, and the shaft, crank, and slotted bearing-pieces, substantially as and for the purposes specified.

13. In combination, a machine-stand having the yoke cast to the leg, the yoke carrying a knife-edge bearing, and the leg carrying a knife-edge bearing, and the treadle-shaft, crank, and slotted bearing-pieces, the leg being provided with recess for reception of a bearing-piece, substantially as and for the purposes specified.

14. In a sewing-machine stand, a half-yoke for supporting a bearing of the treadle-shaft, said half being screwed to the leg at each side of the stand, substantially as and for the purposes specified.

15. In combination with the leg of a machine-stand, the knife-edged bearing located in the leg and adapted to engage a groove in the shaft, substantially as and for the purposes specified.

16. In combination with the leg of a machine-stand, the knife-edged bearing located in and cast to the leg and adapted to engage a groove in the shaft, substantially as and for the purposes specified.

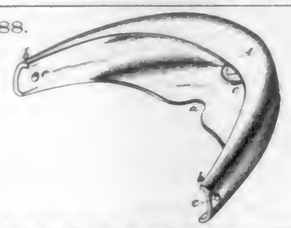
17. The half-yoke provided with a knife-edge bearing cast to the yoke, substantially as and for the purposes specified.

18. In a sewing-machine, the combination of the stand, fly-wheel, crank, adjustable knife-edge bearings C F, and shaft provided with annular grooves, substantially as and for the purposes specified.

296,388. EYE-PROTECTOR. RUFUS CHOATE, WILLIAM H. ROHRER, and ANDREW H. RAGAN, Washington, D. C. Filed July 24, 1883. (Model.)

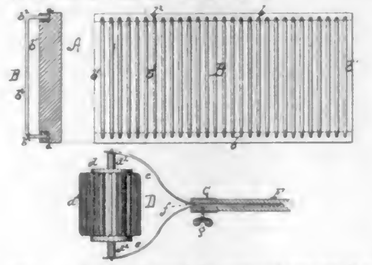
Claim.—An eye-shield consisting of a projection shield formed of paper-pulp, adapted to fit and be secured to the face of the wearer above

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and below the eyes, said shield having a narrow horizontal front opening or slit, substantially as set forth.

296,389. PLAITER AND PUFF-FLUTER. JANE A. CLOTHIER, Cumberland, Wis. Filed Aug. 27, 1883. (No model.)

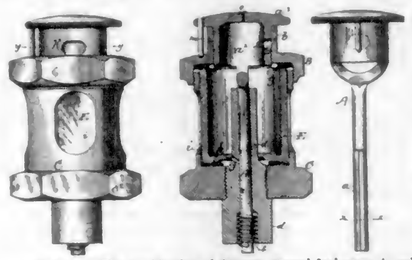


Claim.—1. The plate A, having the rabbet *a* on each side, in combination with the frame B, consisting of the side pieces, *b b*, and transverse strips *b'*, as set forth.

2. The plate A, having the rabbet *a* on each side, in combination with the frame B, consisting of the side pieces, *b b*, and transverse strips *b'*, said strips having the curves b^2 and middle portions, b^3, the latter out of the plane of the side pieces, *b b*, as set forth.

3. The presser-roller D, consisting of the body *d*, radial wings *d'*, and arbor d^2, in combination with the adjustable handle E, as set forth.

296,390. OIL-CUP. ISAAC H. CONGDON, Omaha, Nebr. Filed Feb. 1, 1884. (No model.)



Claim.—1. The combination of the cam-shaped feed-stem A and guide-stem *d* with spiral spring *f*, adapted to hold the cap of guide-stem A close on top of the cylindrical cap-nut B, substantially as and for the purpose set forth.

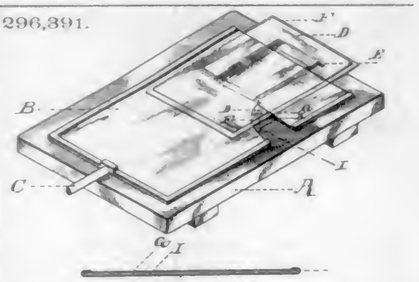
2. The combination of the cam-shaped feed-stem A, having the cylindrical top *a* and oblong hole L, cut through said cylindrical portion, with the cap-nut B, having the oblong hole K, cut through the extended rim of the same, substantially as and for the purpose described.

296,391. ART OF PRINTING BY SUNLIGHT OR OTHER LIGHT, AND APPARATUS THEREFOR. EZRA COPE, Hamilton, Ohio. Filed Jan. 5 1884. (No model.)

Claim.—1. In a sun-printing apparatus, an envelope provided with an exhaust-aperture, and having one of its layers of proper transparency, and one or both of its layers of collapsible limpness, substantially as and for the purpose specified.

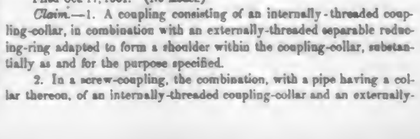
2. In a sun-printing apparatus, an envelope provided with an exhaust-aperture, and having one of its layers of proper transparency, and one or both of its layers of collapsible limpness, and adapted to receive a sensitive sheet or a negative, or both, substantially as and for the purpose specified.

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3. The improvement in the method of securing close contact between the negative and sensitive sheet in the art of sun-printing, which consists in connecting them together and exhausting the air from between them, substantially as set forth.

296,392. SHOE-CALK SHARPENER. JOHN H. CUNNINGHAM, Etna, assignor to himself and William M. Fishaven, Allegheny, Pa. Filed Jan. 11, 1884. (No model.)

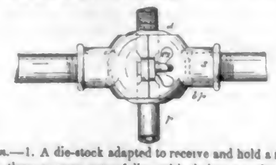


Claim.—1. In a tool for sharpening calks and other articles, the combination, with two files arranged parallel, of a clamp-handle composed of two plates or leaves, each provided with two parallel V-shaped grooves for the reception of the adjacent ends of the files, and devices for securing the leaves or plates together, substantially as and for the purposes specified.

2. In a tool for sharpening calks and other articles, the combination, with two files arranged parallel, of a handle provided with clamping-plates for securing the adjacent ends of the files at one extremity of the tool, and a detachable hand-rest provided with devices for clamping the adjacent ends of the file at the opposite extremity of the tool, substantially as and for the purposes specified.

3. In a tool for sharpening calks and like articles, the combination, with two files arranged parallel, of a detachable clamp for securing the adjacent ends of the two files, said clamp provided with a handle which extends in the axis or line of the files, substantially as and for the purposes specified.

296,393. SCREW-CUTTING DIE. JAMES M. DODGE, Indianapolis, Ind. Filed Nov. 22, 1883. (No model.)



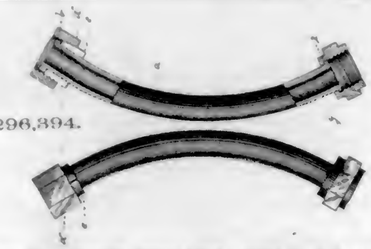
Claim.—1. A die-stock adapted to receive and hold a movable block containing three or more sets of dies, with their respective guides so arranged that the axis of each die and its guide may, at will, be placed and held at right angles with the axis of the handles and coincident, or nearly so, with the longitudinal center of the tool when complete, preserving its working-balance, substantially as described.

2. The movable multiple-faced die and guide herein described, the opening on one side adapted to receive and guide the pipe, the opposite face provided with a die for cutting a thread upon the pipe, in combination with any suitable die-stock for receiving and clamping the same, substantially as described.

296,394. COUPLING DEVICE. DANIEL P. DERCOLI, Pittsburg, Pa. Filed Oct. 17, 1881. (No model.)

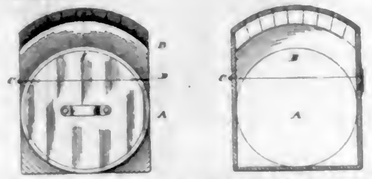
Claim.—1. A coupling consisting of an internally-threaded coupling-collar, in combination with an externally-threaded separable reducing-ring adapted to form a shoulder within the coupling-collar, substantially as and for the purpose specified.

2. In a screw-coupling, the combination, with a pipe having a collar thereon, of an internally-threaded coupling-collar and an externally-



threaded reducing-ring adapted to form a shoulder within the coupling-collar, substantially as and for the purpose specified.

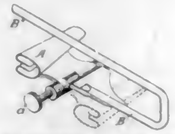
296,395. TRUNK. ABEL R. EARL, St. Louis, Mo. Filed Jan. 9, 1884. (No model.)



Claim.—1. A trunk the top of which is made of strips connected by V-joints, substantially as shown and described.

2. A trunk the top of which is made of strips connected by V-joints and provided with round corners, as set forth.

296,396. REVERSIBLE BINDING ATTACHMENT FOR SEWING-MACHINES. LYNDES F. ELLSWORTH, Wilton, N. Y. Filed Aug. 13, 1880. (No model.)



Claim.—1. A binding attachment for sewing-machines, consisting of a supporting-rod adapted to be adjustably secured to the presser-bar above the bed-plate, and in a line at right angles to the path of the needle, a scroll guide or guides, and means whereby the opening or mouth of the said guide or guides may be presented to either the outer or inner side of the needle-path, substantially as described.

2. In a binding attachment for sewing-machines, the combination, with a suitable support, of a hinged binding-guide adapted to be adjusted to reverse positions, substantially as described, and for the purpose set forth.

296,397. ERASER. GEORGE ELSEY, Springfield, Mass. Filed Feb. 6, 1883. (No model.)



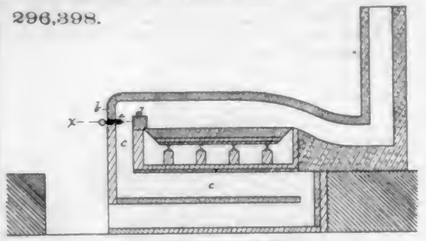
Claim.—1. The combination of a base-piece, *a*, having projections *c*, an erasing material, a handle-piece, *i*, and means to hold the parts in position, substantially as and for the purposes stated.

2. The piece *i*, screw *j*, and erasing material A, in combination with a base-piece, *a*, having boss *b*, pins *d*, and projections *c*, all constructed and operating substantially as shown.

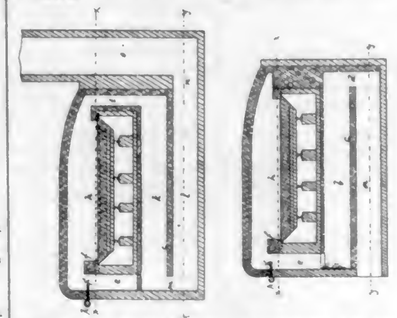
296,398. BRICK NOZZLE FOR GAS-FURNACE PIPES. JOHN EVANS, Etna, Pa., assignor of one-half to George A. Chalfant, same place. Filed June 1, 1883. (No model.)

Claim.—In furnaces for burning gaseous fuel, the combination, with the air-flue and bridge-wall, of the refractory gas-induction nozzles arranged in the furnace-walls and projecting into the air-flue to a point at or near the bridge-wall, said nozzles having beveled delivery ends and sockets for the reception of the gas-supply pipes, substantially as and for the purposes specified.

296,398.



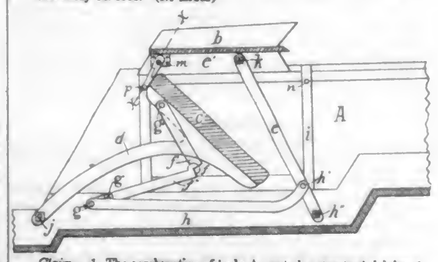
296,399. HEATING-FURNACE. JOHN EVANS, Etna, Pa., assignor of one-half to George A. Chalfant, same place. Filed June 1, 1883. (No model.)



Claim.—1. In a heating-furnace, the combination of the following elements, viz: return air-flues extending under the bed, and having the receiving and delivery ports at the front end of the furnace, a vertical chamber in front of the bridge-wall communicating with the air-flues, waste or smoke flues extending forward under the bed, and then back to the stack at the sides of the air-flues, and having the receiving and delivery ports at the rear end of the furnace, said air and waste-product flues being arranged alternately and in vertical planes, and a gas-main having branches which discharge the gas into the vertical air-chamber at or near the bridge-wall, substantially as and for the purposes described.

2. In combination with the bed of a heating-furnace, a regenerator-chamber arranged beneath the same, said chamber composed of a series of air and waste-product flues constructed in the form of return-flues, as specified, the air-flues having their receiving and delivery ports at the front of the furnace, the waste-product flues having their receiving and discharge ports at the opposite or rear end of the furnace, and the air and waste-product flues arranged parallel and alternating, whereby the air and waste products travel in reverse direction, and the air travels progressively from the coolest to the hottest part of the furnace, substantially as specified.

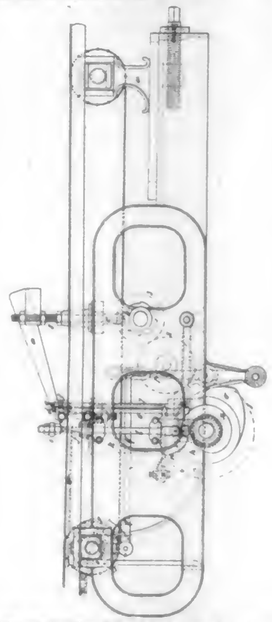
296,400. JUMP-SEAT CARRIAGE. DUDLEY E. GALE, Salisbury, Mass. Filed May 14, 1883. (No model.)



Claim.—1. The combination of body A, seats *b c*, standard *d*, jointed support *f*, jamping-iron *e*, and connecting-rod *h*, with said rod pivoted at its rear end to jumping-iron *e* at *h'*, above pivot *h''*, and having its front end pivoted to section *f''* of support *f* at *g''*, below pivot *g*, substantially as specified.

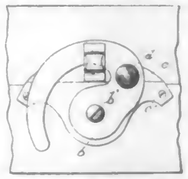
2. In combination with seat *b* and body A, the spring *l*, secured to base *c'* of the seat, and provided with the actuating-knob *p* and stud *t*, to engage seat *u* in the body, substantially as specified.

296,401. MACHINE FOR CARDING BUTTONS BY MEANS OF ELECTRICITY. LOUIS GILLON, Les Lilas, near Paris, France. Filed Jan. 7, 1884. (No model.) Patented in France Mar. 8, 1883, No. 154,136, and in Belgium Mar. 10, 1883, No. 60,710.



Claim.—The combination of the chutes *a*, pins *d e*, electro-magnet *k*, notched pole-piece *j*, and bar *i* with mechanism, substantially as described, for moving the pins *e* and the bar *i*, and for moving a card over the notched pole-piece and under the bar *i*, substantially as herein shown and described.

296,402. FASTENER FOR THE MEETING-RAILS OF SASHES. WILLIAM GOFORTH, Windsor, Mo. Filed Apr. 26, 1883. (Model.)



Claim.—The sash-fastening herein described, composed of the latch having its shank pivoted on the sash B, and provided with the tongue curved on an arc struck from its pivot and beveled from its point upward, and adapted to be swung twice over the joint between sashes A B, and the stop having a lateral ledge or plate projected from its upper end and arranged on sash A in position to be engaged by the latch-lever, substantially as described, and for the purposes set forth.

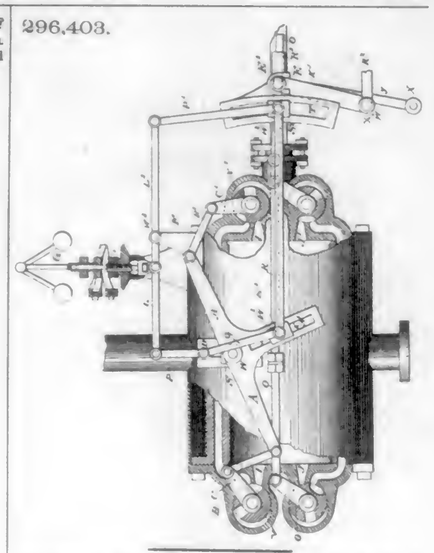
296,403. CUT-OFF MECHANISM. WM. FARR GOODWIN, Stelton, N. J. Filed May 9, 1883. (No model.) Patented in England May 23, 1883, No. 2,584.

Claim.—1. In combination with the induction-valves of a steam-engine, the adjustable lever or rock arms A A A′, links B B′, crank-arms C C′, pivot W, and rod R, combined together into a working system, in the manner and for the purpose substantially as described.

2. In combination with the levers A A A′, links B B′, crank-arms C C′, valves V V′, and rod R, the adjustable pivot-bearings S, S′, and S², slot K, support D, and link *q*, arranged to operate in the manner and for the purpose substantially as illustrated and described.

3. The lever or combined levers A A A′, links B B′, crank-arms C C′, the link-arm K′, slot T, pivot W², and rods R and R′, combined together and arranged to operate in the manner and for the purpose substantially as illustrated and described.

296,403.

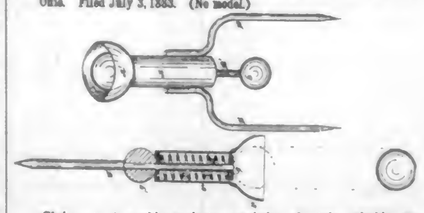


296,404. AUTOGRAPH-ALBUM. WILLIS C. GRANT, Norwalk, assignor to himself, and Robert V. MURRAY and William Engel, both of Cleveland, Ohio. Filed Mar. 14, 1883. (No model.)



Claim.—An autograph-album provided with a series of leaves to receive autographs, another series of leaves furnished with spaces consecutively numbered, said spaces each adapted to receive a sentence of a romance or the like, and provided with two columns—one for the numbers of the spaces and the other for the entry of the page on which the writer's autograph is entered—and a series of leaves divided into spaces suitable to receive sketches, said spaces also being consecutively numbered, substantially as set forth.

296,405. MARBLE-PROJECTOR. JOHN H. GREENWOOD, Columbus, Ohio. Filed July 3, 1883. (No model.)



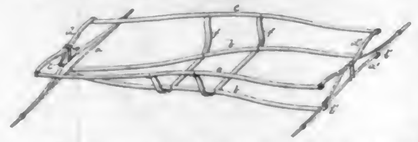
Claim.—1. A marble-projector consisting of a tube suitably supported and having an interior spring-plunger, the outer end of said plunger being provided with a target, and means, substantially as described, for compressing the spring of the plunger and retaining it in this position until released by a blow on the target, substantially as and for the purposes described.

2. The tube A, provided with legs B, in combination with the plunger B′, located partly within said tube, and provided with a spring, as C, the outer end of said plunger being provided with a target, *b*′, and mechanism for retaining it in this position until released by a blow on the target *b*′, substantially as and for the purposes described.

3. The tube A, having a flared upper end or bowl, A′, and a perforated bottom, *a*, and provided with legs B, in combination with the plunger B′, having a head or disk, *b*, and a target, *b*′, located partly within the tube A, and provided with a notch, *d*, adapted to engage with the bottom *a*, that portion of the plunger which is within the tube being surrounded by a spring, C, compressed between the head *b* and the bottom, substantially as and for the purposes described.

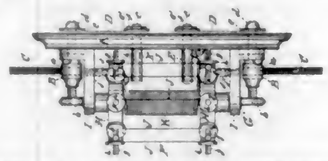
4. The toy substantially as set forth, and consisting of legs B, tube A, spring-rest *a*, spring C, plunger B′, carrying the target *b*′, and spring locking device, the top of the tube being adapted to receive and sustain a marble or other pellet, substantially as and for the purposes described.

296,406. VEHICLE RUNNING-GEAR. WILLIAM W. GRIER, Hilton, Pa. Filed Feb. 7, 1884. (No model.)



Claim.—The combination, in a no-perch vehicle-gear, of diagonal springs connected to the middle of the front axle and to the rear axle at or near its ends, with cross-springs fastened to the head-block and at the top of the rear axle, side springs connected to the ends of the cross-springs, and braces uniting the diagonal and side springs, substantially as and for the purposes described.

296,407. LIGHTNING-ARRESTER FOR TELEGRAPH AND TELEPHONE LINES. JOHN GRIFFIN, Philadelphia, Pa. Filed Oct. 13, 1883. (No model.)



Claim.—1. In a telegraph and telephone lightning-protector, the combination of the spring K with the reel F, screw-stops *j*″ *j*′, and pins *j j*, the spring surrounding the shaft G and being confined at one end to a disk, H, of the reel, and at the other end to the base A, substantially in the manner and for the purpose set forth.

2. The combination of the screw-stops *j*″ *j*′ and pins *j j* with the disks H H and housings I I, substantially as and for the purpose set forth.

296,408. BUTTON. JOSIAH HARRINGTON, Berkswell Lodge, 66 Water Lane, Brixton, County of Surrey, England. Filed Mar. 28, 1882. (No model.) Patented in England June 22, 1881, No. 2,729.



Claim.—A button having a post, *a*², and the foot-piece *a*, rigidly connected to the outer end, and projecting from one side of said post at a right angle thereto, and provided with recesses, in combination with the spring-bow or foot-piece *a*′, having the lugs *a*³, the foot-piece *a*′ being of larger diameter and adapted to embrace the foot-piece *a* in the same plane therewith, and to be retained either in an open or closed position by the elasticity of its arms and the lugs and recesses, all substantially as and for the purpose set forth.

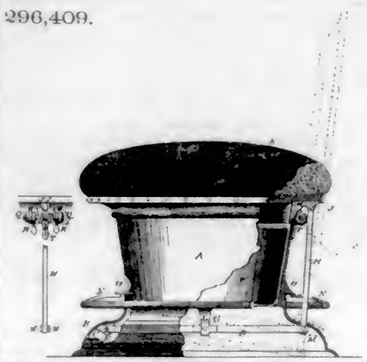
296,409. SPITTOON-HOLDER. BENJAMIN H. HASKINS, Mechanicsville, N. Y., assignor of one-half to John Young, same place. Filed Jan. 28, 1884. (No model.)

Claim.—1. A spittoon-case or a spittoon provided with a hinged cover encircled with a pedal-rail having provisions for engaging with stationary fulcrum-points on said case, and capable of depression at all points of its periphery, in combination with mechanism connecting said pedal-rail with said hinged cover, adapted to secure the elevation of said cover by the depression of said pedal-rail, the whole being constructed and arranged to operate substantially in the manner described, and for the purposes set forth.

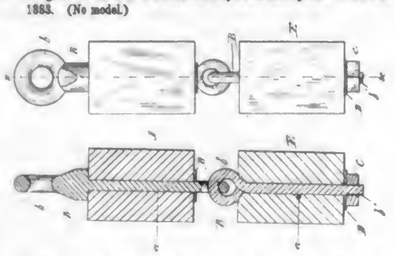
2. A circumambient pedal-rail having provisions for engaging with fulcrum-ledges on the spittoon-case or spittoon, in combination with mechanism connecting said rail with the cover of the spittoon-case or spittoon, whereby said case or spittoon will be uncovered by the act of depressing said rail at any point in its periphery, substantially in the manner described and set forth.

3. A spittoon case or holder having a chamber for the reception of the spittoon, a hinged cover adapted to be used as an ottoman or foot-rest, and provided with mechanism whereby said cover may be raised, so as to open said case for use, by the depression of an encircling foot-rail, substantially in the manner described and set forth.

296,409.



296,410. SASH-WEIGHT. CHARLES EBERHARD HEISE, Chicago, Ill., assignor of one-half to James N. Raymond, same place. Filed Dec. 20, 1883. (No model.)

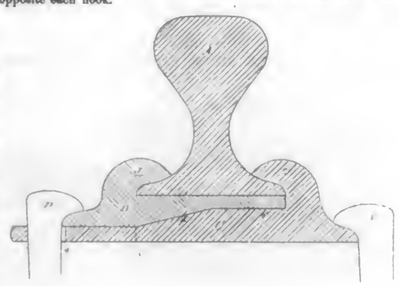


Claim.—1. A sash-weight composed of a solid and separate body having a hole through it from end to end, and a bolt extending through the hole, and provided with a loop or ring at one end and means whereby it is secured to the body at the other, substantially as and for the purposes set forth.

2. A sash-weight body, A, of lead cast under pressure, having a hole, *a*, extending through it from end to end, in combination with the metal bolt B, provided with a ring or loop, *b*, at one end and a threaded section, *b*′, at the other, and the fastening-nut C, substantially as and for the purposes set forth.

296,411. RAILWAY. RUFUS A. HOUGHTON, Defiance, Ohio. Filed Oct. 1, 1883. (No model.)

Brief.—A rail-support consists of a bed-plate and intermediate plate with irregular adjacent surfaces, each plate formed with a projecting hook to engage the foot of a rail, and constructed with the greater bulk of metal opposite each hook.

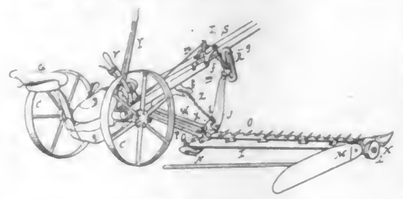


Claim.—1. A base and support for railway-rails, and as a means for securing the same upon the ties, the bed-plate C and intermediate plate, B, each provided with a projecting hook, as described, said plates constructed with the greater bulk or thickness of metal directly opposite said hooks, substantially as and for the purpose set forth.

2. In combination with the rail A, the intermediate plate, B, and bed-plate C, adapted to grasp the foot of the rail, said plate constructed with a broken upper surface, substantially as described.

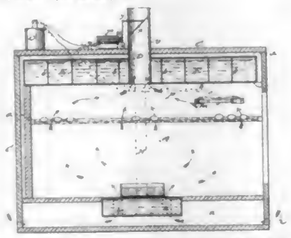
3. In combination with the rail A, and as means for securing the same upon the ties, the bed-plate C, provided with the opening *a*, incline surface *b*, horizontal plane *c'*, and the hook *c*, and intermediate plate, B, having hook *d*, and an under face substantially conforming to the upper face of the plate C, as set forth, whereby the inner end of the said plate B is thinnest and the shank of the hook *c* is made of a minimum length, substantially as and for the purpose set forth.

296,412. MOWER. HENRY A. HOWE, Albion, N. Y. Filed June 9, 1883. (No model.)



Claim.—In a mower, the connection between the forward end of the combined draw-bar and shoe with the slotted guide-bracket by a rolling joint, consisting of a rounded neck passing through the slot in the guide-bracket, and held therein by a screw-nut with a spherical washer, substantially in the manner described.

296,413. INCUBATOR. FRANK HUMPHREVILLE, Lancaster, Pa. Filed May 11, 1883. (No model.)

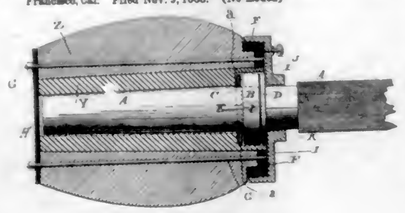


Claim.—1. In an incubator, the upper tank divided into compartments, the lower tank, the boiler with central and side flues, and connecting-pipes, in combination with the heating source, substantially as and for the purpose herein specified.

2. The combination, with the egg-trays having wire bottoms, of guides or ways formed with two horizontal arms, the distance between the said arms being equal to the distance between the upper arm of one guide and the lower arm of the guide next above, as and for the purpose set forth.

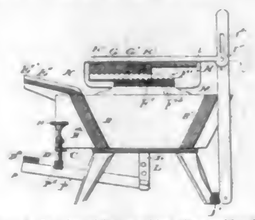
3. The combination, in an incubator provided with ventilating-openings *i i*, leading into the air-space *a*, of the tank I, provided with flues, as passages *l l*, leading from said air-space to the egg-chamber, whereby only warm air is introduced into said egg-chamber, substantially as and for the purpose set forth.

296,414. HUB FOR VEHICLE-WHEELS. BENJAMIN F. JACOBS, San Francisco, Cal. Filed Nov. 9, 1883. (No model.)



Claim.—The combination, with the hub Z, axle A, and rabbeted boxing Y, of the detachable collar B and washers C D, adjustably mounted on said axle, the recessed annular plate F, having a corrugated surface, the disk H, bolts G G, and detachable cap I, substantially as shown and described.

296,415. MACHINE FOR FELTING AND SIZING HATS AND OTHER FABRICS. ROSWELL S. JUDSON and CHARLES M. ACKERMAN, Mattawan, N. Y. Filed Jan. 19, 1884. (No model.)



Claim.—1. In a hat-sizing machine, the combination of the tub, the corrugated bed mounted thereon, the guides secured on the outer sides of said tub, the standards L, secured and movable vertically in said guides, the rubber having lateral eyes, the rods or rails passed through said eyes and supported on standards L, and suitable operating mechanism, substantially as and for the purposes set forth.

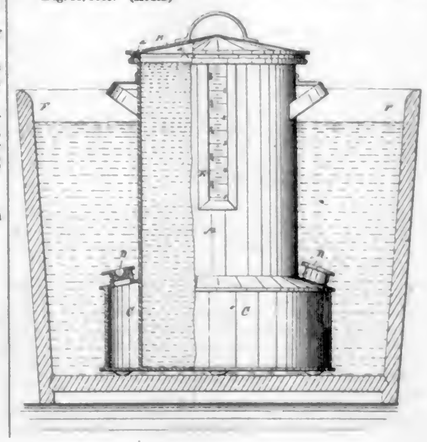
2. In a sizing or felting machine, the combination of the tub having a corrugated or roughened bed, and provided with guides K on its outer sides, the standards secured and movable vertically in said guides, and provided on the upper end with a horizontal rod, the rubber supported on said rod and movable, as described, the brackets O, pivoted at their upper ends, and the treadles pivoted to the lower ends of said brackets, and connected with standards L, substantially as set forth.

3. The combination of the tub, the corrugated bed, the vertically-adjustable rubber support, the rubber, the rod, having one end secured rigidly to the rubber and extended therefrom, the lever J, pivoted at its lower end, and provided near its upper end with a slot, J^2, and a pin passed from the rod I into or through said slot, substantially as set forth.

4. The hat-sizing machine herein described, composed of the tub provided with a table and a corrugated rubber, as described, and having guides K secured on its outer sides, the standards L, the rods O, mounted thereon, the rubber provided with eyes sliding on said rods, the bar I, extended from said rubber, the lever J, pivoted at its lower end, and provided near its upper end with slots J^2, wherein the bar I is connected, the brackets Q, pivoted at their upper ends, and the treadle pivoted to the lower ends of the brackets and connected with the standards L, substantially as set forth.

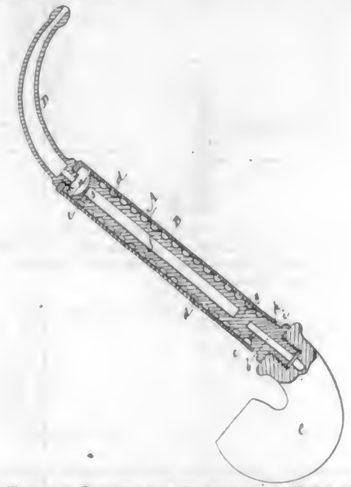
5. In a sizing-machine, the bed F, having grooves formed in its upper face and terminating at a point near the sides thereof, and provided with vertical openings formed through it from the center of the grooves, substantially as and for the purposes set forth.

296,416. CREAMING-CAN. JOHN A. KENDALL, Hamilton, Mo. Filed Aug. 11, 1883. (Model.)



Claim.—The milk-can A, provided at its lower part with the closed annular warm-water or air chamber C integral therewith, said chamber having openings and plugs for said openings, in combination with the cold-water vessel F, as and for the purpose described.

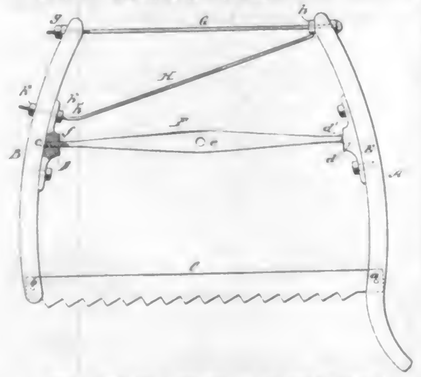
296,417. PIPE-STEM. JURGEN PETER LAWSE, Butler, N. J. Filed Jan. 23, 1884. (No model.)



Claim.—1. In a pipe-stem, the combination, with the spirally-grooved core A, having the longitudinal passages *b f* and the transverse passages *c e*, of the outer casing, B, having the mouth-piece D secured to it, and projecting beyond the end of the core to form the chamber *m* between its end and the end of the core, substantially as herein shown and described.

2. In a pipe-stem, the spirally-grooved core A, having its upper end cup-shaped, as at *n*, and provided with longitudinal passages *b f*, the transverse passages *c e*, and the hole *s*, in combination with the outer casing, B, having the mouth-piece D secured to it, and projecting beyond the end of the core to form the chamber *m*, substantially as herein shown and described.

296,418. BUCK-SAW FRAME. THEOPHILUS LAROCQUE, Williamstown, N. Y. Filed Feb. 18, 1884. (No model.)

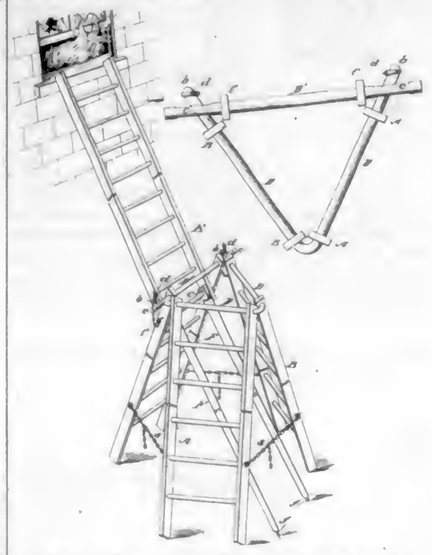


Claim.—1. The bar A, provided with the socketed casting E, and the bar B, provided with a screw-tapped casting, D, in combination with the truss-rod F, having ball *d'* to turn in socket *d*, and screw-threaded shank *f* entering screw-tap *c*, substantially as and for the purposes set forth.

2. The diagonal brace H, having eye *h* at one end and collar h^2 at the other, in combination with the bars A B and tie-rod G, passing through eye *h*, substantially as and for the purposes set forth.

296,419. FIREMAN'S TOWER. EUGENE B. MAGNUS, South Norwalk, Conn. Filed Jan. 15, 1884. (No model.)

Brief.—The ladders are hung and supported upon a triangular frame and are connected together by chains near their lower ends. A supplemental ladder having suitable props is supported upon one of the upper rungs of any of the lower ladders.

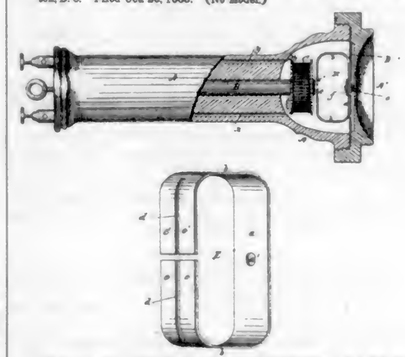


Claim.—1. The combination, with the scaling sides or ladders A B C of the tower, of a triangular upper connecting device constructed to provide for the swinging or turning of the ladders respectively upon its several sides or legs, essentially as described.

2. The combination, with the ladders A B C, of a triangular upper connecting device composed of independent sections D D', the one of which is made to form two sides or legs of the triangle, and the other the remaining leg thereof, and which are constructed to provide for the swinging of the ladders on them, and to allow of the dismemberment and securing of said sections and the ladders carried by them, substantially as specified.

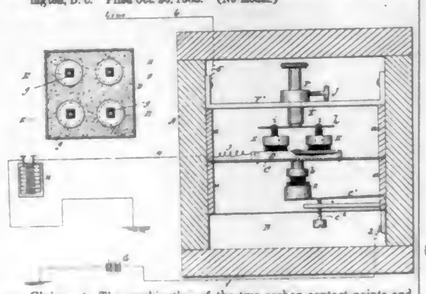
3. The combination, with a many-sided ladder-tower, substantially as described, of the supplementary ladder E, slotted at its lower ends, and the upper slotted and lower pointed props F F, essentially as and for the purposes herein set forth.

296,420. RECEIVING-TELEPHONE. JAMES A. MALONEY, Washington, D. C. Filed Oct. 26, 1883. (No model.)



Claim.—The combination, in a receiving-telephone, of a non-magnetic diaphragm, a magnet, and a multiple-reed armature, under the arrangement and for operation substantially as hereinbefore set forth.

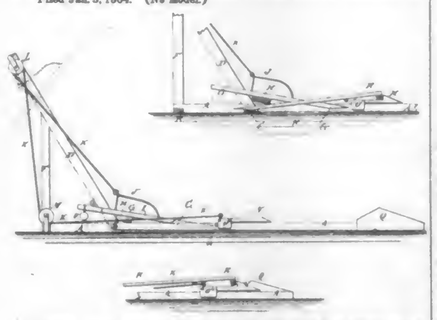
296,421. TELEPHONE-TRANSMITTER. JAMES A. MALONEY, Washington, D.C. Filed Oct. 26, 1883. (No model.)



Claim.—1. The combination of the two carbon contact-points and interposed loose iron filings or other finely-subdivided metal, substantially as and for the purpose hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the diaphragm C, carbon contact-plate D, having on its face loose iron filings or other finely-divided metal, carbon contact button or buttons E, and adjustable carrier F.

296,422. HAY-STACKER. JAMES BASCOMB MATLOCK, Huntsville, Mo. Filed Jan. 3, 1884. (No model.)



Claim.—1. A hay-stacker constructed substantially as herein shown and described, comprising the base-bars A, having stops P and trip-blocks Q, the hinged base-frame B A′ C, the inclined bars D, the elevating-rake G H, the cords and pulleys K L M, and the sliding catches N, as set forth.

2. In a hay-stacker, the combination, with the base-bars A, the inclined bars D, the base-frame B A′ C, and the elevating-rake G H, of the sliding catches N, ropes K, and the pulleys L M, substantially as herein shown and described, whereby the said rake can be raised by drawing upon the said ropes, as set forth.

3. In a hay-stacker, the combination, with the elevating-rake G H, the ropes K, and the base-bars A, of the sliding catches N, substantially as herein shown and described, whereby the said ropes can be operated to raise the elevating-rake by the outward movement of the collecting-rake, as set forth.

4. In a hay-stacker, the combination, with the base-bars A, the collecting-rake G H, and the sliding catches N, of the trip-blocks Q, substantially as herein shown and described, whereby the said sliding catches can be released automatically from the collecting-rake, as set forth.

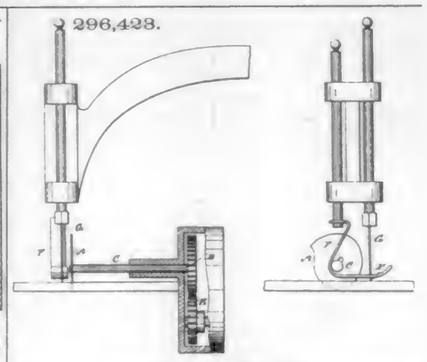
5. In a hay or straw stacker, the combination, with the base-frame having an inclined track at one end and trip-blocks at its other end, of the two rakes, the rope for elevating one rake, the sliding catches connected to said rake-elevating rope, and the stops for arresting the rearward movement of said catches, one of said rakes engaging with said catches, substantially as and for the purpose set forth.

296,423. TRIMMER FOR SEWING-MACHINES. DANIEL MAUS, Utica, N.Y. Filed Aug. 2, 1883. (No model.)

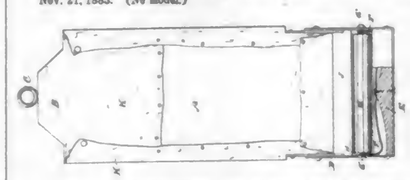
Brief.—An eccentric rotary trimmer-disk is provided with serrations upon the cutting-edge.

Claim.—A rotary trimming-disk having an eccentrically-curved and sharpened edge of constantly-varying radius, with teeth or serrations upon the portion of its periphery having the greatest projection from the center, combined with a sewing-machine, substantially as shown and described.

296,428.



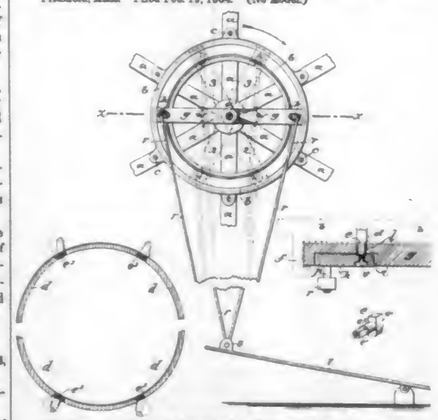
296,424. BOSOM-BOARD. SAMUEL MAXIM, Wayne, Me., assignor to Norris Kendall Lincoln and Ellis L. Lincoln, both of same place. Filed Nov. 21, 1883. (No model.)



Claim.—1. The combination, with the bosom-board, of the swinging U-shaped frame D, hinged or pivoted thereto, the cross-bar E, fixed to the bottom of the U-shaped frame, the U-shaped spring F, the roller G, journaled in the U-shaped spring, and guides for controlling the roller in its yielding movement in the swinging frame, substantially as shown and described.

2. The combination, with the bosom-board, of the slotted and swinging U-shaped frame D, provided with slots, the cross-bar E, made thickest in the middle, the U-shaped spring F, fastened at its middle to the cross-bar E, the roller G, journaled in the U-shaped spring, and the headed pins G′, forming the journals of the roller and extending through the slots of the swinging frame to guide the roller in its yielding motion, as described.

296,425. DRIVING MECHANISM FOR SEWING AND OTHER MACHINES. SAMUEL MAXIM, Wayne, Me., assignor to Edward M. Smith, Pittsfield, Mass. Filed Feb. 19, 1884. (No model.)



Claim.—1. A driving mechanism for sewing or other machines, constructed with a ring, *b*, forming or fixed to a drive-wheel, and having a slot, *d*, links *g*, reversely-set plates *k*, carrying studs *e*, for engaging the walls of slot *d* at opposite side of the drive-ring alternately, to rotate the ring or wheel continuously in one direction by connecting-rods

r and a treadle or lever, substantially as shown and described.

2. The combination, with the drive-ring *b*, of the pivoted links *g*, carrying the reversely-set plates *k*, having the studs *e*, for engaging the slot *d* of the ring *b*, and said ring having the groove *f*, in which the outer ends of the links *g* are guided, substantially as shown and described.

3. The links *g g*, halved together at their centers, recessed at *g′* at their opposite faces, and carrying buffers *w*, in combination with the ring *b* and means for moving the links, substantially as shown and described.

4. The combination, with the ring *b*, studs *e*, links *g*, and plates *k*, of the recesses *i*, shaped at *i′* for reversely-set stops to the plates *k*, substantially as shown and described.

5. The combination, with the ring *b*, studs *e*, links *g*, and plates *k*, of the springs *m*, substantially as shown and described.

6. The combination, with the ring *b*, link *g*, and plates *k*, of the stud *e*, having a head, e^3, for engaging the slot *d* of ring *b*, a round portion, e^2, journaled in a bearing, *l*, of the link *g*, and a square or angular end, e', on which the plate *k* is rigidly fitted, substantially as shown and described.

7. The combination, with the ring *b*, link *g*, plate *k*, and stud *e*, of the screw *o*, substantially as shown and described.

296,426. COAT-PATTERN. WILLIAM J. MCCARTIN, St. Louis, Mo. Filed Aug. 16, 1883. (No model.)

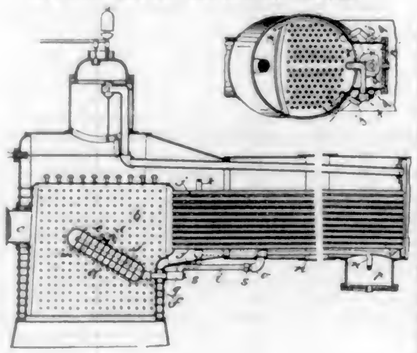


Claim.—1. A coat-pattern formed with a recess to receive an arm, a corner contiguous to the neck, and extensions to surround the body, as set forth.

2. A coat-pattern formed with a body, A, a recess to receive an arm, a corner, D, contiguous to the neck, extensions A^1 A^2 to surround the body of the person, and a leveling device.

3. A coat-pattern made substantially as herein shown and described, and provided with a liquid level, as and for the purpose set forth.

296,427. FEED-WATER HEATER. PATRICK MCGIVERN and WILLIAM E. FRYE, Crestline, Ohio. Filed Oct. 27, 1883. (No model.)



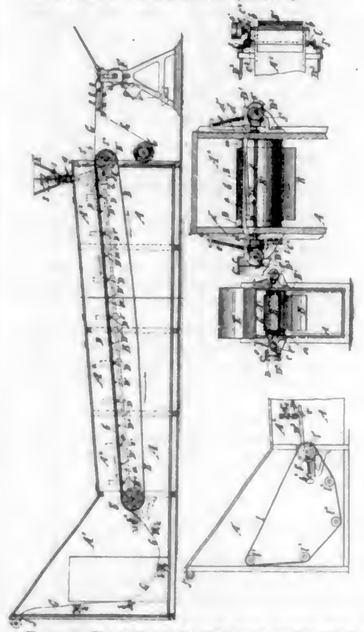
Claim.—1. The water-table feed-water heater arranged in the fire-box, and removably secured to the sides thereof by brackets and clips, and supported at its lower end by detachable feed and delivery pipe connections extending through the fire-box to the outside, whereby said pipes and feed-water heater may be disconnected for cleaning or repair without having to enter the fire-box.

2. The feed-water pipe connected to the water-heater *a* by an outside section, *i*, connecting with an inside section, *n*, and connecting with the heater through the fire-box side and with a detachable joint, substantially as described.

3. The delivery-pipes *j j*, connected to the water-heater *a* through the fire-box side, and by detachable joints, and having inside extensions discharging the water at or about the water-level, and below it, and at opposite ends of the tube-section of the boiler, substantially as described.

4. In a feed-water heater for locomotive-boilers, located in the fire-box, two delivering-pipes extending therefrom into the tube-section of the boiler by outside connections through the fire-box and the bottom of the boiler, one of said pipes extending in the heater to the upper portion of the same and discharging at or about the water-level at the rear ends of the tubes, and the other pipe opening into the lower part of the heater and discharging at a lower point in the boiler, near the front end of the tubes, to cause circulation of water in the heater when the pump is not working, substantially as described.

296,428. METHOD OF FLOCKING PAPER AND OTHER FABRICS, AND MACHINE THEREFOR. JOHN MCMILLIN and JAMES MCADAMS, New York, N.Y. Filed Jan. 7, 1884. (No model.)



Claim.—1. The method of flocking paper or other fabric, consisting in printing with adhesive substance on the fabric, in moving the fabric during and after printing continuously forward, and then upward to a point of delivery, in delivering flock upon the printed fabric as it moves, in subjecting the fabric to a beating operation during its forward movement and after the flock has been delivered upon it, and in subjecting the fabric to a second beating or a shaking operation as it moves upward to the point of delivery, substantially as and for the purpose herein described.

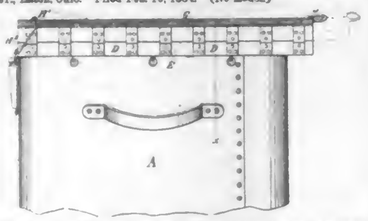
2. The combination of a closed flocking-box having a flexible bottom, an endless apron or carrier arranged to travel immediately above the said bottom, and serving to move the fabric continuously forward, beaters arranged below the bottom of the box for acting thereon, a printing-machine for printing with adhesive substance on the fabric before it enters said box, and a hopper or distributer for flock arranged at that end of the box at which the fabric enters, substantially as and for the purpose herein described.

3. The combination of the closed flocking-box A^2, having a flexible bottom, *a*, the endless apron or carrier B, the stationary hopper or

distributer E, for delivering flock into said box, beaters for acting upon the said bottom *a*, and a printing-press from which the paper or fabric passes continuously into said box, substantially as and for the purpose herein described.

4. The combination of the closed flocking-box A^3, having a flexible bottom, *a*, the endless apron or carrier B, the flock-hopper E, a printing-press from which the paper or fabric passes continuously into said box and to said carrier, means for producing an upward movement of the flocked paper or fabric as it leaves said carrier, and beaters or shakers for acting on the paper or fabric during such upward movement, substantially as and for the purpose herein described.

296,429. MAIL-BAG. FREDERICK MICHAEL and ROBERT WILLIAMS, Jr., Eaton, Ohio. Filed Feb. 16, 1884. (No model.)



Claim.—1. The combination, with a pouch having longitudinal pockets formed in its edges at the mouth, of a cover-piece provided with welts adapted to pass into the pockets and close the pouch, a hasp on the cover-piece, and means for locking the hasp on the pouch, substantially as herein shown and described.

2. The combination, with a pouch, of a sliding cover-piece for closing it, a hasp on the cover-piece, and a lock-casing secured to the pouch and adapted to receive and hold the free end of the hasp, substantially as herein shown and described.

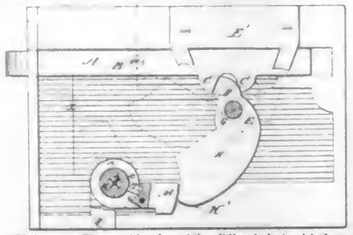
3. The combination, with a pouch, of a sliding cover-piece for closing the pouch, a hasp on the sliding cover-piece, and a combined lock-casing and tag-holder secured on the pouch, substantially as herein shown and described.

4. The combination, with a pouch, of the welts C, the shouldered plates D, the cover-piece G, and the welts H on the same, substantially as herein shown and described.

5. The combination, with the pouch A, of the welts C, the cover-piece G, the welts H, secured to the same, and of the shouldered plates or strips D, projecting beyond the end edges of the pouch, substantially as herein shown and described.

6. The combination, with a mail-pouch, of a sliding cover-piece, a hasp on one end of the same, the lock-casing K, provided with notches N, the cover L, provided with the transverse groove O, and of a bolt-and-lock mechanism for locking the cover in place, substantially as herein shown and described.

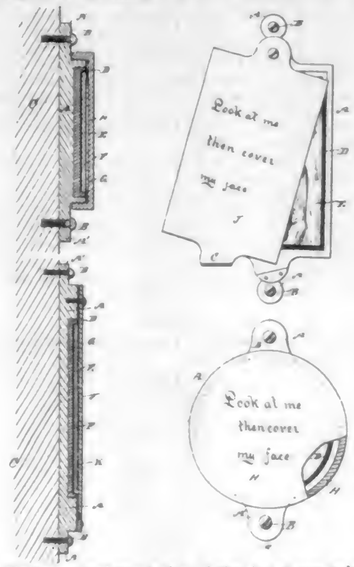
296,430. LOCK. MARTIN LUTHER MIKESELL, Muscatine, Iowa, assignor, by mesne assignments, to Mary Eliza Mikesell, same place. Filed Dec. 13, 1883. (No model.)



Claim.—1. The combination of the sliding bolt A with the weighted tumbler H, secured to the knob-shank, and provided with a toe on its upper end engaging said bolt, and with a concavity *f* at its lower end, and a swinging stop, M, mounted to rotate on a bushing, *k*, and lock against the lower end of the weighted tumbler, said bushing being constructed to be operated by a key, and provided with a pin for engaging the said swinging stop, substantially as set forth.

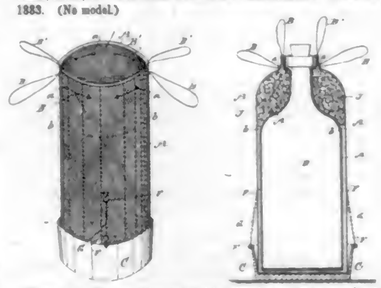
2. The combination of the weighted tumbler with the devices for locking said tumbler in place, said devices consisting of a stop, M, having a groove *n*, terminating in a stud, *o*, and a bushing, *k*, on which said stop is mounted, a pin, *m*, on said bushing and within the groove *n*, and a key-post and webs *b c* in the center of said bushing, substantially as set forth.

296,431. TOMBSTONE. SOLOMON R. MILLER, Mount Union, Pa. Filed Aug. 27, 1883. (No model.)



Claim.—A tombstone having a hollow box or case made fast thereto, said case being provided with a round cover overlapping and screwing on an annular projection thereof, a rubber lining, D, with a raised rim, and a glass plate forced within said rim, as shown and described, whereby a picture of deceased may be protected from air and moisture.

296,432. REFRIGERATOR FOR COOLING CONTENTS OF BOTTLES, CANS, &c. BERNHARD MOEBIUS, Chihuahua, Mexico. Filed Oct. 27, 1883. (No model.)



Claim.—1. The combination, with a bottle or other vessel, of two sacks or bags passed around the same, and of a freezing-mixture held between the two bags, substantially as herein shown and described.

2. The combination, with the two sacks or bags A A'—one contained within the other—of the eyes *a*, fastened in the sacks or bags at or near the upper edge, and of the cords B B', passed through the said eyes, substantially as herein shown and described.

3. The combination, with the sacks A A', of the basin or cup C, suspended below them, substantially as herein shown and described.

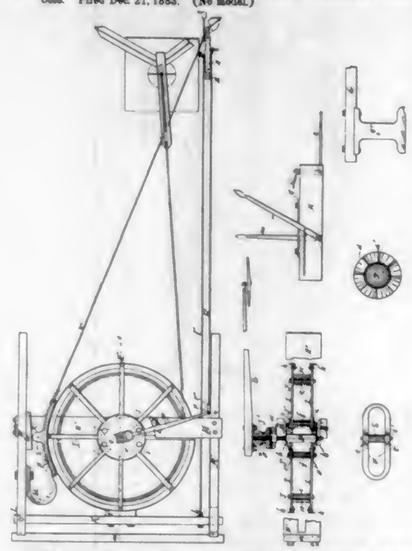
4. The combination, with the sacks or bags A A', of the chains G and the basin or cup C, substantially as herein shown and described.

5. The combination, with a bottle or other vessel, of two sacks or bags of fibrous material, and pieces of fibrous or other material held between the two bags, substantially as and for the purpose set forth.

6. The combination, with a bottle or other vessel, of two sacks or bags of fibrous material, pieces of fibrous or other material held between the two bags, and the outer liquid-holding vessel, whereby the bags are kept saturated by their lower portions being in contact with the cooling-liquid, while the balance of the outer surface is exposed to the air to facilitate cooling by evaporation, substantially as and for the purpose set forth.

7. A refrigerator for bottles, &c., consisting of two bags, A A', of which the latter is contained within the former, the two bags being sewed together at *b*, substantially as herein shown and described.

296,433. HOISTING APPARATUS. JAMES H. MONTGOMERY, Denver, Colo. Filed Dec. 21, 1883. (No model.)



Claim.—1. The hereinbefore-described hoisting apparatus, consisting, substantially, of a frame-work, the drum-wheel attached thereto, upon which to wind and unwind a hoisting-rope, a friction-brake, rope, and lever for regulating the descent of the weight, an adjustable arm for the purpose of revolving the drum-wheel, mechanism for disengaging the arm from the drum-wheel, and a lock whereby the weight is prevented from lowering, all operating as described and specified.

2. The drum-wheel B, composed, substantially, of the shaft D, the flanges *e*, having slots *d'* made therein, arms I, the distance-washers *f* and *c*, the band F, the rims *h*, and the bolts *j* and *j'*.

3. In a hoisting apparatus, the combination, with the drum-wheel E and shaft D, of the hub *d*, the thimble *g*, and sweep G, whereby force applied to the arm revolves the drum-wheel.

4. In a hoisting apparatus, the combination, with the drum-wheel E, the shaft D, the hub *d*, and thimble *g*, of the lever P, fulcrumed to the frame, and having the rope R attached to the end thereof, the pulley *r'*, and hand-lever *n*, whereby the sweep is thrown out of gear.

5. In a hoisting apparatus, the combination, with the drum-wheel E, of the brake-block E', brake-lever K, the rope *l'*, the hand-lever *m*, and ratchet N, all operating as specified.

6. A roller-lock consisting, substantially, of a brake-shoe, F, having lugs *t* thereon, and the roller S.

7. In a hoisting apparatus, the combination of the roller-lock, consisting of the brake-shoe F, having lugs *t* thereon, carrying the roller S, the sloping block W, spring U, the cord V', and the foot-lever V, all operating as described.

8. In a hoisting apparatus, the combination, of a drum or wheel, the roller-lock, composed of the brake-shoe F, the roller S, and tapering wedge W, all operating as specified.

9. The forked lever P, fulcrumed at P', whereby the thimble is disengaged from the drum-wheel.

296,434. EXTENSION-TABLE. GEORGE MULLER, New York, N. Y. Filed Oct. 26, 1883. (No model.)

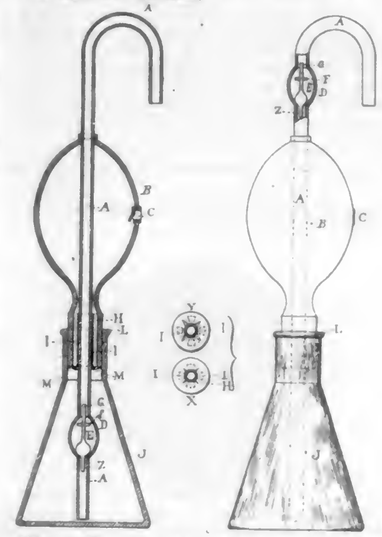
Claim.—1. The combination, in a table, with the legs *a b c d*, side frames, *g g'*, end frames, *h h'*, top *k*, and grooved strips *r*, of the legs *e f*, slide-partitions *l l'* and shelves *m m'*, and hinged leaves *n n'*, the parts being constructed and arranged so that the said slide-partitions and shelves can be pushed into the body of the table to allow the leaves to fall, as set forth.

2. In a table, the combination, with the legs *e f*, and slide-partitions *l l'* and shelves *m m'*, of the grooved strips *r*, the side frames, *g g'*, slotted for the passage of the slide-partitions, and the end pieces, *h h'*, grooved for the ends of the shelves *m m'* to slide in one above the other, substantially as and for the purposes set forth.

296,434.



296,435. DECANTING-PUMP. ELVIN O. MURDOCK, New York, N. Y. Filed Aug. 17, 1883. (No model.)



Claim.—1. The combination of a containing-vessel, J, a compressible bulb, B, provided with valve C, a tube, A, having a valve, E, and a stopper, H, provided with channels I, said tube passing entirely through the bulb B, and being free to slide vertically through it, substantially as described, for the purpose specified.

2. The combination of a containing-vessel, J, a compressible bulb, B, provided with valve C, a tube, A, and a stopper, H, provided with channels I and valves M, said tube passing entirely through the bulb B, and being free to slide vertically through it, substantially as described, for the purpose specified.

3. The combination of a containing-vessel, J, a compressible bulb, B, and a tube, A, the tube having a valve, E, and the bulb a valve or hole, C, and a stopper with channels I and valve M, substantially as described.

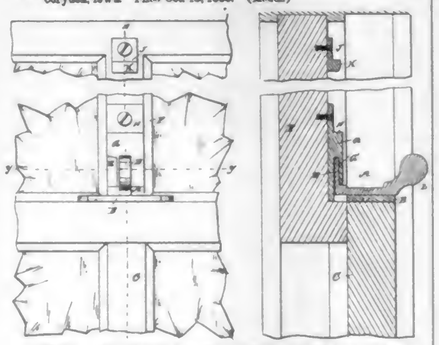
296,436. HOSE. JOHN MURPHY, Brooklyn, N. Y. Filed Jan. 21, 1884. (No model.)



Claim.—1. As an article of manufacture, a hose containing an interior and exterior layer of rubber, and interposed between said layers of rubber a textile fabric cut straight, surrounded by a textile fabric cut on the bias, substantially as set forth.

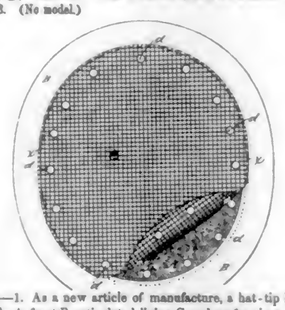
2. In a hose, the combination, with a textile fabric cut straight, of a textile fabric cut on the bias and so arranged that the textile fabric cut on the bias is outside of the textile fabric cut straight, substantially as and for the purpose set forth.

296,437. WINDOW AND DOOR BUTTON. EVANDER B. NEWCOMB, Corydon, Iowa. Filed Oct. 13, 1883. (Model.)



Claim.—In a window-lock, the combination, with a pivoted lever, A, having an upright lug provided with a beveled edge, of the plate G, provided with a vertical recess, G', having a beveled edge and a shoulder, H, above said recess, and of a plate, J, near the top of the sash, provided with a lug, K, whereby the sashes may be locked when fully closed, or the lower sash be supported when raised to its fullest height or when only partially raised, substantially as herein shown and described.

296,438. HAT-TIP. JOHN F. NEWTON, Jr., Boston, Mass. Filed Sept. 20, 1883. (No model.)



Claim.—1. As a new article of manufacture, a hat-tip having the asbestus body A, front B, reticulated lining C, and perforations *d*, the body being interposed between the lining and front and secured in position by the stitches *x*, substantially as set forth.

2. A hat-tip constructed substantially as described, and provided with the perforations *d* around the periphery of its body, in combination with the crown E, having the central ventilator, *m*, substantially as set forth.

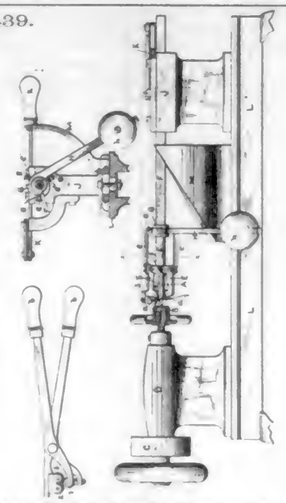
3. As a new article of manufacture, a hat-tip having its body composed wholly or in part of asbestus, and this I claim whether said body is made with or without perforations, substantially as specified.

296,439. MACHINE FOR FORMING TEETH UPON FILE-BLANKS. WM. T. NICHOLSON, Providence, R. I. Filed May 28, 1883. (No model.)

Claim.—1. The combination, substantially as before set forth, of a clamp or suitable holder for a file-blank, a revolving tooth-generating cylinder, substantially as described, and arranged relatively to the file-blank, so that the axis upon which it revolves shall be oblique to the longitudinal axis of the blank, suitable means, as described, for causing either the file-blank to be rotated upon its axis or the generator to be revolved upon the blank, and suitable means, as described, for causing pressure to be exerted by the generator upon the blank, to form cutting-teeth thereon, as set forth.

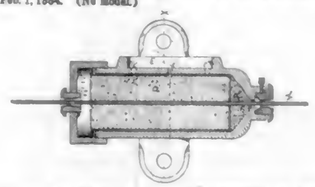
2. The combination, substantially as before set forth, of a clamp or suitable holder for a file-blank, a series of revolving tooth-generating cylinders, substantially as described, the last one of such cylinders in the series having its teeth arranged at a greater obliquity to the axis of the cylinder than the teeth of the preceding generators in the series, suitable means, as described, for causing either the file-blank to be rotated on its axis or the generator to be revolved around the blank, and suitable means, as described, for causing pressure to be exerted by the generator upon the blank, to form cutting-teeth thereon, as set forth.

3. The combination, substantially as before set forth, of a clamp or suitable holder for a file-blank, a series of tooth-generating cylinders, substantially as described, the last one of such generators in the series being arranged, as described, relative to the file-blank, so that the axis upon which it revolves shall be oblique to the longitudinal axis of the blank, suitable means, as described, for rotating the blank upon its axis, suitable means, as described, for giving a movement to the tooth-generating tool lengthwise of the blank, and a pattern-face conforming to the shape of the file-blank, whereby the generating-tool can be made to press upon a tapering file-blank throughout its length.



4. The combination, substantially as before set forth, of a clamp or suitable holder for a file-blank, a series of tooth-generating cylinders mounted in the ends of levers, as described, and pivoted to a sliding bar, the axis of which coincides with the axis of the blank-holder, means, as described, for giving a to-and-fro movement to said bar, means, as described, for causing the generators to approach radially toward each other to conform to the taper of the blank, and means, as described, for rotating the blank upon its axis.

296,440. WIRE-OILING DEVICE. JAMES B. OLIVER, Sewickley, Pa. Filed Feb. 1, 1884. (No model.)



Claim.—1. The method of oiling wire, consisting in passing it through oil-saturated compressed sawdust or similar material, substantially as and for the purpose described.

2. A wire-oiler consisting of a suitable case containing oil-saturated sawdust or similar material, and having wool or similar material surrounding the wire-exit opening, substantially as and for the purposes described.

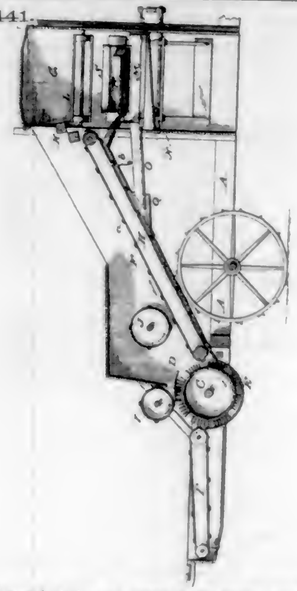
296,441. THRASHING AND CLEANING MACHINE. WILLIAM H. PARRISH, Salem, Oreg. Filed Sept. 29, 1883. (No model.)

Claim.—1. In combination with a traveling endless feed-apron, an upwardly-moving thrashing-cylinder and a concave above the same, and an elevator-apron directly in rear of said cylinder and concave, said parts being arranged as shown, whereby the straw and grain are delivered from the feed-apron to the elevator-apron without materially changing the direction of their travel.

2. In combination with an overshot thrashing-cylinder and a concave above the same, a traveling feed-apron having its delivery end close to the mouth of the concave, and a ribbed beater located over the mouth of the concave, substantially as and for the purpose explained.

3. The combination, with overshot thrashing-cylinder C and its concave D, located above the same, endless traveling feed-apron B, elevator H in rear of the cylinder, and beater J, located over the receiving end of the elevator, all substantially as shown and described, whereby

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grain placed upon the feed-apron is caused to pass between the cylinder and concave and up the elevator without materially altering its direction.

4. The combination, substantially as herein shown and described, of a thrashing-cylinder and concave, a trunk extending backward from said cylinder and concave, an elevator-apron within said trunk, a cleaning mechanism independent of the elevator-apron and a tailings-spout extending from the cleaning mechanism into the elevator-trunk beneath the elevator-apron, whereby said apron is caused both to elevate the grain from the thrashing-cylinder and to return the tailings thereto from the cleaning mechanism.

5. In combination with a thrashing-machine, a grain-cleaner, and an elevator-trunk extending from the former to the latter, a tailings spout arranged substantially as shown and described, to return the tailings from the cleaner into the elevator-trunk, whereby they are reconveyed to the thrashing-machine.

6. The combination, substantially as herein shown and described, of a thrashing-cylinder and concave, a grain cleaner or separator, a trunk, F, connecting the thrashing and cleaning mechanisms, an endless elevator-apron, H, within said trunk, and a shaking-trough, O, arranged substantially as shown, to receive the tailings from the cleaner, and having its discharge end extended into trunk F beneath the apron H, substantially as and for the purpose explained.

7. In combination with cylinder C and with a spiked concave above the same, a smooth concave below said cylinder, an elevator-trunk extending upward from the smooth concave to a cleaner or separator, a grain-cleaner, and a tailings-trough arranged to receive the tailings from the cleaner, and having its discharge end extended into an opening at the under side of the elevator-trunk, substantially as shown.

8. The herein-described thrashing and cleaning machine, consisting of thrashing-cylinder C, spiked concave D above said cylinder, smooth concave E below said cylinder, trunk F, extending upward from concave E, cleaner G, located at the delivery end of trunk F, carrier H within said trunk, riddle M, shaking-shoe P, and trough O, arranged substantially as shown, to deliver the tailings into trunk F.

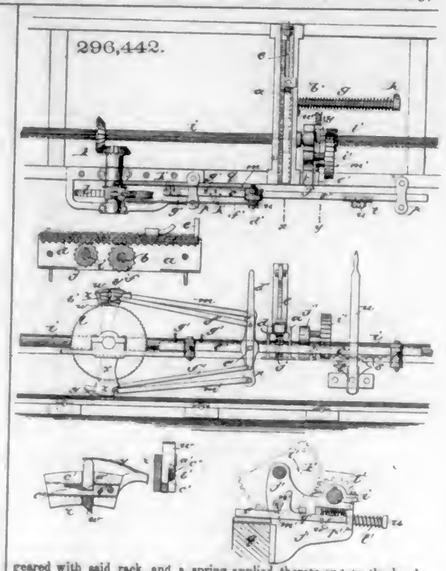
9. The combination, substantially as set forth, of cylinder C, concaves D E, trunk F, cleaner G, carrier H, beaters I J, cylinders K, straw-carrier L, riddle M, shaking-shoe P, tailings-spout O, and pocket Q, all constructed and arranged to operate substantially as set forth.

10. In combination with elevator H and grain-cleaner G, having a shaking-shoe, a curved chute or board, R, connected with the shoe, and serving, substantially as explained, to deliver the grain at the head of the riddle and from side to side thereof.

296,442. SAW-MILL SET-WORKS. ROBERT R. PARSONS, Jackson, Miss. Filed Nov. 9, 1883. (No model.)

Claim.—1. In head-blocks for saw-mills, the combination, with the head-block having on its under side a rack, and the setting-shaft geared with said rack, of the shaft having its bearing in the head-block and

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geared with said rack, and a spring applied thereto and to the head-block, substantially as and for the purpose set forth.

2. In a saw-mill head-block, the head-block having on its under side a rack, the setting-shaft geared with said rack, and the shaft geared with the said rack, and having a spring applied thereto and to the head-block, in combination with the ratchet-wheel, whose shaft is geared with the setting-shaft, and the hand-lever having a toothed segment gearing with the rack of a sliding bar carrying the ratchet-wheel-operating mechanism, substantially as and for the purpose set forth.

3. In a saw-mill head-block, the combination, with the setting-shaft geared with the head-block, and the shaft having a spring applied thereto and to the head-block, said shaft being geared with the head-block rack, of the stop-wheel having a series of pin-holes and the buffer-slide having a horn, a buffer-spring, and a supplementary spring to return the buffer-slide to its normal position after the movement of the horn out of the plane of movement of the pin of the stop-wheel, substantially as and for the purpose set forth.

4. In a saw-mill head-block, the setting-shaft geared with the head-block and with the shaft carrying a ratchet-wheel, and the shaft geared also with the head-block, and having a spring applied thereto and to the head-block, in combination with the sliding bar having stops, one on each side of one of its guides, and carrying a lever provided with pawls engaging with said ratchet-wheel, the hand-lever having a toothed segment gearing with a rack on said sliding bar, the stop-wheel having a stop-pin, and the spring buffer-bar having a horn, substantially as and for the purpose set forth.

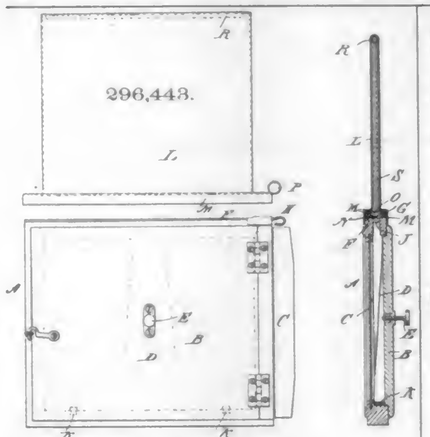
5. In a saw-mill head-block, the combination, with the pawl-arms connected centrally to the axis of the ratchet-wheel and to a centrally-pivoted lever, and spring-catches fitted to slide vertically in the pawl-arm heads, of the slides fitted to slide in the latter and in the catches at right angles to the plane of movement of said catches, and having at intermediate points between their ends notches or recesses with inclined surfaces, said slides being connected to a hand-lever centrally pivoted upon the aforesaid lever, substantially as and for the purpose set forth.

6. In a saw-mill head-block, the combination, with the stop-wheel having a stop-pin and gearing with the setting-shaft, of the sliding spring buffer-rod having the horn, and the supplementary readjusting-spring connected to a fixed point and to the sliding buffer-rod, substantially as and for the purpose set forth.

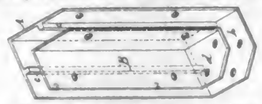
7. The stop-wheel *i'*, having a series of pin-holes, *k'*, and the buffer-slide *o'*, having horn *n'*, and buffer-spring *l'*, in combination with the setting-shaft *i* and the knees *e*, having springs *g*, for shifting the knees back, said wheel *i'* being geared with said setting-shaft, substantially as described.

296,443. PHOTOGRAPHIC-PLATE HOLDER AND CASE. SEBASTIAN S. PECKINPOGH and GEORGE JEFFERY WHITE, Big Rapids, Mich., assignors to said White. Filed Sept. 25, 1883. (No model.)

Claim.—The combination, with a plate-holder, of the plate or strip D and the adjusting-screw E, substantially as herein shown and described.



296,444. CORNER-STAY FOR TRUNKS, BOXES, &c. PARDON T. PERKINS, Oswego, N. Y. Filed Oct. 31, 1883. (No model.)

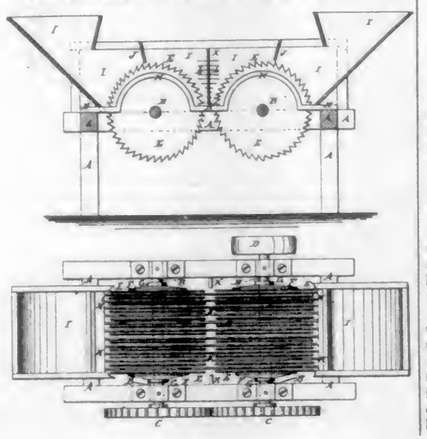


Claim.—1. The within-described corner-stay for boxes, trunks, and analogous articles, consisting of an angular plate adapted to embrace the corner of said article, and provided with tongues or projections adapted to engage with grooves or indentations in the two adjacent sides of the article, said plate adapted to be secured in position by rivets, screws, or other suitable means, substantially as set forth.

2. A corner-stay for boxes, trunks, and analogous articles, consisting of an angular metallic plate corresponding to the corner of the box, and provided on its inner sides with tongues for engaging with grooves in the sides of the box, and having at its base a web resting against the under side of the box, and fastening devices for securing said plate in position, substantially as shown and described.

3. The combination of a box or analogous article provided near its corners with vertical grooves *a a*, the angular plate A, provided with the web *b* and tongues *c c*, the angular plate B, provided with the web *d*, and rivets or other suitable fastening devices for securing said plates, respectively, to exterior and interior corners of the article, substantially as described and shown.

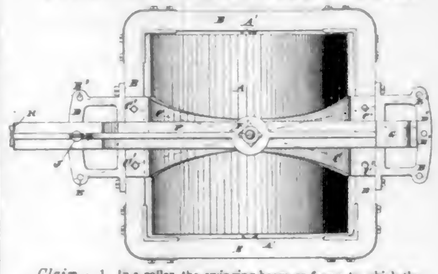
296,445. MACHINE FOR PULVERIZING CLAY. MARSHALL POPE PHILLIPS, Lakeland, La. Filed Oct. 3, 1883. (No model.)



Claim.—1. The combination, with two opposite sets of rotary saws in a hopper, of the intermediate partition, K, having pins L, as shown and described.

2. The combination, with a set of rotary saws on the same shaft and within the same hopper, of the cross-partition J, arranged above the saws, as shown and described.

296,446. STREET-ROLLER. CHARLES K. PECKLES, St. Louis, Mo., assignor to Richard C. Pope, same place. Filed Aug. 16, 1883. (No model.)

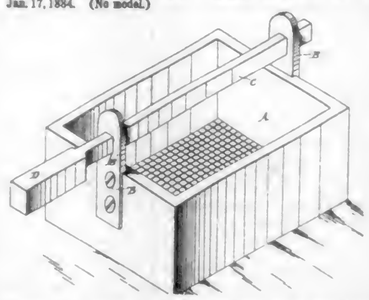


Claim.—1. In a roller, the swinging beam or frame, to which the tongue is secured, supported by an arch to which it is pivoted above the center of the roller, in combination with suitable means for connecting the beam to the frame of the roller, substantially as set forth.

2. In a roller, the swinging frame or beam, to which the tongue is secured, supported by an arch to which it is pivoted above the roller-in combination with the brackets secured to the frame of the roller, and having three holes each, one in the center and one in each corner, and adapted to engage a socket on the swinging frame or beam, and to be connected therewith by a suitable pin, substantially as and for the purpose set forth.

3. The combination of roller A, frame B, arch C, counterbalanced swinging frame or beam F, pivoted to the arch, and having means at one end for the attachment of the tongue, and a socket, I, to receive the brackets on the frame, and the brackets D D′, secured to the frame B, all substantially as shown and described, for the purpose set forth.

296,447. ASH-SIFTER. HENRY C. PIGUERON, Spring Lake, N. J. Filed Jan. 17, 1884. (No model.)



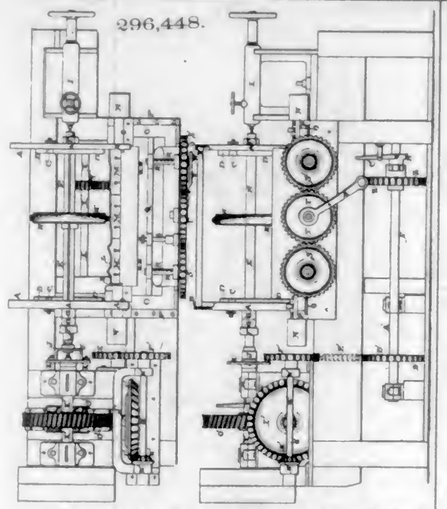
Claim.—The combination, with an ash-sieve, of the lugs B, having squared apertures B′, the squared rod C, passed through the apertures B′, and having a squared enlarged handle part, D, substantially as herein shown and described.

296,448. MACHINE FOR PLANING POLYGONAL BODIES. JAMES PLENKHARP, Columbus, Ohio. Filed Sept. 8, 1883. (No model.)

Claim.—1. In a planing-machine, the combination of the slowly-revolving heads A, between which the pieces of lumber are clamped, and rapidly-revolving planer-head L, the wheels S′ T, screws R, the slide in which the planer is journaled, and the stop S, the slide being provided with the flange Q, substantially as shown.

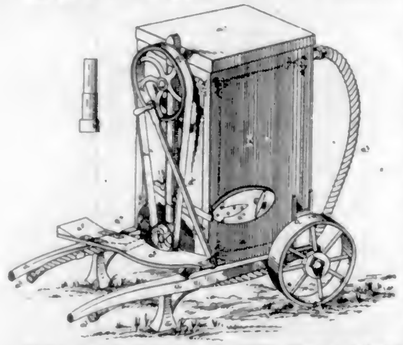
2. In a planing-machine, the combination of the two heads A, between which the pieces to be planed are clamped, the planer L, located to one side of the heads, and a mechanism for causing it to rapidly revolve, and suitable intermediate shafts or gearing located under the frame for driving the heads with a slow motion, with the short shaft G′, pinion H′, wheel I′, screw-shaft J′, and worm-wheel on the main shaft, for communicating the motion of the intermediate shafts or gearing to the heads, substantially as described.

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3. The combination of the heads A, provided with the flanges B upon their outer edges, the expansible rings D, which are applied to the inner sides of the heads, and the screw-operated wedges, which are placed between the ends of the rings, substantially as shown.

296,449. COTTON-HARVESTER. WILLIAM J. POWELL, Marshfield, Mass., assignor to the Powell Cotton Harvester Company, Concord, N. H. Filed May 22, 1882. (No model.)



Claim.—In a cotton-harvester, in combination with the flexible tubes a^3, the claws b^3 in the nozzle, supported by the yielding elastic band c^3, substantially as described.

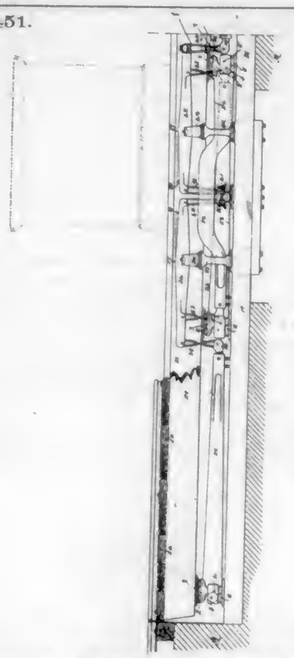
296,450. MANUFACTURE OF NUT-PICKS. HENRY MARCUS QUACKENBUSH, Herkimer, N. Y. Filed Mar. 24, 1882. (No model.)



Claim.—The manufacture of nut-picks substantially as herein described, consisting in the selection of a metallic rod ornamented upon its surface to form the handle, reducing a portion of this rod in a lathe to form the point, and finally compressing the point in a die, by which it is condensed and rendered stiff and hard and the desired curvature imparted to it.

296,451. PLATFORM-SCALE. WILLIAM W. REYNOLDS, Rutland, Vt., assignor to the Howe Scale Company, same place. Filed Aug. 10, 1882. (No model.)

296,451.



Claim.—1. In a weighing-scale, the combination, with the two mounting-levers 23 24, arranged side by side and fulcrumed at opposite ends, of the cross-lever 41, the extension-levers 48 34, and connections, substantially as described.

2. In a weighing-scale, the combination, with the two mounting-levers 23 24, arranged side by side and fulcrumed at opposite ends, and occupying an inclined or oblique position with relation to the body of the scale, of the cross-lever 41, the extension-levers 48 34, and connections, substantially as described.

3. In a weighing-scale, the combination, with the mounting-lever 24, of the cross-lever 41, the extension-lever 34, and connections, said mounting-lever being curved to pass said cross-lever, substantially as described.

4. In a weighing-scale, the combination, with the two mounting-levers 23 24, arranged side by side and fulcrumed at opposite ends, of the mounting-lever 25, the cross-lever 41, the extension-levers 34 48, and connections whereby the vibrations of said mounting-levers are transmitted to said cross-lever, substantially as described.

5. In a weighing-scale, the combination, with the mounting-levers 25 26, arranged in line, of the cross-lever 41, the extension-levers 38, 44, and 48, and connections whereby the vibrations of said mounting-levers are transmitted to said cross-lever, substantially as described.

6. In a weighing-scale, the combination, with the two mounting-levers 23 24, arranged side by side and fulcrumed at opposite ends, of the mounting-levers 25 26, arranged in line with each other and with the levers 23 24, the cross-lever 41, the extension-levers 34, 48, 44, and 38, and connections whereby the vibrations of said mounting-levers are transmitted to said cross-lever, substantially as described.

7. The combination, with the levers 25 and 44, provided with single knife-edge pivots, of the lever 48, provided with a triple knife-edge pivot, the yoke 7, and the shackles 1, 46, and 8, substantially as described.

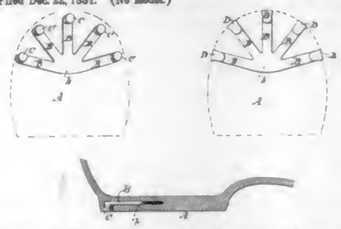
8. The combination, with the extension-levers 38 48, of the intermediate extension-lever, 44, and means for vertically adjusting said last-named lever, substantially as described.

9. The combination, with the mounting-levers 23 24 and the extension-levers 34 48 and cross-lever 41, of the supports 37 62, formed to bridge said mounting-levers, and connections whereby the vibrations of said mounting-levers are transmitted to said cross-lever, substantially as described.

296,452. WASHING COMPOUND. ANNIE E. RHOADS, Baraboo, Wis. Filed Aug. 2, 1883. (No specimens.)

Claim.—The herein-described washing compound and dirt-extractor, consisting of sal-soda, saltpeter, and gum-camphor combined about in the proportions given.

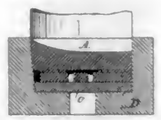
296,453. RUBBER SHOE. FREDERICK RICHARDSON, Providence, R. I. Filed Dec. 22, 1881. (No model.)



Claim.—1. The combination, with the heel of a rubber shoe, of the radial single metallic arms B, separated by intervening spaces and united only at their inner ends, said arms being embedded in the heel, and having their outer ends provided with wearing-points extending through the tread-surface of the heel, and separated by intervening portions of the rubber, substantially as described.

2. The metallic heel protector consisting of the single arms B, radiating from and united only by the center piece, *b*, and provided at their outer ends with points projecting at right angles to the plane of the arms, substantially as described.

296,454. DIE FOR MAKING RUBBER HEELS. FREDERICK RICHARDSON, Providence, R. I. Filed May 15, 1882. (No model.)



Claim.—1. The improved die-plate C, provided with the depressions to receive the projections *b'* of the wearing-plate B, and also with the slitted raised bead *b''*, to receive the radial portion of the wearing-plate, substantially as described.

2. The combination, with the mold D, of the die-plate C, having depressions and the slitted bead, as shown and described, whereby said die-plate is adapted to receive and hold the skeleton wearing-plate having the projections *b'*, for the purposes set forth.

296,455. HEEL-PLATE FOR RUBBER SHOES. FREDERICK RICHARDSON, Providence, R. I. Filed May 15, 1882. (No model.)



Claim.—1. As an improved article of manufacture, the skeleton plate B, formed with the rim *g*, and the bars *e*, provided with the ribs *f*, substantially as and for the purposes set forth.

2. The combination, with a rubber boot or shoe, of the skeleton plate B, embedded in the heel thereof, and formed with the rim *g*, and the bars *e*, provided with the ribs *f*, substantially as and for the purposes set forth.

296,456. PEN. WILLIAM T. RIGHTMYER, Meriden, Conn. Filed May 26, 1883. (No model.)



Claim.—The writing-pen herein described, provided with a slitted concavo-convex nib or point, the upper surface of which is concaved longitudinally of the pen, and the under surface or contact-point convexed, as and for the purposes herein specified.

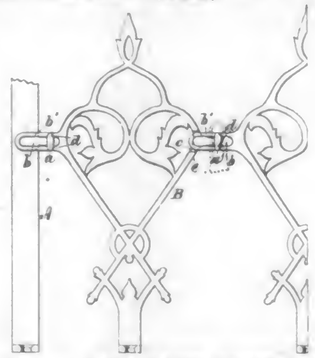
296,457. FRUIT-BOWL. DANIEL C. RIPLEY, Pittsburg, Pa. Filed Dec. 20, 1883. (No model.)

Claim.—A glass dish or bowl having a pivoted metallic bail or handle secured thereto by metallic lugs, substantially as and for the purposes described.

296,457.



296,458. ADJUSTABLE CRESTING FOR BUILDINGS. TIMOTHY ROGERS, Springfield, Ohio, assignor to the Rogers Fence Company, same place. Filed Mar. 24, 1883. (No model.)



Claim.—1. In adjustable cresting, an ornament-section having a T-headed hook extending from the frame of the ornament on one side, and adapted to engage with an elongated slot in a frame-bar extending from the frame of the ornament-section connecting therewith, substantially as set forth.

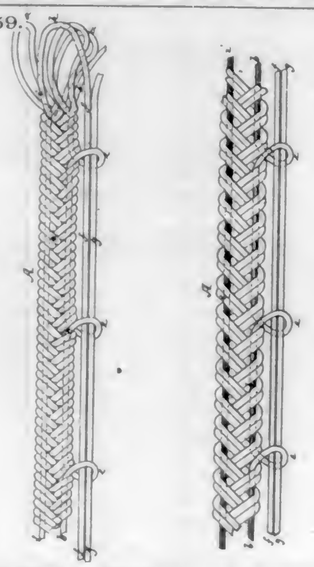
2. An adjustable cresting having its finial-post and ornament-sections each provided at their connecting parts with a T-headed hook and a slotted bar, said hook being formed upon one part of the connection and the slotted bar upon the other, and brought into engagement by turning one of the sections at right angles with the other, to allow the hook to pass through the slot in the bar in securing the sections together, substantially as set forth.

3. In combination with the finial-post A, having the bent T-headed hook *a*, of the ornament-section B, provided with horizontally-slotted bar *b'*, having the slot *b*, engaging therewith, substantially as set forth.

4. The combination, with the ornament-section, of a frame-bar bent at right angles from its vertical line, so as to form a depression on either side of the hook thereon, to allow the slotted bar on the connecting-section which engages with said hook to lie therein, and to slide endwise under the ends of said hook in adjusting the cresting, substantially as set forth.

296,459. SELVAGE FOR HAMMOCKS. ALBERT O. ROOD, New York, N. Y., assignor to Vincent P. Travers, same place. Filed Oct. 25 1883. (No model.)

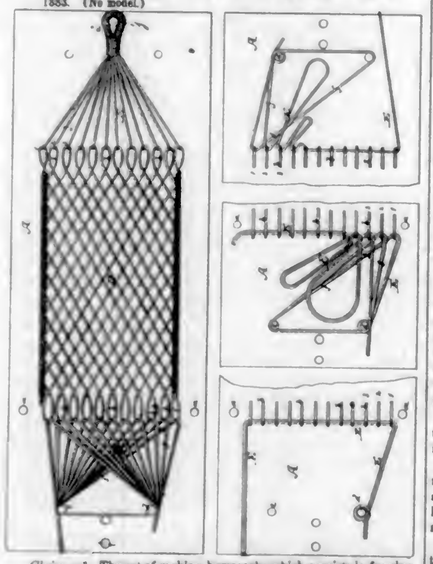
296,459.



Claim.—1. The selvage for hammocks, A, consisting of a number of braided strands, in combination with the straight strand *i*, passing longitudinally therethrough, as set forth.

2. The selvage for hammocks, A, consisting of a number of braided strands, in combination with the strand *b*, having loops *e* formed therein, and the strands *f* and *i*, the strand *i* passing through the selvage and the strand *f* through the loops *e*, substantially as described.

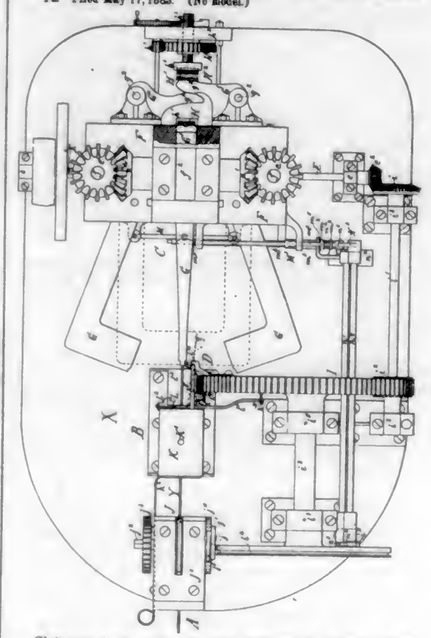
296,460. ART OF MAKING HAMMOCKS. ALBERT O. ROOD, New York, N. Y., assignor to Vincent P. Travers, same place. Filed Nov. 17, 1883. (No model.)



Claim.—1. The art of making hammocks which consists in forming the hammock-body with loops *b b* in the ends thereof in any known manner, then forming each end of the hammock by drawing the cord E, from which the hammock end is to be made, in a straight line through the end loops *b b* of the hammock-body, and in then drawing said cord from between said end loops *b b*, forming of it the converging strands of the hammock end, and in finally uniting these strands into a terminal eye, *i*, substantially as herein shown and described.

2. The art of making hammocks which consists in forming the hammock-body with loops *b b* in the ends thereof in any known manner, then forming each end of the hammock by drawing the cord E in a straight line through the loops *b b* that are at the ends of the hammock-body D, in then drawing this cord out from between the end loops *b* and holding it temporarily, in then coiling or winding the outer part of this cord, and in then forming from this coiled or wound portion the eye *i* at the end of the hammock, substantially as herein shown and described.

296,461. HORSESHOE-NAIL MACHINE. JOSEPH ROY, Philadelphia, Pa. Filed May 17, 1883. (No model.)



Claim.—1. The combination of a pair of swinging hammers, suitable means for operating said hammers, a pair of levers, G', and a spring, whereby the hammers are caused to exert simultaneously equal blows upon a nail-rod, substantially as described.

2. In a nail-machine, the combination of two pairs of swinging spring-hammers, each hammer having a cam-arm, *g*, with shafts E *f f f'*, arranged in a quadrangle, each provided with a cam, *f²*, and two driving gear-wheels, *d'*—one on each side of the cam—and with the springs H H' and levers *g'*, substantially as and for the purpose described.

3. In combination with a gas-furnace, B, four swinging hammers, G, cams *f²*, four pairs of gear-wheels, *d'*, four bell-crank levers, G', two central springs, H H', acting, respectively, on the respective pairs of bell-crank levers and causing these levers simultaneously to operate upon two hammers of a pair, and each pair of said hammers being thus made to act alternately upon an iron rod supported and guided by the furnace, and constantly and uniformly heated by the flame of the same, substantially as described.

4. In combination with the hammers and levers of a nail-machine, the frame H³, clasps *h'*, having screw-shanks *h²* and nut-wheels *h⁴*, and the springs H H', substantially as and for the purpose described.

5. The combination, with the forging-hammers and gas-furnace of a nail-machine, of the cutter *i⁵*, having a sloping surface, *i¹⁰*, and pivoted to a support of the nail-machine, the spring lifting-lever *l'*, and the wheel I, having a corresponding cutter and an actuating-pin, *i⁹*, substantially as and for the purpose described.

6. The combination, with the forging-hammers and gas-furnace, of the wheel I, provided with an oblique-edged cutter, *i¹⁰*, and with actuating-pins *i⁹* and *i⁹*, the oblique-edged cutter *i⁵*, and means for moving the end of the nail-rod obliquely sidewise for cutting it off and lifting and holding the cutter *i⁵* up and in contact with the nail-rod, and readjusting the nail-rod and said cutter to their original position after the nail is cut off, substantially as and for the purpose described.

7. The combination, in a nail-machine, of a swinging cutter l^{6}, having a sloped surface, l^{11}, spring-lever l^{7}, having an upright arm, l^{12}, and pin l^{14}, and wheel L, having a corresponding cutter and a pin, l^{3}, substantially as and for the purpose described.

8. The combination, in a nail-machine, of the cutting-off mechanism D, comprising means for elevating and lowering the stationary cutter, with the deflecting and readjusting spring-lever L, substantially as and for the purpose described.

9. In a nail-machine, the combination, with forging mechanism C, of a gas-furnace, B, having openings k k', door k^{2}, and gas blow-pipe K', comprising an outer pipe, k^{3}, having a pointed nozzle, k^{4}, and an inner pipe, k^{5}, having a pointed nozzle, k^{7}, and means for regulating the said gas blow-pipe, substantially as and for the purpose described.

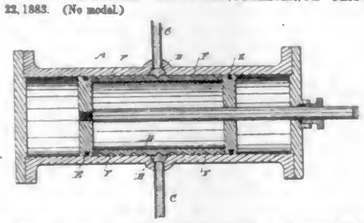
10. The combination, with the furnace, the cutting-off mechanism, and forging-hammers, of grooved wheel I', having the V-shaped deflection i^{7}, grooved feeding-rolls J, gears j^{2}, ratchet-wheel j^{4}, pawl j^{5}, pawl-lever j^{6}, and pin j, substantially as and for the purpose described.

11. The combination, in a nail-machine, of the grooved wheel I', having the V-shaped deflection i^{7}, grooved feeding-rolls J, gears j^{2}, ratchet-wheel j^{4}, pawl j^{5}, pawl-lever j^{6}, and pin j, substantially as and for the purpose described.

12. The combination, with forging-hammers G, of the checks M M', wheel I', having cam I^{11}, and the intermediate connecting mechanism—to wit, levers n^{2} n^{10}, shafts n' n^{3}, and levers N N' N^{2}—substantially as described.

13. In a nail-machine, the combination, with a single centrally-operating power-spring, of a pair of bell-crank levers, a pair of swinging hammers, a gas-furnace provided with a gas blow-pipe, and a feeding mechanism, substantially as and for the purpose described.

296,462. PACKING, LUBRICATING, AND COOLING THE PISTONS OF AIR-COMPRESSORS. CHAS. F. RUFF, Phœnixville, Pa. Filed Aug. 22, 1883. (No model.)



Claim.—1. The combination, with the cylinder A, provided on its inside, at the center, with an annular groove, B, and inlet and outlet pipes C C on the outer opposite sides of the cylinder and communicating with said groove, of a suitably-packed piston, substantially as set forth.

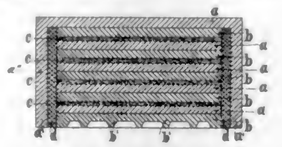
2. The combination, with the piston provided with a series of annular grooves, F, of the cylinder A, having an internal central groove, B, and the outlet and inlet pipes C C, substantially as set forth.

296,463. MANUFACTURE OF PAPER. WILLIAM RUPP, New York N. Y. Filed Feb. 20, 1884. (No specimens.)

Claim.—1. Combining infusorial earth with the pulp in the manufacture of paper, for the purpose set forth.

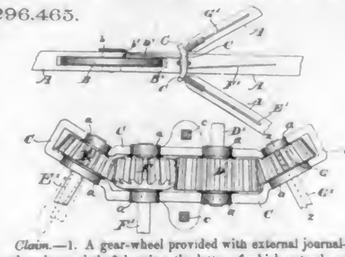
2. In the manufacture of absorbent paper, the substitution of infusorial earth for a portion of the paper-stock.

296,464. VOLTAIC PILE. AUGUST SCHROEDER, Stettin, Germany Filed Sept. 29, 1883. (No model.)



Claim.—In a voltaic pile, the combination of the bottom plate, b, provided with downwardly-extending projections b', with the top plate, a, the downwardly-projecting part a'' of which surrounds all the other plates, and comes with its teeth a' in the level of the projections b', as described, and for the purpose set forth.

296,465. SHAFT-BEARING IN WHEELS. SAMUEL SCHUCH, Indianapolis, Ind., assignor to Ewald Over, same place. Filed Feb. 12, 1884. (No model.)



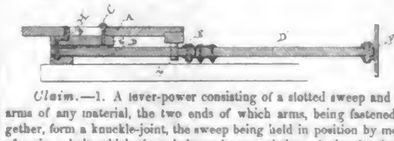
Claim.—1. A gear-wheel provided with external journal-bearings, a, and an internal shaft-bearing, the latter of which extends only a portion of its length, the remaining portion being formed flaring, substantially as described, and for the purposes specified.

2. The combination of a gear-wheel having external journal-bearings, a, independent boxings therefor, a loose non-circular internal shaft-bearing, and a correspondingly-formed shaft, substantially as set forth.

3. The combination of a casing or frame-work having boxings for the wheels, wheels mounted in said boxings and provided with internal shaft-bearings, said shaft-bearings being adapted to engage with the shafts but a portion of their length, the remaining portion being formed flaring, whereby the line of the shaft may be varied without changing the position of the wheels, substantially as set forth.

4. In a grain-drill, the combination, with the frame-work, of the gear-box C, gear-wheels D E F G, mounted therein, the wheels E and G being provided with conical bearings, and the shafts E' F' G', mounted in and driven by said wheels E F G, and means for operating the same, substantially as described, and for the purposes specified.

296,466. LEVER-POWER. DAVID W. SHELEY and WILLIAM W. SHELEY, Albany, N. Y., assignor of one-fourth to William H. King, same place. Filed Jan. 7, 1884. (No model.)



Claim.—1. A lever-power consisting of a slotted sweep and two arms of any material, the two ends of which arms, being fastened together, form a knuckle-joint, the sweep being held in position by means of a pin or bolt, which pin or bolt can be passed through the slot therein to keep such arm from moving sidewise, and underneath which said sweep having the slot shall be a wheel, which wheel shall revolve against a part of a circle or ellipse forming the side or end of a plane of any material under said sweep opposite to the knuckle-joint, and then against either of the turned-up edges or sides of said plane or against pieces of any material affixed to or upon said plane, and which sweep shall have at one of its ends rods or rollers, substantially as described, and for the purpose set forth.

2. In a lever used for pressing purposes, the combination of a sweep forming such lever, in which shall be a slot through which a pin or bolt passes to prevent a lateral motion of said arm, and a wheel affixed to and placed either underneath or on top of such sweep, as described, and for the purposes set forth.

3. In a lever used for pressing purposes, the combination of a sweep forming such lever, having a slot therein, a wheel affixed to and placed either on top or underneath said sweep, and a plane of any material placed either above or below said lever, the end of which opposite the knuckle-joint in said lever shall either be turned up in the form of part of a circle or ellipse, or to or upon which such end shall be affixed a piece of metal or wood to form a part of a circle or ellipse, and the edges of said plane adjoining said part of the said circle shall either be turned up, or along or upon the sides of said plane shall be affixed pieces of any material in such a manner as that the inner faces of said turned-up edges or of said pieces, if prolonged, would form an angle of ninety degrees or less, substantially as described, and for the purposes set forth.

4. In a lever used for pressing purposes, the combination of a sweep forming such lever, having a slot therein, and having at one end thereof rods or rollers, one of which is held in position on each side of one of the arms forming the knuckle-joint of such lever, and a wheel affixed to and placed either on top or underneath said lever, and a plane of any material placed either above or below said sweep, substantially as described, and for the purposes above set forth.

5. A sweep for a lever, made of any material, constructed with a slot therein, for the purposes above set forth.

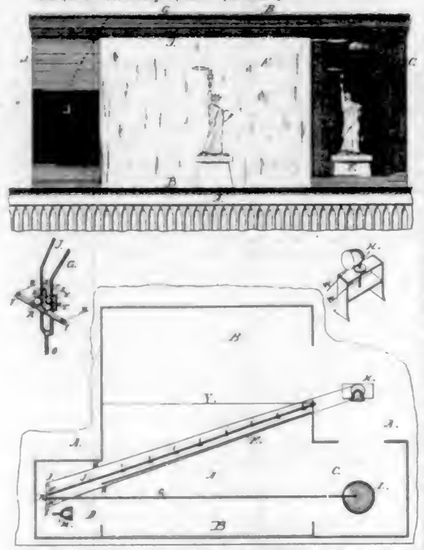
6. A lever consisting of a sweep constructed with a slot therein and turning around a pivot, and the two arms joined together, and which form a knuckle-joint, in one of which arms, at or near the knuckle-joint, shall be a rod or pin, which is inserted into the slot in said sweep, and

is acted upon by said sweep to turn the said arms of said lever, for the purposes above described.

7. In a lever for pressing purposes, the plane which is placed between the sweep which moves upon a pivot and has a slot therein, and the end of one of the arms of said lever, which, with the other arm, forms a knuckle-joint, for the purposes above described.

8. In a lever for pressing purposes, the combination of the slotted sweep moving on a pivot, and the plane underneath and upon which said sweep is placed and to which said sweep is affixed, for the purposes above set forth.

296,467. THEATRICAL APPLIANCE. JOHN W. SHERMAN, New York, N. Y. Filed July 30, 1883. (No model.)



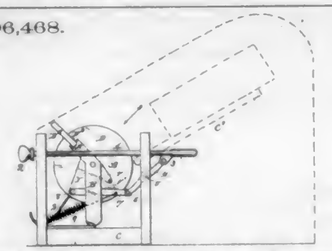
Claim.—1. The combination, with a theatrical stage or cabinet, a side exhibition-compartment open to the stage but closed at the front, and a vertical plate of glass so fitted or adjusted in front of the stage at a horizontal angle as to face the side compartment, of a light concealed upon the side of the stage opposite to the exhibition-compartment in position to throw its rays across the front of the glass into said compartment, a second concealed light placed overhead in said compartment, and a third concealed light placed in the rear of the compartment, and adapted to be reflected either into said compartment or upon the stage in the rear of the glass plate, all substantially in the manner and for the purpose herein set forth.

2. The combination, with a theatrical stage or cabinet fitted with a glass reflecting-plate, E, and with concealed illuminating-burners L M and i i on opposite sides of said plate, of a gas-main, O, to supply said burners, branch pipes J G, connecting the main with the burners, stop-cocks N N in said branch pipes, a coupling-rod, R, connecting the cock-levers, and side pipes, S S, connecting each branch pipe above and below its controlling-cock, substantially in manner and for the purpose herein set forth.

3. The combination, with a gas-main supplying the burners illuminating a vertical glass reflecting-plate upon a theatrical stage, the branch pipes connecting said main with the burner, stop-cocks in said pipes, and a coupling-rod, R, connecting the cock-levers, and with a rotating light and reflector, H, adapted to illuminate either the stage in the rear of the glass or objects placed at the side thereof in front of the plane of the glass, of cords W W, extending from either end of the coupling-rod R, or from the cocks connected thereby, to the device upholding the rotating light, whereby the movement of the cocks in opening and closing shall operate to reverse the position of said light and reflector, substantially in the manner and for the purpose herein set forth.

296,468. MECHANICAL AUTOMATIC CIGAR-SELLER. DANIEL WEBSTER SHIRK and CARY OBERLIN COLE, Grand View, Iowa. Filed May 22, 1883. (Model.)

Claim.—1. In a cigar-seller, the combination of the shaft A, the disks or arms D, secured thereto, segments E F and pivoted segment H,



means for tilting said segment, the receiver I, spring L, delivery-board S, and an operating mechanism for moving the parts, substantially as shown.

2. In a cigar-seller, the combination of the shaft A, disks or arms D, secured thereto, segment F, rocking receiver I, spring L, cam P, delivery-board S, and an operating mechanism for moving the parts, substantially as specified.

3. In a cigar-seller, the combination of the shaft A, disks or arms D, secured thereto, segments F, rocking receiver I, spring L, cam P, delivery-board S, tappet-rod T and shaft therefor, coin-receiving arm U, guard-lever V, suitable tripping mechanism therefor, and an operating mechanism for moving the parts, substantially as described.

4. The combination of the shaft A, disks or arms D, secured thereto, segment F, rocking receiver I, spring L, cam P, delivery-board S, tappet-rod T, shaft M, crank N, tripping-lever W, guard-lever V, coin-receiving arm U, and an operating mechanism for moving the parts, substantially as set forth.

5. The combination of the shaft A, disks or arms D, secured thereto, segment F, rocking receiver I, spring L, cam P, delivery-board S, tappet-rod T, shaft M, crank N, tripping-lever W, guard-lever V, coin-receiving arm U, lever Y, having a finger, Y^{2}, for grasping the coin, and an operating mechanism for moving the parts, substantially as specified.

6. The combination of the shaft A, coin-receiving arm U, secured thereto, lever Y, having finger Y^{2} for grasping the coin, guard-lever V, tripping mechanism therefor, cigar-receiver I, tilting mechanism therefor, delivery-board S, and an operating mechanism for moving the parts, substantially as shown.

7. The combination of the shaft A, coin-receiving arm U, secured thereto, guide-trough B^{9}, a device for grasping the coin, guard-lever V, tripping mechanism therefor, cigar-receiver I, tilting mechanism therefor, and an operating mechanism for moving the parts, substantially as described.

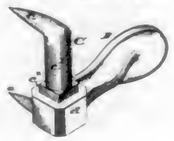
8. The combination of the shaft A, coin-receiving arm U, secured thereto, ears U', having receiving-grooves U^{3}, guide-trough B^{9}, a device for grasping the coin loose on shaft A, guard-lever V, tripping mechanism therefor, rocking cigar-receiver I, and mechanism for moving the parts, substantially as described.

9. The combination of the shaft A, coin-receiving arm U, secured thereto, ears U', having grooves U^{3}, guide-trough B^{9}, lever Y, having finger Y^{2}, guard-lever V, tripping mechanism therefor, cigar-receiver I, tilting mechanism therefor, and an operating mechanism for moving the parts, substantially as shown and described.

10. The combination of the pivoted cigar-receiver, a suitable tilting device therefor, a coin-receiver that is rigidly secured to the shaft, a loosely-mounted lever provided with a finger or other device for grasping the coin, a guard-bar for retaining the coin in the receiver, a lever for tripping the guard-bar, actuating mechanism therefor, springs or other devices for retaining the parts in their normal positions, and a bar or lever provided with suitable connections for operating the mechanism, substantially as specified.

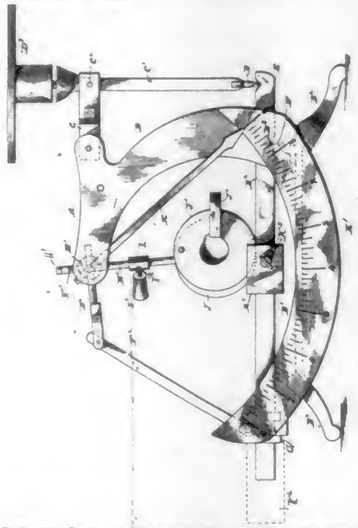
11. The combination of an inclosing-case provided with an inclined feeding-board, a pivoted cigar-receiver, a suitable device for tilting said receiver, a coin-receiver that is rigidly secured to the actuating-shaft, an operating-lever provided with a device for grasping the coin, a guard-bar for retaining the coin in the receiver, a lever for tripping the guard-bar, actuating mechanism therefor, springs for returning the parts to their normal position, and a suitable operating bar or lever, all combined and arranged to operate substantially as shown and described.

296,469. FASTENER FOR DOORS, WINDOWS, GATES, &c. ALEXANDER G. SIMPSON, Arcadia, Mo. Filed Aug. 20, 1883. (No model.)



Claim.—The combination, in a fastener, of the journal C and the arm D, said journal having the two parts c' and c^2, and said arm having the eye d, to enable the arm to turn upon the part c' and be prevented from turning when upon the part c^2, as described.

296,470. WEIGHING-SCALE. EMILE SIEBERT, Buffalo, N. Y. Filed Dec. 18, 1883. (Model.)



Claim.—1. In a scale, the combination, with the indicating-hand and a graduated plate having indicating-marks, of a pendulum having a weight supported eccentrically to the pivotal points of the pendulum-support.

2. In a scale, the combination, with an indicating-hand, a pendulum, and a shaft upon which the hand and the pendulum are mounted, the pendulum being provided with a weight supported eccentrically to the axis of said shaft, of a graduated scale having equidistant indicating-marks.

3. In a scale, the combination, with the pendulum, of a supplemental weight connected thereto eccentrically to the point of oscillation of the pendulum.

4. In a scale, the combination, with the pendulum having a supplemental weight connected thereto eccentrically to the point of oscillation of the pendulum, and a stop to limit the movement of the said supplemental weight, of a pen connected to the pendulum and capable of adjustment radially from the point of oscillation and circumferentially around the pendulum-stem.

5. In a scale, the combination, with the supporting-platform and the pivoted guide, of the pivoted beam, the pendulum-shaft, the means for connecting the beam and the shaft, the shaft being provided with an indicating-hand, and a pendulum having a supplemental weight supported eccentrically to the point of oscillation of said shaft.

6. In a scale, the combination, with the supporting-platform, the standard, and the pivoted guide-arm, of the pivoted beam having an adjustable collar, the pendulum-shaft provided with an adjustable arm, and the link connecting the arm and the collar together.

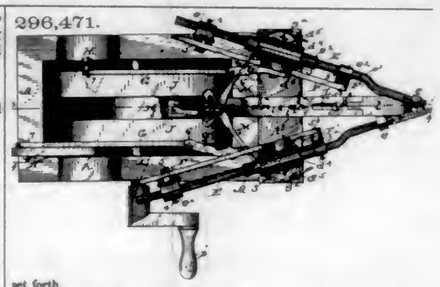
7. In a scale, the combination, with the supporting-platform, the standard, and the pivoted guide-arm, of the pivoted beam, the distance between the pivotal points of the arm and its connection with the standard being approximately the same as the distance between the pivotal point of the beam and its contact with said standard, and the pendulum-shaft having an adjustable arm, the beam and shaft being adjustably connected together.

296,471. GIN-SAW-FILING MACHINE. FRANK M. SIBK, Newnan, Ga. Filed Sept. 26, 1883. (No model.)

Claim.—1. In a saw-sharpening machine, the combination, with the grooved disks J J and pivoted levers H H, of the file-bars E E, the posts D D′, and the angle-bars and connecting-rods for imparting a properly-limited movement to said file-bars, substantially as described.

2. The combination, with the grooved disks J J and cam K, of the pivoted levers H, file-bars E, the angle-bars, connecting-rods G, the posts D D′, the feed-bar L, and springs M, substantially as and for the purposes

296,471.



set forth.

3. The grooved disks J and posts D D′, composed of the jointed sections and arranged to turn at their bases, in combination with the file-bars E, pivoted levers H, the angle-bars, and connecting-rods G, substantially as and for the purposes specified.

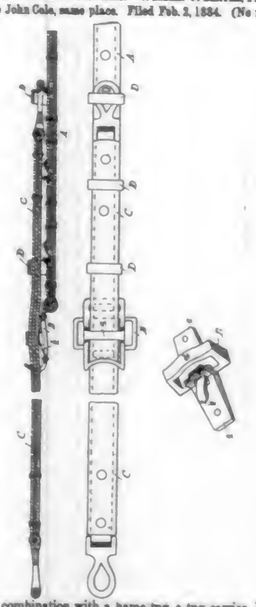
4. The combination of the grooved disks J, pivoted levers H, file-bars E, the angle-bars, and connecting-rods G, with the posts D D′, each formed of two jointed sections, the jaws d^3, flanged sleeves d, nuts d^3, pins 2, and the adjustable brackets C, substantially as and for the purposes stated.

5. The grooved disks J, slotted pivoted levers H, posts D D′, and file-bars E, in combination with the grooved guide-pieces D^2, links F′, angle-bars F, and connecting-rods G, substantially as set forth.

6. The frame A, carrying the adjustable brackets C, in combination with the shaft I, carrying grooved disks J, the posts D D′, guide-pieces D^2, file-bars E, angle-bars F, connecting-rods G, and levers H, arranged and operating substantially as and for the purposes set forth.

7. The grooved disks J and posts D D′, in combination with the pivoted levers H, slotted at their upper ends, the guide-pieces D^2, file-bars E, having eccentric front extremities provided with shank and carrying the nuts or collars s, the collars s s' s^2, the jointed connecting-rods G, having slotted rear ends, and the open links F′, substantially as and for the purposes specified.

296,472. HAME-TUG AND BUCKLE. WARREN C. SLATER, Fremont, Mich., assignor to John Cole, same place. Filed Feb. 2, 1884. (No model.)



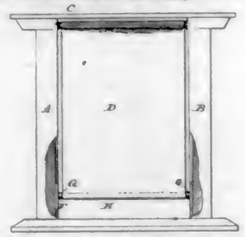
Claim.—1. In combination with a hame-tug, a tug-carrier, B, having loop a, and spring b, arranged under said loop, substantially as and for the purposes specified.

2. In combination with a hame-tug, a tug-buckle, D, consisting of the longitudinal bar c, provided with the loop d and tongue e, substantially as and for the purposes specified.

3. A hame-tug, A, provided with a series of buckles, D, in combination with a trace provided with a cockeye upon each end, so as to be reversed and arranged to engage with the tongue of one of the series of buckles, substantially as described.

4. The combination, with the tug A and tug-carrier B, the latter provided with a spring, b, of a series of buckles, D, secured to said tug, and the trace C, when constructed, arranged, and operating substantially in the manner and for the purposes described.

296,473. WINDOW-SHADE FIXTURE. NICHOLAS SLINGLAND, Falls Village, Conn. Filed Feb. 23, 1884. (No model.)

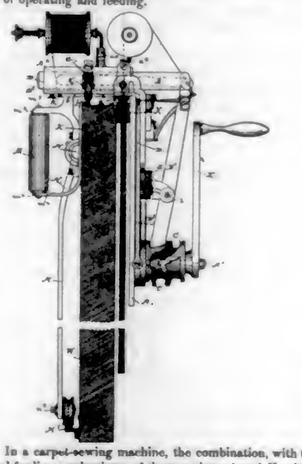


Claim.—1. The combination of vertical parallel guides on the jambs of a window-frame, a spring-roll arranged to automatically roll up the shade, a slat in the lower end of the shade, and a shoe arranged upon each of the guides on said jambs, the said slat extending from the shoe on one side to the shoe on the opposite side, and engaged with the respective shoes, the bearing of the said shoes upon the jambs made elastic, substantially as described.

2. The combination of vertical guides on the respective jambs of a window-frame, an automatic shade-roller, a shade attached thereto, a shoe fitted to move up and down on the guide of each of said jambs, a slat at the lower end of the shade, one end resting in a socket on one of the shoes and extending across into a socket on the shoe at the opposite side, and a spring introduced between the shoes and slat, whereby a yielding pressure is produced upon said shoes against their respective jambs, substantially as described.

296,474. CARPET-SEWING MACHINE. ALPHONSO BUDD SMITH, San Francisco, Cal., assignor to Solon Pattee, same place. Filed Apr. 26, 1883. (No model.)

Brief.—Interchangeable feeding devices are provided, whereby the machine is adapted for feeding on a bench-support or upon the edges of the carpet. The side plates are adjustable to satisfy the requirements of either condition of operating and feeding.



Claim.—1. In a carpet-sewing machine, the combination, with the stitch forming and feeding mechanisms, of the two plates A and K, which support said mechanisms, one of said plates being provided at the top with an arm extending across over the other plate, and the other plate being secured adjustably to the said arm, whereby the plates may be adjusted toward or from each other, substantially as set forth.

2. The combination of the box A^4, the fixed depending plate A, having stud A′ and brackets b d, and the actuating mechanism connected therewith, and rear plate, K, having the guide-handle, and adapted to slide laterally toward and from the fixed plate, and a binding-screw, substantially as hereinbefore described, for the purpose set forth.

3. The combination of the frame adapted to travel astride of the edges of material to be stitched together, carrying wheels g g, a work-supporting bench, W, having fixed track, the clamps w X, and the steady-bar, with traction-wheel and the guide-rail on the back of the work-bench, substantially as hereinbefore described, for the purpose set forth.

4. In a carpet-sewing machine, the combination of the traveling frame adapted to carry all the stitch-forming mechanism, and to rest astride of and move over the edges of the material to be stitched, a work-supporting bench having a guide-track for the frame, and a clamping device to hold the material in a vertical position, a fixed rack placed in relation to the guide-track, as described, and a pawl or vibrating finger, D, and operating mechanism attached to the said traveling frame, the movements of which in one direction cause the finger to engage with the rack and propel the frame forward, and in the other direction to pass over the rack without engaging, substantially as hereinbefore described.

5. The combination, with the adjustable traveling frame having a horizontally reciprocating and vibrating looper, of the fixed lever D′, having the head D^4, provided with the two slots, and interchangeable feeding devices to be secured in the slots, substantially as set forth.

6. The combination of the stationary bench W, track H, notched plate w, clamp-bar X, and movable clamps Y, substantially as hereinbefore described.

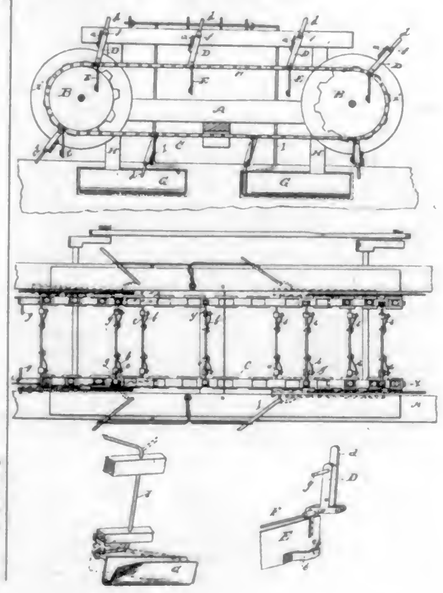
7. The combination of the stationary bench W, track H, notched plate w, clamp-bar X, movable clamps Y, and lower guide-rail, H′, carrying-frame, and steadying-bar N, with its roller, substantially as described.

296,475. TACK OR FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Nov. 24, 1883. (No model.)



Claim.—The herein-described metallic cut tack or fastener, consisting, essentially, of the head a, with tapering sides and extended portions or ends, and having the convexed upper surface and concaved under surface, c, said under surface being provided with spurs, as represented, and the pointed prong b, integral with the head, projecting from the concaved under surface, c, thereof, and tapering on all its sides from heel to point, with two of its sides flush or even with the tapered sides of said head, all as shown, and for the purpose specified.

296,476. PROPELLING APPARATUS FOR VESSELS. JAS SCOTT SMITH, Marshall, Ark. Filed Dec. 4, 1883. (No model.)



Claim.—1. The combination, in propelling mechanism for vessels, consisting of the sprocket-wheels and working-chains having bracket-arms secured thereto, said arms being provided with a spring-bar, which is pivoted on a cross-rod passing through the bracket-arms, whereby the paddles are held against undue strain, substantially as described.

2. A propelling apparatus consisting of the sprocket-wheels and chains, the latter having bracket-arms, in combination with the guide and tripping mechanism, whereby motion is imparted to the paddles and also released, for the purpose set forth.

3. The combination, in a propelling apparatus consisting of the sprocket-wheels and chains, the latter provided with bracketed spring-arms, of the hinged paddles provided with the cushioning devices, all operating together as set forth and described.

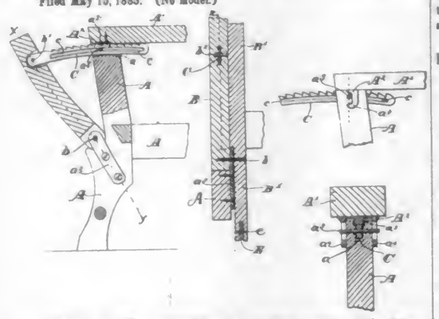
4. The combination, in an apparatus for propelling vessels, of the sprocket-wheels and chains provided with bracket-arms, and with the paddle-blades having on their backs springs and compression-balls interposed between said springs and paddle, for preventing concussion of the paddle-blades against the bracket, as described.

296,477. TILE-MACHINE. JOHN S. SMITH, Jackson, Mich., assignor of one-half to Theadore G. Bennett, same place. Filed Nov. 30, 1883. (No model.)



Claim.—A conveyer formed by the combination of the grooved shaft A A', and semicircular flanged and feathered reversible and interchangeable sections C C', substantially as and for the purpose set forth.

296,478. RECLINING-CHAIR. OTTO STECHHAN, Indianapolis, Ind. Filed May 15, 1883. (No model.)



Claim.—1. The combination, in a reclining-chair, of the frame-work A, the reclining back B, the notched bars C, the arms A', hinged to the front uprights of said frame-work and extending back and resting upon the rear uprights thereof, and catches upon the under side of said arms, which enter the notches in said bars when said arms are in lowered position, and are withdrawn from said notches by raising the arms, substantially as shown and specified.

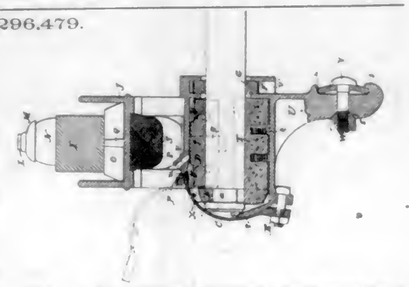
2. The combination, in a reclining-chair, of the frame-work, the back, the rack-bars having longitudinal slots therein, pins extending through the rear uprights of said frame-work and said rack-bars, hinged arms, and catches on said arms which engage with the notches in said rack-bars, substantially as shown and specified.

3. The combination of the frame-work, the back, the rack-bar, the hinged arm A', the device A^3, having catch a^3, and hooked portions a^4, and pins a^2, extending through the rear uprights of said frame-work, and adapted to engage with said hooked portions a^4, substantially as set forth.

296,479. CAR-AXLE BOX. JOHN STEPHENSON, New York, N. Y. Filed Apr. 18, 1883. (No model.)



296,479.



Claim.—1. The combination, in a car-axle box, of a grooved axle, a forked key fitted to said axle, and grooves in the box receiving the limbs of said key and extending into the oil-well, whereby the play of the key is made the medium of elevating the oil from the well to a point above the axle, substantially as set forth.

2. The combination of the box, a bearing-block in contact with the top of the box, and provided with an oil-basin, y, and a key check-plate having limbs extending into the well, and fitted to its grooves, to elevate the oil into the basin, substantially as set forth.

3. A car-axle box provided with a key-plate fitting a groove in the axle and in grooves in the box, and with a bearing in contact with the flat top of the box, and confined between the rear wall and the key-plate, substantially as set forth.

4. A car-axle box in which the journal is locked longitudinally by a key-plate, and provided with a dust-chamber containing a surrounding dust-collar in contact with the axle, the collar being free to gyrate within its chamber, or controlled by the axle, substantially as set forth.

5. A car-axle oiling-pad independent of the box-shell, and having in combination vertical plates bent outward at their upper edges and shaped to conform to the journal, with felt between the plates held firm in position for journal-contact by the outward spread-plates, and provided with a supporting-spring, substantially as set forth.

6. The combination of a car-axle box and axle-journal, oiled by a pad of felt resting on the spread-wings of two vertical plates clasping the felt, and holding it up to the journal by a supporting-spring resting on the floor of the box, substantially as set forth.

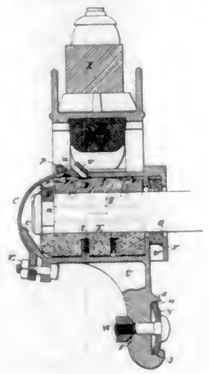
7. An oiling-pad arranged beneath the grooved axle, and provided with an extension projecting beneath the neck of the axle, substantially as set forth.

8. A car-axle-box oiling-pad of felt or analogous material provided with blocks or pieces of hard material secured immovably therein for contact with the journal, substantially as set forth.

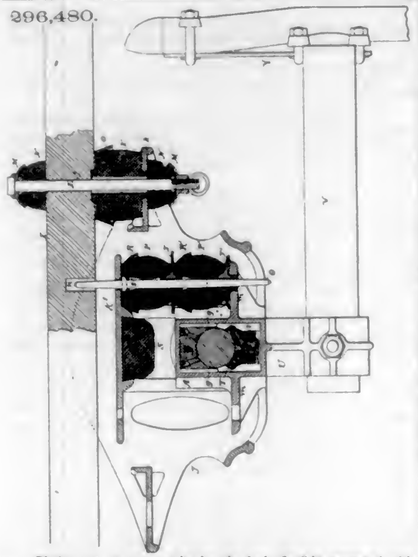
9. A car-axle box provided with an oiling-pad of felt or analogous material having screws a^2 secured immovably therein, for the purpose specified.

10. A car-journal oiling-pad having felt or similar fabric between two vertical plates, the upper portion of the plates and felt diverging in lines conforming to the curve of the journal, the parts of the felt for journal-contact having metal or other hard substance inserted, and upheld by the curved metal plates, as and for the purposes specified.

296,480. CAR-AXLE BOX. JOHN STEPHENSON, New York, N. Y. Filed July 23, 1883. (No model.)



296,480.



Claim.—1. A tram-car having the body flexibly connected with its pedestals through the medium of springs capable of lateral play, arranged between the pedestals and sills, and provided with axles having annular grooves and bearings within the boxes sliding in the pedestals, whereby lateral movement of the boxes with respect to the axles is prevented, substantially as set forth.

2. The combination, in a tram-car, of the sills, pedestals, intervening springs, bolts passing therethrough, and cushions at the end of each bolt, and with the two pedestals on opposite ends of the axle held in relative position by the axle-boxes locked on the journals, substantially as set forth.

3. A tram-car with pedestals receiving the boxes and intervening springs, flexible elastic cushions between the car-body and the pedestals, the axle-journals locked within the boxes, and the connections arranged to permit the pedestals to change position independently as the axles approximate the radial lines of curves, and to restore the pedestals to their normal positions as the car comes upon the straight portions of the track, substantially as set forth.

4. A tram-car having its axles locked in the axle-boxes, and cushions secured in flanged seats, so as to permit movement of the body independent of the pedestals by which the axles and wheels are impelled, substantially as set forth.

5. A tram-car having at each side of the axle-box a spring resting on a disk, and the upper end of the spring capped by a re-enforce inverted cup, with its bottom indented into a cavity of the spring, the indentation of the cup-bottom receiving the collar of the pintle, substantially as set forth.

6. A tram-car having at each side of the axle-box a spring in two or more sections, an inverted cup and disk between the springs, an inverted cup above the upper spring, with central bosses upon the cup and disk interlocking each other and extending into recesses in the springs, and a central pintle extending through all the parts, substantially as set forth.

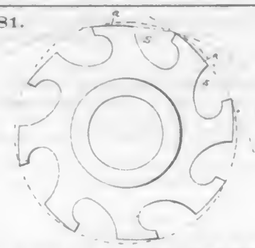
7. A car-pedestal having an elastic bumper-cushion arranged in and supported by a socket beneath the bed-plate and in suspense above the axle-box, substantially as set forth.

8. A car-pedestal having at the under side of the bed-plate a socket or receptacle for retaining a bumper-cushion, substantially as specified.

296,481. CUTTER-HEAD. JOHN D. STRICKLER, Worcester, assignor to Oscar L. Noble, Boston, Mass. Filed Jan. 28, 1884. (No model.)

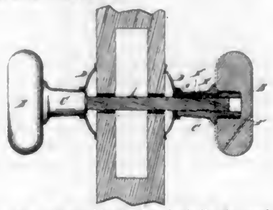


296,481.



Claim.—A rotary cutter composed of a slotted body and teeth, having faces *a a* formed as arcs of circles, the radii of such arcs being longer than the radii of the body, as set forth.

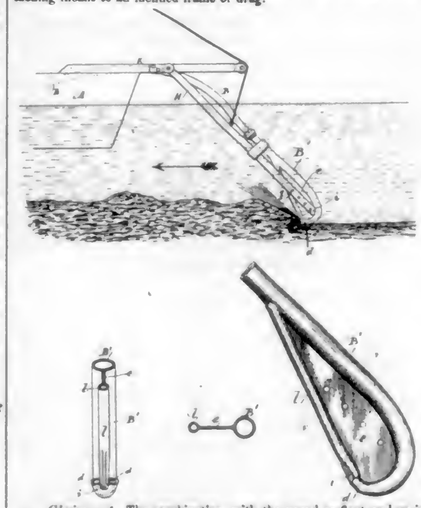
296,482. KNOB ATTACHMENT. OSCAR STODDARD, Detroit, Mich. Filed Jan. 2, 1884. (No model.)



Claim.—In a self-attaching knob and spindle, the combination, with a knob-shank having the spindle-opening and inclined key-channel, and vertical channel at inner end, of an inclined key serrated on its under surface, having the hooked inner end, as set forth, and a square spindle having the serrated surface A', the whole when arranged and combined as set forth.

296,483. HYDRAULIC APPARATUS FOR REMOVING SAND-BARS, &c. ROY STONE, New York, N. Y. Filed Sept. 24, 1883. (No model.)

Brief.—A plow is formed of a curved water-pipe having two upwardly-directed jet-nozzles, and a branch pipe with a downwardly-directed nozzle, and connected to the main pipe by a web, forming the attaching means to an inclined frame or drag.



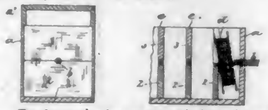
Claim.—1. The combination, with the vessel or float and an inclined connection or drag, of a curved water-pipe at the lower end terminating in the jet-tube *d*, having an upward inclination, and acting to project the solid materials upwardly into the current in the river, substantially as set forth.

2. In a hydraulic excavating apparatus, the pipe B', the jet-tubes *d d*, having an upward inclination, and a jet-tube, *i*, between the tubes *d*, substantially as set forth.

3. The combination, in a hydraulic plow, of a pipe through which water is forced, jet-nozzles for the issuing water at upward and downward inclinations, to loosen and raise the solid materials into the current of the river, and a web, *s*, at the front of the water-pipe, to cause the plow to rise and pass over any obstruction that is not removed by the water, substantially as set forth.

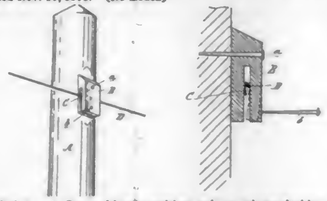
4. In a hydraulic excavating apparatus, the pipe B', web *s*, jet-tubes *d*, branch pipe *l*, and connections to the scow and to the water-pumps, substantially as set forth.

296,484. SHOW-BOX AND REEL-HOLDER. GEO. C. TATE, Malden, Mass. Filed May 14, 1883. (No model.)



Claim.—The box *a*, having apertures in its ends, and transverse partitions *c*, each having a central aperture, and a movable portion above said aperture, combined with the rod *b*, adapted to pass endwise through the end apertures of the box and the central apertures of the partitions, and to support reels placed between said partitions, the endwise movement of the rod enabling some of the reels to be released and removed from the box without disturbing or removing the whole series of reels, while the removability of the upper portions of the partitions enables them to be displaced while the rod is being inserted through the box and reels, so that the reels can be inclined to facilitate the insertion of the rod, as set forth.

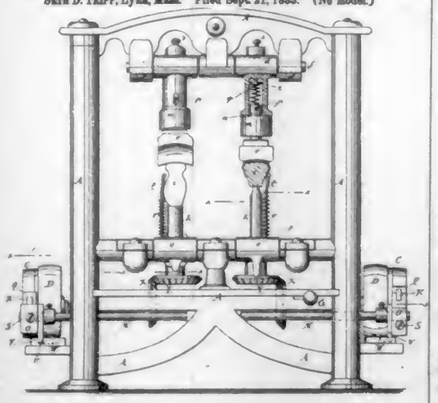
296,485. MEANS FOR SUPPORTING AND INSULATING ELECTRICAL WIRES. JOHN WATSON TRINGHAM, Windsor, Ontario, Canada. Filed Nov. 19, 1883. (No model.)



Claim.—1. In combination with a pole or other suitable support, the means of securing the wire to such pole, which consists of a bifurcated block whose arms are constructed to approach each other and clamp the wire in a fixed position between them, substantially as and for the purposes described.

2. The combination, with a pole and cross-arm or other suitable support, provided with a hole, of a bifurcated top pin, which, being forced into said hole, will clamp the conductor, substantially as described.

296,486. MACHINE FOR LEVELING BOOT AND SHOE SOLES. SETH D. TRIPP, Lynn, Mass. Filed Sept. 21, 1883. (No model.)



Claim.—1. In a machine for leveling boot and shoe soles, the combination, with the shaft Z, connected with the drive-shaft B by bevel-gear wheels Y X, of the right and the left worms *a b* and the worm-segments *c d*, carrying the last *i* and the presser-foot *e*, substantially as herein shown and described, whereby the last and presser-foot are made to move in unison, as set forth.

2. In a machine for leveling boot and shoe soles, the combination, with the presser-foot rod *n* and the worm-segment *d*, of the socket *m* and the spring *q*, substantially as herein shown and described, whereby the said presser-foot will adjust itself to the varying thicknesses of the soles, as set forth.

3. A machine for leveling boot and shoe soles, constructed, substantially as herein shown and described, with two worm-shafts, two pairs of right and left worms, and two pairs of worm-segments arranged to carry their lasts and presser-feet at the same time and in opposite directions, to adapt the two pairs of lasts and presser-feet to be attended by the same operator, as set forth.

4. In a machine for leveling boot and shoe soles, the combination, with the last-carrying segment *c* and the last *i*, of the rod *t* and spring *v*, substantially as herein shown and described, whereby the heel of the boot or shoe will be held from rising on the last when pressure is applied to its toe, as set forth.

5. In a machine for leveling the soles of boots and shoes, the combination, with the pulley C and the socket-arm O, of the brake-shoe Q, the brake-block P, shaft N, and the pivot-screw S substantially as herein shown and described, so that the axes of the said pulley, shoe, and block will be in a straight line, or nearly so, when the brake is in use, and the brake-shoe axis will be carried out of the line when the motion of said pulley is reversed, withdrawing the brake-shoe from the pulley, as set forth.

6. In a machine for leveling the soles of boots and shoes, the combination, with the screw-nut J, moving upon the drive-shaft B, and the shaft N, carrying the brake-sockets O, blocks P, and shoes Q, of the arms M and the springs and stops *k l*, substantially as herein shown and described, whereby the brake will be applied and withdrawn automatically, as set forth.

296,487. TACKLE. KING UPTON, Peabody, Mass. Filed Sept. 17, 1883. (No model.)

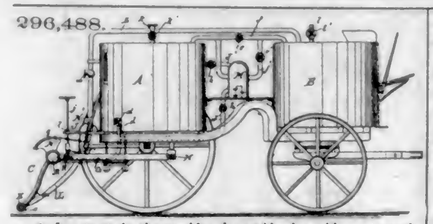


Claim.—In a tackle, the combination, with the rope and blocks, of the swiveled connecting device for connecting the standing end of the rope with one of the blocks, whereby the said rope is permitted to twist or rotate on its axis independently of the connected block, substantially as and for the purposes set forth.

296,488. STREET-CLEANING MACHINE. BERGEN VAN GAASBEEK, Mount Vernon, N. Y. Filed Sept. 28, 1882. (No model.)

Claim.—1. The water-discharge pipe E, provided with the series of nipples *c*, and the inclosed pipe K, provided with the nipples *p*, in combination with the tank A and tank B, said tanks connected, respectively, with pipes E and K, substantially as and for the purpose set forth.

296,488.



2. In a street-cleaning machine, the combination, with a water-tank, pressure-tank, and distributer, of a furnace for heating the water or air, or both, substantially as and for the purposes set forth.

3. The combination, with the tank A, of the connected pipes D and E, the latter being provided with the series of nipples *c* or apertures, substantially as and for the purposes set forth.

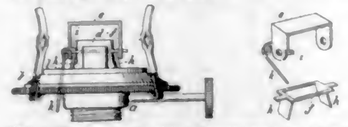
4. In a street-sprinkling device, the pipe D, hinged to the rear cross-bar, H, of a stage or parallel frame, in combination with the winding-shafts *g* and *j j* and chains *g'* and *j' j'*, for adjusting the distributer, substantially as and for the purposes set forth.

5. The central bar, F, pivoted in the carriage, in combination with the sliding bars G G, cross-bars H H', winding-shaft *g*, chain *g'*, and pipe D, hinged to the rear cross-bar, substantially as shown, and for the purposes set forth.

6. In a street-sprinkler, the combination, with the water-pipe having nipples and connected to the water-tank, of the air-pipe, with nipples adapted to project into the nipples of the water-pipe, and connected to the compressed-air tank, substantially as and for the purpose set forth.

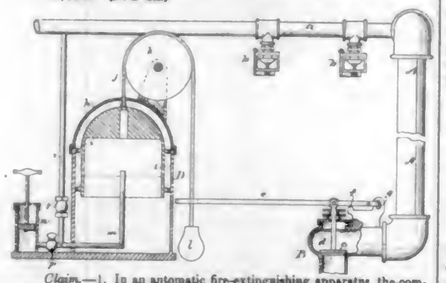
7. In a street-sprinkler, the combination, with the compressed-air tank and the water-tank, of the air-pipe having nipples and the water-pipe surrounding the air-pipe, and having nipples, into which the nipples of the air-pipe project, said air and water pipes having connection with the compressed-air and water tanks, substantially as and for the purpose set forth.

296,489. LAMP-EXTINGUISHER. WILLIE C. WALTER, Richmond, Va. Filed Sept. 17, 1883. (No model.)



Claim.—In a lamp-extinguisher, the combination, with the slotted frame *f*, constructed as described, and provided with the outwardly-inclined legs *h h* and opposite end journals for the hood, of the rectangular hood *e*, having its downward arms perforated to receive the journals of the frame, and one of the arms provided with the stop *i*, and an eye for receiving the operating-rod *k*, the whole adapted to be applied to a lamp-burner, substantially as specified.

296,490. AUTOMATIC FIRE-EXTINGUISHING APPARATUS. CALEB C. WALWORTH, Boston, and OSBORN B. HALL, Malden, Mass. Filed Nov. 17, 1883. (No model.)

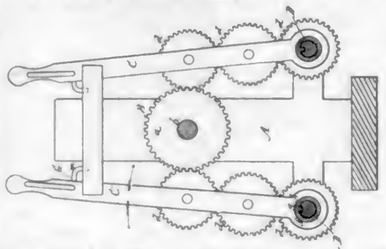


Claim.—1. In an automatic fire-extinguishing apparatus, the combination of a water-supply pipe, with distributing branches connected therewith, and provided with extinguishers adapted to be opened and rendered operative by heat at the danger-point thereof, a water-excluding valve arranged in said supply-pipe, a tank supported by compressed air, with connections by which the air also communicates with and fills the water-distributing pipes, so as to be liberated by the opening of an extinguisher, and devices connecting said tank and water-excluding valve, and adapted to open the valve and admit the water by the falling of the tank at the liberation and escape of the air therein by the opening of an extinguisher, substantially as specified.

2. In an automatic fire-extinguishing apparatus, the combination of supply-pipe A, its branches *a*, and automatic extinguishers *b* thereon arranged, a water-excluding valve, *c*, arranged in said supply-pipe, an air-tank, *i*, arranged to be supported by compressed air, and with devices for compressing and confining the air therein, a pipe, *s*, communicating with said air-supply devices and with the water-distributing pipes, a cord, *j*, supported by sheave *k* and attached to said tank, a weight, *l*, suspended by said cord, and a valve-weighting lever, *e*, arranged to be actuated by said cord and its weight, and to thereby open the valve and liberate the water, when the tank falls, by reason of the escape of the air therein, at the liberation of an extinguisher by heat, substantially as specified.

3. In combination with valve *c* and lever *e*, the latter pivotally connected with the valve-stem, and means to actuate said lever, the fulcra *f g*, arranged at different distances from the valve-stem, to vary the relative lengths of the arms of the lever at and after the commencement of the rising movement of the valve, substantially as specified.

296,491. DIFFERENTIAL GEAR. JONATHAN B. WEST, Rochester, N. Y. Filed Sept. 6, 1883. (No model.)



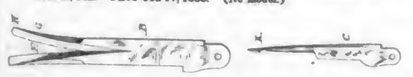
Claim.—1. In a differential gear, the combination of a series of cone-gears attached together in one body, a lever turning loosely upon the shaft which is to be driven, and a set of pinions mounted on the lever, the upper one engaging with the cone-wheels, the lower one resting loosely on the shaft and connected therewith by a spline which allows free longitudinal movement on the shaft, but imparts rotary movement as the gearing is turned, as set forth.

2. In a differential gear, the combination of the cone-gears *a a a*, all attached together, the lever C turning on the shaft to be driven, the set of spur-pinions *d d d*, mounted on the lever, the upper one engaging with the cone-gears, the lower one engaging with the shaft by a spline, and the block E provided with a set of graduated notches, *i i i*, corresponding with the wheels of the cone-gear, the end of the lever being retained by said notches, as shown and described, and for the purpose specified.

3. The combination, in a differential gear, of the cone-gears *a a a*, the lever C, the pinions *d d d*, engaging with the cone-gears at the top and with the shaft D at the bottom, the block E, provided with the graduated notches *i i i* and holes *k k k*, and the catch G, attached to the lever engaging with said holes, all arranged to operate in the manner and for the purpose specified.

4. In a differential gear, the combination, with a set of cone-gears, of two levers turning on shafts on opposite sides of the cone-wheels, a set of pinions mounted on the shafts, the upper ones engaging with the cone-gears and the lower ones fitted on the shafts, and provided with splines engaging with the shafts, whereby one shaft can be driven by the other shaft through the medium of the cone-gears, as set forth.

296,492. LOCK-STITCH RIPPER. ELIJAH HARVEY WHEELER, Corpus Christi, Tex. Filed Oct. 17, 1883. (No model.)

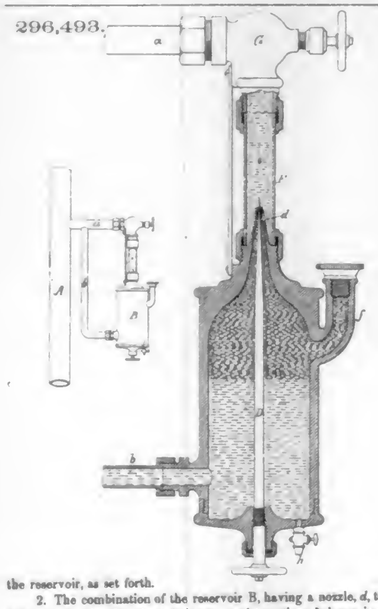


Claim.—As an improvement in rippers, the combination, with the knife-handle A, of the lock-stitch ripper comprising the blade B, bifurcated or slotted centrally at one end, the adjoining edges of which are beveled inwardly and ground sharp, one prong of said blade being rounded, as and for the purpose set forth.

296,493. LUBRICATOR. JOHN R. WHITACRE, Canton, Ohio. Filed Oct. 22, 1883. (No model.)

Claim.—1. The combination of the reservoir B, having in the top a nozzle, *d*, with the needle-pointed valve D, adapted to the nozzle, and having a threaded stem adapted to a threaded opening in the bottom of

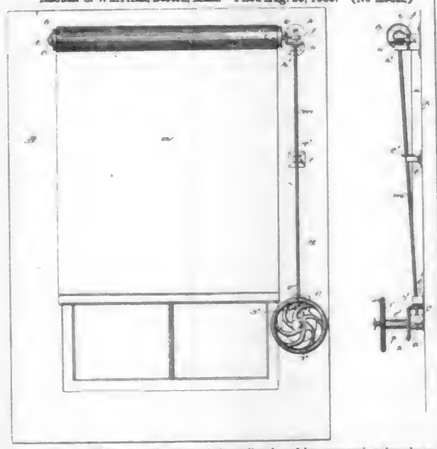
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the reservoir, as set forth.

2. The combination of the reservoir B, having a nozzle, *d*, the needle-pointed valve D, adapted thereto, and to a threaded opening in the reservoir, and the tube F, secured to the reservoir and surrounding the upper end of the nozzle, as set forth.

296,494. APPARATUS FOR OPERATING WINDOW-SHADES. REUBEN S. WHITTIER, Boston, Mass. Filed Aug. 20, 1883. (No model.)



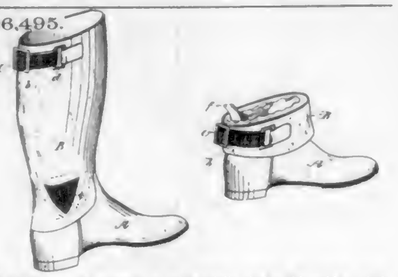
Claim.—The combination of the roller *b* and its supporting-brackets with the shaft *m*, handle *r*, gearing connecting the said handle, shaft, and roller, and guides or brackets *h'*, *t*, and *o'*, for engaging and steadying the shaft, substantially as described.

296,495. RUBBER BOOT. JOHN J. WILLIAMSON, Boston, Mass. Filed July 28, 1883. (No model.)

Claim.—1. The combination, in a boot, of a rubber foot portion, a thin, flexible leg, and the gores *e*, let into the lower portion of the leg, all substantially as and for the purposes described.

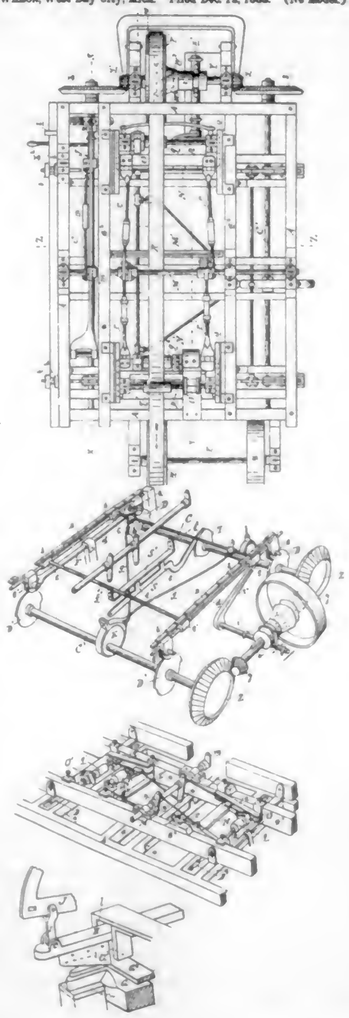
2. A rubber boot the foot part of which is of india-rubber compound of substantially the usual thickness, and is adapted to be drawn upon the foot of the wearer without traction upon the leg part, and which has

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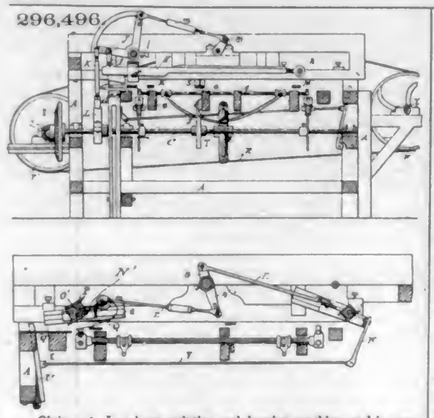


a closed leg part of gossamer or substantially similar thin rubber-cloth material, provided with means of attachment to the leg or body of the wearer, substantially as described.

296,496. HOOP POINTING AND LAPPING MACHINE. FITCHLAND L. WILSON, West Bay City, Mich. Filed Dec. 12, 1883. (No model.)



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Claim.—1. In a hoop pointing and lapping machine, and in combination with the table upon which the hoop-blanks are supported, two or more carrier-bars extending across the table of the machine, and provided with racks or retaining-ledges to engage with the hoop-blanks, in combination with devices for imparting a four-motion feed to said carriers, whereby the hoop-blanks are carried intermittently over the table from front to rear, substantially as and for the purposes described.

2. In combination with the stationary table of the machine, and the pressure-bars M, secured above said table, a carriage operating in the plane of said table, and actuated by mechanical devices which give it a to-and-fro and up-and-down motion, whereby the racks or carrier-bars B B, which are secured to or form the ends of said carriage, form a feeding device by which the hoop-blanks are intermittently carried over the table from front to rear, substantially as and for the purpose described.

3. In a hoop pointing and lapping device, the combination of the feed-carriage with an eccentric, E, which imparts a to-and-fro motion thereto, and with the cams D D D' D', upon which the four corners of the carriage are supported, and which impart an up-and-down motion to said carriage, substantially as and for the purpose specified.

4. In a hoop pointing and lapping machine, the combination of the carrier-bars B B, cross-heads *c c'*, attached to the under sides of said bars, guide-bars *d*, passing through said heads, transverse bars *f f'*, connecting the cross-heads *c* and *c'*, respectively, eccentric E, for imparting a reciprocating motion to the said carrier-bars B, rods *g g*, connecting the eccentric to the bar *f*, friction-rollers *e e'*, attached to the outer ends of the guide-bars *d*, and cams D D', engaging with the rollers and constructed to give a vertically-reciprocating motion to the said bars B, substantially as and for the purpose specified.

5. In a hoop pointing and lapping machine, the combination of the carrier-bars B B, constructed to have a rising-and-falling and to-and-fro motion, with the guides *i i*, secured to the front end of the table of the machine, whereby the hoop-blanks formed in a pile between these guides may be withdrawn therefrom by the carrier-bars one by one and carried over the table, substantially as described.

6. In a hoop pointing and lapping machine, a lapping device consisting of two reciprocating carriages supported in guides oppositely inclined above the table over which the hoop-blanks are carried, and each provided with a revolving cutter-head, substantially as and for the purposes described.

7. In a hoop pointing and lapping machine, the combination of the shaft C, eccentric L, mounted on said shaft, rod K, attached to said eccentric, lever J, joined to the rod K, link I, depending from and joining the levers J and H, lever H, and knife G, mounted on said lever H, all combined and operating substantially as described.

8. In a hoop pointing and lapping machine, a carriage reciprocatingly actuated by suitable devices between inclined guides adjustably secured above the table over which the hoop-blanks are carried, in combination with a revolving cutter-head secured upon said carriage, and the spring pressure-foot Q, substantially as and for the purposes described.

9. A clamping device adapted to prevent the hoop-blanks from being pulled endwise while operated upon by the lapping device, consisting of the bar S, pivotally secured at its rear end to the main frame, and provided with the studs *s*, in combination with a resistance-plate, S', adjustably secured to the main frame, and means, as T, whereby said clamping device is operated, substantially as described.

10. The clamping device designed to prevent the loops from being pulled endwise by the action of the cutter-knives which perform the lapping, the same consisting of the bar S, pivoted at one end to the frame below the table, and engaging with its free end upon a cam which intermittently lifts the bar, and thereby presses one or more hoop-blanks between it and the stationary pressure bar or plate S', secured above the table, substantially as described.

11. In a machine for pointing and lapping hoops, and in combination with the two carriages N N', provided with cutter-heads O O', pulleys *q* and *q'*, journaled upon the same, and the belt R, passing over said pulleys and communicating motion thereto, devices for operating the two cutter-heads of the cutter-heads, and a butting device which adjusts each hoop-blank lengthwise before it is lapped by the second cutter-head, all combined and operating substantially as and for the purpose described.

carriages simultaneously, so that the belt is tightened when the cutter-heads are in operation, substantially as described.

12. The combination of the carriages N N', bearing revolving cutter-heads O O', with the rock-shaft M, rocker-arms *n n'*, secured to the shaft M, and links *r r'*, joining said arms with the carriages, substantially as set forth.

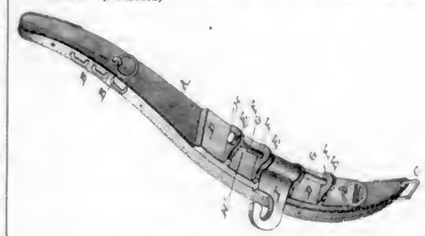
13. In combination with two lapping devices arranged to operate successively one on each end of a hoop-blank, a butting device constructed to push the ends of the hoops to be lapped, varying in length, to a regulated distance from the cutter-head, substantially as and for the purpose specified.

14. In a machine for pointing and lapping hoops, the butting device herein described, consisting of the vibrating arm U, pivotally attached to the main frame, rod V, attached to said arm, and arm W, attached to the rod V and to the carriage N, substantially as and for the purpose specified.

15. In a machine for pointing and lapping hoops, and in combination with the feeding-carriage thereof, mounted on cams secured to shafts C C', located at the front and rear of the machine, respectively, and deriving its motion from an eccentric on one of the said shafts, and the lapping devices, means for imparting motion to the said shafts and lapping devices, consisting of the bevel-gears *z'*, secured to the outer ends of said shafts, bevel-pinions *y'*, meshing with said gear, shaft *v'*, carrying the said pinion on its opposite ends, taper sleeve w^3, feathered to the shaft *y'*, pulley *w'*, loosely mounted on the shaft *v'*, and provided with the taper projection w^3, to engage with the taper sleeve w^3, belt R, imparting motion to the pulley *w'*, rock-shaft *x'*, engaging with the sleeve w^3, and shipping-lever x^3, attached to the shaft *x'*, all constructed and operating substantially as and for the purposes specified.

16. In a machine for pointing and lapping hoops, the combination of the following parts: a table upon which the hoop-blanks are supported, a carriage constructed to have a rising-and-falling and to-and-fro motion, which carries the hoop-blanks intermittently from front to rear, taking them one by one from the bottom of a pile of hoop-blanks placed between guides in the front end of the machine, a pointing device pointing the hoops by a shearing action, two reciprocating carriages supported in inclined guides above the table, and provided with cutter-heads which lap the hoop-blanks upon their ends lengthwise the grain, a clamping device which prevents the hoop from being pulled laterally by the action

296,497. HAME. EMERSON E. WINSTEAD, Dresden, Tenn. Filed Nov. 10, 1883. (No model.)

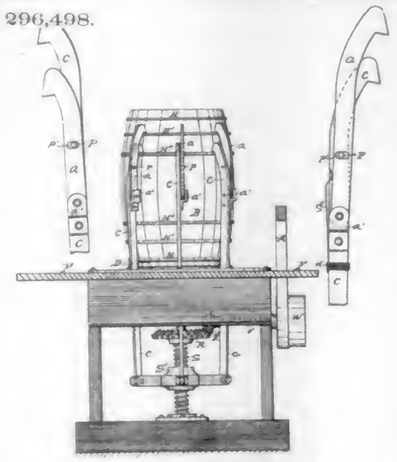


Claim.—The combination, with the hame having plate D, provided with the projecting perforated steps E, and trace-hook I, having eye J, of the removable lock-bolt G, constructed with the spring-catch H' below its head H, whereby the bolt is locked, removably, between the upper and under side of the topmost step or projection, as shown and specified.

296,498. BARREL-TRUSSING MACHINE. JOSEPH WINTERBOTHAM, Joliet, Ill. Filed Nov. 15, 1883. (No model.)

Claim.—In the barrel-trussing machine described, the combination of the hub or cross-head S' and its operating mechanism with the hooked bars *a* and *c*, pivoted together as shown, one of said bars being provided with the transverse slot I'' and the other with the stud P, to operate in said slot to prevent the slotted bar from falling too far in either direction, and means for throwing the pivoted bar forward toward the barrel, as and for the purpose set forth.

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3. A combined spring and axle for wagons and other vehicles, consisting of stub-axles secured between the ends of spring-plates, substantially as herein shown and described.

4. Levers *e*, pivoted to a block, *g*, attached to one member of a vehicle-spring, and connected by one arm to the other member of said spring, and also connected by the other arm to the body of the vehicle, substantially as described.

5. The levers *e*, pivoted to block *g* on the upper member of spring *b*, connected to the body by the jacks *g*, and connected to the lower member of the spring by the link *h*, with or without eye-screw *j*, substantially as described.

6. A carriage having side springs, and also having the body connected to said side springs by levers *e*, blocks *g*, and rods *h*, or equivalent means, substantially as described.

296,499. PROTECTIVE HEAD-COVERING OR HOOD. ANTON WIENKWSKI, New York, N. Y. Filed Oct. 17, 1883. (No model.)

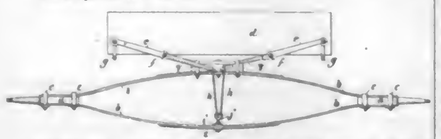


Claim.—1. A protective head-covering consisting of a hood provided with glass-covered eye-openings, an interior mouth-piece, an induction air-tube connected with said mouth-piece, a valve within said induction air-tube adapted to automatically open inwardly for the admission of air, and an eduction air-tube, also connected to said mouth-piece, provided with a valve adapted to open outward automatically for the discharge of air, substantially as described.

2. A protective head-covering consisting of a hood provided with glass-covered eye-openings, a mouth-piece below said openings, an induction air-tube connected with said mouth-piece, having a funnel-shaped terminal provided with filtering material, an automatic inlet-valve within said tube, and an eduction-tube, also connected to said mouth-piece, and provided with an automatic valve adapted to open outwardly, said tubes being passed up over the top of said hood, which latter is provided with means for retaining the tubes in place, substantially as described.

3. A protective head-covering comprising a hood provided with glass-covered eye-openings, an induction air-tube opening opposite the mouth of said hood, provided with an automatic inlet-valve, and an eduction air-tube, also connected to said hood opposite the mouth, and provided with an automatic outlet-valve, said tubes being passed up over the top of said hood, which latter is provided with means for retaining the tubes in place, substantially as described.

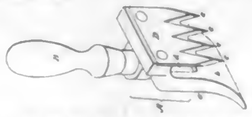
296,500. SPRING-WAGON. THOMAS P. YATES, Factoryville, N. Y. Filed Sept. 14, 1882. (No model.)



Claim.—1. As an improved article of manufacture, an elliptical spring having journal-bearings at its ends, as set forth.

2. A combined spring and axle for road-wagons and other vehicles, the same being constructed with a joint in the spring, substantially as herein shown and described.

296,501. ICE-CHIPPING TOOL. HERMANN ALBRECHT, Philadelphia, Pa., assignor to the American Machine Company, same place. Filed Feb. 6, 1884. (No model.)



Claim.—1. An ice-pick in which a guard, A, handle B, and blade D, provided with one or more chipping-teeth, are combined, substantially in the manner set forth.

2. The combination of the guard A, having an opening, *d*, and curved flange *b*, with the handle B and blade D, attached to the guard, substantially as set forth.

296,502. FIRE-ESCAPE. CHARLES BINGLEY ANDERSON, Maysville, Ky. Filed Apr. 23, 1883. Renewed Mar. 5, 1884. (No model.)

Brief.—The cylinder around which the rope is passed and to which the belt is secured is locked to the fastening-hook by a locking-rope until the person to be lowered is ready to descend.



Claim.—1. A fire-escape consisting of a rope having a snap-hook and ring, a traveling cylinder-bearing engaging a turn of the rope and having a yoke, and opposite the same, above the cylinder, having a transverse bar and a locking-rope, substantially as specified.

2. In a rope fire-escape, the combination, with a traveling bearing having the yoke *g*, of the rope *a*, having a hook, *b*, the belt or band V, and a locking-rope, *l*, substantially as specified.

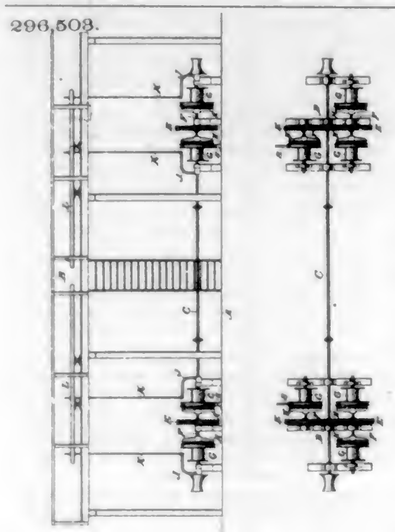
296,503. DREDGER. HORACE B. ANGELL, San Francisco, Cal. Filed Oct. 15, 1883. (No model.)

Brief.—Chains leading to anchors on each side of the hull are wound on drums controlled through clutches thrown by elbow-levers, connecting-rods, and operating-levers operative from the lookout-platform.

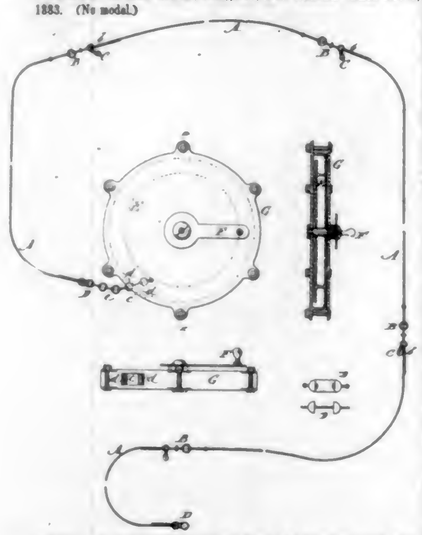
Claim.—1. In a dredging apparatus, the means for operating the ropes by which the scow is swung from side to side, consisting of the rope-winding drums, and friction-clutches by which they may be engaged or disengaged from the driving-shaft, in combination with the levers J and L and connecting-rod K, whereby the drums may be operated from a distant point, substantially as herein described.

2. In a dredging apparatus, and in combination with ropes or chains leading over pulleys to anchors upon each side of the scow, drums turning loosely at opposite ends of a shaft, and each having one of the ropes secured to it, friction-clutches by which they may be alternately engaged and disengaged, and levers J L and connecting-rods K, substantially as and for the purpose herein described.

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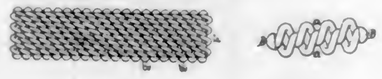


296,504. MEASURING DEVICE FOR SURVEYING AND OTHER PURPOSES. ALFRED ATKIN, Wanganui, New Zealand. Filed Nov. 9, 1883. (No model.)



Claim.—An improved measuring device for surveying and other purposes, consisting of the wire A, composed of a series of sections, the swivels B, uniting said sections, the tallies C, the opening and closing swivels D on the outer and inner ends of the wire, and the chain *e*, for connecting the swivel on the inner end with a reel, substantially as herein shown and described.

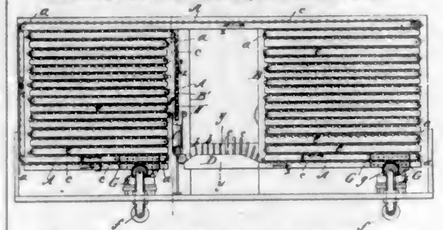
296,505. ORNAMENTAL CHAIN. GEORGE A. BARNETT, Providence, R. I. Filed July 13, 1883. (No model.)



Claim.—1. The combination, with the spiral wires *a a*, of the caps B B, constructed to cover the ends of the spirals, as described.

2. An ornamental chain composed of interlocked spiral wires, the ends of each pair of which are covered by a cap, which forms the edge of the chain, as a new article of manufacture.

296,506. APPARATUS FOR PAINTING BOBBINS, &c. LUTHER C BALDWIN, Manchester, N. H. Filed July 10, 1883. (No model.)



Claim.—1. In an apparatus for painting and drying bobbins and other like articles, the traveling endless belt provided with work-carrying spindles or mandrels, and arranged to form one or more vertical tiers of forward and backward horizontal courses of travel, substantially as specified.

2. In painting and drying apparatus for bobbins and other like articles, the endless belt A, arranged to travel backward and forward throughout a vertical series of courses, and provided with work-carrying spindles or mandrels *b b*, in combination with the rollers *a a* and a rotary paint-brush, E, essentially as described.

3. The combination of the friction-belts G G with the endless traveling belt A, carrying spindles or mandrels *b b*, and the rotary paint-brush E, substantially as and for the purposes specified.

4. The work-rotating friction-belts G G, provided internally with a series of rollers or supports, *l l*, arranged so that said supports in the one belt are in intermediate relation with those in the other belt, for operation in connection with a work-carrying belt arranged to pass in between the friction-belts, and with a mechanically-driven paint-brush, essentially as described.

5. In an apparatus for painting and drying bobbins and other like articles, the combination, with the endless traveling belt A and its spindles or mandrels *b b*, of the receiving stand or guide D, constructed to flex the belt as it passes therethrough, and to give said mandrels an upward pitch or inclination, whereby the placing of the bobbins or like articles on the mandrels is facilitated, substantially as shown and described.

6. In combination with the endless traveling belt A and bobbin or other work carrying spindles or mandrels *b b* thereon, the inclined delivering device or ejector H H, for operation on the inner ends of the bobbins or like articles carried by said mandrels, essentially as specified.

7. In an apparatus for painting and drying bobbins and other like articles, the combination of an endless traveling belt armed with spindles or mandrels for supporting the work, a mechanically-driven and self-feeding brush for painting the bobbins or like articles, a device for rotating the work while being painted, and a device for automatically delivering or ejecting the work after it has been painted and dried, substantially as described.

8. The combination of the endless belt A, arranged to travel forward and backward first through one tier, B, of upper and lower courses, and then through another tier, B′, of like courses, the spindles or mandrels *b b*, carried by said belt, the receiving stand or guide D, constructed to flex the belt A, as described, the work guiding or steadying and rotating friction-belts G G, applied to each tier B B′, the rotary paint-brushes E E, and the work-delivering device H H, essentially as and for the purposes herein set forth.

296,507. MACHINE FOR PRESSING ARTIFICIAL BLOCKS OR BRICKS, &c. ALBERT BALL, Claremont, N. H., assignor to the Sullivan Machine Company, same place. Filed Apr. 11, 1883. (No model.)

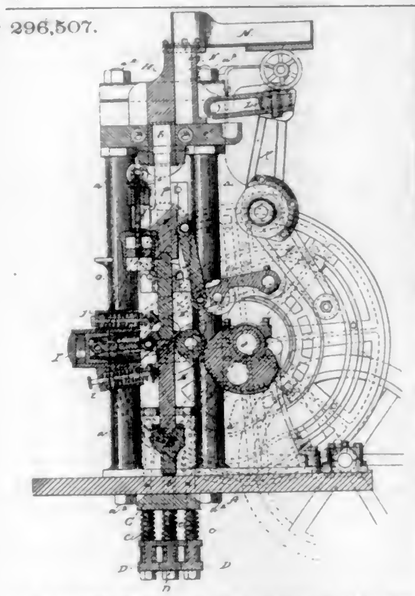
Claim.—1. In a press, the combination of a bed-piece, groups of supporting-springs under said bed-piece, and a toggle-joint lever resting at one end upon said bed-piece and carrying a plunger at the other end, the several parts being constructed substantially as described, and arranged in the same vertical plane.

2. The combination, with the sliding head H and the levers K K, of the equalizing-bar L, centrally pivoted to an extension of said sliding head, and connecting at its outer ends with levers K K by means of ball-and-socket joints, substantially as and for the purpose set forth.

3. In a press, the combination, with the toggle-joint, of an air-cushion, I, and the two springs *i j*, the latter arranged one against each section of the toggle-joint, substantially as and for the purpose set forth.

4. In a press, the combination of an air-cushion, O, with the plunger, substantially as described, and for the purpose set forth.

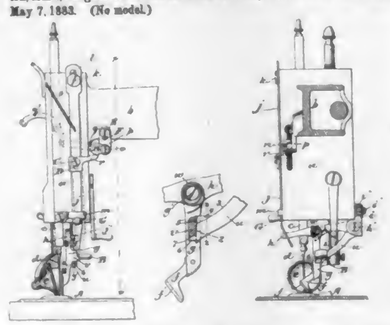
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5. In a press, the combination of an air-cushion, O, and the piston thereof, the cut-gear o, yoke P, and plunger, substantially as described, and for the purpose set forth.

6. In a press, the combination, with the hopper, of a separate extension secured to the sliding head, and forming the back of the throat both of the hopper and sliding block, substantially as and for the purposes set forth.

296,508. SEWING-MACHINE TRIMMER. LYMAN L. BARBER, Boston, Mass., assignor to the Barber Trimmer Company, Portland, Me. Filed May 7, 1883. (No model.)



Claim.—1. In a sewing-machine, the combination of a knife-holder having a trimming-knife, a lever to which said knife-holder is pivoted, mechanism for oscillating said lever about its fulcrum, whereby the knife is vertically reciprocated, and a guide which governs and secures the downward and forward movement of the knife, substantially as described.

2. In a sewing-machine, the combination of a knife-holder having a trimming-knife, a pivoted support or lever to which said holder is pivoted, mechanism for oscillating said support and reciprocating the knife-holder in contact with the fulcrum, and a guiding-fulcrum, 2, on which the knife-holder is tilted while moving downwardly, whereby the knife is given simultaneous downward and forward motion, as set forth.

3. In a sewing-machine, the combination of a knife-holder carrying a trimming-knife, a lever to which said holder is pivoted, and mechanism, substantially as described, for oscillating said lever so as to reciprocate the knife vertically, with means for imparting to it a forward movement, and means for disengaging said lever from the operating mechanism, substantially as stated.

4. In a sewing-machine, the combination of a knife-holder having a trimming-knife, a pivoted lever to which said holder is pivoted so as to reciprocate vertically, as described, and a guide-bar, as *u*, having a face, as 2, which serves as a fulcrum for the knife-holder when in operating position, and guiding-faces which control the position of the knife when not operating, substantially as described.

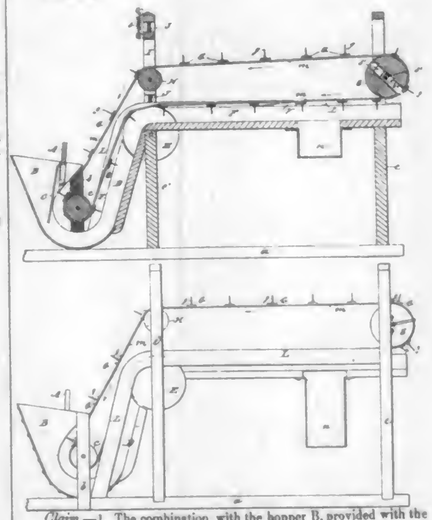
5. In a sewing-machine, the combination of a knife-holder having a trimming-knife and a slotted offset, *b*, a vertically-movable support to which said bar is pivoted, means for disengaging said support from the operating mechanism thereof, fixed guides 2 and 3, with which said slotted offset is engaged, and a spring whereby, when the support is disengaged from its operative mechanism, the knife-holder and its support are raised until the offset *v* rises above the guide 2, and the knife-holder is then turned on its pivot and moved backwardly on the guide 3, as set forth.

6. In a sewing-machine trimmer, the combination of the knife and knife-holder, the pivoted lever to which the knife-holder is pivoted, the reciprocating slide-bar which engages and operates said lever, but may be disconnected, as described, the adjustable bracket on said bar, and the cam and spring for reciprocating said slide-bar, all substantially as described.

7. The oscillating take-up link *q*, provided with the cam *n*, combined with the slide or bar *j*, having the arm *r* and notch *j''*, the spring *s*, the pivoted knife-holder support *h*, and the knife-holder *g*, as set forth.

8. The combination of the knife-holder support *h*, the knife-holder *g*, having knife *f*, the laterally-movable slide or bar *j*, and the hanger *i*, adjustably secured to the head of the machine, whereby the knife-holder and knife may be adjusted with reference to the needle, as set forth.

296,509. ELEVATOR FOR SEED-COTTON AND OTHER MATERIALS. SIDNEY W. BARTHOLOMEW, Castalia, N. C. Filed Aug. 25, 1883. (No model.)



Claim.—1. The combination, with the hopper B, provided with the grooves *d*, of the adjustable feed-board A, having ribs C, substantially as shown and described, whereby the quantity of seed-cotton or other material drawn up the flue can be regulated to prevent clogging of the machine, as set forth.

2. The combination, with the flue D, provided with the tracks F, broken away at the turn of the flue, and rake-heads G, of the wheels E, forming a continuation of the tracks, and serving the double purpose of tracks and reducing the friction of the rake-heads at the turn of the flue by causing the wheels to revolve, substantially as shown and described.

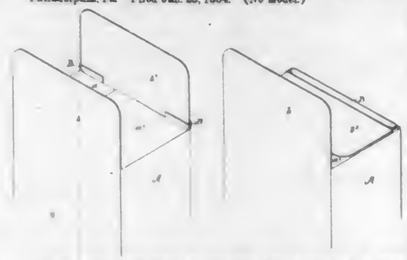
3. The combination, with the endless bands *m* and rake-heads G, secured at right angles to the bands, and provided with vertical teeth *g*, of the idle-pulley H, journaled in the sliding frame I, and adjusted in grooves J by springs *s*, whereby the bands can be kept constantly tight, substantially as shown and described.

4. The combination, with the endless bands *m* and rakes G *g*, secured thereto, as set forth, of the flue D, provided with tracks F and side strips, L, substantially as shown and described.

5. The combination, with the bands *m*, rakes G *g*, and flue D, provided with the chute-*n*, of the tracks F, having inclines V V, substantially as shown and described.

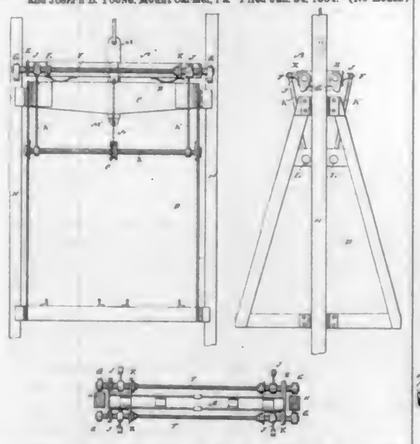
6. The combination, with the drum S, provided in its middle with a hole, *s'*, passing diametrically through it, and bands *m*, having rakes G *g*, of the loose bar X, inserted in the hole *s'*, and provided with the recess *s²*, and shaft *s²*, having its middle portion squared, substantially as shown and described.

296,510. FLAP-RETAINER FOR PAPER BOXES. JACOB C. BAUER, Philadelphia, Pa. Filed Jan. 23, 1884. (No model.)



Claim.—The combination of the outer flaps, *b* and *b'*, of a paper box, with a retainer, B, applied to one flap and being movable over and off from the other flap, substantially as described.

296,511. SAFETY-CATCH FOR ELEVATORS. AUGUST J. BECKER and JOSEPH B. YOUNG, Mount Carmel, Pa. Filed Jan. 24, 1884. (No model.)



Claim.—1. The combination, with an elevator car or cage, of a frame carrying shafts provided with cam or eccentric disks on the ends, which disks are adapted to engage with the upright guide-posts in the well, springs adapted to be compressed upon applying strain to the cage, suspending bar or rod, and of chains extending from the said frame over suitable pulleys to the rod or bar from which the cage is suspended, substantially as herein shown and described.

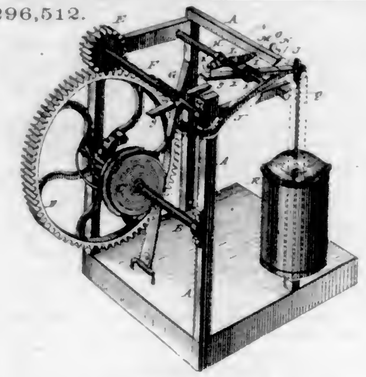
2. The combination, with an elevator car or cage, of the frame A, the springs B, under the same, the shafts F, held in the frame A, the cam or eccentric disks G on the ends of the same, and the chains N, extending from the suspension bar or rod M over pulleys O on shafts L to the frame A, substantially as herein shown and described.

3. The combination, with an elevator car or cage, of the frame A, the springs B, the shafts F, the cam or eccentric disks G on the ends of the same, the arms J, the rods K, the shafts L, the pulleys O, and the chains N, extending from the suspension bar or rod M over the pulleys O to the frame A, substantially as herein shown and described.

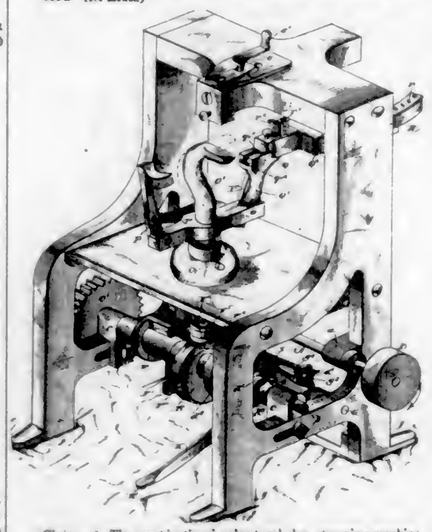
296,512. CHURN-POWER. JAS A. BOALS, Burgettstown, Pa., assignor to W. P. Vance and Alexander McClintock, both of same place. Filed Nov. 15, 1883. (No model.)

Claim.—In a mechanical motor for churns, the combination of the actuating mechanism, shaft F, having pinion E, star-wheel G, bifurcated lever I J, having box *i*, pin K, and friction-roller P, shaft H, and adjustable spring L, substantially as set forth.

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296,513. MACHINE FOR STAMPING BOOTS AND SHOES. CHARLES M. BOLLES and MICHELL E. BYRON, East Pepperell, Mass. Filed Jan. 31, 1884. (No model.)



Claim.—1. The combination, in a boot and shoe stamping-machine, of shoe-supporting devices, mechanism carrying the stamping-dies, and devices connecting the supporting devices with said stamping mechanism, adapted, upon the movement of the supporting devices, to throw said mechanism, with said dies, completely into or out of position, and actuating means, substantially as set forth.

2. The combination, in a boot or shoe stamping machine, of shoe-supporting devices, mechanism carrying the stamping-dies, which dies are normally out of position for stamping, means for automatically throwing the stamp-carrying mechanism into position above the shoe-supporting devices, and thereby cause the stamping-dies to come into proper position for stamping, and actuating means, substantially as set forth.

3. The combination, in a boot and shoe stamping machine, of shoe-supporting devices, mechanism carrying the stamping-dies and adapted to be thrown into and out of position for stamping, shoe-supporting devices, a pivoted lever adapted to be moved so that its upper end bears against the heel of the shoe, and connected with the stamping mechanism, so as to actuate the same when moved, and actuating means, substantially as described.

4. The combination, in a boot and shoe stamping machine, of shoe-supporting devices, mechanism carrying the stamping-dies, which dies are normally out of position for stamping, a vertically-adjustable block located in the top of the machine above the supporting and stamping devices, and adapted to have the stamp-dies successively come in con-

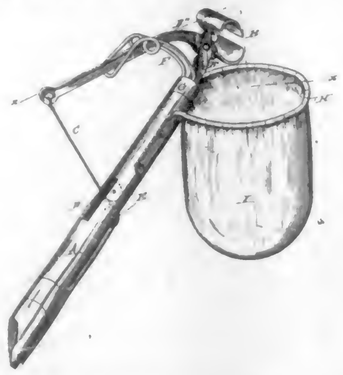
tact therewith and depress said dies for stamping, and actuating devices, substantially as described.

5. The combination, in a boot and shoe stamping machine, of stamping devices provided with a depending rack, shoe-supporting devices carrying a wedge-shaped block adapted to engage said rack when the support is elevated, and means for elevating said support, substantially as described.

6. The combination, in a boot and shoe stamping machine, of stamping devices adapted to be thrown into or out of position, and having a depending rack, a pivoted heel-rest adapted to be moved so that its upper end will bear against the shoe-heel, a block sliding on guides adapted to support the front end of the shoe, a wedge-shaped block mounted on said sliding block, and connections whereby the movement of the pivoted heel-rest throws the stamping mechanism into position, and at the same time moves said sliding block into position for elevation to the stamping devices and causes said wedge-shape block to engage said rack, and devices for effecting such elevation, substantially as set forth.

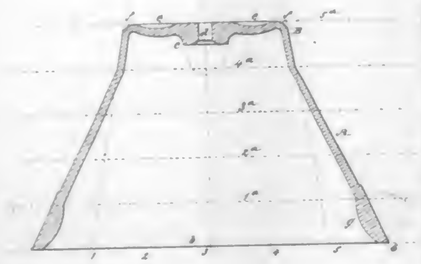
7. The combination, in a boot and shoe stamping machine, of stamping devices located in the upper part of the machine, shoe-supporting devices located beneath the same, mechanism connected to said supporting devices for intermittently elevating said support to the stamp, and actuated by a sliding toothed disk revolving and sliding longitudinally on its shaft and a collar bolted adjustably to said shaft, to limit the longitudinal motion of said toothed disk, substantially as set forth.

296,514. FRUIT-PICKER. JOSEPH ALFRED BOTTOMLEY, Greenville, Conn. Filed Nov. 2, 1883. (No model.)



Claim.—In a fruit-picker, the combination of the pole having a bag or receptacle at its end, and having pulleys in a longitudinal slot near the end, a pair of cutters or nippers secured with one arm in the end of the pole, and having their cutting-edges at right angles to the axis of the pole, an operating-cord attached to the end of the free arm of the cutters and passing between the pulleys in the pole, a spring secured in the end of the pole and forming a double arch, having coils at the middle of the arches, and having its doubled end bearing against and sliding upon the inner edges of the free arm, as and for the purpose shown and set forth.

296,515. BELL. MARCUS M. BOWERS, Baltimore, Md. Filed Sept. 13, 1883. (No model.)

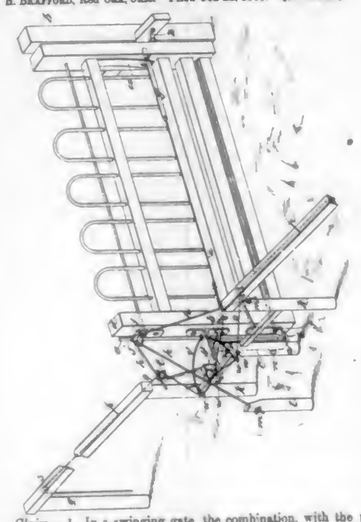


Claim.—1. A bell cylinder or shell having its sides constructed to form the flare by a series of interrupted straight lines or surfaces arranged to diverge in a downward direction, substantially as specified.

2. A bell cylinder or shell having its head or cap made concave on its top, substantially as and for the purpose herein set forth.

3. As an improved article of manufacture, a bell cylinder or shell having its body portion of truncated form, its head or cap of diminishing tapering construction, and concave on its top, and its hammer-swell arranged within it, essentially as shown and described.

296,516. GATE HANGING AND OPERATING APPARATUS. JOHN H. BRAFFORD, Red Oak, Ohio. Filed Oct. 22, 1883. (No model.)



Claim.—1. In a swinging gate, the combination, with the pivotal hinging-rod, of the gate having the upper and lower hinging-brackets and the intermediate arm, said rod passing through said brackets and arm, and said arm carrying a pulley or roll, the latch-rod, and the operating-cords connected to said latch-rod and passing over said pulley, substantially as and for the purpose set forth.

2. In a swinging gate, the combination, with the pivotal hinging-rod having the cord-supporting struts, of the gate having the upper and lower hinging-brackets, and the intermediate arm carrying a pulley or roll, said rod passing through the brackets and arm, and the operating-cords connected to the latch-rod, and passing over the said pulley or roll, and through eyes or over rolls of said struts, substantially as and for the purpose set forth.

3. In a swinging gate, the combination, with the hinge-post having the plate provided with angle ends supporting the pivotal hinging-rod, of the gate having the upper and lower hinging-brackets, and the arm intermediately disposed between said brackets and carrying a roll or pulley, the cord-supporting struts connected to the hinging-rod, and the operating-cord connected to the latch-operating rod and passing through eyes or over pulleys of the struts and the pulley of said arm, substantially as and for the purpose set forth.

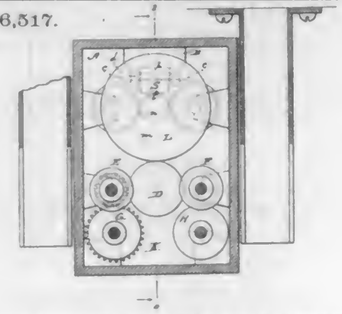
4. In a swinging gate, the combination, with the post having a plate provided with angle ends, and the pivotal hinging-rod connected by adjustable stays to posts, of the gate having the upper and lower hinging-brackets, and the intermediate arm carrying a pulley, the spring-actuated latch and its rod, and the operating-cord connected to said rod and passed through eyes or over pulleys of the struts connected to said pivotal or hinging rod, and over the pulley of said arm, substantially as and for the purpose set forth.

296,517. CAR-AXLE BOX. RUSSELL BREWER, Newark, N. J. Filed Jan. 16, 1884. (No model.)

Claim.—1. In a car-axle box, the double roller L and a convex oscillating piece, S, operating in connection with said double roller, and with a plain bearing in the upper part of the box, substantially as specified.

2. In a car-axle box, the combination, with the lower submerged lubricating-rollers, G and H, provided with gear, substantially as shown, of the upper lubricating-rollers, E and F, the double rollers L, and means for securing parallelism between the said double rollers and the journal

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D, whereby the lubricating material may be raised in a positive manner and discharged on the journal and friction-rollers, substantially as specified.

296,518. SHOE. WILLIAM A. BRISTOR, Indianapolis, Ind. Filed Dec. 18, 1883. (No model.)

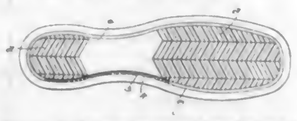


Claim.—1. The process of making shoes which consists, first, in stitching the ball of the sole and toe of the upper together while wrong side out, then turning the shoe, then placing the insole, shank, and counter in position, then completing the stitching and afterward finishing the shoe in the ordinary manner, substantially as set forth.

2. The combination, in a shoe, of the sole A, the upper D, the rear half-insole, B, the shank C, and counter D', said several parts being constructed, arranged, and secured together substantially as shown and specified.

3. A shoe the forward portion of which is stitched together by a row of stitches at the outer edge of the sole, and the remaining portion of which is stitched together by a row of stitches nearer the center of the sole, both said seams being inside the point where the sole and upper come together, substantially as described, and for the purposes specified.

296,519. OUTER SOLE FOR BOOTS AND SHOES. ALFRED A. BROOKS, Boston, Mass. Filed Nov. 5, 1883. (No model.)



Claim.—1. An india-rubber outer sole provided with a perforated intermediate layer of fibrous or textile material, the india-rubber above and below the said layer uniting through the said perforations, substantially as described.

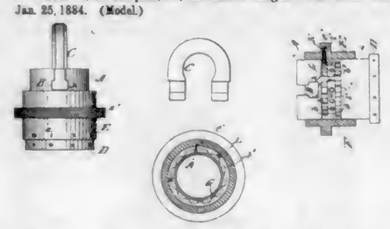
2. An india-rubber outer sole provided with a perforated intermediate layer, *a*, and with a channel at its outer face, substantially as described.

3. An india-rubber outer sole provided with a molded channel, combined with an independent protecting-rand to cover the stitches made through the said outer sole, substantially as described.

4. As an improved article of manufacture, a molded India-rubber sole channeled, and having an intermediate layer of textile material, to strengthen the same in the line of the channel for the reception of stiches, substantially as described.

5. A molded india-rubber sole having one face corrugated and provided with a molded channel, and having an intermediate layer of fibrous material in the line of the channel, to strengthen the said sole where it is to receive stitches through it to attach it to a boot or shoe, substantially as described.

296,520. PERMUTATION-PADLOCK. JOHN W. BRUFF and WILLIAM E. T. MERRILL, Philadelphia, Pa.; said Merrill assignor to said Bruff. Filed Jan. 25, 1884. (Model.)

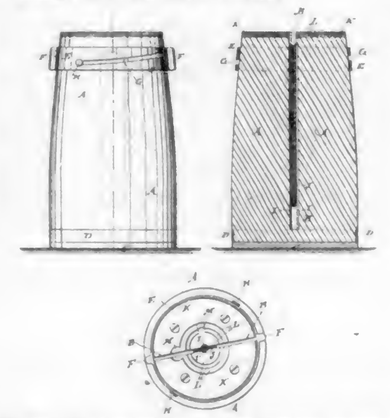


Claim.—1. In a padlock, a cylinder having a dovetailed rabbet or recess across its upper end for the staple, and a notched or toothed groove surrounding said cylinder, in combination with an encircling collar having suitable means, substantially as described, for engaging with the teeth or notches of the groove, whereby the staple may be locked or unlocked by a series of movements of substantially different character of the collar.

2. The cylinder A, recessed at B, for the reception of the staple, and formed with the circumferential groove F, having shoulders *b b'*, a bridge, G, and recess L, in combination with the collar or sleeve E, provided with pin *i* and spring *i'*, and the staple C, fitting the channel B, said cylinder and sleeve being numbered or lettered, substantially as described.

3. The cylinder A, having the groove F, with shoulders *b b'*, notched or toothed, as described, in combination with the collar or sleeve E, having the pin *i* and spring *i'*, adapted to engage with said teeth and notches, substantially as described.

296,521. ENGRAVER'S BANGLE-CLAMP. HENRY CARPENTER, Flushing, N. Y. Filed Feb. 14, 1884. (No model.)



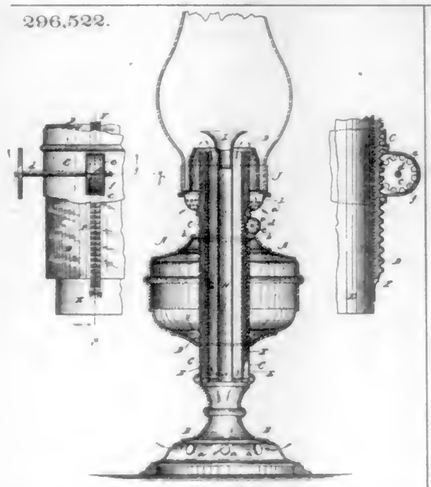
Claim.—1. An engraver's bangle-clamp constructed substantially as herein shown and described, and consisting of the tapered and slotted block having recessed clamping-plates K attached to its upper end, and provided with a tapered and slotted band, E, guide-pins H, and a V-spring, J, as set forth.

2. In an engraver's bangle-clamp, the combination, with the tapered and slotted block A, provided with recessed clamping-plates K, of the tapered and slotted band E, the guide-pins H, and the V-spring J, substantially as herein shown and described, whereby the parts of the clamp can be readily drawn together and separated, as set forth.

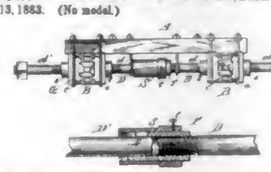
296,522. LAMP. WILLIAM P. CASPERSON, Chicago, Ill. Filed Oct. 1, 1883. (No model.)

Claim.—The combination of the described rack F and pinion *c*, and of the disks *f*, mounted on shaft *d*, one on each side of the pinion, and having a diameter at least as great as that of the circle described by the points of the teeth of the pinion, adapted to guide the rack in a true vertical position, and compress the wick on each side of the rack, and prevent the teeth of the pinion from coming in contact with the wick, substantially as described.

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296,523. VEHICLE-AXLE. SAMUEL T. CAVETT, Evansville, Ind. Filed Sept. 13, 1883. (No model.)



Claim.—1. The combination, with the two axle-sections, of the coupling-box, secured to the inner end of one of said sections, and receiving the inner and of the other section loosely, substantially as described.

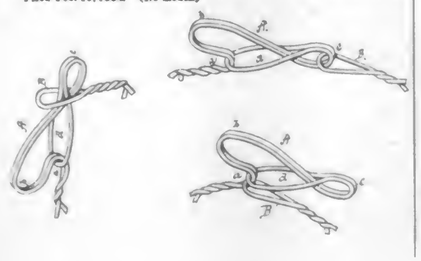
2. The combination, with the two axle-sections and the coupling-box fixed to the inner end of one section and receiving the inner end of the other section loosely, and provided with the lubricating slot or opening, of the adjustable sleeve fitting upon said coupling-box and provided with a lubricating-slot, and means for holding and releasing said sleeve, to permit the rotation of the same, substantially as described.

3. The combination, with the bolster and bearing-boxes secured thereto, of the two axle-sections, provided with intermediate journals, arranged in said bearing-boxes, suspended in loops depending from the bolster, and having their inner ends loosely coupled to revolve independently of each other, substantially as described.

4. The combination, with the bolster, its lubricating bearing-boxes, and the loosely-coupled axle-sections, having intermediate journals in said bearing-boxes, of the brace eyes or loops secured to the bolster and embracing the inner portions of the axle-sections, respectively, substantially as and for the purpose set forth.

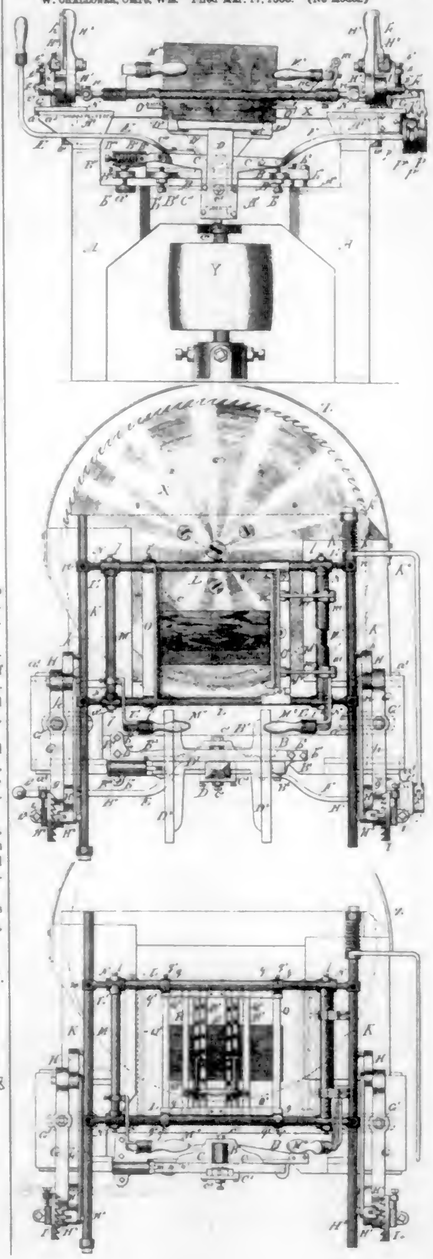
5. The combination, with the bearing-boxes having apertures, as described, of the hinged grease-caps, adapted to cover said apertures, substantially as set forth.

296,524. BALE-TIE. WINFIELD SCOTT CHAPPEL, New Egypt, N. J. Filed Feb. 19, 1884. (No model.)



Claim.—The locking loop or link A, adapted to receive a loop on the end of the bale-wire, and formed with the curved part *a*, the looped part *b*, loop *c*, and end loop, *d*, constructed and operating substantially as described, and for the purpose set forth.

296,525. SHINGLE-SAWING MACHINE. JOHN CHALLONER and JOHN W. CHALLONER, Omro, Wis. Filed Mar. 17, 1883. (No model.)



Claim.—1. The combination, with a shingle-sawing machine, of a removable tipping table and a spalt-carriage adapted, as described, to replace said tipping table when the latter is removed, substantially as set forth.

2. The combination, with a shingle-sawing machine, of holding-dogs constructed, substantially as described, so as to be capable of movement away from their operative position, and a spalt-carriage arranged to be brought into operative position between said dogs when the dogs are moved out, substantially as set forth.

3. The combination, with a shingle-sawing machine, of a spalt-carriage provided with mechanism, substantially as described, to hold the spalt from above, so that the ends and sides of the spalt may be clear.

4. The combination, with a shingle-sawing machine, of a spalt-carriage having supporting-bars, and dogs constructed, substantially as described, to project below said bars and into the upper surface of the spalt.

5. In a shingle-sawing machine, a spalt-carriage composed of side timbers, as Q Q, end pieces connecting said side timbers, supporting-bars, as Q^3 Q^3, connecting the end pieces, and arranged between the side timbers, and a series of dogs arranged between said bars Q^3 Q^3, so as to engage with the upper surface of a spalt, all combined substantially as stated.

6. The combination, with the frame of a spalt-carriage, of a pair of dog-bars having dogs arranged diagonally, as described, so as to project below the frame of the carriage, and mechanism, substantially as stated, for giving said bars an oblique movement, all substantially as described.

7. In a machine for sawing shingles, the combination of a horizontal carriage with a spalt-frame carrying movable bars, provided with downward-projecting dogs for supporting a spalt and carrying it against the saw, substantially as set forth.

8. In a sawing-machine, the combination of a horizontal carriage, spalt-frame, movable head-blocks connected to the guides of the carriage by bell-cranks, and pawls and segments for lowering either guide to change the inclination of the spalt-frame, substantially as set forth.

9. The combination, with the timbers of the spalt-frame, of the dog-bars R R', suspended therefrom, and carrying diagonal depending dogs r r', the said bars being adapted to be moved in opposite directions, substantially as set forth.

10. The combination of the spalt-frame, timbers Q Q' Q^2 Q^2 Q^3, transverse frames S S, dog-bars R R', having end extensions, R^1, with diagonal slots r^3, central projections, R^2 R^4, with perforations r^2 and r^4 and diagonal dogs r r', links T and U, standards V, arms W, and handle w, substantially as set forth.

11. In a shingle-machine, a spalt-frame having dog-bars suspended therefrom, adapted to move in opposite directions, and provided with diagonally-depending dogs, pointing in opposite directions, in combination with standards, links, and lever-arms connected to the upper portion of the spalt-frame and to the movable dog-bars, whereby a downward pressure on the said lever-arms will force the dogs into a spalt held beneath and lock them in such position, substantially as set forth.

12. The combination of the guides K K and telescoping frame supported between them, and the head-blocks, bell-cranks, and links supporting said guides, with the lever H^2, pawl H^3, segments I, slotted for the reception of the bolt h', adjusting-screws i^3 i^3, nut i^4, collar *i*, and lugs i^2 and *g*, whereby the said segment may be adjusted vertically to regulate the thickness of the shingles sawed from the spalt, and also laterally to regulate the frame for the last shingle, substantially as set forth.

296,526. FOLDING STAIRCASE. CHARLES H. CHASE, New Orleans, La. Filed Dec. 4, 1883. (No model.)

Brief.—The invention consists of a pivoted section and a section adapted to slide therein, provided with a chain for raising it and a brace pivoted to the wall and sliding section. Folding hand-rails are pivoted to the section and provided with chains and weights for folding the same. Pivoted steps are united by rods pivoted to them, and a chain is attached to the rods, controlled by a weight. Connected with the sections is a chain operated by a shaft and drum, and means for revolving the shaft from the inside or outside of the structure, and a pivoted locking-bar secures the device to the structure when not in use.

Claim.—1. A folding staircase constructed, substantially as herein shown and described, of two sections, one adapted to slide within the other, as set forth.

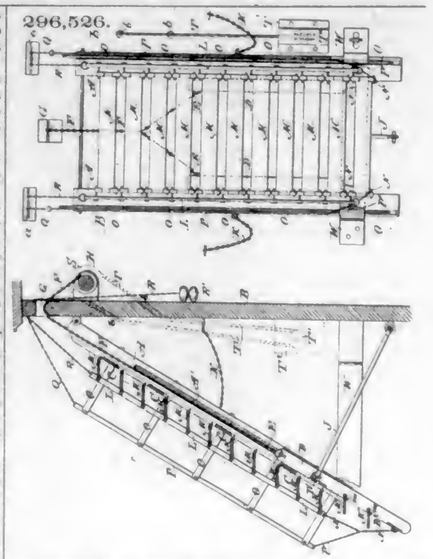
2. The combination, with a pivoted staircase-section, of an additional section adapted to slide within the first, and of a chain for raising the sliding section, substantially as herein shown and described.

3. The combination, with a pivoted staircase-section, of a sliding section adapted to slide within the pivoted section, a chain for raising the sliding section, and a brace pivoted to the wall and to the sliding section, substantially as herein shown and described.

4. The combination, with a pivoted staircase-section, of an additional section adapted to slide within the same, a chain for raising the sliding section, a folding railing pivoted to the pivoted section, and of chains and weights for automatically folding the railing, substantially as herein shown and described.

5. The combination, with a folding staircase, of pivoted steps, a pivoted rod uniting them, a chain attached to one end of the rod, and a weight suspended from the inner end of the chain, substantially as herein shown and described.

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6. The combination, with the pivoted side bars A, of the sliding side bars D, the shaft H, the chain F, the pulley S on one end of the shaft, the steps M and M', the endless chain T, and the pulley T', substantially as herein shown and described.

7. The combination, with the pivoted side bars A, of the sliding side bars D, the chain F, the shaft H, means for revolving the shaft from the inside or outside of the building, &c., the steps M M', the rods L, pivoted to the steps M, the rods O, the railing-bars P, the chains Q R, attached to the bars P and rods L, respectively, and of the weights Q' and R' on the inner ends of the chains Q and R, substantially as herein shown and described.

8. The combination, with a pivoted folding staircase, of the pivoted locking-bar W, and means for holding the free end of the same to the building, substantially as herein shown and described.

296,527. EYEGLASS-HOLDER. HERBERT G. CHASE, New York, N. Y. Filed Jan. 19, 1884. (No model.)



Claim.—1. An eyeglass-holder consisting of a body portion, a safety-pin made substantially parallel with the body, and a hook having a closed top with a depression or cavity formed in the top of the hook, as and for the purpose specified.

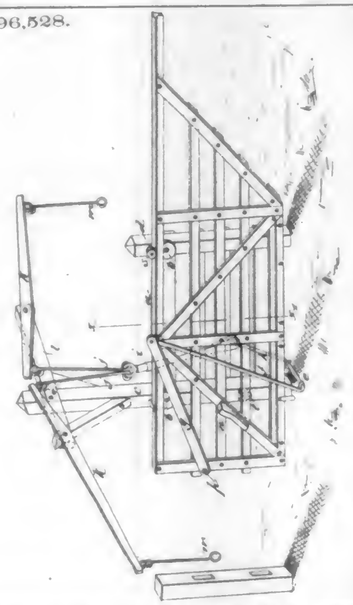
2. An eyeglass-holder consisting of a body portion, a safety-pin made substantially parallel with the body, a hook having a closed top with a depression or cavity in the top, and a guide-tongue above the hook, forming a part thereof, touching or nearly touching the body, but standing away from the body at its top, as herein shown and described.

3. An eyeglass-holder consisting of a body portion, a safety-pin made substantially parallel with the body, a socket to receive the end of the safety-pin struck out from the body of the holder, a hook having a closed top and a depression or cavity in the top, and a guide-tongue, forming a part of the hook, standing above the same and serving as a guide to the glasses in entering the hook, as set forth.

296,528. GATE OPENING AND CLOSING APPARATUS. ANSON W. CHILCOTT, Mattoon, Ill. Filed July 26, 1883. (No model.)

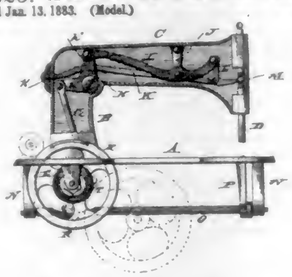
Claim.—In a gate opening and closing mechanism, the combination, with the pivoted levers *k* above and on either side of the gate, connected at their inner ends with the rod *i* by means of the links *j*, of the crank-shaft secured beneath the gate, and provided with long and short arms *f h* parallel to and in the same plane with each other, the latter being connected with the rod *i* below the center of the gate, and the former being connected to the connecting-rod *g* above the center of the gate, the con-

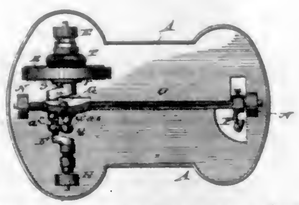
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necting-rod *g* being pivoted to the front part of the gate, substantially as set forth.

296,529. SEWING-MACHINE. PETER J. CLEVER, Brunswick, Mo. Filed Jan. 13, 1883. (Model.)

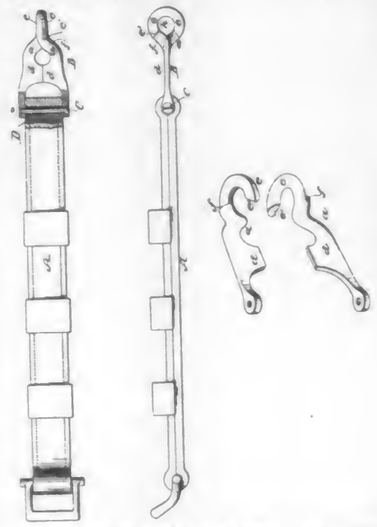




Claim.—1. The combination of the crank-shaft, means for rotating the same, the reciprocating drive-arm connected to the crank-shaft and to the bell-crank lever, the bell-crank lever, the horizontal lever-bar supported by a pivoted link and connected to the bell-crank lever, the horizontal hinged arm linked to said lever-bar, and the needle-bar connected with the free end of the arm, substantially as set forth.

2. In a sewing-machine, the combination of the crank-shaft, the needle-bar, the intermediate connecting mechanism embodying a drive-rod, bell-crank lever, horizontal lever-bar, suspending-link, hinged arm, and connecting-link, the rock-shaft carrying the shuttle, and the operating-arm connected to the crank-shaft and to the rock-shaft by a universal joint, substantially as set forth.

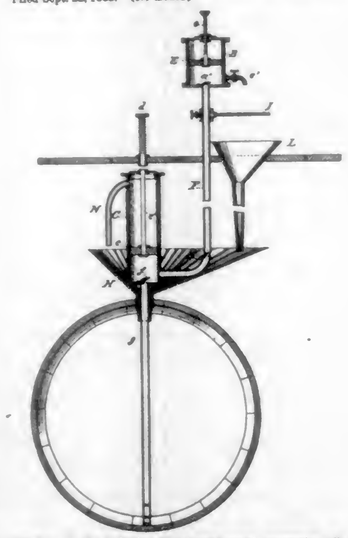
296,530. HAME-CLIP. EDWARD DELOS COLE, Macon, Ill. Filed Sept. 28, 1883. (No model.)



Claim.—1. The clip B, formed of the sections *a a*, in combination with the screw C and sleeve D, substantially as and for the purposes set forth.

2. The hame-clip B, composed of the hooked sections *a a*, formed with the plates *d d*, shoulders *f f*, and diagonal ends *e' e'*, in combination with the screw C and sleeve D, substantially as and for the purposes set forth.

296,531. MEASURING-PUMP. SHERMAN M. COLE, Adamson, Iowa. Filed Sept. 22, 1883. (No model.)

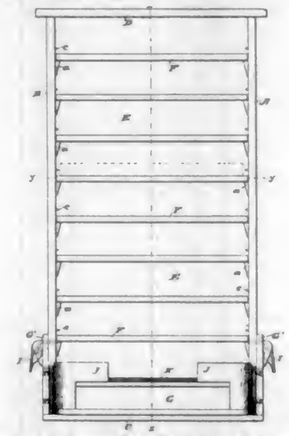


Claim.—1. In a device for elevating and measuring oils or other fluids through the bung-hole of a barrel, the pump-cylinder having the pump-tube rigidly secured to its bottom, and extending to and resting on the bottom of the barrel, in combination with a registering measuring-receptacle having a gaged float, valve, and faucet, a valved pipe connecting the measuring-receptacle with the pump-cylinder, the piston, pistoq-rod, and pump-lever, and a funnel-seat through which the pump-tube passes into the barrel, substantially as specified.

2. In a measuring-pump, the combination, with the measuring-receptacle, the pump and valve-tube connecting, and the drip-funnel seated in the bung-hole of the barrel, of the adjustable grate-rest secured to the valve-pipe beneath the measuring-receptacle and above the drip-funnel, substantially as specified.

3. In an elevating and measuring pump, the corrugated drip H and air-inlet funnel seated in the bung-hole of a barrel beneath the discharge-faucet of the measuring-receptacle B, and the intermediate adjustable grate-rest, I, for the receiving-vessel, all combined and adapted to operate substantially as specified.

296,532. POOL-RACK. HUGH W. COLLENDER, New York, N. Y. Filed Feb. 13, 1884. (No model.)



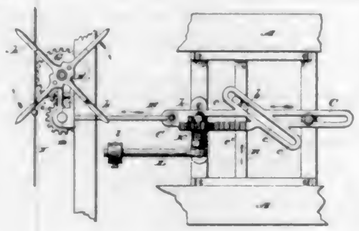
Claim.—1. In combination with a pool-rack or set of shelves adapted to receive the players' balls, and from which the balls may be successively discharged or thrown out, a carriage-like device adapted to slide up and down in front of the rack, and provided with means for guiding the contents of the shelves as successively discharged, and a suitable receptacle adapted to be placed within said carriage and receive the contents of the pool-rack, all substantially as set forth.

2. In combination with the side pieces, A B, of a pool-rack, a set of hinged or pivoted shelves adapted to tip upwardly and forwardly at their rearmost edges, and suitable means for successively tipping said shelves so as to discharge their contents in succession, substantially as set forth.

3. In combination with a set of hinged or pivoted shelves adapted to tip upwardly and forwardly at their rearmost edges, suitable stops to prevent said shelves from tarning too far, substantially in the manner and for the purposes set forth.

4. In combination with a pool-rack capable of discharging the contents of its ball-supporting surfaces antomatically, a carriage adapted to receive the discharged contents of the shelves, substantially as described, the said carriage being provided with means, as set forth, for deflecting and guiding the balls toward its middle, to insure their proper reception within any suitable receptacle carried by the said carriage, all substantially as set forth.

296,533. CHECK-ROW ATTACHMENT FOR CORN-PLANTERS. MATTHEW FRANKLIN CONNETT, Springfield, Ill. Filed Nov. 21, 1883. (No model.)



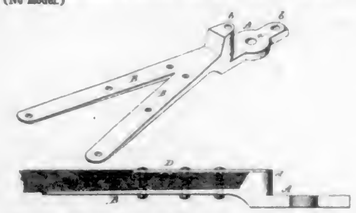
Claim.—1. A check-row attachment for corn-planters in which are combined the following elements, viz: a chain or sprocket wheel adapted to be rotated intermittingly in one direction by the action of a knotted check-row line, a longitudinally-reciprocable bar arranged at a right angle to the seed-slide, and provided with a diagonal cam-slot, which engages with a stud or pin upon the latter, and means, substantially as shown, for connecting said sprocket-wheel and slotted bar, whereby each partial rotation of the former will cause the latter to be moved longitudinally and said seed-slide to be operated, substantially as and for the purpose specified.

2. The combination of a longitudinally-reciprocable bar provided with a diagonal slot and arranged at a right angle to the line of movement of the seed-slide, a stud or pin secured to the latter and engaging with said diagonal groove, a pitman-rod connected with the bar and driven from a crank or pitman wheel, and suitable means for driving said wheel, substantially as shown and described.

3. In combination with the slotted seed-slide-actuating bar C, provided with the toothed rack *c²*, the pinion K, shaft *k*, and radial weighted arm L, substantially as and for the purpose set forth.

4. In combination with the seed-slide B, provided with the stud *b*, the bar C, having the diagonal slot *c'*, the pinion D, provided with the arm *d*, the connecting-rod E, the shaft F, the gear-wheel G, the sprocket-wheel H, having the arms *h*, and the line I, provided with the knots *i*, all constructed and operating substantially as and for the purpose shown and described.

296,534. CARRIAGE-PERCH IRON. WILLIAM H. COOPER, New Haven, Conn., assignor to M. Seward & Son, same place. Filed Feb. 11, 1884. (No model.)



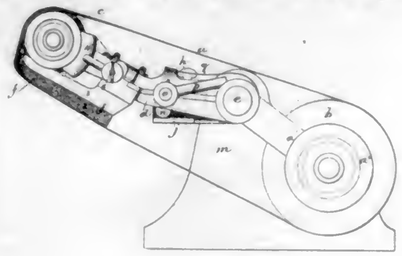
Claim.—As an article of manufacture, the herein-described perch-iron, consisting of the bar A, constructed with the straps B B diverging from the rear end of the said bar in a plane substantially parallel therewith, but above the top of said bar, and with an upward extension, *d*, to form a shoulder against which the wood portions of the perch may abut, substantially as described.

296,535. ABRADING-MACHINE. FREDERICK W. COY, Boston, Mass. Filed Mar. 8, 1884. (No model.)

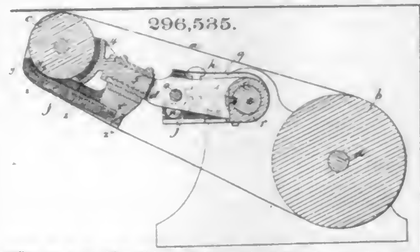
Brief.—The frame carrying the upper pulley and intermediate support is pivoted on an axis between the two pulleys. When the outer end of the frame is in its lowest position, the distance between the pulleys is least and the belt is loose. When the article to be ground is pressed against the belt, it raises the end of the frame, the distance between the pulleys increases, and the belt is tightened. Removing the pressure lowers the frame and loosens the belt automatically. The yoke carrying the upper pulley swivels and is adjustable in the swinging frame.

Claim.—1. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, an intermediate support for said belt, and mechanism whereby the belt is tightened by pressure exerted on the belt and its intermediate support, and automatically loosened when said pressure is removed, as set forth.

2. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, a pivoted frame, whereby one of said pulleys is supported and adapted to be moved with relation to the other



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pulley, so as to either tighten or loosen the belt, and an intermediate support for the belt, connected to said pivoted frame, whereby, when pressure is exerted against the belt and its support, the belt is tightened, and when said pressure is removed the belt is automatically loosened, as set forth.

3. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, a pivoted frame supporting one of said pulleys, an intermediate support for the belt, connected to the pivoted frame, and a stop to limit the belt-tightening movement of said frame, as set forth.

4. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, a pivoted frame supporting one of said pulleys, an intermediate support for the belt, connected to the pivoted frame, and a spring whereby the swinging end of the frame is automatically moved to loosen the belt, as set forth.

5. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, a pivoted frame supporting one of said pulleys, an intermediate support for the belt, connected to said frame, and means, substantially as described, for varying the normal position of the pivoted frame and the pulley supported thereby, as set forth.

6. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, a pivoted yoke supporting the journals of one of said pulleys, and adapted to be turned so as to give the axis of the pulley any desired longitudinal inclination, and means, substantially as described, for turning said yoke and for holding it in any position to which it may be turned, as set forth.

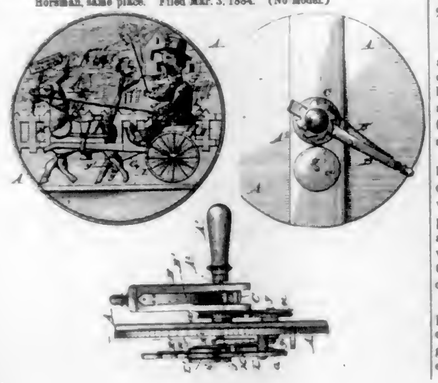
7. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, one having a crowning periphery, and an intermediate support having a convex or crowning abruptly-curved surface at one end arranged to curve the belt abruptly in its passage from one pulley to the other, as set forth.

8. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, one having a crowning periphery, and an intermediate support having a convex or crowning abruptly-curved surface arranged to curve the belt abruptly in its passage from one pulley to the other, and thereafter presenting, successively, a straight surface and a concave surface of gradually-increasing depth, as set forth.

9. The combination, with the supporting and driving pulley *b*, of the bearing or support for the arbor of said pulley, provided with the circular enlargement a^2, as set forth.

10. In an abrading-machine, the combination of an abrasive belt, two supporting-pulleys therefor, and mechanism whereby the belt is tightened by pressure exerted thereon, and automatically loosened when said pressure is removed, as set forth.

296,536. TOY. JESSE A. CRANDALL, Brooklyn, N. Y., assignor to E. I. Horsman, same place. Filed Mar. 3, 1884. (No model.)

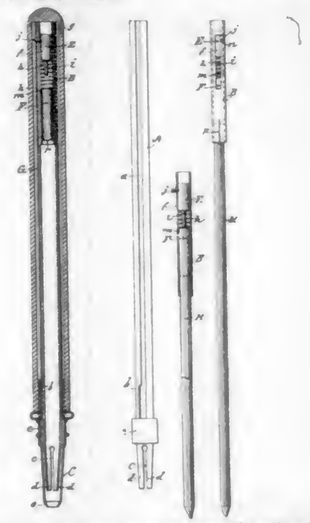


Claim.—1. The combination of a clacker having a disk applied on the spindle and an automaton on the face of the disk, substantially as described.

2. The combination of a loaded clacker applied on a spindle having a handle secured to it, a disk, and an automaton applied on the face of the disk, substantially as described.

3. The combination of a loaded clacker, pulleys *a' a'*, a disk applied on the spindle of the clacker, and an automaton on the face of the disk, substantially as described.

296,537. CRAYON-HOLDER. ALONZO T. CROSS, Providence, R. I. Filed Aug. 15, 1883. (No model.)



Claim.—1. In a crayon-holder, the combination of the carrier-tube, provided with a split end for frictionally holding the crayon, with means, substantially as described, for imparting an initial movement to the crayon-stub from the carrier-tube, and a spring for forcibly ejecting the same when the frictional grip of the split end of the tube has become less than the resilience of the spring.

2. In a crayon-holder, the combination of the screw mechanism, and a carrier-tube provided with a split end for frictionally holding the crayon, with a forcer and a spring adapted to forcibly eject the stub of the crayon upon the continued movement of the screw after the carrier has reached its stop at the lower end of the holder.

3. In a crayon-holder, the combination of the screw mechanism, and a carrier-tube provided with a split end for frictionally holding the crayon, with a forcer, a ping, and an intervening spring adapted to forcibly eject the crayon, substantially as described.

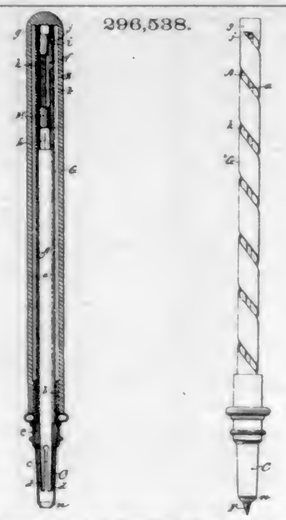
296,538. CRAYON-HOLDER. ALONZO T. CROSS, Providence, R. I. Filed Aug. 15, 1883. (No model.)

Claim.—1. In a crayon-holder, the combination of the hollow screw and screw-holding tube provided with a slot, the lower end of which is enlarged at one side to form a shoulder, with the carrier-tube provided longitudinally with a slot having a pin-holding noteb at its upper end, and the forcer provided with a pin adapted to pass through the slot in the carrier-tube and enter the groove of the hollow screw, for operation substantially as described.

2. In a crayon-holder, the combination of the hollow screw and screw-holding tube provided with a slot, the lower end of which is enlarged at one side to form a shoulder, with the carrier-tube provided longitudinally with a slot having a pin-holding notch at its upper end, and the forcer provided with a pin adapted to pass through the slot of the carrier-tube and enter the groove of the hollow screw, and the spring-jaws arranged within the point-tube and adapted to prevent the rotation of the carrier-tube when the pin of the forcer has arrived at the shoulder in the slot of the screw-holding tube, substantially as described.

3. In a lead or crayon holder, the combination of the carrier-tube, provided longitudinally with a slot having a lateral notch at its upper end, with a forcer arranged within the carrier-tube and provided with a guiding-pin passing through the slot of the carrier-tube and adapted to enter the lateral notch, whereby the carrier-tube will be prevented from

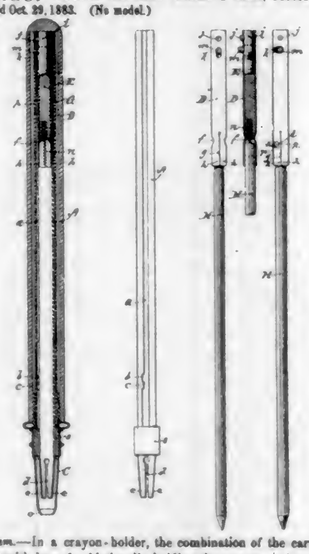
296,538.



backward movement upon the introduction of the lead or crayon, substantially as described

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296,539. CRAYON-HOLDER. ALONZO T. CROSS, Providence, R. I. Filed Oct. 29, 1883. (No model.)



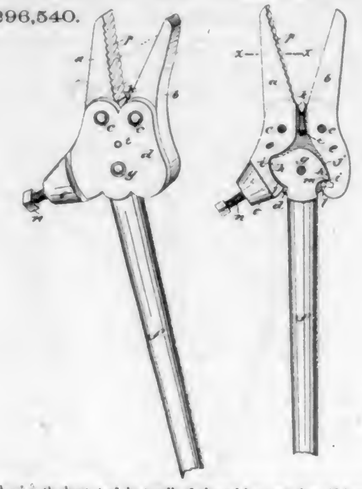
Claim.—In a crayon-holder, the combination of the carrier-tube, provided with jaws for frictionally holding the crayon, and means, substantially as described, for laterally opening the jaws of the carrier-tube, with a spring held within the bore of the carrier-tube and adapted to forcibly eject the crayon-stub upon the lateral spreading of the jaws, substantially as described.

296,540. WRENCH. DWIGHT MORSE DE SILVA, Corning, N. Y. Filed Dec. 4, 1883. (Model.)

Claim.—1. In a wrench, the combination, with the plates *d* and the pivoted and spring-pressed jaws *a b*, having curved arms *e j*, of the handle *f*, pivoted between the said jaws, and provided with cams A, substantially as herein shown and described.

2. In a wrench, the combination, with the plates *d* and the pivoted and spring-pressed jaws *a b*, each having curved arms *e j*, and the jaw

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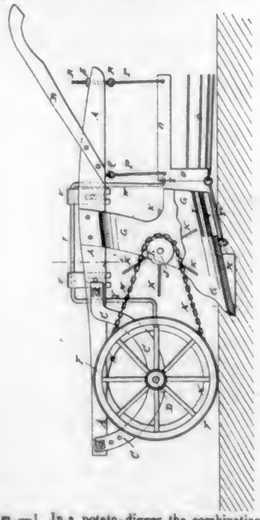
b, having the hook *i*, of the handle *f*, pivoted between the said jaws, and provided with the cams A and shoulder *m*, substantially as herein shown and described.

3. In a wrench, a serrated jaw made with a beveled face, substantially as specified.

4. In a wrench, the combination, with the plates *d* and the handle *f*, having cams *k*, and the pivoted jaws *a b*, having curved arms *e j*, of the adjusting-screw *n*, passing through the curved arm of one jaw and resting against one of the cams of the handle, substantially as herein shown and described.

5. In a wrench having gripping-jaws *a b*, the jaw *a* having a beveled and serrated gripping-face, *p*, to form an angle-edge to grip the object to be turned, substantially as described.

296,541. POTATO-DIGGER. WILLIS DODGE, Presque Isle, Me., assignor of one-half to George M. Lace, same place. Filed Dec. 12, 1883. (No model.)



Claim.—1. In a potato-digger, the combination, with the draft-beam, with its wheels, and the scoop, of the shaker or screen pivotally suspended from said beam, and the approximately U-shaped crank-shaft, with its lower forward end provided with a forward extension engaging a zigzag grooved or cam disk on one of the aforesaid wheels, and with its

lower rear end provided with a rearward extension connected to said screen or shaker, substantially as and for the purpose set forth.

2. In a potato-digger, the combination of the draft-beam, the approximately U-shaped crank-shaft connected to the screen or shaker connected to the scoop, said shaft also connecting with a cam-disk, and the right-angled arms supporting said shaft and adjustably connected to said beam, substantially as and for the purpose set forth.

296,542. WATCH-CHAIN TIP. OSCAR M. DRAPER, North Attleborough, Mass. Filed Dec. 17, 1883. (No model.)



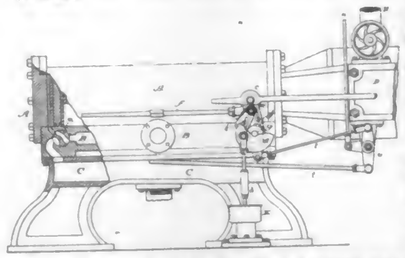
Claim.—1. An improved tip for watch-chains, consisting of a rim provided with a pair of apertures arranged to receive a ring and to hold the same without solder.

2. An improved tip for watch-chains, consisting of a rim provided with a pair of apertures arranged to receive a ring and to hold the same without solder, and provided also with one or more apertures to receive the chain-links.

3. An improved tip provided with a flaring rim having apertures to receive a ring and to receive the chain-links, in combination with a disk secured in the open side of the tip by burnishing, substantially as described.

4. The combination, with a watch-chain, of the tip formed with the flaring rim having the apertures *b b'*, the ring *c*, and the disk C, secured to said tip by the burnished portion *x x*, the said chain being secured within the apertures *b'*, substantially as and for the purposes described.

296,543. VALVE AND GEAR FOR STEAM-ENGINES. AUGUST C. DUNKE and AUGUST F. DUNKE, Manitowoc, Wis. Filed May 25, 1883. (No model.)



Claim.—1. The herein-described oscillating valve-operating catch, with a hook, *i'*, for moving the valve in one direction, a stud for moving the valve in the opposite direction, and a finger or projection by which the catch is tripped.

2. The herein-described valve, consisting of an elongated substantially cylindrical valve-body having closed or solid ends, a longitudinal slot through which the steam passes laterally to the cylinder, and an exhaust passage or recess cut in its side.

3. The combination, substantially as set forth, of the cylinder, the steam-chest, the exhaust-chamber, the valve seat or chamber formed at the end of the steam-chest and communicating with the cylinder, the steam-chest, and the exhaust-chamber, the rocking or rotary reciprocating valve seated in said valve-chamber having solid or closed ends and a longitudinal slot, through which the steam passes laterally to the cylinder, and an exhaust recess or passage cut in its side, and mechanism for automatically operating the valve.

4. The combination, substantially as set forth, of the valve-spindle, the disk or crank secured thereto, the rocking crank, its actuating-rod, the oscillating catch-hook pivoted on said crank, the cut-off regulator, mechanism for automatically actuating it from the governor to trip the catch, and the dash-pot with an automatically-compensating rod.

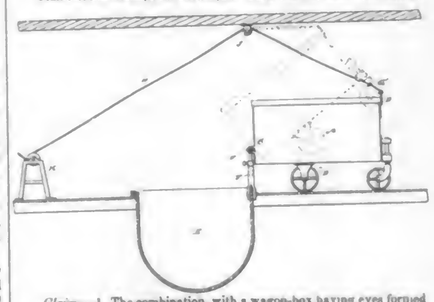
5. The combination, substantially as set forth, of the valve-spindle, a crank, *s*, rocking on the same center as the valve-spindle, its actuating-rod, the disk or crank secured on the end of the valve-spindle, a catch-hook loosely pivoted on the rocking crank *s*, which opens the valve to admit steam to the cylinder, and mechanism for tripping the catch at the desired point of cut-off.

6. The combination, substantially as set forth, of the valve-spindle, the rocking crank *s*, its actuating-rod, the crank or disk secured on the end of the valve-spindle, the catch-hook pivoted on the crank *s*, which opens the valve to admit steam to the cylinder, mechanism for automatically tripping the catch at the desired point of cut-off, and a shoulder on the catch which turns the valve into the exhaust-position on the reverse movement of the crank *s*.

7. The dash-pot rod herein described, consisting of an upper and lower stem, a coupling-socket, and a spring contained in said socket.

8. The combination, substantially as set forth, of the valve-stem, the disk or crank secured thereon, mechanism for rocking the disk or crank in both directions from the normally-closed position of the valve, and a dash-pot having an automatically-compensating rod.

296,544. SUGAR-DUMPING WAGON. JAMES D. EDWARDS and LEON FRANCOIS HAUBTMAN, New Orleans, La. Filed Feb. 13, 1884. (No model.)



Claim.—1. The combination, with a wagon-box having eyes formed on one end, of standards at the trough into which the contents of the box are to be dumped, which standards have eyes formed on their upper ends, and of a rod passed through the eyes on the end of the box and the eyes on the standards, substantially as herein shown and described.

2. The combination, with a wagon-box, of bars provided with eyes or apertures, which bars are clamped on the end of the box, standards provided with eyes, and of a rod passed through the eyes in the standards and the eyes on the bars clamped on the end of the box, substantially as herein shown and described.

3. The combination, with a wagon-box, of the bars L, having apertured lugs L', and hooks M, the collars N, provided with the prongs O, and means for locking the collars on the bars, substantially as herein shown and described.

4. The combination, with a wagon-box, of the eyes C, secured on one end, and the apertured lugs D on the opposite end, substantially as herein shown and described.

5. The combination, with a wagon-box provided with means for hinging it at one end, of means for securing a lifting-chain at the opposite end, substantially as herein shown and described.

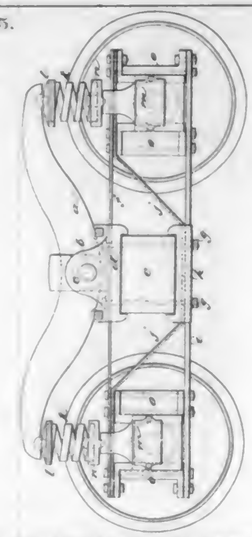
6. The combination, with a wagon-box provided with means for hinging it, of the tongs Q, having a plate on the end of one jaw and a hook on the end of the other jaw, substantially as herein shown and described.

296,545. CAR-TRUCK. JOHN R. FISH, Grand Rapids, Mich. Filed Aug. 11, 1883. (No model.)

Claim.—1. In a car-truck, the combination, with a truck-frame and axle-bearings projecting above the same, of equalizing-bars pivoted at their centers to supports above the truck-frame, and extending longitudinally of the frame, with their ends projecting over the axle-bearings, and springs interposed between the projecting ends of the equalizing-bars and the axle-bearings, substantially as herein shown and described.

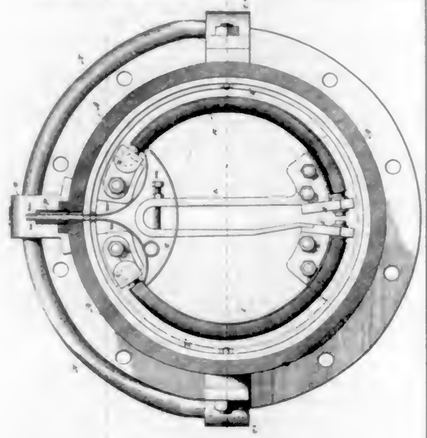
2. In a car-truck, the combination, with the truck-frame provided with the plate *d*, having ears c and the axle-bearings *m*, of the equalizing-bars *a*, pivoted between the ears of the said plate, and having their ends projecting over the axle-bearings, and the springs *k*, interposed between the equalizing-bars and axle-bearings, substantially as herein shown and described.

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3. In a car-truck, the combination, with the truck-frame, the plates *d h*, and the bolster *e*, of the equalizing-bars *a*, pivoted to the plates *d*, the springs *k*, and the axle-bearings *m*, substantially as herein shown and described.

296,546. ELECTRO-MAGNETIC AIR-BRAKE. HENRY FLAD, St. Louis, Mo. Filed June 7, 1883. (No model.)



Claim.—1. The combination, with the main air-pipe of an air-brake system and a series of brake-cylinders arranged on different cars, and having pistons connected with the brakes thereof, respectively, of a series of valves arranged to connect said cylinders through suitable connections alternately with the main pipe and with the external air, and a series of electro-magnets arranged to operate said valves, substantially as described, whereby the brakes of a train may be operated automatically and simultaneously.

2. The combination, with the cylinder having openings or ports, substantially as described, of the annular valve having suitable air-passages, and arranged to open and close said cylinder-ports, an electro-magnet arranged to operate said valve, and means for including said electro-magnet in an electric circuit extending outside of the cylinder, essentially as set forth.

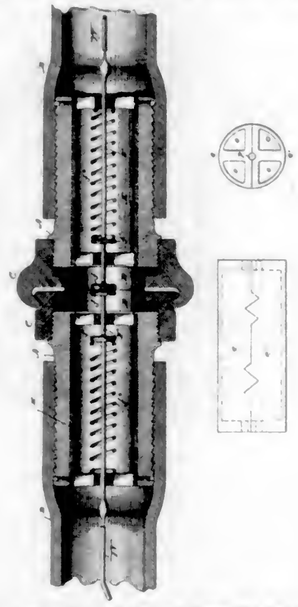
3. The combination, with the cylinder having an annular valve-seat formed therein, and suitable ports or openings leading outward from said seat, and the annular valve fitted to said seat and provided with proper air-passages, of an electro-magnet secured to said valve, and a stationary electro-magnet arranged to co-operate with the said valve-magnet, the helices of said magnet being connected and arranged to be included in a circuit extending outside of the cylinder, substantially as described.

4. The combination, with an air-brake cylinder provided with ports, substantially as described, its piston, and the supply or exhaust pipe and coupling-hose of a railway-car, of an electro-magnetic valve arranged to open said ports, conducting-wires connected with the electro-magnetic devices of said valve, and arranged within the supply or exhaust pipe and coupling-hose, and automatic wire-connecting devices arranged in the hose-couplings, whereby the electric wires may be connected from car to car simultaneously with the coupling of the hose, substantially as described.

5. The combination, with the air-pipes, coupling-hose, conducting-wires arranged within said pipes and hose, and the automatic wire-connecting devices arranged in the hose-couplings, of the stationary couplings, one or more, arranged upon a car, and connected with a wheel or wheels thereof through intermediate electrical conductors, essentially as and for the purpose set forth.

6. In an air-brake system, the combination, with the air-pipes and inclosed conducting-wires, an electric battery, and circuit including said conducting-wires, of the three-way cock arranged in the air-conduit, and provided with circuit closing and breaking devices, and means for operating the same simultaneously with the operation of the said three-way cock, substantially as described.

296,547. ELECTRICAL CONNECTOR IN PIPE-COUPLINGS FOR AIR-BRAKES. HENRY FLAD, St. Louis, Mo. Filed June 7, 1883. (No model.)



Claim.—1. The combination, with the sections of a pipe-coupling and insulating-casings located within the coupling-sections, said casings provided with skeleton end bearings, of spring-actuated metallic contacts supported in the bearings of the insulated casings, and electrical conductors connected with said contacts, substantially as set forth.

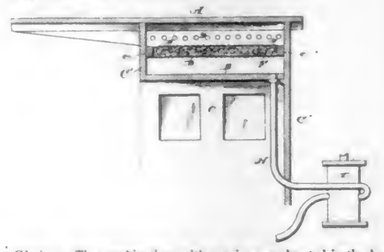
2. The combination, with the sections of a pipe-coupling and insulating-casings, each made in longitudinal sections, and provided with two-part end bearings, of spring-actuated metallic contacts supported in the bearings of the insulated casings, and electrical conductors connected with said contacts, substantially as set forth.

3. The combination, with the pipe-coupling sections and gaskets D D, secured thereto, of the insulated casings E, metallic contacts E *f*, spring *f*², and electrical conductors W, substantially as set forth.

4. The combination, with two sections of a pipe or hose coupling

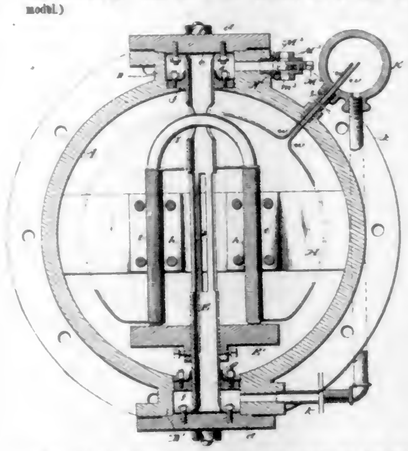
and gaskets of insulating material attached to each section to form an air-tight joint, of insulated casing located within the coupling-sections, and spring-actuated metallic contacts supported in bearings of the insulated casing, and electrical conductors connected with said contacts, substantially as set forth.

296,548. AIR-FILTER. HENRY FLAD, St. Louis, Mo. Filed June 14, 1883. (No model.)



Claim.—The combination, with an air-pump located in the locomotive-cab, of the air-filter arranged in a chamber directly under the roof of the cab, said chamber being provided with openings at one side of said filter, and the suction-pipe leading from said chamber on the opposite side of the filter to the air-pump, substantially as described.

296,549. ELECTRO-MAGNETIC VALVE AND CONNECTION. HENRY FLAD, St. Louis, Mo. Filed June 7, 1883. Renewed Feb. 26, 1884. (No model.)



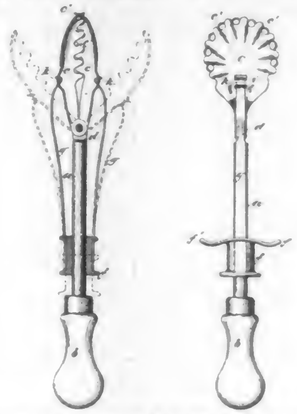
Claim.—1. The combination, with the cylinder provided with suitable ports, of the tubular diametrically-arranged valve, the armature carried by said valve, and the electro-magnet arranged to attract said armature, substantially as described.

2. The combination, with the main or communicating pipe and the cylinder having diametrically-opposite ports or passages arranged for communication with the said pipe and the external air, respectively, of the tubular valve arranged to open and close said ports, and having its interior in communication with the interior of the cylinder, the armature carried by said valve, and the electro-magnet arranged to attract said armature, and having its helices arranged for connection in an electric circuit outside of the cylinder, substantially as described.

3. The combination, with the cylinder provided with ports arranged for communication with a main pipe and the external air, respectively, and an electro-magnetic valve for controlling said ports, of a supplementary valve for regulating the flow of air from the cylinder when the electro-magnetic valve has opened the passage to the external air, substantially as described.

4. The combination, with the cylinder provided with ports arranged for communication with a supply-pipe and the external air, respectively, and an electro-magnetic valve arranged to open and close said ports alternately, of an automatic regulating-valve arranged to close the communication between the cylinder and external air when the pressure in the cylinder falls to a predetermined point after the electro-magnetic valve has opened the port to the external air, substantially as and for the purpose set forth.

296,550. DISHCLOTH-HOLDER. JOHN T. FOSTER, Arlington, N. J. Filed Dec. 21, 1883. (No model.)



Claim.—1. A grasping-tongs for holding dishcloths or other articles, consisting of a stem or handle, two grasping-jaws on the end thereof, a spring tongue or tongues arranged to constantly hold the said jaws closed by lateral pressure thereon, and a longitudinally-sliding manipulating device for flexing said tongues, and thus opening the jaws, substantially as herein set forth.

2. A device for holding dishcloths, &c., consisting of a stem, *a*, having a suitable handle, in combination with the jaws *c c*, hinged on the end of the stem and formed of sheet metal shaped and corrugated in the form of scallopped shells, with suitable means for opening and closing said shells, substantially as herein set forth.

3. The combination, with the stem *a* and handle *b*, of the hinged jaws *c c*, formed in the shape of corrugated shells, with toothed intermeshing edges, and with suitable means for opening and closing said jaws, substantially as herein set forth.

4. The combination, with the stem *a*, having a suitable handle, of jaws *c c*, hinged on the end thereof, a manipulating sleeve or knob sliding on said stem, and one or more tongues or rods, *g g*, connecting said sleeve with one or both of said jaws, substantially as and for the purpose set forth.

5. In a device for holding cloths, &c., the combination, with a handle and grasping-jaws supported therefrom, of a sliding manipulating sleeve or knob operatively connected with the jaws to open the same, and formed with the laterally-projecting finger-rests *f' f'*, substantially as and for the purpose set forth.

6. The combination, with the stem *a* and handle *b*, of hinged jaws *c c*, sliding sleeve *f*, and connecting-tongues *g g*, arranged and operating substantially as and for the purpose set forth.

7. In a grasping or tongs device, substantially such as set forth, the combination, with the stem or handle, of the grasping jaw or jaws formed with slots *i i* and bar *k*, the tongue or rod *g*, having a hooked end engaging in said slot and bar, and a manipulating device acting on said tongue to operate the jaw, substantially as herein set forth.

296,551. WIRE-COILING MACHINE. ABEL H. FROST and FRED I. BRYANT, Chicago, Ill. Filed Mar. 24, 1883. (No model.)

Claim.—1. In a force-feed machine for coiling wire, the combination, with the coiling-spindle and feeding devices, of adjustable means for variably flexing the wire before it passes onto the spindle, substantially as described, and for the purposes set forth.

2. The combination, with the coiling-spindle and feeding devices, of a vertically-adjustable guide for leading the wire to the spindle, substantially as described, and for the purposes set forth.

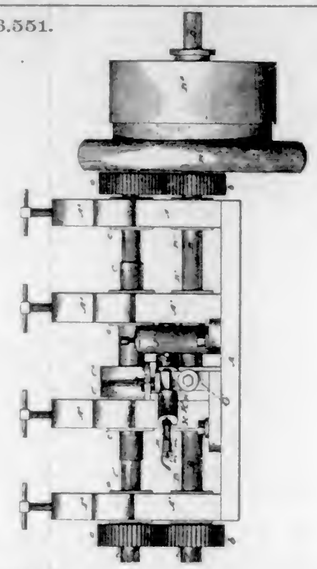
3. The combination, with the coiling-spindle and feeding devices, of two or more separately and vertically movable guides and adjusting devices therefor, substantially as described.

4. The combination, with the coiling-spindle and feeding devices, of pivoted guide-plates F F, provided with grooves for the several wires, an intermediate plate, I, and means for adjusting the guide-plates, substantially as described.

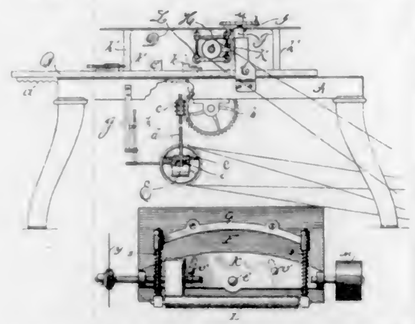
5. In combination with a non-rotating coiling-spindle and force-feeding devices, an outwardly enlarged conical tip, M, arranged in prolongation of the coiling-spindle, substantially as described, and for the purposes set forth.

6. In combination with the non-rotating coiling-spindle, the rotating conical tip M, substantially as described, and for the purposes set forth.

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296,552. MACHINE FOR TRUING WEAVERS' SHUTTLES, PICKER-STICKS, &c. STEPHEN C. GARDNER, Eagleville, Conn. Filed Sept. 6, 1883. (No model.)



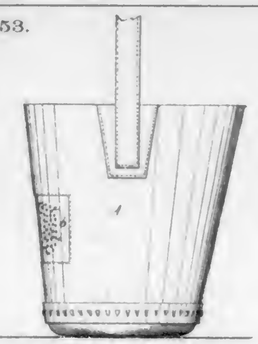
Claim.—1. In the described machine, the combination, with the bed-plate and suitable holding devices for the article to be operated upon, of the carriage F, vertically adjustable, suitable cutting devices secured to said carriage so as to be capable of adjustment in a circular direction, and the roller-frame *o*, constructed substantially as described, and secured to said carriage by means of the bracket G, all the parts operating in the described relation to each other, for the purpose set forth.

2. In combination with the bracket of the cutter-head, capable of angular adjustment, as described, the driving mechanism therefor, consisting of the counter-shaft I' and pulley T, constructed and arranged substantially as described, whereby the same inclination may be given to the pulley T as that of the cutter-head, for the purpose described.

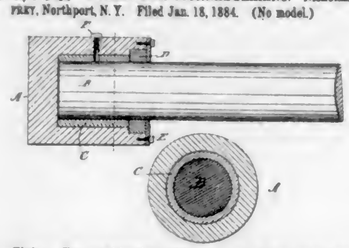
296,553. FEED-BAG. JAS. W. GEDNEY, New York, N. Y. Filed Oct 18, 1883. (No model.)

Claim.—As an improved manufacture, a canvas feed-bag provided with a leather section inserted in the body of the bag, and having eyeleted perforations, all substantially as set forth.

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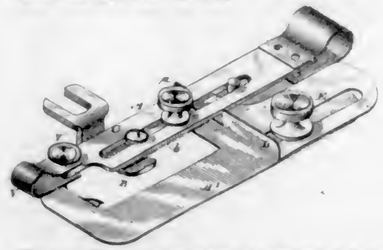


296,554. WATER-PROOF JOURNAL-BEARING. NICHOLAS W. GODFREY, Northport, N. Y. Filed Jan. 18, 1884. (No model.)



Claim.—The combination, with a journal, of the socket-bearing A, having plug F, the lining C, the flexible packing-ring D, closing in said lining, and the washer E, secured to the end of the socket-bearing, substantially as shown and described, and for the purpose set forth.

296,555. TUCK-MARKER FOR SEWING-MACHINES. JULIUS C. GOODWIN and CHARLES W. WARREN, Philadelphia, Pa., assignors to the American Buttonhole, Overseaming and Sewing Machine Company, same place. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of the presser-foot, its lateral extension, the longitudinally-slotted creaser-bar mounted thereon, and actuated by the presser-foot to crease the cloth, creasing devices, the guide C and set-screw *a* for adjusting the creaser-bar on the presser-foot, the slotted base-plate A' of the tucker, and a set-screw, E, for adjustably securing it to the bed-plate of the machine.

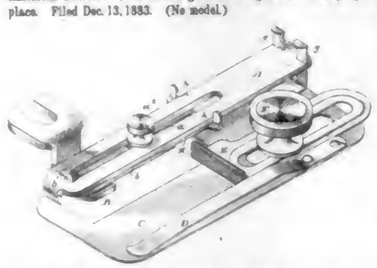
2. The combination, substantially as set forth, of the creaser-bar, the bent or elliptic spring V, the creaser *e*, carried thereby, and the screw V' for adjusting the creaser, which screw is carried by the creaser-bar, and works against the elliptic spring in line with the creasing device.

3. The combination, substantially as set forth, of the creaser-bar, an elliptic creaser-spring, V, carried by the creaser-bar, and a screw, V', for adjusting the spring V.

4. The combination, substantially as set forth, of the presser-foot, the creaser-bar mounted on and actuated by the presser-foot, devices for securing the creaser-bar on the presser-foot, and mechanism for imparting an increased vertical motion to the presser-foot.

5. The combination, substantially as set forth, of the presser-foot, creasing devices carried thereby, devices for securing the creaser-bar on the presser-foot, the presser-foot bar, the lever pivoted thereto, a cam-face which acts on the lever, and the adjustable fulcrum of the lever.

296,556. TUCK-MARKER FOR SEWING-MACHINES. JULIUS C. GOODWIN and CHARLES W. WARREN, Philadelphia, Pa., assignors to the American Buttonhole, Overseaming and Sewing Machine Company, same place. Filed Dec. 13, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of the presser-foot, the creaser-bar mounted thereon, so as to move bodily vertically with the presser-foot, the bottom plate, and a loose connection between the bottom plate and a creaser-bar, which permits the vertical movement of the latter.

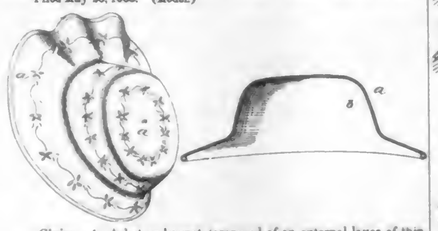
2. The combination, substantially as set forth, of the presser-foot, the creaser-bar mounted thereon and moving bodily therewith, the bottom plate, and the vertical guide on the bottom plate in which the creaser-bar works vertically.

3. The combination, substantially as set forth, of the presser-foot, the slotted creaser-bar mounted thereon, the wedge-plate which works between the creaser-bar and the presser-foot, and the clamping bolt or nut which serves to clamp the presser-foot, wedge, and bar together.

4. The combination, substantially as set forth, of the presser-foot, the slotted creaser-bar mounted thereon, the sliding wedge-plate, the clamping bolt or nut, the bottom plate, and the loose connection between the creaser-bar and bottom plate.

5. The combination, substantially as set forth, of the presser-foot, the cloth-feed, the enlargement on the sole of the presser-foot, and the creaser-bar carried by the presser-foot.

296,557. HAT OR BONNET. JOHANNA HANSEN, New York, N. Y. Filed May 28, 1883. (Model.)



Claim.—1. A hat or bonnet composed of an external layer of thin leather and an internal sustaining-layer of buckram or equivalent fabric, substantially as herein set forth.

2. A hat formed of an external layer of leather and an internal layer of buckram or equivalent fabric, pressed simultaneously by dies into the desired form, substantially as set forth.

3. The process set forth for manufacturing leather hats, consisting in placing a sheet of leather upon a sheet of buckram or equivalent fabric, with the leather layer outermost, and then pressing the two layers simultaneously, between dies, into the form of the desired hat, substantially as set forth.

296,558. BRACKET FOR INSULATING-SUPPORTS FOR ELECTRICAL CONDUCTORS. DAVID S. HAINES, New York, and STEPHEN D. LAKE, Brooklyn, N. Y. Filed Nov. 30, 1883. (No model.)

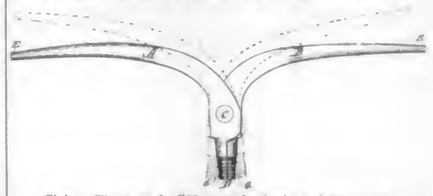


Claim.—1. The combination, substantially as hereinbefore set forth, of an insulator-bracket, means for securing the same to a support, a stem for receiving an insulator, and a screw fitting into said stem and serving to bind said insulator upon said stem.

2. The combination, substantially as hereinbefore set forth, of the bracket A, having a stem, E, the screw F, and the insulator G.

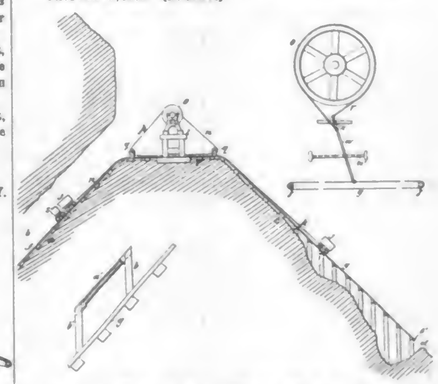
3. The combination, substantially as hereinbefore set forth, of an insulator-bracket, means for securing the same to a permanent support, a seat for an insulator raised upon the surface of said bracket, and means, substantially such as described, for securing an insulator upon such seat.

296,559. TONGS FOR LIFTING SPOOLS OF FENCE-WIRE. WM. A. HARDIN, Leavenworth, Kans. Filed Feb. 8, 1884. (No model.)



Claim.—The tongs for lifting spools of wire and like objects, consisting of the bent levers A B, pivoted together at C, and having their short ends formed into a nose, D, of approximately cylindrical form, which is adapted to support a spool by frictional contact with the surface of an opening therein, whereby the tongs may be adapted for use on spools of different constructions, and having openings therein of different diameters, substantially as specified.

296,560. ORE-ELEVATOR. WILLIAM ALLEN HARTT, Rochester, N. Y. Filed Feb. 20, 1884. (No model.)



Claim.—1. The combination, with an inclined way, up which the ore or other material is to be raised, and another inclined way, down which the material is to be delivered, and being longer than the first inclined way, and with the cars and operating-ropes therefor, of a dead-weight car and a drum for the rope of the discharging-way, of a larger diameter than the drum for the rope of the hoisting-way, substantially as described.

2. The combination, with the inclined ways *f g*, having parallel overlapping sections on the level *e*, also the connecting-switches *h i*, of the drums *m o*, of different sizes, operating-ropes *n p*, three or more cars, *j*, and a dead-weight car, *s*, substantially as described.

3. In an ore-elevating apparatus consisting of the inclined ways *f g*, having parallel overlapping sections on the level *e*, and switches *h i*, with drums *m o*, hoisting-ropes *n p*, and cars *j*, the guide-pulleys *q*, arranged to extend the ropes of the respective ways past the ends of said level sections from the respective operating-drums, substantially as described.

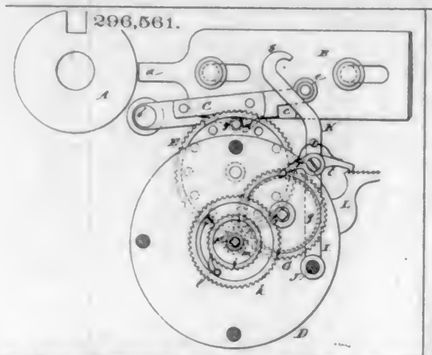
4. The combination of the brake *v* and lever *w*, having the endless cord *y*, and notched holding-bar *x'*, with the drum *o*, hoisting-ropes *n p*, inclined ways *f g*, and the cars *j s*, substantially as described.

5. The combination, with the inclined ways *f g*, having parallel and overlapping sections, and the connecting-switches *h i* on the level *e*, of spring mechanism located at the lower end of the way *g*, and adapted to be compressed by the descending loaded cars, and to raise the empty cars to slacken the rope and facilitate the pushing of the cars onto the way *f*, substantially as described

296,561. TIME-LOCK. MOSES CHARTEN HAWKINS, Edinburgh, Pa. Filed July 23, 1883. (Model.)

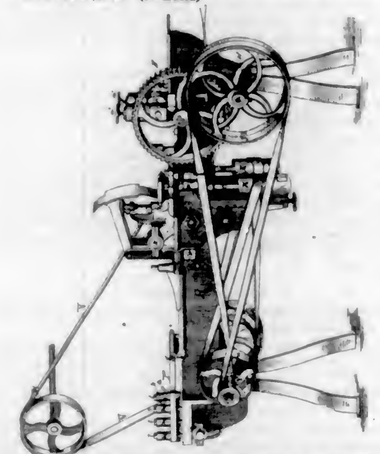
Claim.—1. The combination, with the slide-bolt B, having a side pin, *c*, of the latch C, engaging said pin, turning on a pivot, *b*, and having a downwardly-projecting beveled arm, *d*, and a roller, *e*, on a pin projecting horizontally from the face of the latch, a time-movement having the pin-wheel E, the gear *f* F, and the pin *g*, whereby the latch may be raised and the bolt released at any desired time, as described.

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2. The combination, with the going-barrel and time-catch, of an accident-lever, two spring-pawls on arms I K, a ratchet on the going-barrel, and a stationary ratchet, said lever having an inclined surface to engage with said time-catch, as and for the purpose specified.

296,562. PLANING-MACHINE. ELI B. HAVEN, Big Rapids, Mich. Filed Dec. 10, 1883. (No model.)



Claim.—1. A blind-slat-planing machine provided with bead edging planers and concave top and bottom side planers, the edging-planers arranged to act in advance of the top and bottom planers, whereby the edging-planers do not become nicked by use, as set forth.

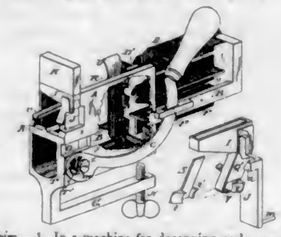
2. The bed-frame A, provided with brackets for the shafts of the top and bottom planing-cylinders, M N, the shaft R and leading-pulley S intermediate said planing-cylinders, and the driving-belt V, led over said pulley S and over the pulleys T U successively, as and for the purpose set forth.

3. The planing-cylinders M N, combined with the pivoted overhanging frame P, jointed to the frame A by pins *g* intermediate the planers, said frame P being provided with the yoke A and the adjustable bed-pieces *q*, substantially as and for the purpose set forth.

4. In a planing-machine fitted with planing-cutters arranged to plane the under side of the stuff as it passes the machine, and in combination with said under-side planer, an overhanging frame, P, pivoted to the main frame, and provided with a planing-bed to hold the stuff against the action of the cutters, said overhanging frame being capable of turning back on its pivots to expose said cutters and make them easily accessible for adjustment or sharpening.

296,563. MACHINE FOR DEPRIMING AND REPRIMING CARTRIDGE-SHELLS. HENRY T. HAZARD, Los Angeles, Cal., assignor of one-half to J. F. Ponder, same place. Filed Apr. 26, 1883. (Model.)

Brief.—One shell is decapped, another recapped, and a third ejected from the machine at each throw of the operating-lever. The shells are fed to the operating-plungers by the action of gravity.



Claim.—1. In a machine for decapping and recapping cartridge-shells, the combination of a frame provided with a clamp, a support adapted to sustain the head of a shell without covering the cap thereon, and a fixed anvil, a slide moving in guides in said frame, and provided with a plunger having a projecting pin in line with the cartridge-support, a second plunger in line with the anvil, and an ejector below said plungers, a lever pivoted to the frame and serving to actuate the slide, and a reservoir, arranged substantially as shown and described, to deliver primers in front of the anvil.

2. In a cartridge-capping implement, the combination of a frame provided with a stationary anvil to sustain the primer against the pressure of a shell moving over it, a yielding device, substantially such as described, for holding the primer in front of said anvil, a plunger adapted to carry a cartridge-shell, and a lever for moving said plunger, whereby the shell may be forced toward the anvil and over the primer sustained thereby.

3. In a decapping and recapping implement, the combination of a frame, A, having a cross-piece to support a cartridge-head while being decapped, and a fixed anvil, K, movable cap-tube Q, provided with spring-jaws S S, adapted and arranged to be separated by said anvil, slide B, provided with decapping-plunger D, recapping-plunger E, and ejector F, and lever C, connected with the slide B, substantially as shown and described.

4. In combination with frame A, adapted to contain three shells superposed one upon another, and provided with an outlet for spent caps, an anvil to sustain a fresh cap, and an outlet for recapped shells, a slide mounted and arranged to move within said frame, and carrying a decapping-plunger in line with the outlet for spent caps, a second plunger in line with the anvil, and an ejector in line with the shell-outlet, all substantially as shown, whereby a single movement of the slide is caused to decap one shell, cap a second, and expel a third.

5. In a recapping implement, the combination of a fixed anvil, a swinging cap-tube, and beveled spring retaining-jaws at opposite sides of said tube, adapted to be pressed against and separated by the anvil through the pressure against them of the shell to be recapped.

6. In combination with frame A, having stationary anvil K, movable cap-tube Q, closed at its lower extremity, and provided with laterally-moving spring-jaws S S, beveled at their inner edges opposite the end of the anvil, substantially as and for the purpose set forth.

7. In a decapping and recapping machine, the combination of a fixed reservoir, I, and a detachable reservoir, H, provided with parallel teats or projections *n n*, whereby the primers may be directed into the upper reservoir and the said reservoir secured to the lower swinging reservoir, substantially as described.

8. In a decapping and recapping implement, the combination of a frame, a cap-reservoir, a movable feed-tube communicating with said reservoir, a slide provided with plungers to effect the decapping and recapping of the shells, and an agitator independent of the feed-tube, actuated through the movement of said lever, and arranged, substantially as shown, to enter the reservoir and raise the caps therein, and then to retreat and permit the caps to fall, substantially as shown and described.

9. In a decapping and recapping implement, the combination, with a frame, and with a slide moving therein and carrying decapping and recapping plungers, of a cap-reservoir, an agitator having its end arranged within said reservoir, and an operating-lever connected with the slide and with the agitator, substantially as and for the purpose set forth.

10. In a repriming implement, the combination of a frame provided with a stationary anvil, a yielding device, substantially such as described, for holding a primer in front of said anvil, slide B, having plunger E, and lever C, adapted to move said slide, substantially as shown.

11. In a repriming device substantially such as described, the combination of a frame provided with fixed anvil K, a movable cap-tube, an agitator provided with beveled shoulder *a*, adapted, substantially as described, to force the tube back as the agitator rises, a slide, B, provided with plunger E, and an operating-lever, C, connected with the slide and agitator, substantially as shown and described.

12. The herein-described implement, consisting of frame A, provided with a clamp, a stationary support for a cartridge-head, and a fixed

anvil, a cap-reservoir arranged, substantially as shown, to deliver caps directly in front of the anvil, and provided with beveled spring retaining-jaws adapted to be separated by said anvil, a slide carrying a plunger adapted to enter a shell, and provided with a projecting pin to remove primers, a second plunger adapted to enter a shell and force it toward the anvil, and an ejector to expel shells from the implement, and a lever connected with the slide and serving to impart motion thereto, substantially as set forth.

13. In an implement for recapping cartridge-shells, a cap-tube provided with a loop or bar at its lower end, to prevent the fall of caps therefrom, and with laterally-movable spring-jaws projecting over openings in the front and rear faces of the tube, to prevent the escape of caps except when the jaws are pressed apart, and mechanism, substantially as described, to force apart the spring-jaws.

14. In a machine for decapping and recapping cartridge-shells, a frame adapted to receive the shells in a single row, one resting upon or against another, and a slide arranged to move in said frame, and provided with an ejector opposite the innermost or bottom shell, a recapping-plunger in line with the next shell, and a decapping-plunger in line with the third shell, substantially as shown and described, whereby the shells are adapted to fall by gravity to the respective plungers and the ejector in proper succession.

15. In an implement for decapping and recapping cartridges, the combination of a swinging cap-tube provided with beveled spring-jaws, an anvil to separate said jaws, and an agitator arranged to enter the cap-tube, and provided with a beveled lug to act against the cap-tube and release it from the anvil, to which it is held by the spring-jaws.

296,564. METALLIC BUSHING. CHARLES HEBLE, Washington, D. C. Filed Jan. 4, 1884. (No model.)



Claim.—1. A bushing for barrels, kegs, or other vessels, having an increasing inside taper, and at its lower end a circumferential recess, substantially as shown and described.

2. The combination of a bushing having an increasing inside taper and a circumferential recess at its lower end with a plug or bung having a central cavity inserted therein, substantially as shown and described.

296,565. MACHINE FOR SEWING BAGS AND OTHER ARTICLES. CHARLES M. HINE, St. Louis, Mo., assignor to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Aug. 4, 1883. (No model.)

Brief.—The driving-shaft imparts motion to the needle-lever by means of an eccentric and connecting-rod, the latter sliding in bearings in the needle-lever. The sliding rod serves also, by means of lever-connections, to produce reciprocating movements of the feed-bar. A spring-leaf carries a presser-foot, which latter may be raised by means of a sliding rod and cam, the latter resting upon a separate fixed arm. The needle-lever is deflected at its front end. The goods are fed in a line transverse to that of the driving-shaft.

Claim.—1. The combination of a shaft, a rotary hook or looper carried thereby, a needle-lever provided at its end with means for holding a needle or needles, and fulcrumed behind the needle, with its axis of oscillation transverse to the line of feed, and mechanism for operating said lever, substantially as described.

2. The combination, with a needle-lever, of an eccentric-rod supported and sliding in bearings in said lever, and an eccentric for operating said parts, substantially as described.

3. The combination of the needle-lever provided with means for attaching a needle or needles directly thereto, the sliding eccentric-rod and the eccentric, substantially as described.

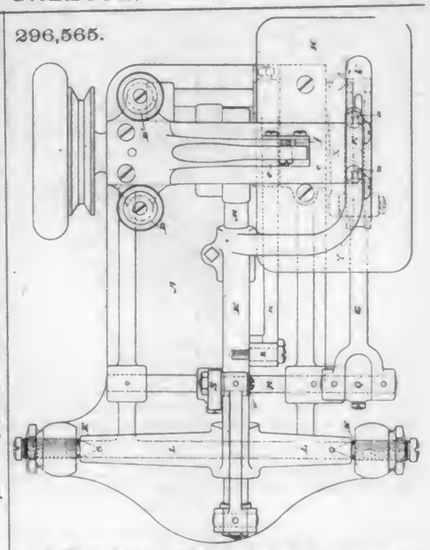
4. The combination, with duplicate hooks or loopers and the needle-lever provided with devices for attaching the needles directly thereto, of the bearings for supporting the said lever, with its axis of oscillation parallel with the axis of rotation of said hooks or loopers, and the duplicate needles for co-operating with said hooks or loopers, said needles being attached to said lever and moving in curved paths, substantially as described.

5. The combination, with the work-plate and machine-frame, of the presser-foot carried by a leaf-spring, the sliding pin, the cam connected with said pin for raising and lowering said foot, and the bearing for said cam, the elasticity of the spring tending to press said presser-foot toward the said work-plate, substantially as described.

6. The combination, with the needle-lever and feed-bar of a sewing-machine, of an eccentric, eccentric-rod, and connections for rocking said lever and for imparting back-and-forth movements to said feed-bar from the said eccentric through the strap which encircles the same, substantially as described.

7. The combination, with the needle-lever, the eccentric, and the sliding eccentric-rod, of the feed-bar, the rock-shaft, and the link, the latter connected with the said eccentric-rod, substantially as described.

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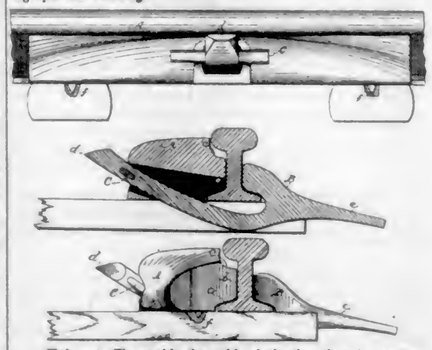
8. The combination, with the needle-lever of a sewing-machine and the feed-bar arranged under the work-plate of said machine, of connections for imparting the rising and falling motions to the feed-bar from the needle-lever, substantially as described.

9. The combination, with the needle-lever and feed-bar, of an eccentric and eccentric-rod and connections for imparting a rocking motion to the needle, and the rising and falling and back and forth motions to the feed-bar, all from said eccentric through the strap which encircles the same, substantially as described.

10. The combination, in a sewing-machine, of the revolving shaft, one or more hooks or loopers operated thereby, the eccentric on said shaft, the bent needle-lever fulcrumed behind the needle, and provided with fastening devices for attaching one or more needles directly thereto, the eccentric-rod sliding in bearings in said needle-lever, the feed-bar, the rock-shaft, the connections between the needle-lever and feed-bar, and connections between the eccentric-rod and rock-shaft, substantially as described.

296,566. CAR-REPLACER. JOS. A. HOOEL, Cumberland, Md. Filed Dec. 14, 1883. (No model.)

Brief.—The double-inclined replacing-block having a hopper-shaped opening through it, and formed on one side to fit upon the rail-flange and against the web thereof, is secured to said rail by a hook-lever, one arm of which passes through the opening in the block, the other arm resting upon the rail-flange.



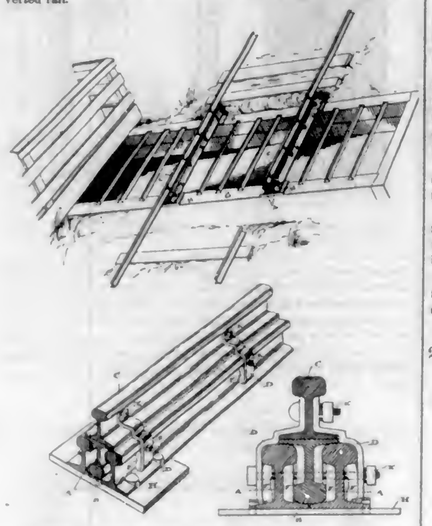
Claim.—1. The combination, with a body-piece shaped on one vertical face to fit the web of a low rail, shaped on its bottom to fit the base-flange of the rail and the ties on which the rail rests, having a hopper-shaped hole through it and grooved longitudinally across the small end of said hole, of a hook having a hole through its body near the end, and

a wedge-shaped key shaped to engage said hole and the groove aforesaid, as and for the purpose specified.

2. The combination, with the block having the hopper-shaped aperture described, of a hook having a handle at one end and pointed at the other end, and means for securing said hook to the block, as shown and described.

296,567. RAIL-STRINGER. HENRY HOLGATE, Toronto, and ROBERT RAGNALL, Hamilton, Ontario, Canada. Filed Dec. 15, 1883. (No model.) Patented in Canada Dec. 19, 1883, No. 18,332.

Brief.—Rail-stringers for open culverts, cattle-guards, &c., consisting of two T-rails side by side, their bases touching, or nearly so, a center T-rail inverted between the side rails, the flanges thereof resting on the heads of the side rails, and all being held together by clips, filling-plates, and bolts, the track-rails resting upon the base of the central inverted rail.



Claim.—1. As an improved rail-stringer, two T-rails, A, laid on their bases side by side, the inner edges of their bases touching each other, or nearly so, a similarly-shaped center rail, B, inverted and slipped between the two rails A, the flanges of its base resting on the heads of the side rails, and the bottom of its base presenting a level support for the running rail C, in combination with clips arranged to combine the rails together, substantially as and for the purpose specified.

2. The rails A and B, arranged as described, so as to form a support for the running rail C, the clip-plates D, and bolts E, arranged to combine the rails together, in combination with packing-pieces F, inserted between the rails A and B, and between the rails A and clip-plates D, substantially as and for the purpose specified.

3. In combination with a rail-stringer composed of the rails A and B, arranged and combined together as described, a plate, H, placed on the timber G, and held there by spikes driven into the timbers through holes in the plate, and notches cut in the outer edges of the flanges of the rails A, substantially as and for the purpose specified.

296,568. STEAM-DAMPER REGULATOR. JULIUS L. HORNIG, Jersey City, N. J. Filed Aug. 16, 1883. (No model.)

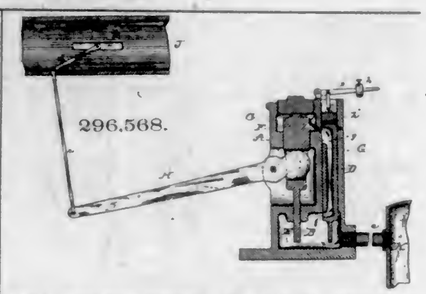
Claim.—1. In a steam-damper regulator, the combination, with damper-connections, of a steam-motor working the damper and moved in both directions by steam-pressure, and a valve controlling the motor and acted upon directly by the steam-pressure, substantially as set forth.

2. In a steam-damper regulator, the combination, with damper-connections, of a steam-motor working the damper and moved in both directions by steam-pressure, a valve controlling the motor and acted upon directly by the steam-pressure, and a counter-balance, substantially as set forth.

3. In a steam-damper regulator, the combination, with damper-connections, of a steam-motor working the damper and moved in both directions by steam-pressure, a valve controlling the motor and acted upon directly by the steam-pressure, and an adjustable counter-balance, substantially as set forth.

4. The combination, with a steam-boiler-furnace damper, of a differential steam-motor connected with the boiler, and connections between them whereby said damper is operated by variations in the steam-pressure, substantially as set forth.

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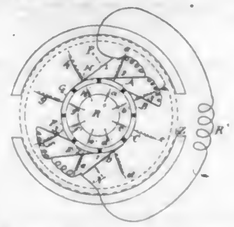
5. In a steam-damper regulator, the combination, with damper-connections, of the opposing plungers of different areas, the steam-chambers containing said plungers, a constant steam-connection with the chamber having smaller plunger, and means for opening and closing a steam-connection with the chamber having larger plunger, controlled by variations in steam-pressure, substantially as set forth.

6. In a steam-damper regulator, the combination, with damper-connections, of opposing plungers of different areas and the valve controlling the admission of steam to the plungers, substantially as set forth.

7. In a steam-damper regulator, the combination, with damper-connections, of the opposing plungers of different areas, a steam-connection with the chamber having smaller plunger, and a valve opening and closing a connection between the chambers, substantially as set forth.

8. In a steam-damper regulator, the combination, with damper-connections, of differential motor, the valve, and the snifting-passage, substantially as set forth.

296,569. DYNAMO-ELECTRIC MACHINE. EDWIN J. HOUSTON and ELIHU THOMSON, Philadelphia, Pa., assignors to the Thomson-Houston Electric Company. Filed Nov. 30, 1878.



Claim.—1. In a dynamo-electric machine, the combination, with two field-poles of opposite polarity, of a plurality of armature bobbins or coils simultaneously exposed to the inducing action of said poles, half of the terminals of which bobbins are joined together or to a common conductor, while the remaining terminals are connected to separate segments of a commutator.

2. The combination, with two diametrically-opposite inducing-poles in a dynamo-electric machine, of a plurality of armature coils or bobbins, the similar ends of which coils are joined separately to the separate plates of a commutator, while their opposite ends are united in a common electrical joint or connection, and two collecting-brushes or sets of brushes applied to said commutator, and forming, respectively, the positive and the negative collector of the machine.

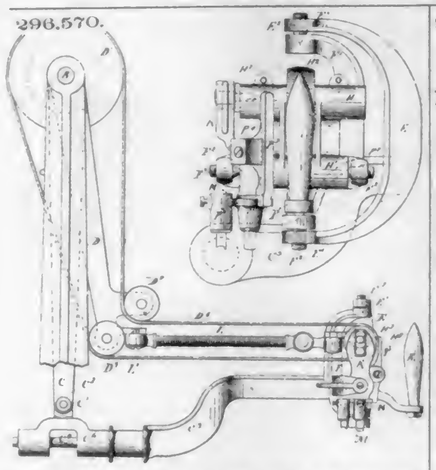
3. The combination, in a dynamo-electric machine, of two diametrically-opposite field-of-force poles, a plurality of armature-coil terminals joined *seriatim* to the plates of a commutator, a common joint or connection for the opposite terminals of the coils, and a positive and negative collector applied to said commutator, and each arranged to collect the current in multiple arc from those terminals which are for the time being on the same side of the shaft and are of the same polarity.

4. In a commutator for a dynamo-electric machine, the combination of an adjustable plate or spring, M, and a flexible band or strip, S, of conducting material, substantially as described.

296,570. SOLE-EDGE-BURNISHING MACHINE. JAMES HOWARD, Boston, Mass. Filed Dec. 26, 1883. (No model.)

Claim.—1. In a sole-edge-burnishing machine, the combination of the swinging frame D, arm C^3, resilient connection L, and working-head

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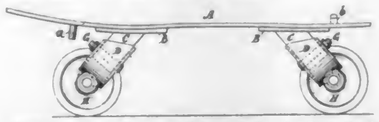


with the belt D^4, pulleys D^2 D^3, and driving-pulley D', all operating together substantially as described, and for the purpose set forth.

2. In a sole-edge-burnishing machine, the combination of the swinging frames D and C, the housings C^2 and C^3, spindles C^4 and arms C^5, and working-head of machine, all operating together substantially as described, and for the purpose set forth.

3. In a sole-edge-burnishing machine, the combination of the working-head having a crank-shaft, H^3, lever K, tool-holder N, and locking-lever I^2, all operating together substantially as described, and for the purpose set forth.

296,571. ROLLER-SKATE. CHARLES HUCKINS and GEORGE N. PARKER, Boston, Mass. Filed June 25, 1883. (No model.)



Claim.—1. In a roller-skate, the socket or casing D, open only at the top, and containing the elastic material F, in combination with the hanger C and foot-plate A, substantially as and for the purpose set forth.

2. The combination of the foot-plate A, the plate B, hanger C, socket D, and inclosed elastic material F, secured to the hanger by a bolt, G, and the axle-bearing E, forming a part of the socket F, substantially as and for the purpose set forth.

296,572. DRIER. GEORGE H. INDENDORF, Philadelphia, Pa., assignor to Henry G. Morris, same place. Filed Apr. 10, 1883. (No model.)

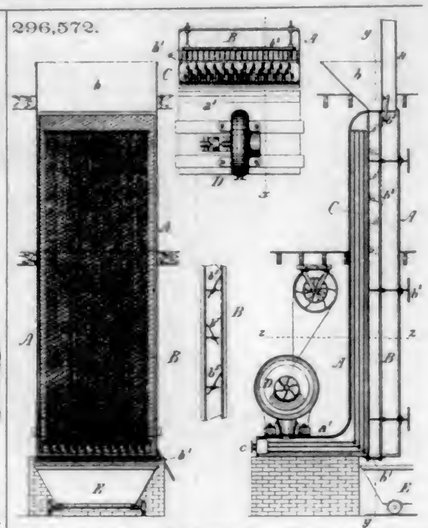
Claim.—1. The combination, substantially as set forth, of a closed casing having an air-discharge pipe at one of its sides, a cooling or heating supply trunk or nozzle located on the opposite side, a grated or perforated grain chute or channel provided with a supply-hopper, and passing through the casing, and a fan or blower for effecting the passage of a current of air from the said supply trunk or nozzle through the grain-chute to the said air-discharge pipe.

2. The combination, substantially as set forth, of a closed casing having an air-discharge pipe on one of its sides, a cooling or heating supply trunk or nozzle located on the opposite side, a grated or perforated grain chute or channel provided with a supply-hopper, and passing through the casing, a series of pipes connecting with said supply trunk or nozzle for circulating the heating or cooling medium, and located between said supply trunk or nozzle and the grain-chute, and a fan or blower for effecting a current of air from the said supply-trunk between the circulating-pipes and through the grain-chute to the air-discharge pipe.

3. The combination, substantially as set forth, of a casing, a fan or blower for effecting the passage of a current of air through said casing, and a grated or perforated chute or channel passing through the casing, and having one or more of its sides made movable and adjustable, so as to increase or diminish its transverse area and volume at pleasure.

4. The combination, substantially as set forth, of a casing having a series of heater-pipes therein, a fan or blower for effecting the passage

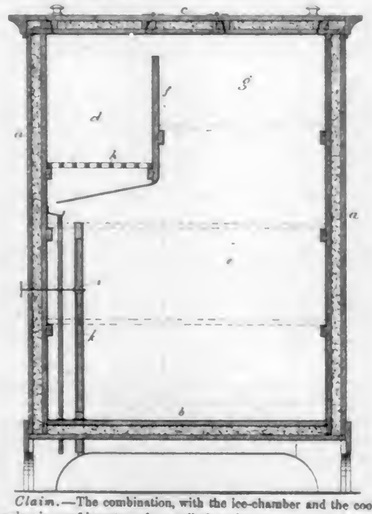
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of a current of air through the casing, a grated or perforated chute or channel passing through the casing, and a series of inclined deflecting-plates adjustable, as described, located within said chute or channel.

5. The combination, substantially as set forth, of a casing having a series of heater-pipes therein, a fan or blower for effecting the passage of a current of air through the casing and through a grated or perforated chute or channel passing through said casing, and a cooling-chamber formed by an extension of the casing beyond the ends of the heater-pipes.

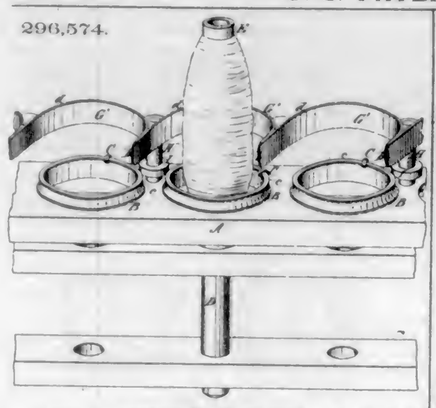
296,573. REFRIGERATOR. JAMES JACKSON, New York, N. Y. Filed Dec. 17, 1883. (No model.)



Claim.—The combination, with the ice-chamber and the cooling-chamber in a refrigerator, of a ventilating-pipe opening at its lower end to the exterior atmosphere, and rising within the cooling-chamber to about the middle of the same for confining the cold air and for allowing the escape by a downward circulation of a portion of the air within the refrigerator, for the purposes, and substantially as set forth.

296,574. THREAD-SEPARATOR FOR RING-SPINNING FRAMES. GILMAN JAQUITH, Maysville, Ky., assignor to himself and JAMES J. WOOD, same place. Filed July 8, 1882. (No model.)

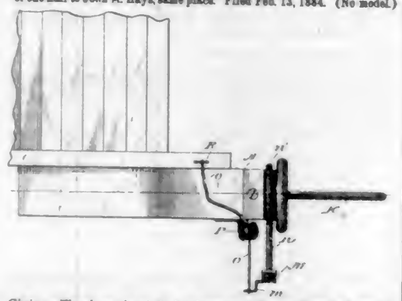
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Claim.—1. The combination, with the ring-rail A, the rings B, and supports H, of a series of united separators, G', provided with points *b*, each separator being curved from the said points concentric with and about one-half of the circumference of the rings, and thence diverging to the point of the adjacent separator, and secured thereto, substantially as herein shown and described.

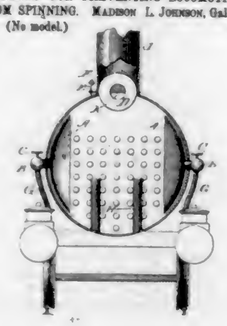
2. The combination, with the ring-rail, the rings, and travelers, of the united curved separators G', the supports H, arranged between alternate pairs of rings in proximity to the backs thereof, and the clearers I, formed or arranged upon said supports on a level with the paths of the travelers, substantially as herein shown and described, whereby the supports serve to support both the separators and clearers, as set forth.

296,575. CAR-COUPLING. GILES T. JOBSON, Augusta, Ga., assignor of one-half to John M. Hays, same place. Filed Feb. 13, 1884. (No model.)



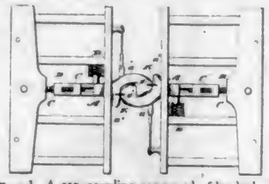
Claim.—The draw-head A, having recess C, slot D, pin E, strap-guides N N, and pulley P, in combination with the rods *n n* and *n'*, coupling-pin S, cross-bar M, and cord or chain O, and the slide B, having recess H, grooves I, and tongue *a*, having slot *e*, and the springs G G, substantially as shown and described.

296,576. MEANS FOR PREVENTING LOCOMOTIVE DRIVING-WHEELS FROM SPINNING. MADISON L. JOHNSON, Galena, Ill. Filed Aug. 17, 1883. (No model.)



Claim.—The combination, with the wire-gauze-covered pans, arranged within the smoke-box of a locomotive, having their lateral tubes provided with valves, the pipes G G, leading therefrom to the track-rails, the damper D, provided with a central annular opening, its bearing-shaft having crank-arm connecting with the controlling-rod F, and the blast-pipes H H, arranged within the smoke-box, all adapted to operate substantially as shown and described.

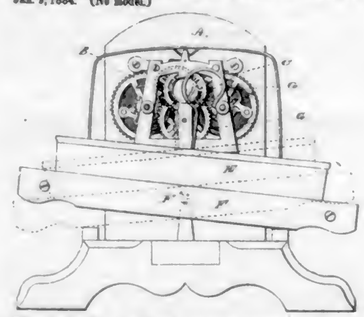
296,577. CAR-COUPLING. HENRY L. JOHNSTONE, Palmetto, Ga. Filed Nov. 10, 1883. (No model.)



Claim.—1. A car-coupling composed of hooked-end draw-bars which are adapted to engage with each other by lateral horizontal movements, and are held in such engagement by means of a lock or locks that is or are connected with one draw-head and adapted to engage with contiguous portions of the other draw-head, substantially as and for the purpose specified.

2. The hereinbefore-described draw-bar A, provided with the rounded front end, the notch *a*, having the curved engaging face *a'* and the shoulder a^2, the spring-bar B, the springs C and D, and the latch or lock E, all combined to operate substantially as and for the purpose set forth.

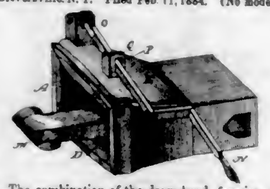
296,578. APPARATUS FOR CLEANING PHOTOGRAPHS. ROBERT H. JONES, MARCUS B. SMITH, and LARS J. A. ROSWALL, Clarence, Mo. Filed Jan. 9, 1884. (No model.)



Claim.—1. In a machine for washing photographs, the combination of a pan or tank for liquid supported on pivotal bearings, and having attached an arm provided with a yoke, in which an armed crank or cam-wheel operates, so as to swing the tank back and forward, substantially as and for the purpose set forth.

2. The machine for washing photographs herein described, composed of the standard A, mounted on a suitable base, the tray pivoted thereto and provided with an arm, G, having a yoke, G', at its upper end, and the motor secured on the standard and having one of its shafts provided with a crank operating in the yoke G', substantially as and for the purposes specified.

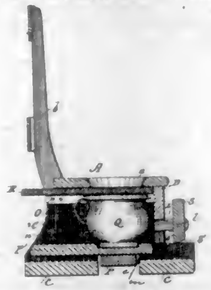
296,579. CAR-COUPLING. LANSING JORALEMON and NELSON R. MABEY, Gloversville, N. Y. Filed Feb 11, 1884. (No model.)



Claim.—The combination of the draw-head, forming a vertical recess, forming vertical ways at its forward corners, closed at their lower ends by a cross-piece, with a top plate resting upon the edges of the recess, and forming a forward sliding plate having a recess at its lower

end, forming forwardly-beveled lugs at its sides, and forming a longitudinal rib upon its under side and a vertical guide-bar at the rear end of the rib bearing against the rear side of the recess, as and for the purpose shown and set forth.

296,580. ODORLESS PRIVY SEAT OR CHAIR. FRANKLIN B. KENDALL, Tumwater, Wash. Filed May 25, 1883. (No model.)



Claim.—1. In an odorless privy seat or chair, the combination, with a vertically-reciprocating platform supporting an excrement-vessel, of levers pivoted to the supporting-frame and connected to the platform, and a step pivoted to and between the forward ends of the levers and adapted to engage with shoulders on the chair, substantially as herein shown and described, whereby the excrement-vessel is raised and lowered, as set forth.

2. The combination, with a box, O, provided with shoulders *b'*, slots *o*, and recesses *m*, of the pivoted levers L, rods B, carrying the platform P, and pivoted step S, substantially as described, and for the purpose set forth.

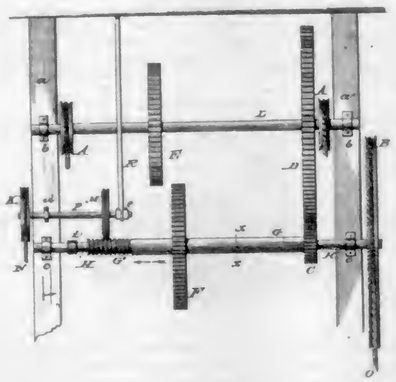
296,581. WOOD PAVEMENT. JAS. KERR, London, England. Filed Dec. 18, 1883. (No model.) Patented in England Feb. 15, 1877, No. 627; in France Nov. 30, 1881, No. 146,143; in Belgium Dec. 12, 1882, No. 59,839, and in Italy July 16, 1883.



Claim.—1. The art of laying wooden pavements consisting in setting wooden blocks directly upon a solid concrete foundation or bed, running liquid asphalt or bitumen into the interstices or joints between the blocks for partly filling said interstices or joints, and then completely filling the latter by a cement grouting, as and for the purpose set forth.

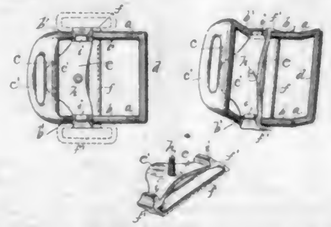
2. A pavement consisting of a concrete foundation or bed, wooden blocks placed directly thereon, asphalt or bitumen clamping-shoes uniting the blocks at their bases, and a cement grouting filling the spaces between the blocks above said asphalt clamping-shoe, substantially as described.

296,582. LIFT OR ELEVATOR. EARNEST KRAUSE, El Paso, Tex. Filed Feb. 27, 1884. (No model.)



Claim.—The combination, in the hoisting mechanism of a lift or elevator, of shaft L, having the pulleys A A, carrying the ropes or chains to which the platform and its counterpoise are attached, and the gear-wheels D and E, of different diameters, shaft H, having spline *h*, and pulley B, carrying the hoisting-rope which operates the mechanism, sliding sleeve G, provided with pinion C and cog-wheel F, and having the worm G', shaft P, having worm-wheel M, engaging the worm G', and means for rotating shaft P, the whole constructed and combined to operate substantially as and for the purpose shown and set forth.

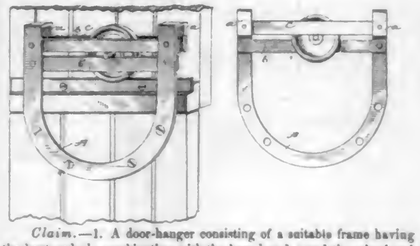
296,583. TRACE-BUCKLE. JAS. LALLY, Des Moines, Iowa, assignor of one-half to Thomas G. Orwig, same place. Filed July 31, 1882. (No model.)



Claim.—1. In a buckle, the combination of a frame having inclined planes *b* on its parallel side bars and upwardly or outwardly bent portions *b'* at the rear ends of said inclined planes, and a sliding detachable loop or frame, *e f f*, having a wedge, *d'*, and a tongue, *h*, substantially as shown and described, to operate in the manner set forth, for the purpose specified.

2. The improved two-part buckle composed of the frame *a b b' c d*, and the combined sliding and detachable wedge and loop, and guards *e e' f f' i i*, constructed in the manner shown and described, for the purposes specified.

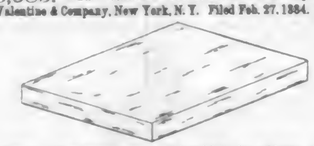
296,584. DOOR-HANGER. WILLIAM J. LANE, Poughkeepsie, N. Y. Filed Jan. 21, 1884. (No model.)



Claim.—1. A door-hanger consisting of a suitable frame having the bent ends, in combination with the bars *b* and *c*, and the wheel and axle, substantially as described.

2. In a door-hanger having a suitable frame and the bent ends, the bars *b*, *b'*, and *c*, combined with the wheel and axle, substantially as described.

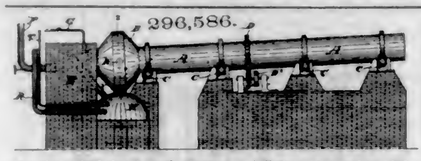
296,585. FELT RUBBER. JOS. B. LAUGHTON, Brooklyn, assignor to Valentine & Company, New York, N. Y. Filed Feb. 27, 1884. (No model.)



Claim.—The improvement in felt rubbers for rubbing, cleaning, and smoothing varnish and other surfaces, consisting of the pumice or other rubbing, smoothing, and polishing agent used therewith, combined and incorporated with the fibers of the felt by intermixture in the texture of the fabric, substantially as described.

296,586. ATTACHMENT FOR SMELTING-FURNACES. GILBERT M. LEVERTT, Indianapolis, Ind. Filed Nov. 17, 1883. (No model.)

Claim.—1. The combination, with a smelting-furnace, of an independent covered receptacle containing a lead bath and adapted to re-



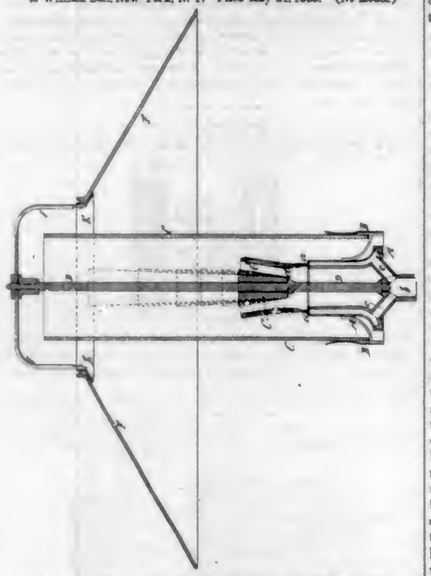
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ceive the melted slag from the furnace, and distinct means of supplying fuel and a blast of air to said receptacle, whereby when said air-blast and fuel-supply are in operation the slag in said receptacle is kept in a melted condition, thereby permitting the valuable metals therein to be precipitated into said lead bath, substantially as set forth.

2. The combination of the substantially horizontal revolving furnace A, having enlarged portion or bosh B, the covered receptacle H, having orifice N, and containing a lead bath, the blast-pipe R, and fuel-supply pipe T, substantially as set forth.

3. The combination of the furnace A, the covered receptacle H, containing a lead bath, the fuel-supply T, the air-supply R, the escape V for the products of combustion, the escape P for the slag, and the well M for removing the molten metal as the same accumulates, substantially as set forth.

296,587. BURNER. ANDREW B. LIPSEY, West Hoboken, N. J., assignor to William Ball, New York, N. Y. Filed May 21, 1883. (No model.)



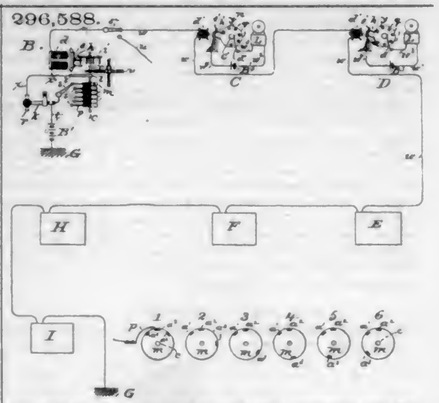
Claim.—1. The combination, with a burner, of a deflector destitute of any air-passage, extending approximately the same height as the flame to be produced by the burner, having its largest portion approximately the same size as the inner wall of the burner-tube, and adapted to direct air toward the flame through its entire length, substantially as and for the purpose described.

2. The combination, with a burner, of a deflector destitute of any air-passage, extending approximately the same height as the flame to be produced by the burner, flaring upward, and having its largest portion approximately the same size as the inner wall of the burner-tube, and adapted to direct air toward the flame through its entire length, substantially as and for the purpose described.

296,588. INDIVIDUAL SIGNALING APPARATUS. THOMAS D. LOCKWOOD, Malden, Mass. Filed Dec. 22, 1883. (No model.)

Claim.—1. The hereinbefore-described system of electric signaling circuits and apparatus, consisting of an automatic circuit-controlling device at a central station, said device comprising a series of movable circuit-controllers adapted to break the circuit at a time different for each, a main battery or equivalent source of electricity, and a series of substation signaling-instruments each in a local circuit or in a branch or de-

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rived main-line circuit, and each provided with a commutator controlled by an electro-magnet in the main circuit, adapted to respond to the circuit changes effected by the central-office circuit-controlling device, whereby the several signaling-instruments, each at a time differing from the others, may be energized and caused to give the signal, or brought into position to give the signal, substantially as described.

2. The combination, with an electric signaling-circuit, of a series of clock-work motors each controlled by an electro-magnet included in the said circuit, a series of rotary circuit-controllers, such as described, attached to and adapted to be rotated by one of the motors, and means, as indicated, whereby a battery may be momentarily connected with the main circuit independent of the circuit-controllers, to energize all of the electro-magnets included therein, and to start the motors and immediately thereafter to connect the battery to line through any desired one of the circuit-controllers, so that as soon as the said circuit-controller in its rotation opens the circuit all the electro-magnets in circuit will be automatically arrested, substantially as and for the purposes described.

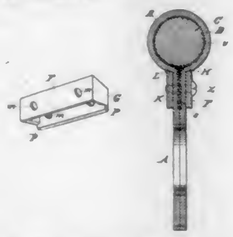
3. The combination, substantially as hereinbefore described, in an electric signaling-circuit connecting a central station and a series of substations, of a central-station signaling-instrument consisting of a motor, a controlling electro-magnet, a number of circuit-controllers actuated by said motor, means, as indicated, whereby a battery may be directed to line through either of the said circuit-controllers, and other means whereby any one of the circuit-controllers can be placed in the line-circuit and made operative to the exclusion of the others, with a series of sub-station signaling-instruments each corresponding to one of the central-station circuit-controllers, and each consisting of an alarm-bell in a normally incomplete or inoperative shunt, branch, or local circuit, a motor similar to that of the central-office instruments, a commutator or circuit-changer actuated thereby for completing or making operative the bell-circuit, and an electro-magnet in the main-line circuit adapted to respond to changes in the current traversing the same, and to control the motor, the central and sub-station instruments being adapted to be simultaneously set in motion by a single electric impulse, and to be stopped at the ringing-point of the station desired by the automatic action of the central-office instrument in opening the battery-circuit after a lapse of time, depending in length upon the circuit-controller employed, whereby the bell at the sub-station corresponding to the circuit-controller employed may be rung, the bells at the other stations remaining quiescent, for the purpose specified.

4. A signal-transmitting instrument consisting of a clock-work and actuating-motor therefor, an electro-magnet in an electric circuit controlling the said motor, a series of circuit wheels or controllers driven by said clock-work, any one of which may be manually included in the said electric circuit, and each of which is provided with a non-conducting unison-point located in the same position in each one of the series, a non-conducting point differing in position for each wheel, and adapted to break the circuit at a definite point in the revolution of the wheels, and a third non-conducting point identical in position for each wheel, adapted to break the main-line circuit when the revolution is nearly completed, to serve as a visual signal, and a key circuit-closer to close the battery through the electro-magnet independent of the circuit-wheels, all in combination, whereby the said transmitter is adapted to energize its own electro-magnet, and any others which may be in circuit therewith, and thus to release the motor and clock-work and actuate the circuit-controlling wheels by closing the circuit with the key, to open the circuit again, discharging the electro-magnets, and automatically stop the motor at a definite period in the revolution of said wheels, and when the said motors are again manually started by means of the key to open the circuit a second time at a point near the completion of the revolu-

tion, substantially as and for the purposes described.

5. The combination of a signal-transmitting instrument consisting of a clock-work and motor therefor, an electro-magnet controlling the said motor, a series of circuit-wheels driven by said clock-work, a switch for connecting any of the said circuit-wheels in the main-line, and a key for closing the circuit of a battery onto the line independent of the route through the circuit-wheel, and a main battery with two or more alarm-instruments, each consisting of a clock-work and motor, a controlling electro-magnet therefor in the main-line circuit, an electro-magnetic bell in a normally-inactive independent or branch circuit, and a commutator actuated by the clock-train and motor, the said commutator at each alarm-instrument being adapted to correspond with any one of the signal-transmitter circuit-wheels, as described, and to close or make operative its own bell-circuit at a time differing from all the others, all arranged as described, whereby the transmitting and signal-receiving motors may be simultaneously released and automatically stopped by the action of the circuit-wheel corresponding to the alarm-instrument to be rung, substantially as and for the purposes specified.

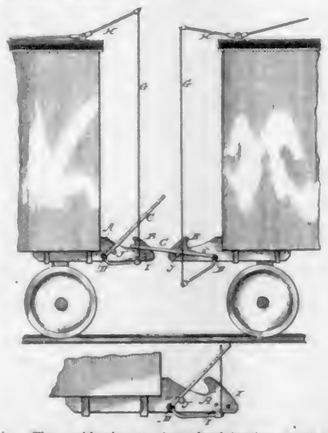
296,589. NECK-YOKE. MIRON V. LONGWORTH, Delphos, Ohio. Filed Feb. 4, 1884. (No model.)



Claim.—1. The combination, with a leather neck-yoke center, of the rectangular elongated clamping-plate F, having end flanges, G, the plate K, having lugs P, with perforations *m*, and bolts or screws, substantially as specified.

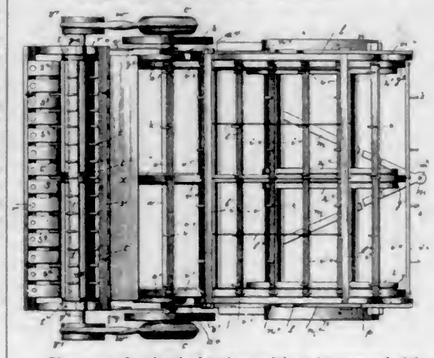
2. The combination, with the elongated clamping-plate F, having its inner edge beveled, as shown, and provided with the end flanges, G, having their inner edges beveled, the plate K, having its inner edge beveled, and the respective plates, having vertical perforations, the yoke-bar C, having its central portion recessed and provided with angular shoulders E, the leather center, and bolts or screws, substantially as specified.

296,590. CAR-COUPLING. SIDNEY LYONS, Brockston, Tex. Filed Feb. 28, 1884. (No model.)



Claim.—The combination of a draw-head forming a hook or horn upon its upper side, and having a series of transverse perforations near its under side, a pin fitting into the said perforations, and a link hinged at the inner end of the draw-head, having means for raising its outer end and resting upon the ends of the pin, as and for the purpose shown and set forth.

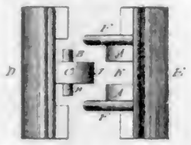
296,591. HAY-LOADER. JASON W. MACY and VOLNEY W. MACY, Searsborough, Iowa. Filed Oct. 16, 1883. (No model.)



Claim.—1. In a hay-loader, the revolving rake composed of the recessed circular middle and end disks, and the rake-heads let into said recesses and held in place by iron bands shrunk over them and around the middle and end disks, substantially as specified.

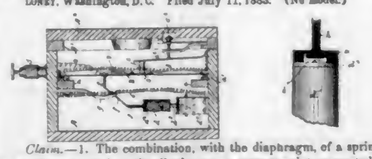
2. In a hay-loader, the combination of the elevator, the elevator-frame, the side rails, the tenoned cross-bars keyed in mortises in said side rails, the longitudinal parallel strips secured to the upper and middle cross-bars between said side rails, and the upper and middle pulleys for carrying the elevator-belts journaled in said strips and side rails, substantially as specified.

296,592. NECK-YOKE ATTACHMENT. THOMAS COPELAND MAGGS, Detroit, Mich. Filed Oct. 9, 1883. (No model.)



Claim.—The lug C, with bolts B and B molded on it, the projection J, and the notch K between two grooved lugs molded on clamp D, all taken in combination to form the adjustable hinge A, substantially as shown, and for the purposes set forth.

296,593. ELECTRIC TELEPHONE-TRANSMITTER. JAMES A. MALONEY, Washington, D.C. Filed July 11, 1883. (No model.)



Claim.—1. The combination, with the diaphragm, of a spring-acting carrier mounted on the diaphragm, a contact-point connected or attached to said carrier, and a stirrup for controlling the movements of the carrier, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the diaphragm, the spring-acting carrier, and its contact-point, of a stirrup adjustable with relation to said carrier, substantially as and for the purposes hereinbefore set forth.

3. The diaphragm, the bent spring-acting carrier, and its contact-point, in combination with a stationary contact-point to operate in connection with the carrier contact-point, and a stirrup which controls and directs the movement of the carrier to and from the stationary contact-point, substantially as hereinbefore set forth.

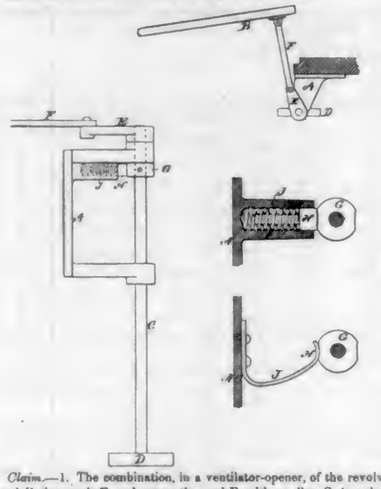
4. The combination, with the diaphragm and the spring-acting carrier, of a contact disk or button loosely mounted on or suspended from said carrier, substantially as and for the purposes hereinbefore set forth.

5. The combination of the diaphragm, the spring-acting carrier, the contact disk or button suspended from or loosely mounted on said carrier, the stirrup for controlling the movements of the carrier, and the stationary contact-point, substantially as and for the purposes hereinbefore set forth.

6. The combination of the diaphragm, the bent spring-acting carrier, the contact disk or button suspended from or loosely mounted on the lower end of the same, so as to be capable of independent vertical movement without rotation, the carrier-controlling stirrup, and the stationary contact-point, substantially as and for the purposes hereinbefore set forth.

7. The combination of the diaphragm, the carrier-stem *f*, secured thereto, and provided with a slanting spring portion, *f''*, intermediate between its upper horizontal and lower vertical ends, the contact button or disk loosely mounted on the lower end of said carrier-stem, the controlling-stirrup *g*, adapted to operate against or in connection with the spring portion *f''*, and the stationary contact-point, for joint operation substantially as hereinbefore set forth.

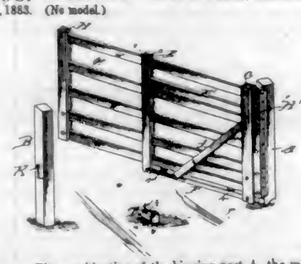
296,594. SASH-ADJUSTER FOR RAILROAD-CARS. ALBERT K. MANSFIELD, Boston, Mass. Filed Dec. 5, 1883. (No model.)



Claim.—1. The combination, in a ventilator-opener, of the revolving rod C, the crank E, and connecting-rod F, with a collar, G, (or other revolving part,) provided with depressions to engage with a follower, H, forced against the collar, all substantially as set forth.

2. In a ventilator-opener, the combination of the spring J, follower H, and the revolving collar G, with depressions, substantially as described.

296,595. SLIDING GATE. JOHN S. MCCLASKEY, Graham, Mo. Filed Oct. 6, 1883. (No model.)

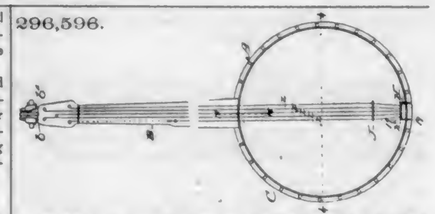


Claim.—The combination of the hinging-post A, the main frame having double uprights hinged to stand to one side of said post, the sliding wicket W, having its horizontal bars between the two parts of the uprights, the rollers supporting the bottom bars of the wicket, the sill-post having the shoulder and beveled portion, and located in the center of the gateway to support the end of the main frame, its beveled portion extending and facing in the direction in which the gate is swung, and the shutting-post B, provided with devices for engaging the wicket, substantially as described.

296,596. BANJO. HERCULES MCCORD, St. Louis, Mo. Filed May 19, 1883. (No model.)

Claim.—1. The straining-hoop D, provided with the slotted projections *d d* and the slotted and perforated heads E' E', in combination with the wires E and straining mechanism, substantially as described.

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2. The body C, provided with the guides a^2 a^3, formed as described, and the indentations *a*, in combination with the wires E and an internal stretching mechanism, substantially as described.

3. In a banjo, the combination of the body C, having the part *c*, and the guides a^2, with the wires E and the central tightening device for these wires, substantially as described.

4. In a banjo, the combination, with the shell, of the wires E, the nuts *f f'*, and the bolt f^2, said bolt being secured to the nut *f'*, substantially as described.

5. The combination of the body C, the hoop D, having the slotted projections *d d*, and the slotted and perforated heads E' E', with the tightening device F, substantially as described.

6. The U-shaped tail-piece H, having an upper depressed portion, h^2, and rigidly secured to the body C, substantially as described.

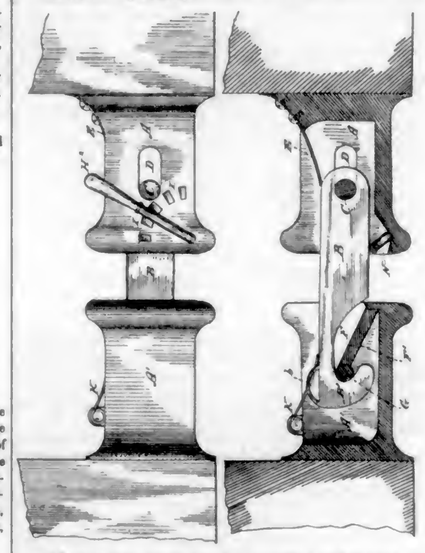
7. The combination of the U-shaped tail-piece H, having the upper part, h^3, bent downward, as described, and provided with diametrical perforations, substantially as specified, with the body C, the parchment I, and the bridge J, substantially as described.

8. The U-shaped tail-piece having a depressed upper portion and a cross-bar diametrically perforated, as a new and improved article of manufacture.

9. The combination of the U-shaped tail-piece H, having a perforated cross-bar, with the body C, having the perforation *h*, substantially as described.

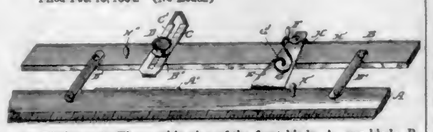
10. A U-shaped tail-piece having an upper portion provided with a rounded extended bearing for the strings, and rigidly connected with the banjo-body, substantially as described.

296,597. CAR-COUPLING. THOMAS L. MCKEEN, Easton, Pa. Filed Jan. 28, 1884. (No model.)



Claim.—The improved automatic car-coupling or self-coupler herein shown and described, consisting of the draw-head A, having side slots, D, spring E, transverse bolt C, playing in the slots D, coupling-hook B, recessed at F, cross-bar N H, having handle H^9, and means for holding the same in its adjustable position, and draw-head A', provided with the transverse bolt F and inclined plane F', the whole constructed and combined to operate substantially as and for the purpose shown and set forth.

296,598. PARALLEL-RULER. JOHN CALVIN MILLER, Ickesburg, Pa. Filed Feb. 13, 1884. (No model.)



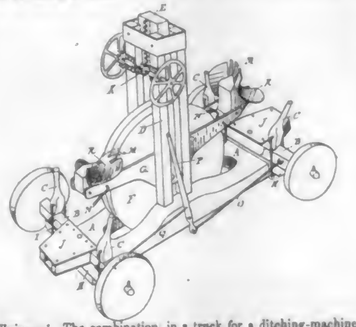
Claim.—1. The combination of the front blade, A, rear blade, B, provided with a transverse recess, B″, and having a nick, H, in its rear side or edge, connecting-plates B′ B′, metal spacer C, provided with a longitudinal slot, and having its forward end bent down to form a head and its rear end turned up to form a convenient handle, and provided on one of its sides with a suitable scale, thumb-screw D, metal plate E, rigidly secured at its bent forward end to the front blade, A, and provided with a catch, F, near its rear end, adapted to engage with the nick H, and spring G, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

2. The combination of the front blade, A, rear blade, B, provided with a nick, H, in its rear side or edge, connecting-plates B′ B′, metal plate E, rigidly secured at its bent forward end to the front blade, A, and provided with a catch, F, near its rear end, adapted to engage with the nick H, and spring G, as and for the purpose shown and described.

3. The combination, with the front blade, A, and rear blade, B, hinged together by the connecting-plates B′, of the spacer C, formed of a single piece of metal, provided with a longitudinal slot, and having its forward end bent down to form a head and its rear end bent up to form a convenient handle, and adapted to be secured adjustably in the transverse recess B″ of the rear blade, B, by means of a suitable thumb-screw, D, as set forth.

296,599. DITCHING-MACHINE. RUSSELL H. NOGAR, Dundee, Mich. Filed Dec. 26, 1883. (No model.)

Brief.—A vertically-adjustable sash carries the cutter and interposed disks of an excavator-wheel. A frame thereon and transverse thereto carries two cleaner-plates, intended to be caused, by cams, to alternately (as the one or the other end of the machine runs foremost) clear the wheel, wholly or partially determining the effective penetration of the cutter-disks. Each axle (both being pivoted) may be locked by U-links embracing such axle and its bolster, and having cam-bearing levers. From each axle a detachable rod leading to a common lever enables both axles to be turned at once.



Claim.—1. The combination, in a truck for a ditching-machine, of the front and rear axles secured to the bed, each by a proper king-bolt, with locking-cams for locking said axles in position, said axles being each provided with suitable bounds, or other known appliances for securing a tongue thereto, whereby the device may be run in either direction, substantially as and for the purposes described.

2. In a ditching-machine, a cutting-wheel, constructed as described, journaled in the lower end of a sash, having a vertically-reciprocating movement within a frame, in combination with cleaning devices or plates, constructed substantially as described, and adapted to clear the earth from the cutting-wheel in advance of its cut in either direction, whereby the depth of the cut may be regulated, substantially as specified.

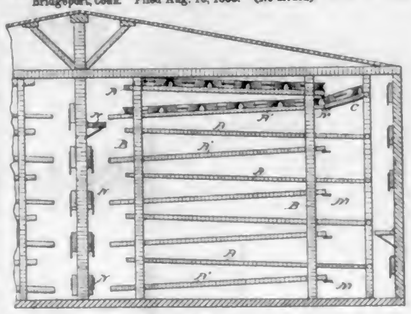
3. In a ditching-machine, and in combination with the cutting-wheel journaled in the lower end of a sash, such sash being provided with means for elevating or lowering the same, a frame secured longitudinally to said sash, and pivotally carrying at each end thereof cleaners, constructed substantially as described, and the cams N, arranged to throw such cleaners alternately into or out of action, as circumstances may require, substantially as set forth.

4. In a ditching-machine, and in combination with the bed and axles thereof, each of said axles being pivotally secured one at each end of said bed, a lever centrally pivoted to said bed and suitably connected with each of said axles, substantially as and for the purposes described.

5. As an improved lock in ditching-machines, constructed to embrace and bind together both the axle and bolster thereof, the U-shaped link I and cam C, constructed substantially as described.

6. A ditching-machine consisting of the bed A, to which are pivotally secured the axles B, locking devices C, by which such axles are secured as required, frame D, centrally supported upon the bed A, sash E, to which is journaled the cutting-wheel F, with means for elevating or lowering said sash, frame G, secured to said sash, and carrying upon its end the fingered cleaners H, provided with means for being alternately thrown out of action, the parts being arranged, constructed, combined, and operating substantially as and for the purposes described.

296,600. MANUFACTURING AND STORING ICE. GEO. NORWOOD, Bridgeport, Conn. Filed Aug. 10, 1883. (No model.)



Claim.—1. The shelves constructed, as described, with hinged or pivoted sections and inclined, whereby the ice cakes may slide automatically toward the platforms, substantially as set forth.

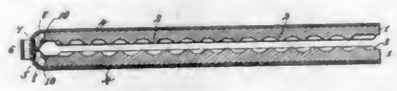
2. A building for the manufacture of ice, constructed with shelves sectioned and inclined, as described, and platforms inclined toward the storing devices, substantially as set forth.

3. The shelves A, inclined, as shown, and having sections C, adapted to be dropped down upon the shoulder M, substantially as shown.

4. The section C, hinged at H, and adapted to be secured to the shelf A by means of bolt E, connected by rod G to lever D, the latter pivoted below the section, substantially as set forth.

5. The shelf A, having bar J, pivoted on the under side of said shelf and provided with upwardly-projecting lug K, in combination with the section C, having arm R, substantially as set forth and described.

296,601. OIL-PRESS MAT. ADELBERT E. OSBORN, Waco, Tex., assignor to the Model Machine Company, same place. Filed Dec. 31, 1883. (No model.)



Claim.—1. An oil-press mat composed of molded paper-pulp leaves hinged or jointed together, each leaf being provided with an attached leather back, substantially as described.

2. An oil-press mat composed of molded paper-pulp leaves having a backing composed of a continuous piece of leather, a leather handle secured to the backing, the leaves having their knuckle-joint secured to the handle, and the plates jointed to the hinge-leaves and rigidly attached to the mat-leaves, substantially as described.

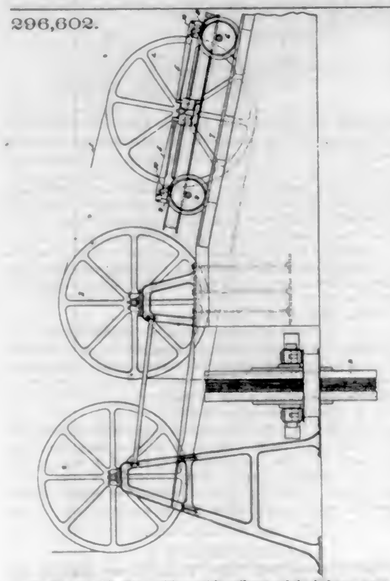
3. An oil-press mat composed of leaves provided with a backing connecting one of their ends, a handle-strip secured to the backing between the leaves, the hinge-leaves having their knuckle-joint carried by the handle-strip, and the plates jointed to the hinge-leaves and rigidly attached to the mat-leaves, substantially as described.

296,602. CABLE-RAILWAY APPLIANCE. WILLIAM H. PAINE, Brooklyn, N. Y. Filed Aug. 31, 1883. (No model.)

Brief.—A gravity cable-tension car having automatic brake mechanism.

Claim.—1. The combination, with a cable railway, of a gravitating balance-car provided with an automatic braking device, as and for the purpose set forth.

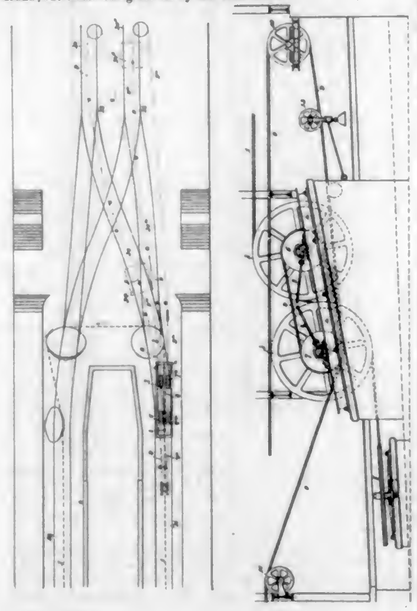
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2. The combination, with a cable railway, of the balance-car 4 5 6, and automatic brakes 9, adapted to resist the movement of the balance-car in one direction.

296,603. AUXILIARY SWITCHING APPARATUS FOR CABLE RAILWAYS. WILLIAM H. PAINE, Brooklyn, N. Y. Filed Aug. 31, 1883. (No model.)

Brief.—At the end of a line the cars are transferred to the return-line through auxiliary cables and tracks and switches, said cables being driven in either direction, at the will of the operator, through clutches and drums, the latter being driven by the main cable.



Claim.—1. The combination of a main driving-rope, a pair of sheaves between which said rope is passed, so as to rotate them in opposite directions, an auxiliary rope, and a pair of clutch-drums for driving said auxiliary rope, placed in connection with either of the main driving-sheaves at will for running the auxiliary rope in either direction, substantially as described.

2. A double-track cable railway provided with divergent shunting-tracks, suitable switches connected therewith, and divergent auxiliary or supplemental cables for the said divergent shunting-tracks, whereby incoming cars may be run from one of the main tracks upon divergent shunting-tracks alternately and from them transferred in succession to the opposite main track for the return trip, substantially as described.

3. The combination of a main driving-rope, a pair of auxiliary switching-ropes, and alternately-moving dummies connected with the said switching-ropes, so as to pass the incoming cars alternately to the two switching-tracks, for successive transfer to the opposite track of the main railway, substantially as set forth.

4. The combination, with the main rope of a cable railway, of a pair of drums constantly driven thereby in opposite directions, two pairs of drums driving auxiliary ropes and connected at the will of the operator with either of the main driving-drums, so as to run the respective auxiliary ropes in either direction required, a pair of divergent tracks carrying dummy-cars driven by the respective auxiliary ropes, and suitable switches for transferring the main-lines cars from the auxiliary tracks to the return-track of the main road, substantially as set forth.

5. The combination, with the main driving-rope of a cable railway, of a pair of sheaves driven thereby in opposite directions, two pairs of clutch-drums carrying auxiliary shunting-ropes and connected with the constantly-moving driving-sheaves at the will of the operator, for running said auxiliary shunting-ropes in opposite directions, dummy-cars moved by the auxiliary shunting-ropes upon separate tracks, and a switching mechanism operating to transfer the main-line cars from the auxiliary switching-tracks to the main return-track, and retain the dummy-cars on the switching-tracks, as explained.

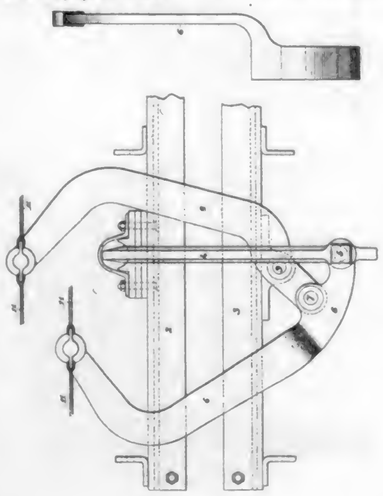
296,604. GRIPPING AND BRAKE MECHANISM FOR CABLE RAILWAYS. WILLIAM H. PAINE, Brooklyn, N. Y. Filed Aug. 31, 1883. (No model.)

Brief.—The grip-jaws are carried by double levers fulcrumed one upon the other, so as to first give them a quick movement and then a more forcible one. The operating-shaft which controls brake and grip is vertically adjustable through a lever.

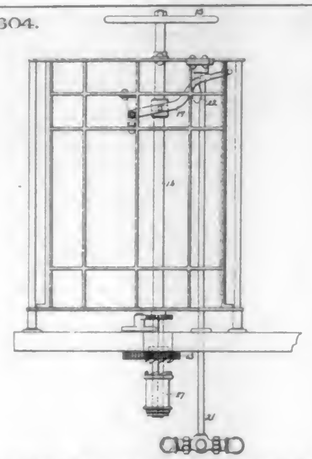
Claim.—1. A gripping device for cable railways, consisting of double levers and suitable jaws mounted thereon, said levers being fulcrumed one on the other, and operating, substantially as herein described, so as to bring the jaws in contact with the rope by a quick movement and grip it by a more forcible movement.

2. A grip for cable-railway cars, operated by double levers through the medium of an endless chain or rope traveling in opposite directions, as set forth.

3. A grip for cable-railway cars, operated by double levers fulcrumed one on the other and coacting on the gripping-jaws, substantially as and for the purpose set forth.



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4. A grip for cable-railway cars, operated by double levers through the medium of an endless rope or chain passing over drums at either end of the car, said drums deriving rotation from the hand-brake windlass, as set forth.

5. The combination, with the grip mechanism and the brake mechanism, of a hand-shaft movable vertically, so as to engage with either, substantially as described.

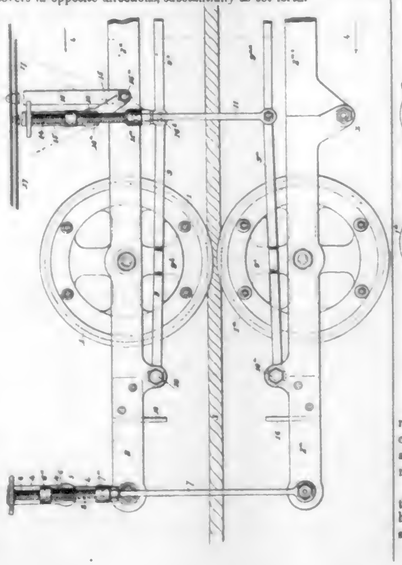
6. The combination of a grip mechanism, a brake mechanism, and a vertically-moving shaft having a lever for adjusting it, as and for the purpose set forth.

296,605. ROLLER-GRIP FOR CABLE RAILWAYS. WILLIAM H. PAINE, Brooklyn, N. Y. Filed Aug. 31, 1883. (No model.)

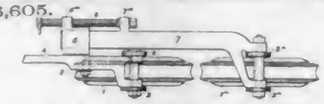
Brief.—Grip-roller levers fulcrumed to each other are adjustable to compensate for wear. Brake-shoes bear outward against the interior of the rim of the grip-rollers, and are carried by adjustable levers pivoted to the grip-roller levers.

Claim.—1. The combination, with a roller-grip for cable railways, of locking-shoes mounted on suitable beams, and bearing outward against the interior of the rim, of the grip-roller, substantially as described.

2. In a roller-grip for cable railways, the combination of a pair of levers —one fulcrumed on the other—and locking-shoes moved by the said levers in opposite directions, substantially as set forth.



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3. In a roller-grip for cable railways, the combination, with the locking-shoes mounted on suitable levers, of a system of levers flexibly connecting said locking-levers, and having means for adjustment, as described.

4. In a grip for cable railways, the combination, with the gripping-rolls mounted in a pair of levers fulcrumed to the bottom of the car, of a pair of levers fulcrumed to the ends of the aforesaid levers, and flexibly connected to each other, as and for the purpose set forth.

5. In a grip for cable railways, the combination, with a pair of levers carrying a pair of gripping-rollers, and flexibly connected together by a second pair of levers, of mechanism, substantially as described, for adjusting the levers carrying the rollers to and from each other, for the purposes set forth.

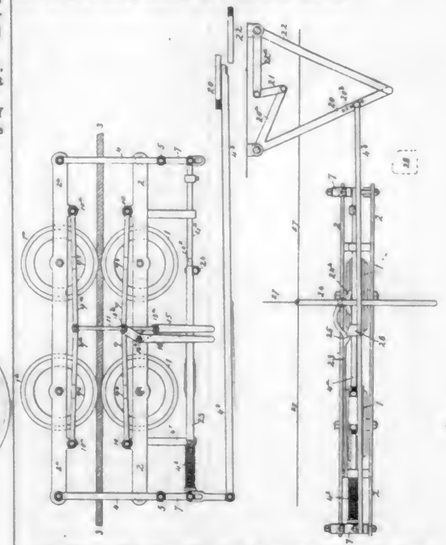
6. In a roller-grip for cable railways, the combination, with a pair of gripping-rolls mounted in a pair of levers, of a pair of levers fulcrumed to the ends of the aforesaid levers, and connected together through the medium of a sliding block mounted on one of the levers, and carrying an adjusting-screw having a fixed bearing in a lug on the other one of said levers, as and for the purpose specified.

7. In a device for gripping a moving rope or cable, a pair of gripping rolls or sheaves, and a locking device applied to one or more of the said gripping rolls or sheaves at a point or points nearer the moving rope or cable than the axles of the said gripping rolls or sheaves.

8. In a roller-grip for cable railways, means for applying locking-pressure to one or more of a pair of gripping rolls or sheaves at a point or points nearer their opposing surfaces than are their axles.

296,606. AUTOMATIC CONNECTOR AND DISCONNECTOR FOR GRIPS OF CABLE RAILWAYS. WILLIAM H. PAINE, Brooklyn, N. Y. Filed Nov. 12, 1883. (No model.)

Brief.—Vertical pivoted levers connected by a toggle-connection actuate the grip-pulleys when said levers are actuated by fixed stops upon the track. A pivoted lever upon a spring-actuated locking-box trips the grip through contact with inclines upon the track.



Claim.—1. The combination, with the gripping device of a cable railway, of suitable levers for opening and closing said grip, and suitable contact blocks or posts placed at desired points along the route and adapted to engage with and operate the respectivn levers, in the manner and for the purposes set forth.

2. In combination with the gripping mechanism of a cable railway, the vertical levers suspended from the car, pivoted to each other, and having means of connection with the grip and adapted to operate, substantially as described, when the car is given a preliminary movement.

3. In combination with the gripping mechanism of a cable railway

and means for automatically drawing the sheaves of the grip together, a locking device adapted to hold them in contact with the cable, substantially as described.

4. In combination with the gripping mechanism and means for automatically applying and locking the same, the tripping device for liberating the grip, substantially as set forth.

5. In combination with the gripping mechanism and means for automatically applying the same, the arm 23, having a shoulder, 25, adapted to drop behind the stop 26 of the bar 4* and to lock the sheaves in position, as described.

6. In combination with the gripping mechanism and means for automatically applying and locking the same, the tripping-lever 24, pivoted to the locking-arm 23, and having a cross-piece, 24*, and lugs 24*, the whole adapted to trip and disconnect the locking mechanism and release the grip, substantially as described.

296,607. SNAP-HOOK. JAMES A. PARK, Lansing, Mich. Filed Feb. 2, 1884. (No model.)



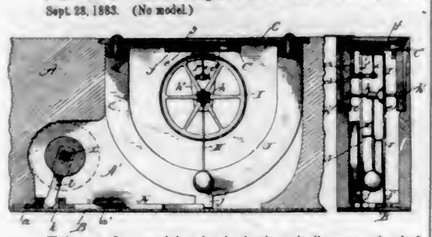
Claim.—1. A snap-hook whose end loop is provided with a beaded pin or stud, substantially as set forth.

2. A snap-hook formed with the usual end loop and an additional loop and a headed stud or pin, substantially as set forth.

3. A snap-hook whose end loop is formed with an inclined integral headed stud and an inclined integral loop, substantially as set forth.

4. A snap-hook formed with the usual end loop, a downwardly-projecting inclined stud having an elongated head, and an upwardly-projecting inclined loop, substantially as set forth.

296,608. PENDULUM-LEVEL, PLUMB, AND INCLINOMETER. CHARLES J. PARKHURST and ALBERT W. PARKHURST, North Adams, Mass.; said Albert W. Parkhurst assignor to said Charles J. Parkhurst. Filed Sept. 28, 1883. (No model.)



Claim.—1. In a pendulum-level, plumb, or inclinometer, the shaft or pivot of the index-hand connected with the pendulum shaft or pivot by multiplying bevel-gears, for the purpose and substantially as described.

2. In a pendulum-level, the combination of the index-hand, the pendulum, and multiplying bevel-gears connecting said pendulum and index-hand, and adapting said index-hand to be moved over a greater distance than the pendulum, substantially as described.

3. In a pendulum-level, the pendulum and the index-hand arranged on axes at right angles one with the other, and combined substantially as described, whereby the index-hand is made to move through an entire circle in the movement of the pendulum through an arc of ninety degrees.

4. In a pendulum-level, plumb, or inclinometer, the pendulum suspended between elastic plates or springs adapted to grasp and hold said pendulum at any desired point.

5. The pendulum actuating the index-hand, pivoted between elastic plates or frames adapted to hold said pendulum in any desired position, in combination with means for forcing said plates apart and freeing the pendulum, substantially as described.

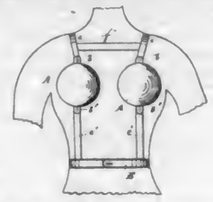
6. In a pendulum-level, plumb, or inclinometer, the pendulum supported between yielding side plates, in combination with the slide for separating said plates, and the thumb-shaft and lever for operating said slide, substantially as described.

7. The combination, in a pendulum-level, plumb, or inclinometer, of the pendulum, the index-hand with its pivot at right angles to the pendulum-shaft and geared thereto, the elastic plates or springs for holding said pendulum at any desired point, and means for adjusting said plates, all substantially as described.

296,609. MILK-CATCHER FOR NURSING-WOMEN. LYDIA E. PATTEE, Smith Centre, Kans. Filed July 20, 1883. (No model.)

Claim.—In a milk-catcher for nursing-women, the protector A, having concave side B, orifice a, and orifice C, made of flexible material,

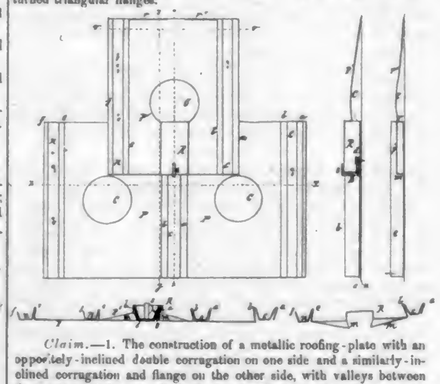
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and provided with short button-hole straps *b b'*, in combination with elastic straps *c c*, having cross-strap *f*, and straps *c'*, attached to the belt E, as shown and described, and for the purposes set forth.

296,610. METALLIC ROOFING-PLATE. GEORGE PATTEN, Washington, D. C. Filed Dec. 28, 1883. (No model.)

Brief.—A roof-plate is formed with an oppositely-inclined double corrugation on one side and a similarly-inclined corrugation and flange on the other side, with valleys between them. It is further provided with a hood, a hook-shaped securer, pendent triangular flanges, and upturned triangular flanges.



Claim.—1. The construction of a metallic roofing-plate with an oppositely-inclined double corrugation on one side and a similarly-inclined corrugation and flange on the other side, with valleys between them, substantially as set forth, for forming the lateral joint between adjacent plates.

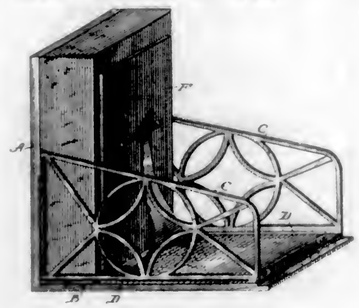
2. The hood R, in combination with the securer B, substantially as described, whereby the upper tier of plates is firmly attached to those beneath and the joint-valleys closed.

3. In combination with the hood R and the securer B, the pendent triangular flanges *m*, for forming the transverse joint, substantially as described.

4. The combination of the upturned triangular flanges *r r'*, pendent triangular flanges *m*, and securer B with the lateral joints, substantially as and for the purposes set forth.

5. The combination of the chamber C and hood R with the two sets of triangular flanges and the plate-surfaces, substantially as and for the purposes set forth.

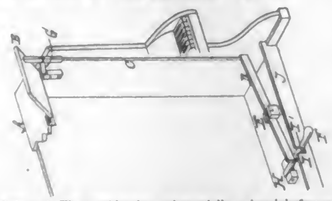
296,611. FILE-HOLDER AND CASE. EDWARD THOMAS PEARSON, Washington, D. C. Filed Jan. 24, 1884. (No model.)



Claim.—1. In a file-holder, the sides C, having recessed slots D, in combination with the standard E, having forwardly and laterally projecting arms G G, as and for the purpose set forth.

2. The combination, with the wooden case K, provided with metallic rails N, having bosses *n* and the cross-rod *n'*, of the holder consisting of the base A, front B, and sides C C, having hooks *c c*, and standard E, having follower F, as and for the purposes set forth.

296,612. LID-RAISING ATTACHMENT FOR PIANOS. GEORGE W. PEEK, New York, N. Y. Filed Sept. 29, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with the hinged lid of a piano-forte, of the lid-supporting rod, the vertically and horizontally oscillating pedal, the lever connecting the supporting-rod to the pedal, and a stop adapted to engage the pedal when it is shifted laterally in the depressed position thereof.

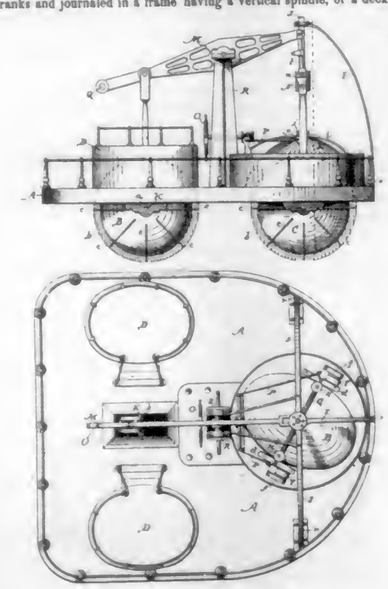
2. The combination, substantially as hereinbefore set forth, with the hinged lid of a piano-forte, of the lid-supporting rod, the vertically and horizontally oscillating pedal, the lever connecting the supporting-rod to the pedal, and the guide-slot for the pedal having an offset to receive the pedal when it is shifted laterally in the depressed position thereof.

296,613. BUOYANT PROPELLER FOR VESSELS. NICOLAI PETERSEN, Charleston, S. C. Filed Dec. 10, 1883. (No model.)

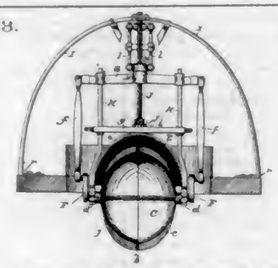
Claim.—1. The combination, with the deck A, having a circular hole in it, of the yoke I, spanning said hole and secured to the deck, and the yoke *i*, also secured to the deck and spanning the hole at right angles to yoke I, the yoke *i* being some distance below yoke I, and a vertical spindle, J, of a wheel, C, journaled in said yokes, whereby the said deck is partly supported by the said wheel, and the stem of the wheel is supported at its upper and lower ends in a fixed position relative to the deck.

2. The combination, with the wheel C and the spindle J, of the hood E, covering the wheel and supported by said spindle, to revolve with the wheel thereon, as shown and described.

3. The combination, with the floating paddle-wheel provided with cranks and journaled in a frame having a vertical spindle, of a deck, a



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walking-beam journaled in a post or bearings mounted thereon, arched yokes secured to the deck and having bearings for said vertical spindle and the attached wheel-frame to rotate in, vertical guide-rods secured to said frame, a cross-head mounted to reciprocate on said rods, pitmen connecting the cross-head with the aforesaid cranks, and means for connecting said cross-head with said walking-beam, as shown and described.

4. The combination, with a cranked paddle-wheel having a vertically-reciprocating cross-head connected with said cranks, all pivoted to rotate horizontally, of a walking-beam connection consisting of a collar having trunnions on it, journaled between shoulders of said cross-head, and two pitmen, each hung at one end upon the walking-beam, and at the other end to one of said trunnions, as shown and described.

5. The combination, with three floating cranked paddle-wheels, one of which is a rudder, and a deck supported on the journals thereof, of a post mounted on the deck, a walking-beam journaled in said post, a pitman connecting the crank of two of the wheels with the walking-beam, and a swiveling connection between the other end of said beam and the cranks of the rudder-wheel, substantially as and for the purpose specified.

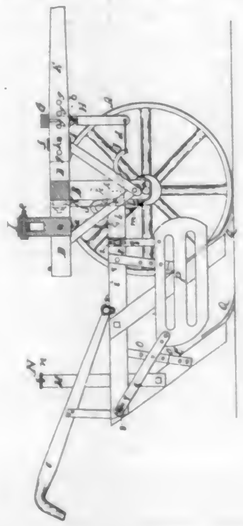
296,614. SALT FOR CATTLE. HENRY G. PUFFARD, New York, N. Y. Filed Mar. 5, 1884. (No specimens.)

Claim.—1. A cattle-salt compounded of common salt and an oxide or salt of phosphorus, in the proportions and as and for the purposes described.

2. As a new article of manufacture, cattle-salt compressed or formed into solid hard tablets or blocks of any desired size and shape, as and for the purpose described.

296,615. CULTIVATOR. CHAUNCEY M. PINCHNEY, Aledo, Ill., assignor of one-half to Aaron W. Cole and Mary A. Cole, both of same place. Filed Nov. 18, 1882. (No model.)

Brief.—A vertically-balancing evener, side bell-cranks, depending draft-hangers, and connecting draft chains or rods. The plow-beams connected to swiveled posts adjustable laterally.

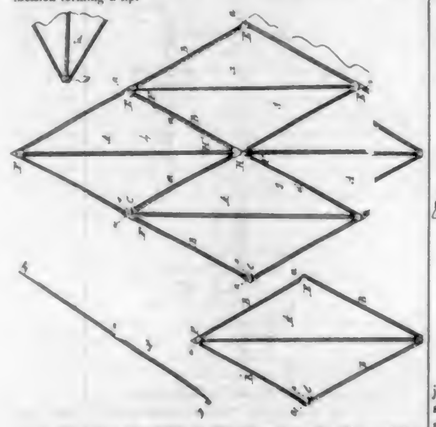


Claim.—1. In a draft and weight equalizer for cultivators, the combination of the suspended draft-bars H H, situated forward of the axle of the machine, vertically-swinging cross-lever I, situated back of the axle, bell-crank levers J J, horizontal rods *d d*, connecting the said hanging bars and the bell-crank levers, and vertical rods *e e*, connecting the cross-lever with the bell-crank levers, substantially as and for the purpose herein specified.

2. The combination of the plows C C, rock-shafts K K, provided with adjusting pivot-holes *k k*, bearings L L, provided with adjusting-slots *l l*, and bolts *m m*, with arched frame B, substantially as and for the purpose herein specified.

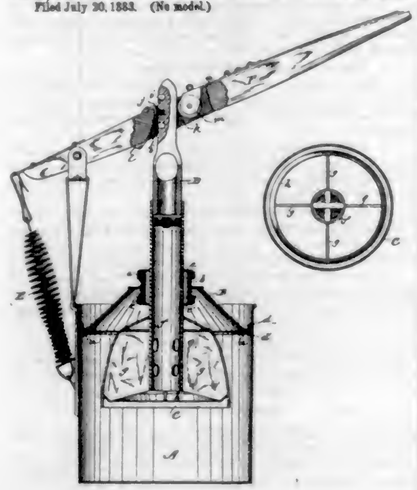
296,616. ROOFING-TILE. BENJAMIN F. POWERS, GEORGE E. NEEDHAM, and JAMES HAYES, Cleveland, Ohio; said Hayes assignor to said Powers and Needham. Filed Jan. 2, 1884. (No model.)

Brief.—The edges of a rhomb-shaped tile are formed with a rib, and one acute angle terminates in a hook, while one obtuse angle has an incision forming a lip.

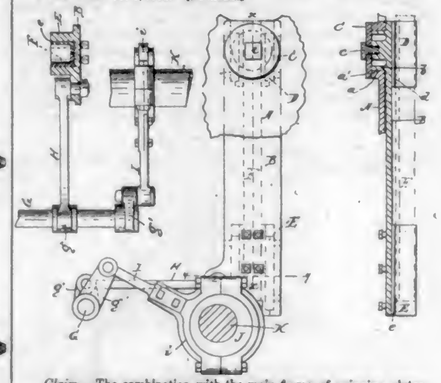


Claim.—As a new article of manufacture, a roofing-tile consisting of a rhomb-shaped or a square metal plate, having the edges thereof corrugated, forming a groove on one side thereof and a corresponding swell or rib on the opposite side, and having one acute angle of the tile terminating in a hook, and in one of the obtuse angles thereof an incision forming a lip, substantially as herein set forth, and for the purpose specified.

296,617. WASHING-MACHINE. FRANCIS G. POWERS, Champaign, Ill. Filed July 30, 1883. (No model.)



296,618. GANG-SAW MILL. DE WITT CLINTON PRESCOTT, Marinette, Wis. Filed Oct. 1, 1883. (No model.)



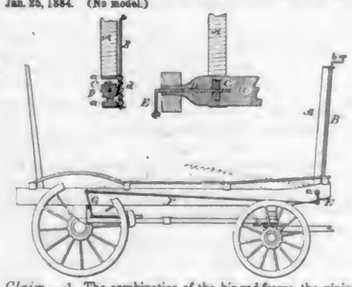
Claim.—The combination, with the main frame, of swinging plates journaled in said frame, guide-boxes D E, placed in line upon said plates, stiles F, sliding directly in both of such guides, and operating mechanism, substantially as described.

296,619. NECKTIE OR CRAVAT FASTENER. JULIUS N. PROESCHEL, Milwaukee, Wis. Filed Nov. 5, 1883. (No model.)



Claim.—A necktie-fastener consisting of a body, A, arms *a' a'*, and tongue B, as set forth.

296,620. BRAKE FOR HAY-WAGONS. JOSEPH A. PUTT, Marlborough, Ohio, assignor of one-half to Isaiah S. France, same place. Filed Jan. 25, 1884. (No model.)

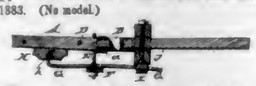


Claim.—1. The combination of the hinged frame, the pinion, and revolving shaft connected with the lower end of the frame, the rod sup-

ported by said frame, and provided at its lower end with a screw meshing with said pinion, the brakes, and means connecting the same with the revolving shaft carrying the pinion, substantially as described.

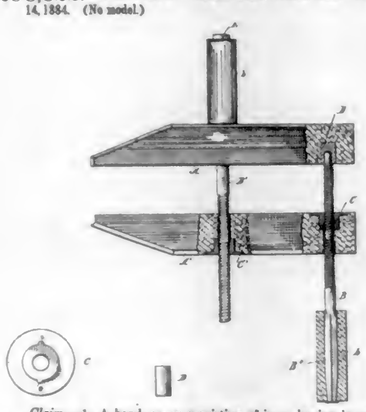
2. The combination of the frame connected to the wagon at its lower end by a rock-bar, a revolving shaft journaled in said rock-bar, and provided with a pinion fitting in an opening made in said bar, a rod journaled in suitable bearings on said frame, and provided with a screw at its lower end, meshing with said pinion, the brakes, and the rod connecting them with the pinion-shaft, substantially as described.

296,621. TONGUE-SUPPORT. DANIEL READ, New Salem, KANS. Filed Nov. 22, 1883. (No model.)



Claim.—The combination, in a tongue-support for vehicles, of the axle having the guard plate or strip secured to its under side, the tongue having the block secured to its under side, formed with the curved or segmental recess, the flat spring having its front end curved to correspond to said recess, and received and protected thereby, and having its rear end acting against and retained by the said guard-plate, the approximately U-shaped yoke embracing the rear end of the tongue, and cross-plate adjustable on the ends of the yoke and pivotally connected with the spring, all arranged and operating substantially as set forth.

296,622. HAND-SCREW. THOMAS RENO, Detroit, Mich. Filed Jan. 14, 1884. (No model.)



Claim.—1. A hand-screw consisting of jaws, having in combination therewith suitable metallic screws, one of said jaws being provided with metallic nuts inserted therein from opposite faces of said jaw, substantially as described.

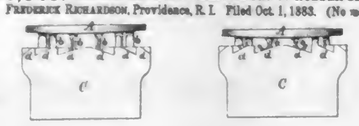
2. A hand-screw consisting of the combination, with the jaws, of metallic screws, one of said jaws being provided with metallic nuts C C', inserted therein from opposite faces of said jaw, and the other jaw provided with a suitable thimble, substantially as described.

3. A hand-screw consisting of the combination, with the jaws, of suitable metallic screws, B B', one of said jaws being provided with metallic nuts inserted from opposite faces of the jaw, to receive said screws, the screw B' being provided with a suitable handle, and a nut, E, to prevent the screw from being withdrawn from the handle, substantially as described.

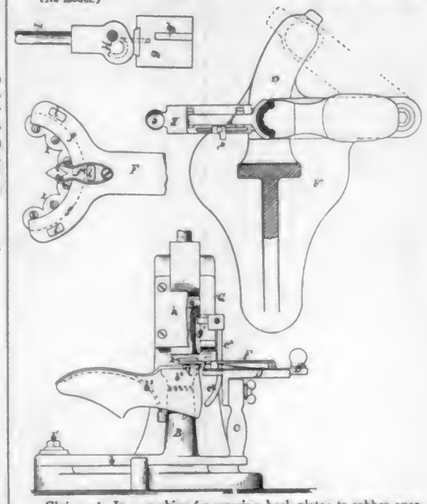
4. In a hand-screw, the combination of the two jaws, one of them being provided with metallic nuts inserted therein from opposite faces of the jaw, and the other provided with a metallic thimble inserted from the inner face of the jaw, the metallic screws B B', provided with suitable handles, and a nut, E, to the screw B', to hold the handle thereon, substantially as described.

5. In a hand-screw, the combination of the jaws A A', metallic nuts C C', provided with ribs and inserted in jaw A' from opposite faces of the jaw, and the metallic screws B B', substantially as described.

296,623. DIE FOR SECURING HEEL-PLATES TO RUBBER SHOES. FREDERICK RICHARDSON, Providence, R. I. Filed Oct. 1, 1883. (No model.)



296,624. MACHINE FOR SECURING HEEL-PLATES TO RUBBER SHOES. FREDERICK RICHARDSON, Providence, R. I. Filed Oct. 1, 1883. (No model.)



Claim.—1. In a machine for securing heel-plates to rubber overshoes, the combination, with a support for the shoe, of a guide and holder, substantially as described, by which the heel-plate is held in the proper position on the shoe, and means, substantially as described, by which the heel-plate is forced onto the shoe, and the nails or pins through the same and secured by clinching, as described.

2. The combination, with the support for the shoe, and the plunger for securing the heel-plate by forcing the pins of the heel-plate simultaneously through the shoe and clinching the same, of the guide F, constructed to support the heel-plate, and provided with projections arranged to bear against the shoe, as described.

3. The combination, with the pivoted swinging post or horn B, constructed to support the shoe, of the guide F, constructed to support and guide the heel-plate, and the plunger *g*, arranged to force the heel-plate onto the shoe and secure the same, substantially as described.

4. The combination, with the die b^2, supported on the post B, and the plunger *g*, of the slide E, the holder-guide F, constructed to support and guide the heel-plate, and means, substantially as described, by which the holder-guide is withdrawn automatically as the plunger descends, as described.

5. A machine for applying heel-plates to rubber overshoes, consisting of devices for attaching the same, provided with the holder F, and means, substantially as described, for bringing the same in contact with the rear portion of the shoe, as described.

6. The combination, with the support for the shoe, and means for forcing the heel-plate onto the shoe, of the holder and guide F, provided with the centering-guide *f'*, and the projections *l l*, constructed to guide and support the heel-plate while the same is being secured, as described.

7. The combination, with the post B, the die b^2, and plunger *g*, of the slide E, provided with the adjustable arm *e'*, and the guide and holder F, of the bell-crank lever e^2, constructed to be operated by the plunger and withdraw the holder-guide F from the heel-plate, as described.

8. The combination, with the swinging support for the shoe, and the plunger moving in fixed guides operated by a hand-lever and cam, as described, of the segmental bearing *a*, constructed to support the post and shoe and resist the pressure of the plunger, as described.

296,625. SAFETY ATTACHMENT FOR HORNED ANIMALS. GEO. W. RITCHIE, Arrowsmith, Ill. Filed Dec. 21, 1883. (No model.)

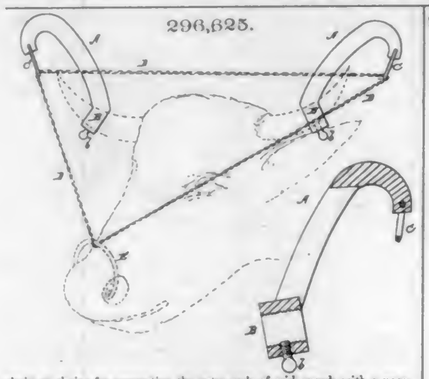
Claim.—1. A safety attachment for horned animals, consisting of the guards constructed to be secured to the horns of an animal, and a chain or chains for connecting the outer ends of said guards with a nose-ring.

2. The combination, substantially as before set forth, of the guards provided at the base with a collar and at their upper curved ends with a ring or loop, means for locking said collars to the horns of an animal, and chains for connecting the curved ends of the guards with a nose-ring.

3. The combination, substantially as described, of the guards provided at the base with a threaded collar, means for locking said collar to the horns of an animal, and chains for connecting the upper ends of the guards with a nose-ring.

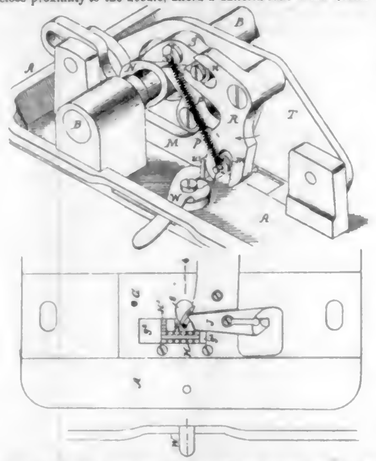
4. The combination, substantially as described, of the guards constructed to be secured to the horns of an animal, and a chain for connecting the outer ends of the guards with each other and with a nose-ring.

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296,626. BUTTON-HOLE SEWING-MACHINE. GEORGE S. ROBINSON, Philadelphia, Pa., assignor to the American Buttonhole, Overseaming and Sewing Machine Company, same place. Filed Dec. 18, 1882. (No model.)

Brief.—The side projection on the feed-dog insures a straight pull of the fabric through the feed-guide, while the guide and edge-turner, by close proximity to the needle, afford a uniform feed of the fabric.



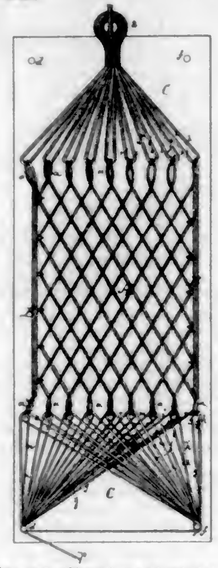
Claim.—1. The combination of sewing mechanism and the feed-plate H, having a projection, H', extending laterally beyond the needle, with the edge guide and turner J, as set forth.

2. The combination of the needle and looper of an overseam-sewing machine, the feed-plate extending laterally beyond the needle, the presser-foot having a projection, K', and the edge guide and turner J, as set forth.

3. The combination of the shaft B, having a cam, N, with the feed-bar M and the levers R, S, and P, as set forth.

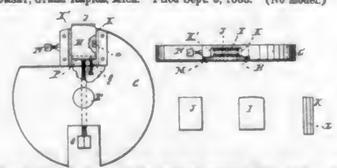
4. The combination of the shaft B, having a cam, N, the feed-bar M, the levers R and S, and the regulating-lever W, having a stop, *w*, as specified.

296,627. ART OF MAKING HAMMOCKS. ALBERT O. ROOD, New York, N. Y., assignor to Vincent P. Travers, same place. Filed Oct. 31, 1883. (No model.)



Claim.—The art of making a hammock, which consists in forming the body with the eyes *a* in the ends thereof in any known manner, then forming each end of the hammock by doubling a cord and passing and drawing it through one of the eyes *a* of the hammock-body, then forming the loop *g*, then doubling the cord again and introducing it through another eye *a* of the hammock-body, then forming the loop *m*, then passing said loop *m* through the third eye *a* of the hammock-body, and continuing in this manner until all the eyes *a* at the end of the hammock-body have been engaged with the loops formed by the doubled cord, tying the ends of the cord, and, finally, binding the outer ends of this looped structure and forming the terminal eye *s*, substantially as described.

296,628. MACHINE FOR MAKING BARBED STAPLES. GEORGE RUMSEY, Grand Rapids, Mich. Filed Sept. 5, 1883. (No model.)



Claim.—In a machine for making staples, the wheel or disk G, having in the side thereof a recess, in which are fitted barbing plates or dies secured therein by clamps and set-screws N O, plate P, and binding-plate M, and interposed between the said barbing-dies, a bending-slide having a reciprocal radial movement between said plates or dies, and retained therein by a notch and pin and in a projected position for bending a staple-blank by a spring, Q, substantially in the manner as described, and for the purpose specified.

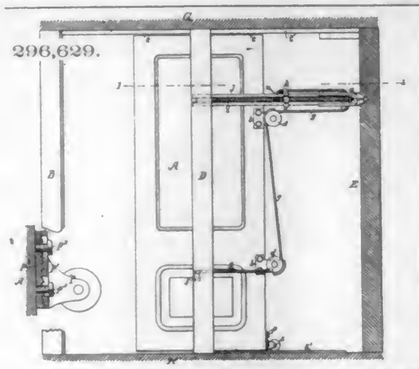
296,629. GUIDING AND SUPPORTING DEVICE FOR DOORS. AMOS SANDERS and ROGER S. HENDERSON, Philadelphia, Pa. Filed Feb. 6, 1884. (No model.)

Brief.—Sliding doors supported by a fixed wire or other rope through sheaves upon door. The rope may be adjusted to take up slack by securing one end to a slide upon a screw-rod on a bar secured in the house-framing. One edge of the door is supported by a vertically-adjustable roller, to permit the lowering of the door for removal.

Claim.—1. The combination of a door, A, with a rope, *g*, secured at its opposite ends, and passing over pulleys *d* at the rear of the door, as set forth.

2. The combination of the door and its pulleys with the rope *g*, secured at one of its ends to an adjustable fastening, as set forth.

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3. The combination of the door and its pulleys, the rope *g*, the fastening for one end of the same, and a bar, J, having an adjustable slide, *h*, for the opposite end of the rope, as set forth.

4. The combination of the door and its pulleys, the rope *g*, the bar J, having an adjustable slide, *h*, and the adjustable plate *a*, as set forth.

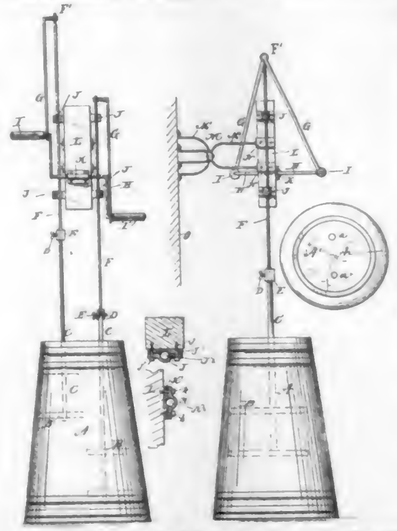
5. The combination of the door and its pulleys, the rope *g*, the bar J, having a bearing for said rope, and an adjustable slide, *h*, as set forth.

6. The combination of the door and its pulleys, the rope *g*, the bar J, the screw-rod *i*, longitudinally confined thereto, and the slide *h*, having a nut, *n*, adapted to said screw-rod, as set forth.

7. The combination of the door A and its pulleys, the rope *g*, and a guide-wheel and rail for supporting the rear of the door, as set forth.

8. The combination of the door A and its pulleys, the rope *g*, the guide-rail *s'*, and the wheel *s*, carried by an adjustable bracket, *p*, as set forth.

296,630. CHURN. JAMES BAILEY SCHOOLEY, Mountain Home, Ark. Filed Jan. 11, 1883. (No model.)

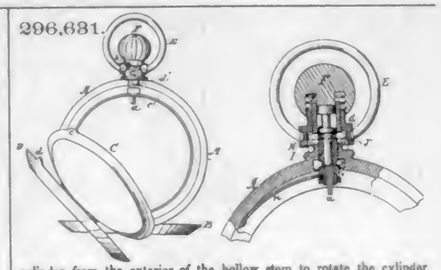


Claim.—The combination of the mechanism herein described with the block I, having the stay M, composed of the arms M' M², for attaching the mechanism to any suitable place, whereby the churning-vessel and its dashers are adapted to be removed therefrom, as shown and described.

296,631. WATCH-CASE. CHARLES SCHUETZ, Newark, N. J. Filed Dec. 6, 1883. (No model.)

Claim.—1. The combination, with the watch-case, of the attached tubular stem, the cylinder arranged to rotate within said stem, and having at its inner extremity a cam or cams, and means connecting with the

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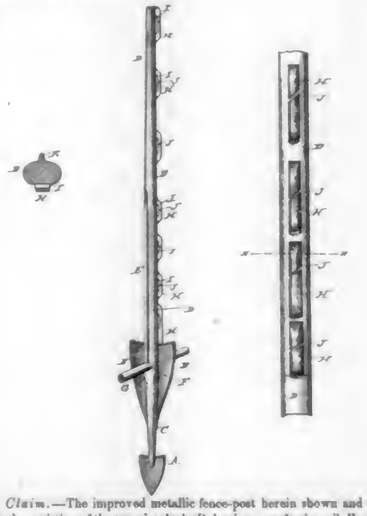
cylinder from the exterior of the hollow stem to rotate the cylinder within the stem, substantially as described.

2. The combination, with the watch-case, of the attached tubular stem, the hollow cylinder arranged to rotate within said stem, and having at its inner extremity a cam, a shank extending through the cylinder and carrying the knob or ball, and means connecting with the cylinder from the exterior of the hollow stem to rotate the cylinder within the stem, substantially as described.

3. The combination of the body of a watch-case with one or more covers and with a hollow stem, a cylinder located within the hollow stem, and provided with one or more cams which act against a surface or against surfaces of the cover or covers, a sleeve placed upon the stem and connected with the cylinder, and means for retaining the cylinder and the sleeve in place, while allowing them to be turned for bringing the cams into operation, substantially as and for the purpose specified.

4. The combination of the body A of a watch-case with one or more covers and with a hollow stem, H, a cylinder, I, located within the hollow stem H, and provided with one or more cams, *k i*, which act against suitable surfaces of the cover or covers, a ring, J, with projecting arms, and with notches for the lugs *l* of the cylinder I, a sleeve, G, with notches *h* to receive the projecting arms of the ring J, and with a slot, *m*, a knob, F, shank *a*, and screw *b*, constructed and operating substantially as specified.

296,632. FENCE-POST. LEGRAND SCOTT, Nashville, Tenn. Filed Dec. 3, 1883. (No model.)

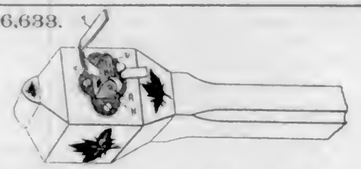


Claim.—The improved metallic fence-post herein shown and described, consisting of the tapering body D, having re-enforcing rib E, projections H, slotted at I and cut across obliquely at J, wings B, aperture F, tapering stem C, and arrow-head A, all in one piece, and cross-bar G, adapted to be inserted through the aperture F, substantially as and for the purpose shown and set forth.

296,633. FRICTION-CLAMP. HUGH SELLA, Toronto, Ontario, Canada. Filed Feb. 14, 1884. (No model.)

Claim.—1. In combination with a strap or its equivalent, a roller, C, provided with a handle, *b*, and eccentrically pivoted between the jaws

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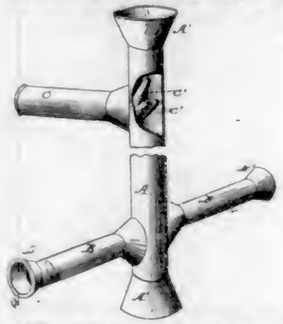


of the bracket E, substantially as and for the purpose specified.

2. In combination with a strap or its equivalent, a roller, C, eccentrically pivoted between the jaws of a bracket, E, having a curved projection, *a*, arranged substantially as and for the purpose specified.

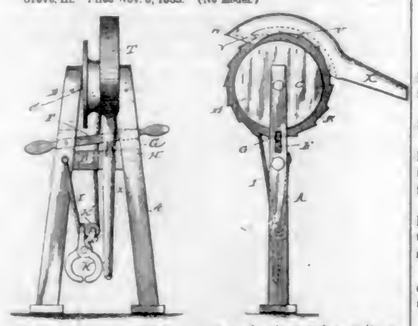
3. In combination with a strap or its equivalent, a roller, C, provided with a handle, *b*, and eccentrically pivoted between the jaws of a bracket, E, having a curved projection, *a*, substantially as and for the purpose specified.

296,634. VENTILATING APPARATUS. JOSEPH SELLWOOD and SIMON JAMES HARRY, Ishpeming, Mich. Filed Oct. 8, 1883. (No model.)



Claim.—The ventilating apparatus herein shown and described, consisting of the main pipe A, branch pipes B B, and exhaust-pipe C, having upwardly-curved air-tubes C', all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

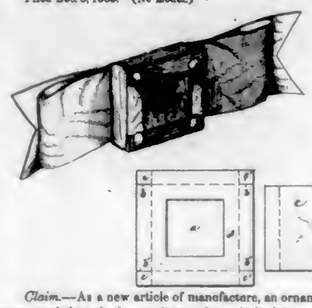
296,635. RAILWAY-TRACK LIFTER. ISRAEL SHOUDY, Paw Paw Grove, Ill. Filed Nov. 3, 1883. (No model.)



Claim.—1. The combination of a frame forming bearings at its upper end, a drum having a ratchet-flange, a flat bar pivoted at one end in a vertical slot in the frame, sliding with its other end in a similar slot, bearing with its upper edge in between the ratchet-teeth of the drum, and bearing with its lower edge near its free end against a spring, a rope or chain secured at one end to the upper portion of the frame and at its other end to the drum, a tong or grapple having hooked lower ends and eyed upper ends, through which the rope or chain passes, and a lip-lever having a pawl engaging the ratchet-wheel, as and for the purpose shown and set forth.

2. The combination of two convergent uprights connected by a cross-piece and forming bearings at their upper ends, a wheel or drum having a ratchet-flange and journaled in the bearings in the frame, a flat bar having handles at both ends, pivoted in a slot in one of the uprights, sliding with its free end in a slot in the other upright, engaging the ratchet-flange with its upper edge, and bearing with its lower edge against a spring near its outer free end, a rope or chain fastened at one end to the upper portion of the frame and at the other end to the drum, a tong or grapple having hooked lower ends and eyed shanks provided with rollers or pulleys in their upper ends, over which the chain or rope passes, and a lever consisting of a curved portion having a notched outer end and inwardly-pointing lip, and provided with a handle, all constructed to operate as and for the purpose shown and set forth.

296,636. ORNAMENT FOR PERSONAL WEAR. WALTON DUANE SMITH, Prophetstown, Ill., assignor of one-half to Cyrus Emery, same place. Filed Dec. 3, 1883. (No model.)



Claim.—As a new article of manufacture, an ornament for personal wear, consisting of a box or frame of any desired form, and constructed of pasteboard, thick paper, or thin sheet metal, and having an opening preferably of the same form as the box, the sides of said box being formed with slits, the ends of said sides being bent and secured upon themselves, and a strip of the same material, having its ends bent and adapted to be inserted in said frame or box to form the bottom thereof, said box being trimmed or ornamented, substantially as described.

296,637. SEWING-MACHINE. JAMES F. SWEMKER, Philadelphia, Pa., assignor to the National Sewing Machine Company, (Limited,) same place. Filed Nov. 8, 1883. (No model.)

Brief.—The horn that serves to guide the clamp and its contained fabric may be depressed below the top of the bed-plate to facilitate the application of the fabric to or removal from the clamp-plates. Provision is made for operating it by hand or automatically.



Claim.—1. The combination of the sewing mechanism of a button-hole sewing-machine with a horn, *x*, having a yielding support, and with mechanism whereby said horn can be elevated or depressed, as set forth.

2. The combination of the sewing mechanism, the table or bed, the horn *x*, and the lever *a*, carrying said horn, as set forth.

3. The combination of the sewing mechanism, the table or bed, the horn *x*, the lever *a*, carrying the same, the slide B, and means, substantially as described, whereby the reciprocation of the slide is caused to effect the vibration of the lever, as set forth.

4. The combination of the sewing mechanism, the table or bed, the horn *x*, the lever *a*, carrying the same, and having an inclined slot, *m*, the slide B, and the bell-crank lever G, having a pin, *i*, adapted to the slot *m*, as set forth.

5. The combination of the table or bed having an opening, *y'*, lever *a*, and the horn *x*, forming part of a lever, *x'*, hung to the lever *a*, and acted upon by a spring, x^3, as set forth.

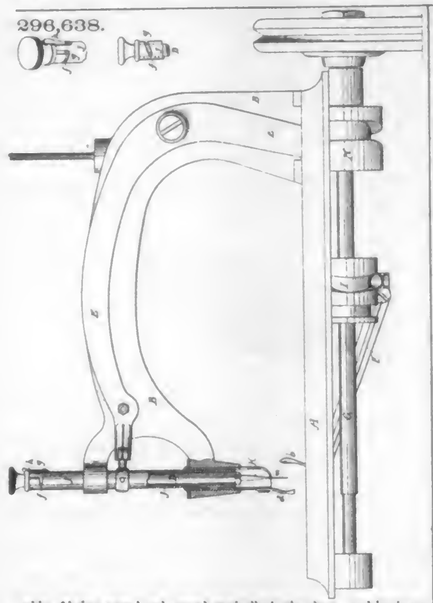
296,638. SEWING-MACHINE. JAMES F. SWEDIKER, Philadelphia, Pa., assignor to the National Sewing Machine Company, (Limited,) same place. Filed Nov. 26, 1883. (No model.)

Brief.—The needle-bar, with the needle, can be detached from its surrounding and guiding sleeve, and then be removed. This is done when the looper is entirely below the bed-plate, thereby allowing the fabric operated upon to be readily removed.

Claim.—1. The combination of the sleeve J, having a slot, *g*, means for guiding and for reciprocating said sleeve, and a needle-bar, D, capable of being turned and moved vertically in the sleeve, and having a pin, *f*, adapted to the slot *g*, as set forth.

2. The combination of the sleeve J, having a right-angled slot, *g*, means for reciprocating and for guiding said sleeve, a needle-bar, D, ca-

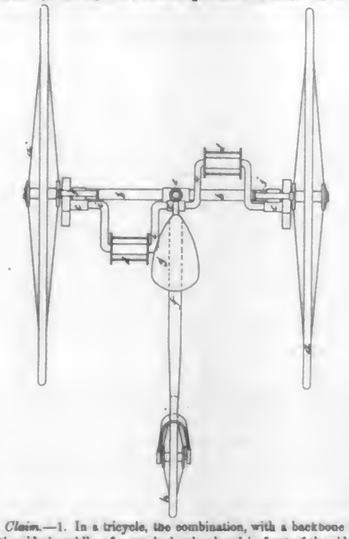
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pable of being turned and moved vertically in the sleeve, and having a pin, *f*, adapted to the slot *g*, and the retainer *h*, as set forth.

3. The combination of the lower looping-needle, *b*, and its operating mechanism, the upper sewing-needle, *a*, and its bar D, the sleeve J, in which the said bar D can be moved vertically, and means for guiding and for reciprocating said sleeve, as set forth.

296,639. TRICYCLE. WILLIAM SPENCE, Surbiton, and RICHARD COCKBURN THOMPSON, Brixton Rise, County of Surrey, England. Filed Feb. 27, 1884. (No model.) Patented in England Jan. 23, 1884, No. 1,971.



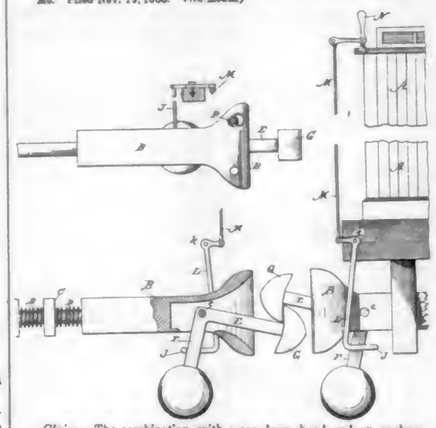
Claim.—1. In a tricycle, the combination, with a backbone carrying the rider's saddle, of a cranked axle placed in front of the rider and open at its front, and extending below the bearings of the pedals, substantially as shown, and for the purposes set forth.

2. In a tricycle, the combination of the cranked axle *b* for the main or driving wheels, with the steering-handles *j j*, and with the central stem or upright, *e*, extending upward from the cranked axle, the combination being and operating substantially as and for the purposes set forth.

3. In a tricycle, the arrangement, in connection with the central stem or upright, *e*, extending upward centrally from the cranked axle *b*, of the steering-handles *j j*, formed on or connected to such stem, substantially as herein shown and described.

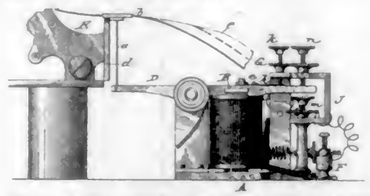
4. In a tricycle, the combination of the cranked axle *b*, central stem or upright, *e*, steering-handles *j j*, and pivoted backbone *f*, all substantially as described and shown.

296,640. CAR-COUPLING. CHARLES WILLIAM SPENCER, Richmond, Mo. Filed Nov. 19, 1883. (No model.)



Claim.—The combination, with a car draw-head and an anchor-shaped link pivoted thereto, said link having upwardly and downwardly projecting hooks and a balance-weight, of a bar, J, extending horizontally laterally from the rear side of the said balance-weight to the side of the car, thence extending upward and pivoted to the car at *k*, and thence horizontally as a lever-arm, the connecting-rod M, and the elbow-lever handle N, substantially as shown and described, whereby a link may be raised to disconnect it from another link either by a person on the ground beside the car or by a person on top of the car.

296,641. MORSE REGISTER AND PERFORATOR. LORIN C. SPRINGER, Hyde Park, assignor of eleven-twentieths to Chancy G. Wright, Chicago, Ill. Filed Mar. 3, 1883. (No model.)



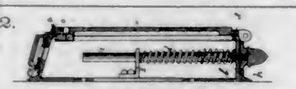
Claim.—1. The combination, with the perforating-needle and a guide for the ribbon, of the lever D, the coil A A', and the vibrating arm *h*, said coil being intermittently electrically connected with the vibrating arm, the line-wire, the battery, and a suitable key, substantially as described.

2. The combination, with the rocking-lever D and its central pivot, the armature B, and magnet C, of a perforating-needle directly attached to and actuated by the lever, said lever being actuated by making and breaking an electric circuit connected therewith, substantially as described.

3. The combination, with suitable guides for the ribbon, and the lever D, having pivoted thereto the perforating-needle, of the armature, the coil A A', and the vibrating arm *h*, said coil being intermittently electrically connected with the vibrating arm, the line-wire, the battery, and a suitable key, all substantially as described.

296,642. LETTER-BOX. CHARLES A. STEBBINS, Chelsea, Mass. Filed Apr. 28, 1883. (No model.)

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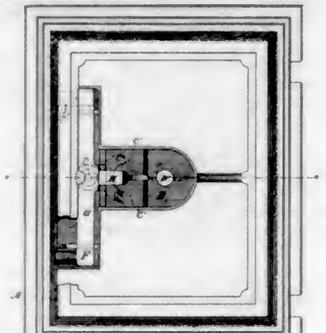


Claim.—1. In combination with the bottom of a letter-box, an outside plate adapted, by means of its attachments to the box, to clamp and retain packages against the bottom of the box, substantially as described.

2. A letter-box the bottom of which is provided with holes to admit the passage of standards or rods, in combination with an outside plate having secured therein standards or rods adapted to pass through the holes in the bottom of the box, and provided with retaining-springs, substantially as and for the purpose set forth.

3. A letter-box consisting, essentially, of the box having its bottom provided with holes to admit the passage of standards or rods, and provided with the slanting top formed with the shoulder *a* in its inner front edge, the door hinged to the bottom of the box, and having the rib *d*, and the plate *h*, having rods *i* and springs *l*, substantially as and for the purpose set forth.

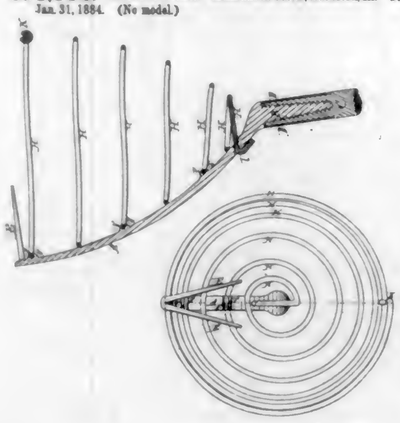
296,643. SAFE-DOOR. EMORY STOCKWELL, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed Feb. 27, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of the door-flanges and the plate cast in one piece therewith, the plate being provided with a lock-curb and stops, and guides for the bolt-work, the whole being so arranged that the filling of the door may be flush with the inside of said plate and curb.

2. The combination, substantially as set forth, of the frame or flanges, the plate cast in one piece therewith, and provided with a curb or recess for the reception of the lock and bolt-work, and the brace or reduced portion of the casting *b*, which extends from the curb to the opposite flange of the door-frame.

296,644. FRUIT-PICKER. HIALMER H. STONE, Rockford, Ill. Filed Jan. 31, 1884. (No model.)

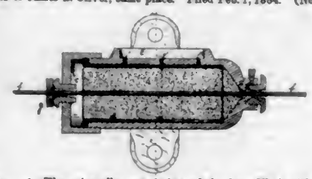


Claim.—1. The herein-described fruit-picker, consisting, essentially, of a spirally-coiled wire receptacle and a supporting-rib, when constructed and arranged substantially as and for the purpose set forth.

2. The herein-described fruit-picker, consisting, essentially, of a spirally-coiled wire receptacle, a curved supporting-rib, and a rod handle, said picker having a detachable connection with the handle, substantially as and for the purpose set forth.

3. The combination, with a supporting-rib having a detachable screw-threaded connection with a rod handle, picking-arms projecting laterally from its upper end in V form, and clinch-points projecting from its inner face, of a spirally-wound receptacle fixed to the supporting-rib, substantially as and for the purpose set forth.

296,645. WIRE-OILING DEVICE. JOHN STUBBS, Pittsburg, Pa., assignor to James B. Oliver, same place. Filed Feb. 1, 1884. (No model.)

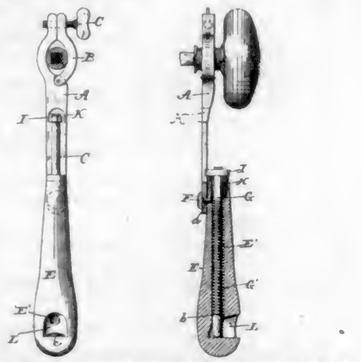


Claim.—1. The wire-oiler consisting of the box filled with an oil-absorbent material, having perforated ends for the passage of the wires, and an oil-cup communicating therewith, substantially as and for the purpose described.

2. A wire-oiler consisting of a suitable box, a removable perforated inner case suitable for containing oil-saturated material, and an oil-cup communicating with the interior of the box, substantially as and for the purpose described.

3. The combination of the die *g* with the wire-oiling device, substantially as and for the purposes described.

296,646. BURGLAR-ALARM. GEO. W. TALLMAN, New York, N. Y. Filed Jan. 16, 1884. (No model.)



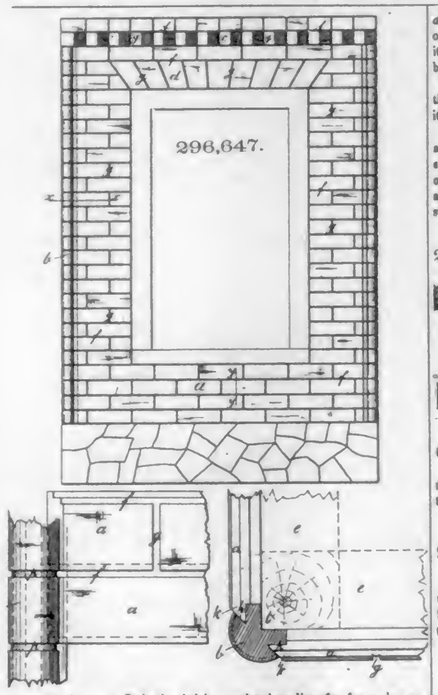
Claim.—1. A burglar-alarm consisting of a plate adapted to be attached to the shank of the door-knob, a gravitating pendant enlarged at its lower end, as described, and provided with a spring-actuated hammer, said pendant being pivoted to said plate, as set forth.

2. A burglar-alarm consisting of a gravitating pendant in which are located a spring and spring-actuated rod or hammer, said spring being held in an elevated position by a button adapted to rest in a notch or opening in the arm, by which the device is secured to the shank of the door-knob, as described, whereby the partial rotation of the door-knob will release the button, and the rod or hammer will be forced downward on the cap or other fulminate, as set forth.

3. In a burglar-alarm, a plate, A, adapted to be secured to the shank of a door-knob, and furnished with an opening, K, in combination with the gravitating pendant E, spring G', rod G, nut H, and button I, as set forth.

296,647. IMITATION-BRICK WEATHER-BOARDING FOR FRAME HOUSES. PETER TOOLIS, Charleston, S. C. Filed Feb. 5, 1884. (No model.)

Brief.—Tongued and grooved weather-boarding and corner-strips prepared in imitation of brick. The corner-strips are grooved to receive the ends of the weather-boarding, and also the framing of the structure.



Claim.—1. Imitation-brick weather-boarding for frame houses, made with grooves on its surface, treated in the manner described, substantially as shown, and for the purpose set forth.

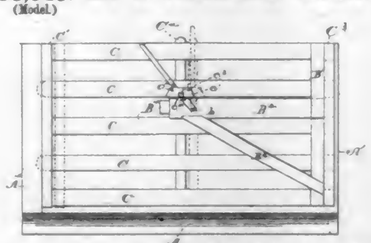
2. In connection with a tongued and grooved weather-boarding strip, the additional grooves *f f* and *g g*, treated in the manner described and shown, and for the purpose set forth.

3. Corner-strips for imitation-brick weather-boarding, made with grooves on their surfaces, treated as hereinbefore described, shown, and set forth.

4. In connection with the corner-strip *b*, the grooves *h h*, in combination with the ends *k k* of the weather-boarding strips *a*, substantially as shown and described.

5. The recess *i*, in combination with the grooves *h h* of the corner-strip *b*, for the purpose described and set forth.

296,648. GATE. EZRA E. TOPE, Leesville, Ohio. Filed Sept. 6, 1883. (Model.)



Claim.—1. The combination of a suitable crane or support provided with a stud or bearing-point, a gate placed on said crane, and provided also with a projection or bearing-point above the bearing on the crane, and a lever pivotally secured on the gate, and adapted at its lower end to engage the bearing on the crane, and having formed on it a hook or shoulder arranged in position to engage the bearing on the gate, all arranged and operating substantially as specified.

2. The farm-gate, substantially as described, composed of the gate, the crane hinged to the swing-post and supporting the gate, the pin or stud secured on the crane, the boxing secured on the gate by bolts c^2 c^2 and incasing the roller, and the lever provided with widened end notch, *d*, adapted to engage the pin or stud on the crane, and having elongated opening d', whereby it is pivoted on the roller-shaft, and constructed on its edge next the bolt c^2 with a hook or shoulder arranged to engage said bolt, all as and for the purposes specified.

3. The combination, with the crane having a stud or bearing, and the gate proper, of a lever pivotally secured to the gate, and adapted at its lower end to engage the stud on the crane, substantially as set forth.

4. The combination of the crane provided at its swinging end with a lug or projection, B^1, and having a stud or bearing-point, *b*, near said swinging end, the gate having end battens, C', and placed and movable on said crane, the lever pivoted on the gate above the crane, and adapted at its lower end to engage the stud *b*, and suitable locking devices, substantially as specified.

296,649. WINDOW-CURTAIN BAR. IRA B. TRIPP, Aurora, Ill. Filed Feb. 23, 1884. (No model.)

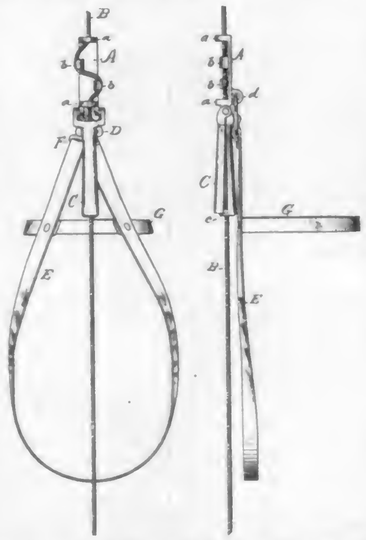


Claim.—1. A window-curtain bar composed of one or more slotted metallic tubes, substantially as described.

2. In combination with a window-curtain bar composed of one or more slotted metallic tubes, the spirals B B or equivalent means attached to the edges of a curtain, substantially as and for the purpose set forth.

296,650. FIRE-ESCAPE. ANDREW TURNBULL, New Britain, Conn. Filed Apr. 16, 1883. (No model.)

Brief.—A friction fire-escape consisting of a plate having perforated lugs at each end and hooked frictional pins, through and over which the escape-rope is passed. A hand-clamp made in two parts, both hinged to the lower part of the plate, is provided.



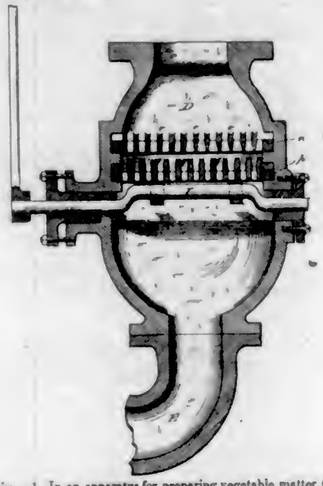
Claim.—1. In a frictional device for a fire-escape, a suitable frame bearing lugs at each end, with an orifice through said lugs for the passage of the rope, and between said lugs and out of alignment therewith hooked frictional pins which are left unobstructed at their outer ends, substantially as described, and for the purpose specified.

2. A frictional fire-escape consisting of the plate A, lugs *a a*, having each an orifice through them, and the outwardly-curved hooked lugs *b b*, which project forward from near the side edges of the plate, substantially as described, and for the purpose specified.

3. The combination of the plate A, bearing lugs *a a* and *b b*, and the divided handle, both parts of which are hinged to the lower end of said plate, substantially as described, and for the purpose specified.

4. The combination of a frictional rope-deflecting device and the divided handle, both parts of which are hinged thereto by means of suitable pintles, and provided with the rectangular groove, while one part has the eye-bridge at its lower end, substantially as described, and for the purpose specified.

296,651. APPARATUS FOR PREPARING VEGETABLE SUBSTANCES FOR FERMENTATION. CHAS. UNGER, Pittsburg, Pa. Filed Oct. 31, 1883. (No model.)



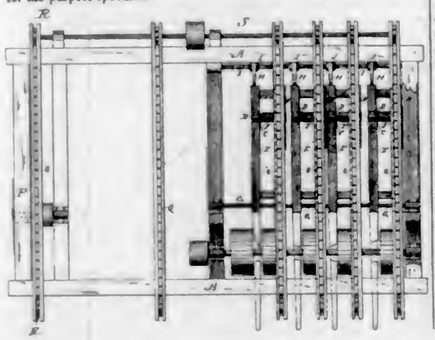
Claim.—1. In an apparatus for preparing vegetable matter for fermentation, the combination, with boiler A, adapted to receive steam under pressure at its upper end, of a drum, D, communicating with the lower end thereof, and having one or more horizontal series of vertically-reciprocating sharpened cutters, substantially as described.

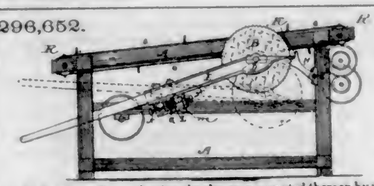
2. In combination with drum D, the series of stationary cutters *o*, having downwardly-tapered sides, and the vertically-movable series of sharpened cutters *q*, having upwardly-tapered sides, substantially as described.

3. The combination, in drum D, of the stationary cutters *o*, the vertically-movable cutters *q*, registering with the spaces between said cutters *o*, and means for moving said cutters *q* from outside the drum, substantially as described.

296,652. CIRCULAR SAWING MACHINE. JOHN VAN PATTEN, East Tawas, Mich. Filed Sept. 21, 1883. (No model.)

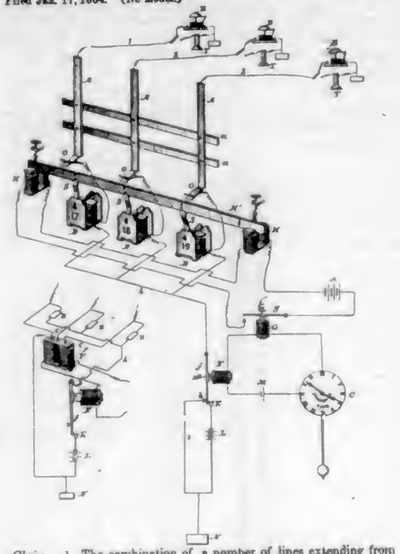
Claim.—1. The combination, with a series of circular-saw frames hung at one end to swing vertically, of a corresponding series of bracing-latches adapted to engage and hold said said frames raised, one rock-shaft supporting all of said latches, set-screws in said latches for adjusting them on said shaft, and the front of each latch provided with a face, K, as and for the purpose specified.





2. A series of frames having circular saws mounted thereon by means of bearings fixed on said frames, in combination with box-bearings adjustably secured to said frames, and a rod or rods for the same to swing on, and means for adjusting said box-bearings on said swinging frames, whereby the several saws may be aligned relative to each other, as described.

296,653. APPARATUS FOR DISTRIBUTING TIME-SIGNALS OVER LINES EMPLOYED FOR OTHER PURPOSES. FRANK WALDO, Washington, D.C., assignor of one-half to Leonard Waldo, New Haven, Conn. Filed Jan. 17, 1884. (No model.)



Claim.—1. The combination of a number of lines extending from a central office, said lines being normally connected to a common conductor at the central office, a generator and a circuit controller or transmitter common to said lines, a standard-time keeper, means for actuating said circuit-controller in correspondence with said time-keeper, apparatus on each line adapted to receive time-signals, and electrical communicating apparatus on the lines additional to said time-signal-receiving apparatus.

2. The combination of a number of lines extending from a central office, said lines being normally connected to a common ground at the central office, and containing electrical communicating or signaling apparatus, a common transmitting device for simultaneously sending electrical impulses over said lines to actuate said signaling apparatus, and a standard-time keeper controlling the transmitting device.

3. The combination of a number of telephone-lines extending from a central office, a common transmitting device for simultaneously sending electric impulses over said lines, a standard-time keeper controlling said transmitting device, and ordinary receiving-instruments at the subscriber's station responding to said impulses.

4. The combination of a number of lines extending from a central office, a common ground therefor at the central office, a common generator and transmitting device, and means controlled by a standard-time keeper for simultaneously connecting all of said lines with said generator and transmitter.

5. The combination of a number of lines extending from a central office, a common ground-connection therefor at said central office, a common transmitting device, and means for breaking said normal ground-connection and establishing a common ground-connection through said transmitting device.

6. The combination of a number of lines extending from a central

office, a common ground-connection therefor at said central office, a common transmitting device, and means controlled by a standard-time keeper for breaking said normal ground-connection and establishing a common ground-connection through said transmitting device.

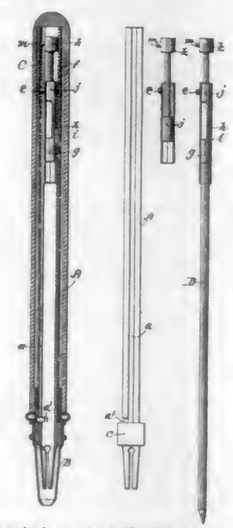
7. The combination of a number of lines extending from a central office, a common ground-connection therefor at said central office, a common generator and transmitter, a switch for including the generator and transmitter in said common ground-connection, an electro-magnet controlling said switch, and a standard-time keeper controlling the circuit of said electro-magnet.

8. The combination of a number of lines extending from a central office, each including an annunciator, means for simultaneously sending an electrical impulse over said lines, and a mechanical stop for preventing the fall of the annunciator-drop under the influence of said impulses.

9. The combination of a number of lines extending from a central office and including different resistances, means for sending an electrical impulse over said lines from a common connecting-line, and adjusting-resistances adapted to be included in said lines during the transmission of said impulse.

10. The combination of a number of lines extending from a central office, a common ground therefor at said central office, means for breaking the individual ground-connection of the lines, branch lines containing resistances complementary to the resistances of the main lines, respectively, a common connecting-line for said branch lines, and means for completing said connecting-line to ground through a generator and transmitter.

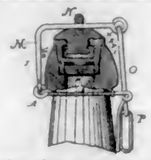
296,654. LEAD AND CRAYON HOLDER. WALTER H. WALES, Providence, R. I., assignor to Alonzo T. Cross, same place. Filed Nov. 20, 1883. (No model.)



Claim.—1. In a lead or crayon holder, the combination of the carrier-tube *d*, provided with the pin *e*, and the forcer *j*, provided with the pin *m*, with the tube A, provided with the slot *a*, having a lateral extension, *a'*, and the hollow screw C, provided at its forward end with the shoulder *n*, whereby, upon the arrival of the carrier-tube at its lower stop, provision is made for the lateral movement of the pin *e* during the subsequent forward movement of the forcer by the continued movement of the screw, substantially as described.

2. In a lead or crayon holder, the combination of the carrier-tube *d*, provided with the pin *e*, the plug *g*, adapted for a limited movement within the tube *d*, and having its rear end cut away at one side, and the forcer *j*, having its forward end made to correspond with the rearward end of the plug *g*, and provided with the pin *m*, all arranged and operating substantially as described.

296,655. BOTTLE-STOPPER. JAMES T. WALKER, Baltimore, Md. Filed Jan. 17, 1884. (Model.)



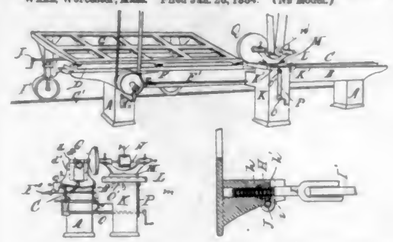
Claim.—1. A bottle-stopper having a cavity in its lower end, in which is fitted a slightly protruding plug, and a diaphragm which acts to transmit the pressure of the stopper upon the plug, and to prevent the stopper from collapsing while undergoing extreme pressure.

2. A bottle-stopper having a cavity in its lower end, in which is fitted a slightly protruding plug, and having a diaphragm forming the upper wall of said cavity, with a stud projecting therefrom arranged to bear upon the plug, and provided with an upper pressure-disk.

3. In a bottle-stopper, the combination, with a bottle having a shoulder formed in its mouth, and a stopper having a cavity in its lower end, in which is fitted a slightly protruding plug, the stopper and the plug arranged to bear upon the shoulder, and the stopper to move downward independently of the plug until it is solidly resisted by the shoulder, of fastening devices whereby the stopper and plug are forced and held upon the shoulder.

4. In a bottle-stopper, the combination, with a bottle having a shoulder formed in its mouth, and a stopper having a cavity in its lower end, in which is fitted a slightly protruding plug, and having a diaphragm with a projecting stud which acts to press upon the plug and prevent the stopper from collapsing, of fastening devices whereby the stopper is forced and held against the shoulder.

296,656. GRINDING AND POLISHING MACHINE. EDMUND R. WARE, Worcester, Mass. Filed Jan. 26, 1884. (No model.)



Claim.—1. In a grinding and polishing machine, the combination, with the horizontal supporting-bed, of the traveling bed-plate, a carrier pivoted at one side to the traveling bed-plate, means for supporting the opposite side of the carrier independently of the horizontal supporting-bed, a grinding-wheel, and means for adjusting the grinding-wheel toward and from the path of the traveling plate, substantially as set forth.

2. In a grinding and polishing machine, the combination, with the horizontal supporting-bed, of the traveling bed-plate, the carrier pivoted at one side to the bed-plate, means for supporting the opposite side of the carrier independently of the horizontal supporting-bed and for adjusting the edge of the carrier vertically, a grinding-wheel, and means for adjusting the grinding-wheel toward and from the path of the traveling bed-plate, substantially as set forth.

3. In a grinding and polishing machine, the combination of the horizontal supporting-bed, the traveling bed-plate, a carrier pivoted at one side to the traveling bed-plate, means for supporting the opposite side of the carrier independently of the horizontal supporting-bed, a grinding-wheel, the shaft of which is supported wholly at one side of the traveling bed-plate, and means for adjusting the grinding-wheel toward and from the path of the traveling bed-plate, substantially as set forth.

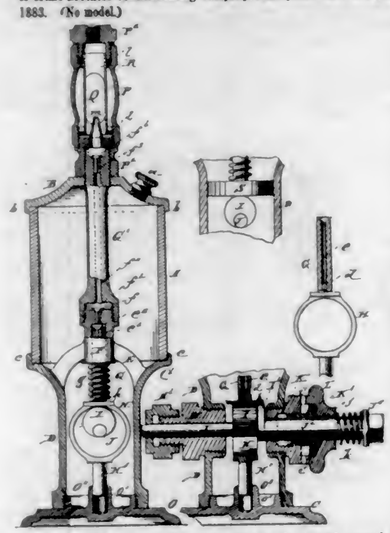
4. In a grinding and polishing machine, the combination of the horizontal supporting-bed, the traveling bed-plate, a carrier attached at one edge to the traveling bed-plate, and a carrying-wheel adjustably connected to the opposite edge of the carrier, substantially as set forth.

5. In a grinding and polishing machine, the combination of the horizontal supporting-frame, the traveling bed-plate, a grinding-wheel supported wholly upon one side of the traveling bed-plate, a carrier supported at one side upon the traveling bed-plate, and means for supporting the opposite side of the carrier independently of the traveling bed-plate, substantially as set forth.

6. In a grinding and polishing machine, the combination, with the outer edge of the carrier, of the leg H, the standard I, supported in said leg and extensible relative thereto, and the supporting-wheel I', substantially as set forth.

7. In a grinding and polishing machine, the combination, with the outer side or edge of the carrier, of the legs H, the screw-threaded standards I, the nuts *i*, seated in the legs H, and the adjusting-shaft J, for simultaneously raising and lowering both ends of the carrier, substantially as set forth.

296,657. LUBRICATOR. WILLIAM O. WAYMAN, Chicago, Ill., assignor to Crane Brothers Manufacturing Company, same place. Filed Aug. 13, 1883. (No model.)



Claim.—1. The combination, with a receptacle, A, and a stand, D, of a hollow lifting-plunger, G, and devices for operating the same, located and operating within the receptacle and its base, for passing oil or lubricant from the receptacle, substantially as and for the purpose specified.

2. The receptacle A and stand D, in combination with a hollow lifting-plunger, G, eccentric I, and shaft J, located and operating within the oil-receptacle and its base, for reciprocating the plunger to raise and pass the oil from the receptacle, substantially as specified.

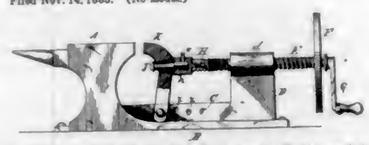
3. The receptacle A, stand D, hollow plunger G, eccentric I, and shaft J, in combination with a plug, F, tube G', and suitable valves for lifting and controlling the oil, substantially as and for the purpose specified.

4. The receptacle A, stand D, plug F, hollow plunger G, spring *g*, eccentric I, and shaft J, in combination with the tube G', valve for controlling the passage of the oil, and chamber P, substantially as and for the purposes specified.

5. The chamber A, stand D, plug F, hollow plunger G, spring *g*, eccentric I, and shaft J, in combination with the tube G', valve for controlling the passage of the oil, nozzle *m*, chamber P, and pipe R, substantially as and for the purposes specified.

6. The receptacle A, stand D, plug F, and plunger G, in combination with the eccentric I I', shaft J, and sleeve J', substantially as and for the purpose specified.

296,658. COMBINED ANVIL, VISE, AND DRILL. JAS. WEATHERS, Indianapolis, Ind., assignor of one-half to John A. Robbins, same place. Filed Nov. 14, 1883. (No model.)



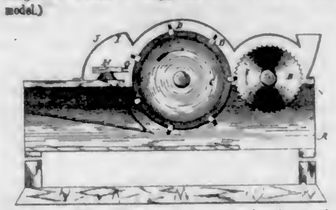
Claim.—1. In a combined anvil, vise, and drill, the anvil A, extended base B, perforated rib C, and standard D, which is provided with a female screw, all being cast in one piece, substantially as described.

2. The combination, with an anvil having the rib C and standard D, of the jaw K, the shaft E, and rod H, passing through the shaft, and connected to the jaw by the headed bolt J, passing through a hole in the same and fastened in the drill-holder on the end of the rod, all arranged to operate substantially as described.

3. The combination, with an anvil having the rib C and standard D, of the screw-shaft E and rod H, which passes through it and carries the drill-holder, all arranged as and for the purpose set forth.

4. The combination, with the anvil having the rib C and standard D, which carries the screw-shaft E and drill-rod H, of the removable bed I, adapted to fit against the back of the anvil, as and for the purpose set forth.

296,659. COTTON-GIN. SAMUEL DILLARD WEBB, Washington, D. C., assignor to William W. Brigg, same place. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination, in a cotton-gin, of a set of saws with a series of brushes constructed to be turned on their axes to bring different sides to bear on the saws, substantially as described.

2. The combination, in a cotton-gin, of a set of saws with a cylinder provided with a series of adjustable brushes having their acting fibers arranged substantially at right angles to the sides of the saws, substantially as described.

3. The combination, in a cotton-gin, of a set of saws with a series of cylindrical brushes having their acting fibers arranged at right angles to the sides of the saws, substantially as described.

4. In a cotton-gin, a series of saws and a series of brushes having their acting fibers arranged substantially parallel with the rotating shaft carrying the brushes, in combination with a series of pins pointing substantially toward said brush-carrying shaft, and arranged to be struck by the fibers of the brushes substantially at right angles to their length, whereby the fibers are first jarred and then caused to flirt rapidly back to their original position, as set forth.

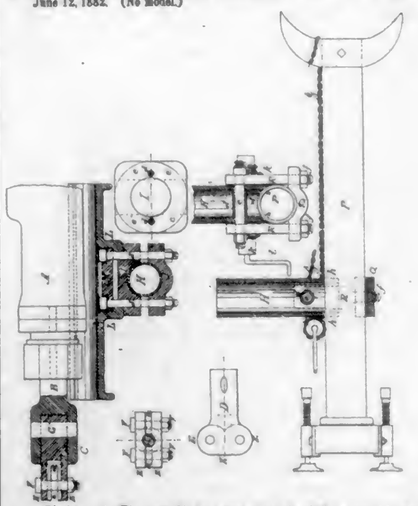
5. The combination, in a cotton-gin, and with the saws thereof, of a series of cylindrical brushes having their acting fibers arranged substantially at right angles to the sides of the saws, and a series of combing-wires set in different planes, and also arranged substantially at right angles to the acting fibers of the brushes, as and for the purposes set forth.

6. The combination, in a cotton-gin, and with the saws and brushes thereof, of the mote-box I and the comb G H, arranged in said mote-box, substantially as described.

7. The combination, in a cotton-gin, of a brush-cylinder, a device, substantially as described, for cleaning the brushes, and a mote-box arranged to receive the refuse removed from the brushes by the cleaning device, as set forth.

8. The combination, in a cotton-gin, of a brush-cylinder, the pins, a flue to carry away the lint, and a mote-box arranged above the flue, to receive the refuse knocked off the brushes by the pins, substantially as described.

296,660. ROCK-DRILL. DE VOLSON WOOD, Boonton, N. J. Filed June 12, 1882. (No model.)



Claim.—1. The arm H, for supporting the drill, in combination with the column I', the inner end of the arm being fitted to the column

and thereto secured by the straps R R, bolt *e*, and clamp Q, substantially as set forth.

2. The combination and arrangement of the clamp J I, having an annular seat, *c c*, for receiving a projection, L L, on the slide N of a rock-drill, with the cross-bar or plate M, and through-bolts *d d*, as and for the purposes set forth.

3. In a rock-drill, the combination, substantially as hereinbefore described, of the column P, arm H, having one end fitted thereto, and secured in position by the straps R R and brace Q, the shaft *k*, provided with means of rotation, and the chain *g*, arranged to be wound upon or from off the shaft, and thus raise or lower it and the arm H, substantially as shown and described.

296,661. COMBINED CORKSCREW AND KEY-RING. WILBER B. WOODMAN, Newark, N. J. Filed Nov. 24, 1883. (No model.)



Claim.—1. A corkscrew the handle of which constitutes a key-ring, substantially as set forth.

2. A corkscrew the handle of which consists of two semicircular parts, which may be sprung apart sufficiently to admit or permit the withdrawal of a key, substantially as set forth.

3. The screw A, having a handle composed of the parts B D, as described, the whole being formed from a single piece of wire, substantially as described.

4. A screw, A, having a handle composed of the folded parts B D, the free ends of which are turned from each other, the whole being formed, substantially as described, from a single piece of wire.

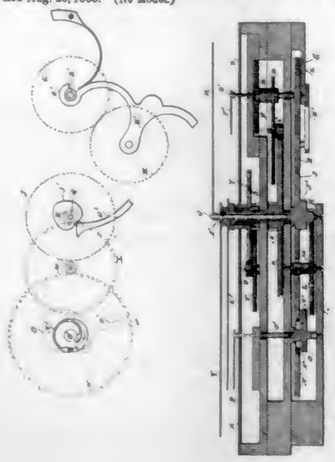
296,662. BUCKLE. WILBER B. WOODMAN, Newark, N. J. Filed Nov. 24, 1883. (No model.)



Claim.—1. A buckle consisting of the frame divided into two loops by a cross-bar which carries a tongue, the frame being formed from a single piece of wire, the ends of which are manipulated to close the frame and form the cross-bar, substantially as set forth.

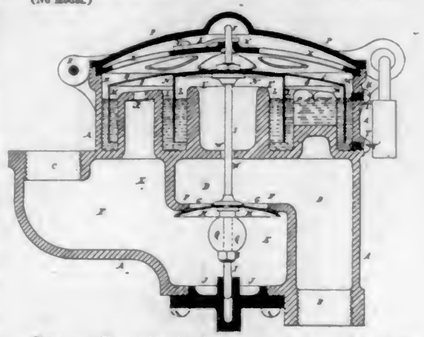
2. A buckle consisting of the frame, a cross-bar dividing the frame into two loops, and a tongue, the whole being formed from a single piece of wire by bending the central parts of same to form the frame, the extremities of the piece of wire being manipulated to close the frame, and one extremity constituting the cross-bar, the other the tongue, substantially as set forth.

296,663. STOP-WATCH. ADRIEN AUBERT, Sentier, Switzerland. Filed Aug. 20, 1883. (No model.)



Claim.—The combination, in a stop-watch, of the arbor Q, independent second-hand R, and heart-cam J', with the arbor O', independent minute-hand P, heart-cam O, wheel N, pinions K M and wheels J L, a frictional connection between the shaft O' and wheel N, and the levers O^a O^a, substantially as and for the purposes specified.

296,664. MERCURY GAS-GOVERNOR. JOHN D. AVERELL, New York, assignor to William Carry, Brooklyn, N. Y. Filed Feb. 2, 1884. (No model.)



Claim.—1. The combination, in a pressure-regulator, of the valve H, its guide-rod I, the cups N and O, with removable ballast or weight Q, arranged on the rod below the valve, whereby its center of gravity is lowered, and the apparatus is thereby rendered more steady, substantially as set forth.

2. The combination, in a pressure-regulator, of the spider guide-plate K, having the stop Z, the lower guide-nut, J, the weighted valve-rod I, with the interposing valve and cups, whereby the mercury-cups and valve are more securely held in a vertical central position when lowered, substantially as described.

3. The combination of the top guide-plate, K, with the stop Z and its pivot Y, arranged to stop the rod I, substantially as and for the purpose herein stated.

296,665. CAR-COUPLING. GEORGE BLYTHE, Chillicothe, Mo. Filed Jan. 30, 1884. (No model.)



Claim.—1. The combination of the inclined table A, having the lever-arms B, the suspenders C, attached to the bail D, and the pin F, substantially as and for the purpose set forth and described.

2. The chain K and pendants K' K', for the purpose substantially as set forth.

3. The pin F, set in the guide-bar E, which moves in frame L, substantially as and for the purpose described.

4. The combination of the inclined table A, lever-arms B B, suspenders C C, coupling-pin F, chain K, and pendants K' K', substantially as set forth.

5. The bail D, having downward-pending eyelets on either side, and an upward-pending one on the rear side, provided in front with a set-screw, substantially as and for the purpose set forth and described.

6. The combination of the pin F, bar E, bail D, pendants K' and K', pulleys I I, with table A, lever-arms B, and suspenders C, substantially as and for the purpose set forth and described.

296,666. GRAPPLE. FRANK BOWDEN, Lowell, Mass., assignor of one-half to Arthur P. Brown, same place. Filed Feb. 23, 1884. (No model.)

Claim.—1. A grapple consisting of two bands or loops provided with handles, and arranged to surround and clasp a package upon being raised by said handle, as and for the purpose specified.

296,666.



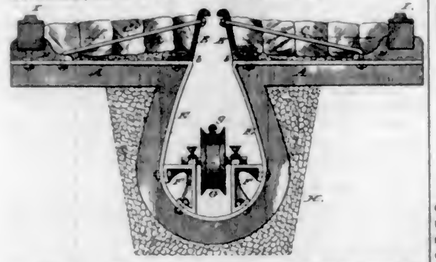
2. A grapple consisting of two bands or loops provided with handles, the inner surfaces of said loops having points or projections, and arranged to surround and clasp a package upon being raised by such handles, as and for the purpose specified.

3. A grapple consisting of two bands or loops, connected to each other by staples, and provided with handles, and arranged to surround and clasp a package upon being raised by said handles, as and for the purpose specified.

4. A grapple consisting of two bands or loops, connected to each other by staples, the inner surfaces of said bands having points or projections, and being provided with handles, and arranged to surround and clasp a package upon being raised by such handles, as and for the purpose specified.

296,667. CONDUIT FOR TRACTION-ROPE RAILWAYS. ZACCUR PRALL BOYER, Philadelphia, Pa., assignor to the United States Cable Motor Construction Company, of New Jersey. Filed Feb. 25, 1884. (No model.)

Brief.—A traction-cable-conduit girder of rolled iron or steel having the horseshoe configuration at its center, and the horizontal wings formed at an acute angle to said central portion, whereupon are supported the slot-irons, and at the outer ends of said wings the track-rails.



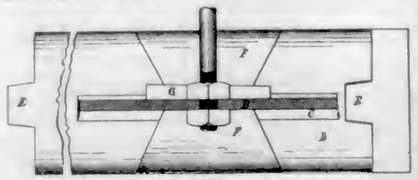
Claim.—1. In a conduit for a traction-rope or endless-cable railway, the iron or steel yoke A, of the form approximately of a horseshoe, and having wings extending horizontally therefrom at nearly a right angle, forming level bearings, as at *b*, adapted to receive and support the metallic beams B B, said yoke being rigidly held in position by means of concrete, H, all constructed substantially as set forth and described.

2. In conduits for traction-rope or endless-cable railways, yoke A, formed of a single T-rail, or any single rail of iron or steel of the shape shown, bent into the form described, for the purpose of encompassing the walls or sides of the conduit or tubing, and also to serve for rigidly holding in position beams B B, chairs D D, and supports F F, constructed and arranged substantially as specified.

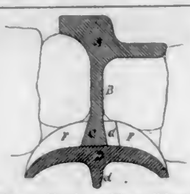
3. In a conduit for a traction-rope or endless railway, the combination and arrangement of yoke A, constructed of wrought metal, as described, with wings extending horizontally therefrom at nearly a right angle, and forming bearings *b*, beams B B, connecting-rods C C, and chairs D D, all operating substantially as set forth and described.

296,668. TRACK FOR STREET-RAILWAYS. LODOWICK BRATTON, Providence, R. I., assignor of one-half to Daniel F. Longstreet, same place. Filed Sept. 3, 1883. (No model.)

Brief.—The dovetail-shaped base of the rail is secured to a metal sill by lugs on the latter, and a wedge-shaped key. The under side of the sill is formed with a rib.



296,668.

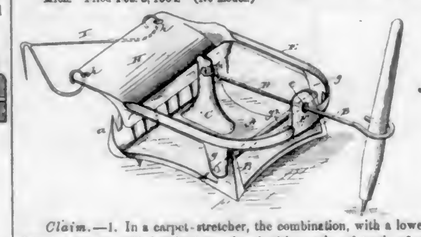


Claim.—1. The combination, with a rail having the head A, the web B, and the dovetail-shaped base C, of the cast-metal sill D, provided with the lugs F F, and the wedge-shaped key G, constructed to secure the rail to the sill and secure a continuous bearing for the rail, as described.

2. A permanent way for street-railways, consisting of rails provided with suitable heads, deep webs, and dovetail-shaped bases, substantially as described, secured to sills made of cast metal, and provided with lugs constructed to secure the rail at intervals by wedges, and support the same continuously, and tie-rods provided at each end with two nuts, as described.

3. The combination, with the continuous sill D, provided with the rib *d*, and the lugs F, of the rails having each the head A, web B, and dovetail-shaped base C, and the wedge-shaped keys G, substantially as and for the purposes set forth.

296,669. CARPET-STRETCHER. JOSEPH HILLARY BRIGGS, St. Clair, Mich. Filed Feb. 8, 1884. (No model.)



Claim.—1. In a carpet-stretcher, the combination, with a lower clamping-plate provided at its forward end with a series of teeth, of an upper clamping-plate provided on its under side with a series of teeth, said plates being pivoted at their rear ends, and a rod secured to the under clamping-plate, substantially as set forth.

2. In a carpet-stretcher, the combination, with a lower clamping-plate provided with a series of teeth and with an upwardly-projecting post, of an upper clamping-plate pivoted to the lower clamping-plate, and provided upon its under side with a series of teeth, and a rod hinged to said post and passing through a perforation formed in an upwardly-projecting lug at the rear end of the upper clamping-plate, substantially as set forth.

3. In a carpet-stretcher, the combination, with a lower clamping-plate provided with a series of teeth at its forward end, and having upwardly-projecting perforated lugs at its rear corners, and provided at about its center with an upwardly-projecting post, of an upper clamping-plate provided upon its under side with a series of teeth and at its rear end and upon the under side thereof with downwardly-projecting lugs provided with perforations, a shaft pivoting the said upper section to the lower section, and a rod connected to the upwardly-projecting post of the lower plate, and passing through a perforated lug projecting upwardly from the rear end of the upper clamping-plate, substantially as set forth.

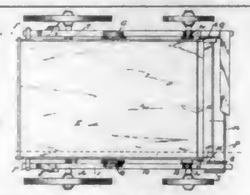
4. In a carpet-stretcher, the combination, with two clamping-plates pivoted together, of a bifurcated rod pivoted to the upper clamping-plate, the ends of said rod converging and terminating in a bent hook, substantially as and for the purpose set forth.

5. In a carpet-stretcher, the combination, with two clamping-sections pivotally secured together, of a post secured to the lower clamping-section and provided at its upper end with a perforation, and a rod pivoted to said post, the opposite end of which is provided with a loop and a lever, substantially as set forth.

296,670. DUMPING-WAGON. WILLIAM C. BRYAN, Nashville, Tenn. Filed Nov. 15, 1883. (No model.)

Claim.—1. In a dumping-wagon, the combination, with the inclined frame, of the body provided with the rollers at or near its middle, and also near its forward end, and the cross-bar at its rear end, and the stops or guards upon the inclined frame, whereby the middle rollers, coming in contact with the said stops or guards, permit the body to be tilted upon the axles of said rollers, substantially as described.

296,670.

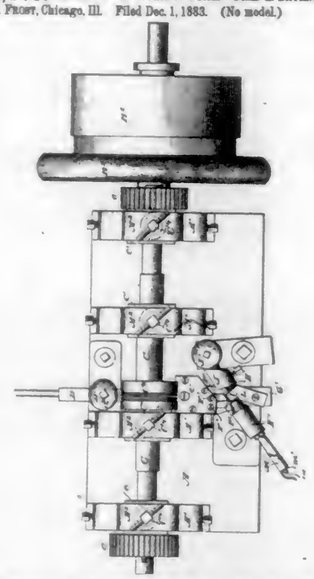


2. The combination of the inclined frame with the body, the hooked arms pivoted to the body, the incline for automatically raising the hooked arms, and the rod with which the hooked arms engage, substantially as described.

3. The combination, with the inclined frame, of the body, the pivoted hooked arms, the rod with which they engage, and the U-shaped arms mounted on the rock-shaft, substantially as described.

4. The combination, with the inclined frame, of the body, the pivoted hooked arms, the inclined guides for raising said arms, the rod with which the arms engage, the rock-shaft and its U-shaped arms, and the spring upon the rock-shaft, substantially as described.

296,671. METHOD OF COILING WIRE. FRED L. BRYANT and ABEL H. FROST, Chicago, Ill. Filed Dec. 1, 1883. (No model.)

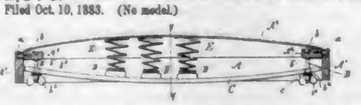


Claim.—1. The method of making spiral coils of wire which consists in first bending the wire otherwise than to form the coil, and thereafter imparting to the wire the flexure by which the coil is produced, substantially as described.

2. The method of making spiral coils composed of two or more wires side by side which consists in first bending one of said wires otherwise than to form the coil, and thereafter imparting to both wires the flexure by which the coil is produced, substantially as described.

3. The method of coiling several wires side by side which consists in first unequally bending two or more of said wires otherwise than to form the coils therein, and thereafter imparting to said wires the flexure by which the coil form is produced.

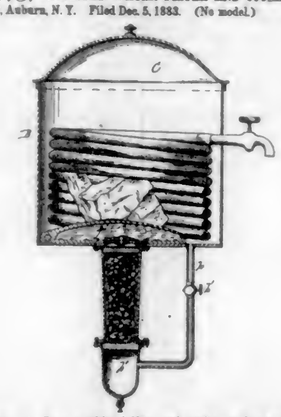
296,672. SPRING BED-BOTTOM. SANFORD S. BURR, Winnetka, Ill. Filed Oct. 10, 1883. (No model.)



Claim.—1. In a spring bed-bottom, the combination, with the frame and the cover, of the springs located beneath said cover, the longitudinal sustaining-slats for said springs, and adjusting mechanism, arranged substantially as set forth, whereby said sustaining-slats can be lifted vertically in order to vary the tension of the springs, substantially as described.

2. In a spring bed-bottom, the combination, with the frame and the cover, of the springs located beneath said cover, the transverse slats for said springs, the longitudinal slats, and means, substantially as described, for adjusting said spring-sustaining slats vertically, whereby the tension of the springs can be varied, substantially as described.

296,673. COMBINED WATER FILTER AND COOLER. FRANK E. CADY, Auburn, N. Y. Filed Dec. 5, 1883. (No model.)



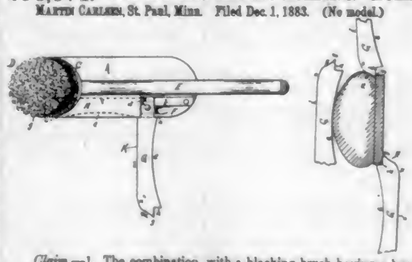
Claim.—1. In a combined filter and cooler, an ice-tank or cooling-reservoir for holding the unfiltered water, a cooling chamber or coil located within or surrounding the same, and a filter connected to the cooling-chamber and located outside the chamber, in combination with a pipe for conveying the water from the ice-tank to the filter, substantially as and for the purpose described.

2. In a combined filter and cooler, an ice-tank or cooling-reservoir for holding the ice and unfiltered water, and a cooling chamber or coil for receiving and holding the filtered water, in combination with a filter connected to the chamber or coil, and a pipe for conveying the unfiltered water from the tank to the lower end of the filter, substantially as and for the purpose described.

3. In a combined filter and cooler, an ice-tank or cooling-reservoir and a filter and sediment-chamber, in combination with a cooling chamber or coil for holding the filtered water, connected to and supplied from the ice-tank or cooling-reservoir, substantially as and for the purpose described.

4. In a combined cooler and filter, the ice tank or coil for holding the ice and unfiltered water, and a cooling-receptacle, in combination with a sediment-chamber and filter connected to the cooling-chamber, and a pipe for conveying the water from the tank to the cooling-chamber through the sediment-chamber and filter, substantially as and for the purpose set forth.

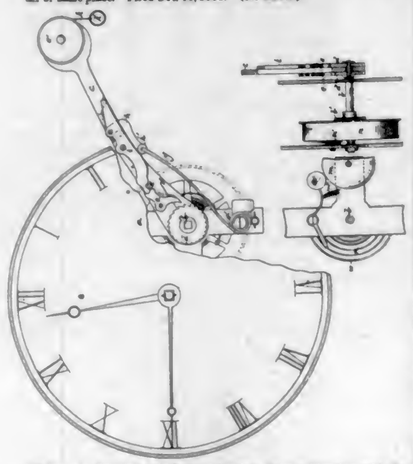
296,674. BOOT AND SHOE CLEANING IMPLEMENT. ANDREAS MARTIN CARLSEN, St. Paul, Minn. Filed Dec. 1, 1883. (No model.)



Claim.—1. The combination, with a blacking-brush having a handle, E, of a scraper, G, provided with the concave edge *e*, point *g*, notch *h*, and partly straight and partly curved back, substantially as and for the purpose herein specified.

2. The scraper having the curved front edge, *e*, straight back edge, *i*, point *g*, and small curves *m n*, substantially as and for the purpose specified.

296,675. WINDING DEVICE FOR CLOCKS. PETER B. CASSIDY, Pittsburg, Pa., assignor to himself, Thomas Delaney, and G. Frank Kierson, all of same place. Filed Dec. 10, 1883. (No model.)

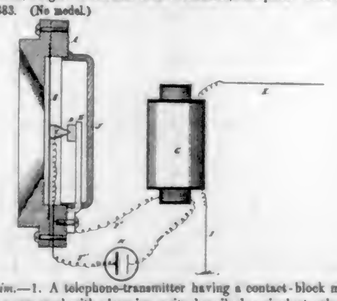


Claim.—1. In clock-winding mechanism, the combination, with the winding-arbor having a ratchet-wheel secured thereto, of a winding-lever pivoted on the arbor, a pawl pivoted on the winding-lever, and adapted to engage with the ratchet, a pawl-lever pivoted on the winding-lever for actuating the pawl, and a spring connected with the pawl-lever by an intermediate link for actuating the pawl-lever and the return-throw of the winding-lever, substantially as and for the purposes specified.

2. The combination of the winding-arbor, ratchet, self-retracting lever, releasing-pawl, cord, and spring-barrel *c'*, substantially as and for the purposes described.

3. In a clock-movement, the mainspring having a tappet projection, in combination with a bell-clapper adapted to be actuated by the projection on the mainspring, and a bell arranged in such position as to be sounded through the medium of said devices when the movement is wound up, substantially as and for the purposes described.

296,676. TELEPHONE-TRANSMITTER. SAGER CHADWICK, Philadelphia, Pa., assignor of one-half to E. V. Machetta, same place. Filed June 9, 1883. (No model.)



Claim.—1. A telephone-transmitter having a contact-block made of gelatine prepared with glycerine or its described equivalent, substantially as described.

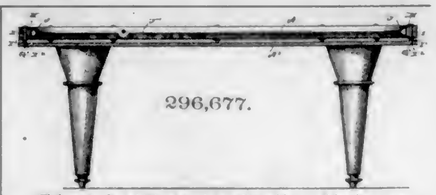
2. The combination of diaphragm B, conical contact C, gelatinous composition block D, substantially as described, and metal support E, substantially as and for the purpose specified.

3. The combination of diaphragm B, conical contact C, gelatinous composition block D, substantially as described, metal support E, and case J, substantially as and for the purpose specified.

4. A telephone-transmitter provided with a diaphragm made of gelatine, substantially as described.

5. The combination of gelatine diaphragm B, contact-point C, prepared gelatine block D, substantially as described, metal support E, and case J.

296,677. BILLIARD AND POOL-TABLE. GEO. A. CHARLEY, Washington, D. C. Filed Dec. 26, 1883. (No model.)



296,677.

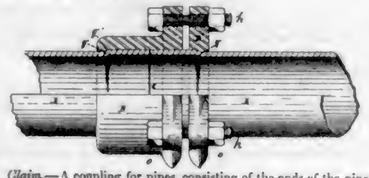
Claim.—1. In a billiard, pool, or other table, a rail having a cushion suitably secured thereto, and means whereby said rail and cushion may be raised or lowered, so as to conform to various sizes of balls, and at the same time to admit accumulated dirt on the surface of the table to be brushed under said cushion, substantially as described and set forth.

2. A rail having a cushion secured thereto, in combination with the bed of the table, and a threaded bolt connecting said rail and bed, whereby the rail and cushion may be vertically adjustable with relation to the bed of the table, substantially as described and set forth.

3. In a billiard, pool, or other table, a rail provided with a cushion and bolt secured thereto, said bolt being provided with a lower threaded end, in combination with the bed of the table provided with an opening adapted to receive the threaded end of the bolt, as set forth.

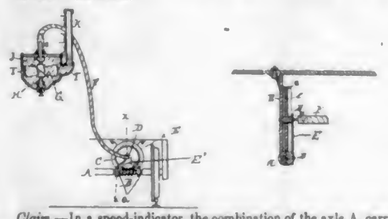
4. In a billiard, pool, or other table, the combination of the rail H, cushion J, bolt I, tap-nut I', body A^3, and the plate G, the rail, table, and plate G being provided with openings for the reception of the bolt, substantially as described, and for the purposes set forth.

296,678. PIPE-COUPLING. JOSEPH CONNOR, Philadelphia, Pa. Filed May 12, 1883. (No model.)



Claim.—A coupling for pipes, consisting of the ends of the pipes to be joined, enlarged for a short distance, so as to form the shoulders *g*, and plane enlarged portions between said shoulders and the ends of the pipes, and the coupling-pieces B and B', and means for uniting them, said couplings being provided with interior shoulders to take hold of the shoulders *g*, and one of said portions of coupling being of sufficient length to cover the joint at the meeting ends of the pipes, substantially as set forth.

296,679. SPEED-INDICATOR. EDWD. R. E. COWELL, Detroit, Mich., assignor of three-fourths to William De Waggstaff, of Russia. Filed Dec. 12, 1883. (No model.)



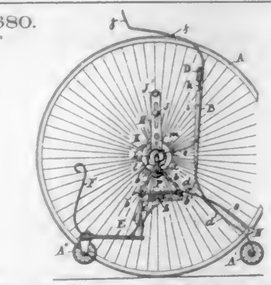
Claim.—In a speed-indicator, the combination of the axle A, carrying the worm B, the pendent bracket E, secured to the under side of the truck and supporting said axle and strengthening the same at *a*, the shaft D, supported at one end by the bracket E, and at the other by the part E', attached to the bracket E, which has the shield *e* cast integral therewith, pinion C, carried by said shaft D, and inclosed within the casing E E', and meshing with the worm B, and the flexible shaft F, attached at one end to the shaft D, and at its other end to the indicator, substantially as and for the purpose described.

296,680. VELOCIPEDE. DANIEL CROWLEY, Boston, Mass. Filed Oct. 3, 1883. (No model.)

Claim.—1. In a velocipede, the removable bar C, in combination with the double-crank-axle shaft *a b*, as shown and described.

2. The adjustable head-rest D, rods *h h*, and tubes *i i*, in combination with the back of a hanging chair, as and for the purpose set forth.

296,680.



3. In a velocipede substantially such as described, the wheels A' A'', having the lower portion of their peripheries above the level of the lower portion of the peripheries of the main wheels A A, and attached the one to the rear of the seat by a bar, *d''*, and the other to the front of the foot-rest E, as and for the purpose specified.

4. The combination of the adjustable foot-rest E, the dasher F, and the hanging seat, as shown and described.

5. The combination, with the driving-levers H, of the adjustable handle J and a fixed handle, J', substantially as and for the purpose specified.

6. The brakes L, in combination with the friction-pulley I, driving-levers H, and the pins *m*, as and for the purpose specified.

7. The ratchet-wheel cover M, provided with an opening, *n*, and projecting portion *m'*, in combination with the ratchet-wheel G, levers H, and pawls K, substantially as shown and described.

8. The scrapers N, attached to the seat by rods *o*, in combination with the wheels A, as shown and described.

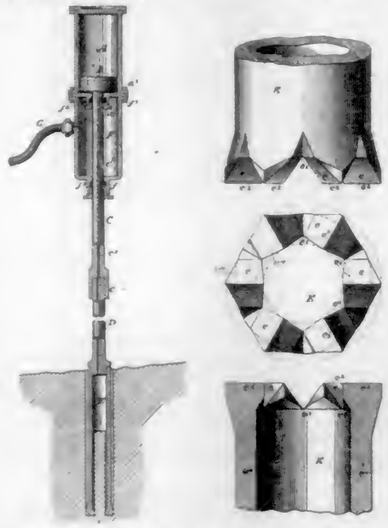
9. In combination with the seat, an adjustable weight, S, supported on cleats underneath the seat, for the purpose of adjusting the seat to persons of different weights, as set forth.

10. A stand, T T, provided with bearings on the upper ends for the reception of axles *a a*, attached to the swinging seat, so as to support the latter, as and for the purpose set forth.

11. The back B, curved at *d*, and provided with arms *e*, in combination with the crank-axle *a b b'*, substantially as shown and described.

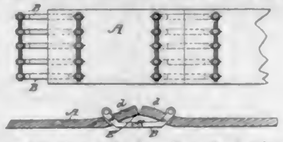
296,681. ROCK-DRILL. GEORGE McC. DERBY, Astoria, N. Y. Filed June 20, 1883. (No model.)

Brief.—A reciprocating tubular drill is supplied with water internally by the devices shown.



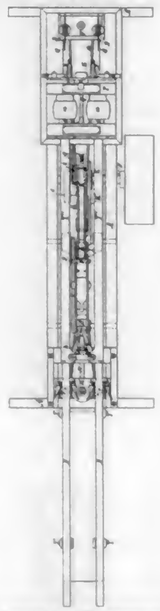
Claim.—The combination, with the tubular rock-drill, of a tubular shank to which said drill is attached, mechanism for communicating a positive to-and-fro motion to said drill, and means for forcing a stream of air, steam, or water through said drill, its tubular support, and bit.

296,682. BELT-FASTENER. WILLIAM R. DUNN, Alton, and TEMPLE H. DUNN, Crawfordsville, Ind. Filed Sept. 26, 1883. (No model.)



Claim.—As an improved article of manufacture, the belt-fastener herein described, consisting of the bars B, having the horizontal portion M and arms *a a*, projecting upward from the portion M at opposite ends on the angle specified, and provided with eyes for the reception of the locking-rods C C, the fasteners adapted, when applied to a belt under pressure, to bulge its adjacent ends outward by frictional engagement and occupy the space on the line of resistance formed thereby, so that the inner surface of the belt and the horizontal portion of the fasteners will be in line and run smoothly over the pulleys, substantially as and for the purposes set forth.

296,683. MACHINE FOR MANUFACTURING MOUTH-PIECES FOR CIGARS. ERNST EHLIS, San Francisco, Cal. Filed Nov. 9, 1883. (No model.)



Claim.—1. In a machine for the manufacture of mouth-pieces, provided with the supporting-mandrels, the carriage E, carrying the cutters *a b c*, for hollowing, rounding, and separating the mouth-pieces, in combination with the slide O, which is fixed to the carriage, the lever Q, connected with the slide at one end and having the weight *s* at the other, and the cam H, provided with the ear *t*, the latter being under the rear end of the lever Q and to engage therewith, as set forth.

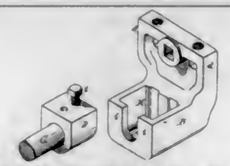
2. In a machine for forming mouth-pieces, the combination of the carriage M, spring-acted advancing-jaws *i*, located on said carriage, retaining-jaws *k* in front of said carriage, lever N, provided with the separating-wedge *m*, which enters between the free ends of jaws *k*, and means, substantially as described, for operating said lever N, as set forth.

296,684. SHAFT-BEARING. MERRILL A. FURBUSH, Philadelphia, Pa. Filed Mar. 3, 1884. (No model.)

Claim.—1. The combination of a hanger having a pocket, H, with the bearing-block D, adapted to but removable from said pocket, and the shaft G, the end of which has its bearing in the block, as set forth.

2. The combination of a hanger having a pocket, H, with the bearing-block D, adapted to but removable from said pocket, the shaft G, having a spherical end adapted to a bearing in the block, and the follower *q*, whereby the shaft is confined to the block, as set forth.

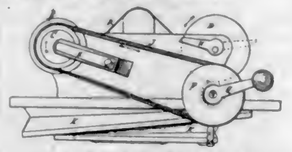
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3. The combination of the hanger having a pocket, H, and set-screw *w* with the shaft G, having a spherical end, *p*, the bearing-block D, adapted to but removable from the said pocket, the follower *q*, and means for confining the same to the block, substantially as set forth.

4. The combination of a frame, A, having flanges *a* and *b*, the hanger having a portion, *d*, bearing against the flange *b*, the set-screws *n*, *n'*, and *m*, whereby the hanger is confined to the flange *a*, and the bolt *f*, whereby the hanger is confined to the flange *b*, as set forth.

296,685. MECHANICAL MUSICAL INSTRUMENT. MERRITT GALLY, New York, N. Y. Filed Jan. 16, 1884. (No model.)

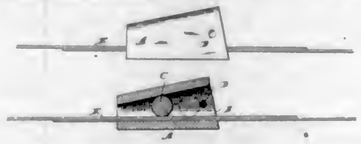


Claim.—1. In a mechanical musical instrument, the combination, with a sheet-winding device operating on the take-up roll, of an oppositely-acting friction sheet-winding device of less power, substantially as described, simultaneously operating on the delivery-roll, as set forth.

2. In a mechanical musical instrument, the combination, with a sheet-winding device operating on the take-up roll, of an oppositely-acting friction sheet-winding device of less power, simultaneously operating on the delivery-roll, and mechanism, substantially as described, connecting the same with the motor of the take-up roll, all substantially as shown and set forth.

3. The combination, with the take-up roll and its power mechanism, constructed substantially as described, of the motor-shaft, a belt leading therefrom, and the oppositely-acting friction retarding and rewinding device, constructed substantially as described, and arranged to be driven by the belt and operate on the delivery-roll, as set forth.

296,686. BALE-TIE. JOB A. GRESHAM, Waynesborough, Ga. Filed Jan. 23, 1884. (No model.)



Claim.—1. The within-described bale-tie having a single wedge-shaped opening therein for the passage of both ends of the band, an automatic fastening, C, in said opening, and the rod or pin D, passed transversely through the enlarged end of the tie and located within the said wedge-shaped opening, substantially as and for the purpose set forth.

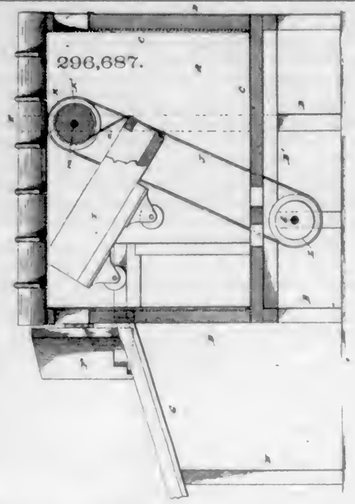
2. The within-described bale-tie having a single wedge-shaped opening therein for the passage of both ends of the band, the roller C in said opening, and the rod or pin D, passed transversely through the enlarged end of the tie within the said wedge-shaped opening, and having its ends upset against the sides of the tie, substantially as and for the purpose set forth.

296,687. COTTON-GIN HOUSE. WILLIAM F. GROVES, Marietta, Ga. Filed Feb. 23, 1884. (No model.)

Claim.—1. A gin-house frame constructed substantially as described, lined with sheet metal, and having metal doors and metal top to make the same fire-proof, in combination with a tramway both within and without the house, and passing through one of the doors of the same, and adapted to carry a car operated by mechanism within the said gin-house, substantially as described.

2. Windlass *k'*, located within the gin-house, and provided with a cord or chain, *a*, in combination with the tram I and its way G, constructed and operating substantially as and for the purpose set forth.

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296,688. INSULATING-SUPPORT FOR ELECTRIC CONDUCTORS. DAVID S. HAINES, New York, and STEPHEN D. LAKE, Brooklyn, N. Y. Filed Nov. 30, 1883. (No model.)



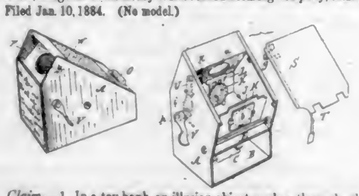
Claim.—1. An insulator for electric conductors, made of porcelain, glass, or other suitable material, in two or more sections, and secured together and to a support by a single screw passing therethrough, substantially as described.

2. An insulating-support made in two or more sections, having parallel grooves across their faces, and adapted to be held upon a single screw, substantially as and for the purpose described.

3. An insulating-support made in two sections, and having an annular semicircular groove formed upon its exterior along the contiguous edges of said sections, substantially as described.

4. An insulating-support consisting of the two sections *a* and *a'*, having the angular grooves *b'* and *b²*, the raised projections *d'* and *d²*, and the annular semicircular groove *f*, substantially as described.

296,689. TOY BANK. HENRY C. HART and JAMES W. CROSS, Detroit, Mich., assignors to the Henry C. Hart Manufacturing Company, same place. Filed Jan. 10, 1884. (No model.)



Claim.—1. In a toy bank, an illusion object, a glass through which a coin deposited may be observed, and means for converting said glass into a mirror adapted to reflect an image of the illusion object, substantially as and for the purposes set forth.

2. In a toy bank, a sight-opening through which a coin deposited may be observed, an illusion object, a glass placed between the illusion object and the deposited coin, and means for alternately admitting light on either side of said glass, while excluding it from the other side thereof, substantially as and for the purposes specified.

3. A toy bank having a translucent top, a darkening-slide shorter than said top, provided with mechanism for actuating the same, a coin-support adapted to hold a coin in line with a sight-opening, and a glass between the sight-opening and coin-support placed at such an angle with the sight-opening and with an illusion object contained in the bank that the image of such illusion object will be reflected by said glass in said sight-opening when light is excluded from behind and admitted in front of said glass, substantially as shown and described.

4. A toy bank having a translucent top, a coin-support at the rear end, a sight-opening at the front end through which the coin-support is visible, a partition wholly or partly transparent between said sight-opening and coin-support, an illusion object at the front end of said bank, and mechanism adapted to admit light through the translucent top on either side of said glass, while excluding light from the other side thereof, substantially as shown and described.

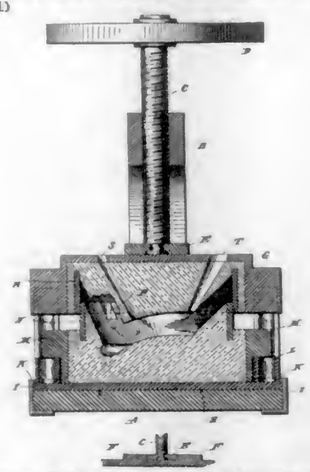
5. In a toy bank having a glass top, W, coin-support N, and illusion object K, the darkening-slide S, operated by suitable mechanism, and adapted to darken that part of the interior of the bank in which is situated the coin-support, and simultaneously admit light to that part of the bank in which is situated the illusion object, and vice versa, substantially as and for the purposes specified.

6. In a toy bank, a coin-support located in the rear end of the bank, a sight-opening and illusion object in the front end, and a glass interposed between the sight-opening and coin-support, and adapted, when light is excluded from the rear end and admitted to the front end of the bank, to reflect the image of the illusion object to the sight-opening, substantially as shown and described.

7. In a toy bank, the combination of the glass top W, darkening-slide S, operated by suitable mechanism, partition H, having glass J over an opening, *b*, therein, sight-opening *a*, and the imitation coin and support K L, substantially as shown and described.

8. The combination of the coin-support N, rock-shaft P, carrying arm Q, having ends *g e*, and lever R, spring *f*, and slide S, carrying arm T, and operated by mechanism substantially as described, as and for the purposes set forth.

296,690. DENTAL MOLD. JAS. W. HAYFORD, Tiffin, Ohio, assignor of one-half to George S. Yingling, same place. Filed Nov. 2, 1883. (No model.)

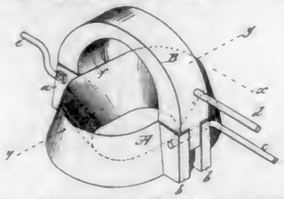


Claim.—1. The combination, with the base-plate and frame of the device, of the bottom plate and shell forming the lower section of the mold, the lateral lugs on said bottom plate having slotted guide-standards for the sections of the mold and the slotted clamps, whereby the bottom plate is clamped to the base of the mold, substantially as specified.

2. In combination with the upper and lower sections of the mold and the frame, and bottom plate guide-standards and pressure-screw, the internal rings adapted to fit one within the other and be embedded in the respective matrices of the mold, one of the rings being slotted at its edges for the initial escape of gas or confined air, substantially as specified.

3. The combination, with the frame and its base, of the mold-sections, the bottom plate and slotted guide-standards and clamps, and the pressure-screw having a dovetailed swiveled plate, and the dovetailed projections on the upper section of the mold, with which said plate engages, whereby the upper section may be manipulated accurately with respect to the lower section, substantially as specified.

296,691. MANUFACTURE OF GLASS BASKETS. JOHN HOARE, Corning, N. Y. Filed Dec. 5, 1883. (No model.)

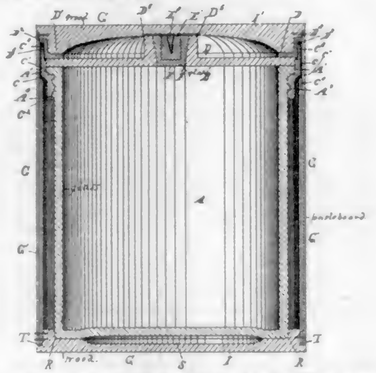


Claim.—1. A glass-blower's mold for forming glass baskets and similar articles with integral bow-handles, consisting of the mold A and movable yoke B, substantially as described.

2. The combination, with a glass-blower's mold, of the adjustable hood C, substantially as described.

3. The combination of the mold A, movable yoke B, and adjustable hood C, substantially as described.

296,692. CASE FOR PRESERVING FOOD. JONATHAN J. HOTT, Chelmsford, Mass., assignor to Edward F. Richardson, same place. Filed Feb. 21, 1883. (No model.)



Claim.—1. The combination of the case provided with an external screw-thread and a ring extending vertically above said case and having an internal screw-thread engaging with the thread upon said case to guide the cover when being ground, as herein described.

2. The combination of the case A, provided with a screw-thread, A^2, the ring C, provided with screw-threads C^2 C^3, the cover B, and the ring D, provided with the screw-thread D^2, as and for the purpose specified.

3. The combination of the case A, provided with the screw-thread A^2 and flange A', the ring C, provided with the screw-threads C^2 C^3 and the shoulder C', the cover B, and the ring D, provided with a screw-thread, D^2, as and for the purpose specified.

4. The combination of the case A, provided with the screw-thread A^2, the ring C, provided with screw-threads C^2 C^3, the cover B, and the ring D, provided with the screw-thread D^2 and flange D', as and for the purpose specified.

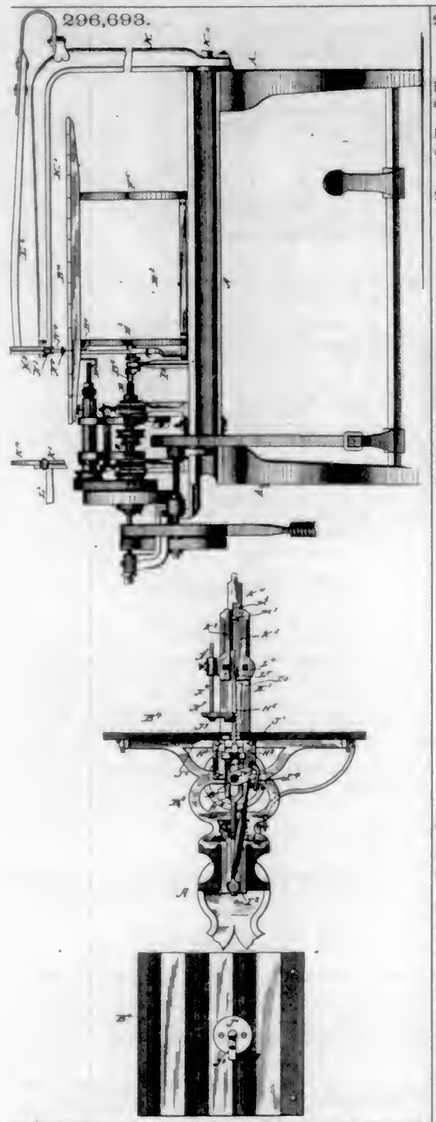
296,693. SCROLL-SAWING MACHINE. WAYNE J. HULL, Alexandria, Dak., and WILLIAM E. VARNEY, Daytonville, Iowa. Filed Jan. 29, 1884. (No model.)

Claim.—1. In a wood-working machine, the combination, of the arm K', provided at its free end with the vertical ways K^3, and the slotted slide K^4, adjustably connected to the spring-arm L^2, the slide K^4 being provided with the lateral recess L^4, intersected by the vertical recess L^3, the latter to receive the upper end of the saw-blade and the former to receive the cross-pin L^5, by which the saw is removably connected to the slide K^4, substantially as specified.

2. In a wood-working machine, the combination, with the frame B^3, carrying the table B^4, of the circular metallic guard-plate J', having a central perforation and a radial groove, J^3, arranged in the lateral line of the table B^4, let into the table, and provided with an adjustable slide, J^5, having its inner end recessed vertically, and the scroll-saw and mechanism for operating the same, substantially as specified.

3. In a wood-working machine, the combination, with the frame B^3

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on the bench-frame A, and table B^4, located thereon, of the bifurcated arm H^4, arranged beneath the table, having the clamping-nut H^2 at its upper end, crank I^2, clamp I^4, the crank-shaft B^2, having end bearings in the frame B^3 and shaft D, pitman-rod I^3, connected at its upper end to the said crank, the arm K', rising from the frame, and provided with a spring-arm, L^2, the vertically-slotted slide K^4, the adjustable bifurcated foot N^3, and operating mechanism, substantially as specified.

296,694. BREECHING FOR VEHICLES. DANIEL HUTCHINSON, Poland, Me. Filed Feb. 4, 1884. (No model.)

Claim.—1. In an improved breeching, the combination of the breeching-strap *b*, which is buckled into the holdback *f*, with the spring *c* and the standard *e*, substantially as shown, and for the purposes specified.

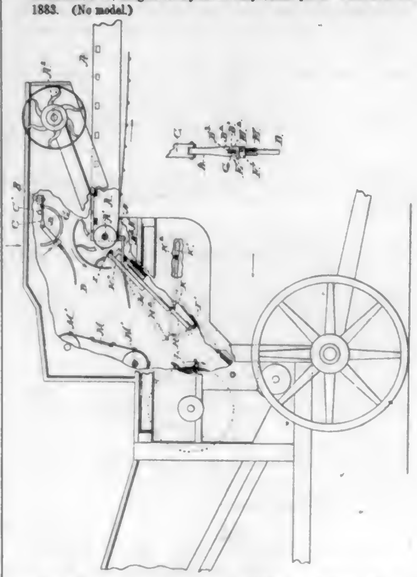
2. The combination, in an improved breeching, of the spring *c*, having one end turned up into the holdback *f*, with the standard *e* and the shaft *a*, substantially as set forth.

3. The combination, in an improved breeching, of the spring *d*, having one end secured to the standard *e*, with the breeching-strap *b*, substantially as described, and for the purposes specified.

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296,695. BAND CUTTER AND FEEDER. MATTHEW H. JOSLYN, Rochester, N. Y., assignor to Myron L. Joslyn, same place. Filed Dec. 22, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of the cylinder, the grain-casting platform, hinged at its upper edge, and movable as described, and a suitable grain-feeding device arranged in position to deliver grain onto the casting-platform, substantially as and for the purposes set forth.

2. The combination, substantially as herein described, of a grain-feeding mechanism, a thrashing-cylinder, and a sectional grain-casting platform arranged in front of the cylinder, said platform being hinged at its upper and lower sides and movable at its middle portion, as and for the purposes specified.

3. In a thrashing-machine, the grain-casting platform, substantially as herein described, composed of the section H', hinged at its upper end to the framing-rods J, the section H^3, hinged at its lower end, the section H^2, hinged to section H^2, and sleeves J', fitting on rods J, all arranged and adapted to operate substantially as and for the purpose set forth.

4. The combination, with the thrashing-cylinder, the feed mechanism elevated above the cylinder, and having its delivery end arranged in advance thereof, and the returning-belt, arranged in front of the delivery end of the feed mechanism and approximately vertically over the receiving side of the cylinder, substantially as set forth.

5. The combination, substantially as set forth, of the cylinder, the feed mechanism, the grain-casting platform, and the returning-belt, all arranged and adapted for use substantially as specified.

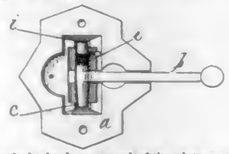
6. The combination, with the cylinder and the grain-casting platform, of lower spreader-fingers having their points extended in front of the platform, between the latter and the cylinder, and means whereby said fingers are operated or oscillated in an approximately horizontal plane, and in a line at right angles to the line of motion of the platform, substantially as set forth.

7. The combination, with the feed-belt, of a series of pivoted spreader-fingers arranged above the delivery end of the feed-belt, means whereby these fingers are oscillated in a plane at right angles to that of the feed-belt, and means whereby said fingers are adjusted and held at any suitable point to and from the feed-belt, substantially as set forth.

8. The combination, with the bar C, pivotally supported at one end, and the finger D, pivoted to the opposite end of the bar C, of the segment G, secured at one end to the bar C and lapped at its other end alongside fingers D, and means, substantially as described, whereby said finger may be clamped to said segment at any point of adjustment along the same, substantially as set forth.

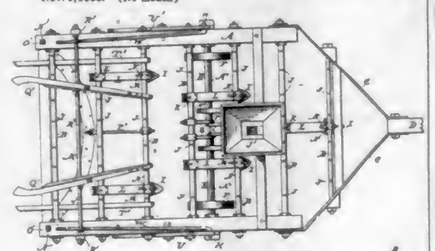
9. The combination of the feed-belt, the series of upper spreader-fingers, arranged above the inner end of said belt, the grain-casting platform, the pivoted lower spreader-fingers, arranged to vibrate in approximately a horizontal plane, the cylinder, and the grain-returning belt arranged above the cylinder, all substantially as and for the purposes specified.

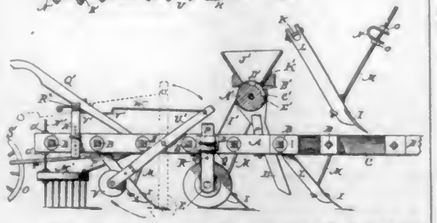
296,696. WARDROBE-HOOK. CHARLES A. KUHLMAN, Richmond, Ind. Filed Feb. 4, 1884. (No model.)



Claim.—A wardrobe-hook composed of the plate *a*, arm *b*, shaft *c*, and spring *e*, constructed and operating in the manner and for the purposes set forth.

296,697. CORN-PLANTER. HIRAM D. LAYMAN, Benton, Ark. Filed Nov. 9, 1883. (No model.)





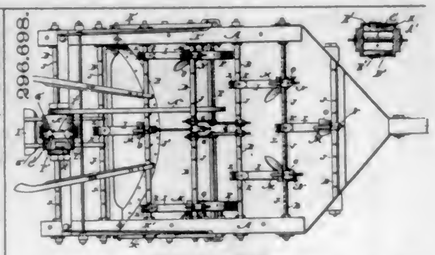
Claim.—1. In a corn-planter, the combination of the frame having the series of parallel cross-rods B, each provided with a series of notches, J, and the plows having slotted standards L, and bolts K, passing through said standards and engaging with the notches of one rod, and the screw-rods M, connected to the next forward rod B by the clips N and nuts O, substantially as shown and described.

2. In a corn-planter, the combination of the frame having the series of parallel cross-bars B, each being provided with a series of notches, J, the plows arranged to open and close a furrow, and having slotted standards L, and bolts K, passing through the standards and engaging with the notches of one rod, the screw-rods M, connected to the next forward rod B by the clips N and nuts O, the hopper and seed-dropping device, and the covering-harrow, substantially as shown and described.

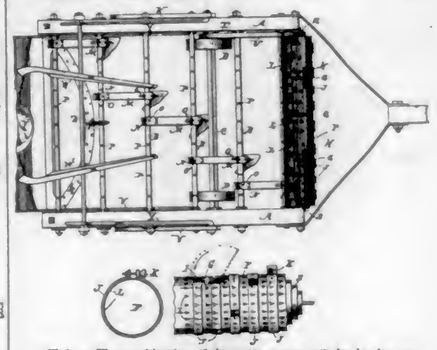
296,698. COTTON-PLANTER. HIRAM D. LAYMAN, Benton, Ark. Filed Nov. 9, 1883. (No model.)

Claim.—The combination of the frame, the series of plows I, arranged to throw up a ridge and to open a furrow therein, the cylindrical seed-drum A', having a series of uniform holes, C', therein, the band E', adapted to be shifted both longitudinally and circumferentially of the drum, and having both of its edges recessed to form lips G' therein, the lips of one edge being wider than those of the other, whereby either one or more holes C' may be covered by each lip by the proper adjustment of the band, and the drag I', for covering the seed, substantially as shown and described.

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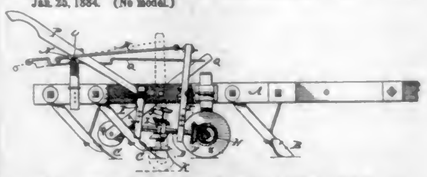


296,699. SEED-SOWER. HIRAM D. LAYMAN, Benton, Ark. Filed Nov. 16, 1883. (No model.)



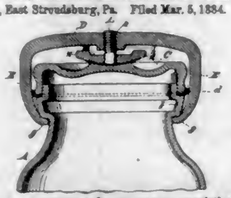
Claim.—The combination of the seed-sowing cylinder having perforations therein, and transverse partitions G, the doors I, each opening to two compartments formed by said partitions, and a series of cut-off bands, J, having set-screws K, to adapt them for being set to hold the doors firmly closed, and to regulate the discharge of seed, substantially as shown and described.

296,700. COTTON-CHOPPER. HIRAM D. LAYMAN, Benton, Ark. Filed Jan. 25, 1884. (No model.)



Claim.—The combination, with the frame A and the shaft D, carrying the hoe-drum, and having bevel-pinion F, gearing with a pinion, G, on the supporting-axle of the frame, of the oscillatory hangers E E' and means for adjusting said hangers to hold the pinion F in or out of engagement with pinion G, substantially as shown and described.

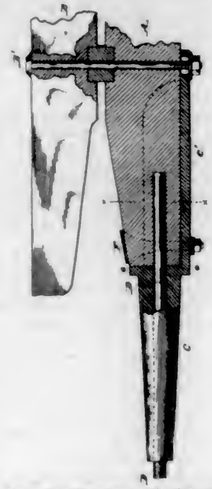
296,701. FRUIT-JAR-COVER FASTENING. PHILIP LYON and JOSEPH H. BOSHARD, East Stroudsburg, Pa. Filed Mar. 5, 1884. (No model.)



Claim.—1. A fastening for jar-covers, consisting of a transverse clamping-bar having a central projection, and a threaded perforation extending through said projection, and, engaging said perforation, a set-screw having a flattened expanded foot, formed with operating-lugs on its marginal portion, substantially as specified.

2. The transverse clamp-bar having downwardly-extending arms formed with catch ends, and a central threaded perforation, and, engaging said perforation, a set-screw having a flattened convex-bottom foot, formed with marginal operating-lugs, substantially as specified

296,702. AXLE-SKEIN. LEMUEL H. MERRIMAN, Auburn, assignor of one-half to Thomas G. Prickett, Springfield, Ill. Filed Jan. 10, 1884. (No model.)



Claim.—1. In an axle-skein, the combination, with a cast-iron arm, of a wrought-iron rod or core passing centrally through it, and adapted at one end to enter the wooden axle, the other end being screw-threaded to receive the nut for holding the wheel to the skein, substantially as described.

2. In an axle-skein, the combination, with a wooden axle, of a wrought-iron rod or core having on its outer end a screw-thread, and its inner end adapted to project into the end of said axle, and a cast-iron arm, one end of which forms a spindle through which the rod passes, and provided with a shoulder which rests against the end of the axle, and the other end projecting under and being provided with wings to embrace the axle, and being bolted thereto, all being arranged substantially as described.

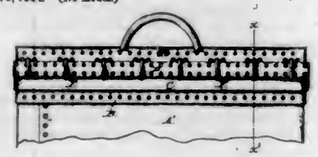
296,703. BICYCLE-BEARING. OLIVER M. MITCHELL, Providence, R. I. Filed Jan. 17, 1884. (No model.)



Claim.—1. The combination, with the rim B, having the oblique portion *b*, of the split bearing-ring A, provided with threaded ends and the oblique portion *a*, and the nuts C C', arranged and operating as set forth.

2. The combination, with the split-ring bearing A, having the oblique portion *a* and the screw-threads *a'* *a'*, of the rim B, having the oblique portion *b*, the channel *b'*, the pin b^2, and the pivoted arm *c*, and the nuts C C', arranged and operating as set forth.

296,704. MAIL-BAG. JAMES B. MURRAY, New York, N. Y. Filed Mar. 5, 1884. (No model.)



Claim.—1. The combination, in a bag, of rigid hooks attached to one side of the bag or to a flap, and adapted, when the bag is closed, to pass through its other side and project, with an independent flexible locking device adapted to be drawn under said projecting hooks, and thereby prevent the opening of the bag, substantially as described.

2. The combination, in a bag, of rigid hooks attached to one side, adapted, when the bag is closed, to pass through its other side and project, with a flanged locking-strap adapted to be drawn under said projecting hooks, thereby preventing the opening of the bag, substantially as described.

3. The combination, in a bag provided with slots near its top, of a flap with rigid hooks attached, adapted, when the bag is closed and the flap folded, to pass through and project beyond the slots, with an independent flexible locking device adapted to be drawn under said projecting hooks, substantially as and for the purposes described.

4. The combination, in a bag provided with slots near its top, of a flap with rigid hooks attached, adapted, when the bag and flap are closed, to pass through and project beyond the slots, with a flanged locking-strap, substantially as and for the purposes set forth.

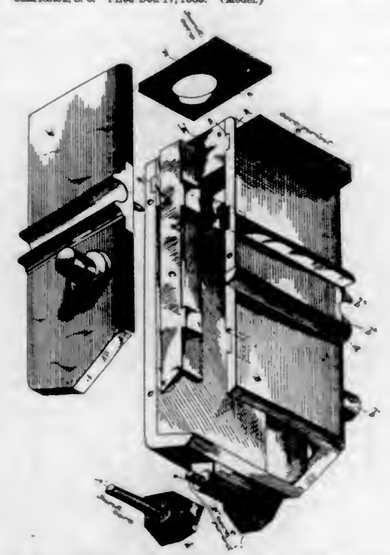
5. The bag *a*, provided with the slots M M, a flap, N, with hooks F F, and the locking-strip D, substantially as and for the purposes described.

296,705. BOTTLE-WRAPPER. JOSEPH M. NOVY and PETER HENRY, St. Louis, Mo. Filed Jan. 14, 1884. (No model.)



Claim.—A wood-veneer bottle-wrapper having corrugations *a a*, extended in concentric curves, as and for the purpose described.

296,706. PATTERN FOR CAR-AXLE BOXES. MICHAEL O'MARA, Charleston, S. C. Filed Dec. 17, 1883. (Model.)



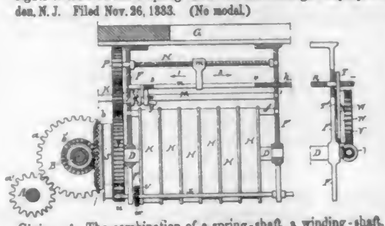
Claim.—1. A pattern for casting car-axle boxes, consisting of the shell B, having one part, *e'*, of the dust-guard box-pattern E, and of the removable rabbet-strip C, the side D, and the separate part E of the dust-guard box-pattern, as shown and described.

2. A pattern for casting car-axle boxes, consisting of the shell B, having the core-print *e* and one part, *e'*, of the dust-guard box E, and

of the removable rabbet-strip C, the side D, and the separate part E of the dust-guard box-pattern, in combination with the divided dust-guard box-core *n o*, as and for the purpose set forth.

3. A pattern for casting car-axle boxes, consisting of the shell B, having core-prints *c c'* and *e*, one part, *c'*, of the dust-guard box E, and of the removable rabbet-strip C, the side D, and the separate part E of the dust-guard box-pattern, in combination with the divided dust-guard box-core *n o* and the hinge-lug core *h i*, as set forth.

296,707. SPRING-MOTOR. DANIEL M. PFAUTZ, Philadelphia, Pa., assignor to the Automatic Spring Motor Car and Carriage Company, Camden, N. J. Filed Nov. 26, 1883. (No model.)



Claim.—1. The combination of a spring-shaft, a winding-shaft, a clutching device whereby the two shafts can be thrown into and out of gear, and clutch-shifting mechanism, substantially as described, operating in unison with the spring-shaft, whereby the latter is thrown out of gear with the winding-shaft when the spring is wound up, as set forth.

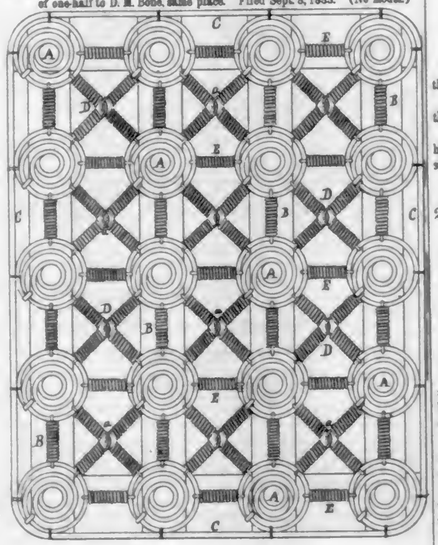
2. The combination of the spring-shaft, the winding-shaft, a clutching device whereby the two shafts can be thrown into and out of gear, a screw-shaft, N, geared to the spring-shaft, and having a nut, *m*, and means, substantially as described, whereby the nut is caused to traverse the screw-shaft and actuate the clutch, as set forth.

3. The combination of the spring-shaft D, the winding-shaft M, the clutch *g g'*, the slotted rod A, connected to the movable half of the clutch, the screw-shaft N, and the nut *m* thereon, having a projection adapted to the slot of the bar *h*, as set forth.

4. The combination of the spring-shaft D, a counter-shaft or axle, B, and clutching mechanism whereby the two shafts may be thrown into and out of gear, with a friction-drum secured to said shaft D, and a brake-strap applied to said drum, whereby the shaft can be locked in position when thrown out of gear with the shaft B, as set forth.

5. The combination of the spring-shaft D, having a drum, *p*, the brake-strap *s*, adapted thereto, and the lever *t*, the opposite arms of which are connected to the opposite ends of said brake-strap, as set forth.

296,708. BED-BOTTOM. FRANK J. ROBINSON, Petersburg, Ill., assignor of one-half to D. M. Bone, same place. Filed Sept. 8, 1883. (No model.)



Claim.—In a bed-bottom, the V-shaped springs D D, each consisting of two coiled portions united by a single wire, forming the apex of the spring, looped together in pairs at their apices, in combination with the bed-springs A A, and means for supporting the said bed-springs, substantially as and for the purpose herein specified.

296,709. PROCESS OF SEPARATING PRECIOUS METALS FROM ORES, &c. EDWARD HUBBARD RUSSELL, Park City, Utah. Filed May 28, 1881. (No specimens.)

Claim.—The process of separating from ores and metallurgical products gold, silver, and copper free from lead, which consists in leaching the ore or product with a hyposulphite solution containing a soluble carbonate, substantially as described.

296,710. PROCESS OF SEPARATING METALS FROM ORES AND METALLURGICAL PRODUCTS AND FROM EACH OTHER. EDWARD HUBBARD RUSSELL, Park City, Utah. Filed Sept. 28, 1882. (No specimens.)

Claim.—1. The process of separating precious metals and lead from ores and metallurgical products and from each other which consists in first dissolving out the metals and lead from the ore or product by means of a hyposulphite solution, and subsequently adding to the solution containing the precious metals and the lead a soluble phosphate to cause the precipitation of the lead, substantially as described.

2. The process of separating precious metals and lead from ores and metallurgical products and from each other, consisting in dissolving out from the ore or product both the precious metals and lead by means of a hyposulphite solution, adding to the resulting solution a soluble phosphate to precipitate the lead, and finally removing the solution and precipitating the precious metals therefrom, substantially as described.

3. The process of separating precious metals and lead from ores and metallurgical products and from each other which consists in leaching the ore or product with a hyposulphite solution to dissolve out both the precious metals and lead, adding to the resulting solution a soluble phosphate to precipitate the lead, and finally removing the remaining solution and precipitating the precious metals therefrom, substantially as described.

296,711. SIDE-SADDLE. HENRY RUWART, Jefferson City, Mo. Filed Jan. 29, 1883. (No model.)

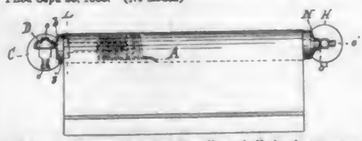


Claim.—1. A side-saddle tree having the strainer G countersunk in the side bars, as and for the purpose described.

2. The combination, in a saddle, of the flat-topped side bars, A A, the detachable roll C, and the cover E, substantially as described.

3. The combination of the side bars, A A, the cover B, the detachable roll C, the cover D, the fastenings *c c*, the cover E, and strainer G, substantially as described.

296,712. CURTAIN-FIXTURE. ALVAH SWEETLAND, Syracuse, N. Y. Filed Sept. 25, 1883. (No model.)



Claim.—1. The combination of a roller-spindle having a groove and an adjacent flat surface, and a bolt carried by a roller for locking the same by contact with the groove and the bite of the edge of the groove upon the locking-bolt, substantially as and for the purpose set forth.

2. The combination of the spindle provided with the groove *a* and adjacent flat surface *c*, the collar E, and bolts *m*, substantially as shown and described.

3. The combination of the spring-roller A, spindle B, collar E, bolts *m*, and ferrule *i*, the spindle and collar being constructed and operating to bite the bolt with the edges of the groove, substantially as specified.

4. The head-bracket C, constructed with a base-screw, F, stem *y*, and studs *o*, provided with a shoulder, *r*, substantially as shown and described.

5. A roller-spindle constructed with hub *x*, having therein a groove, *a*, and adjacent flat surface *c*, a shoulder, *b*, and a semi-spherical head, D, having a hole, *n*, through it, by which the spindle is connected to the bracket and prevented from revolving, substantially as shown and described.

6. The tail-bracket H, constructed with base-screws F, stem *y*, and studs *o' s*, substantially as shown and described.

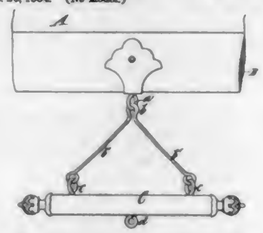
7. A curtain-fixture consisting of the roller A, spindle B, collar E, bolt-seats *d*, and bolts *m*, engaging with the groove *a* and flat surface *c* of the spindle, the spindle-head D, bracket C, tail-piece N, and bracket H, constructed and operated together, substantially as and for the purposes specified.

8. The spindle B, provided with a head, D, in combination with the bracket C, provided with the studs *o*, and shoulder *r*, substantially as and for the purposes set forth.

9. The perforated semi-spherical spindle-head D, in combination with a bracket having a stud, *s*, constructed substantially as described.

10. In a curtain-roller, the collar E, constructed with bolt-seats *d*, each being on a line tangential to the spindle-hole therein, in combination with locking-bolts *m m*, reciprocating in the bolt-seats, substantially as and for the purposes set forth.

296,713. SHADE-PULL. LUTHER G. TURNER, Torrington, Conn., assignor to the Turner & Seymour Manufacturing Company, same place. Filed Feb. 26, 1884. (No model.)



Claim.—1. The combination, with the bar or rod of a shade-pull, of a wire hanger having diverging arms connected with the bar or rod near opposite ends thereof, substantially as herein described.

2. The combination, with the bar or rod of a shade-pull, and a suspension device for attachment to a shade-stick, of wire arms diverging from said suspension device and connected with said bar or rod near opposite ends thereof, substantially as herein described.

3. The combination, with the bar or rod of a shade-pull, of a wire hanger consisting of an eye, *b*, and arms *b'*, extending therefrom and connected with the bar or rod near opposite ends thereof, substantially as herein described.

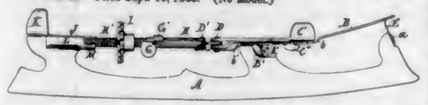
4. The combination, with the bar or rod of a shade-pull, of a wire hanger having diverging arms, the ends of which are inserted into and secured in said bar or rod near opposite ends thereof, substantially as herein described.

5. The combination, with the tubular bar C, and a core fitting therein, of a wire hanger having diverging arms, the ends of which are inserted into said bar and core near opposite ends of the bar, substantially as herein described.

6. The combination, with the bar or rod of a shade-pull and suspension devices connected therewith near opposite ends, of an eye, *d*, attached to said bar or rod between its two points of suspension, substantially as herein described.

7. The combination, with the bar or rod of a shade-pull, of a wire hanger having diverging arms connected with the bar or rod near opposite ends, and the eye *d*, attached to the bar or rod between the points of connection of the arms, substantially as herein described.

296,714. SKATE. JAS A. WHELPLEY, Greenwich, New Brunswick, Canada. Filed Sept. 15, 1883. (No model.)



Claim.—1. The sole-plate B, formed of a single plate, with the stamped-out portions E and B' at the front and rear, for attachment to a skate-runner, A, substantially as shown and described.

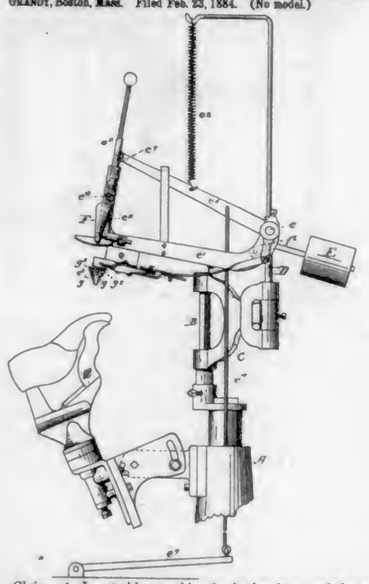
2. The clamps C C, constructed with the buttons C'' and bent edges C', in combination with the lever G and the slotted sole-plate B, when the said clamps are placed above the sole-plate, substantially as set forth.

3. The heel-plate J, constructed as described, with the depression L and projecting piece M, and adapted for attachment to a skate, substantially as set forth.

4. The combination of the heel-plate J, constructed as described, the screw-rod H H', the dog I, and lever G, as and for the purpose set forth.

5. The combination of the heel-plate J, the screw-rod H, the dog I, lever G, clamps C C, and sole-plate B, all substantially as set forth.

296,715. TACKING-MACHINE FOR LASTING BOOTS OR SHOES. ERASTUS WOODWARD and ROBERT ASHE, Somerville, and EDWARD F. GRANDY, Boston, Mass. Filed Feb. 23, 1884. (No model.)



Claim.—1. In a tacking-machine for lasting boots and shoes, the combination, with a jack, of a tack feeding and driving mechanism, constructed substantially as described, and adapted to be moved by one hand over the surface of the sole of a shoe fixed upon the jack in operative position.

2. In a tacking-machine for lasting boots and shoes, the combination of tack-driving mechanism, the pivoted arm *e'*, and the handle F, all substantially as and for the purposes described.

3. In a tacking-machine for lasting boots and shoes, the combination of the jack for supporting the work, the tack-driving devices supported at the end of a vertically-movable arm, *e'*, a treadle, *e²*, and connecting mechanism whereby upon the movement of the treadle the tack is caused to be driven, all substantially as and for the purposes described.

4. In a tacking-machine for lasting, the combination of a jack for supporting a boot or shoe in the lasting process, tack-feeding and tack-driving devices supported upon the end of a pivoted arm, *e'*, said pivoted arm *e'*, and its movable support, all substantially as and for the purposes described.

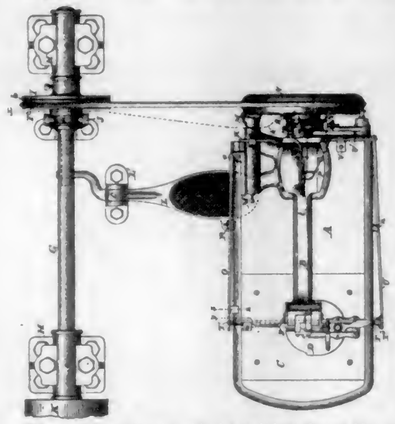
5. In a tacking-machine for lasting, the combination of a jack for supporting a boot or shoe, tack feeding and driving devices, and means, substantially as shown, for moving them vertically in relation to the work, and for holding the nozzle of the tack-driving mechanism in contact therewith during the driving of the tack, and also means for moving said tack feeding and driving devices in a horizontal direction, all substantially as and for the purposes described.

6. That improvement in lasting boots and shoes which consists in placing the last, with the upper and insole thereon, in a fixed and operative position upon the jack, drawing the upper over the insole, holding it in position with one hand, moving the tack feeding and driving mechanism over the face of the sole to the desired point with the other hand, and then driving the fastening.

7. In a tacking-machine for lasting boots and shoes, the combination of a jack adapted to be rotated in a substantially horizontal plane, and nail supporting and driving mechanism, constructed substantially as described, and having both vertical and lateral movements, as specified.

REISSUES.

10,465. BUTTON-HOLE SEWING-MACHINE. FRANK W. CROSS, Lynn, Mass. Filed Dec. 1, 1883. Original No. 279,349, dated June 12, 1883. Division A.



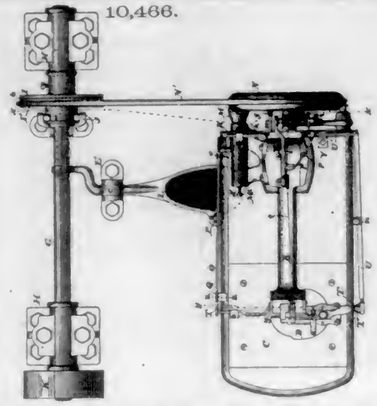
Claim.—1. In combination with a button-hole sewing-machine provided with a vertically-reciprocating needle arranged to descend alternately through the material and through the slit of the button-hole, a fly-wheel, a brake-shoe arranged to engage with said fly-wheel, and to be pressed thereon by a spring, and to be retracted therefrom by the operator, means for automatically locking said brake in said retracted position, and mechanism arranged to operate independently of the movements of the clamping device and automatically release said brake, and adapted to be adjusted to stop the machine at any predetermined point in the movement of the needle, substantially as and for the purposes described.

2. In combination with a button-hole sewing-machine provided with a work-clamping device, the spring-pressed brake-shoe M, the elbow-lever O, the catch Q, the push-pin h h^2, the counter-shaft G, provided with tight and loose pulleys, the shipper J, and the treadle-lever L, connected by the rod P to the lever O, and arranged and adapted to be depressed by the foot and thereby retract the brake-shoe and lock it, substantially as described.

3. In combination with a button-hole sewing-machine provided with a work-clamping device, the brake-shoe M, the elbow-lever O, the catch Q, the push-pin h h^2, the pin *i*, the locking-bolt R R', and an adjustable cam arranged and adapted to be revolved about its axis and to retract the locking-bolt R R' once to every two revolutions of the needle-operating shaft of the machine, substantially as described, for the purposes specified.

4. In a button-hole sewing-machine provided with an automatic stop mechanism, the combination of the vertically-vibrating elbow-lever O, the catch Q, the extensible push-pin h h^2, fitted to slide in a groove in the under side of the work-plate C, and the pin *i* of the work-clamping device D, as a means of operating the stop mechanism, substantially as described.

10,466.



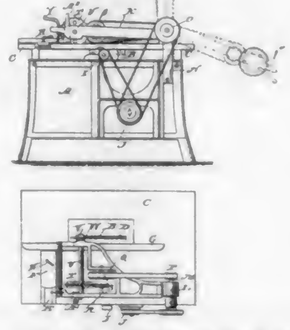
10,466. BUTTON-HOLE SEWING-MACHINE. FRANK W. CROSS, Lynn, Mass. Filed Feb. 6, 1884. Original No. 279,349, dated June 12, 1883. Division B.

Claim.—1. The combination, in a sewing-machine, of a spring-pressed brake-shoe, a lever for retracting said shoe, a catch for locking said lever, a bolt for locking the brake-shoe in a retracted position, a cam or other device for retracting said bolt at regular intervals, a push-rod adapted to disengage the brake-shoe-retracting lever from its catch, a system of levers connecting said push-rod with the thread that supplies the needle, and arranged and adapted to be inoperative while the thread remains taut, and to be acted upon to move said push-rod endwise by the retractive movement of the locking-bolt whenever the thread breaks, substantially as and for the purposes described.

2. The combination of the brake-shoe M, the lever O, the catch Q, the locking-bolt R R', the adjustable screw *s*, the cam S *m*, the rod T, the levers U *p*, the link U', and rod o, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination, in a sewing-machine, of a fly-wheel, a brake-shoe arranged to engage with said fly-wheel, and to be pressed thereon by a spring, and to be retracted by the operator, a device for automatically locking said shoe in its retracted position, mechanism for automatically releasing said brake-shoe independently of the movement of the work-clamp, a mechanism connecting said locking device with a thread-guide, and adapted to be acted upon by said releasing mechanism to release the brake-shoe and stop the machine when the thread breaks, substantially as and for the purposes described.

10,467. FEED MECHANISM FOR CIRCULAR SAWING MACHINES. JOSEPH H. HERMANCE, Toledo, Ohio, assignor to R. S. & R. L. Greenlee, Chicago, Ill. Filed Apr. 4, 1883. Original No. 239,497, dated Mar. 29, 1881. Patented in Canada May 1, 1882, No. 14,712.



Claim.—1. In feed mechanism for circular sawing machines, the feed-wheel consisting of the ratchet-toothed wheel W, having its teeth X beveled on their inner sides from their rear edges downward, forward, and outward, the bevel extending from the point to the base of the tooth, as at Z, so as to form an edge at the inner side of the front of the teeth, and mechanism for operating the same, whereby, should the material to be sawed be too narrow to be engaged by the ends of the teeth, the sharp edges formed by the inner bevels will engage the edge of the material and feed it forward, the tooth-marks being obliterated by the saw-kerf, substantially as specified.

2. In feed mechanism for circular sawing machines, the combination, with the feed-wheel consisting of the ratchet-toothed wheel W, mounted on the transverse shaft V in the hinged frame, and having the inner sides of its teeth X beveled from their rear edges downward, forward, and outward from point to base of the tooth, as at Z, to form an edge at the inner side of the front of the teeth, of the set-screw Y in the frame K, and the guide A^3, fixed on the table, and arranged to prevent the lateral movement of the frame K, and mechanism for operating the feed-wheel in connection with the saw, substantially as specified.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

THE PENNSYLVANIA RAILROAD COMPANY APPELLANT, *v.* THE LOCOMOTIVE ENGINE SAFETY TRUCK COMPANY.

Decided March 3, 1884.

1. NEW USE—OLD PROCESS.

The application of an old process or machine to a similar or analogous subject, with no change in the manner of applying it, and no result substantially distinct in its nature, will not sustain a patent, even if the new form of result has not before been contemplated.

2. SAME—NON-INVENTION.

In trucks already in use on railroad-cars the king-bolt which held the car to each truck passed through a bolster supporting the weight of the car, and through an elongated opening in the plate below, so as to allow the swiveling of the truck upon the bolt and lateral motion in the truck, and the bolster was suspended by divergent pendent links from brackets on the frame, whereby the weight of the car tended to counteract any tendency to depart from the line of the track: *Held*, that a patent for employing such a truck as the forward truck of a locomotive-engine with fixed driving-wheels was void for want of novelty.

3. SMITH—TRUCKS FOR LOCOMOTIVES.

Letters Patent No. 34,377, granted to Alba F. Smith, February 11, 1862, for an improvement in trucks for locomotives, declared void.

APPEAL from the Circuit Court of the United States for the Eastern District of Pennsylvania.

Mr. Justice GRAY delivered the opinion of the Court.

This is an appeal by the defendant below from a decree against it upon a bill in equity for the infringement of letters patent granted on February 11, 1862, to Alba F. Smith for an improvement in trucks for locomotive-engines, the specification annexed to which, except the drawings and the letters referring to them, and the formal beginning and conclusion, was as follows:

Several laterally-moving trucks have heretofore been made and applied to railroad-cars. My invention does not relate, broadly, to such laterally-moving trucks, but my said invention consists in the employment, in a locomotive-engine, of a truck or pilot wheels provided with pendent links, to allow of a lateral movement, so that the driving-wheels of the locomotive-engine continue to move correctly on a curved track in consequence of the lateral movement allowed by said pendent links, the forward part of the engine traveling as a tangent to the curve, while the axles of the drivers are parallel, or nearly so, to the radial line of the curve. In the drawing I have represented my improved truck itself. The mode of applying the same to any ordinary locomotive-engine will be apparent to any competent mechanic, as my truck can be fitted in the place of those already constructed, or the same may be altered to include my improvement.

The specification then refers to the drawings, showing the wheels, the axles, and the frame of any ordinary locomotive-truck, made in any usual manner, with the center cross-bearing plate or platform of two thicknesses of iron plate riveted together, strengthened by cross-bars beneath, and embracing at its ends the upper bars of the frame; a bolster made of a flanged bar, the king-bolt passing through the center of the bolster, and also through an elongated opening in the plate, so as to allow of lateral motion to the truck beneath the bolster, and at the same time becoming a connection to hold the truck to the engine, the bolster taking the weight of the engine in the middle, and itself suspended at the ends of bars attached to the moving ends of pendent links attached by bolts at their upper ends to brackets on the frame, and the distance between the bars, transversely of the truck, slightly more than between the bolts, so that the pendent links diverge slightly. The specification then proceeds:

When running upon a straight road, the engine preserves great steadiness, because any change of position transversely of the track, in consequence of the engine moving over the truck or the truck beneath the engine, is checked by the weight of the engine hanging upon the links, and in consequence of their divergence any side movement causes the links on the side toward which the movement occurs to assume a more inclined position, while the other links come vertical, or nearly so. Hence the weight of the engine acts with a leverage upon the most inclined links, to bring them into the same angle as the others, greatly promoting the steadiness of the engine in running on a straight line. As the pilot or truck wheels enter a curve, a sidewise movement is given to the truck, in consequence of the engine, and drivers continuing to travel as a tangent to the curve of the track. This movement and the slight turn of the whole truck on the king-bolt not only causes the wheels to travel correctly on the track, with their axles parallel to the radial line of the curve of track, but also elevates the outer side of the engine, preventing any tendency to run off the track upon the outer side of the curve. Upon entering a straight track the truck again assumes the central position, and in case of irregularity in the track or any obstruction the truck moves laterally without disturbing the movement of the engine.

I do not claim laterally-moving trucks, nor pendent links, separately considered; but

What I claim, and desire to secure by letters patent, is—

The employment, in a locomotive-engine, of a truck or pilot wheels fitted with the pendent links, to allow of lateral motion to the engine, as specified, whereby the drivers of said engine are allowed to remain correctly on the track, in consequence of the lateral motion of the truck allowed for by said pendent links when running on a curve, as set forth.

The invention, then, as claimed, is for the combination, with a locomotive-engine, of a truck, of which the king-bolt, forming the connection to hold the truck to the engine, passes through a bolster and through an elongated opening in the plate or platform of the truck, so as to allow the truck to have a lateral motion beneath the bolster, and the bolster takes the weight of the engine in the middle, and is suspended from the frame of the truck by pendent and slightly-divergent links, so that any movement of the engine or truck sidewise, as in entering upon or passing over a curve of the track, causes the links on the side toward which the engine moves to assume a more inclined position, and the other links to become nearly vertical, and the weight of the engine, hanging upon the links, checks its own lateral movement and tends to bring both sets of links back to their original angle. In railroad-cars the trucks were allowed to swivel around the king-bolt before 1841. The transverse slot and pendent links, allowing a lateral mo-

tion, were used by Davenport and Bridges in 1841. In 1859 Kipple and Bullock made the pendent links divergent, and at the time of Smith's invention the trucks of railroad-cars had all the elements of the truck put by him under the front of a locomotive-engine. The question, therefore, is whether employing as the forward truck of a locomotive-engine with fixed driving-wheels a truck already in use on railroad-cars has the novelty requisite to sustain a patent.

After carefully considering the evidence and arguments in this case and the reasons assigned for sustaining Smith's patent, in the opinion of the court below, reported in 1 Banning & Arden, 470, and in the opinion rendered by the circuit court in the second circuit in *Locomotive Engine Safety Truck Co.* v. *Erie Railway Co.*, reported in 6 Fisher Pat. Cas., 187, and in 10 Blatchford, 292, this Court finds itself unable to escape from the conclusion that the application of the old truck to a locomotive-engine neither is a new use nor does it produce a new result.

In both engine and car the increased friction against the rails and the danger of being thrown off the track in entering upon or passing along a curve are due to the impulse of forward motion in a direction tangential to the curve and to the influence of centrifugal force. In the engine, as in the car, the object and the effect of the transverse slot allowing a slight lateral motion, and of the divergent pendent links by means of which the weight of the engine or car itself helps to keep it upon the track, are to secure steadiness and safety by lessening the friction against the rails and the danger of being thrown off the track. The only difference is that, by reason of the fixed position of the driving-wheels of the engine, the truck, which has before been applied at each end of a car, can only be applied at the forward end of the engine, and therefore the accommodation of the movement of the engine to the curve of the track may be less complete than in the case of the car. The effect of the invention upon the engine as compared with its effect upon the car is the same in kind, though perhaps less in degree.

It is settled by many decisions of this Court, which it is unnecessary to quote from or refer to in detail, that the application of an old process or machine to a similar or analogous subject, with no change in the manner of application and no result substantially distinct in its nature, will not sustain a patent, even if the new form of result has not before been contemplated. (*Hotchkiss* v. *Greenwood*, 11 How., 248; *Phillips* v. *Page*, 24 How., 164, 167; *Jones* v. *Morehead*, 1 Wall., 155, overruling S. C. nom.; *Livingston* v. *Jones*, 1 Fisher Pat. Cas., 521; *Hicks* v. *Kelsey*, 18 Wall., 670; *Smith* v. *Nichols*, 21 Wall., 112; *Brown* v. *Piper*, 91 U. S., 37; *Roberts* v. *Ryer*, 91 U. S., 150; *Keystone Bridge Co.* v. *Phœnix Iron Co.*, 95 U. S., 274, 276; *Planing Machine Co.* v. *Keith*, 101 U. S., 479, 491; *Pearce* v. *Mulford*, 102 U. S., 112; *Heald* v. *Rice*, 104 U. S., 737, 754–756; *Atlantic Works* v. *Brady*, 107 U. S., 192.)

In the well-known case of *Crane* v. *Price*, in which the English Court of Common Pleas upheld a patent for using anthracite instead of bituminous coal with the hotblast in smelting iron ore, the evidence, as Chief Justice Tindal remarked, proved beyond doubt that in the result of the combination of the hot-air blast with the anthracite not only was the yield of the furnace more and the expense of making the iron less, but "the nature, properties, and quality of the iron were better" than under the former process by means of the combination of the hot-air blast with bituminous coal. (4 Man. & Gr., 580, 604; 5 Scott N. R., 348, 389; 1 Webster Pat. Cas., 393, 410.) And the decision rests, as was pointed out by Chief Baron Pollock and Baron Parke, in *Dobbs* v. *Penn*, (3 Exch., 427, 432, 433,) and by Mr. Justice Bradley in *Hicks* v. *Kelsey*, above cited, upon the ground that a new metal or composition of matter was produced. As observed by Mr. Justice Bradley—

> In compositions of matter a different ingredient changes the nature of the compound; whereas an iron bar in place of a wooden one, and subserving the same purpose, does not change the identity of a machine. (18 Wall., 674.)

So in *Smith* v. *Goodyear Dental Vulcanite Co.* in this Court, as was observed by Mr. Justice Strong in delivering its judgment—

> A new product was the result, differing from all that had preceded it not merely in degree of usefulness and excellence, but differing in kind, having new uses and properties. (93 U. S., 486, 494. See also *Goodyear Dental Vulcanite Co.* v. *Davis*, 102 U. S., 222.)

Upon the principles which must govern this case the decisions of this Court and of the highest courts of England are in full accord, as will appear by referring to three cases, fully argued and considered, all of which were carried to the Exchequer Chamber, and two of which were finally decided in the House of Lords.

In *Bush* v. *Fox* a patent for constructing the interior of a caisson or cylinder with successive chambers to work in, "in such manner that the work-people may be supplied with compressed air and be able to raise the material excavated, and to make or construct foundations and buildings," under water, when a similar apparatus had already been used for working underground on land, was held by Chief Baron Pollock, by the Court of Exchequer Chamber, and by the House of Lords to be void for want of novelty, after able arguments in support of the patent by Sir Alexander Cockburn, then Attorney-General, and by Mr. Webster, the accomplished patent counsel, at the successive stages of the case. (Macrory Pat. Cas., 152, 167, 179; 9 Exch., 651; 5 H. L. Cas., 707.)

So the Court of Queen's Bench held that the finishing of yarns of wool or hair by a process previously applied to yarns of cotton and linen by subjecting them, while distended and kept separate, to the action of rotatory beaters or burnishers, by which they would be burnished or polished on all sides, was not the subject of a patent, because, as Lord Campbell said, in order to sustain a patent for the application of an old process to a new purpose "there must be some invention in the manner in which the old process is applied." "Here there is no novelty in the mode of application," "but merely the application of a known process by a known means to another substance." (*Brook* v. *Aston*, 27 Law Journal (N. S.) Q. B., 145; S. C. 4 Jurist (N. S.) 279; S. C., with the opinion less fully reported, 8 E. & B., 478.) The judgment was unanimously affirmed in the Exchequer Chamber. Of the opinions there delivered it is sufficient to quote from that of Baron Martin, who, after expressing his concurrence in the statement of Mr. Justice Willes in *Patent Bottle Envelope Co.* v. *Seymer*, (28 Law Journal (N. S.) C. P., 22, 24; S. C. 5 C. B. (N. S.,) 164, 173,) that "the application of a well-known tool to work previously untried materials or to produce new forms is not the subject of a patent," added "when a machine is well known it becomes in fact a tool." (28

Law Journal (N. S.) Q. B., 175, 176; 5 Jurist (N. S.,) 1025, 1027.)

But perhaps the most important English case is that of *Harwood* v. *Great Northern Railway Co.*, (2 B. & S., 194, 222, and 11 H. L. Cas., 654.) In that case a patent was obtained for "improvements in fishes and fish-joints for connecting the rails of railways." In the specification the patentee stated that in securing the joints of rails it had been found advantageous to attach to each side of the rails, by means of bolts and rivets, pieces of iron commonly called "fishes," and described his invention as consisting in making the fishes with a groove or recess in their outer surfaces, so as to receive the square heads of the bolts or rivets, and to prevent them from turning round while the nuts on the other side were being screwed on or off, and also to avoid the danger of the flanges of the wheels of the carriages striking against the heads; and he claimed—

> The constructing fishes for connecting the rails of railways with a groove adapted for receiving the heads of the bolts or rivets employed for securing such fishes, and the application of such fishes for connecting the rails of railways.

In an action for the infringement of that patent it appeared that fishes for connecting the rails of railways had never before been made with a groove or recess in their outer surfaces, so as to receive the square heads of the bolts; but it was proved that in the construction of several railway-bridges beams of timber had been laid horizontally one above the other, and fastened or bolted together with bolts and nuts, horizontal bars or plates of iron placed beneath, parallel to and in contact with the beams, and fastened or bolted by the same bolts and nuts, and each of these bars or plates of iron constructed with a groove in its under surface, which received the square heads of the bolts, and which served the double purpose of strength and of preventing the heads of the bolts from turning round. In those bridges there were no joints to be fished by the bars or plates of iron, nor were there corresponding bars or plates of iron above the horizontal beams of timber. But it was also proved that a bridge, known as the "Hackney bridge," having too great a span to be conveniently crossed by a single beam, had been constructed with two horizontal longitudinal beams of timber on each side, the ends of which met and were joined together in the middle of the bridge by scarf-joints; that beneath those beams were transverse planks, constituting the flooring of the bridge, and beneath the planks were bars of grooved iron, like those used in the other bridges, carried under the scarf-joints and under the whole length of the horizontal beams; that above and immediately over each scarf-joint, extending eighteen inches beyond each end of the joint, and resting immediately upon the longitudinal beam, was a horizontal flat plate of iron thirteen feet in length, and that the bolts passed upward through the grooved iron bars, the transverse planking, and the longitudinal beams, and also, at the middle of the bridge, through the plates of iron over the scarf-joints. A verdict supporting the patent was obtained under the rulings of Lord Chief Justice Cockburn and affirmed by the Court of Queen's Bench; but its judgment was unanimously reversed in the Exchequer Chamber in a considered judgment delivered by Mr. Justice Willes, and the judgment of reversal was affirmed by the House of Lords in accordance with the opinions of Lord Chancellor Westbury, Lord Cranworth, and Lord Wensleydale, and of a majority of the judges who attended, upon the ground, as stated by the Lord Chancellor, that the application of the channeled iron horizontally under the timbers of a bridge being well known, "the channeled iron was applied in a manner which was notorious, and the application of it to a vertical fish would be no more than the application of a well-known contrivance to a purpose exactly analogous or corresponding to the purpose to which it had been previously applied." (11 H. L. Cas., 683.) And all who gave opinions in the House of Lords concurred with the Court of Exchequer Chamber in the proposition of law that the mere application of an old contrivance in an old way to an analogous subject, without any novelty in the mode of applying such old contrivance to the new purpose, is not a valid subject-matter of a patent. (2 B. & S., 228; 11 H. L. Cas., 666, 672, 682, 684, 685.)

In the case at bar the old contrivance of a railroad-truck, with the swiveling king-bolt, transverse slot, and pendent divergent links, already in use under railroad-cars, is applied in the old way, without any novelty in the mode of applying it, to the analogous purpose of forming the forward truck of a locomotive-engine. This application is not a new invention, and therefore not a valid subject of a patent.

The decree of the circuit court must therefore be reversed, and the case remanded, with directions to dismiss the bill.

U. S. Circuit Court—Western District of Pennsylvania.

KELLER *et al. v.* STOLZENBACH *et al.*

Decided March 20, 1884.

1. A decree rendered against a plaintiff because of his failure to reply to a plea or set it down for argument is not conclusive, since all the authorities agree that in order to constitute the former judgment or decree a bar it must appear that the point in issue was judicially determined after a hearing and upon consideration of the merits.
2. During the existence of a partnership between two persons one of them invented a machine upon which a patent was granted to him. The firm paid the fees and costs of procuring the patent and the expenses of an experimental trial of the invention, and also paid the expenses of some litigation which ensued. It appeared, however, that all the outlay by the firm was more than repaid by the benefits arising from the use of the invention in the partnership business. *Held*, that upon these facts no implied license arises to the member of the firm not the inventor to make, vend, and use the patented machine after the dissolution of the partnership.

Messrs. Bakewell & Kerr and *Mr. D. F. Patterson* for the complainants.

Mr. G. H. Christy for the respondents.

ACHESON, *J.:*

Nicholas J. Keller, one of the plaintiffs, and Philip M. Pfeil, one of the defendants, entered into partnership on April 26, 1870, in the business of dredging and dealing in sand and gravel, the partnership lasting until April 10, 1875, when it was dissolved by mutual consent. During the existence of the partnership Keller invented a sand and gravel separator, for which letters patent were granted to him on May 21, 1872. With his consent, and at the firm expense, the patented apparatus was put on two boats owned by the firm—one called the "Hippopotamus," the other the

"Rainbow"—and was used thereon without charge during the continuance of the partnership. The firm paid the fees and costs of procuring the patent and the expenses of an experimental trial of the invention, and also paid the expense of some litigation which ensued. The evidence, however, tends to show that this outlay was more than made good by the advantage and benefits accruing to the firm from the free use of the invention on said boats. Upon the dissolution of the firm, each partner took at an agreed value one of the boats—Keller the "Hippopotamus," Pfeil the "Rainbow"—each then having the patented machine thereon. A contest immediately arose as to the right of Pfeil to use the patented machine on the "Rainbow," and Keller filed a bill in this court to restrain such use, alleging that the privilege had not passed with the boat. The decision of the court, however, was against him, and his bill was dismissed. Subsequently Pfeil built another boat, called the "Wharton McKnight," and placed and used thereon the patented apparatus. Thereupon Keller filed in this court another bill against Pfeil and his associates to restrain the infringement of his patent. To this bill the defendants filed a plea setting up the same matters of defense now relied on. To this plea the plaintiff did not reply, nor did he set down the same for argument. Wherefore a decree dismissing the bill was entered under and in the terms of the thirty-eighth rule in equity, viz:

> If the plaintiff shall not reply to any plea, or set down any plea or demurrer for argument on the rule-day when the same is filed, or on the next succeeding rule day, he shall be deemed to admit the truth and sufficiency thereof, and his bill shall be dismissed as of course, unless a judge of the court shall allow him further time for the purpose.

The defendants plead the decree entered under this rule in bar of so much of the present bill as relates to the "Wharton McKnight" or the use of the patented invention thereon. Whether this position is well taken is the first question in the case. That such decree is not conclusive is, I think, evident from the authorities, they all agreeing that in order to constitute the former judgment or decree a bar it must appear that the point in issue was judicially determined after a hearing and upon consideration of the merits. (1 Gr. on Ev., secs. 529, 530; Story's Eq. Pl., sec. 793; *Badger* v. *Badger*, 1 Cliff., 237, 245; *Haves* v. *Tiernan*, 53 Pa. St., 192; *Hughes* v. *United States*, 4 Wall., 232.)

In *Homer* v. *Brown* (16 How., 354) it was held that a judgment of non-suit, entered upon an agreed statement of facts submitted to the court for decision, was not a bar to a subsequent suit between the same parties and for the same cause of action. Says Mr. Justice Clifford in *Badger* v. *Badger*, *supra*:

> If the order of dismission was not upon the merits of the bill, it matters not whether it was with or without the consent of the complainant.

And Mr. Justice Field says in *Hughes* v. *United States*, *supra*:

> If the first suit * * * was disposed of on any ground which did not go to the merits of the action, the judgment rendered will prove no bar to another suit. (4 Wall., 237.)

Now, the primary purpose of rules of court being to regulate the practice and promote the dispatch of business, the intention to create an estoppel ought not to be lightly imputed to the rule now under consideration. Such effect, it seems to me, is foreign to the object to be subserved. True, the rule declares that the plaintiff so in default "shall be deemed to admit the truth and sufficiency" of the plea; but this implied admission is merely for the occasion and to open the way for a decree of dismission "as of course," without trial, hearing, or adjudication, a decree which is the equivalent of a judgment of non-suit at law for want of a narr or other default of a like nature.

It appears that the defendants are not only using the invention on the "Wharton McKnight," but that they have built another boat, the "Little Ike," upon which they intend (it is admitted) placing and using a sand and gravel separator constructed pursuant to Keller's patent; and they defend, generally, upon the ground that Pfeil is invested with a license to make, use, and sell the patented machine. No express license is shown, and none is asserted in view of the proofs. The defendants stand on the implied license. But if such license exists, it must spring from the facts heretofore stated—viz, the invention by Keller during the partnership between him and Pfeil, the free use, with Keller's consent, by the firm of the patented apparatus upon their boats, and the payment by the firm of the fees, costs, and expenses of procuring the patent, &c. But I cannot see that these facts afford any solid foundation for the defense set up.

In *McWilliams Manufacturing Co.* v. *Blundell* (11 Fed. Rep., 419) upon a substantially similar state of facts, it was held that the firm could make no claim to the patent, and after dissolution an injunction to restrain infringement issued against the late partner. Here the merit of the invention is Keller's exclusively. He is indebted to Pfeil for no ideas or suggestions. The letters patent were never treated as partnership property. At the dissolution of the firm the partners made a schedule of the firm assets at agreed valuations with a view to a division, but the patent was not in that schedule. The claim which Pfeil then asserted was the right to use the patented apparatus with which the "Rainbow" was equipped. To that extent his demand was reasonable and just, and it was sustained. But now he practically insists upon an equitable ownership in the patent, for he claims the unlimited right, individually and in connection with his present partners, to make, use, and vend the patented apparatus. But no express agreement is shown whereby the firm or Pfeil acquired any interest in the patent. If the firm paid the expenses connected with the issue of the patent, &c., they received a full equivalent in the use of the invention upon their two boats free of royalty; and in the absence of direct proof of any other or greater right in the firm, none is fairly inferable from the facts as they appear.

Our conclusion that Pfeil's right to use the invention is limited to the construction on the "Rainbow" finds support in adjudged cases. (*Brickill* v. *Mayor, &c., of New York*, 7 Fed. Rep., 479; *Wade* v. *Metcalf*, 16 Id., 130.) Nor does this view conflict with the decisions cited by the defendants. In the nature of the case (the invention being a process) the presumed license in *McClurg* v. *Kingsland* (1 How., 202) was unlimited and justly so under the circumstances.

In *Chabot* v. *American Button-Hole, &c., Co.* (6 Fisher, 71) the facts were not only substantially similar to those in *McClurg* v. *Kingsland*, but there was the additional element of an express contract, the terms of which greatly strengthened the presumption of an unrestricted license. The subject-matter of the patent in Slemmer's Appeal (58 Pa. St., 155) was a process which, if legally the invention of one partner, was in fact the result of partnership labor, experiment, and development; and the dealings of the partners with each other had been of such a character that it would have been grossly inequitable to deny to any of them the right to use the invention.

In *Kinny's Patent Button-Holing Co.* v. *Somervell et al.* (38 Law Times R., 878) the partnership was formed for the sole purpose of working the patented invention and had been conducted for several years, during which time the partner whom it was attempted arbitrarily to enjoin had aided in perfecting the invention and invested his capital in the business. It was a clear case (as was Slemmer's Appeal) of a dedication of the use of the invention to the partnership without limit as to time. But of any such dedication of Keller's patent there is a lack of evidence, and the equity of Pfeil is fully satisfied by the use of the patented apparatus on the "Rainbow."

Let a decree be drawn in favor of the plaintiffs, in accordance with the views expressed in this opinion.

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OF THE
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[BY AUTHORITY OF CONGRESS.]

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Patents on Electricity.

The Patent Office has prepared, and has now for sale, an Index (arranged alphabetically, numerically, and by classes) of all patents relating to Electricity granted by the United States prior to June 30, 1882, comprising about four thousand patents, and making a volume of two hundred and fifty pages.

The price, in paper cover, is $3 per volume; bound, $5 per volume.

Issue of April 15, 1884.

Patents	384	No. 296,716 to No. 297,099, inclusive.
Designs	8	No. 14,957 to No. 14,964, inclusive.
Trade-Marks	28	No. 11,066 to No. 11,113, inclusive.
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Arkansas	.....	.....	New Hampshire	4	.....
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Minnesota	2	.....			
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Chili	.....	.....	Scotland	1	.....
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Cuba	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	23	5
England	9	1			
France	4	4			

DESIGNS.

14,957.—ACE OF SPADES FOR PLAYING-CARDS.—*Adolph Binkert*, Philadelphia, Pa., assignor to *Caterson, Bretz & Co.*, same place. Application filed March 13, 1884. Term of patent 3½ years.

14,958.—ORNAMENTATION OF SEWING-MACHINES.—*William Haehnel*, New York, N. Y., assignor to *Palm & Fechteler*, same place. Application filed February 21, 1884. Term of patent 7 years.

14,959.—FONT OF PRINTING-TYPE.—*Charles E. Heyer*, Chicago, Ill., assignor to *Arthur M.* and *Alson E. Barnhart*, both of same place. Application filed July 16, 1883. Term of patent 14 years.

14,960.—ORNAMENTATION OF TABLE-WARE.—*Charles A. May*, Trenton, N. J., assignor to *Joseph Burroughs* and *Elijah Mountford*, both of same place. Application filed October 29, 1883. Term of patent 7 years.

14,961.—PHOTOGRAPHIC-ALBUM LEAF.—*Stephen Meers*, Brooklyn, N. Y. Application filed March 7, 1884. Term of patent 14 years.

14,962.—ORNAMENTATION OF TABLE-WARE.—*Elijah Mountford* and *Charles A. May*, Trenton, N. J., assignors to said *Mountford* and *Joseph Burroughs*, same place. Application filed October 29, 1883. Term of patent 7 years.

14,963.—FONT OF PRINTING-TYPE.—*John K. Rogers*, Brookline, Mass. Application filed March 3, 1884. Term of patent 3½ years.

14,964.—FONT OF TYPE.—*John K. Rogers*, Brookline, Mass. Application filed March 15, 1884. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

11,086.—SOAP.—*James Armstrong & Co.*, Baltimore, Md. Application filed March 6, 1884.

"The representation of two horseshoes with the heels together."

11,087.—METALLIC PENS.—*George D. Barnard & Co.*, St. Louis, Mo. Application filed March 7, 1884.

"The arbitrary word-symbol 'VULCAN.'"

11,088.—VELVETS, VELVETEENS, VELVETAS, AND SIMILAR PILE FABRICS.—*Charles E. Bruce*, Brooklyn, N. Y. Application filed February 28, 1884.
"The word 'WONDERFUL.'"

11,089.—WATER-PROOF CLOTHING.—*John F. Carter*, Beverly, Mass. Application filed March 14, 1884.
"The representation of a lozenge, or a four-sided figure having two of its angles acute and the other two obtuse."

11,090.—SPRING-BALANCE SHADE-ROLLERS.—*Charles H. Cushman*, Boston, Mass. Application filed May 25, 1883.
"The arbitrary words 'CUSHMAN'S KNAPP,' printed in white characters on a shaded ground, representing a six coil spring-roller."

11,091.—FRENCH AND OTHER FINE CANDY.—*Darby & Co.*, Baltimore, Md. Application filed February 28, 1884.
"A boating scene. In the foreground is a body of water having on it a sail-boat and a pair of swans, in the background foliage, and on the right a cupid flying."

11,092.—SLEEVE-BUTTONS, COLLAR-BUTTONS, AND STUDS.—*Howard & Son*, Providence, R. I. Application filed February 23, 1884.
"'WORLD,' either expressed as a word or pictorially."

11,093.—CONDITION-POWDERS.—*Stephen Jennings*, Boston, Mass. Application filed March 3, 1884.
"The words 'SHERIDAN'S CAVALRY.'"

11,094.—OLIVE-OIL SOAP.—*Liebman & Butler*, Brooklyn and New York, N. Y. Application filed February 28, 1884.
"The word 'VIRGIN.'"

11,095.—ROASTED COFFEE.—*Ricker & Lee*, Galveston, Tex. Application filed March 12, 1884.
"The representation of a negro carrying a tray bearing a coffee-pot, cream-pitcher, sugar-bowl, and coffee cups and saucers."

11,096.—MEDICINE FOR THE CURE OF FEMALE DISEASES.—*C. F. Simmons & Co.*, St. Louis, Mo. Application filed December 29, 1883.
"The arbitrarily-selected words 'LA PROVIDENCIA,' in connection with the picture of a cactus."

11,097.—SAFETY-MATCHES.—*Trummer & Co.*, London, England. Application filed March 3, 1884.
"The word 'NITKDALS,' united with the arbitrary symbol of a giraffe."

11,098.—WHITE SEWING-MACHINES.—*The White Sewing Machine Company*, Cleveland, Ohio. Application filed March 3, 1884.
"The words and letters 'WHITE SEWING MACHINE CO., CLEVELAND, O., U. S. A.,' arranged in an elliptical band encircling a nude figure bearing a flowing scarf with the inscription 'WHITE PAR EXCEL.'"

11,099.—BICALCIUM ACID LACTATE.—*Avery Lactate Company*, Boston, Mass. Application filed March 8, 1884.
"The representation of a cow."

11,100.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"The letters 'C. S. I.'"

11,101.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"The words, letters, and sign 'J. CLARK & CO.'"

11,102.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed February 20, 1884.
"The word-symbol 'RACER.'"

11,103.—CIGARS.—*Frederick Glahn*, Green Bay, Wis. Application filed February 19, 1884.
"The arbitrarily-selected letter-symbol 'K. P.' in connection with the picture of a man in the uniform of a Knight of Pythias arranged within a triangle."

11,104.—BEER AND OTHER MALT AND ALCOHOLIC LIQUORS.—*Grande Société Française de Distilleries, Malteries, et Brasseries*, Paris, France. Application filed July 13, 1883.
"The representative symbol of a comet and the word 'COMÈTE.'"

11,105.—CORDIALS AND LIQUORS.—*Les Héritiers de Marie Brizard et Roger, M. B. Glotin, Achard & Glotin*, Bordeaux, France. Application filed March 19, 1884.
"The representation of a distilling apparatus."

11,106.—LIQUORS AND CORDIALS.—*Les Héritiers de Marie Brizard et Roger, M. B. Glotin, Achard & Glotin*, Bordeaux, France. Application filed March 19, 1884.
"The words 'MARIE BRIZARD & ROGER' and peculiar forms of scroll-work printed in silver and blue on a white ground."

11,107.—CORDIALS AND LIQUORS.—*Les Héritiers de Marie Brizard et Roger, M. B. Glotin, Achard & Glotin*, Bordeaux, France. Application filed March 19, 1884.
"The representation of a distilling apparatus and the words 'MARIE BRIZARD & ROGER, BORDEAUX.'"

11,108.—BAKING-POWDER.—*William Prescott*, Cambridgeport, Mass. Application filed December 19, 1883.
"The portrait of William Prescott and the word 'EXCELSIOR.'"

11,109.—SHIRTS, DRAWERS, AND OVERALLS.—*Joseph Rice* and *Israel D. Lees*, Philadelphia, Pa. Application filed March 7, 1884.
"The word 'CRESCENT' or the representation of a crescent."

11,110.—CIGARS AND CIGARETTES.—*Herman Segnitz & Co.*, Milwaukee, Wis. Application filed February 26, 1884.
"The words 'THE TRAVELER.'"

11,111.—PHOSPHATE FERTILIZERS.—*Shroff & Co.*, Leesburg, Va. Application filed February 27, 1884.
"The word 'KETOCTIN.'"

11,112.—SMOKING-TOBACCO.—*The Wellman & Dwire Tobacco Company*, Quincy, Ill. Application filed February 16, 1884.
"The words 'STANDARD TIME' and the arbitrary symbol of a clock."

11,113.—UNFERMENTED GRAPE-JUICE.—*August Werner*, New York, N. Y. Application filed March 11, 1884.
"The words 'GRAPE CREAM.'"

LABELS.

4,051.—Title: "ANTIFERMENTINE" (FOR A CHEMICAL POWDER.)—*The Antifermentine Company, (Limited.)* New York, N. Y. Application filed March 22, 1884.

4,052.—Title: "91,895 NINETY-ONE, EIGHT NINETY-FIVE. COUGH MIXTURE."—*M. J. Breitenbach*, New York, N. Y. Application filed March 22, 1884.

4,053.—Title: "TRUE AND ORIGINAL TRIPLE LEAF BRAND BAY RUM."—*D. Brilles*, New York, N. Y. Application filed February 28, 1884.

4,054.—Title: "PETROLEUM SOAP."—*George C. Buntin* and *James A. Draper*, Terre Haute, Ind. Application filed March 19, 1884.

4,055.—Title: "IMPERIAL VEGETABLE BLOOD AND LIVER PILLS."—*Reason Drake*, La Grange, Ind. Application filed March 19, 1884.

4,056.—Title: "SYRINGE."—*Albert H. Essex*, Fall River, Mass. Application filed March 22, 1884.

4,057.—Title: "BOTANIC SARSAPARILLA."—*G. R. Finlay & Co.*, New Orleans, La. Application filed March 25, 1884.

4,058.—Title: "ARTIST'S EYE LOTION."—*L. Fuller*, New York, N. Y. Application filed March 22, 1884.

4,059.—Title: "ELPHIN HAIR RESTORER."—*L. Fuller*, New York, N. Y. Application filed March 22, 1884.

4,060.—Title: "THE ORIGINAL PERFECT FITTING WAUKENPHAST." (FOR BOOTS AND SHOES.)—*Hubert Gardiner*, Philadelphia, Pa. Application filed March 17, 1884.

4,061.—Title: "SEAL ROCK SPRING WATER."—*Silas Gurney*, Boston, Mass. Application filed March 20, 1884.

4,062.—Title: "LIBERTY" (FOR TIP-LININGS FOR HATS.)—*Francis G. Hanson*, Brooklyn, N. Y. Application filed March 24, 1884.

4,063.—Title: "STAR BUTTER" (FOR CRACKERS.)—*G. W. Heathman & Co.*, Dayton, Ohio. Application filed March 22, 1884.

4,064.—Title: "CONGRESS HALL," (FOR CIGARS.)—*Louis Kuhn*, Baltimore, Md. Application filed March 25, 1884.

4,065.—Title: "DIAMOND," (FOR BITTERS.)—*Herbert W. Lake*, Waterbury, Conn. Application filed March 25, 1884.

4,066.—Title: "FABRICE PARIS" (FOR GLOVES.)—*Langfeld, Lichten & Co.*, Philadelphia, Pa. Application filed March 25, 1884.

4,067.—Title: "CHAUTAUQUA BAKING POWDER."—*Arthur S. McCall*, Jamestown, N. Y. Application filed March 25, 1884.

4,068.—Title: "CHARMING BELLE" (FOR FLOUR.)—*Meyer & Bulte*, St. Louis, Mo. Application filed March 17 1884.

4,069.—Title: "GOYNE'S GREAT BLOOD REMEDY."—*George Twigge Miller, Charles Edmund Gilbert, Edward James McGehee*, and *Louis Breard*, Perry, Ga. Application filed March 22, 1884.

4,070.—Title: "MAY BLOSSOM." (FOR CIGARS.)—*M. Richardson & Son*, Elmira, N. Y. Application filed March 24, 1884.

4,071.—Title: "SCHRODER'S MEDICATED PAD."—*John A. Schroder*, Dayton, Ohio. Application filed March 20, 1884.

4,072.—Title: "SCOTT'S COCA BEEF AND IRON WITH PHOSPHORUS."—*Charles W. Scott*, Kansas City, Mo. Application filed March 20, 1884.

4,073.—Title: "CLENZENE" (FOR SOAP OR SAPONACEOUS MATTER.)—*Alonzo Burton Simonds*, New York, N. Y. Application filed March 19, 1884.

4,074.—Title: "SPERRY'S GERMEA FOR BREAKFAST," (FOR FLOUR.)—*S. W. Sperry*, San Francisco, Cal. Application filed March 20, 1884.

4,075.—Title: "STEWART'S A. Q. C." (FOR A MEDICAL COMPOUND.)—*J. A. Stewart* and *M. R. Stewart*, Conyers, Ga. Application filed March 4, 1884.

4,076.—Title: "DOCTOR WILLIAMS' HUMALICO." (FOR A MEDICAL COMPOUND.)—*Wm. D. Vail & Co.*, Greenbush, N. Y. Application filed March 19, 1884.

4,077.—Title: "WEEKS' WORM POWDERS."—*James E. Weeks*, Jersey City, N. J. Application filed March 18, 1884.

4,078.—Title: "SILVER DUST POLISHING POWDER."—*James T. White*, Philadelphia, Pa. Application filed March 19, 1884.

4,079.—Title: "PROCTER'S INSECT POWDER."—*John H. Winkelmann*, Baltimore, Md. Application filed March 25, 1884.

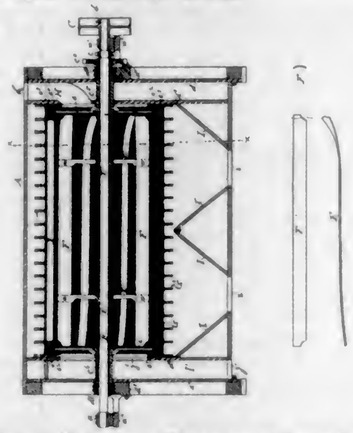
4,080.—Title: "PROCTER'S LIQUID GLUE."—*John H. Winkelmann*, Baltimore, Md. Application filed March 25, 1884.

4,081.—Title: "FLEMING'S TEA BERRY TOOTH POWDER."—*John H. Winkelmann*, Baltimore, Md. Application filed March 25, 1884.

PATENTS

GRANTED APR. 15, 1884.

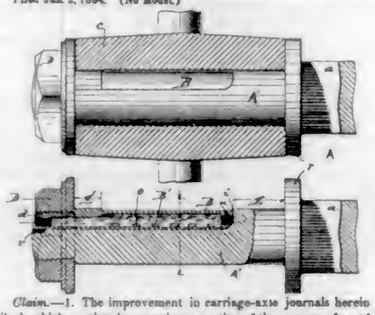
296,716. FLOUR-SIFTING MACHINE. FRANZ WILHELM ANDREE, Chicago, Ill. Filed Aug. 2, 1883. (No model.)



Claim.—1. The combination of the bolt or screen G, shaft B, and sleeves c^2 c^3, provided with the radiating arms *e*, having peripheries *e'*, with the circular plates c^4 c^4, formed with grooves c^5, and the outer beaters, D, substantially as described and shown.

2. The bolt or screen G, shaft B, hube E, radiating arms E', concaved on their outer ends, and beaters or strips F, in combination with the sleeves c^2 c^3, provided with radiating arms *e*, having peripheries *e'*, circular grooved pieces c^4 c^4, outer beaters, D, and means for rotating said shaft and the beater-carrying sleeves at different speeds, substantially as described and shown.

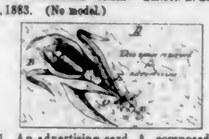
296,717. SELF-OILING AXLE. ELIJAH P. BAKER, Olneyville, R. I. Filed Jan. 2, 1884. (No model.)



Claim.—1. The improvement in carriage-axle journals herein described, which consists in removing a portion of the upper surface of the journal, said cut extending from the outer end of the axle to or nearly to the collar, and adapted to receive a chambered and apertured oil-receiver, the outer end of the latter being provided with a screw-thread, thereby adapting the receiver to be retained in position by means of the axle-nut, all substantially as shown, and for the purpose set forth.

2. In a carriage-axle journal, cut away as shown and described, the removable chambered and apertured oil-receiver B, provided with means for retaining the same in position laterally, and further provided at its outer end with the threaded portion *b*, adapted to engage with the axle-nut, substantially as shown and set forth.

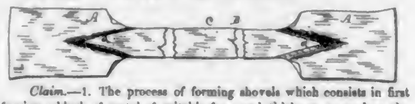
296,718. ADVERTISING-CARD. BENSON D. BALDWIN, Chicago, Ill. Filed Feb. 9, 1883. (No model.)



Claim.—1. An advertising-card, A, composed of paper or other suitable material, having the design of a flower, B, thereon, a part of the face of the card being adapted to receive advertisements, the card being cut through at points E over the flower, in combination with the bottle C, inserted in the card through the cut portions, so that the body of the bottle forms the stamen of the flower, and adapted to contain perfume, substantially as described, and for the purpose set forth.

2. An advertising-card composed of paper or other suitable material, having the design of a flower thereon, a part of the face of the card being adapted to receive advertisements, the card being cut through at points on or over the flower, in combination with a bottle adapted to contain perfume, inserted in the card through the cut portion, so that the body of the bottle forms the stamen of the flower, the bottle being secured to the card by a ribbon or string, all substantially as described, and for the purpose set forth.

296,719. PROCESS OF FORMING SHOVELS. ELMORE A. BARNES, Pittsburg, Pa. Filed Sept. 17, 1883. (No model.)



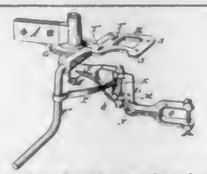
Claim.—1. The process of forming shovels which consists in first forging a block of metal of suitable form and thickness to produce the required shape and size of rolled blade-blanks, with a socket parting or cavity therein, then rolling the said block to a uniform thickness double the required thickness of the shovel-blade, or thereabout, and then completing the blade-blank by inserting it between revolving rolls from the discharge side thereof, to reduce the same, the said rolls having recesses for forming the re-enforced portion over the socket of the blade.

2. The improved process of forming shovels which consists in first forging a block of metal of suitable form and thickness to produce the required shape and size of rolled blade-blank, with a socket parting or cavity therein and the upper ends of the strap part united, then rolling the said block to a uniform thickness double the required thickness of the shovel-blade, or thereabout, and then completing the blade-blank by inserting it between revolving rolls from the discharge side thereof, to reduce the same, the said rolls having recesses for forming the re-enforced portion over the socket of the blade.

296,720. WHEEL-PLOW. JOHN W. BARTLETT, Moline, Ill., assignor to the Moline Plow Company, same place. Filed Oct. 26, 1883. (No model.)

Claim.—1. A frame carrying a mold-board plow and provided with rear sustaining-wheels, in combination with a swiveled leading-wheel arranged to travel in the preceding furrow, an independently-

296,720.



swiveling draft device, and an adjustable connection, substantially as described, whereby the draft device and wheel may be maintained in fixed relations to each other while in action, but an angular adjustment of one with respect to the other permitted at will, whereby the leading-wheel may be caused to travel constantly in one line or another with respect to the line of draft.

2. The draft-frame, the plate connected thereto by the king-bolt, the axle extending through the plate, the tongue-plate journaled on the axle, the draft devices connected to the king-bolt, and the connection between the draft devices and axle, said parts being combined substantially as described.

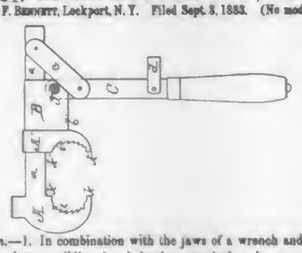
3. In combination with the draft-frame, and the axle connected therewith by the king-bolt, the draft-arm mounted on the lower end of the king-bolt, and the adjustable bar or brace connecting the draft-arm with the outer end of the axle.

4. In a draft mechanism for a wheeled plow, a swiveling axle, a tongue, connecting devices whereby the tongue is caused to turn the axle, draft devices adjustable laterally around the pivot of the axle, and adjustable connections between said draft devices and the axle, substantially as described, whereby the wheel is caused to follow the line of draft and the lateral adjustment of the draft devices permitted.

5. In a wheeled plow, the axle movable around a vertical pivot, combined with a draft-arm movable independently around the same pivot, and intermediate devices for securing the lateral adjustment of the draft-arm with respect to the axle, substantially as shown.

6. In combination with a plow-carrying frame having sustaining-wheels at the rear, a leading-wheel mounted on a swiveling axle and adapted to travel in the preceding furrow, a horizontally-swiveling draft device, an adjustable connection whereby the wheel and draft device may be adjusted and fixed in position with respect to each other, as described, and a pole or tongue fixed to the swiveled axle by devices substantially as described, and adapted to permit a horizontal angular adjustment of the tongue with respect to the wheel and draft devices, whereby the angular positions of the tongue, wheel, and draft devices may be varied independently of each other, or fixed while in action.

296,721. SELF-ADJUSTING FULCRUM-LEVER WRENCH. BENJAMIN F. BENNETT, Lockport, N. Y. Filed Sept. 3, 1883. (No model.)



Claim.—1. In combination with the jaws of a wrench and a main bar, *a*, the short or sliding bar *b*, having attached to its rear end the movable lever-handle bar C, and with the fulcrum side braces, *c*, all arranged and operating substantially as specified.

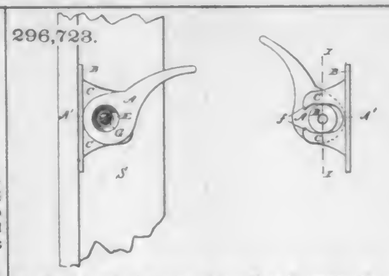
2. In a wrench, the combination of the jaws, long bar *a*, short movable bar *b*, with jointed handle-bar, C, plate B, metallic fulcrum side braces, *c c*, and loop *d*, all arranged and operating substantially as specified.

296,722. FIRE-PROOF PAPER. D. AUSTIN BROWN, Boston, Mass. Filed Oct. 6, 1883. (No specimens.)

Claim.—As an improved article of manufacture, a fire-proof or non-conducting paper composed of asbestus and infusorial earth, substantially as herein described.

296,723. SASH-HOLDER. SETH A. BROWN, Buffalo, N. Y. Filed Oct. 22, 1883. (No model.)

Claim.—A sash-lock consisting of the pressing-plate B, having the separate parallel arms C C, provided with the projections F F, in combination with a cam-lever, A, having the eccentric portion or cam A' and a boss or projection, D, the latter being concentric to the pivot G,



and provided with a depression or recess, E, on its opposite side, to receive the screw-head.

296,724. TOY AND ADVERTISING MEDIUM. LEE S. BURRIDGE and NEWMAN R. MARSHMAN, New York, N. Y. Filed Nov. 15, 1883. (No model.)

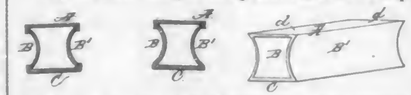


Claim.—1. As an advertising medium, any figure, A, having one or two pivoted parts, F F, the wire C, and the small figure or object E, all substantially for the purpose described.

2. As a toy, any figure, A, shown on a flat surface, having one or two hinged parts, F F, the wire C, and the small figure or object E, likewise shown on a flat surface, all substantially for the purpose as shown and described.

296,725. RAILWAY-TIE. WILLIAM T. CARTER, Newark, N. J. Filed Oct. 31, 1883. (No model.)

Brief.—A hollow railway-tie having concave sides and a flat top.



Claim.—1. As a new article of manufacture, a hollow railway-tie having concave sides, as specified and set forth.

2. The combination, in a hollow railway-tie, of the curved and concave sides and flat top or bearing surface, as specified and set forth.

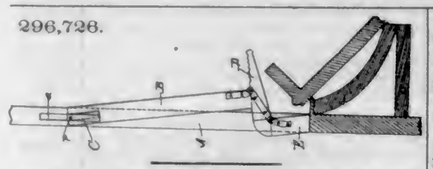
296,726. MUSIC-DESK FOR PIANOS. MILO J. CHASE, Richmond, Ind. Filed Aug. 14, 1883. (No model.)

Claim.—1. A music-rack for upright pianos, consisting of a rack pivoted in the upright frame and to a ledge also pivoted in the frame, the connection being such as to permit the rack and ledge to be folded together in a vertical plane when out of use, substantially as set forth.

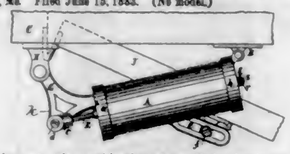
2. In a piano music-rack, the rack B, pivoted by a sliding connection to the piano-frame, in combination with a ledge, D, pivoted to the piano-frame and swinging outward, substantially as and for the purpose specified.



296,726.



296,727. PNEUMATIC DOOR-CHECK. WALTER C. CLARK, Auburndale, Mass., assignor to the Shaw Door-Check and Spring Company, Portland, Me. Filed June 15, 1883. (No model.)



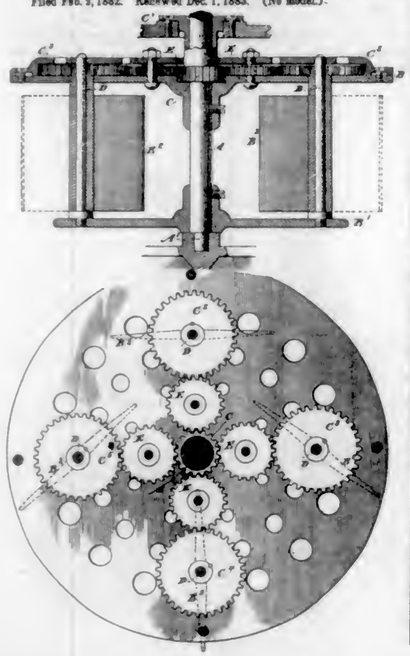
Claim.—1. The combination of a cylinder having a piston and spring therein, and pivoted at one end to the door-frame, with a lever pivoted at one end to the door-frame, having at the other end a slot, *e*, into which a stud on the door extends, and having an arm, K, to which the outer end of the piston-rod is pivoted, said arm being formed with said lever as an integral part thereof, substantially as and for the purpose set forth.

2. In combination with the disk *g*, forming part of a piston in a pneumatic door-check, and having an opening, *l*, a disk, *j*, of leather or of other pliable material, having an opening, *k*, substantially as and for the purpose set forth.

3. In a pneumatic door-check, the combination of the disk *g*, having an opening, *l*, valve *j*, of leather, or of material having like pliability, having opening *k*, cup-packing A, having one or more openings, *m*, and disk and nut *i*, having one or more openings, *n*, substantially as described.

4. In combination with the cap *b* of the cylinder, having one or more openings, *p*, the disk *q*, of felt or other suitable material, the washer *r*, and screw *s*, to form an adjustable vent and muffler, substantially as set forth.

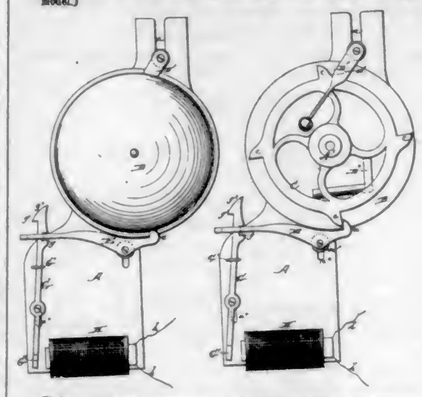
296,728. SUBMERGED FEATHERING PADDLE-WHEEL. ALFRED CLOUGHLY, Long Branch, N. J., Executor of TRUMAN A. COOK, deceased. Filed Feb. 9, 1882. Renewed Dec. 1, 1883. (No model.)



Claim.—1. In a submerged wheel for propelling boats or vessels, the combination of a central vertical shaft, A, a fixed non-revolving gear-wheel, C, intermediate revolving wheels, E E E E, rotating propelling-blades B^2, which revolve upon shafts D, fixed on the disk of the wheel, gear-wheels C^2, C^3, C^4, and C^5, which drive the propeller-blades, and a chambered disk, B, which incloses all of the gear-wheels, substantially as and for the purpose set forth.

2. In a submerged wheel for propelling vessels, the combination of a central rotating shaft, A, fixed gear-wheel C, four intermediate revolving wheels, E E E E, blade-propelling wheels C^2, C^3, C^4, and C^5, the propelling-blades B^2, revolving upon fixed shafts, and the shafts D, which form bearings for the entire length of the blades, the arrangement of the parts being substantially as described, whereby the blades are maintained in their proper positions with reference to the path of the vessel, as set forth.

296,729. ELECTRIC CALL-BELL. GEORGE P. CONANT, Geneva Lake, Wis., assignor, by direct and mesne assignments, of one-half to Albert E. Lytle and Robert B. Smith, both of Chicago, Ill. Filed July 5, 1883. (No model.)



Claim.—1. In an alarm or signal bell, a call-wheel having arms or projections adapted to actuate the bell-hammer, in combination with an actuating drum or wheel upon the same shaft, formed with an angular recess, one arm of which contains a spring, and an angular pawl adapted, when placed in this recess, to engage with the arms or spokes of the call-wheel, substantially as shown and described.

2. In an alarm or signal bell, a bell, a vibrating hammer formed with a projection on its shank or arm, and a revolving striking or call wheel provided with a series of arms or projections, in combination with a vibrating lever having one end formed with a hook adapted to engage the call-wheel, an armature-lever adapted to engage with the vibrating lever, and an electro-magnet, substantially as and for the purpose set forth.

3. In an alarm or signal bell, the call-wheel C, formed with projections *c*, and the hooked escape-lever E, having a slot, *e'*, through one end, in combination with the lever G, formed with notch *g*, projection *g'*, and beveled nose g^2 upon one end, and carrying the armature G' upon the other, and the electro-magnet H, all constructed and arranged to operate substantially as and for the purpose set forth.

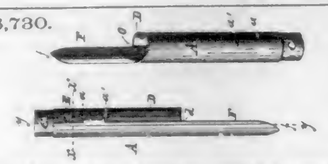
4. In an alarm or signal bell, the call-wheel C, having projections *c*, and the hooked escape-lever E, in combination with the spring-actuated drum B upon the same post as the call-wheel, and provided with the angular recess *b'*, spring *b'*, and angular pawl B^2, substantially as and for the purpose set forth.

5. In an alarm or signal bell, the base A, formed with slots a' a^2 a^4, post A', carrying the gong D, drum B, and call-wheel C, and the hammer D', formed with a projection, *d*, in combination with the escape-lever E, having hook *e* and slot *e'*, armature-lever G, having upon one end the armature G', and the other formed with the notch *g* and beveled nose g^2, the spring G^2, and the electro-magnet H, all constructed and arranged to operate substantially as and for the purpose set forth.

296,730. COMBINED PENCIL-SHARPENER, ERASER, &c. JOHN A. COOK, Buffalo, N. Y. Filed Jan. 14, 1884. (No model.)

Claim.—1. An improved article of manufacture, consisting of a tube having a knife-blade rigidly secured on one end thereof, said blade being fixed to one side of the end of said tube and projecting beyond said end, whereby the pencil may be inserted into the knife end of the tube, the pencil secured, and the edges and point of the knife protected, substantially as specified.

296,730.

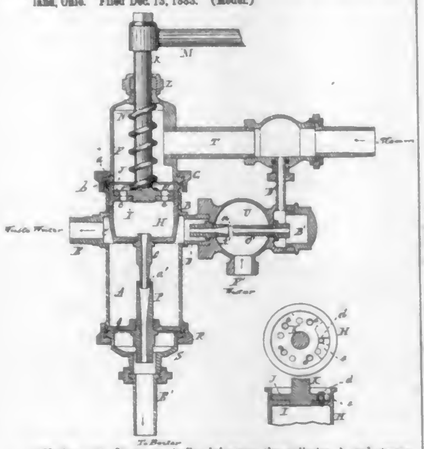


2. An improved article of manufacture, consisting of a tube having a knife-blade transversely curved and rigidly secured on one end thereof, said blade being fixed to one side of the end of the tube and projecting beyond said end, substantially as described, and for the purposes set forth.

3. The tube A, having the lip *e* formed integral therewith, in combination with the eraser and cushion C, substantially as described, and for the purposes set forth.

4. The blank A, for a combined pencil-holder and penknife, adapted to be formed into tubular shape, substantially as described, said blank consisting of the main portion A, having slots *a a'*, starting from the points *g g'* on one edge of said blank, the projection *e*, and the lance-shaped projection F, as specified and explained.

296,731. STEAM-BOILER INJECTOR. WILLIAM W. COWLEY, Cleveland, Ohio. Filed Dec. 13, 1883. (Model.)

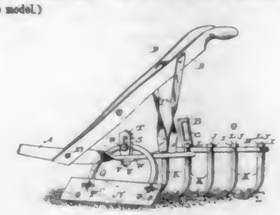


Claim.—1. In steam-boiler injectors, the cylinder A and steam-chamber F, connected to each other in the relation shown and described, said cylinder having therein a steam-chamber, H, provided with a diaphragm or valve-seat, having therein steam-ports *c*, rotating valve provided with steam-ports *c'*, arranged to register with the ports *c* of the diaphragm or valve-seat, separating the interior of the steam-chamber from the interior of the cylinder, valve-stem, and spring constructed and arranged to co-operate, substantially as set forth, and for the purpose specified.

2. The arrangement and combination of the steam-chamber F, steam-chamber B', pipe T, pipe D', and hollow globe provided with an inlet for the passage of water therein, substantially as herein set forth.

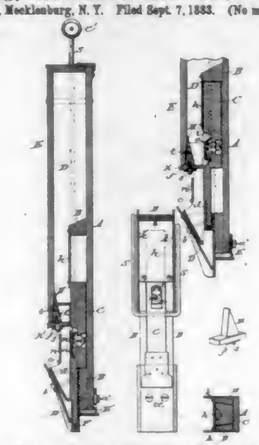
3. The cylinder A, provided with an enlargement forming an interior recess around the steam-chamber H, inlet B, and waste-water pipe, substantially as herein set forth.

296,732. CULTIVATING HARROW AND SCRAPER. WILLIAM R. CRAIG, Columbia, Tenn. Filed June 15, 1883. Renewed Mar. 13, 1884. (No model.)



Claim.—The combination of the beam having one or more vertical perforations, a vertically-slotted plate having a screw-threaded shank, nutted to said beam, a bail bolted adjustably to said slotted plate and straddling the beam, and a scraper having slots through which pass bolts, by which it is connected adjustably to the ends of the said bail, as set forth.

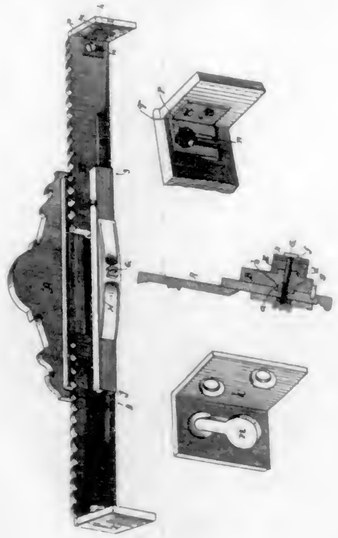
296,733. HAND CORN AND SEED PLANTER. FRANK EUGENE CULVER, Mecklenburg, N. Y. Filed Sept. 7, 1883. (No model.)



Claim.—The combination of the socket B, having a mortise with inclined sides through it, the plunger C, having in its upper portion a tenon, to fit and reciprocate in the mortise, main board A, inclined wedge H, plate A, eyelet-guides *e e*, and the metallic link S, substantially as specified.

296,734. CORNICE. WALLACE H. DODGE, Mishawaka, Ind. Filed Apr. 16, 1883. (No model.)

Brief.—An extensible window-cornice having an ornamental center-piece, two wing-pieces, and return end pieces. The wing-pieces are securely fastened to the center-piece by a clamping-bar, and is itself strengthened by a washer or plate concaved on its inner or under side.

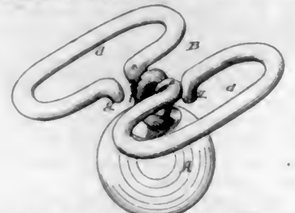


Claim.—1. The center-piece A, wings B B, clamping-piece E, and screw G, combined with the plate H, substantially as and for the purposes set forth.

2. The center-piece A, provided with the groove *a*, the wings B B, provided with piece *b* and ribs *d*, combined with clamping-piece E, provided with groove *f*, the plate H, as described, and the bolt G, substantially as set forth.

3. The wing-piece B, provided with rabbet *q*, and the detached return-piece I, combined with the angle-plate *k*, provided at one end with means for permanent attachment with said return-piece, and at the other end with the slot *n*, adapted to slip over and fit the screws *p* and hold said return-piece against the shoulder of said rabbet, as set forth.

296,735. BUTTON-FASTENER. WALLACE H. DODGE, Mishawaka, Ind. Filed Sept. 24, 1883. (No model.)

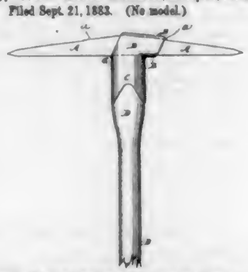


Claim.—1. A wire button-fastener constructed with the central part, *e*, to hold the button-eye, and the T-head portions *d d*, curved around, substantially as shown, whereby the terminals are brought close to the part *e*, as described, to prevent displacement of the button-eye.

2. A wire button-fastener with the central part, *e*, and the T-head portions *d d*, the terminals being brought around close to the part *e*, and one or both of them turned downward, as at *g*, substantially as described.

3. A wire button-fastener having the central part, *e*, with the depressed bend *i*, and the T-head portions *d d*, having the terminals bent around near to the part *e*, and bent downward, as at *g*, substantially as and for the purpose described.

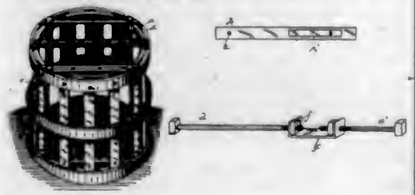
296,736. PICK. GEORGE W. ELLIOTT, Liverpool, County of Lancaster, England. Filed Sept. 21, 1883. (No model.)



Claim.—1. In combination with the handle, the tapered socket overhanging the handle on one side only, its larger end being next the handle, as described and shown.

2. In a pick, a blade-socket formed with stout curved sides, capable of giving slightly when the tapering blade is forced into the socket with great force, whereby a constant grip is maintained by the socket upon the blade, substantially as described.

296,737. KNOCKDOWN CRATE. JOEL A. H. ELLIS, Beaver Falls, Pa. Filed July 18, 1883. (No model.)

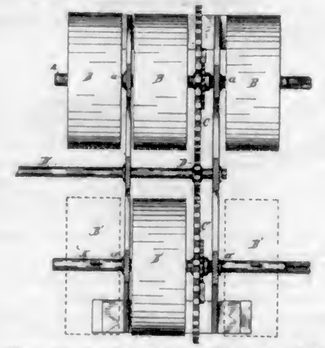


Claim.—1. A hoop for barrels, casks, or crates, which consists of an inner section, *a*, and an outer section, *a'*, said sections riveted together and provided with intermediate blocks, *b*, having stave-openings between them, substantially as and for the purposes described.

2. In knockdown crates, the staves A, provided with lateral cleats A', said cleats adapted to hold the hoops in their proper relative positions, substantially as and for the purposes described.

3. In knockdown crates, the combination, with the heads, staves, and hoops, of the bolts *d d'*, the connecting-iron *f*, and the nuts *f''*, substantially as and for the purposes set forth.

296,738. SPRING-MOTOR. JOSEPH W. FAWKES, Oak Park, Ill. Filed Feb. 23, 1884. (No model.)



Claim.—1. A spring-motor comprising a series of co-operating springs, and having a part of said springs made detachable, for the purpose of adapting said motor to render different quantities of power, substantially as shown and described.

2. In a spring-motor, a shaft, A or A', bearing a series of co-operating springs, a part of which springs are adapted to be disengaged for the purpose of deriving different quantities of power from said motor, substantially as shown and set forth.

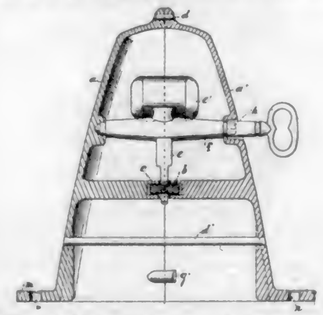
3. In a spring-motor, a shaft, A or A', having its bearings at such distance from its ends as to adapt said ends to receive one or more springs, substantially as and for the purposes set forth.

4. In a spring-motor, a shaft, A, and rod *b*, each having its bearings at such distance from its ends as to adapt said shaft and rod to receive one or more springs, B, substantially as shown and described.

5. A spring-motor comprising a series of co-operating shafts, A A', each bearing a series of detachable or removable springs, substantially as and for the purposes specified.

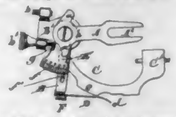
6. In a spring-motor, a series of shafts, A A', arranged about a central transmitting-shaft, D', said shafts A A' each bearing a series of detachable or removable springs, substantially as shown and set forth.

296,739. HITCHING-BLOCK. FRANKLIN GIFFORD, Springfield, Ohio, assignor to Joseph G. Jacobs and Christian Hanika, both of same place. Filed Oct. 13, 1883. (No model.)



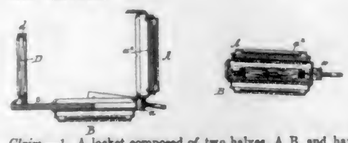
Claim.—A stationary hitching device having a casing, *a a'*, a weighted lever, *c c' f*, a slide-bolt, *b i*, working in slideways in said casing, and a key for actuating said bolt, substantially as and for the purpose specified.

296,740. RUFFLING ATTACHMENT FOR SEWING-MACHINES. HARRY C. GOODRICH, Chicago, Ill. Filed Aug. 11, 1883. (Model.)



Claim.—An arm, H, having its acting end provided with projections *a a'*, in combination with an arm, B, carrying a ruffling-blade and having adjusting devices, gage E, and frame or support C, substantially as described.

296,741. LOCKET. FORREST B. GOULD, Boston, Mass. Filed Feb. 27, 1884. (No model.)

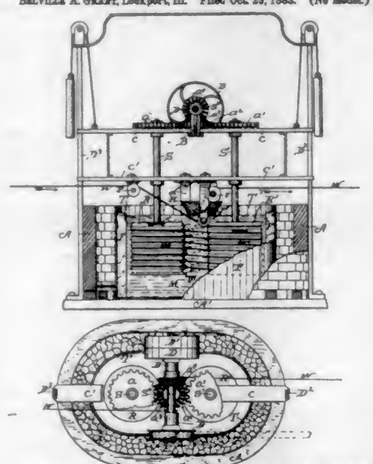


Claim.—1. A locket composed of two halves, A B, and having a slide-plate provided with a pivoted frame, *d*, the said locket and pivoted frame being adapted to receive a magnifying-glass and a picture to be magnified, the glass and frame being made movable with relation to each other, to place the picture and the magnifying-glass at the proper focal distance apart, substantially as described.

2. A hinged locket having one of its halves or sections adapted to receive and hold a picture or other object to be magnified, the other half or section being provided with a slide-plate, and an attached magnifying-glass hinged or pivoted to said slide-plate, substantially as shown and described.

3. A hinged locket having its half or section A provided with a picture-holder, *a*, and the half-section B provided with the guideway *b*, and having the beveled slide or movable plate *c* therein, and the frame *d*, having the magnifying-glass D, and hinged to said slide *c*, all substantially as described, and for the purpose set forth.

296,742. APPARATUS FOR GALVANIZING AND COATING WIRE. BELVILLE A. GRANT, Lockport, Ill. Filed Oct. 29, 1883. (No model.)



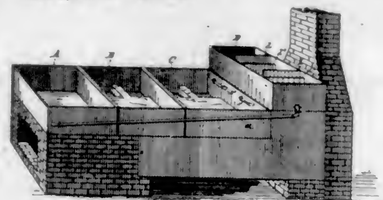
Claim.—1. The combination of the furnace A, vat T, having the vertical projecting ribs or flanges F F, vertical grooved drums R and R', shafts S and S', sliding frame *c c'*, ports D^2 and D^3, pinions *a a' a²*, sheaves P and P', *v* and *v'*, bevel-gear a^3 and a^4, shaft S'', and pulleys D and E, all adapted to operate as and for the purpose set forth.

2. In a wire-galvanizing apparatus, the grooved drums R and R', and the means whereby said drums are rotated within the vat T in the molten galvanizing metal M, to propel the wire *w* through the galvanizing material, in combination with the vat T, substantially as set forth.

3. The combination of the vat T, having the vertical ribs or flanges F, grooved drums R and R', shafts S and S', sliding frame *c c'*, ports D^2 D^3 pinions *a a' a²*, and sheaves P, P', *v*, and *v'*, as and for the purpose set forth.

4. In a wire-galvanizing apparatus, the combination of the vat T, vertical grooved rollers or drums R and R', adapted to rotate within the vat T, and the means described for rotating and holding said drums in a vertical position, as and for the purpose set forth.

296,743. SUGAR-EVAPORATOR. GUSTAVE H. GREEN, Hudson, Ohio. Filed Apr. 5, 1883. (No model.)



Claim.—1. In an evaporating apparatus, the combination, with a heater, D, having a corrugated or depressed bottom, of the wings *d*, *d'*, and *d''*, extending alternately nearly across the same from opposite sides, and the tubes d^2, d^3, and d^3, connecting said corrugated or depressed portions together and arranged on opposite sides, substantially as shown, and for the purpose set forth.

2. In a system of evaporating-pans, the sleeve G, coupling the pans in such a manner that any pan can be removed without disturbing the other pans, and preventing the liquid from boiling over from one pan to another, substantially as and for the purpose set forth.

3. In an evaporizing apparatus, the combination, with a heater, of the container E, the enlarged chamber *e*, the double lever F, and the sleeve *f*, substantially as and for the purpose shown and described.

4. In a system of evaporating-pans provided with siphons for conveying liquid from one pan to another, a covering of gauze or other suitable material placed over the ends of the siphon-tube, making the siphon portable without reversing, and also straining the juice in its passage from one pan to another, substantially as and for the purpose shown and described.

5. The combination, with the float *f'*, of the vertical perforated plate *f²* and the forked lever f^3, substantially as shown and described.

6. In a system of evaporating-pans provided with a deep pan in front and pans of less depth in the rear, the shallow pans made with one broad side suitable for attaching to the deep pan, thus making the rear pans interchangeable, and saving material in the construction of the shallow pans, substantially as and for the purpose set forth.

7. In the process of sugar-evaporating, the removing of a pan from the arch when it has become coated with deposit, and so placing it that the warm sap will flow through it in some part of the process, thereby dissolving the sediment or deposit, so that it can easily be removed from the pan, substantially as described, and for the purpose specified.

8. In a system of evaporating-pans provided with a heater, the combination, with the tubes d^2 and d^3, of the removable partitions T, that may be used in any or all of the corrugations of the heater, substantially as shown and described.

296,744. CARPET-SEWING MACHINE. GEORGE GRIBEL, Oakland, Cal. Filed May 31, 1883. (Model.)

Brief.—The machine is designed to ride upon the edges of the material to be united and stitch them together, and to have the capacity to work on both heavy or thick and light or thin material. Pawls are carried by arms that are oscillated by means of a rock-shaft. These pawls engage serrated portions on feed-rollers. The rollers are urged by a spring to grasp the material operated upon, and by their intermittent rotation produce the feed.

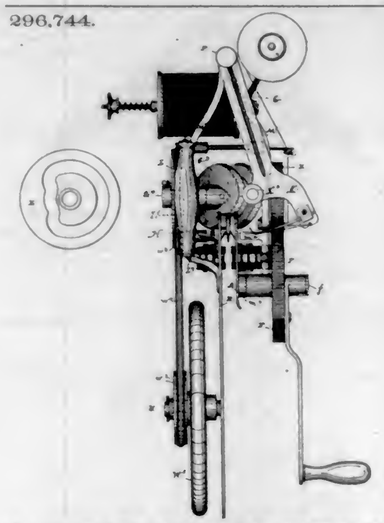
Claim.—1. The combination of the arched bracket M, parallel plates A B, having transverse needle-apertures *b b*, cut-away sides, and blocks C D, with the feed and stitch-forming devices carried thereby, substantially as described.

2. The combination, with the plates A B, having needle-throats, of the needle-arm G, pivoted in the top of the bracket M, and needle secured in the lower end of the needle-arm below the cam, the transverse shaft having needle-actuating cam G^3 and looper-cam L, and means for rotating said shaft, constructed as described.

3. The combination, with the plates A B, having transverse needle-throats and cut-away sides, of the transverse shaft G^4, carrying the needle-actuating cam G^3, and the oscillating needle-arm G, having a center of motion above the shaft, and bracket-arms M' M', united at the top and forming the support for the pivot of the needle-arm at that point, substantially as described.

4. The combination of the frame A B, oscillating needle-arm G, driving-gears F and *x*, cam G^3, transverse shaft G^4, cams L W, and

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the balance-wheel W' upon the side of the frame opposite to the driving-gear, and connections between the parts, substantially as described.

5. The horizontal rock-shaft T, levers T' T', feed-pawls T^2 T^2, springs T^3, and means for operating the rock-shaft, combined with the feed-levers and feed-rollers, substantially as described.

6. The parallel plates A B, connected together only at their upper outer corners, in combination with the arched bracket M, having lugs m^2 m^2, and with the feeding and stitch mechanisms carried thereby, substantially as set forth.

7. The combination, with the parallel plates A B, having cut-away sides, and connected together only at their upper outer ends, of the blocks C D, one fixed and the other adjustable, and the stitch-forming and feeding mechanisms, substantially as described.

8. The combination, with the parallel plates A B, having cut-away sides, and connected together only at the outer corners, of the adjustable and removable turning-in guide D, substantially as described.

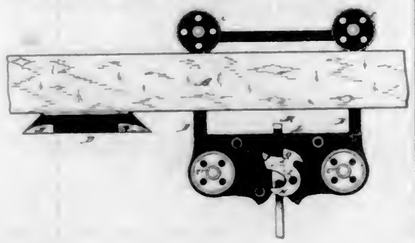
9. The combination, in a suitable frame, of the pivoted feed-levers, carrying revolving feed-rollers S, with ratchet portions s^2 formed in the center of the rollers, with feed portions on each side, the vibrating levers and pawls T' T^2, and mechanism for actuating said levers and pawls, substantially as described.

10. In a carpet-sewing machine, the combination, with the feed-operating mechanism, of revolving feed-rollers having feeding portions, S, and the intermediate ratchet portion, s^2, formed in the center of the rollers between the two feed portions, substantially as described.

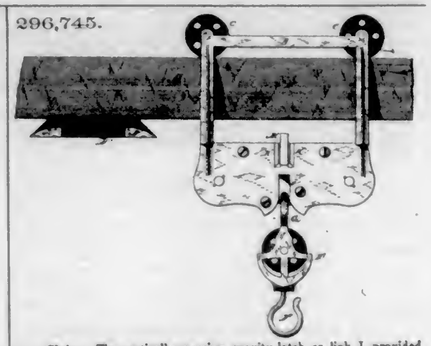
11. The roller-carrying levers pivoted to the frame, having thumb-pieces R', arms R R, and hub I, and the revolving feeding-rollers, in combination, substantially as described.

12. The automatic yielding gripper-feed, consisting of the combination of the pivoted levers R R, revolving feeding-rollers S, having central ratchet portions, s^2, spring U, feed-pawls T^2, and mechanism for actuating said pawls simultaneously, substantially as described.

296,745. HAY-CARRIER. CHARLES A. GUTENKUNST, Milwaukee, Wis. Filed Sept. 10, 1883. (No model.)

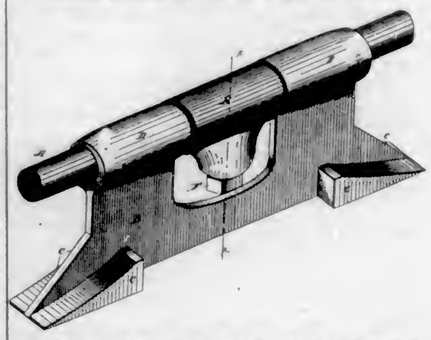


296,745.



Claim.—The vertically-moving gravity latch or link J, provided with arms M M, in combination with a single retaining-hook, H, provided with shoulder O, said arms M M being adapted to engage upon the inclined lugs N N upon the respective sides of the bracket D as the carriage approaches said bracket from either side, and drop between and be retained by said inclined lugs while the tackle and fork are being elevated, substantially as and for the purpose specified.

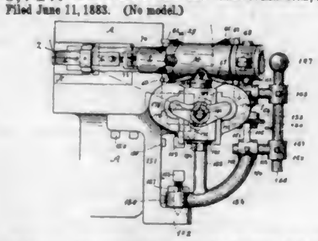
296,746. ADJUSTABLE STOP FOR HAY-CARRIERS. WILLIAM GUTENKUNST, Milwaukee, Wis. Filed Jan. 26, 1884. (No model.)



Claim.—1. The combination of the rod or cable way A, carriage-stop B, provided with loosely-fitting supporting-sleeves D D, and retaining-block E, provided with set-screw F, substantially as and for the purpose specified.

2. The combination, with a rod or cable way, A, of the stop E, provided with set-screw F, and carriage-stop B, provided with loosely-fitting sleeves D D, and at its respective ends with the angular lugs C C, substantially as set forth.

296,747. NAIL-PLATE FEEDER. JOHN F. HAMMOND, Omaha, Nebr. Filed June 11, 1883. (No model.)



Claim.—1. The combination, with the machine-bed and with the reciprocating barrel, of the encompassing-collar, means, substantially as described, whereby said collar is sustained and made radially adjustable upon the machine-bed, and the rocking barrel-yoke, to reciprocate said

barrel, substantially as set forth.

2. The combination, with the machine-bed and with the reciprocating barrel, of the encompassing-collar, means, substantially as described, whereby said collar is sustained and made radially adjustable upon the machine-bed, the rocking barrel-yoke, and the pivoted frame to sustain said yoke, substantially as set forth.

3. The combination, with the machine-bed, the reciprocating barrel, and the encompassing-collar journaled upon the machine-bed, of the rocking barrel-yoke and the pivoted frame which sustains said yoke, substantially as described.

4. The combination, with the machine-bed and with the reciprocating barrel, of the encompassing-collar having lateral journal-extension thereon, means, substantially as described, whereby said collar is sustained and made radially adjustable upon the machine-bed, the rocking barrel-yoke, and the pivoted frame about which said yoke journals, substantially as set forth.

5. The combination, with the reciprocating barrel and the rocking barrel-yoke, of the pivoted frame upon which said yoke is sustained, and mechanism, substantially as described, to hold the pivoted frame adjustably and rigidly in position, substantially as set forth.

6. The combination, with the machine-bed and its reciprocating barrel, of the rocking barrel-yoke sustained in ball-and-socket journal, whereby said yoke may easily adapt itself to the radial adjustment of the barrel about the machine-bed, substantially as described.

7. The combination, with the reciprocating barrel and the rocking barrel-yoke, of the pivoted frame upon which said yoke journals, and a link-bar to hold said frame adjustably and rigidly in position about the machine-bed, substantially as described.

8. The combination, with the reciprocating barrel and the rocking barrel-yoke, of the pivoted frame upon which said yoke journals, an arm extending therefrom, and a link-bar adjustably secured to said arm, substantially as described.

9. The combination, with the arms 154, having journal-eyes 162 thereon, of the adjustable spindle 163, which sustains the rocking barrel-yoke, substantially as described, so that its center of oscillation may be shifted in angular relation to the pivot-centers 23 and 183, substantially as set forth.

10. The combination, with the reciprocating barrel and the barrel-yoke, of the adjustable spindle, between which and said yoke there is a ball-and-socket joint to permit of free oscillations of the yoke, substantially as described.

11. The combination, with the pivoted frame having movable spindles 163, of the ball-spindle 166, adjustable therein, the rocking barrel-yoke socketed to said ball-spindle, and the reciprocating barrel, substantially as described.

12. The combination, with the reciprocating barrel K, and with the barrel-yoke joined pivotally thereto, of the ball-bearing to freely sustain yoke G in oscillating position, substantially as described.

13. The combination, with the reciprocating barrel, of the rocking barrel-yoke having journal-box 169 and adjusting-block 170, and the ball-bearing 167, constituting with said box and block a ball-and-socket joint to sustain the barrel-yoke in manner free to oscillate, substantially as described.

14. The combination, with the machine-bed and with the reciprocating barrel, of the encompassing-collar, and means, substantially as described, whereby said collar is sustained and made radially adjustable upon the machine-bed, substantially as set forth.

15. The combination, with the machine-bed and with the reciprocating barrel, of the encompassing-collar, and means, substantially as described, whereby said collar is sustained and made radially and laterally adjustable upon the machine-bed, substantially as set forth.

16. The combination, with the machine-bed and with the reciprocating barrel, of the encompassing-collar having long journal-extension thereon, the bearing-box to receive said journal, and means, substantially as described, whereby said box is retained in radial adjustment upon the machine-bed, substantially as set forth.

17. The combination, with the machine-bed and the reciprocating barrel, of the encompassing-collar and the laterally-adjustable bearing-box to sustain said collar, substantially as described.

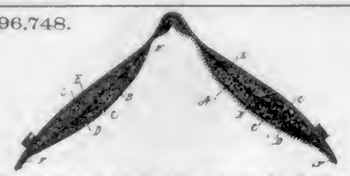
18. The combination, with the machine-bed and with the reciprocating barrel, of the encompassing-collar, the laterally-adjustable bearing-box to sustain said collar, and the yoke and clamp-screw to retain said box in desired adjustment, substantially as set forth.

19. The combination, with the machine-bed and with the reciprocating barrel, of the encompassing-collar, the bearing-box to sustain said collar, the base-plate, and a curved lug located between and co-operating with said base-plate and machine-bed to permit the radial adjustment of the reciprocating barrel, substantially as described.

296,748. HARNESS-PAD. JULIUS C. HARPHAM, Peoria, Ill. Filed Nov. 13, 1883. (No model.)

Claim.—1. In a harness-pad constructed, essentially, of two pieces of skin retaining the wool or hair, the wool sides being turned toward each other, the herein-described intermediate piece or partition of paper,

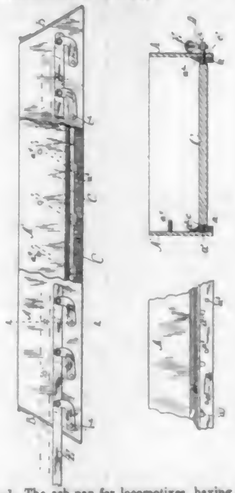
296,748.



cloth, or other suitable material, substantially as and for the purpose set forth.

2. As an improvement in harness-pads, the combination of two pieces of tanned skin retaining the wool or hair, the wool or hair sides being turned toward each other, an intermediate partition of paper, cloth, or the like, and a covering of patent-leather, enameled cloth, or equivalent material, substantially as and for the purpose set forth.

296,749. ASH-PAN FOR LOCOMOTIVES. ELI S. HART, Clinton, Iowa. Filed Dec. 27, 1883. (No model.)



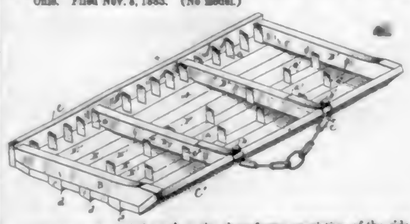
Claim.—1. The ash-pan for locomotives, having a bottom composed of slats hinged by end pivots located near their longitudinal edges, and swinging upward within the pan, and devices for operating said slats, located in a plane above the bottom of the pan, substantially as specified.

2. In a locomotive ash-pan, a series of slats forming a close flat bottom when closed, swinging upward within the pan, and hinged by end pivots located near their longitudinal edge, in combination with operative devices located above the bottom of the pan, substantially as specified.

3. In an ash-pan, the combination, with the slats and means for operating the same, of the stops a^3, substantially as specified.

4. In an ash-pan, the combination, with the slats and means for operating the same, of the stops a^4, substantially as specified.

296,750. CLOD-CRUSHER. WILLIAM HENRY HARTSELL, Pikeville, Ohio. Filed Nov. 8, 1883. (No model.)



Claim.—In a clod-crusher, the drag-frame consisting of the side pieces or beams, B B', the intermediate beams, D D', the strips C C',

and the alternating strips E E', secured to the under faces of the beams, the lower faces of the strips E projecting below the strips E', and having rearwardly-inclined lower faces, in combination with the rearwardly-curved knives secured in slots in the strips E E', and the draft-chain secured to the beams D D', substantially as specified.

296,751. PENCIL SHARPENER AND HOLDER. THOMAS HOLDSWORTH, West Winsted, Conn. Filed Apr. 24, 1883. (No model.)

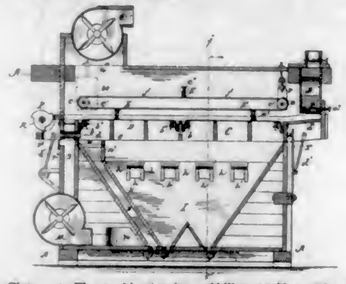


Claim.—1. As a new article of manufacture, the combined pencil sharpener and holder, consisting of sharpener *a*, tubes *b c*, and a means to attach the same to a frame or desk, substantially as shown.

2. As a combined pencil sharpener and holder, a V-shaped roughened part and one or more tubes secured together and provided with wings *d*, to secure the device to a slate-frame, substantially as shown.

3. The pencil-sharpener *a*, in combination with wings *d*, adapted to secure the sharpener to a slate or desk, substantially as shown.

296,752. MIDDLINGS-PURIFIER. ANDREW HUNTER, Chicago, Ill. Filed Sept. 19, 1883. (No model.)



Claim.—1. The combination, in a middlings-purifier, of the shaker C, the side bars, F, and bolts H, and a series of interrupted or open brushes, E E E, having extension ends adapted to slide on said bars and operate successively upon different parts of the upper surface of said shaker, substantially as described.

2. The combination, in a middlings-purifier, of suction-fan O, the casing and inner walls forming the space S, the shaker C, graded silk D, feed-trough B, and tubes *d*, arranged for partially supplying suction-fan O with air, substantially as described.

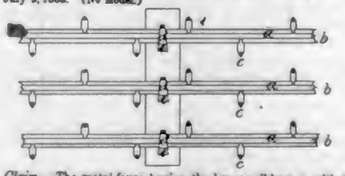
3. The combination, in a middlings-purifier, of the shaker C, sectional graded silk D, having looped sides *c*, clamps *b*, with the silk fastened to them, bolts for fastening them to the cross-section of the frame, rods *c*, and bolts c''; for stretching the silk sidewise, substantially as described.

4. The combination of the shaker-frame C, suction-fan O, blast-fan M, compartment I, and parallel wind-receptacles L L, and transverse openings *h h'*, substantially as described.

5. The combination, in a middlings-purifier, of the shaker C, blast-fan M, suction-fan O, boppered compartment I, with discharge-openings J J' J'', and chute N, substantially as described.

6. The combination, in a middlings-purifier, of the shaker C, a series of interrupted or open brushes, E E E, tubes *d*, feed-hopper B, fans M and O, boppered compartment I, with discharge-openings J J' J'', chute N, and silk D, substantially as described.

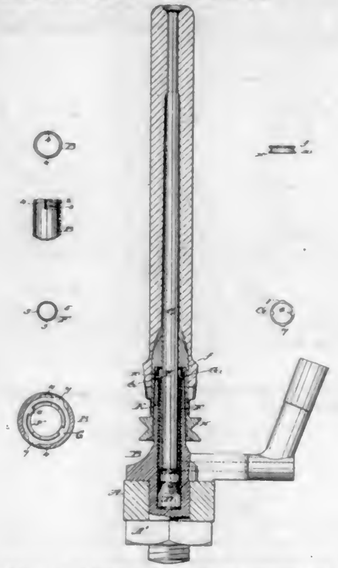
296,753. BARBED FENCE. JOHN E. KELLY, Fryeburg, Me. Filed July 9, 1883. (No model.)



Claim.—The metal fence having the bars or ribbons *a*, with the rib extending longitudinally of the same and in the center thereof, as set forth, the projections *c*, arranged in the order and constructed as set forth, and with their points turned outwardly, as described, in combination with the clamping-hook *d* and a proper post, as set forth.

296,754. SPINDLE-BEARING. JOHN KILBURN, Lowell, Mass. Filed June 18, 1883. (No model.)

Brief.—The bolster and bolster-case are provided with grooves and notches, into which projections upon the ring are adapted to fit and turn and restrain the bolster from rotation within the case.



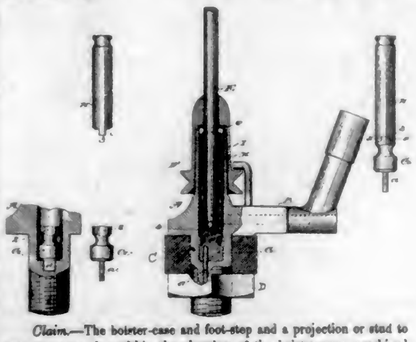
Claim.—1. The bolster and the bolster-case, combined with a ring located at the upper end of the bolster, the said parts being provided with notches and projections, to enable the said ring to co-operate with the said bolster and case and restrain the rotation of the bolster in the said case, substantially as described.

2. The bolster-case provided with the groove S, and the bolster notched *a'* its upper end, combined with the locking-ring having lugs adapted to enter the grooves of the case, and projections to enter the notches of the bolster, to operate substantially as described.

3. The bolster-case and bolster, combined with a narrow locking-ring adapted to hold the bolster and to be held by the bolster-case, the said ring being of less width than the space between the interior of the said case and the exterior of the bolster, substantially as described.

296,755. SPINDLE-BEARING. JOHN KILBURN, Lowell, Mass. Filed June 25, 1883. (No model.)

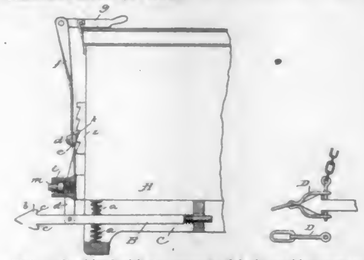
Brief.—The lower end of the bolster and upper end of the step are connected by projections and notches, and the step and bolster are prevented from being rotated in the bolster-case by a projection or stud upon the lower end of the step engaging an opening in the chamber of the bolster-case.



Claim.—The bolster-case and foot-step and a projection or stud to engage an opening within the chamber of the bolster-case, combined

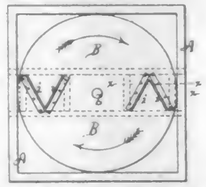
with a bolster, the lower end of the bolster and the upper end of the foot-step being provided with projections and notches, substantially as described, whereby the bolster, when engaged with the foot-step, is prevented from being rotated within the bolster-case, for the purposes set forth.

296,756. CAR-COUPLING. GILBERT A. KIRKPATRICK, Canton, Me. Filed June 30,1883. (No model.)



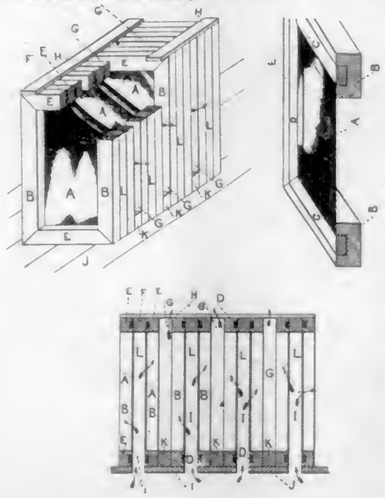
Claim.—Combined with the arrow-head *b*, the auxiliary removable coupling D, secured to such arrow-head by a pin passing through eyes in the part D and through the draw-bar.

296,757. VEGETABLE-SLICER. SAMUEL KRAUSHAAR, Buffalo, N. Y. Filed Oct. 13, 1883. (No model.)



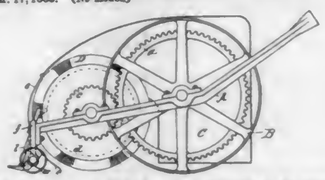
Claim.—In a device for cutting cabbage for kraut, the cutting-knives described, set in pairs in a V position, with their cutting-edges facing each other, in combination with a revolving table, in which the knives are set, means for revolving said table, and boxes or compartments set around the knives, substantially as set forth.

296,758. DUST-ARRESTER. OSWALD KUTSCHE, Grand Rapids, Mich. Filed Jan. 29, 1884. (No model.)



Claim.—In a dust-arrester, screens A, attached independently to the frames B C D E, which frames are arranged in series and connected together, substantially as shown, in combination with the inlet-chambers I, provided with closed tops F, and the outlet-chambers G, having closed bottoms K, as herein set forth.

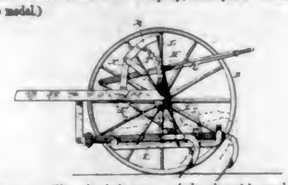
296,759. LAWN-MOWER. HENRY LACASSE, Auburn, N. Y. Filed Mar. 17, 1883. (No model.)



Claim.—1. In a lawn-mower, the combination of the cutters, the brush, the brush-shaft, and intermediate operating devices, whereby the cutters are vibrated by the revolution of the brush-shaft, substantially as and for the purposes set forth.

2. In a lawn-mower, the combination of the cutters, the brush, and the box C, having the curved lip, and provided with the cover *e*, as and for the purposes set forth.

296,760. WHEEL-CULTIVATOR. AUGUST LINDGREN, Moline, Ill., assignor to the Moline Plow Company, same place. Filed Jan. 5, 1884. (No model.)



Claim.—1. The wheeled frame and the shovel-beam jointed thereto, in combination with a laterally-swinging suspension device for said beam, a foot-lever pivoted to the beam, an independent suspending device for said lever, and a hand-lever and locking devices mounted on the frame, and connected to the beam-suspending and also to the lever-suspending devices, substantially as described, whereby the two suspension devices may be adjusted simultaneously.

2. In a cultivator, the combination of the following members: the wheeled frame, a vertically-swinging shovel-beam, a hand-lever mounted on the frame and provided with locking devices, a beam-suspending device extending directly from said lever to the beam, a foot-lever pivoted to the beam, and an independent suspending device for said foot-lever connected to the hand-lever, substantially as described, whereby the movement of the hand-lever is caused to adjust the beam and also adjust independently the fulcrum of the foot-lever.

3. In a cultivator, the combination of the wheeled frame, the shovel-beam, the hand-lever, and devices to lock the same mounted on the frame, the link or chain extending from the hand-lever to the beam, the foot-lever M, pivoted to the beam, the lever mounted on the frame, and the connecting devices extending from opposite ends of said lever to the hand-lever and the beam, respectively.

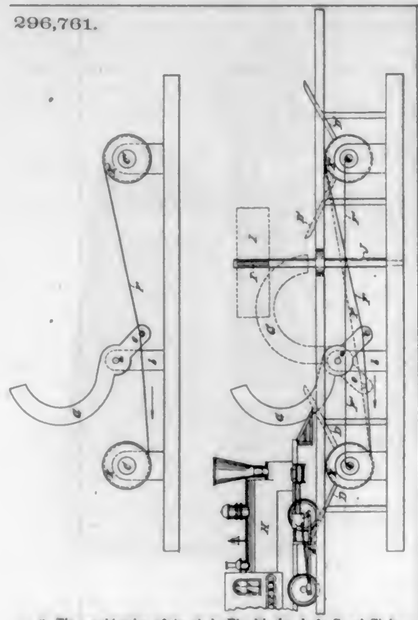
296,761. OPERATING RAILROAD-GATES. JOHN LITTLE, Philadelphia, Pa. Filed Dec. 6, 1883. (No model.)

Brief.—Projecting levers to be struck by the passing train are rigidly secured to the rock-shafts, which are connected by chains, one being secured to the gate, the other to a signal. The shafts and levers are so arranged that one closes and the other opens the gate and signal as the train passes.

Claim.—1. The combination of the rocking shafts C and C', having levers D and D', arranged at opposite angles, as described, rigidly secured thereon, and chain-wheels E and E' and chain F, with the gate G, and locomotive H, having an arm, *d*, whereby the gate is brought to its lowest position before the locomotive reaches the cross-track B, and is reversed to its elevated position after the train has passed said track B, substantially as described.

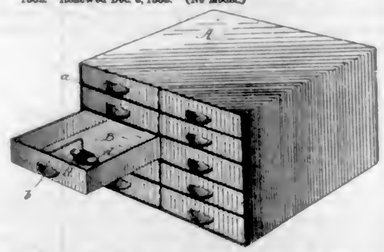
2. The combination of the chain F' with the rock-shafts C and C', having levers D and D', rigidly secured thereon, and chain-wheels E and E', connected together by means of the chain F, and with the post J, provided with a danger-signal, I, arranged at a crossing, B, substantially as described.

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3. The combination of the chain F' with the shafts C and C', having levers D and D', rigidly secured thereon, and chain-wheels E and E', connected together by means of the chain F, and with the post J, having a danger-signal, I, at a siding, substantially as and for the purpose set forth.

296,762. BILL-FILE. JOEL H. LOUDER, Chicago, Ill. Filed Oct. 3, 1883. Renewed Dec. 6, 1883. (No model.)

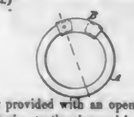


Claim.—1. In a file-holder, the combination, with the upturned rim thereof, of a needle, the point of which projects toward and is guarded by said rim, substantially as shown and described.

2. In a file-holder, the combination, with the upturned rim thereof, of an elastic needle provided with a right-angular bend, and having its point projecting in close proximity to and in a plane just below the top of the rim, substantially as described.

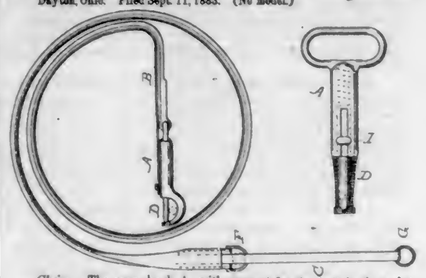
3. The combination, with a file-holder, of an angular bent needle, and a coiled spring formed in continuation of said needle, substantially as described.

296,763. KEY-RING. WILLIAM C. LUCAS, Meriden, Conn. Filed Jan. 2, 1884. (No model.)



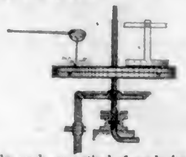
Claim.—A ring provided with an opening, *a*, and an incision, *c*, and a sleeve, B, conforming to the ring and having an inner projection, *c*, whereby the sleeve is held in place, all constructed substantially as and for the purpose described.

296,764. DETACHABLE HITCHING DEVICE. CHAS. MARQUARDT, Dayton, Ohio. Filed Sept. 11, 1883. (No model.)



Claim.—The snap-hook A, with support for the bolt in the point of the hook, in combination with the hitching-strap B and detaching-strap C, attached to bolt of said snap-hook, substantially as set forth.

296,765. MANUFACTURE OF WHITE LEAD. JOHN COWDERY MARTIN, Richmond, County of Surrey, England. Filed Dec. 1, 1882. (No model.) Patented in England Mar. 18, 1879, No. 1,054; in France Sept. 18, 1879, No. 132,767; in Germany Sept. 21, 1879, No. 10,209, and in Belgium Sept. 26, 1879, No. 49,401.



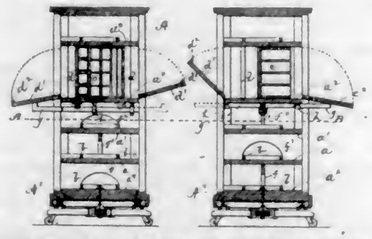
Claim.—The mode or method of producing solutions of lead salts by dropping molten lead onto stationary or moving wetted surfaces kept wet by jets or sprays of water or by occasional immersion in water, and dissolving the very small flakes or splashes of metallic lead so formed in a solvent, substantially as hereinbefore described.

296,766. TAG AND TAG-FASTENER. GEORGE W. MCGILL, New York, N. Y. Filed Sept. 27, 1881. (No model.)



Claim.—A paper-board tag combined with a metallic staple-fastener having pointed legs passed through the tag in two separate perforations, bent toward each other and parallel to the head, so as to clamp the tag between the folds of the staple-legs and the head, and bent outward at right angles to the head, substantially as shown and described.

296,767. BOOK-CASE. PETER ELTEA MCINTOSH, Rochester, N. Y. Filed Aug. 15, 1883. (No model.)



Claim.—1. The revolving book-case, substantially as described and shown, composed of the casing A, provided with suitable doors, and divided horizontally by a series of partitions, *a a' a²*, the partitions *a a'*

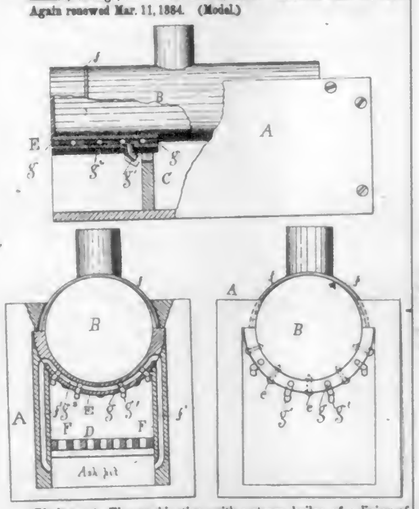
serving as book-racks, and the partition a^2 provided on three of its sides with book-racks d and book-supports d', hinged to said partition, and provided on its remaining side with the pigeon-hole case e, and the writing-desk e, hinged to the partition opposite the pigeon-holes, and provided with the hinged wings or extensions d' d', all as and for the purposes set forth.

2. In a book-case, the combination of the book-supports and writing-desk, hinged to the casing and turning outward, as described, the loops or keepers A, constructed with the projection A', and the supporting-bars passed through said keepers, and provided on their under side with a series of notches arranged to engage the projection A', whereby the said bars may be secured at any point desired, and the book-supports and desks supported on the outer end of said bars held at any suitable degree of inclination, substantially as set forth.

3. The combination, with the casing, of the partitions a a' a^2 and the supports f f' f^2, said supports being staggered or arranged as described, the adjacent ones being at right angles and the alternate ones in line with each other, substantially as and for the purposes specified.

4. The combination of the casing, a writing-desk hinged to and turning outward from the casing, the supporting-bar movable outward under the writing-desk, said bar being indented, and a device, substantially as shown, for engaging said indentations, whereby said bar may be held at any point desired, as and for the purposes set forth.

296,768. **STEAM-BOILER AND FURNACE LINING.** CHARLES MCMILLAN, Chicago, Ill. Filed Dec. 8, 1879. Renewed Mar. 16, 1882. Again renewed Mar. 11, 1884. (Model.)



Claim.—1. The combination, with a steam-boiler, of a lining of tiling having plain concavo-convexed faces corresponding with and suspended by the boiler in close and direct contact with the boiler over the fire-chamber, substantially as described.

2. The combination, with a steam-boiler, of a perforated lining conforming in shape to and suspended in close contact with the entire contiguous surface of the boiler, said perforations forming air-inlets not having contact with the boiler, substantially as described.

3. A lining for steam-boilers, concavo-convex in form, held in contact with the boiler, and provided with a series of perforations, forming air-inlets, terminating in elbow-tubes, substantially as described.

4. The combination, with a steam-boiler, of a perforated concavo-convex lining suspended in contact with the same over the fire-chamber, and of a perforated side lining for the fire-chamber, substantially as described.

296,769. **FIRE-ESCAPE SLING.** BENEDICK MILLER and GEORGE H. HUME, Paola, Kans. Filed June 22, 1883. (No model.)

Brief.—The sling is attached to the friction device by loops, and the back strap is secured to the front strap below the loops.

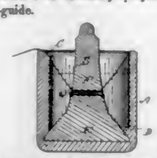
Claim.—A fire-escape sling having a supporting-strap provided with loops for the purpose set forth, and a front strap, a back strap attached to the front strap below the loops, and a net or canvas sack attached to the back and supporting strap, substantially as described.

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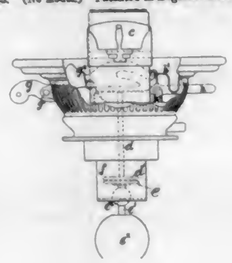
296,770. **THREAD-MOISTENING ATTACHMENT FOR SEWING MACHINES.** JANE NIXON, New York, N. Y., assignor of one-half to Vernon Bell, same place. Filed Mar. 9, 1883. (No model.)

Brief.—The device is used to moisten the thread before it passes to the needle, whereby it is rendered less brittle, and consequently less liable to break when the machine is run at a high rate of speed. The vessel has on its inner side a vertical rib, and diametrically opposite thereto, near the bottom, an inwardly-projecting flange for securing therein the thread-guide.



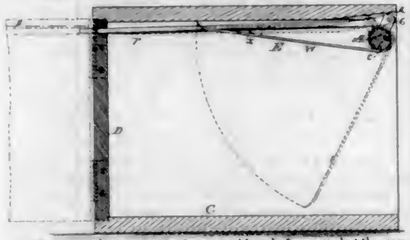
Claim.—A thread-moistening attachment for sewing-machines, comprising a cup or vessel having on its inner side a vertical flange extending nearly to the bottom, and an inwardly-projecting flange arranged near the bottom and diametrically opposite the said rib, in combination with a disk having a transversely perforated upright, and provided with a notch in one side, as and for the purpose set forth.

296,771. **LAMP-EXTINGUISHER.** ROBERT OGDEN, Manchester, and ROBERT JAMES ANDERSON, Liverpool, County of Lancaster, England. Filed Nov. 7, 1883. (No model.) Patented in England Feb. 6, 1883, No. 657.



Claim.—The combination of a sliding extinguisher with a lever, g, for raising and lowering the same, the spring g^3, which operates said lever to automatically raise said extinguisher for allowing the same to close, the spring-pressed trigger h, which normally holds said lever out of operation, the spindle d, arranged below said trigger, and provided at its lower end with a disk, d', and the weighted spindle d', having at its upper end a disk, e, in contact with said disk d', for the purpose set forth.

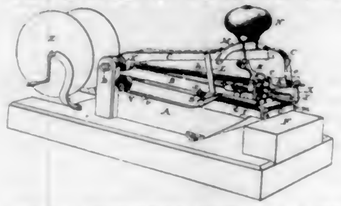
296,772. **POST-OFFICE BOX.** ENOCH OSGOOD, Washington, D. C. Filed Oct. 26, 1880. Renewed Oct. 16, 1883. (No model.)



Claim.—1. In a post-office box, a rocking shaft mounted at the rear and thereof, and provided with a suitable guard device, said shaft being connected to the door, substantially as set forth, whereby when the door is opened the shaft will be rocked to throw down the guard device and close the rear end of the box, substantially as set forth.

2. In a post-office box, a rocking shaft provided with a series of spring wires or strips, said shaft being mounted as described, and connected to the front door by a rod, whereby when the door is opened said shaft will be rocked to throw down the guard-strips and close the rear end of the box, substantially as herein set forth.

296,773. **ADDRESSING-MACHINE.** HIRAM PARKER and JAMES T. DRUMMOND, Mount Pleasant, Iowa. Filed May 26, 1883. (No model.)



Claim.—1. The combination of the reservoir A, lid B, operating-arm C, elastic extension C', oscillating feed-arm H, feed-foot G, slides I, presser-foot E, knives c and c', guide X, the moistening device, consisting of the rock-shaft P, bar R, provided with cross-head R' and a porous moistener attached thereto, and operating-arm S, the springs K, K, and V, and the angular bent arm L, all arranged substantially as herein shown, for the purposes specified.

2. The combination, with the knives c and c', of the operating-arm C, having an elastic extension, C', adjustably coupled to it for the purpose of properly operating the knife c with the knife c', causing their edges, respectively, to rub each other in their movements, so as to cut shearswise, substantially as shown, for the purpose specified.

3. In combination with the operating-arm C, the oscillating arm H, and the grooved slides I, the oscillating feed-foot G, provided with adjustable teeth b, substantially as shown, for the purpose specified.

4. In combination with the operating-arm C and the feed-foot G, the oscillating arm H, having one end pivoted to a lug on the under side of said arm C and the other end pivoted to the upper end of standards or lugs a, attached to said foot, substantially as shown, for the purpose specified.

5. In combination with the grooved slides I and the sliding feed-foot G, the friction-spring f, substantially as shown, for the purpose specified.

6. In combination with the reservoir A and the reciprocating moistening device, herein shown, the lid B, provided with toothed or perforated ends, substantially as shown, for the purpose specified.

7. In combination with the lid B and guides or slides I, the retaining-springs W, substantially as shown, for the purpose specified.

8. In combination with the reservoir A, spring V, and arms C and L, the automatic moistening device, consisting of the rock-shaft P, pivoted bar R, cross-head R', provided with a dauber attached thereto, and the arm S, all substantially as shown, for the purposes specified.

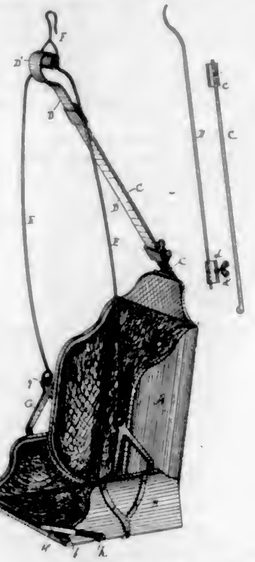
296,774. **TELEGRAPHIC CABLE.** WILLIAM R. PATTERSON, Chicago, Ill., assignor, by mesne assignments, to the Western Electric Company, same place. Filed Dec. 5, 1881. (No model.)



Claim.—An improved telegraphic cable formed by the combination, substantially as set forth, of a core of electrical conductors and a sheathing consisting of a pipe composed of an alloy of lead and tin in proportions varying from ninety to ninety-seven parts of lead to from three to ten parts of tin.

296,775. **SUSPENDED ADJUSTABLE CHAIR AND SEAT.** HENRY S. PEEK, Westfield, N. Y., assignor to the Novelty Manufacturing Company, (Limited,) Miles Grove, Pa. Filed Dec. 31, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 285,665, dated September 25, 1883, to same inventor.



Claim.—1. In a suspended adjustable chair, the combination, with the seat B and swinging or pivoted back A, of the rigid bails G G, attached to the sides of the seat B, the rigid guys E E, arching over the seat, and the adjustable back-stay C D, connecting the top of the back A with the top of the arched guys, substantially as shown, and for the purposes set forth.

2. In a suspended adjustable chair, the combination, with the seat B and swinging or pivoted back A, of a supporting-frame, G G and E E, for suspending the seat B in a horizontal position, and an adjustable back-stay, C D, for holding the back at any desired angle to the seat, substantially as shown, and for the purposes mentioned.

3. In a suspended adjustable chair, substantially as shown, the combination, with the pivoted back, of the adjustable back-stay C D, having at one end a C-spring, D', formed on one of the parts of said stay, substantially as shown, and for the purposes mentioned.

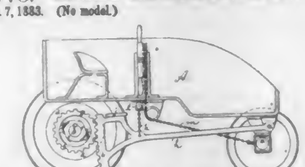
4. In a suspended adjustable chair, substantially as shown, the combination, with the seat and its suspending-guys, of the rigid bails G G, attached on the sides of the seat, and extending from at or near the ends of said sides, and meeting with an eye, g, or other means for connecting with the guys at a central point above the seat over each side piece, as set forth.

5. In a suspended adjustable chair, substantially as shown, the combination, with the seat and its suspending-guys, of the bail-pieces G G, which reach under the sides of the seat in the manner of an angle-iron, extend to points near the ends of the sides, and then curve outwardly from the sides, and finally meet above the sides, over the middle of the same, substantially as shown.

6. The combination, with the seat of a suspended adjustable chair, of the board H, pivoted on the adjustable side straps, H', substantially as and for the purposes set forth.

7. In an adjustable suspended chair, the combination, with the seat B, having notch *b*, as shown, of the board H, pivoted, as shown, on the adjustable side stays, H', and the binding-screws *h* on the sides of the seat, substantially as shown.

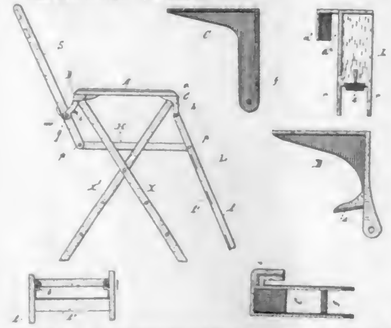
296,776. VELOCIPEDE. ALBERT PISENBIKER, New York, N.Y. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination, in a velocipede, of axle *b*, having ratchet-wheels *f* rigidly secured thereto, with the loose annular cog-wheels *e* and disks *d*, fastened to both sides of cog-wheels, and having pawls *g*, and with the foot-levers *h*, engaging cog-wheels *e*, substantially as specified.

2. The combination of axle *b*, ratchet-wheels *f*, cog-wheels *e*, disks *d*, and pawls *g*, with the foot-levers *h*, and with the chain *k*, connecting the foot-levers and passing over friction-rollers *l*, substantially as specified.

296,777. RECLINING OR HAMMOCK CHAIR. FRANK H. PLUMMER, Hennikor, assignor of one-half to G. W. & M. L. Stearns, Lebanon, N. H. Filed Nov. 14, 1883. (No model.)



Claim.—1. The combination of the arm-rests, provided at each end with brackets, with a back pivoted to the rear brackets, a leg-rest pivoted to the front brackets, and a seat pivoted to the back and leg-rest, said brackets being constructed with sockets and bent arms, substantially as described, whereby they may be connected with means for supporting the structure from above, or connected to a supporting-base, as and for the purposes specified.

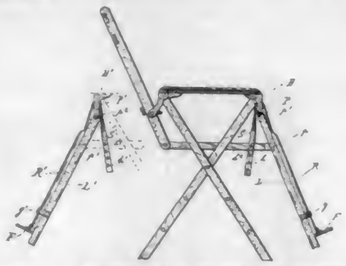
2. The arm-rests and the front brackets, C C, the latter provided with bent arms *a*, depending sides for receiving the leg-support between them, and sockets for the inner chair-legs, combined with the pivoted leg-support, chair seat and back, the rear brackets, and supporting means for the structure, substantially as set forth, as and for the purposes specified.

3. The arm-rests and rear brackets, D D, the latter provided with the outer-leg socket-arm a', the slot a^2, the depending hinge-arm, and the stop *s*, combined with the pivoted back, rest, and leg-support, the front brackets, and supporting means for the structure, substantially as set forth, as and for the purposes specified.

4. The combination of the back, seat, and leg-support, said leg-support and back-frame being provided with metal lugs *b b* at the point of pivoting the seat thereto, with the front and rear brackets, C C D D, the arm-rests, and supporting means, substantially as set forth, for the structure, as and for the purposes specified.

5. The combination, with the chair-supporting frame consisting of two pairs of crossed arms or bars pivoted together, one within the other, of the arm-rests provided with front and rear brackets, the back pivoted to the rear brackets, the leg-support pivoted to the front brackets, and the seat pivoted to the back and leg-support between the bars, forming the frames thereof, the said rear brackets being provided with the offset-sockets to receive the ends of the outer pair of supporting-bars, as and for the purposes set forth.

296,778. FOOT-REST. FRANK H. PLUMMER, Hennikor, assignor of one-half to G. W. & M. L. Stearns, Lebanon, N. H. Filed Nov. 14, 1883. (No model.)



Claim.—1. The combination of the main frame and supporting means, substantially as described, with the pivoted leg-support, the sliding foot-rest, and means, substantially as described, for connecting the foot-rest and main frame, as and for the purposes set forth.

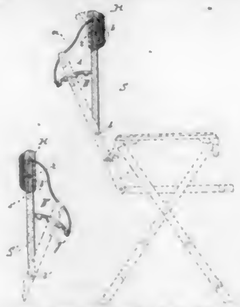
2. The combination of the foot-rest with the leg-support, the main frame, and means for connecting the foot-rest and leg-support, as set forth, and means, substantially as described, for connecting the foot-rest and main frame, whereby the foot-rest may be adjusted, as and for the purposes specified.

3. The combination of the arm-rests and their brackets, the back pivoted to the rear brackets, the leg-support pivoted to the front brackets, and a seat pivoted to the back and leg-support, with a foot-rest connected with the leg-support, substantially as set forth, and means, as described, for connecting the foot-rest and seat, as and for the purposes specified.

4. The combination of the foot-rest F and rods R R' with the adjustable straps S S', pulleys P P', the swinging leg-support, and the chair-frame, as set forth.

5. The combination of the arm-rests and brackets B B', provided with pulleys P P', with the chair-frame, leg-support, adjustable straps S S', rods R R', and the foot-rest F, as set forth.

296,779. HEAD-REST. FRANK H. PLUMMER, Hennikor, assignor of one-half to G. W. & M. L. Stearns, Lebanon, N. H. Filed Nov. 23, 1883. (No model.)



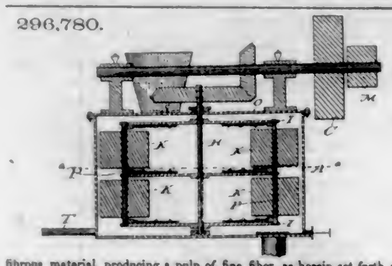
Claim.—1. The combination, with a chair, of bars pivoted at one end to the sides of the back-frame, and slotted substantially as described, a head-rest pivoted to the free ends of said bars and adjustable in the slots, as set forth, and means, substantially as described, for adjusting the inclination of said bars with respect to the chair-back, as and for the purposes specified.

2. The combination of the head-rest provided with the lateral pivot-bolts *b b'* and thumb-nuts *t t'*, with the swinging side bars, S S', provided with slots *s s'*, and recesses *r*, the pivoted rack-bars B B', and the chair, as set forth.

296,780. PROCESS OF AND APPARATUS FOR MANUFACTURING PAPER-PULP FROM WOOD. GOLDSBURY H. POND, New York, N. Y., assignor to Edmund A. Mores, Rutland, Vt. Filed July 18, 1883. (No model.)

Claim.—1. The cylinder A, with cover O, shaft H, provided with plates and arms I I, the rollers K K, and the steam-pipe T, to hold and work a charge of sawdust, chips, shavings, or other pieces of wood or

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fibrous material, producing a pulp of fine fiber, as herein set forth and described.

2. The cylinder A, provided with a shaft, having plates and arms I I, between which are hung the rollers K K, either singly or in a series, one above the other, substantially as described.

3. The rollers K K, hung between the plates and arms I I, with adjustable hangings, consisting of the set-screws N, and springs J, to set them out against the inner side of the cylinder A with any pressure required, whereby the rollers are allowed to pass over any large pieces that may be in the charge and resume their regular pressure upon the sides of the cylinder, as fully described and set forth.

4. The cylinder A, provided with shaft H, having secured thereto plates and arms I I, and rollers K K, having an opening, D, as described, revolving loosely on the pin P, whereby the rollers are automatically set out onto the inner side of the cylinder by the centrifugal force, substantially as set forth.

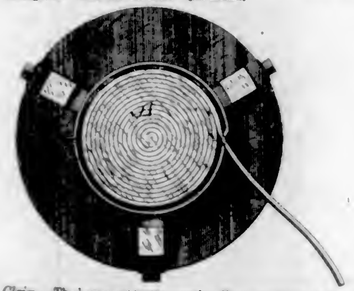
5. In a machine for reducing sawdust or other pieces of wood or fibrous material to pulp, the combination, with the cylinder A, of the shaft carrying arms and plates on which are secured rollers adapted to being operated by the centrifugal force.

6. In a machine for reducing sawdust or other pieces of wood or fibrous material to pulp, the combination, with the cylinder A, of a shaft carrying arms and plates, and the bifurcated ends of the arms having rollers held in place by set-screws and springs, substantially as set forth.

7. The process of reducing sawdust or other pieces of wood or fibrous material to a pulp, consisting of inclosing the same in a tight vessel containing a sufficient quantity of water to float the charge, giving it motion and circulation by a jet of steam under pressure, thereby toughening the fibers, then subjecting it to a light pressure by rollers set out by centrifugal force, as herein described.

8. The process of reducing sawdust or other pieces of wood or other fibrous material to a pulp, consisting of inclosing the same in a tight vessel containing a sufficient quantity of water to float the charge, giving it motion and circulation by a jet of steam under pressure, thereby toughening the fibers, and adding a small per cent. of alkali, then subjecting it to a light pressure by the rollers rolling over it on the inner side of the vessel as they are set out onto it by the centrifugal force.

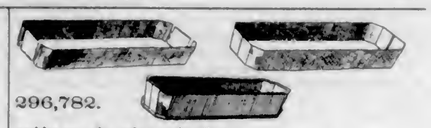
296,781. DIE FOR CUTTING LEATHER STRINGS. CHAS. E. RAMUS, Chicago, Ill. Filed Oct. 10, 1883. (No model.)



Claim.—The improved leather-cutting die A, consisting of the coiled strip C, having cutting outer edges, and the interposed blank B, of less width than the strip C, all arranged and adapted for use substantially as set forth.

296,782. COFFIN. NICHOLAS RAFFLEYES, Rochester, N. Y., assignor to the Stein Manufacturing Company, same place. Filed Apr. 27, 1883. (No model.)

Claim.—1. The herein-described method of covering burial cases or caskets with cloth, the same consisting in forming an endless band or sack of a size less than that of the casket, and stretching the same into



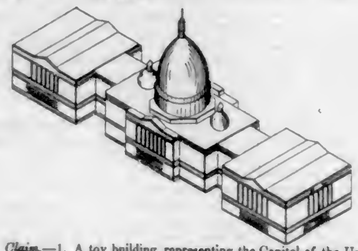
296,782.

position over the casket, as described.

2. As a new article of manufacture, a covering for a casket, consisting of an endless sack or band open at the top and bottom, as described and shown.

3. As a new article of manufacture, a coffin having its body covered with cloth composed of two or more longitudinal sections having their ends stitched together, with the seam on their inner side.

296,783. TOY BUILDING. WM. S. REED, Leominster, Mass. Filed Sept. 26, 1883. (No model.)



Claim.—1. A toy building representing the Capitol of the United States, composed of one or more portions, substantially as set forth.

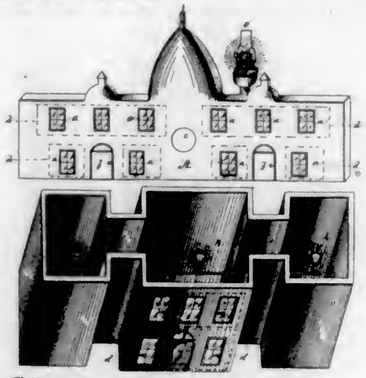
2. A toy building representing the Capitol of the United States, having one of the portions of which it is composed of a size sufficient to serve as a receptacle for the remainder of the toy, as described.

3. A series of strips, sheets, or tablets of suitable material, bearing the miniature representation of the architecture of the original Capitol building, in combination with grooved or other connections for assembling them together, as specified.

4. A continuous strip or sheet of suitable material, bearing the representation of the architecture of the front, rear, and ends of the original Capitol arranged in their proper relative position, of a length and height proportionate to that of the original, and adapted to be bent at the desired points to form the ground plan and elevation of the same, substantially as described.

5. The combination, with a toy building representing the Capitol of the United States, of a panorama constructed and arranged to operate as set forth.

296,784. TOY BUILDING. WM. S. REED, Leominster, Mass. Filed Sept. 26, 1883. (No model.)



Claim.—1. A toy consisting of one or more portions bearing the representation of a part or the whole of the exterior of the Capitol of the United States, and provided with openings to represent doors, windows, &c., or apertures through which to exhibit pictures, panoramic or other views or lessons, in combination with a light located behind the same, substantially as described.

2. One or more strips or sheets of white or colored transparent material, in combination with a toy representation of the whole or a portion of the exterior of the Capitol of the United States, provided with openings to represent doors, windows, &c., or other apertures through which to exhibit pictures, panoramic or other views or lessons, and with a gas, electric, lamp, or other light so located as to be seen through the openings or apertures from the outside, as and for the purpose set forth.

296,785. PLANE. JOSEPH B. RIPSOM, Oshkosh, Wis. Filed July 21, 1883. (No model.)



Claim.—1. The combination, with the stock comprising the bottom plate having the longitudinal side flanges inclined outwardly and upwardly at an angle from the bottom plate, and formed with the throat extending entirely across the bottom plate to the vertex of the angle formed by the bottom plate and side flanges, of a lever-block fulcrumed on the stock, a set-screw for operating the said lever, a bed-plate connected with the lever, the bit carried by the bed-plate, and means for securing the bit in position, substantially as set forth.

2. The combination of the stock having the throat and upright flanges, the cross-pin between the latter, the lever-block having the fulcrum-perforation, and disposed just above the bottom plate and in rear of the throat, the fulcrum-screw, the set-screw for adjusting the lever, the longitudinally-slotted bed-plate pivoted on the lever, the set-screw working in the slot in the bed-plate, the bit having the slot for receiving the head of this screw, the spring cap-plate, and the eccentric lever under said cross-pin and acting to clamp down the spring cap-plate, substantially as and for the purpose set forth.

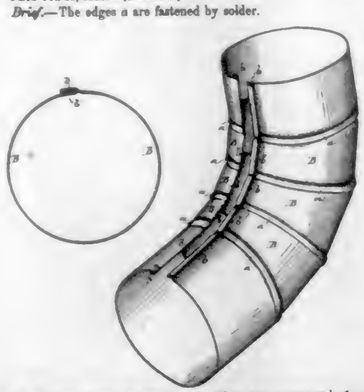
3. The combination, in a plane, of the main bottom lever, the set-screw working through the free end of the lever, a bed-plate pivoted to the lever at its fulcrum end, the bit or cutter connected with the bed-plate, the bowed spring cap-plate, the cross-pin K, and the eccentric lever adjustable under this pin and against the spring-plate, whereby the bit can be adjusted by the set-screw and will be returned by the said spring-plate, substantially as set forth.

4. The combination of the bed-plate having the longitudinally-disposed slot formed with longitudinal side shoulders, the set-screw working through the slot with its head against the shoulders, the nut receiving the screw and bearing against the under side of the bed-plate, and the bit having the transverse slot that received the head of the set-screw, the bit being carried and adapted to be fed by adjusting said screw, substantially as set forth.

5. The combination of a bed-plate, the bit or cutter connected thereto, the bowed spring cap-plate, the cross-pin K, and the eccentric lever having the eccentric head formed with the transverse slot, substantially as and for the purpose set forth.

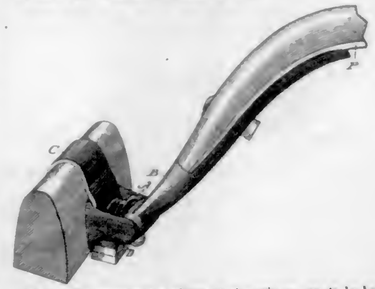
296,786. ELBOW FOR SPOUTING. DANIEL B. ROCK, Fairfield, Pa. Filed Oct. 29, 1883. (No model.)

Brief.—The edges *a* are fastened by solder.



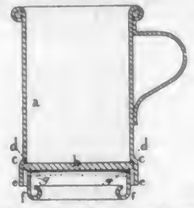
Claim.—An elbow for spouting or other uses, composed of a rectangular piece of metal having angular sections extending laterally from its sides, each section having grooved or beaded sides and flanged ends, said sections being bent into form and connected together substantially as and for the purpose specified.

296,787. THILL-COUPLING. GEO. W. ROSEMAN and JAS. E. STEVENS, Ancram, N. Y. Filed Jan. 14, 1884. (Model.)



Claim.—The combination of two steel castings—one to be bolted to the axle, the other to the thill—constructed substantially as described, with a coiled steel spring terminating at one end in an elliptical concave bearing, as above set forth, forming an improved adjustable thill-coupling of novel design.

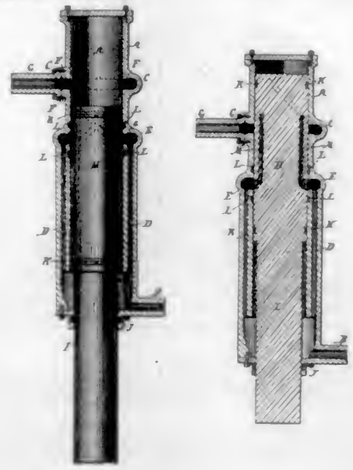
296,788. VESSEL FOR CONTAINING LIQUIDS. WILLIAM THOMPSON SALIX, Bowdoinham, Me. Filed Dec. 14, 1883. (No model.)



Claim.—1. The metal vessel *a*, having the glass bottom *b*, in combination with the groove or channel *c*, flange *e*, the ring *f*, lip *g*, and a suitable packing, the several parts being soldered, as herein set forth.

2. The metal vessel *a*, having the glass bottom *b*, in combination with the groove or channel *c*, flange *e*, the ring *f*, wire *h*, and lip *g*, and a suitable packing, the several parts being soldered, as herein set forth.

296,789. STEAM-POWER STAMP. WILLIAM S. SHARPNECK, Denver, Colo., assignor to the Nichols Manufacturing Company, same place. Filed Dec. 6, 1883. (No model.)



Claim.—1. The combination, in a steam-stamp, of a piston, having an enlarged rod to give heads of different areas, with a cylinder, both cylinder and piston provided with ports arranged, substantially as described, to allow the steam to first raise the piston, and at the same time give it a partial rotary movement, and then expand above the same and drive it downward, as set forth.

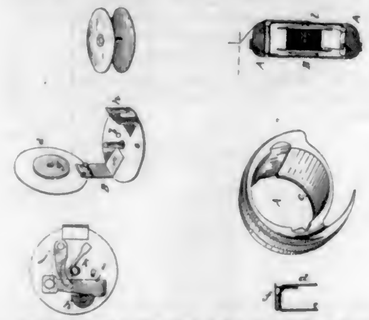
2. The combination, in a steam-stamp, of a piston provided with a passage, M, commencing at the side and terminating at the top of a cylinder provided with the inlet-port E, opening substantially in the center of the cylinder, and exhaust-port C, substantially as described.

3. The combination, with a cylinder, A, having inlet and exhaust ports, of the piston H, provided with the passages M, communicating alternately with said inlet and exhaust ports, said passages being inclined near their upper ends, substantially as and for the purpose described.

4. The combination, with the cylinder A, having the annular inlet-port E, passages D, and main inlet B, of the piston H, having heads of different areas, and provided with the passages M, inclined at their upper ends, all constructed and arranged substantially as described.

5. The combination, with the cylinder A, of the piston H, provided with inclined steam-passages, through which the steam passes on its way to the large end of the cylinder, substantially as and for the purpose specified.

296,790. SEWING-MACHINE SHUTTLE. EARLE H. SMITH, New York, N. Y. Filed Nov. 2, 1882. (No model.)



Claim.—1. The combination, with a circular shuttle having its thread-cavity open on the rear side, of a thread-case therefor, adapted for carrying a bobbin or cop, means of preventing the thread-case from escaping at the rear, and permitting its removal from the front side of the shuttle, and a thread-delivering orifice in the thread-case at the rear.

2. The combination, with a circular shuttle and removable thread-case therefor, of means for preventing the removal of the thread-case except from the front side of the shuttle, and said thread-case provided with a tension device and guide-post, and with a thread-delivering orifice in the thread-case at the rear.

3. In a thread-case for a circular shuttle, the combination of two plates, one of which is hinged, and adapted, by means of a spring, to make a light pressure on an inclosed bobbin, and said thread-case provided with an independent tension on one of said plates.

4. The combination, with a circular shuttle, of a thread-case comprising two plates, adapted to inclose a bobbin or cop between them, a tension device and guide-post on one of said plates, and a thread-delivering orifice pierced obliquely through the thread-case to permit the shuttle-thread to pass directly from the tension to the material being sewed, as shown and described.

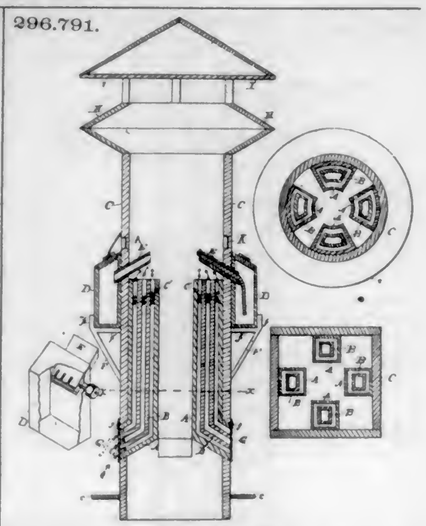
5. The combination, in a thread-case of a rotary shuttle, of a guide-post, *h*, spring *i*, and adjustable arm *j*, substantially as described.

296,791. SMOKE-CONSUMING DEVICE. JOHN W. SMITH and JAMES D. SMITH, Washington, D. C., assignors of fourteen twenty-fourths to Simpson P. Moses, William B. Moore, and I. Heylin McDonald, all of same place. Filed Sept. 22, 1883. (No model.)

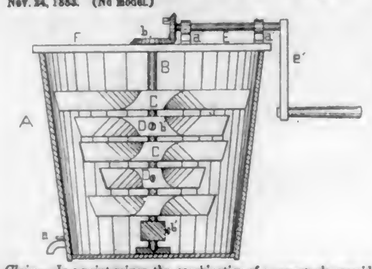
Claim.—1. The method of consuming smoke, which consists in placing an auxiliary smoke-stack upon a chimney or smoke-stack and commingling the products of combustion with atmospheric air as they are emitted from the top of the chimney or stack, and then bringing said oxygenized products into contact with a flame in said auxiliary stack, as set forth.

2. A smoke-consuming device consisting of an auxiliary smoke-stack provided with air-inlet tubes and lamps or flames entering said stack, substantially as set forth.

296,791.



296,792. PAINT-MIXER. RODERICK H. SMITH, Chicago, Ill. Filed Nov. 24, 1883. (No model.)

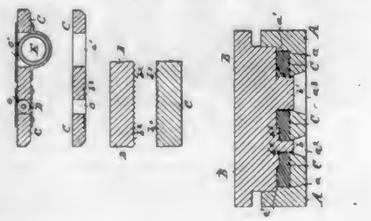


Claim.—In a paint-mixer, the combination of a receptacle provided with blades, which are beveled on opposite sides of the center in opposite directions, attached thereto, with a revolving shaft, to which are rigidly attached blades whose opposite sides are beveled in opposite directions, substantially as and for the purpose set forth.

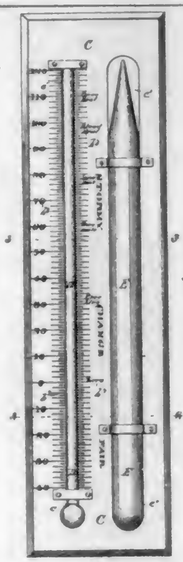
296,793. THERMOMETER AND BAROMETER MOLD, &c. WM. SOMERVILLE, St. Louis, Mo. Filed Mar. 3, 1883. (No model.)

Claim.—1. In the manufacture of thermometer or barometer plates or frames, or both combined in one piece, the mold herein described, consisting of a base or bed plate and plunger with elevations or depressions therein or thereon for forming the numerals, marks, &c., indicating degrees of temperature and changes of weather, and with or without the projections for providing in said plate a slot or slots, as and for the purposes set forth.

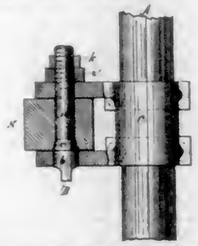
2. As a new article of manufacture, a thermometer plate or frame or barometer plate or frame, or both combined, having the usual marks, numerals, &c., pressed into or upon the plate, substantially as and for the purposes set forth.



296,793.

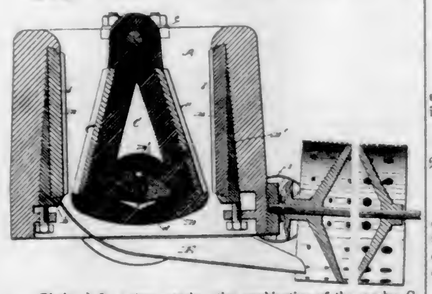


296,794. THILL-COUPLING. FREDERICK M. STEVENS, Waterbury, Conn. Filed June 4, 1883. (No model.)



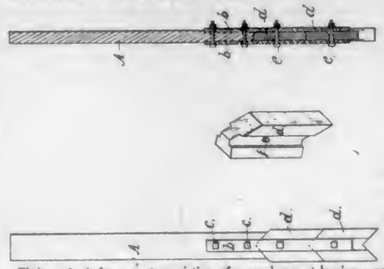
Claim.—The combination, with the eye and axle-clip, of a screw-bolt having a tapering shoulder between the shank and the portion of larger diameter, flattened sides for a wrench, a nut having a projection or finger to prevent its turning when the bolt is being rotated, and a lock-nut, substantially as set forth.

296,795. STONE-CRUSHER. RENNING SUNDQUIST, Chicago, Ill., assignor of one-half to John Sontag, same place. Filed Mar. 5, 1883. (No model.)



Claim.—In a stone-crusher, the combination of the crusher C, formed with a transverse hole, *c'*, diamond-shaped in cross-section, the driving-shaft D, having an eccentric, *d*, within the crusher, a V-shaped block, D', upon either side of the eccentric, said block being concaved to fit the eccentric, substantially as shown and described, and for the purpose set forth.

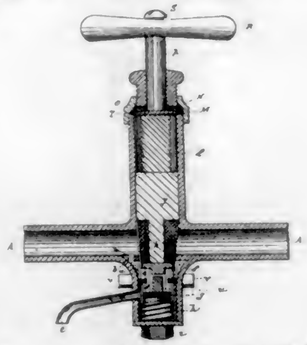
296,796. FENCE-POST. ZACHARY T. SWEENEY and JOSEPH I. IRWIN, Columbus, Ind. Filed Dec. 13, 1883. (No model.)



Claim.—1. A fence-post consisting of a wooden post having a pair of iron bars secured thereto on opposite sides and projecting therefrom, and a series of solid tiles adapted to fit together, and secured between said bars, all combined substantially as specified.

2. Wooden post A, bars *b b*, secured thereto, and tiles *d d*, grooved and formed as shown and described, and secured between said bars, all combined substantially as and for the purpose specified.

296,797. WASTE-COCK. HENRY TAYLOR and RICHARD B. SHARP, Cleveland, Ohio. Filed Apr. 26, 1882. Renewed Dec. 21, 1883. (No model.)



Claim.—In a waste-cock, the combination of the handle R, plunger *j*, and rubber plug *f*, with washer *g* and spring *h*, operating in the manner and for the purposes set forth and described.

296,798. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed Jan. 14, 1884. (No model.)



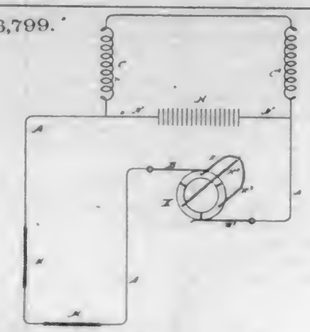
Claim.—The herein-described one-piece sheet-metal fastener A, consisting of the head or base portion *b* and projecting prong *a*, terminating in a rounded one-side end, *a'*, substantially as shown and described.

296,799. DYNAMO-ELECTRIC MACHINE. ELIHU THOMSON, New Britain, Conn., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Dec. 18, 1883. (No model.)

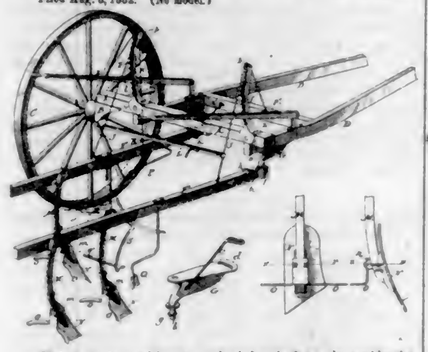
Claim.—1. The combination, with the field-magnet in a dynamo-electric machine, of a secondary or storage battery in a branch around the field-magnet coils, and arranged in the manner described, so that the discharge-current from said battery may circulate through the coils in a direction to preserve the normal polarity of the magnet.

2. The combination, in a dynamo-electric machine, of field-magnet coils connected to a commutator-brush, a branch taken from a point between the commutator and said coils, and a secondary or storage battery in said branch, as and for the purpose described.

296,799.



296,800. CULTIVATOR. NEWTON TROWBRIDGE, Council Grove, Kans. Filed Aug. 8, 1882. (No model.)



Claim.—1. In a cultivator, a wheeled main frame, in combination with a drag-bar or beam and an intermediate connecting-bracket pivoted to the main frame, and reversible end for end thereon, as described, whereby the point of connection between the beam and frame may be moved forward and backward.

2. In combination with the wheeled main frame and the drag-bar F, the intermediate reversible bracket, G, pivoted to the main frame, and provided with the journal to receive the beam-coupling, substantially as described and shown.

3. In combination with the main frame and the reversible bracket G, as described, the brace rod or arm e, adapted for connection with the frame in the two positions described.

4. The combination, with the main frame and the drag-bar, of the beam, the pivoted reversible bracket G, provided with the slot *d*, and with the brace-arm *e*, having the slotted end, as shown, whereby the bracket is adapted to be reversed end for end, and also to be adjusted laterally.

5. In combination with a cultivator-shovel having a flat curved surface, substantially as shown, two cutting-blades, *o*, located in rear of said shovel, and extending horizontally beyond its opposite sides, said blades being adjusted above the point of the shovel and adapted to travel beneath the surface of the ground.

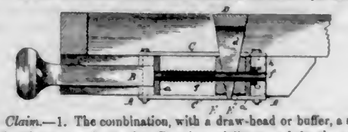
6. In combination with a cultivator-shovel, the rear plate provided with the two laterally-extending knives, and the intermediate bevel-block or washer, *n*, substantially as and for the purpose set forth.

7. In a cultivator, the combination of the following elements: a wheeled main frame, two laterally-swinging beams or drag-bars, a flexible chain or suspending device attached to each beam, a device, substantially as shown, adjustable in length, connecting the suspension devices one with another, whereby the suspending devices may be subjected to lateral strain and caused to maintain the beams normally at a given distance apart, while permitting said distance to be momentarily varied at the will of the operator.

8. In combination with the laterally-swinging beams or drag-bars F F and the chains J J, the adjustable connecting-strap I, substantially as shown.

9. In combination with the seat-supporting arms, the pivoted seat provided with the notched plate *u*, and the sliding bolt *v*, mounted upon the arm and arranged to engage with the edge of said plate, as described and shown.

296,801. DRAW-BAR AND BUFFER. WILLIAM B. TURNER, New York, N. Y., and JOHN J. MANN, Jersey City, N. J., assignors of one-third to Cornelius Beard, New York, N. Y. Filed Feb. 12, 1884. (No model.)



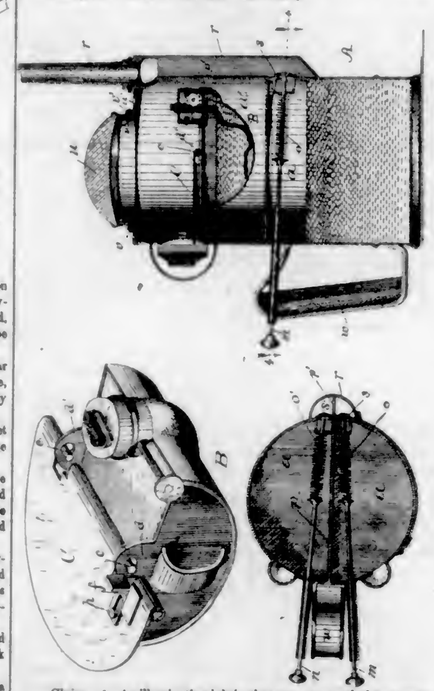
Claim.—1. The combination, with a draw-head or buffer, a spring, and its abutment, of a wedge, D, substantially as and for the purpose specified.

2. The combination, with a draw-head or buffer, a spring, and its abutment, of a wedge inserted between said spring and its abutment, adapted to automatically take up or prevent lost motion, substantially as described.

3. The combination, with a draw-head or buffer, a spring, and a wedge-shaped block, of a wedge, D, inserted between said spring and block, substantially as and for the purpose specified.

4. The combination of a draw-head, a spring, *g*, a wedge, D, having a recess, *d*, and two inverted-wedge-shaped blocks, all constructed, arranged, and operating substantially as described.

296,802. ILLUMINATING LUBRICATING-CAN. EUGENE R. WALKER, Chicago, Ill. Filed Nov. 23, 1883. (No model.)



Claim.—1. An illuminating lubricating-can composed of two apartments, the lower or rear apartment being that which contains the lubricating material, and the upper or forward apartment having placed therein or connected therewith a swinging lamp, so supported as to be self adjusting, and as to retain an upright position when the position of the can is changed, substantially as described, and for the purpose set forth.

2. In an illuminating lubricating-can, the combination of the can A, the lamp B, the pintles *c*, and the ears *d* and *d'*, all arranged substantially as described and for the purpose set forth.

3. In an illuminating-oiler, the can A, composed of two apartments, in combination with the lamp B, placed in the forward apartment, the pintles *c*, the ears or supports *d d'*, the slide *f*, and the screw or bolt *h*, all arranged and constructed substantially as described, and for the purpose specified.

4. In an illuminating lubricating-can, the combination of the can A, composed of two apartments, the swinging lamp B, the partition *p*, and the spout *r*, substantially as described, and for the purpose set forth.

5. In an illuminating-oiler, the combination of the can A, having an oil-apartment and a lamp-apartment, the partition *p*, the rods *m* and *n*, the springs *o* and *o'*, the valves *s* and *s'*, and the spout *r*, all constructed and arranged substantially as described, and for the purpose set forth.

6. In an illuminating lubricating-can, the combination of the can A, the lamp B, suspended in the can, and the perforated plate *a'*, forming the top of the can and carrying the lens, substantially as described, and for the purpose set forth.

7. In an illuminating lubricating-can, the combination of the can A, formed so as to have an upper and lower apartment, the suspended lamp B, the reflector-plate C, the lens *u*, the door *x*, and the spout *r*, all constructed, arranged, and operated substantially as and for the purpose set forth.

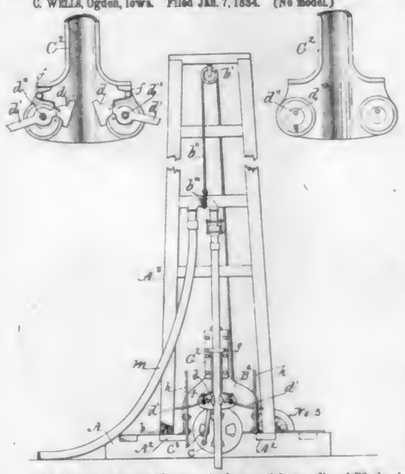
8. In an oil-can, the combination of an oil-receptacle, a lamp-receptacle forming a continuation of the oil-receptacle, and having a lens in its upper part and openings for the admission of air, and a lamp pivotally suspended in the lamp-receptacle, substantially as described.

296,803. SUSPENDER-BUCKLE. CHARLES STARR WELLS, Boston, Mass., assignor of one-half to Alvin M. Cushing, same place. Filed Jan. 23, 1884. (No model.)



Claim.—A suspender buckle or fastening made of thin sheet metal, having a hook re-enforced with an additional layer or thickness of stock, as described.

296,804. ROCK-DRILL AND WELL-BORING MACHINE. WILLET C. WELLS, Ogden, Iowa. Filed Jan. 7, 1884. (No model.)



Claim.—1. A portable base, A, the metal frames B and B^2, the driving-shaft B^3, the crank-wheel C, and a reciprocating jaw-carrier, C^2, arranged and combined in a drilling-machine, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

2. The levers *d'*, having jaws hinged to their ends, in combination with a reciprocating jaw-carrier, C^2, and bridles *h*, adjustably connected with the base of a drilling-machine, substantially as and for the purposes set forth.

3. The T-shaped jaws *d*, the levers *d'*, the adjustable eccentrics *d''*, and the springs *f*, arranged and combined with the reciprocating jaw-carrier C^2, substantially as shown and described, for the purposes specified.

4. The jaw-carrier C^2 having an open ring, *g*, and a hinged section, *g'*, at its top, and carrying a pair of levers, *d'*, having tube-gripping jaws on their ends, in combination with a base or frame, B^2, having adjustable bridles *h*, substantially as shown and described, for the purposes specified.

5. The adjustable slides or stops *i*, in combination with the bridles *h*, and a reciprocating jaw-carrier having pivoted jaw-bearing levers extending their long arms through the said bridles, substantially as and for the purposes specified.

6. The improved rock-drilling and well-boring machine, composed of the following-named elements and sub-combinations, to wit: the portable base A A^2, the frames B and B^2, the driving-shaft B^3, having a crank-wheel on one end and a gear-wheel on the other, the shaft B^4, having a balance-wheel and a pinion, and the shaft B^5, having a gear-wheel and pinion, the reciprocating jaw-carrier having a tube-bearing, *g g'*, at its top, and carrying tube-gripping mechanism *d d' d'' f*, the adjustable bridles *h*, having adjustable slides *i*, the detachable derrick having a pulley and rope, *b' b''*, a drum, J, and a clutch, *k*, substantially as shown and described.

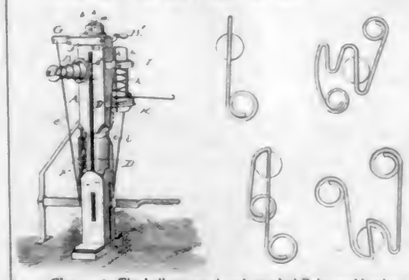
296,805. THILL-COUPLING. HENRY MASON WHEELER, Grand Forks, Dak. Filed Dec. 20, 1883. (No model.)



Claim.—1. In a thill-coupling, the combination of hollow heads C' C^2, attached to the carriage-axle, and having slots *a b* and inclined faces *g g* therein, slotted tubes E' E^2 within the hollow heads, grooved rubber cushions F' F^2 in the said tubes, and thills having T-shaped heads K' K^2, substantially as and for the purpose herein specified.

2. In a thill-coupling, the combination of hollow heads C' C^2, attached to the carriage-axle, and provided with slots *a b* therein, thills having T-shaped heads K' K^2, and pivoted covers L' L^2, covering the ends of the heads and adapted to cover and uncover the slots *a b* therein, and provided with an elastic packing, substantially as and for the purpose herein specified.

296,806. WIRE-COILING MACHINE. LA FAYETTE WILDERMUTH, Columbus, Ohio. Filed Sept. 4, 1883. (No model.)



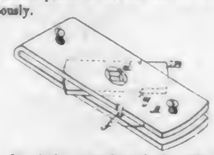
Claim.—1. The hollow post A and mandrel B, in combination with the revolvable plate *a*, the twisted bit C, cam-slide *c*, treadle-rod *d*, and treadle-lever E, all constructed to operate substantially as and for the purpose set forth.

2. The hollow post A and mandrel B, in combination with the blocks H and I, the guide-rods *h h*, bars *i i*, and treadle-lever E, all constructed to operate substantially as and for the purpose set forth.

3. The hollow post A and mandrel B, in combination with the revolvable plate *a*, provided with the groove *a'* and pin *b*, the twisted bit C, cam-slide *c*, rod *d*, cutter-blade G, rod *e*, coiled spring F, and treadle E, all constructed to operate substantially as and for the purpose set forth.

296,807. DRAWER-LOCK. JOS. WISE, Watertown, N. Y., assignor to J. Wise & Son, same place. Filed Jan. 25, 1884. (No model.)

Brief.—The lock is placed in the rail between two drawers which it locks simultaneously.



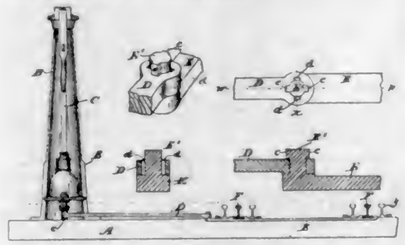
Claim.—1. In a lock, a case formed of a strip folded upon itself and inclosing a turn-bolt journaled therein between the leaves, and adapted, by turning, to be projected from and withdrawn into said case, substantially as described.

2. A double lock comprising a folded strip and a double turn-bolt journaled between the leaves of said folded strip, and adapted, by turning, to be projected beyond the same on both sides, substantially as described.

3. A lock comprising a case formed of a folded strip, in combination with an inclosed turn-bolt supported therein by a projection formed integral with one of said parts and fitting within a hole in the other, substantially as described.

296,808. CONNECTION OF RAILWAY-SWITCH RODS. JOHN B. WITTY, Indianapolis, Ind. Filed Oct. 20, 1883. (No model.)

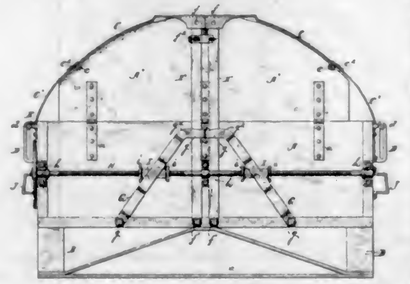
Brief.—The switch-bridle and the switch connecting-rod of the operative lever are jointed together by means of a winged pin on the end of one and a notched hole for receiving the pin in the end of the other, the wings and notches being arranged to register, so that the rod and bridle may be separable only when the rod and bridle are in other than nearly the same line or operative position.



Claim.—1. In a railway-switch, the combination, with the rails, of a rail-coupling having a stud provided with wings, and a connecting-rod connecting said rail-coupling to the switch-stand, having an eye, in the sides of which are notches adapted to receive said wings, the parts being so arranged, when in operative position, that the wings and notches do not register, substantially as described, and for the purposes specified.

2. In a railway-switch, the combination of the switch-rails F, rail-coupling E, said rail-coupling being provided with a stud, E', which is provided with wings *e* at its end, and the connecting-rod D, connecting said rail-coupling to the switch-stand, said connecting-rod being provided with an eye in one end, having recesses *d d* in its sides to receive the wings *e e* on the end of the stud E' on the rail-coupling, the wings of said stud and the recesses in said eye being placed at an angle with each other when the device is in operative position, whereby said rail-coupling and said connecting-rod are securely locked together, substantially as set forth.

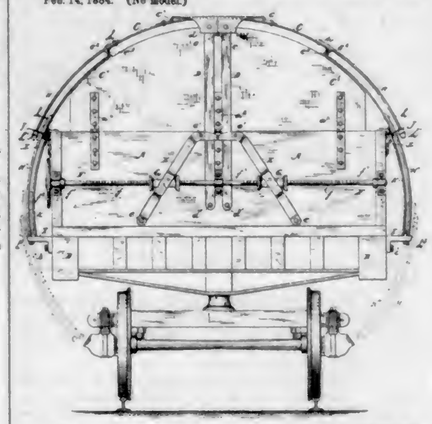
296,809. RAILWAY-CAR COVER. RICHARD H. WYMAN, Chicago, Ill. Filed Jan. 21, 1884. (No model.)



Claim.—1. The combination, with the box or frame of a coal or open car, of the sectional hinged covers C C' C C', with the pivoted bars F F, the pivoted levers G G, shaft H, and sleeve-nuts I I, and means for rotating said shaft, whereby each of said sections may fold back upon itself, substantially in the manner and for the purpose set forth.

2. A movable cover for coal or open cars, consisting of the combination of the folding sectional covers C C' C C', the slotted brackets D, pivoted bars F F, levers G G, screw-threaded shaft H, and sleeve-nuts I I, with means for rotating said shaft, substantially in the manner and for the purposes set forth.

296,810. RAILWAY-CAR. RICHARD H. WYMAN, Evanston, Ill. Filed Feb. 14, 1884. (No model.)



Claim.—1. In a railway-car cover, the combination of the movable sections C C C' C', provided with the rigid supporting-bars H H H' H', brackets I, and bars D D and E E, with screw-threaded shaft and sleeve-nuts for operating the same, substantially as and for the purposes set forth.

2. In a railway-car cover, the combination of the movable sections C C C' C', provided with the rigid supporting-bars H H H' H', brackets I, bars D D and E E, with screw-threaded shaft F, sleeve-nuts G G, for operating said sections, and movable brackets L, for supporting said sections when closed.

3. In a railway-car cover, the combination of the movable sections C C C' C', provided with the rigid supporting-bars H H H' H', having knobs *h h h' h'* thereon, brackets I, locking-plates J, with bars D D and E E, screw-threaded shaft F, sleeve-nuts G G, and means for operating said shaft, substantially as and for the purposes set forth.

4. In a railway-car cover, the combination of the movable sections C C C' C', provided with the rigid supporting-bars H H H' H', having knobs *h h h' h'* thereon, brackets I, locking-plates J, movable brackets L, and connecting-rods M, with bars D D and E E, screw-threaded shaft F, sleeve-nuts G G, and means for operating said shaft, substantially as and for the purposes set forth.

5. The combination of the supporting-brace O and set-screw P, having suitable bearings, as shown, with the side of a car having movable covers, whereby said side may be forced into line and so retained, substantially as and for the purposes set forth.

6. The combination, with the body of a car having sectional movable covers, of the detachable bail Q, sockets *q q*, and segmental racks and pinions, whereby said bail may be released from contact with said sections, and vice versa, substantially in the manner and for the purposes set forth.

7. The combination, with the body of a car having sectional movable covers, of the detachable bail Q, provided with the notch q^2, sockets *q q*, and segmental racks R R, with a suitable shaft and pinions for operating the same, substantially in the manner and for the purposes specified.

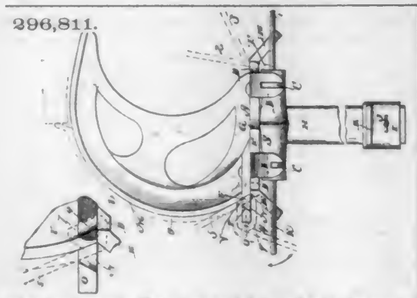
296,811. DEVICE FOR FORMING BAILS FOR BUCKETS. ANDREW JEREMIAH BLAIR, Knoxville, Tenn. Filed July 12, 1883. (No model.)

Brief.—The wire having been placed through the handle, the handle is centered on the wire by the use of the gage-collar and projecting arm. The handle is then placed over the projecting arm and under the curved flanges, and the bends at 2 and 3 are made to secure the handle upon the wire. The end of the wire is placed in the slot N in the flange, and the bends at the end are made. The bail is then shaped around the periphery of the curved flange. In forming hooks for buckets, the end is inserted in slot Q, and the wire is bent around and against periphery M, to form a common hook.

Claim.—1. A bail-forming machine having a vertical plate provided with curved flanges projecting from its top edge, recesses in the said edge near each end, and end flanges extending from these recesses and projecting in the same direction as the curved flanges, substantially as and for the purpose set forth.

2. A bail-forming machine embodying a vertical plate having flanges for retaining the bail-wood in position, supporting-flanges projecting at its ends to support the bail-wire, and recesses arranged between the re-

296,811.



taining and supporting flanges, substantially as and for the purpose set forth.

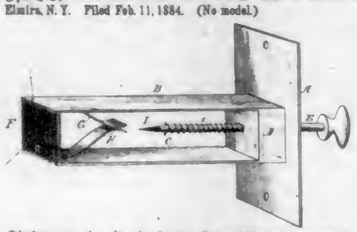
3. A bail-forming machine comprising a main plate having the curved flanges projecting from its top edge, the recesses in its top edge, the end supporting-flanges, the guide-groove, the horizontal projecting arm or plate, and the centering-collar adjustable on the latter, substantially as and for the purpose set forth.

4. A bail-forming machine having a forming-arm provided with a segmental forming-periphery, and with a projecting flange or plate having a forming-slot at the terminus of this periphery, substantially as and for the purpose set forth.

5. In a bail-forming machine, a projecting flange or plate having an ear-forming slot with convergent sides, as set forth.

6. A bail-forming machine comprising a vertical plate having rearwardly-projecting curved flanges for retaining the bail-wood in position, and supporting-flanges projecting in the same direction, recesses formed in its top edge between the retaining and supporting flanges, a forwardly-projecting forming-arm having a segmentally-curved periphery, and a projecting flange or plate having ear-forming slots at the terminus of the said periphery, substantially as and for the purpose set forth.

296,812. ELECTRIC DOOR-BELL PULL. SELWYN NIVEON BLAKE, Elmira, N. Y. Filed Feb. 11, 1884. (No model.)

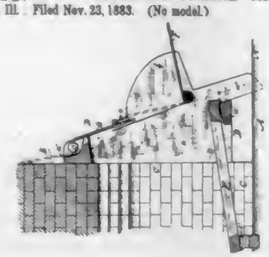


Claim.—1. An electric door-pull consisting of an escutcheon to which are attached plates supporting contact-pieces between them, and spring-actuated knob-shaft adapted to make and break the circuit, as set forth.

2. An electric door-pull consisting of an escutcheon to which are attached plates supporting contact-pieces connected with the electric circuit, and a spring-actuated knob-shaft having a tip of non-conducting material, adapted to make and break the circuit.

3. An electric door-pull consisting of an escutcheon, A, plates B C, attached thereto, block F, of non-conducting material, contact-pieces G H, and spring-actuated knob-shaft having non-conductor I, the whole being adapted to be fitted to the jamb of any ordinary door, as set forth.

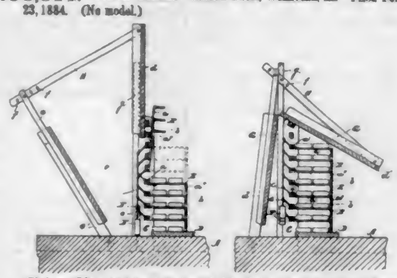
296,813. BRICK-KILN FRONT OR FURNACE. JOSEPH BLUM, Winnetka, Ill. Filed Nov. 23, 1883. (No model.)



Claim.—1. A portable brick-kiln front or furnace, consisting of the side pieces, *a a*, connected to each other by cross-bars *a' a'*, and having thereon the wings *b b*, the doors F and G, and the grate E, substantially as and for the purposes specified.

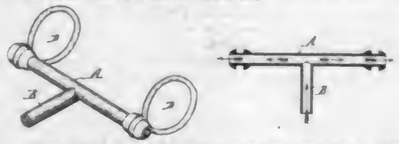
2. A portable brick-kiln front or furnace, consisting of the side pieces, *a a*, connected to each other by cross-bars *a' a'*, and having thereon the wings *b b*, the doors F and G, the pivoted arm or pendant *c*, and the grate E, having thereon the lugs or catches *s s*, arranged to engage the lower cross-bar, *a'*, substantially as and for the purposes specified.

296,814. BRICK-DRIER. JOSEPH BLUM, Winnetka, Ill. Filed Feb. 23, 1884. (No model.)



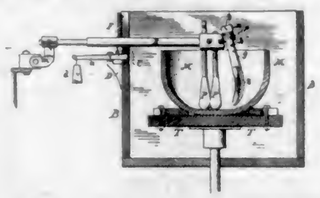
Claim.—The combination, in a brick-drier, of a stationary frame or support, and a cover or roof, G, consisting of two swinging or folding parts or sections, *d* and *d'*, hinged or connected to each other by means rendering both of the said sections simultaneously folding when either is folded or adjusted, substantially as and for the purposes specified.

296,815. BRIDLE-BIT. JOHN B. BLYHOLDER and PHILLIP HUGHES, St. Louis, Mo. Filed Jan. 21, 1884. (No model.)



Claim.—The improved bridle-bit consisting of the hollow or tubular transverse bit A, having a central tube, B, at a right angle thereto, and in communication therewith, substantially as and for the purposes set forth.

296,816. TRITURATING-MACHINE. FRANCIS E. BOERICKE and GEORGE GOLL, Philadelphia, Pa. Filed Dec. 26, 1883. (No model.)



Claim.—1. In a triturating-machine operating substantially as described, the combination, with the rod and pestles, of the pillow-block C and means for adjusting the same, substantially as and for the purpose specified.

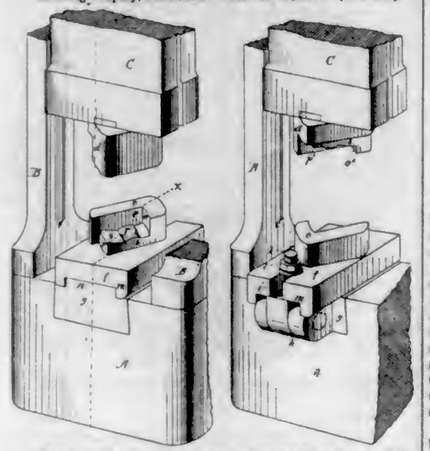
2. The combination of the mortar, the pestles, the reciprocating rod, the pillow-block, and the pivoted and weighted lever, substantially as and for the purpose set forth.

3. The combination, with the rotating mortar, of the loosely-swinging scrapers, substantially as and for the purpose stated.

4. In combination with the mortar and the pestles, the swinging scraper and pin *g*, provided with a thumb-nut for adjusting the scraper laterally with relation to the side of the mortar, substantially as and for the purpose set forth.

5. In combination with the mortar, the scraper having its shank provided with a series of holes therein, and a supporting-pin, whereby the scraper may be vertically adjusted with relation to the mortar, substantially as and for the purpose described.

296,817. MACHINE FOR MAKING AX-POLLS AND SIMILAR TOOLS. JOHN W. BOWERS, Franklin, assignor to the Douglas Axe Manufacturing Company, Boston, Mass. Filed Feb. 23, 1883. (No model.)



Claim.—1. In a swaging-machine, a hammer-die and an anvil-die, which, when brought together, form a closed matrix, and which are so constructed that each die embraces only such of the acting-faces of the matrix as are substantially opposite to those contained in the other, and that each die has its lateral acting-faces extended in planes parallel to the direction of movement of the hammer-die, so as to shut by and form a close joint with the acting-faces which constitute the hammer and anvil, respectively, whereby the lines of juncture of the dies, when they are in contact, will be located at the intersection of the acting-faces of the matrix formed thereby, substantially as described.

2. In a swaging-machine, an anvil-die provided with a hinged or pivoted support, which will permit the anvil-die to tilt upward when the hammer-die begins to ascend after the swaging operation, in the manner and for the purpose specified.

3. In a swaging-machine, a hammer-die and an anvil-die, each of which embraces such of the acting-faces of the matrix as are substantially opposite to those contained in the other, in combination with a hinged support for the anvil-die, all so arranged that the open side of the anvil-die shall be turned away from the hinged end of the said support, and the open side of the hammer-die shall be turned toward the hinged end thereof, substantially as described, for the purpose specified.

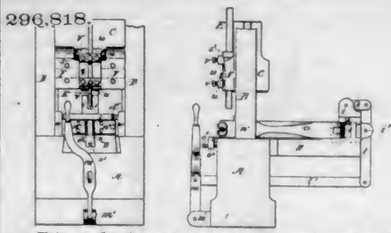
4. In a machine for swaging or pressing ax-polls or similar articles of metal of polyhedral form, a pair of partible dies, each of which contains one or more solid or polyhedral angles formed by complete adjacent acting-faces of the matrix, and each of such faces being substantially opposite to one contained in the other die, but no portion of either of them being diametrically opposite to any other face or portion thereof in the same die, substantially as described.

5. In a machine for swaging ax-polls and similar metal blanks, a pair of dies substantially such as are herein described and shown, the same being so constructed that the two dies form a closed matrix when brought together in the act of swaging the blank, that each die contains only complete acting-faces of the matrix, and such as are each substantially opposite to a face in the other die, and that a projection approximating in form and dimensions to one half of the finished eye to be subsequently punched in the blank is situated across one face of each die, at a location coincident with the position of the eye portion of the blank, and diametrically opposite to the like projection upon the similar face of the other die, whereby, during the operation of swaging, the blank is confined upon all sides, the lines of juncture of the two dies are at angles of intersection of the surfaces of the blank, and the metal displaced from the eye portion of the blank is forced into adjacent portions and given the desired shape by other parts of the matrix.

6. In a swaging-machine, a pair of partible dies, each of which contains only such of the acting-faces of the matrix formed thereby as are substantially opposite to those contained in the other, in combination with a hinged support for one of the dies, which will tilt toward the opposite die when the two dies begin to separate after the swaging operation, for the purpose specified.

296,818. MACHINE FOR PUNCHING THE EYES OF AXES AND SIMILAR TOOLS. JOHN W. BOWERS, Franklin, assignor to the Douglas Axe Manufacturing Company, Boston, Mass. Filed May 3, 1883. (No model.)

296,818.



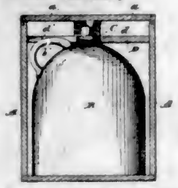
Claim.—1. In a drop-punching machine, the combination of a drop and a tool-stock normally abutting endwise against the drop, with springs for holding the drop and tool-stock in such position, but permitting them to slide vertically upon one another, substantially as shown and described.

2. In a drop-punching machine, the combination of a drop and a tool-stock carried thereby, arranged to slide vertically one upon the other, and having their relative movement limited in one direction by abutting endwise against each other, so as to act as one mass when they descend in the operation of punching, and stops for limiting such movement in the other direction, so that after the tool has been forced into the metal and the drop begins to ascend it will at first move independently of the tool-stock, and then after acquiring momentum will suddenly act upon the tool-stock to withdraw the tool from the metal, all substantially as shown and described.

3. In a drop-punching machine, a drop, in combination with a punch held in a tool-stock capable of separate vertical movement in the drop, and clamping-levers *a a*, pivoted upon the bed of the machine for firmly holding the article to be punched in proper position to receive the thrust of the punch when the drop descends, substantially as described.

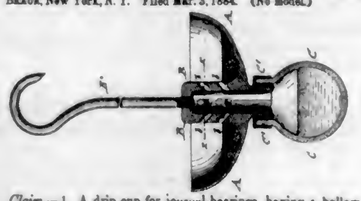
4. In a drop-punching machine for punching the eyes of axes, ax-polls, and similar articles, the combination of a drop and punch with a pair of clamping-levers having removable adjustable dies *n n* in their gripping ends, the faces of which are the counterpart in shape of that which it is desired to produce upon the sides of the finished article, and adjustable clamps *n' n'*, for holding said dies therein, all constructed and operated substantially as described.

296,819. JUG-PACKING BOX. LEONIDAS H. BRADLEY, Springfield, Ill. Filed Sept. 16, 1883. (No model.)



Claim.—The hereinbefore-described jug-holder, consisting of the box A, provided with the cover *a*, the washers C, having each a central opening, *c*, and the collar D, provided with the central opening, *d*, and radial slot *d'*, all combined substantially as and for the purpose specified.

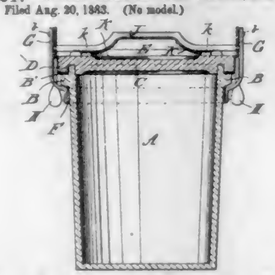
296,820. DRIP-CUP FOR JOURNAL-BEARINGS. J. GOTTFRIED BRAUN, New York, N. Y. Filed Mar. 3, 1884. (No model.)



Claim.—1. A drip-cup for journal-bearings, having a hollow perforated boss or hub, a suspension device secured to the upper end of the hub, and a receiving-vessel attached to the lower discharge end of the hub, substantially as set forth.

2. The combination of a drip-cup for journal-bearings provided with a central hollow boss or hub open at the lower end, said hub having inclined perforations at different levels, with a detachable receiving-vessel attached to the lower discharge end of the hub, substantially as set forth.

296,821. BUTTER-PACKAGE. JOHN C. BROWN, Davenport Centre, N. Y. Filed Aug. 30, 1883. (No model.)



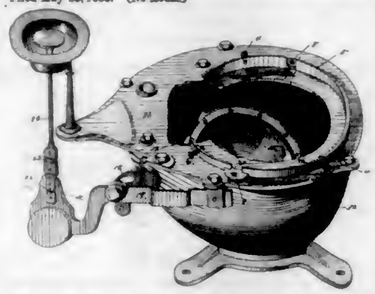
Claim.—1. In a butter-package, the combination, with a jar and its cover, of a ring surrounding the jar, ears projecting from the same, cam-levers held to turn on the ears, and a cross-piece pivoted to the cam-levers and bent at its middle to form a handle-loop, substantially as herein shown and described.

2. The combination, with a butter-jar, of a cover having an annular ridge on its upper surface, which ridge is provided with a series of diametrically-opposite notches, ears projecting from the ring surrounding the jar, cam-levers held to turn on the said ears, and a cross-piece pivoted in the cam-levers, substantially as herein shown and described.

3. In a butter-package, the combination, with a jar and its cover, of cam-levers held to turn on ears held on the jar, and a cross-piece pivoted to the cam-levers, to which cross-piece spring-plates K are fastened, substantially as herein shown and described.

4. The combination, with a jar and its cover, of a ring, F, ears G, pivoted to said ring, cam-levers H, journaled in the ears, and a cross-bar journaled in the cam-levers, and serving the double purpose of a handle and means for holding the cover, substantially as described.

296,822. WATER-CLOSET. PATRICK CONNOLLY, Brooklyn, N. Y. Filed May 23, 1883. (No model.)



Claim.—1. In a water-closet, the combination, with the chamber or body provided with side recesses in its top opening and removable plates for closing said recesses, of the removable pan, substantially as described.

2. The combination, with the basin provided with a flange, as 7, of the body or chamber provided with a flange, as 5, and set-screws, as 4, passing through said flange 5 and abutting against said flange 7, substantially as described.

3. The combination, with the lever 19, of the rod 20, having a universal joint, as 23, substantially as described.

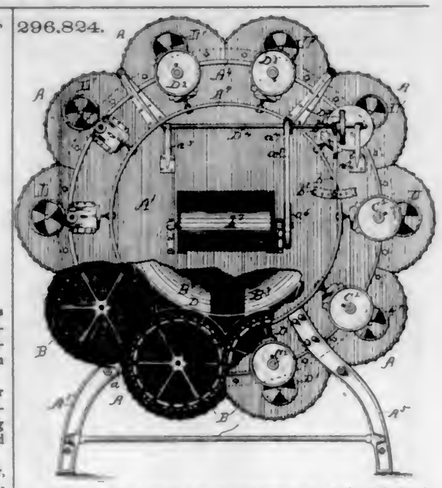
4. The combination, with the lever 19, provided with the ribs 2, of the nut 24, bolt 25, and pull-rod 20, substantially as described.

296,823. JOURNAL-BEARING. EDWARD COPLEY, JUSTUS FORDICE SELDOMRIDGE, and GEORGE DE LA VERGNE, Colorado Springs, Colo. Filed Jan. 10, 1884. (No model.)



Claim.—A journal-bearing section formed with the passage *c*, shoulders *d*, end recesses, *e*, and end shoulders, *f*, in combination with a filling of papier-maché or leatheretta, substantially as described.

296,824. COTTON GINNING AND CLEANING APPARATUS. MILO COVEL, Chicago, Ill. Filed July 3, 1883. (No model.)



Claim.—1. In a cotton-gin, the combination of a series of inclosed toothed cylinders arranged in a circular plane, the whole inclosing an annular interior space, where the cotton or other fibrous substance to be treated is subjected to the action of the continuous moving toothed cylinders, substantially as described.

2. The combination, with a series of hollow cylinders and a casing or jacket provided with openings for the admission of air into each of the cylinders, of a series of fans arranged longitudinally on the inside of each of the said cylinders for the purpose of generating a blast to assist in separating the fiber from the refuse matter and depositing the same in the lint-room when so separated.

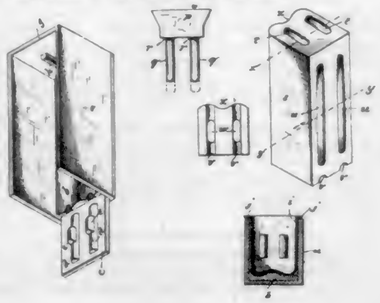
3. In an apparatus as described, the combination, with the series of toothed rings D, and the tie-rods C^3, of the series of wire-clamps a', placed between each pair of rings, for the purpose of retaining the same with proper relation to each other, and arranged to provide openings or air-passages, substantially as set forth.

4. The combination, with a cotton-gin, of a feeding apparatus consisting of the drum b^3, the companion drum b^4, the feed-apron b^5, having the outer surface thereof studded with lag-points which are inclined back from a forward movement of the apron, the concave part *d*, provided with lag-points, and the wire screening-surface *d'*, arranged in the under side of the feed-passage, whereby a portion of the refuse matter is expelled from the substance before it passes into the ginning apparatus, substantially as set forth.

5. The combination, with a ginning apparatus, of a lint-room provided with a number of gauze-drums arranged in a horizontal plane, and self-adjusting rollers F F' F', for the purpose of separating the fiber into as many grades or lots as there are drums.

6. The combination of a ginning apparatus having a discharge-opening, and a lint-room having adjustable shield d^2, hinged to partition d^3, having a space between it and the wall of the lint-room below the discharge-opening.

296,825. MOLDING PLASTIC MATERIAL. CHARLES M. DU PUY, Philadelphia, Pa. Filed Aug. 26, 1882. (No model.)



Claim.—1. The box or mold *a*, having the hinged end-gates, a tray, *i*, therein, and projections to indent the product, and die *o*, constructed and arranged to operate substantially as shown and described, and for the purpose specified.

2. A mold, *a*, having the bottom *b* and ends *c g*, provided with internal projections to give shape to the mass being molded, the tray *i*, and end pieces, *l n*, and the die *o*, substantially as shown and described.

3. The combination, with the mold-box *a*, of the tray *i*, substantially as and for the purpose described.

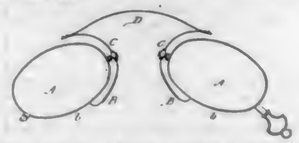
4. The combination, with the mold-box *a*, of the tray *i*, having the edge flanges, *j j*, end flange, *k*, and end pieces, *l n*, substantially as and for the purpose described.

5. The combination, with a mold-box, *a*, and its tray *i*, of the die *o*, having blades or prongs *q*, substantially as shown and described.

6. The combination, with the mold-box *a*, of the die *o*, having blades or prongs *q*, provided with rounded or beveled points, and slightly tapering or rounded shoulders *r*, substantially as and for the purpose specified.

7. The block *s*, formed with cavities *t t* and *u u*, grooves *v v*, and counter-cavities *w w* therein, and the curvilinear back *z*, all substantially as and for the purpose set forth.

296,826. EYEGLASSES. IVAN FOX, Philadelphia, Pa. Filed Feb. 20, 1884. (No model.)



Claim.—In eyeglasses, the springs extended over the lens or frames thereof, and a yoke having its ends attached to the ends of said springs, the connected end of the springs and yoke constituting an abutment for the lenses or frames at the top thereof.

296,827. CLASP. HENRY C. FRANK, New York, N. Y. Filed Feb. 6, 1884. (No model.)

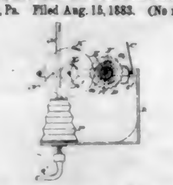


Claim.—1. The skirt-clasp described, having a single foundation, and two independent levers pivoted thereto, each part having projections, as *a*, to hold cushions M, and each lever having an operating-handle and spring, arranged reversely, as set forth.

2. The foundation A, having lugs A', and projections *a*, combined with the two independent levers, as C D, having reversely-arranged handles and springs, the pivot B, common to both levers, and the cushions M, as set forth.

3. In a clasp, as described, the combination of a foundation, as A, with two independent levers, as C D, the said levers having a combined width equal to the width of the foundation, and bearing-jaws, as C' D', and with springs, as E E', as set forth.

296,828. PNEUMATIC BELL-RINGING APPARATUS. ROBERT P. GARSED, Norristown, Pa. Filed Aug. 15, 1883. (No model.)



Claim.—1. In a bell-ringing device, a bell-hammer, in combination with an escapement-wheel fitted loosely on a shaft, and carrying a pawl, a ratchet and gear-wheel fixed to said shaft, a coiled spring connected with said wheel and the supporting-frame, gearing, and operating rack or bar, substantially as described, said spring being wound up on the advance of said bar, the subsequent uncoiling of the spring causing the ringing of the bell and restoring the parts to their normal position, as stated.

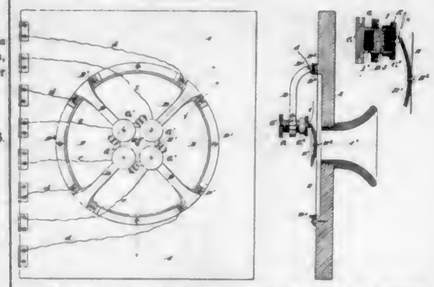
2. In bell-ringing apparatus, the combination of an operative pump, a bellows, and a pipe connecting the same and escapement mechanism, devices for operating the same, and a spring, the latter being coiled on the advance of said devices, leaving the bell-hammer inoperative, and uncoiling on the return of said devices, causing the operation of said hammer and ringing of the bell, substantially as and for the purpose set forth.

3. In bell-ringing apparatus, escapement mechanism and operating devices therefor, in combination with a spring, substantially as described, the same being wound by the primary motion of said devices without affecting the bell, and uncoiling on the return motion of said devices, causing the ringing of the bell, as stated.

4. In a bell-ringing device, a hammer, in combination with an escapement loosely fitted on a shaft and carrying a pawl and ratchet, a spring, gearing, and means for operating said gearing, whereby said spring is wound on the advance motion of the gearing without affecting the bell, the subsequent uncoiling of the spring causing the ringing of the bell and restoration of parts to their normal position, as stated.

5. In a pneumatic bell-ringing apparatus, an inflatable body and operating-pump, a rack connected with said body, a pinion, gearing, and a bell-hammer, in combination with the frame or support, having a roller or pulley which guides said rack, substantially as and for the purpose set forth.

296,829. TELEPHONE. WEBSTER GILLETT, Flushing, N. Y., assignor to the Atlantic and Pacific Telephone Company, Saco, Me. Filed Oct. 15, 1883. (No model.)

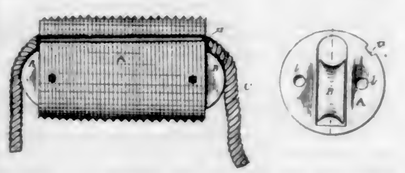


Claim.—1. In a telephone, the combination of a series of separate pins, E, connected with the carbon powder J to form a variable-resistance device, and the concave disk B', fixed to a point in the vibrating disk B, whereby simultaneous vibration may be communicated to said pins, substantially as set forth.

2. In combination with the variable-resistance device formed by the pins E and carbon powder J, and the arms D, carrying the variable-resistance devices, the electrical connections *d e*, the disk B', and the diaphragm B, substantially as and for the purposes specified.

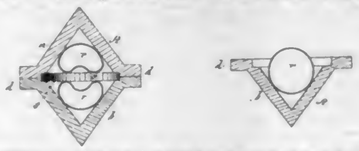
3. In a telephone, the cylinders G, carrying carbon powder J and engaging screw-threads in the arms D, the pins E, and the disks B and B', the parts J and E forming a variable-resistance device, which may be regulated by turning the cylinder G, substantially as specified.

296,830. SASH-CORD GUIDE. WILLIAM C. GILMER, Oakdale, Cal. Filed Aug. 7, 1883. (No model.)



Cloim.—The cylindrical-shaped pulley-piece A, provided with screw-threads and longitudinal groove *a* on its outer surface, and holes *b* at one of its ends, in combination with the sheaves B, carrying cord C, one at each end of the receptacle of the cylinder A, substantially as and for the purpose herein described.

296,831. CASH AND PARCEL RECEPTACLE FOR CASH-CARRIER SYSTEMS. CHARLES GRANT, Jr., and DAVID LAWRENCE, Boston, Mass.; said Lawrence assignor to said Grant. Filed Mar. 13, 1884. (No model.)



Claim.—1. A hollow cash or parcel receptacle of the form of a pair of cones or frusta of cones with their bases coinciding with each other, substantially as described.

2. A hollow cash or parcel receptacle of the form of a pair of cones or frusta of cones with one or more ribs or flanges interposed between their bases, as set forth.

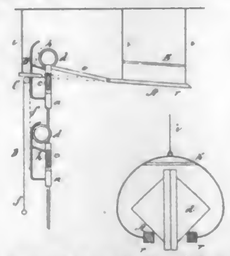
3. The combination, with a hollow cash or parcel receptacle, of a memorandum book or tablet on which to record the amount of the sale and number or name of the salesman, substantially as specified.

4. A memorandum book or tablet with an opening therein for the reception of the money or parcel, in combination with a hollow receptacle of the class described, substantially as described.

5. In combination with a hollow cash or parcel receptacle, a memorandum book or tablet having an opening therein, and with a tube projecting from one of its covers, as and for the purpose set forth.

6. A pair of elastic air-tight balls, in combination with and located in a hollow cash or parcel receptacle, operating as and for the purpose described.

296,832. CASH-CARRIER. CHARLES GRANT, Jr., and DAVID LAWRENCE, Boston, Mass.; said Lawrence assignor to said Grant. Filed Mar. 13, 1884. (No model.)



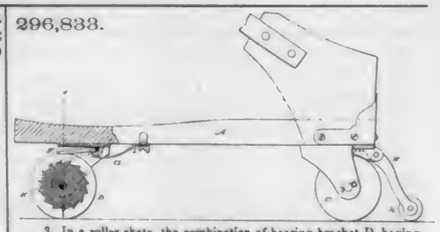
Claim.—1. In combination, an elevator with its carrier and cash or parcel receptacle, a rod or ways on which said elevator is raised by a cord or other connection, a guard for keeping in place the receptacle which is being raised, and for preventing the passage of another receptacle beyond it, and a track having a pivoted section capable of being inclined thereto, as and for the purpose set forth.

2. An elevator, in combination with a standard, one of which is provided with a projection, which enters a groove in the other, the lower portion of said groove being vertical, while its upper portion is curved, constructed to operate as and for the purpose set forth.

3. A holder actuated by a clock-spring for receiving the cash or parcel receptacle on its return from the cashier, in combination with a track having a pivoted section locked in line with the main track by a catch, which is liberated by the weight of said receptacle thereon, a spring for raising the free end of the pivoted section, and a hanging device for guiding the receptacle into the holder, the track being closed by the weight of the receptacle when it strikes said guide, constructed and arranged to operate substantially as and for the purpose described.

4. In combination with a track and a cash and parcel receptacle, the guard E, located thereover, and secured to the vertical track-supports *i*, substantially as described.

296,833. ROLLER-SKATE. MICHAEL F. HANLON, Brooklyn, N. Y. Filed Jan. 19, 1884. (No model.)



Claim.—1. In a roller-skate, the combination, with the usual front roller or rollers, of a ratchet-wheel fixed thereto and a gravity-pawl loosely pivoted beneath the foot-plate, with its free end adapted to engage said ratchet, and thereby prevent a backward rotation of the roller, substantially as set forth.

2. In a roller-skate, the combination, with the front rollers, B B, of ratchet-wheel E, embraced between them, and having spurs *b b*, which penetrate them, and with pawl F, substantially as set forth.

3. In a roller-skate, the combination of bearing-bracket D, having holes *c* and indentations *d d*, with pawl F, having ears *e e*, and with ratchet-wheel E and rollers B B, substantially as set forth.

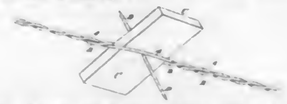
4. In a roller-skate, the combination, with ratchet-wheel E and pawl F, of lever G, adapted to disengage the pawl from the ratchet, substantially as set forth.

296,834. VEHICLE-SPRING. JACOB HOWELL, Jackson, Mich., assignor of one-half to Henry N. Archer and Ansel N. Hovey, both of same place. Filed Apr. 18, 1883. (No model.)



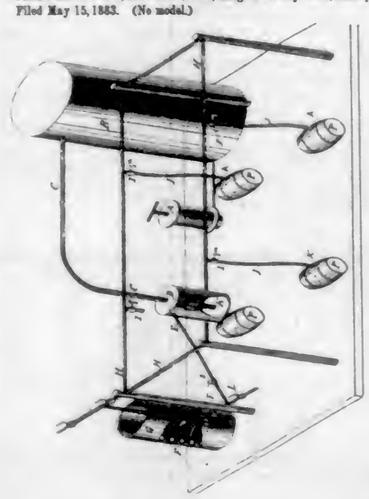
Claim.—The herein-described vehicle-spring, it consisting of the curved spring plate or bar C, extending from a line at or near the center of the body outward to the side bar and bearing upward directly against the body, in combination with another elastic spring-plate, D, which is flat, and is situated in line with the spring C, and is placed throughout its length close to and in contact with the under side of the vehicle, and the hinge or pivot which joins the two elastic parts, substantially as set forth.

296,835. WIRE FENCE. ARTHUR G. HULBERT, St. Louis, Mo. Filed Feb. 24, 1883. (No model.)



Claim.—The flat wooden tablet C, having barb D, in combination with the twisted strands A B, embracing the plain sides of said tablet, one of the strands being arranged above and the other below the barb, as shown and described.

296,836. PROCESS OF AND APPARATUS FOR AGING WHISKY. PIERRE EYMARD JAY, New York, N. Y., assignor to Jay & Co., same place. Filed May 15, 1883. (No model.)

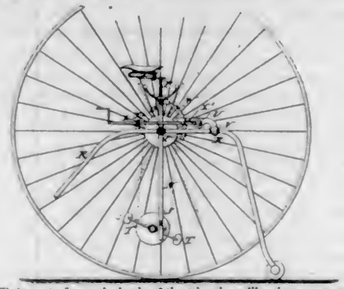


Claim.—1. The herein-described process of aging whisky and similar liquors in oaken casks by subjecting them to the action of a vacuum in said casks and condensing the resultant vapor, substantially as and for the purpose herein set forth.

2. The combination of one or more casks for containing the liquor to be aged, a condensing-worm communicating with the interior of the said cask, a tank containing a suitable deliquescent salt or material, a pump, receiver, and suitable tubular connections for insuring a vacuum within the said tank, condensing-worm, and cask, all substantially as and for the purpose herein set forth.

3. The combination of an air-pump, A, receiver B, pipe C, tank D, pipe E, having stop-cocks *b*, condensing-worm F, having discharge-cock L, pipe or pipes H, nozzles I, having stop-cocks *a*, for connecting the pipes H with the casks containing the liquor to be treated, all substantially as and for the purpose herein set forth.

296,837. VELOCIPEDE. FREDERICK WARNER JONES, Exeter, County of Devon, England. Filed Feb. 15, 1884. (No model.) Patented in England Oct. 23, 1881, No. 4,722.

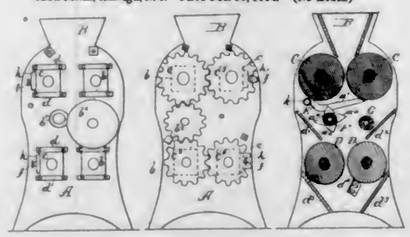


Claim.—1. In a velocipede of the tricycle or like class, a transverse swing-frame pivoted to the main frame and carrying the seat or saddle, the pedals, and the transmitting or driving mechanism, substantially as set forth.

2. In a velocipede of the tricycle or like class, a transverse swing-frame, the upper arched portion of which has a socket for the seat or saddle-bar, horizontal bearings, and vertical rods extending downwardly below said bearings, substantially as set forth.

3. The combination, with the main frame of a tricycle or other like velocipede, of a transverse swing-frame carrying the seat, pedals, and driving-gear, and means, substantially as described, whereby the swing-frame is retained in the desired position relatively to the main frame, substantially as set forth.

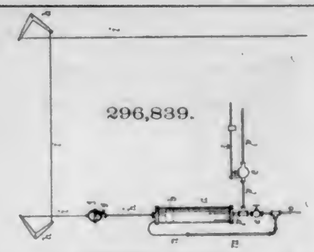
296,838. GRAIN CRUSHER AND DISINTEGRATOR. JESSE ARTHUR JONES, Raleigh, N. C. Filed Feb. 16, 1884. (No model.)



Claim.—In a machine for crushing and disintegrating grain, the combination of the two sets of rollers C C and D D, the slotted and ribbed diaphragm E, and the cylinder F, provided with the blades *a*', extended through the slots of the diaphragm, all constructed and arranged substantially as and for the purposes described.

296,839. STEAM-ALARM AND DAMPER-REGULATOR. JOHN C. JONES and CHARLES T. REID, Decatur, Ill. Filed Nov. 30, 1883. (No model.)

Claim.—The combination, in an automatic steam-alarm, of pipe *p*, cylinder *a*, plunger *b*, piston-rod *h*, weight *f*, escape-pipe *m n*, drip-valve *e*, and discharge-pipe *o*, as and for the purpose set forth.



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296,840. CAR-WHEEL. JOHN N. KAUFHOLZ, Cleveland, Ohio. Filed Sept. 7, 1883. (No model.)

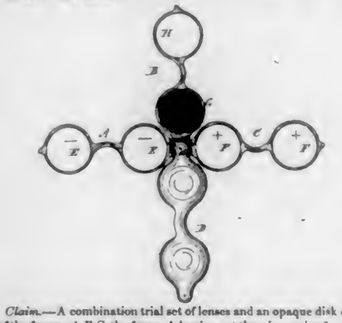


Claim.—1. The hubs A and A', so fitted as to require great pressure to bring them properly together, in combination with the thimble B, and adapted to support and firmly hold the disks that support the rim of the wheel, substantially as and for the purpose set forth.

2. The hubs A and A', in combination with the thimble B and the disks C and C', substantially as shown and described.

3. The combination, with the two-part hub and thimble B, of the disks C C', secured to the two-part hub in the manner described, each disk being provided with an inwardly-projecting lip, and the rim D, provided with the beveled rib *d*, all of the above parts combined as described.

296,841. TRIAL-LENS. JULIUS KING, Cleveland, Ohio. Filed Dec. 13, 1883. (No model.)



Claim.—A combination trial set of lenses and an opaque disk consisting of the frames A B C, the frame A having set therein a pair of — or concave lenses, and the frame C with + or convex lenses, (the above concave and convex of slight power,) and a frame, B, having set therein an opaque disk, whereas the opposite end of frame is a clear opening, the said frames being pivoted in a case or handle, D, substantially as herein set forth, and for the purpose specified.

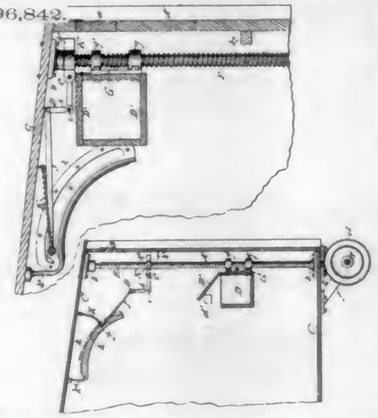
296,842. CATTLE-CAR. WILLIAM KLAEBER and FRED SELL, Milwaukee, Wis. Filed Jan. 29, 1884. (No model.)

Claim.—1. In a cattle-car, a water-trough and a feed-rack mounted on vertical screw-rods, whereby as said rods are turned in one or the other direction both devices will be simultaneously raised close up to the car-top or lowered down for use, in combination with stop-blocks fastened at suitable points in the sides and ends of the car, whereby the said devices are automatically adapted for use, substantially as set forth.

2. In a cattle-car, the threaded screw-rods E E, pivot-plates *b b'*, the pinions *c c*, hangers *f f* for shaft F, carrying the beveled pinions *d d*, ratchet-wheel *f''*, and hand-crank *f'*, and pawl *f''*, in combination with the water-trough D' and the hay-rack D, substantially as shown and described, and for the purpose set forth.

3. In a cattle-car, the screw-threaded rods E E, the trough D', having hanger G, with heads *g* and *g'*, and the hay-rack D, having the loose

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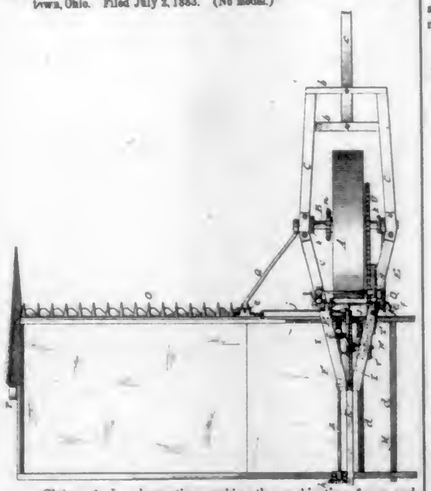


collar K', with projection k^3, in combination with the sides A', having the trap-doors *a a a* and the stop-blocks k^4, substantially as shown and described, and for the purpose set forth.

4. In a cattle-car, the hay-rack D, having the rigid L-shaped base *i*, collar K', with projection k^3, longitudinal rods i' and i^2, and the vertical articulated arms *j* on upper rods j', in combination with the slotted plate *k*, rod k^3, chain K, the trough D', screw-rods E E, trap-doors *a a*, and stop-blocks k^4, substantially as shown and described, and for the purpose set forth.

5. In a cattle-car, the trough D, having cover D^2, with sections d' d^2 d^3, in combination with the screw-rods E, and the ends A^2 of the car-box having stop-blocks d^3, substantially as shown and described, and for the purpose set forth.

296,843. GRAIN-HARVESTING MACHINE. JOSIAH KNOOP, Cass town, Ohio. Filed July 2, 1883. (No model.)



Claim.—1. In a harvesting-machine, the combination of a ground-wheel, a main frame supported thereon, a harvester-platform suspended from said frame in rear of the wheel, and a counter-balance applied to the frame in advance of the wheel.

2. The combination of the main wheel, the main frame provided with the elevated rear extension, the platform-frame, and suspension devices, substantially as described, connecting said platform-frame with the rear extension of the main frame, as described.

3. The combination of the wheeled main frame having an overhead extension behind the wheel, the platform-frame, the bar K, suspended at an intermediate point from the main frame above the platform-frame, and suspending devices extending from the opposite ends of said bar to the platform-frame, as described.

4. The combination of the main wheel, the main frame, the rearwardly and upwardly extending arms E, and the brace G.

5. In combination with the wheeled main frame having the rear extension, the platform-frame suspended by overhead connections from the rear end of the main frame, and means, substantially as described, for effecting the tilting or rocking motion of said platform-frame in a forward and backward direction.

6. In a harvesting-machine, a platform or receiver connected at its front and rear edges by suspending devices to opposite ends of a sustaining-bar, said bar being pivotally supported at an intermediate point in its length, substantially as described, whereby the rocking or tilting motion of the platform is permitted.

7. The combination of the main frame and its elevated rear extension, the platform, the suspending-chains L, bar K, suspending-chain I, and means, substantially as described, for effecting the adjustment of said chain.

8. In combination with the wheeled frame having the elevated extension at its rear, the grain-platform, the overhead suspending devices connecting said platform with the main frame, and the hand-lever T, connected by means substantially as described with the forward edge of the platform.

9. In combination with the main wheel and the main frame having an overhead extension at its rear, the platform, means, substantially as described, for suspending said platform at its front and rear edges from the overhanging frame, and draft-arms Q, extending backward from the ends of the main axle and jointed to the forward edge of the platform.

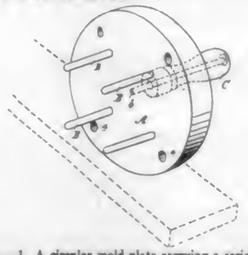
10. In combination with the wheeled main frame, the platform-frame arranged to rise and fall in relation thereto, the vertically-adjustable reel supported upon the main frame or its axle, and devices, substantially as shown, connecting the platform and reel, whereby the reel is caused to rise and fall in unison with the platform.

11. In combination with the wheeled main frame, the standards, the reel-supporting arms jointed thereto, the connecting-arms Q, and the brace *u*, extending from the arms Q to the reel-sustaining arms, whereby the vertical movement of the platform is caused to produce a like movement of the reel.

12. In combination with the main frame and the vertically-swinging reel-support thereon, the vertically-movable platform, the rods *u*, and adjustable devices, substantially as shown, connecting said rod with the reel-supporting arms, whereby the vertical adjustment of the reel may be effected independently of its automatic movement.

13. In combination with the wheeled main frame and the reel-standards, the platform, the upright arm *s*, and the rod or brace *r*, connecting said arm with the standards.

296,844. CAPSULE-MACHINE. JOHN KREHBIEL, Detroit, Mich., assignor to the Globe Capsule Company and Henry J. Milburn, same place. Filed Oct. 16, 1883. (No model.)



Claim.—1. A circular mold-plate carrying a series of mold-pins adapted to be rolled on its edge, and provided with means, substantially as described, for holding and rolling it, substantially as and for the purposes described.

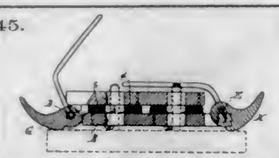
2. A circular mold-plate provided with a series of mold-pins, and a handle projecting from the rear of said plate at its axis, substantially as and for the purposes specified.

3. A circular mold-plate provided with a series of mold-pins adapted to roll upon its edge, and provided with guide-holes to facilitate the cutting of the capsules from off said mold-pins, substantially as and for the purposes set forth.

296,845. CAPSULE-MACHINE. JOHN KREHBIEL, Detroit, Mich., assignor to the Globe Capsule Company and Henry J. Milburn, same place. Filed Oct. 16, 1883. (No model.)

Claim.—1. In a capsule-removing device, a series of sliding jaws arranged on suitable supports, as A B, in combination with cams connected with said sliding jaws, and having one part constructed to close the jaws upon the mold-pins on which the capsules are formed, and another part to push the jaws with the capsules off the mold-pins, substantially as described.

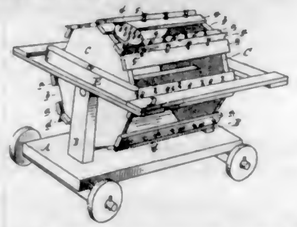
296,845.



2. In a capsule-machine, the combination of yielding jaws arranged in pairs upon sliding plates provided with holes designed to register with the pins upon the mold-plate, and upon which the capsules are formed, and cams, substantially as described, for closing such jaws around the mold-pins, substantially as set forth.

3. In a capsule-removing device, the combination of a mold-plate provided with mold-pins, and the plates A B, having orifices to register with the mold-pins, and yielding jaws C, with cams, substantially as described, for separating the plates from the mold-plate, and thus stripping the capsules from the mold, as set forth.

296,846. CAPSULE DRYING RACK. JOHN KREHBIEL, Detroit, Mich., assignor to the Globe Capsule Company and Henry J. Milburn, same place. Filed Nov. 3, 1883. (No model.)



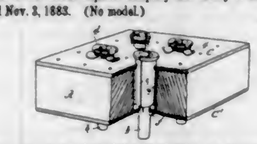
Claim.—1. The combination, with a revolving capsule-drying rack, of a series of capsule-mold plates, and means, as *c*, substantially as described, for securing said plates to the rack, as and for the purposes specified.

2. The combination, with a revolving capsule-drying rack, of a series of capsule-mold plates, means, as *c*, for securing said plates to the rack, and a locking-stop, as E, substantially as and for the purposes specified.

3. The combination, with a revolving capsule-drying rack, of a series of capsule-mold plates, means, as *c*, for securing said plates to the rack, a locking-stop, as E, and flanges or troughs, as *d*, substantially as and for the purposes set forth.

4. A revolving capsule-drying rack consisting of the following elements: a truck, A, a polygonal rack, C, supported upon said truck, locking-clamps *c*, locking-stop E, and flanges or troughs *d*, the parts being constructed, arranged, and operating substantially as and for the purposes described.

296,847. CAPSULE-MACHINE. JOHN KREHBIEL, Detroit, Mich., assignor to the Globe Capsule Company and Henry J. Milburn, same place. Filed Nov. 3, 1883. (No model.)

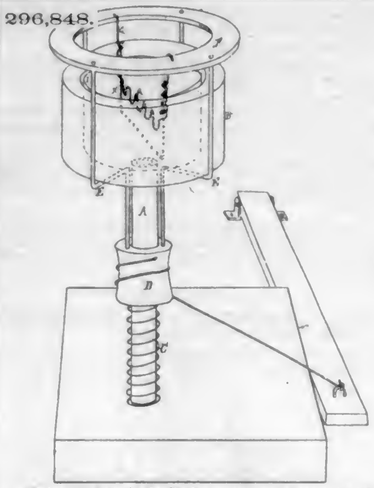


Claim.—1. A hand-tool for lubricating or greasing gelatine-capsule mold-pins, consisting of a series of self-adjusting thimbles set in a yielding support and carrying the lubricant, and adapted to register with the mold-pins upon the plate, substantially as and for the purposes set forth.

2. In a device for lubricating capsule mold-pins, the slotted thimbles B, within the bore of which are secured by the cord *s* the greasing-cloths *d*, such thimbles being arranged in a yielding bed-plate, by means of which said thimbles are capable of adjusting themselves to register with the pins to be lubricated, substantially as described.

296,848. CAPSULE-MACHINE. JOHN KREHBIEL, Detroit, Mich., assignor to the Globe Capsule Company and Henry J. Milburn, same place. Filed Nov. 21, 1883. (No model.)

296,848.



Claim.—1. A device for dipping capsule-molds, consisting of a vertically-moving supporting-frame carrying stirrers adapted to recede and advance as the molds are immersed and withdrawn, substantially as set forth.

2. In a device for dipping capsule-molds, the combination, with a suitable vessel for containing the solution from which the capsules are to be formed, of a vertically-moving supporting-frame carrying stirrers, and mechanism by means of which such stirrers are rotated or partially rotated within the dipping-vessel, substantially as described.

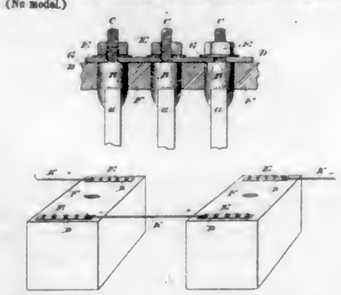
3. In a device for dipping capsule-molds, the combination of the steam-jacket B, supporting frame or ring E, with the pan I and stirrers H G, substantially as set forth.

4. In a capsule-dipping device, the combination of the pan I with two stirrers, one of which moves vertically independent of the other, and means for rotating the same, substantially as described.

5. In a device for dipping capsule-molds, a yielding supporting-frame arranged above the dipping-vessel, and adapted to be depressed by the operator and to assume its original position as the force of such depression is removed, substantially as set forth.

6. In a device for dipping capsule-molds, the combination, with a steam-pipe, A, and jacket B, of the spring C, sleeve D, and brackets E, carrying a supporting-frame, F, provided with advancing and receding stirrers within the pan I, substantially as specified.

296,849. DEVICE FOR CONNECTING THE ELEMENTS OF SECONDARY BATTERIES. WILLIAM LACHLAN, London, England, assignor to the Light and Force Company, New York, N. Y. Filed Jan. 23, 1883. (No model.)



Claim.—1. An electrode comprising a plate having at one edge a lug of greater thickness than the body of the plate and a pin or stud partly embedded in said lug, substantially as described.

2. An electrode comprising a plate with a projecting piece and a pin or stud partly embedded in a lug cast on said projecting piece, substantially as described.

3. The lead electrodes of a secondary battery, provided with a

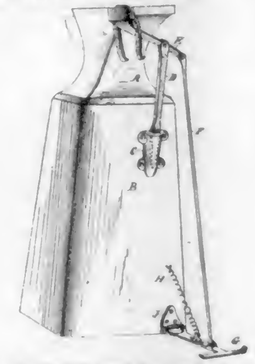
partly-embedded pin or stud of brass, copper, or gun-metal, said pin or stud having the embedded portion tin-coated and secured in the lead by casting, substantially as described.

4. The combination of the perforated cover, the electrodes with lugs projecting through said cover, the pins or studs partly embedded in said lugs, the nuts, and the connecting-strips, substantially as described.

5. The combination, with a series of plates constituting the electrodes of a cell of secondary battery, each plate having a lug projecting through a hole in the cover of said cell, and a threaded pin of copper or copper alloy embedded in said lug, of conductors clamped by nuts on said pins and connecting alternate electrodes with each other, and the two sets thus formed with the poles of other cells or apparatus, substantially as described.

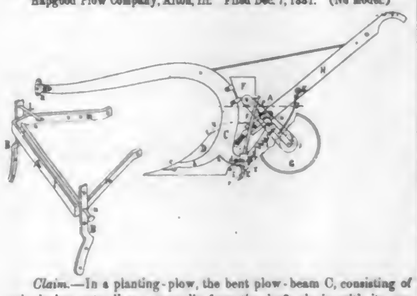
6. In combination with the plates of a secondary battery provided with lugs and screws set therein, the metal connecting strip having perforations, and the nuts for binding the said strip, substantially as described.

296,850. ATTACHMENT FOR ANVILS. MARVIN A. LADD, Springville, Mich. Filed Apr. 26, 1883. (No model.)



Claim.—In combination with the anvil A and lever E, provided with a weighted clamping-jaw, and pivoted substantially as described, whereby said jaw will automatically fall downwardly and away from the anvil by its own gravity, the rod F, treadle G, and spring H, all combined and operating substantially as set forth.

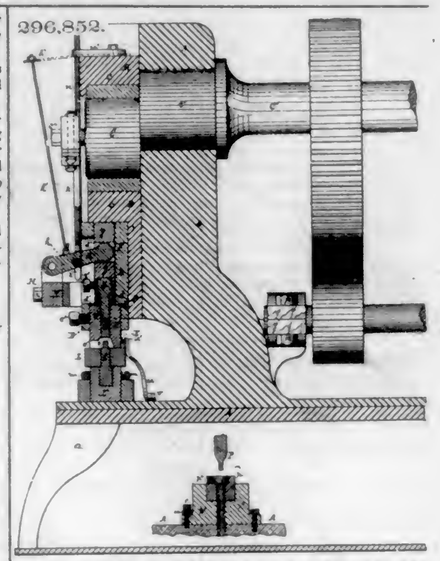
296,851. PLANTING-PLOW. JOHN LANE, Hyde Park, assignor to the Hapgood Plow Company, Alton, Ill. Filed Dec. 7, 1881. (No model.)



Claim.—In a planting-plow, the bent plow-beam C, consisting of a single bar extending rearwardly from the draft-clevis, with its rear part bent curved downward under the mold-board of the plow, substantially as shown, in combination with the listing-plow D, attached to the foot end of the said beam, the drill-tooth following the heel of the said beam, and adjustable vertically, the dropping-box F, with pipe *f*, and the wheel G, with yoke A, provided with pivotal connection with the plow, and handles H H, with brackets B B, attached to the mold-board, all substantially as and for the purpose set forth.

296,852. MACHINE FOR MAKING EYE-RODS AND HOOK-AND-EYE HINGES. CHARLES LANE, Pittsburg, Pa. Filed Jan. 17, 1883. (No model.)

Claim.—1. In dies for forging eye-rods and hooks, a matrix having a side recess and a movable bottom adapted to be advanced after



296,852.

the forging of the blank, and discharge it from the matrix, substantially as set forth.

2. In dies for forging eye-rods and hooks, the matrix-die E, having the matrix *e*, provided with a side recess, *e'*, in combination with the movable plunger-bottom G and lever A, substantially as and for the purposes set forth.

3. In dies for forging eye-rods and hooks, the combination, with the reciprocating frame, of the block D, secured therein, and having the bore *d*, the die E, secured in said block, and having the matrix *e*, and the movable plunger G, forming the bottom of said matrix during forging, and adapted to discharge the forged blank, substantially as set forth.

4. In combination with the matrix-die E, the movable plunger-bottom G, lever A, and spring-rod *k'*, substantially as and for the purposes set forth.

5. In combination with the matrix-die E, the plunger G, slide *g*, having the slot g^2, and lever A, pivoted in the frame H, substantially as set forth.

6. In combination with the block D, having the bore *d*, and slot d^2, the matrix-die E at the base of the block, plunger G within said bore *d*, and lever A, extending through said slot d^2 into the plunger, substantially as and for the purposes set forth.

7. In combination with the movable plunger G and lever A, the forked arm *k*, adapted to press down said lever and plunger after the forging operation, substantially as and for the purposes set forth.

8. In combination with the eccentric C, the arm *k*, journaled at one side of the face thereof, substantially as and for the purposes set forth.

9. In combination with the lever A, the eccentric C, having the wrist-pin *c*, extending out from the face thereof, and the arm *k*, journaled on said pin, and adapted to press upon said lever, substantially as and for the purpose set forth.

10. In combination with the lever A, the arm *k*, adapted to press thereon, and the spring-rod *k'*, substantially as and for the purposes set forth.

11. The combination of the anvil L, punch *l*, extending through said anvil, and lever M, extending under and adapted to raise the anvil, substantially as and for the purposes set forth.

12. The combination of the punch *l*, the anvil L, fitting around said punch, and having the shoulders *l'*, and the lever M, having the arms *m m*, adapted to press against said shoulders and raise said anvil, substantially as and for the purposes set forth.

13. In combination with the anvil L, the lever M, the rod *n*, and the reciprocating frame B, substantially as and for the purposes set forth.

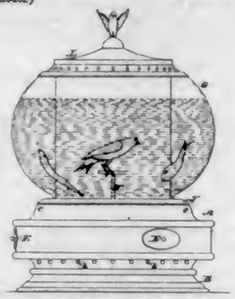
14. In combination with the anvil L, the lever M, the rod *n*, having the stop n^2, and reciprocating frame having the bearing *n'*, through which the rod passes, substantially as and for the purposes set forth.

15. In combination with the punch *l* and the vertically-movable anvil L, the arms *u*, having lips *u'*, for limiting the movement of the anvil, substantially as set forth.

16. In combination with the punch *l* and vertically-movable anvil L, the arms *u*, fitting against said anvil, and having lips *u'*, extending above it, substantially as and for the purposes set forth.

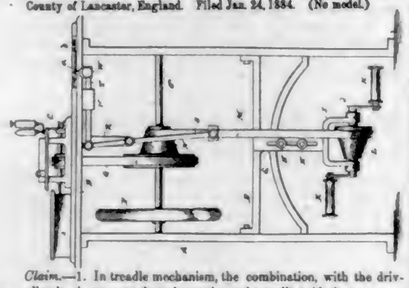
17. The combination of the matrix-die having the matrix *e* and side recess, *e'*, the movable plunger-bottom G, having the short teat *s*, and the anvil L, having the punch *l*, of greater length than the teat *s*, substantially as and for the purposes set forth.

296,853. AQUARIUM. AUGUST LEDIG, Philadelphia, Pa. Filed May 2, 1883. (No model.)



Claim.—A chambered base, in combination with an aquarium-globe formed of double walls, separated at top, the inner wall of which incloses a central space having a removable cover, said space being in communication with said base, so that a bird may occupy either space or base and be seen through the globe.

296,854. TREADLE MECHANISM. HENRY LEEMING, Manchester, County of Lancaster, England. Filed Jan. 24, 1884. (No model.)



Claim.—1. In treadle mechanism, the combination, with the driving-pulley having a cone-shaped exterior and an adjustable hanger, constructed substantially as described, in which its shaft is mounted, of the auxiliary driving-shaft having a like pulley, the two being geared together by means of a belt and having their contracted ends oppositely disposed.

2. In treadle mechanism, the combination, with the driving-pulley having a cone-shaped exterior, and having its shaft mounted in an adjustable hanger, and the auxiliary shaft having a like pulley, of the belt and the belt-shifter, adapted to shift the belt laterally on the pulleys.

3. In treadle mechanism, the combination of a belt-shifter provided with a pointer with a speed-indicating plate, whereby the position of the belt on the pulleys is shifted and the speed indicated.

4. In treadle mechanism, the combination, with a pivoted belt-shifter having a bifurcated extension adapted to embrace the belt, and the arm connected to its upper end, supported by a bearing, and having a pointer, of an indicator-plate provided with characters or words to indicate fast or slow or intermediate speed, according to the position of the pointer.

5. In treadle mechanism, the combination, with the supporting-bracket, of a shaft-hanger secured thereto and capable of adjustment.

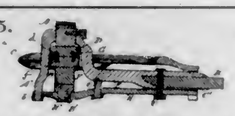
6. In treadle mechanism, the combination, with the adjustable hanger having its extremities constructed to form bearings, of a driving-shaft provided with a driving-pulley, and treadles secured thereto at either side of the pulley.

7. In treadle mechanism, the combination, with an adjustable hanger, the driving-shaft mounted therein, and provided with a cone-shaped driving-pulley, and treadles secured to either side thereof, of an auxiliary shaft having a like pulley, the contracted ends of the said pulleys being oppositely disposed.

296,855. VEHICLE FIFTH-WHEEL. JOHN W. LEETE, South Meriden, Conn. Filed Dec. 4, 1883. (No model.)

Claim.—1. An axle-coupling formed with the annular seats *d* and *f'*, whose exterior walls fit upon each other, and having the center studs,

296,855.

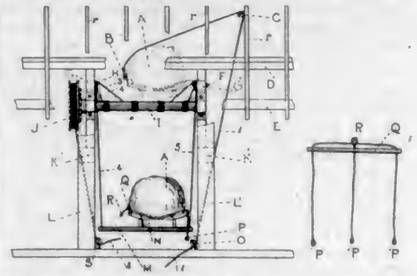


as described, and a separately-formed ring, G, inserted in the seats and held inside and outside by the walls and center studs, as set forth.

2. An axle-coupling formed with the annular seats *d* and *f'*, and uniting ring or band G, set in and held by the walls and center studs of the seats, said coupling being provided with a pivot, B', a binding-plate, H, having a bearing, H', for the pivot B', and means, substantially as set forth, for securing the binding-plate.

3. In an axle-coupling, the combination of the bars A and B, provided with seats *d* and *f'*, a ring, G, a pivot, B', a cap-piece, H, provided with the bearing H' for the pivot, the reach E, provided with the screw-stud *e*, and the front arm, A', having the screw-threaded end *b*, said screws adapted to pass through the cap and receive nuts for holding the cap, as set forth.

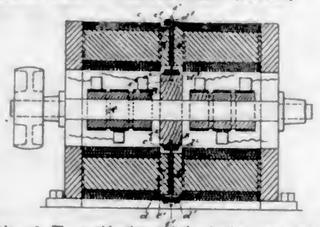
296,856. HAY AND GRAIN ELEVATOR. JOHN G. LIVINGSTON, Bowne, assignor of one-half to Frederick Robbins, Campbell, Mich. Filed Jan. 16, 1884. (No model.)



Claim.—1. The combination, in a hay and grain elevator, of the roller I, having drum-wheel J, the ropes 3 4 5 6, the pulleys H H and H' H', the ratchet W, the catch V, and the rope 7, with the removable poles M M', as shown and described, and for the purpose set forth.

9. In a hay and grain elevator, the combination of the bail composed of the stick Q and the ropes passing through the same, having the loops P P P and R, with the rope 1, passing through the pulleys O and C, and having at its upper end the hook B, intended to catch the loop R, and the pegs F F F, to engage the said loops P P P, all substantially as described.

296,857. DYNAMO-ELECTRIC MACHINE. ADOLPH E. GUSTAV LUBKE, New York, N. Y. Filed Mar. 13, 1884. (No model.)



Claim.—1. The combination, with the circular ranges of field-magnets, of a revolving armature composed of radial bars, all in the same plane, and connected up in two or more circuit-rings by means of lateral connections that pass alternately from the outer and the inner ends of such radial bars, substantially as set forth.

2. The combination, in a circular armature-wheel, of radial bars, all in one plane, and alternate lateral connections from the respective bars, to compose two or more separate armature-helices, substantially as set forth.

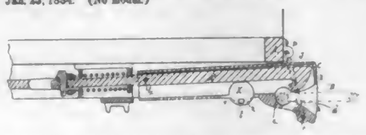
3. In a circular armature-wheel, radial bars composed of thin plates set together flatwise, with insulating material between, and connected up into a circuit by the alternate connections at the ends, substantially as set forth.

4. In an armature-wheel, the radial bars in two ranges, connected together at their outer ends and at the alternate inner ends of the respective ranges, substantially as specified.

296,858. PROCESS OF MAKING ZINC SULPHIDE ANHYDROUS. THOMAS MACFARLANE, Montreal, Quebec, Canada, assignor of one-half to A. RAMSAY, same place. Filed Aug. 24, 1883. (No specimens.)

Claim.—The method of rendering hydrated sulphide of zinc anhydrous, which consists in heating said hydrated sulphide of zinc to redness in the presence of chloride of zinc, whereby access of air and oxidation are prevented by the fumes of the chloride of zinc, and discoloration and loss of covering-power are avoided, substantially as set forth.

296,859. CAR-COUPLING. CHARLIE EDGAR MARK, Flint, Mich. Filed Jan. 23, 1884. (No model.)



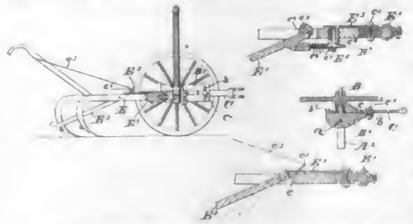
Claim.—1. In a car-coupling, and in combination with a draw-bar and buffer, a swinging bail or gate pivotally pendent from the end of the car, and pivotally connected to said draw-bar and buffer on one side of a vertical line drawn through the pivotal connection to the car, whereby a swinging support for said draw-bar and buffer is provided which will give a slight upward movement and not interfere with their reciprocating movements, substantially as and for the purposes specified.

2. In a car-coupling, and in combination with the hooked end of the draw-bar, and with an inclosing metallic case, a cam eccentrically secured to a shaft which is pivotally secured to the lower side of said case and working in a slot therein, said cam being operated from either side of the car by means of crank-arms secured in suitable boxes at the bottom of the car by means of diagonally-located connecting-rods and universal joints, substantially as and for the purposes specified.

3. In a car-coupling, and in combination with the hooked end of the draw-bar and with an inclosing metallic case, a cam the periphery of which is flattened opposite to or at the point farthest from the shaft to which said cam is eccentrically secured, said shaft being pivotally secured to the lower side of said case, with the cam working in a slot therein, and operated from either side of the car by means of crank-arms secured in suitable boxes to the bottom of the car, the inner ends of said crank-arms connecting with the cam-shaft by means of diagonally-located connecting-rods and universal joints, substantially as and for the purposes set forth.

4. In a car-coupling, and in combination, a hooked draw-bar inclosed within a metallic case, a cam, diagonally-located connecting-rods connecting the cam-shaft with crank-arms by universal joints, the parts being constructed and operating substantially as and for the purposes described.

296,860. CULTIVATOR. MARION W. MCCANN, Posey, Fayette County, Ind. Filed Nov. 5, 1883. (No model.)



Claim.—1. In a wheel-cultivator, the combination, with the wheel-spindle having a bracket, B', at its inner end pivoted on the axle, of a draft-rod journaled on said spindle and secured to said bracket, substantially as described, and for the purposes specified.

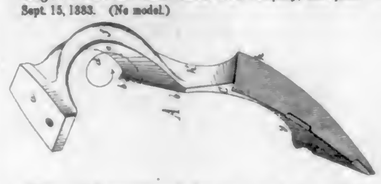
2. In a wheel-cultivator, the combination, with the wheel-spindle B, provided with a bracket, B', and adapted to be hinged to the end of the axle, of the draft-rod C, journaled on said spindle and adjustably secured to said bracket, whereby the draft-rod may have vertical adjustment on said spindle and bracket, substantially as set forth.

3. The combination of the bracket B', having in its front end the slot *b* and on its rear end the lip *b'*, the wheel-spindle B, the draft-rod C, adjustable on said spindle and bracket, and the hinged axle A, substantially as shown and described.

4. The combination, in a wheel-cultivator, of the axle A, the horizontal portions of which are in two parts, the link-shaped extension-pieces D, adapted to be adjustably secured to either of said parts, the wheel-spindle B, hinged thereto, and the draft-rod C, adjustably mounted on said spindle, substantially as described, and for the purposes specified.

5. In a wheel-cultivator, the combination, with the plow-beam E, of the runner E^2, pivoted thereto at its front end, and provided with a notch, *e*, and the spring E^3, secured to said plow-beam and running back over the end of said runner when it is in a raised position, and engaging with the notch *e* when it is in a lowered position, substantially as described, and for the purposes specified.

296,861. PLOW-STANDARD. JAMES P. MCINTYRE, Eau Claire, Wis., assignor to the Eau Claire Chilled Plow Company, same place. Filed Sept. 15, 1883. (No model.)



Claim.—1. A standard-neck for a plow, having a spirally-twisted hollow surface extending from the landside inward, upward, and backward toward the furrow side of the plow, substantially as and for the purpose described.

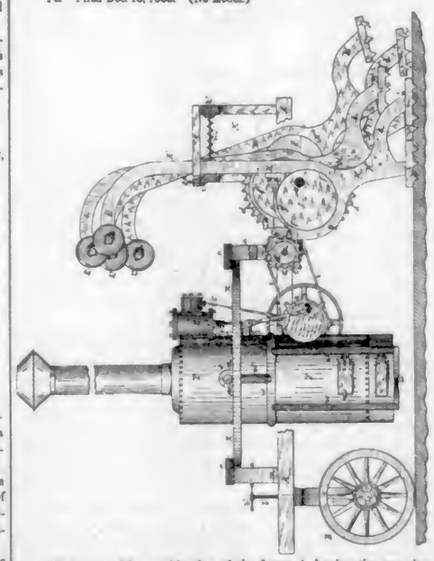
2. The standard formed with a neck having the spiral upwardly and inwardly inclined throatway *d*, substantially as and for the purpose described.

3. The standard formed with the head *a*, neck *c*, flange-brace *f*, mold-board, share, and landside supporting portions *g* and *h*, and the web-brace *h'*, substantially as and for the purpose described.

4. The spirally-twisted neck *c*, forming the throatway *d*, and having the flange-brace *f* on its landside edge, in combination with the mold-board, share, and landside supporting portions *g* and *h*, and the bracing-web *h'*, substantially as described.

5. The neck of the plow-standard, twisted spirally, and having a throatway which inclines inward, upward, and backward, and is of segmental curvature, and diminishes gradually but slightly toward the furrow side of the plow, substantially as described.

296,862. TRACTION-ENGINE. HENRY B. MCMURRAY, Burgettstown, Pa. Filed Dec. 13, 1883. (No model.)



Claim.—1. The combination of the frame A, having the cross-bar *k* supported above it, the shaft *c*, carrying the eccentrics *f*, and legs or bars H, journaled to said eccentrics and extending up back of said cross-bar *k*, substantially as and for the purposes set forth.

2. The combination of the frame A, having the upper guide-frame, K, the shaft *c*, carrying the eccentrics *f*, and legs or bars H, journaled to said eccentrics and extending up within said guide-frame, substantially as and for the purpose set forth.

3. The combination, with the frame A, having the upper guide-frame, K, of the legs or bars extending through said guide-frame, and having the curved upper ends, *h'*, and weights h^3, substantially as and for the purposes set forth.

4. In combination with the frame A, having the upper guide-frame, K, the legs or bars extending through said guide-frame, and cushioning-springs *l*, substantially as and for the purposes set forth.

5. In combination with the frame A, having the upper guide-frame, K, the legs or bars H, extending through said frame, and the springs *m*, secured in said frame, substantially as and for the purposes set forth.

6. The combination of the leg or bar H, having the journal-box *g*, formed therewith and extending out therefrom, cover *g'*, and eccentrics *f*, having the side flanges, *f'*, substantially as and for the purposes set forth.

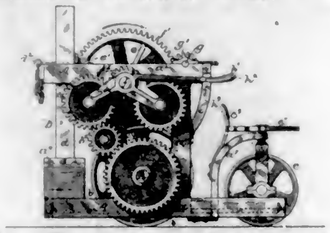
7. In traction-powers, the frame A, having the bearings *a a'*, ring R, pivoted thereon, and boiler P, pivoted on said ring, substantially as and for the purposes set forth.

8. In traction-powers, the frame A, having the bearings *a a'*, ring R, pivoted thereon, boiler P, and basket *w'*, carrying said boiler and pivoted on said ring, substantially as and for the purposes set forth.

9. In traction-powers, the boiler P and engine E, movably hung in the frame thereof, in combination with a power-shaft and chain-power connections between said engine and shaft, substantially as and for the purposes set forth.

10. In traction-powers, the leg or bar H, having the branch *h* and feet or shoes *n*, substantially as and for the purposes set forth.

296,863. MACHINE FOR PACKING ENSILAGE, &c. LOUIS MCMURRAY, Baltimore, Md. Filed Feb. 28, 1884. (No model.)



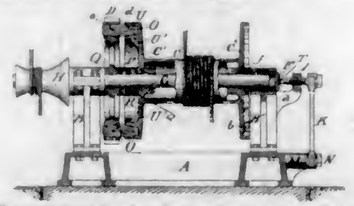
Claim.—1. The combination, substantially as hereinbefore described, of the frame mounted upon a rotating supporting-axle, the vertically-reciprocating stamps, the tappet arm-shaft, the hand-crank, and gearing for connecting the hand-crank to the tappet-arm shaft and to the rotating supporting-axle, whereby the machine is propelled and the stamps operated by power applied to the hand-crank, as set forth.

2. The combination, substantially as hereinbefore described, of a frame mounted upon a rotating supporting-axle, one or more vertically-reciprocating stamps, a tappet-arm shaft for lifting and dropping said stamps, and clutch-gearing connecting said tappet-arm shaft with the rotating supporting-axle, and for disconnecting the same.

3. The combination of the compressing-roller, its frame, and the rotating supporting-axle with gearing and a hand-crank for propelling the roller, substantially as described.

4. The combination of the frame mounted upon a rotating axle, one or more vertically-reciprocating stamps, a tappet-arm shaft for operating said stamps, reversible clutch-gearing for connecting and disconnecting said shaft and supporting-axle, and a hand-crank, substantially as described, whereby the machine can be propelled in either direction by the hand-crank with or without simultaneously operating the stamps, or the stamps operated without propelling the machine, as set forth.

296,864. HOISTING-MACHINE. JAMES MCNEIL and THOMAS MCNEIL, Pittsburg, Pa. Filed Feb. 15, 1884. (No model.)



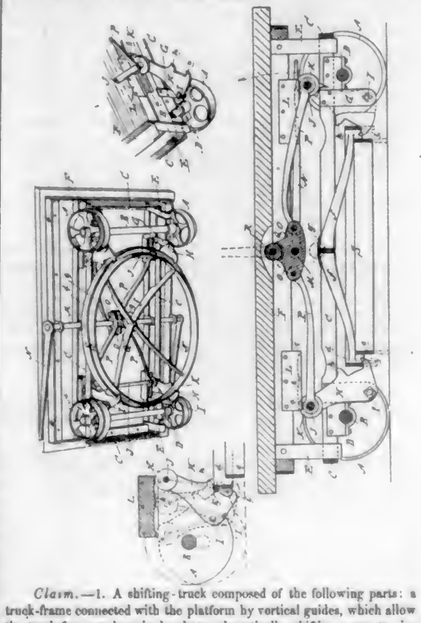
Claim.—1. A winding-drum having a head provided with flanges having their opposite faces inclined, in combination with a drive-wheel and wooden blocks secured to the drive-wheel, and having their projecting ends beveled on their inner and outer sides, substantially as described.

2. A winding-drum having a head provided with flanges having their opposed faces inclined, in combination with a drive-wheel having a slotted rim and double-wedge-shaped blocks, one of the ends of said blocks being adapted to be secured in the slots of the drive-wheel, the other ends of the blocks being adapted to be forced into frictional contact with the inclined flanges of the drum, substantially as set forth.

3. The winding-drum C, the shaft G, in combination with the cylindrical socket F, adapted to rotate and slide along said shaft, the screw I, the arm J, the rods K, and the treadle L, substantially as set forth.

296,865. SHIFTING-TRUCK. PATRICK H. MCWILLIAMS, Detroit, Mich. Filed Oct. 16, 1883. (No model.)

Brief.—A truck with a turn-table and devices for shifting the load from the wheels onto the turn-table, and vice versa. Said devices are so constructed that the weight is transferred without raising or lowering the platform on which the load is carried.



Claim.—1. A shifting-truck composed of the following parts: a truck-frame connected with the platform by vertical guides, which allow the truck-frame to be raised or lowered vertically, shifting supports pivotally secured upon their lower ends to the truck-frame, and supporting the platform upon their upper ends, a circular turn-table supported by the shifting supports and placed centrally between the truck-frame and below the platform, and mechanical devices for oscillating the shifting supports, whereby the load may be transferred from the truck-frame onto the turn-table, and vice versa, substantially in the manner and for the purpose described.

2. In a shifting-truck, the combination of the shifting supports H, their actuating mechanism, and the turn-table S, with the lugs *i i* of the shifting supports, substantially as and for the purposes described.

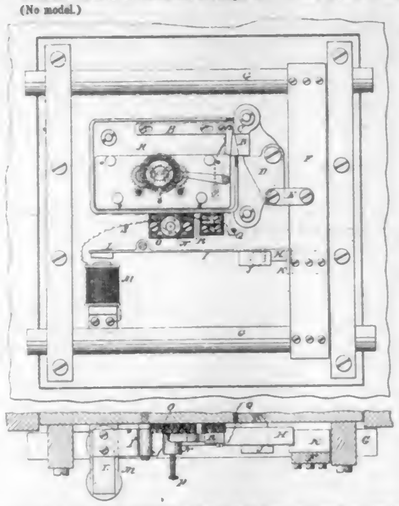
3. In a shifting-truck, the combination of the bearing-plates L, having segmental circular bearing-faces *a b c*, with the shifting supports H and their shifting-fulcrums I *k*, which form the respective centers of the bearing-faces *a b c*, substantially as and for the purposes described.

4. In a shifting-truck, the combination of the lever or levers N, rock-shaft M, rock-arms O, links P, and shifting supports H, forming the devices by which the shifting supports are operated, and so arranged that they form a self-locking device, substantially as and for the purposes described.

5. In a shifting-truck, the combination of the turn-table S, provided with the central bearing-plate, *g*, with the rock-arm Q, bearing friction-roller R, substantially as and for the purpose described.

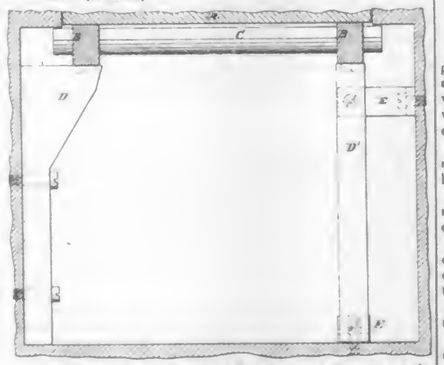
6. In a shifting-truck, the combination of the shifting supports H, and devices for operating the same simultaneously, the pivot I, and lug *k*, one forming a fulcrum upon which the load is supported by the truck, and the other forming a fulcrum by which the load is supported by the turn-table, substantially as and for the purpose described.

296,866. ELECTRIC LOCKING MECHANISM FOR SAFES AND VAULTS. HENRY F. NEWBURY, Brooklyn, N. Y. Filed Apr. 24, 1883. (No model.)



Claim.—The combination of the door-bolts of a safe or similar structure, a locking device for holding said bolts in the locking position, an electro-magnet for controlling such locking device, and an electric circuit leading to the magnet, with provision for a change in the continuity of the circuit, substantially as and for the purpose described, whereby a sudden and heavy shock directed against the exterior of the structure will change the electric circuit from its normal condition, and thus secure the door-bolts from being unlocked.

296,867. MEANS FOR SUPPORTING THE BOLT-WORK OF SAFES AND VAULTS. HENRY F. NEWBURY, Brooklyn, N. Y. Filed Apr. 24, 1883. (No model.)



Claim.—1. The combination of the bolt-frame of a safe or vault door and supporting-abutments, to prevent the same from being detached by the force of a shock directed against the door.

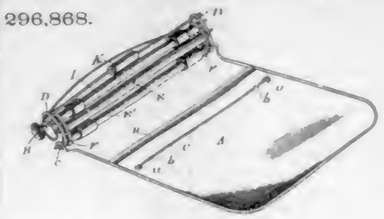
2. In combination with the bolt-frame of a safe or vault door, supporting-abutments for preventing the frame from being detached by the force of a shock, but capable of being moved out of the way when the door is opened, substantially as and for the purpose set forth.

296,868. COPY-HOLDER. EDWARD NUMAN, San Francisco, Cal. Filed Sept. 21, 1881. Renewed Oct. 18, 1883. (No model.)

Claim.—1. In a copy-holder, the tablet A, having at its upper end a downward bend, B, adapted to serve as a paper-cutter, and provided upon its upper face with the guiding rod or rest C, having stops *b b*, substantially as shown and described.

2. In a copy-holder, the combination, with the tablet A, having bend B, of the beveled head-piece G, provided with transverse strip Z,

296,868.

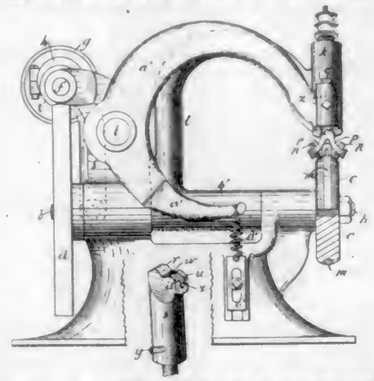


substantially as shown and described.

3. In a copy-holder, the combination of the tablet A, wire frame bent to form brackets or bearings D *c*, rollers E E' I, and bands F F, substantially as shown and described.

4. In a copy-holder, the combination, with the rollers E E' and roller I, having knob H, of the upper roller, K, substantially as shown and described.

296,869. SEAM-FINISHING MACHINE. WILLIAM Y. OBER, Lynn, and FRANK M. STEVENS, Boston, Mass. Filed July 2, 1883. (No model.)



Claim.—1. In a seam-finishing machine, the supporting-wheel c, grooved and provided with a band, *m*, of leather or other suitable and slightly-yielding material, and also having the peripheral face of the wheel, on either side of said band, formed oblique to the plane of the wheel, whereby the cross-section of the face constitutes an unbroken curved line, substantially as specified.

2. The supporting-wheel *c*, formed with a central recess and inserted band, *m*, and with its periphery upon each side of said band oblique to its plane, substantially as specified.

3. In combination with supporting-wheel *c* and rubber *s*, the small rolls *n n*, arranged to allow the seam to pass between them and to co-operate with said wheel and rubber, substantially as specified.

4. The combination, with the supporting-wheel *c*, formed with a central bearing, *m*, and an oblique peripheral face on each side thereof, of rolls *n n*, arranged with their axes and peripheries coincident with the oblique faces of said wheel, substantially as specified.

5. The rubber *s*, formed with a groove, *x*, extending partially but not wholly across its face, substantially as specified.

6. The rubber *s*, formed with the facial ridges *n v*, and the depression *w* between the same, substantially as specified.

7. The rubber *s*, formed with the facial ridge *u*, having the slot *x* therein, and the ridge *v*, extending across the face of the rubber, substantially as specified.

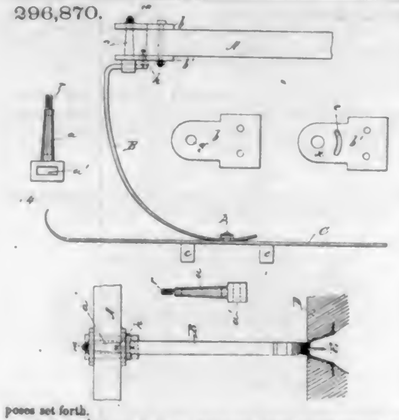
296,870. MACHINE TO PROTECT CABLE-ROAD SLOTS. MAGNUS OHLSON, Chicago, Ill. Filed Oct. 22, 1883. (No model.)

Brief.—The street-cleaning machine carries a spring-arm, to which is attached a sliding shoe which travels over the grip-slot to protect it from dirt, snow, &c., during the process of sweeping or cleaning the street surface.

Claim.—1. In a machine to protect cable-road slots, the combination of the spring B and the shoe C and means of attaching same to the plow, substantially as described, and for the purposes set forth.

2. In a machine to protect cable-road slots, the combination of the spring B and the shoe C, provided with the lugs *c c*, and means of attaching the same to the plow, substantially as described, and for the pur-

296,870.

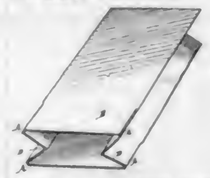


poses set forth.

3. In a machine to protect cable-road slots, in combination with the substantially-described plates *b b'*, the bolt *a*, spring B, and shoe C, provided with the lugs *c c*, substantially as described, and for the purposes set forth.

4. In a machine to protect cable-road slots, in combination with the plates *b b'*, provided with the holes *g x* and slot *s*, the spring B, provided with the pin *h*, and the pivot-bolt *a*, provided with the slot *a'*, and the shoe C, provided with the lugs *c c*, and bolt and pin *p*, substantially as described, and for the purposes set forth.

296,871. PAPER BAG. JOHN P. ONDERDONK, Philadelphia, Pa. Filed May 26, 1883. (No model.)

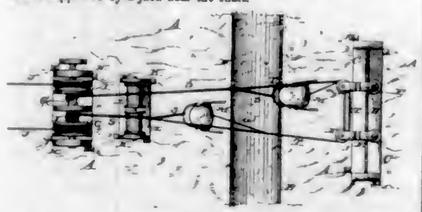


Claim.—1. A paper bag having a satchel-bottom and inward bellows folds, in which the corners of the inward bellows folds are cut apart, substantially as shown and described.

2. A paper bag having a satchel-bottom and inward bellows folds, in which the corners of the inward bellows folds are cut apart and the flaps D D cut off, substantially as shown and described.

296,872. DITCHING-MACHINE. ANDREW J. OSBORNE, Erie, Ill. Filed Jan. 2, 1884. (No model.)

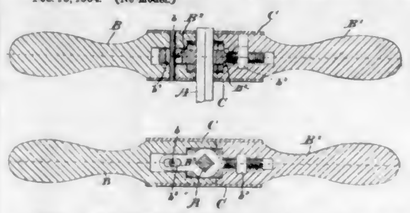
Brief.—A chain running from a shaft which is driven by chains reversely wound on drums thereon, and around which its ends are reversely wound, passes around two pulleys on a supporting-frame, and has scrapers attached to it intermediately of the pulleys and the shaft, and is supported by a jack near the shaft.



Claim.—1. The frame C, provided with pulleys F F, rope or chain S, shaft G, jack K, and scrapers M M, in combination, substantially as shown, and for the purpose described.

2. The shaft G, suporting-jack K, pulleys F F, rope or chain S, scrapers M M, and ropes or chains J, or other suitable means of revolving the shaft G, substantially as shown, and for the purpose specified.

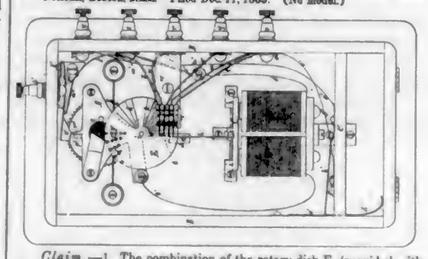
296,873. AUGER-HANDLE. DAVID M. PARRY, Rushville, Ind. Filed Feb. 15, 1884. (No model.)



Claim.—1. An auger-handle constructed in two parts, having an aperture formed in its center, one of said parts having a clamp-bolt adjustably secured in its portion of said aperture, and the other of said parts having a nut set in its portion which engages with a screw-threaded end of said clamp-bolt, whereby the same is operated, substantially as described, and for the purposes specified.

2. In an auger-handle, the combination of the part B, having a socket for the admission of the auger-shank, the clamp-bolt B^3, adjustably secured in said part B, and provided with a hole in its center, which forms a part of the socket for the auger-shank, the part B', having a nut, b^3, set therein, which engages with a screw-threaded end of the clamp-bolt, and the sleeve C, surrounding the center of the handle, substantially as described, and for the purposes specified.

296,874. ELECTRIC FIRE-ALARM APPARATUS. MAJOR DANE PORTER, Boston, Mass. Filed Dec. 11, 1883. (No model.)



Claim.—1. The combination of the rotary disk E, (provided with ribs and studs, as described,) the series of fingers *m*, the clock-movement A, the electro-magnet D, its armature C, and the mechanism connected therewith and with the escapement-wheel of the said clock-movement, and consisting of the wire *k*, spring *d*, projection *e*, and stud *c*, all being adapted and to operate with electric-circuit wires and circuit-closers and an electric alarm, substantially in manner and for the purposes as represented.

2. The combination of circuit-breaking mechanism, substantially as described, (consisting of the spring *l'*, arm n^2, insulating-block *m'*, hard-rubber cam *o'*, abutment *p'*, disk *q'*, and its tooth or cam *r'*, arranged and adapted as set forth,) with mechanism, essentially as explained, consisting of the rotary disk E, (provided with ribs and studs, as described,) the series of fingers *m*, the clock-movement A, the electro-magnet D, its armature C, and the mechanism connected therewith and with the escapement-wheel of the said clock-movement, and consisting of the wire *k*, spring *d*, projection *e*, and stud *c*, all adapted and for use substantially and for the purposes as represented.

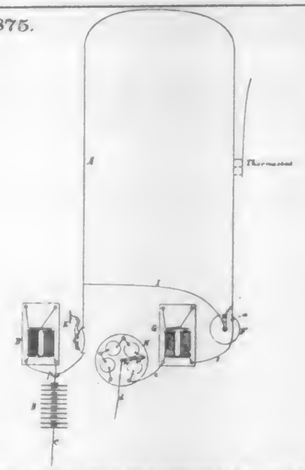
3. The combination of the circuit-closing mechanism, (consisting of the spring *b'*, its handle *d'*, metallic strip *f''*, and latching-spring *e'*,) arranged in the lower part of the case B, as explained, with mechanism, essentially as represented, consisting of the rotary disk E, (provided with ribs and studs, as described,) the series of fingers *m*, clock-movement A, electro-magnet D, its armature C, and the mechanism connected therewith and with the escapement-wheel of the clock-movement, and consisting of the wire *k*, spring *d*, projection *e*, and stud *c*, all being adapted and for use substantially and for the purpose as set forth.

296,875. ELECTRICAL ALARM APPARATUS. MAJOR DANE PORTER, Boston, Mass., and EDMUND RAYNSFORD WILDER, Portland, Me., assignors, by mesne assignments, to said Porter. Filed Dec. 11, 1883. (No model.)

Claim.—1. The combination of the electric-alarm circuit A, battery B, switch F, auxiliary wire I, two relays, D and G, and one or more resistance-coils, H, all being adapted or applied substantially to operate as and for the purpose or purposes as set forth.

2. The combination of the electric-alarm circuit A, battery B, switch

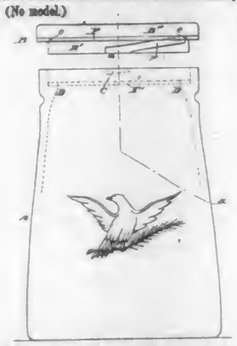
296,875.



F, two relays, D and G, one or more resistance-coils, H, auxiliary wire I, and the connecting-wires *b c*, constructed and arranged as described.

3. The combination of the electric-alarm circuit A, battery B, switch F, having the stud *e* and switch-arm *f*, two relays, D and G, the resistance-coils H and their arm A, auxiliary wire I, and connecting-wires *b c* all constructed and arranged as and for the purpose set forth.

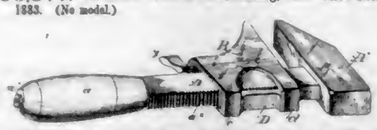
296,876. PRESERVE-JAR FASTENING. ENRICO ROSENTH, Pittsburg, Pa., assignor of one-fourth to Charles F. McKenna, same place. Filed Nov. 22, 1883. (No model.)



Claim.—1. The body A, formed with lugs C and a shoulder, D, in combination with the lid formed with an overhanging rim, B″, and a neck, B′, and the two gaskets, the neck being spirally grooved, as at E, substantially as and for the purpose set forth.

2. The body A, formed with lugs C and a shoulder, D, in combination with the lid having a rim, B″, which overhangs the top of the body, a spirally-grooved neck, and a circumferential groove, *c*, located at the top of the neck, and the two gaskets, substantially as and for the purpose set forth.

296,877. WRENCH. BARNEY ROSS, Sterling, Ohio. Filed Dec. 26, 1883. (No model.)

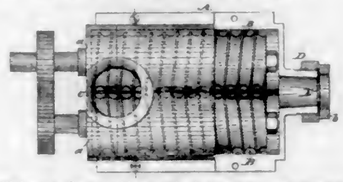


Claim.—1. A wedge operating in a chamber in the movable jaw of a wrench, and provided with a longitudinal recess and a transverse worm-groove, in combination with a worm adapted to engage the groove and actuate the wedge, and provided with a shank extending through the rear end wall of the movable jaw, and a thumb-lever for operating the same, substantially as set forth.

2. The combination, with the worm G, provided with the shank and thumb-lever, as aforesaid, of the jaw B, provided with the hole *b* and the accompanying slot, by means of which the parts may be assembled, substantially as set forth.

3. The bands c and *d*, provided each with beveled edges, in combination with the rack-piece D, provided with ribs or projections swaged or bent so as to engage the said beveled edges and hold the parts firmly in position, substantially as set forth.

296,878. MACHINE FOR PLOTTING SOAP, &c. FRANCIS S. RUTSCHMAN, Philadelphia, Pa. Filed July 23, 1883. (No model.)

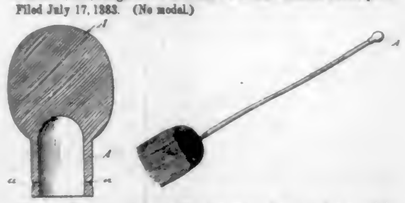


Claim.—1. In a machine for plotting soap, &c., two spiral conveyers arranged side by side, in combination with a casing formed of a two-part body, the two conveyers being located in the opposite sides of said casing, substantially as and for the purpose set forth.

2. A casing having an inlet and outlet and a removable die, in combination with two spiral conveyers, the grooves or threads whereof are pitched in reverse order, said conveyers being arranged parallel in opposite sides of said casing, substantially as and for the purpose set forth.

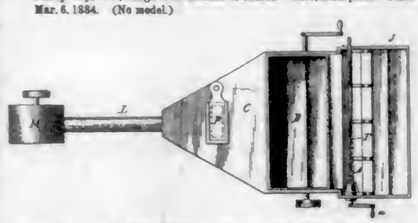
3. A casing formed of two bodies communicating with each other at their places of junction, in combination with two spiral conveyers arranged parallel in the opposite bodies of said casing, substantially as and for the purpose set forth.

296,879. BALANCE-TIP FOR BROOMS. WILLIAM A. SCOLLAY, San Francisco, Cal., assignor of one-fourth to Wilmer Bradford, same place. Filed July 17, 1883. (No model.)



Claim.—The combination, with a broom-handle, of a balance-weight consisting of the metal tip A, having a globular head, and provided with a hollow shank, A′, substantially as shown and described.

296,880. MANUFACTURE OF GREEN-SAND CORES. JAS. SCULL, Jersey City, N. J., assignor of one-half to Samuel Vance, same place. Filed Mar. 6, 1884. (No model.)

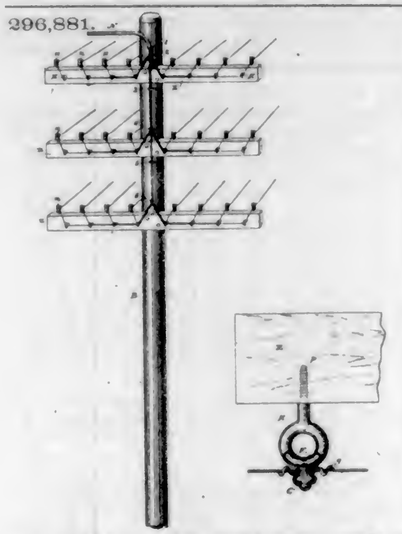


Claim.—The improvement in making cores herein set forth, the same consisting in forcing the green sand by an air-blast upon a revolving mandrel, to pack the same thereon, as specified.

296,881. INSULATOR. JOHN A. SEELY, New York, N. Y. Filed Jan. 11, 1884. (No model.)

Claim.—1. An insulator having a shank provided with a gimlet-point for attaching said insulator to a cross-arm, and a wire-supporting head whose surface is covered with vulcanized india-rubber or an equivalent material, as described.

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2. An insulator for supporting electrical conductors, consisting of a gimlet-pointed screw, and a ring-eyelet whose surface is covered with vulcanized india-rubber or its equivalent, as described.

3. An insulator having a shank for attaching the same to a cross-arm, and an eyelet-head formed of a ring whose surface is covered with vulcanized india-rubber or its equivalent material, substantially as described.

4. The combination of an eyelet-headed screw, the ring of which is covered with insulating material, and an insulating-knob placed upon said ring, around the neck of which wire may be wound.

5. The combination of a telegraph-pole, a cable made up of many individual wires, cross-arms, eyelet insulating supports, as described, and anchors placed upon said cross-arms, to which the wires are individually connected.

6. The combination of devices for distributing the wires of a cable upon the cross-arms of a telegraph-pole, which consist of means for separating the wires of the cable into groups, means for taking a group at a time from the cable at different points of its length, means for carrying each group along a cross arm or support, and for taking a wire at a time at different points along its length from the group, for the purpose set forth.

296,882. LEGGIN. HENRY J. SHIBEL, Jr., and SALLIE M. SHIBEL, Philadelphia, Pa. Filed Nov. 5, 1883. (No model.)

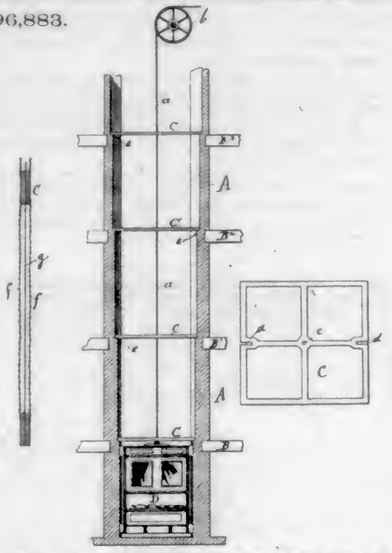


Claim.—1. A new article of manufacture, consisting of a leggin made of water-proof material and open from top to bottom, and having thereon the two rows of lacing-hooks *b b*, one of said rows of hooks being set back, so as to form an overlapping edge, the lacing-cord *c*, and the garter *a*, secured to the top of the leggin, substantially as shown.

2. A leggin made of water-proof material, and having the rows of lacing-hooks *b b* attached thereto, so as to form an overlapping edge, in combination with the lacing-cord c and garter *a*, secured to the top of the leggin, said garter having at one end thereof a fastener, *d*, and at the other end one of the lacing-hooks *b*, substantially as and for the purpose shown and described.

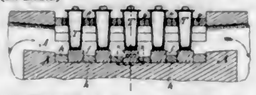
296,883. SAFETY ATTACHMENT FOR ELEVATORS. RUDOLF SHIFFERT, Chicago, Ill. Filed Jan. 23, 1884. (No model.)

296,883.



Claim.—In an elevator-shaft provided with offsets, as described, the combination of elevator D and frames C, of different dimensions, and provided with screens of coarse and fine wire, as described and shown.

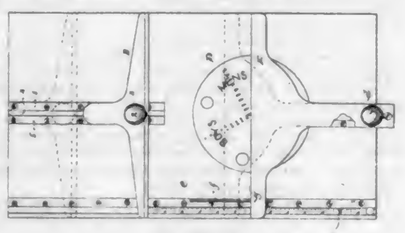
296,884. METHOD OF MANUFACTURING METAL ALLOYS. GUSTAV SELVE, Altena, Westphalia, Prussia, Germany. Filed June 19, 1883. (No model.)



Claim.—1. The method of smelting alloys, more particularly those of zinc, in closed crucibles that are situated with their lower parts in the furnace, while their upper parts project out of the same, consisting in supplying the crucible with copper and melting it, then quickly adding zinc in proper proportions and brass waste, then closing the crucible and applying heat to the lower part thereof, while the upper part is externally exposed to the air, whereby the zinc vapors generated in the lower hotter layer of metal become condensed in rising up into the upper cooler layers, as herein specified.

2. In smelting zinc alloys, the method herein described, consisting in supplying the crucible with copper and melting it, then adding zinc in proper proportions and brass waste, then closing the crucible and applying heat to the lower portion of the same, and thus effecting the condensation of the zinc vapors generated in the lower part of the crucible by means of the cooler upper layers of metal therein, substantially as herein specified.

296,885. TOE-TIP-INDICATING APPARATUS FOR BOOTS AND SHOES. HENRY D. SMITH, Rockland, Mass., assignor of one-half to Zenas M. Lane, same place. Filed Feb. 11, 1884. (No model.)



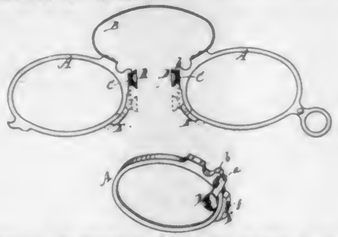
Claim.—1. In a toe-tip indicator, the base A and a gage to position the seam end of the upper, combined with a dial provided with numbers or marks to indicate sizes of boots and shoes to be provided with toe-tips, substantially as described.

2. The base A, a gage for the seam end of the upper, and a movable dial provided with numbers or marks to indicate sizes, combined with an adjustable toe-tip gage, to operate substantially as described.

3. The base A and toe-tip gage, and dial provided with numbers or marks to indicate sizes, combined with a rule, substantially as and for the purpose set forth.

4. The base A, the adjustable gage B, for the seam end of the upper, the adjustable toe-tip gage, and the movable dial provided with one or more radially-arranged rows of numbers or marks to designate the sizes of boots or shoes to be provided with toe tips or caps, to operate substantially as and for the purpose set forth.

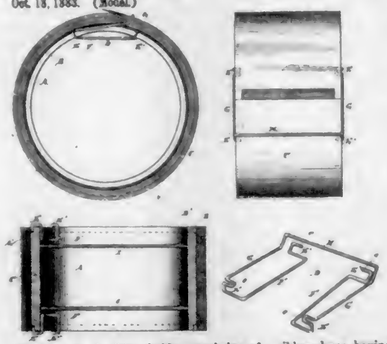
296,886. EYEGLASSES. CHARLES F. SPENCER, Rochester, N. Y., assignor to Charles F. Marsh and Fletcher M. Thrasher, both of same place. Filed Feb. 23, 1884. (No model.)



Claim.—1. The combination, with a pair of eyeglasses, of arms pivoted or attached to the upper inner edges of the glass-frames, capable of being turned at right angles to the same, and pads attached to the outer ends of the arms, as shown and described, and for the purpose specified.

2. The combination, with a pair of eyeglasses, of arms pivoted or attached to the upper inner edges of the glass-frames, capable of being turned at right angles thereto, pads attached to the outer ends of the arms, and separate bearing-blocks attached to the lower inner edges of the frames, as shown and described, and for the purpose specified.

296,887. RIBBON-HOLDER. AMOS STEVENS, Philadelphia, Pa. Filed Oct. 18, 1883. (Model.)



Claim.—1. A ribbon-holder consisting of a ribbon-drum having free annular flanges or edges, in combination with a sliding spring-holder adapted to slide upon said free edges and clamp the ribbon, substantially as and for the purpose specified.

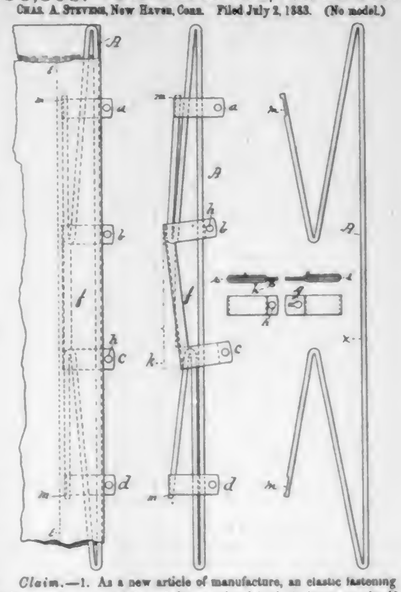
2. A ribbon-drum having free annular flanges or edges and circumferential grooves, in combination with a sliding holder adapted to fit upon and slide upon said free edges, and adapted to clamp the ribbon, the jaws or holding-prongs of said holder running in said grooves, substantially as and for the purpose specified.

3. The ribbon-drum A, provided with one or more heads, I, secured therein so as to leave the edges of said drum clear and form annular flanges, in combination with a spring ribbon-holder, provided with means, substantially as described, to clamp itself to said free edges of the drum, substantially as and for the purpose specified.

4. A ribbon-holder consisting of bars F F, having jaws or hooks E E', prongs *e*, spring-bars G, and cross-bar H, in combination with drum A, substantially as and for the purpose specified.

5. The combination of tubular drum A with cross-bar H, spring-arms G, and arms F, running upon the inner face of the tubular drum A, and retained thereon by the spring-arms G, which clamp the ribbon against said drum, substantially as and for the purpose specified.

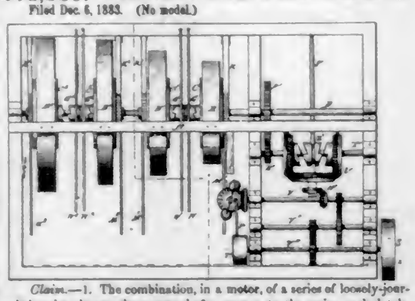
296,888. COMBINED ELASTIC CORSET BUSK AND CLASP. CHAS. A. STEVENS, New Haven, Conn. Filed July 2, 1883. (No model.)



Claim.—1. As a new article of manufacture, an elastic fastening device for corsets, consisting of the angulated busk A, bent upon itself at the ends to form a spring, and secured to the end clasps by niches *m m*, together with the movable clasps *a*, *b*, *c*, and *d*, provided with studs and slots, the whole being arranged to operate substantially as and for the purpose set forth.

2. In a combined elastic busk and clasps for corsets, the angulated busk A, having movable clasps *a b c d*, with studs and slots, and a cross-bar, *f*, connecting the clasps *b* and *c*, and niches *m m* on the ends of the busk for retaining the clasps *a* and *d* in position, substantially as shown, and for the purpose set forth.

296,889. SPRING-MOTOR. PASCHAL A. TARBOX, Louisville, Ky. Filed Dec. 6, 1883. (No model.)



Claim.—1. The combination, in a motor, of a series of loosely-journaled spring-drums, the power-shaft common to the series, and clutching devices intermediate between the drums for attaching two or more of them while in operation simultaneously to the shaft, substantially as described.

2. The combination, in a motor, of a series of loosely-journaled spring-drums, a power-shaft common to the series, and separate clutching mechanism for each of the series, whereby any desired drum of the series may be clutched upon the shaft while in operation on the shaft, substantially as described.

3. In a spring-motor, a drum consisting of a head-piece, I, a barrel and additional head-piece, C, in combination with a power-shaft provided with annular collars E E, for preventing horizontal movement of the drum, substantially as described.

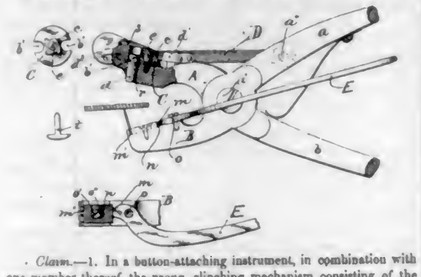
4. In a spring-motor, the combination, with a power-shaft, of a drum loosely mounted thereon, a spring attached at its inner end to the drum and at its outer end to a fixed support, and shifting clutch mechanism upon the shaft for engaging the drum therewith, substantially as described.

5. In a spring-motor, a drum provided with a spring to be wound thereon, pawl-and-ratchet mechanism upon one of the faces of the drum, a lever for operating one of the pawls to wind the spring, and means for releasing the other pawl from the ratchet at will, substantially as described.

6. In a spring-motor, a drum consisting of two head-pieces and a body slotted horizontally at an acute angle, in combination with a spring rigidly fixed at its outer end to a fixed support, and bent or hooked at its inner end to engage with the acute slot, substantially as described.

7. In a spring-motor, the combination, with the spring mechanism, the power-shaft provided with clutching devices, and the shafts and gearing transmitting power to the band-wheel, of a regulator in the train of such gearing, a friction-shoe operated thereby, and a brake-wheel upon the band-wheel shaft controlled by such regulator and shoe, substantially as described.

296,890. BUTTON-ATTACHING INSTRUMENT. JAS. F. THAYER, Providence, R. I. Filed Feb. 27, 1884. (No model.)



Claim.—1. In a button-attaching instrument, in combination with one member thereof, the prong-clinching mechanism consisting of the pin *d*, rotary disk C, spring *d'*, and the lever D, attached to the handle *a* back of the pivot *a'*, combined, arranged, and adapted for use, substantially as described.

2. In a button-attaching instrument, in combination with one member thereof, the herein-described fastener-clamping device, consisting of the recess *m'*, plate *n*, and cam-lever E, combined, arranged, and adapted for use, substantially as described.

3. The herein-described button-attaching instrument, consisting of the member A, provided with pin *d*, rotary disk C, spring *d'*, and connection D, and the member B, provided with recess *m'*, plate *n*, and cam-lever E, the whole combined, operated, and arranged substantially as shown and described.

296,891. BUTTON. EDOUARD A. THIERY, Newark, N. J., assignor to Carter, Sloan & Co., same place. Filed Feb. 25, 1884. (No model.)



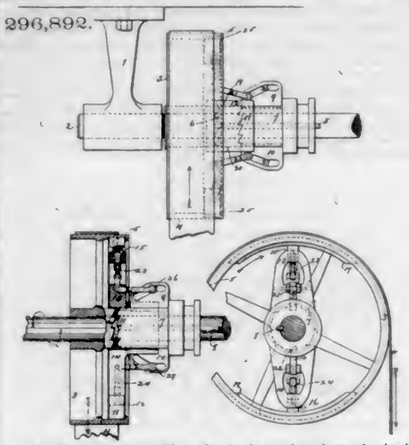
Claim.—1. A button consisting of a suitable head or face, a duplex or bifurcated shank, and eccentric shoes on the inner ends of the shank, substantially as set forth.

2. A button consisting of the head A, the duplex or bifurcated shank B, and the eccentric shoes or plates C C, attached to the free ends of the shank, so as to project outwardly therefrom in reverse directions, substantially as set forth.

296,892. CLUTCH. JOHN THOMSON, Brooklyn, N. Y. Filed July 25, 1883. (No model.)

Claim.—1. The combination, with a pulley, of a locking-clutch, the construction being such that the clutch will operate by a continuous movement of the sleeve, first, to impart the motion of the driving to the driven mechanism by means of friction; second, to then relieve the sleeve from the strain developed by the friction devices; third, to momentarily maintain and drive the driven mechanism by the friction thus developed, and, fourth, to finally directly and positively engage the sleeve and the pulley, substantially as described.

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2. The combination, with a pulley having teeth or claws, of a clutch-sleeve provided with cam-slots and teeth or claws, and friction devices connected with the sleeve, the arrangement being such that the frictional devices are operated to engage with the pulley, and the teeth or claws upon the sleeve and pulley are then caused to positively engage, whereby a direct and practically instantaneous engagement is effected without shock or jar.

3. The combination, with a pulley and friction and locking devices, of a sleeve having cam-slots and claws or teeth, substantially as shown, the arrangement being such that by the continuous movement of the shipping-gear the friction devices are first caused to gradually engage by impact with the pulley, and then to positively and directly connect the sleeve with the pulley, substantially as described.

4. The combination, with a pulley, friction-segments engaging therewith, toggles connected to the friction-segments, and levers connected with the toggles, of a sleeve provided with slots, whereby, upon the movement of the sleeve, the friction-segments are caused to engage with a constantly-increasing force until the said toggles are brought to a straight line, when the sleeve is released from the resistance of the friction devices, and is free to be slid into direct and positive engagement with the pulley.

5. The combination, with a pulley having claws or teeth, friction-segments engaging therewith, and toggle-levers connected with the segments, of a clutch and locking-sleeve having the cam-slots, substantially as shown, engaging with the levers, the arrangement being such that upon the continuous movement of the sleeve the friction-segments are caused to engage with the pulley with a constantly-increasing force, and when the maximum is reached such force is maintained by the toggles, and the sleeve is relieved and free to be locked in direct engagement with the teeth on the pulley, substantially as described.

6. In combination, the pulley 3, friction-segments 17 18, arms 13 14, toggles 23 24, bell-cranks 21 22, cams 9 10, sleeve 7, claws 6 11, and shaft 2, for the purpose herein set forth.

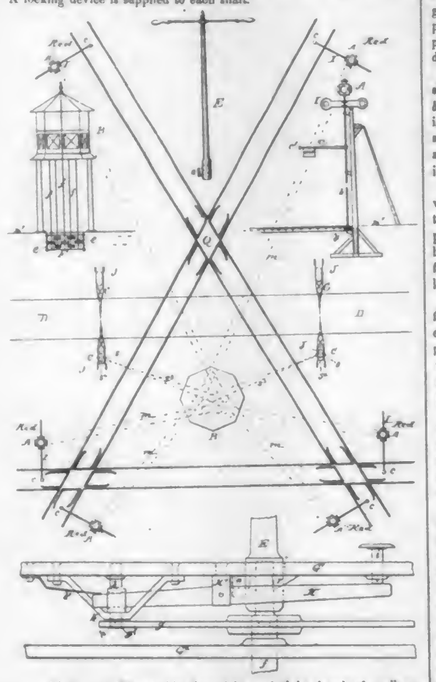
7. The combination, with a pulley having teeth or claws, of a clutch-sleeve provided with cam-slots, teeth or claws, and frictional devices connected with the sleeve, the arrangement being such that the frictional devices are operated to engage with the pulley, and the teeth or claws are then caused to positively engage, whereby a practically-instantaneous engagement is effected between the pulley and clutch without shock or jar.

8. The combination, with a pulley, friction-segments engaging therewith, toggles connected to the friction-segments, levers connected with the toggles, and a sleeve provided with inclined slots, whereby, upon the movement of the sleeve, the friction-segments are caused to engage with the pulley with a constantly-increasing force, substantially as described.

9. The combination, with a pulley having claws or teeth, friction-segments engaging therewith, toggle-levers connected with the segments, and a clutch and locking-sleeve having the inclined cam-slots, substantially as shown, engaging with the levers, the arrangement being such that upon the continuous movement of the sleeve the friction-segments are caused to engage with the pulley with a constantly-increasing force, and when the maximum is reached such force is maintained and the sleeve locked in engagement with the teeth on the pulley, substantially as described.

296,893. RAILWAY SAFETY-SIGNAL. ELISHA H. TOBEY, Denver, Colo. Filed Jan. 9, 1884. (No model.)

Brief.—Crossing-signals operated from shafts independently mounted in a central tower, each shaft being accessible for actuating purposes only through a common plate perforated to allow the application to each shaft of a key for rotating the shaft, and provided with stops on its inner surface to limit the motion of the key between the "danger" and "safety" positions of the signal. The key has a lip which, passing beneath the plate, prevents the withdrawal of the key, except in the normal "danger" position of the signal, whereby, as only a single key is allowed to the operator, only one signal can be set to "safety" at a time. A locking device is supplied to each shaft.



Claim.—1. The combination of day and night signals of a railway-crossing with mechanism for operating the same, a key for directly actuating said signals, and means by which it is locked to said mechanism after being operated to give the right of way over one track only, substantially as set forth.

2. The combination of a signal-operating mechanism for railway-crossings, and a key for directly actuating the same, with mechanism, substantially such as described, whereby the signal and its operating mechanism are automatically locked in the position to indicate "danger" or in the position to indicate "safety" to approaching trains.

3. The combination of a signal-operating mechanism for railway-crossings, a key directly operating the same, and means for retaining said key locked to said mechanism after being operated to give the right of way over one track only, substantially herein described, with a locking device for said mechanism, and a treadle device to release said lock, substantially as described.

4. A signal-operating mechanism for railway-crossings, and a key directly actuating the same, combined with means, substantially herein described, for retaining the key in its actuating position when the signal is moved to indicate "safety," and an automatic signal-locking device.

5. A signal-operating mechanism for railway-crossings, consisting of pulley-operating shafts, cables connecting their pulleys with the signals of all the tracks, a key-box into which said pulley-shafts extend, suitable locking mechanism for said pulley-shafts, a suitable device for unlocking said pulley-shafts, a key-plate, a key for directly actuating the signals, and means for retaining the key within the key-plate, substantially as set forth.

6. The combination of the signal-operating pulley-shafts formed with angular ends, as described, with a key-box, G, having a key-hole plate, into which said angular ends extend, an inclosed device for locking said shafts with said box, a device for unlocking said shafts, a key for directly actuating the signal-operating pulley-shafts, and means for retaining the key within said box, as set forth.

7. The combination, with a signal-operating mechanism for railway-crossings, substantially such as described, and a central tower or station therefor, of the box G, having a top key-hole plate G', arranged to form a part of the tower-floor, and to serve as a cover to prevent access to said signal-operating mechanism except by means of a key, by which the same is directly actuated, substantially as set forth.

8. A signal-operating mechanism for railway-crossings, operated by a key in the manner described, consisting of a box, F, arranged below the surface of the ground and containing pulleys and shafts, the cables connecting them with the track-signals, a key-box, G, arranged above the ground, having a top key-hole plate within the key-holes, in which said pulley-shafts terminate, suitable locking and releasing devices for said pulley-shafts arranged within said key-box, the signal devices, and a key directly actuating the same, substantially as set forth.

9. The combination, with the closed boxes F and G, the winding-shafts *f*, mounted therein, their pulleys *e*, the cables *m*, the signal-shafts *b*, their pulleys *d*, and a key, of an automatic locking device for said winding-shafts, arranged within the box F, means, substantially such as described, whereby said key is retained in a locked position in the box G, and means, substantially such as described, whereby said automatic locking device is released.

10. The combination, with a signal-operating mechanism for railway-crossings, operated directly by a key, of a key-box, G, having a top key-hole plate G', affording access to said mechanism, and a key provided with an arm, means arranged on the inner side of said box for limiting the turning movements of the key, an automatic locking device for said mechanism, and means, substantially such as described, for releasing said locking device, controlled by the foot of the operator.

11. The combination, with an inclosed signal-operating mechanism for railway-crossings, operated directly by a key, and means adapted to engage said key to limit its turning movements, of an automatic locking-pin for said mechanism, which, when locked in "safety" position, acts to prevent the release of the key, and a treadle device connected with said locking-pin for releasing the lock, substantially as described, for the purpose specified.

12. The combination, with an inclosed signal-operating mechanism for railway-crossings, operated directly by a key, and means adapted to engage said key to limit its turning movements, of a spring-depressed locking device for said mechanism, a lever carrying said locking device, an inclosing key-box for the latter, and a releasing treadle-pin adapted to be operated outside of said box, substantially as set forth.

13. The combination, with an inclosed signal-operating mechanism for railway-crossings, and the track-signals, both operated directly by a key, of a key-hole plate permitting the application of a key to operate a single signal, and a key which is fastened to said key-plate by the means substantially as herein set forth.

14. The combination, in a system for operating signals for railway-crossings, of day and night signals 1 A, the independent winding-shafts *f* and pulleys *e*, each shaft having a disk, *g*, provided with perforations *g' g'*, cables *m*, signal pulley shafts *b*, pulleys *d*, the foot-levers H, locking-pins *h*, means for locking said pins with said disks, the treadle-pin *i*, a key for operating the system, closed boxes for the operating mechanism, and means for retaining the key within the key-hole plate when the signal is moved to indicate "safety," substantially as described.

15. The combination, with the winding pulley-shafts *f*, each having a perforated disk, *g*, of a closed box, G, having a key-hole plate, G', provided on its under side with stops *r r*, a key having an arm, *a*, the treadle H, having a pin, *h*, the spring *k'*, the treadle-pin *i*, cables *m*, and the signal-carrying shafts, the said stops being arranged to determine the movements of said disk to receive the locking-pin, substantially as described.

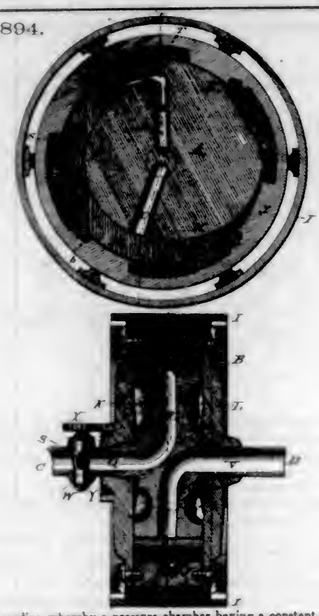
16. A signal-operating mechanism for railway-crossings, comprising the following instrumentalities, viz: a number of key-operated shafts, *f*, having each a pulley, *e*, inclosed beneath the surface of the ground, and a disk, *g*, near its upper end, a key-box, G, arranged above the pulleys and containing the disks *g*, an automatic locking device for each shaft-disk, a device for releasing each shaft-disk from its lock, a key-plate having key-holes corresponding with the pulley-shafts, through which access is had thereto for operating them, a key, stops *r r*, co-operating with said key to limit the turning of said shafts, signals, and cables connecting the key-operated shafts with the signal-shafts, all combined for operation substantially as described, for the purpose specified.

17. In combination, the central station or tower, B, provided with mechanism for operating the signals of railway-crossings, the pivoted weighted gates C, the pulleys *s w*, the cables s^2, the shaft K, its pulley J^2, and hand-wheel H', all constructed and adapted for operation independent of the signals, said gates being opened from the signal-station only when a safety-signal is displayed.

296,894. ROTARY MOTOR. HENRY A. TOBEY, Dayton, Ohio. Filed Sept. 8, 1883. (No model.)

Claim.—1. In a rotary motor, a fixed interior cylinder the periphery of which is composed of two arcs of different radii connected by cam-surfaces, in combination with an outer rotating casement provided with freely-swinging pistons, and adapted to fit closely over the arc having the long radius, whereby a pressure-chamber having a constant area in cross-section is formed between the outer casement and the arc of the cylinder having the short radius, substantially as set forth.

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2. In a rotary motor, a rotating casement provided with pistons hung freely at their forward ends to the casement at equal distances apart, in combination with a fixed interior cylinder the periphery of which is composed of two arcs of different radii connected by cam-surfaces, of which arcs the one having the long radius is adapted to be fitted closely to the inner surface of the casement, whereby a pressure-chamber having a constant area in cross-section is formed between the outer casement and the arc having the short radius, the length of said arc being determined by the distance between adjacent pistons, substantially as set forth.

3. In a rotary motor, rotating casement provided with pistons hung freely thereto at their forward ends, in combination with an inner stationary cylinder the periphery of which is constructed as described, whereby a pressure-chamber is formed between said casement and said cylinder, and a steam-admitting passage constructed in said cylinder and opening into said pressure-chamber at or near its beginning, the steam being admitted in the direct line in which its force is to be applied, substantially as set forth.

4. In a rotary motor, a rotating casement provided with pistons hung freely at their forward ends thereto, in combination with an interior fixed cylinder having its periphery composed of arcs and cam-surfaces, substantially as herein described, and a steam-admitting passage formed in said cylinder opening into said pressure-chamber at its commencement, whereby the full force of the steam is constantly and uniformly exerted upon each piston, substantially as set forth.

5. In a rotary motor, the rotating casement provided with pistons, substantially as described, in combination with a fixed interior cylinder the periphery of which is composed of arcs and cam-surfaces, as described, and inlet and exhaust passages for steam formed in said cylinder, the inlet-passage having its mouth at the commencement of the arc having the short radius, and the exhaust-passage having its opening at the termination of said arc, the length of said arc being determined by the distance between adjacent pistons.

6. The outer rotating casement, in combination with pistons hung to said casement and swinging freely thereon, whereby the centrifugal force of the casement causes the pistons to fold into the rim of said casement, and suitable means whereby the pistons are swung out from the rim, so that they may be operated upon by the motive power, substantially as described.

7. The stationary cylinder having its periphery composed of arcs and cam-surfaces, as described, in combination with a rotating casement inclosing said cylinder, as described, whereby a chamber is formed between said casement and cylinder, the arrangement being such that the chamber commences at the highest point of the cylinder, as set forth.

8. The stationary cylinder having its periphery composed of arcs and cam-surfaces, as described, in combination with a rotating casement provided with freely-swinging pistons inclosing said cylinder, whereby a chamber is formed between the cylinder and casement, the arrangement being such that the chamber commences at the highest point of the cylinder, and a steam-admitting passage formed in said cylinder opening into said chamber at or near its commencement, substantially as described.

9. The combination of the stationary cylinder, the rotating casement, the pistons, the pressure-chamber, the steam-admitting passage, grooves in the rim extending behind said pistons, and a branch steam-passage adapted to communicate with said grooves, substantially as set forth.

10. The outer casement provided with pistons equidistant apart, and with steam-admitting grooves extending behind the pistons, as described, in combination with an inner stationary cylinder, its periphery being composed of two arcs of different radii and connecting cam-surfaces, and provided with the inlet and exhaust passages, the length of the arc having the short radius being determined by the distance between adjacent pistons, the length of the arc having the long radius being determined by the length of a piston and the groove extending behind it, and the length of one cam-surface being determined by the extent of the inlet-opening, whereby the other cam-surface is made as long as possible, substantially as set forth.

11. The combination of the stationary cylinder, the rotating casement, the pistons, the main steam-admitting passage, the branch admitting-passage, and a groove extending behind each piston, and adapted to communicate with said branch passage, the length of the mouth of said groove being determined by the distance between the mouths of the main and branch admitting-passages, substantially as set forth.

12. The pistons provided with hollowed-out inner sides adapted to retain steam, which acts as a cushion to prevent the noise made by the pistons, substantially as set forth.

13. The concave plate N, secured to the stationary cylinder, in combination with the side plate of the casement, substantially as and for the purpose described.

14. The concave plate N, secured to the stationary cylinder at its apex, in combination with the side plate of the casement, against which the free edge of the concave plate is adapted to rest.

15. The stationary cylinder, hollowed out on the side, as described, and the concave plate N, secured to said cylinder on said hollowed part, in combination with the head of the casement, substantially as described.

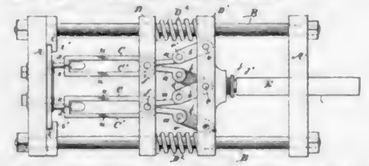
16. The stationary cylinder, hollowed out on the side, as described, and the concave plate N, secured to said cylinder on said hollowed part, the depth of which part is less than the height of said plate, in combination with the head of the casement, substantially as set forth.

17. The piston formed with lugs at or near its free end, in combination with grooves or ways cut in the heads of the casement, substantially as and for the purpose described.

18. The pistons provided with lugs at or near their free ends, as described, in combination with the inner stationary cylinder, and the heads of the casement provided with grooves in which said lugs are adapted to slide, substantially as and for the purpose set forth.

19. The cut-off valve situated in the steam-admitting pipe and provided with a cog-wheel, as described, in combination with the rotating casement provided with gearing adapted to engage directly with the cog-wheel on said valve, substantially as set forth.

296,895. CAPSULE-STRIPPING MACHINE. WILLIAM A. TUCKER, New York, N. Y. Filed July 27, 1883. (No model.)

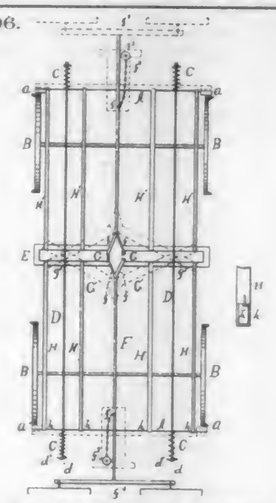


Claim.—1. The combination, in a gelatine-capsule-stripping machine, of the plates D D', arranged to slide on the rods B, the springs D^2, acting to force or hold said plates apart, the stripping-jaws C C', hinged together at *f* in the plate D, and the links *b*, pivoted at their outer ends in the plate D' at *e*, and at their inner ends to the outer ends of the said jaws, at *e'*, and the set-screw F, all as and for the purpose described.

2. In a capsule-stripping machine, the combination of the plates or frames D D', jaws C C', links *b*, rod E, provided at its outer end with the rack *g*, the rocking lever G, provided with the toothed segment *g'*, and the crank I', provided with the crank-pin *r*, arranged to work in the opening h^2 in said lever, all as and for the purpose described.

296,896. CAR-BRAKE. FLAVIUS J. UNDERWOOD, North Springfield, Mo. Filed Nov. 20, 1883. (No model.)

296,896.

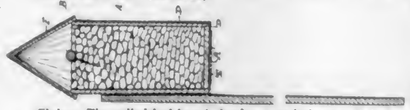


Claim.—1. An improved automatic brake composed of a brake-bar, A, set by springs C, attached to and supported by a rod, D, which is made so as to adjust the tension of the said spring, levers G, having pushing-rods H H', for removing the said brake by an attached rod, F, connecting the said levers with the propelling-power of the vehicle, all substantially as shown and described.

2. In an automatic brake, springs C, adjustably attached upon a rod, D, by means of a nut, *d*, and washer *d'*, pushing-rods H H', with loops A and adjustable device *h'*, levers G G, with fulcrum *g'*, rod F, with fork *f f*, and attachment *f'*, all substantially as shown and described.

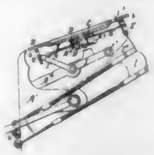
3. The combination of an automatic brake composed of springs C, rods D H F, and levers G, with a common brake-wheel, *f'*, all substantially as and for the purpose set forth.

296,897. POP-CORN PACKAGE. VINCENT D. URSO, Evansville, Ind. Filed Feb. 21, 1884. (No model.)



Claim.—The cylindrical box A, having a conical cover, B, in combination with stick C, as described, and for the purposes set forth.

296,898. PRINTING-PRESS. JOHN H. UTTER, Westerly, R. I. Filed Mar. 6, 1883. (No model.)



Claim.—1. In a printing-press, the cam I², carried on the vibrating frame I, in combination with the lever J, link H, ring G, arm G', disk B, and pawl E, as and for the purposes specified.

2. In a printing-press, the disks B C and pawls K E, combined with the cam I², frame I, lever J, having roller J', link H, ring G, arm G', and movable stop I², as and for the purposes set forth.

296,899. AUTOMATIC SHAFT-TUG. JAMES T. WATSON, St. Louis, Mo., assignor of three-fourths to Richard T. Bishop, same place, and Jean C. Bohrer, St. Paul, Minn. Filed Feb. 7, 1884. (No model.)

Claim.—1. In an automatic shaft-tug, the combination, with the back-band, of pivoted hooks connected thereto, and the girth attached to the hooks, said devices operating in the manner described, so that when the girth is buckled together the hooks will close around the shafts, as set forth.



2. In an automatic shaft-tug, the combination, with the back-band and girth, of hooks adapted to fit around the shafts, said hooks being operated by buckling the girth, as set forth.

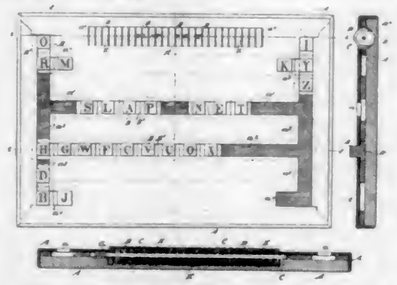
3. In an automatic shaft-tug, the combination, with the back-band, of an extension attached to the back-band on each side, hooks pivoted in the extensions, and the girth attached to the ends of the hooks, and operating as described, for the purpose set forth.

4. In an automatic shaft-tug, the combination, with the back-band, of a buckle attached to the same, and provided with a downward extension, hooks pivoted in the extensions, and the girth attached to the ends of the hooks, as set forth.

5. In an automatic shaft-tug, the combination, with the back-band, of a buckle attached to the ends of the same, and provided with downward extensions, a roller fitted in the end of the extension, hooks pivoted in the extensions, and the girth attached to the ends of the hooks and passing over the rollers, as set forth.

6. As an improved article of manufacture, the herein-described shaft-tug, comprising a buckle provided with a downward extension, the latter having a roller at the lower end thereof, a hook pivoted in the extension, and a cross-bar at the lower end of the hook, arranged and operating for the purpose set forth.

296,900. GAME. BENJAMIN S. WHEELER, Orange, N. J. Filed July 27, 1883. (No model.)

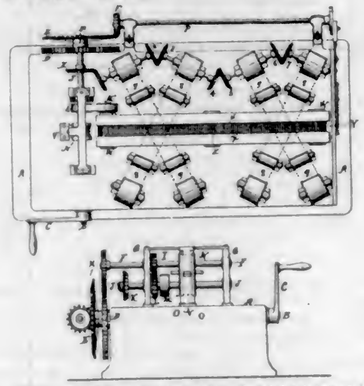


Claim.—1. The board A, having the connected grooves *a* and the recess *a'*, in combination with the blocks B B', sliding in the grooves *a*, and the wheels D, capable of being turned in the recess *a'*, and adapted for joint operation, substantially as herein specified.

2. The series of blocks B B', each carrying a letter on its face, in combination with each other and with the series of wheels D, separating-washers E, and shaft or axle-wire C, and with a board having a system of connected grooves, *a*, and a recess, *a'*, all arranged for joint operation, as herein specified.

3. A toy or game apparatus adapted for educational purposes, having a series of grooves and letter or figure bearing blocks movable therein while not entirely separable therefrom, in combination with each other, and with convenient means for holding and exhibiting changeable copies in proximity thereto, substantially as and for the purposes herein specified.

296,901. CANDY-MACHINE. JOHN P. WIER, Cleveland, Ohio. Filed Nov. 6, 1883. (No model.)

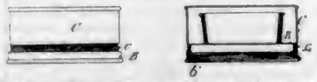


Claim.—1. The combination of the rollers 8 8 9 9, belts 8 8 9 9, channels or guides X X, and cutters W and Y, as and for the purpose set forth and described.

2. The hollow groove or channel formed by guides X X and belt Z, constructed in the manner and for the purposes set forth and described.

3. The belts or webs moving over the groups of rollers or pulleys 8 8 9 9, and designed to impart a rotary progressive movement to the stick of candy within the guides X X, substantially in the manner and for the purposes set forth and described.

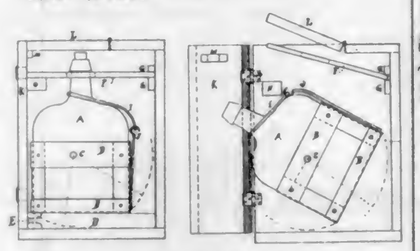
296,902. COLLAPSING CUP. AUGUST H. WIRZ, Philadelphia, Pa. Filed Mar. 10, 1884. (No model.)



Claim.—1. In a collapsing cup, the cap C, having on its outer lower edge the screw-thread *c*, in combination with the base B, having on the inner lower edge thereof the screw-thread *b'*, substantially as and for the purpose described.

2. In a collapsing cup, the base B, having thereon the inner and outer screw-threads, *b* and *b'*, in combination with the cap C, having inner and outer screw-threads, *c c'*, substantially as described and shown.

296,903. DEMIJOHN OR BOTTLE SAFE. ISAAC B. WOLLARD, San Francisco, assignor to the Oakland Glass Works, Oakland, Cal. Filed Jan. 12, 1884. (No model.)

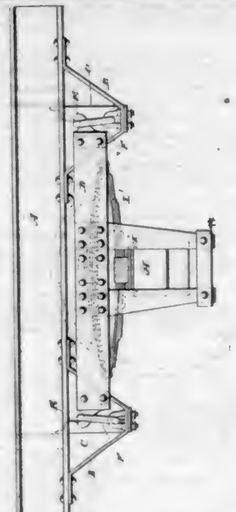


Claim.—1. A demijohn or bottle safe having a swinging basket or tray, B, in combination with the wedge D, substantially as and for the purpose described.

2. A demijohn or bottle safe having a swinging basket or tray, B, in combination with the yoke F, for securing the neck of the vessel, substantially as described.

3. A demijohn or bottle safe having a swinging basket or tray, B, in combination with the loop I and hook J, substantially as set forth.

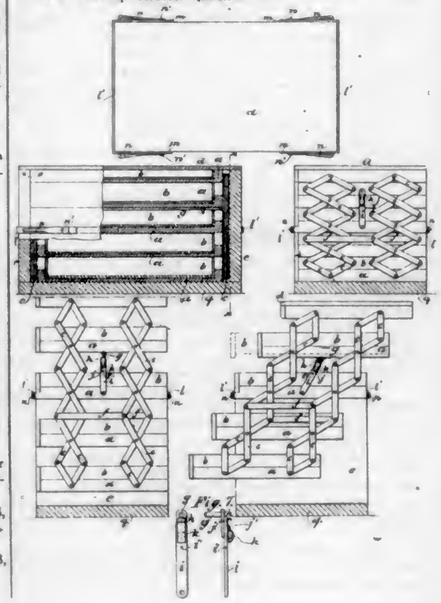
296,904. RAILWAY-TRUCK. LARS SEVERIN ZACHARIASEN, Christiania, Norway. Filed Aug. 23, 1883. (No model.) Patented in England July 30, 1883, No. 3,713, and in France Oct. 18, 1883, No. 156,522.



Claim.—1. The combination, with the car-frame, provided with depending unyielding brackets, of the axle-frame, the axle yieldingly supported within said frame, and the unyielding swinging links forming the sole connection between rigid parts of the axle-frame and the brackets, substantially as set forth.

2. The combination, with the car-frame A and brackets B, of the axle-frame F, guides I, axle-boxes H, springs I', hooks E, and links F, all of the above parts combined as described.

296,905. CHEST OF DRAWERS. ABE LINCOLN ADAMS, Fly Creek, N. Y. Filed Apr. 11, 1883. (Model.)

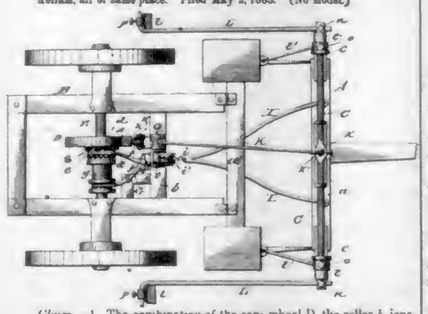


Claim.—1. A slide-drawer chest having the cover *d* ends *e*, and bottom *g*, the loose trays *a*, and the tray *a'*, made fast to said ends, in combination with the lazy-tongs *c c*, connected together by bars *f f*, and pivoted to the cover and trays, as shown and described, whereby the trays *a* may be folded up to or drawn out from the fixed tray *a'*, as specified.

2. The combination, with the frames *a*, trays *b*, and lazy-tongs *c*, of the rod *g*, having at each end a crank, *h*, with hole *h'*, the bar *i*, having hole *i'*, and pivoted at one end to the crank and at the other to the next tray-frame below it, the spring *j'*, carrying pin *j*, bent at one end, and having an eye or loop, and the pivot-bolt *k*, whereby the extended trays may be locked or unlocked, as described.

3. The combination, with the middle tray, of the case having ends *e* and holes *o*, the band *l'*, attached at *m* to said tray, and extending around the ends of the case, and the catches *n*, pivoted at *n'*, as shown and described.

296,906. CORN-PLANTER. ARCHIBALD D. ADAMS, Prophetstown, Ill., assignor of three-fourths to John J. Greene, Joel E. Loomis, and Harry F. Kellam, all of same place. Filed May 2, 1883. (No model.)



Claim.—1. The combination of the cam-wheel D, the roller A, journaled in the bifurcated arms H of lever K, the lever K, oscillating bar C, rods L, hoes *l*, rods *l'*, and the usual seed-slide, substantially as shown, and for the purpose described.

2. The combination of the branch arms H I, chain *i*, pulley *i'*, lever F, lug *f'*, arm *f*, and the wheel D, whereby the operation of the machine is suspended coincidently with the elevation of the furrow-openers or runners, substantially as shown, and for the purpose specified.

296,907. GRAIN-DOOR FOR FREIGHT-CARS. ALEXANDER W. ALEXANDER, Piqua, Ohio. Filed Mar. 12, 1884. (No model.)

Brief.—A frame having a covering secured over its face, the ends of which extend around the ends of the frame, and a longitudinal flexible strip secured between said frame and covering, and projecting from the bottom of the door. A water-proof pasteboard covering is preferred.



Claim.—1. The combination, in a grain-door, with the frame, of a surface or covering secured over the face of the same, and having its ends extended around the ends of the frame and secured to the opposite face thereof, substantially as and for the purpose set forth.

2. The combination, in a grain-door, of the frame, a surface or covering secured over the face of the frame and having its ends extended around the ends thereof, and a longitudinal flexible strip projecting from the bottom, substantially as and for the purpose set forth.

3. The combination, in a grain-door, of the frame, a surface or covering secured over the face of the same, and a longitudinal flexible strip secured between the frame and surface and projecting from the bottom of the door, substantially as set forth.

4. As an improvement in grain-doors, the combination of the frame, the surface or covering secured over the face of the same, and having its ends extended around the ends of the frame and secured to the opposite face thereof, and a longitudinal flexible strip secured between the frame and surface and projecting from the bottom of the door, substantially as set forth.

5. As an improved article of manufacture, a grain-door comprising a frame, and a water-proof pasteboard surface or covering secured to the face of the same, substantially as set forth.

296,908. FASTENING FOR SHOE-SOLES. LEWIS J. ATWOOD, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. Filed Dec. 29, 1883. (No model.)



Claim.—The shoe nail or fastening, having a roughened body portion and a round point that is a gradual taper from the inward curve at the base to the sharpened end, substantially as set forth.

296,909. CASH-CARRIER SYSTEM. GEORGE A. BADGER and WILBER FOWLER LAKIN, Quincy, assignors to John H. Lakin, Boston, Mass. Filed Mar. 12, 1884. (No model.)



Claim.—1. The carrier, with its drum M, clock-spring V, and horizontal axis *m*, in combination with a cash-receptacle secured to the drum by a pair of connections, *x x*, wound in the same direction thereon, substantially as described.

2. The guide-rolle *y* and connections *x x*, in combination with a cash-receptacle, and a carrier having a drum, M, located on a horizontal axis, *m*, and actuated by a clock-spring, as and for the purpose set forth.

3. In combination with a carrier and a cash-receptacle, a pair of closely-wound spiral-spring connections, *x x*, as and for the purpose specified.

4. The latch *y'*, in combination with a spring-actuated drum, M, having a hub provided with an aperture for its reception, as set forth.

5. The carrier-retaining device L, and the arm I, with its elastic cushion *f* and spring *h* for starting the carrier, in combination with a means for unlocking the same, as described.

6. The carrier-retaining device L, with its spring *h* and the arm N, in combination with the guide C and its stop *n* for releasing the carrier, substantially as specified.

7. The sliding holder B with its pin *u*, and the latch S with its notch *t*, spring, and eye *r*, in combination with cords or suitable connections for raising and lowering the holder, as set forth.

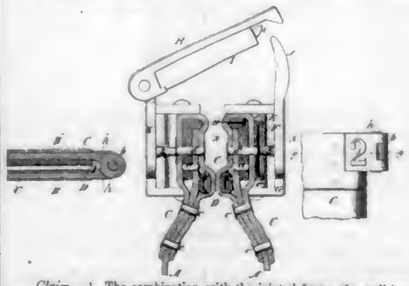
8. A pair of brackets for holding the guide C, in combination with and capable of adjustment on a vertical rod resting in bearings, substantially as described.

9. A pair of brackets for holding the guide C, and adapted to swing and be adjusted upon a vertical rod resting in suitable bearings, a pair of double-grooved pulleys mounted in said brackets, a sliding holder, B, for the end of the track, and a cord or other connection for elevating and depressing the track-holder, combined and arranged to operate as and for the purpose set forth.

10. In combination with a post, a pair of bearing-plates and a series of bracket-supporting rods, as specified.

11. The guide C and its adjusting-screws, in combination with a pair of adjustable brackets and a vertical rod supported in suitable bearings, substantially as described.

296,910. MAIL-BAG. JOHN S. BAILEY, Buckingham, Pa. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination, with the jointed frame of a mail-bag, of the shield-plate G, attached to one of the center joints of the said frame, and provided with fingers on its inner face for bracing the frame and for holding the labels, as set forth.

2. The combination of the jointed frame of a mail-bag and a suitable hasp, with the shield G, attached to one of the center joints *b* of said frame, and formed with a staple-plate, *f*, substantially as set forth.

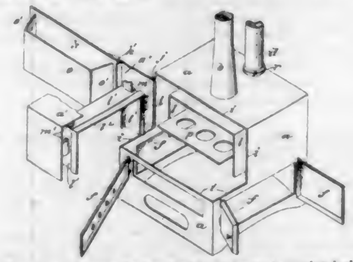
3. The combination, with the jointed frame of a mail-bag and a suitable staple, of the plate K, attached to one of the joints *b'*, and formed with the bracing-fingers *k* on its inner face and the hasp-plate H, hinged to plate, substantially as set forth.

4. The combination, with the jointed frame of a mail-bag and label-holding plate E, on either side of one of the joints *b'*, of the plate G, attached to the said joint *b'*, and provided on its under side with fingers *g*, whereby the said fingers will hold the label firmly within the label-plate, and serve as a brace to the frame, substantially as set forth.

5. The combination of the jointed frame of a mail-bag with a plate or shield attached to one of the central joints and formed with fingers on its inner face, and with a staple on its upper end, and a similar plate attached to the opposite joint and formed with fingers on its inner face, and having a hinged hasp on its upper end, whereby when the hinged frame is closed the fingers of the two plates will brace said central jointed portions, and the hasp be made to engage said staple, substantially as set forth.

6. The combination of the main leather body A of the bag, metal plates B at the upper edge thereof, and elastic strips or tubes D below the edge, with the outer leather, C, folded to embrace the outer and inner edges of the bag and inclose the plates and elastic material, and rivets for securing said parts together, substantially as shown and described.

296,911. STOVE-JACKET. WILLIAM H. BENSON, Elston, Md. Filed Sept. 5, 1883. (No model.)



Claim.—1. A stove-jacket consisting of an outer casing inclosing the stove, and an inner hot closet supported from the outer casing, which casing and closet have independent connections to the draft-flue of the stove, substantially as shown and described.

2. A stove-jacket constructed with a main body portion, *a*, resting on the floor and surrounding the entire stove, and a hinged section, *a'*, adapted to be swung from over the stove-top, said body portion being provided with doors or openings registering with the draft, oven, and other doors of the stove, substantially as shown and described.

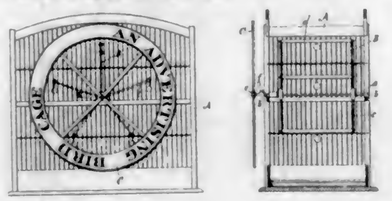
3. A stove-jacket constructed with outer casing, *a*, having hinged section *a'*, and a hot closet consisting of sections *l l'*, fixed, respectively, to sections *a a'*, substantially as shown and described.

4. A stove-jacket constructed with outer casing, *a*, having hinged section *a'*, and a hot closet, *l l'*, in combination with separate hot-air-discharge pipes *b n*, substantially as shown and described.

5. The combination, with the jacket *a*, surrounding the entire stove and resting on the floor, its hinged section *a'*, and the hot closet *l l'*, of the door *k*, having the plate *o*, for closing the front of the hot closet, whereby dust and ashes will be prevented from entering said chamber while the grate is being shaken, substantially as shown and described.

6. The combination, with the stove-jacket and stove-pipe *d*, of the hot closet *l*, fitted to the pipe *d* within the jacket, and secured to said jacket by brackets *n* in rear of the pipe, substantially as shown and described.

296,912. ADVERTISING BIRD-CAGE. HENRY BISHOP, Baltimore, Md. Filed Aug. 23, 1883. (No model.)



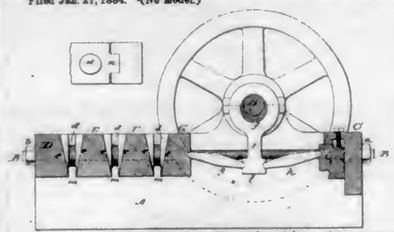
Claim.—An advertising bird-cage consisting of a closed cage, A, a revoluble perch, *d*, located within the cage, and a disk, C, situated outside the cage and having a space adapted to receive advertisements, the disk being secured to the revoluble spindle *a* of the perch, substantially as specified.

296,913. METHOD OF COLORING PHOTOGRAPHS. AUGUSTE BISSON, Paris, France. Filed Jan. 15, 1884. (No specimens.)

Claim.—1. The treatment of the translucent bodies for the reception of photographic impressions, consisting in subjecting them to the action of a bath composed of benzine, resin, and linseed-oil, in or about the proportions herein specified, substantially as herein described.

2. The improvement in the art of printing photographs in colors, consisting in first obtaining stencil-plates or sheets cut out in the contours of the different colors, next applying said plates or sheets to lithographic stones coated with bichromate, then exposing the said stones and plates or sheets together to the action of the light and pressure under a glass, then removing the sheets and coating from the stones, and afterward printing from said stones in flat tints, substantially as herein described.

296,914. STONE-CRUSHER. THEODORE A. BLAKE, New Haven, Conn. Filed Jan. 21, 1884. (No model.)



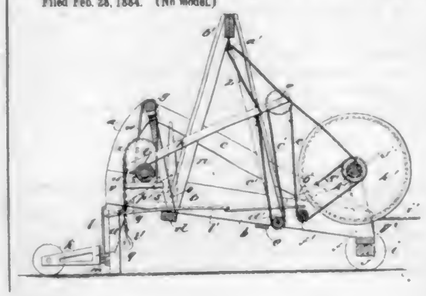
Claim.—1. The combination of a series of jaws, (two or more,) parallel guides, upon which said jaws are arranged and made movable in a path parallel to said guides, and mechanism, substantially such as described, to impart movement to the said series of jaws, the said guides serving to support the said jaws in the same inclination with relation to each other throughout their entire movement, substantially as described.

2. The combination of a series of jaws, (two or more,) parallel guides upon which said jaws are arranged and made movable in a path parallel to said guides, a stationary jaw at one end of the series, and mechanism, substantially such as described, to impart reciprocating movement to the said series of jaws toward and from the fixed jaw and upon their guides, the said guides supporting the said jaws in the same inclination with relation to each other throughout their entire movement, substantially as described.

3. The combination of a series of jaws, parallel guides therefor, a fixed jaw at one end of said series, a toggle at the other end arranged to bear upon the jaw at that end, the adjacent faces of the said jaws diverging from their lower edges upward, whereby a crushing-mouth is formed between each pair of jaws, said toggle serving to impart a crushing movement to said jaws, and the guides serving to retain the jaws in the same inclination with relation to each other throughout their movement, substantially as described.

4. The combination of the fixed jaw D, the movable jaws E F G, &c., rods B, springs *d* between the jaws, and a toggle arranged to bear against the rear jaw and operate to force it, with the intermediate jaws, toward the said stationary jaw, substantially as described.

296,915. STUMP-PULLER. CHARLES ALFRED BLOWE, Union City, Ind. Filed Feb. 28, 1884. (No model.)



Claim.—1. The combination, in a portable supporting-frame, of the pulling-lever *h*, chain *y*, windlass *g' h'*, ropes *c'* and *i'*, guide-pulleys *d' e'*, and the roller *f''*, substantially as described.

2. The combination, in a portable supporting-frame, of the pulling-lever *h*, eccentric block *x*, axle *t*, chain *y*, and the windlass and ropes and guide-pulleys for working the lever, substantially as described.

3. The improved supporting-frame for a portable stump-puller, consisting of legs *a*, main side timbers *b*, upper side timbers *c*, cross-timbers *d*, *e*, and *f*, cross-beam *g*, and the derrick *b'*, said side timbers being upwardly inclined from cross-bar *f* to the parts *a*, and said parts being inclined above timbers *a* to the ends of timbers *c*, substantially as described.

4. The lever-axle *t*, having bearings on the timbers *b*, and re-enforced between said timbers by the stirrups *v w*, suspended from the cross-beam *g*, substantially as described.

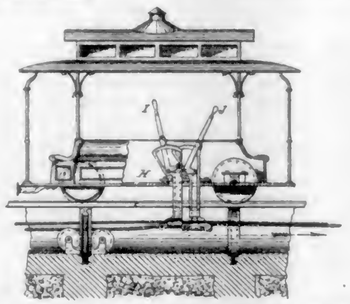
5. The improved stump-pulling machine, consisting of the frame *a*, *b*, *c*, *d*, *e*, and *f* and the derrick *b'*, having the pulling-lever *h*, chain *y*, and the windlass, rope, and pulley mechanism, substantially as herein described, for working said lever, and said frame having the truck *i j* for supporting the front end, and the adjustable casters *k*, attached to the hind end, as specified.

6. The combination of the elbow-levers *n*, cords *p*, and suitable guides, *q*, for said cords, with the casters *k*, adjustably attached to the legs *a* by the pivot-rods *l* and eyes *m*, substantially as described.

7. The combination, with the pulling-lever *h*, hoisting-cord *s*, and the pulling-rope *c'*, of the windlass-shaft *g'*, for working said lever by said cord and rope, said shaft having a smaller section, *k'*, for the cord *s* than the section whereon the rope *c'* winds, substantially as described.

296,916. SYSTEM OF PROPELLING CARS BY MEANS OF CABLES. JOHN L. BOOMS, San Francisco, Cal. Filed Jan. 22, 1884. (No model.)

Brief.—Parallel cables in same tube or cable-way traveling at different speeds, so as to start cars by engaging the slow cable and then engage the fast cable.



Claim.—1. In the cable system of propelling cars, the endless ropes or cables *d e*, mounted parallel with each other and driven at different rates of speed, in combination with two grippers, I J, for connecting the car or dummy with said ropes.

2. The combination of a fast and a slow moving cable, *d e*, with a car to be moved on a track, and separate gripping devices for connecting the car with either cable, substantially as described.

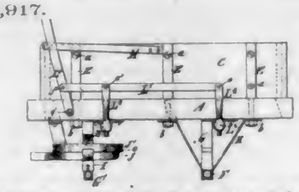
3. The improvement in starting cars from a state of rest, consisting in first connecting them by a suitable gripper, J, with a slow-moving rope or cable, and then, when the car has attained the speed of the slow-moving rope or cable, releasing the gripper from said rope or cable and connecting the car with a fast-moving rope or cable, substantially as described.

4. The improvement in the cable system of propelling cars on a track by means of an endless rope or cable mounted on pulleys in an underground slotted tube or tunnel, consisting of the two separate and independent cables *d e*, mounted on two separate and independent sets of pulleys in the same tube, one of said cables being located on each side of a perpendicular line drawn through the slot in the tube or tunnel, and separate gripping devices for connecting the car with either cable at will, substantially as described.

296,917. DUMPING-WAGON. THOMAS W. BOYCE and CHRISTIAN FRISCHE, Brooklyn, N. Y. Filed Nov. 23, 1883. (No model.)

Claim.—The combination of the parts L L', journals L^2, supported in bearings on the frame, the rod L^3, pivotally connected by pins *e e'* to arms L^4, the lever L^5, adapted to be swung forward and backward to impart a rocking motion to the parts L L', and the resilient bar M, rig-

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idly affixed near one end to the side of a wagon-body for locking the lever L^5, so as to secure the parts L L' in position to support a load.

296,918. HAT-SWEAT. GEORGE S. BRACHER, New York, N. Y. Filed Jan. 26, 1884. (Specimens.)



Claim.—1. A sweat-leather provided with a reed dressed and finished with an application of varnish, attached to said sweat-leather without a covering, substantially as set forth.

2. A sweat-leather provided at its edge with a reed dressed and polished with an application of varnish, without covering, except the inclosing-stitches whereby it is united to the sweat.

3. A sweat-leather provided with a dressed and finished reed, *c*, without covering, and the backing-strip *f*, united to said sweat, but concealed behind the reed, substantially as set forth.

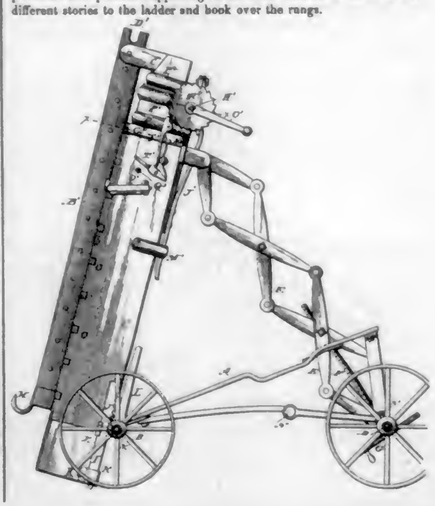
296,919. REED FOR HAT-SWEATS. GEORGE S. BRACHER, New York, N. Y. Filed Jan. 28, 1884. (No specimens.)

Claim.—1. As a new article of manufacture, a reed of rattan or analogous material impregnated with a filling material, and surface-hardened by compression and friction, all substantially as and for the purposes specified.

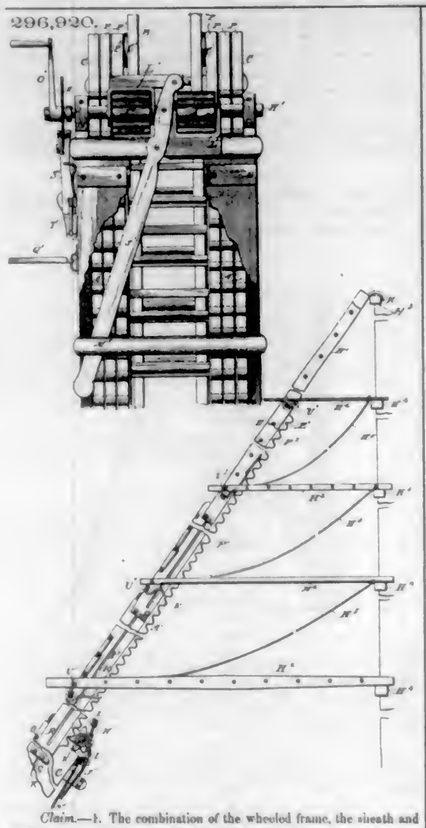
2. A method of treating reeds to improve their qualities and appearance for hat-sweat and other uses, consisting in coloring, filling, compressing, and surface finishing, all substantially as set forth.

296,920. FIRE-ESCAPE LADDER. WM. BRAHNAM, Fredericksburg, Va. Filed July 23, 1883. (No model.)

Brief.—The sheath which contains the folded ladder is pivoted to the rear axle of the truck, and is raised and lowered by a lazy-tongs brace operated by a screw. Rack-bars are secured to the ladder-sides, and the ladders are extended by adjustable pinions engaging with said racks and held extended by spring-catches. The top section is connected to the next lower section by pivoted link-bars. Supplemental ladders provided with pendent supporting-cords reach from the windows of the different stories to the ladder and hook over the rungs.



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Claim.—1. The combination of the wheeled frame, the sheath and ladder pivoted to the rear axle of said frame, the lazy-tongs and operating-screw connecting the sheath to the forward axle of said frame, and the anchors adapted to be set in the ground when the ladder is elevated, substantially as shown and described.

2. The combination of the sheath, the sections of ladder arranged one within another, and having rack-bars secured to their sides, the spring-catches adapted to connect said sections rigidly together, and the adjustable pinions adapted to engage with each pair of rack-bars in turn, substantially as shown and described.

3. The combination, with the sections of ladder having rack-bars thereon and arranged one within another, of a shaft supported in suitable bearings, a pair of pinions feathered thereon, a lever pivoted to the shaft between the pinions, and connected to the latter by sliding yokes, and means for holding the lever in desired positions, substantially as shown and described.

4. The combination, with the connected sections of ladder, of a top section connected to one of the other sections by pivoted link-bars, and having one end recessed to engage with a round of said other section, and spring-catches for forming a rigid connection between the top section and said link-bars, substantially as shown and described.

5. The combination, with the ladder, and means for elevating and supporting the same, of supplemental ladders having hooks at one end adapted to engage with rounds of the main ladder, while their other ends rest on window-sills, and having pendent cords reaching, severally, to each next lower supplemental ladder, substantially as shown and described.

296,921. SEAL. CHARLES H. BUNDY, Middletown, Ohio. Filed Feb. 23, 1884. (No model.)

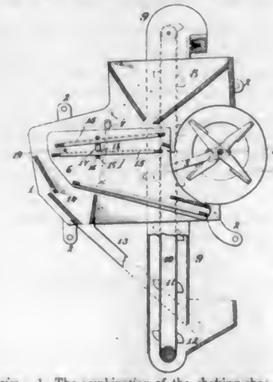
Claim.—1. A seal formed of a waxen or resinous compound, and containing a fibrous netting or web, substantially as and for the purpose set forth.

296,921.



2. As a new article of manufacture, sealing-wafers formed of a fibrous net-work or web coated with a waxen or resinous compound, for the purpose set forth.

296,922. RECLEANING ATTACHMENT FOR THRASHERS OR SEPARATORS. HOWARD CAMPBELL, Richmond, Ind., assignor to Gaar, Scott & Company, same place. Filed Dec. 7, 1883. (No model.)



Claim.—1. The combination of the shaking shoe, the plates fixed to the shoe-sides, and each provided with a pair of lateral pins, the top screen having its side edges adjacent to the centers of their length supported between the pairs of pins, to oscillate in a vertical plane between the pins, and devices for holding the screen when oscillated to adjust it to the desired plane, substantially as described.

2. A recleaning attachment for grain-separators, combining in its structure the receiving-hopper, a screen for receiving the grain from the hopper, an elevator having a chamber at its lower end, and its upper end arranged to deliver the grain to the hopper, and an inclined conductor having one end connected directly with the chamber of the elevator, and its upper end formed into a mouth arranged under the discharge-mouth of the screen, to convey the tailings to the chamber of the elevator, substantially as described.

296,923. REFRIGERATOR. JAMES CASTELL, Blue Rapids, Kans. Filed Aug. 3, 1883. (No model.)

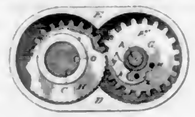


Claim.—1. In a refrigerator, the combination of the filter K' and the four-angular pipe J, substantially as shown, and for the purpose described.

2. In a refrigerator, the combination of the receptacle having dead-air spaces or chambers, ice-chambers having removable ice-pans with tapered bottoms, drip-pan filter K', and four-angular pipe J, substantially as shown and described.

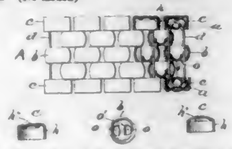
3. In a refrigerator, the overflow-receptacle consisting of a four-angled pipe with its middle portion arranged lower than its receiving and discharging ends, substantially as and for the purpose set forth.

296,924. SELF-FEEDING RATCHET-DRILL. ROBERT N. CHERRY, Jersey City, N. J. Filed Nov. 15, 1883. (No model.)



Claim.—The combination of the eccentric wheels E and E', the ratchet H, pawl A, feed-screw C, and stock B, substantially as herein shown and described.

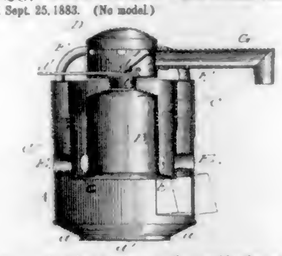
296,925. ROLLER-CHAIN. HENRY A. CHURCH, Providence, R. I. Filed Jan. 2, 1884. (No model.)



Claim.—1. The roller-chain A, herein described, consisting of the intermediate units, *b*, edge units, *a*, and binding-wires *d*, each of said units being provided with the two openings *o* through the end thereof, in combination with the metallic caps *c*, each having a closed end and parallel sides adapted to receive and be secured to said edge units, the whole arranged substantially as shown and set forth.

2. In a roller-chain, the combination, substantially as shown and set forth, of intermediate units, *b*, binding-wires *d*, edge units, *a*, smaller than the intermediate units, and caps *c*, the latter adapted to be secured to the edge units.

296,926. HOT-AIR FURNACE. PERRY H. CLARK, Minneapolis, Minn. Filed Sept. 25, 1883. (No model.)

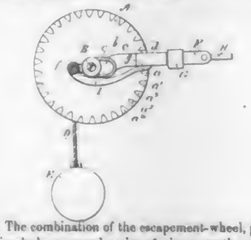


Claim.—1. In a hot-air furnace, the combination, with the inner shell or dome, B, combustion-chamber D, exit-pipe G, and pipe *b*, of the hinged perforated hood or damper *f*, damper *d*, and operating-handle *d'*, substantially as and for the purpose herein shown and described.

2. The combination, with the combustion-chamber D and exit-pipe G, of the perforated hood or damper *f*, substantially as and for the purpose set forth.

3. In a hot-air furnace, the combination, with the shells B C, provided with the flues F E, of the combustion-chamber D, opening into the interior shell, B, said opening being covered by a damper, the actuating-rod of which is also pivotally connected to and actuates a perforated hood, *f*, communicating with the exit-pipe, as and for the purpose set forth.

296,927. VARIABLE ESCAPEMENT. JESSE D. COTTRELL, Central Falls, R. I. Filed Jan. 17, 1884. (No model.)



Claim.—1. The combination of the escapement-wheel, provided on its side with a circularly-arranged series of pins or teeth, with a reciprocating pallet and a pivoted pawl arranged for simultaneous movement with each other at the face of the escapement-wheel, substantially as and for the purpose specified.

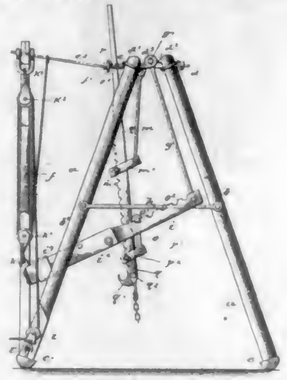
2. The combination of the escapement-wheel, provided on its side with a circularly-arranged series of pins or teeth, with a reciprocating pallet and a pivoted pawl arranged for simultaneous movement with each other at the face of the escapement-wheel, and means for moving the reciprocating pawl both directly and pivotally, substantially as described.

296,928. MANUFACTURE OF PAPER. ENOS M. CRANE, Dalton, Mass. Filed Mar. 14, 1884. (No specimens.)

Claim.—1. The method herein described of designating the thickness or weight of paper of any description, which consists in impressing upon each sheet during the process of manufacture a water-mark indicating the said thickness or weight.

2. As a new article of manufacture, a sheet of paper having impressed upon it by a water-mark an arbitrary character which shall indicate the thickness or weight of said paper per unit of superficial area.

296,929. STUMP-EXTRACTOR. AMBROSE S. CROXTON, Cedar Springs, Mich.; Olive A. Croxton, Administratrix of said Croxton, deceased. Filed July 25, 1883. (No model.)



Claim.—1. The combination, with the shears *b*, mounted on the runners *c*, and provided at their upper ends with the eyebolts d^2 and band *d*, of the shear *b'*, mounted on the runner *c'*, and provided at its upper end with the eyebolts d^2, band *b'*, having projecting shanks carrying the sleeves *e*, and plate for forming the guide, and the pintle *g'*, for connecting the eyebolts d^2 d^2 and suspending the hanger-rod *g*, substantially as specified.

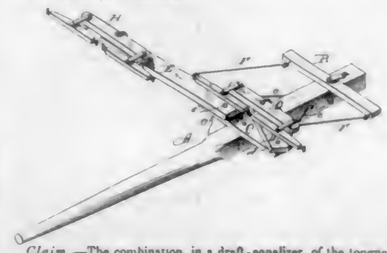
2. The combination, with the shears *b'* of the frame *a*, having the rod e^2, connected to the plate *e'* of the lifting-bar guide, of the pulley-shear connected to the rod e^2 and to the shears *b'*, substantially as specified.

3. The combination, with the frame *a*, provided with the hanger-rod *g*, pivoted to the fulcral end of the hoisting-lever, the rope and tackle for operating the power end of said lever, and the pulley-shear, of the hanger-rod *m*, provided with the pivoted clutch-block *m'*, the short hanger *o*, carrying the cross-pin *o'* at its upper end and the pivoted clutch-block p^2 at its lower end, and the notched lifting-bar *q*, provided with the hook and the perforation in its lower end, said lifting-bar passing through the clutch-blocks p^2 *m'*, the space between side bars of the lever *i*, and through the guide at the top of the frame, substantially as specified.

4. The round rod having the friction-rings and dogs, adapted to engage the clutch-blocks, the rod to pass through rings and between the iron side bars of the lever *i*, substantially as specified.

5. The bifurcated wooden lever A, having the bifurcated face-plate, in combination with the forked bearing carrying the pivoted hanger, the rack-stem, pawl and ratchet, and operating-crank, as specified.

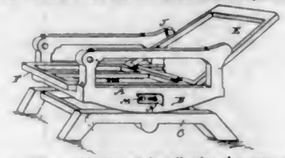
296,930. DRAFT-EQUALIZER. WILLIAM CROSIER, Goodwin, Dak. Filed Oct. 18, 1883. (No model.)



Claim.—The combination, in a draft-equalizer, of the tongue A, bar B, centrally pivoted thereto, bar C, rigidly secured to the tongue, arms D E, respectively pivoted at the ends of the rigid bar C, the bar

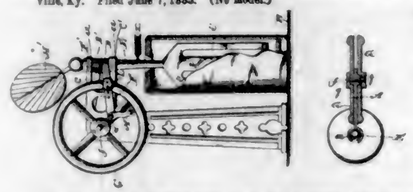
D extending toward the center and having secured to its rear end a pivoted bar, G, and affording therefor a central pivot-bearing carrying the central draft devices at each end, a bar, H, centrally pivoted at the outer end of the arm E and carrying whiffletrees, and connecting-rods F, one of which is connected to the bar D and bar B, for the purpose set forth.

296,931. COMBINED PLATFORM-ROCKER AND RECLINING-CHAIR. PETER B. CUPP, Van Wert, Ohio. Filed July 19, 1883. (Model.)



Claim.—The combination of the following elements: the seat-frame A, having side grooves and arms provided with closed slots H, the sliding seat F, having rack K, the hinged back E, having studs G, projecting laterally into said slots, the rotatable pinion-shaft M L, having a squared end, and the forked sliding plate N, arranged as described, to lock said shaft, all as hereinbefore set forth.

296,932. CHURN. JESSE M. CURTICE and WILLIAM H. CURTICE, Louisville, Ky. Filed June 7, 1883. (No model.)

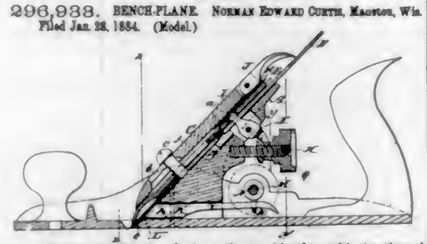


Claim.—1. The combination, with two horizontal arms having half-bearings at their outer ends, of a dasher-shaft having grooves adapted to register with the half-bearings, and an intermediate drum, wheels journaled to the standard, and two straps, the opposite ends of which are respectively connected to the wheels and to the drum of the dasher-shaft, substantially as described.

2. The combination, with the standard, horizontal arms having bearings at their outer ends, and two drive-wheels journaled to the standard, of a dasher-shaft and sectional straps connecting the dasher-shaft and drive-wheel, substantially as described.

3. The combination, with the standard A, having arms C C', the bearings *g*, and shaft *f*, of the wheels G, dasher-shaft E, and straps connecting the wheels and dasher-shaft, substantially as described.

296,933. BENCH-PLANE. NORMAN EDWARD CURTIS, Mauston, Wis. Filed Jan. 28, 1884. (Model.)

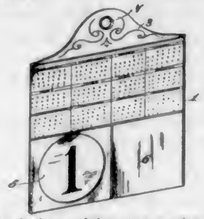


Claim.—1. In a bench-plane, the combination, with the pivoted plane-iron having in its lower rear side a longitudinal groove, of the laterally-adjustable lever adapted to fit into the groove of the plane-iron, and capable of adjustment by the hand, substantially as and for the purpose set forth.

2. In a bench-plane, the combination, with the longitudinally-grooved bed-piece, of the cap-iron having the rear headed projection or screw, with its head entering the groove of said bed-piece, and the adjusting-lever engaging said iron, and actuated by an adjusting-nut, substantially as and for the purpose set forth.

3. In a bench-plane, the combination, with the pivoted plane-iron having in its lower rear surface a longitudinal groove, of the laterally-adjustable lever having a tongue entering the groove of the plane-iron, and the headed screw carrying a nut or sleeve provided with a loop which receives the outer end of the aforesaid lever, substantially as and for the purpose set forth.

296,934. CALENDAR. JOHN CUSSONS, Glen Allen, Va. Filed Feb. 13, 1884. (No model.)



Claim.—1. A calendar consisting of an envelope having a pocket open at the top and closed at the bottom and sides, and provided at one corner with a face-aperture and a sheet bearing numerals adapted to be inserted into and removed from the pocket of the envelope, and when therein to disclose the day of the month through the corner-aperture, substantially as described.

2. A calendar consisting of an envelope having at one corner a face-opening and a sheet bearing daily dates and folded into quarto, as described, said sheet when so folded being capable of insertion into and removal from the pocket of the envelope, and when therein to disclose the numeral designating the day of the month through the corner face-aperture, substantially as set forth.

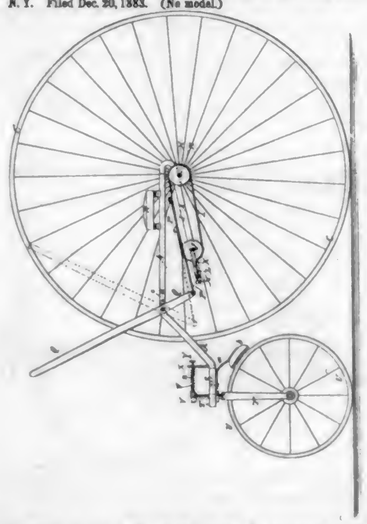
3. A calendar consisting of an envelope having its face provided with an aperture, and bearing an annual calendar and a sheet bearing numerals on its opposite surfaces and folded into quarto, as described, and capable of insertion into and removal from the pocket of the envelope, and when therein to disclose the day of the month through the face-aperture, substantially as set forth.

296,935. PROCESS OF MANUFACTURING CELLULOSE FROM WOOD, &c. CARL FERDINAND DAHL, Dantzic, Prussia, Germany. Filed Mar. 4, 1884. (No specimens.)

Claim.—1. The process of producing cellulose from wood or other vegetable matters by boiling the same under pressure in a watery or hydrated solution containing sulphate of soda, carbonate of soda, soda hydrate, and sodium sulphide, substantially as set forth.

2. The process of treating sulphate of lime and the salts regained from the resultant material in the production of cellulose by boiling the same with lime, substantially as and for the purpose set forth.

296,936. HAND-POWER VEHICLE. THOMAS A. DAVIES, New York, N. Y. Filed Dec. 20, 1883. (No model.)



Claim.—1. In a hand-power vehicle, the combination, with the frame A and the axle B, of an endless chain passing around chain-wheels on the frame and axle, and hand-levers pivoted to the frame, and hav-

ing their lower ends connected to the said endless chain, substantially as herein shown and described.

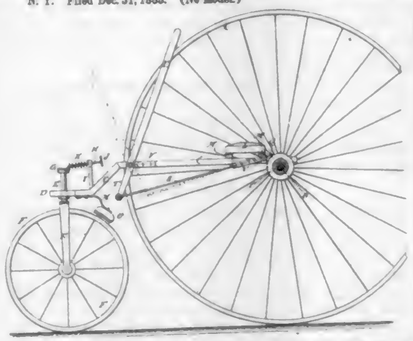
2. In a hand-power vehicle, the combination, with the arm of the frame A, of the spring *a*, secured to said arm, and provided with the brake-shoe *b* at its free end, substantially as described.

3. In a hand-power vehicle, the combination, with the frame A and the hand-levers Q, of the stops *c*, substantially as herein shown and described, whereby the movements of the said hand-levers are limited, as set forth.

4. In a hand-power vehicle, the combination, with the frame A, the axle B, and the drive-wheels C, of the hand-levers Q, the endless chain I, the chain-wheels H J, and the ratchet-wheel and pawl D E, substantially as herein shown and described, whereby the vehicle will be driven forward by the movements of the said levers, as set forth.

5. In a hand-power vehicle, the combination, with the frame A, the chain-wheel J, and the endless chain I, of the clevis K, the rod L, and the hand-nut M, substantially as herein shown and described, whereby the tension of the said endless chain can be readily regulated, as set forth.

296,937. HAND-POWER VEHICLE. THOMAS A. DAVIES, New York, N. Y. Filed Dec. 31, 1883. (No model.)

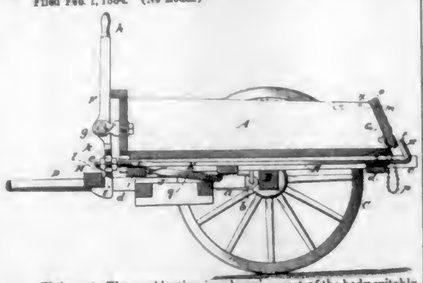


Claim.—1. In a hand-power vehicle, the combination, with the hubs or hub of the drive wheels or wheel A and the frame C, of the ratchet-wheels P, the flexible pawls Q, and the levers T, substantially as herein shown and described, whereby the propelling-power will be applied directly to the drive-wheels, as set forth.

2. The flexible pawl Q, constructed substantially as herein shown and described, with links so constructed that the said pawl will bend, as set forth.

3. In a hand-power vehicle, the combination, with the frame C, the connecting-rods S, and flexible pawls Q, of guides U, substantially as herein shown and described, whereby the said flexible pawls are kept from folding or buckling while being pushed back for another stroke, as set forth.

296,938. DUMPING-WAGON. LEMUEL C. DEER, Lake Charles, La. Filed Feb. 1, 1884. (No model.)

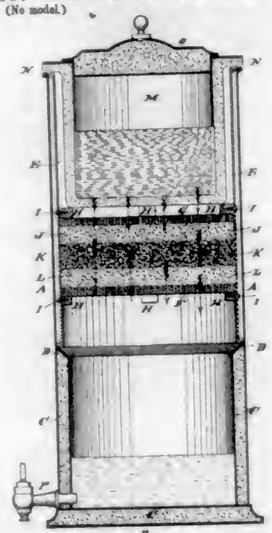


Claim.—1. The combination, in a dumping-cart, of the body suitably mounted and pivoted, a bar adapted to move longitudinally in guides located on the under side of the body, and adapted to hold the end-gate in a closed position, a lever pivotally secured on the cart-body, and capable of securing the body in proper position, and adjustably connected to the said longitudinal bar, substantially as and for the purpose set forth.

2. The combination, in a dumping-cart, of the body suitably mounted, and provided with devices for securing the body in proper position and for maintaining the end-gate in a closed position, and connected to each other, to be simultaneously withdrawn, and an end-gate, G, pivoted as described, and limited in its movements by chains or cables, substantially as set forth.

3. The combination, in a dumping-cart, of the body, pivoted as described, body and end-gate devices, connected and operating as set forth and a bar secured pivotally on the under side of the body, and adapted, when said body is tilted, to come in contact with and be braced by a block secured between the shafts, substantially as specified.

296,939. FILTER. ABNER B. DENTON, St. Louis, Mo. Filed July 28, 1883. (No model.)



Claim.—1. The combination, with an outer case and porous vessel removable therefrom, of an inner case intermediate of the porous vessel and outer case, provided with perforated plates having filtering material between them, as set forth.

2. The combination of outer case, A, having shoulder D, inner case, E, supported on the shoulder, perforated plates fitting the interior of the inner case, having filtering material between them, and porous vessel M, supported on the cases by a suitable rim, and removable therefrom without removing the inner case, as set forth.

3. The combination, in a filter, of the outer case, A, and a removable case, E, with removable perforate plates F G, and removable rests or cleats H, for the purpose set forth.

296,940. FRAME FOR POCKET-BOOKS, &c. HIPPOLYTE DIDOCT, Fils, Paris, France. Filed Feb. 27, 1884. (No model.)



Claim.—A frame for pocket-books and similar receptacles, comprising the two jaws A and A′, of elastic metal, hinged together as shown, and provided with concave-convex engaging-flanges c and c′, respectively, constructed and arranged to operate substantially as set forth.

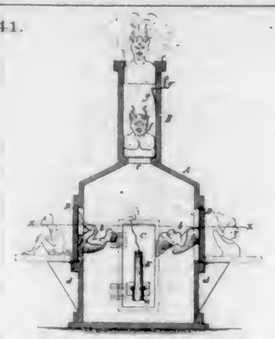
296,941. TOY. CHARLES DIENER, New York, N. Y. Filed Feb. 23, 1884. (No model.)

Claim.—1. A fire-cracker toy made substantially as herein shown and described, and consisting of an inclosure in which the fire-cracker is to be exploded, the inclosure being provided with images arranged to be deployed by the force of the explosion, substantially as set forth.

2. The inclosure A, formed with the chimney B, having an image, *f*, placed therein, and provided with the spring *g*, for holding the image at the top of the chimney, substantially as described.

3. The door C of the inclosure A, formed or provided with the

296,941.



socket *a*, for holding a fire-cracker, substantially as and for the purposes set forth.

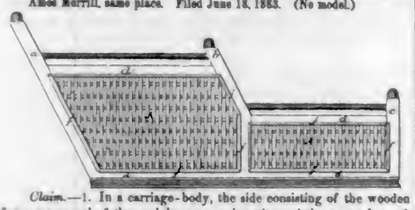
296,942. WRENCH. JAMES DU SHANE, South Bend, Ind. Filed Nov. 30, 1883. (No model.)



Claim.—1. In a nut or pipe wrench, the combination, with the rack-bar, of the fixed jaw, the movable-jaw frame, the screw therein, and a threaded nut on this screw having a groove in its periphery, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination, with the rack-bar, of the fixed jaw, the movable-jaw frame, the adjusting-screw having its bearings therein, the nut on this screw, and the collar G, adjustably fixed thereon, substantially as and for the purposes described.

296,943. CARRIAGE-BODY. GEORGE A. ELLIS, Gardner, Mass., assignor to Henry Heywood, George Heywood, Alvin M. Greenwood, and Amos Merrill, same place. Filed June 18, 1883. (No model.)



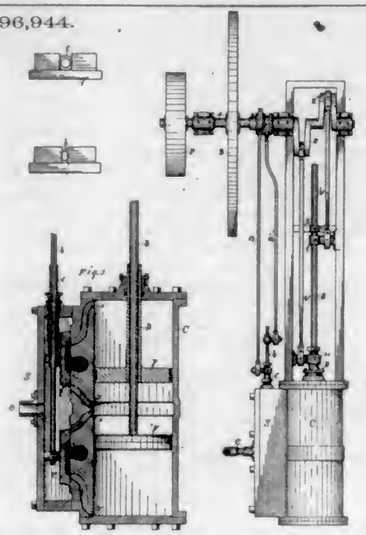
Claim.—1. In a carriage-body, the side consisting of the wooden frame composed of the upright posts *a*, *b*, and *c* and the cross-pieces *d*, connecting said uprights, combined with panels of woven cane or similar material united with said frame in substantially the manner and for the purpose described.

2. A carriage-body having its sides composed of the upright posts *a*, *b*, and *c*, cross-pieces *d*, connecting said uprights and constituting frames, panels of woven cane or similar material united to said frame, the usual interior upholstering, and board foundations interposed between said upholstering and panels, and to which the upholstering is secured, substantially as set forth.

296,944. BALANCED STEAM-ENGINE. BENJAMIN FIELD, Dalley, Mich. Filed Aug. 18, 1883. (No model.)

Claim.—In a steam-engine, the combination, with a cylinder and steam-chest, each having two intermediate and two end induct-ports, two exhaust-ports, and slide-valves *r t*, of two cut-off-valve rods, one playing through the other, connected by independent eccentrics to the shaft A, two piston-rods which are adapted to play one through the other, having piston-heads F F′ and connecting-rods e e′, the cranks E E′, as specified, and the shaft A, the whole arranged substantially as set forth.

296,944.

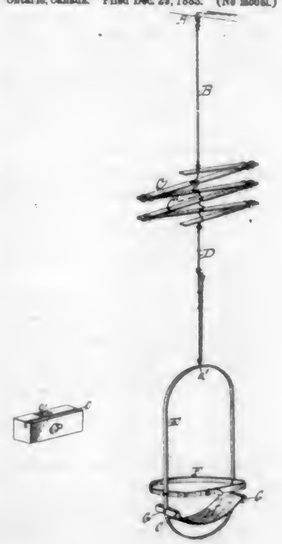


296,945. FOUNTAIN ATTACHMENT FOR MARKING-BRUSHES. PETER C. FORRESTER, Leavenworth, KANS. Filed Aug. 20, 1883. (No model.)



Claim.—An elastic bulb, A, provided with end necks, B B′, and a vent, E, in the neck B, extending from the enlargement in the bulb to the lower part of said neck, said bulb being adapted to be passed over any ordinary brush-handle, substantially as shown and described.

296,946. BABY-JUMPER. CHARLES TOWNSEND GARDNER, Napanee, Ontario, Canada. Filed Dec. 29, 1883. (No model.)

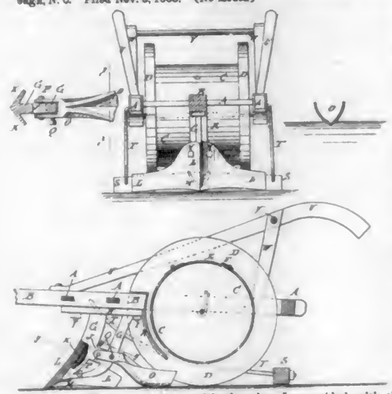


Claim.—1. A baby-jumper consisting of an oval seat-frame formed from a single blank, slotted cleats, and a confining hoop or band secured to the frame, a yielding seat the ends of which are fastened in the slots of the cleats, and means for suspending said frame and its attachments, substantially as shown and described.

2. In a baby-jumper, a spring formed by uniting the ends of a series of suitable blanks or staves, substantially as shown, in combination with a safety-cord passed through perforations in the intermediate staves, and its ends secured to the upper and lower plates of the springs, and detachably connected to suspension-cords, as and for the purpose specified.

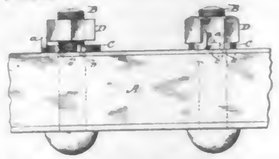
3. In combination, the spring C, having means to suspend it from a support, and provided with an independent safety-cord, C', adjusting-cord D, a seat-frame, E, having a confining hoop or band, F, and slotted cleats G, secured thereto, and a seat H, the ends of which are fastened in the slots of the cleats, substantially as shown and described.

296,947. COTTON-PLANTER. WILLIAM THOMAS GARDNER, Tarboro, N. C. Filed Nov. 8, 1883. (No model.)



Claim.—The combination, with the plow L, provided with the socket M, and the adjustable pivoted channel-opener O, of the standard G, provided with the side wings, K, and made in two parts, united in a point at their lower ends, connected at their upper ends by the plate H, and provided at their middle parts by a web, J, substantially as shown and described.

296,948. NUT-LOCK. JOHN GILSOUR, Columbus, Ind. Filed Dec. 20, 1883. (No model.)



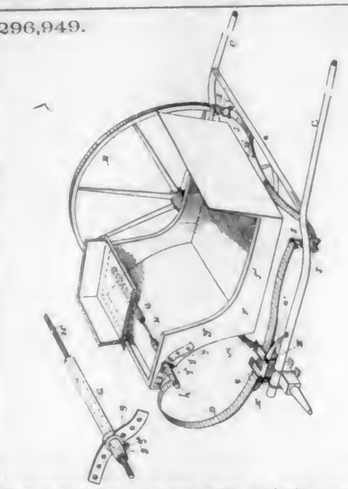
Claim.—1. As a new article of manufacture, a washer for locking nuts upon bolts, having the projections *b b'* formed on one side of the same, and an upturned end, *a*, the diameter of the washer being enough larger than the diameter of the bolt to permit the upturned end to be bent into or out of the path of the nut by bending the washer at a point between its upturned end and the projection *b'*.

2. A device for locking nuts, consisting of an open ring, one end of which projects outward and apart from the other, so that its upturned end is in a circumference of longer radius than that in which the inner end lies, and having on its under side two or more projections, whereby the nut may be screwed to place without striking the outer end of the ring, and may force the projections into the underlying surface, and the outer end may then be bent inward against the side of the nut, substantially as and for the purpose stated.

296,949. TWO-WHEELED VEHICLE. WILLIAM T. GOODMAN, Fulton, Cal. Filed Jan. 14, 1884. (No model.)

Claim.—1. In a two-wheeled vehicle, the side springs, D, having upwardly and forwardly curved rear ends, and the front cross-spring, D', connected with the side springs by links, in combination with the body

296,949.



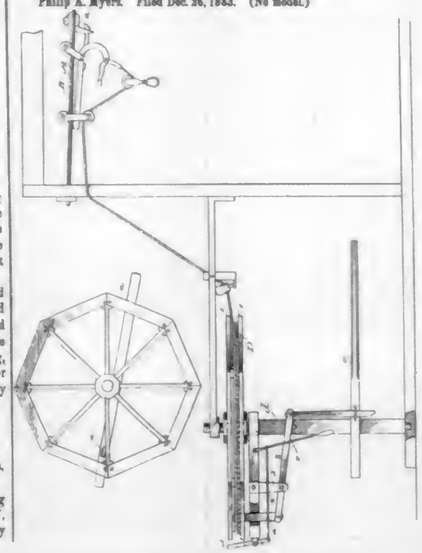
F, supported in front on the cross-spring, and having a cross-shaft, H, loosely mounted or journaled through its rear or seat portion, said shaft having its projecting ends journaled in rear curved ends of the side springs, substantially as herein described.

2. In a two-wheeled vehicle, the side springs, D, having curved rear ends, and front cross-spring, D', in combination with the body F, having pipe G through its seat portion, and the transverse pivot-shaft H, on the ends of which the curved rear ends of the side springs are pivoted, substantially as herein described.

3. In a two-wheeled vehicle, the side springs, D, having the links I pivoted in their forward ends, said links having the small bottom loops, *i*, in combination with the front cross-spring, D', having in its ends the pivoted links J, passing through the small loops *i*, substantially as and for the purpose herein described.

4. In a two-wheeled vehicle, the axle A and shafts C, clipped thereto, in combination with the springs D, the clips E, securing them to the axle, and the yoke *e*, having arm *e'*, secured to the shafts, substantially as and for the purpose herein described.

296,950. ELEVATOR-POWER FOR HAY-CARRIERS. JOHN S. GRAHILL, Hayesville, Ohio, assignor of two-thirds to Francis E. Myers and Philip A. Myers. Filed Dec. 26, 1883. (No model.)

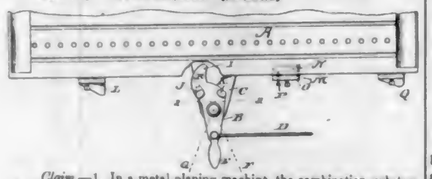


Claim.—1. In combination with a hay-carrier and track of substantially the class described, a winding drum or wheel loose on its shaft, an ordinary horse-power mechanism within reach of the driver, for connecting or disconnecting at will the wheel and horse-power shaft, and a hoisting-rope of the carrier connected to the wheel, all substantially as described.

2. The combination of the track, the carrier and rope, and the wheel or drum loose on its shaft *d*, a pole for the horse, and mechanism for connecting or disconnecting the wheel and shaft within reach of the driver, all substantially as described.

3. In combination with an elevated carrier, a vertical shaft, a wheel loosely attached to its upper end, means for connecting the draft-animal to the shaft, devices for connecting or disconnecting shaft and wheel, and a rope to the carrier, adapted to be wound on the wheel, whereby the rope is kept out of the way of the animal, all substantially as described.

296,951. METAL-PLANING MACHINE. GEORGE A. GRAY, Jr., Covington, Ky. Filed Oct. 22, 1883. (No model.)

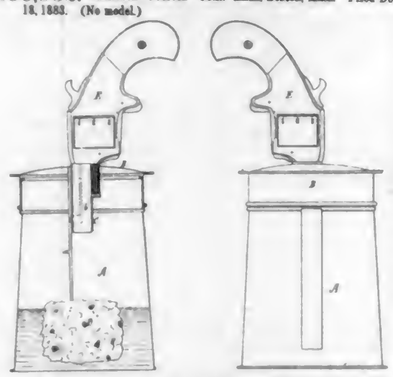


Claim.—1. In a metal-planing machine, the combination, substantially as set forth, of a reversing-tumbler, a front dog adjustable along the table, and adapted to throw the tumbler into position to give the table a backing motion, a suppressible back dog adjustable along the table, and adapted to throw the tumbler into position to give the table a forward motion, and a stop-dog adapted to throw the tumbler into a neutral position.

2. In a metal-planing machine, the combination, substantially as set forth, of a reversing-tumbler, a front dog, a suppressible back dog, and a stop-dog adjustable along the table.

3. In a metal-planing machine, the combination, substantially as set forth, of a reversing-tumbler, a front dog, a suppressible back dog, and a stop-dog fitted to throw the tumbler and start the forward table motion, and upon its retreat to throw the tumbler to a neutral point.

296,952. SIGNAL-TORCH. JOHN HALL, Boston, Mass. Filed Dec. 18, 1883. (No model.)



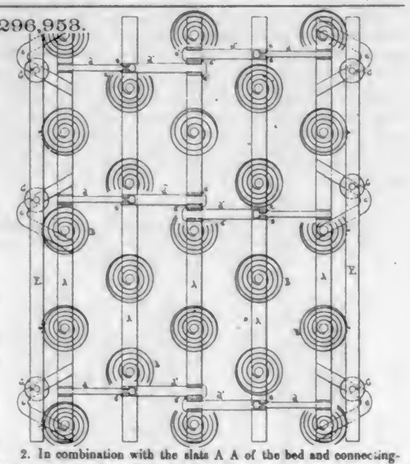
Claim.—1. The combination of the pot or can and its cover with the torch and pistol or fire-arm adapted to such cover, so as to operate substantially and for the purpose as set forth.

2. The combination of the can or pot and its cover with the torch and the pistol-barrel socket or receiving-tube adapted to such cover, essentially as represented.

296,953. SPRING BED-BOTTOM. BENJAMIN A. HAM, Boston, Mass. Filed Sept. 15, 1883. (No model.)

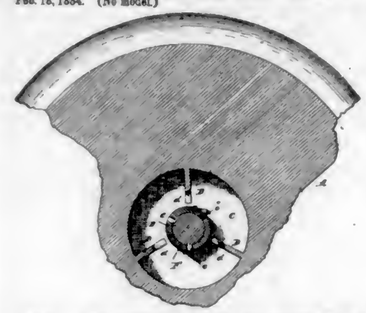
Claim.—1. The slats A A and the springs B, in combination with the cross-bars *d d'* and clips *e e'*, attached to the slats, substantially as described, whereby the bars may slide at right angles to the slats in the clips *e e'*, substantially as set forth.

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2. In combination with the slats A A of the bed and connecting-bars, supported springs B, the bracket-pieces *e e*, the top side slat, E, and the auxiliary spring C, placed directly beneath said top slat and upon the bracket-pieces *e e*, substantially as described.

296,954. CAR-WHEEL. MAHLON HAMLIN, Catawissa, Pa. Filed Feb. 18, 1884. (No model.)



Claim.—1. The chamber C in a car-wheel, surrounding the eye of the same and provided with the slotted flanges D D, integral with the wheel, in combination with the perforated steel casing in the eye, substantially as and for the purpose set forth.

2. The oil-chamber C and flanges D D, as constructed, in combination with the perforated steel casing F, and the pins O O, playing in the perforations of same, substantially as and for the purpose set forth.

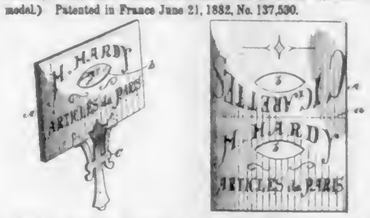
296,955. NON-HEAT-CONDUCTING VESSEL. HIRAM M. HANMORE, White Plains, N. Y. Filed Mar. 4, 1884. (No model.)



Claim.—1. The combination, with a vessel for containing liquid or solid substances, of a non-conducting covering of raw-silk waste and calcined or carbonate of magnesia, and a surrounding jacket, substantially as herein described.

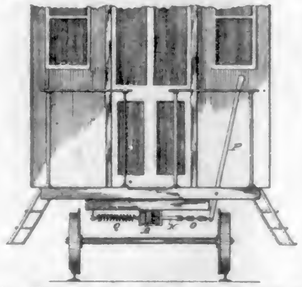
2. The combination, with a vessel for containing liquid or solid substances, of a covering of raw-silk waste wrapped around the vessel, a coating of calcined or carbonate of magnesia applied to the raw-silk waste, a superposed layer of paper, a layer of felt applied outside the paper, a second layer of paper outside the felt, and an inclosing-case, the whole forming a non-conducting protection, substantially as and for the purpose herein described.

296,956. ADVERTISING MUSICAL INSTRUMENT. HIPPOLYTE HARDY, Paris, France. Filed Dec. 6, 1882. Renewed Feb. 18, 1884. (No model.) Patented in France June 21, 1882, No. 137,530.



Claim.—The folded advertising-card A, provided with openings *b*, in combination with the intermediate reed or diaphragm sheet, B, and removable clip or handle C, as herein shown and described.

296,957. CAR-COUPLING. CHARLES L. HATHAWAY, Austin, Tex. Filed Feb. 23, 1884. (No model.)



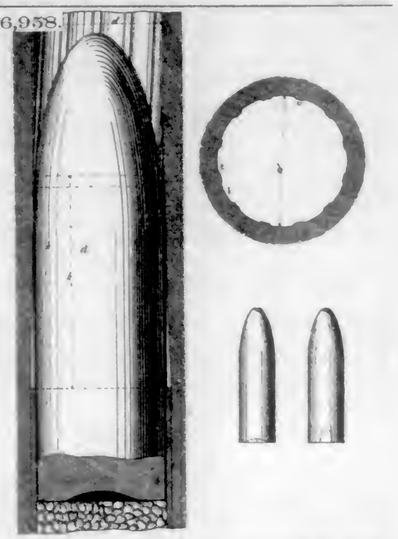
Claim.—The combination of the draw-head forming the shoulder having the spring-bolt, the lever pivoted to the same, the connecting-rod, and the lever and rectangular bail, with the sliding bar fitting with its eyed inner end upon the curved inner end of the lever, having a lug or enlargement upon its inner end sliding in a slot in the side of the draw-head, and having means for pulling it out to the side, as and for the purpose shown and set forth.

296,958. BARREL FOR FIRE-ARMS. WILLIAM HEBLER, Zurich, Switzerland. Filed Jan. 11, 1883. (No model.) Patented in Italy Dec. 27, 1882, No. 14,898; in Belgium Dec. 30, 1882, No. 59,888; in Sweden Mar. 13, 1883; in France Mar. 30, 1883, No. 152,669; in Spain May 6, 1883, No. 3,747, and in England July 3, 1883, No. 333.

Claim.—1. The rifle-barrel having broad shallow grooves and narrow lands, the surfaces of which lands and the bottoms of which grooves are in arcs of concentric circles, the said lands and grooves being connected by curved or rounded portions, and having a pitch of one turn in from fifteen to forty centimeters, and also having a slightly conoidal portion connecting the rifled portion of the barrel with the bullet-seat, as set forth.

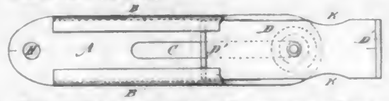


296,958.



2. A rifled gun-barrel provided with a bullet-seat of slightly conoidal form, adapted to receive a projectile or bullet, the diameter of which bullet, including its envelope or wrapper, is greater than the diameter of the bore of the barrel taken in the grooves, whereby, as the cartridge is fired, the bullet is engaged by the lands, and the space in the barrel behind the bullet is rendered gas-tight, as set forth.

296,959. LABEL-HOLDER FOR MAIL-BAGS. FRANK LOUIS HEROLD, Terryville, Conn., assignor to the Eagle Lock Company, same place. Filed Mar. 12, 1884. (No model.)



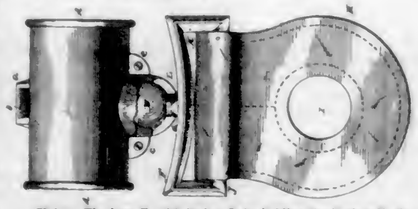
Claim.—1. In a tag or label holder, the combination, with the strip A, having grooved flanges B, and a longitudinal slot, C, of the slide D and the pintle F, substantially as herein shown and described.

2. In a tag or label holder, the combination, with the strip A, having grooved flanges B, and a longitudinal slot, C, of the slide D, the pintle F, and the spring-washer E, substantially as herein shown and described.

3. In a tag or label holder, the combination, with the strip A, having grooved flanges B, and a longitudinal slot, C, of the slide D, having upturned ends D', substantially as herein shown and described.

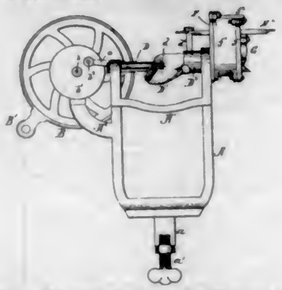
4. In a tag or label holder, the combination, with the strip A, of the slide D, having notches K in the side edges at one end, substantially as herein shown and described.

296,960. NECK-YOKE. NICHOLAS HIATT, Independence, Kans. Filed Dec. 20, 1883. (No model.)



Claim.—The loop F, with its bar J, for holding the leather H, the neck *e*, and the ball D, all cast in one piece, in combination with the divided sleeve provided with a shell in which is a globe-shaped socket to receive and retain the ball D, substantially as and for the purpose set forth.

296,961. CHERRY-SEEDER. WILLIAM F. HIBNER, Baltimore, Md., assignor to the Scott Manufacturing Company of Baltimore City. Filed Nov. 15, 1883. (Model.)



Claim.—1. The combination of the tube D^2, having its forward end cut diagonally, plate H, and tube A, arranged therein, box G, plate I, and tube *i*, attached to the front of said box, and means, substantially as described, for reciprocating the tube D^2 and its connections, as set forth.

2. The combination, with the main frame A, of the rod D, trough D', and tube D^2, attached together, means for reciprocating them in said frame, box G, having perforated top, and plate E, attached to the tube D^2 and having a perforation therein, and arranged to reciprocate therein and act as a trap for the cherries, as set forth.

3. In combination, box G, having perforated top, tube D^2, having tube *h* secured therein, tube *i*, attached to the front of box G in line with tube A, standard *d'*, plate E, attached to said standard, and means, substantially as described, for reciprocating tube D^2 and plate E simultaneously, as set forth.

296,962. SPINDLE-BOLSTER FOR SPINNING-MACHINES. ADDISON S. HOPKINS, Pascoag, R. I. Filed May 31, 1883. (No model.)

Brief.—The bolster-case is provided in its upper end with a conical shoulder. The bolster is provided with a conical flange which is adapted to fit loosely upon the said shoulder, and is also provided below its bearing-surface with a slot for engagement with a pin to prevent its rotation, said construction permitting partial axial and vertical movement of the bolster within the case.



Claim.—The bolster-case A, having a socket for the reception of the bolster, and provided in its upper end with a conical shoulder and a pin, M, in combination with the bolster E, having a projecting flange formed with a conical shoulder on its upper side adapted to fit loosely and be supported upon the conical shoulder in the bolster-case, and provided below its bearing-surface with a slot, *d*, for engagement with the pin M, as and for the purpose set forth.

296,963. FOUNTAIN-PEN. JAMES P. HOTT, Newtown, Conn. Filed Feb. 23, 1884. (No model.)

Claim.—1. The hollow casing A, having the upper end tightly closed and the lower end nearly closed, to form a holding-seat for a separate pen, as C, with a point, A', properly formed to constitute a writing-point integral with the body of the case A, whereby the said casing may be used as a pen, or as a holder for a separate pen, or both simultaneously, as herein specified.

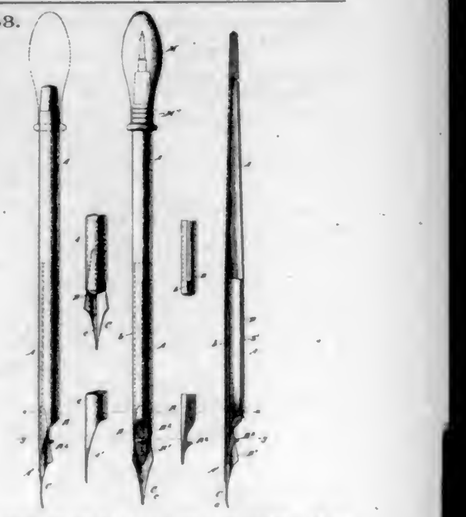
2. The casing A, adapted to perform the double functions of a pen-handle and ink-reservoir, in combination with a suitable writing-point at the lower end, with an elastic bulb, M, at the upper end, and with a separate pen, as C, all arranged for joint operation, as herein specified.

3. The inner case or feeder, B, having the split *b*, in combination with the outer casing, A, having a tightly-closed upper end, arranged for joint operation, as herein specified.

4. The inner case or feeder, B, having a point, B', and a projection, B^3, the outer case, A, having a point, A', and means for tightly closing the upper end, combined and arranged for joint operation, as herein specified.

5. In a fountain-pen, the outer case, A, and inner case or feeder, B, combined as shown to present a thin annular aperture between them, in combination with a coating of wax or analogous water-repelling material applied on one of the surfaces, substantially as herein specified.

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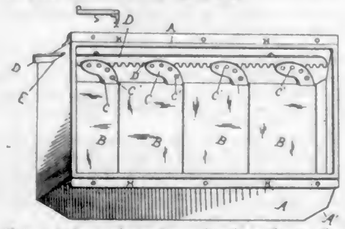


6. A fountain-pen case in two parts—one within the other—the inner part, B, having a projection, B^3, and being removable and adjustable by sliding within the other, substantially as herein specified.

7. In a fountain-pen, the elastic bulb M, in combination with the outer case, A, and adjustable inner case or feeder, B, the device being arranged to allow the slow escape of the ink, as herein specified.

8. A fountain-pen having two concentric casings, A and B, one of which is equipped with a pen-point, A', integral therewith, arranged as shown, so as to serve at will, either as a pen itself or as a holder to receive a separate pen, C, and to supply ink properly under either condition, as herein specified.

296,964. LOCOMOTIVE ASH-PAN. JOSEPH W. HOYT and JOHN WESTLEY TWIGGS, Jackson, Mich., assignors of one-third to Derrick O. Dyer, same place. Filed Dec. 6, 1883. (No model.)



Claim.—1. In an ash-pan, the combination of the pan, the pivoted bottom slats or sections provided with a rack curved on an arc struck from their pivots, and the rack-bar suitably supported in position to engage said curved racks and movable longitudinally, substantially as set forth.

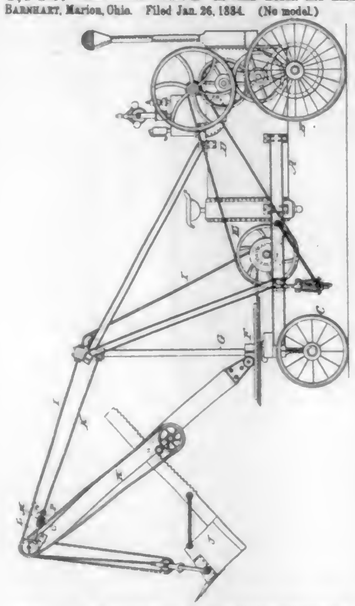
2. In an ash-pan, the combination, with the pan and the pivoted bottom slats or sections provided with a plate projected vertically from one end, of the rack-teeth projected laterally from the said plate below its upper edge and arranged in the arc of a circle, and the rack bar suitably supported in position to engage the rack-teeth, substantially as and for the purposes specified.

3. In a locomotive ash-pan, the herein-described slats or sections pivoted in the pan, and having the forward and rear edges beveled rearwardly from their upper to their lower sides, said bevels being formed in similar angles on the opposite edges, whereby the slats may be reversed and extended the full length of said slats, substantially as described, whereby the joint between the adjacent slats is formed in a continuous inclined plane, substantially as and for the purposes specified.

4. The ash-pan, substantially as hereinbefore described, composed of the pan having a slot formed in one side, the slats pivoted in the pan and provided with curved racks, the rack-bar secured within the pan and meshed with the curved racks, the pin or stud having one end secured to the rack-bar and its opposite end projected through the slot F,

and the link arranged outside the pan and secured to the pin or stud, substantially as and for the purposes set forth.

296,965. TRAVELING CRANE. EDWARD HUBER and HENRY M. BARNHART, Marion, Ohio. Filed Jan. 26, 1884. (No model.)

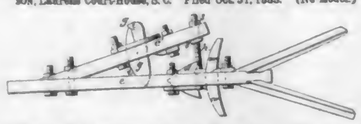


Claim.—1. The combination of the traction-engine truck having the boiler, windlass, and the engine, the mast secured upon the turn-table operated by the windlass, the crane-beam secured at its lower end upon the turn-table, a brace-chain extending from the upper end of the mast, and a bail secured to the outer end of the crane-beam, and having a spring-cushioned rod secured to the outer end of the brace-chain, as and for the purpose shown and set forth.

2. The combination of the upright mast of a crane, the crane-beam, a brace-chain secured to the upper end of the mast, a bail secured to the upper end of the crane-beam and forming a box for the reception of a spring-cushion, and a rod secured to the end of the brace-chain, and bearing with its enlarged end against the outer end of the spring, as and for the purpose shown and set forth.

3. The combination of a bail secured to a crane-beam and forming a box at its middle, having its rear end closed and perforated, a spring bearing with its rear end against the closed end of the box, and a rod attached to the end of a brace-chain sliding in the perforated end of the box, and bearing with its enlarged outer end against the outer end of the spring, as and for the purpose shown and set forth.

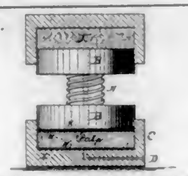
296,966. SHOVEL-PLOW. ROBERT H. HUDGINS and HENRY R. ALLISON, Laurens Court-House, S. C. Filed Oct. 31, 1883. (No model.)



Claim.—The combination, in a cultivator-plow, with the main beam *c*, angularly-placed adjustable beam *c'*, and bracing-standards *a b* of the shovel *d*, the bow-scraper *w*, secured upon the rear standard, as described, and scraper *g m*, having side and bottom cutting-flanges, *i i*, secured to the forward standard, all constructed and arranged substantially as shown, and for the purpose described.

296,967. ART OF MANUFACTURING CELLULOID AND OTHER COMPOUNDS OF PYROXYLINE. JOHN W. HYATT, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Feb. 11, 1884. (No model.)

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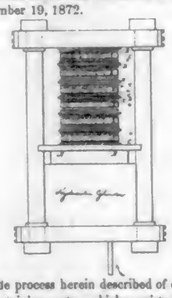
Claim.—1. The process herein described of removing aqueous particles from pyroxyline pulp, which consists in effecting the displacement of the aqueous particles by means of pressure applied to a suitable liquid, whereby the aqueous particles are caused to leave the pulp, their places being occupied by the unobjectionable liquid particles, substantially as set forth.

2. The process herein described of removing aqueous particles from pyroxyline pulp and loading the pulp with alcohol or other suitable liquid, which consists in subjecting the pulp containing the aqueous particles to pressure, in connection with the alcohol or other suitable liquid, a means of escape for the aqueous particles being provided, whereby the particles of alcohol or other suitable liquid are made to take the place of the aqueous particles, substantially as set forth.

3. The process herein described of treating pyroxyline pulp, which consists in effecting the displacement of the aqueous particles by means of a liquid which can afterward be utilized as a solvent, substantially as described.

296,968. PROCESS OF AND APPARATUS FOR EFFECTING THE DESICCATION OF PYROXYLINE PULP. JOHN W. HYATT, WILLIAM H. WOOD, and JOHN H. STEVENS, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Feb 11, 1884. (No model.)

Brief.—Improvement on the invention in Letters Patent No. 133,229, dated November 19, 1872.



Claim.—1. The process herein described of effecting the desiccation of pyroxyline containing water, which consists in, first, subjecting it, with an absorbing agent, to great pressure in a press, whereby a large percentage of the aqueous particles are expelled; and, second, removing the moisture that remains by subsequent treatment of an analogous character or otherwise, substantially as set forth.

2. The process of effecting the desiccation of pyroxyline pulp containing water herein described, which consists in, first, forming the pulp into a cake; second, subjecting the cake to great pressure in contact with a surface of bibulous material, whereby a large percentage of the aqueous particles is removed; and, third, completing the desiccation by subjecting the partly-desiccated material to the action of a surface of dried bibulous material or otherwise, substantially as set forth.

3. The process herein described of effecting the desiccation of pyroxyline containing water, which consists in forming a pile composed of a series of layers of pyroxyline, bibulous material, and plates B, and subjecting the pile thus formed to pressure, substantially as set forth.

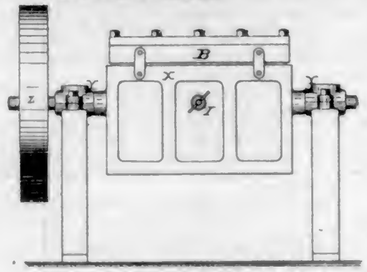
4. The process herein described of effecting the desiccation of pyroxyline containing water, which consists in forming a pile composed of a series of layers of pyroxyline, bibulous material, and plate B, and subjecting the pile thus formed to pressure, and then subjecting the pyroxyline to further treatment by means of dry bibulous material, or otherwise, to free it from the moisture which remains, substantially as set forth.

5. The process herein described of effecting the desiccation of pyroxyline containing water, which consists in forming a pile composed of a series of layers of pyroxyline, pads of blotting-paper, and plates B, and subjecting the pile thus formed to pressure, substantially as set forth.

6. The process herein described of effecting the desiccation of pyroxyline containing water, which consists in forming a pile composed of a series of layers of pyroxyline, blotting-paper, and plate B, and subjecting the pile thus formed to pressure, and then subjecting the pyroxyline to further treatment by means of dry bibulous material, or otherwise, to free it from the moisture which remains, substantially as set forth.

7. The process herein described of effecting the desiccation of pyroxyline, which consists in, first, subjecting it with an absorbing agent to great pressure in a press, the pressure being continued for a given time; and, second, effecting the removal of the moisture which remains by subsequent treatment with a dry absorbing agent or otherwise, substantially as set forth.

296,969. MANUFACTURE OF PYROXYLINE MATERIAL. JOHN W. HYATT, JOHN H. STEVENS, WILLIAM H. WOOD, and JOHN EVERDING, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Mar. 22, 1884. (No model.)



Claim.—1. The process herein described of effecting the impregnation of pyroxyline material with liquid solvents, which consists in, first, forming it into cakes or plates; second, placing it in a suitable vessel; third, introducing the liquid solvent, and, fourth, agitating the liquid solvent by rotating the vessel or otherwise, whereby the solvent is caused to pass over the surface of the cakes or plates until they are impregnated, substantially as described.

2. The process hereinbefore described of impregnating cakes of pyroxyline with liquid solvents, which consists in causing the passage of the solvents over the surfaces of the cakes while said cakes are held apart until they have absorbed a sufficient amount of the solvents.

3. The process hereinbefore described of treating pyroxyline material, which consists, first, in forming it into cakes or plates; second, causing liquid solvents to flow over the cakes until a sufficient amount has been absorbed while the cakes are held apart, and, third, then allowing the material to remain in an air-tight case for a proper length of time.

4. The apparatus hereinbefore described, consisting of a receptacle of suitable dimensions to receive the cakes of material, and provided with an inlet for the liquid solvents, and means for retaining the cakes apart during the agitation of the receptacle.

5. The receptacle for receiving the cakes of pyroxyline, provided with the detachable rods R R, the bars P P, carrying pins, the strips M and S, substantially as set forth.

6. The receptacle provided with the bars P P, carrying pins, the detachable rods R R, strips S S and M M, and the inlet-aperture having a compression-plug, substantially as set forth.

296,970. MANUFACTURE OF CELLULOID AND OTHER COMPOUNDS OF PYROXYLINE. JOHN W. HYATT, JOHN H. STEVENS, and WILLIAM H. WOOD, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Mar. 22, 1884. (No specimens.)

Claim.—1. A process in which pyroxyline is first ground to a pulp, then pressed into cakes and dried, and the said cakes softened with the required amount of liquid solvent by being formed into a pile with the solvent between the cakes, and then mixed or masticated in heated rolls or other suitable apparatus.

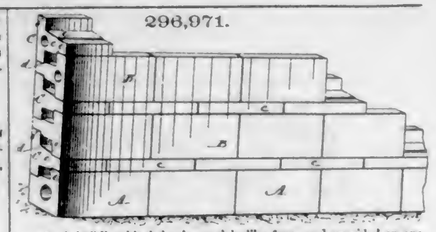
2. A process in which pyroxyline is first ground to a pulp, then formed into cakes and dried, and the cakes softened with a liquid solvent by being formed into a pile, the solvents being held between the cakes by means of suitable pads, the material being afterward mixed or masticated in heated rolls or other suitable apparatus, substantially as described.

3. A process in which pyroxyline is first ground to a pulp and pressed into cakes and dried, the proper amount of liquid solvent introduced by spreading the solvent in a viscid condition between the cakes, and the whole then mixed or masticated in heated rolls or other suitable apparatus, substantially as described.

296,971. BLOCK FOR BUILDING PURPOSES. THOMAS L. JOWETT, Boston, Mass. Filed May 23, 1883. (Model.)

Claim.—1. An improved building-block having a slab-like form, and provided with a rib or tongue on one of its longitudinal sides, the rib or tongue being of a length equal to the thickness of the block, substantially as herein shown and described.

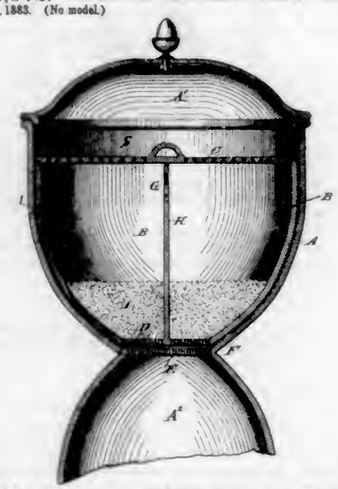
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2. A building-block having a slab-like form, and provided on one of its longitudinal sides with a tongue or rib having shoulders *c* on opposite sides, substantially as herein shown and described.

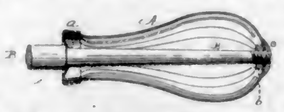
3. In a wall, floor, or other like structure, the combination of a series of slab-like blocks provided with longitudinal tongues having shoulders on opposite sides, the shoulders being at a distance from the edge of the tongues equal to the thickness of the block, substantially as herein shown and described, whereby passages between the blocks will be formed.

296,972. WATER-FILTER. EMILE KARST, St. Louis, Mo. Filed Nov. 2, 1883. (No model.)



Claim.—The combination of the outside vessel or receptacle having a neck or contracted part provided with the fixed foraminated plate E, and the removable inside vessel, B, provided with the perforated cover C, foraminated bottom plate, D, and central partition, H, having hand-hole G, substantially as and for the purpose shown and set forth.

296,973. BICYCLE-HANDLE. GEORGE SEELEY KELSEY, Birmingham, County of Warwick, England, assignor to Benjamin Kelsey, same place. Filed Nov. 26, 1883. (No model.) Patented in England Sept. 4, 1882, No. 4,200.

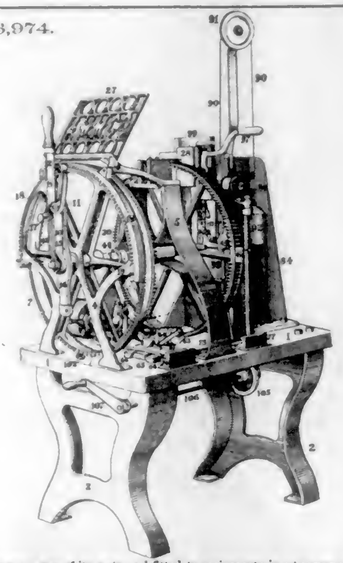


Claim.—The combination, with the hollow longitudinally-slotted handle A and the guiding-bar B of a bicycle, of the internal nut, *b*, and external convex nut, *c*, arranged and constructed substantially as and for the purpose above described.

296,974. MACHINE FOR MAKING MATRICES. ROBERT L. KIMBERLY, Philadelphia, Pa., assignor to the American Matrix Machine Company, New York, N. Y. Filed Aug. 3, 1882. (No model.)

Claim.—1. The combination, substantially as set forth, of a type or die carrying wheel, a series of die-stocks, each having a type or charac-

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ter die upon one of its ends, and fitted to reciprocate in a bearing in said wheel, a stationary index or guide, and mechanism for arresting and securing the type or die wheel in such position that any desired die of the series shall be brought into a position which is indicated and determined by the index.

2. The combination, substantially as set forth, of a type or die carrying wheel secured upon a shaft, a series of type or character dies fitted to reciprocate in said wheel, an operating arm or lever provided with a pin or projection, and coupled by a detachable connection to the shaft of said wheel, and a stationary index or guide segment having a series of openings or recesses, each adapted to receive said pin, these members being combined for joint operation to enable any die of the series to be selected, brought into determined position, and the further movement of the die-wheel arrested.

3. The combination, substantially as set forth, of a type or die carrying wheel secured upon a shaft, an operating arm or lever coupled detachably to said shaft, a pair of arms secured to and projecting in opposite directions from said shaft, and a pin by which the operating-lever may be coupled to either of said arms, these members being combined for joint operation to enable either half of the type-wheel to be rocked, as desired, by the movements of the operating-lever within a semicircle on a determined side of its center.

4. The combination, substantially as set forth, of a type or die carrying wheel secured upon a shaft, a collar adapted to be reciprocated on said shaft by the operating-arm thereof, a counter-shaft for the reception of driving-power from a prime mover, a driving-shaft connected by a clutch-coupling with said counter-shaft, so as to be capable of being rocked intermittently thereby, tripping mechanism for engaging and disengaging the counter and driving shafts, and a rock-shaft connected with said tripping mechanism and rocked by the movement of the collar on the type or die wheel shaft, these members being combined for joint operation to admit of a single revolution being imparted to the driving-shaft by a movement of the operating-arm and collar.

5. The yielding pressure plate or shield, substantially as and for the purpose set forth.

6. The combination, substantially as set forth, of a die-stock having a type or character die upon one of its ends, and a pressure plate or shield interposed between a shoulder on the die-stock and a matrix block or bed, for the purpose of distributing the impressing force over a uniform enlarged area.

7. The combination, substantially as set forth, of a die-stock having a type or character die upon one of its ends, a reciprocating plunger acting to effect impressions of said die in a matrix-block, and a movable pressure plate or shield interposed between a shoulder on the die-stock and the face of the die.

8. The combination, substantially as set forth, of a feed-regulating wheel having a series of stops or projections of different lengths located circumferentially upon it, an operating arm or lever for the purpose of rotating said wheel either partially or entirely, as desired, and a sliding abutment, the travel of which is regulated by the length of the projection selected by the movement of the operating-arm and feed-wheel.

9. The combination, substantially as set forth, of a feed-regulating wheel and a type or die wheel, both secured to a shaft which is susceptible of either entire or partial rotation, an operating arm or lever connected to said shaft, and a stationary index or guide segment, with which said operating-arm is adapted to be engaged at different points.

10. The combination, substantially as set forth, of a feed-regulating wheel having a series of stops or projections of varying lengths secured thereto, a reciprocating block adapted to abut against any one of said series of stops, and feed mechanism connected with said reciprocating block, these members being combined for joint operation to enable varying degrees of traverse dependent on the lengths of the several stops to be imparted by the feed mechanism.

11. The combination, substantially as set forth, of a driving-shaft, a block reciprocated thereby, and a double-armed vibrating lever pivoted upon said block and adapted to receive and impart varying degrees of traverse to feed mechanism.

12. The combination, substantially as set forth, of a series of stops of varying lengths, a double-armed lever pivoted upon a reciprocating block or slide, and having a toothed segment upon each of its ends, a rack formed upon a block adapted to abut against any one of said series of stops, and engaging one of the toothed segments of the double-armed lever, and a rack engaging the other segment thereof and imparting rotation to a feed-shaft.

13. The combination, substantially as set forth, of a feed-regulating wheel having a circumferential series of stops or projections, a reciprocating block adapted to abut against said stops, and a bearing or abutment to prevent displacement of the feed-regulating wheel by the impingement of said block against said stops.

14. The combination, substantially as set forth, of a matrix-block holder having a series of teeth upon one of its sides, an adjustable clamping-jaw having a slide working in said holder, and an arm pivoted to said jaw, and having a series of teeth adapted to engage the teeth of the matrix-block holder.

15. The combination, substantially as set forth, of a carrier fitting in guides on a head or frame, and having an inclined side, a matrix-block holder supported and movable within said carrier at right angles to the guides thereof, a key having one of its sides inclined correspondingly with the inclined side of the carrier, and suspended so as to be elevated by a weight or spring, and a reciprocating plunger acting upon the straight side of the key, these members being combined for joint operation to effect the advancement, intermittently, of the carrier throughout the length of its guides by the successive alternate movements of the plunger in one direction.

16. The combination, substantially as set forth, of a matrix-block holder supported in a laterally-moving carrier, a vertically and laterally moving key acting to transmit successive movements of a plunger to said carrier, and a retracting-shaft having pulleys secured by flexible connections to the carrier and to the key, respectively.

17. The combination, substantially as set forth, of a carrier, a matrix-block holder fitted to move vertically therein, pawl-and-ratchet mechanism for imparting intermittent vertical movement to the holder within the carrier, an independent retaining-pawl and ratchet for maintaining the holder in position during the intervals between its movements in the carrier, and a releasing device for throwing the several pawls out of contact with their ratchets, to admit of the return of the matrix-block holder to its initial position at the termination of its traverse in the carrier.

18. The combination, substantially as set forth, of a matrix-block holder, a sliding head carrying said holder, a stationary frame or abutment, and a spring interposed between said abutment and the sliding head, for regulating the position of the matrix-block relatively to the face of an impressing-die.

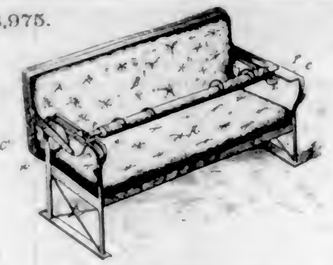
19. The combination, substantially as set forth, of a stationary frame or standard, a head or frame fitted to slide in guides on said standard, a carrier supporting a matrix-block holder and adapted to traverse in guides on one end of said head or frame, a spring bearing against the opposite end of said head and against an abutment on the stationary frame or standard, and a locking-shaft and screw to secure said head in the position into which it may be moved by the tension of the spring.

296,975. SAFETY-BRACE FOR CAR-SEATS. WILLIAM R. LAMPTON, Terre Haute, Ind. Filed Jan. 11, 1884. (No model.)

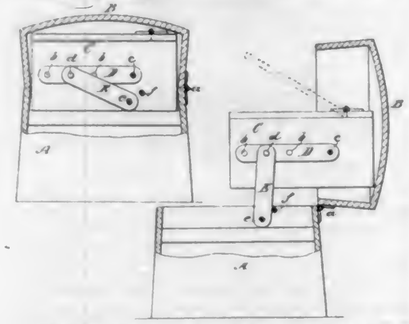
Claim.—1. The combination, with a frame of a car-seat having arm-rests, one of which is slotted, of a block fitted in said slotted arm and adjustable therein, and the bar swiveled and hinged at one end to said block, and the other end engaging with the opposite arm-rest, substantially as shown and described.

2. In a car-seat, the combination, with the frame thereof having arm-rests, one of which is slotted, of the block fitted in said slotted arm-rest and adjustable therein, and the safety-brace hinged and swiveled at one end to said block, and provided at its other end with means, substantially as shown, for retaining the same in any desired position on the arm-rest, as and for the purpose described.

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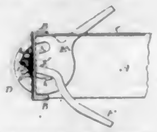
296,976. TRUNK. WILLIAM J. LARKE, Brooklyn, N. Y. Filed Jan. 11, 1884. (No model.)



Claim.—1. The combination, with the trunk body and lid, of the tray directly pivoted to the lid and pivotally connected to the body, substantially as and for the purpose set forth.

2. The tray C, pivoted in the lid B, in combination with the plates E and stop-pins *f*, the plates being pivoted to the body and tray of the trunk, substantially as and for the purposes described.

296,977. MECHANICAL MOVEMENT. JOSEPH P. LAVIGNE, New Haven, Conn., assignor to Joseph S. Sackett and Jane Halliwell, both of same place. Filed Jan. 28, 1884. (No model.)

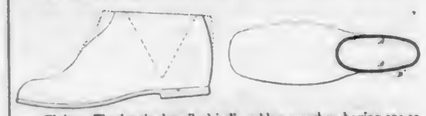


Claim.—1. The combination of the lever C, arranged for vibratory movement, the lever E, arranged for vibratory movement in a plane at right angles to the plane of the lever C, a dog, *a*, on said lever C, and arranged to be moved in a plane at right angles to the plane of the lever C, and the lever E, constructed with shoulders *h i* forward of the dog on opposite sides of the pivot of the said lever E, and with a stud, *l*, in rear of the dog, whereby in the vibratory movement of the lever E the said stud is thrown to the right and left of the dog, the dog constructed to engage said stud in each vibratory movement of the lever C, whereby the dog will be thrown from side to side and engage one of said shoulders *h i* in each full vibration of said lever C, and whereby two full vibrations of the lever C will impart but a single full vibration to the lever E, substantially as described.

2. The combination of the lever C, arranged for vibratory movement, the lever E, arranged for vibratory movement in a plane at right angles to the plane of vibration of the lever C, and the dog *a*, arranged in bearings in said lever C in a plane at right angles to the plane of vibration of said lever C, and so as to slide from right to left, the said dog constructed with a projection, *m*, the lever E constructed with shoulders *h i* forward of the dog and each side of the pivot of said lever E, and with a stud, *l*, in rear of the pivot and of the dog, whereby in each movement of the lever C in one direction the said projection *m* will strike the stud *l* on the lever E and force said dog to the right or left, as the case may be, and whereby one end of the said dog will engage one of said shoulders on the lever E in one movement of the lever C, and in the next movement in the same direction the opposite end of the dog will engage the opposite shoulder, substantially as described.

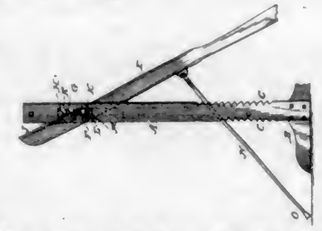
3. The combination of the lever C, arranged for vibratory movement, the lever E, arranged for vibratory movement in a plane at right angles to the plane of the lever C, a dog, *a*, on said lever C, and arranged to be moved in a plane at right angles to the plane of the lever C, the lever E constructed with shoulders *h i* forward of the dog on opposite sides of the pivot of the said lever E, and with a stud, *l*, in rear of the dog, whereby in the vibratory movement of the lever E the said stud is thrown to the right and left of the dog, the dog constructed to engage said stud in each vibratory movement of the lever C, whereby the dog will be thrown from side to side and engage one of said shoulders *h i* in each full vibration of said lever C, and whereby two full vibrations of the lever C will impart but a single full vibration to the lever E, and the lever F, pivoted to the base in rear of the pivot of the lever E and in connection with the said lever E, whereby the movement of the lever E in one direction imparts a movement to the lever F in the opposite direction and in the same plane, substantially as described.

296,978. OVERSHOE. GEO. A. LEWIS, Naugatuck, Conn., assignor to Goodyear's Metallic Rubber Shoe Company, same place. Filed Feb. 18, 1884. (No model.)



Claim.—The herein-described india-rubber overshoe, having one or more elastic gores introduced into a corresponding-shaped recess in and so as to make substantially a part of the lining, the lining and gore covered on the outside by a continuous india-rubber surface, substantially as described.

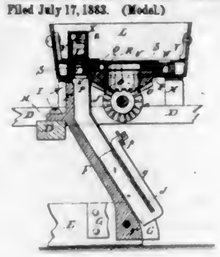
296,979. WAGON-JACK. JOSEPH F. LUDWEY, Marion, Ohio. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination, in a wagon-jack, of the parallel notched standards having side openings, E, notched plates F, inserted into said openings, so as to leave a narrow slot, H, opening into the notched bearings G, lever I, having fulcrum-bolt K, adapted to slide up and down in the slot H and to engage the bearings G, and brace-rod N, having cross-head O at its free end, substantially as and for the purpose shown and set forth.

2. The combination, in a wagon-jack, of the parallel standards A A, having wedge-shaped notches C *c* and notched bearing-plates F, lever I, having fulcrum-bolt K, and rod N, having the wedge-shaped cross-head O at its free end, adapted to be wedged into the notches C *c* and held in place therein, substantially as and for the purpose shown and set forth.

296,980. CHECK-ROW CORN-PLANTER. THOMAS J. LINDSAY, Lafayette, Ind. Filed July 17, 1883. (Model.)



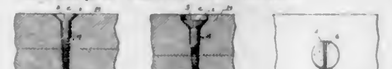
Claim.—1. In a corn-planter, the combination, with the shaft *b* and the spout F, of the vibrating plate *r*, hung in the spout, and formed with an upwardly-projecting arm or lever, *q*, pivoted upon the outside of the spout, the beveled gear-wheel *k*, crank-shaft *m*, having the beveled pinion *l*, centrally-pivoted lever *o*, and connecting-rods *n p*, substantially as shown and described, and for the purpose specified.

2. In a corn-planter, the revolving serially-apertured plate S, disposed under the coincidently-apertured false bottom U of the seed-holder, the beveled gear-wheel O, the shaft *b*, carrying the pinions *a k*, and crank-shaft *m*, having the beveled pinion *l*, in combination with the vibrating plate or valve *r*, hung in the spout F, and formed with an upwardly-projecting arm or lever, *q*, pivoted on the outside of the spout, centrally-pivoted lever *o*, and connecting-rods *n p*, substantially as and for the purpose set forth.

3. In a corn-planter, the shaft *b*, having the toothed wheel *s*, and the spring-lever *u*, having the roll *t*, in combination with the valve or plate *r*, hung in the spout F, and formed with an upwardly-projecting arm or lever, *q*, pivoted on the outside of the spout, centrally-pivoted lever *o*, and connecting-rods *n p*, substantially as and for the purpose set forth.

4. In a corn-planter, the shaft *b*, carrying the toothed wheel *s*, the spring-lever *u*, having the roll *t*, the rotating serially-apertured plate S, arranged under the coincidently-apertured false bottom U of the seed-hopper, the gearing *a k l*, the crank-shaft *m*, connecting-rods *n p*, centrally-pivoted lever *o*, and the valve or plate *r*, hung in the spout F, and formed with an upwardly-projecting arm or lever, *q*, pivoted upon the outside of the spout, substantially as and for the purpose set forth.

296,981. CHECK-ROW WIRE. CHARLES S. LOCKE, Joliet, Ill. Filed Nov. 9, 1883. (No model.)

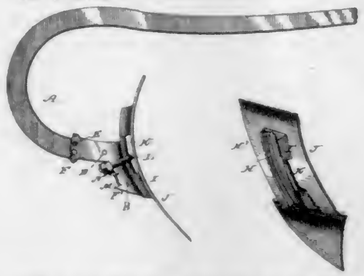


Claim.—The cast malleable shell described, being spherical in form, or nearly so, and having an opening on one side, extending from pole to pole, of sufficient width to admit the coupled ends of the wires, and adapted to have its edges closed together to inclose the coupled ends of the check-row wires, as and for the purpose set forth.

296,982. WOOD-SCREW. JESSE B. LOW, New York, N. Y., assignor of three-fourths to George H. Seeley, Nathan Seeley, and James H. Taylor, all of same place. Filed Nov. 24, 1883. (No model.)

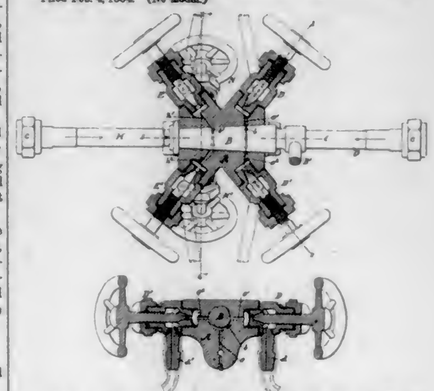
Claim.—A self-countersinking screw-head having the cutting edges or devices composed of those two of the ends of the drive-slot walls which project throughout their entire lengths from the shank to the periphery beyond the opposite edges of the drive-slot walls, substantially as shown and described.

296,983. CULTIVATOR. DAVID N. LOEB, Ross, Iowa. Filed Feb. 5, 1884. (No model.)



Claim.—As an improvement in cultivators, the combination of the curved beam A, having apertures A' A'', and rounded at its lower end, shovel-holder consisting of the curved rounded tongue B, having the longitudinal grooves G and lugs or projections F', and jaws C C, adapted to fit on either side of the lower rounded end of the beam A, pivot-bolt D, removable and adjustable shovel, comprising the blade J and saddle I, secured to the rear side of the shovel-blade, and provided with the recess K and longitudinal grooves H, and yoke L, having cross-piece M and nuts N, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

296,984. DISSOLVING-COCK. TIMOTHY J. MAPES, Philadelphia, Pa. Filed Feb. 4, 1884. (No model.)



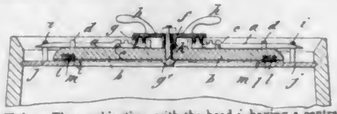
Claim.—1. The combination of the body and main plug of a dissolving-cock and supply-pipes with channels leading from the plug, and needle-valves, substantially as described, controlling said channels.

2. The combination of the body and main plug of a dissolving-cock and supply-pipes with self-contained needle-valves detachably applied to said body, and channels leading from the plug to the valves, as set forth.

3. The combination of the nozzles *d d'*, to which are applied flexible tubes leading to the lanterns of a stereopticon apparatus, with a dissolving-cock having channels, and provided with a plug having grooves *b b'* of the relative proportions herein set forth, whereby the dissolving effect is produced without diminishing the light on the screen in changing from one lantern to the other.

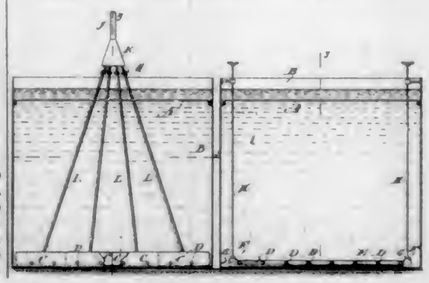
4. The combination of a dissolving-cock and its handled plug with a bearing-piece, G, and cam-lever F, substantially as described.

296,985. CHURN-COVER FASTENER. MARK MARSDEN MATOCK, Buffalo, N. Y. Filed Dec. 29, 1883. (No model.)



Claim.—The combination, with the bead *j*, having a central opening and staples *i*, and cover *b*, provided with the guides *c d*, of the disk *f*, provided with the separate overlapping curved flanges *g* on its under face, and handles A and radially-sliding bolts *a*, each having a tapered outer end, a rack, *e*, near its inner end, and a T-head, *n*, substantially as shown and described.

296,986. APPARATUS FOR AGITATING THE LIQUOR IN TANVATS. THOMAS A. MAYER, Philipsburg, Pa. Filed Sept. 14, 1883. (No model.)



Claim.—1. The combination, with a vat, of boxes or compartments on the bottom of the same, perforated tubes projecting from the compartments, and pipes for conducting compressed air into the compartments, substantially as herein shown and described.

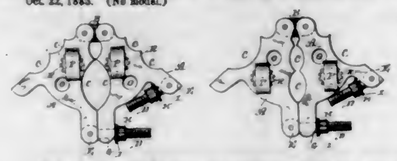
2. The combination, with a vat, of perforated pipes on the bottom of the same, which pipes connect compartments or boxes, and a transverse pipe, which is provided at the ends with valves, substantially as herein shown and described.

3. The combination, with a vat, of the boxes C, the perforated pipes D, the pipe E, and the pipes L, for conducting air into the boxes, substantially as herein shown and described.

4. The combination, with a vat, of the boxes C, the perforated pipes D, the pipe E, the valve-casings F in the ends of the same, the valves G in the casings F, the rods H, and the pipes L, for conducting air into the boxes C, substantially as herein shown and described.

5. The combination, with a vat, of the pipes L, the box K, the pipe J, the cocks M, the boxes C, the perforated pipes D, and the pipe E, substantially as herein shown and described.

296,987. TIRE-TIGHTENER. SPENCER MCCAY, Topeka, Kans. Filed Oct. 22, 1883. (No model.)



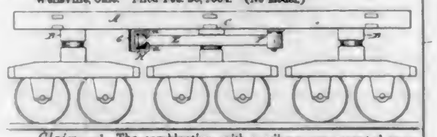
Claim.—1. In a tire-tightener, the combination of the two grooved reversible blocks, which are loosely connected together with suitable clamping devices, substantially as shown.

2. In a tire-tightener, the combination of the two reversible blocks loosely connected together, and provided with grooves of different sizes in their opposite faces, with the clamping devices for securing the blocks to a spoke, and suitable jack-screws for forcing the felly outward, substantially as described.

3. The combination, in a tire-tightener, of the two blocks loosely connected together, and provided with different-sized grooves upon their opposite faces, and provided with a series of holes through their tops, with the clamping devices for holding them together, and the jack-screws, substantially as set forth.

4. In a tire-tightener, the combination of the two blocks A, grooved upon opposite faces, and loosely connected together by the link B, the pivoted screw-bolts D, provided with nuts H, the jack-screws P, grooved nuts R, and a suitable device for turning the nuts, substantially as specified.

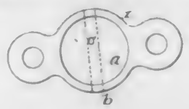
296,988. CAR-TRUCK. JAMES H. MCCLURE and GEORGE F. MURDOCK, Wellsville, Ohio. Filed Feb. 20, 1884. (No model.)



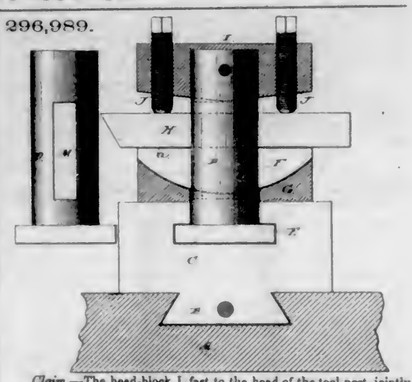
Claim.—1. The combination, with a railway-car mounted upon two end trucks, of a beam pivoted at one end to the car, a truck supporting the beam midway upon a pivot, and means, substantially as described, connecting the other end of the said beam with the car, as and for the purpose specified.

2. The combination, with the car-body A, and the trucks connected therewith by bolsters B, of the beam E, pivoted at F to the car-body, the roller H on its other end, the segmental way G, and the bolster C of a truck pivoted to said beam E, as shown and described, for the purpose specified.

296,989. TOOL-HOLDER. ALFONSO MERCER, Norfolk, Va., assignor of one-half to William Sanderlin and Thomas M. Sanderlin, both of same place. Filed Sept. 27, 1881. (No model.)



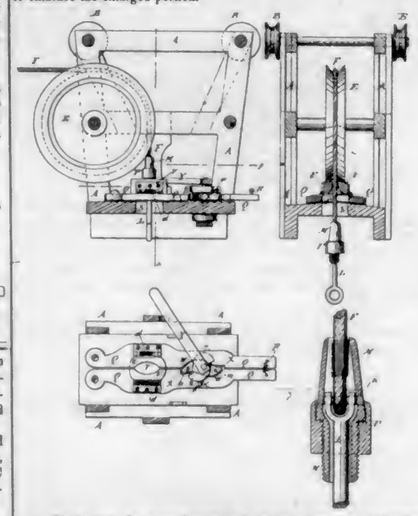
296,989.



Claim.—The head-block I, fast to the head of the tool-post, jointly with the binding-screws J, for clamping the tool, substantially as specified.

296,990. EARTH-REMOVER. SAMUEL A. MILLER, Philadelphia, Pa. Filed Aug. 29, 1883. (No model.)

Brief.—A traveling carriage has two pivoted bucket-supporting levers held together by a spring, thrown apart by a pivoted double cam, (operated by a similar cam on a lever striking pins on such first cam,) and recessed in their meeting edges for the passage of the elevating-rope, and having hinged spring-pressed blocks for a cone on said rope to rest on. The cone is made in two semi-cylindrical screw-threaded sections enlarged above the threading, and through which passes a pin going through eyes on the bucket-attaching rod and on the end of the hoisting-rope, and held together by an interiorly-threaded band countersunk to embrace the enlarged portion.



Claim.—1. In an earth-removing apparatus, constructed substantially as herein shown and described, and consisting of the trip-cone, a carriage having the hinged catch-blocks, the levers carrying the said catch-blocks, and the lever-operated cam for separating the levers and catch-blocks and allowing the cone to pass down, as set forth.

2. In an earth-remover, the cone M, constructed, substantially as herein shown and described, in two parts, having a screw-thread upon their reduced lower ends and secured in place by a screw-band having a countersunk upper part, as set forth.

3. In an earth-remover, the combination, with the hoisting-rope F, the coupling-rod L, and their connecting-pin K, of the cone M and screw-band P, substantially as herein shown and described.

4. In an earth-remover, the combination, with the bottom of the

carriage A, of the hinged catch-blocks U, having springs *d*, the recessed levers Q, having spring R, and a lever-separating mechanism, substantially as herein shown and described, whereby the bucket will be supported and can be readily released, as set forth.

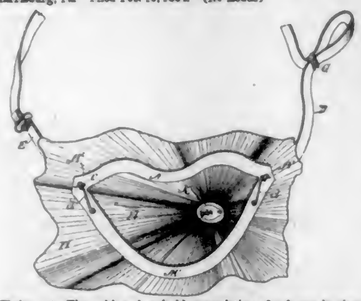
5. In an earth-remover, the combination, with the levers Q, carrying the hinged catch-blocks U, of the double cam X and the lever Y, having cross-head Z, substantially as herein shown and described, whereby the said levers and catch-blocks can be readily separated, as set forth.

296,991. SCREW. ALEXANDER MITCHELL, Fredericton, New Brunswick, Canada. Filed May 15, 1882. (No model.)



Claim.—A wood-screw having a cylindrical threaded barrel, A, terminating in a chisel-edge or awl-point, *a*, of a width at its edge and base corresponding to the width of the cylindrical barrel cut away inward and upward from circumference to center, to form the inverted-V-shaped recess and outer cutting-edges, as shown and set forth.

296,992. DENTAL-RUBBER-DAM HOLDER. ROBERT H. MOFFITT, Harrisburg, Pa. Filed Feb. 19, 1884. (No model.)



Claim.—1. The rubber-dam holder consisting of a frame having an arched portion adapted to apply over the upper lip transversely, and an arched or curved portion adapted to apply below the lower lip and extended to embrace said other arched portion, both said portions being provided with attaching-hooks for holding the rubber dam thereon, and means for attaching said frame to the head, substantially as and for the purpose set forth.

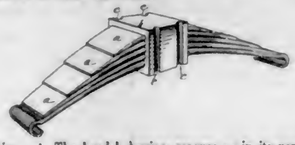
2. The rubber-dam holder A A' M *a*, provided with band D, in combination with the shield N M', applied to the said holder, substantially as and for the purposes set forth.

296,993. FOLDING SATCHEL. ROBERT MOFFLY, Philadelphia, Pa. Filed Feb. 23, 1884. (No model.)



Claim.—In a folding satchel made from a single piece of leather or similar material, the combination, with the bottom and sides, of the regulating-flaps and central weighted flaps, as and for the purposes specified.

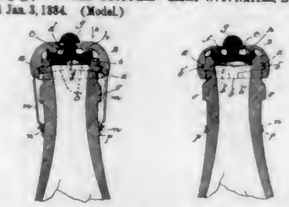
296,994. VEHICLE-SPRING. GEORGE W. MORRIS, Pittsburg, Pa. Filed Feb. 13, 1884. (No model.)



Claim.—1. The band *b*, having grooves *c c* in its vertical outer sides, in combination with the spring and the clip-bolts *d*, seated in said grooves, whereby to lock the band to the spring-securing bolts, substantially as described.

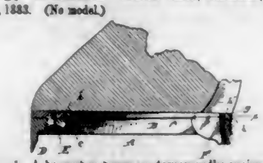
2. The elliptic half-spring having its leaves secured by a hot-pressed band, having grooves in its outer vertical walls, as shown, and for the purpose described.

296,995. BOTTLE-STOPPER. ERNST W. F. NATTER, Everett, Mass. Filed Jan. 3, 1884. (Model.)



Claim.—The bottle-neck provided with one or more projections, *a*, and the metal cap B, provided with a central opening, and with an inclined annular groove, *b'*, and the annular projection A, combined with a flexible or india-rubber washer having a neck and head, the neck being extended through the cap, the washer being held loosely in the cap, and acted upon by the annular projection, the latter forcing the flanged part of the washer down into the neck of the bottle to close the same tightly, the cap rotating independently of the washer, all substantially as described.

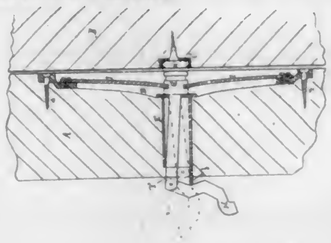
296,996. HORSESHOE. HOLGER OLSON, Mariadahl, Kans. Filed Nov. 12, 1883. (No model.)



Claim.—1. A horseshoe having a downwardly-projecting flange on its under side, and having a dovetailed opening in said flange and partially in the toe of the shoe, in combination with a toe-calk which is adapted to fit into said opening, and which has a rear extension which lies against the web of the shoe and turns up and over said web, as and for the purpose set forth.

2. A horseshoe having a downwardly-projecting flange on its under side, and provided at its heel with a longitudinal lateral slot at the base of the flange and a longitudinal vertical slot in the web of the shoe, in combination with the calk having splines on two of its sides to fit into said slots, substantially as and for the purpose set forth.

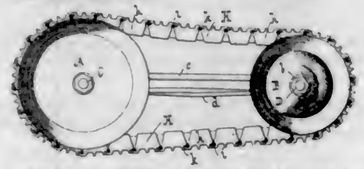
296,997. SASH-FASTENER. ARILLA D. ORDWAY, Reed City, Mich. Filed Nov. 21, 1883. (No model.)



Claim.—1. A window-stop consisting of the bolt F, having a head, G, provided with a channel, as described, in combination with springs I, having one end secured to the sash and the other fitting in and engaging with said channel, as and for the purpose set forth.

2. In a window-stop, the combination of the bolt F, having head G, springs I, bent lever H, thimble E, provided with arm *b*, serving as a fulcrum for said lever, and cup-stop C, when constructed, arranged, and operating substantially in the manner and for the purposes specified.

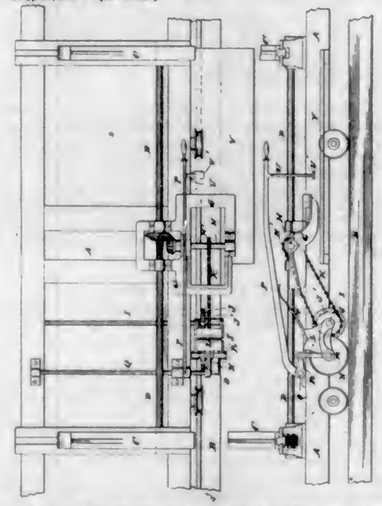
296,998. ROAD-ENGINE. GEORGE F. PAGE, Baltimore, Md. Filed Jan. 5, 1884. (No model.)



Claim.—1. In a road-engine, the driving and pilot wheels provided with peripheral grooves and connected by an endless chain having a V cross-section, substantially as and for the purpose specified.

2. In a road-engine, the driving and pilot wheels connected by an endless track composed of hollow links having extensions which extend into the adjoining links, substantially as and for the purpose specified.

296,999. HEAD-BLOCK FOR SAW-MILLS. DARIUS PARKHURST, St. Louis, Mo., assignor of one-half to Geo. H. Knight, same place. Filed Aug. 20, 1883. (No model.)

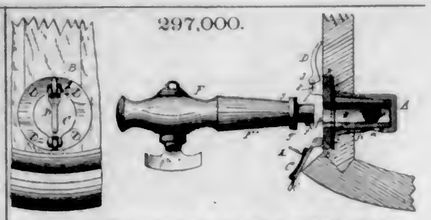


Claim.—1. The combination, with a carriage, a set-works counter-shaft, a chain-wheel on the counter-shaft, a friction-roller, and means for raising and lowering the friction-roller, of the intermediate shaft secured to the carriage, cog-wheel and chain-wheel on the intermediate shaft, yoke secured to the means for raising and lowering the friction-roller, shaft supported by the yoke, and on which the friction-roller is mounted, cog-wheel on the yoke-shaft, and frame hinging the yoke-shaft to the intermediate shaft, as set forth.

2. The combination, with a carriage, a set-works counter-shaft, a chain-wheel on the counter-shaft, a friction-roller, and a shaft having a crank, of the intermediate shaft secured to the carriage, cog-wheel and chain-wheel on the intermediate shaft, yoke secured to the crank, shaft supported by the yoke, and on which the friction-roller is mounted, cog-wheel on the yoke-shaft, and frame hinging the yoke-shaft to the intermediate shaft, as set forth.

297,000. FAUCET ATTACHMENT TO BARRELS. JACOB PAULUS, New York, N. Y., assignor to himself and August Hartmann, same place, and Louis Remshardt, Brooklyn, N. Y. Filed May 31, 1883. (No model.)

297,000.



Claim.—1. The combination of a socket, A, attached to the faucet-hole of a barrel, said socket having an opening, *a*, an interior tube, E, having an opening, *e*, a retaining face-plate, B, a hinged valve, C, and means for locking said valve into closed position, substantially as set forth.

2. In a faucet attachment to barrels, the combination of a socket, A, secured to the faucet-hole, said socket having an opening, *a*, an interior tube, E, having an opening, *e*, a face-plate, B, a hinged valve, C, having a pin, *h*, fitting into recesses f^3 f^3 of the face-plate B and tube E, respectively, and means for locking said valve in closed position, substantially as set forth.

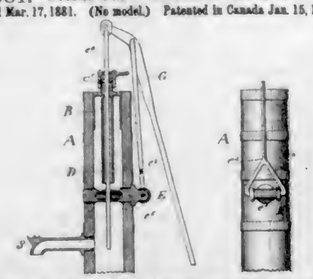
3. In a faucet attachment to barrels, the combination of a socket, A, attached to the faucet-hole, said socket having an opening, *a*, an interior tube, E, having an opening, *e*, a face-plate, B, and a faucet, F, the barrel F' of which is provided with means for engaging the interior tube, E, and turning the same on its axis, so that its opening is thrown in or out of register with the opening of the socket, substantially as set forth.

4. In a faucet attachment to barrels, the combination of the fixed socket A, having an opening, *a*, an interior tube, E, having an opening, *e*, a face-plate, B, having an opening in line with the opening of the interior tube, said face-plate and tube being provided with recesses f^3 f^3, respectively, a faucet, F, the barrel F' of which is provided with a cylindrical end, *f*, and lug *f'*, whereby the interior tube can be engaged and turned around its axis, substantially as set forth.

5. In a faucet attachment to barrels, the combination of a fixed socket, A, having an opening, *a*, interior tube, E, having an opening, *e*, and recess f^3, face-plate B, having recess f^3, faucet F, the barrel F' of which is provided with a cylindrical end, *f*, lug *f'*, collar *g*, and elastic ring *g'*, substantially as set forth.

6. In a faucet attachment to barrels, the combination of a fixed socket, A, having opening *a*, interior tube, E, having opening *e* and recess f^3, face-plate B, having recess f^3 and quadrangular cam-groove f^4 at its rear side, faucet F, having cylindrical end *f*, lug *f'*, collar *g*, and elastic ring *g'*, substantially as and for the purpose set forth.

297,001. WOODEN PUMP. DAVID PLEWS, Toronto, Ontario, Canada. Filed Mar. 17, 1881. (No model.) Patented in Canada Jan. 15, 1881.



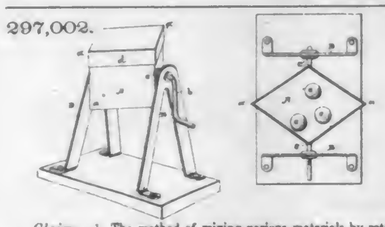
Claim.—1. A foot-iron, E, in a banded wooden pump, constructed with two threaded bearings—one on each side of the bore of the pump—provided with a shoulder-flange, e^3, screwed fast up to the barrel thereof, and an aperture, e^3, for the pump-rod to pass through, and a journal-socket, e', in which the rock-axle turns, substantially as specified and described, and operating as set forth.

2. In a banded wooden pump, the combination, with the foot-iron E, having a socket, e', and shoulder-flange e^3, of the hinged rock-arm e^2, the handle G, the pump-rod e^4, and the stuffing-box e', as shown and described.

3. In a banded wooden pump constructed with a foot-iron, E, the combination, with the barrel *a*, of the cylinder B, carrying the tube D, as shown and described, and operating as set forth.

297,002. APPARATUS FOR MIXING SOLIDS AND LIQUIDS AND FOR OTHER PURPOSES. ERASMUS A. POND, Rutland, Vt. Filed Oct. 5, 1883. (No model.)

297,002.



Claim.—1. The method of mixing various materials by rotating them in such way that the particles will all be projected constantly and regularly toward a common point, substantially as described.

2. A box or receptacle journaled as set forth, so that in rotating the corners or points of the box or receptacle farthest from the axis of rotation move always in the vertical plane passing through the center of the box or receptacle, substantially as described.

3. A box or receptacle of cubical, rhombic, or similar form, hung on trunnions attached at the middle points of two diagonally-opposite edges, substantially as described.

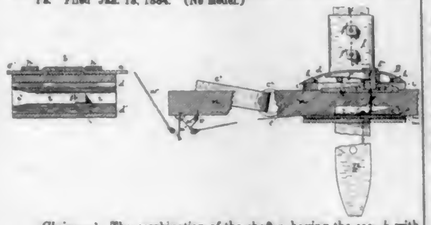
4. The combination, with the box or receptacle constructed and operating as set forth, of the iron balls, substantially as and for the purpose described.

5. The box or receptacle hung on trunnions attached at the middle points of diagonally-opposite edges, and having a corrugated interior, substantially as described.

6. The combination, with a box or receptacle supported and revolving as set forth, of a removable corrugated lining, substantially as described.

7. A rotary box or receptacle made of open-work material in a conical, rhombic, or similar form, provided with a corrugated interior, and supported so that in rotation the corners or points farthest from the axis will in succession occupy the lowest central point, substantially as described.

297,003. HARNESS. JAMES MCC. PORTER, Collier, Allegheny County, Pa. Filed Jan. 18, 1884. (No model.)



Claim.—1. The combination of the shaft *n*, having the seat *k*, with the sleeve D, supported by the harness, and having the spring-key *l*, substantially as set forth.

2. In combination with the shaft, a sleeve supported on the harness and fitting around said shaft, connecting apparatus between said sleeve and shaft, and mechanism within the shaft for disengaging said apparatus, substantially as set forth.

3. The combination of the sleeve having a spring-key, shaft having a corresponding seat, and mechanism for freeing said key from said seat, substantially as set forth.

4. The combination of the sleeve D, having the slot *i* and spring-key *l*, of the shaft *n*, having the lugs l^1 l^2 and seat *k* between them, substantially as and for the purposes set forth.

5. The combination of the sleeve D, having the extension *f*, the combined point-strap and billet, the back plate, *f'*, and securing-bolts, substantially as and for the purposes set forth.

6. The combination of the sleeve D, having the extension *f*, the combined point-strap and billet, the back plate, *f'*, and bolts, where said extension and back plate have the lips f^2 and the edge of said plates thinned, as at f^3, substantially as and for the purposes set forth.

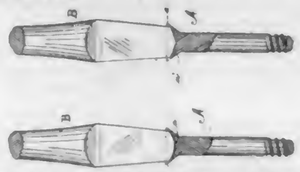
7. The combination, with the sleeve D, of the combined trace-strap and stay-strap, and means for securing it firmly to the sleeve, substantially as and for the purposes set forth.

8. In combination with the sleeve D, having the key *l*, and shaft *n*, having the seat *k*, the pin *r* and wedge *p*, supported within the shaft, substantially as and for the purposes set forth.

9. In combination with the shaft *n*, the guide-plate *s*, having the ribs *s'*, wedge *t*, and pin *r*, substantially as and for the purposes set forth.

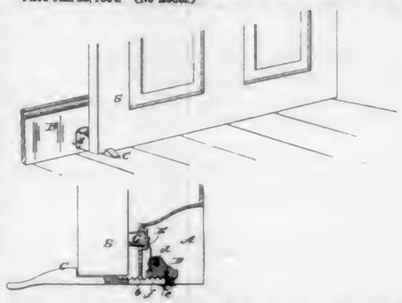
10. In combination with the shaft having the pins *r* and wedges *t* therein, the wires *t'*, rod *u*, and spring mechanism for operating said wedges, substantially as and for the purposes set forth.

297,004. SCREW. STACY POTTS, Washington, D. C. Filed Oct. 18, 1883. (No model.)



Claim.—A screw the head of which is provided with a drive-slot extending entirely across and sloping downward toward the center from the opposite ends, substantially as illustrated and described.

297,005. DOOR-CHECK. LOUIS RALL, GUSTAV RALL, and EDWARD RALL, Glasgow, Mo., assignors of one-fourth to Moritz Lahmann, same place. Filed Jan. 28, 1884. (No model.)



Claim.—1. In combination with the box or case A, the catch C, for holding the door open, made longitudinally adjustable to adapt it to doors of different thicknesses, the pivoted carrier D, constructed to engage with said catch at different points in its adjustment, and the spring E, substantially as specified.

2. The door-check herein described, consisting of the casing A, carrier D, pivoted therein and serrated on its under side, the catch C, slotted at *f*, and provided with the serrations *b*, and a set-screw *e*, for securing said serrated parts when properly adjusted, substantially as set forth.

297,006. WHIP. ALONZO C. RAND, Minneapolis, Minn. Filed Feb. 13, 1884. (No model.)

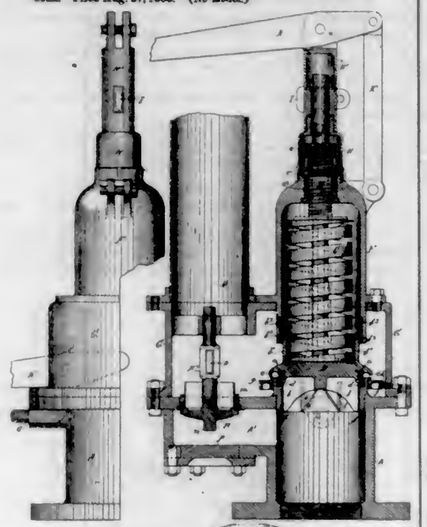


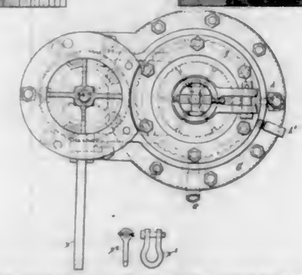
Claim.—1. A whip stock or body having an independent core or center which is capable of being given tension, longitudinally to the stock, by means substantially as described, and adapted for the purpose set forth.

2. A whip stock or body composed of sections bound together by means of an independent core which passes through them, and which is provided with an enlarged threaded end, and a nut adapted to secure the

parts firmly together and keep the whip taut, yet still elastic, substantially as set forth.

297,007. MARINE SAFETY-VALVE. GEORGE W. RICHARDSON, Boston, Mass., assignor to the Consolidated Safety Valve Company, Hartford, Conn. Filed Aug. 27, 1883. (No model.)





Claim.—1. In combination with the two-part lock-up case, composed of the two independent sections mounted upon the spring-casing, the lever connected with and arranged to move the upper section, said section being connected with the valve-spindle, substantially as shown and described.

2. The combination, as before set forth, of the slotted valve-spindle, the two-part lock-up case, the key passing through the upper section and through the valve-spindle, and arranged to receive a lock, and the testing-lever connected with the upper section, substantially as explained.

3. In combination with the base piece carrying a safety-valve and its appliances, a relief-valve communicating with the chamber which incloses the safety-valve, and a steam-discharge conduit leading from said chamber, substantially as shown and described.

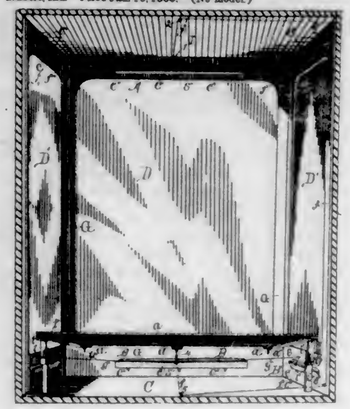
4. In combination with the relief-valve mounted upon same base as the safety-valve, the removable hand-hole plate, arranged substantially as shown, and for the purposes set forth.

5. The herein-described appliance for steam-boilers, the same consisting, essentially, of a spring-actuated safety-valve, a relief-valve, and a conduit for conveying steam discharged from the ports governed by said valves, the whole being mounted upon a suitable base, arranged to communicate with the interior of the boiler through a single opening therein, and adapted for operation substantially in the manner and for the purposes explained.

6. In combination with the casing surrounding the seat for the safety-valve, and also the seat for the relief-valve, as explained, the drain-pipe tapped into said casing, and arranged to drain the chamber formed thereby, substantially as shown and described.

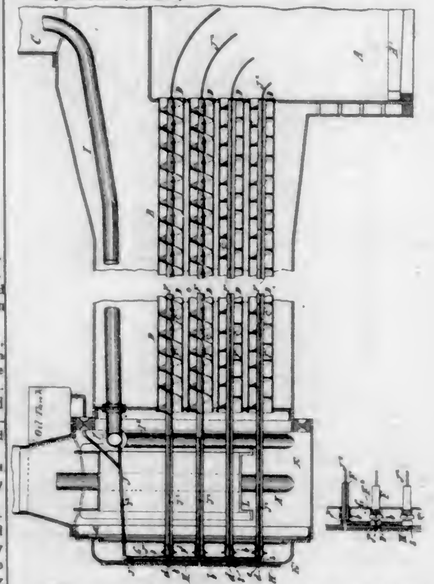
7. In an appliance for steam-boilers of the character herein set forth, the casing surrounding the openings governed by the relief and safety valves, and the casing for the tension-spring mounted upon the first-named casing and made removable therefrom, substantially as shown and described.

297,008. SHOW-WINDOW VENTILATOR. GEORGE W. RICHWINE, Muncie, Ind. Filed Jan. 10, 1883. (No model.)



Claim.—The combination, with a window-frame, of a hinged floor, supported above the lower part of the frame by overlapping adjustable legs, substantially as set forth.

297,009. STEAM-BOILER. JACOB ROEBLING, Brooklyn, N. Y. Filed July 16, 1883. (No model.)



Claim.—1. In a steam-boiler, the combination, with a fire-box, a smoke arch, chamber, or passage, and flues extending between the same, of perforated tubes extending through the flues and serving to conduct air into the same, and spiral flanges between the flues and tubes, substantially as described, whereby the products of combustion are caused to circulate spirally through the flues and air is discharged from the tubes into them.

2. In a steam-boiler, the combination, with a fire-box, a smoke arch, chamber, or passage, and flues extending between the same, of perforated

air-tubes extending through the flues, capable of being turned, and having spiral flanges secured upon them within the flues, substantially as herein described, whereby the products of combustion are caused to circulate spirally through the flues and air is discharged from the tubes into them.

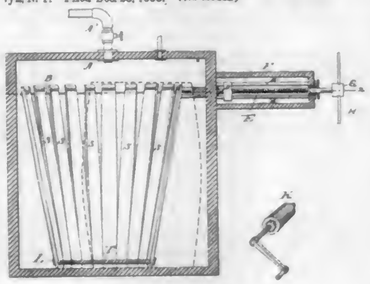
3. In a steam-boiler, the combination, with a fire-box, a smoke arch, chamber, or passage, and flues extending between the same, of air-tubes arranged within the flues, spirals between the tubes and flues, and pipes passing through the air-tubes and serving to convey steam to the fire-box, substantially as specified.

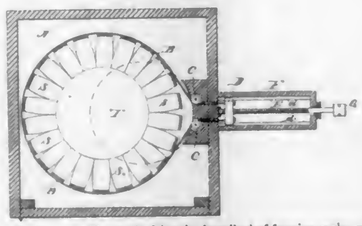
4. In a steam-boiler, the combination, with a fire-box, a smoke arch or chamber, and flues extending between the same, of perforated tubes extending into the flues, and a door or cover at the front of the smoke arch or chamber provided with perforations with which the forward ends of the tubes communicate, substantially as specified.

5. In a steam-boiler, the combination, with a fire-box, a smoke arch or chamber, and flues extending between the same, of perforated tubes extending into the flues, spiral flanges secured to those portions of said perforated tubes which extend into said flues, a door or cover at the front of the smoke arch or chamber provided with perforations with which the forward ends of the tubes communicate, and a perforated slide plate or valve, whereby the passage of air through the perforations of the door or cover may be regulated, substantially as specified.

6. In a steam-boiler, the combination of the flues D, the tubes F, the spiral flanges F', secured to said tubes, the diaphragm G, the springs F'', pins or their equivalents beyond the springs, and the door or cover E', substantially as specified.

297,010. BARREL-SHAPING MACHINE. JOS. M. ROBINSON, Brooklyn, N. Y. Filed Dec. 28, 1883. (No model.)





Claim.—1. The method herein described of forming casks, which consists in submitting the straight staves, when set up around one of the heads of the cask, to the action of steam in a steaming-box, drawing and completely closing the softened staves together to form the cask while still inclosed within the steaming-box, and binding and securing the free ends of the closed staves in position before removing the cask from the box.

2. The combination, with a steaming-box adapted to receive the set-up shook of a cask, of a flexible contractile loop or band fitted within the box in position to encircle the staves of the shook, and arranged to be contracted by suitable mechanical devices operated from without the box, substantially in the manner and for the purpose herein set forth.

297,011. HARNESS-PAD. CHAS. W. ROGERS, Baltimore, Md. Filed Jan. 23, 1884. (No model.)



Claim.—1. The plate E, provided with the ribs d^2 and loop e, and having openings d' to receive the nuts d^4 d^4, as and for the purposes set forth.

2. The combination, substantially as described, of the pad-top, the tree, the plates E, constructed as described, the nuts d^4 d^4, and the bolts G G, as and for the purpose set forth.

3. The combination, with the pad, of the tree provided with turn-back strap-loop and check-rein hook, the plate E, having loop e', and the bolts and nuts for connecting the same, as set forth.

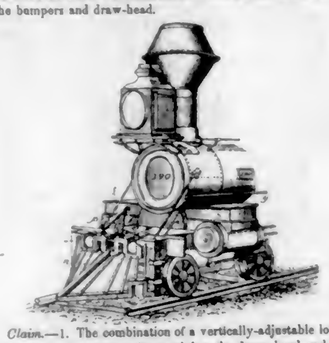
4. As an improved article of manufacture, the tree herein described, provided with perforations d d^3, rabbets d' d^3, and loop d^5, as set forth.

5. The tree provided with perforations d d^3 and rabbets d' d^3, in combination with eyebolts and nuts and the check-rein hook, as and for the purpose set forth.

6. As an improved article of manufacture, the tree herein described, provided with perforations d d^3 and rabbets d' d^3, and having the turn-back strap-loop d^5, made integral therewith, as set forth.

297,012. SAFETY DEVICE FOR LOCOMOTIVE-PILOTS. OSCAR ROTHROCK, Beech Creek, Pa. Filed Dec. 13, 1883. (No model.)

Brief.—A vertically-adjustable pilot is moved upon suitable guides at the forward end of the locomotive-truck, and is operated by a connection with the cab of the locomotive. Recesses are formed in the pilot for the bumpers and draw-head.



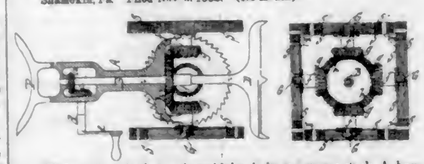
Claim.—1. The combination of a vertically-adjustable locomotive-pilot having spaces n n n, for receiving the draw-head and bumpers, with the mechanism consisting of the links f f'', rock-shaft E, lever h, and rod g, substantially as and for the purpose set forth.

2. The combination, with a locomotive-truck having posts p p, of a vertically-adjustable pilot attached to said posts, and means for operating said pilot at the will of the operator, as described.

3. The combination, with a locomotive-truck having posts p p at its forward end, said posts having guides o o, of the vertically-adjustable pilot constructed as described, and the means, substantially as herein set forth, whereby the same is operated from the cab of the engine.

4. The combination, with a locomotive-truck having suitable guides at its forward end, of a vertically-adjustable pilot moving in said guides, and means for raising and lowering the same, substantially as described.

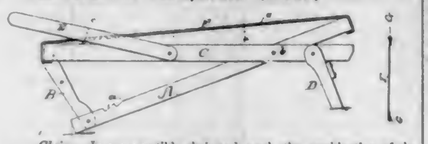
297,013. TOOL FOR BORING SQUARE HOLES. MAIER ROTHSCHILD, Shamokin, Pa. Filed Nov 8, 1883. (No model.)



Claim.—1. A boring-tool combining in its structure a stock, A, having four projecting arms, f, the spindle B, passing longitudinally through the stock and carrying the drill D, the four independent transverse spindles G, mounted, respectively, in the arms on the stock, a circular saw, S, mounted on each transverse spindle, and through which the latter passes, a secondary saw, S', in the form of an annulus, connected with the outer face of each saw at its periphery, to cut a passage-way for the outward-projecting ends of the transverse spindles, and means for revolving all the spindles, substantially as described.

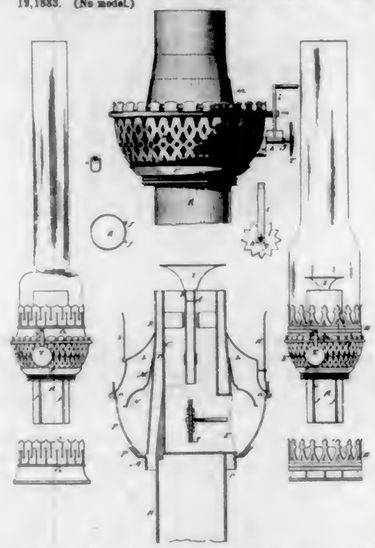
2. The combination, in a boring-tool, of the stock A, having the breast-plate P at its outer end, and four projecting arms, f, at its other end, the spindle B, passing longitudinally through the stock and carrying the drill D, the four independent transverse spindles G, mounted, respectively, in the arms on the stock, a circular saw, S, mounted on each transverse spindle, and means for revolving all the spindles, substantially as described.

297,014. CONVERTIBLE CHAIR AND BEDSTEAD. ELI RUNDELL, Santa Barbara, Cal. Filed Sept. 8, 1883. (No model.)



Claim.—In a convertible chair and couch, the combination of the frame A, reversible supports B, frame C, provided with buttons c, loop or frame E, and seat F, substantially as described.

297,015. LAMP-BURNER. STERNE RUSSELL, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Sept. 19, 1883. (No model.)



Claim.—1. In a tubular lamp-burner, the tubular extension R, extending downward from the inner tube, and constructed with the vertical parallel ribs f f, substantially as and for the purpose described.

2. In a lamp-burner, the annular drip-flange P, made as a fixed part of the burner and extending around its base above the screw, substantially as described.

3. In a lamp-burner, the combination of the wick-adjusting shaft g, the sleeve h, loose thereon, the lever i, hung in said sleeve, its end constructed to engage the shaft, substantially as described.

4. In a lamp-burner, the combination of the wick-adjusting shaft g, the sleeve h, loose thereon, the lever i, hung in said sleeve, its end constructed to engage the shaft, and the frictional spring n, substantially as described.

297,016. JOURNAL-BOX. EPHRAIM H. RUNT, Boston, Mass. Filed Mar. 4, 1882. (No model.)

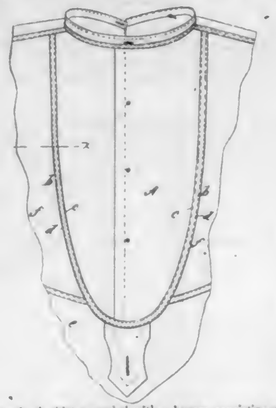


Claim.—The combination of the journal box or frame and the packing therein, composed of a substantially homogeneous admixture of asbestus and silicate of soda or equivalent substance, substantially as set forth.

297,017. METHOD OF PRODUCING ROLLER-SURFACES FOR PRINTING, STAMPING, OR EMBOSSING. J. JULIUS SACHS, Manchester, County of Lancaster, England. Filed July 1, 1880. (No specimens.) Patented in England July 4, 1879, No. 2,724.

Claim.—In the preparation of metal rollers for printing, the improvement consisting in covering the roller with chrome-gelatine, placing around it a curved or flexible pattern adapted to transmit light to certain parts and prevent the transmission to others, exposing the roller to light and revolving it to present each portion to the light, and removing the soluble portions of the chrome-gelatine coating, substantially as described.

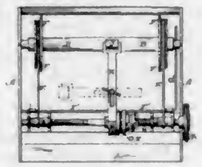
297,018. SHIRT. JOHN H. SCRIVEN, Grafton, N. Y. Filed Jan. 9, 1884. (Model.)



Claim.—1. A shirt provided with a bosom consisting of an outer ply hemmed around its outer edge, an interlining, and an inside lining, all secured together by stitches at their centers and attached to the body of the shirt by stitches i h, and the outer ply extending beyond the inter and inside linings and attached at the outer edge of its hem to the body of the shirt by the stitches d, substantially as described.

2. The method herein described of forming a shirt, consisting in hemming around the outer ply of the bosom and attaching said ply to an inter and an inside lining, then attaching the several plies to the body of the shirt by rows of stitching, one of which passes through the hem of the outer ply at its edge beyond the point of attachment of the other plies, substantially as described.

297,019. LET-OFF MECHANISM FOR LOOMS. JACOB SHAW, Wilmington, Del., assignor of one-half to Henry C. Downward, same place. Filed May 3, 1883. (No model.)



Claim.—1. The combination of the beam, the frame, the springs, the bands which are attached at one end to the springs, and then passed up over the beam, the tightening-shaft C, to which the other ends of the bands are fastened, a clutch placed upon the tightening-shaft, and an arm attached to a part of the clutch for bearing against the yarn on the beam, the shaft C being made to extend across the frame parallel to the beam, substantially as shown.

2. The combination of the beam, springs, and bands which are attached to the springs, and which pass up over the beam, with the shaft, which is provided with pulleys for receiving the bands, a clutch, and a friction-roller connected to the shaft for bearing against the beam, substantially as described

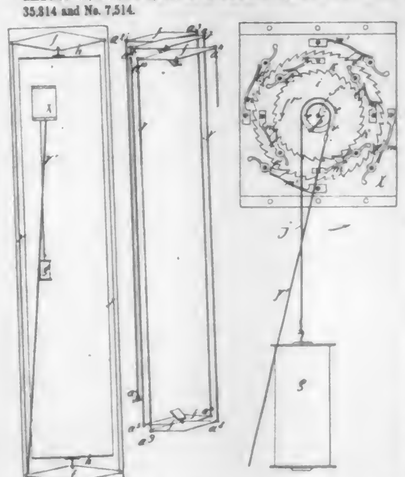
3. The combination of the beam with the bands E, springs, to which the bands are attached, the shaft C, a clutch, H O, spring Q, the friction-roller, the arm attached to the part H of the clutch, and carrying the friction-roller, and means for turning the shaft to adjust the tension of the springs and bands, substantially as set forth.

4. The combination of the beam with the bands E, springs, to which the bands E are attached at one end, a shaft for receiving the opposite ends of said bands, a clutch, H O, a spring, Q, upon said shaft, the roller J, and the slotted support for said roller attached at its lower end to the part H of the clutch, substantially as specified.

5. The combination of the beam B with the bands E, springs G, shaft C, and clutch H O, spring Q, a friction-roller, which is carried by the part H of the clutch, and bears against the beam, and the pin B', substantially as specified.

6. The combination of the beam with the bands E, springs G, rod F', provided with the arms H' and the handle G', the connecting-hooks which unite the springs and the arms together, and the shaft C, to which the bands E are fastened at one end, substantially as set forth.

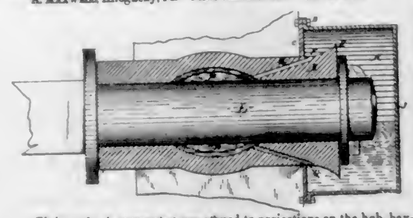
297,020. AUTOMATIC CLOCK-WINDING DEVICE. NATHAN SILBERBERG, Targ, Roumania. Filed July 3, 1883. (No model.) Patented in Germany Oct. 25, 1882; in France Oct. 26, 1882, No. 151,758; in England Nov. 28, 1882, No. 5,661, and in Austria-Hungary Feb. 24, 1883, No. 35,314 and No. 7,514.



Claim.—1. In a clock, the combination, with a metal chain formed of a series of bars or rods connected by levers, of the weight *g*, the chain *j*, the disks *b d* on the shaft *f*, the rope *e*, the ratchet-wheels *i k*, the pawls *l l'*, and the springs *m m'*, which ratchet-wheel *k* is connected with the chain for winding up the weight or spring of the clock, substantially as herein shown and described, and for the purpose set forth.

2. In a clock, the combination, with a metal chain formed of a series of bars or rods connected by levers, of devices for winding up the weights or springs of a clock, and of a safety-catch for automatically preventing the further winding of the spring or weight at the proper time, for the purpose of preventing overwinding of the clock-work, substantially as herein shown and described.

297,021. CAR-WHEEL LUBRICATOR. JAMES P. SULLIVAN and JAMES A. MAXWELL, Allegheny, Pa. Filed Jan. 24, 1884. (No model.)

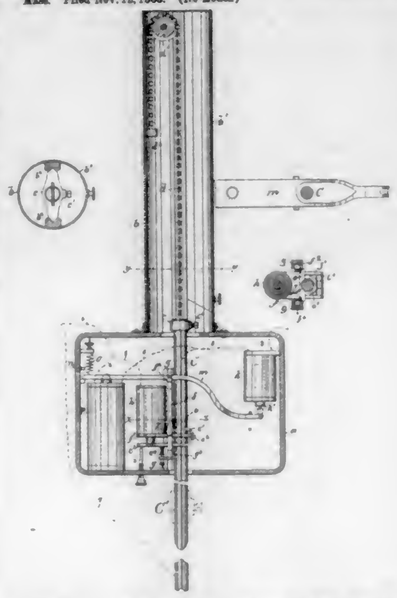


Claim.—1. A corrugated cap affixed to projections on the hub, having a central aperture for the introduction of a lubricant, substantially as described.

2. In a corrugated cap affixed to projections on the hub, a gutter formed by the expanded forward end of the hub and the surrounding wall of the cap, substantially as described.

3. The combination of the cap A with gutter F and the channels G, leading to the corrugated chamber H in the hub, substantially as shown and described.

297,022. ELECTRIC-ARC LAMP. JOSEPH J. SKINNER, Newtonville, Mass. Filed Nov. 12, 1883. (No model.)



Claim.—1. In an electric lamp, a clamp and lifting mechanism therefor, combined with a magnet controlling the jaws or carbon-gripping portions of the clamp independently of the position or movement of the clamp, whereby the said gripping portions are operated without bodily movement of the said clamp parallel with the carbon, substantially as described.

2. In an electric lamp, a clamp and lifting mechanism therefor, combined with an electro-magnet rigidly connected with the said clamp and movable therewith, substantially as described.

3. In an electric lamp, a clamp and lifting mechanism therefor, combined with an independent magnet included in a shunt around the arc, and operatively connected with the jaws or gripping portion of the clamp, whereby the said gripping portion is operated to feed the carbon independently of the bodily movement of the clamp relative to the lamp-box, substantially as described.

4. In an electric lamp, a clamp and lifting-magnet therefor, combined with a depressing-magnet in a shunt-circuit around the arc, a retractor for said depressing-magnet, and an independent magnet operatively connected with the jaws or gripping portion of the clamp, and controlling the said gripping portion independently of the position of the clamp relative to the lamp box or frame, substantially as described.

5. The clamp and its lifting-magnet and a depressing-magnet in a shunt-circuit around the arc, the said magnets tending to move the clamp in opposite directions, and each operating independently of the other to produce its raising or lowering effect upon the clamp, combined with an independent controlling-magnet for the jaws or the gripping portion of the clamp, substantially as described.

6. In an electric lamp, the lamp-box containing the feed-controlling devices of the lamp, and tube surmounting the said box, having one side movable for the purpose of introducing the carbons from above the lamp-box, the carbon being engaged directly by the clamp, substantially as described.

7. The lamp-box and clamp and its operating mechanism therein, combined with the tube surmounting the box, provided with guides, and the cross-head movable therein, the said cross-head and clamp constituting the guides for the carbon, substantially as described.

8. The clamp and lifting mechanism therefor, combined with a magnet operatively connected with the jaw or gripping portion of the clamp, the said magnet being in a shunt-circuit around the arc, and the said shunt-circuit including the carbon and clamp-jaw, substantially as described.

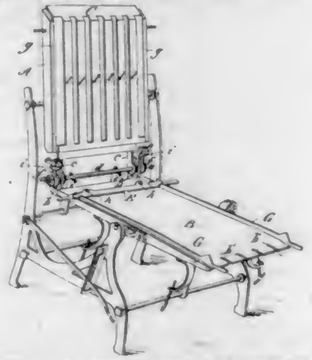
9. The clamp-frame having a jaw or gripping member fixed upon it adapted to engage the carbon at one side only, and a co-operating jaw or gripping member pivoted on the said frame and adapted to engage the carbon at the opposite side, one of the said jaws being higher than the other, and the said jaws permitting a free movement of the carbon between them when the said carbon is in an inclined position, substantially as described.

10. In an electric lamp, the clamp-frame having carbon-gripping devices or jaws, combined with guides fixed with relation to the lamp-box or frame-work, the said guides controlling the movement of the said clamp-frame, substantially as described.

11. In an electric lamp, a clamp and lifting mechanism therefor, combined with an independent magnet operatively connected with the jaws or gripping portion of the clamp, and controlling the said gripping portion independently of the position of the clamp relative to the frame-work of the lamp, and a stop whereby the grip of the clamp upon the carbon is relaxed when the clamp is in its lowest position with relation to the frame-work, substantially as described.

12. The lamp box or frame and guides *b'*, and the cross-head C, movable therein, combined with the clamp-frame and clamp and guides therefor, the said cross-head and clutch determining the position of or guiding the carbon in its feeding movement, substantially as described.

297,023. APPARATUS FOR STEREOTYPING. FREDRICK J. SMITH, Brooklyn, assignor of one-half to JAMES H. BEALS, Jr., New York, N. Y. Filed Nov. 29, 1882. (Model.)



Claim.—1. In a stereotyping apparatus, the combination, with a nowel having its forward end slotted, of a foot-piece having its forward side notched and removably secured to the rear end of the nowel, and removable side bars engaging with the notches and slots of foot-piece and nowel, substantially as herein shown and described.

2. In a stereotyping apparatus, the combination, with nowel B, provided with holes near its rear end, and the slots *b'* at its forward end, of the foot-piece E, provided with the pins *h* and notches *e'*, and the removable side bars G, substantially as herein shown and described.

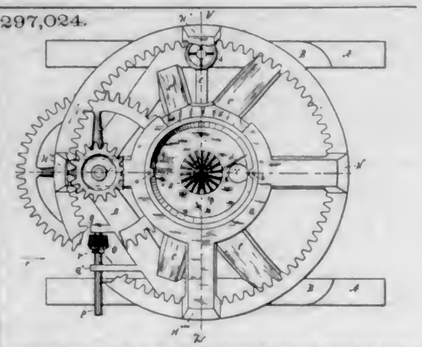
3. The slotted hinge-plates *b b*, formed on the nowel B, and having the perforated plates *i i*, formed at their upper ends, in combination with the eye-plates *c c*, formed on the cope, the rod *d* and the eyebolts *f f*, placed on the rod and passing up through the plates *i i*, and nuts *e e* on said eyebolts, for adjusting the hinge, substantially as set forth.

297,024. GRINDING-MILL. GEORGE K. SMITH, Freeport, assignor to H. C. Staver & Co., Chicago, Ill. Filed June 4, 1883. (No model.)

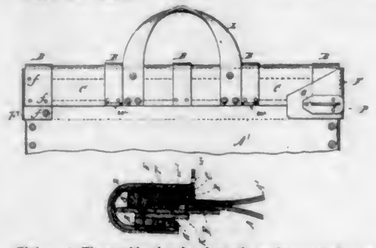
Claim.—1. In a grinding-mill, the combination of suitable grinding mechanism, a train of gearing connected with said grinding mechanism, and adapted to propel the same, a power-transmitting shaft connected with said train of gearing, and adapted to transmit the motion thereof to machinery other than said grinding mechanism, and means whereby said grinding mechanism and power-transmitting shaft may be thrown out of engagement with said train of gearing, substantially as shown and described, and for the purpose set forth.

2. The combination of the master-wheel G, pinion L, spur-gear K, pinion M, mounted on the shaft J', lever *e*, supporting said shaft, and removable pin *m*, supporting said lever and adapted by its withdrawal to throw said pinion M out of engagement with the spur-gear K, substantially as shown and described, and for the purpose set forth.

3. In a grinding-mill of the class described, the combination of an internally-geared horizontal master-wheel, a vertical shaft rotating in the center of the master-wheel, and independent thereof, a horizontal grinding-burr, and a horizontal pinion rigidly mounted on said vertical shaft, a suitably-journaled horizontal shaft adapted to transmit motion to mechanism other than said grinding-burr, a beveled gear mounted on said horizontal shaft, and a spur and bevel gear connecting said master-wheel with said horizontal pinion and said beveled gear, substantially as shown and described, and for the purpose set forth.



297,025. MAIL-BAG. THOS. H. SMITH, Bloomington, Ill. Filed Feb. 19, 1884. (No model.)



Claim.—1. The combination, in a bag, of a stationary hood or cover, rigid transversely, beneath which the flap of the bag is locked in position, with a locking-strap adapted to be likewise drawn beneath the hood or cover, thereby preventing the opening of the bag, substantially as described.

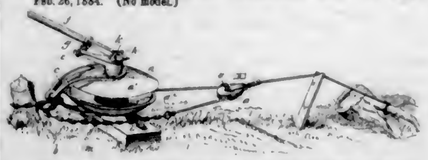
2. The combination, in a bag, of a stationary U-shaped cover, rigid transversely, provided with a longitudinal recess, and the flap of the bag provided with a strip adapted to rest in said longitudinal recess, with a locking-strap adapted to be drawn longitudinally beneath said hood, thereby preventing the opening of the bag except on the withdrawal of the strap, substantially as described.

3. The bag A, having its front or opening flap provided with a strip, H, adapted to engage and rest in the channel T, with a suitable locking device for preventing the withdrawal of the front of the bag from the hood, substantially as described.

4. The combination, in a bag, of a hood, C, provided with a channel, T, and the front flap of the bag provided with locking-strip E, and the strap F, provided with locking-strip H, substantially as described.

5. The combination of stationary rigid U-shaped straps or hooks permanently attached to one side of the top of a bag, provided with suitable locking devices, beneath which the flap, when closed, is locked in position, with a flexible locking-strap adapted to be drawn beneath the said straps or hooks, thereby preventing the opening of the bag, substantially as described.

297,026. STUMP-EXTRACTOR. WILLIAM SMITH, Tomah, Wis. Filed Feb. 26, 1884. (No model.)



Claim.—1. In a portable windlass, the combination, with the drum, of the upper and lower concave flanges, substantially as specified.

2. In a portable windlass, the combination, with the concave-flanged drum having the arm at its upper end, of the half-clevis and link forming the frame therefor, and mechanism for winding the drum, substantially as specified.

3. In a portable windlass, the combination, with the drum having the concave flanges at the upper and lower ends, the arm at the top, and the clevis forming the frame for the drum, of the center-bolt having the oblique loop at its upper end, and the operating-lever provided with the three links, whereby it may be connected to the arm and the oblique loop to operate the windlass, substantially as specified.

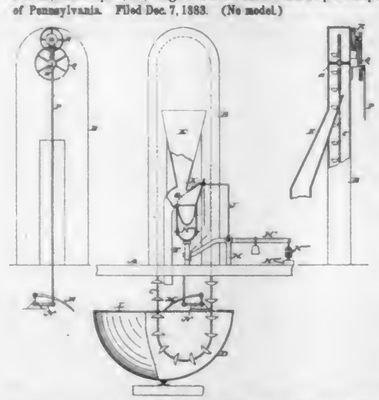
4. In a portable windlass, the combination, with the concave-flanged drum having the arm and oblique loop at its upper end, and supported in bearings in a suitable frame, of the rope and the pulley, having the pivoted guards for holding the rope in place, and an operating-lever for winding the drum, substantially as specified.

5. In a portable windlass, the combination, with the drum and clevis and mechanism for operating the drum, of the cross-plank secured to the under face of the half-clevis and forming a base for the machine, substantially as specified.

6. In a portable windlass, the combination, with the drum having the upper and lower concave flanges, the upper arm, and operating-lever, of a suitable frame forming bearings for the drum, substantially as specified.

297,027. WEIGHING AND SUPPLYING APPARATUS.

HENRY E. SNYDER, Philadelphia, Pa., assignor to the Weikel & Smith Spice Company, of Pennsylvania. Filed Dec. 7, 1883. (No model.)



Claim.—1. A hopper provided with a chute which is permanently uncovered, and an additional discharge throat or outlet, in combination with weighing devices which automatically cut off the supply of grain through said discharge throat or outlet whenever a certain quantity has been weighed, substantially as set forth.

2. A hopper provided with a permanently-open chute and an additional discharge throat or outlet, in combination with a plate, K, adapted to slide across said throat and clear it, a scale-pan arranged to receive the grain from said throat, and a scale-beam and connecting-rods through which the descent of said pan gradually moves said plate across said throat or outlet and closes the same, substantially as set forth.

3. A supply-pan and an endless conveyer for raising the material therefrom, in combination with a hopper which is fed by said conveyer and discharges into said pan, and automatic weighing devices, which are supplied through an independent outlet or discharge-throat of said hopper and operate to close the same when a certain quantity has been weighed, without closing the outlet whereby said hopper discharges into said supply-pan.

4. A supply-pan and an endless conveyer operating therein, in combination with means for imparting rotary motion to said pan, substantially as and for the purpose set forth.

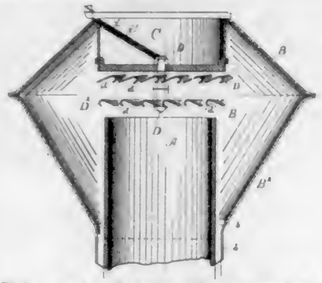
5. A hopper provided with a chute which is permanently uncovered, and an additional discharge throat or outlet, in combination with weighing devices which automatically cut off the supply of grain through said discharge throat or outlet whenever a certain quantity has been weighed, and a counterbalance-weight controlling said devices and consisting of two sliding parts, operating substantially as set forth.

6. A hopper provided with a permanently-open chute and an additional discharge throat or outlet, in combination with a plate adapted to slide across said throat and close it, a scale-pan arranged to receive the grain from said throat, a scale-beam and connecting-rods through which the descent of said pan gradually moves said plate across said throat or outlet and closes the same, and a counterbalance-weight controlling said devices consisting of two sliding parts, substantially as and for the purpose set forth.

7. The combination, with an automatic weighing and supplying device, of a counterbalance-weight consisting of an upper constant part, H'''', and a lower part, H''''', one part being hollow and internally shouldered, and the other part having a connecting-stem formed with a T-head, substantially as and for the purpose set forth.

297,028. SPARK-ARRESTER.

HARRY M. STAINFIELD, Bucyrus, Ohio. Filed May 2, 1883. (No model.)



Claim.—1. A spark-arrester having two vanes, one above the other, in the line of draft and loose upon their shaft.

2. A spark-arrester having two revolving vanes loose upon their shaft, the blades on one vane being at a reverse angle to the blades on the other vane, substantially as described.

3. In a spark-arrester, a vane having blades curled upon themselves to form recesses, substantially as described.

4. In a spark-arrester, a vane having blades provided with flanges d^2 and d^4, substantially as described.

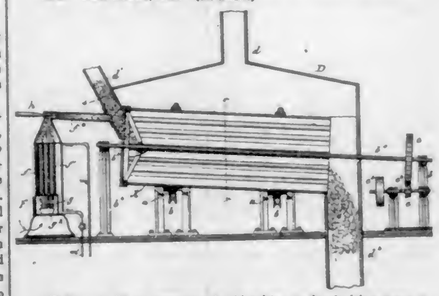
5. In a spark-arrester, a vane having a blade provided with flanges d^3 and d^4, and a recess, d^2, substantially as described.

6. In a spark-arrester, the combination of a vane-post and a lubricator located outside the stack and connected with the post by a tube, substantially as described.

7. In a spark-arrester, the combination of a vane-post, a lubricator located outside the stack, and connected with the post by a tube inclosed within a tube, substantially as described.

297,029. METHOD OF AND APPARATUS FOR BLEACHING SUGAR.

OSCAR B. STILLMAN, Natick, and JOHN M. STILLMAN, Watertown, Mass. Filed Dec. 26, 1883. (No model.)



Claim.—1. In an apparatus for bleaching or decolorizing sugar, a chute or passage for the sugar, combined with an apparatus for the production of sulphurous-acid gas, and with a pipe to discharge the said gas into the sugar, substantially as described, to operate as and for the purposes set forth.

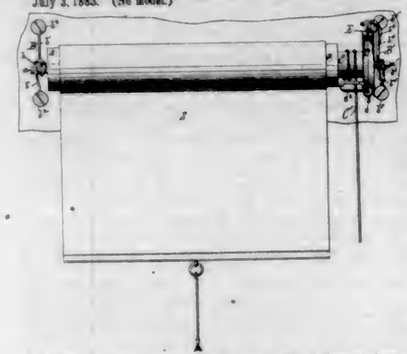
2. The chute *d*, for the passage of the crystallized or granular sugar, combined with the pipe f^7, to conduct sulphurous-acid gas into the said sugar, and with a pipe, *h*, to deliver steam into the pipe f^7, substantially as described.

3. A chute or conductor for the sugar, and rotary cylinder to receive the sugar from the said chute or conductor, combined with a pipe to conduct sulphurous-acid gas into the said sugar, and with an apparatus for the production of the said gas, as and for the purposes set forth.

4. In the art of manufacturing sugar, subjecting the crystallized or granular sugar, while in motion, to the action of sulphurous-acid gas, as and for the purpose described.

297,030. SHADE-FIXTURE.

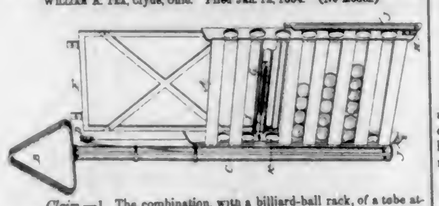
HENRY E. STOVER, St. Louis, Mich. Filed July 3, 1883. (No model.)



Claim.—The combination, with the shade-roller A, journaled at *a a'* to run freely in bearings, as described, and provided with the barrel C and operating-cord C', together with the pulley D, of the bracket B, carrying the bearing b^3, and the friction-lever E, with its spring *e'*, arm *e*, and loop e^3, said bracket and lever being formed of a single piece of wire bent and turned upon itself to constitute said bearing, lever, spring, arm, and loop, as specified, and for the purpose set forth.

297,031. AUTOMATIC INCLINE POOL-BALL RACK AND SPOTTER.

WILLIAM A. TEA, Clyde, Ohio. Filed Jan. 12, 1884. (No model.)



Claim.—1. The combination, with a billiard-ball rack, of a tube attached to one side thereof, and means for raising and lowering the same, substantially as shown and described, whereby billiard-balls placed in the rack will be received in the tube and conducted to a table, as shown and described.

2. The combination, with a billiard-ball rack and a tube attached to one side thereof, of a triangular frame secured to the end of the tube, and means for raising and lowering the same, substantially as specified.

3. The combination, with a billiard-ball rack, A, provided with hinges I, and the tube C, attached thereto, of the frame F, hinged at one end to the rack at I, and at the other end to the wall, and the pulley D and weight and cord E, substantially as shown and described.

4. The combination, with the rack A, the tube C, the hinged frame F, the weight E, and pulley D, of the roller-hinges H on the rack, and the grooved ways J, as shown and described.

5. The combination, with the ball-rack A, the frame F, hinged thereto and to the wall, the roller-hinges H, the grooved ways J, and the tube C, of the brace-chains L, as shown and described.

6. The combination, with the rack A, hinged to swing, as described and the tube C, connected thereto, of the stop-door K and the spring G, for returning the same, as shown and described.

7. The combination, with the rack A, hinged to swing, as described, the tube C, attached thereto, and the stop-door K, hinged to the rack, of the two chains L, one connecting the rack and wall, and the other connecting the door K and the wall, as shown and described, the two chains being of such relative lengths that the rack A, when tipped down, will incline toward the tube C, and the door K will be held open, for the purpose specified.

297,032. SHUTTER-WORKER.

LEONARD TILTON, Brooklyn, N. Y. Filed Oct. 19, 1883. (No model.)

Claim.—1. The window-blind holder herein shown and described, consisting of the jointed arm A and stud B, and combined with means, substantially as described, for locking the sections of the arm A, at their pivotal points, at any desired position, as and for the purposes set forth.

2. The sections *a* and *a'*, hinged together and to the stud B, the stud being formed with notches *g'*, and the section *a* with notches *g*, in combination with the dogs G G', springs *l*, and cam F, all arranged to operate substantially as set forth.

297,032.



3. The section *a'* of the arm A, formed with the flanges *i i*, in combination with the section *a*, formed with the stop-lips *h h*, substantially as and for the purposes set forth.

4. The stud B, formed with lips *h' h'*, in combination with the section *a'* of the arm A, formed with the flanges *i i*, substantially as and for the purposes set forth.

5. The hollow section *a'* of the arm A, inclosing the sliding dogs G G', and springs *l l*, in combination with the cam F, arranged between the dogs, and adapted to be turned by crank I and locked by jam-nut J, substantially as described.

6. The cam F, arranged between the adjacent ends of the dogs G G', and formed with the stop-lips *g g*, substantially as and for the purposes set forth.

297,033. TERRET FOR HARNESS.

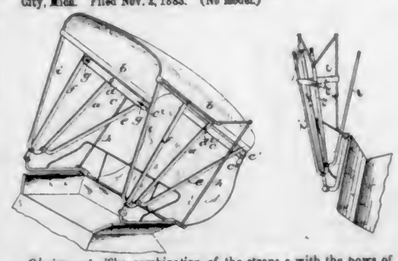
HARRY F. TOWNSEND and LEON A. TOWNSEND, Avon, Ill. Filed Oct. 13, 1883. (No model.)



Claim.—The combination of a terret having two perforated lips upon the lower end of one side, a lever curved to conform to the shape of the side of the terret and pivoted between the lips, and a spring bearing against the lower end of the lever and against the shank of the terret, as and for the purpose shown and set forth.

297,034. CARRIAGE-TOP FASTENER.

JOHN JACOB TRAVIS, Carson City, Mich. Filed Nov. 2, 1883. (No model.)



Claim.—1. The combination of the straps *c* with the bows of a carriage-top, said straps being attached at or near the middle to one bow *a*, and adapted to fasten around the bows and the braces *h*, to confine the bows when the top is folded down, substantially as described.

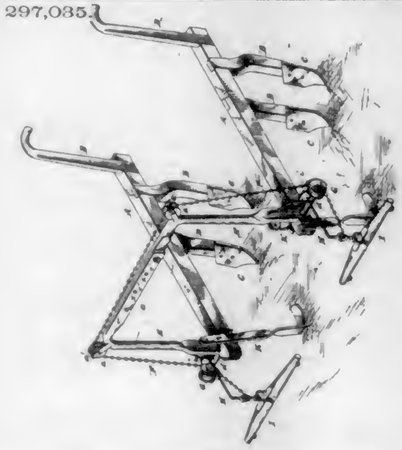
2. The straps *c*, attached at their middle to the bows *a*, and provided at their ends with button-holes, in combination with the buttons *g* on the bows *e f* at their upper ends, whereby the strap may serve as a brace, substantially as set forth.

297,035. CULTIVATOR.

MARTIN A. TRAVIS, Hamburg, Iowa. Filed Nov. 28, 1883. (No model.)

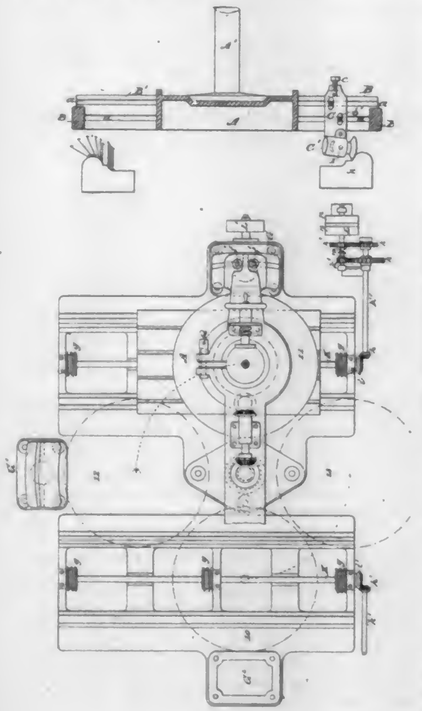
Claim.—The combination, in a cultivator, of the standards E E, adjustably secured together, and the beams A A and their attachments, the pulleys *a a*, the chain F, passing over the same, and the movable bars H H, passing through apertures in the plates *i i*, the bars having the ends of the chains attached to them, and the whiffletrees I, the bars by sliding back and forth serving to take up the slack of the chain as the standards are adjusted, and the chain permitting the whiffletrees to act together as a double-tree, substantially as specified.

297,035.



297,036. MACHINE FOR DRESSING STONE. FRANK TEIER, London, England. Filed Nov. 6, 1883. (No model.) Patented in England Jan. 30, 1883, No. 341.

Brief.—Rotating chucks carry tool-holders which carry rolling cutter-disks, said holders being adjustable vertically and horizontally on the chucks. The chucks are mounted in a swinging frame pivoted to one side of the track upon which the stone-supporting carriage runs, so that the chucks may be swung into position to cut either the top surface or the edge of a slab. Posts are located to support the outer end of the frame in either of its positions.



Claim.—1. In a stone-dressing machine, a cutter-carrying chuck or head having a series of arms for holding the cutter-carrying slides, said slides being adjustable toward and from the stone in a line parallel with the axis of vibration of the chuck, as set forth.

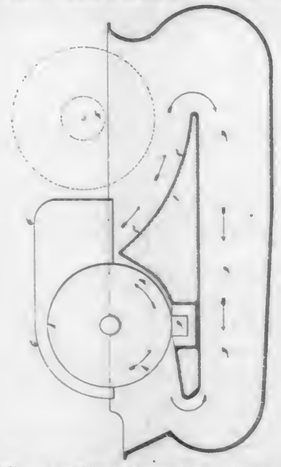
2. In a stone-dressing machine, a cutter-holding chuck or head consisting of a central spindle having arms radiating therefrom, and joined by an outer rim, in combination with cutter-carrying slides adapted to be vertically and horizontally adjusted on the arms, as set forth.

3. In a stone-dressing machine, a cutter-holding chuck having a series of slotted arms, to each of which are secured one or more slides, said slides being adjustable to and from the stone to be dressed in lines parallel with the axis of vibration, and also adjustable in lines at right angles to the line or axis of rotation, in combination with cutters and cutter-holders pivoted to the slides, said cutter-holders being adjustable in a circular direction around said pivotal point, as set forth.

4. As an improvement in the art of dressing stone with moldings or irregular surfaces thereon, a rotating chuck carrying a gang or gangs of cutter-carrying slides, said slides being adjustable on the chuck in vertical and horizontal planes, and to which are pivotally attached cutter-holders bearing independently-rotating cutters capable of adjustment around said pivotal point, whereby the cutters are adjusted and arranged to act on the stone at different angles and at varying depths, to give the required shape and finish to the surface of the stone by the continual rotation of the chuck, as set forth.

5. In a stone-dressing machine, a centrally-pivoted and horizontally-swinging beam supported at its ends (when in working position) by columns G G' G², said beam being provided with cutter-holding chucks, in combination with a vertical shaft passing up through the pivot of the beam, which is geared to the main driving-shaft at the bottom and to shafts at the top, for driving the cutter-holding chucks, as set forth.

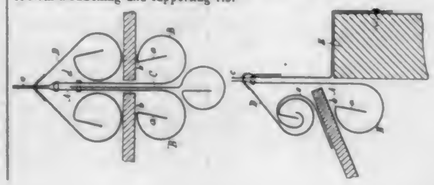
297,037. MACHINE FOR PREPARING PULP FOR PAPER-MACHINES. WILLIAM UNTHERSTON, Leith, Scotland. Filed Jan. 28, 1884. (No model.) Patented in England Mar. 17, 1880, No. 1,150.



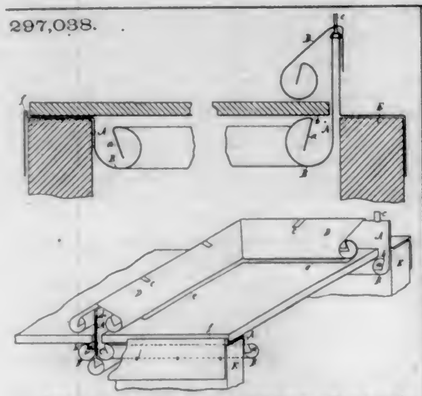
Claim.—A machine for preparing pulp, consisting of the roll A, bottom plate, B, and back-fall C, said parts being arranged to operate within a trough having a passage, D, beneath such parts, through which the pulp is returned for repeated treatment, as described.

297,038. SKYLIGHT. CHARLES A. VAILE, Baltimore, Md. Filed June 20, 1883. Renewed Mar. 17, 1884. (No model.)

Brief.—The glass supports and the bearing portion of the cover are of tubular form, the interior edges of the plates being bent downward to form a stiffening and supporting rib.



297,038.

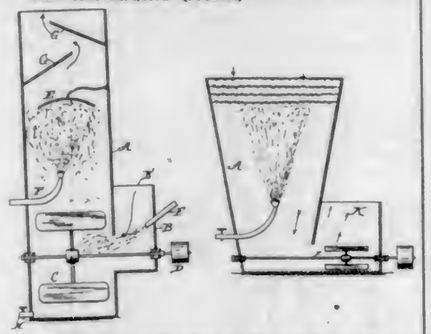


Claim.—1. A skylight-bar of open tubular form, with an inwardly-projecting stiffening and water-conducting strip, substantially as specified.

2. In combination with the open tubular portion of a skylight-bar, the sheet-lead strip e, combined with and arranged with reference to the said bar, substantially as and for the purpose specified.

3. In combination with the sheet A, bent so as to give two open tubular bearings for the glass plates, the stiffening-bar C, substantially as specified.

297,039. AIR-COOLING MACHINE. WILLIAM V. WALLACE, Boston, Mass. Filed Mar. 4, 1884. (No model.)



Claim.—1. The method herein described of cooling and moistening air in rooms or apartments, the same consisting in spraying or pouring water or other air-cooling liquid directly onto rapidly-revolving and positively-driven air-agitating surfaces, as set forth.

2. In a device for cooling and moistening air, the combination of a fan-blower or other air-agitating devices with sprays or jets of water let into the apartment in which the fans are located, or into the channel through which the air is forced, and onto the rapidly-revolving surfaces of the fan-blower, as set forth.

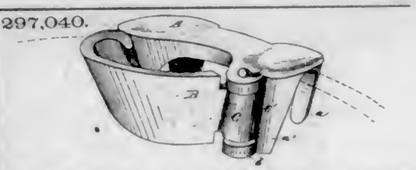
3. In a device for cooling and moistening the air of rooms and apartments, a fan-blower mounted in a suitable casing, having air inlets and outlets, the vanes or shaft of said fan-blower being provided with buckets adapted to be revolved by a stream of water coming in contact therewith, as set forth.

4. In a device for cooling and moistening the air of rooms or apartments, a fan-blower adapted to be revolved in a chamber in which sprays or jets of water are thrown, in combination with a series of spray-guards, whereby the free water is prevented from being thrown into the apartment, as set forth.

297,040. MOP-WRINGER. JAMES F. WALTER, Waterloo, Iowa, assignor to A. D. Ellis, same place. Filed Oct. 11, 1883. (No model.)

Claim.—1. As a new article of manufacture, the mop-wringer herein described, consisting of the castings A and B, hinged to each other, the casting A being provided with means for attachment to the rim of a bucket, and the curved tapering casting B provided at its free end with

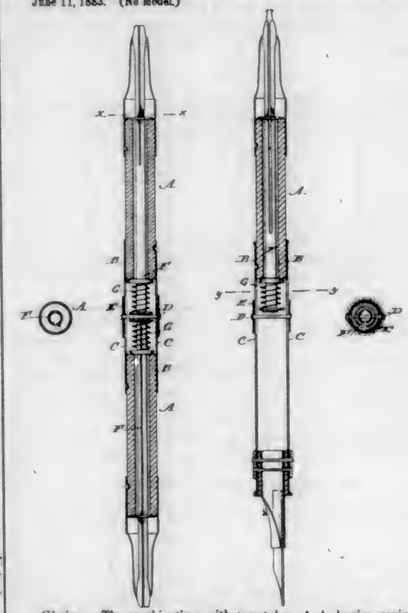
297,040.



a hook portion, C, having an upwardly-inclined lower edge, substantially as set forth.

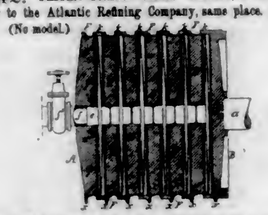
2. The improved mop-wringer herein described, consisting of the portion A, having downwardly-projecting arms *a a'* and projecting ears *b b*, through which passes a connecting-pintle, and the casting B, tapered from its upper edge downwardly, and provided with an eye, *c*, having a stop, *c'*, formed thereon, and at its opposite end an inwardly-curved portion, C, having its lower end beveled upwardly, substantially as described and shown.

297,041. PENCIL. GEORGE CHARLES WARD, Girard, Kans. Filed June 11, 1883. (No model.)



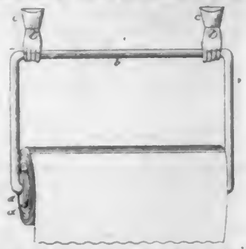
Claim.—The combination, with two tubes, A A, having spring-pressed pencil-holders F F, of a tube, B, having two longitudinal slots, C C, and a sliding sleeve, E, provided with the cross-pin D, as and for the purpose specified.

297,042. FILTER-PRESS. HENRY WARDEN, Philadelphia, Pa., assignor to the Atlantic Refining Company, same place. Filed May 24, 1883. (No model.)



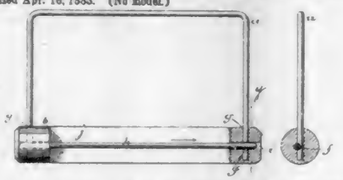
Claim.—The combination, in a filtering-press, of a series of grooved plates, one plate having a flange overlapping the periphery of the adjoining plate, with filtering-disks folded at and near their outer edges over the periphery of one plate and attached thereto, all substantially as set forth.

297,043. TOILET AND WRAPPING PAPER HOLDER. SETH WHEELER, Albany, N. Y. Filed Apr. 16, 1883. (No model.)



Claim.—As a new article of manufacture, a toilet-paper fixture composed of a bail or handle made of light wire bent to form laterally-yielding spring-arms, and provided with means for attachment to the ends of a central core, said spring-arms being of a length that will permit them to be grasped above the edge of the core for the purpose of expanding for removal from the core, and a suspension device, substantially as shown, connected with said bail, so as to permit a swinging movement of the bail when the roll of paper is suspended, substantially as described.

297,044. TOILET-PAPER FIXTURE. SETH WHEELER, Albany, N. Y. Filed Apr. 16, 1883. (No model.)



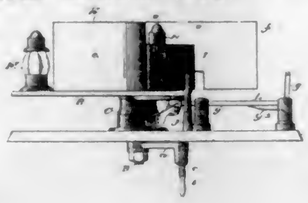
Claim.—A toilet-paper fixture composed of a bar provided with vertical and longitudinal slots near both ends and recessed between its ends, in combination with a bail-handle notched near both ends and entering the vertical slots from the periphery of the bar, and a transverse rod entering the longitudinal slots and the notches of the bail-handle, substantially as described.

297,045. WRAPPING OR TOILET PAPER FIXTURE. SETH WHEELER, Albany, N. Y. Filed Feb. 6, 1884. (No model.)



Claim.—In a toilet-paper fixture, the spring-handle having its ends bent to form hooks, in combination with the roller having vertical slots through its periphery to permit the passage of the hook ends of the handle, and the engagement of such ends with the roller, substantially as described.

297,046. NAUTICAL SIGNAL-LIGHT. MERRITT WHITE, North Adams, Mass. Filed Jan. 22, 1884. (No model.)

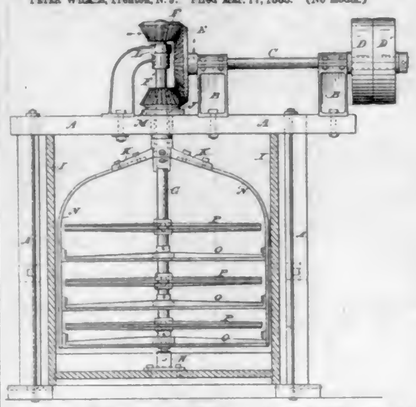


Claim.—1. In nautical signals, the combination of a revolving platform, colored lights upon the same, and a shield stationary relatively to said platform and lights, substantially as and for the purpose described.

2. In nautical signals, the combination of a revolving platform, colored lights upon the same, cams attached to the same, and a steam-whistle having connection with said cams, substantially as and for the purposes described.

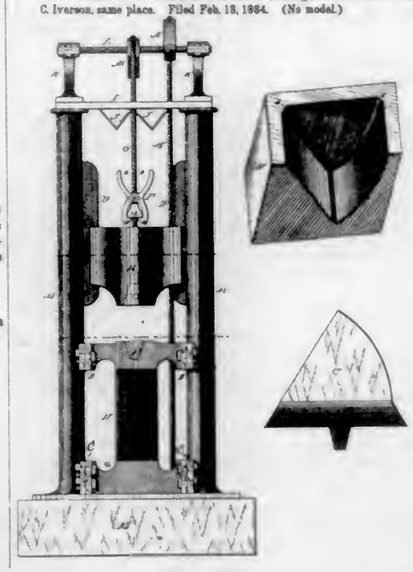
3. In nautical signals, the combination of a revolving platform, colored lights upon the same, cams attached to the same, a steam-whistle having connection with said cams, and a spring-detent handle for revolving and holding said platform in the desired position, all arranged and operating substantially as described.

297,047. BLUNGER FOR MIXING CLAY FOR POTTERS' USE. PETER WILCH, Trenton, N. J. Filed Mar. 17, 1883. (No model.)



Claim.—In combination with a suitable frame, A, and clay-tank I, the vertical shaft G, provided with cross-arms P, cage N, provided with cross-arms O, the shaft G passing centrally through both sets of arms, and adapted to be rotated in a direction opposite to that of the cage N, by means substantially as described, for rotating the cage and shaft, as hereinbefore set forth.

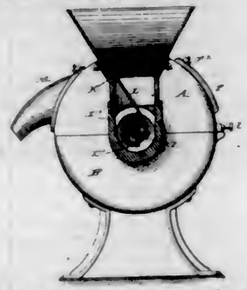
297,048. MACHINE FOR DOUBLE-SEAMING ELEVATOR-BUCKETS. CHARLES J. WILLIAMS, Milwaukee, Wis., assignor of one-half to John C. Iverson, same place. Filed Feb. 13, 1884. (No model.)



Claim.—1. The combination of the columns A, provided with the flanges B and C, and guideways D D, of the cross-blocks F, H, and G, cap-piece I, and journal-standards K K, shaft L, pulleys M and N, ropes O and A', and drop-block R, all substantially as and for the purpose specified.

2. In a drop-press, the combination of the former B', having beveled or rounded corners *b b*, and punch or block C', conforming in shape to the interior surface of the bucket to be swaged, substantially as and for the purpose specified.

297,049. GRINDING-MILL. JAMES P. WINCHELL, Springfield, Ohio. Filed Sept. 5, 1883. (No model.)

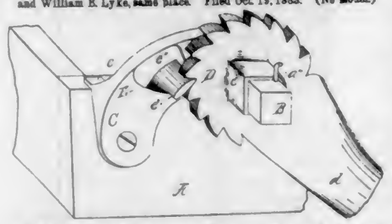


Claim.—1. In a grinding-mill, the combination, with the case A B, having opposite openings, N N, in its upper portion, of a removable tangential spout, and a plate for closing the opening opposite the attached spout, substantially as specified.

2. In a grinding-mill, the combination of a hopper having inclined walls, an inclined vibrating agitator-plate, and the crusher beneath the said hopper and agitator-plate, substantially as specified.

3. In a grinding-mill, the combination, with the shaft and the disk D, having the mortise *f* in its hub H, of the crusher I, having a tenon, *f'*, on one end and keyed near the other end to the shaft, substantially as specified.

297,050. WINDLASS. GEORGE W. ZIEGLER and GEORGE W. GRAVES, Norwalk, Ohio, assignors, by direct and mesne assignments, to said Graves and William B. Lyke, same place. Filed Oct. 19, 1883. (No model.)



Claim.—1. In hoisting devices, the combination, with the shaft and winding mechanism and pawl for holding the same against return movement, of a gudgeon or bearing adapted to bear the strain imposed upon the pawl, substantially as described.

2. In hoisting devices, the combination, with the shaft, constructed as described, of the collars *a a'''*, said collar *a'''* formed integral to the gudgeon, and said gudgeon formed substantially as and for the purpose set forth.

3. The shaft formed of different diameters, for the purpose described, in combination with the gudgeon, ratchet-wheel, and pawl, said pawl formed with the branch *e'*, which projects through an opening in the gudgeon, substantially as and for the purposes set forth.

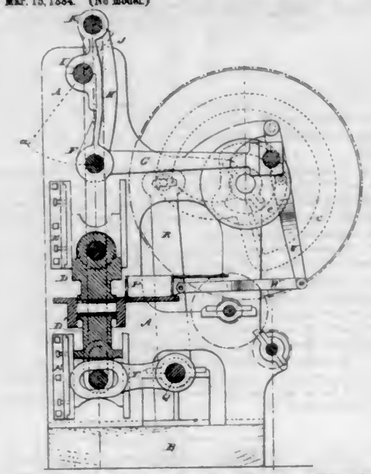
4. The combination, with the shaft having its larger outer end provided with the concavity, of the ratchet-wheel having flanges around its bore on the outer face, recessed as described, and pin *a''*, said wheel having cast with it the crank-arm *d*, for the attachment thereto of a crank, substantially as set forth.

5. The combination, with the shaft and ratchet-wheel, of the gudgeon and pawl, said gudgeon being formed with the lugs *e e* and opening *e''*, and said pawl operating with the gudgeon, substantially as described.

6. The combination, with the gudgeon formed and secured to frame A, as described, of the pawl located and pivoted in the hollow face of said gudgeon, the ratchet-wheel, and shaft, all operating substantially in the manner described.

7. The combination, with the shaft and ratchet-wheel, of the gudgeon and pawl, said gudgeon having the hollowed face, and forming at the end a bearing for the pawl, said pawl pivoted therein and adapted to bear against the sides and bottom thereof, to relieve its pivotal point from strain.

297,051. BRICK-MACHINE. WILLIAM ANDROS, Keokuk, Iowa. Filed Mar. 15, 1884. (No model.)



Claim.—1. In a brick-machine, a toggle-pressure pivoted in the frame of the machine eccentrically to a line drawn through the center of said toggle, the upper section being provided with an extension to which the rods for operating the lower plunger are secured, as set forth.

2. In a brick-machine, a toggle-pressure operated from its joint by devices substantially such as described, the upper section of which is pivoted eccentrically near its upper portion to the sides of the machine, while the upper end is provided with trunnions or arms, to which are secured the rods for operating the lower plunger, as set forth.

3. In a brick-machine, a toggle-pressure pivoted in the sides of the frame of the machine, as described, and to which the upper plunger is attached and adapted to be operated from its joint, and to the upper end of which are attached rods, which are secured to and connect the lower plunger with the free end of the toggle-pressure, whereby the upper plunger is adapted to be thrust downward and the lower plunger pulled upward simultaneously, as set forth.

4. In a brick-machine, a toggle-pressure pivoted eccentrically, as described, to the frame of the machine, and provided with an upwardly-extended portion, in combination with an operating-bar secured to the joint of the toggle, and with the bars for operating the lower plungers, as set forth.

5. In a brick-machine, a lower plunger, adapted to be raised and lowered, in combination with a rock-shaft operated as described, whereby the lower plunger is carried up and the brick is ejected from the mold, as set forth.

297,052. CAR-COUPLING. FREDERICK RALDT, Chester, Pa. Filed Feb. 20, 1884. (No model.)

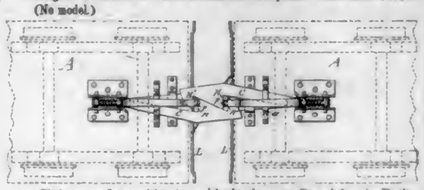


Claim.—1. A sectional cast-metal draw-bar having upper and lower plates, and intermediate skeleton web, C, and thimbles, substantially as described, riveted together, as and for the purpose set forth.

2. A sectional cast-metal draw-bar consisting of the plates A and B, skeleton casting C, and thimbles, all riveted together, substantially as set forth.

3. A sectional cast-metal draw-bar consisting of the plates A and B, skeleton castings C and D, and thimbles, all riveted together, substantially as set forth.

297,053. CAR-COUPLING. CHAS. O. BARNES, Baldwinsville, N. Y., assignor of one-half to Lucien Barnes, Sr., same place. Filed Mar. 6, 1884. (No model.)



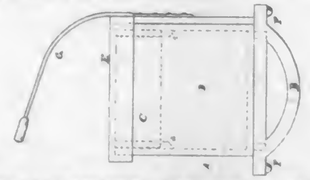
Claim.—1. In combination with the bumper D and its pin P, the lateral vibratory hook H, adapted to engage with the pin of the approaching car, beneath the draw-head thereof, substantially as shown and described.

2. In combination with the bumper D, the brace B, beneath said draw-bar, the pin P, extended through the brace, and the lateral vibratory coupling-bar C, having two hooks, H H', adapted to simultaneously engage, respectively, the two pins of the cars to be coupled, substantially in the manner set forth and shown.

3. In combination with the bumper D, the brace B, underneath said bumper, the coupling-pin P, extended through the brace, the lateral vibratory coupling-arm C, arranged between the bumper and brace, and provided with the brace-hook H and coupling-hook H', the flexible stirrup *a*, supporting and actuating the coupling-arm C, and the lever L, extended across the car, and having the arm *l*, connected with the aforesaid coupling-arm, substantially as described and shown.

4. In combination with the lateral vibratory coupling-arm C and lever L, connected therewith, the supplemental lever M, connected to the top of the car and with the lever L, substantially as and for the purpose shown and set forth.

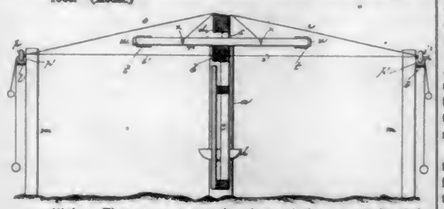
297,054. ASH-SIFTER. ELIZABETH BATESON, Detroit, Mich. Filed Sept. 8, 1883. (No model.)



Claim.—1. The combination of the receiving-receptacle provided with a cover, the sieve within the receptacle, the rockers below the bottom thereof, and the elastic stops outside of the receptacle, substantially as described.

2. The combination of the receiving-receptacle provided with the cover and operating-handles, the sieve within the receptacle, the rockers below the bottom of the receptacle, and the elastic stops outside of the receptacle, substantially as described.

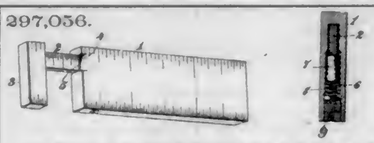
297,055. GATE. ROBERT F. BAUGHM, Lexington, Miss. Filed May 12, 1883. (Model.)



Claim.—The gate-post *a*, having the notched cross-arm A and the lifter *e*, and latch-wires for operating said lifter, in combination with a pivoted gate swinging vertically, provided with a cross-arm, *r*, carrying sliding latches at its ends, and a gravitating latch on the inner end rail of the gate, with latch-wires and opening-wires for operating the same, substantially as specified.

297,056. CALIPER-RULE. STEPHEN H. BELLOWS, Athol, Mass., assignor to the Standard Tool Co., same place. Filed Feb. 16, 1884. (No model.)

297,056.



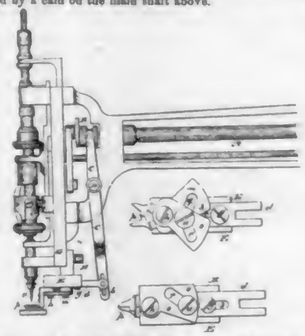
Claim.—1. A caliper-rule composed of the rule and the slide carrying the caliper-head, the rule having its inner end at a point directly opposite the face of the slide beveled or recessed and brought to a practically sharp or thin edge for reading the graduations on the slide, and starting the latter outward by the finger-nail, substantially as described.

2. The combination, with the caliper-rule composed of the rule having a transverse orifice and the slide carrying the caliper-head and provided at its inner end portion with a recess or notch, of a gib or shoe bearing against the slide and a spring held in the orifice under tension to press the gib or shoe on the slide, substantially as described.

3. The combination, with the caliper-rule composed of a rule having a transverse orifice and the slide carrying the caliper-head, of a gib or shoe in the orifice, a spring pressing the gib or shoe on the slide, and the set-screw in the outer end of the orifice holding the spring under tension, substantially as described.

297,057. PROCESS OF AND CUTTING APPARATUS FOR SEWING AND EMBROIDERING. LEON BERTRAND, Paris, France, assignor to Emile Cornely, same place. Filed July 27, 1883. (No model.)

Brief.—The upwardly-drawn thread at the completion of each stitch is clipped off above the bed-plate by a pair of cutting-blades which are operated by a slide that is reciprocated by a lever whose upper end is actuated by a cam on the main shaft above.



Claim.—1. In the art of machine sewing and embroidering, the process consisting in first forming a stitch in the ordinary way, and, second, cutting the thread above the fabric after the completion of the said stitch and before the commencement of another, whereby a velvet or peluche seam is produced, substantially as described.

2. The combination, with the needle of a sewing and embroidering machine, of cutting apparatus arranged to operate in the path of the needle to sever the sewing-thread after the formation of a stitch, and connections for operating said cutting apparatus from a movable part of the machine, substantially as described.

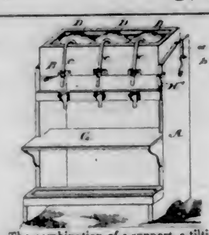
3. The combination, in an organized sewing and embroidering machine, with the needle-bar and its operating devices, of thread-cutting mechanism, arranged in close proximity to the cloth-plate, and connections for operating said mechanism from a movable part of the machine to sever the sewing-thread when the needle is clear of the warp, substantially as described.

4. The combination, with the sewing and embroidering machine, of the shears operating in the path of the needle, slides and levers, as specified, and operating means for closing said shears to cut the thread when the needle is above the cloth-plate, and for opening them to permit the descent of the needle, substantially as described.

5. The combination, in a sewing and embroidering machine, of the pivoted plates, the shear-blades carried thereby, the slide having a stud or pin working in oblique slots in said plates, and means for reciprocating said slide from a moving part of said machine, substantially as described.

297,058. APPARATUS FOR FILLING VESSELS. MARTIN L. BEST, Canton, Ohio, assignor of two-thirds to Jacob Miller and Levi L. Miller, both of same place. Filed Aug. 4, 1883. (No model.)

297,058.



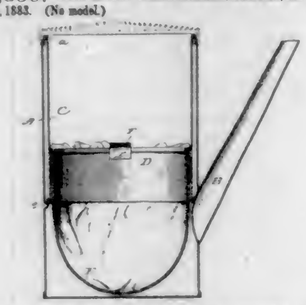
Claim.—1. The combination of a support, a tilting receptacle journaled therein, a stop for holding said receptacle in its raised position, and a stop for upholding it in its lowered position, substantially as described.

2. The combination of a support, a tilting receptacle journaled therein, a series of vessels within said receptacle, and a siphon leading from each vessel, substantially as described.

3. The combination of a support, a tilting receptacle journaled therein, a series of vessels within said receptacle, caps to each of said vessels, and a siphon leading from each vessel, substantially as described.

4. The combination of a support, a tilting receptacle journaled therein, a series of cups of different capacities communicating with one another and contained within said receptacle, and means for delivering the contents of said vessels from out of the same, substantially as described.

297,059. COFFEE-POT. FRED J. BICKNELL, Rockland, Me. Filed Oct. 31, 1883. (No model.)

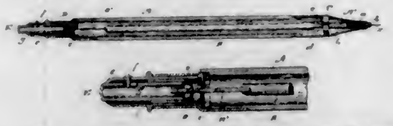


Claim.—1. An attachment to coffee-pots, consisting of a cylinder open at both ends and supported within the pot, the adjustable ring within the cylinder provided with the parts E and F, for the purpose set forth, and a straining substance, all as set forth.

2. The attachment to coffee-pots, consisting of a cylinder supported within the pot, and an adjustable ring within the cylinder provided with a handle, F, upon the upper side, and a curved hoop, E, upon the under side, substantially as described.

3. In combination with the inner cylinder, the ring having hoop E upon its under side, adapted to distend the straining material, and the handle F.

297,060. LEAD AND CRAYON HOLDER. CLAES W. BOMAN, New York, N. Y., assignor to Joseph Reckendorfer, same place. Filed May 1, 1883. (No model.)

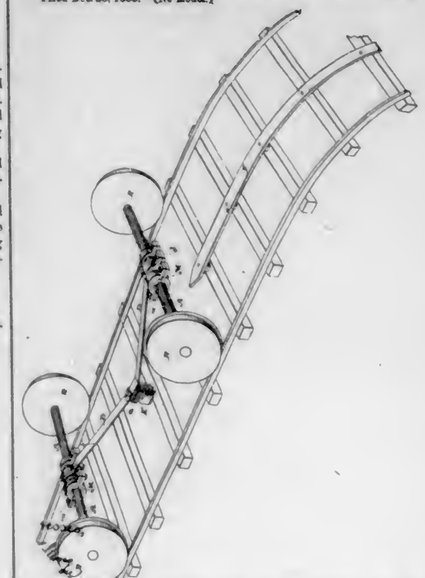


Claim.—1. The combination of the handle, the longitudinally-movable freely-sliding stem, the stop, the spring-closed stem-holding device, and the longitudinally-movable spring-controlled pressure-cap operating, when pushed forward, to force open the said device and release the stem, substantially as hereinbefore set forth.

2. The combination of the handle, the longitudinally-movable freely-sliding stem, the stop, the spring-closed stem-holding jaws, and the longitudinally-movable pressure-cap sliding between said jaws, operating, when pushed forward, to force apart said jaws, and actuated by said jaws to return to its original position when released from hand-pressure, substantially as set forth.

3. The handle, the longitudinally-movable freely-sliding lead-holding stem, the rotatable screw compressing-sleeve mounted thereon, and the stop attached to said sleeve and engaging the handle, substantially as described, in combination with the rotatable sleeve *e*, the spring-closed stem-holding jaws, and the pressure-cap, substantially as hereinbefore set forth.

297,061. SAFETY CAR-TRUCK. SAMUEL BROWN, San Francisco, Cal. Filed Dec. 28, 1883. (No model.)



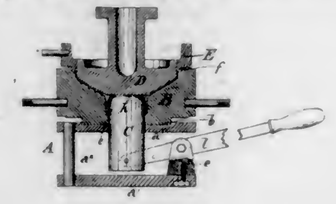
Claim.—1. In a safety car-truck, and in combination with the axles, the bar D, having boxes formed on each end, in which the axles are journaled, and the clamp or guard E, secured to said bar, substantially as herein described.

2. In a safety car-truck, and in combination with the axles, the bar D, the ends of which are formed to encircle the upper semi-circumference of the axles, the caps *d*, formed to encircle the lower semi-circumference, and bolted to the ends of the bar, whereby boxes are formed in which the axles are journaled, and the clamp or guard E, secured to said bar, substantially as herein described.

3. In a safety car-truck, the bar D, extending between the axles, which are journaled in its ends, as described, in combination with the clamp or guard E, bolted to said bar, and the intervening thin plates, *e*, between said bar and clamp, whereby the latter may be vertically adjusted, substantially as herein described.

4. In a safety car-truck, the axles A and the sleeves M, clamped and secured thereto, and formed, as shown, with shoulders *m*, in combination with the bar D, the ends of which form boxes or journals encircling the sleeves M of the axles, and the clamp or guard E, secured to said bar, substantially as herein described.

297,062. GLASS-MOLD AND THE PRODUCT THEREOF. WM. H. BRUNT, Baldwin, Allegheny County, assignor to Voigt, Ward & Co., Pittsburg, Pa. Filed Jan. 28, 1884. (No model.)



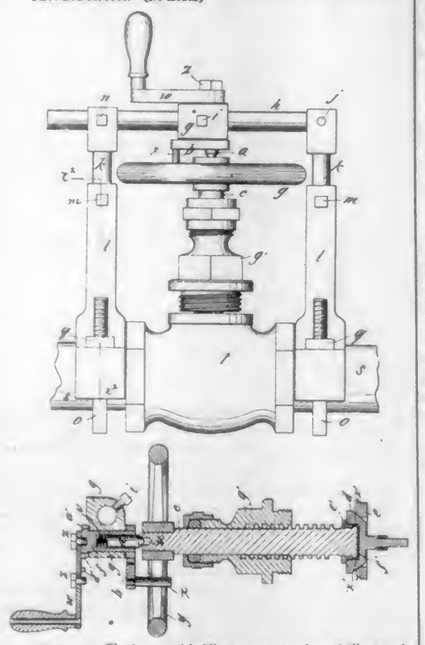
Claim.—1. In a glass-mold, the combination of the body portion B, having suitably-shaped recess and an uncontracted central vertical opening therein, the guide-ring E, the upper plunger, D, the lower plunger, C, having a suitably-shaped boss on its upper end, and mechanism for operating said plungers, substantially as set forth.

2. In a glass-mold, the combination of the body portion B, the guide-ring E, the solid upper plunger, D, the lower plunger, C, having its upper end beveled or cut away, as shown, and having suitably-shaped boss thereon, and mechanism for operating said plungers, substantially as set forth.

3. In a glass-mold, the combination of the body portion B, the guide-ring E, the upper plunger, D, and the lower plunger, C, said plungers meeting in horizontal plane, the upper plunger having a suitably-shaped boss on its upper end, substantially as set forth.

4. A shade-holder for lamps having a cylindrical or bowl-shaped body portion united to a suitably-shaped base or support, and having an internal flange at or near the junction of the base and body, forming an increased body of glass at that point, substantially as set forth.

297,063. VALVE-GRINDER. HARRY W. BURLEIGH, Franklin, N. H. Filed Dec. 11, 1883. (No model.)



Claim.—1. The improved holding device for valve-grinding mechanism, consisting of clamp-stands *l*, having means for being clamped to the pipe, the rods *k*, fixed adjustably in said clamp-stands, and the shaft *h*, pivoted to one of the said clamp-stands and detachably secured to the other, substantially as described.

2. The combination of the adjustable block *g*, having the center-shaft *f*, and center *a*, with supporting-shaft *h*, adjustable rods *k*, and the clamp-stands *l*, said center-shaft *f* having the driving-arm *b* and a crank, *w*, or other means for driving it, substantially as described.

3. The crank *w*, having one or more holes for the attaching-screws *r*, and one or more studs *d'*, in combination with the center-shaft *f*, having the pinion *a'*, substantially as described.

4. The clamp-stands *l*, having sockets and binding-screws for the rods *k*, and adjustable clamping mechanism for the lower ends of said rods *k*, for connecting with the pipe *s* and the rods *k*, substantially as described.

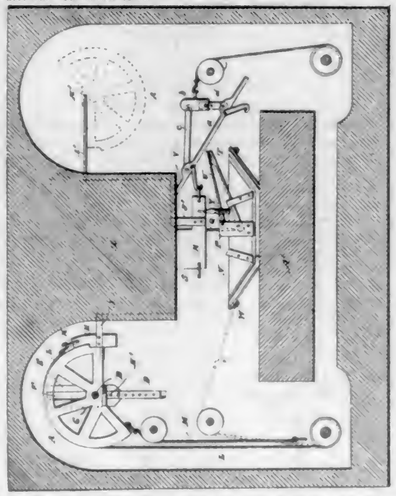
5. The flexible washer *f'*, in combination with the valve *d*, bush *s'* and stem *c*, for connecting the same, substantially as described.

6. The combination of the center-holding block *g*, tubular center shaft *f*, center *a*, and spring *v*, said shaft *f* having a driving crank or pinion and a driving-arm, *b*, and pin *x*, substantially as described

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297,064. MINING APPARATUS. THOS. W. CAMPBELL, Valley Falls Kans. Filed Oct. 10, 1883. (No model.)

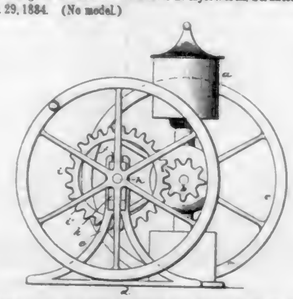
Brief.—Segments with grooved peripheries for operating chains are each provided with a bar perforated for securing it in a longitudinally-slotted casting, in which such bar is adjusted. The mass between the channels of the segments is acted on by a cutter on a reciprocated carriage pressed to work by a spring and lever, and having an "excavator-bar" connected to it.



Claim.—1. The combination, with the segment having a peripheral groove, of the flat perforated bar, to which said segment is journaled, the longitudinally-grooved cast-metal section, and means for adjusting the bar thereto, and the drive ropes and pulleys, the whole being adapted to be secured to the floor of the mine-drifts and operated by a suitable motor, substantially as specified.

2. The combination, with the carriage and the mechanism for moving the same, of the cutters and the spring and lever for holding the same to their work, and the excavator secured to the cutter-section, the whole arranged to operate substantially in the manner and for the purposes specified.

297,065. COFFEE-MILL MOTOR. ALBERT JUDSON CLARK, Carbondale, assignor of one-half to Judson D. Aylsworth, Scranton, Pa. Filed Feb. 29, 1884. (No model.)



Claim.—1. In a motor for coffee and spice mills, the combination, with the base provided with the bifurcated standards, of the combined fly and gear wheel having a suitable handle, and a fixed pinion on the end of the shaft of the mill-shaft, substantially as specified.

2. In a motor for coffee and spice mills, the combination, with the bifurcated standards on a suitable base, of the adjusting and securing blocks forming bearings in the bifurcations for the shaft of the combined fly and gear wheel, the combined fly and gear wheel provided with a handle, and an engaging-pinion on the mill-shaft, substantially as specified.

3. In a hand-mill, the combination, with the mill-frame provided with vertical standards at one end forming bearings for the shaft of the driving-wheel, of the pinion on the mill-shaft, and the combined fly and gear wheel provided with a suitable handle, substantially as specified.

297,066. SAFETY-VALVE AND MUFFLER. JOSEPH M. COALE, Baltimore, Md. Filed Jan. 17, 1884. (No model.)



Claim.—1. The combination of the valve proper, the diaphragm above the same, the auxiliary valve, and the tubular auxiliary valve hub or stem resting in a recess or socket in the valve proper, and formed with vent-holes for the escape of steam that may leak through into the chamber formed by the valve proper and diaphragm, as and for the purposes hereinbefore set forth.

2. The combination of the valve proper, A, the diaphragm C, the auxiliary valve B, the hub or stem B', provided with vent-holes R, the valve-spring, and the spring-case C, having outlets R', as and for the purposes hereinbefore set forth.

3. The spring-case G, carrying the muffler, and having outlets M, which open into the muffler, and outlets R', which have no communication with the muffler, in combination with the valve proper, A, the diaphragm C, the auxiliary valve B, and the hub or stem B', provided with vent-holes R, as and for the purposes hereinbefore set forth.

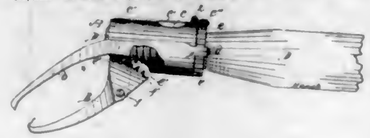
4. The combination, with the main and auxiliary valves, of the valve shell or body, and the adjusting-case having the lip W and the diaphragm C, as and for the purposes hereinbefore set forth.

5. The case D, adjustable on the valve shell or body, and provided with lip W and diaphragm C, in combination with the main and auxiliary valves, their controlling-spring, and means for adjusting the tension of said spring, substantially as hereinbefore set forth.

6. The valve shell or body and the case D, adjustable thereon, and having diaphragm C and lip W, in combination with the spring-case G, carried by said adjustable case, the main and auxiliary valves A B, the valve-controlling spring, and means for adjusting the tension of said spring.

7. The combination of the valve shell or body, the case D, adjustable thereon, and the spring-case G and muffler, carried by and movable with said case D, substantially as hereinbefore set forth.

297,067. MOP AND BRUSH HOLDER. WILBER F. CORNELIUS, Muncie, Ind. Filed Nov. 5, 1883. (No model.)



Claim.—1. In a mop and brush holder, the ferrule A, provided with lugs *b'''*, in combination with jaws B *b b'*, screw C, ratchet and pawl, and catches *d*.

2. In a mop and brush holder, the ferrule A, having a spring-pawl, *c' c'''*, lugs 1 2, and catches *d*, in combination with the jaws and screw C.

3. The combination of the screw C, having ratchet *e*, and threads *e'*, with the catches *d* and ferrule A, having lugs 1 2, and spring-pawl *c' c'''*.

4. In a mop and brush holder, the combination of jaws B *b b'*, lugs *b'''*, screw C, handle D, ratchet *e*, pawl *c' c'''*, and lugs 1 and 2, all for the purpose set forth.

297,068. ENDLESS-CABLE-TRACTION RAILWAY. FREDERICK G. CORNING, Brooklyn, N. Y. Filed Jan. 19, 1884. (No model.)

Brief.—A supplemental tunnel located alongside the cable-tunnel and under the grip-slot receives the drip and other refuse from the street-surface, and is connected with said cable-tunnel by a continuous longitudinal slot, through which the grip enters the cable-tunnel. The refuse is removed from the supplemental tunnel by cleaning mechanism actuated by the cars.

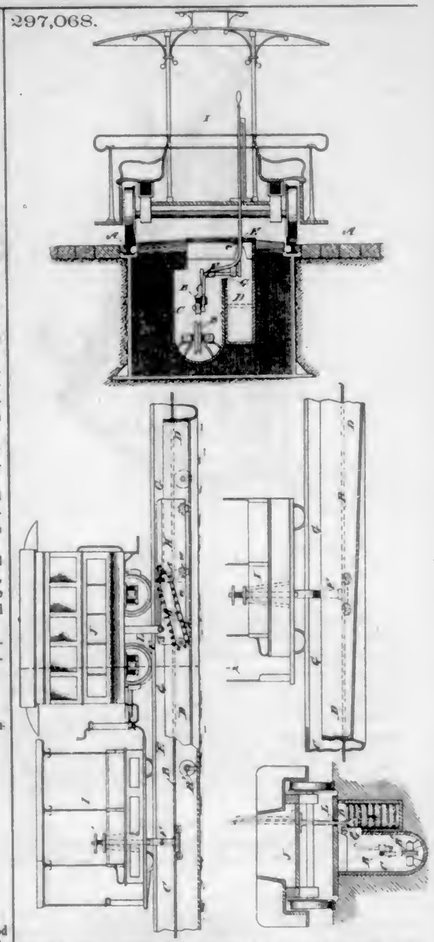
Claim.—1. In an underground tunnel for endless-cable traction, the combination of a tube containing an endless cable, with a second tube, at the top of which is a vertical slot opening upward to the street, both tubes or tunnels being continuously connected by a horizontal slot or opening, and in combination with a gripping device passing through both the vertical and the horizontal slots, substantially as described.

2. In an underground tunnel for endless-cable traction, the combination of tube C, containing the endless cable B, with a second tube, D, having an independent inclined bottom, at the top of which tube is a vertical slot, E, provided with lip *e*, said slot opening upward to the street, both tubes C and D being continuously connected by the horizontal slot G, and in combination with a gripping device passing through both the vertical and horizontal slots, substantially as described.

3. In an underground tunnel for endless-cable traction, a tube containing an endless cable and a second tube containing any suitable brush communicating by a vertical slot, opening upward, with the street, both tubes being communicating by a horizontal slot, in combination with a gripping device passing through both the vertical and horizontal slots, substantially as described.

4. In an underground tube or tunnel with a vertical slot in which an endless cable travels, the combination of a partition, P, in such tunnel, placed between the cable and the vertical slot, with a continuous horizontal slot or opening, G, between the edge of such partition and the top of the tube or tunnel, substantially as described.

297,068.



297,069. CULTIVATOR. THOMAS JEFFERSON CRAFT, Ellisville Depot, Miss. Filed Dec. 6, 1883. (No model.)

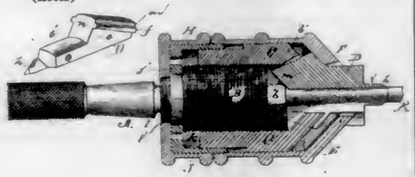
Claim.—1. The combination of the central beam, the triangular hollow casting, and the doubled outer beams, hinged at their doubled ends to the rear corners of the triangular casting, and secured at their inwardly-bent rear ends to the rear end of the central beam, as and for the purpose shown and set forth.

297,069.



2. The herein-described combined cultivator and gang-plow, consisting of the central beam, the triangular hollow casting, the outer doubled beams, hinged at their doubled ends to the rear corners of the triangular casting, and having slotted inwardly-bent rear ends sliding with their slots upon the rear reduced end of the central beam, and connected adjustably together by means of a nutted bolt passing through the slots, handles secured movably at their forward ends to the triangular casting, uprights pending from the rear portions of the handles and secured adjustably to the slotted end pieces by means of nutted bolts, and the braces hinged to the triangular casting, crossing each other, and hinged at their rear ends to the rear ends of the outer bars, as and for the purpose shown and set forth.

297,070. LATHE-CHUCK. GEORGE W. DAVIS, New Bedford, Mass., assignor of one-half to Ezekiel H. Noble, same place. Filed Dec. 13, 1882. (Model.)



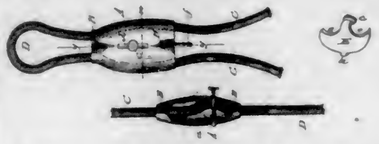
Claim.—1. The combination, in a lathe-chuck, of the stock having a threaded head provided with a front tapering portion, against which bears a series of cutting-dogs, a case traveling on the said head and adapted to exert a downward pressure on the dogs, and a shell concentric with the cap and clamping the dogs against the conical front portion of the head, and rigidly secured by engaging a threaded cap, against which bears the head, and which is re-enforced by a second cap secured on the stock, substantially as set forth.

2. The combination, in a lathe-check, of a case traveling on a threaded head and having a front conical portion, a series of openings near the center and radiating therefrom, and provided with grooves *d*, adapted to receive ribs on the body portions of the cutting-dogs which rest snugly in the said radiating openings, and a shell concentric with the said case and adapted to clamp the dogs against the said head and screw-threaded at its rear for engagement with a threaded cap, substantially as set forth.

3. The combination, in a lathe-chuck, of an interiorly-threaded case traveling on the threaded body of the head of the stock, and having a front conical portion provided with inclined grooved openings adapted to receive inclined body portions of a series of dogs ribbed as described, and a shell, substantially as set forth.

4. The combination, in a lathe-chuck, of a stock having a threaded head, B, a threaded case, C, traveling thereon, and having a conical portion provided with grooved openings inclined to receive inclined ribbed dogs, a shell, E, concentric with said case C, and screw-threaded at its rear to engage a threaded cap, H, against the head of which bears the shoulder *j* of the head, and a cap, J, secured to the neck, and re-enforcing the cap H, substantially as set forth.

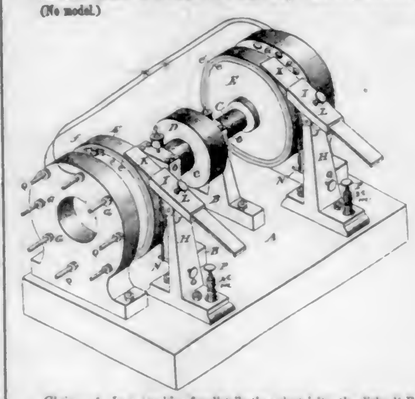
297,071. MAIL-BAG FASTENER. WILLARD D. DORENUS, Washington, D. C., assignor to Frank Hodges, same place. Filed Mar. 26, 1884. (No model.)



Claim.—1. A device for fastening mail-bags, consisting of a short section of a tube provided with the depressed portions B, formed of one piece of metal, and a detent or clamp, E, adapted to fit within said tube-section, as set forth.

2. A device for fastening mail-bags, consisting of a short section of a tube having the depressed portions B, in combination with the detent E and rope or cord C.

297,072. APPARATUS FOR DISTRIBUTING ELECTRICAL CURRENTS. GEORGE W. DURHOW, Portland, Oreg. Filed Apr. 12, 1883. (No model.)



Claim.—1. In a machine for distributing electricity, the disks E E, provided with rings *e e' e'* and springs *f f'*, rotating on a shaft, in combination with mounted disks F F' and contact-points G G', whereby an electric current can be divided up into as many circuits as there are contact-points, operating as shown, and for the purpose described.

2. In combination with platform A, standards B B *b b*, shaft C, having thereon disks E E *e e' e'*, provided with springs *f f'*, and mounted disks F F', having contact-points G G', distributing-brushes K K, pressing upon disks E E, and suitably mounted in standards H H', and adapted to be held firmly against disks E E by spiral springs N, for the purpose set forth.

3. In combination, disks E E, rotating upon shaft C and suitably connected, standards H H, brush-holders I, and distributing-brushes K K, adapted to receive and transmit an electric current from binding-post M to the contact-points G G' upon disks F, for the purpose set forth.

297,073. COUPLING FOR ROPES OR CABLES. GEORGE M. GREEN, Streator, Ill. Filed Jan. 3, 1884. (Model.)

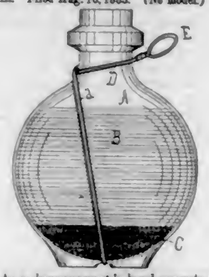


Claim.—The combination, with the socket A, provided with a loop or frame, B, and having longitudinal grooves *a* in the aperture and notches *b* at the inner end of the aperture, of the key C, having two opposite projections, *d*, at the inner end, and means for securing the rope at the outer end, and of the spring F, held in the frame B, substantially as herein shown and described.

297,074. PAINT. EDMUND H. HAGUE, Jackson, Mich., assignor of one-third to Walter Johnson, same place. Filed Oct. 13, 1883. (Specimens.)

Claim.—The herein-described composition of matter, to be used as a paint for preserving materials to which it is applied and rendering them fire-proof and water-proof, it consisting of the following materials, combined in substantially the proportions and under the conditions named, to wit: coal-tar, sulphur, china-clay, alum, salt, and black oxide of manganese, substantially as set forth.

297,075. HAND-GRENADE FIRE-EXTINGUISHER. JOHN J. HARDEN, Chicago, Ill. Filed Aug. 10, 1883. (No model.)



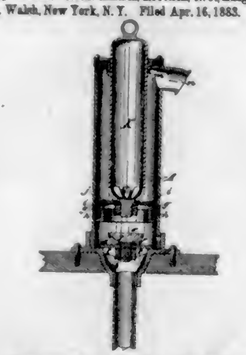
Claim.—1. As an improvement in hand-grenade fire-extinguishers, the combination of the frangible walls of the grenade with the contained fire-extinguishing solution, and with movable solid bodies applied within the grenade, substantially as and for the purpose herein specified.

2. In a hand-grenade fire-extinguisher, the combination of a glass shell and a wire, metal band, or other substance having a greater heat-conducting power than glass, substantially as and for the purpose herein specified.

3. In a hand-grenade fire-extinguisher, the combination of the glass shell with a wire or metal band provided with a loop or hook, substantially as and for the purpose set forth.

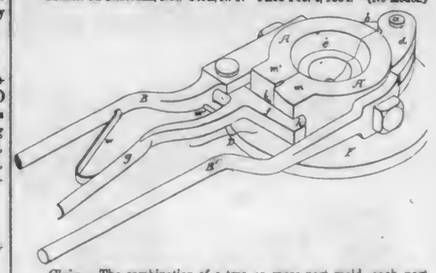
4. In a hand-grenade fire-extinguisher, the combination of a glass shell provided with notches, and a wire or metal band inserted in the grooves or notches, substantially as and for the purpose set forth.

297,076. PUMP. ROBT. HARDIE, Hoboken, N. J., assignor of one-half to John A. Walsh, New York, N. Y. Filed Apr. 16, 1883. (No model.)



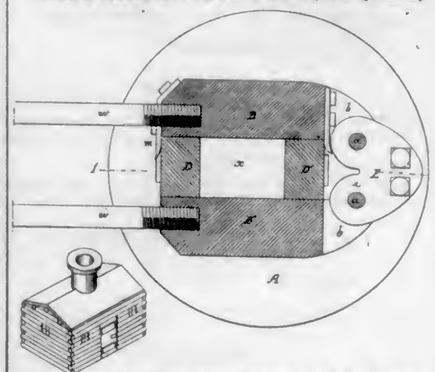
Claim.—The combination, with the cylinder A, provided with a foot-valve, of the hollow rod or plunger having a rounded lower end formed integral with it, and provided with openings *l*, so that the rod or plunger may serve as an air-chamber, and also provided with an integral screw-threaded stud or projection, the piston or bucket *g*, screwed upon said stud or projection, and the flexible delivery-valve *j*, clamped between the piston or bucket and the integral end of said rod or plunger, the end of said rod or plunger forming a guard for said delivery-valve, substantially as described.

297,077. GLASS-MOLD. EMIL HERCKNER, Millville, N. J., assignor to John Mickle, same place, James Whitall, Robert P. Smith, Charles Roberts, and William H. Nicholson, Philadelphia, Pa., and Charles Albert Tatum and Francis M. Underhill, New York, N. Y. Filed Feb. 4, 1884. (No model.)



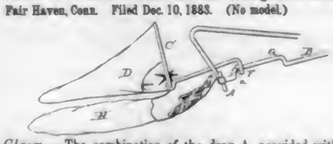
Claim.—The combination of a two or more part mold, each part having the usual handle, with a spring latch-lever having an arm adjoining the handle of one part of the mold and constructed to lock and release the other half of the mold, substantially as set forth.

297,078. GLASS-MOLD. EMIL HERCKNER, Millville, N. J., assignor to John Mickle, same place, James Whitall, Robert P. Smith, Charles Roberts, and William H. Nicholson, Philadelphia, Pa., and Charles Albert Tatum and Francis M. Underhill, New York, N. Y. Filed Feb. 4, 1884. (No model.)



Claim.—The combination of movable side pieces, B B', of a glass-mold and a projection or projections on the same, with one or more movable self-retracting blocks D, forming part of the mold, and constructed to be operated by the said projection or projections, substantially as set forth.

297,079. APPARATUS FOR CATCHING STAR-FISH. J. FRANK HOMAN and FRANKLIN L. HOMAN, New Haven, assignors to Lancraft Bros., Fair Haven, Conn. Filed Dec. 10, 1883. (No model.)



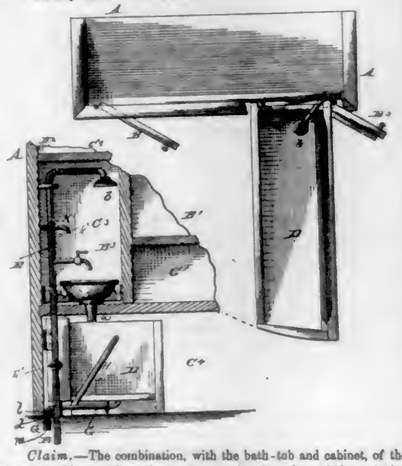
Claim.—The combination of the drag A, provided with means, substantially such as described, whereby it may be drawn over the surface of the oyster-bed, with an opened-mouthed receptacle, D, in rear of the drag, the mouth arranged to open above the plane of the drag, and so as to leave an open space downward between the drag and the mouth, substantially as described.

297,080. GARTER-CLASP. PHILIP KALISH, Chicago, Ill. Filed June 4, 1883. Renewed Mar. 6, 1884. (No model.)



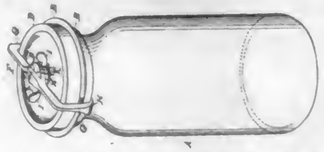
Claim.—The clasp A B, whereof the part A is formed of the parts or jaws *a b*, which are movably united at one edge with a pin, *c*, and provided at the other with the fastening device *d e*.

297,081. BATHING APPARATUS. GEROW KOONS, St. Louis, Mo. Filed May 25, 1883. (No model.)



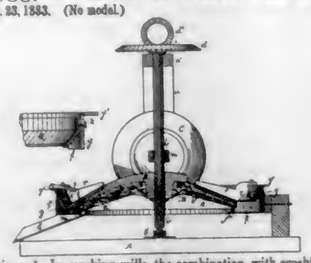
Claim.—The combination, with the bath-tub and cabinet, of the supporting-hinge *c*, the swinging waste-pipe G, and eye *l*, the swiveled coupling *m*, the pipe E, and swiveled coupling E', and the shower-jet *b*, secured to the horizontal portion of the pipe E, substantially as specified.

297,082. FRUIT-JAR. PHILIP LYON and JOSEPH H. BOSSARD, East Stroudsburg, Pa. Filed Feb. 26, 1884. (No model.)



Claim.—The centrally-perforated transverse clamp-bar having lateral depending arms formed with inwardly-turned ends, and a central expanded portion having its under side formed by two semicircular inclined surfaces, and a turning disk having two semicircular inclined surfaces corresponding to those of the transverse bar, a pivot-pin long enough to allow the play of the cover extending upward loosely through the perforations of said bar, and lateral operating-lugs, substantially as specified.

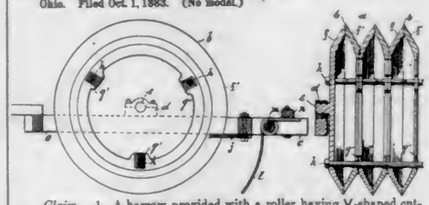
297,083. CRUSHING-MILL. GEO. W. MORROW, Toronto, Ohio. Filed Aug. 23, 1883. (No model.)



Claim.—1. In crushing-mills, the combination, with crushing-rolls, of a table or pan and an annular skirt forming, in connection with the edge of the table, an annular discharge-opening for the crushed material, substantially as and for the purposes set forth.

2. In crushing-mills, the combination, with crushing-rolls, of a table or pan, an annular skirt forming, in connection with the edge of said table, an annular discharge-opening, and means for adjusting the skirt vertically to and from said table, to vary the size of the discharge-opening, substantially as set forth.

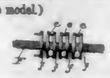
297,084. HARROW. JACOB F. MUHS and CHARLES MOLHO, Springfield, Ohio. Filed Oct. 1, 1883. (No model.)



Claim.—1. A harrow provided with a roller having V-shaped cutting-disks, each of said disks constructed with two dish-shaped parts that are united through the agency of coincident projections and cavities through which bolts pass to bind the entire series of disks together, substantially as and for the purpose specified.

2. A harrow provided with a roller having V-shaped cutting-disks, each constructed with two dish-shaped parts, and the entire series being bound together through the agency of bolts passing through their entire length, and provided with a clearing-plate having V-shaped parts that enter the cavities between the disks, substantially as and for the purpose specified.

297,085. FLEXIBLE SHAFT. JOHN G. NICHOLS, Halton, Kans. Filed Jan. 26, 1884. (No model.)



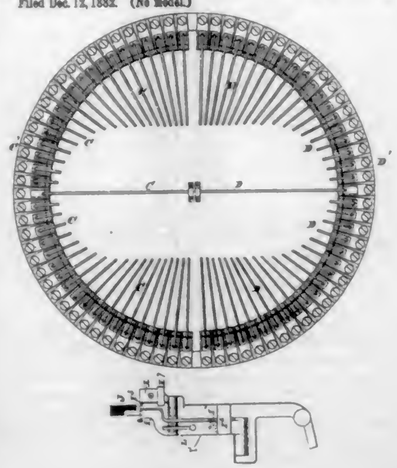
Claim.—1. A flexible coupling for shafts and other purposes, consisting of a series of disks arranged as described, flexibly connected together and to the ends of the shafts, as set forth.

2. A flexible coupling for shafts, consisting of a series of disks, the sides of which are arranged parallel to each other, said disks being flexibly connected together and held in alignment by a flexible support, as and for the purpose set forth.

3. A flexible coupling for shafts, consisting of a series of disks connected together, as described, and held in alignment by a central flexible support, as set forth.

4. In a flexible coupling, the disks D, formed with open spaces or recesses, in which are secured the links *a* by means of pins *b* and band *d*, secured to the projecting portions of the disk, as set forth.

297,086. TYPE-WRITING MACHINE. HENRY OPPEN, St. Louis, Mo. Filed Dec. 12, 1883. (No model.)



Claim.—1. In a type-writing machine, two sets of type-carrying levers arranged, substantially as described, so that the types of each set will strike a center common to the levers of that set, in combination with suitable operating mechanism, as set forth.

2. In a type-writing machine, two sets of type-carrying levers arranged, substantially as described, so that the types of each set will strike a center common to the levers of that set and being hinged to semicircular bars placed a short distance apart, so that two letters can be printed at the same time—one from each set—substantially as set forth.

3. In a type-writing machine, two sets of type-carrying levers hinged to semicircular bars placed a short distance apart, so that two letters can be printed at the same time—one from each set—one set of the levers having upper and lower case letters and the other set having lower-case letters only, substantially as and for the purpose set forth.

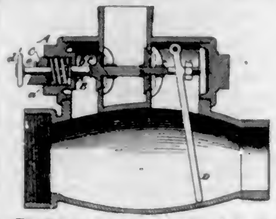
4. In a type-writing machine, the two sets of keys connecting with the two sets of type-carrying levers by means of transverse bars, substantially as set forth.

5. A type-writing machine having two independent series of type-carrying levers provided, respectively, with operating-keys, the finger-pieces of one set being placed near the corresponding finger-pieces of the other, substantially as shown and described.

6. In a type-writing machine, the two sets of keys connecting with two sets of type-carrying levers by means of transverse bars which are loose at both ends, and held from upward movement by plates secured to the base of the machine, substantially as shown and described, for the purpose set forth.

7. In a type-writing machine, the three-part dog for engaging with the rack of the carriage, in combination with two sets of keys arranged to operate the different parts of the dog, substantially as and for the purpose set forth.

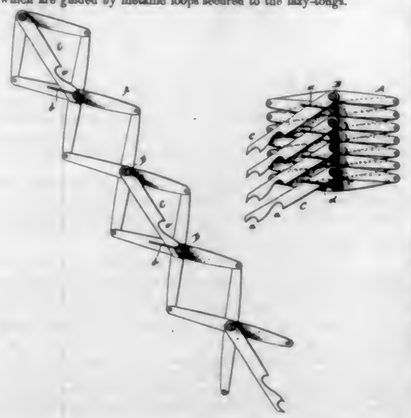
297,087. AUTOMATIC RELIEF-VALVE FOR STEAM FIRE-ENGINES. JOHN E. PRENTY, Baltimore, Md. Filed Mar. 25, 1884. (No model.)



Claim.—The stem *b c d*, spring *a*, cap A, and plug C, in combination with the double puppet-valves and their stem, and swinging device D, all adjusted within the chamber B and body of the relief-valve, substantially as specified.

297,088. LADDER. CORYDON A. ROOT, Andover, Ohio, assignor of one-half to James L. Applegate, same place. Filed Feb. 18, 1884. (No model.)

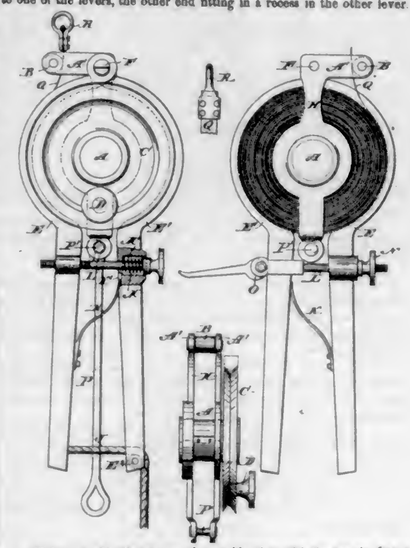
Brief.—The alternate rounds of the lazy-tongs carry notched braces which are guided by metallic loops secured to the lazy-tongs.



Claim.—The improvement in ladders consisting of the combination, with two lazy-tongs forming the sides of the same, the rounds at each intersection of the lazy-tongs, and the notched braces pivoted to the ends of the alternate rounds, of the metallic loops or guides secured to the lazy-tongs, and adapted to restrict the play of the bars or braces, all the parts being arranged to operate substantially as and for the purpose described.

297,089. FIRE-ESCAPE. REUBEN C. RUTHERFORD, Quincy, Ill., assignor of one-third to James Woodruff, same place. Filed Aug. 16, 1883. (No model.)

Brief.—A fire-escape in which the levers which apply the brake-band are operated by a screw and nut. One end of a spring is secured to one of the levers, the other end fitting in a recess in the other lever.



Claim.—1. In a fire-escape, the combination, with the angular frame H, of the roller B, the arbor A, the metal band, wire, or cable Q, the brake-wheel C, rigidly mounted on one end of the arbor, the brake-levers E E', the spring K, fastened to the lever E, and having its free end in a recess, K', in the lever E', and means for holding or pressing the brake-levers together, substantially as herein shown and described.

2. In a fire-escape, the combination, with the frame H, of the arbor A, the metal band, wire, or cable Q, the brake-wheel C on the arbor, the brake-levers E E', pivoted to the frame H, and the rope J, fastened to the lower end of the lever E, and passing over a pulley in the lower end of the lever E', substantially as herein shown and described.

3. In a fire-escape, the combination, with the frame H, of the arbor A, the metal band, wire, or cable Q, the brake-wheel C, the brake-levers E E', the screw-pintle L, the nut N, and the cam-lever O, substantially as herein shown and described.

4. In a fire-escape, the combination, with the plates H, having arms A', of the roller B, the arbor A, journaled in the plates H, the metallic band, cable, or wire Q, the brake-wheel C, and the brake-levers E E', substantially as herein shown and described.

297,090. PUNCHING-MACHINE. NORMAN C. STILES, Middletown, Conn. Filed Jan. 27, 1883. (No model.)

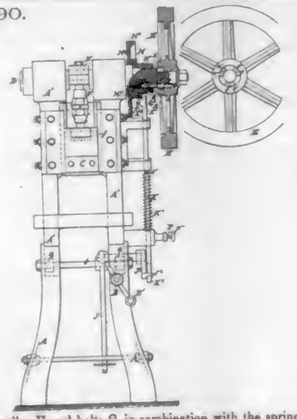
Claim.—1. The fixed support A and adjustable framing A', with suitable supporting means, *a*, and the die-carrier C, with means for operating it, in combination with each other and with the slide K, having curved arm K^2, receiving motion from a treadle mounted on the fixed portion, all arranged to serve substantially as herein specified.

2. The pins *e e'* of the female clutch, located in a recess formed by enlarging the bore of the fly-wheel, and adapted to serve substantially as herein specified.

3. A clutch-pin having a straight cylindrical body, *e*, and a head, *e'*, bounded by radial and circumferential lines of the recess in the fly-wheel, substantially as herein specified.

4. The sliding collar H, sliding bolts G, and screws G', passing through longitudinal slots or recesses in the crank-shaft, and serving to

297,090.



unite the collar H and bolts G, in combination with the springs L, tending to throw the bolts G outward, substantially as herein specified.

5. In a punching-press substantially as described, the wedge or start-and-stop piece H^4, made with a double face, so as to operate in relation to the slide K with either direction of fly-wheel motion, substantially as herein specified.

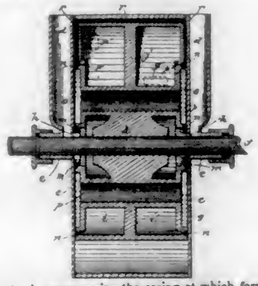
6. The radially-sliding piece K, its end comprising the abutment K', and having also the incline K^2, in combination with means, J J', for moving it at the will of the operator, and with the sliding collar H, face-cam H^1, and rim H^2, having a lip, H^3, all arranged for joint operation as herein specified.

7. The combination, with the shaft D, of the curved wedge-shaped bearing-piece R and a spring for holding the same against its bearing with a constant force in a correspondingly wedge-shaped recess in the framing, as and for the purposes herein specified.

8. In a punching-press having a suitable die-carrier, C, operated by the eccentric D', the compound connecting-rod having the eyes V' V^2, right and left screws V^3, and upper and lower threaded sleeves V^4 V^5, all arranged for joint operation as herein specified.

9. In combination with the frame A' and shaft D, the wedge-piece B, bushing T, spring t, and adjusting-screw t', as and for the purposes set forth.

297,091. ROTARY STEAM-ENGINE. FREDERICK SUTTER, Louisville, Ky., assignor of one-half to Adolph Reutlinger, same place. Filed July 24, 1883. (No model.)



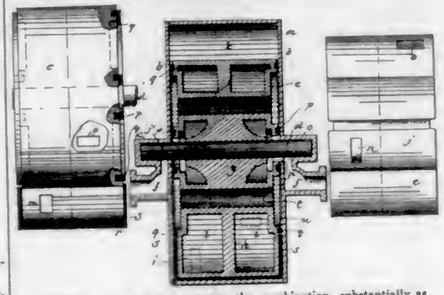
Claim.—1. A steam-engine the casing of which forms the steam-cylinder, the rotary piston divided centrally into two independent chambers having openings into the cylinder for the live and exhaust steam, respectively, a solid hub and shaft for said piston, the axial inlet for the live steam, and the axial outlet for the exhaust-steam, combined with the working-head on said piston co-operating with two abutments in the cylinder, which divide the cylinder into live and exhaust steam chambers, all constructed and arranged to operate substantially as and for the purpose set forth.

2. The combination, with the cylinder and piston, of abutments s s', normally seated against the piston and provided with operating-pistons, and a normally and constantly charged steam-pipe connecting the two, substantially as and for the purpose described.

3. The rotary piston having separated non-communicating induction and eduction ports or chambers, facial depressions, and transverse tubes connecting such depressions to equalize the pressure upon the said piston within its casing or cylinder, substantially as set forth.

4. The combination, with the cylinder and the two-chambered rotary piston therein, of the facial packing-rings in said piston, and steam-passages behind them, substantially as and for the purpose specified.

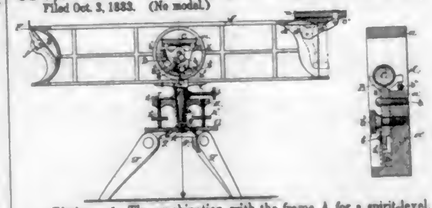
297,092. ROTARY WATER-METER. FREDERICK SUTTER, Louisville, Ky., assignor of one-half to Adolph Reutlinger, same place. Filed July 24, 1883. (Model.)



Claim.—1. In a water-meter, the combination, substantially as shown and described, of a cylinder, an inclosed concentric rotary piston divided into two separate non-communicating chambers, a water-way between the piston and cylinder, a head on such piston fitted water-tight in said water-way, valves in said water-way seated on the piston and operated by the piston-head for opening, and by gravity for closing, a shaft for the piston, tubular water-tight bosses forming boxes for said shaft, the recessed hub of the piston fitted to said shaft, and an inlet and outlet communicating with said chambers through the recessed hub, substantially as and for the purpose described.

2. The piston divided into two non-communicating chambers, provided with ports independent of one another, an inlet and an outlet for each of said chambers, a recessed hub, through which the supply is introduced and the exhaust discharged, a cylinder and tubular bosses in which said piston and its shaft are inclosed water-tight, a water-way between the cylinder and piston, in which the piston-head is rotated water-tight, and with which the piston-chamber ports communicate, and packings for securing the piston water-tight within the cylinder, substantially as set forth.

297,098. LEVELING-INSTRUMENT. LEVI C. STROWD, Albany, N. Y. Filed Oct. 3, 1883. (No model.)



Claim.—1. The combination, with the frame A for a spirit-level, having a central seat, a', as herein set forth, and the graduated quadrant D, of the carrier B, pivoted to the seat a', and provided with arms b' for containing the spirit-level tube C, the said carrier having the adjusting-screws b^3, binding-screw b^3, and adjustable pointer b^4, all constructed and arranged to operate as herein specified.

2. The combination, with a spirit-level frame, A, having the sights E and F attached thereto, substantially as set forth, of a center-pin, I, provided with flanges i' and clamping-screw i^2, whereby the said spirit-level frame is attached to and adapted to revolve in a supporting-stand, as and for the purpose herein specified.

3. In a supporting-stand for a spirit-level frame, A, provided with sights E and F, as herein set forth, the combination, with the graduated table H, provided with a central socket, h, and supported on adjusting-screws h^2, as herein described, of the center-pin I and arm J, the latter being adjustably connected to said center-pin, as and for the purpose herein specified.

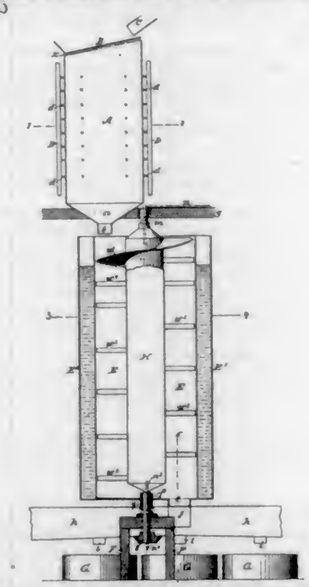
4. The combination, with the graduated table H, provided with the studs or pins h^3, of the center-pin I, having a movable arm or index, J, attachable thereto, for the purpose of limiting the rotatory movement of the center-pin I to the part of the circle intervening between the pins h^3, as and for the purpose herein specified.

297,094. BILL-OF-FARE INDICATOR. EUGENE S. SUTTON, Wildwood, Wis. Filed Sept. 8, 1883. (No model.)



Claim.—A bill-of-fare indicator composed of the perforated sheets secured together and provided with the stationary printed strips b, the intervening seats c, the guard-strips e e, the removable slide-strips d, printed as described, the slide-pins i, and the alternate removable pins k, substantially as described.

297,095. WASHING RAW SUGAR AND APPARATUS THEREFOR. JOHN H. TUCKER, Philadelphia, Pa. Filed Nov. 21, 1883. (No model.)



Claim.—1. The mode herein described of mixing raw sugar with water or sirup, the said mode consisting of forcing fine sprays of said water or sirup against and into a falling shower of finely-divided raw sugar, substantially as set forth.

2. The process herein described of first obtaining a heated magma of raw sugar and water or raw sugar and sirup, and then subjecting it to the action of a centrifugal machine.

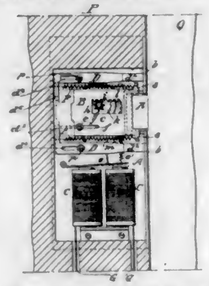
3. The process herein described of treating raw sugar, the said process consisting of the following branches—namely, first, sifting the sugar so as to remove therefrom chips and other foreign matters; second, mixing with the sugar water or sirup; third, heating and agitating the magma of sugar and water or sugar and sirup; and, fourth, subjecting it to the action of a centrifugal machine, substantially as set forth.

4. The combination of a mixing-vessel, A, having numerous lateral openings, with devices for injecting fine spray through the said openings, substantially as set forth.

5. The combination of the mixing-vessel A with the agitated screen B, substantially as described.

6. The combination of the steam or water heated tank E with the steam or water heated rotating cylinder H and its stirring-arms w'.

297,096. ELECTRIC DOOR-KEEPER. ALBERT C. WORRELL, New York, N. Y. Filed Oct. 29, 1883. (No model.)



Claim.—1. The combination, with the keeper casing or shell A, provided with the recess a, of a sliding keeper provided with a rack-spring, pressed and sliding bolts connected to the keeper by springs, a train of gearing, one pinion of which meshes with the rack of the keeper, a spring-pressed pawl, and an electro-magnet for operating the pawl, substantially as herein shown and described.

2. The combination, with the sliding keeper B, of the spring-pressed sliding beveled bolts D, the springs F, connecting the bolts and keeper together, and mechanism for locking and releasing the keeper, substantially as herein shown and described.

3. The sliding keeper B, having rack i, meshing with pinion j, in combination with pawls k' o, and intermediate gearing for locking the keeper B in its forward position, substantially as and for the purposes set forth.

4. The sliding bolts D, formed with arms d^4, in combination with sliding keeper B and springs E F, arranged to operate substantially as and for the purposes set forth.

5. The liberating-keeper for doors, herein shown and described, consisting of the recessed shell A, sliding keeper B, having rack i, electro-magnets C, beveled bolts D, and springs E F, in combination with pawls o k, gear-wheels l m n, pinion j, and ratchet k', all arranged to operate substantially as and for the purposes described.

297,097. MANUFACTURE OF SHEET-IRON. W. DEWEES WOOD, Pittsburg, Pa. Filed Dec. 5, 1883. (No specimens.)

Claim.—1. As an improvement in the method of manufacturing sheet-iron set forth in Patent No. 291,260, simultaneously reviving and carbonizing the surface of the sheet by the conjoint application thereto of charcoal, and a mixture of graphite with suitable oleaginous or resinous matter, substantially as described.

2. As a step in the manufacture of planished sheet-iron, applying to the oxidized surface of the sheet, preliminary to a reviving operation, a mixture of graphite and oleaginous or resinous matter along with pulverized charcoal, substantially as set forth.

297,098. APPLICATION OF CELLULOID FOR ENAMELING TEXTILE FABRICS, &c. WILLIAM H. WOOD and JOHN H. STEVENS, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Mar. 11, 1884. (No specimens.)

Claim.—1. The within-described process of enameling, which consists in causing the adhesion to the surface to be enameled of a sheet of material the base of which is pyroxyline, by, first, coating the surface with a suitable cement containing an oxidizable or drying oil; second, drying the cement, and, third, attaching the pyroxyline sheet by heat and pressure.

2. The within-described process of enameling, which consists in, first, coating one of the surfaces of the pyroxyline sheet or veneer with a suitable cement containing an oxidizable or drying oil; second, drying the cement, and, third, attaching the pyroxyline sheet by the application of heat and pressure, substantially as set forth.

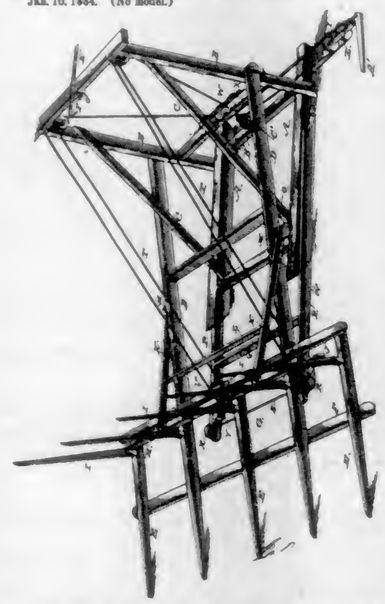
3. The within-described process of enameling, which consists in, first, coating the surface to be enameled with a suitable cement containing an oxidizable or drying oil; second, drying the cement, and, third, attaching a sheet of seasoned material the base of which is pyroxyline, substantially as set forth.

4. The method of enameling material in the form of sheets hereinbefore described, which consists in causing the adhesion of a sheet of material the base of which is pyroxyline to enameled cloth or oil-cloth, by bringing the pyroxyline sheet in contact with the coated surface of the enameled cloth or oil-cloth, and subjecting the two to heat and pressure, substantially as described.

5. The method of enameling material in the form of sheets hereinbefore described, which consists in, first, coating one of the surfaces of a sheet of pyroxyline material with a suitable cement; second, drying the cement, and, third, effecting the adhesion of the pyroxyline sheet or veneer to the surface to be enameled by the application of heat and pressure, substantially as described.

6. The process herein described of enameling cloth, leather, or textile fabrics by means of sheets or veneer of pyroxyline material, which consists in effecting the adhesion of the sheet or veneer of pyroxyline material by subjecting it to heat and pressure while in contact with a dried surface of a cement containing oxidizable or drying oil.

297,099. HAY-STACKER. JOHN R. WRIGHT, Wheeling, Mo. Filed Jan. 10, 1884. (No model.)



Claim.—1. The combination of the carrier-arms, means for elevating them, the frame hinged upon the upper side of the carrier-arms, the arms hinged to the rear side of the hinged frame connected by a cross-bar, and having the inclined notches in their lower edges, the bails upon the outer sides of the carrier-arms, and the catches or pawls hinged upon their upper ends, as and for the purpose shown and set forth.

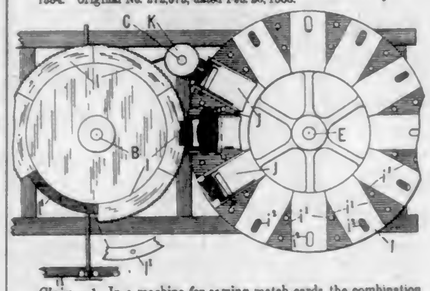
2. The combination of the frame, the draft-rope attached to the upper ends of the frame at both ends, the lifting-arms having pulleys at their outer ends, the pulleys at the upper ends of the uprights, the three pulleys upon the cross-piece at the lower portion of the frame, the block having the single-tree attached to it, and the swiveled block or pulley having the doubled end of the rope passing over it, as and for the purpose shown and set forth.

3. The combination of the uprights connected at their upper ends by a cross-piece, the lifting-arms having the transverse shaft at their outer ends, the catch-lever pivoted to the cross-piece at the upper ends of the uprights, a set-screw at the forward side of the cross-piece, and the slotted plate sliding adjustably upon said set-screw, as and for the purpose shown and set forth.

4. The hay-stacker consisting of the skids, the uprights, the carrier-arms pivoted upon the uprights near their lower ends, the lifting-arms pivoted upon the skids near their rear ends, the frame hinged upon the upper side of the carrier and having means for adjusting it, the pulleys at the ends of the lifting-arms and at the ends of the uprights, the three pulleys at the lower rear portion of the frame, the block having two pulleys and the single-tree, the swiveled pulley, and the rope passing over the pulleys and secured at both ends to the upper ends of the uprights, all constructed and arranged as and for the purpose shown and set forth.

REISSUES.

10,468. MACHINE FOR SAWING MATCH-CARDS. GILBERT FLEWWELLING and GILBERT J. HARER, Hampton, New Brunswick, Canada, assignors to the Diamond Match Company, of Connecticut. Filed Feb. 26, 1884. Original No. 272,675, dated Feb. 20, 1883.



Claim.—1. In a machine for sawing match-cards, the combination of the following elements: first, a revolving table having a series of independent holders for the card-blanks; second, a gang of circular slitting-saws; and, third, cam mechanism, substantially as described, adapted to cause the holders at the proper time to thrust the card-blanks into the line of the saws' action, and to withdraw them therefrom, substantially as described.

2. In a machine for sawing match-cards, a revolving table with a series of card-blank holders having a capacity for radial movement upon the table, and cam mechanism, substantially as described, for moving the holders to present the blanks to the mechanism for acting upon the same.

3. In a machine for sawing match-cards, a revolving table with a series of card-blank holders adapted to hold the card-blanks with their ends in a concave line, and cam mechanism, substantially as described, for moving the holders to present the blanks to the slitting-saws, as described.

4. In a machine for sawing match-cards, the combination of the following elements: a revolving table having a series of independent holders for the card-blanks, a gang of circular pointing-saws, a gang of circular slitting-saws, and cam mechanism, substantially as described, for moving the card-blanks into and out of the line of action of the slitting-saws.

5. The combination, with the horizontal disk I, arranged on shaft E, and carrying the card-blank holders J, of the clamp-bar j^2, pivoted at j^4, the mechanism j^3 j^5 j^7, and the notches j^6, whereby the blanks may be held in the holders, as described.

6. The combination, with the disk I, provided with the movable blank-holders, of the saws mounted on the top of a shaft, c, and the segment-saws *l*, attached to the rim of disk I, and having washers l', whereby the blocks are first grooved and then slitted the required depth, as described.

7. In combination with the holders carrying roller-studs and sliding in disk I, the detachable piece i' and the grooved cam M, arranged under said disk on a support, as and for the purpose described.

10,469. TREATING AND MOLDING PYROXYLINE. JOHN W. HYATT, Jr., Newark, and ISAIAH S. HYATT, Morristown, N. J., assignors by mesne assignments, to the Celluloid Manufacturing Company, of New York. Filed Mar. 10, 1884. Original No. 105,338, dated July 12, 1870; Reissue No. 5,928, dated June 23, 1874.

Claim.—1. The process of preparing pyroxyline, consisting of grinding the pyroxyline into a pulp, and after mingling therewith a solvent subjecting the mixture to heat and pressure, substantially as and for the purpose described.

2. The use of finely-comminuted camphor gum mixed with pyroxyline pulp, and rendered a solvent thereof by the application of heat, substantially as described.

3. The treatment of pyroxyline pulp containing camphor mixed therewith in a finely-divided condition by subjecting the same to pressure in molds and continuing the pressure until the mold and its contents are cooled, substantially as described.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the District of Columbia.

MARVIN v. LILLIE.

Decided May 31, 1867.

1. It is against the spirit and letter of the law to grant an independent patent to an applicant for an invention shown and described, though not claimed, in a prior patent issued to the same person.
2. The pretext that no claim was made to the invention in the original patent will not avail, since the law provides for the amending of patents by enlargement or restriction, or even by division of the subject-matter.
3. No interference can lie except as between claimants of the same invention. If an applicant claims that which is shown in a previous patent, the patentee should be notified of it and an opportunity first offered to him to lay claim to the invention.

APPEAL from the Commissioner of Patents.

OLIN, *J.:*

This is nominally an interference case in which the question of priority alone should be at issue; but the appeal is taken on grounds which, if sustained, vitiate the proceedings under the interference. It is proper, therefore, that I should inquire into these grounds.

It appears from the papers in the case, and it is not denied by the counsel for the appellee, that the invention now sought to be patented and claimed in the application in interference is shown and described in the patent issued to L. Lillie, the appellee, on August 8, 1865. Such being the case, I am of opinion that an application for an independent patent cannot be entertained. It is contrary to the spirit and, I believe, the letter of the law to grant a new patent to an applicant who has already obtained one for the same invention. The pretext that he did not specifically claim the device he might have claimed in the original patent will not avail, since the law provides for the amending of patents by enlargement or restriction, or even by division of the subject-matter of any patent at any time during the term for which it is granted. The first reason of appeal is therefore sustained.

As to the second reason of appeal: On comparison of the claims of Marvin and of Lillie no conflict is apparent. Marvin claims a combination of devices which is not claimed by Lillie; but the construction given to Lillie's claim is such as to embrace a feature shown but not claimed by Marvin. This interference, therefore, is declared between two parties who do not claim the same thing.

In my opinion no interference can lie except as between claimants of the same invention. If, as in this instance, an applicant claims that which is shown in a previous patent, the patentee should be notified of it and an opportunity first offered to him to lay claim to the invention. This seems to me to be the safe rule; for the patentee may either acknowledge that the particular feature in question is not his invention, but that of the claimant, and if so there would be no occasion for an interference; or he may show that the thing had been in public and common use for many years, and therefore had become public property; or he may assert his right to it by filing in the regular form a claim, and then an interference would be in order, not otherwise.

The second reason of appeal is sustained so far as the first clause is concerned. In view of the fundamental errors pointed out in the initiatory proceeding in this case, I deem it unnecessary to say anything on the question submitted under the third reason of appeal.

Upon the whole I am of opinion that the decision of the Commissioner of Patents in deciding the interference between Lillie and Marvin in favor of Lillie is erroneous; and I do, this 31st day of May, 1867, sustain the appellant's first and second reasons of appeal, and reverse the judgment of the Commissioner; and I do further adjudge and order that the said interference be dissolved, and that the application of the said Lillie be finally rejected.

U. S. Circuit Court—District of California.

CAHN v. WONG TOWN ON.

Decided February 4, 1884.

COMBINATION OF SEPARATE DEVICES—SUB-COMBINATION.

The fact that a device comprising several patentable elements has been patented as a whole will not prevent the patentee from afterward securing a patent for a combination of any number of the elements less than the whole, provided he applies for it before the lesser combination has been two years in public use.

Mr. M. A. Wheaton for the complainant.
Mr. J. L. Boone, contra.

SAWYER, *J., (orally.)*

This action is upon a patent. The patent consists of lapping over two pieces of leather in making the seam of a boot or any other work of the kind, running a line of rivets along, and then a line of stitching on each side of the line of rivets, so as to make a compact, tight seam. The plea sets up that the patentee in this case on a prior occasion procured a patent, and that this other and prior patent is for the same thing with the addition of a piece of india-rubber inserted between the two pieces of leather. The strip of india-rubber having been inserted, a line of rivets is run along with two lines of stitching—one on each side of the line of rivets—in the same manner as in the second patent. The defendant claims that the second patent is not a new invention; that it is merely a combination of a

part of the elements of the first patent, or of the prior invention, and therefore that the second patent is void as not covering a new invention. I think probably that would be the case if the patentee were a different inventor. If the patentee in the prior patent had been a different person from the patentee in the second, I am inclined to think so. But the prior patentee is the same man, and doubtless if he had made the invention at the time he obtained his first patent he might have got a patent for the sub-combination, omitting one element, the slip of india-rubber; and it does not appear in the plea that this second invention has been in public use or on sale for more than two years, whereby it would be abandoned to the public. The inventor failed, therefore, if he is the inventor of both at the same time, to obtain a patent for all he was entitled to. If he was the inventor at that time, he was entitled to patent the second or sub-combination of elements, omitting the inserted strip of india-rubber, as well as the first combining all the elements. He might, perhaps, have got a reissue covering both if his invention of the sub-combination is sufficiently indicated in the specification of the first patent; but he has chosen to obtain an independent patent for the sub-combination. If he invented it at the same time with the other, he might undoubtedly have obtained a patent in the first instance. I think if it was patentable with the additional element of the indin-rubber, the sub-combination without the addition of the india-rubber, invented at the same time, would be patentable. Justice Field says in the *Giant Powder Case* (4 Fed. Rep., 720; 5 Fed. Rep., 197) that this is the proper mode of proceeding when there is another invention for which an independent patent might have been obtained but has been omitted. If he was the inventor of both, he was entitled to patent both—the sub-combination without the strip of india-rubber as well as the entire combination of the lapping of the leather and the intervention of a piece of indla-rubber to make the seam tighter, and better still in combination with the line of rivets and line of stitching on each side of it. He being the first person to invent both, I think it was patentable as to both. He doubtless did invent the sub-combination as well as the entire combination at the same time. He embraced the sub-combination in the last patent without the additional element intervening; and it does not appear that it was on sale for two years before the application for the last patent. I think the plea, then, should be overruled. And it is so ordered.

U. S. Circuit Court—District of New Jersey.

DOYLE *v.* SPAULDING *et al.* ILLINGWORTH *v.* SAME.

Decided March 15, 1884.

1. The use or knowledge of the use of an invention in a foreign country by persons residing in this country will not defeat a patent which has here been granted to a *bona fide* patentee, who at the time was ignorant of the invention or its use abroad.
2. Letters Patent No. 166,700, granted August 17, 1875, to Illingworth, and No. 99,299, granted February 1, 1870, to Patrick Doyle, construed, sustained, and held to be infringed by machines used under Letters Patent No. 240,727, granted April 26, 1881, to Spaulding *et al.*, as assignees of Alfred E. Jones.

Mr. J. C. Clayton for the complainants.

Mr. Francis Forbes, with whom was *Mr. A. Q. Keasbey*, for the defendants.

NIXON, *D. J.*:

These two cases will be considered together for reasons which will hereinafter appear.

On March 5, 1881, the complainant Illingworth commenced a suit in this court against the defendants for infringement of Letters Patent No. 166,700, dated August 17, 1875, for improvement in molds for ingots.

The defendants answered, setting up, among other things, that said letters patent were void (1) on account of prior knowledge and use of the alleged invention; (2) because every substantial and material part of the invention was described and claimed in Letters Patent No. 99,299, and granted to one Patrick Doyle, February 1, 1870, for improvement in molds for making combined ingots of steel and iron, and in English Letters Patent No. 3,801, issued to William Moore by the Queen of Great Britain and Ireland, dated November 21, 1873, and sealed May 19, 1874; and (3) denying the right of the complainant to recover because the defendants were the assignees and owners of Letters Patent No. 240,727, granted to one Alfred E. Jones, and were entitled to use the invention therein described and shown, notwithstanding the letters patent of complainant on which the suit was bronght.

It appears in the testimony that for several years previous to the filing of the bill two of the defendants, Fitzsimmons and Jennings, were in the employ of the complainant's firm, and they became familiar with the use of molds made under the Doyle patent, which is set up as anticipating the alleged invention of Illingworth. It also appears that the co nplainant used the Doyle patent for several years previous to 1875 in the manufacture of iron and steel ingots, the inventor, Doyle, during the time being in business with the complainant; that the above patent was obtained by Illingworth in view of the fact that Doyle was about going out of the firm, after which it was supposed that the continued use of his patent would not be allowed, and that he went out and remained away from the complainant from 1875 to 1880, when he returned and became the superintendent of his works.

On the 7th of May, 1881, Patrick Doyle began his suit against the defendants for the infringement of the letters patent which had been set up in the former action as an anticipation of the Illingworth patent.

The answer of the defendants denies (1) that Doyle was the original and first inventor of the improvements therein claimed, and (2) alleges that every substantial and material part of the invention was known to several persons now residing in this country, and by whom it had been used in Sheffield, England, during their residence there. Pending the taking of testimony in these suits, two applications were made to the court by the respective parties—one by the defendants in the Illingworth suit, asking that they might be allowed to amend their answer by inserting the allegation that the invention claimed by Illingworth was known to certain persons residing in this country, who used it in the city of Sheffield, England, before coming hither, and the other by the complainant in the Doyle suit, who moved to strike out the said allegation in the answer filed therein. The question involves the interpretation of the clause "not known or used by others in this country" in section 4886 of the Revised Statutes, which first appeared in section 24 of the act of

July 8, 1870, and which had never received judicial construction.

Being willing to afford the parties an opportunity without embarrassment to correct any mistake which the court might fall into in deciding a matter of first impression, we allowed the allegation to stand in the answer in the Doyle suit and to be inserted in the Illingworth answer, and directed the parties to make their proofs of the facts and to present their views more fully at the final hearing. (See *Illingworth* v. *Spaulding et al.*, 9 Fed. Rep., 611.)

After a careful consideration of the three sections of patent act which bear upon the subject—sections 4886, 4920, and 4923 of Revised Statutes—we are of the opinion that the use or a knowledge of the use of an invention in a foreign country by persons residing in this country will not defeat a patent which has here been granted to a *bona fide* patentee, who at the time was ignorant of the existence of the invention or its use abroad.

When the parties began to take the proofs they united in a stipulation that the evidence should be entitled in both causes and that the two should be argued together. The defendants also admitted in writing in each of the cases that before the commencement of the suits, and since the granting of the letters patent, respectively, they had manufactured combined ingots of iron and steel in the following manner and for the following purposes;

I.

By means of a mold made in conformity to Letters Patent of the United States No. 240,727, granted to them April 26, 1881, as assignees of Alfred E. Jones, a copy of which is hereto annexed, marked "Complainant's Exhibit Jones' Patent."

II.

By means of a mold made with two covers, in all respects like that shown in the above-named letters patent, except that there were two covers instead of one, and the slide was omitted.

The covers are so made that a part of the cover first used projects into the molds

The process is as follows: The mold being clamped together the first metal to be cast is poured into it, and when sufficiently set the cover is removed and a second one, perfectly flat, is inserted in its place. When this is done there remains a space between the newly-cast metal and the side or cover of the mold, into which is cast the remaining part of the ingot.

The mold is shown in the model Complainant's Exhibit "E," when both covers are used and the slide is omitted, one cover having a projection into the mold and the other being flat.

III.

By means of a mold of three parts, each part being composed, as usual, in two-part molds of three sides rising from a closed base.

The operation of the mold is as follows:

The two parts of the mold are joined together in the usual manner by rings and wedges, and an ingot is cast therein in the usual way.

Immediately that the metal is set one side of the mold is removed, and another, a little larger, is fixed by rings and wedges in the place of the side removed.

Into the space thus made, adjacent to the glowing ingot of metal, the molten metal to complete the ingot is poured. When sufficiently cooled the combined ingot is removed, as is usually done in ingot-molds of two parts.

This mold is represented by Complainant's Exhibit "F." The size and proportions of the parts however are not correct: only the arrangement and operation of the parts are intended to be illustrated.

IV.

By means of a mold of two parts, in which one of the parts is like the ordinary two-parts mold—viz., with three sides and a bottom—the other part being made flat on one side and with a projection on the other so arranged as to project between the sides and into the other part when the two are joined together.

The operating of the mold is as follows:

The two parts of the mold being joined together by rings and wedges in the usual way, (the projecting part of one side extending into the recess in the other,) the metal is cast into it, and when the metal is set, the side with the projection is removed and turned so that its flat side is toward the center of the mold. There is thus left an open space in the mold, into which is cast the metal which is intended to complete the ingot.

The combined ingot is removed in the ordinary way of removing single ingots.

This mold is represented by Complainant's Exhibit "G."

The same limitation is made in regard to this exhibit as to Exhibit "F" above.

V.

By means of a mold similar to that last described, with the exception that instead of one cover there are two, one being flat, and one having a projection on its inner surface, as just described. The operation is the same as of Exhibit "G," with the exception that instead of turning the cover so that the projection shall be outermost, the flat cover is used. This mold is represented by Exhibit "H."

The same limitation is made to this exhibit as to Exhibit "F" above.

Newark, N. J., October 8, 1881.

FRANCIS FORBES,
Solicitor for the defendants in above causes.

The subject-matter of the controversy has reference to the use of molds in casting combined ingots of iron and steel. The patent oldest in date for the employment of mechanism for such a purpose was granted to Patrick Doyle on February 1, 1870, and numbered 99,299. The patentee says that his invention relates to improvements in molds for making ingots of iron and steel in a manner so as to dispose of the one metal on one or more sides of the other and to secure a perfect union of the two, and that it consists of a vertical mold of four or other number of plain sides, one or more of which may be detachable and clamped to the other by strong bands in which a strong thick plate of metal is arranged to fit near one side from top to bottom, snugly to occupy a part of the space when the metal of which the greater part of the ingot is to be composed is poured in, and to remain until the same has solidified sufficiently to retain its position, when it is withdrawn, leaving a space for the other metal, which, being poured in, unites perfectly with the first and forms the required composition ingot.

In introducing his specifications the patentee speaks of his invention as an "improved" mold for making combined iron and steel ingots, thereby implying that other molds were in use of which he regarded his as an improvement. Not only the scope of this patent but the validity of the subsequent issues to Illingworth and Jones must be determined by the state of the art at the time when the Doyle patent was granted. The evidence on this subject is meagre. After looking through the testimony with care, we fail to find anything relating to the state of the art, except the statement of Mr. Illingworth that he had been engaged in the steel business for seventeen years; that prior to the Doyle invention he had never seen any molds or other mechanism with which skate-metal, which was a combination of steel and iron, could be made; that the only mode of manufacturing such a combination of which he had any knowledge was to weld together the iron and steel into one bar and then rolling it out, and that this was the only method then in use at his works. Accepting this as the state of the art at this time, it must be conceded that there was novelty and value in the Doyle improvement. It was a step from the mere mechanical combination by welding to a chemical one resulting from the fusion and union of the two metals when in a heated state. It was the introduction of the variable cavity, whereby the amount of the one metal or the other could be accurately adjusted and obtained by the exercise of ordinary mechanical skill.

We are confirmed in our view of the Doyle patent by the fact that as late as 1873 a patent was granted in England to William Moore for substantially the same device for making combined ingots of iron and steel, securing the variable cavity by the use of a slide,

which would hardly have been granted if such a method of casting ingots had previously been in use in England, as the defendant so earnestly contended.

On the argument the counsel for the defendants insisted that the complainant had failed to prove any infringement. The reason why specific proof was not offered was, doubtless, owing to the circumstance that the defendants admitted the performance of acts and the use of instrumentalities which the complainant assumed would be sufficient to satisfy the court of the fact of infringement. For instance, the defendants filed in the cases an admission that they had manufactured combined ingots of iron and steel by means of a mold made in conformity to the Letters Patent No. 240,727, granted to them April 26, 1881, as assignees of Alfred E. Jones. If we understand the argument of counsel, it is that there was a failure of expert testimony to inform the court whether or not such an act was an infringement of the several patents of the complainants. We fail to see how experts' testimony would be of any service. Numerous experts could undoubtedly have been found both by the complainant and the defendants who would respectively maintain the views of their employers on a question of that sort; but their evidence would not greatly help the court in deciding what is simply a question of mechanical equivalents. Having in our hands the respective letters patent, the models, and the molds used, we trust it will not be set down as presumption to add that we have quite as much confidence in our own judgment as we should have in the opinion of experts whether the use of the one was an infringement of the claims of either of the others.

It need not be claimed that Doyle was the first person who used molds in casting ingots of iron or steel; but the evidence shows that he was the first who manufactured combined ingots of these metals by the use of mechanism which produced a variable cavity in the molds. The several patents of Illingworth and Jones reach the same result as to the variable cavity; but Illingworth has changed, and, as we think, improved, the mechanism. In the Doyle patent the cavity for one of the metals is made by the use of an iron or steel slide, and in the Illingworth by two covers, one with a plain or straight surface and the other recessed.

If such a substituted instrumentality of the mechanism is not a mere equivalent for the metal slide of Doyle, the patent may be held good for the improvement, although it is valueless except in combination with Doyle's invention, and can no more be used without his consent than Doyle can use Illingworth's improvement without his consent.

The first admission of the defendants is their use of molds made in conformity to the Jones letters patent. We regard this as a clear infringement of the Doyle patent.

Their second, third, fourth, and fifth admissions embrace the use of instrumentalities which not only infringe the Doyle invention, but also the improvement of the Illingworth patent. There are differences in construction and mode of operation shown; but these are not radical or independent enough to take them out of the catagory of mechanical equivalents.

Let a decree be entered in favor of the complainants in both cases for an injunction, and the usual order of reference be made for an account.

12

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., April 16, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Lindsay Steele, of Chester, Randolph county, Illinois, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

AMOS HADLEY,
Acting Chief Clerk.

The Commissioner of Patents.

Issue of April 22, 1884.

Patents	449—	No. 297,100 to No. 297,548, inclusive.
Designs	10—	No. 14,965 to No. 14,974, inclusive.
Trade-Marks	26—	No. 11,114 to No. 11,139, inclusive.
Labels	17—	No. 4,082 to No. 4,098, inclusive.
Reissues of patents	2—	No. 10,470 to No. 10,471, inclusive.
Total issue	504	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	2	.....	New Hampshire	4	.....
California	9	.....	New Jersey	16	3
Colorado	4	.....	New Mexico Territ'y	.....	.....
Connecticut	17	1	New York	95	8
Dakota Territory	1	.....	North Carolina	2	4
Delaware	.....	.....	Ohio	36	2
District of Columbia	7	.....	Oregon	.....	.....
Florida	2	.....	Pennsylvania	23	3
Georgia	3	.....	Rhode Island	8	1
Idaho Territory	.....	.....	South Carolina	.....	1
Illinois	48	1	Tennessee	2	1
Indiana	16	.....	Texas	2	.....
Indian Territory	1	.....	Utah Territory	1	.....
Iowa	7	.....	Vermont	.....	.....
Kansas	4	2	Virginia	3	.....
Kentucky	4	.....	Washington Territ'y	.....	.....
Louisiana	1	.....	West Virginia	.....	.....
Maine	2	.....	Wisconsin	8	1
Maryland	10	8	Wyoming Territory	.....	.....
Massachusetts	44	1	United States Army	.....	.....
Michigan	18	.....	United States Navy	.....	.....
Minnesota	3	.....			
Mississippi	4	.....	Total to citizens of the United States	423	38
Missouri	12	1			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	4	.....
Austria-Hungary	.....	.....	Hawaiian Islands	.....	.....
Barbadoes	.....	.....	Hayti	.....	.....
Belginm	.....	.....	Italy	.....	.....
Bermuda	.....	.....	Mexico	1	.....
Brazil	.....	.....	New Zealand	.....	.....
Canada	6	.....	Russia	.....	.....
Chili	.....	1	Scotland	2	.....
Colombia, U. S. of	.....	.....	Sweden	.....	.....
Cuba	.....	1	Switzerland	4	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	36	5
England	15	3			
France	4	1			

DESIGNS.

14,965.—PENCIL-CASE.—*Le Roy W. Fairchild*, New York, N. Y. Application filed February 25, 1884. Term of patent 3½ years.

14,966.—OIL-STOVE.—*Robert Ham*, Troy, N. Y., assignor to *The Standard Oil Store Company*, same place. Application filed March 7, 1884. Term of patent 7 years.

14,967.—FINGER-RING.—*Harvey Huestis*, Providence, R. I. Application filed March 10, 1884. Term of patent 7 years.

14,968.—PEN-WIPER.—*Leopold Kahn*, New York, N. Y. Application filed March 8, 1884. Term of patent 3½ years.

14,969.—ORNAMENTATION OF HARDWARE.—*Arthur Langerfeld*, New Britain, Conn., assignor to *P. & F. Corbin*, same place. Application filed March 3, 1884. Term of patent 14 years.

14,970.—CARPET.—*Edward Poole*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed February 19, 1884. Term of patent 3½ years.

14,971.—AXLE-YOKE.—*Henry K. Porter*, Boston, Mass. Application filed July 21, 1883. Term of patent 14 years.

14,972.—SASH-FASTENER FRAME.—*William E. Sparks*, New Britain, Conn., assignor to *The Kempshall Manufacturing Company*, same place. Application filed September 17, 1883. Term of patent 7 years.

14,973.—DRAWING-SQUARE.—*Langdon Shock Thompson*, Lafayette, Ind. Application filed March 1, 1884. Term of patent 7 years.

14,974.—PAPER.—*Samuel W. Wilson*, New York, N. Y. Application filed March 1, 1884. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

11,114.—POWDERED GLUE.—*Bernard Cannon* and *William Cannon*, Lincoln, county of Lincoln, England, and *Edward Cannon, Sr.*, and *Edward Cannon, Jr.*, Dublin, county of Dublin, Ireland. Application filed October 4, 1883.

"The representation of cannons, in combination with the surname and fac-simile signature of the firm-name of the registranta."

11,115.—POWDERED GELATINE.—*Bernard Cannon* and *William Cannon*, Lincoln, county of Lincoln, England, and *Edward Cannon, Sr.*, and *Edward Cannon, Jr.*, Dublin, county of Dublin, Ireland. Application filed October 4, 1883.

"The surname and fac-simile signature of registrants' firm."

11,116.—CONCENTRATED PREPARATION OF SIZE.—*Bernard Cannon* and *William Cannon*, Lincoln, county of Lincoln, England, and *Edward Cannon, Sr.*, and *Edward Cannon, Jr.*, Dublin, county of Dublin, Ireland. Application filed October 4, 1883.
"The surname and fac-simile signature of the firm-name of the registrants."

11,117.—DRUGS AND CHEMICALS.—*William S. Powell*, Baltimore, Md. Application filed March 5, 1884.
"The arbitrarily-selected letter 'P,' with the word 'PURITY.'"

11,118.—MANUFACTURED CHEWING-TOBACCO.—*Harden H. Reynolds*, Winston, N. C. Application filed February 16, 1884.
"The letters and word 'ELEPHANT' and the figure of an elephant."

11,119.—CEMENT FOR CEMENTING IRON SURFACES TOGETHER.—*James H. Carrington*, New York, N. Y. Application filed March 26, 1884.
"The word 'VULCAN.'"

11,120.—MEDICAL COMPOUND FOR THE CURE OF AGUES AND FEVERS.—*Charles W. Goodhue*, New York, N. Y. Application filed March 4, 1884.
"The words 'DR. SUTTON'S.'"

11,121.—WOOLEN TEXTILES, INCLUDING YARNS, CASSIMERES, FLANNELS, JEANS, AND LINSEYS.—*The Zanesville Woolen Manufacturing Company*, Zanesville, Ohio. Application filed March 21, 1884.
"The letter 'Z.'"

11,122.—CERTAIN PLASTIC COMPOSITION AND ARTICLES MADE THEREOF.—*John G. Kearsing*, Newark, N. J. Application filed March 18, 1884.
"The word 'DURANOID.'"

11,123.—COUGH-CANDY DROPS.—*Adolph C. Meyer*, Baltimore, Md. Application filed March 18, 1884.
"The arbitrary word-symbol 'DR. BULL'S' and the fac-simile signatures of 'A. C. MEYER & CO.' and 'JOHN W. BULL.'"

11,124.—SOLID AND FLUID MEDICINAL PREPARATIONS.—*Adolph C. Meyer*, Baltimore, Md. Application filed March 18, 1884.
"A device as follows: In light lettering on a dark ground, and occupying an arc of about three-fourths of a circle, are the words 'DR. BULL'S FAMILY MEDICINES.' Beneath is a ribbon, which completes and extends a little beyond the circle on each side. The central part of the device represents a bull's head and neck."

11,125.—COUGH-SIRUP.—*Nathan F. Philo*, Jersey City, N. J. Application filed February 23, 1884.
"The arbitrarily-selected word 'MOHAWK.'"

11,126.—MELISSA-WATER.—*Henry Renouard & Co.*, Paris, France. Application filed November 2, 1883.
"The representation of a bottle bearing the words 'EAU DES CARMES.'"

11,127.—PREPARATION FOR PROMOTING THE GROWTH OF THE HAIR.—*William Henry Sayre*, Newark, N. J. Application filed March 1, 1884.
"The word-symbol 'QUINMARTHION.'"

11,128.—BLACK AND COLORED SILKS.—*Shaen & Fithian*, New York, N. Y. Application filed March 21, 1884.
"The word 'CYCLOPS.'"

11,129.—TEA AND COFFEE.—*Ferdinand von Ocen* and *Theodore von Ocen*, Charleston, S. C. Application filed March 10, 1884.
"The monogram 'T & C E,' entwined with sprigs of the tea-plant, which incline toward the left, and with sprigs of the coffee-plant inclining toward the right."

11,130.—REFINED LARD.—*The W. J. Wilcox Company*, New York, N. Y. Application filed February 23, 1884.
"A picture of the Elector or the word 'ELECTOR,' or both."

11,131.—SMOKING AND CHEWING TOBACCO, CIGARS, CIGARETTES, CHEROOTS, AND SNUFF.—*F. W. Felgner & Son*, Baltimore, Md. Application filed March 20, 1884.
"The words 'MERCHANT'S DISPATCH.'"

11,132.—CIGARS, CIGARETTES, CHEROOTS, CHEWING-TOBACCO, AND SNUFF.—*F. W. Felgner & Son*, Baltimore, Md. Application filed March 29, 1884.
"The letters 'F W F & S' in the form of a monogram, the border around the same, and the words 'HERBE DE LA REINE.'"

11,133.—CHEWING AND SMOKING TOBACCO, SNUFF, AND CIGARS, CIGARETTES, OR CHEROOTS.—*F. W. Felgner & Son*, Baltimore, Md. Application filed March 29, 1884.
"The words 'MINER'S CHOICE.'"

11,134.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed March 26, 1884.
"The word-symbol 'OLD STAND BY' and the pictorial representation of a sailor in the act of steering with a wheel."

11,135.—CIGARS.—*Sebastian Azcano y Meana*, Havana, Cuba. Application filed February 11, 1884.
"The words 'FLOR DE LAS VILLAS.'"

11,136.—PLUG AND TWIST TOBACCO.—*Richard Joshua Reynolds*, Winston, N. C. Application filed March 25, 1884.
"The words 'ELEANOR CALHOUN.'"

11,137.—PLUG AND TWIST TOBACCO.—*Richard Joshua Reynolds*, Winston, N. C. Application filed March 25, 1884.
"The arbitrary word 'SCHNAPPS.'"

11,138.—PLUG AND TWIST TOBACCO.—*Richard Joshua Reynolds*, Winston, N. C. Application filed March 25, 1884.
"The arbitrary word 'CAROMEL.'"

11,139.—PLUG, FINE-CUT, AND SMOKING TOBACCO, CIGARS, AND CIGARETTES.—*Herman Segnitz & Co.*, Milwaukee, Wis. Application filed March 19, 1884.
"The word-symbol 'ELEVEN-TEEN.'"

LABELS.

4,082.—Title: "DRAPER OILER CO." (FOR OIL CANS.)—*Dana K. Alden*, Boston, Mass. Application filed March 22, 1884.

4,083.—Title: "LEON GAMBETTA" (FOR MANUFACTURED TOBACCO OR CIGARS.)—*William Bradney*, Chicago, Ill. Application filed March 22, 1884.

4,084.—Title: "ETHIOPIAN PILE OINTMENT."—*John A. Campbell* and *William C. Campbell*, Nashville, Tenn. Application filed March 3, 1884.

4,085.—Title: "DR. C. F. BULL'S COUGH DROPS."—*Candy Bros.*, St. Louis, Mo. Application filed March 26, 1884.

4,086.—Title: "DR. DOUGLAS' HERB TEA."—*Robert Douglas*, Baltimore, Md. Application filed March 31, 1884.

4,087.—Title: "FORBIDDEN FRUIT" (FOR CIGARS.)—*T. R. Harris & Co.*, Cohocton, N. Y. Application filed March 26, 1884.

4,088.—Title: "JOHNSON'S SPEEKHERNE, FOR THE HAIR."—*Thomas Johnson*, Utica, N. Y. Application filed March 26, 1884.

4,089.—Title: "PLEASANT WINE OF IRON."—*John Keeshan*, Cincinnati, Ohio. Application filed March 26, 1884.

4,090.—Title: "WRINKLE ERADICATOR."—*Bertha Kirkpatrick*, Philadelphia, Pa. Application filed April 1, 1884.

4,091.—Title: "LAKE'S EXPECTORANT COUGH BALSAM."—*Herbert W. Lake*, Waterbury, Conn. Application filed March 27, 1884.

4,092.—Title: "GOLDEN GATE BITTERS."—*Thomas B. Madden & Co.*, Coffeyville, Kans. Application filed March 29, 1884.

4,093.—Title: "IMPROVED IMPERIAL LINSEED OIL."—*Peter W. Mead*, Brooklyn, N. Y. Application filed March 18, 1884.

4,094.—Title: "DR. SMITH'S AGUE POWDERS."—*Aaron G. Miller*, Philadelphia, Pa. Application filed March 26, 1884.

4,095.—Title: "THE FORESTER" (FOR AXES.)—*New England Axe Co.*, Lock Haven, Pa. Application filed March 29, 1884.

4,096.—Title: "TELEPHONE SOAP."—*John S. Paige*, Providence, R. I. Application filed March 27, 1884.

4,097.—Title: "DR. WALTER'S HEADACHE CURE."—*Eyer Walter*, Nortonville, Kans. Application filed March 26, 1884.

4,098.—Title: "WIECZOREK'S DIALYSED PERRATED OR IODO-PERRATED COD-LIVER OIL, 1:1000."—*Anthony Wieczorek*, New York, N. Y. Application filed March 26, 1884.

Declaration between the United States of America and the Kingdom of Italy—Reciprocal Protection of Marks of Manufacture and Trade.

Concluded June 1, 1882. Ratification advised by the Senate February 25, 1884. Proclaimed March 19, 1884.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION.

Whereas a declaration between the United States and Italy for the reciprocal protection of marks of manufacture and trade in the two countries was concluded and signed by their Plenipotentiaries at Washington on the 1st day of June, 1882, the original of which declaration is word for word as follows:

DECLARATION.

The Government of the United States of America and the Government of His Majesty the King of Italy, wishing to provide for the reciprocal protection of the marks of manufacture and trade, have agreed as follows:

The citizens of each of the high contracting parties shall enjoy, in the dominions and possessions of the other, the same rights as belong to native citizens, or as are now granted or may hereafter be granted to the subjects or citizens of the most favored nation, in everything relating to property in trade-marks and trade-labels.

It is understood that any person who desires to obtain the aforesaid protection must fulfill the formalities required by the laws of the respective countries.

In witness whereof the undersigned, having been duly authorized to this effect, have signed the present declaration, and have affixed thereto the seal of their arms.

Done in duplicate original at Washington this first day of June, one thousand eight hundred and eighty-two.

FRED'K T. FRELINGHUYSEN. [SEAL.]
FAVA. [SEAL.]

And whereas the said declaration has been duly ratified:

Now, therefore, I, Chester A. Arthur, President of the United States, have caused the said declaration to be made public, to the end that the same and every clause and part thereof may be observed and fulfilled with good faith by the United States and the citizens thereof.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this nineteenth day of March, in the year of our Lord one thousand eight hundred and [SEAL.] eighty-four, and of the Independence of the United States the one hundred and eighth.

CHESTER A. ARTHUR.

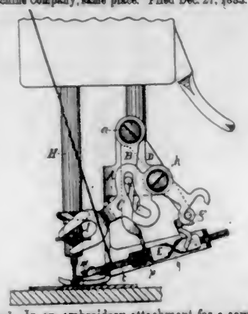
By the President:
FRED'K T. FRELINGHUYSEN,
Secretary of State.

[*Note.*—Inasmuch as the act of Congress entitled "An act relating to the registration of trade-marks," approved August 5, 1882, gives the right of trade-mark registry to subjects of any foreign country which by law admits the like right for citizens of the United States, this declaration is held to be an establishment of the fact that such reciprocal privilege exists, and is therefore effective from June 1, 1882, the date of its signature.]

PATENTS

GRANTED APR. 22, 1884.

297,100. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. GEORGE WELLS BAKER, Cleveland, Ohio, assignor to the White Sewing Machine Company, same place. Filed Dec. 27, 1883. (No model.)



Claim.—1. In an embroidery attachment for a sewing-machine, the combination, with a spiral shaft, a lever constructed to engage and reciprocate said shaft, and a second lever constructed to engage the spiral portion of the shaft and impart an oscillating rotary motion thereto, of a third vibrating lever constructed to engage and be actuated by the sewing-machine and connected to both the first and second levers, and adapted to vibrate the same, substantially as set forth.

2. In an embroidering attachment for a sewing-machine, the combination, with a looper-shaft and means for imparting an oscillating rotary motion thereto, of a vibrating lever constructed to engage and reciprocate the looper-shaft, and a lever constructed and arranged to be actuated by the sewing-machine, and connected to said vibrating lever and adapted to actuate the same, substantially as set forth.

3. In an embroidering attachment for a sewing-machine, the combination, with a looper-shaft having a spiral portion, and means for reciprocating said shaft, of a vibrating lever constructed to engage the spiral portion of the looper-shaft, and a separate lever constructed and arranged to be vibrated by the sewing-machine, and connected with the vibrating lever, and adapted to actuate the same and impart an oscillating rotary motion to the looper-shaft, substantially as set forth.

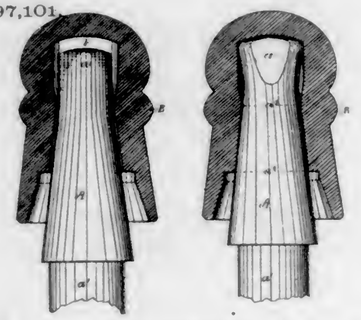
4. In an embroidering attachment for sewing-machines, the combination, with a looper-shaft and a lever constructed and arranged to be actuated by the needle-bar, of two intermediate levers connected at one end to said needle-bar-actuated lever, the free ends of said levers being connected to the looper-shaft, one of the levers serving to reciprocate the shaft and the other to impart an oscillating rotary motion thereto, substantially as set forth.

297,101. INSULATOR FOR TELEGRAPH-WIRES. LUTHER C. BALDWIN and JOHN C. THURSTON, Manchester, N. H. Filed Oct. 18, 1883. (No model.)

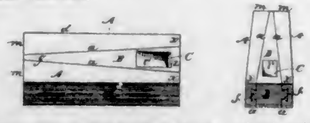
Claim.—1. A cup of non-conducting material having its interior shaped substantially as described, in combination with a pin which, when partially inserted, allows the cup to turn, and when fully inserted forms a bearing for and prevents the cup from turning, substantially as set forth.

2. A cup of non-conducting material having its interior formed into an upper chamber with flat sides, a middle circular chamber, and a lower tapering chamber oval at one end and circular at the other, in combination with a supporting-pin having a knob with flat sides at one end, its other end adapted to be secured to an arm or post, and a cylindrical tapering part between these ends, substantially as and for the purpose set forth.

297,101.

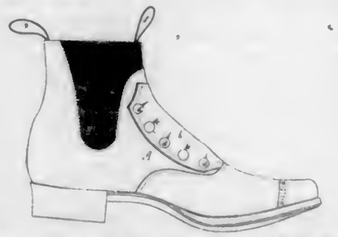


297,102. QUOIN. MICHAEL C. BARRY, Salem, Mass. Filed Mar. 7, 1883. (No model.)



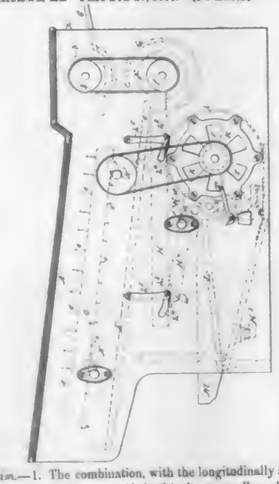
Claim.—As a new article of manufacture, a printer's quoin composed of two side blocks tapered longitudinally on one side, and provided with dovetail grooves on their tapered sides, and a central wedge-shaped block or key provided on its sides with dovetail tongues adapted to fit the dovetail grooves of the side blocks, and on its upper face with a recess having an incline sloping upward toward its narrow end for the bearing of the shooting-stick when locking the form, and a more abrupt incline or shoulder toward the larger end for the bearing of the shooting-stick when unlocking the form, the said side blocks and key being of uniform thickness, substantially as described.

297,103. SHOE. ISAIAH ADDITON BEALS, Brockton, Mass. Filed Jan. 31, 1884. (No model.)



Claim.—A shoe having in the leg and ankle portion of its upper an elastic gore, and the said leg portion closed down its front to or about to the instep, and such instep provided with a fly, and separable fastenings therefor, to secure it at its lower part to the instep, all being substantially as set forth.

297,104. CLOVER THRASHER AND HULLER. CHARLES A. BEELE, Hagerstown, Md. Filed Dec. 27, 1883. (No model.)



Claim.—1. The combination, with the longitudinally and vertically reciprocating carrier-bars provided with the upwardly and downwardly projecting pins, of the open frame having longitudinal passages for said carrier-bars to play through, the inclined lugs q q, secured to the under side of the open frame, the friction-rollers upon which said inclined lugs rest, and the cams q^2 q^2 on the cross-shafts, for acting upon the lugs and imparting to the frame an upward and forward movement, and the platform arranged below the carrier-bars, substantially as described.

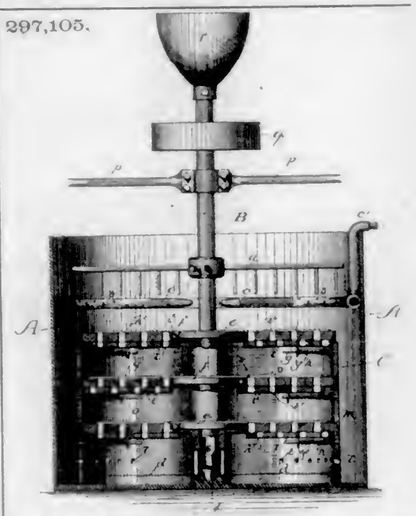
2. The combination, with the fan and the fan-casing, of the stationary plates provided with openings at the ends of said casing, and with the inwardly-projecting boss or hub, and the swinging plates mounted on the said boss or hub, and provided with openings and with projecting wings, to catch the blast, substantially as described.

3. The combination, with the fan and the fan-casing, of the stationary plates provided with the openings, and with the inwardly-projecting boss or hub having the recess for the bearing of the swinging plates, and the swinging plates provided with the openings and wings, and having the knife-edge bearing for resting in the recess of the hub of the stationary plates, substantially as described.

4. The combination of the conveyer, arranged to drop seed upon the sieve, with the sieve, the fan, and the adjustable deflector, consisting of the parallel slats and swinging supports, all adapted to be simultaneously adjusted, so as to direct the blast in parallel lines, but at different angles with respect to the sieve, substantially as described.

297,105. PROCESS OF AND APPARATUS FOR SEPARATING METALS FROM THEIR ORES. ABEL H. BLISS, Chicago, Ill. Filed Jan. 16, 1884. (No model.)

297,105.



Claim.—1. The process herein described of separating metals from their ores, which consists in introducing the ore in a triturated condition into a body of mercury below the surface of the same, and then successively stopping and releasing it, once or oftener, in its upward progress through the mercury, substantially as described.

2. In an apparatus for separating metals from their ores, the combination of the following elements: a vessel, A, for containing mercury, means for charging the ore in a triturated condition into the mercury below the surface of the same, a hollow body, C, within the vessel A, having a diameter less than that of the vessel, whereby a space exists between the two, and containing one or more compartments, and opening at or near its base into the annular chamber, and mechanism for opening and closing the tops of the compartments, substantially as described.

3. In an apparatus for separating metals from their ores, the combination, with a vessel for containing mercury, and with means for charging the ore in a triturated condition into the said vessel near its base, of mechanism for alternately stopping and releasing the ore in its progress upward through the mercury, all substantially as described.

4. In an apparatus for separating metals from their ores, the combination, with a vessel for containing mercury, and with means for charging the ore in a triturated condition into the said vessel near its base, of mechanism for alternately stopping and releasing the ore in its upward progress through the mercury, and mechanism for creating a downward current in that portion of the mercury through which the ore rises, all substantially as described.

5. In an apparatus for separating metals from their ores, the combination, with a vessel, A, for containing mercury, of the rotary stand-pipe B, having a hopper at its upper end, one or more openings near its lower end, and means for evolving it, a hollow body, C, within the vessel, of smaller diameter than the vessel, whereby an annular space exists between the two, and opening at or near its base into the said annular space, and containing one or more sets of compartments intercommunicating in vertical series, and mechanism operated automatically by the rotation of the stand-pipe for opening and closing communication between the compartments in vertical series consecutively, substantially as described.

6. In an apparatus for separating metals from their ores, the combination of the following elements: a vessel for containing mercury, a rotary stand-pipe supported within the said vessel, and having one or more discharge-openings near its lower end and a hopper at its top, means for permitting the said stand-pipe to be revolved, a hollow body, C, of smaller diameter than the vessel and standing around the stand-pipe within the vessel, and opening at or near its base into the space surrounding it, said body being formed in sections superposed one upon another, and divided by partitions into compartments having openings in their tops, sliding plates l in contact with the tops of the compartments, and provided with openings to register with those in the said tops, and mechanism for sliding the said plates back and forth through the revolution of the stand-pipe, comprising cams o upon the stand-pipe, and spring mechanism acting in opposition to the cams, substantially as described.

297,106. DEVICE FOR HOLDING PENCILS AND OTHER OBJECTS. CLARK W. BOMAN, New York, N. Y., assignor to Joseph Reckendorfer, same place. Filed May 19, 1883. (No model.)

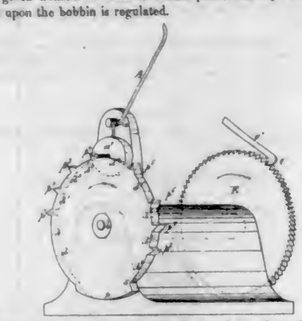


Claim.—1. The combination of the handle or sheath, the tubular receiver provided with notches, the slotted guide-tube connected with the slotted receiver by a pin-and-helical-slot connection, substantially as described, the spring and the follower, with a stop to limit the outward movement of the follower, intending to claim none of these parts separately, but all of them in combination, when made and operating substantially as hereinbefore set forth.

2. A follower provided with a stop pin or lug and grasping or holding device, in combination with a slotted guide-tube, a tubular slotted and notched receiver connected therewith by a pin-and-helical-slot connection, substantially as described, and a coiled spring, intending to claim none of these parts separately, but only the combination of all of them, when constructed and operating as set forth.

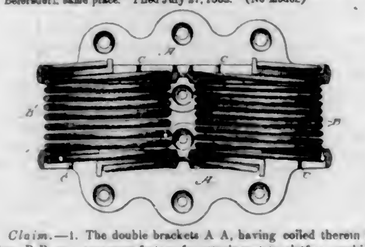
297,107. COP-BUILDING MECHANISM. JOHN BOND and GEORGE SMETHURST, Maynard, Mass. Filed Mar. 23, 1883. (No model.)

Brief.—By mechanism shown the ring-rail is caused to repeat its stroke a given number of times at certain parts, whereby the laying of the yarn upon the bobbin is regulated.



Claim.—The combination, with the pawl A and mechanism for raising and lowering the ring-rail, of mechanism for controlling the pawl, adapted to be connected to and operated by said rail-operating mechanism, whereby the stroke of the ring-rail is repeated and the yarn laid on the same part of the cop, as and for the purpose set forth.

297,108. SPRING ATTACHMENT FOR PLATFORM ROCKING CHAIRS. WILLIAM I. BUNKER, Chicago, Ill., assignor of one-half to Jacob Beiersdorf, same place. Filed July 27, 1883. (No model.)

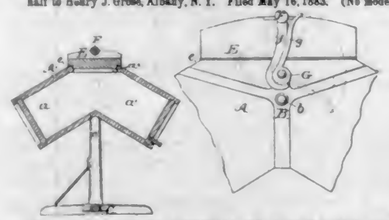


Claim.—1. The double brackets A A, having coiled therein the springs B B, as a new manufacture for attachment to platform rocking-chairs, substantially as and for the purpose described.

2. In a platform rocking-chair, the combination, with the rocker and base-rail, of the brackets A A and the coil-springs B B', one of said springs being constructed of lighter wire than the other, substantially as described, and for the purpose set forth.

3. The combination, in a platform rocking-chair, of the brackets A A and coil-wire spring B, said brackets provided with a lug, C, substantially as described, and for the purpose set forth.

297,109. CHURN. JOHN H. BURCK, North Hoosic, assignor of one-half to Henry J. Gross, Albany, N. Y. Filed May 16, 1883. (No model.)

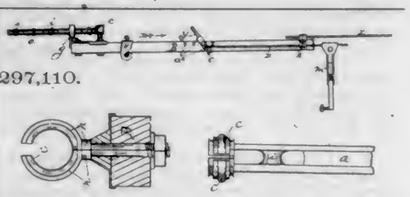


Claim.—In a churn, the combination, with a cream-holding receptacle provided with eccentrics G, as herein described, of the cover E, provided with a shaft, F, having pendent hooks f, adapted to engage with the eccentrics G and secure said cover in place, as herein specified.

297,110. CHECK-ROW ATTACHMENT FOR SEED-PLANTERS. FRANK W. CALAR, Joliet, Ill. Filed Jan. 20, 1883. (No model.)

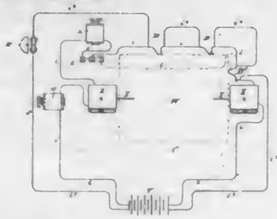
Claim.—1. In a check-row attachment for seed-planters, the combination of the beam B, having the row of holes a^2, oscillating yokes y y, pitmen z z, clasp e, drop-lever m, standard c, slotted curved rotating guides a, hinged between the jaws n n, and having a series of friction-rollers, i, and guide-rest g, having the slot in its upper end for the reception of the guide a, all adapted to operate in the manner and for the purpose set forth.

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2. In the check-row attachment described, the jaws n n, having the slot c between their upper ends, in combination with the swinging guides a, having a corresponding slot in their inner end inclosed by said jaws and adapted to receive the wire w through said corresponding slots, as and for the purpose set forth.

297,111. PRINTING-MACHINE. ANDREW CAMPBELL, Brooklyn, assignor to John and Edmund McLoughlin, both of New York, N. Y. Filed July 27, 1883. (No model.)



Claim.—1. In a printing machine or press, means, substantially as described, whereby the proper placing of the sheet up to the front guides closes breaks in an electric circuit, which excites an electro-magnet, which controls the mechanism that closes the grippers, substantially as set forth.

2. In a printing machine or press, a front guide constructed in the form of a circuit closer and breaker, and arranged in an electric circuit, substantially as described, whereby the proper placing of the sheet closes the circuit thereat, for the purposes specified.

3. In a printing machine or press, the combination of mechanism, substantially as described, for actuating the grippers, means, substantially as described, for electrically controlling the operation of said mechanism for actuating the grippers, an electric generator, wires forming the electric circuit, and front guides constructed in the form of circuit closers and breakers, substantially as described, whereby the proper placing of the sheet to the guides closes breaks in the electric circuit, and thus controls the operation of the mechanism for actuating the grippers, all arranged substantially as set forth.

4. In a printing machine or press, the combination of mechanism, substantially as described, for actuating the front guides, means, substantially as described, for electrically controlling the operation of said mechanism for actuating the front guides, an electric generator, wires forming an electric circuit, and front guides constructed in the form of circuit closers and breakers, substantially as described, whereby the proper placing of the sheet to the guides closes breaks in the electric circuit, and thus controls the operation of the front guides, substantially as and for the purposes set forth.

5. In a printing machine or press, the combination of means, substantially as described, for rotating the cam-shaft 9, means, substantially as described, for electrically controlling the operation of said mechanism for rotating the cam-shaft, an electric generator, wires forming the electric circuit, and front guides constructed in the form of circuit closers and breakers, substantially as described, whereby the proper placing of the sheet to the guides closes breaks in the electric circuit, and thus controls the mechanism for operating cam-shaft 9, substantially as and for the purposes set forth.

6. In a printing machine or press wherein the proper placing of the sheets to the front and side guides electrically controls the gripper-actuating mechanism, each front and side guide constructed in the form of a circuit closer and breaker, substantially as described, whereby the proper placing of the sheet up to all of the guides is necessary in order to close the breaks in the circuit at the guides, substantially as and for the purposes set forth.

7. In a printing machine or press wherein the proper placing of the sheet to the front guides electrically controls the operation of the

press mechanism, and wherein there is a break in the electric circuit at each front guide adapted to be closed by the proper placing of the sheet, the combination of a circuit breaking and closing device, substantially as described, arranged at some point in the circuit, and mechanism, substantially as described, arranged to close said break in the circuit after the breaks at the front guides are closed, and switch or shunt the current before the circuit is broken at said guides by their backward movement, whereby a spark at the front guides is avoided, substantially as set forth.

8. In a printing machine or press wherein the proper placing of the sheet to the front guides electrically controls the mechanism for actuating the front guides, an electrical switch constructed and operated by mechanism, substantially as described, arranged to switch the front guides out of the electric circuit a moment before they withdraw, whereby the breaking of the circuit consequent on their withdrawal will not affect the electrical control of the mechanism, substantially as described.

9. A front or side guide of a printing machine or press, comprising a plate, *d*, provided with contacts *g g*, a plate, *f*, hinged thereto, and provided with a contact, *j*, and a spring, *k*, to keep the contacts separate normally, substantially as set forth.

10. The combination, with the side guide, D', constructed substantially as shown, of the plate *x'*, provided with a recess to receive the free end of the plate *f* of the guide, substantially as set forth.

11. The mechanism for actuating the grippers, comprising the closing-stud and its spring, the disk B', provided with the cam *n*, the wheel B, provided with the lug *q*, the shaft *s*, bearing arms *r* and *t*, the lever M, with arms *y* and *z*, the magnet L, its lever *v*, provided with hook *a'*, and its retracting-spring, and the gripper-shaft provided with cam H, all combined and arranged to operate substantially as set forth.

12. The mechanism for actuating the grippers, constructed substantially as described, in combination with the front and side guides, constructed substantially as described, the electric generator, and the circuit-wires *i i*, all constructed and arranged to operate substantially as set forth.

13. The combination of the front guides constructed substantially as described, the generator, the circuit-wires *i' i'* and *i''*, disk B', provided with cam *a'*, the slide *d'*, contact-piece *g'*, conductors $h' h^2 h^3$, and the spring *f''*, all arranged to operate substantially as set forth.

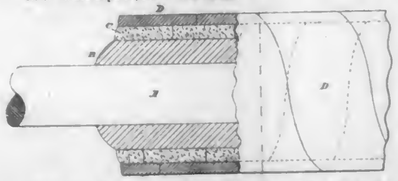
14. A printing machine or press provided with front and side guides constructed to form circuit-closers and breakers, substantially as described, and with an electric annunciator-circuit containing an electric annunciator and generator, and arranged to be broken and closed at the said guides, substantially as set forth.

15. The combination, in a printing-press, of the front and side guides, constructed substantially as shown, the generator, the electric annunciator and its circuit having breaks at said guides, the main circuit with breaks also at said guides, the switch device S, constructed substantially as described, the switch-wire *i'*, the electro-magnet L and its armature-lever, the disk B', bearing the operating-cams and levers *r t*, the said levers and cams, the lever M, the electro-magnet O and its armature-lever, the lever Q, the disk N, and the wheel S, provided with a pawl, *j*, all constructed and arranged to operate substantially as set forth.

16. In a printing machine or press, the front and side guides D D D', constructed substantially as shown, the electric generator and the wires of the main circuit, a mechanical circuit-closing device, S, and the fingers Y Y, and their operating mechanism, the magnets which actuate said fingers being in the main circuit, whereby, when said circuit is completed, the fingers will be thrown down, substantially as set forth.

17. In a printing machine or press, the combination of the time-wheel B and the disk B', the latter provided with the cams for actuating the grippers and front guides, with mechanism, substantially as described, controlled by the proper feeding of the sheet to the guides, for compelling the said disk to rotate with the time-wheel, whereby the said disk is compelled to rotate and perform its functions only when the sheet is properly fed, all constructed and arranged to operate substantially as set forth.

297,112. FORM-ROLLER FOR PRINTING. ANDREW CAMPBELL, Brooklyn, assignor to John and Edmund McLoughlin, both of New York, N. Y. Filed Sept. 10, 1883. (No model.)



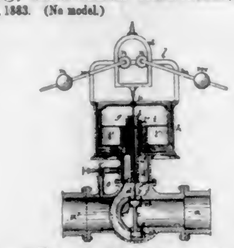
Claim.—1. A printer's roller provided with a leather cover, and a cushion of cork arranged under and next to said leather, substantially as shown and described.

2. A printer's roller comprising a metal stock, a wooden core, a cork cushion, and a leather cover arranged next to the cork, substantially as described and shown.

3. A printer's roller comprising a stock and core, a cork cushion, C, wrapped spirally around and secured to said core, and a leather cover, D, wrapped around and secured to the cork cushion C, substantially as set forth.

4. A printer's roller comprising a metal stock, a wooden core, B, secured thereto, a cork cushion, C, wrapped spirally around and secured to said core, and a leather cover, D, wrapped spirally around and secured to the cushion C, substantially as set forth.

297,113. GAS-GOVERNOR. JOHN S. CONNELLY, Pittsburg, Pa. Filed Nov. 3, 1883. (No model.)



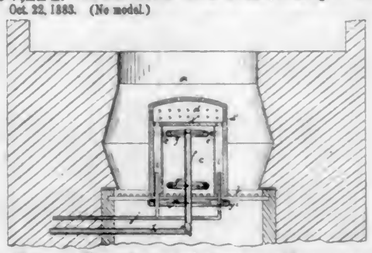
Claim.—1. The combination, in a gas-governor, of a float and valve, with a valve-stem connected to said float and having a friction-roller at its upper end, and a pivoted weight-lever having a curved arm extending at an angle therefrom, or from the journal thereof, which curved arm bears on the said roller, so as to cause the pressure of the lever to be always exerted in the direct vertical plane of the valve-stem as it falls and rises, substantially as and for the purposes described.

2. The combination, in a gas-governor, of a valve-stem, float, and a disk-valve having the part which first enters the seat tapered slightly and the part below the taper cylindrical, the tapered part being very long relatively to the cylindrical part, with a cylindrical valve-seat, so that the valve shall have a long run in its seat before closing or fully opening, substantially as and for the purposes described.

3. The combination, in a gas-governor, of a valve for regulating the flow of gas from the supply to the service main, with a pipe or by-pass extending around the valve and communicating with the valve-chamber on opposite sides of the valve-seat, for the purpose of enabling the valve to be adjusted, so as to be affected by a very slight change of pressure in the service-main, substantially as and for the purposes described.

4. The combination, in a gas-governor, of the valve-stem *d*, having a friction-roller, d^3, pivoted weighted lever *m*, and bent arm m^2, substantially as and for the purposes described.

297,114. GLASS-FURNACE. JAMES DALZELL, Pittsburg, Pa. Filed Oct. 22, 1883. (No model.)



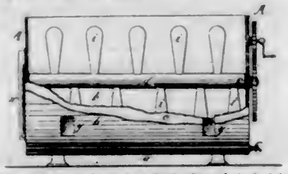
Claim.—1. The construction and arrangement of the devices herein described, consisting of a perforated burner situated in the eye of a glass-furnace, below the bench, having an air-supply orifice, and a gas-supply pipe arranged to admit natural gas within the burner, substantially as and for the purpose specified.

2. The construction and arrangement of the devices herein described, consisting of a perforated burner situated in the eye of a glass-furnace, below the level of the bench, having an air-supply orifice, and a gas-supply pipe arranged to admit natural gas within the burner, and a perforated air-chamber arranged above the burner and having an air-supply pipe leading thereto, substantially as and for the purpose specified.

3. The combination, in a glass-melting furnace, of a gas-burner arranged in the central part of the fire-chamber or eye, and having a space between the same and the walls of the eye, so that the drip of the pots shall fall in the space, and not on the burner, substantially as and for the purposes specified.

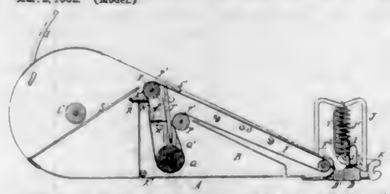
4. The combination, in a glass-melting furnace, of a gas-burner arranged within the central part of the eye, and having a cap or casing interposed between the gas-pipes and the crown of the furnace, substantially as and for the purpose specified.

297,115. EGG AND SUGAR BEATER. CHARLES DEX, Buffalo, N. Y. Filed Sept. 24, 1883. (No model.)



Claim.—The combination of the horizontal shaft *d*, having projections or whippers *i i i*, with the box or receptacle A' A' A', having the rounded bottom *a*, with jacket or apartment *b b*, all constructed substantially as and for the purposes described.

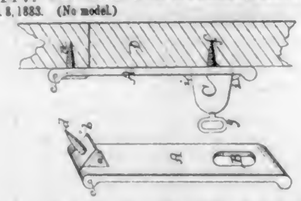
297,116. MAILING-MACHINE. ROBERT DEX, Buffalo, N. Y. Filed Mar. 2, 1882. (Model.)



Claim.—1. In an addressing-machine, the bearings P' Q' for the several rollers employed, arranged on the inside surfaces of the shell A, and proportioned as described relative to the diameters of the respective rollers, in order that the belt may travel close to the sides of the shell without liability of contact with the bearings, substantially as shown and described.

2. In combination with the paste-distributer H of a mailing-machine of the kind described, the sliding plate R, arranged contiguous thereto, and adapted to move horizontally to increase or diminish the area of the serration of said distributer for the purpose of correspondingly permitting a greater or less amount of paste to be applied to the web, substantially as described.

297,117. HASP-LOCK. DAVID H. DONALDSON, Buffalo, N. Y. Filed Oct. 8, 1883. (No model.)



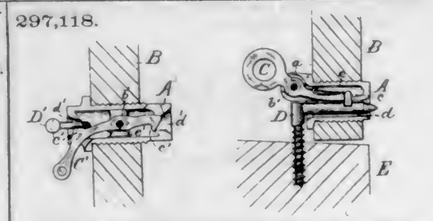
Claim.—1. The combination of the hasp A, having the recess *a* in its upper inner surface, and the hinged or swinging piece *b*, setting therein and holding a screw or bolt, *d*, to fasten it to a door or other place, substantially as specified.

2. A hasp and lock consisting of the hasp A, having the recess *a* in its upper inner surface, and the hinged or swinging piece *b*, setting therein and holding a screw or bolt, *d*, to fasten it to a door or other part, an oblong opening, B, in the hasp A, and an oblong bulb-lock, C, having the screw-point *f*, adapted to be inserted directly in the wood by turning the bulb C, substantially as set forth.

297,118. SHUTTER-FASTENER. WM. E. DOOLITTLE and D. EDWARD DOOLITTLE, New Britain, Conn. Filed Jan. 14, 1884. (No model.)

Claim.—1. A blind-fastener consisting of a case having a socket extending through the case and bell-mouthed at each end, and also of a spring-actuated latch having an integral operating-handle outside of the case and an engaging hook inside of the case, and also of a keeper for engaging the latch at a point within the socket, the whole being constructed and operating together substantially as described.

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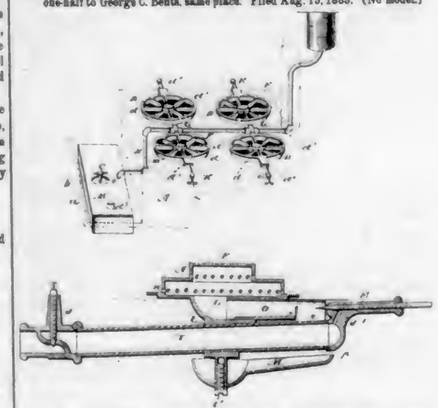
2. The herein-described blind-fastener, consisting of the case provided with a latch and spring-chamber, the latch and spring arranged therein, and the socket bell-mouthed at each end and extending through the case by the side of the spring-chamber, and in the same general direction as the length of the latch, substantially as described, and for the purpose specified.

297,119. BED-PAN. JULIA E. DRAKELEY, Madison, Wis. Filed Nov. 3, 1883. (No model.)



Claim.—The combination of the pan P, provided with the extra flange *f*, with the annular rubber air-cushion A, substantially and for the purposes as described.

297,120. VAPOR-STOVE. FAY O. FARWELL, Cresco, Iowa, assignor of one-half to George C. Benta, same place. Filed Aug. 15, 1883. (No model.)



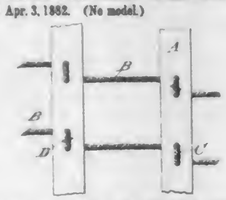
Claim.—1. In combination with an ordinary cooking-stove, a supply-tank placed in the ash-box of the same, a pump situated in the supply-tank and forming a part thereof, burners situated in or under the pot-holes of the stove-top, a single supply-pipe attached to the tank, and intermediate connecting-pipes between the burners and the main supply-pipe, substantially as set forth.

2. In combination with an ordinary cooking-stove, an oil-supply tank situated in the ash-box thereof, and provided with a pump for forcing the oil up to the burner, skeleton plates situated within the pot-holes and supported by the stove-cover, vapor-burners supported on the skeleton plates, a main supply-pipe, and intermediate connecting-pipes connecting the burners with the main supply-pipe, substantially as set forth.

3. The combination, with skeleton plates situated within the pot-holes of an ordinary cook-stove, and supported by the cover thereof, said plates being provided with lateral shields d^2, of vapor-burners supported on said skeleton plates and provided with screw-valves, which latter rest under the shields, a supply-tank, a main supply-pipe, and branch pipes connecting the burners and main pipe, substantially as set forth.

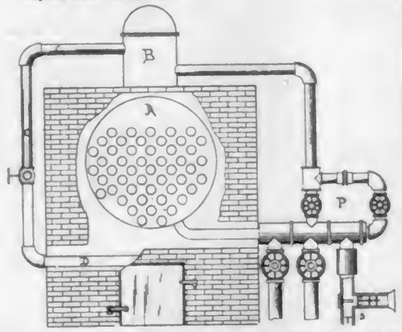
4. The combination, with the tube I, screw-valve coupling J, screw-valve, and drip-cup, of the screw-valve E, the split tube O, constructed as described, and the cap N, all of the above parts combined and adapted to operate as described.

297,121. FLY-NET FOR HORSES. DIETRICH FRICKBRICK, Milwaukee Wis. Filed Apr. 3, 1882. (No model.)



Claim.—In that class of fly-nets in which the cords are secured to transversely-arranged bars in perforations, the combination, with such bars and cords, of the U-shaped staples inserted through said bars from their lower surface, and having their respective arms extending above and around the looped portion of said cords between the perforations above the upper surface of the bars as adapted to prevent the cords from slipping in the perforations or the bars from slipping upon the cords, substantially as and for the purpose specified.

297,122. SMOKE-CONSUMER. WILLIAM L. FITCH, Chicago, Ill. Filed July 19, 1883. (No model.)



Claim.—1. The method of consuming smoke, which consists in discharging from the boiler superheated air and steam onto and into the smoke as it rises from the surface of the fire.

2. The method of consuming smoke, which consists in discharging from the boiler mixed superheated air and steam in a spray extending over the surface of the fire onto and into the smoke as it rises therefrom.

3. The method of supplying air to a smoke-consumer, which consists in first introducing it into the steam-boiler along with the feed-water, and thence conducting it to the consumer to be discharged onto the smoke.

297,123. WATCH-CASE SPRING. WALTER H. FITZ GERALD and GEORGE C. SMITH, Chicago, Ill. Filed Aug. 6, 1883. (No model.)



Claim.—1. The combination, with a watch-case, of the bow-shaped catch-spring F, provided with a catch at its middle, and having its ends loosely resting against the rim between the rim and the center and free to slide over the perimeter of the rim while the spring is being operated, substantially as described.

2. The combination, with a watch-case, of the bow-shaped catch-spring F, provided with a catch at its middle, and having its ends bent reversely to the main bend of the spring and loosely resting against the rim between the latter and the center, substantially as described.

3. The combination, in a watch-case having a hinged front, of the lift-spring H, located between the center and the rim, and pivoted at a point between its ends to the latter, and means for holding one end of the spring when the opposite end thereof is depressed by the hinged front, substantially as described.

4. The combination, with a watch-case having a hinged front, of the bow-shaped catch-spring F, having a catch at or near its middle, and arranged between the rim and the center with its ends free to slide along the rim when the spring is operated, said spring being provided with an opening through which the stem passes, substantially as described.

5. The combination, in a watch-case having a hinged front, of the lift-spring located between the center and the rim, and pivoted at a point between its ends to the latter, said rim being provided with a stud or abutment for holding one end of the spring when the opposite end thereof is depressed by the hinged front, whereby the spring shall be capable of flexion at both sides of its pivot, substantially as described.

297,124. WATCH-CASE. WALTER H. FITZ GERALD, Chicago, Ill. Filed Jan. 7, 1884. (No model.)



Claim.—1. A watch-case provided with a movement-holding rim screwed into the center of the case, substantially as described.

2. A watch-case center having at or near one of its edges an internally-threaded portion adapted to receive a threaded portion of a movement-holding rim, substantially as described.

3. The combination, in a watch-case, of an internally screw-threaded center with an externally screw-threaded movement-holding rim adapted to be screwed in the said center, substantially as described.

4. The combination, in a watch-case, of an internally screw-threaded center with an externally screw-threaded movement-holding rim screwed in the said center, with a part of its screw-threaded perimeter extending beyond the center to receive a lid, substantially as described.

5. The combination, in a watch-case, of an internally screw-threaded rim fitting in the center and extending beyond the inner edge thereof, so as to expose a portion of its screw-threaded perimeter, and a lid screwed onto the exposed screw-threaded perimeter of the rim, substantially as described.

6. A watch-case center, in combination with a movement-holding rim provided with a screw-threaded portion adapted to be connected with the case-center, and having a bearing against a seat on the said center, substantially as described.

7. A watch-case center, in combination with a movement-holding rim provided with a screw-threaded portion adapted to be connected at one end with the case-center, and at its opposite end having a bearing on a seat on the watch-case center, substantially as described.

8. A movement-holding rim for a watch-case, adapted to contain the movement, and provided at one edge with a threaded portion adapted to be screwed into the center or body of the case, and at the opposite edge adapted to bear on a seat formed in the case-center, and to receive a detachable bezel or cover, substantially as described.

9. In a stem setting and winding watch-case, the case-center provided with a back having a screw or equivalent connection with the case-center, in combination with a movement-holding rim provided with a screw-threaded portion adapted to be connected with the case-center, and a detachable bezel, substantially as described.

10. A movement-holding rim for a watch-case, provided at one edge with an externally-threaded portion adapted to be screwed into an internally screw-threaded portion of the case-center, and at its opposite edge provided with a shoulder adapted to rest on a seat formed in the case-center, substantially as described.

11. A watch-case center having at one edge an internally-threaded portion adapted to receive a threaded portion on a movement-holding rim, and an externally-threaded portion adapted to engage a threaded back or cover, said center being also provided with a seat adapted to receive a shoulder on the movement-holding rim, substantially as described.

12. A watch-case center having at one edge an internally-threaded portion adapted to receive a threaded portion on a movement-holding rim, and at its opposite edge provided with a seat on which the movement-holding rim seats when the said rim is in place within the case-center, substantially as described.

297,125. SAW-HANDLE. PERRY FRAHER, Mount Summit, Ind. Filed May 26, 1883. (No model.)



WITHDRAWN.

Claim.—1. In a saw-handle, a T-shaped loop-bolt formed in a single piece, adapted to encircle or clasp the end of the saw-plate, and means for securing the same to said saw-plate, whereby the handle is set at right angles with the cut of the saw, instead of in line therewith, substantially as set forth.

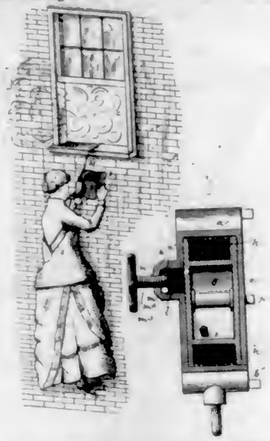
2. In a saw-handle, the combination of the usual handle, the washer upon the lower end of said handle, the T-shaped loop-bolt formed in one piece with the arms at substantially right angles with the shank, and said shank extending up through said washer into said handle, where it engages with a suitable fastening therein, substantially as set forth.

3. The combination of the saw-handle A, the washer B upon the lower end of said handle, having slots in its lower face, and a T-shaped loop-bolt, C, formed in one piece, the shank of which is adapted to enter a longitudinal hole in the lower end of the handle, and means for securing the bolt in said hole, whereby said handle may be securely clamped to said saw, substantially as set forth.

4. The combination, with the saw-handle A, of a conical washer, B, at the lower end of said handle, said washer being slotted upon its lower face, and a T-shaped loop-bolt, made in one piece, and having a screw-threaded shank adapted to engage with a nut arranged in a longitudinal perforation in the end of said handle, substantially as described, and for the purposes specified.

297,126. PORTABLE FIRE-ESCAPE. FRANCIS INGERSOLL FREEMAN, Warren, Ohio. Filed Feb. 7, 1884. (No model.)

Brief.—A rectangular depression in one of the outer walls of the casing contains a rubber brake-block operated to bear against the casing by a hand-screw bearing thereon.



Claim.—In a fire-escape, the combination, with a two-part casing, the body portion of which is provided with a rectangular depression in its side wall, said depression having a threaded opening through its outer wall, of a finely-threaded screw seated in said opening, and provided on its outer end with a hand-wheel, a rubber friction-brake seated in said rectangular depression in the side wall, and a revolving flanged drum carrying the cable, substantially as specified.

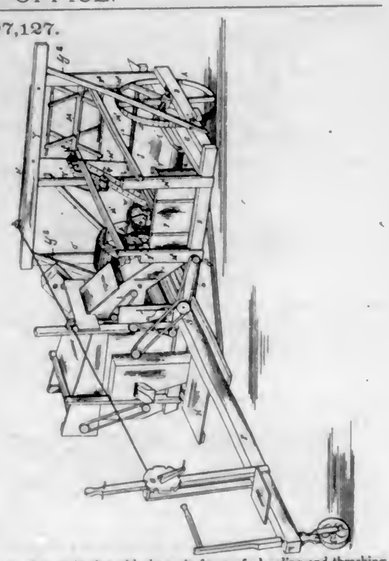
297,127. COMBINED HEADER AND THRASHER. SAML. L. GAINES, Stockton, Cal. Filed Apr. 28, 1883. (No model.)

Claim.—1. A frame adapted for a combined heading and thrashing machine, said frame consisting of the transverse beams D D', longitudinal beams B C E E' E², rearwardly-extending beam F, and platform H, extending at right angles to the line of draft, substantially as described.

2. A frame composed of the transverse beams D D', longitudinal beams B C E E' E², and rearwardly-extending beam F, in combination with suitable supporting-wheels, and driving-wheel A', mounted in said frame, and connecting-gearing consisting of the axle *a*, shafts *d* and *g*, gears *b*, *c*, *e*, *f*, *d'*, *l*, and *g'*, cam K, and pivoted connecting-rod K', substantially as set forth.

3. In combination with the main frame of a heading and thrashing machine, the heading and conveying frame I, I', and I², roller J', having a pivoted shaft for said heading and conveying frame, roller J², apron J, cam K, pivoted lever K', a cutter mechanism operated by said lever, and suitable driving and adjusting mechanism, substantially as specified.

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4. In combination with the main frame of a heading and thrashing machine, the frame I, I', and I², roller J', having a pivotal shaft, conveyer J, cam K, pivoted lever K', a cutter mechanism operated by said lever, conveyer O, located at the rear of conveyer J, and mechanism for actuating said conveyers and cutting mechanism, substantially as set forth.

5. In combination with the main frame of a heading and thrashing machine, the heading and conveying frame, substantially as described, pivotally secured at its rear end to the main frame, conveyer J, cam K, pivoted lever K', a cutting mechanism operated by said lever, conveyer O, located at the rear of conveyer J, and at right angles thereto, auxiliary conveyer P, and mechanism for operating said conveyer, substantially as shown and described.

6. The combination of a cutter mechanism, conveyer J, conveyer O, located at the rear of conveyer J, and extending at right angles thereto, auxiliary conveyer P, located to one side of conveyer O, and being auxiliary thereto, and suitable operating mechanism, substantially as shown.

7. In combination with the main frame, a conveyer-frame pivoted therein at its rear end, having a cutting mechanism at its front end and a suitable vertical adjusting mechanism, and a reel-frame pivoted to the main frame and flexibly connected to the conveyer-frame, for the purpose set forth, substantially as described.

8. In combination with the main frame, a conveyer-frame pivoted therein at its rear end, having a cutting mechanism at its front end, and a suitable vertical adjusting mechanism, a reel-frame pivoted to the main frame and flexibly connected to the conveyer-frame, and conveyer O, located at the rear of conveyer J, and extending at right angles thereto, substantially as specified.

9. In combination with the main frame, a conveyer-frame pivoted therein at its rear end, having a cutting mechanism at its front end, and a suitable vertical adjusting mechanism, a reel-frame pivoted to the main frame and flexibly connected to the conveyer-frame, conveyer O, located to the rear of conveyer J, and extending at right angles thereto, and vertical conveyer P, located at one side of the conveyer O, and auxiliary thereto, substantially as set forth.

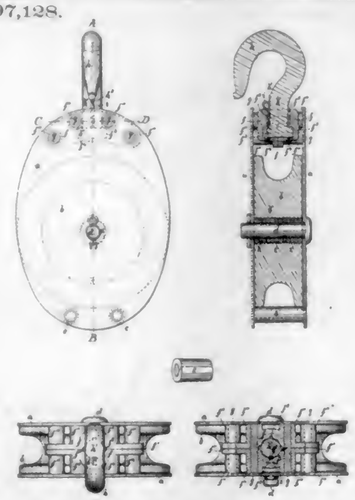
10. The combination of the main frame, a conveyer-frame pivoted therein at its rear end, a cutting mechanism at the front end of the conveyer-frame, windlass G, mounted on the main frame, and rope N, extending therefrom to the pivoted conveyer-frame for the purpose of vertically adjusting said frame, substantially as shown and described.

297,128. PULLEY-BLOCK. DANIEL M. GARRETT, Boston, Mass., assignor to the Whitman & Barnes Manufacturing Company, Akron, Ohio. Filed Jan. 19, 1884. (No model.)

Claim.—1. The pulley *b*, having a central screw-threaded or equivalent perforation, *b'*, in combination with the perforated rawhide washers *c c*, cemented together and secured within the said perforation *b'*, in a manner substantially as herein set forth and described.

2. In a pulley-block, the upper end piece made in two halves, *f f*, secured to sides *a a*, and having semi-annular internal grooves, *f² f²*, and flanges *f' f'*, adapted to retain in position the shank *h'* and head *h''* of the hook *h*, as set forth.

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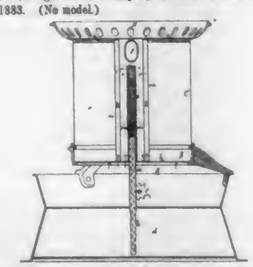


3. In a pulley-block, the hook A, its shank A', and lower annular head, A'', all made in one continuous solid piece, combined with an end piece for securing such hook, said end piece being made in two halves, $f f$, riveted to sides $a a$, as set forth.

4. The end piece for holding the hook in a pulley-block, as described, made in two halves, $f f$, provided with tubular projections f'' f'', and secured to sides $a a$ by means of rivets $g g$, as and for the purpose set forth.

5. In a pulley-block, one or more grooves, f^5 A^5, in the respective bearing and shank for the hook, combined with detachable locking-pin i, or equivalent locking device for locking the hook to its block, as and for the purpose set forth.

297,129. APPARATUS FOR HEATING. DANIEL MCBRIDE GRAHAM, Chicago, Ill., assignor to the Company of Vulcan, New York, N. Y. Filed June 5, 1883. (No model.)



Claim.—1. The combination of the foraminous chimney *e* and air-distributer *f*, and their air-supplying conduits, with the lamp A, all being arranged substantially as set forth.

2. The combination of the foraminous chimney *e* and air-distributer *f*, and their air-supplying conduits, with the lamp A, all being adapted and to operate substantially as set forth.

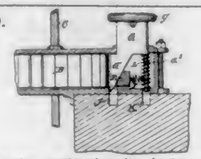
3. The combination of the cup B, perforated in its bottom, the dome C, perforated in its top, and the perforated ring D, with the lamp A, the foraminous chimney *e*, and air-distributer *f*, and their air-supplying conduits, arranged as set forth.

4. The combination of the cup B, perforated in its bottom, the drum C, perforated in its top, and the perforated ring D, with the lamp A, the foraminous chimney *e*, and air-distributer *f*, and their air-supplying conduits, all being adapted and to operate substantially as represented.

297,130. CAR-BRAKE ATTACHMENT. ELI M. HOLCOMB, Bay Springs, and FREDERICK E. MILLER, Evaline, Mich.; said Holcomb assignor to said Miller. Filed Aug. 27, 1883. (No model.)

Claim.—1. The combination, with a ratchet-wheel and a spring-pressed pawl having a beveled side, of a vertically-sliding and spring-

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pressed plate having a wedge-shaped projection resting against the beveled side of the pawl, substantially as herein shown and described.

2. The combination, with the ratchet-wheel B, the spring-pressed pawl E F, having a beveled side, and the casing A, inclosing the same, provided with a slot in its top and a slot and aperture in its bottom, of the plate G, provided with the wedge G′ and prong G^2, and the spring L, substantially as herein shown and described.

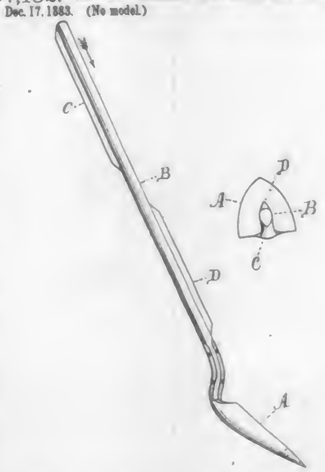
3. The combination, with a ratchet mounted on a brake-shaft and contained in a casing, of a pawl pressed against the edge of the wheel by a suitable spring, and a plate held to move vertically in the casing and provided with a wedge adapted to act on the pawl, and with a downwardly-projecting prong surrounded by a spring for pressing it and the plate upward, substantially as herein shown and described.

297,131. COATING COMPOUND FOR WIRE-DRAWING. ALONZO F. HOYLE, Worcester, Mass. Filed Oct. 19, 1883. (No specimens.)

Claim.—1. The improved coating for wire herein described, the same consisting of lime-water and sugar, compounded substantially as and in the proportions set forth.

2. In a compound for coating wire preparatory to drawing the same, the combination of lime and sugar, substantially as specified.

297,132. SHOVEL. FREDERICK W. HUDSON, Leominster, Mass. Filed Dec. 17, 1883. (No model.)



Claim.—1. In a round shovel-handle, the projection D, formed upon the upper side thereof and upon that end nearest the blade, for the purpose herein shown and described.

2. In a round shovel-handle, the projection C, formed upon the under side thereof and upon that end of the handle farthest from the blade, for the purpose herein shown and described.

3. A round shovel-handle provided with the projections D and C, substantially as shown and described.

297,133. DEVICE FOR SUSPENDING MACHINERY. JOSEPH D. HUNTINGTON, Chicago, Ill. Filed Mar. 4, 1884. (No model.)

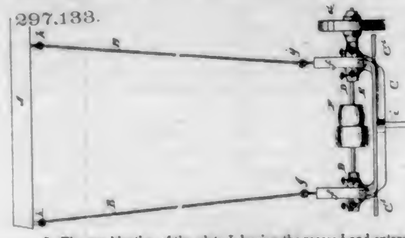
Claim.—1. The combination of the frame C and brackets *f* with the suspending-rods B, substantially as specified.

2. The combination of the frame C and bar H with the plate I, substantially as described.

3. The combination of the frame C and brackets *f* with the rods B, bar H, and plate I, substantially as set forth.

4. The combination of the plate I, springs *a*, and bolts *d* with the plate J, substantially as specified.

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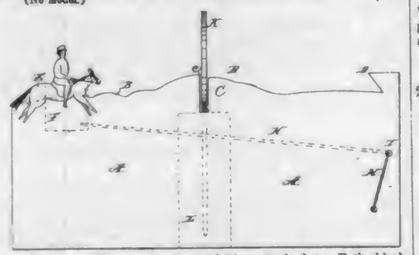


5. The combination of the plate I, having the recess *b* and enlarged opening *c*, with the spring *a* and bolt *d*, substantially as described.

6. The combination of the frame C and brackets or yokes *f* with the springs *a*, bolts *g*, and rods B, substantially as specified.

7. The combination and arrangement of the frame C, shaft E, and pulleys F with the rods B, single supplanting-bar H, and yielding plate I, substantially as described.

297,134. TOY. LOUIS KELLER, New York, N. Y. Filed Oct. 11, 1883. (No model.)

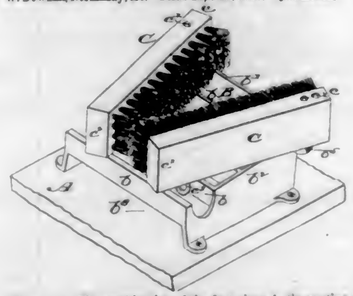


Claim.—1. The combination of the base A, the horse E, the block F, the cord H, and the ring K, substantially as and for the purposes set forth.

2. The combination of the base A, the block F, the horse E, and the cord H, substantially as and for the purposes set forth.

3. The ring K, having an opening at one side thereof and covered with paper, so as to simulate a complete ring, substantially as and for the purposes set forth.

297,135. BOOT-CLEANER. JOHN C. KUPFERLE, St. Louis, and JOSEPH W. DOWLER, Normandy, Mo. Filed Sept. 22, 1883. (No model.)

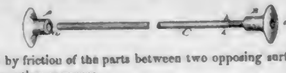


Claim.—1. The combination of the foot-piece A, the grating B, and the brushes C C, said grating consisting of the scrapers *b b* and the side pieces, b^2 b^2, and having an opening or openings, b^2 b^2, as and for the purpose described.

2. The combination of the foot-piece or base A, the grating B, and the brushes C C, said brushes at one end being pivoted, and having their free ends elastically connected by the spring D, beneath the plate b^2, and said grating having the opening or openings b^2 b^2, substantially as described.

297,136. EXTENSION SUSPENSORY ROD. CHARLES LA DOW, Albany, N. Y. Filed Jan. 23, 1884. (No model.)

Claim.—1. The combination of the extension-rod with its socket-button and nut, substantially as described, for maintaining the same self-



sustained by friction of the parts between two opposing surfaces for suspensory or other purposes.

2. The combination of the extension-rod with its socket-button and nut and rubber pads, substantially as described.

297,137. CHECK-HOLDER AND BAG-FASTENER. CHAS. LEAVITT, Cleveland, Ohio. Filed Dec. 17, 1883. (No model.)



Claim.—1. A combined check-holder and bag-fastener, consisting, essentially, of a frame provided at its ends with webs or projections to support the check in front, a cross-plate for holding the check in contact with the webs or projections, a screw projecting from the rear face of the cross-plate, and a clamping-nut for holding the ends of the cord, all of the above parts combined as described.

2. In a combined check-holder and bag-fastener, the combination, with the frame provided with the webs *a*, cross-bar B, screw *b*, and grooves *c d*, of a thumb-nut adapted to hold the cord within the grooves and prevent it from slipping, substantially as set forth.

297,138. COUNTER FOR FACILITATING THE TRANSFER OF COIN. ALBERT LEGO and HENRI DUPAU, Grasse, (Alpes-Maritimes,) France. Filed Mar. 15, 1884. (No model.) Patented in France Sept. 29, 1883, No. 157,758, and in Luxemburg Feb. 4, 1884, No. 358.



Claim.—In an apparatus for facilitating the transfer of coin between the public and shop-keepers, bankers, cashiers, and any other persons, the arrangement of a flat tray of approximately-circular form, provided with mouths for the delivery of coin, the said tray resting upon a rod consisting of two parts pivoted on each side of the axis of the tray and supported by springs, in the manner hereinbefore shown and described.

297,139. LIQUID PAINT. GEORGE T. LEWIS, Philadelphia, Pa. Filed Dec. 6, 1882. (No specimens.)

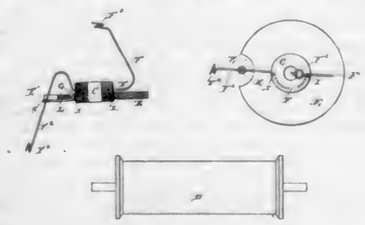
Claim.—A liquid paint consisting of sublimed white lead, oil, and an alkaline solution of resin, combined substantially as and in the proportions specified.

297,140. FLIER FOR TWISTING SILK. HIPPOLYTE LIAUTIER, Scranton, Pa. Filed Sept. 7, 1883. (No model.)

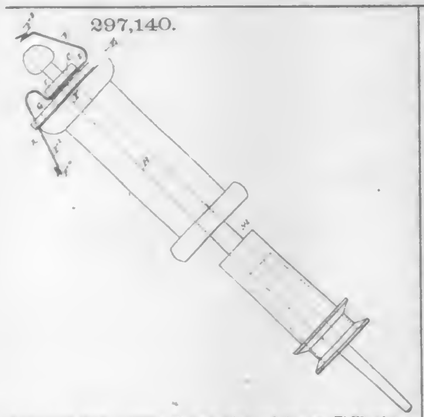
Brief.—The flier consists of a hub having a groove in its periphery, in which the wire arms are held by pins, and having a disk at its base, with a cut-away portion in which a shank having an eye on its outer end is secured. The lower wire arm passes through the eye, and is thus held from its tendency to move outward caused by its elasticity and the centrifugal force exerted upon it.

Claim.—1. The combination of the flier-block, the balance-disk, and the arms F′ F^2, the upper portion of the block being made to project above the top of the disk, for the attachment of the arms, substantially as shown.

2. The combination of the flier-block, a balance-disk connected



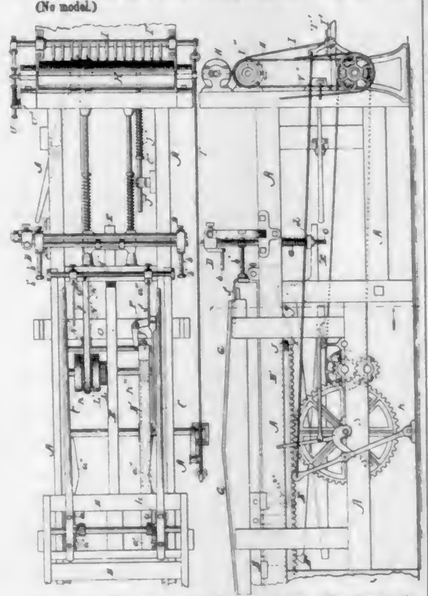
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thereto, and having a recess, E', in its edge, and the arms F' F², substantially as described.

3. The combination of the flier C, having groove G, with the disk E, having cut E', wire arms F' and F², pins I, and shank L, having the eye K, substantially as shown and described.

297,141. MACHINE FOR TURNING BAGS. SAMUEL T. LOCKWOOD, Chicago, Ill., assignor to Davis J. Whiting, same place. Filed Mar. 3, 1883. (No model.)



Claim.—1. The combination of separable bag-holding fingers, the reciprocating bag-turners, and the rotary stripping-rollers, with means for supporting and operating the said fingers, for reciprocating the bag-turners, and for rotating the said rollers, for the purposes set forth.

2. The combination of the bag-holding fingers *b b'*, means for supporting the said fingers, the reciprocating bag-turners C C, the tilting cam or lever E, and the traveler F, with means for operating the said bag-holding fingers *b'* from said cam or lever, and for reciprocating the said bag-turners and traveler, for the purposes set forth.

3. The combination of the fixed fingers *b b*, the movable fingers *b' b'*, means for supporting the fingers *b b*, means for carrying the fingers *b' b'*, and the springs *e e*, with the reciprocating bag-turners C C, the cam E, the traveler F, a supporting-frame, and means for operating the said several parts in conjunction with each other, for the purposes set forth.

4. The combination of fingers *b b'*, adapted and arranged to hold open the mouth of the bag, supports for said fingers, a bar, and rods connecting the said bar with the supports of fingers *b'*, with a reciprocating bag-turner, a tilting cam or lever for operating the said fingers *b'*, and extending underneath the said bar, a traveler, F, for actuating the said cam, and a table for supporting the bags, substantially as and for the purposes set forth.

5. The combination of the bag-supporter or table G, with the bag-holding fingers *b b* and *b' b'*, arranged, substantially as shown and described, with relation to the supporter G, the reciprocating pivoted bag-turners C C, located underneath the supporter G, and arranged to pass between the separable fingers *b b* and *b' b'*, the cam or lever E, means for supporting the said fingers, and operating them from the cam or lever E, and means for operating the said bag-turners and cam, substantially as and for the purposes set forth.

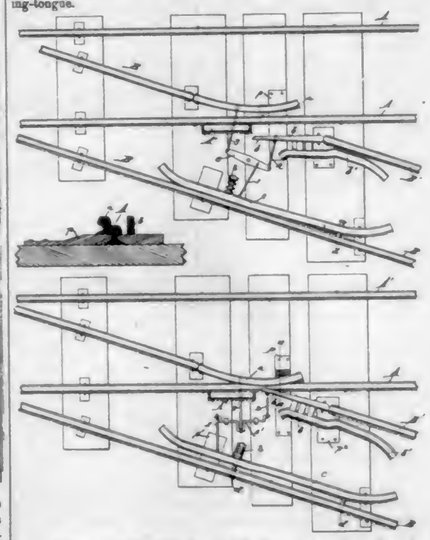
6. The combination of the fixed fingers *b b*, a support for the said fingers, the fingers *b' b'*, the horizontal rod *b''*, the vertically-movable rods *c c*, the cross-bar *d*, and a support for rods connected with the fingers *b' b'*, with the tilting cam or lever E, extending underneath the cross-bar *d*, a reciprocating bag-turner, the traveler F, and means for reciprocating the said turner and traveler, substantially as and for the purposes set forth.

7. The combination, with the bag-turning mechanism, of the stripping-rollers H H, means for rotating the said rollers, and a bag-supporter, G, arranged substantially as shown and described, for the purposes set forth.

8. The combination of the laterally-expansible and reciprocating arms C C, the separable fingers *b b'*, the stripping-rollers H H, and the springs *a' a'*, means for expanding the said arms, for supporting and separating the said fingers, and for rotating the said rollers, all operating in connection with each other, and driving-gearing for reciprocating the said arms, for the purposes set forth.

297,142. RAILWAY-FROG. DANIEL H. MAHONEY, Olney, Ill. Filed Aug. 21, 1883. (No model.)

Brief.—Upon the opposite sides of one of the main rails and at one of the siding-rails are located pivotal sections connected by a crank-shaft and connecting-links, with a guard-rail pivoted to the other siding-rail. The pivotal section outside of the main rails is provided with an actuating-tongue.

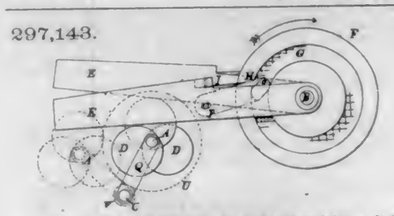


Claim.—1. In combination with the main rails A A', siding-rails B B', and pivotal sections *a b*, the pivoted guard-rail *c*, and crank-shaft and connecting-links, arranged and operating substantially as and for the purpose set forth.

2. In an automatic railway-frog, the pivotal sections *a b*, the latter being provided with the actuating-tongue *b'*, in combination with the guard-rail *c*, and a transmitting-lever (or crank-shaft) and connecting-links, substantially as and for the purpose specified.

297,143. VARIABLE SPEED DEVICE. WALTER F MARKS, Chapinville, N. Y. Filed Sept. 6, 1883. (No model.)

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Claim.—1. The combination, with the driving and driven shafts A and B, of a series of two or more clutches and clutch-levers applied to the driven shaft, and mechanism for imparting variable motion to the levers, substantially as and for the purposes set forth.

2. The combination, with the relatively adjustable driving and driven shafts A and B, of a series of two or more clutches and clutch-levers applied to the driven shafts, and mechanism for imparting variable motion to the levers, substantially as and for the purposes set forth.

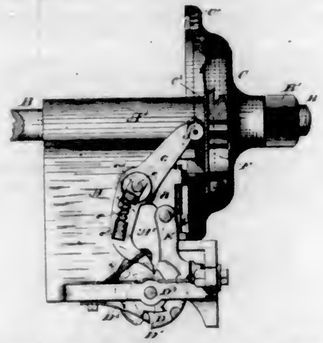
3. The combination, with the shafts C and B, of the intermediate adjustable shaft, A, a series of clutches and clutch-levers applied to the driven shaft B, and mechanism attached to the intermediate shaft to impart variable motion to the clutch-levers, substantially as and for the purposes set forth.

4. The combination, with the shaft A, provided with cams or eccentrics D D, supporting-arm Q, shaft C, and gears U V, of the driven shaft B, arranged to be rotated at a variable speed by clutches and clutch-levers operated from the shaft A, substantially as and for the purposes described.

5. The combination, with the relatively adjustable driving and driven shafts A and B, of a series clutches and clutch-levers applied to the driven shaft, and a corresponding series of cams on the driving-shaft, and the shaft C, arranged to transmit motion to the driving-shaft by connecting mechanism, substantially as and for the purposes set forth.

6. The combination, with the driven shaft B, arranged to revolve in fixed bearings, and provided with a series of clutches and clutch-levers, of the adjustable driving-shaft A, arranged to be moved to and fro to vary the movement of the clutch-levers, substantially as and for the purposes set forth.

297,144. CORD-HOLDER FOR GRAIN-BINDERS. ROBT. W. MARKS, Chicago, Ill., assignor to William Deering, same place. Filed Apr. 13, 1883. (Model.)



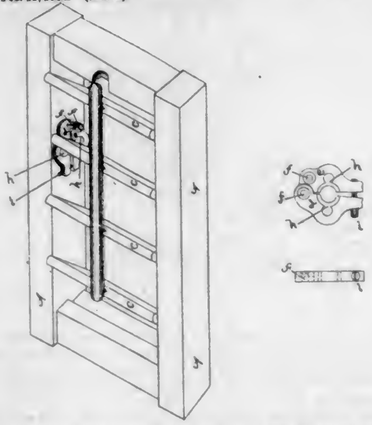
Claim.—1. The combination of the ratchet-wheel, the lever having a longitudinal and vibratory movement, and adapted to engage the teeth of the said ratchet-wheel to produce intermittent rotation thereof, and means for moving the said lever, substantially as described.

2. The combination of the ratchet-wheel, the lever having a longitudinal and vibratory movement, and adapted to engage the teeth of the said ratchet-wheel to produce intermittent rotation thereof, and the wheel C, having the cam-track adapted to produce the described vibratory and longitudinal movements of the said lever, substantially as described.

3. The vibratory and endwise-movable lever G, combined with the cam-wheel C, for producing the described movements of the lever, substantially as described.

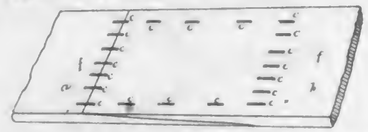
4. The combination of the vibratory and endwise-movable lever, the cam-wheel C, for giving said lever the described movements to move the cord-holding ratchet-wheel, and the spring *e*, for returning the said lever to the position for re-engagement with the ratchet-wheel, substantially as described.

297,145. BLIND-STOP. THOMAS MASSEY, Pawtucket, R. I. Filed Feb. 13, 1884. (Model.)



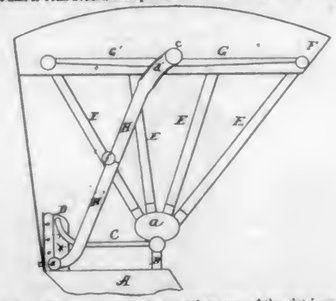
Claim.—In combination with the slats and stiles of swivel blinds and shutters, a compression-clamp composed of the right and left hand parts *d e*, having central and beveled receptacles for the beveled linings *h h*, and fastened together and to the stile by the two screws *f f*, the said beveled linings *h h* fitted to the slat-trunnion, as set forth, and the set-screw *i*, for the purpose of adjusting the pressure of the clamp, as desired, all in the manner substantially as shown and described.

297,146. BELT-FASTENER. EDWARD MAYNE, Boston, Mass. Filed Feb. 14, 1884. (No model.)



Claim.—The combination, with the scarfed ends of a belt, of two transverse rows of staples arranged to straddle and unite the joints and longitudinal rows of staples at the edges of the belt, substantially as and for the purposes set forth.

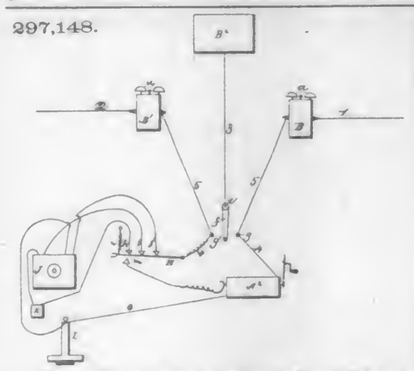
297,147. CARRIAGE-TOP. HENRY MCCURRY, Fulton, Ill., assignor of one-half to John Stuart, same place. Filed Jan. 14, 1884. (No model.)



Claim.—The combination, in a carriage-top, of the slat-irons *a*, the support-bars *d*, the standards E, all pivoted to the slat-irons, the top braces, G G', jointed together at *c*, and the upright main braces H H', pivoted to the support-bars *d*, and to the joints *c* of the top braces, and connected together by the knuckle-joints *f*, adapted to break forward, and all constructed and arranged substantially as and for the purposes described.

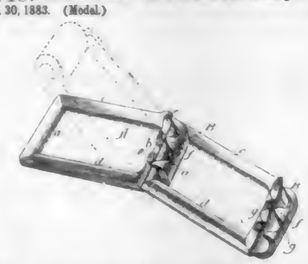
297,148. TELEPHONE CALL AND SWITCH BOX. EDWIN H. MCFALL, Memphis, Tenn. Filed Mar. 29, 1883. (No model.)

297,148.



Claim.—The combination, in a telephone call and switch box, of two magnet-bells, B B', connected to the line-wires and to the contact-points *g g'*, which in turn are connected to the generator and telephone-transmitter, respectively, and a switch-lever, *f*, arranged between the contact-points and having a ground-connection, substantially as herein shown and described, whereby either side can be cut out, and still the bells remain in the circuit of the cut-out side and the circuit not made dependent on the switch for continuity, as set forth.

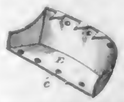
297,149. DRIVE-CHAIN. DENNIS D. MCKERNAN, Chicago, Ill. Filed Aug. 30, 1883. (Model.)



Claim.—1. A drive-chain link provided with a transverse horizontal opening forming an open spiral way, said way being formed by alternate projections on the hook and contiguous end bar, substantially as described.

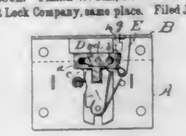
2. A drive-chain link provided with an open spiral way between the hook and contiguous end bar, and having one or both of its side bars angular in cross-section, substantially as described.

297,150. HEEL-PLATE FOR BOOTS OR SHOES. STEPHEN D. MERRW, Peabody, Kans. Filed Oct. 15, 1883. (No model.)



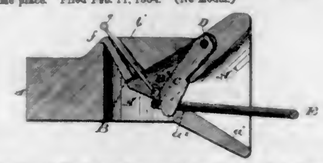
Claim.—As an improved article of manufacture, the herein-described heel-plate, shaped to conform to portions of the side and bottom of the heel of a boot or shoe, and provided along the edge of the bottom portion with screw-holes and nail-holes for the fastening devices, and at the edge of the side portion with screw-holes and interned sharp integral points D, adapted to be driven into the side of the heel to retain the side in position on the heel, substantially as shown and described.

297,151. LOCK. FRANK W. MIX, New Britain, Conn., assignor to the Corbin Cabinet Lock Company, same place. Filed Jan. 11, 1884. (Model.)



Claim.—The combination of the bolt D, provided with a shoulder, H, the fences *a a*, mounted upon the bolt and adapted to be set relatively to the tumblers of the lock, and the stop E, accessible from the outside of the lock-case and acting upon the shoulder of the bolt, substantially as described, and for the purpose specified.

297,152. CAR-COUPLING. ROBERT T. MORRISON, Jr., Medina, Ohio, assignor of one-half to George D. Billings and Abner B. Bishop, both of same place. Filed Feb. 11, 1884. (No model.)



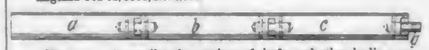
Claim.—1. The pivoted weight B, provided with the cover *b*, and the chamber B', adapted to receive the coupling-pin and the opening *b'*, substantially as set forth.

2. The combination, with the draw-head, of a coupling-pin pivoted at its upper end to the draw-head, a weight also pivoted to the draw-head and provided with a groove in which the coupling-pin rests, and a chain or other device attached to the free end of the coupling-pin and passing upwardly through the weight, substantially as set forth.

3. The combination, with a draw-head, of the coupling-pin pivoted to the draw-head, the weight B, pivoted to the draw-head and provided with a groove in which the coupling-pin rests, and with a seat, *a*, adapted to rest on the link and hold it in position to engage the coupling-pin of the approaching draw-head, substantially as set forth.

4. The combination, with the coupling-pin C, arranged as aforesaid, of the rod F, provided with the arms F' and *f* and the connections G and *g*, substantially as set forth.

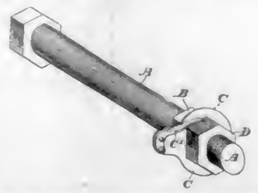
297,153. COUPLING SHAFTING. ALFRED MUIR, Manchester, County of Lancaster, England. Filed Dec. 19, 1883. (No model.) Patented in England Oct. 12, 1883, No. 4,865.



Claim.—1. A coupling for sections of shafts and other bodies, consisting of interlocking projections and recesses formed in the proximate ends thereof, in combination with a stud fitted into central recesses in said ends, and pins extending transversely through said sections and stud on each side of the joint, the surface of said sections being flush and unbroken.

2. A shaft-coupling or coupling for other bodies, consisting of sections having their proximate ends formed with interlocking projections and recesses, said projections and recesses being bounded at the sides by radial lines, substantially as set forth.

297,154. LOCKING-WASHER FOR JAM-NUTS. AUGUSTUS P. NEBLE, Edinburg, Ind., assignor of one-half to Charles W. Neible, same place. Filed Jan. 9, 1884. (No model.)

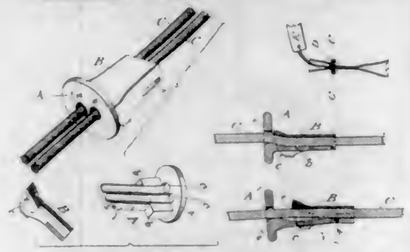


Claim.—1. The combination of a bolt having only a single style of thread, an ordinary nut, a jam-nut, and a washer interposed between said nuts, and provided with engaging devices which engage with said nuts by reason of their own formation, whereby when said nuts are turned up they are secured against independent movement.

2. The combination of the bolt, the nut therefor provided with holes, a washer provided on one side with studs or pins adapted to enter said holes, and on the other with a pawl, and a jam-nut adapted to engage with and be held in position by said pawl.

3. The combination, with the nut and jam-nut of a bolt, of a washer adapted to engage with and be held by said nut, and a pawl adapted to engage with and hold said jam-nut, said jam-nut being serrated upon one or more sides for this purpose, substantially as set forth.

297,155. MAIL-BAG FASTENING. ENOCH OSGOOD, Washington, D.C. Filed Jan. 30, 1884. (No model.)



Claim.—1. A clasp made in two parts—the body A and its slide B—with longitudinal grooves cut the whole length of the body A, and having a head with two holes through it for the cords C C to pass, a short flange or catch, *b*, on either side of the grooves running to the head, the grooves extending from the lower ends of the catches *b b* to the head, cut inclined, as shown, under the cord C at *b*, for the purposes substantially as herein set forth.

2. The slide B, made with two grooves cut in its entire length, to correspond with and to fit the inclined grooves in the body A, the receding part of the grooves in the large end of the slide B being made rough at *e* to hold the cord C from slipping over it, and having an inside catch, *c*, as shown, to pass or slip over the catches *b b* on the body A, for the purposes substantially as set forth.

3. The hook D, made with a shank that will pass through both parts of the mouth of the bag and hook on the cord C on the opposite outside, and to hold it, together with the clasp A and B, substantially as herein set forth.

297,156. BOOT OR SHOE. FRED PACKARD, Brockton, Mass. Filed Feb. 18, 1884. (No model.)



Claim.—1. In a button-gaiter, a button-piece having its outer edge turned over and provided with a cord or stay-piece, the same being interposed between the folded edge of the button-piece and the outer ends of the button-holes, substantially as shown, and for the purpose described.

2. A boot or shoe having a turned-over, snipped or notched and corded edge, whereby the said edge may be turned to form corners without wrinkles, substantially as described.

3. In a boot or shoe, a top piece and a button-hole piece provided with a cord or stay-piece, combined with a vamp stitched to the said top piece and button-hole piece, the end of the cord or stay-piece being crossed by the stitches uniting the said parts, substantially as described.

297,157. EXTENSION-LAMP. DEXTER W. PARKER and LEWIS F. GRISWOLD, Meriden, Conn.; said Griswold assignor to the Charles Parker Company, same place. Filed Oct. 16, 1883. (No model.)

Claim.—1. An extension lamp-fixture provided with supporting devices for the neck of a shade, and a ring which surrounds and protects the lower edge of the shade, but is not supported thereby.

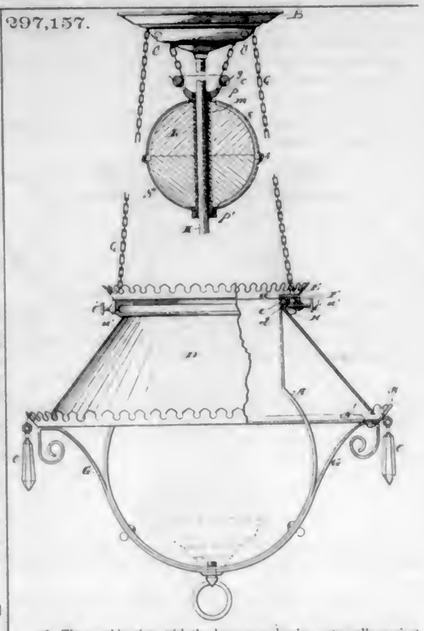
2. An extension lamp-fixture provided with a crown-ring, shade-supporting devices attached to said crown-ring, and an additional separable ring which surrounds and protects the neck of the shade and occupies the place of the lower part of the ordinary crown-ring, substantially as set forth.

3. A lamp-harp having its ends extended above the top of the shade and bent down outside of the same, in combination with a crown-ring and devices attached to said arms outside of said shade, and adapted to grasp or clamp the upper part of the latter, substantially as set forth.

4. The combination, with the harp-arms having outwardly-projecting hooked upper ends provided with binding-screws, of the crown-ring provided with openings for the passage of said hooked portions, substantially as set forth.

5. The combination, with the harp-arms having outwardly-projecting hooked upper ends provided with binding-screws, of means of supporting said arms, and the neck-ring H, having holes for the passage of said screws.

297,157.



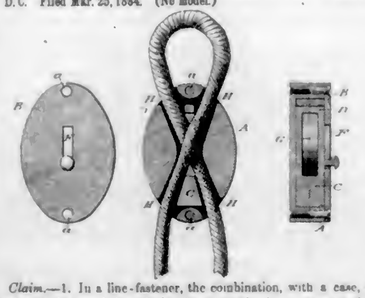
6. The combination, with the harp-arms having outwardly-projecting hooked upper ends provided with binding-screws, of the crown-ring provided with openings for the passage of said hooked portions, and the neck-ring arranged within the hooks and provided with holes for the binding-screws to pass through, substantially as set forth.

7. The counter-weight composed of a solid core having an axial passage, a smooth tube lining said passage, and having protruding ends, the hemispherical shells inclosing said core, and having openings through which the ends of said tube protrude, and a nut screwed on one of the ends of the said tube, a device being on the other end of said tube which confines the core and shell thereto, substantially as shown.

8. The combination, with the shells and a tube extending through the same, of nuts screwed on the protruding ends of said tube, the upper nut being provided with means for attaching the same to suspending devices, substantially as set forth.

9. The combination, with the counterweight-core, of the tube arranged through the same and having protruding ends, the shell inclosing the core and having central openings for the tube ends, and the nuts screwed upon said ends, the upper nut being cup-shaped and perforated to receive the chain-hooks, substantially as set forth.

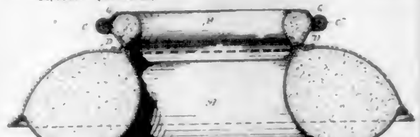
297,158. ROPE OR LINE CLASP. ALBERT L. PITNEY, Washington, D.C. Filed Mar. 25, 1884. (No model.)



Claim.—1. In a line-fastener, the combination, with a case, of a clamping device consisting of a block or lever having an apertured portion extending therefrom, substantially as described, whereby the cords passing through and under the opening in the extension move the clamping device when a strain is brought upon the cords, substantially as and for the purpose set forth.

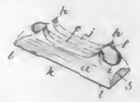
2. In a line-fastener, the combination of a case having a slot, with a clamping device consisting of a block or lever having an apertured portion extending therefrom, and provided with a stud or projection at right angles thereto, whereby the clamping device is held in the case, substantially as and for the purpose set forth.

297,159. HORSE-COLLAR. GEORGE W. POOL, Lamar, Mo. Filed Dec. 14, 1883. (No model.)



Claim.—The combination of the collar A, the rim B, and the smaller rim C, the rim C being secured to the rim B by means of the two seams D G, whereby the rim C can be detached without injury to the collar, substantially as shown and described.

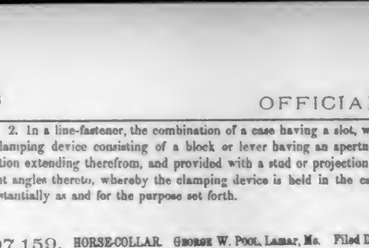
297,160. AXLE-YOKE. HENRY K. PORTER, Boston, Mass. Filed July 21, 1883. (No model.)

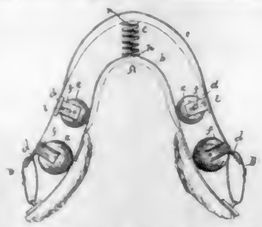


Claim.—1. An axle-yoke having a longitudinal groove formed in the upper side thereof, between the clip-receiving holes, substantially as specified.

2. In axle-yokes formed with an upper concave line or face adapted to receive and fit to the rounded portion of the axle, the upper face of that part of the yoke which extends beyond the axle formed with a descending concave line, substantially as specified.

297,161. RIDING-SADDLE. JAS. L. POWELL, Summerville, Mo. Filed Dec. 27, 1883. (No model.)

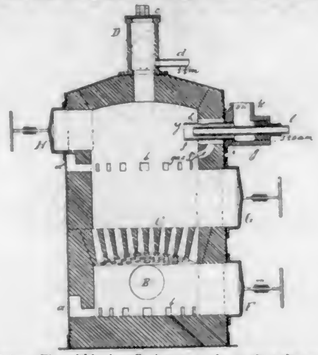




Claim.—1. In a riding-saddle, the combination, with the tree A, of the seat provided with the front and rear bow-shaped spring-stirps, *c c*, the spiral springs interposed between the tree and seat, as described, the friction-rollers, and the seat stay-straps, all substantially as and for the purpose set forth

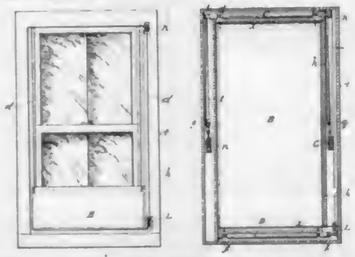
2. In a riding-saddle, the combination, with the tree, constructed as described, and provided with the friction-roller bearing-plates, of the seat having its intermediate longitudinal strips, *d d*, provided with means for connecting the stirrup-straps, the friction-rollers, vertical spiral springs, the lateral stay-straps, and the central longitudinal cross-straps, all adapted to operate substantially as and for the purposes specified.

297,162. PROCESS OF GENERATING GAS. HENRY PRATT and JOHN J. RYAN, Chicago, Ill. Filed Aug. 24, 1883. (No model.)



Claim.—The within-described process of manufacturing gas, which consists in superheating and decomposing steam by passing it down through incandescent or highly-heated fuel, then passing the resulting gases through a second body of heated fuel for converting any contained carbonic acid into carbonic oxide, then drawing the gases into an injector and commingling them with volatile hydrocarbons, and then discharging them over the fire-bed.

297,163. CURTAIN-FIXTURE. THOMAS L. QUIGLEY, Boston, Mass., assignor to himself and Charles F. Quigley, same place. Filed Apr. 16, 1883. (No model.)



Claim.—1. The improved curtain-fixture herein described, the same consisting of the rollers D C, cords *t h*, sheave-blocks *g q*, weights G *n*, pulleys K L, and cords *f d*, constructed, combined, and arranged to operate with the curtain B, substantially as set forth.

2. In a curtain-fixture, the spring N, sheave-block H, and fixed pulley M, in combination with the cord A and rollers C D, arranged to operate substantially as and for the purpose set forth.

3. The combination of a window-casing provided in its outer face with cord-holes and with slots for the exposure of pulleys and passage of the shade, rollers housed within said casing proper, a shade connected to said rollers, and means for raising and lowering said shade.

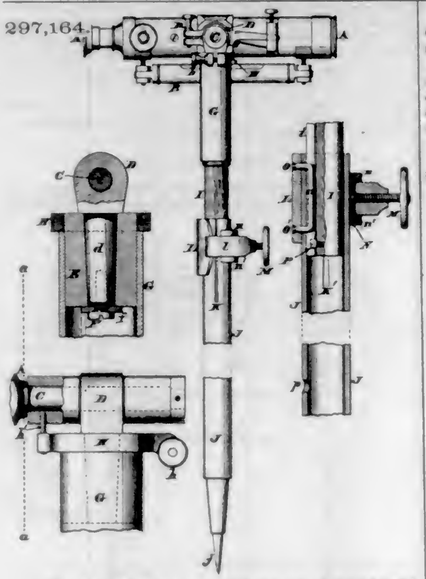
4. The combination of a window-casing provided in its outer face with cord-holes and with slots for the exposure of pulleys and passage of the shade, rollers housed within said casing proper, a shade connected to said rollers, a cord, one end of which is connected directly or indirectly with one of said rollers, a weight connected to said cord and suspended within the window-casing, and means for raising or lowering said shade.

5. The combination of a window-casing provided in its outer face with cord-holes and with slots for the exposure of pulleys and passage of the shade, rollers housed within said casing proper, a shade connected to said rollers, a cord, one end of which is connected with the casing and the other end with the upper roller, a counterbalance-weight connected to said cord and suspended within said casing proper, an actuating-cord, which is connected at one end to said casing, and passes over both rollers and over an intermediate pulley, and is connected at the other end to one of said rollers, and a tension device connected to said cord.

297,164. SURVEYOR'S LEVEL. THEODORE F. RANDOLPH, Cincinnati, Ohio. Filed Oct. 16, 1883. (No model.)

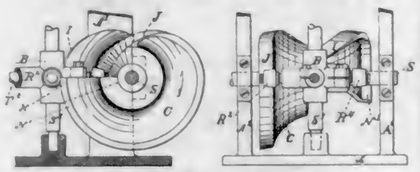
Claim.—1. The combination, in a leveling-instrument, of telescope A, journal C, bearing D, spindle *d*, socket E, clamp-ring H, screw *h*, and pin *h'*, which pin couples said bearing D and ring H in the manner described, and for the purpose set forth

297,164.



2. The combination, in a surveyor's instrument, of grooved staff I *i*, slotted tubular leg J K K', stirrup L *l l'*, gib N *n n'*, screw M, and key *o* O O', which latter is fastened to said stirrup L and traverses the groove *i*, for the purpose described.

297,165. MECHANISM FOR CONVERTING MOTION. FRANCIS H. RICHARDS, Springfield, Mass. Filed Mar. 10, 1884. (No model.)

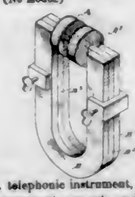


Claim.—1. The cam C and a series of arms, combined and operating substantially as described.

2. A cam, C, and a series of arms having adjustable tapered ends, combined and operating substantially as described.

3. A cam, C, and a series of arms having adjustable tapered rollers, combined and operating substantially as described.

297,166. TELEPHONE. JAMES HARRIS ROGERS, New York, N. Y. Filed Apr. 5, 1883. (No model.)



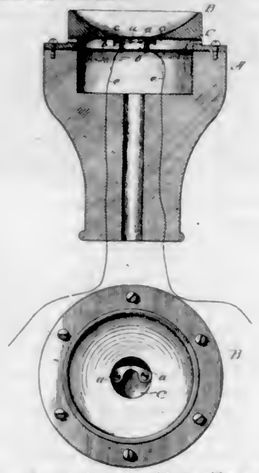
Claim.—1. In a telephonic instrument, substantially such as described, two or more permanent magnets, and an interposed soft-iron piece clamped between them, and having its two polar ends projecting toward and into very close proximity to one another, but out of contact, substantially as and for the purpose described.

2. The combination, with the permanent magnets B B^2, of the soft-iron piece B^3, clamped between them, and having its two polar ends projecting toward and brought into close proximity with one another, and the coils A A^2, mounted on the piece B^3.

3. The combination, with the permanent horseshoe-magnets B B^2, of the soft-iron piece B^3, made in two or more parts, and coils of wire surrounding said piece B^3 at one or more points.

4. In a telephonic instrument the two polar ends or edges of whose magnet project toward and into close proximity with one another, the combination, with such magnet, of a sectional spool applied to a cylindrical portion thereof, whereby the coil of wire for such magnet may be wound upon the spool in the ordinary way.

297,167. TELEPHONE. JAMES HARRIS ROGERS, New York, N. Y. Filed Dec. 26, 1883. (No model.)



Claim.—1. In a telephone adapted for use either as a transmitter or receiver, the diaphragm, in combination with two electrodes mounted thereon in direct contact with each other, such electrodes being adjustable independently of the diaphragm and of each other, and electrical connections, substantially as described and shown.

2. In a telephone adapted for use either as a transmitter or receiver, the diaphragm, in combination with the standards, the screw carbon-holders, the independently-adjustable electrodes held in direct contact with each other, and electrical connections, substantially as described.

297,168. TELEPHONE. JAMES HARRIS ROGERS, New York, N. Y. Filed Dec. 26, 1883. (No model.)



Claim.—1. In a telephone, the combination of the diaphragm, the electrode-standards mounted thereon, a single electrode having a retaining-flange resting loosely on said standards, and electrical connections, substantially as described.

2. In a telephone, the combination of the diaphragm, the grooved electrode-standards mounted thereon in close proximity, a loose electrode resting upon the standards having a retaining-flange, and electrical connections, substantially as described.

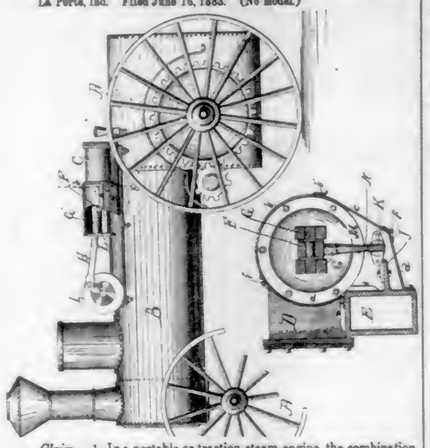
3. In a telephone, the combination of the diaphragm, the grooved electrode-standards mounted thereon, the loose electrode resting upon the standards, and a removable retaining-ring upon the loose electrode, substantially as described.

4. In a telephone, the combination of the diaphragm, the grooved electrode-standards mounted thereon, and the loose electrode resting upon the standards, having a ring of soft rubber, substantially as described.

5. In a telephone, the combination of the recessed body of the telephone, the diaphragm, the grooved electrode-standards upon the diaphragm, a loose electrode resting upon the standards, and a ring upon said electrode, constructed to fill the space between the standards, and also to bear upon the bottom of the recess in the telephone, substantially as described.

6. As a new article of manufacture, an electrode of cylindrical form, and having a central circular flange or ring, substantially as described.

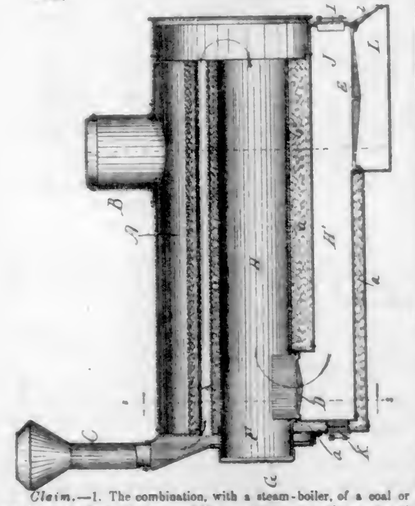
297,169. PORTABLE AND TRACTION ENGINE. MENRAD RUMELY, La Porte, Ind. Filed June 16, 1883. (No model.)



Claim.—1. In a portable or traction steam-engine, the combination, with the wheels and boiler supported thereon, of the steam-cylinder, its piston, cross-head, and slides, arranged between and above the wheels and supported on said boiler, and a hinged covering inclosing said cross-head and slides, adapted to open out to afford ready access to the same, substantially as specified

2. In a portable or traction steam-engine, the combination, with the wheels A and boiler B, supported on the same, of steam-cylinder C, steam-chest D, heater E, pump-plunger K, cross-head F, and slides G G, all arranged between and above said wheels and supported on said boiler, and coverings *a*, *b*, *c*, and *d*, hinged together and inclosing said cross-head, slides, and pump-plunger, substantially as specified.

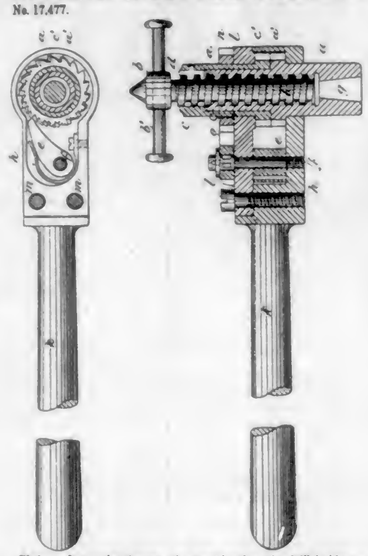
297,170. COMBINED STRAW AND COAL OR WOOD BURNING ENGINE. MENRAD RUMELY, La Porte, Ind. Filed June 16, 1883. (No model.)



Claim.—1. The combination, with a steam-boiler, of a coal or wood burning grate, fire-box, and flues, and a straw-burning grate and fire-box arranged beneath the former and at the opposite end of the boiler, and having a main flue connecting through the coal or wood burning grate and fire-box with their flues, said fire-boxes and main flue being lined with water-compartments connecting with the boiler, substantially as specified.

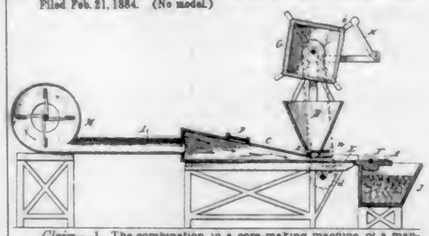
2. In a combined straw and coal or wood burning engine, the combination of the boiler with a coal or wood burning grate, D, fire-box F, and flues H and A, said fire-box F being arranged at one end of the boiler and surrounded with water-compartments *a a a*, connected with the boiler, a straw-burning grate, E, and fire-box J, arranged beneath said coal-grate D and at the opposite end of the boiler, and having a main flue, H', connecting through said grate D and fire-box F with main flue H, said fire-box J being lined on its sides with water-compartments, and flue H being surrounded with water-compartments *a*, connected with the boiler, substantially as specified.

297,171. RATCHET-DRILL. CASPAR SCHUMACHER, Kalk, Germany. Filed Dec. 21, 1882. (No model.) Patented in Germany July 21, 1881. No. 17,477.



Claim.—In ratchet-braces, the combination of a drill-holder, *a*, provided with internal screw-thread, and with ratchet-teeth *a'*, with a screw-spindle, *b*, and adjusting-sleeve *c*, secured to the screw-spindle, and having ratchet-teeth *c'*, spring-pawl *e*, hand-lever *k*, ratchet-wheel *n*, secured to the adjusting-sleeve *c'*, and having at least one tooth less than the sleeve *c*, and a pawl, *o*, adapted to be put in and out of gear with the wheel *n*, substantially as and for the purpose described.

297,172. MACHINE FOR MAKING GREEN-SAND CORES. JAMES SCOLL, Jersey City, N. J., assignor of one-half to Samuel Vance, same place. Filed Feb. 21, 1884. (No model.)



Claim.—1. The combination, in a core-making machine, of a mandrel and means for turning the same, a tube arranged with its end opposite the mandrel and communicating with a blowing apparatus, and means, substantially as described, for feeding green sand regularly into the tube, substantially as set forth.

2. The combination of the mandrel, tube communicating with the blowing apparatus, and hopper arranged above and communicating with the tube, substantially as specified.

3. The combination of the mandrel, tube, blowing apparatus, hopper, and riddle arranged above the hopper, for the purpose set forth.

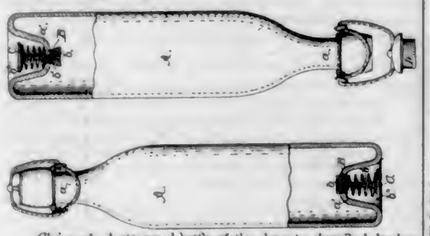
4. The combination, with the mandrel, blowing apparatus, and hopper, of a riddle and hammer arranged to strike the riddle at intervals, substantially as specified.

297,173. HAT AND COAT HOOK. FRANK SELIGER, New York, N. Y. Filed Oct. 19, 1883. (No model.)



Claim.—The combination of plate *a*, having hook *c*, prongs *e*, and shoulder *d*, with the arm *b*, having knob *g*, substantially as herein shown and described.

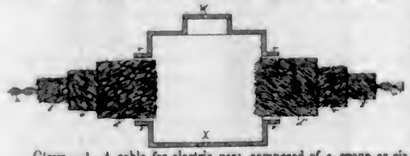
297,174. BOTTLE. THEODORE L. SEYMOUR, Albany, N. Y. Filed June 8, 1883. (No model.)



Claim.—1. A stoppered bottle of the character described, having in its bottom a vent-aperture controlled by an automatically-closing valve, as and for the purpose specified.

2. A stoppered bottle of the character described, having in its bottom a vent-aperture controlled by an automatically-closing valve, and means exterior to the bottle for operating said valve, as and for the purpose specified.

297,175. INSULATED ELECTRIC CONDUCTOR OR CABLE. SIDNEY F. SHELBOURNE, New York, N. Y. Filed June 11, 1883. (No model.)



Claim.—1. A cable for electric uses, composed of a group or circumferential series of insulated conductors, or strands of conductors, each series in outward progression resting by the several insulations of its wires upon the next interior series, and passing in spirals opposite in direction to those of such interior series, for the purpose and substantially as described.

2. An electric cable composed of strands of insulated conductors interwoven with each other in pairs, and arranged in circumferential layers or series, each outward series passing in spirals of opposite direction to those of the adjacent interior series, as and for the purpose set forth.

3. The electric conducting-line made up of cable-sections, each section formed of groups or strands of conductors arranged in circumferential series, as described, the spiral of the strands or series in one section passing in opposite spirals to those of the corresponding strands or series in the adjoining section, and being united variably in the test-boxes, as set forth.

297,176. ANTI-INDUCTION ELECTRIC CONDUCTOR. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Aug. 18, 1883. (No model.)



Claim.—1. An insulated conductor for electric uses, combined with a conductive layer or coating of pulverized magnetic oxide of iron surrounding and inclosing its insulation as an induction-shield, substantially as described.

2. The black oxide of iron or equivalent substance, mixed with any suitable material in the form of paste, and applied as a coat or layer surrounding the insulation covering the wire or other electric conductor, substantially as described, and for the purpose of resisting conduction and dividing induction between adjacent conductors, as herein set forth.

3. In combination with an insulated conductor covered with a metallic coating or induction-guard, an outer covering of insulation inclosing such induction-guard for the purpose of separating it conductively from the like coatings of adjacent conductors, as and for the purpose herein described.

4. The combination in series of the following elements: first, a wire or other electric conductor; second, an insulating material covering and inclosing said wire; third, an induction-shield or conductor covering and inclosing such insulating material, and composed of a metal or pulverulent paramagnetic substance; fourth, surrounding and inclosing such metal or paramagnetic substance, a coating or wrapping of insulating material, substantially as and for the purpose set forth.

297,177. ELECTRIC CABLE. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Aug. 18, 1883. (No model.)



Claim.—1. A series of strands for an electric cable, each composed of two or more separately-insulated conductors formed into a helix about each other, and arranged in succeeding divisions within a line or lines of cable, so that the spirals of the strand in any one division are reversed in direction with reference to the spirals of the connecting strand or conductors in the preceding division, for the purpose of balancing the currents of induction, as herein set forth.

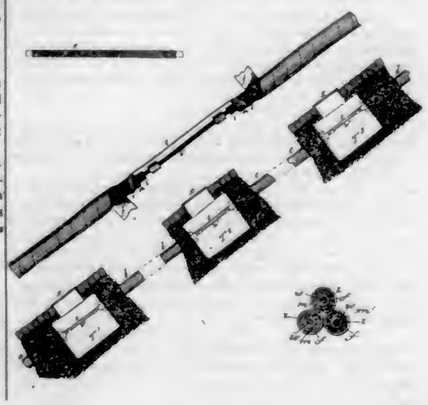
2. Two or more helical strands of separately-insulated conductors, arranged about each other helically, substantially as described.

3. An electric cable composed of two or more helical strands of insulated conductors in which the helices of any two strands laterally adjacent in the same division are of opposite direction or spiral, substantially as and for the purpose set forth.

4. An electric cable composed of layers or series of helical strands in which the strands are arranged in series of opposite spirals around each other, for the purpose and in manner as described.

5. The adjacent divisions of an electric cable composed of several series of helical strands of insulated conductors, in combination with each other, so that the spirals of the same series of strands in the cable shall be of opposite spiral direction in the adjacent divisions, substantially as and for the purpose described

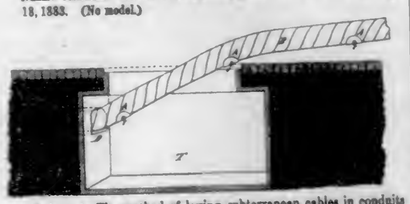
297,178. MEANS FOR CONTROLLING AND LIMITING INDUCTION. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Aug. 18, 1883. (No model.)



Claim.—1. A sectional cable, in combination with the test-boxes in which the cable-sections are united, and the conducting-strips, or its equivalent, joining the induction-shields of said united sections, for the purpose of unifying the currents of induction between the sending and receiving points of communication, substantially as described.

2. In combination with the test-boxes of an underground sectional cable and the conductive connection of the individual induction-shields of the several conductors composing such sections of the cable with each other in pairs across such test-boxes, the outer insulation of the induction-shield of each of the several conductors, by which it is inclosed and separated from conductive contact with each and all of the others laterally, as and for the purpose herein set forth.

297,179. METHOD OF AND MEANS FOR LAYING SUBTERRANEAN CABLES. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Aug. 18, 1883. (No model.)



Claim.—1. The method of laying subterranean cables in conduits herein described, consisting in drawing into such conduits the cables at test or draw boxes placed beneath the pavement by means of a wire, draw-rope, chain, or rod extending through such conduit, and in fastening under such cables as they enter said conduits, at convenient intervals, a series of trucks or rollers, for the purpose of aiding the passage of the cable within the conduit and preventing its abrasion or injury against the walls of such conduit.

2. A truck or roller consisting of a curved semi-cylindrical plate of metal having small caster-wheels on bearings or trunnions fastened or cast upon the convex surfaces of such curved plates, for the purpose of supporting and easing the passage of subterranean cables within their conduits, substantially as described.

3. The combination of a subterranean cable with small trucks or rollers at spaced intervals attached to it, substantially as and for the purpose set forth.

4. The combination, with a subterranean cable, of trucks or rollers placed at intervals thereon, and the coating or layer of adhesive material on the cable-contact surfaces of said trucks, as and for the purpose set forth.

5. The combination of an arched and flat-bottomed conduit, a subterranean electric cable, and trucks or rollers for supporting the cable above the plane surface or floor of such conduit, for the purpose of preventing its injury or abrasion in passing along the conduit, substantially as described.

297,180. SUBMARINE-TELEGRAPH CABLE. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Sept. 8, 1883. (No model.)



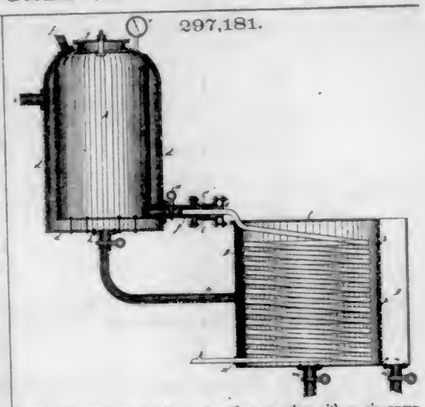
Claim.—A submarine and subterranean electric cable composed of three conductors insulated from each other, one central and the others annular about it, combined so that the central or first annular forms the signal-conductor, and the ends of the remaining two are connected together, completing an induction-guard circuit, as herein set forth.

297,181. METHOD OF AND APPARATUS FOR INSULATING ELECTRIC CABLES. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Sept. 8, 1883. (No model.)

Claim.—1. The process, substantially as herein described, of obtaining a complete saturation and solid insulation within the fibers covering conductors or electric cables drawn into metal tubes, consisting in first removing the air particles from such fibers, simultaneously applying heat thereto; then saturating such fibers and filling the same and the inclosing-tube with melted insulating material; then gradually cooling said tube, commencing at the end remote from the supply of insulating material, the liquid portion of such material being kept under pressure within the tube, to supply the place of shrinkage on cooling.

2. An apparatus for insulating electric cables, consisting in the combination of a steam-jacketed insulation-holder, with stuffing-box outlet, a heating and cooling tank or chamber for containing the cable-inclosing tube, connected with the steam-space of the insulation-holder, and fitted

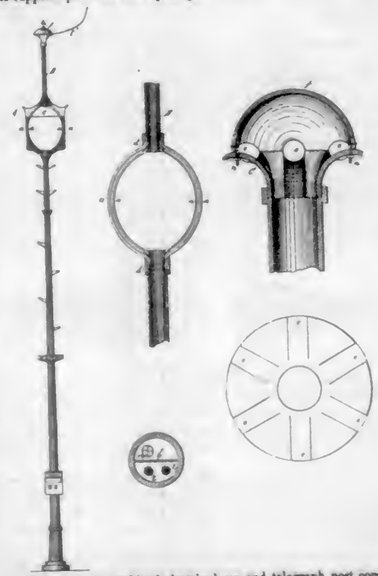
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with a regulated water inflow and outflow, together with an air-pump, with stuffing-box attached to remote end of such cable-containing tube, substantially as and for the purpose set forth.

297,182. COMBINED ELECTRIC-LIGHT AND TELEGRAPH POST. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Sept. 8, 1883. (No model.)

Brief.—Consists of a hollow metallic post containing electric conductors separated by a metallic division. The post has an open segment for an electric lamp, with curved metallic tubes and a hollow upward extension. The latter has a curved flaring head-piece, with radial curved cable-supports provided with openings.



Claim.—1. A combined electric-lamp and telegraph post consisting of a hollow iron column of usual construction, an open or divided segment, A, for an electric lamp, and the hollow upward extension B, for carrying within it telegraph wires or cables, substantially as and for the purpose set forth.

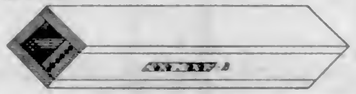
2. The lamp-frame A, composed of cast-iron ornamental work and one or more curved wrought-metal tubes, as shown at *a a a a*, arranged together substantially as described, and for the purpose set forth.

3. In a hollow metal column for telegraph conductors or cables, the curved flaring head-piece C, containing radial divisions formed as curved supporting-rests for said cables, and provided with radial openings as outlets for the same, substantially as described.

4. In a column or hollow post for containing electric conductors,

the combination of electric-light cables or conductors with telephone-cables, when separated from each other by a metallic division constructed in and forming part of said hollow post, for the purpose of preventing inductive effects between such cables, substantially as herein set forth.

297,183. CONDUIT AND ATTACHMENT FOR ELECTRIC CONDUCTORS. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Dec. 11, 1883. (No model.)



Claim.—1. An underground conduit for electric conductors having grooved pieces in the sides thereof, forming, by the matching together of said grooved pieces face to face, a vertical line of passages for single conductors, said conduit having in addition thereto a central passage or passages to contain groups or assemblages of conductors, substantially as described.

2. A conduit for electrical purposes, constructed with a central passage or passages for through-wires and side passages for single local wires, with elongated lateral openings reaching said side passages, and a plate or cover for each of such openings, having itself two or more localized openings, as st forth.

3. A subterranean electric conduit having elongated lateral openings to the longitudinal passages within the conduit, in combination with a plate or cover for each of such openings, having two or more outlets through it for the ends of the conductors when divided and diverted, such elongated lateral openings being made longitudinally upon the conduit, substantially as and for the purpose set forth.

4. The electric conduit having main passage A, side passages, *a*, *b*, *c*, *d*, *e*, and *f*, and in connection with such side passages a metal plate or attachment, B, with nipples surrounding the openings *m*, *n*, *p*, and *k*, and screw-threads *t t* on such nipples, substantially as described.

297,184. PROTECTING ELECTRIC CONDUCTORS FROM INDUCTION. SIDNEY F. SHELBOURNE, New York, N. Y. Filed Dec. 11, 1883. (No model.)



Claim.—1. In electric cables in which the conductors have metallic induction-shields surrounding their insulation, an additional or outer insulation for each of such induction-shields, in combination with the electrical connection of such induction-shields in pairs at the ends of the cable-section or line of cables, substantially as and for the purpose set forth.

2. The combination of insulated induction-shields relatively exterior, in pairs or limited groups, with each other, said shields being connected at the ends of an electric cable or line of cable-sections, forming completed metallic induction-circuits within such cable or line of cable-sections and insulated from the earth, substantially as described.

3. In electric cables composed of two or more sections, the combination of the conductors with each other in pairs, said conductors being united by the electrical connection of their induction-shields at the junction of the sections, so that the induction-shield of one may serve, in whole or part, for protecting one or more other conductors in the same cable, each induction-shield in such manner forming one of a pair in circuit, and connected in succession linearly with linear portions of the shield of one or more other conductors within the cable, substantially as set forth.

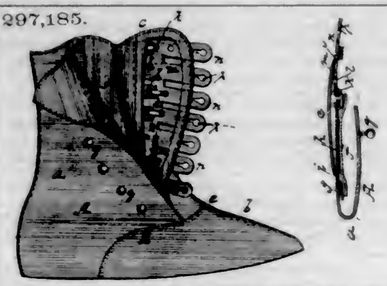
4. Two or more insulated conductors with insulated induction-shields, said shields being electrically united at their ends in pairs in a line of cable-sections, the shields forming a closed metallic induction-circuit, or linear succession of such circuits, between the conductors, as and for the purpose set forth.

297,185. SHOE-UPPER. WARREN G. SLATER, Fremont, Mich., assignor of three-fourths to James R. Odell, Sam Odell, and S. P. Barnhard, all of same place. Filed Feb. 15, 1884. (No model.)

Claim.—1. The shoe-upper provided with the instep or front piece, *c*, stitched at its lower end only to said upper, and having the slits *i* to receive the straps A, and the slits *o* to receive the tongues *n*, said tongues adjustably attached to the straps, and the latter secured at the opposite ends to the shoe-upper, substantially as described.

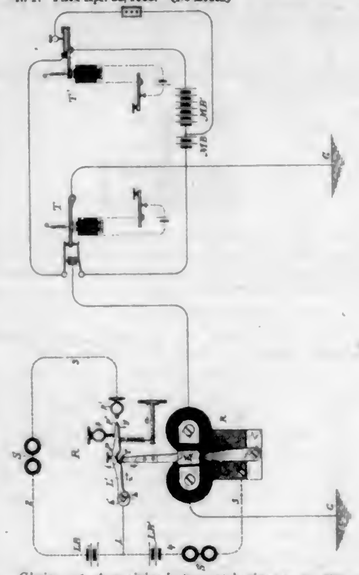
2. The shoe-upper having secured thereto one end of the straps A, the latter adapted to pass through the slits in the front portion, *c*, and adjustably connected to the tongue-strap *m*, the tongues passing through the slits *o*, and having the button-holes *p* to connect with the buttons *q* on the shoe, substantially as described, and for the purpose specified.

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3. The shoe-upper capable of adjustment, substantially as described, consisting of the portions *a b c*, straps A, and tongues *n*, the whole operating as and for the purpose set forth.

297,186. QUADRUPLEX TELEGRAPH. GERRITT SMITH, Astoria, N. Y. Filed Apr. 28, 1883. (No model.)



Claim.—1. A receiving-instrument having one armature, and an auxiliary shuttle-lever in continuous mechanical contact therewith and controlled thereby, responsive to changes in the polarity and in the strength of line-current, either or both.

2. A receiving-instrument composed of an electro-magnet and having one armature, and an auxiliary shuttle-lever in continuous mechanical contact therewith and controlled thereby, responsive to changes in the polarity and in the strength of line-current, either or both, and capable by combined action of assuming four different positions.

3. A receiving-instrument composed of an electro-magnet having one armature, and an auxiliary lever in contact therewith, responsive to changes in the polarity and in the strength of line-current, either or both, in combination with two independent sounding or recording instruments.

4. The combination, in a diplex telegraph, of two independent keys or transmitters, a main battery or batteries controlled by said keys, a main line, a relay having an armature-bar, and an auxiliary lever in continuous mechanical contact therewith and controlled thereby, and two independent sounders of recording instruments.

5. A key or transmitter arranged to vary the strength of line-current, a key or transmitter arranged to vary the polarity of the current controlled by the first key or transmitter, a receiving-relay having one armature, and an auxiliary lever responsive to changes in the strength and in the polarity of line-current, either or both, and two independent sounding or recording instruments.

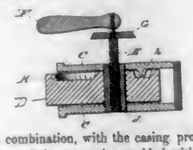
6. A main-line receiving-instrument having one armature-bar responsive both to changes in polarity and variations in the strength of

main-line current, an auxiliary lever in contact therewith, and two receiving-sounders with their local circuits so arranged that upon a change of polarity in the main-line current one of said sounders will alone respond, and upon a change in the strength of said main-line current the second of said sounders will alone respond.

7. A main-line receiving-instrument having one armature-lever responsive either to changes of polarity or changes of strength in the main-line current, in connection with a pivoted lever capable of motion in four directions, and having an electrical terminal connection with each of two local circuits for operating separate receiving-sounders, and two contact-points, forming, respectively, the opposite terminal of said local circuits, whereby, upon a change of polarity in the main-line current, said armature-lever will complete one local circuit, and upon a change of strength in said current said armature-lever will complete a second local circuit, substantially as described.

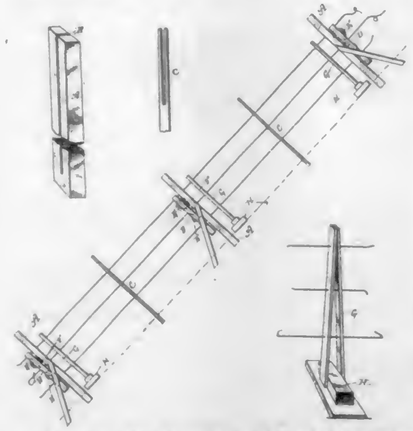
8. A main-line receiving-instrument responsive to changes in the polarity and to changes of strength in the main-line current, either or both, two receiving-sounders with their local circuits, a movable electrical connection common to one terminal of both of said local circuits, a movable contact-point forming the second terminal of one local circuit, and a fixed contact-point, forming the second terminal of the second of said local circuits, whereby, upon a change in the polarity of the main-line current, one local circuit will be completed or broken, and upon a change in the strength of said main-line current the other local circuit will be completed or broken, substantially as described.

297,187. SASH-HOLDER. WILLIAM O. SMITH, Norwalk, Ohio. Filed Aug. 3, 1883. (Model.)



Claim.—The combination, with the casing provided with an inwardly-projecting lug, of the eccentric provided with a groove, H, the hub rigidly secured to the eccentric, the spindle E, plate G, and handle F, all of the above parts combined as described.

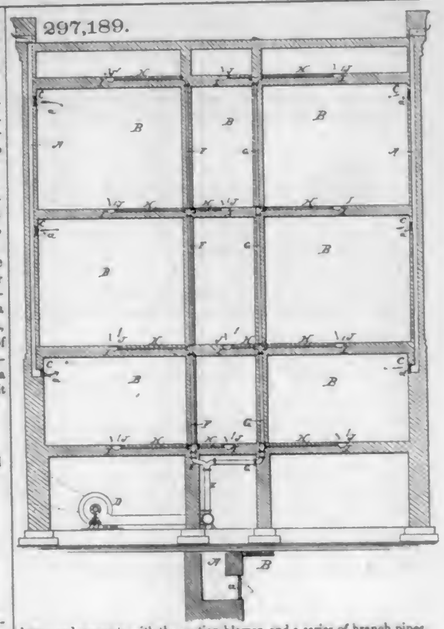
297,188. FLOOD-FENCE. JOHN SNIDER, Fountainstown, Ind. Filed Dec. 8, 1883. (Model.)



Claim.—In a fence, the combination of the slotted posts, the panels of the fence, the slides provided with rollers, and the posts which have floats secured to their lower ends, substantially as described.

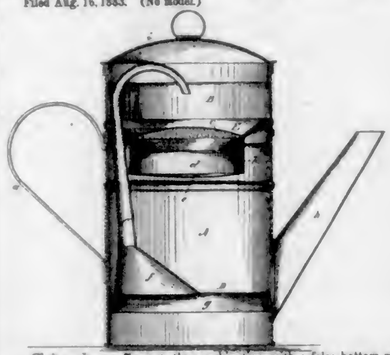
297,189. MEANS OF VENTILATION. MARSHALL B. STAFFORD, New York, N. Y. Filed May 3, 1883. (No model.)

Claim.—An improved means for ventilating buildings and equalizing the temperature therein, which consists of the fresh-air flue A, leading from the roof and connected with the upper part of the apartments by flues C, having automatically-operating valves *a a*, suction-blower D, a foul-air pipe which extends upward through the building, and whose



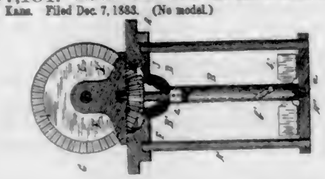
lower end connects with the suction-blower, and a series of branch pipes, H, which lead from the foul-air pipe to the lower part of the separate apartments, and are provided at their mouth with registers J, substantially as set forth.

297,190. COFFEE-POT. BENJAMIN F. STAGGS, Hendersonville, N. C. Filed Aug. 16, 1883. (No model.)



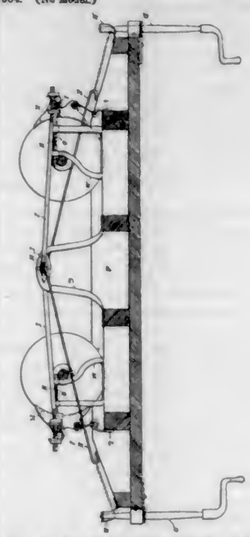
Claim.—In a coffee-pot, the combination, with a false bottom provided with a suitable tube for the passage of the boiling water, of a receptacle for the coffee, into which the upper end of the tube extends, said receptacle having a funnel-shaped vessel and a convex perforated bottom, and a cloth strainer connected to a ring depending from the vessel, substantially as and for the purpose set forth.

297,191. CHURN. ORAN F. STEED and EZRA A. NIXON, Little River, Kans. Filed Dec. 7, 1883. (No model.)



Claim.—The combination of the shaft B B', carrying gear-wheel J, the bowl-shaped shield D, churn-cover A, having gear-wheel cavity F, the pillow-blocks E, and driving mechanism G C, substantially as specified.

297,192. CAR-BRAKE. JOHN STROEKER, Jr., Mobile, Ala. Filed Jan. 17, 1884. (No model.)

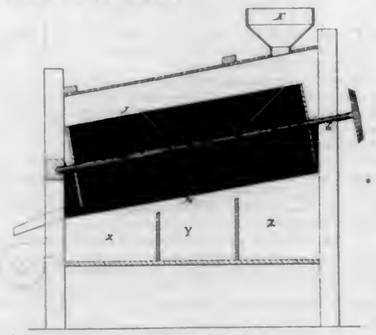


Claim.—1. In a car-brake, the combination, with the center bar connected with a lever at one end and adapted to be actuated by the draw-bar, and terminating at the other in bifurcated extensions, of the brake-bar adjustably secured to said extensions, and the movable guide-rod flexibly connected thereto and fitted in guides, and the spring and adjusting-nut, whereby the shoes are guided to the wheels and their normal position relatively to the wheels governed.

2. In a car-brake, the combination, with the brake-bar, of the guide-bar connected thereto, provided with a spring and an adjusting-nut, and mounted in fixed guides, whereby the normal position of the brake-shoes relatively to the wheels is governed.

3. In a car-break, the combination, with the brake-bars flexibly connected to the frame-work, and the guide-rods flexibly connected thereto, provided with springs and adjusting-nuts, and mounted in guides depending from the frame, of the bifurcated center bars adjustably connected to the brake-bars near the ends of the latter and to the lever mounted in a depending bracket, and the draw-bars, chains, and brake-rods.

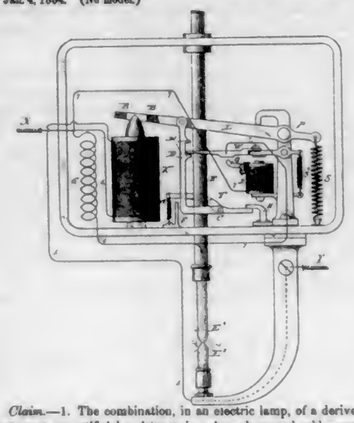
297,193. PROCESS OF TREATING COTTON-SEED. THOS. TAYLOR, Washington, D. C., assignor of one-third to James E. Fitch, same place. Filed Nov. 26, 1883. (No model.)



Claim.—1. A process of treating cotton-seed, consisting in subjecting the seed to the action of a solution of sulphuric acid of commerce and water, in the proportions of about one part, by measure, of the acid and from two parts to six parts, by measure, of water, and then to a mechanical rubbing action to remove the fiber from the seed, substantially as described

2. A process of treating cotton-seed, consisting in subjecting the seed to the action of a solution of sulphuric acid and water, in about the proportions named, then to an alkaline bath, then to a bath of water, and finally to a mechanical rubbing or abrading action to remove the fiber, substantially as described.

297,194. ELECTRIC-ARC LAMP. ELIHU THOMSON, Lynn, Mass., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 4, 1884. (No model.)



Claim.—1. The combination, in an electric lamp, of a derived-circuit magnet, an artificial resistance in a branch around said magnet, to cause said magnet to be energized when the current begins to flow, and a shunting device for automatically cutting out said resistance, as and for the purpose set forth.

2. The combination, in an electric lamp, of a derived-circuit magnet controlling the feed-regulating armature, an artificial resistance in the carbon branch, and means for automatically shunting said resistance when the magnet has acquired a predetermined power, substantially as set forth.

3. The combination, in an electric lamp, of a derived-circuit magnet, an artificial resistance in the carbon-circuit, means for permitting the carbons to come together when the lever of the feed-regulating mechanism is abnormally retracted, and a shunting device for shunting said resistance when the feed-regulating lever has been moved to a predetermined point by the magnet in its abnormally-strengthened condition.

4. In an electric-arc lamp, the combination of a derived-circuit magnet for controlling the feeding and separating mechanism, an artificial resistance in a branch around said magnet, a shunting device for shunting the magnet at a predetermined point in the movement of the feed mechanism, and means for holding said shunting device stationary during the operation of the lamp.

5. In an electric lamp, the combination of a derived-circuit magnet for controlling the feeding and separating mechanism, an artificial resistance arranged in the manner described, so as to cause a flow of current in the magnet at starting the lamp, a shunting device for shunting said resistance automatically, as described, and an electro-magnet in the shunt-circuit for holding said shunt closed during normal operation of the lamp.

6. In an electric-arc lamp, the combination of a derived-circuit magnet, an artificial resistance in the carbon branch around the same, a circuit-controller actuated when the lamp mechanism has been moved to a predetermined point, whereby said resistance may be shunted out of circuit, and an electro-magnet in the cut-out circuit for holding the circuit-controller in position to keep the shunted-out circuit closed.

7. The combination, in an electric lamp, of a derived-circuit magnet, a feed-controlling and carbon-separating lever actuated thereby, an artificial resistance in a branch around the magnet, and a shunting device which in one position of the lever places said resistance in circuit, and in another position shunts it.

8. The combination, in an electric lamp, of a derived-circuit magnet, feed-controlling mechanism that releases the carbon when the magnet's armature is abnormally retracted, as well as when the magnet's strength is increased by an increase of arc-resistance requiring a feed, an artificial resistance in a branch around the magnet, closed when the mag-

net's armature is in an extreme retracted position, and means for shunting said resistance and holding it shunted while the armature is in normal or feed-regulating position.

9. The combination, in an electric lamp, of a derived-circuit magnet, an artificial resistance in a branch around the same, feed-regulating mechanism provided with releasing stops or detents which permit the carbon to feed both when the feed-regulating armature is abnormally retracted and when it is attracted to the required degree, and means for cutting out said resistance automatically at a predetermined point in the armature's movement.

10. The combination, in an electric lamp, of a derived-circuit feed-regulating coil of high resistance, an artificial resistance in a branch around said coil, for forcing current into the coil at the start, and a circuit-controller for automatically throwing the artificial resistance out of action, as and for the purpose described.

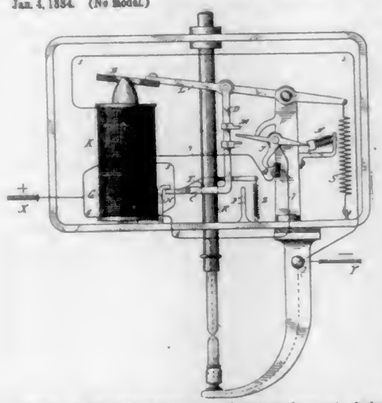
11. The combination, in an electric lamp, of a derived-circuit magnet, a feed mechanism actuated thereby and released in its two extreme positions, an artificial resistance in a branch around the magnet, and an automatic shunting device, as and for the purpose described.

12. In an electric-arc lamp, a derived-circuit magnet, feed-regulating mechanism brought into operative position by said magnet when sufficiently energized, an artificial resistance in a branch around said magnet, and means for automatically shunting said resistance, as and for the purpose described.

13. The combination, in an electric lamp, of a derived-circuit feed-controlling magnet, an artificial resistance in a branch around the same, a circuit-controller governing the flow of current through the artificial resistance and actuated by the feed-regulating lever, and a magnet for holding said circuit-controller stationary while the lamp is in operation.

14. The combination, in an electric lamp, of a derived-circuit feed-regulating magnet, an artificial resistance in a branch around the same, a shunt-circuit closer for automatically shunting said resistance when the lamp mechanism has been brought to feed-regulating position, and a device energized by the lamp-current for keeping said cut-out circuit closed.

297,195. ELECTRIC-ARC LAMP. ELIHU THOMSON, LYNN, MASS., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 4, 1884. (No model.)



Claim.—1. The combination, in an electric-arc lamp, of a derived-circuit coil or magnet of high resistance, feed-regulating mechanism controlled thereby, and released upon an extreme reverse movement of the magnet core or armature, as well as upon a forward movement thereof in the normal operation of the lamp, and means for assisting the derived-circuit magnet in bringing the feed mechanism into normal operating position, as and for the purpose described.

2. The combination, in an electric-arc lamp, of a feed mechanism and derived-circuit magnet controlling the same, a starting or assisting coil in the circuit with the carbons, and means for rendering said coil inactive and holding it out of action while the carbons are burning, as and for the purpose described.

3. The combination, in an electric-arc lamp, of a starting-coil in the circuit through the carbons, releasing devices to permit the carbon to descend freely when the lamp is out of action, and a switch or circuit-controller for rendering the starting-coil inactive as soon as the lamp begins to burn, as and for the purpose described.

4. In an electric-arc lamp, the combination, with the feed mechanism, of means for permitting a release of the carbon both when the feed-controlling armature is attracted and when it is retracted, as and for the purpose described.

5. In an electric-arc lamp, the combination of a derived-circuit magnet of high resistance around the carbons, a starting coil or magnet in circuit with the carbons when the lamp is out of action, and a switch or circuit-controller for shunting said coil when the lamp is started, and holding it cut out so long as the lamp shall continue in operation.

6. In an electric lamp, the combination, with a derived-circuit magnet and feed-regulating mechanism released to produce a feed when the magnet's strength increases with an increase of arc, of auxiliary releasing devices which permit the carbon to feed when the magnet is de-energized, devices for bringing the feed mechanism at starting into normal or operating position to lift the carbon and form the arc, and means for throwing said devices out of operation, whereby the feed mechanism may be left to the control of the high-resistance derived-circuit magnet.

7. The combination, in an electric lamp whose carbons are normally or at the start in contact, of a derived-circuit magnet of high resistance in a branch around the carbons, feed mechanism controlled thereby, a starting coil or magnet in circuit with the carbons, to assist the derived-circuit magnet in starting the lamp, and a switch or circuit-controller for shunting said coil and holding it shunted, so that the lamp may operate under the control of the derived-circuit magnet independently of said coil.

8. The combination, substantially as described, of a derived-circuit magnet, a feed mechanism having an auxiliary stop or detent for permitting the carbons to come together when the magnet-armature is abnormally retracted, as well as when it is drawn forward by the increase of current in the derived-circuit magnet, a coil or magnet in circuit with the carbons for assisting the derived-circuit magnet, and means for shunting said coil when the feed mechanism has been moved to a predetermined point.

9. In an electric-arc lamp whose mechanism is controlled by a derived-circuit magnet only in the feed-controlling operation, the combination of a starting-circuit, a circuit closer or controller actuated by the magnet-armature in its movement to extreme position, and a spring bearing on said circuit-closer, so as to act upon it at an angle in either of its positions, and to thus hold the contacts open or closed independently of the lever when moving in a limited range.

10. The combination, in an electric lamp, of a derived-circuit magnet, a clamp or clutch controlled thereby, stops or detents for releasing the clutch at either extreme of movement, a coil or magnet for assisting the derived-circuit magnet at starting, and means for automatically preventing an operative flow of current in said coil when the derived-circuit-magnet armature has been moved to a predetermined point.

11. The combination, in an electric lamp, of a derived-circuit magnet whose coil is in a branch of high resistance around the carbons, a starting-coil wound on the same core with said derived-circuit coil and in circuit with the carbons, and a switch or circuit-controller for controlling or cutting off the flow of current in said latter coils, whereby, after the lamp is started, it may be left to burn under the sole control of the derived-circuit coil.

12. The combination, in an electric lamp, of a clamp or clutch and two releasing-stops for the latter, arranged in the manner described, to release the carbon or carbon-carrier in either of the extreme positions of the clutch.

13. The combination, in an electric lamp, of the clamp or clutch having the clamping toe or jaw T and two stops, arranged in the manner described, to release the toe on an upward or downward movement of the clutch to a determinate extent.

14. The combination, in an electric lamp, of a high-resistance derived-circuit feed-regulating magnet, an auxiliary coil in circuit with the carbons for moving the feed-regulating mechanism to a point from which, when retracted, it may raise the upper carbon, and means for automatically shunting said coil and holding it shunted, so that the operations of forming the arc and controlling the feed may progress under the control of the derived-circuit magnet only.

297,196. ELECTRIC-ARC LAMP. ELIHU THOMSON, LYNN, MASS., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 4, 1884. (No model.)

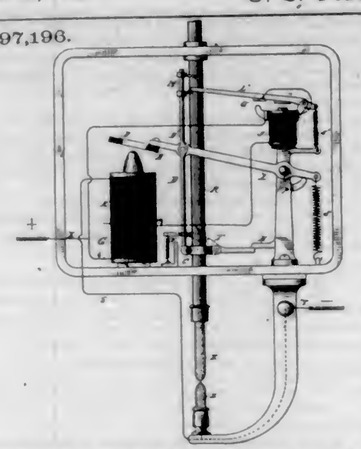
Claim.—1. The combination, in an electric lamp, of a starting circuit or coil, a shunting device therefor actuated by the regulating-lever, and a magnet or coil or other device affected by electric current whose circuit is governed by said shunting device for holding the shunt-circuit closed while the lamp is in operation.

2. The combination, in an electric lamp, of a starting coil or magnet in the carbon circuit, a shunting device for shunting said coil when the feed mechanism has been brought to normal or feed-regulating position, and an electro-magnetic coil in the shunt-circuit for holding said shunt-circuit closed.

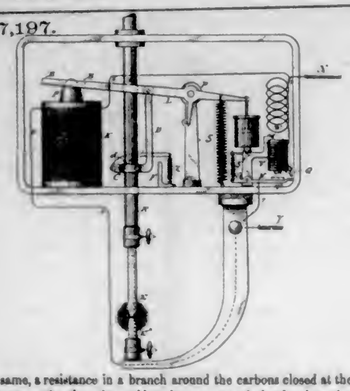
3. The combination, in an electric lamp, of a starting coil or magnet in the carbon circuit, a shunting device for shunting said coil when the feed mechanism has been brought to a predetermined position, and a coil or magnet in the shunting-circuit for acting on said shunting device and keeping the shunting-circuit closed while the lamp is in operation.

4. The combination, in an electric lamp, of a derived-circuit regulating-magnet, an assisting-coil for assisting the same in pulling the regulating-lever from an extreme retracted position to a normal or feed-regulating position, a shunting device for shunting said coil when the lever has reached a predetermined position, and a magnet or coil in the shunt-circuit for holding the latter closed, as and for the purpose described.

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5. The combination, in an electric lamp, of a high-resistance derived-circuit magnet, feed-regulating mechanism having stops or releasing devices which release the same at either extreme of movement, a starting coil or circuit, means for rendering said coil or circuit ineffective when the feed-regulating armature is moved from an extreme retracted position, and a magnet or coil for keeping said coil or circuit inoperative, as and for the purpose described.

6. The combination, in an electric lamp, of a high-resistance derived-circuit feed-regulating magnet, an auxiliary coil in circuit with the carbons for moving the feed-regulating mechanism to a point from which it may, when retracted, raise the upper carbon, means for automatically cutting out said coil and holding it cut out, so that the operations of forming the arc and controlling the feed may progress under the control of the derived-circuit magnet only, and a coil or magnet in the cut-out circuit for holding the cut-out circuit closed.

7. The combination, in an electric lamp, of a feed-regulating-magnet core carrying two coils—one in a derived circuit of high resistance around the carbons and the other in a circuit with the carbons—means for shunting said latter coil when it shall have brought the feed-regulating mechanism into normal position for separating the carbons, and a magnet in the shunt-circuit for holding said shunt-circuit closed.

8. The combination, in an electric lamp, of a feed-regulating-magnet core carrying two coils—one in a derived circuit around the carbons and the other in a circuit with the carbons—feed-regulating mechanism which permits a release of the carbon when no current is circulating in the derived-circuit coils, as well as when said coils carry an increased proportion of current due to lengthening of the arc, a circuit controller or switch actuated directly or indirectly by the feed-regulating lever when the same is operated by means of the coil in the carbon circuit, for cutting out said coil when the feed-regulating devices reach their extreme of movement, and an electro-magnet in the cut-out circuit for acting on the circuit-controller and keeping it in proper position while the current flows through the carbons.

9. The combination, in an electric lamp, of the two coils K G, wound and connected as described, an armature-lever actuated by the core of said coils, a clutch carried by said lever, and provided with upper and lower releasing-stops, a cut-out circuit-closer for shunting said coil G, means for mechanically acting on said circuit-closer when the armature-lever is drawn forward and when it is abnormally retracted, so as to open or close the cut-out circuit, and a coil in the cut-out circuit, and acting on said circuit-closer, as and for the purpose described.

10. The combination, in an electric lamp whose carbons are at the start in contact, of a starting-coil in circuit with said carbons, and means for automatically shunting or cutting out said coil when the feed mechanism has been brought by the action of said coil into the proper feed-regulating or carbon-separating position, and a magnet in the cut-out circuit for holding the same closed, as and for the purpose described.

297,197. ELECTRIC-ARC LAMP. ELIHU THOMSON, LYNN, MASS., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 5, 1884. (No model.)

Claim.—1. The combination, in an electric lamp, of feed mechanism, a derived-circuit magnet of high resistance regulating or controlling the same, a resistance in a branch around the carbons closed at the start, and means for throwing said resistance out of circuit when the lamp mechanism has been brought into operative position.

2. The combination, in an electric-arc lamp, of a high-resistance derived-circuit magnet, feed mechanism controlled thereby, a resistance somewhat greater than the normal arc in a branch around the carbons for forcing current into the high-resistance derived circuit to start the lamp, and a circuit-breaker for breaking the circuit of said resistance when the lamp mechanism has been brought into operative position, so as to leave the lamp to the controlling action of the derived-circuit magnet only.

3. The combination, in an electric lamp, of a high-resistance derived-circuit magnet, a retractor for the armature-lever thereof, feed-regulating mechanism controlled by said lever, a resistance somewhat greater than the normal arc in a branch around the carbons, and means for breaking said branch and keeping it broken when the current passes through the carbons, so that the lamp may continue in operation by the action of the derived-circuit magnet only.

4. The combination, in an electric lamp whose carbon circuit is broken when the lamp is out of action, of a high-resistance derived-circuit magnet, feed mechanism controlled thereby, a resistance in a branch around the carbons, and means for breaking said branch when the feed mechanism has been brought into normal or feed-regulating position, as and for the purpose described.

5. The combination, in an electric lamp, of a high-resistance derived circuit containing means for regulating the position of the carbons, a carbon circuit open when the lamp is out of action, a resistance in a branch around the carbons, and a circuit-controller therefor actuated by a magnet in the carbon circuit, as and for the purpose described.

6. The combination, in an electric lamp, of a regulating-lever, L, a high-resistance or derived-circuit magnet, and a retractor acting upon said lever in opposite directions, feed-regulating mechanism that holds the carbons apart when the lever is retracted to an extreme position, a resistance in a branch around the carbons, and means for breaking said branch and holding it broken when current flows through the carbons.

7. The combination, in an electric lamp whose carbons are separated at the start, of a high-resistance derived-circuit magnet, feed mechanism controlled thereby, and a resistance in a branch around the carbons for forcing current into the high-resistance magnet, so that it may have power to start the lamp.

8. An electric lamp constructed to have three conducting-paths—one through the carbons, one through the high-resistance-controlling magnet, and a third through a resistance greater than that of the arc—as and for the purposes described.

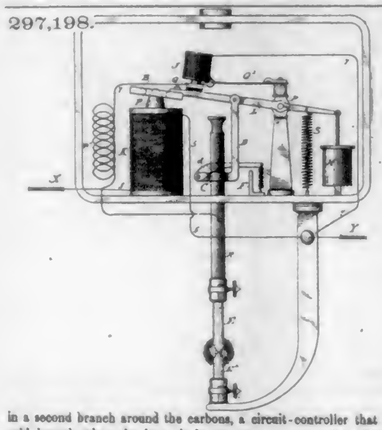
9. The combination, in an electric lamp having a high-resistance derived circuit carrying the regulating-current, of a second branch around the carbons containing a resistance preferably greater than the normal arc, and closed at starting of the lamp, and means for bringing the lamp mechanism into operation, placed in the high-resistance circuit and energized by the abnormal flow of current produced therein by the presence of the second resistance branch.

297,198. ELECTRIC-ARC LAMP. ELIHU THOMSON, LYNN, MASS., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 5, 1884. (No model.)

Claim.—1. The combination, in an electric lamp, of a high-resistance derived-circuit magnet and retractor therefor, feed-regulating mechanism controlled thereby, a resistance in a branch around the carbons, and a circuit-controller actuated by the regulating-lever, as and for the purpose described.

2. In an electric lamp, the combination of a high-resistance derived-circuit magnet, a feed-regulating lever controlled thereby, a resistance

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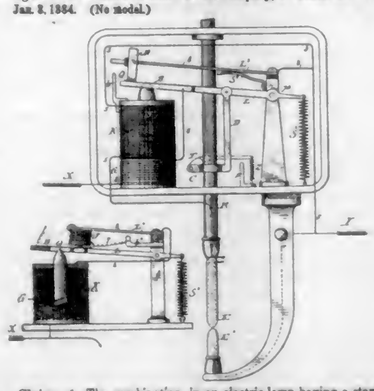
in a second branch around the carbons, a circuit-controller that closes said branch when the lever is in an extreme retracted position, and means for keeping said branch closed while the lever is moving from such position to its proper position for permitting a release of the carbons.

3. The combination, in an electric lamp, of a high-resistance derived-circuit magnet, a feed-regulating mechanism controlled thereby, a resistance branch around the carbons closed by the regulating-lever when retracted to an extreme position, and a magnet in said branch for keeping the branch closed until contact of the carbons is effected.

4. The combination, in an electric lamp, of a high-resistance feed-regulating magnet in a derived circuit around the carbons, a resistance in a second branch around the carbons, a spring-retracted circuit-closer for said branch that closes the branch when the feed mechanism is retracted to an abnormal extent, and a magnet in the branch and mounted on said circuit-closer for compelling the circuit-closer to move with the lever and keep the branch closed during forward movement of the lever.

5. The combination, in an electric-arc lamp having a derived circuit of high resistance carrying the regulating-current, of an extra branch containing a resistance, means in the regulating derived circuit for bringing the lamp mechanism into operative position under the action of current forced into said circuit by the presence of the resistance in the extra branch, a circuit-controller for said branch arranged in the path of the regulator-lever or other portion of the lamp mechanism moving therewith, and a magnet adapted to move with the circuit-closing points for preserving the extra branch during forward movement of the lever from the extreme retracted position.

297,199. ELECTRIC-ARC LAMP. ELIHU THOMSON, LYNN, MASS., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 3, 1884. (No model.)



Claim.—1. The combination, in an electric lamp having a starting coil or circuit, of a switch or circuit-controller and a magnet and armature for keeping the contacts of the circuit-controller set during the forward movement of the feed-regulating mechanism from an extreme retracted position to a feed-regulating position.

2. The combination, in an electric lamp having a starting coil or circuit, as described, of a circuit-controller or switch that closes the starting-circuit when the feed-regulating lever is in an extreme retracted position, a magnet and armature for keeping the contacts closed during forward movement of the lever, and a detent or stop for opening the switch-contacts at a predetermined point in the movement of the feed-regulating mechanism.

3. The combination, in an electric lamp, of a starting coil or circuit, a circuit-controller or switch therefor, and a magnet for holding said switch-contacts in unchanged relation during forward movement of the lamp mechanism from an extreme retracted position, said magnet being wound with coils connected with the lamp-circuits.

4. The combination, in an electric lamp, of a starting coil or circuit, a switch or circuit-controller therefor, and a magnet for holding the switch-contacts in unchanged relation until the lamp mechanism has been brought to feed-regulating position, said magnet being wound with coils in the starting-circuit of the lamp.

5. The combination, in an electric lamp, of a starting coil or circuit, a switch or circuit-controller therefor whose contacts are closed when the regulating-lever of the lamp is retracted to an extreme position, a magnet for keeping the switch-contacts in unchanged relation during forward movement of the regulating-lever, and mechanism for separating the armatures from its magnet, as and for the purpose described.

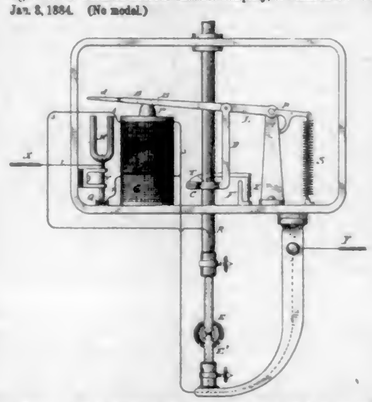
6. The combination, in an electric lamp, of a starting coil or circuit, a switch or circuit-controller therefor, and a magnet and armature movable with the switch and lamp mechanism for keeping the parts of said switch in unchanged electrical relation.

7. The combination, in an electric lamp, of a starting coil or circuit, a switch or circuit-controller therefor, and a magnet and armature, one carried by the feed mechanism and the other by the circuit-controller, so that the contacts of the latter may be kept in unchanged electrical relation during an extended movement of the feed mechanism.

8. The combination, in an electric lamp, of a starting coil or circuit, a switch or circuit-controller, one part of which is movable independently of the lamp mechanism, while the other moves with said mechanism, a magnet and armature for keeping said parts in unchanged electrical relation, and a spring or other retractor for separating the parts of the circuit-controller when the armature is freed from the magnet.

9. The combination, in an electric lamp, of a starting coil or circuit, a switch or circuit-controller therefor, and a magnet for keeping the contacts of said controller in unchanged electrical relation during forward movement of the lamp-regulating devices from a retracted position, said magnet's coils being in a branch around the carbons.

297,200. ELECTRIC-ARC LAMP. ELIHU THOMSON, LYNN, MASS., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 3, 1884. (No model.)



Claim.—1. The combination, in an electric-arc lamp, of a starting circuit or coil, a circuit-controller or switch therefor, and a magnet and armature for operating said switch, one carried by the lamp mechanism or devices moving therewith and the other by the switch, said magnet and armature being arranged, in the manner described, so that they will be brought into operative proximity when the lamp mechanism has been moved to a predetermined extent by the action of the starting circuit or coil.

2. The combination, in an electric lamp provided with a starting circuit or coil closed when the lamp is out of action, of a circuit-controller and a magnet and armature for actuating the same, arranged, in the manner described, so as to be brought within attractive distance of each other on the forward movement of the regulating-lever from an extreme retracted position.

3. The combination, with the regulating or feed-controlling armature-lever and the switch V, of a magnet and armature, one carried by the lever and the other by the switch, and arranged, in the manner described, so as to be brought into proximity by the forward movement of the lever under the action of the feed-regulating lever, as and for the purpose described.

4. The combination, substantially as described, in an electric lamp, of a switch or circuit-controller controlling the starting-circuit, and a magnet and armature for operating the circuit-controller when they have been brought into suitable proximity by the movement of the lamp mechanism toward feed-regulating position, said magnet being wound with coils in the lamp-circuit, so that it may continue to act upon the circuit-controller while the lamp is in operation.

5. The combination, in an electric lamp having a starting circuit or coil, as described, of a circuit-controller or switch and a magnet and armature, one carried by the lamp mechanism and the other by the circuit-controller, the coils of said magnet being in the carbon-circuit, as and for the purpose described.

6. The combination, in an electric lamp having a starting circuit or coil, as described, of a circuit-controller or switch, a magnet and armature, one moving with the lamp mechanism and the other carried by the switch, and arranged, in the manner described, to be brought into proximity by the movement of the lamp mechanism under the influence of the starting-circuit, and a coil for said magnet placed in the circuit with the carbons.

7. The combination, in an electric lamp, of a feed-regulating derived circuit of high resistance, a feed-regulating lever controlled thereby, a starting circuit or coil, a switch or circuit-controller therefor, and an armature and magnet, one carried by the lever and the other by the switch, and arranged, in the manner described, so as to be out of proximity when the lever is retracted, but to be brought into proximity by the movement of the lever to feed-regulating position.

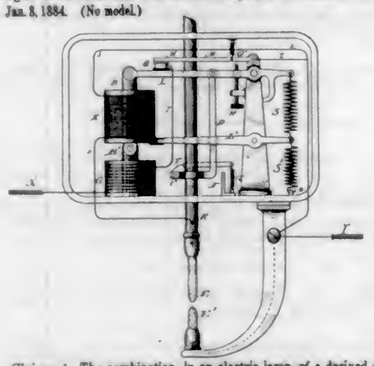
8. The combination, substantially as described, of the switch controlling the starting-circuit, the magnet whose coils are in the carbon-circuit, and the armature carried by the switch or the lamp mechanism for holding the switch elevated or out of position for closing the starting-circuit while the lamp continues in operation.

9. The combination, in an electric lamp, of a feed-regulating magnet whose coils are in a high-resistance derived circuit, an auxiliary branch around the carbons containing an artificial resistance, a circuit-controller for said branch, carrying a magnet or its equivalent, as described, an armature, and an armature or magnet carried by the lamp mechanism, and arranged to act upon the circuit-controller when said lamp mechanism shall have moved to a predetermined extent under the action of the current forced into the derived circuit by the artificial resistance.

10. The combination, in an electric lamp having a starting coil or circuit, as described, of a circuit-controller therefor, and a magnet movable with the lamp mechanism, for holding the contacts of said controller in unchanged electrical relation during operation of the lamp, said magnet being wound with coils connected to the lamp-circuit.

11. The combination, in an electric lamp having a starting coil or circuit, as described, of a circuit-controller or switch therefor, and a magnet and armature movable with the lamp mechanism, for holding the switch-contacts in unchanged electrical relation during operation of the lamp, said magnet being wound with coils in the principal circuit.

297,201. ELECTRIC-ARC LAMP. ELIHU THOMSON, LYNN, MASS., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Jan. 3, 1884. (No model.)



Claim.—1. The combination, in an electric lamp, of a derived circuit of high resistance carrying the feed-regulating current, feed-regulating mechanism controlled thereby, a retractor acting in opposition to the effects of the feed-regulating current, and an electro-magnet for diminishing the retracting force when the lamp starts, as and for the purpose described.

2. The combination, in an electric lamp, of a feed-regulating armature-lever, a retracting-spring therefor, an electro-magnet for slackening said spring when the current is turned on, and means for rendering said electro-magnet ineffective when the lamp mechanism has been brought to normal or proper feed-regulating position.

3. The combination, in an electric lamp, of a high-resistance derived-circuit magnet mounted on a movable support, a feed-regulating lever controlled by said magnet, and an electro-magnet that acts on said support and simultaneously lowers said support and diminishes the retracting force acting on the feed-regulating lever.

4. The combination, in an electric lamp, of a feed-regulating magnet mounted on a movable support, an armature for said magnet having a retractor connected with said support, a starting electro-magnetic coil for simultaneously lowering said support and slackening the retractor, and means for cutting out said coil when the lamp mechanism has been brought to feed-regulating position.

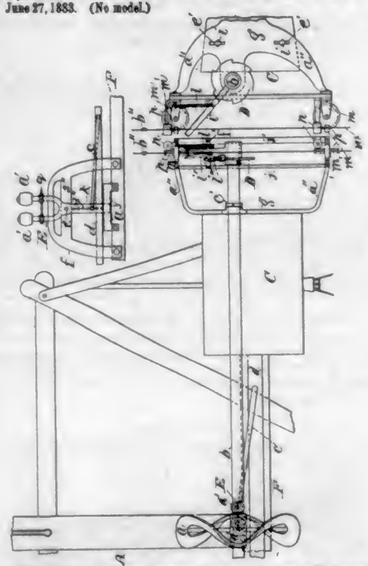
5. The combination, in an electric lamp, of a feed-regulating lever, a high-resistance derived-circuit magnet acting thereon, an auxiliary or starting magnet, and a retractor for the feed-regulating mechanism connected with the armature-lever of the starting-magnet.

6. The combination, in an electric lamp, of a starting electro-magnet, a high-resistance derived-circuit magnet mounted on the armature-lever for the starting-magnet on one side of its fulcrum, and a retracting-spring for the feed-regulating armature-lever connected with the armature-lever for the starting-magnet on the other side of the fulcrum.

7. The combination, in an electric-arc lamp, of a high-resistance derived-circuit magnet, an electro-magnet whose coils carry current when the lamp starts for lowering said high-resistance magnet, and means for cutting out the coils of the starting-magnet when the lamp mechanism has been brought into operative position.

8. The combination, in an electric lamp, of a feed-regulating lever and a starting-magnet having an armature connected with the feed-regulating lever through the retractor for the latter, as and for the purpose described.

297,202. CHECK-ROWER. JOHN J. TUTTLE, Springfield, Ohio. Filed June 27, 1883. (No model.)



Claim.—1. In a check-rower, the combination, with a revolvable shaft having the double-spiral male cam on the center of the same engaging with an adjustable oscillating fork provided with rollers, and pivoted over the slide-lever of a corn-planter, a ratchet-wheel rigidly attached to said shaft, and a pivoted spring-fork having a spring-latch engaging with the teeth of said ratchet-wheel for operating the check-rower, of the adjustable bracket having the upwardly and outwardly bent limbs, the cross-bars connecting the same, and the bearing-pulleys and guide-rollers arranged as shown, and adapted to be operated as set forth.

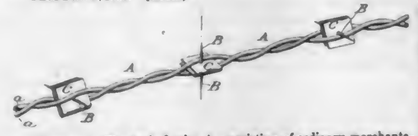
2. The combination, with the seed-boxes and the main cross-bar of

the planter, of the brackets having the upwardly-bent and outwardly-extended limbs, the cross-bars connecting the same, said brackets being adapted to support the revoluble shaft and its auxiliary operative devices, and having the horizontal slots extending through the body of the same, whereby they are made adjustable (in connection with bolts securing them to the ends of the seed-hoppers and the main cross-bar) toward the front and rear of the planter, as set forth.

3. In a check-rower wire, a hollow button of ellipse shape having a cleft extending longitudinally through the axial line of the same from one end to the middle of said button, said cleft being wider at the outer end to allow of the insertion of the wire sections, and adapted to be closed to retain the eye ends of said wire sections and swivel them within the button, as set forth.

4. In a check-rower, a hollow button of ellipse shape having an open cleft extending from one end through it to the middle of the same for the insertion of the ring ends of the wire sections, and adapted to be closed over the same, and having its inner cavity flat at the ends around the wire-hole to allow the ring end of said wire (having a square abutting end) to turn freely within said cavity, and to prevent it from kinking when operated or in coiling for transportation.

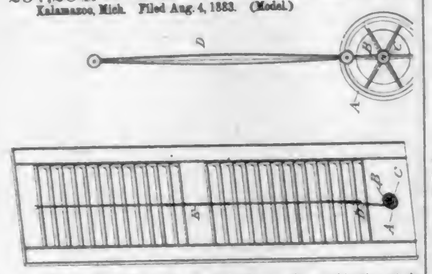
297,203. BARBED FENCE. HENRY M. UNDERWOOD, Waukegan, Ill. Filed Dec. 24, 1883. (Model.)



Claim.—1. The barbed wire A, consisting of ordinary merchantable tacks, B B, secured within the doubled plate C between the two strands *a a* of said wire A, substantially as shown and described.

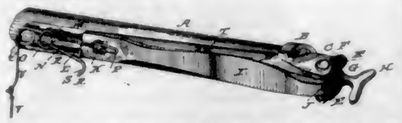
2. The combination, with the folded warning-plate C, of the headed barbs B, inserted therein, the barbs piercing the warning-plate, and having their heads secured between its folded sides.

297,204. BLIND-SLAT LOCK AND OPERATOR. ISAAK VAN KERSEN, Kalamazoo, Mich. Filed Aug. 4, 1883. (Model.)



Claim.—In a blind-slat stop and adjuster, the combination of the friction crank-wheel A, having a friction-spring, B, and a center-screw, C, by which the crank-wheel A is fastened to the frame and pressed to the spring B to a desired friction on the crank-wheel, and the rod D, connecting the slat-bar with the crank-wheel, substantially as described, for the purpose specified.

297,205. HORSE-DETACHER. ISAAC A. WESSON, Wingo, Ky. Filed Jan. 15, 1884. (No model.)



Claim.—1. The combination of the single-tree, the socket having the outwardly-projecting lips having enlargements at their outer ends, and the pivoted hook having means for retaining and releasing it, as and for the purpose shown and set forth.

2. The combination of the single-tree, the socket having outwardly-projecting lips provided with the pivotal pin, and the inwardly-extending socket-bar having the longitudinally-grooved enlargement at its inner end, provided with the eye, the hook having T-head perforated central portion and inwardly-extending hook-bar having a transverse slot at its inner end, the rearwardly-projecting eye passing through the said slot, the elastic cushion, and the spring-key, as and for the purpose shown and set forth.

3. The spring-key having one end doubled, central coil, and outwardly-bent end, in combination with the inner eye, the outer eye, and the slotted hook-bar, as and for the purpose shown and set forth.

297,206. PROCESS OF PREPARING OR TREATING COMPOSITION OR MATERIAL TO BE USED IN MAKING PLAQUES. JOHN J. WEST, Chicago, Ill. Filed Oct. 24, 1883. (Specimens.)

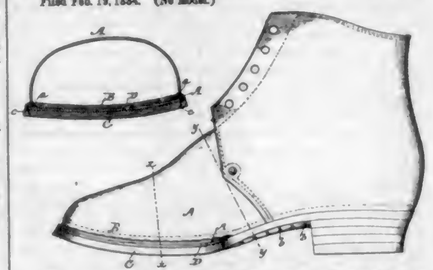
Claim.—1. In the manufacture of casts for decoration in oil-colors, the process of preventing the checking, cracking, or peeling off of the oil-paint applied for decoration, which process consists in applying to the dry cast a coating of oil-varnish, substantially as and for the purposes specified.

2. In the manufacture of casts for decoration in oil-colors, the process of preventing the checking, cracking, or peeling off of the oil-paint applied for decoration, which process consists in applying to the dry cast a coating of oil-varnish, allowing the said coating to become dry, and then painting the same with white zinc ground in oil, substantially as and for the purposes specified.

3. A composition for the manufacture of casts for decoration in oil-colors, which composition consists of an absorbent material coated in its hard and dry state with oil-varnish, and afterward painted with white zinc ground in oil, substantially as and for the purposes specified.

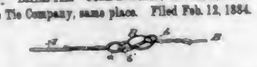
4. A cast made from absorbent material brushed in its hard and dry state with oil-varnish, and afterward painted with white zinc ground in oil, substantially as and for the purposes specified.

297,207. BOOT OR SHOE. WILLIAM H. WETMORE, Raleigh, N. C. Filed Feb. 19, 1884. (No model.)



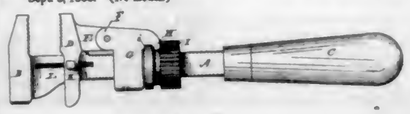
Claim.—The improved boot or shoe described, the same having the upper united around the front to the side or edge of the inner sole by stitches passing through the upper and diagonally through the inner sole from the side or edge to the bottom, and to the outer sole by stitches passing through the upper in close proximity to and parallel with those of the first seam and through the outer sole, and having the said upper turned in at the shank between the outer and inner soles, and there fastened by cable-screws or equivalent fastening devices, the margin of the upper around the front of the boot or shoe being turned outward below the upright portion, which is fastened to the edge or side of the inner sole, substantially as set forth.

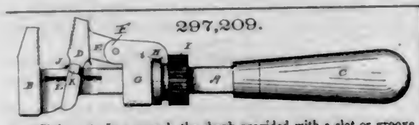
297,208. BALE-TIE. JOSEPH WHITE, Cleveland, Ohio, assignor to the Tyler Bale Tie Company, same place. Filed Feb. 12, 1884. (No model.)



Claim.—In a wire bale-tie one end of which is provided with the loops *b* and B′ and intermediate shank, *b*′, the said loop *b* being passed through the loop B′, forming a hook, while the opposite end, thereof is provided with a single loop, *a*, which latter is adapted to be passed through the loop B′ over the loop *b*, and rest against the hook formed by the shank *b*′, all of the above parts operating as described.

297,209. WRENCH. THOMAS FOSTER WHITE, Salem, Kans. Filed Sept. 3, 1883. (No model.)



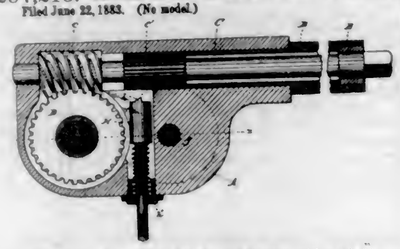


Claim.—1. In a wrench, the shank provided with a slot or groove in its side, in combination with the sliding jaw pivoted or jointed to a sliding sleeve, and a pointed screw or rod working through the side of the jaw and engaging with the slot or groove, as and for the purpose set forth.

2. In a wrench, the shank A, carrying stationary jaw B, and provided with a longitudinal groove in its side, in combination with the sliding jaw pivoted or jointed to a sliding sleeve, and having a pointed screw or rod engaging with the longitudinal groove, and a spring secured to the shank and bearing against the inner face of the sliding jaw, substantially as and for the purpose set forth.

3. In a wrench, the shank A, provided with a longitudinal groove or slot in its side, in combination with the sliding jaw formed with a rearward extension, a sleeve provided with a forward extension, which is pivoted or jointed to the said rearward extension, a pointed screw or rod working through the sliding jaw and engaging with the groove in the shank, and a spring bearing against the inner face of the sliding jaw, as and for the purpose set forth.

297,210. RATCHET-DRILL. PARDON A. WHITNEY, Cleveland, Ohio. Filed June 22, 1883. (No model.)



Claim.—1. In a ratchet-drill, the combination, with a suitable casing and handle, of a drill-socket, a worm-wheel rigidly secured thereto, a revolving shaft, and a worm secured to the shaft, substantially as set forth.

2. The combination, with a suitable casing and handle, of a shaft passing longitudinally through the handle, and provided with a worm, a worm-wheel journaled within the casing and meshing with the worm, a drill-socket rigidly secured to the worm-wheel, the part E, screw F, and mechanism for transmitting the motion of the worm-wheel to the part E, substantially as set forth.

3. In a ratchet-drill, the combination, with a casing and handle, and a shaft journaled within the casing and provided with a worm, of a gear meshing with the worm, a drill chuck or socket rigidly secured to the worm-gear, and a pawl and ratchet for holding the shaft against movement in one direction, substantially as set forth.

4. In a ratchet-drill, the combination, with the casing, handle, shaft, the latter being provided with a worm and ratchet-wheel, a worm-gear, and drill chuck or socket, of a spring-actuated detent adapted to be turned so as to engage the ratchet-wheel on either side of the shaft, substantially as set forth.

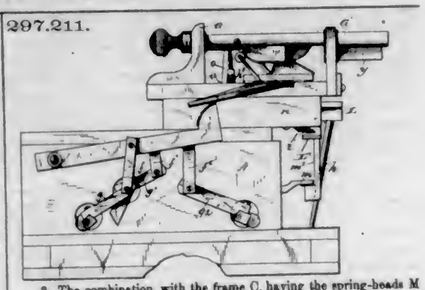
5. The combination, with the handle and casing, of the shaft provided with a worm, a worm-wheel meshing with the worm, a drill-socket rigidly secured to the worm-wheel, the pinion D′, the part E, the pinions G and G′, and the screw F, all of the above parts combined and adapted to operate as described.

297,211. REED-ORGAN STOP-ACTION. ORSON C. WHITNEY, Cleveland, Ohio. Filed July 24, 1882. (Model.)

Claim.—1. The combination, with the frame A, having the pivoted lever *a*, of the frame C, having the rod *k*, secured in a groove in said frame, and provided with an arm, *w*, resting loosely on said lever, said rod made in bail form and having rollers c^3 c^4, and the uprights G G′ on frame C, in which play the stop-rods F F′, provided with blocks *q* of different sizes, whereby the mute d^2 is partially or entirely opened alternately by said stops, as shown and described.

2. The combination, with the frame A, having the vertical pins *o*, provided with grooves or slits, of the frame C, having perforations to engage said pins, and provided with upwardly-turned spring-catches k^3, adapted to be sprung into the grooves or slits of the pins to secure the two frames together, as shown and described, and for the purpose set forth.

297,211.

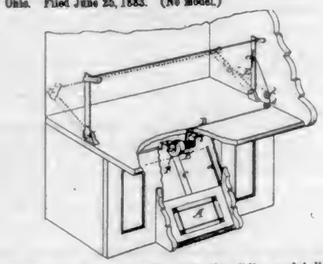


3. The combination, with the frame C, having the spring-heads M M′, provided with pins a^4 a^5, of the frame A, having the levers L L′, engaging said pins, the former provided with the pin *h*, connected to the tremolo, and the latter provided with an arm, *m*′, attached to an arm, *m*, of the swell, and the stop-rods F^3 F^3′, adapted to engage the spring-heads to operate the said tremolo and swell, as shown and described.

4. The combination, with the frame A, having the levers e e' e^2, pivoted to one side thereof, and provided with links f f' f'' and arm g g' g^2, connected to the links and to the mutes d d' d^2, of the frame C, having uprights G G′, provided with openings g g' for the stop-rods F F′ F^4 F^5, having blocks, the rods k k' k^2, provided with rollers c^3 c^4 c^5 c^6, and the arms w w' w^2, resting on said levers, said stops F^4 F^5 independently operating the mutes d d', and the stops F F′ operating the bail-rod *k*, whereby the valve *d* is partially or entirely thrown open, as set forth.

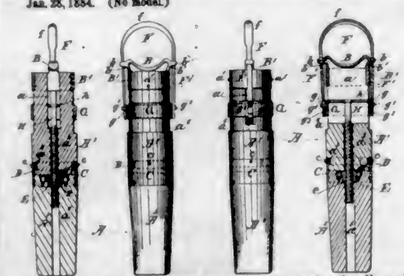
5. The pins a^4 and a^5, secured to the spring-heads M and M′ on the frame C, in combination with the swell and tremolo-valve lever and the draw-stops F^3 F^3′, as shown and described.

297,212. CABINET-ORGAN CASE. ORSON C. WHITNEY, Cleveland, Ohio. Filed June 25, 1883. (No model.)



Claim.—The combination, with the sliding pedal-lid A and the bracketed double roller B B′, the former carrying one end of the strap C, the other end thereof being attached to the pedal-lid, of the tilting frame E, having the adjustable cord D, which passes over pulleys *d*, and is connected with the roller B′, as shown and specified.

297,213. ENGRAVER'S TOOL. WM. WILDT, Richmond, Va. Filed Jan. 28, 1884. (No model.)



Claim.—1. An engraver's tool composed of a stock or handle made in two sections, arranged for rotation one upon the other, and in combination therewith of holding devices consisting of a stationary support or table and a retaining device secured to and adjustable upon one of the handle-sections for securing the object to said stationary support, said adjustable holding device being made detachable from the handle-sec-

tion, and a screw connected with said holding device and operated from either one or the other handle-section, for the purposes specified.

2. An engraver's tool composed of a stock or handle made in two sections, arranged for rotation one upon the other, and in combination therewith of a stationary support or table detachably connected with said handle or stock for supporting the object, a retaining device secured to and adjustable upon one of the handle-sections for securing the object to or holding the same on said support or table, said holding device being likewise made detachable from the handle or stock, and a screw-rod connected with the adjustable holding device and operated from one or the other handle-section, for the purposes specified.

3. An engraver's tool composed of a stock or handle made in two sections, arranged to rotate one upon the other, and in combination therewith of interchangeable stationary supports or rests, interchangeable retaining or holding devices for securing the object to said supports or rests, and a screw connected with the interchangeable holding devices for operating the same by the rotation of either handle-section, for the purpose specified.

4. The handle A, composed of the section A', provided with the annular groove a^3, and the section A^2, provided with the sleeve C, and in combination therewith of the split ring D and suitable devices for rigidly connecting the sleeve C with said ring, as described, for the purpose specified.

5. The combination, with the handle-section A', having slot *a* and an axial passage, a^3, the handle-section A^2, having a like passage, and a threaded bearing, E, said sections being rotatable one on the other, of the sleeve G, arranged to slide on section A', and the screw-rod H, rigidly connected to sleeve G, and operating in bearing E, whereby said sleeve may be adjusted vertically by the rotation of either handle-section, as described, for the purpose specified.

6. The combination, with the two-part handle A, constructed for operation as described, a stationary support or table secured to the upper end thereof, and a retaining or holding device secured to and adjustable vertically on the upper handle-section and above said stationary support, of the sleeve G, connected with the holding device, and screw-rod H, rigidly connected to the retaining or holding device, said parts being arranged for co-operation as described, for the purposes specified.

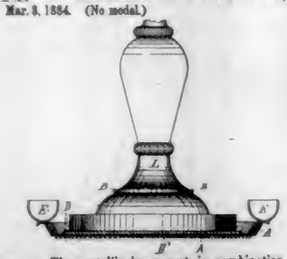
7. The combination, with the two-part handle A, constructed for operation as described, and interchangeable stationary support or table adapted to be secured to the upper end of said handle, and an interchangeable retaining or holding device adapted for vertical adjustment above said stationary support, of the sleeve G, detachably connected with the adjustable holding device, and the screw-rod H, rigidly connected with the sleeve G, said parts being arranged for co-operation as described, for the purpose specified.

8. The combination, with the two-part handle A, constructed for operation as described, the stationary segmental and grooved support B, secured to the upper end of said handle, and the U-shaped retaining or holding device F, having its segmental portion *f* grooved also, said device being adjustable vertically above the stationary support, of the sleeve G, connected to said holding device F, and the screw-rod H, connected with and operating the sleeve G, said parts being arranged for co-operation as described, for the purpose specified.

9. The combination, with the vertically-adjustable retaining or holding device, the legs or arms of which are provided with apertures f' f'', as described, of the sleeve G, provided with pins g g^3, substantially as described, for the purpose specified.

10. The combination, with the two-part handle A, constructed for operation as described, the stationary support or table B, secured to the end thereof, the slotted guide bearings or lugs *b*, and the retaining or holding device F, the legs F' of which move in and are guided by said lugs *b*, of the sleeve G, connected with said legs F', and the screw-rod H, connected with the sleeve G, said parts being arranged for co-operation as described, for the purpose specified.

297,214. METALLIC LAMP-MAT. THEODORE F. WOOD, Vernon, N. J. Filed Mar. 3, 1884. (No model.)



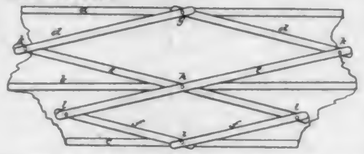
Claim.—1. The metallic lamp-mat, in combination with a wire clamp to secure the mat to a lamp-foot, substantially as shown and described.

2. The metallic lamp-mat in combination with a clamp to secure it to a lamp-foot, and springs to secure a removable pad, D, inside the mat, as and for the purpose set forth.

3. The metallic lamp-mat provided with a clamp to secure it to the lamp-foot, and with the pads D and D' secured inside and outside of its bottom, as and for the purpose set forth.

4. The combination, with the metallic lamp-mat having a clamp to secure it to a lamp-foot, of the match-boxes E, substantially as and for the purpose set forth.

297,215. KITE. WILLIAM C. WOOD, New York, N. Y. Filed Oct. 2, 1883. (No model.)

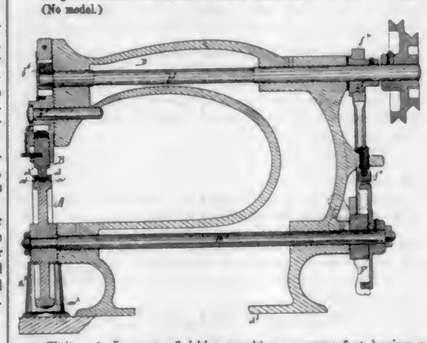


Claim.—1. A kite-frame consisting of a series of transverse and substantially parallel bars, and a series of distending-bars pivoted together at their ends and intermediately to the transverse bars, substantially as shown and described, whereby the frame is adapted to be folded together, or distended for use.

2. A kite composed of a folding frame consisting of a series of transverse and substantially parallel bars, and a series of distending-bars pivoted together at their ends and intermediately to the transverse bars, substantially as shown and described, means for holding the frame in distended position, and a covering of paper or other fabric, as and for the purpose described.

3. A kite-frame composed of a series of transverse and substantially parallel bars, a series of distending-bars pivoted together at their ends and intermediately to the transverse bars, a string or cord at each side of the frame secured to the transverse bars and extending from end to end of the kite, and means for holding the frame in distended position, all as and for the purpose described.

297,216. SEAM-FINISHING MACHINE. CHAS. WOODMAN, Chelsea, assignor of one-half to Charles S. Fifield, Boston, Mass. Filed Jan. 7, 1884. (No model.)



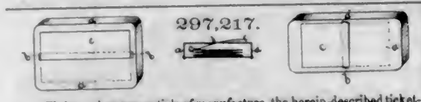
Claim.—1. In a seam-finishing machine, a presser-foot having a groove to receive and guide the seam, and two pressers, *d d'*, in combination with a rubbing-tool adapted to reciprocate between the two pressers, and a support for the stock or material, substantially as set forth.

2. In a seam-finishing machine, a rubbing-tool having two working-faces, one above the other, the higher face being located to act first on the seam, in combination with a presser-foot and support for the material, substantially as and for the purpose set forth.

3. In a machine for finishing a welted seam, a welt-trimming knife adjustable on its support, as described, and having its support detachably connected, in combination with seam-supporting devices, substantially as and for the purpose set forth.

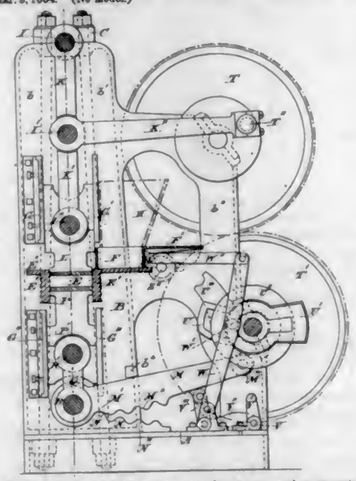
4. The improved seam-finishing machine hereinbefore described, consisting of the support, the double presser-foot, and the reciprocating tool for rubbing the seam, all arranged and combined substantially as set forth.

297,217. CASE FOR TICKETS. PHILIPS ABBOTT, Brooklyn, N. Y. Filed Feb. 12, 1884. (No model.)



Claim.—As a new article of manufacture, the herein-described ticket-holder, consisting of a box or case having a ticket-delivery slot or passage formed in the top or bottom thereof and substantially midway between those edges of the face which are parallel with said slot, whereby said case may hold a strip of tickets folded in zigzag form, with one-half of the ticket on the extremity of said strip projecting from said slot to facilitate its extraction, said projecting half being held substantially parallel with the surface of the case and contained within the boundaries thereof, as set forth.

297,218. BRICK-MACHINE. WILLIAM ANDRUS, Keokuk, Iowa. Filed Mar. 3, 1884. (No model.)



Claim.—1. In a brick-machine, one lever arranged to operate one or more brick-pressing plungers, and combined with a cam having in its circuit portions arranged to act upon such single lever and give through it to the plungers a series of actions to compress the brick, to move the brick slowly in the molds, to push the brick out of the molds, to hold the brick out of the molds for removal, and to draw the plungers back to the bottom of the molds again.

2. In a brick-machine, a lever arranged to operate one or more brick-pressing plungers, and provided with two or more fulcrums arranged for alternate action—one for use in pressing the brick, and one or more for pushing the brick out of the molds—and located nearer to the first or driving end of the lever.

3. In a brick-machine, the lever M, arranged to operate two or more plungers to compress the brick, and provided with fulcrums M' M'' between the driving and driven pivots, for use in alternate or serial order.

4. In a brick-machine, the combination of means to operate opposing sets of plungers to press the brick, such means consisting of a crank, pitman, and knuckle-jointed parts to operate one set of plungers, and of a cam and lever to operate the other set, the whole arranged to press the brick, and then by the same lever to push them out of the molds.

5. In a brick-machine having two wheels, T T', driven alike, for operating opposing sets of pressing-plungers, the combination of a crank and pitman and knuckle-jointed parts connecting from one wheel to one set of plungers, with a cam and lever connecting from the other wheel to the other set of plungers, the whole arranged so the cam and single lever will act both to compress the brick and then push them out of the molds.

6. The combination of the lever M, provided with two fulcrums for alternate use, and parts R Q R', with the knuckle-jointed parts arranged to operate opposing sets of plungers for compressing the brick.

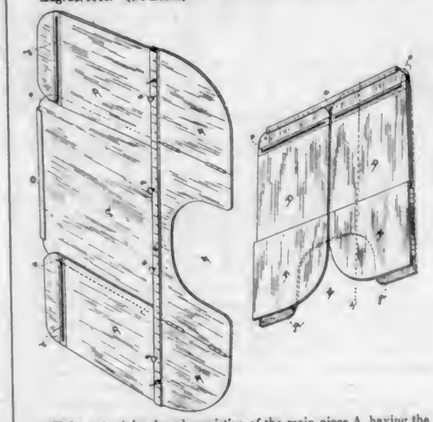
7. The combination of the lever M, provided with two fulcrums for alternate use, and parts R Q R', with the knuckle-jointed parts arranged to operate opposing sets of plungers, and so that the several joints between the joints I R will come into one straight line at the point of greatest pressure on the brick.

8. The improved process of making brick which consists in filling molds with pulverized clay and compressing it by opposing plungers moving together, then releasing the brick from pressure, and while so released moving them in the molds, then re-pressing the brick with a greater pressure than at first before discharging them from the molds.

9. The rock-shaft V, with its two arms, V' V'', combined with operating part U''', and arranged to move lever M to draw down the lower plungers.

10. In a brick-machine, the combination of mold filler-box F with its covered slideways and bent supporting-hangers, arranged substantially as and for the purpose set forth.

297,219. LAP-BOARD. ADAM L. ANTHONY, Placerville, Cal. Filed Aug. 22, 1883. (No model.)

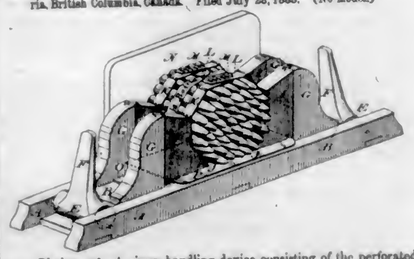


Claim.—1. A lap-board consisting of the main piece A, having the cut-out portion E, the corner-pieces B B, hinged thereto and adapted to be folded thereon, and the side leaves, D D, sliding upon the corner and main pieces, substantially as herein described.

2. The main piece A, having the upper and lower ways or guides, c and *a*, and the hinged lower corners, B B, having ways or guides *b*, continuing the line of guide *a*, in combination with the side leaves, D D, sliding in guides *b*, *c*, and *a*, arranged and operating substantially as herein described.

3. The main piece A, having upper and lower ways or guides, c and *a*, and the hinged lower corners, B B, having ways or guides *b*, continuing the line of guides *a*, in combination with the side leaves, D D, sliding in guides *b*, *c*, and *a*, and the means for directing and limiting their extension, consisting of the slots *d d'* in said side leaves, and the pins *e* in the main piece A, fitting through said slots, all arranged and operating substantially as herein described.

297,220. CIGAR-BUNDLING MACHINE. HENRY F. BEHNSEN, Victoria, British Columbia, Canada. Filed July 28, 1883. (No model.)

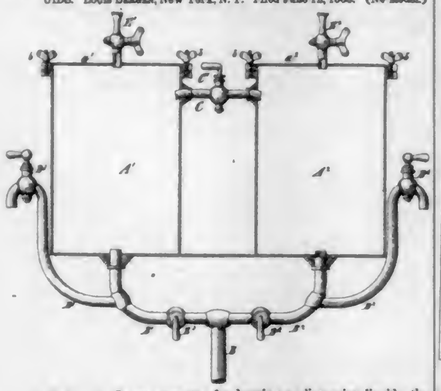


Claim.—1. A cigar-bundling device consisting of the perforated standards G, mounted upon horizontally-moving blocks B, and a means for causing them to approach to and recede from each other, consisting of the eccentric E, having a lever-arm, F, and spring D, coiled around the rod C, in combination with plates K and L, hinged to the tops of said standards, and hooks or latches, by which they may be united to hold the bundle while being compressed, substantially as herein described.

2. In a cigar-bundling device, the base A, provided with slots, and the slides B, perforated longitudinally, in which is supported central rod, C, having a spiral spring, D, whereby the blocks are forced apart, in

combination with the eccentric E, having the handle F, the perforated standards G, pin H, secured to the inwardly-beveled pieces I, provided with the inwardly-inclined extension J, the hinged jointed plates K and L, provided with hooks and notches, and the gage or stop plate N, all substantially as shown, and for the purposes described.

297,221. APPARATUS FOR DISPENSING AND DRAWING LIQUIDS. LOUIS BERGER, New York, N.Y. Filed June 12, 1883. (No model.)



Claim.—1. In an apparatus for drawing or dispensing liquids, the combination of two vessel or compartments, pipes leading to the vessels or compartments from a receptacle containing the liquid, a pipe or passage establishing communication between the two vessels or compartments, and provided with a valve or cock, and vents or gas-escapes in the upper part of the vessels or compartments, substantially as specified.

2. In an apparatus for drawing or dispensing liquids, the combination of the vessels A′ A², pipes B′ B², provided with cocks B³ B⁴, the pipe C, provided with the cock C′, the pipes D′ D², provided with cocks or faucets D³ D⁴, and the vents or gas-escapes E′ E², substantially as specified.

297,222. TRANSPOSITION KEY-BOARD FOR MUSICAL INSTRUMENTS. WILLIAM BOHRER, Montreal, Quebec, Canada, assignor to Walter Richard Elmesherst, same place. Filed Sept. 29, 1883. (No model.)



Claim.—1. In a transposition key-board, the combination of a stationary frame set over the key-board of the piano or organ, and carrying pins or bolts corresponding to the keys of the same, and a sliding-frame carrying keys acting, when struck, through said transmitting-pins in the stationary frame upon the keys of the key-board proper, all substantially as herein set forth, and for the purposes described.

2. In a transposition key-board, a bar carried in a frame separate from the key-board proper and set over it, said bar having even and level upper surface and carrying transmitting-pins normally not in contact with the keys of the sliding frame, all substantially as herein set forth, and for the purposes described.

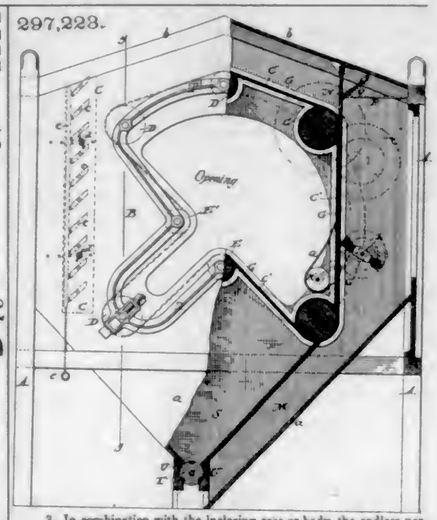
3. In a transposition key-board, the combination, with a rigid frame set over the same and separable therefrom, in which is carried intermediate transmitting mechanism, of a sliding bank of keys pivoted to a back piece or pieces attached to rear of such stationary frame, as and for the purposes set forth.

297,223. DUST-ARRESTING MACHINE. JOHN S. BRANDSTARTER, Liverpool, County of Lancaster, England. Filed Mar. 21, 1883. (No model.) Patented in England Nov. 17, 1882, No. 5,367, and in France Nov. 13, 1882, No. 152,136.

Claim.—1. In an air-purifying or dust-arresting machine, the combination of the endless belt of pervious material, a series of rolls sustaining the same, an inclosing case or body, and elastic packing closing the space between the edges of the belt and the interior surface of the body, substantially as described, whereby the leakage of air past the edges of the belt is prevented.

2. In a dust-arresting machine, the combination of an external case or body, an internal endless belt of pervious material, and flanges or ribs applied to the inner surface of the body and embracing the edges of the belt.

297,223.



3. In combination with the inclosing case or body, the endless pervious belt, flanges, or guides, between which the edges of the belt are carried, driving-chains applied to the edges of the belt, and elastic packing applied to the guides and acting against the belt, substantially as described, whereby the edges of the belt are carried uniformly and positively and the leakage of air past them prevented.

4. In a dust-arresting machine, an endless belt of pervious material, combined with a series of sustaining-rolls, the central roll at the upper end being located at a greater elevation than its companions, whereby the upper surface of the belt is given a downward inclination in both directions, as and for the purpose described.

5. In a dust-arresting machine, the combination of the endless belt of pervious material, the two external rolls, and the five internal rolls, arranged in the relative position described and shown.

6. In a dust-arresting machine, the combination of the endless pervious belt of flexible material, the receiver Q, having at its lower edge a scraper to act upon the belt, and the conveyer R, arranged as described, whereby the material adhering to the inner surface of the belt is detached and removed from the machine.

7. The external body or casing, in combination with the endless pervious belt, the spout M, to receive material from the rear side of said belt, and a valve, N, closing communication between said spout and the front of the apparatus.

8. In a dust-arresting machine, the combination of the external body, the internal endless pervious belt arranged to permit the passage of air from its exterior surface inward, and the rotary brush, arranged, as described, to act upon the exterior surface of the belt, and a chamber closed from communication with the inflowing air.

9. In combination with the body, the endless belt, and the supporting-rolls, the flanges or guides attached to the inside of the body, and following the inner surface of the pervious belt, and encircling the sustaining rolls or polleys, in the manner described and shown.

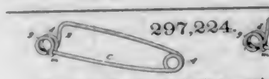
10. In a dust-arresting machine, the combination of the external case or body provided with openings in its sides, the internal belt encircling said opening, the belt-sustaining rolls, and external metallic frames, T′, each constructed complete of one piece, and applied to the outside of the body to sustain the journals of all the rolls on that side of the machine.

11. In a dust-arresting machine embracing an exterior case or body and an internal screen, a frame located in the mouth or inlet of said chamber and provided with a series of blades or deflectors, said frame being arranged and combined with means, substantially as described, adapted to permit its adjustment to different positions, whereby the series of deflectors, as a whole, may be adjusted to suit the different directions from which the air may enter the machine.

12. In a dust-arresting machine, the endless pervious belt and driving-chains attached to its edges, in combination with the supporting-roll, and with the sprocket-wheels concentric with said roll, the wheels having their pitch-lines outside of or beyond the periphery of the roll, as and for the purpose described.

297,224. SAFETY-PIN. WM. J. BROADBENT, Belleville, N.J. Filed May 19, 1883. (No model.)

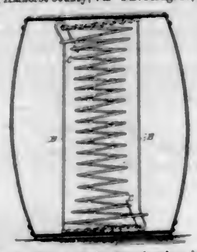
297,224.



Claim.—1. A safety-pin having a catch composed of two rings or coils, and a connecting portion, substantially as described, forming a bearing or rest on the rear of the coil for the pin when locked, and so formed that the point of the pin, when locked, will lie between two rings and be protected thereby, as set forth.

2. In a safety-pin, the combination of the part B, bent at right angles near its end, and then bent into two rings or coils side by side, and with the connecting bearing or rest *m* on the rear of the coil, a spring, A, and a pointed portion, C, adapted to be received between the said rings and locked in position by the bearing or rest *m*, as described.

297,225. VENTILATION OF BARRELS AND BOXES. JAMES WILLIAM BROOK, Amherst County, Va. Filed Aug. 17, 1883. (No model.)

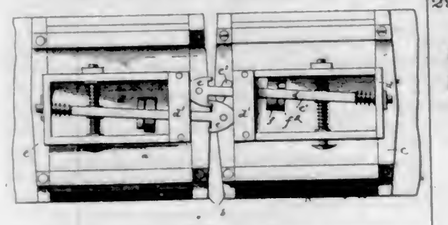


Claim.—1. The combination of a barrel or box in which some perishable article is to be packed with a spring which is placed therein, to allow air to circulate freely through the article, substantially as shown.

2. The combination of a barrel or box to be used in the packing of perishable articles with the spring which is placed therein, the ends of the spring being enlarged, substantially as described.

3. A coil to be used for the purpose specified, provided with large coils or circles at the ends, and provided with hooks or guards to prevent the coil from being extended too much, substantially as set forth.

297,226. CAR-COUPLING. DAVID BROWER and JAMES DUNLAP, Bowerston, Ohio. Filed Feb. 28, 1884. (No model.)



Claim.—1. In an automatic car-coupling, the combination, with the supporting-frame, of the laterally-operating coupling-head provided with the pivoted shifter-block and operating-wheel on the same shaft, the tension-spring, and mechanism for operating the same, substantially as specified.

2. In an automatic car-coupling, the combination, with the framing having the transverse bolt provided with coil-springs and washers, and the elongated slot in the rear piece of said framing, of the coupling-head having the arrow-head, the enlarged portion provided with the rectangular slots in which work the pivoted shifter-block and the operating-wheel on opposite ends of the same shaft, the shouldered stem, the coiled spring between the shoulder and the rear piece of the framing, the pin and washer for holding the head in place, and the chain and hand-wheel for operating the parts, substantially as specified.

3. In a car-coupling, the combination, with framing having the rear piece slotted rectangularly for the reception of the rear end of the coupling-head, and the transverse bolt passed through the sides of the framing and through the coupling-head, of the coupling-head provided with the arrow-head, the enlarged portion provided with the pivoted shifter-block and the operating-wheel on the same shaft therewith, at the opposite end thereof, the tension-spring for controlling the wheel and the chain leading therefrom, and mechanism for operating the same, substantially as specified.

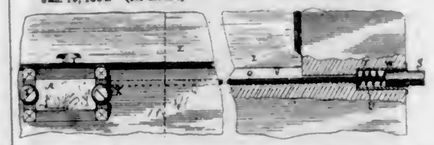
297,227. LEVELING AND PLUMBING INSTRUMENT. OLIVER H. P. BROWN, Clarksville, Ark. Filed Mar. 1, 1884. (No model.)



Claim.—1. In a combined plumb and level, the combination of set-screw *g*, working in threaded plate *h*, secured on the back of cup *b*, and bearing in its jewel *j* the lower end of pivot *e*, with set-screw *i*, working in a female screw in frame *d*, and bearing in its jewel *j* the upper end of pivot *e*, both adapted to work together, all substantially as shown, and for the purposes set forth.

2. In a combined plumb and level, the combination of set-screw *g*, working in threaded plate *h*, secured on the back of cup *b*, and bearing in its upper end the lower end of pivot *e*, with set-screw *i*, working in a female screw in frame *d*, and bearing in its lower end the upper end of pivot *e*, and face *c*, set in the bottom of cup *b*, weighted plumb *f*, and its finger, all substantially as shown and described, and for the purposes set forth.

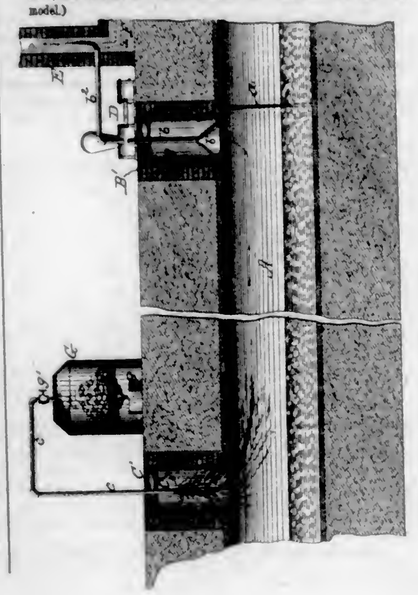
297,228. SASH-FASTENER. FRANCIS M. CASE, Denver, Colo. Filed Jan. 19, 1884. (No model.)



Claim.—1. In a window-fastening, a bell-crank, F, working on a fulcrum, B, a two-armed slide, D, arranged immediately over the fulcrum B, and having one of its arms engaging with the bell-crank F, in combination with a bolt, also engaging with the bell-crank, substantially as and for the purposes described.

2. In a window-fastening, a slide, D, having thumb-piece E, and a long and a short arm, the bell-crank F, having a stud, H, on which the short arm of the slide rests, and turning on a pivot arranged centrally under the slide, and a bolt connected to said bell-crank, in combination with a casing forming, with one of its sides and the central pivot, a guide for the slide, substantially as described.

297,229. DISINFECTING SEWERS. EDWARD Z. COLLINGS, Camden, N. J., and CHARLES F. PIKE, Philadelphia, Pa. Filed Mar. 12, 1883. (No model.)



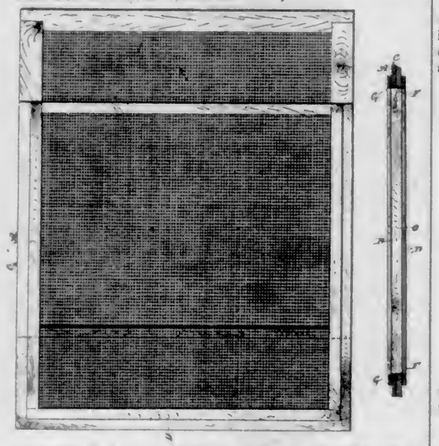
Claim.—1. The combination, with a sewer having man-holes, of a disinfecting apparatus consisting of a generator having a pipe extending into one man-hole, and a pump or exhaust placed at the other man-hole, substantially as described.

2. The combination, with a sewer having man-holes and a plate, *a*, of a disinfecting apparatus consisting of a generator having a pipe extending into the man-hole, and a pump or exhaust placed at the other man-hole, substantially as described.

3. In combination with a sewer, a gas-generator and suction appliances having pipe *b*, with flaring end *b'*, substantially as shown and described.

297,230. WINDOW-SCREEN. HOUSTON KENTON COTTON, Mount Vernon, Ohio. Filed Oct. 15, 1883. (No model.)

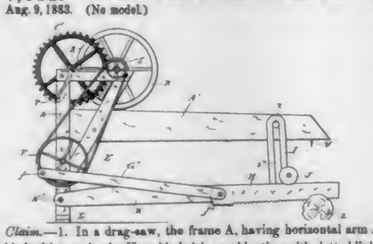
Brief.—An extensible window-screen formed of two parts, having metallic clips sliding in grooves and holding the two frames together, and having a barb projecting from the upper edge of the stationary part, which holds the frame in the window.



Claim.—1. The combination, in a screen, of the stationary part A, provided with the flange O at one end, and with a sharp point or projection upon its upper edge, for catching in the sash, with the movable part D, and the slides F, which are applied to the inner edges of the frames, so as not to interfere with the movement of the part D, the upper edge of which is beveled away, substantially as shown and described.

2. The combination, in a screen, of stationary part A, provided with the sharp points C, to engage with the sash or sill, and the movable part D, constructed and operating substantially as described.

297,231. DRAG-SAW. FRANK A. CRAWSHAW, Willshire, Ohio. Filed Aug. 9, 1883. (No model.)

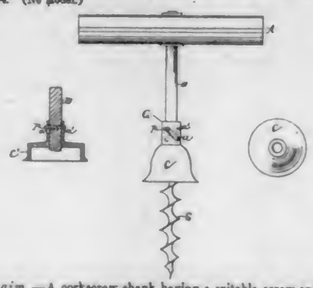


Claim.—1. In a drag-saw, the frame A, having horizontal arm A', provided with metal point U, and bolt *i*, in combination with slotted link I, pin I', pivoted arm K, and slide M, having vertical arm M', adapted to support the friction-roller J, as described, and for the purposes set forth.

2. In a drag-saw, the frame A A', spur-wheels C and Q, shaft B', fly-wheel B, pulley S, belt E, pulley F, and oscillating arm K, having slide M, provided with arm M', adapted to support friction-wheel J, in combination with pitman G, slide N, and saw H, as described, and for the purposes set forth.

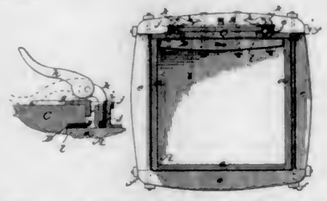
3. In a drag-saw, the slide M, having arm M', friction-roller J, slotted link I, and bolt *i*, in combination with slide N and saw H, as shown and described, and for the purposes set forth.

297,232. CORKSCREW. THOMAS CURLEY, Troy, N. Y. Filed Feb. 21, 1884. (No model.)



Claim.—A corkscrew-shank having a suitable screw and handle, and provided with a projecting stop, P, in combination with cap C, having a sleeve, G, adapted to loosely fit said shank, and provided with one or more slots or grooves, *a a'*, adapted to receive said stop, substantially as described, and for the purposes set forth.

297,233. CHURN. DAVID W. CURTIS, Fort Atkinson, Wis., assignor of one-half to Oscar S. Cornish, same place. Filed Aug. 1, 1883. (No model.)



Claim.—1. In combination with a churn-body and a cover applied thereto, an eccentric clamping-lever pivoted directly to an adjustable threaded stem, substantially as shown.

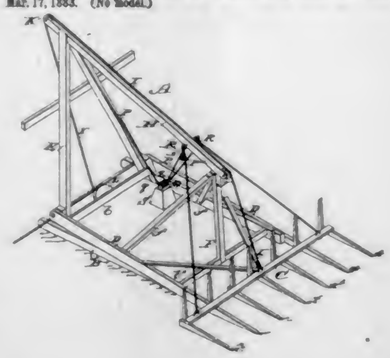
2. In combination with a churn-body, A, and a cover, C, applied thereto, adjustable clamping devices consisting of threaded sockets *j*, secured to the body, threaded stems *k*, screwed into said sockets, and eccentric levers *k*, pivoted directly to the stems *k*, substantially as shown.

3. The herein-described churn-body A, provided with opening *l*, outside braces or cross-bars, *e*, and inside braces or cross-bars, *m*, substantially as and for the purpose explained.

4. In combination with the churn-body A, the outside braces, *e*, inside braces, *m*, and bolts passing through the inside and the outside braces and the intermediate body, substantially as and for the purpose set forth.

5. In combination with a churn-body having an opening, *l*, cross-braces or supports *m*, applied to the inner face and firmly secured to the side or head in which the opening is made, whereby the side or head is prevented from warping.

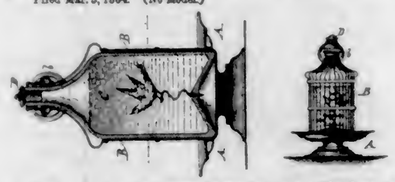
297,234. HAY-RICKING DEVICE. REES O. DAVIS, Milan, Mo. Filed Mar. 17, 1883. (No model.)



Claim.—1. The combination, in a hay-ricker, of the base B, the fork C, the arms D D, the uprights E F, the plate H, the rope I, the rope P P' P', the counter-balance S, the sheave Q, and the sheaves R R, substantially as described.

2. The combination, in a hay-ricker, of the base B, the fork C, the arms D D, the uprights E F, the plate H, the rope P P' P', the counter-balance S, and the sheaves Q and R R, substantially as described.

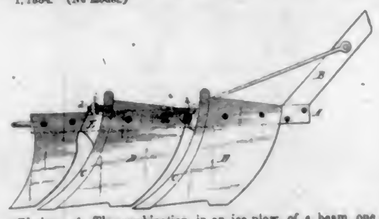
297,235. PERFUMERY-STAND. VINCENT DEKUTH, Brooklyn, N. Y. Filed Mar. 3, 1884. (No model.)



Claim.—1. A perfumery-stand formed of a supporting-base, a detachable wire body, B, a perfumery-bottle supported on the stand inside of the wire body, and means whereby the body is attached to the base, substantially as and for the purpose set forth.

2. The combination of a supporting-base, A, a wire body, B, having an opening in the top part, and a perfumery-bottle supported on the base in the wire body, the neck of said bottle being extended through the open top of the wire body and closed by an ornamental stopper or cap, substantially as set forth.

297,236. ICE-PLOW. HERMAN F. DERNELL, Athens, N. Y. Filed Mar. 1, 1884. (No model.)



Claim.—1. The combination, in an ice-plow, of a beam, one or more plates or supports, D, connected thereto and having forward curved edges, and cutter-bars C, with bearing-edges conforming to curves slightly greater than the edge bearings upon the supports, substantially as described.

2. The curved cutter-bars having their rear bearings upon the forward edges of supporting-plates having greater curves and secured to the beam, in combination with devices for bending the cutter-bars back against their bearings, substantially as described.

3. The combination of the cutter-bars and supporting-plates, the curve of the edges of the bars differing from that of the edges of the plates, and the bearings of the bars and plates having corresponding grooves and projections, substantially as described

4. The combination of the beam A, differently-curved cutter-bar C, wedge E, and means for forcing the latter between the rear inclined edge of the plate D and the edge of the cutter, substantially as described.

5. The combination of the beam A, plate D, having an inclined rear edge, curved cutter-bar C, wedge arranged between the rear edge of the plate and the adjacent cutter-bar, screw-pin *c* upon the wedge, and nut *d*, substantially as described.

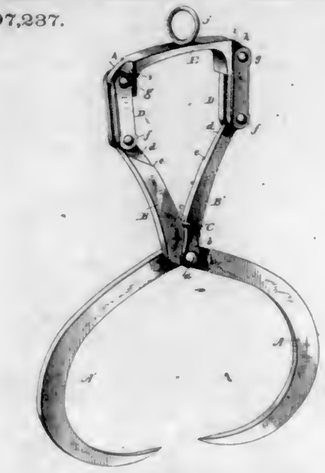
6. The combination of the plate D and bar C, one having a dovetailed edge rib fitting a corresponding groove in the other, substantially as described.

297,237. ICE-TONGS. JOHN S. DOLLINGER, Covington, Ohio. Filed Mar. 15, 1884. (No model.)

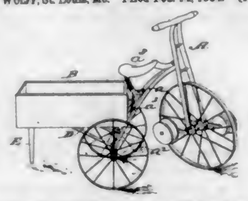
Claim.—1. The combination, in an ice-tongs or grapple, of jaws pivoted together by a pivot-bolt, *a*, and a yoke secured by said pivot-bolt and interposed between the extensions of said jaws above said pivot-bolt, substantially as and for the purpose set forth.

2. The combination, in an ice-tongs or grapple, of jaws pivoted together by a pivot-bolt, a yoke secured by said pivot-bolt, and interposed between extensions of the jaws above said pivot-bolt, the upper end of said extensions shouldered and tongued, a horizontal yoke shouldered and tongued, and connecting-links pivotally attached to said tongues and limited in their movement by said shoulders, substantially as set forth.

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297,238. VELOCIPEDE ATTACHMENT. FREDERICK J. W. DOPP and GEORGE WOLFF, St. Louis, Mo. Filed Feb. 14, 1884. (No model.)



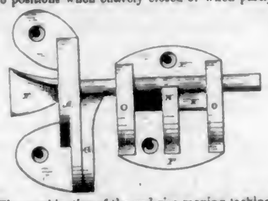
Claim.—1. The combination, substantially as described, of the velocipede A, the detachable seat B, and the hinged leg F.

2. The combination of the velocipede A, the seat B, and the leg E.

3. The combination, as described, of the velocipede A, having the rods *a' a'*, with the detachable seat having the hook C and braces D D.

297,239. LOCK FOR SLIDING DOORS. JAMES HENRY DOUGHERTY, Whistler, Ala. Filed Apr. 30, 1883. (Model.)

Brief.—By the construction claimed a sliding door may be locked in either of two positions when entirely closed or when partly open.



Claim.—The combination of the endwise-moving locking-bolt, provided with the locking-arm G, and the projection H, with the locking-frame A, and the support having a flange upon each of its edges, and a central flange, in between which flanges the projection H is made to catch, substantially as described.

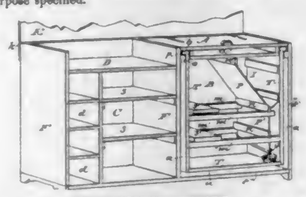
297,240. CUPBOARD. ALONZO DOW and LEWIS H. GORHAM, Wooster, Ohio. Filed Mar. 10, 1884. (No model.)

Claim.—1. In a cupboard, the combination, with the box B, open at the top, having lid A and supporting-strip *c*, of the removable inner box, T, provided with marginal rim *b*, forming with the box B the continuous dead-air space *a*, with the double wall, substantially as shown and described, and for the purpose specified.

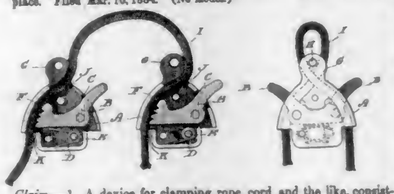
2. In combination with the inner box, T, the detachable ice-pan P, with condensing-sheet P', supporting-strips *m n*, and shelves *s'*, substantially as set forth.

3. In combination with the cupboard C and box B, the detachable shelves, constructed as shown—to wit, with back board E, double brackets *g*, and shelf H, the back board E arranged to form, with the brackets *g* and shelf H, the supporting-angles K and K', respectively, substantially as set forth.

4. In a cupboard, the combination, with cupboard-apartment C, of the refrigerator-apartment B, constructed as shown and described, and the detachable shelves provided with back board E, double brackets *g*, and supporting-angles K K', substantially as shown and described, and for the purpose specified.



297,241. CLAMP FOR ROPES, CORDS, &c. FREDERICK EGGE, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed Mar. 10, 1884. (No model.)

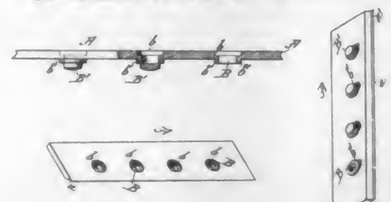


Claim.—1. A device for clamping rope, cord, and the like, consisting of two shells having pivoted therein spring-pawls, with heel ends projecting outwardly therefrom, said shells being provided with openings, as described, and having a pin or post between their forward portions, whereby the cord may be introduced from opposite sides of said post through said openings, and between the pawls and the sides of the shells, substantially as described.

2. In a clamp for cord, rope, and the like, the shells having pivoted therein pawls B, with their heel ends projecting through openings C in the shells, and with springs D, bearing against the lower portions of the pawls, said shells being provided with openings J K, for the passage of the cord, and with post H between their forward portions, substantially as set forth.

3. In a clamp for cord, rope, &c., the pawls arranged within the shells—one above the other—and adapted to secure the cords at opposite sides of the clamp, whereby said cord may be crossed and passed through the clamp without any abrupt bend, substantially as described.

297,242. TAB-PLATE FOR SAWS. JAS. E. EMERSON, Beaver Falls, Pa. Filed Mar. 10, 1884. (No model.)



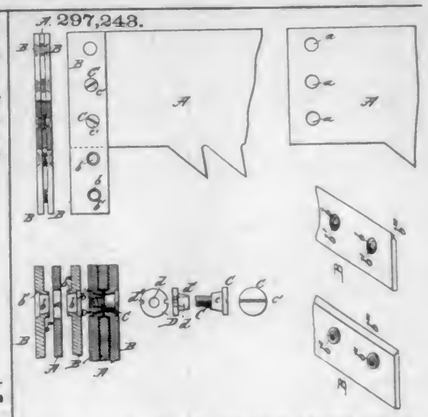
Claim.—The tab-plates A, as an article of manufacture, having rivet or screw holes B, countersinks *b*, inwardly-projecting flanges or rings *b'*, and beveled edge *a*, substantially as described.

297,243. SAW-TAB. JAS. E. EMERSON, Beaver Falls, Pa. Filed Mar. 10, 1884. (No model.)

Claim.—1. The tab-plates B B, having bolt-holes *b*, countersinks *b'*, inwardly-projecting flanges or rings *b''*, and beveled edges *b'''*, in combination with a saw-plate, A, substantially as and for the purposes described.

2. The combination of tab-plates B, having inwardly-projecting flanges *b''*, with a saw-plate, A, having holes *a* of such size that they

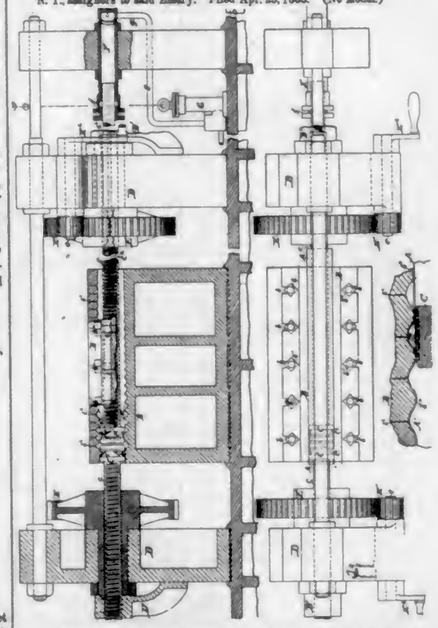
297,243.



fit over and around the flanges *b''*, which flanges alone receive and support the strain of the saw, substantially as described.

3. The combination of the screw-bolt C, having the neck *c*, and headed screw-nut D, having neck *d'*, with the tab-plates B, having holes *b* and the inwardly-projecting flanges *b''*, substantially as described.

297,244. METHOD OF AND APPARATUS FOR CORRUGATING TUBES. CHARLES E. EMERY, Brooklyn, and A. HENRY GENTNER, New York, N. Y., assignors to said Emery. Filed Apr. 25, 1883. (No model.)



Claim.—1. The method described of giving a desired form to metallic tubes, which consists in inclosing the tubes in a proper former, and then applying hydraulic pressure to the interior of successive sections of said tubes, as herein specified.

2. The method described of producing corrugations in tubes, which consists in inclosing the same in a former, and then applying hydraulic pressure to the interior of the successive lengths of such tubes, and allowing the uncorrugated portion to be drawn longitudinally to supply the material for the corrugations successively, as set forth.

3. As an apparatus for annularly corrugating tubes, the divisible form B *b*, and the removable fastenings *b'*, pistons C, operated singly or

together, to increase or diminish the capacity of the chamber, the pump G, for inducing a strong hydraulic pressure, and a passage, c^3, for conducting the water under pressure to the interior of the tube, all combined and arranged for joint operation, substantially as and for the purposes herein specified.

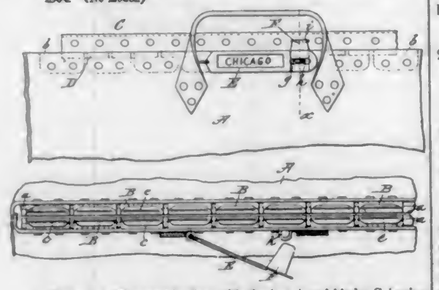
4. The divisible form B, having internal annular corrugations diminishing in depth toward one end, in combination with pistons C, operated singly or together, to increase or diminish the capacity of the chamber, means for introducing water under pressure, and means for inducing the gradual retreat of a piston C, all arranged to serve as herein specified.

5. The form B, having annular corrugations and vent-holes b^3, in combination with means for introducing hydraulic pressure in the interior of an inclosed tube, and pistons C, fitting tightly within the tube and operated singly or together to increase or diminish the capacity of the chamber, all substantially as and for the purposes herein specified.

6. The divisible form B *b*, with suitable fastenings therefor, the pump G, sleeve F, having stuffing-box *f*, the pistons C, operated singly or together to increase or diminish the capacity of the chamber, and gears E E', for moving the pistons, all combined and arranged to operate substantially as herein specified.

7. In a machine for shaping tubes, the duplicate pistons C, and means for introducing and operating them, in combination with a divided form, B, and suitable fastenings, means for introducing hydraulic pressure in the space between the pistons, and means for allowing the pistons to move apart while the pressure is on, all substantially as and for the purposes herein specified.

297,245. MAIL-BAG FASTENING. MARTIN V. B. ETHERIDGE, Boston, assignor of one-half to Henry E. Waite, Newton, Mass. Filed Mar. 10, 1884. (No model.)



Claim.—1. The combination, with the bag A and binder C, having slot *i*, of the hasp E, provided with a lug, F, for entering said slot, and means for securing the hasp, substantially as described.

2. The combination, with the bag A, having strips *a a* within its mouth, and flanged locking-ways B B, attached thereto, the mouth of the bag being extended above said strips to cover the sides of the locking-ways, of a flexible binder, C, having hood *f* and locking-ways D D, substantially as described.

3. The combination, with the bag A, having strips *a a*, secured within its mouth, of the flanged locking-ways B B, supported by said strips and provided with lips *c c* and swells *e e*, and the flexible binder C, having locking-ways D D, substantially as described.

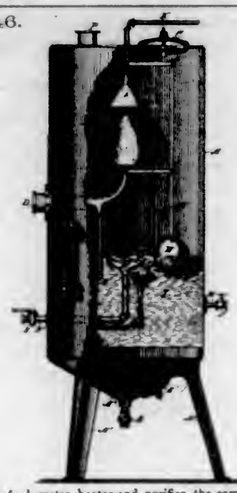
4. The combination, with a mail-bag having flanged locking ways or plates B B and staple A, and a binder, C, provided with flanged locking-plates D D and slot *i*, of the hasp and tag-holder E, having slot *g* and lug F, and means for securing the hasp, substantially as described.

297,246. FEED-WATER HEATER. ROLAND G. EWER, Brooklyn, N. Y., assignor to Ella L. Ewer, same place. Filed Sept. 27, 1883. (No model.)

Claim.—1. A feed-water heater and purifier constructed substantially as herein shown and described, consisting of shell A, provided with blow-off cock and man-holes, upward-curving bell-mouthed steam-pipe D, water-supply pipe K, provided with conical nozzle and water-distributer, water-pipe valve adapted to be adjusted by connection with a ball-float, float H, and valve-connecting rods, skimming-pan and pipe, and hot-water-delivery pipe, all arranged and operating substantially as set forth.

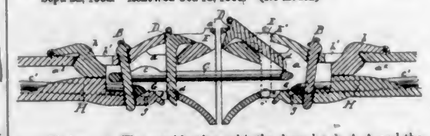
2. In a feed-water heater and purifier, the combination, with the steam-pipe D, having a bell-mouth opening upward in the vertical axis of the heater, of the water-pipe K, having a conical nozzle opening downward over the mouth of the said steam-pipe, substantially as herein shown and described, whereby the steam and the supply-water may be brought into more intimate contact, as set forth.

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3. In a feed-water heater and purifier, the combination, with the steam-pipe D and water-pipe K, opening opposite each other, of the drop-pipe D', substantially as and for the purpose described.

297,247. CAR-COUPLING. GEORGE FORBES, New York, N. Y. Filed Sept. 22, 1883. Renewed Oct. 13, 1883. (No model.)



Claim.—1. The combination, with the draw-heads A A and the sharp-pointed coupling-link C, weighted at the inner end, so as to adapt it to remain in a horizontal position while in the act of coupling, of the L-shaped loose gravitating catch-block D, the pin or widened part *d*, and of the peculiar-shaped openings E *e* and the shoulders E' *a'*, adapted to sustain the catch-block D and to cause it to be automatically lifted from its normal position and its upper end slid forward and downward along the bed or bearing formed by the slot E when acted upon by the coupling-link C, and they are also adapted to prevent the catch-block D from falling out of the draw-head, substantially as described.

2. The combination, with the draw-head A and with the interior chamber a^2 and weighted reserve link C', of the inclined groove G, adapted to allow the forward end of the link C' to sink flush with the bottom of the interior chamber of the draw-head, and of the cushion F, whereby the rear end of the link is elevated, substantially as described.

3. The combination, with the draw-head A and with the interior chamber a^2 and weighted reserve link C', of the inclined groove G, adapted to allow the forward end of the link C' to sink flush with the bottom of the interior chamber of the draw-head, of the stay H and openings *g*, and of the cushion F, as and for purpose specified.

4. The combination, with the draw-head A and with the interior chamber a^2 and weighted reserve link C', of the inclined groove G, adapted to allow the forward end of the link C' to sink flush with the bottom of the interior chamber of the draw-head, of the stay H, pivoted block *h*, and slot *h'*, substantially as described.

5. In a draw-head, A, the combination, with the forward interior chamber *a* and rear chamber a^2 and reserve link C', of the stay H and pivoted block *h*, forming a closed partition between the chambers *a* and a^2, being thereby adapted to prevent a link from entering too far and to allow the reserve link C' to be withdrawn, as described.

6. The combination, with a draw-head, of the pivoted block or stay *h* and the slot *h'*, substantially as and for the purpose described.

7. The combination, in a draw-head, A, with a weighted link, C, of the stay H, pivoted block *h*, inclined groove G, reserve link C', and pin B, adapted to prevent any longitudinal movement of the link C, substantially as set forth.

8. The combination, in a draw-head, A, with a chamber, *a*, and loose gravitating catch-block D, and pin *d*, of the slots or openings E and *e*, with widened portions E^2 and e^2 at their entrance into the chamber, as described.

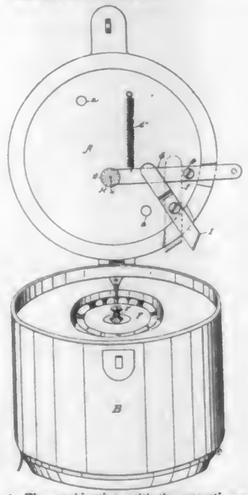
9. The draw-head A, constructed with the interior chambers *a* and *a*², and with a widened open throat, whereby the top of the draw-head is left thick, the sides and bottom being thin, its front face also having beveled edges, as and for the purpose set forth.

10. The combination of the bar N, lever M, brackets O', and plate O, substantially as described.

11. The combination, with the bar N and crank N', of the lever M, brackets O', and plate O, substantially as set forth.

12. The combination, with the draw-head A and loose gravitating catch-block D, of the bar N, chain *n'*, lever M, and eyes *n*, as specified.

297,248. **AUTOMATIC TIME-REGISTER.** GAY. W. FOSTER, New York, N. Y. Filed Feb. 8, 1883. (Model.)

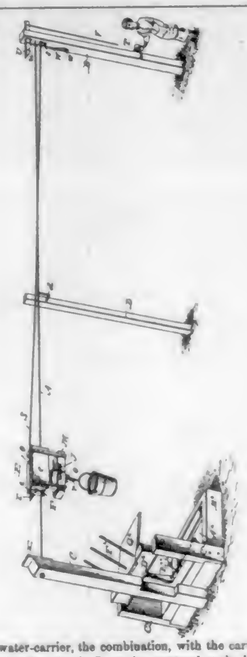


Claim.—1. The combination, with the operating mechanism of a clock or other time-piece, of a recording-dial mounted on the rear end of the hour-hand shaft and revolving therewith, and a lever provided with a pencil-point or marker, so arranged that said point or marker shall rest upon and press against the face of the recording-dial and produce a continuous record thereon of the times and time at which the lever is moved or operated, substantially as shown and described.

2. The combination, with a clock or other time-piece provided with an ordinary dial, and a secondary or recording dial mounted on the rear end of the hour-hand shaft, of a lever, G, provided with marking or indicating means arranged to record continuously upon such secondary dial, and a check or stop lever, I, substantially as and for the purpose set forth.

3. A clock or time-piece provided with a secondary recording-dial mounted as described, a marking-lever so arranged as to continuously record upon the secondary dial, and a check or stop lever, I, in combination with a door-knob or other door-operating means, and suitable connecting mechanism, substantially as and for the purpose set forth.

297,249. **WATER ELEVATOR AND CARRIER.** ROBERT J. FOSTER and JOHN W. COLLIE, Viola, Ark. Filed June 25, 1883. (No model.)



Claim.—1. In a water-carrier, the combination, with the carriage E, of the T-shaped pivoted latch, provided with hooks i i^2 at one end and with a shank, J, curving outward at the bottom, so as to connect with an extension of clasp L, said clasp consisting of two pivoted arms curved to fit around the conical block O, substantially as set forth.

2. In a water-carrier, the combination, with the wire or cable A, the plate *x*, secured to post C, and the latch U, pivoted to post B, and adapted to catch over a notch, *t*, formed in one end of the carriage, of the carriage E, having the T-shaped latch I pivoted therein and provided with hooks i i^2, the shank J, carving outward at the bottom, so as to connect with an extension of clasp L, said clasp consisting of two connected pivoted arms, the frame M, suspended from the carriage and formed with an opening, *m*, the rope S, and conical block O, to which the rope is attached, said parts arranged and operating substantially as shown and described.

3. In a water-carrier, the combination, with the carriage E, of the latch I, formed with a shank, J, carving outward at the bottom, and a clasp fitted within a recess in the lower frame, M, and provided with an extension, *l*, said shank connecting with said extension, as set forth.

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4. In a water-carrier, the combination, with the carriage E, of the latch I, formed with a shank, J, carving outward at the bottom, a clasp, L, fitted within a recess of frame M, and formed of two pivoted arms connected together, one arm being free at one end, and an extension, *l*, formed on one of said arms, said shank connecting with said extension, as set forth.

5. In a water-carrier, the combination, with the carriage E, formed in sections *e e*, of the latch I, working in a groove between the sections, a frame, M, suspended by bars from the carriage and provided with an opening, *m*, a clasp, L, fitted within a recess in said frame and covered by a guide-board, Q, a conical block, O, adapted to pass through the opening *m* in the frame to an opening in the guide-board, and a shank, J, of latch I, connecting with an extension, *l*, of the clasp, for the purpose set forth.

6. In a water-carrier, the combination, with the carriage E, formed with a notch, *t*, and provided with a T-shaped latch pivoted therein, the shank of said latch connecting with a clasp below said carriage, of a latch, U, pivoted to a post near the house, said latch formed with a hook adapted to catch in the notch *t*, and serving by its weight to elevate the T-shaped latch, for the purpose set forth.

7. A latch pivoted to a post near the house, and provided with a hook at one end adapted to catch in a notch, *t*, in the carriage, said latch serving by its weight to elevate a T-shaped latch journaled in the carriage, and thereby release the bucket, as set forth.

8. In a water-carrier, the well-door journaled in a frame above the well or cistern, operating devices connecting with said door, and having an extension and a series of fingers, said extension being operated by the descent of the bucket and the fingers by the ascent of the bucket, as set forth.

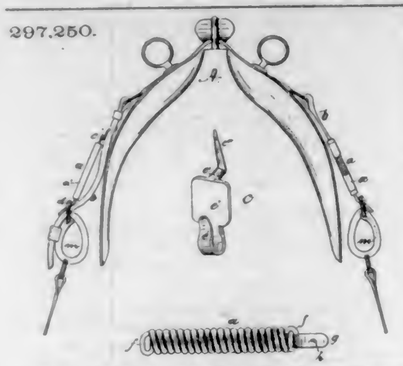
9. In a water-carrier, the combination, with the well-door journaled in a frame above the well or cistern, of a board pivoted to standards erected on said frame, a series of fingers projecting from the board, an extension depending at or about right angles to the said board, and means for connecting the well-door and board together, for the purpose set forth.

10. The combination, with the conical block O, of a clasp for retaining the same, consisting of two pivoted arms connected together, one of said arms being free and the other being connected with the operating mechanism, as set forth.

297,250. **HARNESS-SADDLE.** ALVAH W. FRASER, Newark, N. J. Filed Aug. 15, 1883. (No model.)

Claim.—1. In a harness-saddle, a hook or catching device adapted to receive and hold the spring, said spring *c*, billet *g*, and buckle *d*, all arranged and operating in combination with the back-band *b* and tug-loop *m*, as set forth.

297,250.

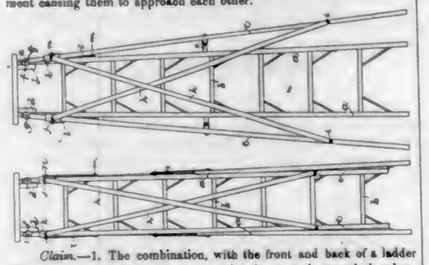


2. In combination, the saddle A, back-band *b*, spring *c*, provided with covering *a'*, adjustable support *c*, having the supporting portion *e*, extension *e'*, portion *e''*, and prolongation *e'''*, the billet *g*, buckle *d*, and tug-loop *m*, all arranged and operating in combination as set forth and shown.

3. In a harness-saddle, the combination of the back-bands *b*, tug-loops *m*, and springs *a*, secured at one of their ends to the tug-loops and at their opposite ends to the back-bands, substantially as shown and described.

297,251. **LADDER.** CHARLES FREELL, Boston, Mass. Filed Feb. 16, 1884. (No model.)

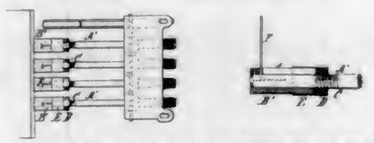
Brief.—Consists of front and rear standards hinged together at the top, and provided with jointed stay-rods, and mechanism whereby the rear standards are moved apart laterally when closed, a reverse movement causing them to approach each other.



Claim.—1. The combination, with the front and back of a ladder hinged together at the top and adapted to be opened out and closed together, of mechanism constructed and arranged to automatically expand or spread the standards of the back in a lateral direction when opened out from the front, and to automatically contract or draw together said standards when the front and back are closed together, substantially as specified.

2. The combination, with front standards, *a a*, and back standards, *c c*, hinged together and provided with stay-rods *s*, of sleeves *k*, rods *l*, and braces *h*, all arranged to operate substantially as specified.

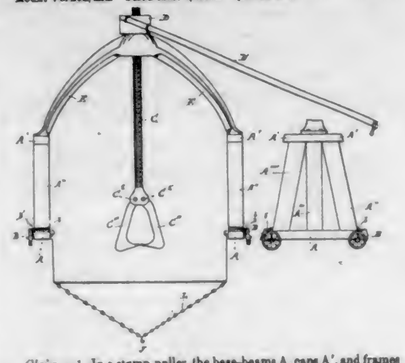
297,252. **STOP-MOTION DEVICE FOR SPOOLING-MACHINES.** JOHN GARNER, Philadelphia, Pa. Filed Mar. 27, 1883. (No model.)



Claim.—1. The combination of the detector-lever A, provided with screw-threads C, with the nut D and india-rubber tube or tip B', substantially as and for the purpose specified.

2. The combination of the india-rubber tube or tip B' and metal sleeve E with the lever A, provided with screw-threads C and nut D, substantially as and for the purpose shown and described.

297,253. **STUMP-PULLER.** GEO. M. GRABERT and THOS. J. DEVORE, Mount Vernon, Ind. Filed Mar. 4, 1884. (No model.)

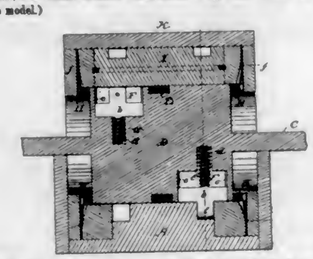


Claim.—1. In a stump-puller, the base-beams A, caps A', and frames A'' A''' A'''', secured to each other by arch-piece E, in combination with screw-rod C, having hooks C''' attached thereto, and nut D, having lever D', as described, and for the purposes set forth.

2. In a stump-puller, in combination with base-pieces A, caps A', frames A'' A''' A'''', arch-piece E, and screw C, having hooks C''', nut D, and lever D', the adjustable wheels B, as described, and for the purposes set forth.

3. In a stump-puller, the combination of base-beams A, having stops H, pawls A, and boxes *b*, with elbow-axles B'' B' and wheels B, substantially as described, and for the purposes set forth.

297,254. **ROTARY ENGINE.** GEORGE L. GRIFFIN, WILLIAM AURELIUS SHOUP, and JAMES ROBERT CADE, Harrisburg, Tex. Filed Dec. 15, 1883. (No model.)

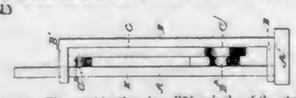


Claim.—1. In a rotary engine, a piston or cylinder formed with a chamber or pocket, F, having one of its walls vertical and the other inclined, in combination with a sliding valve fitted therein and adapted to be thrust outward by means of a spring, substantially as and for the purpose set forth.

2. In a rotary engine, the combination, with the casing formed on its inner periphery with grooves constituting steam-passages, a revolving piston provided with chambers or pockets to which are fitted spring sliding valves and a cut-off with inclined spring-arms, substantially as and for the purpose set forth.

3. The improved rotary engine herein described, consisting, essentially, of the casing formed with steam-passages, revolving piston, and divided into two sections by means of the packing-ring, and provided with spring sliding valves fitted into pockets thereof, end packing-rings, cut-off with spring-arms arranged on opposite sides thereof, and arranged within the steam-passages of the casing, and cap-plate, with induction and eduction ports.

297,255. **LIFTING-JACK.** JOHN B. HALBERT, Maitland, assignor of one-half to Edward R. Trofford, Sanford, Fla. Filed Feb. 23, 1884. (No model.)



Claim.—1. The combination, in a lifting-jack, of the standard, the elevating-frame, and the eccentric, substantially as and for the purposes set forth.

2. In a lifting-jack, the base provided with a standard and the elevating-frame movable vertically on said standard, combined with the elevating-eccentric, arranged and operating substantially as and for the purposes set forth.

3. In a lifting-jack having a standard and elevating-frame, the eccentric having its ring pivotally secured to one of said parts and its disk pivoted eccentrically to the other, substantially as set forth.

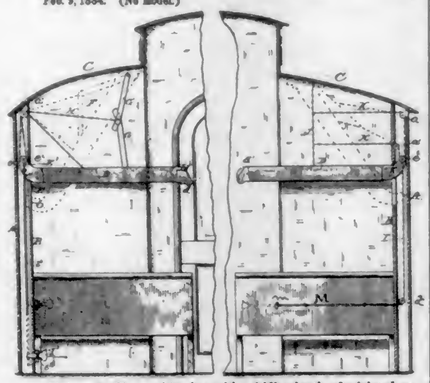
4. In a lifting-jack, the combination, with the standard, of the elevating-frame having its horizontal arms slotted to fit said standard, and the eccentric, substantially as set forth.

5. The combination, substantially as herein described, of the base provided with a tapered or inclined mortise, A^3, and having a standard, as described, the elevating-frame having horizontal arms and provided on its lower side with a foot fitted to said slot A^3, and the eccentric, substantially as and for the purposes specified.

6. The herein-described lifting-jack composed of the base, the standard mounted thereon, the elevating-frame, the eccentric-ring pivoted to the standard, and the disk pivoted to the elevating-frame and provided with a lever-socket and lifting into the eccentric-ring, substantially as set forth.

7. In a lifting-jack, the combination of the base, the standard mounted on the base, the elevating-frame having its horizontal arms secured and movable vertically on the standard, the eccentric-disk pivoted on the elevating-frame, and the ring fitting over said disk and having the upper end of its rod or bar bent at right angles and journaled in the standard, substantially as set forth.

297,256. FOLDING BERTH. HENRY S. HALE, Philadelphia, Pa. Filed Feb. 9, 1884. (No model.)



Claim.—1. The combination, with a folding berth, of a jointed supporting-link pivoted at its lower end to the berth, a support for the upper end of the link, a chain connected at one end to the jointed link, and means for pulling the chain toward the vertical plane of the inner edge of the berth, substantially as set forth.

2. The combination, with a folding berth, of a jointed link pivoted at its lower end to the berth, a support for the upper end of the link, and means for moving the central part of the link toward the vertical plane of the inner edge of the berth, substantially as set forth.

3. The combination, with a folding berth, of a jointed link pivoted at its lower end to the berth, means for supporting the upper end of the jointed link, means for supporting the inner edge of the berth, and permitting it to rise and fall, and means for moving the central part of the jointed link toward the vertical plane of the inner edge of the berth, substantially as set forth.

4. The combination, with a folding berth, of a jointed link attached at its lower end to the berth, a support for the upper end of the link, a support for the inner edge of the berth which permits it to rise and fall, a chain connected at one end to the jointed link and at its opposite end to the inner edge of the berth, and a pulley for supporting the chain between its ends, substantially as set forth.

5. The combination, with a folding berth, of a jointed link connected at its lower end to the berth, a support for the upper end of the link, a support for the inner edge of the berth, a chain connected at one end to the jointed link and at its opposite end to a weight, and a pulley for supporting the chain between its ends, substantially as set forth.

6. The combination, with a folding berth, of a jointed link connected at its lower end to the berth, a support for the upper end of the link, a chain connected at one end to the jointed link and at its opposite end to the inner edge of the berth, a pulley for supporting the chain between its ends, a rising and falling weight, and a chain connecting the weight with the jointed link, substantially as set forth.

7. The combination, with a folding berth, of a jointed link, a chain connected at one end to the berth, at its opposite end to the jointed link, and at its doubled end to the inner edge of the berth, and a pulley for supporting the chain between its doubled ends and its ends which are attached to the jointed link and berth, substantially as set forth.

8. The combination, with a folding berth, of a jointed link pivoted at its lower end to the berth, means for supporting the upper end of the jointed link, means for supporting the inner edge of the berth, and means for moving the central portion of the jointed link away from a line which intersects the pivot at the lower end of the link and the point at which the link is attached to the partition at the end of the berth, substantially as set forth.

9. The combination, with a folding berth, of a pivotal support between its outer and inner edges, the vertical link I, connected with the inner edge of the berth, and devices for locking the vertical link in position to hold the berth in its inclined position, substantially as set forth.

10. The combination, with a folding berth having end rails projecting through the inner wall of the car, of a pivotal support between the outer and inner edges of the berth, and a locking mechanism connected to the end of a side rail between the inner and outer walls of the car, for locking the berth in a horizontal position, substantially as set forth.

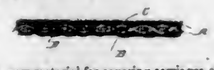
11. The combination, with a folding berth having end rails projecting through the inner wall of the car, of a pivotal support between the outer and inner edges of the berth, a longitudinal rod supported at its end in the end rails, between the outer and inner walls of the car, a vertical bar, I, connected to the longitudinal rod, and the locking-latch I', substantially as set forth.

12. The combination, with a folding berth, of a pivotal support between its outer and inner edges, and a locking mechanism connected with its inner edge to lock the berth in a horizontal position, substantially as set forth.

13. The combination, with a folding berth, of pivotal supports between its outer and inner edges, and a locking mechanism connected with its inner edge and adapted to lock the berth in a horizontal position, and also in an inclined position, substantially as set forth.

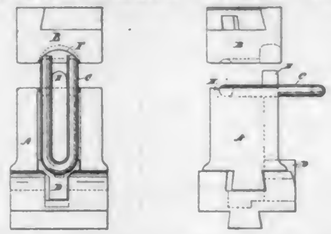
297,257. MATERIAL FOR COVERING CARRIAGES. EDWARD W. HARRAL, Fairfield, Conn. Filed Mar. 21, 1884. (No model.)

Brief.—Improvement on the invention in Letters Patent No. 280,309, dated June 26, 1883.



Claim.—A new material for covering carriages and analogous uses, consisting of a cotton fabric having upon one side a facing of wool, which is forced into the interstices of the threads, and upon the opposite side a facing of water-proof material, which enters said interstices, taking firm hold both on the threads and the back of the facing, substantially as described.

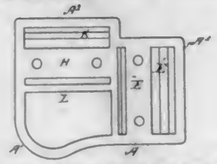
297,258. APPARATUS FOR MAKING RINGS, COUPLING-LINKS, &c. SILAS HARRIS, San Francisco, Cal. Filed Oct. 30, 1883. (No model.)



Claim.—1. An apparatus for forming rings, links, &c., consisting of a bottom die channeled upon its front vertical face and upon its horizontal face, and having the arch E between the sides of the vertical channel, in combination with a top die having an arched face in line above the vertical channel of the lower die, and a horizontal channel corresponding with the horizontal channel of the lower die, substantially as herein described.

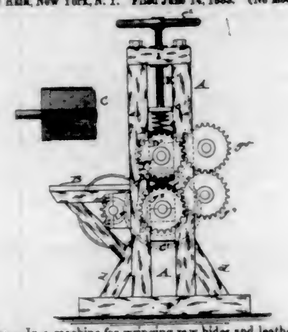
2. An apparatus for forming links, rings, &c., consisting of a lower die channeled upon its front vertical face and upon its horizontal face, and having a shallow supplemental chamber, H, around the curved channel in the horizontal face, in combination with an upper die having a vertical arch corresponding with the vertical channels of the lower die, and a horizontal channel which registers with that of the lower die, substantially as herein described.

297,259. HALTER-FASTENER. MICHAEL C. HATER, Boston, Mass. Filed Jan. 7, 1884. (No model.)



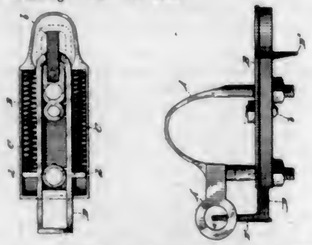
Claim.—In a halter, a metallic fastener cast in one piece, consisting of the line-bars A' A^2 A^3, the fastening-bars E and H, and the retaining-bars K, L, and E', all arranged to operate together substantially as described, and for the purpose set forth.

297,260. MACHINE FOR WRINGING RAW HIDES AND LEATHER. ANTON REIN, New York, N. Y. Filed June 14, 1883. (No model.)



Claim.—In a machine for wringing raw hides and leather, the rolls C and D, in combination with friction-coverings consisting of ropes wound around said rolls, mechanism for operating said rolls, and a supporting-frame, substantially as described.

297,261. THILL-COUPLING. SAUNDERS HURRELL, Jr., Mount Vernon, Ohio. Filed Aug. 11, 1883. (No model.)



Claim.—1. In a thill-coupler, the combination, with a suitable clip having a chambered base provided with a cover, B', of the spring-actuated slide D, provided with projections D' D^2, substantially as set forth.

2. In a thill-coupler, the combination, with a clip and a suitable shaft-eye, of a spring-actuated slide adapted to hold the shaft-eye against its bolt, and the spring b', all of the above parts combined and adapted to operate as described.

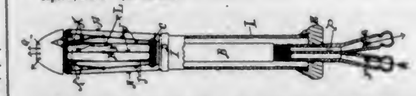
3. The combination, with the clip and shaft-eye, of the chambered clip-tie B, the stop or catch b', the slide D, provided with arms d, and the springs C, all of the above parts combined and adapted to operate as described.

297,262. BOX-FASTENER. THOMAS HUMPHREYS, Salford, County of Lancaster, England. Filed Nov. 12, 1883. (Model.) Patented in England Sept. 6, 1883, No. 4,292.



Claim.—In a fastening for baskets, cases, and other articles, a slotted tube attached to the cover of the basket, in combination with hooks attached to the body of the basket and adapted to enter said slots, a movable rod arranged within said tube and adapted to engage by partial rotation with said hooks, and a locking device which prevents said rod from moving after engaging with said hooks, substantially as set forth.

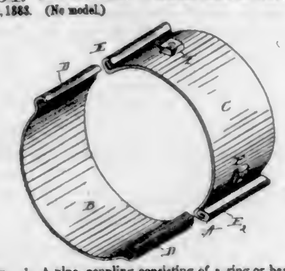
297,263. SYRINGE. JOHN BINGHAM HUNT, Delaware, Ohio. Filed Apr. 2, 1883. (No model.)



Claim.—1. In a vaginal syringe, two concentric tubes, B I, in combination with hand-nut E, collar C, adjustable arms J J, shoulders M M, braces K K, and diaphragm H, whereby an adjustable dam or reservoir is produced within the vagina, substantially as specified.

2. In a vaginal syringe, the combination, with two concentric tubes, B I, nozzle A, and pipes F G, of hand-nut E, collar C, adjustable arms J J, shoulders M M, braces K K, and diaphragm H, substantially as specified.

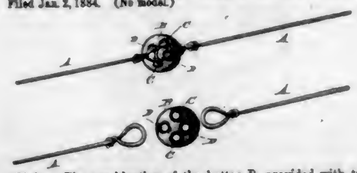
297,264. PIPE-COUPLING. THEODORE HUNT, St. Louis, Mo. Filed Nov. 6, 1883. (No model.)



Claim.—1. A pipe-coupling consisting of a ring or band comprising two parts or sections formed of elastic material, one of said sections being provided at its ends with inturned book-shaped flanges, and the other section being provided at its ends with outturned flanges, re-enforced by bending the metal of the flange upon itself, said inturned and outturned flanges being adapted to engage each other when said ring or band sections are sprung together, substantially as specified.

2. A pipe-coupling comprising two half rings or bands provided at their ends with suitable catches adapted to engage each other when the said sections are sprung together, one of the said sections being provided on its outer side, near its ends, with studs or projections, substantially as and for the purpose set forth.

297,265. CHECK-ROW WIRE. WILLIAM F. JOHNSON, Sterling, Ill., assignor to George S. Tracy and Thomas A. Galt, both of same place. Filed Jan. 2, 1884. (No model.)

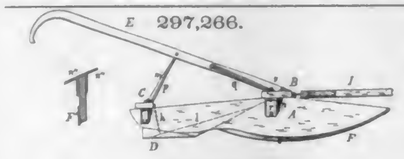


Claim.—The combination of the button B, provided with two or more holes through its disk, and the sections A A, the ends of such sections being looped together, and the central portion of such button being interposed between the engaging ends of such sections, substantially as shown, and for the purpose described.

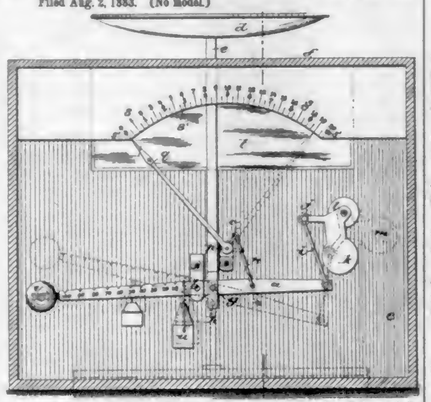
297,266. POTATO-COVERER. FRANK G. JUNEY, Victor, N. Y. Filed Jan. 24, 1883. (No model.)

Claim.—The combination, with the mold-boards A A', provided with shares F F', of the cross-bars B and C, and the yielding coverer D, formed of sheet metal of suitable thickness, and having its rear edges extended laterally beyond the mold-boards, substantially as and for the purposes specified.

297,266.



297,267. PENDULUM-SCALE. HENRY CLAY KEELER, Ogden, Utah. Filed Aug. 2, 1883. (No model.)

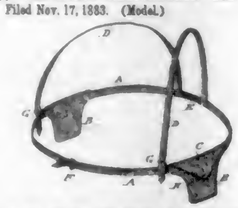


Claim.—1. The combination, in a weighing-scale, of the weigh-beam *a*, having the multiplying-weight *u*, balance-weight *v*, and pendulum-weight *k*, and the supporting-bar *o*, having the scoop *d*, and the platform-lever connecting extension *h*, substantially as described.

2. In a weighing-scale having the pointer *q*, for recording the weights on a dial, the said dial having separate dial-scales for the scoop and platform, in combination with a double weigh-beam, substantially as described.

3. The weigh-beam *a*, journaled in the main frame, the weight *k*, journaled in the frame at *l*, and provided with arm *j*, and the rod *i*, connecting-arms *a* and *j*, in combination with the index or pointer *q*, independently journaled in the frame, and provided with the crank-arm *o* and the rod *w*, connecting arm *o* with arm *a*, as and for the purpose specified.

297,268. TRAVELER'S TREASURE-BELT. ADA H. KEPLEY, Effingham, Ill. Filed Nov. 17, 1883. (Model.)



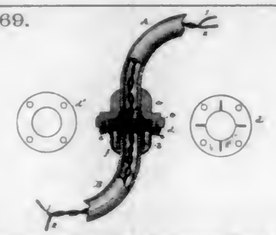
Claim.—A belt for carrying money or other valuables, consisting of a yielding belt or band adapted to be secured around the body, provided with pockets, as described, and having shoulder-straps, the belt or band provided with buckles, whereby the belt and straps may be adjusted, all substantially as set forth.

297,269. ELECTRIC-LIGHT FIXTURE. PHILIP H. KLEIN, Jr., New York, N. Y., assignor to Bergmann & Co., same place. Filed Dec. 12, 1883. (No model.)

Claim.—1. The combination of a jointed or swinging bracket having open wireways through its joints and continuous flexible electrical conductors extending through said bracket from end to end, substantially as set forth.

2. The combination of a jointed or swinging bracket having open wireways through its joints and two continuous flexible separately-insulated electrical conductors extending through said bracket from end to end, substantially as set forth.

297,269.



3. The combination of a jointed or swinging bracket having open wireways through its joints, continuous flexible electrical conductors passing through said bracket from end to end, and means for preventing the bracket-arms from making a complete revolution, substantially as set forth.

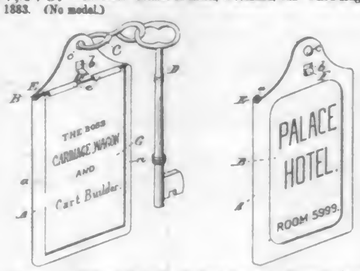
4. In an electrical swinging bracket, the combination of two parts, one turning within the other, and the flexible plate holding them together, substantially as set forth.

5. In an electrical swinging bracket, the combination of the cap on one part, the flanged sleeve on the other, fitting into said cap, and the flexible plate holding them together, substantially as set forth.

6. The combination of the cap forming one side of the joint, the sleeve turning therein, forming the other side, and the shell *f*, covering said sleeve, substantially as set forth.

7. In a swinging bracket containing continuous flexible electrical conductors extending through the bracket from end to end, the tubes of the bracket extending from the ends of the joints, substantially as set forth.

297,270. KEY-TAG. FRANK A. KNOX, Woodland, Cal. Filed Aug. 27, 1883. (No model.)



Claim.—1. In a tag, the plate A, having an open center and guides *a* on its side edges, adapted to receive a card, the inscription of which may be exhibited through its open center on its outer side, in combination with the plate E, adapted to fit within the guides *a* of plate A, and to hold a second card between itself and said guides, whose inscription is exhibited on the opposite side of the tag, substantially as herein described.

2. In a tag, the plate A, having an open center and guides *a* on its side edges, adapted to receive a card, in combination with the plate E, having the top guides, *c*, said plate being adapted to fit within the guides *a* of plate A, and to receive a card on its outer side, under its guides *c*, and hold it between itself and said guides, substantially as herein described.

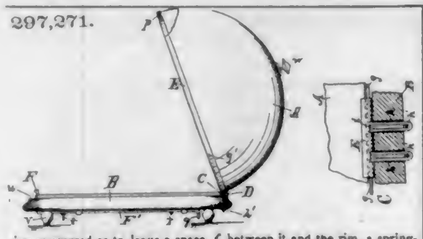
3. In a tag, the plate A, having an open center and guides *a* on its side edges, adapted to receive a card, in combination with the plate E, having top guides, *c*, and a tongue, F, adapted to fit through a hole, *b*, in the head of plate A, whereby said plate is secured, said plate being fitted within the guides *a*, and adapted to receive a card on its outer side, under its guides *c*, and hold it between itself and said guides, substantially as herein described.

297,271. SHOW-CASE. DANIEL E. LADD and ELIJAH J. E. WHITAKER, Baltimore, Md. Filed June 23, 1882. Renewed Mar. 19, 1884. (No model.)

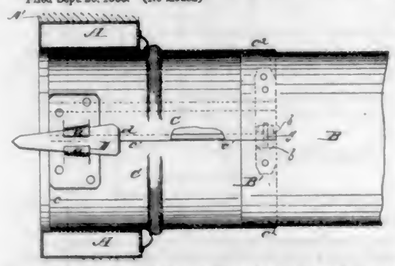
Claim.—1. In a show-case, the combination of a base, B, a half-spherical glass shade provided around its rim with a metal binding, a hinge attached to the said binding and base, a spring which tends normally to raise the shade, and a catch-hook which holds the shade when down, and which is provided on the under side of the base with means for its release, as set forth.

2. In a show-case, the combination of the glass shade provided around its rim with a metal binding having openings *i*, the binding being so secured as to leave a space, *f*, between it and the rim, a spring-wire having loops *h*, the ends of the wire occupying the space, and the loops projecting through the aforesaid openings, and a base having holes *k*, through which pass the said loops, which are rigidly secured, as and for the purpose set forth.

297,271.



297,272. STOVE-PIPE CONNECTION. GODFRIED LAUBE, Huron, Dak. Filed Sept. 26, 1883. (No model.)



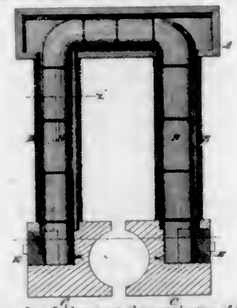
Claim.—1. An expansible stove-pipe connection provided at opposite ends with mechanism for contracting and expanding said ends, respectively, substantially as set forth.

2. An expansible stove-pipe connection provided with mechanism on the inside thereof at one end for expanding said connection, and with mechanism on the other end outside of said connection for contracting it, substantially as set forth.

3. The stove-pipe connection C, having its edges overlapped, as at *c c'*, and provided on its inside, near one end, with brackets *a*, and wedge D, for expanding that end of said connection, and with a device at its opposite end, outside of the connection, for contracting that end of said connection.

4. The connection C, constructed substantially as described, with the loose joint *c'*, the ears *a a*, and lugs *b b*, and adapted to receive the wedge D, and the bolt *g* and nut *g'*, and to be attached to the thimble A or to the chimney-aperture, and to receive and be attached to the stove-pipe B, as set forth.

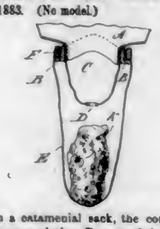
297,273. FIELD-MAGNET FOR DYNAMO-ELECTRIC MACHINES. JOHN W. LAWSON, Harrison, N. J. Filed Nov. 16, 1883. (No model.)



Claim.—1. In a field-magnet, the combination of the hollow yoke A, tubular cores B, pole-pieces C, and wire bundle D, and clamps for binding the said wire bundle to the pole-pieces C, as specified.

2. In a field-magnet, the combination, with the wire bundle D and pole-pieces C, of a clamp for binding the said wire bundle to the pole-pieces.

297,274. CATAMENIAL SACK. CHARLES H. LEVY, New York, N. Y. Filed Sept. 26, 1883. (No model.)

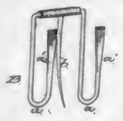


Claim.—1. In a catamenial sack, the combination, with an apertured piece, A, and grooved piece B, secured thereto, of the spring-frame F, carrying the sack E, and removably secured to the grooved frame B, substantially as shown and described, whereby said sack can readily be removed, cleansed, and replaced without removing the other parts of the device from the wearer, as set forth.

2. In a catamenial sack, the combination, with the apertured piece A, of the frame B, secured to the same, the pouch or sack E, and the spring-frame F, secured to the pouch E, and provided at one end with a notched head, H, and at the other end with a prong or projection, G, substantially as herein shown and described.

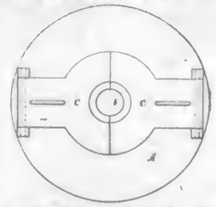
297,275. NECKTIE-FASTENER. WILLIAM L. LINDER, Burlington, Iowa. Filed Dec. 31, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 289,670, dated December 4, 1883.



Claim.—An improved neck-tie fastener, consisting of the two upright or vertical hooks *a a*, adapted to be hooked over the collar, and the rearwardly-projecting hinged pin *b*, for attachment to the cravat, all substantially as hereih set forth.

297,276. GLASS LAMP-FOUNTAIN. GEORGE HENRY LOMAX, Somerville, Mass. Filed Jan. 16, 1884. (No model.)



Claim.—1. A lamp-fountain consisting of a ring and a body united by casting or forming the body in a mold against the said ring previously laid therein, all being substantially as set forth, the said ring being to constitute a lip extending around and projecting above the top of the body, as explained.

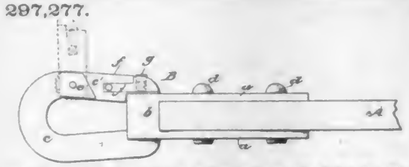
2. The process substantially as described of making a glass lamp-fountain with a lip or drip-flange, such consisting in first making a ring of glass and inserting it within the upper part or mouth of a mold having a cover or covers recessed peripherally, as described, to receive such ring, and next placing the said cover or covers within the ring, so as to cover its upper edge, and blowing within the mold and against the lower edge of the glass ring in a sufficiently-heated state the glass to constitute the body of the fountain, such ring being thereby united to the body, as specified.

297,277. HAME-CLIP. CHARLES W. MASSENHEIMER, Allentown, Pa. Filed Feb. 25, 1884. (No model.)

Claim.—1. The hame-clip herein shown and described, formed of the plates *a*, bridge *b*, and hook *c*, made in one piece, and the hinged closing-tongue *f*, arranged for closing the entrance to the hook *c*, substantially as described.

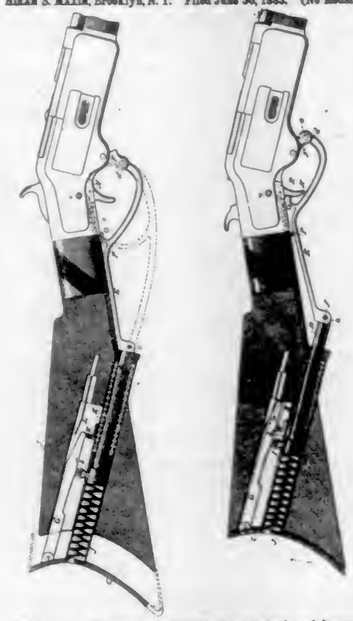
2. In a hame-clip, the closing-section *f*, hinged to the end of the hook *c*, and provided with the catch-hook and spring *j i*, in combina-

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tion with notched pin or stud *g*, formed upon one side of the clip, substantially as and for the purposes set forth.

297,278. MECHANISM FOR OPERATING GUN-LOCKS BY RECOIL. HIRAM S. MAXIM, Brooklyn, N. Y. Filed June 30, 1883. (No model.)



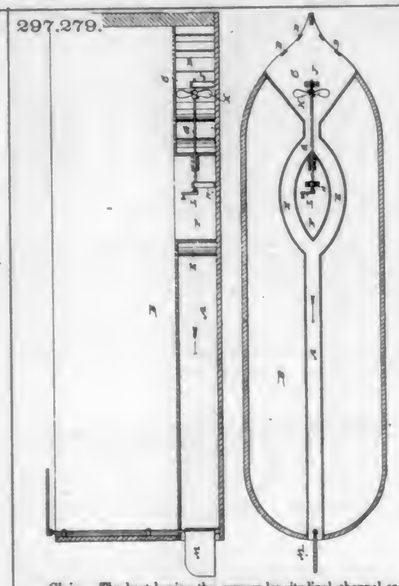
Claim.—1. The combination, with the gun-stock and hammer-operating lever F, of the bolt D, arranged in a passage in the stock, the rod E, connecting said bolt with said hammer-operating lever, the shoulder-plate C, supported by a suitable guide, the spring J, having one end bearing against said plate and the other against the end of bolt D, a spring arranged to force said bolt in opposition to said spring J, a latch for holding plate C compressed to the butt of the stock, and a device operated by the kick or rebound of the gun for releasing said latch, substantially as described.

2. The combination, with the hammer-operating lever F, trigger N, and pin P, connected with the trigger-stop, of the shoulder-plate C, the latch G, connected thereto, the stationary catch H, the bolt D, carrying a trip for releasing said latch, the spring J, arranged between the bolt and shoulder-piece, spring K, arranged to drive the bolt rearwardly, and the combined guard and connecting-rod E, pivoted at its front end to the trigger-operating lever and at its rear end to the bolt, and provided intermediately with the projection O, arranged to strike the rear side of the trigger when the rod is thrown forward and to press inward the trigger stop-pin when it is drawn rearward, the whole arranged, as shown, in connection with the stock of a gun of the kind described.

3. The combination, with the movable shoulder-plate C, connected with the hammer-cocking lever of a gun, as described, of a latch arranged to hold said shoulder-plate to the position for cocking the hammer, and a device operated by the rebound of the gun for unlatching said plate, substantially as described.

297,279. CANAL-BOAT. ANGUS MCDONALD, Ausable, Mich. Filed Feb. 6, 1884. (No model.)

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Claim.—The boat having the narrow longitudinal channel or tunnel in its lower surface, with a widened front end protected by a screen or bars, the said channel or tunnel curved laterally on each side of a central chamber and extending throughout the length of the boat, in combination with the propeller and its shaft, with its forward end supported in the widened portion of said tunnel, and its other end provided with means for its operation and supported in the aforesaid central chamber, as shown and described, and for the purpose set forth.

297,280. METHOD OF FORMING FELT BOOTS, SHOES, &c. DANL. F. MERRER, Baltimore, Md., assignor to the Marine Shoe Company, Kenne bunk, Me. Filed Feb. 4, 1884. (No model.)



Claim.—1. As an improvement in the art of forming felt boots, shoes, &c., the cylindrical woolen bat, as set forth.

2. As an improvement in the art of forming felt boots, shoes, &c., the cylindrical woolen bat in which the staple is crossed upon itself, as set forth.

3. As an improvement in the art of forming felt boots, shoes, &c., the method which consists in, first, forming the sliver into a cylindrical bat; second, cutting such bat on the line *x x*; third, cutting said bat on the line *u u*; fourth, hardening the blank thus formed, bringing the edges *b b* together, and then felting, &c., all as described.

4. As an improvement in the art of forming felt boots, shoes, &c., the method which consists in, first, forming the sliver into a cylindrical bat in which the sliver crosses itself; second, cutting such bat on the line *x x*; third, cutting such bat on the line *u u*; fourth, hardening the blank thus formed, bringing the edges *b b* together, and then felting, &c., all as described.

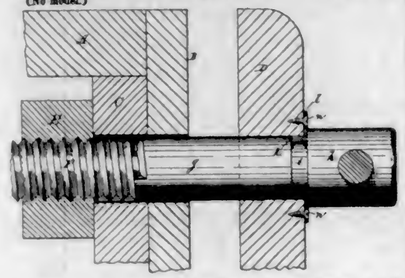
297,281. UMBRELLA AND PARASOL RIB. ABNER T. MEYER, New York, N. Y. Filed Sept. 11, 1883. (Model.)



Claim.—1. As an improved article of manufacture, a hollow umbrella-rib re-enforced at its outer end by a bar, as specified, and provided on its said outer end with a bead, C, and flattened portion D, having an eye passing through both the rib and bar, as set forth.

2. The herein-described improvement in the method of finishing the ends of hollow umbrella or parasol ribs, consisting in placing a wire in the end of the rib, pressing the outer end of the rib together, flattening and upsetting the wire and the rib, and then perforating the flattened rib and wire, substantially as herein shown and described.

297,282. CARPENTER'S VISE. JOHN F. MILLER, Pittsburg, Pa., assignor of one-half to Walter E. Hague, same place. Filed Sept. 10, 1883. (No model.)

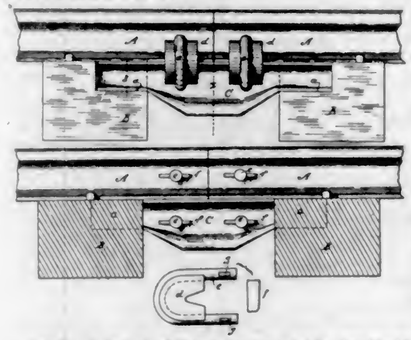


Claim.—1. In a carpenter's vise, the combination, with the jaw D, of the screw F, having shank *g*, groove *i*, and head A, and the two-part metallic sleeve *k*, having flange *l* secured to said jaw, substantially as described.

2. The combination of the nut E, screw F, having head A, and groove *i* next to said head, and metallic sleeve *k*, having flange *l*, said sleeve fitting in groove *i*, and said flange being constructed, substantially as described, for attachment to a vise-jaw, as set forth.

297,283. RAILWAY-RAIL JOINT. RICHARD PEERE MORGAN, Jr., Dwight, Ill., assignor to the Morgan Rail-Joint Company, same place. Filed Dec. 1, 1883. (No model.)

Brief.—The sub-rail having reduced or flattened ends is secured to the main rails by ⊓-staples and jaw-pieces, and suitable securing devices to hold the latter to the former.



Claim.—1. The sub-rail C, having its bearing ends reduced or flattened, substantially as described.

2. The jaw-piece *d* and separate ⊓-staple *e*, encompassing the same, the ends of said staple being provided with suitable fastening means, whereby in co-operation the track and sub rails may be securely clamped together, substantially as set forth.

3. The combination, with the track-rails and cross-ties, of the sub-rail having reduced ends, the jaw-piece to receive the webs of said track and sub rails, the separate staple, and the fastening devices, (wedge-keys,) substantially as set forth.

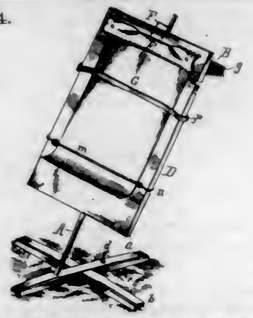
4. The combination, with the track-rails and cross-ties, of the sub-rail having reduced or flattened bearing ends, and the clamping devices for securely holding said rails together, substantially as set forth.

297,284. PAPER-HOLDER. ISAIAH S. MUDGETT, Princeton, Minn. Filed Jan. 31, 1884. (No model.)

Claim.—1. The combination, in a paper-supporting device, of a rod having a clamp and rear cross-bars perforated for the passage of a rod, the lower end of which is adapted to engage either an inclined or vertical recess in the base, and a base having said inclined and vertical recess, substantially as set forth.

2. The combination, in a paper-supporting device, of a pad having

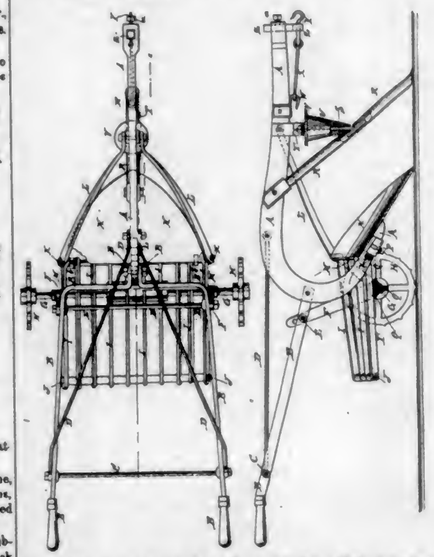
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the upper and lower cross-bar secured to its rear face perforated for the passage of a rod mounted in a base, the said upper cross-bar being recessed at its ends to form a projection to retain one end of a spring which is attached to the center of a curved cross-bar on the upper front face of the pad and provided with a lug, substantially as set forth.

3. The combination, in a paper-supporting device, of a pad arranged and constructed as described, and having the rear cross-bars perforated for the passage of a rod mounted in the base, and a spring secured at the rear of the pad and bearing frictionally against the said rod, substantially as set forth.

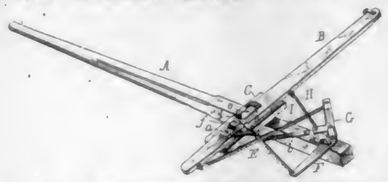
297,285. POTATO-DIGGER. HANS NELSON, Waupaca, Wis. Filed Jan. 4, 1884. (No model.)



Claim.—1. In a potato-digger, the combination, with the beam and the scoop connected to its rear downwardly and inwardly curved end, of the clearer, with its forward curved bar supported in the lower end of the beam and in lugs on the rear bottom portion of the scoop, and connected to the divergent ends of bars fastened at their convergent ends to the beam, and the clearer-vibrating cams or wings on the axle of supporting-wheels, substantially as and for the purpose set forth.

2. In a potato-digger, the combination of the beam, the scoop, the curved clearer supported at its forward end in the lower end of the beam and in lugs on the rear bottom edge of the scoop, and connected to the divergent ends of bars fastened to the beam, the handles, with their right-angled portions connected to the beam, and the axle having the clearer-vibrating cams and the axle-supporting bars connected to the forward bar of the clearer and to the handles, substantially as and for the purpose set forth.

297,286. DRAFT-EQUALIZER. CHRISTIAN OLSON, Granite Falls, Minn. Filed Jan. 31, 1884. (No model.)

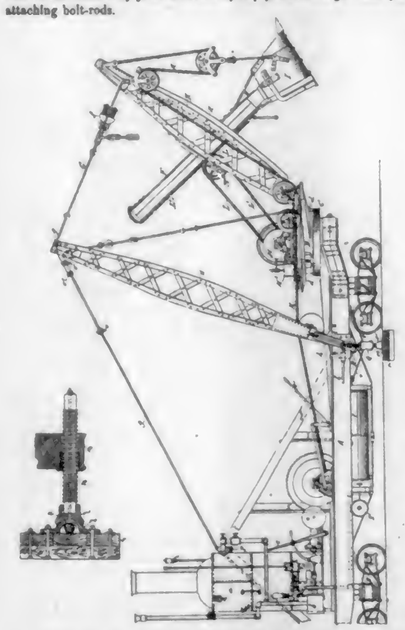


Claim.—1. The combination, in a draft-equalizer, of a bar suitably pivoted and designed to receive the whiffletrees, and intermediate devices, adjustable as described, substantially as and for the purpose set forth.

2. The combination, in a draft-equalizer, of a bar suitably pivoted and designed to receive the whiffletrees, intermediate devices, adjustable as described, and containing the flexible rods E I, substantially as set forth.

297,287. EXCAVATOR AND DREDGE. RALPH R. OSGOOD, Albany, N. Y., assignor, by mesne assignments, to the Osgood Dredge Company, same place. Filed Feb. 14, 1883. (No model.)

Brief.—The dipper-handle is thrust and returned by chains run around sheaves to a drum mounted with its engine on the turn-table. The lift-chain runs to a drum with its engine on the main frame. The boom is supported from a hinged A-frame bearing, through bracing-rods, on lateral arms on the truck, which carry jack-screws with broad foundation-blocks universally jointed thereto by cap-plates, through which pass attaching bolt-rods.



Claim.—1. In a dredging or excavating machine, the combination of a main engine with its adjuncts, a hoisting-drum with operative connecting mechanism, a turn-table having mounted thereon an independent engine and a drum for a dipper-thrusting chain, a boom supporting a dipper-handle carrying a dipper, a hoisting-cable, and an A-frame with connecting means leading to the boom, substantially as described.

2. In a machine of the class described, the combination, with a turn-table having mounted thereon a driving-engine and a drum operated directly by said engine, of the boom provided with the intermediate sheaves, M M', and dipper-handle, with the chains L L' passing over and around the said sheaves and drum, the combination and mode of operation being substantially as described.

3. In a machine of the character herein set forth, having an A-frame for sustaining the boom, the combination, with the platform, of the side arms for receiving the jack-screws, and the inclined braces connecting the A-frame and the side arms, substantially as and for the purposes set forth.

4. The combination, as before set forth, of the platform, the A-frame mounted thereon, the side arms connected with the platform at or near the bases of the A-frame, the inclined braces connecting the A-frame and side arms, and the jack-screws passing through the outer ends of said arms, substantially as and for the purposes explained.

5. The combination of the jack-screw mounted in the side arm, the broad foundation therefor, provided with a suitable cap, and the connecting-rod passing through the body of the screw and secured at top and bottom, substantially as shown and described.

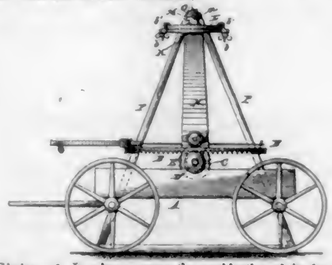
6. In a machine of the class described, the combination, with the body of the machine, having side arms through which are passed jack-screws, of the A-frame, having bracing-rods connected to the jack-stay arms, substantially as described.

297,288. CORN-SHELLER. HARVEY PACKER, Rock Falls, assignor to Thomas A. Galt and George S. Tracy, both of Sterling, Ill. Filed Jan. 2, 1884. (No model.)



Claim.—In a corn-sheller, the combination of the stationary partitions C and the intermediate separating and carrying chains, B, said chains consisting of open links and projecting spurs, the apices of the partitions being above the plane of the links of the chains and below the points of the spurs, substantially as and for the purpose set forth.

297,289. PORTABLE HORSE-POWER. HARVEY PACKER, Rock Falls, Ill. Filed Mar. 14, 1884. (No model.)



Claim.—1. In a horse-power, the combination of the frame A, a post or posts, H, disk K, and plate L, the plate L being adjustable in a horizontal plane, substantially as shown, and for the purpose described.

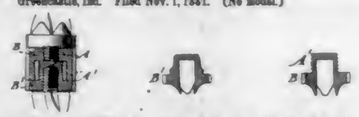
2. In a horse-power, the combination of the frame A, a post or posts, H, and the vertical shaft G, the latter being suitably journaled to and supported by such post, substantially as shown, and for the purpose specified.

3. In a horse-power, the combination of the frame A, post or posts H, disk K, plate L, bolts *b*, and shaft M, substantially as shown, and for the purpose named.

4. In a horse-power, the combination of the wheel B, pinions C, independent shafts D, bevel-wheels E, pinion F, and shaft G, substantially as shown, and for the purpose described.

5. In a horse-power, the combination of the support P, shaft M, provided with the collars *d*, and the plate L, substantially as shown, and for the purpose mentioned.

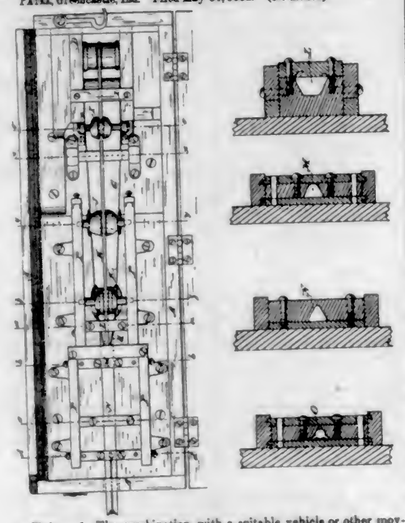
297,290. COUPLING FOR LIGHTNING-RODS. THEODORUS H. PATEK, Greencastle, Ind. Filed Nov. 1, 1881. (No model.)



Claim.—1. The lightning-rod joint consisting of the dovetailed tenons on the ends of the rod-sections, in combination with the coupling-pieces B B', provided with screw-threads, and with projecting portions for clasping the ends of the rod, as shown and described.

2. The lightning-rod joint consisting of threaded tenons as shown, in combination with the internally-threaded coupling-pieces of larger diameter than said tenons, whereby the coupling-pieces are adapted to fit loosely on said tenons and to be secured, as described.

297,291. PORTABLE LIGHTNING-ROD MACHINE. THEODORUS H. PATEK, Greencastle, Ind. Filed May 31, 1882. (No model.)



Claim.—1. The combination, with a suitable vehicle or other movable support, of the frame or box A, lightning-rod-forming mechanism, and the wire-core-straightening mechanism, substantially as described.

2. The combination of the dies for forming the sheet-metal covering with the rolls or guides for straightening and directing the wire core rigidly secured to a frame or box in compact form, as hereinbefore set forth.

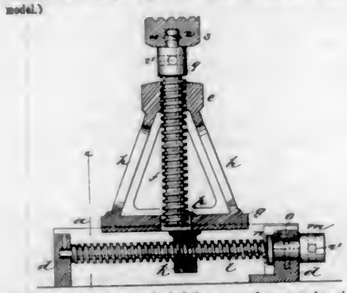
3. The wire straightening and guiding rolls, in combination with the formers arranged in rear thereof, whereby the guide-rolls perform the double function of guiding and straightening the core-wire, and partially forming the copper covering, substantially as described.

4. The peculiar form of the die shown at Fig. 7, substantially as and for the purpose set forth.

5. The peculiar form of the die shown at Fig. 8, substantially as and for the purpose set forth.

6. The peculiar form of the die shown at Fig. 9, with the three radial slots for forming the wings of the rod, and a central orifice for the passage of the core, substantially as set forth.

297,292. LIFTING-JACK. ERICK J. QVARNSTROM, Norway, assignor to himself and John E. Hagey, Vulcan, Mich. Filed Mar. 3, 1884. (No model.)

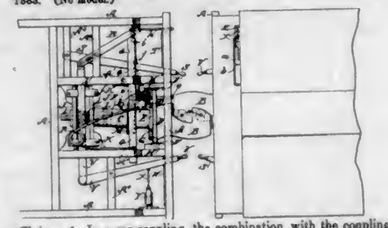


Claim.—1. The nut *e* for the hoisting-screw *f*, supported on the base-plate *g*, having rabbet-grooves *i* in the bottom, fitted to the sides *a* of the bed-frame, and having the nut *k*, in combination with the screw *l*, fitted in said nut and in bearings of the end pieces, *d*, of the bed-frame, substantially as described.

2. The nut *e*, legs *h*, and the base-plate *g*, constructed in one integral piece, and combined with the hoisting-screw *f*, adjusting-screw *l*, and the bed-frame *a d*, substantially as described.

3. The nut-supporting bed-plate *g*, fitted to the sides *a* of the bed-frame by rabbet-grooves *i*, in combination with end pieces, *d*, of said bed-frame, fitted to allow the bed-plate to slide over them, said bed-plate being connected with the adjusting-screw *l*, substantially as described.

297,293. CAR-COUPLING. EDWARD L. RAYNSFORD, Susquehanna, assignor to himself and John R. Raynsford, Montrose, Pa. Filed Sept. 27, 1883. (No model.)



Claim.—1. In a car-coupling, the combination, with the coupling-hook B, the draw-bar C, and the sills A', of the collar E, the bearing-plate D, having cross-heads D', and the slide-bearings H, substantially as herein shown and described, whereby the coupling-hook and draw-bar are suspended and allowed to turn and slide freely, as set forth.

2. In a car-coupling, the combination, with the collar E and the sliding bearing-plate D, of the stops F G, substantially as herein shown and described, whereby the rotation of the draw-bar and coupling-hook is limited, as set forth.

3. In a car-coupling, the combination, with the draw-bar C and the frame A, of the pulley M, the chain N, the sliding bar O, and an operating mechanism, substantially as herein shown and described, whereby the said draw-bar and the coupling-hook can be turned to couple and uncouple the cars, as set forth.

4. In a car-coupling, the combination, with the sliding bar O, having notch *d*, of the spring-catch *c*, substantially as herein shown and described, whereby the coupling-hook B is locked in an uncoupled position, as set forth.

5. In a car-coupling, the combination, with the sliding bar O and the frame A, of the levers R S, substantially as herein shown and described, whereby the cars can be uncoupled from one side of the track, as set forth.

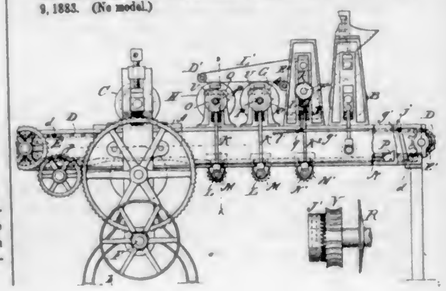
6. In a car-coupling, the combination, with the frame A and the levers R S, of the sliding bar U and the lever V, substantially as herein shown and described, whereby the cars can be uncoupled from either side of the track, as set forth.

7. In a car-coupling, the combination, with the lever V and the car-body, of the chain X, the pulleys Y Z, and the lever *a*, substantially as herein shown and described, whereby the cars can be uncoupled from the top of the car, as set forth.

8. In a car-coupling, the combination, with the frame A, the sliding bar O, and the spring-catch *c*, of the spring P and the spring-held trip-rod *e*, substantially as herein shown and described, whereby the cars, when run together, will be coupled automatically, as set forth.

9. In a car-coupling, the combination, with the frame A and the spring-held trip-rod *e*, of the sliding bar *j*, having beveled end, the connecting-bar *i*, and the crank-rod *h*, substantially as herein shown and described, whereby the said trip-rod will be held from operating, as set forth.

297,294. WIPING AND POLISHING APPARATUS FOR PLATE-PRINTING MACHINES. ALEXANDER REID, Brooklyn, N. Y. Filed Jan. 9, 1883. (No model.)



Claim.—1. In a plate-printing press, the combination, with the reciprocating bed A, of the roller H, having slots *c*, the webs *b*, the paying-off spools Q Q', the receiving-spools R R', and means, substantially as herein shown and described, for rotating the spools R R' and vertically reciprocating the roller, as set forth.

2. The combination, with the roller G or H, having receiving and paying-off spools, of the worm-shafts W and worm-wheels V V', the shafts being formed or provided with the gears *f*, meshing with the gear *h*, substantially as and for the purposes set forth.

3. The combination, with the worm-wheels V V' and worm-shafts W, formed with the beveled gears at their inner ends, of the shaft X, formed with the beveled gear *h*, and running in the hollow journal Y, substantially as described.

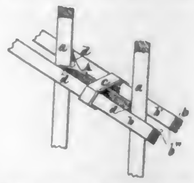
4. The combination, with the wiping and polishing rollers and the web L', passing over the rollers D' and E' and under the wiper J, and attached to the roller F', of the ratchet-and-lever mechanism for revolving the roller F', substantially as and for the purposes set forth.

5. The reciprocating rack N, in combination with the pinions M M, eccentric shafts L L, and connecting-rods K K, attached to the rollers, whereby the rollers are reciprocated vertically, as and for the purposes set forth.

6. The combination, with the reciprocating rack N, of the pinion M', eccentric shaft N', and connecting-rod K', attached to the wiper J, whereby the wiper is reciprocated vertically, as and for the purposes set forth.

7. The chain D, attached at its ends to the bed A, and provided with the studs or pins *d d*, in combination with the rack N, formed or provided with the toes *p p*, as and for the purposes set forth.

297,295. IRON FENCE. TIMOTHY ROGERS, Springfield, Ohio, assignor to the Rogers Fence Company, same place. Filed Mar. 31, 1883. (No model.)

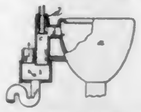


Claim.—1. In an iron fence having two rails in the same plane, forming a double rail, and having pickets supported between said rails, the combination of a spacer-bar extending in line with said rails, and in the same plane therewith between the pickets, having an end fork straddling the picket and a lateral fork on either side, formed by a prong of the end fork, in connection with a lateral spur which straddles the rails, and an intermediate band adapted to inclose the rails and spacer-bar, as set forth.

2. In a double-rail fence having square rails and pickets of like form between them, the combination, with said rails and pickets, of a spacer-bar having end forks engaging with the picket-rods, side forks or notches contiguous thereto engaging with the inner angles of said rails, and an intermediate band inclosing the whole midway between the pickets.

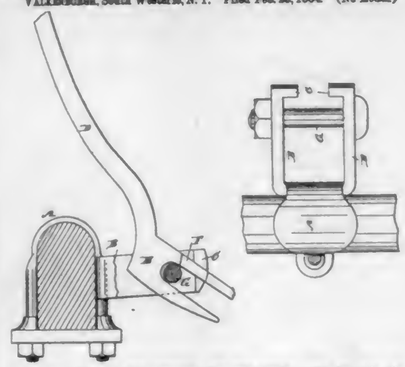
3. The combination, with rails *b*, having the inner angles, *b''*, and the picket-rods *a*, inserted between said rails, with their transverse angles in contact therewith, and their opposite angles in the central longitudinal line between them, of the spacer A, having the prongs *d* and *e*, and the clip-band *c*, substantially as set forth.

297,296. APPARATUS FOR VENTILATING WATER-CLOSETS, URINALS, DRAINS, SEWERS, AND THE LIKE. THOMAS ROWAN, London, England. Filed Nov. 3, 1883. (No model.) Patented in England Jan. 19, 1883, No. 276, and in Canada Jan. 24, 1883, No. 16,193.



Claim.—The combination, with the structure to be ventilated, of the receiver B, supplied with a purifying material through which the foul air or gas passes, the water-nozzle *d*, having its mouth located as described with reference to the inlet of the tube through which the air or gas is driven and washed, chamber *e*, and pipes *g* and *f*, all as and for the purposes described.

297,297. THILL-COUPLING. LORENZO D. RUNDELL and PERRY VAN VALKENBURGH, South Westerlo, N. Y. Filed Feb. 25, 1884. (No model.)



Claim.—1. In a thill-coupling, the combination, with the axle-clip A, having jaws B, provided with inside flanges, C, at the outer ends, of the bar D, secured to the thill, and having a fork, E, provided with notches F in the side edges of the front prong, substantially as herein shown and described.

2. In a thill-coupling, the combination, with the axle-clip A, having jaws B, provided with inwardly-projecting flanges C, tapered toward the lower ends of the bar D, secured to the thill, having a fork, E, formed on its end, in the side edges of the front prong of which notches F are formed, and of the bolt G, substantially as herein shown and described.

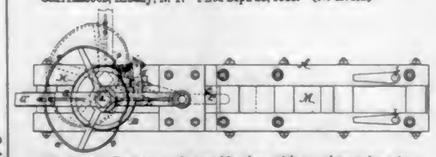
297,298. STOPPERING BOTTLES FOR AERATED OR GASEOUS LIQUIDS. RICHARD J. SANKEY, London, England. Filed June 11, 1883. (No model.) Patented in England Apr. 30, 1883, No. 2,176; in Germany May 26, 1883, No. 24,740; in Victoria Aug. 7, 1883, No. 3,516; in South Australia Aug. 13, 1883, No. 330, and in New South Wales Oct. 11, 1883, No. 83 12,341.

Claim.—1. The method herein described of fixing an elastic seating in the narrowing or conical neck of a bottle, consisting in first reducing in diameter a ring of hard india-rubber, usually called "vulcanite" or "ebonite," next passing it into the bottle-neck, placing it against an elastic seating in such neck, and then subjecting it to heat until the said ring expands and becomes tightly fitted in the interior of the bottle and against the elastic seating, substantially as and for the purpose set forth.

2. A bottle for internal stoppers, having a conical or narrowing opening in its neck, and having an interior rubber seating resting upon a step and held to place therein by an expanded hard-rubber ring, substantially in the manner herein shown and described.

3. A bottle for internal stoppers, having a narrowing neck, and having a seating fixed in such neck resting upon a step consisting of an expanded vulcanite ring, and held to place thereon by another expanded vulcanite ring, substantially in the manner herein shown and described.

297,299. BALING-PRESS. HENRY V. SCATTERGOOD and CHARLES F. SCATTERGOOD, Albany, N. Y. Filed Sept. 25, 1883. (No model.)



Claim.—1. In a press, the combination, with a reciprocating plunger, of a plunger-operating mechanism consisting of a crank-motion whose shafts have their bearings in the swinging ends of vibratile links, the opposite ends of said links being pivoted at a fixed point on the press-frame, substantially as specified.

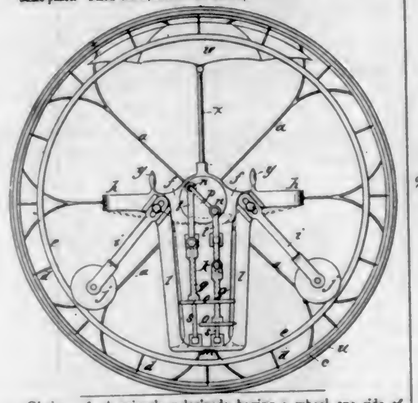
2. In a press, the combination, with a plunger and its operating mechanism, of an automatic brake mechanism adapted to prevent the rebound of the plunger, substantially as herein specified.

3. In a press, the combination, with a reciprocating plunger and its operating mechanism, of an extensible sweep or lever which has its maximum length when the plunger meets with the greatest resistance, and its minimum length when the plunger meets with the least resistance, as herein specified.

4. The resistance-bars K, having in one or both edges longitudinal grooves *k*, as and for the purpose herein specified.

5. In a press, the combination, with the resistance-bars K, of the shafts L, arranged as herein described, and for the purpose specified.

297,300. VELOCIPEDE. CHARLES M. SCHAFFER, Louisville, Ky., assignor to himself, James T. Ritchig, C. C. Allen, and G. W. Allen, all of same place. Filed Oct. 8, 1883. (No model.)



Claim.—1. A unicycle velocipede having a wheel, one side of which consists of a rim, *e*, of nearly the size of the felly-rim, and short spokes *d*, connecting said rim *e* with the felly-rim, substantially as described.

2. A unicycle velocipede having a wheel, one side of which consists of a rim, *e*, of nearly the size of the felly-rim, and spokes *d*, connecting said rim *e* with the felly-rim, and also having a frame for the operator, one side of which is supported on the wheel-hub, and the other side is supported on the rim *e* by one or more grooved rollers, *j*, substantially as described.

3. In a unicycle velocipede, the combination, with the frame-bar *f*, supported on the hub of the wheel, and having U-shaped arms A, of the arms *i*, having the grooved rollers *j* traveling on the rim *e* of the wheel, substantially as and for the purpose set forth.

4. In a unicycle velocipede, the combination, with the frame-bar *f*, supported on the hub of the wheel, and having U-shaped arms A, of the arms *i*, having the grooved rollers *j* traveling on the rim *e* of the wheel, and adjustably connected to the said arms, substantially as and for the purpose set forth.

5. The combination, with a unicycle velocipede having an open-sided wheel, of the frame-bar *f*, supported on the hub of the wheel, and having U-shaped arms A, supported by one or more rollers, *j*, on the rim *e* of the open side of the wheel, substantially as described.

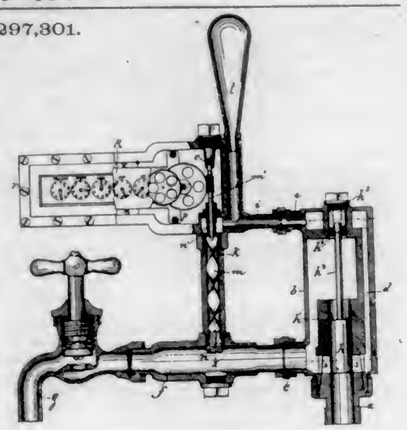
6. The rim of a unicycle-wheel, consisting of two felly-rims, *e*, connected by short bolts *c*, with a clear space between said felly-rims, forming an outlook directly ahead of the operator, substantially as described.

7. A unicycle velocipede having a wheel open at one side, and having a car or frame for the operator, sustained internally of the wheel from the hub and by adjustable rollers, substantially as described.

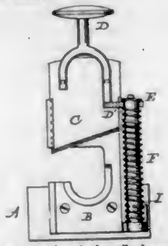
297,301. WATER-METER. NICHOLAS SIEBERT, Maplewood, assignor of three-eighths to Oliver E. Simmons, Boston, and Edward W. Simmons, Jamaica Plain, Mass. Filed July 11, 1883. (No model.)

Claim.—The combination of the chamber *b* and its inlet-passage, having two ports in the sides thereof at the same level, and a valve-guide, forming a continuation of the said inlet-passage, with the valve-plug *h*, longitudinally movable in the said passage, and controlling both ports simultaneously, the outlet-passages *f* and *i*, communicating with the said ports independently, and the connecting-passage *k* and measuring-screw *m* therein, substantially as described.

297,301.



297,302. CIGAR-CUTTER. GEORGE E. SIEBLER, Dayton, Ohio. Filed Aug. 20, 1883. (No model.)



Claim.—The cigar-cutter herein described, consisting of the grooved block A, frame B, provided with guides for the cutter, a lug, and a semi-circular notch, the stationary rod I, supported by the lug, spiral spring F, surrounding said rod, cutter C, provided with head D, having branches, with said cutter riveted thereto, and a forked arm embracing the rod, and washer E, said parts being combined and arranged substantially as described.

297,303. CORD-CLAMP. CARL J. A. SJOBERG, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed Mar. 21, 1884. (No model.)



Claim.—1. In a clamp for cord, rope, &c., the clamping-dogs adapted to rock within the shells from a point of contact within the same, substantially as set forth.

2. The shells provided with openings, as described, and having arranged therein rocking dogs provided with lugs projecting outwardly through said shells, substantially as described.

3. The dogs C, serrated at their forward portions, and with their rear extremities terminating in angular portions E, adapted to fit within one corner of the shells and rock therein, and having lugs F projecting outwardly through said shells, substantially as set forth.

297,304. OIL-CUP. PERRY SMALL, Guyamas, Mexico. Filed Dec. 29, 1883. (No model.)

Claim.—The combination of the glass oil-cup A, having a partition-plate, D', integral therewith, and provided with a seat, said partition dividing the cup into an oil and drip chamber, with the frame B surrounding said cup, and provided with openings H above the partition-

297,304.

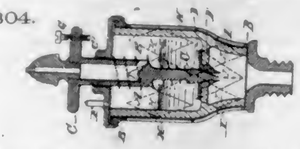
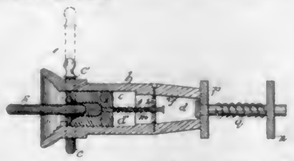


plate and openings I below the partition, and also provided at its upper end with a suitable cap, C', supporting the drop C, substantially as set forth.

297,305. CAR-COUPLING. GEORGE W. SKELLIE, Newark, N. J. Filed Sept. 17, 1883. (No model.)



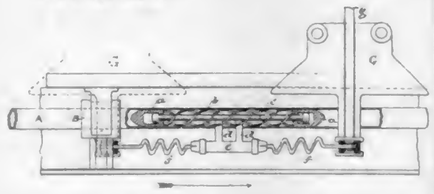
Claim.—1. The combination, with the funnel-shaped buffer *b*, having the chamber *d* therein and pin-perforation therethrough, of the spring-actuated plunger working in said chamber, adapted to automatically cover the said pin-perforation when the said pin is withdrawn, and with the beam having the longitudinal-slot-sliding blocks and levers, whereby the pins are withdrawn, substantially as herein set forth.

2. The repressible bumper *b*, having the funnel-shaped head, and having the chamber *d* and pin-perforation therein, and having the spring-actuated plunger *e*, provided with the link-opening and the pin *c*, and levers working in sliding fulcrum-blocks, all said parts being arranged and operating substantially as set forth.

3. A car-coupling of the character described, provided with the slotted beam *a*, the sliding fulcrumed blocks *s s*, and the levers *r r*, arranged and operating in the manner substantially set forth.

4. The combination, in a car-coupling, of a spring-actuated plunger (having a concave outer end) adapted to hold the coupling-pin up when the cars are uncoupled, and a draw-head having a mouth flaring at all sides, and a central aperture adapted to allow the link, when the pin is inserted, the requisite lateral and vertical swing, and at the same time to hold it in a position to automatically engage and couple with an opposite draw-head when the cars are brought together, as set forth.

297,306. APPARATUS TO BE USED IN ELECTRIC RAIL OR TRAM WAY SYSTEMS. MICHAEL HOLROYD SMITH, Halifax, County of York, England. Filed Dec. 11, 1883. (No model.) Patented in England Oct. 24, 1883, No. 5,065.



Claim.—1. In an electric rail or tram way, the combination, with a tubular conductor, of a shuttle composed of the expansible spring-collector *b* and heads *a*, located and adapted to travel in said tubular conductors, to collect and transmit the current through suitable connections with said shuttle to the motor, substantially as and for the purpose described.

2. In an electric tramway, substantially as shown and described, the combination of the shuttle composed of the heads *a* and an expansible spring between said heads, with a connecting-bolt to limit the movement of the heads toward and from each other, and thereby the expansion and contraction of the spring-collector, substantially as described.

3. In an electric tramway, the conductor A and the shuttle located therein, combined with the coiled spring *f*, connected with said shuttle and with the car, substantially in the manner and for the purpose described.

4. In electric rail or tram ways, the combination of the tubular conductor A and insulating-support B with supports C, D, and F, wedge E, and cover H, all substantially as and for the purposes set forth.

5. In an electric rail or tram way, the walls of the channel, a removable cover, H, having attached thereto the wedge-holding projection F, the supporting-pieces C, and slide-piece A, combined with the lugs *i* on the wall of the channel, to receive the piece A, and the movable piece D, held by the wedge, all substantially as described.

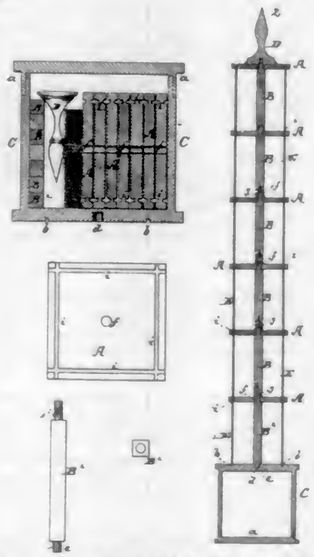
297,307. FLYING TARGET. CHARLES F. STOCK, Peoria, Ill. Filed Feb. 1, 1884. (No model.)



Claim.—1. The combination of the fragile ring B, formed on its lower inner edge with a flange, *a*, with the infrangible carrier-ring constructed to be inserted within the fragile ring and be held therein by the said flange, substantially as set forth.

2. The combination of the fragile ring B, formed with a flange, *a*, on its lower inner edge, with the infrangible carrier-ring A, closed on its top and constructed to be inserted within the fragile ring and be held therein by the said flange, substantially as set forth.

297,308. BUILDING-BLOCK. WALTER STRANDBERG, New York, assignor to Edward I. Horsman, Brooklyn, N. Y. Filed Jan. 26, 1884. (No model.)



Claim.—1. The combination of the box C, having one or more sockets, *d*, with the post B^3, having tenons *e* and *g*, and with the posts B B, having sockets *h* and tenons *g*, and with the perforated and grooved boards A A, substantially as herein shown and described.

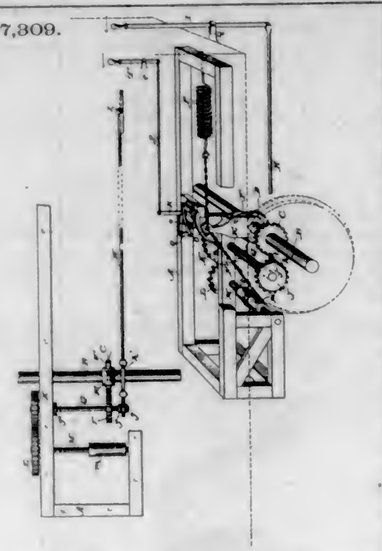
2. The box C, combined with the posts B^3 and B, the boards A A, and the upright strips or sheets E E, the boards A and the face of the box C being grooved to receive said upright strips or sheets, substantially as herein shown and described.

297,309. CAR STARTER AND BRAKE. JACOB W. STRICKLE and GEORGE R. STRICKLE, Louisville, Ky. Filed Mar. 7, 1884. (No model.)

Claim.—1. The combination, with the axle of a car, of a ratchet-wheel secured thereto, a lever or pawl carrier mounted loosely on said axle and provided with a pawl, a spring connected with said pawl-carrier, a gear-wheel mounted on said axle, a second gear-wheel adapted to be moved toward or from the first gear-wheel, mechanism arranged to be operated by the driver of the car for bringing said gear-wheels into engagement with each other when the car is to be stopped, and mechanism operated by said gear-wheels and connected with said pawl-carrier for extending said spring, all substantially as set forth.

2. The combination, with the axle of a car, of a ratchet-wheel secured thereto, a pawl-carrier having a pawl, a spring connected with said pawl-carrier, mechanism adapted to be thrown into operation by the driver and connected with said axle for extending said spring, means for automatically disconnecting the extending mechanism from the car-axle, and means for keeping said spring extended when the extending mechanism has been thus disconnected, all substantially as set forth.

297,309.

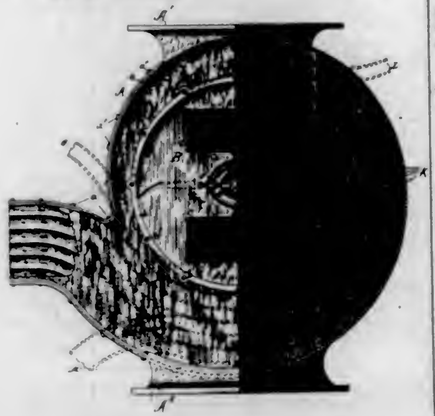


3. The combination of the axle B, ratchet-wheel D, pawl-carrier E, pawl F, gear-wheels C and J, shaft G, gear-wheels K and L, shaft M, chain N, spring P, sliding bar H, having an extension, A, serving as a support for the shaft G, and hand-lever I, substantially as set forth.

4. The combination, with the chain N, having a catch or stop, *n*, of the pawl O, link Q, angular lever R, link S, and hand-lever T, substantially as set forth.

5. The combination of the frame A, axle B, ratchet-wheel D, pawl-carrier E, pawl F, gear-wheels C and J, the latter having the blank or double cog *j*, shaft G, gear-wheels K and L, shaft M, having drum *m*, chain N, having stop or catch *n*, pawl O, links Q and S, levers R and T, spring P, sliding bar H, having extension A, and hand-lever I, substantially as set forth.

297,310. FAN-BLOWER. JAMES E. STUDLEY, Oshkosh, Wis. Filed May 5, 1883. (No model.)



Claim.—1. A fan-blower provided with a series of partitions within the shell, arranged, respectively, in volute form, the beginning of said partitions being at equal distances from each other and from the axis of the fan, respectively, and corresponding in number to the blades of the fan, substantially as and for the purposes set forth.

2. A fan-blower provided with a series of partitions within the shell, arranged in a volute form and terminating in the eduction-pipe in parallel lines, substantially as described.

3. A fan-blower provided with a series of partitions within the shell, arranged, respectively, in volute form, the beginning of said partitions being at equal distances from each other and from the axis of the fan, respectively, and corresponding in number or bearing a fixed proportion to the blades of the fan, whereby the latter may be balanced while in labor, substantially as described.

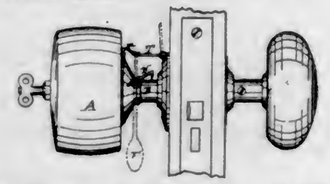
4. A fan-blower in which the air is received from side induction-pipes provided with a cylinder surrounding the axis of the fan, and to which cylinder the blades of said fan are secured, substantially as and for the purposes set forth.

5. A fan-blower provided with a seat upon the bottom and top, respectively, whereby the position of said blower may be reversed and the same adapted for use as an exhaust or pressure blower, substantially as described.

6. A fan-blower provided with a series of partitions within the shell between the fan and peripheral chamber, the beginning of said partitions being at equal distances from each other and concentric with the axis of the fan, and corresponding in number or bearing a fixed proportion to the blades of the fan, whereby said fan may be balanced while in labor, said partitions being carried outward, so that the end of one may pass the beginning of the next, substantially as and for the purposes set forth.

7. A fan-blower in which the air is received from opposite sides, provided with a series of partitions within the shell, arranged in volute form, and terminating in parallel lines in the eduction-pipe, in combination with the fan G, having the central annular disk, H, substantially as and for the purposes set forth.

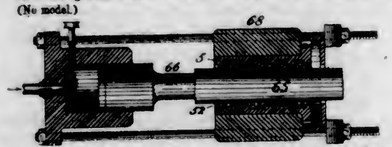
297,311. BURGLAR-ALARM. HENRY E. TABER, Watkins, N. Y. Filed Dec. 18, 1883. (Model.)



Claim.—1. In combination with the hollow resonant door-knob and spring-actuated clock-work inclosed therein, the bell-hammer connected to the verge-shaft *i*, the external detent, *m*, connected to the protruding end of said shaft, and the hinged stop T, adapted to be thrown in and out of position for engaging the detent when the knob is in its normal position, substantially as described and shown.

2. In combination with the detachable hollow knob, inclosed alarm mechanism, and detent protruding through the knob, as shown, a stop hinged on the knob and adapted to engage the detent while the knob is detached from the door, substantially as described and shown.

297,312. SHAFT-BEARING. HARRIS TABOR, Allegheny, assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed Feb. 28, 1884. (No model.)



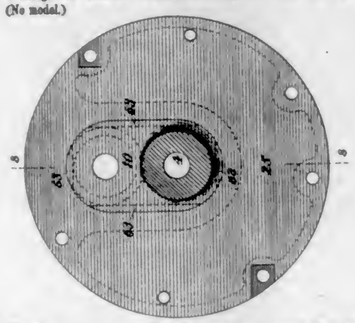
Claim.—1. The method of forming and finishing soft-metal linings for bearings, which consists in first casting a lining around a core-mandrel of less diameter than the journal which the lining is to receive, and thereafter expanding said lining into its bearing or box, and coincidently truing and finishing its bore by the internal pressure of a finishing-mandrel of larger diameter than the core-mandrel, substantially as set forth.

2. As a new article of manufacture, a shaft-bearing having a soft-metal lining which is expanded into position in the bearing and coincidently trued and finished by the application of internal pressure, substantially as set forth.

4.

3. The combination of a shaft-bearing and a lining of soft metal, having the wearing-surface of its bore trued and finished by compression exerted upon the natural skin or surface of the metal, substantially as set forth.

297,313. CRANK-DISK. HARRIS TABOR, Allegheny, assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed Feb. 28, 1884. (No model.)



Claim.—1. As a new article of manufacture, a crank-disk which is united to an arm or crank of a crank-shaft by being cast upon and around the same, substantially as set forth.

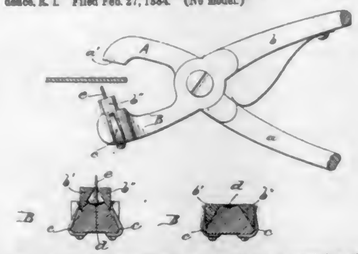
2. The combination of a crank-arm and a crank-disk cast upon and around the crank-arm, and engaging the same by a tongue-and-groove connection, substantially as set forth.

297,314. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed Feb. 25, 1884. (No model.)



Claim.—The herein-described one-piece cut-sheet-metal button-fastener A, consisting of the base *a*, projecting prong *b*, terminating in curved end *d*, substantially as shown and described.

297,315. BUTTON-SETTING IMPLEMENT. JAMES F. THAYER, Providence, R. I. Filed Feb. 27, 1884. (No model.)



Claim.—1. An instrument for setting buttons, consisting of two jaws or members, one of which is provided with supplemental movable jaws, the meeting faces of which are beveled, and which are adapted to hold the fastener and to slide out of the way while it is being secured, substantially as described.

2. In an instrument for setting buttons, the combination, with the members thereof, of the movable jaws *b'* and *b''* and springs *c*, arranged and adapted for use substantially as described.

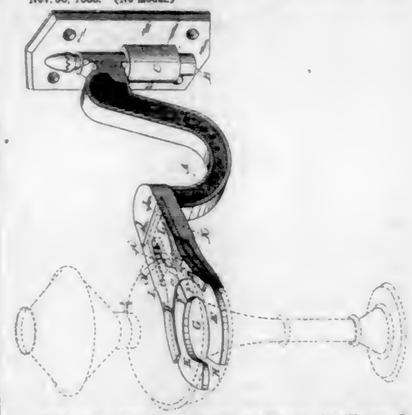
3. The herein-described instrument for attaching buttons, consisting of the member B, provided with seat *d*, movable jaws *b'* and *b''*, and spring *c*, in combination with the member A, provided with die *a'*, the whole combined, arranged, and adapted for use substantially as described and shown.

297,316. BRACE FOR SLEIGH-KNEES. ORLANDO A. THAYER, Paris, Me. Filed Nov. 23, 1883. (No model.)

Claim.—The brace for sleds or sleighs herein described, consisting of a casting made in a single piece, and provided with an under and an inner socket adapted to respectively receive and firmly retain the extremities of the standard and cross-bar, a depending extension formed integral with said brace and adapted to act as a re-enforce for the standard, a perforation in the body of said brace for the passage and retention of the side rail of the sleigh, substantially as and for the purpose set forth.

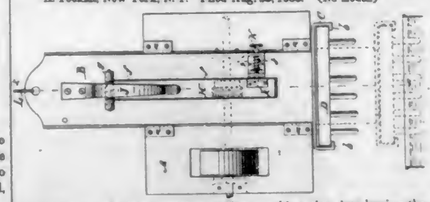


297,317. LAMP-BRACKET. ALFRED THURSER, Concord, Cal. Filed Nov. 30, 1883. (No model.)



Claim.—In a lamp-bracket having the elevated sides K, arms D, the pivoted jaws E, forming a circular central opening adapted to receive the shank of a lamp, and provided with a flaring or beveled mouth, in combination with the backwardly-extending arms or lugs J, connected by a curved spring, whereby the jaws are closed automatically, all substantially as shown, and for the purposes described.

297,318. MACHINE FOR MOLDING GELATINE CAPSULES. WM. A. TUCKER, New York, N. Y. Filed Aug. 23, 1883. (No model.)



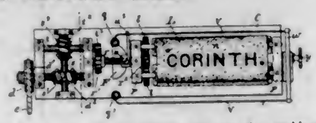
Claim.—1. In a capsule-molding machine, the plate having the openings *c* and *c*, and on which is journaled the shaft E, provided with the pulley F and pinion G, the plate B, fitted to slide in ways on plate A, and having the opening *f*, the plate H, hinged to the plate B, and provided with the rack I and spring J, and the head C, secured to said plate B, all as and for the purposes described.

2. In a capsule-molding machine, the plate A, on which is journaled the shaft E, provided with the pinion G and hub *d*, the plate B, which is provided with the spring-bolt K, and to which is hinged the plate H, that is provided with the rack I, lug *h*, and ear *k*, and the spring J, secured to the plate B, all as and for the purpose described.

297,319. BLEACHING RAW COTTON. JOHN C. VANLOHE, Baltimore, Md. Filed Mar. 25, 1884. (No specimens.)

Claim.—The process herein described of bleaching raw cotton, which consists in first subjecting the cotton in a compressed state, as in a bale, to the action of bleaching-liquids, then rinsing the compressed and bleached cotton, then tearing the bleached and compressed cotton apart or loosening it, and then drying it, substantially as specified.

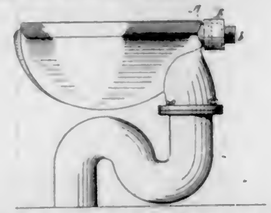
297,320. STATION-INDICATOR. MARTIN V. WALKER, Wesson, Miss. Filed Jan. 3, 1884. (No model.)



Claim.—1. In a station-indicator for cars, the combination of a station-name roll, L, mounted on rollers, a bell, F, a shaft, *r*, having a pinion, r^2, to move the rollers of the name-roll, a projecting finger, w^2, and two bell-hammers, each having a spring-arm, *w*, and adapted to be shifted so that only one of the spring-arms is within reach of the said projecting finger, as set forth.

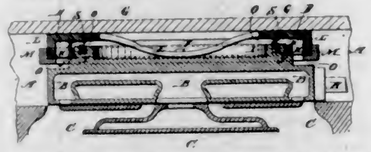
2. In a station-indicator for cars, the combination of a station-name roll, L, two rollers, *k k'*, a bell, F, two bell-hammers to be used alternately on the one bell, both being attached to a slotted bar, *w*, a set-screw, *y*, for holding the bar in either position to which it may be shifted, and a shaft, *r*, to operate the roll and hammers, as set forth.

297,321. WATER-CLOSET CONNECTION. HENRY C. WEEDEN, Boston, Mass. Filed Jan. 12, 1884. (No model.)



Claim.—The combination, with the flushing-pipe of an earthenware water-closet bowl, A, having the projections *a*, of a metallic surrounding and re-enforcing connection, B, having the reduced screw-threaded part *b* and the inwardly-projecting parts *c*, the whole being cemented and held together by a suitable cement or bind, all substantially as herein specified and described.

297,322. BALANCED SLIDE VALVE. ASHBEL WELCH, Lambertville, N. J. Filed Dec. 22, 1883. (No model.)



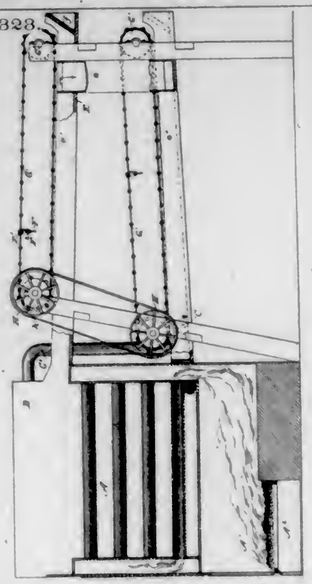
Claim.—1. A balanced slide-valve constructed with a balance-ring working against the inner face of the valve-chest cover, and connected to the body of the valve by a flexible diaphragm-packing and a cross-bar, and centrally secured to the valve, substantially as shown and described.

2. A balanced slide-valve constructed with a balance-ring working against the inner face of the valve-chest cover, and connected to the body of the valve by a flexible diaphragm-packing, and a cross-bar centrally secured to the valve, and having suitable springs interposed between the body of the valve and the balance-ring, substantially as shown and described.

3. The combination, in a balanced slide-valve, of the valve-body B, rabbeted at J, the balance-ring D, and the flexible diaphragm-packing H, held to the valve-body and the balance-ring at its inner and outer edges, respectively, by the ring-collars K M, substantially as shown and described.

297,323. APPARATUS FOR THE MANUFACTURE OF SALT. SCHUYLER C. WELLS, Le Roy, N. Y. Filed Feb. 1, 1884. (Model.)

297,323.



Claim.—1. The combination of the fire-box, the heating-flues directly over and at the side of the same, the dividing-wall, and the double grainers—one over the other—substantially as described.

2. The combination of the fire-box underneath the heater, the heating-tubes, the dividing fire-wall, the upright feed-flue, the force-pump, and the double grainers, arranged and operating substantially as described.

3. The combination of the solid rake-bar, the rake-driving mechanism, and the grainers—one above the other—substantially as described.

4. The combination of the rake-bar connecting the two rake-driving chains, the grainer, and the inclined drainer at the rear end of the grainer, all arranged and operating substantially as described.

5. The combination of the brine-heater and the double grainer—one arranged over the other—substantially as described.

6. The combination of the brine-heater, the double grainer, the centrifugal pump, the pump exit-pipe reaching underneath the brine in the heater, and the open space upon the upper grainer, all arranged and operating substantially as described.

7. In a brine-heating device having return heating-flues, the combination of the upright feed-flue, the centrifugal pump, the steam-injecting pipe, connected therewith, and the pump exit-pipe, all arranged and operating substantially as described.

8. The combination of the upper grainer, the lower grainer, the connecting-conduit, and the force-pump, arranged and operating substantially as described.

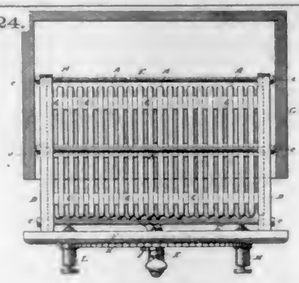
9. The combination of two open-linked endless chains, running upon the same vertical level, the toothed chain-operating wheels, two of which are secured to a shaft in such manner that the two chains are kept in the same relative position, the flexibly-hinged rake, the central rake-locking devices, and the rake-retaining ribs, all arranged and operating substantially as described.

297,324. RHEOSTAT. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 19, 1883. (No model.)

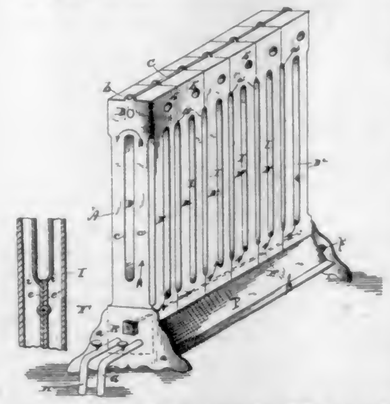
Claim.—1. The combination, with a number of slabs or plates of insulating material bound together in a bundle, with interposed strips of insulating material, and wound with uninsulated resistance-coils, of a box or casing for containing the bundle, a removable cover to which the bundle is secured, a series of contact-plates on the exterior of said cover and connected with the coils, and a key or shifting-contact for including more or less of the coils in an electric circuit, as set forth.

2. The combination of a number of plates or slabs, as A, wound with coils, the interposed strips or blocks, C, for keeping them apart and affording spaces for the circulation of air, the end plates D and rods E, or other suitable devices for binding the plates A together, the cover or support F, and the series of contact-plates arranged thereon and connected with the coils in substantially the manner described.

297,324.



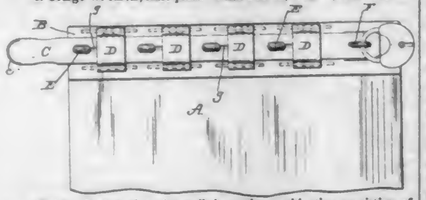
297,325. STEAM-RADIATOR. CORYDON WHEAT, Geneva, N. Y. Filed Mar. 8, 1883. (No model.)



Claim.—1. In a radiator, the combination, with the end sections divided into vertical compartments, having a partition in the lower part thereof, and the intermediate sections having each vertical compartments and dividing-partitions in the lower parts thereof, of the inclined foot and heel rests, the said end and intermediate sections and rests being secured together, substantially as described.

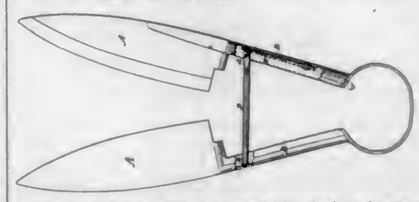
2. In a radiator, the combination, with the end sections divided into vertical compartments, having vertical partitions in the lower parts thereof, an outlet and a drip pipe, of the intermediate sections having vertical compartments, and vertical partitions in the lower parts thereof, the said sections being secured together by bolts passing through lips at the top, and through a passage formed between and near the bottom of the partitions, and provided with the inclined and horizontal foot and heel rests at each side thereof, substantially as shown and described.

297,326. MAIL-BAG. FRANK WHEATON, New York, N. Y., assignor to George W. Carter, same place. Filed Feb. 12, 1884. (No model.)



Claim.—In fastenings for mail-bags, the combination consisting of the herein-described button, attached by its base to the front and exterior of the bag, near the mouth thereof, a flap extending from the rear over the mouth and front of the bag, and provided with apertures adapted to pass over the head of the herein-described button, a strap sliding upon the front of the herein-described flap, and having corresponding apertures prolonged horizontally into slots adapted to receive the shank of said button, clamps crossed over the herein-described strap to hold the same against the flap, an ordinary staple at one end of the herein-mentioned flap, upon which the sliding strap may be padlocked, with the aid of a slot cut in said strap, when the bag is closed, all as hereinbefore described, and for the purposes set forth.

297,327. ANIMAL-SHEARS. WM. F. WICKENDEN, San Luis Obispo, Cal. Filed Dec. 7, 1883. (No model.)



Claim.—1. In a pair of shears having blades, shanks, and spring, substantially as herein shown, the brace bar or rod D, pivoted by one end in one shank, and adapted, when extended transversely, to fit and secure its other end against the opposite shank, and the spring E, bearing against the pivoted end of said brace to keep it in position when closed, substantially as and for the purpose herein described.

2. In spring-shears the spring of which prevents the blade from remaining open beyond a certain width, a brace rod or bar pivoted at one end to the shank of one blade, in combination with the shank of the opposite blade, provided with a recess or socket, into which the loose end of the bar fits, substantially as and for the purpose set forth.

297,328. CAR-COUPLING. S. LLOYD WIEGAND, Philadelphia, Pa. Filed Sept. 3, 1883. (Model.)



Claim.—1. A car-coupling consisting of two interlocking hooks, A, of such form as to embrace the front and rear sides of the pin F, and subject the said pin to a compressing strain only in the direction of the line of draft or motion of the train, and each provided with a flaring jaw, E, adapted by its form to laterally guide the end of the opposing hook into the bottom of the converging hook and jaw, and there rigidly hold the same in proper alignment, in combination with the pin or key F, so constructed and arranged as to rigidly retain the end of each hook in the convergence of the opposite hook and jaw when the pin F is placed between the hooks A, substantially as shown, and for the purpose set forth.

2. A car-coupling consisting of two similar hooks, A, each having a flaring jaw, E, adapted to align each other, and provided with a tapering guide for supporting and guiding a central pin to a position for locking said hooks together, substantially as set forth.

3. A car-coupling consisting of two similar hooks, A, each having a flaring jaw, E, adapted to guide, by a lateral movement, the opposing hook into proper alignment in such manner as to permit the recurved or overlapping ends of the hooks A to pass each other in the act of coupling and uncoupling, with a bolt or pin, F, adapted to separate the overlapping ends of the hooks A in the direction of the line of traction of the coupling, substantially as and for the purpose set forth.

4. In a car-coupling, the combination of two similar hooks having flaring jaws, and adapted to be flexibly connected to the ordinary drawheads of railway-cars, and by their form align themselves, when forced together, with a pin or key adapted to secure them together, substantially as shown and described.

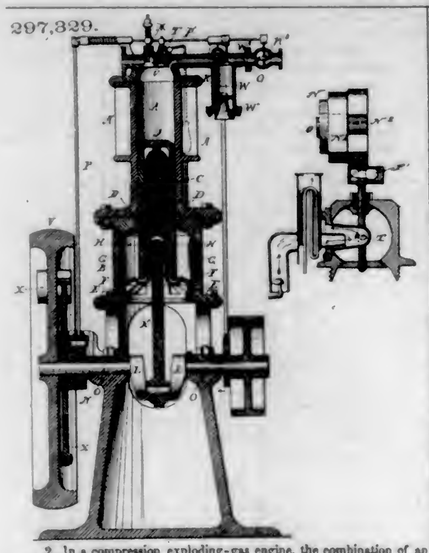
5. The combination of two similar hooks having flaring jaws, and adapted by their form to align themselves, when forced together, and susceptible of unrestricted vertical motion in each other, with a pin or other interposed body for securing the same together, substantially as set forth.

6. The combination of two similar hooks, A, having flaring jaws E, adapted to engage and align themselves, when pressed together, and be locked by an interposed pin, F, with a spring, G, arranged to disengage the same, when retracted, and present the hooks in position for re-engagement, substantially as set forth.

297,329. GAS-ENGINE. S. LLOYD WIEGAND, Philadelphia, Pa. Filed Sept. 13, 1883. (No model.)

Claim.—1. In an explosive-gas engine, a vertical exploding-cylinder provided with a heat non-conducting jacket at the upper part and a packing fitting a piston or plunger at the lower portion, substantially as and for the purpose set forth.

297,329.



2. In a compression exploding-gas engine, the combination of an exploding-cylinder with an air-pump of greater displacement than the exploding-cylinder discharging air directly into said cylinder, and a compression gas-pump delivering gas directly into said cylinder, and arranged during the same stroke to first purge the exploding-cylinder and afterward compress therein a charge of air and inflammable gas or vapor, substantially as and for the purpose set forth.

3. In a compression explosive-gas engine, in combination with a vertically-reciprocating piston or plunger working in a heated compression exploding cylinder or chamber, a packing located below the heated portion of said cylinder, fitting between the exploding-cylinder and air-pump and around the piston or plunger, substantially as and for the purpose set forth.

4. In a compression explosive-gas engine, the combination of an exploding-cylinder provided with an exhaust-valve operated by a cam controlled by a speed-regulator, so as to automatically vary the time of closing said valve in the compression or return stroke, with a pump arranged to force gas or mixtures of air and inflammable vapor into the said exploding-cylinder, and having a valve arranged to admit gas or air and inflammable vapor to the said pump during the outward stroke thereof, and to be held open by a cam controlled by a speed-regulator to varying points during the returning stroke, and thereby permit varying portions of the charge to return through the said admission-valve to the supply-pipe, and automatically regulate the speed of the engine by changing the volume of inflammable charge introduced into the exploding-cylinder, substantially as and for the purpose set forth.

5. In an explosive compression gas-engine, the combination of an igniting-chamber containing a body heated by an external flame, with a valve opening and closing communication between said chamber and the exploding-cylinder, said valve being operated by a cam varied and controlled in position by a speed regulator, so as to change the time of closing communication between the igniting-chamber and the exploding-chamber, substantially as and for the purpose set forth.

6. In a compression explosive-gas engine, the combination of a gas-pump, arranged to deliver gas into the exploding-cylinder, with a valve admitting gas into said pump, operated by a cam to close at varying positions of the pump, said cam being adjusted automatically, and controlled by a connected speed-regulator, substantially as and for the purpose set forth.

7. In an explosive compression gas-engine, the combination of a vertical air-pump piston, E, with a vertically-moving propelling trunk or piston, C, having a less displacement than the piston E, and reciprocating in an exploding-cylinder, A, of less capacity than the said air-pump cylinder B, and having ducts H, for admitting air into the exploding-cylinder A from the air-pump cylinder B, substantially as shown and described, and for the purpose set forth.

8. The combination of the piston C, provided with air-channels H, valve J, and piston E, having valves F, arranged to work in the cylinder G, substantially as and for the purpose set forth.

9. In an explosive compression gas-engine, the combination of a pump arranged to compress inflammable gas or inflammable mixtures of air and vapor and deliver the same directly into the pressure or exploding cylinder, with an inlet-valve arranged to admit gas or inflammable mixtures of air and vapor to the said pump throughout the outward stroke, and controlled by a cam operated by a connected speed-regulator, so as to close said valve at varying points in the returning stroke of the pump, for the purpose of varying the quantity of gas or equivalent inflammable charge introduced into the exploding-cylinder at each stroke by permitting variable portions thereof to return through the inlet-valve to the supply-pipe or reservoir, substantially as set forth.

10. In a compression gas-engine, the combination of a speed-regulator with a cam arranged and connected with the exhaust-valve of the exploding-cylinder, so as to control and regulate the volume of air shut up and compressed in the exploding-cylinder proportionately to any variations in the velocity of the engine, for the purpose of compensating and correcting such variations, substantially as shown and described.

11. The combination, in an explosive compression gas-engine, of a speed-regulator with the cam connected with and arranged to operate the exhaust-valve of the pressure-cylinder and the inlet-valve of the gas-pump, so as to open and close said valves at varying points in the piston-stroke of the engine, and thereby varying the volumes of air and inflammable gas or vapor to the pressure-cylinder for the purpose of compensating for variations in speed and maintaining uniform velocity of the engine.

12. In a compression explosive gas-engine, the combination of an air-pump forming a guide for the piston of the pressure-cylinder, and directly forcing air through the pressure-cylinder, for first purging the same of the products of the preceding combustion, and afterward for compressing charges of air in definitely-measured proportions to charges of gas forced into said cylinder, substantially as and for the purpose set forth.

13. In a compression explosive gas-engine, the combination of an igniting-chamber with a valve communicating with and shutting off communication with the exploding-chamber, and adapted, when open, to direct a current of air through the igniting-chamber, substantially as and for the purpose set forth.

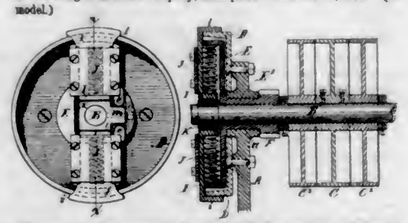
14. In a compression explosive gas-engine, the combination of an igniting-chamber containing an incandescent body with an exploding or pressure cylinder, and having a valve controlling communication between them connected with an operating mechanism, to close the igniting-chamber from the pressure-cylinder at low pressure in both vessels, and to open and admit a portion of the explosive charge from the cylinder to the igniting-chamber when under higher pressure, for the purpose of igniting the same.

15. In a compression explosive gas-engine, an igniting-chamber containing an incandescent body heated by a flame-jet applied internally to said incandescent body, substantially as set forth.

16. In a compression explosive gas-engine, an igniting-chamber containing an incandescent body heated by a jet of flame external to the said chamber, supplied with air heated by the escaping products of combustion of said flame, substantially as set forth.

17. In a compression exploding gas-engine, the combination of an air-pump forming a guide for the power-receiving piston, and arranged to directly purge the exploding-cylinder, and during the same stroke compress air therein, a gas measuring and compressing pump, a speed-regulator connected with and operating the inlet-valve of the gas-pump and the exhaust-valve of the pressure-cylinder, and an igniting-chamber connected by a valve with the exploding-cylinder, and operated by a cam rotated with a fly-wheel and shaft, receiving motion through a crank and pitman, operated by the piston or trunk propelled by the explosion of air and combustible gas in the exploding-cylinder, substantially as and for the purpose set forth.

297,330. MECHANISM FOR CHECKING OR STOPPING THE ACTION OF MACHINERY. JACOB D. WRIGHT, Worcester, Mass., assignor to the Wright Machine Company, same place. Filed Dec. 5, 1883. (No model.)



Claim.—1. The revoluble head or disk E, provided with lugs *c*, and carrying radially-moving friction-pad slides I, with recoil-springs J, in combination with a stationary concentric friction-flange, D, and a centrally-located operating-hub, K, having a projection, *m*, for engaging said disk, and provided with angles *l*, for moving said slides when the hub is turned to the position of engagement with said disk, substantially as set forth.

2. The combination, substantially as hereinbefore described, of the shaft B, having the hub K fixed thereon, the head or disk E, mounted loose on said shaft, and carrying the driving-pinion F, the radially-moving slides I, carrying friction-pads *i*, the springs J, the stationary friction-rim D, and means for effecting engagement between said hub and disk, and for moving said slides by action of the hub, as set forth.

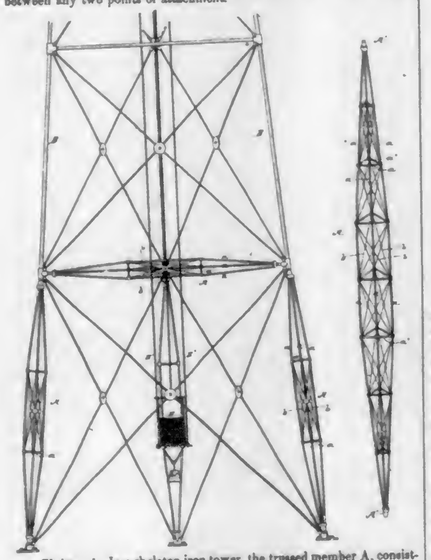
3. The combination of the following elements, viz: a central shaft, stud, or axis, a frictional surface concentric therewith, frictional pads for engaging said surface mounted on guiding-slides, in connection with a support plate or disk concentric with or centered upon said axis, and provided with springs for forcing the pads against said frictional surface, and a central hub or device adapted for counteracting said springs and relieving the frictional contact when the motive force is applied for starting and operating the machinery.

4. A head or disk carrying slides or friction-pads operated by springs, and a friction flange or plate, either of which may be stationary and the other revoluble, in combination with a suitable device for operating the friction-pads against the action of the springs when the motive power is brought into action, substantially as set forth.

5. The friction-slides, with their pads and springs, and the friction-flange, in combination with means for automatically relieving the friction and permitting the operation of the mechanism when power is applied to the revoluble shaft by the action of the propelling force exerted through said shaft.

297,331. SKELETON TOWER. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed Sept. 7, 1881. Renewed Jan. 3, 1883. Again renewed Mar. 17, 1884. (No model.)

Brief.—A trussed skeleton frame or member composed of three or more sub-members which are spread centrally and converge at their ends, where they are joined in a connecting-piece, and being straight between any two points of attachment.



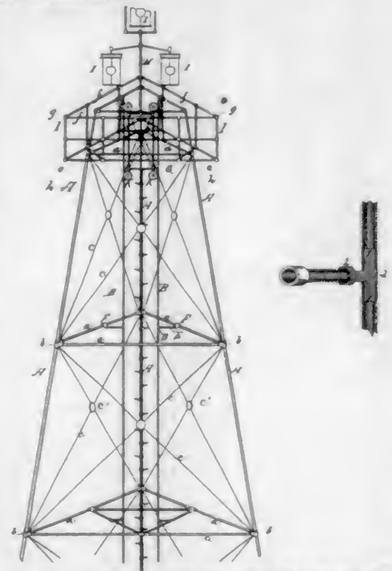
Claim.—1. In a skeleton iron tower, the trussed member A, consisting of three or more sub-members, *a*, centrally spread and converging, and connected at their ends, and joined by cross-ties intermediate to their ends, said sub-members being straight between adjacent points of attachment, whereby longitudinal compressive strain upon the entire member A gives direct longitudinal compressive strain upon all parts of each sub-member, substantially as described.

2. In a skeleton iron tower, the combination, with the base piece or step, of the trussed member A, consisting of three or more sub-members spread centrally, converging at their extremities, straight between their connections, and joined by end connecting-pieces, A', and intermediate ties, as set forth, the lower of said end pieces being provided with an eye, and connected with the base-piece, substantially as and for the purposes set forth.

3. A trussed skeleton member open at its center, triangular in cross-section, its members arranged to resist crushing, tensile, and transverse strains, constructed in sections with cylindrical, longitudinal, and transverse sub-members screw-threaded at their ends, connected by screw-threaded couplings, and trussed by diagonal adjustable tension brace-rods, the end sections of the longitudinal sub-members being connected to and diverging from unitary couplings at each end of the member, substantially as described and shown.

297,332. ELECTRIC-LIGHT TOWER. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed July 16, 1881. Renewed Mar. 17, 1884. (No model.)

Brief.—The lamp-carriage moves up and down on the way in the interior of the tower, and its mast, to which the lamps are hung, projects above the top of the tower when it is elevated. The coupling connecting the tubes of the uprights is made with a tenon to enter and fit into each adjoining tube-section, and is provided with a socket to receive the ends of the connecting-tubes.



Claim.—1. The combination, with a tower and a way, of a lamp-carriage mounted in said way and projecting above the top of the tower, substantially as described.

2. The combination, with a tower, of a lamp-carriage and a way for the same, said carriage being provided with a mast for supporting a lamp above the top of the carriage, substantially as described.

3. The combination, with a tower and an interior way, of a lamp-carriage mounted in said way, and one or more electric lamps supported on said carriage, substantially as described.

4. The combination, with a cross-sectionally-angular tower and a movable lamp-carriage, of lamps mounted upon the carriage and moving up and down in the angles of the tower, substantially as described.

5. The combination, with a tower and an interior way, of a lamp-carriage mounted in said way and projecting above the tower, substantially as described.

6. The combination, with a tower and a centrally interiorly arranged way, of a lamp-carriage mounted in said way, substantially as described.

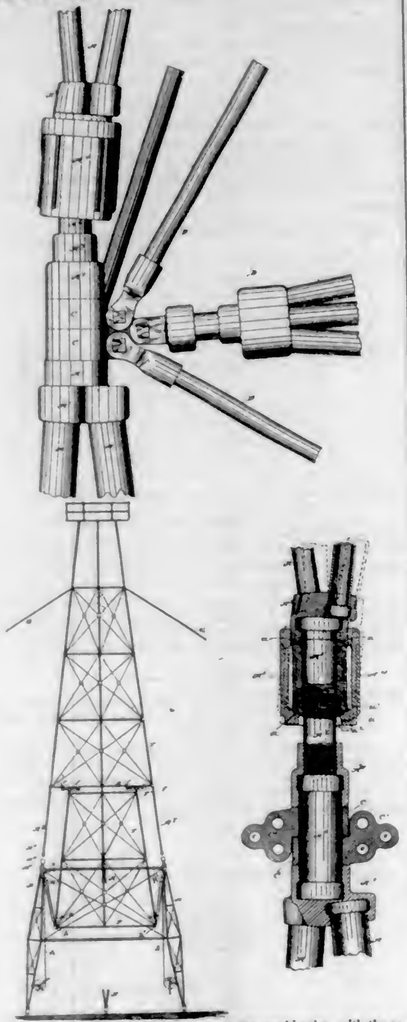
7. The combination, with a tower and a centrally interiorly arranged way, of a lamp-carriage mounted in said way, and means for raising and lowering said carriage, substantially as described.

8. The combination, with a skeleton tower and an interior way, of a lamp-carriage supported in said way, and one or more electric lamps mounted on said carriage, substantially as described.

9. The combination, with the sectional tubular way, the girts, and the connecting-tubes, of a coupling provided with tenons entering each opposing tube-section of the way, and with a socket receiving the ends of the connecting-tubes, substantially as described.

297,333. SKELETON IRON TOWER AND MODE OF ERECTING THE SAME. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed Dec. 8, 1882. Renewed Mar. 17, 1884. (No model.)

Brief.—The uprights of the adjacent sections of a skeleton tower are united by universal-joint couplings consisting of a steel nipple threaded into a sleeve having rounded ends, the sleeve inclosed in a shell rounded in its lower end and connected by a screw-thread to a nut fitting the upper rounded end of the sleeve. The upper part of the tower is erected within the permanent lower section of the tower, and is raised by a hoisting-tackle and a false work of a greater height than the uprights to be inserted.



Claim.—1. In a skeleton iron tower, the combination, with the uprights, of universal-joint couplings uniting adjacent sections, substantially as described.

2. In a skeleton iron tower, the combination, with the adjacent tower-sections, of the sleeve A^2, having its ends rounded in the surface of a sphere, the correspondingly-socketed coupling-nut A^3, and the shell A^4, constructed to engage the lower end of the sleeve, and threaded to the nut A^3, substantially as described.

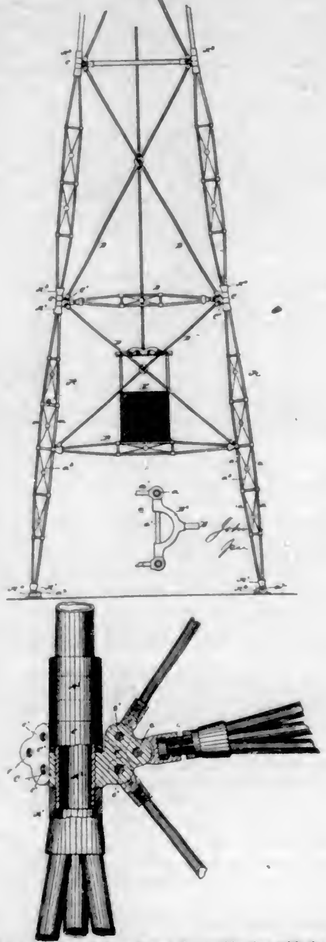
3. In combination with adjacent tubular tower-sections, the steel nipple A^2, sleeve A^2, shell A^4, and nut A^3, substantially as described, and for the purposes set forth.

4. The method, substantially as described, of constructing skeleton towers, which consists in building both upper and lower parts on the ground, the latter permanently in place, the former within the latter, and finally raising the upper part and connecting it to the lower part, substantially as described.

5. In combination with the permanently-set lower section of the tower, with an upper part of the tower erected within the same, and with suitable hoisting-tackle, a false work, F, of greater height than the length of the tower section or uprights to be inserted, substantially as described.

297,334. SKELETON TOWER. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed June 13, 1882. Renewed July 30, 1883. Again renewed Mar. 17, 1884. (No model.)

Brief.—The girts are connected to the lower sections of the uprights between their ends by a branched coupling fitting on the cross-ties of the sections. The couplings by which the girts and diagonal braces are joined to the uprights, at the ends thereof, are formed with eyes, which are slipped over the tubes at the joint, and offset apertured lugs, to which the girts and braces are pivotally secured.



Claim.—1. In a skeleton tower, the combination, with the girt B, connected to the lower sections of the tower-uprights between their ends, of the said uprights having the trussed construction described, and the diagonal braces terminating at their lower ends at or near their girt extremities, substantially as described, and for the purposes set forth.

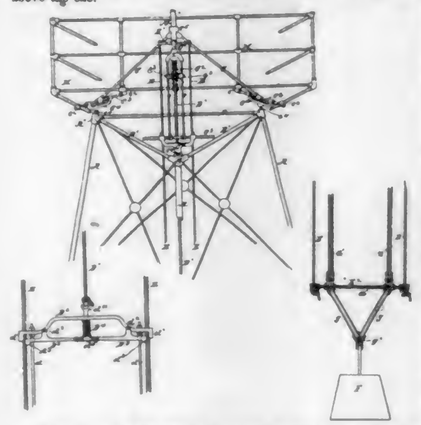
2. In a skeleton tower, the combination, with uprights A and horizontal girts, of the couplings formed of the two eyes C, having apertured lugs C', and suitable means for retaining the eyes in place upon the uprights, substantially as described, and for the purposes set forth.

3. As a special fitting for use in the construction of skeleton towers, as described, the casting composed of the eye C and the lug C', the latter being offset, as shown, and provided with the apertures *c c'*, arranged substantially as shown, and for the purposes stated.

4. In combination with the trussed sections of the tower-uprights and with the girt B, the fitting B'', centrally connected with the girt and embracing the tie *a'* at or near its ends, substantially as described.

297,335. SKELETON TOWER. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed Oct. 12, 1881. Renewed Mar. 17, 1884. (No model.)

Brief.—The inclined standards, which are supported by the uprights, are joined by a coupling at their upper ends and support the mast for holding the light, and also the guide and hoist ropes of the elevator-cab, which is placed in the interior of the tower. The hoist-rope runs over a pulley which is adjustable on its supporting-rods. The fittings on the lower ends of the inclined standards, which also support the landing, are screw-threaded into the couplings which connect them to the uprights. A weight secured to the lower ends of the guide-ropes holds them taut, while permitting expansion and contraction. A platform-landing is secured to the lower ends of the guide-ropes. Clamping-bars arranged to grip the guide-ropes, if the hoisting-rope breaks, are arranged above the cab.



Claim.—1. The combination of a tower, an electric lamp supported thereby, and an elevator mechanism placed in the interior of the tower, by which an attendant may reach the lamp, substantially as described.

2. In combination with the tower-uprights and the inclined standards C, the duplex standard C' and the pulley C^2, mounted upon the legs *c c* of the latter, substantially as and for the purposes stated.

3. In combination, the duplex leg C', pulley C^2, and bearings c^3, adjustably secured to the legs *c c*, substantially as described, and for the purposes set forth.

4. In combination with the three or more converging standards forming the apex of the tower, as described, the mast A^2 and a suitable connecting-piece, C^4, which joins the standards and supports the mast, substantially as and for the purposes set forth.

5. In combination with the uprights A and the inclined standards supported thereby, adjustable connections joining the standards with the uprights, substantially as described, and for the purposes set forth.

6. In combination with the uprights A and the inclined standards, the branched fittings C^4, and horizontal rods C^3, extended to give support to a landing, substantially as described.

7. In combination with the hollow tower, guides E for a cab, suspended from the top of the tower, means for securing the guides E at their lower ends, and means for holding them at a suitable and equal distance apart at both their ends, substantially as and for the purposes set forth.

8. In combination with a tower and an elevator cab or carriage, the suspended flexible guides E and means for holding said guides in practically uniform tension materially greater than is due to their weight, which means automatically yield with the expansion and contraction of the said guides, substantially as described.

9. In a tower, the combination, with suspended elevator-guides E, subject to expansion and contraction, of a weight suspended thereby clear of the ground, whereby a practically uniform tension is maintained upon said guides materially greater than that due to their own weight, while permitting them to expand and contract, substantially as described.

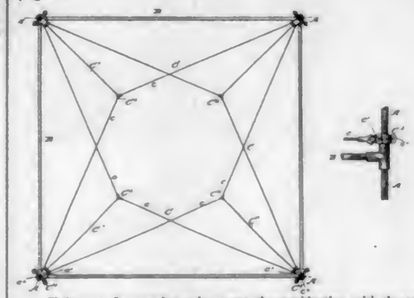
10. In combination with a skeleton tower, provided with an interior elevator, the platform G, forming a lower landing from which access may be had to the elevator cab or carriage, and located at a suitable elevation to allow passage beneath the same, substantially as described.

11. In combination with the suspended cab-guides E, the platform G, suitably supported at its outer end, and supported at its inner end from the guides E, substantially as described.

12. In combination with the flexible cab-guides E, the cab provided with clamping-bars D^2, arranged and actuated to bear upon the guides when the lifting-rope breaks, and fixed opposing bearings *d'*, whereby the ropes are first more or less deflected and then grasped, substantially as described.

297,336. SKELETON IRON TOWER. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed May 31, 1883. Renewed Mar. 17, 1884. (No model.)

Brief.—Combines with the uprights of a quadrangular tower diagonal ties centrally deflected by means of ties secured to the intermediate uprights.

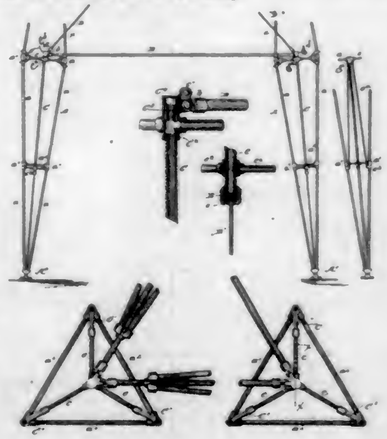


Claim.—1. In a quadrangular tower, the combination, with the uprights, of the diagonal ties C and the ties C', the former of said ties being centrally deflected, and the latter operating to hold the former under proper tension in such deflected position, substantially as described.

2. In the quadrangular tower, the combination, with the uprights, of the four diagonal ties C C, connected in pairs to the diagonally-opposite uprights, and the ties C' C', connected severally with the ties C and with the intermediate uprights, whereby the said ties C are held centrally deflected at opposite sides of the tower-axis, substantially as described.

297,337. SKELETON TOWER. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed May 31, 1883. Renewed Mar. 17, 1884. (No model.)

Brief.—The top of a center-post connected to the base-casting of a compound member is united to converging sub-members by a coupling. At the top of the center-post is a cap, to which a girt and diagonal brace are attached. The lower end of the center-post rests in a cap having a headed bolt threaded into the base-casting.



Claim.—1. In a skeleton iron tower, the combination, with the compound member A, of a part located and duly supported in the axis of said member, and between the ends thereof, and adapted for the attachment of a girt or brace, substantially as described.

2. In a skeleton iron tower, the combination, with the sub-members *a* of the compound member A, of radial sub-members *c*, and a coupling supported thereby, for the attachment of a girt or brace, substantially as described.

3. In combination with the compound upright A and diagonal brace D, the converging sub-members *c*, means for connecting said members with the diagonal brace, and means for resisting the upward strain of said diagonal brace upon the sub-members *c*, substantially as described.

4. In combination with the upright A and diagonal brace D, the converging sub-members *c* and a center-post, C, connected with the base-casting A', substantially as described.

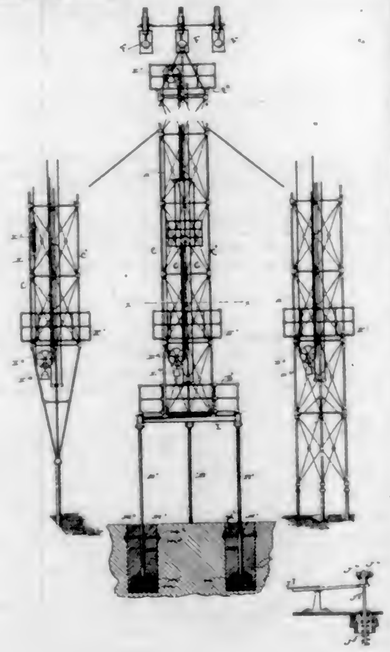
5. In combination with the compound upright A, the converging sub-members *c*, center-post, C, couplings C^2, and cap C^4, the latter constructed to afford attachment for the girt and diagonal, substantially as described.

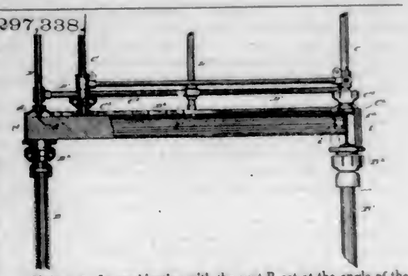
6. In combination with the sub-members *a* and coupling *a'*, Fig. 6, the central coupling, C^2, the threaded brace *c*, and nuts c^4, substantially as and for the purpose set forth.

7. In a compound member, A, the combination, with the centrally-supported coupling for a brace or girt, of a cap, E, and a headed bolt, E', threaded into the base-casting, substantially as described.

297,338. SKELETON TOWER. JOHN S. ADAMS, Elgin, Ill., assignor to the Detroit Iron Tower Company, Detroit, Mich. Filed May 31, 1883. Renewed Mar. 17, 1884. (No model.)

Brief.—The tower-uprights are supported by a post set at the angle of a sidewalk, and by posts set at the opposite sides of the cross-walk from the post at the angle, the posts being joined by beams. The posts are surmounted by recessed castings, in which rest the ends of the beams, the castings being connected with the posts by adjustable union-joints. A rail-post is threaded at its lower end through the upper part of each recessed casting, and has a point set in its lower end and entering the beam. The elevator-cab has an endless counterweighted hoisting-rope, connected therein and in reach of the occupant, and a foot-piece to release blocks clutching flexible guide-ropes, by means of followers pressed outward by spring-actuated toggle-arms. The base-posts rest in masonry, with collars and cross-rods embedded therein, the rods having nuts external to the masonry.





Claim.—1. In combination with the post B, set at the angle of the walk, and the posts B' B', set at the opposite side of the cross-walks from the post B, the beam I, joining the posts B', and the tower-uprights C, C', and C', deriving their support from said posts and beams, substantially as described.

2. In combination with the tower-uprights C, C', and C', the base structure described for the intersection of street-walks, consisting, essentially, of the posts B, B', and B', set in the relative position shown, and the beams I and I', joining said posts, and forming the immediate supports for the tower-uprights, substantially as described.

3. In combination with the posts B and B', and with the connected beams I and I', arranged as shown, the recessed castings I^3, surmounting the posts, and means for securing the ends of the beams to the said castings, substantially as described.

4. In combination with the posts B and B', and with the beams I and I', the castings I^3, forming seats for the ends of the beams, and adjustable union-joints B^3, connecting said castings with the posts, substantially as described.

5. In the base tower structure described, the combination, with the beams I and I' and recessed castings I^3, of the points *d*, inserted through the castings I^3, and entering the beams, substantially as described.

6. In combination with the recessed casting I^3 and beam I or I', the rail-post D, threaded through the upper surface of said casting I^3, and the point *d*, set in the lower end of the post D, substantially as described, and for the purposes set forth.

7. In a tower, the combination, with the elevator-cab and its guides, of an endless hoisting-rope, having the cab connected therein, and a counter-weight connected in said rope, said rope being arranged in convenient reach of the occupant of the cab, substantially as described, and for the purposes set forth.

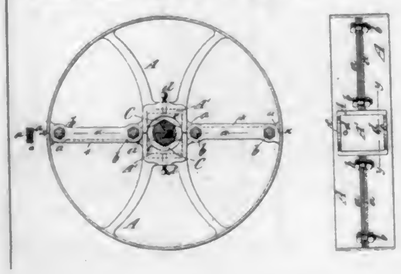
8. In combination with the elevator-cab, the hoisting-rope arranged in convenient reach of the occupant, a counter-weight connected with the rope, and means for holding the cab stationary in the absence of the occupant, substantially as described.

9. In combination with the cab-hoisting rope, counter-balance, and means whereby the occupant may raise and lower the cab, means for normally holding the cab locked to the guides, and means whereby the occupant may release the cab, substantially as described.

10. In combination with the cab, and with the flexible guide-ropes G therefor, the boxes J^3, suitable clutch-blocks contained therein, followers J^3, toggle-arms J^4, means for normally depressing the toggle, and means whereby the occupant may release the toggle, substantially as described.

11. In combination with the base posts or post of a tower, and with the masonry forming the foundations of the same, the collar M' and rods M^3, provided with suitable nuts external to the masonry, substantially as and for the purpose set forth.

297,339. SPLIT PULLEY. JOHN N. BALDWIN and THOMAS O. STILES, Bloomfield, N. J. Filed Feb. 25, 1884. (No model.)



Claim.—1. The combination, with a split pulley the sections of which may be separated to enable them to be placed on a shaft, of two clamps, with which the sections of the pulley are connected, and which have concave faces, and means whereby said clamps may be adjusted to and tightened upon the opposite sides of a shaft, to hold the shaft between their concave faces, substantially as herein described.

2. The combination, with a split pulley the sections of which may be separated to enable it to be placed on a shaft, of two clamps having angular or V-shaped faces, and with which the sections of the pulley are connected, and means whereby the clamps may be adjusted to and secured upon a shaft, substantially as herein described.

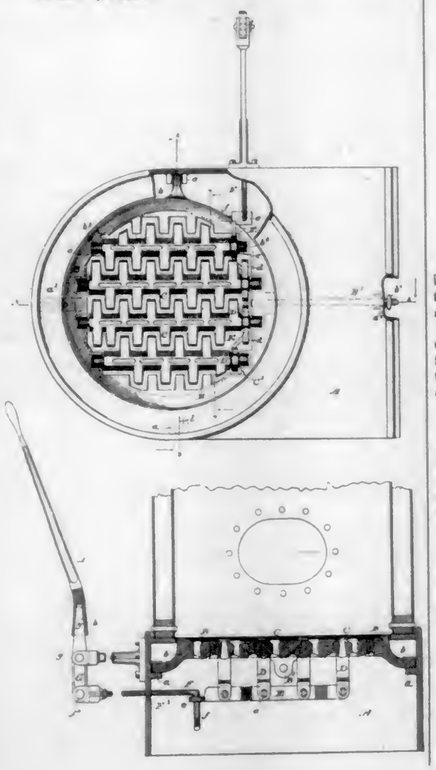
3. The combination, with a split pulley, of two clamps, with which the sections of the pulley are connected, and bolts passing through the two clamps on opposite sides and independent of the pulley, whereby the clamps may be tightened upon a shaft, substantially as herein described.

4. The combination, with the halves of a split pulley, of arms which are formed with the halves or sections, and which lap on or over each other in planes transverse to the axis of the pulley, and bolts inserted through said lapping arms in a direction parallel with the axis of the pulley, substantially as herein described.

5. The combination, with the halves or sections of a split pulley, of two clamps connected with the pulley, and having faces which are recessed or cut away between their ends, so as to obtain a bearing near each end, and means independent of the pulley for securing said clamps upon a shaft, substantially as herein described.

6. The combination, with the halves or sections of a split pulley, A A, each having a cavity or box, A′, in which are openings or slots *e*, of the clamps C, provided with lugs or ears *e′*, extending through said openings or slots *e*, bolts *g*, passing through said lugs or ears, and serving as a means of tightening the clamps upon a shaft, and bolts for securing the halves or sections of the pulley to said clamps, substantially as herein described.

297,340. GRATE. LEMUEL BANNISTER, Philadelphia, Pa. Filed Apr. 28, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the casing, the grate-frame pivoted therein, the grate-bars pivoted in the grate-frame, their pendants, the coupling-bar, the link-rod connected with the bar by a swivel-connection, and the curved guide on the link-rod to enable the coupling-bar to conform without strain to the tilting movements of the grate.

2. The combination, substantially as hereinbefore set forth, of the tilting grate-frame, the grate-bars rocking therein, the pendants, the coupling-bar, the link-rod, the swivel-connection between the bar and link, and the guide-slot in the casing.

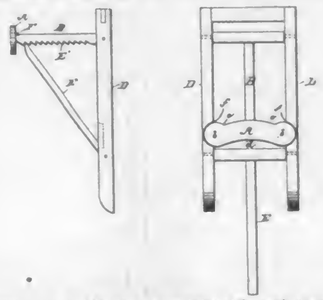
3. The combination, substantially as hereinbefore set forth, of the casing, its open bearings, the grate-frame, its trunnions resting in said bearings, the open bearings of the grate-frame, and the grate-bars resting therein, whereby both the grate-frame and grate-bars readily may be assembled or separated from each other and from the casing.

4. The combination, substantially as set forth, of the grate-frame, the grate-bars, the pendants for rocking the grate-bars interposed between the studs and trunnions of the grate-bars inside the grate-frame, and the wings *d* of the pendants, which constitute grate-bar teeth which serve to agitate the fuel.

5. The combination, substantially as hereinbefore set forth, of the casing, the tilting grate-frame, the grate-bars rocking therein, the tilting-handle of the grate-frame, the pendants, their enlarged heads, the coupling-bar, the link-rod, the loose or swivel-joint connection between the bar and link, the rocking lever, and the guide-slot in the casing.

6. The combination of the casing, the pivoted grate-frame, the trunnions on the sides of the grate-frame on which the frame rocks, the handle rigidly secured to the front of the grate-frame, and means for suspending the handle so as to hold the grate in a horizontal position, substantially as set forth.

297,341. CLOTHES-HANGER. LOUIS BARXANT, Baltimore, Md. Filed Jan. 3, 1884. (No model.)

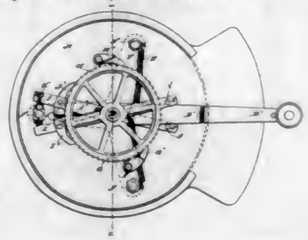


Claim.—1. A clothes-hanger consisting of the notched arm B, having a cross-bar, A, hinged at its free end, and a prop, E, for supporting the arm, the arm and prop being pivoted to the support D, substantially as shown and described.

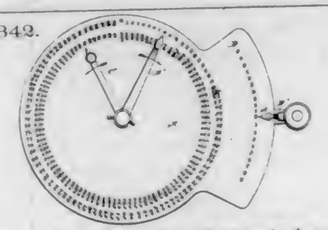
2. A clothes-hanger consisting of the notched arm B, having the cross-bar A at its free end, and formed with enlargements *b b* at its ends for holding a garment thereon, and a prop, E, for supporting the arm, the arm and prop being pivoted to the support D, substantially as shown and described.

297,342. ADDING-MACHINE. WILLIAM HENRY BEATLEY, Hurdsville, Ma. Filed Aug. 14, 1883. (No model.)

Brief.—Movement of the lever to one side of the central "0" actuates the units index; to the other side, the tens index. Each index, with its actuating devices, is independent of the other.



297,342.



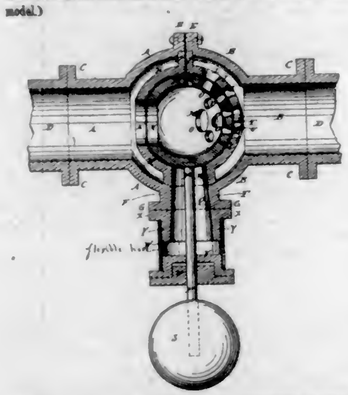
Claim.—1. The combination, with the dial A, bearing the two concentric circular series of numerals B and C, reading in opposite directions, and also bearing a row of numerals, D, proceeding both ways from a central zero, of indicator-hands B′ C′, supported centrally of the series B and C, a lever movable in the direction of the row of numerals D, and mechanism connecting the lever with the indicator-hands, constructed to move said hands independently in opposite directions, whereby movements of the lever D to points opposite given numerals in the row D′ will carry the indicator-hands a corresponding number of places along the series B and C, substantially as and for the purposes set forth.

2. The combination, with the dial-plate bearing circular series of numerals B and C, of a central arbor, E, oppositely-toothed fast and loose ratchets G and H, indicator-hands B′ and C′, a hand-lever, D′, and movable pawls arranged to engage the ratchets, and constructed to be thrown, one in one direction and the other in the other direction, alternately by vibration of the hand-lever, substantially as described.

3. In an adding-machine, the combination, with the arbor E and ratchet-wheels G and H, mounted thereon, of a freely-pivoted lever, D′, pawl-levers I and J, separately movable by vibration of the hand-lever, a stop or stops for said pawl-levers, means for returning the pawl and hand-levers to their normal positions, and means for preventing the rotation of the ratchets during the return of the pawl-levers, substantially as described.

4. In an adding-machine, the combination, with the arbor E and fast and loose oppositely-toothed ratchets G and H thereon, of the lever D′, pawl-levers I and J, provided with pins *i* and *j*, springs O and P, and detent-pawls G′ and H′, substantially as and for the purposes set forth.

297,343. MARINE-ENGINE GOVERNOR. ALEXANDER HAMILTON BELL and ASPINWALL FULLER, New York, N. Y. Filed Dec. 17, 1883. (No model.)



Claim.—1. A marine-engine governor constructed substantially as herein shown and described, and consisting of the shell A B, the two-part spherical valve-seat H I, having flanges J and perforations K L R, the spherical valve M, having perforations N O, and provided with a weighted valve-stem, P, and the stuffing-box V and flexible connecting-hose W, as set forth.

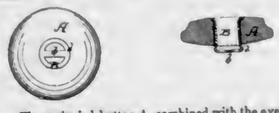
2. In a marine-engine governor, the combination, with the shell A B, of the two-part spherical valve-seat H I, having flanges J and perforations K L R, and the spherical valve M, having perforations N O, and weighted stem P S, substantially as herein shown and described, whereby the admission of steam will be regulated and stopped by the rocking and pitching of the vessel, as set forth.

3. In a marine-engine governor, the valve constructed substantially as herein shown and described, and consisting of the two-part spherical seat H I, having flanges J and perforations K L R, and the spherical valve M, having perforations N O, and weighted stem P, whereby the rocking and pitching of the vessel will move the said valve to partly or fully shut off steam, as set forth.

4. In a marine-engine governor, the combination, with the valve-seat H I, having vertical slot U, and the valve M, of the pin T, substantially as herein shown and described, whereby the said valve is kept from turning about the axis of its stem, and taking its perforations out of register with the perforations of the valve-seat, as set forth.

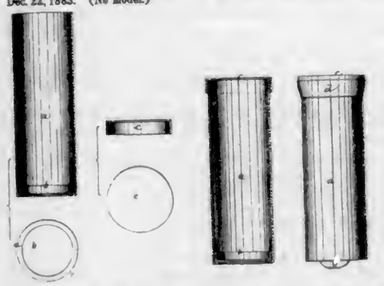
5. In a marine-engine governor, the combination, with the collar F of the shell A B, and the valve-stem P, of the stuffing-box V, and the flexible hose W, substantially as herein shown and described, whereby the escape of steam around the oscillating valve-stem will be prevented, as set forth.

297,344. BUTTON. JOHN BIRD, Union City, Conn. Filed Feb. 8, 1884. (No model.)



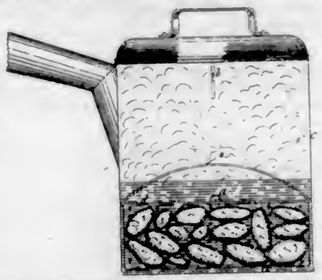
Claim.—The swiveled button A, combined with the eyelet B, which has lower enlargement, *d*, that projects beyond the back of the button, and integral cross-bar *b*, substantially as herein shown and described.

297,345. CARTRIDGE-SHELL. PAUL BOCA, Paris, France. Filed Dec. 22, 1883. (No model.)



Claim.—As an improved article of manufacture, a cartridge-shell constructed of a tube, *a*, with an inturned flange, a bottom, *b*, with a flange, and a flanged cap, *c*, the said three parts being made from celluloid or its specified equivalent, and cemented together, substantially as set forth.

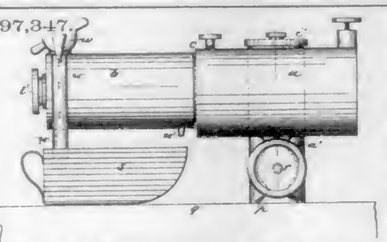
297,346. POTATO-STEAMER. CHRISTOPHER FABIAN BOWER, 43 College Street, Liverpool Road, County of Middlesex, England. Filed Aug. 24, 1883. (No model.) Patented in England Feb. 13, 1883, No. 780.



Claim.—The saucepan *c*, having a stud, *b*, secured thereto at or near its upper end, in combination with the vessel *d* fitting therein, and having the loop *a*, secured thereto at or near its upper end, and provided with the handle *e*, substantially as described.

297,347. LUBRICATOR. HENRY R. A. BOYS, Barrie, Ontario, Canada. Filed Jan. 17, 1884. (No model.)

297,347.



Claim.—1. A lubricator constructed with an oil-cylinder and forcing-piston and a liquid-gage cylinder and forcing-piston so arranged with relation to each other that the outward pressure of the lubricant by the piston of one cylinder shall cause a corresponding outflow of the liquid from the other cylinder to measure the rate of feed of the lubricant, substantially as shown and described.

2. A lubricator constructed with an oil-cylinder, *a*, and a gage-cylinder, *b*, provided with connecting-pistons *d e*, and having a transparent passage, *u*, for the gaging-liquid, to indicate the rate of feed of the lubricant, substantially as shown and described.

3. A lubricator constructed with oil-cylinder *a* and gage-cylinder *b*, connected in the line by a plug, *c*, and provided with pistons *d e*, to be moved one by the other, substantially as shown and described.

4. The combination, with the oil-cylinder *a*, of its piston *d*, passages *m*, *l*, and *o* in and along the side wall of the said cylinder, and the valve *n*, substantially as shown and described.

5. The combination, with the gage-cylinder *b*, of its piston *e*, pipe and valve *t t'*, and the valve *w*, substantially as shown and described.

6. The combination, with the oil-cylinder *a*, having piston *d*, and rod *f*, passages *m l o*, and valve *n*, of the gage-cylinder *b*, having piston *e*, pipe and valve *t t'*, valve *w*, and sight-glass *u*, substantially as shown and described.

7. The combination, with the gage-cylinder *b* and its piston *e*, pipe *t*, valve *t'*, and drop-valve *w*, of the vessel *s*, substantially as shown and described.

8. The combination, with the gage-cylinder *b* and vessel *s*, of the drip-nozzle *u'*, substantially as shown and described.

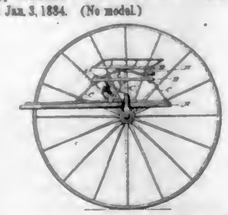
9. A lubricator constructed with oil and gage cylinders *a b*, having pistons *d* and *e* acted on one by the other, and arranged to feed the oil and measure the feed, and with an oil-reservoir having a downwardly-opening valve, *c'*, to be closed by steam-pressure while the piston of cylinder *a* is forced forward by the steam-pressure to feed the oil from said cylinder, and said reservoir being arranged to feed oil by an opening of its valve *c'* when the steam-pressure is cut off and the feed from the oil-cylinder *a* ceases, substantially as shown and described.

10. The reservoir *a'*, constructed with a case, *j'*, apertured to receive the oil-vessel *d'*, constructed with an opening, *e'*, and a valve therefor, and the valve *c'*, and said case connecting by a passage, *b'*, with the steam-chest *q*, substantially as shown and described.

11. The combination, with the case *j'*, of the reservoir *a'*, having the oil-vessel *d'*, apertured at *s'*, and valve *c'* of the cut-off valve *k'*, substantially as shown and described.

12. The reservoir *a'*, constructed with an apertured case, *j'*, having a valve, *c'*, controlling a passage, *b'*, to the steam-chest, and an oil-vessel, *d'*, apertured at *s'*, and having the adjustable plug-valve *f''*, substantially as shown and described.

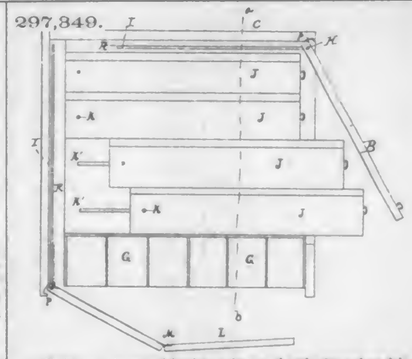
297,348. SKELETON SPEED-VEHICLE. THOS. H. BROWN, Chicago, Ill. Filed Jan. 3, 1884. (No model.)



Claim.—The combination, with the skeleton body and inclined seat-braces, of a fixed frame, B, secured to said braces, a vertically-movable seat, and springs supporting the seat and connecting it with the frame B, substantially as and for the purpose set forth.

297,349. TICKET-CASE. WILLIAM E. CHATTERTON, Troy, N. Y. Filed May 4, 1883. (No model.)

297,349.

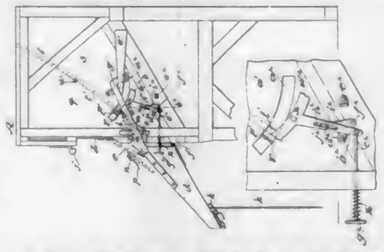


Claim.—1. As an article of manufacture, the wire frame for a ticket-case, consisting of the border-wire, a plurality of vertical wires, and a plurality of horizontal wires with hooks, as shown, said parts being united together as described.

2. A ticket-case or the like formed with a recess or chamber, R, for receiving the sliding door when the case is opened, and the end of the outer wall provided with a notch, P, for receiving the inner end of the door when the case is closed, substantially as described.

3. The organized ticket-case consisting of the case formed with recesses R R, provided with the upper and lower guiding-grooves, I, the parallel sliding supports J, having the wire frames for suspending the tickets, and doors provided with upper and lower guide-pins, substantially as and for the purposes set forth.

297,350. COAL-CHUTE. JOSEPH K. CLIFTON, Geneseo, Ill. Filed Feb. 11, 1884. (No model.)



Claim.—1. The combination of a self-closing latch-bolt, *h*, with the balanced apron *d* and the coal box or pocket *a*, said latch-bolt having the chain, rope, or rod *k* attached to it in such manner that the pull of the chain, rope, or rod to swing the balanced apron down will unlatch the balanced apron, substantially as described.

2. The combination of the pawl-brace *l* with the door *e* of the box or pocket *a* and the balance-arms *g* of the balanced apron *d*, said balance-arms having the notches *m* for said pawl-brace, substantially as described.

3. The buffers *p*, attached to the door *e*, in combination with the latch-bar *n*, catches *o*, and the balanced apron *d*, substantially as described.

4. The partition *t*, having the door *t'* and latches *v*, in combination with the coal box or pocket *a*, having door *e* and balanced apron *d*, and also having catches w^2, substantially as described.

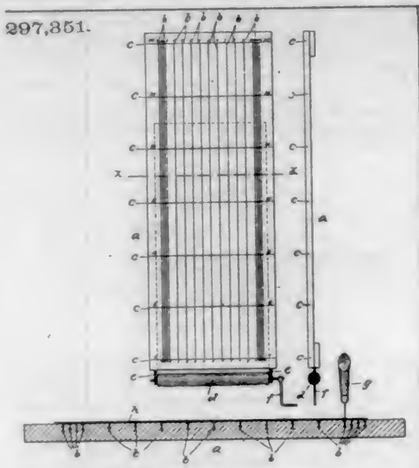
5. The partition *t*, having the door *t'*, with latches *v*, in combination with the box or pocket *a*, having the curved slots a^2, catches w^2, levers b^2, stops d^3 and e^2, rod c^3, handle g^2, and spring *z*, said levers b^2 being connected to the cranked rod f^2, i^2, and j^2, substantially as described.

6. The supporting-posts *c'*, set under the boxes or pockets *a*, and having spliced pieces *d* for the side frames of the boxes or pockets *a*, attached to said posts above the point where the weights *c'* of the balance-arms *g* of the balanced apron *d* drop when the balanced apron is in a closed position, in combination with the balance-arms *g*, attached to the overlapping sides *k'* of the balanced apron *d*, substantially as described.

297,351. CUTTING-BOARD. GEORGE W. CODY, Hartford, Conn. Filed Aug. 14, 1883. (No model.)

Claim.—A cutting-board, *a*, having the longitudinal grooves *b* and the transverse grooves *c*, arranged substantially as shown and described, in combination with a roller, *d*, supported in suitable brackets or bearings, all substantially as described.

297,351.

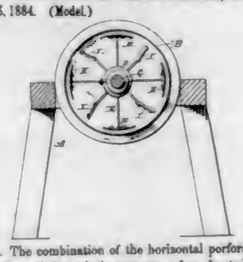


297,352. SNAP-HOOK. JAMES C. COVERT, West Troy, N. Y. Filed Jan. 7, 1884. (No model.)



Claim.—An improved snap-hook having an end hook and an end loop, and an integral body cast therewith, said body being chambered longitudinally, and having an open uniform slot extending from the forward end of same where base of hook is situated to the loop at rear end, and being provided with a spring and sliding bolt, all substantially as shown and described, for the objects herein set forth.

297,353. GRAIN-SCOURER. GEORGE A. DAWSON, Cardington, Ohio. Filed Jan. 16, 1884. (Model.)



Claim.—1. The combination of the horizontal perforated cylinder, a shaft passing through it, and the two sets of perforated scouring devices, which are arranged at right angles to each other, substantially as described.

2. The combination of the horizontal perforated cylinder B, the shaft G, which passes through it, a set of curved perforated scouring devices, and a set of perforated radial scouring devices, which extend at right angles to the devices H, substantially as described.

3. The combination of the horizontal perforated cylinder B, the shaft G, which passes through it, a set of curved perforated scouring devices, and a set of perforated radial scouring devices, which extend at right angles to the devices H, and a means for adjusting the said sets of scouring devices with respect to each other, substantially as set forth.

297,354. COMPOSITION FOR DESTROYING THE GRAPE OIDIUM. HENRI DE CHASSELOUP-LAUBAT, Périgueux, France. Filed Jan. 22, 1884. (No specimens.) Patented in France May 22, 1883, No. 155,595.

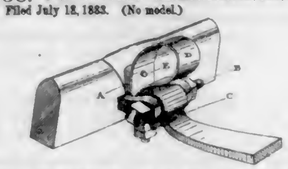
Claim.—The herein-described composition of matter to be used for destroying the oidium on the grapes, consisting of water, pentasulphuret of potassium, and marine salt, in the proportions specified.

297,355. THIMBLE. MARIE DEMME, Mühlhausen, Germany. Filed Oct. 12, 1883. (No model.) Patented in Germany Apr. 21, 1883, No. 25,669; in Belgium Sept. 29, 1883, No. 62,742; in England Sept. 29, 1883, No. 4,639, and in Italy Sept. 30, 1883, XXXI, 440, XVII, 15,951.



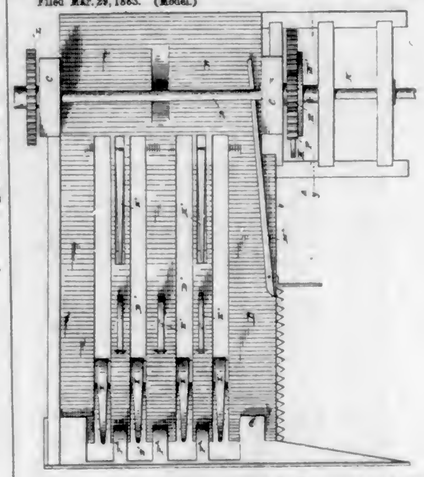
Claim.—A thimble lined with an elastic material, such as rubber, as described, for the purpose specified.

297,356. THILL-COUPLING. JEROME C. DIETRICH, Galt, Ontario, Canada. Filed July 12, 1883. (No model.)



Claim.—The combination, with the jack A, having pin E and bolt B, of the thill C and the spring D, having a large loop extending over the thill, as shown, whereby the thill is pressed downward upon the bolt and is made capable of easy removal, substantially as described.

297,357. HARVESTER. WALLACE DINGMAN, Battle Creek, Mich. Filed Mar. 29, 1883. (Model.)



Claim.—1. The combination, with the grain-platform and rake-head, of the grain-holding fingers, the spring-levers, and the ropes connecting said fingers and spring-levers and passing over the rake-head, the whole arranged to operate substantially as and for the purposes herein set forth.

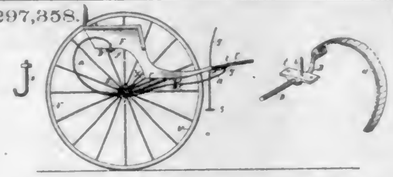
2. The combination of the double platform, the rake-head, mechanism for reciprocating the rake-head, and the reversely-arranged springs secured to the bottom portion of the platform, as and for the purposes herein set forth.

3. The combination of the platform, the rake-head, the mechanism for reciprocating the rake-head, and a shoe hinged to the rake-head, and adapted to fall in recesses in the bottom portion of the platform and to slide upon said bottom, as and for the purposes herein set forth.

4. The combination, in a harvester, of a double platform, the lower platform provided with recesses and openings, as described, the reciprocating rope and spring-levers, grain-holding fingers, and reversely-pointing springs, all carried by said lower platform, as and for the purposes herein set forth.

297,358. TWO-WHEELED VEHICLE. LEVI DONLEY, Kalamazoo, Mich., assignor of one-half to Hobert B. Sorter, same place. Filed Feb. 8, 1884. (No model.)

297,358.



Claim.—1. In a two-wheel vehicle, the combination, with the body, the thills, and the rocking bar having the end cranks, of the side and bolster springs, arranged substantially as set forth.

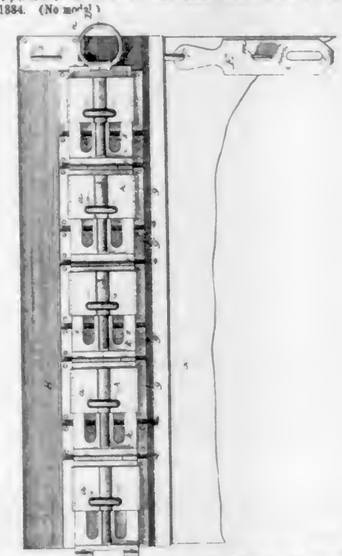
2. The combination, with the body and suitable supporting-springs, of the thills adjustably connecting with the axle by means of the confining-clips provided with the wedge-shape washers, substantially as described.

3. The combination, with the body and the side and bolster springs, of the rocking bar provided with the end cranks, and means for adjustably connecting the ends of the bolster-spring with the side springs, substantially as specified.

4. In a two-wheel vehicle, the combination, with the body provided with a rocking bar having a crank at each end, of the side springs, the C ends thereof pivotally connected with said cranks, and a bolster-spring, all substantially as set forth.

5. The combination, with the body and thill, of the side and bolster springs, and the double-jointed confining-clips provided with a thumb-nut and the rounded nut, substantially as set forth.

297,359. MAIL-BAG. JOHN EBERT, Frederick, Md. Filed Mar. 24 1884. (No model.)



Claim.—1. In combination with a mail or like bag having a series of holes near its mouth, a flap having a series of staples adapted to pass through the holes in the bag, and a series of locking-bolts, the staples and bolts being secured to the flap, all substantially as described.

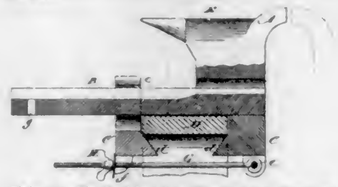
2. In combination, the bag having a series of holes near its mouth, the flap attached to the bag below the series of holes, the staples, the plates *g*, and straps A, and the locking-plates having bolts adapted to engage with the staples and straps, all secured to the flap, all substantially as described.

3. The plates *g*, having straps A, the plates being attached to the flap, with spaces between equaling the length of movement of the locking-plates, and the hinged locking-plates, the hinges being placed in the spaces between said plates, all these parts being combined with the staples and bag, substantially as described.

4. In combination with the series of connected locking-plates, and the straps A, and plates *g*, and with the staples, all secured to the flap, the locking-hasp and its staple, all substantially as described.

5. In combination with a mail or like bag having a series of holes near its mouth, a flap attached to the bag below the series of holes, a line of staples attached to the flap, and a flexibly-connected series of locking-plates, also attached to the flap, said locking-plates being adapted to slide longitudinally in engaging with the staples, all substantially as described.

297,360. VISE ATTACHMENT. CHARLES H. EDDY, Auburn, N. Y. assignor to himself and Gustave S. Baker, same place. Filed Mar. 4, 1884. (No model.)

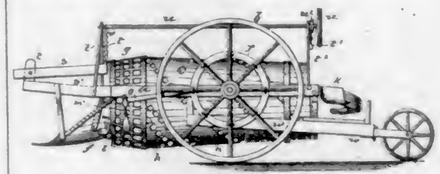


Claim.—1. The fixed jaw C on the under side of the vise, in combination with the adjustable jaw C′, arranged to slide on or along the bed of the vise, and the pivoted bolt G, with its nut H, for adjustment of the one jaw relatively to the other, substantially as and for the purpose herein set forth.

2. In combination with the vise, the fixed jaw C on the under side thereof, constructed with a beveled inner face or projection, *d*, and adjustable sliding jaw C′, having a reversely-beveled inner face or projection, *d*, in combination with means for adjusting the movable jaw, and whereby the vise is drawn down and firmly locked to its place, essentially as described.

3. The reversely-beveled fixed jaw C and adjustable jaw C′ of the vise-holding attachment, constructed for operation as described, in combination with the pivoted adjusting screw-bolt G and its thumb-screw H, applied to said jaws, substantially as and for the purposes specified.

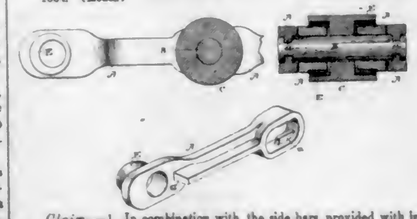
297,361. POTATO-DIGGER. JOB ESTES, Sterling, Mich. Filed Oct. 20, 1883. (No model.)



Claim.—1. In a potato-digger, the revolving drum mounted in bearings in the end timbers of the main frame, having the tapering open-work portion *g* at the forward end, the spirally-arranged opening in the remaining portion, and the internal spiral flange, *i*, extending throughout its length, and mechanism for revolving said drum, substantially as specified.

2. In a potato-digger, the combination, with the main frame, of the platform pivoted thereto in rear of the revolving open-work drum, and mounted upon a caster-wheel, and the seats arranged above the platform, substantially as and for the purposes specified.

297,362. DRIVE-CHAIN. WILLIAM DANA EWART, Chicago, Ill., assignor to the Ewart Manufacturing Company, same place. Filed Feb. 29, 1884. (Model.)



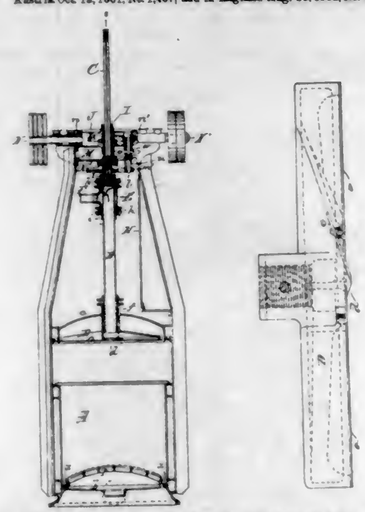
Claim.—1. In combination with the side bars provided with inwardly-projecting bosses (to get a large wearing-surface on the pintle) and the pintle-like end bars, anti-friction rollers which bear and run upon the pintle-like devices or end bars, and which have overhanging peripheries covering the boss-like devices, all substantially as and for the purposes set forth.

2. A drive-chain the side bars of which have inwardly-projecting

bosses adapted to work on a pintle-like end bar, said bosses having apertures or holes for the pintle formed eccentrically to the cylindrical contour of the bosses, substantially as and for the purposes set forth.

3. In combination with the side bars of a link, a pintle-like removable end bar having notches or recesses *e*, the oblong openings in two ends of said side bars provided with centrally-arranged feathers or ribs, *a*, adapted to engage with the recesses of the pintle of an adjacent link in such manner as to afford a bearing for the pulling strain on the unmutilated portion of the said pintle-like end bar, substantially as set forth.

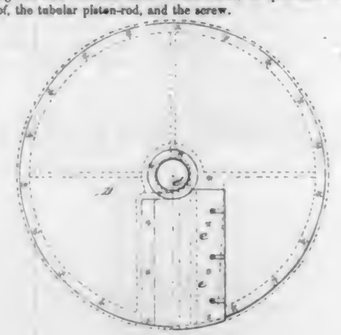
297,363. FILTERING APPARATUS. JOHN F. C. FARQUHAR and WALTER OLDHAM, London, England; said Oldham assignor to said Farquhar. Filed Nov. 4, 1882. (No model.) Patented in France Sept. 13, 1879, No. 132,711; in Belgium Sept. 15, 1879, No. 49,316; in Germany Sept. 30, 1879, No. 9,557; in Spain Mar. 30, 1881, No. 1,379; in Italy May 19, 1881, No. 12,933; in Portugal June 1, 1881, No. 678; in Sweden July 22, 1881, No. 210; in Norway Aug. 2, 1881; in Denmark Oct. 12, 1881; in Austria Oct. 13, 1881, No. 1,407, and in England Aug. 25, 1882, No. 4,072.



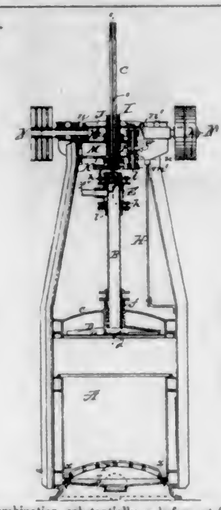
Claim.—The combination, substantially as before set forth, of the filtering-chamber, with the cutter-head, the screw, and the differential gear, for causing said cutter-head to revolve and to move progressively through the filtering-chamber.

297,364. APPARATUS FOR FILTERING LIQUIDS. JOHN F. C. FARQUHAR and WALTER OLDHAM, London, England. Filed July 7, 1883. (No model.) Patented in France Dec. 19, 1881, No. 146,417; in England Aug. 25, 1882, No. 4,072; in Belgium Sept. 19, 1882, No. 59,054; in Germany Oct. 27, 1882, No. 21,976; in Italy Nov. 10, 1882, No. 14,752; in Canada May 5, 1883, No. 16,820, and in Brazil July 21, 1883, No. 74.

Claim.—1. The combination, substantially as before set forth, of the filtering-chamber with the hollow cutter-head, the perforated bottom thereof, the tubular piston-rod, and the screw.



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2. The combination, substantially as before set forth, of the filtering-chamber with the cutter-head, the screw, the tubular piston-rod, and the feed-chest connected with said piston-rod between the screw and the cutter-head.

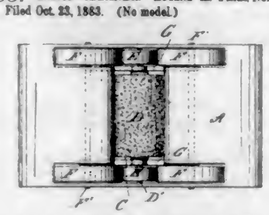
3. The combination, substantially as before set forth, of the filtering-chamber with the cutter-head, the tubular piston-rod, the feed-chest, and the slide and guide for said chest.

4. The combination, substantially as before set forth, of the cutter-head, the filtering-chamber, and the convex grid at the bottom of the said chamber, constructed of less diameter than said chamber, so that a peripheral pocket is formed for filtering material around said grid.

5. The combination, substantially as before set forth, of the cutter-head, the filtering-chamber, and the convex grid at the bottom of the filtering-chamber.

6. The combination, substantially as before set forth, of the filtering-chamber, the revolving cutter-head, the screw, the screw-nut, the cross-head which supports said screw-nut, and the inclined uprights which combine said cross-head with the filtering-chamber.

297,365. HORSE-CLEANER. EUGENE M. FARR, North Muskegon, Mich. Filed Oct. 23, 1883. (No model.)



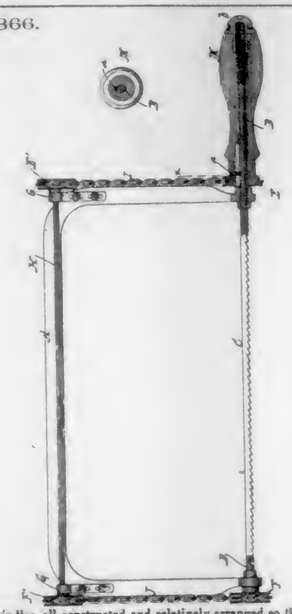
Claim.—In a horse-cleaner, the combination, with a box, A, having a slot, C, of the brush D, the links or bars G, and the friction-wheels E and F, substantially as herein shown and described.

297,366. HANDSAW. CHAS. A. FENNER, Mystic River, Conn. Filed Feb. 14, 1884. (No model.)

Claim.—1. A handsaw consisting, essentially, of a frame or arched holder, two spindles having their bearings in said frame, the saw-blade secured to said spindles, a handle fitted on one of the spindles, and mechanism, substantially as described, for connecting said handle with the other spindle, whereby both spindles are operated or turned simultaneously for setting the saw carried thereby into different positions relatively to the frame or holder, substantially as described.

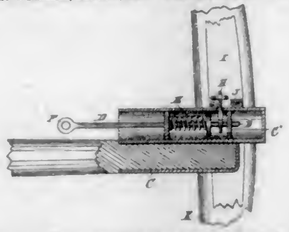
2. The combination of the spindles B and D, having chain-wheels E F, the handle M, fitted on the spindle B, the chains I, and the longitudinal shaft H, having chain-wheels E′ F′, with the frame or holder A, having bearings for the spindles and shaft, and the saw-blade C, secured

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to the spindles, all constructed and relatively arranged so that the turning of the handle will enable both spindles to be rotated simultaneously for setting the saw into different positions, substantially as described.

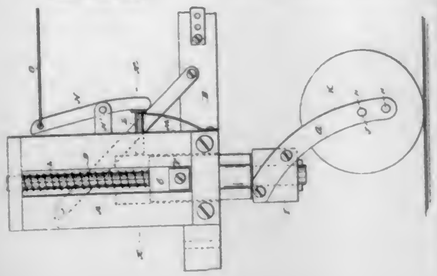
297,367. DEVICE FOR ATTACHING AND DETACHING HORSES. CICERO C. FERRELL, Shubuta, Miss. Filed Feb. 4, 1884. (No model.)



Claim.—1. The ferrule C, having tubular attachment C', provided with transverse opening G and spring-actuated pin D, substantially as shown and described.

2. The combination of the thills having the ferrules C and spring-actuated pins D, connected therewith, and the hames having the loops H and guards J, substantially as shown and described.

297,368. TONGUE-REST. JOHN FISHER, Riley, Ind. Filed Feb. 26, 1884. (No model.)



Claim.—1. In a tongue-rest, the combination, with the tongue, of the upright frame A, the slide C, the rod D, projecting upward from the same, and the spiral spring E, surrounding the said rod, substantially as herein shown and described.

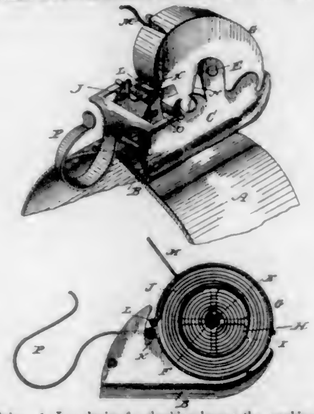
2. The combination, with the tongue B, of the upright frame A, the slide C, the upright rod D, the spring E, the swivel I, the arms G, and the wheel K, substantially as herein shown and described.

3. The combination, with the tongue B, of the upright frame A, the slide C, the spring E, the wheel K, held on the lower end of the slide, and the block F on the slide, substantially as herein shown and described.

4. The combination, with the tongue B, of the slide C, the spring E, the wheel K, held on the lower end of the slide, the sliding bolt L, the spring M, and means for pressing the bolt L inward, substantially as herein shown and described.

5. The combination, with the tongue B, of the slide C, the spring E, the wheel K, held on the lower end of the slide, the sliding bolt L, the spring M, the pivoted lever N, and the cord O, substantially as herein shown and described.

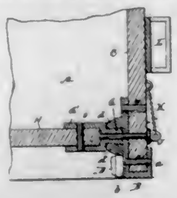
297,369. CHECKING DEVICE FOR HARNESS. THEODORE B. FLOYD and HENRY L. BARTON, Pine Hill, N. Y. Filed Feb. 4, 1884. (No model.)



Claim.—1. In a device for checking horses, the combination of a plate adapted to be attached to the saddle of the harness, having upright parallel lips shaped into hooks or catches at their forward ends and united by a transverse axle or pin at their rear ends, a drum rolling upon said axle and provided with a central sleeve, a barrel containing a spring, the inner end of which is secured to the sleeve of the drum, a ribbon secured to the spring-barrel, and having a hook upon its outer end formed with an open frame adapted to catch over the hooks upon the upright lips, and means, substantially as described, for tilting the outer drum forward or backward, as and for the purpose shown and set forth.

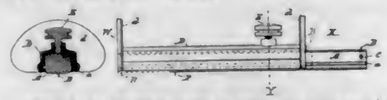
2. The combination, in a horse-checking device, of a plate adapted to be secured to the harness-saddle, having upright parallel lips shaped into hooks or catches at their forward ends, and united by a transverse axle or pin at their rear ends, a drum rocking upon said axle and provided with a central sleeve, a spring secured to the base-plate and to the drum, tilting it forward, a barrel containing a spring the inner end of which is secured to the sleeve of the drum, a ribbon secured to the spring-barrel, and having a hook upon its outer end formed with an open frame adapted to catch over the hooks upon the upright lips, and a bifurcated plate secured to the upper side of the drum, as and for the purpose shown and set forth.

297,370. WAGON-BODY. CHARLES F. FOLSOM, Atoka, Ind. Ter., assignor of one-half to John A. Dillon, same place. Filed Dec. 15, 1883. (No model.)



Claim.—The combination, with the bottom board A, corner-standards B, having vertical grooves for the ends of the side boards, dovetailed projections *d*, and bars D, secured to the standards, and having lower screw-threaded ends passed through the bottom board, and provided with nuts on their ends, of the U-shaped castings G', for the reception of the end-boards, and having the dovetailed tongues G, bolts *e p*, and locking-pin J, substantially as shown and described.

297,371. DOUBLE-HEADED GAGE. GEORGE S. FORREST, Concord, N. H. Filed Feb. 25, 1884. (No model.)

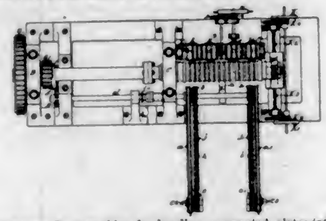


Claim.—1. In a carpenter's gage, the combination of the gage-bar A, having at either end the marking-points B, projecting from opposite sides thereof, with the double-headed slide D, provided with the thumb-screw E, operating substantially as and for the purpose set forth.

2. In a carpenter's gage constructed substantially as shown, the combination of the gage-bar A, having tongues *a*, and the marking-points B, projecting from opposite sides thereof, with the double-headed slide D, having grooves *d'*, and the screw E, constructed and operating substantially as described, and for the purpose specified.

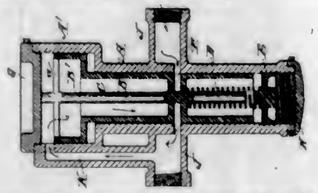
3. In a carpenter's gage-bar, A, the combination, with one or more marking-points, B, of the set-screws C, acting against said points B, for the purpose of holding them in position, substantially as and in the manner specified.

297,372. APPARATUS FOR CORRUGATING TUBES. SAMSON FOX, Harrogate, County of York, England. Filed Sept. 25, 1883. (No model.) Patented in England Nov. 15, 1881, No. 5,006; in Belgium May 26, 1882, No. 58,030, and in Germany June 2, 1882, No. 21,533.



Claim.—In a machine for bending corrugated plates into corrugated tubes, suitable guides adapted, as shown, to engage with a groove or grooves of a plate and guide it into the bite of the main rolls, in combination with the endless chains or their equivalents, provided with projections for taking or bearing against the rear edge of the plate, the pulleys for carrying the endless chains, one pair of which pulleys is driven at greater power to press the plate into the bite of the main rolls and to overcome the resisting action of the bending-roll in forming the tube, and means for arresting the movement of the endless chains when the rear edge of the plate has approached the bite of the main rolls, substantially in the manner as herein described.

297,373. PRESSURE-REGULATOR. FRANCIS JOSEPH FLEESS, Manchester, N. H. Filed Aug. 21, 1883. (No model.)

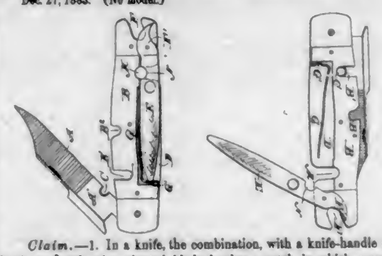


Claim.—In a pressure-regulator for steam, gases, or liquids, the combination of the cylindrical casing A, enlarged at A', provided with opposite internally-threaded necks J J, and having caps G H, the hollow sliding plunger B, enlarged at B' to fit into enlargement A', the rod C, having arms *a*, and a top extension-check extending through the plunger, and provided with a spiral spring at the lower end, and the nut E, screwing into the lower end of case, as shown and described.

297,374. ROOFING COMPOUND. JAMES T. FRETWELL, Atlanta, Ga. Filed Nov. 13, 1883. (No specimens.)

Claim.—A roofing compound composed of Roman cement, sand, white lead, litharge, and linseed-oil, all mixed together in about the proportions and in the manner specified.

297,375. POCKET-KNIFE. GEORGE FREUND, Durango, Colo. Filed Dec. 27, 1883. (No model.)



Claim.—1. In a knife, the combination, with a knife-handle case having a hoteh, of a pivoted blade having a notch in which a screw-thread is cut, substantially as herein shown and described.

2. In a knife, the combination, with the handle-case B, having notches B² B', of a pivoted blade having a notch, O, in which a screw-thread is cut, substantially as herein shown and described.

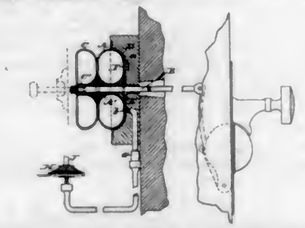
3. In a knife, the combination, with the handle-case B, having a forked end, of a knife pivoted to the case, and having a projection beyond the pivot, thereby forming pliers to cut a fuse, substantially as herein shown and described.

4. In a knife, the combination, with the knife-case B, having a recess, D, of the pivoted blade E, adapted to swing into the recess, and of the spring G, for throwing the blade E outward, substantially as herein shown and described.

5. In a knife, the combination, with the knife-case B, having a recess, D, of the pivoted blade E, and the L-shaped spring G, having a notch, G', in its short shank, substantially as herein shown and described.

6. The combination, with a knife-handle case, provided with a notch, M, of a blade having one side recessed to form a spoon-blade for digging out giant-powder candles, and a screw-threaded notch, N, in its edge, substantially as herein shown and described.

297,376. PUMP. ROBERT P. GARSED, Norristown, Pa. Filed Sept. 26, 1883. (No model.)



Claim.—1. A hollow flexible body with central walled opening, and having a hole for the passage of air, communicating with the interior of said body, in combination with a plunger with central opening, whereby the flexible fold in said body finds room for its distention upon the collapsion of said body, substantially as and for the purposes set forth.

2. A hollow body of flexible material with hole for the passage of air, and a walled opening passing through said body, in combination with a plunger of dishing form with upwardly-extending hollow boss adapted to overhang the walled opening in said body, whereby by the pressure of the plunger the fold around the inner periphery of said body (which forms during its collapsion) finds storage within the boss on the plunger.

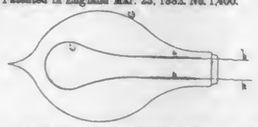
3. A hollow flexible body with walled opening having a hole for the passage of air, communicating with the interior of said body, in combination with an operative plunger adapted to collapse said body and force air therefrom, substantially as and for the purposes set forth.

4. A hollow body rounded upon its surface, with central circular walled opening, and having a hole for the passage of air, communicating with the interior of said body, in combination with an operative plunger and an air-conveying pipe, substantially as and for the purpose set forth.

5. A hollow body rounded upon its surface, with central circular walled opening, and having a hole for the passage of air, communicating with the interior of said body, in combination with an operative plunger, an air-conveying pipe, and an inflatable bellows, substantially as and for the purpose set forth.

6. A pump having a body of the form of an annulus, with inner and outer walls, a plunger adapted to bear against said body, and a plunger-stem passed through the opening formed by the inner wall of said body, substantially as and for the purpose set forth.

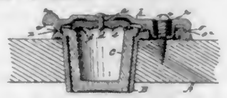
297,377. INCANDESCENT ELECTRIC LAMP, TOM ERNEST GATEHOUSE, Camberwell, County of Surrey, England. Filed Nov. 9, 1882. (No model.) Patented in England Mar. 23, 1883. No. 1,400.



Claim.—1. In an incandescent electric lamp, the combination, in continuous circuit, of two directly-connected conductors—such as platinum and carbon—proportioned as to resistance, substantially as specified, whereby the electrical resistance of the conductors will vary in opposite directions with similar changes of temperature, substantially as described.

2. An incandescent electric lamp having its burner formed of a carbon filament and its leading-in wires of platinum, said leading-in wires being directly connected to the carbon filament and having resistances proportioned substantially as described, whereby the electrical resistance of the conductors will vary in opposite directions with similar changes of temperature, as set forth.

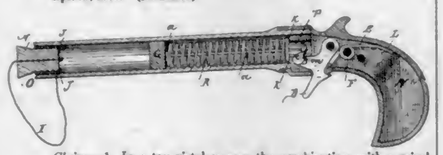
297,378. INK-WELL. JOHN H. GIFFORD, Springfield, Mass. Filed Sept. 17, 1883. (No model.)



Claim.—1. In an ink-well, an ink-receptacle, a case to receive the same, said case having a side extension, a cover pivoted to said extension and having a bearing, as *o*, as described, which engages a bearing, as o^2, to lift the rear part of the cover when closed, and a spring held to bear upon the cover by means of its pivot, all in combination substantially as described.

2. An ink-receptacle, a case to receive the same, having a side projection, a cover pivoted to said projection and pressed down by a spring surrounding the pivot, projections on the cover and the case near the pivot, which tend to lift the cover at its rear end when closed, and a notch and projection at the side of the case and cover opposite the pivot, forming a catch to the cover when closed, all in combination substantially as set forth.

297,379. TOY PISTOL. AMBROSE GILMAN, Shelburne, Mass. Filed Apr. 30, 1883. (No model.)



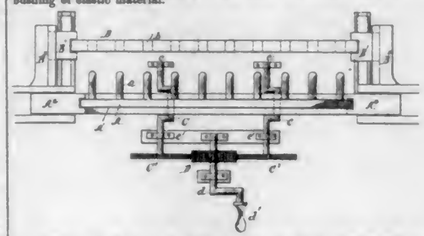
Claim.—1. In a toy pistol or gun, the combination, with a spiral spring having a rod or stem in continuation of and formed of the same wire as the coils of said spring, extending from the front toward the rear of said spring, and provided with a knob or shoulder, B, of a barrel shouldered at each end, and a trigger suitably located and arranged to engage and release the knob B of said spring, substantially as described.

2. In a toy pistol or gun, the combination, with a shouldered barrel, of a spiral spring, R, having an internal wire or stem in continuation of and formed of the same wire as the coils of said spring, extending from the front toward the rear of said spring, and provided with the knob or shoulder B, the cork or substance G, located in said barrel at the forward end of said spring, and the trigger suitably hung, and having a notch, *c*, and spring E, all arranged for operation substantially as described.

3. In a toy pistol or gun, the combination, with a shouldered barrel, of a spiral spring, R, having an internal wire or stem in continuation of and formed of the same wire as the coils of said spring, extending from the front toward the rear of said spring, and provided with the knob or shoulder B, the cork or substance G, located in said barrel at the forward end of said spring, and the trigger, suitably hung, and having a notch, *c*, and spring E, all arranged for operation substantially as described.

297,380. CAPSULE-MACHINE. JAMES H. GLOVER, Detroit, Mich. Filed May 19, 1883. (No model.)

Brief.—Ring-cutters cut upon their inner peripheries and have a bushing of elastic material.



Claim.—1. In a capsule-cutting machine, a plate provided with an orifice having an annular cutting-edge, in combination with a frame constructed to receive a mold-plate provided with a capsule-mold pin which is adapted to enter the cutting-orifice of the plate, and mechanism acting on the frame to impart a circular motion to the mold-pin within said orifice, substantially as described.

2. In a capsule-cutting machine, a cutter-plate constructed with an orifice surrounded by an annular beveled cutting-edge projecting inwardly toward the center of the orifice, substantially as described.

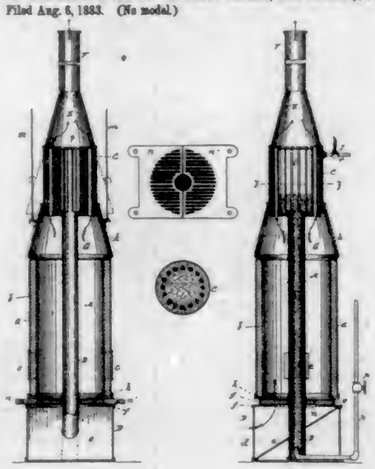
3. In a capsule-cutting machine, a plate having an annular cutting-edge, in combination with a frame constructed to receive a mold-plate having a mold-pin adapted to enter the cutting-orifice of the plate, a crank connected with the said frame, and mechanism for rotating the crank to impart motion to the mold-pin in the cutting-orifice for severing the capsule, substantially as described.

4. In a capsule-cutting machine, a plate provided with an orifice having a yielding cutting-edge, in combination with a mold-plate having a mold-pin adapted to enter said cutting-orifice, and means for imparting motion to the mold-pin in the orifice, substantially as described.

5. In a capsule-cutting machine, a plate provided with one or more orifices, annular cutters arranged around said orifice or orifices, and a bushing of elastic material around the periphery of the cutters, and means for rotating the plate, substantially as described.

6. The combination, in a capsule-cutting machine, of ring-cutters cutting upon their inner peripheries, and a bushing of elastic material, substantially as described.

297,381. APPARATUS FOR UTILIZING WASTE HEAT OF KILNS IN GENERATING STEAM. CORNELIUS GODFREY, East Williston, N. Y. Filed Aug. 6, 1883. (No model.)

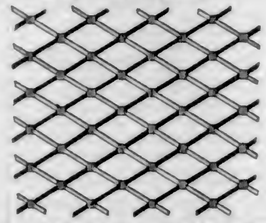


Claim.—1. In an apparatus for utilizing the waste heat of cement-kilns and similar structures to generate steam, the combination of the tubular boiler or steam-generator C, the upright pipe B, passing through the center of the kiln, and connecting with said generator C, and appliances, as described, for taking steam from said generator and for supplying water to said pipe B, as and for the purposes set forth.

2. The combination, with a cement-kiln or similar structure, A, of the steam-generator B C, consisting of the central tube, B, and tubular receptacle C, the water-supply pipe H, and the steam-discharge pipe I, and arranged in relation to said kiln, substantially as shown and described.

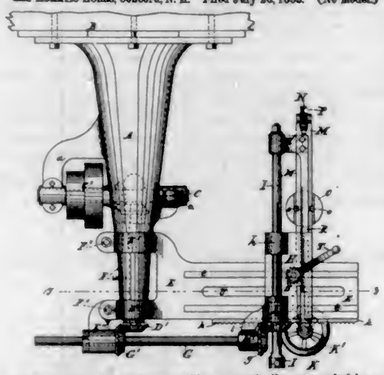
3. The grate *n n'*, made in two separate sections, and provided with the ears *o o*, as described, in combination with the body A, plate *f*, provided with flanges *g g*, and plate A, as and for the purposes set forth.

297,382. SLASHED METALLIC SCREENING. JOHN F. GOLDING, Chicago, Ill. Filed Sept. 24, 1883. (No model.)



Claim.—As an article of manufacture, metallic screening formed of slashed and stretched metal, substantially as hereinbefore set forth.

297,383. SUSPENDED DRILLING-MACHINE. EDWARD F. GORDON and HORATIO HOBBS, Concord, N. H. Filed July 26, 1883. (No model.)



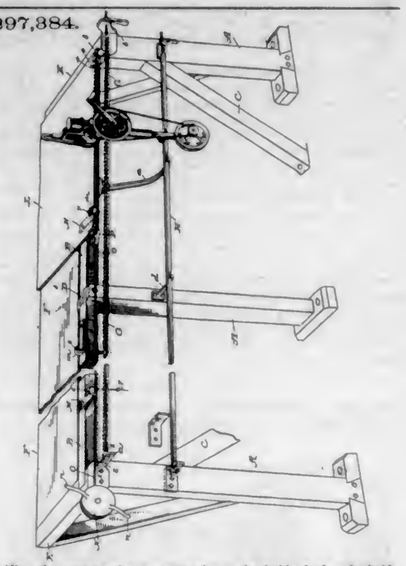
Claim.—1. In a drilling-machine, a vertically-suspended hanger adapted to support the drilling apparatus from the beams above it, and provided with a cylindrical portion around which said apparatus may be revolved, in combination with an arm or frame adapted to swing entirely around said hanger, a sliding head mounted for radial movement on said frame, a tool-stock having a vertical movement on said head, and a connected system of shafts and gearing, for the purposes set forth.

2. The depending hanger A, with its vertical cylindrical portion A', and supporting nut or sleeve F, and the vertical shaft D, adapted to revolve therein, in combination with a radial frame swinging in a horizontal plane around the hanger, a tool-carrying head arranged to move lengthwise of the frame, a horizontal shaft having bearings in said frame and head, and a tool-stock having a fixed and a sliding bearing carried on such head, said shafts being connected by bevel-gears, substantially as and for the purpose set forth.

297,384. CARPET-SEWING MACHINE. GEORGE GOWING, Boston, Mass. Filed Dec. 21, 1883. (No model.)

Claim.—1. In combination, a bar, B, and the carpet-supporting frame in the same horizontal plane with the upper surface of the bar, a cogged rail, G, parallel with the bar, with suitable lower rail, the two rails carrying the sewing-machine, devices at the ends of the track for

297,384.



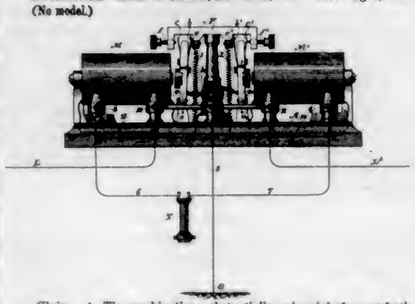
holding the carpet under proper tension, and suitable devices for holding the edges of the carpet to the sewing-machine, all substantially as described.

2. In combination, the sectional bar B, supported on suitable standards, cross-pieces E extending from the bar B, and supported by braces from the standards, the table-sections F, a track for the sewing-machine parallel with the bar B, and the arms M, pivoted on the bar and adapted to be swung aside as the machine advances, substantially as described.

3. In combination with a table for supporting the carpet, and a track for the machine parallel with the table, arms M, pivoted on the table and having the peforated bent ends, said arms being adapted to hold the edge of the carpet by means of a pin, and to swing out of the way of the machine, substantially as described.

4. In combination, a table for supporting the carpet, a track parallel to the table-edge for the machine, devices at one end of the track for holding the two ends of the carpet, swinging arms M, for supporting evenly the edges of the carpet, a pulley at the other end of the track, and a cord and a gripper adapted to hold the two parts of the carpet under unequal strain, whereby the figuring may be made to match as the carpet is sewed, all substantially as described.

297,385. PROTECTOR FOR TELEGRAPH AND TELEPHONE INSTRUMENTS. ELIAS M. GREENE, New York, N. Y. Filed Aug. 4, 1883. (No model.)



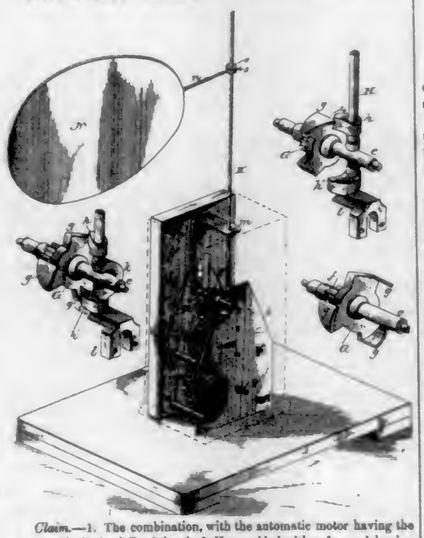
Claim.—1. The combination, substantially as hereinbefore set forth, with a main line and a telephone or telegraph instrument, of two electro-magnets included in said main line, their armatures and armature-levers, two insulated rear contact-stops through which the circuit-connections with said telephone are normally completed, two front contact-stops in electrical connection with each other and with the earth, and means, substantially such as described, whereby the circuit through said telephone will be interrupted at two independent points upon opposite

sides of the same and the circuit of said main line completed independently thereof, when said main line is traversed by currents of abnormal strength.

2. The combination, substantially as hereinbefore set forth, with a telephone or other electrical instrument, a main line in the circuit of which it is normally included, and means, substantially such as described, for interrupting the connections of said telephone upon each side thereof whenever a current of abnormal intensity traverses the main line, and substituting therefor electrical connections with the earth, of a lightning-guard consisting of two adjustable milled surfaces extending from points in the conductor upon opposite sides of said telephone into close proximity with the conductor united with the earth.

3. The combination, substantially as hereinbefore set forth, of two electro-magnets, their armatures and armature-levers, two contact-springs carried upon each of said levers, two insulated back contact-stops, against which one of the contact-springs upon each of said levers normally rests, a telephone or telegraphic instrument included in a conductor uniting these two contact-stops, and two front contact-stops against which the remaining springs upon said levers are caused to impinge when said electro-magnets are traversed by currents of abnormal strength, which front contact-stops are in electrical connection with the earth.

297,386. AUTOMATIC FAN. WILL B. GREENE, Washington, D. C. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination, with the automatic motor having the rotary toothed wheel G, of the shaft H, provided with a fan, and having the pallets A A' projecting at different angles, and arranged to be struck alternately by teeth of said wheel for the purpose of giving the shaft and fan an oscillating motion, substantially as described.

2. The combination, with the toothed wheel G, provided with teeth *g*, and arranged to receive rotary motion from suitable automatic mechanism, of the fan-shaft H, having the bend *k*, curved on one side of the shaft of said wheel, so as to bring the shaft H in the plane of the diameter of said wheel, the pallets A A', projecting at different angles from said fan-shaft, so as to be struck alternately by the teeth *g*, and the fan N, secured to said shaft, substantially as described.

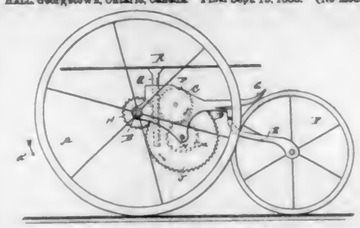
297,387. CHECK-REIN HOOK. GEORGE W. HALL, Bridgeport, Conn., assignor of one-half to Edward J. Morgan, same place. Filed Mar. 1, 1884. (No model.)



Claim.—1. In a check-rein hook, arm H, pivoted within a recess in the housing, and having a curved projection which fits the inner wall of said housing and acts as a stop, and a stump which projects downward to the bottom of the recess, in combination with a coil-spring resting in a socket in the housing and bearing against said stump, whereby said spring is fully protected against the entrance of dirt or water.

2. In a check-rein hook, the rigid curved hook, the housing, the base, and a shank cast in a single piece, in combination with a spring, an arm pivoted within the housing, and provided with a stop to limit its motion, and an abutment against which the spring bears, said pivot, stop, abutment, and spring being all located within the housing, as described, and for the purpose set forth.

297,388. ROLLER-SKATE. TOMAS P. HALL, Toronto, and JAMES B. HALL, Georgetown, Ontario, Canada. Filed Sept. 15, 1883. (No model.)



Claim.—1. A foot-power vehicle or wheel-skate having a foot-rest downwardly movable by the gravity of the operator and upwardly by a spring, for the purpose specified.

2. The combination, in a gravimotor having two front wheels, with a rear wheel, F, of a spring-supported brake-plate and a vertically-reciprocating foot-rest, whereby the brake may be applied by throwing the weight on the heel, as described.

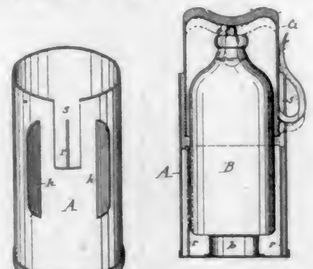
3. A gravimotor having the front wheels A A, the bearing-frame C, a single rear wheel F, and a bearing frame or fork, E, jointed to said frame C, as shown and described.

4. The combination, with a platform, C, of the vertically-reciprocating platform R, the shaft B, the driving-wheels A, the pinion H, the cog-wheels P, M, and J, the clutch L, the spring O, and the rack Q, substantially as herein shown and described.

5. The combination, with the frame C, provided with the spring-arm D, of the fork E, pivoted to the arm D, the wheel F, and means for revolving the driving-wheels, substantially as herein shown and described.

6. The combination, with the frame C, provided with a spring-arm, D, and a tongue, G, of the fork E, pivoted to the spring-arm D, the wheel F, and means for revolving the driving-wheels, substantially as herein shown and described.

297,389. BOTTLE-OPENER. WILLIAM H. HANNAN, Palermo, N. Y. Filed Mar. 1, 1884. (No model.)



Claim.—1. The within-described bottle-opener, consisting of a liquid-receptacle adapted to contain the body of the bottle, and provided around the bottle with a space for receiving the overflow from the bottle, as set forth.

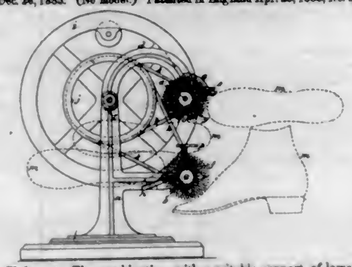
2. The bottle-holder A, provided with ribs *r r* and raised base *b*, as shown and described.

3. The bottle-holder A, provided with ribs *r r*, raised base *b*, and slot *s*, substantially as described and shown, for the purpose set forth.

4. The bottle-holder A, provided with ribs *r*, raised base *b*, slot *s*, and handles *h h* at opposite sides of the slot, substantially as described and shown.

5. The combination of the bottle-holder A, provided with ribs *r*, raised base *b*, slot *s*, and spring *c*, substantially as and for the purpose shown and set forth.

297,390. MACHINE FOR CLEANING AND BLACKING BOOTS OR SHOES. JAS. HARGRAVE, Burley Leeds, County of York, England. Filed Dec. 26, 1883. (No model.) Patented in England Apr. 23, 1883, No. 2,054.

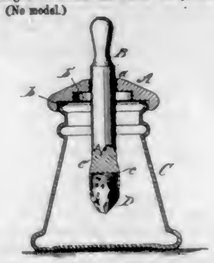


Claim.—1. The combination, with a suitable support, of lower and upper rotating brush-carrying spindles, the former in a fixed or constant position in the machine, the other moving radially about a center, a stud or center, *c*, the hand-wheel *i*, the pulley, and the driving-bands, arranged as described, so that one brush approaches or recedes from the other while both are rotated from the common driving source, substantially as set forth.

2. The combination, with a suitable support, of the spindles *b c*, threaded, as shown, to admit of radially mounting and changing the brushes, and the said brushes adapted to be mounted on said spindles, substantially in the manner as herein described.

3. In a machine for cleaning, blacking, and polishing boots and shoes and for other analogous purposes, the combination of standard *a*, spindle *b*, stud *c*, movable arm *d*, rotating spindle *e*, brushes *f g*, driving-pulley *j*, and driving-bands *k*, whereby said spindles *b* and *e*, together with brushes *f* and *g*, can be caused to rotate, as and for the purposes described and set forth.

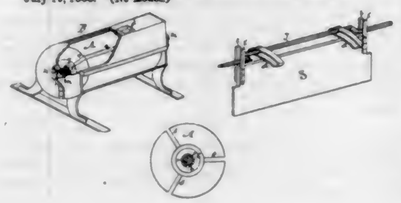
297,391. MUCILAGE CUP OR HOLDER. STEPHEN S. HARMAN, New York, N. Y., assignor to himself and Morris T. Lynch, same place. Filed Feb. 2, 1884. (No model.)



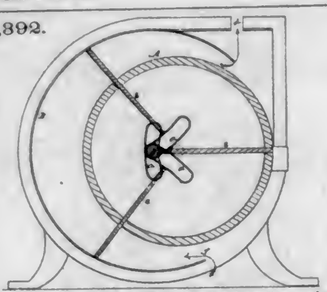
Claim.—1. The cover A, formed with the recesses *b b'*, whereby the cover is adapted to be applied to cups of different sizes, in combination with the handle or stick B, having the sponge D attached to its lower or inner end, substantially as and for the purposes set forth.

2. The stick B, fitted in the cover A, enlarged and recessed or cupped at its lower end to receive and hold the sponge D, substantially as described.

297,392. ROTARY BLOWER. RALPH E. HARRIS, Macomb, Ill. Filed July 19, 1883. (No model.)



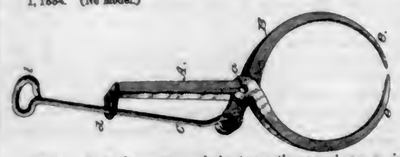
297,392.



Claim.—1. The cylinder A, having hollow journals *c c* and slots *e e e* in its outer circumference, and placed at one side of the inner circumference of the casing B, in combination with the shaft J and wings *s s s*, having yokes *a a a* and guides *i i i* attached, substantially as shown and described, for the purpose set forth.

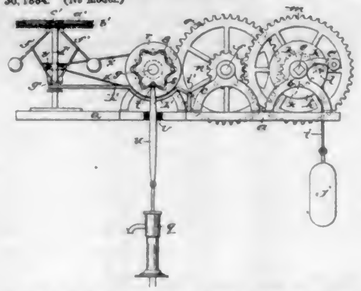
2. The wings *s s s*, having yokes *a a a* and guides *i i i i* attached, in combination with the crank-shaft J, as shown and described.

297,393. ICE-TONGS. MARION HATFIELD, Marshall, Mo. Filed Mar. 1, 1884. (No model.)



Claim.—As an improvement in ice-tongs, the curved arm or jaw A, having a straight extension terminated by the loop *d*, in combination with the short curved arm B, pivoted to the arm A, and provided with an eye to which is attached the bar C, passing through the loop *d*, and terminating in a hand-hold or loop, *b*, all the parts being constructed and arranged for joint operation in the manner shown and described.

297,394. MOTOR. JACOB HECKENLIVELY, Eureka, Kans. Filed Jan. 30, 1884. (No model.)



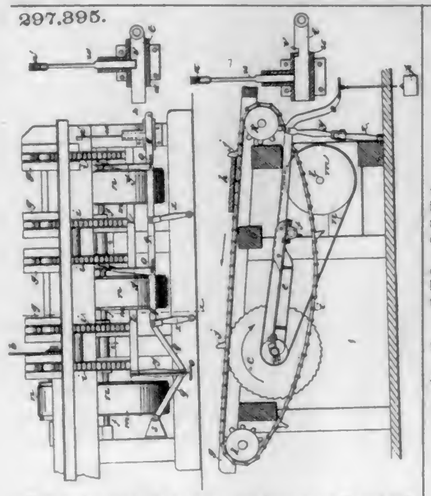
Claim.—1. A motor constructed with a drum and a weight suspended therefrom, said drum connecting by a ratchet-and-pawl device with a gear-train, which drives a shaft carrying a wheel having a zigzag or star-shaped cam-groove, for driving the pitman of a pump or other machine, and the said driving-shaft connecting by a ball-governor with a pivoted brake-lever acting on the periphery of the cam-wheel to control the speed, substantially as shown and described.

2. The combination, with the sleeve *g'* of the ball-governor *f'* and the cam-wheel *r*, of the pivoted brake-lever A', connected to be lifted by the sleeve against the cam-wheel when the speed is excessive, substantially as shown and described.

297,395. LUMBER-TRIMMING MACHINE. EDWARD HEYDE, East Saginaw, Mich. Filed Jan. 21, 1884. (No model.)

Claim.—1. The combination, with a series of trimming-saws mounted on swinging frames for use of one only at a time in the working position, of the chain *q*, the joints of which are connected alternately

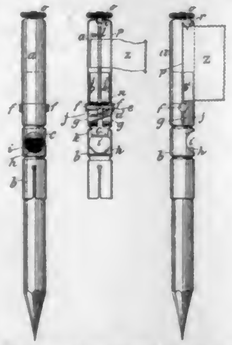
297,395.



with the levers of said swinging frames, and joint-supports for said chain, said joint-supports consisting of the vibrating struts *x* between the levers, permanent support *s* at one end and the slide-bar *t* at the other end of said chain, and said slide-bar having a notch, *v*, and a latch-bolt, *w*, to set said slide-support either for maintaining one of the saws in the working position or all of them out of said working position, substantially as described.

2. The combination of a series of counterbalanced pivoted saw-frames, having trimming-saws at their inner ends and foot-levers *o* at their outer ends, with the chain-links *q*, connected to said foot-levers by rods *y*, pivoted thereto, and to struts *x*, pivoted to the frame below said rods, the said chain-links being connected to the frame at one end by a fixed support, *s*, and provided at the opposite end with a notched slide, *t*, working in the casing *u*, a stop-latch, *w*, also working in said casing at right angles to the slide *t*, for engaging said slide, and a lever, *a'*, connected to said stop-latch for operating the same, substantially as set forth.

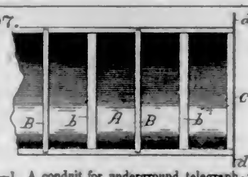
297,396. COMBINED APPARATUS FOR ATTACHMENT TO PENCILS. JAMES HICKISSON and WILLIAM LEE, London, County of Middlesex, England; said Lee assignor to said Hickisson. Filed Oct. 12, 1883. (No model.)



Claim.—The improved attachment for pencils, composed of the tubular slotted holder *a*, spindle and head, the cigar-cutter, and mechanism for operating the same, the tubular case containing said cutter, with an opening at one side, and slotted at one end, and adapted to receive a lead-pencil, as and for the purposes set forth.

297,397. CONDUIT FOR UNDERGROUND TELEGRAPH-WIRES. EMIL C. HILDEBRAND, Chicago, Ill. Filed Dec. 6, 1883. (No model.)

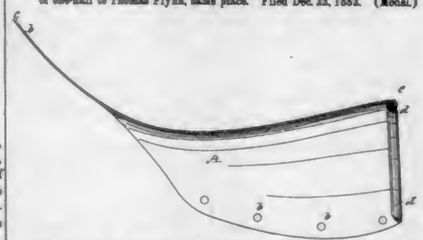
297,397.



Claim.—1. A conduit for underground telegraph-wires, provided with a removable cover, and having the rounded bottom part, *a'*, forming a chamber or passage under the wires, in combination with the removable perforated diaphragms B and the cross-bars *b b'*, substantially as and for the purpose described.

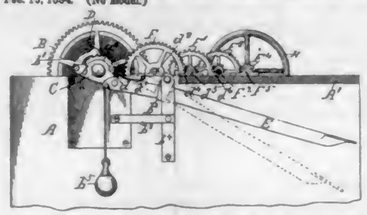
2. In a conduit for underground wires, the combination, with the conduit A, of the metallic plate C, provided with the arms *d d'*, and having numerous perforations for the passage of the electric wires, substantially as and for the purpose set forth.

297,398. SADDLE-SEAT. PETER B. HIRSCH, Denver, Colo., assignor of one-half to Thomas Flynn, same place. Filed Dec. 22, 1883. (Model.)



Claim.—A sheet-metal saddle-seat shaped to the form of a rider's buttocks, and turned at the front over a stiffening-wire to retain the plate in shape, as described.

297,399. SPRING-MOTOR. HENRY HOFMANN, Austin, Ill. Filed Feb. 19, 1884. (No model.)



Claim.—1. In a spring-motor, the combination, with a master gear-wheel, of a main shaft, on which said gear-wheel is loosely mounted, and a coiled spring having one end rigidly secured to said gear-wheel, and the opposite end rigidly secured to said shaft, whereby the spring is adapted to be wound up no matter whether the said gear-wheel is moving or stationary, substantially as and for the purpose set forth.

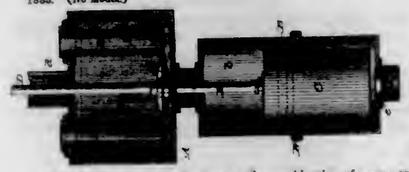
2. In a spring-motor, the combination, with a main shaft, of a gear-wheel loosely mounted on said shaft, whereby the same are adapted to have an independent rotation relative to each other, a coiled spring encircling said shaft and having one end rigidly secured thereto, while the opposite end is rigidly connected to the said gear-wheel, a ratchet-wheel rigidly mounted on one end of said shaft, a rocking plate loosely mounted on said shaft, a winding-pawl having one end pivoted to said rocking plate, the opposite end engaging with said ratchet-wheel, and a locking-pawl adapted to engage with and lock said ratchet-wheel against a back movement, substantially as and for the purpose set forth.

3. The combination, with a main shaft, of a gear-wheel loosely mounted on said shaft, a motor-spring encircling said shaft, a ratchet-wheel rigidly mounted on said shaft, a rocking plate having a pivotal movement on said shaft, and a treadle-bar connected to said rocking plate, whereby said spring is adapted to be wound up and a continuous motion maintained by an intermittent pressure on the treadle-bar, substantially as described.

4. In a spring-motor, the combination, with a rocking plate loosely mounted on a main or spring shaft, of a treadle-bar connected to said rocking plate, and means for returning these parts to a normal position when the pressure is relaxed on said treadle-bar, substantially as and for the purpose set forth.

5. In a spring-motor, the combination, with a multiplying train of gearing, of a motor-spring having connection with said train, a main shaft, a ratchet-wheel, a rocking plate, and a treadle-bar, all combined, arranged, and operating substantially as described.

297,400. DOUBLE-ACTING PUMP. WILLIAM H. HOLCOMBE and CLIFFORD A. HOLCOMBE, Beloit, Wis., assignors to the Holcombe Brothers and Stone Manufacturing Corporation, (Limited,) same place. Filed Jan. 22, 1883. (No model.)



Claim.—1. In a double-acting pump, the combination of a case or body consisting of two communicating chambers, one above the other, the upper chamber having a central outlet-pipe, and provided with a piston working through the top of the chamber, and the lower chamber containing an elongated piston, and provided with an upwardly-opening valve about midway of its height, encircling the piston, and with an inlet-valve at its lower end, the respective pistons being connected to and operated by a rod common to all, and passing through the central outlet, substantially as shown and described.

2. The herein-described pump, consisting of case A, containing chambers *a b*, the former provided with outlet *d* and the latter provided with valves B and *c*, piston E, working in and passing through the top of chamber *a*, piston C, working in chamber *b*, and the piston-rod D, common to both the pistons, passing through the outlet *d*, substantially as shown and described.

3. In a pump, the combination of two separate pistons carried by independent rods, said rods adapted to be connected or disconnected at will, substantially as and for the purpose specified.

4. In combination with cylinder A, having upper and lower chambers, *a* and *b*, piston C, arranged to act in the lower chamber, piston E, arranged to act in the upper chamber, and independent rods connected, respectively, with pistons C and E, and adapted to be connected with or disconnected from each other, substantially as described.

5. The herein-described pump, consisting of case or body A, having chambers *a b*, the latter containing a valve at its bottom and another about midway of its height, piston C, carried by rod D, pistons E, carried by rod D', and set-screw F, adapted to connect or disconnect the two rods, as required.

6. In a double-acting pump, the combination of an upper chamber having a central outlet, and pistons passing through the wall or top of the chamber on opposite sides of said outlet, a lower chamber containing a valve at its lower end, a piston, and a valve about midway of the height of the chamber, between the piston and the walls of the chamber, the lower piston being carried by a rod extending upward to the lever or operating device, and the pistons E being carried by a tubular rod encircling the first, and adapted to be connected therewith or disconnected therefrom, substantially as explained.

297,401. STAVE-BENDING MACHINE. EDWARD HOLMES and BRITAIN HOLMES, Buffalo, N.Y. Filed MAY 30, 1883. (No model.)

Claim.—1. The within-described mode of bending staves, consisting in applying the pressure at the ends of the stave in the direction of its length and partly downward in the direction of the bend while the back or outside of the stave is supported on a yielding bed, substantially as described.

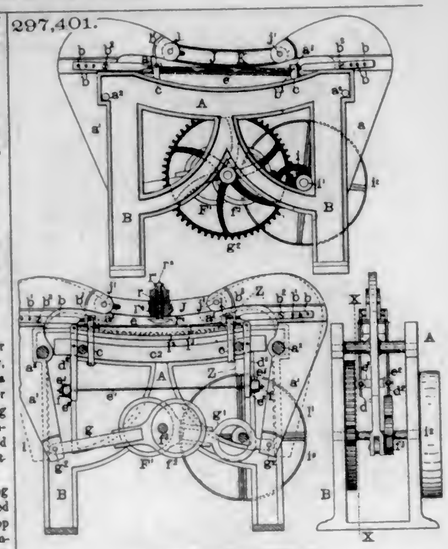
2. In a machine for bending staves, the arms or levers for giving the end-pressure, and their operating mechanisms, substantially as described, and the pushing-blocks a^2, secured by pivots to the arms *b*, and made adjustable by bolts b^2, in combination with the arms *c*, having their lower ends pivoted to a cross-bar, substantially as and for the purposes specified.

3. The end-pressing arms provided with pushing-blocks, and their operating mechanism, substantially as described, and a yielding bed secured to the pivoted arms d^2, in combination with the rod *d'* and springs d^3, for the purposes specified.

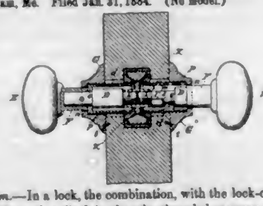
4. The end-pressing arms or levers, the adjustable pushing-blocks secured to the pivoted arms *b*, as specified, a yielding spring-bed secured to the pivoted arms d^2, and the rod *d'* and springs d^3, in combination with the eccentric F' f^3, arms *g g'*, and their operating mechanism, substantially as described.

5. The combination of the spring or yielding bed, the arms d^2, pivoted to the bed c^2, rod *d'*, springs d^3, and screw-nuts *f*, for the purpose of regulating the tension of the yielding spring-bed, substantially as described.

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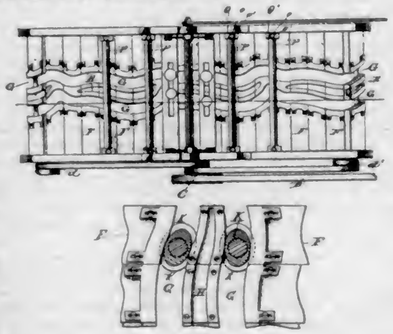
297,402. LATCH KNOB ATTACHMENT. GEORGE LEWIS HOWLAND, Topeka, Mo. Filed Jan. 31, 1884. (No model.)



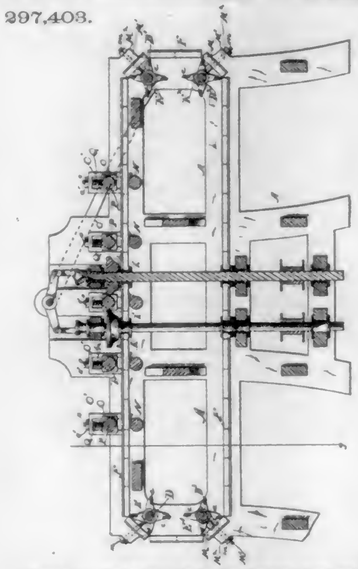
Claim.—In a lock, the combination, with the lock-case, constructed substantially as described, having the threaded recesses *x* to engage the inner ends of the externally-threaded thimbles D, of the thimbles D, having interior flanges, *e*, the knob-shanks having the lugs *l*, and the knob-roses, substantially as specified.

297,403. MOLDING-MACHINE. JOHN W. HUDSON, Wellington, Ill. Filed Feb. 29, 1884. (No model.)

Brief.—An endless table formed of sections hinged together is provided with slots in its surface, which guide the revolving cutters and hold them in contact with the material to be acted upon, said material being clamped upon the table between the slots which guide the cutters. This table passes over bearing-rollers beneath spring-actuated presser-rolls, and is actuated by pulleys and shafts at each end of the machine, each of said shafts being adjustable by means of set-screws.



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Claim.—1. In a machine for finishing irregular forms, and in combination with revolving cutters, an endless traveling table, constructed as herein described, having hinged sections extending from side to side of the machine, and provided with cam-slots that determine the position of the cutters, as and for the purpose set forth.

2. In combination with an endless table, as described, and with cutters directed by cam-slots in such table, boxes in which the cutter-spindles are journaled, having flanges, as *k k'*, and oval shanks which traverse the said slots, as set forth.

3. In a machine for finishing irregular forms, the combination of the endless traveling table composed of hinged sections which extend from side to side of the machine, and are provided with slots, as described, with fan-wheels E E' E² E³, and means, substantially as described, whereby said table is operated and the tension thereof adjusted at will, as and for the purpose set forth.

4. In a machine for finishing irregular forms, the combination of the fan-wheels mounted in adjustable boxes, as described, with the endless traveling table composed of hinged sections extending from side to side of the machine, and provided with slots that direct the position of the cutters, and means, substantially as described, for operating the fan-wheels and table, as and for the purpose set forth.

5. In a machine for finishing irregular forms, the fan-wheels, constructed substantially as described, journaled in adjustable boxes and adapted to be rotated in the same direction and at equal speed, in combination with the endless traveling table having hinged sections extending from side to side of the machine, and provided with two slots having irregular sides, to direct the position of the revolving cutters, and means for operating said fan-wheels, the endless table, and revolving cutters, as and for the purpose set forth.

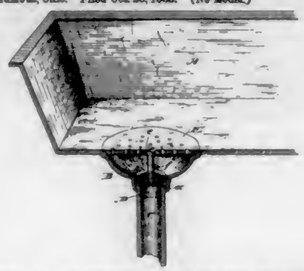
6. In a machine for finishing irregular forms, the combination of an endless traveling table having hinged sections extending from side to side of the machine, and provided with slots for determining the position of the revolving cutters, and provided with grooves wherein the articles to be finished are placed and held, in combination with the revolving cutters, adjustable fan-wheels, and means, substantially as described, whereby motion is imparted to said endless table, revolving cutters, and adjustable fan-wheels, as set forth.

7. In a machine for finishing irregular forms, the combination of an endless traveling table composed of hinged sections extending from side to side of the machine, and provided with slots and a groove, for the purpose described, with a series of rolls placed below and supporting said table, and means, substantially as described, for operating said table, as and for the purpose set forth.

8. In a machine for finishing irregular forms, an endless table composed of hinged sections extending from side to side of the machine, and provided with slots and a groove, as described, in combination with a bearing-roll placed below the table, and spring-pressure rolls placed above such table, substantially as described, and for the purpose set forth.

9. A machine for finishing irregular forms, consisting of the following elements, to wit: an endless traveling table composed of hinged sections F, extending from side to side of a frame, A, provided with irregular slots G, for determining the position of the cutter-spindles, and grooves H, for the reception of the blanks, said table operated by fan-wheels E E' E² E³, journaled in boxes M, which are adjusted by rods M' and nuts *m*, and rotated by pulleys *d d'* *d²* *d³* upon their shafts, carrying rolls N, located below the table, adjustable spring-pressure rolls located above the table, and the driving-pulley, all combined and operating substantially as herein described.

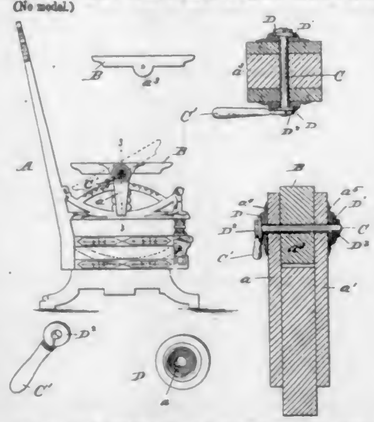
297,404. SINK OR ANALOGOUS ARTICLE. HENRY L. JACOBS, Columbus, Ohio. Filed Oct. 20, 1883. (No model.)



Claim.—1. The combination of the sink-neck, the expanding plug or ferrule, and the pipe expanded and clamped against the interior walls of the neck by the ferrule, and calked down around and upon the upper portion of the latter, as and for the purposes hereinbefore set forth.

2. The combination, with the body and neck of the sink, of the pipe inserted in the neck, the tubular plug or ferrule inserted in the pipe so as to clamp the latter in place in the neck, the strainer, and the binding-screw passing down through the said strainer into a screw-threaded hole or socket provided for it in the ferrule or plug, substantially as and for the purposes hereinbefore set forth.

297,405. CHAIR. NIELS JACOBSON, Chicago, Ill. Filed Feb. 20, 1883. (No model.)



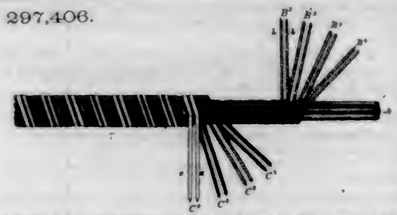
Claim.—The combination, with the seat-supporting frame of a chair, of the standard attached to said frame, and the arm-rest attached to the upper end of said standard by the horizontal pivoting-bolt transverse to the arm, and means, substantially as described, for clamping said rest in any desired position, as set forth.

297,406. CONDUCTOR FOR TELEPHONE AND TELEGRAPH PURPOSES. WILLIAM JAMIESON, New York, N. Y. Filed Feb. 15, 1884. (No model.)

Claim.—1. A telephone or telegraph cable in which the conducting-wires are helically wound and grouped in pairs for the formation of metallic circuits, the two wires forming each circuit being separated from each other by one or more intervening wires, substantially as described.

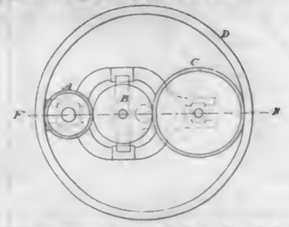
2. A telephone or telegraph cable consisting in the combination,

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substantially as hereinbefore set forth, of conducting-wires helically wound and grouped in pairs for the formation of metallic circuits, the two wires forming each circuit being separated from each other by one or more intervening wires, and a conducting-core consisting of one or more parallel insulated wires.

297,407. DRIVING-GEAR. FLEEMING JENKIN, Edinburgh, Scotland. Filed July 12, 1883. (No model.) Patented in England Apr. 14, 1883, No. 1,913; in France May 21, 1883, No. 155,568; in Austria Aug. 16, 1883, No. 30,212, and in Belgium Dec. 10, 1883, No. 63,486.



Claim.—1. The improved system of frictional gearing wherein the reduplication and arrangement of parts cause the required pressure to produce adhesion by friction without causing pressure on the bearings, substantially as shown and described.

2. The combination of the series of rollers arranged in a nest, as described, and means by which to adjust frictional contact or surface pressure between the rollers without causing pressure on their bearings, substantially as hereinbefore set forth.

3. The combination of the series of rollers arranged in a nest, as described, the rack, and means by which to adjust frictional contact or surface pressure between the rollers and between the rack and contiguous rollers without causing pressure on the roller-bearings, substantially as and for the purpose hereinbefore set forth.

4. The combination of the series of rollers arranged in a nest, as described, and the spring (or springs) by which to adjust frictional contact or surface pressure between the rollers without causing pressure on their bearings, substantially as and for the purpose hereinbefore set forth.

5. The combination, with an endless band, of one or more nests of gearing, the reduplication and arrangement of parts constituting such nest or nests being such, substantially as described and shown, as to produce adhesion by friction without causing pressure on the bearings, as set forth.

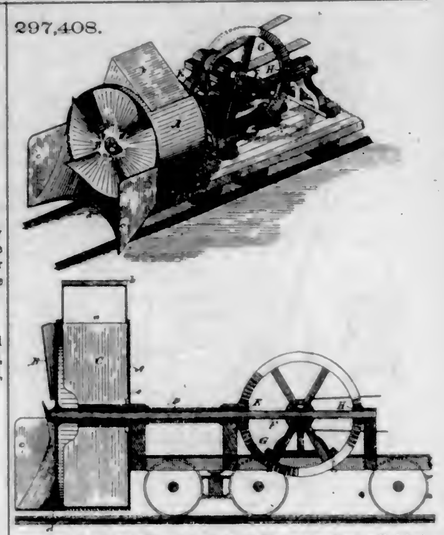
297,408. SNOW-PLOW. ORANGE JULL, Orangeville, Ontario, Canada, assignor to Edward Ledlie, same place. Filed Jan. 15, 1884. (No model.) Patented in Canada Jan. 22, 1884, No. 18,506.

Brief.—A pinion on the hollow shaft which carries the fan-blade and on the solid shaft which carries the cutting-blade mesh with the driving gear-wheel. An opening in the case over the fan-blade is provided with a hood to direct the snow from the track.

Claim.—1. In an improved snow-plow in which a cutting-blade is caused to revolve in front of and in the opposite direction to a revolving fan-blade, a hollow shaft arranged to support and revolve with the fan-blade, in combination with a shaft journaled within the hollow shaft and arranged to propel the cutting-blade, each of said shafts being provided with a pinion meshing with the gear-wheel G, substantially as and for the purpose specified.

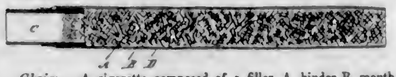
2. The fan-blades C, fixed to and propelled by the hollow shaft D, and the cutting-blades B, fixed to and propelled by the shaft F, which is journaled within the shaft D, in combination with a cylindrical case, A, having an opening, *a*, in its circumference, and flaring side flanges, *c*, with a bottom flange, *d*, curved from the side flanges, *c*, inwardly to a point near the revolving blades B, substantially as and for the purpose specified.

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3. A series of fan-blades revolving within an open-front cylindrical case having an opening, *a*, in its circumference, and an opening, *c*, in its back, and a hood, *b*, over said opening *a*, in combination with a revolving disk formed by a series of cutting-blades, B, and located at the open front of the cylindrical case, substantially as and for the purpose specified.

297,409. CIGARETTE. BARNARD A. KAUFMANN, Detroit, Mich., assignor to the Globe Tobacco Company, same place. Filed Dec. 19, 1883. (No model.)



Claim.—A cigarette composed of a filler, A, binder B, mouth-piece C, secured between the ends of said binder and filler, and secured to the former upon its inner wall, and a wrapper, D, inclosing the whole and gummed to the binder where it incloses the mouth-piece, substantially as herein shown and described.

297,410. EXCAVATING-ELEVATOR. GEO. H. KANNACHER, Columbus, Ohio. Filed July 12, 1883. (No model.)

Brief.—A vertical slide carrying in brackets the lower shaft of an excavating-chain is raised or lowered through a screw-shaft, and a nut driven at will in reverse directions through the interchangeable engagement with a horizontal gear-wheel communicating with the nut of bevel-gears to the right and left of such wheel, respectively. The driving-shaft carrying said bevel-gears gears with the driving sprocket-shaft of the excavating-chain to drive it continuously. The upper chain-shaft is on a car raised or lowered simultaneously with the slide by an endless chain secured to the car driven by worm and gearing from the slide-driving shaft. Duplex pointed cutters, with the rear point the longer, are secured to cross-bars diagonally arranged on the chains alternate with scoops.

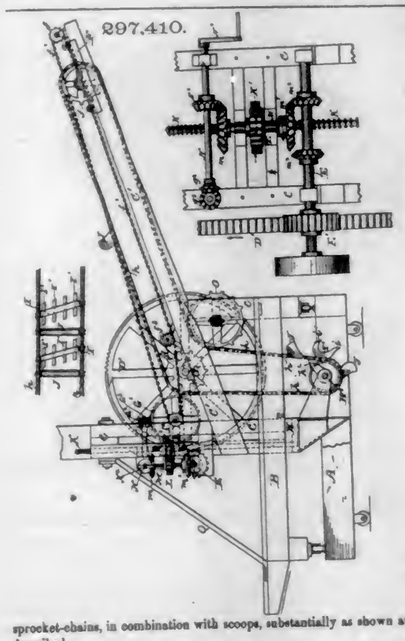
Claim.—1. In an excavator, the combination of the main shaft provided with sprockets, a counter-shaft, G, provided with sprockets, endless chains carrying, separately secured thereto, excavating and elevating devices, a car adapted to ride the boom, and means for rotating the main shaft continuously in one direction and the counter-shaft in either direction, at will, substantially as and for the purpose set forth.

2. The combination of a vertical slide, a screw and gears for elevating and depressing the same, and the endless chain *f*, secured to the car F and operated through gearing and worm-wheel from the driving-shaft, for automatically and proportionately varying the position of the car carrying excavating chain-sprockets, substantially as specified.

3. In an excavating-machine, the combination of an endless chain and a pick having two operative points, the rear one of which is projected farther from its base than the forward one, substantially as specified.

4. In an excavator, a series of picks, arranged diagonally upon the

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sprocket-chains, in combination with scoops, substantially as shown and described.

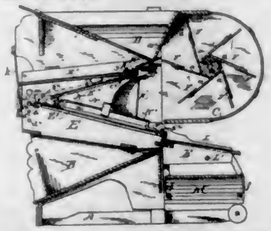
5. The combination of the shaft D, provided with sprockets *d*, car F, provided with sprockets *f*, idler O, vertical slide H, shaft H', carried by brackets upon the slide, shaft G, worm-gear G', sprockets f^3, chains *f'* and A, and means for rotating said shafts, substantially as shown and described.

6. The combination of the slide H, screw K, nut K', gear L, and shaft E, provided with interchangeable gears m^2 m^3, with gears E' D', and an endless chain having picks and scoops, substantially as shown and described.

7. The combination of horizontal shaft E, gears m^2 m^3, vertical shaft M, gears *m m'*, shaft N, gears N^2 g^2 thereon, gears g^3, and worm G^3, and car carrying endless chain, substantially as shown and described.

8. The combination of the chains A A, diagonal cross-bar I, picks I', and scoops or shovels J, substantially as shown and described.

297,411. FANNING-MILL. WILLIAM H. KELLY, Lexington, Va. Filed Oct. 26, 1883. (No model.)



Claim.—1. The combination, with the fan-shaft a^2, the shoe E, and the hangers *k k'*, of the actuating devices, all arranged on one side of the machine, and consisting of the band-wheel G, the recessed pulley G^2, the central pulley, H', the bands G' H, and the rod *b*, eccentrically attached to the central pulley and connected to the middle portion of the side of the shoe, substantially as and for the purposes described.

2. The combination, with the riddle E' and the screen E^2, of the sieve E^3, having its lower end provided with feet e^4, supported upon the inclined screen, and the fixed pins e^3, for supporting its upper end, the sieve being thus adjustable at any required inclination, substantially as and for the purposes set forth.

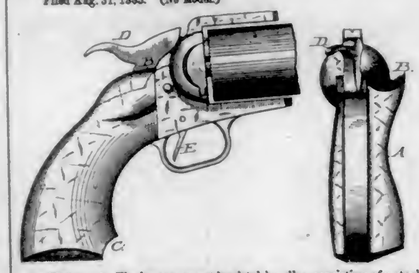
3. The combination, with the riddle E' and the cant-board K', of the board K, removably attached to the inner end of the riddle, and extended under the cant-board, substantially as and for the purposes described.

4. The combination, with the shoe E and the riddle E', of the holders c^2 c^3, and the bolts *c c*, having the locking ends *c' c'*, substantially as and for the purposes set forth.

5. The combination, with the shoe E, of the chute M, removably attached to the lower end of the shoe, the notched pendants *f f*, the key A', and the screws *f' f'*, inserted through the slots *h h*, substantially as and for the purposes set forth.

6. The combination, with a vibrating shoe, E, and a screen, E^2, provided with the cleats *n n*, of the knocker N, the rod N', attached to the screen between the cleats, said knocker adapted to be oscillated and caused, by the vibratory motion of the shoe, to strike the cleats and produce both lateral and vertical jarring motions upon the screen, substantially as and for the purposes described.

297,412. PISTOL-HANDLE. JOHN C. KELTON, San Francisco, Cal. Filed Aug. 31, 1883. (No model.)



Claim.—1. The improvement in pistol-handles, consisting of a stock attached to the back-strap, and formed with a curve upon one side to fit the hand, and made thicker at its curved side than at its opposite side, substantially as and for the purposes set forth.

2. In a pistol-handle, the stock enlarged upon one side and curved to fit the hand, and provided with the groove B, formed in its upper part at one side of the back-strap, and having the recess C in its lower end to receive the little finger of the operator's hand, substantially as and for the purposes herein set forth.

3. In a pistol-handle, the stock having the enlarged side portion, A, curved to fit the hand, and provided with the groove B in its upper end to receive the thumb of the operator's hand, and also with the recess C in its lower end to receive the operator's little finger, in combination with the broad flat trigger E, inclined backward at right angles to the line of applied force, substantially as described, and for the purpose specified.

4. In a pistol, the handle having the enlarged side portion, thumb-groove B, and finger-recess C, as shown, in combination with a hammer having the comb depressed, bent to the left, broadened, and canted to the right, substantially as herein shown and described.

297,413. MANUFACTURE OF ETHYL-BLUE COLORING-MATTER. ALFRED KERN, Basle, Switzerland, assignor to the Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Jan. 10, 1884. (No specimens.)

Claim.—The blue coloring-matter produced by the condensation of alpha-phenyl-naphthylamine with tetra-ethyl-diamido-benzophenone, and having the characteristics above described.

297,414. METHYL-BLUE COLORING-MATTER. ALFRED KERN, Basle, Switzerland, assignor to the Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Jan. 10, 1884. (No specimens.)

Claim.—As a new product, the blue dye-stuff or coloring-matter hereinbefore described, and having the characteristics above set forth.

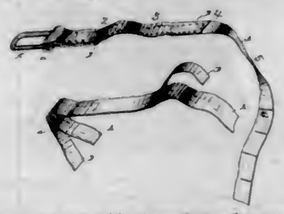
297,415. METHYL-BLUE COLORING-MATTER. ALFRED KERN, Basle, Switzerland, assignor to the Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Jan. 10, 1884. (No specimens.)

Claim.—As a new product, the purple dye-stuff or coloring-matter hereinbefore described, and having the characteristics above set forth.

297,416. ETHYL-BLUE COLORING-MATTER. ALFRED KERN, Basle, Switzerland, assignor to the Badische Anilin and Soda Fabrik, Mannheim, Germany. Filed Mar. 4, 1884. (Specimens.)

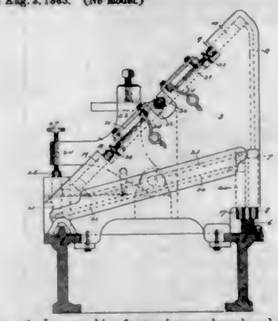
Claim.—The blue coloring-matter produced by the condensation of tetra-ethyl-diamido-benzophenone with dibenzyl-aniline, and having the characteristics above described.

297,417. TAPE-MEASURE. WILLIAM KNUPPEL, Hoboken, N. J. Filed Feb. 5, 1883. (No model.)



Claim.—As a new article of manufacture, the measuring-tape herein described, consisting of the tape A, the loop A', and the strengthening and marking piece B, the latter extending down the tape and ending at the two-inch and four-inch marks, or other designated points on opposite sides, thereby making such points conspicuous, as and for the purposes set forth.

297,418. MACHINE FOR TURNING GUN-BARRELS AND OTHER ARTICLES OF IRREGULAR FORM. CHARLES A. KING, Meriden, Conn. Filed Aug. 3, 1883. (No model.)



Claim.—1. In a machine for turning gun-barrels and other articles, a stationary former or guide secured to the bed of the machine, in combination with a carriage movable along said bed, a movable tool-holder secured on said carriage, a piston movable within a cavity in said carriage, and against which said tool-holder has a bearing, a piston movable within a cavity in said carriage and bearing against said former or guide, and a duct or chamber connecting said cavities and adapted to be filled with liquid, whereby the movement of the piston along said former or guide will actuate the tool-holder through the medium of the liquid, substantially as described.

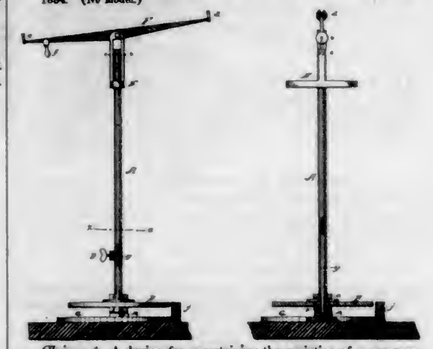
2. In a machine for turning gun-barrels and other articles, a stationary former or guide secured to the bed of the machine, in combination with a carriage movable along said bed, a movable rest secured on said carriage, a piston movable within a cavity in said carriage against which said movable rest has a bearing, a piston movable within a cavity in said carriage and having a bearing against said former or guide, and a duct or chamber connecting said cavities and adapted to be filled with liquid, whereby the movement of the piston against said former or guide will actuate said movable rest through the medium of the liquid, substantially as described.

3. In a machine for turning gun-barrels and other articles, a single stationary former or guide secured to the bed of the machine, a carriage movable along said bed, a movable tool-holder secured on the carriage, a piston movable within a cavity in said carriage against which the tool-holder has a bearing, a piston movable within a cavity in said carriage and having a bearing against said former or guide, and a duct or chamber connecting said cavities and adapted to be filled with liquid, in combination with a movable rest secured on said carriage, a piston movable within a cavity in said carriage, and against which said rest has a bearing to support a barrel or other article while being turned, a piston movable within a cavity in the carriage and having a bearing against said former or guide, and a duct or chamber connecting said cavities and adapted to be filled with liquid, whereby said tool-holder and said rest to support the barrel are operated in unison through the medium of the liquid in said ducts or chambers by their respective pistons moving against the same former or guide, substantially as described.

4. In a machine for turning gun-barrels and other articles, a stationary former or guide secured to the bed of the machine, a carriage movable along the bed of said machine, two rests movable on said carriage and located to support a gun-barrel or other article on opposite sides while being turned, a piston for each rest to bear against and movable within a cavity behind each rest, a piston to actuate each rest and movable within a cavity in the carriage and bearing against said former or guide, and a duct or chamber connecting each two cavities containing the pistons for each rest and adapted to be filled with liquid, whereby both said rests will be operated in unison by the movement of their respective pistons along the former or guide, through the medium of the liquid contained in their respective ducts or chambers, substantially as described.

5. In a machine for turning gun-barrels and other articles, a carriage movable along the bed of the machine, a movable rest secured on said carriage, and a piston movable within a cavity in said carriage, in combination with an adjusting-screw adapted to operate between said rest and said piston, for adjusting the pressure of the piston against the movable rest, substantially as described.

297,419. DEVICE FOR ASCERTAINING THE VARIATION OF COMPASSES. CHARLES E. KIRTLAND, Milwaukee, Wis. Filed Jan. 25, 1884. (No model.)



Claim.—1. A device for ascertaining the variation of a compass, substantially as herein shown and described, consisting of a fore sight and rear sight rigidly affixed at the respective ends of a vertically-oscillating sight-bar centrally pivoted in the top of a gravity-acting guide-frame vibrating freely at right angles to the line of motion of the sight-bar and pivoted near its top, at the top of a standard on and by which it is supported, and against which it is guided, which standard, near its lower end, has a rigid flange or plate on which is the usual compass-chart notation, and at the end of which standard, below said flange, is a bearing-collar, said bearing-collar and plate being centrally perforated, admitting a supporting-pintle adjustably inserted through said collar and plate up a distance into the tubular standard, said pintle having a rigid collar near its lower end, on and against which the above-described standard-collar bears and is supported, said pintle and pintle-collar being rigidly affixed to a plate, which plate is adapted to be rigidly affixed to the deck of a vessel or other suitable place, and which plate has also a guide-standard, with a fore-and-aft notch in its top surface, substantially as and for the purpose specified.

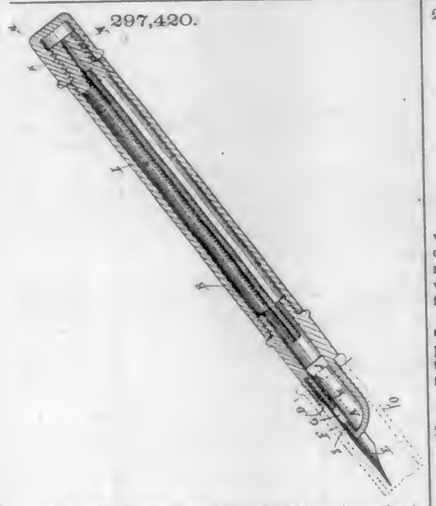
2. In a device for ascertaining the variation of a compass, the vertically-oscillating sight-bar F, provided at its extremities with rigidly-affixed sights *d* and *e*, the gravity-guide frame E, in the top of which guide-frame the sight-bar F is centrally pivoted, the tubular standard A, to which, near the top, the gravity-guide frame E is pivoted, said standard being provided with the rigidly-attached flange or plate B, in combination with the plate G, provided with rigidly-affixed pintle *g*, and guide-standard *j*, substantially as and for the purpose specified.

3. In a device for ascertaining the variation of a compass, the sights *d* and *e*, sight-bar F, centrally pivoted in top of gravity-guide frame E, which guide-frame is pivoted in top of tubular standard A, having chart-bearing flange B and bearing-collar nut *b*, in combination with pintle *g*, bearing-collar nut *h*, plate G, and notched guide-standard *j*, all substantially as and for the purpose specified.

297,420. FOUNTAIN-PEN. ALBERT J. KLETZKER, New York, N. Y., and CHARLES H. COURT, Jersey City, N. J.; said Court assignor of one-half his right to said Kletzker. Filed Feb. 17, 1882. (No model.)

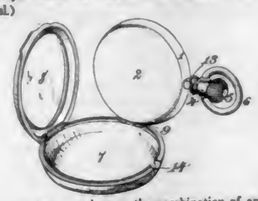
Claim.—1. In a fountain-pen, the combination, with the apertured point-section A, of a spring-pressed block or plug projecting into the aperture and provided with a tongue, substantially as herein shown and described, whereby the block or plug is adapted to be vibrated by the pen to cause the flow of ink, and the ink conducted to the point of the pen, as set forth.

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2. In a fountain-pen, the combination, with the point-section A, provided with pen-recess D and the aperture F, of the transverse piece J, the spring H, secured to the said piece, and the block or plug G, provided with the tongue S, and adapted to be vibrated by the pen, substantially as and for the purpose set forth.

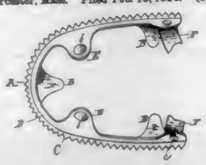
297,421. WATCH-CASE. JAMES LAMONT, Sag Harbor, N. Y., assignor to the Fahys Watch Case Company, same place. Filed Mar. 22, 1884. (No model.)



Claim.—1. In a watch-case, the combination of an outer case, a suitable pendant or stem attached to an inner case, an inner case hinged to the outer case upon an axis or pintle parallel with the pendant or stem, and adapted to be opened on said hinge, substantially as described.

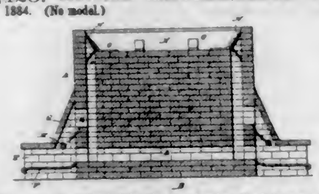
2. In a watch-case, the combination of an inner case for carrying the movement, a suitable pendant or stem attached to the inner case, and an outer case composed of two parts secured together, the outer and inner cases having a hinged connection upon an axis or pintle parallel with the stem or pendant, whereby the inner case may be turned outwardly from the outer case at a right angle to the stem or pendant, substantially as described.

297,422. COASTING-GUARD FOR BOOTS OR SHOES. WILLIAM LAWRENCE, Worcester, Mass. Filed Feb. 15, 1884. (No model.)



Claim.—As an improved article of manufacture, a coasting-guard for boots or shoes, of substantially the form shown in the drawings, having three or more lips or projections, B, or their equivalent, upon its under surface, for the foot to rest upon, with a row of teeth or corrugations, C, on the outer and lower edge, for the purpose stated, and two or more parts, E, projecting out from the part D, substantially as shown and described.

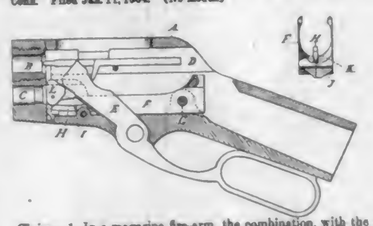
297,423. BRICK-KILN. JAMES S. LESTER, Atlanta, Ga. Filed Mar. 17 1884. (No model.)



Claim.—1. In a brick-kiln, the herein-described furnace, provided with a grate having an upward turn at its inner end, and an extension or hood having in it a damper, both the furnace and the extension communicating with the inside of the kiln through suitable openings in the wall of same, and being arranged to operate as and for the purpose set forth.

2. In a brick-kiln provided with furnaces of the construction described, the automatically-adjustable plates or strips beveled and supported by braces, as described, and operating to close the space between the kiln-wall and brick-pile, thus preventing the escape of heat from the furnace through the said opening, substantially as described.

297,424. MAGAZINE FIRE-ARM. JOHN M. MARLIN, New Haven, Conn. Filed Jan. 11, 1884. (No model.)



Claim.—1. In a magazine fire-arm, the combination, with the carrier and breech-piece, of a stop located in the forward end of the carrier, and normally standing above the bed thereof, and arranged to be engaged and depressed by the breech-piece, substantially as set forth.

2. In a magazine fire-arm, the combination, with the carrier and breech-piece, of a stop located in the forward end of the carrier, and normally standing above the bed thereof, and arranged to be engaged and depressed by the breech-piece, and means for elevating the said stop after depression, substantially as set forth.

3. In a magazine fire-arm, the combination, with the carrier and breech-piece, of a stop mounted in a recess formed in the bed of the carrier, and normally standing above the level of the same, and arranged to be depressed by the breech-piece, substantially as set forth.

4. In a magazine fire-arm, the combination, with the carrier and breech-piece, of a stop mounted in the forward end of the carrier, and normally standing above the bed thereof, and having its rear end provided with an incline with which the breech-piece engages in its rearward movement and elevates the outer end of the stop, substantially as set forth.

5. In a magazine fire-arm, the combination, with a split carrier and the breech-piece, of a stop mounted in and normally standing above the bed of the carrier, and constructed and arranged to be depressed by the breech-piece, and to enter between and force the sides of the carrier apart when so depressed, substantially as set forth.

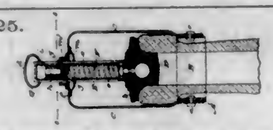
6. In a magazine fire-arm, the combination, with a split carrier and the breech-piece, of a stop mounted in and normally standing above the bed of the carrier, and constructed and arranged to be depressed by the breech-piece, and to enter between and force the sides of the carrier apart when so depressed, and to be elevated by the same in closing, substantially as set forth.

7. In a magazine fire-arm, the combination, with a split carrier and breech-piece, of a stop located in and normally standing above the bed thereof, having its forward end wedge-shaped, and arranged to be depressed by the breech-piece, and to enter between and force the sides of the carrier apart when so depressed, and to be elevated by the same in closing, substantially as set forth.

297,425. STOPPER-LOCK. JAS. D. MATTESON, New York, N. Y. Filed Feb. 8, 1884. (No model.)

Claim.—1. In a stopper-lock for bottles and similar receptacles, the combination, with the bail provided with a nut, of the stopper, the screw provided with a key-socket, the slotted tube which incloses the

297,425.

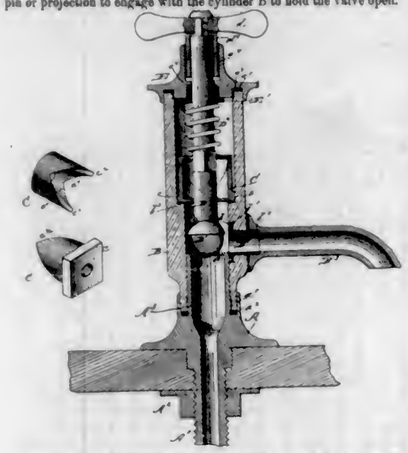


screw, and the casing secured to said tube and provided with a key-hole substantially as set forth.

2. In a stopper-lock for bottles and similar receptacles, the combination, with the bail provided with a nut, of the stopper, the slotted tube E, the stem *c*, for attaching the stopper to the tube, the inclosed screw F, provided with a key-socket in its upper end, and the casing G, provided with a key-hole to receive the key, all arranged substantially as set forth.

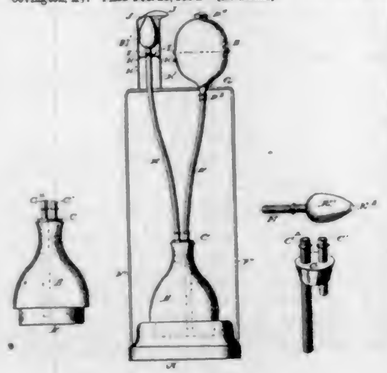
297,426. FAUCET. JAMES MCGINLEY, Chicago, Ill. Filed May 8, 1883. (No model.)

Brief.—The upper part of the cam-box C may be provided with a pin or projection to engage with the cylinder B to hold the valve open.



Claim.—A self-closing faucet consisting of the base A, having valve-seat *a*, cylinder B, provided with nozzle B^2, and formed with the shoulder b^2, above which it is formed angular in cross-section, and the cap E, having a stuffing-box and a socket, e^2, in combination with the two-part cam-box C, one part of which is formed square or angular and held stationary within the cylinder, and the other is fast upon and moves with the valve-stem, the valve-stem D, and the spring D^2, adapted to hold the cam-box and valve properly seated and return the latter to place when released, all constructed and arranged to operate substantially as and for the purpose set forth.

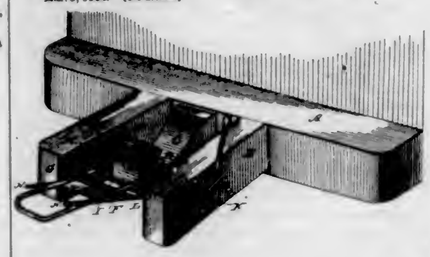
297,427. AIR MEDICATOR AND INJECTOR. BRADFORD MCGREGOR, Covington, Ky. Filed Feb. 23, 1884. (No model.)



Claim.—1. In a device for medicating and applying air, the combination, with the bottle having a reservoir in its lower end and the tubes D' E, connected with such bottle, substantially in the manner described, and provided with bulbs D E', of the base provided in its upper side with a socket fitted to receive said reservoir, and the frame or arch mounted on said base and provided with supports adapted to hold said bulbs, substantially as set forth.

2. The combination of the bottle, the base adapted to receive the same, the discharge-tube E, having a bulb-nozzle, E', provided with a suitable discharge-opening, and the supply-frame provided with means for holding the bulb-nozzle, and having a spring-cap arranged to bear on the bulb-nozzle and close the discharge-opening thereof, substantially as set forth.

297,428. CAR-COUPLING. THOMAS L. MCKEEN, Easton, Pa. Filed Mar. 3, 1884. (No model.)

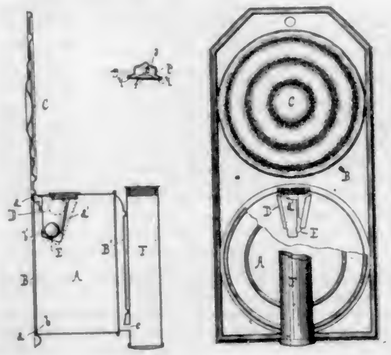


Claim.—1. The combination of a hook-shaped draw-head having a horizontal longitudinal slot near its outer end, a link having its inner end forming a transverse bar sliding in the slot, and two bumpers, one upon each side of the draw-head, and having longitudinally-slotted bearings upon their inner sides for the reception of the ends of the transverse bar, as and for the purpose shown and set forth.

2. The combination, in a car-coupling, of a link hinged at its inner end in a hook-shaped draw-head, with a transverse bar turning in transverse bearings in two bumpers upon the sides of the draw-head, having handles upon its ends, and having two projecting rods upon its middle provided with a plate secured between them at a short distance from their ends, the said arms and plate being adapted to clasp and support the link, as and for the purpose shown and set forth.

3. In a car-coupling of the described class, the combination of a hook-shaped draw-head, having a horizontal slot near its outer end, two bumpers secured at the sides of the draw-head, and having longitudinally-slotted boxes upon their inner sides, open at the rear ends, and forming transverse bearings, a link having a transverse bar at its inner end sliding in the horizontal slot in the draw-head, and sliding with its ends in the slotted boxes upon the bumpers, and a transverse bar turning in the bearings in the bumpers, having handles upon its ends, and having two projecting arms connected near their ends by a plate, and adapted to support and clasp the link, as and for the purpose shown and set forth.

297,429. LAMP. FRANKLIN W. MERRYMAN, Baltimore, Md. Filed Oct. 18, 1883. (No model.)



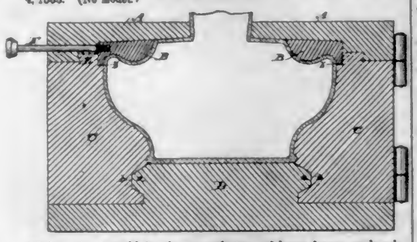
Claim.—1. The back B of the lamp, corrugated to form the reflector C, substantially as specified.

2. In a lamp, the cylindrical reservoir A, with one of its ends secured to the back B and the other provided with the head B', substantially as and for the purpose specified.

3. The open-sided float-chamber D, having as a part thereof a spring, *a'*, substantially as and for the purpose specified.

4. In combination with the lamp, the cap G, which consists of the threaded cylinder *d*, having the perforated conical bottom *e*, and plate *f*, combined with the curved circular disk *g*, substantially as specified.

297,430. MOLD FOR THE MANUFACTURE OF GLASS LAMPS AND LAMP-FOUNTS. JOHN F. MILLER, Martin's Ferry, Ohio. Filed Dec 4, 1883. (No model.)

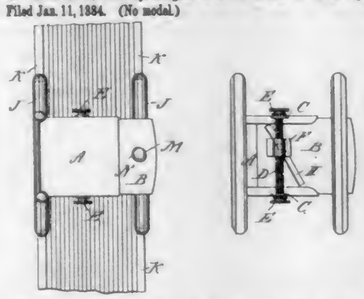


Claim.—1. A mold for the manufacture of lamp founts or bowls, provided with a solid removable ring located beneath the folding or hinged top of the mold, said ring being adapted to form an annular depression or groove in the top of the fount or bowl, as set forth.

2. A mold for the manufacture of lamp founts or bowls, provided with a recess in its top to receive a solid removable ring, and a hinged cap or cover adapted to hold said ring in position, as set forth.

3. In a glass mold, the base D and mold-sections C, provided with an annular offset, *b'*, in combination with a removable ring, B, and hinged cap or cover A, as set forth.

297,431. EXTENSIBLE CLASP FOR BOOKS. JACOB MÜNCH, Offenbach-on-the-Main, Germany, assignor to Edward Posen & Co., same place. Filed Jan. 11, 1884. (No model.)



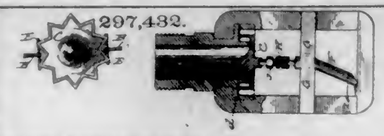
Claim.—1. In a book-clasp, the combination, with two overlapping plates, of a transverse screw journaled in one plate and passing through a nut or block having a part engaging with a diagonal slot or guide in the other plate, all substantially as herein shown and described.

2. In a book-clasp, the combination, with the plate A and the plate B, held to slide under the plate A, of the screw D, journaled on the plate A, and the nut F, mounted on the spindle D, and having a projection engaging with a diagonal slot in the plate B, whereby one plate is adapted to slide beneath the other, substantially as herein shown and described.

3. In a book-clasp, the combination, with the plate A and the sliding plate B, having a diagonal slot, H, of the screw-spindle D, journaled on the plate A, and the nut F, mounted on the spindle D, and provided with a projection, G, extending into the slot H, substantially as herein shown and described.

297,432. AUTOMATIC FIRE-EXTINGUISHER. WM. MERACHER, Cleveland, Ohio. Filed Jan. 21, 1884. (No model.)

Claim.—1. In an automatic fire-sprinkler, a distributer having continuous vertical walls with salient projections, said distributer being located to receive the water from the pipe and to distribute it in various



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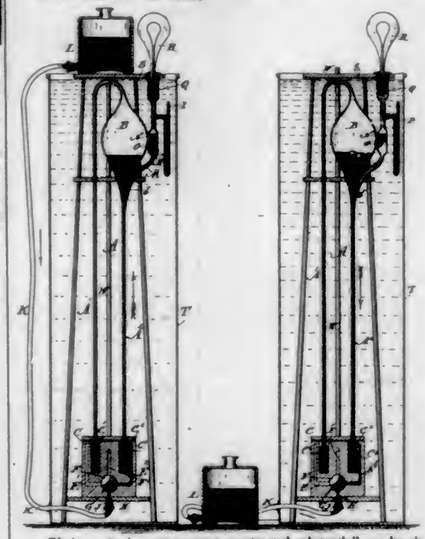
directions, substantially as described.

2. In an automatic fire-extinguisher, the distributer having a vertical continuous wall, said wall being provided with salients and with a central cone, substantially as described.

3. In an automatic fire-extinguisher, the body A, having frame B, and a distributer with supporting-posts and arms G, adapted by means of solder to hold the distributer to the body, substantially as described.

4. In a distributer, the body, a frame, a distributer adapted to close the body, a supporting-post having arms adapted to be connected to the frame by solder, and post H and extensible post J, the parts being constructed and arranged in their relation to each other substantially as described.

297,433. VACUUM-PUMP. CHARLES G. E. NEVEUX, New York, N. Y. Filed Oct. 6, 1883. (No model.)



Claim.—1. A vacuum-pump constructed substantially as herein shown and described, and consisting of two vertical tubes united at their upper ends, one of the tubes being provided at the upper end with a bulb and at the base of the bulb with a pipe leading to the receptacle from which the air is to be exhausted, as set forth.

2. A vacuum-pump constructed of two vertical tubes united at their upper ends, one of the tubes being provided at the upper end with a bulb communicating with both tubes, from the bottom of which bulb a tube projects upward, which is connected with a receptacle from which the air is to be exhausted, the lower ends of the said tubes being contained in cups forming mercury seals, to and from which cups channels lead for conducting mercury into and from the tubes, substantially as herein shown and described, and for the purpose set forth.

3. In a vacuum-pump, the combination, with two vertical tubes united at their upper ends, of channels leading to the lower ends of the tubes, and of a cock for bringing the lower end of either tube in communication with a channel through which the mercury can be conducted, substantially as herein shown and described, and for the purpose set forth.

4. In a vacuum-pump, the combination, with two vertical tubes united at their upper ends, in one of which tubes a bulb is formed, of a tube projecting upward from the base of the bulb, an apertured disk in the said tube, and a valve for closing the aperture in the said disk, substantially as herein shown and described, and for the purpose set forth.

5. In a vacuum-pump, the combination, with two vertical tubes united at their upper ends, one of the tubes being provided with a bulb from the lower end of which a tube projects upward, which is connected with a vessel from which the air is to be exhausted, of two pockets, into

which the lower ends of the tubes pass, and in which they are sealed by mercury seals, channels connecting the said pockets with an opening containing a cock-plug, which cock-plug opening is connected by suitable tubing with a mercury-receptacle, substantially as herein shown and described, and for the purpose set forth.

6. In a vacuum-pump, the combination, with two vertical tubes united at their upper ends, a bulb being formed in one of the tubes, and a tube projecting from the base of the bulb, with which tube the receptacle from which the air is to be exhausted is connected, of a block provided with pockets, into which the lower ends of the tubes pass, a reservoir-opening formed in the said block, an opening containing a cock-plug, channels connecting the said openings with the upper ends of the pockets, a channel connecting the said opening with the reservoir recess or aperture, and a tube connecting the said opening with a mercury-receptacle, substantially as herein shown and described, and for the purpose set forth.

7. In a vacuum-pump, the combination, with a U-shaped tube, A, having a bulb, B, of the tube M, with which the vessel to be exhausted is connected, the blocks C, provided with pockets C' C², for receiving the ends of the shanks, and with an opening, C³, forming a mercury-reservoir, which block is provided with chambers E' E², extending from the pockets to an opening, F, containing a cock-plug, G, and with a channel, F', extending from the aperture C² to the opening F, the neck J, the tube K, the mercury-bottle L, the valve V in the bottom of the reservoir, and the air-pipe W, substantially as herein shown and described, and for the purpose set forth.

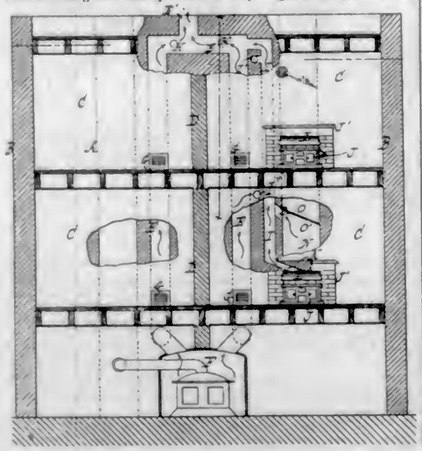
8. A vacuum-pump constructed with two pipes united at the upper ends, one of the pipes being provided with a bulb and with a branch pipe, to which the receptacle from which the air is to be exhausted is connected, which branch pipe is so located that when the mercury rises to enter the bulb from the bottom the mercury will seal the lower end of the said branch pipe before it rises in the bulb, substantially as herein shown and described, and for the purpose set forth.

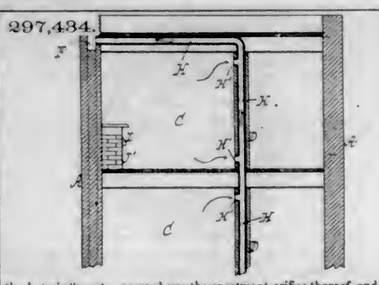
9. In a vacuum-pump, the combination, with two vertical pipes united at their upper ends, one of which pipes is provided with a bulb, of a cock by means of which the inlets at the lower ends of the pipes can be regulated in such a manner that mercury can be admitted in the bulb, either from the top or from the bottom, and also whereby the flow of mercury into the top of the bulb can be regulated as may be desired, substantially as herein shown and described, and for the purpose set forth.

297,434. HEATING AND VENTILATING APPARATUS. PATRICK W. NOLAN, New York, N. Y., assignor to himself, and Carlos Bardwell, Lakewood, N.J. Filed Mar. 17, 1883. (No model.)

Claim.—1. In a building, the combination, with a hot-air flue leading from a furnace, communicating with an apartment of the building, and opening at the upper end to the exterior of the building, of a ventilating-flue, also communicating with said apartment and opening into the hot-air flue at a point above the apartment-orifice thereof, whereby an artificial draft may be created in the ventilating-flue from the hot-air flue, without contaminating the air admitted to the apartment with the gases entering the hot-air flue from the ventilating-flue.

2. In a building, the combination of a hot-air flue leading from a furnace, communicating with an apartment of the building, and opening at the upper end to the exterior of the building, a ventilating-flue, also communicating with said apartment and opening at the upper end into





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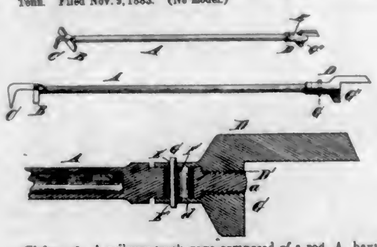
the hot-air flue at a point above the apartment-orifice thereof, and a second ventilating-flue leading from a kitchen-range or other heating medium and opening into the other or main ventilating-flue, whereby an artificial draft can be created in the main ventilating-flue, either from the hot-air flue or from the second ventilating-flue.

3. In a building, the combination of a hot-air flue, E, leading from a furnace, communicating with an apartment of the building and opening at the upper end to the exterior of the building, a ventilating-flue, H, also communicating with said apartment and opening into the hot-air flue at a point above the apartment-orifice thereof, a ventilating-flue, I, opening at its upper end into the hot-air and ventilating flues E and H, and a channel, K, connecting the flue I with a kitchen-range, J, or other heating medium, substantially as described.

4. In a building, the combination of a hot-air flue, E, leading from a furnace, communicating with an apartment of the building, and opening at the upper end to the exterior of the building, a ventilating-flue, H, also communicating with said apartment and opening into the hot-air flue at a point above the apartment-orifice thereof, a ventilating-flue, I, opening at its upper end into the hot-air and ventilating flues E and H, a channel, K, connecting the flue I with a kitchen-range or other heating medium, a chimney, N, receiving the products of combustion from the range, and having an orifice, O, connecting it with the ventilating-flue from the range, and a damper, O', serving to open and close said orifice, substantially as and for the purpose described.

5. In a building, the combination of a hot-air flue leading from a furnace, communicating with an apartment of the building, and opening at the upper end to the exterior of the building, a ventilating-flue, I, leading from a kitchen-range, connecting through an orifice with a chimney receiving the products of combustion from the range, and opening at its upper end into the hot-air flue, and a damper for opening and closing the orifice between the chimney and the flue, substantially as described.

297,435. RAILROAD-TRACK GAGE. PATRICK NOLAN, Hurricott, Tenn. Filed Nov. 9, 1883. (No model.)



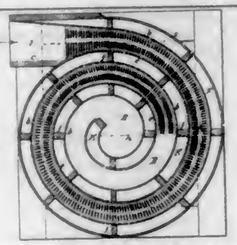
Claim.—1. A railway-track gage composed of a rod, A, having a transverse bar, B, and clamp-hook C at one end, and an adjustable extension-bar, D, at its other end, substantially as herein set forth.

2. A railway-track gage composed of a rod, A, having a clamping bar and hook, B C, at one end, and an adjustable shouldered extension-bar D at its other end, the said extension D being locked in position for the desired width of track by a pin, G, passed through perforations E E' and slot F, substantially as herein set forth.

297,436. DUST-COLLECTOR. BARNEY F. OKTMAN and HORATIO R. TAYLOR, Buffalo, N. Y. Filed Jan. 23, 1884. (No model.)

Claim.—1. In a dust-collector, the combination of a bent or curved air-passage constructed with a perforated wall, which deflects the dust-laden air out of its course, and a dead-air chamber, which receives the dust-particles, which are driven through the said perforated wall by their momentum, while the air passes off through said passage in another direction, substantially as described.

297,436.



2. In a dust-collector, the combination, with a spiral passage having an outer perforated wall, of a spiral dead-air chamber arranged on the outer side of said perforated wall, substantially as described.

3. In a dust-collector, the combination, with a bent or curved air-passage constructed with a perforated wall, which deflects the dust-laden air out of its course, of a dead-air chamber arranged on the outer side of said perforated wall, and partitions arranged in said dead-air chamber, whereby its continuity is broken, substantially as described.

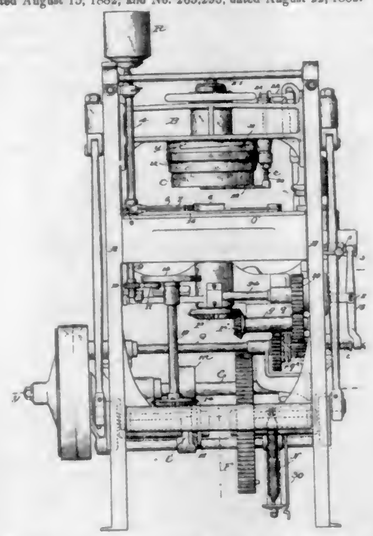
4. In a dust-collector, the combination, with a bent or curved air-passage constructed with a perforated outer wall, which deflects the dust-laden air out of its course, and with a perforated bottom, of a dead-air chamber arranged on the outer side of said perforated wall and below said perforated bottom, substantially as described.

5. The combination, with the spiral air-passage B, having an outer perforated wall, *b*, inlet-spout A, and discharge-spout D, of the spiral dead-air chamber E, open at the bottom, and a receiver, K, arranged below the said chamber E, substantially as described.

6. The combination, with the spiral air-passage B, having an outer perforated wall, *b*, inlet-spout A, and discharge-spout D, of the spiral dead-air chamber E, provided with partitions *f*, and receiving-hopper K, substantially as described.

297,437. HEEL-MACHINE. EDWARD H. PARKS, Providence, R. I., assignor to the Mansell Heel Machine Company. Filed July 17, 1883. Renewed Mar. 19, 1884. (No model.)

Brief.—Improvement on Mansell's Letters Patent No. 262,902, dated August 15, 1882, and No. 263,293, dated August 22, 1882.



Claim.—1. A horizontal rotary table carrying cutter-dies, in combination with mechanism for holding the table in a fixed position, and mechanism for starting it at the will of the operator, and with a vertically-reciprocating block acting in conjunction with the dies, substantially as described.

2. A horizontal rotary table having two cutting-dies or sets of dies, a vertically-reciprocating block acting in conjunction with the die, mechanism for rotating the table, automatic arresting mechanism, and starting mechanism, substantially as described.

3. A cutting-die, a vertically-reciprocating block acting in connection therewith, and a reciprocating pasting mechanism adapted to move under the block and deposit or apply paste after the cutting of each lift, substantially as described.

4. A revolving table carrying cutter-dies or sets of dies, automatic stopping mechanism, starting mechanism, a vertically-reciprocating block, reciprocating pasting mechanism, and discharging mechanism, substantially as described.

5. A revolving table carrying cutting-dies or sets of dies, automatic stopping mechanism, starting mechanism, reciprocating pasting device, blank-discharging devices, a press, and an arm adapted to move the blank from the position of the die to the said press, substantially as described.

6. The inner and outer dies, in combination with their respective die-holders, and annular flanges or rings having inclines reversed in position to inclines on the die-holders, substantially as described.

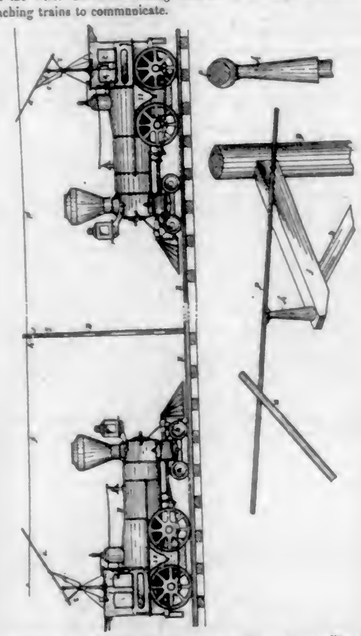
7. In combination with the reciprocating block and dies, the guard-arm and mechanism for moving the same in the described relation to said block, substantially as set forth.

8. The revolving table carrying dies in the described relation to a reciprocating block, and provided with holes to receive a locking-pin, in combination with said locking-pin, connected by lovers to a spring-clutch forming connection between the driving-power and the table, all substantially as set forth.

9. The press-piston, in combination with the clearing-plunger, the toggle-joint having projection 66, and the spring, all substantially as described.

297,438. TRAIN-SIGNAL. MARCUS F. PARRISH and SCHUYLER J. MUNN, Niles, Mich., assignors of one-third to Charles W. Millard, same place. Filed Oct. 30, 1883. (No model.)

Brief.—The contact-arm is spring-pressed and reversible from one side of engine to the other; also can be lifted wholly out of engagement with the wire. Short connecting-sections at crossings to enable approaching trains to communicate.



Claim.—1. The combination, with a metal track and a line of wire along said track, of railway-engines or other vehicles, each provided with an alarm, an electric generator, and an electric reversible conducting-arm adapted to engage said line of wire, whereby an alarm is sounded in the engines approaching each other, substantially as set forth.

2. The combination, with a metal track and a line of wire along said track, of separate engines or other vehicles adapted to traverse said track, each provided with an alarm, an electrical generator, conducting-wires, and a reversible conducting-arm adapted to engage said line of wire, substantially as described.

3. The combination, with a metal track and a line of wire along said track, of railway-engines or other vehicles, each provided with means for producing electricity, means for receiving and transmitting signals, alarms, or messages, a reversible conducting-arm adapted to engage said line of wire, and means for causing a yielding engagement of said parts, all substantially as set forth.

4. An engine or other vehicle provided with a tube-support, and a shaft adapted to rotate in said tube-support, in combination with a conducting-arm connected with the top of said shaft, and means for rotating the shaft, for the purpose of throwing the conducting-arm from one position to another, substantially as described and shown.

5. In a train-signaling device, the combination, with a tube-support, a thimble at the top of said tube-support, and adapted to rotate around the latter, of a pivotally-connected conducting-arm and spring-braces connecting said arm and thimble, substantially as specified.

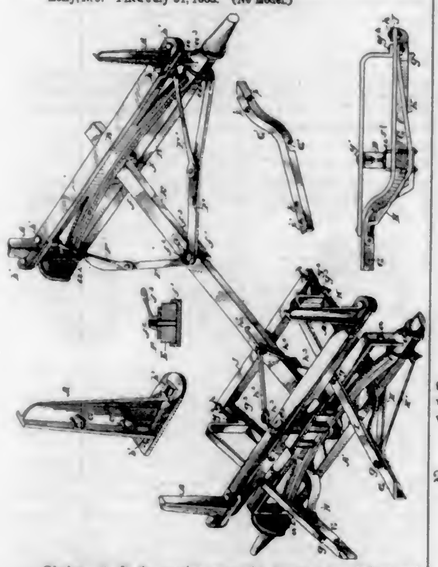
6. In a train-signaling device, the combination, with a metal track and a line of wire along said track, of an engine or other vehicle adapted to traverse said track, and provided with means for communicating signals or messages, means for producing electricity, a reversible conducting-arm, and conducting-wires connecting said means and conducting-arm with the axle, or equivalent metal portion of the vehicle, substantially as set forth.

7. An engine or other vehicle provided with an insulated tube-support, a shaft adapted to rotate in said support, a pivoted conducting-arm, an electrical generator, an alarm, and conducting-wires, in combination with a metal track and a line of wire along said track, substantially as described and shown.

8. In a train-signaling device, the combination, with a vehicle having a shaft adapted to rotate, an operating-lever at the lower end of said shaft, a conducting-arm connecting with the upper end thereof, an alarm, generator, and conducting-wires, of a metal track and a line of wire along the line of said track, substantially as described and shown.

9. The combination, with metal tracks crossing each other and vehicles adapted to traverse said tracks provided with conducting-arms, conducting-wires, generators, and means for receiving and transmitting signals or messages, of the main lines of wire thrown out of their regular line at the crossing of the tracks, and the short lines of wire connecting with each other where they cross, all substantially as set forth.

297,439. VEHICLE RUNNING-GEAR. ROBERT C. PARVIN, Mount Holly, N. J. Filed July 31, 1883. (No model.)

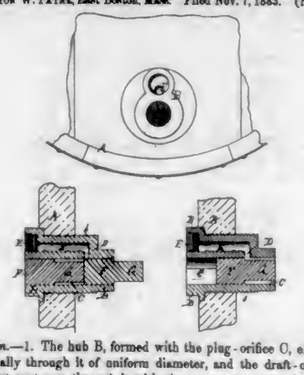


Claim.—1. In the running-gear of a wagon, a rear bolster and arched axle-bed formed in one piece, the axle-bed being constructed to bear at the extremities only, and being provided with central projections, *f*, in combination with the axle B', braces F and F', and T-bolt *f*', as described and shown.

2. In the running-gear of a wagon, in combination with standards A, having the bases, as shown, the bolster C, having depressions or seats at the extremities for standards, and apertures d^3 to receive nuts d^2 for the securing-bolts, as herein shown and specified.

3. In combination with the front axle of a wagon, the arched axle-bed D, formed, substantially as shown, with enlargements e' e^3, perforated to receive king-bolt and securing-bolts, perforated vertical walls *a*, and hub-covers a^3, and the bolster C, formed with perforated enlargement *e* and bearing-plate e^4, substantially as shown and specified.

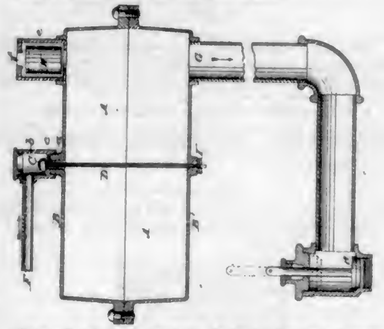
297,440. APPARATUS FOR PLUGGING AND TAPPING BARRELS. NEWTON W. PAYNE, East Boston, Mass. Filed Nov. 7, 1883. (No model.)



Claim.—1. The hub B, formed with the plug-orifice C, extending longitudinally through it of uniform diameter, and the draft-orifice E, running but part way through it with the transverse connecting-recess D, in combination with plugs adapted by driving in to alternately open and close the tap-hole of the barrel, for the purpose set forth.

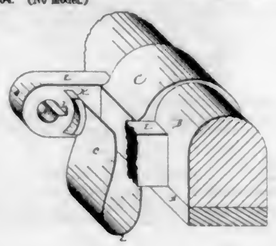
2. A barrel provided with a hub permanently secured in its tap-hole, and having one internal and two external orifices connected transversely, as shown, in combination with the plug or plugs F G, having two distinct diameters, substantially as and for the purpose set forth.

297,441. PRESSURE-REGULATING VALVE. GALEN W. PEARSONS, Kansas City, Mo. Filed Oct. 26, 1883. (No model.)



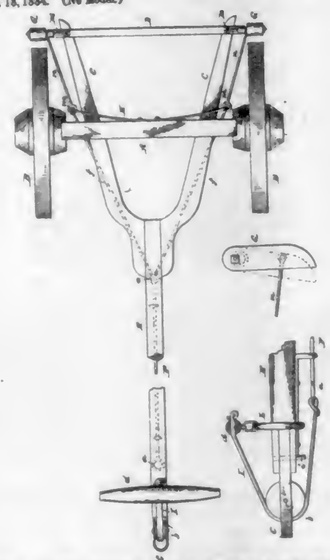
Claim.—In a device for regulating the flow of liquids, the combination of the chamber A, having flexible walls and valve-operating devices, substantially such as described, connected thereto, with the float-valve H, outlet-pipe G, and valve *d*, as and for the purpose set forth.

297,442. THILL-COUPLING. PALMER D. PECK, Colesburg, Iowa. Filed Feb. 12, 1884. (No model.)



Claim.—The combination, with the perforated and slotted ears, of a thill-iron bored and slotted, as described, and formed with an enlarged eccentric portion, a splined pin to secure the parts, a spring upon which the thill-iron bears, and stops to limit the movement of the spring, substantially as set forth.

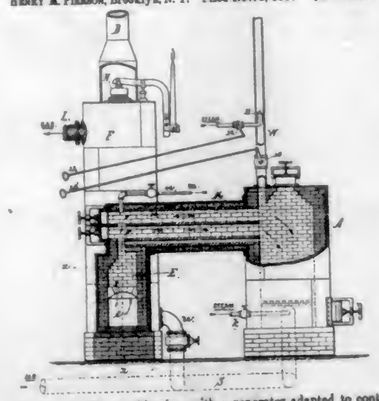
297,443. WAGON-BRAKE. LAWSON G. PEEL, Hazlehurst, Miss. Filed Feb. 18, 1884. (No model.)



Claim.—1. The brake-blocks G G, connected at their upper ends to the short axles M M upon the cross-bar D, and at their lower ends to the rods *n n*, in combination with the spring H, which connects with the rods *n n*, substantially as and for the purpose set forth.

2. The combination, for applying and relieving the brakes, of the following parts: neck-yoke *d*, pulley *b*, strap I, rods F, *f f*, and *n n*, connecting to the brake-blocks, and the spring H, substantially as and for the purpose specified.

297,444. APPARATUS FOR THE MANUFACTURE OF GAS. HENRY M. PIERSON, Brooklyn, N. Y. Filed Nov. 5, 1883. (No model.)



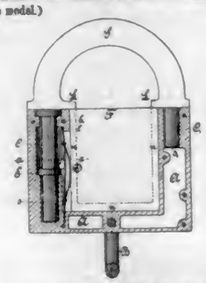
Claim.—1. The combination, with a generator adapted to contain a bed of incandescent fuel, of a fixing-chamber, and cokers between the generator and fixing-chamber and forming the sole passages for the gases, the loosely-laid fire-brick or similar material in the fixing-chamber, pipes for supplying the air at the base of the fixing-chamber and at the base of the generator, and a pipe for supplying steam at the base of the generator, substantially as set forth.

2. The combination, in a gas-making apparatus, of a set of cokers adapted to the reception of soft coal or similar material, and forming also the passage for the gases, a generator connected with one end of such cokers for the reception of the coke from such cokers, a fixing-chamber, F, connected with the other end of such cokers, and the pipe for supplying steam beneath the incandescent bed of fuel in the generator, substantially as set forth.

3. The combination, with the generator adapted to contain a bed of incandescent fuel, of a pipe for supplying steam into such generator, one or more cokers connected with the opening into such generator and adapted to receive soft coal or similar fuel, a fixing-chamber and the flue connected from the said cokers to the said chamber, and means of supplying hydrocarbon into such flue, substantially as and for the purposes set forth.

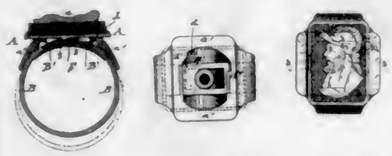
4. The combination, in a gas-making apparatus, of one or more cokers for receiving the soft coal or similar material, the movable cover or covers of such retorts, an escape-pipe connected with the back end of such retort, a jet-pipe for steam or other material under pressure to induce a current in such escape-pipe, and the cock for closing the said pipe substantially as and for the purposes set forth.

297,445. SEAL-LOCK. CHARLES M. PLUMB, Madison, Wis. Filed Feb. 20, 1884. (No model.)



Claim.—The combination of the staple S, having the extensions *s* and *s'*, and the collar E, working in the sockets C C, with the seal-plate F, the double spring D, and catch *c*, all arranged to operate as described, and for the purposes set forth.

297,446. FINGER-RING. CHARLES PEARL, Cranford, N. J., assignor to Sterne Brothers & Co., New York, N. Y. Filed Mar. 7, 1884. (No model.)



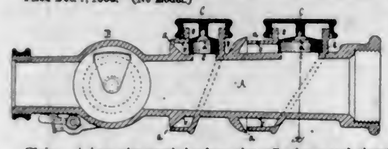
Claim.—1. The combination, in a finger-ring, of a lower box portion, an axially-turning upper box portion, and a shank the ends of which are guided in the lower box portion, and adapted to be tightly clamped by the upper box portion, substantially as set forth.

2. The combination, in a finger-ring, of a lower box portion, a shank the ends of which are guided in the lower box portion, an axially-turning upper box portion adapted to clamp the ends of the shank, and means whereby the extent of axial motion of the upper box portion is limited, substantially as set forth.

3. In a finger-ring, the combination of the lower box portion, *a'*, having a screw-socket, *b*, an adjustable shank, B, having slotted and overlapping ends B', and an upper box portion, *a*, having a central screw-post, *b'*, fitting into the socket of the lower box portion, so that the shank ends are tightly clamped or released, substantially as set forth.

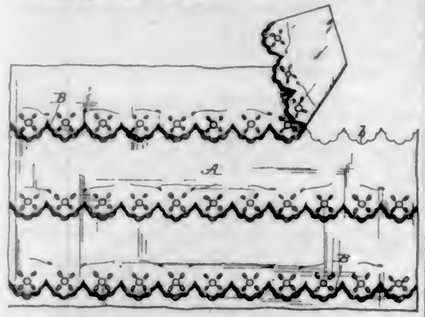
4. In a finger-ring, the combination of the lower box portion, *a'*, having a central screw-socket, *b*, an adjustable shank, B, having slotted and overlapping ends B', guided in said lower box portion, an axially-turning upper box portion having a central screw-post, *b'*, and a downward-projecting stop-pin, *d*, and abutments *d'* of the lower box portion, substantially as set forth.

297,447. HOSE-PIPE NOZZLE. JOHN E. PRUETT, Baltimore, Md. Filed Dec. 7, 1883. (No model.)



Claim.—A hose-pipe nozzle having a shut-off valve or cock therein, an annular space around said nozzle, with a lateral aperture for the escape of water, and an opening to form the means of communication between the said space and the interior of the nozzle, combined with a valve to control the said opening, substantially as specified.

297,448. EMBROIDERY. MORRIS H. PULASKI, Philadelphia, Pa. Filed Aug. 16, 1883. (No model.)



Claim.—1. As a new article of manufacture, a web of embroidery having the scalloped or curved edges of the embroidered part weakened, as described, as and for the purpose intended, substantially as described.

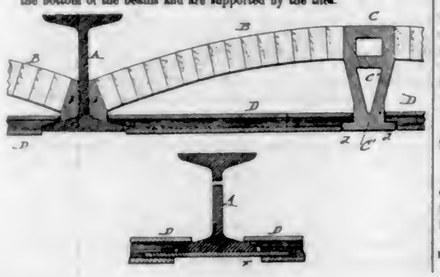
2. As a new article of manufacture, a web of embroidery having the edges of each embroidery-strip perforated, scored, indented, or cut contiguous to and around the curves and scallops constituting the lower edge of each embroidered strip of such web, as and for the purpose intended, substantially as described.

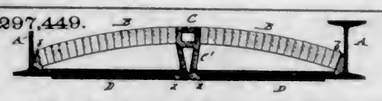
3. As a new article of manufacture, the within-described separable web of embroidery, indented, scored, or perforated contiguous to and around the curves or scallops of the edge of each strip of embroidery composing such web, whereby each of said strips is readily separable from the main fabric around said scallops of said edges, and when so detached each strip is practically cut out around the curves or scallops of the edge of the embroidery, substantially as described.

4. A separable web of embroidery consisting of strips of embroidery, the lower edge of each of said strips being a series of scallops, curves, or ellipses, and having surrounding such curves, ellipses, or scallops a weak frangible line, whereby each strip may be detached from the web in a finished condition, with its scallops, curves, or ellipses cut out ready for use, substantially as described.

297,449. FIRE-PROOF BUILDING. GUSTAVUS W. RADER, New York, N. Y. Filed Jan. 18, 1884. (No model.)

Brief.—A brick arch extending between and supported by I-beams has a keystone with a downward extension. Fire-proof tiles are supported by the extension and the I-beams. Fire-proof plates extend across the bottom of the beams and are supported by the tiles.



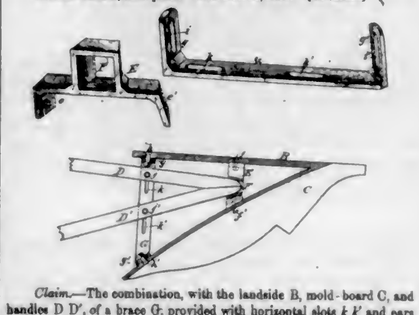
297,449. 

Claim.—1. The combination of the beams, a transverse brick arch extending between the beams, a keystone having a downward extension, and horizontal tiles or plates that are supported on the keystone-extension and the beams, substantially as set forth.

2. The combination of the beams A, a transverse brick arch, B, extending between the beams, a keystone, C, having a downward extension, C', provided with lateral shoulders *d d*, and hollow fire-proof tiles or plates D D, that rest by their recessed ends on the keystone-extension and the base of the beams, substantially as set forth.

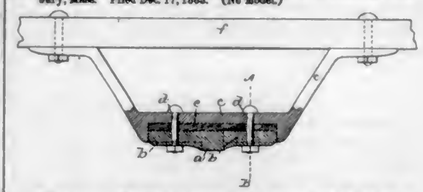
3. The combination of the beams A A, brick arch B, extending between the beams, keystone C, having a downward extension, C', fire-proof tiles or plates D D, supported by the beams A and extensions C', and fire-proof plates E, extending across the bottom of the beams and supported by the tiles, substantially as specified.

297,450. PLOW. JOHN RITZ, Gowanda, N. Y., assignor of one-half to William Danber, same place. Filed Dec. 10, 1883. (No model.)



Claim.—The combination, with the landside B, mold-board C, and handles D D', of a brace G, provided with horizontal slots *k k'* and ears *g g'*, having upright slots *i i'*, the ear *g'* being fitted directly against the inner side of the mold-board, and a brace, E, having a socket, F, formed upon the upper part of said brace and integral therewith, in which the lower ends of the handles D D' are secured, substantially as set forth.

297,451. TWO-WHEELED VEHICLE. JAMES D. ROBERTSON, Salisbury, Mass. Filed Dec. 17, 1883. (No model.)



Claim.—1. The saddle *c*, formed with a central longitudinal cavity to receive the axle-lugs and elastic buffer, and having a transverse seat in the side walls of said cavity for the axle, and with the elevated ends formed to be secured to shaft *f*, substantially as specified.

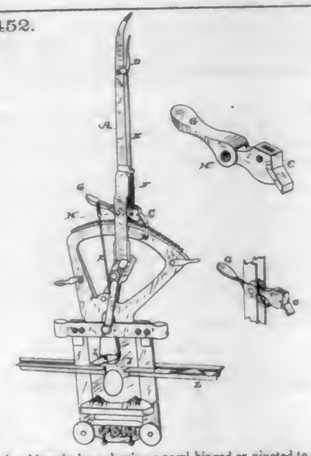
2. The combination, with saddle *c*, formed as specified, of axle *a*, formed or provided with securing-lugs adapted to enter the chamber in said saddle, a cushioning body interposed between said lugs and the roof of said chamber, and screw-bolts *d d*, extending through the upper wall of said chamber, the cushioning body, and lugs, whereby the angle of the shafts relatively to the upper plane of the axle may be changed at will by actuating the screw-nuts on said bolts, substantially as specified.

297,452. PAWL FOR CABLE-GRIP LEVERS. HENRY ROOT and FREDERICK A. TUCKER, San Francisco, Cal. Filed Feb. 18, 1884. (No model.)

Brief.—The pawl is extended to the rear of the lever to permit its operation by the foot, and said extension is connected to a lever pivoted to the grip-frame, which is actuated automatically by inclines upon the slot-irons.

Claim.—1. A pawl for cable-grip levers, having an extension to the rear of the lever, substantially as herein described.

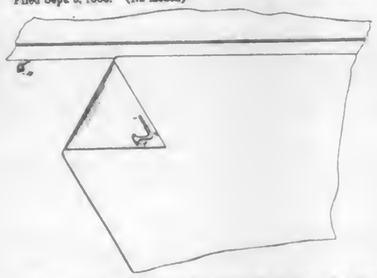
297,452.



2. A cable-grip lever having a pawl hinged or pivoted to it so as to engage a curved rack, in combination with an extension or foot-piece projecting upon the opposite side of the lever from the pawl, and forming a part or connected with it, substantially as herein described.

3. A pawl for cable-grip levers, having an extension to the rear of the lever, in combination with a short supplemental lever pivoted to the grip-frame, and connected with the pawl by a rod, and lugs fixed to the slot-iron so as to act upon the supplemental lever and disengage the pawl, substantially as herein described.

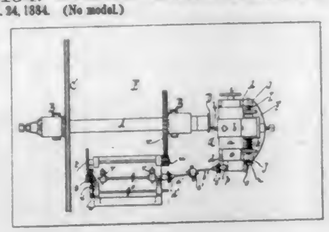
297,453. CARPET-FASTENER. HERMAN A. SCHWERS, Chicago, Ill. Filed Sept. 5, 1883. (No model.)



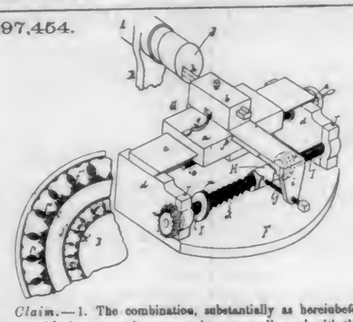
Claim.—1. A securing-hook for carpets, having its shank adapted for attachment to the carpet and formed with an arm at right angles, having a hinged spring-actuated extension adapted to be turned in or out at pleasure and locked in either position, substantially as shown and described.

2. The shank A, having a right-angle bend, *a*, pivoted extension *a'*, its inner end squared and shouldered, and the spring *a²*, all combined, constructed, and arranged to operate substantially as and for the purpose set forth.

297,454. ROSE-ENGINE. ANTON SCHWITTER, Brooklyn, N.Y. Filed Jan. 24, 1884. (No model.)



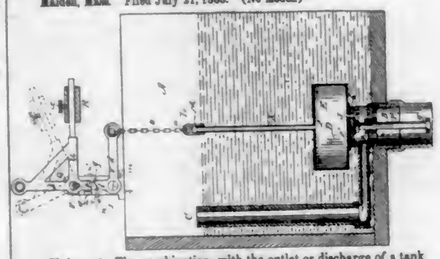
297,454.



Claim.—1. The combination, substantially as hereinbefore described, with the tracer, the graver, the pattern-die, and with the spindle which carries the work or the article to be acted upon by the graver, of a multiplying-gear for imparting to the pattern-die a revolving motion faster than that of the spindle which carries the work, and of means for moving the pattern-die in the direction of the length of its supporting-shaft.

2. The combination, substantially as hereinbefore described, of the spindle A, shaft *q*, multiplying-gear to transmit motion from the shaft A to the shaft *q*, shaft *p*, extension-rods *a' b'*, with universal joints *d' c'*, spindle I, geared with the shaft *p*, pattern-die H, feathered on the spindle I, spring *k*, nut *l*, and slide-rest G, carrying the tracer *j* and graver A.

297,455. VALVE FOR WATER-CLOSETS, &c. WILLIAM SCOTT, Malden, Mass. Filed July 21, 1883. (No model.)



Claim.—1. The combination, with the outlet or discharge of a tank for water or other liquid, of a chambered valve which has openings or passages for the ingress and egress of the liquid of the tank and of air, and is otherwise constructed and arranged that seated said discharge is closed and raised said discharge is opened, and from the then ingress of liquid said valve is again seated, emptying its contents, substantially as described, for the purpose specified.

2. The combination, with the seat H of the outlet or discharge B of a tank for water or other liquid, of a chambered valve, D, which has openings or passages J K for the ingress and egress of the liquid of the tank and of air, and is provided with a stem, P, suitably guided, all so that when said valve is seated said discharge is closed and when raised said discharge is opened, and from the then ingress of liquid from the tank said valve is again seated, emptying its contents into said discharge, substantially as described, for the purpose specified.

3. The combination, with the outlet or discharge of a tank for water or other liquid, of a chambered valve which has openings or passages J and K, for the ingress and egress of the liquid of the tank and of air, and the port M of the air-passage made downwardly inclining, and all otherwise constructed and arranged that seated said discharge is closed and raised said discharge is opened, and from the then ingress of liquid said valve is again seated, emptying its contents into said discharge, substantially as described, for the purposes specified.

4. The combination, with a tank for liquid, an outlet-pipe for the liquid, and a valve to said outlet-pipe, of two pivoted levers for operating said valve, one of said levers being constructed to slide at its pivotal point and to act on the other lever to open the valve when moved in one direction and when moved in the other direction to be shifted at its pivotal point, substantially as described.

5. A crank-lever, N, having arm *d*, connected to a valve of a tank for water or other liquid, and arm *l*, rounded at its outer end, in combination with an operating crank-lever, Q, having arms *s*, *t*, and *u*, its arm *t* at its outer end rounded, and an elongated fulcrum-bearing, *w*, substantially as described, for the purpose specified.

6. The pivoted lever N, having long arm *d*, and short arm *l*, rounded at its free end, in combination with a lever, Q, having its short arm *t* rounded at its free end, and formed with an elongated fulcrum-bearing, *w*, whereby said levers are adapted to operate substantially as described.

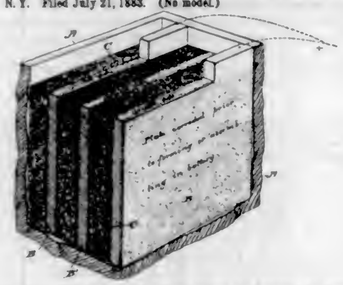
7. The combination, with a tank for liquid, an outlet-pipe for the liquid, a float-valve for closing said outlet-pipe, provided with an air-inlet pipe and a liquid-inlet, the liquid-inlet being located at such point that when the valve is unseated the liquid will pass from the tank into said valve, and when seated the liquid will pass therefrom into the outlet-pipe of the tank, substantially as described.

297,456. CHUCK FOR ROCK-DRILLS. HENRY C. SERGEANT, Denver, Colo. Filed Feb. 23, 1884. (No model.)



Claim.—The combination, with the drill-chuck having a socket for the reception of the drill or drill-rod, of clamping screw-bolts having their heads formed with concave bearing-surfaces *i' i'*, and inserted through the chuck from opposite sides thereof and on opposite sides of its socket, for clamping the drill or drill-rod by pressure applied in opposite directions on diametrically-opposite portions thereof, substantially as herein described.

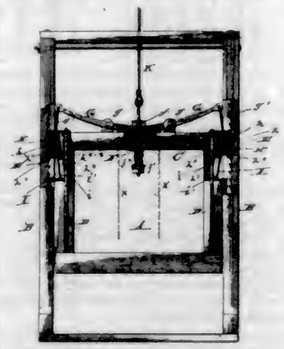
297,457. SECONDARY BATTERY. WILLIAM ANTHONY SHAW, Pittsburg, Pa., assignor to the Electrical Accumulator Company, New York, N.Y. Filed July 21, 1883. (No model.)



Claim.—The method of making plates or elements for secondary batteries by corroding with nitric, acetic, or hydrochloric acid or other chemical corroding agent, a plain, corrugated, or perforated lead plate, or other suitable body of lead, or a suitable body of other metal, and then removing them from the action of the corroding agent and assembling the same with other elements in the cell, with an exciting solution or electrolyte, substantially as described.

297,458. WITHDRAWN.

297,459. SAFETY-CLUTCH FOR ELEVATORS. JAMES WILLIAM SIMMONS, East Monroe, Ohio. Filed Feb. 19, 1884. (No model.)

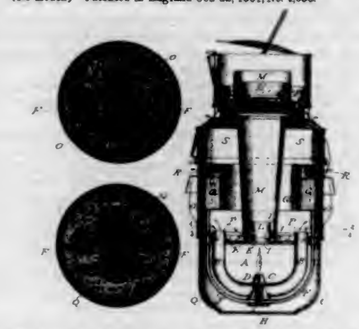


Claim.—1. In a safety-clutch for elevators, the combination, with the vertical side racks, E E, king-bolt F, and clutch-blocks H H, provided with proper connecting and operating mechanism, of the beams D, having recesses I I, provided with inclined surfaces *i i*, all constructed and adapted to operate substantially as shown and described.

2. In a safety-clutch for elevators, the combination, with the vertical side racks, E E, king-bolt F, levers G G, and links *g' g'*, of the clutch-blocks H H and beams D, having recesses I I, all constructed and arranged to operate substantially as shown and described.

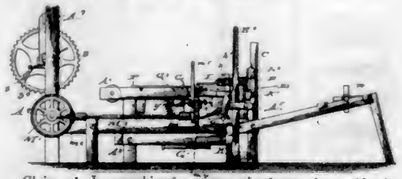
3. The combination, with an elevator-cage, of vertical side racks, E E, king-bolt F, provided with shoulders *f f*, a spring, *f'*, chain or cord K, levers G G, clutch-blocks H H, and links *g' g'*, all constructed and arranged to operate substantially as and for the purpose set forth.

297,460. VENTILATION OF LAMPS. FREDERICK HENRY SMITH, Winchmore Hill, County of Middlesex, England. Filed Feb. 19, 1883. (No model.) Patented in England Oct. 22, 1881, No. 4,638.



Claim.—In inclosed lamps or burners, the reflector E, having an opening, I, in the center thereof, not fitted directly with a chimney, the false cover J, having a central opening, K, therein, concentric with but smaller than the opening I in the reflector E, the short neck or chimney L, attached to the false cover J, and the chimney M, external to the short neck or chimney L, the whole constructed, arranged, combined, and operating so that the heated products of combustion emanating from the said lamp shall induce currents of air to be drawn in through the holes or openings R in the outer casing, and be caused to traverse the spaces between the reflector E and the false cover J, and between the short neck or chimney L and the longer chimney M, substantially as hereinbefore described, and illustrated in Figs. 1, 2, and 3 of the drawings, and for the purpose specified.

297,461. MACHINE FOR MAKING WIRE FENCES. HOMER SMITH, Kirksville, Mo. Filed July 10, 1883. (Model.)



Claim.—1. In a machine for making wire fences, the combination of uprights, cross-pieces vertically adjustable upon said uprights, and heads adjustable upon said cross-pieces, substantially as described.

2. In a machine for making wire fences, the combination of uprights having longitudinal slots, cross-pieces having longitudinal slots and attached to the uprights by bolts, and adjustable heads between the cross-pieces, and held in place by bolts passing through the longitudinal slots in said cross-pieces, substantially as described.

3. In a machine for making wire fences, a head having a pinion for revolving it, stationary jaws attached to the pinion, and pivoted jaws attached to the stationary jaws, substantially as described.

4. In a machine for making wire fences, a head having jaws pivoted at their rear ends, substantially as described.

5. In a machine for making wire fences, a head having curved pivoted jaws and a gradually-reduced opening, for the purpose set forth.

6. In a machine for making wire fences, a head having a pinion provided with openings for the wire, stationary jaws attached to the pinion and having guide-grooves for the wire, and pivoted jaws having an opening for the wire to pass through and be twisted, substantially as described.

7. In a machine for making wire fences, a head having stationary jaws, and pivoted jaws attached to the stationary jaws, and provided with springs, for the purpose set forth.

8. In a machine for making wire fences, the combination of wire-twisting heads, stops adapted to be raised or lowered in front of the heads, movable beater-frames between the stops and heads, and springs rigidly attached by one end to the frame C, and the other end projecting forward between the heads and resting upon the top of the machine for holding the picket in place, substantially as described.

9. In a machine for making wire fences, the combination of a roller suspended in a frame, a wheel also suspended in a frame and having a radial flange, *s*, a register operated by said flange, and a bell having a hammer which is tripped by said flange when the wheel is revolved, substantially as described.

10. In a machine for making wire fences, the combination of a roller upon which the fence is wound, a wheel journaled in movable bearings and having a radial flange, and a registering apparatus operated by said flange, substantially as described.

11. In a machine for making wire fences, the combination of a frame having movable bearings, a wheel journaled in said bearings, and having an arm, and a registering apparatus operated by said arm when the wheel is revolved, substantially as described.

12. In a fence-making machine, the spring I, attached to the cross-head C, and having its free end projecting between the heads and resting upon the top of the machine.

13. In a fence-making machine, the combination of a roller, M, having miter-wheel M′, a shaft, M³, having one end journaled on the shaft of roller M, and having a miter-wheel, M³, gearing with said wheel M′, and means, substantially as described, for revolving the shaft.

14. In a fence-making machine, a reel-frame having shaft B³, reels B′, and keys *b*, substantially as and for the purpose set forth.

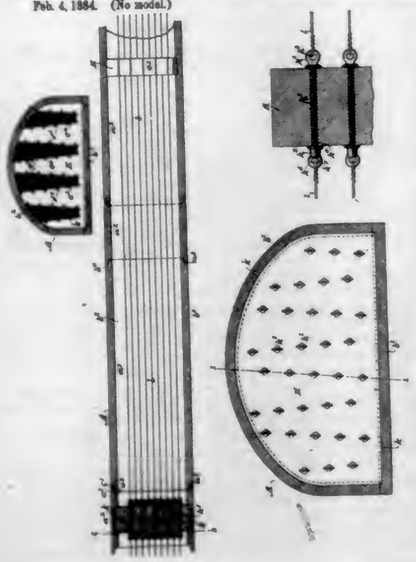
15. In a machine for making wire fences, the combination of a plate having clamps and a central aperture, and a revolving head having a disk held in place by said clamps, substantially as described.

16. In a machine for making wire fences, the combination of a plate having adjustable clamps and a central opening, and a head having a disk held in place by said clamps, substantially as described.

17. In a machine for making wire fences, the combination of a frame having loops A⁴ and grooves A³, a beater, H, having arms *h*′ moving in said loops A⁴, cross-pieces A, held in grooves A³, and projections A², extending above the top of the frame, and toggle-levers *k* and *k*′, attached to arms *h*′ and to a shaft, and said shaft having a crank, substantially as described.

18. In a machine for making wire fences, the combination of a frame having revolving heads and stops adjustable to and from the heads, substantially as and for the purpose set forth.

297,462. UNDERGROUND WIRE-CONDUIT. THOMAS L. SMITH, New York, N. Y., assignor of one-half to Daniel A. Mathews, same place. Filed Feb. 4, 1884. (No model.)



Claim.—1. In a conduit for electric conductors, a series of bridges for supporting the conductors, and a series of solid supports extending across said conduits and separating the same into distinct compartments, and a series of conducting rods or bolts extending through said supports, for supporting the separate sections of conductors within said conduit and placing the adjacent sections in electrical connection with each other.

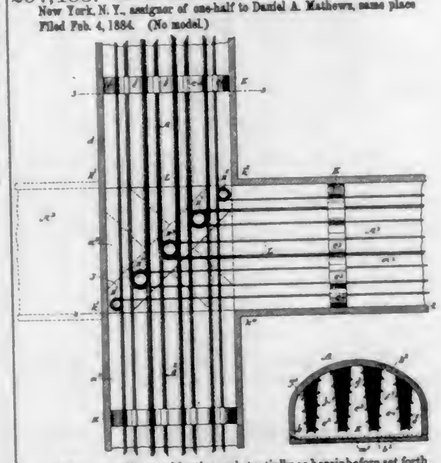
2. The combination, substantially as hereinbefore set forth, with a conduit for electric conductors, of a series of supports for the conductors, which supports divide the conduit into water-tight compartments, a series of screw-bolts extending through said supports, and means for attaching sections of conductors to the respective ends of said screw-bolts, and for causing said screw-bolts to exert tension upon the sections of conductors.

3. The combination, substantially as hereinbefore set forth, of a series of sections of a conduit for electric conductors, a series of non-conducting bridges placed within the same, non-conducting plates applied to said bridges, a series of shorter sections of conduit alternating with the first-named sections, a series of rigid non-conducting supports placed within certain of the shorter sections, and means, substantially such as described, for obtaining independent electrical connections through said supports.

4. The combination, substantially as hereinbefore set forth, in an underground conduit, of a series of bridges having notches for receiving electric conductors, and a series of solid supports interposed in said series of bridges, having means, substantially such as described, for receiving the terminals of the conductors supported in said bridges, and for securing connections through the supports without changing the relative positions of the conductors.

5. The combination, substantially as hereinbefore set forth, of a series of supporting-bridges for electric conductors, having a series of upwardly-projecting tapering fingers, in the sides of which are formed notches for receiving the conductors, non-conducting plates covering said notches, and rigid supports interposed in said series of bridges, and means for securing electrical connections for the conductors through said rigid supports without changing the relative position of the conductors.

297,463. CONDUIT FOR UNDERGROUND LINES. THOMAS L. SMITH, New York, N. Y., assignor of one-half to Daniel A. Mathews, same place. Filed Feb. 4, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a series of supporting-bridges for electric conductors, having a series of upwardly-projecting fingers, in the sides of which are formed notches for receiving the conductors, non-conducting plates covering said notches, and a series of tapering pillars for receiving the conductors led from said fingers, and extending diagonally across the conduit containing said bridges.

2. In an underground conduit, the combination, substantially as hereinbefore set forth, of a bridge consisting of a series of upwardly-projecting fingers for supporting electric conductors, and a series of pillars corresponding in number to the number of said fingers.

3. The combination, substantially as hereinbefore set forth, in a conduit for electric conductors, of means, substantially such as described, for supporting conductors throughout the length of said conduit, and a series of conical pillars placed at the corners formed in said conduit, or by branch sections of said conduit.

4. The combination, substantially as hereinbefore set forth, with a series of electric conductors, and means, substantially such as described, for supporting the same in different vertical planes within an underground conduit, of a series of conical tapering pillars placed at the points where said conductors deviate from straight lines, for supporting said conductors in such a manner that they may be led in different directions, said pillars having spiral grooves, substantially as described.

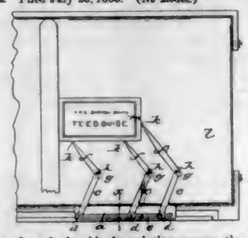
5. The combination, substantially as hereinbefore set forth, with a series of electric conductors, of means, substantially such as described, for supporting the same in different vertical and horizontal planes within an underground conduit, and a series of pillars placed at the points where said conductors deviate from straight lines, for supporting said conductors in such a manner that they may be led in different directions, said pillars having spiral corrugations or grooves, substantially as described.

6. In a conduit for underground lines, a series of tapering grooved pillars extending along the line of intersection of two or more sections of conduit, substantially as described.

7. The combination, substantially as hereinbefore set forth, with the conduits A and A′ and the bridges E, of the pillars H, having the spiral grooves *h*.

8. The combination, substantially as hereinbefore set forth, in a conduit for underground lines, of a series of tapering grooved pillars arranged diagonally across said conduit, and supported at the top and bottom in the outer walls of said conduit, substantially as described.

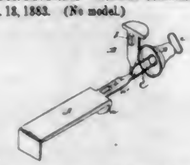
297,464. FEED-GUIDE FOR PRINTING-PRESSES. WM. B. SMITH, Orlando, Fla. Filed July 23, 1883. (No model.)



Claim.—1. In a feed-guide for printing-presses, the combination, with the base-bar, of the series of fingers, each composed of articulated sections and pivoted to said bar, one of said series of fingers being longer than the others, to enable it to rest against a side edge of the sheet of paper, while the other fingers rest against or support the bottom edge thereof, substantially as and for the purpose set forth.

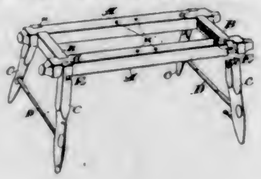
2. In a feed-guide for printing-presses, the combination, with the base-bar having a longitudinal slot, of the series of fingers, each composed of articulated sections and adjustably pivoted to said bar, one of the series of said fingers being longer than the others and resting against a side edge of the paper, while the shorter fingers rest against or support the bottom edge thereof, substantially as and for the purpose set forth.

297,465. DOOR-SECURER. WILLIAM STARRETT, North Manchester, Ind. Filed Dec. 13, 1883. (No model.)



Claim.—In a door-securer, the hook-shaped piece A, having a flange, *a*, screw-threaded shank *a*′, and socket *a*², in combination with the flanged part B, having projection *b*, nut D, and bent wire loop C, substantially as and for the purpose set forth.

297,466. KNOCKDOWN FRAME FOR GRINDSTONES. FRANK M. STEARNS, Berea, Ohio. Filed Feb. 26, 1884. (No model.)



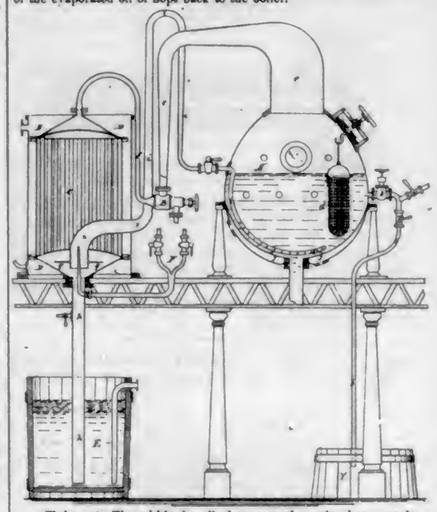
Claim.—1. In a knockdown grindstone-frame, the combination, with side pieces provided with the gains *a*, forming seats for the legs, as shown, of legs engaging the said gains, and provided with the shoulders *c*, and bolts for holding the legs in position, substantially as set forth.

2. In a knockdown grindstone frame, the combination, with side pieces of the frame, provided with the gains, forming seats for the legs, the inner walls of said gains sloping downward and outward, of legs coupled in pairs by flexible cross-bars, and provided with the shoulders *c*, and bolts for securing the parts together, substantially as set forth.

3. The combination, with the parts A and B, gained to form a frame, as shown, the former provided with the beveled gains *a* and the latter with the grooves *b*, of the legs C, provided with the shoulders *c*, and coupled in pairs by the flexible bar D, and secured by the bolt E, substantially as set forth.

297,467. PROCESS OF AND APPARATUS FOR THE TREATMENT OF HOPS IN THE MANUFACTURE OF MALT LIQUORS. ALEXANDER STEINER, New York, N. Y. Filed Sept. 29, 1883. (No model.)

Brief.—Boils the mash in vacuo. Conducts lighter portions only of the evaporated oil of hops back to the boiler.

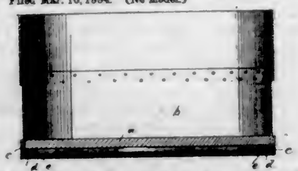


Claim.—1. The within-described process of treating hops, consisting in boiling the same in the presence of worts in a vacuum-pan, condensing from the vapors evolved therefrom the heavy oils, and returning the lighter aromatic vapors separated from the heavier oils to the vacuum-pan, substantially as described.

2. The combination, with a vacuum-pan, an ejector, and a condenser, of a pipe leading from the space beneath the condenser into the liquid in the pan, substantially as and for the purpose specified.

3. The combination, with a vacuum-pan, an ejector, and a condenser, of a pipe, *i*, leading from the space beneath the condenser into the liquid within the pan, and means for injecting steam or gas into the pipe *i*, substantially as and for the purpose specified.

297,468. TANK FOR WINDMILLS. HARRY R. STEVENS, Los Angeles, Cal. Filed Mar. 10, 1884. (No model.)



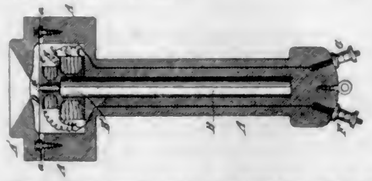
Claim.—The herein-described water-tank, consisting of the galvanized sheet-metal body, having the wooden bottom fitting tightly therein within a short distance of the lower edge of the body, in combination with the encircling-hoop directly opposite the edge of the wooden bottom, the wire ring below the under face of the bottom, and the lower projecting edge of the body bent inwardly over the wire ring and clinched into the under face of the bottom, substantially as specified.

297,469. SHOE. JOHN H. STICKNEY, Boston, Mass. Filed Feb. 28, 1884. (No model.)



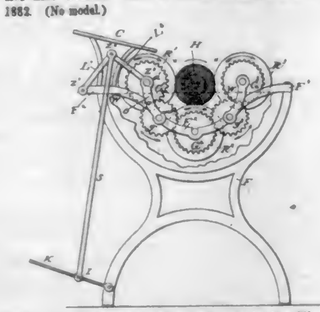
Claim.—As an improved article of manufacture, a rubber overshoe provided with the permanent flexible shoe-horn and pants-supporter B, substantially as set forth.

297,470. TELEPHONE. HENRY R. T. STRANGWAYS, London, England. Filed Nov. 23, 1882. (No model.)



Claim.—In an electric telephone, the combination, with the diaphragm or vibrator D, fitted with a small magnet or piece of metal, *d*, capable of inductive action, and a main magnet, B', opposed to said small magnet, of the coils or helices C E, arranged concentric with such magnets, and wound, as described, so that a divided current will flow through each of the coils in one and the same direction, and act simultaneously and in precisely the same manner upon the two magnets, substantially as herein set forth.

297,471. METHOD OF AND MACHINE FOR SCALDING AND FELTING HAT-BODIES. JAMES S. TAYLOR, Danbury, Conn. Filed Jan. 19, 1882. (No model.)



Claim.—1. The method herein described of scalding and felting hat-bodies, which consists in gently rolling and manipulating the same in scalding water without superimposed pressure, substantially as set forth.

2. The combination, in a hat scalding and felting machine, of three rollers adjusted at suitable distances to felt a bundle of hats by rolling and pressing it in the cavity between them, the felts being inserted into and removed from the cavity without altering the distances of the rollers for that purpose, substantially as set forth.

3. In a hat scalding and felting machine, a series of parallel rollers combined and arranged to form an open and unobstructed chamber, within which the goods may be inserted and felted, and from which they may be conveniently removed, substantially as set forth.

4. The method herein described of scalding and felting hat-bodies, which consists in the operations, while the goods are entirely or partly submerged in scalding water, of rolling and subjecting them to variable pressure between revolving surfaces, substantially as set forth.

5. The method herein described of scalding and felting hat-bodies, which consists in the operations, while the goods are exposed to the action of hot water, of continuously rolling the goods between revolving surfaces and alternately compressing and relieving them from pressure, whereby the water, by such variation of pressure, is successively taken up by the goods and in part ejected therefrom, substantially as set forth.

6. The combination, in a scalding and felting machine, of a vat or tub to hold scalding water, and inclosed within said tub, so as to be wholly or partially submerged in the water, a series of stationary rollers, and one or more rollers having a positive or variable pressure derived from connections controlled by the operator, substantially as set forth.

7. The combination, in a felting-machine, of a series of stationary rollers, and one or more rollers having a positive or variable pressure derived from connections controlled by the operator, substantially as set forth.

8. The toggle-joint L' L^2, as applied to the roller R', in combination with the lever K and connecting-rod S, operating in the manner and for the purpose substantially as described.

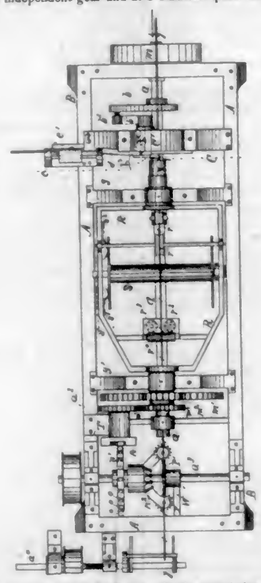
9. The combination of the toggle-joint L' L^2, arm O, and roller R', operating in manner and for the purpose substantially as described.

10. The plank C, arranged as shown, in combination with the roller R' and chamber or receptacle *z z*, substantially as set forth.

11. The rollers R^3 and R^4 in parallel bearings, as described, and the roller R', operated by means of the toggle-joint or its equivalent, in combination with the vessel for holding heated liquid for saturating the goods while undergoing the process of felting, all operating in manner and form substantially as described.

297,472. WIRE-BARBING MACHINE. PLEASANT A. TERRELL, Grinnell, assignor of one-half to James H. Coon, Des Moines, Iowa. Filed Aug. 27, 1883. (No model.)

Brief.—A sprocket-wheel effects the forward feed of the twisted and barbed wire and of one of its strands into and through the machine, and of the other strand from a spool in the twister-frame. The barb-wire is coiled and then cut. The wrapping-pinion is mounted on the end of the twister, and is fastened to and rotated by the twister, or is rotated by an independent gear and at a different speed from the twister.



Claim.—1. The barb-feeding mechanism consisting of the eccentric c^3, arm c^7, lever c^4, and sliding block c^5, and means for operating said device, substantially as described.

2. The combination of eccentric c^3, arm c^7, lever c^4, sliding block c^5, having the lug c^{10}, flange c^6, and adjusting-screw c^{11}, substantially as and for the purpose set forth.

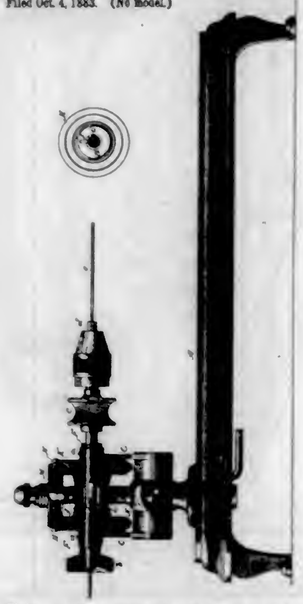
3. The barb-cutting mechanism consisting of cam *b*, arm *b'*, oscillating shaft *a'*, made integral with head b^2, and cutting-dies *v'* and *v*, with means for operating said cam, substantially as described.

4. The rotating twister R and coiling-wheel *h*, mounted on the twister, in combination with the barb-feeding and barb-cutting devices, and means for rotating the twister, and means for actuating the barb-feeding and barb-cutting devices, substantially as described.

5. The rotating twister R, barb-coiling wheel *h*, mounted on the twister, and the barb-feeding and barb-cutting mechanisms, in combination with the drum n^2, and means for actuating all the said several devices, substantially as and for the purpose specified.

6. The rotating twister K and barb-coiling wheel A, mounted on the twister, with means for rotating each of said devices at different speeds, in combination with mechanism for feeding and cutting the barb-wire, substantially as described, and for the purpose set forth.

297,473. REVERSING-PULLEY. GEORGE A. TOBEY, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 4, 1883. (No model.)



Claim.—1. The combination, with two loose reversing-pulleys, an intermediate guide-pulley, and a belt, of a shaft or spindle capable of endwise movement, and means for bringing the same into engagement with either loose pulley, substantially as set forth.

2. The combination, with pulleys H K, having the lugs *f f*, guide-pulley M, and belt N, of the spindle D, provided with the lug G, and means for imparting to the shaft an endwise movement, whereby the same is caused to engage with either of the pulleys H K, as set forth.

297,474. HAME-TUG. IRA H. TUBBS, Chicago, Ill. Filed Dec. 26, 1883. (No model.)



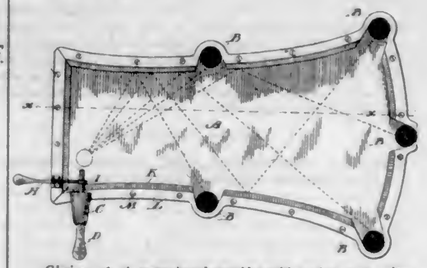
Claim.—1. The combination, with the hame-tug A, consisting of the two lower parts *a a'* and the upper shorter part, a^2, of the metallic clip B, having arms *b b'*, of unequal length, the longer arm being inserted between the parts *a a'* and attached to the chape or buckle-strap E, while the shorter arm is sheathed between the part *a'* and the shorter part a^2, substantially as described.

2. In a hame-tug, the connecting-plate D, provided at one end with the attaching-post a^2, and having the perforations a^4 b^4 in opposite ends of said plate, and the intermediate holding pins or posts, *d* d' d^2 d^3, substantially as and for the purpose set forth.

3. In a hame-tug, the combination, with the connecting-plate D, perforated at each end, and provided with attaching-posts, as described, of the shorter clip-arm *b'*, perforated at the extreme end to receive the post a^2, and the chape or trace-buckle strap E, whereby said clip-arm and chape are securely connected, substantially as herein set forth.

4. The combination, with the hame-tug A, of the clip-iron B, having arms of unequal length, formed integral by the attaching-eye E, the connecting-plate D, and the buckle-strap E, all secured together by means of the screw b^2, inserted from the under side and terminating in the plate D, and the screw a^2, inserted from the upper side and terminating in the end of the long arm of the clip B, substantially as set forth.

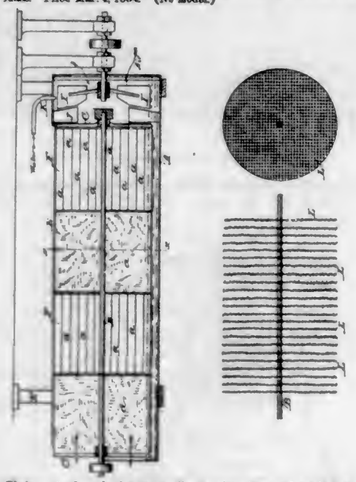
297,475. GAME-BOARD. LOUIS P. VALIQUET, Bridgeport, Conn., assignor of one-half to Louise W. Strong, New York, N. Y. Filed Oct. 10, 1883. (No model.)



Claim.—1. A game-board provided with pockets at the sides, a cue arranged within a stationary housing, and a cue-guide adapted to operate at right angles to the cue, substantially as set forth.

2. In a game-board provided with pockets, the cue-housing flared at the forward extremity and secured within the side of the board, and having interiorly arranged therein the spring-cue, in combination with the guide adapted to act on the cue at right angles, substantially as described.

297,476. AIR-COOLING DEVICE. WILLIAM V. WALLACE, Boston, Mass. Filed Mar. 4, 1884. (No model.)



Claim.—1. In a device for cooling, moistening, and purifying air, a cylinder adapted to be rotated, provided with a series of compartments, the walls of which are formed of fabric, perforated or water absorbing or conducting material, said compartments being adapted to have currents of air passed therethrough, as and for the purpose set forth.

2. An air cooling and moistening device composed of a cylinder having compartments or passages formed therein by means of fabric or other water-conducting material arranged as described, said cylinder being adapted to be slowly rotated in a trough or outer casing containing water, in combination with a fan-blower or other air-forcing device, as and for the purpose set forth.

3. In an air-cooling device, a cylinder composed of a series of sections, said sections being provided with a series of air-compartments arranged vertically and horizontally, alternating at right angles to each other, the walls of said compartments being formed of canvas or other water conducting or absorbing material, as set forth.

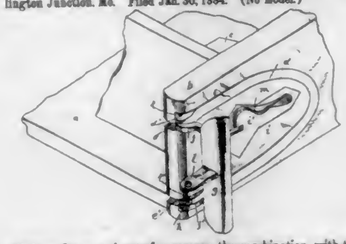
4. In an air-cooling device, a cylinder covered with woven or reticulated material, and having internal compartments or ducts for the passage of air, said cylinder being adapted to be rotated and partially submerged in water, as set forth.

5. In an air-cooling device, a cylinder mounted in suitable bearings and provided on its periphery with a series of troughs or buckets adapted to receive and hold water poured therein, whereby said cylinder is caused to rotate with an intermittent motion, as set forth.

6. An air-cooling device consisting of a cylinder or compartment having air-passages therethrough formed of woven fabric, by winding or passing the same around bars or slats arranged near to and parallel with the axis and periphery of the cylinder, as set forth.

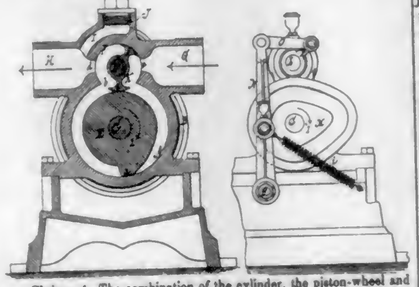
7. In an air-cooling device, a cylinder or compartment provided with a series of diaphragms of woven material adapted to be saturated with a cooling-liquid, in combination with a fan-blower adapted to rotate in a direction at right angles to the axis of the cylinder, and cut-offs or deflectors arranged near the fan-blower, whereby the air-currents are directed in straight lines into the cylinder and between the saturated surfaces of the fabric, as set forth.

297,477. CLEAT FOR END-GATES. JOHN HOWARD WARREN, Burlington Junction, Mo. Filed Jan. 30, 1884. (No model.)



Claim.—In an end-gate for wagons, the combination, with the side-board *b*, of the wagon-box having the wooden cleat *c*, the end recesses, *a a'*, and the metal-faced opening *i*, having the pivoted hook *m* on the outside of the face-plate of the metal frame *d* let into the outer face of the board *b*, and provided with the eyes *d' d'* at the ends of its arms, and the metal cleat *g*, having perforated arms *f f'*, hinged to the arms of the frame *d*, and working in the recesses *a a'*, and the staple-stud *l* on its front or inner face, said cleat *g* being adapted to be turned back out of the way of the end of the wagon-box when open, substantially as specified.

297,478. ROTARY PUMP. ALBIN WARTH, Stapleton, N. Y. Filed July 26, 1883. (No model.)

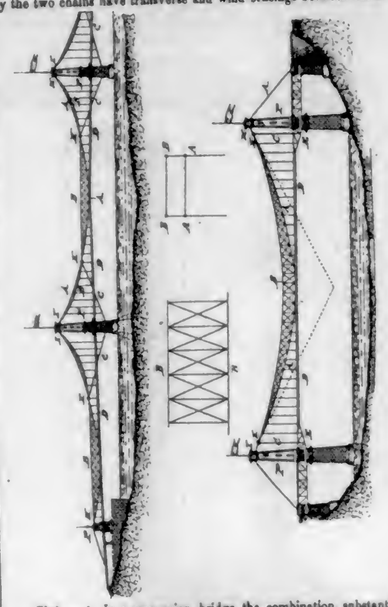


Claim.—1. The combination of the cylinder, the piston-wheel and piston fitted to revolve within the cylinder, the cylindrical valve-chamber communicating with the cylinder and with the supply and discharge pipes, the oscillating abutment-valve balanced within the valve-chamber, and the cam at the outside of the cylinder for oscillating the valve, substantially as described.

2. The combination of the cylinder, the piston-wheel and piston fitted to revolve within the cylinder, the cylindrical valve-chamber communicating with the cylinder and having the opposite supply and discharge ports, the oscillating abutment-valve arranged in the valve-chamber and composed of the oppositely-projecting wings, said valve being balanced in the valve-chamber by the pressure against one wing being balanced by the pressure against the other wing, and the cam outside of the cylinder, by which motion is imparted to the abutment-valve, substantially as described.

297,479. SUSPENSION-BRIDGE. GUSTAV WEHNER, Berlin, Germany, assignor of one-half to Eugene A. Radiger, Brooklyn, N. Y. Filed Aug. 25, 1882. (No model.)

Brief.—A suspension-bridge composed of a main and a secondary suspension-chain, and intermediate joints connecting the chains in the span, with stays extending from said joints to the piers. The ribs formed by the two chains have transverse and wind bracings between them.



Claim.—1. In a suspension-bridge, the combination, substantially as set forth, of a main suspension-chain, a secondary suspension-chain, intermediate joints connecting said chains between their pier-supports, and stays extending from said joints to the piers.

2. In a suspension-bridge, the combination, substantially as set forth, of a main suspension-chain, a secondary suspension-chain, intermediate joints connecting said chains between their pier-supports, braces connecting said chains between said intermediate joints, and stays extending from said joints to the piers.

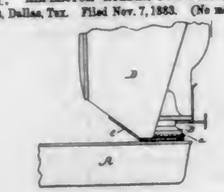
3. In a suspension-bridge, the combination, substantially as set forth with ribs composed of a main suspension-chain, a secondary suspension-chain, intermediate joints connecting said chains between their pier-supports, and bracings between said chains, of transverse and wind bracings between such ribs.

4. In a suspension-bridge, the combination, substantially as set forth, with ribs composed of a main suspension-chain, a secondary suspension-chain, intermediate joints connecting said chains between their pier-supports, and bracings between said chains, of transverse and wind bracings between the ribs and stays extending from said joints to the piers.

297,480. PROCESS OF SEPARATING METALS FROM FRANKLINITE ORES. ARTHUR F. WENDT, New York, N. Y. Filed Nov. 21, 1883. (Specimens.)

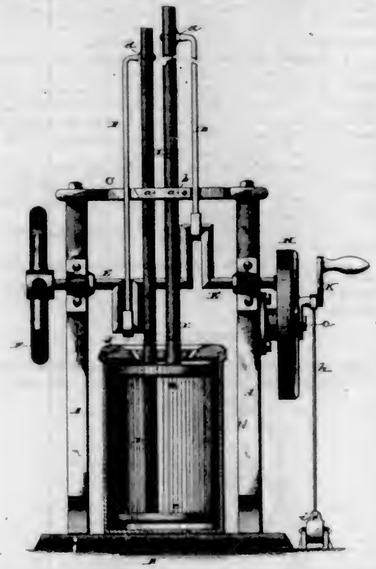
Claim.—The process herein described of reducing franklinite ores, which consists in selecting that portion of the ore containing practically only franklinite and willemite, separating these minerals according to their specific gravities, as described, smelting the willemite for spelter and reducing the franklinite by the Wetherill process for oxide of zinc, and finally smelting the residuum for spiegeleisen, substantially as set forth.

297,481. REFLECTOR-HOLDER FOR LAMPS. DANIEL RUGGLES WILLIAMS, Dallas, Tex. Filed Nov. 7, 1883. (No model.)



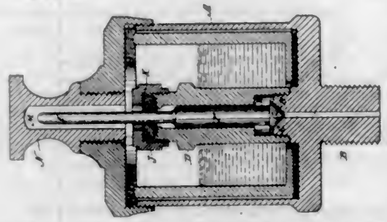
Claim.—The combination, with a lamp, A, and a lamp-collar, B, provided with a circumferential flange, *a*, of a reflector, D, provided with a keeper, *b'*, spring-clasp C'', springing around said collar under the flange *a* at its lower end, and having its free ends bent angularly at their upper ends and secured in said keeper by their tension, and slide *c*, substantially as shown and described.

297,482. CHURN. JONATHAN B. WILSON, Zanesville, Ohio. Filed Apr. 3, 1883. (No model.)



Claim.—In a reciprocating churn, the combination, with the upright standards, cross-bar C, provided with the grooves *a a*, the dasher-rods I, and the single latch *b*, for securing both dasher-rods in position, of the pitmen D, adjustably secured at their upper ends to the dasher-rods, the double-crank shaft provided at one end with a fly-wheel, and at its opposite end with a pinion, and journaled to the standards A, the intaglio gear-wheel H, journaled to one of the standards A, and provided with a combined crank and handle, the pitman *h*, secured to said crank, and the treadle *i*, all of the above parts combined as described.

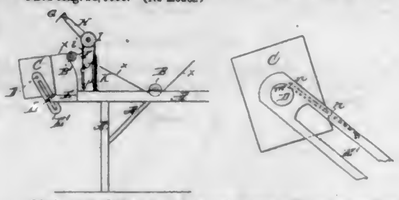
297,483. OIL-CUP FEEDER. JAS. E. WORSWICK, Montgomery, Ala., assignor of one-half to Arthur T. Hannon, same place. Filed Jan. 31, 1884. (No model.)



Claim.—1. The combination of the tube, the pin loosely arranged therein, and the removable collar secured to the upper end of the tube, and a removable perforated disk contained within the collar to form a bearing for the upper end of the pin, substantially as shown and described.

2. As a removable bearing for the feeding-pin of an oil-cup, a disk having a perforation adapted to form a bearing for the pin, and being made of a size adapted to be fitted in a holding-collar, substantially as shown and described.

297,484. PAPER-BOX MACHINE. PHILLIPS ABBOTT, Brooklyn, N. Y. Filed Aug. 21, 1883. (No model.)



Claim.—1. In box covering or trimming machines, the combination, with the box-form and the support from which the glue or paste coated strip passes to said form, of a single-bladed cutter arranged and operating to act against the unglued face of the strip at a point intermediate between said box-form and support, substantially as and for the purposes hereinbefore set forth.

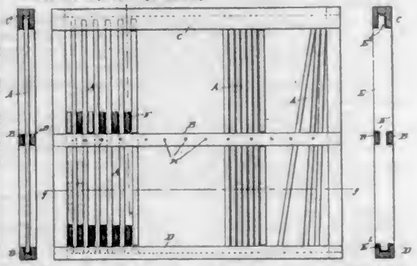
2. The combination, substantially as hereinbefore set forth, of the revolving box-form, the detent therefor, the support from which the glue or paste coated strip passes to the said form, and the single-bladed cutter arranged and operating to act against the unglued face of the strip at a point intermediate between said support and box-form.

3. The combination of the box-form adjustable relatively to the cutter, substantially as described, the support from which the glue or paste coated strip passes to said form, and the single-bladed cutter arranged to act against the unglued face of the strip at a point intermediate between said support and adjustable box-form, substantially as hereinbefore described.

4. The combination of the revolving box-form adjustable relatively to the cutter, substantially as described, the detent therefor, the support from which the glue or paste coated strip passes to the box-form, and a single-bladed cutter arranged and operating to act against the unglued face of the strip at a point intermediate between the said box-form and support, substantially as and for the purposes hereinbefore set forth.

5. The combination of the knife G, the arm H, the wheel I, the lever J, the cord *i*, and the spring *k*, substantially as and for the purposes set forth.

297,485. LUMBER-RACK. JOSEPH AMB ATCOCK, Whitesburg, Ga. Filed Oct. 27, 1883. (No model.)



Claim.—1. A lumber-rack consisting of a frame and vertical sticks held movably between the bars of the said frame, substantially as herein shown and described.

2. The combination, with a frame and a series of sticks held movably between the bars of the said frame, of devices for drawing and pressing the lumber and sticks together, substantially as herein shown and described.

3. In a lumber-rack, the combination, with top, bottom, and end pieces, of a series of movable vertical sticks held between them, and of vertical studs held between the sticks, substantially as herein shown and described.

4. In a lumber-rack, the combination, with horizontal top, bottom, end, and intermediate bars, of a series of movable vertical sticks held between them, and of studs provided with tenons fitting in the grooves of the top and bottom pieces, (or bars,) and provided with notches for the intermediate pieces or bars, substantially as herein shown and described.

5. In a lumber-rack, the combination, with the top and bottom pieces, C D, of the frame, of the intermediate pieces, B, having apertures H, the movable vertical sticks A, held between the top and bottom pieces, C D, the pin G, and the wedge J, substantially as herein shown and described.

6. The combination, with the top pieces, C, and the bottom pieces, D, of the frame, each provided with a groove, of the intermediate pieces,

B, and the sticks A, held between the pieces B, and having their ends in the grooves formed in the top and bottom pieces, C D, respectively, substantially as herein shown and described.

297,486. HARNESS-PAD. HOLLAND C. BABCOCK, Hartford, Conn., assignor of one-half to P. Jewell & Sons, same place. Filed Nov. 17, 1883. (No model.)



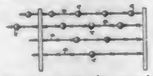
Claim.—1. As an improved article of manufacture, a harness-pad consisting of an outer foundation of enameled leather or other suitable material, an antiseptic filling, and a lining of pliable rawhide, substantially as set forth.

2. As an improved article of manufacture, a harness-pad or the like device consisting of a foundation of enameled leather or other suitable material, a filling, and a lining of pliable rawhide, all substantially as described.

3. The combination of a foundation, *a*, an antiseptic interlining, *b*, and a rawhide lining, *c*, all substantially as described.

4. As an improved article of manufacture, a harness-pad or analogous article having its bearing-surface covered with pliable rawhide, all substantially as described, and for the purpose set forth.

297,487. WARNING DEVICE FOR BARBED FENCES. CHARLES H. BACON, Springfield, Ohio. Filed Aug. 11, 1883. (No model.)



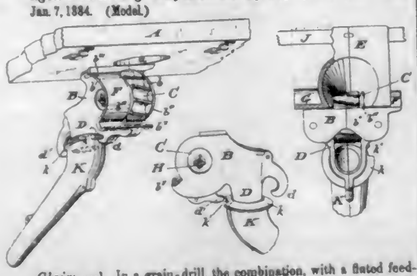
Claim.—1. The combination, with the strand of a fence having barbs thereon, of the combined signals and guards axially mounted on the strand and free to turn thereon, and having smooth or plain surfaces projecting outward beyond the barbs, to prevent the latter from tearing or lacerating an animal rubbing or moving sidewise against the fence, substantially as described.

2. The combination, with the strand of a fence, of signals and guards loosely and axially hung on the strand, said signals or guards constructed and located to have a free longitudinal or shifting movement imparted to them on their axial support, with means on the strand to limit the longitudinal or shifting motion of the said signals and guards, substantially as described.

3. The combination, with the strand of a fence having barbs thereon, of a combined signal and guard composed of two sections and means for connecting the sections, said signal and guard being hung on the strand and provided with smooth or plain surfaces projecting outward beyond the points of the barbs, substantially as described.

4. The combination, with the strand of a fence having barbs thereon, of spherical signals and guards axially hung on the strand, and having smooth or plane surfaces projecting outward beyond the points of the barbs, said spheres each comprising two halves, and means for uniting them, substantially as described.

297,488. GRAIN-DRILL. THEODORE BUKER, Lancaster, Ohio, assignor to the Hocking Valley Manufacturing Company, same place. Filed Jan. 7, 1884. (Model.)



Claim.—1. In a grain-drill, the combination, with a fluted feed-wheel, of a cup having two winged sections—to wit, one fixed section, B, in which said wheel is journaled, and having a delivery-spout, D, and one shiftable section, E, which constitutes the supply-funnel to said feed-wheel, and whose capacity and that of said delivery-nozzle remain unaffected by changes in capacity of the feed-wheel—the whole being constructed and operated substantially as set forth.

2. In a grain-drill, the combination, with a fluted feed-wheel, of a cup divided longitudinally of the feed-wheel on a line following the periphery of the feed-wheel on the receiving side thereof, to provide one fixed and one shiftable section to slide on the rear wall of the fixed section, each section having a guard-wing, constructed and operating substantially as set forth.

3. In a grain-drill, the described combination, with a fluted feed-wheel, of a grain-cup having a fixed section in two parts, and a shiftable section, a guard-wing on the fixed section, and a groove or recess in the rear of said section, and a guard-wing on the shiftable section, the latter being supported in the groove or recess, as set forth.

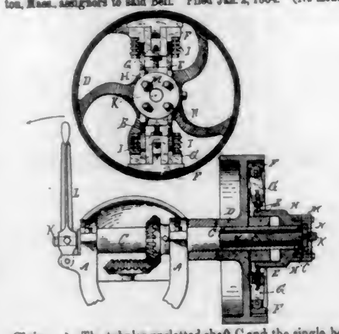
4. In a grain-drill, the described combination, with a fluted feed-wheel, C, of a grain-cup composed of two sections—to wit, a stationary section, B, which affords journal-bearing to said feed-wheel, and has a guard-wing, F, whose cylindrically-convex surface is flush with the feed-wheel's periphery, and a shiftable section, E, which has a cylindrically-concave wing, G, adapted to fit and slide upon said wing F—in the manner set forth, and for the purpose explained.

5. In a grain-drill, the described combination, with a fluted feed-wheel, of a cup composed of two sections—one fixed, the other slidable—a projection on the rear of the fixed section, and a projection or hook on the front thereof, for the purpose set forth.

6. The delivery-spout having exterior flange formed with a gate or recess, for the purpose set forth.

7. In a grain-drill, the combination, with the delivery-nozzle D of the cup, of the hooks *d d'*, and separable and reversible delivery-spout having exterior flange, *k*, formed with gate or recess *k'*, substantially as set forth.

297,489. CLUTCH MECHANISM. WM. G. BELL and WM. P. GAY, Boston, Mass., assignors to said Bell. Filed Jan. 2, 1884. (No model.)



Claim.—1. The tubular unslotted shaft C and the single belt-pulley D, mounted loosely thereon, in combination with the clutch-operating rod K, extending entirely through said shaft, the lever L or other actuator at one end of said shaft, and clutch mechanism at the other end thereof, adapted by the reciprocation of said rod to be frictionally engaged with said pulley and disengaged therefrom, substantially as set forth.

2. A belt-pulley of ordinary form loosely mounted on a plain tubular shaft, so as to revolve freely about the same without imparting motion thereto, in combination with a cross-bar secured to said hollow shaft, and a non-rotary rod reciprocating within it and engaging with a hub which carries toggles adapted to actuate two friction-segments at the extremities of said cross-bar, substantially as and for the purpose set forth.

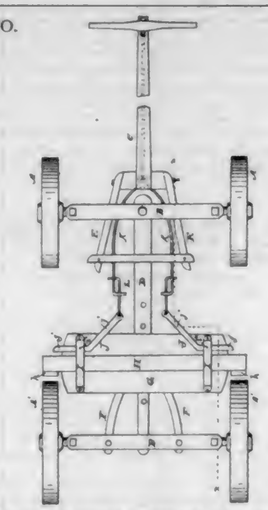
3. The hollow shaft C, the rotary pulley D, and the sliding hub H, in combination with the pivoted lever L, the non-rotary reciprocating rod K, and the collar N, engaging internally with the hub, substantially as and for the purpose set forth.

297,490. VEHICLE-BRAKE. FRED. BIERY, Mastersville, Miss. Filed Jan. 26, 1884. (No model.)

Claim.—1. The combination, with the running-gear, of the platform or support secured to the running-gear in front of the rear wheels, the brake-bar H, mounted upon the platform, the bent levers J J, pivoted near the ends of the support or platform, the lever N, link M, and devices situated on each side of the reach, connecting said link with the levers J J, substantially as set forth.

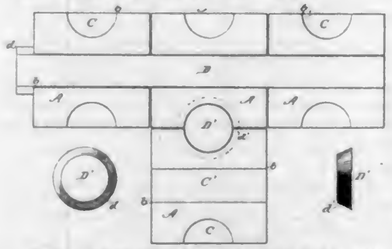
2. The combination, with the running-gear, of the platform or support secured to the running-gear in front of the rear wheels, the brake-bar H, mounted upon the platform, and carrying at its ends the brake-shoes A, the straps or guides I, attached to the platform near its ends, and arranged to hold the cross-bar in place, the bent levers J J, pivoted at *j'* between the strap I and the platform, the arms *j* of which bear against bar H, and the arms *j'* of which extend inward and forward, whereby there is left a part of the platform near its center unobstructed by moving parts of the brake, the lever N at the front of the tongue, the link M, and connecting devices extending on each side of the reach, and connecting the link M with the levers J J, substantially as set forth.

297,490.



3. The combination, with the running-gear, of the platform or support secured to the running-gear in front of the rear wheels, the brake-bar H, mounted upon the platform, and carrying at its ends the brake-shoes *h*, the levers J J, pivoted to the platform, the lever N, the link M, the U-shaped bar K K, having the perforations *k* at its rear ends, and the arms or bars L L, which are secured to the levers J, and may be made to engage with any of the apertures *k*, to adjust the amount of pressure exerted upon the brake-bar, substantially as set forth.

297,491. CONSTRUCTING AND FASTENING TILES. WALTER BOOTH, Tarrytown, N. Y. Filed Mar. 7, 1884. (No model.)



Claim.—1. The method of binding tiles to each other by means of retaining undercut depressions and a back supporting tie or ties fitted therein, substantially as and for the purpose described.

2. The manufacture of tiles provided with retaining undercut depressions in the backs thereof, for the purpose of receiving a supporting and conforming tie or ties, substantially as described.

3. In tiling, the art of supporting and uniting tiled surfaces by means of ties fitting in recesses in the backs thereof, substantially as described.

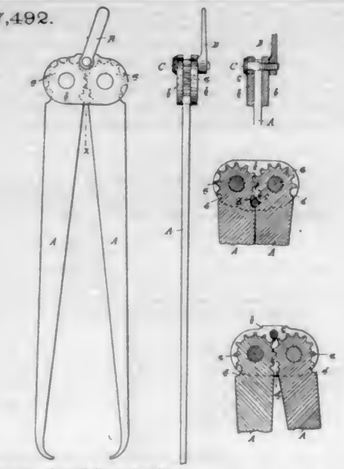
4. A tile brace or tie for uniting and supporting tiles by its insertion within the recessed backs thereof, substantially as described.

297,492. CALIPERS. CHARLEY BOVENSIEP, Detroit, Mich. Filed Feb. 23, 1884. (No model.)

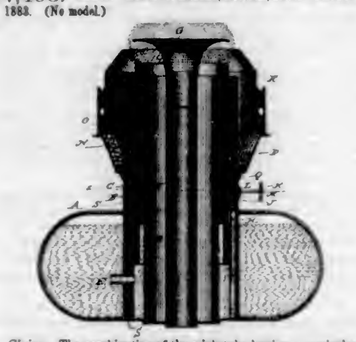
Claim.—1. A calipers consisting of the legs A, each terminating in a toothed segment, and each leg being independently pivoted between the plates *b b*, through which passes the bolt C, provided with a lever locking-nut, substantially as described.

2. In a calipers having a locking-bolt, the legs A, having recesses *d*, adapted to inclose or embrace the locking-bolt when the legs are reversed to form inside calipers, substantially as specified.

297,492.

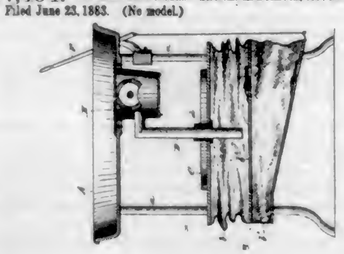


297,493. LAMP. LEWIS O. BREKKE, Decorah, Iowa. Filed Nov. 26, 1883. (No model.)



Claim.—The combination of the wick-tube having a vertical groove in its outer wall, with a recess near the middle, a wick-raising tube having triangular inwardly-raised tongues pointing together, and having a perforated flange formed by the ends of the strip composing the tube bent outward, soldered together, and punched at equal close distances, and the cog-wheel or pinion secured upon the inner end of a shaft turning with its inner end in the wick-tube, and turning in the recess formed in the outer wall of the wick-tube, as and for the purpose shown and set forth.

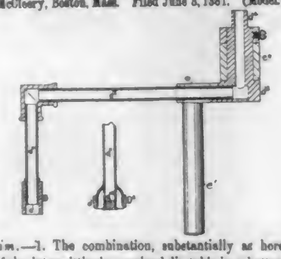
297,494. PORTABLE FORGE. THOMAS H. BULLOCK, Cleveland, Ohio. Filed June 23, 1883. (No model.)



Claim.—1. The combination, with a tray and bellows, of an intermediate connecting-pipe rigidly secured at one end to the tray or tuyere, and adapted to form a guide for the bellows, substantially as set forth.

2. The combination, with a tray provided with a tuyere and a bellows, the latter being provided with a weight, C, arranged concentrically with the bellows, of an intermediate connecting-pipe, the upper end of which is rigidly secured to the tuyere, while the lower portion thereof forms a guide for the bellows, substantially as set forth.

297,495. MACHINE FOR MAKING BUTTONS. DUNCAN H. CAMPBELL, Pawtucket, R. I., assignor to Henry B. Metcalf, same place, and William McCleery, Boston, Mass. Filed June 8, 1881. (Model.)



Claim.—1. The combination, substantially as hereinbefore described, of the intermittingly-revolved die-table in a button-making machine, one or more feeding-cupules, an air-pump, a vacuum-chamber, and valve mechanism for controlling communication between the cupules and vacuum-chamber and causing said cupules to engage with and release the parts of a button.

2. The combination, substantially as hereinbefore described, of the revolving die-table of a button-making machine, the series of dies in said table, the series of receptacles for parts of a button, a series of cupules or suckers provided with automatic valves, and mechanism for vibrating, lifting, and lowering said cupules.

3. The combination, in a button-making machine, with the revolving die-table, its series of dies, and the vertically-reciprocating plungers, of feeding-cupules moving vertically with said plungers, substantially as described.

4. The combination, in a button-making machine, of the intermittingly-revolved die-table, the intermittingly-reciprocating plunger, the feeding-cupules, and intermediate connecting mechanism, whereby said cupules are alternately moved vertically and swung laterally toward and from the dies on the table, substantially as described.

5. The combination, in a button-making machine, of the intermittingly-revolved die-table, the intermittingly-reciprocated plungers, the feeding-cupules, the receptacles or chutes for parts of a button, and the mechanism which operatively connects said die-table and plungers with said cupules, whereby said cupules are alternately moved vertically and swung laterally toward and away from said die-table and said receptacles or chutes, substantially as described.

6. The combination, substantially as hereinbefore described, of the intermittingly-rotated die-table, a series of laterally-vibrating automatic feeding devices concentrically arranged above the die-table, and the intermittingly-rotated cam for swinging said feeding devices.

7. The combination, in a button-making machine, of a laterally-vibrating and vertically-reciprocated feeding-cupule, and an inclined conducting-chute which affords a yielding support for the lowest button part therein when pressed upon by the cupule, substantially as described.

8. The combination, substantially as hereinbefore described, of two or more feeding-cupules connected by two necks with a vacuum-chamber, of a pair of coupled sliding valves—one in each neck—the rotative valve-plate, and means, substantially as described, for reciprocating the valve-plate, and also for causing the engaging contact of the valves and plate for alternately opening and closing said valves.

9. The combination, with the vertically-reciprocated vacuum-chamber, two or more cupules, and a pair of coupled valves, of the valve-plate, the cam-wheel on the die-table, and the intermediate lever, and a spring for rotating the valve-plate, substantially as described.

10. The combination, with the cupules, their coupled valves, and rotated valve-plate, of the adjusting-screws at the base of each valve-plug, for varying the tenacious capacities of the cupules, substantially as described.

11. The combination, in a button-making machine, of the intermittingly-rotating die-table and its dies, a feeding-cupule, a bell-crank lever, and an intermittingly-rotated cam-wheel, substantially as described.

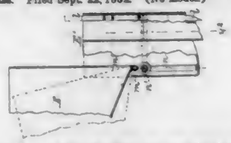
12. The combination, with the cupules, of the torsionally-elastic pipes connecting them to the local vacuum-chamber, and serving as springs for effecting one swinging movement of the cupules, substantially as described.

13. The cupule D^2, provided with an annular mouth and central pad or cushion, substantially as described.

14. The combination, substantially as hereinbefore described, of a die-table, a series of tubes open at each end, and mounted upon a movable table, laterally-vibrating feeding mechanism for transferring the contents of said tubes to the die-table, and means for forcing the contents of either tube to one end thereof, and thereby delivering said contents progressively to the feeding mechanism, as set forth.

15. The combination of a series of feed-tubes open at each end, and mounted upon a movable table, and a plunger, substantially as described, whereby either of said tubes may be readily placed in line with said plunger, which forces its contents to one end thereof, as set forth.

297,496. BUTTON-MACHINE. DUNCAN H. CAMPBELL, Pawtucket, R. I., assignor to Henry B. Metcalf, same place, and William McCleery, Boston, Mass. Filed Sept. 22, 1882. (No model.)



Claim.—1. In a button-machine, the combination, substantially as hereinbefore described, of the revolving die-table, its series of dies, automatic feeding mechanism, and the counterbalanced vertically-reciprocating plunger-frame, whereby shocks or jars liable to impair the operation of the feeding mechanism are obviated, as set forth.

2. The combination, in a button-machine, of the revolving die-table, the main shaft, its cams below said table, the plunger-frame, and the counterbalance-weight below said table, and its levers for lifting equally at opposite sides of said plunger-frame, substantially as described.

3. The combination, in a button-machine, of the vertical pipe, the mechanism for vertically reciprocating said pipe, the flanged sleeve and cupule telescoped on said pipe, and the spring on said pipe, which permits the cupule to yield to pressure during the descent of said vertical pipes and when the cupule is in contact with the button part which is to be lifted thereby, substantially as described.

4. The combination, in a button-machine, of a chute and a cupule, and a retaining-finger vibrated by the cupule as it descends into the lower end of the chute, substantially as described, whereby the lowest button part in said chute is relieved from contact with the next following part in the chute during the engagement of the cupule with said lowest part, as set forth.

5. In a button-machine, the combination, with transferring mechanism, of a feeding-chute provided with a separate or detached yielding foot, substantially as described.

6. A feeding-chute provided with a longitudinally-sliding top, which frictionally engages with the contents of the chute for forcing them to the foot of the chute for delivery therefrom, substantially as described.

7. The combination, with a feeding-chute, of a longitudinally-reciprocating sliding top and a latch-slide for lifting the lower end of said top away from the contents of the chute during its backward movement, substantially as described.

8. The combination of the stationary auxiliary hopper and the reciprocating pivoted main hopper, substantially as described.

9. The combination of a chute, a hopper vertically recessed at one end to form a three-sided vertical mouth for said chute, and a stirrer within the hopper, which sweeps in a vertical plane across the open side of said vertical mouth, substantially as described, whereby disk-shaped fillings massed in the hopper are separately caused to enter said mouth in a vertical position and left free to fall edgewise into the chute, as set forth.

10. The combination of a hopper, a chute having a vertical mouth at one end of the hopper, a vertically-reciprocating agitator, which serves as a movable side of said mouth within the hopper, and a stirrer which operates within the hopper, substantially as described.

11. The combination of a chute, a swinging triangular stirrer, and a hopper containing the stirrer, and having a rounded and inclined bottom, substantially as described.

12. In a button-making machine, the combination, with a series of vertical detachable tubes having each a collar, and mounted upon a revolving table, of a stationary stop, which engages successively with the collar of each tube as the table revolves, and thereby secures each tube against vertical displacement while delivering its contents, substantially as described.

13. A cloth-feed tube for button-machines, contracted internally at both ends and having one of said ends readily removable, substantially as described.

14. The combination, substantially as hereinbefore described, of dies, a feed-tube, a device for transferring the contents of said tube piece by piece to the dies, a follower, and positively-operated mechanism, substantially as described, for lifting said follower within said tube at a speed proportioned to that at which the contents of the tube are removed.

15. The combination, in a button-machine, of a feed-tube, a follower provided with a screw-threaded stem, a rotative nut which embraces said stem, a ratchet-wheel connected to said nut, and a pawl-lever which engages with said ratchet-wheel, and is vibrated by mechanism connected with the main shaft of the machine, substantially as described, for positively lifting said follower within the feed-tube, as set forth.

16. The combination of the follower having a threaded stem, a rotative split nut, which embraces said stem and lifts the follower, a ratchet-wheel and vibrating pawl-lever for rotating said nut, a rigid arm projecting from the stem of the follower below the nut, and a wedge, which is forced into service by the rigid arm as it rises with the follower-stem for opening the split nut and permitting the follower to fall, substantially as described.

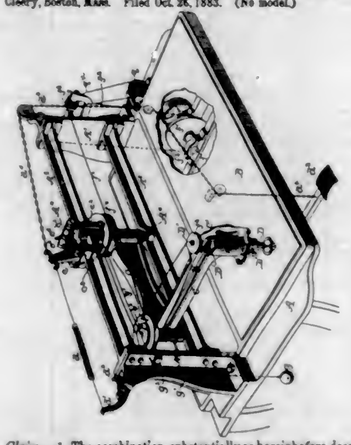
17. The combination, with the follower, its threaded stem, the split nut, and the ratchet-wheel and vibrating pawl-lever for rotating the nut, of a rigid arm on the stem of the follower and a wedge forced upward by a spring, substantially as described, for maintaining the split nut in its opened condition during the fall of the follower, substantially as described.

18. The combination, with the follower, its threaded stem, the split nut, and the ratchet-wheel and vibrating pawl-lever for rotating the nut, of the wedge, its spring, and a rigid arm on the follower-stem, which, when the follower rises, causes said wedge to open the nut and permit the follower to fall, and when said follower falls causes said wedge to retire from the nut and permits it to close again upon the stem, substantially as described.

19. The combination, with the split nut, the follower, its stem, and rigid arm, of the wedge, its spring, and the pendent latch, by which the wedge is kept free from the nut until released by said rigid arm upon the follower-stem, substantially as described.

20. The combination, with a series of feed-tubes, a tube-table provided with a weight, cord and pulley, and a ratchet-wheel, of a follower which is common to all of said tubes, and a spring-pawl which engages with the ratchet-wheel and is automatically released therefrom at intervals by the follower, substantially as described, whereby when one tube is discharged the table is rotated sufficiently to present another tube to the follower, as set forth.

297,497. CLOTH-CUTTING MACHINE. DUNCAN H. CAMPBELL, Pawtucket, R. I., assignor to Henry B. Metcalf, same place, and William McCleery, Boston, Mass. Filed Oct. 26, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the revolving tubular cloth-knife, the cloth-bed, and means, substantially as described, for enabling the knife to be located while revolving above any and all portions of the cloth-bed and a pile of fabric thereon, and to cut through said pile at any and all parts thereof, as and for the purposes specified.

2. The combination, substantially as hereinbefore described, of the tubular cloth-knife, its vertically-movable jointed arm, and the cloth-bed.

3. The combination, substantially as hereinbefore described, of the cloth-bed and its leveling mechanism, and a revolving tubular knife, which can be moved toward and away from the bed only in the axial line of the knife, as set forth.

4. The combination, substantially as hereinbefore described, of a revolving tubular cloth-cutting knife, the cloth-bed, a knife-pad supported by said bed, but movable laterally with the knife, and means, substantially as described, for enabling the knife while revolving to cut its way through a pile of fabric interposed between the pad and knife, as set forth.

5. The combination, substantially as hereinbefore described, of a revolving tubular cloth-cutting knife, and a knife axis or chuck which is skeletonized for the reception of a removable disk-holder for receiving the cloth disks which are cut by said knife, as set forth.

6. The skeletonized knife-chuck, in combination with the clamping-collar, substantially as described, whereby a tubular disk-holder is secured in position above and concentric with a tubular knife mounted on said chuck, as set forth.

7. The combination of the chuck, the jointed arm, the belt-pulleys at the butt of the arm, its central joint, and on the chuck, their belts, and counteracting drags, which overcome the tendency of the arm to swing in the direction of the draft on the belts, substantially as described.

8. The combination, substantially as hereinbefore described, of a hollow revolving chuck, the jointed arm, its lifting-spring, the depressing-treadle, and the cloth-bed.

9. The combination, with a tubular knife and its chuck, and a jointed arm on which the knife-chuck is mounted, of a grinding-wheel located within the sweep of the arm, substantially as described, whereby the knife may be ground while revolving on its chuck.

297,498. WATCH-CHAIN HOOK. CHARLES B. CARPENTER, North Attleborough, Mass., assignor to E. A. Bliss Company, same place. Filed Sept. 18, 1883. (No model.)



Claim.—1. The combination of a segmental piece, A, having a swivel-ring, *a*, a hook, B, pivoted to one end of the piece A, and provided with a recess, *b*, at the other end, a recessed and spring-cushioned catch, C, that is guided in the opposite end of the piece A, and provided with a stud, *d*, projecting through a slot, *d'*, of the piece A, substantially as set forth.

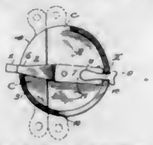
2. The combination of a hollow segmental piece, A, provided with a spring-catch, C, at one end, the spring-catch having a projecting stud, *d*, guided in a slot, *d'*, of the segment A, with a hook, B, pivoted to the other end of the piece A, the free end of which is recessed, so as to be locked by the spring-catch, substantially as set forth.

297,499. FASTENER FOR MEETING-RAILS OF SASHES. LOUIS J. CHURCH, Washington, D. C., assignor of one-half to William H. Wylie, same place. Filed Nov. 19, 1883. (No model.)



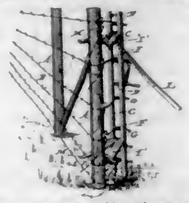
Claim.—The sash-lock described, consisting of the part *a*, having the locking-notches *g*, and extensions 1, for attachment to the sash, the latch *c*, pivoted on the part *a*, and slotted at its front end, and a gravity-latch pivoted within said slot by a pivot passing through the front thereof, said gravity-latch being larger at its lower inner end, and adapted to fall by gravity in the locking-notches when opposite thereto, in combination with the catch B on the outer sash, adapted to receive the end of the catch C, substantially as described.

297,600. FASTENER FOR MEETING-RAILS OF SASHES. LOUIS J. CHURCH, Washington, D. C., assignor of one-half to William H. Wylie, same place. Filed Nov. 19, 1883. (No model.)



Claim.—In a sash-lock, the case A in the arc of a circle, connected to the inner sash, and provided with the slot and locking-notches 10, the locking-catch B, the latch E, weighted at its inner end and inclosed within said case, and adapted thereto, combined with the part C, connected to the outer sash and forming with the part A a complete circle, and adapted to receive the end of the catch B, substantially as described.

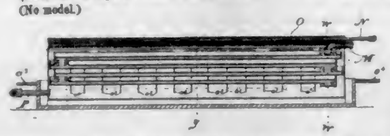
297,501. GANG-WIRE STRETCHER. JOHN H. COLE and EDWARD L. COLE, Muscatine, Iowa. Filed Sept. 26, 1883. (No model.)



Claim.—1. The machine for stretching wire, or gang-wire stretcher, herein shown and described, the same consisting of the upright frame C C, having brace-blocks, spools F, ratchets H, pawls I, and arms or projections I' M I', substantially as and for the purpose shown and set forth.

2. The combination, in a machine for stretching wire, of the frame C D, having spools F, a removable handle for turning the spools, a pawl-and-ratchet mechanism for holding the spools, the arms or extensions I I, having curved bearings M at their outer ends, brace L, stake-iron O, and stake N, all constructed and combined to operate substantially in the manner and for the purpose shown and set forth.

297,502. ABSORBER FOR AMMONIA ICE-MAKING APPARATUS. MAHLON S. CONLY, Indianapolis, Ind., assignor of two-thirds to Thomas H. Butler and Orange R. Weaver, both of same place. Filed Aug. 10, 1883. (No model.)

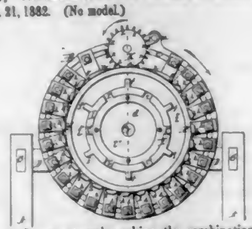


Claim.—1. An absorber for ammonia-gas, consisting of an outer shell and a series of hollow-bottomed troughs therein, the ammonia-gas being conducted through the several chambers formed by the hollow bottoms, and the weak aqua-ammonia or water being conducted through the troughs over the bottoms thereof, which also constitute the tops of said chambers, substantially as set forth.

2. In an absorber or device for charging water or weak aqua-ammonia with ammonia-gas, a series of hollow-bottomed troughs, the trough portions of which are adapted to contain the water or weak aqua-ammonia, and the hollow bottoms or chambers of which are adapted to contain the ammonia-gas, provided with a series of small pipes, which extend from said chambers to the bottoms of the troughs next below them, substantially as set forth.

3. The combination of the shell O, the series of hollow-bottomed troughs therein, the inlet-pipes M and N, and the outlet-pipe P, substantially as described, and for the purposes specified.

297,503. OATMEAL-MACHINE. GEORGE H. CORMACK, Rockford, Ill. Filed Apr. 21, 1882. (No model.)



Claim.—1. In an oatmeal-machine, the combination, with a rotary cylinder, substantially as herein described, having its rim perforated, of a pin-wheel mounted to revolve on the periphery of the perforated rim, having its pins to enter the perforations in the rim, substantially as and for the purpose hereinbefore set forth.

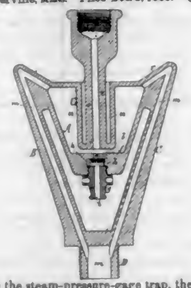
2. The combination, with a rotary cylinder, substantially as herein described, having its rim perforated, of a pin-wheel mounted to revolve on the periphery of the perforated rim, having its pins to enter the perforations in the rim, and a pivoted lever-support for said pin-wheel, adapting it to engage the perforated rim by the action of gravity, substantially as and for the purpose hereinbefore set forth.

3. The combination, with a rotary cylinder, having its rim perforated, and a pin-wheel mounted to engage its perforated periphery, of guards overlapping the periphery of the perforated rim on opposite sides of the pin-wheel, substantially as and for the purpose hereinbefore set forth.

4. The combination, with a rotary cylinder having its rim perforated, a pin-wheel mounted to engage the periphery of the perforated rim, and guards to overlap the perforated rim on opposite sides of the pin-wheel, of cutters placed to engage the oat-grains and divide them in sections, substantially as and for the purpose hereinbefore set forth.

5. The combination, with a rotary cylinder having its rim perforated, a pin-wheel mounted to engage the periphery of the perforated rim, and guards to overlap the perforated rim on opposite sides of the pin-wheel, of double-edged adjustable cutters capable of use, in connection with the perforated revolving rim, in either direction, and at velocities dependent upon its use as a centrifugal or gravity machine, substantially as and for the purpose hereinbefore set forth.

297,504. TRAP FOR STEAM-PRESSURE GAGES. GEORGE HANCHARD CROSBY, Somerville, Mass. Filed Dec. 3, 1883. (No model.)

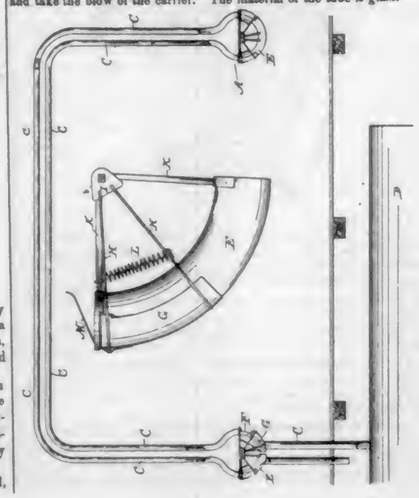


Claim.—1. In the steam-pressure-gage trap, the combination of an open insulating chamber or space, *a*, arranged between the eduction-pipe *c* and the vase or water-holder, with such pipe and said vase or holder, such space or chamber being for the purpose as set forth.

2. The improved gage-trap, substantially as described, consisting not only of the vase or water-holder A, the connection-screw D, and bent arms B and C, arranged and provided with a passage, *m*, leading through such screw and one or each of the said arms and into the upper part of the vase, but of the eduction-tube *c*, and the insulating-cup G, open at top, and arranged in the vase, all being substantially as set forth.

297,505. PNEUMATIC TUBE. WILBUR G. DAVIS, Syracuse, N. Y. Filed Jan. 3, 1884. (No model.)

Brief.—A pneumatic dispatch-tube the openings in which for the reception and delivery of the carriers are normally closed by sliding spring-actuated covers withdrawn by hand when a carrier is to be inserted, and pushed aside automatically for the delivery of a carrier by means of a spring-arm projecting from the cover into the tube, to stop and take the blow of the carrier. The material of the tube is glass.

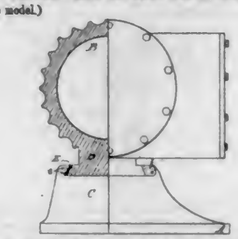


Claim.—1. Pneumatic tubes for use in stores, &c., for conveying cash boxes or carriers or other packages, said tubes being made of glass or other transparent material, as set forth.

2. In devices for opening and closing the exit and entrance ports of pneumatic tubes, a sliding plate adapted to cover the opening in the tube, provided with an arm which projects into the tube, against which the carrier is forced to push the plate back and open the port, in combination with a spring adapted to operate on the plate in a reverse direction, to close the port after the carrier has been discharged from the tube, as set forth.

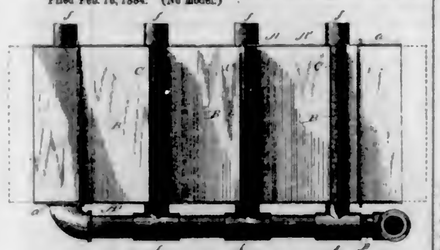
3. The sliding plate G, secured to the pivoted plate I by means of rods H, and provided with a spring-arm, M, in combination with the bars K, spring L, and tube C, provided with an aperture, F, as set forth.

297,506. ENGINE. ISAAC DE GRAFF, Detroit, Mich. Filed Oct. 1, 1883. (No model.)



Claim.—The connection between an engine and its frame, as herein described, the foot D, engaging by a tenon in an undercut mortise in the post C, and provided with wedges and devices for holding the same, substantially as and for the purposes set forth.

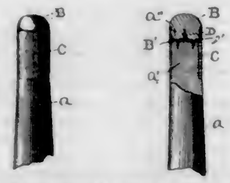
297,507. STEAM-EMPTYING ASH-PAN. JOHN DESMOND, Jackson, Mich., assignor to James Carey and Charles Ratson, both of same place. Filed Feb. 16, 1884. (No model.)



Claim.—1. In a locomotive ash-pan, the plates B, arranged with relation to the ejector-pipes C, having slots C' for ejecting the ashes from the bottom of the pan, substantially as shown, and for the purpose described.

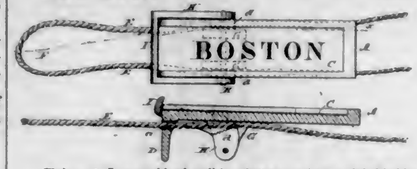
2. In a locomotive ash-pan, the combination of the pan A, having outlet-gates *a a*, plates B, ejector-pipes C, and steam-supply pipe D, substantially as shown, and for the purpose described.

297,508. BILLIARD-CUE TIP. DAVID DESBAUER, Martinsville, Ind. Filed Sept. 8, 1883. (No model.)



Claim.—The combination of thimble C, having the sockets A' and A'', base-plate B', provided with the inverted screw D, screw-holes D', and inner screw-threaded portion, tip B, and cue A, all substantially as herein described and set forth.

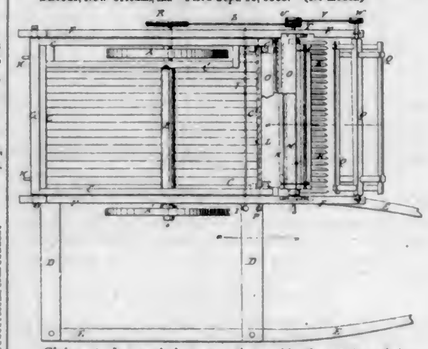
297,509. MAIL-BAG FASTENER AND TAG-HOLDER. WILLARD D. DORENUS, Washington, D. C., assignor, by direct and mesne assignments, to Frank Hodges and Albert L. Pitney, both of same place. Filed Mar. 31, 1884. (No model.)



Claim.—1. In a combined mail-bag fastener and tag or label holder, a plate provided with a dovetailed recess to receive the tag or label, and two levers provided with eccentrics or cams pivoted thereto, and adapted to clamp the rope or cord, the outer ends of the levers being connected by a cross-bar, which, when the device is in use, closes the end of the tag-holding recess to hold the tag or label in its proper place, as set forth.

2. In a mail-bag fastener, a plate having a tag-holding recess, and perforated lugs for the passage therethrough of cords or ropes, and having pivoted thereto eccentric levers, over which the cord or rope passes, and adapted to hold said rope in contact with the plate, as set forth.

297,510. GRAIN HEADER AND HARVESTER. PETER EDWARD DROUET, New Orleans, La. Filed Sept. 19, 1883. (No model.)



Claim.—1. In a grain-harvester, the combination of the cart having a front board made in two or more parts adjustable with respect to each other, the side bars, F, pivoted at their rear ends on a bar, G, secured to the upper part of the rear end of the cart, the scraper-roller, comb, reel, and driving mechanism therefor carried on the forward portions of said side bars, and a rod, I, passing through the side bars and any one of a series of holes in the forward end of each side of the cart, for the purpose of adjusting the bars at different heights, substantially as set forth.

2. In a grain-harvester, the combination of the cart having a front board made in two or more parts adjustable with respect to each other, the pivoted adjustable side bar, F, the scraper-roller and reel journaled between the forward ends of the side bars, suitable driving mechanism therefor, the comb-plate under the scraper-roller formed with or having secured thereto the rearward-extending plate L, and a cover-plate O, also formed with a rearward-extending plate, the two said plates forming a chute adapted to project to or within the opening formed in the adjustable front board, substantially as set forth.

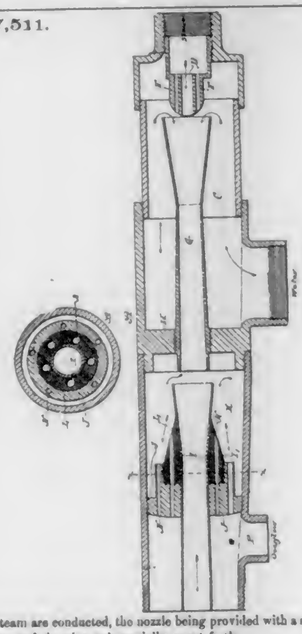
3. In a grain-harvester, the combination of the side bars, F, the scraper-roller and reel journaled between the forward ends of said bars, suitable driving mechanism therefor, the comb K, arranged below the scraper-roller, and a friction-roller, X, journaled in the side bars below the comb-plate, substantially as set forth.

4. In a grain-harvester, the combination, with the side-boards of the cart-body C, and the end-board made in two or more parts, of the rod P, substantially as herein shown and described, whereby the upper part or parts can be supported above the lower part to form an inlet-opening, as set forth.

297,511. INJECTOR. WILLIAM T. EWING, Chicago, Ill. Filed Aug. 27, 1883. (Model.)

Claim.—1. The combination, in an injector, of a condensing-chamber provided with a nozzle or nozzles and a pipe through which the water

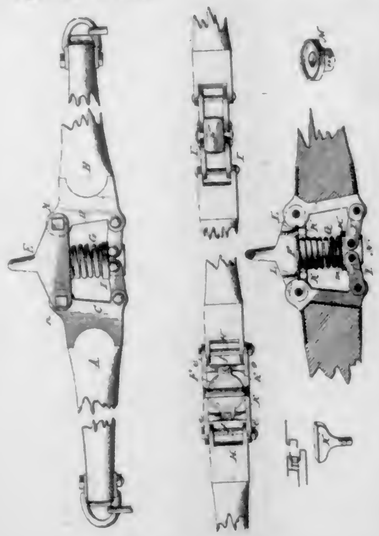
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and steam are conducted, the nozzle being provided with a series of openings around the pipe, substantially as set forth.

2. In an injector, the combination of the suction-chamber, a steam jet or nozzle provided with a series of auxiliary jets, the pipe through which the water is forced, the condensing-chamber, the pipe through which the water is carried away, and the nozzles J, provided with a removable nozzle or cone, both of the cones being provided with apertures or openings through which the water is forced from the chamber, substantially as specified.

297,512. DOUBLE-TREE. SAMUEL M. FIREY, Clear Spring, Md. Filed Aug. 1, 1883. (No model.)



Claim.—1. The combination of the hinged arms A and B with the toggle-links and the central spring, substantially as and for the purposes set forth.

2. The arms A and B, provided with clips C and D, in combination with toggle-links I, clevis E, and spring G, all arranged to operate substantially as and for the purposes set forth.

3. The arms A and B, hinged to clevis E, provided with a seat for the spring G, in combination with toggle-links I, substantially as set forth.

4. The combination of the spring-cap M and adjusting-screw N, for regulating the tension of the spring, and thus giving the arms of the double-tree more or less stiffness, as set forth.

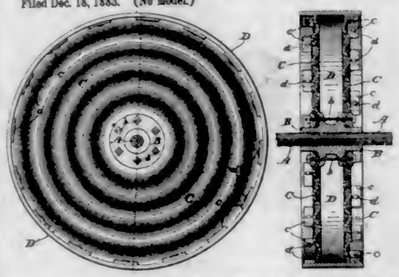
297,513. COMBINED SAW JOINTER AND GAGE. HENRY FLATER, Findlay, Ohio, assignor of one-half to William L. Carlin, same place. Filed Dec. 7, 1883. (No model.)



Claim.—1. The combination, with the jointer-head having the vertically and longitudinally slotted central depression and the depending end flanges, of the integral base and pivot-standard and the swivel-headed clamping-bolt, substantially as specified.

2. The combination, with the pivoted jointer-head having the vertically-slotted central depression and the depending end flanges, of the horizontal base portion having the short locking-arm, and the swivel-headed clamping-bolt in the opposite longer arm, substantially as specified.

297,514. WHEEL OR PULLEY. HARMON H. FULTON, Indianapolis, Ind., assignor to the Indianapolis Machine and Bolt Works, of Indiana. Filed Dec. 18, 1883. (No model.)



Claim.—1. A wheel or pulley composed of a hub consisting of three parts, a web consisting of two corrugated sheet-metal disks arranged substantially parallel with each other, and a rim, said several parts being constructed and secured together, substantially as shown and described, and for the purposes specified.

2. The combination of the three-part hub B, the double corrugated sheet-metal web C C, and rim D, forming a wheel or pulley, substantially as shown and specified.

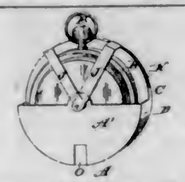
297,515. LEATHER AND CLOTH VARNISH. WALTER C. GIFFORD, Brooks, Mich. Filed Oct. 11, 1883. (No specimens.)

Claim.—The herein-described composition of matter for coating leather, cloth, &c., to render it water-proof and provide it with a polish, consisting of alcohol, gum-shellac, white resin, oil of turpentine, kerosene-oil, oil of cinnamon, and lamp-black, in the proportions herein specified.

297,516. WATCH-PROTECTOR ATTACHMENT. JULIUS C. GRINNELL, Brooklyn, N. Y. Filed Sept. 10, 1883. (No model.)

Claim.—1. A watch-protector made substantially as herein shown and described, and consisting of a casing provided with swinging stirrups adapted to swing over the watch when the same is in the casing, as set forth.

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2. In a watch-protector, the combination, with a casing adapted to receive a watch, of swinging stirrups and a fork or hook hanging from the said stirrups, substantially as herein shown and described, and for the purpose set forth.

3. In a watch-protector, the combination, with a casing adapted to receive a watch, of pivoted stirrups, springs for swinging them apart, and a hook suspended from the said stirrups, substantially as herein shown and described, and for the purpose set forth.

4. In a watch-protector, the combination, with a casing adapted to receive a watch, of pivoted stirrups, springs for swinging them apart, a hook suspended from the said stirrups, and a catch for locking the stirrups when they are swung upward, substantially as herein shown and described, and for the purpose set forth.

5. In a watch-protector, the combination, with a casing and swinging stirrups, of springs for pressing them apart, and of a fork hanging from the ends of the stirrups, and provided with a projecting arm passing through a slot in the bottom of the casing, substantially as herein shown and described, and for the purpose set forth.

6. In a watch-protector, the combination, with a casing, of swinging stirrups having studs, a catch for locking the stirrups in place, a spring for swinging them from each other, and a fork suspended from the ends of the stirrups, and provided with an arm projecting through a slot in the bottom of the casing, substantially as herein shown and described, and for the purpose set forth.

7. In a watch-protector, the combination, with the casing A, provided with the plates B C, united by a rim, D, having slots K, of pivoted stirrups J, one shank of each of which passes through a slot K into the space between the plates B C, substantially as herein shown and described, and for the purpose set forth.

8. In a watch-protector, the combination, with a casing, A, of the swinging stirrups J, having studs M, the anchor H, the pin G, the button F, the spring I, and the fork P, suspended from the inner shanks of the stirrups, substantially as herein shown and described, and for the purpose set forth.

9. In a watch-protector, the combination, with the casing A, of the swinging stirrups J, provided with studs M, the anchor H, the pin G, the button F, the spring I, the spring L, and the fork P, suspended from the inner shanks of the stirrups, substantially as herein shown and described, and for the purpose set forth.

10. In a watch-protector, the combination, with the casing A, having plates B C, and a neck, E, provided with a groove, *b*, of the stirrups J, having studs M, the anchor H, the pin G, the button F, the stud *a*, projecting from the pin G, the spring L, and the fork P, substantially as herein shown and described, and for the purpose set forth.

11. In a watch-protector, the combination, with a casing, of swinging stirrups, springs for separating them, and a device suspended from the stirrups and adapted to support the watch, and to be pressed downward by the same, thereby swinging the stirrups toward each other and over the watch, substantially as herein shown and described, and for the purpose set forth.

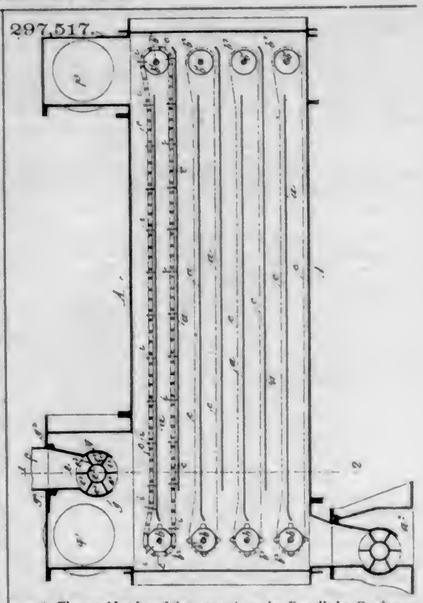
297,517. APPARATUS FOR THE DISTILLATION OF WOOD. ROBT. HALDANE, Glasgow, County of Lanark, Scotland. Filed Sept. 24, 1881. (No model.) Patented in England Apr. 5, 1880, No. 1,435.

Claim.—1. The combination, with the retort A, having shelf or shelves *a*, chain or chains *c*, scrapers *i*, feed-wheel *e*, operating mechanism for said chain and wheel, and outlets for conducting off the distilled gases, of the cooler B, communicating with the said retort through a passage, a^2, controlled by a feed-wheel, and formed or provided with chambers *n*, tubes n^2, ropes or chains *p*, scrapers p^2, driving-wheels q q^2, operating mechanism therefor, water-casing n^3, and controlled discharge-outlet b^2, as and for the purpose hereinbefore set forth.

2. The cooler B, consisting of the combination of the chambers *n*, tubes n^2, ropes or chains *p*, scrapers p^2, driving-wheels q q^2, discharge-wheel *e*, and casing n^3, for the purpose described.

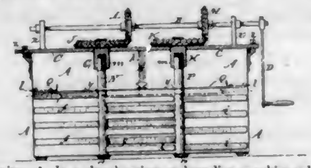
3. In apparatus for obtaining products from the destructive distillation of sawdust, shavings, and other small wood, the combination of the retort A, the cooler B, and the winnowing-machine E, constructed, arranged, and communicating with one another substantially as hereinbefore described, whereby the material fed into the retort is conducted successively through said retort, cooler, and winnowing-machine, from which latter it is finally discharged in the condition of charcoal, as and for the purposes hereinbefore specified.

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4. The combination of the retort A, cooler B, cylinder C, winnowing-machine E, and means, substantially as hereinbefore described, whereby the material fed into the retort is conveyed successively through said retort, cooler, cylinder, and winnowing-machine, as and for the purposes set forth.

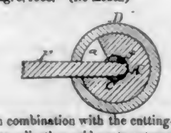
297,518. DOUGH-MIXER. FRANCIS F. HUSSEY, Newton, Mass. Filed July 17, 1883. (No model.)



Claim.—1. In a dough-mixer or kneading-machine substantially such as described, the removable truss or bar C, having the standards *x x*, and carrying the crank-shaft B, provided with the gears L M, in combination with the gears J K, and vertical shafts G H, having the sockets *m*, for receiving the float-shafts N P, the gears L M being respectively arranged on corresponding sides of the gears J K, whereby the float-shafts are caused to revolve in the same direction and their intermeshing floats to move in opposite directions, and said bar may be readily removed from the body of the machine without removing the float-shafts, substantially as set forth.

2. In a dough-mixer or kneading-machine, the guard Q, in combination with the body A, float-shafts N P, means for securing said guard in said body, and operative mechanism for said shafts, substantially as and for the purpose specified.

297,519. COLLAPSIBLE SCREW-TAP. JAS. M. JOHNSON, Cleveland, Ohio. Filed Aug. 8, 1883. (No model.)



Claim.—1. In combination with the cutting-dies constructed in two parts, the strip A, for adjusting said parts outwardly, as and for the purpose set forth.

2. The tapering core C, having the grooves *c* in the forward end,

and the slot *f'*, substantially as described.

3. The sliding nut *f*, in combination with lever F and core C, as and for the purpose specified.

4. In combination with the tapering core C, having slot *f'*, the lever F, nut *f*, mandrel A, and the adjusting-screw *n* in the rear end of said hollow mandrel, for adjusting and securing the core in place, substantially as described.

297,520. AUTOMATIC WINDING-SIGNAL FOR SPRING-CLOCKS. EDWARD JUNGERMAN, Gettysburg, Pa. Filed Jan. 10, 1884. (No model.)



Claim.—1. The combination, with the spring of a clock and its working parts, of a yielding bar placed in range of contact with the mainspring when relaxed and expanded, and a signal adapted to be set by the yielding movement of said bar, as and for the purpose described.

2. The combination, with the spring of a clock and its working parts, of a yielding bar placed in range of contact with the mainspring when relaxed and expanded, a stop for limiting the movement of said bar inward toward the clock-spring, a signal adapted to be set by the yielding of the bar, and a spring for drawing back the signal, as and for the purpose described.

3. The combination, with the spring of a clock, its slotted face, and its working parts, of the yielding bar C, adjusted in relation to the spring to be struck and moved by the expansion of the latter, arm D, oscillating sleeve E, arm G, signal-plate J, and spring I, substantially as and for the purpose described.

297,521. COMBINED KNIFE-SHARPENER AND FORK. WILLIAM KAUFMAN, New York, N. Y. Filed Sept. 17, 1883. (No model.)



Claim.—A fork provided with the transversely V-notched sharpening-block secured thereto, and the longitudinal converging slit made therethrough, and terminating in converging grooves running out at the surface of the metal, substantially as specified.

297,522. CASH SYSTEM. THOMAS M. KENNEY, Cambridge, Mass., assignor of one-half to FRANK E. MASON, same place. Filed Mar. 24, 1884. (No model.)

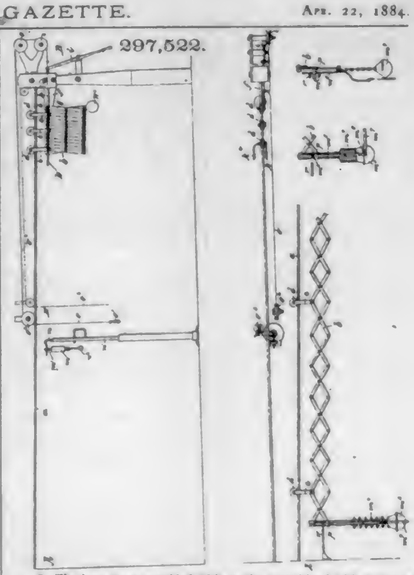
Claim.—1. In a carrying apparatus, the combination, with a track or guide, of a lazy-tongs supported and guided by the said track and actuating mechanism for contracting and expanding the said lazy-tongs, whereby the latter may convey articles between stations on the said track, substantially as described.

2. The combination, with the lazy-tongs and actuating mechanism for expanding and contracting the same, of a carrier connected with the said lazy-tongs and moved thereby, substantially as described.

3. The lazy-tongs provided with a carrier, combined with a support for holding an article in position to be engaged by the said carrier in the movement of the lazy-tongs, substantially as described.

4. The lazy-tongs and carrier connected therewith, combined with a detacher adapted to engage an article supported on the said carrier and remove it therefrom, substantially as described.

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5. The lazy-tongs provided with carriers, combined with a support for holding an article in position to be engaged by one of the said carriers in the movement of the lazy-tongs in one direction, and a detacher in position to engage an article supported on one of the said carriers and remove it therefrom in the movement of the lazy-tongs in the other direction, substantially as described.

6. The lazy-tongs having at one end a joint connected with a fixed pivot and at its other end a carrier, combined with actuating mechanism for expanding the said lazy-tongs and an actuating-weight or equivalent for contracting the said lazy-tongs, substantially as described.

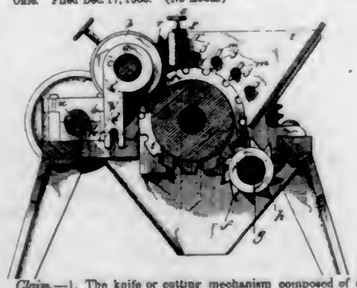
7. The lazy-tongs and actuating mechanism therefor, combined with a vertically-movable carrier connected with the said lazy-tongs, substantially as described.

8. The lazy-tongs provided with a carrier, combined with the flexible actuating device connected with the said lazy-tongs, whereby the latter may be actuated from different points or stations, substantially as described.

9. The main lazy-toogs and actuating mechanism therefor, combined with a carrier, receptacle, and vertically-movable lazy-tongs connecting the said receptacle with the main lazy-tongs, substantially as described.

10. The main lazy-tongs, combined with the vertically-movable lazy-tongs connected with one end thereof, and the actuating-bar for the vertically-movable lazy-tongs and hinged extension of the said bar, substantially as described.

297,523. OATMEAL-CUTTER. FRANKLIN W. KREMER, Wadsworth, Ohio. Filed Dec. 17, 1883. (No model.)



Claim.—1. The knife or cutting mechanism composed of a shaft, circular cutters loosely secured thereon, to turn with the shaft, and interposed separating-washers having projecting arms intersecting the peripheries of the cutters, substantially as and for the purpose described.

2. The combination, in an oatmeal-machine, with the squared shaft and means to rotate the same, of circular knives arranged to turn with

the said shaft, and having lateral play thereon, the interposed non-rotating washers, and their projecting arms intersecting the acting edges of the knives, substantially as and for the purpose described.

3. In an oatmeal-machine, the combination, substantially as shown and described, of a longitudinally and circumferentially grooved feeding-cylinder, means to rotate the same at a given speed, a shaft, circular cutters loose on and turning with said shaft, stationary washers separating said cutters, arms projecting from said washers and intersecting the cutting-edges of the cutters, and means to rotate said shaft at a much-diminished speed relative to that of the feeding-cylinder, as and for the purpose set forth.

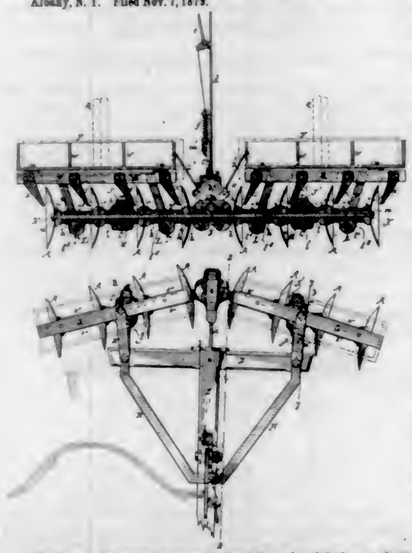
4. The combination, substantially as shown and described, of a feeding-cylinder having circumferential grooves, a cutting mechanism, a clearing device composed of a series of toothed circular plates, the teeth of which enter and clear said grooves, a shaft on which said plates are secured and properly spaced, a worm-wheel on said shaft, and worm-gearing connecting said shaft with the feeding-cylinder shaft, from which it and the cutting mechanism receive slow rotations, as set forth.

5. The combination, substantially as shown and described, of the hopper, a feeding cylinder therein grooved longitudinally, a cutting mechanism, a series of bars and pins therein, a head to which said bars are connected, a blade also attached to said head and arranged over and between the feeding-cylinder and cutting mechanism to operate upon grains standing on end in the grooves, and means to rotate said cylinder and feeding mechanism and reciprocate said bars and blade.

6. The combination, with the hopper and feeding-cylinder, of a blade arranged over the feeding-cylinder next its discharge side, means to reciprocate it, a pressure-board over the same, and temper-screws to hold the board down on the blade, substantially as shown and described.

7. The combination and arrangement, substantially as shown and described, of the framing, a driving-shaft on the same, a hopper, a longitudinally and circumferentially grooved feeding-cylinder, a shaft carrying circular cutters separated by non-rotating cutter-clearing washers, a shaft carrying a series of circular toothed plates, a grating or series of grain-distributing bars, and a blade arranged over the feeding-cylinder, a cam on the cylinder-shaft, gearing connecting said shaft and the driving-shaft, and the series of worms and worm-wheels connecting the shafts of the cutting and clearing shafts with the cylinder-shaft.

297,524. WHEEL CULTIVATOR OR HARROW. CHARLES LA DOW, Albany, N. Y. Filed Nov. 7, 1879.



Claim.—1. The combination, substantially as hereinbefore set forth, of a disk-gang shaft, a spool enveloping the shaft, a sleeve enveloping the spool, and provided with a spherical bearing, and a correspondingly-shaped socket in the boxing connected with the main frame.

2. The combination, substantially as hereinbefore set forth, of the disk-gang shaft, the sectional ball loosely mounted thereon, and its socket.

3. The combination, substantially as hereinbefore set forth, of the disk-gang shaft, the sleeve thereon, its hemispherical head, and the hemispherical section loose on the sleeve.

4. The combination, substantially as hereinbefore set forth, of the disk-gang shaft, the sectional ball thereon, the socket therefor, the recess therein, and the pin (on the section of the ball next the socket-opening) working in said recess to prevent said section from turning, while permitting the ball to rock.

5. The combination, substantially as hereinbefore set forth, of a disk-gang shaft, disks mounted thereon, spacing-thimbles interposed between the disks, a sleeve on the inner end of the disk-gang shaft having a hemispherical enlargement upon its end, a hemispherical collar loosely mounted on the sleeve, said hemispherical enlargement and collar forming a sectional ball, a socket for the said ball, a pin on the hemispherical collar working in a recess in the socket, and a clamp-nut upon the outer end of the axle.

6. The combination, substantially as hereinbefore set forth, of a disk-gang, a scraper-bar, scrapers mounted thereon, and supporting-bars pivoted on the spacing-thimbles and scraper-bar.

7. The combination, substantially as set forth, of a disk-gang, a scraper-bar, scrapers mounted thereon, supporting-bars pivoted on the spacing-thimbles and scraper-bar, a lever on the frame for actuating the scraper-bar, and a connection between the lever and the bar.

8. The combination, substantially as hereinbefore set forth, of the main frame, the disk-gangs, the scraper-bars, the pivoted supports between the spacing-thimbles and scraper-bars, the pivoted supports between the scraper-bars and main frame, scrapers, a rocking lever, and link-connections between the rocking lever and scraper-bars.

9. The combination, substantially as hereinbefore set forth, of a main frame, a disk-gang consisting of concave disks mounted on an axle, mechanism for adjusting the disk-gang relatively to the line of draft, and a weight-box mounted on the disk-gang and adjustable with it.

10. The combination, substantially as hereinbefore set forth, of a frame, disk-gangs composed of concavo-convex disks mounted on axles, weight-boxes mounted above the disk-gangs, and a lever whereby the angle of the gangs and weight-boxes relatively to the line of draft may be varied and a uniform depth of cut of the disks secured.

11. The combination, substantially as hereinbefore set forth, of a main frame, a disk-gang, a scraper-bar and weight-box mounted on pivoted supports above said disk-gang, so as to be free to vibrate laterally, a stop to limit said vibrations, and scrapers mounted upon the scraper-bar, whereby the scrapers are caused to approach and recede from the disks (to clear them of clogging matter) by the jostling of the machine.

12. The combination of the main frame, a disk-gang, mechanism for adjusting the gang relatively to the line of the draft, a weight support or beam mounted over and carried by the gang, draft-connections extending from the frame to the gang, which permit the adjustment of the gang, and a brace extending from the frame to the weight support or beam.

13. The combination of the main frame, a disk-gang, a weight support or beam mounted over and carried by the gang, and the bifurcated connection $H' H^2$, extending from said beam to the frame.

14. The combination, substantially as hereinbefore set forth, of a main frame, disk-gangs flexibly connected at their inner ends, and also connected to the main frame, a lever, a bar connecting the lever and the flexible connection, and a guide-plate in which said bar works endwise.

15. The combination of the main frame, the endwise-moving draw-bar *a*, the slotted guide-plate, and the disk-gangs, for the purpose set forth.

16. In a harrow, the combination of a pole, a cross-bar projecting laterally therefrom, disk-gangs hinged to the cross-bar, a lever on the pole, a bar connecting the lever to the disk-gangs, and a guide, between the prongs of which the bar is thrust back and forth by the action of the lever.

17. In a harrow, the combination of a pole, a draft-frame or cross-bar, disk-gangs connected to the frame, a lever on the pole in front of the cross-bar, a bar connecting the lever and the disk-gangs, and a guide located between the gangs and lever to regulate the motion of the bar.

18. The combination, substantially as hereinbefore set forth, of the main frame, disk-gangs connected to the frame by draft-connections, which leave the ends of the gangs free to vibrate vertically and horizontally, and stops or braces secured upon the main frame, applied at said draft-connections to prevent them from rising, and to relieve the draft-bars from vertical strain.

19. A seat-supporting standard composed of sheet metal of concavo-convex form in cross-section, and tapering from its base to its top, substantially as described.

297,525. FEEDING DEVICE FOR RULING-MACHINES. EMIL LARSON and OSCAR HAMMARLUND, Chicago, Ill., assignors of one-third to Nils F. Olson, same place. Filed Jan. 26, 1883. (No model.)

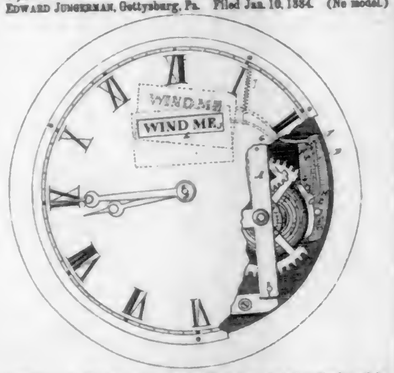
Claim.—1. In a pneumatic feeding device for paper-ruling machines, a vacuum-tube supported by telescopic arms adapted to be advanced or retracted, as described, in combination with spring-actuated pivoted arms provided with angular projections, whereby when these arms are thrown up the tube is forced suddenly back and freed from the paper, substantially as shown and described.

and the slot *f'*, substantially as described.

3. The sliding nut *f*, in combination with lever F and core C, as and for the purpose specified.

4. In combination with the tapering core C, having slot *f'*, the lever F, nut *f*, mandrel A, and the adjusting-screw *n* in the rear end of said hollow mandrel, for adjusting and securing the core in place, substantially as described.

297,520. AUTOMATIC WINDING-SIGNAL FOR SPRING-CLOCKS. EDWARD JUNGERMAN, Gettysburg, Pa. Filed Jan. 10, 1884. (No model.)



Claim.—1. The combination, with the spring of a clock and its working parts, of a yielding bar placed in range of contact with the mainspring when relaxed and expanded, and a signal adapted to be set by the yielding movement of said bar, as and for the purpose described.

2. The combination, with the spring of a clock and its working parts, of a yielding bar placed in range of contact with the mainspring when relaxed and expanded, a stop for limiting the movement of said bar inward toward the clock-spring, a signal adapted to be set by the yielding of the bar, and a spring for drawing back the signal, as and for the purpose described.

3. The combination, with the spring of a clock, its slotted face, and its working parts, of the yielding bar C, adjusted in relation to the spring to be struck and moved by the expansion of the latter, arm D, oscillating sleeve E, arm G, signal-plate J, and spring I, substantially as and for the purpose described.

297,521. COMBINED KNIFE-SHARPENER AND FORK. WILLIAM KAUFMAN, New York, N. Y. Filed Sept. 17, 1883. (No model.)



Claim.—A fork provided with the transversely V-notched sharpening-block secured thereto, and the longitudinal converging slit made therethrough, and terminating in converging grooves running out at the surface of the metal, substantially as specified.

297,522. CASH SYSTEM. THOMAS M. KENNEY, Cambridge, Mass., assignor of one-half to Frank E. Mason, same place. Filed Mar. 24, 1884. (No model.)

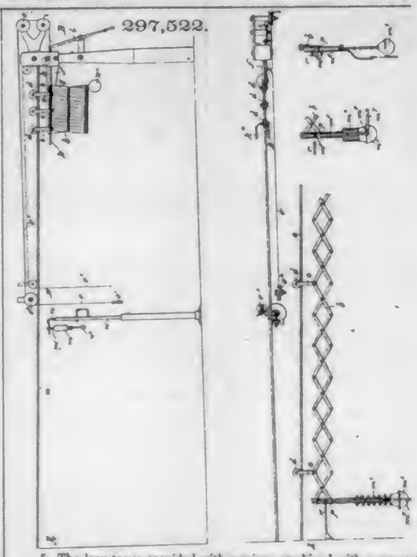
Claim.—1. In a carrying apparatus, the combination, with a track or guide, of a lazy-tongs supported and guided by the said track and actuating mechanism for contracting and expanding the said lazy-tongs, whereby the latter may convey articles between stations on the said track, substantially as described.

2. The combination, with the lazy-tongs and actuating mechanism for expanding and contracting the same, of a carrier connected with the said lazy-tongs and moved thereby, substantially as described.

3. The lazy-tongs provided with a carrier, combined with a support for holding an article in position to be engaged by the said carrier in the movement of the lazy-tongs, substantially as described.

4. The lazy-tongs and carrier connected therewith, combined with a detacher adapted to engage an article supported on the said carrier and remove it therefrom, substantially as described.

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5. The lazy-tongs provided with carriers, combined with a support for holding an article in position to be engaged by one of the said carriers in the movement of the lazy-tongs in one direction, and a detacher in position to engage an article supported on one of the said carriers and remove it therefrom in the movement of the lazy-tongs in the other direction, substantially as described.

6. The lazy-tongs having at one end a joint connected with a fixed pivot and at its other end a carrier, combined with actuating mechanism for expanding the said lazy-tongs and an actuating-weight or equivalent for contracting the said lazy-tongs, substantially as described.

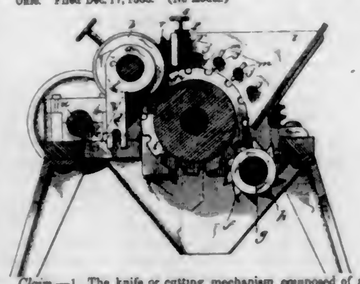
7. The lazy-tongs and actuating mechanism therefor, combined with a vertically-movable carrier connected with the said lazy-tongs, substantially as described.

8. The lazy-tongs provided with a carrier, combined with the flexible actuating device connected with the said lazy-tongs, whereby the latter may be actuated from different points or stations, substantially as described.

9. The main lazy-tongs and actuating mechanism therefor, combined with a carrier, receptacle, and vertically-movable lazy-tongs connecting the said receptacle with the main lazy-tongs, substantially as described.

10. The main lazy-tongs, combined with the vertically-movable lazy-tongs connected with one end thereof, and the actuating-bar for the vertically-movable lazy-tongs and hinged extension of the said bar, substantially as described.

297,523. OATMEAL-CUTTER. FRANKLIN W. KREMER, Wadsworth, Ohio. Filed Dec. 17, 1883. (No model.)



Claim.—1. The knife or cutting mechanism composed of a shaft, circular cutters loosely secured thereon, to turn with the shaft, and interposed separating-washers having projecting arms intersecting the peripheries of the cutters, substantially as and for the purpose described.

2. The combination, in an oatmeal-machine, with the squared shaft and means to rotate the same, of circular knives arranged to turn with the said shaft, and having lateral play thereon, the interposed non-rotating washers, and their projecting arms intersecting the acting edges of the knives, substantially as and for the purpose described.

3. In an oatmeal-machine, the combination, substantially as shown and described, of a longitudinally and circumferentially grooved feeding-cylinder, means to rotate the same at a given speed, a shaft, circular cutters loose on and turning with said shaft, stationary washers separating said cutters, arms projecting from said washers and intersecting the cutting-edges of the cutters, and means to rotate said shaft at a much-diminished speed relative to that of the feeding-cylinder, as and for the purpose set forth.

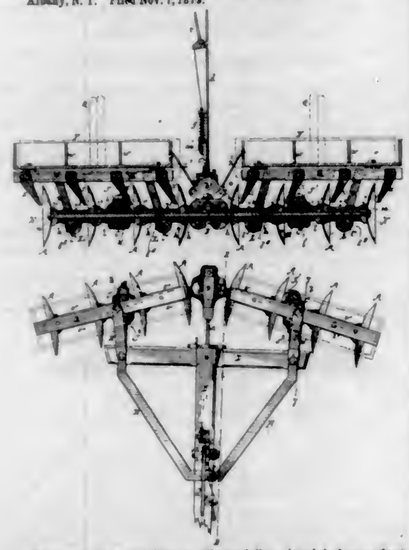
4. The combination, substantially as shown and described, of a feeding-cylinder having circumferential grooves, a cutting mechanism, a clearing device composed of a series of toothed circular plates, the teeth of which enter and clear said grooves, a shaft on which said plates are secured and properly spaced, a worm-wheel on said shaft, and worm-gearing connecting said shaft with the feeding-cylinder shaft, from which it and the cutting mechanism receive slow rotations, as set forth.

5. The combination, substantially as shown and described, of the hopper, a feeding cylinder therein grooved longitudinally, a cutting mechanism, a series of bars and pins therein, a head to which said bars are connected, a blade also attached to said head and arranged over and between the feeding-cylinder and cutting mechanism to operate upon grains standing on end in the grooves, and means to rotate said cylinder and feeding mechanism and reciprocate said bars and blade.

6. The combination, with the hopper and feeding-cylinder, of a blade arranged over the feeding-cylinder next its discharge side, means to reciprocate it, a pressure-board over the same, and temper-screws to hold the board down on the blade, substantially as shown and described.

7. The combination and arrangement, substantially as shown and described, of the framing, a driving-shaft on the same, a hopper, a longitudinally and circumferentially grooved feeding-cylinder, a shaft carrying circular cutters separated by non-rotating cutter-clearing washers, a shaft carrying a series of circular toothed plates, a grating or series of grain-distributing bars, and a blade arranged over the feeding-cylinder, a cam on the cylinder-shaft, gearing connecting said shaft and the driving-shaft, and the series of worms and worm-wheels connecting the shafts of the cutting and clearing shafts with the cylinder-shaft.

297,524. WHEEL CULTIVATOR OR HARROW. CHARLES LA DOW, Albany, N. Y. Filed Nov. 7, 1879.



Claim.—1. The combination, substantially as hereinbefore set forth, of a disk-gang shaft, a spool enveloping the shaft, a sleeve enveloping the spool, and provided with a spherical bearing, and a correspondingly-shaped socket in the boxing connected with the main frame.

2. The combination, substantially as hereinbefore set forth, of the disk-gang shaft, the sectional ball loosely mounted thereon, and its socket.

3. The combination, substantially as hereinbefore set forth, of the disk-gang shaft, the sleeve thereon, its hemispherical head, and the hemispherical section loose on the sleeve.

4. The combination, substantially as hereinbefore set forth, of the disk-gang shaft, the sectional ball thereon, the socket therefor, the recess therein, and the pin (on the section of the ball next the socket-opening) working in said recess to prevent said section from turning, while permitting the ball to rock.

5. The combination, substantially as hereinbefore set forth, of a disk-gang shaft, disks mounted thereon, spacing-thimbles interposed between the disks, a sleeve on the inner end of the disk-gang shaft having a hemispherical enlargement upon its end, a hemispherical collar loosely mounted on the sleeve, said hemispherical enlargement and collar forming a sectional ball, a socket for the said ball, a pin on the hemispherical collar working in a recess in the socket, and a clamp-nut upon the outer end of the axle.

6. The combination, substantially as hereinbefore set forth, of a disk-gang, a scraper-bar, scrapers mounted thereon, and supporting-bars pivoted on the spacing-thimbles and scraper-bar.

7. The combination, substantially as set forth, of a disk-gang, a scraper-bar, scrapers mounted thereon, supporting-bars pivoted on the spacing-thimbles and scraper-bar, a lever on the frame for actuating the scraper-bar, and a connection between the lever and the bar.

8. The combination, substantially as hereinbefore set forth, of the main frame, the disk-gangs, the scraper-bars, the pivoted supports between the spacing-thimbles and scraper-bars, the pivoted supports between the scraper-bars and main frame, scrapers, a rocking lever, and link-connections between the rocking lever and scraper-bars.

9. The combination, substantially as hereinbefore set forth, of a main frame, a disk-gang consisting of concave disks mounted on an axle, mechanism for adjusting the disk-gang relatively to the line of draft, and a weight-box mounted on the disk-gang and adjustable with it.

10. The combination, substantially as hereinbefore set forth, of a frame, disk-gangs composed of concavo-convex disks mounted on axles, weight-boxes mounted above the disk-gangs, and a lever whereby the angle of the gangs and weight-boxes relatively to the line of draft may be varied and a uniform depth of cut of the disks secured.

11. The combination, substantially as hereinbefore set forth, of a main frame, a disk-gang, a scraper-bar and weight-box mounted on pivoted supports above said disk-gang, so as to be free to vibrate laterally, a stop to limit said vibrations, and scrapers mounted upon the scraper-bar, whereby the scrapers are caused to approach and recede from the disks (to clear them of clogging matter) by the jostling of the machine.

12. The combination of the main frame, a disk-gang, mechanism for adjusting the gang relatively to the line of the draft, a weight support or beam mounted over and carried by the gang, draft-connections extending from the frame to the gang, which permit the adjustment of the gang, and a brace extending from the frame to the weight support or beam.

13. The combination of the main frame, a disk-gang, a weight support or beam mounted over and carried by the gang, and the bifurcated connection $H' H^2$, extending from said beam to the frame.

14. The combination, substantially as hereinbefore set forth, of a main frame, disk-gangs flexibly connected at their inner ends, and also connected to the main frame, a lever, a bar connecting the lever and the flexible connection, and a guide-plate in which said bar works endwise.

15. The combination of the main frame, the endwise-moving draw-bar *a*, the slotted guide-plate, and the disk-gangs, for the purpose set forth.

16. In a harrow, the combination of a pole, a cross-bar projecting laterally therefrom, disk-gangs hinged to the cross-bar, a lever on the pole, a bar connecting the lever to the disk-gangs, and a guide, between the prongs of which the bar is thrust back and forth by the action of the lever.

17. In a harrow, the combination of a pole, a draft-frame or cross-bar, disk-gangs connected to the frame, a lever on the pole in front of the cross-bar, a bar connecting the lever and the disk-gangs, and a guide located between the gangs and lever to regulate the motion of the bar.

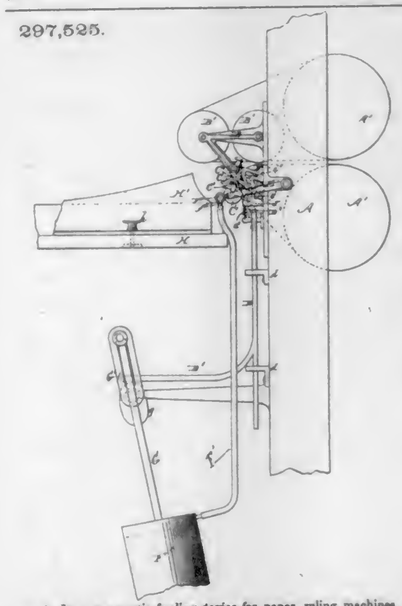
18. The combination, substantially as hereinbefore set forth, of the main frame, disk-gangs connected to the frame by draft-connections, which leave the ends of the gangs free to vibrate vertically and horizontally, and stops or braces secured upon the main frame, applied at said draft-connections to prevent them from rising, and to relieve the draft-bars from vertical strain.

19. A seat-supporting standard composed of sheet metal of concavo-convex form in cross-section, and tapering from its base to its top, substantially as described.

297,525. FEEDING DEVICE FOR RULING-MACHINES. EMIL LARSON and OSCAR HAMMARLUND, Chicago, Ill., assignors of one-third to Nils F. Olson, same place. Filed Jan. 26, 1883. (No model.)

Claim.—1. In a pneumatic feeding device for paper-ruling machines, a vacuum-tube supported by telescopic arms adapted to be advanced or retracted, as described, in combination with spring-actuated pivoted arms provided with angular projections, whereby when these arms are thrown up the tube is forced suddenly back and freed from the paper, substantially as shown and described.

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2. In a pneumatic feeding device for paper-ruling machines, the combination of a vacuum-tube adapted to detach and lift a sheet of paper from the pile with a spring-actuated roller provided with angular projections, adapted at the proper times to be thrown upward, releasing the tube from the sheet and carrying it up to the feeding-rollers, substantially as described and shown.

3. In a pneumatic feeding device for paper-ruling machines, the vacuum-tube F, supported in the ends of the pivoted telescopic arms E E', provided with projecting spring *e*, slot e^2, and pin e', in combination with a plate, I, secured to the frame and formed with the angular guide-slot i i', substantially as and for the purpose set forth.

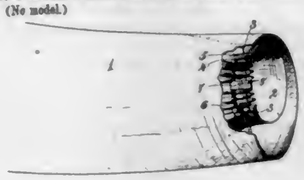
4. In a pneumatic feeding device for paper-ruling machines, a series of continually-revolving feed-rollers, B' B^2, journaled in a frame or casting secured to the main frame of the ruling-machine, in combination with a vacuum-tube, F, and a spring-actuated roller, C', the first adapted to lift the sheet from the pile and the latter to press it against the feed-rollers, substantially as and for the purpose set forth.

5. In a pneumatic feeding device for paper-ruling machines, the combination of the roller C', journaled in spring-actuated pivoted arms C, provided with a pin, c^3, with a retaining-catch, C^2, and the rod D, adapted to slide vertically, and provided with a retracting-hook, D^4, substantially as and for the purpose set forth.

6. In a pneumatic feeding device for paper-ruling machines, the shaft G^2, provided with a cam, *g*, and slotted crank G', connected to the piston of the air-pump, and the vertically-sliding operating-rod D, in combination with the vacuum-tube F, and feeding-roller C', substantially as and for the purpose set forth.

7. A pneumatic feeding device for paper-ruling machines, consisting, essentially, of a vacuum-tube flexibly connected to an air-pump, and supported in pivoted telescopic arms thrown in and out by a projecting pin working in a guide-slot, a pivoted spring-actuated roller, a sliding operating-rod, and a cam upon a driving-shaft, provided with a crank connected to the pump, all combined, constructed, and arranged to operate substantially as and for the purpose set forth.

297,526. GARMENT-SLEEVE. SALOMON LOESCH, New York, N. Y., assignor of one-half to David Heineman, Gloucester, Mass. Filed Jan. 24, 1884. (No model.)



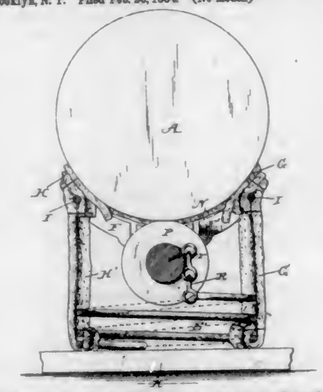
Claim.—1. A garment-sleeve having at or near its outer extremity two attached separated flaps provided with orifices, and a cord or tape passing through the said orifices for bringing the flaps toward each other and contracting the wrist-opening, substantially as described.

2. A garment-sleeve having at or near its outer extremity two separated flaps attached at one edge and free at the other, and connected by an adjustable cord or tape for bringing the flaps toward each other to shirr that part of the sleeve end between the flaps and leave the remaining portion smooth and plain, substantially as described.

3. A garment-sleeve provided at or near its outer extremity with two separated flaps, each provided with orifices, and a cord or tape passed through the said orifices and its ends brought together upon one of the flaps for drawing the flaps together to shirr that part of the sleeve end between the flaps, leaving the remaining portion of the sleeve end smooth and plain, substantially as described.

4. A garment-sleeve provided with two separated attached flaps, guide-loops intermediate the flaps, and a cord connecting the flaps and passing through the intermediate guide-loops for contracting the wrist-opening, substantially as described.

297,527. CAR-AXLE LUBRICATOR. WILLIAM GEORGE MITCHELL, Brooklyn, N. Y. Filed Feb. 20, 1884. (No model.)



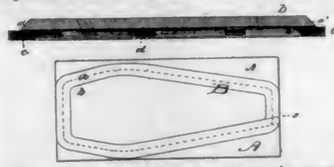
Claim.—1. In a journal-lubricator, a roller or spool provided with a chain or jointed beater, R, attached, to rotate with it as a beater.

2. In a journal-lubricator, a roller or spool provided with a metal chain, R, attached thereto at one point, as shown.

3. In a journal-lubricator, a roller or spool provided with a chain or jointed beater, R, combined with wipers G H, and with a spring-supporting frame.

297,528. COFFIN LID OR COVER AND PROCESS OF MAKING THE SAME. BENJAMIN MORRIS, Newark, N. J. Filed Feb. 16, 1884. (No model.)

Brief.—A center is cut out from a board, so that the inner edge of the band and the outer edge of the center are reciprocally beveled, said center being removed and secured upon the opposite side of said board, keeping the same faces of the parts uppermost.

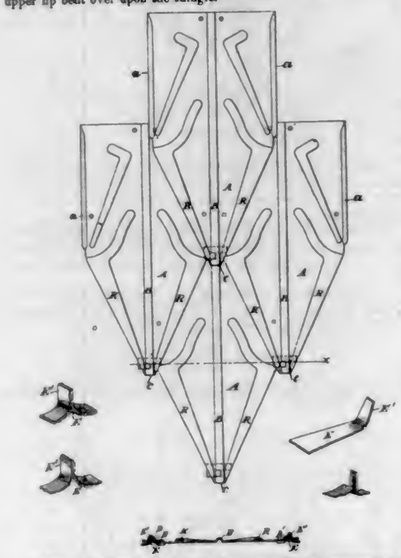


Claim.—1. The method of manufacturing wooden covers, to wit: cutting out a center from a board with an inclined saw, removing said center and securing it upon the opposite side of said board from that from which said center was withdrawn, keeping the same faces of said parts uppermost, substantially as set forth.

2. The method of manufacturing lids or covers for coffins, to wit: cutting the blank from the board, then cutting out a center from said blank with an inclined saw so that the inner edge of the band thus formed and the outer edge of said center will be reciprocally beveled, then removing said center from its band and securing it upon the opposite side of said band from that from which it was withdrawn, all substantially as herein set forth.

297,529. METALLIC ROOFING-SHINGLE. JOHN MOTT, New York, N. Y., assignor to the Anglo American Roofing Company, same place. Filed Sept. 22, 1883. (No model.)

Brief.—The point of the shingle is provided with a slot, through which projects an attaching-clasp having an underlying portion, and an upper lip bent over upon the shingle.



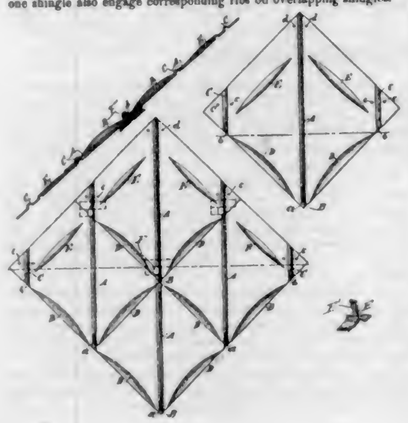
Claim.—1. A metallic shingle of substantially the construction described, having a longitudinal slit in its point adapted to pass over the upwardly-projecting lip of an attaching-clasp, as set forth.

2. The combination, with metallic shingles each having a longitudinal slit in its point, of attaching-clasps E, each having an upwardly-projecting lip, E', as and for the purpose described.

3. Metallic shingles of substantially the construction described, having a longitudinal slit in the points, in combination with clasps having a body adapted to fit under either one or both underlying shingles, and an upwardly-projecting lip adapted to pass through said longitudinal slit and be bent over on the shingle, whereby the point of the shingle is securely held in place, as set forth.

297,530. METALLIC SHINGLE. JOHN MOTT, New York, N. Y. Filed Oct. 24, 1883. (No model.)

Brief.—Shingles are connected by an attaching-clasp having an underlying portion and a lip passing up through a slot in the lower portion of a rib at the sides and center and bent over. Inclined ribs on one shingle also engage corresponding ribs on overlapping shingles.

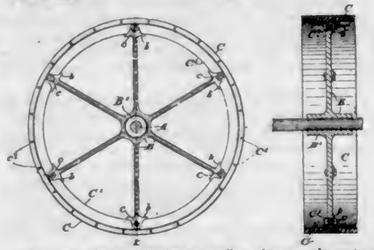


Claim.—1. A metallic roofing-shingle, substantially such as described, provided at its lower end, and just above the point, with a longitudinal slit, *a*, and at its parallel corners with longitudinal slots *b b*, as and for the purposes set forth.

2. Metallic shingles of substantially the construction described, having a longitudinal slit in the points and longitudinal slots in the opposite corners, in combination with an attaching-clasp having a body adapted to fit under the underlying shingles in the course next below, and an upwardly-projecting lip adapted to pass through said longitudinal slots and slit and be bent over onto the overlapping shingle, as and for the purposes set forth.

3. Metallic shingles each having a rib, A, provided with a longitudinal slit, *a*, ribs C C parallel to each other and to the rib A, and each provided with a longitudinal slot, *b*, at their lower ends, and ribs D E, whereby diamond-shaped shingles may be formed out of square pieces of sheet metal, and are adapted when combined with attaching-clasps to form a roofing, as set forth.

297,531. PULLEY. HORATIO C. NEWCOMER, Indianapolis, Ind., assignor of one-half to William E. Rockwood, same place. Filed Dec. 18, 1883. (No model.)

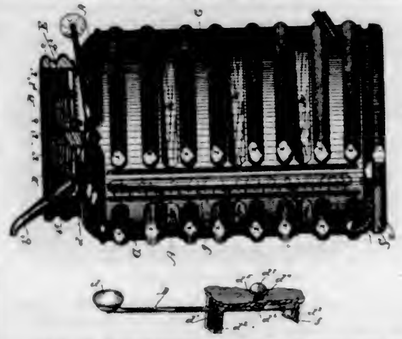


Claim.—1. The combination, in a pulley, of a paper rim and a cast-metal spider, the ends of the arms whereof are extended to form bearings by which the rim is supported, substantially as shown and specified.

2. The combination of a metal spider, the outer ends of the arms of which are enlarged, and a paper rim having an internal rib or flange against which the said enlarged ends fit, and to which they are secured, substantially as set forth.

3. The combination of the metal spider B, having enlarged ends or bearing-plates *b* on its arms, the paper rim C, having rib or flange C', and the bolts or rivets *c*, by which said rib and said arms are secured together, the whole forming a pulley, substantially as shown and described, and for the purposes specified.

297,532. VESSEL FOR CONTAINING AND TRANSPORTING LIQUIDS. DANIEL W. NORRIS, Elgin, Ill. Filed Feb. 15, 1884. (No model.)



Claim.—1. As a new article of manufacture, an incased vessel having a glass body and a top composed of a single piece of sheet metal shaped to form the cover for the mouth of the body, and also the internal and external annular flanges, between which the upper portion of the body is placed in attaching the top to the body, and provided with a filling-orifice and a pouring-spout, and secured to the body by a cemented screw-connection, substantially as described.

2. In combination with the glass body, the top composed of a single piece of sheet metal, forming a cover for the mouth of the body, the in-

ternal and external annular flanges having the groove between them, and provided with a filling-orifice and a pouring-spout, substantially as described.

3. The top composed of a single piece of sheet metal, forming the cover for the mouth of the body, and also the internal and external annular flanges, in combination with the supplemental internal annular flange and the glass body, substantially as described.

4. The top composed of a single piece of sheet metal, forming the cover for the mouth of the body and the external annular flange, in combination with the supplemental internal annular flange having its upper edge turned outward, and the glass body, substantially as described.

5. A sheet-metal top provided with an internal annular flange and an external annular screw-threaded flange, in combination with the body of a glass vessel having a screw-threaded upper portion, substantially as described.

6. The funnel-shaped sheet-metal top provided with a filling-orifice and a pouring-spout, substantially as described.

7. A can having a funnel-shaped sheet-metal top, which is provided with a filling-orifice at its lowest portion and a pouring-spout near its upper portion, substantially as described.

8. A can having a funnel-shaped sheet-metal top, which is provided with a filling-orifice and with a pouring-spout, substantially as described.

9. The combination, with a vessel having a pouring-orifice, of a spring-supported bar or lever carrying a pad or stopper at its outer end for closing the pouring-orifice, and means for first pressing the inner end of the lever to a fulcrum or bearing, and then causing it to turn on said bearing and release the pad from the pouring-orifice, substantially as described.

10. The combination, with a vessel having a pouring-orifice and a vent, of a spring-supported bar or lever carrying a pad or stopper at its outer end for closing the pouring-orifice, and a valved plunger adapted, when pressed, to open the vent, force the inner end of the lever to its fulcrum or bearing, and then cause the lever to turn on said bearing and release the pad from the pouring-orifice, substantially as described.

11. The combination, with a pouring-orifice, of the spring-supported lever having the pad or stopper at its outer end, of the loop constituting the fulcrum or bearing for the inner end of the lever, and of the plunger for operating the lever, substantially as described.

12. The combination, with the pouring-orifice, of the lever having the pad or stopper, the guide-loop and its spring, the inner loop or fulcrum, and the plunger, substantially as described.

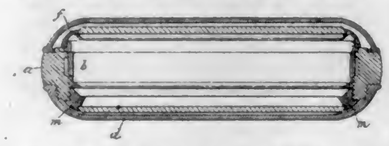
13. The combination, with the pouring-orifice and the vent, of the lever and its pad, the guide-loop and spring, the inner loop forming the fulcrum of the lever, and the valved plunger working in the vent-opening, substantially as described.

14. A sheet-metal can-top provided with a pouring-orifice and a vent, and having the spring-seated lever provided with the pad, the fulcrum for the inner end of the lever, and the valved plunger for operating the lever, substantially as described.

15. A glass vessel, in combination with a sheet-metal inclosing-case having one or more elongated longitudinal openings showing one or more of the principal units of measure, and one or more elongated vertical openings provided with a scale showing the minor units of measure, substantially as described.

16. A sheet-metal case having one or more elongated horizontal openings showing one or more of the principal units of measure, and one or more elongated vertical openings provided with a scale showing the minor units of measure, substantially as described.

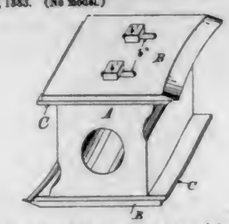
297,533. WATCH-CASE. DANIEL O'HARA, Waltham, assignor to Robbins & Appleton, Boston, Mass. Filed Dec. 1, 1883. (No model.)



Claim.—1. The combination, in a watch-case, of the case-center having an internally-threaded portion, and an external or outer back, *d*, the movement-holding ring screwed into said threaded portion, and the back cap or bezel *m*, screwed to the case-center, and serving as an additional protection for the back of the movement, the case-center or the ring being provided with a front bezel protecting the front of the movement, as set forth.

2. The combination, in a watch-case, of the case-center having an internally-threaded portion, 2, and an external or outer back, the movement-holding ring, and the back cap or bezel, both externally threaded and screwed into the threaded portion of the center, said portion being suitably widened to receive the ring and back cap, as set forth.

297,534. CUTTER-HEAD. MICHAEL S. O'NEIL, Rock Island, Ill. Filed Nov. 23, 1883. (No model.)

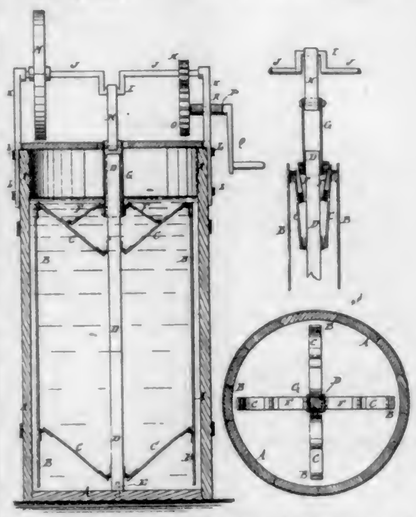


Claim.—1. A beveled or ovaled cap of steel, iron, or other suitable material applied between the knife and cutter-head of a rotating or revolving cutter, with the pointed portions of each together, as and for the purpose described.

2. The combination of the cutter-head, the cutter-knives with slots and bolts, and beveled or ovaled caps having slots corresponding to the slots in the knives, substantially as described, and for the purpose specified.

3. The combination of the cutter-head, the cutter-knives, and bolts by which they are secured with beveled or ovaled caps or plates, substantially as described, and for the purpose specified.

297,535. CHURN. ANSON MELVIN OTIS, York, Nebr. Filed Sept. 23, 1883. (No model.)



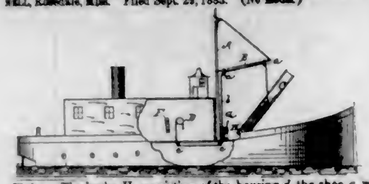
Claim.—1. A churn constructed substantially as herein shown and described, and consisting of a churn-body having a center screw at its bottom, and a stationary shaft provided with a radially expanding and contracting dasher connected by hinged bars, a sliding tube, a hinged connection attached to said tube and dasher, and a pitman with a driving mechanism, as set forth.

2. In a churn, the combination, with the churn-body A, having a screw, E, attached to its bottom, of the stationary shaft D and the hinged paddles B C, provided with connecting-bars F, a sliding tube, G, and a pitman for connecting the said dasher with a driving mechanism, substantially as herein shown and described, whereby the churning will be done by the successive expansion and contraction of the said dasher, as set forth.

3. In a churn, the combination, with the churn-body A, the radially expanding and contracting dasher B C D, and the bars, tube, and pitman F G H, of the crank-shaft J, the gear-wheels N O, and the crank Q, substantially as herein shown and described, whereby the said dasher can be readily and rapidly expanded and contracted, as set forth.

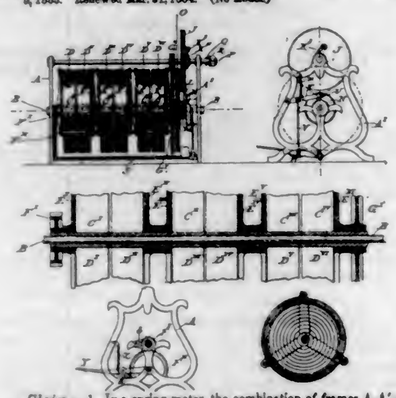
4. In a churn, the dasher constructed substantially as herein shown and described, and consisting of the stationary shaft D, the radial hinged paddles C, and the upright hinged paddles B, as set forth.

297,536. HOISTING DEVICE FOR VESSELS. RICHARD HOYT PURNELL, Rosedale, Miss. Filed Sept. 29, 1883. (No model.)



Claim.—The brake H, consisting of the housing *d*, the shoe *g*, with yoke *i*, sliding in grooves in the housing, and the lever *h*, fulcrumed in the housing, and having its lower end loosely inserted in the yoke of the shoe, in combination with the mast A, boom B, and rope *b*, swung from pulleys on said boom, as and for the purpose described.

297,537. MOTOR. HERMANN ROSTER, Philadelphia, Pa. Filed June 5, 1883. Renewed Mar. 31, 1884. (No model.)



Claim.—1. In a spring-motor, the combination of frames A A', a longitudinal shaft, B B, a spur-wheel, F', a retaining-pawl, *b*, a series of hollow sleeve-shafts, C' C'' C''' C'', a number of shields and stays, E' E'' E''' E'' E'' E'', a spur-wheel, G, a spur-wheel, G'', a shaft, H, a pulley, J, a retaining-pawl, K', and ratchet-wheel K'', pulleys M' and M'', and a rope or band, L, substantially as described above.

2. In a spring-motor, the combination of a treadle, Y, retaining-pawl *a*, spur-wheels F'' F', retaining-pawl *b*, sleeve-shaft C' and longitudinal shaft B B, and the two frames A A', substantially as described above.

3. In a spring-motor, the combination of the two frames A A', a shaft, H, a pin, Q, a square piece, R, a washer, P, a pulley, J, a retaining-pawl, K', a ratchet-wheel, K'', spur-wheels G' and G'', a shaft, B B, a series of hollow sleeve-shafts, C'' C''' C'' C', a series of springs, D'' D' D'' D''' D'' D'', a number of shields and stays, E'' E'' E'' E''' E'' E', a spur-wheel, F', and a retaining-pawl, *b*.

4. In a spring-motor, the combination of a treadle, W, a link, V, a spring-lever, T, a sliding block, U, a spring, *d*, a spring, X, a circular disk, N, pulleys M', M'', and J, a rope or band, L, a shaft, H, spur-wheels G' G'', a shaft, B B, and a sleeve-shaft, C'', &c., substantially as set forth.

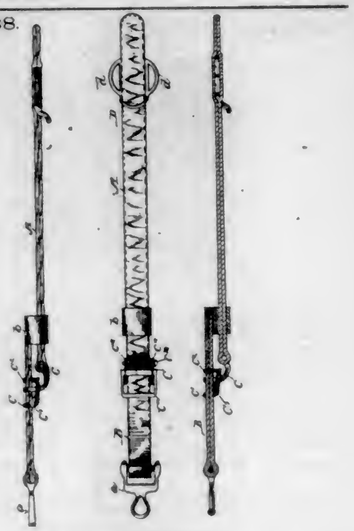
5. In a spring-motor, the combination of two frames, A A', the treadle Y, retaining-pawl *a*, spring Z, wheels F'' F', retaining-pawl *b*, shaft B B, sleeve-shafts C' C'' C''' C'', shields E' and E'' E''' E'' E' E'', springs D' D'' D''' D'' D' D'', spur-wheels G' G'', shaft H, pin Q, piece R, washer P, pulley J, retaining-pawl K', ratchet-wheel K'', pulleys M' M'', bands L and O, circular disk N, sliding block U, spring-lever T, spring X, link V, and treadle W, substantially as described.

297,538. HAME-TUG AND TRACE. GEO. RUFF, Monroe City, Mo. Filed Jan. 10, 1884. (No model.)

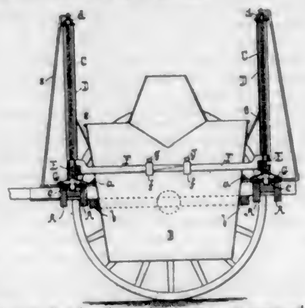
Claim.—1. The combination, with a trace and a tug arranged at the rear end of the trace, of the two-part or framed buckle, one having a portion of its surface at a right angle to the other portion, and connected to the rear or inner end of the trace, and the other part or frame interlocking with the former frame or part, and having a tongue projecting from its forward cross-bar, substantially as and for the purpose set forth.

2. The combination of the tug B, having loops *a* and *b*, trace A, having loop-frame D, and the buckle E, having interlocking parts or frames C and C', substantially as shown, and for the purpose described.

297,538. [illegible]



297,539. DUMPING COAL-CART. WILLIAM S. SHOEMAKER, Baltimore, Md. Filed Jan. 23, 1884. (No model.)



Claim.—1. In a dumping coal-cart, a wheeled frame with an opening therein, a hopper located within and projecting through the said wheeled frame, combined with screws to elevate the said hopper, substantially as described.

2. In a dumping coal-cart, a wheeled frame having an opening therein, a hopper suspended within the said opening, a flange on the hopper to limit its depression within the said opening, and means to elevate the said hopper, all combined substantially as specified.

3. As means for elevating the hopper of a dumping coal-cart, a pair of vertical screws, nuts on the said screws, a bar which passes loosely through the hopper, with its ends resting on the said nuts, and means to revolve the said screws, all combined substantially as specified.

4. In combination with the screws C, nuts E, and the box F, the slotted tubes D, having bearings for the upper ends of the said screws, substantially as specified.

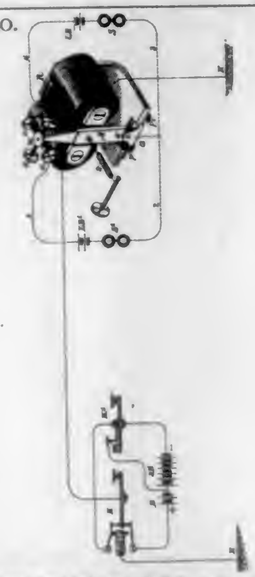
297,540. DIPLEX OR QUADRUPLEX TELEGRAPH. GERRITT SMITH, Astoria, N. Y. Filed July 7, 1883. (No model.)

Claim.—1. An electro-magnetic receiving-instrument having a single armature pivoted upon a universal joint, and capable of taking four contact positions, respectively, located in different radial planes with respect to the central position of the armature and against contact-points.

2. An electro-magnetic receiving-instrument responsive to variations in the polarity and in the strength of line-current, either or both, provided with one armature which is pivoted upon a universal joint, and in connection with two local circuits, and four fixed stops so located as to circumscribe the movements of said armature, substantially as described.

3. An electro-magnetic receiving-instrument responsive to varia-

297,540.



tions in the polarity and in the strength of line-current, either or both provided with one armature capable of taking four positions, and pivoted upon a universal joint, substantially as described.

4. An electro-magnetic receiving-instrument responsive to variations in the polarity and in the strength of line-current, either or both, having one armature upon a universal joint provided with three working-contacts and one resting-contact.

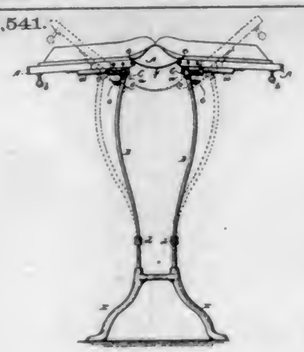
5. A receiving-instrument responsive to changes in the polarity and in the strength of main-line current, either or both, having one armature, and a rotating local-circuit contact-point, in combination with a main battery or batteries, and two keys or transmitters, one of which transmitters controls the polarity of the line-current and the other the strength of line-current.

6. A receiving-instrument responsive to changes in the polarity and in the strength of line-current, either or both, having one armature, and a rotating local-circuit contact-point, in combination with means for generating an electric current, and two keys or transmitters, one of which—say the first—when operated controls the strength of main-line current, the polarity of which is varied by the operation of the second key or transmitter.

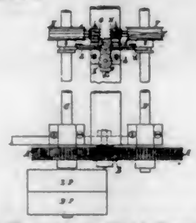
7. In a duplex-telegraph relay, the combination of an armature-bar, and a series of contact-stops surrounding said armature, two of which stops, respectively, form the poles of two local circuits, the whole being arranged, as shown, whereby the resultant of the movement of the armature upon the cessation of magnetism due to a current reversal and the movement of the armature due to the direct action of the reversed current shall be in direction toward the contact for making the desired signal, and away from the contact by which, if connection were made therewith, a false signal would be caused.

8. The receiving-instrument, R, having armature A, disk *w*, and stops *a b c d*, with their local-circuit connections, substantially as described.

297,541.



297,542. MACHINERY FOR STRETCHING AND SMOOTHING SEWING-THREAD. JOSEPH E. TYNAN, Paterson, N. J. Filed Mar. 19, 1883. (No model.)

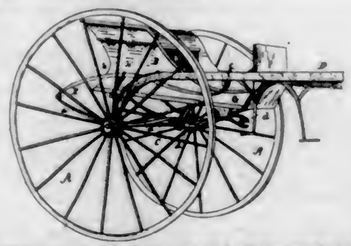


Claim.—1. The combination of the feeding wheel or roller F, drawing wheel or roller E, their shafts and operative gears, and the intermediate grooved guide-rollers, G and H, with the stop-motion arranged therewith, as set forth, and consisting of the clutches *a b a b*, furcated bar *d*, slider *e*, spring *h*, post *k*, roller K, standard *g*, and guide-roller I, all being arranged and adapted substantially as represented.

2. The stop-motion, substantially as described, consisting of the clutches *a b a b*, bar *d*, slider *e*, spring *h*, post *k*, roller K, standard *g*, and guide-roller I, arranged and combined essentially in manner to operate as and for the purpose set forth.

3. The combination of the stationary friction-abutments *s* with the feeding and drawing rollers or wheels, their shafts and operative gear and guide wheels, and stop-motion, as described, all being arranged, adapted, and to operate substantially as set forth.

297,543. TWO-WHEELED VEHICLE. WILLIS VANDERCOOK, Mason, Mich. Filed Aug. 8, 1883. (No model.)

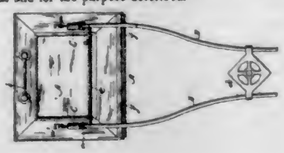


Claim.—1. A spring for two-wheeled vehicles, consisting of the side springs, E, having their top sections, *b*, connected to the shafts and their lower sections connected to the cross-spring F, and bar H, when constructed, arranged, and operating substantially as and for the purposes set forth.

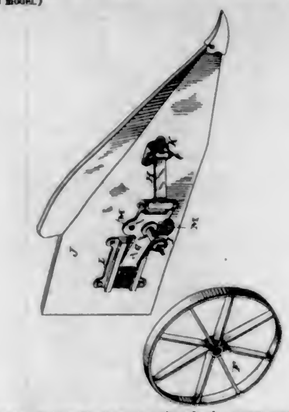
2. In combination with the wheels A, axle C, body B, and shafts D, the springs E, having their top sections connected to the shafts and their lower sections connected to the cross-spring F, and cross-bar H, when constructed, arranged, and operating substantially as and for the purposes specified.

297,541. DICTIONARY-STAND. EDGAR D. SWAIN, Chicago, Ill. Filed Sept. 10, 1883. (No model.)

Claim.—The combination of the spring-rods B, and the sleeves C, pivoted to them and to the lids A, having the rods *a'* within said sleeves, substantially as and for the purpose described.

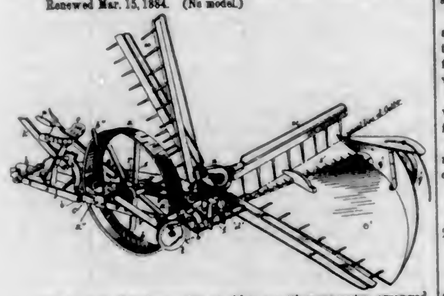


297,544. GRAIN-WHEEL FOR HARVESTERS. WILLIAM N. WHITELEY, Springfield, Ohio. Filed June 19, 1883. Renewed Mar. 15, 1884. (No model.)



Claim.—A knuckle-jointed grain-wheel support consisting of the jointed bars G H, the bar H being hinged to the divider, combined with the guide I, wherein the end of the bar G may slide, substantially as herein described, to permit the grain-wheel to automatically adjust itself into the plane of the tangent of the curve being described by the outer end of the machine.

297,545. HARVESTER. WILLIAM N. WHITELEY, Springfield, Ohio, assignor to Whiteley, Fraaler & Kelly, same place. Filed May 4, 1882. Renewed Mar. 15, 1884. (No model.)



Claim.—1. In a harvesting-machine, a cutting apparatus, arranged obliquely to the line of travel of the machine and actuated by one pair of bevel-gears, combined with a pivoted shaft and bearing, *u' v'*, box *y'*, track *s'*, having a cam-slot, *a''*, and a pivoted lever, *b''*, for the purpose specified.

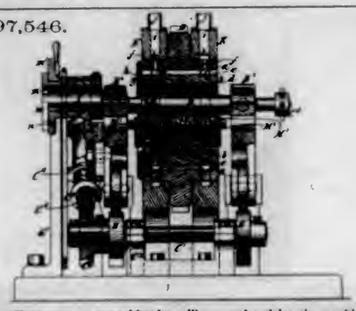
2. In a harvesting-machine, a frame, *c*, bent and pivoted to the shoe *f* at *g*, in combination with an apertured suspension-piece, *b'*, connecting the parts *c* and *f*, so as to form a pivot upon which the platform may be tilted.

3. In a harvesting-machine, a frame, *c*, bent and pivoted to the shoe *f* at *g*, and an apertured suspension-piece, *b'*, connecting the parts *c f*, in combination with a drag-bar, *r*, substantially as described, and for the purpose of tilting the platform *c'*.

4. A main driving and supporting wheel provided with a bevel-gear ring located under its rim, with the teeth of the same facing outward, and a cutting apparatus set oblique to the line of advance, combined with an actuating crank-shaft at right angles with the cutting apparatus and in the plane of the main-wheel axis, and the pinion on its forward end in engagement with said gear-wheel, whereby said crank-shaft may pass the center of the wheel and its pinion engage with a gear-wheel sheltered beneath the rim of the main wheel.

297,546. MACHINE FOR ROLLING AXLES. SILAS H. WILSON, Brooklyn, N. Y., assignor, by direct and mesne assignments, to Robert H. Thompson and Elizabeth Wilson, same place, and Henry D. Norris, New York, N. Y. Filed Apr. 27, 1883. (No model.)

297,546.



Claim.—1. In a machine for rolling round articles, the combination of an annular or female roller, male rollers extending within the same, and means for rotating them so that their adjacent surfaces will move in the same direction, the operation of rolling being performed by the interior surface of the female roller acting in conjunction with the exterior surfaces of the male rollers, substantially as specified.

2. In a machine for rolling round articles, the combination of an annular or female roller, male rollers extending within the same, means for rotating the rollers, and mechanism for producing a movement of the male rollers toward the opposite portion of the female roller, substantially as specified.

3. In a machine for rolling round articles, the combination of an annular or female roller, male rollers extending within the same, a chuck for holding the metal to be rolled, means for rotating the rollers, and mechanism for moving the male rollers toward the opposite portion of the female roller and raising and lowering the chuck correspondingly, substantially as specified.

4. In a machine for rolling round articles, the combination of an annular or female roller, male rollers, a chuck for holding a bar of metal to be rolled, and means for rotating the said rollers and the said chuck, substantially as specified.

5. In a machine for rolling round articles, the combination of an annular or female roller, male rollers, supports for the journals of the latter admitting of the adjustment thereof at different angles, and means for forcing the male rollers toward the opposite surface of the female roller with the front end in advance of the rear end, substantially as specified.

6. The combination, with the annular or female roller A, provided with channels, of bearings therefor provided with channels, and means for supplying water to these channels, substantially as specified.

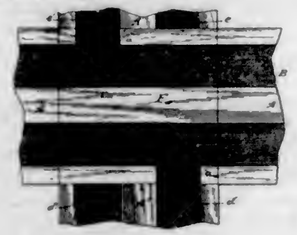
7. The combination, with the annular or female roller A and the male rollers B C, of a water-reservoir, and a roller rotating therein and in contact with the rollers B C, substantially as specified.

297,547. JUNCTION-BOX FOR ELECTRIC CIRCUITS. ALEXANDER P. WRIGHT, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 4, 1883. (No model.)

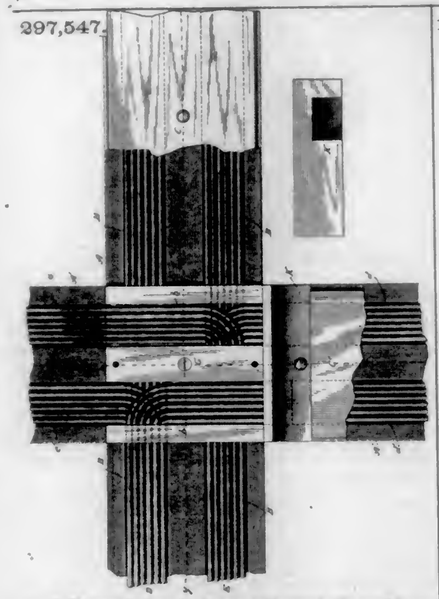
Brief.—Branch circuits are diverted from main circuits which are composed of a number of wires by cutting away the casing at the points where the branches diverge and inserting grooved supports, over which are led the branch wires, and whereby the main and branch conductors are separated.

Claim.—1. The combination, with the parallel conductors of an electric circuit, of a grooved holder for containing the main conductors, and a superposed grooved and perforated block for containing branches from the conductors and insulating the same, substantially as herein set forth.

2. The combination, with the parallel conductors of an electric circuit, of the block F, containing grooves and notches, and the superposed block G, containing transverse grooves and perforations, these parts being constructed and combined for forming a branch circuit or circuits in substantially the manner described.



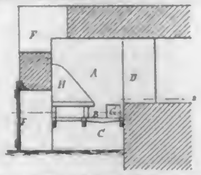
297,547.



3. The combination, with the grooved holders for the parallel conductors of a main and branch electric circuits, of a section, as F, having notches *a*, the block G, having transverse grooves, as *b*, and perforations, and a block or cover, all substantially as set forth.

4. The combination, with the grooved holders A and A′ and conductors composed of a number of wires, of a section, as F, with notches *a*, a block, as G, with transverse grooves and perforations for bending one or more wires from the section F over the block, and a cover for concealing and protecting the wires, all as set forth.

297,548. FIRE-GRATE. GEORGES ALEXIS-GODILLOT, Paris, France. Filed Jan. 15, 1884. (No model.)



Claim.—1. In a furnace, a fire-bed, H, constructed in the form of a semi dome, bell, cone, or pyramid, substantially as shown, and set with its back or vertical side against the wall of the furnace, and said fire-bed arranged with relation to the flue D, as shown, and adapted to operate substantially as set forth.

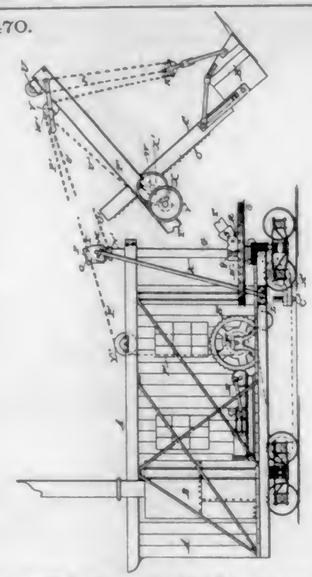
2. The combination, with a furnace-chamber constructed, as shown, with a charging-opening at its upper part, of the fire-bed H, of the form shown and described, set with its back or vertical face against the furnace-wall, and arranged with relation to the flue D, as shown, and the horizontal grate B, all arranged substantially as set forth.

REISSUES.

10,470. TRAVELING CRANE. HENRY M. BARNHART and EDWARD HUBER, Marion, Ohio. Filed Jan. 11, 1884. Original No. 285,100, dated Sept. 18, 1883.

Claim.—1. In a crane of the described class, the combination of a single hoisting-shaft, F, running in one direction, whether the load is to be raised or lowered, the chain-drums F′, journaled loosely upon the same shaft, and the clutch mechanism for coupling the drums to the shaft, whereby the crane-post may be turned right or left without reversing the shaft, substantially as and for the purpose shown and set forth.

10,470.



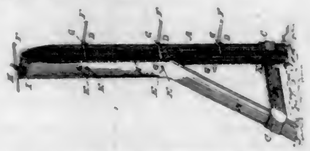
2. The mast G, provided with a head, I, having a recess, N, in its top, in which are journaled the sheaves P and sockets J′, adapted to receive the ends of the braces K, as and for the purpose shown and set forth.

3. The head I, having a recess, N, in its top, in which are journaled the sheaves P and sockets J and J′ J′, adapted to receive the head of the mast G and the ends of the braces K, as set forth.

4. The combination of the swinging jack-beams A″ A″, provided with jack-screws C″ and rods B″, by which the jack-beams are secured in their adjusted position, as and for the purpose shown and set forth.

5. The combination of the shaft F, the engine for rotating the same, the drums F′, journaled loosely upon the shaft, near each of its ends, the friction-clutches K′, the levers for operating said clutches, the chain G′, passing around the turn-table H, and secured at either end to the sliding drums F′, turn-table H, adapted to be rotated by the chain G′, hoisting-drum E′, loosely journaled upon the shaft F at its central part, friction-clutch M′, the lever for operating the clutch, hoisting-chain P′, mast G, pivoted to the turn-table, near its center, and provided with a head, I, and collar N′, loosely secured upon the mast G, below the head, and connected to the upper end of the crane T by a chain, O′, all constructed and combined as and for the purpose shown and described.

10,471. FENCE-POST. FANNIE S. SMITH, Topeka, Kans., assignor, by direct and mesne assignments, to H. THOMAS and W. F. THOMAS, same place, and L. C. LAURENT, Shawnee County, Kans. Filed Feb. 29, 1884. Original No. 292,141, dated Jan. 15, 1884.



Claim.—1. A metallic fence-post consisting of the standard formed by the parts A and A′ in one piece, disposed at right angles to each other, and having holes K E I, and notches D, connecting-brace B, and wire-ties C G H, all constructed and combined substantially as and for the purpose shown and described.

2. As an improved article of manufacture, a metallic fence-post formed of a single bar or strap bent at the point constituting the top of the post and doubled, one part having a quarter-turn, and the two parts being in contact and secured together to form the post-body, but being separated below so that the two may enter the ground apart from each other, thus forming a broad base for the post, the said two separated lower parts being tied or stayed by a horizontal brace, all substantially as set forth.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

THE BURROW-GILES LITHOGRAPHIC COMPANY *v.* SARONY.

Decided March 17, 1884.

1. The object of section 4962 R. S. is to give notice of the copyright to the public by placing upon each copy in some visible shape the name of the author, the existence of the claim of exclusive right, and the date at which this right was obtained. This notice is sufficiently given by the words "Copyright, 1882, by N. Sarony," found on each copy of the photograph under consideration.
2. The construction placed upon the Constitution by the first act of 1790 and the act of 1802 by the men who were contemporary with its formation, many of whom were members of the convention which framed it, is of itself entitled to very great weight; and when it is remembered that the rights thus established have not been disputed during a period of nearly a century, it is almost conclusive.
3. An author in the sense in which the term is used in the Constitution is "he to whom anything owes its origin; originator; maker; one who completes a work of science or literature." So, also, by "writings" in this clause of the Constitution is meant the "literary productions" of those authors, and Congress has very properly declared these to include all forms of writing, printing, engraving, etching, &c., by which the ideas in the mind of the author are given visible expression.
4. No doubt entertained that the Constitution is broad enough to cover an act authorizing copyright of photographs so far as they are representatives of original intellectual conceptions of the author, and the facts being that the photograph in question was made entirely from the plaintiff's original mental conception, to which he gave visible form by posing the subject in front of the camera, selecting and arranging the costume, draperies, &c., arranging and disposing the light and shade, suggesting and evoking the desired expression, *Held* that the photograph in question is an original work of art, of which the plaintiff is the author, and of a class of inventions for which the Constitution intended that Congress should secure to him the exclusive right to use, publish, and sell, as it has done by section 4952 R. S.

IN ERROR to the Circuit Court of the United States for the Southern District of New York.

Mr. David Colman for the plaintiff in error.
Mr. Aug. T. Gurlitz for the defendant in error.

Mr. Justice MILLER delivered the opinion of the Court.

This is a writ of error to the Circuit Court for the Southern District of New York. Plaintiff is a lithographer, and defendant a photographer, with large business in those lines in the city of New York. The suit was commenced by an action at law in which Sarony was plaintiff and the Lithographic Company was defendant, the plaintiff charging the defendant with violating his copyright in regard to a photograph the title of which is "Oscar Wilde No. 18." A jury being waived, the court made a finding of facts on which a judgment in favor of the plaintiff was rendered for the sum of $600 for the plates and 85,000 copies sold and exposed to sale, and $10 for copies found in his possession, as penalties under section 4965 of the Revised Statutes.

Among the finding of facts made by the court the following presents the principal question raised by the assignment of errors in the case:

3. That the plaintiff, about the month of January, 1882, under an agreement with Oscar Wilde, became and was the author, inventor, designer, and proprietor of the photograph in suit, the title of which is "Oscar Wilde No. 18," being the number used to designate this particular photograph and of the negative thereof; that the same is a useful, new, harmonious, characteristic, and graceful picture, and that said plaintiff made the same at his place of business in said city of New York, and within the United States, entirely from his own original mental conception, to which he gave visible form by posing the said Oscar Wilde in front of the camera, selecting and arranging the costume, draperies, and other various accessories in said photograph, arranging the subject so as to present graceful outlines, arranging and disposing the light and shade, suggesting and evoking the desired expression, and from such disposition, arrangement, or representation, made entirely by the plaintiff, he produced the picture in suit, Exhibit A, April 14, 1882, and that the terms "author," "inventor," and "designer," as used in the art of photography and in the complaint, mean the person who so produced the photograph.

Other findings leave no doubt that plaintiff had taken all the steps required by the act of Congress to obtain copyright of this photograph, and section 4952 names photographs among other things for which the author, inventor, or designer may obtain copyright which is to secure him the sole privilege of reprinting, publishing, copying, and vending the same. That defendant is liable under that section and section 4965 there can be no question if those sections are valid as they relate to photographs. Accordingly, the two assignments of error in this court by plaintiff in error are, first, that the court below decided that Congress had and has the constitutional right to protect photographs and negatives thereof by copyright. The second assignment related to the sufficiency of the words "Copyright, 1882, by N. Sarony," in the photographs, as a notice of the copyright of Napoleon Sarony under the act of Congress on that subject. With regard to this latter question it is enough to say that the object of the statute is to give notice of the copyright to the public by placing upon each copy in some visible shape the name of the author, the existence of the claim of exclusive right, and the date at which this right was obtained. This notice is sufficiently given by the words "Copyright, 1882, by N. Sarony," found on each copy of the photograph. It clearly shows that a copyright is asserted, the date of which is 1882, and if the name Sarony alone was used it would be a sufficient designation of the author until it is shown that there is some other Sarony. When, in addition to this, the initial letter of the christian name Napoleon is also given, the notice is complete.

The constitutional question is not free from difficulty. The eighth section of the first article of the Constitution is the great repository of the powers of Congress, and by the eighth clause of that section Congress is authorized—

> To promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.

The argument here is that a photograph is not a writing nor the production of an author. Under the acts of Congress designed to give effect to this section the persons who are to be benefitted are divided into two classes, authors and inventors. The monopoly which is granted to the former is called a "copyright," that given to the latter, "letters-patent," or, in the familiar language of the present day, "patent-right." We have, then, copyright and patent-right, and it is the first of these under which plaintiff asserts a claim for relief.

It is insisted in argument that a photograph, being a reproduction on paper of the exact features of some natural object or of some person, is not a writing of which the producer is the author. Section 4952 of the Revised Statutes places photographs in the same class as things which may be copyrighted with "books, maps, charts, dramatic or musical compositions, engravings, cuts, prints, paintings, drawings, statues, statuary, and models or designs intended to be perfected as works of the fine arts." "According to the practice of legislation in England and America," says Judge Bouvier, (2 Law Dictionary, 363,) "the copyright is confined to the exclusive right secured to the author or proprietor of a writing or drawing which may be multiplied by the arts of printing in any of its branches."

The first Congress of the United States, sitting immediately after the formation of the Constitution, enacted that the—

> Author or authors of any map, chart, book or books, being a citizen or resident of the United States, shall have the sole right and liberty of printing, reprinting, publishing, and vending the same for the period of fourteen years from the recording of the title thereof in the clerk's office, as afterward directed. (1 U. S. S., 124, s. 1.)

This statute not only makes maps and charts subjects of copyright, but mentions them before books in the order of designation. The second section of an act to amend this act, approved April 29, 1802, (2 U. S. S., 171,) enacts that from the 1st day of January thereafter he who shall invent and design, engrave, etch, or work, or from his own works shall cause to be designed and engraved, etched, or worked, any historical or other print or prints, shall have the same exclusive right for the term of fourteen years from recording the title thereof as prescribed by law.

By the first section of the act of February 3, 1831, (4 U. S. S., 436,) entitled an act to amend the several acts respecting copyright, musical compositions, and cuts, in connection with prints and engravings, are added, and the period of protection is extended to twenty-eight years. The caption or title of this act uses the word copyright for the first time in the legislation of Congress.

The construction placed upon the Constitution by the first act of 1790 and the act of 1802 by the men who were contemporary with its formation, many of whom were members of the convention which framed it, is of itself entitled to very great weight; and when it is remembered that the rights thus established have not been disputed during a period of nearly a century, it is almost conclusive.

Unless, therefore, photographs can be distinguished in the classification on this point from the maps, charts, designs, engravings, etchings, cuts, and other prints, it is difficult to see why Congress cannot make them the subject of copyright as well as the others.

These statutes certainly answer the objection that books only, or writing in the limited sense of a book and its author, are within the constitutional provision. Both these words are susceptible of a more enlarged definition than this. An author in that sense is "he to whom anything owes its origin; originator; maker; one who completes a work of science or literature."—Worcester. So, also, no one would now claim that the word "writing" in this clause of the Constitution, though the only word used as to subjects in regard to which authors are to be secured, is limited to the actual script of the author, and excludes books and all other printed matter. By "writings" in that clause is meant the "literary productions" of those authors, and Congress very properly has declared these to include all forms of writing, printing, engraving, etching, &c., by which the ideas in the mind of the author are given visible expression. The only reason why photographs were not included in the extended list in the act of 1802 is probably that they did not exist, as photography as an art was then unknown, and the scientific principle on which it rests and the chemicals and machinery by which it is operated have all been discovered long since that statute was enacted. Nor is it to be supposed that the framers of the Constitution did not understand the nature of copyright and the objects to which it was commonly applied, for copyright, as the exclusive right of a man to the production of his own genius or intellect, existed in England at that time, and the contest in the English courts, finally decided by a very close vote in the House of Lords, whether the statute of 8 Anne, chapter 19, which authorized copyright for a limited time, was a restraint to that extent on the common law or not, was then recent. It had attracted much attention, as the judgment of the King's Bench, delivered by Lord Mansfield, holding it was not such a restraint in *Millar v. Taylor*, (4 Burrows, 2303,) decided in 1769, was overruled on appeal in the House of Lords in 1774. (Ibid., 2408.) In this and other cases the whole question of the exclusive right to literary and intellectual productions had been freely discussed.

We entertain no doubt that the Constitution is broad enough to cover an act authorizing copyright of photographs so far as they are representatives of original intellectual conceptions of the author. But it is said that an engraving, a painting, a print, does embody the intellectual conception of its author, in which there is novelty, invention, originality, and therefore comes within the purpose of the Constitution in securing its exclusive use or sale to its author, while a photograph is the mere mechanical reproduction of the physical features or outlines of some object animate or inanimate, and involves no originality of thought or any novelty in the intellectual operation connected with its visible reproduction in shape of a picture; that while the effect of light on the prepared plate may have been a discovery in the production of these pictures, and patents could properly be obtained for the combination of the chemicals, for their application to the paper

or other surface, for all the machinery by which the light reflected from the object was thrown on the prepared plate, and for all the improvements in this machinery and in the materials, the remainder of the process is merely mechanical, with no place for novelty, invention, or originality. It is simply the manual operation, by the use of these instruments and preparations, of transferring to the plate the visible representation of some existing object, the accuracy of this representation being its highest merit. This may be true in regard to the ordinary production of a photograph, and that in such case a copyright is no protection. On the question as thus stated we decide nothing. In regard, however, to the kindred subject of patents for invention, they cannot by law be issued to the inventor until the novelty, the utility, and the actual discovery or invention by the claimant have been established by proof before the Commissioner of Patents; and when he has secured such a patent, and undertakes to obtain redress for a violation of his right in a court of law, the question of invention, of novelty, of originality, is always open to examination. Our copyright system has no such provision for previous examination by a proper tribunal as to the originality of the book, map, or other matter offered for copyright. A deposit of two copies of the article or work with the Librarian of Congress, with the name of the author and its title-page, is all that is necessary to secure a copyright. It is, therefore, much more important that when the supposed author sues for a violation of his copyright the existence of those facts of originality, of intellectual production, of thought and conception on the part of the author should be proved than in the case of a patent-right. In the case before us we think this has been done.

The third finding of facts says, in regard to the photograph in question, that it is a

> Useful, new, harmonious, characteristic, and graceful picture, and that plaintiff made the same * * * entirely from his own original mental conception, to which he gave visible form by posing the said Oscar Wilde in front of the camera, selecting and arranging the costume, draperies, and other various accessories in said photograph, arranging the subject so as to present graceful outlines, arranging and disposing the light and shade, suggesting and evoking the desired expression, and from such disposition, arrangement, or representation, made entirely by plaintiff, he produced the picture in suit. * * *

These findings, we think, show this photograph to be an original work of art, the product of plaintiff's intellectual invention, of which plaintiff is the author, and of a class of inventions for which the Constitution intended that Congress should secure to him the exclusive right to use, publish, and sell, as it has done by section 4952 of the Revised Statutes.

The question here presented is one of first impression under our Constitution, but an instructive case of the same class is that of *Nottage v. Jackson*, (11 Queen's Bench Division, 627,) decided in that court on appeal August, 1883.

The first section of the act of 25 and 26 Victoria, chapter 68, authorizes the author of a photograph, upon making registry of it under the copyright act of 1862, to have a monopoly of its reproduction and multiplication during the life of the author.

The plaintiffs in that case described themselves as the authors of the photograph which was pirated in the registration of it. It appeared that they had arranged with the captain of the Australian cricketers to take a photograph of the whole team in a group, and they sent one of the artists in their employ from London to some country town to do it.

The question in the case was whether the plaintiffs, who owned the establishment in London where the photographs were made from the negative and were sold, and who had the negative taken by one of their men, were the authors, or the man who for their benefit took the negative. It was held that the latter was the author, and the action failed because plaintiffs had described themselves as authors.

Brett, M. R., said in regard to who was the author:

> The nearest I can come to is that it is the person who effectively is as near as he can be the cause of the picture which is produced—that is, the person who has superintended the arrangement, who has actually formed the picture by putting the persons in position and arranging the place where the people are to be—the man who is the effective cause of that.

Lord Justice Cotton said:

> In my opinion "author" involves originating, making, producing, as the inventive or master mind, the thing which is to be protected, whether it be a drawing, or a painting, or a photograph;

and Lord Justice Bowen says that photography is to be treated for the purposes of the act as an art, and the author is the man who really represents, creates, or gives effect to the idea, fancy, or imagination.

The appeal of plaintiffs from the original judgment against them was accordingly dismissed.

These views of the nature of authorship and of originality, intellectual creation, and right to protection confirm what we have already said.

The judgment of the circuit court is accordingly affirmed.

Supreme Court of the United States.

BLACK *et al* v. THORNE *et al*.

Decided March 24, 1883.

> It does not always follow that, because a party may have made an improvement and obtained a patent for it, another using the improvement will be mulcted in more than nominal damages for the infringement. If other methods in common use produce the same result with equal facility and cost, the use of the patented invention cannot add to the gains of the infringer or impair the just rewards of the inventor. The inventor may, indeed, prohibit the use or exact a license-fee for it, and if such license-fee has been generally paid its amount may be taken as the criterion of damages to him when his rights are infringed. In the absence of such criterion the damages must necessarily be nominal.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. Chas. N. Black for the appellants.
Mr. D. B. Eaton for the appellees.

Mr. Justice FIELD delivered the opinion of the Court.

This is a suit on the equity side of the Court for the infringement of two patents, issued to the plaintiffs' intestate, one for an alleged "new and useful improvement for burning tan-bark, bagasse, sawdust, and other kinds of fuel, in a wet state, for the purpose of creating heat to generate steam, or to be employed in heating or drying operations," and the other for a "new and useful improvement in furnaces, in using as fuel bagasse and other carbonaceous substances, too wet to be conveniently burned in the usual way," with a prayer that the defendants may be decreed to account for and pay to the plaintiffs the gains and profits derived from making and using furnaces containing the inventions and improvements of the deceased, and be enjoined from further infringement.

The defendants contested the validity of the patents, but the court sustained them, and held that the defendants had infringed them by the use of furnaces containing the improvements patented in burning wet tan to generate heat employed in the tanning of hides. It therefore decreed that the plaintiffs recover the profits and gains which the defendants had made from this use of the improvements, and ordered a reference to a master, to take testimony on the subject and state an account of them. It also granted the injunction prayed, restraining further infringement.

The master took testimony on the subject, and reported that the plaintiffs were entited to recover from the defendants as profits made by them from the infringement the cost or value of the wood which, but for the use of the patented inventions, they would have burned in generating heat for their tanneries, which amounted to over $44,000. Upon exceptions, this report was set aside, the court holding that the rule adopted to ascertain the profits made was erroneous. (*Black* v. *Thorne*, 12 Blatchf., 20.) The case was thereupon again sent to the master, and further testimony was produced, upon which he reported that there was no proof before him showing what profits, if any, had been made by the defendants from the use of the plaintiffs' improvements. This report was confirmed, and a decree entered pursuant to it, that no profits were to be recovered of the defendants. From this decree the case is brought here by appeal.

The question presented for our determination relates to the correctness of these reports, the plaintiffs contending for the first one, the defendants for the second.

The rule adopted by the master in his first report, to ascertain the profits made by the defendants from the use of the improvements, was clearly wrong. The claims of the patents were confined to the use of the improvements to produce heat by the burning of wet fuel. The object sought was the production of heat. The question, therefore, was what advantage in its production did the use of the improvements in burning wet tan have over other known methods in common use of producing the same result—that is, the same heat. So far as the improvements by burning wet tan gave advantages in producing heat over other methods there was a profit or gain to the defendants. We can suppose that such advantage might arise from the rapidity with which the heat was produced, or from the diminished cost of its production, or in various other ways. The difference between the cost of generating heat by the use of the improvements and wet tan and the cost of producing it by the use of wood as a fuel could not be the measure of profit, unless with those improvements or with other methods wood was the only means besides wet tan of producing the same heat, and that was not shown. Other substances may have answered equally well as fuel.

On the second hearing before the master it was shown, and he so found and reported, that there were methods and furnaces other than those of the plaintiffs, and other than those burning dry fuel alone, which would produce the same results in generating heat for the purposes for which the defendants used the heat, and which methods and furnaces they had a right to use, and that the saving to them, or profits made by them, by the use of the plaintiffs' inventions over the other furnaces, was not proved. Such being the case, the report could not have been otherwise than as it was.

It does not always follow that because a party may have made an improvement in a machine and obtained a patent for it, another using the improvement and infringing upon the patentee's rights will be mulcted in more than nominal damages for the infringement. If other methods in common use produce the same results with equal facility and cost, the use of the patented invention cannot add to the gains of the infringer or impair the just rewards of the inventor. The inventor may indeed prohibit the use or exact a license fee for it, and if such license fee has been generally paid its amount may be taken as the criterion of damage to him when his rights are infringed. In the absence of such criterion the damages must necessarily be nominal.

Decree affirmed.

THE

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of April 29, 1884.

Patents	410	No. 297,549 to No. 297,958, inclusive.
Designs	12	No. 14,975 to No. 14,986, inclusive.
Trade-Marks	13	No. 11,140 to No. 11,152, inclusive.
Labels	13	No. 4,099 to No. 4,111, inclusive.
Reissues of patents	2	No. 10,472 to No. 10,473, inclusive.
Total issue	450	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	7	
Austria-Hungary	1		Hayti		
Barbadoes			Holland		
Belgium	1		Mexico		
Bermuda			New Zealand		
British Guiana	1		Norway		
Canada	3		Roumania		
Chili			Scotland		
Colombia, U. S. of			Switzerland	1	1
Cuba	1		West Indies		
Denmark					
Ecuador			Total to citizens of foreign countries	32	1
England	7				
France	10				

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	1	
Arizona Territory			Nevada		
Arkansas	2		New Hampshire	1	1
California	12		New Jersey	25	6
Colorado	5	1	New Mexico Territ'y		
Connecticut	15		New York	61	7
Dakota Territory			North Carolina	2	
Delaware	1		Ohio	35	
District of Columbia	2	1	Oregon	1	
Florida			Pennsylvania	45	
Georgia	1		Rhode Island	7	1
Idaho Territory			South Carolina	1	
Illinois	38	1	Tennessee	4	
Indiana	19		Texas	3	
Indian Territory	2		Utah Territory		
Iowa	7		Vermont	2	
Kansas	3		Virginia		
Kentucky	7		Washington Territ'y		
Louisiana	3		West Virginia	4	
Maine	4		Wisconsin	5	
Maryland	4	1	Wyoming Territory		
Massachusetts	40	5	United States Army	1	
Michigan	16		United States Navy		
Minnesota	2				
Mississippi	2		Total to citizens of the United States	390	25
Missouri	7	1			
Montana Territory					

DESIGNS.

14,975.—CHAIR.—*Charles Julius Bruschke*, Lake View, Ill. Application filed August 27, 1883. Term of patent 7 years.

14,976 and 14,977.—WATCH-CASE.—*John C. Dueber*, Newport, Ky. Applications filed December 31, 1883. Term of patents 7 years.

14,978.—WATCH-CHAIN.—*Charles K. Giles*, Chicago, Ill. Application filed September 13, 1883. Term of patent 7 years.

14,979.—ORNAMENTATION OF COTTON, SILK, OR OTHER FABRICS.—*Thomas Hardcastle*, Bradshaw Works, near Bolton, county of Lancaster, England. Application filed February 25, 1884. Term of patent 7 years.

14,980.—CURRY-COMB BACK.—*William P. Kellogg*, Troy, N. Y. Application filed November 17, 1883. Term of patent 7 years.

14,981.—SCONCE-FRAME.—*John C. Miller*, Meriden, Conn., assignor to *The Meriden Bronze Company*, same place. Application filed March 22, 1884. Term of patent 7 years.

14,982.—HOSIERY.—*George E. Nye*, Bristol, Pa., assignor of one-half to *Edward Tredick*, same place. Application filed February 18, 1884. Term of patent 7 years.

14,983.—HOSIERY.—*George E. Nye*, Bristol, Pa., assignor of one-half to *Edward Tredick*, same place. Application filed February 23, 1884. Term of patent 7 years.

14,984.—FOUNDATION-FRAME FOR A FLORAL PIECE.—*Henry F. Reed* and *Samuel Keller*, New York, N. Y. Application filed December 7, 1883. Term of patent 7 years.

14,985.—ORNAMENTATION OF UNDERSHIRTS.—*Seman A. Steenarton*, Montclair, N. J., and *Henry M. Keiser*, Brooklyn, N. Y. Application filed January 28, 1884. Term of patent 14 years.

14,986.—NEWEL-POST.—*Henry Textor*, Brooklyn, N. Y., assignor to *James S. Simpson* and *George F. Simpson*, both of same place. Application filed January 3, 1884. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

11,140.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"A black-band outer circle, a gold-band inner circle, a black interior space, and a gold shield, having upon them words and figures; also, the words 'GEORGE A. CLARK' and 'CLARK'S.'"

11,141.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"Two concentric circles, with a shield at the bottom upon the space between them and extending within the inner circle, the shield and the space between said circles being gold, and the figures and letters thereon black, and the circles and space within the inner circle black, with gold letters on said space; also, the words 'CLARK'S' and 'GEORGE A. CLARK.'"

11,142.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"Radiating lines, the words 'CLARK'S' and 'PAISLEY,' an ornamental border or line of circumference, and a peculiar arrangement of the lines formed by the words 'CLARK'S,' 'PAISLEY,' and 'CROCHET COTTON.'"

11,143.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"An arrangement of lines forming the outlines of a horseshoe, having within said outlines the words 'CLARK'S CROCHET COTTON.' Within said horseshoe, and parallel with said words, are the words and letter 'GEO. A. CLARK.' At the base of the line formed by them is the word 'AGENT.' At the bottom of the design, and between the two extremities of the horseshoe, is a shield, upon which are one or more numeral figures indicating the size of the thread. A line parallel with the interior line of the horseshoe surrounds or encircles the words and letter 'GEO. A. CLARK, AGENT,' and the shield, and a circular line forms the circumference of the entire design. Said circular line, the interior circular line, and the outline of the shield, and said words and letters are blue, the shield and the outlines of the horseshoe red, and the remaining portions of the design white."

11,144.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"Two concentric circles, having across the face of the inner circle two horizontal lines equidistant from the diameter of said circle, the space between said circles and between said lines being blue, with white lettering thereon, and the remaining space gold and white; also, the words, letter, and sign 'J. CLARK & CO.'"

11,145.—CAUSTIC POTASH AND LYE.—*Eliza N. Hall*, New York, N. Y. Application filed February 21, 1881.
"The representation of a ball upon a star of a solid color."

11,146.—PEGS FOR BOOTS AND SHOES.—*The Kearsarge Peg Company*, Bartlett, N. H. Application filed March 24, 1884.
"The figure of a red star or the word-symbol 'RED STAR.'"

11,147.—FLOUR.—*Philip Land* and *George Scaggyard*, Brownsville, Mo. Application filed March 31, 1884.
"The pictorial representation of a white swan upon water."

11,148.—OLIVE-OIL SOAP.—*Liebman & Butler*, New York, N. Y. Application filed February 28, 1884.
"The representation of three stars arranged in the form of a triangle."

11,149.—CIGARS.—*James Meade*, Penn Yan, N. Y. Application filed October 15, 1883.
"The words 'WILD ROSE' in connection with the picture of a female figure in a semi-nude state in the act of pulling roses from a bush in a field."

11,150.—WATCHES.—*Vacheron & Constantin*, Geneva, Switzerland. Application filed March 20, 1884.
"The representation of two interlaced horseshoes."

11,151.—BILL OR PAPER FILE HOLDERS AND CASES OF SHELVING FOR THE SAME.—*Edmund W. Woodruff*, Washington, D. C. Application filed March 19, 1884.
"The letters forming the word 'WOODRUFF' or 'WOODRUFF'S.'"

11,152.—LUMBER, BOARDS, LOGS, AND STAVES.—*Andrew Brown*, Buffalo, N. Y. Application filed March 12, 1884.
"The letter 'K.'"

LABELS.

4,099.—Title: "FRENCH ENAMEL OR PERFECT BEAUTIFIER."—*Madam Arnault & Co.*, Denver, Colo. Application filed April 7, 1884.

4,100.—Title: "DIETETIC OZONE WATER."—*The Chemical Ozone Manufacturing Company*, Boston, Mass. Application filed April 7, 1884.

4,101.—Title: "THE DOUBLE CONCENTRATED OZONE WATER."—*The Chemical Ozone Manufacturing Company*, Boston, Mass. Application filed April 7, 1884.

4,102.—Title: "OZONE POWDER."—*The Chemical Ozone Manufacturing Company*, Boston, Mass. Application filed April 7, 1884.

4,103.—Title: "SIMPLE OZONE WATER."—*The Chemical Ozone Manufacturing Company*, Boston, Mass. Application filed April 7, 1884.

4,104.—Title: "CONCENTRATED OZONE WATER.—*The Chemical Ozone Manufacturing Company*, Boston, Mass. Application filed April 7, 1884.

4,105.—Title: "FUMADORA," (FOR CIGARS.)—*Hamburger Bros. Co.*, Chicago, Ill. Application filed April 5, 1884.

4,106.—Title: "L. KNITTEL'S INDIAN HAIR TONIC."—*Louis Knittel*, Hoboken, N. J. Application filed April 2, 1884.

4,107.—Title: "PLATT'S CHLORIDES."—*Henry B. Platt*, New York, N. Y. Application filed April 8, 1884.

4,108.—Title: "IODIC COMP." (FOR A MEDICINE.)—*Paul S. Redfield*, Providence, R. I. Application filed April 5, 1884.

4,109.—Title: "ROGERS' GRAPOLINE." (FOR A MEDICAL PREPARATION.)—*James H. Rogers & Co.*, New York, N. Y. Application filed March 21, 1884.

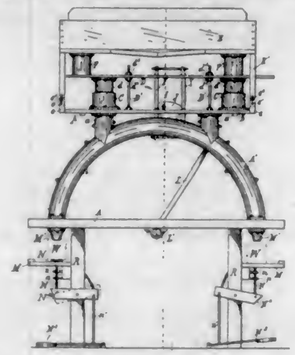
4,110.—Title: "TENDER FEET." (FOR BOOTS AND SHOES.)—*Louis Sleininger*, Baltimore, Md. Application filed April 2, 1884.

4,111.—Title: "BRANDYRE" (FOR BRANDY AND WHISKY.)—*Henry Snyder, Jr.*, Brooklyn, N. Y. Application filed April 5, 1884.

PATENTS

GRANTED APR. 29, 1884.

297,549. **MACHINE FOR FILLING CANS.** GEORGE ACKERMANN, Cincinnati, Ohio, and JOHN WAGNER, Dayton, Ky., assignors of one-third to Charles F. Louden, Cincinnati, Ohio. Filed Dec. 27, 1883. (No model.)



Claim.—1. In a machine for filling cans, the combination of a curved tube occupying a portion of the circumference of a circle, a piston reciprocating in said tube, and mechanism for regulating the supply of canning material to the piston and delivering said material in front of the piston, substantially as and for the purposes specified.

2. In a machine for filling cans, a tube having a supply-opening and a delivering-opening, an interiorly-reciprocating piston, plate B, a measure-tube sliding with plate D, and a supply-box having a delivery tube or opening for delivery, at stated periods, to the measuring-tube, of the material to be canned, substantially as and for the purposes specified.

3. In a machine for filling cans, a tube carrying a reciprocating piston, plate B, adjustable telescopic measure, sliding plate D, and a supply-box having a tube or opening for delivery to the measure, substantially as and for the purposes specified.

4. A machine for filling-cans, consisting of a semicircular tube, having an interior piston provided with mechanism for causing it to move in both directions in said tube, and mechanism, substantially as described for delivering the material to said tube alternately in front of the opposite ends of said piston, the latter being adapted to force the material from the ends of said tube, substantially as and for the purposes specified.

5. In a can-filling machine, the semicircular tube A', provided with an interior piston, said piston being connected to mechanism for causing it to move back and forth in said tube, and the tube A' being provided with the inlet-tubes *a a'*, in combination with the box or receptacle E and intervening mechanism, substantially as described, for causing some of the contents of said box to be alternately delivered to the tubes *a a'*, substantially as and for the purposes specified.

6. The semicircular tube A', provided with inlet-tubes *a a'*, and the box E, supported above said tube and provided with tubes F F', in combination with the sliding carriage D^2, carrying the tubes C *d* and C' *d'*, said last-named tubes being adapted to communicate alternately with the tubes F F' above and the tubes *a a'* below, substantially as and for the purposes specified.

7. The semicircular tube A', provided with inlet-tubes *a a'*, having a plate, B, secured on their upper ends, and the box E, provided with tubes F F', and supported on brackets E', connected to the plate B, in combination with the sliding carriage D^2, consisting of the plates D and B', and carrying the tubes C *d* and C' *d'*, the plate B' resting and sliding on the plate B, and the plate D resting against the lower ends of the tubes F F', substantially as and for the purposes specified.

8. In a can-filling machine, the combination of the telescopic tubes C *d* C' *d'*, sliding plate D, rigidly connected to tubes *d d'*, plate B, and a forcing-tube provided with tubes or openings *a a'*, and the supply-box E, having tubes or openings F F', substantially as and for the purposes specified.

9. The combination of the box E, provided with tubes F F', and supported on brackets E', connected to plate B, and capable of vertical adjustment, and the carriage D^2, resting and capable of sliding on said plate B, and consisting of the plate B' D, carrying the telescopic tubes C *d* and C' *d'*, the plate D, when the plate B' rests on the plate B, being held against the lower ends of the tubes F F' by means of the standards D', having set-nuts d^2 d^2, substantially as and for the purposes specified.

10. The semicircular tube A', provided with the interior piston-heads, K' K^2, connected to opposite ends of a piston-rod, K, the latter being connected to one end of a vibrating rod, L, the other end of said rod being connected to a rock-shaft, L', in combination with the sliding carriage D^2, constructed substantially as described, and provided with a yoke, I', and the cam J, connected to a shaft, I, and engaging with said yoke, and the operating-shaft G, and connecting and operating mechanism, substantially as described, for causing the cam J to revolve and the rod L to vibrate, substantially as and for the purposes specified.

11. The semicircular tube A', having an interior piston, K K' K^2, connected to one end of a rod, L, the other end of said rod being connected to a rock-shaft, L', provided with a crank-arm, L^2, in combination with the driving-shaft G, shaft G^2, gear-wheels G' g^2, crank G^3, and connecting-rod *l*, substantially as and for the purposes specified.

12. The sliding carriage D^2, constructed and supported substantially as described, in combination with the shaft I, having cam J, and the driving-shaft G and shaft G^2, and connecting and operating mechanism, substantially as described, for causing the shaft I and cam J to revolve to cause the carriage D^2 to move back and forth, substantially as and for the purposes specified.

13. In combination with the curved tube suitably supported, a funnel, M', located at the end of the tube, and a piston-head operating in said tube, the head consisting of a shell, *k*, and an interior supplemental piston, K^2, adapted to be advanced beyond the end of the shell *k*, substantially as and for the purposes specified.

14. The semicircular tube A', connected to the table A, and having at each end a funnel, M', in combination with the interior piston-heads, K' K^2, each head consisting of a shell, *k*, and an interior supplemental piston, K^2, adapted to be advanced beyond the end of the shell *k*, substantially as and for the purposes specified.

15. The combination of the curved tube and funnel M', and a hollow piston-head, K, operating in said tube, and the supplemental piston K^2, adapted to lie in the hollow piston and to be advanced beyond the end of the latter, and an elastic spring for retracting the supplemental piston when pressure thereon by the piston-rod is removed, substantially as and for the purposes specified.

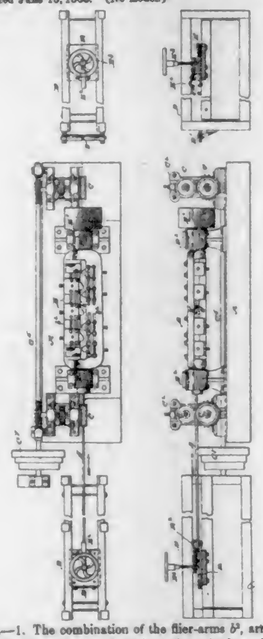
16. The combination of the shell *k* and the interior supplemental piston, K^2, connected to the piston-rod K, and having at its inner end a flange or stop, *k'*, and the spring k^2, compressed between said flange or stop and the bottom of the shell *k*, substantially as and for the purposes specified.

17. The semicircular tube A', constructed and supported substantially as described, and the shelves M, located beneath the ends of said tube, and each provided with a disk, N, and mechanism, substantially as described, for causing said disks to be raised and lowered, substantially as and for the purposes specified.

18. The table or shelf M, provided with adjustable stops *m* and with the disk N, in combination with the treadle N^2, rod *n'*, lever N^3, and rod N', for causing said disk to be raised, substantially as and for the purposes specified.

19. The semicircular tube A', having inlet-tubes *a a'*, the upper end of the last-named tubes being each provided with a sliding gate or cover, O, substantially as and for the purposes specified.

297,550. MACHINE FOR STRAIGHTENING METAL RODS. JOHN AGNEW, Cummings, assignor to the Agnew Shafting Company, Chicago, Ill. Filed June 18, 1883. (No model.)



Claim.—1. The combination of the flier-arms b^3, arranged in parallel planes on opposite sides of a plane through the axis, dies B^3, arranged opposite the axis, and suitable holding devices for securing the dies to the arms b^3, substantially as described.

2. In combination with the arms b^3 of the flier, arranged in different planes, as illustrated, dies applied to adjacent parallel faces of said arms, and caps B^4 and bolts b^4, for securing the said caps to the arms b^3, substantially as described.

3. In combination with the flier-arms and dies secured thereto, means for securing said dies adjustably lengthwise of the arms, substantially as described.

4. The combination, with the flier-arms b^3, provided with longitudinal slots, of dies B^3 and bolts b^4, arranged in the slots b^4, for adjustably clamping the dies in place on the arms, substantially as described.

5. In combination with the arms b^3 of the flier, arranged in parallel planes on opposite sides of the axis, recessed cap-plates B^4, bolts for securing said cap-plates to the arms and radial adjusting-screws B^5, substantially as described.

6. In combination with the arms b^3 of the flier, and the dies arranged on proximate faces of said arms, as shown, the recessed cap-plates B^4, resting on the arms b^3 at the sides and ends of the dies, clamping-bolts b^4 for holding said cap-plates to the arms, radial adjusting-screws B^5, and clamping-bolts b^4, substantially as described.

7. In combination with the alternating dies B^3, the supplemental dies or plates B^6, radially adjustable on the frame, and arranged in opposition to the extreme dies B^3, substantially as described, and for the purposes set forth.

8. The combination, with a flier carrying the straightening-dies, of two feeding devices, arranged one at one end and the other at the other end of the flier, and constructed, respectively, to push and draw the rod or shaft through the flier, substantially as described.

9. The combination, with the flier carrying straightening-dies, of two pairs of feed-rollers C C, one pair placed at each end of the flier, and axially in line therewith, and actuating mechanism constructed to rotate said feed-rolls simultaneously in the same direction and at equal speeds, substantially as described.

10. In combination with the flier carrying straightening-dies, the two pairs of feed-rollers C C, arranged at opposite ends of the flier, as shown, the shaft c of said feed-rolls provided with intermeshing gear-wheels c', the worm-wheels C^9, arranged on one shaft of each pair of feed-rolls, and a continuous worm-shaft, C^8, engaged with said worm-wheels, substantially as described.

11. In combination with the uprights C^2, provided with the vertical slot c^2, the feed-roller shafts c, bearing-boxes C', interposed removable block, C^4, and adjusting-screws c^3, substantially as described.

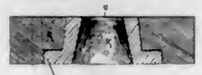
12. The combination, with the feed-roller shafts c, and a support or supports for said shafts, and the slotted uprights C^2 the bearing-boxes C', screws c^3, and interposed springs, c^3, substantially as and for the purposes set forth.

13. The combination, with a flier of a rod-straightening machine, and feeding devices for carrying the rod or shaft through the flier, of ways arranged at opposite ends of the machine, carriages running in said ways, and devices for holding the ends of the shaft applied to the carriages, substantially as described.

14. The combination, with the flier carrying the straightening-dies, feed-rolls at opposite ends of the flier for advancing the rod or shaft being straightened, ways D, carriages mounted in said ways, and devices upon said carriages for holding the ends of the shaft, of a stationary roller, D', near the feed-rolls at the end of the flier at which the shaft emerges, for the support of the straightened rod or shaft, substantially as described.

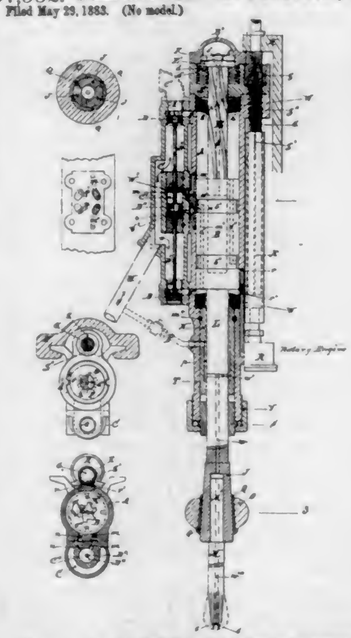
15. The combination, with the hollow gudgeon b of the flier, of an axially-apertured wooden plug, B^7, fitted to admit the shaft to be straightened, substantially as described.

297,551. DIE FOR DRAWING METAL RODS. JOHN AGNEW, Cummings, assignor to the Agnew Shafting Company, Chicago, Ill. Filed June 18, 1883. (No model.)



Claim.—The internal die having an internal conical compressing-bore terminating in a plain cylindrical drawing or sizing face, a, an exterior flange, a', and an exterior conical form of less slant than its interior bore, whereby the drawing or sizing bore a is backed by thicker wall or strengthened against stress and wear, substantially as shown and described.

297,552. STEAM ROCK-DRILL. JOHN F. ALLEN, Brooklyn, N. Y. Filed May 29, 1883. (No model.)



Claim.—1. In a rock-drill, the piston B, having two recessed parts, b' b'', in combination with passage-ways c' and c'', respectively, said passages c' c'' connecting the upper groove or recess in the piston with the lower part of the cylinder, and the lower recess in said piston with the upper part of the cylinder, in the manner and for the purpose described.

2. The piston D'', moving in a closed cylinder, C', arranged in the valve-chest C, in combination with cylindrical valves D D, working in a valve-chest open at its ends, and connected together by the valve-rod D', substantially as set forth.

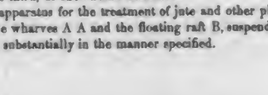
3. In a rock-drill, in combination with the cylinder A, provided with a piston, B, having two recesses, b' b'', and connected through passages c' c'', respectively, with the ends of cylinder A, and the cylinder C', provided with a piston, D'', attached to the valve-rod D', the passages n n' and m m', provided with self-acting valves, arranged to operate in combination with the edges of the piston B and of its recesses b' b'', in the manner and for the purpose substantially as described.

4. In a rock-drill, in combination with the central bolt, E, provided with an end flange, E', resting on disks d d', alternately held stationary in the cylinder-head A' and on said bolt E, the passage-ways h and h', disk F, with holes h'', closed by a self-acting valve, f, and the hollow chambered cap-piece B', arranged to operate by the pressure in the cylinder, substantially in the manner and for the purpose herein set forth.

5. In a rock-drill, the enlarged and tapering end J of the piston-rod I, divided or split in three or more parts, in combination with the gibs Q, made in two or more parts, the solid ring O, and the cutting-tool M, as and for the purpose described.

6. In combination with the piston of a rock-drill, working free in the cylinder, a series of disk-shaped springs, W, placed in the ends of the cylinder, substantially in the manner and for the purpose herein set forth.

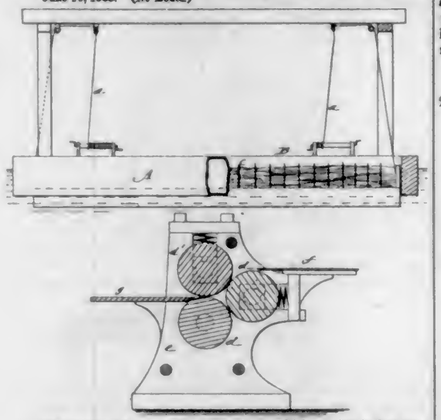
297,553. MUSIC-BOOK HOLDER. CLINTON S. ANDEN, Providence R. I. Filed Aug. 18, 1883. (No model.)



Claim.—1. In a book-holder, the glass clamp-piece C, combined with a spring-clamp, B, provided with a retaining-band, b, and a back or supporting piece, A, as shown.

2. In a book-holder, a transparent clamp-piece, C, combined with a clamping device, said clamp-piece constructed substantially as described to operate on the face of the book-pages, to hold the book open.

297,554. PROCESS OF AND APPARATUS FOR THE TREATMENT OF RAMIE AND JUTE. NICHOLAS ARTHURS, New Orleans, La. Filed June 19, 1883. (No model.)



Claim.—1. A process of treating plants, which consists in first saturating the stalks with water; secondly, crushing them; thirdly, breaking them into fine pieces, and, fourthly, removing the lint or fiber from the material, as described.

2. The combination, with the frames e, having the feed and delivery tables f g, of three plain-faced rolls, d d d', of which two are held by springs to the third, as shown and described.

3. The apparatus for the treatment of jute and other plants, which consists in the wharves A A and the floating raft B, suspended between the wharves, substantially in the manner specified.

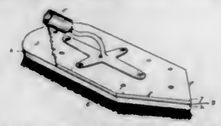
4. The combination of two pairs of rolls, h h h h, both pairs being longitudinally ribbed, but the ribs on the first being larger and coarser than those on the second pair, whereby the plants will be successively broken into coarse and fine pieces, as described.

5. In apparatus for beating or crushing jute or other plants, the combination of the fluted roller o and the reciprocating beater p, substantially as shown in Fig. 7, for operation in the manner specified.

6. The cylinder i, made hollow, covered with boards, having four longitudinal blades, k, and provided with lugs k', carrying pins, as and for the purpose specified.

7. The crusher consisting of the top rolls, m, bottom rolls, l, and side rolls, m', as and for the purpose set forth.

297,555. SCRUBBING-BRUSH. HARRIET E. BAKER, Springfield, Mass. Filed Nov. 15, 1883. (No model.)



Claim.—1. An improved scrubbing-brush consisting of the block 2, having an apex or point at one end formed at an angle of less than ninety degrees, and with rice fibers or roots secured in said block, a cover, 4, having the same form and firmly secured to said block, and a water-proof packing, 3, secured between said block and cover, all combined substantially as described.

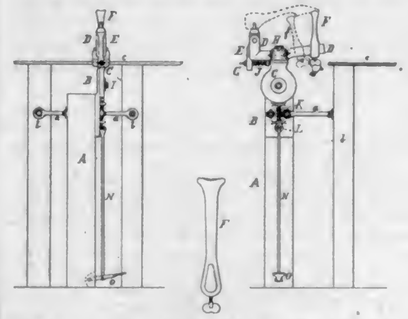
2. The combination, in a scrubbing-brush, of the block 2, having an apex or point at one end formed at an angle of less than ninety degrees, and with rice fibers or roots secured in said block, a cover, 4, having the same form and firmly secured to said block, a water-proof packing, 3, between said block and the cover, and a socket or shank secured to the cover adapted to receive and hold a handle, substantially as described

297,556. DEVICE FOR MANIFOLD COPYING. HERMAN G. BARLOW and JOHN B. BARLOW, Grand Rapids, Mich. Filed Sept. 20, 1883. (No model.)



Claim.—An improved blank for manifold copying, consisting of a sheet of paper divided into three equal sections by lines of perforations, and printed in the same manner herein shown and described, whereby the sections may be folded upon each other with a single sheet of copying-paper, in such manner that matter written upon one section will be reproduced upon the other two, substantially as set forth.

297,557. LASTING-JACK. JOS. BEAULIEU, Worcester, Mass., assignor of one-half to Levi Beaulieu, same place. Filed Feb. 13, 1884. (No model.)

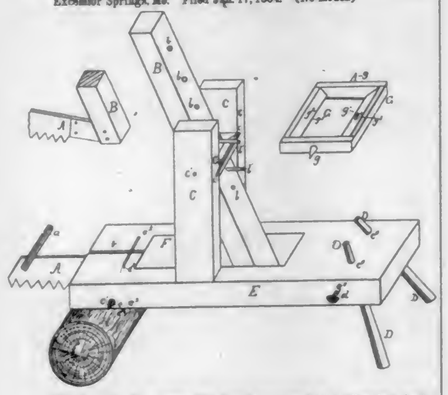


Claim.—1. The lasting-jack described, consisting of the standard B, supported and braced as set forth, the swivel C, with its joints at each end, and the arm D, carrying a spring-pin and rest for supporting the work, all constructed and operating as and for the purposes set forth.

2. The combination of the standard B, supported and braced as set forth, the swivel C, joined thereto by a movable joint held by a spring-bolt and notch, and connected to the arm D by a friction-joint at

right angles to the other, and the arm D, carrying the holding mechanism for the work, all constructed and operating substantially as described.

297,558. DRAG-SAW FRAME. MARLOW BECK and AUSTIN MCROREY, Excelsior Springs, Mo. Filed Jan. 17, 1884. (No model.)



Claim.—1. A crescent-saw frame composed of a vibrating shaft, B, supported in a yoke, G, between uprights C C, said uprights resting upon a horizontal piece, E, said piece having a slot, F, to receive the shaft, and a slot, f', to receive the saw, the front end of said piece resting upon the log to be sawed, and its back end upon legs D, all substantially as shown and described.

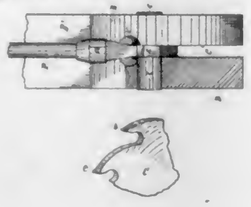
2. An improved crescent-saw frame for supporting the front end of a saw, composed of a vibrating shaft, B, said shaft being made adjustable in height, and supported in a yoke, G, said yoke having bearings in uprights C C, which are stayed upon a horizontal piece, E, said piece having a slot, F, to receive the shaft, and a slot, f', to receive the saw, and a bar, c^3, to stay the front end, and adjustable legs D, to support the back end of said frame, all substantially as shown and described.

3. The combination of a saw, A, with a frame composed of a shaft, B, supporting one end of said saw, supported in a yoke, G, having bearings in uprights C C, said uprights supported upon a horizontal piece, E, said piece having a slot, F, in which the shaft vibrates, and a narrow slot, f', said piece resting upon the log to be sawed at one end, and upon adjustable legs D D at the other, all substantially as and for the purpose set forth.

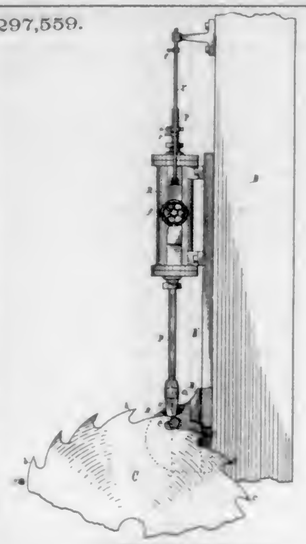
4. In an improved frame for carrying the front end of a crescent-saw, a vibrating shaft, B, adjusted in height by means of holes b, in which are placed pins b', a vibrating yoke, G, having arms g for bearings, and the front and back sides beveled from below and above g' g^3, forming an edge, g^3, and a horizontal piece E, made with a slot, F, to receive a vibrating shaft, and a slot, f', to receive a saw, and having a bar, c^3, over the slot f', and made with sharpened ends c^3, a pin, e, passing across the lower part of said slot f', to hold the saw up, the back end of said piece E being supported by means of legs D, adjusted in length by means of thumb-screws d, all substantially as shown and described, for the purpose specified.

297,559. SAW-SWAGING DEVICE. BENJAMIN F. BRIDGES, Big Rapids, Mich. Filed Aug. 17, 1883. (No model.)

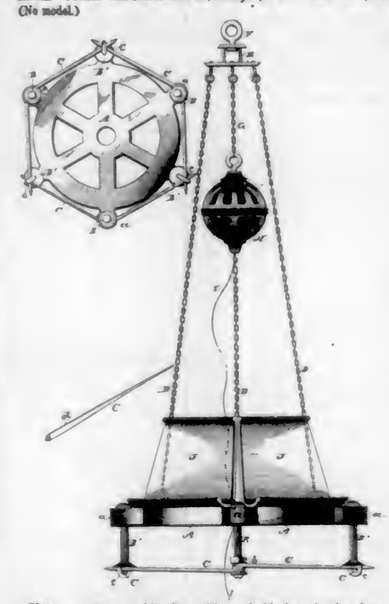
Claim.—The combination, with the die-support having the integral recessed extension, of the engine, swaging-hammer, and a die adapted for the swaging of a saw-tooth, all said parts constructed and associated in substantially the combination shown and described.



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297,560. COMBINED BAG AND TWINE HOLDER AND SHOW-RACK. GEORGE RANDOLPH BROWN, Palmyra, N. Y. Filed Oct. 5, 1883. (No model.)



Claim.—1. The combination, with a suitable base having depending fingers secured thereto, of a double-pointed needle centrally secured to one of the fingers, the opposite ends of the said needle adapted to be held in place by keepers secured to the fingers on opposite sides of the finger supporting the spring.

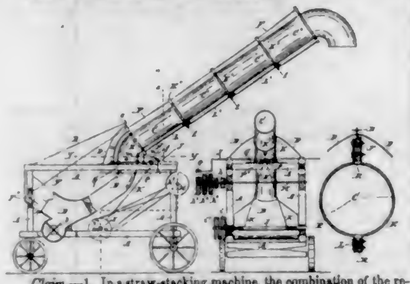
2. The combination, with a suitable base or frame and needle-attaching devices, of needles provided with sharpened upper edges, substantially as set forth.

3. The combination, with a swiveled link supporting a bag-holder, of a cord-holder suspended from said link between the bag-holder chains, substantially as set forth.

4. The combination, with a frame or base provided with bag-holding needles, and a central cord opening or passage, chains or equivalents, to the lower end of which the frame is suspended, and a swiveled link, of a chain or equivalent secured to the swiveled link between the chains to which the base or frame is secured, and a cord-holder suspended from said chain, substantially as set forth.

5. The combined device, consisting of a base provided with bag-supporting needles, racks for displaying or holding goods or other articles, and a twine or cord holder, all of the above parts combined as described.

297,561. STRAW-STACKING MACHINE. JAMES BUCHANAN, Indianapolis, Ind. Filed Oct. 12, 1883. (No model.)

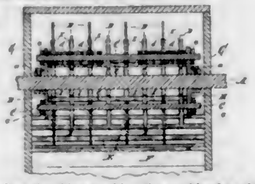


Claim.—1. In a straw-stacking machine, the combination of the receiver B, the fan b, the discharge-tubes C C' C', ring or shoulder G, anti-friction balls g g, the ropes K K, the shaft I, the arms m m, the shifting-rod J and arm j, the pulleys i i' on shaft I, the pulleys h h' and h^2 on shaft H, and the driving-belt O, substantially as described, and for the purpose specified.

2. In a straw-stacking machine, the combination of the receiver B, the fan b, the telescoping discharge-tubes C C' C', the iron bands E E' E', the blocks R R, the iron stays L L' L', the set-screws l l l, the braces n n, the shoulder G, and the flanges s s s, substantially as described, and for the purpose specified.

3. In a straw-stacking machine, the combination of the receiver B, the fan b, the telescoping discharge-tubes C C' C', ring G, the iron bands E E' E', the blocks R R, the wire rope F, the pivot s, and the braces D D D, substantially as described and specified.

297,562. THRASHING-MACHINE. JAMES BUCHANAN, Indianapolis, Ind. Filed Oct. 25, 1883. (No model.)



Claim.—In a thrashing-machine, the combination of the casing G, the receiver H, the solid concave bottom F, the grated concave formed by the round iron rods E E, the shaft A, the cast-iron disks B B, the iron rods C C, the beaters D D, the thin circular guide-plates I I, and the washers d d, all substantially as described, and for the purpose specified.

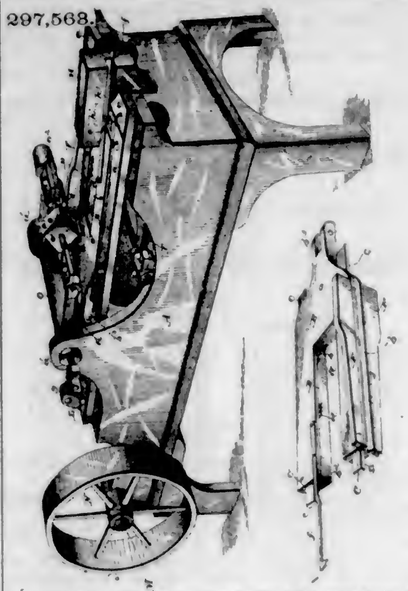
297,563. MACHINE FOR MAKING WEDGES. ARTHUR M. BURNHAM, Gardiner, Me. Filed Dec. 14, 1883. (No model.)

Claim.—1. In a machine for making wedges, the combination, with two rotary cutters situated in different horizontal planes, and each adapted to be moved toward and away from the other, of a carriage situated between the rollers and provided with devices for clamping the block therein.

2. The combination, with two cutter-carriers pivoted to the machine-frame and two revolving cutters, the shafts of which are journaled, respectively, in the free ends of the carriers, of a reciprocating carriage situated between the cutters and provided with devices for holding a block of wood therein.

3. The combination, with two cutter-carriers pivoted to the machine-frame and two revolving cutters, the shafts of which are journaled, respectively, in the free ends of the cutter-carriers, of a reciprocating carriage running between the cutters and provided with formers, and a

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single belt for operating the cutters and holding the cutter-carriers in contact with the formers.

4. In a machine for making wedges, the combination, with two cutter-carriers pivoted to the machine-frame, and cutters journaled, respectively, in the free ends of said carriers, of a carriage provided on its opposite faces with formers, against which the cutter-carriers rest, and a belt for holding the cutter-carriers in contact with the formers.

5. In a machine for making wedges, the combination, with rotary cutters, of a carriage adapted to reciprocate between the cutters and provided with dogs, which latter automatically engage the block of wood, carry it between the cutters, and automatically discharge it.

6. In a wedge-machine, the combination, with a carriage mounted upon ways, and provided with devices for automatically engaging and releasing the blocks, and further provided with formers for regulating the shape of the wedge, of an upper and lower rotary cutter and devices whereby the cutters are held in vertical adjustment, substantially as set forth.

7. The combination, substantially as before set forth, of the cutter, the reciprocating carriage, the hopper, and a feeding-hook secured to the carriage and adapted to draw a blank from the hopper at each reciprocation of the carriage.

8. The combination, substantially as before set forth, of the rotary cutters, the reciprocating carriage interposed between said cutters, the hopper, and a feeding-hook secured to the carriage and adapted to draw a blank from the hopper at each reciprocation of the carriage.

9. In a wedge-machine, the combination, with rotary cutters journaled in swinging frames, of a carriage mounted upon ways and provided with automatic devices for grasping and releasing the blocks, and mechanism whereby the carriage is reciprocated and the cutters rotated, substantially as set forth.

10. In a wedge-machine, the combination of swinging frames having rotary cutters journaled therein, automatically-operated dogs adapted to grasp, feed, and release the blocks, and formers for controlling the converging motions of the cutters, substantially as set forth.

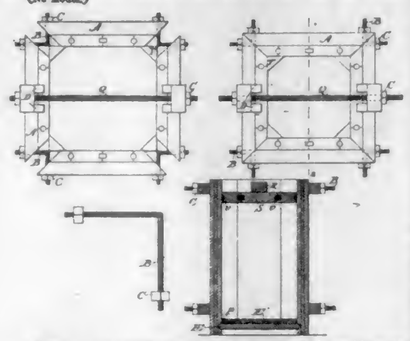
11. In a wedge-machine, the combination, with two rotary cutters driven by a single belt and having opposite rotary motions, of a carriage adapted to slide upon ways and provided with an automatic clamping device, a hook adapted to engage a block in the hopper, and templets for determining the angle of the wedge, and the ways, substantially as set forth.

12. In a machine for making wedges, the combination, with a suitable frame, a reciprocating carriage, and revolving cutters, of a slotted lever pivoted at one end to the frame, a pitman connecting the opposite end of said lever to the carriage, and a crank journaled to the frame and engaging the slotted lever, substantially as and for the purpose set forth.

13. The combination, with suitable cutters and a reciprocating carriage, the latter provided with an oblong open slot, of sliding bars situated on opposite sides of the slot and projecting from both ends of the

carriage, the said bars being provided with diagonal lugs, and dogs provided with diagonal slots in which the lugs of the said bars rest and move, and the stops secured to the frame against which the bars abut, substantially as set forth.

297,564. SILO. GEORGE E. BURT, Harvard, Mass. Filed Oct. 17, 1883. (No model.)



Claim.—1. A portable compressing silo composed of movable parts, constructed and arranged substantially as described.

2. The mechanism in a silo constructed with laterally-compressing sides, substantially as described.

3. The bands A A, connecting with angle-irons B B, screws and nuts C C, in combination with a silo, substantially as described.

4. The combination of the lever F, the connecting-arms H H, the toggle-joints J J, pivots I, I, G, and X, with post D, all arranged in a silo, substantially as described.

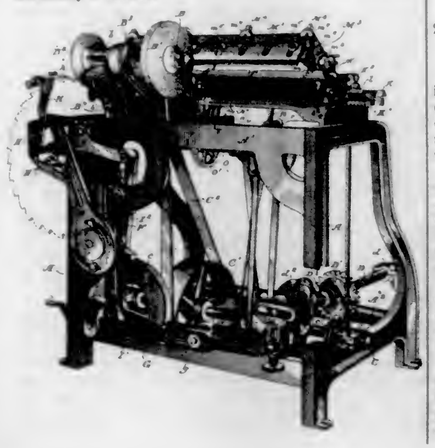
5. The combination of the toggle-joints J J J J, the arm O, the posts D D, the platens R and S, and rod Q, all arranged substantially as described.

6. In combination with a silo, the platen R S, constructed with grooves, and yielding packing in its joints, substantially as described.

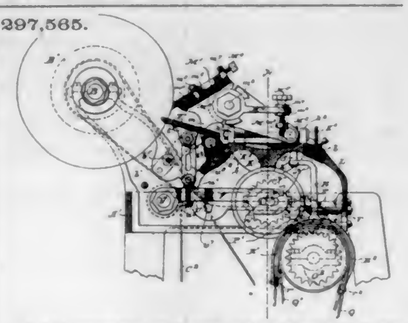
297,565. MACHINE FOR GRINDING CUTTER-KNIVES. LEWIS BUSH, Jr., Chicago, Ill., assignor to the American Machinery Company, same place. Filed June 1, 1883. (No model.)

Claim.—1. The combination, with a rotary grinding-disk and a longitudinally and laterally movable plate constructed to support a knife in position to be ground, of a movable table constructed to support said plate, and means constructed to give a vibratory motion to said table, substantially as described.

2. The combination, with a rotary grinding-disk, of a longitudinally-movable bed-plate, K, a knife-supporting plate, M', pivotally attached to said bed-plate and laterally adjustable thereon, a pivoted table, T, constructed to support said plate M', and means for vibrating said table, substantially as described.



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3. The combination, with a rotary grinding-disk and with a rotating shaft, N', provided with a crank-pin, n', of a longitudinally-movable bed-plate, K, a plate, M', pivotally attached to said bed-plate, a pivoted table, T, and a pivoted lever, V, connected to said table, and provided with a slot, v, constructed to engage the said crank-pin n', substantially as described.

4. The combination, with a rotary grinding-disk and with a rotating shaft, N', provided with a crank-pin, m', of a longitudinally-movable bed-plate, N, a plate, M', pivotally attached to said bed-plate, a pivoted table, T, a pivoted lever, V, connected with said crank-pin, a pitman, U, joining said lever with the said table, and adjustable connections between said pitman and lever, substantially as and for the purpose set forth.

5. The combination, with a rotary grinding-disk and a sliding bed-plate, K, of arms M, pivoted to said bed-plate, a knife-supporting plate, M', pivotally connected with the free ends of said arms, means for adjusting the angle of the plate M' with reference to the arms, and means for supporting the said plate M', substantially as and for the purpose set forth.

6. The combination, with a rotary grinding-disk and a sliding bed-plate, K, of arms M, pivoted to said bed-plate, means for adjusting the pivot connecting said arms with the bed-plate laterally upon said plate, a knife-supporting plate, M', pivotally connected with the free ends of the arms, means for adjusting the angle of the plate M with reference to the arms, and means for supporting the said plate M', substantially as and for the purpose set forth.

7. In a unitary machine for grinding cutter-knives and sharpening saws, the combination, with a stationary rotating arbor carrying two grinding-disks, and with a driving-shaft, of means for supporting and giving the necessary movements to a saw in relation to one of the grinding-disks, and a movable carrier for supporting a cutter-knife in proper position with reference to the other disk, substantially as described.

8. In a unitary machine for grinding cutter-knives and sharpening saws, the combination, with a stationary rotating arbor carrying two grinding-disks, and with a suitable driving-shaft, of means for supporting and giving the necessary movements to a saw, and means for supporting a cutter-knife and giving it a transverse vibratory motion, substantially as described.

297,566. SAW-SHARPENING MACHINE. LEWIS BUSH, Jr., Chicago, Ill., assignor to the American Machinery Company, same place. Filed June 1, 1883. (No model.)

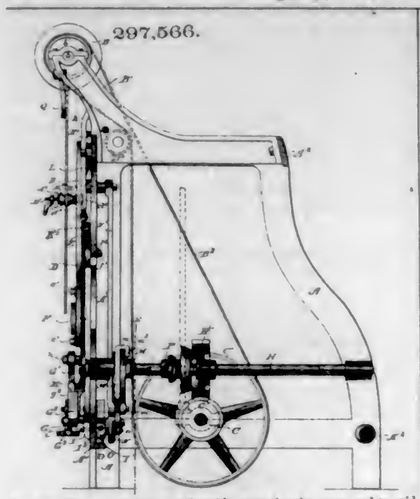
Brief.—The saw is automatically moved toward and from a rotating but otherwise stationary grinding-wheel, which first grinds the front or cutting face of the tooth, and then as the saw is simultaneously lowered and rotated the back of the tooth is ground, and by means of a former-block on the feed-lever the desired form is given to the back of the tooth.

Claim.—1. In a saw-sharpening machine, the combination, with the machine-frame and with a rotary grinding-disk mounted in stationary bearings, of a guide-plate, F, adjustably attached to the machine-frame, a sliding plate, E, means for supporting the saw from the plate E, constructed to permit said saw to be adjusted both laterally and vertically with reference to said plate, and means for reciprocating said plate, substantially as described.

2. In a saw-sharpening machine, the combination, with the machine-frame and with a rotary grinding-disk mounted in stationary bearings, of a guide-plate, F, adjustably attached to the machine-frame, a sliding plate, E, arm D, for adjustably supporting the saw upon the plate E, and means for reciprocating the said plate E, substantially as described.

3. In a saw-sharpening machine, the combination, with a rotary grinding-disk and with a sliding plate, E, for supporting the saw, of a lever, G, pivoted to the machine-frame and connected at one end to said plate E, means for operating said lever, and a guide-plate, F, pivoted to the machine-frame at its lower end at a point near the connection between

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the plate E and lever G, and adjustably secured at its upper end to said frame, substantially as and for the purpose set forth.

4. In a saw-sharpening machine, the combination, with a rotary grinding-disk, with a sliding plate, E, and with means for reciprocating said plate, of an arm, D, connected at one end to said plate so as to permit a rotary adjustment of said arm upon said plate, a pin, D', upon said arm for supporting the saw, and means for adjusting said pin longitudinally upon said arm and securing it in its adjusted position, substantially as described.

5. In a saw-sharpening machine, the combination, with the grinding-disk B, and with the sliding plate E, provided with a pivot-pin, e, of an arm, D, provided with an aperture for the insertion of said pivot-pin, with curved slots d, and with a longitudinal slot, d', bolts c', for securing said arm to the said plate, a pin, D', for supporting the saw, and means for adjustably securing said pin in the said slot d', substantially as described.

6. In a saw-sharpening machine, the combination, with a grinding-disk, B, and a sliding plate, E, for supporting the saw, of a lever, G, connected with said plate, a movable fulcrum for said lever upon the machine-frame, means for adjusting said fulcrum longitudinally of the lever, and means for operating said lever, substantially as and for the purpose set forth.

7. In a saw-sharpening machine, the combination, with a rotary grinding-disk, with a sliding plate, E, for supporting the saw, and with a crank-shaft, H, of a lever, G, provided with a longitudinal slot, g', a sliding block, I', provided with a pivot-pin, g, and a screw-shaft, I^2, for moving said block, substantially as described.

8. The combination, with the sliding plate E, and the shaft H, provided with a crank-pin, h, of the lever G, and adjustable means for connecting said lever with the crank-pin, substantially as described.

9. The combination, with the sliding plate E, the shaft H, provided with a crank-pin, h, and with the lever G, of a plate, G', adjustably attached to said lever, and provided with a slot, g^2, substantially as and for the purpose set forth.

10. In a saw-sharpening machine, the combination, with a grinding-disk, and with means for supporting the saw, of a feed-finger, k, a pivoted lever, K, a form-block, K^3, adjustably attached to said lever, a lever, L, having its end constructed to bear against said form-block, means for oscillating the said lever L, and a spring, K^3, for retaining the said form-block in contact with the said lever, substantially as described.

11. In a saw-sharpening machine, the combination, with the feed-finger k, with the lever K, and with means for operating said lever, of the plate K^4, sliding block K^6, adjusting-screw K^5, and means for adjustably securing the said plate to the said lever, substantially as described.

12. The combination, with the feed-finger k, with the lever K, provided with the form-block K^3, with the lever L, and with the shaft H, provided with an eccentric, M, of the lever N, provided with a movable fulcrum, n, and a pitman, N', substantially as described.

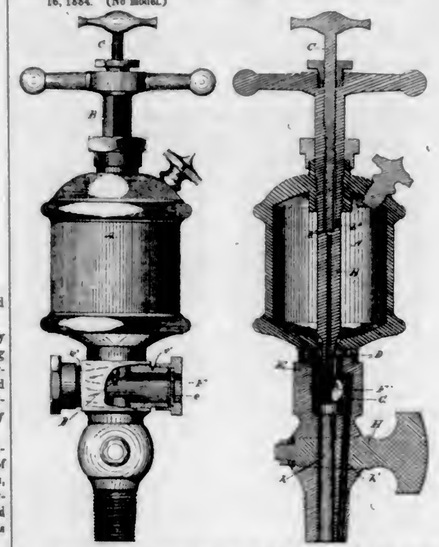
13. In the saw-sharpening machine described, the combination, with the lever K, provided with a form-block, as K^3, of a lever, L, arranged to engage the form-block, and having its pivotal point located above its point of contact with the said block, substantially as and for the purpose set forth.

14. The combination, with the feed-finger lever K, of a form-block, K^3, constructed of wood, and removably attached to said lever, substantially as and for the purpose set forth.

15. In a saw-sharpening machine, the combination, with a pin, D', for supporting the saw, of a stationary hollow cone, D^2, a cone, D^3, constructed to rotate freely on said pin, and means for adjusting said cone D^3 longitudinally upon said pin and holding it in its adjusted position, substantially as described.

16. The combination, with the pin D', and with the hollow cone D^3, of the cone D^3, the nut d^3, and a key, d^4, constructed to pass through a slot in said pin, substantially as described.

297,567. LUBRICATOR. MILTON S. CARELL, Quincy, Ill. Filed Feb. 16, 1884. (No model.)



Claim.—1. The combination, with the oil-cup having the valve-seat and opening at the bottom thereof, of the hollow stem through which the cup is vented, having the elongated tip or extension projecting through the valve-seat opening down into the chamber of the fitting, and the fitting having the glasses located in line with the tip of the elongated extension, whereby when the valve is raised slightly from its seat the oil will escape through the valve-seat opening, run down the elongated tip into the chamber of the fitting, and escape from said tip in the form of drops, which are visible through the glasses, substantially as described.

2. In combination with the oil-cup, projecting hollow spindle, horizontal sight-tube, and vertical delivery-tube, of the vent-tube opening into the delivery-tube at both top and bottom, substantially as described.

3. In a lubricator such as described, and in combination with the feeding devices, the fitting containing the sight-openings, and the vent-tube, the valve for closing or regulating the passage of steam through the vent-tube, substantially as described.

297,568. COMPOSITION FOR STAINING AND PRESERVING WOOD. SAMUEL CABOT, Jr., Boston, Mass. Filed July 16, 1883. (Specimens.)

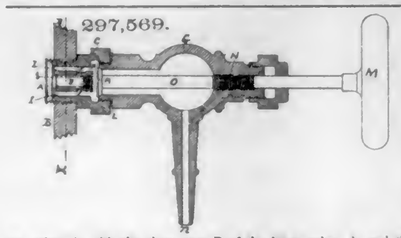
Claim.—A composition for staining and preserving wood, composed of rectified creosote-oil, or any of the distillates of coal-tar which pass over between 125° and 200° centrigrade, about fifteen per cent. of finely-divided pigment, and about ten per cent. of drying-oil, substantially as set forth.

297,569. GAGE-COCK. WILLIAM CASEY, Algiers, La. Filed July 9, 1883. (No model.)

Claim.—In a gage having two valves, one being placed on the inside of the boiler, the combination of the ports I, cast in shell C of in-

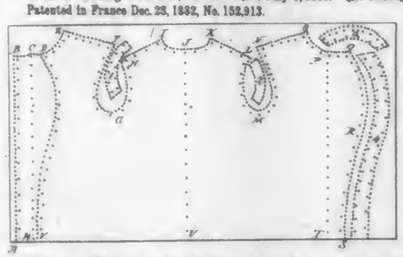


297,569.



ner valve, A, with the short stem D of the inner valve, A, and the screw N on stem O of the outer valve, R, all substantially as described, and for the purpose specified.

297,570. PATTERN FOR UNDER-GARMENTS. JEAN MARIE CLAUDIUS CHENIVESSE, Bourg St. Andéol, France. Filed July 5, 1883. (No model.) Patented in France Dec. 23, 1882, No. 152,913.



Claim.—1. The herein-described pattern for under-garments having the configurations shown and described, and provided with the lines of perforations A B C D E F G H I J K L M N O P Q R S T U V W, substantially as described, for the purposes specified.

2. The herein-described under-garment having the configurations shown and described, and provided with the lines of perforations A B C D E F G H I J K L M N O P Q R S T U V W, and, in combination therewith, of the bands 1, 2, and 3, substantially as described, for the purposes specified.

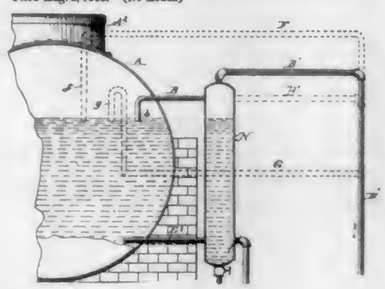
3. The herein-described pattern for under-garments having the configurations shown and described, and provided with the lines of perforations A B C D E F G H I J K L M N O P Q R S T U V W, and, in combination therewith, of the bands 1 2 3 4, substantially as described, for the purposes specified.

4. The herein-described sleeve-pattern having the configurations shown and described, and provided with the lines of perforations A' B' C' D' E' F' G' H' I' L', substantially as described.

5. In combination with the sleeve-pattern having the configurations shown and described, and provided with the lines of perforations A' B' C' D' E' F' G' H' I' K' L', the shirt-pattern having the configurations shown and described, and provided with the lines of perforations A B C D E F G H I J K L M N O P Q R S T U V W, substantially as described, for the purposes specified.

297,571. WITHDRAWN.

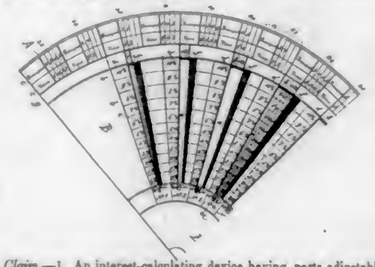
297,572. BOILER-FEEDER. WILLIAM CUNNINGHAM, Watsontown, Pa. Filed Aug. 2, 1883. (No model.)



Claim.—1. In a device for feeding water to a boiler in which the steam-supply to the pump is regulated by the height of the water, the combination of a steam-pump, a boiler, a cylinder intervening between the boiler and pump, and pipes connecting the cylinder with the boiler and pump, the cylinder having a steam-space in its upper part, said space being connected to the steam-space of the boiler by a pipe having its end bent downward, substantially as shown and described.

2. In a boiler-feeder, the combination of the boiler, the cylinder N, the steam-pipes B and B', the first entering the cylinder in the side, and the other at the top, the first pipe being bent downward in the steam-space of the boiler, the water-pipes E' E², and a steam-pump, whereby the boiler is fed automatically and water is prevented from entering the steam-cylinder of the pump, all substantially as shown and described.

297,573. INTEREST-CALCULATOR. ARNOLD DAVIDSON, Brooklyn, N. Y. Filed Aug. 16, 1883. (Model.)



Claim.—1. An interest-calculating device having parts adjustable one with relation to the other, upon which are displayed a table of interest and different expressions of each of the elements of principal, of rate, and of time in the interest-calculation problem, whereby such device is adapted to admit of the variation of the value of each and every of such elements, and thus show any amount of interest sought for, substantially as described.

2. A device for calculating interest which admits of the variation of any one of the three elements in the interest-calculation problem of principal, of rate, and of time, consisting of a lower disk or table bearing two of such elements, in conjunction with an interest-table and an upper disk or indicator bearing the remaining element, substantially as described.

3. In combination with an interest-calculating device, a table having grouped together pairs of factors, each of which pair has a common multiple with the others of the same group, such group consisting of two of the elements of the interest-calculation problem of principal, of rate, or of time, substantially as described.

4. In combination with a superincumbent disk or indicator, a lower disk or other device having thereon an interest-table, a part whereof consists of two of the three elements in the interest-calculation problem of principal, time, or rate, grouped together in pairs, each pair of which respectively is composed of two factors of a multiple common to it and every other pair of the same group, substantially as described.

5. In a device for calculating interest, an indicator having apertures of various widths therein, and having inscribed thereon adjacent to such apertures the different values of one of the three elements in the interest-calculation problem of principal, of rate, and of time, in combination with another disk or table bearing computations of interest, and, in connection therewith, the two remaining elements, substantially as herein shown and described.

6. An interest-calculator consisting of an indicator having apertures of various widths therein, and adjacent to such apertures different expressions of rates of percentage, in combination with an interest-table displayed in columns upon a disk or other device, and having, in connection with such columns, different expressions of the elements of principal and of time, substantially as herein shown and described.

7. In combination with a calculating device having a table of figures thereon, an indicator having apertures therein, and tracing-cloth or other transparent material covering a portion of such apertures, substantially as and for the purpose set forth.

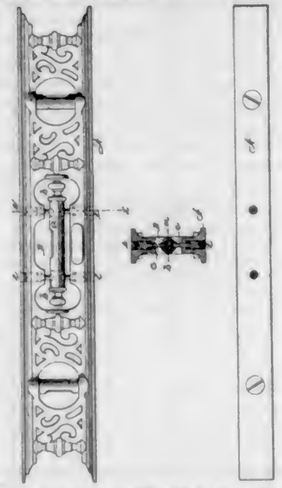
8. In an interest-calculating device, a lower disk or device having a computation table or tables thereon, and different expressions of two of the elements of the interest-calculation problem, in combination with an upper disk or indicator having therein apertures of various widths and bearing different expressions of the third element, substantially as herein described.

9. In a calculating device, a lower disk or device having a computation table or tables thereon and different expressions of two of the elements in the interest-calculation problem, in combination with an upper disk or indicator having apertures of various widths, adjacent to which are figure-columns and different expressions of the third element, substantially as described.

10. In combination with a lower disk having interest-computations thereon, a superincumbent revolubly indicator having a space or spaces thereon adapted to expose the subjacent interest-columns, and upon the margin of such space or spaces dollar and cent signs to various periods, whereby the proper value of the figures in the interest-computations displayed beneath is indicated, substantially as described.

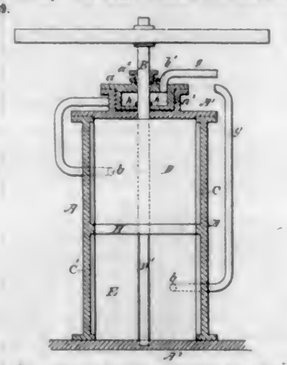
11. The combination of the projecting disk A with the upper disk, B, having therein apertures *e* and partial coverings *f* of transparent material, and the interest table or tables constructed and arranged for the purposes and substantially as shown and described.

297,574. SPIRIT-LEVEL. LEONARD L. DAVIS, Springfield, MASS. Filed Mar. 10, 1884. (No model.)



Claim.—A spirit-level having a longitudinal opening, B, between its opposite faces, two screws passing through each of said faces, and having their points terminating opposite each other within said opening, and a bubble-glass case adapted to be hung upon the points of said screws, all combined and arranged substantially as set forth.

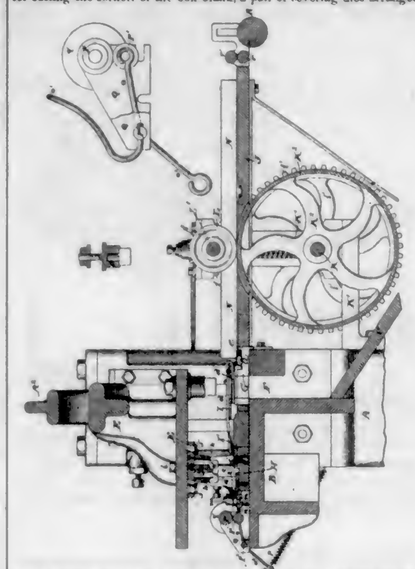
297,575. ROTARY ENGINE. ADOLF DECHER, Munich, Germany. Filed Oct. 11, 1883. (No model.) Patented in France Aug. 31, 1883, No. 144,929.



Claim.—In a rotary engine, the combination of a working-cylinder divided into two chambers by a horizontal partition, each chamber having two abutment-valves, E E, and steam inlet and outlet ports *b g*, with a shaft, B, provided with two piston-wings, D, for each chamber, a rotary valve, *k*, rigidly connected with shaft B, and operating in a valve-chest formed on one of the heads of the cylinder, and suitable connections between said valve, the source of steam-supply, and the cylinder-chambers, and connections to exhaust the spent steam from said chambers, said parts being constructed for co-operation substantially as described.

297,576. MACHINE FOR CUTTING STRAW-BOARD FOR PAPER BOXES. GEORGE H. DICKERMAN, Somerville, MASS. Filed June 9, 1883. (No model.)

Claim.—1. In a machine for cutting straw-board for making paper boxes, the combination of two pairs of rectangular male and female dies for cutting the corners of the box-blank, a pair of severing-dies arranged



to be adjusted toward and from the corner-cutting dies, and two crease-embossing blades arranged upon opposite sides of said severing-dies, and adapted to be adjusted toward and from said severing-dies, substantially as and for the purposes described.

2. In combination with the fixed bed B and vertically-reciprocating cross-head E, the die-plate H, having adjustably secured thereon the stationary cutting-die *c'*, and, firmly secured thereto in fixed positions, the slotted stand O^2, and the plate O, carrying the cutter blade or die *i'*, and provided with the rectangular guide-blocks O^2, and adjustably secured to the cross-head E, all substantially as and for the purposes described.

3. The plate O, adjustably secured upon the cross-head E, and having firmly secured thereon the cutting-die *i'*, and the two crease or fold embossing-blades *k k*, bolted to the under side of said plate O, and arranged to be adjusted thereon toward or from the cutting-die *i'*, all arranged and adapted to operate substantially as and for the purposes described.

4. The combination of two pairs of corner-cutting dies, arranged to be adjusted in a direction at right angles to the line of feed of the material, a pair of severing-dies or cutters arranged to be adjusted in a direction parallel with the line of feed of the material, and a pair of embossing-blades arranged upon opposite sides of and parallel to the movable severing-die, and to be adjusted toward and from said severing-die, substantially as described.

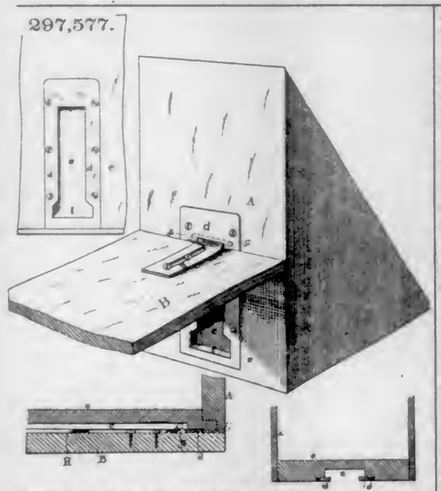
5. In combination with the vertically-reciprocating cross-head E and the severing and embossing dies, the delivery-roll P, mounted in fixed bearings, the shaft P^2, provided with the arms *o o*, *o'*, and o^2, the spring *p*, and the roll P', mounted in bearings in the movable ends of the arms *o o*, substantially as and for the purposes described.

297,577. PAPER-FILE. WILLARD D. DORENUS, Washington, D. C., assignor to Edmund W. Woodruff, same place. Filed Feb. 9, 1884. (No model.)

Claim.—1. A file holder or box, A, provided with undercut or flange groove *c*, and a shelf, B, combined with a T-head coupling-plate, H, or its equivalent, permanently attached to the shelf B, and engaged with the flanges *d* of the groove *c*, so as to permit a longitudinal or tilting movement of said box without disengagement at any moment.

2. A file holder or box, A, provided below with an undercut or flange groove, *c*, having an enlargement, *i*, and the shelf B, combined with a T-head plate, H, permanently attached to but capable of moving upon said shelf, the T-head lugs *g* of said plate being within said groove,

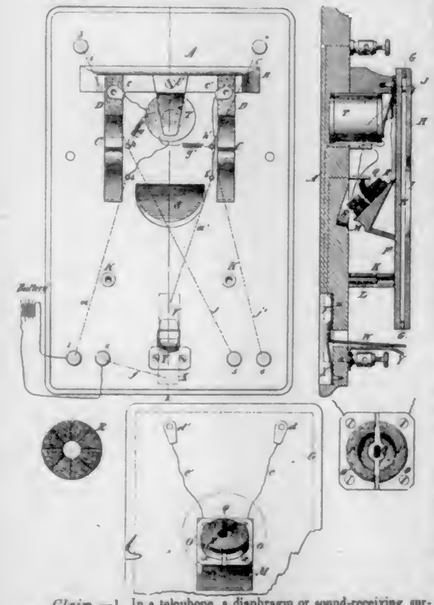
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to attach the box and shelf and be incapable of separation until said box has been withdrawn off the shelf and tilted, as shown and described.

3. The box A, provided with the undercut or flange groove *c* in the bottom *e*, and the shelf B, combined with the T-head plate H, fitted to enter and engage within the flanges of said groove *c*, and attached to said shelf, so that it may move thereon, as described, to permit the box A to move forward and tilt, as described, without at any moment being detached or detachable from said plate H.

297,578. TELEPHONE-TRANSMITTER. DANIEL DRAWBAUGH, Eberly's Mill, Pa., assignor to the People's Telephone Company, of New York. Filed Nov. 12, 1883. (No model.) Patented in Belgium Jan. 10, 1884, No. 63,302.



Claim.—1. In a telephone, a diaphragm or sound-receiving surface, two fixed electrodes coincidently inclined or having their upper surfaces inclined in the same plane, the said electrodes not being in electrical contact with one another, a loose electrode superimposed upon both of said fixed electrodes and resting upon said electrodes by gravity, and a means of maintaining said loose electrode in position upon the fixed electrodes, substantially as described.

2. In a telephone, a vertical diaphragm, two fixed electrodes supported upon said diaphragm and not in electrical contact with one another, a loose electrode superimposed upon both of said fixed electrodes and resting upon them by gravity, and a means of maintaining said loose electrode in position upon the fixed electrodes, substantially as described.

3. In a telephone, a diaphragm, a support secured to the rear side of said diaphragm and having an inclined upper surface, two fixed electrodes secured upon the inclined side of said support and not in electrical contact with one another, a loose electrode of like material resting upon said fixed electrodes, and a post of non-conducting material projecting from said support, and passing loosely through an aperture in said loose electrode, substantially as described.

4. In a telephone, a diaphragm rigidly fastened at one side and having a greater part of its periphery free and unattached, two electrodes inclined or having inclined upper surfaces supported upon said diaphragm, and not in electrical contact with one another, a loose electrode of like material resting upon said fixed electrodes by gravity, and a means of supporting the loose electrode to prevent it from sliding off the fixed electrodes, substantially as described.

5. In a telephone, a diaphragm, two fixed electrodes of semicircular segmental form, coincidently inclined, supported upon said diaphragm, and not in electrical contact with one another, a loose electrode, annular in form, and resting by gravity upon said fixed electrodes, and a post projecting above said fixed electrodes, and passing loosely through the aperture in said loose electrode, substantially as described.

6. In a telephone, two electrodes, one of said electrodes being loose, of substantially wedge-shaped cross-section, or having one side made heavier than the other, so that when said electrode is suspended said weighted or thicker side may, by the action of gravity, assume a lower position than the unweighted or thinner side, the said loose electrode forming a bridge between the fixed electrodes, substantially as described.

7. In a telephone, the combination of the diaphragm E, support M, plates O O′, fixed electrodes P P′, post Q, and loose electrode R, substantially as described.

8. In a telephone, a diaphragm rigidly secured at one end to a support, the greater part of the periphery of said diaphragm being unattached, a piece or pieces of elastic material being interposed between said diaphragm and the support, the inner side of said diaphragm near the free end thereof resting against a piece or pieces of elastic material supported in contact with said side, but not attached thereto, substantially as described.

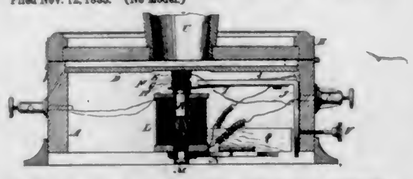
9. A telephone having no inclosing box or case, the electrodes being supported by the diaphragm, and the diaphragm being rigidly attached at one end to a support secured to the back or base board, substantially as described.

10. In a telephone, the combination of a diaphragm, E, supported at one end, the interposed frame or piece G, and cover H, having an orifice, I, the said cover being secured to and vibrating with the diaphragm, substantially as described.

11. In a telephone, the combination of the back or base board, A, the bar B, brackets C, posts L, and elastic tubes K, with the diaphragm E, interposed frame or piece G, and cover H, substantially as described.

12. In a telephone, the combination of the base-board A, bar B, brackets C, posts L, elastic tubes K, diaphragm E, interposed piece G, cover H, bracket M, socket-plates O O′, electrodes P P′, electrode R, post Q, induction-coil T, and circuit-connections, substantially as described.

297,579. TELEPHONE-TRANSMITTER. DANIEL DRAWBAUGH, Eberly's Mill, Pa., assignor to the People's Telephone Company, of New York. Filed Nov. 12, 1883. (No model.)



Claim.—1. In a telephone-transmitter, a diaphragm, an electrode supported by or otherwise connected so as to vibrate with said diaphragm, a second electrode sustained by a permanently-polarized vibratory support of inductive material in contact with the first electrode, the said support forming the armature of an electro-magnet having a permanently-polarized core, the contiguous ends of said armature and core being of like polarity, and the said electrodes and the coil of the electro-magnet being in circuit, substantially as described.

2. In a telephone, and in combination with the diaphragm thereof, and with an electrode supported by or vibrating with said diaphragm, a resistance-varying electrode mounted upon a vibratory polarized armature whose outward motion is resisted by a fixed polarized magnet, like poles being opposed, the power of the fixed magnet being varied in proportion to the strength of the current passing through a circuit in which is included both electrodes and a coil surrounding the fixed magnet, substantially as described

3. In a telephone, the combination of the diaphragm carrying one electrode, the vibrating electrode supported upon a polarized armature, the polarized magnet in the rear of the armature, the battery-coil, and circuit-connections, whereby the outward motion of the armature and its associated electrode is resisted by the polarized magnet with a force greater in proportion to the approach, and at the same time the power of the magnet is augmented in proportion to the pressure upon the electrodes incident to the increased contact produced by the motion of the diaphragm toward its associated electrode.

4. In a telephone-transmitter, a diaphragm or sound-receiving surface, an electrode supported by or otherwise connected so as to vibrate with said diaphragm, a second electrode sustained by a vibratory elastic support, a permanent magnet connected to and polarizing said support, a means of moving said magnet, and thereby the support, so as to adjust the initial pressure between the electrodes, and an electro-magnet acting upon said support, and included in circuit with the electrodes, substantially as described.

5. A telephone-transmitter containing an electrode supported by or vibrating with the diaphragm, and a second electrode supported upon a vibratory permanently-polarized armature, the said armature being arranged in front of the permanently-polarized core of an electro-magnet, two independent means of varying the initial pressure between said electrodes, one of said means consisting in a screw or analogous contrivance for moving the armature and its associated electrode, and the other of said means consisting in a device for moving the core of the electro-magnet nearer to or farther from the armature, and thereby causing said core to exercise a greater or less magnetic influence thereon, substantially as described.

6. In a telephone containing a diaphragm and a fixed electrode carried thereby or vibrating therewith, a vibratory electrode supported by an armature of inductive material, with a means of mechanically adjusting said armature, and also a means of magnetically adjusting said armature by the approach or recession of the pole of a permanent magnet, either or both of said means of adjustment of the armature operating to vary the initial pressure between the electrodes, substantially as described.

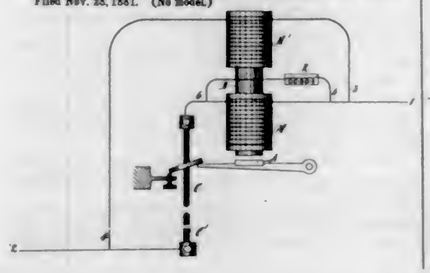
7. In a telephone, the combination of the diaphragm or other vibrating surface carrying an electrode, the opposing electrode supported upon an armature attached to one pole of a permanent magnet, and magnetized by induction therefrom, and the induction-coil supported upon and having its core magnetized by induction from another permanent magnet, and circuit-connections, substantially as described.

8. In a telephone containing circuit-connections, a diaphragm or sound-receiving surface, and an electrode carried by or vibrating with said diaphragm, an electrode having a vibratory support of inductive material polarized by a permanent magnet, the said support being placed in the magnetic field of a second permanent magnet, which second magnet constitutes the core of an induction-coil, substantially as described.

9. In a telephone, the combination of the diaphragm carrying an electrode, the polarized armature carrying a second electrode in contact with the first, the circuit-connections, and the induction-coil, whose core, polarized by induction, is located in line with the electrodes, and facing the armature to which one of said electrodes is attached, substantially as described.

10. The pivoted permanent magnet supporting the induction-coil and means for adjusting the same, in combination with the adjustable permanent magnet provided with a spring of inductive material carrying an electrode, and the diaphragm carrying a second electrode, substantially as described.

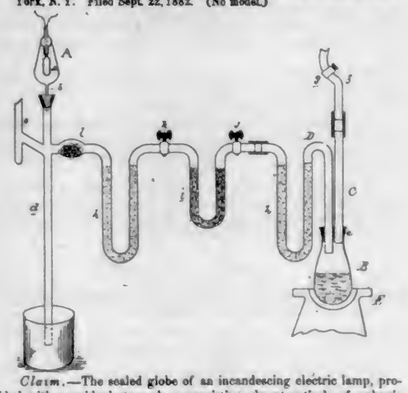
297,580. ELECTRIC-ARC LIGHT. THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Nov. 28, 1881. (No model.)



Claim.—1. In regulating mechanism for arc-lamps, the combination of the opposing solenoids or electro-magnets located one in the line and the other in a shunt around the arc, both of such solenoids or electro-magnets having the same resistance, substantially as set forth.

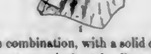
2. In regulating mechanism for arc-lamps, the solenoid or electro-magnets of the same resistance located in the line and in a shunt around the arc, in combination with a shunt around the solenoid or electro-magnet in the line, substantially as set forth.

297,581. INCANDESCENT ELECTRIC LAMP. THOMAS A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed Sept. 22, 1882. (No model.)



Claim.—The sealed globe of an incandescing electric lamp, provided with a residual atmosphere consisting almost entirely of carbonic monoxide, substantially as set forth.

297,582. DYNAMO-ELECTRIC MACHINE. THOMAS A. EDISON, Menlo Park, N. J. Filed June 29, 1883. (No model.)

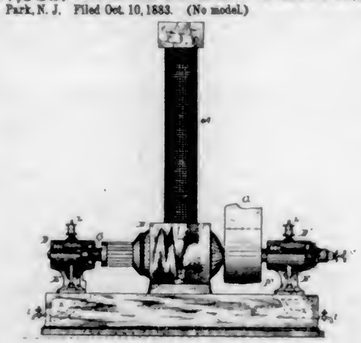


Claim.—1. The combination, with a solid cylindrical armature-core composed of disks strung on a shaft, and coils wound longitudinally thereon, of supports projecting from certain of said disks, forming longitudinal projecting rows, between which said coils are wound, substantially as set forth.

2. The combination, with the ordinary disks of the armature-core, of interspersed disks having slots or notches in their edges, and projecting supports inserted in said slots or notches, substantially as set forth.

3. The combination, with the ordinary thin disks of the core, of the interspersed thicker disks provided with projecting supports for the coils, substantially as set forth.

297,583. DYNAMO-ELECTRIC MACHINE. THOMAS A. EDISON, Menlo Park, N. J. Filed Oct. 10, 1883. (No model.)



Claim.—1. In a dynamo-electric machine driven by a belt, the shaft balanced in its bearings, and free to move in either longitudinal direction, substantially as set forth.

2. The combination, with a dynamo-electric machine driven by a belt, of means tending to move the shaft of the machine longitudinally in one direction, and means acting with equal force to move it in the opposite direction, substantially as set forth.

3. The combination, with a dynamo-electric machine driven by a belt, of a spring bearing against an end of the armature-shaft, substantially as set forth.

4. In a dynamo-electric machine driven by a belt, the combination of a spring bearing against an end of the shaft of the machine, and means tending to move said shaft against said spring, substantially as set forth.

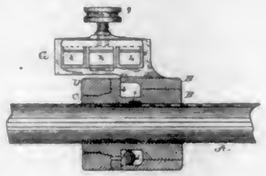
5. A belt-driven dynamo-electric machine placed at a slight angle from a vertical position, and provided with means resisting the consequent sliding tendency of the shaft of the machine, substantially as set forth.

6. A belt-driven dynamo-electric machine placed at a slight angle from a vertical position, and provided with a spring bearing against the lower end of its shaft, substantially as set forth.

7. In a dynamo-electric machine driven by a belt, the combination of an adjustable spring bearing against an end of the shaft of the machine, and means tending to move said shaft against said spring, substantially as set forth.

8. The combination, with a dynamo-electric machine, of a bed-plate therefor, formed as an open-ribbed frame, one or more oil-receptacles within said bed-plate, and one or more ducts leading from the journal-boxes to said receptacles, substantially as set forth.

297,584. DYNAMO-ELECTRIC MACHINE. THOMAS A. EDISON, Menlo Park, N. J. Filed Oct. 10, 1883. (No model.)



Claim.—1. The combination, in a commutator-brush holder, of the shaft or spindle, a cylinder fixed thereon, a movable collar concentric to said cylinder and carrying the brush, and adjusting means connecting said collar and cylinder, substantially as set forth.

2. In a commutator-brush holder, the combination of the cylinder fixed upon the shaft or spindle, the movable collar carrying the brush and sleeved upon the fixed cylinder, and the adjustable spring connecting the two parts, substantially as set forth.

3. The combination of the shaft or spindle, the inner cylinder formed as a split sleeve, the clamping-ring, and the outer adjustable collar carrying the brush, substantially as set forth.

4. The combination of the shaft or spindle, the inner cylinder having a pin entering a groove in said shaft or spindle, the clamping-ring, and the outer movable collar carrying the commutator-brush, substantially as set forth.

5. The combination, with the inner cylinder fixed upon the shaft or spindle and the outer movable collar thereon, of the adjustable spring attached to the movable collar, and the pin connecting said spring with the fixed cylinder, substantially as set forth.

6. The combination, with the adjustable collar provided with a projecting tube and the spring within said tube, of the inner fixed cylinder and a connection between the spring and said fixed cylinder, substantially as set forth.

7. The frame carried by the brush-holder and supporting the brush throughout the greater part of its length, substantially as set forth.

8. The combination, with the adjustable cylinder having a projecting head, of the brush-supporting frame carried by such head, substantially as set forth.

9. The combination of the adjustable cylinder having a projecting head provided with an aperture, the brush-supporting frame fixed in such aperture, and the brush held in such frame and adjustable through said aperture, substantially as set forth.

10. The combination of the longitudinally-divided brush and the brush-supporting frame correspondingly divided, the ends of the brush-divisions projecting beyond the frame, substantially as set forth.

11. The commutator-brush composed of alternate metal strips and layers of wires, substantially as set forth.

12. The longitudinally-divided commutator-brush composed of alternate metal strips and layers of wires, substantially as set forth.

297,585. INCANDESCING CONDUCTOR FOR ELECTRIC LAMPS. THOMAS A. EDISON, Menlo Park, N. J. Filed Oct. 10, 1883. (No model.)



Claim.—1. The incandescing conductor for an electric lamp, consisting of a carbonized tightly-twisted strip of paper or other suitable carbonizable material, substantially as set forth.

2. The incandescing conductor for an electric lamp, consisting of a carbonized tightly-twisted strip of paper or other suitable carbonizable material provided with a carbonizable cementing material, substantially as set forth.

3. The filament for forming, on carbonization, the incandescing conductor of an electric lamp, consisting of a tightly-twisted strip of paper or other suitable carbonizable material, substantially as set forth.

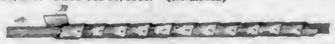
4. The filament for carbonization, consisting of a tightly-twisted strip of paper provided with a carbonizable cementing material, substantially as set forth.

5. The method of forming incandescing conductors for electric lamps, consisting in twisting a strip of carbonizable material into a homogeneous filament and carbonizing the same, substantially as set forth.

6. The method of forming incandescing conductors for electric lamps, consisting in twisting a strip of carbonizable material into a homogeneous filament, providing it with a carbonizable cementing material, and carbonizing the whole, substantially as set forth.

7. The method of forming incandescing conductors for electric lamps, consisting in twisting a strip of carbonizable material into a filament, treating the same with hydrofluoric acid or other gelatinizing or parchmentizing agent, to form a cementing material, and carbonizing the whole, substantially as set forth.

297,586. ELECTRICAL CONDUCTOR. THOMAS A. EDISON, Menlo Park, N. J. Filed Oct. 10, 1883. (No model.)

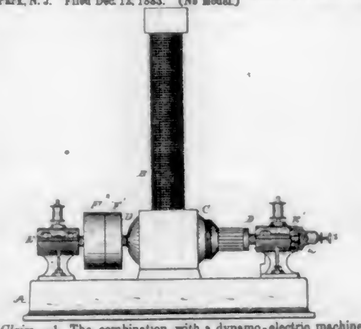


Claim.—1. The combination, with an electrical conductor, of a strip of parchment-paper wound spirally thereon, and a braided or wound retaining-covering, substantially as set forth.

2. As an insulator for electrical conductors, japanned parchment-paper, substantially as set forth.

3. The combination, with an electrical conductor, of a strip of japanned parchment-paper wound spirally therron with its edges overlapping, and a retaining-covering, substantially as set forth.

297,587. DYNAMO-ELECTRIC MACHINE. THOMAS A. EDISON, Menlo Park, N. J. Filed Dec. 12, 1883. (No model.)



Claim.—1. The combination, with a dynamo-electric machine, o means opposing the attraction of the driving-pulley by the field-magne of the machine, substantially as set forth.

2. The combination, with a dynamo-electric machine, of a spring bearing on the end of the armature-shaft and opposing the attraction of the driving-pulley by the field-magnet, substantially as set forth.

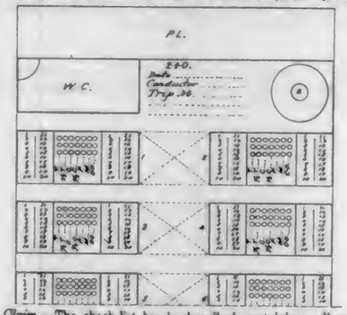
3. The combination, with a dynamo-electric machine, of a driving-pulley nearly removed from the attraction of the field-magnet, and means opposing the slight attractive influence of said magnet upon said pulley, substantially as set forth.

4. The combination, with a dynamo-electric machine, of a driving-pulley partly of magnetic and partly of non-magnetic material, substantially as set forth.

5. The combination, with a dynamo-electric machine, of a driving-pulley partly of magnetic and partly of non-magnetic material, and means opposing the attraction of the field-magnet for said pulley, substantially as set forth.

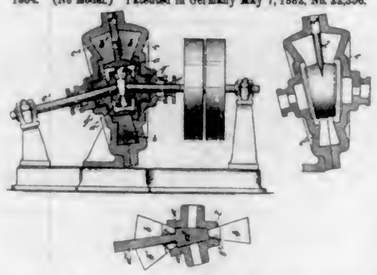
6. The combination, with a dynamo-electric machine, of a driving-pulley partly of magnetic and partly of non-magnetic material, and a spring opposing the attraction of said pulley by the field-magnet of the machine, substantially as set forth.

297,588. CHECK-LIST FOR REGISTERING RAILWAY-PASSENGERS. SAML. D. ELDRED, Minonk, Ill. Filed June 9, 1883. (No model.)



Claim.—The check-list herein described, containing a diagram of the interior arrangement of seats in a passenger-car, upon which the numbers of seats, station-numbers, and a series of letters indicating manner of payment of fare, are all combined substantially as and for the purposes described.

297,589. ROTARY ENGINE. CARL ENEK, Nuremberg, Bavaria, assignor to Victor Henry von Swaine, Wiesbaden, Germany. Filed Jan. 9, 1884. (No model.) Patented in Germany May 7, 1882, No. 22,356.



Claim.—1. A rotary engine consisting of the case *c c'*, beveled-gear wheels *a a'*, mounted upon shafts *e e'*, the said gear-wheels being connected with the paddles *b b'*, of the filler *d d'*, and of inlet and outlet pipes *f f'*, all combined and arranged substantially as herein shown and described.

2. In rotary engines, the case *c c'*, made in two parts, that are so arranged as to form the flanged pipes *f f'*, in combination with the filler *d*, having tail-piece *d'*, substantially as shown and described.

297,590. GLASS-PRESS. LOUIS FISCHER, Pittsburg, Pa. Filed Dec. 28, 1883. (No model.)

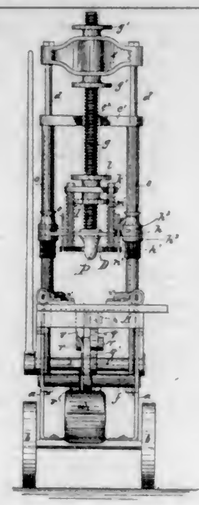
Claim.—1. In a press, the table A, provided with hollow standards, the rods *d*, located within said standards, and the plunger P, in combination with mechanism for reciprocating the rods, substantially as set forth.

2. In a press, the table A, having suitable hollow standards, the rods located within said standards, and the platen D, carrying the plunger, and having the sleeves A, adapted to slide on the standards, in combination with mechanism for reciprocating the rods, substantially as set forth.

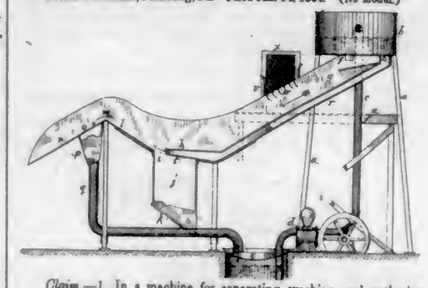
3. In a press, the table A, having hollow standards, the rods *d*, located within said standards, and the plunger P, in combination with the toggle-joint *g g'*, and mechanism for opening and closing said toggle-joint, substantially as set forth.

4. In a glass-press, the toggle-joint *g g'*, secured at one end to the table A, or a fixed part thereof, the other end being secured to the rods *d* below the table, in combination with the lever *e'* and the counter-weight, substantially as set forth.

297,590.



297,591. MACHINE FOR SEPARATING COAL FROM ASHES, &c. LOUIS O. FRAZIER, Pittsburg, Pa. Filed Jan. 14, 1884. (No model.)



Claim.—1. In a machine for separating, washing, and gathering small pieces of coke or breeze from ashes, clinkers, and the like, the combination of the elevated water-tank provided with a supply-pipe for feeding water thereto, and with holes through its bottom, the chute, and sub-raceway, said chute having the transverse opening at the lower end, an upward-inclined plane beyond said transverse opening, and the spout or declining slide provided with a sieve for separating the water from the breeze or washed coke, a funnel, a return-pipe, and a cistern, substantially as described.

2. The combination of the water-tank and cistern provided with communicating supply and return pipes, with the downwardly-inclined chute and sub-raceway provided with a transverse opening at the foot of said chute, the shorter upward incline, and the discharge-spout having a sieve, substantially as shown and described.

297,592. SHOE. PIERRE DAMASE FERCHINGER, Paris, France. Filed Aug. 16, 1883. (Model.) Patented in France Feb. 13, 1883, No. 153,684.



Claim.—1. In the manufacture of boots and shoes, the herein-described pattern, having the shank portion *a'*, heel-sections *b b*, and counter *c f*, whereby a boot or shoe may be made having the shank, vertical

walls of the heel-case, and counter in one piece, substantially as described.

2. In the manufacture of boots and shoes, the herein-described pattern, having the sole portion *a*, shank portion *a'*, heel portions *b b*, and counter *c f*, whereby a boot or shoe may be produced having the outsole shank, vertical walls of the heel-casing, and counter made of a single piece of material, substantially as described.

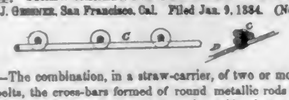
297,593. MANUFACTURE OF SPLIT BLANKS. WILLIAM GARRETT Beaver Falls, Pa. Filed Oct. 19, 1883. (No model.)



Claim.—1. The improvement in the art of manufacturing laterally split or divided blanks which consists in indenting or impressing in a suitably rolled and heated bloom one or more lateral gaps or recesses along the entire length thereof, and thereafter reducing the bloom to the required thickness, and simultaneously closing up the recesses thereof without welding the same, substantially as set forth.

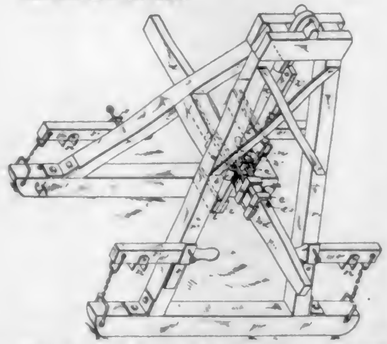
2. The improvement in the art of manufacturing laterally split or divided metallic blanks which consists in first rolling one or more lateral gaps or recesses in a bloom, and thereafter closing up said recesses and reducing the bloom to the required thickness by rolling the same parallel with the recesses thereof, substantially as set forth.

297,594. STRAW-CARRIER FOR THRASHING-MACHINES. MAXIMILLION J. GEBHART, San Francisco, Cal. Filed Jan. 9, 1884. (No model.)



Claim.—The combination, in a straw-carrier, of two or more flexible endless belts, the cross-bars formed of round metallic rods or wires bent to form loops or eyes, and rivets for securing said rods to said belts, substantially as and for the purpose described.

297,595. MECHANICAL POWER. WILLIAM SMITH GRAY, May, Tex. Filed Feb. 2, 1884. (No model.)



Claim.—1. As an improvement in mechanical powers, the combination, with the center bar having a pivoted cross-head at its lower end carrying two lifting-pawls, and two holding-pawls pivoted to the center bar above the cross-head, of two rack-bars working through the lower cross-head on the center bar and through a cross-head above the holding-pawls, and two levers for operating the pivoted cross-head and lifting-levers, substantially as specified.

2. In a mechanical power, the combination, with the center bar, pivoted cross-head, and rigid cross-head thereon, and the rack-bars, lifting-pawls, and holding-pawls, of the swinging hooks at the ends of the rigid cross-head on the center bar, for engaging the holding-pawls and keeping them out of engagement with the racks, substantially as specified.

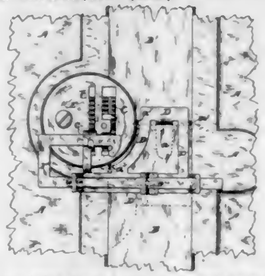
3. In a mechanical power, the combination, with the center bar and rack-bars and the lifting and holding pawls, of the pivoted cross-head having end sockets for the reception of the removable wooden levers, substantially as specified.

4. In a mechanical power, the combination, with the derrick, the posts of which are provided with the perforated stirrups, of the levers having clip-fulcrums, and chains provided with securing-pins connected at their power ends by chains to the runners of the derrick, substantially as specified.

5. In a mechanical power, the combination, with the pivoted cross-head at the lower end of the center bar, the rigid cross-head on the center bar, and the rack-bars connected by pivoted parallel bars at their lower ends, of the hold-pawls below the rigid cross-bar and the lifting-pawls pivoted in spaces in the pivoted cross-head on opposite sides of the center bar and provided with lever-handles, substantially as specified.

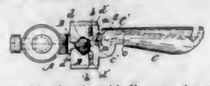
6. In a mechanical power, the combination, with the center bar provided with a base, a pivoted cross-head, a rigid cross-head, and lifting-pawls and holding-pawls, of the rack-bars having upper and lower pivoted cross-heads, substantially as specified.

297,596. HOLDER FOR SEWING-MACHINE ATTACHMENTS. JOHN M. GRIEST, Chicago, Ill., assignor to the Chicago Attachment Company, same place. Filed Nov. 5, 1883. (Model.)



Claim.—A holder for connecting attachments or parts of attachments to sewing-machines, the said holder consisting of a removable plate, D, having thereon the depending and horizontally-projecting yielding tongue *a* and one or more depending lugs, *a' a'*, substantially as and for the purposes set forth.

297,597. BINDING ATTACHMENT FOR SEWING-MACHINES. JOHN M. GRIEST, Chicago, Ill., assignor to the Chicago Attachment Company, same place. Filed Nov. 5, 1883. (Model.)



Claim.—The combination, in a binding attachment for sewing-machines, of the presser-foot A, cut-off at the needle-hole, and having thereon the studs *b b*, the set-screw B, and the binder C, the said binder having a neck or extension, C', and a flattened portion or shank, D, in which are the slots *d' d' d'*, an elongated needle-hole, and an opening, *d''*, all arranged, substantially as shown and described, with relation to each other, for the purposes set forth.

297,598. METHOD OF PRODUCING ARTIFICIAL PRECIOUS STONES. SAMUEL GROSSOURD, Les Mousierus, France. Filed Dec. 17, 1883. (No specimens.) Patented in France Oct. 25, 1883, No. 151,732.

Brief.—Improvement on Letters Patent No. 280,467, dated July 3, 1883, and No. 290,040, dated December 11, 1883, to same inventor.

Claim.—1. The herein-described method of obtaining artificial precious stones, which consists in fritting, fusing, or melting together superposed layers of colored enamels, as described.

2. The herein-described method of obtaining imitation precious stones of a given color or of a variegated color, which consists in fritting, fusing, or melting together superposed layers of colored enamels to a foundation-layer of strass, as described.

3. The herein-described method of obtaining imitation precious stones of a given color, or of variegated colors, which consists in fritting, fusing, or melting together alternating superposed layerr of strass and colored enamels, as described.

4. As a new article of manufacture, an imitation precious stone composed of enamels of different colors, as set forth.

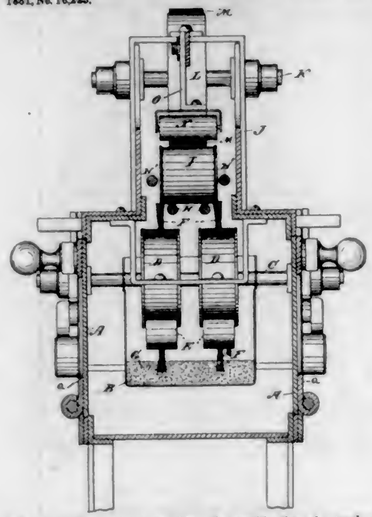
5. As a new article of manufacture, an imitation precious stone composed of enamels of different colors and strass, as described.

297,599. TWO-WHEELED VEHICLE. CHARLES S. HARPER, Sharon, Mass. Filed Apr. 27, 1883. (No model.)

Claim.—The combination of axle *b*, shafts *c*, cross-bars *d d*, springs *e e*, and links *f*, said cross-bars and springs being arranged relatively to

the axle to give the required balance to body *a* over the axle, and said springs and cross-bars being so relatively arranged that the springs shall be freely suspended in links *f* beneath said cross-bars, substantially as specified.

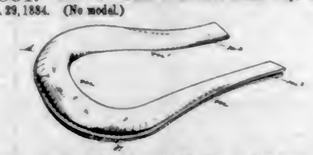
297,600. RESINING-MACHINE. BERNHARD HAUSHERR and JOHAN METZNERS, Cham, Switzerland, assignors to David S. Page, New York, N. Y. Filed Mar. 15, 1884. (No model.) Patented in Germany Feb. 19, 1881, No. 16,225.



Claim.—1. In a resining-machine, the combination of a track arranged to support and guide the articles to be resined, a reservoir for containing the resin, and an endless brush-band for applying the resin to the said articles, substantially as shown, and for the purpose specified.

2. The combination, in a resining-machine, of a track arranged to support and guide the articles to be resined, an endless band for moving such articles along said track, a reservoir for holding the resin, and an endless brush-band for applying the resin to said articles, substantially as shown, and for the purpose described.

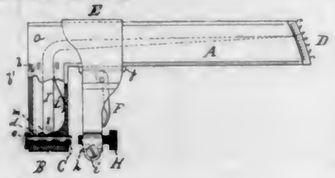
297,601. CRUPPER. HIRAM H. HENDRIX, Kansas City, Mo. Filed Feb. 29, 1884. (No model.)



Claim.—1. A crupper formed with the swelled bow *m*, curved shanks *m'*, and arms *m²*, having an external shell made of a single blank, A, of leather, cut or formed with enlarged body *a*, curved portion *a'*, and portion *a²*, as set forth.

2. The crupper described, composed of the blank A, having parts *a a' a²* and inclined crease *f*, the filling-piece B, and the core C, the blank A and core C being secured by stitches *f''*, and the whole constructed and operating as set forth.

297,602. MICROMETER. THOMAS HOOKER, Syracuse, N. Y. Filed Mar. 21, 1883. (No model.)



Claim.—1. In a micrometer, a jaw connected to the needle and consisting of a sliding bar projecting at both ends from the head, substantially as specified.

2. In a micrometer, a jaw consisting of a sliding bar provided with a stud operating in a slot in the index-needle, and with a handle or end projecting from the head, substantially as specified.

3. In a micrometer, a jaw consisting of a sliding bar arranged at a right angle to the index-needle and provided with a spiral stud, substantially as specified.

4. The arm E, carrying the adjusting-nut H and set-screw *i*, in combination with a body, A, carrying an index-needle, I, and a projecting sliding bar, C, having a rib, *d*, and handle *c*, substantially as shown and described.

5. The combination of the body A, carrying the needle I, spring L, and sliding projecting rod C, these elements constituting one portion of a micrometer, with the arm E, carrying the adjusting-screw H and set-screw *i*, constituting the remaining portion, and with means, substantially as shown and described, for adjustably securing one of said portions to the other, substantially as and for the purposes set forth.

6. The combination of the head B, sliding bar C, projecting at each end therefrom and having a stud, the slotted needle I, and the spring L, whereby the jaw may be opened and the needle operated from the outside of the head, and the jaw automatically self-closed against an object to be gaged.

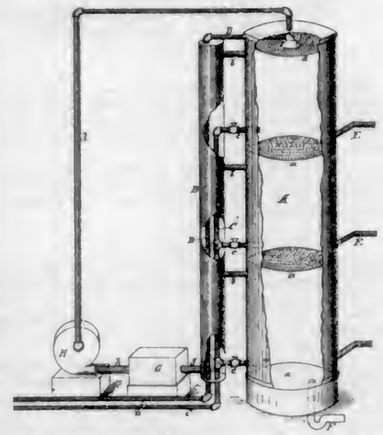
7. In a micrometer, a jointless index-needle and sliding bar operating together, and both controlled by a spring acting directly upon the needle, and through that upon the sliding bar, constructed and operating together substantially as set forth.

8. In a micrometer, the combination of the needle I, sliding bar C, projecting at both ends, spring L, scale D, arm E, and screw H, with the body A, constructed and operating together substantially as and for the purposes set forth.

9. In a micrometer, a sliding bar, C, provided with a handle, *c*, a multiplying-needle, I, and spring L, acting directly upon the scale D, in combination with the arm E and screw H, constructed and operating together substantially as described, for the purposes specified.

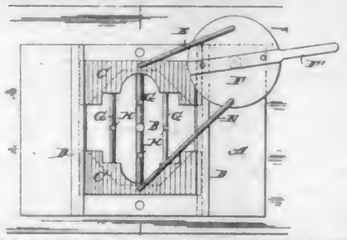
10. A micrometer consisting of the bar C, needle I, and spring L, inclosed in the body A, a scale, D, upon the body, and a screw, H, inclosed in the arm E, in combination with each other and operating together substantially as and for the purposes set forth.

297,603. APPARATUS FOR IMPROVING THE FIRE-TEST OF PETROLEUM AND FOR BLEACHING OTHER OILS. JOHN B. HUSTON, Cleveland, Ohio. Filed June 9, 1883. (No model.)



Claim.—The apparatus for improving the fire-test of oils and for bleaching animal and vegetable oils by a direct contact of live steam to petroleum or direct contact of bleaching material to animal or vegetable oils in a finely-divided condition, consisting of a vessel, A, divided by perforated floors *a* into two or more compartments, an air-pipe, B, connected to the upper part of said compartments by pipes *b b*, and inclosing a steam-pipe, C, connected to lower part of said compartments by pipes *c c*, and also inclosing oil-pipe D, connected to top chamber of vessel A, the vapor-escape pipes E, a box, G, for containing bleaching material, and a blower, H, connected through said box to air-pipe B and pipe I with top of vessel A, substantially as described.

297,604. DIE FOR PRESSING CLAY FENCE-POSTS. EPHRAIM IVEFF, North Ferrara, Ohio, assignor to himself and Frank Sheeran, same place. Filed July 23, 1883. (Model.)

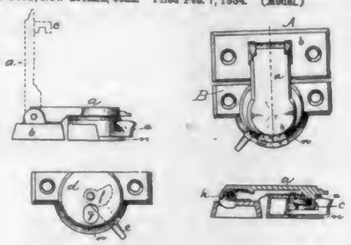


Claim.—1. A die for pressing clay fence-posts made substantially as herein shown and described, and consisting of a plate provided with an opening and two adjustable sliding plates, by means of which the opening can be enlarged and decreased, as set forth.

2. In a die for pressing fence-posts, &c., the combination, with a plate having an opening, of the sliding plates C and the rods H, held on curved rods G, extending across the opening of the plate A, substantially as herein shown and described.

3. In a die for pressing fence posts, the combination, with the plate A, having an opening, B, of the sliding plates C, the connecting-rods E, and the disk F, provided with a handle, F', substantially as herein shown and described.

297,605. FASTENER FOR MEETING-RAILS OF SASHES. OLIVER S. JUDD, New Britain, Conn. Filed Feb. 7, 1884. (Model.)



Claim.—1. The herein-described sash-fastener, consisting of the spring-pressed latch having the slotted stud, the keeper having orifice *g* to receive said stud, and provided with a locking-lever and cam for engaging said slotted stud, substantially as described, and for the purpose specified.

2. In a sash-fastener of the class described, a chambered keeper having a flat upper surface containing a slotted orifice, and provided with a locking-lever mounted within the chamber, substantially as described, and for the purpose specified.

297,606. PREPARATORY COATING FOR WIRE-DRAWING. VIRGIL D. KENERSON and CHARLES N. HOWE, Worcester, Mass. Filed Sept. 14, 1883. (No specimens.)

Claim.—1. As a coating for wire preparatory to drawing, a paste made of starch mixed with water and scalded and dried upon the surface of the wire, substantially as set forth.

2. A coating for wire preparatory to drawing, consisting of a paste made of starch mixed with water and scalded, and having combined therewith an alkaline substance—as sal-soda—substantially as hereinbefore set forth.

297,607. RAILROAD-TRACK CLEARER. GEORGE J. KINZEL, Knoxville, Tenn. Filed Oct. 24, 1883. (No model.)

Brief.—The under side of the scoop is flat, to allow it to move upon the faces of the rails, and is hung from a derrick mounted upon a truck and raised by ropes and a windlass.

Claim.—The combination, with a car or car-truck provided with a suitable derrick and windlass, of a scoop substantially of the form shown, and having its under side flat, and a slide-bar connected to its front edge, said scoop being suspended from the derrick by rope and pulley and connected to the car or car-truck by draw-bars, substantially as and for the purpose set forth.

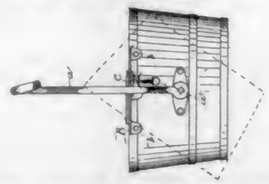
297,607.



297,608. PROCESS OF PRODUCING COLORED PICTURES ON POTTERY AND PORCELAIN. ADOLF KÜNTH, Leipsic, and ROBERT BEYERMANN, Gross Breitenbach, Germany. Filed Nov. 23, 1883. (No specimens.)

Claim.—The application and use of the chromo-lithographic process for the reproduction of colored pictures on pottery and porcelain, in the manner and for the purpose substantially as described.

297,609. SELF-DUMPING TUB. CHARLES P. LATTERCOR, Somerville, Mass. Filed Feb. 29, 1884. (No model.)



Claim.—1. The combination of the dumping-tub A, having the bail *a* pivoted thereto, as described, the locking-pawls C, the bolts D, for locking the pawls in place, and the latches F, for holding the bolts depressed, operated by the bail, all substantially as and for the purposes described.

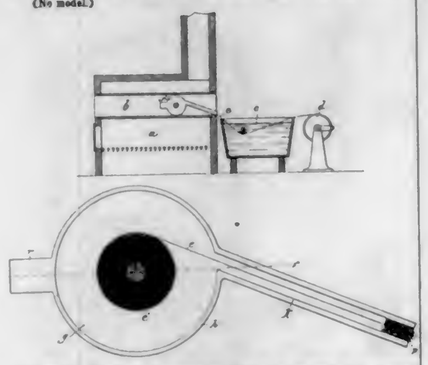
2. The combination of the dumping-tub A, having the bail *a* pivoted thereto, as described, the locking-pawl C, and pawl-locking bolt D, adapted to be moved to release the pawl C, all substantially as and for the purposes described.

3. The combination of the tub A, the bail *a* pivoted thereto, as described, the pawl C, pivoted, as described, the bolt D, for locking the pawl, and the arm E for depressing the bolt, all substantially as and for the purposes described.

4. The combination of the dumping-tub A, the bail *a*, and pawl C, bolt D, and latch F, all substantially as and for the purposes described.

5. The combination of the plate B, the pawl C, pivoted thereto, the spring-actuated rod d^3, carrying the bolt D, and secured to the side of the tub, as described, the bail *a*, unlatching-arm E, and the bolt-holding latch F, pivoted to the plate B, all substantially as and for the purposes described.

297,610. METHOD OF AND APPARATUS FOR HARDENING STEEL RIBBON. JOHN LOGAN, Waltham, Mass. Filed Dec. 13, 1883. (No model.)

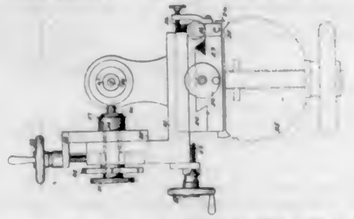


Claim.—1. That improvement in the art or method of hardening steel ribbon for springs which consists in coiling the ribbon and inclosing the coiled ribbon in a case or body of metal, heating it therein, and uncoiling or unwinding the heated ribbon and cooling the same as it is unwound, substantially as described.

2. The furnace, combined with a case inclosing the coiled ribbon to be hardened, and protecting the said ribbon from the air or gases in the furnace, and means to cool the said ribbon as it is unwound from the case, substantially as described.

3. The case having a flanged main or body portion and cover, combined with a central pivot for the coil of ribbon, the said case having a nose for guiding and protecting the ribbon as it is unwound from the interior of the case.

297,611. MACHINE FOR MAKING GEM-SETTINGS. CHARLES L. LOVERIN, Brooklyn, N. Y. Filed Sept. 25, 1883. (No model.)



Claim.—1. The combination, with suitable slides, as 20 21, of the hollow sleeve, as 27, and chuck 30, and means carried by the vertical portion of said slide 21 for supporting the same, substantially as described.

2. The combination, with suitable slides, as 20 21, of the hollow sleeve, as 27, chuck, as 30, gage-plate 28, and means carried by the vertical portion of said slide 21 for supporting the same, substantially as described.

3. The combination, with the slides 20 21, of the slide 22, provided with means for vertically adjusting it and for carrying a chuck, as 30, substantially as described.

4. The combination, with the slides 20 21 and the base-plate 23, of the slide 22, provided with means for vertically adjusting it and for carrying a chuck, as 30, substantially as described.

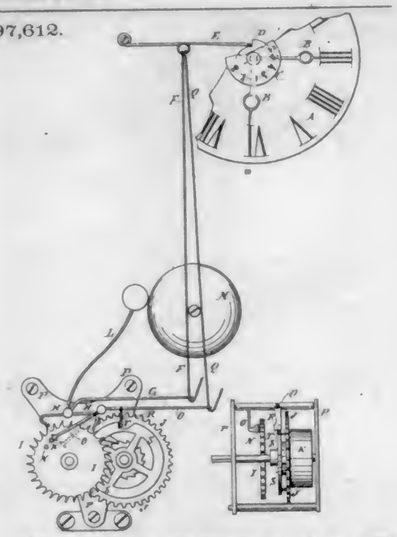
5. The combination, with the slides 20 21, of the slide 22, provided with a hollow sleeve, as 27, a chuck, as 30, and means for vertically adjusting said slide 22, substantially as described.

6. The combination, with the slides 20 21, of the slide 22, provided with a hollow sleeve, 27, a chuck 30, and a gage-plate 28, and means for vertically adjusting said slide 22, substantially as described.

7. The combination, with the slide, as 22, hollow sleeve 27, having short stud 32, and gage-plate, as 28, of a chuck, as 30, mounted in said hollow sleeve and held therein by a back nut, 31, substantially as described.

297,612. EIGHT-DAY CLOCK ALARM. C. FRED. LOCHER, Montgomery, N. Y. Filed Aug. 15, 1883. (No model.)

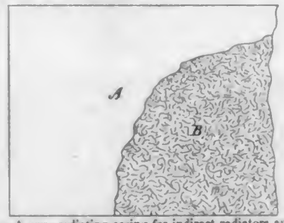
297,612.



Claim.—1. An eight-day alarm attachment for clocks, constructed substantially as herein shown and described, and consisting of the dial and cam C D, the lever E, the connecting-wire, pallet-arm, and pallet F G H, the connecting-wire Q, and the lever O, having follower R, the pallet-wheel I, having stop-pins N N, the main wheel J, having trip-wheel S, and the spring K, as set forth.

2. In an alarm attachment for clocks, the combination, with the drop-lever E, the pallet-wheel I, and the main wheel J, of the connecting-wire Q, the lever O, having follower R, the two pins N, and the trip-wheel S, having notch T, substantially as herein shown and described, whereby the alarm is made to sound successively each day for a week with one winding of the alarm-spring, as set forth.

297,613. HEAT-RESISTING CASING. THOMAS A. MACDONALD, Boston, Mass. Filed June 13, 1883. (Model.)



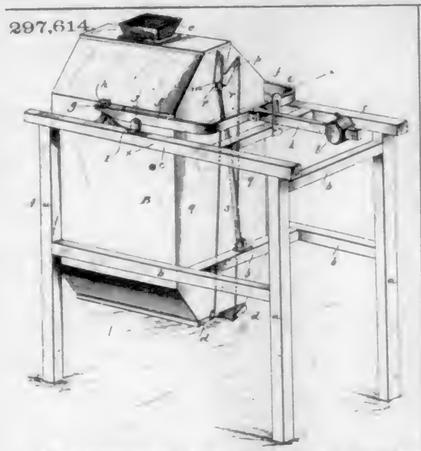
Claim.—A non-radiating casing for indirect radiators and hot-air radiators, composed of card-board and asbestus united together by an adhesive substance and subjected to pressure, substantially as and for the purpose set forth.

297,614. AUTOMATIC GRAIN-METER. GEORGE MARSH and VINDEX ARNOLD, Marshall, Mich. Filed Feb. 15, 1884. (No model.)

Claim.—1. The combination, in a grain-meter, of a counterpoised receptacle divided into compartments, a gate arranged to alternately cover the inlet of one or the other of such compartments, a rock-lever connected with such gate, and a stationary spring-finger to engage such rock-lever to throw it first to one side and then the other, to move the gate from the empty to the full compartments, substantially as shown and described.

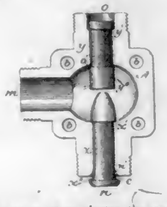
2. The combination, in a grain-meter, of the counterpoised receptacle divided into two compartments, a gate arranged to cover the inlets to said compartments alternately, a rock-lever connected with the gate, discharge-valves to said compartments, rods connecting said rock-lever and valves, and a stationary finger engaging said rock-lever, to throw its arms and the attached rods beyond the axis or dead-center of the lever as the receptacle descends, to positively lock the closed discharge-valve, substantially as described.

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3. The combination, in a grain-meter, of a frame, a forked lever fulcrumed thereon, a counterpoise on said lever, a receptacle hung in said forked lever and divided into two compartments, a gate arranged to cover the inlets to said compartments alternately, a rock-lever connected with the gate, discharge-valves to said compartments, rods connecting said rock-lever and valves, and a stationary finger engaging said rock-lever, to throw its arms and the attached rods beyond the axis or dead-center of the lever as the receptacle descends, to positively lock the closed discharge-valve, substantially as described.

297,615. EJECTOR. JOHN M. MARTT, Clarksville, Ark. Filed June 25, 1883. (Model.)



Claim.—1. In a steam jet or ejector, the casing made in two parts, A and B, exactly coinciding with each other, and held together by bolts and nuts *a* or screws passing through the holes *b*, each half having grooves so cut on its inner face that when joined together, as described, they will form suction-hole *m*, and cylinder-beds *n'* *o'*, having shoulders, substantially as shown and described, and for the purposes set forth.

2. In a steam jet or ejector, cylinders *x* and *y*, ground to fit loosely in their respective beds *n'* and *o'*, and having shoulders x' x^2 y' y^2, substantially as shown and described, and for the purposes set forth.

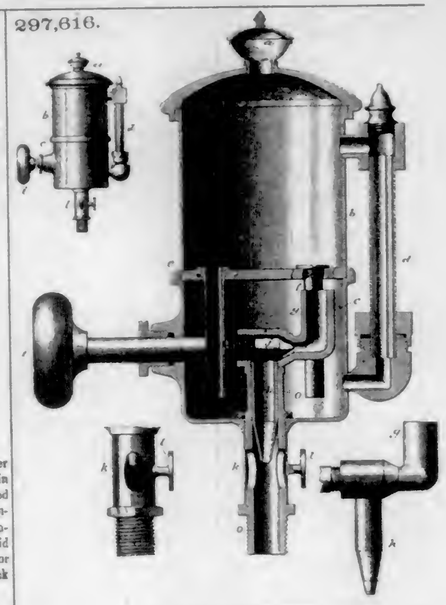
3. In a steam jet or ejector, the combination of half-casing A with tubes *x* and *y*, ground loosely in their respective beds *n'* *o'*, and having shoulders x' x^2 y' y^2, with half-casing B exactly coinciding with half-casing A, and all secured together by bolts and nuts *a*, substantially as shown and described, and for the purposes set forth.

297,616. LUBRICATOR. MICHAEL MCMULLIN, Denver, Colo. Filed June 30, 1883. (No model.)

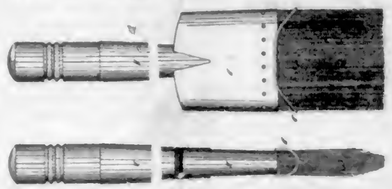
Claim.—1. The oil-reservoirs *b* and *c*, the former having an opening, *a*, said reservoirs communicating with each other by means of the flanged pipes *e* and *f*, and the pipe *g h*, provided with the conical-end regulating-screw *i j*, and the tube *o*, provided with the oval opening capable of being closed to exclude dust, and sleeve or cut-off *l*, and the glass tube *d*, whereby the flow of oil is observed and regulated through the pipe *g h*, as and for the purpose set forth.

2. The combination, with the reservoirs *b* and *c*, of the flanged pipes *e* and *f*, the pipe *g h*, the regulating-screw *i j*, the tube *o*, and the cut-off *l*, constructed, arranged, and operating substantially as herein described.

297,616.

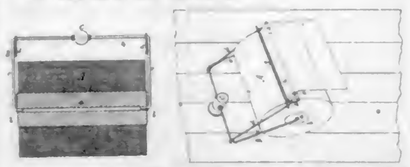


297,617. BRUSH-BRIDLE. ALFRED S. MILES, Brooklyn, N. Y. Filed Apr. 18, 1883. (No model.)



Claim.—The herein-described bristle-supporter soldered to the brush-socket, extending up to support the bristles at the margin of the brush, and arranged to be detached, substantially in the manner and for the purposes set forth.

297,618. PAPER-HOLDER. ALBERT CANDY MOORE, Bellows Falls, Vt. Filed Dec. 26, 1883. (No model.)

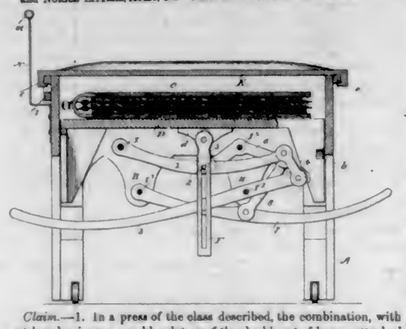


Claim.—1. The knife connected to the bail and provided with a brake to extend from it, the said knife, against the roll of paper, and to be borne against it by the draft of the strip of paper on the knife while the latter may be in the act of separating the paper, all being substantially as set forth.

2. The bail provided with the guide and knife, arranged as set forth, and with a brake to extend from the knife against the roll of paper, all being substantially and to operate as represented.

3. The combination of the bail provided with the supporting screw or device, with the knife and brake arranged and connected with each other as described, and connected with the bail by arms applied thereto, as set forth.

297,619. MACHINE FOR FORMING OIL-CAKES. JOHN L. MOSS and NORRIS LITTELL, Rome, Ga. Filed Jan. 14, 1884. (No model.)



Claim.—1. In a press of the class described, the combination, with a mat-box having a movable platen, of the double set of levers attached to the under side of the platen, substantially as described.

2. In a press of the class described, the combination, with a platen working in a mat-box, of the connected set of levers and guide-bar, substantially as described.

3. In a press of the class described, the combination, with a vertically-movable platen, of a spring-catch engaging with a stop-support on the platen for holding the same in an elevated position, substantially as described.

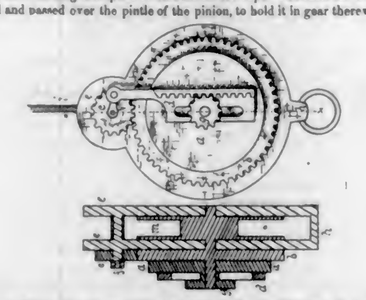
4. In a press of the class described, the combination, with two or more mat-boxes arranged in the same horizontal plane, of a movable top or cover adapted to be adjusted over either mat-box and serve as a cover for the same while the mat is being subjected to pressure, substantially as described.

5. In a press of the class described, the combination, with a platen for supporting the mat, of a support for holding the leaves of the mat in opened condition while the mat-leaves are being filled with seed-meal, substantially as described.

6. An oil-cake former consisting of the following organized instrumentalities, to wit: two or more mat-boxes arranged in the same horizontal plane, a movable cover common to both, movable platens, means for actuating the platens, and means for locking the platen in the elevated positions, substantially as described.

297,620. AUTOMATIC FIRE-ESCAPE. GEORGE W. MURPHEY and FRANK P. MURPHEY, Kenney, assignors of two-fifths to Park B. Murphey and Charles M. Murphey, both of Harristown, Ill. Filed June 14, 1883. (No model.)

Brief.—A fire-escape in which, as the rope is unwound, the motion of the rope-pulley is conveyed through gears to a racked bar, where it becomes oscillating motion, and is conveyed to the pinion and oscillating wheel, retarding the speed of descent on the rope. The rack-bar is slotted and passed over the pintle of the pinion, to hold it in gear therewith.



Claim.—In an automatic fire-escape, the combination of a cord-pulley, a gear-wheel, a crank-pinion, a rack and pinion, and an oscillating lever, as and for the purpose set forth.

297,621. BIRD-CAGE. JAMES S. MUSGRAVE, Bloomfield, N. J. Filed Aug. 10, 1883. (No model.)

Claim.—1. The safety-inclosure B, for bird-cages, having an open bottom and provided with side openings, a perch, and means for securing it in a cage above the bottom of the same, substantially as herein shown and described.

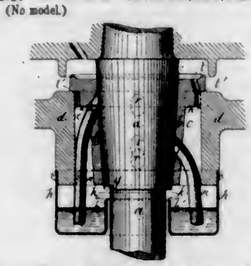
297,621.



2. The combination, with a bird-cage, of the open-bottom inclosure B, provided with perch *a*, bail *b*, openings *c*, and flanges *d*, substantially as herein shown and described.

3. The safety-inclosure B, for bird-cages, made open at the bottom and provided with a perch, and formed with the openings *c* and flanges *d*, substantially as and for the purposes set forth.

297,622. LUBRICATOR. THOMAS NEL, Paris, France. Filed Feb. 26, 1884. (No model.)



Claim.—1. The combination and arrangement of parts constituting the apparatus for lubrication by means of canes for the cylindrical or conical journals of vertical shafts, in connection with an oil-reservoir having an internal flange, whereby to assure the excess of oil returning to the reservoir, substantially as herein shown and described.

2. The chambered and bushed boss for loose pulleys, the same having channels *d* and apertures *e*, whereby to effect automatic lubrication by means of canes, substantially as herein described, and shown in Fig. 2, or equivalents shown in Figs. 3 and 4 of the drawings.

3. The combination, with the bosses of existing pulleys, of oil-chambers having internal flanges encircling the perforated boss, and of canes fitted therein, substantially as described, and shown in Fig. 5 of the drawings.

4. The combination, with the chambered bosses of loose pulleys and friction-pulleys on vertical axes, of loose reservoirs having internal flanges fitted to the boss, substantially as herein described, and shown in Fig. 6 of the drawings.

5. The combination of the oil-reservoir having internal flange with the bushing *b*, canes *r*, and shaft *a*, said shaft having an enlargement which overhangs the inner flange of the oil-reservoir, substantially as herein shown and described.

297,623. TIME-LOCK. HENRY F. NEWBURY, Brooklyn, N. Y. Filed Jan. 24, 1883. Renewed Mar. 27, 1884. (No model.)

Brief.—An electric motor is connected with a time-lock in such a way that in case the time mechanism is injured or stops the lock may be unlocked by said motor in about the same time that would be required by the time-lock.

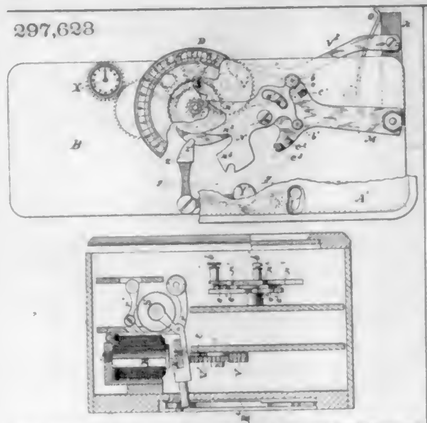
Claim.—1. The combination, in a time-lock, of a lock bolt or dog, a time-movement or clock acting on the same through the medium of a revolving device, and an electromotor connected with said lock bolt or dog independently of such device, and capable of withdrawing the bolt from the locking position with a slow motion, substantially as and for the purpose set forth.

2. The combination, in a time-lock, of a lock bolt or dog, a time-movement or clock acting on the same through the medium of a revolving device, and an electromotor connected with said lock bolt or dog, both through the medium of such revolving device and independently thereof, substantially as and for the purpose set forth.

3. The combination, in a time-lock, of a lock bolt or dog, an electromotor for retracting the same from the locking position, and a cut-out for automatically short-circuiting such motor, and thus arresting its action when the bolt is fully retracted.

4. The combination, in a time-lock, of a lock bolt or dog, an electromotor for retracting the same from the locking position, and an indi-

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cator arranged to be operated by such electromotor, substantially as and for the purpose set forth.

5. The combination, in a time-lock, of a revolving device actuated by the time-movement or clock thereof, and an adjustable forked lever arranged to be acted on by said revolving device, said lever being made heavier at one end than the other and loosely pivoted, so as to be brought into the operative position by the force of gravity, substantially as and for the purpose set forth.

6. The combination, in a time-lock, of an adjustable forked lever interposed between the dial and the lock-bolt, and two adjusting devices, one of which operates in connection with a fixed stop for regulating the position of such lever when setting the lever for a single day, substantially as and for the purpose set forth.

7. The combination, in a time-lock, of an adjustable forked lever interposed between the dial and the lock-bolt, one or more adjusting devices for regulating the position of such lever, and positive stops to prevent the accidental displacement of the lever, substantially as set forth.

8. The combination, in a time-lock, of the bolt-operating lever, an adjustable forked lever pivoted thereto in position to be acted on by the dial, one or more adjusting devices for regulating the position of such forked lever, and inclined stops on the bolt-operating lever for such adjusting devices to operate against, substantially as and for the purpose set forth.

9. The combination, in a time-lock, of an unlocking-lever, a detent for holding said lever in the retracted position, and an operating-connection passing through the lock-case for tripping such detent from the exterior of the lock-case.

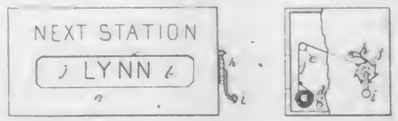
297,624. PULLEY. OLAF R. OLSEN, Indianapolis, Ind., assignor to the Indianapolis Machine and Bolt Works, same place. Filed Mar. 1, 1884. (No model.)



Claim.—1. The outer rim, *r*, in combination with the secondary rim *r'*, hub *h*, and spokes *s*, substantially as described.

2. A pulley composed of a jointed outer metal rim to which the hub and spokes are connected by means of a secondary inner rim, substantially as described.

297,625. STATION-INDICATOR. IRVING OSGOOD, Ellsworth, Me. Filed Nov. 8, 1883. (No model.)



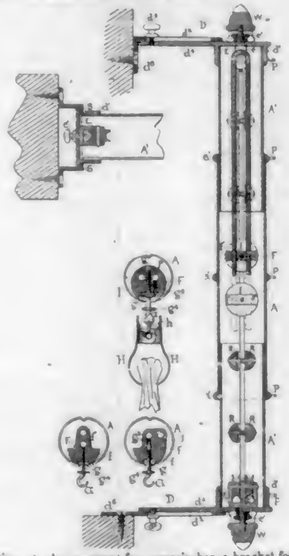
Claim.—1. The within-described station-indicator, consisting of a casing, a spring-roll, *d*, secured near the front of said casing, loose roll *e*, situated in substantially the same vertical plane as said roll *d*, and serving to guide the web *j* and keep it extended in a vertical plane, roll *f*, revolved by means of crank *i*, and held in any desired position by the ratchet and pawl *h*, and flexible web *j*, attached to said rollers *d* and *f*, and having the names of the stations affixed thereto, all combined and operating substantially as and for the purposes set forth.

297,626. INDESTRUCTIBLE COMPOUND FOR COATING WIRES FOR ELECTRICAL PURPOSES. JOEL H. PAGE, Philadelphia, Pa., assignor of one-half to Blanch Carrie King, same place. Filed Dec. 28, 1883. (No specimens.)

Claim.—1. A compound of litharge and glycerine, formed into a thick paste, for coating wires to be used for electric purposes, substantially as hereinbefore described.

2. Electric wires coated with a compound of litharge and glycerine, substantially as set forth and described.

297,627. CURTAIN-FIXTURE. LOUIS PAGE and LOUIS WIESER, Brooklyn, N. Y. Filed Jan. 18, 1884. (No model.)



Claim.—1. As a support for a curtain-bar, a bracket formed of two or more flat pieces placed edgewise up and down, one or more of the pieces with edges raised laterally, and one or more of the pieces slotted, so as to admit of their sliding upon and stiffening each other and of being clamped together laterally, substantially as set forth.

2. As a support for a curtain-bar, an extension-bracket formed of two or more pieces arranged to slide upon each other endwise, one of such pieces forming the end cap of the curtain-bar, as set forth.

3. The combination, with a curtain operated endwise along its support, of sockets which support and confine the ends of the curtain-bar, each socket being divided circumferentially into two parts, and provided with a flange which retains endwise the end cap of the bar, substantially as set forth.

4. The combination, with a curtain arranged to slide endwise along its supporting-bar by means of cords, of master-balls F F, attached to such cords, each ball provided with an eyelet for each cord, with a central screw-tapped hole at right angles to and between such eyelets, a smooth hole opening into one of said eyelets, in which hole a pin, g^3, slides freely, together with a curtain-supporting hook, G, the threaded shank of which is screwed into said central tapped hole, and is made to control the position of said pin g^3 and its impingement upon the cord by means of a flange, g', upon said hook, which hook G is operated from the outside of the bar, substantially as set forth.

5. The combination, with a curtain arranged to travel endwise along its supporting-bar by means of cords, of master-balls, each ball provided with an eyelet and a curtain-supporting hook, the shank of which hook screws into such ball, and by its entry into the ball causes the cord in such eyelet to be clamped, substantially as set forth.

6. The combination, with an adjustable extension curtain-bar formed of two or more cylindrical pieces telescoping into each other, of longitudinal grooves or other indentations which match so as to prevent the telescoping sections from turning upon each other, substantially as set forth.

7. The combination, with an extension curtain-bar composed of two or more pieces sliding along each other, of a leg or pin, K', and corresponding openings, K^2 and e^2, operating substantially as set forth, in guarding against excessive extension of the bar-sections.

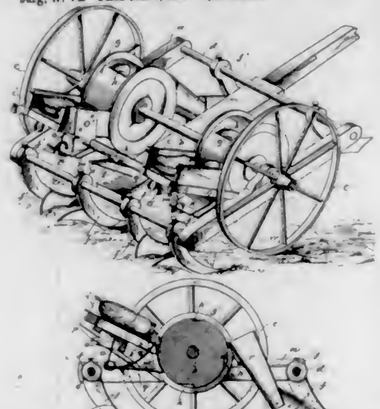
8. The combination, with a curtain arranged to move endwise along its supporting-bar, of a curtain-clasping clamp, H, suspended from the bar by a hook or eyelet, G, attached to the clamp by a bail, A, the ends of which are fastened to the spindle pivoting the two parts of the clamp, substantially as set forth.

9. The combination, with a curtain operated endwise along its supporting-bar, of hooks or eyelets P, attached to the under and front side of such bar for the support of a supplemental lambrequin or other ornamental drapery, substantially as set forth.

10. The combination, with a curtain operated endwise along its supporting-bar, of curtain-supporting hooks and rollers arranged to travel along such bar, each set being formed of two rollers, R R, their spindle r^3, and the hook G, with its shank looped centrally around spindle r^3 and piercing at its upper end the bail *r*, which bail is looped around the ends of spindle r^3, the whole operating substantially as set forth.

11. The combination, with a curtain arranged to be operated endwise along its supporting-bar by means of cords, of cord-guiding rollers attached by their frames to the bottom of the caps covering the ends of the bar, substantially as set forth.

297,628. COMBINED CORN-PLANTER, POTATO-PLANTER, POTATO-DIGGER, AND CULTIVATOR. GEO. WESLEY PERSOL, Parkersburg, W. Va. Filed Jan. 9, 1884. (No model.)



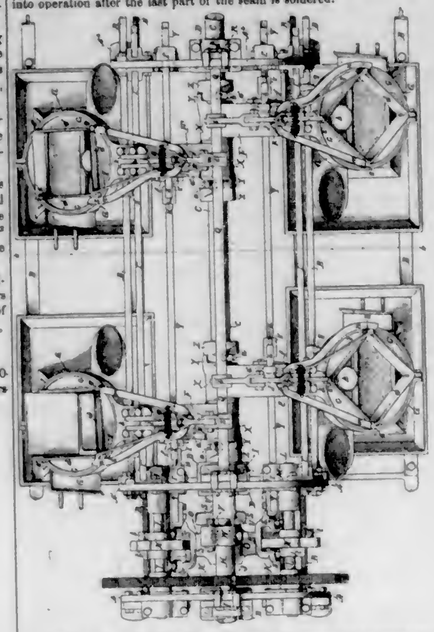
Claim.—1. In an organized machine, the combination, with the adjustable dropping-wheels having seed-pockets in their peripheries, and the hinged seed-tubes connected to the opening-plows, of the inclined adjustable hoppers, the adjustable shields, the adjustable feed-checks, the operating-lever, and the adjustable covering-plows, substantially as specified.

2. In an organized machine, the combination, with the drop-wheels, inclined hoppers, and adjustable shields, of the feed-checks *n n*, secured to the crank-arms *o*, connected by the coupling-lever *p*, and the foot-lever *q*, connected to the coupling-lever *p*, and fulcrumed on the frame of the machine, substantially as specified.

3. In a seeding-machine, the combination, with the driving mechanism, feed-wheels, and seed-tubes, of the laterally-adjustable inclined hoppers, substantially as specified.

297,629. SOLDERING-MACHINE. GEORGE H. PERKINS, Philadelphia, Pa. Filed Mar. 23, 1883. (No model.)

Brief.—This machine solders the seam which unites the head to the body of a rectangular or other angular bodied can. The cans are placed in holders mounted upon arms carried by a rock-shaft. Each holder descends and dips that portion of the seam which is at one side of the head into the solder bath. This is done successively until the entire seam is soldered. The can rises from the bath in an angular position, so that the freshly-soldered portion of the seam drains toward the next unsoldered portion. After the last portion of the seam is soldered, the can rises in a position to drain this part of the seam toward the part last before soldered, and then the corner of the can between those two parts of the seam is dipped to remove the surplus drop of solder. The holder is turned to present an unsoldered portion of the seam to the bath by a pulling and a pushing pawl, which operate as the holder is rising and descending. The holder is given a partial turn backward to present the corner of the can to the bath by a tripping-pawl, which is brought into operation after the last part of the seam is soldered.



Claim.—1. In a machine for soldering the seams which secure the heads to the bodies of quadrangular, square, hexagonal, or other shaped sheet-metal cans not circular or oval, the following instrumentalities in combination: first, a series of stationary rotatable can-holders each adapted to receive a can; second, a series of rock-shaft arms to which said can-holders are connected so as to rock therewith; third, mechanism common to all of the rock-shaft arms whereby said rock-shaft arms are at predetermined intervals caused to rock; fourth, mechanism whereby the can-holders are at predetermined intervals caused to turn or rotate; and, fifth, pans or suitable devices adapted to contain solder.

2. In a machine for soldering the seams which secure the heads to the bodies of quadrangular, square, hexagonal, or other shaped sheet-metal cans not circular or oval, the following instrumentalities in combination: first, a double series of rotatable can-holders each adapted to receive a can; second, a double series of rock-shaft arms to which said can-holders are respectively connected so as to rock therewith; third, mechanism common to both series of rock-shaft arms whereby first one series of said arms and then the other series is at predetermined intervals caused to rock; fourth, mechanism whereby first one series of can-holders and then the other series is at predetermined intervals caused to turn or rotate; and, fifth, pans or suitable devices to contain solder.

3. In a machine for soldering the seams which secure the heads to the bodies of quadrangular, square, hexagonal, or other shaped sheet-metal cans not circular or oval, the following instrumentalities in combination: first, a series of stationary rotatable can-holders each adapted to receive a can; second, a series of rock-shaft arms to which said can-holders are connected so as to rise and fall therewith; third, mechanism whereby the rock-shaft arms are at predetermined intervals caused to rock; fourth, mechanism whereby the can-holders during their rise are caused to make a part of a quarter-turn, and during their fall to complete said quarter-turn; and, fifth, pans or suitable devices adapted to contain solder.

4. In a machine for soldering the seams which secure the heads to the bodies of quadrangular, square, hexagonal, or other shaped sheet-metal cans not circular or oval, the following instrumentalities in combination: first, a series of rotatable can-holders adapted each to receive a can; second, a series of rock-shaft arms to which said can-holders are connected so as to rise and fall therewith; third, mechanism whereby

the rock-shaft arms are at predetermined intervals caused to rock to their full throw up and down; fourth, mechanism whereby the rock-shaft arms are at predetermined intervals arrested in descending before they have completed their full descent, and retained in such position until they again rise; and, fifth, pans or suitable devices to contain solder.

5. In a machine for soldering the seams which secure the heads to the bodies of quadrangular, square, hexagonal, or other shaped sheet-metal cans not circular or oval, the following instrumentalities in combination: first, a series of rotatable can-holders adapted each to receive a can; second, a series of rock-shaft arms to which said can-holders are connected so as to rise and fall therewith; third, mechanism whereby the rock shaft arms are at predetermined intervals caused to ascend to the full height and descend to the full extent of the movement of the rock-shaft arms; fourth, mechanism whereby the rock-shaft arms are at predetermined intervals arrested in their full descent, and retained in their arrested position until their next ascent; fifth, mechanism whereby the can-holders are caused to intermittently rotate, so as to present the four sides of one of the head-seams of the cans contained in them and one of the corners to a bath of solder; and, sixth, pans or suitable devices adapted to contain solder.

6. In a machine for soldering the seams which secure the heads to the bodies of quadrangular, square, hexagonal, or other shaped sheet-metal cans not circular or oval, the following instrumentalities in combination: first, pans or suitable receptacles or devices adapted to contain molten solder; second, a double series of rotatable can-holders adapted to receive each a can; third, a double series of rock-shaft arms to which said can-holders are connected so that they rise and fall therewith; fourth, mechanism whereby the rock-shaft arms are at predetermined intervals caused to ascend and descend; and, fifth, suitable devices whereby given rock-shaft arms are at predetermined intervals raised to a height greater than is correspondent with the descent of the remaining arms.

7. In a machine for soldering the seams which secure the heads to the bodies of quadrangular, square, hexagonal, or other shaped sheet-metal cans not circular or oval, the following instrumentalities in combination: a series of can-holders, a series of holder-supports, a series of rock-shaft arms, a series of pawls, a pawl-shaft and pawl-carrying attachments, a rock-shaft, and suitable mechanism for actuating the rock-shaft and the pawl-shaft, substantially as hereinbefore set forth.

8. In a machine of the class above recited, in combination with a series of revolable can-holders provided with pawl-pins, a series of pushing and pulling pawls, and means for actuating said pawls so as to occasion quarter-turns of the can-holders, substantially as set forth.

9. In a machine of the class above recited, in combination with a series of revolable can-holders provided with pawl-pins, a series of trip-pawls and means for occasioning the intermittent actuation of said trip-pawls, for the purpose of giving an eighth-turn to the can-holders, substantially as and for the purpose set forth.

10. In a machine of the class above recited, as a composite device for occasioning the rotation of a can-holder, a pushing-pawl, a pulling-pawl, a trip-pawl, and means for actuating said pawls, substantially as hereinbefore set forth.

11. In a machine of the class above recited, in combination with a revolable can-holder provided with pawl-pins and connected with a rock-shaft arm so as to rise and fall therewith, a pushing and a pulling pawl connected together by a spring, and ordinarily in range of contact with the pawl-pins, and a trip-pawl pivoted to said pulling-pawl, suitably actuated to rise and fall oppositely to the rock-shaft, and ordinarily retained out of contact with the pawl-pins on the can-holder, and means for tripping said trip-pawl into action with said pins, so as to raise the pushing and pulling pawls out of range of contact therewith, substantially as set forth

12. As a device for actuating the pushing and pulling pawls and the trip-pawl, the pawl-carrier, the pawl-rocker, the shifter-standard, means for actuating said shifter-standard, and means for oscillating the pawl-shaft, substantially as set forth.

13. As a device for tripping the trip-pawl, the shifter-standard provided with a cam-surface, and means for actuating said shifter-standard, so that its cam-surface operates upon said trip-pawl, substantially as set forth.

14. In a machine of the class above recited, in combination with a pulling-pawl, a trip-pawl provided with a counter-balance, substantially as set forth.

15. In a machine of the class above recited, as a device for intermittently arresting the descent of the rock-shaft arms, the shifter-standards provided with the base-bands and erected from the shifter-rod, the shifter-rod, and means for imparting to the shifter-rod a predetermined intermittent longitudinal reciprocation, substantially as set forth.

16. In a machine of the class above recited, as a means for connecting the rock-shaft arms with the rock-shaft in such manner as to permit for a given arm a lift greater than the descent of a given arrested arm, the laterally-projecting lugs on the rock-shaft arm, and the collars on the rock-shaft, substantially as set forth.

17. In a machine of the class above recited, in combination with the trip-pawls and with the rock-shaft arms, the shifter-standards, formed each with a base-band or laterally-projecting stop, and provided with a boss having an upper surface, a lower surface, and an intermediate incline, the shifter-rod, and means for actuating said shifter-rod longitudinally, so as at predetermined intervals to place the base-bands in the path of the descending rock-shaft arms, and to force the trip-pawls to travel up the inclined surface on the bosses, substantially as and for the purposes hereinbefore recited.

18. In a machine of the class above recited, in combination with and as a device for occasioning the oscillation of the rock-shaft, rock-shaft arms, and can-holder, the rocking yoke on the rock-shaft, the cams on the cam-shafts, and means for actuating said cams, substantially as hereinbefore set forth.

19. In a machine of the class above recited, in combination with the can-holders, the pawls, and the pawl-shaft, the depending yoke on said pawl-shaft, the crank on the driving-shaft, the driving-shaft, and means for actuating said shaft, substantially as and for the purposes set forth.

20. In a machine of the class above recited, in combination with the can-holders and the set of pawls which actuate said holders, the shifter-rods and their shifter-standards, the roller-yoke, the cams, and suitable mechanism for actuating said cams, substantially as and for the purposes set forth.

21. In a machine of the class above recited, a series of rotatable can-holders, a series of rock-shaft arms supporting the same, a rock-shaft for actuating said rock-shaft arms, a set of pawls for occasioning the rotations of said holders, pawl-rockers, and pawl-carrying devices for actuating said pawls, a pawl-shaft, and suitable mechanism for occasioning the opposite oscillations of the rock-shaft and of the pawl-shaft, substantially as hereinbefore set forth.

22. In a machine of the class above recited, in combination with the rock-shaft, rock-shaft arms, and can-holder, and with the pawl-shaft, pawl-rockers, and pawls, the driving-shaft, driving-pinion, driving toothed wheels, cam-shafts, cams, rocking yoke, depending yoke, and crank, the whole assembled, related, and operating substantially as and for the purposes specified.

23. In a machine of the class above recited, in combination with a can-holder, a pawl-carrier, a pushing and a pulling pawl, a spiral spring connecting said pawls, heels on the rearwardly-extending extremities of said pawls, and a counterbalanced trip-pawl pivoted to the pushing-pawl, substantially as and for the purposes set forth.

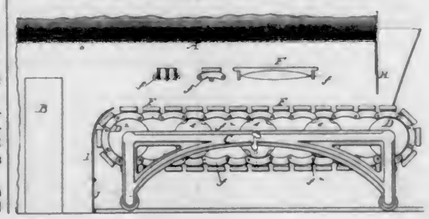
24. In a machine of the class above recited, in combination with a rock-shaft arm, a can-holder connected with and carried by said arm, a pawl-carrier provided with pawls to actuate said can-holder, and a guide for said pawl-carrier, substantially as and for the purposes set forth.

25. In a machine of the class above recited, in combination with cams having crests and hollows upon their peripheral faces and cam-surfaces upon their sides, roller-yokes operating in connection with the cam-surfaces on their sides, and a rocking yoke operating in connection with the crests and hollows upon their faces, a rock-shaft equipped with can-holders and adapted to be actuated by said rocking yoke, devices for actuating the can-holders, and shifter-standards for controlling the can-holder-actuating devices adapted to be actuated by said roller-yokes, substantially as and for the purposes set forth.

26. In a machine of the class above recited, in combination with a can-holder, being a rotatable disk or plate of metal provided with a central opening, pawl-pins, substantially as and for the purposes specified.

27. In a machine of the class above recited, in combination with a solder-pan provided with a central stop adapted to receive the corner of an angular can, a correspondingly angular can-holder adapted to receive a can, means for rocking said can-holder up and down with respect to said solder-pan, and means for presenting said can-holder angularly with respect to the plane of the surface of solder in said pan, so that upon a descent of the can-holder in its angular position a corner of the can will encounter and rest upon the stop, substantially as and for the purposes set forth.

297,630. SMOKE-PREVENTING FURNACE. GEORGE PLAYFORD and GEORGE RICHARD SWAINE, Cleveland, Ohio; said Swaine assignor to Charles F. Alexander, same place. Filed June 29, 1883. (No model.)



Claim.—1. The herein-described traveling grate, consisting of the combination of two or more series of transverse bars, the bars of each series being pivotally connected to form an endless carrier, and the different series connected by means, substantially as described, whereby the unity of the grate is insured and the removal of the individual bars permitted, substantially as set forth.

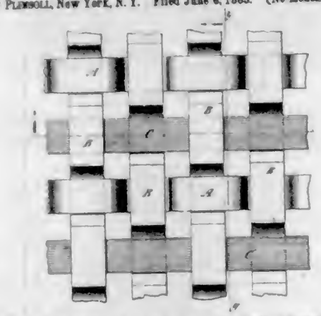
2. The herein-described traveling grate, consisting of the combination of two or more series of transverse bars, said bars being joined to one another by continuous pivots, which also connect the different series with one another, substantially as set forth.

3. The herein-described traveling grate, consisting of the combination, with the transverse bars pivoted together to form an endless carrier, and having the downwardly-projecting links *f*, of intermediate supporting-rollers recessed to fit said projections, substantially as set forth.

4. The herein-described traveling grate, consisting of the combination of two or more endless carriers formed of grate-bars, said carriers being arranged side by side, and connected by means, substantially as described, with one another, and intermediate supporting-rollers arranged on the line or lines of junction of said carriers, substantially as set forth.

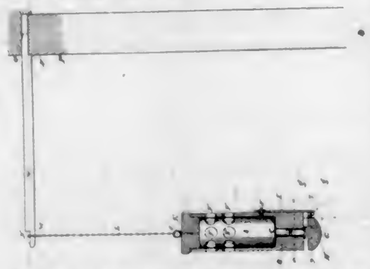
5. The herein-described traveling grate, consisting of the combination of two or more series of transverse bars, said bars being joined to one another by continuous pivots, which also connect the different series with one another, and an intermediate supporting roller or rollers arranged on the line of juncture of the different series, substantially as set forth.

297,631. MODE OF WEAVING METALLIC BARS. HENRY DAVIDSON PLEWSOLL, New York, N. Y. Filed June 6, 1883. (No model.)



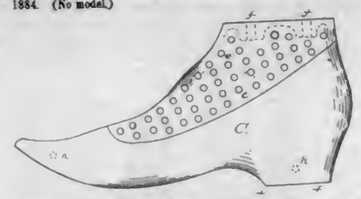
Claim.—The mode of forming a woven fabric from bars or tubes of metal, which consists in rolling, forging, casting, or pressing a series of bars or tubes, B, into wavy or undulating form, and similarly preparing another series of bars or tubes, A, of a different thickness and curve, as shown, and arranging them as described, and then inserting in the openings or loops formed by the bars or tubes B a series of straight bars, C, to lock together said bars or tubes A and B, in the manner shown and described.

297,632. BURGLAR-ALARM. WILLIAM H. KEIFF, Philadelphia, Pa. Filed Feb. 11, 1884. (No model.)



Claim.—In a burglar-alarm, the cylinder A, having solid part B, with a hole, C, lugs *b b*, and groove K at the bottom, and with apertures F at the top, in combination with cap E, hinged hammer G, having pin H, and faces *g g'* at right angles to each other and on the hinge, and a spring, I, the end of which presses on the faces *g g'*, to hold the hammer open or closed, and kept from displacement by lugs *b b* and groove K, between which it works, substantially as and for the purpose specified.

297,633. LAST. GEORGE A. REYNOLDS, Utica, N. Y. Filed Jan. 25 1884. (No model.)



Claim.—1. A metallic shell-last provided with an upper perforated shank portion, substantially as and for the purposes stated.

2. A metallic shell-last provided with a perforated shank portion, as shown, composed of sections which are jointed and cemented, all substantially as set forth.

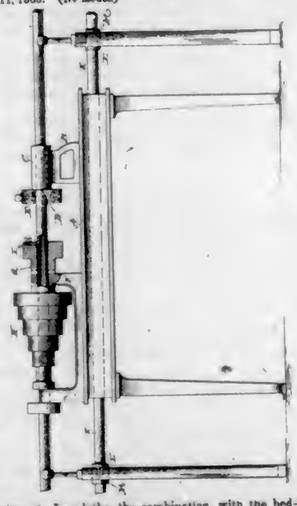
297,634. HAME-TUG. THOS. L. RIVERS, Mount Vernon, Ill., assignor to Charles B. Lindsey, same place. Filed Dec. 28, 1883. (No model.)



Claim.—1. The combination of a series of hame-tugs having rectangular slots, hooks, or catches formed upon their inner sides, and with re-enforcing strips, said tugs being connected by links engaging with the hooks upon the under sides of said tugs, with a trace-plate having an inwardly-projecting lug formed upon its inner side, substantially as set forth.

2. As an improved article of manufacture, a hame-tug having the slots or openings *b b'*, communicating with each other by means of the slot *b'*, said tugs being formed upon their inner sides with hooks, and provided upon their outer sides with re-enforcing strips, in combination with a plate, C, formed with the lug D, substantially as described.

297,635. TURNING-LATHE. JOHN B. ROMANS, Nashville, Tenn. Filed Sept. 11, 1883. (No model.)

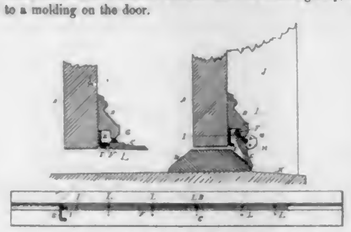


Claim.—1. In a lathe, the combination, with the bed-frame A, of the laterally-extending rods K, arranged to slide in the bed-frame, and the adjustable supports L, having the collars M and the upwardly-projecting crutches, substantially as specified.

2. In a lathe, the combination, with the bed-frame, of the head-block and tail-block having hollow spindles, the rods K, extended from the ends of the bed-frame, and adapted to slide in the latter, and the supports L, adjustable upon the rods K, and provided with upwardly-projecting crutches, substantially as specified.

297,636. WEATHER-STRIP. JOSEPH F. ROWLETT, Richmond, Ind., assignor, by direct and mesne assignments, to Frank Dennis and Carrie N. Rowlett, both of same place. Filed Jan. 30, 1884. (No model.)

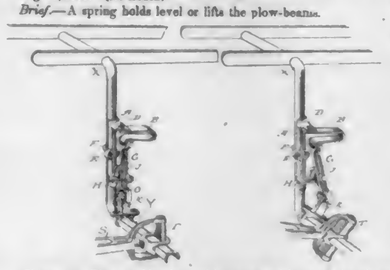
Brief.—A thin wooden strip provided with a longitudinal metallic bar, which acts both as a counter-balance and a re-enforcing strip, is pivoted to a molding on the door.



Claim.—In combination with mold B, the hinged strip C, the longitudinal metallic bar F, fastenings L, stop E, and projection or button H, all constructed for the purpose as herein described.

297,637. CULTIVATOR. HANS H. SATER, Dubuque, Iowa. Filed Aug. 31, 1883. (No model.)

Brief.—A spring holds level or lifts the plow-beams.



Claim.—1. The combination, with the shovel-bars, of the pivoted standards K, the lever G', the spring secured to the said lever and connected to the frame of the cultivator, and the roller J and its curved track.

2. Combined with the arch of the cultivator, axles, semi-tubular sleeve A, curved track H', in combination with the spring B, secured to said sleeve, the bar G, having a roller, and a pivoted standard, K, connected to the shovel-bars.

3. The combination, with the coupling T and the bars attached thereto, of the standard K, locked to such coupling, the bar G, having forked ends, and the spring B, connected to the semi-tubular sleeve A.

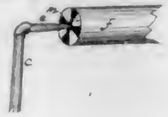
297,638. METHOD OF USING NATURAL GAS AS A FUEL. ADAM SCHAEFER, Sharpsburg, Pa. Filed Nov. 21, 1883. (No model.)

Claim.—1. The method herein described for burning natural gas, which consists in mixing air with the natural gas as it comes from the well and heating the admixture prior to ignition, substantially as and for the purposes specified.

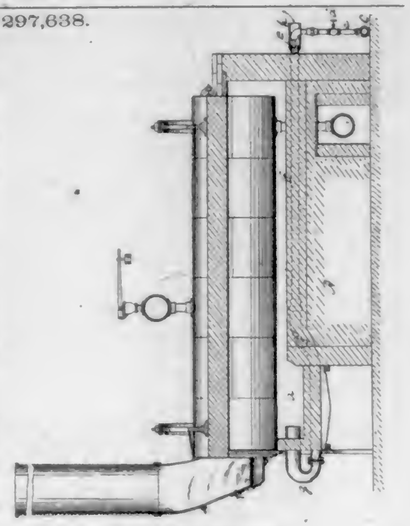
2. In devices for admixing and burning natural gas, the combination, with a gas-supply pipe, of a gas and air admixing conduit the diameter of which is greater at the delivery end than at the receiving end, substantially as and for the purposes specified.

3. In devices for admixing air and natural gas and burning the same, the combination of an admixing-conduit whose diameters increase from the receiving to the delivery end, and a burner or delivery-nozzle which increases in diameter from its receiving end to its mouth, substantially as and for the purposes specified.

4. In a device for admixing air with natural gas and burning the admixture, the combination, with the open-ended conduit, which gradually increases in diameter, of a gas-supply pipe projecting into its open end, where the diameter of the conduit is the least, and an expanding nozzle or burner secured to its opposite end, or where the diameter of the conduit is the greatest, substantially as and for the purposes specified.



297,638.

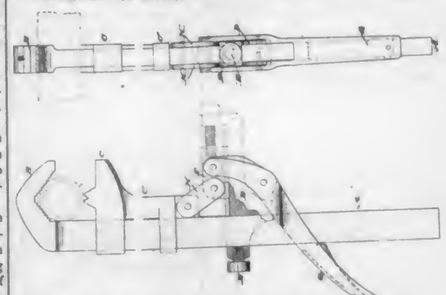


297,639. PROCESS OF MANUFACTURING CHAIR-SEATS OF VEGETABLE FIBER AND CHROMIC ACID. RUDOLF SCHEMMEL, Annaberg, Germany. Filed May 25, 1883. (Model.)



Claim.—The process of manufacturing chair-seats, consisting of the following steps: first, mixing together ground rags and vegetable fiber (in equal parts) and chromic acid to make a paste; then forming this paste into sheets; then strengthening these sheets by the addition of textile fabric; then molding and pressing each sheet to give the proper texture and superficial configuration; then varnishing and drying each sheet and cutting the chair-seats out of the same.

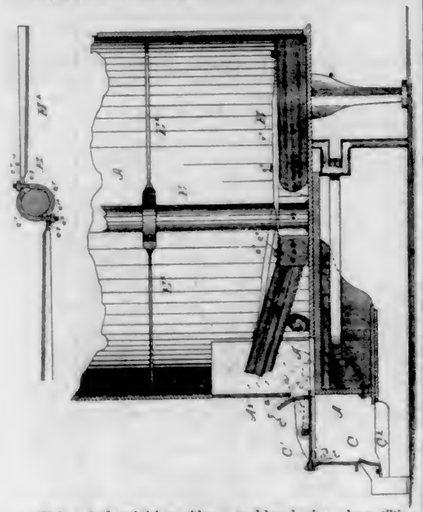
297,640. WRENCH. FRIEDRICH SCHEMANN, Philadelphia, Pa. Filed Nov. 3, 1883. (No model.)



Claim.—1. A wrench having a movable jaw and an adjustable slide, both fitted on the bar, a screw for holding said slide, a movable block supported on said slide, a pivoted link connecting said block and the movable jaw, and means for operating said block, substantially as and for the purpose set forth.

2. In a wrench, a bar, fixed jaw, and movable jaw, in combination with an adjustable slide fitted on said bar and having a holding-screw, a movable block, means for operating said block mounted on said slide, and a link connecting said block and the movable jaw, substantially as and for the purpose set forth.

297,641. BRICK-MACHINE. FRANK W. SHELLEY, Anderson, Ind. Filed Feb. 21, 1884. (No model.)



Claim.—1. In a brick-machine, a mud-box having a loose tilting plate forming the cover thereof, substantially as described.

2. In a brick-machine, the combination of a mud-box having a loose tilting plate forming the cover thereof, and a reciprocating plunger working horizontally in said box, substantially as described.

3. In a brick-machine, the combination of a mud-drum, a mud-box connected with said drum, and having a loose tilting plate forming the cover thereof, and a reciprocating plunger working horizontally in said box, substantially as described.

4. In a brick-machine, the combination of a mud-drum having an opening or slot, a', a mud-box connected with said drum, and having a tilting plate provided with a curved lip, and a horizontally-reciprocating plunger in said box, substantially as described.

5. In a brick-machine, the combination of a mud-drum having an opening or slot, a', a mud-box connected to said drum, and having a tilting plate provided with a curved lip and a strip, and a horizontally-reciprocating plunger, substantially as described.

6. In a brick-machine, a mud-box having a pivoted plate provided at its forward or front end with a strip of leather or equivalent substance, substantially as described.

7. In a brick-machine, a mud-box having a tilting plate provided with a curved lip, substantially as described.

8. In a brick-machine, a mud-box having a tilting plate provided with a curved lip and a longitudinal strip, substantially as described.

9. In a brick-machine, the combination of a mud-box having a loose tilting cover, and means for automatically returning said cover to its place when tilted, substantially as described.

10. In a brick-machine, a wiper consisting of a hub and extensions forming the wiper-blades, which are pivoted at their inner ends to the hub and adapted to ride over obstructions on any part of the bottom, substantially as described.

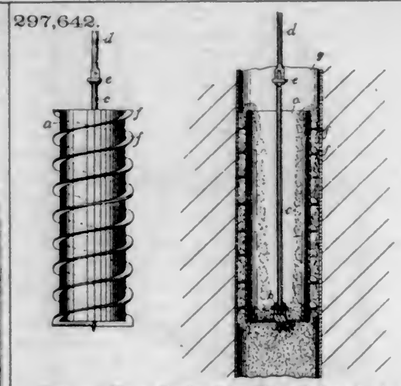
11. In a brick-machine, a wiper-blade pivoted to the hub, and having a spring for holding said blades against the bottom of the drum, substantially as described.

12. In a brick-machine, the combination of a shaft and knives, which are provided with a curved part, a', screw-threaded end a^2, openings a^3, and nuts a^{10}, for clamping the blades onto the shaft, substantially as described.

297,642. SAND-AUGER. JACOB SICKLER, Otterbein, Ind. Filed Feb. 12, 1884. (No model.)

Brief.—A cylindrical vessel exteriorly traversed by two spiral flanges delivering thereinto and terminating below in cutting-points has a socket in its closed bottom for receiving a shaft-section pivoted to the main shaft and prevented from playing on the pivot by an embracing-ring.

297,642.

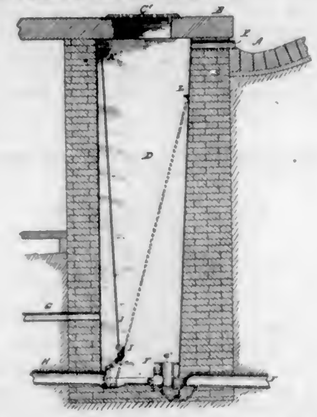


Claim.—1. The combination of the hollow cylinder a, closed at the bottom, flanges $f\,f$, socket b, shaft c, shaft d, and band e, adapted to holding c and d rigid, all substantially as shown and described.

2. A sand-auger consisting of a hollow cylinder, a, closed at the bottom, having two sharpened lips on the bottom, and having two spiral flanges wound upon it externally from the top to the center of the bottom, and forming a hollow auger adapted to being moved freely inside of a well-tube, and to being attached to a common well-boring auger-shaft, substantially as shown and described, and for the purpose set forth.

297,643. SEWER. THOMAS L. STARK, Chicago, Ill. Filed Dec. 26, 1883. (No model.)

Brief.—A basin or well, into which empties the house-drain and gutter pipes, has a man-hole and cover, and overflow-pipe connecting with the street-gutter, and a discharge-pipe emptying into the main sewer. A valve applied to the mouth of the house-drain pipe is operated by a rod secured in raised or lowered position.



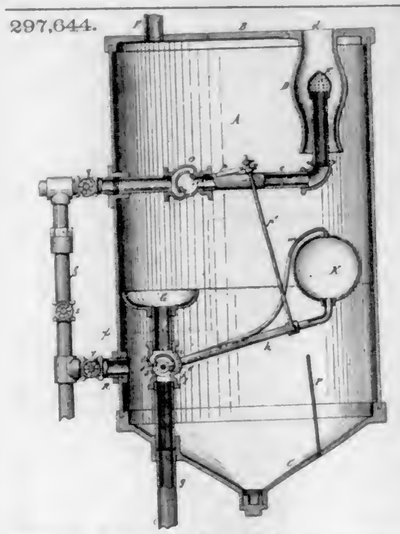
Claim.—1. The combination of the well, hole, or basin, the house-pipe H, entering the said basin, the pipe F, entering the said basin and communicating with the main sewer, a valve or door applied to the discharging end of the pipe H, and means for opening and closing the said valve, substantially as and for the purposes specified.

2. The combination of the basin D, the pipes H and F, the valve I, the rod J, and means for retaining it in its raised and lowered positions, the pipe or duct E, the hole or opening C and its cover, and the roof-gutter pipe, all arranged, substantially as shown and described, with relation to each other, for the purposes set forth.

297,644. FEED-WATER HEATER. DAVID P. STEWART, Buffalo, N. Y. Filed Aug. 30, 1883. (No model.)

Claim.—1. The combination, in a feed-water heater, of a water-inlet pipe and an overflow-pipe, each having a regulating cock or valve, and a float, whereby the positions of both of said cocks or valves are

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automatically adjusted, substantially as set forth.

2. The combination, with the overflow-pipe, of a regulating cock or valve having its hollow plug at all times in communication with the lower portion of the overflow-pipe, a float, and a hollow stem extending from the lower portion of the float to the hollow plug of the regulating-valve, substantially as set forth.

3. The combination, with an escape-pipe, of a cock or valve having its hollow plug in communication with the lower portion of the escape-pipe, a float and a drain-pipe, and a vent-pipe extending from opposite ends of the float to the hollow plug of said cock or valve, substantially as set forth.

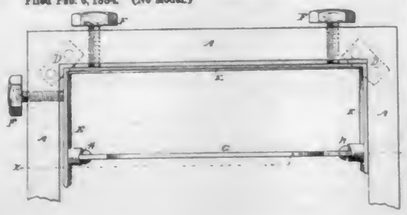
4. The combination, with the overflow-pipe *g*, of a cock, I, having a hollow plug, J, and hollow shank *l*, a float having a hollow stem, *k*, opening into the shank *l*, and a vent-pipe, *m*, extending from the float through the hollow shank *l* into the hollow plug J, substantially as set forth.

297,645. JOURNAL-BOX. FRANK W. THAYER, Milwaukee, Wis. Filed Mar. 11, 1884. (No model.)



Claim.—In shell journal-boxes composed of hard and soft metal, the shell A, cast solid with the notched end flanges, I I, the two sets of diagonal ribs B B B B, and the ribs D D, extending inward from the flanges I I.

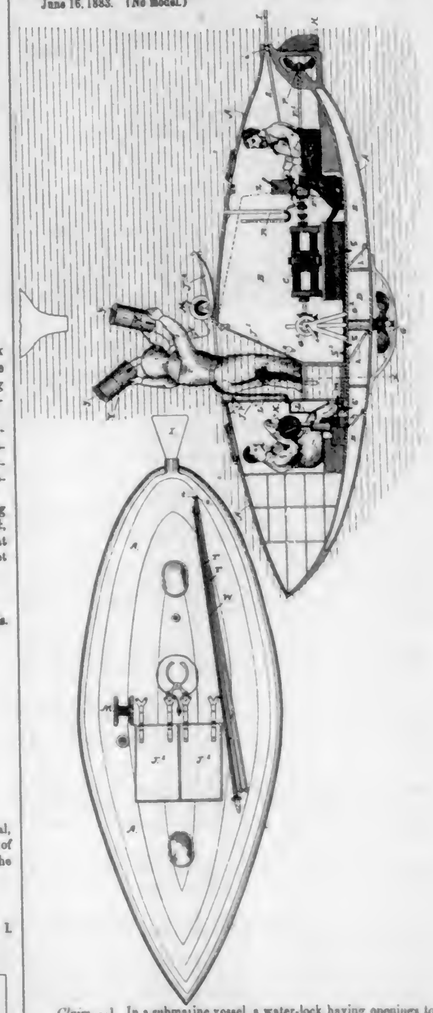
297,646. MOLDER'S FLASK. ELEAZER THOMAS, Pawtucket, R. I. Filed Feb. 6, 1884. (No model.)



Claim.—1. In combination with a molder's flask provided with supports D, or their equivalents, a marginal sand frame or band and one or more clamping-screws adapted to confine said frame or band within the flask or release it therefrom, substantially as and for the purpose set forth.

2. In combination with a molder's flask, a marginal sand frame or band provided with removable and adjustable cross-bars, substantially as and for the purpose set forth.

297,647. SUBMARINE VESSEL. JOSIAH H. L. TUCK, San Francisco, Cal., assignor to the Submarine Monitor Company, New York, N. Y. Filed June 16, 1883. (No model.)



Claim.—1. In a submarine vessel, a water-lock having openings to the interior and exterior of the vessel, and means for closing the same, in combination with a water-ballast compartment and connections thereto, whereby the lock may be emptied of water after being used, as set forth.

2. In a submarine vessel or boat, a water-lock, J, located in the upper part of the vessel, and having hatches or coverings opening out upon the top thereof, whereby a person in the lock, when it is open, can stand upright above the top of the vessel.

3. In a submarine vessel or boat, a double water-lock the compartments of which are separate from each other, and which can be used separately or together, substantially as set forth.

4. In a submarine vessel, a water-lock located at or near its upper surface, and provided with hatches opening upon said upper surface, but which are air and water tight when closed, the said lock having an air-vent connected with the air-chamber of the vessel, and means for controlling the same, and a water-passage leading to the water-ballast chamber or compartment underneath the vessel, substantially as set forth.

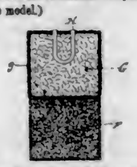
5. In a submarine vessel, the combination, with the water-lock located at or near its upper surface, and means for entering, opening, closing, and emptying the same, of an air-supply pipe, as L', connected to the interior of the vessel at one end and to the armor of the operator at the other, as set forth.

6. In a submarine boat or vessel, a water-lock compartment, J, located in the upper portion of the vessel's body, having openings upward upon the top of the vessel controlled by removable covers, doors, or hatches J' J², a water-discharge pipe, *m*, connecting it with a water-receiving compartment in the vessel, an air-vent, *p*, and a coupling, K, for connecting an air-tube within the compartment with an air-supply apparatus in the vessel, as set forth.

7. The combination, with the body or vessel A, of the air-conducting tubes T T, capable of being raised and lowered, having their open ends controlled by valves to keep out water and admit air, and the hinged mast W, to which the tubes are attached, and with which they are raised and lowered, substantially as described.

8. The herein-described submarine vessel, consisting of the hull A, having water-lock compartments J, water-ballast compartments D E E, inlet and discharge tubes *g g k*, propelling-engine C, propellers F G, and suitable motors for driving them, the indicator R, the air-conducting tubes T T on the outside, and means for raising and holding their ends above the water, and an air-pump, substantially as described.

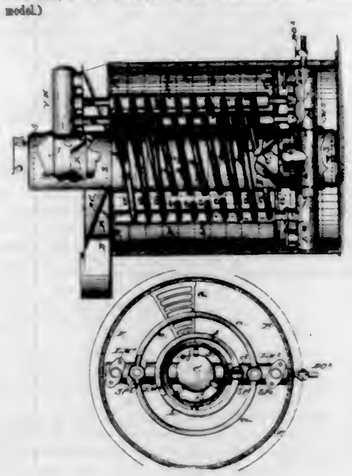
297,648. MARINE TORPEDO. JOSIAH H. L. TUCK, San Francisco, Cal., assignor to the Submarine Monitor Company, New York, N. Y. Filed Mar. 18, 1884. (No model.)



Claim.—1. A torpedo having a float portion coated with adhesive material and provided with a magnet, substantially as set forth.

2. In a buoyant torpedo, the combination, with the magazine, of a superposed buoyant chamber or float and a coating of some adhesive material applied thereto, whereby the torpedo will adhere to any object with which it may come in contact, substantially as described.

297,649. WATER-TUBE STEAM-GENERATOR. CHARLES WARD, Charleston, W. Va. Filed Mar. 4, 1880. Renewed Nov. 2, 1883. (No model.)



Claim.—1. The combination, with a series of semicircular or circular tubes and upper and lower manifolds, of a pipe having a lengthwise division-plate or diaphragm, as specified, whereby said pipe serves both for supply and discharge, as specified.

2. In combination with the cylindrical boiler or separator and manifold, a series of encircling-tubes which take their supply from above the mud-space through transverse supply-pipes, (from separator,) and deliver the water and steam into the cylindrical boiler by manifold for the purpose of separating steam, water, and mud, substantially as described.

3. The combination, with the cylindrical boiler or separator having a mud-collector in its lower part, of vertical pipes c, a series of encircling-tubes which receive their supply at a point above the mud-collector or mud-space, and discharge into pipes that lead into the upper end of the separator, as specified.

4. The combination, with the vertical separator, of the deflector D, placed in its upper portion, and the series of tubes and stand-pipes connected with the separator at a point located above the deflector, as and for the purpose specified.

5. The combination, with the separator, of the annular mud-collector located in its lower portion, and the manifolds connected at a point below said collector, as specified.

6. The combination, with the annular mud-collector and the separator, of the cone which changes the course of the water and facilitates the deposition of mud, as specified.

7. The combination, with the separator and the system of tubes and stand-pipes, and the lower manifold having a partition, *p*, of the blow-off cocks attached, respectively, to the separator and manifold, as shown and described, to allow, first, blowing out the mud, and then the water, through all the circulating system.

297,650. ELEVATOR-CHAIN. CARLOS SHERMAN WARNER, Brooklyn, N. Y., assignor to Lucius Curtiss Warner, Crown Point, Ind. Filed Jan. 10, 1883. (No model.)



Claim.—In an elevator-chain, the combination of the flat links A, having their ends bent to form loops C D, the latter of which is provided with a slot, E, and the wire links B, having their solid ends fitted into the loop C of the link A and their open ends into the loops D of the links A, the ends of said links B being bent out through the slot E, substantially as shown and described.

297,651. PEN-HOLDER. OLIVER S. WARNER, Akron, Ohio, assignor of one-half to David E. Warner, Jamesport, N. Y. Filed Jan. 25, 1884. (No model.)



Claim.—1. A pen-holder having a grip of the triangular type and integral with the penstock, one of the sides of said triangle being convexly curved and one concavely curved, substantially as and for the purposes specified.

2. A pen-holder having a grip of the triangular type, one of the sides of said triangle being convexly curved, one concavely curved, while the third is a plane surface, substantially as and for the purposes specified.

3. The combination, substantially as before set forth, of a pen-holder having at one end a tubular socket and triangular-shaped grip, one of the sides of which is convex, and an elastic plug or pen-seat secured within the tubular socket, substantially as and for the purposes specified.

297,652. SHAFT-COUPLING. JEREMIAH MEARS WATSON, Sharon, Mass. Filed Nov. 1, 1883. (No model.)



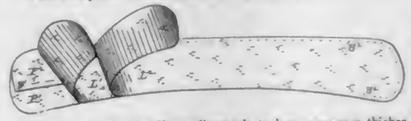
Claim.—1. The combination of the shaft-coupling sleeve, having within it and arranged, as described, with its bore, a cylindrical chamber eccentric therewith, substantially as explained, with a curved wedge placed in such chamber, and to operate with a shaft when in the bore, essentially and for the purpose as set forth.

2. The shaft-coupling sleeve having within it and arranged with its bore a cylindrical chamber, essentially in manner as described, and also having two screw-threaded openings arranged to lead into such chamber in manner as set forth, in combination with a curved wedge arranged in such chamber, and with a screw screwed into one of such openings and to operate against the head of the said wedge, substantially as represented.

3. The combination of the shaft, grooved or recessed in its periphery at or near one end of it, with a curved wedge lapping about such shaft, and having a spline or feather extending from it into the groove or recess of the shaft, and with a sleeve having within it a chamber eccentric with the bore of such shaft, and applied to the shaft and wedge, substantially as set forth.

4. The combination of a sleeve having within it two cylindrical chambers eccentric with its bore, and in each chamber a curved wedge having a spline or feather, as described, with two shafts grooved or recessed in their peripheries to receive the splines or feathers of the said wedges, and extended in opposite directions into the bore of such sleeve and into or through the two eccentric chambers, and arranged with the wedges, as set forth.

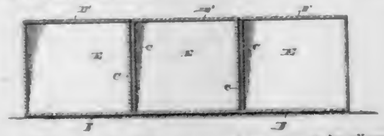
297,653. COLLAR. ALVIDER WHITED, Troy, N. Y., assignor to Holmes & Ide, same place. Filed Nov. 23, 1883. (No model.)



Claim.—1. In a bandless collar made to have an upper thicker part and a lower thinner part, and, in combination therewith, an interior longitudinally-arranged lapping seam between the said thinner and thicker parts of the collar, and produced by inverting a thickness of the ply that is cut to be narrower than the full-width blanks of the collar, uniting said narrower blank as inverted on its inner edge longitudinally to a full-width thickness of the ply at or below the transverse center of the latter, and then turning up said narrow ply-blank over its lapping union, so as to bring its outer edge in folded coincidence with the other blanks before superimposing the facings, sewing, and turning the collar, as shown and described.

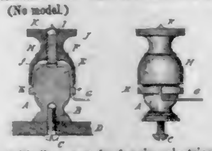
2. A bandless collar made with an upper thicker and lower thinner part, in combination with an interior stiffening-seam arranged longitudinally within the ply free from the facings of the collar, and between said thicker and thinner parts, as herein shown and described.

297,654. WOODEN BOX. HENRY WOOD, Wellington, Ohio. Filed Dec. 28, 1883. (No model.)



Claim.—A box divided into a series of compartments by adjacent partitions, which latter constitute ends of the adjacent compartments, each compartment of said box having one or more of its four sides entirely independent of the adjacent compartment, substantially as set forth.

297,655. BINDING-POST. THOS. R. ABERNETHY, Chicago, Ill. Filed Nov. 21, 1883. (No model.)



Claim.—1. A binding-post for forming electrical connection between a conducting-wire and other conductors, consisting of a conical or sugar-loaf-shaped base provided with means for securing to a support, and having a projection at its apex perforated for the passage of the conducting-wire, a cap the interior whereof conforms in shape to the base engaging therewith, substantially as and for the uses and purposes shown and described.

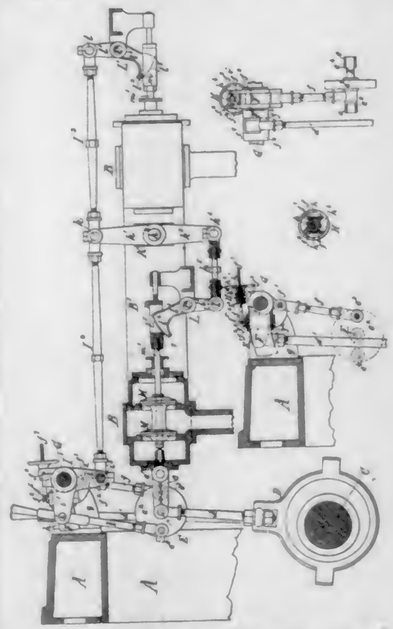
2. In a device of the character herein specified, a conical post provided with a screw-threaded perforation at bottom for engaging with a securing-screw, as set forth, and having a perforated projection at top adapted and arranged to receive a conducting-wire, substantially as shown and described.

3. A binding-post wherein the upper portion of the base is conical or sugar-loaf in shape, a screw-thread being formed at the base of the cone, and arranged to engage with a corresponding thread near the rim of a cap passing down thereover, substantially as shown and described.

4. The combination, with the base A, having a conical upper portion, E', of a screw-threaded projection, F, perforated at *f*, substantially as and for the uses and purposes shown and described.

5. In a binding-post of the character herein specified, base A, screw-threaded perforation B, screw C, cone E', projection F, perforated at *f*, and cap or cap-piece H, the whole combined and arranged to operate substantially as shown and described.

297,656. VALVE-GEAR. HERMAN F. AMBOS, Columbus, Ohio, assignor to the Columbus Machine Company, same place. Filed Jan. 7, 1884. (No model.)



Claim.—1. In a valve-motion for steam-engines, the combination of a stroke-varying mechanism, comprising the adjustable slide and its connections, and a stroke-increasing mechanism, comprising the disk c^3 and its connections, whereby a very quick and variable or adjustable valve-stroke is obtained, substantially as and for the purpose described.

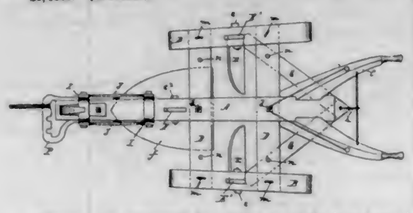
2. The combination of the eccentric-rod *d*, operating the center shaft, E, of the disk c^3, the wrist-pins c^3 c^4, connecting-rods *f* I, lever-arm I', having a wrist-pin, *i*, and swinging arm F, having pin *f''*, whereby a rapid motion for the valve is obtained, substantially as and for the purpose described.

3. The combination of the slide *f'*, the swinging arm F, having the adjusting device of the said slide attached to it, and the connecting-rods *f* and I, substantially as and for the purpose described.

4. The combination of the valves M, having frames *m* and valve-rods *m'*, and the operating-levers L L', having tappet-heads *l*^{3} of the construction shown, whereby only the greatest speed of the valve-motion is utilized, substantially as and for the purpose described.

5. The combination of the valve-rods *m'*, having oblong frames *m*, and the tappet-levers L L', having concentric surfaces *l*^{3}, whereby the valves M are kept in their closed position, substantially as and for the purpose described.

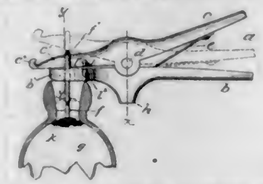
297,657. CULTIVATOR. DANIEL ARCHER, Madison, Cal. Filed Oct. 29, 1883. (No model.)



Claim.—1. In a cultivator, the combination of the draw-beam A and cross-pieces D D, movable side bars, B, and means for adjusting them to and from the draw-beam, shares E, secured to the side bars, with a central share, *f*, secured in front of the shares E to the draw-beam, substantially as herein set forth.

2. In a cultivator, the combination, with the draw-beam and frame, of the upright standards E, bearing the shares, and the horizontal bars G, having the harrow-teeth *g g*, said supports being secured to the standards E at one end, and supported by a rod, A, secured to the frame at the other, substantially as set forth.

297,658. STOPPER-PULLING PLIERS. BELLAMY A. BACON and JAMES W. BOARDMAN, Hartford, Conn. Filed Mar. 5, 1884. (No model.)



Claim.—1. As an improved article of manufacture, stopper-drawing pliers consisting of a lever-handle having a forked jaw and a lever-handle having a hook-bearing jaw pivotally connected, and operating substantially as described, and for the purpose set forth.

2. In combination, pivoted levers with jaws opening under pressure upon the handles, and one jaw bearing a hook, substantially as described, and for the purpose set forth.

3. In combination, lever *b*, with a forked jaw, *b'*, lever *c*, with the jaw *c'*, bearing the hook c^3, and the pivot *d*, all substantially as described.

4. In combination, the pivotally-connected lever-handles *b* and *c*, with jaws bearing the laterally-projecting valve-stretching device *l*, all substantially as described.

5. In combination, the fulcrum-lever *b*, having the forked jaw *b'*, and hammer-head *h*, the lever *c*, with elongated jaw *c'*, bearing the hook c^3, and the pivot *d*, all substantially as described.

6. In combination, a fulcrum-lever, *b*, having a forked jaw, *b'*, with a lateral prong, l^2, a lever, *c*, having a jaw, *c'*, with a hook, c^3, and lateral prong, *l'*, and a pivot, *d*, all substantially as described.

297,659. FORGE-HAMMER. JAS. H. BAKER, Westville, Ohio. Filed Oct. 24, 1883. (No model.)



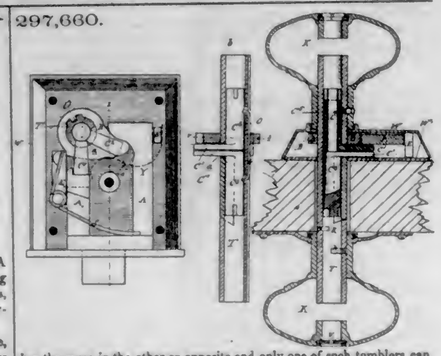
Claim.—1. The combination, with the movable die-block B, of the rack F, secured on the same, the shaft G, the pinion J, mounted on the same, and engaging with the rack F, and of the hand-wheel K on the outer end of the shaft, substantially as herein shown and described.

2. The combination, with the anvil I and the movable die-block B, of the rack F, secured on the die-block, the arm H on the anvil, the shaft G, held to turn in the arm H, the pinion J, mounted on the shaft G and engaging with the rack, and of the hand-wheel K, mounted on the outer end of the shaft G, substantially as herein shown and described.

297,660. LOCK. FREDERICK BALLIN, Detroit, Mich. Filed Oct. 22, 1883. (No model.)

Claim.—1. In a lock provided with a hollow spindle, two tumblers, the pintles of which are inclosed within said spindle, and constructed and arranged substantially as specified, whereby the insertion of a key into one end of said spindle actuates both of said tumblers, while by inserting the same in the other or opposite end only one of such tumblers can be operated, substantially as and for the purpose set forth.

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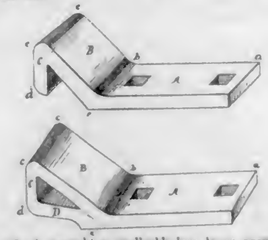
2. In a lock, and in combination with the hollow spindle thereof, the tumblers C' C'', the latter being provided with a solid pintle upon one side and a pin upon the other, said pin passing through the hollow pintle of the tumbler C', substantially as set forth.

3. In combination with the two tumblers C' C'', provided with pintles having depressions or indentations, and hollow spindle T, having openings coincident with said depressions in said pintles, and provided with a longitudinal groove on its outer face, the spring O, seated in said groove, with its ends projecting through said openings in the spindle and engaging with said pintles to prevent their displacement, as set forth.

4. In combination with the hollow spindle T, having a longitudinal groove and openings, as described, and tumblers C' C'', provided with pintles having depressions coincident with said openings, the spring O, seated in the said groove and held therein by the tumbler sleeved on said spindle, the ends of said spring being in engagement with the said pintles, substantially as and for the purpose specified.

297,661. RAIL-BRACE. PINCKNEY F. BARR, Denver, Colo. Filed July 28, 1883. (No model.)

Brief.—A wrought or malleable iron brace formed with a foot, a diagonal stay, a vertical side or back, and a foot-connection which may be welded to the foot.



Claim.—1. A wrought or malleable iron brace provided with a foot, A, a diagonal stay, B, and vertical side C, substantially as described.

2. A wrought or malleable iron brace provided with a foot, A, a diagonal stay, B, vertical side C, and foot-connection D, substantially as described.

3. A wrought or malleable iron brace provided with a foot, A, a diagonal stay, B, vertical side C, and foot-connection D, and having the foot-connection welded to the foot, substantially as described.

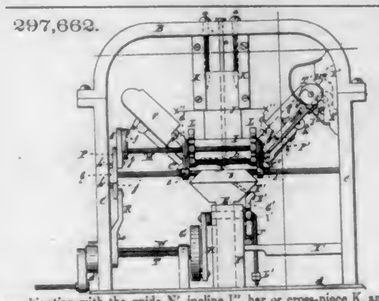
297,662. TRAY-MACHINE. MYRON E. BENJAMIN, Cleveland, Ohio. Filed Oct. 5, 1883. (No model.)

Claim.—1. The bifurcated lever G', pin E', adjustable screw-rod J', and trip M', in combination with the cog-wheel A', for the purpose set forth, and substantially as described.

2. In a machine for making trays, guide-arm N', the staple-bending slide O', provided with projecting arms *f'' f'''*, for bending the staple-blanks and for cutting the same from the wire for said blanks, and the rollers T', in combination with the jaw P', provided with a transverse groove in the end thereof, spring for closing said jaw, and inclines H''' and J'', substantially as described, and for the purposes specified.

3. In a machine for making trays, the staple-driver provided with a shoulder, *s'*, and roller A'', arranged to operate in relation to and in

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combination with the guide N', incline I'', bar or cross-piece K, and jaw P', provided with spring Q', having a shoulder, r', the co-operation of which shoulders s' and r' open said jaw for the removal of the staple from the groove in the end of the jaw P', that the staple may be driven therefrom into the folds of the tray and clinched, substantially as set forth.

4. In combination with the guide N' and staple-driver, the jaw P', provided with a groove, n', adapted to receive the staple-blank below the upper surface of the end of the said jaw, so that the prongs of the staple may be bent against the blank sides of the end of the jaw below its line of contact with the guide, substantially as described.

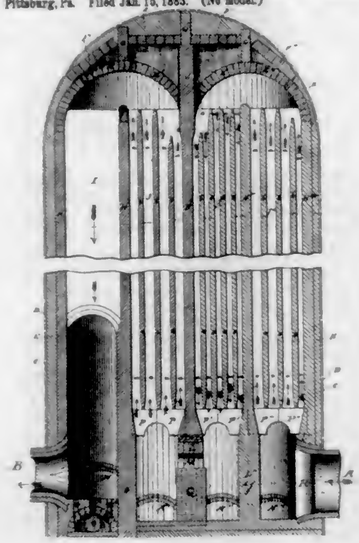
5. In combination with the jaw P' and staple-driver, the finger R', arranged in relation to the groove in said jaw, substantially as set forth, and for the purpose specified.

6. In a machine for making trays, the guiding-jaws n', each of which is provided with a notch, which, when the jaws are closed, forms a hole for guiding the stapling-wire from the conducting-tube to the bending-slide, in combination with the slide U', pin, and bending-slide O', as described.

7. In combination with the forming-dies of a machine for making trays, a slide consisting of the bar or cross-piece V, with projecting arms extending therefrom to and between the said forming-dies for conveying thereto the tray-blanks, and having a reciprocating movement imparted thereto on the frame U by the mechanism described, substantially as set forth.

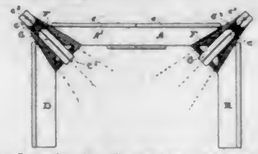
8. In a machine for making trays, the rotative segmental clinchers arranged in relation to each other and to the cog-wheel A' and B', as set forth, and provided with a segment-rib adapted to fit and move in a corresponding groove, by which is obtained to said clinchers an annular movement, substantially as described, for operating the same, in combination with the means for holding and driving a staple, for the purpose specified, and substantially as set forth.

297,663. BLAST-FURNACE APPARATUS. JOHN FRANCIS BENNETT, Pittsburg, Pa. Filed Jan. 15, 1883. (No model.)



Claim.—In apparatus for raising the temperature of the air to be fed to a blast-furnace, a stove, C, having cold-air inlet A, sloping wall R, dividing the current, partition-walls H H' H'' H''' H'''', forming chambers I J J' J'', tubes *b b b*, forming flues *a a a*, passage M, and heated-air outlet B, substantially as described.

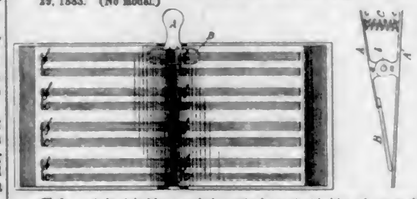
297,664. MITER-BOX. WM. I. BOYER, San Francisco, Cal. Filed Sept. 21, 1883. (No model.)



Claim.—1. In a miter-box, the combination of two sides joined at a right angle with a triangular plate, as F, placed at the juncture thereof, having its base set to face the inside of the box, and a saw-guide pivoted and adjusted on said plate, substantially as set forth.

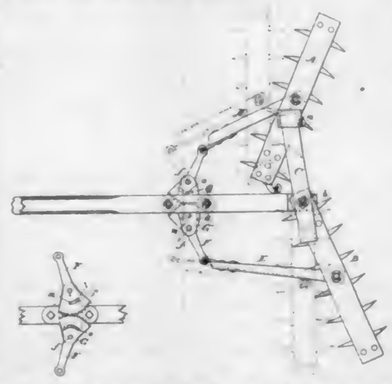
2. A miter-box consisting of the sides A B D, joined together to form three sides of a square, with their junctures secured by triangular plates F, having the saw-guides C pivoted to the outer ends thereof and adjusted upon the inner broader ends, substantially as set forth.

297,665. LEAF-HOLDER. JACOB W. BRAAM, Crapo, Mich. Filed Dec. 29, 1883. (No model.)



Claim.—A leaf-holder consisting of plates A A', hinged to each other, as set forth, wire extension B, and spring C, the whole combined and arranged to operate substantially as shown and described.

297,666. DISK-HARROW. FRANK BRAMER, Little Falls, N. Y. Walter W. Whitman and Lewis H. Crandall Executors of said Bramer, deceased. Filed June 23, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of the gang-frames, the draft-bars, the pivoted geared slotted adjusting-plates, the projecting wings or plates in which they are pivoted, and a pin or stop for limiting the swing of the gangs.

2. The combination, substantially as set forth, of the pole, the disk-gang frames hinged thereto, the draft-bars, the pivoted adjusting-plates to which the draft-bars are hinged, and mechanism for controlling the movement of the plates so as to permit the disks to automatically assume a position parallel with the line of draft when the machine is backed,

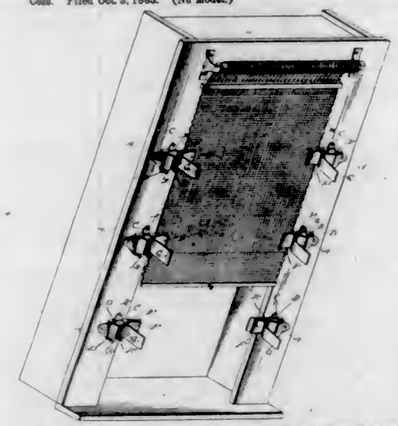
and to hold the gangs at the desired angle when the machine is drawn forward.

3. The combination, substantially as set forth, of the draft-pole, the disk-gang frames hinged thereto at their inner ends, the draft-bars, the pivoted adjusting-plates, which permit the disks automatically to assume a position parallel with the line of draft when the machine is backed, and hold the gangs at the desired angle when the machine moves forward, mechanism for limiting the movements of the adjusting-plates, and the hinge-connections between the draft-bars and adjusting-plates, placed on a lower plane than the hinge-connections between the gang-frames and draft-pole.

4. The combination, substantially as set forth, of the pivoted geared adjusting-plates, the gang-frames, connections between the gang-frames and the plates, and mechanism for controlling the movement of the adjusting-plates so as to vary the angle of the gangs.

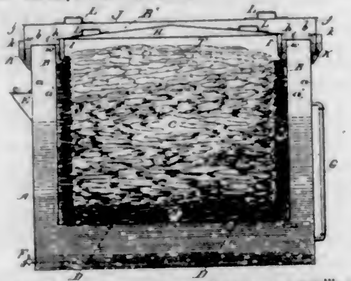
5. The combination, substantially as set forth, of the draft-pole, the plate bolted thereon and having the laterally-projecting wings, the geared slotted adjusting-plates with which the gang-frames are connected, pivoted in said wings, stop-pin apertures in the wings, and a pin or detent for limiting the movement of the gangs.

297,667. WINDOW-SCREEN. AINSWORTH BROWN, Colorado Springs, Colo. Filed Oct. 3, 1883. (No model.)



Claim.—The combination of a base-plate, A, having forwardly-bent arms D D and E E, the laterally-projecting flat spring F, secured between the arms D D, and forced outward from the body-plate A by its own tension, and the cam-lever G, pivoted between the arms E E, and adapted to force the end of the spring F into contact with the base-plate, as and for the purpose herein set forth.

297,668. TOBACCO-SWEATER. GEORGE BROWNSTEIN, San Francisco, Cal. Filed Sept. 7, 1883. (No model.)



Claim.—1. In a machine for sweating tobacco, a metallic vessel having an outer water-jacket with perforated top *b*, in combination with the removable metallic covers having a space between them, forming a steam-jacket over the top of the interior compartment, and communicating with the water-jacket of the main vessel through the perforated top of the latter, substantially as described.

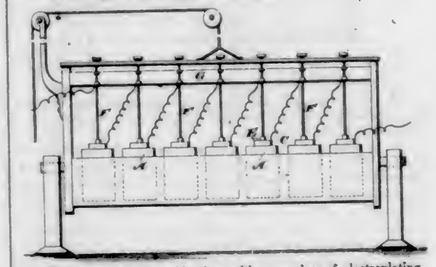
2. In a machine for sweating tobacco, the metallic vessel A, having an interior tobacco-containing compartment, and a surrounding water-jacket having an inlet and a drain, and the inner and outer circumscribing flanges, I K, at the top of the vessel, forming troughs *i k* for a water-seal, in combination with the removable inner and outer covers, H J, having flanges *h j*, fitting in the water-troughs, and having a steam-jacket, B', between them, communicating with the water-jacket of vessel A, substantially as herein described.

3. In a machine for sweating tobacco, the metallic vessel A, having an interior tobacco-containing compartment, and a surrounding water-jacket having an inlet and a drain, and the inner circumscribing flange, I, at the top of the vessel, forming a trough, *i*, for a water-seal, in combination with the inner cover, H, having its upper surface sloping from center to edge, and a flange, *h*, fitting the inner water-trough, and the raised outer cover, J, forming between itself and the inner cover a steam-jacket communicating with the water-jacket of vessel A, substantially as herein described.

4. In a machine for sweating tobacco, the metallic vessel A, having an interior tobacco-compartment and a surrounding water-jacket, and the inner and outer circumscribing flanges, I K, at the top of the vessel, and higher than its upper edge, said flanges forming troughs *i k* for a water-seal, in combination with the removable inner and outer covers, H J, having flanges *h j*, fitting in the water-troughs, and having a steam-jacket between them, communicating with the water-jacket of vessel A, substantially as herein described.

297,669. APPARATUS FOR ELECTROPLATING. CHAS. F. BRUSH, Cleveland, Ohio. Filed May 27, 1881. (No model.)

Brief.—Agitates solution by current of air.



Claim.—1. The combination, with a number of electroplating-baths, each provided with an anode adapted to surround an electric-light carbon, of devices for supporting an electric-light carbon centrally (or approximately so) within each anode, and electric conductors for connecting the electroplating-baths in series, so as to be traversed by the same current, substantially as set forth.

2. The combination, with a number of electroplating-baths, each provided with an anode adapted to surround an electric-light carbon, and electric conductors for connecting the baths in series, of devices for supporting an electric-light carbon centrally (or approximately so) within each anode, and for raising and lowering said carbons, substantially as set forth.

3. The combination, with a number of electroplating baths, each containing an anode adapted to surround an electric-light carbon, of a series of clamps, each adapted to support an electric-light carbon centrally (or approximately so) within each anode, and means for raising and lowering the clamps simultaneously, substantially as set forth.

4. The combination, with a tilting frame having a series of jars or receptacles supported therein, each jar or receptacle being provided with an anode and suitable bath, of devices for supporting an electric-light carbon in each bath, electric conductors for connecting the baths in series, and devices for raising and lowering the carbons simultaneously, substantially as set forth.

297,670. ENGINE-REGISTER. CYRUS CHAMBERS, Jr., Philadelphia, Pa. Filed Apr. 13, 1881. (No model.)

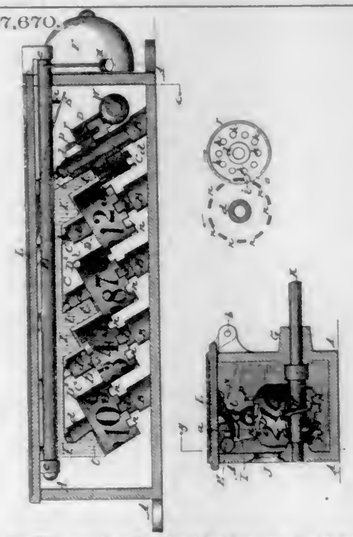
Claim.—1. In an engine-register, a revoluble shaft provided with tappets and a bell-hammer arm, said shaft and arm being spring actuated, as specified, in combination with a series of count or dial wheels, each having a row of ten holes, and a pin adapted to be inserted into any one of said holes, substantially as described, and for the purposes set forth.

2. In combination with the dial-wheels D D', &c., the pin *p*, tappets *t*, plate I, shaft E, hammer H, and bell F, all constructed, arranged, and operating substantially as described.

3. In combination with the case A, the lugs B, inclined studs C, lugs *l*, and wheels D D', &c., constructed and operating in the manner and for the purpose specified.

4. The combination of the alarm mechanism and the lugs *l* with the lid L of the case, in order that when the lid is opened the wheels

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can be readily removed or adjusted and the alarm-pin set, as desired.

5. The combination of the lid L, provided with the lugs *l* and the dial-wheels, to prevent the removal or displacement of the wheels when the lid is closed, as set forth.

6. In an engine-register, a series of count or dial wheels loosely mounted on diagonal or inclined studs, so that the upper face edge of the first or driving wheel of said series shall lie immediately under the lower edge of the adjoining wheel, said upper face edge of the driving-wheel being provided with a tooth, the said under lower edge of the adjoining or driven wheel being provided with ten notches, whereby at each revolution of the driving-wheel the driven wheel is turned one-tenth of a revolution, as set forth, and at the same time permitting the wheels to be raised and lowered on their respective studs, to effect the disengagement of the teeth and notches aforesaid, for the purpose of adjustment, substantially as described and set forth.

7. In an engine-register, a series of count or dial wheels loosely mounted and inclined, so that the upper face edge of the first or driving wheel of said series shall be immediately under the lower edge of the adjoining wheel, said upper face of the driving-wheel being provided with a tooth, the said under lower edge of the adjoining or driven wheel being provided with ten notches, whereby at each revolution of the driving-wheel the driven wheel is turned one-tenth of a revolution, as set forth, in combination with a drive-shaft and worm, said worm engaging with the notches on the under side of one of the dial-wheels, substantially as specified.

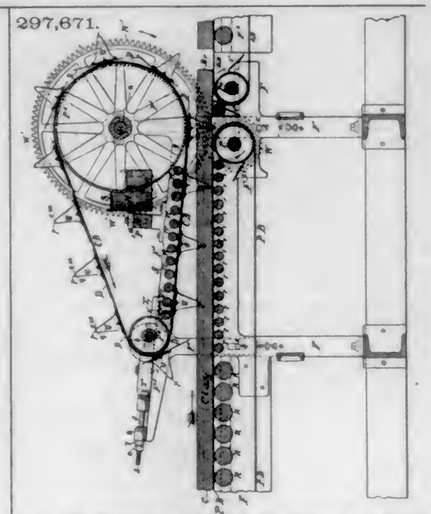
297,671. BRICK-MACHINE. CYRUS CHAMBERS, Jr., Philadelphia, Pa. Filed Feb. 8, 1883. (No model.)

Claim.—1. The improvement in the art of making bricks of clay or other plastic substance, which consists in forcing the same through a die in a bar and cutting the latter into bricks by means of a wire or wires mounted on an endless belt propelled automatically by the pushing force of the said bar, through suitable intermediate mechanism, to move in the same direction as the bar and diagonally across its path, the movement given to the wire or wires with relation to that of the bar being as described, whereby the latter is intersected transversely at right angles, and is cut off into brick-lengths, substantially as set forth.

2. The improvement in the art of making bricks of clay or other plastic material, consisting in forcing such material through a suitable die in a continuously-moving bar or column, and simultaneously dividing the same into bricks by means of a wire or series of wires caused to move with the continuous bar, and at the same time across its path, substantially as set forth.

3. In a machine for making bricks of clay or other plastic material, the following elements, combined and operating substantially as hereinbefore described, viz: mechanism for expressing a body of such material through a die in a bar or column, means for sustaining the latter, and mechanism for severing it into bricks, consisting of one or a series of wires mounted on an endless belt, substantially in the manner described, caused to move with and to carry said wire or wires across the path of the said bar of clay, whereby the latter is divided into bricks.

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4. The combination, in a brick-making machine, with mechanism for forcing the clay through a die in a continuously-moving bar, of means for sustaining and preserving the same in line with the die, and a device for severing the bar into bricks, consisting of a wire or a series of wires suitably mounted on an endless flexible belt arranged and caused to move with and simultaneously across the path of the continuous bar, whereby the same is cut off into bricks, all constructed, combined, and operating substantially as described.

5. In a brick-making machine, the combination, with means for forcing a continuous bar of clay through a die, of an endless belt running over pulleys and supported in a suitable frame, which belt is located and adapted to receive said bar of clay thereon and be by the latter propelled, and mechanism for cutting off the advancing end of the bar into bricks, consisting of one or a series of wires suitably mounted over and near the end of the bar on a flexible endless belt inclined toward the bar of clay and propelled, through intermediate connections, by the push or force of the bar impinging upon the first-mentioned belt, all combined, constructed, and adapted to operate substantially in the manner and for the purposes shown and described.

6. The combination, with the propulsion-belt PB, adapted to receive and sustain the ejected continuous bar of clay, of the pulley P^v, gears W W', pulleys P^s and P^u, and the endless carrier running upon the last-mentioned pulleys, and having mounted thereon the cut-off wires, whereby the wires are successively carried athwart the moving bar of clay, and whereby the latter is severed into bricks, substantially as shown and set forth.

7. In that class of brick-machines wherein the clay is expressed through a die in the form of a bar, the combination of a movable carrier, a series of cut-off wires secured thereto and held taut by spring-controlled devices, whereby said wires are adapted to yield to hard bodies in the clay and then resume their normal position, together with suitable mechanism for propelling said carrier and causing the cut-off wires to advance through and sever the bar of clay into bricks, substantially as and for the purpose set forth.

8. In combination with the endless belt CB, the U-shaped bows secured thereto, and adapted to hold the cut-off wires, substantially as shown and described.

9. The combination, with the endless belt or carrier CB, of the elastic U-shaped bows secured thereto, the said bows being adapted to hold and by their elasticity keep taut the cut-off wires, yet allow them to yield temporarily to obstructions, substantially as specified.

10. In combination with the belt CB, the U-shaped bows having means, substantially as shown, for the ready attachment thereto of the cut-off wires, and for determining and limiting the position of the latter, substantially as and for the purposes set forth.

11. In combination with the endless cut-off belt and the described wire-holding bows, the rigid plates D, substantially as shown, and for the purposes specified.

12. In combination with the bows U, the cut-off belt and its pulleys, the plates D, when secured to said belt at a single point or transverse line, whereby the belt is at all times permitted to hug closely the said pulleys, substantially as specified.

13. The combination, with the cut-off belt and its convex-faced pulleys P^u P^s, and the U-shaped bows, and the series of convex-faced rollers *rr*, of the plates D, having concaved bases to conform to the shape of said pulleys, substantially as and for the purpose specified.

14. In combination with the flexible endless carrier CB, wire-holders U, and pulleys P^u P^s, of the plates D, when secured to said belt at a single point or transverse line to the rear of the minor axis of the plates, substantially as and for the purposes specified.

15. The combination, with the endless cut-off carrier-belt and its pulleys, and the cut-off wires mounted on said belt in bows or frames, having elongated bases, of the series of resistance-rollers *rr*, the arrangement, construction, and operation being substantially as and for the purposes set forth.

16. The combination, with the belt CB, pulley P^s, driving-pulley P^u, the series of wires mounted on said belt in a suitable frame, and the line of resistance-rollers *rr*, of the opposed series of rollers *r* beneath the propulsion-belt, all constructed, arranged, and adapted to operate substantially in the manner and for the purposes described.

17. The combination, with the cut-off belt carrying the transverse wires, the pulley P^v, and mechanism for driving the same, of the pulley P^s, journaled in the tightener-frame T, whereby said pulley P^s may be adjusted longitudinally, substantially as and for the purposes stated.

18. In combination with the propulsion-belt, its pulley P^v, and the endless belt bearing the cut-off wires, the pulleys P^u and P^s, journaled in the vertically-adjustable frame F', substantially as and for the purposes specified.

19. The combination, with the cut-off belt having the cut-off wires suitably mounted thereon, as described, of the pulley P^s, and the tightener-frame T, having pulley P^s, journaled in said frame, together with one or more resistance-rollers, *rr*, whereby the relative positions of the pulley P^s and said rollers will remain unaltered, substantially as and for the purpose specified.

20. The combination, with the wire cut-off belt and its pulleys, arranged as shown with relation to the propulsion-belt PB and to the continuous clay bar C, of the gears W W', proportioned as described, whereby the said cut-off belt is caused to advance at a speed having a relation to that of the propulsion-belt—that is, in effect the bar of clay—as set forth, whereby the cut-off wires are caused to be carried squarely through the moving clay bar.

21. The combination, with the cut-off belt and mechanism for driving the same, and rollers *r*, and pulley P^v, of the U-shaped wire-holders having the distance between their opposite limbs greater than the width of said rollers and pulley, so as to admit of the cut-off wires being carried below the bar of clay, as specified.

22. In a brick-machine of the class recited, the following elements in combination, viz: an endless belt or its equivalent for receiving and sustaining the moving bar of clay issuing from the die of the machine, an endless carrier having cut-off wires suitably mounted thereon and propelled by mechanism, substantially as described, and an off-bearing belt caused to travel at a greater surface speed than that of the carrier and the bar of clay expressed from the die of the machine, whereby the severed bricks are successively carried away by said off-bearing belt in time to escape the wire that has just severed the brick from said moving clay bar, the combination and arrangement being substantially as and for the purpose described.

23. The combination, with the propulsion-belt, and the wires mounted upon the endless cut-off belt running over pulleys above the path of the bar of clay and propelled by suitable mechanism, substantially as shown, of the off-bearing belt caused to run faster than said propulsion-belt, whereby the severed brick is carried away in time to escape the wire which has just cut it from the said bar, substantially as shown and described.

24. In combination with the propulsion-belt and the off-bearing belt running over pulleys, respectively, in suitable frames, the independent transfer-roller I, located with relation to said belts, substantially as and for the purpose described.

25. The improvement in scrapers for freeing belt-pulleys of clay or other substances, consisting in the combination, with said scrapers, of deflecting-wings for directing the material scraped from the peripheries of the pulleys, so that the same will fall beyond the belts, substantially as described.

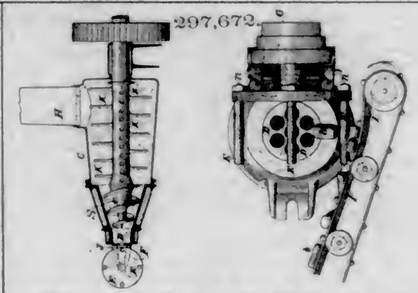
26. In combination with the cut-off belt and its pulleys, the scrapers having the deflecting-wings H, as and for the purpose stated.

27. In the class of brick-machines in which the bar of clay expressed through a die is severed into bricks by means of a series of wires on an endless moving carrier, the method of adapting the cut-off mechanism for making either bricks or tiles, (in connection with suitable dies,) consisting in mounting upon said carrier an even number of said cut-off wires whose distance apart is substantially equal to the length of ordinary bricks, and removing alternate wires for adapting the cut-off to make tiles, and reinserting such alternate wires for making bricks, substantially as set forth.

297,672. APPARATUS FOR MAKING CLAY RAILROAD-BALLAST. CYRUS CHAMBERS, Jr., Philadelphia, Pa. Filed Mar. 31 1883. (No model.)

Brief.—Forces tempered clay through die and breaks it off in chunks as it issues preparatory to drying and burning.

297,672.



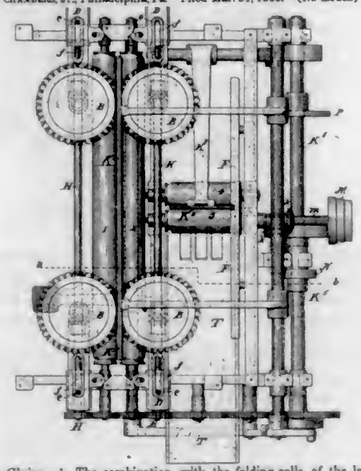
Claim.—1. In combination with devices for expressing a column of clay from a die, a breaker-bar or series of such bars projecting across the path of the column of clay issuing from said die, and arranged with relation to said column as shown—that is to say, so that the latter is free to advance until broken off by the breaker-bar—together with means for moving said breaker-bar across the path of the column of clay, substantially as and for the purpose set forth.

2. In combination with one or more dies and mechanism for forcing clay in plastic condition through the same, the rotatable disk bearing a series of breaker-bars projecting therefrom laterally across the path of the bodies of clay expressed from said dies, said bars being arranged on said disk, as shown, whereby the advance of the bodies of columns of clay is unobstructed until broken off by the said breaker-bars coming into contact therewith when the disk is rotated, substantially as and for the purpose described.

3. In combination with the die or dies and devices for forcing clay out of the same, the breaker-bars secured to a disk which is pivoted to a swinging bracket, whereby the said bars may be brought in the path of or out of the path of the body of clay issuing from the die or dies, substantially as and for the purpose recited.

4. The combination, with the die or dies D, breakers E, disk F, and bracket J, hinged as shown and described, of the lug *m*, substantially as and for the purpose specified.

297,673. MACHINE FOR FOLDING TOWELS, NAPKINS, &c. CYRUS CHAMBERS, Jr., Philadelphia, Pa. Filed Mar. 31, 1883. (No model.)



Claim.—1. The combination, with the folding-rolls, of the lateral smoothing-brushes and the vibrating knife for tucking the article to be folded into the bite of said rolls, substantially as and for the purpose stated.

2. The combination of the slotted feed-table, the first pair of folding-rolls, the folding-knife, and the lateral rotary smoothing-brushes, all combined, constructed, and operating substantially as described, and for the purposes specified.

3. The combination, with the slotted feed-table, of the trio of rolls 1 2 3, means, substantially as described, to rotate the same, the first of two said rolls being in a horizontal plane, and the third in a vertical plane with the second of the trio, together with the respective folding-

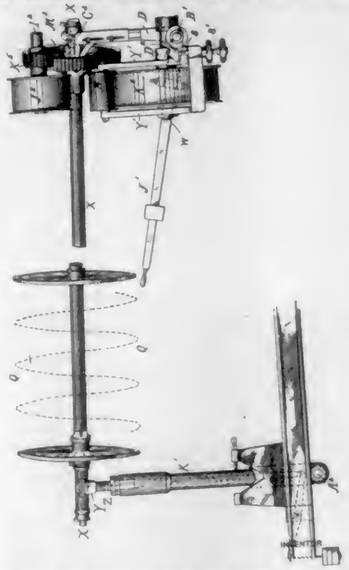
blades for operating the same, and mechanism, substantially as described, to tuck the articles to be folded into the bites of the first and second and of the second and third of the trio of rolls, respectively, substantially as and for the purposes stated.

4. In combination with the slotted feed-table and the folding-rolls and folding-blades, the lateral rotary brushes, and means, substantially as described, for adjusting the same longitudinally, substantially as set forth.

5. The combination, with the first pair of folding-rolls, of the vibrating knife K, the rotary smoothing-brushes having the bevel-gear C, the feathered shafts H, with a bevel-gear, and the adjustable bracket provided with bearings for said gears and brushes, together with mechanism, substantially as shown, for operating said brushes, rolls, and folding-knife, the construction and operation being substantially as and for the purposes set forth.

6. The combination of the slotted feed-table, the lateral brush-wheels, the rolls 1 2 3, and rolls 4 5 6, at right angles to the first-mentioned rolls, together with the respective folding-blades, and the mechanism for operating the same, all combined, constructed, and operating substantially as and for the purposes set forth.

297,674. CUT-OFF-REGULATING DEVICE FOR BRICK-MACHINES. CYRUS CHAMBERS, Jr., Philadelphia, Pa. Filed Dec. 26, 1883. (No model.)



Claim.—1. The combination of the cut-off-blade shaft having gear M^3, the gear K^3, pulleys K^3 and J^3, the pivoted yoke having the idler B, and set-screws *s*, (or their equivalent,) the arm D^2 on rock-shaft B', and the lever D', connecting said cut-off-blade shaft and rock-shaft, all constructed and adapted to operate substantially as and for the purpose recited.

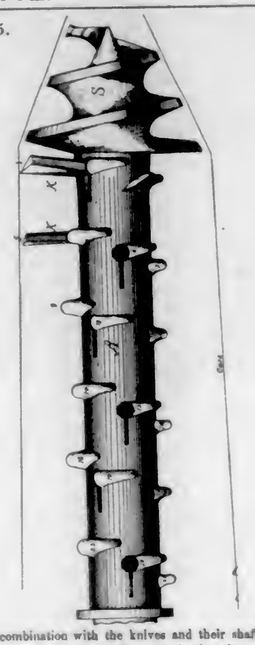
2. In a brick-machine of the recited class, the combination, with the cut-off mechanism, of an adjustable friction-belt device, substantially as shown and described, whereby, through suitable intermediate mechanism, the movement of the bar of clay issuing from the die of the machine is caused to operate said friction-belt device, and thereby causes the same to convey power to and to speed the cut-off mechanism correspondingly to the speed of the bar of clay, substantially as set forth.

297,675. CLAY TEMPERING AND EXPRESSING DEVICE FOR BRICK-MACHINES. CYRUS CHAMBERS, Jr., Philadelphia, Pa. Filed Dec. 26, 1883. (No model.)

Claim.—1. In combination with the shaft and screw, the knives arranged upon said shaft in a spiral running reversely to the spiral of the screw and staggered longitudinally, in the manner and for the purpose specified.

2. In combination with the screw and the knives arranged on the shaft in the manner shown, the first two knives located with relation to each other and the screw, as and for the purpose specified.

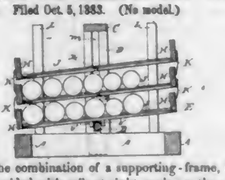
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3. In combination with the knives and their shaft provided with the unequidistant end grooves, the screw having the socket, with lugs corresponding to said grooves, substantially as and for the purpose specified.

4. In combination with the pugging-shaft, the tempering-knives arranged thereon in a spiral, and staggered, as and for the purpose specified.

297,676. DEVICE FOR PRESERVING EGGS. GEORGE COWAN, Marshfield, Mass. Filed Oct. 5, 1883. (No model.)



Claim.—1. The combination of a supporting-frame, a tilting rack pivoted thereto, provided with rails at right angles to the axis on which the rack oscillates, said rails being a proper distance apart for the support of hens' eggs placed side by side between them, and means for arresting the rack at a slight incline to the horizontal in either direction to which it may be tilted, substantially as described.

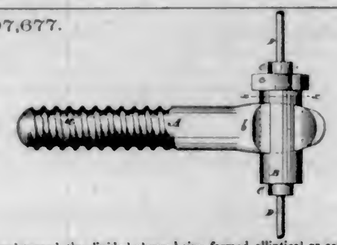
2. The combination of the standards provided with vertical grooves and supporting-pins crossing the grooves at different heights, and oscillatory racks provided with pivot-pins adapted to rest within said grooves on said supporting-pins, said racks having rails at right angles to their axes of oscillation a proper distance apart for the support of eggs placed side by side between them, substantially as described.

3. The improved egg-preserver herein described, the same consisting of the base A, bar D, standards B, provided with the grooves *m*, and pins *d*, rack E, provided with the pins *v*, racks F G, provided with the pins *x*, and the wire K, constructed, combined, and arranged to operate substantially as set forth.

297,677. DEVICE FOR ATTACHING TELEGRAPH-WIRES TO POSTS AND INSULATING THEM THEREFROM. HERBERT COTTRELL, Newark, N. J. Filed Aug. 27, 1883. (No model.)

Claim.—1. The combination of the hook constructed to be attached to a telegraph-pole, and the divided clamp B B, lined with insulating material C C, the sections of said clamp being adapted to be placed together with the wire between them, and then slipped laterally through the hook, and

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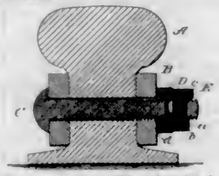
afterward turned, the divided clamp being formed elliptical or cam-like in cross-section, whereby when it is inserted in the hook and turned it will bind both against the hook and the wire, substantially as described.

2. The combination of the hook having the throat *g*, and constructed to be attached to a telegraph-pole, and the divided clamp B B, lined with insulating material C C, the sections of said clamp being adapted to be placed together with the wire between them while the wire is in the hook, and then slipped laterally through the hook, and afterward turned, and said clamp having its circumference constructed with a projection which binds against the hooks when the clamp is turned and locks the latter in contact with both the hook and the wire, substantially as described.

3. The combination of a hook and a divided clamp elliptical or cam-like in cross-section and lined with insulating material, substantially as described.

4. The combination of a hook and a divided clamp elliptical or cam-like in cross-section and lined with insulating material, said clamp having an angular head, *c*, for receiving a wrench, the sections composing the clamp being adapted to be placed together upon the wire while the latter is in the hook, and then slipped laterally through the hook and turned, substantially as described.

297,678. NUT-LOCK. CHAUNCEY B. CRAGIN, Ada, Minn. Filed Jan. 19, 1884. (No model.)



Claim.—1. The combination, with a slotted bolt and its nut, of a transverse key having a projection at right angles at each end, substantially as and for the purposes set forth.

2. The combination, with the slotted bolt and the fish-plate, or other structure through which such bolt passes, of the key having outwardly-extending projections arranged to overlap the edges of the slot, and the spring interposed between the fish-plate and the nut, substantially as described.

297,679. BARB-FENCE MACHINE. JOHN D. CURTIS, Worcester, Mass., assignor to Washburn & Moen Manufacturing Company, same place. Filed Aug. 1, 1883. (No model.)

Brief.—Two sets of barb feeding and cutting devices, placed one set on each side of the coiling-spindle, are operated alternately. The coiling-spindle coils a barb while revolving in one direction and another barb during its revolution in the opposite direction. The barbs are cut off after their free ends are coiled about the main wire.

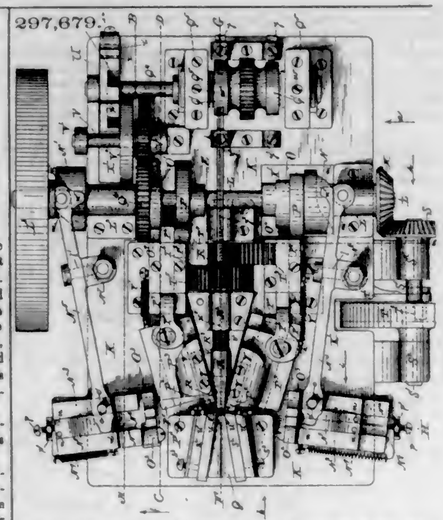
Claim.—1. In a machine for manufacturing barbed fence-wire, means for supporting and feeding the main wire and means for supporting and feeding the barb-wires, in combination with the coiling-spindle and means for operating the same, all arranged and operating substantially as described, whereby the barb-wire is coiled upon the main wire by the rotary movement of the coiling-spindle in each direction, substantially as shown and described.

2. In a barb-fence machine, the combination, with the coiling-spindle, of alternately-acting barb-wire-feeding devices placed on opposite sides of the coiling-spindle, substantially as shown and described.

3. In a machine for barbing fence-wire, the combination, with the coiling-spindle, of movable and stationary cutters, placed on opposite sides of the coiling-spindle, for cutting off the barb-wires, working alternately, substantially as shown and described.

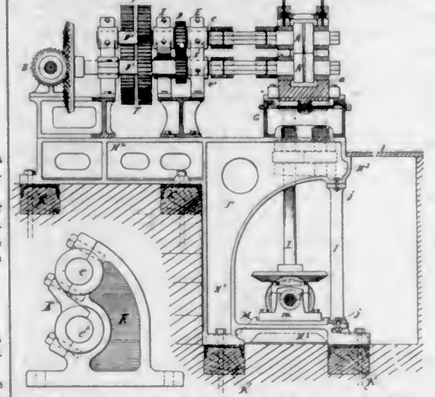
4. In a machine for barbing fence-wire, the combination, with coiling-spindle, of alternately-acting barb-wire-feeding devices, placed on opposite sides of the coiling-spindle, and alternately-working movable

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and stationary cutters placed on opposite sides of the coiling-spindle, substantially as shown and described.

297,680. CONSTRUCTION OF CONTINUOUS ROLLING-MILLS. FRED H. DANIELS, Worcester, Mass. Filed June 21, 1883. (No model.)



Claim.—1. A continuous rolling-mill in which the several pairs of rolls are arranged in the peculiar manner shown—viz., the first ten pairs being arranged with their axles alternately in horizontal and vertical positions, and the following six pairs with their axles all in horizontal position—in combination with driving-shafts and gearing for operating the same, disposed in the manner described.

2. The transverse under frame, H, having the foot portion, central upright, and extended top, integrally constructed and disposed in the peculiar manner shown and described, for the purpose set forth.

3. The combination, with the transverse frame H in a continuous rolling-mill, of a removable support or column, I, arranged between the upper and lower forward-projecting parts of said frame, substantially as and for the purpose set forth.

4. In a continuous rolling-mill, the combination of the transverse frame H, having overhanging end H^3, and the removable support or column I, said parts being respectively provided with interlocking flanges and grooves *i*, and corresponding side slots, with the holding-bolts *j* arranged therein, substantially as and for the purpose set forth.

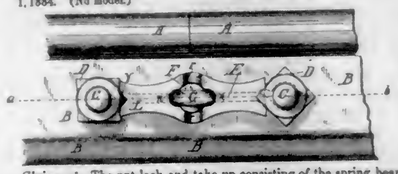
5. The combination, with a continuous rolling-mill, of an auxiliary feed mechanism located between the furnace and first pair of reducing-rolls, as described, for receiving and drawing the hot billets from the

heating-furnace and delivering them squarely to the grooves of the reducing-rolls of the mill, substantially as set forth.

6. The combination, with a continuous rolling-mill and a heating-furnace, of an auxiliary set of feeding-rolls, *n n*, operated independently of the mill-rolls, and adapted for receiving and withdrawing the heated billets from the furnace, and guiding devices for conducting them into the mill.

7 The combination, with a continuous rolling-mill and the auxiliary feeding apparatus, of the hinged guide P, adapted to be swung out of position, to permit passage of the attendant from one side of the machine to the other, as set forth.

297,681. NUT-LOCK. LEVIS H. DAVIS, West Chester, Pa., assignor to the Wilmington Malleable Iron Company, Wilmington, Del. Filed Feb. 1, 1884. (No model.)



Claim.—1. The nut-lock and take-up consisting of the spring bearing-plate, the T-head button, and the locking-plate, when constructed, combined, arranged, and adapted to operate substantially as and for the purposes specified.

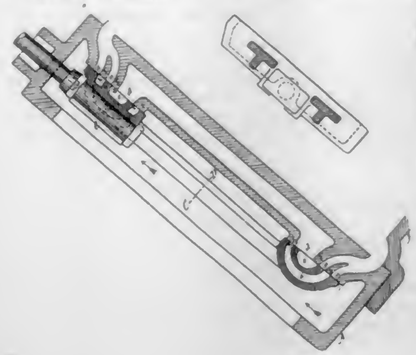
2. The combination of the arched spring bearing-plate, the rotatable button having a slot therein to receive the arched portion of said plate, and the projecting cross-bar, together with the locking-plate recessed on its under side to receive and allow play of the bearing-plate, and having an opening therein with side extensions thereof adapted for the reception of the said button and its cross-bar, and having also inclinations extending up from the extremities of said side extensions of the opening in the plate, all constructed and adapted to operate together substantially as and for the purposes set forth.

3. In combination with the bearing-plate and the cam-locking plate having the described opening therein, the T-head button provided with means, substantially as shown, for limiting the rotation of said button, substantially as and for the purpose stated.

4. The combination of the slotted button and the arched spring bearing-plate passed through the slot in said button, and having its ends bent around to form bolt-holes, substantially as and for the purpose specified.

5. In combination with the rails and fish-plates or other structures bolted together, the bolts, their nuts, the arched elastic bearing-plate having openings for the passage of the bolts, and the rotatable button connected to the bearing-plate substantially in the manner shown, and provided with the projecting cross-bar, together with the correspondingly recessed and perforated locking-plate having its ends adapted to abut against or in close proximity to the nuts, said locking-plate being also provided with upwardly-inclined faces communicating with a transverse groove, upon which faces the under sides of the projecting parts of the cross-bar of the button bear against the stress of the spring bearing-plate when the said button is turned, all constructed, arranged, and operating substantially as and for the purposes described.

297,682. SLIDE-VALVE. ISAAC DE GRAFF, Detroit, Mich. Filed Oct. 1, 1883. (No model.)



Claim.—1. A Ω-valve provided with a passage, *a'*, and a passage, *e*, with the bridge *c* between them, serving to close the exhaust-port when the live steam is passing through the passage *a'*, and both passages being contained wholly within said valve, and terminating in exhaust-passages when steam is passing from the cylinder to the exhaust-port, substantially as described.

2. The combination, *m* a valve-case, of the valve C, provided with the auxiliary passages *a'* and *e*, and the ports *a* and *d* of the cylinder, and the latter having the bridge *b*, and all relatively proportioned to the lap, travel, and bridges, substantially as set forth.

297,683. TELEPHONE-LINE. THOMAS B. DOOLITTLE, Bridgeport, Conn. Filed Feb. 21, 1883. (No model.)



Claim.—1. A telephone-line having a series of earth-connections of a material of low conductivity—such as wood—said material having its surface coated with water-proof material, substantially as described.

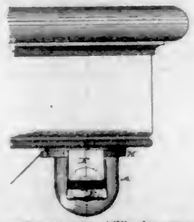
2. A telephone-line upheld by a series of supports, of wood or similar material, of low conductivity, having their surface coated with water-proof material, substantially as described.

3. A support for telephone-wires, consisting of a wooden pin inserted in a pole or cross-arm, and made water-proof at all parts of its surface, except at the point on which the conducting-wire absolutely rests, substantially as described.

4. A support for telephone-lines, consisting of a wooden pin and a grooved wire-holder at its upper part, the surface of the said pin being painted or varnished, as described, to prevent the substance of the pin from acquiring moisture, and the groove thereof being left unpainted, whereby the normal escape is maintained constant, substantially as described.

5. A support for telephone-lines, having its surface coated or covered with a waterproofing and insulating material, except where the wire rests, substantially as described.

297,684. CHALK-HOLDER FOR BILLIARD AND OTHER GAME TABLES. TIBERIAS DOUGHERTY, Philadelphia, Pa. Filed Nov. 6, 1883. (No model.)



Claim.—1. A chalk-holder for a billiard or other game table, consisting of a chalk clamp or holding device, a cord, a reel, a spring, and a rotatable supporting frame or casing, the clamp or holding device automatically returning to its normal position by the action of said spring, and the frame or casing moving relatively to the position of the player, substantially as and for the purpose set forth.

2. A chalk-holder for a game-table, having a cord for connection with the chalk, a winding device for said cord operating automatically, and a frame or casing rotatably movable relatively to the position of the player, substantially as and for the purpose set forth.

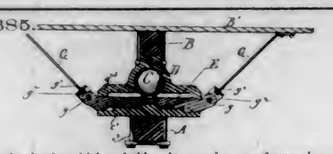
3. In a chalk-holder for a game-table, a clamp formed of rubber, and a strengthening-plate connected therewith at the base, having the cord attached to it, substantially as and for the purpose set forth.

4. A chalk-holder for a game-table, consisting of a clamp or holding device, a cord, a reel, spring, and rotatable frame or casing, substantially as and for the purpose set forth.

297,685. FIFTH-WHEEL FOR WAGONS. JAMES T. DOOLEY, Chicago, Ill. Filed Feb. 25, 1884. (No model.)

Claim.—1. The combination of the ball and its plate with a socket and its plate, the one secured to the axle and the other to the bolster, an

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interposed ring having thick and thin edges, and means for turning said ring with the bolster or with the plate secured thereto, substantially as specified.

2. The combination, with the axle and its bolster, of a ball and its socket secured the one to the axle and the other to the bolster, and an interposed ring or device for limiting the movement of said socket on its ball, substantially as specified.

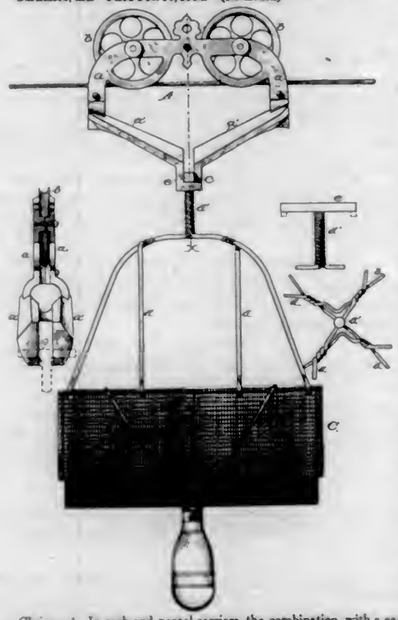
3. The combination of the ball and its plate with the socket and its plate, and the ring interposed between said plates, and made with thick and thin edges, to permit the socket to rock from side to side, but not backward and forward, substantially as specified.

4. The combination of the ball and its plate secured to the axle, with the socket and its plate secured to the bolster, and the interposed ring having thick and thin edges, and provided with a brace for turning said ring with the bolster, substantially as specified.

5. The combination of the ball and its plate secured to the axle, with the socket and its plate secured to the bolster, said socket being made in two parts embracing said ball, a two-part interposed ring mounted on the neck of said ball, and braces extending from said ring to the body of the vehicle, and having a swivel-connection with said ring, substantially as specified.

6. The combination of the ball and its plate secured to the axle, with a socket and its plate secured to the bolster, a neutral ring, and a brace extending from said ring to the vehicle, to prevent the bolster rocking backward and forward, substantially as specified.

297,686. CASH AND PARCEL CARRIER. GILBERT R. ELLIOTT, Boston, Mass., assignor to the Continental Cash Car Company of Baltimore, Baltimore, Md. Filed Feb. 16, 1884. (No model.)



Claim.—1. In cash and parcel carriers, the combination, with a car permanent upon the track, of a carrier detachably connected thereto substantially in line with the center of gravity of such car, and whose supports center at a point in line with its center, as described.

2. In cash and parcel carriers, the car having sides separated for the admission of the supports of a carrier.

3. In cash and parcel carriers, the car having straight sides and separated for the admission of the supports of a carrier.

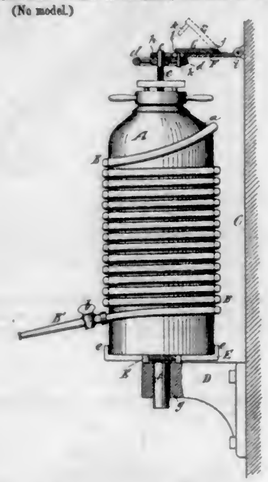
4. In cash and parcel carriers, the car having sides inclining toward its center and separated for the admission of the supports of a carrier.

5. In cash and parcel carriers, the car having sides inclining toward its center, and forming thereat the channel *c*, and separated for the admission of the supports of a carrier.

6. In cash and parcel carriers, the combination, with a car of the kinds described, of a carrier having supports uniting at a point above it, and provided with a cross-piece which is at right angles to the length of said carrier.

7. In cash and parcel carriers, the combination, with a car of the kinds described, of a carrier having supports uniting at a point above it, and provided with a cross-piece having hooked ends, as described.

297,687. SUPPORTING AND OPERATING CHEMICAL FIRE-EXTINGUISHERS. JAMES E. GILLESPIE, Warwick, N. Y. Filed Nov. 16, 1883. (No model.)



Claim.—1. The combination, with a chemical fire-extinguisher consisting of a closed cylindric vessel and a hose connected therewith and communicating with the interior thereof, of a support or bearing on which the extinguisher may rotate to enable the hose to be reeled upon it or extended for use, whereby the closed cylindric vessel which constitutes the chemical fire-extinguisher may be made to serve as a barrel for the hose, substantially as herein described.

2. The combination, with a chemical fire-extinguisher consisting of a closed cylindric vessel and a hose connected therewith and communicating with the interior thereof, of a base-piece whereon the extinguisher may stand, and a support or bearing to which the base-piece is fitted, and whereon the extinguisher and base-piece may rotate to enable the hose to be reeled upon the extinguisher or extended for use, whereby the closed cylindric vessel which constitutes the chemical fire-extinguisher is made to serve as a barrel for the hose, substantially as herein described.

3. The combination, with a chemical fire-extinguisher and a hose connected therewith, of a bearing or support whereon the extinguisher may rotate to enable the hose to be reeled upon it or extended for use, and means for automatically liberating the chemical in the extinguisher by the rotating of the extinguisher, substantially as and for the purpose herein described.

4. The combination, with a chemical fire-extinguisher provided with a projecting stem, whereby the chemical is liberated, and a hose connected with the extinguisher, of a bearing or support whereon the extinguisher may rotate to enable the hose to be reeled upon it or extended for use, and a detent for precluding the turning of said stem, substantially as and for the purpose herein described.

5. The combination, with a chemical fire-extinguisher provided with a projecting stem, whereby the chemical is liberated, and a hose connected with said extinguisher, of a base support or bearing whereon the extinguisher may rotate, a top bearing for said stem, and a detent for holding the stem against turning and removable independently of said top bearing, substantially as and for the purpose herein described.

6. The combination, with the extinguisher A, provided with the stem *c*, and handle or wheel *d*, of the hose B, the base-piece E, the bearing *g* for said base-piece, the hinged arm F, comprising a bearing for said stem, and the secondary arm G, carrying the detent *k*, all substantially as herein described.

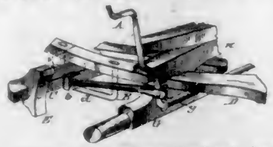
297,688. TELEPHONE-CABLE. FRANZ C. GUILLEAUME, Cologne, Prussia, Germany. Filed Nov. 3, 1883. (No model.)



Claim.—1. A cable composed of strands wrapped spirally around a core-strand, *d*, of non-insulated wire, the said wrapping-strands being composed of a series of insulated wires, *a*, wrapped spirally around a single non-insulated wire, *b*, as set forth.

2. The cable described, composed of the strands of insulated wires *a* and non-insulated wire *b*, wrapped spirally around a core, *d*, of non-insulated wires, the said strands and core being wrapped with tin-foil tape, as set forth.

297,689. WAGON-BRAKE. JAMES H. HENCOCK, Bradford, Penn. Filed Feb. 16, 1884. (No model.)



Claim.—In a vehicle-brake, the combination of a lever, A, secured to the front of the axle, with the end bolts, B, adjustably secured to the brake-beam, and slotted in front, so as to embrace the lever, and the supporting-guides *d*, whereby the brake-beam is held in place and prevented from moving laterally, substantially as and for the purpose set forth.

297,690. MACHINE FOR DOUBLING AND WINDING YARN OR THREAD UPON BOBBINS. JOHN HORROCKS and JAMES HORROCKS, Manchester, County of Lancaster, England. Filed Oct. 19, 1882. (No model.) Patented in England Oct. 22, 1879, No. 4,273; in France Apr. 20, 1880, No. 136,230, and in Belgium Apr. 22, 1880, No. 51,234.

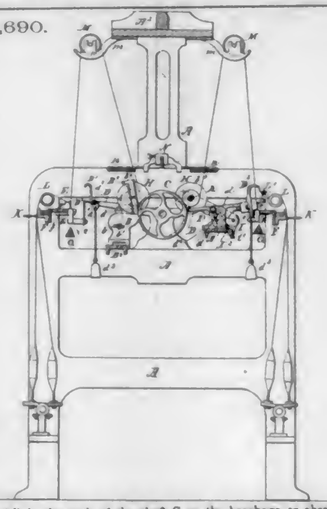
Brief.—The detector-wires fall into the path of a revolving shaft upon the breakage or absence of a thread or threads, and cause the pivoted detector-plate to be tilted, thereby releasing suitable mechanism which operates to lift the bobbin clear of the driving drum and carry the detector-wires out of the path of the said revolving shaft.

Claim.—1. The combination, with a pivoted detector-plate, the detector-wires thereof, a driving-drum, C, and a rotating shaft, G, of mechanism, substantially such as described, to lift the bobbin clear of the drum when one or more detector-wires fall in the path of shaft G on the breakage or absence of a thread or threads, and automatically carry said wires out of the path of said shaft, as described, for the purpose specified.

2. The combination, with a pivoted detector-plate, its detector-wires, a driving-drum, C, and a rotating shaft, G, of a lever operating to lift and support the bobbin out of contact with the driving-drum when one or more detector-wires fall in the path of the shaft G on the breakage or absence of a thread or threads, and means whereby said wires are automatically moved out of the path of said shaft, as described, for the purpose specified.

3. The combination, with the driving-drum C, the detector-plate E, and detector-wires E′, of the rotating shaft G, prism-shaped in cross-section, and mechanism, substantially such as described, for positively lifting the bobbin clear of the driving-drum when one or more of the detector-

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wires fall in the path of the shaft G on the breakage or absence of a thread or threads, and devices for automatically moving said wire or wires out of the path of said shaft, as described, for the purpose specified.

4. The combination, with the driving-drum, the detector-wires and detector-plate, and a rotating shaft to tilt said plate when one or more of said wires fall by reason of the breakage or absence of a thread or threads, of a lever operated by the movement of said detector-plate to lift the bobbin out of contact with the driving-drum, appliances, substantially such as shown and described, to hold said bobbin in the latter position independently of the lever, and a tripping device operated from said lever to return the bobbin into contact with the driving-drum, as set forth.

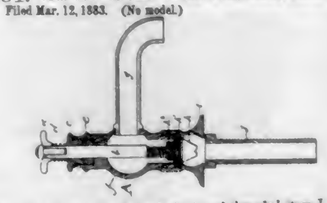
5. The combination, with the driving-drum, the bobbin-support, the detector-wires E′, detector-plate E, wire *s*, and shaft or bar G, of the adjustable lever D and the adjustable bent wire D^2, all arranged for co-operation, substantially as and for the purpose specified.

6. The combination, with the driving-drum, the bobbin-frame I, and the prop I^2, of the lever D, and the tripping-arm d^6, substantially as and for the purpose specified.

7. A detector-wire, bent as at e^2, in combination with the detector-plate E, constructed with longitudinal ribs *e′*, channeled as at e^3, the retaining-plate E^2, and means, substantially such as described, for rigidly securing plate E′ to plate E, substantially as shown, and for the purpose specified.

8. The combination, with a driving-drum, a pivoted bobbin-frame, a lever, a stop to hold said lever out of contact with the bobbin-frame or its bobbin, and tripping devices to trip the stop on the breakage or absence of a thread, of a weight connected with the lever, substantially as and for the purpose specified.

297,691. SELF-CLOSING TAP. FRANCIS HYDE, Toronto, Ontario, Canada. Filed Mar. 12, 1883. (No model.)

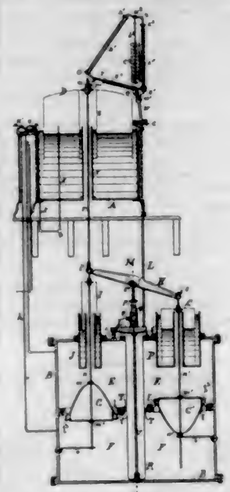


Claim.—In a faucet, the valve-body A and threaded stem J, combined with the valve-stem *b*, triangular in cross-section and carrying the upwardly-seating valve *h*, valve-seat *h′*, and metallic flanged washer h^3, the whole arranged substantially as set forth.

297,692. GAS-PRESSURE REGULATOR. GUSTAVUS A. HYDE, Sr., Cleveland, Ohio, and GUSTAVUS A. HYDE, Jr., East Saginaw, Mich. Filed Jan. 2, 1884. (No model.)

Claim.—1. In a gas-pressure governor or regulator, the adjustable weight e^3, together with the vibrating pendent rod h^3, suspended from the triangular adjustable frame O O′ *z z′*, having V-shaped or sharp-

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pointed supports *a a′ a″*, secured in V-shaped bearings *r w w* by stops *v v v′*, in combination with the float D, rods *r*, *n*, and *n′*, and valves G and G′, substantially as shown, and for the purpose set forth.

2. The two valves G and G′, having projecting rings l^2 l^2, sharp-edged gage-rings *l l*, and sharp-edged seats *l′ l′*, in combination with rods *n*, *n′*, and *r*, tubings I and C, balancing-bar H, float D, triangular adjustable frame O O′ *z z′*, vibrating pendent rod h^3, and adjustable weight e^3, substantially as shown, and for the purpose set forth.

3. The tubing C and its annular tubing P, having greater diameter than the tubing I and its annular tubing J, in combination with the rods *n*, *n′*, and *r*, balancing-bar H, valves G and G′, with float D, triangular adjustable frame O O′ *z z′*, and vibrating pendent rod h^3, and adjustable weight e^3, substantially as shown, and for the purpose set forth.

4. The balancing-bar H, fulcrumed at its center and connected with rods *n*, *n′*, and *r*, with sharp-edged bearings i^7 i^8 i^9, and having an adjustable fulcrum-pillar, *p*, in combination with tubings I and C, valves G and G′, float D, and triangular adjustable frame O O′ *z z′*, substantially as shown and described.

5. A varying-temperature regulator composed of alternate wood and iron rods c^4 d c^5 f c^6 d c^7, inclosed in casing R, and connected to lever L′ and rod L, in combination with triangular adjustable frame O O′ *z z′*, float D, rods *r*, *n*, and *n′*, valves G and G′, tubings I and C, and balance-bar H, substantially as shown, and for the purpose set forth.

297,693. EJECTOR FOR INSECT-POWDERS. ADOLPH ISAACSEN, New York, N. Y. Filed Nov. 8, 1883. (No model.)



Claim.—In combination with a readily-detachable current-inducing means, as F D, and a powder-receptacle having a thread, a^2, the cap B, having tube C, provided with perforations *c*, and bayonet-joint *c′*, as and for the purposes set forth.

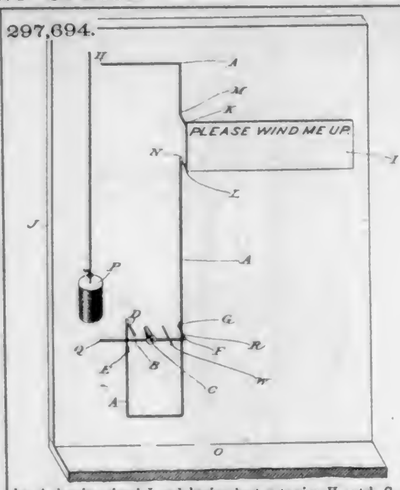
297,694. AUTOMATIC WINDING-REMINDER FOR CLOCKS. EDWARD JUNGERMAN, Fort Supply, Ind. Ter. Filed May 7, 1883. (No model.)

Claim.—1. In a clock the mechanism whereof is operated by the descent of a weight, the combination of a movable sign bearing the inscription "Please wind me up," or its equivalent, with a suitable opening in the dial or case of the clock, and with supporting devices for the sign so arranged relatively to the weight that the latter causes the sign to be moved so as to expose the inscription when it is run down, and to move the inscription out of sight when it is run up, substantially as shown and described, and for the purpose specified.

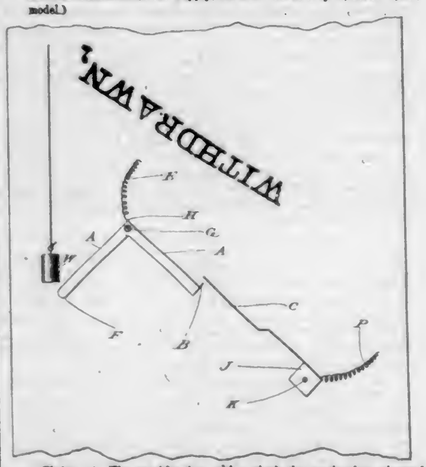
2. In a clock the mechanism whereof is actuated by a weight, the combination, with the weight P, of the pivoted bar B, the vertically-sliding rod A, and the movable sign I, the whole arranged to operate substantially as shown and described.

3. In a clock the mechanism whereof is actuated by a weight, the bar A, bearing signal I, and having bent extension H, catch G, and points D E, and the bar B, the whole arranged to operate substantially as shown and described.

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297,695. ELECTRIC WINDING-REMINDER FOR WEIGHT-CLOCKS. EDWARD JUNGERMAN, Fort Supply, Ind. Ter. Filed May 7, 1883. (No model.)



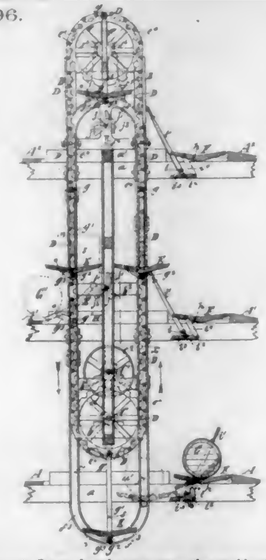
Claim.—1. The combination, with a clock the mechanism whereof is actuated by the descent of a weight, of an electrical circuit including an electric bell or other electrical warning device, said electrical circuit being disposed and arranged relatively to the weight in such a manner that the circuit is closed by the weight when the latter is run down, substantially as described, and for the purpose specified.

2. The combination, with a clock the mechanism whereof is actuated by the descent of a weight, of devices whereby the descent of said weight may be made at a certain point to close an electrical circuit including an electric bell or other electrical warning device, substantially as shown and described, and for the purpose specified.

3. The combination, with a clock the mechanism whereof is actuated by a weight, W, of the piece A A, pivoted at G, as set forth, one arm of said piece bearing the point B, and the electrical circuit leading to an alarm-bell, substantially as and for the uses and purposes shown and described.

297,696. ELEVATING APPARATUS. THOMAS KEITH, New York, N. Y. Filed Feb. 16, 1884. (No model.)

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Claim.—1. In an elevating apparatus, the combination, with two endless chains or carriers and wheels therefor, arranged at the top and bottom of the apparatus, of a rod extending between and connected with said chains or carriers, hangers depending from said rod between the chains or carriers, a moving platform pivoted to and carried by said hangers, and a tripping mechanism against which the inner edge of said platform is brought in its descent to tilt said platform and cause it to deliver its load outward, substantially as herein described.

2. In an elevating apparatus, the combination, with two endless chains or carriers and wheels therefor, arranged at the top and bottom of the apparatus, of a moving platform depending by means of hangers from and between the chains or carriers, guides for the chains or carriers, and independent guides for the lower portions of said hangers, whereby the vertical position of said hangers is continuously maintained, substantially as herein described.

3. In an elevating apparatus, the combination, with two endless chains or carriers and wheels therefor, arranged at top and bottom of the apparatus, of a rod extending between and connected with said chains or carriers, hangers depending from said rod, a moving platform pivoted to and suspended by said hangers, pivoted loading-platforms capable of being tilted by the moving platform in its ascent to deliver their load upon the moving platform, and a trip mechanism for tilting said pivoted moving platform independently of its hangers in its descent in order to deliver the load, substantially as herein described.

4. In an elevating apparatus, the combination, with endless chains or carriers and a cross-rod connecting them, of hangers depending from said rod, a moving platform pivoted to said hangers, and pivoted loading-platforms capable of being tilted by the moving platform in its ascent to depress the inner edges of said loading-platforms and cause their load to pass onto the said moving platform, substantially as herein described.

5. In an elevating apparatus, the combination, with two endless chains or carriers and a cross-rod extending between and connecting them, of hangers depending from said rod between the chains or carriers and provided with outwardly-extending arms, and a moving platform slanting from opposite edges toward its center, pivoted to said outwardly-extending arms of the hangers at a distance from its center, and supported by said hangers at its center, substantially as herein described.

6. The combination, with endless chains and wheels therefor, of a rod, g, extending between said chains, hangers g', a rod, g^2, connecting the lower ends of said hangers, arms g^3, extending outward and upward from the rod g^2, and a moving platform having its lowest point at the center, pivoted to said arms, and resting upon the rod g^2, substantially as herein described.

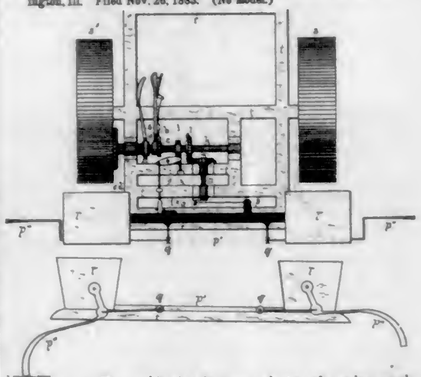
7. The combination of the wheels d e, endless chains D D, the rods g g^2, the hangers g', and arms g^3, separate guides for the ends of said rods g g^2, and the moving platform E, pivoted to the arms g^3 and resting on the rod g^2, substantially as herein described.

8. The combination, with two endless chains or carriers and wheels therefor, of moving platforms depending by means of hangers from and between said chains or carriers, a pivoted loading-platform, a tripper pivoted below said loading-platform and within range of said moving platform in its ascent, and a rod or connection between the rear end of said tripper and the front end of said loading-platform, whereby the moving platform, in rising, will act upon said tripper, and by raising its front end will depress the front end of said loading-platform and cause it to deliver its load upon the moving platform, substantially as herein described.

9. The combination, with endless chains or carriers and a moving platform suspended between them, of a pivoted loading-platform, F, the shaft i, the lever i', whereby said shaft may be turned, the arms i^2, the tripper i^3, pivoted to said arms, and the rod i^4, connecting the tripper in rear of its pivot with the platform F forward of its pivot, substantially as herein described.

10. In an elevating apparatus, the combination, with two endless chains or carriers and cross-rods connecting them, of hangers depending from said cross-rods between said chains or carriers, movable platforms suspended by said hangers and capable of making the complete circuit of the chains or carriers without being inverted, guides for said chains or carriers, and stops applied to the chains or carriers, capable of yielding to the forward movement thereof, but serving to prevent a reverse movement, substantially as herein described.

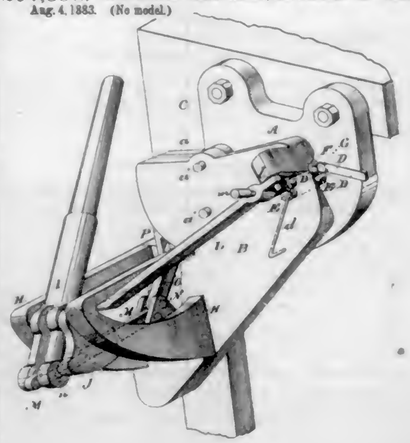
297,697. CHECK-ROW CORN-PLANTER. WARNER L. KELLAR, Lovington, Ill. Filed Nov. 26, 1883. (No model.)



Claim.—1. The combination, in a corn-planter, of a spring-crank adapted to convert continuous rotary motion from the planter-wheel into reciprocating motion in the seed-slide, and a catch adapted to hold the seed-slide rigid during a partial revolution of said crank, and to release the same by motion from the planter-wheel at the proper time for operating the drop, as set forth.

2. The combination, in a check-row corn-planter, of wheel a', gearing e d k l m, spring-crank o, and seed-slide p', as and for the purpose set forth.

297,698. SAW-SWAGE. SIMON KINNEY, San Francisco, Cal. Filed Aug. 4, 1883. (No model.)



Claim.—1. In a saw-swaging machine, the clamp or shoe D and sliding clamp D', by means of which the sides of the tooth are held, the anvil-bar E, and pivoted lever F, in combination with the stop G on said anvil and die-lever, and secured to said die-lever by a spring, g, substantially as shown, and for the purpose described.

2. In a saw-swaging machine, the plates A B, spaced by the blocks a, the stationary clamp or shoe D, and sliding clamp D', in combination with the lever I, having a cam, J, and the swinging or pivoted bar L, having a roller, K, substantially as shown and described.

3. In a saw-swaging machine, the plates A B, spaced by the blocks a, the former having the stationary clamp or shoe D, and the anvil-bar E, having a flattened upper surface, in combination with the sliding clamp D', the pivoted die-lever F, the clamp D' being adapted to be operated by the lever I, having cam J, the pivoted bar L, having roller K, and means for operating the die-lever after the operation of the clamp, consisting of the arm M, lever I, arms N O, and block P, all arranged and operated substantially as herein described.

4. In a saw-swaging machine, the spaced plates A B, anvil-bar E, the die-lever F, pivoted to said plates, and adapted to swage the tooth by means of the fulcrumed lever I, arm M, swinging arm N, arm O, and block P, all arranged and operated substantially as described.

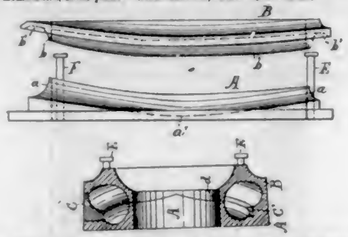
297,699. PIN FOR ELECTRIC INSULATORS. JOHN M. KLEIN, San Francisco, Cal. Filed Sept. 13, 1881. (No model.)



Claim.—1. The wrought-metal pin B, provided with a soft-metal head, b, which is grooved or threaded to fit into and engage with the socket in an insulator for supporting electric wires, substantially as set forth.

2. An insulator pin or support for electric insulators, having a wrought-metal body and a screw-threaded head of larger diameter than the body of the pin, of cast metal, substantially as set forth.

297,700. MOLD FOR HORSE-COLLARS. THEODORE F. LEMASSENA and JAMES STANLEY, Newark, N. J.; said Lemassena assignor to Lillian Lemassena, same place. Filed Nov. 19, 1883. (No model.)



Claim.—1. The combination, in a horse-collar mold, of the top and bottom sections, B A, each made in one piece to fit the front and back of the collar, as described, and the side sections, formed in two pieces and fitted to the hame-crease, substantially as and for the purpose set forth.

2. In a horse-collar mold, the top and bottom sections, fitted to one another upon the inner side of the collar, and provided with an open space at the outer side along the line of the hame-crease, in combination with the loose sections C, fitted to such open space for shaping the hame-crease, and held in place by the pins E, the whole arranged and operated as and for the purpose set forth.

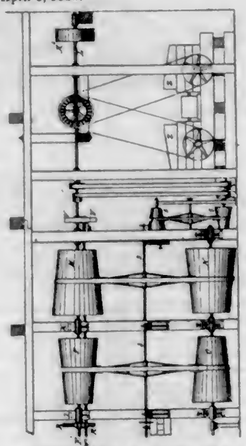
297,701. CAR-COUPLING. DAVID T. LINDSAY, Cairo, Ill. Filed Mar. 21, 1884. (No model.)



Claim.—The combination, with the draw-head, of the pin-rest and link-supporting head A, tube B, attached to head, tube C, attached to filling-piece E, and the spiral spring D, as shown and described.

297,702. MACHINERY FOR MAKING PAPER. GEO. E. MARSHALL, Turner's Falls, Mass. Filed Mar. 25, 1884. (No model.)

Brief.—Improvement on the invention in Letters Patent No. 275,056, dated April 3, 1883.



Claim.—1. The combination of the four cone-pulleys M N O P, for the purpose of changing and regulating the speed of a paper-machine, constructed substantially as described

2. The combination of the cone pulleys M N O P with the shaft F, by which are driven the couch-roll, the press-roll, the driers, and the calender, or any one of them, constructed substantially as described.

3. The combination of the friction-wheels V V with the screw X and the shafts L and W, for driving the felt washers 2 2, constructed substantially as described.

4. The combination of the main shaft and the cone-pulleys M, N, O, and P with the shaft F, to drive the different parts of paper machinery, giving to each the requisite degree of speed without the necessity of stopping the machine or changing the gear-wheels.

297,703. APPARATUS FOR CONSTRUCTING ARTIFICIAL TOOTH-CROWNS. ARTHUR E. MATTESON, Chicago, Ill. Filed Oct. 12, 1883. (No model.)



Claim.—1. A die for swaging artificial-tooth-crown blanks, having a face shaped to give form to the metal crown-blank, and also having an anvil-surface opposite the face of the die, around which a portion of the blank is bent or formed, substantially as described.

2. The combination of a male die for swaging artificial-tooth-crown blanks, having an anvil-surface opposite the swaging-face of said die, with a female die shaped to receive the swaging-face of said male die, substantially as described.

3. A pair of pivoted jaws forming part of a swaging device, fitted with detachable swaging or forming dies, for forming artificial tooth-crowns, substantially as described.

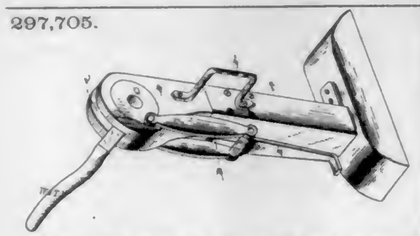
297,704. ARTIFICIAL TOOTH-CROWN. ARTHUR E. MATTESON, Chicago, Ill. Filed Sept. 17, 1883. (No model.)



Claim.—An artificial tooth crown or shell, or portion thereof, constructed of a compound plate of gold and platina, substantially as described.

297,705. LIFTING-JACK. HENRY WILLAM MOHANY, Mount Horeb, Wis., assignor of two-thirds to Halvar Nelson and Henry J. Eggers, both of same place. Filed Mar. 4, 1884. (No model.)

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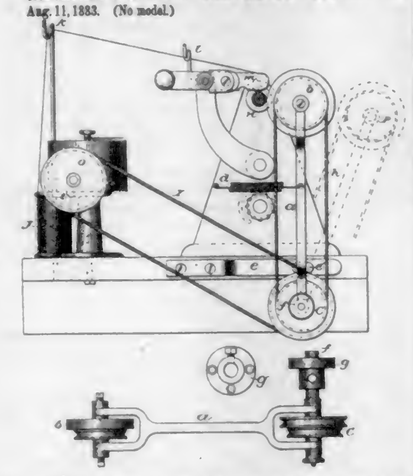
Claim.—1. The combination, with a suitable upright or standard, of a jack-head secured to the upper end thereof, said jack-head being provided with a slot extending around a portion of its circumference and provided with an enlarged opening, substantially as set forth.

2. The combination, with a suitable upright or standard provided at its upper end with a jack-head or bracket having a slot and opening, as shown, of a roller having bearing in said opening, substantially as set forth.

3. The combination, with a jack-head or bracket supported upon a suitable standard, and provided with a slot and opening, as shown, of a roller having bearing in said opening, and provided with a recess or slot for the reception of a bar or lever, substantially as set forth.

4. The combination, with a jack-head or bracket supported upon a suitable standard, and provided with a slot and enlarged opening, as shown, of a roller bearing in said opening, and provided with a recess or slot for the reception of a bar or lever, and arms connected to the sides of said roller, said arms being provided at their ends with a pivoted portion having an angular end, substantially as set forth.

297,706. MACHINERY FOR MEASURING SILK THREAD DURING THE PROCESS OF SPOOLING. ROBERT MORRISON, Canton, MASS. Filed Aug. 11, 1883. (No model.)



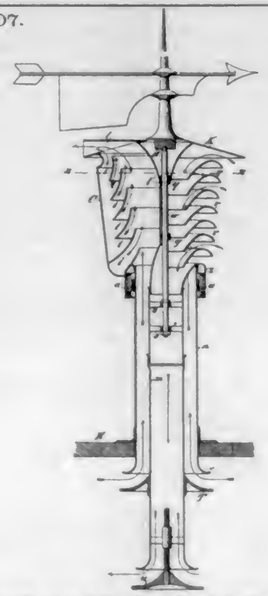
Claim.—The combination of the pivoted arm *a*, the wheel *b*, having an elastic and a grooved face, the wheel *c*, the bands *h* and *i*, and the tension-spring *d*.

297,707. VENTILATOR. CONRAD MÜLLER, Hamburg, Germany. Filed May 28, 1883. (No model.) Patented in Germany Sept. 23, 1882, No. 22,015.

Claim.—1. The combination, with stationary inlet and outlet tubes *m n*—one within the other—of a cowl having a central partition, *t*, and a cap or crown, K, with which said partition is connected, and having on one side of said partition a series of funnels, *r r*, communicating with the inlet-tube *m*, and on the other side a series of inverted funnels, *i i*, communicating with the outlet-tube *n*, substantially as herein described.

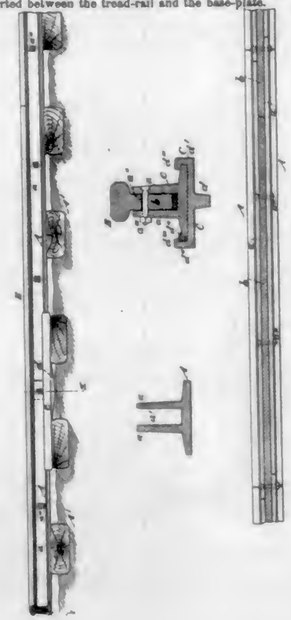
2. The combination, with stationary inlet and outlet tubes *m n*—one within the other—of a cowl having a central partition, *t*, and a cap or crown, K, with which said partition is connected, and having on one side of said partition a series of funnels, *r r*, communicating with the inlet-tube *m*, and on the other side a series of inverted funnels, *i i*, communicating with the outlet-tube *n*, and a mantle, C, inclosing said funnels, open at the edges of the partition *t*, and communicating with an opening, *l*, provided in the cap or crown K on the same side of the partition *t*, substantially as herein described.

297,707.



297,708. RAILROAD-RAIL AND RAIL-JOINT. JOHN S. MCLEOD, Boston, MASS. Filed Apr. 23, 1883. (No model.)

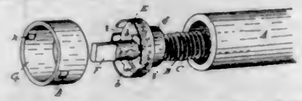
Brief.—A compound railroad-rail set in a base-plate having vertical ribs. One of the ribs is projected beyond and one set back of the ends of the plate. The tread-rail is inserted between the ribs of the base-plate, and has vertically-elongated bolt-holes in its web. A cushion is inserted between the tread-rail and the base-plate.



Claim.—1. A base-plate for a compound railroad-rail, having vertical ribs or flanges on its upper face, one of said ribs or flanges being projected beyond and one set back from each of the respective ends of the plate, substantially as and for the purposes set forth.

2. In a compound railroad-rail, a base-plate having vertical ribs or flanges on its upper face, one of said ribs or flanges being projected beyond and one set back from each of the respective ends of the plate, combined with a tread-rail inserted between the ribs or flanges of the base-plate, and having vertically-elongated bolt-holes in its web, and a cushion inserted between the bottom of the tread-rail and the base-plate, substantially as and for the purposes set forth.

297,709. CURTAIN-FIXTURE. WALTER B. NOYES, Saginaw, Mich. Filed Feb. 23, 1884. (No model.)



Claim.—1. In a spring curtain-fixture, the spindle B, constructed in two sections, between the engaging ends of which the box and pawl-disk are secured, substantially as described.

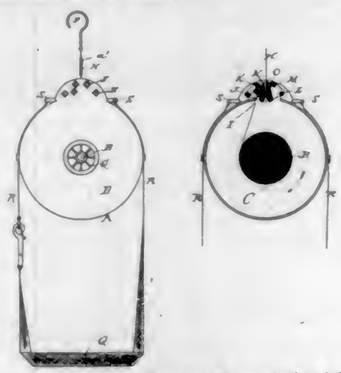
2. In a spring curtain-fixture, the combination of the spring-spindle B, cap H, and flattened spindle-section F with the box D and pawl-disk E, substantially as set forth.

3. In a spring curtain-fixture, the combination of the spring-spindle B and means, substantially as described, for securing thereto the flattened end section, F, with the disk and box D, provided with the hollow boss *d*, substantially as described.

4. The combination, in a spring curtain-fixture, of the roller A, spring-spindle B, spring C, spindle F H, box D, pawl-disk E, and ferrule G, when constructed, arranged, and operating substantially in the manner and for the purposes set forth.

297,710. FIRE-ESCAPE. MATTHEW C. O'CONNOR, New Haven, CONN. Filed May 23, 1883. (No model.)

Brief.—The rope or band is passed from the reel over bearing-pins and friction-blocks near the opening of the case.



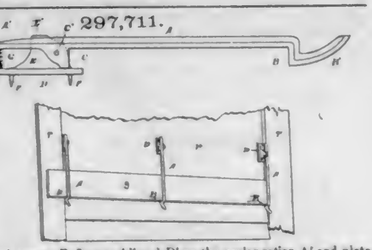
Claim.—1. In a portable fire-escape, the combination of the case A, having rounded bearing-pins I J K L M projecting from the inner face of the back plate, C, and friction-blocks N O, arranged between said bearing-pins, webbing or other suitable material, H, means, substantially as described, for coiling and uncoiling the same, and the sling Q, substantially as and for the purpose set forth.

2. The fire-escape herein described, consisting of case A, having rounded bearing-pins I J K L M, and friction-blocks N O, having rounded lower ends, webbing or other suitable material, H, adapted to travel across the faces of said pins, and across the rounded lower ends of both of and around one and between both of said friction-blocks, central shaft, B, hand-wheel G, and sling Q, substantially as and for the purpose set forth.

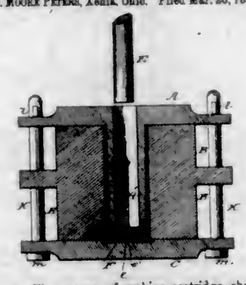
297,711. SIDING-HOOK. JOHN D. OTIS and DWIGHT M. MAXWELL, Peoria, Ill. Filed Oct. 17, 1883. (No model.)

Claim.—The hook B, having straight shank A and lug C, in combination with the plate D, having lug E, to which said shank A is pivoted, and prongs F, fingers A″ and D′ on the prolongation A′ and plate D, respectively, and the coiled spring G, abutting between said fingers, substantially as and for the purpose set forth.

297,711.



297,712. MANUFACTURE OF CARTRIDGE-SHELLS FROM PAPER-PULP. G. MOORE PETERS, Xenia, Ohio. Filed Mar. 20, 1884. (No model.)



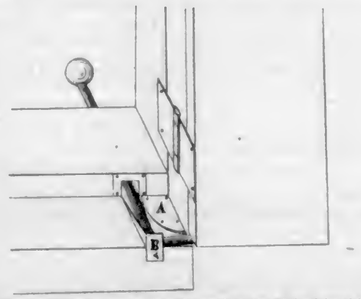
Claim.—1. The process of making cartridge-shells from paper-pulp, which consists in pouring said pulp into a mold enlarged vertically and circumferentially at the bottom to form the base of the shell, and having an internal tube slightly tapered on its outer surface and rounded at the bottom, and a piston for forcing the pulp into the mold, whereby the body of the shell is formed in said mold, substantially as and for the purpose set forth.

2. A mold for making cartridge-shells from paper-pulp, consisting of the internal cylinder, and sides having a tapered opening between them, and a base provided with means for forming a seat for the primer, and an opening through the base into the charge, substantially as set forth.

3. A cartridge-shell made of paper-pulp compressed or molded, and provided with a thickened base and a flange, and a seat for the primer, substantially as set forth.

297,713. SHUTTER-WORKER. JOHN POOL, Elizabeth City, N. C. Filed July 3, 1880. Renewed Oct. 5, 1883. (Model.)

Brief.—The invention consists in providing a curved fulcrum-plate for the jointed lever, whereby a continuous fulcrum-bearing surface is obtained.



Claim.—In a shutter-worker, the combination of the jointed lever *a b c* with the fixed curved fulcrum-plate A in the form of a section of an ellipse, and filling the angle between the window-frame and said jointed lever, whereby said jointed lever is afforded a continuous fulcrum-surface during the opening or closing of the shutter, substantially as described.

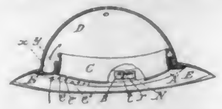
297,714. VEHICLE. JACOB PEREK, San Leandro, Cal. Filed Oct. 6, 1883. (No model.)



Claim.—1. In a vehicle, the side bars shaped to the form of the body, with vertical and horizontal ribs, and supplemental lugs or seat-supporting flanges, substantially as herein described.

2. In a vehicle, the side bars shaped to the form of the body, with vertical and horizontal ribs, and the deep vertical webs *a a* at the bends or angles, and the supplemental lugs, substantially as herein described.

297,715. ADJUSTABLE VENTILATOR FOR HATS. WILLIAM M. PROTHEROE, New York, N. Y. Filed Apr. 16, 1883. (Model.)



Claim.—1. An entire horizontally sliding, swinging, or movable hat-sweat, substantially as and for the purposes described.

2. A hat-sweat made smaller in circumference than the interior circumference of the hat, and secured thereto by slides or other fastenings, whereby the sweat is capable of horizontal movement relatively to the hat, substantially as and for the purposes described.

3. The combination of the hat D E, the hat-sweat C, and the slides or fastenings *g*, whereby the sweat is capable of horizontal movement relatively to the hat, substantially as and for the purposes described.

4. As a new article of manufacture, a hat-sweat strengthened or braced, and provided with slides or other fastenings for the purpose of securing the sweat within the hat, and of allowing a horizontal movement of the same relatively to the hat, substantially as and for the purposes described.

5. As a new article of manufacture, a continuous ring of stiffened felt, provided with slides or other fastenings for the purpose of securing said ring within a hat, and of allowing a horizontal movement of said ring relatively to the hat, substantially as and for the purposes described.

6. In a ventilating-hat, the sweat-band C, the flange A, perforated at *a a' a''*, &c., and the flange A', in combination with the slides or other fastenings, *g*, whereby said sweat-band and flanges are capable of horizontal movement relatively to the hat, substantially as and for the purposes described.

7. In a ventilating-hat, the continuous ring of felt A B A', with perforations *a a' a''*, &c., and the sweat-leather C, in combination with the slides or other fastenings, *g*, whereby said ring of felt and sweat are capable of horizontal movement relatively to the hat, substantially as and for the purposes described.

8. In a ventilating-hat, the sweat-brace B, with flanges A A', perforated at *a a' a''*, &c., in combination with slides or other fastenings, *g*, whereby said sweat-brace is capable of horizontal movement relatively to the hat, substantially as and for the purposes described.

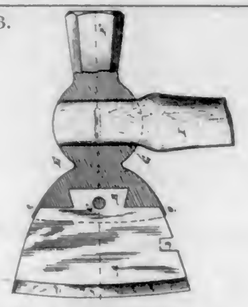
9. A ventilating device for hats, consisting of the sweat-band C, made smaller in circumference than the interior circumference of the side crown, D, at its intersection with the brim E, to admit air between it and the side crown, braced or strengthened by a ring of metal, felt, or other material, provided with the flange A, perforated at *a a' a''*, &c., and the flange A', all secured to the hat by the slides or other fastenings, *g*, in such manner that by horizontal movement of the sweat relatively to the hat the ventilation may be opened or closed or changed, substantially as described.

10. In combination with the horizontally sliding, swinging, or movable hat-sweat C, the flange A, constructed sufficiently broad so as to enable the wearer to support it firmly up against the under side of the hat-brim E between the thumb and fingers in the operation of putting on and removing the hat, substantially as and for the purposes described.

297,716. HATCHET. ALFRED C. REX, Philadelphia, Pa. Filed Feb. 1, 1884. (No model.)

Claim.—A hatchet the body of which is made of cast-iron, and cast upon a steel blade formed with a dovetail extension, and an aperture through which the metal of the body flows, substantially as and for the purpose specified.

297,716.



297,717. RULER. PEREZ C. REX, Boston, assignor to Charles J. Bailey and Julius M. Clapp, both of Newton, Mass. Filed Feb. 29, 1884. (No model.)

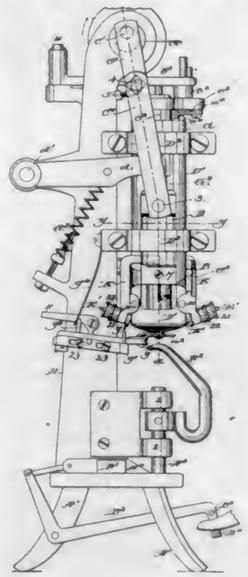


Claim.—1. As an improved article of manufacture, a ruler composed of a roller and a bar loosely connected each with the other by links which hold the pivots for the bar, whereby the ruler may be used at will with either side of the bar uppermost, the under side thereof then resting flat on the paper below it, to operate substantially as and for the purpose described.

2. In a ruler, a roller and flat bar joined together by links, and having a stop to arrest the movement of the bar with relation to the roller, whereby either side of the flat ruler may be laid upon the paper, substantially as described.

3. In a ruler, a roller and flat bar and links to join them, the said roller being provided with a scale, and the links with an index to operate, substantially as described.

297,718. MACHINE FOR UNITING THE UPPERS AND SOLES OF BOOTS OR SHOES. STILLMAN W. ROBINSON, Columbus, Ohio, assignor of one-half to Orlando E. Lewis, same place. Filed Aug. 2, 1883. (No model.)



Claim.—1. In a nailing-machine, a support for the stock, the uniformly-reciprocated working-head and the spring-pressed sleeve carried thereby, and the spindle therein and its grippers *a*, adapted to engage the fastening strip or wire, and to drive the same into the stock, the grippers acting to drive the said strip or wire into the stock after the sleeve is arrested in its downward movement, substantially as described.

2. The uniformly-reciprocating working-head, the spindle provided with grippers to engage the fastening strip or wire, and the sleeve to receive the spindle, and adapted to be lifted with the working-head and to descend therewith until arrested by the stock on the work-support, combined with the screws or projections 7, carried by the working-head, to act upon the grippers *a* and force them toward each other, to grasp and drive the strip or wire into the stock, substantially as described.

3. The work-support and the working-head and its grippers, both working in unison with an unvarying length of stroke, combined with the reciprocating sleeve D', spindle B therein, and grippers *b b*, the latter having a varying stroke determined by the thickness of the stock, all co-operating to insert the fastening strip or wire, to insure the production of a fastening therefrom in accordance with the thickness of stock being operated upon, substantially as set forth and described.

4. The spindle B and its throat-piece 17, having an opening or channel corresponding in cross-section with the cross-section of the fastening strip or wire, combined with means, substantially as described, to partially rotate the spindle, the latter turning the strip or wire with it, as set forth.

5. In a nailing-machine, the combination of mechanism, substantially as described, to drive the end of the fastening strip or wire into the stock, with the grippers to engage and partially turn or rotate the driven strip or wire after its insertion into the stock, whereby the grooved edges of the strip are enabled to cut into portions of the stock, notorn or abraded by the grooved edges of the strip or wire when being driven into the stock, substantially as described.

6. The combination of the working-head, sleeve D', partially-rotating spindle B, grippers *a a*, and adjusting-screws 7 7 with the grippers *b b*, ring *e*, bars *e' e'*, block *e*^{3}, and spring *e*^{2}, as described.

7. The combination of the spindle B, grippers *b b*, and ring *e* with vertical bars *e' e'*, to operate the said ring and grippers, substantially as described.

8. The working-head D and sleeve D', combined with the lever *d* and spring to act upon and press the nose of the sleeve upon the stock, substantially as described.

9. The combination of the partially-rotating rod and projections *f* thereon, and levers E E, for operating the cutters, as described.

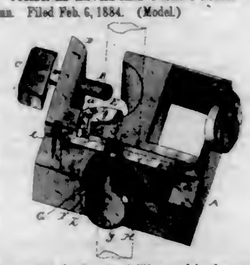
10. The working-head, sleeve, and spindle B and grippers *a b*, combined with the levers and cutters to cut off the driven wire next the stock, substantially as described.

11. The combination of the feed-bar *g* with the bar *g'*, having a slot at its back end and a pin, *g*^{2}, at its front end, as and for the purpose described.

12. The work-support and the spindle through which the fastening strip or wire is extended, and means, substantially as described, to reciprocate and to partially rotate the said spindle, combined with grippers to engage the fastening strip or wire and drive it into the stock to hold and partially rotate the strip or wire in the stock, as set forth.

13. The herein-described method of uniting pieces of leather, which consists in forcing into the same a wire, portions of which are grooved or serrated, while other portions are smooth, and thereafter partially rotating the said wire in the leather and cutting off the wire, substantially as and for the purposes set forth.

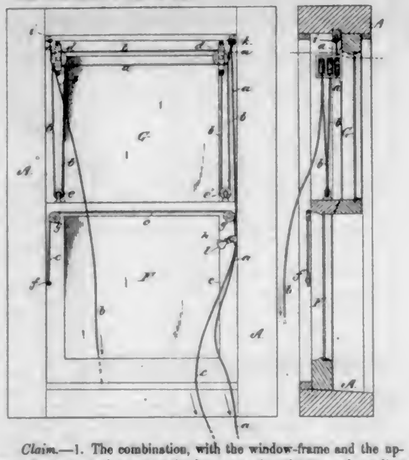
297,719. COMBINED LEVEL AND BORING-GUIDE. ALBERT ROOT, Hamden, Conn. Filed Feb. 6, 1884. (Model.)



Claim.—1. An attachment for drilling and boring tools, consisting of a block or plate, means, substantially as described, for attaching the same to the tool, an indicator disk or dial attached to said block or plate, a rim or ring loosely mounted on and adapted to move circumferentially around said disk or dial, and having a suitable pointer thereon, and a weighted pointer pivotally attached to the disk or dial, with capability of oscillating therein, substantially as set forth.

2. The attachment for drilling and boring tools herein described, consisting of a block or plate having means, substantially as described, for attaching the same to the tool, and indicator-dials or disks attached to said block or adjacent sides thereof, each dial being provided with an indicator-ring loosely mounted on the circumference thereof, and a pivoted weighted pointer, substantially as and for the purpose set forth.

297,720. SASH-BALANCE. S. HOWLAND RUSSELL, New York, N. Y. Filed Jan. 11, 1884. (No model.)

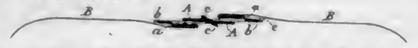


Claim.—1. The combination, with the window-frame and the upper sash, of the closing-cord *a*, fixed at one end to the frame depending in a loop therefrom, and passing under pulleys on the upper sash, thence over a pulley, *k*, fixed to the frame, and thence depending therefrom for manipulation, substantially as and for the purpose set forth.

2. The combination, with a window-frame and the lower sash, of the closing-cord *c*, fixed at one end to the frame, and passing over a pulley, *g*, on the sash, and thence depending for manipulation, substantially as herein set forth.

3. The combination, with a window-frame and its upper and lower sashes, of the two pulleys *d d''*, affixed to the top of the upper sash, and the two pulleys *e e'*, affixed to the top of the lower sash, with the opening-cord *b* fixed at one end to one of the sashes, thence passing in successive loops over the respective pulleys, and finally depending for manipulation, substantially as and for the purpose set forth.

297,721. BALE-TIE. HALBERT RUST, Jeffersonville, Ind. Filed Feb. 28, 1884. (No model.)



Claim.—1. In a bale-tie, the plates A, each being provided with a raised cross-bar, *a*, and an end bar, *b*, for attachment of band, and having a tongue turned from the plane of the plate, and an opening for passage of a tongue, substantially as and for the purpose described.

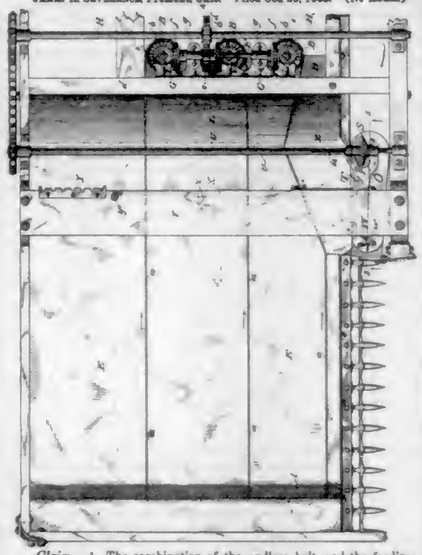
2. In a bale-tie, two plates, A, provided with tongues *c*, raised bars *a*, end bars, *b*, and openings for passage of tongues, in combination with a band with its ends applied to said plates, substantially as shown and described.

297,722. PENCIL-CLASP. GUSTAVUS A. SCHLEICHTER, Reading, Pa. Filed Nov. 16, 1883. (No model.)



Claim.—A pencil clasp or holder composed of a tubular body, A, open at both ends, having a longitudinal slot, C, extending from one end to a re-enforce head, B, near the opposite end, a presser-foot E, and pin F attached to said head, and having near its slotted end a female bead, D, in combination with a reversible holder, G, provided with a male locking-bead, I, and a hook or eye, J, adapted to slide in the slot C, and its respective ends provided with a pen and rubber, substantially as and for the purpose set forth.

297,723. GRAIN-DELIVERING APPARATUS FOR HARVESTERS. JAMES R. SEVERANCE, Fremont, Ohio. Filed Oct. 20, 1883. (No model.)



Claim.—1. The combination of the endless belt, and the feeding-teeth rigidly secured to the side and crosswise of the belt and projecting from its edge, substantially as and for the purpose hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the slotted surface or platform-cover, driving and driven pulleys rotating with their faces in a plane parallel to the slotted surface, endless belts beneath the slotted surface and passing around said pulleys, and the feeding-teeth rigidly secured to the sides and crosswise of the belts and projecting from their edges, for the purpose described.

3. The combination of the platform having the slotted surface, the endless carrier, and the pulleys by which the front section of the carrier is deflected inwardly at the inner front corner of the slotted surface, substantially as and for the purpose hereinbefore set forth.

4. The combination of the platform having the slotted surface lowered at its inner front corner, the endless carrier, and means by which the front section of the carrier is deflected inwardly to leave an unobstructed space above the lowered inner front corner of the platform's surface, substantially as and for the purpose hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the platform having the slotted surface, the endless carrier, means by which the front section of the carrier is deflected inwardly to provide an unobstructed space at the inner front corner of the platform's surface, and the adjustable butter, for the purpose described.

6. The combination, substantially as hereinbefore set forth, of the platform, the batter, its frame, the batter-actuating shaft, the suspending-bracket sliding along said shaft, and with which the batter-frame is connected at its inner end, and the support for the outer end of the batter-frame and by which it is allowed vibratory and longitudinal movement, for the purpose described.

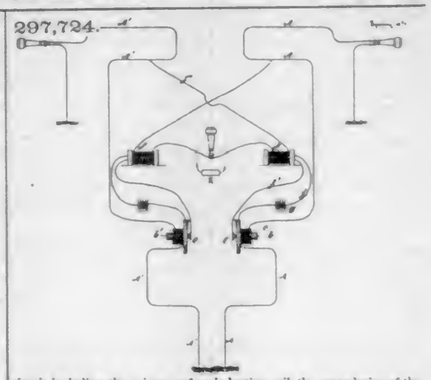
7. The endless butter composed of the chain having the inclined teeth secured to its detachably-united links, substantially as and for the purpose hereinbefore set forth.

297,724. TELEPHONE-REPEATER. DANIEL E. SMITH, Hartford, Conn. Filed Sept. 27, 1883. (No model.)

Claim.—1. The combination of two main wires to and from the repeating-station which ground at that station, repeating-magnets in the main-line circuits, microphones in the primary circuit of the induction-coils, a local battery in the latter circuit, and a rheostat interposed between the induction-coils in their secondary circuit, the said secondary circuit being completed by joining the free ends of the wire to the opposite main-line wires at the repeating-station and beyond the repeating-magnet on the wire to be transmitted into, all substantially as described.

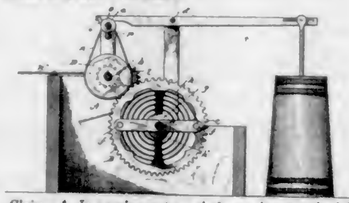
2. In a telephone repeating apparatus, the combination of the main-line wires that ground at the repeating-station directly through the repeating-magnets in the line-circuits, the said repeating-magnets in operative proximity to michrophones in local-battery circuits, each battery-

297,724.



circuit including the primary of an induction-coil, the secondaries of the two induction-coils connected in series and with the line beyond the repeating-magnets, and the resistance included in said secondary circuit, all substantially as described.

297,725. SPRING-MOTOR. ALFRED D. STANSBURY, Collier's, W. Va. Filed Feb. 13, 1884. (No model.)



Claim.—1. In a spring-motor, a shaft, *a*, and a gear-wheel, B, loose on said shaft, provided with a yoke composed of the bar *e* and posts *f*, and a drum, *g*, fast on said shaft, combined with a spring connected at one end with said drum, and at the other with one of the posts *f*, substantially as and for the purpose described.

2. The shaft *a*, wheel B, loose thereon, and the spring connected to said shaft and wheel, substantially as described, combined with the gear C on said shaft, and the shaft *b*, having gear *i*, and clutch-gear *k*, arranged as set forth.

3. The shaft *a*, wheel B, loose thereon, and the spring connected to said shaft and wheel, substantially as described, combined with the winding or intermediate idler-pinion, *l*, located between the wheel B and clutch-gear *k*, as set forth.

4. The shaft *a*, wheel B, loose thereon, and the spring connected to said shaft and wheel, substantially as described, the gear C on said shaft, and the shaft *b*, having gear *i*, and clutch-gear *k*, combined with the pawl *t*, to engage wheel B, all arranged to operate as set forth.

5. The shaft *a*, wheel B, loose thereon, and the spring connected to said shaft and wheel, substantially as described, the gear C on said shaft, and the shaft *b*, having gear *i*, and clutch-gear *k*, combined with the pawls *t* and *u*, to engage wheels B and C, respectively, all arranged to operate as set forth.

6. The shaft *a*, wheel B, loose thereon, and the spring connected to said shaft and wheel, substantially as described, the gear C on said shaft, and the shaft *b*, having gear *i*, clutch-gear *k*, and band-pulley D, combined with the cranked shaft *c*, the beam or lever *q*, connected with said cranked shaft, and a belt, *n*, for transmitting motion from shaft *b* to shaft *c* to vibrate the lever, all arranged and operating as set forth.

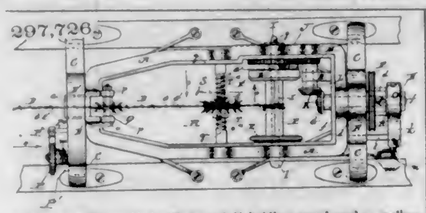
7. In a spring-motor, the rock-shaft *d*, combined with a pendulum having one or more spring-coils in its arm, and an adjustable weight, substantially as and for the purpose described.

297,726. MACHINE FOR TWISTING AND SPOOLING BARBED-WIRE FENCING. DANIEL C. STOVER, Freeport, assignor to I. L. Ellwood & Co., De Kalb, Ill. Filed Mar. 2, 1883. (No model.)

Claim.—1. The combination of a holding-spring, A, with the spool E, driving spur-gear J, and revolving frame A, in which said spool and gear are supported, substantially as and for the purposes set forth.

2. The combination, with the pulley H, shaft *f*, frame A, supporting-frame C, spool E, and gearing between the spool E and shaft *f*, of

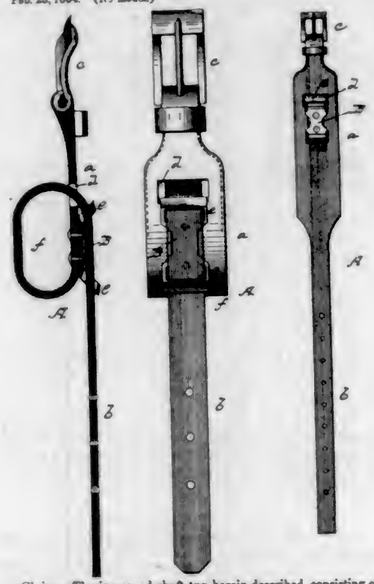
297,726.



friction-strap O, provided with arms *k k'*, holding part *l*, cord *m*, pulleys *n*, ratchet-wheel P, provided with hub P', and pawl P², substantially as and for the purposes set forth.

3. The combination of the frame A and spool E with one or more springs, *h*, spur-gear J, pinion M, shaft L, bevel-gear K, bevel-gear G, shaft *f*, and the means for holding said shaft, substantially as and for the purposes set forth.

297,727. SHAFT-TUG. PHINEAS B. SWICK, Tecumseh, Mich. Filed Feb. 23, 1884. (No model.)



Claim.—The improved shaft-tug herein described, consisting of the single strap A, having the broad loop portion *a*, narrow strap portion *b*, the transverse slot *d*, and the buckle *c*, and provided with the plate B, secured on the outer face of the loop portion, having end loops, *e e*, to receive the strap *b* after the latter is passed through the slot *d* in forming the shaft-loop *f*, the whole constructed and arranged as shown, described, and for the purpose set forth.

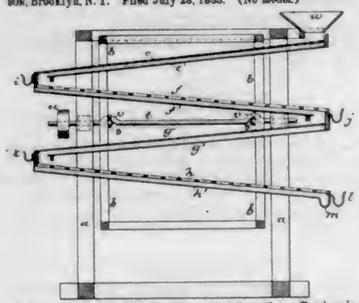
297,728. DIAMOND-HOLDER FOR STONE-DRESSING TOOLS. ABE L. TEETOR, Cambridge City, Ind. Filed June 28, 1883. (No model.)



Claim.—1. The combination, with a recessed head, of the follower, one end of which is provided with a series of notches, so as to accommodate diamonds of various shapes, and a screw for moving the follower, substantially as set forth.

2. The combination, with a recessed head, of a reversible follower, one end of which is provided with a series of notches, and the opposite end plain, and a bolt for securing the diamond between the follower and head, substantially as set forth.

297,729. COFFEE SEPARATOR AND ASSORTER. JOHN S. THOMPSON, Brooklyn, N. Y. Filed July 28, 1883. (No model.)



Claim.—1. A sieve for separating round from flat coffee-berries, provided with oblong meshes of a width and length to admit the flat berries, and sides of prolonged depth equal to their width, or sufficient to prevent the rotation of the round berries therein, whereby the flat berries drop through the meshes, while the round berries pass off the top of the sieve, substantially as herein set forth.

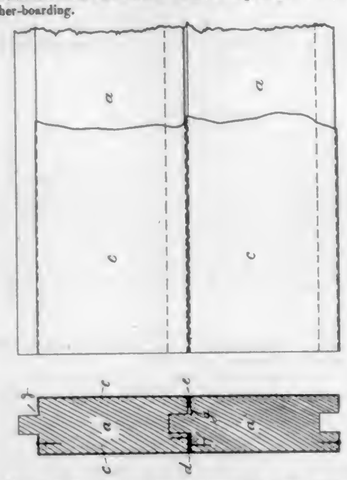
2. A sieve for separating round from flat coffee-berries, formed of narrow strips set up edgewise and fastened together in a supporting-frame at fixed intervals, and sufficiently apart to form oblong meshes between the strips, which meshes have a prolonged depth equal to their width, or nearly so, substantially as and for the purpose set forth.

3. A coffee-assorting machine for separating round from flat berries, formed with a series of successively-arranged screens of successively-diminishing mesh over which the coffee is passed successively, the said screens being formed alternately with mesh of shallow depth—such as *e g*—and mesh of prolonged depth—such as *f h*—whereby the coffee is separated into round and flat berries of different sizes, substantially as herein shown and described.

4. In a coffee sifting and separating machine, the successively-arranged series of screens *e f g h* of diminishing mesh, the screens *e g* having round-holed mesh of immaterial depth, and the screens *f h* slotted mesh of prolonged depth, arranged and operating substantially as and for the purpose set forth.

297,730. FIRE-RESISTING WEATHER-BOARDING. PETER TOGLIO, Charleston, S. C. Filed Feb. 5, 1884. (No model.)

Brief.—Weather-boards saturated with non-inflammable material are covered with thin sheets of metal, having flanges secured to the weather-boarding.

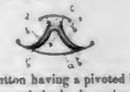


Claim.—1. Fire-resisting weather-boarding for frame houses, consisting of weather-boards saturated with uninflammable material and with their surfaces protected by coverings of thin sheet metal, substantially as herein described and shown.

2. In combination with fire-resisting weather-boarding, the coverings of thin sheet metal *c c*, made with flanged edges *d* and *e*, and fast-

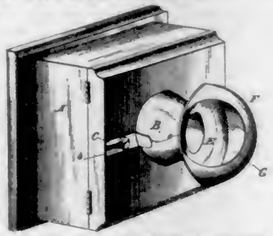
oned to the weather-boards, substantially as described and shown, and for the purpose set forth.

297,731. SLEEVE-BUTTON. JOHN B. VAN HOUTEN, Newark, N. J. Filed Apr. 6, 1883. (No model.)



Claim.—In a sleeve-button having a pivoted back or shoe, the combination, with the face-plate and the back or shoe, of a bifurcated tubular shank, the diverging ends of which are secured to the face-plate, and a spring contained therein, as described, arranged to engage with a lug upon said shoe, as shown, to hold the latter in operative and inoperative relations to the face-plate, substantially as and for the purposes set forth.

297,732. TELEPHONE MOUTH AND EAR PIECE. FRANCIS WARE, Boston, Mass. Filed Jan. 14, 1884. (No model.)



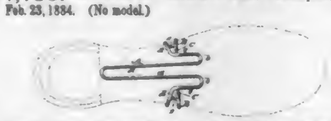
Claim.—1. A mouth or ear piece for telephones, consisting of two hemispherical sections joined by a conical section, substantially as described.

2. A mouth or ear piece for telephones, consisting of two hemispherical sections joined by a conical section, the outer hemisphere having an opening in its side.

3. In a mouth or ear piece for telephones, the combination, with the flaring connecting-piece E, of the hemispherical piece F, having an opening, G, the construction being such that the latter may be turned upon the former, to bring the opening into any desired position.

4. The combination, with the case of a telephone, of a mouth and ear piece consisting of two hemispherical sections joined by a conical section, and means for attaching the same to the telephone-case, as set forth.

297,733. ICE-CREEPER. CHARLES F. WEST, Philadelphia, Pa. Filed Feb. 23, 1884. (No model.)

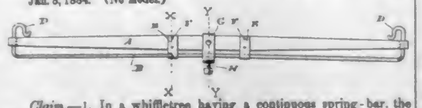


Claim.—1. An improved ice-creeper consisting of a shank, clips at the sides thereof, and spurs projecting from the clips formed of a continuous piece of wire, substantially as and for the purpose set forth.

2. The shank A, clips B, and spurs C, formed of the parts *a b c d e f*, continuous of each other, substantially as described.

3. An ice-creeper formed of a continuous piece of wire having a shank, clips, and spurs, said shank consisting of two elastic arms, *a a*, which are united by a bend at the rear of the shank, substantially as and for the purpose set forth.

297,734. WHIFFLETREE. JAMES WHITCOMB, San José, Cal. Filed Jan. 3, 1884. (No model.)



Claim.—1. In a whiffletree having a continuous spring-bar, the fixed band G, provided with a set-screw, H, which by tightening or loosening causes the spring-bar to act with a greater or less resilience, substantially in the manner as herein set forth and specified.

2. The combination and arrangement of the beveled wooden bar, continuous spring-bar, angle-irons or fulcrum, and the fixed band provided with the adjusting set-screw, constructed and operating substantially in the manner as herein set forth and specified.

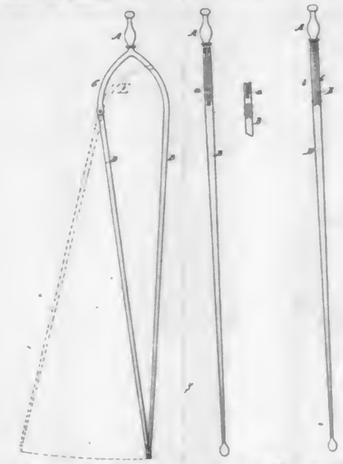
297,735. SPRING FOR STEAM AND OTHER PRESSURE GAGES. EDWIN A. WOOD, Utica, N. Y. Filed Jan. 16, 1884. (Model.)



Claim.—1. As a new article of manufacture, a diaphragm-spring for pressure-gages, composed of plates or disks of brass or other suitable metal, compressed or compacted into the required shape and tempered by the action of rolls, as set forth.

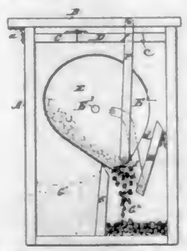
2. A diaphragm-spring for pressure-gages, composed of an upper plate having its edges turned downward and then inward and upward, in combination with a lower plate having its edges turned down to interlock with the upturned edges of the upper plate, and soldered thereto, as set forth.

297,736. TONGS. WILLIAM E. WOOD, Houston, Tex. Filed Aug. 22, 1883. (No model.)



Claim.—In a pair of tongs, the stationary leg B, having the slot *a*, and the stationary arm C, having the slot *b*, in combination with the movable leg D, pivoted to the arm C, and having the extension E, substantially as shown and described.

297,737. ASH-SIFTER. WILLIAM T. ADAMS, Baltimore, Md. Filed Dec. 10, 1883. (No model.)



Claim.—1. The sifter or screen made in the shape of a cylindrical receptacle having a longitudinal opening, and hung centrally upon bearings in the case, combined with the case and bearings, the lid B, and a link-bar connecting the two for oscillating and inverting the sifter, as shown and described.

2. The combination, with the case A and the hinged lid B, of the stationary top having smaller hinged lid D, adapted to sustain and form a brace for the lid B when they are opened, as described.

3. The combination, with a containing-case having two compartments in its bottom, of a hinged lid, B, a vibrating screen, a link-bar connecting the hinged lid to the vibrating screen, a hinged chute-board covering the coal-compartment, and a link-bar connecting the screen to the chute-board for the simultaneous operation of the lid B, screen, and chute-board, substantially as shown and described.

297,738. CAN-TOP. HORACE R. ALLEN, Indianapolis, Ind. Filed July 7, 1883. (No model.)



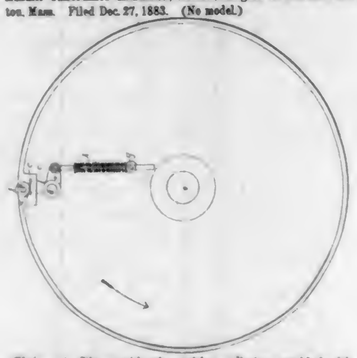
Claim.—1. As an article of manufacture, a wire covered with solder capable of use for soldering joints in metallic vessels, substantially as described and specified.

2. As an article of manufacture, a wire covered with solder having a shape in cross-section corresponding to that of the parts adjacent to the seam to be soldered, and capable of use for soldering joints in metallic vessels, as set forth.

3. As an article of manufacture, a wire covered with solder, a portion of the wire being bare of solder and to be used for soldering joints in metallic vessels, as described and specified.

4. For soldering and opening joints in metallic vessels on the metallic sheets to be soldered, a coating of any mixture that will act as a resist and keep the solder from adhering to the plates at all points except when the coating has been purposely removed, in combination with a solder-covered wire, substantially as described, and for the purposes specified.

297,739. GRIPPER MECHANISM FOR BRONZING-MACHINES, &c. ALBERT THEOPHILUS ANDERSON, Chelsea, assignor to Wm. H. Forbes, Boston, Mass. Filed Dec. 27, 1883. (No model.)



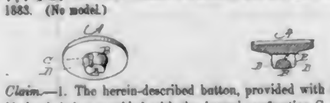
Claim.—1. The combination, with a cylinder provided with a gap, of a gripper-shaft which substantially fills said gap, and a suitable gripper-plate on said shaft, substantially as described.

2. The combination, with a cylinder having a gap of nearly circular outline, of a shaft which is nearly cylindrical and substantially fills said gap, and a gripper-plate attached to said shaft, and suitable operating mechanism, substantially as described.

3. The combination, with a cylinder having a gap, of a bushing therein, said bushing having a longitudinal groove which is filled by the gripper-shaft, and a suitable gripper-plate on said shaft, substantially as described.

4. The combination of the cylinder having a gap, the bushing C therein extending to the periphery of the cylinder at C', but being slightly lower at C², the gripper-shaft *a*, and suitable operating mechanism therefor, and the gripper-plate *b*, its outer surface curved on the same circle as the cylinder, substantially as described.

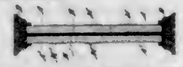
297,740. BUTTON. JAMES F. ATWOOD, Boston, Mass. Filed Oct. 8, 1883. (No model.)



Claim.—1. The herein-described button, provided with the shank B, said shank being provided with the lateral perforation C, the opposite mouths or ends of which deepen or curve downward toward the outer end of said shank, as shown, thus causing the portion of the shank forming the bottom of the perforation to be convex in shape, whereby a wire fastening may be applied without causing a sharp bend therein, substantially as and for the purpose set forth.

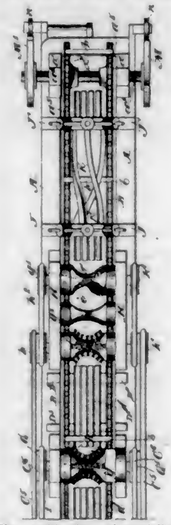
2. The herein-described button, provided with the shank B, said shank being provided with a lateral perforation and with opposite vertical grooves, D, leading from the foot or outer end of the shank to said perforation, substantially as and for the purpose described.

297,741. LUMINOUS SIGN. GEO. H. BABCOCK, Plainfield, N. J. Filed Apr. 20, 1882. (No model.)



Claim.—The sign herein described, consisting of the glass plates A A', placed back to back, with a single coat of luminous paint, B, between the plates, the face of each plate having opaque letters, and the whole secured within the double frame D, as set forth.

297,742. MACHINE FOR HUSKING, SILKING, AND CUTTING CORN. GEORGE E. D. BALDWIN, Baltimore, Md., assignor, by direct and mesne assignments, to Lawrence W. Counselman and Albert L. Scott, both of same place. Filed Sept. 18, 1883. (No model.)



Claim.—1. The combination, substantially as described, with the bed of the machine, of the standards D' E, provided with circular heads D² and E', the guide-bars *d'*, secured within the heads D², and the knives *e*, located in the head E', as set forth.

2. The combination, with the circular head E', of the radial spring-impelled bars *e'*, provided with knives *e*, and the feed-belt B, passing through said head and between said knives, for the purpose set forth.

3. The combination, in a corn husking and silking machine, of a series of radial inwardly-pointed knives for longitudinally splitting the husk, and feed mechanism, substantially as described, for carrying the ear between said knives, as set forth.

4. In combination with the head E', provided with radially-arranged sleeves *e²*, the bars *e'*, knives *e*, springs *e³*, head D², and spring-guards *d'*, as set forth.

5. The combination, in a corn-husking machine, of a series of inwardly-pointed radial knives for slitting the husk longitudinally, a pair of concave brushes for removing the husk from the ear, and a continuous feed mechanism for impelling the ear consecutively through these devices, substantially as set forth.

6. The combination, with the bed of the machine, of the knives for slitting the husk, the concave brushes, knives for removing the corn from the ear, and continuous feed mechanism, as described, for impelling the ear, as set forth.

7. The combination, with the bed of the machine, of knives for removing the corn from the cob, feed mechanism for forcing the ear between said knives, and reciprocating sieves located below said knives, substantially as and for the purpose set forth.

8. The combination, with the bed of the machine, of knives for cut-

ting off the ends of the ears, knives for slitting the husk longitudinally, concave brushes for removing the husk, and a continuous feed mechanism, substantially as described, for propelling the ear of corn, as set forth.

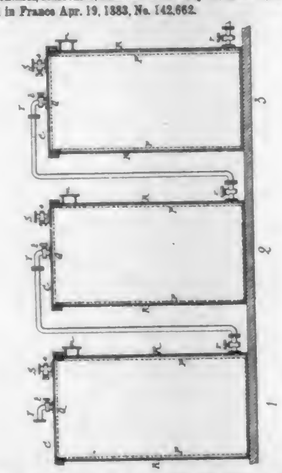
9. The combination, with the bed of the machine, of knives for cutting off the end of the ear of corn, knives for slitting the husk longitudinally, brushes for removing the husk, and knives for removing the corn from the cob, a feed-trough, sections of which are interposed between each of the devices, and a continuous feed mechanism, substantially as described.

10. In combination, the bed of the machine and the following mechanisms mounted consecutively thereon and operated simultaneously, viz: a knife for cutting off the end of an ear of corn, radial knives for slitting the ear longitudinally, concave rotary brushes for removing the husk and silk, and a continuous feed mechanism for impelling the ear entirely through the machine.

11. The combination, with the bed of the machine and a feed mechanism for impelling the ear entirely through the machine, of devices for cutting off the ends of the ears, devices for slitting the husk, devices for removing it from the ears, and mechanism for cutting the corn from the cob, all arranged and operating substantially as set forth.

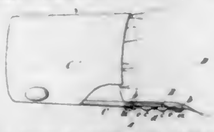
12. The combination, with the bed of the machine and a feed mechanism for impelling the ear entirely through the machine, of devices for removing the husk from ears of corn, and devices for removing the grain from the cob, substantially as set forth.

297,743. EXTRACTION OF OILS AND FATS FROM OLEAGINOUS AND FATTY BODIES. IVAR AXEL BANG, Paris, and CHARLES ALBERT SANGUINETTI, Marseilles, France. Filed May 31, 1883. (No model.) Patented in France Apr. 19, 1883, No. 142,662.



Claim.—The method herein described for treating oleaginous and fatty bodies in order to extract oil therefrom, which consists in first reducing the substance to a finely-divided state, then saturating it with a volatile deodorized product of petroleum, then drawing off the free liquid, and then passing the superheated vapor of a portion of the said volatile liquid through the mass in order to remove therefrom the remaining portions of the volatile solvent, substantially as set forth.

297,744. CUFF-HOLDER. HERMON D. BISHOP, West Hampton, N. Y. Filed Mar. 10, 1884. (No model.)



Claim.—1. A device for attaching and adjusting cuffs to shirt-sleeves, composed of two spring-metal strips or pieces formed with meeting jaws at their opposite ends, and united intermediately of their length, and constructed to open at either of said ends on pressure being applied to bring the strips together between such ends and the point of attachment of the strips, substantially as specified.

2. As a new article of manufacture, the cuff attaching and adjusting device, consisting of a corrugated spring-metal strip, A, having opposite end concave jaws, *a a*, with swells or protuberances *c c* between said jaws, and a spring-metal strip, B, having like concave jaws, *b b*, at its opposite ends, and united with the strip A between the protuberances *c c*, essentially as described.

3. The spring-metal strip B, having jaws *b b* at its opposite ends, and constructed with central side wings, forming clips *d d*, in combination with the corrugated spring-metal strip A, having jaws *a a* at its reverse ends, substantially as shown and described.

297,745. WAGON-TONGUE SUPPORT. JACOB BOWER, Lafayette, Ind. Filed Dec. 21, 1883. (No model.)

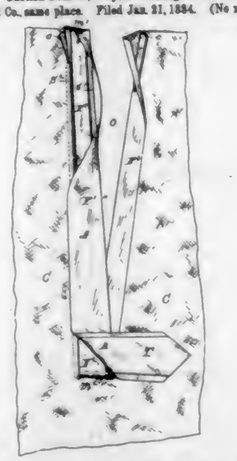


Claim.—1. In a wagon, the tongue C, provided with the pivoted button E, arranged upon the upper side of the tongue and adapted to act in connection with the hounds, substantially as and for the purposes set forth.

2. The tongue C, provided upon the under side with a spring having the hook H, in combination with the chain G, held by the hounds under the spring, substantially as and for the purposes set forth.

3. The tongue C, provided upon the upper side with the pivoted button E, in combination with the spring F, attached to the under side of the tongue, and the chain G, attached to the hook and eye *d f*, secured in the hounds of the wagon, substantially as and for the purposes set forth.

297,746. COMBINED BUTTON-LAP AND STAYING-PIECE FOR GARMENTS. GEORGE BOXLEY, Troy, N. Y., assignor of one-half to George P. Ide Bruce & Co., same place. Filed Jan. 21, 1884. (No model.)

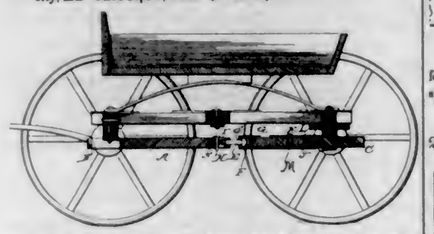


Claim.—1. In combination with the slip-opening of a garment, the tapering strip or placket A, made in one piece that is oppositely folded to produce the facings F′ F² F³, with the adjacent edges of the facing-folds F′ F³ on one side united, as shown, and the remaining free edge of the fold F² sewed to one side of the slit, and the free edge of said fold F′ to the garment exterior, with the facing-fold F³ on its inner edge sewed to the adjacent edge of the slit, and its other edge to the garment exterior, and with said connected parts cross-sewed to the garment and to each other below the slit, as described.

2. In a combined button lap and stay for garment slit-openings, the combination of the strip or placket A, made in one piece and reversely folded to produce the facing-folds F′ F² F³ and tab-end stay T, the stitching S′, uniting on one of their sides the edges of the folds F′ F³, the stitching S² S³, connecting said fold-facings F′ F³ to the edge of the slit-opening and the exterior of the garment, the stitching S² S², uniting the said facing-fold F³ to one side of the slit and to the garment exterior, the cross-stitching S³, joining said connected folds to the garment and to each other below the slit, and the stitching S⁴, uniting said tab-end stay to the garment below the slit, as shown.

3. In a button fly lap and stay for garment slit-openings, the combination of the tapering strip or placket A, made in one piece, the reversing-folds *w′ w²*, made in the strip, the facing-folds F′ F² F³, the stitching S′, connecting on one side the adjacent edges of the facings F′ and F³, and said facings F′ F² F³, adapted to attach to the garment-slit and garment exterior, as shown and described.

297,747. VEHICLE RUNNING-GEAR. JAMES M. BRADLEY, Tyner City, Ind. Filed Sept. 3, 1883. (No model.)



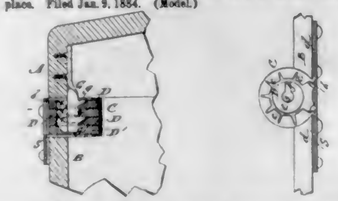
Claim.—The herein-described running-gear for vehicles, comprising a reach consisting of the rear section, C, having a recess, F, in its front end, and having a plate, G, provided with an aperture, G′, secured around its front end, front section, A, provided at its rear end with a horizontal recess, N, and a longitudinal slot, I, connecting piece or hinge D, provided at one end with a bolt, E, and having its other end adapted to fit within the horizontal recess N, and bolt H, working in the slot I, and adapted to secure one end of the hinge D movably within the recess F, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

297,748. APPLE PARER AND SLICER. WILLIAM F. BROCK, Dunellen, N. J. Filed Sept. 24, 1883. (Model.)



Claim.—A parer and slicer having a blade, A, of sheet metal bent or creased longitudinally, as described, to form a cutting-edge, *d*, and a guiding-edge, *e*, and having a longitudinal slot, *a*, cut out along the crown or bend *b* of the blade, forming a discharge-opening, all substantially as herein shown and described.

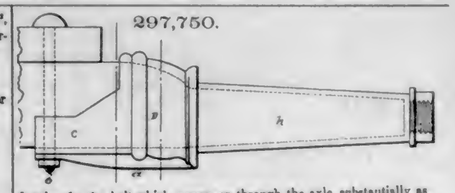
297,749. PERMUTATION-LOCK. WM. M. BROOKE, Brooklyn, N. Y., assignor of one-third to John F. Sias and Lewis M. Swasey, both of same place. Filed Jan. 9, 1884. (Model.)



Claim.—1. The lock herein described, consisting of the sheet-metal case provided with a circular chamber, C, interned notched portion, *c*, on the upper and lower edges of said chamber, securing-flanges *d*, bent from the opening *b* in the case in opposite directions, and a series of horizontally-arranged permutation-disks within said chamber, in combination with a suitable hasp, substantially as set forth.

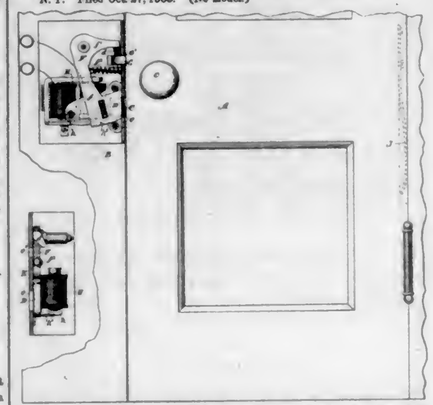
2. A lock-case formed from a sheet-metal blank, E, said blank being provided with the notched central portion, *c*, and bent to form the circular chamber C, of which the notched portion *c* forms the top and bottom, opening *b*, and flanges *d*, bent in opposite directions from said opening, substantially as set forth.

297,750. AXLE-SKEIN. WILLIAM PATTERSON BROWN, Zanesville, Ohio. Filed Apr. 28, 1883. (No model.)



Claim.—As an improved article of manufacture, the axle-skein described, consisting of the spindle portion A, provided at its inner end with the box-shoulder, and in rear of said shoulder with a swell-extension, having an interior shoulder and a strengthening circular rib, in rear of said rib an open top rectangular extension, and the keel-flange *a* extending from the box-shoulder to the end of the said extension, and provided at said end with a raised flattened base to seat the securing-nut, and a perforation for the bolt which passes up through the axle, substantially as specified.

297,751. ELECTRIC DOOR-OPENER. JESSE H. BUNNELL, Brooklyn, N. Y. Filed Oct. 27, 1883. (No model.)



Claim.—1. The combination, substantially as described, with a sliding latch, of the pivoted plate F, formed with the extension or latch plate D at its lower extremity and an arm, *f′*, at its upper portion, and provided with a cam, *d*, a projection on the door for engaging the extremity of the arm *f′*, and acting to force the plate D into the path of the latch, an electro-magnet, its armature, and a suitable stop, *h′*, for retaining the device in locking position against the force of a retracting-spring, *f³*, substantially as set forth.

2. The combination, substantially as described, with a sliding latch, of the pivoted plate F, formed with the extension or latch plate D at its lower extremity, and an arm, *f′*, at its upper portion, a projection on the door moving with the same and acting to force the plate D into the path of the latch, but yielding in the opposite direction to pass the arm *f′*, an electro-magnet, its armature, and a suitable stop, *h′*, for retaining the device in locking position against the force of a retracting-spring, *f³*, substantially as set forth.

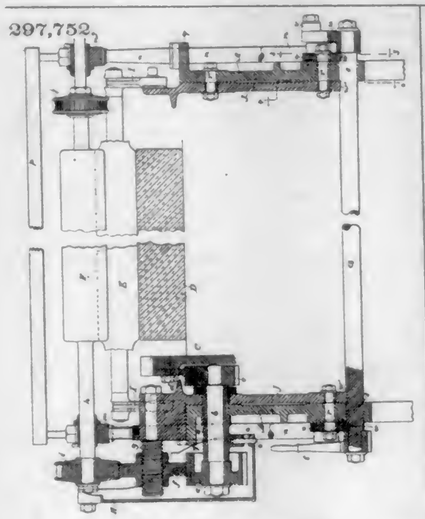
297,752. MECHANISM FOR RAISING THE ROLLERS OF PRINTING-PRESSES. ANDREW CAMPBELL, Brooklyn, assignor to John and Edmund McLoughlin, both of New York, N. Y. Filed Sept. 11, 1883. (No model.)

Claim.—1. In a printing-press, the combination, with the set of form-rollers and the set of distributing-rollers, each set mounted in movable bearings capable of being moved independently of the bearings of the other set, of the said bearings and means, substantially as described, for simultaneously lifting said movable bearings to different heights, whereby the form-rollers are lifted from the form and the distributing-rollers from the form-rollers, for the purposes specified.

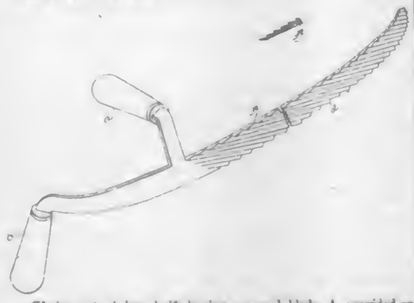
2. In a printing-press, the combination of the form-rollers, a frame capable of vertical motion and affording bearings in which said rollers are mounted rotatively, the distributing-rollers, another frame bearing said distributing-rollers and also capable of vertical motion, and means, substantially as set forth, for lifting both said frames, and thereby lifting the form-rollers out of contact with the form and the distributing-rollers out of contact with the form-rollers, substantially as set forth.

3. The combination of the form and distributing rollers, mounted substantially as shown, the sliding frames in which said rollers are mounted, constructed and arranged substantially as shown, the cam-shafts G G, provided with cams *w w* and *w′ w′*, and arms *u u*, and bar *v*, substantially as and for the purposes set forth.

297,752.



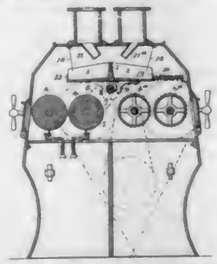
297,753. HAY-KNIFE. WALLACE H. CARTER, Hallowell, Me. Filed Jan. 9, 1884. (No model.)



Claim.—1. A hay-knife having a curved blade, A, provided on one side with grooves *c c*, running at an acute angle to the edge and quite across the blade, all substantially as described.

2. In a curved hay-knife, a series of grooves inclined on the side toward the edge and approximately vertical on the other, and extending quite across the blade, as and for the purpose set forth.

297,754. FEED-BOX FOR ROLLER-MILLS. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed May 31, 1883. (No model.)



Claim.—1. A double-vibrating feed-box provided with a central partition, in combination with two hopper-spouts, whereby a different class of material may be fed to each of two sets of rolls, as set forth.

2. A double-vibrating feed-box provided with a central partition and one common means whereby both are vibrated, in combination with two hopper-spouts and two sets of rolls, as and for the purpose set forth.

3. In a roller-mill, a duplex shaking box and elastic hangers for supporting the same from above, in combination with two sets of rolls, substantially as shown and described.

4. In a feed apparatus for roller-mills, a suspended box divided into two compartments, and a common eccentric shaft, in combination with suitable driving mechanism, as set forth.

5. In a roller-mill, the combination of two sets of rolls and a duplex feed-box with an eccentric or cam-shaft passed through the case of the machine parallel with the said rolls, as and for the purpose set forth.

6. In a feed apparatus for roller-mills, the combination of the pulley on the shaft of the roll 4, the pulley 7, the eccentric shaft 8, and duplex feed-box 1 2, substantially as and for the purpose set forth.

7. In a feed apparatus for roller-mills, the combination of the box 1 2, the spring 10, and eccentric 8.

8. The combination, with two pairs of rolls, of a vibrating feed-box adapted to supply each pair of rolls from its respective sides with an equal and uniform quantity of material, as set forth.

9. A vibrating feed-box having shallow bridges over which the material sifts, in combination with means for imparting a lateral vibratory motion thereto, substantially as set forth.

10. A vibrating feed-box having adjustable bridges over which the material sifts, in combination with suitable means for imparting motion to said box, as set forth.

11. A duplex feed-box, in combination with two pairs of rolls and one common means whereby a lateral vibratory motion is imparted to said box, as set forth.

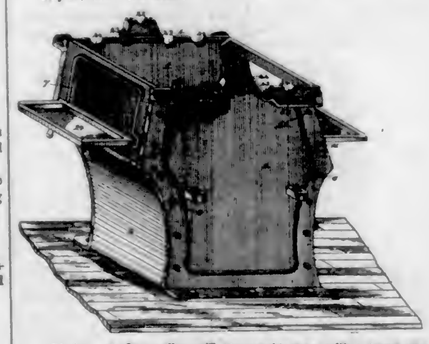
12. In a roller-mill, the combination of a feed-box, elastic hangers for supporting the same, and means for imparting a vibratory motion to said box, as set forth.

13. In a roller-mill, the combination of two sets of rolls and a duplex feed-box with an eccentric for imparting motion to said box in one direction, and a spring for returning it, substantially as set forth.

14. In a roller-mill, the combination, with a vibrating feed-box, of an eccentric shaft, a pulley on said shaft, a belt, and a pulley on one of the roll-shafts, as and for the purpose set forth.

15. In a roller-mill, the combination, with a feed-box, of an eccentric for imparting a horizontally-reciprocating motion thereto, and means for driving said eccentric from one of the crushing-rolls.

297,755. CASING FOR ROLLER-MILLS. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed May 31, 1883. (No model.)



Claim.—1. In a roller-mill, the combination, with a frame constructed of duplicated end and side plates, of a cap or cover similarly constructed, the meeting edges of said parts being formed complementary to each other, as set forth.

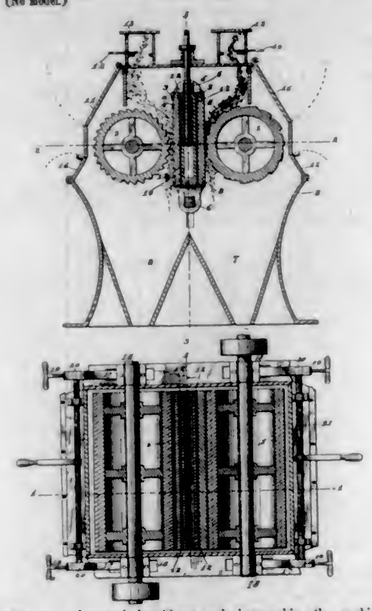
2. The combination of the end plates, 2 and 7, constructed as herein described and shown, and adapted for use at either end of the machine, with the side plates, 1, as set forth.

3. The cap or cover comprising the duplicated plates 15 and 19 and top plate, 18, arranged in the manner and for the purpose herein shown and described.

4. The combination of the lower portion, 1 1 2 2, of the frame or casing and the cap or cover 15 18 19, constructed and adapted for use substantially as herein set forth.

5. The combination, with the duplicate side plates, 1, having the journal-boxes for the stationary rolls cast therewith, of the duplicate plates 15, cast with housings for said journals, and adapted for use on either side of the machine, as set forth.

297,756. GRINDING-MILL. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed May 31, 1883. (No model.)



Claim.—1. In a grain breaking or reducing machine, the combination of a pair of grinding-rolls and a stationary grinding-plate interposed between said rolls and extending above and below the horizontal plane of their axes, as and for the purpose set forth.

2. In a grain breaking or reducing machine, the combination of a pair of grinding-rolls and a stationary grinding-plate having parallel faces interposed between said rolls and extending above and below the horizontal plane of their axes.

3. In a grain breaking or reducing machine, the combination, with a pair of rolls and a grinding-plate interposed between the adjacent faces of said rolls and extending above and below the horizontal plane of their axes, of means for adjusting said plate vertically, as set forth.

4. In a grain breaking or reducing machine, the combination, with a pair of rolls, a grinding-plate interposed between said rolls and extending above and below the horizontal plane of their axes, and means for adjusting said plate vertically, of means for locking it in any position in which it may be set, as described.

5. In a grain breaking or reducing machine, the combination, with a pair of grinding-rolls and a stationary grinding-plate interposed between the adjacent faces of said rolls and extending above and below the horizontal plane of their axes, of means for adjusting the distance asunder of the rolls.

6. In a reduction-machine, the combination, with two rolls, of a grinding-plate for use between them, constructed of a central frame and removable face or grinding-plates, as set forth.

7. In a reduction-machine, the combination, with two rolls, of a grinding-plate for use between them, constructed of a central frame, removable face or grinding-plates, and suitable elastic packing interposed between said plates and frame, as set forth.

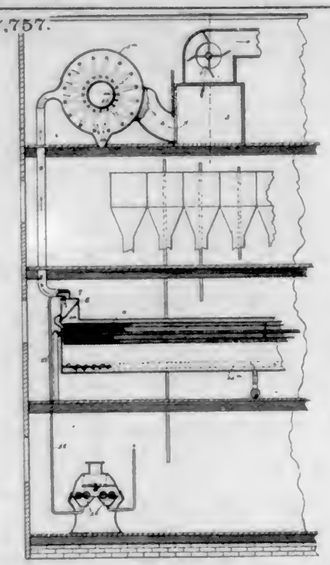
8. In a gradual-reduction machine, the combination of casing 3, hopper-spouts 13 13, rolls 1 2, interposed grinding-plate, and delivery-hoppers 7 8, all constructed and arranged substantially as herein shown and described.

297,757. APPARATUS FOR MANUFACTURING FLOUR. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed May 31, 1883. (No model.)

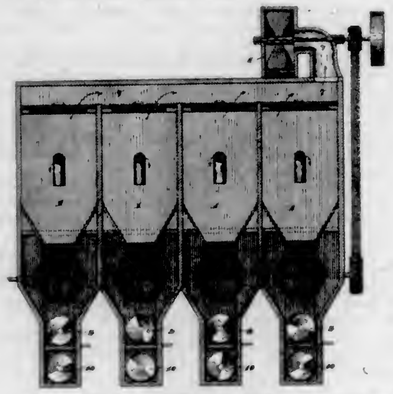
Claim.—1. The combination of a series of rolls or breaking-machines, a series of pneumatic elevating-pipes of a small area, a series of settling-chambers, an exhaust-pipe of larger area, a dust-catcher, and a fan, all arranged substantially in the manner and for the purposes set forth.

2. The combination, with a series of pneumatic elevating-tubes of small area, a series of settling-chambers, and an exhaust-pipe of larger area, of a second pneumatic elevating-tube of small area, a second settling-chamber and a second exhaust-pipe of larger area, and an air-trunk and fan common to all, arranged substantially in the manner and for the purpose set forth.

297,757.



297,758. ATMOSPHERIC ELEVATOR FOR FLOUR-BOLTS. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed May 31, 1883. (No model.)



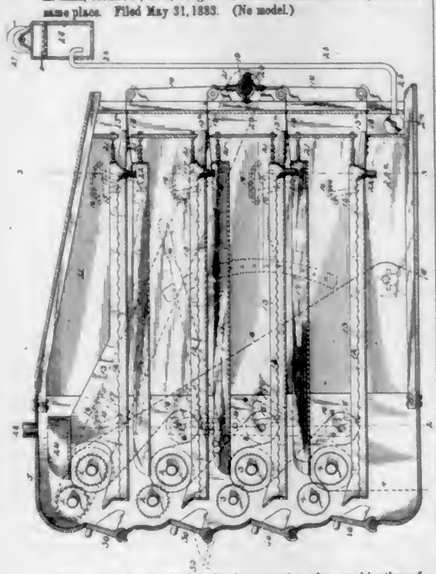
Claim.—1. The combination, with a rotary flour-bolt, of a pneumatic elevating-pipe, a settling-chamber or bolt-hopper of much larger area, into which said pipe delivers, a suction-fan exhausting the air and dust from said settling-chamber, and a feed-spout communicating from said chamber to the bolt, whereby the dust and impurities are carried off before the material reaches the bolt, as set forth.

2. The combination of the rotary bolt 5, elevating-pipe 2, suction-fan 6, settling-chamber 1, valve 3, and automatic valve 4, substantially as and for the purposes set forth.

3. The combination of a series of rotary bolts, 5, pneumatic elevating-pipes 2, settling-chambers 1, and an air-trunk and suction-fan common to all, substantially as shown and described.

4. The combination of a bolting-reel, a fan, an elevating-tube, and a practically air-tight settling chamber or hopper into which a current of air is drawn, and the material to be bolted thereby elevated and purified by one common fan before it reaches the bolt, as set forth.

297,759. GRADUAL-REDUCTION MACHINE FOR MILLING. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed May 31, 1883. (No model.)



Claim.—1. In a gradual-reduction machine, the combination of a vertical series of rolls, riddles, and return-boards, an iron frame, in which are mounted the rolls and the gearing for driving the same, and a wooden frame of any necessary length, extending therefrom and supporting the ends of the riddles and return-boards, substantially as set forth.

2. In a gradual-reduction mill, the combination, with a vertical series of paired rolls, of a belt-tightening pulley located between each two pairs of said rolls, in the manner and for the purpose set forth, and means for simultaneously operating said pulleys, as described.

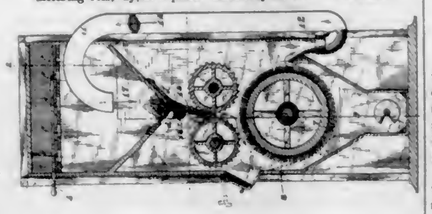
3. In a gradual-reduction mill, the combination, with a vertical series of roll-driving pulleys and a belt passing over said pulleys, of a series of tightening-pulleys located in positions relatively to the roll-pulleys to adapt them to take the belt as it passes from each roll-pulley and deflect it out of its natural course, whereby it is made to encircle a greater part of the peripheries of the roll-pulleys, and means for simultaneously adjusting said series of tightening-pulleys for taking up slack in the belt, substantially in the manner set forth.

4. The combination of the eccentric shaft 20, having a box fitted loosely thereon, the riddle-straps 18, suitable horizontal friction-pulleys, and springs 21, for imparting a vibrating motion to the riddles, as set forth.

5. The combination of two or more riddles and their connecting-straps with an eccentric shaft common to all, a box loosely fitted thereon, and springs acting in opposition to said straps for imparting a shaking movement to said riddles in opposite directions, so that each will counteract the momentum of the other, as explained.

6. The combination of a riddle, a return-board, suspending-hangers and an adjusting-support common to both, substantially as and for the purposes set forth.

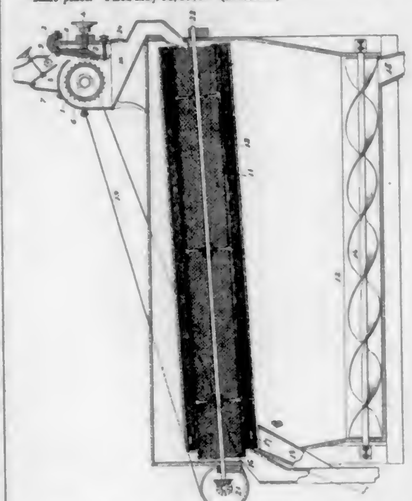
297,760. GRADUAL-REDUCTION MACHINE FOR MANUFACTURING FLOUR. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed May 31, 1883. (No model.)



Claim.—1. In a gradual-reduction machine, a pair of rolls made in sections graduated in fineness, in combination with separate settling-compartments over the roll-sections, pneumatic elevators communicating with the settling-compartments, separate valves to regulate the flow of air from the settling-compartments, and a feed-valve and feed-roller, constructed and operating as herein set forth, at the bottom of each settling-compartment, to prevent the flow of air upward to the said compartment while passing the material therefrom.

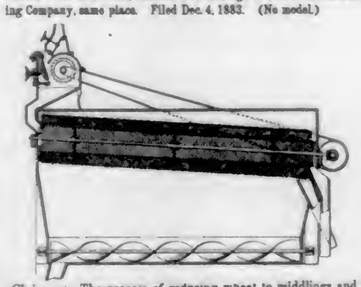
2. The combination, with the pair of sectional crushing-rolls, of a screen, 8, brush 7, a series of pneumatic elevating-pipes, and a series of settling-chambers located over the respective sections of the rolls, as set forth.

297,761. GRAIN REDUCTION AND SEPARATING MACHINE. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed May 31, 1883. (No model.)



Claim.—The herein-described grain reducing and separating machine, comprising the grain-cracking devices, the compound reel consisting of an inner wire-cloth screen, 11, and a finer outer screen, 12, of bolting-cloth, the spouts 10 16 18, and the driving-connections between the cracking devices and the compound reel, all mounted in the same frame, substantially as described.

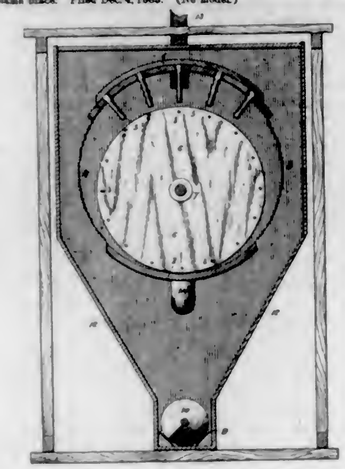
297,762. PROCESS OF REDUCING GRAIN TO MIDDLINGS AND FLOUR. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed Dec. 4, 1883. (No model.)



Claim.—1. The process of reducing wheat to middlings and flour, which consists in passing the grain through the following successive operations: first, splitting the grain and removing the germ as far as possible; second, crushing the grain; third, passing the crushed grain through a disintegrating-machine for dislodging and separating the flour-producing parts from the bran; fourth, treating the product of middlings and flour thus obtained in bolts, in the usual manner.

2. The process herein described, which consists in first splitting the wheat and removing the seam impurities and germ product, then alternately passing the unfinished product through crushing-rolls and disintegrating-machines a sufficient number of times to remove and separate the flour-producing parts from the bran

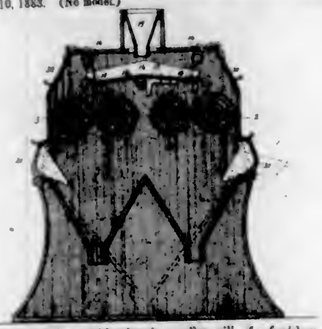
297,763. DISINTEGRATING AND SEPARATING MACHINE. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed Dec. 4, 1883. (No model.)



Claim.—1. The combination, with an outer stationary screen, of pins projecting thereinto and a beater-cylinder mounted and revolving eccentrically therein, as and for the purpose set forth.

2. The combination, with the stationary cylinder, consisting of concaves 1 2 and sieves or screens 3 4, of pins 5, projecting thereinto, and a beater-cylinder mounted and revolving eccentrically therein, as and for the purpose set forth.

297,764. FEED-BOX FOR ROLLER-MILLS. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed Dec. 10, 1883. (No model.)



Claim.—1. The combination, in a roller-mill, of a feed-box, means for imparting motion thereto in one direction, and spring-hangers for suspending it and producing a counter movement, substantially as set forth.

2. In a roller-mill, the combination of a feed-box, coil-spring hangers for suspending said box, and means for imparting motion thereto, as set forth.

3. In a roller-mill, the combination, with a feed-box, of suitable springs coiled in opposite directions for suspending said box, and means for imparting motion thereto, as set forth.

4. In a roller-mill, the combination of a feed-box, a cam-shaft for imparting motion thereto in one direction, and spring-hangers for suspending said box and imparting a counter movement thereto, substantially as set forth.

297,765. CAR-COUPLING. A. JUDSON CRAPEL, Arkansas City, Kans. Filed Jan. 23, 1884. (No model.)



Claim.—1. In an automatic car-coupling, the combination, with the link C, double beveled at its ends, as shown, and a draw-bar, A, provided with holes in its upper and lower faces, of the same configuration as a horizontal section of the coupling-pin, of a coupling-pin composed of a head, B, having sides *a a*, circular arc *b*, shoulders *c c*, and a central tongue or flange, D, having its outer edge downwardly and rearwardly beveled near its lower end, substantially as shown and described.

2. The combination, with the draw-bar A and coupling-pin B B' D, having an eyebolt secured to its rear end, of the lever *x*, fulcrumed in studs secured to the draw-bar, and having its inner end passing through the eye of the eyebolt, substantially as shown and described.

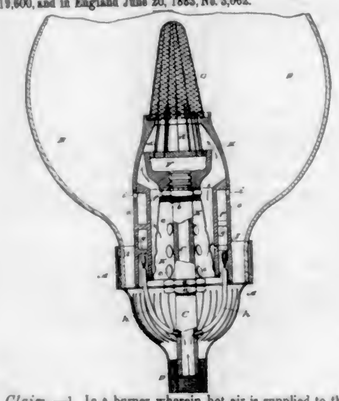
297,766. PROCESS OF PREPARING OZOCERITE AND OTHER SOLID HYDROCARBONS. JEAN CHARLES OCTAVE GHEMIN, Paris, France. Filed July 28, 1883. (No specimens.)

Claim.—1. The herein-described method of treating or preparing ozocerite and other similar hydrocarbons, which consists in first removing the earthy insoluble impurities by the means substantially as described, then heating the thus purified substance in a retort in connection with sulphur in about the proportions specified, and submitting the same to the action of superheated steam in the retort until it distills over, substantially as set forth.

2. The herein-described method of treating or preparing ozocerite and other similar hydrocarbons, which consists in first removing the earthy insoluble impurities, substantially as described, then distilling the thus purified hydrocarbon in combination with flowers of sulphur, substantially as specified, and then removing the oils and lighter hydrocarbons in the manner described, substantially as and for the purposes set forth.

3. The herein-described method of purifying and bleaching ozocerite and similar hydrocarbons, which consists in first removing the earthy insoluble impurities, as herein set forth; second, distilling the thus purified hydrocarbon mixed with flowers of sulphur in about the proportions specified; third, removing the oils and lighter hydrocarbons by heat and pressure, or the specified equivalent of the same; fourth, fusing in a bath with amylic alcohol, cooling and pressing, digesting with animal charcoal while in a molten state, and finally filtering through animal charcoal, substantially as set forth

297,767. ILLUMINATING-BURNER. CHAS. CLAMOND, Paris, France. Filed Jan. 8, 1884. (No model.) Patented in France May 20, 1880, No. 136,771; in Belgium May 28, 1880, No. 61,763; in Italy June 17, 1881, No. 19,600, and in England June 20, 1883, No. 3,062.



Claim.—1. In a burner wherein hot air is supplied to the flame, the combination, with the imperforated axial gas-inlet tube C, bearing on its upper end a gas-chamber and jet apparatus, of the annular flame-chamber arranged exterior thereto and provided with heating gas-jets at its base, and the annular air passage or conduit arranged and adapted to be heated, substantially as set forth.

2. In a burner wherein hot air is supplied to the flame, the combination, with the imperforated axial gas-inlet tube C, bearing a gas-chamber and jet apparatus, of the drum I, made in one piece and containing the annular flame-chamber, and the gas-jets *h*, arranged at the base of said chamber, the flame-chamber being arranged exterior to the annular

passage through which the air passes upward to the burning-point, substantially as set forth.

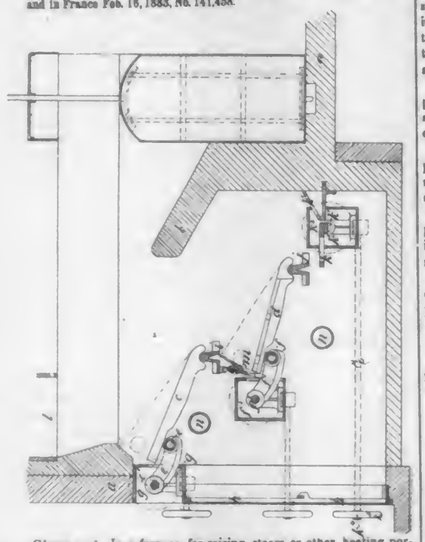
3. The means for heating the air in its passage to the burning-point, comprising the perforated bell E, the annular cylinder I, and the pipes *h*, for admitting gas to the jets at the base of said cylinder, all constructed substantially as set forth.

4. In a burner, the combination, with the dome H, provided with an orifice for the passage of the jet-tubes, and the imperforated gas-inlet pipe C, provided with a gas-chamber, F, of the slender jet-tubes *d*, inclined inward, as shown, and extending upward into the aperture in the dome, substantially as set forth.

5. The combination, in a burner, of the gas pipe or tube C, the gas-chamber F, the small jet-tubes *d d*, the magnesian basket G, the cone H, the annular cylinder I, the perforated bell E, and jet-tubes *h h*, all arranged substantially as set forth.

6. The combination of the basket G, the gas-chamber F, and the jet-tubes *d*, made very slender, of unequal length, and inclined inward, as described.

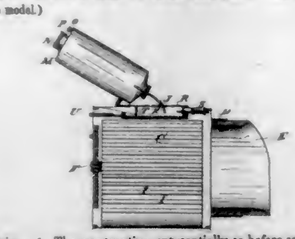
297,768. FURNACE. JEAN PIERRE COTIART, Havana, Cuba. Filed Apr. 10, 1883. (No model.) Patented in England Feb. 3, 1883, No. 500, and in France Feb. 16, 1883, No. 141,458.



Claim.—1. In a furnace for raising steam or other heating purposes, the combination, substantially as set forth, of a deflecting fire-bridge, two or more movable inclined layers of fire-bars, a tumbling-plate, and a steam-blast pipe or pipes.

2. In a furnace for raising steam or other heating purposes, the combination, substantially as set forth, of a layer of fire-bars, a stationary bearer supporting one end of said fire-bars, and a raising and lowering shaft connected by bracket-arms to a roller which supports the other end of the fire-bars.

297,769. INHALER. JAMES NAPOLEON DODGE, Springfield, Mass., assignor of one-half to Solomon J. Gordon, same place. Filed Oct. 25, 1883. (No model.)



Claim.—1. The combination, substantially as before set forth, with the case provided at one end with a flexible mouth-piece and at the opposite end with an adjustable air-gate, of the removable saturation-conduit, which consists of a ribbed cage and a strip of flannel wound back and forth across the cage around the ribs thereof.

2. The combination, substantially as before set forth, of the case provided at one end with a flexible mouth-piece and at the opposite end with an adjustable air-gate, the removable saturation-conduit, constructed as described, and the adjustable hinged anæsthetic-reservoir provided with a drop-tube.

3. The anæsthetic-reservoir provided with a drop-tube and an adjustable vent-valve.

4. The combination, substantially as before set forth, of the case containing the saturation-conduit, the hinged cover thereof, and the adjustable hinged anæsthetic-reservoir provided with a drop-tube passing through a slot in said hinged cover of the case.

297,770. FINISHING AND GLOSSING THE SURFACES OF FABRICS HAVING A COATING OF SOME PYROXYLINE COMPOUND. JARVIS B. EDSON, Adams, Mass. Filed Mar. 17, 1884. (Specimens.)

Brief.—Improvement on Letters Patent Nos. 289,240 and 289,242, dated November 27, 1883, and No. 290,553, dated December 18, 1883.

Claim.—1. The process herein described of continuously glossing sheeted xylonite or other pyroxyline compound, which consists in passing it through a fluid acting as a solvent to the compound, or carrying the same to it, as by a feed-roller fountain method, sufficiently to partially dissolve the surface of the sheet and leave the extreme surface in a flowing condition.

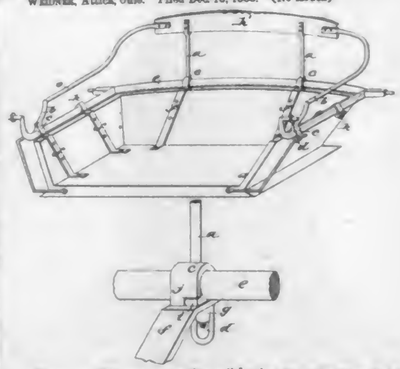
2. The process of producing a gloss upon sheeted xylonite or other pyroxyline compounds, which consists in passing the same through fluid acting as a solvent of the xylonite or similar material, and which, upon evaporation, leaves the desired glossy appearance.

3. The process herein described of glossing sheeted xylonite or other pyroxyline compound, which consists in subjecting one surface of the same to a solvent or a fluid acting as a solvent, without affecting the other surface.

4. The process of glossing sheeted xylonite or other pyroxyline compound, which consists in first heating the same, and then immersing it in a solvent, or otherwise, as described, and allowing it to dry by evaporation, substantially as described.

5. As a new article of manufacture, a fabric composed of a base coated on one or both surfaces with xylonite or other pyroxyline compound, and having its xylonite or similar surface glossed, substantially as and for the purpose described.

297,771. SHIFTING BUGGY-TOP. GEORGE ENGELHART and CHARLES WEIDNER, Attica, Ohio. Filed Dec. 13, 1883. (No model.)



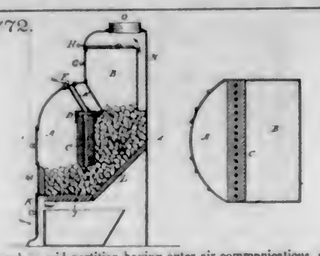
Claim.—1. The top-supporting rail having the extensions, in combination with the notched hook-clips of the seat-back supports, said extensions fitting into opposite notches of said clips, substantially as and for the purpose set forth.

2. The top-supporting rail *c*, having flat-bottomed bearing-sections *a*, with extensions *i*, in combination with the notched hook-clips *c* of the seat-back supports *a* and arm *b*, and with the seat-irons *f*, substantially as described.

297,772. STOVE AND HEATER. THOMAS MARA FELL, Brooklyn, N. Y. Filed July 29, 1881. Renewed Oct. 25, 1883. (No model.)

Claim.—1. As an improvement in stoves and heaters, the combination of the hollow pendent partition dividing the fire-place into two chambers, one of them being a combustion-chamber and the other a distilling-chamber, said partition having outer air-communications, and an air-heating chamber, the partition also having perforations at its bottom, which adapts it to supply highly-heated air in fine streams at or near the surface of the fuel, substantially in the manner shown and described.

297,772.

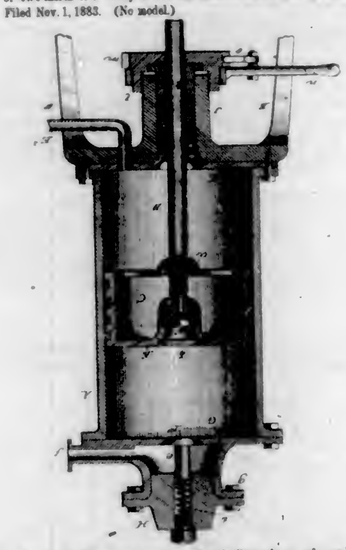


2. The combination, in stoves and heaters, of the pendent hollow and perforated partition, said partition having an air-heating chamber and outer air-communications, and adapted to supply highly-heated air in fine streams at or near the surface of the fuel, plate L, grate-bars I, distilling-chamber B, and combustion-chamber A, all arranged for joint operation substantially as herein shown and described, and for the purpose set forth.

3. In stoves or heaters, the heating and dividing chamber D, fitted with the pipes E, passing across the exit-flue, and receiving a supply of cold air from without, in combination with the hollow pendent partition delivering the heated air downward at or near the surface of the fuel, for the purposes and in the manner substantially as described.

4. In stoves or heaters, an air-regulator opening into pipes E, and a heating-chamber, D, connecting with a hollow pendent partition, in combination with grate-bars I, damper H, and back plate, L, all in the manner substantially as described.

297,773. GAS-PUMP. WILLIAM J. FERGUSON, Baltimore, Md., assignor of two-thirds to J. Olney Norris and Isaac T. Norris, both of same place. Filed Nov. 1, 1883. (No model.)



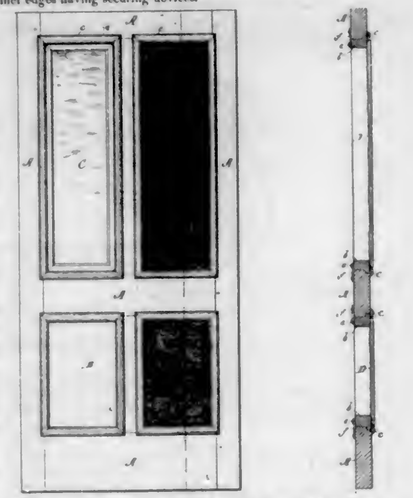
Claim.—1. The combination, with a hollow piston, of a rod secured to one end of the piston and having a headed end wholly within the piston, and an upwardly-opening valve having its upper face flush with the upper end of the piston when said valve is closed, and arranged upon the end of the rod to slide thereon and be guided and limited in its motion, substantially as described.

2. The combination of the hollow piston C, the rod D, secured to one end of the piston, and having a headed end, the valve E, having its upper face, when closed, flush with the piston and guided upon the end of the piston-rod, and the detachable plate-cap or plate *b*, secured to the valve flush with the same, as described.

3. The combination, with the cylinder, its head, and rod D, of the frame B, having gland *j*, the tube *k*, the nut *l*, provided with ratchet *m*, and a lever bearing a pawl for said ratchet and swiveled upon a support concentric with relation to said ratchet, substantially as and for the purpose described.

297,774. DOOR. GEORGE E. FILER and ALBERT H. NEFF, Sheldon, Iowa, assignors of one-third to H. C. Love, same place. Filed Feb. 11, 1884. (No model.)

Brief.—The door-framing having its outer edge rabbeted to receive detachable panels of wood, glass, or woven wire, the outer edges of which panels are provided with an overlapping lip to enter the rabbet, and the inner edges having securing devices.



Claim.—The combination, with the stile or framing of the door, having its outer edge grooved or rabbeted, of the detachable panels of wood, glass, or woven wire, consisting of a framing, *b*, of a thickness equal to that of the stile, and having a lip or flange fitting in the rabbet, the panel proper applied to the outside, the bead *c*, securing the edges of the same, and means upon the inside of the door for securing the panel, substantially as and for the purpose described.

297,775. REEL AND ROD FOR WINDING PAPER AND PROTECTING THE SAME IN THE ROLL. JOS. L. FERN, Jersey City, N. J. Filed Feb. 10, 1883. (Model.)



Claim.—1. A paper-roll head-holding rod provided with threaded ends, and socketed caps adapted to be applied thereto to admit of the rotation of the rod to roll paper thereon, substantially as shown and described.

2. A mill-wound roll of paper having a central rod, directly upon which the paper is wound, and heads attached to and secured by said rod, substantially as shown and described.

3. The combination of the rod, the winding-frame and its counterbalance, means to feed the paper to said rod, and means to operate said rod, substantially as described.

297,776. INSERTIBLE DIAMOND SAW-TOOTH. EMANUEL FOERSTER, New York, N. Y. Filed Oct. 6, 1883. (No model.)

Claim.—The combination, with a recessed saw-blade, B, of an in-

297,776.



sertible saw-tooth, A, means for securing the same to the recessed saw-blade, said tooth being made of soft-tempered steel, and of an auxiliary holder or holders for the diamonds, said holder or holders being made of hard-tempered material and shrunk into the recess of the saw-tooth, substantially as set forth.

297,777. DEVICE FOR PREVENTING HORSES FROM CRIBBING. JOHN O. FOSTER, Watertown, Ill. Filed July 7, 1883. (No model.)



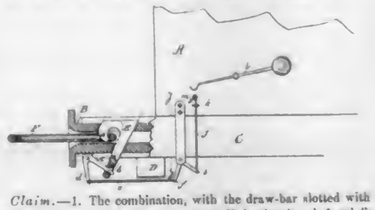
Claim.—1. In a device for the purpose stated, the combination, with a metal strip, A, provided with spurs *a*, and with a strap, B, for securing said strip in place, of a flexible perforated guard, C, and springs for supporting said guard, substantially as described.

2. In a device for the purpose stated, the combination, with the metal strip A, provided with spurs *a*, and with a strap, B, of a perforated guard, C, and spiral springs *a'*, placed around said spurs *a*, between the said strip A and guard C, substantially as described.

3. In a device for the purpose stated, the combination, with the strap B and the strip A, provided with spurs *a*, of a flexible guard, C, bent over the spurs and secured at its edges to said strap, and of springs *a'*, placed upon the spurs, for upholding the said guard, substantially as set forth.

4. In a device for the purpose stated, the combination, with the strap B and the strip A, provided with spurs *a*, of covering-straps B', and a flexible perforated guard, C, secured at its ends to the said straps B' and at its edges to the strap B, substantially as and for the purposes set forth.

297,778. CAR-COUPLING. ALEXANDER MILLER FRASER, Bathurst, New Brunswick, Canada. Filed Feb. 21, 1884. (No model.)



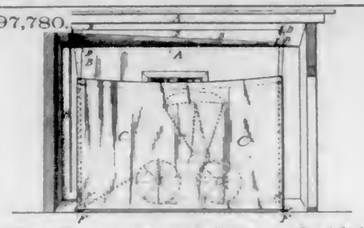
Claim.—1. The combination, with the draw-bar slotted with inclined guide-holes, of the coupling-hook E, having bevel-faced lip *a*, sliding loosely in inclined direction in said slot, as and for the purpose described.

2. The combination, with the draw-bar B, slotted as described, of the sliding coupling-hook E, having bevel-faced lip *a*, crank-arms *c d*, pull-rod *e*, shaft G, with arms *f* and *i*, rod *j*, link *m*, and weighted lever *l*, as and for the purpose described.

297,779. METHOD OF PRODUCING ORNAMENTAL RELIEF BORDERS OR FOREGROUNDS FOR PHOTOGRAPHS. CROSBY M. FRENCH, Garrettsville, Ohio. Filed June 4, 1883. (No specimens.)

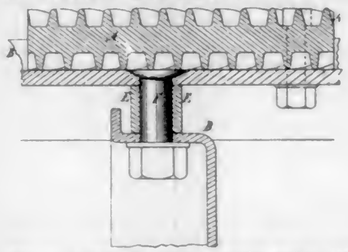
Claim.—The method of producing photograph-borders, consisting in first making a bas-relief border of any desired design, then taking a negative of such design, and finally using this negative in "printing in," in conjunction with a portrait-negative, as a border, substantially as and for the purpose set forth.

297,780. CARRIAGE-COVER. HENRY H. PECK, Fricks, Pa. Filed Oct. 22, 1883. (No model.)



Claim.—The combination, with the bolsting-ropes B and the independent weights F, attached thereto, of the carriage-cover C, formed of thin flexible material, and having at its vertical angles passages for said ropes, through which they are rove, all as shown and described, to operate as specified.

297,781. BEATER FOR THRASHING-MACHINES. RICHARD GARRETT and FRANK GARRETT, Leiston Works, County of Suffolk, and JOHN DEVONSHIRE ELLIS, Sheffield, County of York, England. Filed Sept. 3, 1883. (No model.) Patented in England Feb. 5, 1883, No. 607.

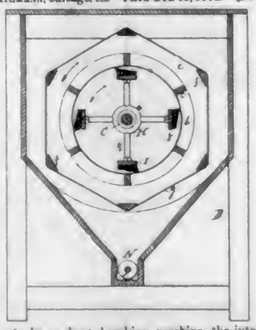


Claim.—1. A reversible beater for a thrashing-machine, consisting of a bar having oblique ribs on opposite faces, the ribs on one face having an inclination toward the right, and the ribs on the other face having an inclination toward the left, substantially as and for the purpose herein described.

2. A reversible beater for a thrashing-machine, consisting of a bar having opposite faces rounded or convex in a transverse direction, and formed with oblique ribs on both faces, the ribs on one face having an inclination toward the right, and the ribs on the other face having an inclination toward the left, substantially as and for the purpose herein described.

3. The combination, with the disks or heads D, of the chairs B, secured on the peripheries of said disks or heads and having concave seats in their faces, and the reversible beaters A, having opposite faces transversely rounded or convex to fit said seats, and provided with oblique ribs, the ribs on one face having an inclination toward the right, and the ribs on the other face having an inclination toward the left, substantially as and for the purpose herein described.

297,782. MACHINE FOR BRUSHING AND SCOURING GRAIN. LOUIS GATHMANN, Chicago, Ill. Filed Dec. 13, 1882. (No model.)

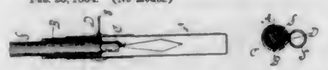


Claim.—1. In a wheat-brushing machine, the interior cylindrical metallic screen, *d*, and an exterior bolting-cloth screen, *g*, both applied to the one rotating frame A, in combination with the rotating brushes I, substantially as and for the purpose set forth.

2. In a wheat-brushing machine, the interior cylindrical screen, *d*, and the exterior bolting-cloth screen, *g*, in combination with the rotating brushes I, extending through the middle section of such screen *d* only, all substantially as and for the purpose set forth.

3. In a wheat-brushing machine, the rotating cylindrical metallic screen *d* and the exterior bolting-cloth screen, *g*, in combination with the rotating brushes I, extending through the middle section of screen *d* only, and the bristles of such brushes forming surfaces that are oblique to the radial lines of the screen, all substantially as described and shown, for the purpose specified.

297,783. CHAIN-BAR. JOSEPH U. GEROW, Brooklyn, N. Y. Filed Feb. 28, 1884. (No model.)

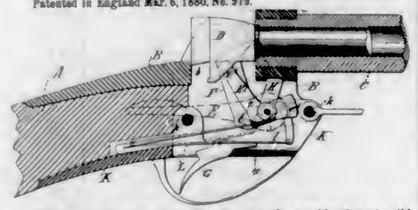


Claim.—1. The combination, substantially as hereinbefore described, of the tubular bar having a longitudinal slot, the inner tube forming a receptacle for a tooth-pick or other article, and the outer tube connected to the inner tube by a pin passing through the slot of the bar.

2. The combination, substantially as hereinbefore described, of the tubular bar having a longitudinal slot, the inner tube or receptacle crimped annularly for increasing its friction, with the tooth-pick or other article inserted therein, and the outer tube connected to the inner tube by a pin passing through the slot of the bar.

3. The combination, substantially as hereinbefore described, of the tubular bar having a longitudinal slot, the inner tube having a stop-shoulder for determining the position of the article inserted therein, and the outer tube connected to the inner tube by a pin passing through the slot of the bar.

297,784. BREECH-LOADING FIRE-ARM. PHILIP THOMAS GODSAL, Elon, County of Buckingham, England. Filed Dec. 19, 1883. (No model.) Patented in England Mar. 6, 1880, No. 979.



Claim.—1. In a breech-loading fire-arm, the combination of a sliding breech-block, a cranked piece, E', one arm of which engages with said breech-block, and the other arm of which is provided with a lateral extension, e^3, a side lever connected with said cranked piece for operating it, and a pivoted extractor, against which said lateral extension e^3 acts to eject a shell, all substantially as herein described.

2. In a breech-loading fire-arm, the combination of a sliding breech-block, a cranked piece, E', one arm of which engages with said breech-block, and the other arm of which is provided with a lateral extension, e^3, a side lever connected with said piece E', for operating it, a pivoted hammer, on the tumbler of which said lateral extension e^3 acts to force back the hammer, and a pivoted extractor, on which said lateral extension e^3 acts to eject a shell, substantially as herein described.

3. In a breech-loading fire-arm, the combination, with a sliding breech-block, of a cranked piece, E', one arm of which engages with said breech-block, and the other arm of which has a lateral extension, e^3, the two said arms being joined at an angle, *s'*, the pivoted extractor H, against which said lateral extension e^3 acts to eject a shell, and a spring bearing upon said angle *s'* of the piece E', and serving to actuate said piece to close the breech-block after said piece E' has been started forward by the operation of inserting a cartridge, substantially as herein described.

4. In a breech-loading fire-arm, the combination of a sliding breech-block, a cranked piece, E', for actuating the same, a side lever for operating said piece E', and a spring arranged to bear on one or other of the arms of said cranked piece E', and thereby serving to hold the breech-block open or closed, substantially as herein described.

5. In a breech-loading fire-arm, the combination of a sliding breech-block, a cranked piece, E', one arm of which engages with the breech-block, and the other arm of which has a lateral extension, e^3, a side lever connected with said piece E', a pivoted extractor, H, against which said lateral extension e^3 acts, a pivoted hammer, and a mainspring, L, the stand side of which bears upon said cranked piece E' to hold the breech-block in an open or closed position, and the other side of which is connected with the tumbler of said hammer, substantially as herein described.

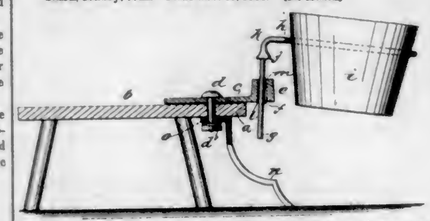
297,785. BUTTON-FASTENER. JOHN H. GOODFELLOW, Troy, N. Y., assignor to the Beaton Button Fastener Company, Providence, R. I. Filed Sept. 19, 1883. (No model.)



Claim.—1. A button-fastener consisting of a ∩-shaped loop, C, and legs *d d*, bent directly outward and upward in opposite directions and in different parallel planes about at right angles to the plane of the loop, as shown and described.

2. A button-fastener consisting of the ∩-shaped loop C and legs *d d*, having their ends beveled in opposite directions to each other, and said legs being bent directly outward and upward in opposite directions and in different parallel planes about at right angles to the plane of the loop, as shown and described.

297,786. MILKING-STOOL. CHAR. D. GOODMAN and FREDERICK J. SMITH, Granby, Conn. Filed Nov. 28, 1883. (No model.)



Claim.—1. The combination of the pail-holding attachment consisting of the plate *c*, having a socket-head, *e*, and being suitably attached to the stool-seat, and the pail-ring *h*, having a pivot-stem, *g*, integral therewith, fitting the socket of head *e*, with a milking-stool, *b*, substantially as described.

2. The combination of the bar *e*, provided with a socket, *f*, with the stem *g*, and a pail-holding ring, *h*, formed integral therewith, the said socket being of a greater diameter than the stem, whereby the stem and its ring will be held at any desired height by the friction of the stem on the opposite edges, *l m*, of the socket, substantially as set forth.

3. A milking-stool provided with a pail-holding attachment, in combination with the strut *a*, bent outward beyond the end of the stool, as shown, and provided at its upper end with a securing-flange, by which it may be secured to the stool, substantially as set forth.

4. The strut *a*, attached to the stool *b* by the angle-head *c*, bolt *d*, and nut *d'*, in combination with the pail-holding attachment, also attached to the stool by the said bolt *d* and nut *d'*, substantially as described.

297,787. TRACE-TRIMMING MACHINE. WILLIAM GORDON, Boston, and J. WESLEY DODGE, Malden, Mass. Filed Jan. 19, 1884. (No model.)

Claim.—1. The combination, in an organized machine for trimming the edges of leather traces or straps, of a pair of elongated jaws, adapted to hold and release a strap and to serve as a gage for the cutter, and a trimming-tool adapted to move along the upper edge of the strap and impart the desired form to the edge thereof, as set forth.

2. In a trace or strap trimming machine, the combination of the elongated jaws *a a'*—the one fixed and the other movable—and means, substantially as described, for moving the movable jaw with relation to the fixed jaw to grasp or release a trace or strap between said jaws, as set forth.

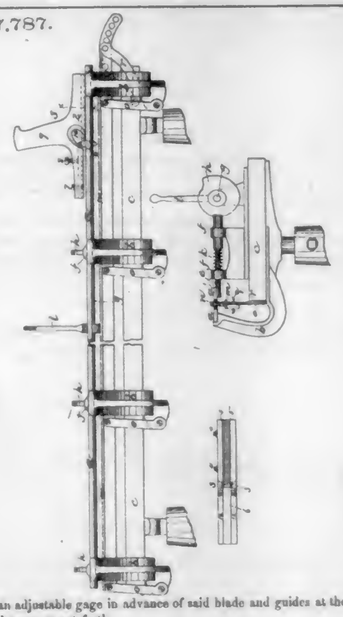
3. In a trace or strap trimming machine, the combination of the elongated parallel jaws—one fixed and the other movable—means, substantially as described, for moving the movable jaw with relation to the fixed jaw, a vertically-adjustable elongated gage arranged to support the lower edge of the strap, and means for positively holding said gage in any position to which it may be adjusted, as set forth.

4. In a trace-trimming machine, the combination of the fixed elongated jaw *a*, the movable elongated jaw *a'*, secured to bars *e*, adapted to slide in bearings *f f*, the rock-shaft *g*, having cams *h*, bearing against the bars *e*, and springs *k*, arranged to press the bars *e* against the cams, as set forth.

5. In a trace-trimming machine, the combination, with the fixed and movable elongated jaws *a a'*, of the elongated gage *m*, located under said jaws, the pivoted links supporting said gage and permitting it to be raised or lowered by an endwise movement, and devices, substantially as described, for holding the gage.

6. The improved trace-trimming tool composed of the stock 2, provided with a cutting blade, 3, parallel with the bottom of the stock, and

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with an adjustable gage in advance of said blade and guides at the sides of said gage, as set forth.

7. The tool-stock 2, divided longitudinally into two parts, having lips 5 5 and connecting-screws 4, whereby the blade may be detachably held in the stock, as set forth.

297,788. GRAPPLE FOR HOSE. ALONZO H. GREEN, Clear Lake, Iowa. Filed Feb. 29, 1884. (No model.)



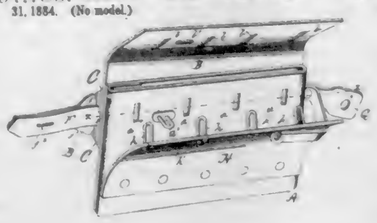
Claim.—1. A hose-grapple consisting of sections of tubes having jointed grappling-irons applied to them whereby the hose is grasped evenly, substantially as described.

2. The grapple herein described, consisting of the parts A and B, pivoted together, and provided at their ends with curved pieces D D, and having handle *a* and link *a'*, substantially as and for the purposes described.

3. In combination with the grapple A B, constructed as described, having an eye, *a''*, on one of its parts, the strap, F, substantially as described.

4. A grapple consisting of the parts A and B, pivoted together, and having on the inner face of each of their jaw ends a curved piece, D, substantially as described.

297,789. MAIL-BAG. FREDERIC GREGSON, Dolington, Pa. Filed Mar 31, 1884. (No model.)



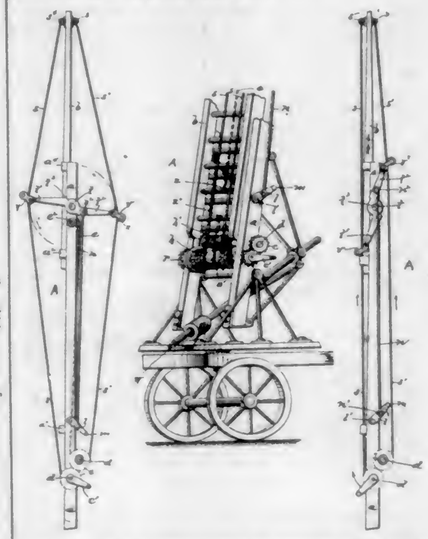
Claim.—1. The improved mail-bag herein described, consisting of the bag proper provided with staple-openings, the covering-flap, the strap-casing, the front flap, and the fastening-strap provided with hooks, substantially as set forth.

2. The combination, with the bag proper having staple-openings *a*, and provided with staple *a'*, the covering-flap provided with staple-openings *b* and *b'*, the front flap provided with staples *h* and openings *h'*, and the fastening-strap, all arranged and adapted for use, substantially as set forth.

3. The combination of the bag having staple-openings, the covering-flap, and the front flap of the strap F, provided with hooks, and secured at one end to the front flap, and provided near said end with a handle-tongue, substantially as set forth.

297,790. FIRE-ESCAPE LADDER. HORACE P. GREWOLD, Providence, R. I. Filed Jan. 2, 1884. (No model.)

Brief.—The pivoted spreaders which tighten the flexible braces are operated by a crank-arm and connecting-rod.



Claim.—1. In an extension-ladder, the combination of the flexible braces *s s'* and geared drums *h h'* with the spreader *t*, the latter being pivoted to the ladder *a* and operated by means of the connection *n* and crank-lever *l*, pivoted to the lower end of said ladder, all substantially as shown and set forth.

2. In an extension-ladder, the flexible braces *s s'*, secured to the top end of the sliding ladder *b*, and also connected with the geared drums *h h'* of the ladder *a*, in combination with the pivoted spreaders *t*, provided with arms *t t'*, adapted to receive said braces, and further provided with means for operating said spreader, all substantially as shown and set forth.

297,791. CONCRETE COMPOUND FOR PAVING STREETS, WALKS, &c. LEVI HAAS, Chestar, Pa. Filed Dec. 21, 1883. (No specimens.)

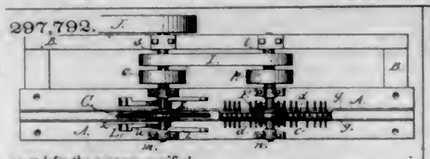
Claim.—1. A concrete compound composed of furnace-slag, gravel, Portland cement, metallic screenings obtained by washing ores, glass cinders, wood and coal ashes, Trinidad asphaltum, and coal-tar pitch in the proportions substantially as described.

2. A concrete compound for the manufacture of tile and ornamental brick, composed of furnace-slag, gravel, Portland cement, metallic screenings obtained by washing ores, glass cinders, wood and coal ashes, Trinidad asphaltum, and coal-tar pitch, and refuse slate for coloring-matter, substantially as described.

297,792. CAPSULE-MACHINE. ALBERT B. HALL, Indianapolis, Ind. Filed Oct. 8, 1883. (No model.)

Claim.—1. In a capsule-machine, a mold for forming capsules, consisting of a pair of parallel bars suitably connected to form a frame, and a series of rods journaled and adapted to revolve in said frame, each of said rods being provided with a pulley, *f*, all combined substantially

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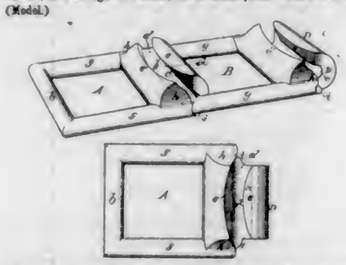
as and for the purpose specified.

2. The combination, with a capsule-mold formed of a pair of parallel bars suitably connected to form a frame, and a series of rods journaled and adapted to revolve in said frame, of a device adapted for cutting to a length capsules formed on said rods, said device consisting of the following elements, combined substantially as specified, namely: a bed-plate having parallel guides thereon, adapted to receive and guide the bars of said mold, a knife or knives attached to said bed-plate in such position as to come in contact with the rods of said mold, means for propelling said mold along said bed-plate between said guides, and a friction-wheel arranged to impinge against said rods, and to revolve them by the frictional contact of its periphery therewith.

3. In a capsule-machine, the combination of plate A, having guides *g g* thereon, friction-wheels F and D, shafts *l* and *n*, and disk *h*, mounted in a yielding bearing and adjustably secured to said plate, all substantially as and for the purpose specified.

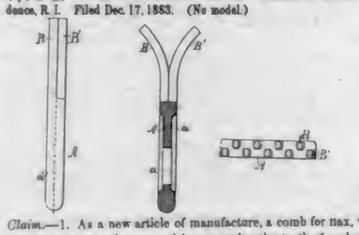
4. In a capsule-machine, the combination of plate A, having guides *g g* thereon, friction-wheels E and C, shafts *s* and *m*, and friction-wheels *u* and *v*, mounted in yielding bearings secured to said plate, and arranged to revolve in a plane at an acute angle with said guides, substantially as and for the purpose specified.

297,793. DRIVE-CHAIN. THEODORE F. HALL, Marietta, Ohio, assignor, by direct and mesne assignments, of part to Alfred J. Richards, W. E. Conner, and George W. Lovell, all of same place. Filed Oct. 9, 1882. (Model.)



Claim.—A drive-chain link consisting of side bars, *g g*, straight bar *b* at one end, and open hook D at the opposite end, the socket or bearing in which the pivot-bar works being straight and its throat or slot being curved—that is to say, convex on the side next to the pivot of the hook and concave on the opposite side next to the end bar—and having the projections *i i* extending into said socket, substantially as shown and described.

297,794. COMB FOR FLAX, WOOL, &c. WILLIAM P. HALL, Providence, R. I. Filed Dec. 17, 1883. (No model.)

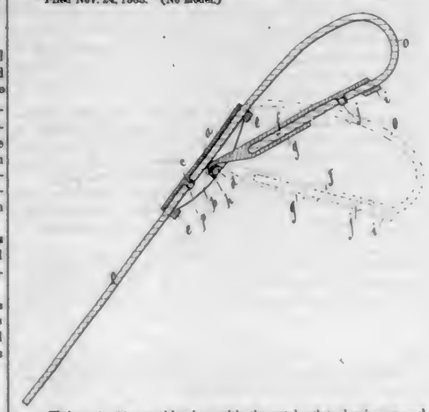


Claim.—1. As a new article of manufacture, a comb for flax, wool, hair, &c., having its teeth arranged in two series, the teeth of each series being opposite the spaces between the teeth of the other series, substantially as and for the purposes set forth.

2. An improved comb for flax, wool, hair, &c., having its body formed with a depressed portion and a raised edge, and formed on its upper edge with two series of teeth, the teeth of one series being opposite the spaces between the teeth of the other series, substantially as described.

3. As a new article of manufacture, the comb herein described, consisting of the body A, centrally depressed, and provided with the raised edge *a'* and hole *a*, and the teeth B B', formed upon the upper edge of the body, and arranged as described.

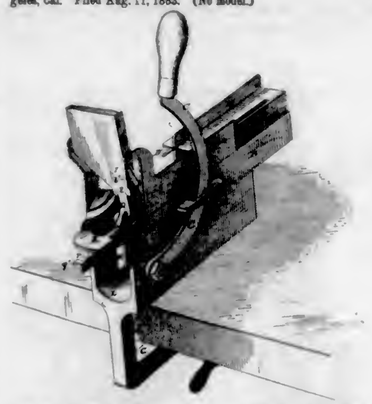
297,795. REIN-FASTENER. NORMAN N. HAZELTON, Lamoni, Iowa. Filed Nov. 24, 1883. (No model.)



Claim.—1. The combination, with the catch-plate having an end loop, a nib, and side flanges provided with a cross-bar, of the hooked plate having an end loop and a nib, substantially as and for the purpose set forth.

2. In a tag and rein fastener, the combination, with the catch-plate having an end loop, a nib adjacent to said loop, and a cross-bar arranged beyond a longitudinal plane touching the outer end of the nib, of the hooked plate having a nib and a loop at one end, substantially as and for the purpose set forth.

297,796. CARTRIDGE IMPLEMENT. HENRY T. HAZARD, Los Angeles, Cal. Filed Aug. 11, 1883. (No model.)



Claim.—1. In an implement substantially such as described, the combination of a frame, A, provided with an anvil, K, a swinging magazine, a tube, Q, provided with spring-jaws S, and a slide, B, provided with plunger E, to press the shell against the anvil, and with arm *r*, having lateral projection *q'*, to move the magazine-tube away from the anvil, substantially as set forth.

2. In combination with frame A, having anvil K and support W, a slide, B, provided with decapping-plunger D and recapping-plunger E, and the hand-lever C, pivoted to the frame A and working between lugs on the side of slide B, whereby movement of the lever is caused to move the slide.

3. The priming mechanism consisting of a reciprocating plunger, a stationary anvil, and a movable cap-tube having a passage-way across it, substantially as shown, whereby the shell is advanced upon the primer and receives it into the pocket thereof.

4. In combination with a plunger adapted to carry a shell, and with a fixed anvil in line with the center of the plunger, a primer-feeding mechanism consisting of a tube closed at its lower end, and having a passage across it closed by movable jaws, substantially as shown, whereby the primers are held in position to be seated in an advancing shell.

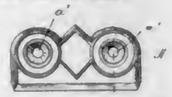
5. In an implement such as described, the combination of a frame provided with a support, W, cut out, as shown, to support a cartridge-shell without covering the primer-pocket, and having stationary anvil K below the support W, plungers D and E, the former in line with support W, and provided with a decapping-pin, the latter in line with anvil K, and means, substantially as described, for moving said plungers, whereby a shell may be deprimed by the plunger D and carried by gravity into position to be primed by the plunger E.

6. In combination with frame A, plunger E, and means, substantially as shown and described, for imparting a reciprocating motion to said plunger, a flat detachable reservoir, I, provided with tube Q and spring-jaws S, said jaws preventing the escape of primers in applying the magazine or reservoir to the frame or in handling after filling.

7. In combination with reservoir I, a spring-arm, *b*, within the reservoir, provided with an outwardly-projecting incline, *b'*, and an operating-lever, C, and capping-plunger E, said lever arranged, substantially as described and shown, to act upon the incline *b'*.

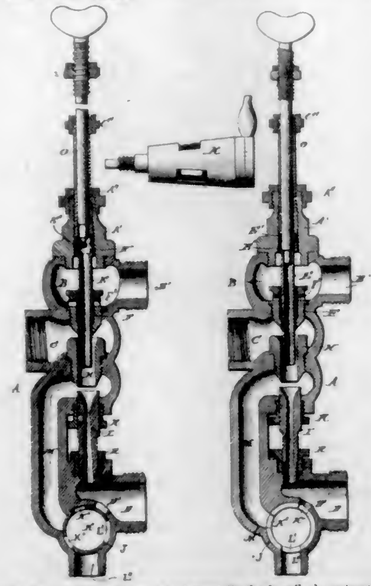
8. In combination with frame A, reservoir I, cap-tube Q, and plunger E, slide B, carrying said plunger, and provided with an incline to enter a slot, *l*, in the cap-reservoir beneath the caps, and an operating-lever, C, applied substantially as shown.

297,797. ART OF MAKING PLUMBERS' TACKS. CHARLES EBERHARD HEEB, Chicago, Ill., assignor of one-half to James N. Raymond, same place. Filed Dec. 20, 1883. (No model.)



Claim.—The herein-described process for the manufacture of plumbers' tacks, the same consisting in first casting a strip of lead of suitable width for the tacks, and then cutting and stamping said strip into tacks by suitable cutting and stamping dies, substantially as and for the purposes set forth.

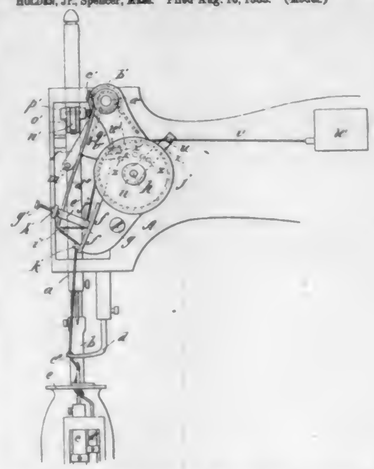
297,798. INJECTOR. LOVREN EDWIN HOGUE, Sandy Lake, Pa. Filed Nov. 3, 1883. (Model.)



Claim.—1. In an injector of substantially the described construction, the combination of the shell A, provided with a forcing-tube, the lower section of which, I, is adapted to be raised or lowered, a lifting tube or nozzle, F, provided with apertures F', a hollow steam-tube, E, having a lower tapering end, and provided with apertures E', and an exterior screw-thread upon its central part to adapt it to be raised or lowered, and a valve-stem, O, as and for the purpose shown and set forth.

2. In an injector of substantially the described construction, the combination of the shell A, provided with a combined lifting and forcing tube, the lower section of which, I, is adapted to be raised or lowered, a lifting tube or nozzle, F, provided with apertures F', a hollow steam-tube, E, having a lower tapering end, and provided with apertures E', and an exterior screw-thread upon its central part to adapt it to be raised or lowered, a valve-stem, O, overflow-pipe M, chamber J, three-way cock K, hot and cold water overflow L'', and lever or connecting-rod P, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

297,799. TENSION DEVICE FOR SEWING-MACHINES. HIRAM HOLDEN, Jr., Spencer, Mass. Filed Aug. 10, 1883. (Model.)



Claim.—1. The combination, with the plate *f*, having stud *h* and shifting tension-wheels *i j*, the rod *u*, having guide-eyes, and a wax-cup or spool, of the supporting-arm *x*, pivoted on stud *h* between said plate and wheel *i*, and having a stud-pin, *y*, fitted in one of a circle of holes, *z*, in said plate, whereby the thread-guides may be set higher or lower, as described.

2. The plate *f*, having flange *f'*, with eyes *k'*, and stud *a'*, with adjustable collars *b' b'*, the take-up wires *d'''*, coiled around said collars and having guide-eyes *i'*, the slotted posts *c'*, provided with adjusting device *g' k'*, and the guide *d*, having eye *c''*, in combination with the lever *l'*, having arm *m'*, the pivoted dog *n'*, the awl-bar having collar *p'*, with ears *o'*, and the needle, operated substantially as described.

3. The combination, in a tension device, of duplicate tension-wheels *i j*, arranged on a stud, *h*, and provided with sleeve *k*, nut *n*, spring *m*, and washer *s'*, for adjusting wheel *i*, and collar *l*, nut *q*, spring *p*, and washer *o*, for adjusting wheel *j*, substantially as described.

4. The tension-wheels *i j*, mounted on a stud, *h*, attached to plate *f*, which plate also carries the take-up wires *d''* and lever *l'* by the stud *a'*, and also carries the guide-posts *c'* and eyes *k'* by flange *f'*, and is adapted to be attached to the awl-bar-carrying head of a sewing-machine, substantially as described.

297,800. MANUFACTURE OF MEDICATED LOZENGES OR TABLETS. ALVAH W. HOLWAY, Boston, Mass. Filed Feb. 9, 1884. (No specimens.)

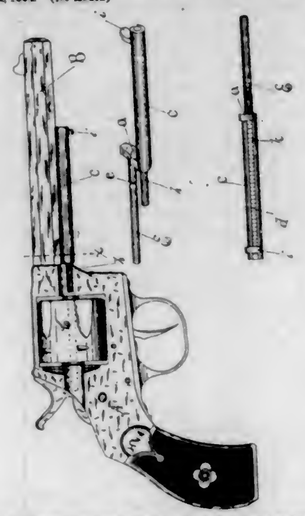
Brief.—Improvement on the invention of Letters Patent No. 75,272, dated March 10, 1868.

Claim.—1. A tablet or lozenge consisting of sugar, cream of tartar, and acid phosphate, substantially as set forth.

2. The process herein described of forming a tablet or lozenge of sugar and acid phosphate, which consists in boiling the sugar and incorporating the acid phosphate by kneading while the compound is very hot, substantially as set forth.

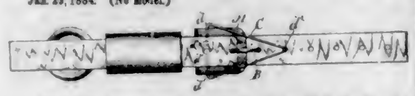
3. A tablet or lozenge in which sugar and acid phosphate constitute a base, substantially as expressed.

297,801. REVOLVER. SAMUEL S. HOPKINS, Norwich, Conn. Filed Feb. 4, 1884. (No model.)



Claim.—In combination with a revolver frame and cylinder, a removable axial pin having secured to its outer end, or formed as an integral part thereof, a tube containing a spring-pressed ejector-rod whose forward end has a flange by means of which said rod may be forced rearward, the tube and ejector-rod being (when in place) in longitudinal alignment with the chambers of the cylinder, all arranged substantially as and for the purpose specified.

297,802. HARNESS-BUCKLE. ELIAS HOXIE, Red Creek, N. Y. Filed Jan. 29, 1884. (No model.)



Claim.—In a harness-buckle, the combination, with the buckle, of a safety appliance, its forward end formed with a hook and its divergent arms provided with inwardly-projecting ends adapted to enter beneath the strap, substantially as described, and for the purpose set forth.

297,803. GARMENT-CLASP. JAMES C. HYDE, West Haven, Conn., assignor to the West Haven Buckle Company, same place. Filed Mar. 17, 1884. (No model.)



Claim.—1. The combination of the two hinged jaws A B, the wire loop C having its two legs fixed to the tail of one of the jaws and extended to form a helical spring between the two jaws, the end of the spring arranged to bear upon the opposite jaw, substantially as described.

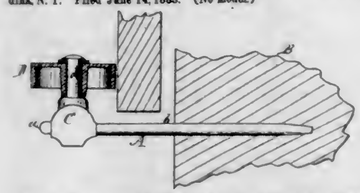
2. The combination of the two hinged jaws A B, the wire loop C attached to the tail of one of the jaws, the said loop extended to form a helical spring between the two jaws, and so as to bear upon the opposite jaw, with the wire guard *m m* hinged to the said other jaw and to the loop, substantially as described.

297,804. GARMENT-CLASP. JAMES C. HYDE, West Haven, Conn., assignor to the West Haven Buckle Company, same place. Filed Mar. 17, 1884. (No model.)



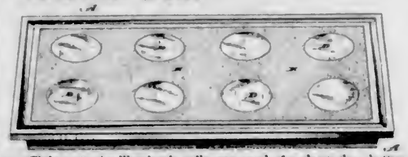
Claim.—The combination of the two jaws A B, hinged together, the helical spring *b*, arranged between the jaws to hold them in their closed condition, the loop C, made from wire, the upper end of one jaw bent around the lower bar of the loop, and the U-shaped guard made from wire, the upper end of the other jaw turned around the bend of the guard, and the two legs of the guard extending upward and hinged to the loop, substantially as described.

297,805. STAY-ROLLER FOR SLIDING DOORS. SAMUEL IDE, Medina, N. Y. Filed June 14, 1883. (No model.)



Claim.—A stay-roller for sliding doors, consisting of a staple cast into a head of cast-iron, the rounded end of the staple projecting back outside of the casting, and serving to receive the blows of the hammer in driving, and a roller mounted on top of the casting, as set forth.

297,806. ILLUMINATING-TILE. JACOB JACOBS, New York, N. Y. Filed Feb. 16, 1884. (No model.)



Claim.—1. An illuminating-tile composed of a sheet-glass bottom and a superimposed body of cement provided with glass lenses, substantially as and for the purpose specified.

2. An illuminating-cover for areas, vaults, &c., composed of tiles having each a sheet-glass bottom and a superimposed body of cement provided with glass lenses, in combination with a supporting-frame which receives and contains said tile, substantially as and for the purpose shown.

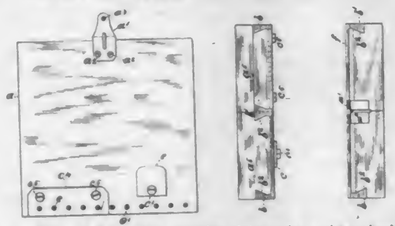
297,807. TRUSS-BRACE FOR VEHICLE-AXLES. AARON JENKINS, Wabash, Ind. Filed Dec. 17, 1883. (No model.)



Claim.—1. A clip for axle truss-braces, formed to fit under the face of the axle, and having its ends extended upward against the sides thereof, and terminating in hooks to fit over the truss-rods, substantially as shown, and for the purpose described.

2. The combination, with the axle provided with skeins formed with side eyes, and the truss-braces arranged against the sides of the axle, above the lower line thereof, and adjustably secured to the skeins, of the truss-clips formed to fit the under face of the axle, and their ends extended up to form ears terminating in hooks adapted to engage with and thereby be held in position by the tension of the truss-braces, substantially as described.

297,808. FURNACE-DOOR. LEMAN F. JOHNSON, Cleveland, Ohio. Filed Dec. 3, 1883. (No model.)



Claim.—A furnace-door consisting of the casting or plate *a*, having the side pieces, *b b'*, and the air-space *f* and holes *d'*, in combination with the bricks a^2 and holding-pieces *a'* and *c*, substantially as and for the purposes described.

297,809. FOLDING ROCKER. JAMES R. JONES, Reading, Mich., assignor to the Colby Wringer Company. Filed Dec. 3, 1883. (No model.)



Claim.—1. In a folding rocking-chair, the combination, with the rockers having pins *p t* and buttons *v*, and the front and rear legs, of an adjustable fastening consisting of a slotted and notched link pivoted to the rear leg and to the rocker, and constructed to engage with the pins on the rocker, substantially as described.

2. In a folding rocking-chair, the combination of the rockers A A, having pins *p t* and buttons *v*, the side pieces, B B and C C, flexible seat D, and the adjustable links E E, having slots *m* and notches *s*, substantially as described.

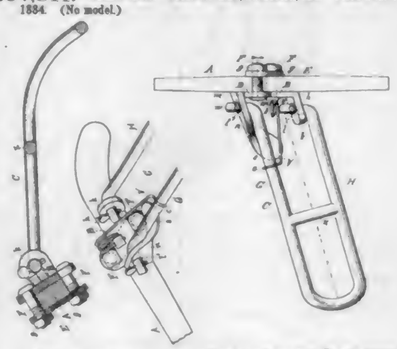
297,810. APPARATUS FOR BOILING SAP OR CANE-JUICE. OBED H. JONES, Kortright, N. Y. Filed Feb. 7, 1884. (No model.)



Claim.—1. In an apparatus for boiling sap, juice, or similar fluids, the combination of a pivoted track having one end projecting over a furnace or fire-place, a truck traveling upon the track and having means for suspending the boiling-pan, and weights at the end of the track, being sufficiently heavy to tilt the end of the track over the fire-place upward when the desired quantity of water has been evaporated, as and for the purpose shown and set forth.

2. The combination, in an apparatus for boiling sap, cane-juice, or similar fluids, of a fire-place, a track having the end placed over the fire-place bent at an obtuse angle to the other end of the track, pivoted upon an upright or uprights, and resting with its ends alternately upon abutments at each end, a truck traveling upon the track, and having the boiling-pan suspended from it by means of chains, a weighted rope passing over a pulley at the end of the track away from the fire-place, a rope passing over a pulley at the fire-place, both ropes attached to the truck, an adjustable stopping-block fitting upon the track, and a receptacle for weights sufficiently heavy to tilt the track when the sap or juice has attained its desired consistency, all constructed as and for the purpose shown and set forth.

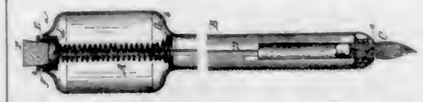
297,811. DRAG-ROD. JOHN N. KEY, Princeton, Ind. Filed Feb. 4 1884. (No model.)



Claim.—1. The combination, with the hinge-plate B, constructed substantially as shown and described, having the forwardly-extending arms provided with perforations to receive the journal ends of the drag-rod, the arm *n*, bent inwardly and downwardly to form an under support for the said rod, the spring-arm V having its inner end secured to the said hinge-plate, and its outer end bent over and engaging the drag-rod, the drag-rod, and means for securing the hinge-plate to a plow-beam, substantially as specified.

2. The combination, with the loop-form drag-rod, of the hinge-plate having bearings receiving the journal ends of the rod, a supporting-arm extending under the rod, and a bearing-spring attached to the hinge-plate and engaging the rod, substantially as specified.

297,812. MARKING IMPLEMENT. WILLIAM A. KIBBE, Leavenworth, Kans., assignor to Martin A. Norton, same place. Filed Aug. 13, 1883. (Model.)



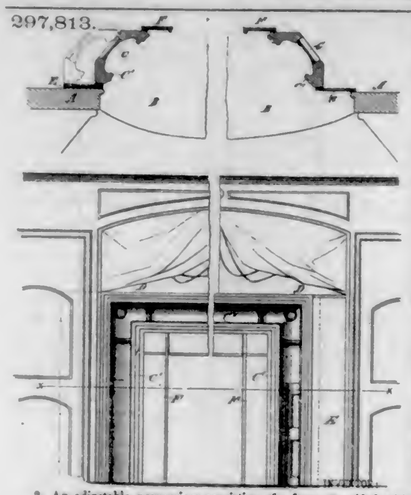
Claim.—1. The combination, in a paint striping and marking machine, of the reservoir A, tube B, and threaded nozzle E, connected to the brush-holding tube extending down through the reservoir A into the tube B, and carrying the marking-brush at its lower end, substantially as set forth.

2. The combination, in a paint marking and striping machine, of a reservoir, A, and tube B, and threaded nozzle E, having milled rib *s* and cap F, and connected to the upper end of the rod D, extending down into the tube B, and carrying the piston G and the marking and striping brush, substantially as described.

297,813. ADJUSTABLE PROSCENIUM. ISAAC KIRALFY, New York, N. Y. Filed Feb. 1, 1884. (No model.)

Claim.—1. The combination, with a proscenium-wall, of an adjustable proscenium-frame, arranged behind the wall, and adapted to partly fill the opening in the said wall, substantially as herein shown and described.

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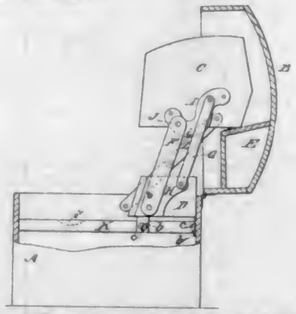


2. An adjustable proscenium consisting of a frame provided with wings for increasing or decreasing the size of the said frame, substantially as herein shown and described.

3. An adjustable proscenium consisting of a frame formed of a top piece, C', and standards C', provided with doors or openings, substantially as herein shown and described.

4. An adjustable proscenium consisting of a frame formed of a top piece, C', two standards, C', and corner-pieces D, substantially as herein shown and described.

297,814. TRUNK. WILLIAM J. LARSH, Brooklyn, N. Y. Filed Feb. 14, 1884. (No model.)



Claim.—1. The tray D, having the tray C hinged to it, and provided with the plates *b* and screws *c*, or similar means for securing it in the body A, substantially as and for the purposes set forth.

2. The tray C, having the stay-rod J passing through it, in combination with the tray and hinging-arms F, substantially as and for the purposes set forth.

3. The plates I, projecting below the bottom of the tray C, and adapted to enter the recesses *i'* when the tray is closed, substantially as and for the purposes set forth.

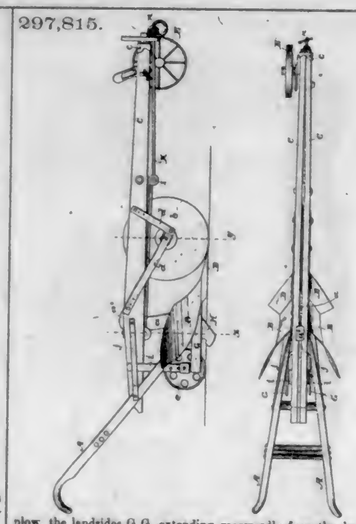
4. The tray E, formed in the cover B, and arranged to fill the space above the auxiliary tray D when the cover is closed, and to support the tray C when the lid is open and the said tray C is swung upward out of the body of the trunk, substantially as shown and described.

297,815. DOUBLE PLOW. JOHN L. LAUGHLIN, Louisville, Ky., assignor to B. F. Avery & Sons, same place. Filed Feb. 14, 1884. (No model.)

Claim.—1. In combination with a double or duplex beam, a revolving colter arranged to rotate partially within the slot or space afforded for its accommodation between the two parts of said duplex beam, all substantially in the manner and for the purpose set forth.

2. In combination with the beam and standard of a double-nosed

297,815.

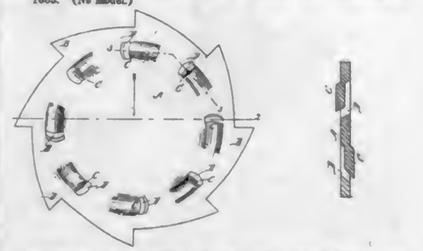


plow, the landsides G G, extending rearwardly from the lower portion of the standard, the vertical bars *i i*, secured at their lower portions to the landsides and at their upper ends to the beam, and a carrying-wheel, *e*, the whole constructed and operating substantially as described, for the purposes set forth.

3. In combination with the double or duplex frog *h h* and the two landsides G G, to which the parts of said frog are secured, an intermediately-arranged standard, *a*, the whole constructed, arranged, and operating in substantially the manner and for the purposes set forth.

4. The combination, with the double plow, a duplex or a slotted beam, and a colter revolving partially within said beam, of the landsides G G, having frogs *h h*, the bars *i i*, a carrying-wheel, *e*, and the fixed rudder-plate H, all substantially as shown and described.

297,816. SAW. JOSEPH LEDWARD, Westerly, R. I. Filed Aug. 24, 1883. (No model.)



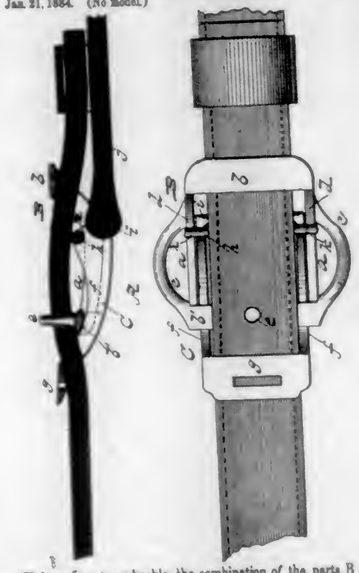
Claim.—A saw-blade having cutting-edges C, made integral with the blade, in combination with throats or openings D through the blade, substantially as and for the purpose specified.

297,817. BRAIDING ATTACHMENT FOR SEWING-MACHINES. FREDERICK LEHR, New York, N. Y. Filed Aug. 31, 1883. (Model.)



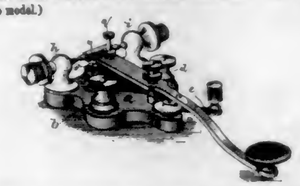
Claim.—A sewing-machine braiding attachment consisting of a presser-foot having a braid-guiding passage of unequal diameters extending longitudinally thereof, the plane of the longer diameter of said passage being inclined relative to a vertical plane, said foot having also a needle-hole arranged at the side of and intersecting said braid-guiding passage, substantially as set forth.

297,818. TRACE-BUCKLE. WM. LENCHEN, Lake City, Colo. Filed Jan. 21, 1884. (No model.)



Claim.—In a trace-buckle, the combination of the parts B and C, the latter provided with curved side bars *f f*, connected by the bars *g i* A, the latter extending outwardly on each side of the bars *f f*, and the portion B, having the curved side bars *a a*, loops *c c*, said bars connected by the cross-bars *b b'*, the latter bar having the tongue *e*, the whole operating as shown and described.

297,819. TELEGRAPH-KEY. CHARLES W. LEWIS, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Sept. 8, 1882. (No model.)



Claim.—In a telegraph-key, a spring-lever pivoted or centered at its extreme end by a cross-bar mortised and shouldered thereon, in combination with the adjustable spring and contact-points, substantially as and for the purpose specified.

297,820. GASO-ELECTRIC LAMP. JOHAN HERN LODER, Brussels, Belgium. Filed Jan. 17, 1883. (No model.) Patented in England Dec. 8, 1882, No. 5,961; in Belgium Dec. 9, 1882, No. 43,512; in France Dec. 11, 1882, No. 140,314, and in Germany Dec. 16, 1882, No. 120,725.

Claim.—1. In a gaso-electric lamp, the combination of a gas-burner, electrical conductors, air supplying and regulating devices, and devices for regulating the position of the said electrical conductors, substantially as described.

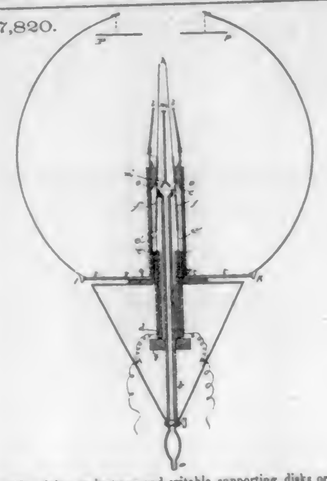
2. In gaso-electric lamps, the combination, with the gas-burner, of flexible conductors, holder-arms, and carbon or other pencils, all operating substantially as specified, and for the purposes set forth.

3. In gaso-electric lamps, the combination, with the gas-burner, of regulating mechanism bearing upon the pencil-holders, which are operated by movable screw mechanism, all substantially as specified.

4. In gaso-electric lamps, the combination, with said lamps, of exit-chambers or plates, into or through which the flame will pass for a short distance for the purpose of giving increased steadiness to said flame, all substantially as specified.

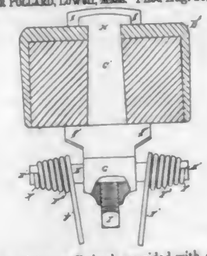
5. In gaso-electric lamps, the combination, with said lamps, of

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movable globes or lanterns and suitable supporting disks or plates, by the movement of which the air-feed to the lamp can be regulated, substantially in the manner described.

297,821. PICKER-STAFF CHECK FOR LOOMS. OLIVER D. LOMBARD and SYLVESTER POLLARD, Lowell, Mass. Filed Aug. 30, 1883. (No model.)



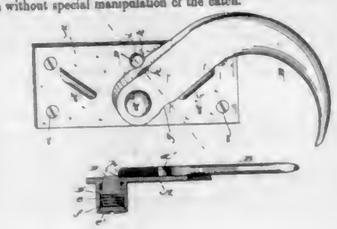
Claim.—1. A picker-staff check provided with a shank adapted to reach through the picker-staff slot of a lay-beam, and having means to engage directly with said lay-beam, substantially as specified.

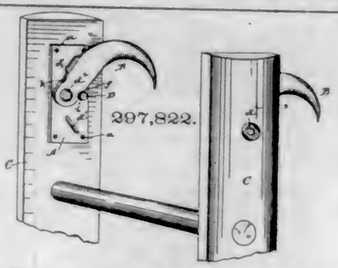
2. A picker-staff check provided with a shank adapted to reach through the picker-staff slot of the lay-beam, and having a pair of ears adapted to rest upon the top of said beam or its cap, and having another pair of ears adapted to press against the under side of said lay-beam, substantially as specified.

3. The combination of the wire bent into connected spirals, and having an arm, the spindle provided with holes to receive the ends of said wire, the block, means of attaching said block to a lay-beam, and a set-screw turning in said block and thrusting against said spindle, substantially as and for the purpose specified.

297,822. LADDER-HOOK. JOHN F. MANAHAN, Lowell, Mass. Filed Mar. 28, 1884. (No model.)

Brief.—The hooks are positively locked in operative position upon their base-plates by a spring-catch, and detachably secured in inoperative position by the same catch, so they can be shifted into operative position without special manipulation of the catch.



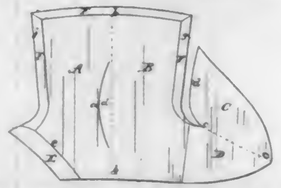


Claim.—1. In a ladder-hook, the combination, with a base-plate and hook proper, of a spring-controlled catch or lock for positively locking the hook to the base-plate, substantially as hereinbefore set forth.

2. A ladder-hook comprising a base-plate, a spring-controlled locking pin or bolt mounted in said plate, and a pivoted hook, combined to operate substantially in the manner and for the purposes hereinbefore set forth.

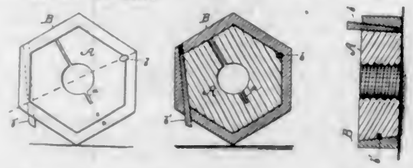
3. The combination of the base-plate provided with stops, the pivoted hook arranged to bring up against one or the other of said stops when opened or closed, and the spring-controlled locking pin or bolt adapted to automatically lock the open hook, and to be overlapped by the beveled or equivalently-formed portion of the closed hook, substantially as and for the purposes hereinbefore set forth.

297,823. UPPER. STEPHEN MARVIN, Burnettsville, Ind. Filed Dec. 30, 1881. (No model.)



Claim.—A boot or shoe upper cut through along the line *a*, the edges and near parts crimped till the edge *a'* can be lapped over the edge *a* and stitched or otherwise fastened down, for the purpose of incurving the line *b b*, all substantially as described.

297,824. NUT-LOCK. JACOB C. MCAFEE, Dallas, W. Va. Filed Sept. 26, 1883. (No model.)



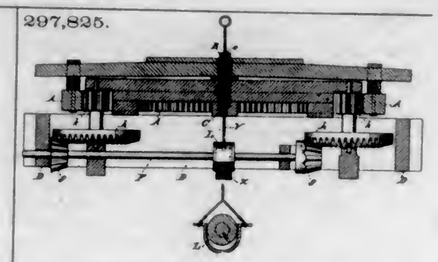
Claim.—1. The combination of a split nut, an inclosing-band, and a key arranged between the band and the nut, to press the sections of the nut to closer contact with the bolt, substantially as shown and described.

2. The combination of the split nut and inclosing-band, having their adjacent faces made tapering, and the key *b'*, arranged at the joint of the nut and band, and disposed in the plane of the nut, as and for the purpose described.

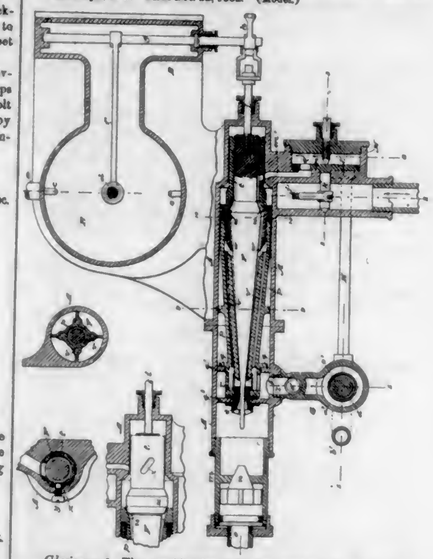
297,825. HORSE-POWER. JOHN T. MCCARNEY, Columbus Junction, Iowa. Filed Feb. 26, 1884. (No model.)

Claim.—In a horse-power, the combination, with the master-wheel having a central block or hub seated on a perpendicular center-pin, of the line-shaft F, friction-wheel L, rigidly connected thereto under the center-pin, as shown, the friction-brake Z, constructed as described, having its operating-arm V extending up through a passage, *e*, in the center-pin, and terminating in a handle, substantially as specified.

297,825.



297,826. LIFTING FEED-WATER INJECTOR. WILLIAM MCELROY, Brooklyn, N. Y. Filed Dec. 22, 1882. (Model.)



Claim.—1. The combination, with the injector, of an ejector, a float-chamber arranged between the injector and the water-source, a pipe or water-conduit leading from the water-source to the float-chamber, and a pipe leading from said chamber to the injector, a float in said chamber connected with and arranged to actuate a steam-valve in a steam-chest by its rise and fall, said steam-chest arranged to receive steam from a generator, and said valve arranged to control the admission of steam to the injector and ejector, whereby the passage of water through the float-chamber on its way to the injector serves to cut off the steam from the ejector and admit it to the injector, substantially as set forth.

2. The combination, in an automatic lifting-injector, of an injector proper, an ejector arranged to exhaust the air from and through the injector, whereby the water is caused to rise and fill the injector, and means, substantially as described, whereby the passage of water on its way to the injector cuts the steam off from the ejector and admits it to the injector, substantially as and for the purposes set forth.

3. The combination of a float arranged to rise and fall with the rise and fall of the water in a steam-generator, a valve actuated by said float and arranged to stop the passage of steam from the generator to an injector, the said injector, the steam-chest M and the steam-pipe leading thereto, a valve, *n'*, a float-chamber, I, connected with water-source by a pipe, J, and with the injector by a pipe, K, a float in said chamber I arranged to actuate the valve *n'*, and an ejector connected with the injector and arranged to exhaust the air therefrom, said valve *n'* being arranged to control the steam ports and passages leading from the steam-chest to the injector and ejector, respectively, all arranged to operate substantially as set forth.

4. The ejector comprising the shell *a'*, provided with a coned seat, *f'*, the tubular perforated shell *d'*, arranged to screw into the bottom of the shell *a'*, and its upper end arranged to rest on the seat *f'*, the axial spindle *e'*, secured to the shell *d'*, and the check-valve *c'*, all combined

and arranged substantially as set forth.

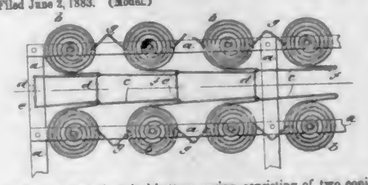
5. The combination, with the shell A of the injector provided with internal flanges, q' q^2, the cone p, provided with a flange, q, passages v v, and apertures w, the tubular screw r, guide s, valve n, spindle F, and shell t, all arranged substantially as set forth.

6. The combination, with the shell of the injector, of the spindle F, arranged to play longitudinally therein, the cone p, the shell t, screwed onto the base of the cone, and provided with an oblique slot or groove, x, and the screw y, mounted in the shell of the injector and arranged to engage said groove x, all constructed substantially as and for the purposes set forth.

7. The combination of the injector proper, the ejector, the float-chamber I, water-supply pipe J, pipe K, float L, lever j', shaft k', valve n', steam-chest M, and steam-pipe l from the generator, and the steam-pipe H, leading to the ejector, all combined and arranged to operate substantially as set forth.

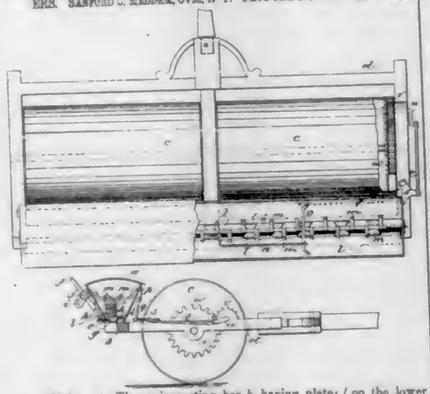
8. The chamber I, provided with a main pipe, K, leading from its top to the injector, and an auxiliary pipe, p', leading from said chamber at a lower point, whereby water is supplied to the injector from said chamber I before the float L rises to its highest point, substantially as set forth.

297,827. SPRING BED-BOTTOM. JOHN MCILHONE, St. Louis, Mo. Filed June 2, 1883. (Model.)



Claim.—A one-piece bed-bottom spring consisting of two conical coils, b b, and a tie formed of the elongated loops f f, the arms c c, bent at e, and the cross-head d, as shown and described.

297,828. FERTILIZER-DISTRIBUTING ATTACHMENT FOR ROLLERS. SANFORD C. MEDDICK, Ovid, N. Y. Filed Jan. 17, 1884. (No model.)



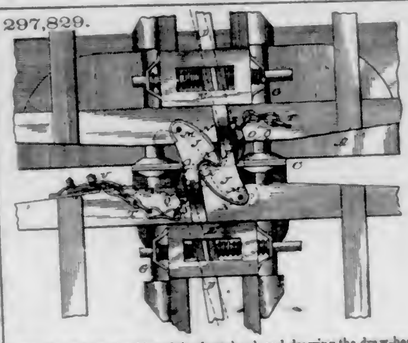
Claim.—1. The reciprocating bar k, having plates l on the lower edge, and the prongs m on the upper edge, and being arranged in the hopper over slot g of the bottom of said hopper, and geared with one of the roller-shafts by mechanism, substantially as described, for operating it.

2. The reciprocating bar k, having plates l, both of the side edges of each plate inclining inwardly to the slot g of the hopper, in combination with the means for reciprocating said bar, substantially as shown and described.

297,829. CAR-COUPLING. ISAAC JOHNSON MERRICK, Conetton, Ohio. Filed Mar. 7, 1884. (No model.)

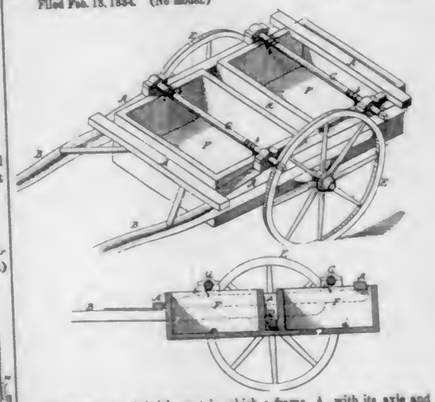
Claim.—The combination, in a car-coupling, of a draw-head having a slightly-hooked shoulder and a horizontal slot or recess behind the shoulder, a block or lever pivoted horizontally in the said slot, a chain attached to the outer end of the said lever or block, and means for drawing the said chain to one side, tilting the inner end of the lever into the

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space behind the shoulder of the draw-head, and drawing the draw-head to the side, as and for the purpose shown and set forth.

297,830. CART. JOHN MILLS and JAMES MILLS, Wilmington, Del. Filed Feb. 13, 1884. (No model.)



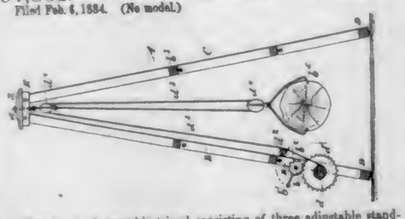
Claim.—1. A brick-cart in which a frame, A, with its axle and wheels, is combined with two receptacles, F, one in advance and the other in the rear of the axle, all substantially as set forth.

2. A brick-cart in which a frame, A, with its axle and wheels, is combined with two receptacles, F, one in advance and the other in the rear of the axle, and with mechanism for raising and lowering said receptacles, all substantially as set forth.

3. The combination of the frame A, having an axle and wheels, and the body comprising two receptacles, F, with intervening space, d, for the reception of the axle, as set forth.

4. The combination of the frame A, having an axle and wheels, the body comprising two receptacles, F, with intervening space, d, for the reception of the axle, and mechanism for raising and lowering said body, as set forth.

297,831. HOISTING-DERRICK. ANDREW R. MORRISON, Litchfield, Ill. Filed Feb. 6, 1884. (No model.)

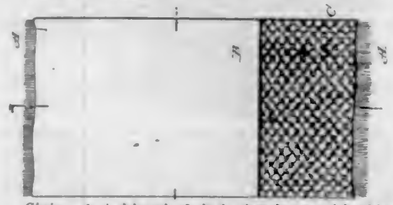


Claim.—1. A portable tripod consisting of three adjustable standards, two of which are secured by their inner ends to a cross-piece, all of said standards being joined to a metal plate at their outer ends, said

plate supporting tackle-blocks, with rope connection to winding mechanism secured to the outside of said standards.

2. A tripod-derrick consisting of the standards B B and C, the cross-bar D, binding-rod b^3, and the metal cap E, in combination with the eye-bolt a, pulley-blocks d^3, roller d^2, drum d, shaft b, arms b', gear-wheels b^2 and d', caps c, rope d^3, and the weight b^3, all arranged and operated substantially as shown.

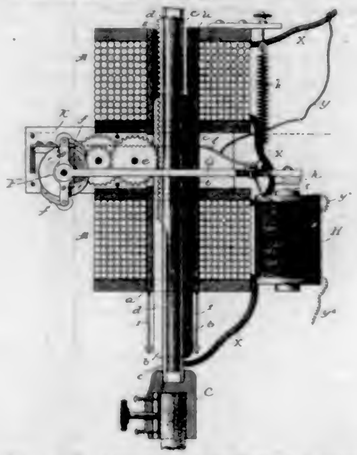
297,832. PLASTERING. JAS. MORRISON, Jr., New York, N. Y. Filed Aug. 7, 1883. (Model.)



Claim.—1. A slab made of plastic plastering material and long strands of cocoanut fibers extending longitudinally the length of the slab and embedded therein, as set forth.

2. As an improved article of manufacture, a slab made of plastic plastering material and long strands of cocoanut fibers embedded therein, the upper face of the slab being roughened to receive a hard finish, as set forth.

297,833. ELECTRIC-ARC LAMP. PHILIP P. NUNGESSER, Cleveland, Ohio. Filed Oct. 4, 1883. (No model.)



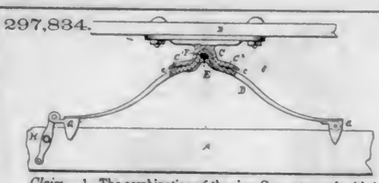
Claim.—1. In an electric lamp, an electro-magnet in the main circuit, having a tubular case, a, a slotted magnet-core, b, a tube, c, within the magnet-core, held by frictional contact and carrying the carbon-holder, a rod, d, having a rack-edge adapted to the slotted tube and armature, an escapement-wheel, and pallet-connections with a lever and electro-magnet in a shunt, the parts being combined and operating substantially as described.

2. In combination with the electro-magnet having hollow case, the hollow slotted magnet-core b and tube c, carrying the carbon-holder, the rod d, having rack-edge, the escapement-wheel, lever G, and arms g g, carrying pallets, the electro-magnet H H, armature A on lever G, shunt-circuit, and platinum points, all substantially as described.

3. In combination with the rack-edge of the feeding-rod of the lamp, the escapement-wheel and pallets, the train of gearing, and the lever carrying an armature acting in the described relation to the shunt-magnet, said escapement-wheel, train of gearing, and lever being carried upon a sliding frame, whereby the gears may be disconnected from the rack, as set forth.

297,834. VEHICLE-SPRING. SOLOMON E. OVIATT, Lansing, Mich. Filed Aug. 10, 1883. (No model.)

297,834.



Claim.—1. The combination of the riser C, constructed with braces C' C², having opposite depending flanges, the spring D, fitting between the flanges of the riser, and a bolt, E, passing transversely through the flanges of the riser under the spring, substantially as described.

2. The combination of the riser C, having a central recess, and braces C' C², provided with depending flanges, the spring D, bent upward at its center to fit in the recess and between the flanges of the riser, and a bolt, E, passing transversely through the flanges of the riser under the bent portion of the spring, substantially as described.

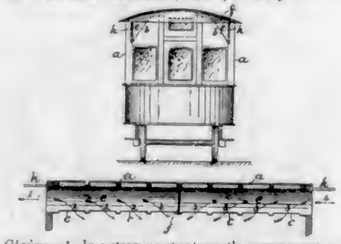
3. The combination of the spring D, having its ends provided with the clasps G, the riser C, having a flanged top, and a bolt, E, passing transversely through the riser under the spring, substantially as described.

4. The combination of the riser C, having a stationary flanged top, the spring D, fitting the riser, and having a clasp, G, at each end, and means for firmly uniting the spring and riser, substantially as described.

5. The combination, with a vehicle-spring, of a cushion adapted to receive the thrust at one end of the spring and to prevent the travel of said end of the spring, substantially as described.

6. A vehicle-spring consisting of spring D, riser C, and means for properly securing the two together, said springs provided with suitable end clasps, and, in combination therewith, a suitable cushion secured beneath one of the said clasps, substantially as described.

297,835. VENTILATING RAILROAD-CARS. JAMES M. PALMER, Cambridge, Mass. Filed Dec. 11, 1883. (No model.)



Claim.—1. In a steam or street car, the passage-way e, open at both ends, and provided with a partition, f, at or near the center of its length, and apertures c, communicating with the interior of the car, substantially as and for the purposes described.

2. In a steam or street car, the passage-way s, open at both ends, and provided with a partition, f, at or near the center of its length, and apertures c, fitted with slides d, for regulating the supply of fresh air admitted to the interior of the car, substantially as shown and described.

297,836. INJECTOR. WILLIAM R. PARK, Taunton, Mass., assignor to the Hancock Inspirator Company, of Massachusetts. Filed Nov. 3, 1883. (No model.)

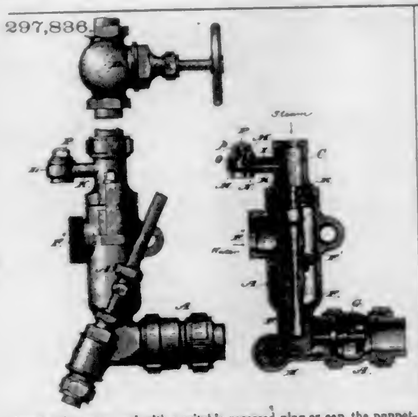
Claim.—1. In combination with an injector, a vacuum-relief valve applied between the steam-valve and the discharge end of the steam-nozzle, and adapted to be opened by the pressure of the atmosphere when the pressure within the steam pipe or chamber falls below that of the air without, substantially as and for the purpose described.

2. In combination with an injector, an automatic valve adapted to remain normally closed against the egress of air or steam from the steam chamber or pipe, and to be opened by the pressure of the atmosphere to admit air from without into said chamber or pipe when a vacuum occurs therein, substantially as and for the purpose set forth.

3. In combination with the injector and the passage opening into the steam chamber or pipe between the steam valve and nozzle, the automatic valve situated in such passage, and adapted to normally close it against pressure from within, and to be opened by the pressure of the air without, to admit air to the chamber or pipe when a vacuum occurs therein, substantially as and for the purpose set forth.

4. In combination with the passage extending from the steam-chamber and the passage intersecting the outer end of said passage, and

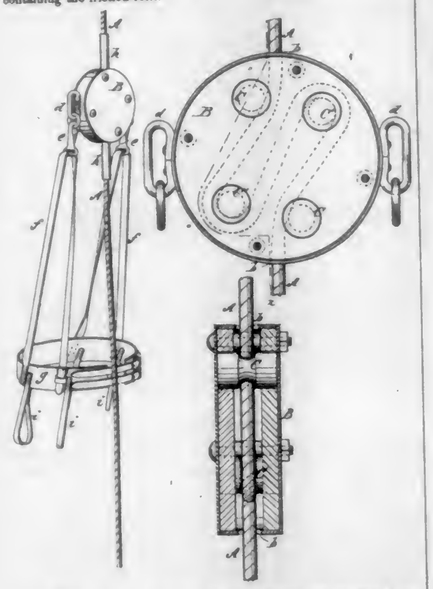
297,836.



closed at its upper end with a suitable recessed plug or cap, the puppet-valve closing the opening into the lower end of the intersecting passage, and having its stem fitting in and guided by said lower end of the passage and the recess in the plug or cap, but so formed as not to close them, substantially as and for the purpose set forth.

297,837. FIRE-ESCAPE. FRANCIS DAY PARKELEE, Hillsdale, Mich. Filed May 31, 1883. (No model.)

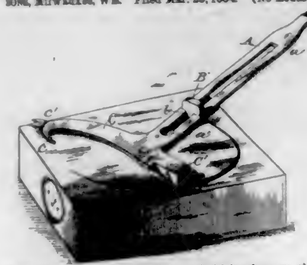
Brief.—Flexible tubes are attached to the openings of the case containing the friction-rolls.



Claim.—1. In a fire-escape, the combination, with the case B, having upper and lower openings, *b*, and provided with the flexible tubes *h* and the loops *d*, on opposite sides, to receive the suspension-straps, of the pulleys C C', the pulleys C being arranged on opposite sides of the said openings and the pulleys C' on opposite sides of and a little below and above the pulleys C, respectively, substantially as herein shown and described.

2. The combination, with the friction-pulley frame or case B, having oppositely-arranged apertures or guides *b b*, and the resistance pulleys, wheels, or rollers C C', of the flexible tubes *h h*, attached to said case in continuation of said guides, for use in connection with a pendent rope, band, or chain, substantially as specified.

297,838. COMBINED HOUSEHOLD IMPLEMENT. FOSTER E. PARSONS, Milwaukee, Wis. Filed Mar. 25, 1884. (No model.)

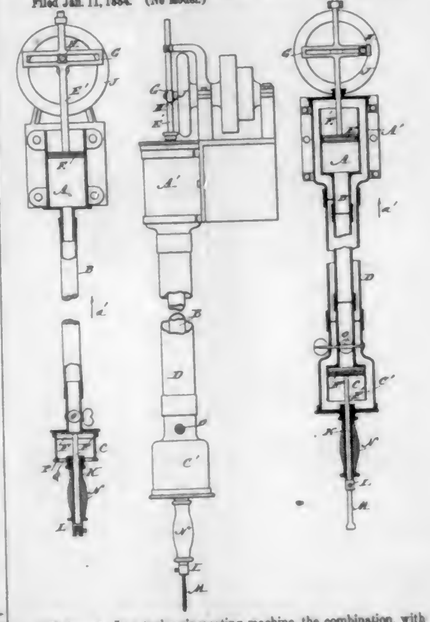


Claim.—1. In a combined household implement, the combination of the lever-handle A, provided with the slot *a* and aperture *a'*, with the knife B, having square shank *b*, and head B', the ends of which are adapted to overlap the edges of said slot, and the shank to be moved longitudinally therein, and the pivot-blade D, having flat base *d* and round shank *d'*, substantially as set forth.

2. In a combined household implement, the combination of the lever-handle A and curved head C, terminating in the hook *c*, substantially as set forth.

3. The combined household implement described, consisting of the curved fruit-can opener, the straight lever-handle with adjustable cutting-blade, the pivot-blade, and the screw-driver, tack-hammer, and tack-drawer, all as set forth.

297,839. MACHINE FOR RECIPROCATING TOOLS. FRED R. PATCH, Sutherland Falls, Vt., assignor of one-half to Redfield Proctor, same place. Filed Jan. 11, 1884. (No model.)



Claim.—1. In a tool-reciprocating machine, the combination, with two cylinders, each having an open and a closed end, and connected together by a tube, of pistons in the said cylinders provided with piston-rods projecting from the open ends of the cylinders, and a regulating-valve in the connecting-tube, substantially as herein shown and described.

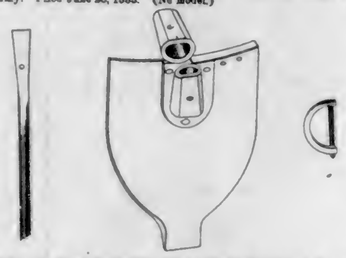
2. The combination, with two cylinders, each having an open and a closed end, the closed ends being connected by a tube, of a piston in each cylinder, a piston-rod on each piston, the piston-rods projecting from the open ends of the cylinders, closed casings surrounding the cylinders, and a tube connecting the casings and surrounding the tube connecting the cylinders, substantially as herein shown and described.

3. In a tool-reciprocating machine, the combination, with the cylinders A C, the tube B, connecting the cylinders, and the valve O in the said tube, of the pistons E F, provided with rods E' F', and the guide-tube K, through which the piston-rod F' passes, substantially as herein shown and described.

4. In a tool-reciprocating machine, the combination, with the cylinders A C, the tube B, connecting the cylinders, and the valve O in the said tube, of the pistons E F, provided with piston-rods E' F', the guide-tube K, and the handle-piece A, surrounding the guide-tube, substantially as herein shown and described.

5. In a tool-reciprocating machine, the combination, with the piston-cylinders A C and the tube B, connecting them, of the valve O in said tube, substantially as herein shown and described.

297,840. INTRENCHING-TOOL. JOHN H. PATTERSON, United States Army. Filed June 20, 1883. (No model.)



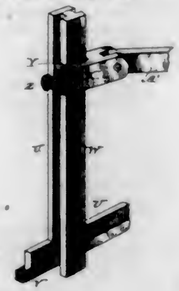
Claim.—1. In an intrenching-tool or similar implement, the combination of the blade, having two handle-sockets placed at approximately right angles with each other in the direction of the stroke of the tool, the one on the rear face, the other on the top or shoulder of the blade, and a suitable handle therefor, whereby the tool may be used either as a hoe, pick, or shovel, substantially as described.

2. In an intrenching-tool or similar implement, the combination of the blade, two shoulder-sockets thereon, located, the one on the face, the other at the top or shoulder of the blade, at approximately right angles to each other in the direction of the stroke of the tool, and each having a perforation in its side, a perforated handle, and a pin, whereby the handle and tool may be securely fastened together, substantially as described.

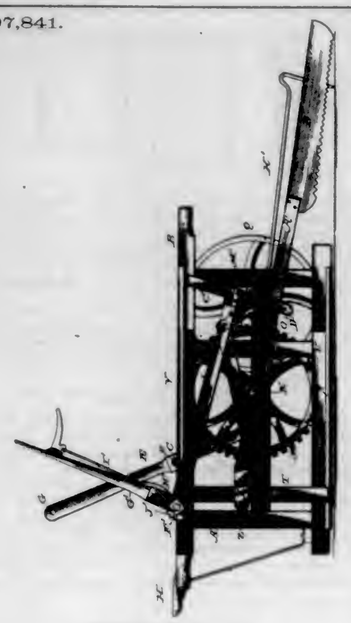
3. In combination with the blade of an intrenching or similar tool having a slit or flange secured to its upper edge, two handle-sockets set at approximately right angles to each other in the direction of the stroke of the tool, the one on the rear face, the other on the top or shoulder of the blade, the handle adapted for insertion in the sockets, and the locking-pin, substantially as described.

297,841. DRAG-SAW. JOHN R. PAYNE, Freedom, Ind. Filed Mar. 13, 1884. (No model.)

Claim.—In a machine for sawing, the combination of a reciprocating frame having its rear end piece provided with a flange T-shaped in cross-section, a block having a recess T-shaped in section and sliding upon the flange, and provided with a set-screw, a saw-bearing bar hinged to the said block, and a bar having a frame at its forward end provided with an anti-friction roller at its lower end adapted to have the saw-bearing bar sliding upon it, and having means for raising or lowering the bar, as and for the purpose shown and set forth.



297,841.



297,842. HAY-RACK. CHARLES AUGUSTUS PEASLEY and ISAAC F. DODGE, Gowen, Mich. Filed Oct. 6, 1883. (No model.)



Claim.—1. In a hay-frame, the front standard, C, provided with a vertical slot and cross-bar, in combination with the binder-pole having a hook at its front end, and provided at its rear end with ropes H H, which pass over pulleys attached to the rear cross-bar of the rack, substantially as shown.

2. A binder-pole for hay-racks, made in two or more sections, and provided at its front end with a hook and at the joints with links F, and hooks *f*, located on the upper edge of the pole, substantially as shown.

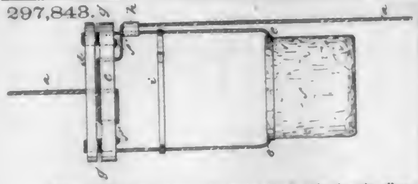
3. The clamp G, adapted for use in connection with the hay-rack and frame, as described, consisting of two members pivoted to each other, and provided with a wedge-shaped portion, and binding-link *k'*, adapted to be clamped upon the binder-pole, and provided with eyes for the reception of the ends of the ropes H.

4. In a hay-rack, the combination of the front post, C, side racks, B B, having pulleys *b*, the binder-pole, and clamp G, adapted to be secured to the binder-pole, and provided at its lower end with ropes H, which pass over the pulleys *b*, secured to the side rack, the parts being organized substantially as shown, and for the purpose set forth.

297,843. FIRE-ESCAPE. CHARLES INGLIS PITTMAN, Halifax, Nova Scotia, Canada. Filed July 9, 1883. (No model.)

Brief.—A brake-block to which the sling is suspended is arranged above the friction-block through perforations in which the escape-rope is rove. Cushion-springs are secured between the ends of the two blocks.

297,843.



Claim.—1. In a fire-escape, the brake-block *d*, having the sling *e* suspended from it, in combination with friction-block *c*, having the rope *a* rove through it, substantially as described.

2. In a fire-escape consisting of rope *a*, friction-block *c*, sling *e*, and brake-block *d*, the sling-rope extended up through block *c*, and also up and down through block *d*, and attached to block *c*, substantially as described.

3. The cushion-springs *g*, in combination with friction-block *c*, sling-rope *e*, and brake-block *d*, said springs being arranged between blocks *c d* and the sling-rope, substantially as described.

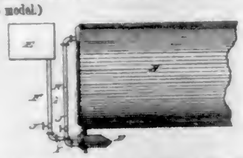
4. The combination of guide A with rope *a*, sling-rope *e*, friction-block *c* and brake-block *d*, substantially as described.

297,844. SULPHO-CONJUGATED VIOLETS OF PARIS. ALCIDE FRANCOIS POIRRIER and DANIEL AUGUSTE ROSENSTIEHL, Paris, France, assignors to the Société Anonyme des Matieres Colorantes et Produits Chimiques de St. Denis. Filed Jan. 17, 1884. (No specimens.)

Claim.—1. The improvement described in the manufacture of sulpho-conjugated Paris violets, consisting in treating the crude coloring-matter with potash, soda, ammonia, zinc, magnesia, or other suitable base, so as to transform the excess of acid into soluble sulphate.

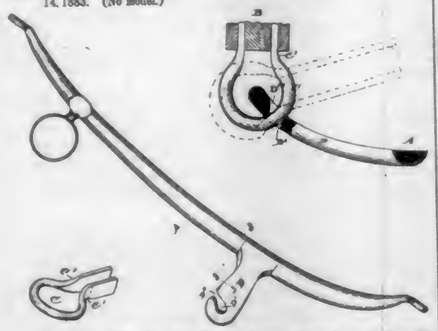
2. The product of the described treatment, the same being a composition of sulpho-conjugated Paris violet, with the free acid neutralized by a suitable substance in the nature of those above specified and having the characteristics set forth.

297,845. SMOKE-BURNING ATTACHMENT FOR FURNACES. WM. A. PORTER, Alliance, and WM. HESTON, Mount Union, Ohio. Filed Dec. 29, 1883. (No model.)



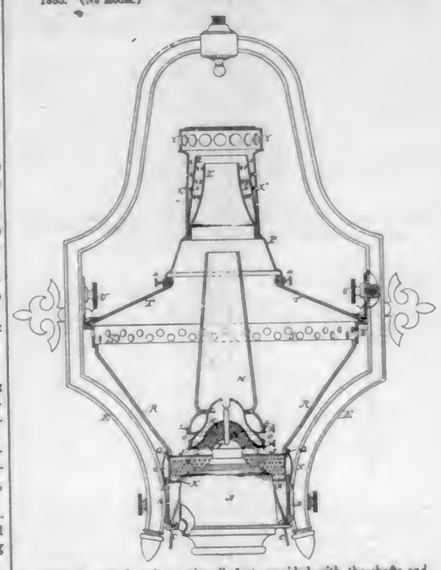
Claim.—The smoke-consuming attachment for steam-boiler furnaces and similar furnaces, consisting of a cylindrical nozzle contracting at its perforated end, a steam-pipe having its open end contracted, and a water-pipe having its outer open end bent downward over the opening of the steam-pipe, as and for the purpose shown and set forth.

297,846. HAME. JERMAIN P. QUINETTE, St. Louis, Mo. Filed May 14, 1883. (No model.)



Claim.—As a new article of manufacture, a hame, having a hook, D, formed in one piece therewith, said hook having a main opening, D', to fit the loop of the tug-clip, a narrow entrance, D'', to the main opening, to admit only a thin portion connecting an arm to the loop of the clip, and a recess, D''', on one side of the inside of the main opening, to permit the clip to be swung outward, as set forth.

297,847. LAMP. ELIAS B. REQUA, Jersey City, N. J. Filed Sept. 3, 1883. (No model.)



Claim.—1. In a lamp, the oil-font provided with the shafts and gear-wheels for raising and lowering the wick, in combination with the band B, having a concave vertical plate, *n*, substantially as set forth.

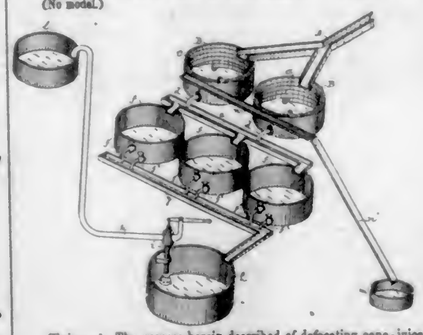
2. In a lamp, the oil-font, the wick-tube, arms I, foraminous cone H, deflector G, and rim L, provided with apertures within the line of the chimney, in combination with the band B, the foraminous band K, and inverted cone-shaped globe R, substantially as set forth.

3. The reflector T, the perforated ring S, and dome P, in combination with the inverted-cone-shaped globe R and the burner and chimney, substantially as set forth.

4. In a lamp, the oil-font, burner, chimney, globe, reflector, and dome, in combination with the ring B, foraminous band K, and detachable foraminous band X, substantially as set forth.

5. In a lighting device, the reflector T, globe, and burner, in combination with the bracket-frame E, screws U, and slotted plates V, the latter being secured to opposite sides of the reflector, and the frame being provided with apertures to receive the screws, substantially as specified.

297,848. PROCESS OF AND APPARATUS FOR DEFECATING CANE-JUICE. WM. A. RUGG, Sr., New Orleans, La. Filed Oct. 6, 1883. (No model.)

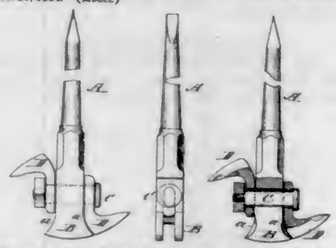


Claim.—1. The process herein described of defecating cane-juice, the same consisting in first boiling the cane-juice in its natural state as soon as it comes from the mill, in removing the skimmings during the said boiling process, and in drawing off the boiled juice or sirup into suitable tanks wherein it is treated with lime or other alkalies, substantially as and for the purpose set forth.

2. The apparatus herein described for defecating cane-juice, consisting of the boiling-tanks B, provided with steam-pipes *c* and faucets *d*, in combination with the defecating-tanks *f*, having two or more draw-off cocks or valves, located as described, and for the purpose specified.

3. The cane-juice-defecating apparatus herein described, consisting of boiling-tanks B, provided with heating-pipes *c* and faucets *d*, the defecating-tanks *f*, provided with faucets, as described, the trough *g* and tank A, pump *i*, with pipe *k*, and the receiving-tank *l*, all arranged as described, and for the purpose set forth.

297,849. CLAW-BAR. HUGH ROBERTSON, Breckenridge, Minn. Filed Feb. 25, 1884. (Model.)



Claim.—1. In a nail or spike extractor, the combination, with the bar with its enlarged end provided with outwardly-curved or concaved faces, of the auxiliary claws with their inner sides of a coincident curvature with the concaved faces of the enlarged end of the said bar, and means for fastening said claws to said bar, substantially as and for the purpose set forth.

2. In a nail or spike extractor, the bar having an enlargement with concaved sides, in combination with the auxiliary claws, with their inner sides of a coincident curvature with the sides of said enlargement of the bar, and having right-angled shanks, and means for reversibly connecting them to said bar, substantially as and for the purpose set forth.

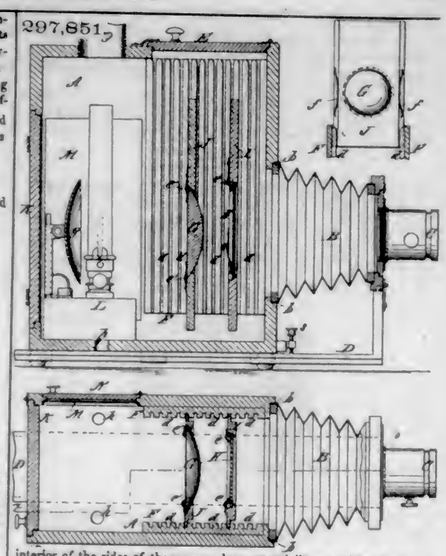
3. In a spike or nail extractor, the bar provided with an enlargement at one end, said enlargement having concaved or outwardly-curved sides or faces, in combination with the slotted auxiliary claws having their inner sides of a coincident curvature with the concavities of said enlargement of the bar, and the bolt securing the right-angled shanks of said claws to said bar, said bolt passing through a slot in said bar, substantially as and for the purpose set forth.

297,850. HALTER. CYRUS R. ROBINSON, Concord, N. H. Filed July 30, 1883. (No model.)



Claim.—As an improved article of manufacture, a halter or hitching-strap consisting of the two straps A B and the two rings or eyes C D, the former being equal in size or larger than the latter, connected and arranged as described, and adapted to be passed around the neck of the animal to be secured, and thence through the bit-ring, as shown and described.

297,851.



Claim.—1. In an enlarging-camera, the box A, having a series of interior slideways in its front end portion, a lid or door for insertion and removal of a lamp and reflector, *g*, within and from its rear portion, one or more air-feeding inlets in its bottom, and a chimney in its top, over the place occupied by the lamp, substantially as specified.

2. The combination, with the box A, having a series of interior slideways or grooves in its forward end portion, for the insertion, removal, and adjustment up or down and toward or from each other of a negative or picture carrying slide and condensing-lens slide, or diffusing-glass, of a lamp and reflector, *g*, in the rear portion of the box, and a front lens or lens-tube in close adjustable connection with the forward end of the box, essentially as described.

3. In an enlarging-camera, the box A, having a series of interior slideways in its front end portion, a lid or door for insertion and removal of a lamp and reflector, *g*, within and from its rear portion, one or more air-feeding inlets in its bottom, and a chimney in its top, over the place occupied by the lamp, substantially as specified.

4. In an enlarging-camera, the box A, having a series of interior slideways in its front end portion, a lid or door for insertion and removal of a lamp and reflector, *g*, within and from its rear portion, one or more air-feeding inlets in its bottom, and a chimney in its top, over the place occupied by the lamp, substantially as specified.

5. The combination, with the box A, having a series of interior slideways or grooves in its forward end portion, for the insertion, removal, and adjustment up or down and toward or from each other of a negative or picture carrying slide and condensing-lens slide, or diffusing-glass, of a lamp and reflector, *g*, in the rear portion of the box, and a front lens or lens-tube in close adjustable connection with the forward end of the box, essentially as described.

6. In an enlarging-camera for operation by artificial light, the camera-box provided with a non-actinic glass in one or both of its sides, at or near its rear end, and constructed to form a lamp-chamber at said end, essentially as and for the purposes specified.

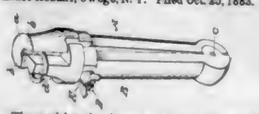
297,852. MANUFACTURE OF YELLOW AND ORANGE COLORING-MATTERS. ZACHARIE ROUSSIN and DANIEL AUGUSTE ROSENSTIEHL, Paris, France, assignors to the Société Anonyme des Matieres Colorantes et Produits Chimiques de St. Denis. Filed Nov. 30, 1883. (No specimens.)

Claim.—1. In the production of azoic coloring-matters, the substitution of the radical of carbonic acid for that of sulphuric acid, substantially as described.

2. The azoic coloring-matters described, the same being characterized by the presence of the radical of carbonic acid in place of the sulphuric-acid radical heretofore present in such matters, substantially as set forth.

3. The improvement in the preparation of coloring-matters varying from yellow to orange, and even red, consisting in substituting the amidocarboxylated acids—such as amidobenzoic acid ($C_6H_4NH_2CO_2H$)—for the corresponding sulpho acids—such as the sulpho acid $C_6H_4NH_2SO_3H$—in the manufacture of azoic coloring-matters in the state of free acid, these coloring-matters being insoluble in water, but their alkaline salts being sufficiently soluble for practical purposes, substantially as described.

297,853. WATCH-MAKER'S HAND-VISE AND RING-BENDER. CHARLES BURNETT RUBERT, Owego, N. Y. Filed Oct. 25, 1883. (No model.)



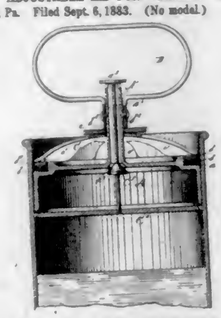
Claim.—1. The tool herein shown and described, consisting of the jaw A, having cheek-pieces *b b*, and the jaw B, having the nose *d*, adapted to close in between the cheek-pieces, substantially as and for

the purposes set forth.

2. The jaws A B, having formed through them the passages *e e*, and slots *e' e'*, in combination with the bolt D, having cross-head *f* at one end, and provided at the other with the thumb-nut E, substantially as and for the purposes set forth.

3. The jaws A B, having passages *e e*, and slots *e' e'*, in combination with bolt D, having cross-plate *f*, the jaw A, having recesses e^2 e^2, formed at the back, substantially as and for the purposes set forth.

297,854. ADJUSTABLE LID FOR VESSELS. HENRY C. SAMPLE, Philadelphia, Pa. Filed Sept. 6, 1883. (No model.)

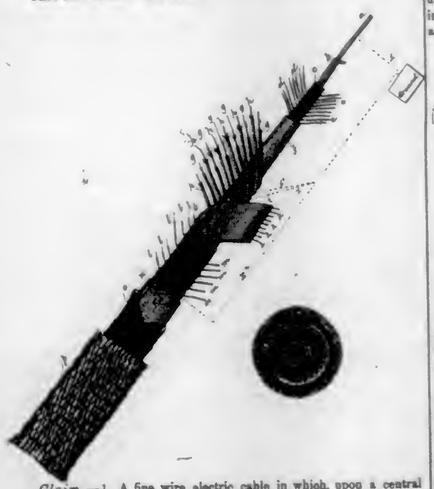


Claim.—1. A cover adapted to be pressed entirely within a vessel, and having a vent-tube and valve adapted to allow the escape of air beneath the cover, in combination with a spring-plate and means for expanding the same to secure the cover, substantially as shown and described.

2. A cover formed with an annular recess containing a rubber packing-ring and a metal expanding ring, and provided with a vent-tube having a valve to regulate the passage of air, in combination with spring-plate having its edges resting upon the expanding ring, and a handle adapted to expand the plate and gasket, to secure the same at any desired point within the vessel, substantially as shown and described.

3. The cover A, formed with the recess *a*, containing the gasket *b* and ring *b'*, and provided with the vent-tube A', formed with the valve-seat *a'* at its lower end, in combination with the handle B, having the cam or cams b^2 on its lower ends, the concavo-convex spring-plate C, valve-stem a^2, having the thumb-piece a^3 and valve C', and the plate C^2, substantially as and for the purpose herein described.

297,855. ELECTRIC CABLE. WILLIAM H. SAWYER, Providence, R. I. Filed Dec. 29, 1883. (No model.)



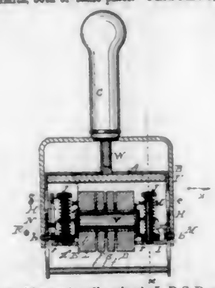
Claim.—1. A fine wire electric cable in which, upon a central heavy wire and insulated therefrom, are a series of fine covered wires and a series of fibrous threads braided together, the wires running spirally in one direction and the threads in the opposite direction, substantially as described, and for the purpose set forth.

2. An electrical cable in which, with a series of spirally-wound rubber-covered wires, is wound a series of fibrous-covered wires lying in the depressions between the rubber-covered wires, substantially as and for the purpose set forth.

3. The cable composed of the central cotton-covered wire, *a*, rubber covering *c*, braided fine wires and threads *d* and *e*, fibrous covering *f*, alternate spirally-wound rubber cover and fibrous-covered wires *g* and *h*, fine wires *k*, inclosed between spiral rubber strips, braided wires *l*, and threads *m* and a water-proof covering, substantially as described.

4. An electric cable in which a central body has wound about it in running spirals a series of wires inclosed between two strips of rubber, substantially as described.

297,856. SELF-INKING HAND STAMP AND DATER COMBINED. ERNST SCHMITZ, Chicago, Ill., assignor to himself, J. Frank Tenney, and Richard Schmitz, both of same place. Filed June 5, 1882. (No model.)



Claim.—1. The rubber die-wheels L P S D, provided with metal boxes E, in combination with the round shaft *v*, as specified.

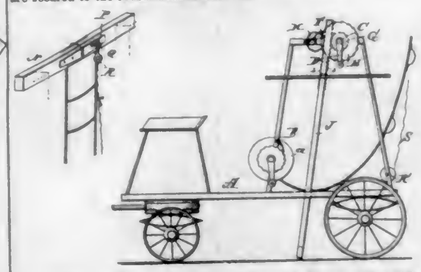
2. The combination of the rubber die-wheels L P S D, boxed as stated, with the washers *f f f*, to separate the rubber, as and for the purpose specified.

3. The combination of the frame *z z*, for supporting the die-wheel, with the die-plate I, posts H H, and springs *n n*, as and for the purpose specified.

4. The combination of the lever F G *r r*, constructed as described, with the rubber die-wheels, frame *z z*, and shaft *v*, as specified.

297,857. FIRE-ESCAPE. GEORGE SHIFIELD, Portland, Oreg. Filed Apr. 6, 1883. (No model.)

Brief.—A racked bar arranged between the toothed wheels carries up a cross-bar to be placed across the window, which bar may be made in two hinged sections, and to which the ladder is secured. Hand-loops are secured to the ladder-sides at intervals.

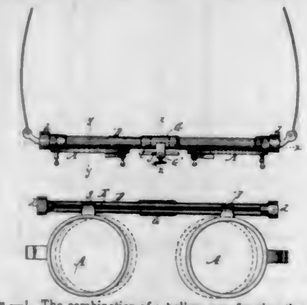


Claim.—1. The combination, with a rope ladder consisting of the side ropes, K, united by cross ropes or rungs L, of hand-loops M, secured to the side ropes, K, substantially as described, and for the purpose set forth.

2. The combination, with the pole J, arranged between the toothed wheels G H, and provided with racks *b b* on its opposite sides, of the cross-bar N, secured to the upper end of the pole, and a rope ladder, K K L, attached to said cross-bar, substantially as shown and described.

3. The combination, with the pole J, arranged between the toothed wheels G H, and provided with racks *b* on its opposite sides, cross-bar N, formed of two sections hinged together and secured to the upper end of the pole, and a rope ladder secured to said cross-bar, of the slotted latch P, staple Q, and pin R, substantially as shown and described.

297,858. TRIAL-FRAME FOR OCULISTS AND OPTICIANS. ANDREW L. SMITH and E. MERRETT COLE, Geneva, N. Y. Filed Mar 3, 1884. (No model.)

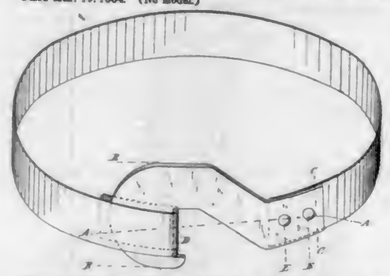


Claim.—1. The combination of a hollow case forming the frame, a right-and-left screw passing longitudinally through the case, and eye pieces or sockets having lugs forming nuts through which the screw passes, as set forth.

2. The combination of the hollow case, the collar resting and turning upon the case, the nose-piece passing through the collar, and a set-screw for securing the nose-piece in place, as set forth.

3. The combination of the hollow case, the right-and-left screw passing through the case, the eye-pieces having lugs forming nuts, through which the screw passes, the collar turning on the case, the nose-piece passing through the collar, and the set-screw for securing the nose-piece, as set forth.

297,859. BALE-TIE BUCKLE. CHARLES R. SMITH, Oxolona, Miss. Filed Mar. 19, 1884. (No model.)



Claim.—The herein-described bale-fastening device, consisting of the strap or band proper and the hook-shaped tie-piece, rigidly connected to said band, substantially as described.

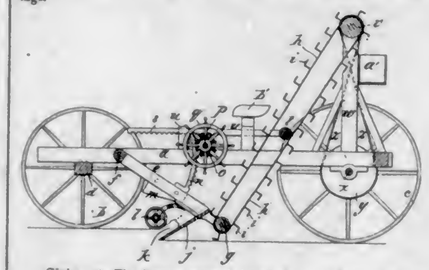
297,860. BAGGAGE-CHECK. CLARENCE CARSON SMITH, Camptown, Pa. Filed Mar. 7, 1884. (No model.)



Claim.—The changeable baggage-check herein shown and described, consisting of the side plates having curved name-slots, strap-slots I I, and central oblong slots or bearings C, circular name-disk having center-pin B working in the slots C, and notches *a*, fixed teeth G, and strap or straps J, constructed and combined substantially as and for the purpose shown and set forth.

297,861. DITCHING-MACHINE. ELMER H. SMITH, Quinton, N. J. Filed Nov. 14, 1883. (No model.)

Brief.—A scoop-plow is secured to a frame pivoted to the truck or main frame, and which carries a roller gage-wheel, flaring ditch-widening plates, and a cogged segment for its vertical adjustment, engaging and supported by a pinion and shaft, which pinion also engages sliding rack-bars carrying a belt-tightener for an elevator, the lower roller of which is carried by the plow-frame and the upper in fixed bearings.



Claim.—1. The frame *e*, suspended from the truck-frame by pivots *f*, toothed bars *n*, pinions *o*, and regulating-shaft *p*, and having plow *j* and lower elevator-roller *g*, in combination with the endless elevator arranged on driving-drum *v*, and having tightener *i*, mounted in sliding toothed bars *s*, gearing with said regulating-shaft, *p*, substantially as described.

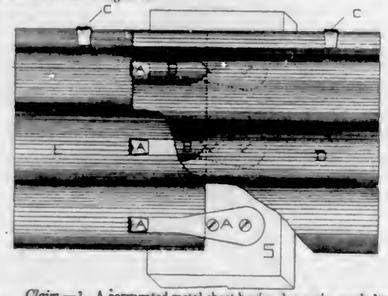
2. The gage-wheel *l*, in combination with vertically-adjusting frame *e*, plow *j*, roller *g*, and endless elevator *h i*, substantially as described.

3. The gage-wheel *l*, in combination with frame *e*, pivoted to frame *a*, and geared with the regulating-shaft *p* by pinions *o* and toothed bars *n*, said frame having plow *j*, and being arranged with the elevator *h i*, substantially as described.

4. The combination of the flaring ditch-widening plates *m*, with the frame *e*, plow *j*, and the elevator *h i*, substantially as described.

297,862. FASTENING FOR CORRUGATED METAL SHEETS. JOHN SMITH, Kansas City, Mo. Filed Feb. 29, 1884. (No model.)

Brief.—Hooks secured to the roof-timber are located in depressions in the edge of a corrugated metal sheet. Hooks at the sides of the sheets conform to the corrugations.



Claim.—1. A corrugated metal sheet having depressions or indentations B stamped or rolled upon one edge or side, such indentations being situated within the longitudinal concavities of the sheet, substantially as shown and described.

2. In corrugated sheets of metal for roofs of buildings, the sheet D, having impressions B fixed along one edge or side, longitudinal fastenings A, secured to timber S, and side fastenings, C, curved as shown, all substantially as described, and for the purposes herein set forth.

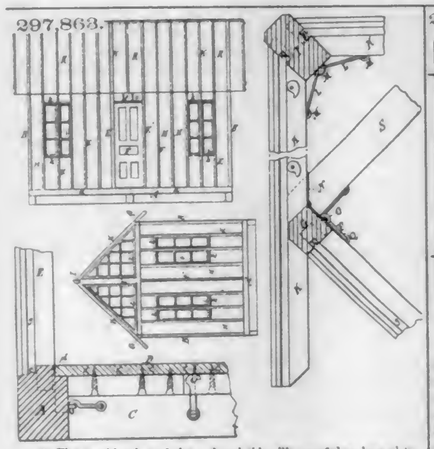
297,863. PORTABLE HOUSE. OTIS HALL SMITH, Cambridge, Mass. Filed Mar. 14, 1884. (No model.)

Brief.—The end and side sills are lapped together at their ends, and the posts are tenoned into the laps and secured to the side sills by separable connections. The wall-plates, rafters, and ridge-piece are connected together and to the posts by separable connections.

Claim.—1. The end and side sills scarfed or lapped together at their ends, in combination with the posts tenoned into the laps, and secured in place by separable connections or hasps, staples, and hooks, all being substantially as represented.

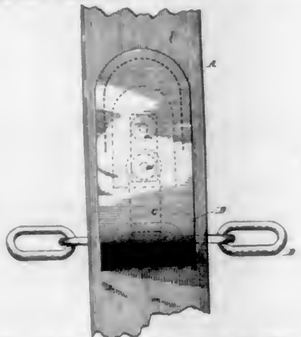
2. The ridge-piece and each side sill, composed of two pieces equal or about equal in their length, and hinged together, in combination with each wall-plate, consisting of three pieces equal or about equal in their lengths, and connected by hinges.

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3. The combination of the end and side sills scarfed or lapped together at their ends, with the posts tenoned into the laps and secured to the side sills by separable connections, and with the wall-plates, the rafters, and the ridge-piece, arranged and adapted and connected together and to the posts by separable connections, substantially as set forth.

297,864. TRACE-CARRIER. WILLIAM M. SMITHER, Keene, Ky. Filed Jan. 31, 1884. (No model.)



Claim.—In a trace-carrier, the combination, with the loop, of a pendulous hook pivoted in the upper end of the said loop, and adapted to vibrate or swing in the direction of the chain or trace, and a plate having on its surface a lug which forms the pivot on which the hook swings, the parts being secured together and to the back-band of a harness by rivets, one of which passes through the lug on the plate, as and for the purpose described.

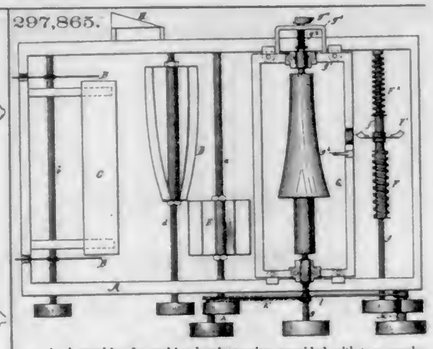
297,865. MACHINE FOR MAKING INSULATOR-PINS. WILLIAM SNEE, West Elizabeth, Pa., assignor of one-half to Milton A. Walton, Cameron, W. Va. Filed Jan. 10, 1884. (No model.)

Claim.—1. In a turning-lathe, the combination of a traveling carriage, blank-centering shafts or spindles, of which one is longitudinally movable on said carriage, and a fixed switch, H, the latter having on its outer side an incline with which the inclined surface of the centering-shafts engage by means of said traveling carriage, substantially as shown and described.

2. In a turning-lathe, the combination, with a frame, of the shafts *d e*, journaled on the under side, a carriage, G, traversing the upper side, a rotary blank-holder arranged on said carriage, and two rotary cutters arranged diagonally to each other on said shafts, as and for the purpose specified.

3. The combination, with a pin-holder carriage having the finger g^4, of a rotary shaft, *f*, carrying the spring-pressed longitudinally-movable worm F, and threading-tool f', whereby a spiral thread may be cut on the pin, as described.

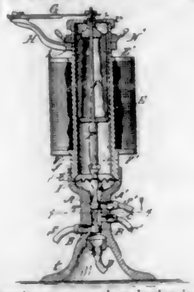
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4. A machine for making insulator-pins, provided with two revolving saws separated a distance equal to the length of the pin, two revolving cutters placed in rear of said saws, a revolving shaft provided with a laterally-sliding cutter and means for laterally moving said cutter, and a carriage sliding lengthwise of the machine and provided with means for receiving, centering, and revolving the pin-blank, all arranged substantially in the manner described, whereby an insulator-pin is completed in a single continuous operation, as set forth.

5. In a turning-lathe, the combination, with a supporting-frame, of a traversing-carriage provided with the blank-holder, two saws to first size the length of pin, two succeeding rotary shapers, and a spiral threader to act on the previously length sized and shaped pin, substantially as described.

297,866. ELECTRIC REGULATOR. ELMER A. SPERRY, Chicago, Ill. Filed Mar. 20, 1883. (No model.)



Claim.—1. An electric-current regulator having in combination a mechanism for actuating a valve or valves by means of variations in an electric current, a valve or valves arranged to be so actuated, a fluid or gas supply and exhaust brought into and out of action by the movement or position of such valve or valves, a counterbalanced reservoir or reservoirs, to and from which the fluid or gas is caused to flow and increase or decrease the weight thereof, and suitable mechanical connections for transmitting motion from said reservoir or reservoirs, substantially as described, and for the purpose set forth.

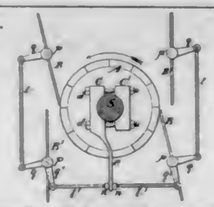
2. The combination, with the gravitating reservoirs secured to the opposite ends of a tilting-lever, of connections for transmitting motion from said reservoirs, and means controlled by an electrical current for causing a fluid or gas to flow to and from said reservoirs alternately, substantially as described, and for the purpose set forth.

3. The combination, with the cylinder T, the connected pipes S and S', pipe C', and a suitable exhaust, of the connected valves A and B and the core of an axial magnet connected with said valves, substantially as described.

297,867. COMMUTATOR AND BRUSH FOR ELECTRIC MOTORS AND GENERATORS. ELMER A. SPERRY, Chicago, Ill. Filed June 9 1883. (No model.)

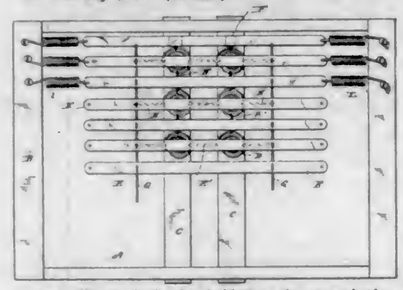
Claim.—1. The combination, with the commutator of a magneto-electric generator or motor, of two pairs of brushes, and mechanism for automatically bringing said pairs of brushes alternately in contact with said commutator in accordance with its direction of rotation, substantially as described.

297,867.



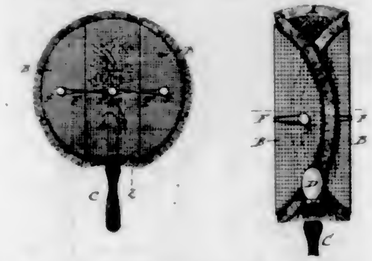
2. The combination, with the commutator and two pairs of brushes, substantially as described, of automatic devices controlled by the rotation of the commutator-shaft for shifting one pair of brushes out of and the other pair into contact with said commutator, when its direction of rotation is reversed.

297,868. SPRING BED-BOTTOM. DAVID F. STAMBAUGH, Effingham, Ill. Filed May 7, 1883. (No model.)



Claim.—The combination, in a bed-bottom, of a rectangular frame provided with a series of cross-slats, C, a series of spiral springs, D, located thereon, the links B', connecting the upper ends of the springs, the longitudinal slats H, secured to said springs, the cords G, connecting the slats, and the longitudinal spiral springs I, connecting the slats at the ends to the frame, substantially as and for the purposes specified.

297,869. FAN. FRIEDMAN STERNHEIMER, New York, N. Y. Filed Mar. 8, 1884. (No model.)



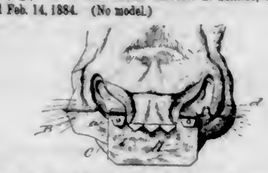
Claim.—1. The combination, in a fan, of a middle web-section, having a fixed handle, and hinged side sections, the middle and side sections being applied to a flexible connecting foundation-piece, whereby a natural spring is imparted to said web-sections, substantially as set forth.

2. The combination of the middle web-section having a handle, hinged side sections, a connecting flexible foundation-piece, that imparts a natural spring to the web-sections, and means whereby the side sections are held in folded position on the fan, substantially as set forth.

3. The combination of the middle section, A, having a handle, C, and spring-clasp D, with hinged side sections, B B, to which a natural spring is imparted by being applied to a flexible foundation-piece, E, substantially as set forth.

4. The combination, with the middle section, A, having a handle, C, and a spring-clasp, D, of hinged side sections, B B, a flexible foundation-piece, E, and an elastic loop or band, F, attached to the convex sides of the web-sections A and B B, so as to re-enforce the natural spring of the fan, substantially as set forth.

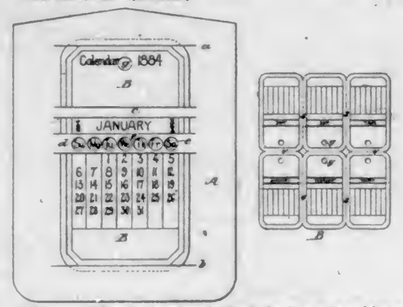
297,870. CALF-WEANER. HOOPER B. STRAUT, Culbertson, Nebr. Filed Feb. 14, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a calf-weaner consisting of a plate having integral teeth arranged as described, and extensions at each side of said teeth bent to form loops for the purpose set forth, and securing-rod pointed at its ends and bent near one end, substantially as specified.

2. As an improved article of manufacture, a calf-weaner consisting of a plate having integral teeth arranged as described, and extensions at each side of said teeth bent to form loops for the passage of a securing-rod, and a rod pointed and bent at each end when in position, substantially as specified.

297,871. CALENDAR. JOSHUA FROST TANNATT, Springfield, Mass. Filed Feb. 8, 1884. (No model.)

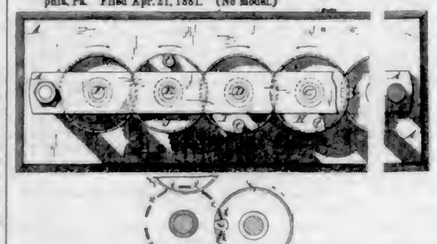


Claim.—1. The calendar-sheet holder A, having upper and lower cross-cuts, *a b*, or either, and intermediate transverse incisions, forming or leaving straps *c d*, for holding the calendar-sheet by friction and admitting of its adjustment, also for the successive exposure of the months on the sheet between said straps, substantially as specified.

2. The calendar-sheet B, having its tables of months, with days of the week and dates to correspond printed on both of its sides, and arranged to admit of a separate or consecutive exposure of the months by first folding the sheet centrally in one direction, as at *v*, and afterward doubling over such folded portions into equal divisions upon themselves, as at *s s*, substantially as shown and described.

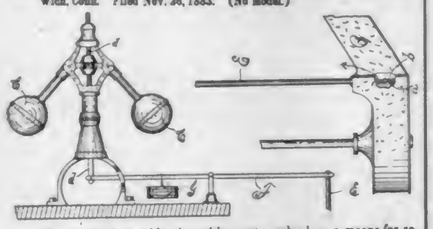
3. The combination of the folded sheet B, having its months, days of the week, and dates printed in separate columns or tables on both sides of the sheet, and the holder A, having cross-cuts *a b*, and intermediate transverse incisions, forming an upper strap, *c*, and lower strap, *d*, having perforations *e* in it, essentially as specified.

297,872. ENGINE-REGISTER. FREDERICK W. TATTERSALL, Philadelphia, Pa. Filed Apr. 21, 1881. (No model.)



Claim.—In an engine-counter, a train of registor or dial wheels, each provided with a double-flanged rim, one edge of which rim having a driving-tooth in a slot or interval therein, and the other or opposite edge having a series of notches therein, said train of wheels being constructed, combined, and arranged in successive relation to each other in the manner shown, and for the purposes described.

297,873. WATER-WHEEL REGULATOR. CHARLES F. THAYER, Norwich, Conn. Filed Nov. 26, 1883. (No model.)



Claim.—1. In combination with a water-wheel, as a means for securing quick action to admit or exclude the supply of water, the two-part gate *a b*, part *a* being secured rigidly in the case of the wheel, said part *b* being adapted to slide vertically, both of said parts *a b* having horizontal slots or openings, which, as gate *b* is raised or lowered, are opened to each other or closed, as hereinbefore described.

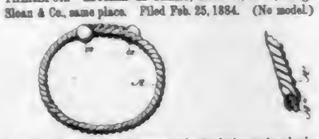
2. In combination with a water-wheel having a fixed slotted gate, as at *a*, a vertically-sliding slotted gate, as at *b*, and a series of friction-pulleys, *c*, so located that said sliding gate acts against said pulleys to reduce friction in the act of raising or lowering *b*, as described.

3. In combination with a water-wheel having a fixed slotted gate, as at *a*, an auxiliary slotted gate arranged to be raised or lowered to admit or exclude the supply of water, and having on its outer side, between slots *c*, V-shaped ribs *h*, as described, and for the purpose specified.

4. In combination with a water-wheel having a slotted fixed gate, the sliding gate *b*, having V-shaped ribs, and the friction-rolls *c*, all arranged as and for the object specified.

5. In combination with a water-wheel having the fixed slotted gate *a* and vertically-sliding slotted gate *b*, the gate-shaft E, lever-arm F, counter-balance G, and a suitable fly-ball governor, all so arranged and connected, as hereinbefore described, that said fly-ball governor acts to rise or lower gate *b*, as and for the purpose specified.

297,874. BRACELET AND MODE OF ORNAMENTING WIRE THEREFOR. EDOUARD A. THIERY, Newark, N. J., assignor to Carter, Sloan & Co., same place. Filed Feb. 25, 1884. (No model.)

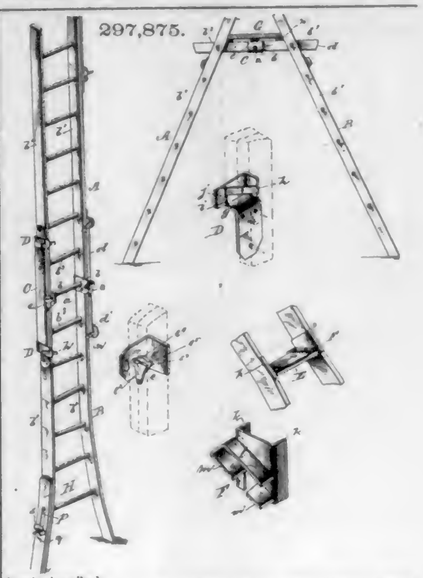


Claim.—1. A bracelet composed of tubular twisted wire of quarter-foil or analogous form, substantially as and for the purpose set forth.

2. That improvement in the art of ornamenting wire or stock for bracelets which consists in inserting a core of soft metal or alloy in tubular wire, then drawing it into quarterfoil or analogous form, next forming kerfs in the grooves between the flutes, and afterward twisting it, substantially as described.

297,875. LADDER. GEORGE P. THORP and MILTON E. THORP, Paola, Kans. Filed Feb. 14, 1884. (No model.)

297,875.



Brief.—Consists of two ladder-sections pivoted at their upper ends to a third short section provided with brackets and catches, which engage to lock said ends in position when the end sections are turned down to form a step-ladder. A detachable platform having beveled ends rests on the central section. Metallic plates embrace the edges of the standards, and are provided with sockets adapted to receive the ends of steps, each plate having an opening in the lower central portion to receive the round, and the step being grooved on its under face, so as to rest upon said round.

Claim.—1. The combination, in a ladder, of two ladder-sections pivotally secured to a third section, brackets secured to said third section and adapted to receive the ends of the first-mentioned sections when turned, as herein described, and a catch for engaging said bracket to lock said ends in position, substantially as set forth.

2. The combination, in a ladder, of three ladder-sections, pivoted and operating as herein described, of slotted brackets and pivoted catches secured to the central section, said catches being adapted to engage the notches of the brackets, substantially as and for the purpose specified.

3. The combination, in a ladder, of two ladder-sections pivotally secured to a third section, and having their ends cut away, as herein set forth, brackets secured to the third section and pierced by a round, and devices for engaging the brackets, substantially as described.

4. The combination, in a ladder, of two ladder-sections pivotally secured to a third section, and a detachable platform having beveled sides adapted to rest on the central section, substantially in the manner herein described.

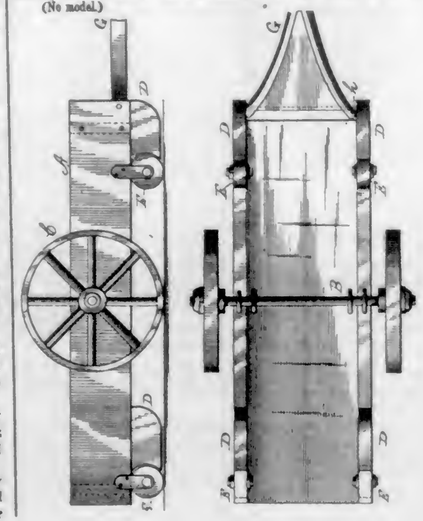
5. The combination, in a ladder, of three ladder-sections, pivoted and operating as herein described, of brackets and catches secured to one of said sections, said catches being provided with a series of projections and adapted to engage the brackets, substantially as specified.

6. The combination, in a ladder, of plates bearing against the sides of the said ladder, and provided with sockets adapted to receive step-sections, substantially as and for the purpose described.

7. The combination, in a ladder, of plates provided with ribs engaging the sides of said ladder, and provided with sockets adapted to receive the ends of step-sections, substantially as set forth.

8. The combination, in a ladder, of plates bearing against the sides of the said ladder, and each provided with a socket having one end open for the purpose specified, and an opening in the lower central portion of the same to receive the round upon which it rests, and a step for insertion therein, grooved on its under face, substantially as set forth.

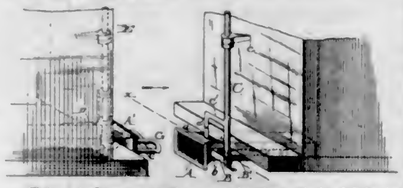
297,876. TRUCK. JOHN H. TIFFANY, Dimock, Pa. Filed Jan. 29, 1884. (No model.)



Claim.—1. In a vehicle, the combination of a set of wheels with runners which are adapted to co-operate with the wheels to sustain the load when the vehicle is in motion, substantially as described.

2. In a vehicle, the combination of a set of larger wheels, the smaller wheels, the runners, and the flexible tongue adapted to each other, substantially in the manner and for the purpose set forth.

297,877. CAR-COUPLING. GEORGE ULSOMER, Harbstadt, Ind. Filed May 11, 1884. (No model.)



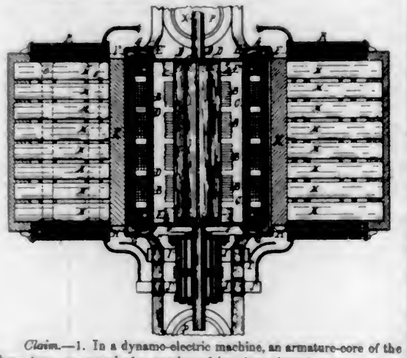
Claim.—1. In an automatic car-coupler, the vertical rod C, having a coupling-pin, *c*, and a depression adapted to engage the slotted arm B, in combination with the draw-head A and a spring, B', substantially as and for the purpose set forth.

2. In a car-coupling, the vertical rod E, having an enlarged portion, *f*, and a curved end, *g*, adapted to adjust a coupling-link, in combination with a draw-head having an eye, *e*, and groove *e'*, substantially as and for the purpose set forth.

3. The draw-head A, having the perforations *a* and *b*, in combination with the slotted arm B, metal plate *a'*, and a spring, B', substantially as and for the purpose set forth.

4. In a car-coupling, the combination of the draw-heads A A', vertical rods C and E, constructed substantially as shown, the coupling-link G, the slotted arm B, metal plate *a'*, and a spring, B', all constructed to operate substantially as and for the purpose set forth.

297,878. DYNAMO-ELECTRIC MACHINE. CHAS. J. VAN DEPOELE, Chicago, Ill. Filed Dec. 8, 1883. (No model.)



Claim.—1. In a dynamo-electric machine, an armature-core of the drum type, composed of a number of iron bars riveted to two or more solid iron rings, the whole, when put together, forming a cylinder or drum, a number of iron rings composed of galvanized iron wire placed upon said cylinder and distanced from one another, and an equal number of iron bars corresponding with the inner ones placed outside the iron and wire rings, the inner and outer bars being placed opposite one another and parallel with the axis of rotation of the said drum, substantially as described.

2. In a dynamo-electric machine, an armature-core composed of a number of galvanized iron-wire rings placed upon a cylinder built up of iron bars and solid iron rings, in combination with iron bars placed on the outside of the iron rings and opposite the bars on the inside of the rings, the whole being covered with proper insulating material, as described and set forth.

3. In a dynamo-electric machine, the armature-core composed of two or more iron rings having riveted on their inside a number of iron bars so distanced from each other as not to touch each other longitudinally, in combination with a number of galvanized iron wire rings placed upon the cylinder, also distanced from one another, and iron bars properly secured to the outside of the rings and opposite the bars on the inside of the cylinder, as described and set forth.

4. In a dynamo-electric machine, an armature-core of the drum type, consisting of iron bars and rings, substantially as described, in combination with the armature-coils wound in sections over the armature-core, the wire coils being so wound that each section shall correspond to a pair of iron bars, and directly placed or wound over the same and parallel therewith, substantially as described.

5. An armature of the drum type, composed of iron bars and rings, substantially as described, in combination with armature-coils wound in sections over said bars, each single section having one or more extra loops or terminals brought to the outside, which are connected to commutator-sections, the circuit from the inner to the outer terminal of each section being continuous, as described and set forth.

6. An armature for dynamo-electric machines having copper conductor wound in sections, each section being continuous from its inner to its outer terminal, and also provided with an intermediate additional terminal placed in the circuit of said sections or coils, and proper connections between said terminals and the commutator of the armature, in order to collect from said sections only part of the current at a time, and successively, as described and set forth.

7. An armature for dynamo-electric machines having its copper conductor wound over a core built up of iron rings and bars, as described, said copper conductor being divided in sections corresponding in number to the iron bars in said core, the inner terminal of each section being connected to the outer terminal of the next in order, until the whole forms one closed circuit, and an additional terminal placed and connected so as to divide the copper conductor in each individual section or coil, all of said terminals being connected to separate sections of a commutator from which the current produced in the armature-coils is to be collected.

8. In a dynamo-electric machine, an iron field-magnet core, around which the copper conductor is wound, built up of a number of soft-iron plates, M M, all riveted together, but leaving an air-space between each plate and the next, in combination with a back plate, N, of cast-iron, cast solid to one end of said plates, substantially as described, and a pole-piece secured to the free end of said soft-iron plates, in front of which the armature is to revolve, as set forth.

9. In a dynamo-electric machine, an iron core and frame forming the field-magnet, consisting of the plates M M, &c., riveted together, and an iron back plate, N, cast thereto, in combination with the pole-pieces K, the top and bottom plates, O' and O², to which the plates N and N' are bolted, forming together a solid frame, the lower plate, O', being provided with proper extensions from its sides, upon which the bearings or boxes for the armature-shaft are secured, substantially as described.

10. In a dynamo-electric machine, the field-magnets for the same, consisting of soft-iron cores built up as described, around which the copper conductors for field-coils are wound, in combination with the cast-iron bottom and top plates, the bottom plate so constructed as to support the field-cores by the plates N N' and the adjustable screws *a a'*, said bottom plate also being provided with extensions P in its neutral part, upon which the posts are fixed, carrying the armature, and in combination with the cast-iron cover or top plate, serving to strengthen the general frame and protect the armature and field coils.

11. In a dynamo-electric machine, an armature wound with two independent circuits—one circuit to do the outside work, the other to keep up the magnetic field of the machine when operating in combination with the cable-helices or field-coils of the machine, as described—and proper means for allowing the current to circulate through a greater or smaller number of the insulated wires constituting said cable, in order to modify the efficiency of the machine, as described and set forth.

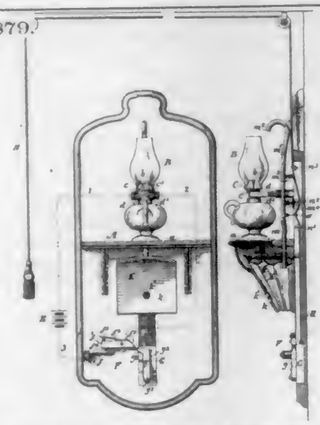
12. In a dynamo-electric machine, an armature wound with two sets of coils—one set to furnish current for the work outside of the machine, the second set to be made available to energize the field-magnets of the machine by transmitting its current through the field-helices, consisting of a number of fine insulated wires made up in a cable—and proper means for cutting out or in circuit a larger or smaller number of individual conductors in said cable for the purpose of modifying the production of current in the coils doing the outside work, substantially as described.

13. In a dynamo-electric machine, the field-magnet coils, consisting of a cable made up of a number of well-insulated fine wires, in combination with a set of independent coils on the armature of the machine, not in common with the armature-coils furnishing the working-current, the current of the independent set of coils to circulate through all the insulated conductors of the cables, connected in multiple arc whenever the machine is doing its maximum duty, or through a smaller number when the machine is working at less than full capacity, substantially as set forth.

297,879. COMBINED ELECTRIC-LAMP LIGHTING AND EXTINGUISHING DEVICE. HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Oct. 6, 1883. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with a lamp, an electrode for igniting the same, and a battery, of a bellows, a tube leading from said bellows, and a device which may be so actuated as to either complete the circuit of said battery through said electrode a sufficient time to ignite said lamp or to compress said bellows

297,879.



and simultaneously cause said tube to extend above said lamp.

2. The combination, substantially as hereinbefore set forth, of a lamp, an electrode for lighting the same, a battery, means for placing the said electrode in the circuit of said battery, a circuit-closing device, a cord for actuating said circuit-closing device, whereby the circuit of said battery may be completed through said electrode, and means, substantially such as described, operated by said cord for extinguishing said lamp.

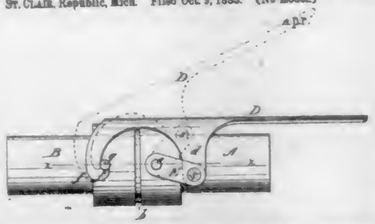
3. The combination, substantially as hereinbefore set forth, of a battery, a lamp adapted to be ignited by a current of electricity from said battery, a circuit-closing device, a cord, by means of which said circuit-closing device may be operated by a slight pull to close the circuit of said battery, and by a harder pull to again open the circuit of said battery, and means, substantially such as described, whereby said lamp may be extinguished under the influence of the harder pull.

4. The combination, substantially as hereinbefore set forth, with a lamp, and means, substantially such as described, for igniting said lamp, of a bellows, a tube leading from said bellows into proximity to the chimney of said lamp, and a device which may at will be so operated as to either actuate said igniting device, or to cause said bellows to be compressed and a current of air forced through said tube into said chimney.

5. The combination, substantially as hereinbefore set forth, with a shelf for supporting a lamp, of a bellows, a tube leading from said bellows and normally held in a given position, and a cord for compressing said bellows and simultaneously causing said tube to extend above the chimney of said lamp, whereby said lamp may be extinguished.

6. The combination, substantially as hereinbefore set forth, with a shelf for supporting a lamp, of a bellows, a tube leading from said bellows above said shelf, the extremity of which tube is turned downward, a spring for normally holding said tube in a given position, and a cord for simultaneously causing the extremity of said tube to be moved into a position above the chimney of said lamp and simultaneously forcing a current of air from said bellows through said tube, whereby the lamp may be extinguished.

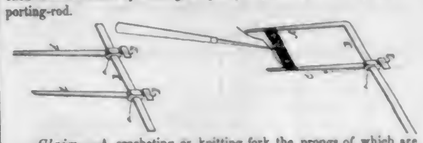
297,880. HOSE-COUPLING. GARRETT M. VAN RIPER and JAMES O. ST. CLAIR, Republic, Mich. Filed Oct. 9, 1883. (No model.)



Claim.—The combination, with the male and female sections A B of the coupling, of the elastic packing-ring C, the locking-pins *g* on the one section, the pivots *e* on the adjacent section, in like central longitudinal line with the coupling as the pins *g*, the handle-piece D, constructed with hooks *f* at its one end for engagement with said pins, and the links E, uniting said handle-piece with the pivots *e*, for operation in connection with the elastic ring C, substantially as shown and described.

297,881. CROCHETING-FORK. JOSEPHINE VETTER, Mount Vernon, N. Y. Filed Oct. 10, 1883. (No model.)

Brief.—This invention obviates the necessity of having a different-sized fork in the manufacture of fork-work—such as insertions, &c.—for each width of fabric by making the prongs adjustable on the leg or supporting-rod.



Claim.—A crocheting or knitting fork the prongs of which are adjustable, so that the distance between them may be changed as desired, substantially as and for the purpose described.

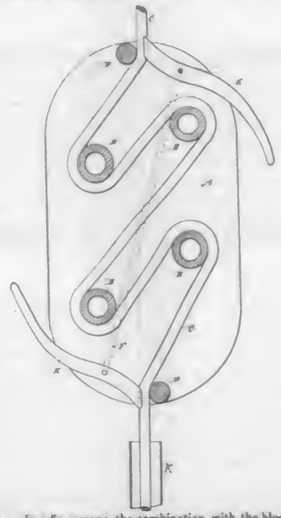
297,882. PITMAN-COUPLING FOR HARVESTERS. JOHN WAGGONER, New Hampton, Mo. Filed Feb. 15, 1884. (No model.)



Claim.—The combination, in a pitman-coupling for harvesters, of the sickle-bar head provided with the rounded or beveled ears or projections C F, the coupling pin or bolt, the pitman-rod screw-threaded at its inner end, and having an eye for the insertion of the bolt, the cup-shaped nut adapted to fit the rounded or beveled shoulders F and bear against the same, and the jam-nut whereby the cup is held in its adjusted position, substantially as and for the purpose shown and set forth.

297,883. FIRE-ESCAPE. DAVID WARE and CHARLES W. RICHMAN, Philadelphia, Pa. Filed Jan. 31, 1884. (No model.)

Brief.—The rope is passed over the friction-pins, and levers connected by a rod arranged obliquely to the frame bear against the rope at the point where it passes over the end friction-pins.



Claim.—In a fire-escape, the combination, with the block A, having the friction-pins B D, and rope C, of the levers E, arranged at opposite ends and on opposite sides of said ends of said block, said levers being connected by an oblique connecting-rod F, substantially as and for the purpose set forth.

297,884. LATHE-DOG. OLIVER D. WARFIELD, Chicopee Falls, Mass., assignor to Charles H. Wood, Providence, R. I., and Edward E. Holton, Chicopee, Mass. Filed July 16, 1883. (No model.)

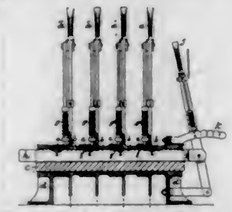
Claim.—In an improved lathe-dog, the combination of an adjusting-screw turned into one end of the dog, with its threaded end projecting into the eye or opening which receives the work, a movable shoe located in a socket on the other side of the eye, and a cam-lever pivoted in the shank to force said shoe to toward the adjusting-screw, substantially as described.

297,884.



297,885. INTERLOCKING-MACHINE FOR SIGNALS AND SWITCHES ON RAILROADS. SAMUEL WARREN, Battle Creek, Mich. Filed Oct. 15, 1883. (No model.)

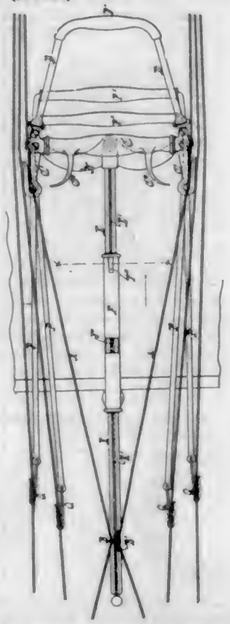
Brief.—The signal-levers rotate upon a grooved shaft which carries a notched sliding locking-bar, the notches of which correspond in width to the respective widths of the hubs upon the signal-levers. Consequently when the lock-bar is shifted to clear one lever the rest are locked.



Claim.—1. The combination of the signal-levers *a a' a'' a'''*, the grooved shaft *c*, and recessed lock-bar A, all substantially as set forth, and for the purpose specified.

2. The recessed lock-bar A, in combination with the hand-levers *a a' a'' a'''*, and immediately engaging or disengaging the same, and operated solely by its own lever, and arranged either outside or inside the hub *b* of the levers, all substantially as described.

297,886. REIN-CONTROLLER. ALBIN WARTH, Stapleton, N. Y. Filed Oct. 10, 1883. (No model.)



Claim.—1. The combination, with a pair of reins for driving horses, of a loop attached to one such rein at a point approximately opposite the horse's tail, to receive the other rein, substantially as and for the purpose described.

2. A rein-controller consisting of a handle having its opposite ends provided with jointed hooks for receiving the reins, substantially as described.

3. A rein-controller consisting of a handle having its opposite ends provided with jointed hooks, in combination with reins having a series of holes to engage the hooks, substantially as and for the purpose described.

4. A rein-controller consisting of a handle having its opposite ends provided with jointed hooks for receiving the reins, in combination with a central pivotal support for the handle, substantially as and for the purpose described.

5. A rein-controller consisting of a handle having its opposite ends provided with means for holding reins, and having branches on opposite sides of its center projecting in curved lines forwardly and laterally therefrom, substantially as and for the purpose described.

6. The combination of a handle having its opposite ends provided with means for holding reins, and having branches on opposite sides of its center and a pivotal support for the handle, substantially as and for the purpose described.

7. The combination of a handle having its opposite ends provided with means for holding reins, a pivotal support for the handle, and a handle-strap connected to the opposite ends of the handle to project rearwardly therefrom, substantially as and for the purpose described.

8. The combination of a handle having its opposite ends provided with means for holding reins, a handle-carrier, and a pivotal support, substantially as and for the purpose described.

9. The combination of a handle-carrier, a pivotal support, and an adjustable stop for regulating the position of the handle-carrier when in use, substantially as and for the purpose described.

10. The combination of a rein-holder, a sliding rod supporting the rein-holder, a guide for the sliding rod, and a friction-spring arranged on the rod-guide to act on the rod, substantially as and for the purpose described.

11. The combination of a rein-holder, a sliding rod supporting the rein-holder, a guide for the sliding rod, and a pivotal support for the rod-guide, arranged to permit it, together with the rod, to assume a horizontal or vertical position, substantially as and for the purpose described.

12. The combination of a rein-holder, a sliding rod supporting the rein-holder, a guide for the sliding rod, a vertical spindle having a pivotal connection with the rod-guide, a socket forming an axial bearing for the spindle, and a friction-spring arranged on the socket to act on the spindle, substantially as and for the purpose described.

13. The combination of a rein-holder, a sliding rod supporting the rein-holder, a guide for the sliding rod, a vertical spindle having a pivotal connection with the rod-guide, a socket forming an axial bearing for the spindle, substantially as and for the purpose described.

14. The combination of a rein-holder, a sliding rod supporting the rein-holder, a guide for the sliding rod, a pivotal support for the rod-guide, and an adjustable stop for sustaining the rod-guide, together with the rod, in the desired position when in use, substantially as and for the purpose described.

15. The combination of a rein-holder, a sliding rod supporting the rein-holder at its rear end, a guide for the sliding rod, a spindle united to the forward end of the rod-guide by a horizontal pivot, and a set-screw arranged in a projection of the rod-guide to impinge against the spindle for sustaining the rod-guide and rod in a horizontal or other position, substantially as described.

16. The combination, with a handle-carrier, of the cross-head having an eye or eyes at the opposite ends, and a handle strap or straps having the ends drawn forwardly through the eye or eyes of the cross-head, and provided with means for holding reins, substantially as and for the purpose described.

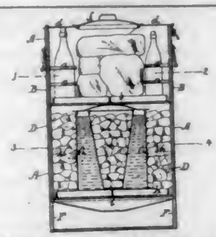
17. The combination, with the sliding rod E, of the cross-head on such rod, having an eye or eyes at the opposite ends, and a handle strap or straps having the ends drawn forwardly through the eye or eyes of the cross-head, and provided with means for holding reins, substantially as and for the purpose described.

18. The combination, with the sliding rod E, of the cross-head on such rod, having an eye or eyes at the opposite ends, a handle having its opposite ends provided with means for holding reins, a central pivotal support on the cross-head for such handle, and a handle strap or straps having the ends drawn forwardly through the eye or eyes of the cross-head, and provided with means for holding reins, substantially as and for the purpose described.

297,887. COMBINED CREAM-FREEZER AND REFRIGERATOR. ABRAHAM WATSON, Georgetown, Demerara, British Guiana. Filed Aug. 13, 1883. (No model.)

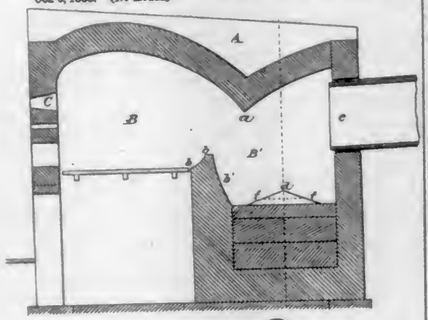
Claim.—1. The combination of the outer casing, A, with the cream-vessel G, having a central ice-receptacle, I, and the refrigerating-vessel B, comprising a central ice-chamber and surrounding bottle-racks, and located above the vessel G, as set forth.

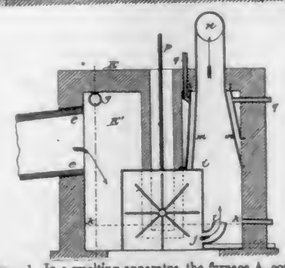
297,887.



2. The combination of the vessel B, having a bottle-rack, *a*, and central ice-chamber, with the cover comprising the outer locked rim, *d*, and central detachable lid, *f*, as set forth.

297,888. FURNACE FOR SMELTING ORES. JOHN W. WEBB, Denver, Colo., assignor of one-half to Charles F. Burrell, same place. Filed Oct. 6, 1883. (No model.)

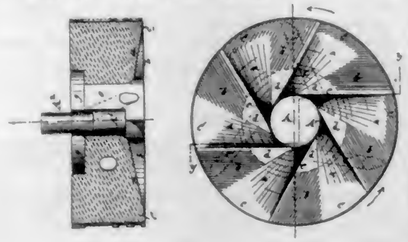




Claim.—1. In a smelting apparatus, the furnace A, comprising the combustion and melting chambers, and having the tunneled conical or prismatic rise *d* located on the sump of the latter, substantially as and for the purpose described.

2. In an apparatus for continuous smelting and condensing, comprising a smelting-furnace and a condenser, the combination, in the latter, of a water-pipe, *g*, the rotary section paddle-wheel *j*, box *i*, pipe *l*, and hood *m m*, substantially as described.

297,889. MILLSTONE. JOHANN CARL WEDEKIND, Nordhausen, Prussia, Germany. Filed Nov. 8, 1883. (No model.)



Claim.—1. A millstone provided with tangential lands and intermediate tangential inclined ventilating-sections, the latter increasing in width and decreasing in depth from the eye toward the skirt, and with vertical air-channels extending from the inner ends of said ventilating-sections to the upper face of the stone, and with a concentric depression in the upper face of the stone, substantially as described.

2. A millstone provided with tangential lands, intermediate tangential inclined ventilating-sections, the latter increasing in width and decreasing in depth from the eye toward the skirt, vertical air-channels extending from the inner ends of said ventilating-sections to the upper face of the stone, and with inclined air-channels extending from the upper face of the stone to the lower ends of said vertical air-channels, substantially as described.

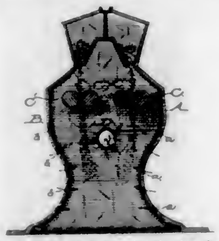
3. A millstone provided with tangential lands, intermediate tangential inclined ventilating-sections, the latter increasing in width and decreasing in depth from the eye toward the skirt, and with vertical air-channels and inclined air-channels extending from the upper face of the stone to the lower ends of said vertical air-channels, said inclined channels being provided with hoods at their upper ends, substantially as described.

4. A millstone provided with tangential lands and intermediate tangential inclined ventilating-sections, the latter increasing in width and decreasing in depth from the eye toward the skirt, the furrows of said lands being parallel to the succeeding ventilating-sections, and the inner ends thereof opening toward the ventilating-sections in advance of the lands, substantially as described.

5. A millstone provided with tangential lands, intermediate tangential inclined ventilating-sections, the latter increasing in width and decreasing in depth from the eye toward the skirt, and with concentric grinding-surfaces at the outer ends of the ventilating-sections, the furrows of said lands being parallel to the succeeding ventilating-sections, and the inner ends thereof opening toward the ventilating-sections in advance of the lands, substantially as described.

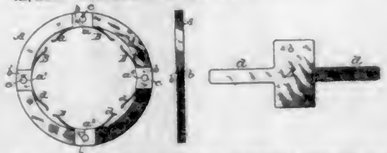
6. A millstone provided on its face with inclined ventilating-sections *a*, having concentric grinding-surfaces *c*, alternating lands *b b*, having smooth inner ends, *d d*, vertical channels *e* at the inner ends of the ventilating-channels, and diagonally-inclined air-channels *d'*, extending from the points near the lower ends of the supply-channels *e e* to the top of the stone, and having hoods *f f* at the top of the stone, substantially as described.

297,890. ROLLER-MILL. ROSIA W. WELCH, Baltimore, Md., assignor of one-half to Wm. CAMMACK, Washington, D. C. Filed Feb. 18, 1884. (No model.)



Claim.—The rolls C C' and their casing, having the lower portions of the sides perforated at *b b*, in combination with the central interior tube, D, arranged below the rolls, and provided with slots *d d*, the lower central slot rendering said tube self-clearing, and the exhaust-pipe E, all constructed, arranged, and operated as set forth.

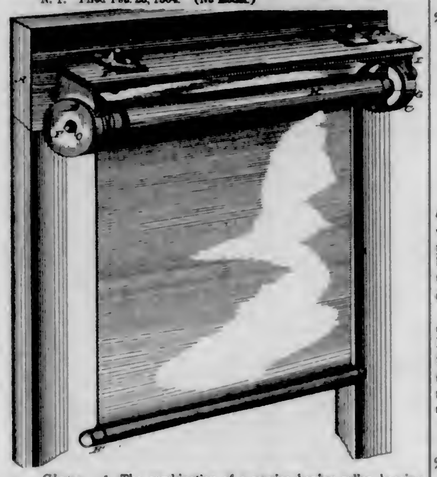
297,891. METALLIC RING PACKING. JEROME WHEELOCK, Worcester, Mass. Filed Jan. 21, 1884. (No model.)



Claim.—1. The combination, with an expansible or contractile packing-ring, of springs having one or more integral lugs projecting from the edge of the spring and at right angles therefrom, substantially as described, whereby said springs may be secured to one or both sides of said rings by transverse rivets through the lug or lugs of the spring and the ring, as set forth.

2. The combination, with expansible or contractile metallic packing-rings, of springs having integral lugs secured to one or both sides of said rings and overlapping or breaking the joints thereof, substantially as described.

297,892. WINDOW-SHADE. EDWIN V. WHITAKER, Gloversville, N. Y. Filed Feb. 28, 1884. (No model.)



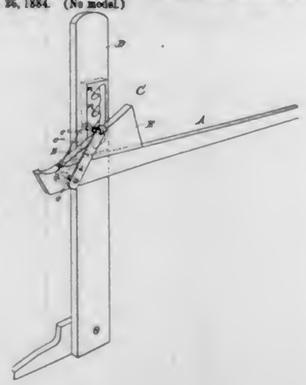
Claim.—1. The combination of a cornice having roller-bearing brackets, with brackets having projecting clamping-lips adapted to clamp the cornice, and having set-screws passing through the lips bearing against the cornice, as and for the purpose shown and set forth.

2. The combination, in a window-shade, of the roller, with a bracket having a longitudinally-slotted base-plate and screws passing through the slots, the said slots sliding upon the said screws, as and for the purpose shown and set forth.

3. The combination, in a window-shade, of the roller, with a bracket having the end of the roller pivoted in it, having slots in its base-plate extending from its inner edge, and sliding with the said slots upon screws, as and for the purpose shown and set forth.

4. In a window-shade, the combination of a bracket forming a flat cylindrical casing or barrel covered by a recessed plate, a helical spring secured to the inner side of the barrel and to a shaft turning in the barrel, a shaft turning in the barrel, having the inner end reduced and provided with a ratchet-wheel, a cog-wheel turning upon the shaft and having a pawl engaging the ratchet-wheel, a cog-wheel having a pinion meshing with the aforesaid cog-wheel, a sleeve having a pinion upon its inner end, turning upon the reduced inner end of the shaft, and having its inner end polygonous, and a shade-roller pivoted in a bracket at its other end, and having a recess or perforation in its end adapted to receive the end of the sleeve, as and for the purpose shown and set forth.

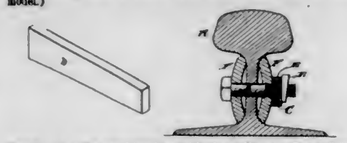
297,893. LIFTING-JACK. ADDISON WHITE, Lynnville, Iowa. Filed Feb. 26, 1884. (No model.)



Claim.—1. The combination of the stirrup B with the slotted and notched support D and the lateral lever A, substantially as specified.

2. In a lifting-jack, the combination of the standard D, stirrup B, and lever A, working in the stirrup against the side of the standard, with the wedge E, substantially as and for the purpose set forth.

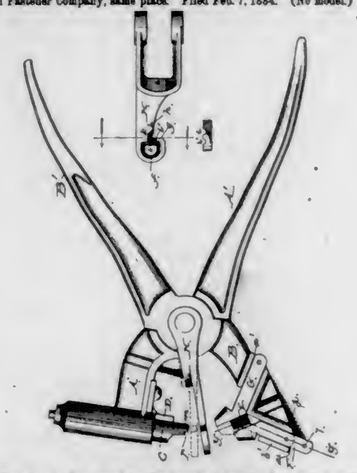
297,894. NUT-LOCK. ARETUS A. WILDER, Detroit, Mich., assignor of one-half to Corydon B. Palmer, same place. Filed Apr. 25, 1882. (No model.)



Claim.—1. The combination, with the ordinary railway fish-plates, of a screw-bolt having a slot through its threaded portion, means for preventing the bolt from turning on its axis, a nut fitting upon said threaded portion, and a wedge-shaped key fitting vertically within the slot in the bolt, with its wider end uppermost, whereby it is adapted to slide and take up the space vacated by the nut in tightening the same on the bolt, substantially as described.

2. The combination, with the ordinary railway fish-plates, of a screw-bolt flattened or squared under its head to enter a corresponding hole in one of the fish-plates, and having a slot formed through its threaded portion, a nut to fit upon said threaded portion, and a wedge-shaped key to fit vertically within said slot, with its outer end uppermost, whereby it is adapted to slide to take up the space vacated by the nut in tightening the same on the bolt, substantially as described.

297,895. APPARATUS FOR SECURING BUTTONS TO FABRICS. ALEXANDER G. WILKINS, Meadville, Pa., assignor to the Wilkins Shoe-Button Fastener Company, same place. Filed Feb. 7, 1884. (No model.)



Claim.—1. In a machine for securing button-fasteners, a spring holding and centering device, in combination with a detent-catch to hold the jaws apart while a fastener is being inserted.

2. In a machine for securing button-fasteners, the jaw B, provided with diverging ways in which slide jaws F G, and the hole *b* of greater pitch than said ways, in combination with the binding rod or wire *b''*, secured to jaw F, all constructed, arranged, and operated as set forth.

3. In a machine for securing button-fasteners, the spring-jaws F G, provided on their faces with the vertical grooves *e e'*, of a combined depth less than the diameter of the fastener-shank I, for the purpose described.

4. In a machine for securing button-fasteners, the spring button-holding plate H, provided with the curved recess *k*, and having its bottom and side conforming to the dimension and shape of a portion of the button-eye, as and for the purpose described.

5. In a machine for securing button-fasteners, the spring-bolt C, provided on its lower end with a stop integral with said bolt for the button-eye to bring up against, as set forth.

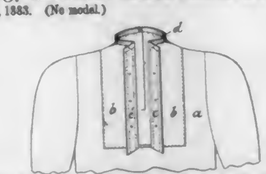
6. In a machine for securing button-fasteners, the bolt C, provided with a projection, *m*, having its inner surface, *n*, curved to conform to

the curvature of a portion of the button-eye, substantially as described.

7. In a machine for securing button-fasteners, the bolt C, provided with the flat face *p*, and the projection *m*, having the inner curved face, *n*, in combination with the button-holding plate H, having the depression *f*, depressions *i i'*, and curved recess *k*, for clamping and securing the button-eye, to act as a mandrel to resist the fastener-shank during the clinching, as described.

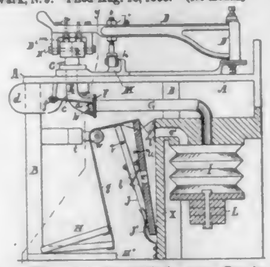
8. In a machine for securing button-fasteners, the spring-bolt C, having the flat face *p*, and provided with the slot *5*, opening through its end, and the stop or projection *m*, in combination with plate H, cut away at *h*, and having the depressions *i i'*, and the curved recess *k*, whereby the button is readily removed from the fastening-point, all constructed, arranged, and operated as set forth.

297,896. SHIRT-BOSOM. FRANCIS S. WILLIAMS, Boston, Mass. Filed Nov. 17, 1883. (No model.)



Claim.—A shirt-bosom made with two single front plaits capable of being lapped one over the other, and provided with corresponding holes for the insertion of studs, each plait being free at the lower end, and both to be secured to the neckband by a single stud in front, all as shown and described.

297,897. CIGAR-WRAPPER-CUTTING MACHINE. JOHN R. WILLIAMS, Newark, N. J. Filed Aug. 18, 1883. (No model.)

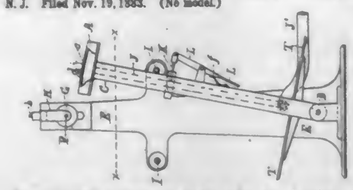


Claim.—1. The combination, with the cutter C and arm D, carrying a compound presser-roller, R, of an adjustable guide-roll, A, attached to the arm and fitted to a rail or guide, substantially as and for the purpose set forth.

2. The combination, with the carrying-arm D, of the compound presser-roller R, having its parts arranged to rise and fall independently, as and for the purpose set forth.

3. The combination, with the arm D and the compound roller R, fitted to rise and fall, as described, of the elastic pressers applied to the upper side of the roller, substantially as herein shown and described.

297,898. CIGAR-WRAPPER CUTTER. JOHN R. WILLIAMS, Newark, N. J. Filed Nov. 19, 1883. (No model.)

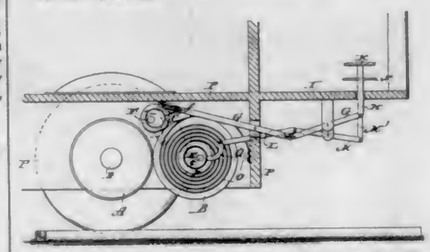


Claim.—1. The combination of the roller, the vibrating arm, the blank-cutter mounted on said arm, a perforated platen within the cutter, and a pipe or tube connecting the exhausting mechanism with the cutter and adapted to move with said cutter, as specified.

2. The combination, with the roller G and the cutter A, of the hollow vibrating arm C, provided with gate or valve K, substantially as described.

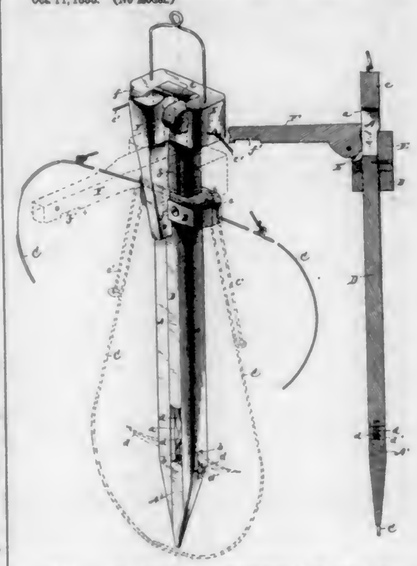
3. The combination, with the roller G and convex cutter A, of the upright arm C, pivoted at the bottom, as described, and the treadles T T, affixed to the arm at opposite sides, substantially as and for the purpose set forth.

297,899. CAR-STARTER. JOHN WILSON, Chicago, Ill. Filed Dec. 28, 1883. (No model.)



Claim.—The combination, in a car-starter, of the drum A on the car-axle, spring-drum B on the eccentric-shaft *e*, and the intermediate drum, C, on the eccentric-shaft F, the said eccentric-shafts *e* and F being respectively connected with foot-treadles K N, arranged to be manipulated by the driver, substantially as described.

297,900. HAY-FORK. SULLIVAN S. WILSON, Litchfield, Mich. Filed Oct. 11, 1883. (No model.)



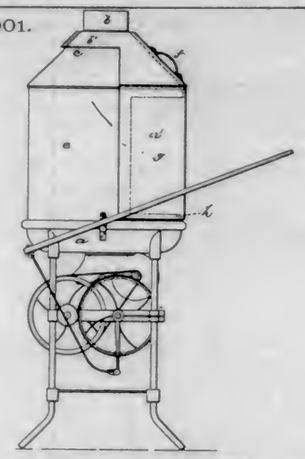
Claim.—1. In a hay-fork, the combination of the sheath provided with the block B, the sliding bar carried within said sheath, the prongs *d d*, pivoted to the lower end of said sliding bar, the sliding head-block E, rigidly attached to said sliding bar, the cam-lever F, pivoted on said head-block, the side arms, C C, pivoted to the blocks B, and the connecting-cords *d' d'*, substantially as and for the purpose set forth.

2. In a hay-fork, the bars A A, the block B, secured to said bars, the sliding bar carrying prongs, the block E, rigidly attached to said sliding bar, the cam-lever pivoted on said block and provided with a notch at its outer end, the arms C C, pivoted to the block B, and cords *d' d'*, connecting said arms and said block E, the parts being arranged and combined substantially as and for the purpose set forth.

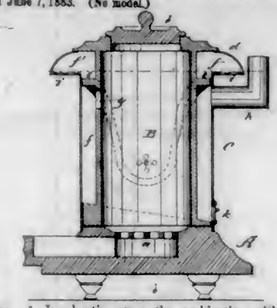
297,901. HOOD FOR FORGES. JAMES F. WINCHELL, Springfield Ohio. Filed Sept. 7, 1883. (No model.)

Claim.—In a forge, the combination, with a hood having a door-space and a conical top, of a revolving door supported on the hood-top by a cap-ring, substantially as specified.

297,901.



297,902. HEATING-STOVE. WILLIAM ARMSTEAD WINFREE, Elizabethton, Tenn., assignor of one-half to Phil F. Cogan, Jersey City, N. J. Filed June 7, 1883. (No model.)



Claim.—1. In a heating-stove, the combination, with the outer cylinder, C, provided with the escape-flue A and cold-air entrance *c*, of the inner concentric cylinder, B, having the escape-opening *g* diametrically opposite the flue A, and the flange *e*, extending from above the openings A *g* downward on each side and below the opening *c*, dividing the annular space between the cylinders into a lower smoke-chamber and an upper hot-air chamber, the latter of which is provided with escape-openings, substantially as herein shown and described.

2. The combination, in a heating-stove, of an inner and an outer cylinder, and the inclined flange or partition dividing the space between the two cylinders into a smoke-chamber and a hot-air chamber, the latter being provided with openings for the escape of the heated air, substantially as described.

3. In a heating-stove, the outer cylinder, C, formed with the enlarged top portion, *d*, in combination with the combustion-chamber B, provided with the opening *g*, and the flange *e*, dividing the space between the two cylinders into chambers *f f'*, substantially as herein shown and described.

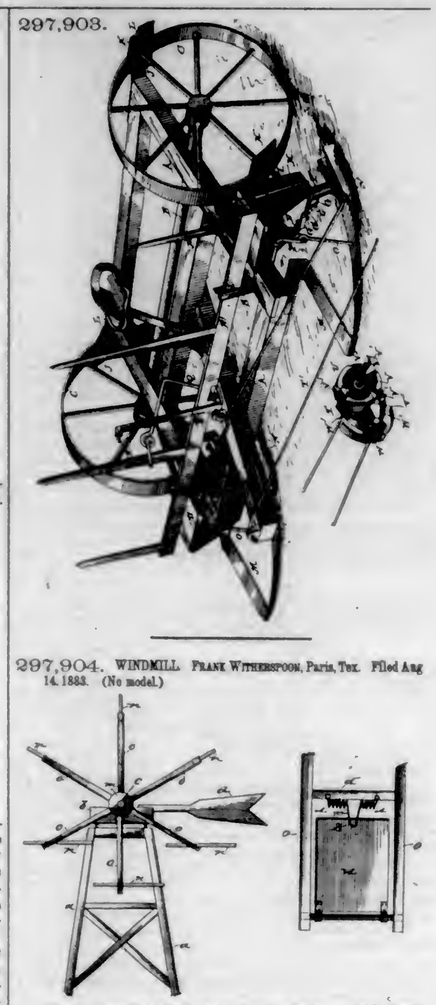
297,903. CORN-PLANTER. FERDINAND WISKOCIL, Prairie du Sac, Wis. Filed Dec. 10, 1883. (No model.)

Claim.—1. The combination of the frame A, seed-boxes D, having apertures D', slides E, having adjustable plates E' and set-screws E'', springs H, levers I, adjustable chutes F, wheels C, having cams J and flanges K, and openers N, having longitudinal slots N', and connected to the front ends of the frame A by means of adjustable springs M, constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

2. As an improvement in corn-planters, a marker consisting of the frame T', wheel V, having teeth V', and having its periphery notched or recessed, as at V'', and catch W, constructed to operate substantially in the manner and for the purpose shown and described.

3. The combination, with the frame A, of the hinged frame T', wheel V, having teeth V', and having its periphery notched or recessed, as at V'', and catch W, constructed as described.

297,903.



297,904. WINDMILL. FRANK WITHERSPOON, Paris, Tex. Filed Aug 14, 1883. (No model.)

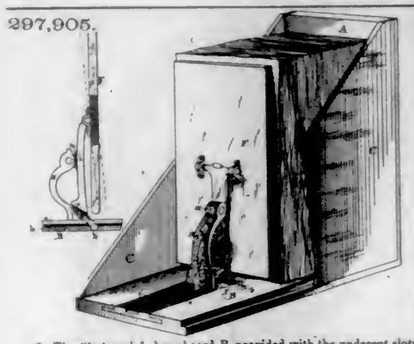
Claim.—In a wind-wheel, the combination of the turn-table, crank-shaft *e*, carrying the pinion *h*, the shaft *c*, having the gear *f*, the wheel having radial arms extending from the same hub, with beams at right angles from their outer ends, to which the sails are attached, and the said radial arms and bar *p*, having detents for controlling the sails, substantially as specified.

297,905. PAPER-FILE. EDMUND W. WOODRUFF, Washington, D. C. Filed Mar. 28, 1884. (No model.)

Claim.—1. The head and base boards of a paper-file, the file-board, and a supporter for the same, the lower end whereof has a sliding connection with the base-board, combined with a brace hinged at its upper end to the file-board supporter, the lower free end of said brace bearing on the base-board, and adapted to clamp and lock the file-board when pushed to a point on the base-board nearly in line with the axis of the hinge, as set forth.

2. The head-board A, base-board B, and the file-board F, with its supporter *i*, having at its lower end a sliding pivotal connection with said base-board, combined with a brace, H, hinged at its upper end to said file-board supporter, the free end of said brace bearing on the base-board, and adapted to clamp and lock the file-board when pushed to a point on the base-board nearly in line with the axis of the hinge, as set forth.

297,905.



3. The file-board A, base-board B, provided with the undercut slots or grooves, and the file-board F, combined with the plate *i*, provided at its lower end with the lugs K, and the brace H, hinged to the upper end of said plate *i*, whereby the clamping strains are not transmitted to nor through the file-board F, as set forth.

4. The head-board A, base-board B, and file-board F, combined with the plate *i*, having a sliding pivotal connection with said base-board, and provided with the shoulder *p*, and the hinged brace H, whereby when the file-board is tilted backward it is supported in its angular position by said shoulder independent of said brace, as set forth.

5. The head-board A and base-board B, combined with the supporter *i*, having a sliding pivotal connection with said base-board, the brace H, hinged to said supporter, and the file-board F, also hinged to said supporter at about the middle of length of said file-board.

297,906. PLOW. CHARLES ANDERSON, South Bend, Ind., assignor to the South Bend Iron Works, same place. Filed Feb. 14, 1884. (No model.)



Claim.—1. The combination, with a plow-standard provided with a dovetail recess in its nose portion, of a sectional landside, the front section being provided with a dovetail projection that fits within the correspondingly-shaped recess in the nose of the standard, substantially as set forth.

2. The combination, with a plow-standard having an opening in its nose portion adapted to receive a reversible plow-point, of a solid share having a slip-nose shank on its under side constructed to fit into said opening in the nose of the standard, substantially as set forth.

3. The combination, with a plow-standard and mold-board, said standard constructed to allow of a reversible wing and point being applied thereto, of a solid share provided with a projection on its under side adapted to fit into the opening in the nose portion of the standard, substantially as set forth.

4. The combination, with the standard and mold-board, of the solid share and wedge-shaped plate secured between the standard and share, substantially as set forth.

5. The combination, with the mold-board and standard, of the solid share and the wedge-shaped plate, the latter being provided with two perforated arms at its rear ends, and bolts for securing the arms to the share and standard, substantially as set forth.

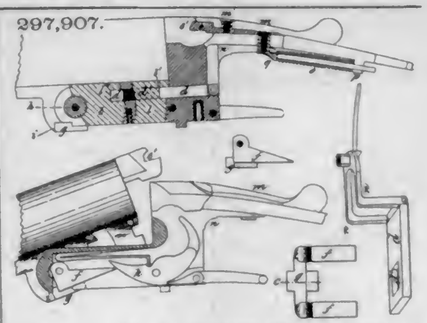
6. The combination, with the mold-board brace, of a handle-brace made in a single piece and detachably secured to the mold-board brace, said handle-brace being constructed with flanged arms to which the ends of the handles are bolted, substantially as set forth.

7. The combination, with the handle-brace, to which the ends of the handles are secured, of a two-armed brace centrally secured to the mold-board, and provided at one end with a hole for the passage of a bolt to secure the handle thereto, the opposite end of the arm being provided with a teat or projection that engages the handle, substantially as set forth.

297,907. BREECH-LOADING FIRE-ARM. WILLIAM ANSON and JOHN DEELEY, Birmingham, County of Warwick, England. Filed Nov. 7, 1883. (No model.) Patented in England Apr. 11, 1883, No. 1,833.

Claim.—1. In a breech-loading fire-arm, the combination of the

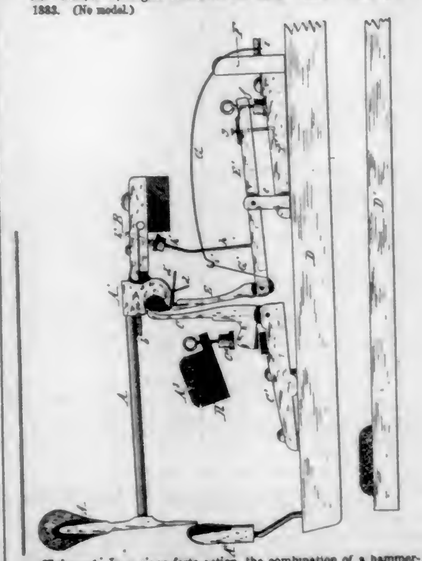
297,907.



drop-barrel having the lug *l*, provided with front and rear recesses, *l' l''*, and the recess *d'* at the upper portion of the breech end, the lower bolt, *d*, having the slot *d''* and angle-piece *n*, the upper bolt, *a*, the lever *m*, swinging on a fixed pivot, m^2, at the upper side of the breech, a pivot, *m'*, connecting the upper bolt with the lever at one side of its pivot m^2, and a connection between the rear end of the upper bolt and the rear end of the angle-piece *n* on the lower bolt, substantially as described.

2. In a breech-loading fire-arm, the combination of the drop-barrel having on its under side the projection *i*, the separated lifters *f f*, rigidly connected by the transverse bridge-piece or bar *g*, a single pivot-pin, on which both the lifters are journaled above their connecting-bar, said pivot-pin being concentric with the joint of the barrel and breech, and the pivoted hammers *k*, the said projection on the barrel, when the latter is dropped, acting on the bridge-piece or bar to simultaneously swing the connected lifters and cock the hammers, substantially as described.

297,908. REPETITION-ACTION FOR PIANOS. FRANCIS L. BERKER, New York, N. Y., assignor of one-fourth to Gustav Becker. Filed May 7 1883. (No model.)



Claim.—1. In a piano-forte action, the combination of a hammer-butt having two shoulders, one above the other, a lifting-jack, a balancing-jack, a hitching device by which the balancing-jack is retained on the lower shoulder of the hammer-butt, and a balancing-spring applied to the balancing-jack so as to impart a constant backward tension thereon, substantially as set forth.

2. In a piano-forte action, the combination of a hammer-butt having two shoulders, one above the other, a lifting-jack, a balancing-jack, a hitching device by which the balancing-jack is retained on the lower shoulder of the hammer-butt, a balancing-spring applied to the balancing-jack, and a fulcrumed balancing-lever to which the balancing-jack

is pivoted, substantially as specified.

3. In a piano-forte action, the combination of a hammer-butt having two shoulders, one above the other, a lifting-jack, a spring-actuated balancing-jack, a hitching device by which the balancing-jack is retained on the lower shoulder of the hammer-butt, said hitching device consisting of a hitch-pin applied to the hammer-butt and of a slitted hitching-strap applied to the balancing-jack, substantially as set forth.

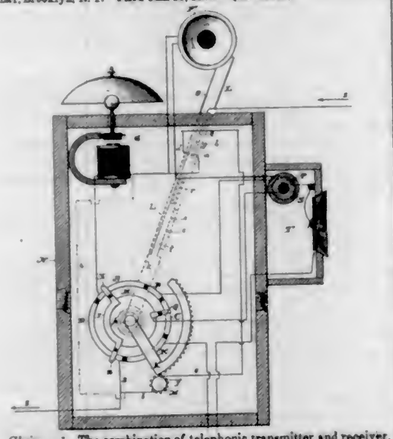
4. In a piano-forte action, the combination of the hammer-butt having two shoulders, one above the other, a lifting-jack acting upon the upper shoulder, a spring-actuated balancing-jack hitched to the hammer-butt below the lower shoulder, a fulcrumed balancing-lever, and a balancing-spring that is applied to a fixed supporting-post, and connected by a looped cord that extends around the lower end of the balancing-jack to a point above the pivot of the same, so as to impart a backward motion to the balancing-jack, substantially as and for the purpose set forth.

5. In a piano-forte action, the combination of a hammer-butt having two shoulders, one above the other, a lifting-jack, a spring-actuated balancing-jack hitched thereto, a fulcrumed balancing-lever, and a balancing-spring which is applied by a tension-regulating screw to a supporting-post of the key-lever, and connected to the balancing-jack by a looped cord which extends around the lower end of the same to a point above its pivot, substantially as described.

6. In a piano-action, the combination of the hammer-butt A, having two shoulders, *a a'*, a lifting-jack, C, a balancing-jack, E, hitched to the hammer-butt, a fulcrumed lever, E', having check-hook *g* and regulating-button *f*, a balancing-spring, G, applied by a tension-screw, *i*, to an upright post, F', and by a looped cord, G', to the balancing-jack, the balancing-spring being supported in the grooved upper end of the post F', and provided with a hook-shaped end for attaching the connecting-cord, substantially as specified.

7. In a piano-forte action, the combination of a hammer-butt, A, having two shoulders, *a a'*, one above the other, a lifting-jack, C, a balancing-jack, E, hitched to the hammer-butt, a fulcrumed balancing-lever, E', a balancing-spring, G, applied to a connecting-post, F', and by a looped cord, G', to the balancing-jack, the balancing-lever E' being provided with a check-wire and button, *h h'*, that abut against a block-screw, h^2, on the hammer-butt arm, substantially as set forth.

297,909. TELEPHONE-STATION APPARATUS. EDWARD M. BENTLEY, Brooklyn, N. Y. Filed Jan. 10, 1884. (No model.)



Claim.—1. The combination of telephonic transmitter and receiver, one being fixed to a support and movable relatively to the other, a signaling-generator, and means for operating the same, said means being actuated by the relative approach or recession of said transmitter and receiver to or from their adjacent operative position.

2. The combination of telephonic transmitter and receiver, one being fixed to a support and movable relatively to the other, a signaling-generator, means for operating the same, said means being actuated by the relative approach or recession of said transmitter and receiver to or from their adjacent operative position, and switching devices, also operated by said movements of the telephone apparatus.

3. The combination of a telephone-support, a telephonic receiver fixed thereto with electric connections, a signaling-generator, and mechanism driving said generator, and actuated by the movement of said support.

4. The combination of a lever-arm, a telephone supported thereby and fixed thereto, and a toothed sector on the axis of said lever-arm gearing into a pinion on the shaft of a magneto-generator.

5. The combination of a telephone, a movable support attached thereto, a normally predominating retracting device for said support, a signaling-generator, and means for actuating said generator by the movement of said support.

6. The combination of a lever-arm, a telephone fixed thereto and supported thereby, a signaling-generator operated by said arm, and a sustaining-retractor for said arm, overcoming the weight of the telephone.

7. The combination of a call-bell and telephonic apparatus, a signaling-generator, an operating device for said generator to which the telephone-receiver is attached, and a switch actuated by said device, for including the telephone apparatus in the main line.

8. The combination of a lever-arm, a receiving-telephone fixed thereto, a signaling-generator, and means for operating said generator by the movement of said arm.

9. The combination of a telephone-support, a telephone carried thereby, electric conductors on said support, and an independently-operated switch also on said support, for changing the circuit formed by said conductors.

10. The combination of a telephone-support, a telephone carried thereby, circuit-connections therefor, an electric generator, and a switch on said support, controlling the circuit of said generator.

11. The combination of a telephone call-box, calling apparatus inclosed therein, a swinging door for the same, and a separately-inclosed transmitting-telephone on the said door.

12. The combination, with a transmitting-telephone, of an adjacent receiving-telephone, a swinging supporting-arm therefor having freedom of vertical and lateral movement, and switching devices actuated by the movement of said arm, for including said telephone in the main line.

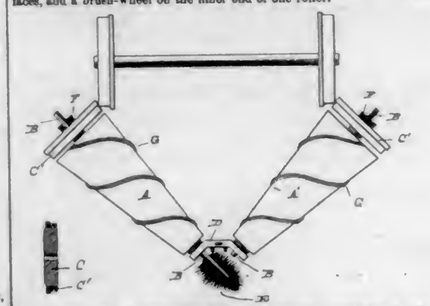
13. The combination, with a transmitting-telephone, of a receiving-telephone and a support therefor adapted to maintain it in a position for conversation adjacent to the transmitting-telephone, said receiving telephone having also freedom of lateral movement relatively to the transmitting-telephone.

14. The combination of a lever-arm, a receiving-telephone fixed thereto, a signaling-generator, means for including said generator in circuit without the telephone, and means for operating said generator by the movement of said arm.

15. The combination of a telephone fixed to a movable support, a generator actuated by the movement of said support, an induction-coil and local battery, and means for closing the circuit of said local battery by the movement of said support.

297,910. TRACK-CLEARER. EPHRAIM B. BISHOP, San Francisco, Cal., assignor of one-half to Elijah H. Gadsby, same place, and Charles R. Allen, Oakland, Cal. Filed Nov. 23, 1883. (No model.)

Brief.—Rubber-faced wheels on the outer ends of the conical rollers operate the same by contact with the car-wheels. The rollers are provided with spirally-arranged brushes or rubber bands upon their surfaces, and a brush-wheel on the inner end of one roller.



Claim.—1. A track-clearer for railway-cars, consisting of two conical rollers hung from the car-floor in suitable journal-boxes, and operated by the frictional contact of the car-wheels with rubber-faced wheels upon the spindles of the rollers, substantially as shown and described.

2. In a track-clearer for railroad-cars, the conical rollers A A', suitably journaled beneath the body of the car, and having spindles B B, and rubber-faced friction-wheels C C, constructed, arranged, and operating substantially as shown and for the purpose set forth.

3. In a track-clearer for railroad-cars, the conical rollers A A', provided with spirally-arranged brushes or raised rubber bands G G, and brush-wheel E, substantially as shown, for the purpose set forth.

297,911. HAIR-CRIMPER. GILBERT H. BLAKESLEY, Bristol, Conn. Filed Oct. 17, 1883. (No model.)

297,911.

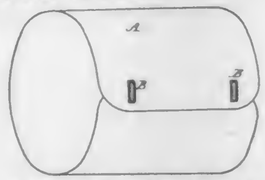


Claim.—1. A hair-crimper having a non-elastic metal strip inclosed within a paper body provided with a braided covering, substantially as set forth.

2. A hair-crimper having a non-elastic metal strip inclosed with a paper or other suitable body provided with a braided covering and with metallic clips, substantially as set forth.

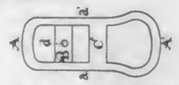
3. The combination, with the paper body, the central portion of which is considerably increased in size, and the flattened wire situated within the body, of a braided covering and metallic clips secured to the ends of the crimper, substantially as set forth.

297,912. CUFF. THOMAS R. BOONE, Rochester, N. Y., assignor, by mesne assignments, to Clara E. Boone, same place. Filed May 18, 1883. Renewed Feb. 29, 1884. (No model.)



Claim.—A cuff or collar having button-holes of rectangular form, worked around their edges, and having a clear space between the edges of substantially uniform width, sufficient to prevent the joining of the edges when the cuff or collar is starched and ironed, substantially as and for the purpose herein specified.

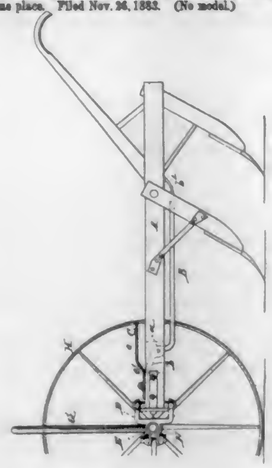
297,913. BREECHING-SUPPORTER. RUSSELL S. BOULTER, Saco, Me. Filed Dec. 8, 1883. (No model.)



Claim.—1. The rim A *a* A′ *a*′, having the part A depressed, as herein specified, in combination with the alternately-depressed cross-bars, as and for the purpose set forth.

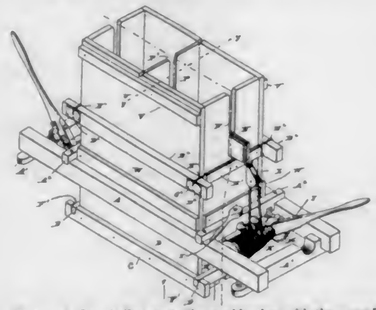
2. The rim A *a* A′ *a*′ and cross-bars B and C, depressed in manner and form as hereinbefore shown and described, and provided with stud *d*, the whole to form an improved article of manufacture.

297,914. DRAG-BAR FOR CULTIVATOR-BEAMS. BYRON C. BRADLEY, Chicago, Ill., assignor to the Furst & Bradley Manufacturing Company, same place. Filed Nov. 26, 1883. (No model.)



Claim.—The combination, with a beam, A, of the drag-bar B, having a projecting end, *b*, and a spring or spring-plate, C, having an opening, *c*, substantially as and for the purposes specified.

297,915. COTTON-PRESS. WILLIAM H. BURGESS, Rich Square, N. C. Filed Jan. 23, 1883. (No model.)



Claim.—1. In a baling-press, the combination, with the reversible side doors provided with projecting and recessed battens, of the slotted end boxing, adapted to be removably secured to the side doors and to the lint-box below the sills, for the purpose of holding the lint-box and press-box in perfect line with each other, substantially as described.

2. In a baling-press, the combination, with the sides of the baling-box, of the lint-box, provided with battens having recesses, and the end boxing having projecting battens which fit into said recesses, substantially as specified.

3. The combination of the longitudinal sills, the intermediate cross-sills, and the eccentric levers with the end boxing slotted top and bottom, and projecting battens provided with recesses, and the lint-chamber having battens and recesses adapted to receive the projecting battens, substantially as and for the purpose set forth.

4. The combination, in a baling-press, of the vertical movable partitions extending across the baling-chamber, and provided with vertical slats, and a cutter whereby a series of independent bales may be formed, substantially as specified.

5. The combination, in a baling-press, of a windlass having a cylindrical and cone-shaped portion provided with right and left hand guide-grooves for the purpose of guiding the ropes more evenly and regulating the speed and power of the press, substantially as set forth.

6. The combination, in a baling-press, of a lint-chamber located below the sills, with a pressing-box having doors above the sills for permitting the box to be conveniently filled and the bales to be arranged and handled, as set forth.

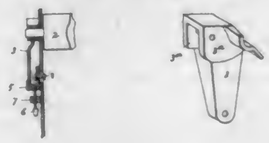
7. The combination, in a baling-press, of a lint-chamber below the sills, a pressing-chamber above the sills, and an upper and lower follower, and mechanism for operating the same, substantially as specified.

8. The combination, in a baling-press, of a movable partition with upper and lower followers, and mechanism for operating the same, whereby a number of bales may be pressed at the same time, substantially as specified.

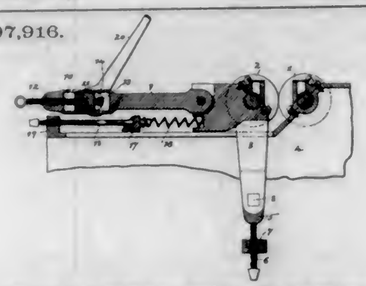
9. The combination, in a baling-press, of a lint-box below the sills, a pressing-box above the sills, and provided with reversible sides, and the removable end boxing slotted top and bottom, and having projecting battens which have bearings in the projecting battens on the side of the lint-box, and also provided with movable cross-ties for holding the sides firmly together, substantially as described.

10. The combination, in a baling-press, of the movable doors, provided with battens at their ends, and cross beams and ties, whereby the baling-box may be inverted, substantially as and for the purpose specified.

297,916. ADJUSTING AND LEVELING DEVICE FOR ROLLER-MILLS. JOHN M. CASE, Columbus, Ohio, assignor to the Case Manufacturing Company, same place. Filed Mar. 31, 1884. (No model.)



297,916.

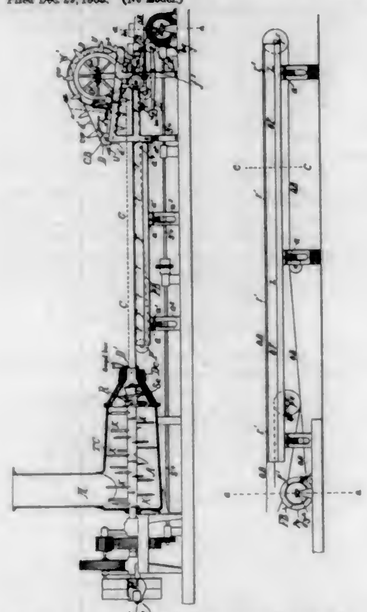


Claim.—1. In a leveling device for roller-mills, the combination, with arm 3, journal-box, and the casing having lug 7 and a guiding-slot in its flange, of block 5, clamp-bolt 8, and adjusting-screw 6, bearing in said lug, as and for the purpose set forth.

2. In a roller-mill, the links 9, hand-screws 12, followers 11, shaft 14, provided with eccentric ends 13, and lever 20, in combination with suitable means for holding the rolls in grinding position with a yielding pressure, as and for the purpose set forth.

3. The combination, with links 9, adjustable followers 11, and shaft 14, provided with eccentric ends 13, of the adjustable springs 16, as and for the purpose set forth.

297,917. BRICK-MACHINE. CYRUS CHAMBERS, Jr., Philadelphia, Pa. Filed Dec. 29, 1883. (No model.)



Claim.—1. The improvement in the means for fitting the socketed thrust-plate onto the end of the pugging-shaft, consisting in providing the latter with a shoulder and longitudinal indentations, and said thrust-plate with a corresponding bearing or shoulder, and internal lugs adapted to register with and enter said indentations in the shaft, the bearing-surfaces being trued up, all substantially as and for the purposes specified.

2. The screw-case lining adapted to be rotated to different positions with relation to the case and the expressing-screw, and provided with means, substantially as shown, for securing the same in such different positions, substantially as and for the purpose described.

3. The combination of the screw-case, the rotatable lining having the slots r^3, and the fastening-lugs r^3, substantially as and for the purpose specified.

4. The inlet-pipe having its lower extremity extended into the tempering-case beyond the inside periphery thereof, in proximity to the circle described by the subjacent knives, and of curvilinear form, substantially as shown, and for the purpose set forth.

5. In combination with the screw-case and the pivoted eye or lock bolt, the hinged die-case provided with the fulcrum-lugs L, arranged with relation to the eyebolt as and for the purpose specified.

6. In combination with clay expressing and molding devices, the propulsion-belt and cut-off mechanism, and frame F, with means, substantially as shown, for adjusting the said frame vertically, for the purpose specified.

7. The endless cut-off belt or carrier having plates D secured thereto, the guideways G, substantially as and for the purpose set forth.

8. The endless cut-off belt or carrier, the plates D, with their sides extending beyond the edges of said belt, the bows U, and cut-off wires mounted thereon, and the guideways G, all constructed, combined, and adapted to operate substantially as and for the purposes stated.

9. The clay-expressing mechanism, the propulsion-belt, the cut-off mechanism consisting of a series of wires mounted transversely upon an endless belt or carrier, arranged with relation to the propulsion-belt and the moving bar of clay thereon, substantially as shown, and adjustable frictional devices, substantially as shown, for conveying auxiliary motion to said propulsion-belt, all combined, constructed, and operating substantially as and for the purposes set forth.

10. The following elements in combination, to wit: clay-expressing devices, an endless belt running over pulleys journaled in a frame, and adapted to receive thereupon the bar of clay issuing from the die of the machine, a pulley, as P^w, on the shaft of the forward one of said pulleys, a positively-driven pulley, as P^x, an idler, as I R, on a pivoted adjustably-weighted lever, as L L′, a slack or friction belt running over said last-mentioned pulleys and in contact with said idler, together with mechanism for severing the moving bar of clay into bricks, consisting of a series of wires mounted on an endless belt or carrier, arranged with relation to the propulsion-belt and the bar of clay thereon, as shown, all constructed and adapted to operate and co-operate substantially in the manner and for the purposes set forth.

11. The combination of the propulsion-belt, the cut-off mechanism, the pulleys P^w and P^x, the idler I R, the friction-belt, and the weighted pivoted lever L L′, composed of two independent arms adjustable with relation to each other, substantially as and for the purpose described.

12. In combination with the endless wire cut-off belt or carrier, the plates D, when provided with the upturned flanges *d*′, substantially as and for the purposes specified.

13. In combination with the propulsion-belt and cut-off mechanism, the independent roller I, having the tapering form shown, and for the purpose specified.

14. In combination with the pulley P^w and the deflecting-wings H, the detachable scraper S, adjustably mounted on the latter, substantially as and for the purpose specified.

15. The combination, with the cut-off belt running over pulleys P^y and P^w, mounted in the frame F′, of the tightener-frame having the pulley P^t journaled therein, and the adjusting-screw r^t, working in said tightener-frame, and having its forward end abutting against a projection, T^w, located between said pulleys P^t and P^t, as and for the purpose specified.

16. In combination with the off-bearing belt and its frame and rollers, the cap-pieces r^2, in proximity to the edges of said belt and rollers, and having their top surfaces elevated slightly above the belt, as and for the purposes specified.

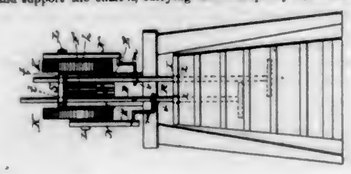
17. In combination with the off-bearing belt rollers, the cap-pieces r^2, covering the journals of the rollers, and extending over near to the ends of the latter and beyond the bearings thereof, as and for the purpose specified.

18. The combination, with the off-bearing-belt rollers, of the cap-pieces r^2 and corner-pieces r', the ends of the journals of said rollers being nearly in contact with said corner-pieces.

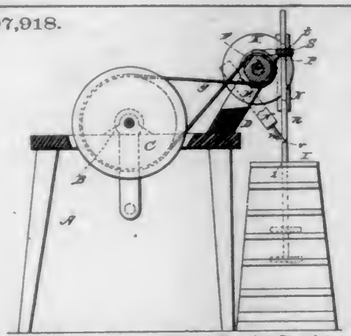
19. The combination, with the rollers r', of the longitudinally-adjustable bearing-strips z, cap-pieces r^2, and corner-pieces r', constructed and arranged as specified.

297,918. CHURN. JOHN JAMES CURD, Rockfield, Ky. Filed May 12, 1883. (No model.)

Claim.—The churn-motor herein described, consisting of the frame A, having bearings B for the journals of the large pulley C, the bracket D, composed of arms E E, which are secured, as shown, to the frame A, and support the shaft A, carrying the small pulley F, the said arms

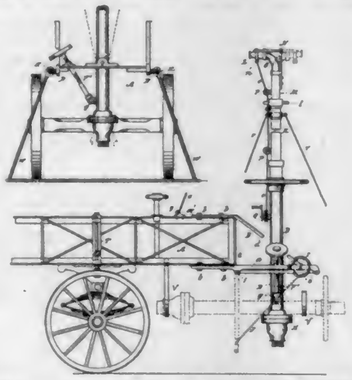


297,918.



being extended outward horizontally, as indicated at P, and connected by the transverse bar S, which is provided with perforations *t*, for guiding the dasher-rods R, the crank-wheels K, secured to the lateral extensions of the said shaft A, the arms N, connected near their upper ends eccentrically to the crank-wheels, and at their lower ends to the dasher-rods by means of the bent wire pivot-arms *m*, the pulley-belt *g*, and operating crank-arm, substantially as specified.

297,919. TOWER-PIPE ATTACHMENT FOR TRUCKS. JOHN R. DAY, New York, N. Y., assignor of three-fourths to Jacob Cohen and Ferdinand W. Hofele, both of same place. Filed Sept. 11, 1883. (No model.)



Claim.—1. The combination, with an ordinary hook-and-ladder truck, of the bracket B, constructed and attached to said truck, as described, and the swinging platform C and pipe D, said platform C being pivoted to said bracket, as described, and provided with the pivoted ring E, within which the pipe D is secured, the whole constructed and arranged in connection with suitable means for locking said platform when raised, as shown and described.

2. In combination with the bracket B, the swinging platform C, pivoted to said bracket, and provided with the pivoted ring E, the pipe D, secured within said ring E, the swiveled plate G, and the screw-rod F', said plate G being provided with a screw-threaded opening at its center, in which said screw-rod F' works, and said screw-rod F' being pivoted at its lower end to the pipe D, the whole constructed and arranged as shown and described, for the purpose set forth.

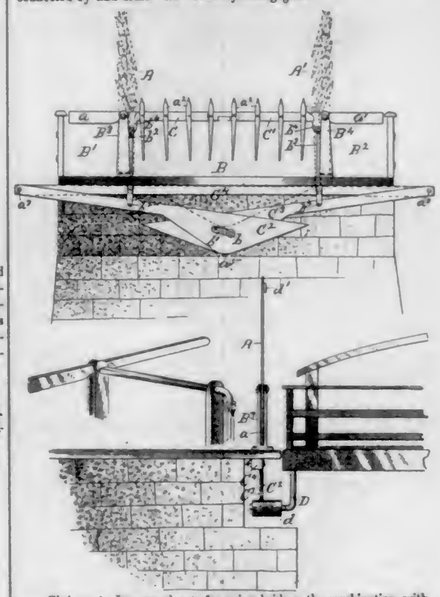
3. The swiveled plate G and screw F', in combination with the pipe D, platform C, and pivoted ring E, as and for the purpose set forth.

4. The pipe D, provided with the flanges *p* and *p'*, carrying the hand-wheel R, in combination with the ring E, coupling H, and cylindrical sleeve *r*, said ring and coupling being provided with the recesses *q* and *q'*, respectively, and connected by said sleeve, as and for the purpose set forth.

5. The discharge-nozzle herein described, composed of the piece L, pipe M, tapering flexible and elastic hose O, and hinge N, provided with the opening *m*, constructed and arranged as set forth.

297,920. GUARD-GATE FOR SWING-BRIDGES. WILLIAM M. DOTY, Chicago, Ill., assignor of one-half to A. Montgomery Ward, same place. Filed Dec. 26, 1883. (No model.)

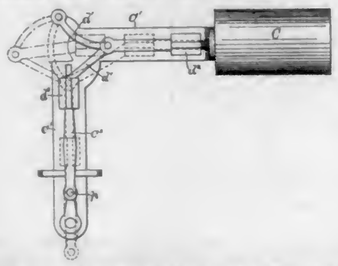
Brief.—A bent arm on the bridge has a friction-roller which engages the beveled or inclined inner ends of a pair of companion levers pivoted at their outer ends to an abutment. The companion levers are connected by link-arms with vertically-tilting gates.



Claim.—1. In a guard-gate for swing-bridges, the combination, with the gates A A', of the arms b^2 b^2, and the companion levers C^2 C^2, having the outer ends pivoted to the timber C^4, while the inner ends are widened and beveled, as described, whereby said gates are raised or lowered by the opening and closing of the bridge, substantially as set forth.

2. In a guard-gate for swing-bridges, the combination, with a bridge, of the angular lever D, the friction-roller *d*, the companion levers C^2 C^2, the vertical arms b^2 b^2, the gates A A', and the posts B^2 B^4, whereby said gates are automatically opened and closed by the movement of the bridge.

297,921. LOCOMOTIVE DRIVING-GEAR. GOTTLIEB ENGHOFER, Attleborough, Mass. Filed Dec. 31, 1883. (No model.)



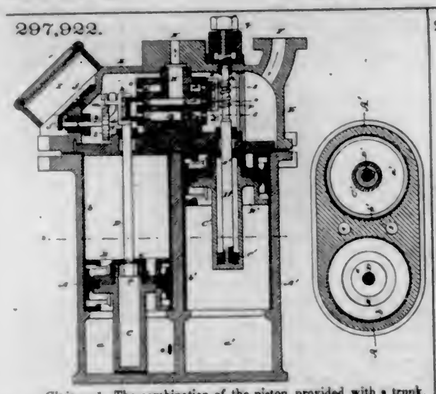
Claim.—1. A locomotive-engine driving-gear arranged in such manner that each full return-stroke of the piston shall produce two complete revolutions of the driving-wheels.

2. The combination, with the cylinder and frame C' C', of the piston-rod and crank-rod and the toggle-joint *d'*.

3. The combination, with the cylinder and the frame C' C', carrying the projection *d*, of the piston-rod, crank-rod, and toggle-joint, arranged and operating as described.

297,922. WATER-METER. ALPHONSE FRAGER, Paris, France, assignor of one-half to Société Michel et Cie, same place. Filed Feb. 16, 1884. (No model.) Patented in France Nov. 9, 1882, No. 152,009.

297,922.



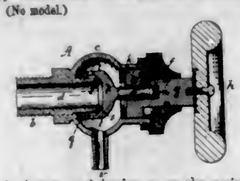
Claim.—1. The combination of the piston provided with a trunk, the valve-stem provided with a button on one end and a claw on the other, the valve, and a spring arranged between the claw and the valve, all substantially as set forth.

2. In a fluid-meter comprising two cylinders, two pistons, two valve-seats, and two valves actuated directly by the pistons, the valve actuated by one piston controlling the ports leading to the cylinder containing the other piston, the means, substantially as herein described, for displacing the valve with reference to its ported seat, whereby the integrity of the meter, as to leakage, may be tested, as set forth.

3. The combination of the piston, the valve, the valve-stem provided with a screw, *p*, arranged to engage a half-nut carried by the valve, and the key *q*, arranged to engage and turn the end of the valve-stem, substantially as and for the purposes set forth.

4. The combination, with the ratchet-wheel *l*, of the pawl *m*, provided with a tail, *n*, to prevent the engagement of more than one tooth, the valve, and the valve-stem provided with a claw to embrace the valve, all arranged substantially as set forth.

297,923. GAGE-COCK. LOUIS B. FULTON, Pittsburg, Pa. Filed Nov. 21, 1883. (No model.)



Claim.—1. A gage-cock having an annular projecting valve-seat and a box surrounding the same, and constituting the valve, and provided with means of rotation under the force of escaping steam or water, substantially as described.

2. A gage-cock having an annular projecting valve-seat with cylindrical body externally, and a box having an internal flange or two or more projections fitting said cylindrical body, and said box constituting the valve, substantially as described, whereby the valve is guided and centered.

3. In a gage-cock, the combination, with an annular projecting valve-seat, of a valve having extended walls embracing and surrounding said seat, said walls having one or more angular ports, substantially as shown and described.

4. In a gage-cock, the combination, with an annular projecting valve-seat, of a valve having extended walls embracing and surrounding said seat, and provided with an angular port or ports adapted to rotate said valve under the propulsive force of escaping steam or water, substantially as described.

5. In a gage-cock, the combination of the annular cylindrical valve seat *a*, box-valve *s*, having port or ports *t*, and guide-pin *o*, adapted to aid in guiding said valve, substantially as described.

6. In a gage-cock, the combination, with the valve and valve-seat, of the boiler-fitting *b*, neck *k*, and bars or frame *w*, with the space inclosed between said parts open and exposed, substantially as described.

297,924. APPARATUS FOR THE PRODUCTION AND UTILIZATION OF SECONDARY ELECTRIC CURRENTS. LUCIEN GAULARD and JOHN DIXON GIBBS, 18 Warwick Street, Regent Street, County of Middlesex, England. Filed Mar. 4, 1884. (No model.) Patented in England Feb. 6, 1884, No. 2,858.

297,924.



Claim.—1. In apparatus for producing secondary currents, the combination, with a single primary, of a set of insulated secondary conductors laid parallel thereto and connected in multiple-arc, substantially as described.

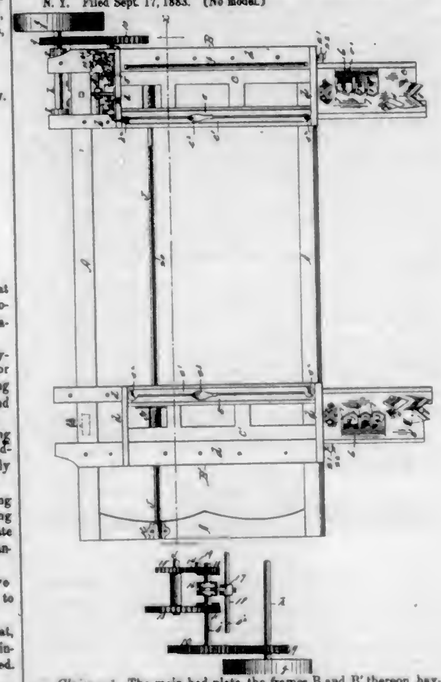
2. In a system for distributing electricity by means of induction-coils, the combination, with the main or generating circuit including the primaries of the induction-coils in series, of the consumption-circuits including translating devices and the secondaries of said coils, each secondary comprising a set of insulated conductors laid parallel to the primary conductor, and connected in multiple arc, substantially as described.

3. In a system for inducing secondary currents, the combination of a number of sets of insulated conductors laid parallel with the primary, the conductors of each individual set being connected in multiple arc, and the several sets being connected the one with the other, either in multiple arc or in series, substantially as hereinbefore described.

4. In an induction-coil, a cable made of a flat conductor for the primary current, surrounded by a number of wires or strips for the secondary currents, substantially as hereinbefore described.

5. In an induction-coil, a cable made of a conductor for the primary current, surrounded by a series of smaller wires or strips for the secondary current, the said wires or strips being separated by threads, strips, or layers of insulating material, and the said smaller wires or strips and separating threads, strips, or layers being connected together by insulating threads or material, substantially as hereinbefore described.

297,925. BOX-MAKING MACHINE. JACOB S. GIBBS, Bridgeport, Conn., assignor to the United States Box Machine Company, New York, N. Y. Filed Sept. 17, 1883. (No model.)



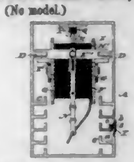
Claim.—1. The main bed-plate, the frames B and B' thereon, having suitable clamping mechanism to retain the boards, reciprocating cutters in said frames, and a shaft and change-gear for driving said cutters, the gear consisting of a large and a small wheel on the driving-shaft, similar wheels in reverse order on the counter-shaft, and a clutch adapted, as described, to throw one or the other system of gears into operation,

all being in combination, as set forth.

2. The main frame, the clamping-frame supported thereon, and suitable clamping mechanism in said frame, and the reciprocating cutter-bar moving in said frame by means of suitable driving mechanism, said cutter-bar having raised ribs 7 thereon and knives B secured between and projecting obliquely beyond said ribs, all in combination as set forth.

3. The cutter-frame having angular bearings for sliding cutter-bar, as *c*, the cutter-bar arranged in said bearings, and a tapering gib, 21, in the bearing at the edge of the cutter-bar, all in combination as set forth.

297,926. UNDERGROUND CONDUIT FOR ELECTRIC WIRES. CHRISTIAN H. GOEBEL, Philadelphia, Pa., assignor to the Goebel Sectional Electric Underground and Pneumatic Delivery Company, of New Jersey. Filed Sept. 21, 1883. (No model.)



Claim.—1. A conduit formed of a tube with ledges and reel-supporting tracks having serrated edges, substantially as and for the purpose set forth.

2. A conduit formed of a tube having reel-supporting tracks, with serrated edges, and a motor-receiving way, substantially as and for the purpose set forth.

3. A conduit formed of a tube having an opening, in combination with a closing-cap consisting of a head, *b*, and a slotted shank, *c*, and the key T, the latter being on the inner face of the conduit, substantially as and for the purpose set forth.

4. A conduit formed of a tube having serrated tracks on which a wire-holding reel is supported and moved, said reel having means for interlocking with said tracks, substantially as and for the purpose set forth.

5. A wire-holding reel for a conduit provided with a pawl, and having a drum formed with serrated heads, said pawl being disengaged from the heads by the advance of the reel, substantially as and for the purpose set forth.

6. A wire-holding reel for a conduit, having a drum with a serrated head, a pawl mounted on the frame engaging with said head, and a sliding rod connected with said pawl operated by the motor of the reel, substantially as and for the purpose set forth.

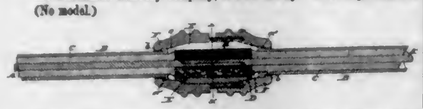
7. A wire-holding reel for a conduit having a pawl and check-pawl, and a drum provided with ratchet-heads the teeth whereof are pitched in reverse order, substantially as and for the purpose set forth.

8. A wire-holding reel for a conduit, provided with means for locking its drum and frame, said means being released by the power applied to advance the reel, substantially as and for the purpose set forth.

9. A wire-holding reel for a conduit having a rear guiding-arm adjustably connected with the frame, substantially as and for the purpose set forth.

10. A wire-holding reel provided with a drum or reel proper with serrated heads and a frame with supporting cross-bars, a locking-pawl, locking-dogs, a sliding rod, and a check-pawl, in combination with a conduit and a motor, said conduit having serrated tracks on which the reel is supported and moved, and a way for the passage of the motor, substantially as and for the purpose set forth.

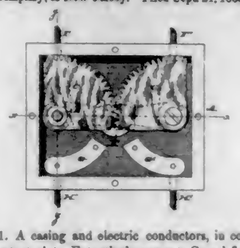
297,927. CONDUIT FOR ELECTRIC WIRES. CHRISTIAN H. GOEBEL, Philadelphia, Pa., assignor to the Goebel Sectional Electric Underground and Pneumatic Delivery Company, of New Jersey. Filed Sept. 21, 1883. (No model.)



Claim.—1. In a conduit for electric wires, a split or divided collar of compressible material encircling the connected ends of the wires, segmental plates of rigid material with tapering backs surrounding said collar, and a clamping-sleeve with tapering inner faces fitted over said segmental plates, combined and operating substantially as and for the purpose set forth.

2. In a conduit for electric wires, a coupling consisting of a split or divided collar of compressible material encircling the connected ends of wires, segmental plates of rigid material surrounding said collar, a clamping-sleeve fitted over said segmental plates, and tubing inclosing the wires formed at the ends within the coupling with shoulders, substantially as and for the purpose set forth.

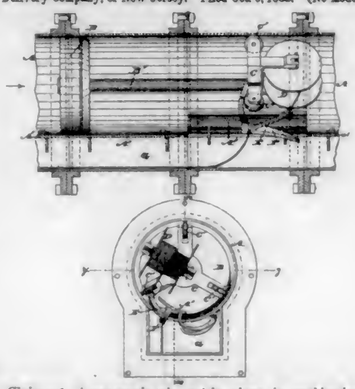
297,928. ELECTRIC CUT-OFF. CHRISTIAN H. GOEBEL, Philadelphia, Pa., assignor to the Goebel Sectional Electric Underground and Pneumatic Delivery Company, of New Jersey. Filed Sept. 21, 1883. (No model.)



Claim.—1. A casing and electric conductors, in combination with tongues G, a contact-plate, E, toothed segments C, and fingers D D′, said fingers being connected with said segments and adapted to engage simultaneously with said contact-plate in one position of the segments, or simultaneously with said tongues in the other position thereof, substantially as and for the purpose set forth.

2. A casing and electric conductors, in combination with two toothed segments geared together, fingers connected with said segments, a contact-plate, and two tongues, said contact-plate being common to the two fingers when the latter are removed from the tongues, substantially as and for the purpose set forth.

297,929. UNDERGROUND CONDUIT FOR ELECTRIC WIRES AND PNEUMATIC TUBE COMBINED. CHRISTIAN H. GOEBEL, Philadelphia, Pa., assignor to the Goebel Sectional Electric Underground and Pneumatic Delivery Company, of New Jersey. Filed Oct. 6, 1883. (No model.)



Claim.—1. A pneumatic tube and its piston, in combination with a supplemental tube or conduit for electric wires attached thereto, and wire-laying devices carried by said piston, substantially as set forth.

2. A pneumatic tube provided with movable doors or sections, in combination with a wire-holding conduit, into which said sections open, and means within said pneumatic tube for opening said sections and laying wire in said tube, substantially for the purpose set forth.

3. A conduit for wire, in combination with a pneumatic tube provided with wire-laying apparatus, and means for opening communication between said conduit and tube, substantially as described.

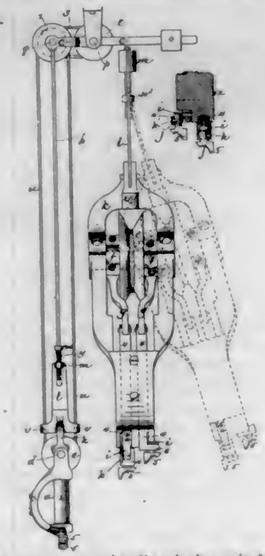
4. A combined pneumatic tube and wire-conduit communicating by means of movable sections or doors intermediate thereof, in combination with the carrier of said tube, provided with wire-laying apparatus, substantially as and for the purpose set forth.

297,930. SOLE-EDGE-BURNISHING MACHINE. WILLIAM GORDON, Boston, assignor of one-half to J. Wesley Dodge, Malden, Mass. Filed Jan. 23, 1884. (No model.)

Claim.—1. In a sole-edge-burnishing machine, the combination of the slide 4 and its operating devices, the burnishing-tool having a recessed shank adapted to rise and fall in said slide, and a spring, *k′*, secured to the slide and projecting at its free end into the recess in the tool-shank, as set forth.

2. In a sole-edge-burnishing machine, the combination of the slide 4 and its operating devices, the burnishing-tool having a recessed shank adapted to rise and fall in said slide, a spring, *i*, bearing on the upper

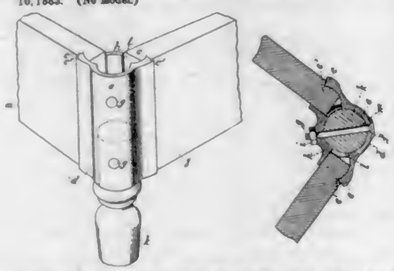
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end of the tool-shank, and a spring, *k′*, projecting at its free end into the recess in the tool-shank, as set forth.

3. In a sole-edge-burnishing machine, the combination of the movable stock having a burnishing tool or tools, and operating mechanism therefor, substantially as described, the pivoted rod *b*, supporting said stock, and the laterally-yielding or elastic plate connecting the stock to the rod, as set forth.

297,931. TABLE-LEG FASTENING. H. WILLIAM GROSS, Vincennes, Ind., assignor of one-half to James A. Plummer, same place. Filed Oct. 10, 1883. (No model.)



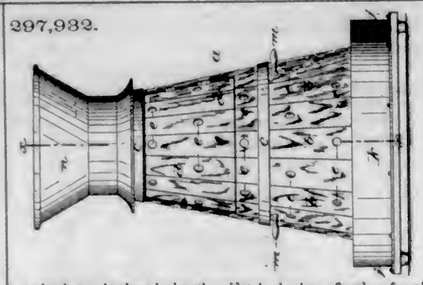
Claim.—The combination, with the adjacent rails *a* and *b*, having shouldered seats in their outer faces at their ends, of the outer casting having flanges to fit the seat, and the body portion provided with perforations and the inner angular concavo-convex perforated castings, and the bolts, table-leg, and securing-nuts, substantially as specified.

297,932. METHOD OF AND MEANS FOR CULTIVATING FRUITS AND VEGETABLES. JOHN WILLIAM GROVES and VALENTINE MINION, South Oil City, Pa., assignors of one-half to Mathew Blakeley Clemenger, same place. Filed Aug. 20, 1883. (No model.)

Claim.—1. The combination, with the perforated vessel *a*, adapted to be filled with earth, of the centrally-disposed upright tube *o*, penetrating the earth to near the bottom of vessel *a*, and having a series of apertures, *p*, arranged at regular intervals along its length, said tube having a flared or funnel-shaped mouth, *q*, and the bottom reservoir, *k*, within which the vessel *a* is pivoted and arranged to rotate, substantially as and for the purpose set forth.

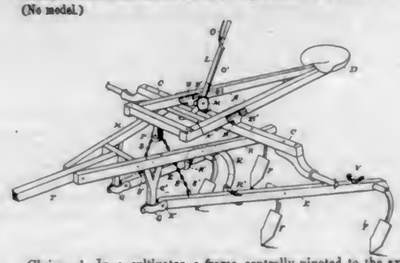
2. The perforated vessel *a*, adapted to be filled with earth, in combination with the vase *n*, removably superposed upon the said vessel, and the centrally-disposed upright tube *o*, penetrating the earth to near the bottom of the vessel, and having a series of apertures, *p*, arranged at

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regular intervals along its length, said tube having a flared or funnel-shaped mouth, *q*, and the bottom reservoir, *k*, within which the vessel *a* is pivoted and arranged to rotate, substantially as and for the purpose set forth.

297,933. ADJUSTABLE SEAT-LIFT CULTIVATOR. CHAS. H. HILL, Lombardville, Ill., and JAS. T. RYAN, Manning, Iowa. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a cultivator, a frame centrally pivoted to the axle or frame of the cultivator, and having a seat upon its rear end, in combination with a pulley secured to the forward end of said pivoted frame, and a chain or other flexible bond passing over said pulley and fastened at its ends to the plow-beams of the cultivator, whereby the weight of the driver in said seat shall support said plow-beams and permit them unequal and opposite vertical motion, as set forth.

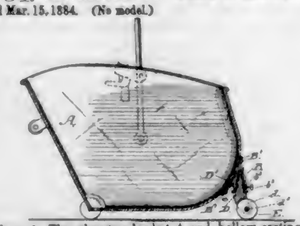
2. The frame A, seat D, and bearings B, in combination with the pulley P, chain S, and the beams E of a cultivator, for the purpose described.

3. The frame A, seat D, bearings B, and pulley P, in combination with the chain S, hooks S′, beams E of a cultivator, the yoke R, and stirrups R′, substantially as specified.

4. In a cultivator, the frame A, having several bolt-holes therethrough, in combination with the bearings B, having corresponding bolt-holes, and pivoted to the axle or frame of a cultivator, and the bolts or pins B′, whereby the leverage of said frame A may be changed without altering the longitudinal position of the same.

5. The combination, in a cultivator, of a frame centrally pivoted to the axle or frame thereof, and having a seat upon its rear end, and means whereby the plow-beams are suspended from the front end of the said pivoted frame, so that these plow-beams shall counterpoise each other and enable the elevation and depression of one to oppositely affect the other, for the purpose set forth.

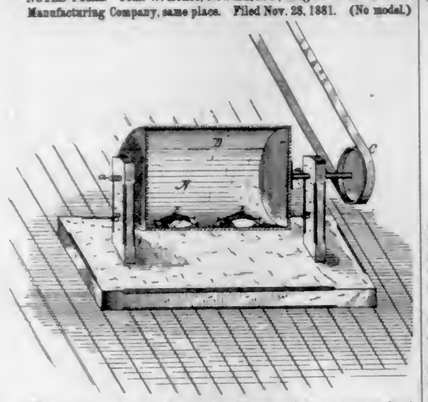
297,934. ELEVATOR-BUCKET. CHARLES W. HUNT, New York, N. Y. Filed Mar. 15, 1884. (No model.)



Claim.—1. The elevator-bucket A and hollow casting B, having projections *b*, in combination with the stem D, provided with a groove, D′, and flanges *b b′*, the wheel E, and set-screws *b²*, all constructed to operate substantially as and for the purpose set forth.

2. The elevator-bucket A, constructed as herein shown and described, in combination with the swiveled wheel E, substantially as and for the purpose set forth.

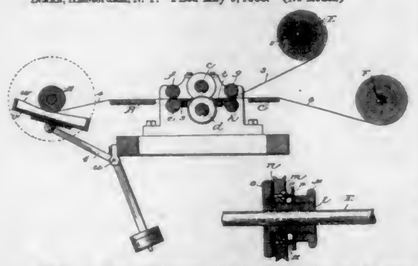
297,935. PROCESS OF DESICCATING PYROXYLINE IN COMMINUTED FORM. JOHN W. HYATT, Newark, N. J., assignor to the Celluloid Manufacturing Company, same place. Filed Nov. 28, 1881. (No model.)



Claim.—1. In the manufacture of celluloid and other compounds of pyroxyline, the process hereinbefore described, which consists in, first, grinding the nitro-cellulose in water, and, second, removing the aqueous particles by agitating the nitro-cellulose in contact with an absorbent.

2. The process hereinbefore described of treating nitro-cellulose after it has been ground to a pulp in a liquid and prior to its conversion, which consists in agitating the pulp about absorbent material inclosed in porous coverings, the whole being within a closed vessel.

297,936. PAPER SLITTING AND WINDING MACHINE. HORACE INMAN, Amsterdam, N. Y. Filed May 9, 1883. (No model.)



Claim.—1. The combination, with the winding-shaft, of the flanged sleeve *l*, the loose pulley on the sleeve, the pressure-springs, and the nut M, all adapted to operate substantially as described.

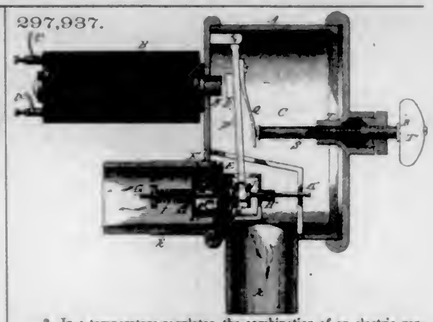
2. Combined with the grooved winding-shaft, the rod *s*, of greater diameter than the depth of the groove, and adapted to slide longitudinally in such groove, for the described purposes.

297,937. HEAT-REGULATOR. WARREN S. JOHNSON, Whitewater, assignor of one-half to William Plankinton, Milwaukee, Wis. Filed Jan. 18, 1884. (No model.)

Claim.—1. In a temperature-regulator, the combination, with an electric generator, of an electric valve and of two thermostats in circuit therewith, one of said thermostats being situated close to the steam-generator, and serving to close the circuit when said generator is in use, and the other thermostat being located in the apartment which the steam-generator is intended to heat, and serving to close the circuit and actuate the electric valve, whereby the steam is shut off when the desired temperature has been attained, substantially as set forth.

2. In a temperature-regulator, the combination of an electric generator, two main conductors leading therefrom, and two or more wires in multiple-arc circuit with reference to said electric generator, each of the wires of the multiple-arc circuit containing a thermostat and an electric valve, whereby the steam is shut off from a radiator whenever the temperature in one or more apartments in which the thermostats are located has attained the desired limit, substantially as set forth.

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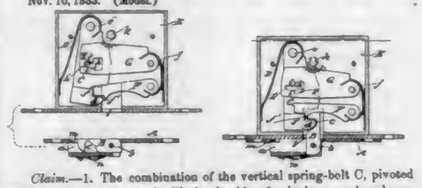


3. In a temperature-regulator, the combination of an electric generator, two main conductors leading therefrom, two or more conducting-wires in multiple-arc circuit with said electric generator, each of said wires including a thermostat and an electric valve, and a thermostat located in the main circuit and adapted to be closed automatically by the heat of the steam-generator when it is in use, substantially as set forth.

4. The combination of an electro-magnet whose coils are external to the steam-chamber, but whose field of magnetic force lies within said chamber, the valve-chamber which is in proximity to the field of magnetic force having walls and parts of non-magnetic substance, and of a suitable valve mechanism situated within said chamber, whereby when the electro-magnet is excited by a current of electricity it will actuate the electric valve, substantially as set forth.

5. The combination, with a valve-casing containing an electric valve situated in and adapted to close a steam-passage, the said valve having an armature-lever provided with a spring, of a rod passing through a stuffing-box in said casing, and provided with a hand-wheel, whereby the end of the said rod may be forced against the spring or the lever of the armature and serve to close the valve when the radiator to which it is attached is not desired for use, substantially as set forth.

297,938. TRUNK-LOCK. EDWD. A. JUDD, New Britain, Conn. Filed Nov. 10, 1883. (Model.)



Claim.—1. The combination of the vertical spring-bolt C, pivoted within the case, and formed with the shoulder *f* at its lower end, and constructed to be operated by a key at its upper end, with the horizontal spring-operated stop F entirely within the case and extending across the path of the keeper and resting at its free end on the lower part of bolt C, and a suitable keeper, whereby when the bolt C is retracted the stop will automatically engage the shoulder *f* and hold the bolt retracted, and release the bolt upon the entrance of the keeper, substantially as set forth.

2. The bolt C, formed with stud *g* and acted upon by spring D, in combination with slotted and spring-actuated tumblers G, stop F, located within the case, and pivoted keeper B, all arranged to operate substantially as described.

3. The pivoted and folding keeper, in combination with the lock proper, having the spring-operated bolt C and stop F, arranged for releasing the bolt upon the entrance of the keeper into the lock, substantially as set forth.

4. The combination, in a lock, of the notched and pivoted keeper B with the spring-actuated bolt C, having nose *d* and shoulder *f*, and the spring-actuated keeper F, having projection *f''*, substantially as described, and for the purpose set forth.

297,939. DEVICE FOR RECORDING TIME. JOHN KELLER and JOHN F. PERLBACH, New York, N. Y. Filed Jan. 3, 1884. (No model.)

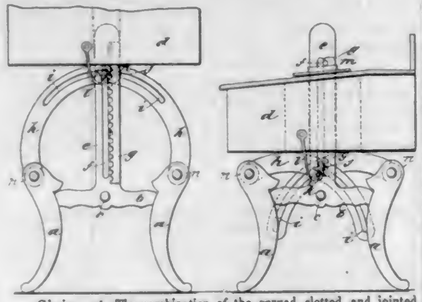


Claim.—1. The box A, provided with the transverse orifices *b b*, ribbon M, and the roller D, combined with the ratchet F, pawls G and H, lever I, and handle J, which, together with said pawl H, are carried by the lever I, substantially as shown, whereby the strip or ribbon, M, of paper may at will be drawn through the orifices *b b*, to expose a fresh surface and conceal that already used.

2. The box A, provided with a hinged lid and a wide orifice therein, combined with the ledge E, detached from the movable lid, but located therein, to constitute narrow slits *b b*, the roller D, provided with the ratchet F, pawls G H, arm I, centered upon the axis of the roller D, curved slot K, and operative handle J, whereby the cover may be raised to expose the internal mechanism without disturbing any of said mechanisms, as set forth.

3. The combination, substantially as shown, of the box A, provided with a hinged lid having a transverse orifice, and within said orifice, flush with the upper edge of the same, a ledge attached to the box independent of the lid, to produce the two slits or apertures *b b*, the rollers C D, the ratchet F, pawls G H, and the arm I, on which the pawl H is carried, and the handle J, whereby the paper is exposed on or above the level of the lid, and the lid may be raised to uncover the mechanism without disturbing it.

297,940. DESK. JACOB KLAR, Rodney, Miss. Filed Oct. 10, 1883. (Model.)



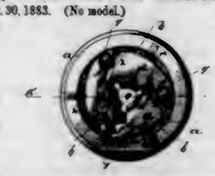
Claim.—1. The combination of the curved, slotted, and jointed arms A, shaft *j*, and pinions *k* with the desk or table supporting bench, the top *d*, and the vertical slotted standard *e*, having toothed racks *g*, substantially as described.

2. The bench consisting of legs *a*, cross-bars *b*, and connecting-rod *c*, and having the curved slotted arms A pivoted to it, and the vertical slotted standards *e* attached to the cross-bars, in combination with the desk or table top *d*, and means, substantially as described, for shifting it and supporting it thereon at any desired height, as set forth.

3. The combination, with the supporting-bench provided with standards *e*, of the table or desk top *d*, provided with vertical openings at each end, extending through the same, and forming guides for the said standards, and the covers *m*, hinged to the upper surface of said top, substantially as herein shown and described, whereby the openings may be closed when the desk is raised to its highest position, as set forth.

4. The slotted curved pivoted arms A, the posts *a*, and the stay-rods *n*, in combination with the slotted standards *e*, desk-top *d*, shaft *j*, pinions *k*, and the toothed bars *g*, substantially as described.

297,941. SCREW-CUTTING DIE. OSWALD J. KOSIOL, Louisville, Ky. Filed Nov. 30, 1883. (No model.)

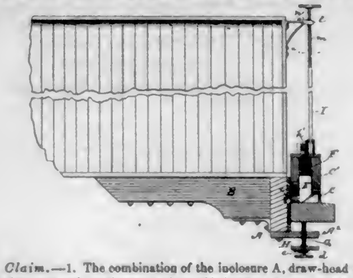


Claim.—1. A die for cutting screw-threads, consisting of a disk or head having a circular recess and a central aperture, a series of cutting dogs or dies, recessed and shouldered at one end and shouldered at the other, and a series of screws having their heads abutting against said shoulders, whereby the dogs or dies are removably and adjustably confined in the head, substantially as specified.

2. The combination, with the recessed head having a central aperture and a series of adjustable cutting dies or dogs, of the confining-screws, whereby the dogs or dies are held in place, and the adjusting-screws, whereby the said dogs or dies are adjusted centrally, substantially as and for the purpose specified.

3. The combination, with the recessed head provided with a central aperture, of the cutting dogs or dies, shouldered as described, and provided with recesses *i*, the confining-screws, and the adjusting-screws, all adapted to operate substantially in the manner specified.

297,942. CAR-COUPLING. GEORGE C. LOAR, Quincy, Ill., assignor of one-half to Joseph L. Morgan, same place. Filed Oct. 9, 1883. (No model.)



Claim.—1. The combination of the inclosure A, draw-head C, arranged transversely to the car, and provided with spring-seated locking-bolt E, set-screw G, and means for holding the draw-head level in its adjustments, as set forth.

2. The combination, with the draw-head C, arranged at right angles to the length of the car, the set-screw G, leveling-bar H, with pins or supports *f f*, the ratchet-wheel *e*, and detent *g*, as and for the purpose described.

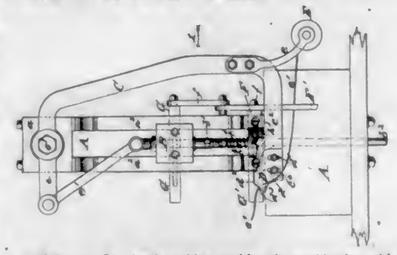
3. The combination, with the draw-head having spring-seated locking-bolt E, arranged vertically above the same, of a vertical shaft, I, and drum J, and a chain or flexible connection extending from the drum to the said bolt, as described.

4. The combination of the draw-head C, having spring-bolt E, the shaft I, with drum J, and a chain connecting said drum to the bolt, and the side rods, *k*, having chains connecting them to the drum, as set forth.

5. The combination, with the vertically-adjustable draw-head C, having spring-bolt E, the shaft and drum I J, connected with the bolt E by chains, and swiveled in the draw-head, the upper end of said shaft being notched or grooved longitudinally, and provided with a detent, substantially as set forth.

6. The link-bar M, having an opening in one end, and having the other enlarged and made hollow, and provided with a pin-hole to form a supplemental draw-bar, as described.

297,943. BOTTLE-CORKING MACHINE. THOMAS R. LOWERRE, New York, N. Y. Filed Oct. 4, 1883. (No model.)



Claim.—1. In a bottle-corking machine, the combination, with the ordinary plunger *b*, of a knife provided with a cord or wire, and arranged to slit the lower end of the cork and leave a portion of the cord therein just before the cork is driven into the bottle, substantially as and for the purpose specified.

2. In a bottle-corking machine, the combination, with the descending plunger *b*, of the knife D, having an inclined cutting-edge, and a hole, d^2, in rear of and a little below the highest point of the cutting-edge, said knife being arranged to move transversely to the motion of the said plunger, substantially as and for the purpose set forth.

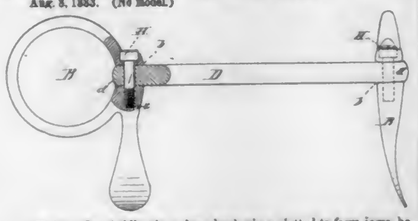
3. In a bottle-corking machine, the combination, with a descending plunger, *b*, and the cord-carrying knife D, moving transversely to the said plunger, of the shears F F', having its movable jaw F'' connected to receive its motion from the movement of the sliding block B and plunger, substantially as specified.

4. In a bottle-corking machine, the combination of the plunger-carrying sliding block B, the lever C, oscillated by the movement of the said block, and provided with a cord-spool, E, and having upon its lower arm, c^3, the cord-carrying cutting-knife D, moving by the oscillation of the lever C transversely to the plunger, substantially as and for the purpose set forth.

5. In combination with the plunger b and the knife D, moving transversely to the plunger, the cork-holder H, provided with the perforated lug h^3 and slotted stop h^3, substantially as and for the purpose set forth.

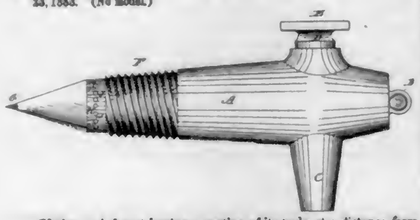
6. In combination with a plunger-block, B, and with the cord-carrying knife D, moving transversely to the said block, the shears F F', adjustable link f'', and the slotted bars G G', for adjusting the length of the cord, substantially as specified.

297,944. BRIDLE-BIT. JOHN MURPHY, Springfield, Mass. Filed Aug. 8, 1883. (No model.)



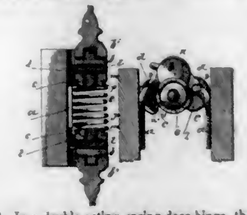
Claim.—In a bridle-bit, a ring cheek-piece slotted to form jaws, between which the apertured end of the bit-bar is clamped, said jaws having a countersunk and tapped bore to receive a headed screw-pin, said bore being elongated beyond the length of the pin, so that when the jaws are distended to their maximum extent there will be a space below the point of the screw-pin, substantially as set forth.

297,945. FAUCET. EDWARD AYERS, Webb City, Mo. Filed Aug. 23, 1883. (No model.)



Claim.—A faucet having a portion of its body at a distance from either end threaded, and one end and the contiguous portion perforated with a series of fine holes, in combination with an auger-bit secured in the end thereof, as described, whereby the faucet is adapted to bore its own hole of entrance, and then to strain the fluid from the shavings so made, as described.

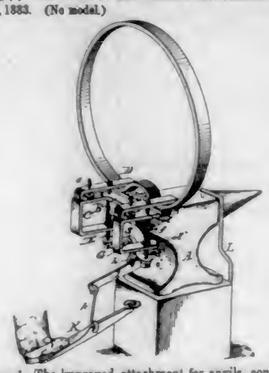
297,946. SPRING-HINGE. DAVID NICKEL and CHARLES ZATTAN, Morris, Ill. Filed Feb. 4, 1884. (Model.)



Claim.—1. In a double-acting spring door-hinge, the inner spring center plate, l, having the central inner projection, p, to engage the end of the spring, and the shouldered cam-dog z, in combination with the outer center plate, w, also having a cam-dog, z', and pivoted to the inner plate, substantially as specified.

2. In a double-acting spring door-hinge, the combination, with the hinge-plates having raised bearings and marginal bearing-loops, of the shifting spring centers pivoted together, and having cam dogs or lugs adapted to engage the bearings of the loops and slide thereon, substantially as specified.

297,947. TIRE-UPSETTER. JAMES NYCE, Dockertown, N. J. Filed Dec. 20, 1883. (No model.)

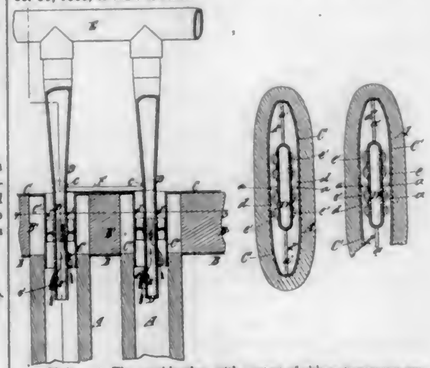


Claim.—1. The improved attachment for anvils, consisting of the bed B, made of a single piece, and having members C formed thereon, in combination with the holders D, having bent ends, and means for depressing the same upon the bed-piece, substantially as shown, and for the purpose set forth.

2. In an attachment for anvils, the bed-piece B, provided with members C, perforations $d\,d'$, and upwardly-projecting pins a, in combination with the holders D, having their rear ends bent, as shown, and provided with downwardly-projecting bars E, with spring elevating means, and a cross-bar, G, attached to each of the bars, and provided with means for depressing the same, the parts being organized substantially as shown, and for the purpose set forth.

297,948. APPARATUS FOR TAKING OFF AMMONIA FROM BONE-BLACK RETORTS. FRIEDRICH OMMER, Brooklyn, N. Y., assignor of one-third to Matthias Hopke, same place. Filed Dec. 5, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 287,570, dated October 30, 1883, to same inventor.



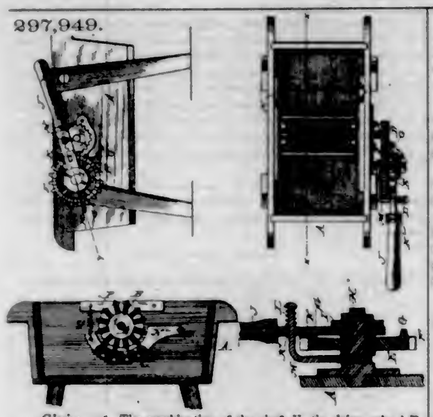
Claim.—1. The combination, with a retort of oblong transverse section, of a flue, also of oblong transverse section, arranged within the retort for conducting away the ammonia or other noxious gases, the said retort being extended considerably beyond the flue in the direction of the major axes, substantially as and for the purpose herein described.

2. The combination, with the retort and flue, both being oblong in their transverse section, and the retort being extended considerably beyond the flue in the direction of their major axes, of the feeding floor or plate, and bearers secured to the floe and serving to support the same by resting on said floor or plate, substantially as and for the purpose herein described.

3. The combination, with the retort A, of oblong transverse section, of the flue D, also of oblong transverse section, and provided with escape-holes e, and with hoods e' on its exterior, the said retort being extended considerably beyond the flue in the direction of their major axes, substantially as and for the purpose herein described.

297,949. WASHING-MACHINE. FERDINAND POLLMILLER, Eddyville, Iowa, assignor of one-half to James B. Bickford, same place. Filed Sept. 4, 1883. (No model.)

297,949.



Claim.—1. The combination of the shaft H, the drive-wheel E, journaled upon said shaft, and having a double set of cogs, F and G, set at right angles to one another, lever or handle J, slotted at K and K', bent arm M, projecting with its free end through slot K', and spring L, constructed and combined substantially as and for the purpose shown and set forth.

2. The combination of the suds-box A, rotary reciprocating rubber B, having pinion D, shaft or pintle H, drive-wheel E, having a double set of cogs, F and G, set at right angles to one another, lever-handle J, slotted at K and K', bent arm M, projecting with its free end through slot K', and spring L, all constructed and combined substantially as and for the purpose shown and set forth.

297,950. GLOVE-FASTENER. GEO. W. PRENTICE, Providence, R. I. Filed Mar. 7, 1884. (No model.)

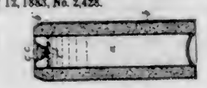


Claim.—1. A fastener or lacing-hook for gloves or other articles, consisting of a head, provided with one, two, or more spurs and a prong, the said prong adapted to be forced through the material of the glove or other article from the under side thereof, bent upon itself to bring its free end adjacent to the upper surface of the material to which it is to be secured, and sufficiently removed therefrom to permit the passage of a lacing-cord between said end and the material, substantially as set forth.

2. The combination, with a glove having a wrist-opening, or analogous article having an opening, of a number of lacing-hooks consisting of heads and prongs, the said prongs adapted to be forced through the material composing the glove from the under side and at each side of the wrist-opening, and bent upon themselves, with their free ends or points adjacent to the upper surface of the material, and adapted to permit the passage of a lacing-cord between the said free ends and the material, means for firmly holding the hooks to the glove, and a lacing-cord secured to the glove at the wrist-opening, and adapted to engage the hooks, substantially as set forth.

3. The combination, with a glove having a wrist-opening, and a lacing-cord secured to said glove at the wrist-opening, of a number of lacing-hooks, each consisting of a head having one, two, or more spurs secured to the under side of the glove, and a prong integral with the head, the said prong projecting through the material of the glove from the under side near the wrist-opening, and bent upon itself toward the wrist-opening, with its point or free end curved or directed toward the heel or post of the prong, and adjacent to the material, and sufficiently removed therefrom to permit the passage of the lacing-cord between said point and the material to engage the hook, all substantially as and for the purpose specified.

297,951. BLASTING-CARTRIDGE. ROBERT PUNSHON and ROBERT R. VIVER, London, England. Filed Dec. 8, 1883. (No model.) Patented in England May 12, 1883, No. 2,428.



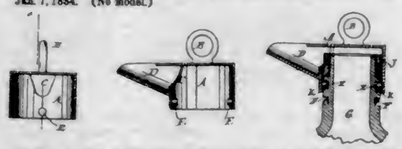
Claim.—1. A cartridge for blasting or similar purposes, consisting of a vessel of glass or other acid-proof and friable substance containing nitric acid, and closed by a glass or other acid-proof ball covered with cement or similar material, which vessel is arranged in combination with a vessel or receptacle containing picric acid, substantially as set forth.

2. In a cartridge containing substances which, when mixed, form an explosive compound, a glass or other vessel having an aperture and a conical passage or tube at one end, in combination with a glass or other acid-proof ball for closing the said aperture, substantially as set forth.

3. The combination of the vessel a, having the aperture or passage c, provided with the ribs or projections c', with the ball c^2, substantially as and for the purpose set forth.

4. In a cartridge, a vessel containing nitric acid arranged in combination with a vessel or receptacle containing picric acid mixed with nitrate of potash, nitrate of soda, nitrate of baryta, carbon, or similar substances, in order to vary or reduce the explosive power of the compound, substantially as set forth.

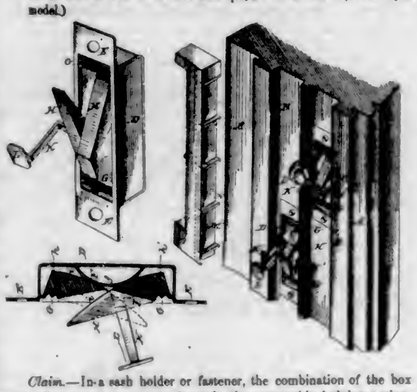
297,952. BOTTLE-STOPPER. MAX RUBIN, Philadelphia, Pa. Filed Jan. 7, 1884. (No model.)



Claim.—1. In a bottle-stopper, the combination, with the male and female parts of the stopper, of the spiral groove or grooves F, having stops K and straight grooves H upon or attached to the bottle, and the pin or pins E, substantially as herein shown and described, whereby the stopper can be readily opened and closed and the movable part can be detached when required, as set forth.

2. In a bottle-stopper, the combination, with the neck G of a bottle provided with spiral and longitudinal grooves F-H, and the shoulder I and the packing J, of the top A, provided with the handle B, the spout D, and the pins E, substantially as herein shown and described.

297,953. SASH-FASTENER. ISAAC J. SALTZER, Prescott, Pa., assignor of one-half to John G. Eckert, same place. Filed Feb. 14, 1884. (No model.)



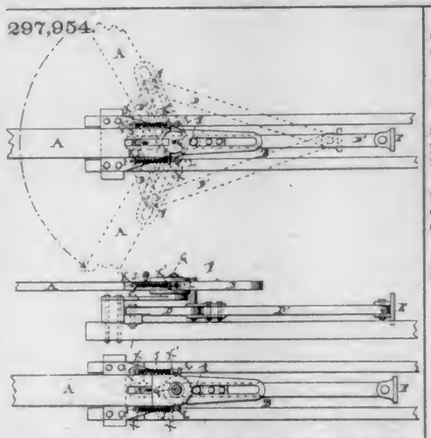
Claim.—In a sash holder or fastener, the combination of the box having the cross bars at opposite ends, the removable bulging spring, the two bolts or wedge-shaped catches hung removably upon the cross-bars at opposite ends of the box, crossing each other with their free ends and bearing against the spring at their point of intersection, and the thumb-lever projecting from the side of one of the wedge-shaped catches, as and for the purpose shown and set forth.

297,954. LEVER-POWER. DAVID W. SEELEY and WILLIAM W. SEELEY, Albany, N. Y. Filed Apr. 3, 1884. (No model.)

Claim.—1. A sweep for a lever-power, consisting of two sections fastened together by a pin, and around which the two sections may be turned, one of which sections shall have a semicircular recessed head, and the other a semicircular head to fit into the semicircular recess in the other, and one of which sections shall be slotted, as described.

2. A sweep for a lever-power, consisting of two sections fastened

297,954.



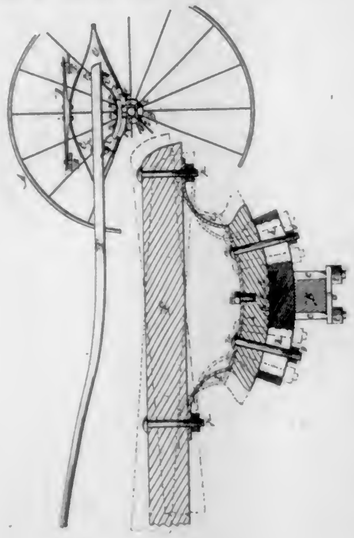
together by a pin, and around which the two sections may be turned, one of which sections shall have a semicircular recessed head, and the other a semicircular bead to fit into the semicircular recess in the other, and one of which sections shall be slotted, and in one of which sections there shall be a slide or rod to be inserted in a hole or recess in the other section, for the purpose set forth, and as described.

3. The combination, in a lever-power, of one or more springs placed on the sides of one section of a double-section slotted sweep, and a sweep consisting of two sections joined together, one of which sections shall be slotted, as described.

4. The combination, in a lever-power, of a sweep made of two sections joined together, in one of which sections there shall be a slot, the two arms of a knuckle-jointed lever, and a pin which is inserted in one of the arms forming said knuckle-joint, and passes through and is operated upon by the slotted portion of said sweep, as described.

5. The process of shortening the purchase-power of a sweep of a lever-power as the resistance of the material pressed is increased, as described.

297,955. TWO-WHEELED VEHICLE. EUGENE E. P. TRUESDELL, Belvidere, Ill. Filed Feb. 23, 1884. (No model.)



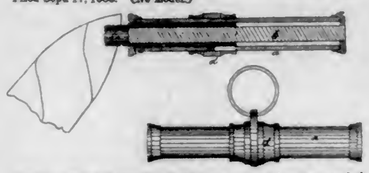
Claim.—1. The combination, with the axle-tree and with the thills, of a two-part pillow-block of segment form, made adjustable within each other, substantially as and for the purpose set forth.

2. The two-part pillow-blocks of segment form, corrugated on their meeting surfaces and made adjustable in the direction of their length to vary their relative positions, substantially as and for the purpose set forth.

3. The combination, with the two-part pillow-blocks of segment form, made adjustable within each other, of clamping-bolts to fix the parts in their adjusted position, substantially as and for the purpose set forth.

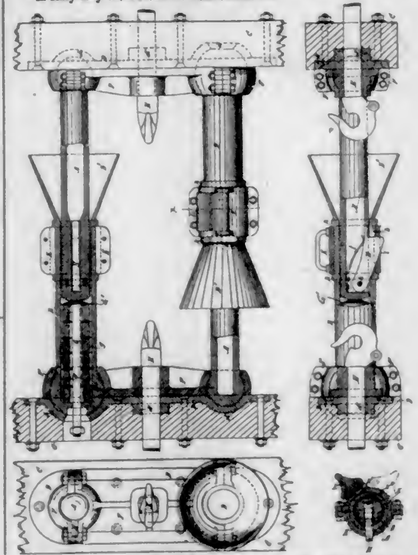
4. The combination, with the axle-tree and with the thills, of a two-part pillow-block of segment form, and a bracket-support to the thill, constructed and arranged to operate substantially as and for the purpose set forth.

297,956. CIGAR-PIERCING DEVICE. JACOB UNGERER, Newark, N. J. Filed Sept. 17, 1883. (No model.)



Claim.—The combination of the case, a center bar arranged therein and fixed in its relation thereto, a sliding tubular cutter working between the bar and case, and a finger-piece arranged outside the case and connected to the cutter, substantially as set forth.

297,957. CAR-COUPLING. FRANZ FORCHER VON AINBACH, Hautzenbuchl, and ANTON HAUSER, Judenburg, Styria, Austria-Hungary. Filed June 11, 1883. Renewed Mar. 25, 1884. (No model.) Patented in Germany Apr. 29, 1883, No. 24,720; in France Apr. 30, 1883, No. 155,187; in Belgium May 1, 1883, No. 61,287; in England May 2, 1883, No. 2,239, and in Italy May 12, 1883, XVII, 15,420, XXX, 419.



Claim.—1. The combination, with a male and female coupling on the same car, of an intermediate hook, E, arranged between said couplings, as shown and described.

2. The buffer-beam C, provided with a supporting-plate, D, having the sockets *d*, in combination with the transverse head F, provided at both ends with rings, whereby the spherical heads of the coupling may be held, as described.

3. The combination, with the coupling-cylinder having shoulders *k k* and the pivoted spring-pressed plate H, of the sleeve K, slotted at *l*, and made adjustable around said cylinder, as and for the purpose specified.

4. A car-coupling composed of a cylinder fixed by means of a ball-and-socket joint to the buffer-beam of one car, and a piston fixed in the same manner to the buffer-beam of the opposite car, the said piston being provided with a longitudinal groove in which a catch is pivoted, which catch is adapted to enter a notch or slot in the cylinder, substantially as herein shown and described, and for the purpose set forth.

5. In a car-coupling, the combination, with a cylinder mounted on one car and a piston on the opposite car, of a catch in the piston, and of a loose sleeve on the cylinder, which sleeve is provided with a notch or slot, substantially as herein shown and described, and for the purpose set forth.

6. In a car-coupling, the combination, with a cylinder mounted on one car and a piston on the opposite car, of a catch in the piston, and of a loose sleeve on the cylinder, which sleeve is provided with a notch or slot, and with a handle for turning it, substantially as herein shown and described, and for the purpose set forth.

7. In a car-coupling, the combination, with a cylinder on one car and a piston on the opposite car, of a buffer-rod in the cylinder, and of a spring surrounding the buffer-rod, substantially as herein shown and described, and for the purpose set forth.

8. In a car-coupling, a supporting-plate, D, on the buffer-beams, in which plate the boxes *d*, of spherical shape, are formed, and through which passes the traction-rod E, in combination with the transverse head F, placed loosely behind the hook of the traction-rod, and bearing at each extremity a ring with spherical faces, which hold the balls of the piston A and of the cylinder B against the boxes *d* of the supporting-plate D, so as to connect the double coupling to the traction-rods with which all the cars are provided, substantially as herein shown and described, and for the purpose set forth.

297,958. ADJUSTABLE HAME FOR HARNESS. MARK A. R. WYCOUFF, Batesville, Ark. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a hame, the adjustable plate D, provided with a projecting push end, *d*, and an engaging projection, *d'*, said plate being actuated by the plate *b*, secured to said plate D, substantially as and for the purpose set forth.

2. A hame having a grooved edge, having holes or notches in the bottom thereof, a sliding bar or plate moving in said groove, one end of the bar having a projection to engage with the holes in the groove, the opposite end extending upward and out of the groove, and a hand-plate, *b*, secured to and adapted to move said sliding bar, substantially in the manner and for the purpose set forth.

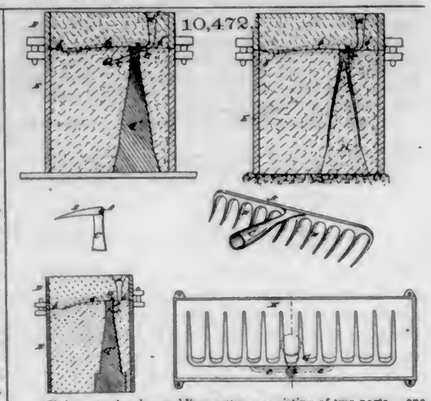
3. A hame having a grooved edge, a notched or perforated plate in the bottom of said groove, an adjustable plate or bar provided with an outwardly-projecting end and downward-projecting point, a handle-plate, *b*, secured to the sliding bar, and a spring interposed between the sliding bar and the handle-plate, as and for the purpose set forth.

4. A hame provided with an adjustable hook, E, and an adjustable bar, D, sliding in a groove, *g*, at one end of said hame, the sliding bar having a plate, *b*, and ring B secured thereto, substantially in the manner and for the purpose set forth.

REISSUES.

10,472. PATTERN AND MEANS FOR MOLDING GARDEN AND OTHER RAKES. JOHN F. HAY, Erie, Pa. Filed Aug. 3, 1883. Original No. 273,683, dated Mar. 6, 1883.

10,472



Claim.—1. A rake-molding pattern consisting of two parts—one for forming the mold for the rake portion, and the other for forming the external mold for the socket portion—the line of division between said parts being the neck of the socket-pattern, whereby the rake-mold may be divided horizontally, the mold for the rake portion may be formed horizontally, and the exterior mold for the socket portion may be formed vertically, substantially as set forth.

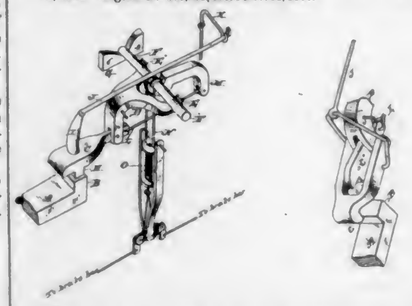
2. The herein-described rake-molding device, consisting of a two-part flask divided horizontally, and a two-part pattern, the latter being divided between the rake-head portion and the socket portion at the point of least diameter, whereby the mold may be divided horizontally, the exterior mold for the socket may be formed in an upright position and the mold for the rake-teeth may be formed in a substantially horizontal position, substantially as set forth.

3. The rake-molding device consisting of two sand-box sections, D E, placed one above the other, and divided by the joint *b*, and a pattern consisting of the two pieces G G', jointed at *c*, whereby the two-part flask may be divided horizontally, the exterior mold for the socket may be formed in an upright position, and the mold for the rake-teeth may be formed in a substantially horizontal position, as set forth.

4. The herein-described two-part rake-mold, divided substantially horizontally upon the line of the rake-teeth, the mold for the rake-head portion being formed between said parts, and the external mold for the socket portion being formed in an upright position in one of said parts, in combination with a vertically-situated core for the socket portion, substantially as set forth.

5. The herein-described two-part rake-mold, divided substantially horizontally upon the line of the rake-teeth, the mold for said teeth being formed between said parts in a position slightly inclined, the points of said teeth being lowest, and the external mold for the socket portion being formed in an upright position in the lower of said parts, in combination with a vertically-situated core for the socket portion, substantially as set forth.

10,473. AUTOMATIC CAR-BRAKE. DAVID J. MACPHERSON, Sioux Falls, Dak., assignor of one-half to J. B. Young, same place. Filed Mar. 13, 1884. Original No. 288,461, dated Nov. 13, 1883.



Claim.—1. In an automatic car-brake, the combination of a lever or levers provided with suitable lugs or shoulders upon their outer free ends, with the draw-head A, having a double-faced flange, B, formed upon

its rear end, and against which the flange or shoulder upon the lever engages when the car is moved in either direction, substantially as shown.

2. In an automatic car-brake, the combination of the draw-head having the flange or shoulder upon it, the lever or levers provided with lugs or shoulders, a pivoted lever or levers, D, a cross-bar, F, and a mechanism connected to the cross-bar for removing and applying the pressure of the brakes to the wheels, substantially as described.

3. In an automatic car-brake, the combination of the draw-head provided with a flange, a pivoted lever provided with a lug or shoulder, and the pivoted levers D M, cross-bar F, and a mechanism for applying and removing the pressure of the brakes, substantially as set forth.

4. In an automatic car-brake, the combination of the draw-head provided with a flange, B, a pivoted lever, C, provided with a lug or shoulder, H, the levers D M, connecting-rod L, the projection I, connecting-rod J, and a crank-lever, K, the parts being combined and arranged to operate substantially as shown and described.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the District of Columbia.

U. S., EX REL. R. HOE & CO. AND GEORGE C. GILL, v. BENJAMIN BUTTERWORTH, COMMISSIONER OF PATENTS.

1. When the Commissioner of Patents stands in this court upon the ground that his decision in favor of an applicant's right to a patent is permanent, a legal duty to proceed to the next step consequent upon such permanent decision must arise, and a failure or refusal to so proceed presents the very evil which the writ of mandamus is designed to cure.
2. Which it appears by the Commissioner's return that he refused to prepare a patent out of deference to the action of the Secretary of the Interior in entertaining an appeal from and reversing his decision, that act of deference does not constitute an exercise by him of discretion as to his own executive functions in such a sense as would cause the writ of mandamus to be an interference with executive discretion.
3. In this proceeding for mandamus the inquiry is, whether the title of the petitioner has been so adjudicated already that he is entitled to the fruit of that adjudication by the performance of a merely ministerial duty. The remedy provided by Section 4915 R. S. is not an adequate remedy in such case.
4. The provisions of the statute giving the Secretary power of directing is general, and the provisions relating to the duties and powers of the Commissioner are specific. It is the latter which must control. When the sections of the statutes are considered together, it must be held that the Commissioner must perform his duties under the direction of the Secretary, except when he is already directed by the superior directory power of the legislature.
5. Applying the above rule of construction to the Commissioner's decisions in cases of interference, *Held* that they are not subject to the directory power of the Secretary, either by contemporaneous dictation or by appeal and reversal described as direction.
6. It appearing that what was intended to be a complete system of remedies by appeal from the decisions of the Commissioner has been provided by the same statute which provides for the directory power of the Secretary, *Held* that in the absence of any express provision for appeal to the Secretary an inferential right of appeal is excluded.
7. Upon the above considerations it is furthermore *held* that the appellate proceedings and reversal by the Secretary in the case at hand were unauthorized, and therefore a nullity; and that consequently the Commissioner of Patents, having finally adjudicated that the relators are entitled to a patent improperly refuses to issue the same, and *ordered* that the writ of peremptory mandamus shall issue.

Mr. Justice JAMES delivered the opinion of the court, as follows:

This is a petition for a writ of peremptory mandamus to the Commissioner of Patents to receive the final fee and to cause letters patent to the relators, R. Hoe & Co., to be prepared and presented to the Secretary of the Interior for his signature. It sets forth that on March 12, 1881, the relator Gill made application for letters patent for certain improvements in printing-machines; that on primary examination the Commissioner was of opinion that this application would interfere with an unexpired patent granted to Walter Scott on March 8, 1881; that such proceedings were had that an interference was duly declared, whereupon the Examiner of Interferences decided that Scott was the original and first inventor of said improvements; that upon appeal to the Examiners-in-Chief this decision was affirmed; that upon further appeal to the Commissioner the latter decided that the relator Gill was the original and first inventor, and entitled to a patent for said improvements, and that he finally decided, on June 4, 1883, that such patent should issue; that the relator Gill assigned to the other relators all his title to said invention, and requested the Commissioner to issue the letters patent therefor when granted to them; that the final fee was tendered to the Commissioner, who refused to accept it, and also refused to cause letters patent to be prepared and presented to the Secretary of the Interior for signature; that the relators were informed by the Commissioner that the only ground of his refusal was the pendency before the Secretary of the Interior of an appeal taken by Scott; that the Commissioner has not denied, and does not deny, that a patent should issue to Gill, unless the Secretary has the right to suspend the issuing thereof by reason of the appeal pending before him, and that the Commissioner has still later informed them that the Secretary has, upon said appeal, reversed his decision and decided that Scott is the original and first inventor of said improvements, and is entitled to a patent therefor.

In the communication last referred to, which is addressed to the relators' counsel, and is made part of the petition, the Commissioner says:

> If the decision of the Commissioner adjudging priority to your client is final, and not subject to review and reversal by the honorable Secretary of the Interior, then your client is entitled, on payment of final fee, to have his patent prepared and issued. But if the honorable Secretary has under the law jurisdiction on appeal to hear and determine the cause, then your client is not so entitled. The decision of the Commissioner of Patents is that your client Gill is entitled to the patent prayed for. On appeal from that decision the honorable Secretary decided that your client is not so entitled. In view of the facts related, I refuse to issue a patent for your client, or to prepare a patent for issue, or to take any steps whatever in that direction. I do this, not because I want further time to consider the case, but because the honorable Secretary has, on hearing the cause, reversed the decision of the Commissioner of Patents, as hereinbefore stated.

In his return the Commissioner says that the statements of the relators as to the applications, appeals, and decision of the Commissioner are true, and that this decision has not been reversed or modified by the Commissioner; that on the 14th of June, 1883, an appeal to the Secretary of the Interior was taken by Scott, and prosecuted under rules prescribed by the Secretary, and that on March 7, 1884, the Secretary made a decision reversing the decision of the Commissioner, and adjudging that Scott was the first inventor and that

Gill was not entitled to a patent; that pending that appeal—namely, on the 4th day of March, 1884—the relator did demand of respondent that he prepare a patent for issue to the relator Gill in pursuance of the decision of the Commissioner of Patents, and that respondent refused so to do, or to take any steps in that behalf; that after the decision of the Secretary had been pronounced the relator again demanded that the respondent prepare for issue a patent in accordance with the judgment of the Commissioner, tendering at the same time the final fee due; that respondent refused to accept said fee, and again refused to prepare said patent; that he so refused, not because he desired to make further inquiry, or to be further advised in that behalf, but that he based his refusal, and does so still, solely upon the ground that the Secretary of the Interior had entertained the appeal taken to him from said decision, and had entered a decision reversing that of the Commissioner of Patents, and awarded priority of invention to Walter Scott.

The return further states that on the 26th of February, 1884, the Secretary of the Interior advised respondent that in pursuance of an opinion of the Attorney-General to the effect that he could, on appeal to him, exercise the jurisdiction to review the decision of the Commissioner of Patents, he had exercised that jurisdiction, and that respondent, in deference to that opinion and the action of the Secretary, refused, and does refuse, to accede to the demand of the relator. In conclusion he says:

> Your respondent further says that if the judgment of the Commissioner of Patents, *which is, that the relator is entitled to receive his patent, as prayed for*, is final, and if upon such judgment it is the lawful duty of the respondent to accept said final fee and take the necessary and proper steps to prepare said patent for issue, as prayed, then your respondent has improperly refused to prepare said patent for issue; but if his decision is subject to review and reversal on appeal to the honorable the Secretary of the Interior, then such refusal on the part of your respondent to accept said fee and prepare said patent for issue is right and proper.

Upon these facts we are asked to require the Commissioner of Patents to accept the final fee tendered by the relators, and to prepare and submit to the Secretary of the Interior, for his signature, letters patent to them for the improvement in printing-machines described in the petition. The questions involved have been argued with very noticeable care and ability by counsel for the relators, and counsel appearing, as we understand, in fact, in the interest of Scott, but nominally as *amicus curiæ*, inasmuch as Scott is not a party to this proceeding. It is claimed by the latter that the relators are not entitled to the remedy of mandamus, first, because the Commissioner of Patents has no longer the legal power to do the act which would be commanded by the writ, that power having been superseded and taken away from him by a lawful appeal to the Secretary of the Interior, and a lawful and controlling decision by the latter that the relators are not entitled, and that Walter Scott, the adverse party to the interference, is entitled to a patent for the improvements in question; and, secondly, because, even if it should be held that the appeal to the Secretary of the Interior and his decision in the premises were unauthorized, and therefore, in contemplation of law, a nullity, the writ would do something more than command a merely ministerial act, and would, in fact, control what would still be a matter of executive discretion with the Commissioner himself; and, third, because the patent laws have provided for the relator a different and adequate remedy. Reversing the order of these propositions, we shall first consider whether, assuming that the Commissioner's decision upon a question of interference is final and conclusive as to the matters submitted to him so far as executive action is concerned, and is not subject to review by the Secretary of the Interior, the writ of mandamus is inapplicable under the circumstances of this case.

We find that the Commissioner has in his return defined the status of the proceedings reached in his own action. He

> admits that it is true that the Commissioner of Patents did decide and adjudge that the said George C. Gill was entitled to receive a patent, as set forth by the relator herein, * * * and that said decision has not been reversed or modified by the Commissioner of Patents.

He then states that when he refused the relator's demand for the issuance of a patent, it was "not because he desired to make further inquiry or to be further advised in that behalf;" and in the conclusion of his return he says:

> If the judgment of the Commissioner of Patents, *which is, that the relator is entitled to receive his patent, as prayed for*, is final, and if upon such judgment it is the lawful duty of the respondent to accept said final fee and take the necessary and proper steps to prepare said patent for issue, as prayed, then your respondent has improperly refused to prepare said patent for issue.

Now, we do not doubt that it is within the executive discretion of the Commissioner, even after making and communicating to an applicant a decision in his favor, and at any time before the issue of a patent for the signature of the Secretary, to reconsider that decision and to make a contrary one. In the ordinary course of business the whole matter rests in executive discretion, at least down to that point, and if nothing more appears the court will not interfere by the writ of mandamus to compel the issue of a patent as the next and consequent step. The Commissioner could answer a demand of the applicant by the simple statement that he had changed his mind, and had decided that the applicant was not entitled to a patent; and so long as he must be supposed to occupy that position he cannot be treated as if he had ceased to do so. It cannot yet be said that his only remaining duty is ministerial; but the respondent does not in any true and practical sense occupy that position. He has said, substantially, that the original decision of the Commissioner of Patents, to the effect that the relator was entitled to a patent as prayed for, has not been changed, that he does not even intend to re-examine it, and that it *is now his decision;* and it is important to observe that this was not merely a position taken in his official communications with the relators. It is the position on which he stands in this court. Now, a position thus assumed in a judicial proceeding may, for the purposes of that proceeding, be treated by the court as the conclusive legal attitude of the party. The executive decision which he thus presents to us and stands upon must be regarded here as a final fact, which is to determine legal consequences in the case. What, then, is the legal consequence of a fixed decision, or what we must treat as a fixed decision, that an applicant is entitled to a patent? No question could be raised if that decision were final, because the law had declared it to be final as soon as it was made. The legal consequence of that fixed decision would be the ministerial duty to issue the patent. We perceive no principle which should distinguish the Commissioner's duty in the case before us from his duty in the case supposed. On principle, the same duty must

accrue whenever his decision to issue a patent must be treated by the court as a fixed and permanent one. Although the law contemplates that the Commissioner may reverse such a decision, and *thereby* defeat the issuance of a patent, it clearly does not contemplate that he may adhere to and stand upon it in this court, and yet defeat the issuance of a patent by simply refusing to act in pursuance of that decision. The progress of executive duty may lawfully be reversed by a new and lawful executive action in a contrary direction; but it would be unreasonable that the law should be arrested at a half-finished stage simply by non-completion, and that there should be no remedy to compel its movement. It would be playing with words, substituting phrases for substance, to say that the writ of mandamus must not be applied in commanding the final step to be taken, on the ground that down to the actual issue of the patent the whole matter must still be regarded by us as resting in executive discretion whether a patent shall issue or not. When an officer stands in court, by his return, upon the ground that he has exhausted the uses of his executive discretion, and refuses to take the ministerial step which follows next when executive discretion has ended, he presents to the court the very evil which the writ of mandamus is designed to remove—a refusal, namely, to perform a ministerial duty. But it was suggested, further, that the determination of the Commissioner not to disregard the action of the Secretary was an exercise of executive discretion, and that, whether he was right or wrong in that determination, his executive action in that matter is not to be controlled by mandamus. It must be remembered that we are now considering the applicability of this remedy on the hypothesis that the Commissioner's control of the question before him was final, and that the Secretary was without power in the premises. On that hypothesis the Commissioner's forbearance or refusal to proceed according to his own judgment must be regarded in law as simply an act of deference. It was not a decision as to his own legal duty. However discreet such conduct toward the head of the Department may have been, it did not constitute an exercise of that kind of discretion with which a court must not interfere by mandamus.

It was also suggested that as the statute provides that "The Commissioner of Patents, under the direction of the Secretary of the Interior, shall superintend or perform all duties respecting the granting and issuing of patents directed by law," the Commissioner must be held to have construed this provision and to have acted upon that construction in refusing to proceed in pursuance of his own decision after the Secretary had undertaken to review and reverse it. This, it is claimed, was an exercise of executive power and discretion which the court must not control by mandamus. But it is apparent on the whole face of his return that the Commissioner, in refusing to follow up his own decision, did not, as a matter of fact, act upon any executive construction of his own as to that provision. It is to be gathered from his answer that the question whether that section gave revisory power to the Secretary was the one which he had not undertaken to settle. Instead of informing us, either expressly or inferentially, that his decision upon that question was the rule of his action in refusing to proceed in pursuance of his own original decision, he distinctly submits it as an unsettled question. Deference to the will of the Secretary, so far from being a decision upon this question, constituted an abandonment of any effort to decide it. Plainly he did not attempt to decide executively upon the effect of the provisions referred to. But the important point to be observed is, that it is wholly immaterial whether he acted upon a construction of that law. If his decision upon the original question before him was not subject to revision by the Secretary, and if he himself had so acted that only a ministerial duty remained to be performed by him, that ministerial duty would not cease to exist merely by reason of his deciding incorrectly that the whole of his power had been taken away. To interpose that decision would be merely to give a bad reason for refusing to perform his ministerial duty; and to describe it as an exercise of executive discretion, and thus to exclude the remedy of mandamus on the principle that it is never used to control executive discretion, would be to defeat the remedy by a mere misnomer. He had no executive discretion to deny his duty, either directly or by circuity.

It was next objected that this remedy is not applicable because a different and adequate remedy has been provided for the relators. This objection refers to Section 4915 of the Revised Statutes, which provides that—

> Whenever a patent is refused, either by the *Commissioner of Patents*, or by the Supreme Court of the District of Columbia upon appeal from the Commissioner, the applicant may have remedy by a bill in equity, and the court having cognizance thereof, on notice to adverse parties and other due proceedings had, may adjudge that such applicant is entitled according to law to receive a patent for his invention as specified in his claim. And such adjudication, if it be in favor of the right of the applicant, shall authorize the Commissioner to issue such patent on the applicant filing in the Patent Office a copy of the adjudication and otherwise complying with the requirements of law. In all cases where there is no opposing party, a copy of the bill shall be served on the Commissioner, and all the expenses of the proceeding shall be paid by the applicant, whether the final decision is in his favor or not.

This objection, that the relators have another remedy in this case, comes rather inconveniently from the party who makes it. His principal position is, that the decision of the Commissioner has been lawfully reversed by the Secretary. If that be true, it is the Secretary, not the Commissioner, who has refused them a patent, and this section does not provide them a remedy by a bill in equity on such refusal. We must consider the objection, however, on the hypothesis that the Secretary's action is a nullity. This section applies to interference cases as well as to applications *ex parte*. When there are adverse parties, notice must be given to them. They are let in as formal parties to the contest, and the contest is upon proofs and the merits of the adverse claims. The case is heard *de novo*. Can it be seriously claimed that the right to try his case in this manner, under the burden of paying all the expenses of the proceeding, is an adequate remedy to a party who *is already entitled* to his patent by the favorable decision of the Commissioner? We conceive that this is one of the cases in which a question is its own answer. Although it may be said that the object, both of the petition for the writ of mandamus and of the bill in equity, is to obtain a patent, the subject of inquiry and the basis of relief in the two proceedings are wholly different. In the proceeding for mandamus, the inquiry is, whether the right of the petitioner to a patent has already been decided, and in such a way that he is entitled to the fruit of that decision by performance of a

merely ministerial duty. In the equity proceeding, the inquiry is, whether he proves originally a right to have a patent. Clearly the right to have the latter inquiry and adjudication is not an adequate remedy to one who already has a sufficient determination of the same question and only asks for execution.

It was insisted at the argument that the objections which we have examined, or any one of them, would forbid the granting of a writ of peremptory mandamus in this case, even if the court should be of the opinion that the Secretary of the Interior does not possess revisory or appellate control over such decisions of the Commissioner of Patents, and that they should preclude an inquiry into the extent of the Secretary's powers. We have, therefore, considered them attentively, and we hold that if the power of the Commissioner of Patents to adjudicate the questions presented to him in the premises was final, so far as executive action was concerned, and was not superseded by a lawful appeal to the Secretary, there is nothing in these objections which precludes the application of the writ of mandamus. We proceed, therefore, to consider the question whether the power of the Commissioner to comply with the command prayed for has been taken away from him by a lawful appeal to the Secretary and a lawful decision by the latter reversing the decision of the Commissioner.

The claim of revisory power in the Secretary of the Interior was based in the argument upon the following provisions of the Revised Statutes:

Section 441. The Secretary of the Interior is charged with the supervision of public business relating to the following subjects: first, the census, when directed by law; second, the public lands, including mines; third, the Indians; fourth, pensions and bounty-lands; fifth, patents for inventions; sixth, the custody and distribution of publications; seventh, education; eighth, Government Hospital for the Insane; ninth, Columbia Asylum for the Deaf and Dumb.

Section 481. The Commissioner of Patents, *under the direction of the Secretary of the Interior*, shall superintend or perform all duties respecting the granting and issuing the patents directed by law.

Section 483. The Commissioner of Patents, *subject to the approval of the Secretary of the Interior*, may from time to time establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office.

Section 487. For gross misconduct, the Commissioner of Patents may refuse to recognize any person as a patent agent, either generally or in any particular case; but the reasons for such refusal shall be duly recorded, and be *subject to the approval of the Secretary of the Interior*.

Section 4883. All patents shall be issued in the name of the United States of America, under the seal of the Patent Office and shall be *signed by the Secretary of the Interior* and countersigned by the Commissioner of Patents.

Especial emphasis, of course, was laid upon Section 481, which provides that the Commissioner shall perform his duties under the direction of the Secretary. It is claimed, broadly, that "the power of supervision and direction gives jurisdiction to the Secretary, upon application made to him in any form that he may prescribe, by appeal or otherwise, to affirm, reverse, or modify the action of the Commissioner."

The provisions referred to, and all of the provisions of the Revised Statutes which we shall have occasion to consider, were taken from the act of July 8, 1870, which was entitled "An act to revise, consolidate, and amend the statutes relating to patents and copyrights." In that work of consolidation Section 481 was taken without any change, except the rejection of redundant words, from the first section of the act of July 4, 1836, by which the office of Commissioner of Patents was first established. It is of some importance, therefore, to examine the extent of the supervisory powers of the Secretary of State as given by this same provision in the original act.

Section 7 of that act provided that the Commissioner should "make or cause to be made" an examination of every application for a patent, and that if, after certain proceedings had, he should decide that the applicant was not entitled to a patent, an appeal might be taken to a board of examiners, "to be composed of three disinterested persons," appointed for that purpose by the Secretary of State, one of them, at least, to be "selected, if practicable and convenient, for his knowledge and skill in the particular art, manufacture, or branch of science" to which the alleged invention appertained. This board might "reverse the decision of the Commissioner, either in whole or in part," and when their opinion was certified to him he was to be governed by it in the further proceedings to be had. Section 8 related to interference cases, and provided a like appeal, with like effect, from the Commissioner's decision.

The act of 1836 provided, then, that the Commissioner should perform his duties "respecting the granting and issuing of patents" "under the direction of the Secretary of State;" and it also provided that he should make a decision on the question whether an applicant was entitled to a patent; but it provided, further, that these decisions should be revised and controlled by a board of examiners. This revision was part of the regular course of executive administration, and the statute gave the Secretary no control over the board of examiners. It is obvious, then, that the Secretary's control over the Commissioner could not be exercised in the form of revisory power over his decisions. Now, it is nothing to the purpose to suggest here that a revisory tribunal no longer intervenes between the Commissioner and the Secretary's control, and that the decisions of the former are thus brought within the operations of the Secretary's direction. The point to be observed is, that the directory power of the Secretary of State and of the Secretary of the Interior was expressed in the same terms, and that that grant of power, as found in the act of 1836, did not pretend to give appellate and revisory power over the decisions which the Commissioner was authorized to make. Let us see whether anything in the act of 1870, which is found in the Revised Statutes, requires us to adopt a different rule in construing the same language.

It is important to observe just here that although Section 481 of the Revised Statutes, which gives the Secretary of the Interior directory power over the duties of the Commissioner of Patents, is found in the Title XI, relating to the organization of the Interior Department, and the sections which we shall consider are found in Title LX, relating to the subject of patents and copyrights. All of them were taken from the act of July 8, 1870. In that act they formed parts of one system, and were to be construed together as such. It is a settled rule of construction of the Revised Statutes that its contents are to be construed in the light of the original statutes from which they were taken. This section relating to directory power is therefore to be regarded as part of the general system, of which the sections now to be considered are also a part.

The following sections provide a system of appeals by which all applications, whether in interference

cases or *ex parte*, may be brought before the Commissioner for his decision:

Section 4904. Whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application, or with an unexpired patent, he shall give notice thereof to the applicants, or applicant and patentee, as the case may be, and shall direct the primary examiner to proceed to determine the question of priority of invention; and the Commissioner may issue a patent to the party who is adjudged the prior inventor, unless the adverse party appeals from the decision of the primary examiner, or of the Board of Examiners-in-Chief, as the case may be, within such time, not less than twenty days, as the Commissioner shall prescribe.

Section 4909. Every applicant for a patent, or for the reissue of a patent any of the claims of which have been twice rejected, and every party to an interference, may appeal from the decision of the primary examiner, or of the examiner in charge of interferences in such case, to the Board of Examiners-in-Chief, having once paid the fee for such appeal.

Section 4910. If such party is dissatisfied with the decision of the Examiners-in-Chief, he may, on payment of the fee prescribed, appeal to the Commissioner in person.

These sections, as we have said, provide a regular system of appeals, both in interference and *ex parte* cases, which brings every application to the Commissioner for decision. The statute commands him to decide, and, of course, it intends that he shall apply the usual processes of decision—in other words, the *judgment* of the person deciding. Can it be possible that the legislature intended, by giving the Secretary directory power, that he might intervene at this point of time and direct the Commissioner what decision he, the Commissioner, was to make? It must be kept in mind that the whole of the Secretary's power must be found within that one word "direction." It hardly seems worth while to reason upon the question whether a general power to direct authorizes the directing officer to dictate to one who is charged by the very same law with the duty and power of hearing the parties to a contest and of deciding between them accordingly what conclusion his mind must reach. Clearly he cannot, in the exercise of this power, dictate to the Commissioner touching his decision before he makes it or while he is making it. Can it be imagined, then, that the power of "direction," which cannot lawfully be applied to the Commissioner's action while he is deciding, was intended to be applied to the same matter after he had decided? Is it permissible to say that a power of direction which cannot be exercised *as* direction may be exercised by way of appeal and reversal, and all the time be called "directing?"

We are informed by the pleadings and exhibits that the Secretary of the Interior has acted upon the opinion of a former Attorney-General to the effect that this general provision of directory power controls the meaning of every section which assigns a duty to the Commissioner, just as if it had been inserted in each; and that the duty and power of hearing and deciding contested questions of priority of invention, for example, are to be construed as if the statute said they were to be performed under the direction of the Secretary. We hold that precisely the opposite rule of construction must be applied to the statute in order to ascertain correctly the intention of the legislature. It must be remembered that this provision is general, and that the provisions relating to the duties and powers of the Commissioner are specific. It is the latter which must control. When they are considered together, it must be held that the Commissioner must perform his duties under the direction of the Secretary, except when he is already directed what he must do by the superior directory power of the legislature. Applying this rule of construction to the Commissioner's decisions in cases of interference, we hold that they are not subject to the directory power of the Secretary, either by contemporaneous dictation or by the circumlocution of appeal and reversal described as direction. We are brought to this conclusion independently of the provisions of the patent laws, which remain to be considered, but we are still further confirmed by these provisions.

Section 4910, as we have seen, provides for an appeal to "the Commissioner in person." Section 4911 then provides that—

If such party, except a party to an interference, is dissatisfied with the decision of the Commissioner, he may appeal to the Supreme Court of the District of Columbia, sitting *in banc*.

By Section 4913 the Commissioner is required to furnish the court with "the grounds of his decision, fully set forth in writing, touching all the points involved by the reasons of appeal."

Section 4914 confines the revision here to the points set forth in the reasons of appeal, and provides that, after hearing the case, this court shall return to the Commissioner a certificate of its proceedings and decisions, which shall be entered of record in the Patent Office, "and shall govern the further proceedings in the case."

These sections authorize a revision of the grounds on which the Commissioner refuses a patent on application *ex parte*, and they do not authorize a revision of the grounds on which the Secretary may act. Manifestly it was the intention of Congress to provide a judicial revision which should be available in every case in which an application *ex parte* is refused—in other words, that refusal should not be made by an officer whose grounds of decision are not subjected to revision by this section.

Section 4915 provides a still further remedy in case of the refusal of a patent for application *ex parte*, and applies the remedy to refusal of an application in interference. It directs that—

Whenever a patent on application is refused, either by the Commissioner of Patents or by the Supreme Court of the District of Columbia upon appeal from the Commissioner, the applicant may have remedy by bill in equity, and the court having cognizance thereof, on notice to adverse parties and other due proceedings had, may adjudge that such applicant is entitled, according to law, to receive a patent for his invention as specified in his claim, or for any part thereof as the facts in the case may appear; and such adjudication, if it be in favor of the right of the applicant, shall authorize the Commissioner to issue such patent, on the applicant filing in the Patent Office a copy of the adjudication and otherwise complying with the requirements of law. In all cases where there is no opposing party a copy of the bill shall be served on the Commissioner, and all the expenses of the proceedings shall be paid by the applicant, whether the final decision is in his favor or not.

This section, and the provisions for appeal to this court which we have just considered, provide either a formal appeal or an original proceeding substantially appellate in its character, which seems manifestly intended to cover all cases in which a patent is "refused," whether they be cases of application *ex parte* or in interference. It is to be observed that in both cases a refusal *by the Commissioner* is the basis of the remedy, and that it seems to be thus implied that, so far as the executive department is concerned, the examination of a claim for a patent and the power to decide upon such claim terminate with him.

But another class of decisions was still to be provided for. The provisions which we have considered relate only to cases in which patents were refused; but it might happen that a patent was improperly granted. A remedy for such cases is found in section 4918, which provides that—

Whenever there are interfering patents, any person interested in any one of them, or in the working of the invention claimed under either of them, may have relief against the interfering patentee, and all parties interested under him, by suit in equity against the owners of the interfering patent; and the court, on notice to adverse parties, and other due proceedings had according to the course of equity, may adjudge and declare either of the patents void in whole or in part, or inoperative, or invalid in any particular part of the United States, according to the interest of the parties in the patent or the invention patented. But no such judgment or adjudication shall affect the right of any person except the parties to the suit and those deriving title under them subsequent to the rendition of such judgment.

In this review of the patent laws certain facts are prominent. The same statute which provides that the Commissioner of Patents shall "perform all duties respecting the granting and issuing of patents" under the "direction of the Secretary of the Interior" provides expressly and in detail for a regular course of examination; it provides expressly for a regular course of appeals from the primary examiners to the Examiners-in-Chief, from the Examiners-in-Chief "to the Commissioner in person," and for a decision by him upon the right of an applicant to receive a patent; it does not provide expressly for an appeal from the Commissioner's decision to the Secretary of the Interior; but it does provide expressly for an appeal and revision of those decisions by this court, or for an original judicial proceeding by which relief against those decisions may be had. These provisions of appeal and relief constitute a system, and when the legislature provides such a system we must suppose that it was intended to be complete and sufficient. As no place in that system was assigned to the Secretary of the Interior, it cannot have been intended that he should have one. Taken in connection with these provisions, his general power of "direction" must be construed to be a power to direct, except when the Commissioner is authorized by the same statute to make "decisions."

We hold, then, that the attempted reversal of the Commissioner's decision by the Secretary in the case before us was unauthorized, and therefore a nullity; and that, consequently, the Commissioner, having finally adjudicated that the relators are entitled to a patent, improperly refused to issue the same. The writ of peremptory mandamus will accordingly issue as prayed for.

Supreme Court of the United States.

GARRETSON *v.* CLARK *et al.*

Decided March 24, 1884.

When a patent is for an improvement, and not for an entirely new machine, the patentee, in order to entitle him to more than nominal damages, must give evidence tending to separate or apportion the defendant's profits and the patentee's between the patented feature and the unpatented features, and such evidence must be reliable or tangible, and not conjectural or speculative; or he must show by equally reliable and satisfactory evidence that the profits and damages are to be calculated on the whole machine, for the reason that the entire value of the whole machine as a marketable article is properly and legally attributable to the patented feature.

APPEAL from the Circuit Court of the United States for the Northern District of New York.

Mr. Jas. A. Allen for the appellant.
Mr. W. F. Cogswell for the appellees.

Mr. Justice FIELD delivered the opinion of the Court.

In this case the court below sustained the plaintiff's patents, adjudged that the defendants were infringers, and directed a reference to a master to ascertain and report the profits and gains made by the defendants. The master reported that no proof was presented to him that they had made any profit, or that the plaintiffs had suffered any damages. The court sustained the report, and the decree allowed the plaintiffs only nominal damages. From this decree the appeal is taken. (*Garretson* v. *Clark*, 15 Blatchford, 70.)

The patent was for an improvement in the construction of mop-heads, which may be described with sufficient accuracy as "an improvement in the method of moving and securing in place the movable jam or clamp of a mop-head." With the exception of this mode of clamping, mop-heads like the plaintiff's had been in use time out of mind. Before the master the plaintiff proved the cost of his mop-heads and the price at which they were sold, and claimed the right to recover the difference as his damages. This rule was rejected, and no other evidence of damages being offered the master reported as stated.

When a patent is for an improvement, and not for an entirely new machine or contrivance, the patentee must show in what particulars his improvement has added to the usefulness of the machine or contrivance. He must separate its results distinctly from those of the other parts, so that the benefits derived from it may be distinctly seen and appreciated. The rule on this head is aptly stated by Mr. Justice Blatchford in the court below:

The patentee [he says] must in every case give evidence tending to separate or apportion the defendant's profits and the patentee's damages between the patented feature and the unpatented features, and such evidence must be reliable and tangible, and not conjectural or speculative, or he must show by equally reliable and satisfactory evidence that the profits and damages are to be calculated on the whole machine, for the reason that the entire value of the whole machine as a marketable article is properly and legally attributable to the patented feature.

The plaintiff complied with neither part of this rule. He produced no evidence to apportion the profits or damages between the improvement constituting the patented feature and the other features of the mop. His evidence went only to show the cost of the whole mop and the price at which it was sold; and, of course, it could not be pretended that the entire value of the mop-head was attributable to the feature patented. So the whole case ended, the rule was not followed, and the decree is therefore affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of May 6, 1884.

Patents	374	No. 297,959 to No. 298 332, inclusive.
Designs	8	No. 14,987 to No. 14,994, inclusive.
Trade-Marks	23	No. 11,153 to No. 11,174, inclusive.
Labels	4	No. 4,112 to No. 4,115, inclusive.
Reissues of patents	4	No. 10,474 to No. 10,477, inclusive.
Total issue	412	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	4	
Austria-Hungary			Hawaiian Islands		
Barbadoes			Hayti		
Belgium			Italy		
Bermuda			Mexico		
Brazil			New Zealand		
Canada	3		Russia		
Chili			Scotland	1	
Colombia, U. S. of			Sweden		
Cuba			Switzerland	3	
Denmark			Total to citizens of foreign countries	19	1
Ecuador					
England	7	1			
France	1				

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2		Nebraska	2	
Arizona Territory			Nevada		
Arkansas			New Hampshire	4	
California	10		New Jersey	26	4
Colorado			New Mexico Territ'y		
Connecticut	13	1	New York	72	1
Dakota Territory	1		North Carolina	1	
Delaware			Ohio	39	
District of Columbia	5		Oregon		
Florida			Pennsylvania	41	1
Georgia	2		Rhode Island	2	
Idaho Territory			South Carolina		
Illinois	34	1	Tennessee		
Indiana	9		Texas	5	
Indian Territory			Utah Territory		
Iowa	6		Vermont	1	
Kansas	3		Virginia	2	6
Kentucky	7		Washington Territ'y		
Louisiana	2		West Virginia		
Maine	2	1	Wisconsin	7	
Maryland	2	4	Wyoming Territory		
Massachusetts	41	4	United States Army		
Michigan	9	1	United States Navy		
Minnesota	3		Total to citizens of the United States	363	25
Mississippi	4				
Missouri	7	1			
Montana Territory					

DESIGNS.

14,987.—BURIAL-CASKET.—*Isaiah G. Hatcher*, Cleveland, Ohio. Application filed February 11, 1884. Term of patent 7 years.

14,988.—MOLDING.—*Isaiah G. Hatcher*, Cleveland, Ohio. Application filed February 12, 1884. Term of patent 7 years.

14,989.—COFFIN-TABLET.—*Oliver McCarthy*, Meriden, Conn., assignor to *The Meriden Britannia Company*, same place. Application filed February 23, 1884. Term of patent 14 years.

14,990.—CULTIVATOR-KNIFE.—*Inrank A. Packard*, Delphos, Kans. Application filed March 31, 1884. Term of patent 14 years.

14,991.—BACK OF A GAME-CARD.—*L. Lum Smith*, Philadelphia, Pa. Application filed March 24, 1884. Term of patent 3½ years.

14,992.—CHRISTMAS-CARD.—*Robert Sneider*, Brooklyn, N. Y. Application filed January 11, 1884. Term of patent 14 years.

14,993.—ENVELOPE.—*Robert Sneider*, Brooklyn, N. Y. Application filed January 11, 1884. Term of patent 14 years.

14,994.—STATIONERY-CASE.—*Joshua F. Tannatt*, Springfield, Mass. Application filed March 10, 1884. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

11,153.—SMOKING-TOBACCO.—*James G. Butler & Co.*, St. Louis, Mo. Application filed March 28, 1884.
"The words 'UNCLE NED.'"

11,154.—STEEL BARS AND PLATES.—*Detroit Steel and Spring Works*, Detroit, Mich. Application filed March 17, 1884.
"The letter 'D' inclosed within a triangle."

11,155.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed March 26, 1884.
"The word-symbol 'GRAPE SHOT.'"

11,156.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed March 26, 1884.
"The word-symbol 'BLUE BELL' and the pictorial representation of the flower bearing that name."

11,157.—APPARATUS FOR PRODUCING FAC-SIMILE COPIES OF WRITINGS, DRAWINGS, AND OTHER DELINEATIONS.—*W. F. B. Massey-Mainwaring*, 99 Shoe Lane, county of Middlesex, England. Application filed January 16, 1884.
"The representation of a toothed wheel and the word 'CYCLOSTYLE.'"

11,158.—CERTAIN PROPRIETARY MEDICINES.—*Adolph C. Meyer*, Baltimore, Md. Application filed March 11, 1884.
"A parallelogram of a bright-red color and the fac-simile of the registrant's firm-signature, 'A. C. MEYER & CO.'"

11,159.—BASE-BALL BATS, INDIAN CLUBS, &c.—*A. J. Reach & Co.*, Philadelphia, Pa. Application filed December 12, 1883.
"A red band encircling a base-ball bat, Indian club, or other article of sporting goods."

11,160.—BASE-BALL BATS, INDIAN CLUBS, &c.—*A. G. Spalding & Bros.*, Chicago, Ill. Application filed November 8, 1883.
"A broad black band encircling the bat about midway thereof."

11,161.—DYES.—*William M. Townley*, Newark, N. J. Application filed March 5, 1884.
"The words 'LIQUID MARBLE.'"

11,162.—PLUG, TWIST, AND SMOKING AND CHEWING TOBACCO, SNUFF, CIGARS, CIGARETTES, AND CHEROOTS.—*Charles W. Van Alstine*, Chelsea, Mass. Application filed March 26, 1884.
"The arbitrarily-selected words 'OUR JOKES OR TRIX, ARE BEST OF ALL.'"

11,163.—WATCHES.—*The Waterbury Watch Company*, Waterbury, Conn. Application filed July 21, 1883.
"The words 'THE WATERBURY.'"

11,164.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"The representation of a triangle within a circle and two letters with a horizontal line between them within the triangle."

11,165.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"The symbol of an anchor, the word 'ANCHOR,' the word 'CLARK'S,' and an arrangement of lines."

11,166.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.
"Two or more curved lines within a circle, the highest point of each line being its center, and its extremities abutting into the circle, and the gold and black color alternating between said lines themselves, and between said lines and the circle the word, sign, and letters 'J. CLARK & CO.' and 'C. S. I.'"

11,167.—ALL KINDS OF MANUFACTURED TOBACCO.—*F. W. Felgner & Son*, Baltimore, Md. Application filed March 29, 1884.
"The arbitrarily-selected word 'MINERS,' in connection with the word 'EXTRA.'"

11,168.—FELT USED FOR HAMMERS AND ACTION PARTS IN PIANOS AND ORGANS.—*Alfred Dolge*, New York, N. Y. Application filed February 21, 1884.
"A red line."

11,169.—SMOKING AND CHEWING TOBACCO.—*P. H. Mayo & Bro.*, Richmond, Va. Application filed April 2, 1884.
"The arbitrary word 'IVY.'"

11,170.—SMOKING AND CHEWING TOBACCO.—*P. H. Mayo & Bro.*, Richmond, Va. Application filed April 2, 1884.
"The arbitrary word 'LOBSTER.'"

11,171.—SMOKING AND CHEWING TOBACCO.—*P. H. Mayo & Bro.*, Richmond, Va. Application filed April 2, 1884.
"The arbitrary word 'TOTO.'"

11,172.—SMOKING AND CHEWING TOBACCO.—*P. H. Mayo & Bro.*, Richmond, Va. Application filed April 2, 1884.
"The arbitrary word 'EGLANTINE.'"

11,173.—SMOKING AND CHEWING TOBACCO.—*P. H. Mayo & Bro.*, Richmond, Va. Application filed April 2, 1884.
"The arbitrary word 'SURPRISE.'"

11,174.—SMOKING AND CHEWING TOBACCO.—*P. H. Mayo & Bro.*, Richmond, Va. Application filed April 2, 1884.
"A series of ellipses."

LABELS.

4,112.—Title: 'CARPET-TACKS."—*American Tack Company*, Fairhaven, Mass. Application filed April 10, 1884.

4,113.—Title: "TINNED CARPET-TACKS."—*American Tack Company*, Fairhaven, Mass. Application filed April 10, 1884.

4,114.—Title: "ANDERSON'S ELECTRIC SALVE."—*William J. Anderson*, Boston Mass. Application filed April 14, 1884.

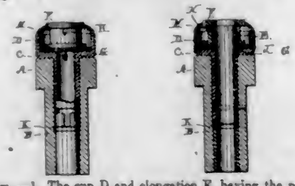
4,115.—Title: "POTTER'S CATARRH CURE, PREPARED BY N. PRENTISS POTTER, M. D. BRIDGTON, ME."—*N. Prentiss Potter*, Bridgeton, Me. Application filed April 10, 1884.

PATENTS

GRANTED MAY 6, 1884.

297,959. SPINDLE-BOLSTER FOR SPINNING-FRAMES. AARON ALDRICH, Taunton, Mass. Filed Sept. 15, 1883. (No model.)

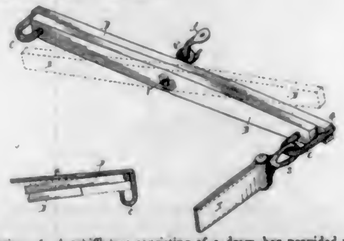
Brief.—The bolster is provided at its upper end with an elongation projecting into the oil-chamber and screw-threaded on its exterior, upon which is fitted a sleeve screw-threaded on its interior. A packing is placed in the bottom of the oil-cup, and the adjustment of the sleeve upon the elongation regulates the flow of oil to the spindle through holes or ducts leading from the bottom of the oil-cup to the interior of the bolster. A packing is placed on a shoulder on the interior of the bolster-socket, below the end of the bolster, to prevent the flow of the oil below said packing.



Claim.—1. The cup D and elongation E, having the passage G, reaching from the interior of the bolster to the cup, at the bottom thereof, and the screw-threaded exterior upper end, the adjustable sleeve F, and the packing J, resting between the bottom of the sleeve F and the cup D, substantially in the manner and for the purpose set forth.

2. The socket or bolder A, constructed with an interior shoulder B, and packing K, in combination with a bolster and spindle, as described.

297,960. WHIFFLETREE. EDWARD R. ANNABLE, Paw Paw, Mich. Filed Feb. 26, 1884. (No model.)



Claim.—1. A whiffletree consisting of a draw-bar provided with the end hooks, a spreader between said hooks, and a pivotally-connected lock-bar adapted to enter and fill the spaces between the ends of the hooks and the spreader, substantially as set forth.

2. The elastic draw-bar provided with the central loop and end hooks, in combination with a spreader between said hooks, and a lock-bar pivotally connected with said spreader, and adapted to operate substantially as set forth.

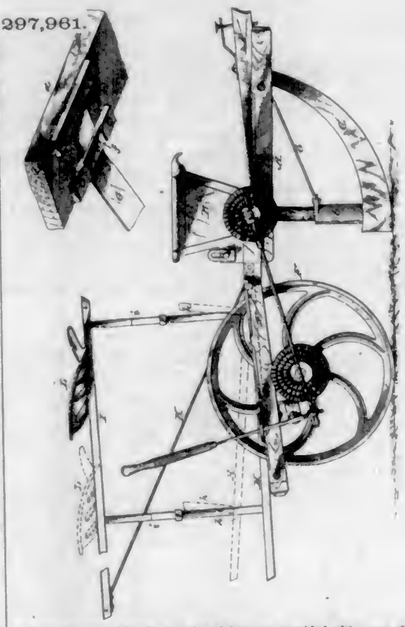
3. The combination, with the draw-bar having the end hooks, of the spreader provided with the central pivot and end notches, and a lock-bar adapted to operate as set forth, substantially as specified.

297,961. GRAIN-DRILL. JOHN I. ASHURST, Havana, Ill. Filed Jan. 11, 1884. (No model.)

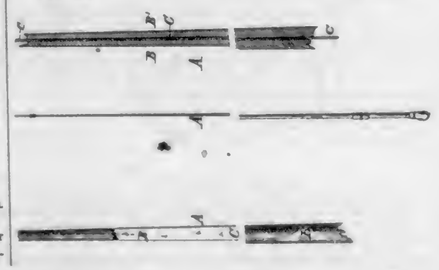
Claim.—1. In a grain-drill, the combination, with a front and rear frame hinged together, and carrying, respectively, the hopper and runners and the press-wheels, of a hinged foot-rest provided with a seat-slide and means for regulating its height by vertical adjustment, substantially as and for the purpose set forth.

2. In a grain-drill, the combination, with the runners thereof, provided with the usual shanks or boots, of spring connected thereto and to the cross-piece of the front frame by means substantially as shown and described, and for the purpose specified.

297,961.

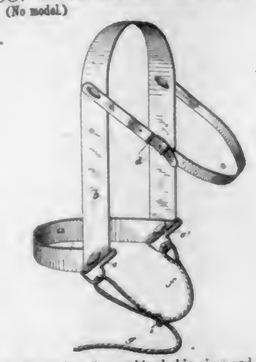


297,962. WHIP. SAMUEL BAKER, Buffalo, N. Y. Filed Mar. 5, 1884. (No model.)



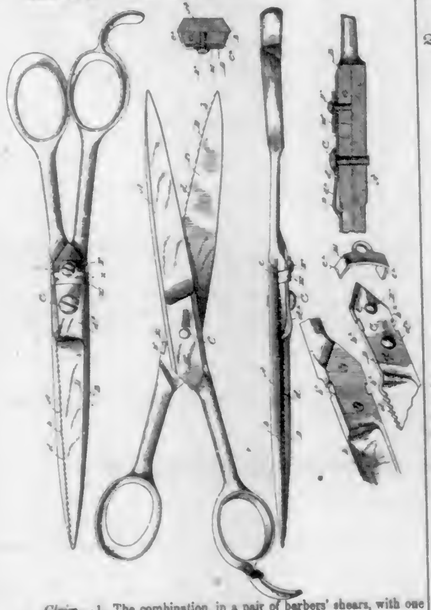
Claim.—As an improved article of manufacture, a whip, A, consisting of two semicircular strips, B B', and a central strip of prepared buckskin, C, the parts being united together, substantially in the manner, as and for the object specified.

297,963. HALTER. EDWARD BARNARD, Rome, N. Y. Filed Jan. 21, 1884. (No model.)



Claim.—In a halter, the combined chin-piece and lead-rope formed of a single piece of rope secured by a loop-connection at one end to one of the loop-castings on the headstall, passed thence through a tongue-buckle and through a second loop-casting at the opposite side of the headstall, and back through the tongue-buckle, which secures it, to form the chin-piece, the free end forming the lead-rope, substantially as specified.

297,964. GUARD FOR BARBERS' SHEARS. ENOCH BATEMAN, Rockford, Ill. Filed Jan. 13, 1884. (No model.)



Claim.—1. The combination, in a pair of barbers' shears, with one of the blades, of the plate secured closely against the outer face thereof, and provided with a serrated edge having the serrations projecting slightly from the cutting-edge of the blade, substantially as and for the purpose set forth.

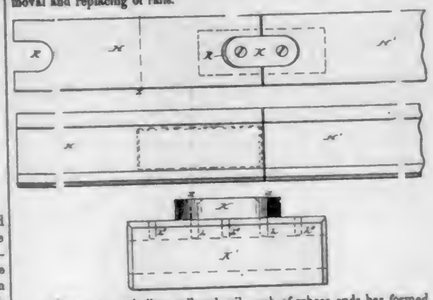
2. A pair of shears having a guard-plate secured in position against the face of one of the blades by means of the pivot pin or screw of the shears, substantially as set forth.

3. A pair of shears embodying the blades, a guard-plate disposed along the face of one of the blades, a plate arranged at the inner end of the guard-plate, and embracing the said guard-plate and blade, and a pin or screw securing this plate in position, substantially as set forth.

4. A pair of shears having a spring-plate secured against the outer face of one of its blades by means of the pivot pin or screw of the shears, the said plate being compressed by the pin and caused to exert its tension to secure an even movement of the cutting-edge of the blades, substantially as set forth.

297,965. RAILROAD-RAIL. THOMAS BREEN, Knowlton, Pa. Filed Dec. 13, 1883. (No model.)

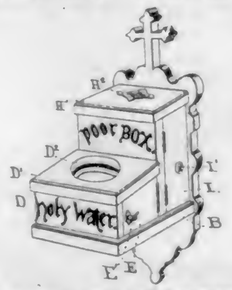
Brief.—The meeting ends of a hollow rail are recessed to receive the tread portion of a key which enters the hollow of each rail, said tread part being detachably connected with said key to admit of the removal and replacing of rails.



Claim.—1. A hollow railroad-rail, each of whose ends has formed in its tread a recess, R, combined with a key, K, between each pair of rails, and the key-bar K' being movably secured to key K, substantially as shown and described.

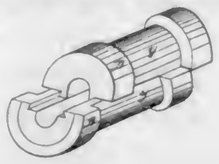
2. The combination of the rail-sections H and H', key-bar K', and key K, substantially as shown, and for the purpose described.

297,966. COMBINED HOLY-WATER FONT AND POOR-BOX. JAS. JOSEPH BRENNAN, Whippany, N. J. Filed Feb. 21, 1884. (No model.)

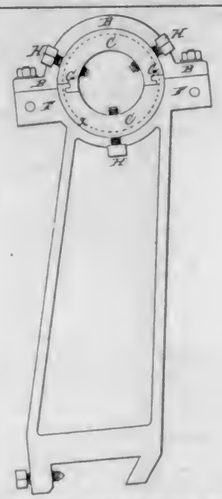


Claim.—The herein-described article of church-furniture, consisting of a combined poor-box and holy-water font separated by the partition C, the said poor-box being projected above the font and in the rear thereof, and provided with a slit or opening, H^2, and having a door, I, hinged at one edge and provided on its opposite edge with a suitable lock, and the holy-water font provided with a dip-opening, D^2, and a tank, F, and provided at one end with a door through which said tank may be removed, substantially as and for the purposes set forth.

297,967. LATHE-REST. SIMON H. BROWN, Ramapo, N. Y., assignor of one-half to William W. Snow, same place. Filed Aug. 28, 1883. (No model.)



297,967.

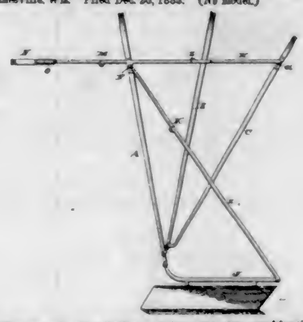


Claim.—1. The revolving sleeve or collar C, of two semi-cylindrical parts provided with longitudinal locking-grooves G, and proper centering devices, substantially as described.

2. The revolving sleeve or collar C, consisting of two semi-cylindrical parts provided with devices whereby they may be brought together and locked by a movement in the direction of their axis, and also with proper centering devices, substantially as described.

3. The combination of a revolving sleeve having a groove, *y*, in its middle, beads D D, and centering-screws H, with the journal-box in two parts, B F, fitting the groove *y*, substantially as described.

297,968. CARRIAGE-TOP. HERMAN BUCHHOLZ and WILLIAM MORRIS, Janesville, Wis. Filed Dec. 20, 1883. (No model.)



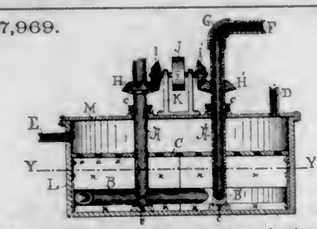
Claim.—1. In a folding carriage-top, the combination, with the bows, of the top-brace pivotally secured to the front and rear bows, and having knuckle-joints at either side of its front pivot, a forwardly-extending curved bow rigidly secured to the front ends of the top-brace, and the cover secured to the bows and the forward extension, substantially as and for the purpose set forth.

2. In a folding carriage-top, the combination, with the bows, of a jointed brace pivotally secured to the front and rear bows, and a top-prop pivotally secured to the carriage-frame, with its upper end pivotally secured to the front bow at the juncture where the brace is secured, substantially as and for the purpose set forth.

3. In a folding carriage-top, the combination, with the bows, of a top-brace secured to the front and rear bows, and provided with upwardly and downwardly working knuckle-joints, and a top-prop secured to the carriage-frame and front bow, and provided with an upwardly-working knuckle-joint, substantially as and for the purpose set forth.

297,969. CONDENSER FOR STEAM AND SMOKE. JAS. M. CARVER, Grand Rapids, Mich., assignor of one-half to Jeremiah W. Boynton, same place. Filed Sept. 7, 1883. (No model.)

297,969.

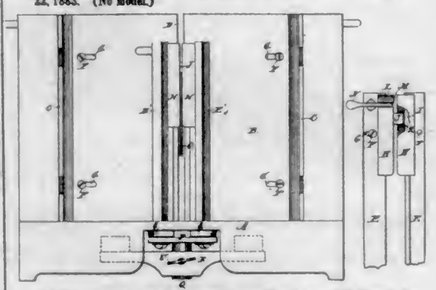


Claim.—1. In a steam and smoke condenser, the pipes A and A', having cross-pipes B and B', with mitered ends, and revolving in opposite directions, as shown and described.

2. In a steam and smoke condenser, the combination, with the revolving pipes A and A' and cross-pipes B and B', having mitered ends, of the perforated top plate C, resting upon the wings or flies *n n*, as shown, and for the purpose specified.

3. In a steam and smoke condenser, the combination, with the revolving pipes A and A' and cross-pipes B and B', having mitered ends, and the perforated top plate C, of the wings or flies *n n*, as shown and described, and for the purpose set forth.

297,970. MITER-BOX. JOS. CASHIN, Washington, D. C. Filed Dec. 22, 1883. (No model.)



Claim.—1. The slides H, having plane faces from end to end, between which a saw may be placed, and provided with a connection by which they may be supported on the back of a saw, consisting of a projection, J, on the face of one slide, and an opening, K, in the face of the other, adapted to receive the end of said projection, substantially as shown and described.

2. The combination of the bars E, the connected slides H, one having the recess M and bevel L, and the catch N, supported in one of said bars, substantially as shown and described.

3. The combination of the revoluble guide-bars E', adapted to turn together, and the series of bars E, having slots C C D, with any one of which slots the slot in said bars E' may be made to register, substantially as shown and described, and for the purpose set forth.

4. The combination of the base A, the guide-bars E', having a common pintle at their lower ends, the supporting-bracket, and the set-screw bearing against the said pintle, substantially as shown and described.

297,971. MANUFACTURE OF ARTIFICIAL STONE AND MARBLE. HENRY ADOLPHUS DANIELS, Yonkers, N. Y. Filed Mar. 1, 1884. (Specimens.)

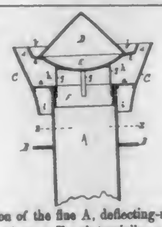
Claim.—1. An artificial stone or marble composed of lime of Tiel, lime, Keen's cement, Martin's or other cements, marble-dust, and calcined or other plaster, united and solidified by mixing therewith a chemical solution formed of starch, gum-arabic, caoutchouc, white vitriol, glue, muriate of soda, soluble glass, and pearlash, with or without nut-gall, substantially as and for the purposes set forth.

2. The herein-described liquid compound, consisting of starch, gum-arabic, caoutchouc, white vitriol, glue, muriate of soda, soluble glass, and pearlash, with or without nut-gall, substantially in the proportions named, for the purpose of producing the crystallization of the artificial stone and marble, as described.

297,972. VENTILATING-FLUE CAP. HENRY LAWRENCE DAY, Minneapolis, Minn. Filed Sept. 13, 1883. (No model.)

Claim.—1. The combination of the flue A, outwardly-flaring shield C, dome D, and convex bottom E, substantially as and for the purpose herein specified.

297,972.



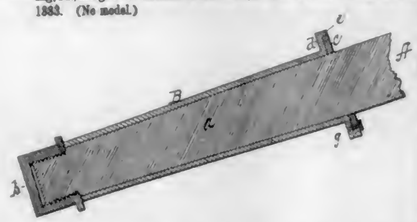
2. The combination of the flue A, deflecting-ring B, flaring shield C, dome D, and convex bottom E, substantially as and for the purpose herein specified.

3. The combination of the flue A, shield C, and dome D, having the lower upturned edge, *b*, and convex bottom E, substantially as forth.

4. The combination of the flue A, shield C, dome D, standards *g*, and ring F, substantially as described.

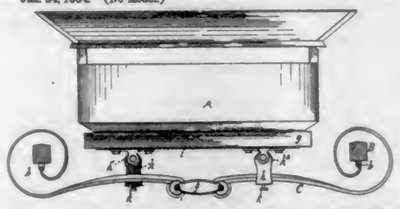
5. The combination of the flue A, deflecting-ring B, flaring shield C, dome D, having the upturned edge *b*, and the bottom E, substantially as and for the purpose herein specified.

297,973. AXLE FOR VEHICLES. JAMES J. DEVINE, Plymouth Meeting, Pa., assignor of one-half to Thomas Lynch, same place. Filed Oct. 31, 1883. (No model.)



Claim.—In combination, the axle A, formed with the extended core *a* and ring or collar *c*, and provided with a burr, *b*, the metal sleeve B, fitted to the core of the axle, and formed with the shoulder *d* and wall *e*, and the retaining-bolt *g*, substantially as and for the purpose set forth.

297,974. VEHICLE-SPRING. JOHN D. DORSEY, Greenville, Ill. Filed Jan. 24, 1884. (No model.)



Claim.—1. A vehicle-spring composed of half-springs joined by a link at one end, and having the other extremities attached to the side bars, around which they form a coiled spring, prior to being connected therewith, in combination with laterally-adjustable couplings or connections with the body of the vehicle, substantially as shown, and for the purpose hereinbefore set forth.

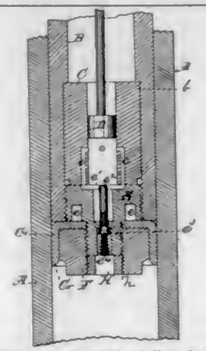
2. In combination with the body and springs of a vehicle, a coupling device connecting them susceptible of a swinging movement and lateral adjustment on both the body and springs of said vehicle, substantially as and for the purpose set forth.

3. A coupling device between the body and springs of a vehicle, by which the said body is supported on said springs, the said coupling device having a lateral adjustment, substantially as shown and described, and being provided with a set-screw or other suitable contrivance by means of which it is secured in position on the springs.

4. The combination of guide *i*, brackets A', couplings A, and the springs of a side-bar vehicle, with which said couplings A are adjustably connected, substantially as and for the purpose specified.

297,975. HYDRAULIC JACK. RICHD. H. DUDGEON, New York, N. Y., assignor to Richard Dudgeon, same place. Filed May 10, 1883. (No model.)

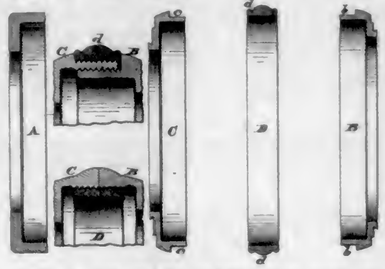
297,975.



Claim.—1. The combination, with a hollow piston, of a removable internal plunger-cylinder provided with internal fluid-passages and held in position by a valve block or plug formed with an extension adapted to hold and support a nut or binding-piece and packing in position, substantially as shown and described.

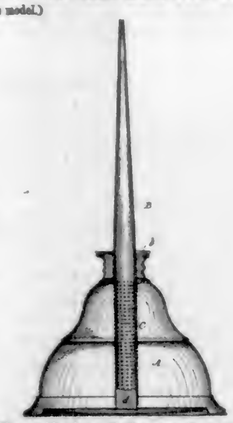
2. The combination, with the hollow piston B and independent cylinder C, provided with internal fluid passages, *c*, of the valve block or plug E, valve *c*³, and a packing, G, and nut or binding-piece F, substantially as shown and described.

297,976. WATCH-CASE CENTER. JOHN C. DUEBER, Newport, Ky. Filed Sept. 17, 1883. (No model.)



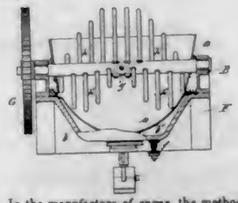
Claim.—A watch-case center consisting of a ring having a pair of halves screwed thereto and secured together by the pendant-bearing, substantially as herein described.

297,977. OIL-CAN. ROBERT ENGLISH, Austin, Tex. Filed Jan. 30, 1884. (No model.)



Claim.—The combination, with the can A, having a screw-threaded opening, of a spout provided upon its sides within the can A with a series of openings, and provided at its lower end with a plug, *d*, and an exteriorly-screw-threaded cap rigidly mounted on said spout, and adapted to engage the screw-threaded mouth of the can A, substantially as set forth.

297,978. METHOD OF AND APPARATUS FOR MASHING SUGAR AND SUGAR MASSES. ALBERT FESCA, Berlin, Germany. Filed Jan. 8, 1884. (No model.)



Claim.—1. In the manufacture of sugar, the method of preparing raw sugar or masse-cuite for treatment in the centrifugal machine, which consists in mixing the cold raw sugar or cold broken-up masse-cuite with sirup or a saccharine solution or water, to give it the required fluidity, and effecting the mixture under a gradually-increasing temperature while the mass is being agitated in a vessel having smooth interior surfaces, substantially as described, for the purpose specified.

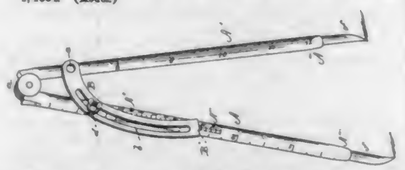
2. In the manufacture of sugar, the method of preparing raw sugar or masse-cuite for treatment in the centrifugal machine, which consists in mixing the cold raw sugar or cold broken-up masse-cuite with sirup or a saccharine solution or water, to give it the required fluidity, and effecting the mixture in a vessel having smooth interior surfaces and under a gradually-increasing temperature until the mass has attained the temperature or about the temperature set forth, as described, for the purpose specified.

3. The herein-described apparatus for preparing raw sugar or masse-cuite for the centrifugal machine, which consists of a receiver or vessel having smooth and preferably curvilinear interior walls, smooth-faced stirrers, or stirrers cylindrical in cross-section, for agitating the material therein, and means, substantially such as described, for applying steam heat to the receiver, as and for the purpose specified.

4. The herein-described apparatus, consisting of a receiver or vessel having smooth and preferably curvilinear interior walls or bottom, and means, substantially such as described, for heating the vessel with steam, in combination with smooth-faced stirrers arranged upon their shaft in groups on helicoidal lines, forming right and left handed screw threads or paths meeting at the longitudinal center of said shaft, substantially as described, for the purpose specified.

5. The herein-described apparatus, consisting of a receiver or vessel having smooth and preferably curvilinear interior walls or bottom, and means, substantially such as described, for heating the vessel with steam, in combination with stirrers arranged upon their shaft in groups on inverse helicoidal lines, forming right and left handed screw-threads, the threads of one group trending from opposite ends toward the center of the shaft, and those of the succeeding group from the center of the shaft toward its extremities, as described.

297,979. DIVIDERS. ROWLAND FOLGER, Milford, Mass. Filed Mar. 1, 1884. (Model.)



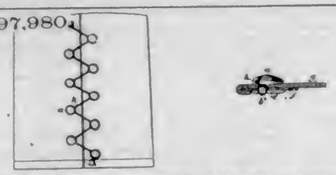
Claim.—1. In combination with the legs A and A' of a pair of dividers, the curved slotted retaining or adjusting bar B, pivoted at one end to the leg A' relatively near the joint, and adjustably secured by means of its slot to the leg A at a greater distance from the joint, substantially as and for the purpose set forth.

2. The combination of the leg A', the adjusting or retaining bar B, pivoted at *e* thereto, and the leg A, provided with the adjusting-screw *d* and the degree-scale A'', substantially as and for the purpose described.

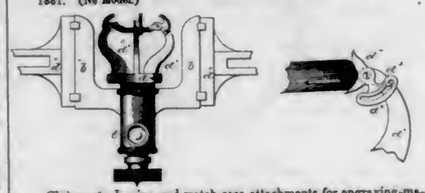
297,980. GLOVE-FASTENING. WILLIAM F. FOSTER, New York, N. Y. Filed July 20, 1883. (No model.)

Claim.—In combination, the lacing-cord, the glove, the disk-like head *a*, arranged on one surface thereof, and the plate *c*, arranged on the other surface, in relation substantially as described, the eccentric neck provided with the flange *c*, and means of attachment, whereby, by the elasticity of the glove, the entrance to the hook is substantially closed to prevent the escape of the cord.

297,980.



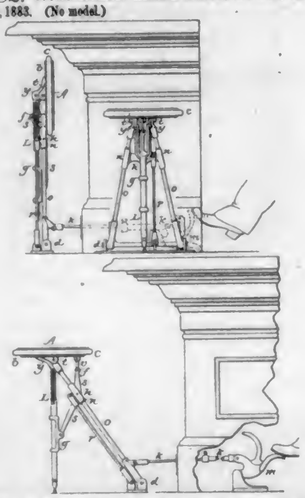
297,981. RING AND WATCH-CASE ATTACHMENT FOR ENGRAVING-MACHINES. ALLAN E. FRANCIS, Cleveland, Ohio. Filed Nov. 16, 1881. (No model.)



Claim.—1. In ring and watch-case attachments for engraving-machines, frame *b*, having body *c*, containing hollow shaft *c'*, provided with head *d*, carrying arms *d'*, and being operated by rod K, all made and combined substantially as and for the purposes herein described and set forth.

2. In ring and watch-case attachments for engraving-machines, the combination of arm *d* with jaw *d''*, having slide *d*³ and screw *d*³, made and arranged substantially as shown and described.

297,982. COUNTER-SEAT. ALLAN E. FRANCIS, Cleveland, Ohio. Filed May 5, 1883. (No model.)



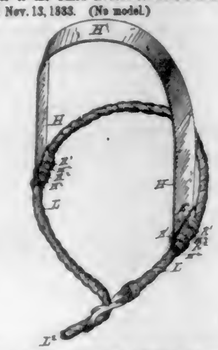
Claim.—1. The combination, with the seat-top, of support L, hinged thereto, the supports *o o*, hinged to the seat-top, and provided at their lower end with means whereby they may be hinged to the floor, arm *s*, connected to the supports L and *o o*, substantially as described, and link *v*, connecting the upper end of arm *s* and the seat-top, as and for the purpose specified.

2. The combination, with the seat-top, of support L, hinged to the same, bracket *d*, supports *o o*, hinged to the seat-top and bracket *d*, arm *s*, connected to the supports L and *o o*, substantially as described, link *v*, connecting the upper end of arm *s* with the seat-top, and rod *r*, connected to arm *s*, as set forth, and pivoted to bracket *d*, as and for the purpose specified.

3. The combination, with the seat-top, of support L, hinged to the

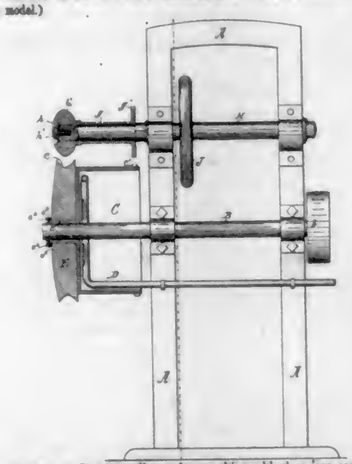
same, bracket *d*, supports *o o*, hinged to the seat-top and to bracket *d*, arm *s*, connected to supports L and *o o*, substantially as set forth, link *v*, connecting the upper end of arm *s* with the seat-top, rod *r*, connected, substantially as described, with arm *s*, and hinged to the bracket *d*, the treadle *m*, and rod *k*, connecting the same to supports *o o*, as and for the purpose specified.

297,983. HALTER-STRAP FASTENING. JOHN GIBBONS, West Troy, N. Y., assignor to the Union Hardware Manufacturing Company, same place. Filed Nov. 13, 1883. (No model.)



Claim.—The combination, with the strap and rope portion of a halter, of the coupling device, consisting of the parallel side bars, B' B², connected by ring-like straps or portions R' R², all applied to operate substantially as set forth.

297,984. HAT-ROLL-PRESSING MACHINE. CHARLES WILLIAM GILMAN and RAYMOND WHEELER, Medfield, Mass. Filed Feb. 27, 1884. (No model.)



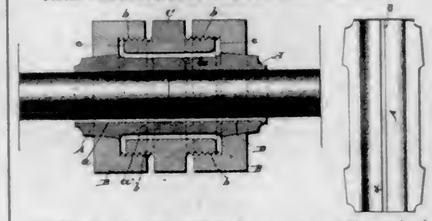
Claim.—1. In a hat-roll-pressing machine, a block or iron connected with a rotating shaft and having a peripheral groove, and a presser shaped at its edge to enter the concaved portion of the roll of a hat-brim, and adapted to hold the convexed or outer side or face of said roll down into the peripheral groove of the block or iron, in combination, as and for the purpose specified.

2. In a hat-roll-pressing machine, a heated block or iron connected with a rotating shaft and having a peripheral groove, and a presser shaped at its edge to enter the concaved portion of the roll of a hat-brim, and adapted to hold the outer surface or face of said roll down into the peripheral groove of the block or iron, combined and arranged as and for the purpose set forth.

3. The combination, with a block or iron connected with a rotating shaft and having a peripheral groove, of a presser connected with a shaft adapted to rise and fall, as set forth, said presser being arranged above the block or iron, and being shaped at its edge to enter the concaved portion of the roll of a hat-brim, and adapted, upon the downward movement of its shaft, to hold the convexed or outer side or face of said roll down into the peripheral groove of the iron or block, substantially as set forth.

4. The combination, with a block or iron connected with a rotating shaft and having a peripheral groove, of a presser connected with and free to be rotated upon a shaft adapted to rise and fall, as set forth, and provided with a sleeve encircling the presser-shafts, and having a toothed disk or gear, and suitable gear mechanism attached to or moved in unison with the block-shaft with which the toothed disk meshes upon the downward movement of the presser-shaft, all substantially as and for the purpose set forth.

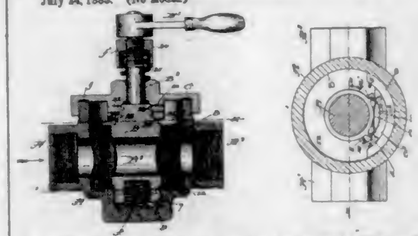
297,985. SHAFT-COUPLING. THEODORE EARNEST GOLDEN and JOHN PORTER GOLDEN, Columbus, Ga. Filed Jan. 12, 1884. (No model.)



Claim.—1. In a shaft-coupling, the combination, with a sectional box for embracing adjacent ends of the sections of the shaft and having tapering ends, as shown, of two end collars resting on the tapering ends of the sleeve and provided with the internally-threaded projections, and a central collar having threaded extensions on the end collars, whereby both end collars are simultaneously moved by the central collar, substantially as set forth.

2. In a shaft-coupling, the combination, with a box, A, adapted to be keyed to a sectional shaft, of the end collars, B, having tapering bores and the internally-threaded projections, and the central collar provided with screw-threaded lateral extensions, which latter engage the threaded projections of the end collars, substantially as set forth.

297,986. VALVE. J. MORTIMER GOLDSMITH, Boston, Mass. Filed July 14, 1883. (No model.)



Claim.—1. In a straight-way valve, a case or shell having a cylindrical seat, *b*, a valve-segment placed therein loosely, a head or valve-mover also in said shell, having a stem and a transverse fluidway or port, a spring interposed between said valve-segment and valve-mover, and projections on the two to engage such segment and its mover, all combined and arranged substantially as described.

2. The valve-case having the cylindrical seat *b*, a main valve-segment provided with a port, and an auxiliary valve-segment seated on the said main valve-segment, combined with the head or valve-mover provided with the transverse way B', and with means to move the said valve-segments in succession, as and for the purposes described.

3. The valve-case and valve-segment inserted therein loosely, and the head or valve-mover provided with a suitable way for the passage of the fluid, combined with a spring to keep the valve-segment against the valve-seat *b*, substantially as described.

4. The valve-case provided with the cylindrical seat *b* and recess 10, and valve-segment inserted therein loosely, combined with the head or valve-mover provided with the way B, and with a pin or projection, 6, and adapted to move the said valve-segment, substantially as described.

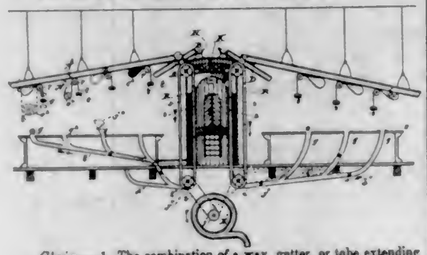
5. The valve-case and its cap provided with the hub 21, extended into the said shell, and having passages 22, combined with the head B, provided with the conical part 20, having grooves, and with a spring to keep the said part 20 into the conical seat in the said extended hub, substantially as described.

6. The valve-case and its cap provided with the hub 21, extended into the said shell, and having passages 22, combined with the head B, provided with the conical part 20, having grooves, and with a nut to

regulate the force of the said spring, substantially as described.

7. The valve-segment provided at its rear side with projections or shoulders, combined with a flat spring, *e*, having its ends abutted against the said shoulders, substantially as described.

297,987. AUTOMATIC STORE-SERVICE APPARATUS. JOHN H. GOODFELLOW, Troy, N. Y. Filed Feb. 12, 1884. (No model.)



Claim.—1. The combination of a way, gutter, or tube extending past a series of clerks' counters or stations, and below the counter or shelving, or both, and a rolling cash holder or box adapted to operate substantially as and for the purpose specified.

2. In a cash-carrying system for stores, the combination of a way adapted to and extending from the cashier's desk H to and over a counter, and a way, trough, or tube extending from the said counter or station and below the line of said counter, and a rolling cash holder or box, substantially as described.

3. In a cash-carrying system, a way adapted to the cashier's desk H and inclined downwardly from and extending over a store-counter, and a way, gutter, or tube extending from the said counters or stations and below the line of said counters, and a rolling cash-holder adapted to receive and carry cash on said ways, as and for the purpose specified.

4. The within-described system for store-service, consisting of the combination of a way or ways adapted to the cashier's desk and downwardly-inclined therefrom, and extending over a store-counter and along a series of stations, and a way, trough, or tube extending from the said counter and stations and below the upper line of said counter, said ways adapted to support and convey by gravity a hollow rolling carrier or ball to an elevator arranged and adapted to elevate said carrier for the cashier's manipulation, substantially as described.

5. The combination, in a cash-carrying system for store-services, of a way or ways adapted to the cashier's desk and inclined downwardly therefrom, and provided with distributing-stations arranged in said ways over the different salesmen's counters or stations, and a way, gutter, or tube extending from said stations or counters below the upper line thereof, adapted to receive, support, and convey by gravity cash-holders to an elevator passing the cashier's desk, for elevating or lowering the carriers thereat, substantially as described.

6. In a cash-carrying system, the combination of one or more chutes arranged below the top line of the counters or salesmen's stations and adapted to convey by gravity a rolling carrier therethrough, and one or more branch ways or tubes leading to the cashier's desk or to an elevator or side track, substantially as described.

7. In a cash-carrying system, a chute or chutes arranged below the top line of the counters or salesmen's stations, and leading thence to the cashier's desk or to an elevator thereat, adapted to convey thereto by gravity a rolling cash-carrier, substantially as described.

8. In a cash-carrying system, the combination of one or more counters or stations and one or more chutes adapted to direct rolling carriers upon or into a way, tube, or gutter, arranged to converge at their lower ends and discharge said carriers into or upon an elevator, whereby they may be raised or lowered to a side track for the operation of the cashier, substantially as described.

9. In a cash-carrying system for stores, the combination and arrangement of an incline way or ways, gutter, or tube longitudinally beneath the counter or shelving, provided with means, substantially as described, for receiving a hollow rolling ball or carrier adapted to carry cash on said ways, and the lower end of said ways adapted to discharge said ball or carrier into or upon an elevator, substantially as and for the purpose set forth.

10. In a cash-carrying system, the combination of a way, tube, or gutter, one or more counters or stations, and one or more inclined chutes connecting the stations or counters with the way, whereby a quick impetus is given the hollow rolling ball or carrier used therewith, when introduced therein, toward the cashier's desk or an elevator or side track thereat.

11. A cash-carrying system consisting of the combination, with one or more salesmen's counters or stations, of one or more chutes, ways, troughs, or tubes leading therefrom, and serving as a means of communication therewith to the cashier's desk, whereby cash-carriers may be sent to the cashier's desk, an elevator thereat by which the cashier may receive or distribute the cash-carriers, and a return distributing-track, the elevator being intermediate of the converging and diverging system of ways, troughs, or tubes, substantially as described.

12. In a cash-carrying system having chutes the bodies of which are arranged below the line of the counter or shelving at the salesmen's stations or counters, the combination, with the chute, of a cover adapted to close said chute when not in use, substantially as described.

13. The inclined chute *g*, arranged at the salesmen's counters or stations, and adapted as a source of indirect communication with a way, trough, or tube to the cashier's desk, whereby hollow rolling cash-carriers are sent by the clerk along said ways, in combination with an inclined return distributing-track, as set forth.

14. The chute *g*, arranged with its mouth extending above the counter, and furnished with a cover, in combination with a way, *b''*, substantially as described.

15. In a cash-carrying system, one or more chutes having their bodies arranged below the top line of the counters or salesmen's stations, but with mouths extending above the top line of the counters or stations, provided with suitable covers, substantially as described.

16. In a cash-carrying system, the combination, with the troughs, grooves, or ways, arranged and adapted to deliver the cash-carriers at the cashier's desk, of one or more grooves, troughs, or ways located at the cashier's desk, and adapted to receive and hold the cash-carriers for the cashier's operations, substantially as set forth.

17. In a cash-carrying system, the combination of troughs, grooves, or ways arranged and adapted to carry from the counters or salesmen's stations the cash-carriers, one or more troughs, grooves, or ways located at the cashier's desk, adapted to receive and hold for his operations the cash-carriers, and an elevator for receiving the cash-carriers from the troughs, grooves, or ways leading from the counters or stations and delivering them into the troughs, grooves, or ways receiving and holding them at the cashier's desk, substantially as described.

18. In a cash-carrying system, the combination, with one or more troughs, grooves, or ways located at the cashier's desk, and adapted to receive and hold thereat the cash-carriers, of an elevator for delivering the cash-carriers thereupon, substantially as described.

19. The combination, with a cashier's desk, H, of a store, and a series of outgoing distributing-tracks, of an elevator adapted to lift the ball from a converging station or stations to the cashier's desk, for his manipulation, substantially as described.

20. The elevator R, consisting of a suitable band provided with platforms adapted to raise a spherical carrier from a position near or below the floor or compartment beneath to an incline leading to the cashier's desk or the neighborhood thereof, for his manipulation, substantially as described.

21. The elevator R, consisting of a suitable band furnished with disks 3' and slot 3'', adapted to raise or lower a spherical carrier to or from the cashier's desk and a converging station, and provided with means for ejecting the carrier in either direction automatically, substantially as described.

22. In combination with a cash-carrying system and a cashier's desk, an elevator consisting of the sections 2 and 3, hand n^3, supporting and driving wheels J and J'', and hoop or disks or equivalents adapted to carry a ball in either direction, substantially as described.

23. The combination, with an elevator, R, for raising and lowering carriers from one floor to another, provided with means, as described, for receiving automatically such carriers into or upon the elevator from the incoming tracks or converging stations, of means, as described, for ejecting said carriers upon a track adapted to to serve clerks in various floors, and means, as described, as a motive power, substantially as described.

24. The combination of the water-motor E and elevator R, and a cash-carrying system adapted to rolling carriers, substantially as described.

25. The combination of the disk 3', slot 3'', and mouth 22, deflector 13, and case 2, adapted to operate as and for the purpose specified, and band n^2 and wheel J.

26. In a horizontal switch on the way of a carrying system, the combination, with a pivoted switch-tongue, of a yielding switch-guard attached to or engaging with the switch-tongue, and extending beyond its pivot into the branch to be kept normally closed, and self-adjusting to various sizes of carriers, adapted to close the switch-tongue upon a carrier passing out of the switch, and means, as described, for holding said tongue in such a position adapted to be released by a carrier to be switched, and a tongue adapted to move said switch-tongue in advance of the carrier, substantially as described.

27. In a horizontal switch on the ways of a carrier system, the combination of a switch-tongue, a latch to retain said tongue against the main rail with the branch closed, and means for moving said tongue by the action of various-size carriers to which it is adapted to yield, and means, as described, for raising said latch by the action of said carriers, and means for moving said tongue to the opposite side of the rail upon being released, whereby a carrier resets the switch upon passing through, substantially as described.

28. In a horizontal switch on ways of a carrying system, the combination of a pivoted switch-tongue provided with a spring or latch normally retaining the tongue in position against the spring, to close a branch way, means, as described, operated on by the carrier, for causing the latch to release the tongue and open the normally-closed branch, and a yielding switch-guard attached to or engaging with the switch-tongue and extending into said branch or way, and adapted to yield to various-sized carriers and again close the switch-tongue after leaving the main way or track and entering the branch way or track, substantially as described.

29. In a horizontal switch on the ways of a carrier system, the combination, with the pivoted switch-tongue provided with the yielding switch-guard V, extending back over the branch, of a latch, U, and a yielding guard, *m*, made in one piece, and adapted to trip the end of the tongue at 10 by the sideward or upward pressure of the carrier, substantially as described.

30. In a cash-carrying system, the combination, with a track or way provided with two vertical moving sections pivoted to the main track at their outer ends, and provided with means, as described, whereby they are connected, of means, as described, for retaining said gates or switches in a horizontal position, adapted to be operated by the carriers, substantially as described.

31. In cash-carrying systems, the combination, with a track or way provided with two vertical moving sections pivoted at their outer ends, and provided with means, as described, for retaining them in a horizontal position adapted to be operated by a carrier intended to pass through the switch, of means, as described, for closing them again by a following carrier, as set forth.

32. In a carrying system, the combination, with a track or way, means, as described, for discharging the carriers from such ways, and a receptacle for arresting the carriers as they drop from the trap, of means, as described, whereby the ball is lowered by counter-weight, substantially as described.

33. In a store system, the combination of a discharging device on the ways and a receptacle beneath the same for the carrier, adapted to automatically drop upon arrival of such carrier in said receptacle, substantially as described.

34. In a store system, the combination of a discharging device on the ways and a receptacle beneath, attached to a lever provided with a counter-weight which may be overbalanced by the arrival of said carrier in said receptacle, whereby said receptacle automatically returns to the track upon relieving the carrier, substantially as described.

35. In a store-service system, a three-rail track or way consisting of rails running parallel with each other and the outer ones higher than the center one, whereby a ball placed upon the track between the two right-hand rails will follow those rails, substantially as described.

36. In a cash-carrier system, the combination of inclined distributing ways A and the devices forming the means for sending a carrier toward the cashier's desk H from and below the counter of a store, and hollow rolling balls T, adapted to receive and carry cash on said ways, as and for the purpose specified.

37. The combination, with the counter *f* and desk H and elevator R in a store, of the devices forming the means for connecting the same, substantially as described.

38. The combination of the box T and bung x'', provided with the devices forming the means for holding the bung in position, as and for the purpose set forth.

39. The combination of the box T, the bung x'', and spring x''' and a detent, x^4, as and for the purpose set forth.

40. The combination of the box T, adapted to roll, the bung x'', the detent x^4, spring x^5, and counter-weight x^3, as and for the purpose specified.

41. The combination of the box T, adapted to roll, the bung x'', the detent x^4, spring x''', counter-weight x^3, and spring x^5, adapted to hold and carry cash, substantially as described.

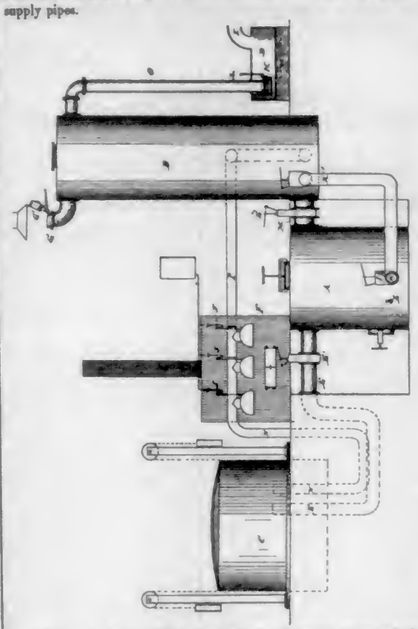
42. A rolling cash-carrier consisting of the combination of the box T, adapted to roll, and provided with a cover, and means, as described, for returning it to the box, and a weight and spring adapted to counterbalance coin, substantially as and for the purpose specified.

43. In a cash-carrying system, the combination, with a cashier's desk, of an independent groove or trough, *k*, adapted to receive and hold a series of rolling cash-carriers, and the devices forming the means for conveying said carriers thereto, substantially as described.

44. In a cash-carrying system, the combination, with the ways, troughs, or tubes forming the track for conveying the cash-carriers, and hangers for supporting or suspending the same, of wires or supports for the hangers arranged on either side of the center thereof alternately and at an angle thereto, whereby the ways are held steady and fixed throughout the length of the track, substantially as set forth.

297,988. APPARATUS FOR MANUFACTURING ILLUMINATING-GAS. ARTHUR O. GRANGER, Philadelphia, Pa., assignor to A. O. Granger & Co., same place. Filed June 25, 1883. (No model.)

Brief.—A body of coal in a furnace is heated by a blast of air, and the resulting products are burned in a fixing-chamber, whereby it is heated. Steam is then decomposed by passage through the heated coal, forming carbonic oxide and hydrogen, which are stored in a holder. They are thence passed to and carbureted in a separate auxiliary hydrocarbon-vaporizer, and the carbureted gas is fixed by passing it through said heated fixing-chamber. The hydrocarbon-vaporizer consists of retorts set in a furnace, and they have connected with them gas and oil supply pipes.



Claim.—1. The combination of generator A, having steam and air pipes, fixing-chamber B, having chimney-valve G, seal D, flues M and O, valved flue E, oil-vaporizer F, and flue P, substantially as and for the purpose specified.

2. The combination of generator A, having steam and air pipes, fixing-chamber B, having chimney-valve G, seal D, flues M and O, valved flue E, auxiliary holder C, pipe N, oil-vaporizer F, and flue P, substantially as and for the purpose specified.

3. The combination of generator A, having steam and air pipes, fixing-chamber B, having chimney-valve G, seal D, flues M and O, valve E', valved flue E, oil-vaporizer F, and flue P, substantially as and for the purpose specified.

4. The combination of a generator having air and steam pipes, a fixing-chamber, a valved chimney-flue and water-sealed gas-outlet from said fixing-chamber, a flue connecting said fixing-chamber with said generator, a carburetor or oil-vaporizer, and flues connecting said carburetor with said generator and said fixing-chamber, substantially as and for the purpose specified.

297,989. SURGICAL ASPIRATOR. CHARLES BUCKNER HARDIN, Independence, Mo., assignor of two-thirds to Jesse W. Clements and John W. Clements, both of same place. Filed Dec. 28, 1883. (No model.)

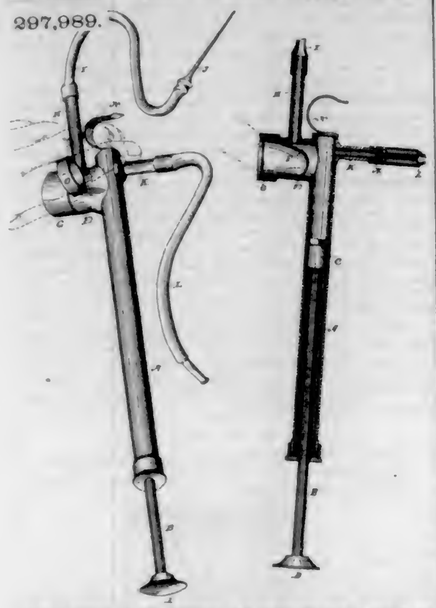
Claim.—1. In a surgical instrument, the combination, with the piston and cylinder, of receiving and conducting tubes connecting with the cylinder, and a rubber flexible safety-valve arranged within the cylinder and adapted to be operated by the hand to close the mouth or inner end of the receiving-tube, as and for the purpose set forth.

2. In a surgical instrument, the combination, with the piston and cylinder, of the conducting and receiving tubes attached to the cylinder, a pipe also attached to the cylinder adjacent to the receiving-tube, and a safety-valve secured within the pipe, and adapted to be operated by the thumb or finger of the operator to close the mouth or inner end of the receiving-tube, for the purpose set forth.

3. In a surgical instrument, a cylinder having a piston working therein, in combination with receiving and conducting tubes, a valve adapted to be operated by the thumb or finger of the operator to close the mouth or inner end of the receiving-tube, and a valve arranged in the conducting-tube and adapted to automatically open by the operation of the piston, as set forth.

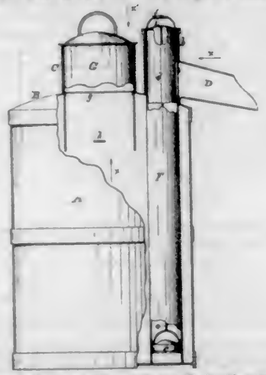
4. In a surgical instrument, the cylinder A, having piston B, carrying a plunger, C, in combination with conducting-tube L, pipe E, cap G, valve F, receiving-tube I, and hooks and rings N O, as set forth.

297,989.



297,990. CAN. WILLIAM HAFER, Rochester, N. Y. Filed Feb. 5, 1884. (No model.)

Brief.—A stopper for the spout is attached to the rod of a lift-pump. When the rod is lifted, the stopper is raised, opening the exit-port of the pump-barrel. When the rod is lowered, the stopper closes the port.



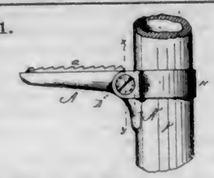
Claim.—A fluid or milk can, A, provided with a tube, *b*, in addition to the usual neck, C, rising above the top of the can at one side of the neck, and provided with a spout, D, in combination with a pump, F, extending down through the tube into the interior of the can, the said pump having an opening, *a*, opposite the spout D, and a thimble, *d*, to close the upper open end of the pump and the opening *a*, substantially as shown and described.

297,991. STEP FOR BICYCLES. GEORGE F. HARWOOD, Worcester, Mass. Filed Feb. 25, 1884. (No model.)

Claim.—1. In a step for bicycles and other velocipedes, the combination, with the band H, bolt D, and nut *d*, of the step A, the back plate, A', thereof being provided with the slot B, extending from a point near the lower end of said back plate to the surface of the step, substantially as and for the purpose set forth.

2. In a step for bicycles and other velocipedes, the combination, with the band H, bolt D, and nut *d*, of the step A, the back plate, A', thereof being provided with the slot B, extending from a point near the lower end of said back plate to the surface of the step and opening into the loop thereof, whereby the two portions of the back plate formed by the slot may be compressed, substantially as and for the purpose described.

297,991.



297,992. VESSEL FOR CONTAINING AERATED LIQUIDS. JOSIAH P. HASKINS, Saratoga Springs, N. Y. Filed Feb. 7, 1884. (No model.)

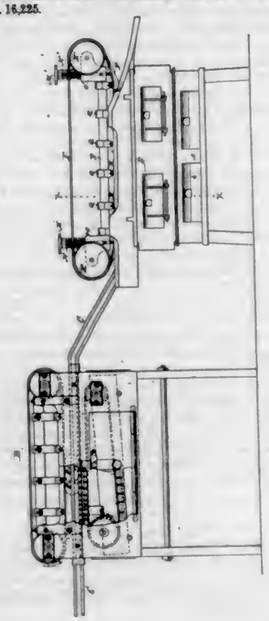


Claim.—1. A vessel for gaseous liquids, &c., having a top formed integrally with the sides and bottom, and provided with an orifice near one side, and a slide adapted to close said orifice, substantially as shown and described.

2. In combination with a vessel, A, having top B, provided with orifice C, and raised rib D at opposite sides of said orifice, grooved substantially as shown, slide E, adapted to enter said grooves and close the orifice.

3. In combination with vessel A, having top B, orifice C, and grooved rib D, slide E, provided with a yielding facing, F, substantially as and for the purpose set forth.

297,993. SOLDERING-MACHINE. BERNHARD HAUSHERR and JOHAN METZNERS, Chur, Switzerland, assignors to David S. Page, New York, N. Y. Filed Mar. 15, 1884. (No model.) Patented in Germany Feb. 19, 1881, No. 16,225.



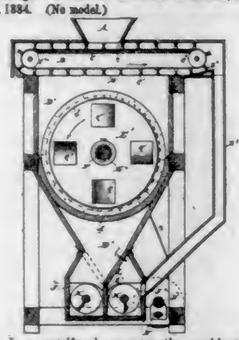
Claim.—1. The combination, in a soldering-machine, of a solder bath, a track extending over such bath adapted to guide the articles to be soldered, and a soldering-tool arranged in the path of said articles for applying solder thereto.

2. The combination, in a soldering-machine, of a solder bath, a track extending over such bath adapted to support and guide the cans or other articles to be soldered, an endless band for impelling the cans along said track, and a soldering-tool arranged in the path of the cans or other articles for distributing the solder thereupon.

3. The combination, in a soldering-machine, of a solder bath, a guide or track for the cans extending over said bath, and a soldering-tool arranged to take the solder for soldering said cans from below the surface of said bath.

4. The combination, in a soldering-machine, of a solder bath, a track arranged over said bath to support the cans, a soldering-tool for applying the solder, and an adjustable guide for regulating the position of said cans with reference to said tools, substantially as described.

297,994. CENTRIFUGAL SEPARATOR. JUSTUS J. HENDRICKSON, Norristown, assignor of one-half to Charles K. Bullock, Philadelphia, Pa. Filed Jan. 8, 1884. (No model.)



Claim.—1. In a centrifugal separator, the combination of the reel having a solid head on its feeding end, said head being provided with apertures or slots, and hoods for said apertures, with a feed-box in which said hoods rotate to scoop up the flour, and means to feed the flour into said feed-box in a continuous shower the full width of the end of the reel, substantially as and for the purpose specified.

2. In a centrifugal separator, the combination of the reel having a solid head on its feeding end, said head being provided with apertures or slots, and hoods for said apertures, with a feed-box in which said hoods rotate to scoop up the flour, a screen covering the top of said feed-box, and a brush adapted to pass over said screen to feed the flour through said screen into said feed-box, substantially as and for the purpose specified.

3. In a centrifugal separator, the combination of the reel having a solid head on its feeding end, said head being provided with apertures or slots, and hoods for said apertures, with a feed-box in which said hoods rotate to scoop up the flour, a screen covering the top of said feed-box, and a brush adapted to pass over said screen to feed the flour through said screen into said feed-box, and a discharge from one end of said screen, through which any lumps or impurities are discharged to prevent clogging of said screen, substantially as and for the purpose specified.

4. In a centrifugal separator, the combination of the reel having a solid head on its feeding end, said head being provided with apertures or slots, and hoods for said apertures, with a feed-box in which said hoods rotate to scoop up the flour, a screen covering the top of said feed-box, and a brush adapted to pass over said screen to feed the flour through said screen into said feed-box, a return-conveyer, and a discharge from one end of said screen, and connecting with the return-conveyer, through which any lumps or impurities are discharged to prevent clogging of said screen, substantially as and for the purpose specified.

5. In a centrifugal separator, the combination of the reel having a solid head on each end, said heads being provided with apertures or slots, and hoods for said apertures, to insure a positive feed and a positive discharge and prevent the overloading of the reel, with a feed-box in which said hoods rotate to scoop up the flour, a long flat screen covering the top of said feed-box, and a flat brush adapted to pass over said screen from one end to the other, to feed the flour through said screen in a continous shower into said feed-box, substantially as and for the purpose specified.

6. A reel having a closed head, in combination with a stationary perforated partition or ring-piece, in which said solid head works, the reel-shaft, and adjustable bearings, whereby said reel may be set true with respect to said stationary partition or ring and prevent wear and binding should the frame become warped or shaft-worn, substantially as and for the purpose specified.

7. The combination of the reel with an auxiliary feeding device, which consists of a long flat stationary screen, upon which the flour is brushed, a flat traveling brush moving over said screen, and means to feed the flour upon said screen, whereby the flour is caused to fall in a continuous shower, substantially as and for the purpose specified.

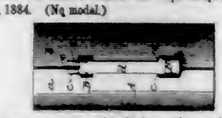
8. In a centrifugal separator, a reel-head provided with a positive feeding device, in combination with an auxiliary screening device consisting of a long flat stationary screen, upon which the flour is brushed, a flat traveling brush moving over said screen, and means to feed the flour upon said screen, whereby the flour is caused to fall in a continuous shower to first make a separation of the flour or middlings from lump impurities, &c., and then deliver said flour or middlings to said positive feeding device, substantially as and for the purpose specified.

9. The auxiliary feed, consisting of chamber B, having hopper A and board B^2, in combination with band C, brushes C', screen B', pulleys C^2, and discharge B^3, substantially as and for the purpose specified.

10. The auxiliary feed, consisting of chamber B, having hopper A and board B^2, in combination with band C, brushes C', screen B', pulleys C^2, inclined board *c*, and discharge B, substantially as and for the purpose specified.

11. In a centrifugal separater, the combination of a reel, a beater, beater-shaft F, sprocket-wheel H', chain *n*, shaft N, supported in adjustable bearings N', sprocket-wheels N^4, conveyer sprocket-wheels M^2, sprocket-wheel M, sleeve E^2, and chain M', whereby said shaft N^2 and its wheels may be adjusted to tighten all of the working-chains, substantially as and for the purpose specified.

297,995. MOLD FOR DRAIN-TILES. CHARLES B. HEWITT, Racine, Wis., assignor to the Racine Cement and Pipe Company, of Wisconsin. Filed Feb. 13, 1884. (No model.)



Claim.—1. In combination with flask-sections *a b*, having two or more pairs of lugs at the line of meeting, removable clamps B, connected by a strip or bar, substantially as shown, whereby the several clamps may be applied or removed simultaneously and by a single operation, and the mold-sections separated one from the other.

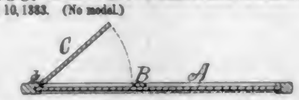
2. In combination with flask-sections *a b*, provided with two or more pairs of lugs, *c*, at the meeting line of the sections, clamp B, consisting of two or more clasps adapted to engage with or to be removed from the lugs at will, and connected by a bar, *d*, as shown.

3. In a flask, the combination of two sections, *a b*, completely separable from each other, each provided near their edges with one or more lugs, *c*, tapered in the direction of the length of the sections, and a clamp for each pair of said lugs, substantially as shown and described.

4. In combination with flask-sections *a b*, each provided with lugs *c*, having beveled front faces and undercut rear faces, clamps B, applied to said lugs, substantially as and for the purpose set forth.

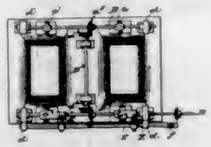
5. The herein-described flask for use in the manufacture of cement pipe and like articles, consisting of sections *a b*, each provided with two or more lugs, *c*, at or near both edges, said lugs tapered longitudinally and beveled on their front faces, and clamps B, straddling and drawing together said lugs, as and for the purpose explained.

297,996. SCHOOL-SLATE. WILLIAM D. HEYER, Elizabeth, N. J. Filed Sept. 10, 1883. (No model.)



Claim.—A school-slate, in combination with a transparent slate hinged thereto, so as to cover or uncover a portion of the opaque slate, substantially as described.

297,997. VALVE-GEAR FOR STEAM-ENGINES. OLIVER P. HOWARD, Burlington, Iowa. Filed Mar. 5, 1883. (No model.)



Claim.—1. The combination of the induction-valves having their gearing on one side of the cylinder, the exhaust-valves having their gearing upon the opposite side of the cylinder, and a connecting-shaft passing under the cylinder for imparting motion from the induction to the exhaust gearing.

2. The combination of the cylinder, induction-valves on one side of the cylinder, the exhaust-valves upon the opposite side of the cylinder, shafts for operating the valves, one below the induction and the other below the exhaust valves, and a shaft passing under the cylinder and connecting the valve-operating shafts, substantially as described.

3. The combination of the induction-valves on one side of the cylinder, the exhaust-valves on the opposite side of the cylinder, shafts D and D', respectively, beneath the induction and exhaust valves, and each having cams for operating said valves and a miter-wheel, and a shaft, D^2, having miter-wheels for connecting said shafts D and D', substantially as described.

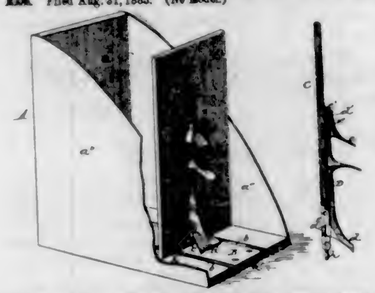
4. The combination of the induction-valves having their gearing on one side of the cylinder, the exhaust-valves having their gearing upon the opposite side of the cylinder, a connecting-shaft passing under the cylinder for imparting motion from the induction to the exhaust gearing, and a rod, F, connected with the induction-gearing and the governor, substantially as described.

297,998. GAGE FOR GORING SHOE-UPPERS. WILLIAM BRADFORD KINSLEY, Stoughton, Mass. Filed Feb. 25, 1884. (No model.)



Claim.—The gore-gage substantially as set forth, consisting of a board or plate provided with the three cells arranged in it, as represented, for the reception and gaging of the gore, and the two pieces of material to be adapted thereto, as specified.

297,999. DEVICE FOR FILING PAPERS. JOHN C LANG, Boston, Mass. Filed Aug. 31, 1883. (No model.)



Claim.—1. In a paper-file, a follower-board combined with an elastic guide or base-board, and frictional clamping devices connecting the follower-board and guide, substantially as described.

2. In a paper-file, a guide or base-board combined with a follower-board having a sliding connection therewith, a vertically-movable brace applied to said board, and means, substantially as described, for locking said brace downward.

3. In a paper-file, the clamping device composed of a slotted follower-board having a sliding brace or rear support, the thumb-latch to lock said brace, and foot hooks or arms on the board, combined with a guide or support therefor.

4. In a paper-file, the combination, with a guide or support, of a clamping follower composed of a board having arms or hooks at the lower end, and a vertically-moving brace or support applied to the follower, the whole arranged, substantially as described, to lean backward at any point within the limits of the guide, substantially as and for the purpose set forth.

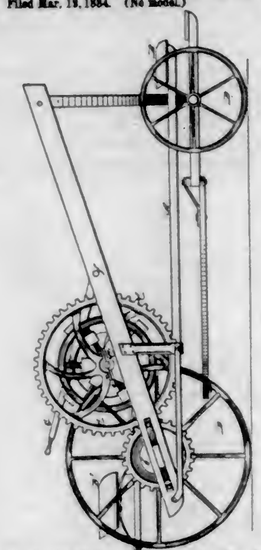
5. The combination, with the guide, of the follower-board slotted at its lower end, the vertically-sliding brace D, provided with the stud *d'''*, and means, substantially as described, for locking the brace in position.

6. In combination with the follower-board and brace, acting as described, the thumb-latch E, constructed, as described, to serve the two-fold purpose of guiding and locking the upper end of the brace.

298,000. PROCESS OF PREPARING MEDICAL COMPOUNDS. HENRY C. LAWRENCE, Chicago, Ill. Filed Nov. 30, 1883. (No specimens.)

Claim.—In a process for making a medical compound composed of spirits, balsam of tolu, sirup, and water, the method of retaining and blending a maximum amount of tolu by heating the alcohol, then adding the tolu and boiling water, and then clarifying the same with carbonate of lime or precipitate of chalk, as set forth.

298,001. SPRING AND WEIGHT MOTOR. ANDREW LEWIS, Naperville, Ill. Filed Mar. 19, 1884. (No model.)



Claim.—1. In a spring-motor, a drum, upon which the actuating or main spring is wound, provided with a series of short springs interposed between the drum and main spring, substantially as and for the purpose set forth.

2. In a spring-motor, a main frame, a drum journaled thereon, and a main spring having one end secured to the frame and the other wound upon and secured to the drum, in combination with a series of short auxiliary springs upon the periphery of the drum, having one end secured thereto and the other free to press outward against the coils of the main spring, substantially as and for the purpose set forth.

3. In a spring-motor, a main spring made in two or more separate parts laid one upon the other, and wound upon a suitable driving-drum, substantially as and for the purpose set forth.

4. In a combined spring and weight motor, a main driving-shaft provided with a fixed clutch-disk and a loose spring-drum adapted to be engaged and disengaged therewith, in combination with a fly-wheel fixed on the main shaft, and having its spokes provided with weights free to slide in and out upon the same as the wheel revolves, substantially as and for the purpose set forth.

5. The wheel C', provided with the sliding weights D, formed with a removable portion, *d*, secured by bolt *d'*, substantially as and for the purpose set forth.

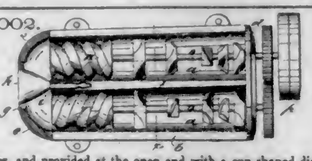
6. In a spring-operated vehicle or car, the main frame A, wheels B B, gearing *b* C, and driving-shafts C', provided with the clutch-disks E, in combination with the oppositely-operating spring-drums E' E^2, constructed as herein described, and the shifting-levers G G, substantially as and for the purpose set forth.

7. In a spring-motor, the main spring G', composed of two or more separate springs wound upon the drum E', and having one end secured thereto and the other to the main frame, in combination with the auxiliary springs G^2, interposed between the main spring and the drum on which it is wound, all constructed and arranged to operate substantially as and for the purpose set forth.

298,002. TILE-MACHINE. WARNER LEWIS, Stone Bluffs, Ind. Filed Aug. 11, 1883. (No model.)

Claim.—1. The combination, with two plungers, screws, or augers, of two cylinders, *a a*, divided by a partition closed at one end, open at

298,002.

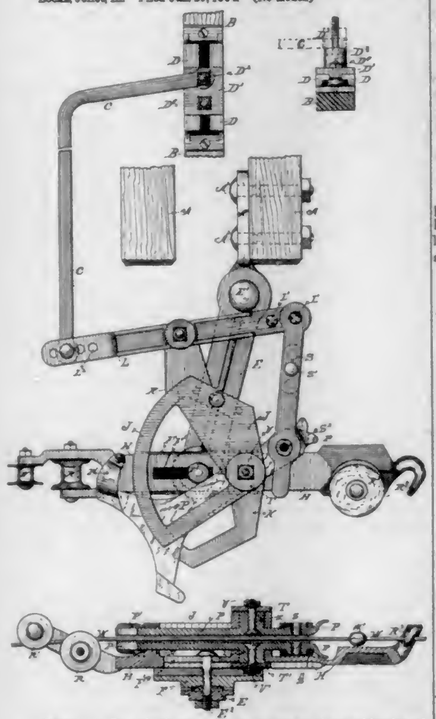


the other, and provided at the open end with a cup-shaped die-plate, *e*, open at *g*, and a central conical core, *h*, as and for the purpose described.

2. The cylinder of a tile-machine, having its internal diameter decreasing from the clay-inlet to its outlet, to condense the clay as it approaches the die, and thus make a strong shell for the tile.

3. The core *h*, having a central stem, *i*, oppositely notched at *j*, in combination with the two sections forming cylinders *a a*, and provided with an intermediate recess, half in each section, and adapted to fit over said stem, as and for the purpose specified.

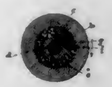
298,003. CHECK-ROWER FOR CORN-PLANTERS. CHARLES S. LOCKE, Joliet, Ill. Filed Jan. 29, 1884. (No model.)



Claim.—1. In a check-rower for corn-planters, the combination of the frame H, having the slot F', seat-plate F, bracket-arm E, and plate A'', the several parts adjustably secured together, as and for the purpose set forth.

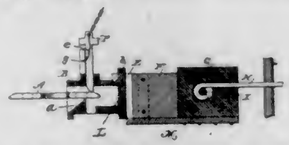
2. In a check-rower for corn-planters, the combination, with the frame H, of the seat F, bracket-arm E, and plates A'', the several parts being provided with the serrations described, and held adjustably together, as and for the purpose set forth.

298,004. CATCH FOR SHADE-ROLLERS. ALSON A. LOTHROP, Boston, Mass., assignor to Charles H. Cushman, same place. Filed June 27, 1883. (No model.)



Claim.—The combination of the clutch *f*, groove *g*, grooved disk *c*, and strip of felting *e*, when used for shade-rollers, as hereinbefore shown and described.

298,005. CAR-COUPLING. FERDINAND F. LUTZ, Louisville, Ky. Filed Feb. 14, 1884. (No model.)



Claim.—1. In a car-coupler, the combination, with the draw-head having the solid back provided with the lateral extensions *b*, of the side plates having slots to receive the said extensions, and the cushion-block F, substantially as specified.

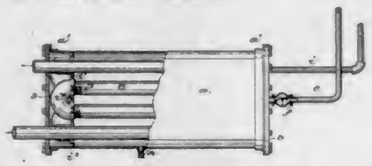
2. In a car-coupler, the combination, with the draw-head constructed as described, having the lateral extensions *b*, of the side plates, J, having the slots *d*, the vertical strips D, and cushion-block L, substantially as specified.

3. The combination, with the draw-head constructed as described, of the block G, provided with the arm H, to receive the king-bolt, the base-plate M, side plates, J, having the forward loops, C, and slots *d*, the draw-head having the rear lateral extensions, *b*, the vertical strips D, elastic block F, and interspace E, substantially as specified.

4. The combination, with the draw-head having the bossed pin-aperture, of the coupling-pin constructed as described, the pin-set, and coupling-link, substantially as specified.

5. The combination, with the draw-head having its inner walls tapering rearwardly, and provided with the incline *a*, of the coupling-link A, having its flat and edge walls beveled at their ends, the pin P, having its lower end beveled, and the pin-set connected to the pin, substantially as specified.

298,006. FEED-WATER HEATER. CHARLES H. MASCON, Muskegon, Mich. Filed Nov. 23, 1883. (No model.)



Claim.—1. The combination of the exhaust-pipes of a locomotive with a feed-water heater consisting of a case or chest and circulating-coil for the feed-water, and steam-inlet pipes leading from each of the exhaust-pipes of the locomotive to the said case, and check-valves within the said pipes opening toward the case, substantially as and for the purpose set forth.

2. In a feed-water heater, the combination of the chest or case to receive steam with the circulating-pipes for the feed-water, the said pipes being connected at the ends of the case by elbows resting in contact with one another and with the walls of the case for supporting the said circulating-pipes, substantially as described.

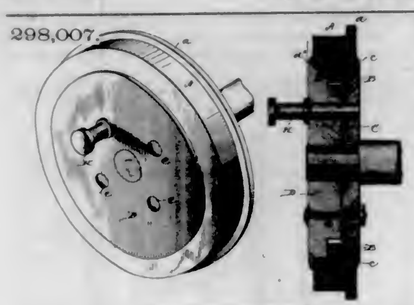
3. The combination of the exhaust-pipes of the locomotive with the heater-case and circulating-pipes for feed-water therein, the steam-inlet pipes *c c'*, leading from the exhaust-pipes to the case, and the outlet-pipe *i*, leading from the said case into the smoke-box of the engine, substantially as described.

4. The combination of the case *a*, circulating-pipes *c* therein, flanged elbows *i*, connecting the said pipes, and having their flanges in contact with one another, the said elbows being provided with lugs i^2, affording a support for the said pipes from the interior of the case, substantially as described.

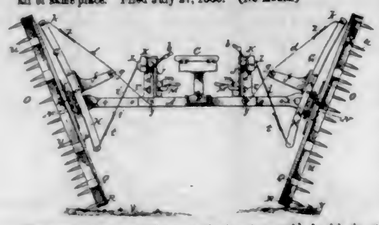
298,007. LOCOMOTIVE-WHEEL. JOHN H. MANN, Grafton, assignor of one-half to Newton J. Myers, Decatur, Tex. Filed Jan. 26, 1884. (No model.)

Claim.—The combination, with a rim, A, having the flange B, of a core, D, consisting of the portions *d d' d^2*, a plate, C, having a flange, *c*, said core and plate being secured to the rim by transverse bolts, and having a central opening for the axle, and being also provided with a hole or opening within which is seated a crank-pin, substantially as set forth.

298,007.



298,008. ROTARY HARROW. DAVID MANUEL, Hyde Park, Mass., assignor of seven-eighths to Benjamin E. Phillips, Lawrence A. Boylan, George Haigh, William H. Julian, John H. Monahan, and Herbert C. Somes, all of same place. Filed July 27, 1883. (No model.)

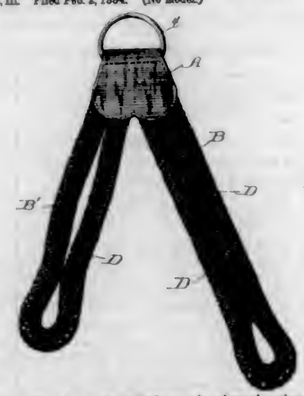


Claim.—1. In a rotary harrow, the bar A, provided with the standard J, having the arm K, the shaft L, provided with the pulleys *n n*, and crank *b*, the treadle M, provided with the chain *l*, and the chains *i d*, for raising, lowering, and securing the wheel O, substantially as described.

2. In a rotary harrow, the head-stock E, carrying the wheel O, and provided with arms G H, and upwardly-projecting arm *f*, in combination with the chains *i d*, and means for drawing and releasing the latter, the arm *f* acting as a lever, against the outer end of which the chain *d* operates in raising and lowering the wheel O, substantially as described.

3. The combination, substantially as set forth, of a bar, arms horizontally pivoted to the outer ends thereof, short axles attached to said arms, wheels on said axles provided with harrow-teeth, a winding mechanism, and elastic extensible cords connecting said arms with said winding mechanism.

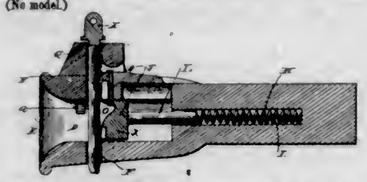
298,009. SUSPENDER-END. MORRIS MARCUS and HERMAN ANDES, Chicago, Ill. Filed Feb. 2, 1884. (No model.)



Claim.—1. In a suspender-end, the reaches formed each or both of two strips of material of unequal width, the wider strip of each reach being doubled to bring two of the edges adjacent to each other, and the narrower strip being superposed upon the wider and crossed, to form the button-hole, from one of the double parts of the wider strip to the other, substantially as described.

2. In a suspender-end, the reaches formed each or both of two strips of material of unequal width, the wider strip of each reach being doubled to bring two of the edges adjacent to each other, and the narrower strip being superposed upon the wider and crossed upon itself at one or more points upon the wider strip, and being secured longitudinally flatwise upon the same to maintain the inner edges of the doubled part of the said wider strip in contact with each other and to form the button-hole, substantially as described.

298,010. CAR-COUPLING. SAMUEL BROOKS MAYFIELD, Palestine, Tex., assignor to Mary L. Mayfield, same place. Filed Mar. 14, 1884. (No model.)

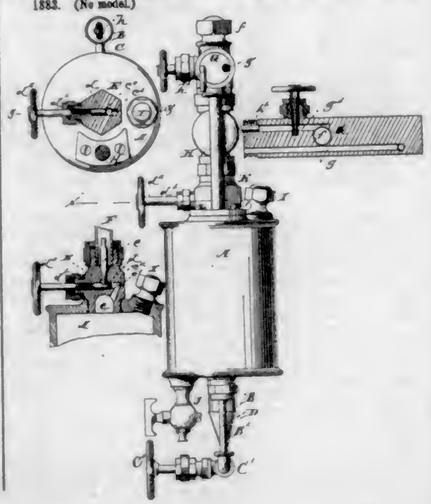


Claim.—1. In a car-coupling, the combination, with the draw-head having the guide and stop around the coupling-pin perforation on its top face, the stops on the inner faces of the vertical walls of the link-chamber in front of the pin-perforation, and the bore in its stem communicating with the link-chamber, of the pin-supporting slide having its head working in the link-chamber beneath the upper portion of the pin-perforation, and its stem or bar working against the spring in the bore of the stem of the draw-head, substantially as specified.

2. As an improvement in car-couplings, the combination of the draw-head having the longitudinally-disposed bore or recess H in its stem, the vertical coupling-pin perforation F, the longitudinal top groove, Q, extending to and opening into the pin-perforation F, and the longitudinal slot U, opening into the pin-perforation F at its front end, the spring I, fitting neatly into the bore H, and working against the front end of the spring I, and the supporting-plate S, sliding in the groove and over the pin-perforation, and provided with the downwardly-extending tongue T at its front end which works in the slot, and is secured to the top edge of the slide J at the front end of the latter, as set forth.

3. The combination, with the draw-head having the longitudinal groove in its top surface, and a longitudinal slot arranged centrally in the bottom of said groove, of a spring-actuated slide having its head provided with a straight front face, at the top of which is formed a projecting flange, and in the surface of which is provided a recess, from which extends a perforation up through the head, a slide-plate working in the groove and having a downwardly-projecting tongue at its front end, through which a perforation is provided, and a pin or bolt passing through the perforations to secure the slide and guide-plate together, as set forth.

298,011. LUBRICATOR. GEORGE MCNEIL, Chicago, Ill. Filed Oct. 23, 1883. (No model.)



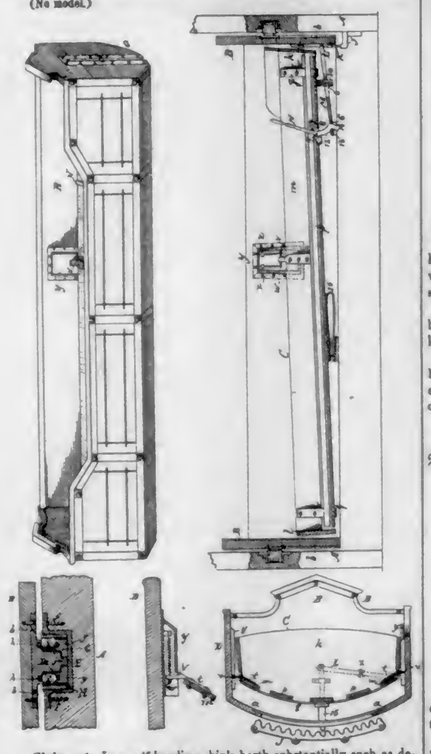
Claim.—1. The chamber G, having a passage, *g*, for steam and a passage, *g'*, for lubricant, in combination with a pipe, B, for the water of condensation, reservoir A, having communication with the pipe B, and oil-feed tube F, substantially as and for the purposes specified.

2. The chamber G, having a passage, *g*, for steam and a passage, *g'*, for oil, in combination with the pipe B, trap-pipe *h*, reservoir A, communicating with the pipe B, and feed-pipe F, substantially as and for the purposes specified.

3. The reservoir A and plug E, having an opening, *e*, and passages *e' e''*, in combination with the feed-tube F and feed-nozzle *e*, substantially as and for the purpose specified.

4. The reservoir A, pipe B, having the trap-pipe *h* located therein, and feed-pipes C D, in combination with the plug E, feed-pipe F, and chamber G, having the passages *g g'*, substantially as and for the purposes specified.

298,012. SHIP'S BERTH. CHARLES A. MILLIGAN, Somerville, and MICHAEL J. KILLION, Boston, Mass., assignors to the Excelsior Self-Leveling Berth and Automatic Ladder Company, Portland, Me. Filed Feb. 7, 1884. (No model.)



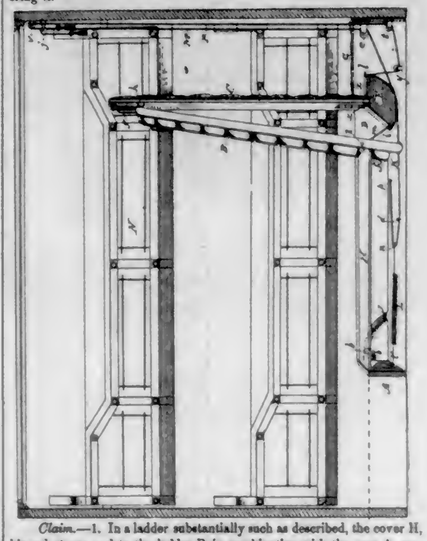
Claim.—1. In a self-leveling ship's berth substantially such as described, the lever N, pivoted to the side of the berth, and provided with the bend or cam 12, and headed stud 14, in combination with the pivoted lever M, and means for locking the berth, substantially as specified.

2. In a self-leveling ship's berth substantially such as described, the berth B, provided with the dovetail grooves *d*, for receiving the beveled or dovetailed flange on the journal D, substantially as specified.

3. The improved self-leveling ship's berth herein described, the same consisting of the berth B, provided with the sockets E, bushings H, grooves *d*, springs *x*, bar *w*, and rack J, the crib C, provided with side rails, *m*, studded bars *i*, slats *p*, bands *q*, levers L M N, bar K, flanged journal D, cap G, and rollers *i*, constructed, combined, and arranged to operate substantially as shown and described.

298,013. LADDER. CHARLES A. MILLIGAN, Somerville, and MICHAEL J. KILLION, Boston, Mass., assignors to the Excelsior Self-Leveling Berth and Automatic Ladder Company, Portland, Me. Filed Feb. 7, 1884. (No model.)

Brief.—The portable ladder is folded into a case or housing which is provided with tracks and covers and mechanism for raising and lowering it.

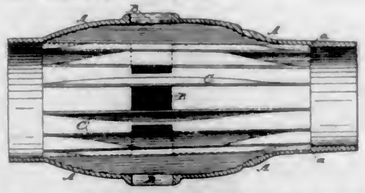


Claim.—1. In a ladder substantially such as described, the cover H, hinged at one end to the ladder B, in combination with the case A, provided with the tracks J, and means for raising and lowering the ladder, substantially as specified.

2. In a ladder substantially such as described, the cover H, in combination with the ladder B, cover C, case A, and means for raising and lowering the ladder, substantially as set forth.

3. In a ladder substantially such as described, the cover H, in combination with the ladder B, cover C, case A, means for raising and lowering the ladder, and means for elevating and supporting the outer end of the cover H when the ladder is erected, substantially as specified.

298,014. VEHICLE-HUB. JOHN MONK, Lynn, Mass. Filed Sept. 6, 1883. Renewed Oct. 9, 1883. (No model.)



Claim.—1. A hub having a shell provided with radial tapering ribs extending from the back band to the front band of the hub, in combination with a wooden core, substantially as set forth.

2. A hub having a shell provided with radial tapering ribs extending from the back band to the front band of the hub, in combination with a wooden core having a groove, into which the tenons of the spokes enter and form a solid base, substantially as described.

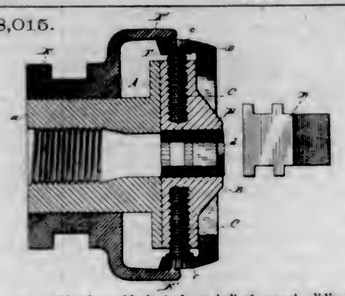
3. A hub having a shell made in one piece, and provided with radial ribs extending from the back band to the front band, and forming spaces *b*, into which the spokes expand, as and for the purpose set forth.

4. In a hub, the combination of a shell, A, provided with radial tapering ribs C, extending from the back band to the front band, in combination with a wooden core having radial groove D, in which the spokes are secured and form a solid base, substantially as specified.

298,015. LATHE-CHUCK. WILLIAM A. MONTGOMERY, Cleveland, Ohio. Filed July 21, 1883. (No model.)

Claim.—1. The combination, with the body or shell of a chuck, sliding jaws adjustably secured to screws, and springs yieldingly connecting the screws to the shell or casing, of devices for simultaneously forcing the jaws toward each other.

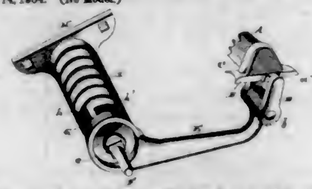
298,015.



2. The combination, with the body or shell of a chuck, sliding jaws adjustably secured to screws, pinions secured to the outer ends of the screws, and springs for yieldingly connecting the jaws to the body or shell, of the ring D, provided with teeth for engaging the pinions on the screws, and devices for simultaneously forcing the jaws toward each other.

3. The combination, with the body or shell of a chuck, the sliding jaws, screws, pinions, springs, and ring D, of the hub provided with the flange E', all of the above parts combined and adapted to operate as described.

298,016. SIDE-BAR VEHICLE. HOLLIS W. MOORE, Olean, N. Y. Filed Feb. 14, 1884. (No model.)



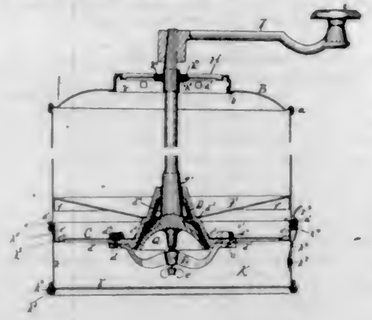
Claim.—1. The combination, with a bracket provided with a shell, and a second bracket or bearing, a shaft supported in said brackets, and a sleeve placed on said shaft, the said sleeve being provided with a serrated head, of an arm having a serrated portion adapted to engage the serrated portion of the sleeve, and a coiled spring, one end of which is secured to the bracket having the shell thereon, while the opposite end is secured to the sleeve.

2. The combination, with a shaft suitably journaled to the under side of a vehicle-body, a sleeve placed on said shaft, and an arm secured to the sleeve, of a coiled spring, one end of which is indirectly connected to the vehicle-body, while the opposite end is secured to the sleeve.

3. The combination, with the shaft, the bracket provided with the shell, and a second bracket or bearing, of the sleeve, arm, clip, clip-tie, and stirrup, substantially as set forth.

4. The combination, with supporting-brackets, the sleeve, arm, and nut for securing the parts together, of a coiled spring, one end of which is indirectly connected to the vehicle-body, while the opposite end is secured to the sleeve, substantially as set forth.

298,017. COMBINED COFFEE CANISTER AND MILL. EDWIN NORTON, Chicago, Ill., assignor to himself and Oliver W. Norton, same place. Filed Oct. 20, 1883. (No model.)



Claim.—1. The combination, with a sheet-metal coffee-canister, of a removable box at the bottom of the same for the reception of the ground coffee, and a coffee-mill having a stationary grinder secured to the sheet-metal bottom of the canister, and projecting up through an opening in the same, and having its rotary grinder secured to a shaft which projects up through the canister, and is journaled at its upper end in the removable sheet-metal cover of the canister and at its lower end in the stationary grinder, said sheet-metal cover being provided with screw-coupling devices to secure the cover rigidly to the canister, and thus afford a fixed bearing for the shaft, substantially as specified.

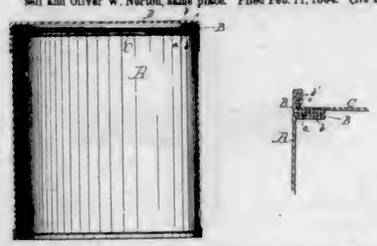
2. The combination, with the sheet-metal bottom C of the canister, of the stationary grinding cone or shell projecting up through an opening in said bottom, and secured thereto by screws passing through a flange on said cone and entering nuts soldered to said bottom, substantially as specified.

3. The combination, with sheet-metal canister-bottom C, of stationary grinding-cone D and bridge-piece E, secured to said bottom C by screws entering threaded nuts soldered to said bottom, substantially as specified.

4. The combination, with bottom C, of body A, having an exterior crimp, *a'*, and hinged box K, provided with a spring-clamp adapted to fit over said crimp to fasten said box to the canister, substantially as specified.

5. The combination, with canister-body A, of bottom C, secured thereto, and box K, provided with a wire at its top, and hinged to said bottom C by a strap folded over said wire and soldered to said bottom, substantially as specified.

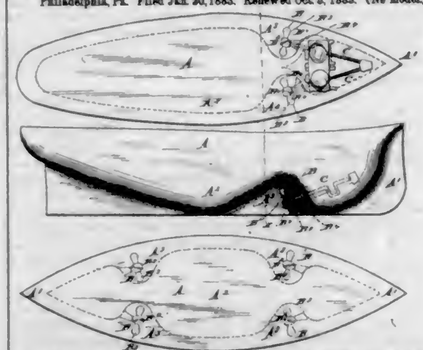
298,018. PAINT-CAN. EDWIN NORTON, Chicago, Ill., assignor to himself and Oliver W. Norton, same place. Filed Feb. 11, 1884. (No model.)



Claim.—1. The combination, with a can-body provided with an interior shoulder to support the seam while it is being formed, of a can-head secured thereto by a double seam folded inwardly and resting upon said shoulder, substantially as specified.

2. The combination of can-body A, provided with inturned flange *a*, with seamless ring B, folded over said flange, and can-head C, having upturned flange *c*, folded with said seamless ring inwardly into a double seam, substantially as specified.

298,019. SHIP'S HULL AND PROPELLER. ZACHARIAH ORAM, Philadelphia, Pa. Filed Jan. 30, 1883. Renewed Oct. 5, 1883. (No model.)



Claim.—1. The combination of a vessel having concavities forward of the midship section and below the water-line with two or more screw-propellers having an oblique downward and outward thrust, located wholly or partially in such concavities, and rotated separately and independently by motors having a driving-shaft in common with each propeller, substantially as and for the purpose set forth.

2. The combination of a vessel having concavities in the hull forward of the midship section and below the water-line, adapted to receive and guide the currents of water to and from screw-propellers located wholly or partially therein, with the screw-propellers having a downward and outward direction of thrust toward the stern of the vessel, and susceptible of independent rotation, substantially as and for the purpose set forth.

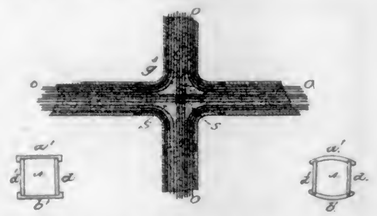
3. The combination of independent engines susceptible of varying and adjustable regulation of speed and direction of motion relatively to each other with propellers located in cavities of a vessel forward of the midship section, and having downward and outward rearward thrust, as and for the purpose set forth.

4. The combination, in a vessel adapted to sail in either direction of its length of keel, of two or more sets of screw-propellers having their axes inclined outwardly and downwardly toward the midship section of the vessel, located wholly or partially in concavities, substantially as and for the purpose set forth.

5. In a vessel having two or more hulls combined in parallel position, the combination of a series of two or more independent engines with screw-propellers having their axes inclined outwardly and downwardly toward the midship portion, such propellers located in or partially within cavities formed in said hulls aft of the bows and forward of the midship section.

6. In a vessel propelled by power internally applied, the combination of screw-propellers located forward of the midship section with projections in the form of zones or segments of prolate spheroids, surrounded by receding curved surfaces, substantially as shown and described.

298,020. LAYING UNDERGROUND ELECTRIC WIRES. JOEL H. PAGE, Philadelphia, Pa., assignor of one-half to Blanch Carrie King, same place. Filed Nov. 16, 1883. (No model.)



Claim.—1. In forming angles in and turning corners with systems of wires laid underground for telegraphic and other electrical purposes, the method of simultaneously laying, protecting, securing, and wholly insulating severally each wire, by arranging and holding in suspension in close proximity to each other to the point of divergence the desired number of wires, and pouring upon them simultaneously an insulating compound, until the whole are embedded to that point, and after the compound has set making the desired diversions, and repeating the operation in the new directions of the several wires, substantially as shown and described.

2. For laying systems of underground wires for telegraphic, telephonic, and other electrical purposes, an extensible jointed conduit-case consisting of removable parts longitudinally dovetailed to engage and secure and made interchangeable with each other, so that the conduit may be extended to any desired length, and be free from lateral joints, substantially as shown and described.

3. A longitudinal conduit-case consisting of top, bottom, and side pieces, quartered longitudinally, and dovetailed to adjust into and secure each other, the whole made continuous through intersecting joints, in combination with a system of underground wires for telegraphic and other electrical purposes, secured and insulated by being wholly embedded in an insulating compound, substantially as shown and described.

4. In systems for underground wires for telegraphic, telephonic, and other electrical purposes, the combination of longitudinal conduit A, angle-joint *g*, lateral and vertical ducts, and test-box *n*, the latter above the surface of the street, securing, protecting, and insulating compound *s*, and systems of wires *o*, substantially as shown, and for the purpose described.

5. In combination, systems of wires *o* for telegraphic, telephonic, and other electrical purposes, insulating and protecting compound *s*, conduit-case A, connecting-joints *h*, and man-holes *r*, for reaching, testing, and repairing defects, together with angle-joints *g*, lateral and vertical ducts, and test-box *n*, above the surface of the street, the whole constructed and arranged substantially as shown and described.

6. In systems of wires for electrical purposes laid underground in common conduits, the combination of the longitudinal casing A, comprising top, bottom, and side parts, and intersecting receiving connecting-sections, hollow intersecting angle-joints *g g' g² g³*, having openings at diverging angles to each other, insulating, securing, and protecting compound *s*, systems of wires *o*, embedded therein, man-holes *r*, for reaching the conduit, and laterally-arranged test-boxes *n*, rising above the surface of the street, substantially as shown and described.

7. Angle-conduits separable horizontally into top, bottom, and intervening side pieces, forming a simple hollow empty case, accessible from the top and side, provided with diverging outlets through branching arms, as shown, and designed and arranged for separating and diverging in various directions systems of wires laid underground for electrical purposes, substantially as and for the purpose described.

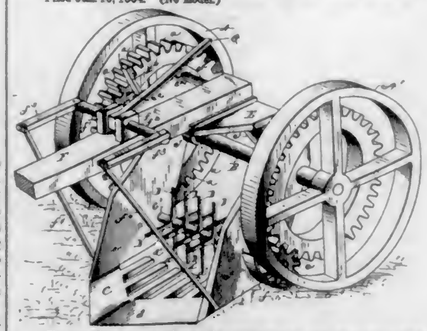
8. An angle-conduit consisting of a simple hollow horizontally-separable empty case, accessible from the top and sides, constructed of top, bottom, and intervening side pieces, and provided with diverging outlets through branching arms, and designed and arranged for separating and diverging in various directions systems of wires laid underground for telegraphic, telephonic, and other electrical purposes, in combination with an insulating compound, *s*, and systems of wires *o*, laid therein, substantially as shown and described.

298,021. SECURING CARRIAGE WINDOW-FRAMES TO CURTAINS. ARIJAH S. PARKER, Cincinnati, Ohio. Filed Dec. 12, 1882. (No model.)



Claim.—A window-frame for carriage-curtains, of leather, textile fabrics, or other material, composed of an outer glass-receiving frame, a second glass-retaining frame provided with tangs which project from the frame at a distance from the edge of the outer frame, and an inner frame against which the tangs are clinched, substantially as and for the purpose specified.

298,022. POTATO-DIGGER. FRANK A. PAUL, South Wales, N. Y. Filed Jan. 10, 1884. (No model.)



Claim.—In a potato-digger, the combination, with carrying-wheels mounted upon a suitable axle, and provided on their inner sides with a circumferential series of teeth, of a frame loosely mounted on the axle of said wheels, extending forwardly and terminating in a pointed end, and provided with rearwardly-extending arms, a shaft carrying pinions adapted to mesh with the teeth of the carrying-wheels, and journaled in the sides *c c'*, said shaft being also provided with arms or fingers D, guards *f*, arranged below the pinions, and a suitable lever for raising and lowering said frame, substantially as set forth.

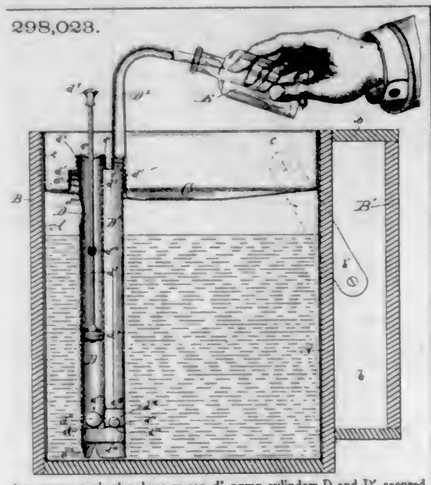
298,023. COMBINED BOTTLING AND SHIPPING CAN. CHARLES R. PEASLEE, Louisville, Ky. Filed Feb. 25, 1884. (No model.)

Claim.—1. The combined transportation and filling can consisting of a can and its inclosing-jacket having a depressed head or tray furnished with a drip-nozzle and an oil-pump, and means for closing the openings in said head when the pump or its plunger is removed, said tray being adapted to contain the pump or its plunger when removed for transportation, substantially as specified.

2. The combination, with the can A and its inclosing-jacket, of the depressed head or tray C, having its vertical flange or wall *c* secured to the top edge of the can-body, and being provided with a screw-nozzle for attachment of a removable pump, and adapted to store said pump during transportation, said vertical flange *c* serving to strengthen the wall of the can-body, and adapt the same to brace against the cover of the jacket and hold the can in position therein, substantially as specified.

3. The combination of the can A, jacket B, tray C, provided with downwardly-projecting drip-nozzle c^2 and cork c^3 and upwardly-project-

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ing screw-nozzle c^4 and screw-cap d', pump-cylinders D and D', secured to said cap d', screw-nozzles d^2 and d^3, also secured to said cap, and caps d^3 d^3, for closing said nozzles, substantially as specified.

4. The combination, with the can A, of the depressed head or tray C, provided with screw-nozzle c^4, of the cap d', adapted to fit on said screw-nozzle, and provided with screw-nozzles d^2 d^3, pump-cylinders and plunger, and the bottling-spout D^2, secured to said nozzle d^3, substantially as specified.

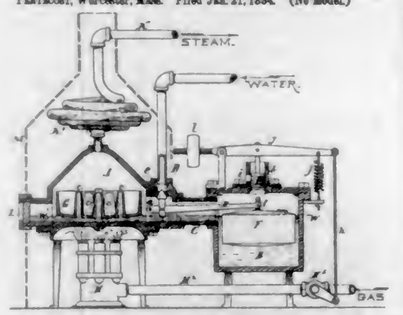
5. The combination, with the can A and its head C, provided with a screw-nozzle, c^4, of the pump-cylinder D and outer cylinder, D', provided with a screw-cap, d', having screw-nozzles d^2 and d^3 communicating with said cylinders D and D', respectively, substantially as specified.

6. The combination, with can A, of protecting-jacket B and its cover B', provided with rim *b* and hinge-straps *b'*, pivoted at each end to said jacket and cover, substantially as described.

7. The combination, with can A, of protecting-jacket B, provided with rim *b*, hooks b^2, and staples b^3, secured to the lower edge of said rim *b*, substantially as specified.

8. The combination, with a transportation-can and its protecting-case having a receptacle at the top for an oil-pump or its plunger, of a pump provided with a screw-cap for securing it to the can, said cap being provided with a nozzle communicating with one chamber of the pump for attachment of a spout, and another screw-nozzle communicating with the pump-cylinder, so that the same may be closed by a cap, substantially as specified.

298,024. APPARATUS FOR GENERATING STEAM. WILLIAM A PENTECOST, Worcester, Mass. Filed Jan. 21, 1884. (No model.)



Claim.—1. The combination of the heating-chamber A, flat at its base, for containing a thin sheet of water, the auxiliary tank B, of greater depth, connected therewith by the conduit C, leading from the bottom level of said chamber to the upper part of said tank, the water-inlet having valve *s*, the valve-lever E, fulcrumed as at *a* and extending through said conduit, the float F, attached to said lever, the steam-delivery K, and burner H, said parts being constructed and relatively arranged for operation substantially as shown and hereinbefore described.

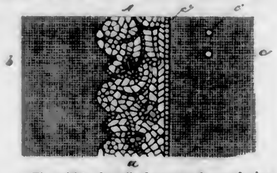
2. The combination, with the generating-chamber A, auxiliary tank B, valve-regulating float F, and valve *e*, of the circular pan or dish-shaped piece G, secured within said chamber, substantially as and for the purpose described.

3. The combination, with the generating-chamber A, having connected therewith the tank or regulating-chamber B, of the disk-shaped piece G, provided with tubes *c*, substantially as set forth.

4. The cylinder *b*, having the side opening, *i*, the piston I, the lever J, and adjustable weight *l*, and spring *j*, in combination with the boiler A, tank B, and burner H, the same being adapted for action as a safety-valve and for regulating the flame of the burner, substantially as set forth.

5. The combination, substantially as hereinbefore described, of the chamber or boiler A, the chamber or tank B, connected therewith, as at C, the water-supply pipe D, having valve *e*, the float F, lever E, the burner H, the coil K', and steam-delivery pipe K, for the purposes set forth.

298,025. EMBROIDERY. MORRIS H. PULASKI, Philadelphia, Pa. Filed Dec. 7, 1883. (No model.)



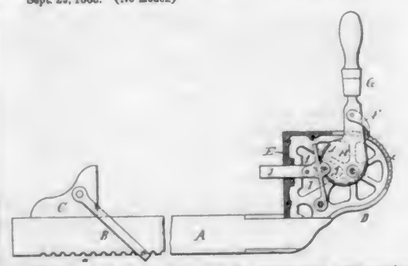
Claim.—1. The within-described process for producing embroidery-lace, which consists of the following steps: first, drawing aside in desired directions in an unbroken condition each and all of the strands of all of the meshes of a piece of textile fabric specially adapted for the purpose, and gathering said strands into groups to form open spaces therein of predetermined configurations, then covering over and concealing with embroidery-threads all of the strands so drawn aside, substantially as set forth and described.

2. As a new article of manufacture, embroidery-lace composed of a foundation of textile fabric specially adapted for the purpose, each and all the strands of all the meshes of which are drawn aside in desired directions in unbroken condition and gathered in groups to form openings of predetermined configurations, said strands being entirely covered over and concealed from view with overlapping embroidery-threads, substantially as described and shown.

298,026. METHOD OF MANUFACTURING ARTIFICIAL STONE. MICHAEL B. RANDLE and BENJAMIN E. TURNER, Statesborough, Ga. Filed Dec. 31, 1883. (No specimens.)

Claim.—The herein-described method of manufacturing artificial stone, consisting in subjecting a molded and partially-hardened mass of cement, sand, and lime to a rubbing operation of cement, lime, and water for filling the cavities or pores in the stone and giving it a smooth or polished surface, and finally saturating the stone with lime-water, substantially as herein set forth.

298,027. JOINER'S CLAMP. FRITZ RESTORFF, Chicago, Ill. Filed Sept. 29, 1883. (No model.)

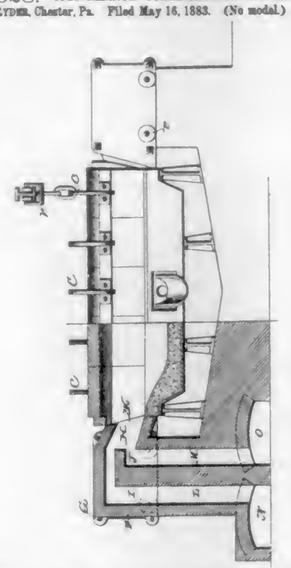


Claim.—1. In a joiner's clamp, the combination, with notched strip A and block C, adjustably mounted thereon, of lever G, provided with flanged cam-head H, rocker-bar I, connected to said cam-head by inwardly-projecting pins, and pusher-bar J, secured to said rocker-bar, said lever, rocker-bar, and pusher-bar mounted between plates D, secured to the end of strip A, as and for the purpose set forth.

2. In a joiner's clamp, the lever G, provided with flanged cam-head H, carrying pawl F, and mounted between notched plates D, in

combination with rocker-bar I, connected with said lever by inwardly-projecting pins, pusher-bar J, secured to said rocker-bar, and block O, said block adjustably mounted on notched strip A, to the end of which plates D are secured, as set forth.

298,028. OPEN-HEARTH STEEL-MELTING FURNACE. CHARLES M. RYDER, Chester, Pa. Filed May 16, 1883. (No model.)



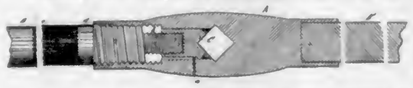
Claim.—1. An open-hearth steel-melting furnace having its sides composed of movable sections, and its roof composed of removable and interchangeable transverse sections, the ends of the roof-sections being supported by the removable side-wall sections, substantially as set forth.

2. An open-hearth steel-melting furnace having its sides and roof composed of removable and interchangeable sections of equal width, substantially as set forth.

3. An open-hearth steel-melting furnace having gas and air flues combined in a single structure, adapted to be moved toward and from the body of the furnace, substantially as set forth.

4. An open-hearth steel-melting furnace having gas and air flues combined in a single structure mounted on wheels, and adapted to be moved toward and away from the body of the furnace, substantially as set forth.

298,029. TAP-WRENCH. NELSON SAWYER, Hartford, Conn., assignor to Wallace A. Downes, Sing Sing, N. Y. Filed July 14, 1883. (No model.)



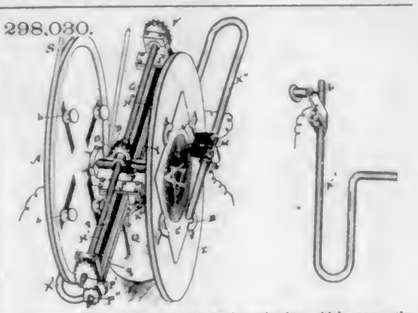
Claim.—The socketed wrench-head having the angular opening, the movable bit, the retaining-pin, and the handle having the oppositely-inclined threaded portions and plain part, all combined and arranged substantially as shown and described, and for the purposes set forth.

298,030. AUTOMATIC ELECTRIC COPYING AND ENGRAVING MACHINE. ALBERT SCHMID, Zurich, Switzerland. Filed Oct. 23, 1883. (No model.)

Claim.—1. In a copying or engraving machine, the combination of the revolving disks A and E, carried at opposite ends of the shaft D, the tracing-point L and drawing point or chisel N, and suitable automatic feed mechanism which moves the tracing-point and drawing point or chisel across the face of their respective disks, substantially as and for the purpose set forth.

2. In a copying or engraving machine, the combination of the revolving disks A and E, carried at opposite ends of the shaft D, the tracing-point L and drawing point or chisel N, controlled by the armature

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of a magnet, M, suitable automatic feed mechanism which moves the tracing-point and drawing point or chisel across the face of their respective disks, and an electric circuit established through the tracing-point and its disk and the electro-magnet, substantially as and for the purpose set forth.

3. In a copying or engraving machine, the combination of the arms K' and K'', cross-heads J' and J'', feed-screws H' and H'', and suitable gearing connecting the feed-screws with the shaft D, constituting a feed mechanism for the tracing point and chisel, substantially as set forth.

298,031. CLASP FOR GARMENTS. CHRISTOPHER C. SHELBY, New York, N. Y. Filed Mar. 12, 1884. (No model.)

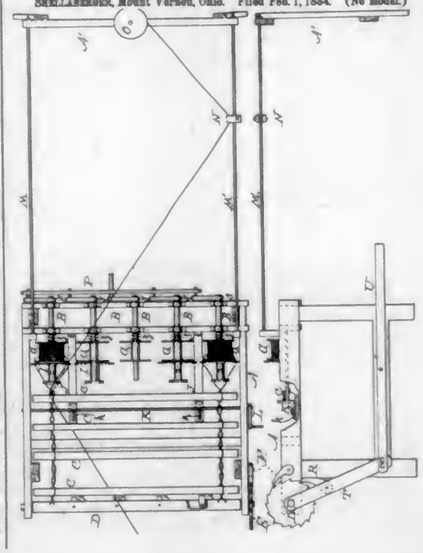


Claim.—1. The herein-described garment-holder constructed of tubular tapering form, and having a longitudinal tapering slot closed at the lower or smaller end, as set forth.

2. The holder consisting of the plate provided with the side wings turned so as to form a slotted tapering tube, and having also the third wing at the bottom of the slot, for closing the lower or smaller end of the slot and assisting in sustaining the side wings in position, substantially as described.

3. The holder consisting of the plate provided with the side wings turned so as to form a slotted tapering tube, and having the wing at the bottom of the slot, and means for attachment to the cord or webbing, substantially as described.

298,032. MACHINE FOR MANUFACTURING FENCES. GEORGE H. SHELLABERGER, Mount Vernon, Ohio. Filed Feb. 1, 1884. (No model.)



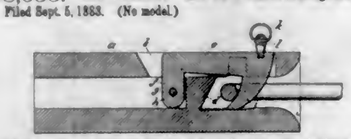
Claim.—1. The combination of the shafts B, frictional springs Z, spools G, and guides I with crank S and bar P, or equivalent mechanism for operating the same, substantially as set forth.

2. The combination of the spring-arm J, having a vertical projection above and a horizontal projection below, and the shaft K, with bearing-arms, as a device for holding and freeing the palings, substantially as set forth.

3. The combination of the wire-spool O, rods M M', and transferable guide N, for the purpose of directing a wire diagonally into position to be interlaced with the fencing-panels, substantially as set forth.

4. In a machine for the manufacture of fencing, the spool G, carrying two wires supported on a horizontal shaft, and with guides, as set forth, to direct the wires to the palings, substantially as described.

298,033. CAR-COUPLING. NEWTON J. SKAGGS, Montgomery, Ala. Filed Sept. 5, 1883. (No model.)



Claim.—The combination, with a draw-head provided with the vertical longitudinal recess *b* in its upper wall, of the abutment *d* midway of the opening in the draw-head, having its outer face inclined outwardly and upwardly, in combination with the coupling-bar *e*, having the vertical arm *f*, perforated laterally near its lower end at the rear end thereof, and the downwardly and rearwardly curved hook *i* near its front end, substantially as specified.

298,034. BAGGAGE-CHECK. CLARENCE C. SMITH, Camptown, Pa. Filed Feb. 11, 1884. (No model.)

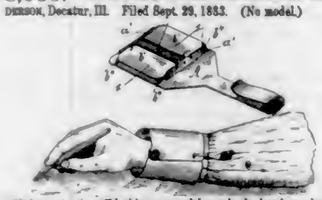


Claim.—1. The combination, in a changeable baggage-check, of the slotted side plates, the circular name-disk having a notched or toothed periphery, the fixed teeth arranged between the side plates, and means for fixing the disk in its adjusted position by interlocking or engaging its toothed periphery with the fixed teeth, substantially as set forth.

2. The combination, in a changeable baggage-check, of the slotted side plates, the circular disk having a central circular aperture and a notched or toothed periphery, the fixed teeth arranged between the side plates, the cam or eccentric inserted through the center of the disk between the side plates, and the finger-buttons for adjusting the position of the cam or eccentric, substantially as set forth.

3. The combination, in a changeable baggage-check, of the slotted side plates, the circular disk having a central circular aperture, a notched or toothed periphery, and the names of stations arranged radially in curved lines on opposite sides of the disk, the names on one side alternating or breaking joints with the names on the opposite side, and means for fixing the disk between its side plates when it has been adjusted to its proper position, substantially as set forth.

298,035. CUFF-HOLDER. FRANK W. STAFFORD and GEORGE A. HENDERSON, Decatur, Ill. Filed Sept. 29, 1883. (No model.)



Claim.—1. A cuff-holder comprising a body having a hook or equivalent means for sustaining the cuff, and having a spring-clip arranged to clasp the shirt-sleeve in direction of the length of the sleeve, substantially as described.

2. A cuff-holder comprising the body A, the hook D, the jaws, and the spring C, substantially as described.

3. A cuff-holder having a body, A, provided at one end with means for attachment to the cuff, and having the flanges *a'* and the spring-jaws pivoted thereto, substantially as described.

4. A cuff-holder having the body A, with cut-away space *a*, the hook D, the flanges, and the pivoted spring-jaws, substantially as described.

5. A cuff-holder having the body A, the hook D, or its equivalent, and the clamping-jaws extending through said body, whereby said jaws may clamp the fabric on one side of said body and may be operated from the opposite side, substantially as described.

6. A cuff-holder having the body A, the hook D, the clamping-jaws extending through said body, and having flanges to elevate the parts *b'* of said jaws above the body, substantially as described.

298,036. SWITCH-OPERATING MECHANISM. JAS. D. STANWOOD, Boston, Mass. Filed Apr. 28, 1883. (No model.)

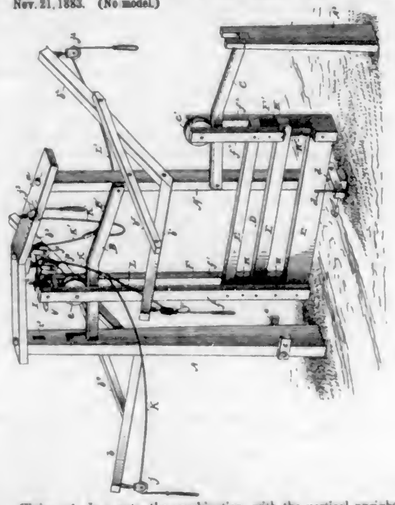
Brief.—Shifting device for a tramway-switch, to be operated by treadles carried by the car and controlled by the driver, embraces a horizontally-sliding bar placed beneath the surface crosswise of the track and connected to the switch; also, vertically-sliding pins connected to said bar by mechanism described in the second claim and arranged to be depressed by means of the treadles to actuate the bar and switch; also, a narrow casing embedded in the track, open at the bottom, containing the mechanism which connects pins and bar and provided with a top plate perforated for the pins.



Claim.—1. The narrow casing A, extending transversely from track to track, made open at the bottom for the escape of dirt and water, and having a top plate forming between the tracks a fixed part of the roadway, in combination with vertical pins D D, protruding through and above such top plate, to be alternately depressed by the treadles, and with a horizontally-sliding bar actuated by said pins and extending from the end of said casing to engage with and shift the switch-tongue, substantially as set forth.

2. The elbow-levers E E, pivoted centrally to the case, at their outer ends to the vertical pins D D, and at their inner ends to the horizontal lever F, in combination with the vertical bar G, pivoted centrally to the lever F, and at its lower end to the case, and connected with the bar B by insertion between shoulders thereon, so as without binding to shift the switch to the right or to the left, according as the right or the left hand treadle is depressed, substantially as set forth.

298,037. GATE. ALONZO H. STARING, German Flats, N. Y. Filed Nov. 21, 1883. (No model.)

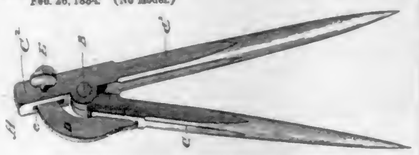


Claim.—1. In a gate, the combination, with the vertical uprights provided with tracks which are inclined or sloping from the center down to the end, of arms secured to the uprights A A' and having pulleys swiveled at their ends, a bar connecting said uprights and having pulleys swiveled on its under side, a gate carrying rollers adapted to travel on said tracks, and cords secured to the upper arm, and a bell-crank latch

pivoted to the upper end of the upright F, the lower or horizontal arm of which is provided with a hook or catch to engage a mortise in the adjacent gate-post, said cords passing through the pulleys on the under side of the bar *a*, and from thence through the pulleys on the ends of the arms *b b' b² b²*, as set forth.

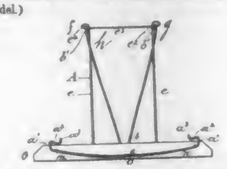
2. The combination, with a sliding gate having an upright, F, of a latch pivoted to the upper end of said upright, and consisting of a bell-crank lever, the upper arm of which has a dog adapted to limit the movement of said latch by contact with the upper end of the upright F, and the lower arm of which has a catch engaging a mortise in the adjacent gate-post, and a cord connected to the upper arm of said latch for raising the same from engagement with the notch i^2, substantially as set forth.

298,038. COMPASSES. WILLIAM STROMBERG, St. Louis, Mo. Filed Feb. 26, 1884. (No model.)



Claim.—The compasses A, having the arc D extended from the leg C outward, upward, over the knuckle B, and engaging with the extension C^2 of the leg C', substantially as described.

298,039. BOOK-RACK. JOEL SWARTZ, Gettysburg, Pa. Filed Jan. 24, 1882. (Model.)



Claim.—1. In a book-rack having a base and back, a spring-brace swinging between the legs of the back, and having end crooks, *g h*, loosely hinged to the back by loops *b' b'* engaging eyes outside the legs of said back, whereby it is adapted to be sprung in between the legs of the back to lock it (the said brace) in position for use in sustaining the rack, substantially as described.

2. The combination, with the base, of the back provided with eyes projecting outside its legs, and the brace hinged in said eyes swung between the legs of the back, and provided with the bends or crooks *g h* below the hinging-points, whereby it is adapted to be sprung in between the uprights of said back when swung back from said eyes, to thereby lock itself in position, substantially as described.

3. A book-rack composed of a supporting-base, a back having eyes outside of its legs, a brace hinged between said legs to said back by loops *b' b'* engaging its eyes, and having crooked or bent ends, substantially as described, so as to be sprung through the uprights thereof, and thereby be self-locking and adjustable, and spring-fingers made in one piece and moving with a curved shaft, substantially as shown and described.

4. In a book-rack having a support for the back and lower edge of a book, the wire *a*, secured to the support in a curved line, substantially as set forth, by staples *s s s*, to convert it into a spring, and having its ends bent to project over such support for holding the book in place thereon, all as and for the purpose described.

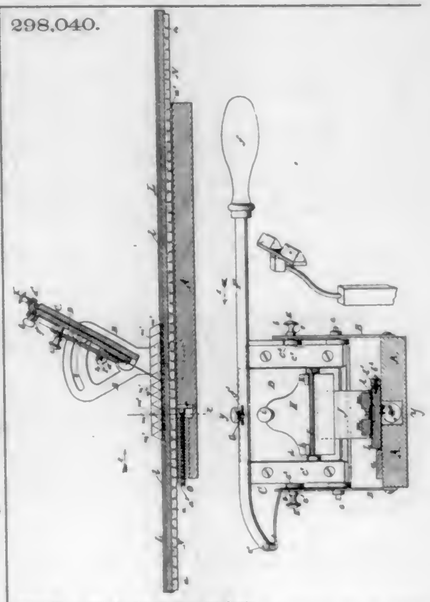
5. The wire *a*, curved as shown, and having the bends *a' a'* and fingers a^2 a^2, combined with a book-support, and means to secure the wire in its curved form thereto, whereby the fingers of said wire are retained in position to hold an open or other book in place upon the support, and also retained in a reverse position to free the book, substantially as set forth.

298,040. DEVICE FOR CUTTING DAMPER-FELT FOR PIANOS. JOHN SWENSON, New York, N. Y. Filed Aug. 13, 1883. (No model.)

Claim.—1. A piano-damper-felt-cutting machine consisting of a bed-plate and uprights, A B, a feed-plate, L, arranged to slide upon the said bed-plate, and provided with means for holding a felted strip, M, and a knife-holding slide, D, and means for moving said slide up and down at an angle to the said feed-plate L, substantially as and for the purpose set forth.

2. The combination of the bed-plate A, provided with the stop *o*, the feed-plate L, provided with the notched bar N, and with means for holding a felted strip, M, and the knife-holding slide D, and means for moving the same up and down at an angle to the said feed-plate L, substantially as and for the purpose set forth.

298,040.



3. The combination of the bed-plate A, provided with the adjustable stop O *o*, the feed-plate L, provided with the notched bar N, and with means, *l l' P*, substantially as described, for holding the felted strip M, the uprights B, provided with the slots *b*, the plate C, pivoted between the said uprights, and provided with guides *c'* and adjusting-screws E, the knife-holding slide D, movable in the said guides, and provided with the leg *d'* and adjusting-screw K, and the lever F, pivoted to the said plate and slide C D, substantially as and for the purpose hereinbefore set forth.

4. In a machine for cutting damper-felt for pianos, the feed-plate L, provided with a recess, *l*, suitable to receive the felted strip M, and having along one side an adjustable strip, *l'*, arranged to clamp the said strip edgewise, substantially as and for the purpose set forth.

298,041. BASE-BALL. THOMAS P. TAYLOR, Bridgeport, Conn. Filed Mar. 7, 1884. (No model.)

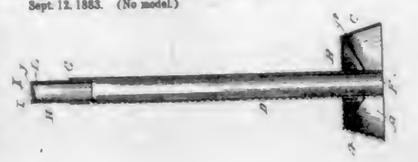


Claim.—1. In the manufacture of base-balls, forming a center by collecting a mass of loose materials, inclosing the mass in hemp combings or like fibrous material, then consolidating and baking under pressure, and then applying the external covering, substantially as set forth.

2. A base-ball consisting of a consolidated mass of loose waste materials inclosed in a wrapper of hemp combings or like material, and with an outer covering, as specified.

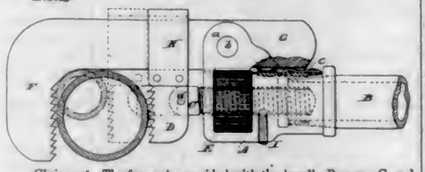
3. A base-ball in which the filling portion of loose materials is confined by an outer layer of hemp combings or other like material, substantially as described.

298,042. CHURN-DASHER. S. MINER TILSON, Rocklane, Ind. Filed Sept. 12, 1883. (No model.)



Claim.—An improved churn-dasher, consisting of a bottom cell or chamber comprising the imperforate top and side walls, a tubular cylindrical staff having the open top and bottom ends, the latter end extending down through the top of said chamber to the plane of the bottom edge of the side walls thereof, the transverse braces disposed above and below the top wall at the point of juncture of the said top wall and staff, and the top cap-piece fitted to the top end of the tubular staff, and having the flat spring carrying a valve at its free end, substantially as and for the purpose set forth.

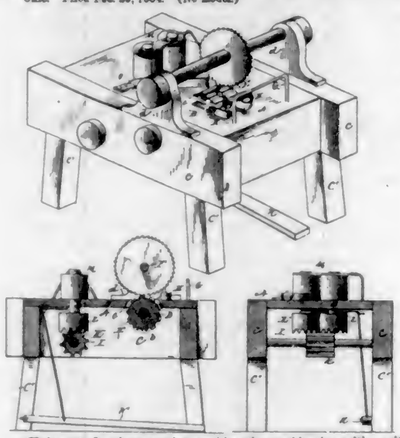
298,043. WRENCH. NATHANIEL W. VANDERVRIFT, Bridgeport, Conn., assignor to Frank Armstrong, same place. Filed Nov. 5, 1883. (No model.)



Claim.—1. The frame A, provided with the handle B, screw C, and adjusting-nut E, and having the cheeks or bearings *a*, in combination with a sliding jaw, D, secured to a movable yoke, H, and a rocking or lever jaw, F, having its tail G connected pivotally to the cheeks *a* of the frame, whereby, when the jaws are placed against the work, grip or releasement may be effected by the downward or upward movement, respectively, of the handle, as and for the purposes hereinbefore set forth.

2. In combination with the pivoted jaw F, sliding jaw D, frame A, and screw C, the yoke H, secured to the jaw D, and embracing the jaw F, in a manner described, with a space, *s*, to permit vibratory movement of said jaw and protect the work from a crushing strain, substantially as hereinbefore set forth.

298,044. HOOP-SPLITTING MACHINE. ISRAEL WALDEN, Fremont, Ohio. Filed Feb. 29, 1884. (No model.)



Claim.—1. In a hoop-sawing machine, the combination, with a suitable supporting-frame, the top of which is formed with an opening near the front end thereof, of a shaft carrying a corrugated disk located beneath said top and bearing in the sides of the supporting-frame, a shaft mounted in brackets on the top of said table, guides H, secured at their rear ends near the rear end of the corrugated disk, their other or free ends extending forwardly and then bent rearwardly to form a U shape, and blocks operated by set-screws for adjusting the same, substantially as set forth.

2. The combination, with a suitable supporting-frame, the top of which is provided with an opening near its front end, of a shaft carrying a pulley mounted in the sides thereof beneath said table, said shaft being also provided with a corrugated disk having a circumferential groove, a shaft carrying the saw, adjustable guides H, secured adjacent thereto, and a bracket, G, secured to the table near the front end thereof, substantially as set forth.

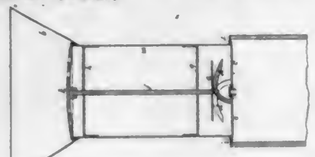
3. The combination, with a suitable frame or support of a shaft located in the sides thereof, and provided at about its center with a pinion-wheel, of vertical rollers the upper ends of which bear in a bracket secured upon the table, and having their lower ends geared to engage said pinion, and a rod secured to the top of the table, its front end extending forwardly adjacent to the saw, substantially as set forth.

4. The combination, with vertical rollers loosely mounted at their upper ends, and adapted to mesh with a pinion at their lower ends, of a lever, and a cord connecting said lever with one of said rollers, substantially as and for the purpose set forth.

5. The combination, with a suitable supporting-frame carrying a corrugated disk provided with a circumferential groove, and with a saw mounted upon a shaft suitably journaled, of vertical rollers loosely connected at their upper ends, and adapted to mesh with a pinion-wheel at their lower ends, and a lever connected with one of said rollers, substantially as set forth.

6. The combination, with a suitable supporting-frame carrying a corrugated disk provided with a circumferential groove, guides located adjacent to said disk, and a saw mounted upon a shaft above said disk, of vertical rollers located in rear of the saw, said rollers being loosely connected at their upper ends, and adapted to mesh with a pinion at their lower ends, a rope or chain connected to one of said rollers, a lever for operating the same, and a rod secured adjacent to said rollers at its rear end, its forward end being located adjacent to the corrugated disk and saw, substantially as set forth.

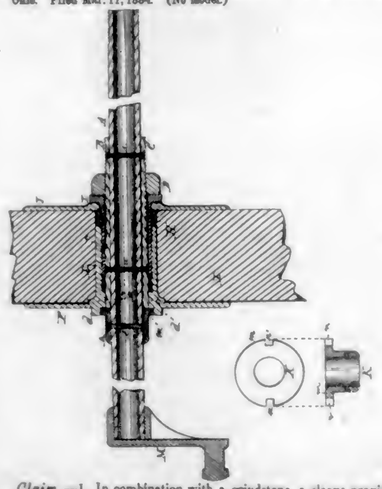
298,045. SEWER-TRAP. THOS. WATKINS, Portsmouth, N. H. Filed July 17, 1883. (No model.)



Claim.—1. In the described improved sewer-trap, the combination of each of its valves, arranged with and applied to the tubular body of the trap as specified, with a horn to extend upward from it, (the said valve,) and with a valve-closer resting upon such horn, and to operate with it, substantially as set forth.

2. The combination of the valve-closer (consisting of the strainer or perforated cover or plate *d*, the rod *f*, and the disk *e*) with guide-spiders *g* and *h*, the tube *a*, the valves *c c*, and their horns *d d*, adapted and arranged, as set forth.

298,046. GRINDSTONE-SHAFT. ARTHUR F. WEAVER, Cleveland, Ohio. Filed Mar. 11, 1884. (No model.)



Claim.—1. In combination with a grindstone, a sleeve provided with a female screw, annular flange, follower J, and tubular screw adapted to engage the screw of the said sleeve for clamping the stone between the flange F and follower, substantially in the manner as described, and for the purpose specified.

2. In combination with the sleeve E, having a flange, F, and pro-

jections or studs *d d*, follower and tubular screw constructed and adapted to each other, as described, the shaft A, provided with a threaded enlargement, and having secured thereon a collar, K, with peripheral notches registered to engage the studs of the said sleeve, and binding-nut D, substantially as described, and for the purpose specified.

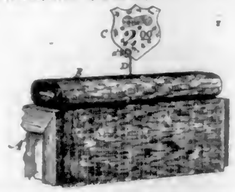
3. In combination with a grindstone, the flanged sleeve E, provided with a female screw and studs, follower J, tubular screw and shaft having an enlargement provided with a threaded end, binding-nut, and notched collar K, constructed, arranged, and adapted to each other, substantially in the manner as described, and for the purpose set forth.

298,047. COCOANUT-SHELLER. JESSE G. WEBB, Boston, MASS. Filed Feb. 8, 1884. (No model.)



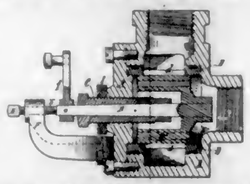
Claim.—The improved cocoanut-sheller herein described, the same consisting of the blade A, having the flat side *f*, and provided with the point *d*, bayonet-rib C, splitting-edge *t*, and handle B, constructed and arranged to operate substantially as shown and specified.

298,048. CARD OR TICKET HOLDER. HENRY WILLSON, Chicago, Ill. Filed Feb. 11, 1884. (No model.)



Claim.—As an improved article of manufacture, a card or ticket holder made of a continuous piece of wire, having a coiled head, *a'*, at one end thereof, and made pointed at the other end, substantially as shown and described, and for the purposes set forth.

298,049. ROTATING JOINT MECHANISM FOR STEAM APPARATUS. EDWD. WRIGHT, Worcester, Mass., assignor to the Wright Machine Company, same place. Filed Dec. 28, 1883. (No model.)



Claim.—1. A rotating joint for apparatus working steam or other fluids under pressure, consisting of a long slightly-tapered stem fitted within a correspondingly-tapered seat or sleeve in a manner to be longitudinally acted upon by the fluid-pressure for closing the tapered surfaces upon each other, and means for sustaining and adjusting said stem in a direction opposite to the action of the steam-pressure in the manner set forth.

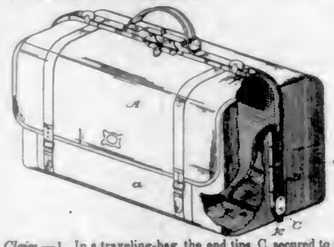
2. A rotative joint mechanism for preventing the escape of steam, or for similar purpose, in which the stem or inner joining part is exposed to the steam-pressure in a direction tending to close the joint or force the adjacent moving surfaces together, and with a positive adjustable bearer adapted for counteracting or sustaining said part in opposition to the steam-pressure and regulating the position of the joint-surfaces in relation to each other, as hereinbefore set forth.

3. A rotating or movable joint on parts communicating from the exterior to the interior of steam apparatus, composed of a slightly-tapered stem, an internally-tapered sleeve or seat bushing surrounding said stem and adjustably secured to the body, shell, or steam-cylinder, and means for sustaining and adjusting said stem within said sleeve to prevent the tapered surfaces being forced together firmly by action of the steam-pressure, substantially as herein set forth.

4. The combination, with the body, shell, or cylinder A surrounding the steam-space or pressure-chamber, of the stem or inner joint part, B, externally tapered in the manner shown and described, the seat-sleeve or outer joint part, C, fitting around said stem with a corresponding internal taper, and the screw or step E, mounted in an arm, F, or relatively fixed support and adapted for sustaining and adjusting said stem in opposition to the pressure from within said steam-chamber, as hereinbefore set forth.

5. The combination of the valve B', having the stem B tapered, as shown, the internally-tapered screw-threaded sleeve C, embracing said stem, the shell or case A, with an arm, F, the screw E, serving as a step for said stem, and an operating connection, *f*, for imparting rotative action to said stem, substantially as described.

298,050. TRAVELING-BAG. CHARLES A. ZINKAND, San Francisco, Cal. Filed Feb. 21, 1884. (No model.)



Claim.—1. In a traveling-bag, the end tips, C, secured to the frame of the bag, in combination with a bar secured to the bag outside and extending under its bottom along its longitudinal center, the ends of said bar bending upward on the outside and over the ends of the tips C, substantially as herein described.

2. In a traveling-bag, the bar D, inside of the bag, and on which the ends of the frame of the bag are pivoted, in combination with the bar E, outside the bag, said bars being secured together at their ends by the bent portions of bar E, which pass up on the outside of the tips C, and to the bag, substantially as described.

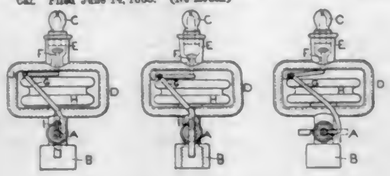
3. In a traveling-bag, having the front *a* and back *a'*, with the encircling frame B, the end tips, C, on the outside of the ends of the frame, and the inside bar, D, on which the ends of the frame and the tips C are pivoted, in combination with the outside bar, E, passing beneath the tips and secured to the ends of the inside bar, and to its body through the bottom of the bag, substantially as herein described.

4. In a traveling-bag, the linings F of the front, back, and flap, in combination with the inside bar, D, and outside bar, E, between which said linings are fastened by the rivets *e*, substantially as described.

298,051. WIRE-COATING PREPARATORY TO DRAWING. BENJAMIN F. AKEN, Jr., Millbury, and CHARLES W. NEWHALL, Jr., and GEORGE W. B. ELLIS, Worcester, Mass. Filed July 13, 1883. (No specimens.)

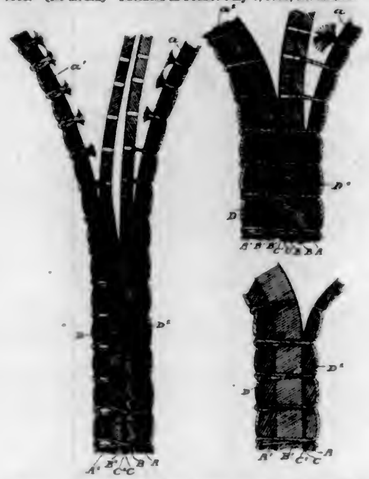
Claim.—The improved wire coating or bath consisting of a solution of dextrine and alum and flour or meal, as and for the purpose set forth.

298,052. CUT-OFF GAS-BURNER. ALVAN C. AUSTIN, San Francisco, Cal. Filed June 14, 1883. (No model.)



Claim.—The automatic gas cut-off herein described, consisting of the valve F, bell-crank G, expansion-drum H, and trip-pin I, arranged and operating in connection with the ordinary parts of a gas-burner, substantially as and for the purpose herein described.

298,053. VELVET AND PLUSH EMBROIDERY. EDUARD BALLY, Schönenward, and JOHANN HARTMANN, Suhr, Switzerland. Filed Oct. 13, 1883. (No model.) Patented in France July 7, 1883, No. 156,450.

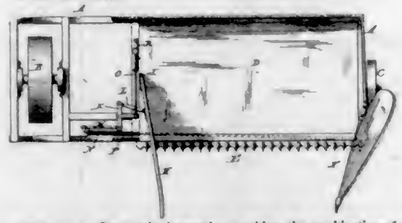


Claim.—1. The process of producing velvet or plush embroidery, which consists, first, in ornamentally sewing together surface sheets of leather or cloth with intermediate layers of the same or other suitable fabric, then cutting the stitches between the intermediate layers, and then removing the intermediate layers, so as to have the projecting cut threads constitute a shag on the leather and cloth, and forming the embroidery design on each of the surface sheets.

2. Plush embroidery, substantially as shown and described, consisting of a cloth or leather sheet, A, having a shag or plush projecting above its face side, and said shag being held in position by lock-stitches, which stitches form said shag with the interlocking threads D on the back side of the cloth or leather.

3. In a new article of manufacture, the combination consisting of a sheet of leather or cloth with threads projecting therefrom, the shag of the threads forming an ornamental design, and the single thread or threads thereof being held by an interlocking thread on the back side of the cloth or leather sheet, and by a coating of paste or glue, the whole being constructed substantially as herein described.

298,054. GRAIN-HARVESTING MACHINE. ELIAS BARNHARD and AARON F. THOMAS, Troy, Ohio. Filed Aug. 1, 1883. Renewed Mar. 27, 1884. (No model.)



Claim.—1. In a grain-harvesting machine, the combination of a cutter mechanism, substantially as described, and a divider or guard movable lengthwise over the end of the cutter to render a portion of the same inoperative, substantially as described and shown, whereby the width of the machine may be increased and diminished.

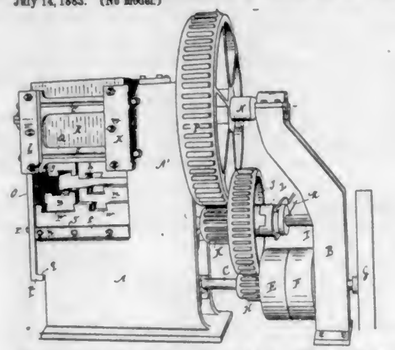
2. In a harvesting-machine, the combination, with an ordinary cutting mechanism such as shown, of a horizontal swinging divider, hinged in rear of the cutter and extended forward across the same to render a portion of the cutter inoperative, substantially as described.

3. In a harvesting-machine, the combination of a cutting mechanism, substantially as described, and two movable dividers or guards located at opposite ends of said cutting mechanism, and adjustable inward past the extremities of the same, substantially as described, whereby the extremities of the cutter may be rendered inoperative and the width of cut thereby reduced.

4. In a harvesting-machine, the combination of a cutting mechanism, substantially as described, a guard or divider movable over the end of the cutter to prevent the access of the grain thereto, and thereby render a portion of its length inoperative, and mechanism, substantially as described, to adjust said guard, extending thence to a point adjacent to the driver's seat, whereby the driver is enabled to vary the width of the cut at will while the machine is in action.

5. In combination with the cutting mechanism, the two movable dividers, and operating mechanism, substantially as described, connected with both dividers, whereby the two may be adjusted simultaneously.

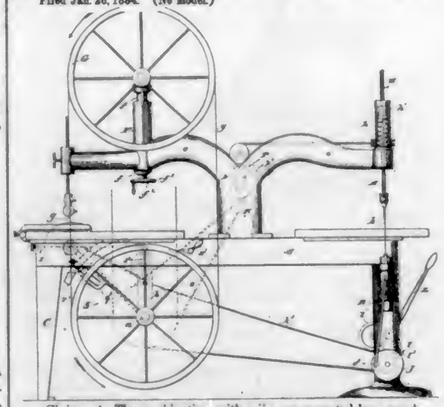
298,055. FORGING-MACHINE. RALPH H. BEACH, Flint, Mich. Filed July 14, 1883. (No model.)



Claim.—1. In a forging-machine, and in combination with the plunging mandrel and main frame thereof, a detachable end plate forming an end bearing for the main shaft, and provided with an offset upon its lower end engaging upon an offset on the main frame, substantially as and for the purposes described.

2. In a forging-machine, the combination of the plunging mandrel R, frame A, and end plate, O, with the guide-plates Q, bolts *o*, and set-screws *m*, constructed and arranged substantially as and for the purposes described.

298,056. UNIVERSAL JOINER. AUGUSTUS BEAN, Concord, N. H. Filed Jan. 26, 1884. (No model.)



Claim.—1. The combination, with a jig-saw operated by a revolving shaft, a friction-wheel and a pulley secured to said shaft, and a belt, of a lever pivoted at its lower end provided with a cross-head, a friction-block secured to said cross-head and adapted to bear against the friction-wheel, and a belt-tightening wheel mounted at the opposite end of said cross-head and adapted to be forced against the belt, substantially as set forth.

2. In a universal joiner, the combination, with a circular saw mounted in a swinging frame, of a curved arm secured to the table-bed of the universal joiner, and devices for locking the swinging saw-frame to the curved arm in a limited rotary adjustment, substantially as set forth.

3. In a universal joiner, the combination, with a circular saw mounted in a swinging frame, and a curved arm secured to the supporting-frame of the universal joiner, of a clamp secured to the swinging frame and constructed to embrace the said curved arm, and thereby lock the swinging frame in a limited rotary adjustment, substantially as set forth.

4. In a universal joiner, the combination, with a circular saw adjustable in the arc of a circle, and operating mechanism, of a tilting table provided with a downwardly-extending slotted plate, and devices for moving and holding the table in a limited rotary adjustment, substantially as set forth.

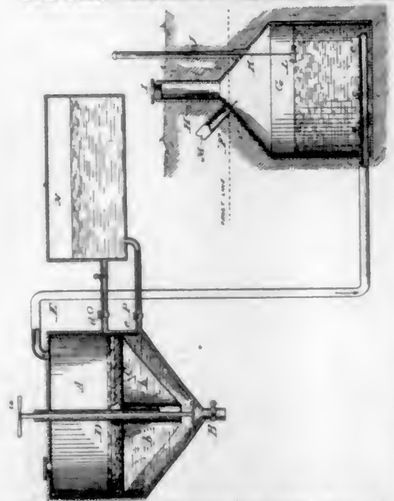
5. The combination, with a circular saw adjustable in the arc of a circle, and suitable operating mechanism, of a laterally-tilting and longitudinally-sliding table situated alongside of the saw, substantially as set forth.

6. The combination, with a circular saw adjustable in the arc of a circle, of a laterally-tilting and longitudinally-sliding table situated on one end of the saw, and a stationary table situated on the opposite side of the saw, substantially as set forth.

7. In a universal joiner, the combination, with a table supporting the main shaft, of a column or standard supported on the table and terminating in three horizontal branches, which latter support, respectively, a band-saw, a jig-saw, and a boring-tool, substantially as set forth.

8. The combination, with a table and a shaft journaled thereto, of the column E, having three horizontal branches, e, e', and e^3, which support, respectively, the band-saw, the jig-saw, and boring-tool, the said saws and boring-tool being operated by the shaft, substantially as set forth.

298,057. GAS-GENERATOR. LYMAN C. BEEBE, Villisca, assignor of one-half to Robert Truman, Afton, Iowa. Filed Oct. 11, 1883. (No model.)



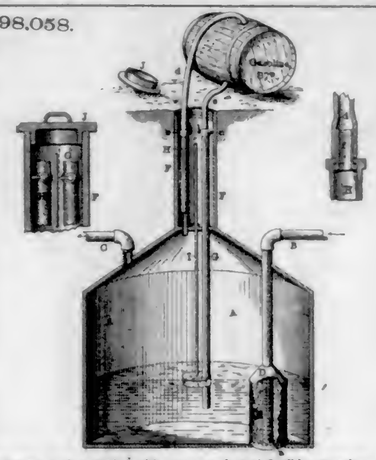
Claim.—A gas-generating apparatus consisting of a vessel, A, charged with acidulated water, a perforated basket, C, within said vessel, containing iron scraps or equivalent matter, acidulated-water reservoir N, pipes O P, connecting said reservoir with vessel A, and provided, respectively, with inwardly-opening check-valve d, and outwardly-opening check-valve e, a gasoline-tank, G, outside of vessel A and below the frost-line, and a pipe extending from generator A to tank G, entering the latter near its bottom, and perforated within said tank, all substantially as described and shown.

298,058. CARBURETOR. LYMAN C. BEEBE, Villisca, assignor of one-half to R. TRUMAN, Afton, Iowa. Filed Nov. 27, 1883. (No model.)

Claim.—1. The herein-described carburetor, consisting of a vessel, A, provided with inlet-pipe B, outlet-pipe C, and upright neck or pipe F, having cover J, filling-tube G, and vent-tube H, both located within pipe F, and each furnished with a stop-cock, and flexible extension provided with a plug adapted to enter the bung-hole of a cask, all substantially as shown and described.

2. In a carburetor, the combination of a tank for containing a hydrocarbon, provided with an inlet and an outlet pipe, a filling-tube and a

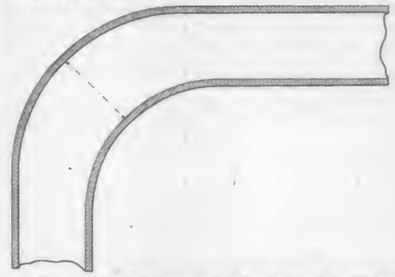
298,058.



vent-tube, each provided with a stop-cock, and flexible extensions connected with the filling and vent tubes, and each provided with a screw-plug adapted to be tightly screwed into the bung-hole of a cask, as and for the purpose set forth.

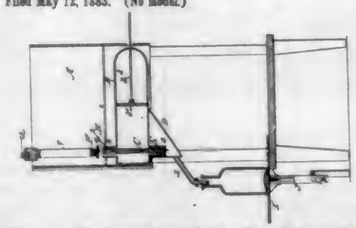
3. In combination with tank A, having inlet and outlet pipes B C, filling-tube G, and vent-tube H, each provided with a flexible extension and with a swiveled screw-plug at the end of said extension adapted to enter the bung-hole of a cask.

298,059. CURVED PIPE. JOHN FRANCIS BENNETT, Pittsburg, Pa. Filed Sept. 24, 1883. (No model.)



Claim.—A pipe whose curvature amounts to a right angle, having an area at its middle point equal to twice that of the main pipe, and tapering in each direction from that point till the straight pipe is reached, the area at that point decreasing in proportion as the curvature is less than a right angle.

298,060. BOTTLING-MACHINE. JOHN C. BLAIR, Louisville, Miss. Filed May 12, 1883. (No model.)



Claim.—1. The combination, with the cylinder B, having the tubes b b' and piston b^3, of the tube C, valves c, and chamber D, substantially as shown and described.

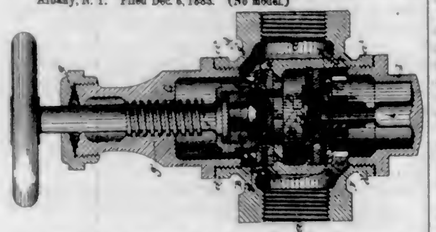
2. The combination, with the cylinder B, having tubes b b' and piston b^3, of the valve-rod E, threaded near its ends, adjustable valves c upon said rod, and means for operating the valve-rod, substantially as

shown and described.

3. The combination, with the tank A, having an orifice, s, in its bottom, of the cylinder B, provided with the tubes b b', the former, b, passing through the orifice s, graduated piston b^3, and tube C, having adjustable valves c on its valve-rod E, substantially as shown and described.

4. The combination, with the tank A, having an orifice, s, in its bottom, valve-bar F, connecting-bars g, and lever G, of the cylinder B, having tubes b b' and graduated piston b^3, tube C, valve-rod E, threaded near its ends, adjustable valves c upon said rod, platform I, and levers J, substantially as shown and described.

298,061. COMBINED CHECK AND STOP VALVE. JAS. H. BLESSING, Albany, N. Y. Filed Dec. 6, 1883. (No model.)

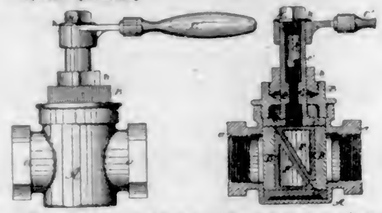


Claim.—1. In a combined check and stop valve, the combination, with a valve-casing containing an inner valve-chamber and a partition—formed between said casing and the wall of its inner valve-chamber—for separating the induction and eduction openings of said casing, the said inner valve-chamber being provided with two valve-seats arranged one above the other, as herein described, of two independent valves entirely disconnected from each other, and arranged as herein set forth, the lower of said valves being always free to operate as a check-valve, and the upper one being provided with means whereby it can be forcibly retained upon its valve-seat, as and for the purpose herein specified.

2. The combination, with a valve-casing, A, containing an inner valve-chamber, B, and a partition, C, formed as herein described, of the removable valve-seats D and caps G and I, constructed substantially as described, and adapted to secure the valve-seats D, as herein specified.

3. The combination, with a valve-casing, A, adapted to contain two independent valves, substantially as herein described, of the removable and interchangeable valve-seats D, each consisting of a flat annular flange provided with a cylindrical flange, d, as and for the purpose specified.

298,062. STOP-COCK. JAS. H. BLESSING, Albany, N. Y. Filed Dec. 18, 1883. (No model.)



Claim.—1. The combination, with a casing, A, provided with branches a, of a turn-plug consisting of a skeleton cage provided with expansible gibs D, angle-frames F, and a spring, E, substantially as and for the purpose herein specified.

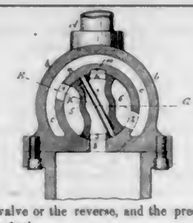
2. The combination, with a casing, A, for a stop-cock, of a turn-plug consisting of a skeleton cage provided with expansible gibs D, mechanism for forcing said gibs outward, and a set-screw, G, as and for the purpose herein specified.

3. In a stop-cock, the combination, with a turn-plug consisting of a skeleton cage provided with a hollow stem, substantially as described, of the expansible gibs D, angle-frames F, and set-screw G, substantially as and for the purpose specified.

298,063. BALANCED ROTARY VALVE. JOHN L. BOGERT, Flushing, N. Y. Filed Sept. 17, 1883. (No model.)

Claim.—1. The valve-chest and hollow valve-case, with a steam-space between the two parts and with openings in the valve-case, in combination with a rotative valve within the case, with side depressions and ports and open ends, substantially as specified, whereby the steam is admitted by the side depressions, and the exhaust takes place through

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the center of the valve or the reverse, and the pressures are balanced, substantially as set forth.

2. The hollow cylindrical valve having two sets of depressions in the sides and openings, forming ports, one set being in the position described to the other set, in combination with the valve-case having ports for the admission of steam, and two ports longitudinally in line with each other, one leading to each end of the cylinder, substantially as specified, whereby the one rotative valve is adapted to exhaust and to admit steam alternately to the two ends of the cylinder, as set forth.

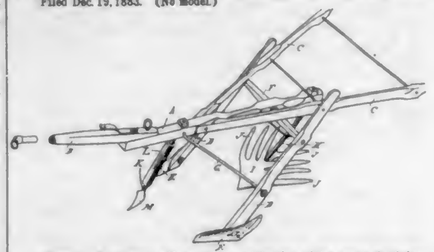
3. The combination, with the cylindrical valve and its case, having the respective depressions and ports, of the pipe i, extending from one side of the valve which covers the port 8 to the opposite side, for the purposes and substantially as set forth.

4. The combination, with the valve-case and tapering valve with depressions and ports, of valve-stems—one at each end—affixed to and moving with the valve, to support such valve centrally within its case and prevent the weight of the valve resting upon the surfaces, and screws and nuts to adjust the valve endwise, substantially as specified.

5. The hollow cylindrical valve having ports or openings through it and depressions in opposite sides, forming passage-ways, in combination with a steam-chest having an internally-cylindrical case and ports through the same, and the recess 10, for the purposes and substantially as set forth.

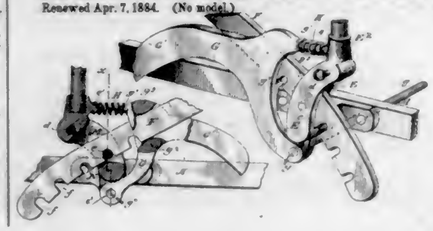
6. A rotative hollow cylindrical valve having two sets of ports and depressions in the sides thereof, in the relative positions described, in combination with a valve-chest and case having openings for the steam to pass to the valve, and four ports leading to opposite ends of two steam-cylinders, the ports being in pairs opposite to each other and in line longitudinally, substantially as set forth.

298,064. POTATO-DIGGER. STEPHEN D. BROWN, Farmington, Mich. Filed Dec. 19, 1883. (No model.)



Claim.—In a potato-digger, the combination of the center draft-bar, A, handle C, standards D, having their upper ends attached to said handles, and braced by the cross-bar F and braces G, both of which are connected to the center draft-bar, standard K, attached to said bar A, and carrying the cylinder L and tooth M, side plows, E, adjustable back and forth on the standards D, and the double-winged digger-shovel I, carried by the standard H, attached to the rear end of the bar A, all constructed and arranged substantially as herein shown and described.

298,065. FOLDING CHAIR. LEWIS BUSH, Jr., Chicago, Ill., assignor to the American Machinery Company, same place. Filed Jan. 12, 1883. Renewed Apr. 7, 1884. (No model.)



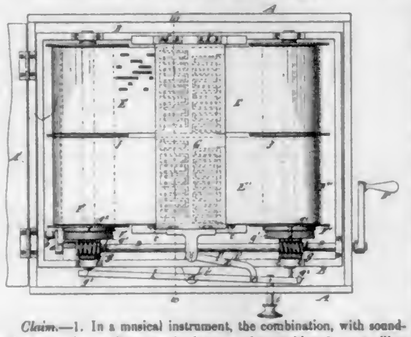
Claim.—1. In a folding chair, the combination, with the seat-frame, the back-frame pivoted thereto, and a notched supporting-arm pivoted to the back-frame, of a stud fixed to the seat-frame, and a hand-lever, G, substantially as and for the purpose set forth.

2. In a folding chair, the combination, with the seat-frame, the back-frame pivoted to said seat-frame, a notched supporting-arm, and a stud for engagement with said notched arm, attached to the seat-frame, of a pivoted hand-lever, G, and a spring, H, substantially as and for the purpose set forth.

3. The combination, with the frame A, pivoted back B, and the notched supporting-arm F, of a bracket, E, provided with a stud, *e*, and the lever G, pivoted to the said bracket, and having lugs g^1 g^2, arranged above and below said supporting-arm, substantially as and for the purpose set forth.

4. In a folding chair, the combination, with the seat-frame, studs *s*, secured thereto, the back-frame pivoted to said seat-frame, and notched supporting-arms pivoted to the back-frame and constructed to engage said studs, of hand-levers G, placed on both sides of the seat-frame, and a rod, *g*, connecting said levers, substantially as and for the purpose set forth.

298,066. MECHANICAL MUSICAL INSTRUMENT. GEO. H. CHINNOCK, Brooklyn, N. Y. Filed Nov. 29, 1882. (No model.)



Claim.—1. In a musical instrument, the combination, with sound-producing devices and two music sheets, cards, or tablets for controlling their operation, of rests for said sheets, cards, or tablets, means for moving the sheets, cards, or tablets simultaneously in either direction, and devices whereby either of the music sheets, cards, or tablets may be rendered inoperative, substantially as and for the purpose herein described.

2. In a musical instrument, the combination of two rests for traveling music sheets, cards, or tablets, sound-producing devices, ducts leading from said rests to conduct air to the sound-producing devices, and means for closing the ducts from either rest while the others remain open, substantially as and for the purpose herein described.

3. In a musical instrument, the combination of two rests for traveling music sheets, cards, or tablets, sound-producing devices, two sets of ducts leading from said rests to conduct air to the sound-producing devices, and devices for closing said sets of ducts, connected together so that either set may be closed and the other set simultaneously opened, substantially as and for the purpose herein described.

4. In a musical instrument, the combination of sound-producing devices, two music sheets, cards, or tablets, and rollers for moving the same to control the operation of the sound-producing devices, two rests for said sheets, cards, or tablets, and devices for simultaneously reversing the direction of rotation of said rollers and rendering either sheet, card, or tablet inoperative, substantially as and for the purpose herein described.

5. In a musical instrument, the combination of two rests for traveling music sheets, cards, or tablets, rollers for moving said sheets, cards, or tablets, sound-producing devices, ducts leading from said rests to conduct air to the sound-producing devices, and devices for simultaneously closing the ducts leading from either rest and for reversing the direction of rotation of the rollers, substantially as and for the purpose herein described.

6. In a musical instrument, the combination of sound-producing devices, two rests for traveling music sheets, cards, or tablets, and air-ducts leading from said rests, two rollers—one upon each side of said rests—for moving the sheets, cards, or tablets, and devices for simultaneously reversing the direction of rotation of the rollers and closing the ducts leading from either rest, substantially as and for the purpose herein described.

7. In a musical instrument, the combination of two rests and air-ducts leading therefrom, rollers—one on each side of said rests—for moving two music sheets, cards, or tablets over the rests, a driving-shaft common to both rollers, and devices for simultaneously effecting the engagement of one roller with and the disengagement of the other roller from said shaft, and for closing one set of air-ducts and opening the other set, substantially as and for the purpose herein described.

8. In a musical instrument, the combination of two rollers, a driving-shaft provided with two screws or worms of reverse pitch, worm-wheels with which said screws engage, clutches connecting said worm-wheels with said rollers, and devices for simultaneously operating said clutches to release one roller from and connect the other roller with its worm-wheel, substantially as herein described.

9. In a musical instrument, the combination, with sound-producing devices, two music sheets, cards, or tablets, for controlling their operation, and two rests arranged side by side for said sheets, cards, or tablets, of means for moving said sheets, cards, or tablets simultaneously in either direction, and devices whereby either of them may be rendered inoperative, substantially as and for the purpose herein described.

10. In a musical instrument, the combination of two rests arranged side by side, and air-ducts leading therefrom, rollers for operating two traveling music sheets, cards, or tablets, slides for closing said air-ducts, and devices for simultaneously reversing the direction of rotation of said rollers and moving said slides to open the ducts from one rest and close the ducts from the other rest, substantially as and for the purpose herein described.

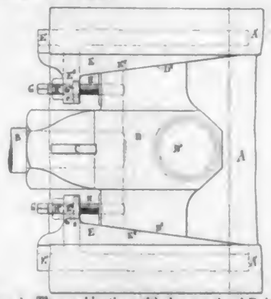
298,067. COMBINED BREAST AND SKIRT SUPPORTER AND SHOULDER-BRACE. MORTIMER CLARKE, Washington, D. C. Filed July 25, 1883. (No model.)



Claim.—1. The combination, in a breast and skirt support and shoulder-brace, of a back V-shaped brace having a loop, *b*, near the terminal portion *a* of their union, a waistband, C, adapted to pass through said loop, and breast-pockets A A, secured to said waistband, and shoulder-straps D D, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination of the shoulder-straps D D, formed and adapted to serve as anterior and posterior suspenders, and provided with a loop, *b*, at their lower posterior ends, and the waistband C, attached anteriorly to the shoulder-straps, and adapted to pass through the loop in the posterior V-shaped portion of the shoulder-straps, and breast-supporting pockets A A, substantially as described.

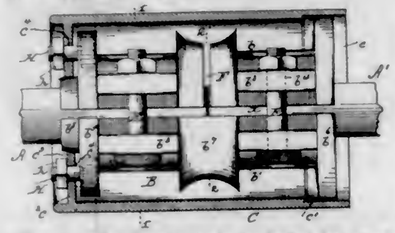
298,068. CROSS-HEAD. GEORGE H. CORLISS, Providence, R. I. Filed Feb. 4, 1884. (No model.)



Claim.—1. The combination, with the cross-head D, having inclined faces D^2, of gibs E, having inclined faces E^2, and two or more independent adjusting-bolts, G G' and H H', exerting forces in opposite directions, all arranged for joint operation, to move and to resist the movement of the gibs relatively to the cross-head, substantially as herein specified.

2. The combination of a cross-head, D, having inclined faces D^2, with adjustable gibs E, having inclined faces E^2, and adapted to be operated in the direction of their length relatively to the cross-head by means of one or more adjusting-bolts, substantially as herein described.

298,069. SHAFT-COUPLING. WM. C. CRANDELL, Jr., Philadelphia, Pa. Filed Aug. 27, 1883. (No model.)



Claim.—1. A shaft-coupler having longitudinal slots extending from the bore to the periphery of the coupling, and a partial transverse slit, F, substantially as and for the purpose set forth.

2. A shaft-coupling composed of longitudinal sections united by straps or bars embedded in the coupling during the process of casting, and provided with clamping-screws and a partial transverse slit, substantially as shown and described.

3. In combination with the coupling-sections *b* b^1 b^2, parted at *x*, the V or U shaped bars or straps D, and clamping-screws E, substantially as shown and described.

4. The coupling-sections *b*, b^1, and b^2, connecting-straps D, and clamping bolts or screws E, in combination with casing C, having tapered opening c^1, seating on the tapered hub b^2, formed on said sections, substantially as shown and described.

5. The coupling B, composed of longitudinally-parted sections having connecting-straps D, clamping screws or bolts E, enlarged ends, and middle part in which is formed a partial transverse slit, substantially as shown and described.

6. The coupling A, having end b^2, with tapered hub b^2, and embedded screws H, in combination with the casing C, having tapered opening c^2, and radial apertures c^4, and nuts *h*, substantially as shown and described.

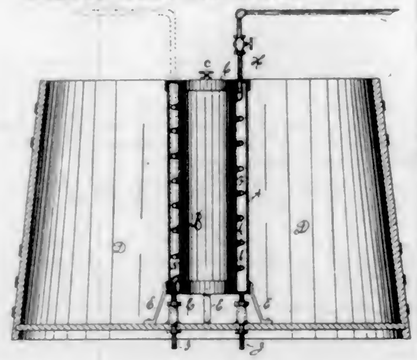
7. A sectional clamp-coupling having partial transverse medium slit or slot, substantially as and for the purpose set forth.

298,070. HOLDBACK-HOOK. CHAUNCY L. CROWELL, Peoria, Ill. Filed Feb. 13, 1884. (No model.)



Claim.—In a holdback-hook of that kind in which a plate, F, has a hook, E, projecting therefrom and pivoted thereto, a curved shank, A, provided with a rectangular eye, B, at the free end thereof, the combination, with such a plate, hook, shank, and eye, of the spring D, riveted or otherwise secured at one end to said shank, and adapted to so impress a strap held by the holdback-hook as to prevent rattling of the same, as set forth.

298,071. APPARATUS FOR COOLING BEER. HENRY E. DUCKBACH, Cincinnati, Ohio. Filed Feb. 12, 1884. (No model.)



Claim.—1. In combination with a beer-vat, the cooling device consisting of an outer cylinder, a cylinder arranged within said outer cylinder to form an annular space, annular heads securing the cylinders together, induction and eduction pipes leading to and from said annular space, and standards secured to the lower end of the device and resting upon the bottom of the vat, to support said lower end above said bottom, substantially as described.

2. In a device for cooling beer, the combination, substantially as specified, of the two cylinders A B, one within the other, and closed at both ends, forming the closed chamber F, with the coil G, located within said chamber, and induction and eduction pipes passing into said chamber and connected to the respective ends of said coil.

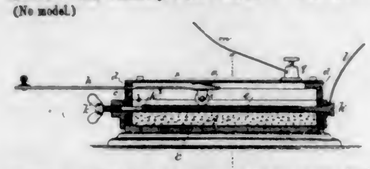
3. In a device for cooling beer, the combination, substantially as set forth, of cylinders A B, caps C, and coil G, with the two induction-pipes connecting, respectively, with coil G and chamber F, and two eduction-pipes leading one from the chamber and the other from the coil, for the purpose of cooling at the same time by means of the refrigerating-liquid and water.

298,072. INSULATING MATERIAL. DANIEL H. DORSETT, Chicago, Ill. Filed Aug. 27, 1883. (No specimens.)

Claim.—1. The herein-described insulating compound, composed of coal-tar, paraffine, silicious sand, and pulverized coal-ashes and cinders, in the proportions substantially as set forth, and for the purpose specified.

2. The above-described compound, composed of coal-tar, paraffine, silicious sand, pulverized coal-ashes and cinders, black oxide of manganese, and ammonia chloride, in the proportions substantially as set forth, and for the purpose described.

298,073. RHEOSTAT. JOHN DOYLE, Hoboken, N. J., assignor to himself and C. Coles Dusenbury, White Plains, N. Y. Filed Nov. 19, 1883. (No model.)

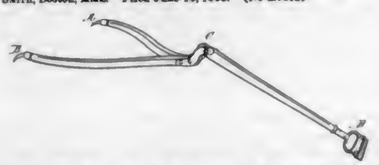


Claim.—1. The combination, with an insulating-holder having an opening therein, of a range of disks or pieces of metal placed together within such holder, a screw or other device to press the pieces together, a movable contact, and circuit-connections, substantially as set forth.

2. In a rheostat, a range of disks or pieces of metal having aluminium surfaces and a movable contact and circuit-connections, substantially as set forth.

3. The sliding contact formed of the plate A, roller *i*, and springs *o*, in combination with the plate *s*, the range of disks or pieces of metal, the holder for the same, and the circuit-connections, substantially as set forth.

298,074. CARPET-STRETCHER. JAMES A. DUNNELL and AARON SMITH, Boston, Mass. Filed June 16, 1883. (No model.)



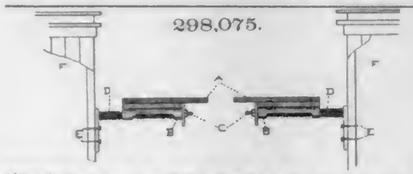
Claim.—The bent arms having points A B, in combination with toothed arm D, hinged at C, whereby two substantial points are given, between which a carpet may be stretched smooth and even at one motion the length or width of the room and be held firmly in place, substantially as set forth.

298,075. SAFETY-BRIDGE FOR RAILWAY-CARS. BENJAMIN L. FERRIS, Kansas City, Mo. Filed Jan. 18, 1884. (No model.)

Claim.—1. In a safety-bridge for freight-cars, the combination, with the wooden platform A, attached to the end of a car, through the medium of sliding blocks B, brackets C, and wood-bolts E, of the short springs D, substantially as shown and described.

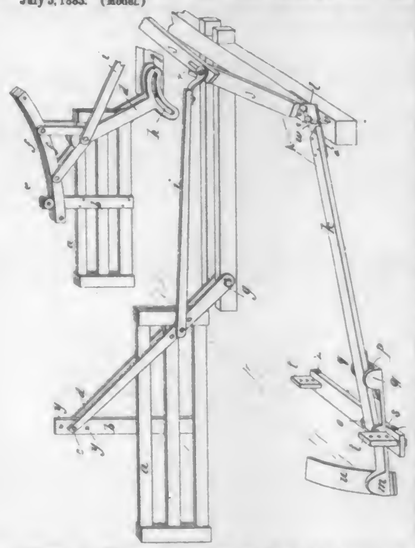
2. A safety attachment for cars, having a narrow platform of wood, A, loosely connected to stationary supporting-brackets, in the manner

298,075.



substantially as shown and described, and for the purposes herein set forth.

298,076. GATE. MARK WILSON FOSTER, Minneapolis, Minn. Filed July 5, 1883. (Model.)



Claim.—1. The combination, with the levers *d* and gate *a*, suspended therefrom, of the angle-levers A, pivoted on the studs *v*, and connecting-rods *i*, substantially as shown and described.

2. The combination, with the levers A, connecting-rods *i*, levers *d*, and rails *f*, of the gate *a*, said gate being suspended from the rails *f*, and the said levers *d* and levers A being arranged to raise the gate and cause it to roll along the rails *f*, substantially as described.

3. The combination of the levers A, connecting-rods *i*, levers *d*, and rail *f*, with the gate *a*, said levers *d* being fitted by slots *h* to fulcrum-pins *g*, and said levers *d* and levers A being arranged to operate the gate, substantially as described.

4. The combination, with the levers *d* and gate *a*, suspended therefrom, and the connecting-rod *i*, provided with a pivot, *x*, of the angle-lever A, composed of the arms *j* and *k*, rigidly secured at their ends by the plate *a'*, having angle-slot *w*, and pivots *v*, substantially as shown and described.

5. The combination, with the levers *d*, gate *a*, suspended therefrom, angle-levers A, pivoted on the studs *v*, and connecting-rod *i*, of the end pieces, *m*, pivoted to arms *k*, springs *p*, and ways *s*, substantially as shown and described.

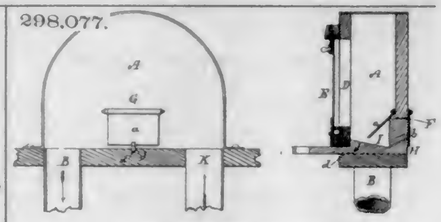
6. The combination, with the levers *d*, gate *a*, suspended therefrom, angle-levers A, pivoted on the studs *v*, and connecting-rod *i*, of the end pieces, *m*, pivoted to arms *k*, springs *p*, way *s*, perforated adjustable uprights *t*, pins *z*, and way *u*, substantially as shown and described.

298,077. CASH-TRANSMITTER. HENRY GAZAILLE, Manchester, N. H. Filed Oct. 6, 1883. (No model.)

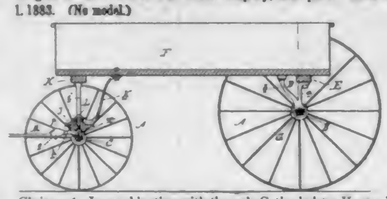
Claim.—1. The combination, with a case or receiver, the dispatch-tube, and an air-pump connecting with said case and tube, of a valve or valves for admitting entrance of air to the case and dispatch-tube, and for closing the opening by which such air enters when the direct stroke of the pump is being made, substantially as explained.

2. In combination, the case A, with its door E, the dispatch-tube B, air-supply tube K, and double valve *a b*, arranged and to operate substantially as explained.

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298,078. WAGON RUNNING-GEAR. PETER GENDRON, Toledo, Ohio, assignor to the Gendron Iron Wheel Company, same place. Filed Aug. 1, 1883. (No model.)



Claim.—1. In combination with the axle C, the bolster H, provided with a bearing-plate, A, having its ends recessed to fit the axles, and adapted to be secured thereto by means of studs engaging therewith, and to be held in place by ferrules, substantially as described.

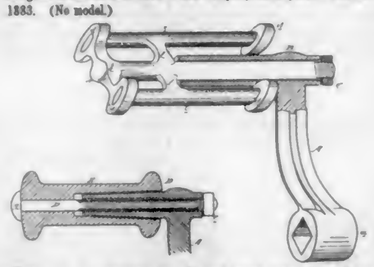
2. In a wagon, the combination of the axle C and bolster H, provided with the bearing-plate A and upwardly-projecting stud I, constructed substantially as described, with the plate J, having arms *i i k*, adapted to be secured to the body, the parts being connected together by a king-bolt, L, substantially as and for the purpose specified.

3. In a wagon, the combination of the axle C and bolster H, provided with the bearing-plate A and upwardly-projecting stud I, constructed substantially as described, with the plate J, having arms *i i k*, king-bolt L, and elastic washer, when constructed, arranged, and operating substantially in the manner and for the purposes set forth.

4. In combination with the ears *o*, forming an integral part of the bolster H, the hook shaft-iron M, substantially as and for the purposes described.

5. In a wagon, and in combination with the axle C, the bolster H, provided with bearing-plate A and stud I, and having cast integral therewith the ears *o*, pivots *r*, and caps *p*, substantially as described, and for the purpose specified.

298,079. VELOCIPEDE-TREADLE. PETER GENDRON, Toledo, Ohio, assignor to the Gendron Iron Wheel Company, same place. Filed Nov. 3, 1883. (No model.)



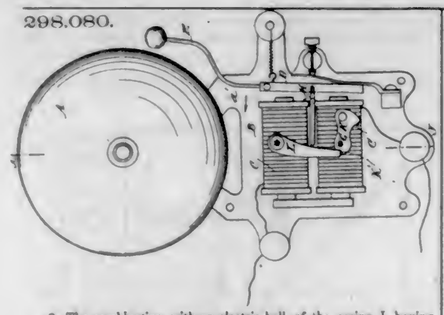
Claim.—1. A velocipede treadle and crank, consisting of a crank cast with a thimble, and a pintle sleeved within said thimble and supporting the treadle, substantially as described.

2. In combination with a crank cast with a thimble, a treadle composed of the foot-bearings *c*, stops *d f*, head *b*, and pintle D, the parts being constructed, arranged, and operating substantially as specified.

298,080. ELECTRIC BELL AND ANNUNCIATOR. JOHN D. GILCHRIST, Ishpeming, Mich. Filed Jan. 15, 1884. (No model.)

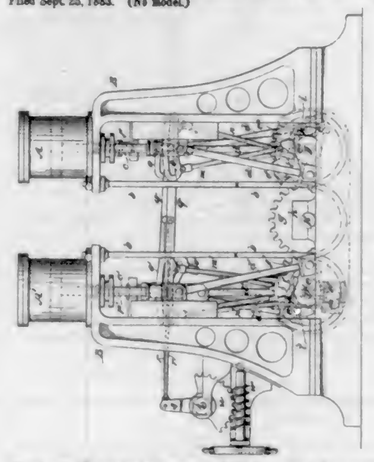
Claim.—1. The combination, with an electric bell, of a pointer or hand, a weighted block connected with the hand, a lever for locking the weighted block and hand in place, and an arm projecting from the armature for the purpose of disengaging the locking-lever from the weighted block, substantially as herein shown and described.

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2. The combination, with an electric bell, of the casing J, having a face-plate, H, the shaft G, held to turn in the face-plate, the hand F on the outer end of the shaft, the block K, secured on the inner end of the shaft G, and provided with a shoulder, K', the lever L, pivoted to the inner surface of the face-plate H, and of the arm M, secured to the armature D, substantially as herein shown and described.

298,081. STEAM-ENGINE. WILLIAM GOLDING, New Orleans, La. Filed Sept. 25, 1883. (No model.)



Claim.—1. In expansion-steam and other engines, the combination, with an intermediate driving-shaft, of a series of independent expansion reciprocating-piston engines, arranged in pairs on opposite sides of said shaft and geared or connected with it to rotate the same, the cranks in each pair of said engines being set at right angles with one another, and the cranks of the several engines being arranged progressively and uniformly, one in advance of the other, substantially as and for the purposes specified.

2. The combination, in the one expansion-engine, of the intermediate driving-shaft, E, the duplicate parallel crank-shafts D D' on opposite sides of said shaft, the gears *f f' g*, connecting the several shafts, a duplicate series, in pairs, of reciprocating-piston expansion-engines having their cranks arranged, as described, progressively and uniformly, one in advance of the other, and a valve mechanism common to all the engines for simultaneously and similarly controlling them, essentially as described.

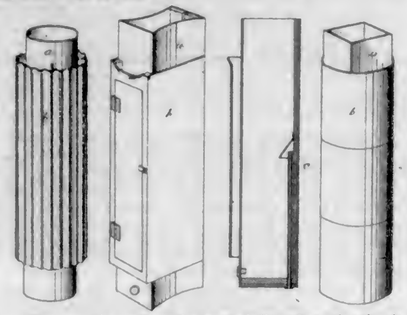
298,082. BUTTON. NAPOLEON B. HALE, San Bernardino, Cal. Filed Nov. 12, 1883. (No model.)



Claim.—The combination, with a button provided with a shank secured to the said button by the parallel and bifurcated ends of said shank, and having a pin, C, and a slot, *b*, formed therein, of the slotted cross-head formed of one continuous piece of spring metal, and provided at its center with a depression, *l*, in which the pin C rests, all arranged to operate substantially as herein described.

298,083. REFRIGERATING CAR AND CHAMBER. EDWARD HAMILTON, Boston, Mass. Filed Apr. 30, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 248,738, dated October 25, 1881, to same inventor.



Claim.—1. In a refrigerating-car or similar refrigerating-chamber, the tank *a*, adapted for holding a freezing-mixture, and the outer removable jacket or casing, *b*, provided with an opening at the top and bottom, and a circulating-air space between the said jacket and tank, all arranged and combined substantially as and for the purposes set forth.

2. In combination, the independent metal refrigerating-tank *a*, provided with the outer metal shell, *b*, the interposed perpendicular joists or stays *a²*, arranged to form perpendicular air-passages upon the outside of the tank *a*, said passages being open both at the top and bottom for the free circulation of air, and presenting independent metal condensing-surfaces all outside the tank *a*, and all adapted to operate in the chamber of a refrigerating-car or refrigerating-chamber, substantially as and for the purposes set forth.

298,084. STYLOGRAPHIC FOUNTAIN-PEN. JOHN C. HARING and CHARLES H. COURT, Jersey City, N. J. Filed Oct. 5, 1883. (No model.)

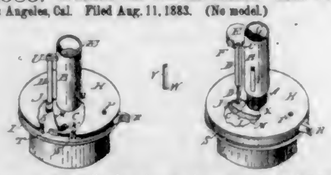


Claim.—1. In a stylographic fountain-pen, the combination of the case, the air-tube formed as described, to constitute a spring at its lower end, and the needle arranged within the case so as to have a bearing against said spring, whereby a vibratory or reciprocating movement is permitted to the needle, substantially as described.

2. In a stylographic fountain-pen, the case, the air-tube inclosed thereby, said tube being cut away as described, to form a spring, and being provided with a plug (as *g*) near its lower end, and the needle arranged in the casing to bear against said spring, all the parts in combination substantially as and for the purpose set forth.

3. In a stylographic fountain-pen, a case provided with a part internally screw-threaded, an air-tube having an external screw-thread to engage therewith, said air-tube being cut away in part at its lower end to form a spring, and a needle arranged, substantially as described, to bear against said spring, all in combination substantially as and for the purpose set forth.

298,085. CHARGER FOR POWDER-FLASKS. HENRY T. HAZARD, Los Angeles, Cal. Filed Aug. 11, 1883. (No model.)



Claim.—1. The following elements in combination, substantially as shown: the inner cut-off gate, C, pivoted at P, and having thumb-piece R, hook T, recess K, shoulder L, and discharge-opening N, the dog J, having opening Q for the reception and operation of the square part of the rod, the rod D being square at one end, and to the other end is rigidly affixed an outer cut-off gate, E, on which gate is mounted the hood F, the charge-tube A, mounted on the face-plate H, and projecting into the

charge-tube B, and having indentations X, the outer tube, B, movably attached to the tube A, through which is cut the slot G and hole for the catch W, on which tube is mounted the support U, in which the rod D rotates, the spring S, the face-plates H and I, the flask Z, and the spring V, having catch W.

2. The arm D, on which is mounted the cut-off gate E, and having apron F, in combination with the dog J, having the hole Q, the cut-off C, pivoted at P and being recessed at K, and having the arm T, shoulder L, and thumb-piece R, the spring S, the spring V, having catch W, and the charge-tubes A and B, substantially as and for the purpose shown.

3. The spring V, mounted on the tube B, and having rigidly affixed on its free end the catch W, which projects through a hole in the tube B into indentations X on the inner tube, A, holding thereby the tube B in proper position on the tube A, and being the means of properly regulating the charges, in combination with the tube B and the tube A, as shown.

4. The arm D, having rigidly affixed thereon the cut-off E, and being mounted on the side of the measuring-tube B, as shown, which arm D extends down into the flask through the hole Q in the dog J, the dog J having opening Q, in combination with the cut-off C, having the thumb-piece R and opening K, and being pivoted on the screw P, the spring S, the measuring-tubes A and B, and spring V, whereby upon the pressure upon the thumb-piece R the opening O will be first closed, separating an exact charge, and by the further movement of the thumb-piece the cut-off E will be opened, leaving the charge free to fall.

5. The charger for powder-flasks, consisting of the slotted charge-tube, the outer cut-off gate, E, mounted upon the connecting-rod D, the dog J, and lower cut-off gate, C, having arm T, curve M, recess K, and shoulder L, all in combination, substantially as shown, whereby the outer gate is operated by the rotation of the inner cut-off gate after the opening into the flask is completely closed.

6. The combination, in a powder-charger, of the following elements: the adjustable tube A B, having slot G and bearing U, the cut-off gate E, connecting-rod D, dog J, spring S, and inner cut-off gate, C, having shoulder L, curve M, recess K, and arm T, substantially as and for the purpose shown and described.

7. In a powder-charger, the rotary rod D, mounted longitudinally on the measuring-tube B, having an outer cut-off gate, E, rigidly affixed to its outer end, the inner and extending through the dog J, said dog being so arranged as to rotate by its engagement with the arm T on the gate C, whereby the outer gate, E, will be opened after the inner gate, C, has closed the channel into the flask.

8. In a powder-charger, the inner cut-off gate, C, having an irregular edge, substantially as shown, in combination with the dog J, operated thereby, and the rod D, supporting the outer rotary cut-off gate, E, whereby said outer gate, E, is operated by the movement of the inner cut-off.

9. In a powder-charger having an inner and an outer cut-off gate, the inner cut-off gate, C, having the discharge-opening L at such a point therein as to register with the passage into the flask when the charger is not being operated, and being connected with the outer cut-off gate by the rotary arm D and dog J, substantially as shown, whereby the measuring-tube will contain an exact charge while the operative parts are at rest.

10. A powder-charger having a measuring-tube, B, arm D, mounted longitudinally thereon, and adapted to operate by rotation by means shown, and an outer cut-off gate, which is rigidly affixed on said arm, which arm is rotated by its combination, as shown, with an inner cut-off gate, C, the inner gate in the first part of its movement closing the channel from the flask to the measuring-tube, after which, by its further movement, the arm D is caused to rotate, thereby opening the outer gate.

11. In a powder-charger, the combination of a measuring-tube, a cut-off gate at or near its outer end, a rotating rod carrying said outer cut-off gate, and provided at its inner end with a lateral arm, an inner cut-off gate provided with an orifice which normally registers with the measuring-tube and with a curved recess, K, and a spring serving to hold the inner cut-off gate normally open, the parts being constructed and arranged to operate substantially as described, whereby a movement of the inner gate is caused first to close the inner end of the tube, and then to open the outer end, substantially as explained.

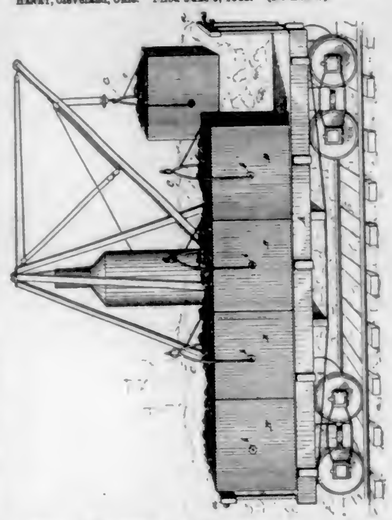
12. In combination with tube B, having opening G in its side gate E, passing through said opening and limited in its inward movement by the tube, rod D, carrying gate E, and provided with dog S, and the inner cut-off gate, C, having curved face M, concentric with its pivot, and recess K, all substantially as shown, whereby the outer gate is locked shut until the slide C moves so far as to bring the recess K opposite the dog S, whereupon the latter is permitted to move laterally, thereby carrying the gate E out of the tube, as explained.

13. The combination, substantially as shown and described, of tube B, having opening G, gate E, rod D, provided with dog S, and inner gate, C, having curved face M, inclined shoulder L, and recess K, all substantially as and for the purpose set forth.

14. In combination with telescopic tube A B, gate E, and dog S, a polygonal rod, D, carrying said gate E, and passing freely through a polygonal opening in said dog, and cap-plates H I, or equivalent supports, one above and the other below the dog, whereby the tube may be lengthened and shortened without disconnecting the gate and the dog

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298,086. DETACHABLE COMPARTMENT FOR CARS. EDWIN S. HENRY, Cleveland, Ohio. Filed June 9, 1883. (No model.)



Claim.—1. The combination, with a series of movable flat-bottom rectangular freight-compartments constructed to extend the width of the car and cover the entire floor-space thereof, of a platform-car provided at its opposite ends with devices for holding the compartments thereon, substantially as set forth.

2. The combination of a platform-car provided at its end with upwardly-projecting frames having inwardly-projecting set-screws, and a series of removable flat-bottom rectangular freight-compartments constructed to extend the width of the car and cover the entire floor-space thereof and fit snugly one against the other, so that the entire series may be held by transverse pressure exerted by the set-screws upon the two end compartments of the series, substantially as set forth.

298,087. TOOTH-PICK DEVICE. JAMES HOFFMAN, Philadelphia, Pa. Filed Jan. 22, 1884. (No model.)

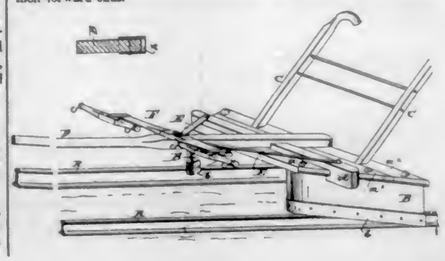


Claim.—1. The herein-described device for holding thread for cleaning teeth, consisting of the spindle or reel A, cylinder B, and jam-nuts C D, all substantially as and for the purposes set forth.

2. The herein-described device for covering the thread, consisting of the cylinder B, furnished with a slot, *c*, or its equivalent, said cylinder revolving on bearings *b b* on spindle A substantially as set forth.

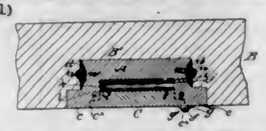
298,088. CAR-TRACK CLEANER. JOHN GLIDDEN HOLDEN and JAMES EVERETT COX, Danville, Ill. Filed Feb. 6, 1884. (No model.)

Brief.—A track-cleaner in which the metal scraper-plates project below the wooden body of the scraper, and in which the scrapers are arranged diagonally across the track, leaving a broad space between their forward ends.



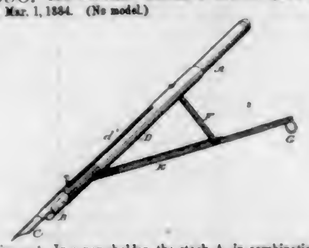
Claim.—The combination of the inward-inclined scrapers B B, separated at their forward ends by a wide space, and provided with plates *b b*, projecting below the scrapers and bent around the forward ends thereof, with the connecting-bars *a a'* a^2 and the bar *d* and tongue D, the bar a^2 being provided with handles C, substantially as set forth.

298,089. PICTURE-CASE FOR TOMBSTONES. HARVEY ALLEN HOLLOMAN and WILLIAM ROBERT GREEN, Kingston, Tex. Filed July 27, 1883. (No model.)



Claim.—The tombstone B, recessed at B', oppositely grooved at *a a*, and having at the lower end the sprue-holes *b*, in combination with the case A, provided with surrounding flanges *e e'*, of which the latter is cut away at *k*, and the grooved side surfaces, *a' a'*, whereby the case may be cemented in the stone, as described.

298,090. PEN-HOLDER. STEPHEN A. HOLMAN, Spencerville, Cal. Filed Mar. 1, 1884. (No model.)



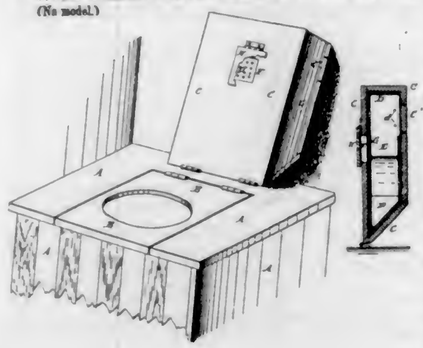
Claim.—1. In a pen-holder, the stock A, in combination with a bar or strip secured at its lower end to the stock, and extending backwardly and at an inclination, to serve as a support or rest for the thumb, substantially as described.

2. In a pen-holder, the slotted stock A, in combination with a bar or strip, the forward end of which projects through said stock and forms a rest for the index-finger, its rear end projecting backwardly and at an inclination, to serve as a support or rest for the thumb, and the brace F, substantially as described.

3. In a pen-holder, the slotted stock A, and the strip or bar E, pivoted at its forward end in the slot of the stock, in combination with the sliding slotted sleeve D, fitted over the pen-stock, and the link F, pivoted to the sliding sleeve and to the strip or bar E, substantially as herein described.

4. In a pen-holder, the slotted and grooved stock A, and the strip or bar E, the forward end of which is pivoted in and projects through the slot of the stock, forming a rest, *e*, in combination with the sliding slotted sleeve D, fitting on said stock, the link F, pivoted to the sliding sleeve and to the strip or bar E, and suitable means for confining or holding the bar E to its place when seated in the slotted stock, substantially as herein described.

298,091. DEODORIZING AND ANTISEPTIC WATER-CLOSET COVER. FREDERICK H. HUBBARD, Brooklyn, N.Y. Filed Jan. 14, 1884. (No model.)



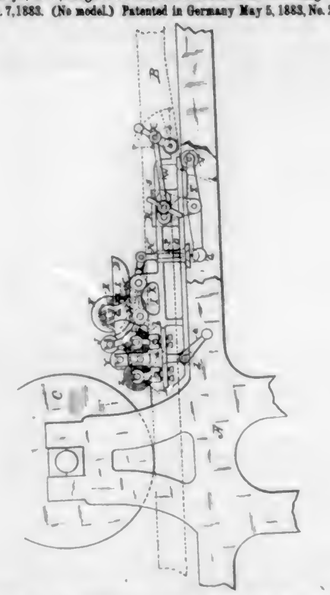
Claim.—1. The combination, with a hinged water-closet cover made in box form, of a non-corrosive vessel arranged in said cover and provided with a number of fine perforations in its bottom, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the hinged hollow water-closet cover C, having an opening, F, in its lower surface, of the non-corrosive vessel D, arranged in said cover and provided with the fine perforations G in its bottom over the opening of the cover, substantially as herein shown and described.

3. The combination, with the hinged hollow cover C, provided with the opening F in its lower surface, and the vessel D, arranged in said cover and provided with perforations G over the opening of the cover, of the flap H, hinged to the cover, near the forward edge of its opening, substantially as herein shown and described.

4. In a water-closet cover, the non-corrosive interior vessel, D, made substantially as herein shown and described, with its rear part closed at the top, and fine perforations in its bottom, whereby the liquid contents of the said vessel will be allowed to drip when the said cover is closed, and the dripping will be prevented and the said contents kept from being spilled when the cover is opened, as set forth.

298,092. LITHOGRAPHIC-PRINTING MACHINE. EMILE JAHN, Brooklyn, N. Y., assignor to John M. Fuchs and Julius C. F. Lang. Filed Aug. 7, 1883. (No model.) Patented in Germany May 5, 1883, No. 24,875.



Claim.—1. In a lithographic press, the bed having the cam-surface A, in combination with an adjustable lever which is actuated by the cam-surface during the movement of the bed to tilt, through a system of levers, the roller J against the trough-roller F, and to permit it to be relieved therefrom, substantially as set forth.

2. In a lithographic press, the levers T, I, and K and piece N, in combination with the bed B, having the cam A, adapted by its movement to tilt the roller J, carried by the lever I, against the trough-roller, and to permit it to be relieved therefrom, substantially in the manner and for the purposes set forth.

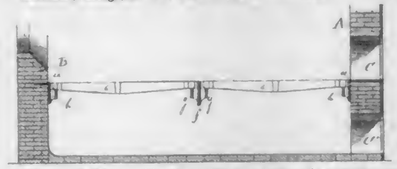
3. The lever T, secured to an adjustable carriage, in combination with the levers I K, piece N, and the bed B, having the cam A, which is adapted by its movement to tilt, through said levers, the roller J against the trough-roller, substantially in the manner and for the purpose set forth.

4. In a lithographic press, the combination of the lever I, carrying the roller J, the lever K, having in one end the screw L, and at its other being pivoted to the vertical slide N, and the rocking lever T, one end of which is below the piece N, and the other terminating in proper relation to be acted upon by the movement of the bed, substantially as set forth.

5. In a lithographic press, the rocking lever mounted in the carriage R, which is adjustable by a hand-lever or winch, X, and locking-screw S, in combination with the slide N, levers I K, and the bed B, having the cam A, which is adapted by its movement to actuate the mechan-

ism to tilt the roller J against the trough-roller and permit it to be relieved therefrom, substantially as set forth.

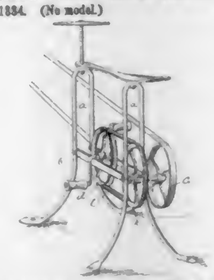
298,093. FURNACE-GRATE. OMAR H. JEWELL and WILLIAM M. MATHESEN, Chicago, Ill. Filed Nov. 27, 1883. (No model.)



Claim.—1. The combination, with grate-bars *e*, of supports secured to the front and bridge walls A B, and consisting of angle-irons *a*, bars *b*, and connecting-lugs *i* and provided with openings *d*, as described and shown.

2. A central support consisting of a center bar, *f*, side bars *g*, connected by lugs *i*, in combination with grate-bars *e* and the end supports described, said central and end supports adapted to support the ends of the grate-bars and provided with openings for the discharge of ashes, &c., as described and shown.

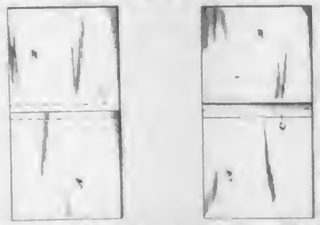
298,094. TREAD-POWER. EDWARD KILBOURN, Jamestown, Wis. Filed Mar. 21, 1884. (No model.)



Claim.—1. A tread-power consisting of the frame, a saddle and handle-bar upon said frame, a pulley having its bearings therein and provided with treadles, and means, substantially as described, for communicating power from said pulley to the driving-pulley, substantially as described.

2. A tread-power consisting of the frame having saddle and handle-bar, the pulley *d*, having its bearing in said frame and carrying treadles, the pulley *k*, mounted in rear of said pulley *d* and connected thereto by band, and the band-wheel G, mounted on the same shaft with pulley *k*, driven thereby, substantially as described.

298,095. METHOD OF JOINING RUBBER FABRICS. ISAAC B. KLEINERT, New York, N. Y. Filed Feb. 21, 1884. (No model.)

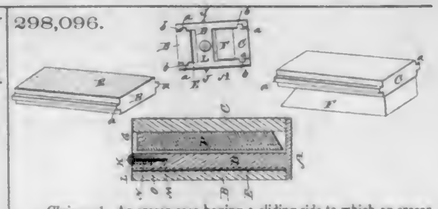


Claim.—1. The method of uniting pieces of rubbered fabric by applying a preparation of rubber to the edges to be joined, and then bringing the edges in contact without overlapping them, to allow the rubber to cohere, substantially as set forth.

2. A seam formed by the cohesion of rubber, said rubber having been applied to two edges of rubbered fabric, and a strengthening-strip cemented over the joined edges, substantially as set forth.

298,096. ERASER-CASE. LOUIS KROB, Zanesville, Ohio. Filed June 30, 1883. (No model.)

298,096.



Claim.—1. An eraser-case having a sliding side to which an eraser is attached, and a sliding cover for one end of the same, substantially as herein shown and described.

2. The combination, with a case, of a reversible slide having an eraser fastened thereto, substantially as herein shown and described.

3. The combination, with a case, of a reversible slide having an eraser fastened thereto, and of a slide provided with an abrading-surface, substantially as herein shown and described.

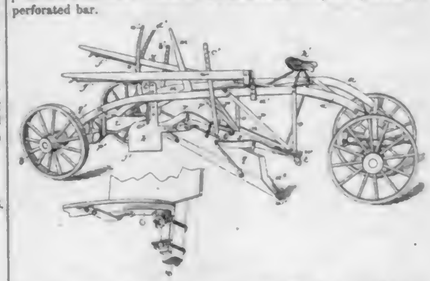
4. The combination, with a case, of a slide to which an eraser is fastened, a slide having an abrading-surface, and a sliding cover on one end of the case, substantially as herein shown and described.

5. The combination, with a case, of a slide to which an eraser is fastened, a slide having an abrading-surface, a sliding cover on one end of the case, and a spring-pintle for holding the cover in place, substantially as herein shown and described.

6. The combination, with the casing A, having a partition, D, of the slide C, to which the eraser F is fastened, the slide B, having an abrading-surface, the cover G, provided with a recess or cavity, K, in its under surface, and the spring-pintle M in the partition D, substantially as herein shown and described.

298,097. ROAD-SCRAPER. LEWIS LAMBORN, Hamorton, assignor to the Lamborn Road Machine Company, (Limited,) Media, Pa. Filed Dec. 11, 1883. (No model.)

Brief.—An arched frame having a fifth-wheel bearing on its front axle and an auxiliary wheel on its rear axle, to ride while a main wheel is in a ditch, has a draw-bar, eyes on which interlink with forward and downward curved clevises on upward-curved draft-beams. A rudder flexibly connected by a pivoted arm to the scraper is adjusted by an elbow-lever connected to a perforated standard thereon, and braced by a hook-rod to a perforated plate on the frame. A landside connected by parallel rods socketed thereto to the main frame is adjustably held by a perforated bar.



Claim.—1. In a road-scraper, a supporting-frame which arches from end to end, in combination with a scraper-bar, substantially as set forth.

2. In a road-scraper, an arched frame supported at its rear end by the rear axle and at its front end through a fifth-wheel by the front axle, in combination with a scraper-bar, substantially as set forth.

3. In a road-scraper, the combination, with an arched frame supported at its rear end by the rear axle and its front end through the fifth-wheel by the front axle, of an auxiliary wheel arranged between the rear wheels of a four-wheeled machine, substantially as set forth.

4. As an improvement in adjustable blades forming the cutting-edge of the scraper-bar of a road-scraper, the combination, with said blades, of a binding-plate which permits the removal or adjustment of the blades by loosening without removing its fastenings, substantially as set forth.

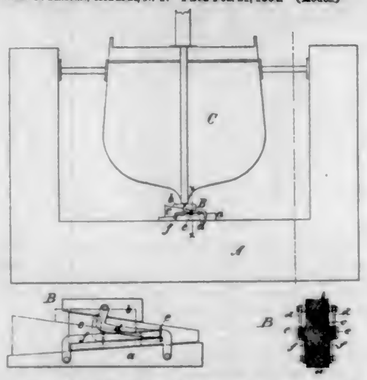
5. In a road-scraper, the combination, with the scraper-bar, of upwardly-curved draft-beams connected by clevises with the draft-bar, which is attached to the supporting-frame, substantially as set forth.

6. In a road-scraper, the combination, with the draft-bar and upwardly-curved draft-beams, of clevises *t* and *u*, constructed with downward and forward curves, and engaging eyes in the draft-bar, which is attached by hangers to the supporting-frame, substantially as set forth.

7. In a road-scraper, a rudder consisting of the blade *k'*, perforated shank *l'*, elbow-lever *m'*, flexible arm *n'*, and hooked rod *o'*, in combination with a scraper-bar and supporting-frame, substantially as set forth.

8. In a road-scraper, the landside consisting of a runner, the parallel rods *t'* and *u'*, the lower ends of which turn in sockets attached to the plate *r'*, and the upper ends of which are flexibly attached to a supporting-frame, and the perforated bar *v'*, adapted to engage a pin or hook or equivalent device on the frame, substantially as set forth.

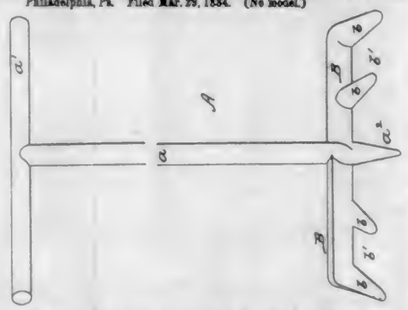
298,098. ADJUSTABLE KEEL-BLOCK. FREDERICK C. LANG and JOHN F. TIETJEN, Rondout, N. Y. Filed Feb. 21, 1884. (Model.)



Claim.—1. The keel-block B, composed of the upper and lower inclined blocks, *a b*, connected together by pivoted S-shaped plates and interposed wedge *c*, connected to said plates by staples *e*, arranged to operate substantially as and for the purposes set forth.

2. The inclined upper and lower blocks, *a b*, connected by the S-shaped plates or rods *d*, the lower block being provided with the fenders *f*, in combination with the wedge *c*, interposed between the said inclined blocks and fenders and connected to the fenders *f* and connecting-plates *d* by the staples *e*, substantially as and for the purposes set forth.

298,099. DEVICE FOR LOOSENING SUGAR, &c. JOHN S. LASH, Philadelphia, Pa. Filed Mar. 29, 1884. (No model.)



Claim.—1. The loosening and crushing tool A, comprising a stem, *a*, having tapering end a^2, and oppositely-inclining radial plates B B, provided with serrated edges *b' b'*, substantially as shown and described.

2. The tool A, having stem *a*, handle *a'*, tapering point a^2, and oppositely-inclining radial plates B B, having studs or fingers *b b*, substantially as shown, and for the purpose set forth.

298,100. JEWELRY-RING. EDWIN F. LEE, New York, N. Y. Filed Sept. 7, 1883. (No model.)



298,100.

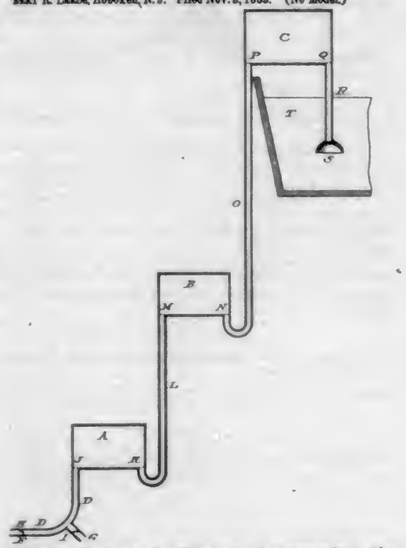


Claim.—1. A ring having on its inner side emblems or figures in relief on the surrounding ground, substantially as herein described.

2. A ring having on the inner side emblems or figures in relief on a surrounding ground, and having the ground covered with enamel, substantially as herein described.

3. The method of forming an emblematic ring, consisting in rolling a strip of metal to produce emblems or figures on or in the surrounding ground, and in bending the strip into a circle, with the emblems or figures on the inner side, and in finally joining the ends of the strip, substantially as and for the purpose described.

298,101. PROCESS FOR THE PURIFICATION OF WATER. ALBERT R. LEEDS, Hoboken, N. J. Filed Nov. 3, 1883. (No model.)



Claim.—1. In the art of purifying water, the process of saturating water with oxygen or ozone, consisting in introducing into water while in motion, under pressure, compressed air also in motion, substantially as described.

2. In the art of purifying water, the process of saturating it with oxygen or ozone by causing the water to come in contact, while under artificial pressure and in motion, with compressed air in a system of pipes and air-chambers, permitting both air and water to enter under pressure, to move through said system while under pressure, and to be discharged into a suitable reservoir, substantially as described.

298,102. HYDRAULIC MOTOR. ROBT. LIGOWSKENING, New Bedford, Mass., assignor of one-half to Frederick B. Nesbett, same place. Filed Nov. 14, 1883. (No model.)

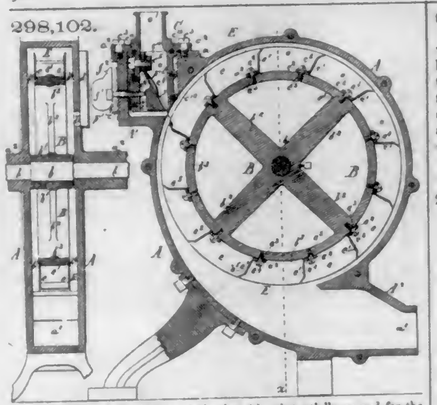
Claim.—1. The combination, with the water-wheel and its inclosing-case having a broad rectangular inlet, *a*, of the conduit C, closed on all sides, and provided with a flexible water-supply-regulating guide, c^4, having a broad surface, and a governing means, substantially as and for the purpose described.

2. The combination, with the water-wheel and its inclosing-case having a broad rectangular inlet, *a*, of the conduit C, closed on all sides, and provided with a rectangular chamber, and a flexible water-supply-regulating guide, c^4, having a broad face, the adjusting-screw *f*, pointer f^2, and dial F', substantially as and for the purpose described.

3. The combination, with the water-wheel and its inclosing-case, of the conduit C, closed on all sides, and having the broad surfaced adjustable guide c^4, which is made flexible at c^5, and provided with a spring, and adapted to be fastened within the rectangular chamber of the conduit by a screw-bolt, substantially as and for the purpose described.

4. The removable conduit C, provided with a coupling-head, c', a rectangular chamber, *c*, bolting-flanges c^3, screw-plates c^{10}, and a flexible removable water-supply-regulating guide, c^4, fitted within the cham-

298,102.



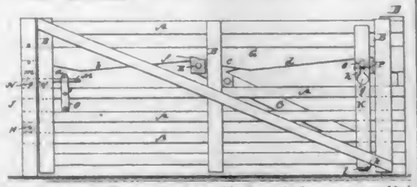
ber, in combination with the projection A', substantially as and for the purpose described.

5. The combination of the wheel B and the water-motor case A A' A^2, having a suitable conduit, C, and the air-supplying vent-hole D, covered by the tube *d*, substantially as and for the purpose described.

6. In a water-motor, the wheel B, having its periphery formed with circular rabbets b^1, and its buckets E, constructed separately with their face-plates *e'* and side portions, *e*, fitted to the rabbeted periphery, all substantially as described.

7. In a water-motor, the wheel B, having separately-constructed buckets E, provided with face-plate *e'*, side portions, *e*, flanged bolting portions e^2, and end portions, e^3, fitting the face-plate *e'*, substantially as described.

298,103. GATE. ADELBERT D. MACK, Franklin, Ohio. Filed July 30, 1883. (No model.)



Claim.—1. The combination, with the swinging crane provided with end rolls, and a guide plank or slat having a tenon on its lower end, of the gate provided with a track-plank having two short corresponding bevels and two long corresponding bevels, substantially as and for the purpose set forth.

2. The combination, with a gate and swinging crane on which the gate can slide, of the plank or slat K, having a slot, *k*, provided with an enlargement, *g*, of the loop *k* on the lower end post of the crane, and of the pintle *e*, on which the roller F is mounted, substantially as herein shown and described.

3. The combination, with a gate having a track-plank provided with two corresponding short bevels and two corresponding long bevels, of the crane provided with end rollers, and a guide plank or slat having a slot provided with an enlargement, and a loop on the hinge-post which receives a tenon on the lower end of said plank, substantially as and for the purpose set forth.

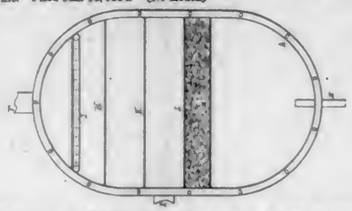
298,104. SWIVELING LOOP-IRON FOR HARNESS. KENNETH MACKAY and THADDEUS C. DUNN, Boston, Mass. Filed Mar. 14, 1884. (No model.)



Claim.—1. In a swiveling loop-iron for harnesses, a joint consisting of an annular boss or projection on one portion of the loop-iron, fitting within an annular recess in the other portion, in combination with a stud projecting from the center of said recess and fitting within the annular boss, whereby two separate and independent bearings are secured, and a fastening-screw adapted to enter the stud and bold the two portions of the loop-iron together, substantially as set forth.

2. In a loop-iron for harnesses, the stationary portion A, provided with an annular boss or projection, *e*, in combination with the swiveling loop portion B, provided with an annular recess, *f*, for the reception of the annular boss *e*, and having a stud, *g*, projecting from the center of the recess *f* into the central aperture, *h*, of the boss *e*, and the fastening-screw C, adapted to enter the stud *g* from the rear side of the portion A, and hold the two portions A B together, all constructed to operate substantially in the manner and for the purpose described.

298,105. FEED-WATER HEATER. THOMAS MARSHALL, Defiance, Ohio. Filed Jan. 16, 1884. (No model.)



Claim.—1. A feed-water heater consisting of the case A, provided with steam-inlet E and steam-outlet B, the water-inlet G, terminating in perforated branches J, the imperforated plate I, the perforated plates H, K, L, and M, and the outlet water-pipe H', all constructed, arranged, and operating substantially as and for the purposes set forth.

2. A feed-water heater consisting of the case A, provided with steam-inlet E and steam-outlet B, the water-inlet G, terminating in perforated branches J, the imperforated plate I, the perforated plates H, K, L, and M, the outlet water-pipe H', water-gage C, and faucet D, the parts being constructed, arranged, and operating as and for the purposes set forth.

298,106. SASH-FASTENER. ROBERT MCCABE, Meadville, Pa. Filed Oct. 8, 1883. (Model.)



Claim.—The construction of the window-sash fastener, as described, consisting of the metal plate D D, the latch C, the rest H, and the lock-hook B, in combination with the screw-knobs 1 2 3 and the thumb-piece F, when the same are constructed as described in the aforesaid combination, for the purposes set forth.

298,107. SHEAF GATHERING AND SHOCKING MACHINE. SOLOMON CLEMENT MINEAR, Chillicothe, Ohio. Filed Aug. 22, 1883. (No model.)

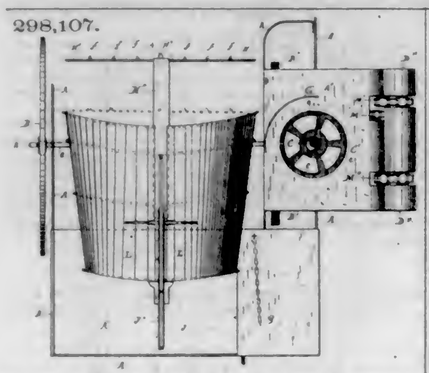
Claim.—1. In a machine for shocking wheat, the combination of the frame, the carrying-wheels, a curved axle having one bearing in the frame and the other in one of the wheels, and a shocking-trough secured to said axle, as described, and for the purposes set forth.

2. In a machine for shocking wheat, in combination with a shocking-trough, a gate sliding in said trough, and means to lock the gate in different positions, as shown and described, and for the purposes set forth.

3. In a machine for shocking-wheat, a shocking-trough, L, in combination with the slide H'', curved piece H', and rods *f*, substantially as shown and described, and for the purposes set forth.

4. In a machine for shocking wheat, the shocking-trough L, the slide H'', having curved piece H', and rods *f*, in combination with compressing-arms H, lever J, handle J', links A, and lever K', substantially as described, and for the purposes set forth.

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5. In a machine for shocking wheat, the frame A, in combination with wheel B', axle C'', bevel-gears D'' D, shaft C, and wheel C', having pins *c*, as shown and described, and for the purposes set forth.

6. In a machine for shocking wheat, the combination of the frame A, wheel B', axle C'', bevel-gear D'', shaft C'', having bevel-gear D', sprocket-wheel F^{xx}, chain M, the shaft F', having sprocket-wheels F^{xx}, F, and F'', and the elevator-chains M' and M'', as described, and for the purposes set forth.

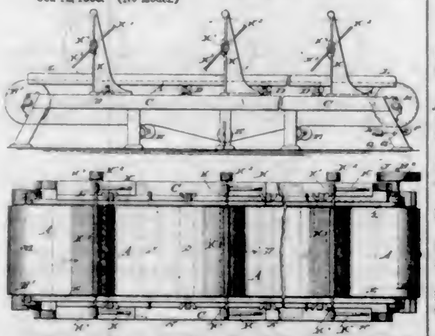
7. In a machine for shocking wheat, in combination with the frame A, the bars E, the pivoted bars E', the plate A''', and curved plate D^x, as described, and for the purposes set forth.

8. In a machine for shocking wheat, the combination of the trough L, plate N, the compressing-arms H, links A, and lever K', as described, and for the purposes set forth.

9. In a machine for shocking wheat, the trough L, the slide H'', the handle J', the lever J, having spring J'', and pin *j'*, the whole in combination as described, and for the purposes set forth.

10. In a machine for shocking wheat, in combination with the frame A, the table A'', the wheel 1^x, and beveled plate G, as described, and for the purposes set forth.

298,108. PAPER-STOCK SORTING AND CLEANING MACHINE. ROBERT O. MOORHOUSE and WALTER MOORHOUSE, Philadelphia, Pa. Filed Oct. 12, 1883. (No model.)



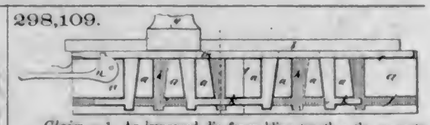
Claim.—1. In a machine for sorting and cleaning paper-stock, the combination of a progressively-moving screening-apron with a series of revolving vanes, arranged to operate substantially as set forth.

2. In a machine for sorting and cleaning paper-stock, the combination of an endless screening-apron with a driving-roller and a second roller pressed toward said driving-roller upon the apron, as and for the purpose set forth.

3. In a machine for sorting and cleaning paper-stock, the combination of revolving vanes having leather or other equivalent clothing upon the edges thereof, with a progressively-moving endless screening-apron, arranged to operate substantially as and for the purpose set forth.

298,109. LOCOMOTIVE-FRAME-FORGING DIE. THOMAS MORRIS, Dunkirk, N. Y. Filed Apr. 25, 1883. (No model.)

298,109.

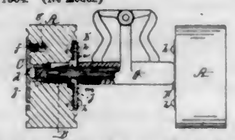


Claim.—1. An improved die for welding together the separate sections of a wrought-metal locomotive-frame, consisting of plate *a*, with grooves *h j*, for the leg and brace forgings of the frame, and a ledge or table, *c*, for supporting the top connecting-bar of the frame that is to be welded to the leg and brace forgings, substantially as described.

2. In a die for welding together the separate sections of a wrought-metal locomotive-frame, the plate *a*, having grooves *h i j*, for the leg and brace forgings of the frame, and a ledge or table, *c*, for supporting the top connecting-bar of the frame that is to be welded to the leg and brace forgings, substantially as and for the purpose set forth.

3. The combination of the holding-lever *m* with the bed-die *a*, having face *c*, and leg-grooves *h*, substantially as described.

298,110. ROLLER-SKATE. CHARLES F. MORSE, Somerville, Mass. Filed Feb. 5, 1884. (No model.)



Claim.—1. An axle, D, having screw-threaded ends, journals *l*, capable of adjustment thereon, and a means of locking them thereto, in combination with a pair of rollers, A, having journal-boxes B, and a means of securing them therein, constructed to operate substantially as and for the purposes described.

2. An axle, D, having its ends provided with screw-threads *k* and notches *p*, in combination with notched journals *l*, adjustable thereon, and keys *r*, for locking them thereto, as set forth.

3. A roller, A, having a journal-box, B, and an outer face-plate, C, for retaining it therein, an axle, D, having screw-threaded ends, a journal capable of adjustment thereon, and an inner face-plate, E, for locking the roller upon the journal, as and for the purpose specified.

298,111. COMBINED BILLIARD-CUE AND WALKING-CANE. WM. G. MORSE, Plainfield, N. J. Filed Apr. 11, 1882. (No model.)



Claim.—1. The combination, with the sections in a walking-staff or billiard-cue, of the screw-cylinder *g*, screwed into one section, and the screw *f* in the adjoining section, substantially as set forth.

2. The sectional billiard-cue having screw-cylinders *g*, and screws *f*, to unite the respective sections, and the ferrule-section F, adapted to the end of the sections A B, when the two or more sections C D E have been removed, substantially as specified.

3. A billiard-cue having one or more axial weight-pockets, in combination with one or more movable or changeable weights for each pocket, substantially as set forth.

4. In a billiard-cue having weight-pockets, the combination of the heavy weights *h h* and the light weights *i i*, substantially as set forth.

5. A billiard-cue having one or more weight-pockets, in combination with the weight or weights and the screw-plug *k*, substantially as set forth.

6. The combination, with the billiard-cue and the elastic tip, of an intermediate bearing-plate having projections that bed themselves into the end of the cue-rod, substantially as set forth.

7. The combination, with the billiard-cue and flexible tip, of a bearing-plate, and a screw passing through a hole in the flexible material into the cue, there being an opening in the flexible material for the screw-driver, and the screw-head being below the surface of the elastic material.

8. A flexible tip for billiard-cues, having a hole for the passage of the body of the attaching-screw, and an enlarged portion of said hole for the head of the screw, and a filling-plug over the head of the screw, substantially as set forth.

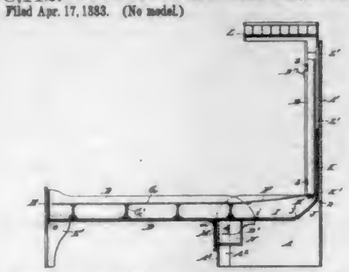
9. A tip for billiard-cues, made of two pieces of flexible material glued together, there being a hole in one for the body of the screw, and in the other for the head, in combination with the attaching-screw passing through the flexible material into the cue, substantially as set forth.

10. The bearing-plate having a central star-shaped opening, and the points bent toward the cue, in combination with the flexible tip and the attaching-screw, substantially as set forth.

11. The combination, with the billiard-cue and the cross-pin *r*, of the flexible tip and the attaching-screw, substantially as set forth.

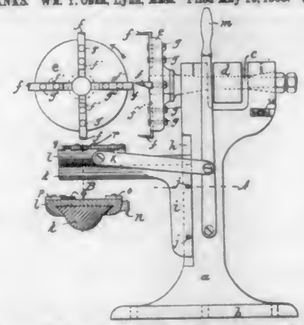
12. The combination, with the billiard-cue and the screw for attaching the flexible tip, of a tip having a plug, *t*, inserted into the hole above the screw-head, substantially as set forth.

298,112. WARDROBE-BEDSTEAD. EUGENE NASH, New York, N. Y. Filed Apr. 17, 1883. (No model.)



Claim.—In a wardrobe-bedstead, the box N, in combination with the stationary portion A, main folding part D, having arms D' and hinges *d*, and the cover M and hinge *m*, constructed as herein specified, for the purposes set forth.

298,113. MACHINE FOR CONCAVING BOOT AND SHOE HEEL BLANKS. WM. Y. OSER, Lynn, Mass. Filed May 19, 1883. (No model.)

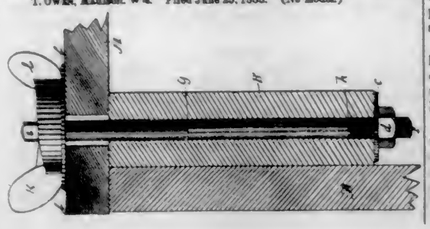


Claim.—1. The combination of arm *i*, constructed and arranged to be vertically adjusted and locked upon standard *a*, and to receive and support the blank-carrying plate *l*, said plate being provided with blank-securing devices, lever *m* and link *n*, for reciprocating the plate, and rotary head *e*, carrying cutters *f*, formed to concave blank *t* in both its longitudinal and transverse sections, substantially as specified.

2. The combination, with devices, substantially as described, for holding the heel-blank and moving the same in a fixed path in the direction of its axis, of a rotary head whose axis is parallel with the line of movement of the blank, and which is provided with knives having a convex cutting-edge adapted and arranged to form a seat in the plane of the blank, and suitable driving mechanism, substantially as specified.

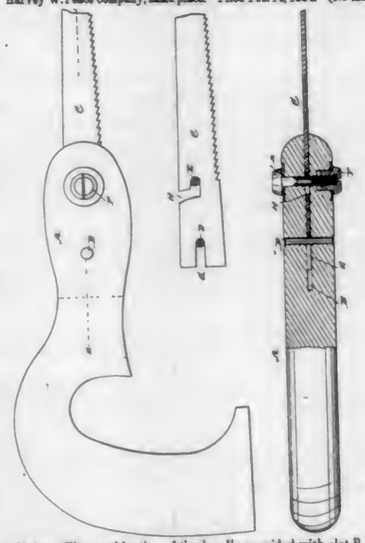
3. The cutter *f*, formed with a shank or bar, *f''*, for securing it to head *e*, and with a convex line adapted to impart the desired longitudinal concavity to the heel-blank, substantially as specified.

298,114. LOCKING DEVICE FOR CLOSETS, BOXES, &c. EDWARD T. OWEN, Madison, Wis. Filed June 23, 1883. (No model.)



Claim.—The combination of the handle provided with slot B, fixed pin D, and clamping-bolt E in front of said pin, with the blade provided with an open longitudinal slot, G, in its rear edge, as shown, and with an open L-shaped slot extending from the upper side downward to the plane of the slot D, and then toward the point of the blade, substantially as set forth.

298,115. SAW. HARVEY W. PEACE, Brooklyn, N. Y., assignor to the Harvey W. Peace Company, same place. Filed Feb. 14, 1884. (No model.)



Claim.—The combination of the handle provided with slot B, fixed pin D, and clamping-bolt E in front of said pin, with the blade provided with an open longitudinal slot, G, in its rear edge, as shown, and with an open L-shaped slot extending from the upper side downward to the plane of the slot D, and then toward the point of the blade, substantially as set forth.

298,116. SCREEN-FRAME. GEORGE PHILLIPS, Tilford, Ill. Filed Jan. 3, 1884. (No model.)

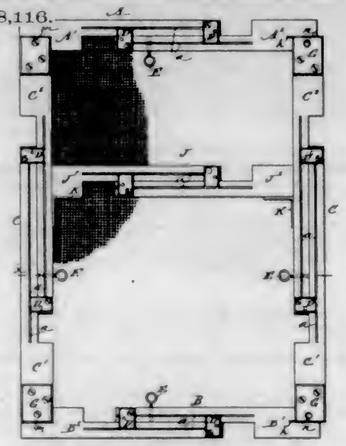
Brief.—A screen-frame consisting of extensible bars having longitudinal recesses, longitudinal grooves in their surfaces, and clips fastened to the inner end of each section and running in the longitudinal grooves of the other, the ends of the side bars having secured clips that slide in the grooves of the end bars.

Claim.—1. A screen-frame having its bars formed of two sections having longitudinal recesses in the adjoining edges, and each section having longitudinal grooves in the side surfaces, and two clips or hook-plates, one being fastened to the inner end of each section, the hooks on the plates of one section passing into the longitudinal grooves in the other section, substantially as herein shown and described.

2. In a screen-frame, the combination, with the end bars having longitudinal grooves in the side surfaces, of side bars, and of hook-plates or clips secured on the ends of the side bars, the hooks of the said hook-plates or clips passing into the grooves in the end bars, substantially as herein shown and described.

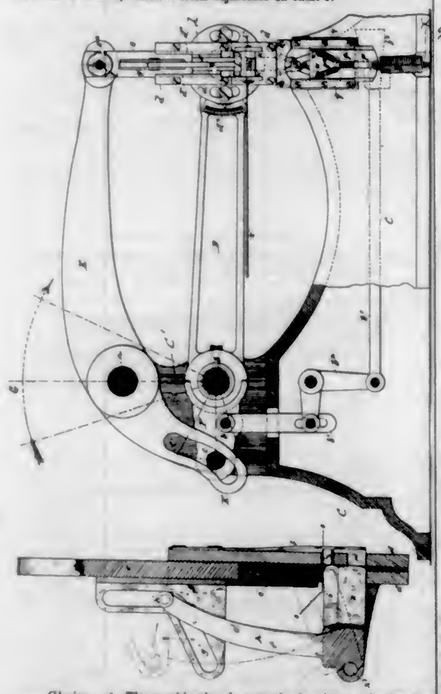
3. In a screen-frame, the combination, with end bars having longitudinal grooves in the surfaces, of side bars, and of hook-plates or clips secured on the ends of side bars, the hooks of the said plates or clips passing into the grooves in the end bars, and the said hooks or plates being provided in the projecting ends with holes, through which screws can be passed, substantially as herein shown and described.

298,116.



298,117. MACHINE FOR STITCHING BOOKS WITH WIRE STAPLES. ERNST PFEIFFER, Plagwitz-Leipsic, Saxony, assignor to Gustav Hazhorst, Leipsic, Germany. Filed Apr. 28, 1883. (No model.)

Brief.—The pivoted cutter and former *k* cute off and bends the wire over the spring-seated anvil or shaping-block *m*, which is then forced from under the formed staple by the plate *i* (attached, like *k*, to lever *h*) acting upon the pins *n* on the anvil-spring *l*. Driver-bar *e'* then descends and drives the staple. For different thicknesses of work frame *d*, carrying the cutting, forming, and driving devices, is adjustable on the end of arm D, which is itself adjustable on shaft *b*.



Claim.—1. The combination, in a staple-forming mechanism for book-stapling machines, of a shaping block or mandrel, over which the wire is fed, hinged cutting and shaping jaws adapted to swing down on either side of said block, and means, substantially as described, for withdrawing said block from between the jaws after the staple is formed, substantially as described.

2. In a machine for stitching books with wire staples, the combination of the hand-lever G, shaft *b*, fixed arm D, having casing *d d'* at the outer end, crank-arm F, fulcrumed lever E, and slide-piece *e*, having push-piece *e'*, with means for cutting off and shaping the wire staple, and means whereby the staple ends are bent and closed after the same have been forced through the paper, substantially as set forth.

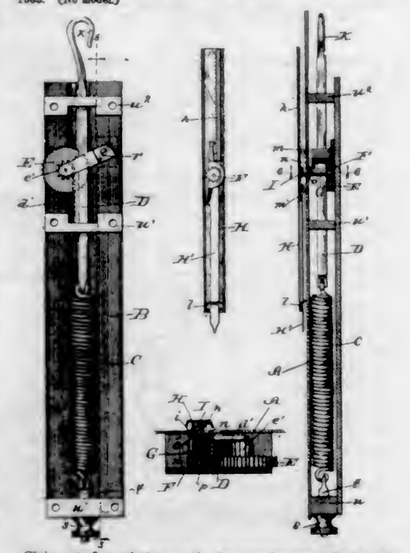
3. In a machine of the class described, the combination of casing *d*, vertical slide-piece *e*, push-piece *e'*, slotted bracket *g*, lever *h*, cutting and shaping pieces *k k*, plate *i*, pins *n n*, and shaping-block *m*, the latter two being applied to a strong band-spring, *l*, so as to release the bent staple for being forced into the paper, substantially as set forth.

4. The combination, with the main shaft, of an intermittent feeding mechanism consisting of a slotted crank-arm on said shaft, an oscillating lever, a slotted link connecting said crank-arm and lever, means, substantially as described, for adjusting said slotted link on the crank-arm and lever for regulating the feed, a spring-pawl at the lower end of said lever for grasping the wire to feed it forward, a guide for the wire, and a spring-pawl for holding the wire during the backward movement of the lever, substantially as described.

5. The combination, in a staple-forming mechanism for book-stapling machines, of a frame, a spring attached thereto provided with a shaping-block and projecting pins, pivoted shaping-jaws adapted to bend the wire over said block, and curved faces movable with said jaws, adapted for contact with said pins for pushing back said spring to withdraw the block from between said jaws when a staple is formed, substantially as described.

6. The combination of a bed, a staple-clinching mechanism, substantially as described, a lever, E, a staple-driver, as *e*, pivoted to said lever, a pivoted arm, D, adjustable with reference to the bed to suit the thickness of the book, a frame, *d*, axially adjustable on said arm, and provided with ways in which the driver slides, and suitable actuating mechanism, substantially as described, said pivoted arm being provided with a graduated scale, and said adjustable frame being provided with a pointer, whereby the proper adjustment is indicated for the given thickness of a book to be stitched, substantially as described.

298,118. SCALE. EDWIN R. PUFFER, Riverside, Ill. Filed July 5, 1883. (No model.)



Claim.—1. In a platform-scale, the combination, with the scale-beam thereof, of a helical spring having its resistance regulated to measure the weights of the said platform-scale, a dial-plate having a graduated scale of numbers arranged on a spiral upon its face, an index-finger vibrating on the dial-plate and made in two parts, one of said parts sliding longitudinally upon the other, and mechanism actuated by the helical spring to cause the index-finger to lengthen and shorten, whereby in its vibrations it is caused to follow the line of the spiral, substantially as described.

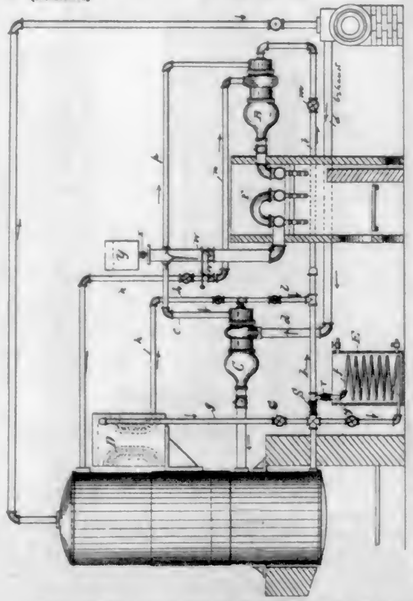
2. In a device for measuring force or resistance, an indicator comprising, in combination, a dial-plate provided on its face with a spiral line having numbers at intervals, an index-finger pivoted at the center of the disk and made in two parts, one of said parts sliding longitudinally upon the other, mechanism for vibrating the said finger upon the dial-plate as the force or resistance increases or diminishes, and mechanism for lengthening the said index-finger when moving forward and shortening it when moving backward, whereby it indicates numbers on the several parallels of the spiral line, substantially as described.

3. In a scale, the combination, with the helical spring for counterbalancing the object to be weighed, of a dial-plate provided with a spiral having numbers marked thereon, an index-finger made in two parts, one part sliding upon the other, mechanism operated by the action of the spring, for turning the said index-finger, and mechanism for lengthening the said finger when moving forward and shortening it when moving backward, substantially as described.

4. In a scale, the extensible index-finger H, caused to vibrate over the dial-plate A, having a graduated scale of numbers marked on a spiral formed on its face, said finger comprising a strip of material secured to the mechanism which causes it to vibrate, an auxiliary index-finger, H', secured to the said finger H and pointed at one end and made narrower toward its other end, where it is provided with teeth to form a rack, and the pinion I, rigidly secured to prevent its revolving, and having its circumference equal to the distance between the spaces in the spiral and kept in mesh with the teeth of the said rack, whereby as the index-finger is caused to revolve the auxiliary index-finger H' will have a longitudinal reciprocating motion, substantially as described.

5. In a scale, the combination of the following elements, to wit: a helical spring, C, rod *t*, to which the end of the said spring is secured, nut *s*, screwed upon the end of the rod *t* and abutting against the transverse bar *n* on the plate B, said bar having a guide for the said rod *t*, whereby the tension of the spring is regulated, rod D, to which the other end of the helical spring is secured, and which passes through guides formed in suitable transverse bars on the plate B, said rod D having a hook, K, and a rack, *d'*, to mesh with suitable gear, which operates when the said rod acts against or with the resistance of the helical spring, extensible finger H H', connected by means of upward-projecting arms with the gear mechanism, and dial-plate A, having a graduated scale of numbers marked on a spiral formed upon its face, all substantially as described.

298,119. UTILIZING THE EXHAUST OF ENGINES. DAVID RENSHAW, Braintree, Mass. Filed Feb. 21, 1883. Renewed Oct. 10, 1883. (No model.)



Claim.—1. The process herein described of utilizing the exhaust of engines by first injecting live steam with a small quantity of water into a superheater by means of the steam previously superheated in said superheater, thereby producing and maintaining a high pressure in the superheater, then injecting a portion of the boiler-water with the exhaust of the engine into the boiler by means of a subsidiary injector working under a superior pressure, as set forth.

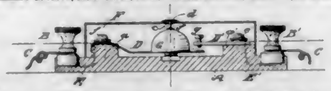
2. The combination of means for utilizing the exhaust of engines, consisting of the boiler, the superheater, the primary injector and the subsidiary injector, and the water-tank, with their intermediate connection, as described.

298,120. BELT-FASTENER. JAMES A. ROBERTS, Detroit, Mich., assignor of one-half to Wm. M. Dwight, same place. Filed Mar. 12, 1884. (No model.)



Claim.—A belt-fastener consisting of a bar, B, provided with an enlarged head, *a*, at one end, and a T-head, *c*, upon the opposite end, in combination with the washer C, when constructed, arranged, and operating substantially in the manner and for the purposes described.

298,121. AUTOMATIC ELECTRIC-CIRCUIT-CLOSING DEVICE. CHARLES T. ROSS, New York, N. Y. Filed Nov. 19, 1883. (No model.)



Claim.—1. The automatic circuit-closing device herein shown and described, consisting of two suitable contact-pieces placed in the circuit and held normally apart by a cap arranged to be released by heat, the contacts being arranged for closing the circuit when the cap is so released, as set forth.

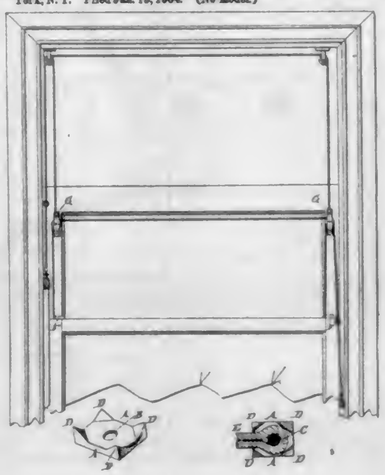
2. The combination, with the contact-pieces D D', of the cover F, having opening *e* and cap *d*, for holding the contacts apart, as and for the purposes set forth.

3. The combination, with the contact D, made of spring metal and provided with post *f*, of the contact D', cover F, and removable cap *d*, arranged to operate substantially as and for the purposes set forth.

4. The contact D, provided with the weight G and post *f*, in combination with contact D' and cover F, having removable cap *d*, substantially as and for the purposes set forth.

5. The circuit-closing device herein shown and described, consisting of the base A, of insulating material, binding-posts B B', contact-pieces D D', connected with the posts, respectively, cover F, and cap *d*, the contact D being made of spring metal, and the cap *d* adapted to be released at a low temperature, substantially as and for the purposes set forth.

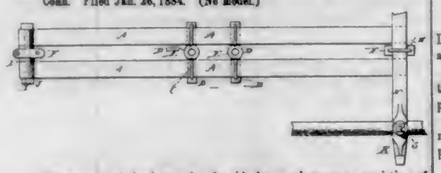
298,122. SASH-CORD FASTENER. S. HOWLAND RUSSELL, New York, N. Y. Filed Jan. 15, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a cord-fastener consisting of the plate A, perforated to receive the fastening-screw, and provided with two or more points, D, having inclined inner sides, as set forth.

2. The combination, with the perforated plate A, having two or more points, D, with inclined inner sides, of the fastening-screw C and the cord E, substantially as herein shown and described, whereby the said cord will be compressed between the said points and around the said screw, as set forth.

298,123. SIDE-BAR VEHICLE. CYRUS W. SALADEE, Torrington, Conn. Filed Jan. 26, 1884. (No model.)



Claim.—1. A duplex spring for side-bar road-wagons, consisting of two flexion members arranged parallel to each other in pairs under each end of the body, and having their outer ends connected to a single bearing suspended from the side bars on opposite sides, substantially as set forth.

2. A duplex spring for side-bar road-wagons, consisting of two flexion members arranged parallel to each other in pairs under each end of the body, their outer ends connected to a double pivotal bearing suspended from the side bars by a single clip, in combination with a single upper member, L, having its center position rigidly secured to the lower members, A A, midway between their ends, by cross-bars B B, clips C C, a shouldered bolt-pin, E, and nut E', and adapted to support the body at the sides, substantially as set forth.

3. A duplex spring-support for vehicles, consisting of two flexion members arranged in pairs parallel to each other, their center portions, A', between the bearings B B, made straight, or nearly so, and connected to the member L by clips C C, shouldered pin-bolt E, and nut E', thence bent downwardly from said bearings, and their outer ends carved upwardly to connect with the frame of the running-gear at opposite sides by a double pivotal and single clip connection, substantially as set forth.

4. A duplex spring-support for vehicles, consisting of two flexion members arranged in pairs parallel to each other, and having their center portions connected together by cross-bars B B and clips or bolts E, base D, and upper member, L, all combined and arranged to operate substantially as set forth.

5. In a side-bar road-wagon, the combination, with the side bars and the bolster, of the standard P, provided with the pin S and shoulder S', the pin passing up through the side bar and secured in place by nut R, and terminating at its lower end in the clip T, which incloses and is secured to the bolster, substantially as specified

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298,124. BLOTTING-PAD. EDWIN A. SCRIBNER, Ridgefield Park, N. J. Filed Dec. 29, 1883. (No model.)

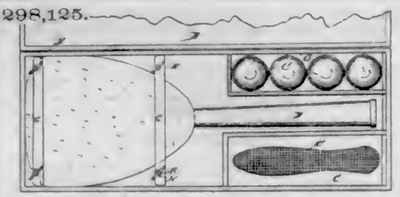


Claim.—1. The combination, with two wooden blocks or pieces, and means for clamping or binding the same together, of sheets of bibulous paper laid on and folded partly around one of said blocks, and plates or strips of metal laid on the paper sheets between the blocks, substantially as set forth.

2. The combination, with two blocks or pieces of wood, and means for clamping or binding the same together, of one or more sheets of bibulous paper laid on and folded upon one of said blocks, and plates or strips of metal bent longitudinally at right angles and laid on the edges of the paper sheets between the blocks, as set forth.

3. The combination, with the blocks A and C, screw B, and knob D, of the sheets of bibulous paper E, and metal strips F, bent at right angles and laid on the edges of the sheets between the blocks, as herein set forth.

298,125. CASE FOR LAWN-TENNIS IMPLEMENTS. GEORGE E. SHEPARD, Jersey City, N. J., assignor to Hall, Nicoll & Granberry, New York, N. Y. Filed Feb. 7, 1884. (No model.)



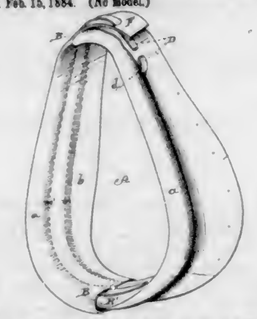
Claim.—1. The combination of the case A, the rods E, the boards I, F', and F, the metal pieces G, and the thumb-screws H, substantially as and for the purposes set forth.

2. The combination of the case A, the rods E, the boards F' and F, the metal pieces G, and the thumb-screws H, substantially as and for the purposes set forth.

3. The combination of the case A, the rods E, the board F, the metal pieces G, and the thumb-screws H, substantially as and for the purposes set forth.

4. The combination of the case A, the rods E, the metal pieces G, and the thumb-screws H, substantially as and for the purposes set forth.

298,126. HORSE-COLLAR. CHARLES STAUFENBIEL, San Luis Obispo, Cal. Filed Feb. 15, 1884. (No model.)



Claim.—1. The two-part horse-collar A, joining at the throat and neck, the ends being unstuffed and flexible, an end of each fitting within a socket formed in the opposing end of the other, in combination with the straps D, secured to the entering end of each, passing through the opposing sockets and emerging therefrom at their bases, and a means for securing the free ends of said straps, substantially as and for the purpose herein described.

2. The two-part horse-collar A, joining at the throat and neck, the ends being unstuffed and flexible, an end of each fitting within a socket formed in the opposing end of the other, in combination with the straps D, secured to the entering end of each, passing through the opposing sockets and emerging therefrom at their bases, and the loose flaps F on the end of each part, provided with loop-holes *f*, through which the free ends of the straps fit and are secured, substantially as herein described.

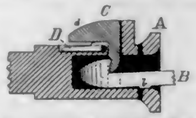
3. The two-part horse-collar A, joining at the throat and neck, each part having a point, B', at one end, and a socket, B, at the other, in relation to each other as described, said socket being formed of the ends of the leather covering the rim and that covering the back of the belly, in combination with the straps D and the overlapping flaps F, provided with loop-holes *f*, said flaps being made of the loose ends of the leather covering the front of the belly, substantially as herein described.

4. The two-part horse-collar A, joining at the throat and neck, each part having a point, B', at one end, and a socket, B, at the other, in combination with means for adjusting the diameter of the socket to regulate the entrance of the point, and a means for holding said point closely in the socket, substantially as herein described.

5. The two-part horse-collar A, joining at the throat and neck, each part having a point, B', at one end, and a socket, B, at the other, made of the ends of the leather covering the rim and that covering the back of the belly, in combination with the wire hook G, for contracting or expanding the socket, and the straps D, for drawing the points tightly into said sockets, substantially as herein described.

6. The two-part horse-collar A, joining at the throat and neck, each part having a point, B', at one end, and socket B at the other, a point of each being adapted to fit within a socket of the other, as described, in combination with a lining, H, containing the stuffing, and having its ends sewed down near the ends of the parts forming the collar, whereby the stuffing is confined, substantially as herein described.

298,127. CAR-COUPLING. LORENZO STEBBINS, Hinsdale, N. H., and GEORGE P. STEBBINS, Vernon, Vt. Filed Mar. 15, 1884. (No model.)

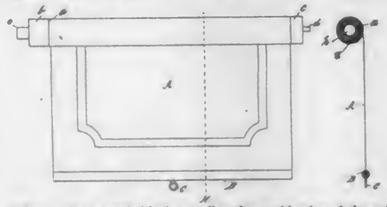


Claim.—1. The catch-bar B, provided with the projecting ribs *b*, as described, in combination with the head A, having a weight-piece, C, resting on the inner end of bar B and raising its outer end, substantially as and for the purposes above set forth and described.

2. In a car-coupler, the head A, the bar B, having a rib, *b*, as described, and the weight-piece C, provided with an arm, *d*, in combination with the rod E, provided with an arm, D, all constructed and operating substantially as and for the purposes set forth.

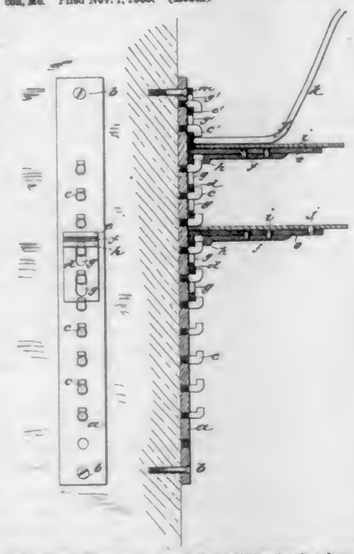
3. The coupling described, consisting of the head A, provided with grooves for the piece C, the bar B, having rib *b*, the piece C, and rod E, provided with arms connecting rod F and rods G and H on the car I, all constructed and operating substantially as described.

298,128. SHADE-FIXTURE. GEO. W. STERLE, Paterson, N. J. Filed Sept. 11, 1883. (No model.)



Claim.—In a curtain shade or roller, the combination of the rod *e* and pawl *h*, the pawl pivoted to the rod so as to keep the lower inner end of said pawl in constant engagement with the lugs *k k'* when said pawl is not occupying the notches *k'*, the upper inner end of the pawl arranged to impinge against the plate *b*, with the lock-plate *b'*, plug *p*, spring *m*, roller *a*, and pin *d*, substantially as set forth.

298,129. ADJUSTABLE SHELVING. HENRY FRANCIS STOCKING, Macon, Mo. Filed Nov. 1, 1883. (Model.)



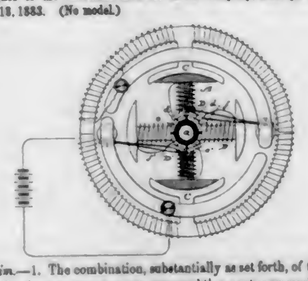
Claim.—1. The combination of the angle bracket-bar *d e*, provided with slots *g*, and a re-enforcing cleat, *f*, having a head, A, with the wall-bar *a* and hooks *c*, substantially as and for the purpose set forth.

2. In an adjustable bracket, the angular bracket *d e*, provided with apertures and connected to the wall-bar by stud-hooks *c*, in combination with a shelf, *i*, fitting closely between the said bracket and the next hook above the bracket, whereby the bracket is securely held in place on the wall-bar, substantially as set forth.

3. The combination of angular bracket *d e*, slotted at *g g*, brace *f*, provided with a head, A, and shelf *i*, with wall-bar *a*, provided with hooks *c*, said shelf fitting closely between the bracket and the next stud above said bracket, whereby the shelf serves as a lock to securely hold the bracket in place, substantially as shown and described.

4. The pole-crane consisting of bent rod *k*, having ring *l*, and slotted connecting-bar *m*, in combination with the inverted hooks *c'*, bracket *d e*, shelf *i*, and the wall-bar *a*, substantially as described.

298,130. ELECTRIC MOTOR. LEVI W. STOCKWELL, Cleveland, Ohio, assignor to the Cleveland Electric Motor Company, same place. Filed Dec. 19, 1883. (No model.)

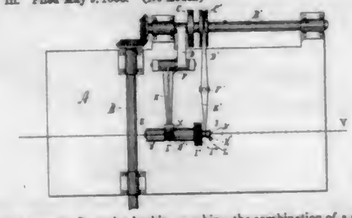


Claim.—1. The combination, substantially as set forth, of the armature-spindle, the armature-magnets arranged thereon transversely to each other, an independent coil on each half of each armature, the terminals of which coil are connected with adjoining commutator-plates, as shown, the commutator-ring, and brushes arranged to give an extended or double contact on each side of the ring, for the purpose set forth.

2. The combination, substantially as set forth, of the field-magnet poles having a uniform polarity on each side of the armature-spindle, the armature-spindle, the armature-magnets arranged thereon transversely to each other and in different vertical planes, the commutator-plates, the brushes arranged to give an extended or double contact on each side of the ring, and an independent coil on each half of the armature, the terminals of which coil are connected to adjoining commutator-plates, as set forth.

3. The combination, substantially as set forth, of the field-magnet poles, the armature, the commutator-ring, and the commutator-brushes arranged in pairs—one pair on each side of the ring—the brushes in each pair being arranged one above the other, as described.

298,131. WIRE-BARBING MACHINE. DANIEL C. STOVER, Freeport, Ill. Filed May 9, 1883. (No model.)

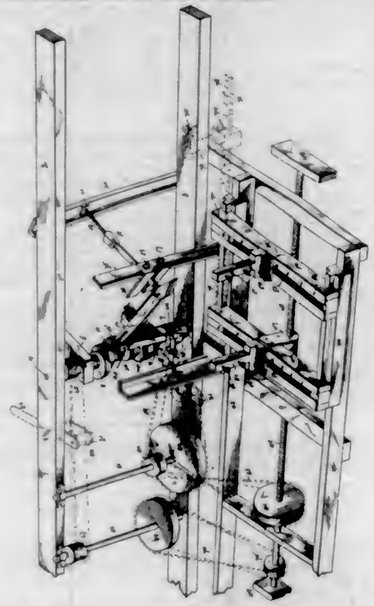


Claim.—1. In a wire-barbing machine, the combination of a spindle perforated longitudinally for the passage of the main wires, a sleeve rotating freely on said spindle, and a barb-wrapping hook attached to and rotating in unison with said sleeve, but having longitudinal motion independent thereof, whereby it is adapted to wrap one of the ends of a barb in a coil arranged next to the face of the sleeve and spindle, and the other end in a second coil continuous with the first, but arranged farther from said face.

2. In a wire-barbing machine, the combination of a spindle longitudinally perforated for the passage of the main wires, a sleeve rotating freely on said spindle, a collar encircling said sleeve and rotating therewith, but having longitudinal motion independent thereof, a barb-wrapping hook rigidly attached to said collar, and adapted to wrap one end of a barb in a coil arranged next to the face of the spindle, and the other end in a second coil continuous with the first, but arranged farther from the face of the spindle, and means for imparting reciprocal longitudinal motion to said collar.

3. The combination of the longitudinally-perforated spindle Q, the sleeve O, rotating thereon, the collar N, keyed to said sleeve and rotating therewith, but free to move longitudinally thereon, the hook K, rigidly attached to said collar, the forked lever E', engaging with the annular groove L in the collar N, and means for imparting reciprocal motion to said lever, whereby reciprocal longitudinal motion is imparted to said collar, substantially as shown and described, and for the purpose set forth.

298,182. STONE-DRESSING MACHINE. NELSON J. SWAYZE, Cottonwood Falls, Kans. Filed Feb. 14, 1884. (No model.)



Claim.—1. In a stone-dressing machine, a main operating-shaft provided with a series of eccentrics having arms 12, and pitmen 17, having one end pivoted to the cutter-arms, and the other end pivoted to the frame of the machine, substantially as and for the purpose set forth.

2. In a stone-dressing machine, a main operating-shaft provided with a series of eccentrics having cutting-arms 12, and pitmen 17, pivoted to the cutting-arms, and having adjustable screws 19, secured to a fixed part of the frame, as and for the purposes set forth.

3. The combination, with the shaft 4, eccentric 10, and cutter-arm 12, of the pitman 17, one end connected to the cutter-arms and the other to the frame, and having guards 36 on each side thereof, as and for the purpose set forth.

4. The combination, with the shaft 4, having eccentric 10, provided with a cutter-arm, 12, having removable bits 14, secured to the lower ends thereof, of the pitman 17, having one end pivoted to said arm, and the other to the girder 20, and provided with spring 38, as and for the purpose set forth.

5. The combination, with the shaft 4, and eccentric 10, and cutter-arm 12, having removable bits 14 secured thereto, of the pitman 17, one end of which is secured to said arm, and the other end to the adjusting-screw 19, mounted in the girder 20, and having the spring 38, removably secured to the lower end of said pitman, as and for the purposes set forth.

6. The combination, with the main shaft 4, having pulleys 58 65, and eccentric 10, rigidly secured thereto, of the cutter-arm 12, secured to said eccentric, and provided with pitman 17, its lower end connected to said arm, and its upper end to the adjusting-screw 19, secured to the frame.

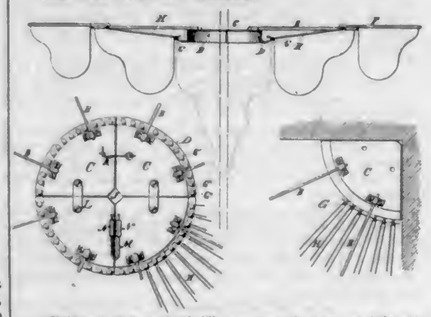
298,133. LABELED WIRE-CLOTH. CHARLES SWINCOE, Cambridge, Mass. Filed Aug. 30, 1883. (No model.)

Claim.—The combination, with a roll of wire-cloth, of a label composed of flexible material inclosed between two layers of the roll and arranged in such position that it can be read through the meshes of the fabric, substantially as described.

298,133.



298,134. HOLDER FOR ORNAMENTAL AND FLY PAPER. VURLIN G. TANSEY, Louisville, Nebr., assignor to himself and TRUMAN HALL, same place. Filed Feb. 19, 1884. (No model.)



Claim.—1. A frame for holding ornamental paper, consisting of a wire frame adapted to be held on the ceiling and adapted to hold ornamental or fly paper, substantially as herein shown and described.

2. The combination, with a frame for holding ornamental and fly paper, of swinging frames adapted to be projected over the edges of the frame to which they are hinged, which swinging frames are also adapted to hold fly-paper or ornamental paper, substantially as herein shown and described.

3. In a frame for holding ornamental and fly paper, the combination, with a curved wire or rod, A, of a plate, C, the rods B, uniting the wire or rod A and the plate C, and of swinging frames F, pivoted on laterally-projecting arms E of the rods B, substantially as herein shown and described.

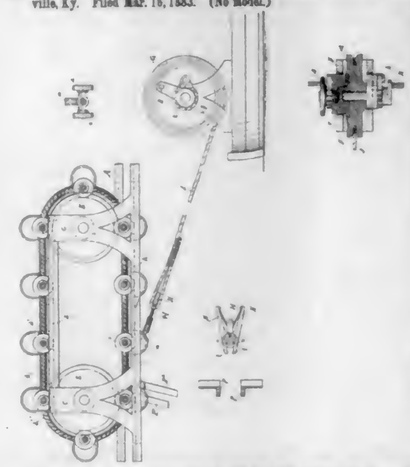
4. In a frame for holding ornamental and fly paper, the combination, with a curved rod or wire, A, of the plate C, connected with the wire A by the rods B, and the cords H, extending from the edge of the plate C to the wire A, substantially as herein shown and described.

5. In a frame for holding ornamental and fly paper, the combination, with the curved rod or wire A, of the plate C, connected with the rod or wire A by the rods B, hooks, or other projections G, on the flange of the plate C, and the cords H, extending from the said hooks or projections to the curved wire or rod A, substantially as herein shown and described.

6. A frame for holding ornamental and fly paper, consisting of four quadrant-sections, each formed of a quadrant-wire held by arms on a quadrant-plate, the quadrant-plates being united with each other by means of clips, hooks, or other suitable devices, substantially as herein shown and described.

7. In a frame for holding ornamental and fly paper, the combination, with the four quadrant-plates united with each other, of four quadrant wires or rods connected by radial arms with the quadrant-plates, and of swinging frames held on the radial arms and adapted to be projected beyond the quadrant-wires, substantially as herein shown and described.

298,135. PROPELLING CANAL-BOATS. GEORGE R. TAYLOR, Louisville, Ky. Filed Mar. 16, 1883. (No model.)



Claim.—1. In an apparatus for towing canal-boats, the track A, provided with standard C, supporting cable-wheels E, in combination with an endless traveling cable provided with hitching-bars *a*, attached thereto, and having anti-friction wheels *c*, as and for the purposes described.

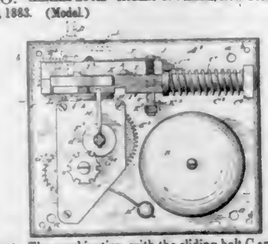
2. In an apparatus for towing canal-boats, the tracks A B, in combination with the standards C, carrying cable-wheels E E, and the endless driving-cable provided with metallic hitching-bars *a*, as and for the purposes specified.

3. In an apparatus for towing canal-boats, the lower track, A, provided with a free opening between its parallel rails, and having formed therewith downwardly-extending lugs or projections P P, adapted to receive the hitching and detaching device between them, as and for the purposes specified.

4. In an apparatus for propelling or towing canal-boats, the endless traveling cable provided with the hitching-bars, substantially as described, in combination with the pivoted hitching-levers N N, attached by means of the metallic bar *a* to the towing-cable *f*, and provided at the forward end with hooks *t t*, for engagement with the hitching-bars, substantially as described.

5. As a means for towing canal-boats, in combination with the hitching devices and towing-cable, substantially as described, the capstan-wheel G, provided with its flanged friction-disk *g*, hand-wheel, and clamp-screw *s*, for operation upon said disk, and the ratchet-wheel and pawl *k*, located upon the main shaft of the capstan, as and for the purposes specified.

298,136. ALARM-LOCK. ROBERT G. VARBAR, New York, N. Y. Filed May 18, 1883. (Model.)



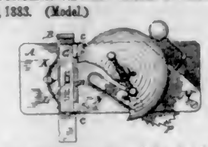
Claim.—1. The combination, with the sliding bolt C and its retracting-spring, of the automatic sliding catch for holding the bolt, and the rounded head or button E, for the catch, projecting through the casing and nearly flush with the outer surface of the casing, as and for the purpose described.

2. The combination, with the bolt and its retractor, of a detached operating-slide or thumb-piece arranged to engage with the bolt to throw it against the stress of its retractor, but not capable of catching upon it in the opposite direction, and an automatic catch for engaging with and holding the bolt against its spring, as and for the purpose described.

3. The combination of bolt C, spring C^3, sliding catch E^3, spring J, and rounded button E, having stem or spindle E^2, engaging with slide E^3, and means for projecting said bolt through the casing.

4. The combination of a horizontally and laterally movable bolt, C, springs C^3 K, detached operating thumb-piece, and stud D D^2, so arranged that it may be brought against the bolt for throwing it to lock the door, the automatic catch, and a detent for an alarm mechanism placed in the path of the bolt when moved laterally, as and for the purpose described.

298,137. BURGLAR-ALARM. ROBERT G. VARBAR, New York, N. Y. Filed Aug. 23, 1883. (Model.)



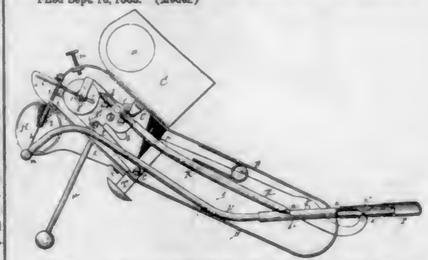
Claim.—1. The combination of the sliding bar B, the transversely-movable plate G, the detent-pin E, and the perforated wheel G^2 of an alarm-movement.

2. The combination of the catch-bar B, having two fulcrums upon the plate A, pin L, plate or support G, for the alarm-detent, and wheel G^2, controlled by said detent, as set forth.

3. The combination of the plate A, spring K, notched sliding bar B, adapted to work freely in a transverse direction on a pin, L, and an alarm controlled by a connection with the bar B at a portion thereof which moves upon pin L when the projecting end of the bar rises or falls above or below its normal plane.

4. The combination of the sliding bar working freely in a plane at right angles to its sliding movement, so that it may rock on either of two pivotal points on the same side of the bar, and an alarm controlled by connection with the bar at a portion thereof which moves in the same direction irrespective of the direction in which its projecting end moves when the bar rocks.

298,138. PAINT-DISTRIBUTER. LIBERTY WALKUP, Rockford, Ill. Filed Sept. 10, 1883. (Model.)



Claim.—1. In a paint-distributer, the herein-described case, consisting of a hand portion provided with a hinged or removable cover, and a forward end portion oblique to the hand portion, having a rearward inclination lengthwise and an upward lateral inclination from its front edge rearward, said inclined portion provided with a removable or hinged lid, substantially as and for the purpose set forth.

2. In a paint-distributer, the combination, with the case for containing the operative parts, of a support for said parts, mounted in the case in such manner as to permit an endwise movement thereof, substantially as and for the purpose set forth.

3. In a paint-distributer, the combination, with a wind-wheel support capable of an endwise movement relatively with its support, of a wind-wheel mounted upon the movable support and capable of revolving on pivotal bearings, substantially as and for the purpose set forth.

4. In a paint distributer, the combination, with a wind-wheel support capable of an endwise movement, and a wind-wheel mounted to revolve in bearing-supports thereon, of a walking-beam mounted to oscillate in bearing-supports on the wind-wheel support, and having a wrist-connection with the wind-wheel, substantially as and for the purpose set forth.

5. In a paint-distributer, the combination, with a walking-beam capable of an endwise movement, of a needle having a wrist-connection with the walking-beam, and capable of a reciprocating movement in the direction of its length of varying throws, substantially as and for the purpose set forth.

6. In a paint-distributer, the combination, with the case containing the operative parts, and with a walking-beam to impart motion to the needle, of a guard-plate to protect the projecting arm of the walking-beam, substantially as set forth.

7. In a paint-distributer, the combination, with a needle having a wrist-connection with the walking-beam, of a slotted guide to receive the depending wrist of the needle, substantially as and for the purpose set forth.

8. In a paint-distributer, the combination, with a needle supported to reciprocate in a pigment-receptacle, and having a wrist-connection with a walking-beam and with a guide-slot, of a guide-finger to engage the needle, said finger having a pivotal support to permit of a swinging movement in the vertical plane of the needle, substantially as and for the purpose set forth.

9. In a paint-distributer, the pigment-receptacle having a pivotal connection with the case, and a lip projecting from the inner edge of the receptacle to engage a corresponding indentation in the case, for holding the pigment-receptacle at a fixed point, substantially as and for the purpose set forth.

10. In a paint-distributer, the combination, with a wind-wheel and with its movable support, of an air-tube mounted upon the wind-wheel support, substantially as and for the purpose set forth.

11. In a paint-distributer, the combination, with the main air-tube and with the branch tube mounted upon the adjustable wind-wheel support, of a flexible tube to connect the branch with the main air-tube, substantially as and for the purpose set forth.

12. In a paint-distributer, the combination, with the spring-actuated valve-lever, of a thumb-lever having a pivotal connection with the free end of the valve-lever, substantially as and for the purpose set forth.

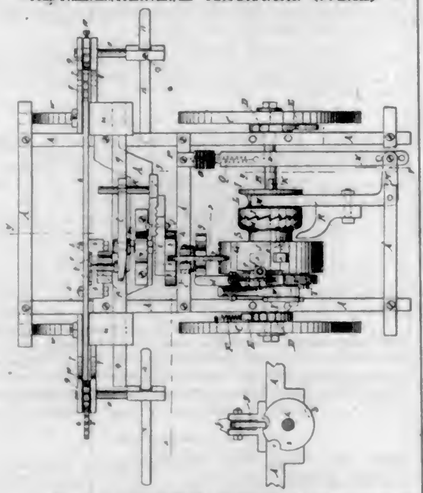
13. In a paint-distributer, the combination, with the wind-wheel support and with the adjustable thumb-lever, of a connecting-link having a pivotal connection with the wheel-support and with the thumb-lever, substantially as and for the purpose set forth.

14. In a paint-distributer, the combination, with the check-valve in the air-tube, mounted upon the wind-wheel support, and with a perforated arm having an adjustable support, of a lever fixed to the check-valve, and having its free end engage the perforated arm, substantially as and for the purpose set forth.

15. In a paint-distributer, the combination, with a reciprocating needle, a walking-beam, and a wind-wheel, of a thumb-lever and a link-connection with the thumb-lever and with the wind-wheel and walking-beam support, substantially as and for the purpose set forth.

16. In a paint-distributer, the herein-described combination of a wind-wheel mounted on a movable support, a valve to control the flow of air through the main supply-tube, a thumb-lever, and a link connecting the valve-lever and movable support of the wheel, substantially as and for the purpose set forth.

298,139. CHECK-ROW CORN-PLANTER. VALENTINE WEBER and JOHN FRIEDMAN, Princeville, Ill. Filed Dec. 3, 1883. (No model.)



Claim.—1. In a corn-planter, the combination, with the wheels and axle C B and the seed-dropping slide *q*, of the trip-wheel G, having arms and rollers *e f*, the vibrating double cam *g*, shaft A, arm *i*, having crank-pin *k*, the slotted lever *l*, pivoted to the standard *n*, and having crank-pin *o*, and the slotted standard *p*, substantially as herein shown and described, whereby the said seed-dropping slide will be operated from the said wheels and axle, as set forth.

2. In a corn-planter, the combination of the seed-dropping slide, the trip-wheel G, having projections *x*, and the arms and rollers *e f*, the vibrating double cam *g*, shaft *h*, having arm *i*, provided with crank-pin *k*, the slotted lever *l*, having crank-pin *o*, slotted standard *p*, the spring-pawl *y*, and the recessed wheel 2, substantially as and for the purpose set forth.

3. In a corn-planter, the combination, with the trip-wheel G and the shaft A, carrying the vibrating cam *g* and the arm *i*, of the projections *x*, the locking-pawl *y*, the spring *z*, and the wheel 2, having recesses 1, substantially as herein shown and described, whereby the seed-dropping slide will be locked until released by the action of the trip-wheel, as set forth.

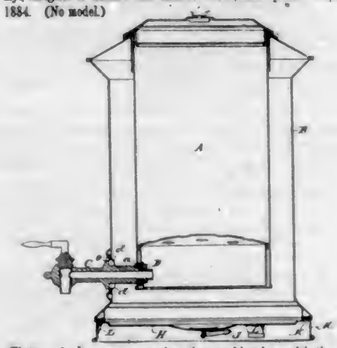
4. In a corn-planter, the combination, with the axle B and the trip-wheel G, of the fixed clutch-wheel H, the sliding clutch-wheel I, the forked elbow-lever M, the connecting-bar N, the foot-lever O, and the spring Q, substantially as herein shown and described, whereby the said trip-wheel can be readily thrown out of and into gear with the said axle, as set forth.

5. In a corn-planter, the combination, with the trip-wheel G, the fixed clutch-wheel H, having groove S and the forked clutch-lever M, of the brake-arm R, substantially as herein shown and described, whereby the outward movement of the said lever will stop the movement of the said trip-wheel, as set forth.

6. In a corn-planter, the combination, with the seed-dropping slide *q* and the grooved guides 7, of the cross-bar 6, the gear-wheels 9, the adjustable shafts 11, and the adjustable bars 12, substantially as herein shown and described.

7. In a corn-planter, the combination of the dropping-slide having the slotted standard *p*, the clamp 3, with its bolts *t* and 5, rack-bar 6, shafts 11, having pinions 9 and markers 12, the trip-wheel G, having arms and rollers *e f*, shaft *h*, carrying the vibrating double cam *g*, and arm *i*, having the crank-pin *k*, and slotted lever *l*, pivoted upon the standard *n*, and having a crank-pin, *o*, entering the slotted standard *p*, substantially as and for the purpose set forth.

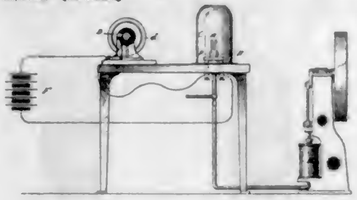
298,140. WATER-COOLER. JOHN EDWARD WELLING, Georgetown, Ky., assignor to himself and Justice Webb, same place. Filed Mar. 5, 1884. (No model.)



Claim.—1. In a water-cooler, the combination, with the casing B and the water-tank A, of the faucet C, having its inner end screw-threaded and extended into the water-tank, and provided with the shoulder *a*, resting against the outer surface of the tank, and the shoulder *b*, resting against the outer surface of the casing, and the nut D on the inner screw-threaded end of the faucet, substantially as herein shown and described.

2. In a water-cooler, the combination, with the shell or casing B and the water-tank A, of the faucet C, having the shoulders *a b*, and having lugs *d* on the shoulder *b*, which lugs fit in notches *g* in the edges of the aperture in the casing A, substantially as herein shown and described.

298,141. METHOD OF TESTING CARBON CONDUCTORS FOR INCANDESCENT LAMPS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Sept. 15, 1883. (No model.)



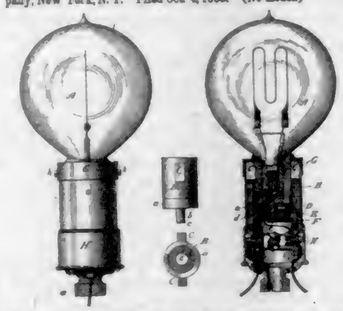
Claim.—1. The method of testing the carbon conductors for incandescent lamps by passing through them an intermittent or undulatory current, and heating or raising to incandescence their defective portions, as herein set forth.

2. The method of testing carbon conductors for incandescent lamps, which consists in mounting the conductors in an exhaust-receiver, and passing through them an intermittent current of a nature to redden or raise to incandescence their defective portions only, as herein described.

3. In a carbon-testing apparatus, the combination of a receiver, means for exhausting the same of air, one or more holders for the carbons forming terminals of an electric circuit, and a device included in the circuit and adapted to close momentarily and at intervals the circuit, as and for the purpose specified

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298,142. HOLDER FOR INCANDESCENT LAMPS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 4, 1883. (No model.)



Claim.—1. The combination, with an incandescent lamp and terminal plates secured to the same, of a holder or socket, means for locking or retaining the lamp therein, and spring-contacts in position to bear upon the terminals of the lamp, and arranged to exert a force tending to raise the lamp from the socket or holder, as set forth.

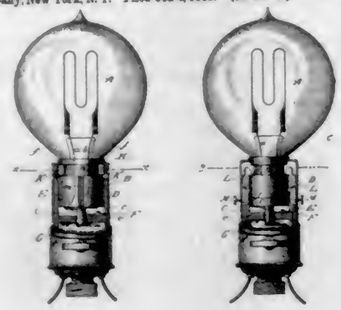
2. The combination, with an incandescent lamp and terminal plates secured to the same, of a holder or socket, spring-contacts therein, forming a seat for the lamp, and means, substantially as described, for locking or retaining the lamp in position against the springs and permitting it to be turned, as and for the purpose specified.

3. The combination, with an incandescent lamp having lugs or ears on the sides of its neck, of a socket or holder having a flanged rim with notches cut therein for admitting and retaining the neck of the lamp, and springs for forcing the lugs or ears against the flange when the lamp is in the holder, as set forth.

4. The combination, with an incandescent lamp having lugs or ears on the sides of its neck, of a socket or holder having a flanged rim with notches cut therein, and a perforated cap or cover with notches corresponding to those in the holder, these parts being constructed for use and operation in substantially the manner set forth.

5. The combination, with the lamp A and base B, having ears or lugs C, and contact-plates *a c*, of a holder or socket, D, having a flanged and notched rim *g*, and the spring-terminals E F, secured within said holder in a manner to bear upon the plates *a b* on the lamp when the latter is in position, as and for the purpose specified.

298,143. SOCKET FOR INCANDESCENT LAMPS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 4, 1883. (No model.)

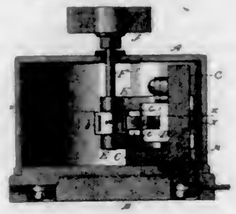


Claim.—1. The combination, with an incandescent lamp and a cylindrical base containing a groove or grooves, as described, of a socket or holder having projections or their equivalents therein for entering the grooves in the lamp-base and retaining the same in position, as set forth.

2. The combination, with an incandescent lamp and a cylindrical base containing a groove or grooves, of a socket or holder, projections therein, or their equivalents, for entering the grooves in the lamp-base, and spring contact-plates forming a seat for the lamp, as herein set forth.

3. The combination, with an incandescent lamp, A, and base B, containing grooves *m m*, of a socket or holder, projections K, and spring-contacts F G, all as described.

298,144. ELECTRICAL CIRCUIT-BREAKER. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 10, 1883. (No model.)



Claim.—1. The combination, in a switch or circuit-breaker, of springs or plates, a spring-lever for completing the circuit by contact with said plates, and a spindle or key with lugs or equivalents for imparting movement to the lever, these parts being constructed and arranged in substantially the manner set forth.

2. The combination, in a switch or circuit-breaker, of terminal springs or plates, a pivoted spring-lever having a raised portion with inclined sides, and arranged to close the circuit by contact with the springs or plates, and a spindle having lugs or their equivalents for imparting movement to the lever, these parts being constructed and arranged in substantially the manner set forth.

3. The combination, in a switch or circuit-breaker, of terminal springs or plates, a pivoted spring-lever formed with a raised and recessed portion, and carrying a pin for making contact between the terminal springs, a spindle journaled above the lever, and a plate secured thereto and adapted to impart movement to the lever by engaging with the raised portion thereof, all as set forth.

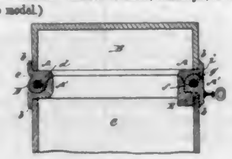
4. The combination of the springs H H, the pivoted spring-lever G, formed with the raised and recessed portion *e*, and carrying the pin A, the spindle F, and plate *a*, with rounded or equivalent ends, all as set forth.

298,145. METHOD OF ORNAMENTING GLASS ARTICLES. AUGUST WEYER, Long Island City, N. Y. Filed Aug. 9, 1883. (Model.)

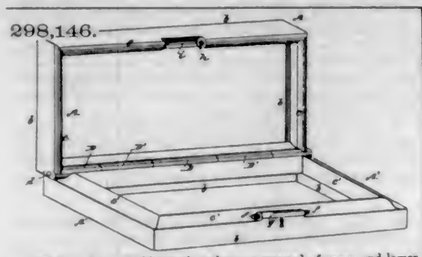


Claim.—The method herein described of ornamenting articles of glass, which consists in transferring pieces of suitable glass enamel by transfer-sheets covered with adhesive substance to a glass body while in a soft state, then pressing said enamel into the soft body of the glass article, and finally fusing the enamel into said glass body, substantially as set forth.

298,146. TRUNK. EDWIN WILSON, Brooklyn, N. Y. Filed Dec. 31, 1883. (No model.)



298,146.



Claim.—1. A double trunk-valance composed of upper and lower rectangular sections or frames, hinged together in the rear by integral hinge-sections which are entirely under cover of the valances, and vertical flanges around said valance-section to receive the top and body of the trunk within them, substantially as specified.

2. The upper and lower trunk valances or frames, A A′, hinged together in the rear, and constructed with tongues and grooves *c c′*, arranged to enter one within the other, and the hinge connecting the valances being wholly under cover by them, essentially as described.

3. The upper and lower trunk valances or frames, A A′, having marginal outer vertical ribs or extensions, *b b*, arranged to receive the top and body of the trunk within them, and united in their rear by a single hinge, D D′, formed integral with the said valances and arranged to extend the whole length of the trunk, under cover of the valances and forming part of the same, substantially as specified.

4. The upper and lower trunk valances or frames, A A′, constructed with rib *b b*, to form sockets for reception of the top and body of the trunk within them, and provided with tongues and grooves *c c′*, arranged to enter within each other, and with a hinge, D D′, and hinge-bolt *d* under cover of the valances, and arranged to extend the whole length of the trunk, essentially as described.

5. The combination, with the hinged upper and lower trunk-valances, A A′, constructed with tongues and grooves *c c′*, arranged to enter one within the other, of the bolt-guide *g*, arranged within the front groove, *c′*, in the lower valance, for operation in connection with a recess, *i*, in the front tongue, *c*, of the upper valance having a bolt hole or holes, *h*, in its end wall or walls, substantially as specified.

298,147. INKING MECHANISM FOR PRINTING-MACHINES. GEORGE ASHLEY WILSON, Liverpool, County of Lancaster, England. Filed Aug. 23, 1883. (No model.)



Claim.—1. In inking apparatus for rotary printing mechanism, the combination, with the ductor-shaft, of an eccentric loose upon the shaft and provided with a projecting pin or clutch-piece, a sliding hand-wheel splined to the shaft and provided with a pin or clutch-piece, a carrying-roller, and interposed mechanism, substantially as described, for actuating the carrying-roller from the eccentric of the ductor-shaft, substantially as and for the purposes specified.

2. In inking apparatus for rotary printing-machines, the combination, with the ductor-shaft, of an eccentric and devices, substantially as described, for causing the same to move with the shaft, an eccentric-strap having an arm provided with a pin, 21, an elbow-lever having its fulcrum at the angle and one arm slotted for the adjustment of the pin 21, and a carrying-roll journaled on the vertical arm of the elbow-lever, substantially as and for the purposes specified.

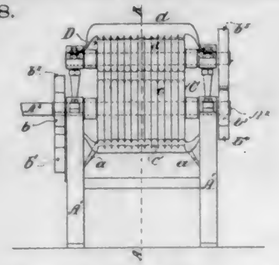
3. The combination of the shaft 4, driving-wheel 6, and disengaging mechanism with the hand-wheel 17 and clutch mechanism, and the eccentric 14 and carrying-roller and connections, substantially as set forth.

298,148. MACHINE FOR FORMING PILLS. AUGUST H. WIRZ, Philadelphia, Pa. Filed Jan. 21, 1884. (No model.)

Claim.—1. The herein-described pill-machine, consisting, essentially, of three grooved rollers arranged in triangular relation to each other, so as to serve the purpose of two sets of rollers, substantially as set forth.

2. The combination, with the grooved rollers, of the rakes or combs, substantially as described, constructed and arranged to rest in and clear the grooves in the rollers, substantially as set forth.

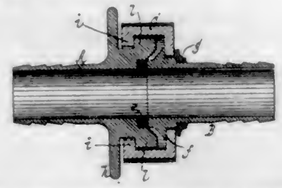
298,148.



298,149. PROCESS OF DISSOLVING METALS IN AMMONIACAL SOLUTIONS. CHARLES ROWLEY ALDER WRIGHT, 3 Castillain Road, Maida Vale, County of Middlesex, England. Filed Nov. 7, 1883. (No specimens.) Patented in England Feb. 9, 1883, No. 737; in France Aug. 8, 1883, No. 156,941, and in Belgium Oct. 27, 1883, No. 63,003.

Claim.—The hereinbefore-described process of treating metals to produce solutions, which consists in subjecting fragments of copper, &c., to the action of water, ammonia, and a stream or streams of air, substantially as set forth.

298,150. HOSE-COUPLING. ALBERT ZOLLER, New York, N. Y. Filed Nov. 22, 1883. (No model.)



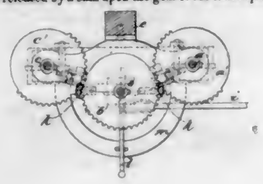
Claim.—1. The combination, substantially as hereinbefore described, of the two hose-attaching pieces A and B, the former having the external lugs, *l l*, with the coupling-piece C, having the flange-sections *i i* and openings *k k*, and devices loosely confining the coupling-piece permanently in position on the attaching-piece B, but permitting its free rotation thereon, substantially as described.

2. A hose-coupling consisting of the hose-attaching pieces A B, the former having the projecting lugs *l l*, and the other having the annular flange *f*, the coupling-piece C, having the internal flange-sections, *i i*, and openings *k k*, and means for permanently holding the coupling-piece against the said flange, but permitting it to be rotated on the attaching-piece carrying said flange, substantially as described.

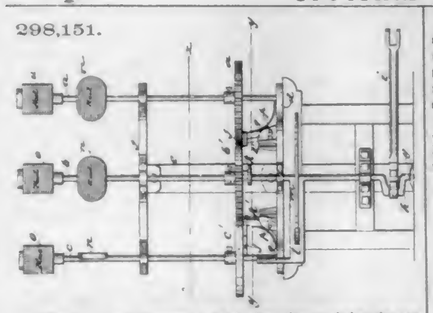
3. A hose-coupling consisting of the following elements, to wit: the hose-attaching pieces A and B, the former having the external lugs, *l l*, and the other having the annular flange *f* and screw-nut *g*, and the coupling-piece C, having the internal flange-sections, *i i*, and openings *k k*, and loosely held between the flange and the nut, to permit its rotation on the hose-attaching piece B, substantially as described.

298,151. RAILWAY-SWITCH SIGNAL. JOSEPH W. ALEXANDER, Fraserville, Quebec, and MARSHALL WHEELHOUSE, Campbellton, New Brunswick, Canada. Filed Oct. 23, 1883. (No model.)

Brief.—The vertical signal-bearing switch-operating spindle of a three-throw switch is connected with two other signal-bearing spindles by mutilated gear, to operate the several signals correspondingly to the several tracks. Pivoted to the gear of each of the two last-named spindles is a latch, which, when its signal should stand at "danger," is engaged by a spring-catch hinged to the frame, and when the signal is to be turned to "safety" is released by a cam upon the gear of the main operating-shaft.



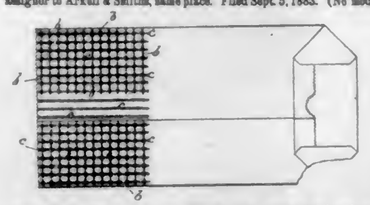
298,151.



Claim.—1. In a signal apparatus for three-throw switches, the combination, with the central crank-shaft, *b*, having the switch-rod i connected to it, also having the signal lamp and board, and also having a partly-toothed wheel, *b'*, and cams *k*, of the shafts *a c*, located on opposite sides of said central shaft, and each having a signal device, also a partly-toothed wheel, *a' c'*, and also a catch, *j*, and said catches provided with locking-catches *k'*, substantially as described.

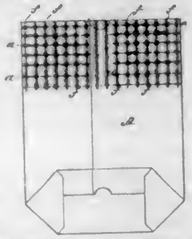
2. A triple signal apparatus for a three-throw switch, consisting of three shafts, *a b c*, each having the proper lamp-and-board signal, and the shafts *a c* being geared with the lever and crank-shaft *b* by the partly-toothed wheels *a'*, *c'*, and *b'*, and having self-locking catches, in combination with the unlocking-cams *k* on the wheel *b'*, substantially as described.

298,152. SOFT-TIE PAPER BAG. JAMES ARKELL, Canajoharie, N. Y., assignor to Arkell & Smiths, same place. Filed Sept. 5, 1883. (No model.)



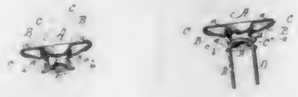
Claim.—A soft-tie paper sack having both longitudinal and transverse flutes or creasings, substantially as and for the purpose set forth.

298,153. METHOD OF MAKING SOFT-TIE PAPER BAGS. JAMES ARKELL, Canajoharie, N. Y., assignor to Arkell & Smiths, same place. Filed Sept. 5, 1883. (No model.)



Claim.—As an improved process or method of manufacturing soft-tie paper sacks, subjecting the paper first to a crimping operation to produce a series of parallel flutes running in one direction, and subsequently fluting or crimping the stock transversely to the first-formed set of flutes or crimps, substantially as and for the purposes set forth.

298,154. BUTTON. JAMES F. ATWOOD, Boston, Mass. Filed Oct. 10, 1883. (No model.)



Claim.—1. The herein-described button, provided with a hollow shank whose bottom or outer end is pressed inwardly into convexo-concave shape, as shown and described, said shank being provided with a transverse passage or perforation, whereby a wire for fastening purposes may be drawn through the latter and over the said bottom or end, substantially as and for the purpose specified.

2. In a button, the combination of the outer tube, B, of the shank, provided with the opposite vertical slots, *b*, and the inner cup, C, provided with the coincident opposite openings, *c*, and convexo-concave bottom C', substantially as and for the purpose described.

298,155. INSTRUMENT FOR SETTING BUTTONS. JAMES F. ATWOOD, Boston, Mass. Filed Oct. 27, 1883. (No model.)



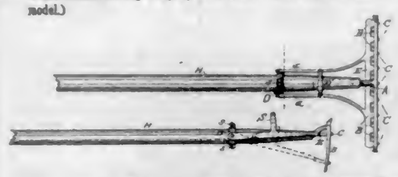
Claim.—1. In a button-setting instrument, the combination of two jaws pivoted together, one of said jaws terminating in a needle adapted to be inserted in fabric and forced under a wire button-fastening therein or thereunder, and the other jaw adapted to grasp said fabric and wire fastening and hold them firmly against said needle, substantially as and for the purpose set forth.

2. In a button-setting instrument, the combination of two jaws pivoted together, one of said jaws being provided with the conical needle H and the other with a suitable former, I, substantially as and for the purpose specified.

3. In a button-setting instrument, the combination of the jaw A, provided with the conical needle H, and the jaw B, provided with the former I, having the notches I', substantially as and for the purpose described.

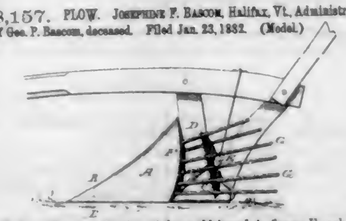
4. The combination, with the handle B, of the blade L, said blade being pivoted to and of the same general shape as said handle, and provided with the knife-edge *l*, and said handle being provided with the slot *n*, substantially as and for the purpose set forth.

298,156. RAKE. WILLIAM BARRY, Syracuse, N. Y., assignor to the Wales Manufacturing Company, same place. Filed Sept. 13, 1883. (No model.)



Claim.—The bar E, provided with tapering clearing-fingers C and rearwardly-projecting arms *a a*, and the yoke S, connected to said arms, in combination with the divided collar D, said collar having trunnions for the attachment of the arms *a a*, as and for the purpose specified.

298,157. PLOW. JOSEPHINE F. BASCOM, Halifax, Vt., Administratrix of Geo. F. Bascom, deceased. Filed Jan. 23, 1882. (Model.)



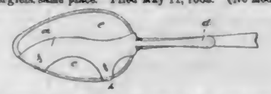
Claim.—The combination of the mold-board A, flange F, rods G G, secured at one end to the flange F, and free at their other end, arm C, and rocker D, as set forth.

298,158. POLICE CHAIN NIPPERS. EDWARD DAVIS BEAN, Chelsea, Mass. Filed Aug. 29, 1882. (No model.)



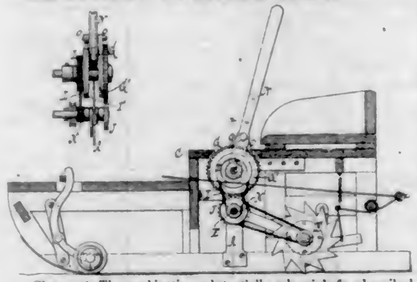
Claim.—In police-nippers, the T-shaped handle A, provided with the recess *a b*, in combination with the handle B, fitting within said recess, substantially as described.

298,159. SPOON. JULIUS BERGFELS, Newark, N. J., assignor to William H. Bergfels, same place. Filed May 11, 1883. (No model.)



Claim.—Jointly with a spoon, as shown, the protecting-guard *b*, having the arms *f*, each of said arms provided with the spring-catch A, and the finger-piece *d*, formed integral with said plate, all substantially as described.

298,160. DEVICE FOR CONVERTING MOTION. CHARLES BERNHARD, New York, N. Y. Filed Mar. 25, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with the driving-shaft and the main shaft, of a fixed cog-wheel on both shafts, one gearing with the other, a loose chain-wheel on the driving-shaft, a fixed chain-wheel on the main shaft connecting with the chain-wheel of the driving-shaft, a ratchet-wheel secured to both the cog-wheel and the chain-wheel of the driving-shaft on the opposite sides of such wheels, and one in a reverse position to the other, an oscillating lever intermediate of the ratchet-wheels on the driving-shaft, and pawls on the oscillating lever adapted to engage the ratchet-wheels, respectively.

2. The combination, substantially as hereinbefore described, with the driving-shaft and the main shaft, of fixed cog-wheels on both shafts—one at each end thereof—gearing with each other, loose chain-wheels on the driving-shaft—one adjacent to each of the cog-wheels thereof—fixed chain-wheels on the main shaft connecting with the chain-wheels of the driving-shaft, ratchet-wheels secured to adjacent cog-wheels and chain-wheels of the driving-shaft on the opposed sides of such wheels and in reverse positions, oscillating levers, one intermediate of each two adjacent ratchet-wheels on the driving-shaft, and pawls on each of the levers adapted to engage the ratchet-wheels, respectively.

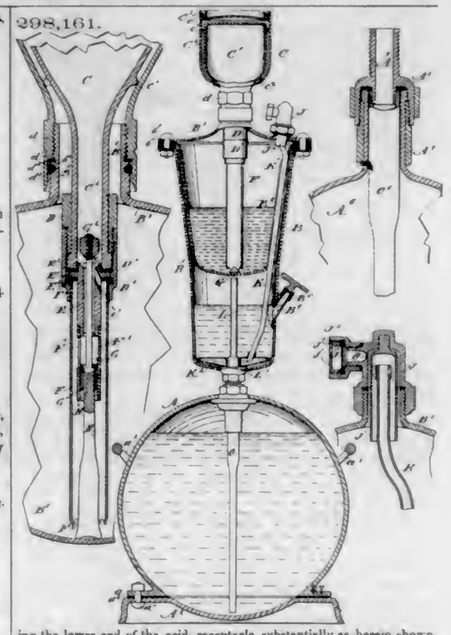
298,161. SODA-WATER APPARATUS. ACHILLE BERTELLI, San Francisco, Cal. Filed Aug. 30, 1883. (No model.)

Claim.—1. The combination of the generator B, consisting of the outer vessel, B', inner vessel, B², and cover B³, securely held to the upper edges of said vessels, with the acid-box C, consisting of an outer vessel, C², secured to said top, and an inner vessel communicating with vessel B², and a suitable cover to said acid-box, substantially as set forth.

2. In a carbonic-acid-gas generator, the combination, with the vessel B', of the vessel B² therein, and the acid-box C, held on the cover of the generator, and provided with a tube extending to near the bottom of the vessel B², substantially as herein shown and described.

3. In a carbonic-acid-gas generator, the combination, with the vessel B', of the vessel B² therein, the acid-box C, and the tube F, extending to near the bottom of the vessel B², and provided with a valve for closing the lower end of the acid-receptacle, substantially as herein shown and described.

298,161.



4. In a carbonic-acid-gas generator, the combination, with the vessel B', of the vessel B², the acid-box C, the leaden bottle C', the valve-tube E, and a valve-plug attached to a rod extending down through a tube extending nearly to the bottom of the vessel B², substantially as herein shown and described.

5. In a carbonic-acid-gas generator, the combination, with the vessel B', the vessel B², and the acid-box C, of the leaden bottle C', the valve-tube E, the rod G, the leaden ball G², the tube F, the sleeve F', the rod H, the sleeve F², soldered to the lower end of the tube E, and the screw-cap G', in which the rod G is held, substantially as herein shown and described.

6. In a carbonic-acid-gas generator, the combination, with the vessels B' B² and the acid-box C, of the tube F, the valve-tube E, provided with an annular ridge E', the sleeve F², the rod G, the leaden ball G², the screw-cap G', and the rod H, held in the screw-cap G, substantially as herein shown and described.

7. In a carbonic-acid-gas generator, the combination, with the vessels B' B² and the leaden acid-bottle C', of the tube F, the screw-cap J, and the pipe K, extending from the same through a perforated tin box, K², on the bottom of the vessel B', substantially as herein shown and described.

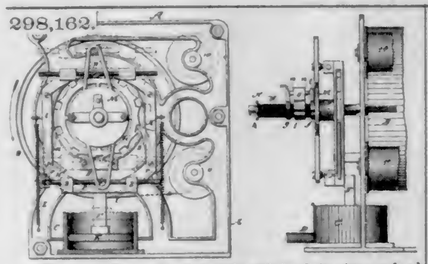
8. In a carbonic-acid-gas generator, the combination, with the vessels B' B² and the leaden acid-bottle C', of the tube F, connecting with the same, the screw-cap J, carrying the safety-valve J', the cup J' in the cap J, and the pipe K, extending from the cap J down to a perforated tin block, K², in the bottom of the vessel B', substantially as herein shown and described.

9. In a carbonic-acid-gas generator, the combination, with the vessels B' B² and the leaden acid-bottle C', of the tube F, connected with the same, the screw-cap J, carrying the safety-valve J', the cup J' in the cap J, the pipe K, extending from the cap J down to a perforated tin block, K², in the bottom of the vessel B', and of the tube L, projecting upward from the bottom of the vessel B', and connected with an internally-threaded neck projecting from the bottom of the said vessel, substantially as herein shown and described.

10. The combination, with a carbonic-acid-gas generator, of a ring surrounding it and connected with the generator, and of a series of tubes for conducting the carbonic-acid gas from the generator into the fountain, substantially as herein shown and described.

298,162. STATION-INDICATOR. HENRI E. BISSELL, Hartford, Conn., assignor to the Bissell Railway Station Indicator Company, same place. Filed Feb. 26, 1883. (Model.)

298,162.



Claim.—1. The combination of the cylinder C, its piston and rod carrying the frame I K, the pawls *a b*, hung, respectively, in opposite sides of the frame, the ratchet G, in connection with the roller B, a slide arranged to be moved at right angles to the axis of the piston and in connection with the said pawls, and mechanism, substantially such as described, between the shaft and slide, whereby at predetermined times a longitudinal movement will be automatically imparted to said slide to engage one pawl with the ratchet and throw out the other, substantially as described.

2. The combination of the cylinder C, its piston and rod carrying the frame I K, the pawls *a b*, arranged, respectively, in opposite sides of said frame, the ratchet G, in connection with the roller B, and with which said pawls will engage, two slides arranged at right angles to the axis of the piston—the one above and the other below the ratchet—the said pawls made interchangeable in the frame, to be engaged with either of said slides, as the case may be, substantially as described.

3. The combination of the cylinder C, its piston and rod carrying the frame I K, the pawls *a b*, arranged, respectively, in opposite sides of said frame, the ratchet G, in connection with the roller B, and with which said pawls will engage, two slides arranged at right angles to the axis of the piston—the one above and the other below the ratchet—the said pawls made interchangeable in the frame, to be engaged with either of said slides, as the case may be, and mechanism, substantially such as described, between the shaft and the said slides, whereby at predetermined times a movement may be imparted to said slides to engage the one pawl with the ratchet and disengage the other, substantially as described.

4. The combination of the cylinder C, its piston and rod carrying the frame I K, the pawls *a b*, arranged, respectively, in opposite sides of said frame, the ratchet G, in connection with the roller B, and with which said pawls will engage, a slide arranged at right angles to the axis of the pistons and engaged with the said two pawls, the disk M, provided with the V-shaped arm, within which a stud on the slide works, a nut, *e*, arranged on a correspondingly-screw-threaded portion of the shaft and in connection with said disk, stops *f g* on said screw-threaded portion of the shaft, arranged to engage said nut at predetermined times and impart to said disk and V-shaped arm a rotary movement, and thereby impart to said slide a movement to reverse the pawls, substantially as described.

5. The combination of the cylinder C, its piston and rod carrying the frame I K, the pawls *a b*, arranged, respectively, in opposite sides of said frame, the ratchet G, in connection with the roller B, the two slides P T, arranged at right angles to the axis of the piston—the one above and the other below—the pawls interchangeable, to be engaged with either of said slides, the disk M on the shaft provided with the V-shaped arm S below, and corresponding arm, U, above, with a stud projecting from the respective slides into said arms, and so as to work therein, the nut *e*, arranged to travel on a screw-threaded portion of the shaft, and in connection with said disk, with stops *f g*, fixed on said screw-threaded portion of the shaft, to engage said nut at predetermined times and turn it with the disk, substantially as described, and for the purpose of converting the apparatus from compressed air as a motor to vacuum, or vice versa, substantially as described.

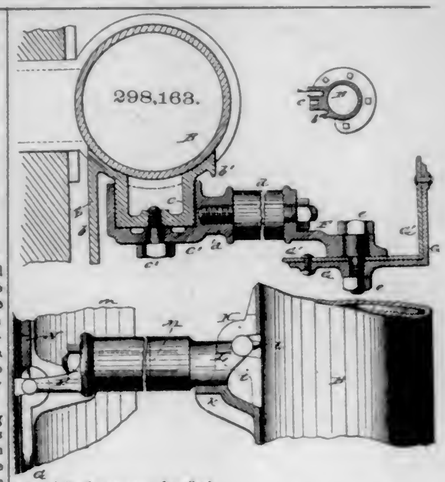
6. In a station-indicator, the combination of the roller by which the slip is moved, two rolls to which the ends of the slip are respectively attached, mechanism, substantially such as described, to impart intermittent rotation to said moving roller, a drum in connection with each of said rolls, the surface of said drums' frustum of cone shape, their bases in opposite directions, and a cord running from one of said drums onto the other, substantially as and for the purpose described.

298,163. FIRE-ESCAPE AND WATER-CONDUCTOR. VIRGIL W. BLANCHARD, New York, N. Y. Filed Jan. 18, 1883. (No model.)

Brief.—A stand-pipe composes the stationary upright of the folding ladder, and the rungs are pivoted to an angular bracket thereon and to the angular movable upright.

Claim.—1. A fire-escape ladder constructed with a stationary tubular upright, in combination with the folding upright G and the rungs jointed to the uprights, and adapted to operate substantially in the manner and for the purposes described.

298,163.

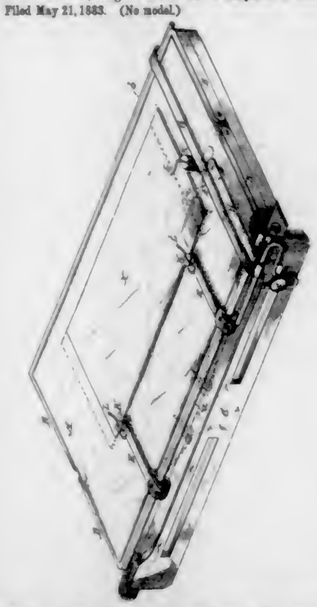


2. In a fire-escape ladder, the combination of a stationary upright, B, an angular bracket, E, having flange *b*, lip *b'*, and swivel-studs *c*, the folding angular upright G, and the rungs pivotally connecting the said uprights, substantially as set forth.

3. In a fire-escape ladder, the combination of a fixed upright, an angular bracket having swivel-studs *c*, the folding angular upright G, the swiveled cap *c'*, pivoted angular end piece, F, and the rungs connecting the same, substantially as set forth.

4. In a fire-escape ladder, the combination, with the folding angular upright G and pivoted end piece, F, of the angular stiffening-strap G', substantially as set forth.

298,164. FEED-GUIDE FOR PRINTING-PRESSES. JOHN BLOCHER, Franklin Grove, assignor of one-half to Benjamin F. Shaw, Dixon, Ill. Filed May 21, 1883. (No model.)



Claim.—1. The combination, with a platen of a printing-press, of a side guide adapted to move on the face of the platen toward the center and side thereof, and connected to the gripping-finger bar of the press by mechanism substantially as described, whereby said movement of the guide is rendered automatic, substantially as and for the purpose set forth.

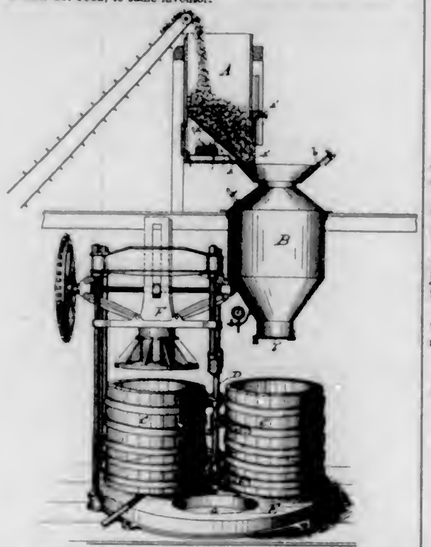
2. The combination, with the platen of a printing-press, of a pivoted side guide and a bar pivoted to the arm of said guide, and also connected to the gripping-finger bar of the press, by means substantially as described, and for the purpose specified.

3. The combination, with a pivoted side guide and a bar pivoted to the arm thereof, and connected to the gripping-finger bar of the press, of bottom guides the arms of which are pivoted to spring-clamps adjustable upon a rod on the lower band of the platen, substantially as and for the purpose described.

4. The side and bottom guides for a printing-press, provided with adjustable gage-heads carrying suitable tongues pivoted thereto, substantially as and for the purpose set forth.

298,165. APPARATUS FOR EXTRACTING CANE-JUICE. GEORGE B. BOOMER, Mount Pleasant, Westchester County, N. Y. Filed Feb. 8, 1884. (No model.)

Brief.—Improvement on Letters Patent No. 269,628, dated December 26, 1882, to same inventor.

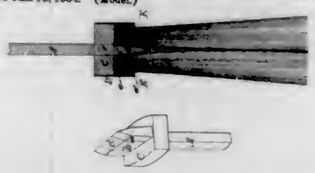


Claim.—1. The process of extracting the juice from sugar-cane by first cutting the cane into short lengths and submitting it to the fumes of burning sulphur, then steaming in a closed tank until the cellular tissues are broken and the condensed saccharine matter is rendered liquid, then submitting it to pressure.

2. A receiver or vessel for the cut cane, having its bottom inclining downward, and at its lowest part a discharge-orifice, with a chamber under such bottom to receive a vessel of burning brimstone, said bottom being perforated or slotted to allow the sulphurous fumes to pass upward through the cut material, substantially as and for the purpose set forth.

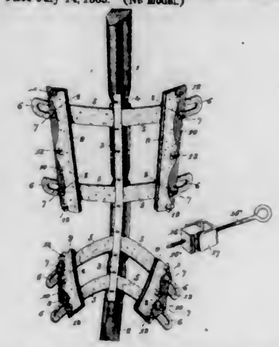
3. In combination with the tank B and the press F, the two hoops C C, revolving about the standard D, and the platform E, having an opening through which the bagasse is discharged, substantially as and for the purpose described.

298,166. PAINT-BRUSH. JOHN FRANCIS BOWDITCH, Revere, Mass. Filed Jan. 18, 1884. (Model.)



Claim.—The handle and cap provided with the wedge-pointed tongue and the mass of bristles, in combination with the ferrule and the wedges E, the latter being placed within the sides of the ferrule at the bottom alongside of the bristles, with their thin edges next to the butts of the bristles, substantially as described.

298,167. BOOT-CRIMP. FRANCIS MARION BRATTON, Hamden Junction, Ohio. Filed July 14, 1883. (No model.)



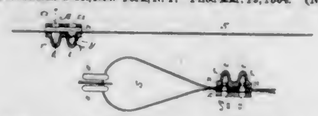
Claim.—1. A boot and shoe crimp consisting of a body forming the leg and foot pieces provided with hinged arms which carry adjustable clamping-jaws, as and for the purpose explained.

2. A boot and shoe crimp and stretcher consisting of a body, 1 2, braced or secured together by strip or bar 3, provided with plates 5, carrying jaws 9 10, as and for the purpose set forth.

3. A boot and shoe crimp consisting of a body forming the leg and foot pieces provided with hinged arms which carry adjustable clamping-jaws, the lower member of said jaws being provided with a lug, and having a nut, 13, and hand-screw 15, as and for the purpose described.

4. The clamping-jaws 9 10, provided with lug 11, in combination with a nut, 13, and hand-screw 15, substantially as and for the purpose set forth.

298,168. SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Mar. 19, 1884. (No model.)



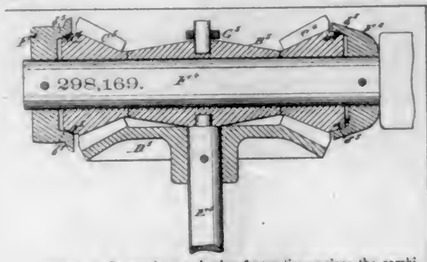
Claim.—1. An improved seal composed of a seal-disk of hard and rigid or substantially rigid material, and a flexible shackle of sheet metal, said seal-disk having a threading-hole adapted to receive one or both ends of said shackle, a recess or recesses behind said threading-hole to receive a burr of the sheet metal and render the same inaccessible, and in front of each recess an aperture adapted to admit a sharp-pointed punch for punching the shackle and throwing said burr into said recess to fasten the seal, substantially as herein specified, for the purposes set forth.

2. A seal-disk of hard and rigid or substantially rigid material, having a threading-hole, a recess or recesses behind said threading-hole, an aperture or apertures in its face opposite or in line with said recesses, and a teat or teats on its back to accomodate said recesses within them, substantially as shown, for the purposes set forth.

3. A seal-disk of hard or rigid or substantially rigid material, having a threading-hole, a recess or recesses behind said threading-hole, and an aperture or apertures opposite or in line with said recesses, and provided with permanent distinguishing-marks formed in or of the material of the seal-disk, as herein described, for the purpose set forth.

4. In combination with a seal-disk of hard or rigid or substantially rigid material, having a threading-hole, a recess or recesses behind said threading-hole, and an aperture or apertures opposite or in line with said recesses, a shackle of sheet metal, preliminarily united with said seal-disk, at or near one end of the shackle, by a burr formed thereon within one of said recesses, substantially as shown, for the purposes set forth.

298,169. STEERING-GEAR FOR TRACTION-ENGINES. ALBERT P. BROOMELL, York, Pa., assignor to Arthur B. Farquhar, same place. Filed Feb. 18, 1884. (No model.)

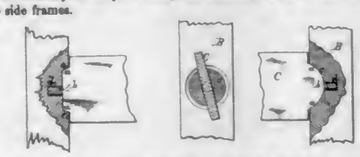


Claim.—1. In steering mechanism for traction-engines, the combination, with the main or motor shaft F^4, and with the shaft E^2, by which motion is communicated, when required, in reverse directions to the steering devices, of the sliding hub B^2, the loose bevel-pinions C^3 C^4, having smooth conical driving-surfaces a^3 a^4 on their backs, and the fast conically-dished drivers F^3 F^4, all arranged upon the main shaft F^4, and the bevel-wheel D^2, fast on the shaft E^2, and in gear, on opposite sides of its axis, with the pinions C^3 C^4, essentially as and for the purposes specified.

2. In steering mechanism for traction-engines, the combination, with the main or motor shaft F^4, and the devices arranged thereon, consisting of the sliding hub B^2, the loose bevel-pinions C^3 C^4, having friction-driving conical backs a^3 a^4, and the fast conically-faced drivers F^3 F^4, of the bevel-wheel D^2, in gear with said pinions on opposite sides of its axis, and the shaft E^2, having said wheel D^2 secured to it, and supported at its upper end in the hub B^2, whereby the spring of said shaft E^2 is made available in controlling the release of the pinions from the friction-drivers, substantially as specified.

298,170. WINDOW-BLIND. HUGH BROTHERTON, New York, N. Y. Filed Feb. 15, 1884. (No model.)

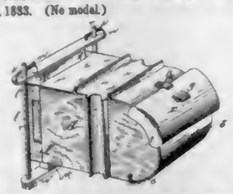
Brief.—A window-blind consisting of a frame having circular seats formed in its sides, and slats having bearings or projections, in addition to the ordinary dowel-pins, fitting and operating in the circular seats in the side frames.



Claim.—1. In a blind, the slats C, having at their ends the bearings *a*, and a dowel, *b*, in combination with a conforming seat in the sides of the frame, substantially as set forth.

2. In a blind, the slats C, having upon their ends the bearings *a* and dowel *b*, in combination with the frame having in its sides the circular seats *c* and *d*, respectively, to receive the bearing and dowel, substantially as specified.

298,171. CAR-AXLE BOX. JAMES WILLSON CARR, Richmond, Va. Filed Sept. 6, 1883. (No model.)



Claim.—1. The combination, in a car-axle box, of the suitably-supported sliding gates having side-extending ears, said gates being adapted to embrace the axle-journal, and bolted together to permit them to move in unison, substantially as set forth.

2. The combination, in a car-axle box, of the suitably-supported sliding gates adapted to embrace the axle-journal, and provided with perforated ears extending beyond the sides of the box, and rods connecting the same, substantially as set forth.

3. The combination, in a car-axle box, of the suitably-supported sliding gates adapted to embrace the axle-journal, and provided on their outer edges with perforated ears, by means of which they may be bolted together, as described, and a loose sliding wicket, P, provided with a recess to embrace the upper side of the said axle-journal, substantially as set forth.

4. The combination, in a car-axle box, of upper and lower gates provided with connecting-rods, which pass through perforated ears which extend beyond the sides of the box, and springs *t t*, attached to the gates, so as to bear against the lips of the gate-guides, substantially as described, and for the purpose set forth.

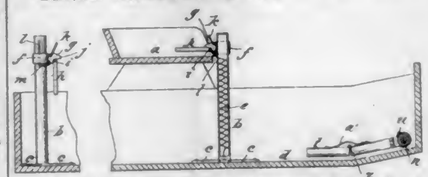
298,172. FALSE BOTTOM FOR MASH-TUNS. GEO. GORDON CAVE, Fenny Stratford, County of Bucks, England. Filed June 25, 1883. Renewed Apr. 10, 1884. (No model.) Patented in England Oct. 17, 1881, No. 4,411.



Claim.—1. The improved false bottom for mash-tuns, hop-backs, or other vessels for the purpose of drainage, constructed of plates, in the piercings or perforations of which plates caps or cylinders A, with heads *a* having fine holes therein, are fitted, substantially as hereinbefore described.

2. In a false bottom for straining or draining purposes, the piercings or holes in the plate B, formed with countersink *b* and recess *b'*, for receiving the cylinders or caps A, formed of corresponding shape, and provided with heads *a*, with perforations *a'*, constructed and operating as and for the purpose herein set forth, and shown by the drawings.

298,173. ROBE-HOLDER FOR VEHICLES. GEORGE HENRY CHAPPELL, Huron, Dak. Filed Oct. 4, 1883. (No model.)



Claim.—1. The combination of presser-arms with the seat of a vehicle, said arms being adapted to hold a lap-robe thereon, substantially as described.

2. The combination of presser-arms with the bottom or foot board of a vehicle, said arms being adapted to hold a lap-robe thereon, substantially as described.

3. The combination of the arm-supporting tubes *b*, springs *c*, collars *f*, and presser-arms *h*, with the seat of a vehicle, the springs being connected with said arms through slots in the supporting-tubes, substantially as described.

4. The collar *f*, having jointed arm *h* and stop-stud *i*, in combination with supporting-tube *b*, and spring *c*, said tube having slot *l m*, and the collar fitted to slide and turn on the tube, substantially as described.

5. The combination of the supporting-rod *n*, and spring-pressed arms thereon, with the body of a vehicle, said rod and arms being located near the bottom and foot board, and arranged to press and hold the lap-robe, substantially as described.

6. The extensible rod *n*, having spring-pressed arms adapted to press and hold the lap-robe, in combination with the vehicle-body, said rod being arranged to be secured between the sides of the body by the right-and-left adjusting-screw, substantially as described.

7. The combination of holding-arms, a rod for holding said arms, and springs for pressing said arms on the bottom or foot board of the body, said arms being pivoted to the holding-rod, and arranged to be raised upright and be secured by studs *w* and *x*, and their holding-down springs *u*, substantially as described.

8. The arms for holding the lap-robe down on the vehicle-bottom, connected to the supporting-rod *n* by turning collars *v*, and pivoted to said collars to fold down along the supporting-rod, substantially as described.

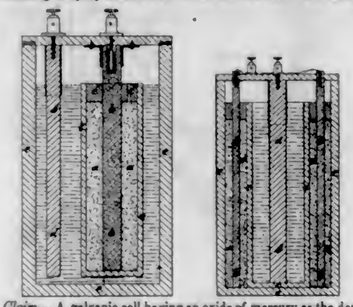
9. The combination, with a vehicle-bottom having irregular shape, of spring-pressed lap-robe-holding arms, having a joint, *z*, and presser-spring *a'*, to conform to said irregular shape, substantially as described.

298,174. HOLDER FOR USE IN CARVING MEAT. LOUIS CHEVALIER and LEON GRAILLOT, Paris, France. Filed Mar. 14, 1884. (No model.)



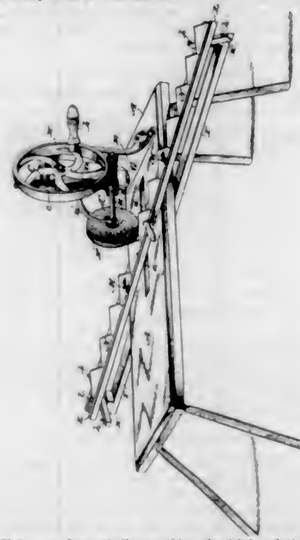
Claim.—A cutlet-holder composed of the sheath *h*, fixed into any suitable handle, the jaws *a*, grooved on their inner faces, and the blades *b*, acting as springs, in combination with the rack *d*, or its equivalent, engaging into the inner projection, *k*, on the pawl *j* of the sheath *h*, the whole constructed and operating as hereinbefore specified, and for the purposes set forth.

298,175. GALVANIC BATTERY. CHARLES L. CLARKE, Manchester, County of Lancaster, England, assignor to the Domestic Electrical Manufacturing Company, Boston, Mass. Filed Nov. 16, 1883. (No model.)



Claim.—A galvanic cell having an oxide of mercury as the depolarizing agent and a solution of potassic or sodic hydrate as the exciting-fluid, substantially as set forth.

298,176. SICKLE-GRINDER. COLIN W. CLAYBOURNE, Quincy, Ill. Filed July 30, 1883. (No model.)



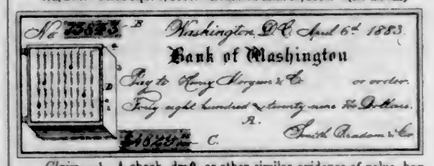
Claim.—1. In a grinding-machine, the driving-shaft of the abrading-wheel, provided with a fixed collar and an adjustable nut and washer, the elastic cylinder on the shaft between the collar and washer, and the wheel provided with a smooth face parallel to the shaft, and adapted to rotate in contact with the elastic material on the shaft, substantially as and for the purpose described.

2. In a grinding-machine, the combination of an abrading-wheel supported within suitable bearings, means for rotating the wheel and for adjusting the same to any desired angle and height with relation to the base of the machine, a bar for holding the article to be ground supported at each end upon supports at the ends of a pivoted bar, upon which it can also slide, and provided with a pin engaging a longitudinal slot in the base, substantially as shown and described.

3. In combination with grinding mechanism substantially as described, the knife-rest composed of the bar I, pivoted centrally upon the table A, the cross-bars K, pivoted upon the ends of the same, and provided with the studs *k*, the bar I, having the longitudinal groove *l*, pivoted stud *l'*, and handle *l''*, and the clamps M, all constructed and combined to operate substantially as set forth.

4. In combination with the grinding mechanism, the knife-rest consisting of a bar pivoted to the under side of the table, and provided at its ends with pivoted cross-bars, the upper faces of which are on a plane above the top of the table, and are provided with stop-pins at their ends, and the grooved bar for holding the knife resting on the cross-bars, and provided with a pin on its lower side engaging a groove in the table, substantially as and for the purpose described.

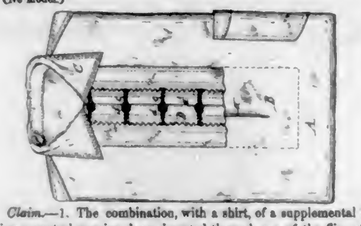
298,177. BANK CHECK AND DRAFT. JAMES K. CLEARY, Washington, D. C. Filed Apr. 6, 1883. Renewed Mar. 27, 1884. (No model.)



Claim.—1. A check, draft, or other similar evidence of value, having imprinted upon it at any convenient locality a series of vertical columns of figures, the first arranged from top to bottom from one to nine, indicating units, and the successive columns to the left of said unit-column representing multiples of one another by ten, in the usual order of enumeration, while each column increases vertically in serial order, substantially as shown and described, whereby a given amount may be expressed and read from left to right in the usual manner, as hereinbefore set forth.

2. A check, draft, or other similar evidence of value, having imprinted upon it a series of figures in vertical columns, and arranged horizontally in the order of usual enumeration, in combination with indicators and arresters, substantially as and for the purposes set forth.

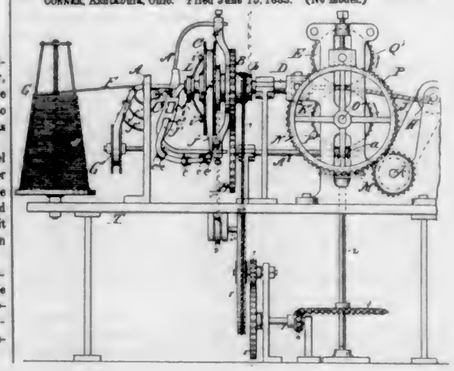
298,178. SHIRT. SWITS CONDÉ, Oswego, N. Y. Filed Dec. 7, 1883. (No model.)



Claim.—1. The combination, with a shirt, of a supplemental front having a central opening, loops inserted through one of the flies of the supplemental front, and secured between said fly and underlying fabric, and buttons or other suitable fastening devices secured to the other fly of the supplemental front, substantially as described and shown.

2. The combination, with a shirt, of a supplemental front provided with a central opening, loops inserted through one of the flies of the supplemental front, and secured between said fly and underlying fabric, and a binding across the exterior of the portion of the fly pierced by the loops, substantially as set forth and shown.

298,179. WIRE WRAPPING OR COVERING MACHINE. CHARLES CONNER, Ashtabula, Ohio. Filed June 15, 1883. (No model.)

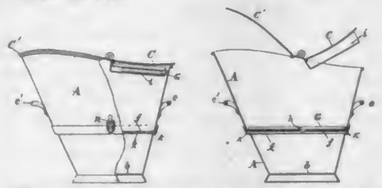


Claim.—1. The combination of the sleeve D, cog-wheel B, arms *d*, and bow A' and its plate C' with the wheel B', worm-shaft A^3, worm *a*, yielding drawing-rollers E E', drum H, and suitable gearing for connecting said rollers and drum with said worm-shaft, substantially as set forth.

2. The wheel B, provided with arms *d*, and bow A', in combination with plates C', provided with the series of guide-plates *c c*, rollers *c'*, and slots c^3 c^3, and suitable mechanism for revolving the said wheel and devices secured thereto, all arranged substantially as herein shown and described.

3. The combination of the gear-wheel B, sleeve D, arms *d*, bow A' plate C', provided with the series of guide-plates *c c*, rollers *c'*, and slotted at c^3 c^3, with the reel C, friction device L, and adjusting-collar *i*, also mounted on sleeve D, and suitable mechanism for operating the wheel B, substantially as set forth.

298,180. COAL-BUCKET. CHRISTIAN COOK, Baltimore, Md. Filed Feb. 19, 1884. (No model.)



Claim.—A coal-bucket having a cover provided with means by which to attach an ash-screen when the latter is not in use, an inturned flange to support an ash-screen intermediate of the cover and bottom, a removable ash-screen, and means, substantially as described, by which to remove ashes from the bottom of the bucket while the ash-screen is on the said flange, as set forth.

298,181. DRAWERS. JOSEPH M. COX, Richmond, Va. Filed Sept. 19, 1883. (No model.)



Claim.—1. A pair of drawers the sections of which are each formed with a front re-enforcing crotch-lap, C, having inclined or biased ends, whereby when the sections are joined the said laps will lie one within the garment and one without, and in such position relative to the body of the fabric as to insure a crossing of the weft of the two thicknesses of material, as described.

2. A pair of drawers made of counterpart sections, each of which is formed with a semi-elliptical rear lap, B, and a front lap, C, the ends of the latter being biased, whereby the weft of each lap C will be at an angle to the weft of the body of the fabric, to form a re-enforce of three thicknesses of material just below the fly of the garment, substantially as set forth.

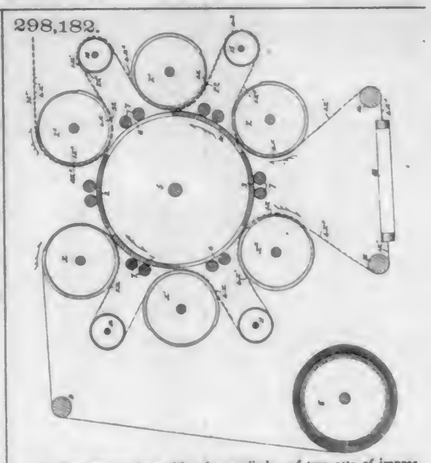
298,182. WEB-PRINTING MACHINE. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Dec. 2, 1882. (No model.)

Claim.—1. The combination, with a form-cylinder, of a plurality of impression-cylinders, and means for causing said impression-cylinders to come into printing contact with certain of the forms upon said form-cylinder, and to keep from printing contact with the remaining forms, whereby one side of a web may be printed from one set of forms upon said form-cylinder and avoid the remaining forms thereon, all substantially as described.

2. The combination, with a form-cylinder, of two sets of impression-cylinders and a web-turner, and means for causing each of said sets of impression-cylinders to come into printing contact with certain of the forms upon the form-cylinder and to keep out of printing contact with the remaining forms, all substantially as described.

3. The combination, with a form-cylinder, of a plurality of impression-cylinders and a register roll or rolls, said impression-cylinders having portions of their peripheries depressed or cut away, substantially as described.

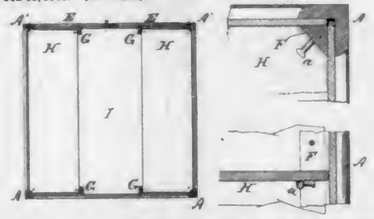
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4. The combination, with a form-cylinder, of two sets of impression-cylinders and register-rolls, said impression-cylinders having portions of their peripheries depressed or cut away, and a web-turner, substantially as described.

5. The combination, with a form-cylinder, of a plurality of impression-cylinders and a register roll or rolls, said impression-cylinders having portions of their peripheries depressed or cut away, and a series of leading-rolls, as 18, substantially as described.

298,183. SHOW-CASE. TERENCE F. CURLEY, Brooklyn, N. Y. Filed Oct. 15, 1883. (No model.)



Claim.—In combination with a show-case, the perforated triangular corner-pieces F, the perforated vertical strips G, and the perforated corner-pieces A', said perforated pieces being adapted to receive adjustable pins *a*, for holding shelves H on each side of the space I, as shown and described, and for the purpose set forth.

298,184. DERRICK. CHARLES T. DAY, Newark, N. J., assignor of one-half to Thomas J. Gray, same place. Filed Mar. 19, 1884. (No model.)

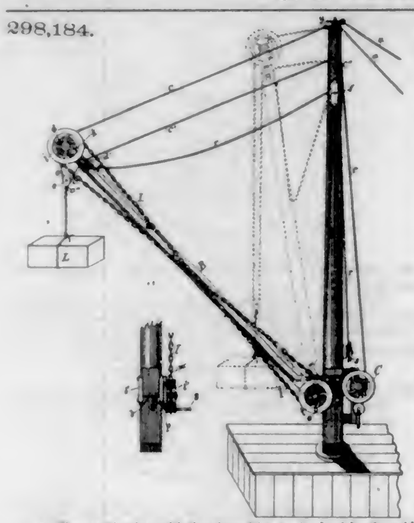
Claim.—1. The combination, with the pivoted boom of a derrick, of a cable for suspending the load from said boom, said cable being fastened to a fixed support and passing over a pulley on the boom, whereby the raising and lowering of the boom will cause said pulley to travel over said cable and the load to be shifted sidewise, substantially as herein set forth.

2. The combination, with the pivoted boom of a derrick, of a cable for suspending the load from said boom, said cable being fastened to a fixed support and passing over a pulley on the boom, and an auxiliary chain or cable for raising or lowering said boom, thereby causing said pulley to travel over the first-named cable, substantially as herein set forth.

3. The combination, with the pivoted boom of a derrick, of a cable for suspending the load from said boom, said cable being fastened to a fixed support and passing over a pulley on the boom, and an endless chain or cable passing over pulleys, one of which rotates correlatively with the first-named pulley, substantially as herein set forth.

4. The combination, with the pivoted boom of a derrick, of a cable fastened at one end to a fixed support and passing over a pulley on the boom to form a traveling connection therewith, and formed into a loop having a bight below said pulley, from which bight the load is suspended, said cable being connected at its opposite end to the hoisting-windlass, substantially as herein set forth.

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5. The combination, with the pivoted boom of a derrick, of a cable fastened at one end to a fixed support and passing over a pulley on the boom to form a traveling connection therewith, and formed into a loop having a bight below said pulley, from which bight the load is suspended, said cable being connected at its opposite end to the hoisting-windlass, and an endless chain or cable passing over pulleys, one of which rotates correlatively with said pulley on the boom over which the first-named cable passes, substantially as herein set forth.

6. The combination, with the boom of a derrick, of a cable fastened to a fixed support and passing over and wound around a pulley on the boom and depending below said pulley to suspend the load, whereby the boom will be stayed by the weight of the load, but may be raised and lowered by causing its said pulley to travel over said cable, and the suspended load thereby be shifted, substantially as herein set forth.

7. The combination, with the boom of a derrick, of a cable fastened at one end to a fixed support and passing over and wound around a pulley on the boom, and formed into a loop having a bight below said pulley, from which bight the load is suspended, said cable being connected at its opposite end to the hoisting-windlass, substantially as herein set forth.

8. The combination of the mast, the boom, the cable formed into a loop, from the bight of which the load is suspended, said cable having one of its ends fastened to the mast and its other end connected to the hoisting-windlass, and the two pulleys on the boom, over which the two sections of said cable respectively pass, substantially as herein set forth.

9. The combination of the mast, the boom, the cable formed into a loop, from the bight of which the load is suspended, one section of which cable is fastened to the mast and the other connected to the hoisting-windlass, the pulley *d* upon the boom and around which the first-mentioned section of the cable is wound, the pulley *d'* on the boom, over which the other section of said cable passes, the chain-pulley fixed to the axis of the pulley *d*, the chain pulley-wheel *i'*, and the endless chain passing over said chain-pulleys, substantially as herein set forth.

10. The combination of the boom, the cable by which the load is suspended therefrom, the endless chain, the chain-pulleys, the ratchet fixed to one of said chain-pulleys, and a pawl or pawls engaging with said ratchet, substantially as herein set forth.

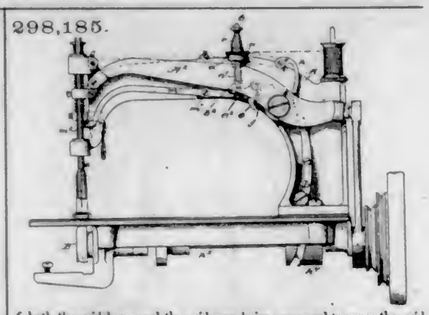
11. The combination of the boom, the cable by which the load is suspended, the pulley *d* on the boom, over which said cable passes, the chain-pulley *i*, mounted upon the same spindle with said pulley *d*, the chain-pulley *i'*, and the endless chain I, passing over said chain-pulleys, substantially as herein set forth.

298,185. TENSION MECHANISM FOR SEWING-MACHINES. GEORGE H. DEMOND and WILBUR F. DIAL, Bridgeport, Conn., assignors to the Wheeler & Wilson Manufacturing Company, same place. Filed Dec. 14, 1883. (No model.)

Brief.—A tension intermittently varied during the operation of stitching is entirely released upon lifting the presser-foot. A spring-actuated stop holds the tension in its released condition until the stitching is renewed.

Claim.—1. The spindle, one or more tension disks or plates, the spring *c'*, and the spindle mover or lever, combined with the lever *m*, having its long arm extended to the head of the machine, and the cam *f*, both the said lever and the said cam being arranged to move the said elbow-lever and spindle, substantially as described.

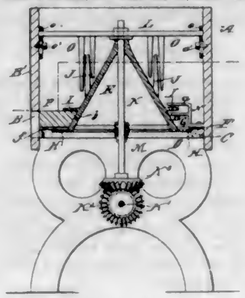
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2. The spindle, one or more tension disks or plates, the spring *c'*, the spindle mover or lever *e*, the lever *m*, and presser-bar-lifting lever to move it, combined with a spring-actuated catch or locking device adapted to operate upon the lever *e*, and serving to lock the same, as described, against backward movement when lifted by the lever *m*, substantially as set forth.

3. The spindle, one or more tension disks or plates, the spring *c'*, the spindle-moving lever *e*, and the cam *f*, provided with the side notch or incline, and adapted to move the lever *e*, combined with the spring-pressed catch or locking device, the cam *f* being adapted to disengage the said locking device from the elbow-lever, as and for the purpose set forth.

298,186. FERTILIZER PULVERIZER AND DISTRIBUTER. CHAS. FREDERICK DIMELE, Carlisle, Pa. Filed Jan. 21, 1884. (No model.)



Claim.—1. In a device for pulverizing fertilizers, the vertically-revolving cone E, formed with the flange H, which partially closes the hopper A, substantially as described.

2. The vertically-revolving cone E, formed or provided with the horizontal arms I and vertical arms J, substantially as described.

3. The vertically-revolving cone E, having horizontal projections I and vertical projections or arms J, in combination with the horizontal stationary breakers N, and the pendent arms O, arranged to operate substantially as described.

4. The combination, with the cone E, provided with arms I J, of the stationary breakers N, and pendent arms O, arranged to operate substantially as described.

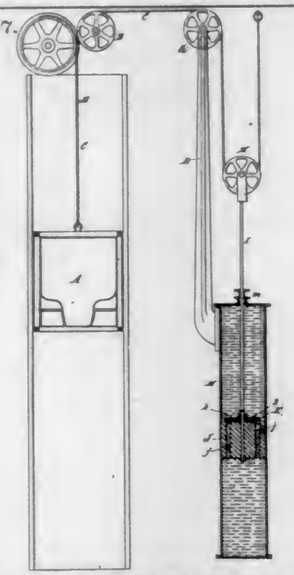
5. The combination, with the cone E, of the adjustable scraper P, with an inner beveled face resting against the side of the cone, near its base, arranged to operate substantially as described.

6. The cross-piece L, provided with the adjusting-arms *o o'* and pendent arms O, in combination with the cone E, having the vertical and horizontal arms I J, and the stationary breakers N, substantially as and for the purpose set forth.

7. The combination, with the vertically-revolving cone E, having vertical and horizontal agitating and crushing arms I J, and formed with flange H, of the hopper A, having pendent arms O, and horizontal breakers or crushers N, and the plate F, having circular opening G and side opening, *f*, and arranged to overlap the flange H of the cone, substantially as shown and described.

298,187. ELEVATOR. WM. J. M. DOBSON, New York, N. Y. Filed Aug. 13, 1883. (No model.)

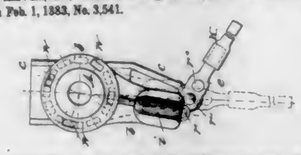
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Claim.—1. The piston J, having liberal apertures *j*, and valve K, having apertures *k*, of less capacity, the valve fitting closely to the piston by its periphery, and having an open chamber under it communicating between the apertures *j* and *k*, in combination with the piston-rod I, rope C, and a suitable pulley or pulleys arranged for joint operation, as herein specified.

2. In a device for elevators, the compound pulleys G H and rigid brace L, in combination with each other and with the elevating-car A, ropes B and C, cylinder M, piston J *j*, and valve K *k*, arranged for giving operation, as herein specified.

298,188. DIFFERENTIAL-LEVER PRESS. ANDRE DOCHSCHER, PIERRE DOCHSCHER, and MATHIAS G. SPOO, Luxemburg, Luxemburg, Germany. Filed Apr. 1, 1884. (No model.) Patented in Germany Dec. 10, 1881, No. 19,050; in Luxemburg Feb. 18, 1882, No. 135; in France Apr. 22, 1882, No. 148,508; in Belgium July 25, 1882, No. 58,580; in Italy Aug. 3, 1882, XXVIII, 490; in Austria-Hungary Aug. 12, 1882, No. 14,733, and in Spain Feb. 1, 1883, No. 3,541.



Claim.—1. The combination of the differential lever, the flanged nut connected to this lever by drop-pins, the pressure-base connected to said nut, and the operating-lever connected loosely to the differential lever, all constructed and adapted to operate substantially in the manner and for the purposes described.

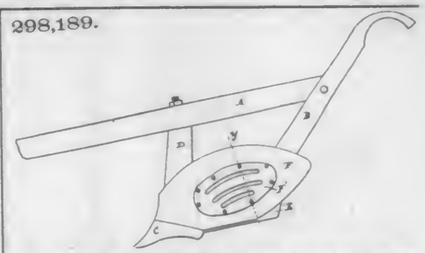
2. The combination of the screw-shaft, the power-nut applied thereon, the lever *b*, connected to the nut by drop-pins, the lever *e*, provided with openings, a fulcrum-pin, *d*, on the base *c*, and a loose connection with the differential lever, all constructed and adapted to operate substantially in the manner and for the purposes described.

3. The combination of the screw-shaft, the flanged nut thereon, the differential lever connected by pins to the said nut, the lever *e*, for actuating the differential lever, the base *c*, and the angular irons, connecting the flanged nut to this base, all constructed and adapted to operate substantially in the manner and for the purposes described.

298,189. MOLD-BOARD. OLIA A. ENOS, Canton, Ohio. Filed Jan. 9, 1884. (No model.)

Claim.—1. In a plow, a mold-board constructed with an aperture, the mold-board surrounding said aperture being integral throughout, in combination with a detachable plate adapted to be situated in said aperture and have its wearing-face flush with that of the surrounding mold-

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board, and means for clamping the detachable plate in place, substantially as set forth.

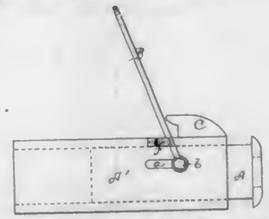
2. In a plow, a mold-board having an aperture, the mold-board surrounding the aperture being integral throughout, in combination with a detachable wearing-plate provided with slots, substantially as and for the purposes set forth.

298,190. NECK-WEAR TIP. WERNER FICHTENBERG, New York, N. Y., assignor to William H. Hart, Jr., Philadelphia, Pa. Filed Jan. 12, 1884. (No model.)



Claim.—The metal neck-wear tip A, having the sides *b b* and ends *c c*, curled or bent over, substantially as and for the purpose set forth.

298,191. CAR-COUPLING. ASA B. FREE, Lyndonville, assignor of one-half to John D. Warren, Medina, N. Y. Filed Feb. 25, 1884. (No model.)



Claim.—1. The combination of the draw-head A and draw-bar or frame A', the latter having the oblong side slots, *a a*, the rectangular link B, attached to a bolt, *b*, which goes through the slots *a a*, and also through the draw-bar A, and the horn C on top of bar A', all arranged and operating substantially as and for the purpose specified.

2. The combination of the draw-head A, slotted draw-bar A' *a a*, link B, and the side stops, *f f*, as and for the purpose specified.

298,192. GAME. ROBERT B. B. FOOTE, Cincinnati, Ohio. Filed July 16, 1883. (Model.)

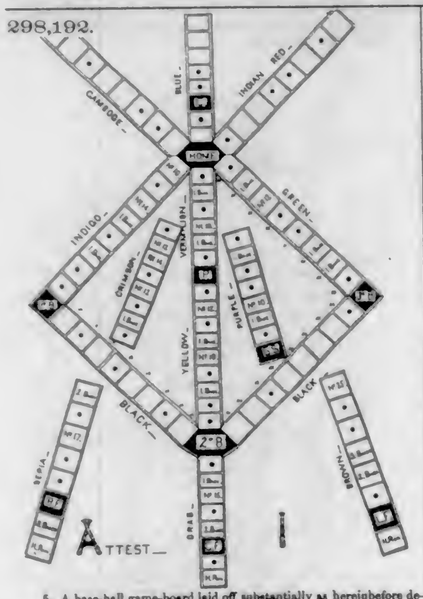
Claim.—1. A base-ball game-board consisting of a number of appropriate rows or sets of differently-colored squares arranged to represent a base-ball diamond, substantially as and for the purposes described.

2. A base-ball game-board consisting of a number of appropriate rows or sets of differently-colored squares arranged to represent a base-ball diamond and different field positions of a base-ball game, substantially as and for the purposes described.

3. A base-ball game consisting of a board composed of variously-colored sets of squares arranged to represent a base-ball diamond and various field positions, in combination with an indicator provided with a circle consisting of the colors employed on the board, and appropriate pointers to designate one of the colors on said indicator, substantially as and for the purposes described.

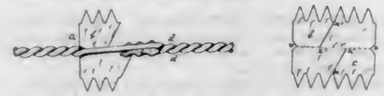
4. The herein-described base-ball game-board, consisting of a number of variously-colored sets of squares arranged to represent a base-ball diamond and the various field positions, a portion of said squares being provided with numbers and characters, substantially as described, in combination with an indicator having a circle composed of the various colors employed on the board, and another circle consisting of a number of blocks or spaces, each block or space being provided with a number, and two pointers—one light and the other dark—arranged to be turned on a central pivot and designate a certain color and number, substantially as and for the purposes described.

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5. A base-ball game-board laid off substantially as hereinbefore described, in combination with an indicator having a circle composed of the various colors employed by the board, and another circle consisting of a number of spaces, each space being provided with a number or designating character, and two pointers, designated from each other in a suitable manner, arranged to turn on a central pivot, and designate, respectively, a certain color or character, as the case may be, substantially as and for the purposes described.

298,193. WARNING-PLATE FOR WIRE FENCES. SAMUEL FORRESTER, Allegheny City, Pa. Filed Jan. 21, 1884. (No model.)



Claim.—1. A warning-plate consisting of a quadrilateral plate or blank having two cuts or slits extending from opposite sides to the line *x x'*, which intersects the plate normally to its other opposite sides, the parts thus formed being bent at an angle to each other on said line *x x'*, substantially as and for the purposes described.

2. A warning-plate consisting of a flat plate notched on two of its edges for the reception of the strand-wires of a fence, and divided by two cuts extending from its other opposite sides partially across the plate, the parts thus formed being bent at an angle to each other on the line connecting the inner extremities of the cuts, substantially as and for the purpose described.

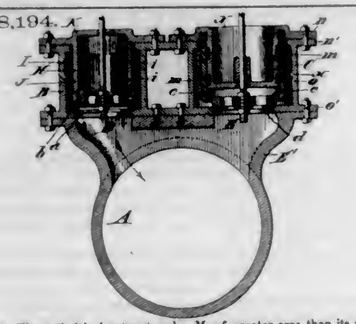
298,194. PUPPET-VALVE. HAMLIN F. FRENCH, Cincinnati, Ohio. Filed Dec. 18, 1883. (No model.)

Claim.—1. In combination with the cylinder A, the cylindrical valve H, provided with an annulus, *b*, and the cylindrical valve M, provided with the annulus *c*, adapted to operate as supply and exhaust valves, communicating directly with the cylinder A, substantially as herein set forth.

2. In combination with the cylinder A, the ports D E, communicating at one side with an inside valve, H, and annulus *b*, and on the other side an outside valve, M, provided with the inside annulus, *c*, whereby the valves are adapted to act as supply and exhaust valves, to be held in the seats by steam-pressure, substantially as herein set forth.

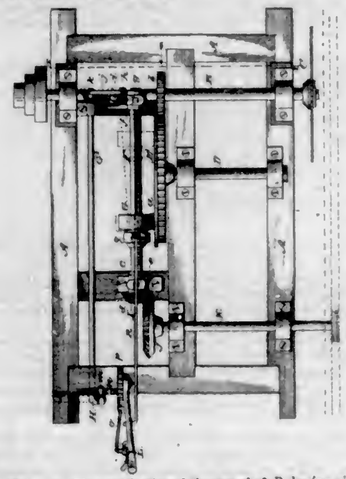
3. The outside annular cylindrical valve, M, in combination with the inside cylindrical cap, N, and provided with an inside annulus, *c*, of greater area than the annulus inside of the annular seat *d*, and adapted to act as an exhaust-valve and to be held in its seat by steam-pressure, substantially as described.

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4. The cylindrical exhaust-valve M, of greater area than its port, and provided with projecting flanges *c* on its inside, so as to hold the valve to its seat by steam-pressure, substantially as herein set forth.

298,195. SAW-MILL FEED MECHANISM. EDWIN T. GARDNER, Rocky Mount, N. C., assignor of one-half to James H. Odom, same place. Filed Mar. 15, 1884. (No model.)

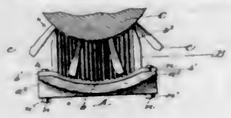


Claim.—1. The combination of the saw-shaft B, having pinion *b*, the short shaft D, arranged parallel with the saw-shaft and having a toothed friction-disk, E, and the laterally-adjustable shaft F, arranged at right angles to shafts B and D, and bearing a friction-wheel, G, arranged to slide longitudinally on said shaft, but revolve rigidly with it, substantially as shown and described.

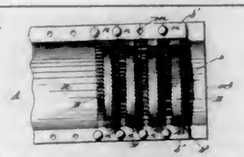
2. The combination, with the friction-disk E, of the laterally-adjustable shaft F, arranged at right angles to the axis of said disk, the feathered and sliding friction-wheel G, the pivoted bearing *c* and frame *e*, the pivoted bearing *f*, the sliding frame *h*, guide-plate *i*, and means for moving this end of the shaft, substantially as shown and described.

3. The combination, with the laterally-adjustable shaft F, of a parallel rock-shaft, G^2, having a crank and connecting-link at one end and a hand-lever and locking-bar at the other, and the feathered and sliding friction-wheel G, the connecting-rod R and hand-lever L, with locking-bar, and the double and right-angular notched plate *n p*, for bringing both hand-levers under the simultaneous control of the workman, as set forth.

298,196. CLOVER-HULLING ATTACHMENT FOR THRASHING-MACHINES. ALFRED L. GATES, Surrey, Wis. Filed Dec. 28, 1883. (No model.)



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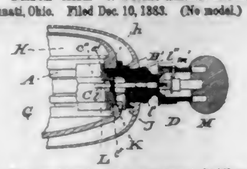


Claim.—1. In a clover-hulling attachment for thrashing-machines, the combination, with the thrashing-cylinder, of the plano-concave provided with teeth-sections, constructed as described, extending from front to rear of the concave, and having vertical front and rear edges and top and bottom edges concentric with the thrashing-cylinder, substantially as herein described.

2. In a clover-hulling attachment for thrashing-machines, the combination, with the thrashing-cylinder, of the plano-concave provided with teeth-sections having their top edges concentric with the cylinder, said sections extending from front to rear of the concave, and having vertical front and rear edges, and provided at their base with laterally-projecting flanges having indentations and fastening-bolts, substantially as described.

3. In a clover-hulling attachment for thrashing-machines, the combination of the plano-concave provided with teeth-sections having vertical front and rear edges, and provided at their base with laterally-extending side flanges that abut together, said flanges provided at their side edges with V-shaped indentations and fastening-bolts, the heads of each of said bolts bearing upon two adjacent sections, substantially as described, with the thrashing-cylinder, as and for the purpose set forth.

298,197. WATCH-CASE. C. WESLEY HARMAN and HORACE G. SKIDMORE, Cincinnati, Ohio. Filed Dec. 10, 1883. (No model.)



Claim.—1. The combination of a movement-holding ring, a case-center, bezel, and inner back, the movement-holding ring adapted to be held from movement in the case-center, and the bezel and inner back being seated upon the movement-holding ring, and secured to the case-center by a turn-joint similar to a screw or bayonet-joint connection, as set forth.

2. The combination of a movement-holding ring, a case-center, bezel, and inner back, the movement-holding ring adapted to be held from movement in the case-center, and the bezel and inner back occupying seats on the movement-holding ring and case-center, and secured to the case-center by being turned into the latter, as by a screw or bayonet-joint connection, as set forth.

3. The combination of a case-center having flanges B B', movement-holding ring having seats d' e^x, the bezel, and the inner back, the movement-holding ring being held from movement in the case-center, and the bezel and inner back both being seated against their respective seats and flanges, and connected to the case-center by being turned in, as by a screw or bayonet-joint, as set forth.

4. In a dust-proof stem-winding-watch case, the slotted push and winder piece M, which contains a sliding key-pin, L, having a screw-threaded plug, K, in combination with the screw-threaded and counter-bored orifice e'' e''' in the movement-containing ring, substantially as and for the purpose set forth.

298,198. BUTTON-HOLE. EDNAH G. HARRIS, Boston, MASS. Filed Dec. 13, 1883. (No model.)



Claim.—A button-hole having its edges re-enforced by a wire, cord, string, or strip of any suitable material inserted between the thicknesses of material in which the button-hole is made, and secured thereto by overstitches, whereby said re-enforce is held between said thicknesses of material by said overstitches on all sides of said re-enforce, substantially as described.

298,199. DEVICE FOR OVERCOMING DEAD-CENTERS AND FOR CONVERTING MOTION. IRVING LEWIS HAWKINS, Windsor, N. Y. Filed Feb. 20, 1884. (No model.)



Claim.—1. The combination, with one or more cam-wheels, of a piston having pins arranged upon opposite sides for engaging the cams, and elongated slots for the passage of the journals, substantially as and for the purposes specified.

2. The combination, with two or more cam-wheels having laterally-projecting journals, of a piston having pins for engaging the cams, so arranged as to overcome the dead-center, and drive two or more wheels in opposite directions, substantially as specified.

298,200. BUTTON-SETTING MACHINE. LORENZO D. HAWKINS, Stoneham, and ERASTUS WOODWARD, Somerville, MASS., assignors to Joseph Davis, Benj. F. Spinney, and Charles A. Coffin, all of Lynn, MASS. Filed May 15, 1883. (No model.)

Claim.—1. In a machine for setting buttons, an independent anvil and a rest to hold the button in position with relation thereto, combined with an independent driver, and a centering device to direct the tack with relation to the anvil and eye of the button, substantially as described.

2. In a machine for setting buttons, a grooved button conductor or chute, down which the buttons are free to roll, the said conductor having an edge, 32, to enter the angle between the back of the button and the junction of the shank therewith, substantially as described.

3. The button conductor or chute, anvil against which to clinch the fastener, a fastener conductor or chute, and an upwardly-moved driver, combined with a transferrer to transfer a fastener into position above the driver, with its point uppermost, and with a centering device for the fastener, to operate substantially as described.

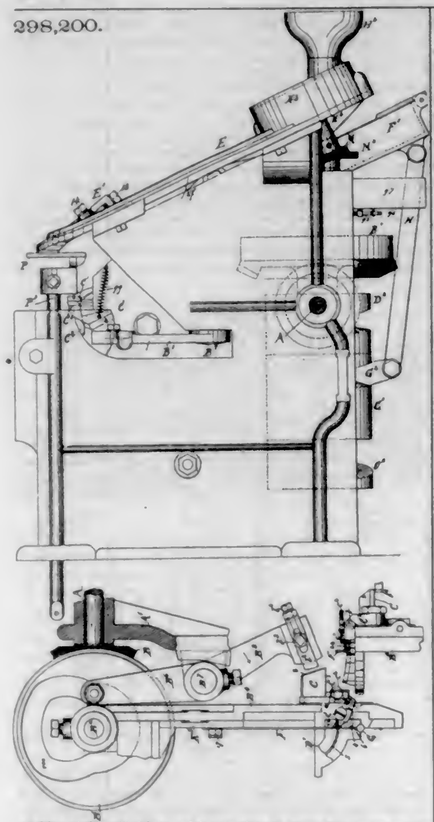
4. The button conductor or chute composed of the under plate provided with a groove and the top plate also provided with a groove, the under plate being of diminishing width outside the groove therein toward the delivery end of the said chute and to then arrive in position at the thin edge 32 of the eye of the button in position to be entered by the fastener, substantially as described.

5. The button conductor or chute and the anvil, and means to carry it, combined with the presser-foot, to clamp the material while the button is being set, substantially as described.

6. The button conductor or chute and the anvil provided with a prong to engage the shank of the button, combined with a driver to direct the fastener, and with means to change the position of the anvil and driver with relation to the end of the button conductor or chute to enable the button to be removed from the button-conducting chute, substantially as described.

7. The button conductor or chute, and an anvil on which to clinch or curl the point of the fastener, combined with a driver to drive the fastener and with means to operate the same and change the relative

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position of the said driver and button-chute horizontally, to remove the button from the chute holding it, substantially as described.

8. The fastener conductor or chute, and transferrer to carry a fastener to the driver, and a driver and support for the face of the material, and an anvil having a clinching-face, combined with a centering device or throat adapted to direct the point of the fastener to the anvil to clinch the said point about the shank of the button, substantially as described.

9. In a button-setting machine, a rest for the button and an adjacent anvil, a driver to drive a fastener, and an interposed device adapted to receive the point of the fastener and present it to the material, and yield to the passage of the fastener between it as the latter is driven by the driver, substantially as described.

10. In a machine for setting buttons, an anvil having a clinching-surface, combined with a driver and means to automatically vary its stroke or movement, according to the thickness of the material, substantially as described.

11. In a machine for setting buttons, an anvil and a driver and a centering device or throat to control the presentation of the point of the fastener to the said anvil, and with a lever having a movable fulcrum and adapted to operate the driver, substantially as described.

12. In a machine for setting buttons, a fastener conductor or chute, a transferrer, and an anvil, combined with a button conductor or chute, a driver, and a feeding-lever, and with means, substantially as described, actuated by the fastener, to determine when the material shall be fed, whereby should the presentation of a fastener be omitted the material will not be fed, substantially as described.

13. A swinging frame and a fastener conductor or chute, an anvil, and a driver carried thereby, combined with a button conductor or chute, a feeding-lever, and a presser-foot supported in another part of the frame-work, and with relation to which the said swinging frame and its parts are made movable a greater or less distance, according to the distance to be preserved between adjacent buttons, substantially as described.

14. In a machine for setting buttons upon boots and shoes and other material, a fastener conductor or chute, a reciprocating driver, opposite the end of which is placed the fastener to be driven, and a centering device or throat for the point of the fastener, combined with a button conductor or chute, a stop to arrest the undermost button in position opposite the said anvil, substantially as described.

15. The fastener-receiver, fastener conductor or chute, driver-bar, and driver, combined with a lever connected with the said receiver and driver-bar, and with a movable fulcrum-pin for the said lever, substantially as described.

16. In a machine for setting buttons, a fastener conductor or chute, grooved to receive the heads and shanks of the fasteners and set at an inclination to enable the said fasteners to descend therein by gravity while resting on their heads, and with their points directed upward, and a transferrer, and driver, and anvil, combined with a button conductor or chute to conduct buttons into position opposite the driver and fastener, the said button conductor or chute being curved and shaped, substantially as described, to cause the shank of the button to be turned to present the open eye in the path of movement of the point of the fastener before it meets the said eye, for the purposes set forth.

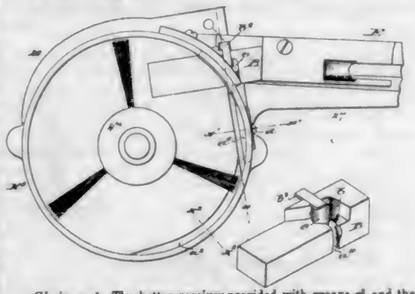
17. The swinging frame and its driver and fastener conductor or chute and anvil and transferrer and the button conductor or chute, combined with means to enable the material to be fed only after a fastener has been driven, and with a counting mechanism to indicate the number of feeding movements, and consequently of the fasteners which are driven, substantially as described.

18. The button-receiver and button raceway therein, grooved to receive the heads of the buttons when standing on edge, and an agitator to place the buttons in the said raceway, combined with the conductor or chute into which the buttons are discharged from the raceway, the latter at its lower portion having a knife-edged rest for the shank, substantially as described.

19. In a button-setting machine, a presser-foot and supporting-surface to hold the material, and a driver and anvil to drive a fastener and clinch it about the shank of the button, combined with means, substantially as described, to change the relative position of the anvil and driver horizontally with relation to the presser-foot, substantially as described.

20. In a button-setting machine, a presser-foot and supporting-surface to hold the material, and a driver and anvil to drive a fastener and clinch it about the shank of the button, combined with means, substantially as described, to change the relative position of the anvil and driver horizontally with relation to the presser-foot, and with a counter to indicate the number of horizontal movements of the said driver, substantially as described.

298,201. BUTTON-FEEDING APPARATUS. LORENZO D. HAWKINS, Stoneham, and ERASTUS WOODWARD, Somerville, MASS., assignors to Joseph Davis, Benj. F. Spinney, and Chas. A. Coffin, all of Lynn, MASS. Filed Nov. 26, 1883. (No model.)



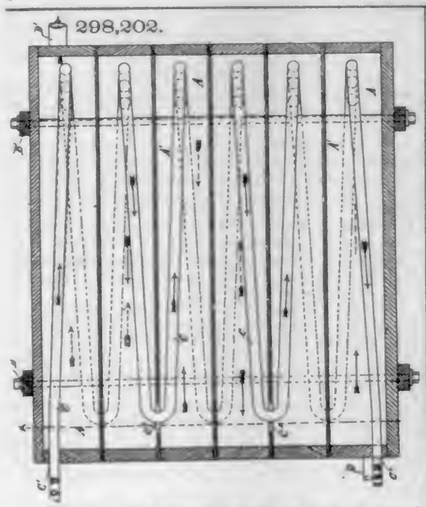
Claim.—1. The button-receiver provided with groove a^2, and the chute or conductor, combined with the block, having a throat for the entrance of the shanks of the buttons, a shoulder, and a passage, e, in communication with the groove in the said chute, the buttons falling edgewise from the said shoulder and dropping on their edges into the chute to roll down the same, substantially as described.

2. The button-receiver having a groove in its bottom, and the shelf or projection located along one side of the same to support part of the button-head, as shown, combined with an agitator or brush to move the buttons, along with their shanks, below the said shelf, and with a block having a throat, substantially as described, adapted to turn the button over upon its edge and effect its entrance edgewise into the groove of the chute, as set forth.

3. In a button-feeding apparatus, the block B, provided with a throat and shoulder and passage e, combined with a slide or projection, b^2, to more or less cover the passage e, substantially as shown and described.

298,202. APPARATUS FOR COOLING MASH, &c. TIMOTHY HAYES, Anderson's Ferry, Ohio. Filed Nov. 17, 1883. (No model.)

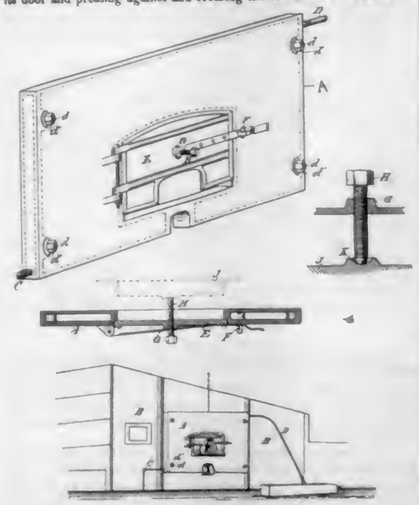
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Claim.—The cooler consisting, essentially, of a series of communicating chambers, A, arranged one above the other, and each provided with a longitudinal partition, A', dividing each chamber into two compartments communicating at one end, in combination with a coil, C, of a constant descending pitch, passing through the series of chambers from top to bottom and around the partition in each chamber, substantially as described.

298,203. COOLING-SHIELD FOR PUDDLING-FURNACES. EDWIN W. HEKMAN, Bay View, Wis. Filed Aug. 11, 1883. (No model.)

Brief.—A shield, hollow for circulation of cold air or water, and secured to the furnace by bolts and nuts, has a screw-bolt passing through its door and pressing against and securing the furnace-door in place.



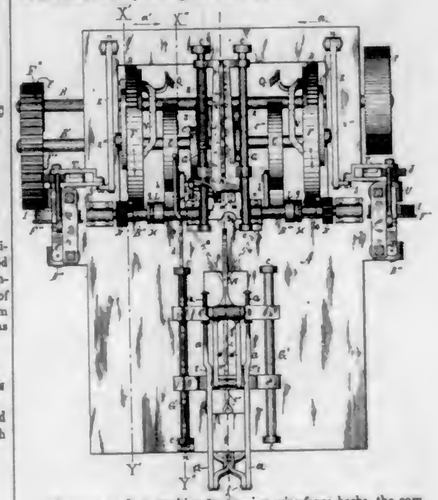
Claim.—1. In a hollow shield for furnaces, a door provided with a screw-bolt for screwing the furnace-door to its seat when closed, substantially as described.

2. The shield-door and mechanism for securing it when closed, in combination with a screw-bolt, H, and furnace-door, as set forth.

3. A hollow shield adapted for containing air or water in circulation, and having a door for giving access to the furnace-door, in combination with a brace for pressing the furnace-door tightly in place when the shield-door is closed, as set forth.

298,204. WIRE-BARBING MACHINE. PETER P. HILL, Lee, Ill., assignor to the Washburn & Moen Manufacturing Company, Worcester, Mass., and Isaac L. Ellwood, De Kalb, Ill. Filed Nov. 30, 1883. (No model.)

Brief.—Two main wires are fed through the machine and are held one above the other. Two barb-wires are fed between the main wires from opposite sides. Their free ends are bent aside by reciprocating binders, and each is then wrapped around the other barb-wire by reciprocating and rotating wrapping-spindles, through which the barb-wires pass as they are fed into the machine, the wraps so formed being on opposite sides of the main wires. The barb-wires are severed by knives—one movable, the other stationary—carried by a sliding head, which brings them into operating position after the ends of the barbs are wrapped. Holding-jaws are closed upon the main wires over and under the barb-wires while the barbs are being formed. These jaws draw along the main wires with the formed barbs between them. The wires are afterward twisted, thereby holding the barbs in place.



Claim.—1. In a machine for forming wire-fence barbs, the combination of means for supporting two barb-wires whose free ends lie in opposite directions, means for intermittingly feeding said wires into a position in which their ends overlap each other and lie side by side, means for wrapping the end of each of said wires about the other, leaving the points projecting, and means for severing said wires at suitable distances from the wraps so formed.

2. In a machine for forming wire-fence barbs, the combination of means for supporting and intermittingly feeding from opposite directions two barb-wires whose free ends at the close of each feed overlap each other and lie side by side, means for grasping said overlapping ends midway between their respective points, means for wrapping the end of each wire about the other wire, the wraps so formed being on opposite sides of said grasping device, and means for severing said wires at suitable distances from the wraps.

3. In a machine for forming wire-fence barbs, the combination of means for supporting and intermittingly feeding from opposite sides of the machine two barb-wires whose ends at the close of each feed overlap each other and lie side by side, means for grasping said overlapping wires at a point midway between their ends, means for bending in opposite directions the ends of said wires, which project on opposite sides of said grasping device, means for wrapping the bent end of each of said wires about the other wire, and means for severing said wires at suitable distances from the wraps formed thereon.

4. In a machine for forming wire-fence barbs, the combination of two hollow spindles lying on opposite sides of the machine and in the same straight line, and journaled in suitable bearings, in which they have longitudinal and rotary motion, means for intermittingly feeding barb-wires through said spindles toward the center of the machine, whereby the inner ends of said wires at the close of each feed overlap each other and lie side by side, means for grasping said wires at a point midway between their ends, means for bending upward and downward, respectively, the projecting ends of said wires, which lie on the opposite sides of said grasping device, means for sliding said spindles inward toward the center of the machine until they engage the bent ends of said wires, means for rotating said spindles and wrapping the end of each wire about the other wire, means for sliding said spindles outward in their bearings, and thereby releasing the ends so wrapped, and means for severing said wires at suitable distances from said wraps.

5. The combination of the hollow spindles B'' B''', journaled in suitable bearings, the pinions N, and cam-faces O, rigidly mounted on said spindles, the flange and segment wheels F, co-operating with said pinions and cam-faces to produce intermittent rotary motion of said spindles, and suitable means for imparting reciprocal longitudinal motion to said spindles, substantially as and for the purpose set forth.

6. The combination of the hollow spindles B'' B''', journaled in suitable bearings, suitable means for imparting intermittent rotary motion to said spindles, the grooved collars L, mounted on said spindles, the swinging levers f'', whose forked ends g play in the grooves in said collars, the rollers x'', mounted on said levers, the cam-wheels F, and the cam-flanges V Q, rigidly attached to said wheels and co-operating with said rollers x'', whereby reciprocal longitudinal motion of said spindles is effected, substantially as shown and described, and for the purpose set forth.

7. The combination, with means for feeding and means for supporting two barb-wires, substantially as set forth, of the two benders K K', above and below the ends of the wires, respectively, the shaft B', journaled in suitable bearings, the cranks s' s'', mounted on said shaft and connected with said benders K K', respectively, and means, substantially as described, for partly rotating said shaft, whereby the benders K K' bend the ends of the barb-wires downward and upward, respectively, substantially as and for the purpose set forth.

8. The combination of the hollow spindles B'' B''', means, substantially as shown and described, for imparting rotary and longitudinal motion thereto, means for intermittingly feeding a barb-wire through each of said spindles, the benders K K' above and below the ends of said wires, respectively, means for thrusting said benders downward and upward, respectively, against the respective ends of said wires, and means for severing said wires after the wrapping of their ends, substantially as shown and described, and for the purpose set forth.

9. The combination of the guides G G and head H, sliding thereon, the two pairs of knives m'' m' and m m''', attached thereto, substantially as described, cam C''', and spring R, adapted to impart reciprocal longitudinal motion to said head, and cams C'' C'', adapted to operate said knives, respectively, substantially as shown and described, and for the purpose set forth.

10. In a wire-barbing machine, the combination of means for supporting two main wires, means for intermittingly feeding forward said main wires, means for feeding two barb-wires across and between the main wires from opposite sides thereof, means for wrapping the end of each barb-wire about the other barb-wire, the two wraps so formed being on opposite sides of said main wires, and means for severing said barb-wires at suitable distances on either side of the main wires.

11. In a wire-barbing machine, the combination of means for supporting two main wires, means for intermittingly feeding said main wires, means for feeding two barb-wires across and between the main wires from opposite sides, means for grasping the main and barb wires at their point of crossing, means for bending downward and upward, respectively, the projecting ends of said barb-wires, means for wrapping the bent end of each of said barb-wires about the other barb-wire, the two wraps so formed being on opposite sides of the main wires, and means for cutting said barb-wires at suitable distances on either side of said main wires.

12. In an automatic wire-barbing machine, the combination of suitable means for supporting two main wires, suitable means for feeding two barb-wires across and between said main wires from opposite sides, two reciprocally-sliding clamping-jaws adapted to grasp the main and barb wires at their point of crossing and hold them stationary during the formation of the barb, and to recede and carry with them the main wires at the completion of the barb, means for wrapping the projecting end of each barb-wire about the other barb-wire while said jaws are stationary, and means for cutting said barb-wires at suitable distances on either side of said clamping-jaws.

13. In a wire-barbing machine, the combination of two reciprocally-sliding jaws adapted to open and close, means for supporting two main wires in the line of and between said clamping jaws, means for feeding two barb-wires across and between said main wires from opposite sides thereof, means for operating said jaws, whereby they are made to advance while open, to close upon said main and barb wires at their crossing, to hold said wires stationary during the formation of a barb, to recede, still grasping said wires, thereby feeding forward the main wires, and to open at the end of said retrograde movement and release said wires, means for bending upward and downward, respectively, the projecting ends of said barb-wires, means for wrapping the bent end of each barb-wire about the other barb-wire, and means for cutting said barb-wires at suitable distances on either side of said clamping-jaws.

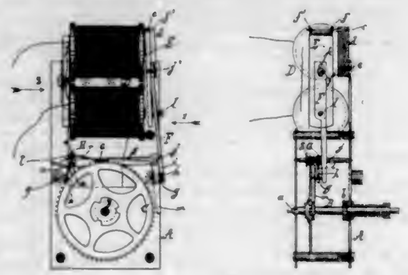
14. The combination of the guides G' G', blocks b b', sliding thereon, jaw W', rigidly attached to said blocks, jaw W, pivoted to the block b, toggle-levers r r', connecting the rear ends of said jaws, rods a, passing through the block b and pivoted to the toggle-levers r r' at their intersections, suitable stops on the rods a, in front of and behind the block b, and means for imparting reciprocal longitudinal motion to the rods a, whereby the jaws W W' are caused to slide forward and back on the guides G' G' and to alternately open and close, substantially as shown and described, and for the purpose set forth.

15. The combination of the jaws W W', rods a, lever f, pitman e, lever f', supporting the end of said pitman, roller x'', pivoted to the end of said pitman, and a suitable cam for imparting reciprocal motion to said pitman, substantially as shown and described, and for the purpose set forth.

16. The combination, with means for supporting the main and barbed wires, substantially as shown and described, of the jaws W W', longitudinally grooved for the reception of the main wires and transversely notched for the reception of the barb-wires, substantially as and for the purpose set forth.

17. The combination, with the jaws W W', and means, substantially as set forth, for imparting to them a reciprocal longitudinal motion, of the ratchet-bar d, adapted to engage said jaws when at their forward limit of motion and hold them stationary while in such engagement, and the cam C, adapted to raise said ratchet-bar and release said jaws, substantially as shown and described, and for the purpose set forth.

298,205. SECONDARY ELECTRIC CLOCK. IDA C. HIMMER and WILLIAM F. WIEGERER, New York, N. Y., assignors to said Ida C. Himmer. Filed Jan. 31, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a cog-wheel, C, an electro-magnet, D, a pivoted armature, E, a lever, F, connected with the armature, a pivoted lever, G, and a gravitating pawl, H, pivoted to one end of the pivoted lever, and provided with a stop-finger, r, and propelling-finger q, said pivoted lever, by its gravity and that of the pawl, serving to retract the armature, and the propelling and stop fingers being thrown into engagement with the cog-wheel by the gravity of the propelling-finger, all substantially as set forth.

2. The combination, substantially as hereinbefore described, of the electro-magnet, the armature, the cog-wheel mounted on or geared together with the center arbor of a clock, the rock-shaft j, the slotted lever mounted on said rock-shaft, the arm extending from the armature and engaging with the slotted lever, the pawl m, and the lever G, mounted on the rock-shaft, and the propelling-pawl attached to the lever G.

3. The combination, substantially as hereinbefore described, of the electro-magnet, the armature, the cog-wheel mounted on or geared together with the center arbor of a clock, the lever G, which is connected with the armature, so as to be actuated by the same, and which serves to retract the armature, the lug s, ajustably secured to the lever G, and the gravitating pawl H, pivoted to this lug, and provided with a propelling-finger and with a stop-finger, which are thrown in gear with the cog-wheel by the gravity of the propelling-finger.

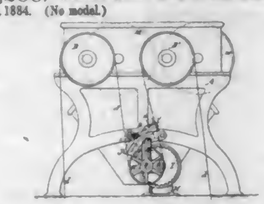
4. The combination, substantially as hereinbefore described, of the electro-magnet, the armature, the cog-wheel mounted on or geared together with the center arbor of a clock, the rock-shaft j, the arm extending from the armature and geared together with the rock-shaft, the screws j'' and l, for adjusting the position of said arm, the pawl m, and lever G, mounted on the rock-shaft, and the propelling-pawl attached to the lever G.

5. The combination, substantially as hereinbefore described, of the electro-magnet, the armature, the adjusting-screw on which the armature swings, the adjustable arm d, the levers F and G, and the gravitating pawl for propelling the wheel, mounted upon or geared together with the center arbor of a clock.

6. The combination, substantially as hereinbefore described, of the electro-magnet, the armature, the pawl m, the stop-pawl s, loosely mounted on the rock-shaft, the gravitating pawl H, the adjusting-screw on which said pawl is mounted, and the wheel mounted on the center arbor of a clock.

7. The combination, substantially as described, of the electro-magnet, the armature mounted on the adjusting-screw c, the adjustable arm d, the arm F, extending from said armature, the lever G, the pawl H, and the wheel C, mounted on the arbor B.

298,206. ROLLER-MILL. NOAH W. HOLT, Buffalo, N.Y. Filed Jan. 21, 1884. (No model.)



Claim.—1. The combination, with two pairs of rollers, B B and B' B', of pulleys D D' and M M', secured to the roller-shafts on opposite sides of the machine, a counter-shaft, A, carrying a wheel, I, and pulleys N N, an adjustable pulley, E, mechanism whereby motion is transmitted from the pulley E to the wheel I, and endless driving-belts *d*, *m*, and *n*, substantially as set forth.

2. The combination, with the fast rollers B B and the slow rollers B' B', of the counter-shaft A, supported in fixed bearings, a tightener-pulley, E, a belt, *d*, driving said tightener-pulley and the fast rollers, mechanism whereby power is transmitted from said tightener-pulley to said counter-shaft, and a belt driving mechanism provided with a tightening device, and connecting the counter-shaft with the slow rollers, substantially as set forth.

3. The combination, with the rollers B B and B' B', of the pulleys D D' and M M', counter-shaft A, tightener-pulley E, made adjustable concentric with said counter-shaft, mechanism whereby motion is transmitted from the tightener-pulley E to said counter-shaft, and mechanism whereby the counter-shaft is connected with the pulleys M M', substantially as set forth.

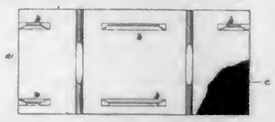
4. In a roller-mill, the combination, with the counter-shaft A, provided with a wheel, I, of the pulley E, shaft *e*, and pinion *i*, a frame, G, pivoted concentric with the shaft A, and means whereby the frame G can be secured in position, substantially as set forth.

5. In a roller-mill, the combination, with the pulleys M M', shaft A, pulleys N N, and belts *m n*, of a tightener-pulley, O, operating against both belts, substantially as set forth.

6. In a roller-mill, the combination, with the counter-shaft A, provided with a wheel, E, of a frame, G, pivoted concentric with said shaft, and provided with a shaft, *e*, and pinion *i*, a gear-segment, *j*, formed on said frame, and a worm-wheel, *k*, substantially as set forth.

7. In a roller-mill, the combination, with the frame A and counter-shaft A, of a frame, G, pivoted concentric with the counter-shaft, and provided with a dovetail segment, *j*, a bearing-piece, J, secured to the frame A, and having a curved dovetail groove, *j'*, a shaft, *e*, supported in the frame G, and means whereby the frame G is adjusted and secured in position, substantially as set forth.

298,207. BEARING FOR SHAFTS, SPINDLES, &c. SILAS J. HOWELL, Boston, assignor of one-half to Daniel W. Gooch, Melrose, Mass. Filed Dec. 14, 1883. (No model.)



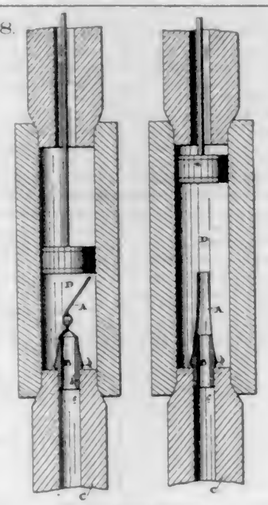
Claim.—1. A bearing composed of a Getchell metal or hardened copper shell or lining, and an adhering baser metal body, the baser metal body and the back of the shell or lining being amalgamated or incorporated one with the other, substantially as described.

2. That improvement in the art or method of producing bearings which consists in coating a metal shell or lining with a metal fluxing coating, and then pouring upon the same in a mold a baser metal body fusible at a lower heat than the shell or lining, and capable of fusing the said metal fluxing coating, thereby amalgamating the opposed surfaces of the said lining and baser metal body, substantially as described.

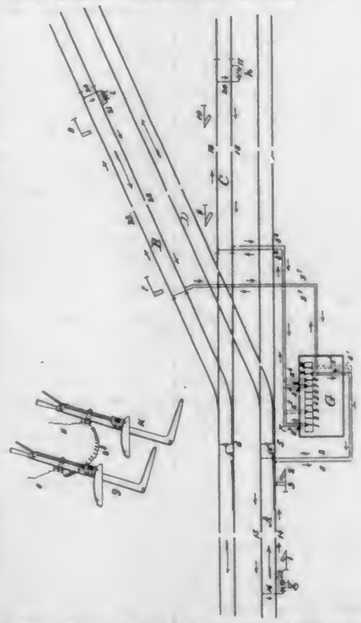
298,208. PUMP. JOHN G. IRVING, Markdale, Ontario, Canada. Filed May 19, 1883. (No model.)

Claim.—The thimble B, having one end constructed to enter the suction-tube of a pump, the other end tapered to receive a flexible tube, and provided with a projecting flange, *b*, adapted to prevent the thimble being forced entirely into the suction-tube, in combination with the flexible rubber tube A, held on said thimble by the flange *b*, substantially as and for the purpose specified.

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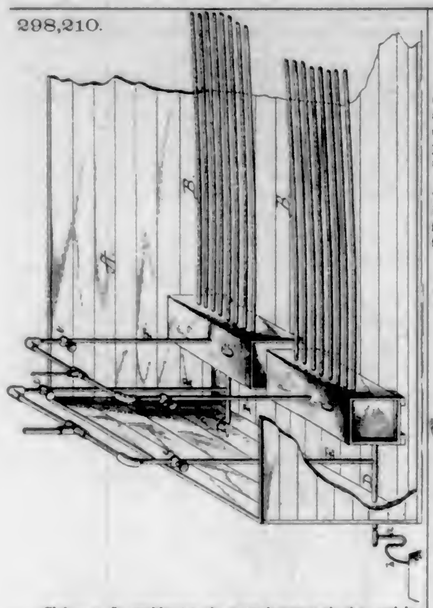
298,209. RAILWAY SIGNALING APPARATUS. CALEB H. JACKSON, Allegheny, Pa. Filed Feb. 15, 1883. (No model.)



Claim.—The combination of a signal governing the movements of trains on one of two intersecting lines of track, an operating-lever for moving said signal, a track-circuit on the other line of track, an electro-magnet included in said circuit, and an electric lock connected with the signal-lever and with the electro-magnet, and adapted to lock said lever by the demagnetization of said electro-magnet, these members being combined for joint operation to automatically lock at "danger" the signal of one line of track by the movement of a train on the other line, substantially as set forth.

298,210. APPARATUS FOR DISTILLING PETROLEUM. EDWARD KELLS, Cleveland, Ohio. Filed Nov. 26, 1883. (No model.)

298,210.



Claim.—1. In combination, the water box or tank, the receiving box or boxes immersed therein, the condensing-pipes opening into the receiving-boxes, and the discharge-pipe provided with a bent tube, *a*, fixed to its under side, substantially as and for the purpose set forth.

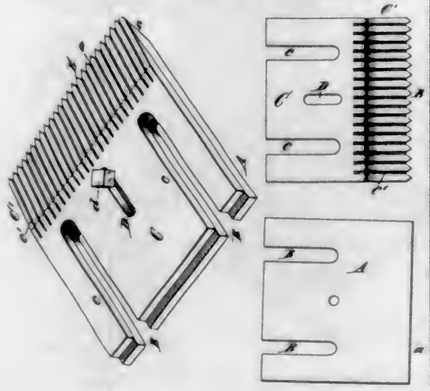
2. In combination, the water tank or box, the receiving box or boxes immersed therein, the condensing-pipes opening into the receiving-boxes, the flushing or pumping pipe let into the receiving-boxes, and the discharge-pipe, substantially as described.

3. In combination, the water tank or box, the receiving-boxes immersed therein, the condensing-pipes opening into the receiving-boxes, the flushing or pumping pipes let into the receiving-boxes, the discharge-pipe, and the vapor-conducting pipe, substantially as described.

4. In combination with the water tank or box and the receiving-box immersed therein, one or more condensing-pipes opening into the receiving-box, said condensing-pipes being laid in a descending curve from the end of the tank to their entrance in the receiving-box, substantially as and for the purpose set forth.

5. In combination with the discharge-pipe of a receiving-box, the bent tube *a*, fixed to the under side of the discharge-pipe, substantially as and for the purpose set forth.

298,211. CUTTER-KNIFE FOR EXCELSIOR-MACHINES. CHARLES L. KNIGHT, Cincinnati, Ohio. Filed Mar. 6, 1884. (No model.)



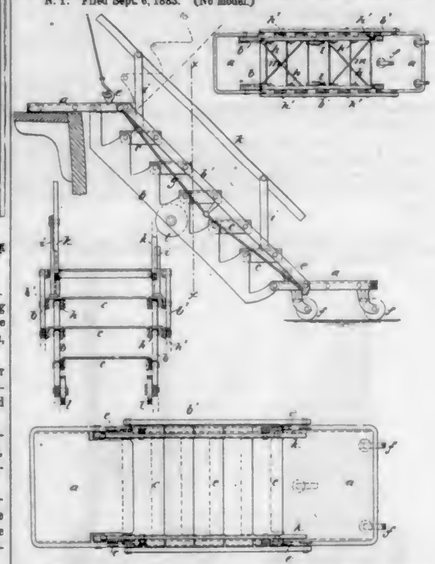
298,211.



Claim.—1. A cutter-knife for an excelsior-machine having a bevsled-edge cutter-blade, A, in combination with a blade, C, provided with a toothed and channeled sticker-edge, both blades being secured together so that the points of the toothed edge of one will project slightly beyond the cutting-edge of the other, substantially as and for the purpose specified.

2. In an excelsior-machine, the sticker-blade C, having sharp-pointed teeth E, which enter the wood to separate and guide fibers of it to the cutter-blade A, and a series of grooves, *c'*, along its beveled face C', to determine the grade of material cut, and to serve as guides for properly sharpening the teeth, substantially as herein set forth.

298,212. GANGWAY FOR SHIPS. THOMAS I. KNIGHT, New York N.Y. Filed Sept. 6, 1883. (No model.)



Claim.—1. An adjustable or folding step-ladder or stairs formed with two series of parallel side bars placed in different planes, in combination with steps jointed to the respective bars, forming a jointed reversible step-ladder capable of assuming opposite inclinations, substantially as herein set forth.

2. In a folding step-ladder, the combination, with parallel side bars and steps hinged thereto at the respective corners, of the overhanging platforms *a a*, hinged at each end of said side bars parallel with said steps, substantially as herein shown and described.

3. A reversible folding or adjustable ladder formed with the outer side bars, *b'*, and inner side bars, *b*, having a notched or stepped form, with steps *c c*, having hinging-ears at different planes on their respective corners jointed to the respective bars, substantially as and for the purpose set forth.

4. A folding step-ladder having parallel side bars with parallel steps jointed thereto, the said steps being formed of sheet metal, with their ends bent at right angles, forming hinging-lugs, which are jointed to said bars, substantially as herein set forth.

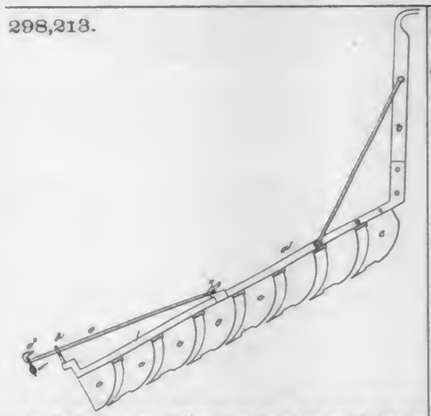
5. The combination, in a folding step-ladder, with parallel side bars and a parallel series of steps jointed thereto, of the suspending-eyes *e e*, fixed in the final steps connecting the side bars, and midway between the said bars, substantially as and for the purpose set forth.

6. In a folding step-ladder substantially such as described, the posts *i i*, arising from the steps, with the banister rail or rails *k k* jointed thereto, substantially as and for the purpose set forth.

298,213. ICE-PLOW. JACOB H. KNOWLES, LAWRENCE, MASS. Filed Jan. 14, 1884. (No model.)

Claim.—1. In an ice-plow, the beam, handles, and blade, combined with a horizontally-swinging link attached loosely to the plow-beam back of its front end, substantially as shown and described, the said link being

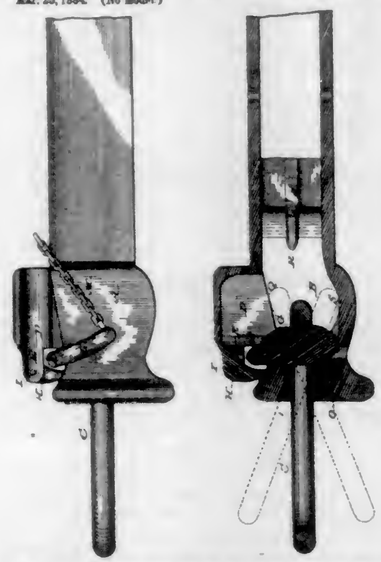
298,213.



adapted to hold the usual whiffletrees, and to operate as and for the purpose set forth.

2. In an ice-plow, the beam and the guide *d* at its front end, combined with the connecting-link *e*, attached to the plow back of the front end of the beam, the said link being extended through the said guide and adapted to hold the whiffletree, substantially as and for the purpose described.

298,214. CAR-COUPLING. JOHN P. LANCASTER, Goshen, Ind. Filed Mar. 25, 1884. (No model.)

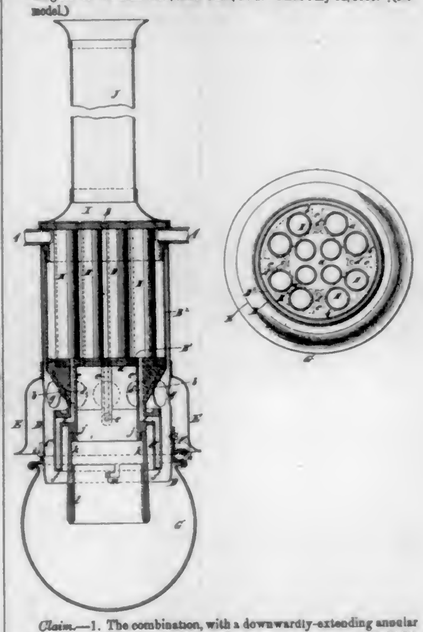


Claim.—1. The combination of the draw-head forming a transverse bearing upon its upper side, and having the inner side of the lower lip of its recess inclined, with the T-shaped coupling-pin rocking with its yoke in the bearing upon the upper side, and bearing with its obliquely-cut-off lower forward corner against the inclined inner side of the lower lip of the recess, as and for the purpose shown and set forth.

2. The draw-head having the roof of its recess inclined toward the forward end, having a transverse lip in its rear end slightly above the middle of the mouth of the recess, and having its bottom concaved, as and for the purpose shown and set forth.

3. The combination of the draw-head forming the transverse bearing at its upper forward corner, having the upper lips forming a circular recess or bore between them, the T-shaped coupling-pin rocking with its yoke in the bearing, and the angular fastening-plate secured upon a pin between the lips of the bearing, and having its inner end forming a circular enlargement fitting into the circular recess between the lips of the bearing, as and for the purpose shown and set forth.

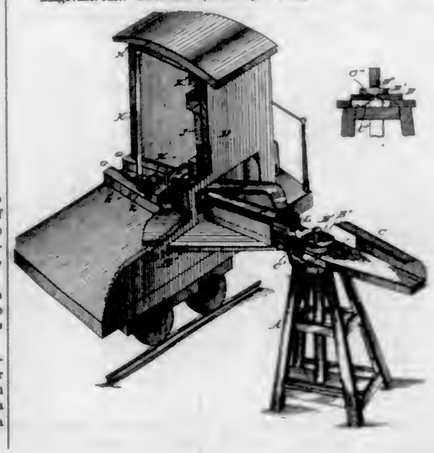
298,215. GAS-BURNER. ANDREW B. LIPSEY, West Hoboken, N. J., assignor to William Bell, New York, N. Y. Filed July 11, 1883. (No model.)



Claim.—1. The combination, with a downwardly-extending annular burner-tip or a circular series of burner-tips, of a gas-chamber, B B' B², pipes extending through the same, and communicating at one end with shells which extend below the burner tip or tips, and at the other end with a chimney, substantially as specified.

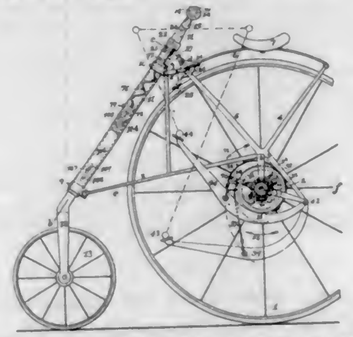
2. The combination, with a downwardly-extending annular burner-tip or a circular series of burner-tips and means for conveying gas thereto, of a shell, D, forming an air-flue and deflector for turning air inward toward the flame, and the shells *k l*, forming part of a flue for the waste products of combustion, and forming a deflector for turning air outward toward the flame, substantially as specified.

298,216. MAIL-BAG CATCHER. WILLIAM HENRY LOCKWOOD, North Kingsville, Ohio. Filed Mar. 6, 1884. (No model.)



Claim.—As an improvement in mail-bag catchers, the combination, with a swinging platform or shelf pivotally secured upon a suitable frame at the side of the railway-track, and having each of its projecting ends beveled or cut away upon one side and provided on the other with a curved wind-shield, of a swinging catch-shelf pivotally secured by one of its ends in a mail-car of ordinary construction, provided at its rear edge with a curved shield, and having at its outer free end a bumper adapted to strike against the beveled edge of the centrally-pivoted platform or shelf as the catch-shelf passes immediately beneath the same, and a sliding car-door adapted to be automatically closed by the swinging in of the catch-shelf after the latter has received the mail-bag, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

298,217. VELOCIPEDE. WILLIAM A. LORENZ, Hartford, Conn. Filed Sept. 1, 1883. (No model.)



Claim.—1. The combination of the handle-bar 14, the brake-handle 18, and the brake-lever 23, all combined and operating together substantially as described.

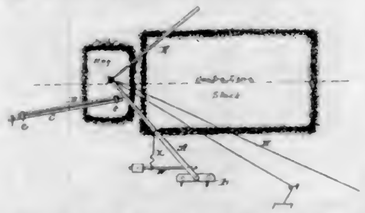
2. The combination of two disks, 30 and 31, having or not having spiral-shaped projections 35 and 36, the straps 37 and 38, the shaft 49, the bevel-gears 50 and 52, and bevel-pinion 51, all operating together, substantially as described, so that the downward motion of a treadle attached to the end of the strap 37 or 38 will operate to give an upward motion to a corresponding treadle or stirrup attached to the end of the other strap, and also vice versa.

3. The combination of the step 70, the disk 31, having or not having spiral-shaped projection 36, and the pawl 32, all operating together so that the rider, when placing his foot upon the step to mount the machine, will cause the wheel 1 to revolve, and thus propel the machine.

4. The combination of the spring 76, the bracket 77, and the holder 78, all combined and operating together substantially as described.

5. The combination of the shaft 106, the spiral spring 104, the key 107, and the steering-bar 11, all combined and operating together substantially as described.

298,218. HAY-STACKER. WILLIAM LOUDEN, Fairfield, Iowa. Filed Jan. 23, 1884. (No model.)



Claim.—1. The combination of the stacking-pole A with means for supporting it in any inclined position, so that its base will be at one side of the stack, and its upper end will be moved along the central line of the stack, substantially as shown and described.

2. The combination of the stacking-pole with supporting-braces which are provided with a sliding or flexible connection, whereby the pole will be moved back and forth over the stack, substantially as set forth.

3. The combination of the stacking-pole, with supports therefor, a hoisting-tackle for elevating the hay, and a suitable locking or holding device, which is adapted to catch and hold the hoisting-tackle and prevent it from dropping down while the pole is being moved over the stack, substantially as specified.

4. The combination of the stacking-pole, with supports therefor, a hoisting-tackle for elevating the hay, a locking device for holding the hay at any desired elevation, and a guy-rope, G, which is connected to said locking device at one end and to the ground at the other, so as to automatically operate the lock, substantially as shown and described.

5. The combination and arrangement of the pole A, pulley F, rope H, dog L, and guy-rope G, substantially as and for the purpose set forth.

6. The combination and arrangement of the pole A, hoisting-rope H, braces C D, and the sleeves *e e*, substantially as and for the purpose set forth.

7. A stacking-pole or hay-elevating mast composed of a number of boards which are secured together at an angle to each other, substantially as shown and described.

8. A stacking-pole or hay-elevating mast composed of a number of boards secured together at an angle to each other, and the solid pole Q, the whole being secured together substantially as shown and described.

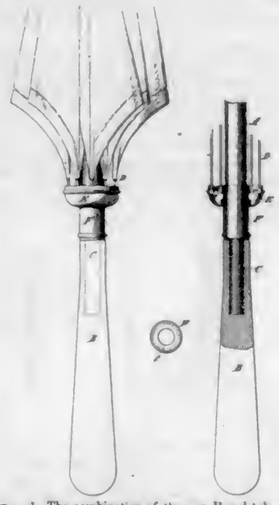
9. The stacking-pole composed of the boards M N O P and the brace R, the whole being secured together substantially as shown.

10. The combination of the stacking-pole with a weighted rod, W, or spring K, for the purpose of regulating the motion of the pole, substantially as set forth.

11. The combination of the stacking-pole with a collar, K, provided with a series of eyes or hooks, for the purpose of making attachments thereto, substantially as described.

12. The combination of the stacking-pole with the collar K, having hooks or eyes for making attachments thereto, and having the ribs *i i*, to prevent it from turning on the pole, substantially as set forth.

298,219. UMBRELLA TIP-CUP. JOHN MATTENBACHER, New York, N. Y., assignor of one-half to Levi L. Gans, same place. Filed Jan. 4, 1884. (No model.)



Claim.—1. The combination of the cup E and tube F, provided with a flange, G, substantially as described.

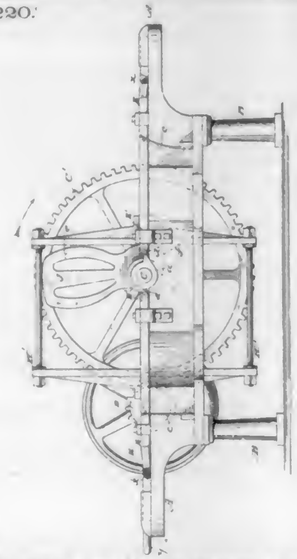
2. The combination of the umbrella-stick A, having a tenon, C, the cup E, and tube F, provided with a flange, G, and the mortised handle, substantially as described.

3. In an umbrella, a cup-supporting tube having a projecting portion clamped in place between the handle and the stick.

298,220. MACHINE FOR MAKING CHAIN-LINK BLANKS. LUTHER MCGILVRAY, Greenville, Pa. Filed Dec. 20, 1883. (No model.)

Claim.—1. The combination, with the cutting mechanism, the sheaves, and the reciprocating driver, of the driver-actuating mechanism, arranged and operating substantially as hereinbefore described, to cause said driver to clamp or hold the bar against the sheaves during the cutting operation, to push the severed bar-length through between the sheaves, and to then return to its original position, substantially as hereinbefore set forth.

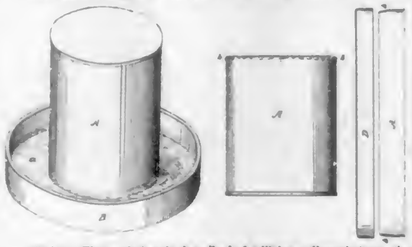
298,220.



2. The combination, with the cutting mechanism and the sheaves, of the reciprocating driver, the cam yoke or frame, and the rotary leaf cam formed with the parts *e f*, as and for the purposes hereinbefore set forth.

3. The combination, with the two sets of knives or cutters, drivers, sheaves, and gages, of the cam-yoke H' and the rotating cam-shaft C, provided with the knife-cam, and the leaf-cam, arranged to operate both sets of instrumentalities in the manner and for the purposes hereinbefore set forth.

298,221. PROCESS OF UTILIZING TIN CANS. BENJAMIN F. MECHLING, Philadelphia, Pa. Filed Mar. 17, 1884. (No model.)



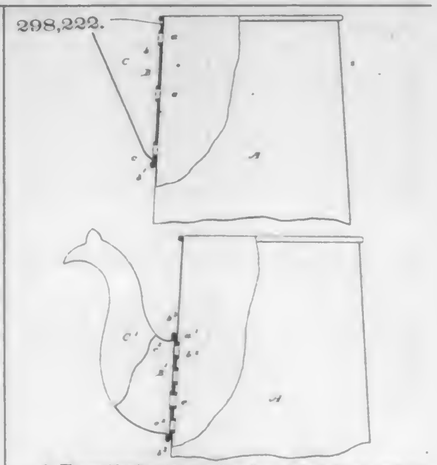
Claim.—The mode herein described of utilizing a discarded can, the said mode consisting in first detaching from the body whatever remains of the opened head of the can, then removing superfluous solder from and smoothing the exterior of the body at and near its edge *b*, and finally bending inward and truing the said edge *b* for the reception of a flanged cover, all substantially as set forth.

298,222. ATTACHMENT OF LIPS AND SPOUTS TO VESSELS. JOHN C. MILLIGAN, Brooklyn, and EMILE MOUHOT, Wood Haven, assignors to the Lalance & Grosjean Manufacturing Company, New York, N. Y. Filed Oct. 16, 1883. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with the body of a vessel, of a lip or spout and an intervening flanged plate, whereby said vessel and lip or spout are united, the body and plate being perforated, so as to serve as a strainer, the projecting edges of the perforations being the means whereby the plate and the vessel are united.

2. The combination, substantially as hereinbefore set forth, of a vessel having a series of perforations formed in its side, a plate similarly perforated, the projecting edges of said perforations being the means whereby said vessel and plate are united, and a spout or lip secured to said vessel by flanges upon said plate and upon said spout or lip.

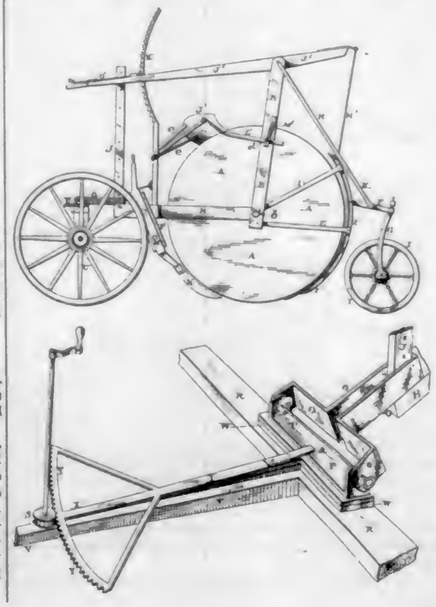
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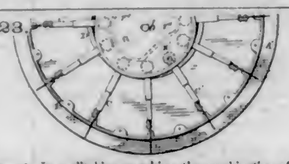
3. The combination, substantially as hereinbefore set forth, with the body of a vessel, of a spout or lip and an intervening flanged plate, a series of holes being formed through said vessel and said plate, by the projecting edges of which said plate and vessel are united.

298,223. DITCHING-MACHINE. MOSES MILNER, Leesburg, Ohio. Filed Dec. 10, 1883. (No model.)

Brief.—A bar pivoted on a truck and having means for turning it extends rearward in a clevis-like device through which passes a perforated vertical standard of a frame carrying an excavator-wheel having spades protruded and retracted by a cam having an angular side so placed that the spades may give when they strike an obstruction. A plow-frame swung by rods pivoted, respectively, above and below the cutter-wheel axle carries at rear a wheel, and has a stay-rod so pivoted that a tilting (through a lever and connecting-rod) of the plow-frame on this pivot simultaneously raises and depresses or depresses and raises the plow and wheel, respectively.



298,223.



Claim.—1. In a ditching-machine, the combination of the wheel A, frame B, plow-frame I', rods D E, pivoted on opposite sides of the center of wheel A, and the wheel I, for supporting the plow-frame, substantially as shown.

2. The combination of the ditching-wheel, the plow-frame I', rods D E, and wheel I, with the rods H N', frame B, and lever J', substantially as described.

3. The combination of the truck, the ditching-wheel, the plow-frame, the caster-wheel, which is loosely attached to the plow-frame, an operating-lever, J', and a supporting-rod for the caster-wheel, whereby the plow-frame and the caster wheel can be adjusted at the same time, substantially as specified.

4. The combination of the ditching-wheel, the cam F', having the angular side H', the spades C', and the friction-rollers G', the angular side of the cam being arranged in such relation to the spades that they can give inward when they strike an obstruction, substantially as specified.

5. The combination of the truck and tongue with the pivoted lever X and a means for moving it, the clevis O, and the standard J, substantially as set forth.

298,224. FLANGING-MACHINE. THOMAS R. MORGAN, Sr., Alliance, Ohio. Filed Oct. 29, 1883. (No model.)

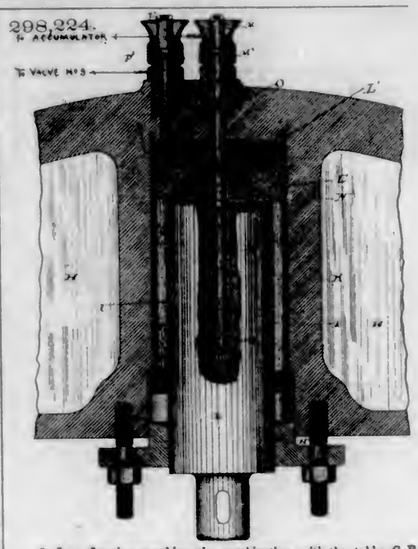
Claim.—1. In a flanging-machine, the combination, with a ram, and a table connected to the ram and provided with a matrix, of a holding-up table adapted to be operated within the matrix, having an independent ram connected therewith, substantially as set forth.

2. In a flanging-machine, the combination, with a ram, and a table connected therewith and provided with a matrix, of a holding-up table provided with an independent ram, and a stationary forming-die located above said matrix, substantially as set forth.

3. In a flanging-machine, the combination, with a matrix, a holding-up table, and independent rams for operating the matrix, and a forming-die located above the matrix, said parts constructed and adapted to flange the outer edge of the plate, of an independent ram, forming-die, and matrix for flanging an aperture in the plate, substantially as set forth.

4. In a flanging-machine, the combination, with a stationary forming-die, J, table E, matrix P, and ram D, of the holding-up table O, adapted to rest upon the table E, and ram F, arranged to operate within the ram D, substantially as and for the purpose set forth.

298,224.

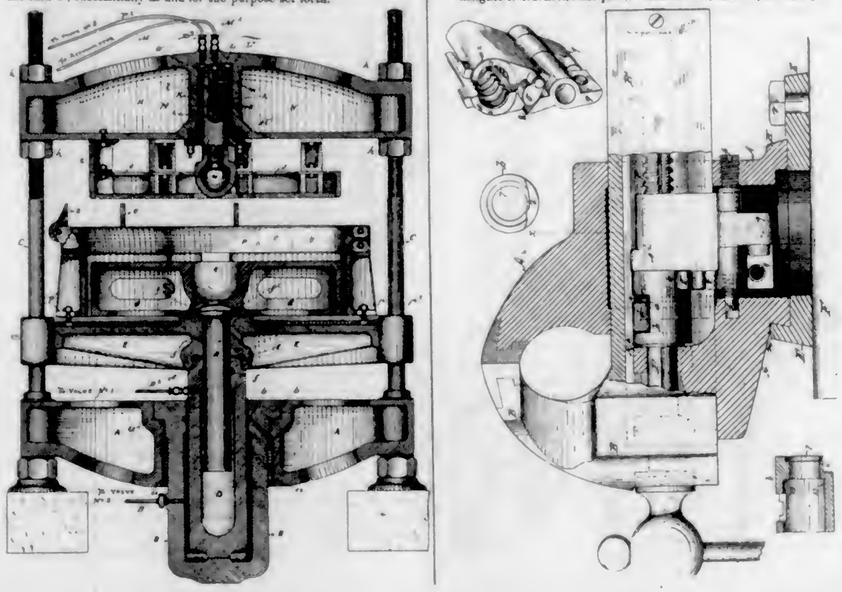


5. In a flanging-machine, the combination, with the tables G E, rams F D, forming-die J, and matrix P, of the strippers Q, substantially as and for the purpose set forth.

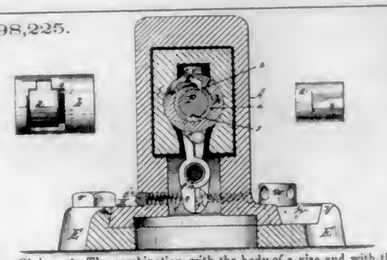
6. In a flanging-machine, the combination, with the cylinder K, of the ram L, provided with a piston at its upper end, and a chamber having a passage communicating with an annular space around the ram, and a tube inserted within the chamber in the ram for supplying water under pressure thereto, substantially as and for the purpose set forth.

7. In a flanging-machine, the combination, with the matrix R, of the forming-die M, ram L, the latter provided with a piston at its upper end, and devices, substantially as described, for supplying water under pressure to the opposite sides of said piston, substantially as and for the purpose set forth.

298,225. BENCH-VISE. WILLIAM H. NORTHALL, Bridgeport, Conn., assignor to C. S. Leet, same place. Filed Oct. 10, 1883. (No model.)



298,225.



Claim.—1. The combination, with the body of a vise and with the screw for operating the movable jaw thereof, of two nut-sections pivoted in said body, and arranged to swing against and from said screw, and mechanism, substantially as described, operated by said screw for swinging the nut-sections upon their pivot, substantially as described.

2. The combination, with the body of a vise and with the screw for operating the movable jaw thereof, of two nut-sections pivoted in said body, and movable therein by mechanism, substantially as described, in the direction of the length of said screw, and mechanism, substantially as described, for locking said nut-sections against the screw, substantially as set forth.

3. The combination, with the movable jaw-screw of a vise, of a vise-body having therein an abutment through which said screw passes, of two nut-sections, substantially as described, pivoted in said body, of a sleeve provided with a pawl-socket, and having a spline-connection with the jaw-screw, of a sleeve fitted over the above-named sleeve having a pawl therein to engage in said pawl-socket, and means, substantially as described, for swinging said nut-sections toward and from the jaw-screw by oscillating said pawl-carrying sleeve, substantially as set forth.

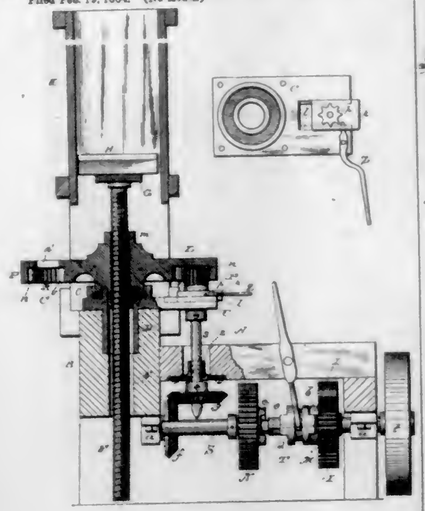
4. The combination, with the nut-sections e e^2, of the cam o, the sleeve b, springs i, and means, substantially as described, for imparting to said sleeve an oscillating movement, substantially as set forth.

5. The combination, with the nut-sections e e^2, having the ring z thereon, of the sleeve b, having the chamber 7, and means, substantially as described, for engaging said nut-sections with the said chamber in the end of said sleeve, substantially as set forth.

6. In combination, the body A, having the abutment K therein, the screw f, spring 10, the nut-sections e e^2, and the sleeves b and a, having springs interposed between them to give the former an endwise movement on the latter, substantially as set forth.

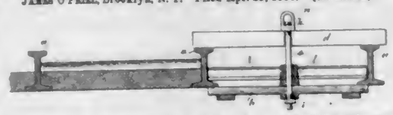
7. The combination, with the body of a vise having a circular bevel-edged foot thereon, substantially as described, of a base having a circular lip thereon to encircle a portion of said foot, and an abutment thereon opposite said lip, and a clamp-block adapted to be secured between said abutment and the edge of said foot, substantially as set forth.

298,226. COTTON-PRESS. JOSIAH DIAL O'DANIEL, Flatonia, Tex. Filed Feb. 19, 1884. (No model.)



Claim.—In a cotton-press, the combination, with a main follower-screw, and a crown-wheel engaging the same and having two series of teeth, of a pinion, p, its shaft, operating slide and lever, and rocking bearing, the main shaft carrying loose cog-wheels of different diameter having clutch-faces, the shifting-clutch, and the counter-shaft, carrying rigid cog-wheels of different diameter, and a bevel-wheel engaging the bevel-wheel at the lower end of the pinion-shaft, substantially as specified.

298,227. FIRE-PROOF FLOOR AND CEILING FOR BUILDINGS. JAMES O'FRIEL, Brooklyn, N. Y. Filed Apr. 23, 1883. (No model.)



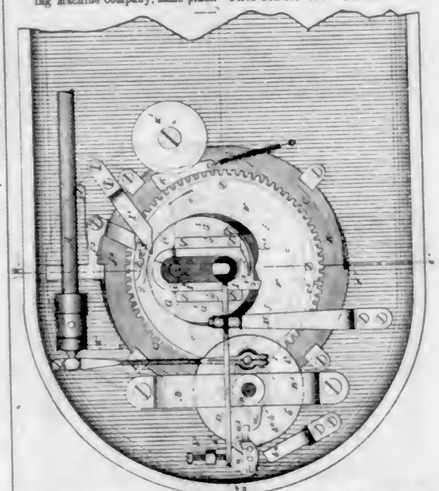
Claim.—1. The combination, with the beams and table, of the cross-bearer, the bolt, nuts, eye, and thimble, substantially as set forth.

2. The method herein specified of making slabs of artificial stone between iron beams, consisting in drawing up to the under side of the beams tables and clamping them by means of bolts and bearers, filling in the space between the beams by a cement resting upon the tables, and forming holes through the cement by thimbles around the bolts, and then lowering the tables, after the cement has hardened, by ropes connected to the bolts and passing through the holes in the cement, substantially as set forth.

3. In the formation of slabs of artificial stone between iron beams, the combination, with the cement, of thwarts resting at their ends upon the iron beams and incased in the cement, substantially as and for the purposes set forth.

4. In combination with the tables b and the bolts c, the nuts upon such bolts, and eyes at their upper ends for ropes to be connected to, and the notched cross-bearers resting upon the beams, substantially as set forth.

298,228. BUTTON-HOLE SEWING-MACHINE. JOHN H. PALMER, Philadelphia, Pa., assignor to American Buttonhole Overseaming and Sewing Machine Company, same place. Filed Oct. 15, 1883. (Model.)



Claim.—1. The combination, substantially as set forth, in a sewing-machine, of the geared ring, its bearing and supporting blocks, the disk E, cloth-carrying devices actuated by the rotation of the ring, and mechanism for actuating the ring.

2. The combination, substantially as set forth, of the rotating ring or wheel, mechanism for rotating it, the camway carried thereby, the disk or plate which travels in and is actuated by said cam, and the cloth-carrying plate connected with said actuating-disk.

3. The combination, substantially as set forth, of the geared ring, its bearing, the face-plate F, the open cam C′, formed in the face-plate, the disk or plate actuated by the cam-face C′, and cloth-carrying devices actuated by said disk.

4. The combination, substantially as set forth, of the wheel C, mechanism for rotating it, the cam C′, the disk or plate acted on by the cam, the slotted plate E, the cloth-plate, and the connections between the disk G and the cloth-plate.

5. The combination, substantially as set forth, of the rotating wheel or ring C, mechanism for actuating it, a cam carried by said wheel or ring, the disk or plate acted on by the cam, the pivoted stop-lever, a cam way or track which travels against one end of said lever, and a stop on the actuating mechanism which works against the other end of the lever.

6. The combination, substantially as set forth, of the bed-plate, the friction-clutch-driving mechanism, the rocking arm d', a stop carried thereby, the pivoted lever arranged entirely beneath the bed-plate of the machine, the cam way or track on which one end of said lever works, also arranged entirely beneath the bed-plate of the machine, and the clutch carrying and actuating mechanism, the arrangement being such that the material being stitched may be handled freely without interfering with the pivoted lever or its controlling cam.

7. The combination, substantially as set forth, of the rotating ring or wheel, mechanism for actuating it, the cam carried thereby, the disk or plate acted on by the cam, cloth-carrying mechanism actuated by said disk, the sliding latch on said plate which engages with a notch on the ring, and means for throwing the latch out of engagement with the notch at intervals.

8. The combination, substantially as set forth, of the geared ring, the cam carried thereby, the disk acted on by the cam, cloth-carrying mechanism actuated by said disk, the sliding latch on the disk, the cam-track on said latch, the pivoted stop-lever, the mechanism for actuating the geared ring, and means for controlling the speed of said mechanism by the position of the pivoted lever.

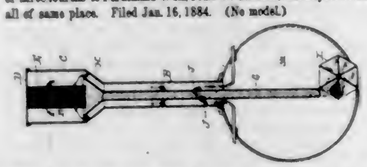
9. The combination, substantially as set forth, of the geared ring, mechanism for actuating it, the cam carried thereby, the plate acted on by the cam and rigidly connected with the cloth-carrying plate, the sliding latch on said plate, the slotted disk E, the catch f^3, which controls the disk E, and the devices for tripping said catch and the sliding latch, as described.

10. The combination, substantially as set forth, in a button-hole sewing-machine, of the ring or wheel C, cloth-carrying devices actuated by the ring, the pulley K, the wedge-block, and the spring which normally draws the wedge-block between the ring and pulley.

11. The combination, substantially as set forth, of the ring C, mechanism for actuating it, the cam carried by the ring, the disk G, actuated by said cam, the slotted plate E, the cloth-plate, which is connected with the disk G by the posts which pass through the slots in the disk E, a cam-track carried on the disk G, a pivoted stop-lever, one end of which bears against said cam-track, and mechanism for controlling the speed of the actuating mechanism by the position of the pivoted stop-lever.

12. The combination of the bed-plate, cloth-carrying devices located on the upper face of the bed-plate, mechanism for actuating the cloth-carrying devices to bring the material into proper position for stitching, a pivoted lever horizontally disposed below and being entirely beneath the bed-plate of the machine, mechanism, substantially such as described, by which the motion of the cloth-carrying devices is increased or decreased according to the position of the lever, and a horizontal cam face or track, also arranged entirely beneath the bed-plate of the machine, by which the position of said lever is changed, for the purpose set forth, whereby the horizontal pivoted lever and its controlling-cam are removed from any possible interference with the material being stitched.

298,229. SPARK-ARRESTER. JOHN S. PARK, Rockport, Ind., assignor of three-fourths to Ferdinand Weil, John W. Graham, and Taylor C. Barrs, all of same place. Filed Jan. 16, 1884. (No model.)

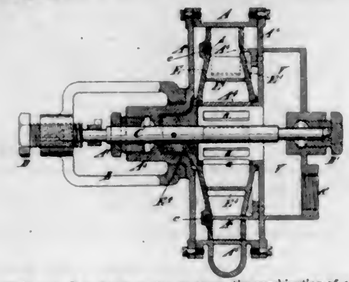


Claim.—1. In a spark-arrester, the combination of the boiler, the stack, the wire screen placed in the upper portion of the stack, the cinder-pipe having its upper end so shaped as to catch the sparks as they fall from the side of the screen, and a revolving cylinder placed at the lower end of the cinder-pipe, substantially as shown.

2. The combination of the boiler, the stack, the wire screen located in the upper portion of the stack, the cinder-pipe located below the screen for catching the cinders, the revolving cylinder or drum for discharging the cinders, the bent pipes which pass through the sides of the cinder-pipes, and the exhaust-nozzles, substantially as described.

3. In a spark-arrester, the combination of the wire screen for arresting the sparks, a cinder-pipe placed below the screen to catch the cinders, and a revolving drum or cylinder provided with a series of compartments, the drum or cylinder being made to revolve only by the weight of the cinders which have fallen into one of the compartments, substantially as set forth.

298,230. ROTARY METER. JOHN A. PEER, Grass Valley, Cal., assignor of one-half to John J. Berger, Brooklyn, N. Y. Filed Sept. 1, 1883. (No model.)

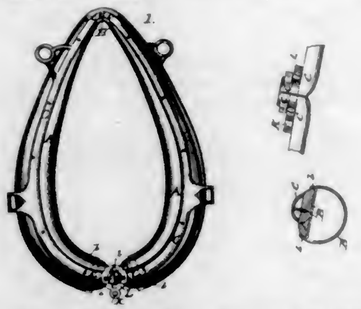


Claim.—1. In a meter, motor, or pump, the combination of a case, a wheel adapted to rotate within the same, and having two sets of buckets, a cylindric shell extending between the two sets of buckets of the wheel, and having an opening through which fluid may pass from the outer set of buckets to the inner set of buckets, and an outlet from that portion of the case which is surrounded by the inner set of buckets, substantially as specified.

2. In a meter, motor, or pump, the combination of a case, a wheel adapted to rotate within the same, and having two sets of buckets, a cylindric shell extending between the two sets of buckets of the wheel, and having an opening through which fluid may pass from the outer set of buckets to the inner set of buckets, and a shell extending into the central part of the case and serving to convey away fluid therefrom, substantially as specified.

3. In a meter, motor, or pump, the combination of a case having a tangential inlet tube or passage communicating with the lower portion, a wheel adapted to rotate within the case, and having two sets of buckets, a cylindric shell extending between the outer set of buckets and the inner set of buckets of the wheel, and having an opening through which fluid may pass from the outer set of buckets to the inner set of buckets, and an outlet from that portion of the case which is surrounded by the inner set of buckets, substantially as specified.

298,231. HORSE-COLLAR. CHAS. A. PETTIS, Brooklyn, N. Y. Filed Nov. 1, 1883. (No model.)

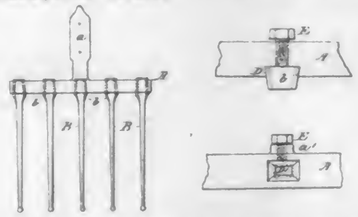


Claim.—1. In a harness-collar, the combination of the hollow pad B, constructed substantially as described, the frame or solid part A, and the hames C, hinged together at the top, and having a fastening, C′, at the bottom, substantially as and for the purposes described.

2. In a harness-collar, the combination of the hollow pad B, constructed substantially as described, and the frame A, hinged together at the top and having a fastening at the bottom, as and for the purposes described.

3. The combination, with the hollow pad B and the frame A and hames C, attached together, of the fastening consisting of the projections C′, the lugs c, and the ring L, substantially as described, and for the purposes set forth.

298,232. FORK. GUSTAV PICKHARDT, Hagen, Westphalia, Germany. Filed May 8, 1883. (No model.)

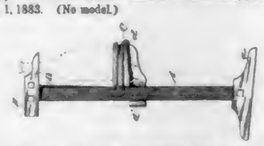


Claim.—1. In a fork, a head, A, having tapering grooves and a corresponding number of bosses, *a'*, in combination with tines having enlarged tapering shanks and set-screws arranged to work in said bosses, as described, for the purposes specified.

2. In a fork, a tine having an enlarged tapering shank, the lateral edges of which are beveled, in combination with a fork-head having dovetailed tapering grooves or slots for the reception of said tine-shank, substantially as shown and described.

3. In a fork, a tine having a tapering enlarged shank, the lateral edges of which are beveled, and a head, A, having a dovetailed groove or slot of the same taper as the tine-shank, in combination with a set-screw, substantially as shown and described.

298,233. BOTTLE-HOLDER. ERNEST R. RICHARDS, Sheboygan, Wis. Filed Dec. 1, 1883. (No model.)



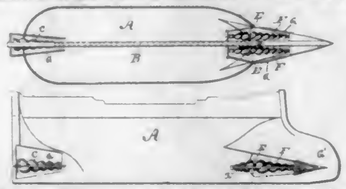
Claim.—1. In a bottle-holder, the standard having the foot and the bifurcated or slotted head-piece, in combination with the spring-actuated receptacle, substantially as and for the purpose set forth.

2. In a bottle-holder, the standard having a longitudinal slot, and the slotted or bifurcated head-piece, in combination with the spring-actuated receptacle or follower, substantially as and for the purpose set forth.

3. In a bottle-holder, the slotted standard having the slotted or bifurcated head-piece, in combination with the receptacle or follower connected to the edgewise-disposed bracket, adapted to have movement in the standard, and the spring connected to said receptacle or follower and the standard, substantially as and for the purpose specified.

4. In a bottle-holder, the slotted standard having the foot and slotted head-piece and disposed in an inclined position, in combination with the spring-actuated follower or receptacle, substantially as and for the purpose stated.

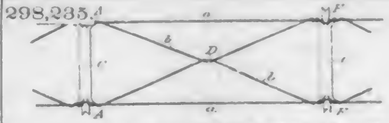
298,234. PROPELLING APPARATUS FOR VESSELS. ALONSO CARDOSO DE LOS RIOS, New Orleans, La. Filed Oct. 13, 1883. (No model.)



Claim.—The combination of the driving-shaft B, the conical screw-propeller C, arranged with its larger end hindmost and attached to the rear end of said shaft, the two parallel propellers F F, made smaller at the ends than at the center, and having pinions E, and the pinion D, secured to the forward end of the shaft and geared with pinions E, substantially as specified.

298,235. METALLIC FENCE. DAVID A. ROACH, Crawfordsville, assignor of one-half to Lewis N. Roach, Eugene, Ind. Filed Jan. 4, 1883. (No model.)

Claim.—In a metallic fence, the combination of the strands *a a*, the diagonal strands *b b*, crossing each other at intervals in the space



between the strands *a a*, and wrapped about the same at opposite points, and the barbed cross-slat C, secured between strands *a a* and *b b* at their points of contact, as shown and described.

298,236. SEPARABLE BUTTON. HAROLD C. ROBINSON and LOUIS J. LALLEMENT, St. Louis, Mo. Filed Sept. 19, 1883. (No model.)

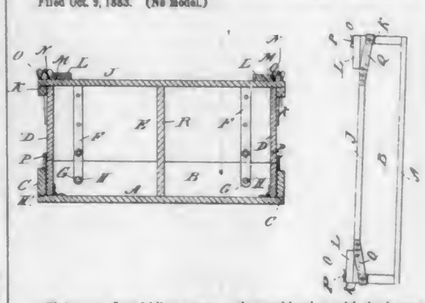


Claim.—1. In a separable button, the combination of a body having an inner wall formed with an opening and a lip projecting across the opening, a lever hinged to the wall in the same plane as the lip, to turn on the wall, and extending through an opening in the side of the body, and a shank recessed to receive the lip and lever, as set forth.

2. In a separable button, the combination of a body having an inner wall formed with an opening to receive a shank, and a lip to fit a recess in the shank, a lever hinged to the wall extending through the body, to form a handle and to fit a recess in the shank opposite to the lip-recess, and a spring to insert the lever in its recess, as set forth.

3. In a separable button, the combination of a body, A, having an opening to receive a shank, an inner wall, J, having a lip, U, and opening to receive the inner end of the shank, a lever, O, hinged to the wall, having its end projecting through the body, a spring, V, to press the lever inward, and a shank, C, having recesses to fit the lip and lever, as set forth.

298,237. FOLDING EGG-CASE. WILLIAM G. RUGE, Washington, Mo. Filed Oct. 9, 1883. (No model.)



Claim.—1. In a folding egg-case, the combination, with the bottom section, from the ends of which screw-pins project, of hinged ends, removable sides, and a cover having holes for the screw-pins, which hinged ends have screw-pins projecting from their upper edges, substantially as herein shown and described, and for the purpose set forth.

2. In a folding egg-case, the combination, with the bottom A, the side boards, B, and the end boards, C, of the sides E, having hook-bars F, and the studs or pins H on the inner surface of the side boards, B, of the ends D, and the cover J, substantially as herein shown and described, and for the purpose set forth.

3. In a folding egg-case, the combination, with the bottom A, the side boards, B, and the end boards, C, of the screw-pins P, projecting from the end boards, C, removable sides E, having hook-bars F, the studs H, projecting from the inner surface of the side boards, B, the hinged ends D, provided with projecting screw-pins N, the apertured cover J, and the winged nuts O, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the box, of the cover J, the cleats K, and the inclined braces Q, secured to the side edges of the cover at the ends, and secured to the ends of the cleats, substantially as herein shown and described, and for the purpose set forth.

298,238. MACHINE-BELT HOLDER. WM. R. SANTLEY, Wellington, Ohio. Filed Oct. 5, 1883. (No model.)

Claim.—1. A machine belt holder consisting of a combination of

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the rim A, having a differential peripheral curve, and transversely in the face thereof a series of slots, rollers journaled in said slots in suitable bearings at each end thereof, and so adjusted that the face of the rollers may be above the surface of the rim, and one or more re-enforcing plates or braces within the rim, substantially as herein set forth.

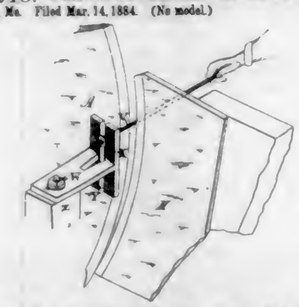
2. In combination with a series of rollers, C, arranged within slots of the rim A, one or more braces or plates secured to the inner face of said rim, substantially as and for the purpose set forth.

298,239. OVERSHOE. EMMETT A. SAUNDERS, Naugatuck, Conn., assignor to Goodyear's Metallic Rubber Shoe Company, same place. Filed Mar. 11, 1884. (No model.)



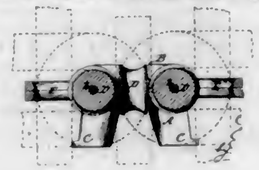
Claim.—In combination with those portions of the shoe which are to be coupled together and held in the proper relative position over the foot of the wearer, a strap-like device, E, projecting from one of said portions, and a spring-tongue fastening device properly secured to the other of said portions, the combination being such, as described, that when the parts shall be coupled together as shown the tongue of the metallic fastening device shall not only engage with one of the perforations of the strap-like device, but shall also operate to hold down the said strap-like device for some distance beyond said perforation, so that in uncoupling the parts of the fastening contrivance the spring-tongue *m* may be elevated or thrown up into a position for ready disengagement from the perforation of the strap-like device by simply taking hold of the protruding end of the latter and pulling it upwardly, as hereinbefore set forth.

298,240. WIRE-CUTTING MACHINE. WINSLOW H. SAVAGE, Bingham, Me. Filed Mar. 14, 1884. (No model.)



Claim.—In a machine for cutting calks, the gage W X, containing slot Y, behind which is a recess sufficient to admit the end of the calk, substantially as described and shown.

298,241. PULLEY BRACKET AND BLOCK. CHAS. SCHNEIDER and CHAS. PFANNE, Washington, D. C. Filed Mar. 19, 1884. (No model.)

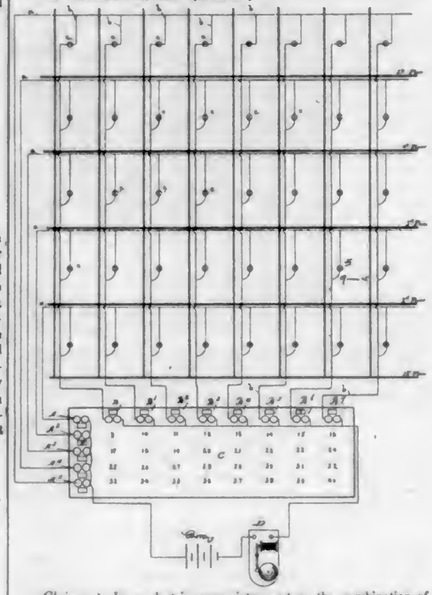


Claim.—1. The pulley-bracket herein described, consisting of a bracket and a nest of grooved pulleys arranged therein to form a circular central eye of rolling surfaces for the rope or cord, substantially as herein set forth.

2. A circular pulley-eye formed of a nest of grooved pulleys, combined with a bracket consisting of an attaching base part and a confining cap part, each having open arms arranged at right angles to each other, and grooved to receive the axis-pins of pulleys arranged in the opening of each arm, substantially as shown and described.

3. A pulley-bracket consisting of a bracket and a nest of grooved pulleys arranged therein to form a circular central eye, and a supplemental eye for one or more of the nest of pulleys, substantially as shown and described.

298,242. ELECTRIC ANNUNCIATOR. PAUL SEILER, San Francisco, Cal. Filed Nov. 16, 1883. (No model.)



Claim.—1. In an electric annunciator system, the combination of a floor or section indicator or set of indicators and a set of room-indicators, each of which marks a corresponding room on all the floors or sections, and means for operating any floor or section indicator and any room-indicator together, whereby the floor or section and the room therein will be indicated.

2. In an electric annunciator system, the combination of battery-wires *a a*, &c., and having connection with battery through a set of indicating annunciators, a series of room or division wires connecting corresponding rooms or divisions on the several floors with a separate room-indicating annuciator, and connections in each room for complete circuit from battery-wire to room-wire and return-wires to the battery, as set forth.

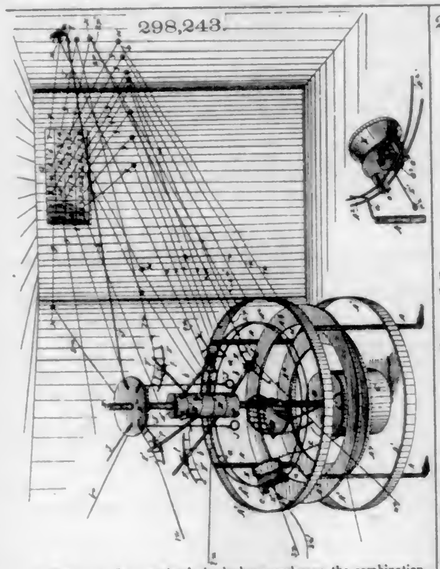
3. The combination of the battery-wires *a*, battery D, indicators A, section-wires *b*, indicators B, and a signal-bell, E.

4. In a system for electrically-connecting rooms or stations with a common receiving station or office, the combination of a battery-wire connecting each room on a floor with an indicator, with section-wires connecting corresponding rooms throughout the several floors with a common indicator, and a battery-wire connecting each room with the section-wires, as set forth.

5. An annunciator consisting of a set of floor or section indicators, a series of room-indicators, and the blanks or room-numbers, arranged with relation to the two sets of indicators, as described, in rows from each floor or section indicator and from each room-indicator, crossing each other, so that the number will be indicated at the intersection.

298,243. MECHANICAL TELEPHONE EXCHANGE. GEO. F. SHAVER, Erie, Pa., assignor to the Consolidated Telephone Company, of New Jersey. Filed Nov. 23, 1882. (No model.)

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Claim.—1. In a mechanical telephone exchange, the combination, with the acoustic lines, of an electric annunciator and branch wires *g*, for affording electric communication between the same, substantially as and for the purposes mentioned.

2. In a mechanical telephone exchange, the ends of the lines *x*, provided with auxiliary or branch lines *x'*, substantially as shown, whereby the operator may keep in acoustic communication with two lines when they are in communication through the office.

3. In a mechanical telephone exchange, the combination, substantially as shown, of the following elements: acoustic lines converging to an exchange-frame, to which they connect detachably, angle-hangers adjustably arranged in proximity to said frame, and, finally, means, substantially as shown, for connecting said acoustic lines one with another through said angle-hanger.

4. In a mechanical telephone exchange, the combination, substantially as shown, of the following elements: acoustic lines converging to a centrally-located circular exchange-frame, to which they are detachably connected, angle-hangers adjustably arranged upon a centrally-located support, and, finally, means, substantially as shown, for connecting said acoustic lines one with another through said angle-hangers.

5. In a mechanical telephone exchange, the combination, substantially as shown, of the following elements: acoustic lines converging to a frame to which they connect, a telephone-supporting rack arranged substantially as shown with relation to said supported wires, and, finally, a traveling telephone adapted to be supported by said rack and connected with said wires at pleasure, substantially as set forth.

6. In a mechanical telephone exchange, the combination, with the acoustic lines, of a post, B, arms B' *b*, and angle-hangers F, with clips *f*, supported on said arms, substantially as shown.

7. In a mechanical telephone exchange, the combination, with the converging acoustic lines and a telephone-supporting rack, of a telephone, E, having connected therewith a line-stretching device, which bears upon said rack and pushes the telephone away from it, substantially as and for the purposes mentioned.

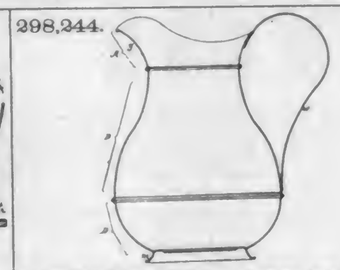
8. In a mechanical telephone exchange, substantially as shown, an exchange rack or frame with wire-sustaining rail A', telephone-support A^2, and a traveling telephone supported thereon, in combination with the post B, having arms B' *b*, and the adjustable angle-line hangers F, mounted on said arms.

9. In a mechanical telephone exchange, the combination, substantially as shown, of the circular wire-supporting frame, circular telephone-supporting rack, central post, B, with arms supporting angle-hangers, the stand C, and chair D.

298,244. SHEET-METAL JUG. ROBERT SHAW, Philadelphia, Pa. Filed Mar. 10, 1884. (No model.)

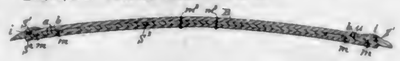
Claim.—A sheet-metal jug composed of the seamed and die-formed upper section, A, the seamed and die-formed intermediate section, B, and

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the lower dished section, D, the several sections being combined and united, all substantially as set forth.

298,245. SPRING-BOARD WAGON. HENRY L. SHERWOOD, North Hoosick, N. Y. Filed Dec. 1, 1883. (No model.)



Claim.—1. A wagon box or seat supporting spring, consisting of an elastic board or bar of wood, a metallic leaf-spring beneath the same, having its ends curved upwardly to receive a rubber cushion and the abutting ends of said wooden board or bar, and provided with ears to secure said spring to the head-block at the front end and the stock of the axle at the rear, as shown and described.

2. A wagon box or seat supporting spring, consisting of a crowned elastic board or bar of wood, a metallic leaf-spring beneath the latter and in surface contact with it, with the ends of said metallic spring curved upwardly and inwardly to receive a rubber cushion and the abutting ends of said board or wooden bar, a slot formed in each end of the latter, and a guide-pin in said slot, with its lower end secured to said metallic spring, and the latter constructed to be attached to the head-block at the front and the stock of the axle at the rear, as shown and described.

3. The combination, in a carriage-spring, of a grooved, crowned, elastic wooden board or bar, provided with a slot at each end, and a metallic leaf-spring beneath and partially or wholly inclosed by said wooden bar, provided with projecting guide-pins to work in the slots in the wooden bar, substantially as shown and described.

4. The combination of a grooved and slotted elastic wooden bar and a metallic leaf-spring having projecting guide-pins, and constructed to be attached to the head-block and stock of the axle, as described.

298,246. HARNESS-PAD. THOMAS A. SIMMONS, Wooster, Ohio, assignor of two-thirds to Wells A. Underwood and Duncan McMillan, both of same place. Filed Nov. 12, 1883. (Model.)



Claim.—1. A metallic coach-pad plate or tree formed with the downwardly-projecting flanges, whose lower edges are curved substantially as shown, to conform to the shape of the horse's back.

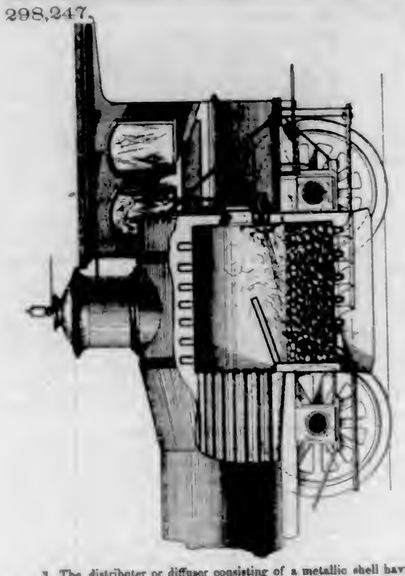
2. The combination, with a metallic pad-plate having downwardly-projecting side flanges for giving shape to the saddle, of a pad provided with a metallic or other hard center plate adapted to bridge over the space between the said flanges, as and for the purpose set forth.

298,247. LOCOMOTIVE-FURNACE. BYRON SLOPER, New York, N. Y. Filed Feb. 15, 1884. (No model.)

Claim.—1. A distributer for distributing hot air and steam for the purpose of surface combustion, consisting of a bell-shaped or concavo-convex shell having a perforated diaphragm and an opening through which the steam and air may be injected into the furnace, substantially as specified.

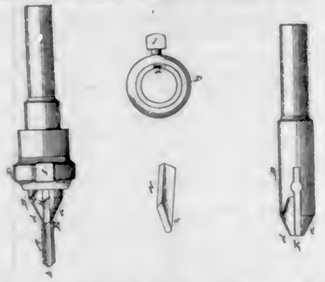
2. The distributer or diffuser consisting of a bell-shaped or concavo-convex shell having a perforated diaphragm and a series of perforations at its lower edge, whereby the induced cold air is heated by an induced current or currents taken directly from the furnace, substantially as and for the purpose specified.

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3. The distributer or diffuser consisting of a metallic shell having an elongated opening in front and a perforated diaphragm dividing the casing into two chambers, in which the air and heated products of combustion are induced, diffused, and commingled previous to coming into contact with the steam, substantially as and for the purpose specified.

298,248. COMBINED DRILL AND COUNTERSINK. ALBERT J. SMART, Greenfield, Mass., assignor to the Wiley & Russell Manufacturing Company, of Massachusetts. Filed Dec. 31, 1883. (No model.)



Claim.—1. The cutter, the ring or collar, having a depression for the reception of the edge of the cutter, the drill, the stock, and the set-screw, all combined, as and for the purposes described.

2. The combination of the drill, the detachable cutter, the edge of which rests within the groove or fluting of the drill, the ring or collar, the stock, and the set-screw, as and for the purposes described.

298,249. MOWING-MACHINE. EPHRAIM SMITH, Pittsburg, Pa. Filed Oct. 26, 1883. (No model.)

Claim.—1. In a mowing and reaping machine, the finger-bar formed with a downward middle curvature, substantially as and for the purpose herein specified.

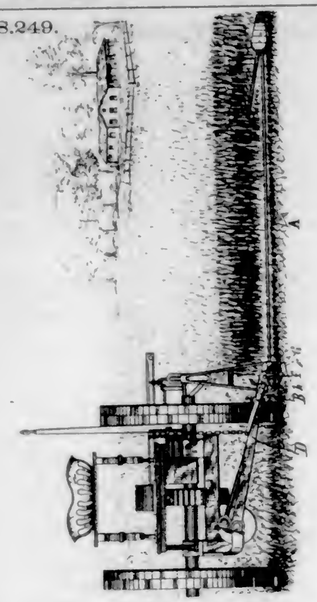
2. A curved finger-bar, in combination with means for sustaining the outer end of the finger-bar from the inner end of the same.

3. A curved finger-bar, A, in combination with a counterbalancing-lever, B, substantially as and for the purpose herein specified.

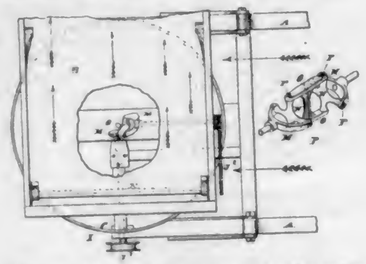
4. The combination of the coupling-arm, the balance-lever, and the adjustable clamp mounted on the coupling-arm, and provided with the fulcrum-pin C, for the purpose specified.

5. The pivot-clamp consisting of the three sides *a* and a separate side, *c*, secured thereto, substantially as specified.

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298,250. STRAW-STACKER FOR THRASHING-MACHINES. DUDLEY D. SPRAGUE, California, and PEARLEY J. SPRAGUE, Higbee, Mo. Filed Jan. 9, 1884. (No model.)



Claim.—1. In a stacker for thrashing-machines, the combination of a stacker-frame, a carrier-belt shaft on the stacker-frame, an intermediate frame supporting the stacker-frame, driving-shafts, and double universal joint connecting the driving-shafts in the vertical pivotal line of the carrier-frame, as set forth.

2. In combination with a thrashing-machine frame, a stacker-frame, and a laterally-movable carrier-frame supporting the stacker-frame, a carrier-belt shaft on the stacker-frame, two driving-shafts, and a coupling consisting of two tumblers, to which the adjacent ends of the shafts are secured by suitable yokes or arms, and a block connecting the tumblers, substantially as and for the purpose set forth.

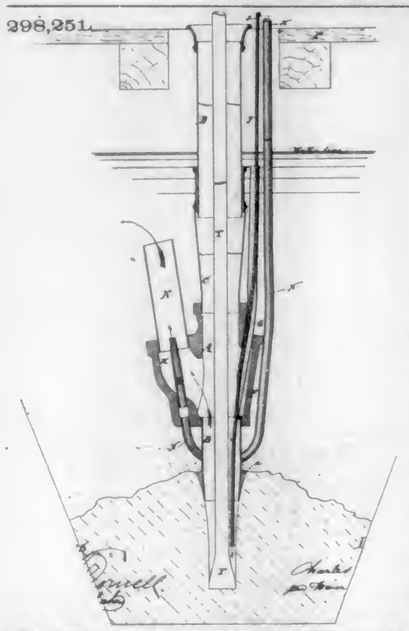
298,251. PIPE-CASING FOR SUBMARINE ROCK-DRILLS. CHAS. A. STERLING, New York, N. Y. Filed Jan. 26, 1882. (No model.)

Claim.—1. In combination with a rock-drill for submarine drilling, the herein-described pipe-casing, in combination with an ejector branch, H K, pipe L N, and movable pipe J, said pipes N and J being connected to suitable force-pumps, or their equivalents, the whole being arranged to operate in the manner and for the purpose substantially as specified.

2. The combination, substantially as hereinbefore set forth, of a rock-drill, tubular inclosing-case, and an independent tube extending longitudinally within said inclosing-case, whereby the fluid under pressure is discharged upon the débris in the neighborhood of the bit of said drill.

3. The combination, substantially as hereinbefore set forth, of a rock-drill, a tubular inclosing-case, an independent tube extending longi-

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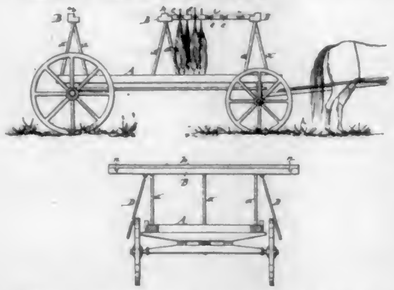


tudinally within said inclosing-case and terminating in proximity to the bit of said drill for discharging a stream of fluid under pressure upon the débris surrounding said bit, and a discharge-opening formed in the side of said inclosing-case.

4. The combination, substantially as hereinbefore set forth, of a rock-drill, a cylindrical inclosing-case, and an ejector consisting of a pipe extending from the upper extremity of said inclosing-case and terminating within a discharge-tube leading from the lower portion of said case.

5. The combination, substantially as hereinbefore set forth, of a rock-drill, an inclosing-case consisting of two or more telescoping cylindrical sections surrounding the upper portion of said drill, a tubular extension of less diameter surrounding the lower portion of said drill, an intervening conically-tapering section, and a discharge opening or tube branching from said tapering section.

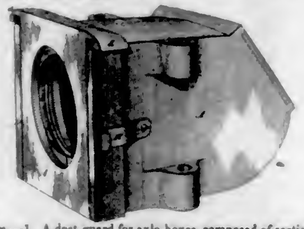
298,252. TOBACCO-TRANSPORTING RACK. WILLIAM STERNBERG, Cleora, N. Y. Filed Feb. 9, 1884. (No model.)



Claim.—1. The combination, with a wagon-rack, of parallel horizontal skids carried elevated and transversely on the rack and projecting over the sides thereof, longitudinal guides on the skids, locking devices on the ends of the skids, for retaining one of the tobacco-carrying bars, and bars adapted to ride on the skids and provided with fastening devices for attaching thereto the tobacco-plants, substantially as described and shown.

2. In combination with the wagon and tobacco-rack mounted thereon, the apron D, suspended from the rack and hanging over the outside of the wheels, substantially in the manner specified and shown.

298,253. CAR-AXLE BOX. DAVID S. STIMSON, Concord, N. H. Filed Oct. 13, 1883. (No model.)



Claim.—1. A dust-guard for axle-boxes, composed of sections separable in a horizontal direction, the inner ends of which are provided with semicircular or concave recesses adapted to fit around the axle, and the vertical outer ends with flanges adapted to shut over slots in the sides of the axle-box when the dust-guard is in position, substantially as set forth.

2. A dust-guard for axle-boxes, composed of sections separable in a horizontal direction, the inner ends of which are provided with semicircular or concave recesses adapted to fit around the axle, and the vertical outer ends with flanges adapted to shut over slots in the sides of the axle-box, said flanges having suitable packing, substantially as set forth.

3. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, a dust-guard composed of sections separable in a horizontal direction and adapted for insertion and removal through said side slots, said sections being provided with flanges at their outer ends, adapted to shut over said side slots, and means for retaining said dust-guard in position in the axle-box.

4. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, a dust-guard composed of sections separable in a horizontal direction and adapted for insertion and removal through said side slots, said sections being provided with packed flanges at their outer ends, adapted to shut over said side slots, and means for retaining said dust-guard in position in the axle-box.

5. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, a dust-guard composed of sections separable in a horizontal direction, and provided with flanges at their outer ends, adapted to shut over said side slots, and spring fastening devices at the sides of said axle-box for holding said dust-guard in place.

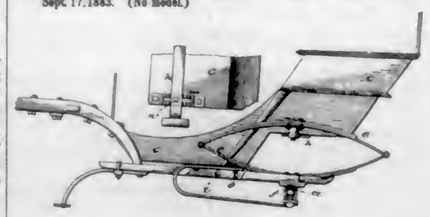
6. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, a dust-guard composed of sections separable in a horizontal direction and adapted for insertion and removal through said side slots, said sections being provided with packed flanges at their outer ends, adapted to shut over said side slots, and spring fastening devices at the sides of said axle-box for holding said dust-guard in position.

7. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, and with laterally-projecting lips above said slots, and a sectional dust-guard having flanges adapted to shut over said slots and under said lips.

8. The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, and with laterally-projecting lips above said slots, and a sectional dust-guard having flanges adapted to shut over said slots and under said lips, said lips being recessed to receive the upper ends of said flanges.

9 The combination, substantially as set forth, of an axle-box provided with slots in its vertical sides opening into the dust-guard chamber, and with laterally-projecting lips above said slots, a sectional dust-guard having flanges adapted to shut over said slots and under said lips, and fastening devices at the sides of the box for holding said dust-guard in place.

298,254. ROAD-CART. CLARENCE H. STRAIGHT, Bryan, Ohio. Filed Sept. 17, 1883. (No model.)

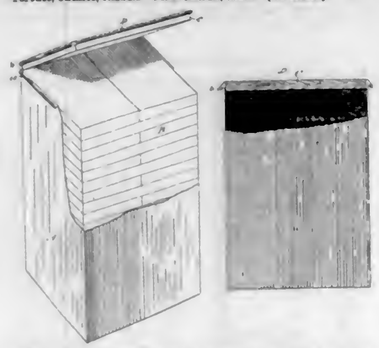


Claim.—1. In a road-cart, the combination, with the clips having recesses for the elliptical springs, the axle, and spring-braces, of the axle, elliptical springs, braces, and side bars, substantially as specified.

2. In a road-cart, the combination, with the body having the recessed body-sills covered with slotted corrugated plates carrying nut-bolts, of the cone-oval shaped body-supports, having holes for the passage of the bolts, and a rounded upper face to fit the corrugations in the plates, substantially as specified.

3. In a road-cart, the combination, with the axle, side bars, and body of the vehicle, of the clips *f*, constructed as described, the elliptic springs, U-form springs *i*, and the side braces, *g*, all constructed and adapted to operate substantially as specified.

298,255. SHEET-METAL TOBACCO-CADDY. EDMUND H. STRIKER Toronto, Ontario, Canada. Filed Jan. 15, 1884. (No model.)



Claim.—1. A sheet-metal caddy or case, A, provided with retaining-lips *a*, formed outwardly at its mouth, in combination with the sheet-metal cover D, having flanges *b*, with upwardly-turned lips on the lower edge of each flange, substantially as and for the purpose specified.

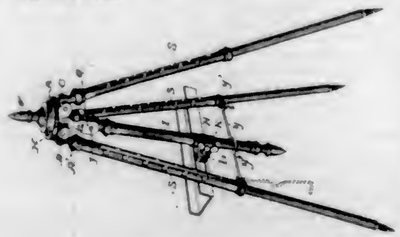
2. A sheet-metal cover, D, having flanges *b*, with upwardly-turned lips on the lower edge of each flange, a wooden block, C, applied as specified, in combination with a caddy or case, A, having retaining-lips *a*, formed outwardly at its mouth, substantially as and for the purpose specified.

298,256. PROCESS OF OBTAINING SODA. JOSEPH TOWNSEND, Glasgow, County of Lanark, Scotland. Filed Sept. 5, 1882. (No specimens.) Patented in England Apr. 30, 1879, No. 1,703, and in Germany Oct. 18, 1879, No. 10,541.

Claim.—1. The process described of treating kainit, consisting in mixing the substance with silica or silica and alumina, heating the mixture, passing air or steam through or over it, whereby chlorine or hydrochloric acid is evolved, reducing the sulphates in the residue to sulphides, and treating the sulphides with carbonic acid to form carbonates of soda and potash, substantially as set forth.

2. The process described of treating kainit, said process consisting in mixing the substance with silica or silica and alumina, then heating the mixture and passing steam or air through or over it, then mixing carbonaceous material with the residue, heating this to convert the sulphates into sulphides, lixiviating the sulphides, and finally treating this solution with carbonic acid to form carbonates, all substantially as set forth.

298,257. EASEL. THOMAS C. VAIL, Topeka, Kans. Filed Feb. 16, 1884. (No model.)



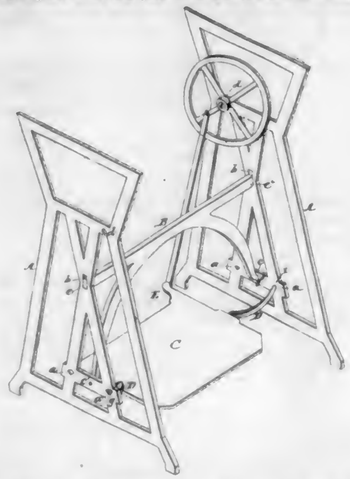
298,257.



Claim.—1. An easel provided with telescopic legs that are all adapted to be adjusted and secured at any desired point, and which are further provided with detachable reversible points at the lower end, said points having one end sharpened and the opposite end rounded, as substantially shown and described.

2. The combination of the cap A, telescopic legs S, depending link G, rod I, pivoted thereto, clamp K, adjustable vertically on said rod, shelf O, adjustable laterally on said clamp, and wire Y, having a bend, Y^3, said wire being adapted to secure the lower ends of two of the legs in position, all combined and arranged to operate substantially as shown and described.

298,258. TREADLE AND STAND FOR SEWING-MACHINES. FRANCIS MARION WEAVER, Springfield, Ohio, assignor of one-half to William Augustus Hance, same place. Filed Mar. 20, 1884. (No model.)



Claim.—1. The combination, with the stand-frames having bearing-openings *a a* and a suitable brace for said frame, of the treadle having bearing-arms adapted to fit and work directly in the stand-bearing openings, substantially as described.

2. The combination, with the stand-frames having bearing-openings *a a* and openings *b b*, the latter having inclines *c'*, and a treadle having bearing-arms adapted to fit and work directly in the stand-bearing openings, of a cross-brace having hook-shouldered ends *e e³*, adapted to fit the inclines of said openings *b b*, and perforated ends *f f*, bolted to the said stand-frames, substantially as described.

3. The stand-frames A A, having the V-shaped bearing-openings *a a*, the openings *b b*, having inclines *c'*, and the openings *c d*, arranged substantially as shown and described, combined with a treadle having bearing-arms terminating in shouldered knife-edge bearings *g i*, and a cross-brace, B, having shouldered hook ends *e e³* and perforated ends *f f*, all constructed substantially as set forth.

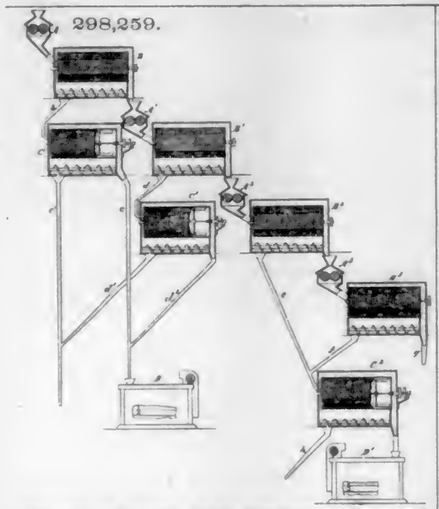
4. The treadle having the bearing-arms D D, and the pitman-rod connection E, formed integrally, in combination with stand-frames having bearing-openings adapted to receive the bearing ends of said arms, and means, as described, for securing and bracing said stand-frame to confine the treadle in its bearings, substantially as herein set forth.

5. The combination of a treadle having bearing-arms, arranged as described, with the stand-frames A A, each having two bearing-openings, *a a*, arranged on the same horizontal plane and in coincident lines with each other, and an opening, *d*, at one side, not opposite but on the same horizontal plane, and a suitable cross-brace, substantially as herein set forth, for the purpose specified.

298,259. ART OF MANUFACTURING FLOUR. JOHN R. WHEATLEY, Detroit, Mich., assignor of one-half to August Heine, Silver Creek, N. Y. Filed July 3, 1883. (No model.)

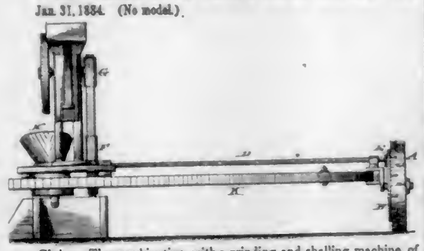
Claim.—The herein-described improvement in the art of manufacturing flour by the gradual reduction of grain, which consists in reducing the grain by successive breaks, separating the products of each reduction into flour and coarse fragments by bolting or sifting, separating the flour

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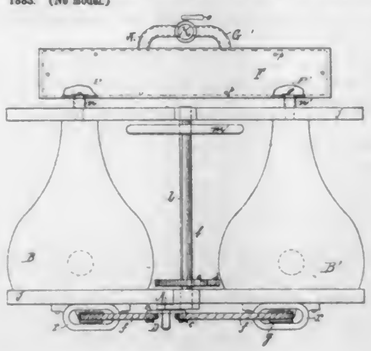
derived from each separation from the accompanying impurities and grits by beating and sifting, and purifying the tailings of this separation by sifting and air-currents, substantially as set forth.

298,260. SHELLING AND GRINDING MACHINE. EDWARD M. WILCOX, Whitewater, Wis., and WILLIAM E. BOTSFORD, Omaha, Nebr. Filed Jan. 31, 1884. (No model.)

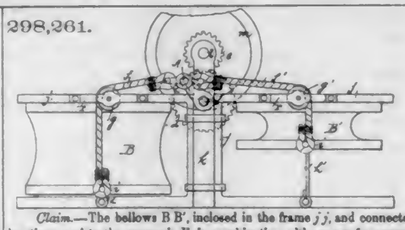


Claim.—The combination, with a grinding and shelling machine, of the sweep K, having the drive-wheel A, provided with a spur-gear, B, and the shaft D, journaled upon said sweep, provided at its outer end with a pinion to mesh with the spur-gear, and at its inner end with a pulley to operate a belt connecting with the pulley G to operate the machine, substantially as specified.

298,261. BELLOWS. JOHN S. WILLIAMS, Chicago, Ill. Filed Aug. 4, 1883. (No model.)

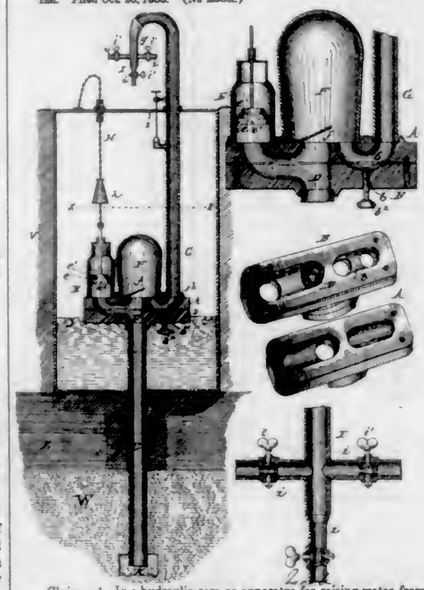


298,261.



Claim.—The bellows B B', inclosed in the frame *j j*, and connected by pipes *n n'* to the reservoir F, in combination with means for operating the bellows, said means consisting of the elastic strips A A', cords *f f'*, pulleys *g g'*, link *c*, and crank A, all arranged and operating substantially as shown and described.

298,262. HYDRAULIC RAM. JACOB BLOOM YEAGLEY, Indianapolis, Ind. Filed Oct. 20, 1883. (No model.)



Claim.—1. In a hydraulic ram or apparatus for raising water from wells having water-bearing strata of different hydrostatic levels, the combination, with an influx fountain-pipe, C, of the two-part castings A B, having a pipe, D, groove *b*, efflux valved chamber E, and valved air-chamber F, said parts adapted to connect two water-bearing strata of different hydrostatic levels, substantially as and for the purposes herein shown and described.

2. In a hydraulic ram or apparatus for raising water from wells having water-bearing strata of different hydrostatic levels, the combination, with an influx fountain-pipe, C, of the parts A and B, having a pipe, D, the efflux valved chamber E, valved air-chamber F, and supply-pipe G, adapted to communicate with air-chamber, and all arranged to connect two water-bearing strata of different hydrostatic levels, substantially as and for the purposes herein shown and described.

3. In a hydraulic ram or apparatus for raising water from wells having water-bearing strata of different hydrostatic levels, the combination, with an efflux-chamber, E, an air-chamber adapted to connect pipes C D, and the supply-pipe G, of the parts A and B, provided with groove *b*, opening *b'*, and plug or stop-cock attachment *b²*, substantially as and for the purposes herein shown and described.

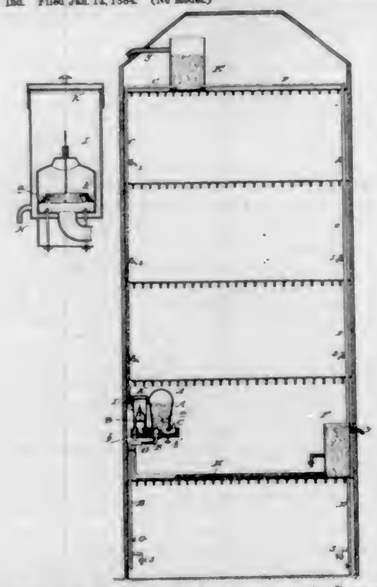
4. In a hydraulic ram or apparatus for raising water from wells having water-bearing strata of different hydrostatic levels, the combination, with a valved air-chamber and influx and efflux pipes, of the efflux-chamber E, having an inverted saucer-shaped valve, *e*, having the two series of openings *e e²*, substantially as and for the purposes herein shown and described.

5. In a hydraulic ram or apparatus for raising water from wells having water-bearing strata of different hydrostatic levels, the combination, with a valved air-chamber and influx and efflux pipes, of the efflux-chamber E, having a valve, *e*, and connecting rope or chain H, having a weight, A, substantially as and for the purposes herein shown and described.

6. In a hydraulic ram or apparatus for raising water from wells having water-bearing strata of different hydrostatic levels, the combination of an influx fountain-pipe, an efflux fountain-pipe, said two pipes adapted to connect two (2) water-bearing strata of different hydrostatic levels, intermediate valved air-chamber, efflux valved chamber, supply-pipe, and drainer 2 2, and a water-distributer having a series of pipes controlled by stop-cocks, substantially as and for the purposes herein shown and described.

7. The combination of an Artesian-fountain pipe, an efflux fountain-pipe with an efflux valved chamber, intermediate valved air-chamber adapted to connect efflux fountain-pipe and Artesian-fountain pipe, and the supply-pipe G and parts A and B, provided with groove *b* and plug or stop-cock attachment *b²*, substantially as and for the purposes herein specified.

298,263. HYDRAULIC RAM. JACOB BLOOM YEAGLEY, Indianapolis, Ind. Filed Jan. 12, 1884. (No model.)



Claim.—1. The combination of the water-works pipe B, supply-pipe C, tank E, supply D, tank F, waste-water receiver I, pipe H, and apparatus A, consisting of the efflux-cylinder *i*, valved air-chamber A', and connecting cross-pipe *b*, substantially as and for the purpose herein shown and described.

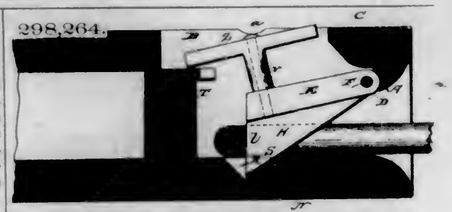
2. The combination of the water-works supply-pipe B with main connection, supply-pipe C, apparatus A, consisting of the efflux valved cylinder *i*, valved air-chamber A', and connecting cross-pipe *b*, the waste-water receiver I, pipe H, and tank F, substantially as and for the purpose herein shown and described.

3. The combination of the water-works supply-pipe B with main connection, supply-pipe C, intermediate apparatus, A, consisting of the efflux valved cylinder *i*, valved air-chamber A', cross-pipe *b*, and waste-water receiver I, having double perforated top K, with alternating openings, substantially as and for the purpose herein shown and described.

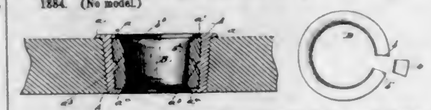
4. The combination of the water-works supply-pipe B, communicating with main pipe apparatus A, constructed substantially as described, supply-pipe C, tank E, supply-pipe D, tank F, and supply-pipe D', substantially as and for the purpose herein shown and described.

298,264. CAR-COUPLING. SAMUEL R. ZIMMERMAN, Hudson, Mich. Filed Mar. 13, 1884. (No model.)

Claim.—In a car-coupling, the draw-head having the elongated aperture B in its top and slot or recess in its bottom, the broad drop-catch plate pivoted to the draw-bar by a transverse pivot-pin, and having an under-catch projection, H, and a pivoted handle, Z, of proper length to engage the aperture B by the ends when turned transversely, and to pass down through said aperture when turned lengthwise, substantially as specified.



298,265. BUNG. ANTON G. ANDERSON, Chicago, Ill. Filed Jan. 11, 1884. (No model.)

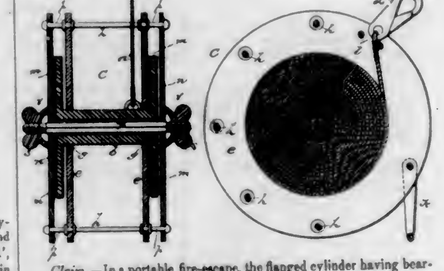


Claim.—1. In a bung-bushing, the combination of the metallic bushing A, provided with flanges *a a' a³*, and a ridge, *a²*, with a lining formed of wood, or compressed wood, paper-pulp, or other suitable material, having an external groove surrounding said lining, and means, substantially as described, whereby said lining may be inserted into the bushing, as set forth.

2. In a bung-bushing, the split lining B, having the groove *b²*, in combination with a wedge, *b*, and the metallic bushing A, having ridge *a²*, substantially as described.

298,266. FIRE-ESCAPE. CHARLES BINGLEY ANDERSON, Maysville, Ky. Filed Apr. 23, 1883. (No model.)

Brief.—By turning the nuts upon the ends of the rod the disk-rubbers are pressed against the flanges of the rope-cylinder, preventing its too rapid turning.



Claim.—In a portable fire-escape, the flanged cylinder having bearings in parallel case-disks, which are rigidly connected, the sliding disk-rubbers connected to the case-disks, and having the central right and left threaded brake-rod, and the manipulating nuts engaging the brake-rod, and operating to press the disk-rubbers against the flanges of the cylinder, substantially as specified.

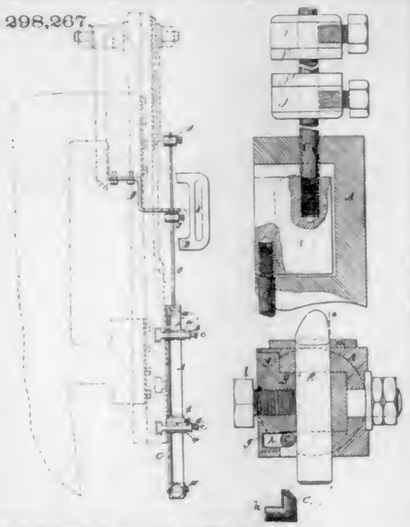
298,267. TOOL-OSCILLATING DEVICE FOR SLOTTING-MACHINES. JOSEPH ANGUS, South Lambeth, County of Surrey, England. Filed Oct. 1, 1881. (No model.) Patented in England Mar. 13, 1880, No. 1,091.

Claim.—1. In a slotting-machine, the combination of a vertically-reciprocating tool-bar adjustable on a vertical axis, a tool-holder mounted in the tool-bar and rocking on an axis at right angles to the axis of the tool-bar, and a double-cutting tool mounted in the tool-holder, whereby the tool may be made to cut in a direction parallel with the axis of the tool-bar and through any degree of the circle around the said tool-bar.

2. In a slotting-machine, the combination of a tool-bar adjustable on its axis, a tool-holder having a rocking movement in the tool-bar, a tool-reversing rod mounted on the tool-bar, and a stationary tappet-bracket, substantially as and for the purpose herein specified.

3. The combination, in a slotting-machine, of the tool-bar A, mounted in bearings on the ram, the rocking tool-holder B, mounted in the said bar, the tappet-rod C, made in two parts and connected by the block *i*, the tappets on said rod, and the fixed tappet-bracket, all ar-

298,267.

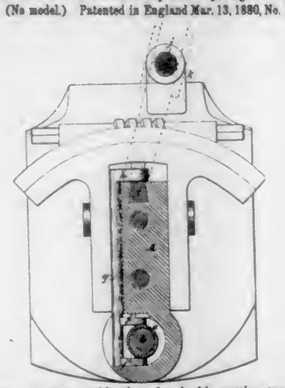


ranged to operate substantially as set forth.

4. The combination, with the ram of a slotting-machine, of the tool-bar A, the rocking tool-holder B, the tappet-bar C, its lower end provided with a hook or projection to engage the tool-holder, and arranged to play in a groove in the tool-bar, and its upper part provided with tappets, and coupled to the lower part in the axis of the tool-bar by means of the block *i*, and the fixed tappet-bracket D, all arranged to operate substantially as set forth.

5. The combination, with the ram of a slotting-machine, of a cylindrical tool-bar bearing a cylindrical tool-holder, gripping-blocks, and a sustaining-ring, substantially as herein specified

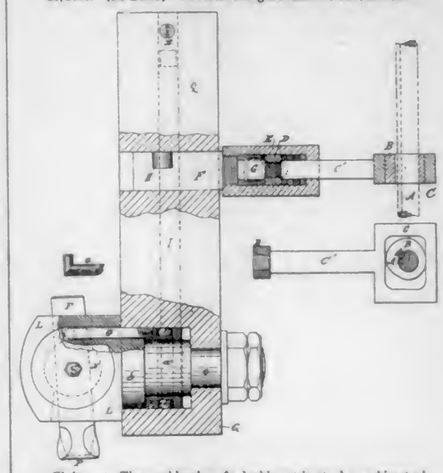
298,268. TOOL-OSCILLATING DEVICE FOR SHAPING-MACHINES. JOSEPH ANGUS, South Lambeth, County of Surrey, England. Filed Oct. 3, 1881. (No model.) Patented in England Mar. 13, 1880, No. 1,091.



Claim.—1. The combination of a double-cutting tool, a rocking tool-holder, in which the tool is mounted, the reciprocating tappet-rod *j*, adapted to rock on its axis, a stationary tappet-bracket, a rod, *l*, adapted to slide in a socket on the tappet-rod, and the mechanism connecting the said rod *l* with the tool-holder, whereby the tool-holder is rocked and the tool reversed at the termination of each forward and return stroke of the machine irrespective of the various adjustments of the machine connected with the tool.

2. The combination of the double-cutting tool D, rocking tool-holder C, tool-holder socket B, sliding collar *a*, connecting-rod *f*, oscillating shaft *g*, provided with the arms *j'* and *h*, slide *i*, sliding and rocking bar *j*, rod *l*, tappet-rod *m*, and tappet-bracket *o*, substantially as and for the purpose herein specified.

298,269. TOOL-OSCILLATING DEVICE FOR PLANING-MACHINES. JOSEPH ANGUS, South Lambeth, County of Surrey, England. Filed Nov. 26, 1880. (No model.) Patented in England Mar. 13, 1880, No. 1,091.



Claim.—1. The combination of a double-cutting tool, a rocking tool-holder, and a tool-holder socket, the socket being adjustable in a vertical plane on a horizontal axis, and the tool-holder and tool rocking in the socket on an axis at right angles to the axis of the socket, whereby the tool may be set to cut the work at any angle.

2. The combination of a tool-bar, a tool-holder socket mounted in the tool-bar and adjustable therein to any position on its axis, a tool-holder rocking on its axis in the socket, a double-cutting tool mounted in the tool-holder and rocking therewith, and the means, substantially as herein described, for automatically rocking the tool-holder and reversing the tool, for the purpose herein specified.

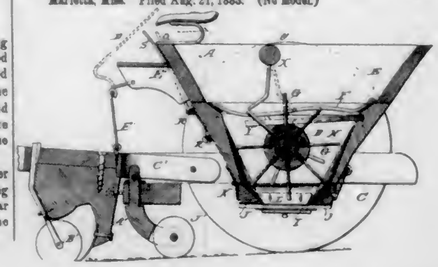
3. The combination of a tool-bar adjustable in a vertical plane on a horizontal axis, a tool-holder socket adjustable on its axis in the tool-bar, a tool-holder rocking on its axis in the socket, and a double-cutting tool mounted in the tool-holder, for the purpose herein specified.

4. The combination of a tool-bar adjustable in a vertical plane on a horizontal axis, and longitudinally in the same plane, a tool-holder socket adjustable on its axis in the tool-bar, a tool-holder rocking on its axis in the socket, a double-cutting tool mounted in the tool-holder and rocking therewith, and the means, substantially as herein described, for automatically rocking the tool-holder and reversing the tool irrespective of the adjustments of the tool-bar and tool-holder socket.

5. The combination, with the tool-bar Q, of the socket-piece L, mounted rotatively therein, the tool-holder N, rocking in the socket-piece, the axis of the two crossing at right angles, the tool P, arranged to fit a transverse aperture in the tool-holder, and its ends to play in circumscribed slots or openings in the socket-pieces, the hook-rod O, collar K, operating-rod I, provided with arms J J H, and the slide F, arranged to be automatically reciprocated, substantially as set forth.

6. The combination, with the tool-bar Q, of the socket-piece adjustable on its axis, the tool-holder N, rocking in said socket-piece, the hook-rod O, sliding collar K, operating-rod I, slide F, relief-spindle A, cam B, strap C, and stem C', connected with the slide F by means of a yielding coupling, substantially as and for the purposes set forth.

298,270. FERTILIZER-DISTRIBUTER. BENJAMIN FRANKLIN ARCHER, Marietta, Miss. Filed Aug. 21, 1883. (No model.)



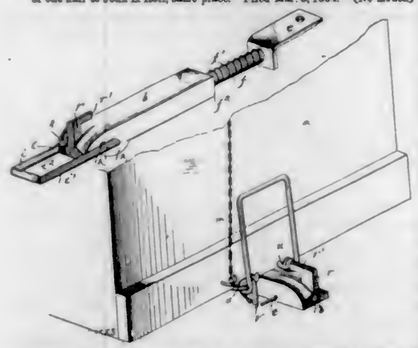
Claim.—1. The combination of the axle carrying the distributing toothed roller, the hopper having an upper compartment with walls converging toward the said roller, and a lower compartment with hinged bottom and walls converging toward the line of the furrow, the hinged grating forming the bottom of the upper compartment, the spring-scraper, and the inner and outer gage-plates in the outlet-slot, substantially as shown and described.

2. The combination of the hounds C', the opening-plow A', and cutter B', secured to said hounds, the lever D', the rod F', connecting the lever to the hounds, and the catch G', for holding the lever, substantially as shown and described, whereby the tongue and hounds may be adjusted and held in a position to support the plow and cutter at an elevation, to regulate the depth of furrow, as specified.

3. The hopper having the lower compartment, H, provided with converging side and end walls, and the hinged bottom J, formed in one piece, and adapted to be opened downward, and having a slot, I, and plates L M, substantially as shown and described.

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298,272. CAR-COUPLING. EDWIN M. BATES, Springfield, Ill., assignor of one-half to John E. Roll, same place. Filed Mar. 3, 1884. (No model.)



Claim.—1. In a car-coupling, the combination, with the coupling-head supported in guides, and having a spring and stop mechanism, of the pivoted coupling-link, provided on one of its arms with a sector-shaped projection, the hook pivoted thereto, and the main and auxiliary chains for setting and coupling the link, substantially as specified.

2. In a car-coupling, the combination, with the coupling-head having the vertical hook at its forward end, of the pivoted coupling-link having the sector-shaped projection and the pivoted hook, and the main chain, the auxiliary chains, and pulleys, substantially as specified.

298,273. ATTACHMENT FOR BOTTLE-STOPPERS. CHARLES H. BENNETT, Cheltenham, assignor of one-fourth to Jacob B. Rohrer, Lancaster, Pa. Filed Jan. 19, 1884. (No model.)

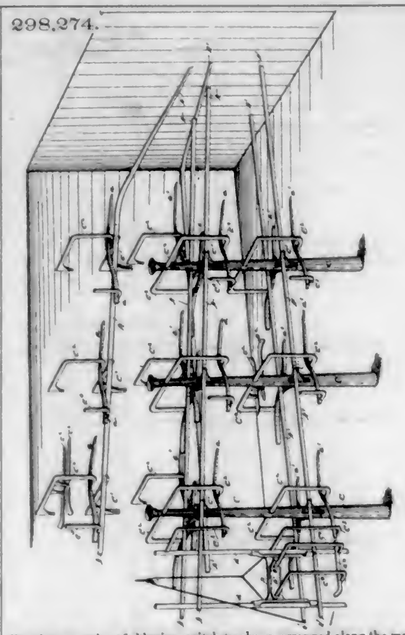


Claim.—1. In a bottle-stopple fastener, the combination of a stopple having a lug, a revolving key passing through said lug and bent over the center of the stopple to form a retaining device, a saddle having lugs for the key, and means, substantially as described, in the key for adjusting and holding the latter in place, substantially as described.

2. The combination of stopple A, having top B, with a recess, *b*, and lug-opening *b'*, the key F, having curved or bent end *f* and adjusting mechanism, and saddle E, with bearings *e e'*, substantially as shown and described.

298,274. CONVEYER APPARATUS. GEORGE C. BLICKENSDERFER and HERVEY SMITH, Erie, Pa. Filed Mar. 17, 1884. (No model.)

Claim.—1. In a conveyer apparatus substantially as shown, the combination, with a series of main supports, C, of main tracks A A', formed of series of bars supported on brackets and graded in opposite



directions, a series of shipping switch-tracks, *a*, arranged along the main track A, and a series of receiving switch-tracks, *a'*, arranged along the main track A', which switch-tracks are formed of bars and are supported on brackets independently of said main tracks, as shown.

2. In a conveyer apparatus substantially as shown, the combination of main lines formed of bars supported on brackets, and switch-tracks formed of properly-carved bars supported independently of the main tracks on brackets, substantially as shown.

3. In a conveyer apparatus substantially as shown, the combination, with a series of main supports, C, of a main track, branch tracks, and transfer switch-track, all formed of bars supported from said main supports, substantially as and for the purposes set forth.

4. In a conveyer apparatus substantially as shown, the combination, with a main and a branch or intersecting track, of a transfer switch-track formed of a curved bar pointed at each end, as shown, and for the purposes set forth.

5. In a conveyer apparatus substantially as shown, the combination, with two parallel tracks, A' A', and the guides c^3 c^3, of the guide-supports c^3 c^4 c^5, sustained by said tracks, as shown.

298,275. CONVEYER APPARATUS. GEORGE C. BLICKENSDERFER and HERVEY SMITH, Erie, Pa. Filed Mar. 18, 1884. (No model.)

Claim.—1. In a conveyer apparatus substantially as shown, a car having a running-gear for use on the main or direct track, and a hook by which it can be caught by the switching devices, substantially as shown.

2. In a conveyer apparatus substantially as shown, the combination, with the main or direct track and a car having a running-gear for use upon said track and a hook thereon, of a switching device consisting of devices, substantially as shown, for engaging with said hook and conveying the car from said main track thereby.

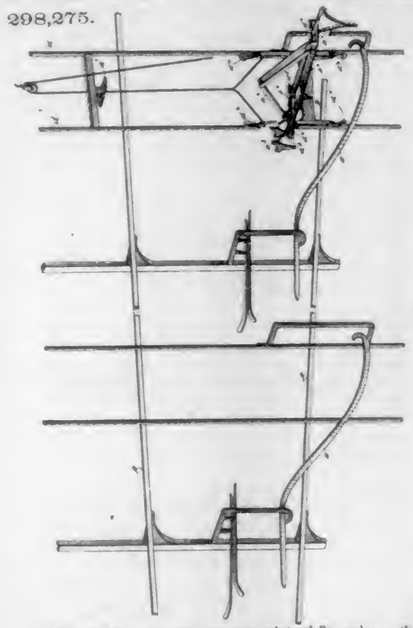
3. In a conveyer apparatus substantially as shown, a car having a running-gear for use on the main or direct track, which is adapted, substantially as shown, to be tripped, and a hook by which the car can be caught and sustained when said running-gear is tripped, substantially as shown, and for the purposes mentioned.

4. In a conveyer apparatus substantially as shown, the combination, with the main track, of a switch-track, which is set at a sufficiently precipitous angle thereto, as shown, to serve as a slideway for the cars when caught thereon by a hook, as shown and described.

5. In a conveyer apparatus, the combination, with a precipitously-inclined track, of a car having thereon a brake, which is held against the track by the plumb position of the car, as shown.

6. In a car for a conveyer apparatus substantially as shown, the combination of the body C, standard C^2, wheels C^3, and hook C^4, substantially as and for the purposes mentioned.

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7. In a car for a conveyer apparatus substantially as shown, the combination of the body C, standard C', wheels C², hook C³, and shoe C⁴, substantially as and for the purposes mentioned.

8. In a conveyer-car substantially as shown, the combination of the body C, standard C', wheels C², hook C³, and brake C⁵, substantially as and for the purposes mentioned.

9. In a conveyer-car substantially as shown, the combination of the body C, standard C', wheels C², block c', toggle c^4, pivoted hook C³, lug c^5, and spring c^6, substantially as and for the purposes set forth.

10. In a conveyer-car substantially as shown, the combination, with the body C, of the pivoted bail E, with catches e', and the ears E', with the notches s, substantially as and for the purposes mentioned.

11. In a conveyer-car substantially as shown, a body, C, formed of wicker-work, and having an oval form, with rounded bottom and ends, as shown and described, and for the purposes mentioned.

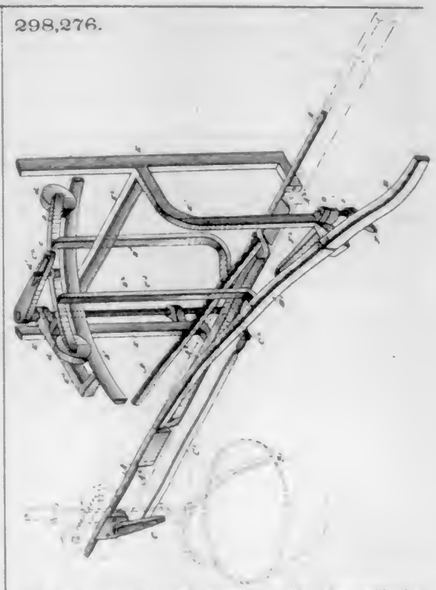
12. In a conveyer-car, the combination of the body C, standard C', wheels C², hook C³, and rollers C⁴ C⁴, as shown, and for the purposes named.

13. In a conveyer apparatus substantially as shown, the combination of the guide-posts d d, elevator-frame D, and friction-rollers d^3 d^3 d^3 d^3, placed at the corners of said frame, substantially as and for the purposes mentioned.

14. In a conveyer apparatus, a car loading or shipping apparatus consisting of the combination of an elevator-frame, a platform on said frame, a slide on said platform, horns for holding the car on said slide, a lever for moving said slide forward, an inclined surface for raising up and letting down the forward end of said slide as it is moved forward, and a spring for moving said slide backward, substantially as shown.

15. In the car elevating and shipping device of a conveyer apparatus, the combination of the posts d d, frame D, platform D', slide D², toggle D⁴, and the plate d', substantially as shown.

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3. In a conveyer apparatus substantially as shown, the combination of the following elements: an elevated track with an offset or notch and a swinging section in said notch, a swinging-switch track, an arc-track, a sliding hanger mounted on said arc-track, and supporting said swinging-switch and main-track section, gearing, substantially as shown, for moving said sliding hanger from the levers C and F, and a pendent car with means, substantially as shown, for moving said levers C and F as it passes them.

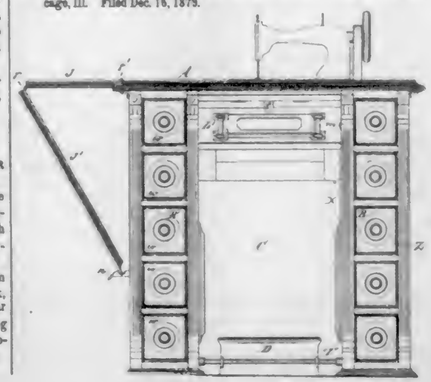
4. In a conveyer apparatus substantially as shown, the combination of the following elements: an elevated main track, a pendent car, and a swinging switch which is actuated from the movement of the car.

5. In a conveyer apparatus substantially as shown, the combination of the following elements: an elevated main track, a pendent car, and a swinging switch and swing section of main track which are actuated from the movement of the car.

6. In a conveyer apparatus substantially as shown, the combination of the following elements: an elevated main track having a swinging section, a swinging switch lying opposite said swing-track section, and means, substantially as shown, for moving said two swing parts simultaneously from the action of the passing car.

7. In a conveyer apparatus substantially as shown, the combination, with a taut-wire main track, of the deflecting-iron A², the swinging-track section A', and the swinging switch B'.

298,277. CABINET FOR SEWING-MACHINES. JAMES BOLTON, Chicago, Ill. Filed Dec. 16, 1879.

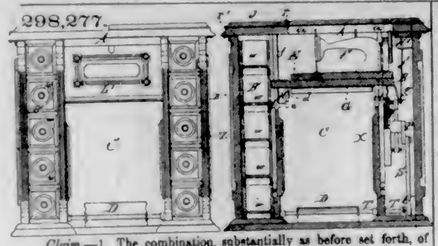


298,276. CONVEYER APPARATUS. GEORGE C. BUCKENDORFER and HERVEY SMITH, Erie, Pa. Filed Mar. 22, 1884. (No model.)

Claim.—1. In a conveyer apparatus substantially as shown, the combination of the following elements: an elevated track, a swinging-switch track, a pendent car, and gearing for swinging said switch, which is actuated by coming in contact with the said car as it passes, substantially as shown.

2. In a conveyer apparatus substantially as shown, the combination of the following elements: an elevated track, a swinging-switch track, the arc-track D', the slide or car D, a hanger connecting said slide or car with the swinging switch, gearing, substantially as shown, for moving said slide from the levers C and F, and a pendent car having means, substantially as shown, for moving said levers C and F as it passes them.

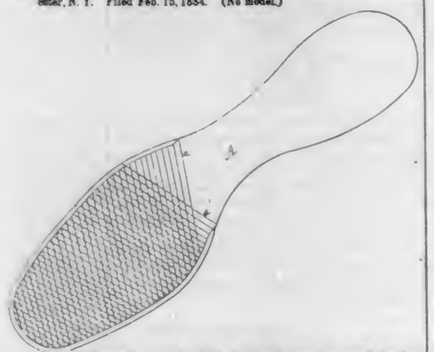
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Claim.—1. The combination, substantially as before set forth, of the perforated top, the movable platform, the grooved guides for the slides, the trunks having openings in their sides for the ends of the platform, and the slides constructed of the required breadth to close the said openings and form panels therefor.

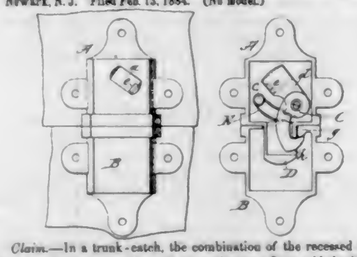
2. The combination, substantially as before set forth, of the perforated top, the articulated folding extension-cover, and the lugs for supporting the edge of the extension-cover when opened.

298,278. INSOLE FOR BOOTS OR SHOES. THOMAS BOLTON, Rochester, N. Y. Filed Feb. 15, 1884. (No model.)



Claim.—As an improved article of manufacture, an insole having one face provided with two series of cross incisions or slits crossing each other in a diagonal direction, extending but part way through, and producing a scarified surface, the opposite face of the insole being uncut, as herein shown and described

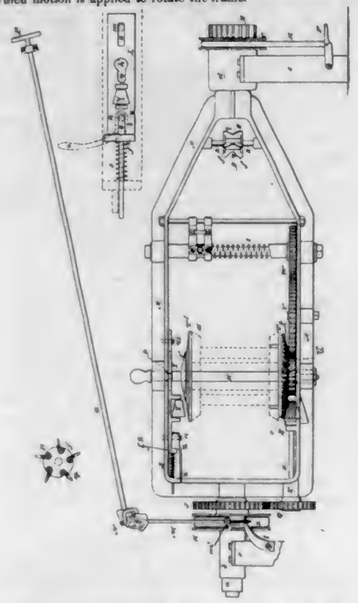
298,279. TRUNK OR BOX FASTENER. EDWARD W. BRETTELL, Newark, N. J. Filed Feb. 13, 1884. (No model.)



Claim.—In a trunk-catch, the combination of the recessed casing A, having a slot, a, pivots b c, and recessed tongue D, provided with side opening, h, the hook or lever C, pivoted in said casing and having an arm, d, provided with thumb-piece e, the spring E, and the keeper B, having opening f and catch g, substantially as described.

298,280. TWISTER AND SPOOLER FOR THE MANUFACTURE OF WIRE FENCING, &c. ORLANDO P. BRIGGS, Chicago, Ill., assignor to the Thorn Wire Hedge Company, same place. Filed Sept. 16, 1882. (No model.)

Brief.—The frame carrying the reel is rotated in boxes supported at each end thereof. The reel is mounted on a spool-shaft and clamped between two opposing plates or disks. One of said disks is conical on its outer surface, and is pressed by an adjustable conical roller to clamp the reel between the disks. On the outer face of the other disk is a beveled rack or gear. The reel is rotated by a bevel-pinion at the end of a shaft meshing with said bevel-gear, rotation being given to the bevel-pinion by means of a pinion on the outer end of the shaft engaging with a spur-gear on the box in which one of the journals of the frame rotates. This spur-gear is held stationary, or caused to rotate at a less speed than the frame, by means of a rod universally jointed to a downwardly-extending rod screw-threaded at its lower end, which is fitted to a hole in a band nearly encircling a pulley mounted on the box with the spur-gear. The journal at the opposite end of the frame is provided with a pinion, to which motion is applied to rotate the frame.



Claim.—1. The combination, with the frame A, of the disk T, and mechanism for rotating the same, movable spool-shaft H, apertured removable disk T', and a self-adjusting friction-roller or presser for forcing the latter disk against the spool, substantially as described.

2. The combination, with the rotating spool-carrying frame A, disk T, and means for rotating said disk, of the opposing disk T', adjustable in the direction of its axis, and having a conical outer surface, a roller arranged to bear on said conical surface, a sliding support for the roller, a spring arranged to force the roller inwardly toward the axis of the disk, and suitable means for retracting the roller, substantially as and for the purposes set forth.

3. In combination with the frame and with the disk T', adjustable as described, the disk T, and a removable spool-shaft, the longitudinally-sliding plate X, roller Y, spring s, and cam Z, connected, arranged, and operating substantially as and for the purposes specified.

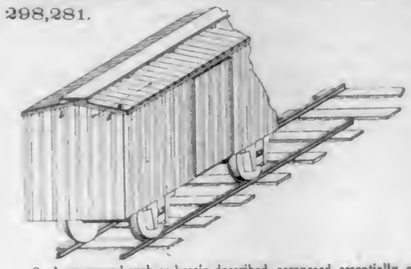
4. In combination with the twister-frame and removable spool-shaft H, having the reduced part p, the sliding plate X, provided with the open slot q', the spring s, and the cam Z, arranged and operating substantially as described, and for the purposes specified.

5. The combination, with the rotating spool-carrying frame, spool-holding disks T and T' therein, friction mechanism, substantially as shown, for rotating the disks and spool, and a screw-threaded rod, M, for regulating the friction of such mechanisms, of a rod, O, universally jointed with the rod M, and extended to the head of the twister, substantially as and for the purpose set forth.

298,281. ASBESTUS COMPOUND AND ARTICLES MADE THEREFROM. CHARLES F. BRIGHAM, Worcester, Mass., assignor of three-fourths to D. Austin Brown, Trustee. Filed Sept. 21, 1883. (No model.)

Claim.—1. A compound such as herein described, composed, essentially, of asbestus and oxide of magnesium, incorporated and tempered or made plastic to be molded, substantially as described.

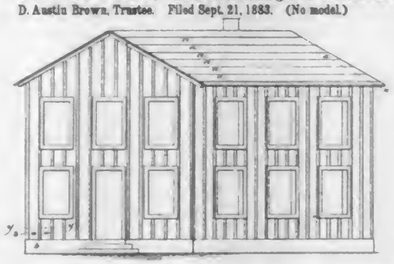
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2. A compound such as herein described, composed, essentially, of asbestus, oxide of magnesium, and paper-pulp, mixed and suitably tempered to render the same plastic, substantially as described.

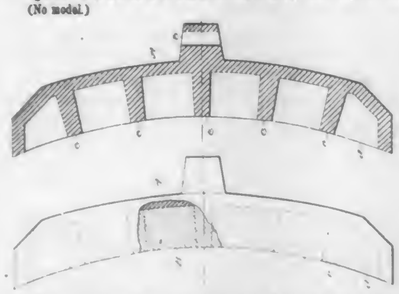
3. A board or other molded article composed of asbestus, having incorporated with it oxide of magnesium, substantially as described.

298,282. FIRE AND WATER PROOF MATERIAL FOR ROOFING, &c. CHARLES F. BRIGHAM, Worcester, Mass., assignor of three-fourths to D. Austin Brown, Trustee. Filed Sept. 21, 1883. (No model.)



Claim.—The herein-described roofing or sheathing, composed of asbestus board or paper treated with silicate of soda and with chloride of calcium, substantially as described.

298,283. BRAKE-SHOE. CHARLES F. BRIGHAM, Worcester, Mass., assignor of three-fourths to D. Austin Brown, Trustee. Filed Sept. 21, 1883. (No model.)



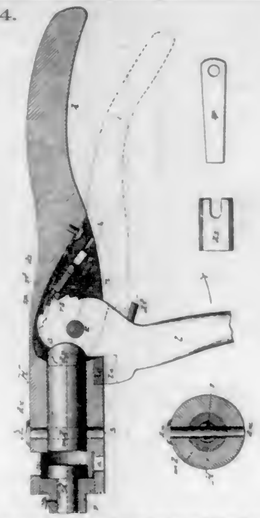
Claim.—1. As an improved article of manufacture, a brake-shoe consisting of a metal frame, and a contained molded body, B, composed of asbestus hardened, substantially as described.

2. As an improved article of manufacture, a brake-shoe consisting of a metal frame, and a contained molded body, B, composed of asbestus hardened, substantially as described, and mixed with an extending heat-resisting material—such as plumbago, lime, or earth—as set forth.

298,284. SEAL-PRESS. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Oct. 19, 1883. (No model.)

Claim.—1. In a seal-press, the combination, substantially as herein specified, of a lever-handle, a movable die or dies actuated thereby, and a pawl-and-ratchet device which prevents retracting said die or dies after a pressing operation is begun until the same is completed, as means for insuring uniform impressions and perfected fastenings in pressed seals, in the manner set forth.

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2. The combination, in a seal-press, substantially as herein described, of a main casting comprising a recessed head, H, a recessed neck, *n*, and a rigid handle, A, the former provided with a pair of dies, a lever-handle casting comprising a lever-handle, *l*, and a combined cam and ratchet-sector, *c rs*, and a spring detent-pawl, *sp*, secured within said recessed neck and engaging with said ratchet-sector, to prevent reversing the motion of said lever-handle, to release the seal, until the pressing operation is fully completed and the seal thus perfected.

3. The disengaging-slide *ds*, in combination with the tappets *dt st* on the lever-handle casting, and the detent-pawl *sp*, substantially as shown and described, for disengaging the latter and freeing the same, in the manner set forth.

298,285. DIE FOR MAKING VISE-JAWS. JOHN CAIN, Pittsburg, Pa., assignor to the Gillespie Tool Company, same place. Filed Dec. 10, 1883. (No model.)



Claim.—1. The die *a*, for forming vise-jaws, having a recess, *a'*, for receiving the shank, a lateral recess, a^2, for forming the head, and an intermediate connecting-cavity, a^4, substantially as and for the purposes described.

2. The die *a*, for forming vise-jaws, having recesses a' a^2 a^3 a^4, substantially as and for the purposes described.

3. The combination of the die *a*, having a cavity, a' a^2 a^4, with the die *b*, having a cavity, *b'*, substantially as and for the purposes described.

298,286. TELEPHONIC TRANSMITTER. HENRY CLAY, Philadelphia, Pa., assignor to the Clay Commercial Telephone Company, same place. Filed May 1, 1883. (No model.)

Claim.—1. In a telephonic transmitter, the combination of a diaphragm, an induction-coil, and electrodes interposed between said diaphragm and induction-coil, which by its gravity maintains and regulates the force of contact of said electrodes, substantially as described.

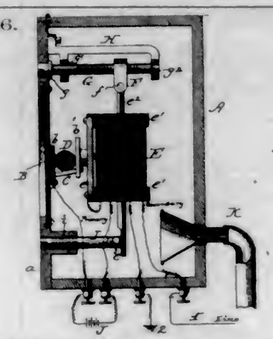
2. In a telephonic transmitter, the combination of a diaphragm, an adjustably suspended or supported induction-coil, and electrodes interposed between the diaphragm and induction-coil, substantially as described.

3. The combination, with a diaphragm, B, having brackets C C, and electrode *b*, of a carbon block, D, held on said brackets, and electrode *b'*, substantially as described.

4. The combination of a diaphragm carrying an electrode, a suspended and adjustable induction-coil having an electrode, and a carbon block between said electrodes, substantially as shown and described.

5. The combination of a diaphragm, B, induction-coil E, having a projecting core, electrodes interposed between the diaphragm and coil,

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and magnetic bar I, substantially as described.

6. In a telephonic transmitter, the combination of a diaphragm and an induction-coil arranged to regulate by its gravity the force of contact between the electrodes and to dampen the prolonged vibrations of said diaphragm, substantially as set forth.

7. The combination of diaphragm B, induction-coil E, having core e^3, electrodes interposed between the diaphragm and coil, and magnetic bar I, substantially as shown and described.

8. The combination of diaphragm B, induction-coil E, having core e^3, electrodes interposed between the diaphragm and coil, bar I, and ear piece or tube K, substantially as shown and described.

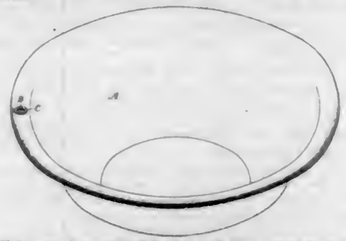
9. The combination of diaphragm B, the pivoted or suspended induction-coil E, having core e^3, electrodes interposed between the diaphragm and coil, and adjustable bar I, substantially as shown and described.

10. The combination of diaphragm B, pivoted and adjustable induction-coil E, electrodes interposed between the diaphragm and coil, and adjustable bar I, substantially as shown and described.

11. In a telephonic transmitter, the combination, with the induction-coil E, of core e^3, nut F, and screw G, substantially as shown and described.

12. The combination of diaphragm B, carrying electrode *b*, and brackets C C, the adjustable induction-coil E, carrying electrode *b'*, and the carbon block D, supported upon said brackets, and presenting diametrical points of contact to the electrodes, substantially as shown and described.

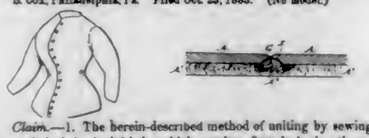
298,287. ENAMELED IRON WASH-BASIN. JAMES COCHRAN, New Lots, and JOHN C. MILLIGAN, Brooklyn, assignors to the Lalance & Grosjean Manufacturing Company, New York, N. Y. Filed Oct. 30, 1883. (No model.)



Claim.—1. As a new article of manufacture, a wash-basin having a hole near its periphery and an eyelet inserted therein.

2. A wash-basin of iron coated with a non-corrosive substance and having a hole near its periphery, with an eyelet inserted therein.

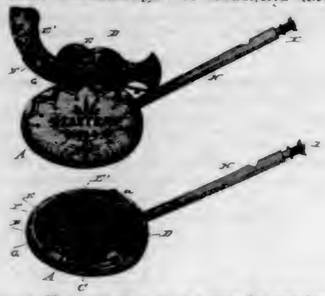
298,288. METHOD OF SEAMING PLUSH-BACK FABRICS. LEWIS S. COX, Philadelphia, Pa. Filed Oct. 23, 1883. (No model.)



Claim.—1. The herein-described method of uniting by sewing two pieces of plush-backed fabric, which consists, first, in laying them upon each other face to face, then joining them by a line of stitches and trimming the said pieces close to said line of stitches, then spreading said pieces out flat and pressing the seam, and finally felting the plush fibers of the back over said seam to protect and render it invisible, substantially as described.

2. As a new article of manufacture, a garment having a plush or felted back, in which the edges of the fabric are united by seams formed by two pieces of the fabric placed face to face and secured together by a line of stitches, and having the surplus cloth trimmed or cut off close to said line of stitches, and the plush or felt fibers on the back felted over the seam, substantially as set forth.

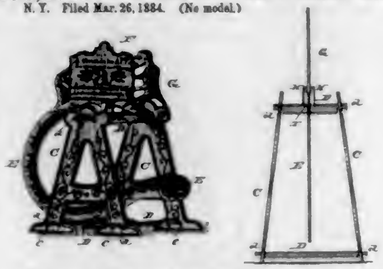
298,289. TOY. JESSE A. CRANDALL, Brooklyn, N. Y., assignor to himself and John W. Seaman, same place. Filed Mar. 20, 1884. (No model.)



Claim.—1. The combination, with the recessed receptacle, of the figure constructed in two parts pivoted together, one part serving to hold the figure in place when concealed, and the catch and spring for releasing and ejecting the figure, substantially as specified.

2. The combination, with a recessed figure representing an egg provided with a whistle, of a jointed figure adapted to be received in said recess, and a catch and spring arranged to hold and eject the jointed figure, all substantially as set forth.

298,290. ALPHABETICAL TOY. JESSE A. CRANDALL, Brooklyn, N. Y. Filed Mar. 26, 1884. (No model.)



Claim.—1. In an alphabetical toy, the supporting-letters having curved slots, and the cross-pieces provided with curved tenons to fit the slots and form a frame for the rocker, substantially as specified.

2. The rocker provided with a ground or shield upon which letters or verses may be applied, substantially as specified.

3. The rocker provided with a shield or ground for letters or other devices, and with the figure of an animal or other object, substantially as specified.

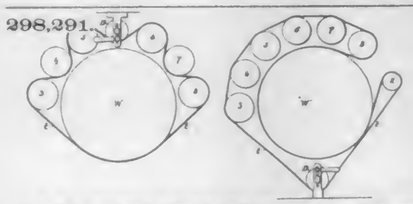
4. The combination of the supporting-frame, formed of letters of the alphabet, as described, and the connecting cross-pieces of a balanced rocker with pointed studs, which rest upon the upper cross-piece of the frame, substantially as specified.

298,291. BELT-GEARING FOR MACHINERY. JOHN H. CROMIE, Camden, N. J., assignor to Merrill A. Furbush and Charles A. Furbush, both of Philadelphia, Pa. Filed Mar. 31, 1884. (No model.)

Claim.—1. The combination of a belt, *t*, and a series of pulleys to which the belt is adapted, with means, substantially as described, whereby said belt may be slackened when it is desired to remove the same from the pulleys, as set forth.

2. The combination of the belt *t* and pulleys, the pulley D, the slotted plate A, the pulley-carrier B, guided thereon, and having two transverse ribs, *a a'*, and the eccentric E, hung to a fixed pin on the said plate A, substantially as set forth.

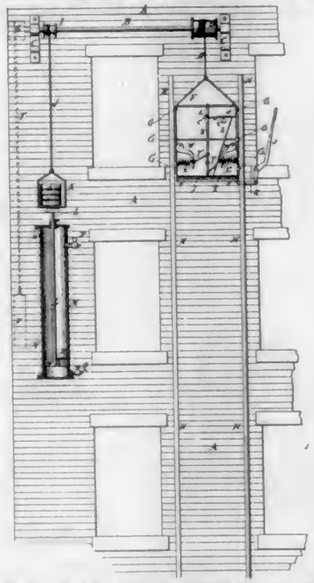
298,291.



3. The combination of the belt *t* and pulleys, the pulley D, the plate A, the pulley-carrier B, having ribs *a a'* and stop *g*, and the eccentric E, having two projections, *m n*, substantially as specified.

298,292. FIRE-ESCAPE. CHARLES R. S. CURTIS, Quincy, Ill. Filed June 23, 1883. (No model.)

Brief.—The car moves upon corrugated ways, and is provided with pivoted cam-brakes and an operating-lever. The car is suspended from a shaft journaled at the upper part of the building, and a weighted piston working in an air-cylinder is also connected to this shaft by a rope wound thereon in an opposite direction from that of the car-rope.



Claim.—1. In a fire-escape, the combination, with a shaft journaled in the upper part of a building, of a carriage suspended from a drum thereon and a piston working in an air-cylinder and connected to drum on the said shaft, the connecting-ropes of the carriage and piston being wound in opposite directions on the drums, substantially as herein shown and described.

2. In a fire-escape, the combination, with the carriage F, shaft B, provided with the drums D I, and ropes E J, wound in opposite directions thereon, of the piston M and the cylinder N, having stop-cocks P Q in its upper and lower parts, substantially as herein shown and described, whereby the descent of the said carriage will be resisted by compressed air above the piston and a partial vacuum below it, as set forth.

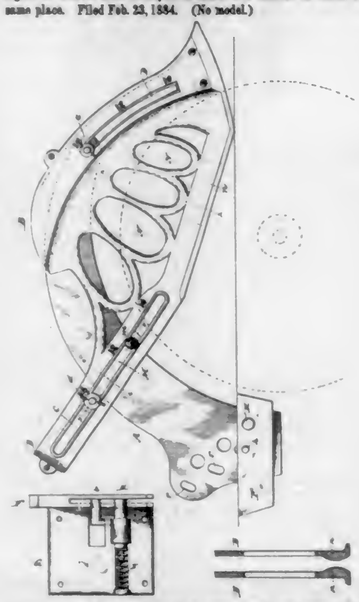
3. In a fire-escape, the combination, with the carriage F, the shaft B, the ropes E J, the piston M, having valve R, and the cylinder N, of the weight O, substantially as herein shown and described, whereby the said carriage will be raised automatically when unloaded and released, as set forth.

4. In a fire-escape, the combination, with the carriage F and guide-posts H, of the lever-cams W, the springs X, the connecting-bars Y, and the lever Z, substantially as herein shown and described, whereby the descent of the said carriage can be controlled, as set forth.

5. In a fire-escape, the combination, with the guide-posts H, provided with corrugated plates V and the spring-pressed cam-levers W, of the lever Z, provided with the pawl *b*, the connecting-rods Y, and the bar *d*, provided with the catch *c*, substantially as herein shown and described.

6. In a fire-escape, the combination, with the carriage F, the lever Z, and pivoted catch-bar *d*, of the hinged plate *f* and the connecting-rod *h*, substantially as herein shown and described, whereby the air-pressure caused by the rapid descent of the carriage is made to release spring-operated cams and check the descent, as set forth.

298,293. SAW-GUARD. WILLIAM H. DALEY, Indianapolis, Ind., assignor of three-fourths to Alpha Medaker and Charles E. Clark, both of same place. Filed Feb. 23, 1884. (No model.)



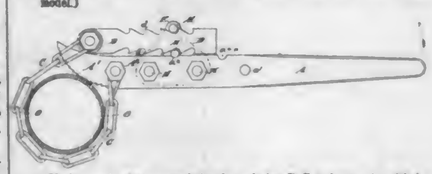
Claim.—1. The arm curved as represented, and provided at its rear end with round and elongated graduated openings, in combination with the box and the plate carrying the sliding bolts, which are adapted to enter the graduated openings in the arm, the whole operating to support the hood and allow a restricted vertical movement of the same, for the purpose specified.

2. The guard B, formed in two parts, and having open-work upon its sides, in combination with the curved arm A, to which it is adjustably connected through slots and by means of set-screws.

3. The guard B, having its forward end curved upward and the two sides or edges of the plates forming it flared outward, substantially as and for the purpose set forth.

4. The enlargements or buffers formed integral with the hood or secured to the same, for the purpose of preventing the wabbling of the saw from interfering with the sides of the said hood, the relative arrangement of the parts being substantially as described.

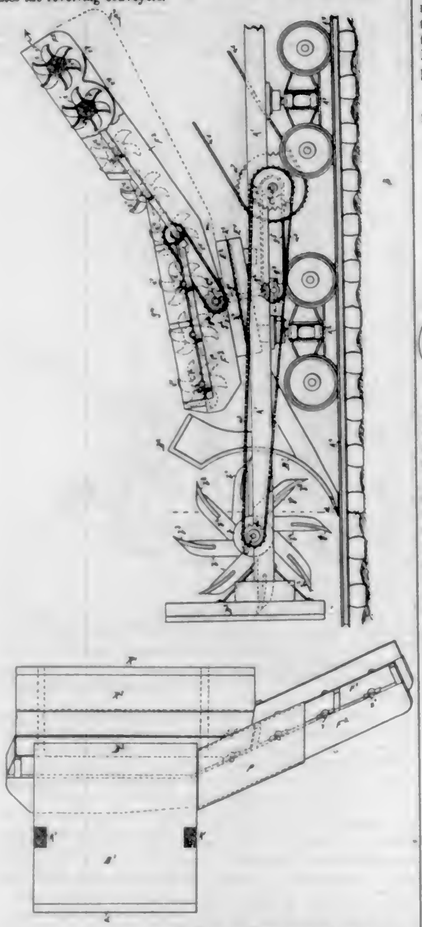
298,294. PIPE-WRENCH. JAMES DOYLE, New York, N. Y., assignor to himself and Patrick McNamara, same place. Filed Oct. 8, 1883. (No model.)



Claim.—A pipe-wrench having chains B C, a lever, A, with its roughened surface A' and notched locking-piece D *d*, in combination with each other and with dogging means M, adapted to engage in any of the several notches *d*, and with means, as H *a' a²*, for changing the point of attachment of the dogging means to the lever A, all substantially as herein specified.

298,295. TRACK-CLEARER. WARREN DUNBAR, Minneapolis, Minn. Filed July 28, 1882. (No model.)

Brief.—Cutting-wheels are placed in advance of the plow. A swinging inclined frame carrying a series of revolving conveyer-drums is placed upon a sub-frame which is revolved upon a turn-table. The top frame may be tilted without affecting the revolution of the shaft which operates the revolving conveyers.



Claim.—1. The combination of a frame mounted upon trucks adapted to run upon a railroad-track, a plow attached to said frame in advance of said trucks, a revolving cutting-wheel in advance of said plow, and a swinging frame carrying a series of revolving conveyer-drums, substantially as and for the purpose set forth.

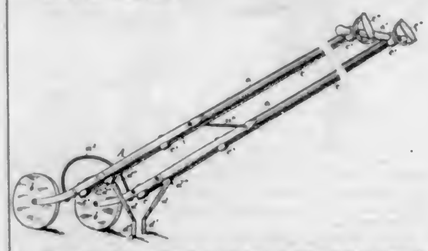
2. The combination of frame A', mounted upon trucks adapted to run upon a railroad-track, a plow, B', attached to said frame in advance of said trucks, side cutters attached to the forward ends of said frame, a revolving cutting-wheel upon said frame in advance of said plow, and a frame swiveled upon said frame A' and carrying a series of revolving conveyer-drums, i^3 i^7, and troughs i^5, substantially as described.

3. The frame A', having the inclined frame E', ring A^1, carrying balls A^2, inclined frame E^2, pivoted centrally upon said frame E' and carrying tilting frame F' F^2, shafts *i*, journaled in said frame F' F^2 and carrying buckets i^7, and means for revolving said shafts *i* and their attached buckets i^7, whereby said frame E^2 may be revolved upon said frame E' and said frame F' F^2 tilted upon said frame E^2 without affecting the revolution of said shafts *i*, substantially as and for the purpose specified.

4. The combination of the frame A', carrying the cross-shaft g^4 and inclined frame E', shaft *g'*, journaled in said frame E' at right angles thereto, frame E^2, pivoted centrally upon said frame E' and having shaft C^2 journaled thereon at right angles to shaft *g'*, means for transmitting motion from shaft *g'* through shaft *g'* to shaft C^2, frame F^2, pivoted upon said shaft C^2 and carrying a series of revolving conveyer-drums, and means for transmitting the motion of shaft to said conveyer-drums, substantially as shown and described.

5. The combination of a frame mounted upon trucks adapted to run upon a railroad-track, a plow attached to said frame in advance of said trucks, a revolving cutting-wheel in advance of said plow, a swinging frame carrying a series of revolving conveyer-drums and snow-guard R' R^2, and combined scraper and guard P, substantially as and for the purpose described.

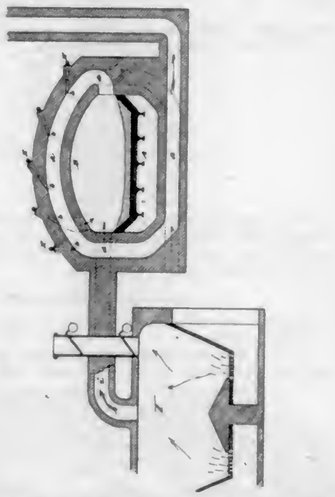
298,296. WHEEL-HOE. SOLOMON FULLER, Danvers, Mass. Filed Nov. 5, 1883. (No model.)



Claim.—1. The combination of the wheeled frame, the independent rocking rods mounted in bearings on the frame, and the weeders or hoes secured to the rods, said rods having means whereby they can be independently or simultaneously rocked in their bearings to adjust the hoes laterally while traversing the ground, substantially as described.

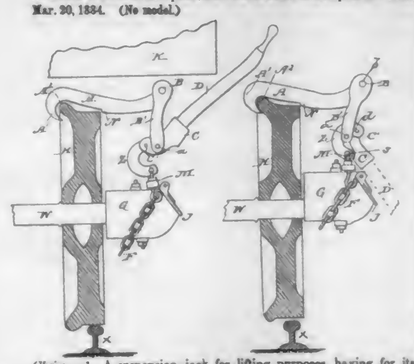
2. The combination of the wheeled frame, the independent rocking rods mounted in bearings on the frame and provided with handles at their ends, and the weeders or hoes secured to the rods, said handles serving to propel the wheeled frame and to independently or simultaneously rock the rods to adjust the weeders or hoes laterally while traversing the ground, substantially as described.

298,297. REGENERATIVE FURNACE. JOHN W. GALVIN, Portsmouth, Ohio, assignor of one-half to Levi D. York, same place. Filed Oct. 23, 1882. (No model.)



Claim.—The regenerative furnace herein described, having the grate A, domes B B, and double walls to form passages *d*, arranged alternately with cold-air passages *c*, the tangential holes or flues *b*, leading through the outer wall into the passages *d*, and covers F, for closing said flues, all constructed, arranged, and adapted to serve as and for the purposes set forth.

298,298. SUSPENSION-JACK FOR REMOVING JOURNAL-BOXES OF CARS. JOHN M. GARVERICK, Harrisburg, Pa., assignor of two-thirds to Charles Wollerton, same place, and John Rhoads, Philadelphia, Pa. Filed Mar. 20, 1884. (No model.)



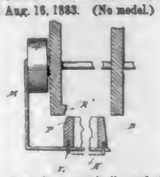
Claim.—1. A suspension-jack for lifting purposes, having for its support an extended arm adapted at its inner end with a hook for clutching the flange of a car-wheel, and adjacent thereto a hold for hugging the outer edge of the tread of said wheel, substantially as and for the purposes set forth.

2. A lifting-jack having for its support an extended arm, A, provided at its inner end with hook A^2 and hold N, for attaching it instantly on a car-wheel, and provided at its outer end with hanger B', in combination with lever C, coupled with swinging link Z, all pivoted or hinged together, and operating to set automatically said lever when the swinging link is raised full throw, substantially as herein shown and described.

3. The combination, with the suspending parts A and B' and the lifting parts C and Z, of means F M Q for hitching the jack mechanism to an oil-box, G, or other object vertically beneath the point B of suspension on said part A, and operating substantially as set forth.

4. The combination, with the suspension-arm A, hanger B', lever C, provided with removable handle D, and swinging link Z, constituting a lifting-jack of invariable throw, of the adjustable hitching device consisting of cross-bar M, with coupling-staple Q thereon, and a chain, F, connected with said cross-bar by screw-eye O and screw-hook P, and nuts *m n*, to vary the length of the hitch, substantially as and for the purposes set forth.

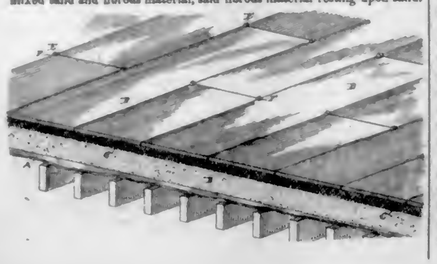
298,299. SEPARATOR FOR PEAS, &c. ROBERT DAVIS GLADNEY, McCandy, Miss. Filed Aug. 16, 1883. (No model.)



Claim.—The combination, in a pea-huller, of the crank-shaft, the connecting-links, the vertically-vibrating sieve, and the casing, having vertically-beveled edges, adapted to impart lateral motion to the sieve, substantially as and for the purposes specified.

298,300. FLOORING. DANIEL HAM, Iowa City, Iowa. Filed Feb. 13, 1884. (Model.)

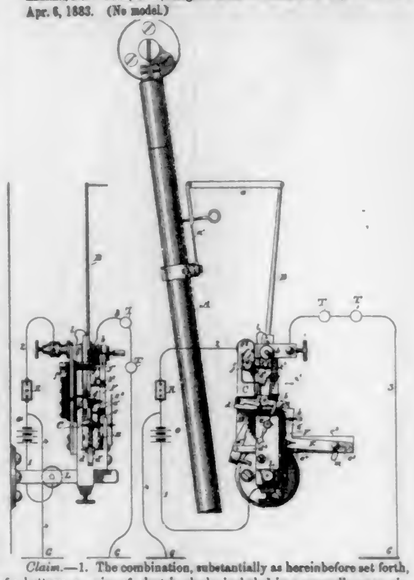
Brief.—Metal plates resting upon sand or upon a layer of intermixed sand and fibrous material, said fibrous material resting upon sand.



Claim.—1. A floor for buildings, skating-rinks, dancing-halls, and other structures, composed of an under layer of sand and a surface of metal plates, substantially as and for the purpose set forth.

2. A floor composed of a base consisting of intermixed sand and matting or fibrous or porous material, and a metallic upper surface, substantially as and for the purpose set forth.

298,301. CIRCUIT-CLOSER FOR ELECTRIC CLOCKS. VITALIS HIMMER, New York, N. Y., assignor to Ida C. Himmer, same place. Filed Apr. 6, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a battery, a series of electric clocks included in a normally-open circuit of said battery, a normally-open shunt-circuit around said clocks, means for periodically closing said shunt-circuit, and means, substantially such as described, for momentarily substituting said clock-circuit for said shunt-circuit.

2. The combination, substantially as hereinbefore set forth, of a battery, a series of electric clocks included in a normally-open circuit of said battery, a normally-open shunt-circuit around said clocks, and means, substantially such as described, for causing the connections of said shunt-circuit to remain completed during the operation of closing and interrupting the connections of said clock-circuit.

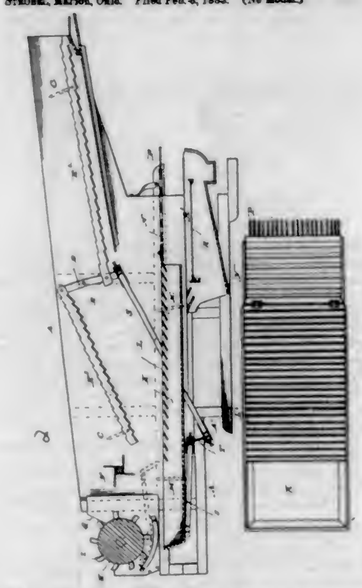
3. The combination, substantially as hereinbefore set forth, with the pendulum of a clock, of a lever actuated thereby, a pawl carried upon said lever, a ratchet-wheel actuated by said pawl, a pin carried upon said ratchet-wheel, a second lever periodically actuated by said pendulum through the agency of said first lever, ratchet-wheel and pin, and two contact-points, one of which acts when the second lever is actuated to close an electric circuit, while the other is placed in the path of a circuit-closing point carried upon said first lever.

4. The combination, substantially as hereinbefore set forth, of a vibrating lever, a pawl carried upon said lever, a ratchet-wheel actuated by said pawl, a circuit-closing lever, means for periodically actuating said circuit-closing lever through the agency of said ratchet-wheel to close an electric circuit, and a contact-pin carried upon said vibrating lever acting to momentarily interrupt said circuit and complete the connections of a second circuit.

5. The combination, substantially as hereinbefore set forth, of a vibrating lever, a pawl carried upon said lever, a ratchet-wheel actuated by said pawl, a circuit-closing lever, means for periodically actuating said circuit-closing lever through the agency of said ratchet-wheel to close an electric circuit, a contact-pin carried upon said vibrating lever acting to momentarily interrupt said circuit and complete the connections of a second circuit, and means, substantially such as described, for interrupting the first-named circuit after the action of said contact-pin.

6. The combination, substantially as hereinbefore set forth, of a vibrating lever, a circuit-closing point carried thereon, a pawl actuated by said lever, a ratchet-wheel actuated by said pawl, a circuit-closing arm, and means, substantially such as described, for causing said arm to be periodically placed in the path of said circuit-closing point through the action of said pawl and ratchet-wheel.

298,302. GRAIN-SEPARATOR. EDWARD HUBER and FREDERICK STROBEL, Marion, Ohio. Filed Feb. 3, 1883. (No model.)



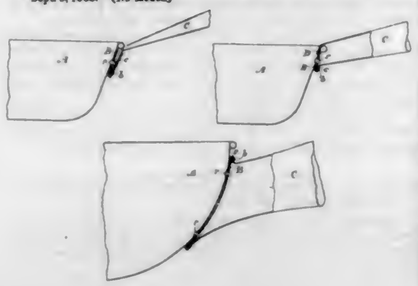
Claim.—As an improvement in grain-separators, the combination, with the shakers F^2 and F^3 and their connections, of the grain-carrier K, having a slatted or perforated top, the swinging links M, supporting said carrier, the riddle N, provided with fingers P and hinged to the rear of said top, and the suspensory links supporting the rear end of said riddle, so as to give it vibratory motion relative to the grain-carrier, substantially as and for the purpose set forth.

298,303. COLLAR-BUTTON. GEO. KREMENTZ, Newark, N. J. Filed Dec. 14, 1883. (No model.)



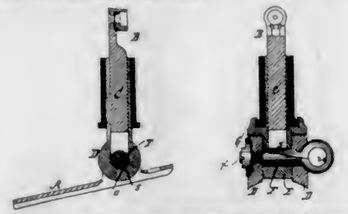
Claim.—A collar or sleeve button having a hollow head and stem, the said head, stem, and the base-plate or back of the said button being shaped and made of a single continuous piece of sheet metal, substantially as herein shown and described.

298,304. HANDLE ATTACHMENT FOR SHEET METAL VESSELS. EMILE KREPPENDORFF and HOWARD C. MARSH, Wood Haven, assignors to the Lalance & Grosjean Manufacturing Company, New York, N. Y. Filed Sept. 5, 1883. (No model.)



Claim.—The combination of the sheet-metal vessel, the handle C, having the flange *c*, and the intervening connecting-collar, B, having the flange *b* on its outer edge, overlapping the flange *c* on the handle, the collar affording a bearing for the handle, whereby it is supported by a double thickness of metal, substantially as described.

298,305. SIGHT FOR FIRE-ARMS. WILLIAM LYMAN, Middlefield, Conn. Filed Mar. 4, 1884. (No model.)

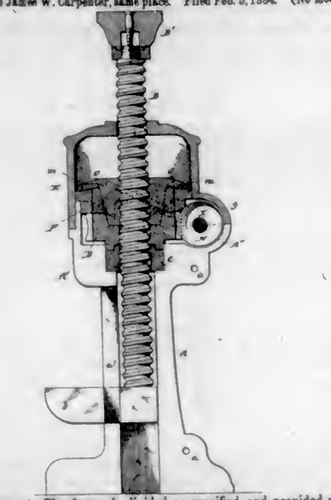


Claim.—1. The combination, substantially as hereinbefore described, of the base and the sight-shank, having corresponding knuckles, either of which is provided with an internal notch, the axial bolt uniting the knuckles, and the spring-catch of the bolt adapted to engage the notch for locking the sight in its upper position.

2. The combination, substantially as hereinbefore described, of the base and the sight-shank, having corresponding knuckles, either of which is provided with an internal notch, the axial bolt uniting the knuckles, the spring-loop on one end of the bolt, and the catch projecting inwardly from the loop to engage the notch for locking the sight in its upper position.

3. The combination, substantially as hereinbefore described, of the base having knuckles, the sight-shank having a knuckle corresponding to those of the base, provided with an internal notch, the axial bolt uniting the knuckles, the spring-catch of the bolt, the screw-threaded projection of reduced diameter at one end of the bolt, and the nut having a beveled inner surface.

298,306. LIFTING-JACK. THOS. MAXON, Dayton, Ohio, assignor of one-half to James W. Carpenter, same place. Filed Feb. 5, 1884. (No model.)



Claim.—1. The frame A, divided as specified, and provided at its upper end with the case A', having inclined openings *c c* in its edge, and adapted to contain the working mechanism of the jack, substantially as herein specified.

2. The box D, formed internally with two parallel sides and two beveled sides, and having sloping grooves on the parallel sides, and the bottom having a circular opening for the jack-screw, and provided externally with a gear-wheel, in combination with the case A and worm-wheel N, substantially as and for the purpose set forth.

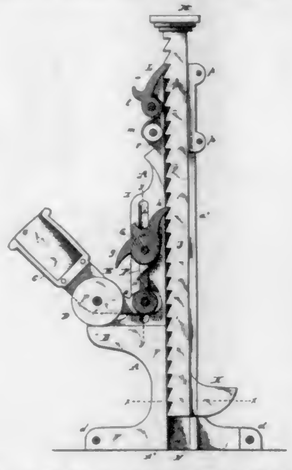
3. The block E in two threaded parts, in combination with the screw B, the box D, and the collar F, constructed substantially as set forth.

4. The dome G, with its inclined slots, in combination with the col-

lar F, and the divided screw-block E, and a pin for operating the collar, substantially as and for the purpose set forth.

5. The combination of the case A', box D, as constructed, the divided block E, the screw B, and the worm-wheel N, the several parts being constructed substantially as and for the purpose specified.

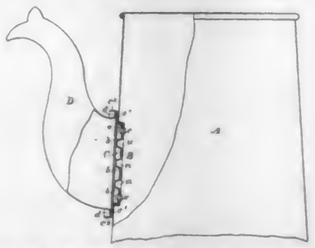
298,307. LIFTING-JACK. THOS. MAXON, Dayton, Ohio, assignor of one-half to James W. Carpenter, same place. Filed Nov. 23, 1883. (No model.)



Claim.—1. The frame A, cast in two parts, bolted together as described, and provided with grooved wings I and table B, in combination with lever E and its wheel, connecting-bar F, pawl G, with its tooth *h* and projection *g*, and the pawl L, the several parts being constructed and connected substantially in the manner and for the purpose set forth.

2. The bar F, having flanges upon its edges which take into the guiding-grooves *i* of the wings I, said bar being pivoted to and between the pawl G and the end *e* of the lever C, as and for the purpose specified.

298,308. ATTACHMENT OF LIPS AND SPOUTS TO VESSELS. EMILE MOUHOT, Wood Haven, and JOHN C. MILLIGAN, Brooklyn, assignors to the Lalance & Grosjean Manufacturing Company, New York, N. Y. Filed Oct. 16, 1883. (No model.)

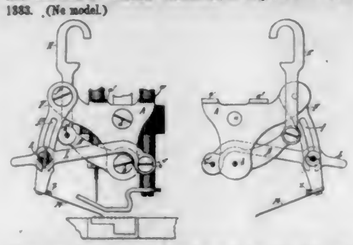


Claim.—1. The combination, substantially as hereinbefore set forth, with the body of a vessel having a section of its side forced outward, of a spout or lip and an intervening flanged fastening-plate conforming in shape to said section.

2. The combination, substantially as hereinbefore set forth, of a vessel having a section of its side forced out of the line of its surface, said section being perforated, a perforated plate fitting said section, and a spout or lip attached to said plate.

3. The combination, substantially as hereinbefore set forth, with a vessel having a series of perforations formed through its side and the portion containing those perforations forced outward from its surface, of a plate having perforations corresponding to the perforations in said vessel and fitting upon said portion, and a spout or lip attached to said plate.

298,309. RUFFLING AND GATHERING ATTACHMENT FOR SEWING-MACHINES. LANSING ONDERDONK, Pamrapo, N. J. Filed June 7, 1883. (No model.)



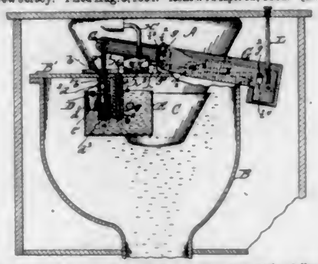
Claim.—1. In a ruffling attachment for sewing-machines, the combination of the main plate, the lever pivoted thereto, and adapted to be actuated by the rise and fall of the needle bar or arm, the pitman pivoted to the short arm of the actuating-lever, the blade-carrier jointed to the pitman, the fulcrum of the lever, and the point of attachment of the pitman thereto being arranged relatively to each other, as described, whereby when the needle is at or near the beginning or completion of its stroke the movement of the ruffling-blade is suspended, substantially as set forth.

2. The combination, with the crimping-blade carrier, the arm of its lower end and the crimping-blade secured thereto, of the set-screw adapted to bear upon the blade, whereby the tension of the same may be regulated, substantially as specified.

3. In a gathering or ruffling attachment for sewing-machines, an actuating-lever, a pitman, an arm hinged at one extremity and bearing a crimping-blade at the other, said arm being provided with a slot and set-screw adjustable within said slot and connecting said pitman to said arm, all so combined and arranged that by varying the position of said screw in said slot the range of oscillation of said arm may be varied, as and for the purposes described.

4. In a gathering and ruffling attachment for sewing-machines, an actuating-lever, a pitman united to said lever at one extremity, and at the other connected to a swinging arm bearing a crimping-blade, said arm being provided with a stud and said pitman with a hook, the whole so combined and arranged that the pitman may be engaged with or disengaged from the arm by engaging or disengaging said hook from said stud, as and for the purpose described.

298,310. WATER-CLOSET. CHARLES F. PIKE, Philadelphia, Pa., assignor, by mesne assignments, to the National Anti Sewer Gas Company, of New Jersey. Filed Aug. 3, 1881. Renewed Apr. 12, 1882. (No model.)



Claim.—1. In a water-closet, the combination of the following elements, viz: a receiver, a bowl, a pan therefor having an attached and an intercommunicating receptacle, which receives a flange depending from an opening in the receiver, and an operating-lever for said pan connected to said receptacle, substantially as shown and described.

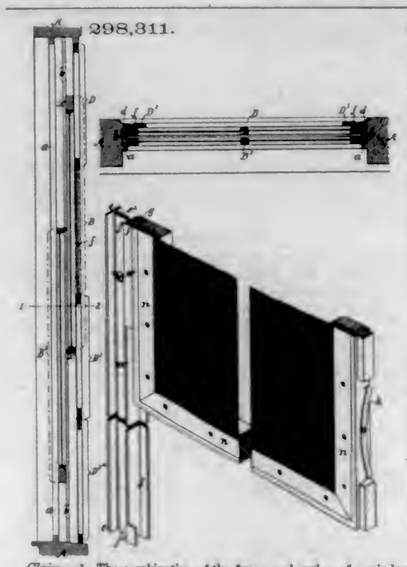
2. The combination, in a water-closet, of a sealing-pan, mechanism for operating the same, a water-supply pipe having a cock, with flushing-pipe for the bowl of the closet, and a branch pipe or conduit from said water-supply pipe leading to the pan, for effecting a running-water seal therefor, substantially as specified.

3. The combination of bowl A, receiver B, formed with lugs B^2 B^3, depending tubes *b' b²*, with pan C, shaft D, and water-supply pipe H, having branch H^2, substantially as and for the purpose set forth.

298,311. WINDOW-SCREEN. JOSIAH K. PROCTOR, Philadelphia, Pa. Filed Sept. 13, 1883. (No model.)

Brief.—A window-screen consisting of two or more vertically-operated screen-sections and constructed to bear upon the rails of the sashes. Bars are secured to the frame, to which are secured laterally-adjustable guide-bars.

298,311.



Claim.—1. The combination of the frame and sashes of a window with a screen made in two or more sections, guided vertically on said frame, and constructed to bear upon the rails of one of the sashes, as set forth.

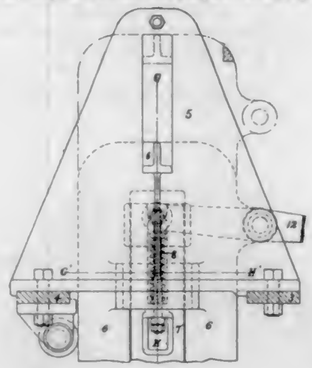
2. The combination of the frame and sashes of a window with the screens D, D', and D^2, guided vertically on the frame, as described, and occupying the relation set forth to one of the sashes.

3. The combination of the screen-frames, the bars *e*, secured to the frame of the window, and the guide-bars *f*, secured to but laterally adjustable on the bars *e*, as set forth.

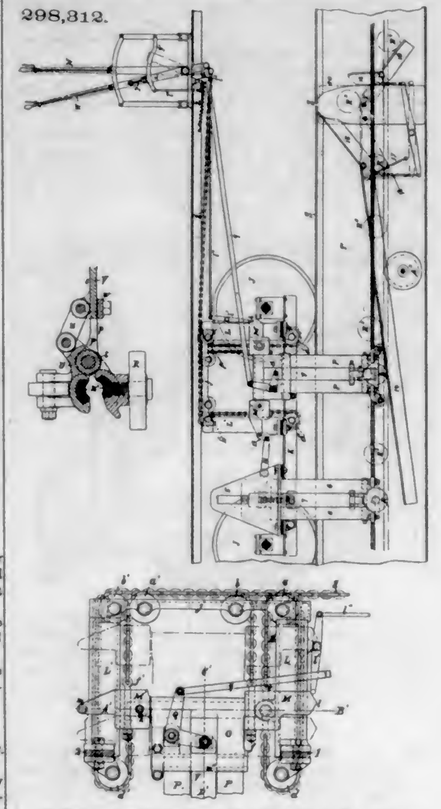
298,312. METHOD OF GRIPPING AND CROSSING CABLES. ROWLAND RANSOM, Philadelphia, Pa. Filed Dec. 3, 1883. (No model.)

Brief.—A main and an auxiliary grip are respectively automatically released, applied, and the former again applied from and to an under cable in crossing an upper cable through a sectional inclined track, which elevates said gripe, whereby, through their connection together, one grip is made to control the action of the other. The operating hand-lever is sectional, and is disconnected to release main grip through connecting mechanism actuated by the vertical movement of said grip by the inclined tracks.

Claim.—1. A slotted conduit, T, with branches on one or both sides, and having flanges 14 15 16 18 19 attached or formed on its interior, over which the gripping mechanism rolls, and is carried safely over a cable, which passes through or into said conduit, and above the cable, traveling longitudinally along said conduit, substantially as shown in Fig. 1.



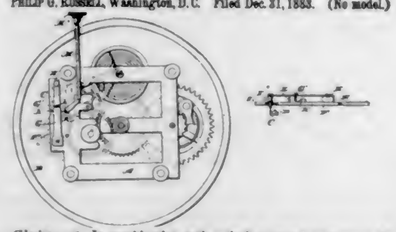
298,312.



2. The combination, in a cable-grip, of a fixed jaw, P, movable jaw U, plate V, link O, cross-head M M', posts L L', girder *j*, pulleys *a a' b b' c d d'*, bell-cranks Q, and the rods *q l' k*, chains *g*, projection *l*, levers *l' y'*, springs *y z*, and levers N and W, all constructed and combined to operate substantially in the manner hereinbefore described, as the main grip, for the purpose specified.

3. The combination, in a cable-grip, of slotted plates 5 5, a fixed jaw having cross-head 6 6 6, movable jaw U, plate 7, spring 8, bolt 9, lever 12, and pawl 13, all constructed and combined to operate substantially in the manner hereinbefore described, as the auxiliary grip, for the purpose specified.

298,313. STOP MECHANISM FOR CLOCKS AND WATCHES. PHILIP G. RUSSELL, Washington, D.C. Filed Dec. 31, 1883. (No model.)



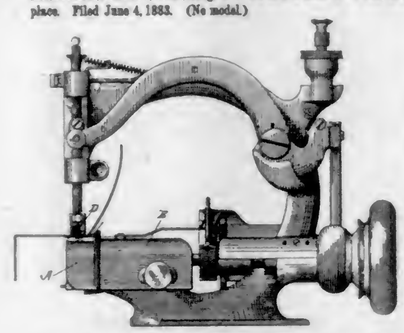
Claim.—1. In combination with a clock or watch movement, the stop device adapted to engage the end of the escape-lever and force the same to either side of its dead-center, so as to stop the movement and put the balance-spring under sufficient stress to make certain the starting of the movement when the stop device is disengaged from the escape-lever, substantially as shown and described.

2. The combination of the escape-lever, having a portion made V-shaped in cross-section, with the stop-lever, provided with a stop-pin adapted to engage said V-shaped portion of the escape-lever, substantially as and for the purpose described.

3. An escape-lever and stop device whose engaging portions are adapted to cause the lever to be carried to either side of the middle point of its arc of motion when the stop device engages said lever, substantially as shown and described.

4. An escape-lever, in combination with a stop device adapted to engage and stop the lever in its vibrations and force it to or toward its limit of motion on either side, and means for causing said stop device to engage and disengage the lever, substantially as and for the purpose described.

298,314. SEWING-MACHINE FOR BRACE-WIRING HATS. MARTIN H. RYDER, Stamford, Conn., assignor of one-half to Eliza A. White, same place. Filed June 4, 1883. (No model.)



Claim.—In a machine for stitching brace-wires and paper linings to hats at one operation, the combination, with the work-plate, the feed, and the feed-bar, of a rocking piece pivoted at the right of the machine, back of the arm and housing, and a feed-operating eccentric and feed-lever located close to the housing, thus leaving the left side of the machine to serve as a horn to support the hat-crown and the paper lining.

298,315. SEWING-MACHINE TENSION. MARTIN H. RYDER, Stamford, Conn., assignor of three-fourths to Eliza A. White, same place, and the Wilcox & Gibbs Sewing Machine Company, New York, N. Y. Filed June 4, 1883. (No model.)

Brief.—The throw of the hand-lever may be regulated by adjustable stops. The nut and spring on the bolt are used to gage the ordinary tension, the lever serving, together with a friction device, (either in the form of a friction-washer or a cam-bearing,) to give quickly, when desired, an increased or diminished tension.



Claim.—1. In a tension device for sewing-machines, means for holding the thread, and a lever to tighten the tension, in combination with adjustable stops, which limit the movement of the lever in both directions, and means for holding the lever by friction in whatever position it may be placed, whereby the tension may be instantly and accurately changed from one class of stitches to another without stoppage of the machine.

2. The combination, in a tension device, with plates for gripping the thread, and a spring acting thereon, of means for compressing said spring, and adjustable stops which limit the movement of the compressing device in both directions, for the purpose set forth.

3. The combination, with means for holding the thread and a spring for controlling the same, of a lever acting to compress the spring, adjustable stops which limit the movement of said lever, and a friction device for holding said lever in any position, whereby the tension may be adjusted to make two classes of stitches, and the adjustment may be accurately changed from one class to the other without stoppage of the machine.

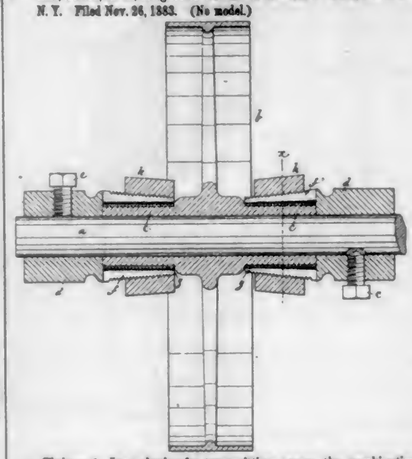
4. Arm H and lever I, in combination with disks B B', spring D, nut G, and pin L, as described, and for the purpose set forth.

298,316. BUTTON-FASTENER. RICHARD SANFORD, Providence, R. I. Filed Feb. 23, 1884. (No model.)



Claim.—The herein-described button-fastening device A, consisting of the plate *a* and prongs *b*, *b'*, *b''*, and *c*, arranged as described, the prong *c* bent to form the loop *d* in the center of said plate *a*, substantially as shown and described.

298,317. DEVICE FOR TRANSMITTING POWER. JOHN A. SHERMAN, Boston, Mass., assignor of one-half to William P. Ward, New York, N. Y. Filed Nov. 26, 1883. (No model.)



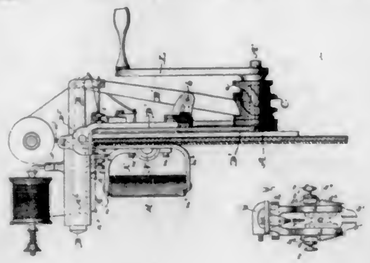
Claim.—1. In a device for transmitting power, the combination, with the member actuated by the motor, of a co-operating member driven thereby, a clamping device, and cushion of yielding material affording a friction-surface for the said clamping device, substantially as described.

2. The combination of the shaft *a*, hub *c*, surrounding the said shaft, and the bushing of yielding material on the said hub, with the clamping device fixed upon the said shaft and engaging the said bushing, the said shaft and hub being intended to be connected one with the actuating-motor and the other with the actuated machinery, substantially as and for the purpose described.

3. The shaft *a* and pulley *b* thereon, having a hub, *c*, loosely fitted on said shaft, combined with the bushing *g* and clamping device *d f k*, fixed upon the said shaft and engaging the said bushing, substantially as described.

298,318. CARPET-SEWING MACHINE. ALPHONSO B. SMITH, San Francisco, Cal. Filed July 11, 1883. (No model.)

Brief.—The action of the feed-lever and nipper-jaws in grasping the material is such as to force the machine to travel along upon the edges of the carpet. A crutch-piece assists in steadying the device in its operation.



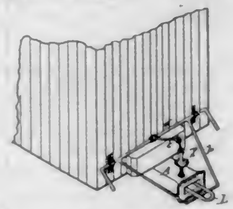
Claim.—1. The combination, with the carrying-frame adapted to rest outside of and travel over the edges of material being sewed, of the steadying-bar having a crutch-piece on one end and the other end adapted to take into a socket on the frame, substantially as herein described.

2. In a carpet-sewing machine, the combination, with the traveling frame adapted to carry all the stitch-forming mechanism and to rest astride of and move over the edges of the material to be stitched, of the nipper-jaws *s s* upon opposite sides of the frame, having dogs *s' s'*, adapted to engage with and grasp between them the material to be stitched, the wedge-piece *r*, and mechanism, substantially as described, whereby the outer ends of said jaws are spread apart and their inner ends pressed together to grasp the material, and thereby form a resistance-point by which progression of the frame is produced, step by step, at each grip of said jaws on the material, substantially as herein set forth.

3. The combination, with the traveling frame having horizontally-reciprocating needle-carrier and vibrating looper, of the feed-lever with the wedge-piece *r*, the fixed loop *d'* on the frame, the brackets *s'*, nipper-jaws supported by said brackets, and the openings A^5 in the plates A and K, below the line of action of the needle, substantially as set forth.

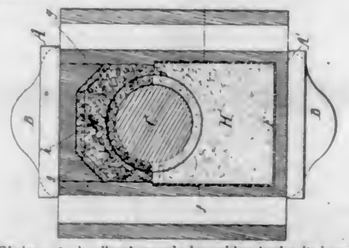
4. The combination, with the traveling frame having horizontally-reciprocating needle-carrier and looper, of the brackets s^4 s^4, feed-bars *s s*, dogs *s' s'*, pivoted on said bars, binding-screws *t*, wedge-piece *r*, actuating-lever D', and cam for operating said lever, substantially as herein set forth.

298,319. CAR-COUPLING. GEORGE W. SOWLES, Chittenango, N. Y. Filed Mar. 25, 1884. (No model.)



Claim.—In combination with the common draw-bar, coupling link and pin, the pivoted lever *a*, extended across the end of the car, the bail *b*, fixed to said lever and reaching under the end of the draw-bar, and the arm *c*, projecting from the lever and connected with the pin, all constructed and combined substantially in the manner shown.

298,320. CAR-AXLE BOX. GEORGE W. STEWART, New York, N. Y., assignor to himself and James F. Wenman, same place. Filed Feb. 4, 1884. (No model.)



Claim.—1. A railroad-car-axle journal-box having its inner and outer ends cast open, the under surface of its top plate channeled or corrugated, and provided with a drawer and cap-plate for closing its outer end, and a plate or board for closing its inner end and excluding dust, substantially as described.

2. A car-axle journal-box provided with corrugations, channels, ribs, or projections which are transverse of and above the axle-journal, and provided with an upper bearing for a car-axle, formed of suitably-prepared old gummy fibrous material, substantially as and for the purpose described.

3. A car-axle journal-box provided with corrugations, channels, ribs, or projections *g*, a plain surface, *h*, and a depression, *m*, whereby it is adapted for the use either of suitably-prepared old gummy fibrous material in form of an upper journal-bearing or the ordinary brass or composition upper journal-bearing, substantially as described.

4. A car-axle journal-box provided with corrugations, channels, ribs, or projections which are transverse of and above the axle-journal, substantially as and for the purpose described.

298,321. FIRE-HOSE. GEORGE A. STUCK, Selma, Ala. Filed Feb. 4, 1884. (No model.)

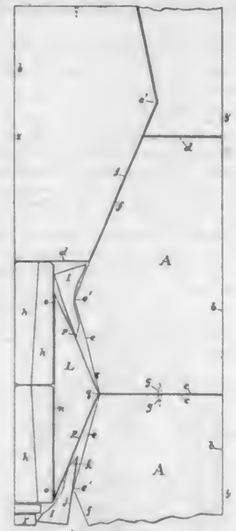


Claim.—1. A hose having two or more internal re-enforcing sectional portions arranged diametrically opposite each other, substantially as specified.

2. In a hose which is composed of a woven exterior and an india-rubber lining cemented together, two or more internal re-enforcing portions, C C, formed on or applied to said lining, substantially as and for the purposes described.

3. As a new and improved article of manufacture, a hose having an exterior layer of woven fibrous material, and a lining composed of two or more india-rubber strips, and internal re-enforced lapped seams, substantially as and for the purposes described.

298,322. DRAWERS. JAMES C. TRACEY, Baltimore, Md. Filed July 24, 1883. (Model.)

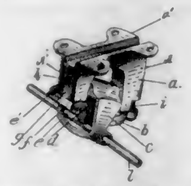


Claim.—1. The herein-described method of cutting drawers, consisting in cutting the part comprising the one half of the body and one leg so as to have from the waist to the ankle a continuous straight front edge, *b*, and taking said edge from one selvage of the goods, taking the same edge of the other half-body and other leg from the same selvage, the waist-edge of the two halves abutting, taking the straight front edges of the next pair of drawers from the other selvage of the goods, and extending the tapering back edge, *f*, of the leg whose front is cut from one selvage along the tapering back edge of the leg which has its front cut from the other selvage, and finally cutting all the other parts necessary to complete one pair of drawers from that portion of the goods between the back body-seams, *e*, of the two halves and the selvage, as shown and described.

2. In a pair of drawers, a continuous seamless crotch-piece, L, having a straight front edge, *n*, widest at the crotch or center, and one of the tapering points extending down each drawer-leg, in combination with front facings, l, on each side of the fly-opening, having their lower points, *k*, attached directly to the said seamless crotch-piece, as set forth.

298,323. ROLLER-SKATE. WILLIAM C. VANNEMAN, Richmond, Ind. Filed Jan. 4, 1884. (No model.)

298,323.



Claim.—1. In a roller-skate, the hanger-frame provided with pendent lugs at opposite ends, with a space between the lugs to receive a truck-frame, said lugs being slotted vertically to receive the axles of the roller-supporting truck, substantially as described.

2. In a roller-skate, the bed-plate formed at one end with the forked arm, at the opposite end with the openings *o* and *p*, and between the two ends with the bar *b*, provided with the longitudinal rib *n*, substantially as described.

3. The combination of the hanger-frame provided with pendent lugs slotted vertically, and having at the end a support for a bed-plate, a truck-frame adapted to have an axle connected therewith, and provided with pivots having their bearings in said vertical slots, and a bed-plate connected with said hanger-frame below the pivots of said truck-frame, substantially as described.

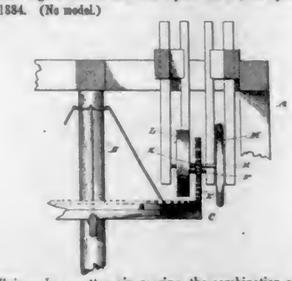
4. The combination of the hanger-frame, the truck-frame having a laterally-yielding connection therewith, a bed-plate below said truck-frame, and a spring-cushion between said bed-plate and truck-frame to restore said truck-frame to its normal position when relieved from strain, substantially as described.

5. The combination of the hanger-frame, the truck-frame having a laterally-yielding connection therewith, a bed-plate below said truck-frame, a spring-cushion between said bed-plate and truck-frame, and means for adjusting said bed-plate to tighten or loosen the connection between the parts, substantially as described.

6. The combination of the hanger-frame provided with pendent lugs slotted vertically, and having at the end a support for a truck-frame, a truck-frame provided with journals having their bearings in said slotted lugs, a bed-plate connected with the hanger-frame below the bearings of the truck-frame, a spring-cushion interposed between said truck-frame and bed-plate, and a screw for tightening the connection between said parts, substantially as described.

7. In a roller-skate, the combination, with the wheel and axle, of the washer *q*, provided with the projection on its face, and a linchpin to the axle to one side of the projection, substantially as described.

298,324. COTTON-GIN GEARING. CHRISTOPHER C. WARREN, Lodi, Miss., assignor of one-half to Christopher C. Irvin, same place. Filed Feb. 5, 1884. (No model.)



Claim.—In a cotton-gin gearing, the combination of the frame or structure with the vertical shaft journaled therein, the horizontal crown-wheel geared on its outer edge and supported by the elongated spokes, the vertical gear-wheel engaging with the said crown-wheel and supported by suitable hangers, and the balancing and transmitting mechanism consisting of a horizontal shaft supported by hangers, and provided near one end with a band-wheel and near the other with a fly or balance wheel, and near its center with a pinion-wheel engaging with the vertical gear-wheel which engages with the gear on the driving or crown wheel, all the parts being arranged to operate as an entirety substantially as described.

298,325. INCANDESCENT LAMP. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 4, 1883. (No model.)

Claim.—1. A carbon conductor for incandescent lamps in the form of a flat or flattened spiral, substantially as described.

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2. The combination, with an exhausted globe or receiver and metal conductors secured therein, of a carbonized strip or filament in the form of a flat or flattened loop, substantially as described.

298,326. ELECTRIC-CIRCUIT CONNECTOR. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 31, 1883. (No model.)

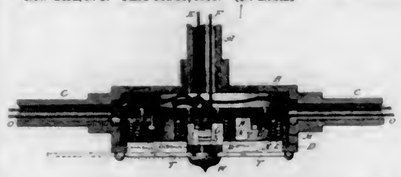


Claim.—1. The combination, with a body of insulating material, and provided with lugs or ears, contact-terminals secured to the insulating-body, and electrical conductors connected with the terminals, of a socket formed or provided with a notched flange for admitting the body, and retaining the same by the engagement of the lugs with the flange and terminals secured within the socket, as set forth.

2. The combination, with a cord or cable and a plug provided with contact-terminals and having lugs or ears on its sides, of a socket with a flanged rim with notches cut therein, and terminals secured within the socket, all as set forth.

3. The combination, with a plug, G, having ears or lugs L L, terminal plates *g k*, and a cable containing conductors connected therewith, of a socket having the flanged and notched cover H, and spring contact-terminals E F, all as set forth.

298,327. INCANDESCENT-LAMP FIXTURE. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 31, 1883. (No model.)



Claim.—1. The combination, with the stem and branches of a chandelier, of metal plates arranged within a box or casing from which the branches extend, a central plate in said box, means for connecting the plates with fusible safety-strips, and conductors arranged within the chandeliers, and connected in the manner set forth.

2. The combination, with the stem and branches of a chandelier, of metal plates with spring seats or rests arranged within the box from which the branches extend, a central plate in said box with spring seats or rests, means for connecting the spring-seats with fusible safety-strips, and conductors arranged within the chandelier, and connected in the manner set forth.

3. The combination, with the stem of a chandelier, a box, and branches extending therefrom, of spring-seats forming terminals of severed branch circuits running through the arms or branches of the chandelier, a cover with slots for the introduction of safety-strips for joining the spring-seats, and means for retaining the strips in place, as herein set forth.

4. The combination, with the stem A, box B, and branches C of a chandelier, of the metal plates L, the central plate, G, means for connecting the central plate, G, with the plates L by fusible metallic strips, and conductors connected in the manner herein described.

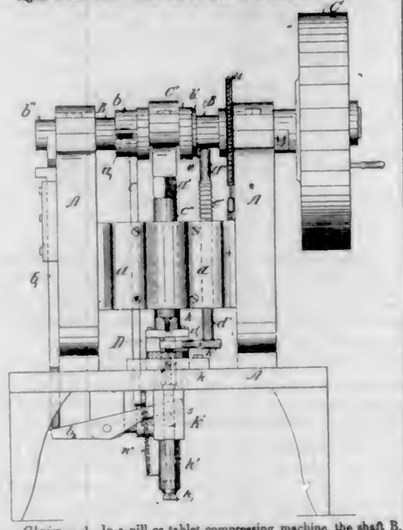
5. The combination, with the box B and branches C, of a plate, H, of insulating material, plates L, with spring rests or seats, central plate,

G, with corresponding rests or seats, slotted cover D, fusible safety-strips V, slides T, and conductors for completing the electrical connections, as described.

6. A holder for safety-strips for electric circuits, consisting of metal plates with spring rests or seats forming the terminals of a severed circuit, and contained in a box or casing, in combination with a slotted cover and a slide, or its equivalent, for retaining the strips when placed across the spring-rests, as set forth.

7. The combination, with a box or casing, B, and branches C of a chandelier, of rests or seats forming terminals of severed circuits running through the branches, and slotted cover D, with slides T, arranged for the insertion and retention of safety-strips for completing the circuits within the box, as and for the purpose specified.

298,328. MACHINE FOR MAKING PILLS, TABLETS, &c. AUGUST H. WIRZ and AUGUST V. W. RAUSCH, Philadelphia, Pa.; said Rausch assignor to said Wirz. Filed Oct. 30, 1883. (No model.)



Claim.—1. In a pill or tablet compressing machine, the shaft B, having thereon the crank C', cams *b* and *b''*, in combination with the pivoted lever *c*, operated by the cam *b*, and thus moving the sliding gage D, the vertical sliding bar b_1, the lever b_2, operating the lower plunger, *k'*, and the shaft *c''*, carrying the upper plunger, *k*, all substantially as and for the purpose described.

2. In a pill-compressing machine, the shaft B, connected with suitable operating means, and having thereon the crank C', cams *b b''*, in combination with the shaft *c''*, having the plunger *k*, the sliding gage or measure D, operated by the lever *c*, the plunger *k'*, operated by the vertical sliding bar *b'*, and the cylinder *h*, all substantially as shown.

3. In a pill-compressing machine, the plungers *k k'*, operating from opposite directions in the hollow cylinder *h*, the sliding gage D, in combination with the magazine *g*, the bar *d''*, having the finger d_1, and driving-shaft B, all substantially as shown.

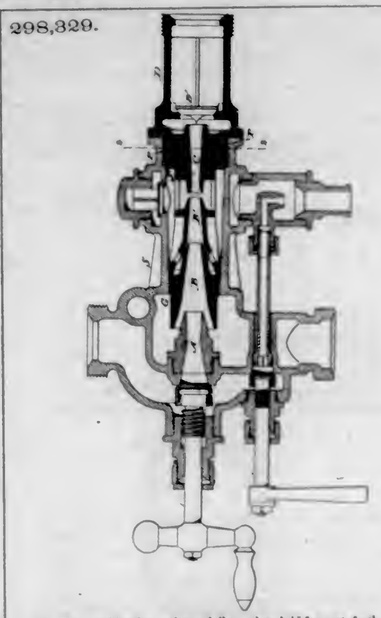
4. In a pill or tablet compressing machine, the plungers *k k'*, operating toward each other from opposite directions, and the hollow cylinder *h*, in combination with the finger d_1, connected with suitable operating mechanism for moving the said finger back and forward, thus knocking the finished pill or tablet from off the top of the lower plunger, substantially as shown.

298,329. INJECTOR AND EJECTOR. JOSEPH WOTAPEK, New York, N. Y., assignor to the Nathan Manufacturing Company, same place. Filed Mar. 5, 1884. (Model.)

Claim.—1. The combination, with the shell or body and the nozzles to be withdrawn, of a nozzle-holder screwed to the shell and connected to the nozzles, substantially in the manner hereinbefore set forth, so that while the two shall move longitudinally bodily and together the holder may rotate independently of the nozzles.

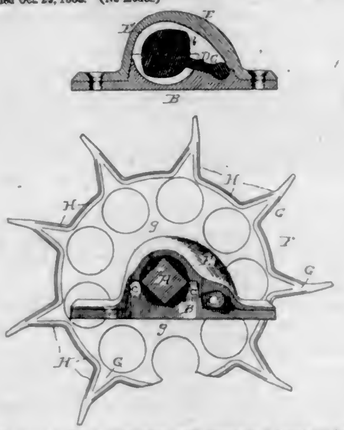
2. The combination, with the nozzles to be withdrawn, of the shell having that portion of its interior which surrounds said nozzles made conical or flaring without recess or depression, so as to gradually increase in diameter toward the delivery end, substantially as and for the purposes hereinbefore set forth.

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3. The combination, substantially as hereinbefore set forth, of the nozzles to be withdrawn, the shell or body having that portion of its interior which surrounds said nozzles made conical or flaring, so as to gradually increase in diameter toward the delivering end, and the nozzle-holder screwed to the shell or body and connected with the nozzles, substantially in the manner described, so that while the two shall move longitudinally bodily and together the holder may rotate independently of the nozzles.

298,330. CHAIN-PUMP FIXTURE. ARTHUR S. WRIGHT, Moline, Ill. Filed Oct. 29, 1883. (No model.)



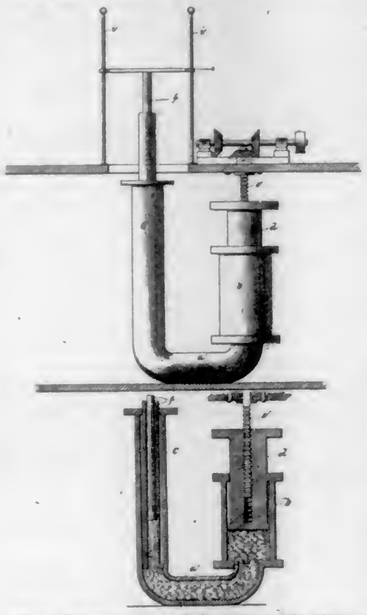
Claim.—1. The combination, with the shaft A, having a journal provided with a cam, *b*, of an oscillating pin, C, having a stud, D, adapted to bear against the periphery of said cam and permit said shaft to revolve in one direction, but preventing a reverse motion thereof.

2. The combination, with the shaft A, having a journal provided with a cam, *b*, of an oscillating pin having a stud projecting therefrom, which bears against the periphery of said cam in such position as to permit said shaft to revolve but in one direction, and having a lateral projection extending from the end thereof, by means of which said pin may be oscillated and a reverse motion of said shaft obtained.

3. The combination of the shaft having a bearing-surface on which is a cam, an oscillating pin having a stud projecting therefrom, and a pillow and cap of the bearing properly recessed, so as to afford protection and permit of the operation of said cam, pin, and stud projecting therefrom within the same.

4. A sprocket-wheel for chain-pumps having forked sprockets, the outer edges of which are re-enforced by a bead which traverses the edges of the rim of said wheel between and is continuous from sprocket to sprocket of said wheel, substantially as and for the purpose set forth.

298,331. ELEVATOR. CHARLES A. YOUNGMAN, Louisville, Ky. Filed Oct. 29, 1883. (No model.)



Claim.—The combination, with the U-shaped fluid-cylinder *a*, constructed substantially as described, having the short diametrically-enlarged branch *b* and the long branch *c*, the elevator-shaft *f*, connecting at its upper end to the platform of the elevator, and telescoped in the said branch *c*, of the piston *d*, screw-shaft *e*, and means for operating the piston to compress the fluid in the fluid-cylinder and raise the platform-shaft, substantially as specified.

298,332. FLATTING AND ANNEALING OVEN FOR GLASS. THEODOR A. ZELLERS, Ottawa, Ill., assignor to the Ottawa Glass Company, same place. Filed Dec. 7, 1883. (No model.)

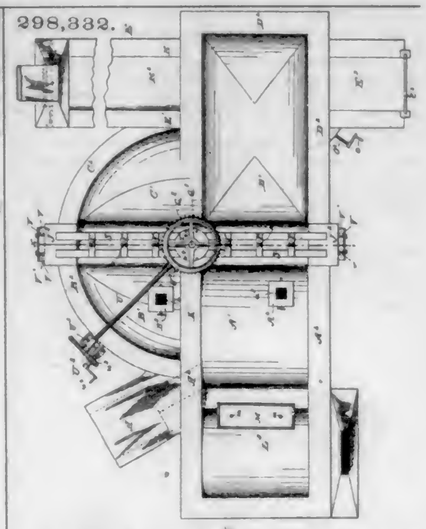
Claim.—1. The combination, with the heating-chamber of a flatting-oven, and with a gas-generator communicating therewith, of means for introducing steam into the gas before the admission of the gas into the heating-chamber, substantially as described.

2. The combination, with the heating-chamber of a flatting-furnace, a gas-generator, and passages connecting the generator with the heating-chamber, of means for introducing water into the generator, whereby steam is mixed with the gas previous to its introduction into the heating-chamber, substantially as described.

3. The combination, with the heating-chamber of a flatting-oven, of a gas-generator located adjacent thereto, and provided with a gas-chamber, L^2, passages connecting the gas-chamber with the heating-chamber, a water-tank, and a valved pipe connecting said tank with the said gas-chamber, substantially as and for the purposes set forth.

4. The combination, with the heating-chamber of a flatting-oven, of a gas-generator provided with a chamber, L^2, a water-reservoir provided with a pipe extending through the upper wall of said chamber L^2, and a receptacle, M', located within the chamber beneath the exit-opening of said pipe, substantially as and for the purpose set forth.

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5. The combination, with the heating-chamber of a flatting-oven, a gas-generator, and passages connecting the generator with the heating-chamber, of a revolving wheel or table constructed to support a series of flatting-stones, and forming the bottom of the chamber, said table being provided with apertures *g*, for the admission of air to said chamber, substantially as described.

6. The combination, with the heating-chamber of a flatting-oven, a cooling-chamber located adjacent thereto, and a revolving wheel or table constructed to support a series of flatting-stones, and forming the bottoms of said chambers, of a closed chamber located over the said table between the chambers above mentioned, substantially as and for the purpose set forth.

7. The combination, with the heating and cooling chambers of a flatting-oven, and a revolving table forming the bottoms of the said chambers, and constructed to support a series of flatting-stones, of a closed chamber located over the said table between the chambers mentioned, and provided with a flue or passage having a suitable damper, whereby the temperature in said chamber may be regulated, substantially as described.

8. The combination, with the heating-chamber A of a flatting-oven, a leer or annealing-oven, a cooling-chamber, D, communicating with the leer, a closed chamber, B, and a revolving table, G, constructed to support a series of flatting-stones, and forming the bottoms of the several chambers mentioned, of a chamber, C, located between the chambers B and D and opening into the latter, said chamber C having a low roof constructed to confine the heat to the surface of said stones, and to prevent the too rapid cooling of the glass thereon, substantially as described.

9. The combination, with the heating-chamber of a flatting-oven, a leer or annealing-oven provided with track-rails, a car for supporting the glass within the leer, a cooling-chamber, D, communicating with the leer, and a rotating wheel or table constructed to support a series of flatting-stones, and forming the bottoms of the chambers mentioned, of a turn-table located within the chamber D, adjacent to the flatting-stones, and constructed to receive the car, whereby said car may be turned to a desired position for placing the sheets of glass thereon, substantially as described.

10. The combination of the heating-chamber of a flatting-oven, a leer, a cooling-chamber, D, communicating with the leer, a revolving table constructed to support a series of flatting-stones, and forming the floor of the said heating-chamber and of the chamber D, a car, tracks arranged longitudinally within the leer for supporting the car, a turn-table within the chamber D, and means for rotating said turn-table from the exterior of the oven, substantially as described.

11. The combination, with a flatting-oven, of an annealing-oven or leer communicating with said flatting oven, and cars for supporting the sheets of glass within the leer, the said leer being constructed with a roof which is flat upon its under side, whereby the heated air within the leer is retained in proximity to the sheets of glass upon the cars, substantially as described.

12. The combination, with the walls of a flatting-oven having two or more chambers, and a revolving table or wheel constructed to support a series of flatting-stones within the oven, of a supporting-arch, J', located between the said walls and over said table, a metal casting, P, forming the keystone of the arch, horizontal beams or mantels resting at their outer ends on the side walls of the oven and supported at their inner ends by said casting, and a suitable roof or covering supported upon the outer walls of the oven and upon the said arch, and constructed to form the chambers of the oven, substantially as described.

13. The combination, with the side walls of a flatting-oven, and the revolving table G, for supporting a series of flatting-stones, and a shaft, G^2, constructed to support said table, of an arch, J', located between the side walls of the oven and over the said table, a casting, P, forming the keystone of the arch, and constructed to afford passage for the vertical shaft G^2, horizontal beams or mantels Q, supported at their outer and inner ends by the side walls and the casting P, respectively, and a filling, R, between the arch and the said beams, substantially as described.

14. The combination, with the side walls of a flatting-oven, and a revolving wheel or table, G, of a casting, P, means constructed to support said casting from the walls of the oven, horizontal beams or mantels Q, supported at their outer ends by the said walls and at their inner ends by the casting P, girders S, located over the top of the furnace and supported upon the side walls thereof, and rods *s*, constructed to support the said mantels from the girders intermediately of their ends, substantially as described.

15. The combination, with the side walls of a flatting-oven, and a revolving wheel or table, G, of an arch, J', a casting, P, forming the keystone of the arch, horizontal beams or mantels Q, supported at their inner ends by the said casting, girders S, located over the furnace and supported upon the side walls thereof, rods *s*, connecting said mantels and girders, and rods *t*, connecting the girders with the casting P, substantially as described.

16. The combination, with the side walls and revolving table of a flatting-furnace, of hollow beams or mantels Q, for supporting the partitions over said wheel, and passages connecting the hollow interior of said mantels with the outer air, substantially as described.

17. The combination, with the outer walls and revolving table of a flatting-oven, of a drum, P, located centrally over said table, means constructed to support said drum from the side walls of the furnace, hollow mantels Q, supported at their outer ends by the side walls of the furnace and at their inner ends by said drum, and passages connecting the hollow interior of said mantels at their outer ends with the open air, and at their inner ends with the interior of the drum, substantially as and for the purpose set forth.

18. The combination, with the outer wall and revolving table of flatting-oven, a hollow mantel, Q, supported at its outer end by the said wall, means for supporting the inner end of the mantel, girders S, and rods *s*, connected with said mantel and girders, of a partition-wall located above said mantel, and provided with passages surrounding said rods, and communicating with the interior of the mantel and with the open air, substantially as and for the purpose set forth.

19. The combination, with the outer walls and revolving table of a flatting-furnace, and the partition-wall J, of the hollow mantels Q, girders S, supported by the outer walls of the furnace, rods *s*, connected with said girders and mantels, and tubes s^3, located within the partition-wall around the rods and communicating at their lower ends with the interior of the mantels, and passages connecting the ends of said mantels with the outer air, substantially as and for the purpose set forth.

20. The combination, with the partition-wall J, of mantels Q, provided with apertures q', having slotted extensions q^3, supporting-rods *s*, having beads s^3, and vertical apertures in said wall communicating with said apertures q' and surrounding the rods, substantially as and for the purpose set forth.

REISSUES.

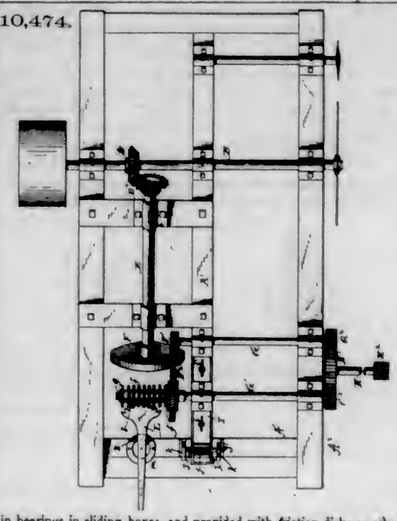
10,474. CIRCULAR SAW MILL. WALTER J. F. LIDDELL, Charlotte, N. C. Filed Dec. 5, 1883. Original No. 274,129, dated Mar. 20, 1883.

Claim.—1. The combination, in a saw-mill feed mechanism, of a friction wheel or disk, F, secured to its actuating-shaft, and the shafts G G', geared to the carriage and provided with friction wheels or disks arranged to bear upon the opposite faces of the disk F, and adapted to be moved together laterally—the one into and the other out of contact with said disk—by the joint lateral movement of their shafts, substantially as described.

2. In a saw-mill-carriage feed mechanism, the combination, with the saw-mandrel, of a shaft geared to said mandrel, and provided with a friction wheel or disk, F, secured to one end thereof, two parallel shafts, G and G', geared to the carriage, and provided with friction-wheels F' and F^2, arranged upon the same side of the axis, and to bear upon the opposite faces of disk F, and means for moving said friction-wheels F' and F^2 for reversing the feed of the carriage, substantially as described.

3. The shaft E, geared to and actuated by the saw-mandrel, and provided with a friction disk or wheel, F, in combination with the shafts G and G', geared to and operating the carriage, said shafts being mounted

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in bearings in sliding boxes, and provided with friction disks or wheels F' and F^2, arranged on opposite sides of and adapted to be moved into or out of contact with the disk F, substantially as and for the purpose described.

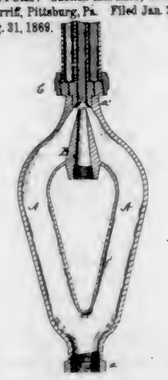
4. The combination, in a saw-mill feed mechanism, of a friction wheel or disk, F, secured to the end of its actuating-shaft, and the shafts G G', supported by bearings fixed to the frame at their ends nearest to the carriage, to gear therewith, provided with friction-wheels, and journaled at their opposite ends in a sliding bearing-block, I, substantially as and for the purpose described.

5. The combination, in a saw-mill-carriage feed mechanism, of the friction-disk F, secured to one end of a shaft geared to and driven by the saw-mandrel, the friction-disk F^2, mounted upon a shaft at right angles to the shaft E of disk F, and geared to the saw-mill carriage, said disk F^2 being made adjustable on its shaft across the face of the disk F, and means for adjusting said disk F^2 lengthwise of its shaft.

6. The combination, in a saw-mill feed mechanism, of a friction-disk secured to a shaft actuated by the saw-mandrel, friction-wheels arranged upon opposite sides of said disk, secured to shafts geared to and actuating the saw-mill carriage, and mounted in movable bearings, and means for adjusting one of the friction-wheels independently of the other across the face of the disk, substantially as described.

7. The combination, in a saw-mill-carriage feed mechanism, of the friction wheel or disk F^2, made adjustable across the face of its actuating-disk F, for varying the feed of the carriage, and provided with a hub or sleeve having annular cogs or teeth, a lever provided with a toothed segment engaging with said toothed hub or sleeve for adjusting said disk on its shaft, and means for holding said lever at any desired adjustment, substantially as described.

10,475. STEAM-PUMP. GEORGE MCFEELY, Steubenville, Ohio, assignor to William J. Sherriff, Pittsburg, Pa. Filed Jan. 24, 1884. Original No. 94,426, dated Aug. 31, 1869.



Claim.—1. The steam-pipe B, in combination with the curved pipes A A, joined at their upper and lower ends, for connecting with the suction and discharge pipes, and bush C, having a short pipe or tubular extension at its outer end, all arranged substantially as described.

2. The combination, in a steam-pump, of curved outer pipes, joined at their upper and lower ends, with a steam-pipe arranged at or near the upper point of junction, and a bush arranged in the discharge end and provided with a short pipe or tube extending into the discharge-pipe, substantially as described.

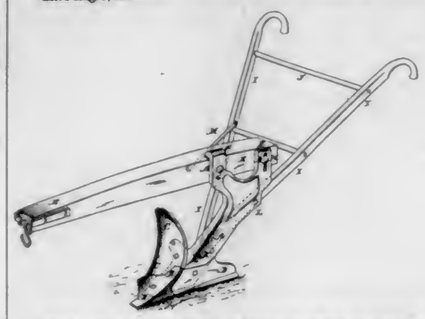
10,476. LOCKING-NUT. GENERAL W. SAMPSON, Springfield, Iowa. Filed Feb. 4, 1884. Original No. 289,143, dated Nov. 27, 1883.



Claim.—1. In lock-nuts, the combination of a dog or block and a spring acting on the dog with a nut having an inclined recess, whereby the dog is pressed against the surface of the bolt, substantially as shown and described.

2. The combination, with a nut having a recess, *a*, of dog C and spring *b*, substantially as described.

10,477. PLOW. ARABELLA G. STARKE, Richmond, Va., Executrix of Patrick H. Starke, deceased. Filed Feb. 29, 1884. Original No. 117,574, dated Aug. 1, 1871.



Claim.—The plow-standard A, having a front bearing or projection flanged to overlap the top of the beam, in combination with the bearing-plate F, adjustable in the recessed rear bearing or projection of the standard, said bearing being adapted to receive studs G H, to secure the beam to said standard and enable said beam to be turned on a center in the forward bearing, and thereby regulate the depth of the plow.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Vermont.

VERMONT FARM MACHINE COMPANY *et al.* v. MARBLE, COMMISSIONER OF PATENTS.

Decided October 11, 1883.

1. The case of *Campbell* v. *James* must be construed to forbid the patenting of an invention by a party who has already patented the same invention, and not merely described it in a patent. The statute does not make prior description in a patent a bar, but being patented. (Sections 4886, 4887, and 4920.)
2. Where four claims of an applicant have been rejected solely on the ground of their subject-matter being described in a patent granted to the same party before the date of filing of the application, *Held* that the rejection is erroneous, and the applicant is entitled to a patent embracing such claims.

Mr. William E. Simonds and *Mr. Kittridge Haskins* for the orators.

WHEELER, *J.*:

The orators, on March 30, 1880, filed an application for a patent for improvements in milk-setting apparatus, consisting, as finally amended, of nine claims, the last five of which have been allowed. The first four have been refused because described although not claimed in a prior patent to the same inventors, No. 207,738, dated September 3, 1878. Prior public use to bar the patent is denied on oath by the applicants and is not shown. The refusal rests solely apparently on the prior description and *Campbell* v. *James*, (104 U. S., 356.) What is said in that case, taken at large, would seem to show that a patent could not be granted for an invention described in a former patent to the same inventor. What was so spoken of there had been not only described but patented in the former patent. What was said is to be understood by reference to what it was spoken of. That part of that case relied upon in this rejection is where it is said—

> It is hardly necessary to remark that the patentee could not include in a subsequent patent any invention embraced or described in a prior one granted to himself any more than he could an invention embraced or described in a prior patent granted to a third person. Indeed, not so well, because he might get a patent for an invention before patented to a third person in this country, if he could show that he was the first and original inventor, and if he should have an interference declared. (Section 382.)

The latter part of this extract relates to the same subject as the former part. It expressly refers to patented inventions by others, and seems to show that patented inventions by the same inventor were intended when inventions embraced or described in his prior patent were referred to. The statute does not make prior description in a patent a bar, but being patented. (Sections 4886, 4887, and 4920.)

The court appears to have merely referred to the plain effect of these statute provisions. In *Battin* v. *Taggart* (17 How., 74) it appears to have been expressly adjudged, upon the same statute provisions as are in force now, that an inventor might have a patent for an invention described in a prior patent to himself. The same seems to have been decided in *Graham* v. *McCormick* (XI Fed. Rep., 859) on full argument and much consideration.

According to the terms of the statutes the orators seem to be entitled to the patent for these claims. There does not appear to be any settled construction to control otherwise.

Let there be a decree for the applicant adjudging that he is entitled to receive a patent for the inventions covered by these first four claims of his application.

U. S. Circuit Court—Northern District of New York.

SWIFT *v.* JENKS *et al.*

Decided March 3, 1884.

1. NON-CLAIM OF APPARENT DEVICE—ABANDONMENT.
   The omission by an inventor to claim a combination or device apparent upon the face of his patent amounts to a dedication of the neglected contrivance to the uses of the public.
2. INJUNCTION—NOT TO ISSUE WHEN IT WOULD WORK INJUSTICE.
   An injunction should not issue when it would work great harm to one party without corresponding benefit to the other, at least where adequate protection can be afforded by other means.

MOTION for preliminary injunction.

Messrs. Duell & Hey for the complainant.
Mr. Neri Pine for the defendants.

COXE, *J.*:

This is a motion for a preliminary injunction. The complainant is the inventor of an alleged improvement in lubricators, for which letters patent were issued August 28, 1883. The claims in controversy are as follows:

> 5. In combination with the steam-condensing duct and its horizontal extension *c*, the lubricant-cup composed of metal and provided in front of the duct-extension *c* with an observation-port, *r*, covered with a transparent plate, substantially as and for the purposes set forth.
> 6. In combination with the oil-cup of a lubricator, the port *r*, covered by a glass plate, and the pipe or tube *c*, having an inclined end or face, substantially as set forth.

Prior to this time, and on the second day of May, 1882, letters patent for a similar invention were issued to the defendants. An interference was declared, and after a thorough investigation the examiners and Commissioner concurred in deciding that the complainant was the prior inventor. But the proceedings in the Patent Office determined more. Upon defendants' motion to dissolve the interference the Commissioner was required to pass upon the question whether or not the subject-matter claimed was patentable. Various references, which, as was urged by the defendants, anticipated the complainant's invention, were presented, and

although the Examiners-in-Chief and the Commissioner were not in accord upon this question, it cannot be denied that the issuing of the patent was, to the extent that the question was there investigated, a decision in favor of the complainant. The proceedings in the Patent Office having, as between these parties, determined, first, that the complainant was the prior inventor, and, second, that the subject-matter of the patent was not void for want of novelty, the complainant would be entitled, if there were no other considerations, to the injunction prayed for, there being no dispute as to the infringement. *Smith* v. *Halkyard*, 16 Fed. Rep., 414; *Shuter* v. *Davis*, Id., 564. But the defendants again insist that the patent is void for want of patentable novelty, and in support of this defense they produce various references not presented to the examiners. They also produce affidavits tending to show that one Giles was the original inventor of the patented device or combination. But the argument having the most weight with the court is the one based upon the complainant's prior patent of March 21, 1882. It is urged that he there fully discloses the subject-matter of claim 5, *supra*. The language of the specification is as follows:

> It is not essential that the cylinder should be wholly of glass so long as that portion directly opposite the end of the tube or pipe E is transparent, to expose to view the end thereof * * * the cylinder may be constructed of metal, with a window or "sight" on a line opposite the tube or pipe.

The metal cylinder with the glass observation-port opposite the end of the tube was not claimed in the March patent, and the language of Mr. Justice Bradley in *Miller* v. *Brass Co.* (104 U. S., 352) is therefore applicable:

> But it must be remembered that the claim of a specific device or combination, and an omission to claim other devices or combinations apparent on the face of the patent, are in law a dedication to the public of that which is not claimed. It is a declaration that that which is not claimed is either not the patentee's invention, or, if his, he dedicates it to the public.

It is argued for the complainant that the patent in suit is not for a particular device, but for a combination, and that, construed most favorably for the defendants, the March patent discloses but one element of that combination. This contention presents for consideration a number of questions not argued upon the motion, but which may perhaps be sufficiently suggested by an examination of *Slawson* v. *Grand St. R. R.*, (107 U. S., 649; S. C., 2 Sup. Ct. Rep., 663,) and other like authorities. Although the papers presented on this motion have been carefully examined, it is not the purpose of the court to discuss the defenses referred to at this time or express an opinion regarding them; they should be disposed of only after careful consideration on final hearing. They are mentioned here simply to show that the defendants have succeeded in raising a sufficient doubt as to the validity of the complainant's patent to induce the court to withhold the writ asked for provided the complainant's right can be fully protected without resort to so positive a remedy. Where an injunction will work great injury to one party without corresponding benefit to the other, it should not ordinarily issue, especially where adequate protection can be had without it.

An injunction should issue unless the defendants, within fifteen days after service of a certified copy of the order entered upon this decision, shall give a bond with two or more sureties, to be approved by a commissioner of this court, conditioned to keep an account of all the lubricators manufactured and sold by them, and to file such account, duly verified, once a month in the office of the clerk of this court, and to pay the amount of any final decree which may be awarded against them, the penalty of the bond to be in such sum as may be agreed on by the parties; or, if they are unable to agree, as may be fixed by the court upon proof by affidavit or otherwise of the extent of the defendants' business.

U. S. Circuit Court—District of Vermont.

VERMONT FARM MACHINE COMPANY *et al.* v. MARBLE, COMMISSIONER OF PATENTS.

Decided April 16, 1884.

Where a bill in equity is brought to obtain a patent (under section 4915 R. S.) in the district of Vermont, and the Commissioner of Patents accepts service, *Held* that by such acceptance the Commissioner consented to be found in said district, and his act in this respect is binding upon his successor.

MOTION for a rehearing.

Mr. Frank T. Brown for the Commissioner of Patents.
Mr. William E. Simonds for the orators.

WHEELER, *J.*:

The bill was brought for an adjudication that the orators were entitled to a patent pursuant to Section 4915 Revised Statutes. The defendant accepted service of the subpœna to have the same effect as if duly served on him by a proper officer, and acknowledged receipt of a copy, but did not appear in court nor make any objection to proceeding to decree. After hearing the orators a decree was made and entered in their favor. (19 Fed. Rep., 307.) The present Commissioner now moves for a rehearing, principally upon the ground of alleged want of jurisdiction of this court. One mode of attempting to show that this court has not jurisdiction is by claiming that the Supreme Court of the District of Columbia has exclusive jurisdiction. The language of this section, however, seems to preclude this idea. It reads:

> Whenever a patent, on application, is refused, either by the Commissioner of Patents, or by the Supreme Court of the District of Columbia upon appeal from the Commissioner, the applicant may have remedy by bill in equity.

This seems to clearly imply that the remedy may be elsewhere. (*Whipple* v. *Minor*, 15 Fed. Rep., 117.) Another, and the principal mode, is by claiming that no circuit court of a district away from the Patent Office, and in which the Commissioner does not reside, can acquire jurisdiction of such cases. The circuit courts have original jurisdiction: "Ninth. Of all suits at law or in equity arising under the patent or copyright laws of the United States." (Rev. Stat., sec. 629.) This is unquestionably a suit so arising. There is no restriction upon proceeding in these courts in such cases, except that civil suits against inhabitants of the United States are not to be brought by original process in any other district than that in which the defendant resides or is found at the time of service. (Rev. Stat., 739.) The court had general jurisdiction of this subject, and the defendant, by his acceptance of service, consented to be found in this district, and did not appear in court to object to being bound by his consent.

In *ex parte Schollenberger* (96 U. S., 369) Mr. Chief Justice Waite, in delivering the opinion of the Court, says:

> The act of Congress prescribing the place where a person may be sued is not one affecting the general jurisdiction of the courts. It is rather in the nature of a personal exception in favor of a defendant, and one which he may waive. If the citizenship of the parties is sufficient, a defendant may consent to be sued anywhere he pleases, and certainly jurisdiction will not be ousted because he has consented.

Here no question was made before; now when one on this subject is made, it is not whether the Commissioner can be compelled to answer, but whether he can consent to be sued away from the seat of Government and his residence. *Prentiss* v. *Ellsworth* (Mirror of Pat. Off., 35; Law's Dig., 103; Wharton's Dig., 365) raised the question as to the compulsion, and not as to the consent, and it was held upon apparently sound reasoning by Judge Randall that the Commissioner could not be compelled by process issuing out of the Circuit Court for the Eastern District of Pennsylvania to answer there. The question of jurisdiction founded on consent did not arise. It is further objected against the jurisdiction here that the court here could not compel obedience of the Commissioner of Patents at the Patent Office to its decree. It is to be presumed, however, that a high officer of a department of the Government will do his duty without compulsion, or even command, from any quarter, especially in a matter where he has no interest, nor the Government any, except that the duty be done. This provision of the statute is framed according to this view. The court does not decree that the Commissioner shall issue a patent, but only "may adjudge that such applicant is entitled, according to law, to receive a patent for his invention as specified in his claim, or for any part thereof, as the facts in the case may appear; and such adjudication, if it be in favor of the right of the applicant, shall authorize the Commissioner to issue such patent," &c. Granting the permission expressed the will of Congress, which would be sufficient. Neither the adjudication or issuing the patent under it will conclude any individual rights. The validity of the patent will be open to trial under the law. But if it is not granted, no suit for infringement can be brought, and the right to the invention cannot be judicially tested. This jurisdiction has been exercised without challenge, except in *Prentiss* v. *Ellsworth*, before cited. *Ellithorpe* v. *Robertson*, 2 Fish., 83.

As this case is now considered, the jurisdiction upon the consent of the Commissioner seems to be ample. The question involved in the case on the merits was purely one of law, requiring the production of no models or exhibits, and no personal attendance, and might well be submitted anywhere. Whether under the circumstances it should be submitted here rested in the discretion of the Commissioner. His act in this respect is binding upon his successor like any other lawful act, and it oppresses no one. This ground presents no reason that appears to be sufficient for opening the case. All the grounds now urged on the merits of the application for the patent were fully considered before, and no sufficient reason appears for going over the ground again.

The motion is denied.

U. S. Circuit Court—Eastern District of Pennsylvania.

PRENTISS v. ELLSWORTH, THE LATE COMMISSIONER OF PATENTS.

Decided April 11, 1846.

1. When the sections of the statute are construed together, it is held that when there are two interfering patents the circuit court of the district whereof the defendant is an inhabitant or where he may be found is the court "having cognizance," and where an original application for a patent has been refused and a remedy is sought in equity, and the process is to be served on the Commissioner of Patents, then the Circuit Court of the District of Columbia is the proper tribunal to entertain the suit.
2. An objection to the jurisdiction of the circuit court in Pennsylvania is that it has no mode of enforcing obedience to its decree, since the circuit courts outside of the District of Columbia have no authority to issue a writ of mandamus to an officer of the United States commanding him to do a ministerial act.

STATEMENT OF THE CASE.

The complainant filed his bill complaining that the defendant as Commissioner of Patents had refused to grant him a patent for certain improvements made by him in the art of weaving goods of various kinds, and prayed the court should by decree order the letters patent prayed to be issued. The defendant filed a plea to the jurisdiction and a general demurrer to the bill. Mr. B. H. Brewster, for Commissioner of Patents, maintained that the court has no jurisdiction; that the defendant did not reside and was not within its jurisdiction at the time process issued. (Act of Congress, sec. 11, 1839.) The only court that can have jurisdiction at any stage of proceedings to obtain a patent is the Circuit Court of the District of Columbia. (Acts of 1801 and 1815, 4 Cranch, 421; 5 Cranch, 288; 8 Wheaton, 699; 7 Cranch, 202; 1 Peters, C. C. R., 489.) Unless the court has jurisdiction under the patent laws or by some other act of Congress, the bill must be dismissed. (5 Cranch, 173; 1 Wash., 232; 4 Dallas, 7.) The patent laws contain no provision investing the circuit courts with such authority. The policy of the law is against the exercise of this authority. The Commissioner would be exposed to endless trouble and inconvenience. He would be compelled to answer at the same time at different points of the Union, and, if the prayer of the bill were granted, to carry with him the models, books, papers, and documents that are of record in the office at Washington, when thereby the public interests would require them to be in the custody of the Department at the seat of Government. (2 Kent, 355 to 372; Phillips on Patents, 313, 57, 379.) The law furnishes a remedy for the errors of a hasty examination of an application for a patent. (Sec. 7 of act of 1836.) The complainant must strictly conform to the provisions of that act before he can apply for the intervention of a court of equity, even had this court jurisdiction, and he must aver in his bill that he has conformed to the provisions of the law. That he has not done. The bill does not state that he has complied with the provisions of the act of 1839. (Peters, C. C. R., 356; 3 Howard, 441.) The Commissioner of Patents is the judge created by law to decide upon these questions. To him must application be made and renewed after a certain formal method laid down in the act, and this court could not now assume to decide the question even had it concurrent jurisdiction, much less when the exclusive jurisdiction is vested in the Commissioner. (9 Wheaton, 532; 1 Paine, 620.) This court has no power to enjoin or command an officer of the General Government residing at Washington to perform any act. How, then, could it enforce its decree? (1 Kent, 322; 3 Dallas, 42; 9 Peters, 574, 602; 8 Peters, 306; 12 Peters, 524; 13 Peters, 279; 7 Peters, 634; 7 Cranch, 577.)

Mr. Waln, in reply, said:

> If the court has no jurisdiction, then the party aggrieved is without remedy. The argument *ab inconvenienti* can never be urged to deprive man of his rights and all legal protection. The jurisdiction is expressly given by the sixteenth section of the act of 1836 and tenth section of the act of 1839. The law provides that expenses shall be paid by complainant in contemplation of the inconvenience to which the Commissioner might be subjected in complaints like this. If parties are confined to the courts of the District of Columbia, then they could not have the decrees of the courts enforced in any other part of the United States except in their local jurisdiction. It is a narrow construction of the law to oust the jurisdiction.

RANDALL, *J.*:

The bill in this case charges that on or about the 8th day of March, 1843, the complainant entered a caveat in the Patent Office of the United States describing cer-

tain improvements made by him in the art of weaving, and that on or about the 8th day of August, 1844, he referred his petition to the Commissioner of Patents, wherein he represented that he had invented certain new and useful improvements in the apparatus for weaving goods of various kinds, and did therein claim as new, as specified in the bill. The bill further charged that the complainant, having in all things complied with the terms and conditions of the act of Congress in such cases made, having furnished specifications, drawings, and models, and paid into the Treasury the legal fee, he did pray that letters patent of the United States might be granted, vesting in him and his legal representatives the exclusive right to the said invention, &c., and that the Commissioner, intending, &c., absolutely refuses to comply with the said reasonable request. After stating the formal excuses or pretenses and propounding certain interrogatories, the orator prays that a copy of the bill may be served on the Commissioner of Patents, and that he may be required to answer, to produce the specification, model, drawing, and claim, and that the court will order and decree that the letters patent be issued, as specified in his claim. To this bill the defendant has filed a special plea, denying the jurisdiction of this court, "because," he says, "the supposed causes of complaint, and each and every of them, accrued out of the jurisdiction of this court, and that the said defendant, Commissioner as aforesaid, was not found within the jurisdiction of the court at the time of serving the writ in this complaint, nor was he an inhabitant within the jurisdiction of this court at the time of serving the writ of subpœna on this complaint, and that he is not liable, as Commissioner as aforesaid, to the jurisdiction of this court." He has also filed a general demurrer to this bill. It is admitted that unless the jurisdiction is given by the sixteenth section of the act of July 4, 1836, (4 Story, 25, 11,) and the tenth section of the act of March 3, 1839, (9 Laws U. S., 1020,) the complainant cannot have the relief prayed for in this court.

By the seventh section of the act of 1836 it is enacted—

That on the filing of any such application, description, and specification, and the payment of the duty hereinafter provided, the Commissioner shall make or cause to be made an examination of the alleged new invention or discovery; and if on any such examination it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country prior to the alleged invention or discovery thereof by the applicant, or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale with the applicant's consent or allowance prior to the application, if the Commissioner shall deem it to be sufficiently useful and important, it shall be his duty to issue a patent therefor. But whenever on such examination it shall appear to the Commissioner that the applicant was not the original and first inventor or discoverer thereof, or that any part of that which is claimed as new had before been invented or discovered, or patented or described in any printed publication in this or any foreign country, as aforesaid, or that the description is defective and insufficient, he shall notify the applicant thereof, giving him briefly such information and references as may be useful in judging of the propriety of renewing his application or of altering his specification to embrace only that part of the invention or discovery which is new. In every such case, if the applicant shall elect to withdraw his application, relinquishing his claim to the model, he shall be entitled to receive back twenty dollars, part of the duty required by this act, on filing a notice in writing of such election in the Patent Office, a copy of which, certified by the Commissioner, shall be a sufficient warrant to the Treasurer for paying back to the said applicant the said sum of twenty dollars; but if the applicant in such case shall persist in his claim for a patent, with or without any alteration of his specification, he shall be required to make oath or affirmation anew in manner as aforesaid; and if the specification and claim shall not have been so modified as in the opinion of the Commissioner shall entitle the applicant to a patent, he may, on appeal and upon request in writing, have the decision of a board of examiners, to be composed of three disinterested persons, who shall be appointed for that purpose by the Secretary of State, one of whom at least to be selected, if practicable and convenient, for his knowledge and skill in the particular art, manufacture, or branch of science to which the alleged invention appertains, who shall be under oath or affirmation for the faithful and impartial performance of the duty imposed upon them by said appointment. Said board shall be furnished with a certificate in writing of the opinion and decision of the Commissioner, stating the particular grounds of his objection and the part or parts of the invention which he considers as not entitled to be patented; and the said board shall give reasonable notice to the applicant as well as to the Commissioner of the time and place of their meeting, that they may have an opportunity of furnishing them with such facts and evidence as they may deem necessary to a just decision; and it shall be the duty of the Commissioner to furnish to the board of examiners such information as he may possess relative to the matter under their consideration; and on an examination and consideration of the matter by such board it shall be in their power, or of a majority of them, to reverse the decision of the Commissioner, either in whole or in part; and their opinion being certified to the Commissioner, he shall be governed thereby in the further proceedings to be had on such application: *Provided, however*, That, before a board shall be instituted in any such case the applicant shall pay to the credit of the Treasury, as provided in the ninth section of this act, the sum of twenty-five dollars; and each of said persons so appointed shall be entitled to receive for his services in each case a sum not exceeding ten dollars, to be determined and paid by the Commissioner out of any moneys in his hands, which shall be in full compensation to the persons who may be so appointed for their examination and certificate as aforesaid.

The eighth section provides—

That whenever an application shall be made for a patent which, in the opinion of the Commissioner, would interfere with any other patent for which an application may be pending, or with any unexpired patent which shall have been granted, it shall be the duty of the Commissioner to give notice thereof to such applicant or patentee, as the case may be; and if either shall be dissatisfied with the decision of the Commissioner in the question of priority of right or invention, he may appeal from such decision on the like terms and conditions as are provided in the preceding section.

The sixteenth section then enacts—

That whenever there shall be two interfering patents, or whenever a patent or application shall have been refused on an adverse decision of a board of examiners, on the ground that the patent applied for would *interfere* with *an unexpired patent previously granted*, any person interested in any such patent, either by assignment or otherwise in the one case, and any such applicant in the other case, may have remedy by bill in equity; and the court having cognizance thereof, on notice to adverse parties and other due proceedings had, may adjudge and declare *either* the patents void in the whole or in part or inoperative and invalid in any particular part or portion of the United States, according to the interest which the parties to such suit may possess in the patent or the inventions patented, and may also adjudge that such applicant is entitled, according to the principles and provisions of this act, to have and receive a patent for his invention as specified in his claim, or for any part thereof, as the fact of priority of right or invention shall in any such case be made to appear; and such adjudication, if it be in favor of the right of such applicant, shall authorize the Commissioner to issue such patent on his filing a copy of the adjudication and otherwise complying with the requisitions of this act: *Provided, however*, That no such judgment or adjudication shall affect the rights of any person, except the parties to the action and those deriving title from or under them subject to the rendition of such judgment.

This section gives the remedy by bill in equity to those cases only provided for by the eighth section of this act; but by the tenth section of the act of 1839 it is declared—

That the provisions of the sixteenth section of the before-recited act shall extend *to all cases where patents are refused for any reasons whatever*, either by the Commissioner of Patents or by the Chief Justice of the District of Columbia, upon appeals from the decision of said Commissioner, as well as where the same shall have been refused on account of or by reason of interference with a previously-existing patent; and in all cases where there is no opposing party a copy of the bill shall be served upon the Commissioner of Patents, when the whole of the expenses of the proceeding shall be paid by the applicant, whether the final decision shall be in his favor or otherwise.

The effect of this section is to give to all persons whose applications are refused under the seventh section (and who were concluded by the decision of the Board of Commissioners under the act of 1836) the same remedy as was provided for those who came within the provision of the eighth section. The remedy is by bill in equity in the court *having cognizance thereof.*

On the part of the complainant it is contended that inasmuch as the seventeenth section of the act of 1836 declares—

That all actions, suits, controversies, and cases arising under any law of the United States, granting or confirming to inventors the exclusive right to their inventions or discoveries, shall be originally cognizable as well in equity as at law by the circuit courts

of the United States, or any district court *having the powers and jurisdiction of a circuit court*—

that Congress did not intend to give jurisdiction to the courts of the District of Columbia, where there is no district court *having the power of a circuit court*, but to the courts of the United States established by the judiciary act of 1789, and the complainant being a resident here this court has the jurisdiction.

In the construction of statutes every part of the act and acts in *pari materia* are to be taken together for the purpose of discovering the intention of the legislature, which, when ascertained, is to prevail. It shall be so construed, if possible, that no clause, sentence, or word shall be rendered superfluous or void; and when great inconvenience will result from a particular construction, that construction shall be avoided, unless the meaning of the legislature be plain, in which case it must be obeyed. (2 Cranch, 386.)

With these rules in view, let us examine the question presented for consideration.

By the section of the act of September 24, 1789, establishing the judicial courts of the United States, it is enacted—

That no person shall be arrested in one district for trial in another in a civil action before a circuit or district court, and no civil suit or action shall be brought before either of the said courts against an inhabitant of the United States by any original process in any other district than that *whereof he is an inhabitant or in which he shall be found* at the time of serving the writ.

The third section of the act of February 27, 1801, concerning the District of Columbia, (3 Story, 2039, appx.,) declares—

There shall be a court in the said District, which shall be called the "Circuit Court of the District of Columbia;" and the said court and the judges thereof shall have all the power by law vested in the circuit courts and the judges of the circuit courts of the United States.

And by the fifth section—

The said court shall have cognizance of all cases in law and equity between parties both or either of whom shall be a resident or found within said district.

The fourth section of the act of March 3, 1815, vesting more effectually jurisdiction in State courts, (2 Story, 1531,) enacts—

That the district courts of the United States shall have cognizance concurrent with the courts and magistrates of the several States and the circuit courts of the United States of all suits at common law when the United States or any officer thereof, under the authority of an act of Congress shall sue, although the debt, claim, or other matter in dispute shall not amount to one hundred dollars.

Various other statutes have been passed either imposing penalties or providing relief, in which it is said the district or circuit courts of the United States shall have jurisdiction; but in all such cases it is understood the intention of Congress was to give jurisdiction to those courts according to well-known and settled principles. These principles are, that process for the institution of a suit either at law or equity in the district or circuit courts shall not run beyond the limits of the district for which the court from which it issues is held, and that the circuit court for the District of Columbia has full equity powers where both or either of the parties shall be found within that jurisdiction. The prohibition of the service of process out of the jurisdiction is, however, a personal privilege which may be waived; but in the present case the defendant has availed himself of the first opportunity to make the objections.

Another objection to the jurisdiction of this court is the mode of enforcing obedience to its decree. It is to be presumed that a court will not take cognizance of a cause unless it can execute its judgment. Now, if this court should take jurisdiction of the complainant's bill and decide that he is entitled to a patent, how can that decision be enforced if the Commissioner should refuse to issue the patent? The proper remedy would seem to be by a mandamus; but the Supreme Court have decided that the circuit courts out of the District of Columbia have no authority to issue a writ of mandamus to an officer of the United States commanding him to do a ministerial act, but that the Circuit Court for the District of Columbia has such power. *Kendall* v. *United States*, 12 Peters, 525. In every aspect of the case it appears to me that this court has no jurisdiction of the complaint. By this construction full effect may be given to every word of the section under consideration: Where there are two interfering patents the circuit court of the district whereof the defendant is an inhabitant or where he may be found is the court "having cognizance," when an original application for a patent has been refused and there is no opposing party, so that the process, a copy of which is to be served on the Commissioner of Patents, the Circuit Court of the District of Columbia, of which the Commissioner is an inhabitant, and which can enforce its judgment, is the proper tribunal. This view also avoids the great inconvenience which would result from the construction contended for by the counsel for the complainant.

The bill prays that the Commissioner be required to produce on the hearing the specifications, models, drawings, &c., and these may be necessary to enable the court to determine upon the validity of the application for a patent. If the Commissioner can be required to produce these in this court, he may with as much propriety be called on to answer similar applications in any circuit court of the Union; an inconvenience, to say the least of it, which, if it had been intended by Congress, they would have used plain, precise, and clear language, such as would not leave the intention open to judicial construction or leave it liable to be misunderstood. This view renders it unnecessary to consider the argument urged in support of the demurrer.

The plea to the jurisdiction is sustained, and the bill dismissed for want of jurisdiction.

U. S. Circuit Court—Western District of Pennsylvania.

BRADLEY *et al.* v. DULL *et al.*

Decided March 24, 1884.

1. An assignment of a patent by an administrator is valid under the act of July 8, 1870. The decision in the case of *The Shaw Relief Valve Company* v. *The City of New Bedford* approved on this point.
2. A part which under certain conditions may be a serviceable addition to the machine, but is not indispensable, and is not mentioned in the claim, held not to be an element of the patented combination.
3. Patent granted December 12, 1871, to Allen G. Bauman, construed, sustained, and held to be infringed.

Messrs. Bakewell & Kerr for the complainants.
Mr. George H. Christy for the respondents.

ACHESON, *J.*:

The grounds of defense are, first, that the plaintiffs have not shown title to the patent sued on, and, second, that there has been no infringement by the defendants.

1. The patent was granted on December 12, 1871, to Allen H. Bauman. He subsequently died intestate, and letters of administration upon his estate were duly

issued to Reuben F. Bauman, who as administrator sold and assigned the patent to the plaintiffs. The defendants controvert the title thus acquired, maintaining that upon the death of the patentee intestate the patent became vested in his heirs, and, therefore, that the administrator was without authority to make sale and assignment thereof. The argument is based on the change in the patent law made by the twenty-second section of the act of July 8, 1870, (reproduced in section 4884 of the Revised Statutes,) whereby it is enacted that the patent shall contain "a grant to the patentee, his heirs, or assigns," the previous legislation having provided for a grant to the "patentee, his heirs, administrators, executors, or assigns." This change, in connection with some other provisions of the existing law, it is contended, indicates an intention on the part of Congress to secure the benefits of the invention to the heirs of the deceased patentee, in case of intestacy, to the exclusion of the administrator. An impressive argument was made by counsel in support of this view. But the contrary has just been decided in the first circuit in the case of *The Shaw Relief Valve Company* v. *The City of New Bedford*, in which was involved the identical question now before me. To the able opinion of Judge Lowell in that case I can add nothing. Adopting his conclusion, I must overrule this defense.

2. Whether or not the defendants infringe depends on the construction to be given to the claim. The subject-matter of the patent is a machine for drying sand and gravel. The invention (so the specification declares) relates to the combination of iron or metal pipe or pipes so constructed and arranged in parallel and longitudinal lines as to form a surface upon which the wet sand or gravel is placed to be dried by the application of fire or steam. The surface formed by the pipe or pipes forms the bottom of a box or frame which contains the wet sand or gravel. The pipe or pipes throughout the whole surface are heated by fire or steam passing through them, so as to dry the sand or gravel, which, when dried, slips and passes through the openings or spaces between the lines of pipe, the wet sand or gravel in the box or frame above drying gradually and passing through ready for shipment and use.

A A is the box or frame in which the wet sand or gravel is placed preparatory to being dried. The bottom of this box or frame is formed by the sets of pipes shown by *c c*, &c. On the surface formed by these pipes the wet sand or gravel rests and adheres until it becomes dried, when it passes through the openings or spaces between the pipes.

28

If fire is used, the pipes are heated from a fire-chamber at one end, the fire, heat, and smoke passing through the pipes into flues at the other end; but the arrangement described for heating the pipes is somewhat different when steam is employed. In the body of the specification occurs the following passage:

Immediately underneath the whole of the surface formed by the pipes is placed a wire sieve, F F, to prevent the sand or gravel from passing too rapidly through the spaces or openings between the pipes, and before the same is sufficiently dried, the sieve so used to be coarse or fine according as the sand or gravel is coarse or fine.

There is but a single claim, which is in these words:

The apparatus herein described for drying gravel or sand, consisting of the fire-chamber, flues, heating-pipes, and case, all constructed and arranged substantially as set forth.

The word "case" does not appear in the descriptive part of the specification, and is used in the claim only. What does the term comprehend? The defendants insist that it includes the sieve F F as an essential constituent; and as they do not use a sieve or any substitute therefor, it is contended that they do not infringe. Webster defines "case" to be "a covering, box, or sheath; that which incloses or contains." Now, turning to the specification, we discover that A A is a "box or frame" in which the wet sand or gravel is placed to be dried. What constitutes the bottom of this box? Is it the sieve? Certainly not, if the specification is to furnish the answer, for it distinctly asserts, not once only, but twice, that the bottom of the box or frame A A is composed of sets of pipes so constructed as to form a surface upon which the wet sand or gravel rests during the drying process. We have, therefore, the "case" complete in all its parts without the aid of the sieve F F. In fact, it is not an essential part of the machine, for without its co-operation the apparatus successfully performs its contemplated work. The truth seems to be that the sieve under certain conditions may be a serviceable addition to the machine, but is not an indispensable part; and as it is not mentioned in the claim and is not necessary either to constitute the "case" or to the successful working of the apparatus, it would seem to be a fair conclusion that it is not an element of the patented combination. This view but conforms to the spirit of the rule for the interpretation of patents authoritatively declared in *Klein* v. *Russell*, (19 Wall., 466,) where it is said:

The court should proceed in a liberal spirit, so as to sustain the patent and the construction claimed by the patentee himself, if this can be done consistently with the language he has employed.

Let a decree be entered in favor of the plaintiffs.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of May 13, 1884.

Patents	386	No. 298,333 to No. 298,718, inclusive.
Designs	8	No. 14,995 to No. 15,002, inclusive.
Trade-Marks	13	No. 11,175 to No. 11,187, inclusive.
Labels	3	No. 4,116 to No. 4,118, inclusive.
Reissues of patents	3	No. 10,478 to No. 10,480, inclusive.
Total issue	413	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	1	1
Austria-Hungary			Hayti		
Barbadoes			Holland		
Belgium			Mexico		
Bermuda			New Zealand		
British Guiana			Norway		
Canada	4		Roumania		
Chili			Scotland		
Colombia, U. S. of			Switzerland		
Cuba			West Indies		
Denmark			Total to citizens of foreign countries	17	2
Ecuador					
England	10	1			
France	2				

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	5		Nebraska	2	
Arizona Territory			Nevada	1	
Arkansas	2		New Hampshire	2	
California	7		New Jersey	17	2
Colorado	2		New Mexico Territ'y	1	
Connecticut	20		New York	77	2
Dakota Territory		1	North Carolina	1	
Delaware	1		Ohio	36	
District of Columbia	1		Oregon	1	
Florida	2		Pennsylvania	32	
Georgia	2		Rhode Island	11	
Idaho Territory	1		South Carolina	4	
Illinois	34	3	Tennessee	2	
Indiana	13		Texas	1	2
Indian Territory			Utah Territory		
Iowa	5		Vermont	1	
Kansas	4		Virginia	1	1
Kentucky	1		Washington Territ'y		
Louisiana	3		West Virginia	1	
Maine	5	1	Wisconsin	9	
Maryland	5	2	Wyoming Territory		
Massachusetts	36		United States Army		
Michigan	13		United States Navy		
Minnesota	5		Total to citizens of the United States	377	14
Mississippi	1				
Missouri	9				
Montana Territory					

DESIGNS.

14,995.—ORNAMENTATION OF CANDLES.—*Francis Baumer*, Syracuse, N. Y. Application filed March 31, 1884. Term of patent 7 years.

14,996.—KNIT SHIRT.—*Switz Condé*, Oswego, N. Y. Application filed December 11, 1883. Term of patent 7 years.

14,997.—WATCH-CASE.—*John C. Dueber*, Newport, Ky. Application filed February 25, 1884. Term of patent 7 years.

14,998.—HARNESS ORNAMENT.—*David C. Lockwood*, Newark, N. J., assignor to *The Rubber and Celluloid Harness Trimming Company*, same place. Application filed March 6, 1884. Term of patent 14 years.

14,999.—GIRL'S COSTUME.—*Catherine Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed March 27, 1884. Term of patent 3½ years.

15,000.—CURTAIN.—*John Sweeney*, New Haven, Conn., assignor of one-half to *James Graham*, same place. Application filed March 26, 1884. Term of patent 14 years.

15,001.—LADY'S WALKING-SKIRT.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed March 27, 1884. Term of patent 3½ years.

15,002.—PARLOR-STOVE.—*Walter P. Warren, Gurdon G. Wolfe*, and *Robert Scorer*, Troy, N. Y., assignors to *The Fuller & Warren Company*, same place. Application filed August 29, 1883. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

11,175.—HAND-MADE TIN CANS.—*Can Makers' Mutual Protective Association*, Baltimore, Md. Application filed February 23, 1884.

"The letters 'C. M. M. P. A.'"

11,176.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.

"The symbol of an anchor, the words and signs 'J. & J. CLARK & Co.,' and the design of a gold center encircled with a black band."

11,177.—SPOOL-COTTON.—*Clark Thread Company*, Newark, N. J. Application filed March 20, 1884.

"The words, letters, and signs 'J. & J. CLARK & Co.,' the representation of an anchor, and the words 'CABLE LAID.'"

11,178.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed March 1, 1884.

"The word 'MECHANIC.'"

11,179.—STIFFENING RIBS OR BONES FOR CORSETS.—*Freeman D. Marckwald*, New York, N. Y. Application filed March 12, 1884.

"The word 'WHALEBONEINE.'"

11,180.—HORSE-BLANKETS.—*Newichawanick Company*, South Berwick, Me. Application filed March 31, 1884.

"The word 'BURLEIGH's' and the portrait of John H. Burleigh."

11,181.—WIRE RODS, FLAT STEEL STRIPS, HOOP IRON AND STEEL, AND SIMILAR HALF PRODUCTS OF IRON AND STEEL.—*E. Boecking & Co.*, Mülheim-on-the-Rhine, Germany. Application filed March 7, 1884.

"The representation of crossed hammers in connection with the letters 'E. B. C.'"

11,182.—SMOKING AND CHEWING TOBACCO.—*P. H. Mayo & Bro.*, Richmond, Va. Application filed April 2, 1884.

"The word 'MAYO's'"

11,183.—EMBROIDERY-SILK.—*James Pearsall & Co.*, London, county of Middlesex, England. Application filed April 9, 1884.

"The letters and words 'FILO-FLOSS.'"

11,184.—PIPES, FITTINGS, AND PLUMBERS' SUPPLIES.—*Reuter & Mallory*, Baltimore, Md. Application filed April 1, 1884.

"The representation of a crescent."

11,185.—LAUNDRY-SOAPS.—*James S. Kirk & Co.*, Chicago, Ill. Application filed February 28, 1884.

"The word 'CERES.'"

11,186.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed March 1, 1884.

"The word 'REVENUE.'"

11,187.—CIGARS.—*Celestino Palacio & Co.*, New York, N. Y. Application filed November 21, 1883.

"The word 'TELEGRAFO.'"

LABELS.

4,116.—Title: "BEGGS' CHERRY COUGH SYRUP."—*F. M. Beggs*, Elk Point, Dak. Ter., and *C. E. DeWitt*, Sioux City, Iowa. Application filed April 21, 1884.

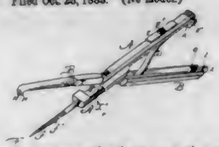
4,117.—Title: "SOUTHERN CATHARTIC PILLS."—*Southern Medicine Company*, Caldwell, Tex. Application filed April 22, 1884.

4,118.—Title: "SOUTHERN CHILL TONIC."—*Southern Medicine Company*, Caldwell, Tex. Application filed April 22, 1884.

PATENTS

GRANTED MAY 13, 1884

298,333. INSTRUMENT FOR SETTING BUTTONS. JAS. F. ATWOOD, Boston, Mass. Filed Oct. 25, 1883. (No model.)



Claim.—1. In a button-setting instrument, the combination, with the jaw A, provided with a device for engaging with a wire fastening, of the jaw B, provided with the inwardly-projecting prongs H, between which the wire is held, substantially as and for the purpose set forth.

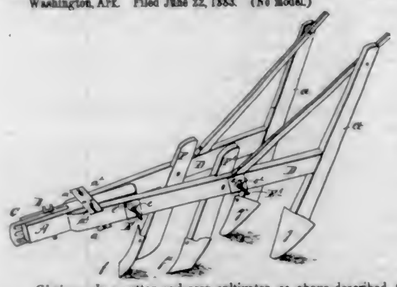
2. In a button-setting instrument, the combination of the jaw A, provided with the depression K, and the jaw B, provided with the former L, constructed and arranged substantially as and for the purpose described.

3. In a button-setting instrument, the combination, with the jaw A, provided with the depression K, of the jaw B, provided with the former L, having side grooves, *l*, all substantially as and for the purpose set forth.

4. In a button-setting instrument, the combination, with the jaw B, provided with the former L, of the jaw A, provided with the depression K and notches or grooves K', substantially as and for the purpose specified.

5. The herein-described button-setting instrument, consisting, essentially, of the jaws A and B, provided with a spreading and a locking device, the knife-edges, I I', needle F, and prongs H, all arranged and constructed substantially as and for the purpose set forth.

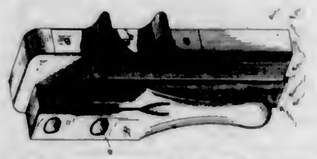
298,334. COTTON AND CORN CULTIVATOR. THOMAS H. BAIRD, Washington, Ark. Filed June 22, 1883. (No model.)



Claim.—In a cotton and corn cultivator, as above described, the combination of plates *a*—one being rigidly secured on the upper and the other on the lower edge of tongue A—with pins *a'* pivoting beams D at their front ends—one on either side of tongue A—with threaded rod E passing transversely through the front ends of said beams D and the rear end of tongue A, threaded rod E' passing transversely through the rear ends of said beams, and hand-nuts *e* working on said threaded rods and against either side of said tongue, and against chips *e²*, secured on the inner and outer sides of said beams D, all substantially as shown and described, and for the purposes set forth.

298,335. LIFTING-JACK. MARVIN R. BALDWIN, Sandy Creek, N. Y. Filed Mar. 7, 1884. (No model.)

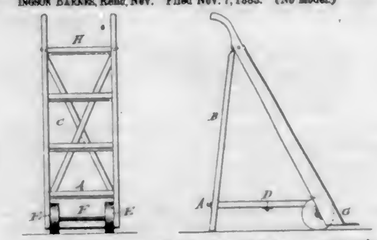
Claim.—1. In a lifting-jack, the combination, with the upright or standard A, beveled at its upper end, of a lever pivoted near the upper end thereof, and a beam, C, pivoted to the end of said lever, substantially as set forth.



2. In a lifting-jack, the combination, with an upright beveled at its upper end, of a lever pivoted near the upper end thereof, and a beam, C, recessed near its end to form an angular portion, said beam being connected to the end of the lever, substantially as set forth.

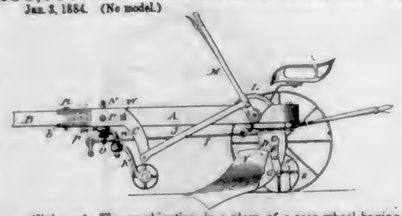
3. The combination, with a standard or upright beveled at its upper end, and a lever pivoted thereto, of a beam pivoted to the upper end of said lever, and a plate connecting said lever on the opposite side, and provided on its upper face with a metal plate having a seat for the reception of a vehicle-axle, substantially as set forth.

298,336. COMBINED TRUCK AND STEP-LADDER. AMOS HUTCHINSON BARNES, Reno, Nev. Filed Nov. 7, 1883. (No model.)



Claim.—An improvement in trucks, with the necessary attachment to form a step-ladder, with steps H between the main arms of the truck, with standards B B hung to the handles of the truck, and with the necessary braces C, with jointed bar D attached to the standards at one end and to the lower step at the other, thus forming a steady support for the step-ladder.

298,337. SULKY-PLOW. SAMUEL W. BARR, Mansfield, Ohio. Filed Jan. 2, 1884. (No model.)



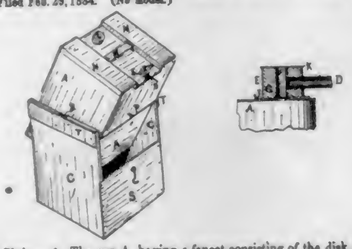
Claim.—1. The combination, in a plow, of a rear wheel having a hollow axle or journal, and a spindle or bolt passing through the axle and secured at one end to the landside, and at the other end to a vertical arm depending from the standard, said spindle serving as a journal

for the wheel, and a brace or spreader between the landside and standard, substantially as shown and described.

2. The combination, with the beam A and tongue B, of the curved bar C, forming one side of the vertical hinge between the beam and tongue, block Y, pivot-bolt W, and lever connection J M, substantially as shown and described.

3. The combination, with the tongue and plow-beam, of the block Y, socket Q, spring S, bolt R, and hinge-plates, substantially as described, and for the purpose set forth.

298,338. CAN AND CASE. JAMES M. BEAN, Watertown, MASS. Filed Feb. 29, 1884. (No model.)



Claim.—1. The can A, having a faucet consisting of the disk J, attached to the can, a cap, K, tube F, secured to the cap and to the disk, an outer cylindric case, E, having a spout, D, secured thereto, and a packing, G, substantially as described.

2. The can A, provided on its upper end with the bars N and on its opposite sides with the case-pieces P, secured to the bars N, and secured to the can by the metal strips R, substantially as described.

3. The combination of the can A, provided with the top bars, N and on its opposite sides with the case-pieces P, secured to the bars N, and secured to the can by metal strips R, with the case end pieces, C, provided with the cross-cleats T and short back and front portions, S, adapted to be connected together and disconnected, substantially in the manner described, as and for the purposes set forth.

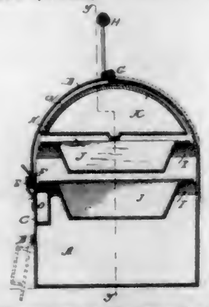
298,339. FRYING-UTENSIL. EDWIN BENDER, Philadelphia, Pa. Filed Apr. 28, 1883. (No model.)



Claim.—1. A frying-utensil consisting of dishing body formed of wire, a rigidly-connected handle continuous of the top ring of said body, and a removably-connected guard-rim at the upper end of the body, substantially as and for the purpose set forth.

2. The frying-pan body formed of wire-work, in combination with a rim, C, set in said body and removably connected therewith by the hooks D, which engage with the top thereof, substantially as and for the purpose set forth.

298,340. LUNCH-BOX. WILLIAM FREDERICK BERGHOFER, Slater, Mo. Filed Mar. 6, 1884. (No model.)



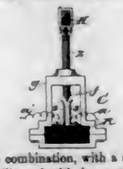
Claim.—1. The combination of the body of the box, having its upper part made semi-cylindrical, and formed with an opening in one side thereof, and a partly-cylindrical hood pivoted to the ends of said body and adapted to be swung forward to cover said opening, and having a bail attached to its rear edge, whereby the weight of the box, when suspended by the bail, will hold the hood in closed position, substantially as specified.

2. The combination of the body of the box, the swinging hood pivoted to the ends thereof, the hinged lid adapted to be engaged by the hood, and the spring-catch attached to said lid and adapted to engage a bead on the edge of the hood, substantially as shown and described.

3. The combination of the body of the box, the swinging hood pivoted to the ends thereof, the hinged lid adapted to be engaged by the hood, the spring-catch adapted to connect the said hood and lid together, and the bail attached to the hood, and means for supporting the bail rigidly, whereby it may serve as a handle for separating the hood from the lid, substantially as specified.

4. The combination of the body of the box, having its upper part made semi-cylindrical and provided with an opening in one side thereof, the partly-cylindrical hood pivoted to the ends of the said body, and the partly-cylindrical liquid-receptacle supported in said upper part of the box, substantially as shown and described.

298,341. ELECTRIC WORK-INDICATOR FOR MILLS. AARON D. BLODGETT, Boston, MASS. Filed Dec. 20, 1882. (No model.)



Claim.—1. The combination, with a series of looms or other machines at one or more mills, and with the starting and stopping mechanism thereof, of a series of electric circuits and circuit-closers therefor—one for each loom—the said circuit-closers being adapted to be operated by the movements made to start and stop the loom, and a recording apparatus located at a central point, and common to all of the looms and circuits, whereby the work of each loom may be automatically registered, substantially as described.

2. In a system of electrical recording, wherein the respective periods of action and inaction of any number of looms or other machines is automatically registered at any suitable central point, the combination, substantially as hereinbefore described, of a rotating metal drum carrying a graduated sheet of chemically-prepared paper, a series of direct line-wires—one for each loom—extending between the several looms and the central point, each wire terminating at the said central point in a metal reed, pen, stylus, or other suitable terminal resting on the prepared paper of the rotating drum, a common return-wire, or an electrical equivalent therefor, branching to all the looms, and also extending to the central point, there being connected with the metal substance of the rotating drum a voltaic battery in the circuit of the common return or ground wire, a series of circuit-closers—one for each loom—connected between the ends of the direct wires and the branches of the return-wires, and means, as indicated, whereby the starting and stopping of each loom is enabled also to close or open its corresponding circuit-closer, so that when the circuit-closer of any loom is closed the circuit of the direct wire belonging thereto shall be completed through the drum and the prepared paper, for the purposes specified.

3. The combination, substantially as hereinbefore described, of a series of looms and their shippers or controlling-levers, and a circuit-closer attached to each of the said shippers and operated by the movements thereof, with a recording apparatus at a distant point, whereon the operative condition of any loom at any given time is recorded, a series of direct wires extending one from each circuit-closer to the said recording apparatus, and a return-wire connected also with the recording apparatus, and extending therefrom through a battery and by means of branches to each and every circuit-closer, for the purposes specified.

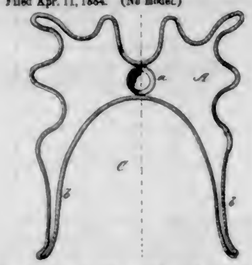
4. In a system for recording electrically the respective periods of operation and rest of a series of looms, a recording apparatus consisting of a metal drum or roller rotated by a suitable motor, a prepared registry-sheet attached thereto, clamping devices for attaching the said registry-sheet to the drum, a series of metal line-terminals resting on the prepared sheet, guides or holders for holding the said terminals in position, and a return-conductor connected with the axis and surface of the drum and leading to a voltaic battery and to a series of distant circuit-closers, whereby the circuit of the battery may be completed through any or all of the direct wires, and whereby each of the said direct wires is enabled, when its circuit is so completed, to trace a line on the prepared paper.

5. The combination, with a series of direct line-wires, a return-wire common to the series, and a voltaic battery in the circuit of the said common return-wire, of a rotating drum coated with a graduated suitably-prepared record-sheet, the said drum having its substance in metallic contact with the return-wire, and the graduated sheet thereon being in electrical connection with all of the direct wires, and a series of circuit-closers, whereby the circuit of any of the direct wires may be completed through the return-wire, substantially as and for the purposes specified.

6. The combination, substantially as hereinbefore described, of the shipper or starting lever of a loom or other manufacturing-machine, with the circuit-closer of an electric circuit extending by a direct line and by a branch and main stem of a common return-line to a distant recording apparatus, whereby the motion of stopping or starting the machine automatically and simultaneously also makes or breaks the said electric circuit, for the purposes specified.

7. The combination, in an electrical registering apparatus, of a rotating metal drum or roller, a chemically-prepared graduated record-sheet spread thereon, a series of direct wires having their metal terminals resting on the prepared paper and extending outwardly therefrom, each to one side of the circuit-closer, a return or ground wire connected with said drum and extending in branch circuits to the other side of each of the circuit-closers, and an electrical battery in the circuit of said return-wire, substantially as described.

298,342. BILLIARD AND POOL BRIDGE. GEORGE BORST, Rochester, N. Y. Filed Apr. 11, 1884. (No model.)

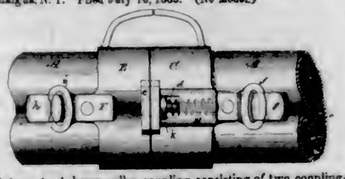


Claim.—1. A billiard or pool bridge having an arch or space under it of sufficient size to admit of the bridge being placed over a ball while resting on the table, substantially as and for the purpose set forth.

2. The combination, with a suitable handle, of a billiard or pool bridge constructed of wire and adapted to rest on the table when in use, substantially as and for the purpose specified.

3. A billiard or pool bridge having an arch, as described, and constructed of wire, substantially as and for the purpose set forth.

298,343. HORSE-COLLAR COUPLING. SYLVESTER J. BOWERS, Canandaigua, N. Y. Filed July 16, 1883. (No model.)



Claim.—1. A horse-collar coupling consisting of two coupling-sections adapted to be attached to the ends of the collar, one of said sections having a loop or keeper upon its exterior and the opposite section a housing containing a spring-bolt, said housing being formed separate and independent of the coupling-section and afterward connected thereto, substantially as and for the purpose set forth.

2. A horse-collar provided at its ends with coupling-sections and loosely-attached devices for connecting thereto the ends of a hame, substantially as and for the purpose specified.

3. In a horse-collar, the combination of two coupling-sections having loosely attached thereto devices for connecting the ends of the hame, one of said sections being provided with a loop or keeper upon its exterior, and the opposite section with a spring-bolt and housing, substantially as and for the purpose described.

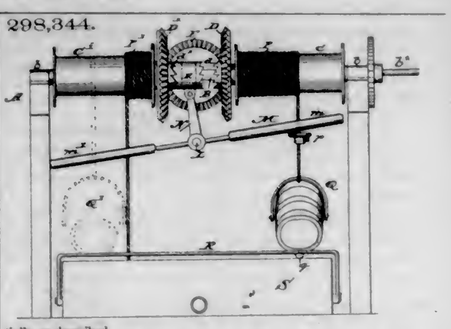
298,344. WATER-ELEVATOR. DEWITT S. BOTAKIN, St. Louis, Mo. Filed Sept. 6, 1883. (No model.)

Claim.—1. The combination of the shaft B, squared at *b'*, the clutch E and means for operating the same, the link G, the shaft I, and the sleeve H, substantially as described.

2. The combination of the shaft B, the clutch E and means for operating the same, the gears D D' F, the parts *d d'*, the link G, the sleeve H, and the shaft I, substantially as described.

3. The shaft I, the spring J, the bearing *i*, the collar K, the gears D D' F, and the shaft B, in combination with operative means, substantially as described.

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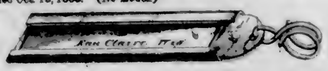


4. The shafts B I, the gears D D' F, the clutch E and means for operating the same, the parts *d d'*, the link G, the sleeve H, and the spring J, in combination substantially as described.

5. The combination of the shafts B I, the drums C C', the gears D D' F, the parts *d d'*, the clutch E and means for operating the same, the link G, the sleeve H, and the spring J, substantially as described.

6. The combination of the shafts B I, the drums C C', the gears D D' F, the clutch E, the link G, the sleeve H, the spring J, the lines P P', the projections *p*, the lever M, and the arm N, substantially as described.

298,345. MAIL-SACK TAG. SEWARD W. BRACKETT, Eau Claire, Wis. Filed Oct. 15, 1883. (No model.)



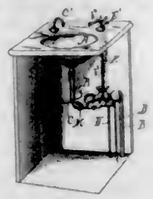
Claim.—In a mail-sack tag, a body provided with side flanges turned over, whereby side grooves are formed for the reception and retention of the card, the lower end of said body being provided with a suitable stop or bottom rest for the card, the upper end of said body having an opening, in combination with a hook having a loop, said loop being secured in said opening, and forming a top stop to prevent the displacement of the card, as specified.

298,346. BOOT OR SHOE. GEO. C. BUSH, Eureka, Mo. Filed Mar. 14, 1884. (No model.)



Claim.—The combination, substantially as described, of the inner sole, A, the welt A', the counter C, extended as described, the outer sole, D, the heel E, having the rabbet *e* and the plate F.

298,347. COMPOUND WATER-COCK AND SEWER-GAS CUT-OFF. WILLIAM CAHOON, Jr., Chicago, Ill., assignor to Walter M. Keenan, same place. Filed June 29, 1883. (No model.)



Claim.—1. The combination, with the waste-pipe and the hot and cold water pipes having suitable drop-valves or cocks for opening and closing the same, of a conical valve for opening and closing the waste-pipe, and a rod having a crank for operating said waste-pipe valve, and a cam for operating said cocks in the water-pipes, so that said waste-pipe may be closed, except when said water-pipe valves are opened, substantially as specified.

2. The combination, with the waste-pipe B, of the conical valve *b*, its valve-seat *b'*, handle b^2, rod b^3, crank-arm b^4, link b^5, cam *a*, secured to said rod b^3, water-pipe D, valve *d*, valve-seat *d'*, valve-stem d^2, and button d^3, whereby said valve is operated by the cam *a*, substantially as specified.

3. The combination, with the waste-pipe B, of the conical valve *b*, its valve-seat *b'*, handle b^2, rod b^3, crank-arm b^4, link b^5, cam *a*, secured to said rod b^3, hot-water pipe D, and cold-water pipe D', each provided with valve *d*, valve-seat *d'*, valve-stem d^2, and adjustable button d^3, whereby said valves *d* are operated by the cam *a*, substantially as specified.

4. The combination, with waste-pipe B, hot and cold water pipes D and D', united together at *c*, water-pipe C, conical valve *b*, for closing the waste-pipe, and drop-valve *d*, for closing the hot and cold water pipes, mechanism for simultaneously operating the valve of said waste-pipe, and either said hot or cold water pipe, and a device for independently lifting the valve of either the hot or cold water pipes, so that both the hot and cold water may be allowed to flow at the same time and mingle together in the pipe C, substantially as specified.

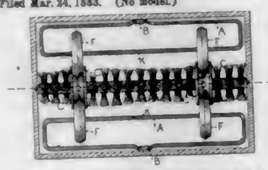
5. The combination of the rod b^3, for operating the valve of the waste-pipe, with cam *a*, secured thereto, for simultaneously operating the valve of the water-pipe, substantially as specified.

298,348. ELEMENT FOR STORAGE-BATTERIES. WILLARD R. CASE, Auburn, N. Y. Filed Nov. 13, 1883. (No specimens.)

Claim.—1. An element or electrode for a secondary or storage battery, composed of an amalgam, with mercury, of any lead alloy, containing a non-oxidizable metal, and having a lower fusing-point than lead alone, any substance capable of storing electrical potential in said battery, and any substance inert in said battery, and capable of occluding gases, substantially as described.

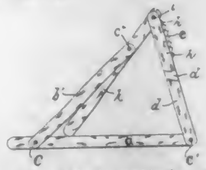
2. The process of forming electrodes for secondary or storage batteries, consisting in, first, making an alloy of lead and any other non-oxidizable metal or metals, said alloy having a lower fusing-point than lead; second, then adding mercury to form an amalgam which shall be pasty while hot; third, then adding any substance capable of storing electrical potential in a secondary battery; fourth, then adding any substance inert in said battery and capable of occluding gases; and, fifth, molding the electrode in suitable shape, substantially as described.

298,349. CARPET-SWEEPER. ERWIN B. CLARKE, Grand Rapids, Mich. Filed Mar. 24, 1883. (No model.)



Claim.—In a carpet-sweeper, the combination of the brush-roller provided with the pinions D D, and the rectangular spring-wires *a a*, loosely connected to the opposite sides of the sweeper-casing, and each wire provided with the wheels F F, the several parts being arranged relatively to each other, substantially in the manner as and for the purpose herein shown and described.

298,350. WAGON-JACK. GEO. B. CLARK, Bozrahville, Conn. Filed Mar. 24, 1884. (No model.)



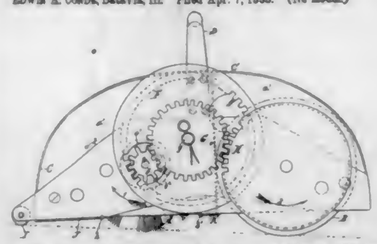
Claim.—In a wagon-jack, the combination, with base *a*, of strips *d d'*, jointed to one end of said base, and having pivot *i* and metallic steps, as described, and strips *b b'*, jointed to the other end of base *a*, having pivoted in their upper or free end a lever, whose short end is provided with a hook to engage pivot *i*, the several parts named being of such size and so connected that when said jack is elevated the fulcrum of lever *k* passes below a line drawn through *e i*, as and for the purpose specified.

298,351. HARNESS-BUCKLE. HENRY C. COLTON, Montpelier, Vt. Filed Feb. 21, 1884. (No model.)



Claim.—An improved harness-buckle having a raised guard upon the frame to protect the end of the buckle-tongue, all substantially as shown and described.

298,352. HORSE-CLEANING MACHINE. CORNELIUS S. CONDE and EDWIN A. CONDE, Batavia, Ill. Filed Apr. 7, 1883. (No model.)



Claim.—1. The horse cleaning, brushing, or combing machine comprising the closed portable arch-shaped frame having a bow-shaped handle, the partition, the dust-traps, and the knocker-rod, suitable driving-gearing, the combing, brushing, or cleaning cylinder, the traction-rollers, and the coupling devices between the gearing and the cylinder, substantially as and for the purpose described.

2. An animal brushing, combing, or cleaning machine comprising a closed portable frame having a partition and a handle, hinged dust-trap doors, a knocker-rod, suitable driving-gearing, a traction-roller, an adjusting-roller, and the coupling means between said gearing and cylinder, substantially as and for the purpose described.

3. The horse brushing, combing, or cleaning machine comprising the arch-shaped closed portable frame having a loop or bow shaped handle at the crown of its arch, the removable brushing, combing, or cleaning cylinder having its stiff tufts of bristles, whalebone, or other stiff substance arranged on spiral lines and alternately out of line with one another, the dust-trap doors hinged and provided with spring fastening-extensions, the knocker-rod, the driving-gearing, the traction and adjusting rollers, and the coupling means, whereby the said cylinder and gearing are coupled and uncoupled, substantially as and for the purpose described.

4. The combination of the frame C, provided with a handle, the brush-cylinder A, provided with a coupling-disk, the sliding short journal provided with a coupling-disk and pins, the pinion, the internally-toothed wheel, the two gears, and a traction-roller, substantially as and for the purpose described.

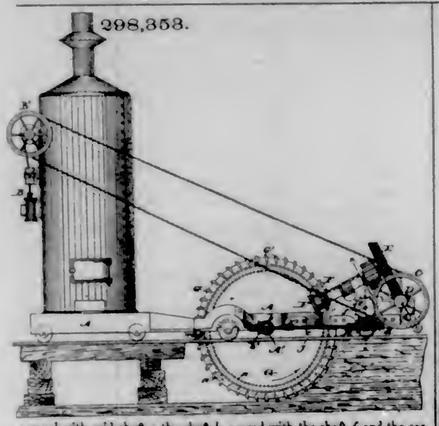
5. The combination of the short journal having gear *f*, coupling-disk and pins, gear F, spiral spring, the revolving brush having a perforated coupling-disk, a traction roller or wheel, and a frame provided with a handle, substantially as and for the purpose described.

6. The revolving combing-brush provided with a short journal, *b'*, at one end, and a perforated disk, *b*, at its other end, in combination with the short journal *c*, having a pinion, and provided with the spring b^4, and coupling-disk b^3, having pins b^3, and the arched frame with its gearing, substantially as and for the purpose described.

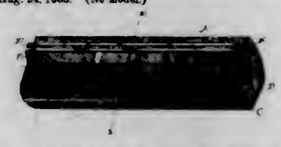
298,353. ROTARY QUARRIER AND STONE-SHAPER. JOHN CRUMP and RICHARD BRERETON, Philadelphia, Pa. Filed July 24, 1883. (No model.)

Claim.—A rotary quarrier and stone-shaper consisting of the carriage A, engine B, with driving-wheel B', band-wheel C, gear-wheel D on the band-wheel shaft C', two shafts, E' E'', geared together, the gear-wheel E on the shaft E' meshing with the gear-wheel D, studs F F' on the shafts E' E'', the rotary cutter G, with openings *a* for the studs F F', the cutter-shaft A', the shaft *c*, gearing with the cutter-shaft, the shaft *f*, geared with said shaft *c*, the shaft A, geared with the shaft *f*, and the carriage-wheels H on the shaft A, said engine being supported on the carriage, and the hand-wheel shaft C', the shafts E' E'', the cutter-shaft A', and the shafts *c f* A having their bearings on said carriage, the parts being constructed and operating substantially as and for the purpose set forth.

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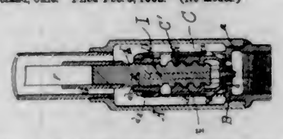
298,354. CARD HOLDER AND EXHIBITOR. SPENCER L. DAVIS, Minneapolis, Minn., assignor of one-half to Henry Tucker, same place. Filed Aug. 24, 1883. (No model.)



Claim.—1. A holder or exhibitor for cards, pictures, and analogous articles, having rounded or carved sides and a weighted bottom and an upwardly-extending slotted portion for receiving and holding said articles, substantially as set forth.

2. A card or picture holder and exhibitor slotted or grooved in its upper face, and having an upwardly-extending slotted portion to adapt it to receive and hold the articles to be exhibited, and having rounded sides and a weighted bottom, substantially as and for the purpose set forth.

298,355. HYDRANT AND STREET-WASHER. ALBERT G. DAYKIN, Cleveland, Ohio. Filed Feb. 8, 1882. (No model.)



Claim.—1. In a water-hydrant, and in combination, the valve-seat frame having one or more standards provided with a relief-port, connecting the space above the valve with the open air, a spindle having quick and slow right and left turn screws, adapted by the same operation to close the water-supply and open the relief-port, as set forth.

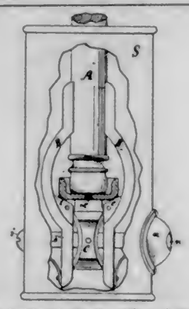
2. The frame B, having standards B', provided with relief-port I, combined with the valve C, stem F, and valve-frame D, as set forth.

3. The frame B, having standards B', provided with port I, combined with the stem F, valve C, having grooves c^2, and the valve-frame D, having arms *d*, as set forth.

4. The combination, with the spindle having threads of different pitch, of the valve-seat frame B, the valve C, having grooves c^2, and the valve-frame D, having arms *d*, substantially as and for the purpose set forth.

298,356. WHIP-SOCKET. WM. F. DOSE, New Haven, Conn. Filed Jan. 10, 1884. (No model.)

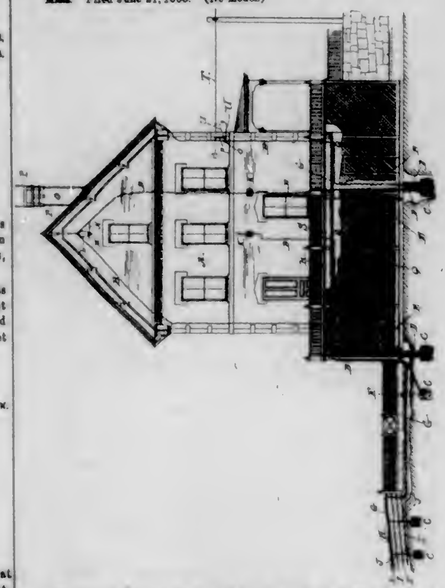
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Claim.—1. A locking device for whip-sockets, consisting of the pivotal clamping-levers B and B, provided with springs *d d*, and journaled to the receiving-base D, the levers B and B being adapted to be operated by the cam C upon the shaft E, with a suitable key upon the key-stem *f*, substantially as and for the purpose set forth.

2. In a whip-socket, the combination of the whip-socket S with the pivotal clamping-levers B and B, journaled to the receiving-base D, as shown and described, and provided with springs *d d*, together with the cam C and shaft E, having a key-stem, *f*, all being arranged to operate substantially as and for the purpose set forth.

298,357. LIGHTNING-CONDUCTOR. THOMAS H. DODGE, Worcester, Mass. Filed June 21, 1883. (No model.)



Claim.—1. The combination of the air-terminal of a lightning rod or conductor with the metallic wires of a barbed fence.

2. The combination, with the wire or wires of a barbed-wire fence, of a lightning-conductor and a series of earth-connections.

3. The combination, with the earth-connections, of a mass or package of barbed wires, C, substantially as and for the purposes set forth.

298,358. PROCESS OF PRODUCING ORNAMENTS FROM METALS, &c. WILLIAM C. EDGE, Newark, N. J. Filed Oct. 1, 1883. (No model.)

Claim.—The process described of making open-work ornaments, which process consists in first uniting the sheet or sheets from which the ornament is to be made to a foundation plate or sheet, *a*, in then em-

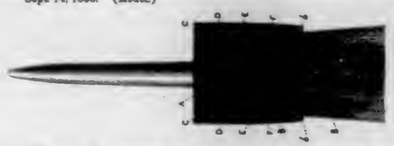


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bossing the whole, then filing down to the foundation sheet or plate, and finally obliterating the foundation sheet or plate, as specified.

298,359. PAINT-BRUSH. JAMES ELLIOTT, Philadelphia, Pa. Filed Sept. 14, 1883. (Model.)



Claim.—The combination, with a square or oblong brush, or the guards E, applied on opposite sides thereof, and projecting, as described, beyond the permanent fastening of the bristles, and the removable bridle applied around and supported by said guards, substantially as specified.

298,360. COMBINED SEAM-STRENGTHENER, GUSSET, AND FLY. JOHN F. EBENSINGER, Toledo, Ohio. Filed Jan. 3, 1884. (No model.)

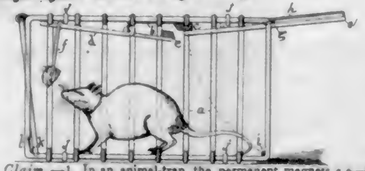


Claim.—1. A combined gusset, seam-strengthener, and button-hole fly for pantaloons, substantially as specified.

2. The combination, with the pantaloons, of the gusset *a*, having extensions *b b*, for strengthening the inner seams of the legs, the rearward extension, D, for strengthening the back-seam, and the forward extension, E, for strengthening the front seam, and forming the button or button-hole fly, substantially as specified.

298,361. ANIMAL-TRAP. PETER R. ERLING, Chicago, Ill. Filed June 4, 1883. (No model.)

Brief.—A magnet attached to the top of the cage holds the door open until a second magnet, carried by the bait-hook lever, is brought in contact with the upper magnet by the animal pulling at the bait, when the door is released, owing to the superior attraction of one magnet for the other over the unmagnetized metallic door. The parts of the cage are hinged together to enable closing or folding.



Claim.—1. In an animal-trap, the permanent magnets *c e*—one operated by a lever attached to the baiting-hook, and the other attached to the deck of the trap—in combination with a door, *o*, operated by gravity, substantially as specified.

2. In an animal-trap, the combination of the four sides and end *r* with hinges *j* and pins *k*, substantially as specified.

3. In an animal-trap, the combination of the four sides, end *r*, and hinges *j* with a door provided with loops *h*, lever *d*, and magnets *c e*, substantially as specified.

4. In an animal-trap, a door closed by gravity, of which the lower edge is magnetic, in combination with magnets *c s* and lever *d*, substantially as specified.

5. In an animal-trap, the combination of the four sides and end *r*, provided with pins *k*, all united by hinges *j*, and attached to one of said sides, a magnet, *c*, and the door, hung in loops *h*, magnet *e*, and lever *d*, substantially as specified.

298,362. MACHINE FOR MANUFACTURING BOTTLE-WIRES. MARTIN V. B. ETHERIDGE, Lynn, Mass., assignor, by mesne assignments, to John E. Wheeler, Trustee, same place. Filed Aug. 17, 1882. Renewed Nov. 6, 1883. (No model.)

Brief.—Spring-jaws attached to a sliding-bar reciprocate across the front of the machine, and draw the wire so that its middle portion will come in front of the holding and twisting jaws. These twisting-jaws move forward between the clamping-jaws, grasp the wire, and draw it back between the clamping-jaws, which then close on the wires. The twisting-jaws are then rotated, thus forming an eye at the middle of the wire. The sliding bar which carries the spring-jaws has a projection at the end opposite the jaws, which strikes a lever carrying a cutter, thus severing the wire. A stationary projection from the frame strikes a lever, which forces open the spring-jaws at the end of the stroke of the sliding jaw.

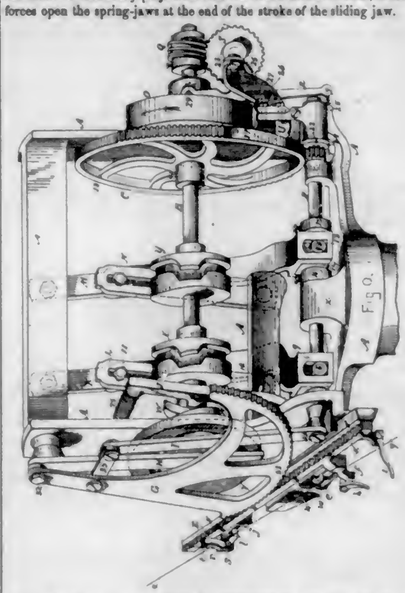


Fig 0.

Claim.—1. In a machine for manufacturing bottle-wires, the improved feeding device described, consisting of the spring jaws or nippers *d e*, cam *g*, and lever *h*, in combination with the slide F, and stop *i*, and operative mechanism, substantially as specified.

2. In a machine for manufacturing bottle-wires, the improved twisting device described, consisting of the shaft D, twister-jaws *a b*, former *c*, sleeve 5, levers K L, cam X, levers M N, cam Y, sleeve 14, gear C, pinion T, and latch U, in combination with the clamping-levers J J, having jaws *w w* and operative mechanism, substantially as set forth.

3. In a machine for manufacturing bottle-wires, the improved registering mechanism described, consisting of the gears Q S, pin 41, lever R, latch 23, and spring 28, in combination with the pulley O, clutch P, and operative mechanism, substantially as set forth.

4. The combination of a feeding device consisting of the spring-jaws *d e*, double cam *g*, lever *h*, and stop *i*, a cutting device consisting of lever *l*, bifurcated or slotted at one end, contractile spring *n*, stop *p*, blade *r*, cam *t*, and slide F, a clamping device consisting of nipper-levers J J, provided with spring 75, a twisting device consisting of sliding shaft D, carrying pivoted twister-jaws *a b*, and former *c*, and suitable actuating mechanism, substantially as described.

298,363. SHOE. THOMAS R. EVANS, Philadelphia, Pa. Filed Mar. 4, 1884. (No model.)

Claim.—1. A shoe having a sole formed of an outer sole of rubber, an inner sole of cork, and a covering for the inner sole of fabric, substantially as and for the purpose set forth.

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2. A shoe having a vamp, side flaps loose or disconnected therefrom at their front ends, and a sole formed of a rubber outer sole, a cork inner sole, and a covering for the inner sole, the parts of the compound sole and upper being secured together, substantially as and for the purpose set forth.

3. A shoe having a vamp and a water-proof sole, said vamp having openings at or about the toe portion, substantially as and for the purpose set forth.

4. A shoe having a sole formed of an outer sole of rubber, an inner sole of cork, and a covering for the inner sole, and a heel formed of a block of cork and a tread of rubber, both secured to the upper, and all parts constructed and operating substantially as and for the purpose set forth.

298,364. CASE FOR PENCILS. LE ROY W. FAIRCHILD, New York, N. Y. Filed Feb. 28, 1884. (No model.)



Claim.—1. In an extension-case provided with a magic movement, the combination of the magic movement, the propelling-spring D, the spring-catch *c*, and collar *d*, said parts being constructed and arranged to operate substantially as shown and described.

2. In combination with the tube C, provided with the collar *d*, the sliding tube A, provided with the spring-catch *c*, spring D, and the sliding head E, all arranged to operate substantially as and for the purpose set forth.

3. In an extension-case, the combination of the spring-hook *c*, the collar *d*, or an equivalent shoulder for the hook to engage with, and a releasing device arranged to come in contact with the hook *c* and release it from its hold upon the locking-shoulder, substantially as herein set forth.

298,365. METALLIC ALLOY FOR SAFES. JOHN FARREL, New York, N. Y. Filed Nov. 2, 1883. (Specimens.)

Claim.—1. The new composite metal or alloy of tin-plate scrap, iron, and franklinite iron or its equivalent, substantially as described.

2. The method of forming a composite metal of tin-plate, scrap iron, and franklinite iron or its equivalent, substantially as described, consisting in melting the ordinary tin-scrap to form an alloy, and fusing this alloy at the same time or subsequently with the franklinite.

298,366. RENDERING GOODS AND FABRICS WATER-PROOF. ROBERT S. FORBES, New York, assignor to Water Repellant Finishing Company, New York, N. Y. Filed Aug. 29, 1883. (No specimens.)

Claim.—1. The process of making goods and fabrics water-proof, consisting in soaking them in a waterproofing solution, drying, and then steaming them, substantially as herein described, whereby the waterproofing solution is fixed on the fibers and the odor is removed, as set forth.

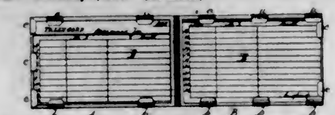
2. The herein-described improvement in making goods and fabrics water-proof, consisting in subjecting the goods treated with a waterproofing compound or solution to the action of dry steam, substantially as herein shown and described.

3. The herein-described solution for making goods and fabrics water-proof, consisting of a vegetable or mineral wax or paraffine, or a mixture of the same, dissolved in a light hydrocarbon, then subjected to the action of sulphuric acid, and then washed, substantially as herein described.

4. The herein-described solution for making goods and fabrics water-proof, consisting of a vegetable or mineral wax or paraffine, or a mixture of the same, dissolved in a light hydrocarbon, then subjected to the action of sulphuric acid mixed with it, and then washed and neutralized by means of an alkaline solution, substantially as herein described.

5. As an improved article of manufacture, a fabric made waterproof, and subjected to the action of steam when the coating has dried, substantially as herein described.

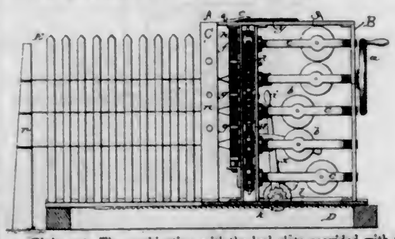
298,367. TALLY-CARD HOLDER. ROBERT L. FRENCH, Wellington, Ohio. Filed July 9, 1883. (No model.)



Claim.—1. A tally-card holder consisting of sections A and B, connected to each other by a hinge-joint, that they may be opened and closed one upon the other, the edges of which sections being provided with lips or hooks turned inward over the face thereof, under which lips tally-cards or tablets are inserted and retained in place while being used, in combination with an elastic band or strap for securing the card-holder to the arm, substantially as set forth.

2. The card-holder arranged in two sections, jointed together that they may fold up, and provided with lips *a*, *b*, and *c*, lapping on each section, respectively, in combination with the tablet, substantially as and for the purpose set forth.

298,368. UPRIGHT WIRE-FENCE-MAKING MACHINE. JOHN MANN FULTZ, Quincy, Ill. Filed Nov. 16, 1883. (Model.)

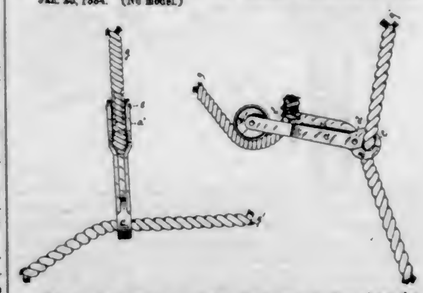


Claim.—1. The combination, with the bed-plate provided with the toothed rack, of the frame provided with the revolving twisters carrying the bobbins, the sprocket-wheels, plain wheels, and endless chain, and the vertical shaft having arms, and the operating lever and spring, substantially as specified.

2. The combination, with the frame having the perforated board *n*, and the mechanism for twisting the wires and moving the frame, of the board *r*, provided with pins to fit the perforations in the board *n*, substantially as specified.

3. The combination, with the bed-frame provided with the toothed rack, of the movable frame carrying the twister mechanism, and provided with the shaft carrying the pinion *k*, ratchet-wheel *j*, lever *i*, and spring-pawl *m x*, substantially as specified.

298,369. LINE-STOPPER. JOHN FURGUSON, Phillipsburg, Pa. Filed Jan. 25, 1884. (No model.)

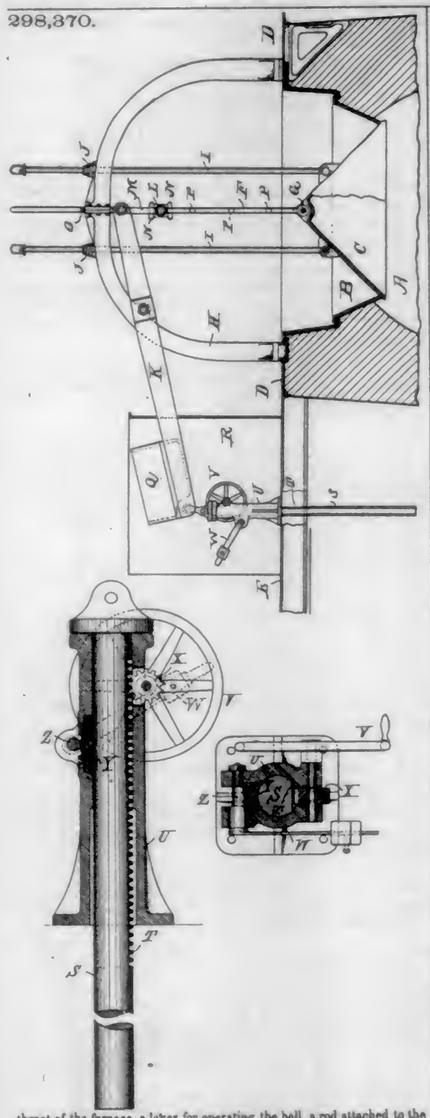


Claim.—A line-stopper consisting of the arms *a b*, pivoted together, having jaws *c c*, the gripping face of each jaw being concave in form, having a sheathing of a non-metallic substance, and forming a cavity at right angles with the longitudinal line of the stopper, the wheel *e*, and the line *g*, substantially as and for the purpose specified.

298,370. BELL AND HOPPER MECHANISM FOR BLAST-FURNACES. FRED. W. GORDON, Pittsburg, Pa. Filed Oct. 22, 1883. (No model.)

Claim.—1. In a blast-furnace, a bell, a hopper, an arch over the

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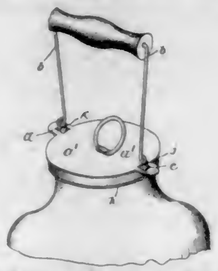
throat of the furnace, a lever for operating the bell, a rod attached to the bell and reaching upward through an eye in the arch, a mortise and pin or equivalent arrangement at the rod above the arch, for supporting the bell independent of the lever mechanism, and a connection between the lever and the rod fitted to take hold of the rod at different points in its length, combined substantially as set forth, for the purpose of enabling the bell-lifting mechanism to be used in removing the hopper.

2. In a blast-furnace, a bell and hopper, an arch over the throat of the furnace, a lever to operate the bell, a rod connecting the lever with the bell, and one or more rods independent of said connecting-rod provided with enlargements at their upper ends attached to the bell and engaging through eyes in the arch, combined substantially as set forth, for the purpose of supporting the bell in its open position when the connection between the bell and lever is broken.

3. In a blast furnace, the combination of a bell and hopper, a lever for operating the bell, a vertically-arranged rack hung to the tail of the lever, a crank-wheel and pinion engaging said rack, friction-pad engaging said rack, an eccentric engaging the friction-pad, and a weighted lever to said eccentric, substantially as and for the purpose set forth.

4. In a blast-furnace, the combination of a feed-hopper, bell, and operating-lever with the cylindrical weight S, having teeth T, the crab-stand U, fitting the cylindrical weight, the crank and pinion V X, the friction-pad Y, the weighted lock-lever W, and the eccentric Z, substantially as and for the purpose set forth.

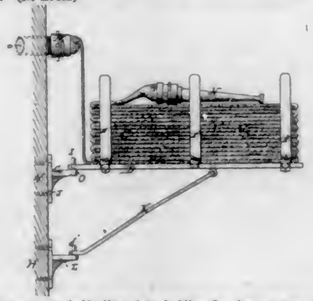
298,371. JUG. JAY R. GRAVER, Lincoln, Nebr. Filed Sept. 12, 1883. (Model.)



Claim.—1. A cork secured with metal coverings closely fitting the mouth of the jug or jar, and secured to the jug by a bail and ears fastening through slots in the cover, as and for the purposes set forth.

2. A bail fastened to a wire with ears attached, the wire passing around the neck of the jug or jar, and the ears extending up through the slots in the cover, as and for the purposes set forth.

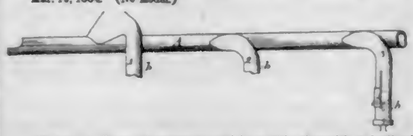
298,372. ADJUSTABLE SHELF FOR HOLDING FIRE-HOSE. JOHN C. M. GUIBERT and WILLIAM M. ANDRUS, New York, N. Y. Filed Mar. 29, 1884. (No model.)



Claim.—1. A shelf adjusted for holding fire-hose at any elevation desired, substantially as described, and for the purpose specified.

2. A shelf adjusted for holding fire-hose at any elevation desired, in combination with brace, brackets, and uprights, substantially as described, and for the purpose specified.

298,373. CASH-CARRIER. OSBORN B. HALL, Malden, Mass. Filed Mar. 19, 1884. (No model.)



Claim.—1. In a cash-conveyer, and in combination with an inclined tubular forwarding-conduit, A, a series of depending sections, *b*, obliquely connected, and communicating with said main conduit, and respectively provided with an elevating device, whereby the cash-ball when placed in such sections may be impelled through the same and into the main conduit, substantially as specified.

2. In a cash-conveyer, a return conduit or way provided with a series of deliveries and corresponding switches for respectively opening and closing the same, with mechanism connecting therewith and communicating with the cashier's desk or central station, whereby the cashier or attendant at such station may at will open any desired one of said deliveries for the escape of the ball thereat, substantially as specified.

3. In a cash-conveyer, and in combination with a series of deliveries and corresponding switches, with opening devices communicating with the central station, a switch-board or indicator numbered or marked coincidently with the switches, and arranged in connection with said opening devices, to respectively indicate whether said switches are open or closed, substantially as specified.

4. In a cash-conveyer, the combination, with a return-conduit having a series of numbered or severally-marked deliveries, with switches thereto, and devices for operating the same, communicating with the central station, with a switch-board numbered or marked to correspond with said conduits, of a series of cash-balls respectively numbered or marked to correspond with said deliveries and switch-board, whereby the cashier or central operator can by the mark or number on each ball determine which of said switches should be opened to deliver said ball at the counter from whence it was forwarded, substantially as specified.

5. In a cash-conveyer, the combination, with the return conduit or way with a series of deliveries arranged therein, of a rock-shaft or pivot, *c*, having an arm, *f*, secured thereon, with means for actuating the same at the central station, and an arm or section, *d*, secured on said pivot and arranged to arrest the returning ball when raised and to close the delivery when lowered, and also an arm or section, *e*, secured on said pivot and arranged to serve as an operative lever, whereby the ball when arrested by arm *d* will shut the same down by the act of entering the delivery from the main line, substantially as specified.

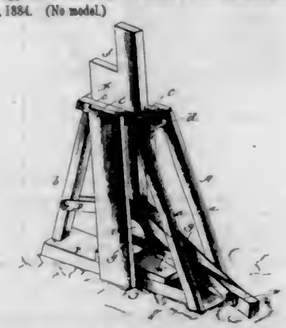
6. A metallic cash-ball overlaid with rubber vulcanized *in situ*, to render said ball noiseless, substantially as specified.

7. A spherical cash-ball having a central disk-like cash-cavity therein, substantially as specified.

8. A cash-ball spherical upon its exterior, with a cash-cavity therein, and having diametrically and equally loaded poles adapted to augment its momentum, substantially as specified.

9. A spherical cash-ball formed with a central disk-like cash-cavity therein, and a pivoted corresponding section adapted to give access to and close said cavity, and provided with means to secure the same in position when closed, substantially as specified.

298,374. LIFTING-JACK. WILLARD L. HALL, Fremont, Nebr. Filed Mar. 22, 1884. (No model.)



Claim.—1. In a lifting-jack, the combination, with a vertical upright, of a lever connected thereto, and a roller journaled between said upright and lever, substantially as set forth.

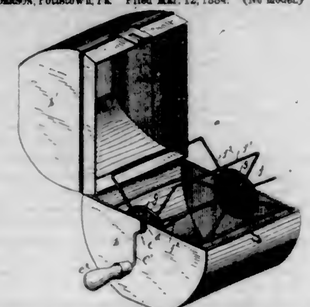
2. In a lifting-jack, the combination, with a vertical upright, of a lever connected thereto, a roller journaled between said upright and lever, and plates secured to the lower end of said upright, and to the beam *b*, substantially as set forth.

3. In a lifting-jack, the combination, with a vertical upright, of a lever pivoted thereto by means of metal plates, a roller journaled between plates secured rigidly to the said lever and plates pivoted to the vertical upright, and plates pivoted to the lower end of the vertical upright at one end, and to the upright *b* at their other ends, substantially as set forth.

4. In a lifting-jack, the combination, with the vertical upright, of a lever pivoted thereto, a roller journaled between said upright and lever, and an inclined strip upon which the said roller is adapted to move, substantially as set forth.

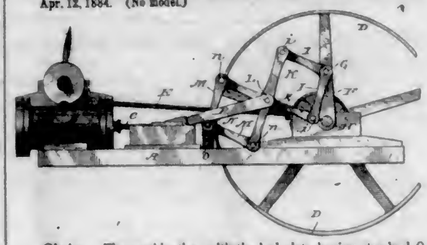
5. In a lifting-jack, the combination, with a supporting-frame having guides at its upper end, of a vertically-moving upright mounted between said guides, a lever pivoted thereto, a roller journaled in a bracket consisting of plates pivoted to the lower end of said upright and plates rigidly secured to the lever, plates secured to the upright *b* at one end and pivoted to the lower end of the vertical upright at the other end, and an inclined strip or block secured upon the upper side of the base-strip, substantially as set forth.

298,375. COMBINED EGG BEATER AND DISH. WILLIAM BOWEN REMMERSON, Pottstown, Pa. Filed Mar. 12, 1884. (No model.)



Claim.—The sectional dish having the sections hinged together, and provided with end notches and suitable fastenings, and the removable galvanized-wire beater, adapted to be rotated within the sectional dish, substantially as specified.

298,376. MECHANICAL MOVEMENT. GEORGE S. HENSLEY, Middletown, assignor of one-half to Zachariah Thompson, Clinton, Ark. Filed Apr. 12, 1884. (No model.)



Claim.—The combination, with the bed-plate having standard O and shaft H, provided with crank F, of the connecting-rod P, levers K K, and pitmen I I and M M, arranged substantially as shown and described.

298,377. MAGAZINE-GUN. LEWIS L. HEPBURN, Ilion, N. Y. Filed Dec. 3, 1883. (No model.)



Claim.—1. The combination, in a magazine-gun, of the reciprocating breech-bolt B B', the pivoted cartridge-carrier E, and locking-brace C, with the operating-lever L, provided with an extension, L', which is offset or made to project laterally within the frame, so as to work by the side of the carrier, locking-brace, and breech-closer or plug B', substantially as described.

2. The pivoted carrier E, provided with a lip, I, and pawl G, in combination with the lever L, provided with the spring-detent *m*, and the stud or projection *o*, said parts being constructed and arranged in relation to each other substantially as described, whereby the carrier is both depressed and then elevated during the forward motion of the lever to open the breech.

3. In combination with the reciprocating breech-bolt provided with the shoulder *u*, and carrier E, provided with a shoulder, *t'*, the pivoted locking-brace C, provided with the shoulders *i* and *k*, said parts being arranged relatively substantially as shown and described, whereby the brace is caused to lock both the breech-bolt and the carrier in position,

as set forth.

4. In combination with the pivoted carrier E and locking-brace C, both journaled on the same pivot or bolt, the operating-lever L, provided with a shoulder or projection, *e*, arranged to bear against or under a projection, *l*, on the locking-brace when the breech is closed, whereby said lever is made to lock or hold the locking-brace and carrier in position, as shown and described.

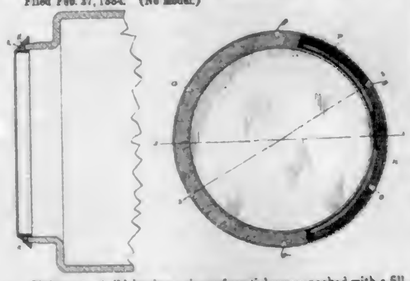
5. The combination of the reciprocating breech-bolt, the pivoted carrier E, having the curved recesses *l* formed in its upper face near the rear, and the operating-lever L L', said parts being constructed and arranged to operate in relation to each other substantially as described, whereby the carrier is made to rise and strike the withdrawn cartridge-shell some time before the breech-bolt has completed its backward movement, and thus eject the empty shell with ease and certainty.

6. The combination of the reciprocating breech-bolt provided with the recess A, the pivoted carrier E, and the operating-lever L L', said parts being constructed and arranged substantially as described, whereby the lever is permitted to move far enough to throw down the locking-brace and carrier before it commences to operate on the breech-bolt, as set forth.

7. The combination, in a breech-loading or magazine gun, of a reciprocating breech-bolt, a pivoted or swinging brace arranged to lock the breech-bolt closed, and an operating-lever, L, provided with an extended arm, L', which is offset or made to project laterally and work alongside of the locking-brace within the frame, substantially as shown and described.

8. The means for securing the front end of the magazine-tube to the barrel, consisting of the ring C', provided with a projection adapted to fit in a corresponding recess in the side of the barrel, and the screw *d'*, the same being arranged substantially as shown and described.

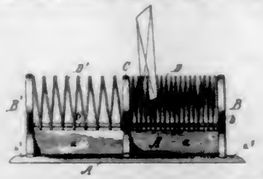
298,378. HERMETIC JAR. THOMAS HEFFLER, Middletown, Ohio. Filed Feb. 27, 1884. (No model.)



Claim.—1. A lid having a circumferential recess packed with a filling of fusible sealing material adhering thereto, and having embedded in said packing a string serving to bind the same together, for the purposes described.

2. A lid having a circumferential recess on its under side, packed with a filling of fusible sealing material adhering thereto, and further secured therein by a string embedded in said material, in combination with prongs extending beneath the same, substantially as described.

298,379. COMBINED PAPER-WEIGHT AND PEN-RACK. ISAAC W. HEYDRICK, Philadelphia, Pa. Filed Feb. 23, 1884. (No model.)



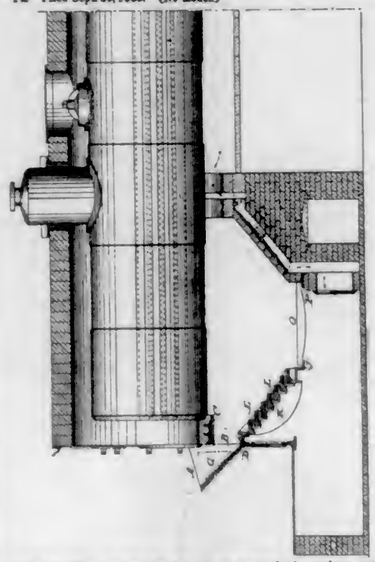
Claim.—1. In combination with a metal base, A, the narrow elevated longitudinal rib *a a'*, having one or more coiled springs, D D', supported along the top of the said rib *a a'*, and overhanging the sides of the same, substantially as and for the purpose set forth.

2. The combination of the cast-metal base A, supporting-rib *a a'*, one or more coiled-wire racks, D D', end supporting-caps, B B', and one or more flat longitudinal guide-rods, *b b'*, lying within the said coiled rack or racks, substantially as herein shown and described.

3. The end supports, B B', having the hooked fingers b^2 b^2, adapted to engage in the sockets a^2 a^2 of the base A, and the coil-guiding rods *b b'*, firmly attached to the said supports B B', in combination with the head or support C, having the socket *c*, adapted to receive the free ends of the said guiding-rods *b b'*, when brought into place by the rivet *c'*, or its equivalent, together with the base A and one or more coiled-wire racks, D D', the whole constructed substantially as and for the purposes set forth.

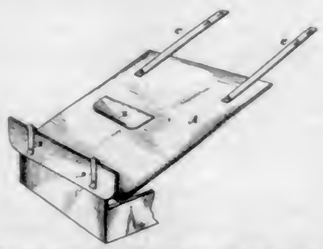
4. A pen-rack adapted to stand upon a desk, consisting of a base, A, and a series of elastic loops or coils, D, elevated above the level of the same by means of a raised rib or its equivalent, *a'*, so that the said elastic loops shall overhang the sides of the said rib and be adapted to grasp and securely hold out of contact with the base or rib a pen-holder, when inserted in said loop or coil, with its projecting point directed downward as well as horizontally, substantially as and for the purposes described.

298,380. BOILER-SETTING. WILLIAM T. HILDRUP, Jr., Harrisburg, Pa. Filed Sept. 26, 1883. (No model.)



Claim.—The heating-flue box Q, constructed of cast-iron, open at the bottom, and provided with the foot R, and flanges *b*, for securing the box in place in the fire-bridge, and strengthened by the longitudinal and transverse ribs *a*, inclined from the center outwardly, said flue-box being arranged within the fire-bridge, substantially as hereinbefore set forth.

298,381. CARRIAGE-APRON. AARON C. HOLDEN, Pittston, Pa. Filed Feb. 4, 1884. (No model.)



Claim.—1. The combination, with U spring-clasps, of an apron the lower end of which is folded and secured to the clamps in the manner shown, whereby the lower edge of the apron will overlap the dash-board, substantially as set forth.

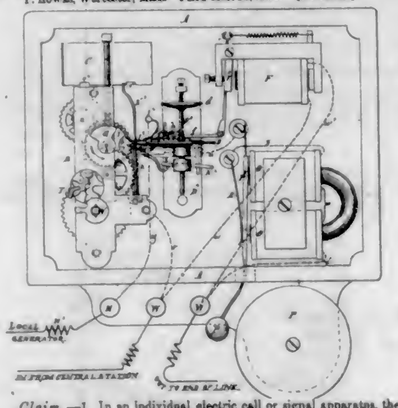
2. The combination, with spring-clasps, of an apron the lower portion of which is folded and inserted in the clasps and secured thereto, whereby the lower edge of the apron will overlap the dash-board, substantially as set forth.

298,382. FOUNTAIN-PEN. GEO. C. HOLT, Hartford, Conn., assignor of one-third to Samuel L. Holt, Mittineague, Mass. Filed June 6, 1883. (No model.)



Claim.—In combination with a writing-pen, an ink-reservoir plate having its upper end rigidly secured to the under side of the pen above the flexible part thereof, and having a stem or step, *b*, fitted to the concave of the pen, and formed lengthwise from the foot of said stem or step to fit the profile of the pen, and in cross-section extended flush with the outer edges of the pen, substantially as and for the purpose set forth.

298,383. INDIVIDUAL ELECTRIC CALL APPARATUS. ALBERT P. HOWES, Worcester, Mass. Filed Mar. 22, 1883. (No model.)



Claim.—1. In an individual electric call or signal apparatus, the combination of an oscillating or rotating electrode actuated by electric impulses indicating the signal-number, and a revolving electrode mechanically operated for closing the signal-operating circuit, said electrodes moving in planes or arcs that cross or transversely intersect with each other, whereby contact of the electrodes is effected at a single position, and means for electrically starting said revolving electrode, as hereinbefore set forth.

2. In an electrical individual call apparatus, the combination of an adjustable electrode electro-magnetically controlled for changing position in accordance with electrical impulses sent over the line, a mechanically-operated electrode adapted to move transversely to or across the arc of motion of said adjustable electrode, and at one position to make contact therewith for closing the circuit of an electrical signaling device, and means for electrically starting the mechanism into action and for mechanically stopping the apparatus when the parts and electrodes are at a normal position, as set forth.

3. In an electric call apparatus, the combination, substantially as hereinbefore described, of a ratchet-wheel carrying an adjustable electrode-arm operated by electrical impulses through the aid of an electro-magnet, swinging armature, and pawl, as set forth, and a mechanical train carrying a revolving electrode adapted to swing into contact with said electrode-arm for closing the signal-actuating circuit, and means for starting the mechanical train with the action of the ratchet-wheel mechanism, and for releasing the ratchet and stopping the apparatus by action of the mechanical train, as set forth.

4. The electro-magnet F, the swinging armature F', carrying the pawl *f*, the ratchet-wheel D, and the spring *d*, for moving the arm or electrode E by and in accordance with electrical impulses through said magnet, in the manner set forth, in combination with the segmental electrode G, mounted upon a shaft, *b*, in transverse position thereto, the mechanism for starting, stopping, and revolving said shaft, signaling devices, and electrical conductors arranged in connection therewith, substantially as described.

5. The guard-wheel J, lever K K' K^2, and arm L, in combination with the mechanical train and ratchet-wheel spindle, substantially as and for the purpose set forth.

6. The cam M, arm *n*, rocker N, and cast-off lever N', in combination with the mechanical train, ratchet-wheel D, arm A, and pawl *f*, for the purposes of releasing said ratchet devices, substantially as set forth.

7. In an electrical call apparatus, the combination with actuating mechanism, of a rotating recessed disk-electrode in circuit with the main line, mounted to revolve into contact with a spring or electrode having a conductor leading to the local generator or battery, for the purpose of short-circuiting said local generator, substantially as set forth.

8. The disk I, having recess *i*, mounted to revolve with the mechanical train and electrically connected with the main line, in combination with the spring-electrode I', supported at stationary position and joined by a conductor with the local generator, substantially as and for the purpose set forth.

9. The combination, with the mechanical train and an electrical call or signal apparatus, of an inclosing-case having a guard or door located in front of the winding-arbor of said train, a latch device for retaining said door closed, and a latch-tripping device controlled by said mechanical train, for automatically releasing said latch, substantially as and for the purpose set forth.

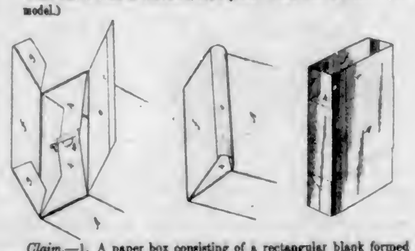
10. In an electric call apparatus, the combination, with the mechanical train and its inclosing-case, of the guard or door for protecting the winding-arbor, provided with automatic latch or fastening devices located at the interior and inaccessible from the exterior of the case, and the latch-tripping mechanism controlled by the mechanical train, and operating in connection with said door and its fastenings, in the manner set forth, whereby said door is retained closed until the time for winding the train, and its closure then resisted until the train is again wound up.

11. The combination, with the key-arbor V and annunciator or doors S, of the winding-stop V', provided with the tripping-arm T, the latch-spring *t'* and catch *t*, and the pressure-spring S', substantially as and for the purposes shown and described.

12. In an individual call-signal apparatus, the combination, substantially as described, of the rotating electrode-arm E, adjustable on the ratchet-wheel D, the electro-magnet F in the main line, the swinging armature F', carrying the actuating-pawl *f*, the mechanical train having revolving electrode G, the starting-levers L K^2 K', cast-off levers *n* N N', and the signal-actuating electro-magnet O P', the line connections or studs W W', and the conductors *v u x z*, arranged substantially as shown, and for the purposes described.

13. In an electrical call apparatus, a mechanical train, B, governed by a revolving fan, C, without escapement devices, and carrying an electrode formed as revolving segmental disk, in combination with a counter-electrode formed as flat spring, and adapted to make contact at its end upon the peripheral surface of said disk, and a stop device for releasing and arresting the movement of said train, in the manner substantially as hereinbefore set forth.

298,384. PAPER BOX. JAMES C. HURD, Springfield, Mass., assignor of one-half to John K. Stannard, same place. Filed Feb. 28, 1884. (No model.)



Claim.—1. A paper box consisting of a rectangular blank formed into a rectangular tube, and slit and bent at the end to form a tongue, *e*, and end section, *f*, with side edges turned in along the width of the section to form inturned side flanges, and with independent side flaps the width of the side sections, substantially as described.

2. A paper box consisting of a substantially rectangular blank formed into a rectangular tube, and slit upon the straight line *t* and bent line *s*, to form independent tongues and flaps for infolding to close the ends, substantially as described.

3. A paper box having a rectangular body, inwardly-folded end pieces extending from the sides, and the width of the latter, an outer end piece with inturned edge flanges extending along its entire width and independent from the side flaps, and a tongue inserted between the flanges and the end piece, substantially as described.

4. A box having a rectangular body prolonged at the front and back to form an end section, *f*, and a tongue, *e*, with a crease, *v*, and with side flanges on the end section of equal width therewith, and flaps independent of the end flanges extending inward from the sides, substantially as described.

298,385. WIRE-STRETCHER. THOMAS HUSTON, Kokomo, Ind. Filed July 12, 1883. (No model.)



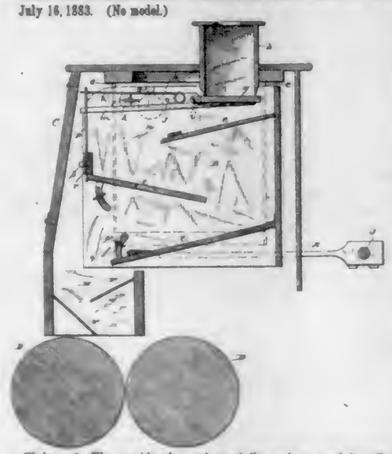
Claim.—In a wire-stretcher, the combination, with the block *b*, having a handle, *b'*, and an indented plate, *c'*, of the block *a*, hinged to the block *b*, and faced with a projecting plate, *c*, and provided with studs or prongs and a ring, as described.

298,386. HINGE FOR MIRRORS. ANTON JELINEK, Chicago, Ill., assignor of one-half to James A. Craig, same place. Filed Apr. 20, 1883. (Model.)



Claim.—A hinge having suitable screw-plates, bowl-shaped lugs projecting at right angles from said plates, so that their concavities face each other, a rivet for holding said lugs together, so as to form an inner chamber, and a spring placed within said chamber, substantially as hereinbefore set forth.

298,387. AUTOMATIC SHELF-FEEDER FOR MIDDLINGS-PURIFIERS AND ROLLER-MILLS. WILLIAM M. JEWELL, Denver, Colo. Filed July 16, 1883. (No model.)



Claim.—1. The combination, substantially as shown and described, of a stationary hopper, a frame provided with distributing-shelves beneath it, means to shake or vibrate such frame, and a shelf pivoted in said frame at the discharge end of said hopper, and provided with a counterbalancing device to render it automatic, and a hook to engage said shelf to limit its range of movement, as and for the purpose set forth.

2. The combination, substantially as shown and described, of the stationary hopper, the shaker suspended beneath it, the shelf for closing the discharge end of said hopper, pivoted in said shaker and moving with it, means, as set forth, for vibrating said shaker, the adjustable counterbalancing mechanism connected with said shelf to vary its resistance, and means, substantially as specified, for limiting the fall of the shelf and for positively preventing its fall, as and for the purpose described.

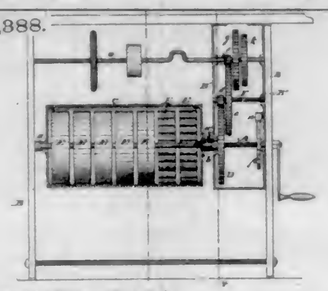
3. In a middlings-purifier or roller-mill, the combination, substantially as shown and described, with the hopper and its discharging-shelf, of the shaking-frame and its bottom or delivery shelf, having adjusting mechanism, as set forth, to insure a uniform distribution of the material fed relatively to the level of the purifier or roller-mill, as set forth.

298,388. SPRING-MOTOR. ALEXANDER KANTHACK, Philadelphia, Pa., assignor of one-half to John M. Driver, same place. Filed Mar. 13, 1884. (No model.)

Claim.—1. A spring-motor having a multiple spring formed of a series of parallel springs, and an unbroken shaft, and a drum with which the springs are connected, said shaft and drum being common to all of the springs, substantially as and for the purpose set forth.

2. A winding-shaft and a spring connected therewith, in combination with a drum inclosing a spring and connected therewith, a hollow journal and sleeve on opposite ends of the drum, a gear-wheel with a hub which freely encircles the shaft and is encircled by the sleeve of the drum, and a power-transmitting shaft and intermediate gearing, substantially as and for the purpose set forth.

298,388.



3. A multiple spring, in combination with an inclosing-drum, a winding-shaft, a hollow journal and sleeve on opposite ends of said drum, a gear-wheel having a hub which encircles said shaft and is fixed to said sleeve, a train of gearing, and a power-transmitting shaft, substantially as and for the purpose set forth.

298,389. BAND-TUCKER. WYLEY M. KEALEN, Payson, Ill., assignor to Elam B. Hale and John B. Markee, both of Birmingham, Ill. Filed Aug. 30, 1883. (No model.)



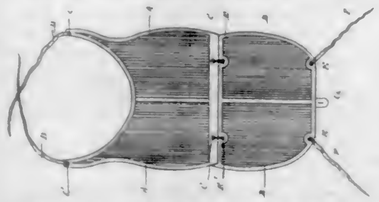
Claim.—A band-tucker composed of the metal shield or cap A, having flange *a*, adapted to fit the inner face of the thumb and its base, in combination with the stall B, of flexible material, provided with a suitable device for securing it to the wrist, substantially as and for the purpose set forth.

298,390. FORCE-FEED FOR GRAIN-DRILLS. JOHN H. KEEDY, West Alexandria, Ohio. Filed Feb. 12, 1884. (No model.)



Claim.—In a force-feed grain-drill, a feed-wheel having on its periphery a series of arrow-head ribs and alternating arrow-head-shaped depressions, and arranged upon the shaft, as described, to rotate in the direction of the arrow-points, substantially as specified.

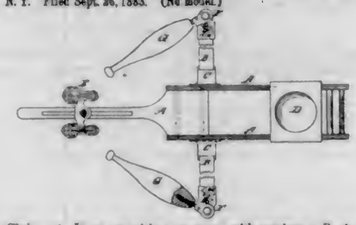
298,391. SHIRT-BOSOM PROTECTOR. CHAUNCEY S. KELLOGG, New Orleans, La. Filed Aug. 23, 1883. (No model.)



Claim.—1. A shirt-bosom protector made of celluloid, having an upper and lower section, as shown and described, and for the purposes set forth.

2. In a shirt-bosom protector, the combination of upper section, A, made of celluloid, having apertures C C' and tape D, adapted to fit the bust, with section B, having apertures E E', as described, and for the purposes set forth.

298,392. EXERCISING APPARATUS. JOHN M. LAFLIN, New York, N. Y. Filed Sept. 26, 1883. (No model.)

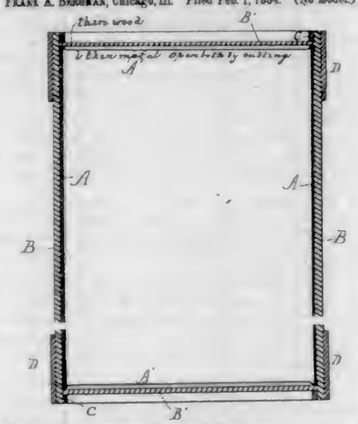


Claim.—1. In an exercising apparatus with outriggers B, the friction-wheel *a*, cap *j*, with rim *l*, lugs *m m*, shoe *p*, and lever *o*, substantially as, for the purpose specified.

2. In an exercising apparatus with outriggers B, the friction-wheel *a*, with rib or vein *w* on the rim thereof engaging with the toothed wheel *q* of a counter, substantially for the purpose described.

3. In an exercising apparatus with outriggers B, friction-wheel *a*, cap *j*, rim *l*, lugs *m m*, shoe *p*, lever *o*, rib or vein *w*, and tooth-wheel *q*, all constructed, arranged, and operated substantially as described and shown.

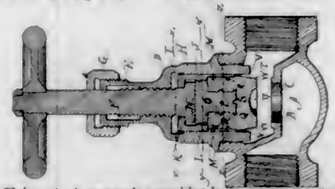
298,393. PACKAGE FOR MIXED PAINTS. EDWARD T. MASON and FRANK A. BERGMAN, Chicago, Ill. Filed Feb. 1, 1884. (No model.)



Claim.—1. The package for mixed liquid paints, consisting of the sealed cylindrical vessel A A', the heads being of thin metal, and a wood jacket projecting beyond the heads of the vessel, and consisting of the cylinder B, the heads B', and the hoops C D, substantially as specified.

2. The package for mixed liquid paints, consisting of the inner metal vessel having heads formed of thin metal, a covering-jacket projecting beyond said heads, and thin or readily-removable wood heads secured in said jacket, substantially as specified.

298,394. COCK AND FAUCET. GEORGE B. MCCRACKEN, Willimantic, Conn. Filed Aug. 7, 1883. (No model.)



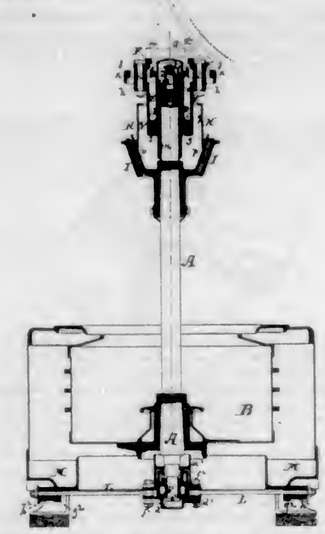
Claim.—1. A stop-cock comprising in its construction the top section of the valve-body, having the piston-recess and the squared-off inner end or edge, the reciprocating piston in the said recess, and the soft-metal valve-disk, whereby the disk may be trued from the squared edge, substantially as set forth.

2. The herein-described valve-piston, comprising the piston-shell having the annular interned flange at its top and formed with the annular interior flanges, the lock-nut arranged in the piston and having the annularly-flanged stem, the spindle having the enlarged end working between the lock-nut and the interned flange, and the soft-metal valve-disk molded in the piston and around the stem of the nut to lock the parts securely together, substantially as and for the purpose set forth.

3. The combination of the body of the valve, the projecting valve-seat arranged therein, the removable top section of the body, having the piston-recess and formed with the squared-off inner end, the piston-shell fitting neatly in the recess and having the square lower end, the operating-spindle, and the valve-disk secured in the piston, substantially as and for the purpose set forth.

4. The combination of the body of the valve, the seat therein, the removable top section of the body, having the piston-chamber, the spindle working through this section and formed with the enlarged end, the piston-shell having the annular interned top flanges and the interior annular flanges, the lock-nut having the annularly-flanged stem, and arranged in the piston to form the spindle-seat, and the soft-metal valve-disk molded in the piston and around the lock-nut, substantially as and for the purpose set forth.

298,395. CENTRIFUGAL MACHINE. THILE H. MÜLLER, New York, assignor to Samuel S. Hepworth, Yonkers, N. Y. Filed Dec. 31, 1883. (No model.)



Claim.—1. The combination of the spindle A, having the upper enlargement, *a*, with the washers *d*, supporting-plate *e*, tubular head D, ball-and-socket joint *f g*, tube E, bolts *i*, and suspension-socket F, having tubular extensions *j*, that pass through apertures in the flange *k* of the head D, substantially as herein shown and described.

2. The combination of the spindle A and its prolongation C and upper enlargement, *a*, with the washers *d*, tubular head D, and means, substantially as described, for supporting said head, and with the plate *e* and oil-tube *o*, that extends upward from said plate *e*, said plate *e* having a passage in alignment with the bore of the tube *o*, substantially as and for the purpose herein shown and described.

3. The combination of the suspended spindle A, and means, substantially as described, for holding it suspended, with the pulley H, having conical portion *p*, and with the conical brake I, horizontal pivot *s* of said brake, and means, substantially as described, for swinging said brake on said pivot, as set forth.

4. The combination of the suspension-socket F, having tubular extensions *j*, with the tube E, suspension-head D, having flange *k*, through which the tubes *j* pass, spindle A, enlargement *a*, washers *d*, supporting-plate *e*, pulley H, and brake I, all arranged so that when the brake is applied the spindle will be slightly lifted and pressure on the washers relieved, as set forth.

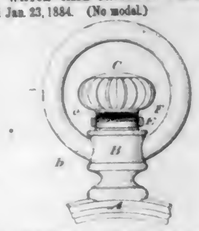
5. The combination of the suspended spindle A with the guard a^3, split sleeve b^3, chamber d^2, horizontal braces L, fixed flange or projection g^3, and cushions k^3, substantially as and for the purpose herein shown and described.

6. The combination of the upright spindle A and means, substantially as described, for suspending it at its upper end, with a bottom bear-

ing and centering braces and cushions L A^2, substantially as herein shown and described.

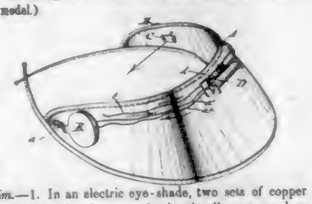
7. The combination of the split sleeve b^2 and oil-chamber d^2, having a vertical prolongation to above the level of the oil, and outer flange for bolts f^2, with a guard, a^2, resting on the inner bushing, b^2, and reaching over said projection of the oil-chamber, and forming upper flange for attaching tension-bolts L, as set forth.

298,396. WATCH-CASE PENDANT. DANIEL O'HARA, Waltham, Mass. Filed Jan. 23, 1884. (No model.)



Claim.—In a stem-winding-watch case, the combination of externally-screw-threaded pendant B, and externally-screw-threaded winding-stem crown C, and the internally-screw-threaded band E, substantially as and for the purposes set forth.

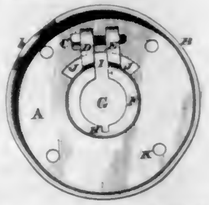
298,397. ELECTRIC EYE-SHADE. LOUIS K. OPPENHEIMER, Cincinnati, Ohio, assignor to Simon Lindeman, same place. Filed Nov. 5, 1883. (No model.)



Claim.—1. In an electric eye-shade, two sets of copper and zinc plates, constituting the elements of galvanic piles, arranged one at each side of the shade, in each of which one ultimate element or plate is attached to the plate, but insulated therefrom, and the other mounted upon a spring-arm electrically connected with an electrode or distributing-plate arranged to act against or in region of the temple of the wearer of the shade when in use, said plates forming a clamp to hold removably a moistened pad, and provided with suitable circuit-connections, substantially as described.

2. The combination, in an electric eye-shade, of one or more galvanic piles and an induction-coil (and circuit-breaker) having its primary arranged in closed circuit with the pile or piles, and two distributing-electrodes arranged to rest against the head of the wearer, and arranged in the open secondary circuit, substantially as set forth.

298,398. SHAFT-COUPLING. JOHN H. OSBORN, Evansville, Ind. Filed Mar. 27, 1884. (No model.)



Claim.—1. As a new article of manufacture, the head or disk A, having a hub, F, lugs D E, key-seat H, slot I, and opening J, the inner periphery of the latter being coincident with the outer periphery of said hub, as herein described.

2. A cylindrical coupling-box consisting of the head A, perforated annular flange or rim B *b*, bolt C, lugs D E, hub F, key-seat H, slot I, and opening J, the inner periphery of the latter being coincident with the outer periphery of said hub, for the purpose specified.

3. The combination, in a shaft-coupling, of heads A A', bolts C C', lugs D D' E E', hubs F F', key-seats H H', slots I I', openings J J', holes K K', keys O O', and retaining devices L, substantially as herein described

298,399. HAT-BINDING ATTACHMENT FOR SEWING-MACHINES. GEORGE W. PARKINSON, Newburg, N. Y. Filed Feb. 20, 1884. (No model.)



Claim.—1. In a hat-binding attachment for sewing-machines, a base-plate having at one end a recess, the edge of said plate bordering on said recess being beveled, as described, combined with a scroll for uncurling and guiding the edge of the hat-brim, and for guiding the binding, substantially as set forth.

2. The base-plate, the scroll attached thereto, and having a downwardly-turned lip for uncurling the hat-brim, and at its apex a passageway that is approximately vertical, combined with a guide arranged approximately parallel with said scroll and adapted to co-operate with the latter in guiding the partially-uncurled edge of the hat-brim, substantially as set forth.

3. The base-plate having at one end a beveled-edged recess, combined with an uncurling and guiding scroll, arranged partially over the beveled edge of said recess, a guide for the lower edge of the binding, and a guide adapted to co-operate with said scroll in guiding the partially-uncurled edge of the hat-brim, substantially as described.

4. The base-plate and the scroll secured thereto, and having a downwardly-turned lip for uncurling the hat-brim, in combination with a guide having a downwardly-turned hook arranged approximately in line with the apex of said scroll, substantially as described.

5. The base-plate, the scroll secured thereto, and having a downwardly-turned lip for uncurling the hat-brim, and the guide for the lower edge of the binding combined with a guide adapted to co-operate with said scroll in guiding the partially-uncurled edge of the hat-brim, substantially as described.

6. The combination of the base-plate A, having the recess A', and the beveled edge *a'*, partially surrounding said recess, the scroll B, secured to said base-plate, the adjustable guide C, having the downwardly-turned hook *c'*, and the adjustable guide D, for the lower edge of the binding, substantially as set forth.

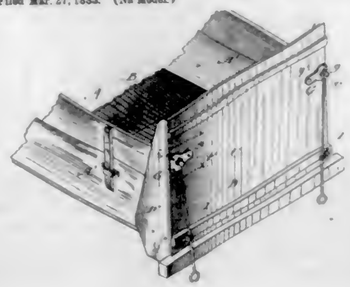
7. The combination of the base-plate A, having the recess A', and the beveled edge *a'*, partially surrounding said recess, the scroll B, secured to said base-plate, the guide C, having the hook *c'*, the screw *c*, for pivotally and adjustably attaching said guide to said base-plate, the guide D, having the slot *d'* and guiding-hook d^3, and the thumb-screw *d*, substantially as described.

8. The presser-foot E, recessed on its inner side, leaving the projection *e* cut away on its bottom, as shown, combined with means for uncurling and guiding the hat-brim and the binding, substantially as described.

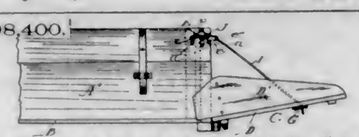
9. The presser-foot E, recessed on its inner side and having the projection *e*, which is cut away on its bottom, said cut-away portion or recess being curved slightly outward to facilitate the turning of the work, combined with means for guiding the hat-brim and binding, substantially as described.

10. The presser-foot E, recessed on its inner side, leaving the projection *e*, which is cut away on its bottom, as shown, combined with the base-plate A, the scroll B, and the guides C and D, substantially as set forth.

298,400. WAGON END-GATE. HAZEN H. PERKINS, Kewanee, Ill. Filed Mar. 27, 1883. (No model.)



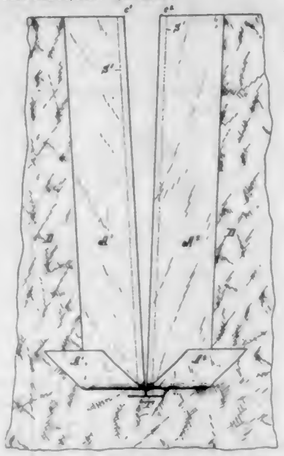
298,400.



Claim.—1. In an end-gate fastening, in combination with the wagon-box, the end-gates and rods I and J, the plates E, having holes *e* in their outer ends and curved at *e'*, and adapted to fit either side of the wagon-box for different adjustments, substantially as and for the purpose set forth.

2. In an end-gate fastening, in combination with the wagon-box, plates E, turn-down end-gate, and hook-rods I, the plates G, having holes *g* of quarterfoil shape, substantially as and for the purpose specified.

298,401. STAYING-PIECE FOR GARMENTS. GEO. W. PINE, Troy, N. Y. Filed Jan. 31, 1884. (No model.)



Claim.—1. In a combined button-lap and stay for garment-slit openings, the combination of a cross-slit made in the garment below the vertical slit-opening, an overlap attached to one side of the garment above the cross-slit, an underlap attached to the other side of the garment-slit above the cross-slit, with the underlap sewed to the upper edge of the cross-slit, and its lower end passed frontwardly through said cross-slit, turned up, and sewed to the inner facing of the overlap, and the latter sewed to the lower edge of the cross-slit, as shown and described.

2. In a combined button-lap and stay for garment-slit openings, the combination of the cross-slit T at the bottom of the slit O, the plackets A' A^2, each attached, as shown, upon one of their side edges to one of the opposite sides of said slit O, and each folded longitudinally and attached on their other sides to the garment exterior above the cross-slit, with the folded placket A^2, attached to the upper edge of said cross-slit, passed frontwardly through the latter, turned up, and sewed to the inner facing of the placket A', and the latter sewed to the lower edge of the cross-slit and the garment exterior, below the latter, as shown and described.

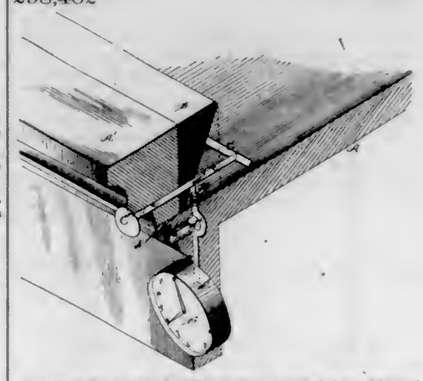
298,402. TIME-REGISTER FOR BILLIARD-TABLES. EDWIN B. PORT, Chicago, Ill. Filed Dec. 26, 1883. (No model.)

Claim.—1. The combination, with a billiard-table, of means adapted to be moved at will, for obstructing the course of the balls, means for registering the lapse of time, and intermediate connection between the two, whereby the movement of the former will start and stop the latter, substantially as and for the purpose set forth.

2. In a time-register for billiards or similar games, a removable obstacle adapted to obstruct the course of the balls, in combination with a time-register, a connection actuated by the obstacle to stop the register, a key adapted to actuate the connection to start the register, and means for locking the obstruction in place, substantially as and for the purpose set forth.

3. The combination, with a billiard-table, of an obstacle adapted to be projected over the table or withdrawn beneath the cushion, a time-register, and an intermediate connection between the two, adapted to start or stop the register as the obstacle is moved, substantially as and for the purpose set forth.

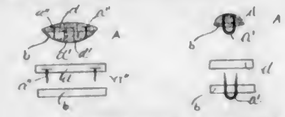
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4. In a time-register for billiard-tables, an obstacle located beneath the overhanging cushion, and provided with means for projecting it over the table at will, in combination with a time-register, and an intermediate connection between the register and obstacle adapted to lock the latter in its forward position, substantially as and for the purpose set forth.

5. The combination, with the table A, constructed as usual, and the rod C, provided with the auxiliary rod *c*, having notch *c'*, of the spring-latch D, formed with the hook *d'* and shoulder d^2, and the register E, all constructed and arranged to operate substantially as and for the purpose set forth.

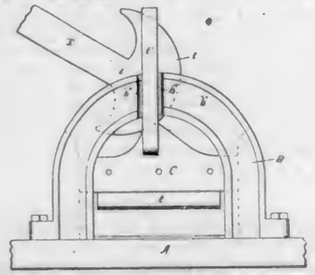
298,403. BUTTON. GEORGE W. PRENTICE, Providence, R. I. Filed Mar. 3, 1884. (No model.)



Claim.—1. A solid button or button-head composed of two or more layers of plastic material, formed as described, and provided with eye-holes, staples, or other suitable means for attachment, substantially as set forth.

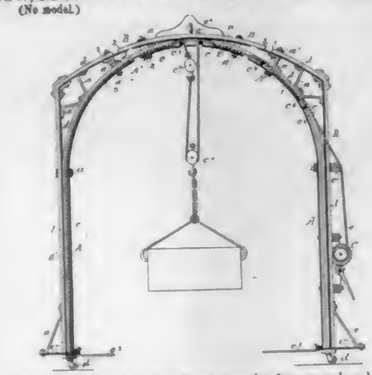
2. The herein-described button or button-head A, consisting of the layers *b* and *d* and fastenings *a''*, with a metallic eye or fastening, the whole arranged substantially as shown and described.

298,404. TOBACCO-CUTTER. GEO. A. PRIEST, St. Louis, Mo. Filed Sept. 5, 1882. (No model.)



Claim.—In a tobacco-cutter, the combination of a suitable base, a support, B, formed with vertical longitudinal opening *b* and side plates, *b'*, one side plate having guide-ribs *b''* on the outside, a sash, C, between the plates, having a cutter, and a vertical arm, *c'*, secured to one side thereof, outside the support, to work between the guide-ribs, having lateral projection *c''*, extending over the said opening, and a lever, E, pivoted to the side plates in the same plane as the sash, having a head, *e*, formed with cam *e'*, fitting between the top of the sash and the projection, as set forth.

298,405. DERRICK. ADAM RETTS, St. Louis, Mo. Filed Apr. 7, 1884. (No model.)

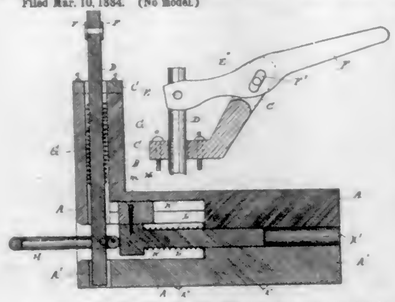


Claim.—1. A portable derrick constructed to form an arch, as herein shown and described, the rope or cable passing from a crab on one leg, up and over the arch to its middle, thence down and through pulley-blocks, and finally up and over the other half of the arch, down, and fastening to the foot-plate of the other leg.

2. In a portable derrick, the legs A and B', and double arch A' and B, formed in sections or of one piece, the foot-plates C', casters or wheels d', crab C, and the rope or cable c, all combined and constructed as herein shown and described, as and for the purpose set forth.

3. In a portable derrick, the legs and arches, being constructed of plate metal, having ribs d, and the groove d^2 in the inner arch and legs, and the braces a and straps a', all constructed as herein shown and described, and for the purpose set forth.

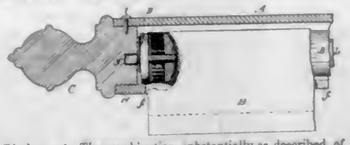
298,406. CAR-COUPLING. JOHN RIDENOUR, Mount Vernon, Ind. Filed Mar. 10, 1884. (No model.)



Claim.—1. In a car-coupler, the draw-head A A', having blocks *b b* and openings K K' K'' *k k*, in combination with bolt I I', having guide block M and spiral spring L, as described, and for the purposes set forth.

2. In a car-coupler, a draw-head composed of upper and lower pieces, A A', and blocks *b b'*, an attachment, B, secured to the top thereof by bolts *f*, having attached thereto by screws *e* a cap, C, having a forked arm, C', in combination with the lever F, having a slot, F', a bolt, F'', a bolt, E, and coupling-pin D, having spring G and shoulders D', adapted to rest upon the link H, as described, and for the purposes set forth.

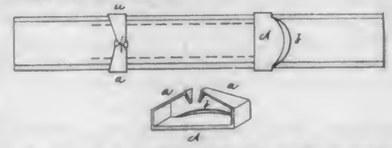
298,407. CURTAIN-FIXTURE. FRANK G. ROBBINS, Lynn, Mass. Filed Jan. 18, 1884. (No model.)



Claim.—1. The combination, substantially as described, of a cornice consisting of a tube provided with a longitudinal slot and ornamental caps or plugs closing the ends of said tube, an automatic spring shade-roller within said tube, journaled in the inner ends of said ornamental plugs, and a shade wound on said roller and hanging through said longitudinal slot.

2. The shell *d*, having the spring-roll D, and provided with the strip *g*, or means for attaching a lace curtain, substantially as set forth.

298,408. STRAP-FASTENER. JEROME W. ROPP, Elyria, Ohio. Filed Feb. 25, 1884. (No model.)



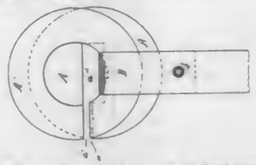
Claim.—A cap, A, provided with the lip *b*, and arms, as described, in combination with the rivet C, all as above set forth, and substantially as described.

298,409. COFFIN. JACOB V. ROWLETT, Richmond, Ind. Filed Aug. 25, 1883. (No model.)



Claim.—In a coffin or packing-case, the lock herein described, consisting of two plates, one of said plates having a practically semicircular lug formed on its edge, the outer edge of said lug being bent slightly inward, the other plate having two lugs of the same construction as the lug aforesaid, the single lug being adapted to lie between the two lugs on the engaging-plate, in combination with a semicircular longitudinal locking-block, substantially as set forth.

298,410. BALE-TIE. ARMER ERWIN RUSSELL, Benton, Miss. Filed Mar. 12, 1884. (No model.)



Claim.—The buckle and washer constructed substantially as specified, in combination with the tie-band, for the purpose set forth.

298,411. PEN-HOLDER. ALDIS EDDY SAGE, Minneapolis, Minn., assignor of one-half to John G. Emery, Jr., same place. Filed Nov. 22, 1883. (No model.)



Claim.—1. A pen-holder consisting of a tube or barrel, B, having inclined slots *a*, and a holder or clamp, A, provided with lugs *b*, adapted to fit into said slots, substantially as and for the purpose set forth.

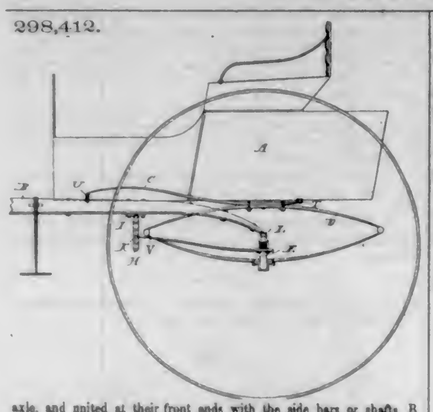
2. The combination of the barrel B, having the slots *a*, and the holder or clamp A, having the lugs *b*, and projection *d*, substantially as and for the purpose specified.

298,412. TWO-WHEELED VEHICLE. CYRUS W. SALADEE, Torrington, Conn. Filed July 12, 1883. (No model.)

Claim.—1. The combination of the axle, shaft-frame pivoted thereto, braces rigidly secured to the axle extending forward beyond the pivot-point and beneath the shaft, adjustable connection between the brace and shaft-frame, spring-supported body, and adjustable connection between the front body-spring and its support, substantially as set forth.

2. In a two-wheeled vehicle, the shafts pivotally connected to the axle B, in combination with under braces, V, rigidly secured to the

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axle, and united at their front ends with the side bars or shafts, B through the medium of pivoted hanger-links H, substantially as and for the purpose set forth.

3. In a two-wheeled vehicle, the combination of the axle, the shafts or side bars pivotally connected to the axle, and the flexion under braces, V, rigidly united to the axle, and connected by an adjusting device to the shaft-frame in advance of the axle, substantially as and for the purpose set forth.

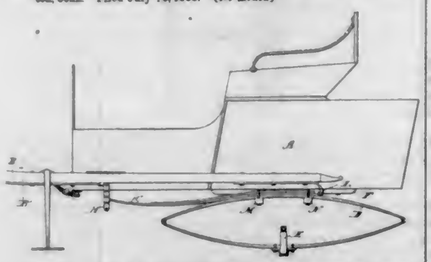
4. The flexion spring-braces rigidly secured to the axle, and extending back of the latter to form arms I.', united to the shaft B, and projecting forward to unite with an adjusting device connecting it to the shaft-frame, substantially as set forth.

5. In a two-wheeled vehicle, the combination of springs D and C, the rear end of the latter rigidly secured to the top member of the spring D, and extended forward and pivotally connected to the body, and the rear end of the body pivotally supported upon the springs D, the whole combined and arranged to operate substantially as and for the purpose set forth.

6. In a two-wheeled vehicle, the two separately-arranged adjusting devices, combined with the frame, axle-body, and springs, the one to regulate the set of the shafts in relation to the axle and the other to regulate the hang of the body in relation to the shafts, substantially as set forth.

7. In combination with the springs and the side bars or shafts, B, the hangers having their upper ends pivotally connected to the shaft-frame, and a connection for the spring adjustable on the hangers, substantially as and for the purpose set forth.

298,413. TWO-WHEELED VEHICLE. CYRUS W. SALADEE, Torrington, Conn. Filed July 16, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, the combination of a spring-platform connected to the axle and supporting the body, a shaft-frame jointed to the platform at the rear, and springs extending from the platform forward of the axle and connected to supports below the top of the shaft-frame, substantially as described.

2. The combination of the body, springs supporting the same, shaft-frame pivoted at the rear, and springs C, connected to the platform, extending forward and connected at the front ends to adjustable connections suspended from the shaft-frame, substantially as set forth.

3. The combination of the axle, springs secured thereto, body supported by the springs, shaft-frame pivoted at or near the tops of the body-supporting springs, springs extending from the platform below the shaft-frame, and adjustable connections between the front ends of the springs and the shaft-frame.

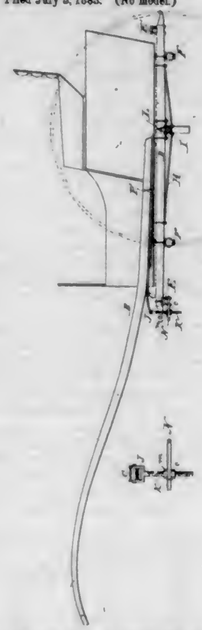
4. In combination, the elliptical springs D, and the spring-braces C, connected to the upper half of the elliptical springs, and at the front ends united with the shaft-frame, substantially as and for the purpose set forth.

5. The combination of the springs D D, between the body and axle, spring-braces C, shaft-frame pivoted to the running-gear at the rear end, and adjusting devices interposed between the front end of the spring-braces and the shaft-frame, substantially as set forth.

6. The under brace, V, secured to the axles, with the opposite ends bent up and connected with the shaft-frame, in combination with the spring-patform, substantially as set forth.

7. In a two-wheeled vehicle, the combination of the axle E, body A, elliptical springs D, shaft-frame pivotally connected to the platform at L, and the springs C, pivotally connected to the front end of the body, substantially as specified.

298,414. TWO-WHEELED VEHICLE. CYRUS W. SALADEE, Torrington, Conn. Filed July 5, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, the combination of the axle, platform-frame connected therewith and supporting the springs, body supported by said springs, and shaft or pole frame pivoted to the axle, and spring longitudinally interposed between the shaft-frame and platform-frame, substantially as set forth.

2. The combination, with the platform-frame, springs, and shaft-frame pivoted to the axle, of springs interposed between the frames, and adjustable connections between the ends of said springs and the platform-frame, substantially as set forth.

3. In a two-wheeled vehicle, the combination of side bars rigidly secured upon the axle, semi-elliptic side springs connecting the cross-bars and adapted to support the body, and shafts or pole pivotally connected to the axle and secured to the front end of the frame by longitudinal springs, substantially as specified.

4. In a two-wheeled vehicle, the combination of a platform-frame connected to the crank-axle, a spring-platform supported by the said frame, adapted to carry the body, and shaft or pole frame, connected to the axle and to the front end of the frame by elastic connections, substantially as specified.

5. In a two-wheeled vehicle, the combination of a platform-frame secured upon the axle, a spring-platform, and shaft-frame supported upon flexion-springs extending from the axle to the front end of the platform-frame, substantially as specified.

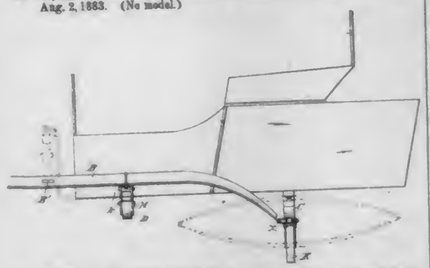
6. In a two-wheeled vehicle, the combination, with the platform-frame secured to the axle, of an extension or projection beyond the sides of the platform, and shafts secured to the said extension and having their rear ends pivotally connected to the axle, substantially as specified.

7. In a two-wheeled vehicle, the combination of a platform-frame

connected to the axle, and a phanton or "drop-front" body having its elevated rear portion carried by a spring-support mounted upon the rear end of the frame, and the drop-front of the body carried upon a spring or springs suspended from the side bars, substantially as specified.

8. In two-wheeled vehicles, an adjusting device composed of the vertical bolt K, the top end of which is adapted to a pivotal connection, plate N, in two sections connected by the hinge-joint N², and set-nuts *m o*, substantially as and for the purpose set forth.

298,415. ROAD-CART. CYRUS W. SALADEE, Torrington, Conn. Filed Aug. 2, 1883. (No model.)



Claim.—1. In a road-wagon, the combination of a crank-axle, body, intermediate spring platform supported by the lower part of the axle, shaft-frame pivotally connected to the upper part of the axle, and spring-connection between the shaft-frame and forward part of the body, substantially as set forth.

2. The combination, with the front spring-support, crank-axle, shaft-frame pivotally connected with the axle, body extending between the shafts, and front supporting-spring, of an adjustable connection whereby to alter the relative set of the body and shaft-frame, substantially as specified.

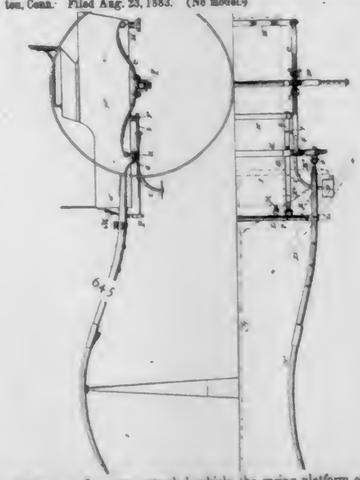
3. The combination of the crank-axle, body, rear supporting-spring, C, parallel to the axle, and connected to the depressed portion thereof, and front spring connected to the shaft-frame, substantially as set forth.

4. The combination of the axle, body-supporting springs, and shaft-frame, consisting of two sections jointed together, the rear section jointed to the axle, and an adjusting device connecting the sections, substantially as described.

5. The combination of the axle, spring-supported body, shafts pivoted at the rear ends to springs connected to the axle, and spring-connections between the front of the body and shaft-frame, substantially as described

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298,416. TWO-WHEELED VEHICLE. CYRUS W. SALADEE, Torrington, Conn. Filed Aug. 23, 1883. (No model.)



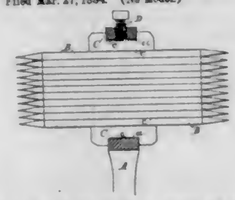
Claim.—1. In a two-wheeled vehicle, the spring-platform consisting of the axle E, longitudinally-arranged semi-elliptic side springs, C, the front ends of which are pivotally connected to a cross-bar, G, carried by the front end of the body, and their rear ends shackled to the cross-spring H, carried by the rear end of the body, in combination with shafts or pole pivotally connected to said cross-bar G, and supported in front of the body by arms or springs D, extending from the body and connecting with the cross-bar L of the shafts or pole, substantially as and for the purpose set forth.

2. In combination with the cross-bar G and spring or arm D, the step having its shank fixed to the cross-bar G, and formed with a single arm extended rearward from the cross-bar and fixed to the spring-arm D, substantially as described.

3. The pole N, curved upward from in front of the cross-bar L, in combination with a truss-brace, substantially as and for the purpose set forth.

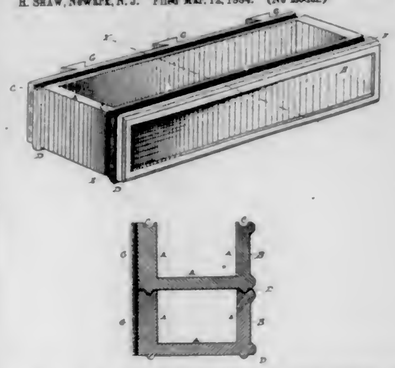
4. In combination, the tongue having the brace-rod K', the sustaining-rods K, transverse bracket K, and the double-tree L, substantially as described.

298,417. SANDSTONE-CRANDALL. FERDINAND SCHUDDE, St. Louis, Mo. Filed Mar. 27, 1884. (No model.)



Claim.—In a crandall, the handle A, having slot *a*, the points B, blocks C and C', having notches or open slots *c* and long faces *c'*, and the set-screw D, all combined, constructed, and arranged to operate as and for the purpose set forth.

298,418. MANUFACTURE OF BRICKS MADE OF GLASS. FRANCIS H. SHAW, Newark, N. J. Filed Mar. 12, 1884. (No model.)



Claim.—1. Bricks made of glass or other vitreous substance, the upper and lower and end faces of which are alternately tongued and grooved.

2. Bricks made of glass or other vitreous substance, the upper and lower and end faces of which are alternately tongued and grooved, in combination with dovetailed keys on the rear face.

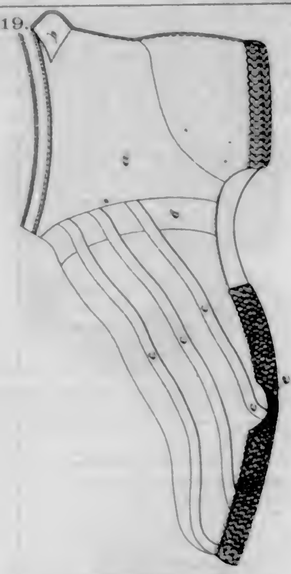
3. Bricks made of glass or other vitreous substance, the upper and lower and end faces of which are alternately tongued and grooved, with dovetailed keys in the rear face, in combination with iron braces inserted in the dovetailed keys, substantially as and for the purposes specified.

298,419. RUBBER SHOE. FREDERICK M. SHEPARD, East Orange, N. J. Filed Mar. 25, 1884. (No model.)

Claim.—1. A high-quarter rubber shoe having an elastic homogeneous quarter and vamp, provided at the rear, near the ankle-opening with a lug or projection, substantially as described.

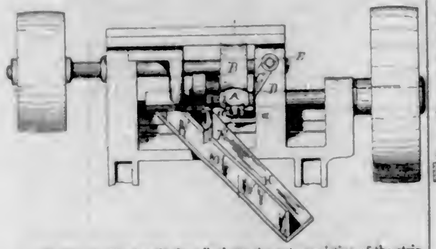
2. A high-quarter rubber shoe having an elastic homogeneous upper provided with strengthening ribs or strips extending to the edge of said upper, and having the sole overlapping the ends of these ribs or strips substantially as described.

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298,420. MACHINE FOR FORMING COUNTER-STIFFENERS. GRANVILLE T. SHEPLEY, West Groton, assignor to Edwin H. Sampson, Boston, Mass. Filed Mar. 31, 1884. (No model.)

Brief.—Improvement on Letters Patent No. 178,869, dated June 20, 1876.



Claim.—1. The herein-described attachment, consisting of the strip C, secured to the frame at one end, and at the other provided with the plate F, having its inner edge concaved to allow of its being set close to or against the convex periphery of the former, substantially as described.

2. In combination with the former A, the plate F and its support C, for the purposes and substantially as described.

3. The combination of former A, plate F, provided with slots *a a*, strip or arm C, and spout H, substantially as described

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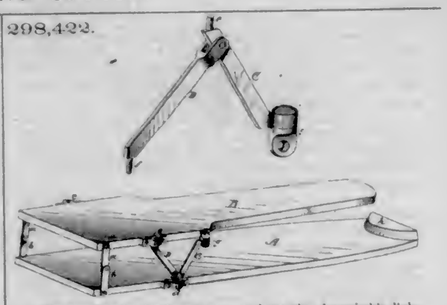
298,421. TOOL. JOHN A. SHERMAN, Boston, Mass., assignor of one-half to William P. Ward, New York, N. Y. Filed Nov. 26, 1883. (No model.)



Claim.—1. A tool-shank consisting of a stem forming a portion of, or adapted to be rigidly connected with, the tool, combined with a bushing of soft material fixed upon the said stem, substantially as and for the purpose described.

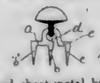
2. As an improved article of manufacture, a rotary-operating tool having its shank composed of a portion of the material of the tool, provided with a bushing of rawhide fixed thereon, substantially as described.

298,422. IRONING-BOARD. JOHN W. SHALLEY, Pittsfield, Me. Filed Dec. 28, 1883. (No model.)



Claim.—Two ironing-boards connected together by suitable links pivoted to each other and to the boards, said boards having connected to their sides eye-plates, in combination with brackets consisting of two arms pivoted together, and having at their ends suitable pins to engage with the eye-plates, said brackets being permanently swiveled or pivoted to one of the boards, substantially as and for the purpose specified.

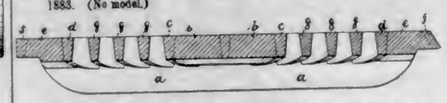
298,423. BUTTON-FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Mar 13, 1884. (No model.)



Claim.—1. An improved sheet-metal button-fastener and lacing-stud combined, consisting of a base with integral prongs, one of which projects from the upper edge of said base over and by the end thereof, forming a loop and prong, and two or more prongs projecting from the opposite edge of the base and in the same plane thereof, all the prongs terminating in substantially the same direction, and to be subsequently bent or clinched, the metal composing said device being in the same condition as it existed in the sheet from which it was cut, and ready for use when so cut, substantially as and for the purpose set forth.

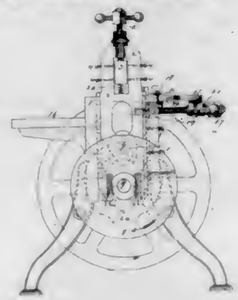
2. As an improved article of manufacture, the herein-described lacing-stud and button-fastener combined, consisting of the base *a*, having prongs *b b'*, and further provided with the arm *c*, formed with the staple *d*, and terminating in prong *e*, the complete device cut from sheet metal, ready for use when so cut, substantially as and for the purpose specified.

298,424. GRATE-BAR. STERRY SMITH, Salem, Mass. Filed Aug. 16, 1883. (No model.)



Claim.—The combination and arrangement of the two side bars, *a a*, extending below the main body of the grate-bar, the short longitudinal bars *e e* at each end of the grate, the central longitudinal bars, *b b*, and the intermediate angular bars, *g g*, arranged as shown, and for the purpose set forth.

298,425. MACHINE FOR CREASING PAPER. JOHN E. STANNARD, Springfield, Mass. Filed Dec. 30, 1882. (No model.)



Claim.—1. In the art of scoring or creasing paper or other kindred substances preparatory to bending the same for use in the manufacture of paper boxes and similar articles, the step herein set forth, which consists in making the crease or score by means of successive blows or pressures, the first of which is lighter than the following one.

2. The within-described method of creasing paper or kindred substances for use in the manufacture of paper boxes and similar articles, consisting in subjecting the material to be creased to an initial pressure between a matrix and creasing-blade, discontinuing that pressure, and afterward repeating it with greater force.

3. In a machine for creasing paper or kindred substances, the combination of cam-disks with a creasing-blade, plunger, and suitable guide bars, such cam-disks being provided with grooves, and such grooves being so shaped as to cause said plunger, when connected with said cam-disks by suitable guides, to give successive creasing blows or compressions at each revolution of the cams, the first of which blows shall be lighter than the following.

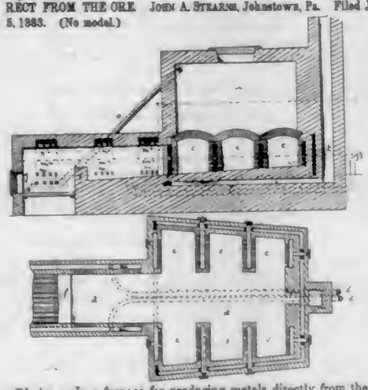
4. In a machine for creasing paper or kindred substances for use in the manufacture of paper boxes or similar articles, an inclined yielding guide, 50, secured in position in front of the creasing-blade, substantially as and for the purpose described.

5. The combination of the cam-disks, each provided with a groove, 20, having two inward trends, 21 and 23, and one made nearer the center of the disk than the other, guide-bars 2, each having a stud engaging in said groove, and the plunger 3, secured to said guide-bars, whereby said plunger is made to give successive blows at each revolution of the cam-disks, substantially as described.

6. The combination of the cam-disks, each provided with a groove having two inward trends—one made nearer the center of the disk than the other—the guide-bars 2, each having a stud engaging in said groove, the plunger 3, and a yielding matrix and a creasing-blade—one secured in the lower face of the compressing-plunger and the other to the platen or bed of the machine—substantially as described.

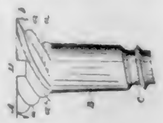
7. The combination, with the compressing-plunger provided with the yielding matrix, the creasing-blade, and the table 16, of the inclined yielding guide 50, secured in a position in front of the creasing-blade, substantially as and for the purpose set forth.

298,426. FURNACE FOR THE MANUFACTURE OF METALS DIRECT FROM THE ORE. JOHN A. STEARNS, Johnstown, Pa. Filed July 5, 1883. (No model.)



Claim.—In a furnace for producing metals directly from the ore, the combination of a reducing-chamber situate on both sides of and above the rear end of the smelting and refining chamber, and communicating therewith at the sides, the line of the openings being substantially at right angles with the line of the draft through the furnace, partition-walls arranged in the reducing-chamber, and having air-passages and outlet-orifices arranged therein, a smelting and refining chamber having a floor or hearth sloping from the rear end to the bridge-wall, and a flue or flues leading from the rear end of the smelting-chamber around the walls of the reducing-chamber, substantially as and for the purpose specified.

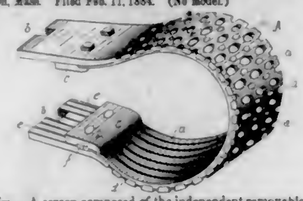
298,427. SCREW. HENRY A. STONE, Brooklyn, N. Y. Filed June 11 1883. (Model.)



Claim.—1. A screw having the conical portion of its head provided with spiral cutters having a pitch greater than that of the thread of the screw, said spiral cutters gradually decreasing in depth toward and terminating at the periphery of the head, substantially as described.

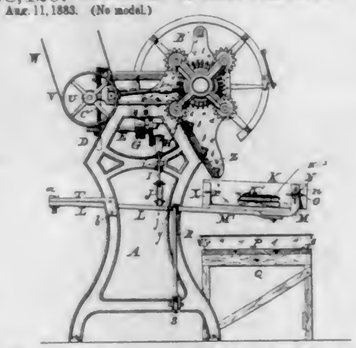
2. A screw having a conical head, which is provided with spiral cutters *a* and flange-cutters *b*, substantially as described.

298,428. SCREEN FOR ATTRITION-MILLS &c. THOMAS LEGGETT STURTEVANT, Framingham, assignor to the Starteavant Mill Company, Boston, Mass. Filed Feb. 11, 1884. (No model.)



Claim.—A screen composed of the independent removable bars and the permanent backing supporting the same, said backing being grooved or other otherwise recessed to receive and steady the bars, substantially as described.

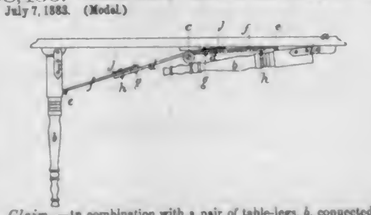
298,429. CORN-SIFTER. JOB TAYLOR, Orchard Park, N. Y. Filed Aug. 11, 1883. (No model.)



Claim.—1. The combination, with the frame A A', the arm T, the bar L, pivoted to said arm at *a*, and having the arms M M', the bar X, the frame K, pivoted at *x x* to the bar X, and the sifters K' K², removably secured to said frame, as shown and described.

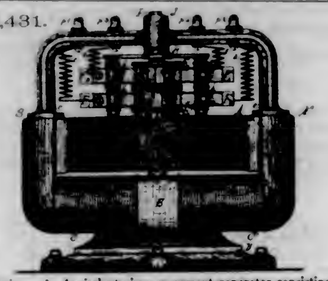
2. The combination, with the frame A A', the support T, the bar L, having arms M M', provided with slots *n*, and pivoted at *a* to support T, the bar X, the frame K, pivoted at *x x*, the removable sifters K' K², and the thumb-nuts O, for adjusting said frame by means of the slotted arms M M', as set forth.

298,430. FOLDING TABLE. ORLANDO A. THAYER, Paris, Me. Filed July 7, 1883. (Model.)



Claim.—In combination with a pair of table-legs, *b*, connected as set forth, the slotted arms *f d*, pivoted at *e* and *c*, the springs *l*, with heads and inclined faces, the spring *j*, having opening *k*, and bolts *g* and *h*, as herein set forth.

298,431. INDUCTORIUM. CHARLES J. VAN DEPOELE, Chicago, Ill. Filed Dec. 31, 1883. (No model.)



Claim.—1. An inductorium or current-generator consisting of an armature and field-magnet provided with coils through which a proper current can be made to circulate, in order to produce the rotation of said armature, in combination with armature-coils wound upon the same core as the driving-armature coils, or wound upon independent armature-cores, but driven by the first, between the poles of a common field-magnet, the coils of which are in a derivation from the primary armature, substantially as and for the purpose described.

2. In an inductorium or current-generator, an armature driven by a current furnished in an arc-light circuit or other source of electricity, in combination with armature-coils wound upon one or more cores, mounted upon a shaft between the opposite poles of a field-magnet, a derivation from said secondary circuit being also wound upon said field-magnet, and connections whereby the rotation of the system will induce current in a portion thereof, said induced current being utilized partly to run incandescent lamps or do other work, and partly to intensify and steady the magnetic field, and thereby to prevent the variations of the arc circuit affecting the induced current, as described.

3. An inductorium or current-generator having an armature and field-magnet provided with coils through which a proper current is made to circulate, so as to produce a rotary motion of said armature between its field-magnet poles, in combination with an armature or armatures driven by the first armature, in order to produce an induced current in the driven armatures, and proper connections by means of which a small portion of the induced current is diverted through the coils of the field-magnet common to the driving and driven armatures, the main part of the induced current being utilized outside of the machine to run incandescent lamps or to do other work, as may be desired.

4. In an inductorium or current-generator, a driving and a driven armature running between the poles of a field-magnet common to both armatures, the driving-armature and its field-magnets receiving the current from an arc-light circuit or other source of electricity, while the current generated in the driven armature is divided between the outside work and a set of independent coils around the common field-magnet in order to steady the induced current.

5. The combination, with an inductorium or tension-reducing device, as above described, of an arc-light circuit furnishing current to drive the armature or armatures in said inductorium, and a regulator forming a derivation from the main circuit, but controlled by the current of the secondary circuit, and arranged to short-circuit the field-magnets to a greater or less degree, according to the requirements of the said secondary circuit, substantially as described.

298,432. FLAT CHAIN. ADOLPH VENTER, Providence, R. I. Filed June 25, 1883. (Model.)

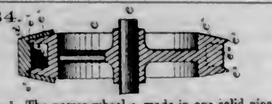


Claim.—The method herein described of making and finishing flat chains, consisting of interlacing or intertwining suitable lengths of spirally-formed wire and subsequently finishing the edges thereof by compressing the protruding ends of such wire to a uniform position against the coils of the chain, in the manner and for the purposes substantially as specified.

298,433. CONDITION-POWDER. CHARLES WHITE, Jr., and JAMES ANDERSON, Versailles, Ind. Filed Jan. 25, 1884. (No specimens.)

Claim.—The herein-described compound, consisting of pulverized fenugreek, pulverized nitrate of potassium, pulverized elecampane, pulverized sulphate of iron, pulverized gentian, and pulverized gum-acacia, in about the proportions specified.

298,434. ROTARY ENGINE. JOHN W. WILES, Carmel, S. C. Filed Jan. 5, 1884. (No model.)



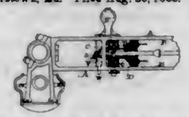
Claim.—1. The power-wheel *e*, made in one solid piece, its rim e^2 being wedge-shaped, the smaller portion pointing outward, and having on its outer periphery buckets or steam-heads e^3, and on either side of said rim V-shaped flanges e^2, all fitting neatly into cover or cap *d*, substantially as shown and described.

2. The cover or cap *d*, having a channel coinciding with rim e^2 of wheel *e*, and grooves coinciding with flanges e^2 e^2, all neatly fitting, substantially as shown and described.

3. In a steam rotary engine, the combination, with a steam-boiler, *a*, and steam-chest *b*, of pipe *c*, cover or cap *d*, having a channel coinciding with rim e^2 of wheel *e*, and grooves coinciding with flanges e^2 e^2, and exhaust-pipe *j*, passing into flue *k*, substantially as shown and described.

4. In a steam rotary engine, the combination of journal-box *g*, having ears *g' g'*, box-seat *h*, and set-screws *i i*, adapted to raise journal-box in said seat, substantially as shown and described, and for the purposes set forth.

298,435. STEAM-PUMP FOR PORTABLE STEAM-ENGINES. WM. C. WOLFE, Hagerstown, Md. Filed Aug. 20, 1883. (No model.)



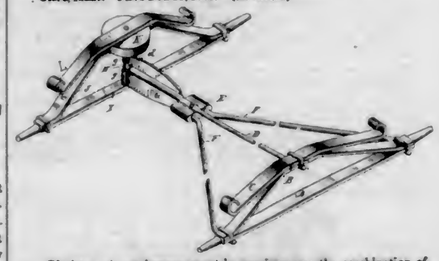
Claim.—1. The combination of the frame provided with suitable flanges, the feed-pump, the detachable valve-chambers applied thereto, and the clamping device for clamping the pump and the chambers against the upper flange of the frame, substantially as shown.

2. The combination of the frame A, provided with the flanges B and slotted flange C, the pump, the removable valve-chambers, the air-chamber U, and a suitable pipe, W, for connection with the air-chamber, the pump and the valve-chambers being clamped together against one of the flanges on the frame, substantially as described.

3. The combination of the pump, the frame A, provided with the flanges B, the valve-chambers O, recessed at their upper ends, the removable guides, which are inserted in the chambers so as to be flush with their tops, and the valves R, substantially as set forth.

4. The combination of the frame A, provided with the flanges B, slotted flange C, with the pump D, having the stud *a* to project through the slot *b* in the flange C, the nut *d*, and the clamping devices P Q and the valve-chambers, which are applied to opposite sides of the pump, substantially as shown and described.

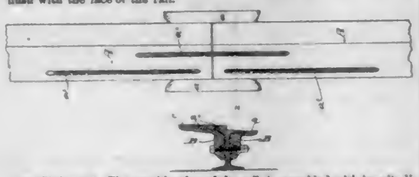
298,436. WAGON RUNNING-GEAR. ALEXANDER WOMACK, Falk's Store, Idaho. Filed Dec. 15, 1883. (No model.)



Claim.—As an improvement in running-gear, the combination of the coupling-plate E, connecting the ends of the rear hounds, the reach secured to the face of the coupling-plate, a headed rod, M, immovably secured at one end within the coupling-plate, a bracket, G, elliptical in form, and having a longitudinal slot, *a*, in which the rod M fits, a recess, *d*, at the front end of the bracket, providing room for the head of the rod and forming arms *g*, and the king-bolt passing through the arms and pivoting the bracket in place, arranged and operating for the purpose set forth.

298,437. TRACK-RAIL ATTACHMENT FOR REPLACING DERAILED CARS. MARSHALL C. WOODS, Indianapolis, Ind., assignor of one half to William N. Wolfe, same place. Filed Aug. 10, 1883. (No model.)

Brief.—Longitudinal grooves are formed in the face of the rail to catch the flange of the wheel as it is thrown onto the rail by the car-replacer, which is a combined fish-plate and car-replacer, and extends up flush with the face of the rail.

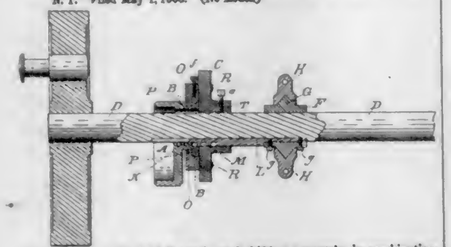


Claim.—1. The combination of the rail A, provided with longitudinal grooves *a'* and the car-replacer B, the top edge, *a*, of which extends up flush with the top of the rail, whereby it is adapted to guide the wheel of a derailed car back onto the track, substantially as set forth.

2. The combination, with the rail A, having longitudinal grooves *a'* in its face, of the combined fish-plate and car-replacer B, the top edge, *a*, of which extends up flush with the top of the rail, and is constructed to form notches at the ends of said edge alongside the rail, substantially as described, and for the purposes specified.

3. The combination, with a car-replacer, of the rail A, having longitudinal grooves *a'* in its face, whereby said car-replacer is aided in performing its function, substantially as set forth.

298,438. STEAM-ENGINE VALVE-GEAR. BISHOP ARNOLD, Auburn, N. Y. Filed May 1, 1883. (No model.)

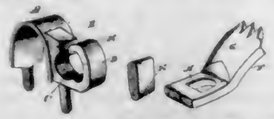


Claim.—1. An adjustable and shifting eccentric, in combination with a revolving shaft and disk, and a sleeve and rack-bar sliding longitudinally on said shaft for the purpose of actuating said eccentric, said sleeve having a peripheral rib and strap provided with trunnions, and adapted to fit the sleeve, and of such a shape as to retain oil, exclude dirt, and admit of adjustment when worn, as described.

2. The combination, with the shaft D, of eccentric A, provided with inclined teeth and guides B, and disk C, provided with guideways O P, and the rack-bar L, substantially as set forth.

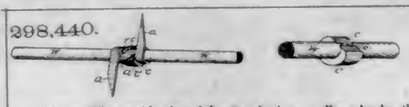
3. The combination of the shaft D, the sliding sleeve F, provided with the V-rib, the strap H, adapted to fit the same, and connected by trunnions to the bifurcated arm of the bell-crank lever K, the rack-bar L, and the eccentric A, each provided with inclined teeth, and the latter provided with guides B, and the disk C, provided with the guideways O P, as shown and described.

298,439. THILL-COUPLING. ALEXANDER O. BONSTEEL, Wilson, N. Y., assignor of one-half to Oscar S. McChesney, same place. Filed Nov. 23, 1883. (No model.)



Claim.—The combination, with a clip constructed with a recess in its forward jaw, said recess being formed with projections at the upper and lower ends of the openings leading thereto, of a flexible cushion adapted to be forced laterally into said recess, and a thill-iron provided with an eye, the end bar of which engages the inner side of the cushion, while the sides of the eye engage the edges of the cushion and prevent its lateral displacement, substantially as set forth.

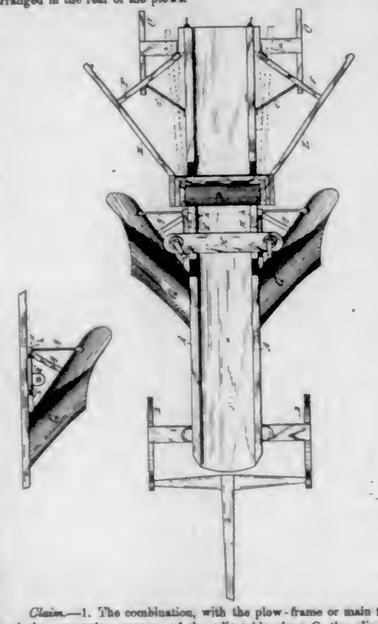
298,440. BARBED WIRE. CURTIS B. BRAINARD, Joliet, Ill. Filed Jan. 11, 1884. (No model.)



Claim.—The combination of the strand-wire *w*, collar *c*, having the flattened side *d'*, and barb *a*, having its central portion or body lie diagonally across said flattened portion of said collar, and having its prods coiled in opposite directions on said strand-wire, one on either side of said collar, as and for the purpose set forth.

298,441. SNOW-PLOW. PETER BRADFORD BRASH, Cheboygan, Mich. Filed Jan. 24, 1884. (No model.)

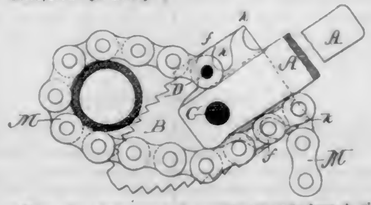
Brief.—The plows are vertically adjustable upon guide-frames, and are held in position by screw rods and nuts. Hinged wings and bars are arranged in the rear of the plows.



Claim.—1. The combination, with the plow-frame or main frame and the supporting-runners, of the adjustable plows G, the adjustable pivoted wings E, and hinged bars F, substantially as and for the purpose set forth.

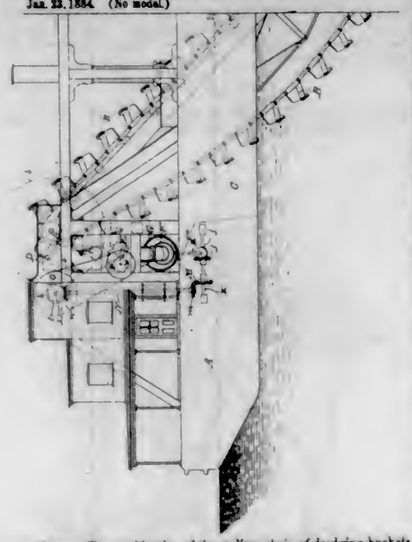
2. The combination, with the side beams, A A, of the metallic guideways *h h*, connected thereto, the plates H H, provided with the plows G G, the cross-bar K, and screw rods and nuts *k k'*, substantially as and for the purpose specified.

298,442. CHAIN-WRENCH. WILLIAM H. BROCK, Corsen, N. Y. Filed Feb. 2, 1884. (No model.)



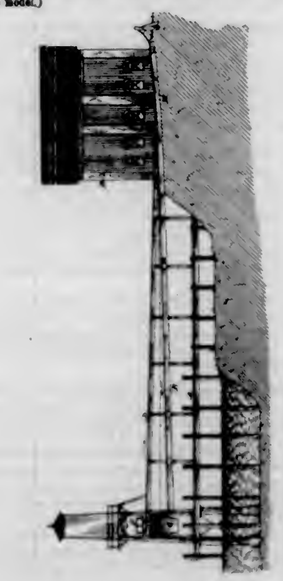
Claim.—In a chain-wrench, the combination of the lever A, pin D, chain M, and bolt C with the jaws B, made with claws *f f* and lugs *k k*, of the structure shown, for holding fast the chain when locked, so as to prevent its falling out whatever be the adjustment of the wrench, substantially as described.

298,443. APPARATUS FOR DREDGING, CRUSHING, AND WASHING PHOSPHATE-ROCK. FRED BROTHERHOOD, Charleston, S. C. Filed Jan. 23, 1884. (No model.)



Claim.—The combination of the endless chain of dredging-buckets, the driving-shaft thereof, the engine-shaft, the gears on said driving-shaft actuated by pinions on the engine-shaft, the crushing-rolls, the conveyer by which the material as excavated and elevated is delivered to said rolls, the belt-and-pulley connections between the crushing-rolls and the engine-shaft, the washing-cylinders, the gearing by which they are connected with and driven from the engine-shaft, and the conveyer by which the material is directed from the crushing-rolls to the washing-cylinders, all substantially as and for the purpose hereinbefore set forth.

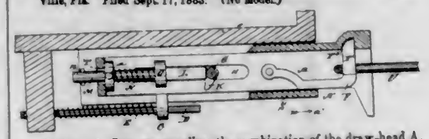
298,444. MEANS FOR LOADING VESSELS WITH PHOSPHATE-ROCK, &c. FRED BROTHERHOOD, Charleston, S. C. Filed Jan. 23, 1884. (No model.)



Claim.—1. The hereinbefore-described improved means for transferring and loading phosphate-rock, &c., consisting of the inclined outgoing track or tracks, the storage or drying shed or sheds from which the material is discharged into the cars on the outgoing track or tracks, the incline return track or tracks, the switch or switches, elevating apparatus for transferring the cars from the level of the outgoing track or tracks to that of the return track or tracks, and the conveyer or conveyers, all substantially as and for the purpose hereinbefore set forth.

2. The hereinbefore-described improved means for transferring and loading phosphate-rock, &c., consisting of the inclined outgoing tracks having additional inclines at their inner ends, the inclined return track or tracks having automatic switch connection with the outgoing tracks, the elevating apparatus at the outer ends of the tracks, and means for conducting the material as discharged from the cars into vessels at the sides of the wharf upon which the elevating apparatus is located, as and for the purpose hereinbefore set forth.

298,445. CAR-COUPLING. THOMAS ELLWOOD BUCKMAN, Jacksonville, Fla. Filed Sept. 17, 1883. (No model.)



Claim.—1. In a car-coupling, the combination of the draw-head A, rear apertured at T, and having slots *d* H, the sides B B, having flanges Q', inner recesses, R, and slots *g*, the shaft G, having outer arm, G', and cam K, the block L, having a rear spindle, M, collar O, and spring N, the journaled collar P, and the pawls Q, as and for the purpose described.

2. The combination, with a rod, D, surrounded by a spiral spring, E, and placed below the draw-head, of the apertured lug C, arranged on the bottom of the draw-head, as and for the purpose specified.

3. The combination, with a sliding draw-head, A, of the upwardly-swinging hook F, the shaft G, provided with a cam projection, K, the swinging locking-block L, the pawls Q, the spring E, and the cross-plate S, substantially as herein shown and described.

4. The combination, with the sliding draw-head A, of the upwardly-swinging hook F, the shaft G, provided with a cam projection, K, the block L, having a spindle, M, the collars O and P, of which the latter is provided with pivots *a*, the spring N, the spring E, and the cross-plate S, substantially as herein shown and described.

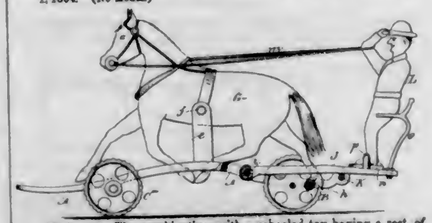
5. The combination, with the sliding draw-head A, of the upwardly-swinging hook F, the shaft G, having a cam projection, K, the block L, the spindle M, the spring N, the pawls Q, held in recesses R in the plates B at the sides of the draw-head, the cross-plate S, and the spring E, substantially as herein shown and described.

6. The combination, with the pivoted hook-coupler F, and bottom S, having slot A', of the draw-head A, projecting beyond the hook and having in the top a recess, F, to receive the hook-point, as shown and described.

7. The combination, with the sliding draw-head A, having slots H, of the side plates, B, having recesses R, the pawls Q, held in the recesses, the swinging hook F, the shaft G, provided with a cam projection, K, and a swinging block for locking the sliding draw-head in place, substantially as herein shown and described.

8. The combination, with a sliding draw-head, of an upwardly-swinging hook pivoted in the same, the shaft G, a swinging locking-block adapted to catch on the shaft and lock the draw-head in place, the handle-lever G', and the pendulum-pawl J, substantially as herein shown and described.

298,446. TOY. FRANCIS W. CARPENTER, Harrison, N. Y. Filed Feb. 1, 1884. (No model.)



Claim.—1. The combination, with a wheeled toy having a rest, of a toy figure, the figure and rest being connected by one part having a notch to receive the other part, substantially as set forth.

2. The combination, with a wheeled toy, of a figure and a pin and socket, by means of which the parts are connected, substantially as set forth.

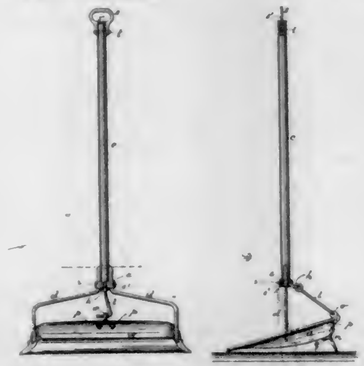
3. The combination, with a toy figure, of a notched rest, a base, a pin, and an opening for receiving the pin, substantially as set forth.

4. A toy figure, in combination with the pivoted bar, a frame or support, the wheels, and the crank-pin or lifter, substantially as set forth.

5. A toy figure, in combination with a pivoted lever, a pivoted animal, the frame or support, the wheels, and the crank-pin or lifter, substantially as set forth.

6. In a wheeled toy, the combination, with a pivoted animal, of a wheel and a crank-pin or projection acting upon the animal to swing the same, and a figure connected with such toy, substantially as set forth.

298,447. DUST-PAN. FRANCIS W. CARPENTER, Harrison, N. Y. Filed Feb. 21, 1884. (No model.)



Claim.—1. The combination, with a handle, of a wire bail passed across through the handle and bent at the sides of and parallel to the handle, and a clamping-band slipped upon the handle and over the parallel portions of the bail-wire, substantially as set forth.

2. The combination, with the dust-pan, of a handle, a wire bail passing across the handle, and a metallic clamping-band slipped on, to include the handle and parallel portion of the bail-wire, substantially as set forth.

3. The metallic band *a*, having an eye, *h*, for the reception of a hook, and notches or recesses at its opposite sides, in combination with the handle and the bail-wire, substantially as set forth.

4. The suspending-loop *s*, having a cross-piece, *s'*, to pass into a groove at the upper end of the handle, and ends for the reception of the attaching-rivet, substantially as set forth.

5. In combination with the dust-pan, a cast-metal rest, an eye at the upper part of the rest-piece, a hook, and the handle, substantially as set forth.

6. The combination, with a handle, of a wire bail passed into the handle, and bent at the sides of and parallel to the handle, and a clamping-band having notches or recesses at its opposite sides, slipped upon the handle and over the parallel portions of the bail-wire, substantially as set forth.

7. The combination, with a dust-pan, of a handle, a wire connected with the dust-pan and passed into the handle, and a clamping-band having notches or recesses at its opposite sides, and slipped upon the handle and parallel portion of the wire, substantially as set forth.

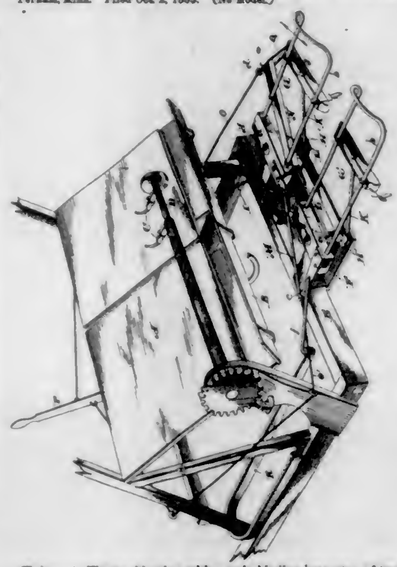
298,448. NIGHT-LIGHT. SAMUEL CLARKE, Childs Hill Works, County of Middlesex, England. Filed Jan. 29, 1884. (No model.) Patented in England Dec. 27, 1883, No. 5,877.



Claim.—1. A night-light having the block of fatty material shouldered or of two diameters, the plaster bottom and the plaster case extending about the block of fatty material from the bottom to the surrounding shoulder of the block, substantially as hereinbefore set forth.

2. The hereinbefore-described method of manufacturing night-lights, consisting in molding a block of fatty material of two diameters, or with a surrounding enlargement at the end remote from the base, and then applying a wrapper around this block, and pouring plaster between said wrapper and the block, thereby forming of plaster both the bottom of the light and a case extending about the sides of the block of fatty material, substantially as described.

298,449. BUNDLE-CARRIER FOR GRAIN-BINDERS. WM. COLLINS, Perham, Minn. Filed Oct. 2, 1883. (No model.)



Claim.—1. The combination, with a grain-binding harvester, of two horizontally-movable leaves hinged thereto, means for opening and closing the leaves, and a rod or other device connecting the leaves, whereby they are moved simultaneously and in opposite directions, substantially as set forth.

2. The combination, with a grain-binding harvester, of two horizontally-movable leaves hinged thereto, devices for locking the leaves in closed adjustment, and mechanism whereby they are moved simultaneously in opposite directions.

3. The combination, with a grain-binding harvester, of two horizontally-movable leaves pivotally secured to the machine-frame, each leaf consisting, essentially, of a head, *a*, and U-shaped frame, said frames being turned up at their outer ends, and devices connecting the leaves, whereby they are moved simultaneously in opposite directions.

4. The combination, with a grain-binding harvester, of two horizontally-movable leaves pivotally secured to the machine-frame, the brace-rods K, and braces J, all of the above parts combined as described.

5. The combination, with two leaves pivotally secured to a binder-frame, and adapted to be moved simultaneously in opposite directions, of a locking-lever journaled to one of the leaves for the purpose of locking both leaves in a closed position, and adapted to be operated by the driver, substantially as set forth.

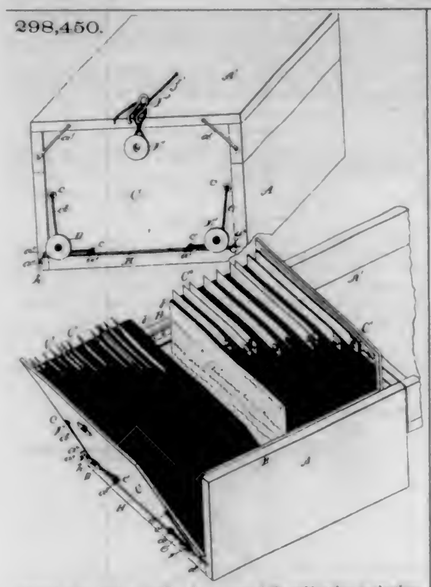
6. The combination, with a grain-binding machine, of the two leaves, one of which is provided with a diagonal brace, N, devices for connecting the two leaves, whereby they are moved simultaneously in opposite directions, the locking-lever, and devices for opening and closing the leaves, substantially as set forth.

298,450. LETTER-FILE AND CABINET. ARTHUR L. COLTON, Milwaukee, Wis. Filed Jan. 14, 1884. (No model.)

Claim.—1. In a file-cabinet, a letter-file consisting of front and rear boards and intermediate independent movable division-sheets bearing index or classification marks, in combination with adjustable supporting cords or tapes passing through holes in the boards and sheets, and securing devices, substantially as set forth.

2. A cabinet having open front and hinged cover, inner side strips of less length than the sides to which they are secured, and projections and eyebolts, in combination with a letter-file having front and rear boards

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adapted to be held in position by means of the said strips, projections, and eyebolts, intermediate independent movable division-sheets, adjustable supporting tapes or cords, and securing devices, substantially as set forth.

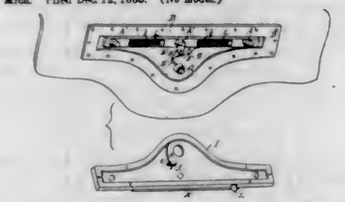
3. The combination, with a case or cabinet having perforated side strips, of a letter-file secured within said cabinet, and having movable division-sheets and an adjustable fastening device adapted to be secured in any of the perforations of the side strips, so as to be always just back of the last division-sheet, substantially as and for the purpose set forth.

4. The combination of the cabinet A, having eyebolts or perforated projections a^3 a^3, with a letter-file secured within said cabinet, and having a front board provided with holes to receive the projections a^3, and the fastening device H, substantially as set forth.

5. The combination of the cabinet A, with hinged cover A', having braces *a'*, catch F', and cord or tape *f'*, with a letter-file secured within said cabinet, and having a front board removably hinged to the bottom of the cabinet, and provided with a belaying-pin, F, substantially as set forth.

6. The combination of the cabinet A and letter-file secured within the same, having a front board removably hinged to the bottom of the cabinet, with the spring I and the link I', substantially as set forth.

298,451. LOCK FOR MAIL-POUCHES. GUSTAVE DEMME, Hancock, Mich. Filed Dec. 12, 1883. (No model.)

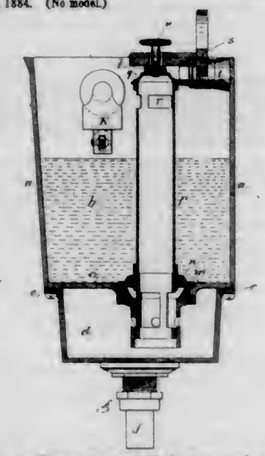


Claim.—1. In a locking device, and in combination with the spring locking-plate D and spring-pawl E thereof, the sliding plate K, provided with the pin *s*, to engage the pawl E, substantially as and for the purpose set forth.

2. In combination with the notched studs A', fastened to the frame of a pouch, and constructed to pass through the flap of the same and into the plate B, secured to said flap, the locking spring-bolt D, secured to said plate and engaging said studs A', and provided with the spring-pawl E, the sliding plate K, secured on the face of said lock, and carrying the pin *s*, constructed to come in contact with said pawl and bring it within the path of the tooth H on the key-spindle G, substantially as and for the purpose specified.

3. In a pouch-lock, and in combination with the spring-plate D and spring-pawl E, the sliding plate K upon the outer face of the said lock, having an opening to display the post-office address, and provided with a pin, *e*, projecting through the slot *f* in the face of said lock, to control the pawl E, the movement of said plate being limited by the studs *d*, projecting therefrom and passing through slots in the front of said lock, whereby the said plate serves the double purpose of displaying an address and of throwing said locking mechanism into a fixed position to be operated on by the tooth of the key-spindle, substantially as described.

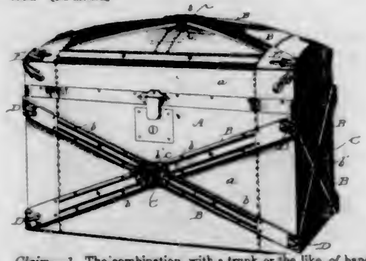
298,452. CISTERN FOR WATER-CLOSETS. JOHN DEMAREST, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed Apr. 4, 1884. (No model.)



Claim.—1. The combination, with the cistern and valve-seat, of the rubber ring-valve *n*, the tube *p* within the valve, having a slotted lower end, forming a guide within the valve-seat, and overflow-openings near the upper end, the cap *q*, the lever *s*, and the screw passing through a hole in the lever into the said cap *q*, substantially as set forth.

2. The lever *s*, pivoted at the inside of the closet-cistern and extending out laterally, in combination with the tube *p*, the cap at the upper end of such tube, the screw passing through the lever into the cap, the washer *l*, the valve *n* around the tube *p*, and the brass valve-seat secured in the bottom of the cistern, substantially as set forth.

298,453. TRUNK. JOHN R. DUGUID, Toledo, Ohio. Filed Feb. 14, 1884. (No model.)



Claim.—1. The combination, with a trunk or the like, of bands secured diagonally over its surface, substantially as and for the purpose set forth.

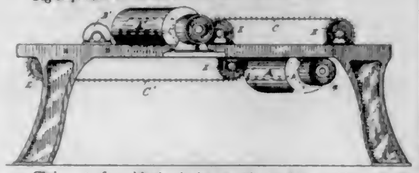
2. As an improved article of manufacture, a trunk or the like having bands secured diagonally over its surface and crossing each other, said bands being jointed together at their point of juncture with each other, substantially as set forth.

3. The combination, in an improved banding for trunks, with the bands secured diagonally over the surface of the trunk and crossing each other, of the clamps secured to the face of the bands at this point of junction, and having the inwardly-extending flanges binding against the edges of the bands on opposite sides, substantially as set forth.

4. As an improved article of manufacture, a trunk or the like hav-

ing pairs of bands secured diagonally over the surface of its sides and ends, and extending from one corner to another, said bands being jointed into each other at their point of juncture, substantially as set forth.

298,454. SHINGLE-PLANING MACHINE. ALONZO W. ELDRIDGE, Big Rapids, Mich. Filed Mar. 19, 1884. (No model.)



Claim.—1. In a shingle-planing machine, and in combination with the cutter thereof, and as a means for feeding the shingles to said cutters, the band-feed made of a steel band, with projecting spurs upon one side and cogs or corrugations upon the other, and pulleys carrying said band, provided with cogs or corrugations coincident with those upon said bands, substantially as described.

2. In a planing-machine, the combination of the two planer-heads, arranged on opposite sides of the bed, and journaled diagonally to such machine and parallel to each other, one being adapted to plane the upper and the other adapted to plane the under side of a shingle, in combination with steel band carriers or feeds, the parts being constructed, arranged, and operating substantially as and for the purposes specified.

3. A shingle-planing machine consisting of a suitable bed, to which are diagonally journaled planer-heads, steel-band feeds adapted to feed the shingle to such planer-heads, and the saws adapted to true the shingle before it reaches either of said planer-heads, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

4. A shingle-machine consisting of a suitable bed, two planer-heads, A A', arranged one above and the other below said bed, steel-band feeds adapted to feed the shingles to said planer-heads, the saws B B', adapted to true the shingle before it reaches either of said planer-heads, one of said saws being adjustable upon its arbor, and the marker-wheel D, adapted to mark or stamp the face of the shingle, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

298,455. SUBMARINE PROJECTILE. JOHN ERICSSON, New York, N. Y. Filed Oct. 3, 1883. (No model.)



Claim.—1. The combination, with a submarine projectile, of a steering-plate attached to its upper side, and presenting its face in an outward direction from the axis of the projectile, substantially as and for the purpose herein set forth.

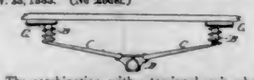
2. The combination, with a submarine projectile, of a steering-plate hinged thereto, and a spring between the said plate and the tail of the projectile, substantially as and for the purpose herein described.

3. The combination, with a submarine projectile having a tail provided with straight longitudinal wings or fins to prevent it from turning, of a steering-plate attached to its upper side, and presenting its face in an outward and upward direction from the axis of the projectile, to control its course in a vertical direction, substantially as herein described.

4. The combination, with the projectile having ribs *a a a'* on its tail, of the hinged steering-plate D and the spring E, substantially as and for the purpose herein described.

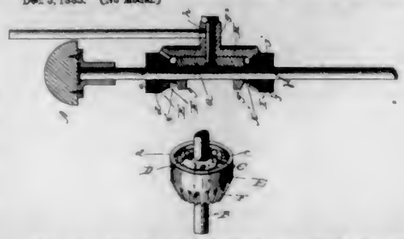
5. The combination, with the tail of the projectile and the hinged steering-plate D, of the guard *e*, substantially as and for the purpose herein described.

298,456. WAGON-SPRING. CHRISTIAN FALLENDI, Brooklyn, N. Y. Filed Nov. 23, 1883. (No model.)



Claim.—The combination, with a torsional-spring bar, and with an arm extending therefrom in a plane at about a right angle with its length, of an auxiliary spiral spring formed or fitted at the end of said arm, to operate by compression, substantially in the manner and for the purpose herein set forth.

298,457. HAND-DRILL. ISAIAH M. FURBISH, Augusta, Me. Filed Dec. 5, 1883. (No model.)



Claim.—In a hand-drill, the combination, with a spindle carrying disks rigid thereon, collars inclosing said disks, said collars being provided on their inner sides with a series of teeth, pawls pivoted on said disks, springs to hold the same in position, cap-plates *e*, inclosing the ends of said collars, which are also provided with teeth upon their outer sides, and a gear-wheel suitably mounted for operating the same, substantially as set forth.

298,458. COMBINED NECKTIE AND COLLAR-BUTTON. ADELBERT L. GILBERT, Milwaukee, Wis. Filed Feb. 27, 1884. (No model.)

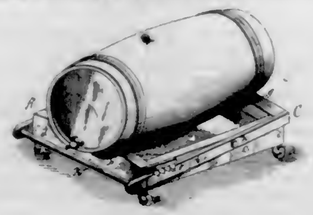


Claim.—1. In neck-wear, the combination of a collar-button, a safety-pin, and a necktie, said safety-pin being detachably connected to the shank of said button, substantially as set forth.

2. In neck-wear, the combination, with the collar-button A, having opening or recess B, of the spring-catch E, having circular recess *a*, eyelet *b*, safety-pin H, and necktie M, said eyelet *b* serving as a place of attachment for said safety-pins, said pin H serving to temporarily connect said tie with said spring-catch and the collar-button, substantially as and for the purpose specified.

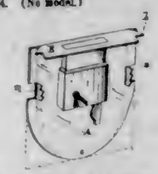
3. In a necktie-fastener, the combination, with the collar-button A, having socket B, of the spring-catch E and fastening-pin H, formed in a single piece, said spring-catch and pin being adapted to serve as a means of attaching a necktie to the collar-button, as set forth.

298,459. BARREL TRUCK AND ELEVATOR. HARRY E. GILCHRIST, Oneonta, N. Y. Filed Feb. 19, 1884. (No model.)



Claim.—In combination, a main supporting frame or platform mounted on casters, its forward end provided with a concave recess or seat, and its sides cut away at their rear end to form right-angular shoulders, which, in connection with a brace secured to the remaining portions of said sides, form a seat, a lever-frame pivotally connected to the main frame or platform, its sides provided with angular notches or recesses and extended beyond the front end of the main frame and connected by a brace, and latches or dogs pivoted to the sides of the main frame at its rear end, and arranged to automatically engage the notches or recesses in the sides of the lever-frame, substantially as described, and for the purpose specified.

298,460. LOCK FOR DRAWERS. EMANUEL G. GORY, Cincinnati, Ohio, assignor to the Corbin Cabinet Lock Company, New Britain, Conn. Filed Feb. 19, 1884. (No model.)

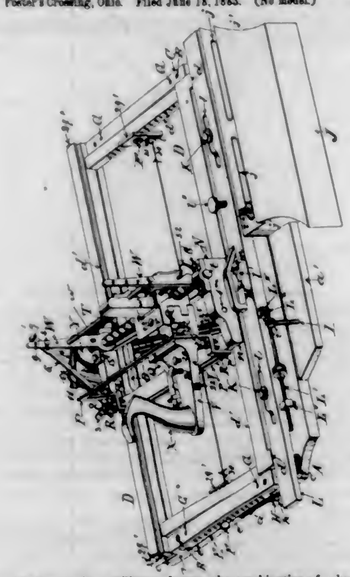


Claim.—1. The combination of a drawer-front having a gain or cavity, having its rear wall sloping outwardly at the bottom to form both a vertical and inner bearing for the lower edge of a lock-plate, and its side walls provided at the top with countersunk depressions, with the lock fitting within said gain and having spurs *b* projecting from its selvage to overlap the side walls of said gain and enter the depressions therein, substantially as described.

2. A cabinet-lock having a portion of the edges of its front plate bent inward, forming flaring lugs to enter an undercut mortise, and the remaining portion left straight to close the cavity, and with the bent portion retain the lock in place.

3. A cabinet-lock having its front plate extending laterally beyond the lock-case, and a portion of the edges of said plate bent inward upon each side to form retaining-wings, and the ends of said inwardly-bent wings serrated or barbed to retain the lock in an undercut routed cavity without extraneous fastenings, substantially as described.

298,461. MILLSTONE-DRESSING MACHINE. DAVID S. GREELY, Foster's Crossing, Ohio. Filed June 18, 1883. (No model.)



Claim.—1. In a millstone-dresser, the combination of a bed-frame having a series of horizontal perforations in its ends, a tilting frame having a corresponding series of horizontal perforations in its ends, one hole of each series of perforations being at the middle part of the end, and pivot-pins to support and hold down the tilting frame from the bed-frame, the pivot-pins being adjustable from or toward a central position, either in or out of line with each other, and forming the fulcrums on which the tilting frame can be tipped toward either side of the bed-frame.

2. In a millstone-dresser, the combination of a bed-frame having a series of horizontal perforations, and slots beneath the perforations in its ends, a tilting frame having a corresponding series of horizontal perforations in its ends, pivot-pins to form adjustable fulcrums to secure the tilting frame to the bed-frame, and bolts adjustable in the slots to limit the tip of the tilting frame.

3. In a millstone-dresser, the combination of a rectangular frame, a tilting frame having a series of holes in its ends, plates secured on the ends of the rectangular frame, having shoulders for the carriage-frame, and mortises, center block having tenons to occupy the mortises, and a series of holes corresponding to the holes in the ends of the tilting frame, and adjustable pivot-pins securing the frames together.

4. In a millstone-dresser, the combination of a bed-plate having posts K, a tilting frame, D, having pin M, and a sliding sill, L, having crooked slots *l* to receive the posts, and slanting groove *l'* to receive the pin, as set forth.

5. In a millstone-dresser, the combination of a bed-plate, a tilting frame pivoted to the ends of the bed-plate having ears, posts extending upward from the bed-plate, and a sliding sill having slots to receive the posts, and thus adapted to move sidewise beneath the ears of the tilting frame.

6. In a millstone-dresser, the combination of bed-plate A, having swinging nut L'' thereon, a tilting frame, D, and a sliding sill, L, provided with a yoke, L'', and adjusting-screw L', tapped within the swinging nut and having its head engaged by said yoke, as set forth.

7. In a millstone-dresser, the cross-carriage Q, having a part, V, hinged to swing laterally, provided with diamond-holders arranged one in advance of the other, and a screw, 23, to adjust the hinged part to place the holders either in or out of line, as set forth.

8. In a millstone-dresser, the combination of main carriage N, cross-carriage Q, feed-screw T, by which the cross-carriage is hinged to the main carriage, the adjustable bar P P', to limit the upward and downward movement of the cross-carriage, and at the same time discharge the functions of a leveling-gage, and screws 20 21, to respectively limit the upward movement of and adjust the cross-carriage, as set forth.

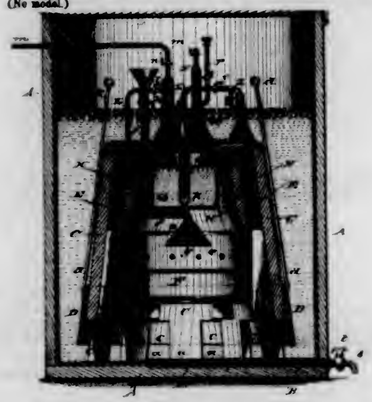
9. In a millstone-dresser, the combination of main carriage N, adjustable screw T, mounted in bearings thereon, having necks *t*, cross-carriage Q, hinged to the screw, arms W, hinged to the necks, bar w, supported by the cross-carriage and supporting the upper ends of the arms, and set-screw adjustable through an arm to limit the excursions of the cross-carriage.

10. In a millstone-dresser, the positively-acting feed mechanism, consisting of reversely-directed ratchet Y Y' on the screw-shaft T, in combination with the vertically-rocking cross-carriage Q, arm W, connected by rod 6 with vibrating plate 2, carrying the two sets of pawls 14 16 and 15 17, and the reversing-cams 18, substantially as set forth.

11. In a millstone-dresser, the combination, with the frame and the carriages, of the stretched thong, fulcrum-ears 29', and hooks by which the thong is secured to the fulcrum-ears, as set forth.

12. In a millstone-dresser, the combination of a bed-plate, A, having horizontal lugs *a'*, supporting-bolts I, and the weights J, adapted to slide longitudinally on the lugs, having slots *j* to receive the bolts, as set forth.

298,462. APPARATUS FOR GENERATING AND CARBURETING HYDROGEN GAS. LEMOT S. GROVES, Afton, Iowa, assignor to Joshua F. Bishop, same place, and J. H. Patt, Creston, Iowa. Filed June 23, 1883. (No model.)



Claim.—1. The inner wooden jacket or skirt surrounding the gasoline-tank within the upper portion of the hydrogen-chamber, substantially as specified.

2. The open-bottom wooden casing C, having marginal ways or notches in its lower edge, and surrounding the hydrogen-chamber, substantially as specified.

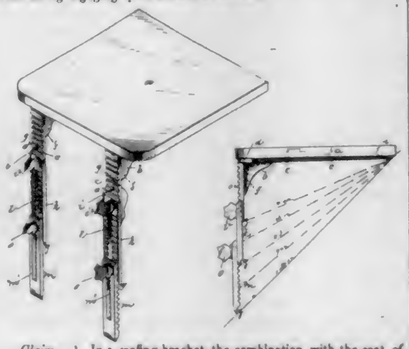
3. The adjustable annular gate extending around the incasement C, and adapted to close the ways or notches thereof, substantially as specified.

4. The combination, with the incasement C and its adjustable annular gate, of a coiled or convoluted and perforated waste-pipe, substantially as specified.

5. The combination, with the basket F, for holding the clippings of iron, of the cleansing device, consisting of the tube *f*, provided near its upper end with the check-valve *h*, and the expanded discharge-chamber *e*, having a perforated base and cap *g*, substantially as specified.

298,463. ROOFING-BRACKET. ALFRED GUEDLE, Canal Dover, Ohio. Filed Feb. 23, 1884. (No model.)

Brief.—Consists of a seat having horizontal angle-irons provided with serrated vertical portions and intermediate slotted detachable and adjustable leg-sections secured together by screws and washers, said sections having engaging-spurs at their lower ends.



Claim.—1. In a roofing-bracket, the combination, with the seat, of the angle-irons having their horizontal portions secured to the under face of the seat, and provided with the strengthening-lugs and webs made integral with the horizontal and vertical portions of said irons, and the vertical portions provided at their lower ends with the spurs for engaging the roof, substantially as specified.

2. In a roofing-bracket, the combination, with the seat provided with angle-irons secured by their horizontal portions to the under face of the same, and having the vertical leg-sections provided with lateral serrations on their outer faces, and screw-holes intermediate of their ends, of the slotted leg-sections serrated on both faces, and provided with spurs at their lower ends, and set-screws and washers for adjustably securing said slotted double serrated sections to the upper leg-sections, substantially as specified.

3. In a roofing-bracket, the combination, with the seat and angle-irons carrying the serrated upper leg-sections, provided with screw-holes, of the intermediate slotted leg-sections, serrated on both faces, and provided with screw-holes in line with their slots near their lower ends, and the lower serrated and slotted sections having engaging-spurs at their lower ends, and set-screws and washers for adjustably connecting the lower and intermediate leg-sections together, and for adjustably connecting the intermediate sections to the upper sections, substantially as specified.

4. A roofing-bracket having serrated and slotted detachable and adjustable leg-sections secured together by set-screws and washers, substantially as specified.

298,464. BUTTON-FASTENER. WILLIAM HALKYARD, Providence, R. I. Filed Mar. 24, 1884. (No model.)

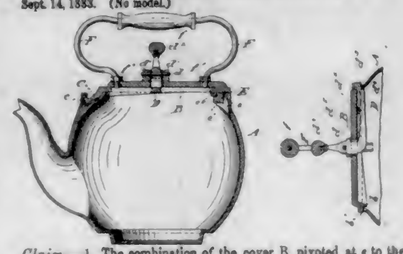


Claim.—1. As a new article of manufacture, the combined button and fastener A herein described, consisting of the button D, flanged eyelet C, and spring-staple B, the latter provided with means for retaining it in position within the eyelet, the whole combined, arranged, and adapted for use substantially as shown, and for the purpose set forth.

2. In a button-fastening, the two-prong spring-staple B herein described, provided with a loop, *b*, and slightly curved and notched or barbed ends *b*², substantially as shown and set forth.

3. The combination of the metallic flanged eyelet C with the spring-staple B, the latter provided with a button-retaining loop, *b*, and prongs *b*², terminating in the notched ends *b*², said staple adapted to pass loosely through the eyelet and retained therein, as shown and set forth.

298,465. TEA-KETTLE. IVORY W. HARLOW, Plymouth, Mass. Filed Sept. 14, 1883. (No model.)



Claim.—1. The combination of the cover B, pivoted at *e* to the kettle-body A, having a tongue, C, stop *b*, and the locking-latch D, shaped and arranged in relation to the cover as specified, with the kettle-body A, having the catch *c*, all substantially as and for the purposes described.

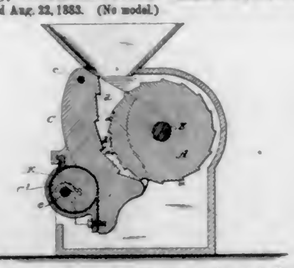
2. The cover B, having the downward-projecting stop or lug *b*, cast therewith, and the latch D, pivoted at *d* to the cover, to have an automatic oscillating movement in relation thereto, all substantially as and for the purposes set forth.

3. The combination of the kettle A, having the pivot-hole a^3 d^4, shaped as described, and stop a^4, with the kettle-cover B, having the pivot *e*, with a locking-projection, e', all substantially as and for the purposes described.

4. The combination of the cover B, pivoted to the body of the kettle, and having the downwardly-projecting tongue C, with the catch *c*, all substantially as and for the purposes described.

5. The combination of the cover B and lever D, pivoted to the cover, as described, and having the stop d^3, with the body A, all substantially as and for the purposes described.

298,466. COTTON-SEED HULLER. HENRY HEARD, Greensborough, Ga. Filed Aug. 22, 1883. (No model.)

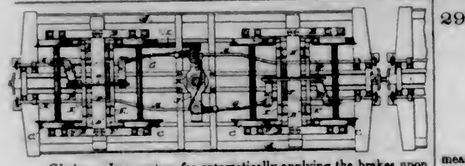


Claim.—1. A grinding-cylinder having contiguous inclined teeth or ridges extending entirely across its face and parallel with its axis, in combination with an adjustable concave or segmental bed, also having contiguous inclined teeth extending entirely across its inner face, the teeth on said concave or bed being wider and deeper than those on said cylinder, substantially as described.

2. A grinding-cylinder having contiguous inclined teeth or ridges extending entirely across its face and parallel with its axis, and a concave or bed also having contiguous inclined teeth extending entirely across its inner face, the teeth on said concave or bed being wider and deeper than those on said cylinder, in combination with a spherical eccentric for adjusting said concave relative to said cylinder, substantially as described.

3. The combination, with a grinding-cylinder, of an adjustable concave or segmental bed having a concave bearing, C², and a spherical eccentric for adjusting said bed relative to said cylinder, as set forth.

298,467. CAR-BRAKE. MARTIN M. HINER, Harrisburg, Pa. Filed July 13, 1883. (No model.)



Claim.—In a system for automatically applying the brakes upon the cars of a railway-train through the momentum of the train, the combination, with each car and with its brake appliances, of a frame constructed of two continuous rods connected by cross-bars, and mounted to have jointly free longitudinal play under the car, each longitudinal rod of the frame being made to extend the entire length of the car, on either side thereof, from bumper-head to bumper-head, in position to align and contact directly with a counterpart projecting arm or rod on the locomotive or tender, and to produce by its rearward movement in unison with its parallel rod an application of the brakes on the car, substantially in the manner and for the purpose herein set forth.

298,468. LUBRICATOR. WILLIAM HOPE and JAMES HOMAN, Spring field, Ohio. Filed Feb. 25, 1884. (No model.)



Claim.—1. The combination, with the cap or cover of a lubricating-cup provided with a suitable oil-opening, of a hinged valve arranged upon the under side thereof, substantially as set forth.

2. The combination, with the cap or cover of a lubricating-cup provided with a suitable oil-opening, of a spring-pressed hinged valve arranged upon the under side of said cap, adapted to close said opening, substantially as set forth.

3. The combination, with a cap or cover of a lubricating-cup provided with a suitable oil-opening, of a hinged valve arranged upon the under side of said cap, the upper surface of which is made convex in form, substantially as set forth.

4. The combination, with a cap or cover of a lubricating-cup provided with a suitable oil-opening, of a hinged valve, the upper surface of which is made convex, and a spring for holding the same in said oil-opening, substantially as set forth.

5. The combination, with the cap or cover of a lubricating-cup provided with a suitable oil-opening, of a hinged spring-pressed valve secured to the under side of said cap or cover, and made convex in form, substantially as set forth.

6. The combination, with a cap or cover of a lubricating-cup provided with a suitable oil-opening located at about the center of said cap, said opening being concave in form upon its under side, of a hinged spring-pressed valve secured to the under side of said cap or covering, and made convex in form to fit the concave opening of the said cap, substantially as set forth.

7. The combination, with a cap or cover of a lubricating-cup provided with a suitable oil-opening, of a valve adapted to fit in said opening to close the same, said valve being formed with an extension or projection upon its lower end, and a spring for holding the same in contact with the under side of the cover, substantially as set forth.

8. The combination, with a cap or cover of a lubricating-cup provided with a suitable oil-opening, of a valve hinged at its rear end upon a shaft secured in downwardly-projecting brackets, substantially as set forth.

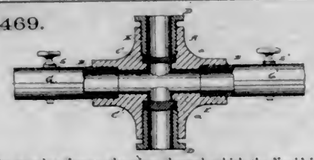
9. The combination, with the cover of a lubricating-cup provided with a suitable oil-opening, of a valve pivoted upon a shaft secured in brackets, and a spring mounted upon said shaft and formed with a loop to engage the under side of the valve, substantially as and for the purpose set forth.

10. The combination, with the cover of a lubricating-cup provided with a suitable oil-opening, of a valve for closing the same, pivoted upon a shaft secured in brackets to the under side of the cover, a coil-spring mounted upon said shaft and formed with a loop to bear against the under side of the valve, and a rod for limiting the movement of said valve, substantially as set forth.

298,469. FLUID-INSPECTOR. JULIUS L. HORNIG, Jersey City, N. J. Filed Oct. 18, 1883. (No model.)

Claim.—1. A fluid-inspector consisting of a pipe or tube through which flows the liquid and apertures upon opposite sides thereof, covered by a transparent medium, so that a stream, ray, or rays of light will pass through the liquid at or about at right angles to its flow, substantially as set forth.

2. The combination, with a cross or four-way pipe intersection, of

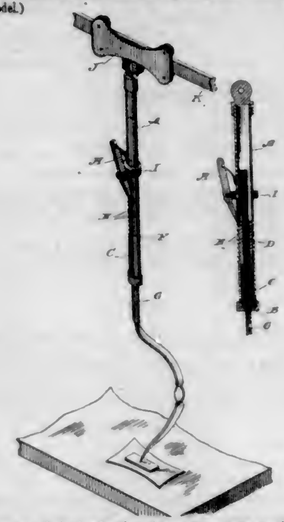


means for securing thereto the pipes through which the liquid is to flow, transparent media placed in each cross, and means for securing the media therein, substantially as set forth.

3. The combination, with a cross or four-way pipe intersection, of means for securing thereto the pipes through which the liquid is to flow, transparent media placed in each cross-arm, means for securing the media therein, and an elastic packing interposed between the media and its seat.

4. The combination, with a fluid-inspector substantially such as described, of cocks interposed to regulate flow of the liquid through the inspector, substantially as set forth.

298,470. DEVICE FOR CLAMPING PATTERNS ON GOODS. JAS. ALFORD HOUSE and CHAS. H. DIMOND, Bridgeport, Conn. Filed Feb. 6, 1884. (No model.)



Claim.—1. A device for clamping patterns onto goods, consisting of a rod adapted to be adjusted to any vertical plane, and having interiorly arranged therein a threaded clamping-bar engaging with a nut within said rod, substantially as set forth.

2. A device for clamping patterns to goods, consisting of a rod pivotally attached to a traveling block or frame, and having interiorly arranged therein a threaded clamping-bar adapted to travel in a nut, substantially as described.

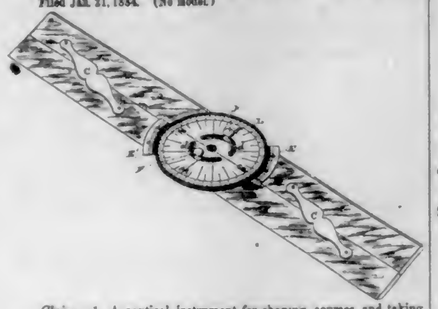
3. In a device for clamping patterns to goods, a rod pivotally attached to a traveling block or frame, and having interiorly arranged therein a nut provided with ratchet-teeth and supported in an elevated position by a spring, in combination with a threaded clamping-bar adapted to travel in said nut, and a pawl attached to said rod and adapted to engage with said teeth and hold the bar against upward movement, substantially as shown and described.

4. In a device for clamping patterns to goods, the threaded clamping-bar adapted to engage with an adjustable nut arranged interior of a rod capable of being adjusted to any vertical plane, substantially as set forth and described.

5. The threaded clamping-bar adapted to engage with a nut in the rod, in combination with means independent of the screw action of the bar for enabling the latter to be brought down and held upon the pattern, and returning said bar to its normal position, substantially as specified.

6. The rod A, having shoulder B and elongated slot F, and with nut D and coil-spring C, arranged interiorly therein, in combination with the threaded clamping-bar G, sliding block J, and pawl H, attached to said rod and engaging with teeth in said pawl, substantially as and for the purpose set forth.

298,471. NAUTICAL PARALLEL RULER. CHARLES HUTCHINSON, San Francisco, Cal., assignor of one-half to William Bendt, same place. Filed Jan. 21, 1884. (No model.)



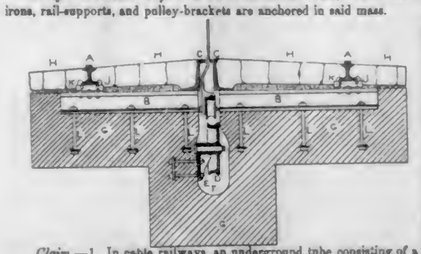
Claim.—1. A nautical instrument for shaping courses and taking cross-bearings, consisting of the parallel rulers A B, connected by links C, the compass-plate D, having slot *d*, and the thumb-screw F, whereby said plate may be turned to indicate any angle of variation with the rulers, substantially as herein described.

2. A nautical instrument for shaping courses and taking cross-bearings, consisting of the parallel rulers A B, connected by links C, the compass-plate D, having slots *d*, and thumb-screws F, and the variation-arc E, substantially as herein described.

3. A nautical instrument for shaping courses and taking cross-bearings, consisting of the parallel rulers A B, connected by links C, the two-part compass-plate D, having slots *d*, and thumb-screws F, and the variation-arcs E E', substantially as herein described.

298,472. MODE OF CONSTRUCTING TUBES AND ROAD-BEDS FOR CABLE RAILWAYS. JOHN D. ISAACS, Oakland, Cal. Filed Jan. 18, 1884. (No model.)

Brief.—The cable-way is cored from a concrete mass, and the slot-irons, rail-supports, and pulley-brackets are anchored in said mass.



Claim.—1. In cable railways, an underground tube consisting of a mass of concrete cored longitudinally to form a ropeway, with slot-irons on top, to form the passage for the grip-shank to move in, anchored therein, and brackets to carry the cable-supporting pulleys, similarly anchored in the concrete, substantially as herein described.

2. In cable railways, an underground tube consisting of a combination of a mass of concrete cored longitudinally to form a ropeway, with slot-irons on top, to form the passage for the grip-shank to move in, anchored therein, substantially as herein described.

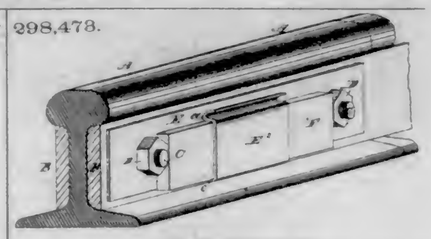
3. In cable railways, an underground tube and road-bed consisting of a combination of a mass of concrete cored longitudinally, with slot-irons on top, to form the passage for the grip-shank to move in, anchored therein, brackets to carry the cable-supporting pulleys, also anchored in the concrete, and a continuous mass of concrete passing under the rails to which said rails are anchored, substantially as herein described.

4. The combination of the concrete mass G, cored to form the tube F, and supporting the rails A A, the sleepers B B, resting horizontally on top of the concrete, and connecting together the rail-chairs and the channel-irons, and the bracket-supports for the cable-carrying pulleys anchored in the concrete, substantially as herein described.

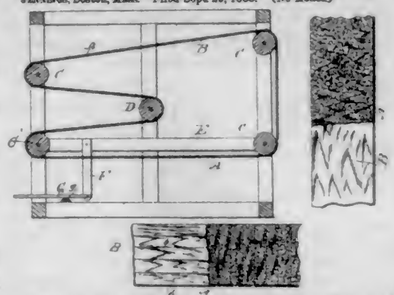
298,473. RAILWAY-JOINT AND NUT-LOCK. WILLIAM M. JENKINS, Defiance, Iowa. Filed Feb. 23, 1884. (No model.)

Claim.—The clasp-plate E, formed with the openings E' and the central clasping tongue, E², and having the spring-lips *b*, formed about the openings E', substantially as and for the purposes set forth.

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298,474. SMOOTHING AND POLISHING MATERIAL. RALPH S. JENNINGS, Boston, Mass. Filed Sept. 29, 1883. (No model.)



Claim.—1. The polishing or smoothing material constructed, substantially as hereinbefore set forth, of sand, emery, or similar grinding substance secured to sheets or strips of wood, which in turn are fastened to other sheets or strips having the grain running transversely relative to the grain of the aforesaid sheets or strips, substantially as set forth.

2. The herein-described polishing or smoothing material, consisting of sand or emery secured to flexible wooden sheets or strips, substantially as set forth.

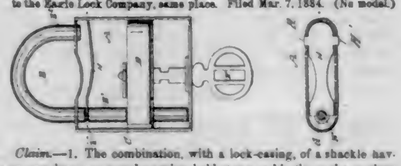
298,475. LAND-ROLLER. KINEY W. JONES, Lemoore, Cal. Filed Jan. 21, 1884. (No model.)



Claim.—1. The spring I for the seat, consisting of a single leaf, one end of which is riveted fast, and the other is curved inwardly on itself, and has a play by reason of a slot, *j*, and guide-pin J, substantially as herein described.

2. The rear frame, A, having rollers B and connecting-arms *b*, formed in one piece, in combination with the frame C, having roller D, curved bar G, seat-spring I, forming a single leaf, and having a raised rear portion, under which and over the bar G the arms *b* are pivoted, substantially as herein described.

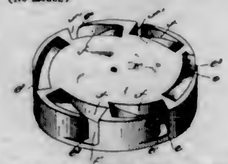
298,476. PADLOCK. CHARLES W. JUDSON, Terryville, Conn., assignor to the Eagle Lock Company, same place. Filed Mar. 7, 1884. (No model.)



Claim.—1. The combination, with a lock-casing, of a shackle having an annular groove, and a spring held at one end in the casing a short distance from the top, which spring has its opposite free end forked and passed into an annular groove in the shackle, substantially as herein shown and described.

2. The combination, with a lock-casing, of the shackle B, having an annular groove, G, and the flat spring H, having one end forked and pressed into the groove G, and provided at the opposite end with two side lugs, H', passing into apertures in the sides of the casing, substantially as herein shown and described.

298,477. WATER-WHEEL. JAMES KELLAM, Ellsworth, Ind. Filed Oct. 2, 1883. (No model.)



Claim.—1. The herein-described turbine, consisting of the wheel F, having the vertical peripheral inclined buckets *f*, the lower ends of which have downwardly-inclined radial openings or passages *f'*, the rear ends of the said buckets being beveled to form sharp edges *e'*, substantially as set forth.

2. The combination, with the forebay and floor provided with openings, of a turbine-wheel mounted on a shaft in close contact to the under side of said floor, and having the inclined buckets *f*, provided with openings *f'*, and having beveled edges *e'*, substantially as set forth.

298,478. REFLECTOR-SUPPORT FOR CANDLES. ALBERT KONSTENT, New York, N. Y. Filed Oct. 4, 1883. (No model.)

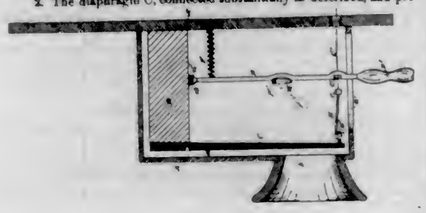


Claim.—As a new article of manufacture, a metallic collar adapted to encircle and rest upon the upper end of a candle, and fitted with a reflector attached to one side, and a counterpoise-handle attached to the opposite side thereof, substantially in the manner and for the purpose herein set forth.

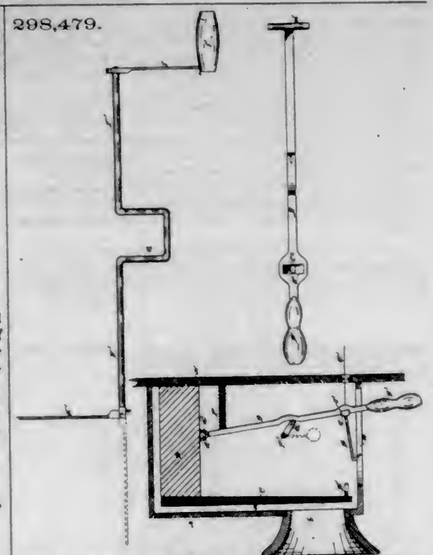
298,479. MECHANICAL TELEPHONE. A. BRENTON KURTZ, Cincinnati, Ohio, assignor of one-half to Freeman C. Ludlow, same place. Filed May 10, 1883. (No model.)

Claim.—1. In a telephone, a diaphragm connected at or near one portion only of its edge to a support, as B, the remaining portion being free to vibrate, and a transmitting-wire adapted to be connected to said diaphragm at some point between its free edge and its point of connection, and to be disconnected therefrom at will, substantially as and for the purposes specified.

2. The diaphragm C, connected substantially as described, and provided with an eye or staple, E', in combination with the wire C', connected to a hook, E, said hook having a cross-bar, *e*, and a lever, D, hinged or pivoted at its upper end, said lever being adapted to engage with the cross-bar *e*, by which the hook E may be drawn forward to engage the eye E', substantially as and for the purposes specified.



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3. The lever D, pivoted at its upper end, and provided with a cup or recess, *e'*, in combination with the wire C', passing through said lever, and connected to a cross-bar, *e*, in front of the lever, said cross-bar being adapted to rest in the cup or recess *e'*, and having the hook E, adapted to engage the eye of a diaphragm, substantially as and for the purposes specified.

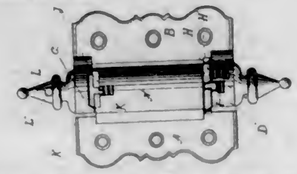
4. The lever D, pivoted at its upper end, and suitably connected near its lower end to the wire C', in combination with the shaft F', passing through the box A from side to side, and provided with a crank, G, adapted to engage the lever D, said shaft being provided with a suitable crank for causing it to rotate, and a spring, F, placed behind the lever, substantially as and for the purposes specified.

5. The lever D, pivoted at its upper end, and connected near its lower end to the wire C', in combination with the shaft F', having a crank or bend, G, to engage with said lever, one end of said shaft being provided with a crank, *f*, having a handle, *f''*, and the other end being provided with a clapper-rod and hammer for ringing the bell, substantially as and for the purposes specified.

6. The shaft F', being provided at one end with a crank, *f f'*, and at the other end with a clapper-rod, H', having a hammer, A, the clapper-rod being connected to the shaft F' by a knife-blade joint, *h'*, to permit said rod to be turned at right angles to the shaft, or in a line therewith, in combination with the bells H, substantially as and for the purposes specified.

7. In combination with a diaphragm suitably supported and provided with an eye or staple, E', the transmitting-wire provided with hook E, and mechanism for causing the hook to engage with said eye, substantially as and for the purposes specified.

298,480. SPRING-HINGE. GEO. M. LANE, Asbury Park, N. J. Filed Jan. 12, 1884. (Model.)



Claim.—1. The combination of the lower knuckle, the knuckle C, provided with slots C', the knuckle A', arranged between said knuckles,

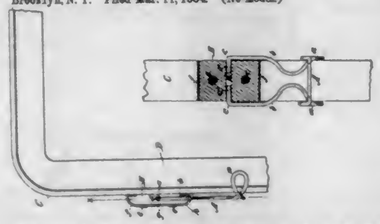
and the spring-cap arranged in knuckle A' and interposed between the spring and the knuckle C, and provided with sliding surfaces adapted to enter the slots C' when the spring is at rest, whereby the longitudinal expansion of the spring is utilized at such times to hold the door against the force of the wind, substantially as set forth.

2. In a spring-hinge, the combination of the knuckle D, having slots D', the spring I, arranged in said knuckle, the plate G, placed on said spring and provided with pawls H, the ratchet-ring having a suitable cross-bar or transverse projections, and the hinge-spring and bifurcated pintle, all arranged and operating substantially as set forth.

3. In a spring-hinge, the combination, with the knuckle A', having slots A^1 A^2, of the spring-cap J, having sliding surfaces K' and slot K^2, and the hinge-spring and pintle, substantially as and for the purposes specified.

4. The combination of the knuckle D, provided with slots D', having lateral wings D^2, the pawl-spring, the pawl-plate provided with pawls having lateral extensions H', and the ratchet-ring, pintle, and hinge-spring, substantially as and for the purposes specified.

298,481. CLASP FOR TRAVELING-BAGS. WILLIAM J. LARGE, Brooklyn, N. Y. Filed Mar. 11, 1884. (No model.)

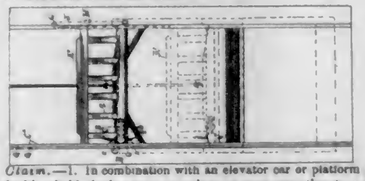


Claim.—1. The clasp A for traveling-bags, made of spring metal bent to form the arms *b b*, and formed or provided with the cheek-piece *a a*, and adapted to be hinged to the jaw of the bag-frame, substantially as described.

2. The clasp A, made of a single piece of metal forming spring-arms *b*, in combination with the face-plate *f*, formed with the curved flanges *k k*, substantially as and for the purposes set forth.

3. The combination, with the clasp A, having the spring *b*, of the face-plate *f*, formed with the notches *g g* and curved flanges *k k*, substantially as and for the purposes set forth.

298,482. SELF-ACTING ELEVATOR-GATE. SAMUEL J. LAUGHLIN, Guelph, Ontario, Canada. Filed Dec. 26, 1883. (No model.) Patented in Canada Dec. 4, 1883, No. 18,234.



Claim.—1. In combination with an elevator car or platform provided with suitable devices to open or close a passage-way thereto, a gate, as E, working in ways and partially counterbalanced, and constructed to close the said passage-way by its own gravity, and governed in its movement by the car acting directly on its counter-balance, substantially as specified.

2. In combination with an elevator car or platform and the gate E, the counterpoise C, having projection C'', working in the guide K, and acted on directly by the car or platform, substantially as and for the purposes set forth.

3. In combination with an elevator car or platform and gate E, partially balanced, the counterpoise C, having projection C'' and catch C', attached to the said gate, both arranged substantially as specified, whereby the one engages the car to open a passage-way thereto, and upon its own release the other engages with the said car to govern the closing of said passage-way, substantially as described.

4. The combination of the gate E and catch C', connected therewith, arms B, attached to the car or platform, and plate D, constructed, arranged, and operating substantially as specified.

5. In an elevator provided with a safety-gate, and as a means for automatically operating the same, the arms B, springs N, catches C' C'', weights C H, guide K, and double-inclined plate D, combined and operating substantially as and for the purposes set forth.

6. In combination with the car or platform of an elevator, and a safety-gate connected therewith, the arms B, provided with the outwardly-flaring projections *c'*, the catches C' C'', oppositely inclined, double-inclined plate D, and guides K, constructed substantially as and for the purposes specified.

298,483. DENTAL HAND-PIECE. HENRY LAURENCE, Chicago, Ill. Filed Sept. 24, 1883. (Model.)



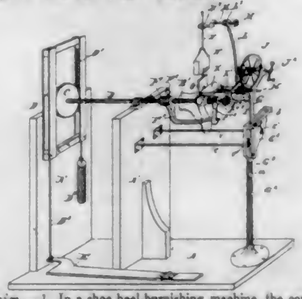
Claim.—1. The combination of the shaft E, sleeved shaft I, spindle J, made hollow at one end and provided with serrated jaws, and sleeved collar Q, as constructed and arranged for the purpose of holding the tool and communicating motion to it.

2. The combination of the sleeved shaft I, provided with toothed cone H, and lever T, provided with bayonet-arm V, for the purpose of disengaging the sleeved shaft I, with its clutched end, from the clutched end of shaft E, and holding the sleeved shaft I and spindle J from revolving, as and for the purpose shown.

3. A dental hand-piece having the shell—within which are the revolving parts—made of the screw-cap G, main shell A, removable shell B, and telescopic shell C, all constructed and arranged substantially in the manner and form shown.

4. The set-screw *a*, in combination with bearing D, and shaft E, and head-piece F, as and for the purpose shown.

298,484. HEEL-BURNISHING MACHINE. ISIDORE LEGAY, New York, N. Y. Filed Oct. 17, 1883. (No model.)



Claim.—1. In a shoe-heel-burnishing machine, the combination, with the oscillating main shaft, of an adjustable shoe clamp or dog fitted upon the end of said shaft by means of a sliding collar encircling the shaft and fixed by a clamping device, substantially in the manner and for the purpose herein set forth.

2. In a shoe-heel-burnishing machine, a shoe clamp or dog secured by one arm to an adjusting-collar encircling the oscillating main shaft of said machine, and carrying upon its opposite arm a screw-bolt terminating in a face-plate, and fitted to traverse in line with the axis of the shaft through a fixed nut on the end of the arm, and to be actuated for adjustment by a suitable crank or hand-wheel, substantially in the manner and for the purpose herein set forth.

3. In a shoe-heel-burnishing machine, the combination, with its oscillating shaft and shoe-clamping device, of a toothed wheel upon said shaft, a weighted reciprocating rack engaging the same upon one side, and a corresponding rack engaging its opposite side, and actuated by a suitable prime motor for the purpose of imparting an oscillating motion to said shaft, substantially in the manner and for the purpose herein set forth.

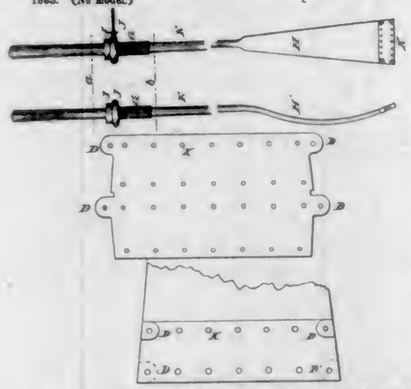
4. In a shoe-heel-burnishing machine, a weighted burnishing-tool supported loosely in a vertical plane coincident with the axis of the oscillating shaft, so as to drop automatically upon the heel of a shoe clamped upon and oscillating with said shaft, substantially in the manner and for the purpose herein set forth.

5. In a shoe-heel-burnishing machine, the combination, with a weighted burnishing-tool adapted to rest and bear automatically upon the heel of a shoe carried by the oscillating shaft of the machine, of a stay-block adapted to traverse at right angles to the burnishing-tool, and to bear against the face thereof to steady it and cause it to move back over the heel, substantially in the manner and for the purpose herein set forth.

6. The combination, in a shoe-heel-burnishing machine, with its weighted automatic burnishing-tool, and with a stay-block traversing at right angles to the tool, to bear against the face thereof, of a screw-shaft engaging said stay-block and working through a threaded seat in a fixed bearing, an extended pinion secured upon the shaft, and a toothed wheel engaging said pinion and rotating in fixed bearings, substantially in the manner and for the purpose herein set forth.

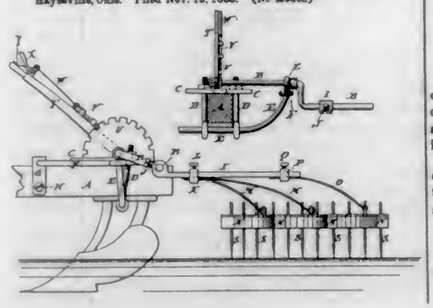
7. The combination, in a shoe-heel-burnishing machine, with its burnishing-tool and the bearings supporting the same, and with a stay-block traversing at right angles to said burnishing-tool, and the bearings supporting the same, of a vibrating arm carrying and supporting upon its upper end the bearings of the burnishing-tool and its stay-plate, and which is pivoted at its lower end to an adjustable standard in line with the oscillating shaft of the machine, to vibrate in a plane at right angles thereto, substantially in the manner and for the purpose herein set forth.

298,485. OAR. SOLOMON LINDENBERGER, Toledo, Ohio. Filed Oct. 22, 1883. (No model.)



Claim.—As a new article of manufacture, an oar the paddle end of which is made in nearly a rectangular form, and covered with a plate of any suitable material, said plate having ears adapted to be folded over upon the sides of the oar, and forming at the point of contact of said ears and sides two thicknesses of metal or material, in combination with means for uniting the whole securely together, substantially as shown, and for the purpose described.

298,486. COMBINED PLOW AND HARROW. ELLIS O. LONG, Hayesville, Ohio. Filed Nov. 13, 1883. (No model.)

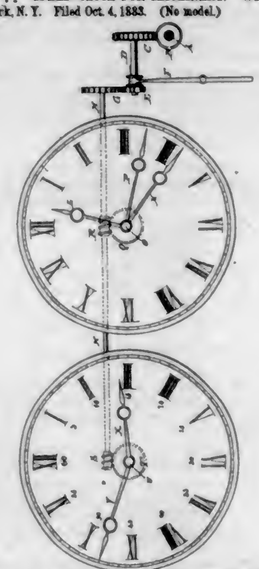


Claim.—1. The combination, with the plow-beam A and the harrow N S, of the crank-rod B, the connecting-bar I, and the springs M O, substantially as herein shown and described, whereby the said harrow is adjustably connected with the said plow-beam, as set forth.

2. The combination, with the plow-beam A and the crank-rod B, of the braces E F and clamps C D and G H, substantially as herein shown and described, whereby the said crank-rod is securely connected with the said plow-beam and firmly supported against the draft-strain of the harrow, as set forth.

3. The combination, with the crank-rod B and the harrow N S, of the connecting-bar I, the springs M O, and the bands and set-screws K L and P Q, substantially as herein shown and described, whereby the said harrow is adjustably connected with the said crank-rod, as set forth.

298,487. SPEED-CLOCK FOR MACHINERY. WILLIAM H. LORD, New York, N. Y. Filed Oct. 4, 1883. (No model.)



Claim.—1. A speed-clock for machinery, constructed substantially as herein shown and described, and consisting of an ordinary clock-work provided with a third hand and connected by a shaft and gearing with the machinery, and a clock-work connected with the machinery by a shaft and gearing, and provided with two hands arranged to revolve, the one once an hour and the other once in sixty hours, as set forth.

2. In a speed-clock for machinery, the combination, with the drive-shaft A, of the clock-work J, provided with two hands, V X, geared to revolve, the one once an hour and the other once in sixty hours, the shaft H, and the connecting-gearing, substantially as herein shown and described, whereby the amount of lost speed will be indicated, as set forth.

298,488. LATHE-CHUCK. EDWIN LASELLE MANSFIELD, Boston, MASS. Filed Jan. 7, 1884. (No model.)

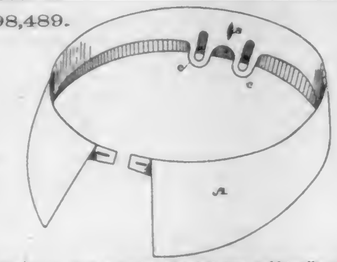


Claim.—1. The chuck, substantially as described, consisting not only of the part A, having the chambered head and tapering shank, but of the part B, having the conical centering-recess in the outer end of its shank, and the tenon extending from such shank at its other end, all being essentially and for the purpose as set forth.

2. The chuck consisting not only of the part A, provided with the chambered head and tapering shank, but of the part B, having the centering-recess in its outer end, and the tenon and one or more cylindrical steps at its other end, all being substantially and for use as explained.

298,489. COLLAR. ALEXANDER J. MCADAM and NEIL L. MCADAM, San Francisco, Cal. Filed Sept. 7, 1883. (No model.)

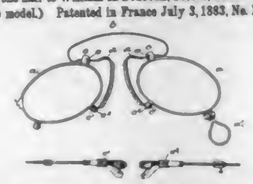
298,489.



Claim.—1. As a new article of manufacture, a shirt-collar provided with an extension or extensions, *c*, in its back, and the elongated slots *a*, for the passage of cravat, arranged below the lower edge of the neckband portion, as and for the purpose set forth.

2. A shirt-collar provided with an extension or extensions, *c*, in its back, and having the slots or openings *a* made therein, one on each side of the back button-hole and below the lower edge of the neckband portion, substantially as and for the purpose herein described.

298,490. EYEGLASSES. JOSEPH PORTER MICHAELS, Paris, FRANCE, assignor of one-half to William R. Donovan, Boston, Mass. Filed Feb. 29, 1884. (No model.) Patented in France July 3, 1883, No. 143,994.



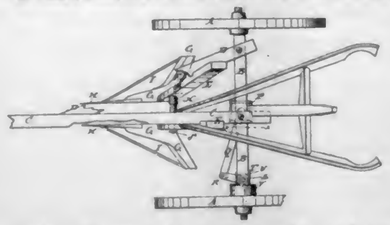
Claim.—1. The combination, with the frames to contain glasses, of nose-pieces pivoted at both ends to said frames, whereby they are adapted to be moved angularly or transversely with relation to said frames, for the purpose specified.

2. In eyeglasses, metallic nose-pieces pivoted to the frames to contain the glasses, and warped or twisted between their pivotal points, substantially as described, and adapted to be moved angularly with relation to the frames, and to present the faces of the nose-pieces or the nose-engaging laminæ, of rubber, horn, or other suitable material, which may be secured to said nose-pieces, against the nose, substantially in the manner and for the purpose specified.

3. In eyeglasses, the frames *a*, having lugs *c c'*, the said lugs *c c'* provided with the grooves and mortises or slots, as set forth, the nose-pieces *d*, pivoted to the said lugs *c c'*, the spring *b*, firmly held in the grooves of the lugs *c*, and the holding-screws, combined in the manner and for the purposes set forth.

4. In an eyeglass, the combination, with the frames having the lugs *c c'*, the said lug *c* provided with the slots or mortises in one side thereof, as described, of nose-pieces pivoted to the lugs *c c'* and adapted to be moved transversely or angularly with relation to the frames and enter the slots or mortises in said lugs *c*, and suitable retaining screws or pivots substantially as described, and for the purpose set forth.

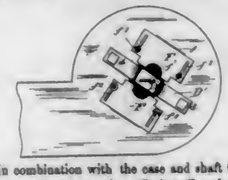
298,491. COMBINED COTTON SCRAPER AND CHOPPER. COLUMBUS JOHNSON MORRISON, Hawthorn, Fla. Filed Dec. 22, 1883. (No model.)



Claim.—1. In a combined cotton chopper and scraper, the standards E, connected together near their lower ends by the bolt J, tubular washer K on said bolt between the standards, the feet G on the lower ends of said standards, and the removable cutters H and scrapers I, secured to said feet, substantially as set forth.

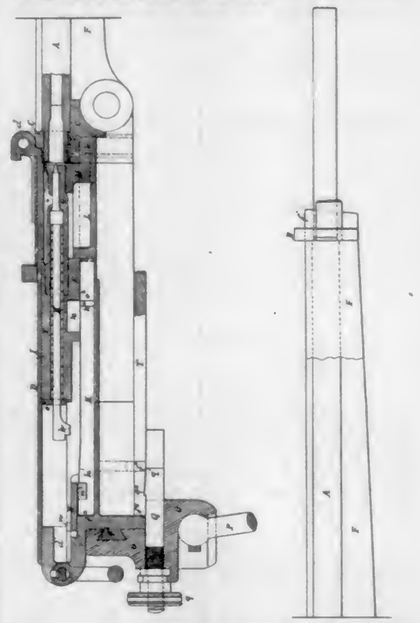
2. In a combined cotton scraper and chopper, the combination, with the axle B and wheel A, of the frame M, the sliding block N, the rod and hoe O P, and the connecting-rod Q, crank-shaft R S, and gear-wheels U V, substantially as herein shown and described, whereby the said hoe will be operated from the said drive-wheel, as set forth.

298,492. ROTARY BLOWER. JOHN L. NEWMAN, West Point, Ga., assignor of one-half to Thomas J. Eady, same place. Filed June 23, 1883. (No model.)



Claim.—In combination with the case and shaft C, the adjusting-slides F, having semicircular openings *f'*, slots *f²*, and upturned edges *f*, and the guide-pins *f³*, as and for the purposes set forth.

298,493. MACHINE-GUN. THORSTEN NORDENFELT, Westminster, England. Filed May 23, 1883. (No model.) Patented in England Oct. 14, 1882, No. 4,899; in France Apr. 14, 1883, No. 154,872; in Germany Apr. 20, 1883, No. 25,956; in Spain July 10, 1883; in Italy Sept. 30, 1883, No. 15,723, and in Austria Dec. 15, 1883, No. 27,846.



Claim.—1. The combination of the frame, the barrels having supporting-connection therewith at front and having grooved lugs formed on their rear ends, the cross-piece C of the frame having recesses into which said lugs enter, and the cover provided with the enlargement received by the grooves of the barrel-lugs, substantially as and for the purpose hereinbefore set forth.

2. The combination of the frame, the barrels having supporting-connection therewith at rear and reduced at their front ends, and a front cross-piece, B, of the frame grooved and perforated within its grooves to receive the reduced ends of the barrels, substantially as hereinbefore set forth.

3. The combination of the longitudinally-moving action-block having the projecting piece I, and inclines *l l'*, and the transversely-moving cartridge-receiver having inclines *m m'*, actuated by the action-block, substantially as and for the purpose hereinbefore set forth.

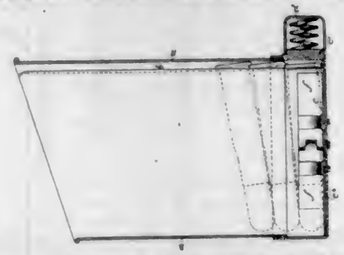
4. The combination of the strikers, the trigger-comb provided with the incline *n²*, and the action-block provided with an incline, *n'*, acting against the incline of the trigger-comb, substantially as and for the purpose hereinbefore set forth.

5. The combination of the frame provided with the cavity *f⁵*, the action-block with the cavity *c²*, and the action-lever having ends *k' k²*, entering said cavities, substantially as and for the purpose hereinbefore set forth.

6. The combination of the frame provided with the socket *f⁴*, having the flange *f⁵*, the action-lever provided with the hollow boss *k²*, entering the frame-socket, and the hand-lever T, having the stud *t*, entering the boss of the action-lever, and provided with the lug bearing against the flange of the frame-socket, substantially as and for the purpose hereinbefore set forth.

7. The combination of the bracket O of the frame or carriage, the adjustable bolt or pin Q, and the hand-lever T, having the spreading lug or finger, substantially as and for the purpose hereinbefore set forth.

298,494. CARTRIDGE-MAGAZINE. THORSTEN NORDENFELT, Westminster, England. Filed Dec. 7, 1883. (No model.) Patented in England May 11, 1883, No. 2,401; in France Nov. 10, 1883, No. 158,473; in Belgium Nov. 14, 1883, No. 63,311, and in Italy Dec. 31, 1883, No. 16,169.

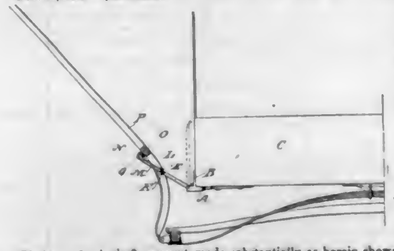


Claim.—1. The combination of the case having the cartridge-ejecting slot and the slide by which the flange of the lowermost cartridge in the case is engaged, and by the actuation of which the cartridges are in turn moved endwise, flanges foremost, and brought into position to be ejected, substantially as and for the purpose hereinbefore set forth.

2. The combination of the case, the slide engaging the lowermost cartridge in the case, and the blades or fingers connected with and operated by the slide for ejecting the lowermost cartridge in the case and supporting and retaining the cartridges above, substantially as and for the purpose hereinbefore set forth.

3. The combination of the case, the slide provided with slots, and the blades or fingers supported by the case and provided with projections engaging the slots of the slide, substantially as and for the purpose hereinbefore set forth.

298,495. SHAFT-SUPPORT. JAMES F. PAGE, Arcadia, La. Filed Nov. 16, 1883. (No model.)



Claim.—1. A shaft-support made substantially as herein shown and described, and consisting of a bar pivoted to the front of the vehicle body or box, and pressed upward by a spring, as set forth.

2. In a shaft-support, the combination, with a plate adapted to be fastened to the front of the vehicle body or box, of a fork or plate pivoted to the plate on the wagon-box, a spring for pressing the fork up, and of a bar held adjustably in the said fork or plate, substantially as herein shown and described.

3. In a shaft-support, the combination, with a plate adapted to be fastened on the front of the wagon-box, of a fork pivoted to the said plate, a bar held adjustably in the fork, a spring for pressing the fork upward, and a notched plate on the cross-bar uniting the shafts, substantially as herein shown and described.

4. In a shaft-support, the combination, with the plate A, of the fork E, pivoted to the same, the spring G, for pressing the fork upward, the serrated plates J, held in the fork, the serrated bar M, and suitable devices for clamping said bar, held between the plates J, substantially as herein shown and described.

5. In a shaft-support, the combination, with the plate A, of the fork E, the spring G, the serrated clamp-plates J, the screw K, and the longitudinally-slotted serrated bar M, substantially as herein shown and described.

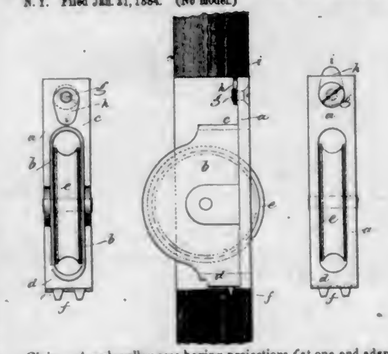
6. In a shaft-support, the combination, with the plate A, having a standard, B, of the fork E, pivoted to the plate A, spiral spring G, passed under the fork E, and having its end recessed in the plate A, substantially as herein shown and described.

7. In a shaft-support, the combination, with the plate A, of a fork or bar pivoted to the same, and of a spiral spring passed under the fork or bar to press or swing it upward, which spring has its ends secured in the plate A, substantially as herein shown and described.

8. In a shaft-support, the combination, with the plate A, having a recess, D, of the fork E, the bolt F, the spring G, the clamp-plates J, the bar M, having a hook, N, and the screw K, substantially as herein shown and described.

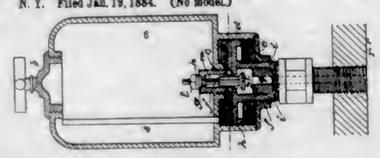
9. In a shaft-support, the combination, with the plate A, of the fork E, pivoted to the same, which fork has a bend, E', in each shank, the clamp-plates J, held within the bends E', the longitudinally-slotted bar M, and of the screw K, substantially as herein shown and described.

298,496. SASH-CORD GUIDE. GEO. W. PERO, West New Brighton, N. Y. Filed Jan. 21, 1884. (No model.)



Claim.—A sash-pulley case having projections *f* at one end adapted to being driven into the wood-work of the window-frame, in combination with a turn-button applied near the other end of the case, the stem of the turn-button passing through the case and terminating with a slotted head, whereby said turn-button may be partially revolved to force the beveled end into the wood of the window-frame, substantially as set forth.

298,497. LUBRICATOR AND MEASURE. JOHN S. PETER, Angelica, N. Y. Filed Jan. 19, 1884. (No model.)



Claim.—1. The combination, with an oil-reservoir, of a measuring-chamber provided with an adjustable bottom having inlet and outlet passages, and valves for alternately closing and opening said passages, substantially as herein shown and described.

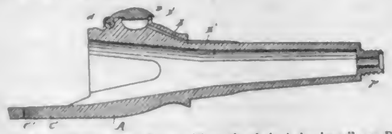
2. The combination, with the cup *a*, of the neck *d*, and the plug *g h i*, having passages *m n* to and from the cup and measuring-chamber *o*, respectively, and the valves *k l*, connected to be seated alternately, substantially as shown and described.

3. The combination, with the cup *a*, and parts *d g h*, forming the measuring-chamber *o*, of the valve *j*, having heads *k l*, adjustable on the valve-stem, to graduate the flow from the cup, substantially as shown and described.

4. The combination, with the cup *a*, neck *d*, plug *g h i*, having passages *m n*, and the valves *k l*, of the aperture-stem *p*, substantially as shown and described.

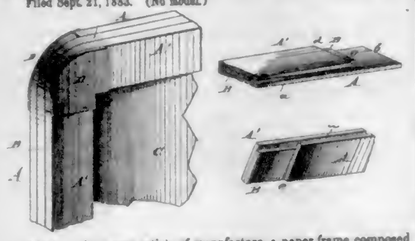
5. The combination, with the cup *d'* and outlet *a'*, of the stem and plate *g h*, apertured at *w w*, the connected valves *k l*, and the lever *e*, substantially as shown and described.

298,498. WAGON-SKEIN. CHARLES PIERCE, Lisle, N. Y. Filed Aug. 30, 1883. (No model.)



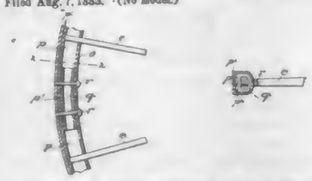
Claim.—In a wagon skein and box, the skein A, having oil-cup D', provided with hinged cover D, channel E, and groove E', in combination with box B, having sand-band H and lugs G, substantially as described, and for the purposes set forth.

298,499. SLATE-FRAME. ORLANDO M. POND, Independence, Iowa. Filed Sept. 21, 1883. (No model.)



Claim.—As a new article of manufacture, a paper frame composed of broad and narrow strips of paper or pasteboard forming the side and end bars, secured together by means of double lapping joints and cement, and the joints covered with leather or other soft material, substantially as described.

298,500. VEHICLE-WHEEL. LYMAN A. POWERS, Bloomington, Wis. Filed Aug. 7, 1883. (No model.)



Claim.—1. A wheel-rim consisting of the D-shaped plate, whose edges overlap, as at p^2, whereby a double thickness of wearing-surface is afforded.

2. A wheel-rim consisting of the D-shaped plate, whose edges are overlapped, as at p^2, and whose ends are connected by a plate within said rim, and covering the joint between the meeting ends of the rim, substantially as set forth.

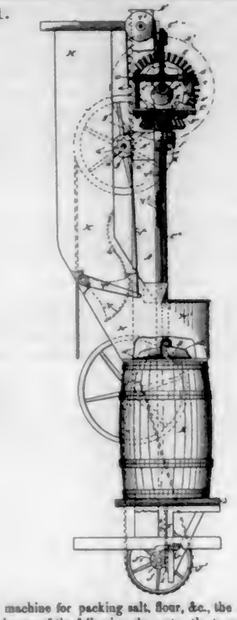
298,501. MACHINE FOR PACKING SALT, FLOUR, &c. RICHARD RADLEY, Buffalo, N. Y. Filed Apr. 17, 1884. (No model.)

Claim.—1. In a machine for packing salt, flour, and other like matter, a tamping-head which is formed with wings which are inclined upward, in combination with mechanism, substantially as shown, which imparts to said tamper a vertical reciprocating and horizontal rotary movement, the said rotary movement occurring as the tamper moves up.

2. In a machine for packing salt, flour, and other like matter, a tamping-head which is formed with wings which are flat in part and in part inclined upward, as at *d* and *d'*, in combination with mechanism, substantially as shown, which imparts to said tamper a vertical reciprocating and a horizontal rotary movement, the said rotary movement occurring as the tamper moves up.

3. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the following elements: a tamping-head formed of wings which are flat in part, as at *d*, and in part inclined upward, as at *d'*, gearing for lifting and pushing down said tamping-head, and gearing for rotating said tamping-head as it is moved up.

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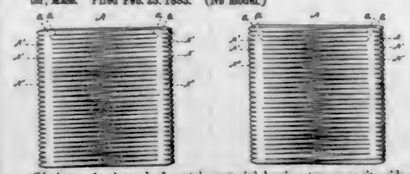
4. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the following elements: the tamping-head D, with blades having the flat part *d* and the inclined part *d'*, the tamping-stem C^3, eccentric-yoke C, guide-bar C', eccentric B^2 on shaft B, which is mounted on the movable frame A', the pawl and ratchet *e* E, gears F F', of which F' is feathered upon the stem C^3, and the drive-wheel B'.

5. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the following elements: a tamper, D, which reciprocates vertically, and rotates and screws out of the barrel, as described, mechanism, substantially as shown, for operating said packer or tamper, a hopper for supplying salt or other matter to the barrel, and a valve or cut-off in said hopper, which is operated from the vertical movement of the tamper as it is lowered into and as it rises up in the barrel.

6. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the hopper H, valve V, valve-moving mechanism V', V^2, V^3, V^4, V^5, and V^6, the sliding frame A', the tamper-moving mechanism B' B^2 B^3 C E *e* F F', and the tamper D.

7. In a machine for packing salt, flour, &c., the combination, substantially as shown, of the following elements: the platform I, the platform-moving devices consisting of the hand-wheel J^4, sprocket-wheels J^3 J', sprocket-chain J^2, shaft J, and racks and pinions *i j i j*, the hopper H, with enlargement H', the tamper D, the moving frame A', carrying the tamper-moving mechanism, and the frame-moving mechanism consisting of the wheel G, shaft G', and rack and pinion *a a'*.

298,502. MAKING MATCH-SPLINTS. CHARLES B. RAWSON, Worcester, Mass. Filed Feb. 23, 1883. (No model.)



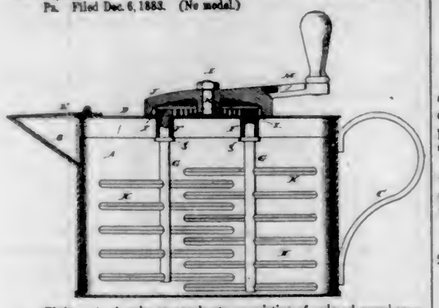
Claim.—1. A card of match material having two opposite sides notched to form the match-heads, and being nearly separated on oblique lines, forming splints, so the pointed end of one splint shall come between the heads of two adjacent matches, as described, and for the purpose set forth.

2. The process of making a card of match-splints, consisting of forming notches on opposite sides of a card of match material, leaving a space between the notches to form the match-head, and afterward partly severing the splints from the card on lines obliquely to the notched sides, so the splints will be wedge-shaped, having the point of each match lying between the heads of the two adjacent matches, as and for the purposes specified.

3. The combination, with a card of match-splints, of a strip of paper, leather, or similar material, attached to the splints at their central section by means of some suitable adhesive substance, as and for the purpose set forth.

4. As an article of manufacture, a roll or package of friction-matches, consisting of a card of cuneiform match-splints, the point of one splint lying between the heads of the two adjacent splints, the several match-splints having some suitable igniting compound attached to their larger ends, and being attached at their central section by any suitable adhesive substance to a strip of paper, leather, or similar connecting material, as and for the purpose set forth.

298,503. EGG AND CAKE BEATER. ALFRED C. REX, Philadelphia, Pa. Filed Dec. 6, 1883. (No model.)



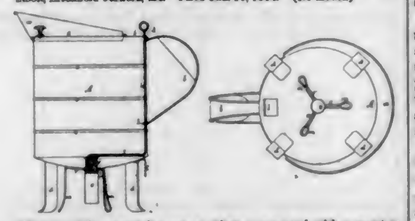
Claim.—1. A cake or egg-beater consisting of a closed vessel combined with rotary beaters having vertical shafts and radiating arms, the arms of one beater passing between the arms of the other during their rotation, said beaters being located and journaled therein, and gear mechanism to rotate said beaters, substantially as and for the purpose specified.

2. The combination of vessel A, removable cover D, and rotary beaters G H, journaled in said cover, substantially as and for the purpose specified.

3. The combination of vessel A, having a spout, removable cover D, having a flap, E, to cover said spout, and rotary beaters G H, journaled in said cover, substantially as and for the purpose specified.

4. The combination of vessel A, removable cover D, and beaters G H, journaled in said cover, pinion I, box spur-wheel J, having internal teeth, and a crank, M, substantially as and for the purpose specified.

298,504. LIQUID-MEASURING VESSEL. MELLEN FREMONT ROBINSON, Litchfield Corners, Me. Filed Jan. 16, 1884. (No model.)



Claim.—The measuring can or pitcher provided with a spout or nose, main and auxiliary legs, a set of ribs, a discharging-tube, and a stopper thereto, arranged and adapted substantially as and for use as represented.

298,505. MAKING ARTIFICIAL BLOCKS, STONES, &c. LOUIS DOSENTHAL, Frankfort-on-the-Main, Germany. Filed Mar. 25, 1884. (No specimens.)

Claim.—1. The preparation, as herein described, of a cast mass of cement made by mixing fresh unset cement with an equal quantity, or rather more, of cement which has already become hardened, (set,) or of finely-ground carbonate of lime, which mass is free from cracks or faults.

2. The preparation of artificial lithographic stones or rollers from cement by mixing unset cement with about an equal quantity of already-set cement finely powdered, or, in lieu thereof, with finely-powdered carbonate of lime, then drying this mixture, pressing it together under a high pressure, sucking a quantity of water necessary for its hardening or setting through it, and finally again subjecting the moist mass to a high pressure, substantially as herein specified.

3. The impregnation of cement stones, rollers, or other formed objects with a liquid saturated with the alkaline and soluble constituents of cement (prepared by stirring cement up with water and pouring off the liquid) until the objects under preparation, by merely grinding, (without the aid of polishing mediums,) show a polish, all substantially in the manner and for the purpose as described.

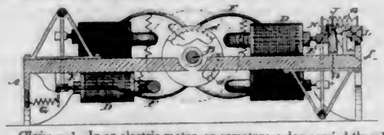
298,506. BUTTON-FASTENER. RICHARD SANFORD, Providence, R. I., assignor to the Heaton Button Fastener Company, same place. Filed May 7, 1884. (No model.)



Claim.—1. A button-fastener provided with two or more prongs at right angles to each other, one of which is formed with an enlarged end portion, said enlargement forming shoulders, behind which the side prong or prongs are upset when the fastener is secured, substantially as set forth.

2. The herein-described fastener A, consisting of the table *a*, provided with the prongs *b* and *c*, the latter being formed with an enlarged portion, *d*, having shoulders *a'*, arranged and adapted for use substantially as shown and described.

298,507. ELECTRO-MAGNETIC MOTOR. CHARLES A. SAXE, Philadelphia, Pa. Filed Sept. 5, 1883. (No model.)



Claim.—1. In an electric motor, an armature, a dog carried thereby, and a retracting-spring operating thereon, in combination with a ratchet-wheel engaged and turned by said dog to rotate a shaft, and circuit breaking and closing devices consisting of an oscillating arm, and a piece between the armature and oscillating arm, which piece allows backward and forward motion of said armature, substantially as set forth.

2. In an electric motor, a ratchet-wheel on a shaft, a pawl engaging therewith, an armature carrying said pawl, and a magnet and spring which operate on said armature in opposition to each other, in combination with a slotted piece attached to said armature, an oscillating bar provided with a stud which enters the slot in said bar, and the electrical connections, whereby the circuit is closed when the armature is in one position and broken when it is in another position, substantially as set forth.

3. In an electric motor, a ratchet on a shaft, a pawl, whereby said ratchet is rotated, an armature which carries said pawl, and a magnet and spring which draw said armature in opposite directions, in combination with circuit breaking and closing devices consisting of a slotted piece carried by said armature, an oscillating bar provided with a stud which extends up through the slot in said piece, a screw operating against said oscillating arm, and the necessary electrical connections, substantially as set forth.

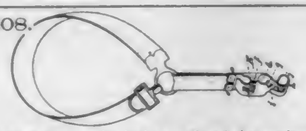
4. In an electric motor, a ratchet-wheel, in combination with a dog which operates against it above the platform or table, and another dog which operates on it below the table, in combination with the armatures, magnets, springs, and circuit-closing devices, whereby said dogs are caused to turn said shaft in the same direction, substantially as set forth.

5. In an electric motor, a ratchet-wheel, in combination with two magnets arranged on opposite sides thereof, or respectively above and below the platform or table on which said ratchet is supported, armatures attracted by said magnets, pawls carried by said armatures, springs whereby said armatures are retracted, and circuit breaking and closing devices, the ratchet-wheel having two reversely-arranged series of teeth, and the pawls being arranged to engage therewith respectively, so that the rotation of the ratchet-wheel and its shaft may be reversed at will, substantially as described.

298,508. CLASP. CHRISTOPHER C. SHELEY, New York, N. Y. Filed Dec. 19, 1883. (No model.)

Claim.—1. The clasp consisting of the parts D and E, pivoted together, the latter having the slot or opening forward of the pivot and terminating in the jaw, and the former having the narrowed portion

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extending through the opening in the part E, and also terminating in a jaw, as described, and the independent spring operating on the two parts to keep their jaws together, substantially as described.

2. The clasp consisting of the part E, having the curved forward portion terminating in a jaw, and provided with the slot, and the part D, pivoted to the part E, having the curved forward portion narrowed to permit it to work through the slot of the other part, and terminating also in a jaw, and having also the portion in rear of the pivot turned down and adapted to bear upon the part E, and form with said part E a second set of jaws, and the independent spring, substantially as described.

298,509. WATCH-CASE. HORACE G. SEDMORE, Cincinnati, Ohio. Filed Jan. 17, 1884. (No model.)



Claim.—1. In a watch-case, the annulus A B, in which the ring part A and the back-rim part B constitute one integral piece of metal, substantially as and for the purpose set forth.

2. In a watch-case, the combination, with the case-center D and annulus A B, of the separable dust-proof panel C, substantially as set forth.

3. In a watch-case, the annulus A B and case-center D, in combination with panel C and bezel E, attached, in the manner described, at the back and at the front, respectively, of said annulus, for the purpose set forth.

4. In a watch-case, the chambered annulus A B, closed at rear and open at front, in combination with the case-springs K L, case-center D, and the pendant H, substantially as set forth.

298,510. HOOK. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Nov. 21, 1883. (No model.)



Claim.—1. A hook adapted to retain a button in position on a fabric, shoe, or other article, consisting of a base and a partial loop on the same vertical plane, integral therewith, the latter projecting from one edge of the former, substantially as shown and described, whereby its free end is brought directly over and above said edge and sufficiently removed therefrom to permit the passage of the eye of a button between said free end and the edge of the base, the whole being disposed in the same plane, substantially as described.

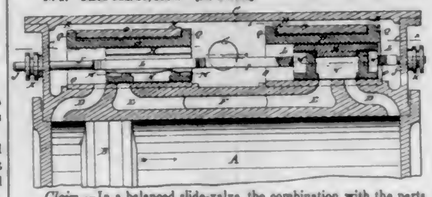
2. As an improved article of manufacture, the herein-described flat sheet-metal hook A, consisting, essentially, of the base *a* and partial-curved loop *b*, projecting from the edge *c* of said base *a*, both in the same vertical plane, and having its free end, *a'*, above and removed from said edge *c*, to permit the passage of the eye of a shank-button between said parts and to act against the edge of the partial loop, all as shown, and for the purpose set forth.

298,511. BUCKLE. JOSEPH WILLIAM SMITH, Newton, Mass. Filed Mar. 24, 1884. (No model.)



Claim.—A fastening for securing the ends of straps or webbings to buckles or the like, consisting of a plate having one edge provided with teeth, adapted to bend back over the central part of the plate, and its other edge plain and adapted to fold back and cover the teeth when bent back over the central part of the plate, in combination with a connecting-shank, a^2, substantially as set forth.

298,512. BALANCED SLIDE-VALVE. WILLIAM G. SMITH, New York, N. Y. Filed Jan. 29, 1884. (No model.)



Claim.—In a balanced slide-valve, the combination, with the parts H of the valve and the valve-boxes O, having recesses R in the ends of its top, of the steel plate P, having flanges Q upon its ends fitting into the said recesses, substantially as herein shown and described, whereby the top of the valve will be protected from steam-pressure and the wear will be taken up automatically, as set forth.

298,513. CAR-COUPLING. JOHN DEVERS SMOOT, Taylor, Tex. Filed Feb. 20, 1884. (No model.)



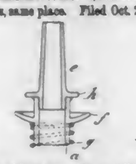
Claim.—1. In a car-coupling, the combination, with a bumper, of arms pivoted therein, their forward ends being provided with hooks, and their rear ends resting within a sliding block having a V-shaped recess, substantially as set forth.

2. In a car-coupling, the combination, with a bumper, of arms pivoted therein, their forward ends being provided with hooks, and their rear ends resting within a block having a V-shaped recess, said block being formed upon its sides with grooves adapted to receive flanges projecting from the inner sides of the said bumper, substantially as set forth.

3. In a car-coupling, the combination, with a bumper, of arms pivoted therein, the forward ends of which are provided with hooks, and having their rear ends resting within a sliding block having a V-shaped recess, and springs secured within the bumper, and having their ends arranged to bear upon the hooked ends of the arms, whereby the same are held in position, substantially as set forth.

4. In a car-coupling, the combination, with a bumper, of arms pivoted therein, the forward ends of which are provided with hooks, and having their rear ends resting within a sliding block having a V-shaped recess, springs arranged to bear against said arms, and a chain secured to said sliding block and connecting the same with a rod secured to the outer side of the car at any suitable point, substantially as set forth.

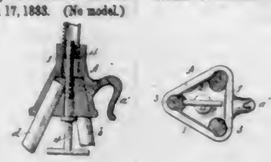
298,514. OILER. ANDREW J. SPERR, Portland, Oreg., assignor to himself and Alfred S. Gross, same place. Filed Oct. 27, 1883. (No model.)



Claim.—1. The combination, with an oil-can, *b*, of the internal presser or follower, *d*, extending out toward the side of can and converging upwardly toward and made integral with the discharge-pipe *a*, as shown and described.

2. The combination, with the spring-supported follower-pipe *a*, of the nozzle *c*, having the collar *h*, as and for the purpose specified.

298,515. HAMMOCK-SUPPORT. GEORGE E. SUTPHEN, Auburn, Ill. Filed Aug. 17, 1883. (No model.)



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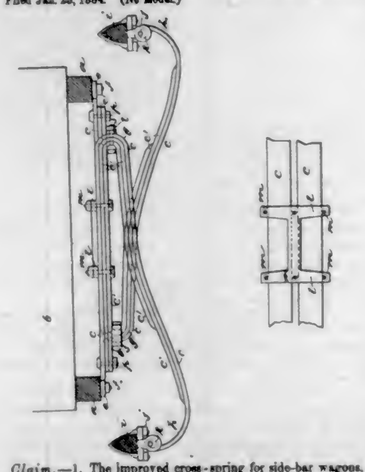


Claim.—1. In combination with the standards G and with the horizontal connection H of a hammock-support, the casting or quarter-turn E, having each of its ends screw-threaded, as set forth, having a hook, 8, on its inner side, and on its outer side the threaded projection 9, provided with a cylindrical bearing to uphold a support for an awning, and provided with a thumb-nut to secure such support in the desired position, and the said support, all substantially as shown and described.

2. In combination, the described tripod-caps, provided each with a hook, *a'*, the quarter-turn castings E, provided each with a hook, 8, and its loose ring, 14, the vertical connecting-pipes G, and the horizontal connecting-pipes, all substantially as shown and described.

3. In combination, the tripod-caps A, made as described, the equal legs *b c d*, removable therefrom, vertical connections G, quarter-turns E, connecting-pipes H H, and the described rings and hooks for suspending and securing the hammock-cord to the quarter-turns and caps.

298,516. SIDE-BAR VEHICLE. JACKSON TAYLOR, Newberry, S. C. Filed Jan. 25, 1884. (No model.)



Claim.—1. The improved cross-spring for side-bar wagons, consisting of two members attached at one end to the rockers *a* of the body, respectively, extended therefrom toward and nearly to the other rocker and alongside of each other, and being therefrom bent backward and extended to and connected with the side bar on the same side of the body that the upper end is connected to, and said members connected together at the middle of the upper horizontal portions, substantially as described.

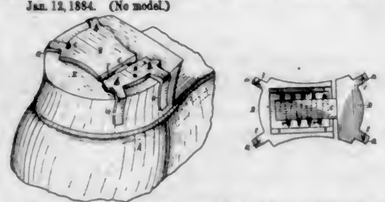
2. A cross-spring for side-bar wagons, consisting of two members connected, respectively, to the rockers *a* of the body, and extended nearly across the body and back to and connected with the side bar of the same side of the body that the upper end is connected to, said members being connected together at the middle of the upper horizontal portions, and also connected to a stiffening-bar, *u*, arranged on said upper horizontal portion of said members, substantially as described.

3. The improved cross-spring for side-bar wagons, consisting of the two members, bent as at *g*, and respectively connected to the rocker *a*, and the side bar, *i*, of the same side of the body, and also arranged side by side in the upper part, and connected together thereat by a clamp device, the said members of the spring and the clamp device being constructed and arranged to enable the said members of the spring to be adjusted along each other for lengthening and shortening the spring, substantially as described.

4. A cross-spring for side-bar wagons, consisting of two members, bent as at *g*, and respectively connected to the rocker *a* and side bar, *i*, of the same side of the body, and also arranged side by side, and connected together in the upper part, the said members having a yoke, *s t*, clamping the plates of which the said members are composed together at the said bends *g*, substantially as described.

5. The combination of the upper parallel parts of the springs *c* with the two H-plates *l*, connected outside of and between the springs by the bolts *m*, substantially as set forth.

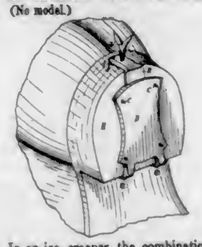
298,517. ICE-CREEPER. JOHN J. TEMPLE, Kalamazoo, Mich. Filed Jan. 12, 1884. (No model.)



Claim.—1. An ice-creeper consisting of the two body parts, provided with clamping-arms and ice-spurs, one of said parts provided with a spring-recess and a spring, and the other part provided with a tongue adapted to operate said spring, and means for retaining the tongue and spring in their recess, all substantially as set forth.

2. A ice-creeper consisting of the two body parts, provided with clamping-arms and ice-spurs, one of said parts provided with a spring-recess and spring located therein, the other part provided with a tongue having the end ing for engagement with the spring, and a cover to said spring-recess, all substantially as set forth.

298,518. ICE-CREEPER. JOHN J. TEMPLE, Kalamazoo, Mich. Filed Feb. 2, 1884. (No model.)



Claim.—1. In an ice-creeper, the combination, with the recessed body, made in one piece, and provided at one end with clamping-arms, of the spring-actuated tongue portion, provided at the outer end with a clamping-arm, and the covering-plate, all substantially as set forth.

2. In an ice-creeper, the body and tongue provided with clamping-arms having the serrated extensions on the inner face of the upper ends, substantially as specified and shown.

298,519. CARPET-STRETCHER. JOS. W. THOMPSON, Pittsborough, Ind., assignor of one-half to William H. Milan. Filed Feb. 27, 1884. (No model.)

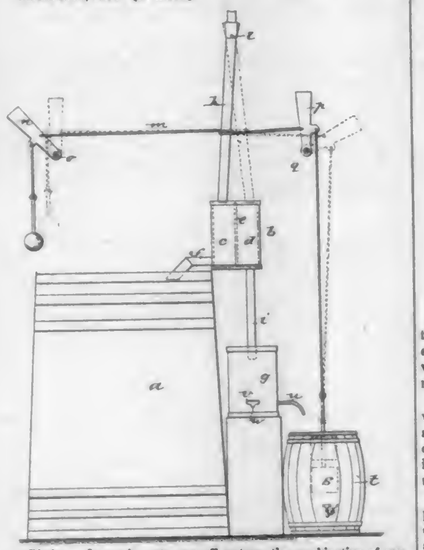
Claim.—1. The above-described carpet-stretcher, having the two cross-heads A and B, in combination with the two arms connected therewith, each of said arms having two hinges, so as to be capable of folding up into three folds, as seen in Fig. 3, and one of said arms having its terminal section or fold slotted, as seen at I, Figs. 2 and 5, to receive the tongue O of the middle fold of the other extension, substantially as set forth.

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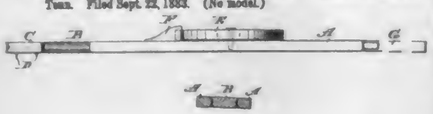
2. In combination with the extension-arm with hinges G H, the tongue O, the cross-head B', bolt L, and slide K, (shown in Figs. 1, 3, and 4 of the drawings,) substantially as and for the purposes set forth.

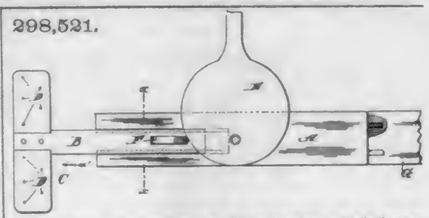
298,520. RAIN-WATER TRAP. EDWARD T. TOOMER, Mobile, Ala. Filed Dec. 19, 1883. (No model.)



Claim.—In a rain-water cut-off or trap, the combination of conductor or pipe *h*, two-compartment chamber *b*, pipe *i*, and bucket *g*, having the spout *u*, waste-passage *v*, and notch *w* in the lower edge of the waste-passage *v*, substantially as and for the purpose set forth.

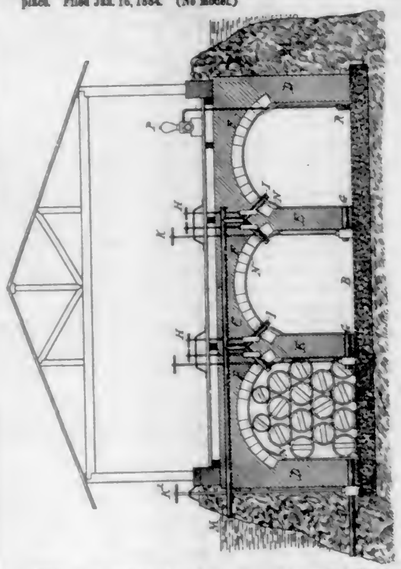
298,521. CARPET-STRETCHER. RUSSELL F. TRUSLOW, Huntingdon, Tenn. Filed Sept. 22, 1883. (No model.)





Claim.—In a carpet-stretcher, the combination, with the base or board A, of the cam E, piece B C, and nose F, as shown and described.

298,522. COLD AND FIRE PROOF STORAGE-BUILDING. BENJAMIN E. VALENTINE, Brooklyn, N. Y., assignor to Charles S. Higgins, same place. Filed Jan. 16, 1884. (No model.)



Claim.—1. A warehouse consisting of a vault or vaults built below the water-level and surrounded by a natural or artificial embankment of earth, as shown at A, around which is the sea or other natural body of water, said vaults being normally free from water, but provided with means, substantially as described, for flooding them.

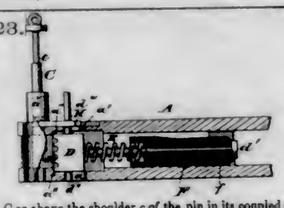
2. A warehouse having vaults built below the water-level, provided with means for being flooded and emptied, as desired, and surrounded by a natural or artificial embankment of earth, as shown at A, and outside of the embankment by the sea or other natural body of water, and having a superstructure erected over said warehouse-vaults, said superstructure serving the purpose of an ordinary warehouse.

3. A vault for cold and fire proof storage consisting of a wholly or partially submerged vault divided into compartments, substantially as described, and provided with mains M and J, for the access of water, and gates H K, for regulating the supply thereof, substantially as and for the purposes described.

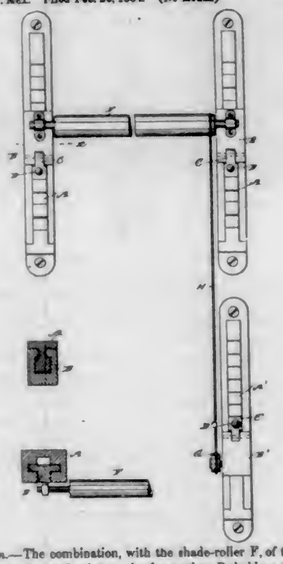
4. The cold and fire proof vault, constructed substantially as described—to wit, in submerged compartments provided with one or more mains, and branches for admitting the flow of water, the pump P, and the gates H K, substantially as and for the purposes described.

298,523. CAR-COUPLING. JOSEPH A. VOGLER, Cincinnati, Ohio. Filed Mar. 17, 1884. (No model.)

Claim.—In a car-coupling, the serrated slide D, whose sliding stem *d'* occupies a sheath, F, containing a helical spring, E, and being pivoted to the draw-head, as at *f*, said slide being guided longitudinally by projections *d''' d''''*, which occupy slots *a a'* in the said head, and having a plate, H, for optional engagement either beneath the point of the uncoupled pin C or above the shoulder *c* of the pin in its coupled or effective condition, substantially as and for the purposes set forth.

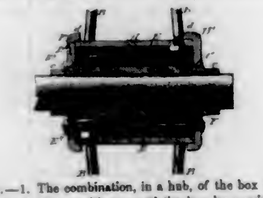


298,524. ADJUSTABLE SHADE-HANGER. JULIUS WAGNER, Silver City, N. Mex. Filed Feb. 26, 1884. (No model.)



Claim.—The combination, with the shade-roller F, of the racks A, having upwardly-projecting teeth, the carriers B, held on the racks A, the pawls C, pivoted to the lower ends of the carriers B, the rack A', having downwardly-projecting teeth, the carrier B' on the rack A', the pawl C', pivoted to the upper end of the slide B', and the roller G on the carrier B', substantially as herein shown and described.

298,525. WHEEL-HUB. JASPER P. WARNER, Dowagiac, Mich. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination, in a hub, of the box with an outer shell removably held in position around the box by a pair of caps connected with each other by tie-bolts and nuts, by means of which the caps are drawn toward each other, and their inner opposing faces caused to exert a binding force against the outer ends of the said shell, so as to hold the latter in place, substantially as described.

2. The combination, in a hub, of an outer shell for holding the spokes with the inner box for the axle, and a pair of caps located on the box and drawn toward each other and against the ends of the shell by tie-bolts provided with binding-nuts, and passing from one cap to the other, one of said caps being made integral with the shell and both serving to removably hold the shell in position around the box, substantially as described.

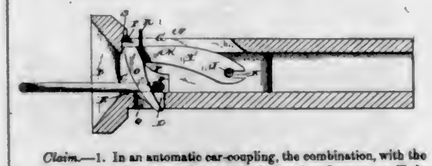
3. The combination, in a hub, of an outer shell for holding the spokes with an inner box, C, having an external taper at one or both ends, and a pair of caps located on the box and held against the ends of the outer shell, one or both of said caps being removably fitted on a tapering portion of the box, and wedged thereon by the means employed for drawing and holding it against the shell, substantially as described.

4. The combination, in a hub, of the box having an external taper, *c*, at one or both ends with an outer shell, to which the spokes are secured, and a pair of caps connected together by tie-bolts passing from one cap to the other, one or both of said caps being removably fitted on a tapering portion of the box, and wedged thereon by the binding force of the bolts and nuts which serve to draw the caps against the outer shell, substantially as described.

5. The combination, in a hub, of an outer shell for holding the spokes with a box, C, for the axle, a pair of caps, D D', each provided with a peripheral flange, *d*, fitting upon the perimeter of the shell, and having their opposing faces held against the ends of the latter, and the bolts passing from one cap to the other, and provided with binding-nuts, whereby the said members are removably secured together, substantially as described.

6. The combination, in a hub, of an outer shell for holding the spokes with an inner box, C, provided with a spline, F, at one or both ends, a pair of caps, D D', one or both of which is made separate from the box, and the bolts connecting together the said caps, and serving to draw them toward each other and hold them against the ends of the outer shell, substantially as described.

298,526. CAR-COUPLING. ANDREW LYNCH WASHBURN, New Orleans, La., and ABRAM L. JOURNEAY, Houston, Tex. Filed Jan. 14, 1884. (No model.)



Claim.—1. In an automatic car-coupling, the combination, with the draw-head having flaring mouth B and link-chamber C, a recess, H, in rear of said chamber, and a slot, G, above the same, of a gravity-hook having its shank bifurcated or slotted at K to clasp a transverse pin or bolt, and having its tongue O fitting in a slot in the bottom of the draw-head, and a recess, Q, forward of the slot L, as set forth.

2. As an improvement in automatic car-couplings, the combination, with the draw-head formed with mouth B and a link-chamber, C, having the straight abrupt back wall, D, to obviate damage to pivot of the coupling-hook, of the recess H in rear of the back wall, the slot G, extending from a point over the pivot of gravity-hook to rear edge of mouth B, the slot L at bottom of chamber C, having beveled front edge, forming the only support for the gravity-hook to retain it up in the draw-head, so that an automatic coupling will be effected, a recess, P, in the draw-head, to receive the upper end of hook, and a slot, K, at rear end of the shank of coupling-hook, to receive a transverse pin or bolt, J, the tongue O of the hook being connected to the upper end of the shank, and curving downwardly in a rearward direction, as set forth.

3. In a car-coupling, the combination, with the draw-head having flaring mouth B and link-chamber C, a recess, H, in rear of said chamber, and a slot, G, above the same, of a gravity-hook, I, having its shank bifurcated at its inner end to clasp a transverse pivot pin or bolt, J, stripe N, secured to the side walls of slot G, a tongue, O, of the hook, fitting in a slot, L, in the bottom of the draw-head, and a recess, Q, forward of the said slot L, as set forth.

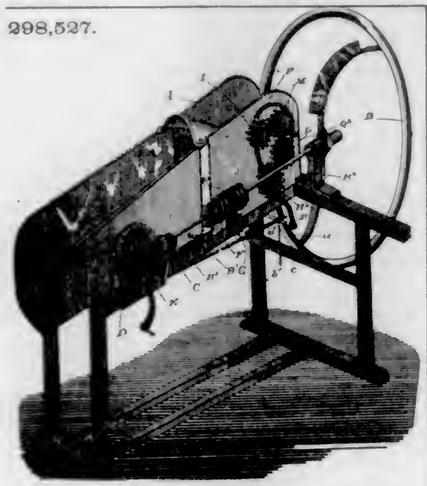
298,527. FEED-CUTTING MACHINE. JOHN WEICHART, San Francisco, Cal. Filed Jan. 24, 1884. (No model.)

Claim.—1. In a feed-cutting machine, the combination of the cutter-shaft B', having worm-gear F, the shaft G', having gears G G^2, the feed-rollers H^2 I', roller-gears H H^4 I, and intermediate gears or pinions, L M, substantially as shown and described.

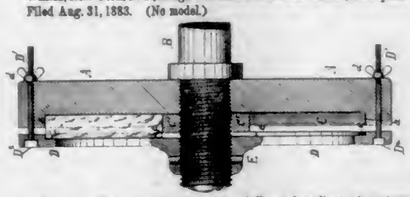
2. In a feed-cutting machine, the combination of the frame A, having slots O Q^2, the feed-rollers H^2 I' and connected gearing, the arms P, depression-plate Q', cross-bars *a c*, pin *b*, spring *d*, and set-screw *f*, substantially as described.

3. In a feed-cutting machine, the combination of the cutter-bar R, depression-plate Q', having lugs Q Q, the curved arms P P', cross-bar *c*, spring *d*, feed-rollers H^2 I', and actuating mechanism, substantially as described.

298,527.



298,528. LATHE FOR TURNING POLYGONAL FORMS. LUDWIG WEBER, New York, N. Y., assignor to himself and Oscar Holzer, same place. Filed Aug. 31, 1883. (No model.)



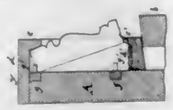
Claim.—1. The combination, substantially as described, of a rotary main disk, a supplementary disk arranged on the face of the main disk, and provided with radial slots adapted to receive polygonal blanks to be turned, a central clamping-nut which shuts over the inner ends of said blanks, a circumferential clamping-ring which shuts over the outer ends of said blanks, and means for adjustably securing said ring to the main disk.

2. The combination, substantially as set forth, of a rotary shaft, a main disk fixed thereto having an outward circumferential flange, a supplementary disk of smaller diameter adapted to fit within the flange of the main disk, said supplementary disk being provided with radial slots adapted to receive polygonal blanks to be turned, a central clamping-nut which shuts over the inner ends of said blanks, a circumferential clamping-ring which shuts over the outer ends of said blanks, and means for adjustably securing said ring to the main disk.

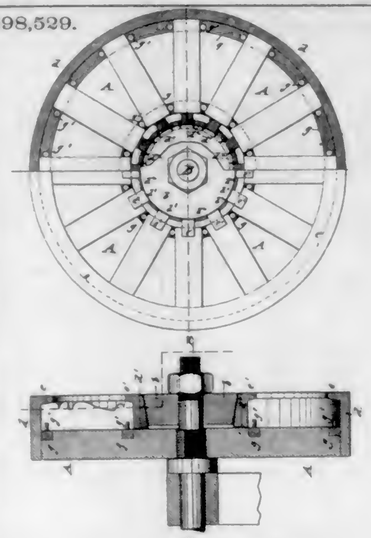
3. The combination, substantially as set forth, of a rotary main disk, a supplementary disk arranged on the face of the main disk and provided with radial slots adapted to receive polygonal blanks to be turned a central clamping-nut which shuts over the inner ends of said blanks, a circumferential clamping-nut which shuts over the outer ends of said blanks, provided with spurs or teeth for grasping the same, and means for adjustably securing said ring to the main disk.

4. The combination, substantially as described, of a rotary disk provided with a circumferential flange, a central clamping-nut for holding the inner ends of polygonal blanks to be turned, a circumferential clamping-ring also for holding said blanks, and means for adjustably securing said ring to said disk.

298,529. WOOD-TURNING LATHE. LUDWIG WEBER, New York, N. Y., assignor of one-half to Oscar Holzer, same place. Filed Feb. 15, 1884. (No model.)



298,529.



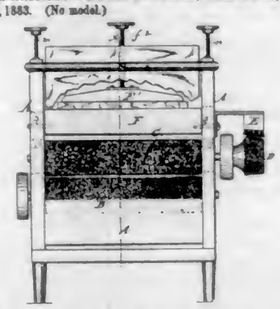
Claim.—1. The combination, with a rotary main disk having a fixed circumferential flange, said flange having an inwardly-projecting shoulder, of inner radially-guided abutments having projecting seats, and means for locking the abutments to the blanks or releasing them therefrom, substantially as set forth.

2. The combination of a rotary supporting-disk, A, having a circumferential flange, *d*, with an inwardly-projecting shoulder, *e*, inner radially-sliding abutments, *d'*, having seats *e'*, fixed guide-cheeks d^2, and a horizontally-adjustable cone, *b*, substantially as described.

3. The combination of a rotary main disk having a circumferential flange, with an inwardly-projecting shoulder, radially-guided abutments having projecting seats, means for applying the abutments to the blanks, and means, substantially as described, for supporting the blanks against laterally-shifting motion, substantially as set forth.

4. The combination of a rotary main disk, A, having a circumferential flange, *d*, with an inwardly-projecting shoulder, *e*, radially-sliding abutments *d'*, having projecting seats *d'*, intermediate guide-cheeks d^2, a horizontally-adjustable cone, *b*, and interchangeable rings *g*, screwed to the disk and provided with retaining-pins *g'*, substantially as specified.

298,530. MACHINE FOR WASHING TABLE-CUTLERY AND OTHER ARTICLES. ANDREW E. WETMORE, Turner's Falls, Mass. Filed May 3, 1883. (No model.)

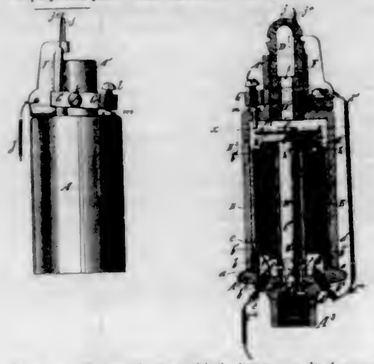


Claim.—1. In an apparatus for washing cutlery and analogous articles, the combination of the brushes B C, having adjustable bearings in which they revolve, and provided with set-screws to adjust the bearings, with a perforated soap-supplying box located over the upper brush, as set forth.

2. The combination, with the revolving brushes B and C and soap-box F, having a perforated bottom, of the adjustable follower F', having screw f^3 for adjusting it over the soap-box, as set forth.

3. A machine for washing table-ware, consisting of the box A, rotary brushes C B, means for vertically adjusting them, a perforated water-discharge pipe, G, a perforated soap-box, F, and the devices for washing cylindrical articles, composed of the brushes D and E, all constructed and arranged substantially as set forth.

298,531. APPARATUS FOR LIGHTING GAS BY ELECTRICITY. LE ROY S. WHITE, Waterbury, Conn., assignor to the Electric Appliance Company, same place. Filed Jan. 4, 1884. (No model.)



Claim.—1. The combination, with the burner-case having a separable base, of an electro-magnet having a movable core, and the coil of which is attached to and has its terminals passing through said base, a circuit-breaking device outside of said case, and a piece interposed between said core and circuit-breaking device passing through said case from the interior to the exterior thereof, for producing the operation of said circuit-breaking device by the movement of said core, substantially as herein described.

2. The combination of the case A, the base A^2, provided with a valve-seat, *f'*, the tube B', projecting upward from said base, the core C, arranged within said tube, and having the gas-valve *f* at its lower end, and the coil B, surrounding the said tube, and having its terminals *c d* extending through the base, substantially as herein described.

3. The combination of the case A, the base A^2, having the screw-threaded flange *b* and the valve-seat *f'*, the tube B', projecting upward from said base, the core C, having the gas-valve *f* at its lower end, the head B^2, fitting upon said tube and bearing against the flange *b*, the head B^2, applied to the upper end of said tube, and the coil B, surrounding said tube between the heads B^2 B^2, and having its terminals *c d* extending through said base, substantially as herein described.

4. The combination, with the case of an electric gas-burner, provided with a screw-threaded socket or projection for the burner-tip, of circuit-breaking devices upon the top of the case, a pin projecting downward into the case and serving by its upward movement to break the circuit, an electro-magnet arranged within the case, and having a movable core adapted to act upon said pin in its rising movement, and having its armature adjustable in said socket or projection, substantially as herein described.

5. The combination, with the case A, provided with the socket or projection A', of the electro-magnet having its core C arranged within the case, circuit-breaking devices on the exterior of the case, the pin *m*, adapted to be acted on by said core in its upward movement, and an iron burner-tip, D, fitted in said socket or projection and acting as an armature to the core C, substantially as herein described.

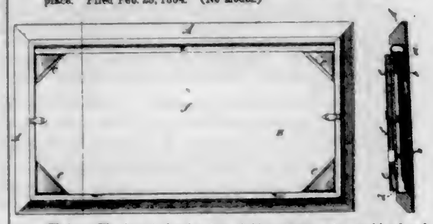
6. The combination, with the case A, having the socket or projection A', of the coil B and core C, arranged in said case, and the armature composed of the piece D' and burner-tip D, both of which are adjustable in said socket or projection, substantially as herein described.

7. The combination, with the case of an electric gas-burner and an electro-magnet having a movable core arranged within the same, of a circuit-breaking device consisting of a fixed member and a gravitating movable member, and a piece passing through the case and interposed between the said movable core and said gravitating member, for the purpose of producing the circuit-breaking movement of said gravitating member by the movement of said core, substantially as herein described.

8. The combination with the case of an electric gas-burner and an electro-magnet having a movable core arranged within the same, of the fixed and movable contacts *j j'*, the pivoted gravitating lever or yoke G carrying said contact *j'*, and the pin *m*, adapted to be operated by the said magnet-core to tilt the said lever or yoke and break contact between *j'* and *j* substantially as herein described.

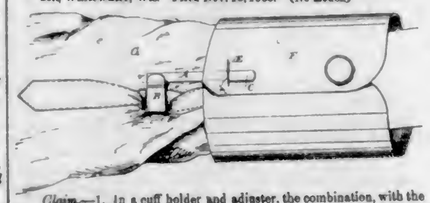
9. The combination, with the case of an electric gas-burner and an electro-magnet with a movable core arranged within the case, of the fixed and movable contacts *j j'* the pivoted gravitating yoke or lever G, carrying the contact *j'*, and provided with the adjusting-screw *l*, and the pin *m* adapted to be operated by said magnet-core to tilt said yoke or lever and break contact between *j'* and *j*, substantially as herein described.

298,532. PORTFOLIO. HENRY S. WILLIAMS and EDWARD L. SHIPMAN, New York, N. Y., assignors to themselves and James D. Shipman, same place. Filed Feb. 23, 1884. (No model.)



Claim.—The box A, having four rigid upright walls, combined and permanently connected by hinge with the portfolio B, the hinge of which is located on the inner face of one of said upright walls, and into which papers are bound for reference, the upper cover of the portfolio constituting, also, the cover of the box, substantially as herein shown and described.

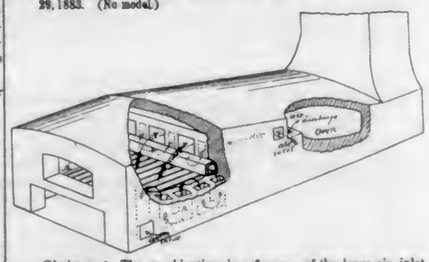
298,533. CUFF FASTENER AND ADJUSTER. THEODORE B. WILSON, Whitewater, Wis. Filed Nov. 10, 1883. (No model.)



Claim.—1. In a cuff holder and adjuster, the combination, with the strip A, having a bend, A', forming a prong, C, at one end, of the clasp B, fastened to the opposite end, substantially as herein shown and described.

2. In a cuff holder and adjuster, the combination, with the strip A, having a bend, A', and a prong, C, and spur D at one end, of a clasp, B, fastened to the opposite end, substantially as herein shown and described.

298,534. FURNACE. ODELL WILSON, Cleveland, Ohio. Filed Oct. 29, 1883. (No model.)

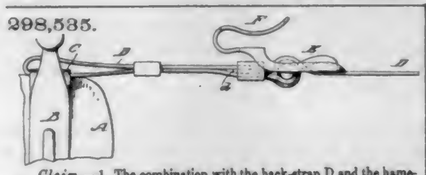


Claim.—1. The combination, in a furnace, of the large air-inlet flues, the intermediate shallow return air-flues, and the smoke-flues located above the return air-flues and between the large flues, substantially as shown and described.

2. The combination, in a furnace, of the large air-inlet flues, the intermediate shallow return air-flues, and the smoke-flues located above the return air-flues and between the large flues, and a series of flues constructed in the side walls of the fire-box, conveying the heated air to the point of combustion, substantially as described.

298,535. BACK-STRAP CHECK-HOOK FOR HARNESS. WILLIAM N. WILSON, Shippensville, Pa. Filed Feb. 23, 1884. (No model.)

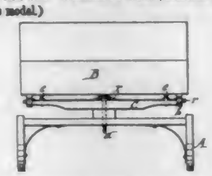
298,535.



Claim.—1. The combination, with the back-strap D and the hame-strap, of the buckle E, provided on its forward end with a hook, F, the said back-strap being secured at one end to the cross-bar of the buckle, and passing around the hame-strap back through the loop of the buckle, where it may be adjusted by the tongue in the usual manner, substantially as set forth.

2. As an improved article of manufacture, a combined check-rein hook and buckle consisting of a buckle-frame, E, provided near its center with the usual cross-piece and tongue, and having its sides curved upward at one end, and there formed with a cross-piece, F', the said cross-piece being extended in a forward direction and then carved rearward toward the opposite end of the buckle-frame, to form the hook, said buckle-frame, cross-pieces, and hook being all formed in one piece, substantially as set forth.

298,536. SLEIGH. WILLIAM H. WINES, Meridian, N. Y. Filed Mar. 1, 1884. (No model.)



Claim.—1. In combination with a sleigh-bolster and body supported thereon, brackets interposed between the bolster and body, and a metal rod or rods secured to the bolster and projecting over the ends thereof, and terminating with an oscillatory bearing on the brackets, substantially as set forth.

2. The combination of a sleigh-bolster and body supported thereon, brackets secured to the under side of the body, a continuous metal rod secured to the top of the bolster and having its ends projecting over the ends of the bolster and entering an eye in the bracket, and collars fixed to said rod at the ends of the bolster, substantially as described and shown.

3. In combination with a bolster connected with the sleigh by a king-bolt, and the body supported on said bolster, a continuous metal rod secured to the bolster and provided with an eye for the passage of the king-bolt, and having its ends projecting over the ends of the bolster and entering an eye in the bracket, substantially as described and shown.

4. In combination with the bolster C and body B, the brackets *b b*, secured to the body, the rod *r*, countersunk in the top of the bolster, and having its end projecting over the end of the bolster and provided with the collar *c*, and the clips *e*, fastening the rod to the bolster, substantially as described and shown.

298,537. SWITCH-STAND. JOHN R. WITTY, Indianapolis, Ind., assignor of part to Henry H. McGaffey, Daniel F. Whitcomb, and Byron Hutchinson, all of same place. Filed Oct. 2, 1883. (No model.)

Brief.—The vertically-reciprocating crank-shaft for operating the switch is locked against rotation when in its lower position by described devices, one of which, located near the base of the stand, is protected by a cover fixed to the frame and supplied with a sliding cap fixed to the shaft.



Claim.—1. In a switch-stand, the combination of the frame B, the operating-rod C, and the latch C^3, mounted on said rod near its upper end, and provided with a hub, c^3, as a means whereby said latch may be secured in position on said rod, said latch being also adapted to come in contact with the sides of said frame when the switch is thrown from the main track to one of the side tracks, and thus limit the throw at the proper point, substantially as described, and for the purposes specified.

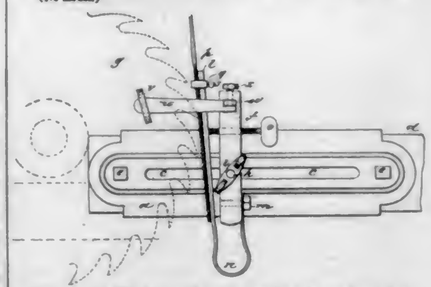
2. In a switch-stand, the combination of the frame-work B, having an extended base, the operating-rod C, journaled in the top and base of said frame-work, and provided with a clutch part, C^3, and the casing D, secured to the base of said frame-work surrounding said clutch part, and extending up around and in close proximity to said operating-rod, substantially as shown and described, and for the purpose specified.

3. In a switch-stand, the combination of the frame-work B, having a projection, b^3, the operating-rod C, having a clutch part, C^3, near its lower end, and the casing D, provided on its front side with a flange, *d*, by means of which it is secured to the horizontal part of the frame B, and on its rear side with a projection, *d'*, which fits under said projection b^3 on the frame, whereby said casting is secured in position, substantially as set forth.

4. In a switch-stand, the combination, with the operating-rod C, having a clutch part, C^3, thereon, of the casting D, its upper end being formed into a neck, and a cap, D', secured to the operating-rod, and adapted to fit down over said neck, thereby preventing any ingress to the clutch, substantially as set forth.

5. In a switch-stand, the combination, with the head-blocks A, stand-frame B, and operating-rod C, provided on its lower end with a crank, C^4, of the piece C^5, bolted between said head-blocks, and provided with an orifice, c^5, into which the end of the wrist of said crank is adapted to fit when the switch is in locked position, substantially as described, and for the purposes specified.

298,538. SAW-JOINTER. HYRAM D. WOLCOTT, Wright's, assignor of one-half to Horace J. Wolcott, Port Allegany, Pa. Filed Dec. 10, 1883. (No model.)



Claim.—1. The improved circular-saw-jointing attachment, consisting of base-plate *a*, supporting-stock *f*, flexibly-connected file-holding plate *l*, attaching-clamp *q s*, and the adjusting-screw *o*, combined and arranged substantially as described.

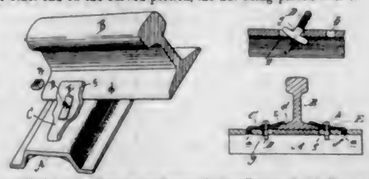
2. The jointing attachment herein described, consisting of base-plate *a*, supporting-stock *f*, file-holding plate *l*, clamp *q s*, and adjusting-screw *o*, combined and arranged substantially as described.

3. The combination, in a circular-saw-jointing attachment, of the base-plate *a*, supporting-stock *f*, file-holding plate *l*, clamp *q s*, adjusting-screw *o*, and the guiding-arms *u* and screw-guides *v*, substantially as described.

4. The guide-arms *u*, having adjusting screw-guides *v*, and connected to the supporting-stock *f* by the overlapping elbows *w*, fitted in a mortise of the stock and secured by the binding-screw *x*, substantially as described.

298,539. MEANS FOR SECURING RAILROAD-RAILS TO METALLIC TIES. SIDNEY R. WRIGHT, Wyandotte, Mich. Filed Aug. 8, 1883. (No model.)

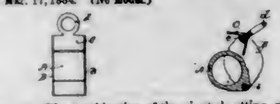
Brief.—The fastening-clip is held to the web of a rail by a bolt having an elongated head and square body engaging with a slot in the tie. One end of an oblong leaf-spring rests on the flat portion of the clip and the other end on the curved portion, the nut being placed over it.



Claim.—1. As a means for securing a railway-rail, a hollow metallic tie provided with the slot *c*, in combination with the clip C and the bolt D, provided with an elongated head and square body, engaging with the slot in the tie, said tie being provided with a space below it to admit of turning the bolt, substantially as and for the purposes described.

2. As a means for securing a railway-rail, a metallic tie provided with the slot *c*, in combination with the clip C, having an inclined part at *c*, the oblong leaf-spring E, one end of which rests upon the flat portion of the clip and the other end upon the inclined part *c*, and the bolt D, provided with an elongated head and square body, engaging with the slot in the tie, substantially as and for the purposes described.

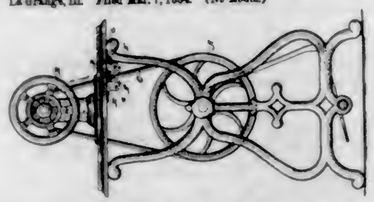
298,540. WATCH-CHARM. REUBEN L. ALLEN, Providence, R. I. Filed Mar. 17, 1884. (No model.)



Claim.—1. The combination of the pivoted setting-rim A, case B B, and the pivoted guard C, adapted to fit the periphery of the setting-rim A, substantially as described.

2. The combination of the pivoted setting-rim A, provided with the hollow *f*, case B B, pivoted guard C, adapted to fit the periphery of the setting-rim A, and the ring *d*, provided with the pivot-eye *g*, cut away at its side, substantially as and for the purpose specified.

298,541. BRAKE FOR SEWING-MACHINES. EDWARD H. AMET, La Grange, Ill. Filed Mar. 7, 1884. (No model.)

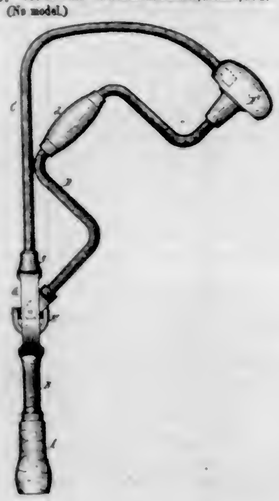


Claim.—1. In combination with the table D, the frame-work E, provided with depending lugs having bearings *e*, adapted to support eccentrics, and having a central aperture for the passage of the belt therethrough, substantially as specified.

2. The combination of the frame E and the table D, the former arranged upon and extending through the latter, whereby the former is strengthened against the strain of the belt when the brake is brought into action, substantially as specified.

3. The blank for the frame E, having a central opening and perforated side and end lugs, all formed in one piece, substantially as specified.

298,542. BIT-BRACE. CHARLES H. AMIDON, Buffalo, N. Y. Filed Oct. 18, 1883. (No model.)

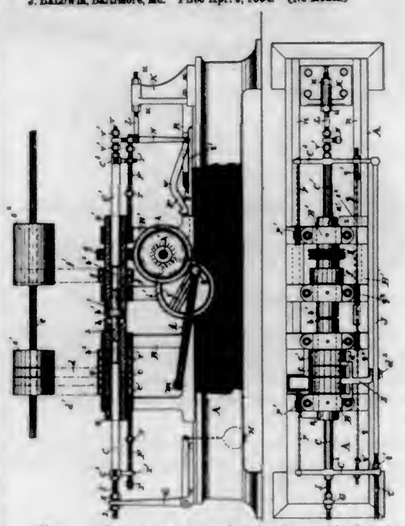


Claim.—1. The combination, with a bit-socket and a crank having its axis arranged at an angle to the bit-socket, of mechanism whereby the rotative motion of the crank is transmitted to the bit-socket, and an angular or elbow-shaped frame or support, whereby the bit-socket and crank are retained in their relative position, substantially as set forth.

2. The combination, with a bit-socket and a crank, D, having its axis arranged at an angle to the bit-socket, of a frame, C, having at one end a head, F, in which one end of the crank is supported, and at its opposite end a bearing, B, in which the shank of the bit-socket is supported, and mechanism whereby the crank is connected with the shank of the bit-socket, substantially as set forth.

3. The combination, with the bit-socket A and shank *a*, of the crank D, the frame C, having a head, F, bearing B, and extension G, and a universal joint, E, connecting the crank D with the shank *a*, substantially as set forth.

298,543. MACHINE FOR TURNING INSULATOR-PINS. JOSEPH J. BALDWIN, Baltimore, Md. Filed Apr. 9, 1884. (No model.)



Claim.—1. In a machine for turning pins, the combination of two hollow mandrels, a cutter-head on each mandrel, and center grips which occupy and move endwise within the hollow mandrels, as set forth.

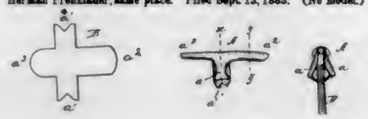
2. In a machine for turning pins, the combination of two hollow mandrels, a cutter-head on each mandrel, center grips which fit the bore of the hollow mandrel, move endwise, and at and for a short distance from their ends are reduced in size, as set forth.

3. In a machine for turning pins, the combination of two hollow mandrels, a cutter-head on each mandrel, center grips which occupy and move endwise within the hollow mandrels, chains and weights to draw the center grips toward each other, and adjustable stop devices to limit the movement of the grips, as set forth.

4. The combination of the center grips adapted to move endwise, a weighted lever to stop the back movement of one grip, and a rod, J, connected rigidly by one end to one grip, extending from thence to and passing loosely through a hole in a cross-bar on the other grip, and provided with a stop-nut, *f*, to press against the said cross-bar, as set forth.

5. The combination of a fixed frame, a reciprocating frame, a hollow mandrel carrying a cutter-head mounted on each frame, and a center grip in each hollow mandrel adapted to move endwise therein, as set forth.

298,544. CLASP-FASTENING FOR ELASTIC STAYS IN CORSETS. THOMAS H. BALL, Chicago, Ill., assignor to himself, Simon Florsheim, and Herman Frentzsaar, same place. Filed Sept. 13, 1883. (No model.)

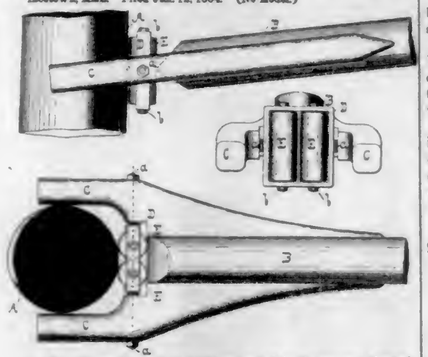


Claim.—1. A metallic fastening for elastic gores and other like articles, consisting of a divided body adapted to be closed on the ends of the spring, and a cross-head having a projecting arm, whereby the device may be securely fastened to the fabric, substantially as described.

2. A T-headed fastening, A, composed of the two clamping-jaws *a* and the cross-head at their fixed ends, in combination with the fabric C, stitched around one arm of the cross-head, and the coiled metal spring D, the end of which is clasped between the ends of the jaws, substantially as and for the purposes set forth.

3. In combination with the fabric C, having the continuous spring-coil D, the fastening A, composed of the grip-jaws *a*, and the cross-head, one arm, a^2, of which is constructed and arranged to rest upon the adjoining bend in the coil, substantially as and for the purposes set forth.

298,545. BOOM AND GAFF FOR VESSELS. ELIJAH BANGS, Provincetown, Mass. Filed Jan. 12, 1884. (No model.)



Claim.—In combination with a boom or gaff having a recess formed between the jaws, an open frame supported in the said recess, which swings loosely on fixed bolts or rods extending through the said jaws, and two cylindrical friction-rollers adapted to turn on upright bolts extending through the said frame, substantially as and for the purpose specified.

298,546. RUBBER BOOT. JOSEPH BARNSAN, Providence, R. I. Filed Jan. 17, 1884. (No model.)



Claim.—1. A rubber boot or shoe provided with a leather sole secured by sewing, riveting, or otherwise to a sheet of rubber and a piece of canvas, and secured to the boot or shoe by cementation, as described.

2. A leather sole or tap provided on one side with a sheet of rubber and a piece of canvas, secured together by sewing or otherwise, adapted to be secured to a rubber boot by cementation, as described.

3. A leather sole provided on one side with a sheet of rubber and a piece of canvas adapted to be secured to the sole of a rubber boot by cementation and mechanical means, as described.

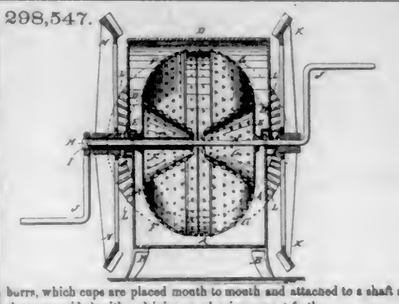
4. The combination, with a rubber boot or shoe, of a leather sole provided on one side with rubber and canvas impregnated with rubber secured together by sewing, or other mechanical means, and by vulcanization, as described.

5. The improved method for securing leather soles to rubber boots, the same consisting in cementing to the leather sole a sheet of canvas with intervening rubber, securing the sole to the canvas by means of sewing, riveting, or other mechanical means, and cementing the whole together before vulcanization, as described.

298,547. POTATO-PARER. GASPAR A. BETANCOURT, New York, N. Y. Filed Sept. 3, 1883. (No model.)

Claim.—1. A potato-parer constructed substantially as herein shown and described, and consisting of a vessel having a close cover and a pair of oblate semispherical cups provided with inwardly-projecting

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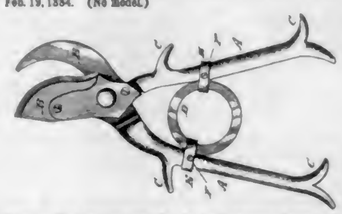


burrs, which cups are placed mouth to mouth and attached to a shaft and sleeve provided with a driving mechanism, as set forth.

2. In a potato-parer, the combination, with the vessel A and cover D, of the oblate semispherical cups F G, the shaft and sleeve H I, the connecting gear-wheels K L M, and a driving crank or pulley, substantially as herein shown and described, whereby the said cups will be revolved in opposite directions, as set forth.

3. In a potato-parer, the combination, with the cups F G, having inwardly-projecting burrs, and the shaft and sleeve H I, of the interior conical projections, F' G', having projecting burrs, substantially as herein shown and described, whereby the said cups are more firmly supported and an increased operating-surface is obtained, as set forth.

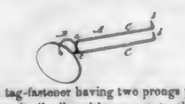
298,548. PRUNING-SHEARS. JOHN G. BURACH, Princeton, Ill. Filed Feb. 19, 1884. (No model.)



Claim.—The combination, in a pair of pruning-shears, of the handles A A, circular rubber spring or ring D, adjustable sleeves or keepers E, and set-screws F, for fixing the same in their adjusted position upon the handles, substantially as set forth.

298,549. TAG-FASTENER. GEORGE N. BUSH, Mattoon, Ill. Filed Oct. 2, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 286,112, dated October 2, 1883.



Claim.—1. A tag-fastener having two prongs provided with a loop or eye arranged longitudinally with respect to the prongs, as distinguished from transversely, and having their ends bent transversely out of the plane of the prongs, substantially as shown and described.

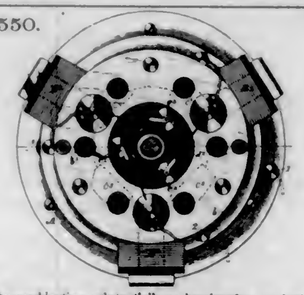
2. A tag-fastener having two prongs provided with a loop or eye arranged longitudinally with respect to the prongs and bent or twisted in a plane intersecting the plane of the prongs, and having their ends bent transversely out of the plane of the prongs, substantially as shown and described.

298,550. REGULATOR FOR ELECTRIC MOTORS. CHAS. G. BURKE, Richmond Hill, N. Y. Filed Nov. 22, 1883. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of a revolving armature, a series of electro-magnets, a circuit-controlling device for transmitting electric currents to said electro-magnets in the proper succession to actuate said armature, and a second circuit-controlling device for modifying the duration of the electric currents thus transmitted.

2. The combination, substantially as hereinbefore set forth, with an electric motor, of an independent circuit-controlling device, whereby the duration of the electric currents transmitted through the coils of said motor may be modified.

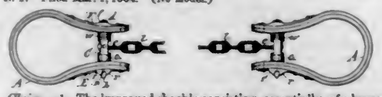
298,550.



3. The combination, substantially as hereinbefore set forth, with a series of electro-magnets, an armature common to all of said magnets, a battery, and means, substantially such as described, for transmitting electric impulses from said battery through said electro-magnets in succession, of a second battery and an adjustable circuit-controlling device, whereby electric currents may be transmitted from the last-named battery through said electro-magnets coincident with the first currents, but of less duration.

4. The hereinbefore-described method of regulating the speed of electric motors, which consists in vitalizing the actuating electro-magnets through the agency of electric currents of determinate duration, and simultaneously supplying controlling-currents of less duration.

298,551. FETTER FOR ANIMALS. MILES E. BURLINGAME, Willett, N. Y. Filed Mar. 1, 1884. (No model.)



Claim.—1. The improved shackle consisting, essentially, of a bowed spring-band, an elastic facing or cover applied to said band, and the removable coupling for drawing the ends of the bow toward each other, substantially as set forth.

2. The combination, with the flexible bow A, of the plates E F the coupling-bar, C, swiveled on one of said plates and detachably connected with the other plate, and a hobble connected with said coupling-bar, substantially as set forth.

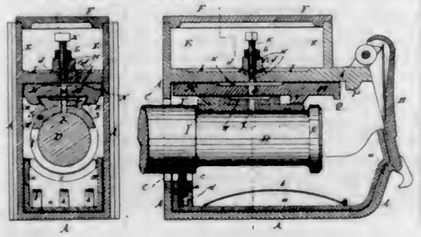
3. In combination with the bow A, the plate E, provided with the longitudinal slot *a* and transverse notches *n*, and the coupling-bar C, formed with the T end *b*, substantially as shown and described.

4. In combination with the bow A, the plate E, provided with the slot *a* and transverse notches *n*, the coupling-bar C, having a T end, *b*, and central hub, *c*, and a spring interposed between said hub and adjacent side of the bow, substantially as described and shown.

5. In combination with the bow A, the plates E F, secured to the exterior of the ends of the bow, the coupling-bar C, swiveled on the plate F, and detachably connected with the plate E, and formed with a central hub, *c*, a hook or eye, *e*, swiveled on the hub, and a spring, G, interposed between the hub and adjacent side of the bow, substantially as described and shown.

6. In combination with the bow A, the plate F, provided with the eye *f*, the plate E, provided with the slot *a* and transverse notches *n*, the coupling-bar C, formed with the central hub, *c*, journal *d*, entering the eye of plate F, and terminating with the upsetting end *g*, and T end *b*, engaging the plate E, and the adjusting-washers *w* and spring G, respectively at opposite ends of the hub, and a hook or eye, *e*, connected with the hub, all constructed and combined substantially in the manner shown and set forth.

298,552. CAR-AXLE BOX. MILTON R. CAREY, Marsh Chunk, Pa. Filed Jan. 25, 1884. (No model.)



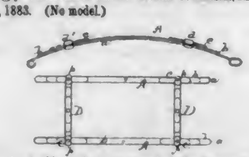
Claim.—1. In a journal-box, the combination, with the housing A and the journal D, of the wedge M, having recess N and perforation O, and provided with dovetailed flanges R, and a stop-flange, V, and the brass U, having dovetailed projection T, and provided with a recess, W, and perforation X, substantially as herein shown and described, whereby the said wedge and brass can have the necessary play, and will conduct oil to the journal D, as set forth.

2. In a journal-box, the combination, with the top of the housing A and the recessed and perforated wedge and brass, of the oil-chamber E, having projection G, perforations H J, and the adjustable screw K, substantially as herein shown and described, whereby oil in any desired quantity can be introduced continuously to the wedge, brass, and journal, as set forth.

3. In a journal-box, the combination, with the housing A, provided with the door B, of the cellar-box *a*, fitting within the said housing and having a closed bottom, and the springs *b*, secured at one end to said cellar-box and having their free ends resting on the bottom of the same, substantially as herein shown and described.

4. In a journal-box, the combination, with the housing A, of the cellar-box *a*, fitting within the housing and having a double wall at its inner end, the plate *c*, the springs *d* under the plate *c*, and the springs *b*, substantially as herein shown and described.

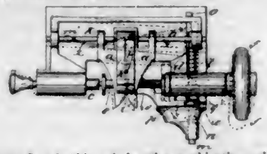
298,553. VEHICLE-SPRING. ROBERT P. CARTER, Arcade, N. Y. Filed Aug. 22, 1883. (No model.)



Claim.—1. A side spring composed of the foundation-leaf *a*, reaching from one end support to the other, one or more long leaves, *b*, and the short leaves, *c*, provided at each clip *d d'*, and said clips *d d'*, one of which is attached to one leaf or more, and the other one to one or more different leaves of the spring, the long springs being united in the center, substantially as set forth, and for the purpose described.

2. The beveled-top saddle-clip B, constructed as described, and in combination with the side springs, A A, or side springs and cross-springs, as and for the purpose set forth.

298,554. BOBBIN-WINDER. GEORGE W. CLAFF, Allemance, N. C. Filed Aug. 4, 1883. (Model.)



Claim.—1. In a bobbin-winder, the combination, with a traverse guide-block having a knife-edge, of a tension-spring for the thread on said guide-block, substantially as herein shown and described, whereby the knife-edge will be pressed upon the bobbin by the thread, as set forth.

2. In a bobbin-winder, the combination, with the base-plate *k*, carrying the bobbin-holding devices, of the traverse-block *a*, pivoted loosely on the rod *d*, and provided with the knife-edge *g* and the guide-notch *i'*, the tension-spring *h*, and the adjusting-screw *h'*, substantially as herein shown and described.

3. In a bobbin-winder, the combination, with the bed-plate *l*, provided with the bracket *n* and stop *o*, the base-plate *k*, pivoted to said bed-plate, and the spring *x*, of the push-rod *m*, provided with shoulder *q*, the spring *t*, surrounding said rod, the latch *p*, having arm *w*, and the springs *u*, substantially as herein shown and described.

298,555. PIN-TAG. OSCAR J. COHN, New York, N. Y. Filed Mar. 14, 1884. (No model.)



Claim.—1. As an improved article of manufacture, the tag-fastener B, formed with the penetrating-arms *a*, the right-angled loops *b*, and the face portion *c*, the said face portion being bent slightly toward

the ends of the arms, as set forth.

2. The fastener B, bent to form the loops *b b*, penetrating-arms *a a*, and U-shaped face portion *c*, bent slightly backward, so as to have a spring action, in combination with the card A, adapted to have the arms *a* passed through it and to rest in the loops *b*, substantially as described.

298,556. HORSE-TOOTH CUTTER. JOHN H. DANCER, Orange, N. J. Filed Dec. 5, 1883. (No model.)

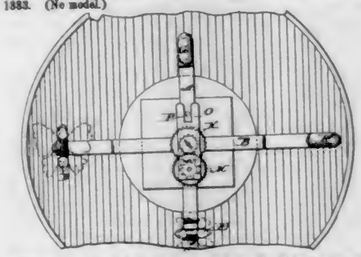


Claim.—1. In a tooth-cutter, the section *a'*, having the turned extremity provided with the co-operating edge *n*, the sliding cutter *b*, the gage *c*, and mechanism to operate the cutter, all combined substantially as shown and described.

2. In combination, in a tooth-cutter, the section *a*, having the angular rest *f*, provided with the concavity *g*, to receive the bar back of the animal's tooth, the cutter, and means to operate the same, substantially as shown.

3. In combination with the section *a'*, having the rest *f*, a cutter having both extremities sharpened, and mechanism to operate the same.

298,557. CLOCK. SANTERRE DIOLOT, New York, N. Y. Filed June 7, 1883. (No model.)



Claim.—1. A clock or time-piece containing the following elements, operated in combination, namely: an ordinary dial and clock mechanism, hour and minute hands worked by said mechanism, arranged behind the dial, provided with magnets that are adapted to attract and hold suitable devices in position in contact with the face of the dial, and cause said devices to slide on the face of the dial to indicate the time, all substantially as herein shown and described.

2. In a clock or time-piece, the combination, with the dial, of devices that slide upon the front face thereof, and of magnets that are revolved behind the dial by the clock mechanism, substantially as herein shown and described, whereby the time will be indicated upon the face of the dial by the shifting of the sliding devices, as set forth.

3. In a clock or time-piece, the sliding devices R S, adapted to slide on the face of the dial and to be moved thereon, so as to indicate the time by means of magnets operated by clock-work behind the dial, substantially as shown and described.

4. In a clock or time-piece, the combination, with the clock mechanism and the back of the dial, of the U-shaped hands or bars arranged one within the other, each bar or hand carrying a magnet and operated as described, whereby two independent sets of devices are made to slide and travel upon the face of the dial in concentric circles of different diameter, to indicate the hours and minutes, as set forth.

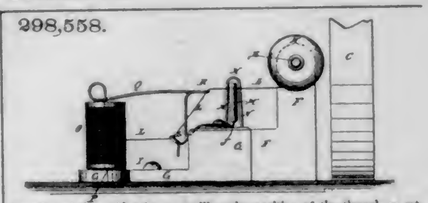
5. In a clock, the combination, with the works and the dial, of the shaft C, the hands A B, having the ends bent, and of the magnets D E, and the balancing-pieces F G on the ends of the hands, substantially as herein shown and described.

6. In a clock, the combination, with the works and dial-plate, of the shaft C, the hands A B, carrying magnets and balancing-pieces on the ends, the collar J, provided with a cog-wheel, K, the pinion L, the cog-wheel M, and the pinion N, the plate O, and the pin P on the under side of the dial, substantially as herein shown and described, and for the purpose set forth.

298,558. BOBBIN-WINDER FOR SEWING-MACHINES. HENRY M DIXON, New York, N. Y. Filed Sept. 4, 1883. (No model.)

Claim.—1. A bobbin-winder constructed substantially as herein shown and described, and consisting of the wheel and spindle for carrying the bobbin, the knife-holder, knife, sheath, and spring for cutting the

298,558.



thread, and the guides for controlling the position of the thread, as set forth.

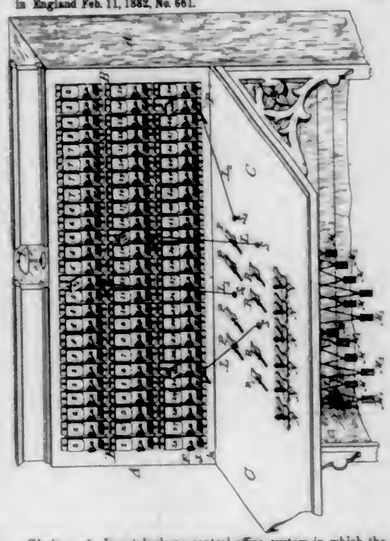
2. In a bobbin-winder, the combination, with the wheel and spindle D E and the guides S R, of the knife K, the recessed knife-holder J, and the spring N, substantially as herein shown and described, whereby the thread will be cut automatically when the bobbin becomes full, as set forth.

3. In a bobbin-winder, the combination, with the knife K, the recessed knife-holder J, and the spring N, of the recessed sheath M, substantially as herein shown and described.

4. The combination, with the stand G, knife K, and sheath M, of the U-shaped spring N, inclined to bring its bend above the upper forward corner of the sheath and exert the proper tension on the thread, as described.

5. In a bobbin-winder, the combination, with the knife K, of the adjustable sheath M, having notch *m*, to gage the point at which the thread shall come in contact with the knife-edge, and the device adapted to wind bobbins of varying size by adjusting the sheath, substantially as described.

298,559. TELEPHONE-EXCHANGE APPARATUS. THOMAS E. DOOLITTLE, Bridgeport, Conn. Filed Sept. 16, 1881. (No model.) Patented in England Feb. 11, 1882, No. 661.



Claim.—1. In a telephone central-office system in which the incoming lines are connected in groups with a series of sectional switch-boards, the combination, with the said sectional switch-boards, of a series of connecting-conductors extending between the switch-boards, and provided at each terminal with devices for transmitting and receiving signals, and with connecting devices whereby call-signals or communications may be electrically exchanged between any two switch-boards or between sub-stations connected by main lines with any two switch-boards.

2. The combination, substantially as hereinbefore described, of a series of sectional switch-boards, a series of main lines divided into groups between the said switch-boards, a series of independent connecting-conductors extending between each switch-board and every other switch-board, each of the said conductors being provided at each terminal thereof with signaling devices and circuit-connections, and a series of local connectors at each switch-board, each provided with a circuit-changer, whereby a telephone common to the series may be connected in circuit

with any one of the series, whereby each switch-board is enabled to signal and communicate with every other switch-board, and whereby a line terminating at one switch-board may be interconnected with a line terminating at another switch-board, for the purposes specified.

3. The combination, substantially as hereinbefore set forth, of a visual signal, an electro-magnet for causing the same to be actuated or exhibited, a key provided with a resting and a working contact, a spring-jack having one of its terminals connected directly to a line-wire and its other terminal to the lever of said key, a connection from the resting-contact of said key to the earth, which includes said electro-magnet, and a connection from the working-contact of said key to one pole of an electric generator whose remaining pole is connected to the earth.

4. The improved spring-jack, constructed substantially as hereinbefore set forth, consisting of a yielding metallic bar which normally rests in a non-conducting seat, a contact-point which forms an electrical connection with said bar while it rests in said seat, and a tapering metallic switch-pin which, when inserted between the yielding bar and its non-conducting seat, forms an electrical connection with the said bar, and at the same time lifts it from the contact-point.

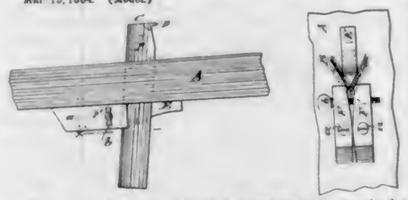
5. The combination, substantially as hereinbefore set forth, of a non-conducting base, a metallic thimble inserted in said base and electrically connected with the earth, a flexible conductor provided with a non-conducting envelope passing through said thimble, a metallic switch-pin or connector attached to and forming one terminal of said flexible conductor, and a weight attached to or acting upon said flexible conductor, tending to keep said terminal normally in electrical contact with said metallic thimble.

6. The combination, substantially as hereinbefore set forth, of a metallic thimble electrically connected with the earth, a flexible conductor provided with a non-conducting envelope passing through said thimble, a metallic switch-pin or connector attached to and forming one terminal of said flexible conductor, and a weight attached to or acting upon said flexible conductor, tending to keep said terminal normally in electrical contact with said metallic thimble.

7. The combination, substantially as hereinbefore set forth, of two metallic thimbles electrically connected with each other and with the earth, two flexible conductors with non-conducting envelopes, said conductors passing through said thimbles, respectively, metallic switch-pins or connectors forming one terminal of each of said flexible conductors, a telephone and a circuit-changer for connecting the remaining terminals of said flexible conductors together, either directly or through said telephone.

8. The combination, substantially as hereinbefore set forth, of a metallic thimble, a flexible conductor provided with a non-conducting envelope passing through said thimble, and a metallic switch-pin or connector attached to and forming one terminal of said flexible conductor, which terminal is larger than the opening of the thimble, whereby the terminal is prevented from being drawn through the thimble by the tension of the conductor.

298,560. BENCH-DOG. RILEY DOTY, Leonardsburg, Ohio. Filed Mar. 15, 1884. (Model.)



Claim.—1. An improved bench-dog consisting of an angular bar provided with a longitudinal channel or channels, and having teeth on the upper forward edges of the sides of the said channel or channels, substantially as herein shown and described.

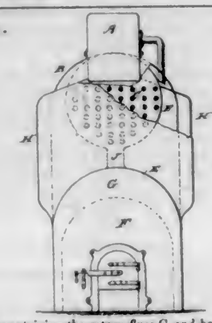
2. The combination, with a top having V-shaped mortises, of a dog V-shaped in cross-section, and means for clamping the dog in the mortises, substantially as herein shown and described.

3. The combination, with the bench-top A, having V-shaped mortises, of the V-shaped dog B, the braces E, and a clamp formed of the pivoted arms F and the thumb-screw *b*, substantially as herein shown and described.

298,561. STEAM-BOILER. PATRICK FRANCIS DUNDON, San Francisco, Cal. Filed Jan. 11, 1884. (No model.)

Claim.—In a steam-boiler of the described class, the construction, combination, and arrangement, as hereinbefore described, of the lower shell, E, having water-space G, surrounding the furnace in whole or in part, the furnace F, communicating with the combustion-chamber D, the

298,561.



upper shell, B, containing the return-flues C, and having pipes or openings J J, communicating with the top of the lower shell, the steam-dome or superheater A, and the flame-jacket H H', the whole constructed, combined, and arranged substantially in the manner and for the purpose shown and set forth.

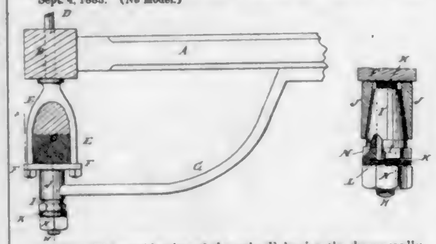
298,562. END-CAP FOR PAPER ROLLS. FREDERICK W. DUNNELL, Tompkinsville, N. Y. Filed Mar. 4, 1884. (No model.)



Claim.—1. An end-cap for paper rolls, made substantially as herein shown and described, and consisting of a sheet-metal cylindrical band having inwardly-projecting scalloped edge, and provided with an end-fastening to adapt the cap to be applied to the end of a paper roll, as set forth.

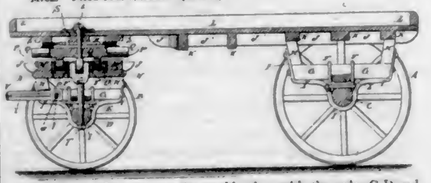
2. The combination, with the paper roll E and its cover F, of a sheet-metal cap, A, substantially as herein shown and described, whereby the end of the said roll is protected from injury, as set forth.

298,563. ADJUSTABLE NUT-BEARING. GEORGE EDMONDS, Brooklyn, assignor to himself and William J. McGinn, New York, N. Y. Filed Sept. 4, 1883. (No model.)



Claim.—The combination of the yoke F, having the downwardly-extended screw-bolt H, the externally-tapered nut I, and the drop-stay G, having the conical socket J, as and for the purpose described.

298,564. WAGON RUNNING-GEAR. WILLIAM H. FANNING, Lapeer, Mich. Filed Jan. 7, 1884. (Model.)



Claim.—1. In a wagon, the combination, with the axles C D and the sand-boards E, of the body-supporting frame consisting of the bars G, secured to the ends of the sand-boards, the inclined bars H, secured

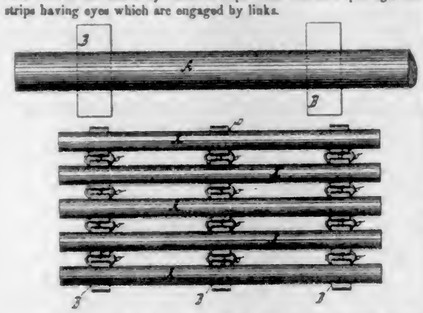
to the bars G, and the brace-bars I, passing around the axles and having their ends secured to said bars G H, substantially as herein shown and described, and for the purpose set forth.

2. In a wagon, the rear frames, G H J, made with a forward extension, J', of their top bars, substantially as herein shown and described, whereby the wagon-body will receive a firm support, as set forth.

3. In a wagon, the combination, with the front frame, G H I, the platform-bars M, and the body L, of the plate N, having grooved blocks O, the plate Q, having rounded blocks P, the fifth-wheel S, and the jointed king-bolt T and its long pivot U, substantially as herein shown and described, whereby the forward and rear parts of the running-gearing can rock independently and without straining the wagon-body, as set forth.

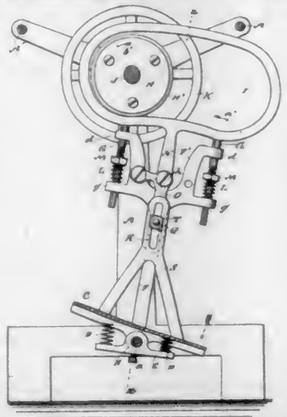
298,565. FLOOR-MAT. FRIEDRICH FASTENRATH, New York, N. Y. Filed Nov. 16, 1883. (No model.)

Brief.—Parallel slats with openings at points entirely within the ends thereof are united by metallic strips fitted into said openings, the strips having eyes which are engaged by links.



Claim.—As an improvement in floor-mats, the combination of the parallel slats A, having the described holes or openings at points entirely within the ends thereof, the metallic strips B, fitted into said openings of the slats and constructed with eyes *e* at both ends, and the links *o*, engaging said eyes of the metallic strips, for connecting the slats, substantially as shown and described.

298,566. FOOT-POWER. HENRY FIELD, JR., New Bedford, Mass. Filed Feb. 21, 1884. (No model.)



Claim.—1. The combination, with a pulley or wheel, of a rocking frame surrounding it, an elbow-lever connected with the frame, and with a rocking standard, and of a rocking arm for holding the frame surrounding the wheel, substantially as herein shown and described.

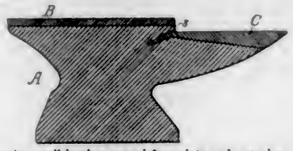
2. The combination, with a pulley or wheel, of a rocking frame surrounding it, a rocking arm on which the frame is held in such a manner that it can have a slight vertical movement, and an elbow-lever pivoted to the frame, to the arm holding the frame, and to a rocking standard, substantially as herein shown and described.

3. The combination, with the wheel H, of the rocking frame I, surrounding it, and provided with downwardly-projecting rods G, the rocking arm F on the shaft B, the fork F', formed on the upper end of the arm F, in the prongs of which fork the rods G are held, the standard S on the rocking foot-plate C, and of the angle-lever O, pivoted to the lower end of an arm, N, of the frame I, to the fork F', and to the standard S, substantially as herein shown and described.

4. The combination, with the wheel H, of the frame I, having the downwardly-projecting rods G, and the arm N, the rocking arm F on the shaft B, the fork F' on the upper end of the arm F, the springs L, the nuts M on the rods G, the angle-lever O, and the standard S on a rocking foot-plate, substantially as herein shown and described.

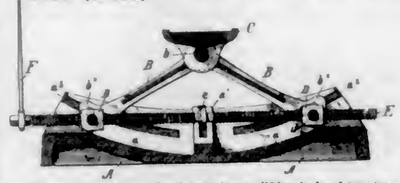
5. The combination, with the rocking foot-plate C, of the cross-bar E, held on the shaft B and below the plate C, and of the springs D, interposed between the foot-plate C and the bar E, substantially as herein shown and described.

298,567. ANVIL. CLARK FISHER, Trenton, N. J. Filed Dec. 20, 1883. (No model.)



Claim.—An anvil having a steel face-plate and a steel or wrought-iron plate covering the horn, the union being effected by casting the iron body on the plates, in which the adjacent extremities of the horn-piece and face-plate are one above the other, and out of contact with each other, and in which the cast metal extends under the entire surface of the face-plate, and between the end thereof nearest to the horn and the horn piece or plate, substantially as and for the purposes set forth.

298,568. LIFTING-JACK. CLARK FISHER, Trenton, N. J. Filed Feb. 16, 1884. (No model.)



Claim.—1. The combination, to form a lifting-jack, of two toggle-bars, the upper extremities of which are connected and adapted to carry the load, a bed-frame upon which the feet or lower extremities of said toggle-bars rest and travel, and a right-and-left-handed screw-shaft adapted conveniently, by means of trunnioned nuts, to act against the lower extremities of said toggle-bars and cause their approach upon said bed-frame, substantially as described.

2. The combination, to form a lifting-jack, of two toggle-bars, the upper extremities of which are connected and adapted to carry the load, a bed-frame upon which the feet or lower extremities of said toggle-bars rest and travel, a right-and-left-handed screw-shaft adapted conveniently, by means of trunnioned nuts, to act against the lower extremities of said toggle-bars and cause their approach or recession upon said bed-frame, and means for preventing the axial movement of said screw-shaft, substantially as described.

3. The combination, to form a lifting-jack, of two toggle-bars connected at their upper extremities by a toggle-pin, and as to said upper extremities equipped with a lifting-head, a lifting-head, a bed-plate upon which the lower extremities of said toggle-bars rest and travel, and a right-and-left-handed screw-shaft which is adapted to said toggle-bars in such manner that upon its rotation in one direction it causes the approach of the lower extremities of said toggle-bars, or in the opposite direction their recession, and when not rotated retains said bars fixedly in a given position, substantially as set forth.

4. In a lifting-jack of the class herein recited, the combination of a bed-frame containing or embodying segmental toggle-ways, two toggle-bars connected as to their upper extremities, adapted as to said upper extremities to sustain the load, and as to their lower extremities adapted to travel in said segmental toggle-ways, and a screw-shaft or kindred device housed in the bed-plate, and adapted to occasion the approach or recession of the lower extremities of said toggle-bars, substantially as set forth.

5. The combination, to form a lifting-jack of the class herein recited, of the bed-frame provided with segmental toggle-ways, the toggle-bars provided as to their upper extremities with a lifting-head, and as to their lower extremities with trunnioned nuts, nuts applied to said toggle-bars and mounted upon a right-and-left-handed screw-shaft, a right-and-left-handed screw-shaft provided with a collar or kindred retaining device housed in the bed-plate, and means for occasioning the rotation of said shaft, substantially as set forth.

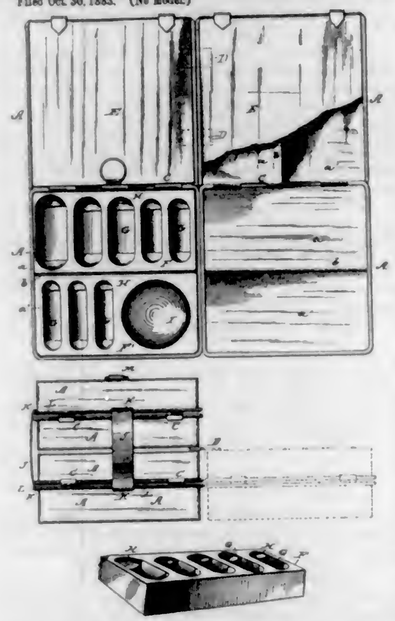
6. The bed-frame hereinbefore described, provided with segmental toggle-ways and with the central collar-socket.

7. The bed-frame hereinbefore described, provided with the segmental toggle-ways, the collar-socket, and the guideways.

8. In combination with a bed-plate upon which the feet of the toggle-bars rest and travel, toggle-bars provided with feet which rest and travel upon said bed-plate, and also provided with bearings in said feet, and nuts equipped with trunnions adapted to said toggle-feet, substantially as and for the purpose set forth.

9. In combination with the bed-frame provided with guideways, the toggle-bars provided with studs adapted to said guideways, substantially as set forth.

298,569. FOLDING CASH-BOX. BENJAMIN C. FOSTER, Baltimore, Md. Filed Oct. 30, 1883. (No model.)



Claim.—1. The combination of the four boxes A, arranged in pairs, the hinges C, connecting the two boxes of each pair together at their upper edges, the said hinges being arranged in alignment with each other, and the hinges D, connecting one box of one pair with one box of another pair at their lower edges or bottoms, substantially as shown and described, and for the purpose specified.

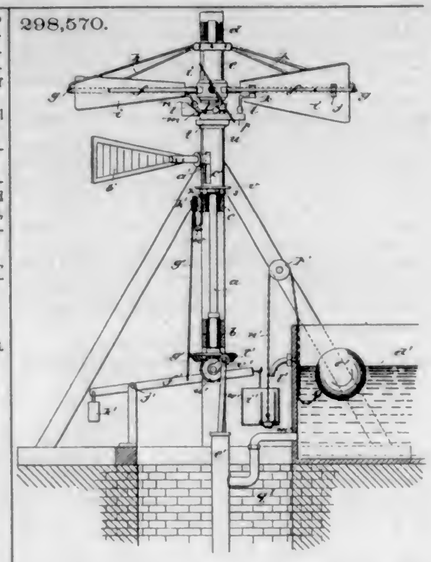
2. The combination of the boxes A, hinged together as described, and having beads L, and the clamps J, having flanges K at their ends, substantially as shown and described.

298,570. WINDMILL. JAMES B. FOSTER, Parsons, Kans., assignor of one-half to Charles G. Wallace, same place. Filed Oct. 22, 1883. (No model.)

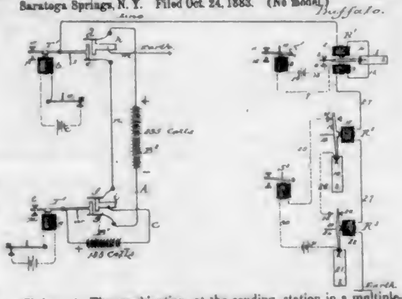
Claim.—1. The cam *m*, plate *n*, sleeve *q*, plate *p*, sleeve *u*, and the regulating-vane *b'*, in combination with the fans *i*, pivoted eccentrically to the arms *f* of the wheel, and having the trailing arms *l*, substantially as described.

2. The lever *f'*, cord *g'*, guide-pulleys *h'*, yoke *w*, and ring *v*, in combination with the sleeve *u*, plate *p*, and the fans *i*, said fans being pivoted eccentrically to the arms of the fan-wheel, and having trailing arms *l*, substantially as described.

298,570.



298,571. QUADRUPLEX TELEGRAPH. GEORGE W. GARDANIER, Saratoga Springs, N. Y. Filed Oct. 24, 1883. (No model.)



Claim.—1. The combination, at the sending-station in a multiple-telegraph system, of a main line, two keys or transmitters, a main battery divided into two sections, and branch circuits, one section of the battery having a greater electro-motive force than the other, the entire battery being always in the same continuous circuit, one of the keys or transmitters alone controlling the potential of the current by reversing the poles of the smaller section of the main battery with respect to the poles of the larger section thereof, and the other key having absolute control of the polarity of the current, substantially as set forth.

2. The combination, at the sending-station in a multiple-telegraph system, of a key or transmitter connected with the main line and playing between two circuit-contacts, a second key or transmitter playing between two circuit-contacts, a conductor connecting the lower contact of the first key or transmitter with the upper contact of the second key or transmitter, a conductor connecting the upper contact of the first key with the lower contact of the second key and including a section of the main battery, and a branch passing from the second key or transmitter to the stationary contact located between the two circuit-contacts of said key and including another section of the main battery, both sections of the battery being always in the same continuous circuit, substantially as set forth.

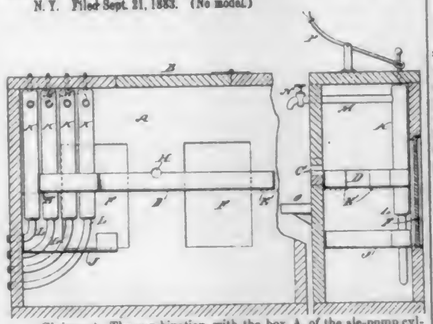
3. The combination, at the receiving-station in a multiple-telegraph system, of a main-line relay the armature of which is actuated by a current of either polarity from the distant station, a second main-line relay which responds to an increase in potential of a positive current only, and a third main-line relay which responds to an increase in potential of a negative current only, the second and third relays operating jointly to receive one set of signals, substantially as set forth.

4. The combination, at the receiving-station in a multiple-telegraph

system, of a main line, a main-line relay and a sounder, the armature of the relay being without retractile spring, and hence repeating signals by a reversal of the polarity of the current to the line at the distant station, with a second and third main-line relays operating jointly to receive one set of signals, a second sounder and branch wires, the second relay responding to an increase in the potential of a positive current only, and the third relay responding to an increase in the potential of a negative current only, substantially as set forth.

5. In a multiple-telegraph system, the combination, at the sending-station, of a main line, two keys or transmitters, a main battery divided into two sections, and branch circuits, both sections of the battery being always in continuous circuit, one key controlling the potential of the current and the other the polarity, with three main-line relays and two sounders with local branches at the receiving-station, the first sounder responding to signals made by the reversing of the polarity of the current to the line at the distant station, the second relay repeating signals into the second sounder when a strong positive current from distant station is decreased, and the third relay repeating signals into said second sounder when a strong negative current from distant station is decreased, substantially as set forth.

298,572. ALE-PUMP AND ICE-BOX. WILLIAM GARDNER, New York, N. Y. Filed Sept. 21, 1883. (No model.)

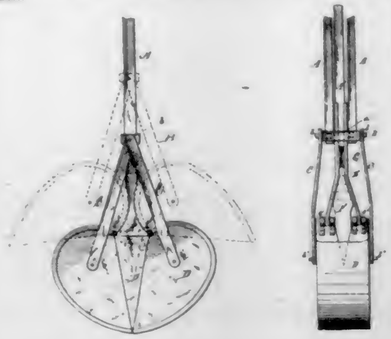


Claim.—1. The combination, with the box A, of the ale-pump cylinders K, secured to one side of the box, and provided with the pipes L at the lower ends, and the pipes M at their upper ends, projecting through the box, and having faucets N, and the lever P, pivoted in suitable supports on the top of the box, and connected to the pump-pistons, substantially as herein shown and described.

2. The combination, with the box A, provided with the ice-tray D, having openings E, and slides E', of the pump-cylinders K, provided with the pipes L at their lower ends, and the pipes M at their upper ends, projecting through the box, and having faucets N, and the lever P, connected to the pistons of said pumps, substantially as herein shown and described.

298,573. DREDGER. DANIEL J. GILCHRIST, Pittsburg, Pa. Filed June 28, 1883. (No model.)

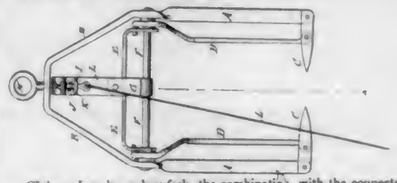
Brief.—Clam-shell buckets are pivoted at their upper edges on pintles passing the upper corners of interposed wedge-shaped pieces, against which the bucket-edges close, and through a wedge-shaped inner block secured to straps depending from a central pole, which plays through a cross-head carried by outer poles and pivotally connected by links to the buckets.



Claim.—1. In a dredging apparatus or bucket, the scoops D D, hinged at their upper end to central wedge-shaped side pieces, D' D', and connected to a movable pole, A', by straps or connections E E, and to poles A by the pivoted links C C, substantially as shown, and for the purpose set forth.

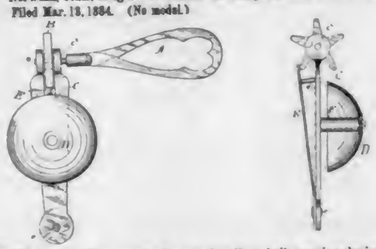
2. In a dredging apparatus, the poles A A A', carrying the scoops D D, having side pieces, D' D', links C C, and wedge-shaped portion F, connecting an operating means, the parts being combined and organized substantially as shown.

298,574. HORSE HAY-FORK. JOSEPH SEIFERT GOSHNAUER, Abbottstown, Pa. Filed Sept. 25, 1883. (No model.)



Claim.—In a horse hay-fork, the combination, with the connected side bars, A, provided with the hinged tines C and the rod F, of the lever-frame E, pivoted upon the connecting-rod F, the connecting-rods D, pivoted to the tines and to the lever-frame E at one side of the pivotal point of said frame, the lever G, fastened to the frame E and pivoted upon the connecting-rod F, the upper end of said lever G having a spring-bolt adapted to engage with the upper connection of the side bars, and means for tripping or withdrawing said bolt, substantially as and for the purpose set forth.

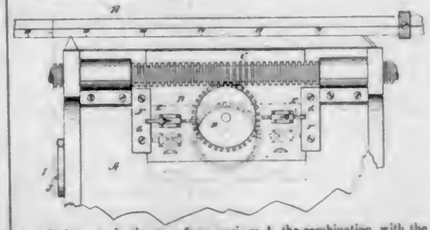
298,575. TOY REVOLVING BELL. WILLIAM GOODFELLOW, South Norwalk, Conn., assignor of one-half to Henry Hoffman, Jr., same place. Filed Mar. 13, 1884. (No model.)



Claim.—1. The combination of a handle, a bell-carrying device, as described, a spring-striker, and mechanism, substantially as described, whereby the spring-striker is made to strike the bell a succession of blows as the body is revolved on the handle, as set forth.

2. The handle A, having spindle a and star-wheel thereon, the body C, slotted as described, and swiveled on said spindle, the bell D, and the spring-striker E e', arranged as described, so that the striker shall act through the slot and strike the edge of the bell when actuated by the star-wheel, all in combination, substantially as described.

298,576. TYPE-WRITING MACHINE. EMIL JULIAN HALL, Alexandria, Va., assignor of one-half to William W. Granger, Washington, D. C. Filed Dec. 8, 1883. (No model.)

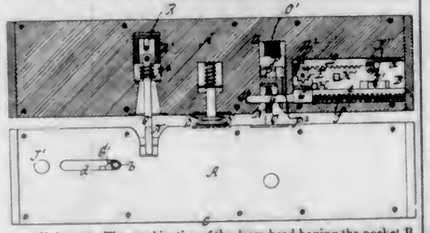


Claim.—1. In the type-form carriage A, the combination, with the toothed drum B, of a movable support therefor, which is fitted on the carriage, and means, substantially as described, for holding the drum from rotation under the action of its inclosed spring while being moved with said support, substantially as shown and described.

2. In the type-form carriage A, the combination, with the toothed drum B, of a movable support therefor, and a locking device, substantially as described, for holding the drum, and for securing the said support when in its normal position in turn, substantially as shown and described.

3. In the type-form carriage A, the combination, with the toothed drum B, of the sliding support or plate D, the notched cleats F, in which the said plate is adapted to move, and the sliding pins E, supported on said plate, and adapted to engage with the teeth of the drum and the notches of the cleats, substantially as shown and described.

298,577. CAR-COUPLING. EMIL HUGO ADOLPH HAUPT, Dolgeville, N. Y. Filed Oct. 18, 1883. (No model.)



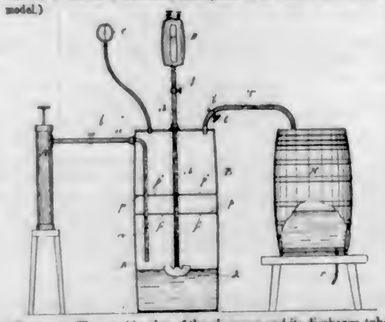
Claim.—1. The combination of the draw-head having the pocket B, the rack-bar D, arranged between stops in said pocket, the return-spring of the rack-bar, the spring-impelled bolt having the lateral projection G', the pinion E, arranged in said projection of the bolt to engage the rack-bar, the axial spindle of the pinion, the bolt-catches C C', and means, substantially such as hereinbefore described, for retracting said catches.

2. The combination of the draw-head having the pocket B, the rack-bar D, arranged between stops in said pocket, the return-spring of the rack-bar, the spring-impelled bolt having the lateral projection G', the pinion E, arranged in said projection of the bolt to engage the rack-bar, the axial spindle of the pinion, the catches C C', the retracting-lever I, engaging the catch C and connecting with the rack-bar, the retracting-lever I', engaging the catch C', and the posh-bar J', acting on the lever last mentioned.

3. The combination of the draw-head having the pockets B Q, the mouth or link-receptacle N, and the bolt-passage G², the rack-bar D, arranged between stops in the pocket B, the return-spring of the rack-bar, the spring-impelled bolt having the lateral projection G', the pinion E, arranged in said projection of the bolt to engage the rack-bar, the axial spindle of the pinion, the catches C C', means, substantially as herein described, for retracting the catches, and the tumbler P, working in the pocket Q, and having projections I'' I''—one arranged in the link-receptacle, and the other arranged to intersect the bolt-passage.

4. The combination, with the draw-head having the mouth or link-receptacle N, and coupling mechanism, substantially such as herein described, of the slide R, the spring acting on the slide, and the link pivoted to the slide at the inner end.

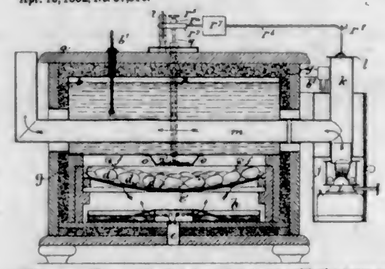
298,578. APPARATUS FOR PRESERVING BEER AND OTHER ALCOHOLIC LIQUORS. CORNELIUS E. HAYNES, Boston, Mass., assignor of one-half to Daniel C. Knowlton, same place. Filed Dec. 10, 1883. (No model.)



Claim.—1. The combination of the air-pump and its discharge-tube, the receiver B, the alcohol-supply vessel D, the discharge-tube *d*, provided with a float-valve, and a pipe for connecting the receiver with a vessel containing the liquor to be preserved, substantially as set forth.

2. The combination as a whole, consisting of the air-pump and its discharge-tube, the receiver provided with the perforated partitions *p p*, and the alcohol-supply vessel and its discharge-tube, provided with the float-valve *k* and the connecting-pipe T, by which the apparatus is connected with the keg, substantially as described and shown.

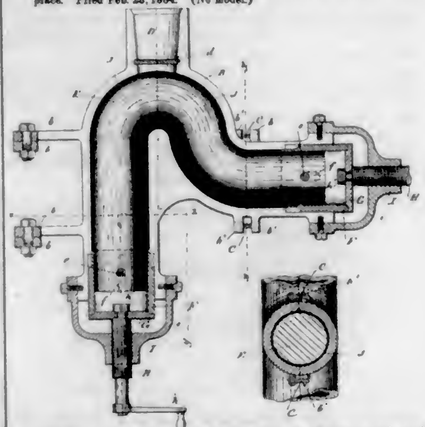
298,579. APPARATUS FOR HATCHING EGGS BY ARTIFICIAL HEAT. CHARLES E. HEARSON, 115 Southwark Street, County of Surrey, England. Filed July 2, 1883. (No model.) Patented in England Nov. 24, 1881, No. 5,141; in France Mar. 8, 1882, No. 147,775, and in Belgium Apr. 15, 1882, No. 57,516.



Claim.—1. The combination, in an incubator, with the water-tank and heating means, of the expansible and collapsible capsule for regulating the supply of heat, the same comprising thin sheets of metal hermetically joined together and inclosing between them a piece of fabric—such as blotting-paper—saturated with a liquid which boils at the temperature desired to be maintained in the apparatus, substantially as described.

2. The combination, with the hot-air flue and damper, of the capsule consisting of thin plates hermetically closed about a piece of fabric saturated with gasoline or other liquid which boils at a temperature of about 103° Fahrenheit, and connections whereby the expansion and collapse of said capsule operate to open and close said damper, substantially as described.

298,580. MACHINE FOR CASTING PLUMBERS' TRAPS. CHARLES E. HESS, Chicago, Ill., assignor of one-half to James N. Raymond, same place. Filed Feb. 28, 1884. (No model.)

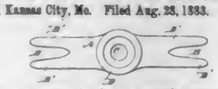


Claim.—1. A mold for casting plumbers' traps, having an enlarged inner diameter at its ends, a core extending into the enlarged cavity at each end, a sleeve at each end, arranged to move back and forth on the core, and having an inner portion of thickness suitable to fit around the core in the smallest part of the mold, and an outer portion of thickness to fit in the enlarged part of the mold and support the core, and mechanism whereby pressure may be applied to the sleeves, to force them inward, all in combination, substantially as and for the purpose described.

2. The mold B, in combination with the core E, the sleeves F, provided with slots *f*, and the pins *e*, substantially as and for the purposes set forth.

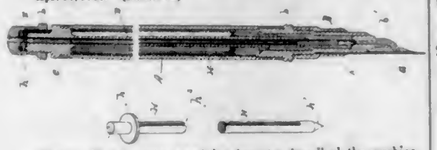
3. The mold B, in combination with the core E, the sleeves F, the follower G, the screw H, and a suitable fixed bearing for the screw, substantially as and for the purposes set forth.

298,581. ENVELOPE-OPENER AND PAPER-CUTTER. CHARLES E. HOCHSTETLER, Kansas City, Mo. Filed Aug. 25, 1883. (Model.)



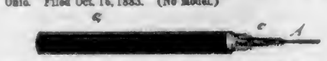
Claim.—A paper-cutter having a central aperture, C, surrounded on the opposite sides by raised rings D, beveled inwardly to form a thumb or finger cavity on each side, and provided at both ends with a fork integral therewith and sharpened to produce four cutting-edges at each end of the blade, as shown and described.

298,582. FOUNTAIN-PEN. JOHN HOLLAND, Cincinnati, Ohio. Filed Apr. 16, 1883. (No model.)



Claim.—In a fountain-pen of the character described, the combination, substantially as before set forth, of the reservoir-holder provided at the top with a plug having a centrally-arranged tubular extension reaching to near the lower end of the holder, the point-section provided with a valve-seat, the air-cap, and a grooved valve-rod fitting snugly within the plug and its tubular extension and secured to the air-cap, whereby the valve may be lowered to or raised from its seat by the lowering or raising of the air-cap.

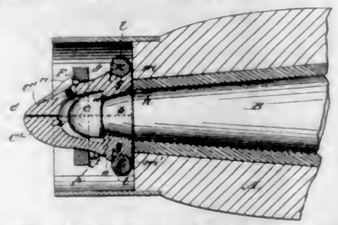
298,583. PENCIL CASE AND LEAD. JOHN HOLLAND, Cincinnati, Ohio. Filed Oct. 16, 1883. (No model.)



Claim.—1. The combination, substantially as specified, of a pencil-case provided with suitable mechanism to move a lead-carrier back and forth within said case, with the point-section, lead A, and lead-grasping fingers or tube B, the said tube or fingers being of a size to pass through the point-section opening when grasping the lead, and the lead having its end reduced to permit the fingers to grasp and hold it without projecting beyond the lead, so that the fingers holding the lead may be protruded beyond the point-section, and the lead may be held firmly against lateral play when the fingers are retracted within the case.

2. A lead having one end reduced, whereby it is adapted to closely fit the opening in the point of an ever-point pencil, and be grasped by the tubular end of the lead-carrier adapted to pass through said opening, substantially as specified.

298,584. HUB-ATTACHING DEVICE. GEORGE H. HOMBACH, St. Ignace, Mich. Filed Mar. 1, 1884. (No model.)



Claim.—1. The combination, with an axle having an annular groove formed in its outer end, of a cap formed in two sections, and having a recess for receiving the end of the axle, and an internal annular ridge, and provided with means for holding the two cap-sections together, substantially as specified.

2. The combination, with an axle having an annular groove formed in its outer end, of a tapering cap divided into two sections, and having an annular internal ridge, the two sections being grooved at their wider inner ends to be passed within a ring for holding the said inner ends together, and being held together at their outer ends by a ring fitting upon the said ends, substantially as specified.

3. The combination, with the axle B, having a groove, *e*, of the divided cap C, having the recess D and ridge *f*, and with means for locking the cap-sections together, substantially as specified.

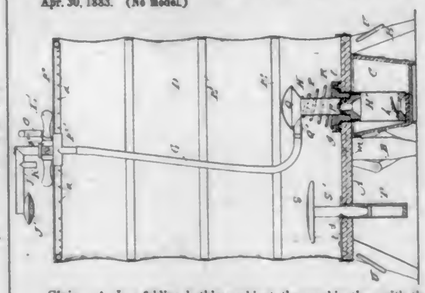
4. In a device for securing wheels upon axles, the cap C, having a recess, D, and an internal ridge, *f*, and being divided into two sections, C′ and C², in combination with the rings E and F, substantially as specified.

5. In a device for securing wheels upon axles, the combination, with the two sections C′ and C², of the cap C, of the ring E, to which the said cap-sections are hinged, of the ring F, hinged to the section C², and of the catch *n* in the section C′, substantially as specified.

6. The combination, with the axle B, having the groove *e*, of the ring E, the two cap-sections C′ C², hinged to the ring E, and adapted to engage with the groove in the axle, the ring F, hinged to the cap-section C² and the spring-catch *n* in the cap-section C′, substantially as specified.

7. The combination, in a device for securing wheels upon axles, with the ring E, of cap-sections C′ C², having a groove near their wider ends, and the two sections being cut away outside the groove, leaving the portions *m m′*, and the cap-section C² being cut away at *h*, and of the ring F, substantially as specified.

298,585. FOLDING BATHING-CABINET. ROBERT ALLEN HORNING, Lanark, Ill., assignor to himself and Charles S. Dame, same place. Filed Apr. 30, 1883. (No model.)



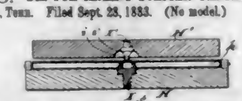
Claim.—1. In a folding bathing-cabinet, the combination, with the base A, folding tube or sack D, having its lower end secured thereto, and means, substantially as described, for raising and lowering said tube and locking it in any desired position, of the tubular perforated ring F, attached to the inside of the mouth of the tube D, and serving the double purpose of a sprinkler and means for distending the mouth of the tube D, substantially as shown and described.

2. In a folding bathing-cabinet, the combination, with the base A, folding tube or sack D, having its lower end secured thereto, tubular perforated ring F, attached to the inside of the mouth of the tube D, and means, substantially as described, for raising and lowering the tube D and locking it in any desired position, of a foot-pump provided with a hollow piston, and tube G, connecting the pump with the perforated tubular ring F, substantially as shown and described.

3. In a folding bathing-cabinet, the combination, with the base A, of the folding sack or tube D, attached to the same, the lazy-tongs M, attached to the base and to the top of the tube, and of the notched locking-lever O, substantially as herein shown and described, and for the purpose set forth.

4. In a folding bathing-cabinet, the combination, with the base A and the folding sack or tube D, of the lazy-tongs M, attached to the base and to the top of the tube, the guide-bar N, provided with the loop B′, and the notched locking-lever O, substantially as herein shown and described, and for the purpose set forth.

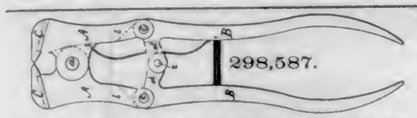
298,586. DIE FOR MAKING BOLSTER-PLATES. HENRY JAMES, Memphis, Tenn. Filed Sept. 28, 1883. (No model.)



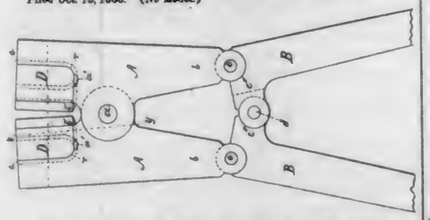
Claim.—The combination of the upper die having a concavity in its lower surface, into which extends a punch provided with a shank, with the lower die carrying rolls mounted upon its sides and extending parallel to but upon a higher plane than the top of the die, and also carrying a hollow punch to force the metal into the concavity in the upper die, and to receive the punch attached thereto, substantially as described.

298,587. CUTTING-PLIERS. JOHN H. JENCKS, Waterbury, Conn. Filed Oct. 15, 1883. (No model.)

Claim.—In a cutting-pliers, the jaws A, having at their outer ends the spline A′, of dovetailed form at its sides and inner ends, in combination with the detachable edge or cutting portion C, having sockets *f*, corresponding in shape to the spline A′, all substantially as and for the purpose herein set forth.



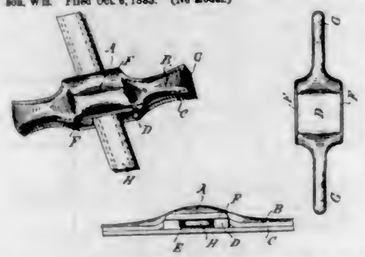
298,588. CUTTING-PLIERS. JOHN H. JENCKS, Waterbury, Conn. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a cutting-pliers, the jaws A, having the longitudinal dovetailed chambers C, cut away at the inner edges of the jaws *a′*, in combination with the edge or cutting portions D, fitting into the said chambers, and there retained with their edges *m* projected inwardly beyond the inner edges of the jaws, all substantially as and for the purpose herein set forth.

2. In a cutting-pliers, the combination of the jaws A, having chambers formed with the dovetailed sides *e g*, and dovetailed inner end, *f*, the jaw being cut away at *a′*, as shown, in combination with the edge or cutting portions D, having correspondingly-shaped parts fitting longitudinally into the said chambers and there retained, with the cutting-edges *n* resting upon the surface of the cut-away portion *a′*, and projecting inward beyond the inner edges of the jaws, all substantially as and for the purpose herein set forth.

298,589. HIP-STRAP LOOP FOR HARNESS. ALBERT KARRAS, Hudson, Wis. Filed Oct. 6, 1883. (No model.)



Claim.—1. A lining for the loop for the hip-strap in the back-strap in harness, consisting of a plate having a transverse perforation, upwardly-projecting flanges at the ends of the said perforation, and longitudinal wings or extensions, as and for the purpose shown and set forth.

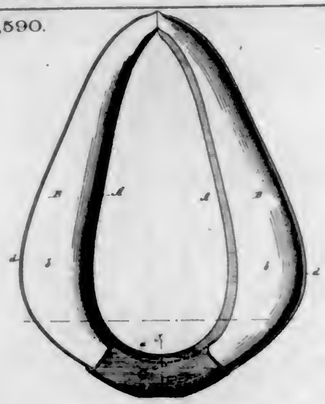
2. The combination of the back-strap consisting of two layers stitched together at their edges and forming a loop, a lining consisting of a plate having a transverse perforation, upwardly-projecting flanges at the ends of the perforation, and longitudinal wings or extensions, and a hip-strap passing through the perforation in the lining, as and for the purpose shown and set forth.

298,590. HARNESS. CHARLES KIPER, Atchison, Kans. Filed Jan. 26, 1884. (No model.)

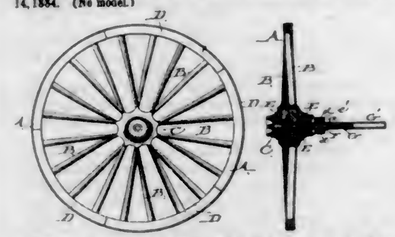
Claim.—1. A horse-collar having the rim and shoulder-pads made of separate pieces, and the throat-section C made in one and the same piece with the rim, substantially as shown and described.

2. The rim A of a horse-collar, having a throat-piece, C, made in one piece therewith, in combination with the shoulder-pads, the said throat-piece being bent over and around the lower ends of the shoulder-pads, and having its free edge secured beneath the lower edge of the rim by the same row of stitching that connects the rim to the shoulder-pads, substantially as and for the purpose described.

298,590.



298,591. VEHICLE-WHEEL. FREDERICK L. KIRKBRIDE, Wyandotte, Kans., assignor of one-half to W. C. Duvall, Kansas City, Mo. Filed Feb. 14, 1884. (No model.)

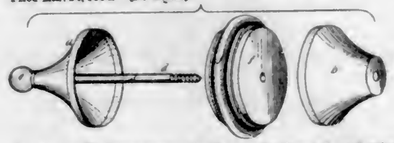


Claim.—1. In a vehicle-wheel, the hub C, having a circle of mortises and a series of spokes, arranged as shown, in combination with an axle, F, provided with a collar, *a*, a shoulder, *b*, having grooves adapted to receive springs *d*, and a cap, *e*, provided with studs *f*, and a perforation, *e′*, substantially as herein set forth.

2. A tubular vehicle-axle adapted to receive the threaded end G of an axle, F, which is provided with a collar, and a shoulder having grooves for the reception of springs, and a cap, *e*, provided with lugs, substantially as set forth.

3. The axle F, provided with the collar *a*, in combination with the grooved shoulder *b*, the springs *d*, and cap *e*, provided with the studs *f*, all constructed to operate substantially as and for the purpose set forth.

298,592. CURTAIN-POLE TIP. JOHN KRODER, New York, N. Y. Filed Mar. 24, 1884. (No model.)

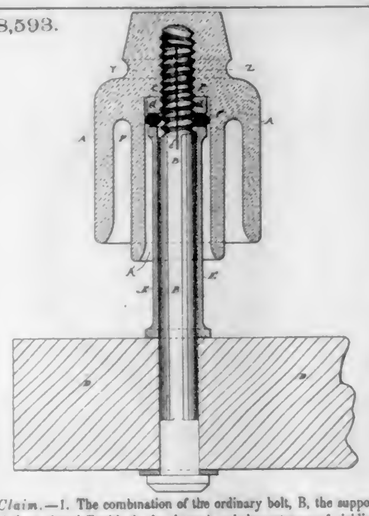


Claim.—1. The improvement in the construction and application of curtain-pole tips which consists of the combination of two detached metal cap-pieces, a central retaining-screw, and a detached central molding composed of one or more pieces of wood, the whole secured to the end of a curtain-pole, and the tip completed by means of the retaining-screw, which is passed centrally through the other parts and screwed into the end of the pole, substantially as set forth.

2. In combination, two metal cap-pieces, a central retaining-screw, and a wooden molding so formed as to fit on the screw and be embraced by the adjacent edges of the cap-pieces, constituting a curtain-pole tip by being held together by means of the screw when it is screwed in the end of the curtain-pole, substantially as hereinbefore set forth.

298,593. INSULATOR. JOSEPH SLATER LEWIS, Birkenhead, County of Chester, assignor of one-half to William Phillips Thompson, Liverpool, England. Filed Aug. 10, 1883. (No model.)

298,593.



Claim.—1. The combination of the ordinary bolt, B, the support D, and the pedestal E with the insulator A and the water-proof yielding washer F, substantially as and for the purposes specified.

2. The combination of the arm or support D with the bolt B, passing up through the same, pedestal E, and nut G, holding all tight, and the screwed end of the bolt exposed for attaching an insulator to, substantially as described.

3. The combination of the ordinary bolt, B, provided with the head and feather to keep it from turning in the support, the insulator A, having chamber A', the support D, and the nut G with the water-proof or yielding washer F, filling the entire area of said internal chamber, substantially as and for the purposes specified.

4. The combination, with the insulator A, formed with the groove P, of a yielding washer, F, adapted to fit into said groove, the bolt B, and pedestal E, substantially as described.

5. The combination, substantially as hereinbefore set forth, of the insulator A, the bolt B, the nut G, and the pedestal or sleeve E.

298,594. TERMINAL INSULATOR. JOSEPH SLATER LEWIS, Birkenhead, County of Chester, assignor of one-half to William Phillips Thompson, Liverpool, England. Filed Aug. 10, 1883. (No model.)



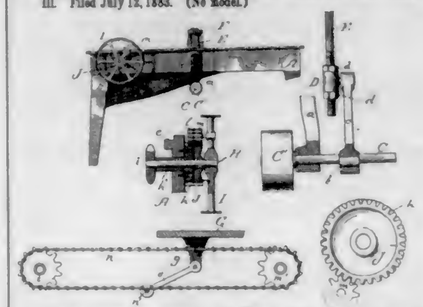
Claim.—1. A terminal insulator having a central vertical hole with rounded ends for the line-wire to be looped into, and insulating-lips placed above and below the vertical center of the insulator, with a groove in the center for attachment, substantially as described.

2. In combination with a terminal insulator, A, a shackle, C, with its ends bent in two contrary directions, (like the letters S or Z,) and fitting into a hole in support D, substantially as described.

3. In combination with a terminal insulator, A, shackle C, held in place by the weight of the line-wire and shackle, with and having their ends hooked into the upper side of the support D, and bearing as a fulcrum upon the end of D while held tight against the under surface of the support, substantially as described.

4. The combination of the terminal insulator A, the two shackle-straps C, the binding H, holding the two ends tight, and the support D, clasping the other two ends, substantially as described.

298,595. BLACK-LEADING MACHINE. GEORGE E. LLOYD, Chicago, Ill. Filed July 12, 1883. (No model.)

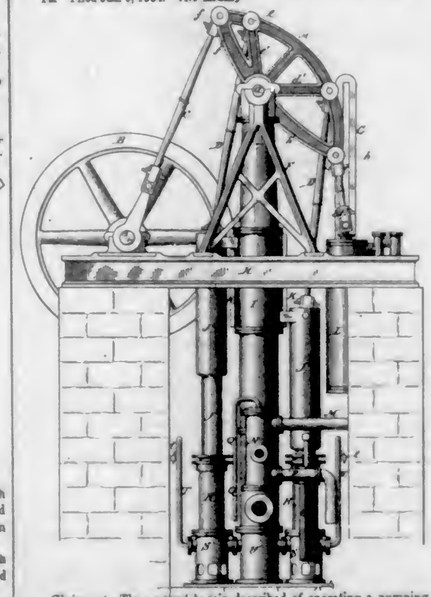


Claim.—1. The combination of the brush, the vertically-reciprocating rods, the lower ends of which are threaded, with the sleeve placed thereon, having a laterally-projecting stud, two nuts placed, respectively, above and below said sleeve, the connecting-rods pivoted to said stud, and eccentrics actuating said connecting-rods.

2. The combination of the bed-plate, the link-chain, and the means described for reducing the speed of the drive-shaft, consisting of shaft H, pinion A, and sleeve A', pinion J, pulley I, and pinions *l* and *m*, substantially as set forth.

3. In a black-leading machine, the vibrating brush and means for operating the same, consisting of the drive-shaft, eccentrics thereon, and connecting rods or links, in combination with the reciprocating bed-plate and means for operating the same, consisting of the endless chain and pitman, and devices, as described, for reducing the speed of the drive-shaft and imparting the same to said endless chain, substantially as set forth.

298,596. STEAM PUMPING-ENGINE. JOSEPH L. LOWRY, Pittsburg, Pa. Filed Jan. 9, 1884. (No model.)



Claim.—1. The method herein described of operating a pumping-engine, which consists in weighting the pump-plungers in excess of the weight required to discharge a column of water at a given level, and transferring said excess of weight of the descending plunger to the motive-power cylinder, to assist in raising the ascending plunger, substantially as described.

2. The method herein described of operating a pumping-engine, which consists in weighting the pump-plungers in excess of the weight required to raise a column of water to a given level, transferring said excess of weight of the descending plunger to the motive-power cylinder, and storing a supplementary power by the descent of the plunger, which shall assist in raising the same in its turn.

3. In a steam pumping-engine, the combination of two pump-plungers weighted in excess of the weight required to raise the column of water to a predetermined level, means, substantially as described, for transferring the excess of weight of the descending plunger to the motive-power cylinder, to assist in raising the ascending plunger, substantially as described.

4. In a steam pumping-engine, the combination of two pump-plungers weighted in excess of the weight required to raise a column of water to a predetermined level, a motive-power cylinder, and a beam provided with rods attached to the plungers and piston, connected so that the change of leverage of said rods and beam shall transfer the excess of weight of the descending plunger to the motive-power cylinder, to assist in raising the ascending plunger, substantially as described.

5. In a steam pumping-engine, the combination of two pump-plungers weighted in excess of the weight required to raise a column of water to a predetermined level, means, substantially as described, for transferring the excess of weight of the descending plunger to the motive-power cylinder, to assist in raising the ascending plunger, and a chamber in which is stored, by the descent of the plunger, a supplementary power to assist in raising the plunger in its turn, substantially as shown.

6. The method of operating a steam-engine which consists in loading the engine above the normal load at the beginning of the power-stroke of the piston, when the steam is at its greatest pressure, gradually diminishing said load as the pressure decreases by the expansion of the steam, and finally applying the excess of load to assist the piston in its next power-stroke, substantially as described.

7. In a pumping-engine, the combination of the motive-power cylinder, beam, plungers, weighted as described, and connections between the beam, plungers, and piston, arranged so that the changing leverages in the beam will cause a reduction of the work imposed on the engine in proportion to the reduction of the working-pressure in the cylinder, due to the expansion of the steam after it is cut off, substantially as described.

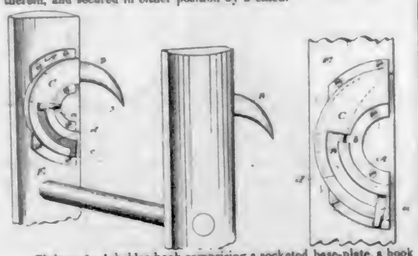
8. The combination of the two coacting weighted plungers, and an engine for operating the same, with a working-beam of elliptic form, the connections of which are arranged in such manner that the beam-pin of the piston-rod travels an equal distance above and below the center of the beam-shaft, and the beam-pins to which the plunger-rods are connected shall not travel below the center of said beam-shaft, substantially as described, for the purpose specified.

9. The combination of the hollow plungers, and an engine for operating the same, with a working-beam of elliptical form, constructed with four arms differing in length and standing at different angles, the piston, plunger, and crank-connections, and the loading-weights N' of the plungers, substantially as described, for the purpose specified.

10. In combination, in a steam pumping-engine, the loaded plungers J J, the engine L, the elliptic working-beam A, having arms of different length, the working-connections, and an air-cushion, T, connected with the valve-chamber S, all constructed for operation substantially as described.

298,597. LADDER-HOOK. JOHN F. MANARAN, Lowell, MASS. Filed Apr. 11, 1884. (No model.)

Brief.—A curved socketed base-plate having a curved hook to slide therein, and secured in either position by a catch.

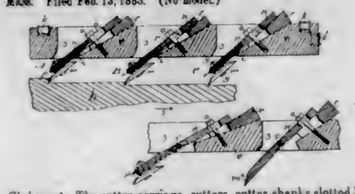


Claim.—1. A ladder-hook comprising a socketed base-plate, a hook proper movable in said socket, and a lock or catch by which said hook is secured in place in said socket, substantially as hereinbefore set forth.

2. The combination of a socketed base-plate, a hook proper arranged to slide in said socket so as to be projected or retracted, as desired, and a lock or catch for securing it in either position, substantially as hereinbefore set forth.

3. The base-plate and curved socket thereon, in combination with the correspondingly-curved and sliding hook proper, and a lock or catch for securing said hook in position in the socket, substantially as hereinbefore set forth.

298,598. STONE-DRESSING MACHINE. JONATHAN MANN, Milton, MASS. Filed Feb. 13, 1883. (No model.)



Claim.—1. The cutter-carriage, cutters, cutter-shanks slotted longitudinally, and pivots for such shanks, on which they may be rocked and moved longitudinally, combined with the fastening-bolts for such shanks, and the wedge-shaped followers beneath such shanks, whereby the angular position of the cutters and their depth below the carriage may be adjusted, substantially as shown and described.

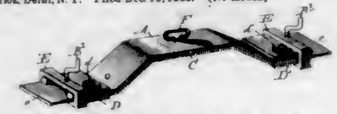
2. The combination, substantially as shown and described, of the cutter-carriage, the cutters, the longitudinally-slotted shanks therefor, the pivots for such shanks, upon which they receive a longitudinal and rocking movement, the wedge-shaped followers for fixing the shanks in their rocking movement, and the fastening-bolts for fixing them in their longitudinal movement, as set forth.

298,599. BOOT OR SHOE. HOWARD T. MARSHALL, Brockton, Mass. Filed June 17, 1882. (No model.)



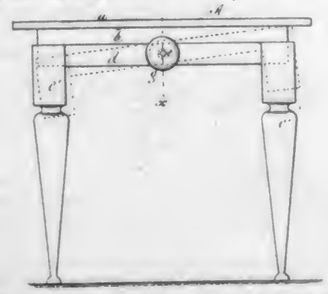
Claim.—As an improved article of manufacture, a boot or shoe made with a slitted opening in its vamp or upper arranged to be connected by a lacing cord or cords for adjusting the boot to fit the instep and around the ankle of the wearer, and having an elastic goring or gorings, and formed, all substantially as set forth, so that the boot can be adjusted to the foot and taken off and put on without disturbing the fastenings.

298,600. GAGE FOR CUTTING CAR-BRACES. CHRISTOPHER MATTICE, Delhi, N. Y. Filed Dec. 10, 1883. (No model.)



Claim.—The combination, with the gage A, having strap-guards D D' and set-screws B B', of the clamps E, having set-screws B^2 B^2, as and for the purpose set forth.

298,601. TABLE. STEPHEN W. MAXSON, Dassel, MINN. Filed Aug. 16, 1883. (No model.)



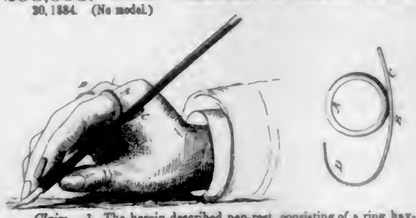
Claim.—The pivoted bar *d* and legs *c'*, fixed to the bar, combined with a table having fixed legs opposite to the side or end where the bar is attached, substantially as described.

298,602. BOILER OR VESSEL EMPLOYED IN THE TREATMENT OF FIBROUS MATERIALS FOR THE MANUFACTURE OF PAPER-PULP AND FOR OTHER PURPOSES. ISAAC SHIMWELL MCDOUGALL, Manchester, County of Lancaster, England. Filed Feb. 12, 1884. (No model.) Patented in England June 30, 1883, No. 3,257.



Claim.—A vessel or boiler for treating fibrous materials and for other purposes, composed of an outer shell and a lead lining secured together by means of bolts and nuts, substantially as and for the purposes described.

298,603. PEN-REST. CAMERON MCKENZIE, Midway, Ala. Filed Mar. 20, 1884. (No model.)

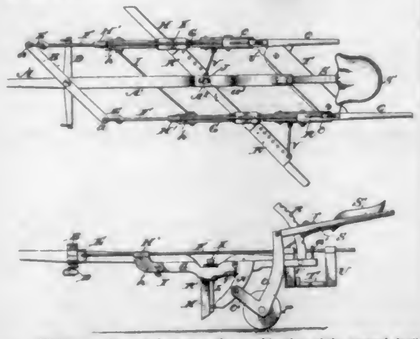


Claim.—1. The herein-described pen-rest, consisting of a ring having a piece of wire or strip of metal fastened to its under side, said strip or wire having one projecting straight end forming the pen-rest, and having its other end bent to form a hook adapted to pass under and around the second finger of the writer, substantially as set forth.

2. The combination, in a pen-rest, of the ring, the piece of wire or strip of metal, bent to form a hook at one end, and the set-screw for fastening the wire and adjusting it upon the ring, substantially as set forth.

298,604. ROAD-SCRAPER. CLARENDON MENDENHALL, Wilmington, Del. Filed Mar. 1, 1884. (No model.)

Brief.—Pivoted on a tongue extending rearwardly in a beam is a cross-beam. So connected to its ends as to enable the scraper to be diagonally adjusted either end forward are rods on which are side beams perforated for round tenons on the scraper, which has a central pivot on the tongue or central beam. The side beams are adjustably connected to perforated plates on the scraper and to each other by a foot-board pivoted to each. Supporting-stocks on the side beams are secured to the scraper by clasps embracing rounded parts of standards on the scraper-back. Hangers pivoted to the stocks carry bearing-wheels, and are depressed to lift the scraper.



Claim.—1. In a road-scraper, the combination of the central draft pole or beam, the pivoted cross-bar, the longitudinal rods or bars connected with the latter, the parallel shiftable side beams, and the scraper-board pivotally connected with the central and side beams, substantially as described.

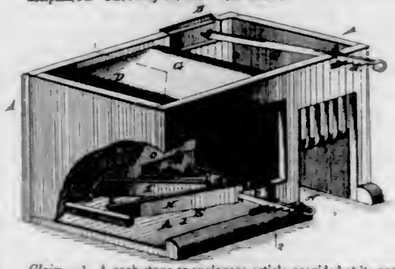
2. In a road-scraper, the combination of the scraper-board having upwardly-projecting round tenons and rear posts or standards provided with rounded portions, and the inclined stocks having clasps encircling said rounded portions, with the parallel shiftable side beams and the central beam or draft-pole, substantially as described.

3. In a road-scraper, the combination of the pivoted foot-board or rear platform and the shiftable side beams having brackets or hangers for supporting said foot-board, with the central beam, a draft-pole, and the scraper-board pivotally connected to the side and central beams, substantially as described.

4. In a road-scraper, the combination of the pivoted hangers and bearing-wheels journaled therein, and the levers or lifting devices connected with said hangers, with the shiftable side beams, the central beam or draft-pole, and the scraper-board pivotally connected therewith, substantially as described.

5. In a road-scraper, the combination of the scraper-board having perforated catch-plates, and the shiftable side beam carrying hooked rods adapted to engage with said catch-plates, with the central beam and second shiftable side beam pivotally connected with the scraper-board, substantially as described.

298,605. STOVE, RANGE, FURNACE, &c. WILLIAM MOGHTT, Philadelphia, Pa. Filed May 19, 1883. (No model.)

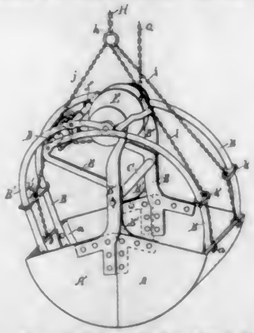


Claim.—1. A cook-stove or analogous article provided at its upper portion with a damper to regulate the passage of hot air or products of combustion from the source of supply to the part to be heated, a vertical side flue to convey said heating medium to the desired position, a hot-air chamber having a series of strips or dividing-plates, each having a vent-opening at the top edge of one end, and a damper for the purpose of releasing the spent heated air, substantially as and for the purpose set forth.

2. In a stove, furnace, or equivalent heating device, the combination, with a suitable flue connected at one end with the source of heat-supply, and at the other end with a hot-air reservoir, of a hot-air reservoir having a series of dividing-strips, each having at one end a vent opening or notch, a plate adapted to rest against the upper edges of said dividing-strips, and a damper and vent-opening, through which the heated air is discharged after use, substantially as set forth.

3. A cook-stove or analogous article having damper B and notched rod C above the furnace, vertical flue D, calorie-reservoirs 1 2 3 4, and damper M, and notched rod N, substantially as and for the purpose set forth.

298,606. HOISTING-BUCKET. GEORGE H. MILLER and CARMER GOTNER, Pawtucket, R. I. Filed Mar. 13, 1884. (No model.)



Claim.—1. The combination, with the bucket A A', of the standards B B', carrying the drum and pulleys, the chains G H *j*, and the chains *l l*, connecting the drum with the pulleys, such parts being arranged to operate substantially as set forth.

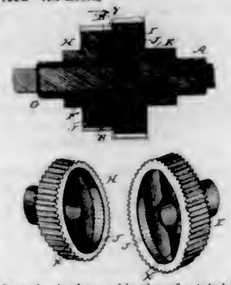
2. The combination, with the bucket, of the standards carrying the drum and pulleys and the adjustable guides *k k'*, and the chains G, H, *i*, *j*, and *l*, substantially as and for the purposes set forth.

298,607. BUTTON-HOLE SEWING-MACHINE. DANIEL MILLS, Philadelphia, Pa., assignor to the United States Automatic Buttonhole Sewing Machine Company, of New Jersey. Filed June 14, 1883. (No model.)



Claim.—The combination of a rotating shaft and a slide having projections with a stop-cam carried by said shaft and made in two adjustable sections, a spring or springs interposed to permit the said sections to yield toward each other, and a wedge or taper screw to bring the sections together against the action of the springs, substantially as specified.

298,608. CLUTCH MECHANISM. B. FRANK MOHR, Mifflinburg, Pa. Filed Apr. 5, 1884. (No model.)



Claim.—1. In a clutch, the combination of a tubular shaft having a longitudinal slot, a longitudinally-sliding rod having a transverse key moving with the rod in the said slot, and wheels or pinions mounted loosely upon the said tubular shaft, and having grooves or recesses in their inner sides adapted to receive and engage the said key, substantially as set forth.

2. In a clutch, the combination, with a tubular shaft having a fixed diametrically slotted disk or its equivalent, and a longitudinal slot extending entirely through the disk, of a longitudinally-movable rod having a transverse key moving in said slot, and of a width equal to the width of the disk, and a pair of wheels or pinions mounted loosely upon the said shaft, and having recesses in their inner adjoining sides, adapted to accommodate the disk, and provided with diametrical grooves in said recesses adapted to receive and engage the movable key, substantially as and for the purpose set forth.

3. The combination of the tubular shaft having the fixed disk or its equivalent, and a slot extending entirely through the same, said slot extending through the tubular shaft farther on one side of the fixed disk than on the other, a longitudinally-movable rod inserted through the tubular shaft and having a transverse slot, a key fitted in the said slot and moving in the longitudinal slot of the tubular shaft, a pin passing transversely through the longitudinal rod to limit the movement of the same, and the wheels or pinions mounted loosely upon the tubular shaft and provided in their inner adjoining sides with circular recesses and diametrical grooves at the bottom of the latter, substantially as and for the purpose herein set forth.

298,609. CULTIVATOR. GILPIN MOORE, Rock Island, Ill., assignor to Deere & Company, same place. Filed Nov. 9, 1883. (No model.)

Claim.—1. In a cultivator, in combination, a central part or yoke, A, a wheel and draft-plate hinged to each end of said yoke, and adapted to swing relatively thereto, substantially as described, plow-gangs, a pole hinged in front of the yoke to swing laterally in reference thereto and independently of the wheels, and adapted to sustain the yoke in an elevated position, and springs connected at the forward ends with the yoke A or a projection in front of the yoke, which projection is connected rigidly to the yoke, and at their rear ends connected with the plow-gangs and adapted to exert an upward force thereon, substantially as and for the purpose specified.

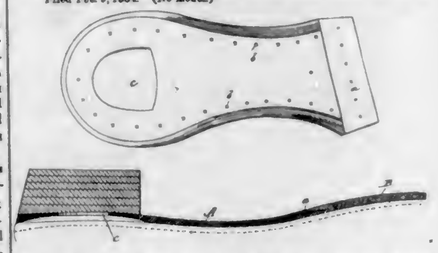
2. In combination, the yoke A, wheels C, hinged to the yoke A, draft-plates D, plow-gangs E, bars F and H, said bar H rigidly connected with the bar F, springs I, and pivoted pole J, substantially as and for the purpose specified.

3. In combination with the yoke A, formed of two parts, *a a'*, and the wheels and draft-plates hinged thereto, the bar F, and pole J, hinged to the bar F, and its rear end supported between the bars *a a'*, substantially as and for the purpose specified.

298,609.



298,610. BOOT OR SHOE SOLE. AARON JAMES MOTT, Fulton, Kans. Filed Feb. 9, 1884. (No model.)

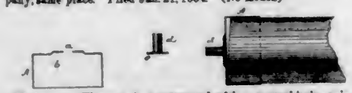


Claim.—1. A metal shank for a shoe, having a heel-base formed therewith, which base is of greater thickness at its edge than it is in the center, as described.

2. A metal shank for a shoe, having a heel-base formed therewith, with a hole, *c*, in the center, as and for the purpose described.

3. The combination, with the leather sole B, of the metal shank A, having scarfed edge *a*, and a heel-base, with a hole *c*, therein, and a leather heel fastened upon the heel-base, substantially as shown and described.

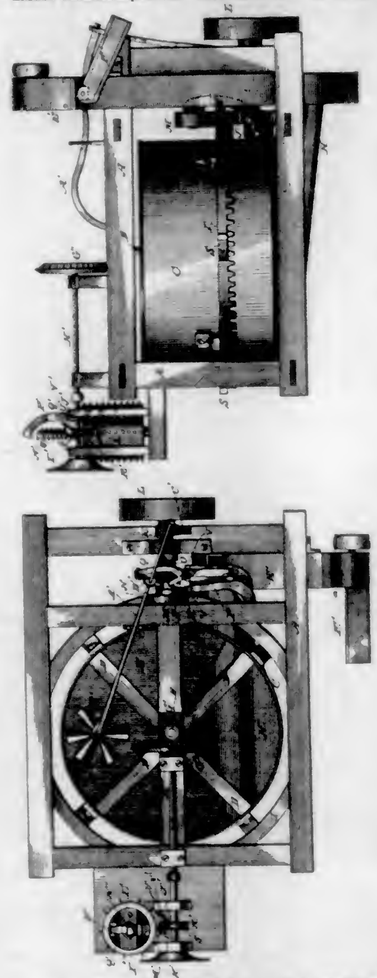
298,611. GUDGEON FOR WINDOW-SHADE ROLLERS. JOSEPH MUNGER, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Jan. 21, 1884. (No model.)



Claim.—1. The cup A, constructed with a central hole, *a*, in its bottom, combined with the flanged gudgeon *d*, secured to said cup through said central hole, substantially as described.

2. The cup A, constructed with the central recess, *b*, upon the inner side of its bottom, and with a central hole, *a*, therein, combined with the flanged gudgeon *d*, introduced through the said central hole, *a*, to bring its flange into said recess, and there secured, substantially as described.

298,612. GRAIN-MEASURING MACHINE. JOSEPH NAFZIGER and ANDREW NAFZIGER, Hopedale, Ill. Filed Jan. 31, 1884. (No model.)



Claim.—1. The combination, with the measuring-cylinder having a toothed ring secured around the same, and projections secured to the said ring at given distances apart, of the shaft having a loose pinion thereon gearing with said ring, the clutch on the said shaft adapted to engage the pinion, and the arm pivoted to the clutch-fork, and having a catch adapted to engage the lugs on the said ring, substantially as shown and described.

2. The combination of the toothed ring carrying the measuring-cylinder, and provided with lugs having inclines T and lips U, the shaft having the loose pinion gearing with the ring, the spring-actuated clutch feathered on said shaft and adapted to engage the pinion, the clutch-fork supporting the clutch, and the arm pivoted to the clutch-fork and arranged between lugs thereon, and having a catch adapted to be engaged by the lugs on the ring, whereby the clutch shall be thrown out of engagement with the pinion before the ring is stopped by the catch, substantially as specified.

3. The combination of the toothed ring carrying the measuring-cylinder, and provided with lugs having inclines T and lips U, the shaft having the loose pinion gearing with the ring, the spring-actuated clutch feathered on said shaft and adapted to engage the pinion, the clutch-fork supporting the clutch, the arm pivoted to the clutch-fork and arranged between lugs thereon, and having a catch adapted to be engaged by the lugs on the ring, the grain-packer and its supporting-lever, the eccentric and connecting rod for oscillating said lever, and the rod connecting the said pivoted arm with the said lever, substantially as shown and described, and for the purpose set forth.

4. The combination, with the measuring-cylinder, of the grain-packer consisting of a radially-slitted disk, (or equivalent device,) the lever carrying the said packer, and means for oscillating said lever, substantially as shown and described.

5. The combination of the oscillatory lever of the grain-packer, the clutch-fork, the oscillatory arm pivoted to said clutch-fork, and the rod connecting the said arm with the said lever, and serving as a fulcrum for said lever, substantially as shown and described, whereby the lifting of the lever by the contact of the grain with the packer shall lift the said arm, and thereby allow the clutch to act, as specified.

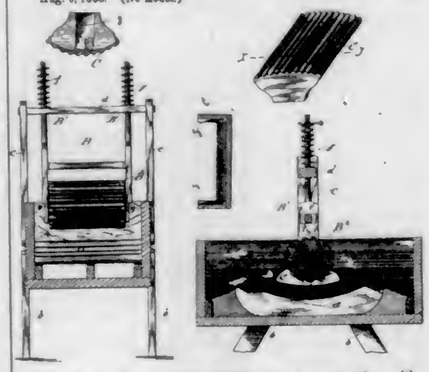
6. The combination, with the measuring-cylinder, made open at both ends, and having the ring secured around the same, and adapted to rotate on a base, of the roller supported above the said ring and in contact therewith, substantially as shown and described.

7. The combination, with the measuring-cylinder and its vertical supporting-shaft, of the registering device, comprising the rotary dial-plate, the feed-screw, and the drum having pegs in its outer surface arranged in spiral order around the same and in vertical rows, substantially as shown and described.

8. The combination of the dial-plate having numbers marked thereon, the feed-screw mounted on the shaft of the dial-plate, and the pegged drum supported on a vertical post and connected to a thread on said post, and having the pegs arranged in spiral order and in vertical rows, and having numbers corresponding to the pegs, substantially as shown and described.

9. The combination of the drum, the post supporting the same and having a spiral thread thereon, and the dog supported in standards in the upper end of the drum, and having a notch in its lower end which engages said thread, and having its upper end extended over the upper end of said post, substantially as shown and described, whereby the fall of the drum when it runs off the upper end of the thread shall cause the dog to re-engage the thread, as set forth.

298,613. WASHING-MACHINE. JESSE NEWMAN, Atlanta, Ill. Filed Aug. 6, 1883. (No model.)



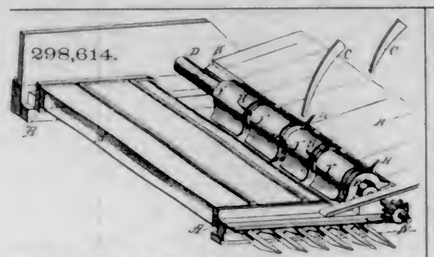
Claim.—1. In a washing-machine, the principal rubber, with a fluted or corrugated surface, a supporting-frame for the same, having its side bars or standards provided with downward-extended projections below the said rubber, in combination with the supplementary rubber, with its side bars provided with grooves or recesses and its convex side finely corrugated or fluted, substantially as and for the purpose set forth.

2. In a washing-machine, the combination of the rubber B, the supporting-frame for the same, having recessed side bars *e*, springs *f*, shaft *d*, receptacle A, having corrugated bottom *a*, and supplementary rubber C, having recessed side bars Z, substantially as shown, and for the purpose described.

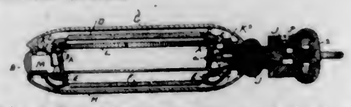
298,614. GRAIN-CONVEYER FOR HARVESTERS AND BINDERS. JOHN D. NIX, Milwaukee, Wis. Filed July 24, 1882. (No model.)

Claim.—1. The combination, with the cylinder D, of finger-disks G G, having flanges G′, and fingers H, pivoted to said disks, having projections A, which extend into curved slots in said disks, substantially as set forth.

2. The brackets E, having cams *e*, the shields F, supported by said brackets, the rotating cylinder having finger-disks, and the fingers pivoted to said disks, as described, so as to be engaged by the cams and projected through the spaces between the shields, all in combination, substantially as described.



298,615. WATCH-CASE. DANIEL O'HARA, Waltham, Mass. Filed Dec. 31, 1883. (No model.)



Claim.—1. In a watch-case, a movement ring or band, A, in combination with a recessed or chambered central shell or body, B, the two together constituting one piece, and the latter constructed for the attachment of the other parts to complete the case, substantially as described, for the purpose specified.

2. In a watch-case, a movement ring or band, A, and a recessed or chambered central shell or body, B, the two together constituting one piece, and the latter constructed for the attachment of the other parts to complete the case, in combination with case-springs K K², arranged in the recess of said central shell, and with a front cap or cover of the case hinged to the front of said shell, and otherwise arranged in relation to said springs, and with a back cap or cover applied to the back of said shell, substantially as described, for the purposes specified.

3. In a watch-case, a movement band or ring, A, surrounded by case-springs K K², for a hinged front cap or cover, G, which springs are confined in a recess or chamber, M, of a central body or shell, B, that of itself is constructed for said springs to be inserted in and removed from said recess at the outside thereof, and substantially as described, for the purpose specified.

4. In a watch-case, a movement band or ring, A, surrounded by case-springs K K², for a hinged front cap or cover, G, which springs are confined in a recess or chamber, M, of a central body or shell, B, that of itself is constructed for said springs to be inserted in and removed from said recess at the outside thereof, and for receiving a ring, T, to cover said springs, and substantially as described, for the purpose specified.

5. In a watch-case, a movement band or ring, A, in combination with a recessed or chambered central body or shell, B, the two together constituting one piece, and the latter constructed to open and close its said recess at the outside thereof, and for the attachment of the other parts to complete the case, substantially as described, for the purpose specified.

6. In a watch-case, a front bezel or crystal-cap, G, having a flange, *d*, in combination with a riser, *f*, at the front of the central shell or body, B, the two adapted for the cap to be entered into and secured to the riser, and in relation to the dial-plate of the movement, substantially as described, for the purpose specified.

7. In a watch-case, a plate or cap, G H, having a shoulder, *m*, at its outer edge, *l*, all made of one piece, substantially as and for the purpose described.

8. In a watch-case, a recessed central shell or body, B, in one piece with a ring or band, A, containing the watch-movement, which at its front and back is protected, substantially as described.

9. In a watch-case, a recessed central shell or body, B, in one piece with a ring or band, A, containing the watch-movement, in combination with springs K K² within the recess of said shell, and with a hinged front cap, G, and bezel-ring C, having crystal at the front of said shell, and said shell at its back protected, all substantially as described.

10. In a watch-case, a recessed central shell or body, B, in one piece with a ring or band, A, containing the watch-movement, in combination with bezel-rings—one at the front and the other at the back of said shell—substantially as described.

11. In a watch-case, a recessed central shell or body, B, in one piece with a ring or band, A, containing the watch-movement, in combination with bezel-rings at the front and back of said central shell, each having a crystal, and with a back cap or plate, H, substantially as described.

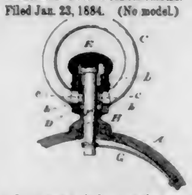
12. In a watch-case, a recessed central shell or body, B, in one piece with a ring or band, A, containing the watch-movement, in combination with springs K K² within the recess of said shell, with a hinged front cap, G, a back cap, H, and front and back bezel-rings, C E, of said central shell, each provided with a crystal, substantially as described.

13. In a watch-case, the combination of the movement-ring A, the angular winding-arbor *a*, the arbor *g*, connected with arbor *a*, and closing the opening in the movement-ring A for the arbor *a*, and a stem, *y*, adapted to engage with the arbor *g*, and to turn from the outside of the case and be moved in and out, substantially as and for the purpose set forth.

14. In a watch-case, the combination of the movement-ring A, the angular winding-arbor *a*, the arbor *g*, connected with arbor *a*, and closing the opening in the movement-ring A for the arbor *a*, a stem, *y*, adapted to engage with the arbor *g*, and the catch-spring for the front cap or plate, G, substantially as and for the purpose set forth.

15. In a watch-case, the combination, with the square-shaped arbor *a* of the watch-movement, of a square-shaped socket or sleeve arbor, *g*, engaged therewith, and interlocked by a collar, *u*, with and turning in a bearing, *v*, of the movement-ring A, of a stem, *y*, engaged with said arbor *g*, and turning within and adapted to be moved in and out of the pendant J of the watch-case, and of a catch-spring, K³, for the front cap or plate, G, substantially as and for the purposes described.

298,616. PENDANT FOR WATCH-CASES. DANIEL O'HARA, Waltham, Mass. Filed Jan. 23, 1884. (No model.)



Claim.—1. In a stem-winder watch-case, the combination of the tapering pendant B and the binding cup-formed winder-stem crown E, substantially as set forth.

2. In a stem-winder watch-case, the combination, with tapering pendant B and the binding stem-crown E, of the spring G, pressing outwardly against the winder-stem F, in the manner and for the purpose set forth.

298,617. METHOD OF TREATING COTTON-SEED. JAMES F. O'SHAUGHNESSY, New York, N. Y., assignor to the United States Cotton Seed Company, same place. Filed Oct. 13, 1883. (No specimens.)

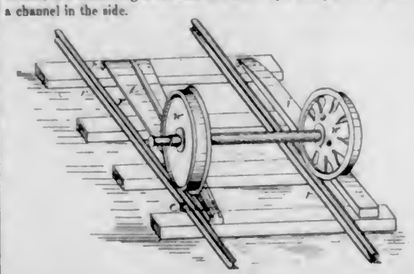
Claim.—The herein-described method of treating cotton-seed, consisting in taking the hull separated from the kernel and grinding it, in removing the fiber therefrom, and then mixing the ground hull with the crushed and pressed kernel, all substantially as described.

298,618. PROCESS OF TREATING COTTON-SEED. JAMES F. O'SHAUGHNESSY, New York, N. Y., assignor to the United States Cotton Seed Company, same place. Filed Dec. 17, 1883. (No specimens.)

Claim.—The hereinbefore-described process of removing the fiber of the hulls of cotton-seed by first heating said hulls after the kernels have been removed from them, then crushing or grinding the hulls, and finally separating the fiber from the pulverized hulls, substantially as described.

298,619. WRECKING-FROG. ALLEN H. PALMERTON, Indianapolis, Ind. Filed Dec. 21, 1883. (No model.)

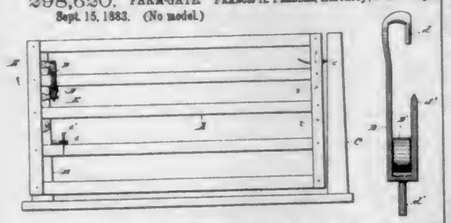
Brief.—A car-replacer consisting of an outside and inside frog, the latter being made with a central flange for the guidance of the derailed wheels, and which frog is fastened to the rail by a clamp which fits into a channel in the side.



Claim.—1. The frog-plate F, provided with the central flange, *f*, in combination with the rail *r* and the clamp C, substantially as described.

2. The frog-plate F, provided with the central flange, *f*, the clamp C, the rails *r*, and the inclined bar *i*, all combined substantially as described.

298,620. FARM-GATE. FRANCIS A. PEEBLES, Hinckley, Ohio. Filed Sept. 15, 1883. (No model.)

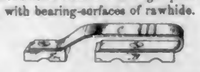


Claim.—1. The combination, with a gate-post provided with brackets, and a gate, of the hanger D, constructed substantially as described, and pivotally secured to the brackets, and the arm *e*, and peg *e'*, substantially as set forth.

2. The combination, with gate-posts and a gate, of the brackets secured to one of the posts, the removable hanger D, the staple secured to the other post, and the vertically-adjustable hook F, all of the above parts being combined as described.

298,621. SADDLE FOR THE TOP ROLLS OF SPINNING-MACHINES. HORATIO L. PIERCE, Providence, R. I. Filed Mar. 27, 1883. Renewed Apr 10, 1884. (No model.)

Brief.—The saddle is formed of a single piece of metal bent so as to form a spring, with bearing-surfaces of rawhide.



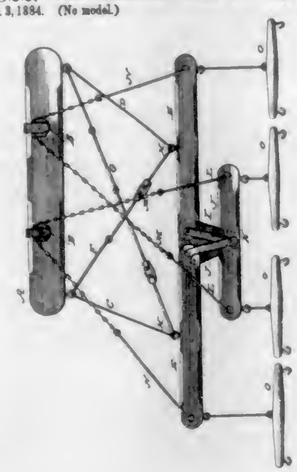
Claim.—1. A saddle for the top rolls of spinning-machines, which is formed from a single piece of material, which is bent so as to form a spring, substantially as shown.

2. A saddle for the top rolls of spinning-machines, formed from a single piece of elastic material, which is bent so as to form a spring, and which has a bearing-piece attached to each of its ends, substantially as described.

3. A saddle formed from a single piece of metal, and bent so as to have its ends separated a suitable distance from each other, and a suitable bearing attached to each end, substantially as set forth.

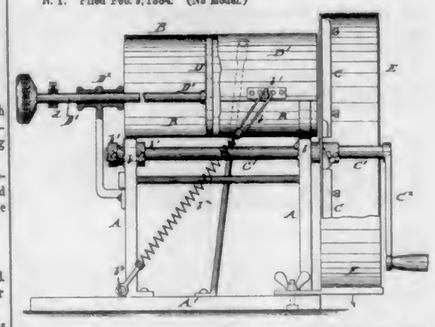
4. In a saddle, the combination of a single piece of metal, which is bent, as shown, so as to form a spring, with pieces of rawhide, which are attached to the ends of the spring, substantially as specified.

298,622. DRAFT-EQUALIZER. SAMUEL RAY, Oregon, Ill. Filed Mar. 3, 1884. (No model.)



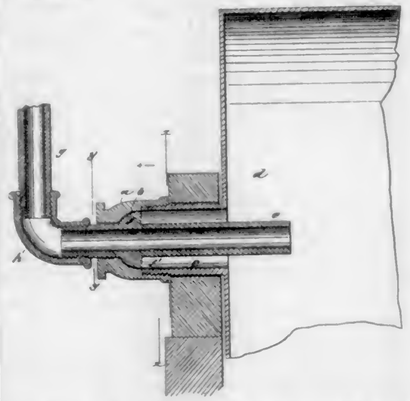
Claim.—In a four-horse draft-equalizer, the combination of the cross-bar attached to the vehicle, and having two pulleys upon its side, the oblique rods hinged to the ends of the cross-bar, the oblique rods attached to the ends of the cross-bar and crossing each other, the inner double-trees hinged or pivoted upon the ends of the oblique bars, the triangular plate and the arms hinged to the inner ends of the inner double-trees, the forward double-tree hinged upon the forward point of the triangular plate and upon the ends of the arms, the chains and rods attached to the outer ends of the inner double-trees and to the ends of the forward double-tree, and the single-trees attached to the ends of the double-trees, all constructed and arranged as and for the purpose shown and set forth.

298,623. VEGETABLE-SLICER. MATHIAS REICHERT, New York, N. Y. Filed Feb. 9, 1884. (No model.)



Claim.—The combination of a horizontal guide-shell having a hinged lid and means for fastening the lid, a horizontally-guided follower, a rotating cutter-disk arranged at one end of the guide-shell, the horizontal shaft of which is supported in bearings below the guide-shell, a crank-handle, secured detachably to the outer end of the shaft, and a guard-frame or hood extending around the cutter-disk, and being detachably connected to the supporting-frame of the machine, substantially as and for the purpose set forth.

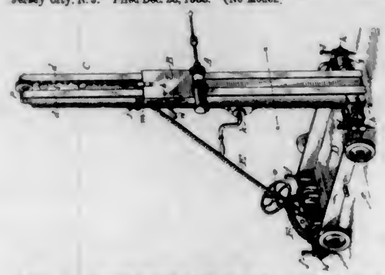
298,624. STEAM-PIPE JOINT FOR ROTARY PAPER-DRYING CYLINDERS, &c. MICHAEL J. ROACH, Lockport, N. Y. Filed Jan. 4, 1884. (No model.)



Claim.—1. In a steam-pipe joint for a hollow revolving journal, the gland *a*, attached to the journal *c*, and having a conical, oval, or equivalent valve-seat, *b*, in combination with a valve, *f*, of corresponding form, on the steam-pipe *e*, substantially as described.

2. The combination, with the journal of a hollow revolving cylinder having its end partly closed to form a valve-seat, of a steam-pipe passing into said journal, and having a valve formed upon it, fitting the valve-seat on the end of the journal, and said valve having a rear surface of sufficient area to insure its being seated by the steam-pressure, substantially as described.

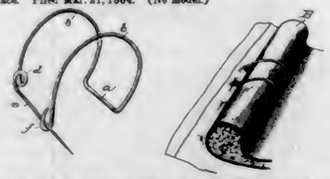
298,625. CARRIAGE FOR ROCK-DRILLS. WILLIAM L. SAUNDERS Jersey City, N. J. Filed Dec. 26, 1883. (No model.)



Claim.—1. The combination of the rock-drill A, saddle B, supporting said drill, and standard C, carrying said saddle, with means for raising and lowering said saddle and drill upon the standard, and the gib *m* and pinion-arm *n* for locking the saddle in place, substantially as and for the purposes set forth.

2. The combination of the standard C, having the longitudinal guides *d*, with the saddle B, having the drill A fixed thereto, the screw E, hand-wheel *e*, and yoke F for adjusting the standard C, and the gib *m* and pinion-arm *n* for locking the saddle in place, substantially as and for the purposes set forth.

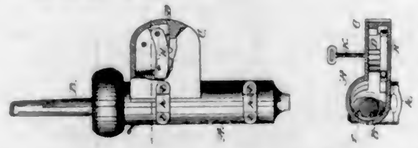
298,626. PAD-FASTENING FOR HORSE-COLLARS. JOHN SCHERLING, Dubuque, Iowa, assignor of one-half to L. D. Randall & Co., same place. Filed Mar. 21, 1884. (No model.)



Claim.—1. The described safety pin and hook, formed of wire, consisting of the bows *b b* and the part *a*, connecting the bows with suitable integral devices for attachment to the collars formed upon the ends of the bows, substantially as described.

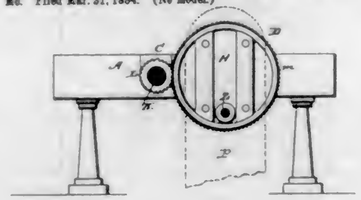
2. In combination with the pad A and the collar B, a safety pin and hook, consisting of the bows *b b a*, formed of wires, the pins *e*, and the hook *f*, substantially as described.

298,627. WHIP-HOLDER. HOWARD SCHONY, Plain City, Ohio. Filed Jan. 14, 1884. (No model.)



Claim.—The combination of the whip-socket A, lock-case C, having therein the lock-bolt D, with the curved end, and the ward H, all as shown, and operating as described.

298,628. MECHANICAL POWER. JACOB C. SELLERS, Marshfield, Mo. Filed Mar. 31, 1884. (No model.)



Claim.—The combination, with the lateral parallel gear-wheels centered on the same axial line, and having in their opposed faces slot-bearings at right-angles to each other, of a double-pinion shaft parallel to the axial line of said gear-wheels, which are respectively engaged by the pinions of said shaft, and a pitman working between said gear-wheels, and having rollers on its opposite sides linearly distant from each other and respectively engaging the slots of the gear-wheels, substantially as specified.

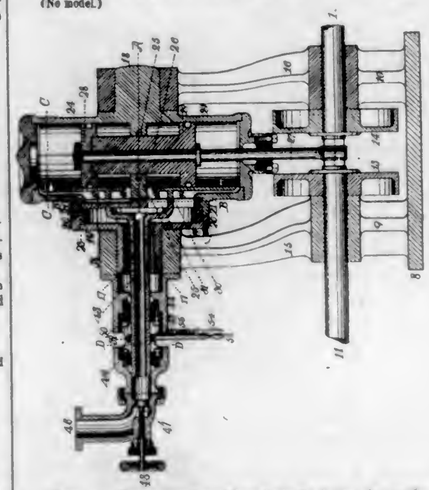
298,629. TAG-FASTENER. SAMUEL S. SENGENBAUGH, Aurora, Ill. Filed Mar. 7, 1884. (No model.)



Claim.—1. A tag-fastener consisting of a wire or piece of metal duplicated or turned upon itself, so as to form two shanks or arms, each of said shanks or arms terminating in a hook turned outward and downward, substantially as shown, from the shank or arm, as set forth.

2. A tag-fastener, constructed substantially as described, having two plain hooks turned by one turn outward and downward from the shanks or arms, in opposite directions, and substantially in the same plane, and so constructed as that, being turned at an angle to the plane in which the hooks are first applied, they will engage opposite to each other in the substance from which the tag or label is to be suspended.

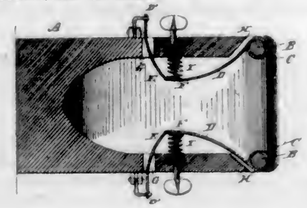
298,630. COMPOUND STEAM-ENGINE. WILBUR L. SHEPARD, Hartford, assignor to Morgan W. Beach, Bristol, Conn. Filed Jan. 30, 1884. (No model.)



Claim.—1. The combination of the cylinder 24, having the annular partition 25, with the piston 26, having the piston-heads 28 and 29, and with the valve-seat 22, having the ports 39, 40, 41, and 42, and with the valve 23, having the ports 30, 31, 32, 33, 37, and 38.

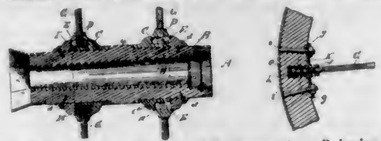
2. The combination of the valve-seat 22, having the ports 39, 40, 41, and 42, with the valve 23, having the ports 30, 31, 32, 33, 37, and 38.

298,631. CAR-COUPLING. KENADA SMITH, West Manchester, Ohio. Filed Feb. 11, 1884. (No model.)



Claim.—The combination, in an automatic car-coupling of the described class, of the draw-head having beveled sides H H and posts B B at the front end, and side slots, G G, bent plates D E F, having sleeves C working on the posts and projecting with their free ends through the slotted sides, and the coiled side springs, I I, the whole constructed in the manner and for the purpose herein shown and specified.

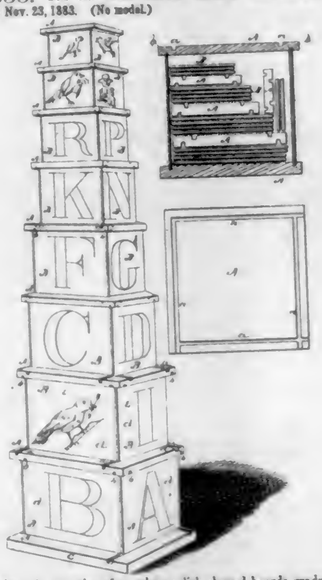
298,632. VEHICLE-WHEEL. MELVIN L. SMITH, Lockport, assignor of one-third to Jonas Terry, Batavia, N. Y. Filed Jan. 9, 1884. (No model.)



Claim.—1. The axle-box A, and the wooden sleeve B, having a flange, *a*, in combination with the collars C C, having the flanges D D, and annular inner flanges, E E, slotted at *b*, and forming the annular spaces F F, the nuts H, spokes G, and collars I I, substantially as and for the purpose shown and described.

2. The spokes G, having the heads *e*, in combination with the spoke-socket K, having the socket *f* and clip-sides *g*, and the felly having the holes *h* bored deeper than the socket and spoke-head, substantially as and for the purpose shown and described.

298,633. TOY BUILDING-BLOCK. EZRA H. SNOW, Orange, N. J. Filed Nov. 23, 1883. (No model.)



Claim.—1. A series of angular or disk shaped boards graduated in size, with grooves *a* and *b* on their two sides, in combination with a series of thin graduated sections, B, constructed to fit into said grooves, as and for the purpose described.

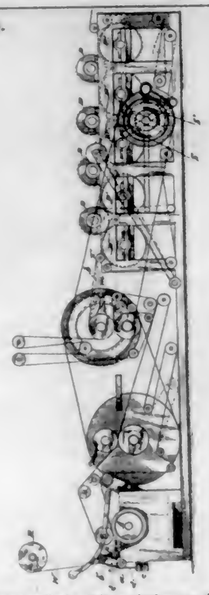
2. In combination, a series of boards, A, with grooves *a* and *b* formed therein, the grooves *a* being nearer the edges of the boards than the grooves *b*, as and for the purpose described.

298,634. PAPER-MACHINE. THOMAS STEWART, Philadelphia, Pa. Filed Oct. 20, 1883. (No model.)

Brief.—Improvement on Letters Patent No. 265,884, dated October 10, 1882, to same inventor.

Claim.—1. The process of embedding a re-enforcing fabric, whether a connected web or a number of parallel threads, in paper during the process of its manufacture, which consists in feeding the re-enforcing fabric to and embedding it in the paper while in a pulpy state, and then adjusting the speed of the drying-cylinders to the same speed as the press-rolls and forming-cylinder or its equivalent, or slower, substantially as and for the purpose shown and set forth.

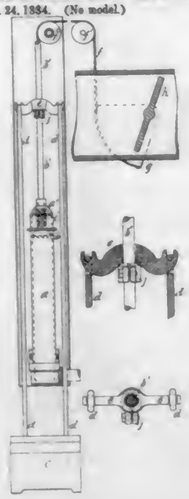
298,634.



2. A machine for the manufacture of textile paper or paper re-enforced by a web or separate threads embodied into the paper fabric while in a pulpy state, provided with an expansion-pulley or its equivalent, whereby the speed of the drying-cylinders may be adjusted to the same speed as the press-rolls and forming-cylinder or its equivalent, or slower, substantially as and for the purpose shown and set forth.

3. In a machine for the manufacture of textile paper, or paper re-enforced by a web or separate threads embodied into the paper while in a pulpy state, an adjustable tension-frame provided with tension-rolls and with weights for regulating the pressure or purchase of the rolls against the re-enforcing fabric, whereby the stretch or tension of said fabric may be regulated in conformity to the speed of the drying-cylinders which take the fabric embodied into the paper from the press-rolls, substantially as and for the purpose shown and set forth.

298,635. DAMPER-REGULATOR. FRANK THOMPSON, New York, N. Y. Filed Jan. 24, 1884. (No model.)

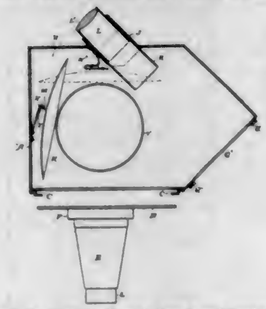


Claim.—1. In a damper-regulator, in combination, the weight *c* the rods *d d*, the yoke *e*, the cylinder *a*, the piston *b*, the piston-rod *b'*, fitted loosely through the yoke *e*, the adjustable collar *j*, clamped on the piston-rod *b'*, and supporting the yoke *e* and weight *c*, and the damper *h*, connected to the free ends of the piston-rod, thus providing means for adjusting the piston in the cylinder after the apparatus is in position, substantially as and for the purpose set forth.

2. In a damper-regulator, the vertically-arranged cylinder *a* and piston *b*, in combination with the weighted yoke *e*, supported by means of a spherical bearing on the collar *j*, secured to the piston-rod *b'*, substantially as set forth.

3. In combination, the cylinder *a*, piston *b*, spring *i*, piston-rod *b'*, collar *j*, yoke *e*, rods *d d*, and weight *c*, substantially as and for the purpose hereinbefore set forth.

298,636. MAGIC LANTERN AND WONDER CAMERA COMBINED. JAMES R. UPHAM, Boston, Mass. Filed Feb. 2, 1884. (No model.)



Claim.—1. In a combined magic lantern and wonder camera, a box having projecting tube E and aperture G', provided with means for retaining opaque pictures thereat, in combination with the cylinder J, having lens-tube L therein, a lamp, D, and a concave mirror, R, having means whereby it may be shifted in position to reflect the lamp-light upon a picture held at said opening G' or to the said projecting tube E, substantially as described.

2. The pentagonal box A, having opening G', and means for holding pictures thereat, in combination with the cylinder J, lens-tube L, hooks N N', concave mirror R, having eye M, and the lamp D, substantially as and for the purpose specified.

3. The box A, having opening G', springs *g*, and ring V, in combination with the cylinder J, cylinder K, lens-tube L, and concave mirror R, substantially as and for the purpose set forth.

4. The box A, having opening G', springs *g*, cylinder J, cylinder K, lens-tube L, and hooks N N', in combination with the mirror, having eye M, ring V, lamp D, side B, removable in the channels C, and having projecting tube E, as shown and described.

298,637. SEAM FOR BOOTS AND SHOES. GEORGE VALIANT, Toronto, Ontario, Canada. Filed Sept. 28, 1883. (No model.) Patented in Canada Oct. 15, 1883, No. 17,882.



Claim.—1. A seam formed from two pieces of material by first folding in the edges of each piece upon itself, then uniting the two pieces by a line of stitches passing through the doubled or folded portions, and leaving outer projecting beads, substantially as set forth.

2. A seam formed from two pieces of material by first passing a line of stitches laterally through the two folded edges, leaving outer projecting beads, then passing a vertical line of stitches through each projecting bead, thus forming a stay covering the first line of stitches, substantially as set forth.

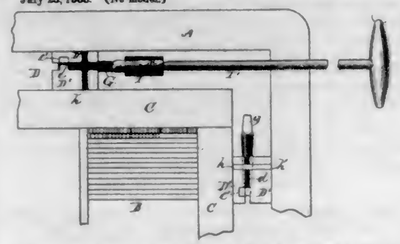
298,638. BOOT. GEORGE VALIANT, Toronto, Ontario, Canada. Filed Sept. 28, 1883. (No model.) Patented in Canada Oct. 16, 1883, No. 17,896.

Claim.—A boot having the edge of its fly of the upper serrated or scalloped, in combination with a piece of material sewed to the said edge and having eyelets or button-holes stamped out of it, substantially as and for the purpose specified

298,638.

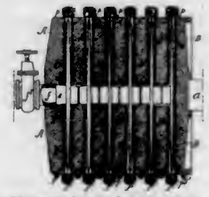


298,639. PRINTER'S QUOIN. CHRISTIAN A. R. L. VER GENUS, Galesburg, Ill., assignor of one-half to Gustave A. Ver Genus, same place. Filed July 23, 1883. (No model.)



Claim.—A printer's quoin formed of blocks D' with horizontal screw-threaded grooves in their adjacent faces, in combination with a conical screw-threaded bolt fitting and working in said horizontal groove, substantially as described.

298,640. SEPARATING LIQUID FROM SOLID MATTER, AND MECHANISM THEREFOR. HENRY WARDEN, Philadelphia, Pa., assignor to the Atlantic Refining Company, same place. Filed May 24, 1883. (No model.)



Claim.—1. The mode herein described of separating solid matter from oil and other liquids, the said mode consisting in compressing supply after supply of the liquid between filtering fabrics, and thereby lodging between the same layer after layer in succession of solid matter, one layer being incorporated with previous layers until a comparatively thick cake composed of the several layers is produced, substantially as described.

2. A filtering-press in which are combined the following elements, namely: first, rings I I'; second, disks of filtering fabric; third, devices for confining the said disks between the rings, and, fourth, grooved plates fitted to the said rings, so as to slide therein, all substantially as set forth.

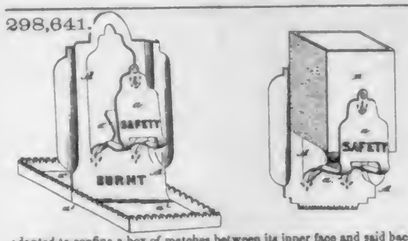
3. The combination, in a filtering-press, of two bags, H, two grooved plates, between which are two filtering-disks, one forming part of one bag and the other part of the adjoining bag, and two rings, one attached to one filtering-disk and the other to the other filtering-disk, one ring overlapping one grooved plate and the other overlapping the other grooved plate, and devices for securing the rings, all substantially as described.

4. The combination of the grooved plates and the beveled rings I I', confining filtering-disks, with a contractible band, P, carrying blocks *p*, adapted to the said rings, substantially as specified.

298,641. MATCH-BOX HOLDER. WILLIAM N. WHEDEN, New Bedford, Mass. Filed Sept. 10, 1883. (No model.)

Claim.—1. A match-box holder composed of a back adapted to receive the rear face of the box and hold said box from side movement, and a spring-clamp which forms part of or is secured to the same, and is

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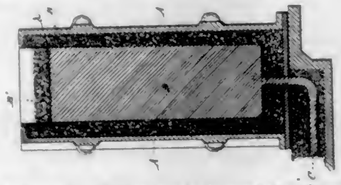
adapted to confine a box of matches between its inner face and said back, substantially as and for the purpose specified.

2. A match-box holder composed of a back, a spring-clamp which is adapted to confine in place upon said back an interposed box of matches, and a stop that is arranged to engage with the lower end of such box and to limit its downward motion, substantially as and for the purpose shown.

3. As an article of manufacture, a match-box holder composed of a back, a spring-clamp for confining in place a match-box, and a stop for limiting the downward motion of such box, and provided with a receptacle for burnt matches, substantially as and for the purpose set forth.

4. A match-box holder composed of a back, a spring-clamp for confining in place a match-box, a stop for limiting the downward motion of said box, and a base for supporting the device in a vertical position, substantially as and for the purpose shown and described.

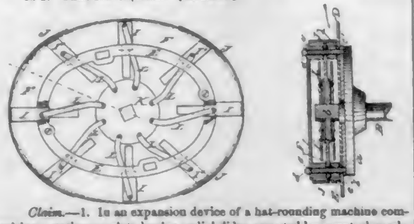
298,642. MANUFACTURING WROUGHT-STEEL. SAMUEL T. WELLMAN, Cleveland, Ohio. Filed Apr. 20, 1883. (No model.)



Claim.—1. As an improvement in the manufacture of wrought-steel, the method herein described, consisting in casting the ingot in a mold made of some good non-conducting material, thereby insuring a slow radiation of heat and a homogeneous temperature to the ingot, and allowing the ingot to remain in the mold until it has been sufficiently reduced in temperature for rolling or hammering, and then removing the mold from the ingot, substantially as set forth.

2. As an improvement in the manufacture of wrought-steel, the method herein described, consisting in casting the ingot in a mold made of some good non-conducting material—as silica, for instance—and covering the top of the metal of the ingot with non-conducting material, and allowing the ingot to remain in the mold until it has been sufficiently reduced in temperature for rolling or hammering, and then removing the mold from the ingot, substantially as set forth.

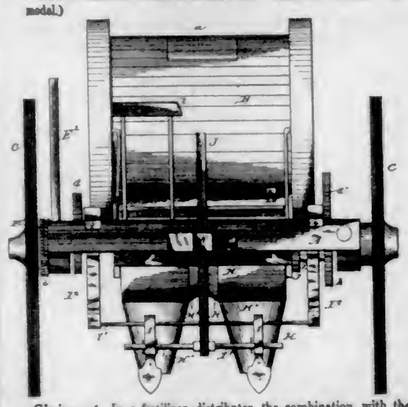
298,643. HAT-ROUNDING MACHINE. JOHN WINSTROM, Brooklyn, N. Y. Filed Dec. 19, 1882. (No model.)



Claim.—1. In an expansion device of a hat-rounding machine comprising a stationary plate having radial slides operated by a central crank-disk, the combination, with the axial slides I, having their links L pivoted at *u* equidistant apart, in the same circle-line, Q, on the said crank-disk, of the oblique slides I', having their links L pivoted at *r* to the said crank-disk, at the same angular distances, M N O P, from the forward pivots, *u*, respectively, as the angles M' N' O' P', which are formed by the center line of each respective oblique slide I' and that of the next preceding axial slide I, substantially as and for the purpose hereinbefore set forth.

2. In an expansion device of a hat-rounding machine comprising a stationary plate having radial slides operated by a central crank-disk, the combination, with the axial slides I, having their links L pivoted at *u* equidistant apart, in the same circle-line, Q, on the said crank-disk, of the oblique slides I', having their links L pivoted at *r* to the said crank-disk, at the same angular distances, M N O P, from the forward pivots, *u*, respectively, as the angles M' N' O' P', which are formed by the center line of each respective oblique slide I' and that of the next preceding axial slide I, the latter pivots or crank-pins *r* being located outside of the circle Q, to increase the throw of the oblique slides I', substantially as and for the purpose hereinbefore set forth.

298,644. COMBINED SEEDER AND FERTILIZER-DISTRIBUTER. GEORGE WASHINGTON WHITE, Belle Mina, Ala. Filed Nov. 16, 1883. (No model.)



Claim.—1. In a fertilizer-distributer, the combination, with the agitator, with its shaft provided with a pinion, of the driving-wheel having a pinion, the supplementary shaft having at one end a pinion, and at its other end an angular surface, the sliding sleeve having an angular bore and a pinion, and the shifting-lever, substantially as and for the purpose set forth.

2. In a fertilizer-distributer, the combination, with the agitator, with its shaft provided with pinions at both ends, and the comminuting or pulverizing rolls, with their shafts provided with intergearing pinions and a separate pinion gearing with one of the pinions of the agitator-shaft, of the supplementary shaft having a pinion at one end and an angular surface at its other end, and a sliding sleeve having a pinion and an angular bore, substantially as and for the purpose set forth.

3. In a fertilizer-distributer, the combination, with the comminuting-roll case affixed to the machine-frame, of the spouts with their upper semicircular portions pivoted and provided with tapering telescoped sections, substantially as and for the purpose set forth.

298,645. BALE-TIE. JOSEPH WHITE, Cleveland, Ohio, assignor to the Tyler Bale-Tie Company, same place. Filed Mar. 21, 1884. (No model.)



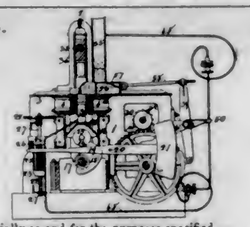
Claim.—A bale-tie with ends provided with a succession of similar curves or bends adapted to interlock when twisted or passed around each other, and adapted to be reduced in length by more or less overlapping the ends, substantially as set forth.

298,646. PRESS FOR MAKING BRICKS, TILES, &c. THOS. WHITTAKER, Accrington, County of Lancaster, England. Filed Mar. 13, 1884. (No model.)

Claim.—1. In a press for manufacturing brick, tile, &c., the combination of two adjustable side sections or mold-tables adapted to slide to and from each other, a separable septum, and detachable end pieces, whereby the size of the mold-cavity may be changed at will, substantially as and for the purposes specified.

2. In a press for the manufacture of brick, tile, &c., the combination, with a mold and a plunger adapted to project beyond the mold, of a feed-box having an inwardly-swinging door or gate which permits the feed-box to be pushed past the projecting plunger and over the mold-

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cavity, substantially as and for the purposes specified.

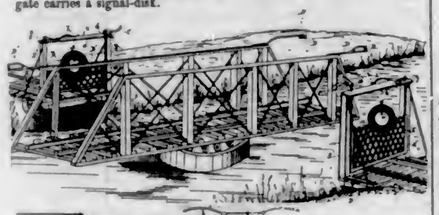
3. In a press for the manufacture of brick, tile, &c., the combination, with an adjustable mold, of a drop-box arranged below the mold and provided with guard-plates, and a hollow bottom plunger detachable from the drop-box, whereby the plunger may be changed to suit the size to which the mold is adjusted, substantially as and for the purposes specified.

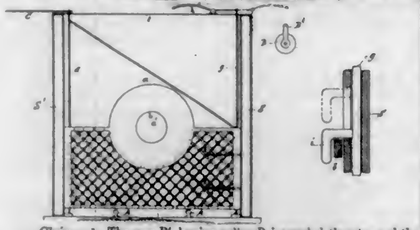
4. In a press for manufacturing brick, tiles, &c., the combination of the twin molds and the hollow twin plungers, one of said plungers having a steam-inlet and the other an outlet-pipe, and the two pistons connected by a dip-pipe, substantially as and for the purposes specified.

5. In a press for manufacturing brick, tiles, &c., the combination of an adjustable mold, a bottom plunger having a separable head, a stop mechanism for limiting the drop of the plunger, and a feed-box having an inwardly-swinging door or gate which permits the feed-box to pass over the projecting head of the plunger, substantially as and for the purposes specified.

298,647. DRAW-BRIDGE SIGNAL. JAS. N. WILLIAMS, Mobile, Ala. Filed Feb. 23, 1884. (No model.)

Brief.—A friction-roller in a forked arm on a swing-bridge frame operates a forked lever on the end of a rod upon which a swinging gate is mounted. A second friction-roller on an arm of the bridge-frame operates a lever pivoted on the cross-bar of a frame in which the gate rests when closed, said lever being connected to a vertically-reciprocating rod. The latter carries hooks engaging catches on the gate. The swinging gate carries a signal-disk.





Claim.—1. The arm B', having roller B journaled thereto, and the upper frame of a draw-bridge, in combination with lever A, rod *g*, having latching mechanism, and gate E, substantially as described, and for the purposes set forth.

2. The forked lever C, rod *d*, and gate E, in combination with the forked arm D', having roller D journaled thereto, substantially as described, and for the purposes set forth.

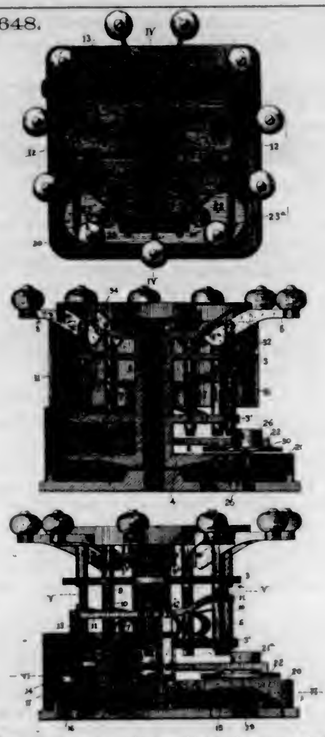
3. In a draw-bridge gate, the lever A, in combination with the rod *g*, having hooks *i*, as described, and for the purposes set forth.

4. In a draw-bridge, the gate E, having signal *a*, in combination with rod *d* and forked lever C, and forked arm D', having roller D, substantially as described, and for the purposes set forth.

5. In a draw-bridge, the posts S S', the cross-bar *t*, the rod *g*, having hooks *i*, in combination with gate E, having catches *b b*, substantially as described, and for the purposes set forth.

298,648. CHECK-PUNCHING MACHINE. JOHN N. WILLIAMS, St. Paul, Minn. Filed Sept. 21, 1883. (No model.)

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Claim.—1. A check-punching machine having a rotary hub, a circular series of punches supported thereon, and separate hand-levers pivoted to the said punches and fulcrumed on the rotary hub, so as to have liberty of endwise movement.

2. A check-punching machine having a revolving series of punches with two lugs or shoulders on their faces, in combination with an oscillating feed-lever adapted to be engaged by both of said lugs or shoulders when either of the punches is brought into position for use, so as to be positively actuated by said punches in both directions of their movement, for the purpose set forth.

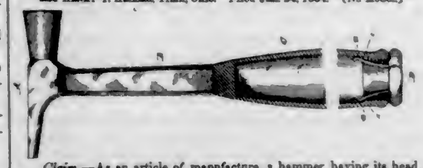
3. The combination of the series of punches 6, bow-shaped lever 11, staff 13, clutch or ratchet movement 14 16 17, feed-shaft 15, and feed-wheel 19, as set forth.

4. The combination of a rotary series of punches, an oscillating feed-lever common to all, a feed-table having feed and guide rollers, and a hinged holding and stripping plate having idle-rollers located above the rollers in the feed-table on both sides of the punch, for the purpose set forth.

5. In a check-punching machine, the combination, with a rotary series of punches and a plate having corresponding matrices, of a hinged plate perforated for the passage of the punch and serving as a holder and stripper.

6. In a check-punching machine, flanged rotary hub-cap 34, shouldered bolts 35, and bar or handle 33, for the purpose set forth.

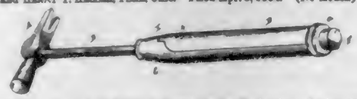
298,649. TACK-HAMMER. GEORGE S. YINGLING, ALBERT L. FLACK, and HENRY T. HELLER, Tiffin, Ohio. Filed Jan. 24, 1884. (No model.)



Claim.—As an article of manufacture, a hammer having its head, shank, and handle all of one piece, the handle being hollow and open at its outer end, and there provided with the shoulders *x x*, for retaining the

springs *e e* of the stopper, thus forming a receptacle for holding tacks, all being arranged substantially as described.

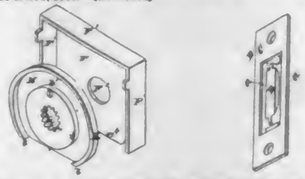
298,650. TACK-HAMMER. GEORGE S. TINGLEY, ALBERT L. PLACE, and HENRY T. HELLER, Tiffin, Ohio. Filed Apr. 3, 1884. (No model.)



Claim.—1. A tack-hammer having its head, shank, and a longitudinal portion of the handle all cast in one piece, the other portion being cast separately and secured thereto, forming, completed, a hammer having an open-ended receptive handle adapted to receive and hold tacks, and to be closed by a suitable stopper, as set forth.

2. A tack-hammer having its head, shank, and a longitudinal portion of the handle and the recessed ring on the end of the said handle all cast in one piece, the other portion being cast separately and secured thereto by the ring at one end and a rivet at the other, the handle being open-ended and internally concave, and adapted to receive and retain tacks, and to be closed by a suitable stopper, as set forth.

298,651. PERMUTATION-LOCK. JAMES W. ALLEN, St. Louis, Mo. Filed Nov. 2, 1883. (No model.)



Claim.—1. In a combination-lock, two or more locking-disks having a limited movement independent of each other, with peripheral flanges L, projecting beyond the face of the lock, substantially as and for the purpose set forth.

2. In a combination-lock, the combination of two independently-movable disks provided with peripheral flanges having segments removed and projecting toward each other, a spindle by which a disk can be rotated to adjust the other disk, and a locking-plate having an orifice, and a bar spanning the orifice, having flanges engaged by the disk-flanges, as set forth.

3. The combination, in a desk-lock, of rotary disks with flanges L, a lock-plate engaged by said disks, and lips *d' d²* upon the lock, entering the recess of the lock-plate, for the purposes set forth.

4. The combination, with the locking-disk H, having a pin or stud, A', of the movable division-plate J, with an orifice, J', and a notch, J^2, engaging on said pin when the lock is lifted from the table, for the purpose set forth.

298,652. ROAD-CART. DANIEL ABSTERBERRY, Troy, Ohio. Filed Sept. 17, 1883. (No model.)

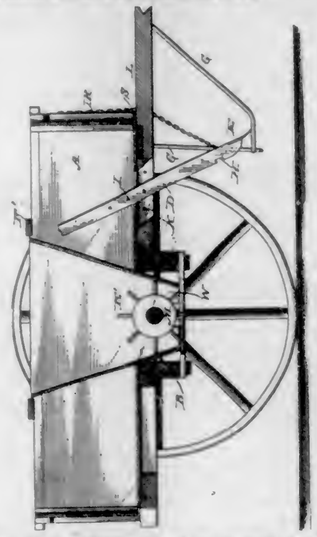


Claim.—1. In a road-cart, the double semi-elliptic springs secured directly to the axle and the side bars, and connected in pairs at their rear ends by wrist-bolts, washers, and securing-nuts, and at their front ends by a connecting-rod, washer, and securing end nuts, substantially as specified.

2. In a road-cart, the combination, with the connecting-rod *k* at the front ends of the springs, of the link *l*, connecting the lateral arm *m* on the inside of one of the shafts, to prevent the body from tilting backward or forward in case of the breakage of the axle-connection with the springs, substantially as specified.

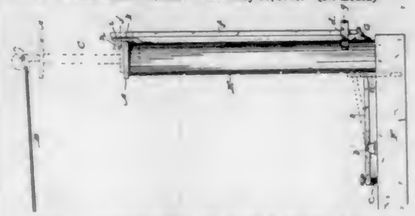
3. The combination, with the semi-elliptic springs connected to the axle and at their front and rear ends, as described, of the side bars and connecting-bars *o o*, provided with the transverse slots *p*, whereby the cart-body may be secured thereto by bolts and nuts, and adjusted back and forth, substantially as and for the purposes specified.

298,653. COMBINED RIDING-CART, COTTON AND CORN PLANTER, AND MANURE-DISTRIBUTER. ANDREW J. ARRINGTON, Epes Station, Ala. Filed Aug. 21, 1883. (No model.)



Claim.—In a cotton and corn planter and manure-distributer, the slotted tongue A, the adjustable plow-standard D, working in and through pendent guide-braces G, in combination with the detachable and interchangeable hoppers A', having inclined bottom B', slot C', through which works the pocketed seed-wheel D', or a series of arms, E', and the coverer H', substantially as set forth.

298,654. ELEVATOR FOR CASH AND PARCEL CARRIERS. ABEL T. ATHERTON, Lowell, Mass. Filed July 23, 1883. (No model.)



Claim.—1. The combination, with the carrier-elevator, the elevator-actuating piston, and its containing-cylinder, of an exhaust or escape valve arranged and operating to automatically open at or near the time the elevator completes its upward movement, substantially as and for the purposes hereinbefore set forth.

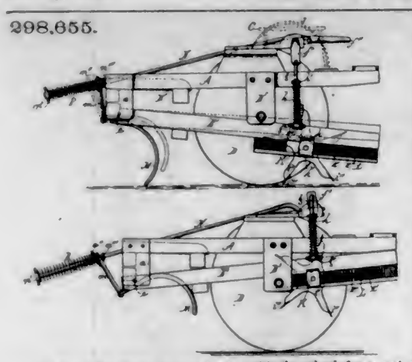
2. The combination, with the carrier-elevator, the elevator-actuating piston, and its containing-cylinder, of an exhaust or escape valve, and valve-operating mechanism actuated by the elevator, or some part moving in unison therewith, to open and close said exhaust-valve at the times and in the manner substantially as hereinbefore set forth.

3. The combination of the carrier-elevator, the elevator-actuating piston, its containing-cylinder, the spring-controlled admission-valve, the exhaust-valve, and exhaust-valve-operating mechanism, actuated by the elevator, or some part moving in unison therewith, at or near its extremes of movement to open and close said exhaust-valve, the combination being and acting substantially as hereinbefore set forth.

298,655. CORNSTALK-CUTTER. JAMES W. ATKINSON and BYRON PHELPS, Moline, Ill., assignors to Deere & Mansur Company, same place. Filed Jan. 12, 1883. (No model.)

Claim.—1. In a stalk-cutter, in combination with a frame, E, adapted to be dragged by one end, and a cylinder of cutters journaled in said frame and adapted to slide back and forth with reference to said frame, springs adapted to operate substantially as and for the purpose specified.

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2. In a stalk-cutter, in combination with the wheel-frame and a swinging frame hinged thereto, a cylinder of cutters journaled to the swinging frame in bearings which permit it to slide back and forth in said swinging frame, substantially as and for the purpose specified.

3. In a stalk-cutter, in combination with the wheel-frame, a swinging frame hinged thereto, and a cylinder of cutters journaled to the swinging frame in bearings which permit it to slide back and forth with reference to said swinging frame, springs adapted to act on the cylinder of cutters, substantially as and for the purpose specified.

4. In combination with the frame E, having slots *e'*, the cylinder of cutters I, journaled in blocks K, which slide back and forth in the slots *e'*, and the springs L, located in the slots *e'*, and adapted to act on the cylinder of cutters, substantially as and for the purpose specified.

5. In combination with the frame A and the swinging frame E, hinged thereto, and having slots *e'*, the cylinder of cutters I, journaled in blocks K, which slide back and forth in the slots *e'*, and the springs L, located in the slots *e'*, in rear of the blocks K, and adapted to act on the cylinder of cutters, substantially as and for the purpose specified.

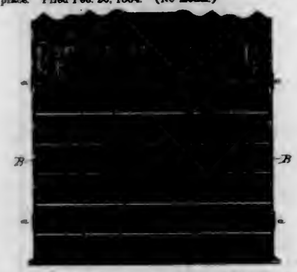
6. In combination with the frame A, swinging frame E, having slots *e'*, cylinder of cutters journaled in blocks which slide in the slots *e'*, and springs L, the crank-shaft F, connected with the frame E by a rod, *g*, and spring A, substantially as and for the purpose specified.

7. In a stalk-cutter, in combination with the frame, rod N, and drag-hooks hinged to the frame, the spring P, adapted to hold the drag-hooks in contact with the ground with a yielding force, substantially as and for the purpose specified.

8. In a stalk-cutter, in combination with the frame and drag-hooks hinged thereto, and rod N, adapted to raise the drags off the ground, a spring, P, adapted to hold the drag-hooks in contact with the ground and to yield to permit said hooks to rise independently of the rod N, substantially as and for the purpose specified.

9. In combination with the wheel-frame and swinging frame, shaft F, and rods *g* and N, adapted to raise the swinging frame and drag-hooks simultaneously, the spring P, adapted to operate substantially as and for the purpose specified.

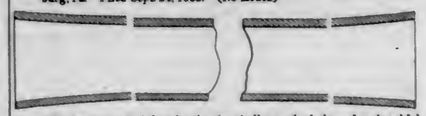
298,656. PAPER, TWINE, AND SACK CASE FOR GROCERS, &c. JAMES F. BARR, Ashland, Ohio, assignor of one-half to Andrew Brubaker, same place. Filed Feb. 20, 1884. (No model.)



Claim.—1. The case for twine, paper, and bags, hereinbefore described, consisting of the back and ends, the shelves C, twine-box E, and compartment F, the box being supplied with a cover, and having at each end a receptacle for a single ball of twine, substantially as set forth.

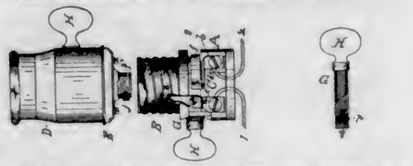
2. The case for twine, paper, and bags, hereinbefore described, consisting of the back A, ends B, hinged thereto, twine-box E, bag-compartment F, and detachable shelves C, substantially as set forth.

298,657. STRAIGHT WATER-PIPE. JOHN FRANCIS BENNETT, Pittsburg, Pa. Filed Sept. 24, 1883. (No model.)



Claim.—A straight pipe having bell-mouthed-shaped ends which have, respectively, an area equal to twice that of the main body, the length of frustum of cone forming the entrances being equal to two diameters of the main body of the pipe, for the purpose herein fully set forth.

298,658. SOCKET FOR INCANDESCENT ELECTRIC LAMPS. SIGMUND BERGMANN, New York, N. Y. Filed Oct. 9, 1882. (Model.)



Claim.—1. The combination, in a turning circuit-controlling key, of a metal thumb-piece, a metal circuit-controlling tip, and a section of insulating material interposed between said metal portions, the parts having engaging screw-threaded portions, by which they are secured together, substantially as set forth.

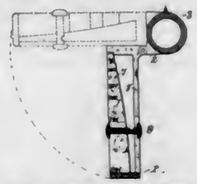
2. In a circuit-controller, the combination, with contiguous metal plates forming circuit-terminals, of a turning circuit-controlling key having a metal tip which bridges the space between said plates to complete the circuit, said key also having a metal thumb-piece insulated from said tip, substantially as set forth.

3. The combination, in a circuit-controller, of contiguous metal plates forming circuit-terminals, a turning circuit-controlling key having a metal tip for bridging the space between the plates, and a metal thumb-piece insulated from said tip, a cam for forcing said key forward to close circuit, and a spring for retracting the key to break circuit, substantially as set forth.

4. In an incandescing-electric-lamp socket, the combination, with the insulating-block A, and circuit-terminals carried thereby, to which run the circuit-wires, of an inclosing metal casing, D E, and the internally-screw-threaded sleeve F, attached to the part E, and provided with the set-screw *j*, or equivalent device, substantially as set forth.

5. In an incandescing-electric-lamp socket, the combination, with the cylindrical block of insulation, of the metal plates attached thereto and continued upward, one to the screw-threaded sleeve, which receives one terminal of the lamp, the other through a circuit-controller to a plate, which makes contact with the other lamp-terminal, substantially as set forth.

298,659. SIGHT FOR FIRE-ARMS. EDWARD L. BERTSOUD, Golden, Colo. Filed Nov. 24, 1883. (No model.)



Claim.—1. The combination, with the barrel of a rifle or cannon, of the stadia-sight secured adjacent to the muzzle, and constructed with the variable opening formed by a straight side and a curved side, and a slide on said sight for indicating in the variable opening that part of the said opening which exactly includes the height of the object aimed at, together with the exact elevation of the muzzle required to strike the object, substantially as described.

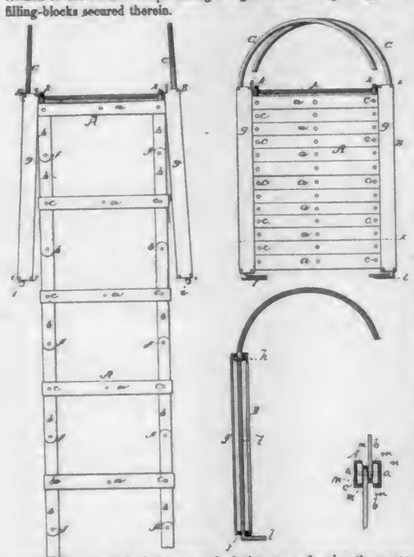
2. The combination, with the barrel of a rifle or cannon, of the stadia-sight hinged adjacent to the muzzle, to be adjusted either to a horizontal or a vertical position, as described, and constructed with the variable opening formed by a straight side and a curved side, and a slide on said sight for indicating in the variable opening that part of the said opening which exactly includes the height of the object aimed at, together with the exact elevation of the muzzle required to strike the ob-

ject substantially as described.

3. The combination, with the barrel of a rifle or cannon, of a stadia-sight hinged adjacent to the muzzle, and constructed with an opening variable in width throughout its length, and a slide on said sight, whereby when the latter is turned to a horizontal position the adjustment of the slide will indicate in the variable opening that part of said opening which exactly includes the height of the object aimed at, and when the sight is turned downward to a vertical position the exact elevation of the muzzle will be indicated for striking the object, substantially as described.

298,660. PORTABLE LADDER. VITAL BISSELL, New York, N. Y., assignor of one-half to Henry A. Robbins, Washington, D. C. Filed Jan. 12, 1884. (No model.)

Brief.—A portable frame having hooks for holding the folded ladder therein and bails or hooks at the upper end. The ladder-rungs are formed of sheet-metal strips having flanges turned at right angles and filling-blocks secured therein.



Claim.—1. A ladder composed of plates *a a*, forming the rounds, and connecting-links *b b*, pivoted to the rounds and to one another, the rounds being provided with stops *c c*, to prevent the folding outward and compel the folding inward of the links behind the rounds, substantially as and for the purpose herein specified.

2. The ladder-rounds *a a*, having their ends bent backward to form both stops *c c* and projecting stays, substantially as herein specified.

3. The combination of a folding ladder, A, composed of plates *a a*, forming the rounds, and connecting-links *b b*, pivoted to the rounds and to one another, and a portable frame, B, provided with sides *g g*, adapted to embrace and sustain the ends of the ladder-rounds, and with means for carrying and suspending the ladder, substantially as and for the purpose herein specified.

4. A ladder-frame, B, formed of side pieces, *g g*, adapted to embrace and sustain the folded ladder, and a top piece, *h*, the said side pieces being connected with the top piece by movable joints, whereby they may be swung outward at the lower ends to set free the ladder and allow it to unfold, substantially as herein specified.

5. Swinging hooks C C, in combination with the ladder-frame B, substantially as and for the purpose herein specified.

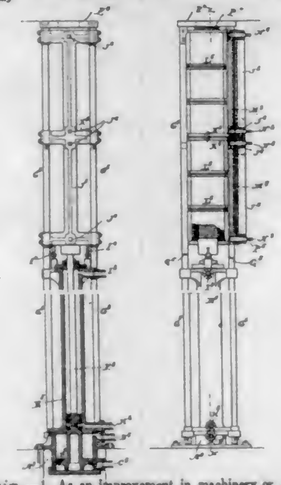
6. Hooks C C, turning on vertical extensions *i i*, pivoted in the sides of the ladder-frame B, the said extensions being provided with lateral projections *l l*, in combination with the folding ladder A, substantially as and for the purpose herein specified.

7. A ladder-round formed of flanged metallic plates, substantially as and for the purpose herein specified.

8. A portable ladder composed of a folding or collapsible ladder, A, and holding-frame B, provided with a carrying and suspending bail or hooks, C C, substantially as and for the purpose herein specified.

9. Ladder rounds or rungs formed of sheet-metal strips having flanges *m m* turned at right angles to the body, and provided with blocks or plates *n n*, filling the spaces between the flanges of the stripe, substantially as and for the purpose herein specified.

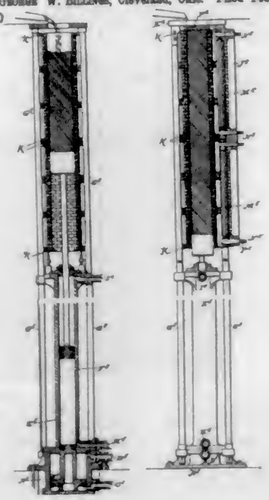
298,661. COMPRESSION APPARATUS FOR CASTING STEEL INGOTS. GEORGE W. BILLINGS, Cleveland, Ohio. Filed Jan. 16, 1884. (No model.)



Claim.—1. As an improvement in machinery or apparatus for casting compressed ingots of considerable length, the combination, with suitable means for securely holding in place a long removable mold, of two cylinders arranged axially in line with the mold (when the latter is held in place) and secured together, one of the said cylinders having a piston that works always within the mold and acts directly on the contents thereof, and the other of said cylinders having a piston which acts directly upon the piston of the other cylinder, all substantially in the manner and for the purposes hereinbefore described.

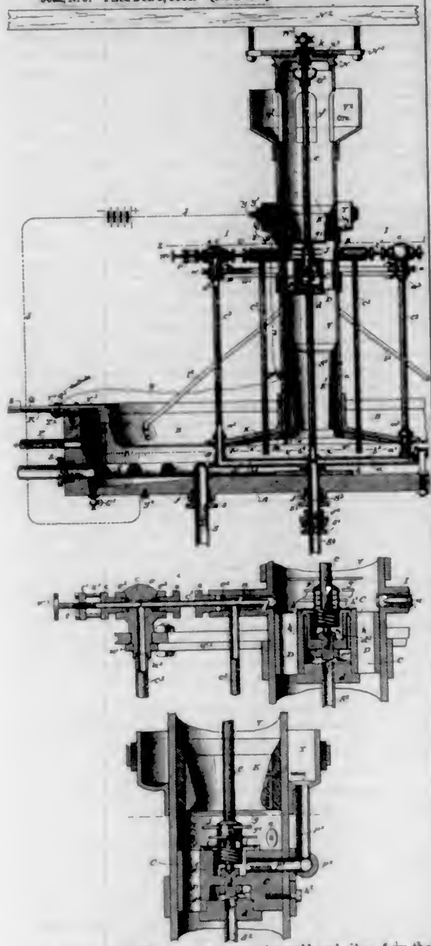
2. As an improved contrivance for making compressed ingots of great length, a machine composed of two stationary cylinders arranged axially in line (one being of longer stroke than the other) together with their respective pistons, and means for holding in proper relative position therewith an ingot-mold, the construction and arrangement of these parts being such, as described, that the piston of longer stroke descends within the mold during the pouring, and is thereafter suddenly forced upwardly within the mold by the action upon it of the other (and more powerful) piston, all in the manner and for the purposes described.

298,662. METHOD OF POURING AND COMPRESSING STEEL INGOTS. GEORGE W. BILLINGS, Cleveland, Ohio. Filed Feb. 29, 1884. (No model.)



Claim.—As an improvement in the manufacture of compressed ingots of great length, pouring the liquid metal into a mold having a descending bottom, (so that the fall of the stream is always slight,) and then immediately subjecting the liquid contents of the mold to severe and sudden compression, all substantially as set forth.

298,663. PROCESS OF AND APPARATUS FOR EXTRACTING GOLD AND SILVER FROM THEIR ORES. CHARLES P. BONNETT, Elizabeth, N. J. Filed Dec. 3, 1883. (No model.)



Claim.—1. The process of extracting gold and silver from their ores by the combined action of mercury, electricity, and water, which consists in forcing mercury, either hot or cold, in the form of very fine globules or spray, into the water containing the ore, sand, &c., causing currents of electricity to traverse the water while the mercury is still in a fine state of division, and collecting the amalgam in a suitable vessel, substantially as and for the purposes specified.

2. The process of extracting gold and silver from their ores by the combined action of mercury, electricity, and water, consisting in forcing mercury, either hot or cold, in the form of very fine globules or spray, into a column of water containing the ore, sand, &c., descending with a constant velocity, causing currents of electricity to traverse the descending column, and collecting the amalgam in any suitable vessel, substantially as and for the purposes specified.

3. The process of extracting gold and silver from their ores by the combined action of mercury, electricity, and water, consisting in forcing mercury, either hot or cold, in the form of very fine globules or spray, into a column of water containing the ore, sand, &c., descending with a constant velocity, thoroughly mixing the globules of mercury with the particles of ore, sand, &c., in the descending column of water, causing currents of electricity to traverse the descending column and collecting the amalgam and mercury in any suitable vessel, substantially as and for the purposes specified.

4. The process of extracting gold and silver from their ores by the combined action of mercury, electricity, and water, consisting in forcing mercury, either hot or cold, in the form of very fine globules or spray, into a column of water containing the ore, sand, &c., descending with a constant velocity, thoroughly mixing the globules of mercury with the particles of ore, sand, &c., in the descending columns of water, causing currents of electricity to traverse the descending column, collecting the amalgam in any suitable vessel, and causing the column of water on emerging from the vessel in which the admixture takes place to pass in a thin stream between an electrified copper plate and an electrified surface of mercury, substantially as described, and for the purposes specified.

5. The process of extracting gold and silver from their ores by the combined action of mercury, electricity, and water, consisting in forcing mercury, either hot or cold, in the form of very fine globules or spray, into a column of water containing the ore, sand, &c., descending with a constant velocity, thoroughly mixing the globules of mercury with the particles of ore, sand, &c., in the descending column of water, passing currents of electricity through the descending column, collecting the amalgam in any suitable vessel, causing the water or slime, on emerging from the apparatus in which the admixture takes place, to pass in a thin stream between an electrified copper plate and an electrified surface of mercury, and subjecting the same to further treatment with electrified mercury upon copper plates, substantially as described, and for the purposes specified.

6. The process of extracting gold and silver from their ores by the combined action of mercury, electricity, and water, consisting in forcing mercury, either hot or cold, in the form of very fine globules or spray, into a column of water containing the ore, sand, &c., descending with a constant velocity, thoroughly mixing the globules of mercury with the particles of ore, sand, &c., held in suspension in the descending column of water, passing currents of electricity through the descending column, collecting the amalgam in any suitable vessel, causing the water or slime on emerging from the apparatus in which the admixture takes place to pass in a thin stream between an electrified copper plate and an electrified surface of mercury, subjecting the same to further treatment with electrified mercury upon copper plates, and collecting the residue contained in the water by the combined action of a copper plate and a mechanical collecting-blanket.

7. The process hereinbefore described of extracting gold and silver from their ores by the combined action of mercury, electricity, and water, consisting, first, in forcing any quantity of mercury, either hot or cold, in excess of what is necessary to amalgamate the precious metals contained in the ore, in the form of very fine globules or spray, into a column of water containing ore, sand, &c., descending with a constant velocity, thoroughly mixing the globules of mercury with the particles of ore, sand, &c., held in suspension in the descending column of water, passing currents of electricity through the descending column, and collecting the amalgam in any suitable vessel; second, in causing the water or slime, after passing out of the apparatus in which the first step of the process is carried on, to pass in a thin stream between an electrified copper plate and an electrified surface of mercury, and subjecting the same to further treatment with electrified mercury upon copper plates; third, in collecting the residue contained in the water by means of the combined action of a copper plate and a mechanical collecting-blanket; and, fourth, in collecting the excess of mercury used in the process, and repeating the steps, with or without the addition of new mercury, as often as may be deemed advisable.

8. In an apparatus for the extraction of gold and silver from their ores, the combination, as hereinbefore set forth, consisting of a revolving vertical mixing chamber or reservoir, a series of injectors or atomizers, whereby the mercury may be forced into said chamber in the form of fine globules or spray, a revolving agitator provided with a series of stirring-arms, and one or more sets of anodes or cathodes within said chamber, means, substantially as described, for insulating the same, a flanged copper plate or disk secured to and revolving with said chamber, an annular insulating-disk secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said mixing-chamber discharges and over which said copper disk and mixing-chamber revolve, means, substantially as described, for electrifying said copper plate and the mercury in said mercury-vessel; a series of tubes for supplying mercury to said injectors, a pump connected therewith for the purpose of retransferring the contents of said vessel to said mixing-chamber, a coil of steam-heating pipes placed in the interior of said vessel, a wheel supporting said disk and chamber, through the spokes and hub of which steam is supplied to said atomizers, a bearing within said mercury-vessel upon which said wheel, disk, and mixing-chamber revolve, and means, substantially as described, for revolving the same, an annular copper overflow-plate attached to the upper surface of the side walls of said mercury-vessel, a series of annular amalgamating riffles or troughs containing mercury formed within said plate, through which a current of

electricity can be passed, a series of annular anodes respectively placed above and in proximity to said riffles, and revolving with said copper disk, means, substantially as described, for insulating said anodes from said revolving disk, and an annular collecting-blanket surrounding the anodes and revolving with the same above the surface of said annular overflow-plate and outside of said riffles.

9. In an apparatus for the extraction of gold and silver from their ores, the combination, with the revolving mixing-chamber, of a cylindrical chamber-head, a friction-bearing, *k*, and a ball-bearing, *z'*, substantially as shown and described, for the purposes specified.

10. In an apparatus for the extraction of gold and silver from their ores, the combination, with the revolving mixing-chamber V, of a cylindrical chamber-head, N, a friction-bearing, *k*, a ball-bearing, *z'*, and a cross-head, *N'*, bolted to the cross-beam U', as shown and described.

11. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber, of an injector or atomizer situated in its hollow interior and supported within the same, substantially as shown and described.

12. In an apparatus for extracting gold and silver from their ores, the combination, with the mixing-chamber in its hollow interior, of an injector, consisting of the casting *c*, having vertical perforations, and the series of mercury injectors or atomizers, substantially as shown and described.

13. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber in its hollow interior, of an injector having a steam-supply pipe, a series of steam-escape vents, a mercury-chamber, and means, substantially as described, for causing the mercury overflowing from said chamber to pass above said vents, substantially as shown and described.

14. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber, of the vertical injector or atomizer C, with the steam-pipes s^2, the packing-box *d*, the mercury-chamber d^3, the steam-chamber d^2, the steam-vents *h h*, and the injection-ports *h' h'*, as shown and described.

15. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber, of an injector or atomizer supported within the same, and serving as an agitator-bearing, substantially as shown and described.

16. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber, of the vertical injector or atomizer C, with the steam-pipes s^2, the packing-box *d*, the mercury-chamber d^3, the steam-chamber d^2, the steam-vents *h h*, the injection-ports *h' h'*, the spindle-bearing *d'*, and the capstan-screw d^4, substantially as shown and described.

17. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber and injector or atomizer supported within the same, of the revolving agitator-spindle, supported by said injector or atomizer, and revolving in a bearing in the head of said mixing-chamber, means, substantially as described, for revolving the same, and one or more series of stirring-arms, as shown and described.

18. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber and injector or atomizer supported within the same, of an agitator-spindle supported by said injector or atomizer and revolving in a bearing in the head of said mixing-chamber, means, substantially as described, for revolving the same, one or more series of stirring-arms, a hollow mercury-cylinder surrounding the agitator-spindle and revolving within the same, and having a series of discharge-holes, one or more spiral tubes for supplying mercury to said cylinder, substantially as shown and specified.

19. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-cylinder and an injector or atomizer supported in the same, of a cylindrical mercury-reservoir in said injector or atomizer, a spindle revolving within said mixing-chamber, a hollow mercury-cylinder having a series of discharge-holes surrounding and revolving with said spindle, one or more spiral tubes for conveying mercury from said reservoir to said hollow mercury-cylinder, substantially as shown and described.

20. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber, of an injector or atomizer supported within the same and serving as an electrode, substantially as shown and described.

21. In an apparatus for the extraction of gold and silver from their ores, the hereinbefore-described combination, with the mixing-chamber, of a series of mercury injectors or atomizers introduced into the side walls of the same, having each the nozzle or mercury-chamber *n*, means, substantially as described, for attaching the same to said side walls, the hollow cross-head *c* with a cylindrical inner surface, the hollow steam-spindle *c'*, closed at one end and open at the other, having one or more steam-ports, *o*, in its side walls passing through said cross-head and extending into said nozzle, means, substantially as described, for horizontally regulating and supporting the same in said nozzle and cross-head, and for preventing the escape of steam and mercury through the space around said spindle, pipes for supplying mercury and steam to said nozzle and cross-head, respectively, and means, substantially as described, for supporting and regulating said series of atomizers or injectors.

22. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber, of a series of injectors or atomizers introduced into the side walls of the same, having each a nozzle or mercury-chamber, *n*, means, substantially as described, for securing the same to said walls, a hollow steam-spindle, *c'*, extending into said nozzle, means, substantially as described, for regulating and supporting the same and preventing the escape of mercury through the space around said spindle, and a pipe for supplying mercury to said nozzle, substantially as shown and described.

23. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber, of a series of mercury-injectors introduced into the side walls of the same, having each a hollow cross-head, *c*, a hollow steam-spindle, *c'*, passing through said cross-head, and having one or more steam-ports, *o*, in its side walls, means, substantially as described, for regulating and supporting the same and preventing the escape of steam from the space around it, and a pipe for supplying steam to said cross-head, substantially as shown and described.

24. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mixing-chamber V, of the vulcanite insulating-cylinder *u*, as shown and described, and for the purposes specified.

25. In an apparatus for the extraction of gold and silver from their ores, the combination of a vertical revolving mixing chamber or reservoir, a series of atomizers or injectors whereby mercury may be forced into said chamber in the form of very fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, one or more sets of anodes or cathodes, and means, substantially as described, for insulating the same within said chamber, and a cylindrical mercury-vessel for collecting the mercury and amalgam from said chamber, substantially as shown and described, and for the purposes specified.

26. In an apparatus for the extraction of gold and silver from their ores, the combination of a vertical revolving mixing chamber or reservoir, a series of injectors or atomizers whereby mercury may be forced into said chamber in the form of very fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, and one or more sets of anodes or cathodes, and means, substantially as described, for insulating the same within said chamber, a flanged copper plate secured to and revolving with said chamber, and a cylindrical mercury-vessel in which said disk and mixing-chamber revolve, all substantially as shown and described, and for the purposes specified.

27. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mercury-vessel A, of a copper overflow-plate surrounding and attached to the upper surfaces of the same provided with a series of amalgamating-riffles, through which an electrical current may be passed, as shown and described.

28. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mercury-vessel A, of the flanged wheel U, with the spokes *b'*, and the hollow standards *a'*, revolving horizontally in said vessel, as shown and described.

29. In an apparatus for the extraction of gold and silver from their ores, the combination, with the mercury-vessel A, of the wheel U, the ball-bearing *z*, and the vertical pillar *l*, with the rollers *l' l'*, as shown and described.

30. In an apparatus for the extraction of gold and silver from their ores, the combination, with the flanged copper plate B, of the insulating-disk *v*, with the mortised bead-collar *m*, as shown and described, and for the purposes specified.

31. In an apparatus for the extraction of gold and silver from their ores, the combination, with the flanged copper plate or disk B, of a series of anodes, and means for insulating them from said copper plate, substantially as shown and described.

32. In an apparatus for the extraction of gold and silver from their ores, the hereinbefore set forth combination, consisting of the mixing chamber or reservoir, a series of injectors or atomisers in the side walls of the same whereby mercury may be forced into the same in the form of very fine globules or spray, a mercury-vessel into which said chamber discharges, and a series of tubes for taking mercury from said vessel and supplying it back to said injectors, as shown and described

33. In an apparatus for the extraction of gold and silver from their ores, the combination, hereinbefore set forth, of the revolving mixing chamber or reservoir, a series of injectors or atomizers whereby mercury may be forced into said chamber in the form of very fine globules or spray, a mercury-vessel into which said mixing-chamber discharges, and a pump connected therewith for retransferring the contents of said vessel to said mixing-chamber.

34. In an apparatus for the extraction of gold and silver from their ores, the combination, hereinbefore described, of a revolving mixing chamber or reservoir, a series of injectors or atomizers whereby the mercury may be forced into said chamber in the form of very fine globules or spray, a mercury-vessel into which said mixing-chamber discharges, a series of tubes for supplying mercury to said injectors, and a pump connected therewith for retransferring the contents of said vessel to said mixing-chamber.

35. In an apparatus for the extraction of gold and silver from their ores, the combination of a vertical revolving mixing chamber or reservoir, a series of injectors or atomizers whereby mercury may be forced into said chamber in the form of very fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, one or more sets of anodes and cathodes, and means, substantially as described, for insulating the same within said chamber, a flanged copper plate or disk secured to and revolving with said chamber, an annular insulating-disk, substantially as shown, secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said mixing-chamber discharges and in which said disk and mixing-chamber revolve, substantially as shown and described.

36. In an apparatus for the extraction of gold and silver from their ores, the combination of a vertical mixing chamber or reservoir, a series of injectors or atomizers whereby mercury may be forced into said chamber in the form of very fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, one or more sets of anodes and cathodes within said chamber, and means, substantially as described, for insulating the same, a flanged copper plate or disk revolving with said chamber, an annular insulating-disk, substantially as shown, secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said mixing-chamber discharges, and over which said disk and mixing-chamber revolve, means, substantially as described, for electrifying said copper plate and the mercury in said mercury-vessel, a series of tubes for supplying mercury to said injectors, a pump connected therewith for the purpose of retransferring the contents of said vessel to said mixing-chamber, a coil of steam-heating pipes placed in the interior of said vessel, a bearing-wheel supporting said disk and chamber, through the spokes and hub of which steam is supplied to said injectors or atomizers, a bearing within said mercury-vessel, upon which said wheel, disk, and mixing-chamber revolve, and means, substantially as described, for revolving the same, and an annular copper plate attached to the upper surface of the side walls of said mercury-vessel, substantially as shown and described.

37. In an apparatus for the extraction of gold and silver from their ores, the combination of a vertical revolving mixing chamber or reservoir, a series of injectors or atomisers whereby mercury may be forced into said chamber in the form of very fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, one or more sets of anodes and cathodes within said chamber, means, substantially as described, for insulating the same, a flanged copper plate or disk secured to and revolving with said chamber, an annular insulating-disk, substantially as shown, secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said mixing-chamber discharges, and over which said disk and mixing-chamber revolve, means, substantially as described, for electrifying said copper plate and the mercury in said mercury-vessel, and a series of tubes for supplying mercury to said injectors, substantially as shown and described.

38. In an apparatus for the extraction of gold and silver from their ores, the combination of a vertical revolving mixing chamber or reservoir, a series of injectors or atomizers whereby mercury may be forced into said chamber in the form of very fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, one or more sets of anodes and cathodes, and means, substantially as described, for insulating the same within said chamber, a flanged copper plate or disk secured to and revolving with said chamber, an annular insulating-disk, substantially as shown, secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said mixing-chamber discharges, and over which said disk and mixing-chamber revolve, means, substantially as described, for electrifying said copper plate and the mercury in said mercury-vessel, a series of tubes for supplying mercury to said injectors, and a pump connected therewith for the purpose of retransferring the contents of said vessel to said mixing-chamber, all substantially as shown and described.

39. In an apparatus for the extraction of gold and silver from their ores, the combination, as hereinbefore set forth, of a vertical revolving mixing chamber or reservoir, a series of injectors or atomizers whereby the mercury may be forced into said chamber in the form of fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, and one or more sets of anodes and cathodes within said chamber, means, substantially as shown, for insulating the same, a flanged copper plate secured to and revolving with said chamber, an annular insulating-disk, substantially as shown, secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said mixing-chamber discharges, and over which said disk and mixing-chamber revolve, means, substantially as described, for electrifying said copper plate and the mercury in said mercury-vessel, a series of tubes for supplying mercury to said injectors, a pump connected therewith for the purpose of retransferring the contents of said vessel to said mixing-chamber, and a coil of steam-heating pipes placed in the interior of said vessel, substantially as shown and described.

40. In an apparatus for the extraction of gold and silver from their ores, the combination, as hereinbefore set forth, of a vertical revolving mixing chamber or reservoir, a series of injectors or atomizers whereby the mercury may be forced into said chamber in the form of fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, and one or more sets of anodes and cathodes within said chamber, and means, substantially as described, for insulating the same, a flanged copper plate secured to and revolving with said chamber, an annular insulating-disk, substantially as shown, secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said mixing-chamber discharges, and over which said disk and mixing chamber revolve, means, substantially as described, for electrifying said copper plate and the mercury in said mercury-vessel, a series of tubes for supplying mercury to said injector, a pump connected therewith for the purpose of retransferring the contents of said vessel to said mixing-chamber, a coil of steam-heating pipes placed in the interior of said vessel, and an annular copper overflow-plate attached to the upper surface of the side walls of said mercury-vessel, substantially as shown and described.

41. In an apparatus for the extraction of gold and silver from their ores, the combination, as hereinbefore set forth, of a vertical revolving mixing chamber or reservoir through which the water or slimes containing the ore to be treated are passed, a series of injectors or atomizers whereby the mercury may be forced into said chamber in the form of fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, and one or more sets of anodes and cathodes within said chamber, and means, substantially as described, for insulating the same, a flanged copper plate secured to and revolving with said chamber, an annular insulating-disk, substantially as described, secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said chamber discharges and over which said disk and mixing-chamber revolve, means, substantially as described, for electrifying said copper plate and the mercury in said mercury-vessel, a series of tubes for supplying mercury to said injectors, a pump connected therewith for the purpose of retransferring the contents of said vessel to said mixing-chamber, a coil of steam-heating pipes placed in the interior of said vessel, a bearing-wheel supporting said disk and chamber, through the spokes and hub of which steam is supplied to said injectors or atomizers, a bearing within said mercury-vessel, upon which said wheel, disk, and mixing-chamber revolve, and means, substantially as described, for revolving the same, and an annular copper plate attached to the upper surface of the side walls of said mercury-vessel, substantially as shown and described.

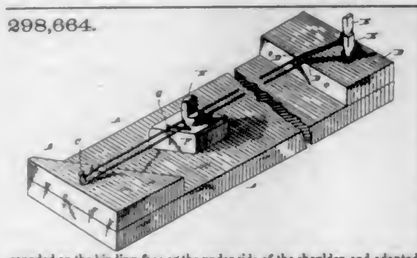
42. In an apparatus for the extraction of gold and silver from their ores, the combination, as hereinbefore set forth, of a vertical revolving mixing chamber or reservoir, a series of injectors or atomizers whereby the mercury may be forced into said chamber in the form of fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, and one or more sets of anodes and cathodes within said chamber, a flanged copper plate secured to and revolving with said chamber, an annular insulating-disk, substantially as described, secured to the lower surface of said copper plate or disk, a cylindrical mercury-vessel into which said mixing-chamber discharges, and over which said disk and mixing-chamber revolve, means, substantially as described, for electrifying said copper plate and the mercury in said mercury-vessel, a series of tubes for supplying mercury to said injectors, a pump connected therewith for the purpose of retransferring the contents of said vessel to said mixing-chamber, a coil of steam-heating pipes placed in the interior of said vessel, a wheel-bearing supporting said disk and chamber, through the spokes and hub of which steam is supplied to said atomizer, a bearing within said mercury-vessel, upon which said wheel, disk, and mixing-chamber revolve, and means, substantially as described, for revolving the same, an annular copper overflow-plate attached to the upper surface of the side walls of said mercury-vessel, and a series of annular amalgamating riffles or troughs for containing mercury formed within said plate, through which a current of electricity may be passed, substantially as shown and described.

43. In an apparatus for the extraction of gold and silver from their ores, the combination, as hereinbefore set forth, of a vertical revolving mixing chamber or reservoir through which the water or slimes containing the ore to be treated are passed, a series of injectors or atomizers whereby the mercury may be forced into said chamber in the form of fine globules or spray, a revolving agitator within said chamber provided with a series of stirring-arms, and one or more sets of anodes and cathodes within said chamber, a flanged copper plate secured to and revolving with said chamber, an annular insulating-disk, substantially as described, secured to the lower surface of said copper disk or plate, a cylindrical mercury-vessel into which said mixing-chamber discharges and over which said disk and mixing-chamber revolve, means, substantially as shown, for electrifying said copper plate and the mercury in said mercury-vessel, a series of tubes for supplying mercury to said injectors, a pump connected therewith for the purpose of retransferring the contents of said vessel to said mixing-chamber, a coil of steam-heating pipes placed in the interior of said vessel, a wheel-bearing supporting said disk and chamber, through the spokes and hub of which steam is supplied to said atomizers, a bearing within said mercury-vessel, upon which said wheel, disk, and mixing-chamber revolve, and means, substantially as described, for revolving the same, an annular copper overflow-plate attached to the upper surface of the side walls of said mercury-vessel, a series of annular amalgamating riffles or troughs for containing mercury formed within said plate, through which a current of electricity may be passed, and a series of annular anodes respectively placed above and in proximity to said riffles, and revolving with said copper disk, and means, substantially as described, for insulating said anodes from said revolving disk, substantially as shown and described.

298,664. AGRAFFE FOR PIANO SOUNDING-BOARDS. CHARLES WILLIAM BREWER, Racine, Wis. Filed Apr. 6, 1883. (No model.)

Claim.—An agraffe for piano-fortes, consisting of two parallel frets applied to the bridge of the sounding-board, and the shouldered screw

298,664.



rounded on the binding-face or the under side of the shoulder, and adapted to bear upon the wires between the frets, substantially as and for the purposes specified.

298,665. LEAD-AND-WIRE SEAL. EDWD. J. BROOKS, East Orange N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Mar. 5, 1884. (No model.)



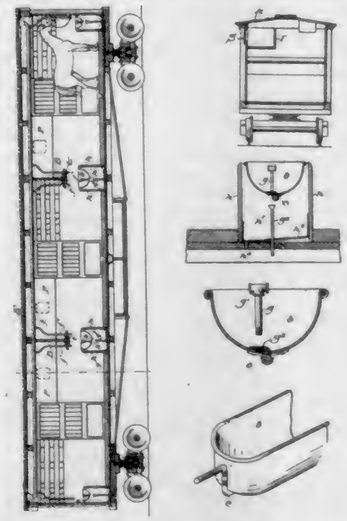
Claim.—1. In combination with a seal-disk, a shackle of single wire, flat in cross-section, provided with notches in its respective edges and with sharp-pointed teeth formed of the metal from said notches, said teeth projecting rigidly from its edges, and having their point ends directed toward the middle of the shackle, substantially as herein specified.

2. In a lead-and-wire seal, the combination of a shackle of flat wire, having its threading end or ends toothed, and provided with one or more detector enlargements at or near each extremity, and a seal-disk having threading-holes to receive said threading end or ends, substantially as herein specified, for the purposes set forth.

3. The combination, in a lead-and-wire seal, of a shackle of flat wire, having both ends notched and toothed, substantially as herein specified, and a seal-disk adapted to cross said shackle ends at its middle at the threading operation, as described, for the purposes set forth.

4. In combination with a shackle-wire, a seal-disk composed of a thin central portion of the required face-outline and diameter, and two cylindrical or semi-cylindrical portions, each having a concentric longitudinal threading-hole, and projecting equally on the respective sides of said central portion, substantially as shown, for the purpose set forth.

298,666. STOCK-CAR. GEO. D. BURTON, New Ipswich, N. H. Filed Jan. 14, 1884. (No model.)



Claim.—1. The pivoted feed-trough *b*, provided with the overflow-pipe *g*, and the trough-supporting shaft *c*, having its pivoting portion *c'* provided with a hand-wheel, *c²*, and ratchet *d*, to be held by a pawl on the car, all substantially as shown, and for the purpose described.

2. The pivoted feed-trough *b*, combined with the boxes *h'*, having the inclined bottom *h²* and the outlet *h³*, all substantially as shown, and for the purpose described.

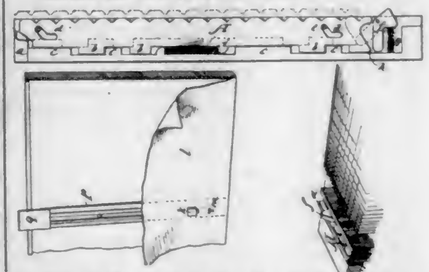
3. The car A, having transverse partitions extending part way from the top to the bottom of the car, strengthened at their lower ends by means of the transverse beams *i*, combined with feed-troughs pivoted beneath the said partitions, and extending into the compartments at either side thereof, substantially as described.

4. The feed-trough *b* and supporting-shafts *c c'* therefor, combined with the hand-wheels *c²*, and ratchet and pawl co-operating with the said shaft, substantially as described.

5. In a stock-car, the pivoted troughs *b* and operating devices therefor, combined with the boxes *h'* beneath them, and the doors *i*, affording access to the said troughs and boxes from the outside of the car, substantially as described.

6. The combination, with the feed and water trough having a threaded outlet-passage, of the hollow plug threaded at one end to enter said passage, and provided with a T-fitting at its other end, constituting a handle for said plug, which operates as an overflow for the trough, substantially as described.

298,667. PAPER-PERFORATING DEVICE. CORTLAND CARLTON, Kalamazoo, Mich. Filed Apr. 13, 1883. (Model.)



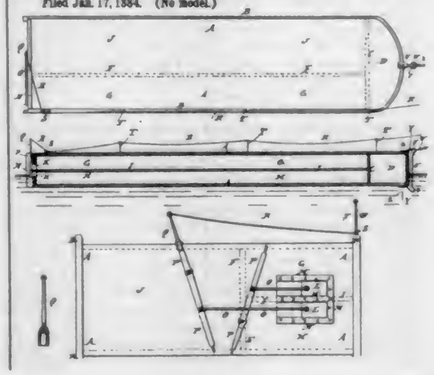
Claim.—1. The lever *f* and spring *g*, in combination with the cutter-bar A, having offsets *b*, slots *d*, point *h*, and a curved recess above the point, the spring *i*, adapted to force the bar down, and the holder-plates *a a*, having the offsets *e* and pins *c*, as and for the purpose specified.

2. In paper-perforators, the combination of bar A, formed with offsets *b*, holder B, having offsets or rests *c*, and means for causing an upward and endwise movement of the bar, substantially as shown and described.

3. The combination of frame *p* and counter *o*, of soft metal, provided with tapes *q*, with a perforator and press-plates, substantially as described.

4. The block *k*, formed with prong *m* and points *n*, in combination with a paper-perforator and tympan-sheet of a press-platen, substantially as described.

298,668. DUMPING-BOAT. MICHAEL S. COLEMAN, New York, N. Y. Filed Jan. 17, 1884. (No model.)



Claim.—1. A dumping-boat in which are constructed on but one side of its longitudinal axis upper and lower water-tight compartments provided with openings which are closed by lever-operated gates, substantially as herein shown and described.

2. In a dumping-boat, the combination, with the boat A and the gate-opening lever P, of the separable eye-standards T and the trip-line R, substantially as herein shown and described, whereby the said lever can be readily operated from the tug to open the gate and dump the load, and the said lever-sections, standards, and trip-line will be automatically detached from the boat and saved, as set forth.

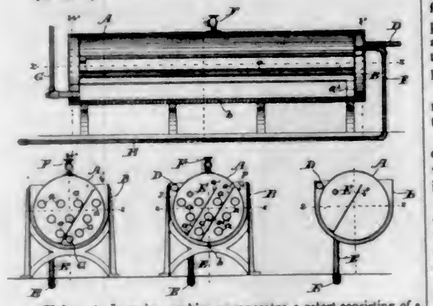
3. In a dumping-boat, the combination, with the bow of the boat, of the draw-bar U, having upper and lower loops, V, and the separable pin Y and its connecting-chain Z, substantially as herein shown and described, whereby the tow-line ring will be released automatically when the boat turns over, and can be readily raised into and secured in the upper loop without disconnecting the said tow-line, as set forth.

4. The combination, with a dumping-boat constructed with water-tight compartments having openings to admit and discharge the water for tilting or capsizing the boat, of a frame, M, provided with a tapering groove, and of a tapered gate, L, substantially as shown and described.

5. The combination, with a dumping-boat constructed with water-tight compartments having openings, of a frame, M, provided with packing N, a tapered gate, L, working in a correspondingly-tapered groove, and a lever, P, for operating said gate, substantially as shown and described.

6. The combination, with a dumping-boat, of a gate-operating lever, P, a separable lever-section, Q, and the trip-line R, substantially as herein shown and described.

298,669. RETORT FOR AMMONIA ICE-MAKING APPARATUS. MAHLON S. CONLY, Indianapolis, Ind., assignor of two-thirds to Thomas H. Butler and Orange R. Weaver, both of same place. Filed Aug. 10, 1883. (No model.)



Claim.—1. In an ice machine or apparatus, a retort consisting of a shell having tubes or pipes extending through from end to end, and partitions alternately extending from one end to near the other, in combination with the hot-water, aqua-ammonia, and gas pipes, substantially as set forth.

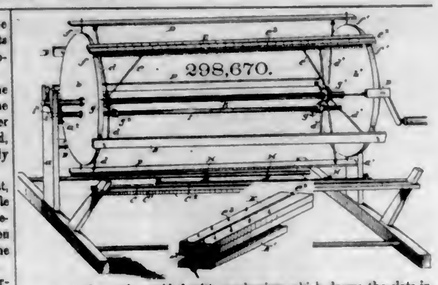
2. In a retort for generating ammonia-gas, a series of pipes and partitions whereby the aqua-ammonia is caused to flow in one direction through the retort, and the hot water is caused to flow in the other direction, thus subjecting the aqua-ammonia to a constantly-increasing heat, substantially as set forth.

3. In a retort for generating ammonia-gas, a series of pipes connecting with a hot-water inlet at one end, and arranged to secure several passages of the water through the retort before passing out at the other, and a series of partitions forming compartments connected with an aqua-ammonia inlet at a point near the hot-water outlet, and arranged to secure several passages of the aqua-ammonia through the retort in contact with the hot-water pipes before passing out at a point near the hot-water inlet, thereby subjecting the aqua-ammonia to a constantly-increasing heat and greatly increasing the amount of gas generated by the process, substantially as set forth.

4. The combination of the shell A, having pipes *a* and partitions *a' a²*, the casing B, surrounding the shell A, and having the spaces between itself and said shell divided into compartments by partitions, a hot-water-inflow pipe, C, a hot-water outflow, D, an aqua-ammonia inflow, E, an ammonia-gas outflow, F, and a weak-ammonia-liquor outflow, G, said several parts being arranged and operating substantially as shown and specified.

298,670. CLOTH MEASURING AND CUTTING MACHINE. EDWIN LODESKI CROSBY, Plymouth, Wis. Filed Mar. 8, 1884. (No model.)

Claim.—1. A contracting reel which contracts as the material is wound upon it, substantially as and for the purpose set forth.



2. A slat reel provided with mechanism which draws the slats in as the reel is revolved, substantially as and for the purpose set forth.

3. The combination, in a reel, of the slats D, collars *g g'*, sliding on the shaft of the reel, the ribs *d d'*, and feed-screw I, operating substantially as described, and for the purpose set forth.

4. In a cloth measuring and cutting machine, the slats D, in combination with a marking-bar, E, the former being adapted to draw inward, and the latter having pins which are pushed outward from the bar as the material is wound upon the reel.

5. In a cloth measuring and cutting machine, the marking-bar E, having two rows of pins and an intermediate knife-groove, substantially as and for the purpose set forth.

6. In combination with the reel of a cloth measuring and cutting machine, the marking-bar E, having several sets of diverging rows of pins, one set for each strip of cloth, and an intermediate knife-groove, substantially as and for the purpose set forth.

7. In a cloth measuring and cutting machine, the marking-bar formed of an adjustable strip and a fixed strip, one of the bars carrying pins which project through holes in the other bar, together with mechanism, substantially as shown, which gradually and continually advances the pins as the cloth is wound upon the reel, substantially as and for the purpose set forth.

8. In combination with the reel of a cloth measuring and cutting machine, the marking-bar having two diverging rows of pins and an intermediate knife-groove, substantially as and for the purpose set forth.

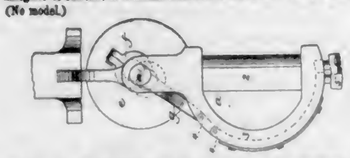
9. In a cloth measuring and cutting machine, a reel having a cloth-cutting knife, M, in combination with mechanism, substantially as shown, which gradually and continually projects the knife outward as the reel is rotated, substantially as and for the purpose set forth.

10. In a cloth measuring and cutting machine, the marking and cutting bar formed of an adjustable strip and a fixed strip, one of the bars carrying pins and a knife-blade, which can be gradually and continually projected through openings in the other bar as the cloth is wound upon the reel, substantially as and for the purpose set forth.

11. The combination, in a reel, of the slats D, the marking-bar provided with rows of pins and formed of a fixed and movable section, the collars *g g'*, sliding on the shaft of the reel, the ribs connecting the collars with the slats and the movable member of the marking-bar, and the feed-screw I, all operating substantially as described, and for the purpose set forth.

12. In a cloth measuring and cutting machine, the feed-screw I, which actuates reel, and contracting and expanding mechanism having a spur-pinion, *i*, in combination with a stud, *a²*, substantially as and for the purpose set forth.

298,671. MECHANICAL MOVEMENT. J. WESLEY DODGE, Malden, assignor of one-half to William Gordon, Boston, Mass. Filed Mar. 7, 1884. (No model.)



Claim.—1. The improved mechanical movement composed of the flexibly-supported stock *a*, adapted to be grasped by the operator's hand, and having two segmental guides, two segmental slides adapted to reciprocate in said guides, and provided with operating-tools, and mechanism for reciprocating said slides simultaneously in opposite directions, as set forth.

2. The combination of the stock having the handle portion and the segmental guides, the segmental slides 4 4, adapted to reciprocate in said guides, and provided with tools, as 5 5, the arbor *e*, journaled in the stock, and provided with two oppositely-projecting eccentrics and rods, *g g*, connecting said eccentrics with the slides 4 4, as set forth.

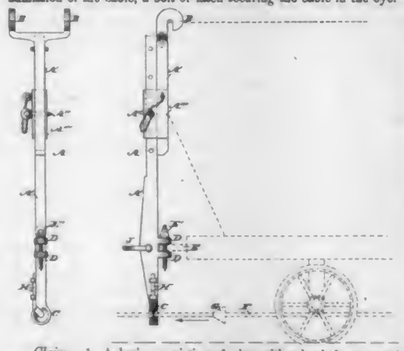
298,672. APPARATUS FOR TRANSMITTING POWER. PROSPER ACHILLE DOHM, Paris, France. Filed July 30, 1883. (No model.)



Claim.—The improvement in the means or apparatus for transmitting motion to machinery, the treadles A B, spring R, segment friction-clutch T T', acting alternately on wheels r r', to wind the spring R, which spring acts to revolve the driving-wheel E, acting to give motion, through the train of wheels P P' and pinions p p', to the wheel D, upon which the transmission-wheel V is carried, with or without brake F, and handle *m*, constructed and operating as and for the purpose herein set forth, and shown in the drawings as applied to a sewing-machine.

298,673. DEVICE FOR COUPLING CARS WITH CABLES. JOHN C. DOLAN, Houtzdale, Pa. Filed July 27, 1883. (No model.)

Brief.—An adjustable traction-bar having a hook for attachment to top of car, eyes for coupling it to the draw-links, and an open eye for admission of the cable, a bolt or latch securing the cable in the eye.



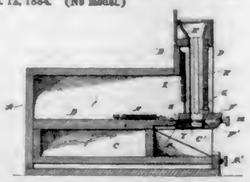
Claim.—1. A device consisting of a bar with a hook for connection with the body of a car, an eye for engagement with a traveling cable, and eyes for coupling with the draw-bar of the car, substantially as and for the purpose described.

2. A bar, A, formed of two pieces adjustably fitted together, one piece having a hook, and the other having an eye at bottom, and eyes near the bottom, substantially as and for the purpose described.

3. A bar with a hook at top, eyes near the bottom, and an open eye at the bottom, in combination with a bolt or latch for closing said open eye, substantially as and for the purpose set forth.

4. The bar with top hook, coupling-eyes, and cable-eye, in combination with a coupling-eye, J, substantially as set forth.

298,674. COIN HOLDER AND DELIVERER. JAMES L. DONNELLY, New York, N. Y., assignor of one-third to J. L. Townsley, Vincennes, Ind. Filed Jan. 12, 1884. (No model.)



Claim.—1. The combination, with the box, of the drawer arranged therein, the transverse shaft, the alarm, and mechanism for operating the same, the plates secured to the shaft, and the lever locking device connected to a crank on the transverse shaft by a rod, and extending through a slot in the back of the box and engaging with the back of the drawer to lock the same, all the parts being arranged to operate substantially as described.

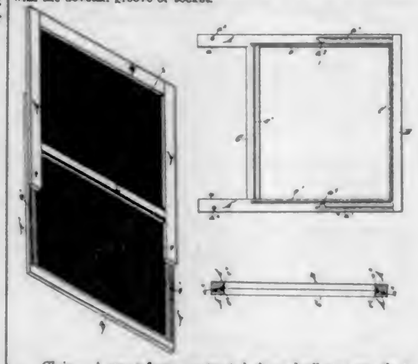
2. The combination, with the vertical holders and horizontal partition at the base of the same, of the slides provided with circular openings, and having semicircular plates secured to their under sides, the operating push-bars extending through the partition, the lever connecting them to the plates, the spring connected to the lever, the stationary plates secured to the partition, the transverse shaft, and the plates secured thereto, all operating as and for the purpose specified.

3. The combination, with the coin-receptacles, of the slides and mechanism for operating the same, and the transverse shaft and locking devices, and the plates for closing the coin-receptacles, substantially as specified.

4. The combination, with the locking devices and the transverse shaft operating the same, and the plates secured to the shaft, of the alarm consisting of a ratchet-wheel having a part only of its periphery serrated and being secured on the transverse shaft, a pawl secured to the hammer-lever and operating the same, and a bell secured to the box, all operating to lock the device and to give a definite number of alarms when the same is unlocked, substantially as described.

298,675. WINDOW-SCREEN. THOMAS W. DOWLDS, Detroit, Mich. Filed Nov. 13, 1883. (No model.)

Brief.—A window-screen consisting of two duplicate parts. The top and bottom rails are grooved and provided with dovetail sockets and tenons. The frames are readily united on one side, and the opposite side is united by springing the frames sufficiently to engage the dovetail tenon with the dovetail groove or socket.



Claim.—A screen-frame constructed of two duplicate parts, the top and bottom pieces of said parts being each provided with a dovetail socket at one end and a dovetail tenon at the other end, said socket being limited in extension to the length to which the frames may be extended, and having a side orifice, a^2, communicating therewith at one extremity, the construction being such that the two frames may be readily united upon one side, and the opposite sides be united by springing the same sufficiently to engage the dovetail tenon of the one with the dovetail socket of the other, substantially as described.

298,676. TELEPHONE-TRANSMITTER. DANIEL DRAWBAUGH, Eberly's Mill, Pa., assignor to the People's Telephone Company, of New York. Filed Nov. 12, 1883. (No model.) Patented in Belgium Jan. 10, 1884, No. 63,802.

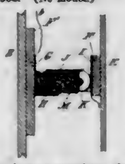


Claim.—1. In a telephone-transmitter, a box or case consisting, substantially, of a block of heavy metal, in combination with resistance-varying electrodes and circuit-connections contained in recesses or openings formed in said block, a back or base board, a means of supporting the box or case thereon, and pieces or blocks of elastic material inserted between said case and the base-board, substantially as described.

2. In a telephone-transmitter, the combination of a back or base board, a box or case containing resistance-varying electrodes, and one or more blocks or pieces of elastic material interposed between the base or back board, the box or case being sustained wholly by said elastic supports, substantially as described.

3. In a telephone, the combination of the box B, elastic blocks C, back board, A, and screws D, substantially as described.

298,677. TELEPHONE-TRANSMITTER. GEORGE W. DRAWBAUGH, Eberly's Mill, Pa. assignor to the People's Telephone Company, of New York. Filed Nov. 12, 1883. (No model.)



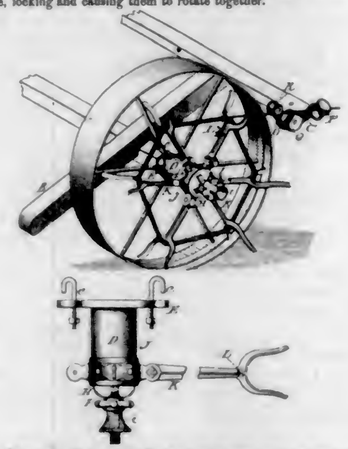
Claim.—1. In a telephone-transmitter, the combination of a diaphragm, an electrode inclined or having an inclined face placed at an angle, preferably forty-five degrees, the said electrode being pivoted or hinged to said diaphragm, and a second electrode inclined or having an inclined face to correspond to the inclination or to the inclined face of the first-mentioned electrode, the said second electrode being rigidly secured to a support and receiving upon its inclined face the inclined face of the first-mentioned electrode, which rests upon it by gravity, substantially as described.

2. In a telephone, two electrodes inclined or having faces inclined at an angle, preferably, of forty-five degrees, one electrode being rigidly fixed and the other electrode hinged or pivoted, the last-mentioned electrode resting, by gravity, with its inclined side or face upon the inclined side or face of the fixed electrode, one of said electrodes being attached to the diaphragm and the other electrode being rigidly held in a support, substantially as described.

3. The combination of the diaphragm E, carbon H, carbon M, bracket G, bracket J, bracket I, a means of hinging or pivoting said brackets I and J, and a support, B, substantially as described.

298,678. REEL FOR CHECK-ROW CORN-PLANTERS. JOHN C. DUPEE and CHARLES P. HOUSUM, Decatur, assignors to Lewis E. Waterman, Mason City, Ill. Filed Dec. 1, 1880. Renewed Mar. 2, 1883. (Model.)

Brief.—The spindle carrying the pivoted forked arms is sleeved onto a hub that is removably attached to the hub and spokes of the transporting-wheel. In paying out the cord the spindle, with its arms, is by a nut and spring-washer frictionally clamped to the hub, which admits of a rotation independent of said hub, and is controlled to prevent unwinding. In taking up the rope a key is passed through the hub and spindle, locking and causing them to rotate together.



Claim.—1. In a reel for laying a check-row wire, a sleeve, D, secured to the wheel A, and having its outer end formed into a spindle, *d*, with a conical part, *d'*, substantially as described, the hub G', with reel-arms, spring-disk H, and nuts I *i*, substantially as and for the purpose set forth.

2. In a reel for laying a check-row wire or cord, in combination, the spindle *d*, fixed to the wheel A, to rotate therewith, and hub G', provided with reel-arms, and friction spring or disk, to control the motion of the reel, substantially as and for the purpose specified.

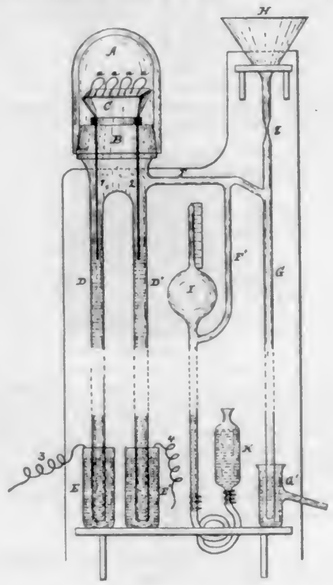
3. A reel constructed substantially as described, attached to the wheel of a corn-planter for laying and for taking up the check-row wire or cord, said reel adapted to rotate in the same or in opposite directions from the direction of rotation of the wheels of the planter, the latter motion being controlled by friction devices and the former motion controlled by a lock connecting it with the wheel, substantially as and for the purpose specified.

4. The hub G', with its forked and hinged arms K, in combination with the wheel of a corn-planter, as and for the purpose specified.

5. In combination with the fixed axle A', wheel A, journaled thereon, and a spindle fixed to said wheel, a reel journaled on said spindle, and its rotation thereon controlled by friction devices, whereby the tension of the check-row wire or rope may be regulated in laying it, substantially as and for the purpose specified.

6. In combination with the fixed axle A', wheel A, journaled thereon, and a spindle fixed to said wheel, a reel the hub of which is journaled on said spindle, and its rotation thereon controlled by a friction-disk, H, and nut I, adapted to force the reel-hub endwise into frictional contact with a surface on said spindle, substantially as and for the purpose specified.

298,679. METHOD OF TREATING CARBONS FOR ELECTRIC LIGHTS. THOS. A. EDISON, Menlo Park, N. J., assignor to the Edison Electric Light Company, New York, N. Y. Filed July 3, 1880. (No model.)



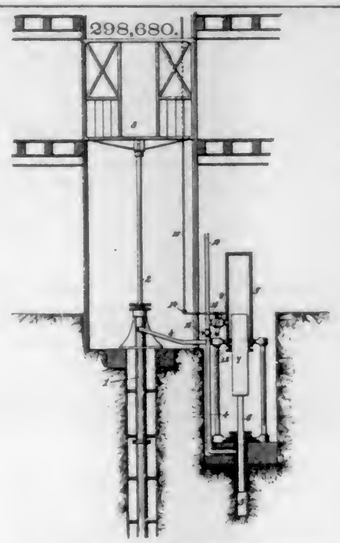
Claim.—1. The method of preparing carbons for incandescing electric lamps having broad or enlarged ends, consisting in first carbonizing the filament, converting its body into carbon, and then subjecting the broad ends or enlarged portions to the action of heat *in vacuo*, substantially as set forth.

2. The combination of a vacuum-chamber, a platform therein for the carbons, an exhausting apparatus, and means for imparting a high heat to the broad ends of the carbons while *in vacuo*, substantially as shown and described.

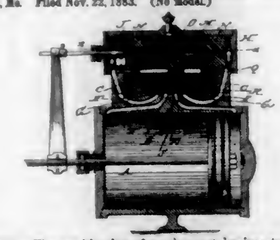
298,680. HYDRAULIC ELEVATOR. EDWD. B. ELLINGTON, Chester, County of Chester, England. Filed July 16, 1881. (No model.) Patented in England Dec. 9, 1880, No. 5,149, and in France Apr. 5, 1881, No. 142,135.

Claim.—The combination of a vertical water-tube, a receiver, and a differential piston interposed between the cylinder of a hydraulic lift and the source of water-supply, whereby the column of water acting on the said piston increases proportionally to the protrusion of the plunger from the lift-cylinder, substantially as described.

298,680.



298,681. STEAM-ACTUATED VALVE. GEORGE EDMUND ELLIOTT, Calais, Me. Filed Nov. 22, 1883. (No model.)



Claim.—The combination of a valve-seat having steam-channels opening at the center and exhaust-channels opening at the sides of the steam-channels, and extending upward, a steam-chest forming a cylinder at its upper end, having ports at its ends connecting with the lower exhaust-channels, and ports opening into the upper exhaust-pipes, and having the live-steam pipe entering at its side, a double-headed piston sliding in the cylindrical portion of the steam-chest, and having a longitudinally-slotted central portion, and a slide-valve consisting of two cups connected by a yoke extending up into a lug projecting into the slot in the piston, as and for the purpose shown and set forth.

298,682. WEATHER-BOARD GAGE. DWIGHT H. FINCH, Aurelia, Iowa. Filed Sept. 23, 1883. (No model.)

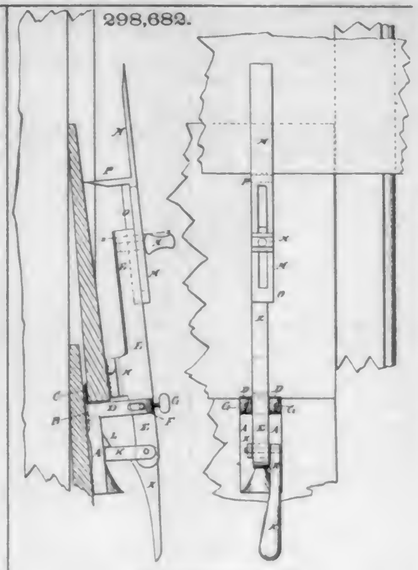
Claim.—1. The combination of a gage-board having at its lower part the toothed bar A, roughened on the lower part of the forward side, rabbeted and provided with the slotted stud D, the steel plate or weather-board B, fastened in the rabbet of bar A, and having spurs C C on its forward end, the adjustable bar E, pivoted in the slot of said stud, and having on its forward side a jaw, H, at the upper side of said stud, and the pivot-pin F, all substantially as shown and described.

2. In a weather-board gage, the combination, with the weather-board having spurs C C, and the bar E, having jaw H, of the elbow-lever K, having an arm resting against said jaw and operating as a cam upon bar E, whereby the weather-board may be clamped between the jaw and spurs, as described.

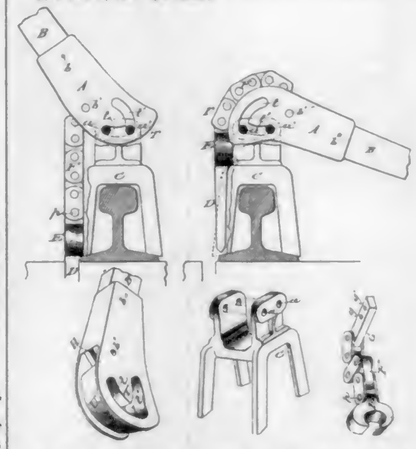
3. In a weather-board gage, the combination, with the jaw H, having tapered dovetailed groove, of the rubber plate J, having tapered dovetailed rib, substantially as herein shown and described, whereby the said jaw is kept from marring the weather-boards, as set forth.



298,682.



298,683. NAIL-EXTRACTOR. HERVEY W. FOWLER, Chicago, Ill. Filed Feb. 11, 1884. (No model.)



Claim.—1. The lever-bar socket A, having a continuous bifurcated slot, T, and which, turning upon and around the stationary axes *a* and *a'*, in combination with them, turns upon two separate fulcrums without breaking in its motion a point of contact between the periphery of the drum-face U and an imaginary perpendicular line touching it when at rest, substantially as specified.

2. In a spike or nail extractor, the combination of the jointed claw-shaft F and the drum-faced and slotted lever-bar socket A with the stand C, having the stationary axes *a* and *a'*, all substantially as and for the purpose specified.

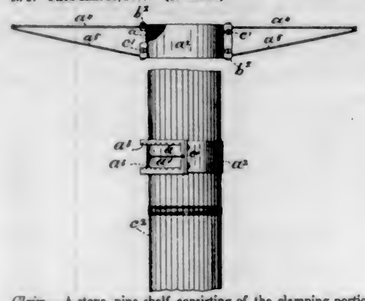
298,684. PRESERVING THE AROMA OF COFFEE. MOSES FIELD FOWLER, Boston, Mass. Filed June 11, 1883. (No specimens.)

Claim.—1. In the treatment of coffee to preserve its aroma and obviate its injurious properties, the improvement consisting in immersing the coffee in an infusion or decoction of flaxseed and then drying, substantially as described.

2. The process of treating coffee, consisting in steeping or macerating flaxseed in water to form an infusion or decoction, immersing the roasted coffee-berry while hot therein, and drying, substantially as described.

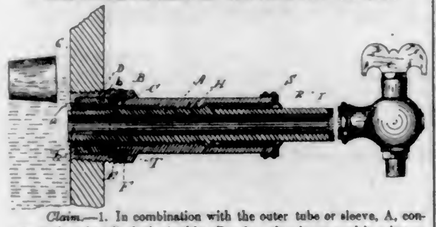
3. As a new article, coffee impregnated with an extract or decoction of flaxseed, substantially as described.

298,685. STOVE-PIPE SHELF. FREDERICK A. GARDNER, Buffalo, N. Y. Filed Mar. 16, 1883. (No model.)



Claim.—A stove-pipe shelf consisting of the clamping portions *a* *a'* a^2, the semicircular wire *b*, and rods a^4 a^5, having their ends terminating in hooks and connected to the part *a* by being passed through the notches a^3 and then through perforations, substantially as specified.

298,686. FAUCET FOR DRAWING BEER AND OTHER LIQUORS. PETER GARDNER, San Rafael, Cal. Filed Oct. 10, 1883. (No model.)

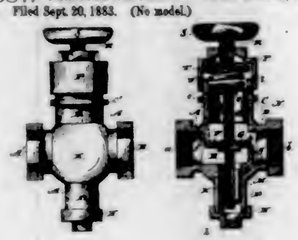


Claim.—1. In combination with the outer tube or sleeve, A, constructed as described, the bushing D, adapted to be secured in a keg or vessel, the internal tube, I, screw-threaded externally, and the screw-threaded annulus adapted to be secured in the internally-threaded bushing D, substantially as and for the purposes specified.

2. In a faucet, the combination, with the bushing D, having its exterior threaded and provided with the inner annular flange, *a*, and the internally-threaded offset at its forward end, and the tube I, substantially as shown, of the sleeve A, having the internal threads, H, the externally-threaded forward extension to engage the threaded annulus T in the bushing D, and the lining *b*, all adapted to operate substantially as and for the purposes specified.

3. In a faucet, the combination, with a vessel having an externally-threaded bushing, of the sleeve A, having its forward and rear ends respectively provided with external threads, the draft-tube I, the gland R, and internally-threaded cap S, with suitably-interposed packing between the gland-cap and tube to form a fluid-tight joint between the sleeve and the draft-tube, substantially as specified.

298,687. PRESSURE-REGULATOR. JOHN F. GODDING, New Haven, Conn. Filed Sept. 20, 1883. (No model.)



Claim.—1. In a pressure-regulator, the high and low pressure chambers, the dividing-partition provided with a connecting-opening, the hollow valve-rod passing through the opening and provided with a valve-head to close said opening on the high-pressure side of the dividing-partition, the piston or equivalent device attached to the rod acted upon by the pressure in the high-pressure chamber alone, and forced outward thereby with a force equal to that exerted by said pressure upon the valve-head to force it and the rod inward to close the valve, the piston or equivalent device on the other end of the rod, adapted to be acted upon by the pressure in the low-pressure chamber to move the valve-rod so as to close the valve, and an adjustable spring device or its equivalent adapted to exert a yielding force upon the rod to move it so as to open the valve, substantially as and for the purpose set forth.

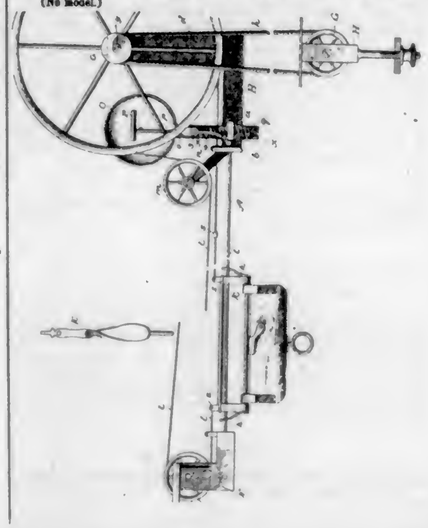
2. In a pressure-regulator, the high and low pressure chambers, the dividing-partition F, the valve-opening therein, the valve-rod provided with a longitudinal passage, the valve-head thereon acting on the high-pressure side of the partition, the piston on the outer end of the rod working in a cylinder open to the air beyond the piston, and having an area equal to that of the portion of the valve-head upon which the contents of the high-pressure chamber exert an inward pressure to close the valve, the piston on the other end of the rod working in a closed cylinder and adapted to be pressed outward by the pressure in the low-pressure chamber, so as to close the valve, and adjustable means for exerting a yielding pressure upon the valve-rod to move it so as to open the valve, all combined and operating substantially as shown and described.

3. The combination of the casing having the central valve-chamber divided into the high and low pressure chambers and the upper and lower hollow cylindrical portions connected therewith, the valve-rod carrying at each end a piston-head working in one of the cylindrical portions, and provided with a longitudinal passage opening at each end into the space beyond the piston-head and outside of the valve-chamber, the cap closing the end of the upper cylindrical portion of the casing, and adjustable means for exerting a yielding downward pressure on the valve-rod to open the valve against the action of the pressure in the pipes, substantially as and for the purpose described.

4. The combination of the casing having the central valve-chamber divided into the high and low pressure portions and having the upper and lower cylindrical chambers, the pistons working in the latter, the cap on the upper cylinder, the hand-screw working through the cap, the follower thereon within said cap, the spring between follower and the top of the piston, and the valve-rod attached at each end to one of the pistons, and provided with a longitudinal passage opening into the space beyond the pistons and outside of the valve-chamber, substantially as and for the purpose set forth.

5. In combination with the valve, its operating-piston working in a suitable cylinder, the cap upon the cylinder for inclosing and holding the pressure-spring and its adjusting mechanism in place, and the valve-rod provided with a longitudinal passage opening into the space above the piston and into the open air below and outside of the valve-chamber, substantially as and for the purpose set forth.

298,688. CASH-CARRIER. RICHARD GORNALL, Baltimore, Md., assignor of one-half to George A. Dubreuil, same place. Filed Apr. 3, 1884. (No model.)



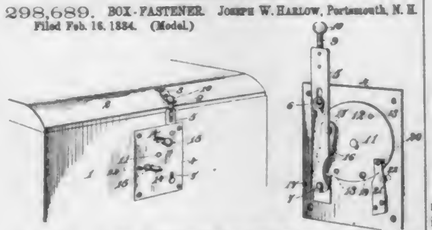
Claim.—1. The endless cord or wire, combined with the driving-wheel at one end and a supporting-wheel at the other, a frame adapted to support the car or pouch included in the endless wire or cord, the wheels and cord or wire being adapted to move freely, and freely-moving devices connected to the driving-wheel and pulley G, arranged within reach of the salesman, whereby the car or pouch may be propelled in either direction, substantially as described.

2. The endless cord or wire, combined with the driving-wheel at one end and a supporting-wheel at the other, a frame adapted to support the car or pouch included in the endless wire or cord, the wheels and cord or wire being adapted to move freely, and freely-moving devices connected to the driving-wheel and pulley G, arranged within reach of the salesman, whereby the car or pouch may be propelled in either direction, and a bell provided with a lever adapted to be operated by the bead upon the wire, substantially as described.

3. The endless cord or wire, combined with the driving-wheel at one end and a supporting-wheel at the other, a frame adapted to support the car or pouch included in the endless wire or cord, the wheels and cord or wire being adapted to move freely, and freely-moving devices connected to the driving-wheel and pulley G, arranged within reach of the salesman, whereby the car or pouch may be propelled in either direction, and a wire or band, *l'*, substantially as described.

4. In combination, the cord or wire *l*, its supporting and driving wheel, a bell mounted upon the bracket near the driving-wheel, and a bead upon the cord or wire *l*, adapted to operate the bell through the slotted arm 4, all substantially as described.

298,689. BOX-FASTENER. JOSEPH W. HARLOW, Portsmouth, N. H. Filed Feb. 16, 1884. (Model.)

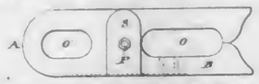


Claim.—1. The combination of an elastic or spring sliding plate, a rigid locking-head secured thereto, a rotating disk, an arm connecting the disk and sliding plate and pivoted to both to slide it longitudinally for engaging or disengaging the rigid locking-head from a catch on a lid or cover, and a knob connected to the disk to rotate it, substantially as described.

2. The combination of a catch consisting of a claw or fork adapted to receive a shank, and having a recess at and around the union of the arms forming the claw or fork, a rigid locking-head adapted to fit the recess, attached to a shank adapted to pass into the claw or fork, a spring or elastic plate carrying the shank and head, a rotating disk, and an arm connecting and pivoted to the disk and plate, whereby rotation of the disk causes reciprocation of the plate to permit the engagement or disengagement of the catch and locking-head, substantially as described.

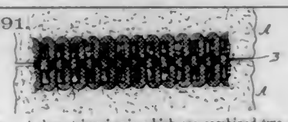
3. The combination, with a catch on the box-lid, of a spring or elastic sliding plate carrying a rigid locking-head and capable of springing laterally to engage and disengage the locking-head and the catch on the lid, a rotating disk, an arm connecting and pivoted to the disk and plate, a spring-catch for holding the disk against rotation, and a knob or handle to rotate the disk for drawing the plate downward when its locking-head engages the catch on the lid to clamp the lid on the box, substantially as described.

298,690. CAR-COUPLING LINK. DANIEL HAYES, Cambridgeport, Mass. Filed Sept. 24, 1883. (No model.)



Claim.—The herein-described coupling-link, having slots in each end for coupling-pins, and a hooked jaw pivoted upon the body of the link opposite to a corresponding jaw in the body of the link, against which its free end is pressed by a spring forming one of the slots, (the other slot being formed in the body of the link,) said jaws being so formed as to be opened by the pressure of the coupling-pin in entering the slot, substantially as described.

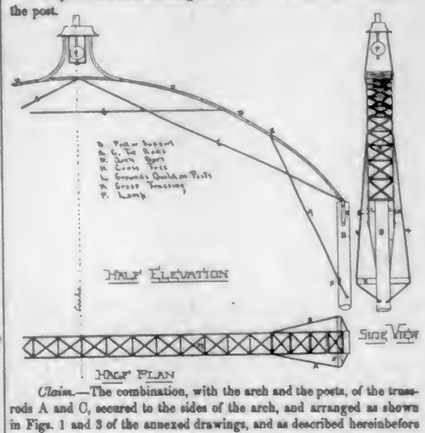
298,691. DRESS-TRIMMING. ADOLPH HIRSCH, New York, N. Y. Filed Feb. 21, 1884. (No model.)



Claim.—A dress-trimming in which are combined two strips of fur and a strip of braid united to both fur strips, substantially as and for the purpose described.

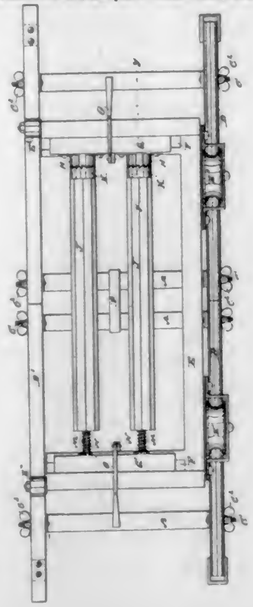
298,692. SKELETON ARCH FOR THE SUPPORT OF ELECTRIC WIRES. GEORGE M. HOAG, Evansville, Ind. Filed Sept. 24, 1883. (No model.)

Brief.—Truss-rods crossing each other are secured to the arch and the post.



Claim.—The combination, with the arch and the posts, of the truss-rods A and C, secured to the sides of the arch, and arranged as shown in Figs. 1 and 3 of the annexed drawings, and as described hereinbefore in this specification.

298,693. QUILTING ATTACHMENT FOR SEWING-MACHINES. GEORGE O. HOUCK and CHARLES SMITH, Springfield, Ohio, assignors of one-third to Richard H. Houck, same place. Filed Oct. 13, 1883. (No model.)



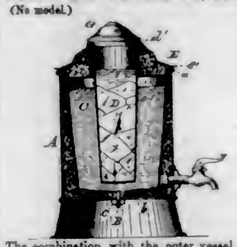
Claim.—1. In a quilting attachment for sewing-machines, the combination, with the rails D D', of the frame E, the rollers E' E', the sliding bars G G', held in the end bars of the frame, the clamps O, pivoted to the bars G, the rollers J, the ratchets H and K, and the springs N, substantially as herein shown and described.

2. In a quilting attachment for sewing-machines, the combination, with the rails D D', of the frame E, the bars G G', sliding in the end pieces of the frame, the rollers J J, and of the clamp O, pivoted to the bars G G', for holding the said bars G G' to the end pieces of the frame E, substantially as herein shown and described.

3. The combination, with the cross-bars A, supported by legs A', of the longitudinally-slotted clips B, secured to the ends of the bars A, the sliding plates C, the bolts C', the winged nuts C', the track-rails D D', a carriage resting on the track-rails D D', and of rollers held in the carriage, to which rollers the quilt can be fastened, substantially as herein shown and described.

4. The combination, with the cross-bars A, supported by legs A', of the longitudinally-slotted clips B, having flanges B', the sliding plates C, the bolts C', the winged nuts C', the track-rails D D', a carriage resting on the track-rails D D', and rollers held in the carriage, to which rollers the quilt can be fastened, substantially as herein shown and described.

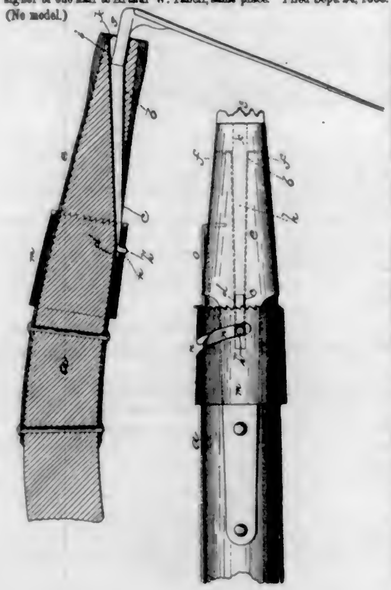
298,694. WATER-COOLER. EDGAR B. JEWETT, Buffalo, N. Y. Filed Mar. 5, 1884. (No model.)



Claim.—1. The combination, with the outer vessel, A, having the water-receptacle seated therein, of the lid E, having the receptacle D rigidly secured thereto, substantially as specified.

2. In a water-cooler, the combination, with the outer vessel, A, having the receptacle C seated therein and secured to the bottom portion thereof, of the lid E, having a central opening for the passage of the receptacle D, provided with a lid, G, substantially as specified.

298,695. TOOL-HANDLE. JAMES P. JOHNSON, Washington, D. C., assignor of one-half to Arthur W. Tancil, same place. Filed Sept. 24, 1883. (No model.)



Claim.—1. The combination, in a handle for farm or garden tools, with the inclined tang-seat and metal socket having the recesses *f f* and registering terminating slots and inclined seat in its ferrule end, of the tang having the head provided with an inclined lug to fit the inclined recess or seat, and a toe, A, at its point, and the slotted ratcheted sleeve engaging the toe by its slot and a retaining-spring by its ratchet to hold the tool in place, substantially as specified.

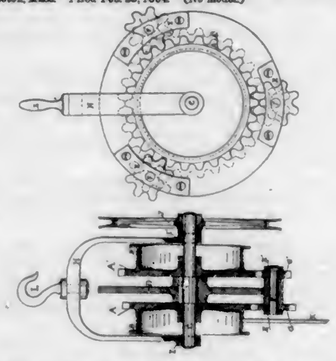
2. The combination, with the handle and the tang seated in an inclined tang-seat, and provided with a toe at its point, of the retaining-spring and the ratcheted slotted sleeve, substantially as specified.

298,696. CARTRIDGE-SHELL. GEORGE KYNOCH, Witton, near Birmingham, County of Stafford, England. Filed Jan. 9, 1882. (No model.) Patented in England Nov. 1, 1881, No. 4,776.



Claim.—The improvement in the art of manufacturing cartridge-shells, which consists in making the shell or tube with a complete bottom having a central recess and applying thereto an external flanged head provided with an inwardly-projecting nipple, forming the percussion-chamber, and then subjecting the parts thus connected to a drawing and heading pressure, whereby the cap is made to closely fit the configuration of the bottom of the tube or shell and the two parts are intimately united with each other, substantially as described.

298,697. DIFFERENTIAL GEARING. RICHARD LAVERY, South Boston, Mass. Filed Feb. 23, 1884. (No model.)



Claim.—1. The combination of two external toothed gears of equal diameters and number of teeth, mounted and free to revolve upon a central axis, with one or more sets of coupled pinions of unequal diameters and number of teeth, free to revolve and carried upon bearings secured to the rim of a central wheel, said pinions rolling around and gearing into the two external toothed gears, for the purpose specified.

2. The combination of two external toothed gears of unequal diameters and number of teeth, mounted and free to revolve upon a central axis, with one or more sets of coupled pinions of equal diameters and number of teeth, free to revolve and carried upon bearings secured to the rim of a central wheel, said pinions rolling around and gearing into the two external toothed gears, for the purpose specified.

3. The combination of two external toothed gears of unequal diameters and number of teeth, mounted and free to revolve upon a central axis, with one or more sets of coupled pinions of unequal diameters and number of teeth, free to revolve and carried upon bearings secured to the rim of a central wheel, said pinions rolling around and gearing into the two external toothed gears, for the purpose specified.

4. The combination of the two central external toothed gears, A A', with the coupled pinions G G', G G', G G', shafts F F F, outside bearings, E E', E E', E E', the wheel D, central shaft, C, bearings I I', and hanger H, substantially as shown, and for the purpose specified.

5. The outside bearings, E E', E E', E E', in combination with the wheel D, shafts F F F, coupled pinions G G', G G', G G', gears A A', drums B B', and shaft C, substantially as shown and specified, and for the purpose set forth.

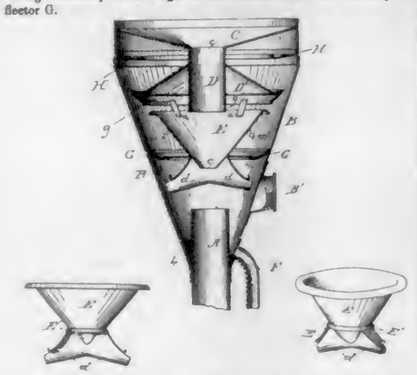
6. The combination of the two drums B B' with the gears A A', coupled pinions G G', G G', G G', bearings E E', E E', E E', shafts F F F, wheel D, and the central shaft, C, supported as described, substantially as shown, and for the purpose set forth.

7. The chambered hook M, swivel or otherwise, containing soft-metal or other packing for the protection of the rope or hoisting-rigging, substantially as shown.

298,698. CONDENSER-HEAD FOR EXHAUST-PIPES OF STEAM-ENGINES. WILFRED C. LYMAN, Chicago, Ill. Filed Sept. 10, 1883. (No model.)

Claim.—1. The combination of the deflector E, sub-deflector E', and the shell B, substantially as set forth.

2. In an exhaust-head, the combination of the shell B, deflector having outwardly-flared edges E, sub-deflector E', and auxiliary deflector G.



3. In an exhaust-head, the combination of the shell B and deflectors D' and E with the auxiliary deflector G, as set forth.

4. The combination of the shell B and the upper deflector provided with the sub-deflector *g*, the lower edges of which are slightly flared outward, with the lower deflector, substantially in the manner set forth.

5. The combination, in a condensing-head for steam-exhaust pipes, of the shell B, the upper deflector provided with the sub-deflector *g*, as described, the lower deflector provided with the sub-deflector E', and the auxiliary deflector G.

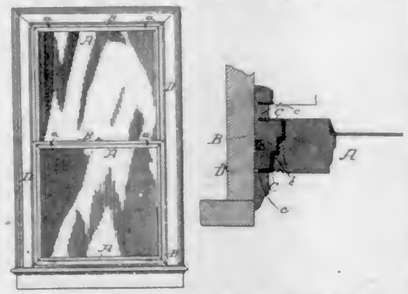
6. The combination, in a condensing-head for exhaust-steam pipes, of the shell B, upper deflector provided with the sub-deflector *g*, the lower deflector provided with the sub-deflector E', and the auxiliary deflectors G and H.

7. In an exhaust-head, the combination of the upper deflector, the lower deflector, E, provided with a sub-deflector, E', and the shell B, as hereinbefore described.

8. In an exhaust-head, the combination of the shell B, the upper deflector, the lower deflector, and the auxiliary deflector H, substantially as specified.

298,699. WINDOW. ANTON MATUSKA, Chicago, Ill. Filed Oct. 20, 1883. (No model.)

Brief.—A sliding window-sash consisting of rabbeted outer frame and sash, the former covered with a sheet-metal covering or casing which comes short of the outer edge, to permit the fitting of the same.



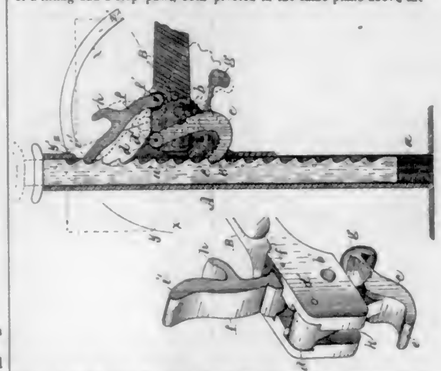
Claim.—1. In a window, as described, the outer frame having its inner edges provided with a series of inverse rabbets, which latter, together with the sides thereof, are covered with a sheet-metal casing, in combination with the inner window-sash, the outer surfaces of which are provided with a corresponding series of rabbets, substantially as set forth.

2. A sliding window-frame, the sides and inner surfaces thereof which are contiguous to an inner frame being provided with a sheet-metal covering coming short of the outer edges of said sliding frame, so as to permit the fitting of the same in position.

298,700. LIFTING-JACK. OLIVER K. MCINTIRE, Springfield, Ohio. Filed Mar. 15, 1884. (No model.)

Claim.—1. In a lifting-jack, the combination, with the lifting-bar and lever, of a lifting and a stop pawl, both pivoted in the same plane of said lever above the fulcrum of the same, the lifting-pawl being suspended below said lever, and having its pivotal end thrown outward over the fulcrum of the latter when operated, whereby the power necessary to operate in lifting is decreased toward the end of the throw of the lever, substantially as set forth.

2. In a lifting-jack, the combination, with the lever and lifting-bar, of a lifting and a stop pawl, both pivoted in the same plane above the



fulcrum of said lever, the pivot of the lifting-pawl being about one-half greater distance from the fulcrum-pin than the pivot of the stop-pawl, whereby said lifting-pawl is caused to lift twice the vertical height of the latter in operating the same, as set forth.

3. The combination and arrangement, with the lever and lifting-bar, of the two pawls pivoted in substantially the same plane of the lever, the lower or lifting pawl being pivoted at the upper angle of the end of said lever, suspended through a slot therein below the same, and provided with a weighted knob extending therefrom, to disengage it from the lifting-bar and to aid it by its gravity in engaging therewith, substantially as set forth.

4. In a lifting-jack, the combination, with standard *a*, lifting-bar *a'*, and lever B, with slot *k*, of pawls *c* and *f*, pivoted to the latter, as described, said pawl *c* being suspended below said lever and provided with a weighted knob, and adapted to be operated substantially as set forth.

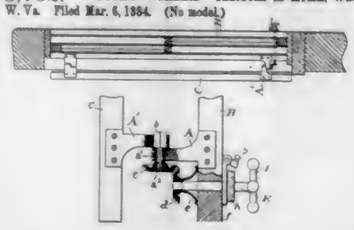
298,701. PITMAN. LEBBEUS BALDWIN MILLER and PHILIP DUHEL, Elizabeth, N. J. Filed Dec. 8, 1883. (No model.)



Claim.—1. In a pitman, the combination of an opening, a fixed nut formed separate from the pitman, a block adapted to slide in said opening, and a regulating-screw provided with a thread engaging said nut, and with an extension attached to said sliding block, substantially as and for the purpose described.

2. The combination, with a pitman having an elongated opening, a nut fixed in said opening, and a block free to slide therein, of an adjusting-screw passing through the head of said pitman and engaging said nut, and provided with an extension entering said sliding block and holding it firmly in position and against lateral motion, substantially as described.

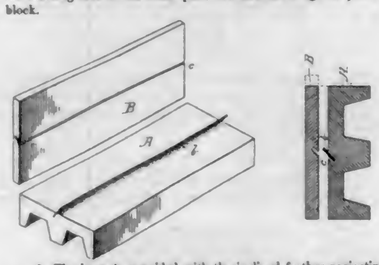
298,702. SHUTTER-WORKER. THEODORE A. MYERS, Wheeling, W. Va. Filed Mar. 6, 1884. (No model.)



Claim.—A shutter-worker having a hinge part, A, for the window-frame, with a round hole, *a*, for the pintle, a pintle having its lower part round, to fit the said hole, and its upper end, *b*, square and larger than the round part, a hinge part, A', for the shutter, having a square hole, *b'*, a bevel-gear on the round part of the pintle, another gear meshing therewith and mounted on a shaft to extend through the frame or wall, and means on the inner end of the shaft to hold it from turning, as set forth.

298,703. MEANS FOR MOUNTING STEREOTYPE OR ELECTROTYPE PLATES. ROBERT W. NELSON, Chicago, Ill., assignor to the American Press Association, same place. Filed Aug. 7, 1882. (Model.)

Claim.—1. A base-block and a stereotype-plate, the two parts meeting each other on one plane, in combination with an inclined key or lug extending from the meeting face of one part into an inclined recess in the meeting face of the other part, and thus securing the plate to the block.



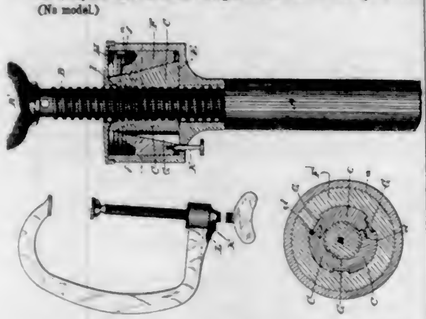
2. The base A, provided with the inclined feather projecting from the upper side thereof, which side otherwise is a plain surface, substantially as described.

3. The plate B, having a plain under side, provided with an inclined groove in said side for the reception of a feather.

4. The combination of the base with feather *b*, the latter removably inserted in an inclined groove in the upper side of and projecting above said base.

5. The combination of base A, having an inclined groove in its upper side, the feather *b*, and the plate B, provided in its under side with an inclined groove.

298,704. SCREW-JACK. DANIEL W. NORRIS, Elgin, Ill., and MICHAEL NEIL, Dayton, Ohio; said Norris assignor to said Neil. Filed Apr. 4, 1884. (No model.)



Claim.—1. The combination, with a screw-shaft, of a divided conical nut and a sliding ring or sleeve for holding the parts of the nut together and in engagement with the screw-shaft, substantially as described.

2. The combination, with a screw-shaft, of a divided conical nut and an inclosing ring or sleeve provided with inclines for opening the parts of the nut, so as to release the shaft.

3. The combination of a screw-shaft, a divided conical nut having wedge-shaped recesses, substantially such as described, and an inclosing ring or sleeve operating normally to keep the nut-sections in engagement with the shaft, and provided with projections, substantially such as described, for opening the parts of the nut when the ring or sleeve is moved longitudinally, substantially as described.

4. The combination of the screw-shaft, a divided conical nut, an inclosing ring or sleeve for keeping the parts of the nut together and in engagement with the shaft, and a spring for holding the sleeve in position.

5. The combination of a screw-shaft, a divided conical nut having the wedge-shaped recesses, the inclosing-sleeve having the wedge-shaped projections, and the spring.

6. The combination of the screw-shaft, a divided conical nut, the inclosing-ring, and means, substantially as described, for sliding the said inclosing ring or sleeve.

7. The combination of the screw-shaft, a divided conical nut, the inclosing-sleeve and the push-pin for sliding said sleeve, and the spring, substantially as described.

8. The combination, with the casing or frame of a screw jack or clamp, of a screw-shaft, a divided conical nut, and an inclosing ring or sleeve, all arranged within the casing substantially as described.

9. The combination, with the casing or frame of a screw jack or clamp, of a screw-shaft, a divided conical nut, an inclosing ring or sleeve for forcing the parts of the nut together, a spring for holding the sleeve in position, and means, substantially as described, for moving the sleeve against the tension of the spring.

10. The combination, in a screw jack or clamp, of a screw-shaft, a frame or casing having its inner lateral walls parallel, a screw-shaft, a divided conical nut, and a ring or sleeve having its interior made conical to correspond to the divided nut, and its exterior formed to correspond to the parallel walls of the casing, substantially as described.

11. The combination, in a screw jack or clamp, of a screw-shaft, a frame or casing having its inner lateral walls parallel, a divided conical nut, and a ring or sleeve having its interior made conical to correspond to the divided nut, and its exterior formed to correspond to the parallel walls of the casing, a spring operating upon the inclosing-ring, and the push-pin for moving said ring against the tension of the spring.

12. The combination of a screw-shaft, a divided nut, a casing or holder within which the divided nut is arranged, and a spring operating to force the parts of the nut together and into engagement with the screw-shaft.

13. The combination, with a screw-shaft, of a divided nut and a ring provided with one or more wedges for separating the parts of the nut, so as to disengage them from the shaft, substantially as described.

298,705. WATCH-CHAIN CHARM. FRANK T. PEARCE, Providence, R. I., assignor to Pearce & Heagland, same place. Filed June 9, 1883. (No model.)



Claim.—1. The combination, with a hollow cylindrical bar closed at one end by a cap, of the pencil-case D, provided with the watch-key E, and the sliding cap F, substantially as and for the purposes set forth.

2. The combination, with the watch-chain bar A, provided with the central ring, B, and the fixed head C, of the telescopic pencil-case D, provided with the watch-key E, and the sliding head F, constructed to cover the key and form a watch-chain bar, as described.

298,706. LINIMENT. SOPHIA POTTER, Clementsvale, Nova Scotia, Canada. Filed Apr. 19, 1883. Renewed Feb. 5, 1884. (No specimens.)

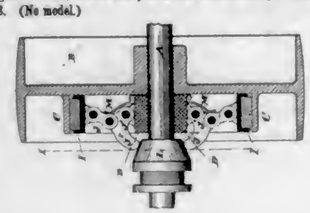
Claim.—The hereinbefore-described medical compound or liniment, composed of spirits of camphor, decoction of the leaves of the pitcher-plant, (*Nepenthe distillatoria*,) saltpeter, porpoise-oil, turpentine, laudanum, and spirits of ammonia, mixed in about the proportions set forth.

298,707. EYELET. WILLIAM H. ROCK, Baltimore, Md. Filed Feb. 11, 1884. (No model.)



Claim.—As an improved article, an eyelet of annular shape, with a lateral extension of reduced width, formed of a continuous strip of sheet metal, with two flanges set at a right angle, substantially as specified.

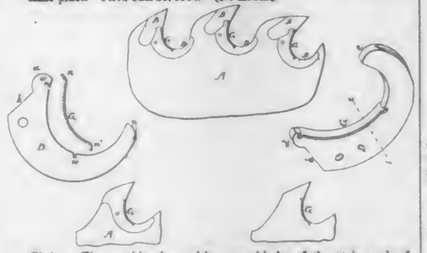
298,708. FRICTION-CLUTCH. ROBERT N. ROSS, Jeffersonville, Ind., assignor of one-fourth to Henry H. Keller, Louisville, Ky. Filed Sept. 19, 1883. (No model.)



Claim.—1. In a friction-pulley, the combination, with a flange between its rim and hub, of a collar, radially-sliding block, toggle hinging the collar and block together, having a projection to bear on a sliding collar on the shaft, and a spring to press the projection outwardly, as set forth.

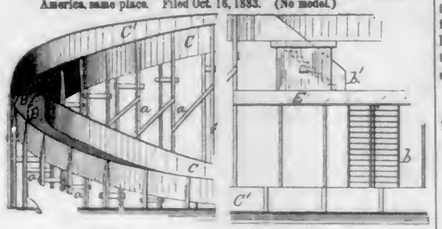
2. The combination of shaft A, pulley B, having flange C, blocks I, tight collar D, toggle-links J J' J², springs M, and sliding collar L, having a conical inner end, all substantially as shown and described, for the purpose set forth.

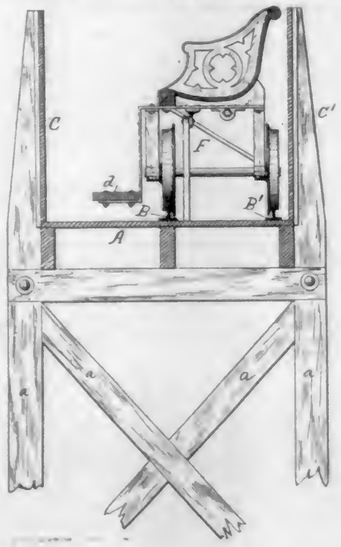
298,709. SAW. JOHN SMITH, Philadelphia, Pa., assignor to Hamilton Disston, Horace C. Disston, William Disston, and Jacob S. Disston, all of same place. Filed Jan. 23, 1884. (No model.)



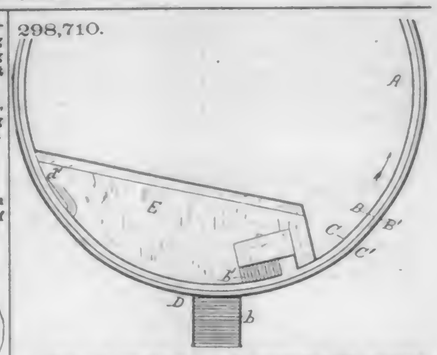
Claim.—The combination, with a saw-blade, of the strip or kerf-clearer G, adapted to the throat of a tooth, and fitted at each end into a slot in the blade, or in any of the within-described attachments thereto, substantially as set forth.

298,710. ROLLER COASTING DEVICE. PHILO M. STEVENS, Chicago, Ill., assignor, by mesne assignments, to the Roller Coaster Company of America, same place. Filed Oct. 16, 1883. (No model.)





298,710.



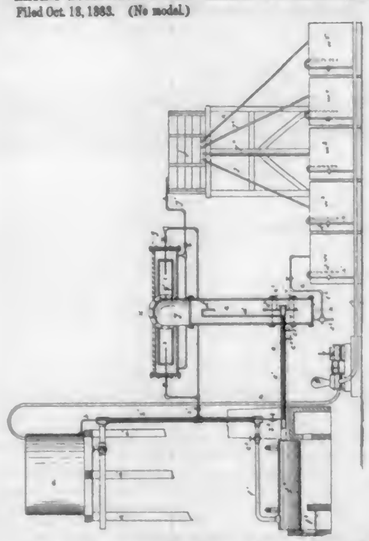
Claim.—In a coasting structure, the combination, with a continuous circular track having a part thereof at an elevation, of the trestle-work *a*, the curbing C C', the car F, and the platform E, substantially as and for the purpose set forth.

298,711. TAG. JOHN C. ST. JOHN, New York, N. Y., assignor of one-half to Fisher M. Clarke, same place. Filed Dec. 31, 1883. (No model.)



Claim.—A tag or price-ticket consisting of the card, the staple having its ends B C bent at right angles to the back A thereof into and through the card, to bring such back upon the face of the card, and the film D of adhesive material applied to the under side of the card in the line of the staple, thereby uniting the latter to the card by flowing into the perforations of the card produced by the ends of the staple, and also stiffening the card.

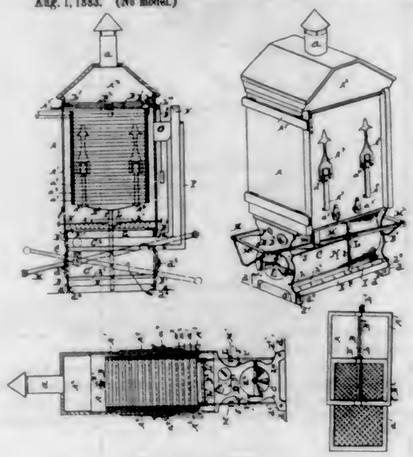
298,712. APPARATUS FOR REDUCING, REFINING, AND SEPARATING HYDROCARBON OILS. EBENEZER W. STRAIN, Allegheny, Pa. Filed Oct. 18, 1883. (No model.)



Claim.—1. In apparatus for refining, reducing, and separating hydrocarbon and other oils, a separator consisting of a series of cylinders, each having an interior pipe open at one or both ends, the interior pipe of one cylinder communicating with the shell of the next cylinder, traps leading from the bottom of the cylinders, and steam-jet pipes opening into the open end or ends of the interior pipes, substantially as and for purpose specified.

2. In apparatus for refining, reducing, and separating hydrocarbon oils, a separator consisting of a series of cylinders, each having an interior open-ended cylinder which communicates with the shell of the next cylinder, and trap-pipes leading from the several cylinders, substantially as and for the purposes specified.

298,713. FRUIT-DRIER. JEROME E. SWEETLAND, Pontiac, Mich. Filed Aug. 1, 1883. (No model.)



Claim.—1. In a fruit-drier, the combination, with the drying-chamber constructed to receive a series of trays, of the guide-rod B, a sleeve sliding on said rod, and provided with a downwardly-extending arm, and a cord connected with said sleeve to move the same forward, substantially as described.

2. In a fruit-drier, the combination, with the drying-ceamber, of the guide-rod B, the sleeve sliding on said rod, and provided with a downwardly-extending arm adapted to engage with a tray, means for moving said sleeve forward, and means for retracting the sleeve after it has been moved forward, substantially as described.

3. In a fruit-drier, the deflector and distributer composed of the diaphragm, in combination with the two sections of slats, and means for moving the two sections of slats in opposite directions to each other, substantially as described.

4. In a fruit-drier, the combination, with the furnace, of the end plates, D D', said plates constructed in duplicate, and provided with supporting-legs integral therewith, said legs constructed with flanges d^1, adapted to receive and support suitable connecting-girts, substantially as described.

5. In a fruit-drier, the combination, with the furnace, of the end plates, D D', said plates constructed in duplicate, and provided with suitable orifices, suitable coverings for said orifices, legs *d d'*, integral with said plates, said legs constructed with flanges d^1 and foot d^2, whereby the legs may be connected to a suitable base, substantially as described.

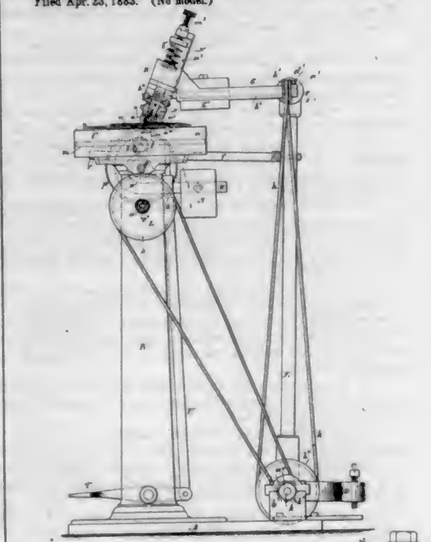
6. In a fruit-drier, the combination of the furnace, the vertically-moving yoke provided with supporting-arms at its upper end, the levers connected intermediate of their length to the yoke, and extending beyond both ends of the furnace, and means for operating said levers from either end of the furnace by hand or other power, substantially as described.

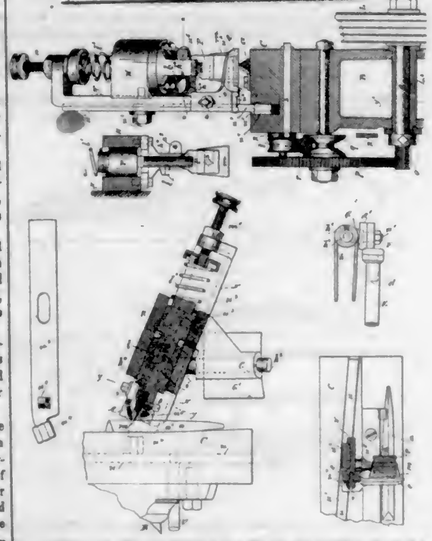
7. In a fruit-drier having a drying-chamber, a furnace below the chamber, and an escape-flue at the top of the chamber, the combination of a smoke-flue leading from the furnace outside thereof, a jacket surrounding said flue and perforated at its lower end for the admission of air, a flue connecting the jacket with the interior of the drying-chamber at its upper end for introducing heated air into the upper part of said chamber, and a series of slats for regulating and directing the entrance of heat into the lower part of the chamber, whereby dry heat is introduced into the chamber, both from its lower and upper portion, and the moisture permitted to escape through the top of the chamber, substantially as described.

8. In a fruit-drier, the combination, with the furnace, of the end plates, the girts connecting the plates, the side plate terminating above the girts, so as to form an intervening air-inlet, and the base-plate extending from one girt to the other under the furnace, substantially as described.

9. In a fruit-drier, the combination of a drying-chamber, a deflector and distributer, composed of sections of slats adapted to be moved in opposite directions to regulate and direct the entrance of heat into the chamber, spring-supports A^3, to hold trays above said slats, and the elevating-yoke to lift said trays up onto the spring-supports, whereby said trays are gradually removed from the heat-directing slats, substantially as described.

298,714. FILE-CUTTING MACHINE. CHARLES VOGEL, Fort Lee, N. J. Filed Apr. 23, 1883. (No model.)





Claim.—1. The combination, in a file-cutting machine, of a bed for the file, a cutter and cutter-head, an arm carrying the cutter-head, a shaft and cam supported by the arm, and a radius-bar connected to one end of said arm, substantially as set forth.

2. The radius-bar, a yoke at the lower end thereof, tubular journals for the same, a driving-shaft passing through the tubular journals, pulleys and belts, a cutter and cutter-head, and mechanism for moving the cutter, substantially as set forth.

3. The combination, in a file-cutting machine, of a bed to support the file, a continuously-rotating feed-pulley, a feed-bar, and a lever acting to press the feed-bar into contact with the pulley, substantially as set forth.

4. The combination, in a file-cutting machine, of the cutter-stock, cutter, and head in which the cutter-stock slides, and a rest upon the file to support the cutter-head, and mechanism for actuating the cutter and for moving the cutter-head along over the file-blank, substantially as set forth.

5. In combination with a cutter and cutter-stock, a revolving cam to raise the cutter-stock, and an adjustable rest to regulate the action of the cutter by varying the position of the cam in relation to the cutter-stock, substantially as set forth.

6. The combination, with the cutter-head, actuating-cam, and cutter, of a file-bed with guide-groove in the same, and a bar connected with the cutter-head, running in said groove to guide the cutter-head, substantially as set forth.

7. In a file-cutting machine, the combination, with the cutter, cutter-stock, and means for actuating the same, of a cutter-head, an arm carrying the same, a bed for the file-blank, and means, substantially as specified, for moving the cutter progressively and for changing the place at which the cutting-edge comes into contact with the file-blank, substantially as set forth.

8. The combination, with the grooved bed for the file-blank, of the feed mechanism, the treadle and lever actuated by the same to stop the feed, the lifter-bar in the groove, the lifter, and the cutter and cutter-head, whereby the feed is stopped simultaneously with the lifting of the cutter, substantially as set forth.

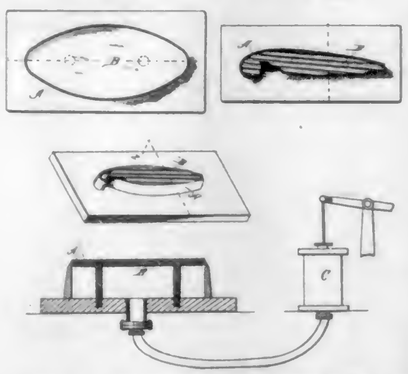
9. In a file-cutting machine, the combination, with the grooved feed-roller, of a feed-bar, a weighted lever and roller acting upon the same, mechanism for moving the feed-roller, a lifter for raising the weighted lever, a cutter-head, a radius-bar connected to the feed-bar, and an arm hinged to the radius-bar and connected with the cutter-head, substantially as set forth.

10. In combination with the cutter-head and feed-bar *r*, the feed-wheel *q*, gear-wheel *p*, changeable pinion *o'*, shaft *o*, and eccentric bushing o^2, substantially as set forth.

11. The combination, in a file-cutting machine, of a continuously-revolving cam, a cutter and stock acted upon by such cam, and adjustable mechanism for sustaining the cam and varying its position in relation to the cutter, to give greater or less motion to the cutter, substantially as set forth.

12. In a file-cutting machine, the combination, with the file-bed, of a radius-bar, an arm jointed at one end to the radius-bar, a cutter-head at the other end of the arm, a cutter and cutter-stock, and a shaft and cam sustained by the arm, and a weight upon such arm, substantially as set forth.

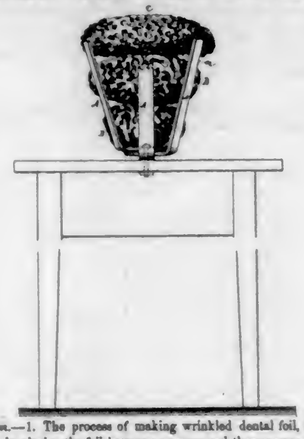
298,715. COMBINED PNEUMATIC HOLDER AND CUTTER. JOHN R. WILLIAMS, Newark, N. J. Filed Jan. 15, 1884. (No model.)



Claim.—1. The combination of an unperforated holding-platen, a cutter surrounding said platen, as shown and described, the platen being so located within the cutter that a space is left between the two, and exhaust mechanism, substantially as described.

2. The combination of an unperforated grooved platen, a cutter inclosing the same, and means for exhausting the air from between the material to be cut and the upper surface of the grooved platen, the grooves of the platen leading to a space or spaces between its outer edge and the surrounding cutter, substantially as described.

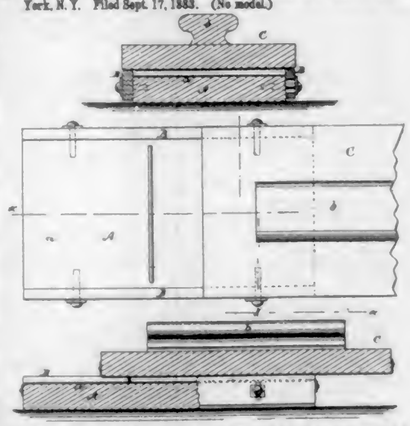
298,716. PROCESS OF WRINKLING GOLD DENTAL FOIL. RICHD. S. WILLIAMS, New York, N. Y. Filed Sept. 17, 1883. (No model.)



Claim.—1. The process of making wrinkled dental foil, the same consisting in placing the foil between sponges and then compressing the sponges vertically and laterally, thereby causing the foil to follow the wrinkled surface of the sponges, substantially as described.

2. A series of fingers or arms secured at their lower ends and diverging upward, combined with sponges confined therein and compressed laterally by the said arms as the sponges are pressed down into or between said arms, substantially as described, and for the purpose specified.

298,717. DENTAL-FOIL CONDENSER. RICHD. S. WILLIAMS, New York, N. Y. Filed Sept. 17, 1883. (No model.)



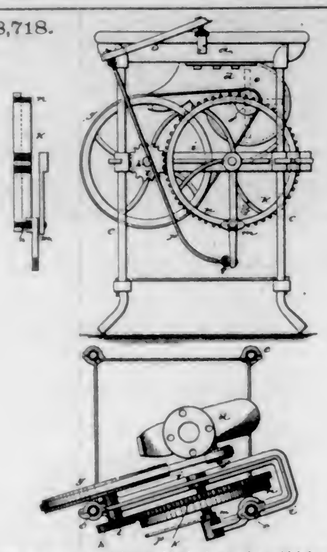
Claim.—The device hereinbefore described for rolling up dental foil, consisting of a bed, A, with adjustable guides B and a platen, C, as and for the purpose described.

298,718. FORGE. JAS. F. WINCHELL, Springfield, Ohio. Filed Sept 7, 1883. (No model.)

Claim.—1. In a forge, the combination, with the fan and its shaft, of the band-wheel and belt connecting said wheel with the fan-shaft, the pinion *i*, journaled in the adjustable bracket *i*, and the rim-flanged gear-wheel, with mechanism for operating the same, substantially as specified.

2. In a forge, substantially as shown and described, the combination, with the rim-flanged gear-wheel *k*, of the grip-clutch *m*, consisting of an arm journaled to the axle of said gear-wheel, and extending downward to the periphery thereof, where it is pivotally connected with a swinging arm provided at its upper end with inwardly-projecting jaws for gripping the flange, and at its lower end with a slot for connecting,

298,718.

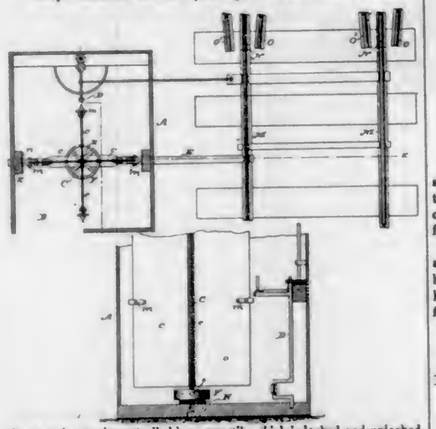


by means of the knuckle-joint *q*, with the bent rod *p*, which is connected with the lever *o*, whereby motion may be communicated to mechanism for operating the fan, as and for the purpose set forth.

REISSUES.

10,478. SAFETY-SWITCH GUARD. HENRY HARMER, Southampton, assignor to Frederick Broughton, Hamilton, Ontario, Canada. Filed Apr. 18, 1884. Original No. 289,254, dated Nov. 27, 1883. Patented in Canada Aug. 22, 1874. No. 3,770; extended Aug. 20, 1879, No. 10,375.

Brief.—Access to the hand-operating switch-lever, which is mounted



in an inclosure, is controlled by a turnstile which is locked and unlocked by the movement of the switch-rails, bolts fixed on an extended tie-bar of the switch-rails being adapted to holes in the hub of the shaft of the turnstile, whereby the movement of the turnstile to permit entrance or departure of the switchman is prevented except when the switch-rails are at the main or other predetermined position.

Claim.—1. In a safety-switch guard, the combination, with an independently-rotating turnstile and a switch box or house, of locking mechanism actuated by the movement of the switch or throw rails, to control said turnstile, all substantially as shown and described.

2. In a safety-switch guard, the combination, with a box or house containing switch-operating mechanism and an independently-rotating turnstile, of locking mechanism actuated by the movement of the switch-rails, whereby to control the turnstile, so as to prevent the egress of the switchman until the switch has been placed in line with the main-line rails, all substantially as shown and described.

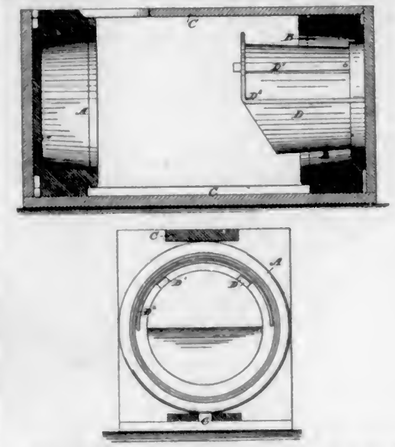
3. In a safety-switch guard, an independently-rotating turnstile having a locking disk or hub, a switch box or house containing switch-operating mechanism and locking mechanism actuated by the movement of the switch-rails to lock or unlock said turnstile, the several parts being combined to operate substantially as and for the purpose set forth.

4. The combination, with the switch and its operating mechanism, of the house A, the turnstile C, with its shaft Z and attached locking hub or wheel F, and the slide-bar E, connected with the switch, and arranged to engage with said wheel or hub when the switch is open or in connection with the siding, substantially as specified.

5. In a safety-switch guard, the combination, with the switch and its operating mechanism, house A, turnstile C, shaft Z, locking wheel or hub F, and engaging slide-bar E, connected with the switch, of the automatically-engaging catches or fastenings *m*, and one or more keepers, *n*, arranged to hold the turnstile in locked position with the slide-bar, substantially as herein described.

10,479. MACHINE FOR TRUSSING BARRELS. JOHN REID, Allegheny City, Pa. Filed Nov. 15, 1881. Original No. 132,601, dated Oct. 29, 1872.

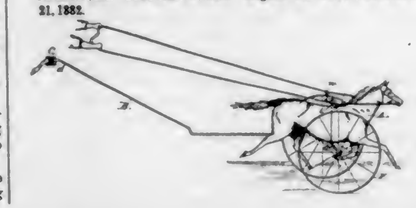
Brief.—The staves are built up between springs and carved external guides, there being a spring for each stave. The hoops are then driven on by cones which advance toward each other from opposite ends of the barrel.



Claim.—1. The mode of building barrels, consisting in placing the staves around springs and a curved bar, and then moving or converging two cones or their equals with truss-hoops toward each other simultaneously, or in one operation, and finally withdrawing the same from the finished article, substantially as set forth.

2. A machine for trussing barrels, having two cones moved toward and from each other by suitable mechanism, said cones containing the binding or truss hoops, in combination with springs and a carved bar holding the staves in position, substantially as herein shown and described, for the purposes set forth.

10,480. TRUNDLING TOY HORSE. ELIJAH J. R. WHITAKER, New York, N. Y., assignor to George W. Whitaker and William T. Whitaker, Baltimore, Md. Filed Mar. 24, 1884. Original No. 255,367, dated Mar. 21, 1882.



Claim.—1. The combination, with a flexible push tongue or rod, adapted to be sustained at one end upon or against the body of a child, of an axle and pair of wheels swiveled to the opposite end of said flexible push tongue or rod, and of lines adapted to turn and steady the axle, substantially in the manner and for the purpose herein set forth.

2. The combination, with an axle and pair of wheels swiveled to a push tongue or rod adapted to the propulsion thereof, guide-lines for steadying and steering the same, and a device representing an animal supported and carried thereby, of rings or terrets *n*, elevated over the figure of the animal and above the top of the wheels, to carry and support the guide-lines clear of entanglement with the wheels in turning, substantially in the manner and for the purpose herein set forth.

3. The combination of the axle provided with an upright steering-post, a device representing an animal loosely swiveled on the steering-post, a cross-bar rigidly attached to the steering-post above the back of the animal, and guide-lines connected to the cross-bar, as set forth.

4. A toy consisting of a device representing an animal provided with a push-tongue rigidly attached to the animal, an axle of a pair of wheels swiveled below and independent of the animal, and lines to turn the axle independent of the animal, as set forth.

5. In a trundling toy, the combination of a pair of wheels, an axle connecting the wheels, provided with an upright steering-post, a device representing an animal loosely swiveled on the steering-post and having a hole through its mouth, a cross-bar rigidly attached to the steering-post, and guide-lines connected to the cross-bar, and extending from one end thereof to and freely through the hole in the animal's mouth, and thence back to the other end of the cross-bar, as set forth.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the District of Columbia.

UNITED STATES, EX REL. JAMES S. GORTON, v. BENJAMIN BUTTERWORTH, COMMISSIONER OF PATENTS.

Decided April 14, 1884.

1. The question whether an appeal from the decision of the Primary Examiner, requiring a division of an application, should be heard by the Examiners-in-Chief or by the Commissioner, is a matter of administrative discrimination, and is not within the control or supervision of the Court, but belongs to the administrative part of the Government.
2. It is doubtful whether claims to the process and to the instrumentalities of the process constitute two subjects of patents. It would seem that the process is not patentable at all.

Before Chief Justice Cartter and Justices Cox and MacArthur.

Mr. A. Pollok for the relator.
Mr. Frank T. Brown for the Commissioner.

Chief Justice CARTTER delivered the opinion of the court.

In the matter of the United States on the relation of James S. Gorton v. Benjamin Butterworth, Commissioner of Patents, which is another application for a mandamus, a great deal of learning has been expended upon it; but after all it needed more to enlighten the court to induce them to the issuing of a mandamus. There was just enough learning and there were just enough facts exhibited to leave the court in doubt whether it ought to interfere at all. The case presented in the mandamus is a conflict or a confusion, whichever it may be entitled, between the exercise of judicial and administrative power in the Patent Office. The court has held repeatedly, and has held to-day in the case we have just decided, (*Hoe & Co.* v. *The Commissioner of Patents*,) that the Patent Office has administrative supervision of the business of that Office in its economies, its police, and its direction, and of necessity must have, and that authority is directly granted, and that as far as their administrative duties are concerned this court has nothing to do with them save by appeal, and then only in the discharge of their judicial act going into judgment. Here is a case where, to say the most of it, the case made by the relator presents a doubtful question between a juridical subject and an administrative subject. The relator complains that the Commissioner of Patents refuses, after a second rejection by the Primary Examiner, to send the case to the Examiners-in-Chief in appeal as in law entitled. The Commissioner of Patents says "Yes, I do not do it, and I do not propose to do it," upon the report of the Primary Examiner, on a second examination, who finds that the subject of the application is an application for two distinctive patents representing two distinctive rights if any. The rule of the Office under the administration of its ministerial and administrative management is, that patents shall not be granted one patent for two inventions; but where the Office finds that condition of things they will draw the surgeon's knife between them and send the party back to the administration of two distinctive subjects. And the Commissioner of Patents informs us in his return that he has, under the light of a report of the Primary Examiner, taken the subject under consideration, and, without the exercise of any judgment or having formed any opinion with reference to it, is now deliberating over it, while the party is in this court applying for a mandamus to make him deliberate faster and better. Now, if we should entertain this application it will be seen at a single glance that the administration of the Patent Office would be resolved into this court-room, and there would be there an end of that business or of the other business that pertains to this jurisdiction. We are not fond enough of this kind of practice to borrow a case or entertain one that is not clearly chargeable upon our duty. There is another thing about it. In the disclosures, as far as we are permitted to examine this case, (for we are not invited to a judicial examination of it at all; we are merely invited to the question of the propriety of practice in the Office and the duty of the administrator to the Office,) enough of the case is made apparent in its history to render it very doubtful with us whether there are two subjects of patents here. We think the Office has taken fully as liberal a view of the subject as the law allows, whether there are or not. One application is for the process and the other is an application for the instrumentalities of the process. And this process is about as indefinite in expression as the English language could well make it when it is not enlightened with something that can explain it. Now, we have just got through determining a case in appeal where we pronounced that the process was not patentable at all, and from very clear authority and clear reasoning. I mean the Brinkerhoff case. In that case a party wanted to get a patent for a form and arrangement of a speculum, a very ingenius device for doing certain kind of work, and he got it. He got two or three patents for it. Then he came back and applied for a patent for the process of applying it. We rejected it. We could not see it, although he had his speculum for us to look into it; but we could not see it at all. This looks to us very much like another case of that sort. It may not be, however. Whether so or not, we are not permitted in this process to look into it to define the judgment of the court whether it is a matter of judicial discrimination or a matter of administrative

discrimination. Apparently, it is a matter of administrative jurisdiction which, we have held all the time, and at no time more emphatically than in the case that we determined here to-day, is not within our control or supervision in any way, and ought not to be, but belongs to the administrative part of the Government.

We have concluded that under these circumstances we cannot issue this writ, but must deny it.

U. S. Circuit Court—Southern District of New York.

MUNDY *v.* LIDGERWOOD MANUFACTURING COMPANY.

Decided April 23, 1884.

1. When an inventor merely brings an old element into his machine, he makes no invention; but where he does more—dispenses with certain parts, duplicates others, rearranges, and simplifies the machine—he must be held to have made an invention.
2. When a patent is for a combination, one element of which is a gear-wheel with a cone supported in a peculiar manner, and the defendant uses the gear-wheel with the cone, but the latter is supported differently, though the elements employed by the defendant are the equivalents of those of the complainant in the patented combination, *Held* that the defendant takes the complainant's combination and infringes his patent.
3. Reissue Letters Patent No. 9,289, July 13, 1880, construed and held to cover a novel and patentable invention.

Mr. Ernest C. Webb, *Mr. Edwin H. Brown*, and *Mr. Frederic H. Betts* for the orator.

Mr. Livingston Gifford for the defendant.

WHEELER, *J.*:

This suit is brought upon Reissue Letters Patent No. 9,289, dated July 13, 1880, the original of which was No. 158,967, dated January 19, 1875, granted to the orator for an improvement in friction-drums for pile-drivers and hoisting-machines. The original had one claim. The reissue has three others and this one, which is made the fourth, and is the only one relied upon. The defenses are lack of novelty and denial of infringement. The object of these inventions is to have a drum for the hoisting-rope, which can be made to engage with, closely or loosely, and be released from gearing in constant motion, so as to be started promptly but moderately, and made to move rapidly or slowly, and to stop gradually or quickly, and be left to turn the other way, at the pleasure of the operator. The orator accomplished this by providing a conical projection on the side of the gear-wheel next to the drum, of nearly the same diameter, made of wedge-shaped pieces of wood with the broad ends outward, forming a tapering friction-surface on the ends of the wood, and a circular flange projecting from the circumference of the drum loose on the same shaft, to fit tightly over the friction-surface on the wheel when pressed toward it, and a spring coiled about the shaft between the wheel and the drum to separate the surfaces. The specification mentions a shell or flange on the side of the gear-wheel supporting the wood, and describes mechanism for pressing the drum toward the wheel and bringing the surfaces together. The claim is for the combination of the drum loose, and the gear-wheel having the friction-cone and side flange to support it and spring to repel it fast, upon the shaft, for this purpose. The defendant makes friction-drums like these in all respects, except that the wedge-shaped pieces of wood are bolted to the gear-wheel. Loose friction-drums connecting with fast gear-wheels on the same shaft, with springs coiled about the shaft to repel them, and friction-surfaces—one of metal and the other of the ends of wood—for use for other purposes, were old and well known; and Letters Patent No. 150,755, dated May 12, 1874, were granted to John Knowlson, Jr., for improvements in similar apparatus, showing a gear-wheel with similar wedge-shaped pieces of wood, separated by radiating flanges on the side of the gear-wheel, presenting friction-surfaces composed of the ends of the wood of each piece, and a drum with a similar projecting flange at each end to fit over the friction-surfaces, and a wheel revolving with but sliding along the shaft at the other end of the drum, having a similar friction-surface, with mechanism for pushing back along the shaft and bringing its friction-surface in contact with that on that end of the drum, and thereby pressing the drum along and bringing the friction-surfaces at the other end of the drum to a bearing, but without any springs to repel the friction-surfaces.

There is some contest as to which invention was first, Knowlson's or the orator's; but from the whole evidence it appears that Knowlson's was first accomplished.

It is strongly urged for the defendant that Knowlson's friction-surfaces are substantially the same as the orator's; that there was no invention in putting the spring to the same purpose in the orator's devices that it had accomplished in prior similar devices, and that the orator really invented nothing but the shell or flange on the wheel for supporting the wood of the friction-cone, which the defendants do not use. Apart from the mode of fastening the wood to the wheel, the friction-cones of Knowlson perform the same function in substantially the same way as those of the orator and of the defendant, although, perhaps, they would not wear so well as either. Each, however, may be considered for this purpose to be the mechanical equivalent of the other. Then the orator is not entitled to a monopoly of this friction-surface in such machines. It is said that beyond this he did nothing but to bring the spring of former machines into Knowlson's, which could be accomplished by the skill of good workmanship. Had this been all, the arguments would be well founded. But he did more. One spring would not have answered to repel the friction surfaces in that machine. Two would have been necessary, and of different power, one to repel the cone on the wheel not geared, and another and stronger to repel the drum, and that from the gear-wheel. The orator dispensed with one of Knowlson's friction-cones and flanges, rearranged and simplified the machine, and put the spring where it was needed or where he wanted it. This appears, after it was done, to have been easy to do; but no one did it before, and it makes a more compact, economical, and useful machine. (*Loom Co.* v. *Higgins*, 105 U. S., 580.) The patent is for the new combination. It is further strenuously urged that the gear-wheel with the cone supported in the orator's peculiar manner is one element of the combination, and that, as the defendant does not use that element, it does not infringe that combination. But the gear-wheel and friction-cone of the defendant are the equivalent in the combination to those of the orator, and by the use of them the defendant takes the orator's patented combination.

Let there be a decree for the orator for an injunction and an account, with costs.

U. S. Circuit Court—District of Indiana.

WESTCOTT *et al. v.* RUDE *et al.*

Decided April 1, 1884.

1. In an account before a master, evidence of payments for past infringement, for the purpose of ascertaining the amount which should be paid by the defendant, is incompetent. To admit it is contrary to the maxim "*Inter alios acta*," &c.
2. When the sale of licenses by the patentee has been sufficient to establish a price for such licenses, that price should be the measure of his damages against an infringer; but a royalty or license-fee, to be binding on a stranger to the licenses which established it, must be uniform.
3. Proof of a single license is not sufficient to establish a market-price.
4. In respect to two or more claims in a patent, each of value, and distinct from the other, one cannot equal all in value any more than in mathematics a part can equal the whole. A licensee may, if he choose, bind himself to pay the same price whether he use the entire invention or a part only, but at the same time he acquires the right to use all, and so his agreement may not be unreasonable; but if as against an infringer such a license can have any force, reasonably it must be in the way only of establishing a royalty for the entire invention.

Mr. H. C. Fox and *Messrs. Wood & Boyd* for the complainants.

Messrs. Stem & Peck for the defendants.

WOODS, *J.*:

The exceptions filed are numerous, but passing by others, the court will consider only those which bring into question the measure of the damages assessed. Upon this point the master says: "Plaintiffs waive all claims for profits and rely upon the proofs produced as establishing a fixed license or royalty as the measure of damages," and after giving an abstract of the testimony of the four witnesses who were examined upon the point, the report proceeds to say:

It is very difficult to determine from this evidence whether it makes proof of such an established royalty or license-fee as furnishes a criterion upon which to estimate the complainants' damages. The owner of a patent is granted a monopoly. He may choose to reserve the right to use his invention exclusively to himself and to make and sell machines, keeping all other manufacturers out of competition. He may enjoin infringers. He has the right to fix a reasonable license-fee or royalty to be paid by manufacturers who use his invention in making machines, and if fixed and reasonable, and paid by those who use the invention, such fee or royalty is a criterion upon which a computation or assessment of damages may be based. It is proved that the Wayne Agricultural Company paid the royalty of one dollar for one-horse machines and two dollars for two-horse machines for four years, a sum which, in the absence of evidence to the contrary, may be regarded as reasonable. Mast & Co. paid between two thousand dollars and three thousand dollars in cash, and conceded privileges which Westcott estimates to have been worth as much more, for infringement. It is true Westcott threatened suit, and when money is paid under threat of suit merely as the price of peace, it furnishes no evidence of the amount or value of the real claim in dispute; but the settlement made shows that Westcott was paid something substantial for the infringement, and that the fear of litigation was a small element of the settlement itself. Westcott says that he arrived at the amount by his estimate of the number of machines made by Mast & Co. and other considerations which are explained in Mast's deposition. Mast says that no estimate was made of the number of machines. Westcott says he gave licenses like the one attached to his deposition to Mast & Co. and to English & Over. Mast was examined, but not interrogated on that point. Mr. English, the active man in the firm of English & Over, says he does not recollect whether they took a license or not.

It is with considerable reluctance that I have come to the conclusion that the evidence furnishes proof of a license-fee which may be taken as a basis for damages. The defendants have undoubtedly infringed complainant's invention, and the machines made by them which are mentioned in the evidence were all made after this suit was brought. As to the point made that the evidence does not show how many of the machines made by defendants infringed one, and how many infringed both claims of plaintiffs, the master is of the opinion that the terms of the license were the same in either case, and the same fee was charged whether one or more claims were infringed. I therefore report and find that the defendants have made and sold eight hundred infringing one-horse machines, and that plaintiffs' damages on that account are eight hundred dollars, and that defendants have made and sold eight hundred infringing two-horse machines, and that plaintiffs' damages on that account are sixteen hundred dollars, making twenty-four hundred dollars his damages in full.

The clause in the license referred to by the master is of the following tenor:

Third. The party of the second part agrees to pay two dollars as a license-fee upon any two-horse drill or seeder, and the sum of one dollar on every one-horse drill or seeder, manufactured by said party of the second part, containing any of the patented improvements; provided that if the said fee be paid upon the days provided herein for semi-annual returns, or within ten days thereafter, a discount of fifty per cent. shall be made from said fee for prompt payment.

There is probably no reason to question the general principles enunciated by the master in respect to the rights of patentees in their inventions, but the court does not concur in all respects with the master's application of them in this case, nor with the conclusion reached. Some of the facts found are not, in the judgment of the court, supported by the evidence. Some items of evidence were considered by the master which, in the opinion of the court, were not admissible, and which therefore should have been allowed no weight whatever.

In respect to the royalty paid by the Wayne Agricultural Company, Westcott, the only witness to the point, testified this:

The licensees to whom these licenses were given paid the fees as stipulated. The Wayne Agricultural Company paid for four years, since which time they have paid nothing, their excuse being that they claimed to have bought an interest in the patent. We sued them in court, and the court decided that they had no title to the patent, and then they agreed to arbitrate with us, and the suit was dismissed.

This evidence does not show the payment of fees as stated by the master. It is left uncertain whether or not the fees paid "for four years" were at the rate of one and two dollars for a machine or fifty per cent. of those sums. The fair inference, perhaps, is that the Wayne Agricultural Company did for four years manufacture drills under the license, though it is not entirely clear that the license was not issued after or near the close of that period, so as to make the transaction in reality a settlement for infringements. This is certainly so in respect to the other parties named, who, if they received licenses at all, which is doubtful, received them as evidence of settlements, and these settlements, it is shown, were made either express threats or the fear of suits for infringement. If for a time the Wayne Agricultural Company made the drills under a license, the manufacture was afterward continued under a different claim or right, and when that claim had been overruled by the court, instead of settling for the infringement on the terms of the license, the company obtained an arbitration, the result of which has not been shown.

The first inquiry is whether the proof in respect to payments for infringements was admissible or ought to have been considered by the master at all. I know of no case in which it has been decided that such evidence is competent, and upon principle I am not able to see how it can be. On the contrary, it seems to me clear that it ought not to be received. Proof of license-fees charged and paid before use for the right to use an invention is admissible upon the same theory that proof of sales in open market of any marketable commodity is competent, because it shows or tends to show a market price; but settlements for past use of an invention cannot be brought within the rule, because inconsistent with the principle on which the rule rests. The infringer, or one who is accused of infringement, is, from the necessity of the situation, under compulsion of making compensation as demanded, or of taking the risk of a suit, and how much his action in a particular case of

settlement may have been influenced by this or other special considerations it is impossible for the master or court to determine, and therefore the inquiry should not be entered upon. The only way to escape the inquiry is to exclude the evidence. To admit it is contrary to the maxim "*Inter alios acta*," &c. It involves an attempt to resolve one doubt or difficulty by another. *Litem lite solvit.* There are doubtless reported cases in which it appears that such evidence was received and considered, but generally this has been done without objection, and uniformly (so far as I know) without a judicial declaration or decision that it was proper.

In the opinion of the court in *Packet Company* v. *Sickles* (19 Wall., 611) the rule is reaffirmed, as laid down in *Seymour* v. *McCormick*, (16 How., 480,) "that in suits at law for infringement of patents, when the sale of licenses by the patentee has been sufficient to establish a price for such licenses, that price should be taken as the measure of his damages against the infringer." "The rule thus declared," it is added, "has remained the established criterion of damages in cases to which it was applicable ever since;" and further on in the opinion it is said, and it affords a clear interpretation of the rule in respect to the point now mooted, "in such a case nothing is more reasonable than that the price fixed by the patentee for the use of his invention in his dealings with others and submitted to by them before using it should govern." This, it is true, is the rule of law; but the complainants waiving their right in equity to claim an account of profits have invoked the same rule here, and must abide by it as it is. See also *Black* v. *Munson*, (14 Blatch., 208;) *Greenleaf* v. *Yale Lock Manufacturing Co.*, (17 Id., 253;) *Matthews* v. *Spanyenbery*, (14 Fed. Rep., 350; 30 Southerland Damages, pp. 601, 607; 1 Greenleaf Evidence, sec. 174; Wharton Evidence, sec. 1199; Abbots Trial Evidence, 188, 189.)

It follows that the proof of damages made in this case, excepting that in reference to the license granted to the Wayne Agricultural Company, must be rejected, and should have been disregarded by the master; and this being done does there remain evidence sufficient to support the master's conclusion? It seems probable that the master himself would have thought not; as it was he came to that conclusion "with considerable reluctance."

The rule, as already stated, requires "a sale of licenses sufficient to establish a price for such licenses." "A royalty, in order to be binding on a stranger to the licenses which established it, must be a uniform royalty." (Walker on Patents, 390.) These and the like expressions and definitions found in the cases and text-books imply that proof of a single license is not sufficient; and if under some circumstances such proof might be deemed adequate, that in this instance is not of such clear and unequivocal character as to give it such weight. (*Proctor* v. *Brill*, 4 Fed. Rep., 415; *Judson* v. *Bradford*, 3 Ban. & Ar., 539; *Black* v. *Munson*, 2 B. & Gordon, 623.)

It is true in a sense, doubtless, that the owner of an invention has a right to fix his price upon it, but to constitute evidence against an infringer he must have fixed it "in his dealings with others," and not merely as a form of license which he was willing to grant. It is, as it appears to me, entirely inadmissible in law or in equity, that a patentee may, by inserting in his licenses a claim for a certain royalty, with a proviso that half that sum will be received in full in case of prompt payment, acquire a right to demand the entire sum of an infringer. If he can arbitrarily make such a discrimination, he may as well make the ratio three to one or any other proportion. The question is what is a reasonable royalty. The laws of the land fix the rates of interest for the forbearance of money, and if it be possible to make a discrimination against infringers of patents over prompt paying licensees greater than lawful interest, (except as may be done by the courts under the statutory provision for treble damages,) it must be done, as it seems to me, upon some competent evidence other than an arbitrary clause in a license or licenses, however many of them may have been issued. The same may be said in reference to the clause in the license which requires that the specified royalty shall be paid for every drill "containing any of the patented improvements." This, as it seems to me, affords no proof, certainly not conclusive proof, against an infringer that he should pay the entire royalty named in the license for infringing only one of two or more claims of a patent, unless the one infringed be shown to be the only claim which has or had any value, or that the different claims were substantially the same.

In respect to two or more claims in a patent, each of value and distinct from the other, one cannot equal all in value any more than in mathematics a part can equal the whole. The licensee may, if he choose, bind himself to pay the same price, whether he use the entire invention or a part only, but at the same time he acquires the right to use all, and so his agreement may not be unreasonable; but if as against an infringer such a license can have any force reasonably, it must be in the way only of establishing a royalty for the entire invention. This view is in accordance with authority.

In *Birdsall* v. *Cooledge* (93 U. S., 64) it appears that the alleged infringement was of one only of three claims in the letters patent, and the court says:

> Still it is obvious that there cannot be any one rule of damages prescribed which will apply in all cases, even when it is conceded that the finding must be limited to actual damages. Where the patented improvement has been used only to a limited extent and for a short time, the jury should find less than the amount of the license-fee.

See also *Proctor* v. *Brill*, *supra*; *Woosten* v. *Simonson*, (16 Fed. Rep., 680;) *Ruggles* v. *Eddy*, (2 Ban. & Arden, 627.)

Without further evidence, the plaintiff is entitled to nominal damages; but that there may not be a failure of justice, the case is remanded to the master, with direction to admit further evidence by each party if offered, and to report the same and his conclusions.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 27—No. 8. TUESDAY, MAY 20, 1884. PRICE—$5 per year

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 15, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Roland H. Thorn, of Lexington, Tennessee, be not recognized from and after this date as an attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 15, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that William H. Matthews, of Cincinnati, Ohio, be not recognized from and after this date as an attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Issue of May 20, 1884.

Patents	378	No. 298,719 to No. 299,096, inclusive.
Designs	11	No. 15,003 to No. 15,013, inclusive.
Trade-Marks	6	No. 11,188 to No. 11,193, inclusive.
Labels	8	No. 4,119 to No. 4,126, inclusive.
Reissues of patents	1	No. 10,481.
Total issue	404	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	2	
Arizona Territory			Nevada	1	
Arkansas	1		New Hampshire	3	
California	9		New Jersey	26	2
Colorado	1		New Mexico Territ'y		
Connecticut	32		New York	64	3
Dakota Territory			North Carolina		
Delaware	1		Ohio	24	1
District of Columbia	4		Oregon	1	
Florida			Pennsylvania	38	1
Georgia	1		Rhode Island	8	1
Idaho Territory			South Carolina	5	
Illinois	41	1	Tennessee		
Indiana	12		Texas	4	
Indian Territory			Utah Territory	1	
Iowa	8		Vermont	1	
Kansas	7		Virginia	3	1
Kentucky	2		Washington Territ'y		
Louisiana			West Virginia	2	
Maine	7		Wisconsin	6	
Maryland	3		Wyoming Territory		
Massachusetts	29	1	United States Army		
Michigan	10	2	United States Navy		
Minnesota	4				
Mississippi			Total to citizens of the United States	373	13
Missouri	12				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany		1
Austria-Hungary			Hawaiian Islands		
Barbadoes			Hayti		
Belgium			Ireland	1	
Bermuda			Mexico		
Brazil			New Zealand		
Canada	3		Russia		
Central America	1		Scotland	1	
Colombia, U. S. of			Sweden		
Cuba			Switzerland		
Denmark					
Ecuador			Total to citizens of foreign countries	16	1
England	8				
France	2				

DESIGNS.

15,003.—SLEEVE-BUTTON.—*Frederick F. Bioren* and *James C. Bioren*, Newark, N. J. Application filed February 16, 1884. Term of patent 7 years.

15,004.—PRINTING-TYPE.—*Henry Brehmer*, New York, N. Y., assignor to *David Wolfe Bruce*, same place. Application filed April 10, 1884. Term of patent 14 years.

15,005.—ORNAMENTATION OF SEWING-MACHINES.—*William Haehnel*, New York, N. Y., assignor to *Palm & Fechteler*, same place. Application filed March 28, 1884. Term of patent 7 years.

15,006.—BISCUIT-CRACKER.—*Josephus Hartman*, Philadelphia, Pa. Application filed September 10, 1883. Term of patent 14 years.

15,007.—ORGAN-CASE.—*Thomas Hill*, Chicago, Ill. Application filed March 25, 1884. Term of patent 3½ years.

15,008.—FIRE-PLACE HEATER.—*William H. Jackson* and *John H. Hankinson*, New York, N. Y. Application filed February 11, 1884. Term of patent 7 years.

15,009.—COAL-OIL STOVE.—*Robert Shaw Oliver*, Albany, N. Y. Application filed March 13, 1884. Term of patent 3½ years.

15,010.—NOTE-PAPER.—*William A. Pike*, Bridgeport, Conn., assignor to *Bradley A. Hard* and *Samuel Parsons*, New York, N. Y. Application filed July 7, 1883. Term of patent 7 years.

15,011.—CAPITAL LETTERS.—*Charles Schafer*, New York, N. Y. Application filed March 26, 1884. Term of patent 7 years.

15,012.—HINGE.—*William E. Sparks*, New Britain, Conn., assignor to *The Nashua Lock Company*, Nashua, N. H. Application filed February 4, 1884. Term of patent 14 years.

15,013.—ACTOR'S SHIELD.—*Charles F. Waldron*, Boston, Mass. Application filed October 27, 1883. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

11,188.—MATCHES.—*Actiengesellschaft Union Vereinigte Zündholz- und Wichse-Fabriken*, Angsburg, Germany. Application filed November 13, 1883.

"The arbitrary symbol of a cimeter, upon the blade of which the words 'TRADE MARK' are placed."

11,189.—SOAP-POWDER OR POWDERED SOAP.—*Fisk Manufacturing Company*, Springfield, Mass. Application filed February 23, 1884.

"The word 'JAPINE.'"

11,190.—VARNISHES AND LIQUID DRIERS.—*D. Rosenberg & Sons*. New York, N. Y. Application filed March 4, 1884.

"The word 'SECHINE.'"

11,191.—LEAD-PENCILS, PENCIL-HOLDERS, PEN-HOLDERS, AND OTHER LIKE ARTICLES.—*Rudolph Weissenborn*, Jersey City, N. J. Application filed February 29, 1884.

"The words 'TORTOISE SHELL.'"

11,192.—WARDROBE-BEDSTEADS.—*Spiegel & Co.*, Chicago, Ill. Application filed March 19, 1884.

"The word 'PERRLESS.'"

11,193.—PLUG AND SMOKING TOBACCO AND CIGARS.—*S. W. Venable & Co.*, Petersburg, Va. Application filed April 11, 1884.

"The words 'BLUE JEANS.'"

LABELS.

4,119.—Title: "CHAPPAQUA" (FOR SHOES.)—*Henry W. Bischof*, Chappaqua, N. Y. Application filed April 25, 1884.

4,120.—Title: "BOWERS' INFALLIBLE COUGH REMEDY."—*Isaac Bowers*, Barnsborough, N. J. Application filed April 25, 1884.

4,121.—Title: "SILVER LAKE." (FOR CANNED TOMATOES.)—*T. C. Davenport*, Philadelphia, Pa. Application filed April 8, 1884.

4,122.—Title: "A VEGETABLE CURE FOR CANCER, TUMOR AND ULCER."—*F. D. French*, Flint, Mich. Application filed April 28, 1884.

4,123.—Title: "DERMATINE" (FOR A PREPARATION FOR THE SKIN.)—*Richard Ince*, Detroit, Mich. Application filed April 22, 1884.

4,124.—Title: "WHEAT BAKING POWDER."—*Martin Kalbfleisch's Sons*, New York, N. Y. Application filed April 19, 1884.

4,125.—Title: "TEN CENT OR DIME CORN CURE."—*John E. Potter*, Providence, R. I. Application filed April 11, 1884.

4,126.—Title: "TOBACCO CURER."—*Samuel Ragendorf*, Cincinnati, Ohio. Application filed April 4, 1884.

DISCLAIMER.

8,781. (Reissue.)—*Abel Barker*, assignor to *Edward M. Lang*, Wyoming, Pa. Reissued letters patent issued July 1, 1879. IMPROVEMENT IN SOLDERING DEVICES. Disclaimer filed May 14, 1884, by the present assignees, *McMurray, Lang & Burnham*.

Enter their disclaimer to all parts of the thing patented which are or may be construed to be broader or more comprehensive than the invention as described and claimed in the original patent issued to Abel Barker on the 17th of May, 1870, and numbered 103,125, and they therefore hereby disclaim the words "rotated about or" from line 34 of the printed specification of said Reissued Letters Patent No. 8,781; and they further hereby disclaim the following claims of said reissued patent:

1. In a soldering-machine, a rod adapted to hold the can cap or lid in place, in combination with a soldering-iron mounted upon and arranged to be rotated about said rod, substantially as described.

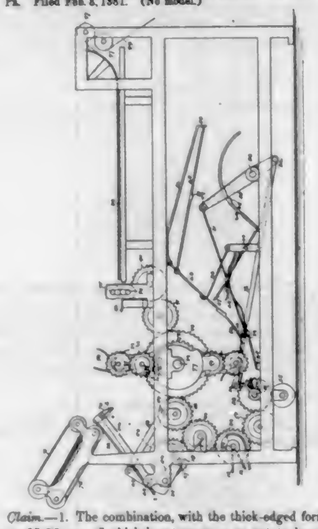
2. In a soldering-machine, a rod adapted to hold the can cap or lid in place, in combination with a soldering-iron sliding upon said rod and adapted to be rotated about it, as set forth.

3. In combination with a soldering tool or die, the rod D, passing through said tool or die to hold the can cap or lid in the process of soldering, substantially as described.

PATENTS

GRANTED MAY 20, 1884.

298,719. PAPER-BAG MACHINE. OSCAR W. ALLISON, Rochester, N. Y., assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Feb. 8, 1881. (No model.)



Claim.—1. The combination, with the thick-edged former, of feed-rolls, as 95 96, one of which is cut away, so as not to break down the edges of the tube, the revolving head which grasps the tube to carry it to the diamond-fold-forming mechanism, and mechanism operating independently of said head to form the diamond fold, all substantially as described.

2. The combination, with the revolving arms or carriers 87, of the revolving heads carried thereby, and co-operating mechanism for forming the diamond fold operating independently of said carriers, all substantially as described.

3. The combination, with the revolving arms or carriers 87, of the revolving heads carried thereby, and co-operating opening, pasting, creasing, and folding mechanism, all substantially as described.

4. The combination, with the revolving arms or carriers 87, of the revolving heads carried thereby, and co-operating opening, pasting, creasing, and folding mechanism, and mechanism for removing the completed bag, all substantially as described.

5. The combination, with the revolving arms or carriers 87, of the jaws 92 93, carried thereby, and the holding-jaws and nippers, operated independently of said carriers, for opening the diamond fold, substantially as described.

6. The combination, with the revolving arms or carriers 87, of the jaws 92 93, carried thereby, the jaws 26 27, grippers 73, and pressers 50, substantially as described.

7. The combination, with the revolving arms 87 and the revolving jaws 92 93, carried thereby, of the creasing-blades 16, substantially as described.

8. The combination, with the revolving arms 87 and the revolving jaws 92 93, carried thereby, of the revolving creasing-blades 16, substantially as described.

9. The combination, with the revolving arms 87, of the jaws 92 93 and the folding-blades 21, carried thereby, and arranged to reciprocate across the faces of said jaws, all substantially as described.

10. The combination, with the revolving arms or carriers 87, of the revolving heads carried thereby, the carrying-tapes 71 72, and the oscillating grippers 70, for taking the completed bags from said heads and delivering them to said tapes, substantially as described.

11. The combination, with the revolving arms 87, of the jaws 92 93 and the tucking-blade 18, substantially as described.

12. The combination, with the revolving arms 87, of the jaws 92 93, the tucking-blade 18, and the grippers 70, substantially as described.

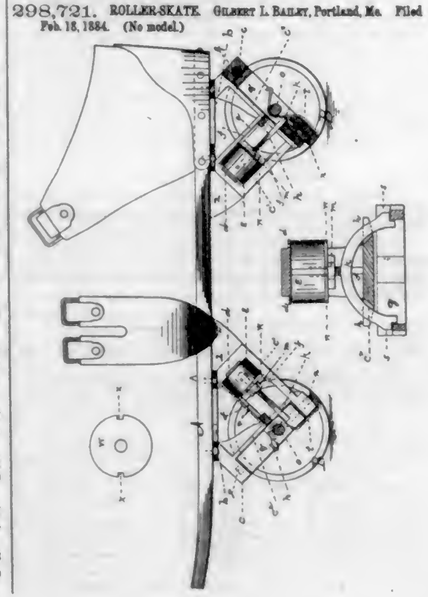
298,720. CAPSULE. LAWRENCE A. ANDERSON, Hamilton, Ohio. Filed Feb. 14, 1884. (No model.)



Claim.—1. The combination, in an improved capsule for vaginal and similar applications, with the capsule, of a filling or packing contained within the capsule and carrying the medicament by absorption, whereby when the capsule is dissolved the medicament will be retained by the said filling or packing in direct contact with the diseased parts until it is absorbed, substantially as set forth.

2. As an improved article of manufacture, a capsule for vaginal and similar applications, comprising a body adapted to receive a packing and a cap, and having a perforation in the body portion adapted for the passage of a string or cord attached to the packing, substantially as and for the purpose set forth.

298,721. ROLLER-SKATE. GILBERT L. BAILEY, Portland, Me. Filed Feb. 18, 1884. (No model.)



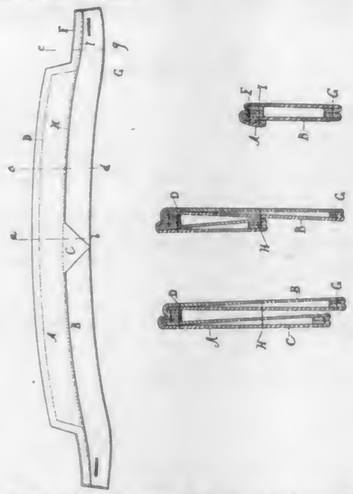
Claim.—1. In a roller-skate, the combination of plate *b*, fastened to foot-piece A, arms *c c'*, longitudinally-inclined frame, roller-carrier *g*, carrying axle *o*, having rollers mounted thereon, pivoted thereto, bar *c²*, having stops *h h* projecting laterally therefrom above said roller-carrier and adapted to strike upon the upper portion thereof, and graduating-spring E, acting thereon through the intermediate yoke, *k*, substantially as shown and described.

2. In a roller-skate, a carrier consisting of frame *q*, substantially as shown, adapted to be pivoted to the arms of a hanger and having notches cut in its sides opposite each other, in combination with an axle upon which rollers are mounted, transversely supported thereon in such a position that its longitudinal center, the pivotal center of said carrier, and the bottom of said notches will be upon the same plane, substantially as and for the purpose herein set forth.

3. In a roller-skate having a swiveling roller-carrier, a spring acting on said carrier through an intermediate yoke adapted to bear upon each side of its center of oscillation, said yoke having an adjustable screw-threaded nut and being held in its proper line of travel by a notched follower working on guides against said spring, substantially as and for the purpose herein set forth.

4. In a roller-skate, plate *b*, fastened to foot-piece A, arms *c c'*, roller-carrier *q*, supporting-axle *o*, having rollers mounted thereon and swiveled to said arms, spring-seat *d*, spring E, notched follower W in contact with said spring, guides *f f*, and yoke *k*, carrying screw-threaded nut *m*, combined and operating substantially as herein described.

298,722. COLLAR. FREDRIK BIEBERSTEIN, Jr., Troy, N. Y. Filed May 23, 1883. (No model.)

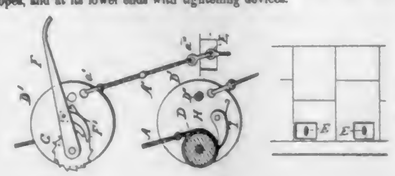


Claim.—1. In a collar composed of body and band parts, a facing integral with the body part extending along and stitched to the upper edge of the projecting band ends, substantially as and for the purposes set forth.

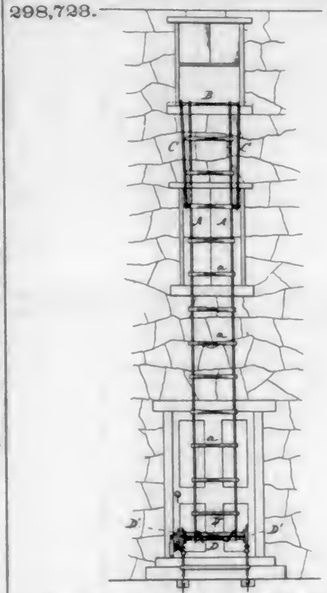
2. The improved collar having a facing integral with the body part, extending along and stitched to the upper edge of the projecting ends of the band, and the rear tab suspended over the band part of the collar, substantially as described.

298,723. FIRE-ESCAPE. SAMUEL BELTZ, Wilmington, Del. Filed Dec. 19, 1883. (No model.)

Brief.—The flexible ladder is provided at its upper end with guard-ropes, and at its lower ends with tightening devices.

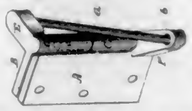


298,723.



Claim.—The adjustable fire-escape described, consisting of a rope ladder provided at one end with a cross-bar, B, and guard-ropes C, to attach and hold the same in position, and the opposite ends of the side ropes supplied with fastening and tightening devices having hooks *a''*, which engage eyes E, secured in the pavement in the manner described, and the reel D, with the lever F, and means whereby the reel can be operated, substantially as described.

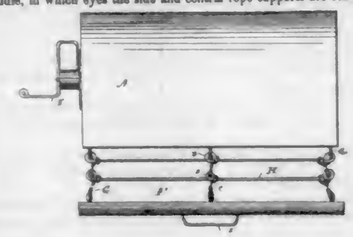
298,724. HINGE. AMOS S. BLAKE, Waterbury, Conn. Filed MAR. 3, 1884. (No model.)



Claim.—A slip-joint hinge having the one part constructed with an arm, E, extending diagonally therefrom, the other part with a corresponding part, F, extending diagonally therefrom in the opposite direction to the arm E, each of said arms constructed with a cavity, *b*, combined with the rod G, one end seated in the cavity of one arm, the other in the cavity of the opposite arm, and so that the said rod, when the hinge is in its closed position, stands diagonally across the plane of the pintle, substantially as described.

298,725. FIRE-ESCAPE. JOSEPH HENRY BOWLBY, Marengo, Ill. Filed Feb. 16, 1884. (No model.)

Brief.—The rungs are formed into eyes at both ends and in the middle, in which eyes the side and central rope supports are secured.



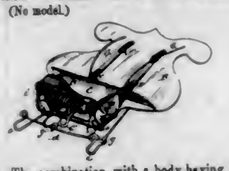
298,725.



Claim.—1. The combination, with a suitable box or casing provided with a shaft having bearing in the sides thereof, of a ladder consisting of the side ropes, G, and central rope, *c*, and rounds or rods bent at their center and ends to form loops, said ropes being secured in said loops by first passing the ropes through the loops, back under, and then over the round, and then passing the rope through the turned-under portion of the same, substantially as shown.

2. The herein-described flexible ladder consisting of the side ropes and central rope and rounds formed at their center and ends with loops, said ropes being secured in said loops, substantially as shown, and for the purpose set forth.

298,726. MUSIC-HOLDER. GEO. BURT, Fort Madison, Iowa. Filed Apr. 3, 1883. (No model.)



Claim.—1. The combination, with a body having bent-up hinge-ears, a sheet-metal clamp pivoted thereto, and a spring actuating said clamp to close its edge upon said body, the clamp having two slots in it, of a spring-wire secured to the body, and passing its two ends out through the two slots aforesaid to press independently of each other upon the upper portion of the body on opposite sides of a central vertical line, for the purpose described.

2. The combination, with a body having bent-up hinge-ears, a slotted sheet-metal clamp and a pivot-pin joining the two, of a spring, constructed and located substantially as described, to force the clamp down upon the body, and two spring-fingers attached to the device, substantially as described, to project through the slots in the clamp and press upon the upper part of the body, as and for the purpose specified.

3. The combination, with a music-holder constructed substantially as described, of means for holding the same to a drum, substantially as follows: a spring-wire, D, having double or reverse hooks *g* at its two ends, similar reverse hooks *e* each side of its middle, and the cross portion *d* connecting its two arms, said arms secured to the body of the music-holder and coiled, forming springs A, as shown and described.

4. A music-holder having a punctured sheet-metal body, and the portions between the punctures indented on opposite sides, in combination with a spring-wire provided with hooks, as set forth, the two arms of said wire passing through said punctures and firmly clamped by the indented portions, as shown and described.

298,727. COMPOUND TO PREVENT THE FUSION OF CINDER. WESLEY CASE, Topeka, Kans., assignor to the Coal Economizing Company, same place. Filed Sept. 27, 1883. (No specimens.)

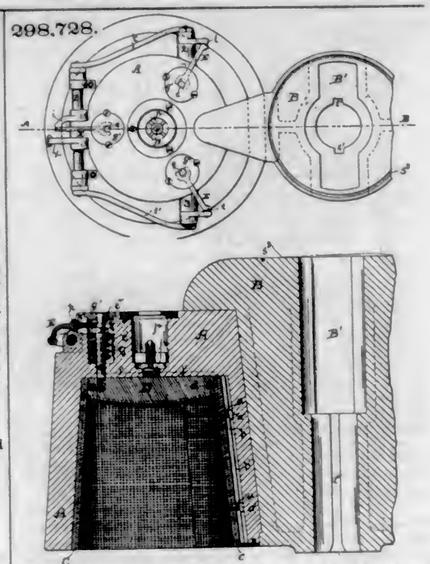
Claim.—The compound for preventing clinkers herein described, consisting of bicarbonate of ammonia, saltpeter, bicarbonate of soda, rosin, Epsom salts, common salt, and a base for preventing the mass from cementing together, all in or about the proportions described.

298,728. APPARATUS FOR FORMING OR MOLDING ARTICLES FROM PULP. WILLIAM L. CHASE, Portland, Me. Filed Sept. 19, 1883. (No model.)

Claim.—1. The combination, with the die having an outwardly-flaring shell-receiving recess, of a sectional shell or lining composed of two or more sections or staves adapted to fit together within the die, so as to present an unbroken inner surface of the shape to be imparted to the molded pulp article, and movable longitudinally upon the flaring inner walls of the die, so as to spread apart or draw together, according to the direction of said longitudinal movement, substantially as and for the purposes hereinbefore set forth.

2. The combination of the die formed with a flaring shell-receiving recess, a sectional shell or lining composed of two or more staves or sections movable longitudinally upon the flaring inner walls of the die, and mechanism for imparting simultaneous movement to all the staves or sections, the combination being and acting substantially as hereinbefore set forth.

298,728.



3. The combination of the die formed with a flaring shell-receiving recess, or sectional shell or lining composed of two or more staves or sections movable longitudinally upon the flaring inner walls of the die, retracting-springs which maintain said sections in their normal or closed position, and discharging mechanism whereby said staves or sections may be moved longitudinally against the stress of their retracting-springs in the direction in which they will be caused to open or spread apart, substantially as hereinbefore set forth.

4. The combination, with the die provided with a flaring shell-receiving recess, of a sectional shell or lining composed of two or more sections or staves longitudinally movable upon the flaring inner walls of the die, so as to spread apart or draw together, according to the direction of said movement, a false bottom longitudinally movable with said staves, and mechanism for imparting said longitudinal movement, substantially as and for the purposes hereinbefore set forth.

5. The combination, with the die and the sectional lining thereof capable of combined lengthwise and lateral movement, of a false bottom connected with the lining-sections, so as to participate only in the lengthwise movement of the latter, substantially as hereinbefore set forth.

298,729. APPARATUS FOR MOLDING ARTICLES FROM PULP. WILLIAM L. CHASE, Portland, Me. Filed Sept. 19, 1883. (No model.)

Claim.—1. In a machine for molding articles from pulp, the combination, with the piston or plunger for delivering pressure upon the article, of toggle-arms and a hydraulic ram, these elements being arranged and adapted to co-operate substantially in the manner and for the purposes hereinbefore set forth.

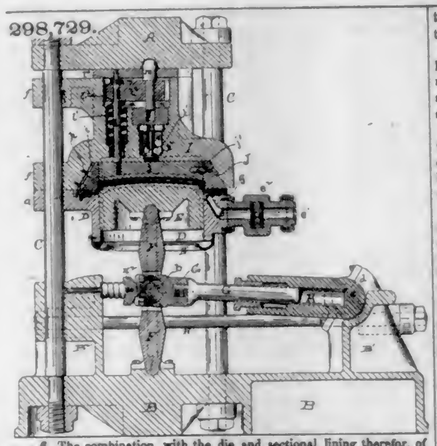
2. The combination, substantially as hereinbefore set forth, of the pressure-delivering piston or plunger, the toggle-arms, the hydraulic ram, and the spring-buffer.

3. The hydraulic ram provided with safety-valve for regulating pressure in the hydraulic cylinder, in combination with the toggle-arms and pressure-delivering piston or plunger, substantially as hereinbefore set forth.

4. The combination of the pressure-delivering piston or plunger, the toggle-arms, and the hydraulic ram hung so as to be capable of oscillatory movement, substantially as and for the purposes set forth.

5. The die provided with a sectional lining, substantially as hereinbefore described, and movable to and from the cylinder or other part with which it co-operates in forming the pulp article, in combination with mechanism whereby the sectional lining, when moved away from said cylinder or other co-operating part, is caused automatically to expand or spread apart for the purpose of loosening or detaching the molded article, substantially as hereinbefore set forth.

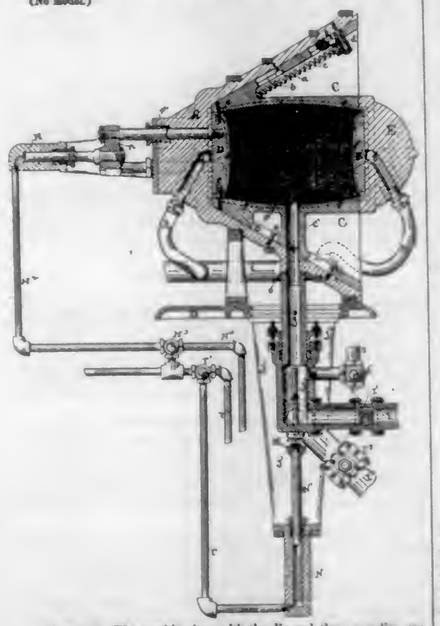
298,729.



6. The combination, with the die and sectional lining therefor, of the upholding-pins and their retracting-springs, the depressible yoke to which said pins are attached, and the discharging-pin, substantially as hereinbefore set forth.

7. The die provided with sectional lining and hinge, or pivoted to the machine-frame so as to swing toward and away from the part with which it co-operates in the operation of forming the article, in combination with the upholding-pins and their retracting-springs, the depressible yoke attached to said springs, the discharging-pin, and a wiper or stop to co-operate with said discharging-pin, substantially as and for the purposes set forth.

298,730. MACHINERY FOR FORMING OR MOLDING ARTICLES FROM PULP. WILLIAM L. CHASE, Portland, Me. Filed Sept. 25, 1883. (No model.)



Claim.—1. The combination, with the die and the expanding sectional lining longitudinally movable therein, of the head-plate arranged to close the open end of the die and to form one head or end of the mold, and movable away from said end of the die, for the purpose of permitting the outward longitudinal movement of the sectional lining, substantially as and for the purposes set forth.

2. The die and its expansible and longitudinally-movable sectional lining, in combination with the hinged head-plate forming part of the mold, and movable on its hinge, so as to close or open the die, as desired, and means for locking said head-plate in its closed position, substantially as and for the purposes hereinbefore set forth.

3. The hinged or movable head-plate provided with a head-piece forming part of the mold-surface, grooved or channeled for the passage of water only, and communicating with a waste pipe or conduit, in combination with the die and its expansible and longitudinally-movable sectional lining, substantially as and for the purposes hereinbefore set forth.

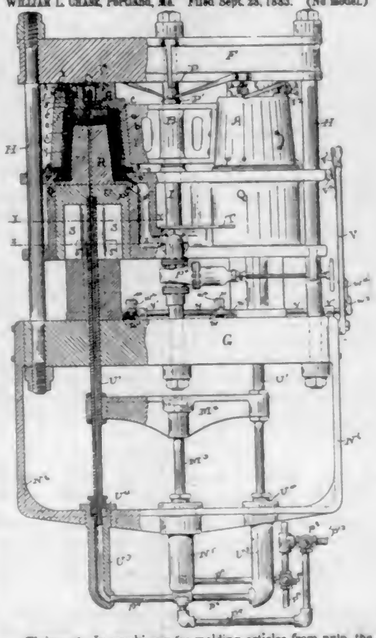
4. The combination, with the die and its longitudinally-movable sectional lining, of the telescopic feed pipe or conduit composed of two or more sections which telescope into one another, so as to permit the pipe to be projected into or withdrawn from the interior of the die through the sectional lining, substantially as and for the purposes hereinbefore set forth.

5. The combination, with the die and its sectional lining, of the feed-pipe composed of tubes K J^3 J, and means for moving tube J^3 back and forth in tube or cylinder J, substantially as and for the purposes hereinbefore set forth.

6. The combination, with the die, the sectional lining, and the false bottom, of the discharging-pins connected to the false bottom, and the hydraulic ram attached to and adapted to operate said discharging-pins, substantially as and for the purposes hereinbefore set forth.

7. The combination, with the die and its sectional lining, of the sliding or longitudinally-movable tube-pipe having its inner end adapted to project into the interior of the die, so that its lateral discharge aperture or apertures shall be beyond the film of pulp to be deposited, substantially as and for the purposes set forth.

298,731. MACHINERY FOR MOLDING ARTICLES FROM PULP. WILLIAM L. CHASE, Portland, Me. Filed Sept. 25, 1883. (No model.)



Claim.—1. In machinery for molding articles from pulp, the combination of dies rotatable upon a common axis with discharging or disengaging mechanism, whereby the formed articles are loosened or disengaged from the dies, and means, substantially as described, whereby said disengaging mechanism is automatically operated during the rotary movement of the dies to effect the loosening of the formed article or articles, substantially as hereinbefore set forth.

2. The combination, with dies rotatable upon a common axis, of mouth-pieces or their equivalents, which co-operate with the die in the operation of forming or pressing the article, said mouth-pieces and dies being movable relatively to one another in the direction of the length of the dies so as to permit the two to separate far enough to allow the revolution of the dies, substantially as and for the purposes hereinbefore set forth.

3. In machinery for molding articles from pulp, the combination, with dies or mold-blocks rotatable upon a common axis, of mechanism for locking the same in operative position, and also for unlocking them so as to leave them free to be revolved, substantially as and for the purposes hereinbefore set forth.

4. In machinery for molding articles from pulp, the combination, with dies or mold-blocks rotatable upon a common axis, of mechanism for locking them in operative position, and also for unlocking them so as to leave them free to be revolved, and means whereby the formed or molded articles are automatically loosened or disengaged during the rotary movement of the same, substantially as and for the purposes hereinbefore set forth.

5. The combination of the rotatable dies, the reciprocatory piston-blocks and flexible bags carried by the same, and means for actuating said parts and for locking and releasing the same, substantially as hereinbefore described with reference to Figs. 2 and 3 of the accompanying drawings.

6. The combination, with the reciprocatory piston-blocks and the flexible bags carried by the same, of the hollow piston-rods for supporting the same, and means whereby air or hydraulic pressure can be introduced into the flexible bags through said hollow piston-rods.

298,732. WOOD-RIM PULLEY. ALFRED CLARKE, Lowell, Mass. Filed Nov. 5, 1883. (No model.)

Claim.—1. The combination of a metallic spider and a flat annular metallic rim-foundation, and means of securing said rim-foundation to the outer ends of the arms of said spider, as and for the purpose specified.

2. The combination of a metallic spider having the outer ends of its arms provided with rabbets, as herein described, and a flat metallic ring secured in said rabbets, as and for the purpose specified.

3. A pulley having a metallic spider, a flat metallic ring secured to the outer ends of the arms of said spider, and wooden fellies secured to said ring, as and for the purpose specified.

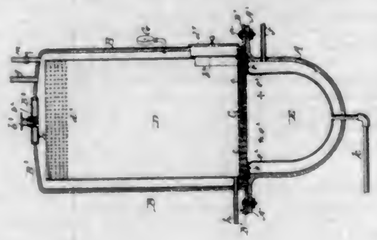
4. A pulley having a metallic spider, a metallic ring secured to the outer ends of the arms of said spider, and wooden fellies or lags secured to said ring, the innermost fellies being rabbeted and overlying the outer edge of said ring, as and for the purpose specified.

298,733. LETTER-BOX. ABNER S. COOK, Burlington, Iowa. Filed Feb. 14, 1884. (No model.)



Claim.—A letter-box, A, provided with window W, perforated top T, lid L, and bottom B, hinged by strong springs, substantially as and for the purpose described.

298,734. APPARATUS FOR REDUCING SULPHUR. FERDINAND DICKERT, Salt Lake City, Utah. Filed Jan. 26, 1884. (No model.)



298,734.

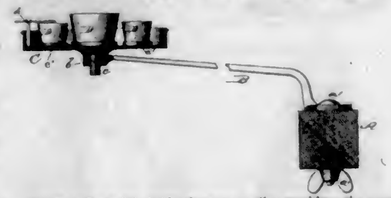


Claim.—1. A sulphur-reducing apparatus consisting of a double-wall bottom receiver having its upper end flanged, a vertical double-wall cylinder resting upon the flange of the former, a strainer between the two receivers, and steam-pipes to admit steam between the walls of each receiver, substantially as and for the purpose described.

2. The combination of the bottom receiver, A, having steam-pipe *f* leading therein, the inner receiver, E, having perforations e^2 adjoining the upper end, the upper cylinder, B, having steam-pipe *g*, the inner cylinder, D, open at both ends, and strainer C under the latter, substantially as and for the purpose described.

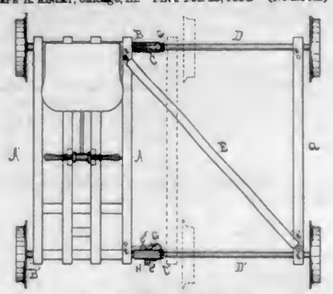
3. The combination of the double-wall bottom receivers, A E, perforated plate C thereon, upper cylinder, B, having upper opening, B^3, and side opening, b^4, with inner cylinder, D, having perforations d^3 in the sides thereof, substantially as and for the purpose described.

298,735. INK-RESERVOIR FOR PAPER-RULING MACHINES. EDWARD P. DONNELL, Chicago, Ill. Filed Nov. 3, 1882. (No model.)



Claim.—In an ink-holder for paper-ruling machines, the combination of the pan C, provided with sockets *c'*, the forked posts *d d*, and the receptacles D, substantially as shown and described, and for the purpose set forth.

298,736. HAND-CAR. WARREN DUNBAR, Minneapolis, Minn., and JOSEPH R. KINLEY, Chicago, Ill. Filed Feb. 23, 1884. (No model.)



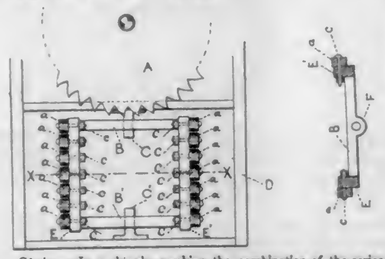
Claim.—1. A hand-car provided with telescoping axles, one part of each axle being suitably journaled to the main hand-car frame, while the other part is suitably journaled to a supplemental frame-work, which moves laterally as the two parts of the axle move the one within the other, substantially as described, and for the purpose of convenience in handling.

2. In a hand-car, the combination of the telescoping axles, one part of each axle being journaled to the main hand-car frame, while the other part is journaled to a supplemental frame-work, with retaining devices which hold the two parts in fixed positions, substantially as and for the purposes set forth.

3. In a hand-car provided with telescoping axles and a main and supplemental frame-work, the combination, with the main frame and supplemental frame-work, of a box attached thereto as a brace, substantially as described.

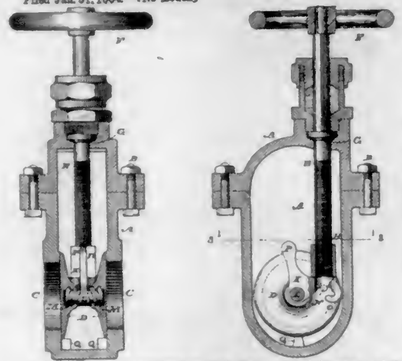
4. In a hand-car provided with telescoping axles and a main and supplemental frame-work, the combination, with the main and supplemental frame-work, of a brace, E, or its equivalent, for the purposes herein set forth.

298,737. SHINGLE-SAWING MACHINE. GORDON EARL, Pierson, Mich. Filed Apr. 8, 1884. (No model.)



Claim.—In a shingle-machine, the combination of the series of friction-rollers *a a a a*, turning on journals *c c c c*, the side pieces, E and E', end pieces, B and B', and journals C and C', all substantially as and for the purpose described.

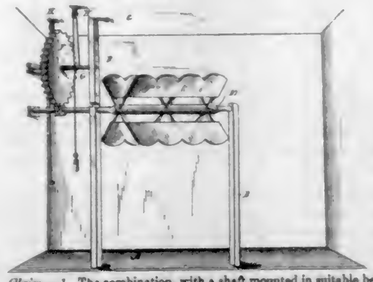
298,738. VALVE MECHANISM. DAVID T. ELLIS, Bridgeport, Conn., assignor of one-half to the Belknap Manufacturing Company, same place. Filed Jan. 31, 1884. (No model.)



Claim.—1. The combination, with the shell and its ports, of the screw-rod, the sleeve-nut, the hook-lever, the right and left screw, and the sliding valves, substantially as set forth.

2. The combination, in a valve mechanism, of sliding screw-threaded valves, and a right and left screw engaging therewith, with suitable means for operating the screw to loosen the valves and to slide them away from the ports, substantially as set forth.

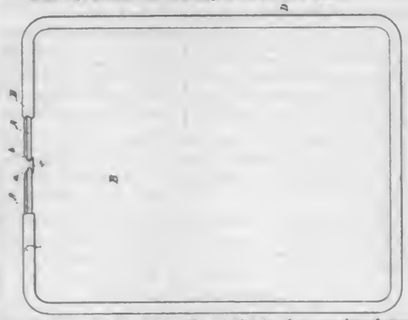
298,739. MECHANICAL POWER. JAMES W. ELLIS, Cameron, Tex. Filed Mar. 6, 1884. (No model.)



Claim.—1. The combination, with a shaft mounted in suitable bearings and provided with a pinion, of a gear-wheel suitably mounted in bearings and adapted to mesh with said pinion, cords oppositely arranged upon the shaft of said gear-wheel and passing through pulleys, and a weight for operating the mechanism, substantially as set forth.

2. The combination, with a shaft provided with a pinion and suitably-arranged fan, of a gear-wheel adapted to mesh therewith, and cords oppositely arranged upon the shaft of the gear-wheel, and adapted to pass through pulleys, said cords being provided at their ends with rings for the attachment of a weight, substantially as set forth.

298,740. MUFFLER FOR SLATES AND SLATE-FRAMES. JOHN D. ENACK, Baldwin, N. Y. Filed Apr. 14, 1884. (No model.)



Claim.—An improved muffling device for slates or slate-frames, composed of a frame-work, A, formed of spring metal, over which is stretched a fibrous or textile material, D, substantially as and for the purposes specified.

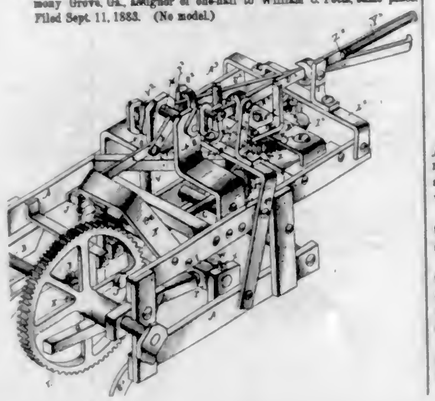
298,741. DITCHING AND GRADING ATTACHMENT FOR PLOWS. JOHN WILLIAM ESTES, Keytesville, Mo. Filed Dec. 5, 1883. (No model.)

Brief.—A plow is adjusted in a vertical open frame by means of a rod connected to its rear end and to a pivoted lever having a locking-bar, and is connected at its front end to the main frame by a double-clevis arrangement, and delivers onto a transverse belt, the lower section of the frame for which is hinged to a longitudinal bar crossing two transverse beams, which form the space within which such section is raised or lowered by a rock-shaft, arms, chains, operating-lever, and locking-arc.

Claim.—1. In a ditching-machine, the combination, with the main frame having a transverse elevator-space formed between horizontal transverse parallel beams connected about the middle of their lengths by a longitudinal beam, M', of a short rectangular elevator-frame, M, pivoted at its rear end by hangers to the longitudinal connecting-beam M', and flexibly connected near its front end by chains attached to the arms of a rock-shaft, I², provided with a lever, *m*, adapted to engage a holding-rack on the main frame, the endless apron P, its sprocket-chains, and the sprocket-wheel on front shaft, and the operating-shaft, substantially as specified.

2. In a ditching-machine, the combination, with the main frame A, provided with the vertical open frame K at the side thereof, of the plow-beam H, adjustably connected to the frame A at its forward end by the clevises *a* and *b*, and adjustably connected to the main frame A at its rear end by the upright *e*, lever *d*, standard *f*, and rack A, substantially as specified.

298,742. GIN-SAW-FILING MACHINE. ALBERT P. GATEWRIGHT, Harmony Grove, Ga., assignor of one-half to William C. Potts, same place. Filed Sept. 11, 1883. (No model.)



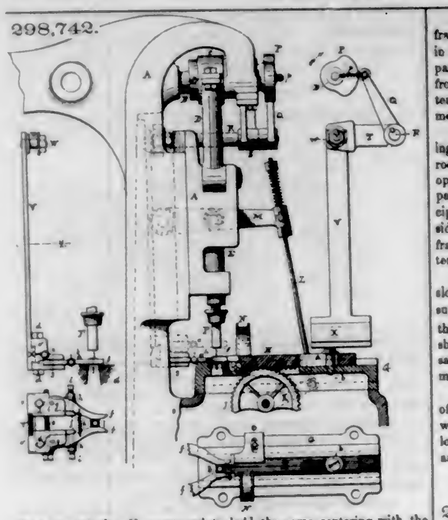
Claim.—1. In a machine for filing gin-saws, the combination of the frame B³, mounted pivotally upon the shaft A², the rotary file mounted in the front part of said frame, means, substantially as described, for imparting a rotary motion to the said file, an arm extending obliquely across from the rear end of the frame B³, a rock-shaft having an upwardly-extending arm or bracket carrying a roller engaging the said arm, and mechanism for operating the said rock-shaft, as herein described.

2. In a machine for filing gin-saws, the combination of the vibrating frame, the revolving file mounted horizontally in the same, the reciprocating files, a spring arranged to force the reciprocating file-holders in opposite directions, so as to hold the files to work against the saw, and a pair of levers having upwardly-extending arms bearing against the reciprocating file-holders, and downwardly-extending studs engaging the sides of the vibrating frame, whereby the movement of the said vibrating frame shall cause the reciprocating file-holders to be forced against the tension of the spring away from the saw, as set forth.

3. The combination of the reciprocating file-holders having vertical slots at their rear ends, the vertically and laterally adjustable guides or supports for the same, a transverse rock-shaft having cranks working in the said slots, an arm extending downwardly from the said rock-shaft, a short transverse shaft having a pinion and a crank, a pitman connecting said crank with the arm upon the rock-shaft, and the main drive-wheel meshing with said pinion, as set forth.

4. In a machine for filing gin-saws, the combination, with the frame, of a supporting-bracket hinged to the rear end of the latter, a set-screw working in the lower end of said bracket, and a securing-plate upon the lower end of said set-screw, substantially as and for the purpose shown and specified.

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from a nut-feeder, H, a nut, and to hold the same centering with the die, substantially as specified.

2. The combination of the blocks *c c'*, having extensions *j*, the pivoted fingers *f f*, spring *k*, and adjusting-screws *a i i*, substantially as shown.

3. The cam P, shafts B R, arms Q T, pin U, and lift-bar V, in combination with a nut-holding device, substantially as and for the purpose specified.

4. The blocks *c c'*, the fingers *f f*, mounted, sprung, and adjustable thereon, as described, and having a vertical reciprocating movement by the lift-bar V, actuated by the levers Q T, shafts B R, and cam P, in combination with a reciprocating plunger, F, operated by the shaft B, eccentric C, pitman D, and socket-bar E, the vertical movements of said fingers *f f* and plunger F being so related in correspondence as to hold a nut centering on the die Y until it is engaged by the plunger F, and then to strip the plunger of waste, substantially as specified.

5. The blocks *c c'*, the fingers *f f*, mounted, sprung, and adjustable on said blocks, as shown, and having the vertical reciprocating movement by the mechanism described, in combination with the nut-feeding device, consisting of the feeder H, having the slot *a* and set-screw *b*, the frame G, the pinion J, arm K, rod L, and lever M, actuated by the main shaft B through its intermediate connections, substantially as and for the purpose specified.

6. The lift-bar V, having a dovetailed projection, X, in combination with the blocks *c c'*, adjustable by the screws *d d e*, and provided with nut-holding fingers, substantially as described.

298,743. GIN-SAW-FILING MACHINE. ALBERT P. GATEWRIGHT, Harmony Grove, Ga., assignor of one-half to William C. Potts, same place. Filed Sept. 11, 1883. (No model.)

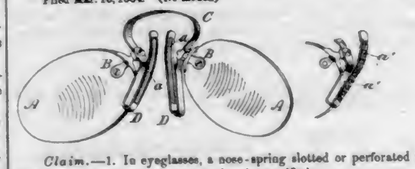
Claim.—1. In a machine for filing gin-saws, the combination of the frame B³, mounted pivotally upon the shaft A², the rotary file mounted in the front part of said frame, means, substantially as described, for imparting a rotary motion to the said file, an arm extending obliquely across from the rear end of the frame B³, a rock-shaft having an upwardly-extending arm or bracket carrying a roller engaging the said arm, and mechanism for operating the said rock-shaft, as herein described.

2. In a machine for filing gin-saws, the combination of the vibrating frame, the revolving file mounted horizontally in the same, the reciprocating files, a spring arranged to force the reciprocating file-holders in opposite directions, so as to hold the files to work against the saw, and a pair of levers having upwardly-extending arms bearing against the reciprocating file-holders, and downwardly-extending studs engaging the sides of the vibrating frame, whereby the movement of the said vibrating frame shall cause the reciprocating file-holders to be forced against the tension of the spring away from the saw, as set forth.

3. The combination of the reciprocating file-holders having vertical slots at their rear ends, the vertically and laterally adjustable guides or supports for the same, a transverse rock-shaft having cranks working in the said slots, an arm extending downwardly from the said rock-shaft, a short transverse shaft having a pinion and a crank, a pitman connecting said crank with the arm upon the rock-shaft, and the main drive-wheel meshing with said pinion, as set forth.

4. In a machine for filing gin-saws, the combination, with the frame, of a supporting-bracket hinged to the rear end of the latter, a set-screw working in the lower end of said bracket, and a securing-plate upon the lower end of said set-screw, substantially as and for the purpose shown and specified.

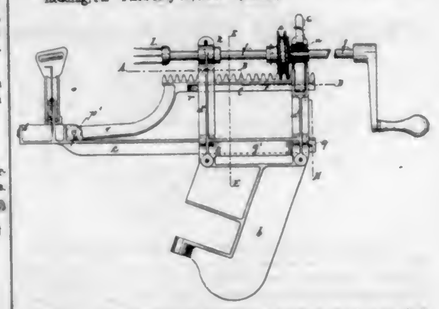
298,744. EYEGLASSES. ERNEST GOLDBACHER, New York, N. Y. Filed Mar. 10, 1884. (No model.)



Claim.—1. In eyeglasses, a nose-spring slotted or perforated in the portion bearing on the nose, as herein specified.

2. In eyeglasses, a serrated nose-spring slotted longitudinally, as herein described, and inclined away from the general plane of the glasses.

298,745. APPLE PARER, CORER, AND SLICER. WM. M. GIBSON, Reading, Pa. Filed May 14, 1883. (Model.)



Claim.—1. In a fruit paring, coring, and slicing machine, the shaft *f*, carrying fork *l*, and the screw *e*, in combination with the knife-carrying frame *c* and hinged dropping rack *r*, and with means, substantially as described, for holding said rack in and throwing it from engagement with said screw, as set forth.

2. The shaft *f*, screw *e*, and bar *c*, combined with the rack *r*, hinged to said bar *c*, and with the spring-hook *s*, whereby the rack is held in and released from engagement with the screw *e*, as set forth.

3. The combination, with the spring-hook *s* and hinged rack *r* of the knife-carrying frame, of the incline *r'*, placed upon the rack in such a position as to throw the hook out of connection with the rack at the end of each paring, coring, and slicing operation, whereby the rack is allowed to fall, substantially as set forth.

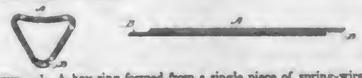
4. In combination with the stop-lugs *s'*, the bar *c*, and hinged rack *r*, the shaft *f*, hung in stationary bearings and carrying the screw *e*, the lever *m*, spring *n*, and hook *s*, as and for the purposes set forth.

298,746. FIGURE, MAP, AND CHART FOR EDUCATIONAL PURPOSES. MARY E. GUIRET, San Francisco, Cal. Filed Sept. 28, 1883. (No model.)



Claim.—As a new article of manufacture, a figure, map, or chart showing divisional views of the whole or different inner parts of the human body in bas-relief, substantially as described.

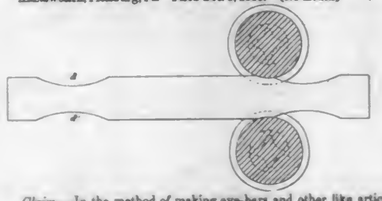
298,747. KEY-RING. EDWARD P. HAFF, New York, N. Y. Filed Feb. 29, 1884. (No model.)



Claim.—1. A key-ring formed from a single piece of spring-wire, having its ends scarfed on opposite sides and bent up into triangular shape, substantially as set forth.

2. A key-ring triangular in shape and with its ends meeting in a scarf-joint at one of the angles, substantially as shown and described.

298,748. METHOD OF MANUFACTURING EYE-BARS. WILLIAM HADSWORTH, Pittsburg, Pa. Filed Dec. 3, 1883. (No model.)



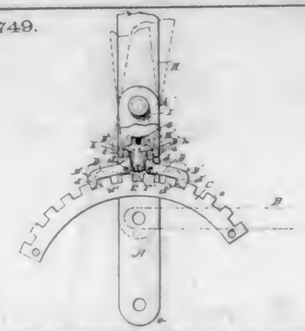
Claim.—In the method of making eye-bars and other like articles, wherein the body portion intermediate between but away from the ends is reduced by successive passes back and forth between rolls, the rolls being reversed while the bar is still engaged by them, and simultaneously the biting and reducing rolls are forced into closer proximity, and as the improvement on said method, notching the metal of the bar near but back of said ends, and at or about the points where, in the movement of the bar, the rolls are to be reversed, and at the ends of the portion to be reduced, substantially as set forth.

298,749. JOINT-LEVER. WILLIAM BUTLER HALL, Duquoin, Ill. Filed Apr. 7, 1884. (No model.)

Claim.—1. As an improvement in joint-levers, the combination, with the double-arm pawls projecting in opposite directions, of an operating-lever having arms projecting over the inner arms of the pawls and bearing against the outer face of the same, as shown, whereby the arms of the lever are adapted to independently operate either pawl, substantially as and for the purpose set forth.

2. As an improvement in joint-levers, the combination of the main

298,749.



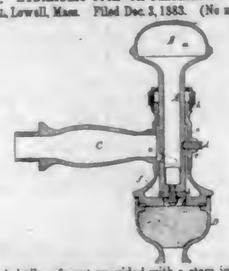
lever carrying two oppositely-projecting pawls, the segmental rack, spring mechanism secured upon the lever and acting upon the pawls, and an operating-lever having arms bearing against the outer face of the pawls, so that they will independently operate either pawl without engaging the other, substantially as set forth.

3. As an improvement in joint-levers, the combination, with the segmental rack, of the main lever carrying the bell-crank pawls having their engaging ends projecting in opposite directions, and a double-arm spring disposed between the inner arms of the pawls and acting upon the same, substantially as and for the purpose set forth.

4. As an improvement in joint-levers, the combination of the main lever, the segmental rack, two bell-crank pawls fulcrumed upon the main lever above the rack, and having their engaging arms projecting in opposite directions, the double-arm spring acting upon the pawls, the operating-lever fulcrumed upon the main lever, and provided with an arm projecting at each side and engaging the inner arms of the pawls, and a centrally-disposed stop-pin to limit the movement of the operating-lever in either direction, substantially as set forth.

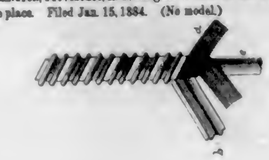
5. As an improvement in joint-levers, the combination of the main lever, the segmental rack, the bell-crank pawls having their main arms projecting laterally in opposite directions, and provided with the beveled inner faces, the centrally-disposed double-arm spring acting upon the inner arms of both pawls, the centrally-disposed stop-pin arranged above the spring, and the operating-lever fulcrumed upon the main lever, having the central recess in its bottom, and the downwardly-projecting arms at each side of this recess, substantially as and for the purpose set forth.

298,750. HYDRAULIC COCK OR FILTERING-FAUCET. ALBERT HALLOWELL, Lowell, Mass. Filed Dec. 3, 1883. (No model.)



Claim.—A hollow faucet provided with a stem interposed between the induct and the educt, such stem being hollow and having an opening into its interior, such opening leading from the interior of the stem into the water-way of the faucet, whereby when the through flow of water is interrupted the latter passes into the stem, and the air therein, having no vent, acts as a cushion, as set forth.

298,751. COVERING FOR ELECTRICAL CONDUCTORS. FRANK S. HARRINGTON, Providence, R. I., assignor to himself and Herbert N. Fenner, same place. Filed Jan. 15, 1884. (No model.)



Claim.—A covering for insulated electrical conductors, consisting of a thin strip of metal corrugated lengthwise in its middle, and wound spirally around the conductor with the edges of the strip overlapping each other, substantially as described, and for the purpose set forth.

298,752. NECKTIE-FASTENER. PETER HENRY HIGGINS, Merced, Cal. Filed Mar. 5, 1884. (No model.)



Claim.—In a necktie-fastener, the plate *a*, of suitable outline, having at its upper edge the integral arms *b b*, bent rearwardly, downwardly, and inwardly, and extending obliquely outward toward the ends of the plate, substantially as specified.

298,753. INSUBLATED TELEGRAPH TIE-WIRE. CHAS. C. HINSDALE, Cleveland, Ohio. Filed Nov. 19, 1883. (No model.)



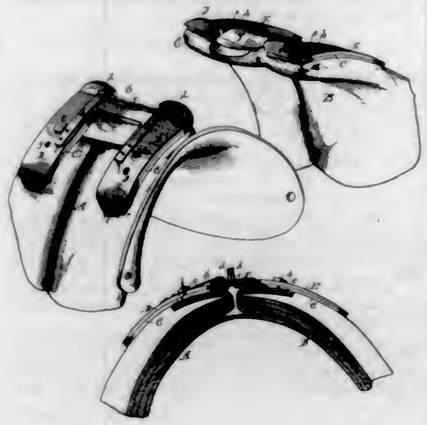
Claim.—1. The combination, with the main wire, the supporting-insulator, and the tie-wire, of a strip of textile fabric coated with gutta-percha or equivalent material, and wrapped around the tie-wire in superposed convolutions, substantially as and for the purposes set forth.

2. The combination, with the main wire, its supporting-insulator, and the tie-wire, of a strip of textile fabric coated with gutta-percha or its equivalent, and wrapped helically around the tie-wire, substantially as set forth, to have a portion of each coil or convolution thereof lap over or under a portion of each adjacent coil or convolution, as and for the purposes described.

3. The combination, with the main wire, of a tie-wire for supporting the main wire, and an insulating strip or strips of flexible material wrapped around the tie-wire and arranged, substantially as set forth, to have a greater number of convolutions at the point or points receiving the strain, substantially as set forth.

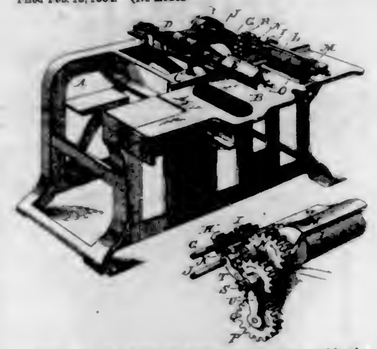
4. The combination, with the main wire and the tie-wire for supporting the main wire, of an insulating-strip of flexible material wrapped helically around the tie-wire, and a second strip of insulating material wrapped upon the outside of the first strip, to increase the thickness of the insulating material at points of wear, substantially as set forth.

298,754. HORSE-COLLAR FASTENING. IVES P. HOYT, Bainbridge, N. Y. Filed Mar. 15, 1884. (No model.)



Claim.—In a horse-collar fastening, the combination, with upper plates provided, respectively, with a suitable tongue, and a spring-catch and pivoted lever for operating it, of lower or base plates, and suitable spurs on either the upper or lower plates, and means for fastening said plates on the collar, substantially as and for the purpose specified.

298,755. PLANING-MACHINE. LEVI HOOSTON, Montgomery, Pa. Filed Feb. 13, 1884. (No model.)

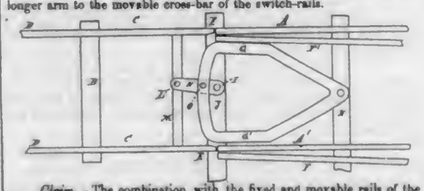


Claim.—1. In a wood-surfacing machine, the combination of a main frame, a vertically-adjustable bed or table, a press-roll overhanging the table and carried by a swinging frame, a feed-roll mounted in bearings carried by the table, gear-wheels secured to the shaft of the press-roll and feed-roll, a driving-pinion meshing with the gear of the press-roll, an intermediate gear-wheel meshing with the driving-pinion and with the gear-wheel of the feed-roll, and means, substantially such as described and shown, for supporting said intermediate gear and permitting it to rise and fall with the table and feed-roll without interfering with its mesh with the other gearing.

2. The combination, substantially as herein described and shown, of main frame A, provided with driving-shaft G, carrying pinion H, gear-wheel I, and elongated pinion K, connected to rotate in unison, press-roll L, provided with gear N, and carried by swinging frame M, having a center of motion concentric with pinion K, (the gear N meshing with said pinion,) vertically-adjustable table B, feed-roll O, mounted in bearings carried by said table, and furnished with a gear, Q, intermediate gear, R, and arms T U, hung upon the pinion-shaft and feed-roll shaft, respectively.

298,756. AUTOMATIC SWITCH. HENRY W. HOWELL, Jr., Elizabeth, N. J. Filed Nov. 12, 1883. (No model.)

Brief.—Shifting-levers operated by the flanges of the wheels are connected to an intermediate vibrating lever, which is secured by its longer arm to the movable cross-bar of the switch-rails.



Claim.—The combination, with the fixed and movable rails of the switch, of the levers G G', connected together to act in unison, as shown, the lever H, mounted on the fixed fulcrum I, and pivoted to the switch-bar, as at L, the connecting-bar of the levers being pivoted to said lever H, between the fulcrum and the pivot L, substantially as set forth.

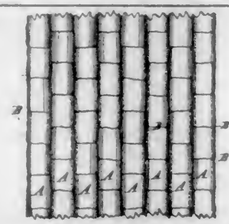
298,757. FIRE-PROOF FABRIC. HENRY W. JOHNS, New York, N. Y. Filed May 10, 1881. (No model.)

Claim.—1. As a new article of manufacture, a woven fabric consisting of a loose and compressible asbestus cord or rope and a warp of small strands, substantially as specified.

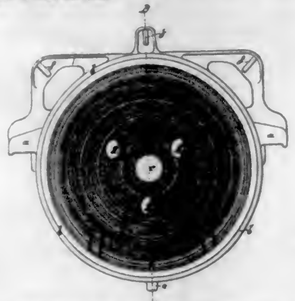
2. The fabric herein described, consisting of the warp and loose and compressible asbestus cord or rope weft, combined as set forth, whereby the faces of the fabric are substantially formed of asbestus and the weft is embedded in the asbestus cord, as specified.

3. The combination of loose and compressible rolls or ropes of asbestus with small strands, as specified, forming a woven fabric, and a coating of sizing, as set forth.

298,757.



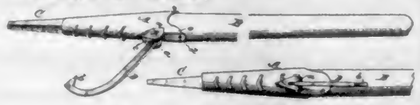
298,758. FILTER-PRESS. SAMUEL HENRY JOHNSON, Stratford, County of Essex, England. Filed Jan. 15, 1884. (No model.) Patented in England Mar. 4, 1882, No. 1,043.



Claim.—1. The means by which press-plates are caused the one to support the other, consisting of suitable projections upon their drainage-faces, substantially as described.

2. The press-plate composed of an interior strong and rigid body of steel or iron, and a covering of metal or composition of metals having the quality of resisting acids—as lead hardened by a small quantity of antimony—substantially as described.

298,759. CANT-HOOK OR DOG. AMOS KENNARD, Clearfield, Pa. Filed Feb. 14, 1884. (No model.)



Claim.—1. A cant-hook or dog having a series of teeth on the arc of a circle V shape in form, or substantially as shown and described, and for the purpose set forth.

2. In a cant-hook or dog, a socket for the handle provided at one end with a pike and at the opposite end with a stop and a series of V-shaped teeth, in combination with a suitable hook pivoted to the socket and provided at its free end with a spur, substantially as and for the purpose described.

298,760. CHURN. CHARLES J. LE ROY, Chicago, Ill., assignor of two-thirds to George W. Whitson and Howard Wagner, both of St. Louis, Mo. Filed Oct. 25, 1883. (No model.)

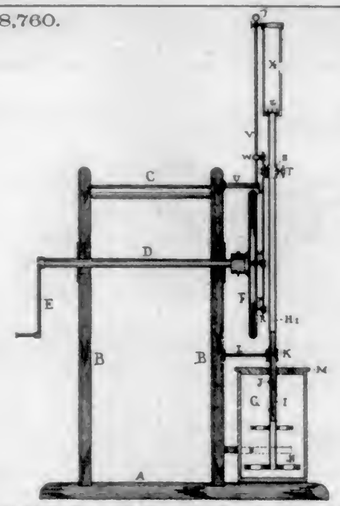
Claim.—1. The combination of a churn-cylinder, a dasher-handle having an internal longitudinal bore, and the suitably-supported cylinder X, having perforations Z Z, for the purpose set forth.

2. The combination of a churn-cylinder, a dasher-handle having an internal longitudinal bore, an oxygen-cylinder suitably supported to receive the rising end of the handle, and a trammel-wheel suitably supported and connected to the dasher-handle so as to operate the churn.

3. The combination of a churn-cylinder, a dasher-handle having an internal longitudinal bore and a spiral on its outer surface, an oxygen-cylinder placed so as to receive the end of the dasher-handle as it rises, an internally-spiraled collar inclosing a dasher-handle and suitably supported, and a trammel-wheel connected to the dasher-handle, as described.

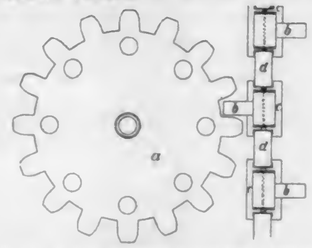
4. The combination of the base A, the supports B B, secured thereto, the crank-shaft D, supported on the standards, the trammel-wheel F

298,760.



on the end of the shaft, the churn G, dasher H, having bore H' and spiral J, the cylinder X, collar K, and pitman R, connecting the trammel-wheel with the dasher-handle.

298,761. SEEDING DEVICE. EMILE LUD, Hiawatha, Kans. Filed Jan. 31, 1884. (No model.)



Claim.—1. In an attachment for seed-drills, a chain composed of sprocket-links having pivoted reversible lugs attached to the non-bearing or out side, said lugs adapted to be thrown in or out of gear with the teeth of a seed wheel or plate, substantially as described.

2. In a seed-drill attachment, the combination, with the link C, of the reversible lug B and the toothed seed wheel or plate A, substantially as shown, and for the purpose set forth.

298,762. EAR-RING. HERBERT G. MACKINNEY, Providence, R. I. Filed Nov. 16, 1883. (No model.)



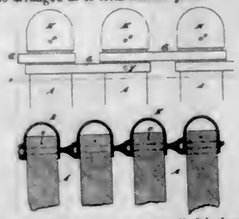
Claim.—1. The bow of an ear-ring, one arm of which is provided with a joint having its axis in the plane of the bow, whereby the lower or movable portion of said arm is made to swing at right angles to said plane.

2. The bow of an ear-ring, provided with a joint, substantially as described, and having stops to limit the movement of the movable portion, for the purpose specified.

3. The bow of an ear-ring, one arm of which is provided with a joint having its axis in the plane of the bow, whereby the movable portion of said arm is made to swing at right angles to said plane, said joint being composed, substantially, of a tube, in which said movable arm is made to turn.

298,763. MAT. RAFAEL MARTINEZ, New York, N. Y., assignor to Emil Gutmann and Henry Goodman, both of same place. Filed Nov. 10, 1883. (No model.)

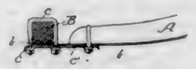
Brief.—A series of cylindrical rods connected in pairs through embracing-rings so arranged as to form flexible joints.



Claim.—1. In a floor-mat, a series of cylindrical rods, A, embraced loosely within rings G, connected in pairs, arranged to form flexible joints, substantially as and for the purpose herein specified.

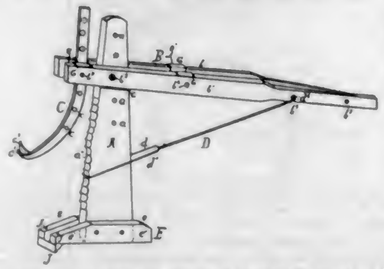
2. In a floor-mat, the parallel rods A, in combination with the end caps, E, two series of loosely-embracing rings G, and means, as *g*, for preventing displacement of the rods endwise, all substantially as herein specified.

298,764. ROAD-CART. ORLANDO J. MCCOLLUM and CARLL OSKAR STRAN, Aurora, Ill. Filed Feb. 3, 1883. Renewed Mar. 15, 1884. (No model.)



Claim.—A vehicle-spring for connecting the shafts to the axles, consisting of an upper and lower leaf, said lower leaf being the shorter, and being independent at that end contiguous to the shaft, said upper and lower leaf having preferably upwardly and downwardly turned end edges, respectively, farthest from the shafts, which bear, respectively, against the axle and contiguous cross-bar of the double clip, by which they are secured to said axle.

298,765. COMBINED CANT-HOOK AND LIFTING-JACK. OBED H. MITCHELL, Springfield, Mo. Filed Mar. 25, 1884. (No model.)

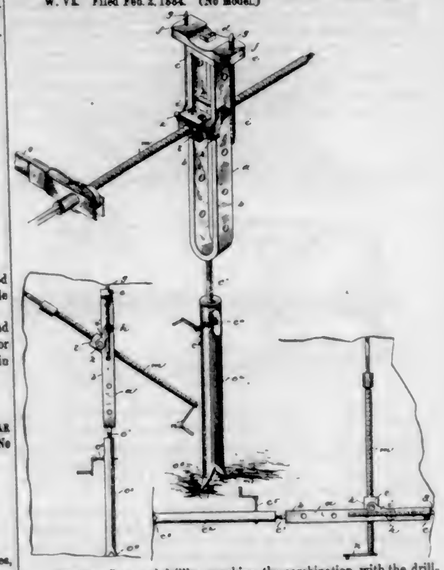


Claim.—1. A lifting-jack composed of a standard, A, having notches *a'*, holes *a*, and a foot, E, composed of two pieces, *e e'*, and having a toe-piece, J, in combination with a lever, B, composed of two pieces, *b b'*, detachably secured to the said standard, and having holes for bolts b^2 b^3 b^4, and a rod, D, which forms a link, *d d'*, and a hook, d^2, and with a hook, C, having holes *c*, and a forked toe, *c' c'*, all arranged and constructed substantially as shown and described.

2. The combination of plates G, having the edge *g'* turned back, with a lever, B, composed of two pieces and having holes for bolts b^2 b^3 b^4, and a supporting-rod, D, which has a link, *d d'*, and a hook, d^2, a hook, C, which has sharp spreading toes *c' c'* and holes *c*, together with a standard, A, having holes *a*, notches *a'*, and a foot-piece, E, which has a toe-piece, J, all substantially as shown and described, for the purpose set forth.

3. The combination of a cant-hook composed of a lever, B, having holes for bolts b^2 b^3 b^4 b^5 b^6, and plates G, to which is detachably secured a hook, C, having holes *c* and toes *c' c'*, with a device composed of a standard, A, having holes *a*, notches *a'*, and a foot, E, composed of two pieces, *e e'*, beneath the front end of which is a toe-piece, J, and a rod, D, having a link, *d d'*, and hook d^2, all arranged and constructed substantially as shown and described.

298,766. COAL-DRILLING MACHINE. LEWIS P. MORAN, Handley, W. Va. Filed Feb. 2, 1884. (No model.)



Claim.—In a coal-drilling machine, the combination, with the drill-frame composed of the perforated side bars, *b b*, connected at one end by the short bar *c*, and provided at the other end with the extension-rack, of the head-block *l*, journaled in hangers connected to the drill-frame by a bolt, A, and nut, passed through perforations in the hangers and bars *b b*, and the drill-shaft and lever for operating it, substantially as specified.

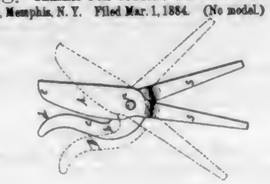
298,767. FOUNTAIN PEN-HOLDER. JAS. MORTON, New York, N. Y. Filed Apr. 11, 1883. (No model.)



Claim.—1. In a fountain pen-holder, the combination, with the hollow stem A, having the bottom channel, *a*, enlarged to receive the feed-tube and pen, as set forth, of the tube E, fitted with its inner end tightly and with its outer end loosely into the said enlargement, and the pen F, inserted between the said tube and enlargement, the said tube being of the curved and gradually-tapering shape shown, and being also provided with the feed-channel G and air-hole H, and having several times larger area of cross-section at and above the air-hole than across the narrowest part of the feed-channel, as and for the purpose set forth.

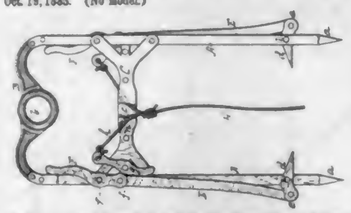
2. In a fountain-pen, the combination of the following elements: the hollow stem A, having the bottom channel, *a*, enlarged to receive the feed-tube and pen, the feed-tube and pen E F, fitted in the said enlargement, as described, the valve-rod D, provided at its lower end with the valve *d*, and having at its upper end a threaded enlargement, *c*, and a knob, C, the perforated cap B, having an inside thread, *b'*, to receive the thread *c*, and an outside thread, *b*, by which it is fitted into the upper end of the stem A, and the packing S, fitted in the thread of the stem A, and surrounding tightly the valve-rod D, all constructed substantially as hereinbefore set forth.

298,768. SHEARS FOR CUTTING TOBACCO-PLANTS. CHARLES NAGLEY, Memphis, N. Y. Filed Mar. 1, 1884. (No model.)



Claim.—The improved tobacco-plant cutter, consisting of the blade A, having its cutting-edge curved slightly toward the back from near the pivot to near the end of the blade, and terminating with increased curvature, and the blade B, pivoted to blade A, and having a reversed curved cutting-edge beginning with an abruptly rearward curve, *a*, near the pivot of the blade, continuing with the abrupt reverse curve *b*, thence a tangential portion, *c*, and terminating with the extensive rearward or outward curve *d*, said blades having shanks *s s* bent upward from the plane of the blades, the whole constructed substantially as shown and set forth.

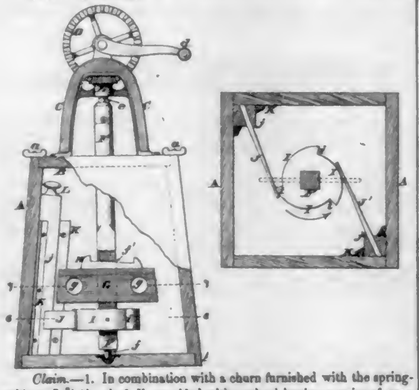
298,769. HORSE HAY-FORK. AARON J. NELLE, Pittsburg, Pa. Filed Oct. 19, 1883. (No model.)



Claim.—1. In a horse hay-fork, the combination of a sheath, a barb pivoted thereon, a hand-lever also pivoted thereon, a connecting-bar pivoted at one end to the barb and at the other to the hand-lever, and a tripping-dog pivoted on the sheath and adapted to act on the connecting-bar to force the same and the hand-lever off their centers, substantially as and for the purposes specified.

2. In a horse hay-fork, the combination of two or more sheaths, each having a hand-lever and a barb both pivoted thereon, a connecting-bar pivoted at one end to the hand-lever and at the other to the barb, and a trip-dog pivoted on the sheath and adapted to act on the connecting-rod to force it and the hand-lever off the center, with a cross or brace bar provided with a central guide-hole to receive the several trip-ropes of the trip-dogs, substantially as and for the purposes specified.

298,770. CHURN. WILLIAM H. NICHOLSON, Mount Washington, assignor of one-half to Robert A. Shannon, Cedar Point, Ohio. Filed Apr. 4, 1883. (No model.)

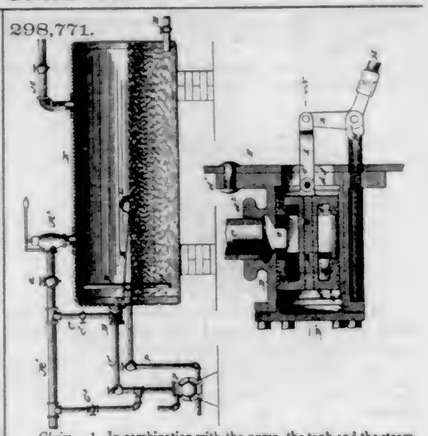


Claim.—1. In combination with a churn furnished with the spring-rubbers J J', the shaft F, provided with a wheel having a series of cam-surfaces, I, with shoulders *i*, that strike the free ends of said spring-rubbers, as herein described, and for the purpose stated.

2. The churn-box A, provided with a shaft, F, armed with a laterally-adjustable dasher, G, and a wheel having cam-surfaces I with shoulders *i*, in combination with the spring-rubbers J J', projecting from detachable uprights *j j'*, situated at the diagonally-opposite corners of box A, the free ends of said rubbers being struck by said cam-surfaces I with shoulders *i*, as and for the purpose herein described.

3. The combination, in a churn, of the detachable uprights *j j'*, spring-rubbers J J', and the cam-wheel carried by the dasher-shaft, substantially as described.

298,771. PUMP-REGULATOR. EUGENE F. OSBORNE, St. Paul, Minn. Filed Apr. 27, 1883. (No model.)

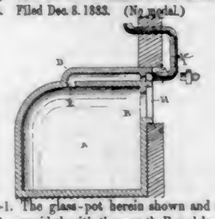


Claim.—1. In combination with the pump, the tank and the steam-pipe of the pump, a valve-chamber provided with ports and constructed in open communication with the tank-interior, a freely-movable valve in said chamber, and a float connected with the valve, substantially as described.

2. In combination with the pump, tank, and float-lever, a valve-chamber, D, in free communication at both ends with the tank-interior, and provided with ports *c* and *c'*, arranged as shown, and the freely-fitted valve E, centrally reduced opposite the port *c*, and a pivotal connection uniting the valve and float lever, substantially as described.

3. The combination, in a steam-distributing system, of a tank connected to receive the water of condensation, the steam-supply pipe of the system communicating with the steam-space of the tank, a pump connected with the water-space of the tank, a steam-supply pipe for the pump, a valve-chamber in open communication with the tank-interior, a freely-moving valve therein, a float riding within the tank, and connections uniting the valve and float, constructed to reciprocate the valve by the rise and fall of the float, substantially as described.

298,772. GLASS-POT. WILLIAM T. OTTO and JOSEPH H. FOX, Wheeling, W. Va. Filed Dec. 8, 1883. (No model.)



Claim.—1. The glass-pot herein shown and described, consisting of the body A, provided with the mouth B and hood C, whereby a recess, H, is formed adapted to receive a stopper, the crown-flue D, communicating with an opening in the pot, as shown, the outer end of said flue being provided with a recess, and the stopper I, in combination with an air-vent extending from the back of the pot along the crown of the same to the front of the pot, and means for regulating the same, substantially as described and for the purposes set forth.

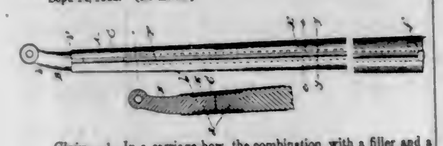
2. The combination, with a glass-pot embodying in its construction an air vent or flue, substantially as herein shown, of a pipe attached to the mouth of the flue, and connected to an exhaust-fan or furnace-stack for the purpose of exhausting the hot air, substantially as herein described.

298,773. DRAFT-EQUALIZER. THOMAS PATES, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Feb. 13, 1884. (No model.)



Claim.—The combination of the central double-tree, two triple-trees, bolt *e*, and hasp *g*, one of the said triple-trees pivoted to each end of the said double-tree by means of the said bolt and hasp, as shown, the two single-trees, block-washers *k*, provided with pins *n*, bolts *j*, and hasp *m*, one of the said single-trees pivoted to the short arm of each triple-tree by means of the said bolt *j*, hasp *m*, and two of said block-washers, as shown, and for the purpose specified.

298,774. CARRIAGE-TOP. RUDOLF H. PFAFF, Ashtabula, Ohio. Filed Sept. 14, 1883. (No model.)



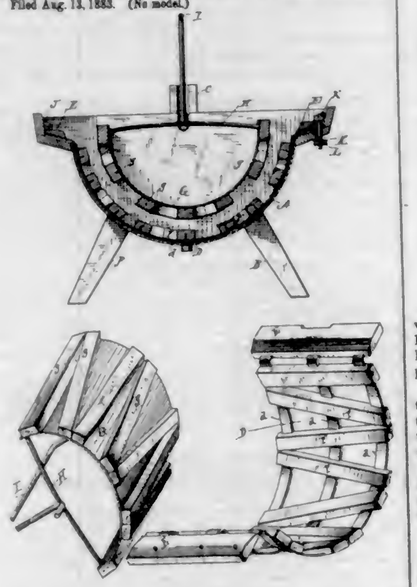
Claim.—1. In a carriage-bow, the combination, with a filler and a slat-iron having a stud, of a ferrule, the outer surface of which is flush with the slat-iron, and a metallic case or cover which extends over the slat-iron below its stud and is welded thereto, substantially as and for the purpose described.

2. In a carriage-bow, the combination of the slat-iron, ferrule, filler, and a metallic case or cover with a strip of metal, as and for the purpose set forth.

3. In a carriage-bow, the combination of a slat-iron, ferrule, filler, and a metallic case or cover with a strip of metal having an ear which takes upon a shoulder of said filler, whereby the joint between the edges of the case is covered and finished, substantially as shown and described.

4. In a carriage-bow, the combination, with a filler and a slat-iron having a stud, of a ferrule the outer surface of which is flush with the slat-iron, and a metallic case which extends over the slat-iron and is welded thereto, substantially as and for the purpose set forth.

298,775. WASHING-MACHINE. MATTHEW R. POTTORFF, Gilman, Ill. Filed Aug. 13, 1883. (No model.)



Claim.—1. In a washing-machine, the body A, having each end extended, as shown, and provided with a block or ledge, secured to one of its ends, in combination with a false bottom, D, having end pieces, E, at right angles thereto, and resting on the extended ends of the body, one of said end pieces fitting under the block or ledge, and the other end piece being slotted, as shown, and a thumb-screw and nut engaging with the slot of said end piece, as and for the purpose set forth.

2. The false bottom having end pieces nearly at right angles thereto, semicircular metallic strips *d*, connecting the end pieces, and arranged longitudinally, and detachable slats or ribs secured to the strips with their ends adjacent to each other, and forming the letter V alternately from one side to the other, in combination with the box or body A, having ledge J, and a thumb-screw, bolt, and nut, as set forth.

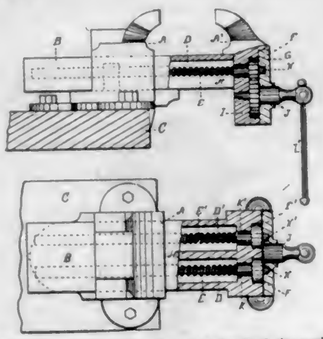
298,776. RAILROAD-RAIL JOINT. RICHARD RAHY, Jr., York, Pa., assignor of two-thirds to Alfred A. Long, same place, and Samuel A. Saroff, Columbia, Pa. Filed Nov. 22, 1883. (No model.)

Brief.—Two detachably-hinged sections, each having an upwardly-turned central portion and an extended flat base.



Claim.—The two-part rail-fastening, consisting of the sections having the lateral and upwardly-projecting parts and united by a hinge which permits the sections to be taken apart so as to remove one rail without disturbing the other rail, substantially as described.

298,777. VISE. CALVIN RIGGS, Worcester, Mass. Filed July 12, 1883. (No model.)

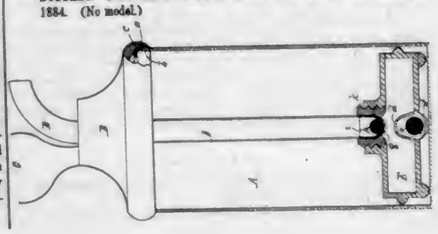


Claim.—1. In a parallel bench-vise, as described, the combination, with the movable jaw A' and sliding bar B, of the two actuating-screws E and E', arranged in the same horizontal plane, housed within said bar B, and so geared together as to act simultaneously, as and for the purpose set forth.

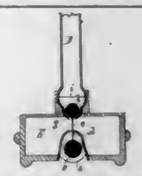
2. The combination, in a parallel bench-vise, as described, of the two actuating-screws E E', arranged in the same horizontal plane within the bar B, and having the tapered ends H H', and a cap-piece, G, with tapered recesses, forming bearings for the tapered ends of the screws, as and for the purpose set forth.

3. In a parallel bench-vise, having the two actuating-screws E and E', housed within the sliding bar B, and both in the same horizontal plane, the chambered sliding bar B, having a central rib, N, as and for the purpose set forth.

298,778. COMBINED LIQUID MEASURE AND REGISTER FOR BOTTLES. EBENEZER H. ROGERS, Jr., New York, N. Y. Filed Feb. 29, 1884. (No model.)



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Claim.—1. The combination of a bottle or similar vessel, a fluid-measure inserted in the base thereof, provided with operating-valves and a spout for filling and discharging the same, and a registering device mounted upon the bottle-top, for indicating the number of times the measure is filled and discharged, all applied and operating in the manner substantially as herein shown and set forth.

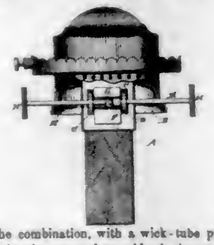
2. The combination of a bottle and a measuring device inserted in the base thereof, such measure being provided with automatic valves for controlling the entry and discharge of the fluid, and a discharging-spout passing through the bottle-top.

3. The combination of a bottle or similar shaped vessel, a metallic top of the same diameter as the vessel-body, carrying a registering device, a spout for delivering the fluid, a fluid-measure depending from the base of such spout, and a locking device for securing the bottle-body and metallic top together, all substantially as and for the purposes as herein shown and set forth.

4. The fluid-measure E, depending from the spout D, and provided with valves *d e* and *h g*, applied and operating substantially as and for the purposes as shown and set forth.

5. The combination of the vessel A, metallic top B, having a register, C, pouring-spout D, and liquid-measure E, all arranged, applied, and operating substantially as and for the purposes as herein shown and set forth.

298,779. WICK-RAISER. GEORGE W. SANFORD, Thomaston, Conn., assignor of one-third to Patrick McCain, same place. Filed Jan. 23, 1884. (No model.)



Claim.—The combination, with a wick-tube provided with elongated slots, of a bearing secured to said tube between the slots, shafts passing through the base of the burner, and having their inner ends journaled in said bearing, and toothed disks secured to the shafts and fitting in said slots, substantially as set forth.

298,780. CLUTCH. HERMAN SCHWETTER, Brooklyn, N. Y. Filed Mar. 26, 1884. (No model.)



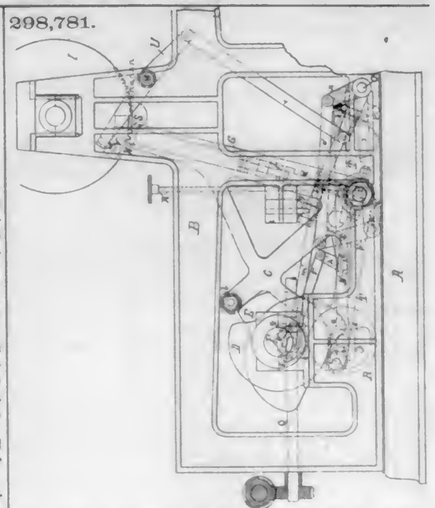
Claim.—1. The herein-described clutch-block mounted in a curved recess formed in the shaft, and having a curved face for bearing against the wall of the corresponding recess in the hub of the wheel, said block being arranged to be moved from the exterior of the wheel, substantially as shown and described.

2. The wheel provided with the enlarged hub, having the interior curved recess, as explained, the shaft having the elongated bearing for the wheel, the clutch-block curved on both bearing-faces, and mounted in a curved recess formed in the shaft, said recess arranged to accommodate the block while the wheel revolves, the collar, the projection on the clutch-block, by which it may be turned from the exterior down into the recess in the shaft, and the spring, combined and arranged substantially as shown and described.

298,781. PRINTING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed Aug. 21, 1883. (No model.)

Claim.—1. The combination, with the impression-cylinder, of a

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lever-arm, as G, a toothed sliding bar, as H, toggle-lever, as L, and a mechanism, substantially as described, for actuating said toggle-lever, substantially as described.

2. The combination, with the impression-cylinder, of a lever-arm, as G, a toothed sliding rod, as H, a toggle-lever, as L, the lower link of which is forked to straddle the hub of the lever C, and a mechanism, substantially as described, for actuating said toggle-lever, substantially as described.

3. The combination, with the impression-cylinder, of a lever-arm, as G, bar, as H, toggle, as L, and its actuating mechanism, substantially as described, a lever, as U, and a mechanism, substantially as described, for operating the parts at every second revolution of the crank-shaft.

4. The combination, with the impression-cylinder, of a lever-arm, as G, bar, as H, toggle, as L, a mechanism, substantially as described, for operating the parts so that the form-bed can be reciprocated any number of times for each impression taken, and a mechanism, substantially as described, for preventing the tripping of the parts except at proper times.

5. The combination, with the impression-cylinder, of a lever-arm, as G, a bar, as H, toggle, as L, lever, as U, and their actuating mechanism, substantially as described, a mechanism, substantially as described, for operating the parts so that the form-bed can be reciprocated any number of times for each impression taken, and a mechanism, substantially as described, for preventing the return of the parts except at proper times, substantially as described.

6. The combination, with the impression-cylinder, of a lever-arm, as G, a sliding rod, as H, a toggle-lever, as L, the lower link of which is a lever of the first order, and a mechanism, substantially as described, for actuating said toggle-lever, substantially as described.

298,782. CORN-PLANTER. LYMAN A. SCOVIL, Williamsport, Ohio. Filed Feb. 12, 1884. (No model.)

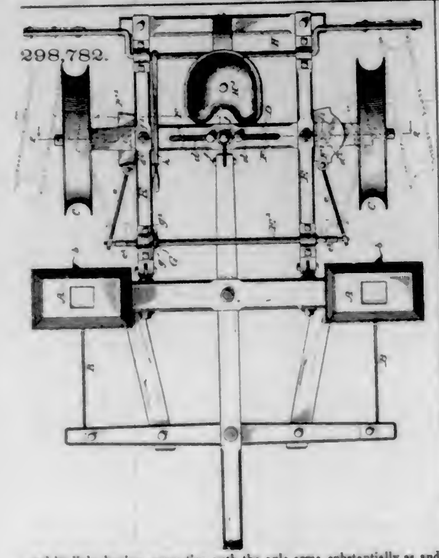
Claim.—1. The combination, substantially as hereinbefore set forth, of the wheel-frame, the axle-beam, the axle-arms having jointed connection with the axle-beam, the adjustable wheels, and means controlled by the attendant for simultaneously and correspondingly inclining the axle-arms, to cause the wheels to move together either inward or outward, whereby they are caused to simultaneously and similarly approach or move away from the central line of draft, for the purpose described.

2. The combination of the trench-openers, the axle-beam in rear thereof, the axle-arms having pivotal connection with the axle-beam, the wheels, the cranked rock-shaft having link-connection with the axle-arms, and its lever and detent devices, substantially as and for the purpose hereinbefore set forth.

3. The combination of the trench-openers, the wheel-frame, the axle-beam, the pivoted axle-arms, the cranked rock-shaft, the adjustable wheels, and the bracket-yokes by which the axle-arms have link-connection with the rock-shaft, substantially as and for the purpose hereinbefore set forth.

4. The combination of the wheel-frame, the axle-beam having longitudinal slots and transverse grooves, the sliding and vibrating axle-arms provided with pivots traversing the longitudinal slots, and guide-lugs working in the transverse grooves, the wheels, the cranked rock-shaft,

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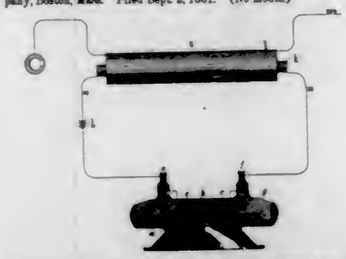
and its links having connection with the axle-arms, substantially as and for the purpose hereinbefore set forth.

5. The combination of the axle-beam, the sliding and vibrating axle-arm, the gear of the supporting-wheel, and the gears supported by connection with the axle-arm, substantially as and for the purpose hereinbefore set forth.

6. The combination of the runners, the teeth at the heels thereof for slightly covering the grain, the wheel-frame, the axle-beam, the axle-arms having jointed connection with the axle-beam, the adjustable wheels, and means controlled by the attendant for simultaneously and correspondingly inclining the axle-arms either to the rear or to the front, to cause the wheels to move together either inward or outward, whereby the grain may be covered by the teeth only, or by them and the wheels, substantially as and for the purpose hereinbefore set forth.

7. The combination of the wheel-frame, the axle-beam, the axle-arms having jointed connection with the axle-beam, the adjustable wheels, means controlled by the attendant for simultaneously and correspondingly inclining the axle-arms either to the front or to the rear, to cause the wheels to move inward or outward, and the series of scrapers for acting on the wheels in their different positions, substantially as and for the purpose hereinbefore set forth.

298,783. RECEIVING-TELEPHONE. CHARLES E. SCRIBNER, Chicago, Ill., assignor, by mesne assignments, to the American Bell Telephone Company, Boston, Mass. Filed Sept. 2, 1881. (No model.)

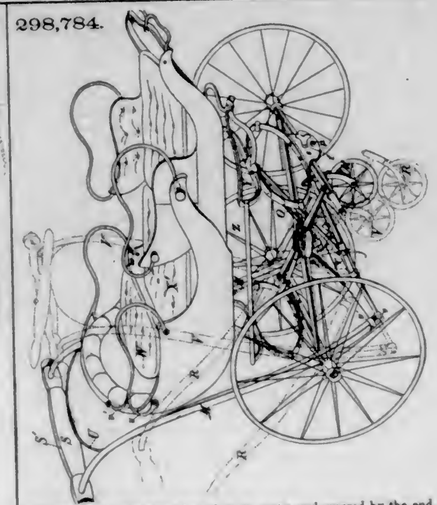


Claim.—The combination of the coil of the electro-magnet of the telephone with the primary of the induction-coil and the battery, whereby the telephone and induction-coil are rendered magnetic from the same source of electricity, substantially as and for the purpose specified.

298,784. CHILD'S CARRIAGE. HORACE C. SEELY, Philadelphia, Pa. Filed Oct. 14, 1881. (Model.)

Claim.—1. The handle having its uprights M journaled upon the axle and provided with the two-piece push-bar S S' and brace U, said

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two-piece push-bar being pivoted at its center and secured by the end caps, substantially as described.

2. The caster-wheel B and its connections, consisting of the triangle composed of its parts *m n o o*, socket *l*, and provided with the sliding sleeve *i*, with its hinge-lug *k*, set-screw *j*, and hinged to the arm A, the latter connected with the lifting-spring *a*, and front spring, axle, or frame, to actuate the said caster-wheel B through the uprights M of the handle, substantially as described.

3. The sliding sleeve *i*, provided with the set-screw *j*, and combined with the arm A and part *n* of the triangle, to produce an adjustable handle, substantially as described.

4. The combination, with the handle and reach, of the stirrup T and check-strap P, substantially as described.

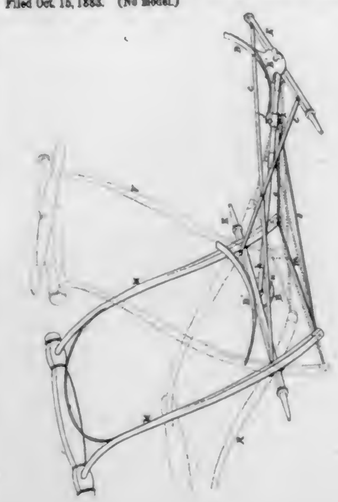
5. The combination, with the reach and front spring or frame, of the brace-strap O, substantially as described.

6. The rocking device, Fig. 4, combined with the spring by its flange *r* and with the axle through holes *t* and *u*, substantially as described.

7. The brace-guard, Fig. 6, with its prongs *v v' w*, combined with the carriage-body, substantially as described.

8. The detachable pillow W, to combine with the back or sides of the carriage-body, substantially as described.

298,785. CHILD'S CARRIAGE. HORACE C. SEELY, Philadelphia, Pa. Filed Oct. 15, 1883. (No model.)



Claim.—1. The combination of the handle-bars journaled upon the axle with ends extending below the same, triangular frame *m o o*, sleeve *i*, coupling-rod *h*, and means for securing the same in its adjusted position upon the coupling-rod, all substantially as described.

2. The coupling-rod *h*, journaled to the front or rear axle, and the front spring journaled on the front axle by means of a set-screw through the hole *u* in the rocking device B', said front axle being held in a horizontal position by the spring-reach *o c*, substantially as described.

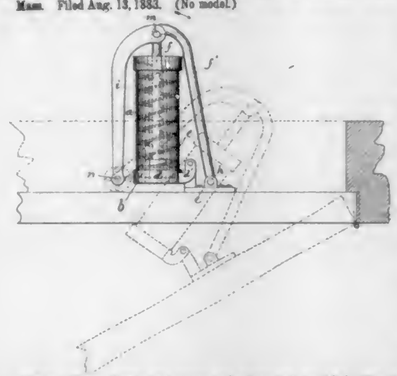
298,786. AUGER. HENRY L. SHALER, Deep River, CONN. Filed Apr. 11, 1884. (No model.)



Claim.—1. An auger or machine bit having the twist thereof constructed on a taper in cross-section, or varying in diameter or circumference throughout a portion of or its entire length, substantially as and for the purpose set forth.

2. An auger or machine bit having its cutting spurs or edges upon the largest diameter of the twist, said twist tapering from the top of the cutting-edges of the spurs back in a true taper designedly the entire length thereof, or sufficiently to form new cutting-edge when worn or broken, and giving clearance to the tool when boring, substantially as and for the purpose specified.

298,787. PNEUMATIC DOOR-CHECK. JOHN A. SHERMAN, Boston, Mass. Filed Aug. 13, 1883. (No model.)



Claim.—The cylinder and piston and piston-rod provided with an extension, combined with the pivot-plate to which the said cylinder and rod-extension are pivoted, the pivotal point of the cylinder being farther from the plate than that of the rod-extension by a distance about equal to that between the said pivots measured parallel with the plate, substantially as and for the purpose set forth.

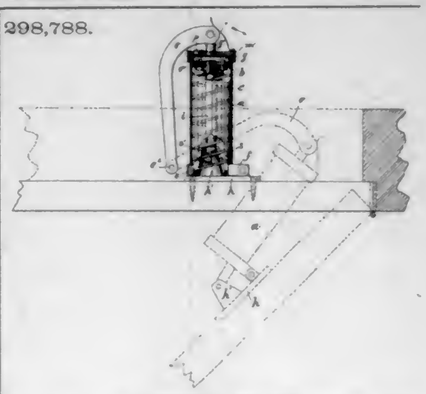
298,788. PNEUMATIC DOOR-CHECK. JOHN A. SHERMAN, Boston, Mass. Filed Aug. 13, 1883. (No model.)

Claim.—1. The cylinder and its pivot-plate, combined with the piston and its piston-rod extending toward and pivotally connected with the said pivot-plate, and the connecting-bar pivotally connected with the end of the cylinder opposite the pivot-plate, substantially as described.

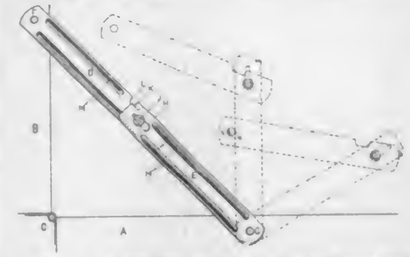
2. In a door-check, the cylinder, piston, piston-rod, and actuating-spring, combined with the connecting-bar and auxiliary spring co-operating therewith, substantially as described.

3. In a door-check, the cylinder and piston, provided with a valve and an orifice and connecting mechanism between them and the door, combined with the regulating-screw controlling the orifice in the said piston and wholly inclosed in the interior of the piston, substantially as described.

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298,789. TRUNK-STAY. CHARLES D. SIMMER, Annapolis, Md. Filed June 27, 1883. (No model.)



Claim.—1. A trunk-stay provided with a tapered friction-slot adapted to operate substantially as and for the purposes set forth.

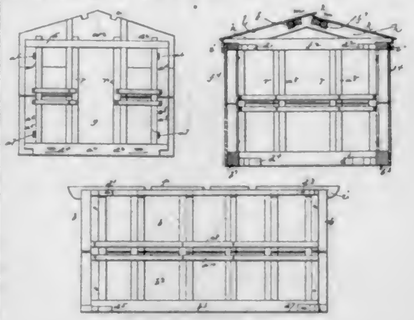
2. A trunk-stay composed of two pivoted arms or blades, one of which is provided with a tapered friction-slot, in combination with the pivot working in said slot and adapted to impede or oppose the closing movement of the trunk-lid, substantially as set forth.

3. A trunk-stay having the blade D, provided with the inclined shoulder L, in combination with the blade E, provided with the lip K, said blades being pivoted together, and adapted to operate substantially as described.

4. A trunk-stay composed of two pivoted arms or blades, the blades of which are provided with one or more guiding ridges or flutes, substantially as set forth.

298,790. PORTABLE BUILDING. JOSEPH SANFORD SIMMONS and ROBERT MARION SIMMONS, Belton, S. C. Filed Mar. 15, 1884. (No model.)

Brief.—Consists of side and end walls made in horizontal sections and detachably connected by angle-irons, hooks, and studs. The roof-sections are supported upon notched rafters, girders, and beams, one section overlying the other at the ridge.



Claim.—1. In a portable building, the combination, with the end walls, made in two horizontal sections, of the side walls, made in two horizontal sections, all of the sections being separable and connected at the corners, sills, and girders by angle-irons, hooks, and studs, substantially as specified.

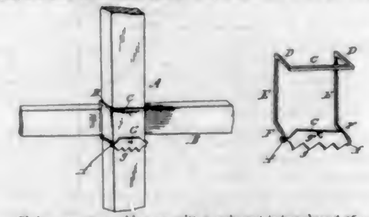
2. In a portable building, the combination, with the sectional side walls and end walls constructed and connected as described, of the notched roofing-girders *h*, secured to the notched tie-beams *f'*, the notched eave-strips *i*, the notched rafters *f f'*, and the roof-sections *k* and *l*, having notched securing-strips *m* on their under faces, substantially as and for the purposes specified.

3. In a portable building, the end wall having the sectional corner-posts and the sectional intermediate studding securely mortised into the sill and girder, and braced by the horizontal laths, in combination with the weather-boarding secured to said sectional corner-posts and studding, and the auxiliary studding loosely tenoned in mortises in the sill and girder of said end wall, substantially as specified.

4. In a portable building, the side wall composed of the sectional studding mortised securely in the side sill and side girder, and braced by the horizontal laths secured to their inner faces, in combination with the weather-boarding and the auxiliary studding tenoned loosely in mortises in the side sill and side girder, substantially as specified.

298,791. BUILDER'S SCAFFOLDING. DANIEL W. SPOONER, Minneapolis, Minn. Filed Aug. 23, 1883. (No model.)

Brief.—A binding-clamp consists of a front horizontal piece, parallel side arms, parallel vertical rear pieces, and lower parallel arms, and a toothed dog pivoted thereto, the whole embracing a post and ledger-board, and held in vertical adjustment by a set-screw in the pivoted dog.

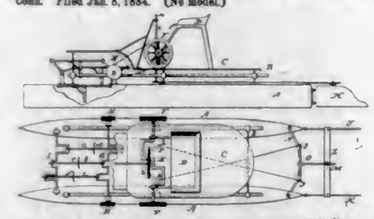


Claim.—1. In combination with a pole and ledger-board of a scaffold, the clamp described, supporting the latter and completely embracing and binding both together against vertical, lateral, and torsional movement, and held firmly in place at any desired point of vertical adjustment by means of the movable dog which engages with said pole, as herein specified.

2. The scaffold-binding frame described, having the parts C D E F with the engaging-dog pivoted in the eyes *f f* thereof, substantially as and for the purposes specified.

3. The dog G *g g'*, in combination with the parts C D E F *f*, adapted to serve substantially as herein described.

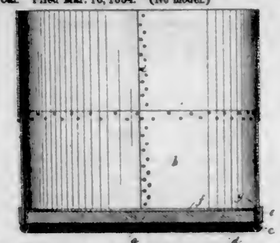
298,792. WATER-VELOCIPEDE. ELIJAH F. STEELE, Wallingford, Conn. Filed Jan. 8, 1884. (No model.)



Claim.—1. The combination of the two connected hulls A A, the deck C, fixed to but raised above said hulls, seat D, double-crank driving-shaft E, the two crank-shafts G and I, parallel to the said driving-shafts, one of said crank-shafts, G, in connection with the driving-shaft, whereby the revolution of the driving-shaft is communicated to said crank-shaft G, and rods connecting the respective cranks on said shafts G and I, each of said connecting-rods carrying a vertical blade, substantially as described.

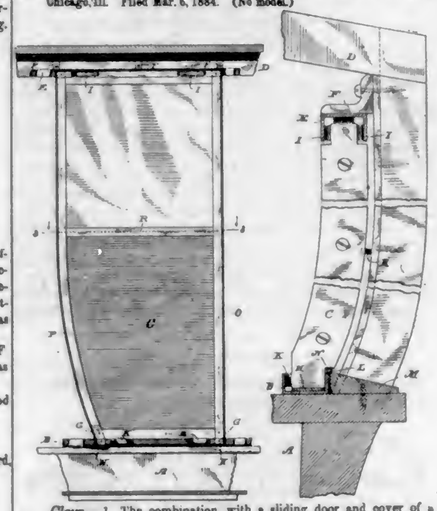
2. In a water-velocipede consisting of the two hulls A A, with propellers between them, and means for driving the same, the combination, with said hulls, of two connected rudders, J and K, the T-shaped lever O, hung between the hulls, the leg of the T in connection with said rudders, the vertical shaft *i*, provided with a handle, *k*, and the cross-piece P below the connections from each end of said cross-piece to the opposite ends of the T, substantially as described.

298,793. TANK FOR WINDMILLS. HARRY R. STEVENS, Los Angeles, Cal. Filed Mar. 10, 1884. (No model.)



Claim.—The herein-described water-tank, consisting of the body of galvanized sheet-iron bent inwardly and upwardly over a strengthening-wire near its lower edge, the wooden bottom fitting tightly in place over the bead formed at the lower edge of the body of the tank, the encircling hoop fitting tightly over the body directly opposite the edge of the wooden bottom, the metal flange bent downwardly and inwardly over the wooden bottom, and the calking in the space between the body-wall and the vertical portion of the upwardly-bent flange, substantially as specified.

298,794. SLIDING DOOR FOR CARRIAGES. FRANK P. STONE, Chicago, Ill. Filed Mar. 6, 1884. (No model.)



Claim.—1. The combination, with a sliding door and cover of a carriage, of troughs or ways, substantially as set forth, and rubber strips that bear against the jambs and the inner sides of the troughs, whereby the joints are made tight when the door is closed, substantially as set forth.

2. The combination, with a sliding door of a carriage and carriage-cover, of the troughs or ways, and the rubber strips that bear within the troughs, and the anti-rattling spring-bearings, substantially as and for the purpose set forth.

3. The combination, with a sliding door and body of a carriage, of the troughs or ways, the spring-bearings, the inclined sill, the rubber strip arranged in the sill, and the recess in the door in which the rubber strip is seated, substantially as set forth.

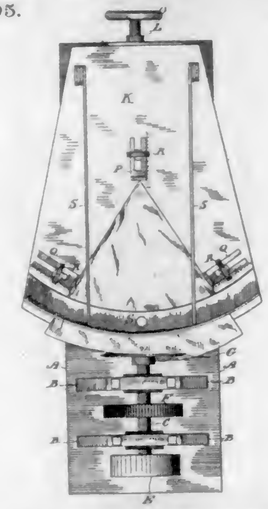
4. The combination, with a sliding door and body of a carriage, of the troughs or ways, the rubber strips, the spring-bearings, and the ebony strip that extends across the door at about its middle, substantially as set forth.

298,795. HAT-BODY-ROUNDING MACHINE. ALFRED T. STURDEVANT, Croton Falls, N. Y. Filed Sept. 29, 1883. (No model.)

Claim.—1. In a device for rounding hat-bodies, the combination of means for holding the hat-body flat upon a revolving platform and the cutting mechanism, substantially as set forth.

2. In a device for rounding hat-bodies, means for holding the hat flat in its cone shape upon the platform, and adjustable gages for confin-

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ing the hat as against horizontal displacement, substantially as set forth.

3. In a device for rounding hat-bodies, the swiveled platform adapted to support the hat, in combination with means for clamping the hat flat in its cone shape against said platform, adjustable gages to prevent horizontal displacement of the hat, and mechanism for cutting the hat-body, substantially as and for the purpose set forth.

4. The table K, swivelly attached to the adjustable block I, and having secured thereto the clamp S and gages P Q, in combination with the cutters G, substantially as shown and described.

5. The clamp S and gages P Q, attached to the platform, as shown, whereby the hat-body may be held and different sizes accommodated, in combination with means for adjusting said platform and mechanism for cutting the hat-body, substantially as described.

6. The clamp S and gages P Q, attached to the platform, as shown, whereby the hat-body may be held and different sizes accommodated substantially as set forth.

298,796. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed Jan. 2, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a prong-deflecting washer or plate having one or more integral bars formed upon its concave side, and also having the edges of the openings therein swaged or elongated, as and for the purpose set forth.

2. The metallic concavo-convex plate A, herein described, provided with the bar *a* upon its concave side, and further provided with the swaged or elongated edge *a'*, the whole formed from a single blank, substantially as shown.

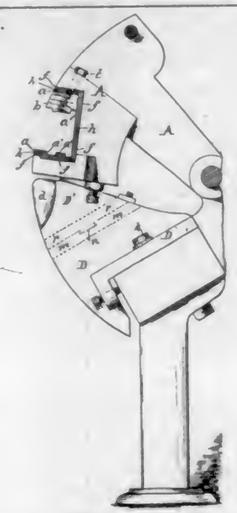
3. In a button-fastening, the combination, with a pronged button or staple, of the concavo-convex plate A, having the bar or tie *a* formed integral with said plate, the edges c of the opening *b* being swaged or extended at *a'*, the whole arranged and adapted to deflect and conceal the prongs, substantially as shown and described.

298,797. HEEL-STIFFENER MACHINE. ASA HOWARD THOMPSON, Boston, Mass., assignor to Edwin H. Sampson, same place. Filed Mar. 31, 1884. (No model.)

Claim.—1. The combination of the divided mold, the boxing A, and the recessed head A, substantially as described.

2. The combination of the recessed head A, the boxing A, the divided molds *b b'*, and the form *d*, with its backing D' dovetailed to the lower support, D, all as described and shown.

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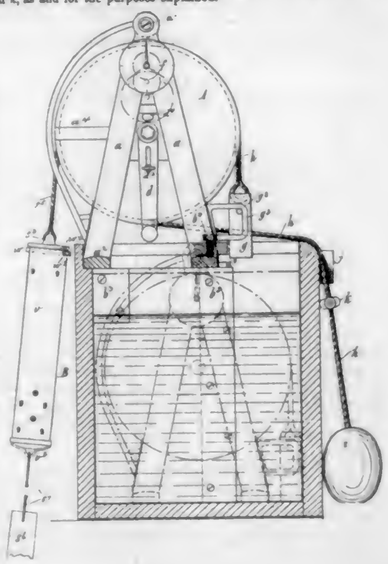
298,798. NAVIGATIONAL SOUNDING APPARATUS. WILLIAM THOMSON, Glasgow, County of Lanark, Scotland. Filed Jan. 21, 1881. (No model.) Patented in England Feb. 23, 1880, No. 781; in France Aug. 23, 1880, No. 138,389; in Germany Sept. 14, 1880, No. 15,123, and in Italy Sept. 20, 1880, No. 13,400.

Claim.—1. In a deep-sea sounding apparatus, the combination, with the drum or reel A, of a frame, *a a*, in which said drum has its bearings, a box, B, to receive said drum and frame, and provide for immersing the sounding-wire in a preservative liquid when not in use, and supports b^2 b^3, for sustaining the frame and drum in operative position, as described.

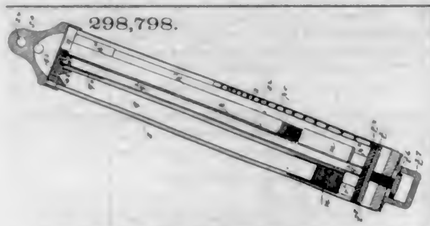
2. The combination of the frame *a a*, having laterally-projecting feet a^2 a^2, the supports b^2 b^3, and beads or flanges to secure said frame by its feet, substantially as described.

3. The combination of the frame *a a*, having feet a^2 a^2, the supports b^2 b^3, and screws b^4 b^4, substantially as described.

4. The combination, with the drum A, frame *a*, and box B, of the brake-cord k, weights *g i*, or springs in lieu thereof, check-blocks *j*, and bead *k*, as and for the purposes explained.



298,798.

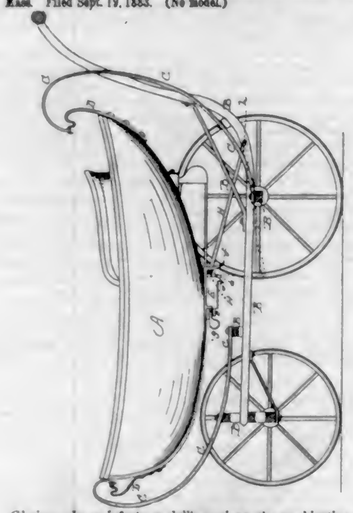


5. The combination of the cord k, weights *g i*, check-blocks *j*, bead *k*, lugs g^2, and stirrups g^3, as described.

6. The depth-gage consisting of a tube of adjustable capacity, with or without cloth to guard its lower end, and communicating at its upper end through a fine tubular passage with another tube capable of being closed and opened, and used for showing the depth by the quantity of water forced into it, essentially as described and represented.

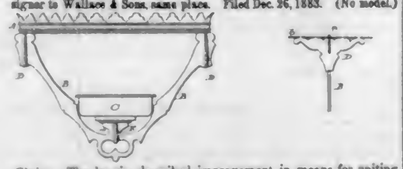
7. A depth-gage consisting of the combination of two, or three, or more, gages, wherein each succeeding tube by which the water enters bears an increasing ratio of capacity to its receiving-tube, as described.

298,799. INFANT'S CARRIAGE. CHARLES W. TROW, Wakefield, Mass. Filed Sept. 19, 1883. (No model.)



Claim.—In an infant's or doll's carriage, the combination, with a laterally-swinging carriage-body provided with a latch or locking device, of an arm extending from the frame and adapted to catch in said locking device, substantially as and for the purpose described.

298,800. HANGING LAMP. JOHN H. TURNER, Ansonia, Conn., assignor to Wallace & Sons, same place. Filed Dec. 26, 1883. (No model.)



Claim.—The herein-described improvement in means for uniting the parts of hanging-lamp fixtures, consisting in a brace constructed with a transverse slot corresponding to the thickness of the part to be braced, and the part to be braced with a corresponding slot, whereby the brace and the part to be braced may be interlocked the one with the other, the said brace constructed, substantially as described, for attachment to the portion to which the part to be braced is to be attached, the plane of the brace being at substantially right angles to the part to be braced, substantially as specified.

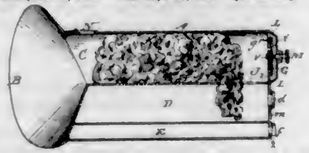
298,801. SHEET-METAL CAN. FRANCIS A. WALSH, Chicago, Ill. Filed June 18, 1883. (No model.)



Claim.—1. A can provided with a collar, *c*, having a shoulder, *g* and *g'*, and with a cover, *b*, united to said can by a part, *i*, whereof the part projecting beyond the collar *c* is turned over outward and down against the collar c and under the shoulder *g'*, substantially as specified.

2. A can provided with a shoulder, *g*, packing *m*, and cover *b*, united together by a separate part, *i*, substantially as specified.

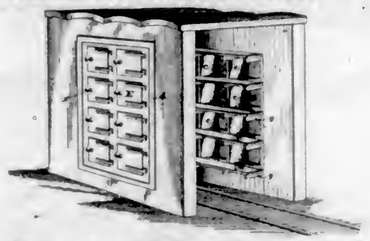
298,802. INHALER. CHARLES WARREN, Wellesley, assignor to John C. Warren, Boston, Mass. Filed Sept. 28, 1883. (No model.)



Claim.—1. In an inhaler substantially such as described, a mouth-piece adapted to fit closely around the mouth of the patient, an air-tube adapted to receive and hold a sponge, an induction-opening through which fresh air may enter said tube when in use, a valve or means for closing said opening as required, an eduction-opening through which the breath may be exhaled, a valve or means for closing said eduction-opening as the vapor is inhaled, a tank for holding the liquid ether or other anæsthetic, provided with an opening into said air-tube, and a plugged or capped opening through which the liquid may be drawn off or inserted, and a water-tank provided with a plugged or capped opening, through which the tank may be filled or emptied, combined and arranged to operate substantially as specified.

2. The air-tube C, tanks D E, and mouth-piece B, constructed and arranged substantially as shown and described, the tank D partially surrounding the tube C, the tank E partially surrounding the tank D, and the mouth-piece forming the top or end for both of said tanks, whereby space is greatly economized and the cost of construction reduced.

298,803. OVEN FOR DRYING CORES OR MOLDS. BENJAMIN F. WATKINS, Alliance, Ohio. Filed Jan. 2, 1884. (No model.)

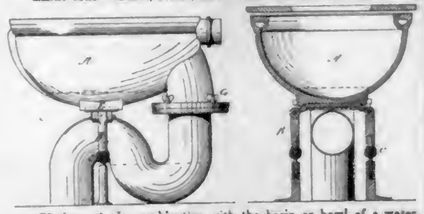


Claim.—1. A foundry or other drying oven provided with a track, a large door for the passage of a truck, a series of shelves secured to one or both side walls of the oven, and a series of small doors by means of which access can be had to the shelves without entering the oven, substantially as set forth.

2. A foundry or other drying oven provided with the main or large doors, a series of sockets set into the walls of said oven, brackets secured to the sockets, shelves supported on the brackets, and a door or doors adapted, when open, to expose the shelves, substantially as set forth.

3. A foundry or other drying oven provided with a large door, metallic frames set into the side walls of the oven and divided up into compartments, each of which is provided with a door, and shelves secured to the side walls or to the metallic frames forming a portion of the side walls, for the purpose of holding small cores, the said shelves being so situated relative to the small doors to enable the cores to be placed on and removed from the shelves through the door-openings without entering the oven, substantially as set forth.

298,804. ADJUSTABLE SUPPORT FOR WATER-CLOSET BASINS. HENRY CORY WEEDEN, Boston, Mass. Filed Nov. 22, 1883. (No model.)



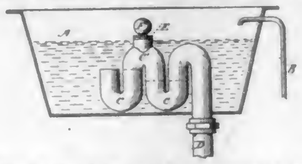
Claim.—1. In combination with the basin or bowl of a water-closet, a supporting-standard of the character described, having legs or supports of adjustable length adapted to carry said basin and support it at the desired height, all substantially as herein described.

2. In combination with a basin or bowl of a water-closet, a supporting and leveling standard of the character described, having legs or supports of independently variable length, adapted to carry the said basin and support it at the desired height and on the desired level, all substantially as herein described.

3. The improved adjustable support for water-closet basins herein described, consisting of a cross-bar, E, connected with vertical extensible standards B, provided with means, substantially as shown, for securing the standards in place at any desired height, all substantially as and for the purposes herein set forth.

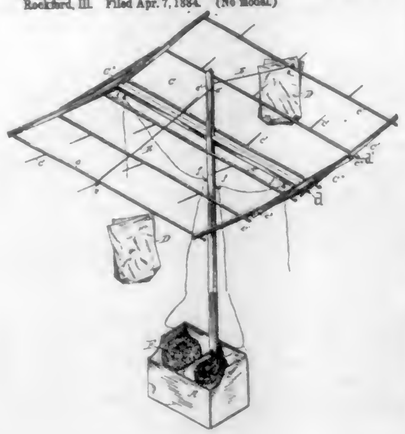
4. The improved support for water-closet basins herein described, consisting of a cross-bar, E, carried by extensible standards B, provided with means whereby the length of the standards may be regulated, and also with means whereby the cross-bar may be attached to the standard at a varying height thereon, all substantially as herein set forth, and for the purposes specified.

298,805. FLUSHING APPARATUS FOR CLOSETS AND URINALS. HENRY C. WEEDEN, Boston, Mass. Filed Mar. 31, 1884. (No model.)



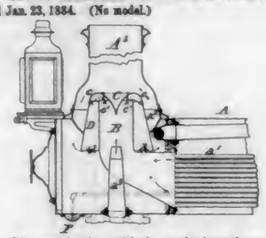
Claim.—In combination with a flushing-tank and its supply-pipe, a double-trap outlet-pipe provided at that portion which forms the air-seal with a valve or cover attached to a float, substantially as and for the purposes hereinbefore set forth.

298,806. BAG AND TWINE HOLDER. WILLIAM WELLINGTON, Rockford, Ill. Filed Apr. 7, 1884. (No model.)



Claim.—A bag and twine holder consisting of a twine-box, a perpendicular standard and its cross-piece with their screw-eyes, and the racks with their bodkins and sustaining-arms, all being combined substantially as and for the purpose set forth.

298,807. SPARK-ARRESTER. JOHN WESTINGHOUSE, Schenectady, N. Y. Filed Jan. 23, 1884. (No model.)

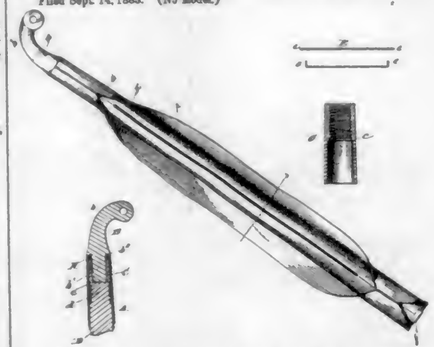


Claim.—1. The combination, with the smoke-box of a steam-boiler, of a discharge-flue connected to the flue or tube-head, and communicating thereat with the flue or flues affording passage to the products of combustion, a deflecting-cone located in line with and adjacent to the opposite end of said discharge-flue, and an outwardly-tapering casing connected to the periphery of the deflecting-cone and forming around the discharge-flue an annular passage opening directly into the smoke-box, substantially as set forth.

2. The combination, with a steam-boiler, of a smoke-box, a jacket forming an annular compartment around the boiler-shell, communicating at the top with said smoke-box, a discharge-flue connected to the flue-head and surrounding the end of the fire flue or flues, a conical deflector located above the opening of said discharge-flue, and an outwardly-tapering casing connected to the periphery of the deflecting-cone and forming around the discharge-flue an annular passage opening into the smoke-box adjacent to the lower end thereof, substantially as set forth.

3. The combination, with a steam-boiler, of a smoke-box communicating at bottom with an annular compartment surrounding the boiler, a discharge-flue connected to the flue-head and extending upwardly in the smoke-box, a conical deflector located above the opening of the discharge-flue, an outwardly and downwardly inclined casing connected to said deflector, and a supplemental deflector projecting from the inside of the smoke-box and forming an annular passage around and above the lower end of the inclined casing, substantially as set forth.

298,808. CARRIAGE-BOW. FREDERICK A. WITTICH, Ashtabula, Ohio. Filed Sept. 14, 1883. (No model.)



Claim.—1. In a carriage-bow, a ferrule having its lower inner portion provided with a screw-thread to receive the slat-iron, and of greater thickness than its upper smooth portion, which receives the tenon of the wooden filler, in combination with the metal case, the lower edge of which is brought together and welded over said ferrule, as shown and described.

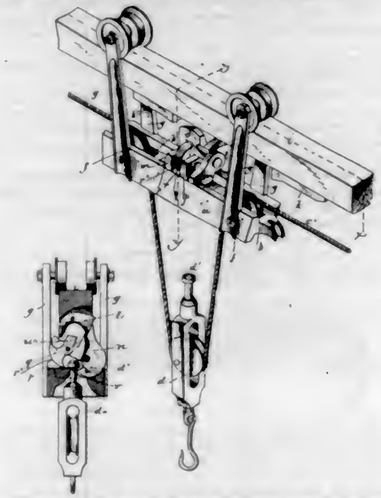
2. In a carriage-bow, the combination of the slat-iron having its upper end provided with a screw-threaded stud, *b'*, a screw-threaded ferrule having the threaded portion upon its inner surface made thicker than the upper portion thereof, and filler D, having a tenon, *d*, upon its lower end, substantially as shown and described.

3. In a carriage-bow, the combination of a ferrule which laps the joint between a filler and stud of a slat-iron, and a metal case which, at its lower end, is welded over said ferrule, and one or more washers, substantially as and for the purpose described.

4. In a carriage-bow, the combination of a filler, a ferrule, and slat-iron, all arranged substantially as described, with the metallic case E, having inwardly-turned lips *c'*, which extend from near the upper end of the filler to near the ferrule, the edges of the case at the ends thereof being welded together, substantially as and for the purpose set forth.

5. The combination of a filler, ferrule, slat-iron, and metallic case, constructed substantially as herein described, with a casing of leather or other material, as and for the purpose set forth.

298,809. HAY-CARRIER. WILLIAM I. WOOSTER and JAMES NATHANIEL REYNOLDS, Harvard, Ill. Filed Mar. 6, 1884. (No model.)



Claim.—1. In a hay-carrier, the combination, with the main casting, of the lug-arms and the hinged drop-block provided with the vertical shoulder, and the arms, in which is arranged the pivoted curved and shouldered dog, adapted to be operated by a pivoted weighted trip in the under face of the track, substantially as specified.

2. In a hay-carrier, the combination, with the base-casting suspended from the track by hangers having flanged track-wheels, of the drop-block and pivoted shouldered curved dog arranged transversely of the casting over a countersunk hole, and a trip-lever operated by a shoulder on the drop-block, substantially as specified.

3. In a hay-carrier, the combination, with the casting provided with the countersunk middle hole and pulleys at its sides, and provided with the hinged drop-block having the vertical shoulder, and the pivoted curved, hooked, and shouldered dog, of the track provided with the rigid stop-blocks on its under face, and the pivoted weighted trip between them, substantially as specified.

4. In a hay-carrier, the combination, with the casting having dovetail grooves in its vertical faces, of the hanger-arms secured within said dovetail grooves by the bolts that form the axes for the pulleys in the casting, substantially as specified.

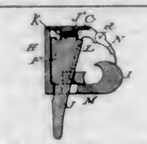
5. In a hay-carrier, the combination, with the main casting having dovetail grooves in its vertical faces, of the detachable hanger-arms, whereby the carrier may be changed from a four-wheel track to a rod or cable track, substantially as specified.

6. In a hay-carrier, the combination, with the main casting having the under countersunk middle hole and the pulleys near each end, of the cross-lug arms and the intermediate point-rest for the pivoted dog, of the drop-block having the nearly oval-shaped recess in its under face between and back of the hook-arms, the vertical shoulder at its rear, the pivoted curved and shouldered dog between the forward portion of the arms, the pulley-block having the headed stem, and the stop-blocks and pivoted trip on the under face of the carrier-track, substantially as specified.

298,810. THILL-COUPLING. WILLIAM H. WRIGHT, Tarrytown, N. Y. Filed June 7, 1883. (No model.)

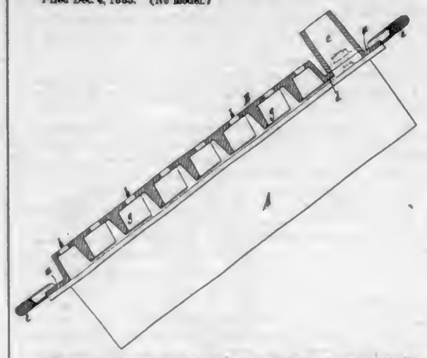
Claim.—In a thill-coupling, the combination of a fixed housing, C, draw-hook I, depressing vertical spring, and vertical cam F, inseparably

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engaged in and operating the restricted horizontal-acting clamp M backward and forward, substantially in the manner and for the purposes described.

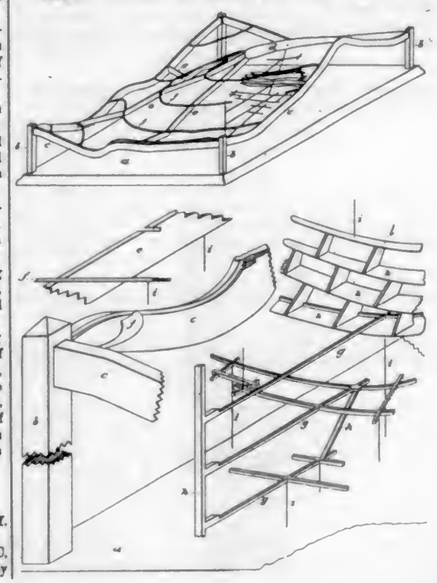
298,811. FLASK OF MOLDS. HAWLEY ADAMS, New York, N. Y. Filed Dec. 4, 1883. (No model.)



Claim.—1. A cope for a mold-flask made in the form of a shallow box having rhomboidal compartments therein, and provided with holes for the escape of air and gas during casting, substantially as specified.

2. A cope for a mold-flask made in the form of a shallow box having rhomboidal compartments therein, of which ribs *g* form one wall of each, and provided with holes *b* in the top for the escape of air and gas during casting, a running-box, *c*, and a passage, *d*, substantially as specified.

298,812. TOPOGRAPHICAL REPRESENTATION OR MODEL. CLARENCE L. ANDERSON, San Francisco, Cal. Filed Feb. 4, 1884. (No model.)



Claim.—1. In a representation or model, an open frame composed of separated parts or strips secured together, and each curved to a reduced fac-simile of the contour of the surface of the ground at the elevation it represents, whereby the topography of the surface is illustrated, said frame being elevated above a datum or base plane, and suitable strips or pieces under said frame, between it and the datum-plane, arranged in relation to each other and to the contour of the surface-frame to properly represent the interior features of a subterraneous work, substantially as described.

2. In a representation or model, the side pieces, *c*, curved to represent a reduced cross-section of the ground on a vertical plane and the pieces *f*, secured thereto, and curved to reduced lines of contour of the surface of the ground, whereby the topography of the ground is illustrated, substantially as herein described.

3. In a representation or model, the side pieces, *c*, curved to represent a reduced cross-section of the ground on a vertical plane, the top *d*, carved to a reduced fac-simile of that portion of the ground which it represents, the rib-pieces *e*, extending from the top *d* to the side pieces, *c*, and carved to the slope of the ground, and the pieces *f*, supported on said ribs between the side pieces, and carved to reduced lines of contour of the surface of the ground, whereby the topography of the ground is illustrated, substantially as herein described.

4. In a representation or model, an open frame-work representing the topography or surface of the ground, and elevated above a datum or base plane, in combination with the strips *h*, secured between and to said frame-work and datum-plane by wires *i*, and representing the shafts of a mine or other subterraneous work, substantially as described.

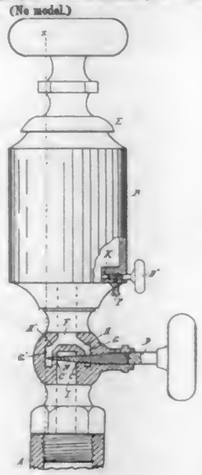
5. In a representation or model, an open frame-work representing the topography or surface of the ground, and elevated above a datum or base plane, in combination with the strips *g*, secured between and to said frame-work and datum-plane by wires *i*, and representing the tunnels or drifts of a mine or other subterraneous work, substantially as described.

6. In a representation or model, an open frame-work representing the topography or surface of the ground, and elevated above a datum or base plane, in combination with the horizontal pieces *k*, spaced by strips *l*, and secured between and to said frame-work and datum-plane by wires *i*, said pieces representing the stopes of a mine or other subterraneous work, substantially as herein described.

7. In a representation or model, an open frame-work representing the topography or surface of the ground, and elevated above a datum or base plane, in combination with the vertical and inclined strips *h*, the strips *g*, and horizontal spaced pieces *k*, secured between and to said frame-work and datum-plane by wires *i*, and to each other, and representing the shafts, drifts, or tunnels, stopes, and other interior excavations of a mine or other subterraneous work, substantially as herein described.

8. In a representation or model, the side pieces, *c*, elevated above a datum or base plane, as shown, the top *d*, ribs *e*, and contour-strips *f*, as described, for showing the topography or surface of the ground, in combination with the strips *h g*, and pieces *k*, secured between and to the frame formed by pieces *c*, *d*, and *e*, and the datum-plane, and to each other, for showing the shafts, drifts, or tunnels, stopes, and other interior excavations of a mine or other subterraneous work, substantially as herein described.

298,813. LUBRICATOR. LUTHER B. BAILEY, London, Ontario, Canada. Filed Feb. 23, 1884. (No model.)



Claim.—1. In a lubricator, a valve-spindle with an elongated tapered valve end, the upper or larger portion of which regulates the steam-inlet, and the smaller portion the lubricant-outlet, in combination with valve-seats of different areas, substantially as and for the purposes described.

2. In a lubricator, the combination of the oil-reservoir thereof, having a passage or passages leading therefrom communicating with the parts to be lubricated, two openings or valve-seats of different areas, the larger being for the admission of steam, and the smaller being the oil-outlet, and a single tapered valve controlling such openings, substantially as and for the purposes specified.

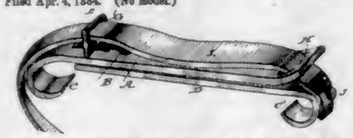
3. In a lubricator, a valve-spindle, D, provided with an elongated tapered valve end, N, in combination with the steam-inlet O and lubricant-outlet C′, such inlet and outlet being of different areas, and arranged with relation to the spindle, substantially as and for the purposes described.

4. In a lubricator, the combination, with the reservoir thereof, of the chambers G G′, passages F I and H H′, steam-inlet C, lubricant-outlet C′, and valve-spindle D, provided with an elongated tapered valve end, N, the parts being arranged, constructed, and operating substantially as and for the purposes set forth.

5. In a lubricator, the combination, with the reservoir thereof, of the chambers G G′, passages F I and H H′, steam-inlet C, lubricant-outlet C′, valve-spindle D, provided with an elongated tapered valve end, N, passage K, and outlet F, the parts being constructed, combined, and operating substantially as and for the purposes set forth.

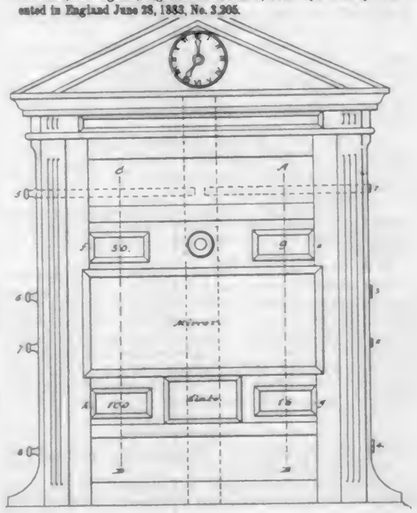
6. In combination with a lubricator constructed substantially as described, a glass-gage, O, provided with passages H″ communicating with the parts to be lubricated, outlet R, valve-spindle D′, and passage L, substantially as shown, and for the purposes specified.

298,814. HAME-FASTENER. OSWALD EVANS BAKER, Jamison, Iowa. Filed Apr. 4, 1884. (No model.)

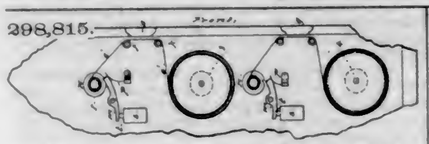


Claim.—The improved hame-fastener herein shown and described, consisting of the longitudinally-slotted top plate having a short transverse slot at one end, a hook for its attachment to one of the hames at the other end, and a hook on its under side, in combination with the perforated bottom plate having a hook for its attachment to the other hame, the strap fastened to the hooked end of the bottom plate, and the swiveled button having a slotted head for the insertion of the free end of the strap, the whole constructed and combined substantially as and for the purpose shown and set forth.

298,815. APPARATUS FOR BILLIARD-MARKING. ROWLAND BATEMAN, Birmingham, England. Filed Jan. 9, 1884. (No model.) Patented in England June 28, 1883, No. 3,205.



298,815.



Claim.—In a game-register, the combination of a case having an opening in its face with a registering-tape arranged within said case and visible through said opening, a pair of spindles to which the ends of said tapes are attached, a notched disk on the rewinding-spindle, the pawl *m*, which normally takes into and locks said disk, and the lock *s*, the bolt of which bears against the tail of said pawl, so as to free said disk, said spindles and lock being accessible from the outside of the case, substantially as set forth.

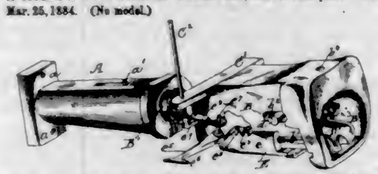
298,816. SEPARATING OIL FROM THE EARTH USED IN REFINING OILS OR FATS. MARY A. BRAL, Chicago, Ill., assignor of one-half to Joseph A. Griffin, same place. Filed Mar. 20, 1883. (No specimens.)

Claim.—1. The method, substantially as described, of extracting oils or fatty substances from earth that has been used for refining fats or oils, which consists in subjecting the fat-saturated earth to boiling in a relatively large body of water, and then removing the fat from the surface of the water, substantially as set forth.

2. The process of separating the oil or fat from the earth which has been used as a bleaching agent by placing the earth in sufficient water to allow a free circulation of its particles, applying heat thereto, agitating the mixture until it is brought to a state of boiling, permitting it to boil until the separation is effected, and then allowing the earth to settle, substantially as described.

3. The process of separating the oil or fat from earth which has been used as a bleaching agent by placing the oil-impregnated earth in water in an open vessel, applying heat externally to the vessel, agitating the mixture until it is brought to a condition of boiling, permitting it to boil until the separation is effected, and then allowing the earth to settle, substantially as described.

298,817. CAR-COUPLING. HENRY T. BEAM, Robinson, Ill., assignor of one-half to Wm. C. Jones and Thomas Aten, both of same place. Filed Mar. 25, 1884. (No model.)



Claim.—1. The hollow cylindrical socket A, provided with flanges *a*, in combination with a cylindrical draw-bar, and with a pin inserted in the draw-bar and passing through the longitudinal slots in the socket, substantially as shown and described.

2. The combination of the socket A, draw-head B, having cylindrical draw-bar B′, spring C, and pin *a*′, substantially as shown and described.

3. The combination of the head B, and the jaw D, provided with the transverse bolt or trunnion *d*′, riding in the slot *b*² in the head, with the jaw D′ and hinge D², each of the jaws having a semi-spherical recess and incline guiding-surface *d* in its inner surface, and with means for locking the jaws together, substantially as specified.

4. The combination of the recessed head B, and the hinged jaws D D′, the former having trunnions riding in an elongated slot in the walls of the head, and connected to the latter by a hinge-joint, with an external sliding plate, and means for operating the same, substantially as specified.

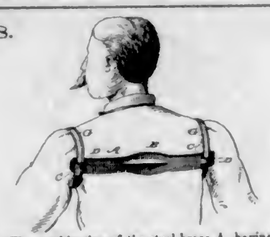
5. The combination of the plate E, having rack *e*², the gear *e*′, standard *e*³, strap *e*⁴, and lever C³, provided with the arm *e*⁵, substantially as specified.

6. The combination, with the draw-head B, provided with flanges *b*′, of the plate E, provided with grooved flanges *c*, substantially as shown and described.

7. The coupling-link F, formed in two sections arranged in different planes, and united by a joint, *f*, and provided with balls F′ at the outer end of each section, substantially as specified.

298,818. SHOULDER-BRACE. BENJAMIN BIDDLECOME, St. Louis, Mo. Filed Mar. 20, 1884. (No model.)

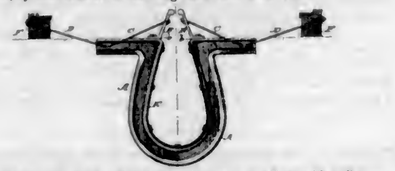
298,818.



Claim.—The combination of the steel brace A, having central enlargement, B, and parallel slots C C at opposite ends, and elastic straps or bands G, clasped between the slotted ends of the brace and the keeper D, formed by said slots, substantially as set forth.

298,819. CONDUIT FOR TRACTION-ROPE OR ENDLESS-CABLE RAILWAYS. ZACCUR PRAIL BOYER, Philadelphia, Pa. Filed Mar. 15, 1884. (No model.)

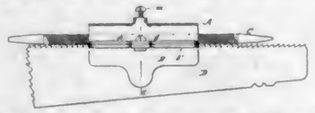
Brief.—Yokes approximating the form of a horseshoe have horizontal wings extending toward but not to the track stringers or sills, the slot-irons being secured to the wings and braced, as are also the stringers or sills, by rods secured to the wings near their outer ends.



Claim.—1. In a conduit for traction-rope or endless-cable railways, the yoke in form approximately that of a horseshoe having wings extending therefrom at nearly a right angle toward but not to the sills of the track, and forming the bearings *b* for the slot-irons, and provided with means for the attachment of braces connecting it with the slot-irons and the sills, all substantially as shown and described.

2. In a conduit for traction-rope or endless-cable railways, the yoke in form approximately that of a horseshoe having wings extending therefrom at nearly a right angle to a point about half-way between the body of the conduit or tubing E and the sill F, each of said wings having two holes, in combination with the slot-irons and sills and braces C C and D D, all arranged, constructed, and operating substantially as set forth and described.

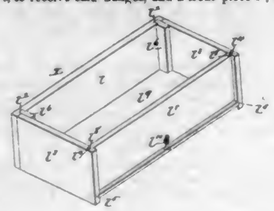
298,820. SAW-JOINTER. BARNARD S. BOLARD, Brooklyn, N. Y. Filed Sept. 6, 1883. (No model.)



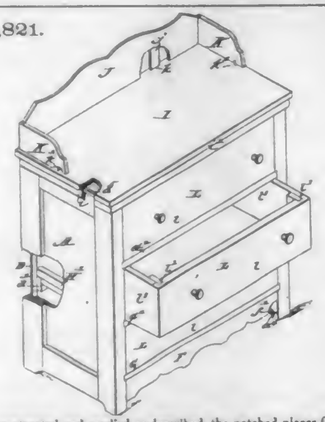
Claim.—In a saw-jointer, the combination of a hollow cap-piece, A, having flanges *a* and *a*′, two side pieces, B and B′, having flanges *b* and *b*′, said side piece B′ being made adjustable, as described, and a file, C, clamped between said cap-piece and side pieces, substantially as shown and described.

298,821. KNOCKDOWN FURNITURE. JOS. B. BROLASKI, St. Louis, Mo. Filed Aug. 6, 1883. (No model.)

Claim.—1. The combination, in a knockdown case or frame, of end pieces A A, provided with flanges *a*², a top, I, provided with interlocking portions *i*, to receive said flanges, and a front piece *i*′, with rails E



298,821.



B C F, constructed and applied as described, the notched pieces G G' G², the fastenings therefor, the detachable back piece, and the drawers, all constructed and put together substantially as described.

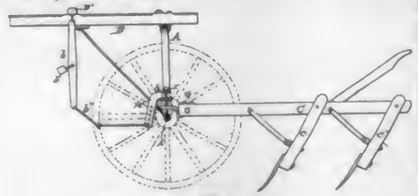
2. The combination of the back rails, B E, removably applied to the end pieces A, and having grooved edges, with the removable back pieces D, fitting into the grooves of said rails, the knockdown drawers, the end pieces A, with the removable draw-slides, and the front strips, G G' G², secured to said end pieces by means substantially as described.

298,822. TAPPET-WIRE FOR CORN-PLANTER CHECK-ROWERS. GEORGE W. BROWN, Galesburg, Ill. Filed Jan. 22, 1883. (Model.)



Claim.—A check-row chain combining in its structure sections of wire united by interlocking eyes *a b''*, a tappet or knot through which the bent or loop portion of one section passes, and in which it is held by a short bent portion, *a''*, of its end resting in a cavity, *a'''*, in the side of the tappet, while the other section is secured by coiling its end upon its main portion, substantially as described, and for the purpose set forth.

298,823. CULTIVATOR. GEORGE W. BROWN, Galesburg, Ill. Filed Feb. 2, 1883. (No model.)



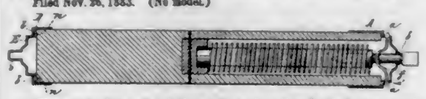


Claim.—1. In a cultivator-coupling, in combination with the bolt D, having eyes *d*, through which the arm A' passes, and long tubular standard E, seated on the bolt D, and held by projections *e*, which rest on the arm A', the beam-plate provided with a tubular standard, G', journaled on the standard E, and nut I for securing the parts together, substantially as and for the purpose specified.

2. The combination, with the plow-beam and axle, eyebolt D, standard E, and beam-plate G, of the draft-plate H, extended forward and downward, and provided with a series of holes for the draft attachment to adjust the draft to exert a downward or an upward force, or not to exert any vertical force upon the beams, substantially as and for the purpose set forth.

3. In combination with the bolt D, journaled on a horizontal part of a cultivator, long tubular standard E, having lugs *e*, beam-plate G, having tubular standard G', journaled on the standard E, the draft-plate H, journaled on the standard G', and provided with holes *h''*, substantially as and for the purpose specified.

298,824. CURTAIN-ROLLER. HEZEKIAH H. BRYANT, Boston, Mass. Filed Nov. 26, 1883. (No model.)



Claim.—1. A cap or end piece for curtain-rollers, having ornamental bosses or moldings struck up or otherwise formed upon its ends, which project beyond the ends of the rollers, and having a suitable orifice or opening, through which a spindle or the journal of a bracket may be passed, substantially as described.

2. A cap or end piece for curtain-rollers, having ornamental moldings or bosses struck up or otherwise formed upon its ends, which project beyond the ends of the roller, and of less diameter than the latter, and provided with a suitable orifice or opening through which a spindle or the journal of a bracket may be passed, substantially as described.

3. As a new article of manufacture, a cap or end piece for curtain-rollers, struck up or spun from wrought metal, having a ferrule portion which fits upon the end of the roller, and provided upon its projecting portion with ornamental bosses or moldings of less diameter than the ferrule, and forming a shoulder which sets against the end of the roller, substantially as described.

4. The combination, with a curtain-roller, of a cap or end piece having a bearing-flange, *b*, surrounding the spindle-opening, substantially as described.

5. A cap or end piece for a curtain-roller, composed of two parts, one of which fits upon the roller, and has an inwardly-turned flange, and the other provided with a projecting portion of a less diameter than the roller, and having a peripheral flange which lies with the ferrule portion and against its flange, substantially as described.

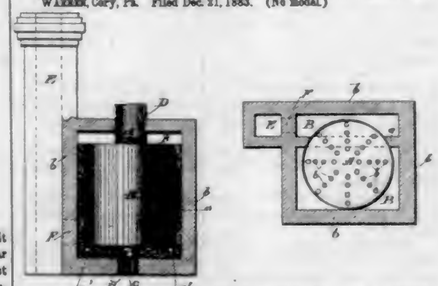
6. In a curtain-roller, the combination, with a cap having suitable pockets or recesses, of a spindle having a grooved or flattened portion, C, and a pawl straddling such portion, and provided with the lip *k*, by bending which the pawl may be fastened in or disengaged from the spindle, substantially as described.

7. A cap or end piece for a curtain-roller, composed of two parts, D and E, having respectively inward and outward flanges, and one part being adapted to fit within and project from the other, substantially as described.

8. The combination, with a curtain-roller, of the end cap, A, having the pockets *a* and flanged bearing *b*, the spindle B, having grooved portion *c*, and pawl C, with notched ends *k*, substantially as described.

9. A cap or end piece for curtain-rollers, having a ferrule portion which fits upon the roller, and provided with a peripheral depression, *a'*, of less diameter than the roller, and ornamental bosses or moldings concentric therewith, substantially as described.

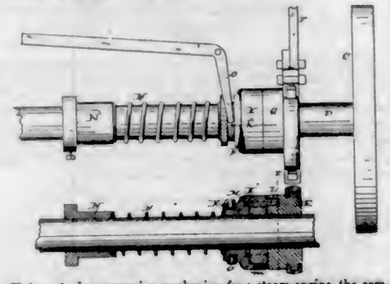
298,825. PETROLEUM-STILL. ROLLIN C. CLARK and MURRAY H. WARREN, Cory, Pa. Filed Dec. 21, 1883. (No model.)



Claim.—1. In a petroleum-still, the combination, with a heating-chamber, the lower portion of which is divided into two parts by a bridge-wall, a flue communicating with one portion of said chamber, and the flue or opening G in the bottom of the other portion of said chamber, of a vertical still supported on standards directly over the opening G, and provided with vertical flues, all of the above parts combined, as described.

2. In a petroleum-still, the combination, with a heating-chamber divided from the top of the still downward into two parts, a flue communicating with one portion of the chamber, and the flue or opening G in the bottom of the other portion of said chamber, of a vertical still supported on standards over the opening G, and provided with vertical tubes extending through the still and set on radial lines, so as to leave a space in the center of the still, and with a man-hole, by means of which access is had to the space between the tubes, substantially as set forth.

298,826. REVERSING-GEAR FOR ENGINES. WILLARD A. CLARKE, Stillwater, Minn., assignor to the North Western Manufacturing and Car Company, same place. Filed Mar. 12, 1883. (No model.)



Claim.—1. In a reversing mechanism for a steam-engine, the combination of the following elements, namely: the engine-shaft, the loose eccentric, and the opposing continuously-rotating collar, one of which can slide relatively to the other on the shaft, and of which one is provided with a pin or projection and the other with seats or recesses to receive the pin, a stop arranged between the collar and the eccentric and adapted to engage with the opposing face of the eccentric, and mechanism, substantially as set forth, whereby the pin is held in its seat.

2. In a reversing mechanism for a steam-engine, the combination of the following elements, namely: the engine-shaft, the loose eccentric, and the opposing continuously-rotating collar, one of which can slide relatively to the other on the shaft, and of which one is provided with a pin or projection and the other with seats or recesses, the intermediate collar adjustably secured to the engine-shaft, means, substantially as set forth, connecting said collar with the continuously-rotating collar and its attached pin, and mechanism, substantially as set forth, whereby the pin is held in its seat.

3. In a reversing mechanism for a steam-engine, the combination of the following elements, namely: the engine-shaft, the eccentric loosely fitted on the shaft and provided with two recesses or seats, one for the forward and one for the backward movement, a collar made movable toward and from the eccentric, a pin attached to the collar and adapted to engage with either of the seats of the loose eccentric, a collar adjustably connected with the shaft and provided in its outer face with a spline, a groove in the sliding collar to receive the spline, and mechanism, substantially as set forth, whereby the pin is held in its seat.

4. In a reversing mechanism for a steam-engine, the combination of the following elements, namely: the engine-shaft, the loose eccentric, and the opposing continuously-rotating collar, one of which can slide relatively to the other on the shaft, and of which one is provided with a pin or projection and the other with seats or recesses, and with stops which project toward the pin-support beyond the plane of rotation, in which the end of the pin moves immediately after it is disengaged from either of the sockets, to prevent the pin from rotating beyond the seats or recesses, substantially as set forth.

5. In a reversing mechanism for steam-engines, the combination of the following elements, namely: the engine-shaft, the loose eccentric, and the opposing continuously-rotating collar, one of which can slide relatively to the other, and of which one is provided with a pin or projection and the other with sockets or recesses, and is provided further with a part-circular groove connecting said sockets upon one side only of the sockets or recesses, substantially as set forth.

6. In a reversing mechanism for steam-engines, the combination of the following elements, namely: the engine-shaft, the eccentric fitted loosely on the shaft and provided with two recesses or seats—one for the forward and one for the backward movement—the sliding collar provided with a pin adapted to enter the recesses, the part-circular groove connecting the recesses, and mechanism, substantially as set forth, whereby the pin may be alternately withdrawn from and held in its seat.

298,827. COUPLING FOR FENCE-WIRES. WILLIAM M. CLOW, East Wheatland, Ill. Filed Oct. 16, 1883. (No model.)



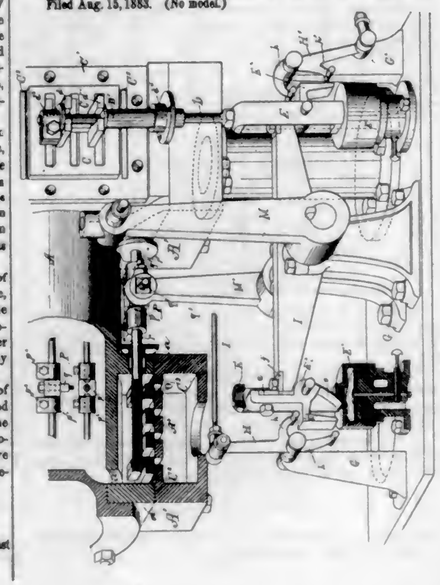
Claim.—1. The combination, with the fence-wire *w*, of the shoe *a'*, provided with the ears *z*, nail P', and lever *a*, having the upturned outer end, *a²*, and of the ring *c'*, as and for the purpose set forth.

2. The combination of the wire *w*, shoes *a'* and *c'*, provided with suitable means for securing said wire therein, lever *a*, hinged in shoe *a'*, and the fence-posts D and D', provided with suitable means for attachment of said shoes thereto, as and for the purpose set forth.

3. In a coupling for forming passage-ways through wire fences, the combination of the shoe *a'*, having the ears *z*, and means for securing the strand-wire *w* in said shoe, and the curved lever *a*, hinged to said shoe, and adapted to operate as and for the purpose set forth.

4. The combination of the shoe *c'*, having the ring *c*, and ears *z*, and pin P, shoe *a'*, having the ears *z* and pin P', curved lever *a*, hinged to said shoe *a'*, and fence-wire *w*, as and for the purpose set forth.

298,828. VALVE-GEAR. GEORGE M. CONWAY, Milwaukee, Wis. Filed Aug. 15, 1883. (No model.)



Claim.—1. The combination, with a beam, F, of trips connected with induction-valves, and trippers connected with the governor-stem, the latter adapted to throw the trip off the beam, either after a determined limit of speed has been attained or when the governor-arms become stationary and drop, as set forth.

2. The trip having offsets E^3 and springs *e*, and connected with the induction-valve stems, in combination with trippers H H', having arms *h h'*, and connected with the governor-stem, as set forth.

3. The yokes, carrying dash-pots and trips, and connected with the induction-valves by stems D, in combination with beam F and the trips and trippers, as set forth.

4. The beam F, having an arm connected with an eccentric on the driving-shaft and an arm, M', connected with the stems of the eduction-valves, in combination with the induction-valve stems and trips connecting them with it, as set forth.

5. The combination, with the governor-stem having stud *k*, of the slotted disk *k'* and the tripping mechanism, as set forth.

6. The combination, with the eduction-valve stems, of a block, P, connecting them with each other, arm *m*, and the beam F, as set forth.

7. The induction-valve having bifurcated lugs, in combination with a valve-stem and adjustable clamp, as set forth.

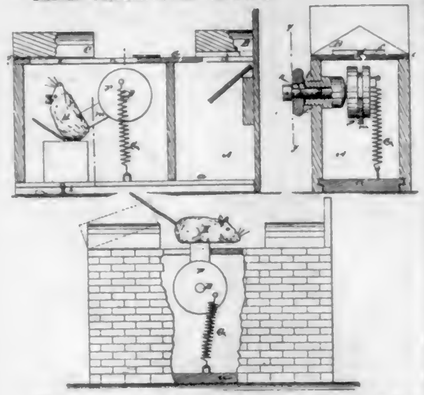
298,829. TABLE-KNIFE. ARTHUR W. COX, Newark, N. J. Filed Mar. 19, 1884. (No model.)



Claim.—1. A handle provided with a finger-rest extending laterally beyond the common thickness of the handle and continued forward in an upwardly-curved stop portion, and having its end in advance of said rest contracted, as described, forming a neck adapted to receive the blade, substantially as set forth.

2. As an article of manufacture, the herein-described handle, formed with indentations on its opposite edges, and laterally-extended finger-rests provided with upwardly-curved continuations or stops, and having its forward end in advance of such finger-rests contracted, as described, and adapted to support the blade, substantially as set forth.

298,830. TOY SAVINGS-BANK. CHARLES M. CRANDALL, Montrose, Pa., assignor of two-thirds to Frederick W. Crandall and Benjamin L. Baldwin. Filed Mar. 13, 1884. (No model.)

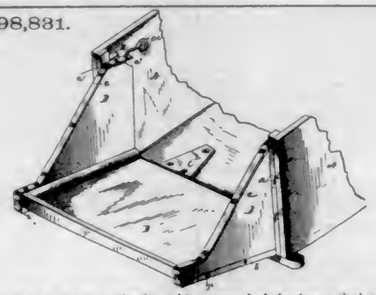


Claim.—1. A toy bank consisting of a box, A, with openings *d* and *e*, revolving shaft D, disk F, and collar E, in combination with a simulated animal, H, arm *m*, slot *g*, and spring G, as and for the purpose described.

2. In a toy bank, the combination of a revolving shaft, D, and pin *k* with a loosely-fitted collar, E, thereon, constructed with a recess, *l*, whereby the shaft may, during part of its revolution, turn independently of said collar.

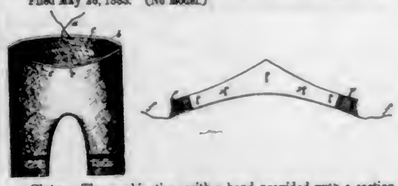
3. In a toy savings bank, the combination of a revolving disk with an arm, *m*, slot *g*, spring G, box A, with openings *d* and *e*, fixed cover B, and hinged cover C, as and for the purpose shown.

298,831. WAGON END-GATE. ISAAC CRUZAN, Willow Springs, Kans. Filed Jan. 12, 1884. (No model.)



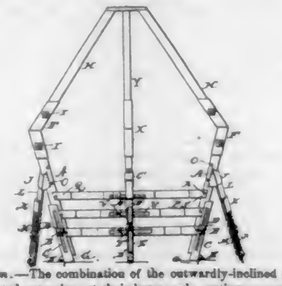
Claim.—The combination, with a wagon-body having vertical strips *d* secured to its inner sides, adjacent to the ends thereof, of a gate, B, hinged to the floor thereof, and provided with side strips, D, having plates *e*, provided at their forward ends with openings or perforations to receive the ends of hooks pivoted to the inner sides of the wagon-body, strips secured to the outer sides of said gate, near the end thereof, and having openings registering with openings *f* in the sides of the wagon-body, for the passage of rods b^3, substantially as set forth.

298,832. UNDER-GARMENT. LOUIS DANNHAUSER, New York, N. Y. Filed May 26, 1883. (No model.)



Claim.—The combination, with a band provided with a section of sections of elastic material, of under-garments severally provided with a draw-string and with means whereby they may be detachably secured to the band for the purpose of being supported thereby, substantially as described, whereby the band will act with a yielding pressure while the under-garments may be left loose around the person.

298,833. FRAME FOR STACKING. WILLIAM J. DARRAH, Fayetteville, Mo. Filed Mar. 6, 1884. (No model.)



Claim.—The combination of the outwardly-inclined corner-posts having slotted extensions at their lower ends, castings or sockets at their upper ends, inclined sockets at their outer sides, and perforations at their edges, the extensible cross-bars having perforated lips at their ends, the outwardly-inclined middle posts having extensions at their lower ends, sockets at their upper ends, and inclined sockets at the middle of their outer sides, the extensible braces fitting with their upper ends into the sockets upon the outer sides of the corner-posts and of the middle posts, and the inwardly-inclined top bars fitting with their lower ends in the sockets at the upper ends of the corner and middle posts, all constructed as and for the purpose shown and set forth.

298,834. DRAFTSMAN'S ADJUSTABLE CURVE-RULER. FRANK WHITHROP DAVENPORT, Providence, R. I. Filed Jan. 19, 1884. (Model.)

Claim.—1. In an adjustable rule, a strip of flexible and partially spring material—as sheet metal, vulcanized rubber, &c.—combined with

298,834.



a partially-rigid piece—as lead, soft copper, &c.—so as to retain any shape to which it is bent.

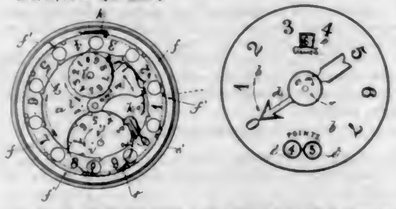
2. In an adjustable rule, the combination of the face-piece E and casing C, attached thereto, said casing being adapted to receive a third portion.

3. In an adjustable rule, the combination of the face-piece E, casing C, and stiffener H, arranged substantially as described.

4. In an adjustable rule, the combination of the face-piece E, casing C, stiffener H, and piece W.

5. In an adjustable rule, the combination of the face-piece E, stiffener H, and piece W, arranged and operating substantially as and for the purpose set forth.

298,835. GAME-COUNTER. FRANK DAYTON, Portland, Oreg. Filed Mar. 13, 1884. (No model.)



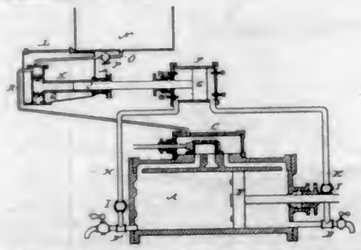
Claim.—1. In a game-counter, the combination, with the two-part case having openings in its face, and a pointer, or a turning-button, *c*, the dog or arm *n*, the ring *f*, the numbered ring *g*, having holes, and the numbered disks *i l*, and mechanism, substantially as described, for moving the parts progressively, as set forth.

2. In a game-counter, the case composed of the base *a*, having an annular rib, *c'*, the numbered face *b*, with openings, the pointer *d*, and turning-button *c*, connected together, the numbered ring and disks, and mechanism for moving the same progressively and giving the count, as set forth.

3. The combination, in a game-counter, of the numbered ring *g*, having holes through it, and notches in its outer and inner edges, the spring-catch *h* and pin *r*, the notched disks *l* and *i* and spring-catches *m* and *k*, the dog or arm *n* and catches *o o'*, and means for revolving the same, substantially as set forth.

4. The base *a*, having an annular rib, *c'*, and the ring *f*, held stationary by pins and provided with a spring-catch, *h*, in combination with the notched ring *g*, having holes and numbers, as described, and a pin, *r*, the notched wheel *i*, and catch or pawl *k*, the arm or dog *n*, and catch *o*, and a pointer, *d*, connected to said dog or arm, as and for the purposes set forth.

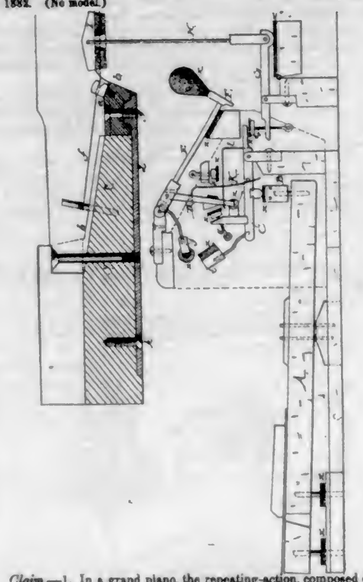
298,836. LUBRICATOR. ARSON C. DEARING, Detroit, Mich. Filed Aug. 27, 1883. (No model.)



Claim.—1. The combination, with a steam-cylinder, of a secondary cylinder whose opposite ends are connected by steam-pipes to the opposite ends of the main cylinder, a pump operated by the piston of the secondary cylinder, and means for supplying oil to said pump, substantially as described.

2. The combination of the cylinder F, connected by pipes with a steam-engine, of the piston G, pump K, operated by said piston, pipe R, chamber L, oil-tank N, and the pipe O, provided with means of regulating the amount of oil passing from the oil-tank to the chamber L, substantially as described.

298,837. PIANO. JULIUS EDEL, Jamestown, N. Y. Filed Nov. 28, 1882. (No model.)

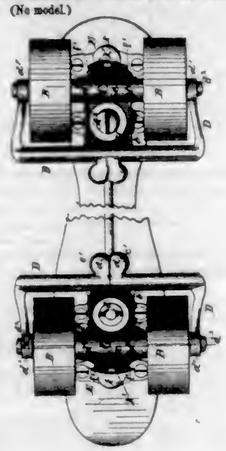


Claim.—1. In a grand piano, the repeating-action, composed of lever C, fly D, hammer F, repeating-spring *l*, fly-spring K, regulating-screw *o*, back-jack *i* and *j*, damper-lever G, and damper-head I, arranged and combined to operate in the manner and for the purpose set forth.

2. In combination with the keys in a grand piano, the repeating-action composed of lever C, fly D, hammer F, repeating-spring *l*, fly-spring K, regulating-screw *o*, and back-jacks *i* and *j*, in front of fly D, thereby making the repeating-action more compact, as shown, and for the purpose set forth.

3. The combination, with the wrest-plank in a grand piano, of the upper iron plate, *b*, having ribs projecting downward on one edge to form a groove, and the heavy iron plate *d* under the wrest-plank C, having a tongue or rib to fit said groove, and secured firmly thereto by screws *g g*, as shown, and for the purpose set forth.

298,838. ROLLER-SKATE. CHARLES E. FLAGG, Boston, Mass. Filed Mar. 15, 1884. (No model.)



Claim.—1. The roller-skate bearings, consisting of the inverted cups or concave sockets *c' c'* and the segmental concave recess c^2, in combination with the balls *d d*, and the segmental convex bearing *f*, substantially as and for the purposes described.

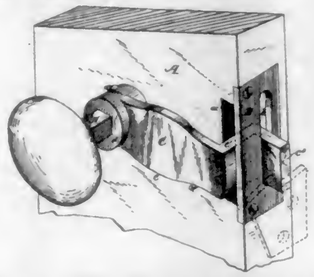
2. The combination, with the bearings *c' c'*, *d d*, c^2, and *f*, of the cushion-boxes *b*, cushions H, and a set-screw adapted to hold the parts together, substantially as and for the purposes described.

3. The axles in two separate parts, G G, provided with holes or slots d^3, in combination with the arms *d' d'*, the spring-keys d^4, and the axle-boxes C, provided with holes to receive the ends of the keys, substantially as and for the purposes described.

4. The roller-skate axle-boxes C, provided with the oil-boxes *e e*, adapted to receive packing to retain the oil, and connected with the axle-bearings by means of the tubes *s s*, formed in and along the axle-boxes, substantially as and for the purposes described.

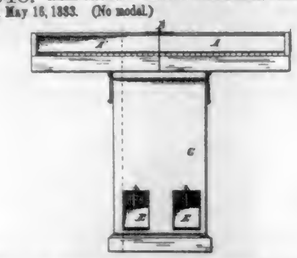
5. The combination of the roller-skate bearings *c' c' d d* c^2 *f*, the cushion-boxes *b*, and cushions H, the standards *g*, heads A, lugs *f' f' f'*, the projections *k*, having the inclined surfaces *k'*, and the projections *a'*, having the concave recesses f^2, substantially as and for the purposes described.

298,839. LATCH. GEORGE FOWLER, Fishmont, N. Y. Filed Mar. 15, 1884. (No model.)



Claim.—The combination, with a door or gate provided in its swinging edge with a mortise, and the guard-plate secured on said edge over said mortise, and provided with a vertical slot, of the latch having its shank pivoted at one end on the door and its other end bent laterally into the mortise, and the point or latching end projected thence through the slot in the guard-plate, substantially as set forth.

298,840. REED-ORGAN. FRANK F. FRANCESCHINI, Philadelphia, Pa. Filed May 16, 1883. (No model.)

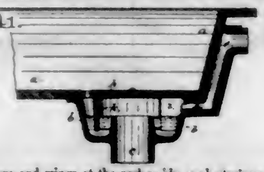


Claim.—An organ or similar musical instrument divided from front to back into separate parts or sections A A', the sections being joined one to another by suitable connections B, and box G, containing the bellows, the pedals, and wind-pipe, said parts being combined and arranged so that when set up they constitute one instrument having a complete key-board, the box being adapted to receive the air-chest when the latter is folded up, substantially as described.

298,841. TRAP FOR SINKS, &c. HENRY FRIEDRICH, East Port Chester, Conn. Filed Jan. 7, 1884. (No model.)

Claim.—1. The sink *a*, having dish *b*, upward-extending outlet *c*, and ventilating-channel *e*, in combination with strainer *h*, having flange *k*, and wings *i*, substantially as set forth.

2. The combination, in a basin-trap, of an annular dish around the waste-pipe, a ventilating-pipe, a removable strainer-plate having a depending flange and wings at the under side, such strainer-plate having an irregular form at its edges, so that it can only be entered one way into its recess around the dish, substantially as set forth.



298,842. LOCK-NUT. SAMUEL GISSINGER, Pittsburg, Pa., assignor to John H. Noble, same place. Filed Sept. 13, 1883. (No model.)

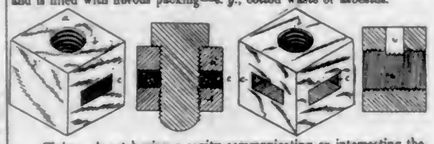


Claim.—1. A nut having an upper threaded portion and a lower unthreaded portion separated by a cavity intersecting the eye of the nut, substantially as and for the purpose specified.

2. A nut having an upper threaded portion and a lower unthreaded portion separated by a cavity intersecting the eye of the nut, said parts being formed separately and united together, substantially as and for the purpose specified.

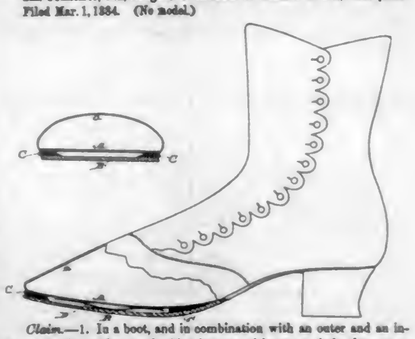
298,843. NUT. SAMUEL GISSINGER, Pittsburg, assignor to John H. Noble, Hulton, Pa. Filed Aug. 3, 1883. Renewed Apr. 14, 1884. (No model.)

Brief.—The cavity passes to or across and beyond the bolt-hole, and is filled with fibrous packing—*e. g.*, cotton waste or asbestus.



Claim.—A nut having a cavity communicating or intersecting the bolt-hole, in combination with fibrous packing capable of being drawn between the threads of the nut and the bolt, substantially as and for the purpose specified.

298,844. BOTTOM FOR BOOTS OR SHOES. CONRAD F. GLANVILLE, San Francisco, Cal., assignor of one-half to William H. Yee, same place. Filed Mar. 1, 1884. (No model.)

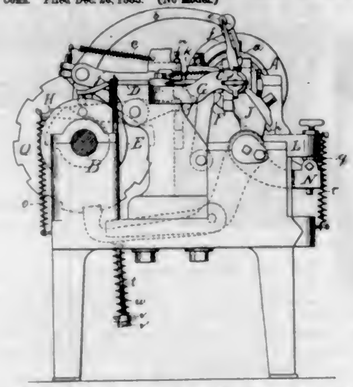


Claim.—1. In a boot, and in combination with an outer and an inner sole, a rim or flange of rubber interposed between their edges, so as to form an inclosed central air-space between the soles, substantially as herein described.

2. In a boot or shoe, an outer and an inner sole, with an edge-interposed rim or flange of rubber, forming an inclosed air-space between the soles, in combination with a spring or springs acting between the soles within this space, substantially as herein described.

3. In a boot, and in combination with an outer and an inner sole, a rim or flange of rubber interposed between their edges, so as to form an inclosed central air-space between the soles, said rim having its front or sides extended up to protect the upper, substantially as herein described.

298,845. SCREW-CUTTING MACHINE. CHARLES GLOVER, Hartford, Conn. Filed Dec. 26, 1883. (No model.)



Claim.—1. The combination of the pendent finger *f*, the plunger *g*, and their operating mechanism, substantially as described, and for the purpose specified.

2. The combination of a holding-chuck, gripping-fingers for bringing a screw-blank in front of said chuck, the pendent finger, and the reciprocating plunger for acting upon said finger, the finger in turn acting upon the end of the screw-blank, substantially as described, and for the purpose specified.

3. The combination of the slide C, having the adjustable plunger mounted therein, the collar A, made adjustable longitudinally upon said slide, and reciprocating mechanism acting upon said collar to operate it and the slide, substantially as described, and for the purpose specified.

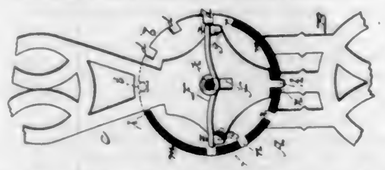
4. The combination of the sliding block G, having the beveled face *l'*, the back rest, F, having the beveled face *l*, and mechanism for reciprocating the slide, substantially as described, and for the purpose specified.

5. The combination of the sliding block G, having the beveled face *l'*, the back rest, F, having the beveled face *l*, mechanism for reciprocating said block G, and an adjustable stop to limit the extent of the upward movement of said block, substantially as described, and for the purpose specified.

6. The combination of the oscillating tool-holder, its driving-lever, driving-cam, the jointed arm P, attached to said driving-lever, and the spring *u*, substantially as described, and for the purpose specified.

7. The combination of the oscillating tool-holder, its driving-lever, driving-cam, the relief-spring *u*, and mechanism for adjusting the pressure of the spring, substantially as described, and for the purpose specified.

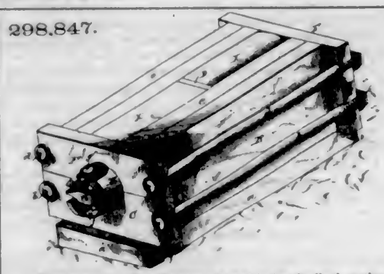
298,846. CANOPY-STANDARD. GEORGE H. GRAHAM and JULIUS D. LLOYD, Oriskany, N. Y. Filed Mar. 17, 1884. (No model.)



Claim.—1. A canopy-standard provided with a central slot to receive a transverse pin and bearings to receive a spring, and provided with projections to engage notches in the stationary portion, whereby said standard is locked automatically in position.

2. In a canopy-standard, the adjustable arm provided with the central slot and side lugs and locking pins or lugs, in combination with the centrally-perforated head, of the stationary arm having notches, and the cap-plate provided with the central pin, the flange having notches and cut away to form a passage for the adjustable arm, substantially as described.

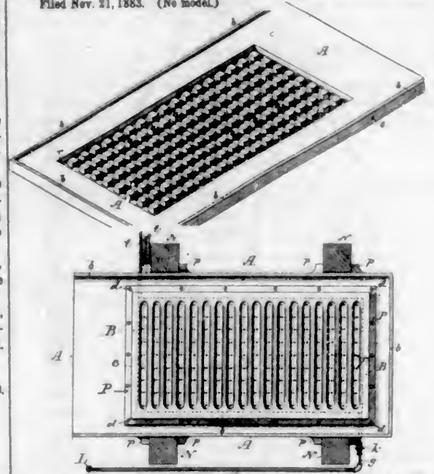
298,847. TILE-MOLD. JAMES GRANT, Goshen, Ind. Filed Mar. 18, 1884. (No model.)



Claim.—1. A collapsible core formed in longitudinal sections and provided with notches at its ends, in combination with a longitudinal strip located between said sections to form a key, and screw-threaded pins seated in the notches of the sections and provided with tightening-nuts and pivoted latches, whereby the sections of the core are drawn together against the key and the latter held in position between the same, substantially as and for the purpose set forth.

2. The combination, with a collapsible core formed in longitudinal sections and provided with a key held between them by a pin and latch, of a mold-frame consisting of a suitable base or platform provided with removable side and end sections, said end sections being divided longitudinally, and each half having at its ends notches or grooves and clamping-rods seated therein, and provided with nuts engaging the screw-threaded ends thereof to securely hold both the side and end sections together and to the base or platform, substantially as and for the purpose specified.

298,848. OIL-PRESS MAT. CHARLES S. HAMILTON, Milwaukee, Wis. Filed Nov. 21, 1883. (No model.)



Claim.—1. The combination, in an oil-press mat, of a metallic plate, A, so excavated on its upper face as to leave at uniform distances from each other, supporting-columns—as *a a*—and of a thin plate, P, secured to said plate A over the excavated portion thereof, thereby forming between the two plates a steam-tight chamber for the reception and circulation of a heating medium, substantially as and for the purposes set forth.

2. The combination of the plates A and P, inclosing between them a heating-chamber with supporting-columns for resisting pressure, substantially as and for the purposes set forth.

3. The combination, with the perforated plate B, having drainage-grooves, of the partition-plate P and excavated plate A, substantially as and for the purposes set forth.

4. The combination, with an oil-press mat, when the same is provided with a heating-chamber, of a flexible hose, as *l*, connecting said chamber with the heat-reservoir, whereby heat is continuously admitted to the mat without interference with its vertical movement, substantially as and for the purposes set forth.

5. The method of heating oil-press mats, consisting in passing the heating medium from its supply-reservoir to the plates to be heated

through a flexible conduit, and permitting said heating medium to enter and escape at diagonally-opposite corners of the heating-chambers in said mats, substantially as and for the purposes set forth.

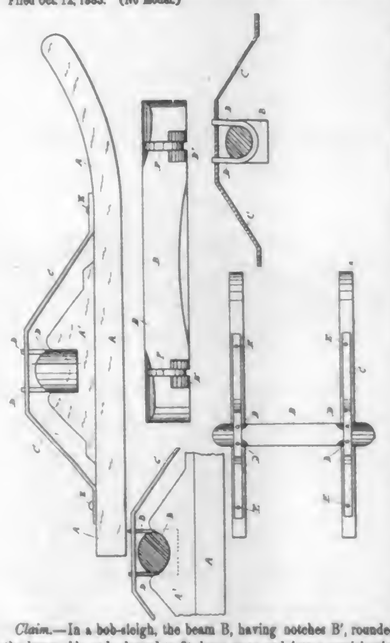
6. The combination, in an oil-press mat, of the plate A, having a plane lower surface, upon which are raised strips *m m*, to prevent the spreading of the meal form beyond proper limits when the same is under pressure, and the cap-plate B, having a corrugated upper face, whereby a meal cake is produced, having one plane and one corrugated face, substantially as and for the purposes set forth.

7. The combination, in an oil-press mat, of the removable perforated cap-plate B, provided on its under face with the drainage-grooves, and the plate A, provided with a heating-chamber formed in its upper face, together with a thin plane partition-plate, P, inserted between said plates A and B, substantially as and for the purposes set forth.

8. The combination, in an oil-press mat provided with a heating-chamber, of the inlet-pipe *g*, provided with cock *k*, the supply-pipe L, located near the opposite end of the press, and the flexible hose *l*, connecting said pipe *g* and pipe L, substantially as and for the purposes set forth.

9. In an oil-press mat, a perforated cap-plate, B, having a corrugated upper face and drainage-grooves cut into its lower face, substantially as and for the purposes set forth.

298,849. BOB-SLEIGH. EDWIN A. HARDING, Harbor Springs, Mich. Filed Oct. 12, 1883. (No model.)

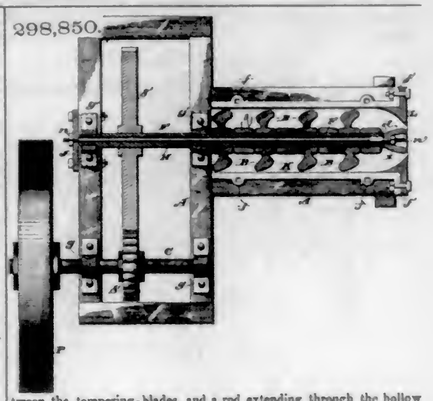


Claim.—In a bob-sleigh, the beam B, having notches B', rounded on the lower side and adapted to fit down upon and into a semicircular recess on top of the blocks A', secured to the upper sides of the runners A, said beam having grooves F, rounded at the bottom, thereby permitting it to oscillate upon the yokes D and block A', in combination with runners A, provided with braces C, as shown and described.

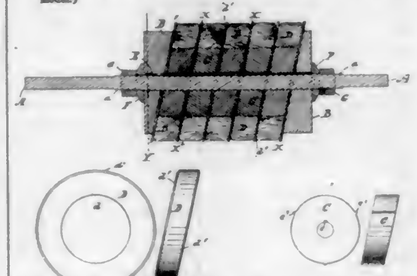
298,850. TILE-MACHINE. FRANCIS M. HARRIS, MAXWELL G. HARRIS, MILO J. HARRIS, and MARCUS L. HARRIS, Covington, Ind., assignors of one-fifth to John N. Spining, same place. Filed Nov. 8, 1883. (No model.)

Claim.—In a tile-machine, the combination, with a frame for supporting the driving-gear, and a cylinder secured to one side of the frame and provided at its outer end with a die, of a hollow rotary shaft journaled in the side pieces of the supporting-frame, and having a gear-wheel secured thereto between said side pieces, said hollow shaft extending into the cylinder and nearly to the outer end thereof, tempering-blades formed with hubs or sleeves encircling the hollow shaft, and spacing-sleeves between the tempering-blades, and a rod extending through the hollow shaft and secured at one end to the machine-frame, the opposite end of the rod having an enlarged bearing for supporting the outer end of the hollow shaft, and a die removably secured to the outer and projecting end of said rod, substantially as set forth.

298,850.



298,851. MACHINE FOR CONVERTING WOOD INTO FIBER. JOSEPH H. HAYDEN and JONATHAN R. SLEEPER, Bristol, N. H., assignors of one-third to Cyral R. Aldrich, Boston, Mass. Filed Mar. 30, 1884. (No model.)



Claim.—1. The herein-described means for converting wood into fiber, consisting of a series of three or more circular saws, separated by wooden collars, provided in their center with holes bored on an angle with the parallel sides thereof, and all mounted upon an arbor and securely clamped thereon by suitable end collars and nuts threaded to said arbor, hung in suitable bearings, and driven by means of a pulley and belt, substantially in the manner and operating as and for the purpose set forth.

2. The herein-described means for converting wood into fiber, consisting of a series of three or more circular saws, separated by collars composed of wood and metal, provided in their center with holes bored on an angle with the parallel sides thereof, and all mounted upon an arbor and securely clamped thereon by suitable end collars and nuts threaded to said arbor, hung in suitable bearings, and driven by means of a pulley and belt, substantially in the manner and operating as and for the purpose set forth.

3. The combination, with the saw-arbor A, of a series of saws, X, mounted thereon and held on an angle by the metal and wooden separator-collars C D, (the collar D having chamfered corners *d'*,) the end collars, B F, the spline E, fitting key-seats in said arbor A, collars B C, and saws X, and suitable nuts, G, all constructed and operating substantially as and for the purpose set forth.

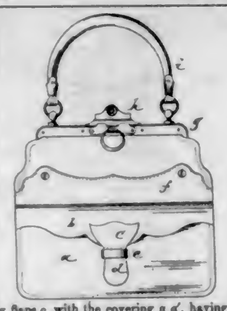
298,852. SATCHEL. DAVID HEIDELBERGER, Chicago, Ill. Filed Jan. 14, 1884. (No model.)

Claim.—1. In a satchel or traveling-bag, the exterior or covering *a a'*, provided with projecting flaps *n*, substantially as and for the purpose specified.

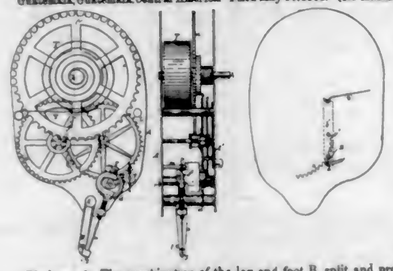
2. The interior or lining formed of side pieces, *k*, bottom piece, *l*, and end pieces or gussets provided with flaps *o*, substantially as and for the purposes specified.

3. The combination of the interior pocket formed of the lining *k*, gussets *j*, having flaps *o*, with the covering *a a'*, having flaps *n*, and the stiffening-piece *m*, all constructed and attached substantially as specified.

298,852.



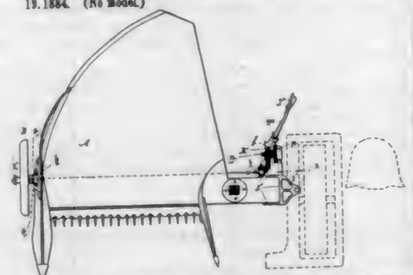
298,853. STENCIL OR PERFORATING PEN. JOHN C. HILL, New Guatemala, Guatemala, Central America. Filed May 16, 1883. (No model.)



Claim.—1. The combination of the leg and foot B, split and provided with the screw *l*, securely attached to the pin *k*, with fixed rests in the sides A A', and needle *n*, needle-bar *i*, and the mechanism described for operating the same, to provide a smooth rest for the mechanism, relieve the hand from supporting the weight, and facilitate the making of perfect letters, as shown, and for the purposes specified.

2. The brake *b'*, pinned to the side A', provided with a mortise on the upper end to receive the bent end of the spring *c'*, and having a thumb-piece extending out through the slot *v*, and an arm, *z*, to engage the cogs of the wheel *c* and stop the machinery and the needle, in combination with the wheel *c*, needle-bar *i*, needle *n*, and the mechanism operating the same, as shown, and for the purposes specified.

298,854. HARVESTER. HENRY A. HOWE, Albion, N. Y. Filed Mar. 19, 1884. (No model.)



Claim.—1. In a harvester, in combination with the main frame and platform thereof, the bracket L, provided with ribs *s'* and the extension *s''*, substantially as and for the purpose described.

2. The combination, in a harvester provided with means for adjusting the platform, of the bracket L, consisting of the plate *s*, ribs *s'*, and ears I, cast in one piece, and constructed to support the mechanism whereby said adjustment is accomplished, substantially as described.

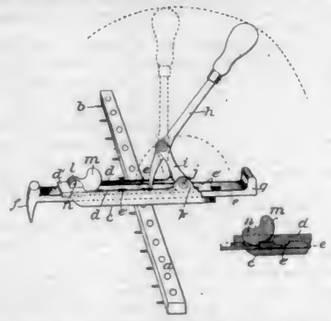
3. The combination, in a harvester provided with means for adjusting the platform, of the bracket L, consisting of the plate *s*, ribs *s'*, and ears I, cast in one piece, and provided with the standard *o*, secured to the base-plate *s*, and having cast integral therewith the rack *p* and pin *n*, all constructed, arranged, and operating substantially as described.

4. In a harvester provided with means for adjusting the platform, in combination with the shoe C, having cast integral therewith the guides *a a* and stop *a'*, the plate *b*, having cast integral therewith the axle *d'* and stop *d''*, whereby the relative movement of the plate and guides is limited, substantially as described.

298,855. SUPPOSITORY FOR CATARRH. FREDERICK HERMAN HUBBARD, Brooklyn, N. Y., assignor to himself and Henry M. Pierson, same place. Filed Jan. 25, 1884. (No specimens.)

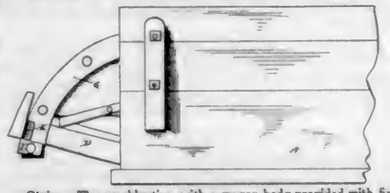
Claim.—The suppository composed of iodoform, geranium, carbolic acid, gum, and a fatty vehicle, substantially as set forth.

298,856. CARPET-STRETCHER. FREDERICK J. HUBBARD, Chicago, Ill. Filed Nov. 22, 1883. (No model.)



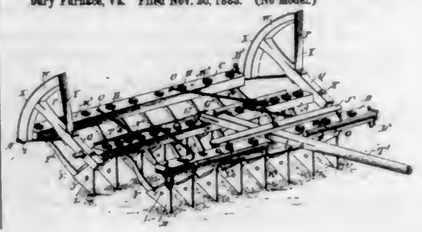
Claim.—In a carpet-stretcher, the combination of the draw-bar *a*, having curved teeth *b* inserted therein, the case *c*, pivoted to said bar, the flanges *d*, the recessed bar *e*, provided with spur *f* and projection *g*, the hand-lever *h*, with yoke *i*, pivoted to standards, as described, and the drop-pawl *m*, secured as specified, all these parts arranged and operated substantially as described.

298,857. END-GATE FOR WAGONS. GEORGE WASHINGTON HURD, Meadville, Mo. Filed Feb. 12, 1884. (No model.)

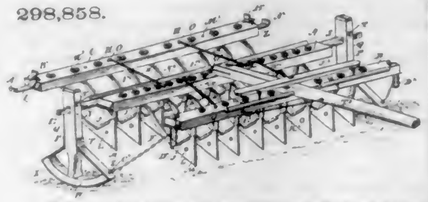


Claim.—The combination, with a wagon-body provided with fixed standards *a a* and slotted removable standards B, secured to the wagon-box between the standards *a a*, of the tail-board D, pivoted at its lower edge to the lower ends of the standards B, and provided with flanged arms K at its top edge, and the curved guides G, hinged to the staples H of the standards B, and provided at their lower ends with lugs L, substantially as specified.

298,858. HARROW AND CULTIVATOR. GEORGE H. JOHNSON, Salisbury Furnace, Va. Filed Nov. 20, 1883. (No model.)



298,858.



Claim.—1. In a harrow, the combination, with the parallel center and front and rear beams, of the curved or angular tooth-carrying standards, pivotally connecting the said center beam with the front and rear beams, whereby the said front and rear beams may be adjusted so as to regulate the position of the standards in relation to the center beam, and hooked rods connecting the center beam adjustably with both the front and rear beams, as set forth.

2. In a harrow, the combination of the center beam, the parallel front and rear beams, the standards connecting said front and rear beams with the center beam, and equipped with triangular teeth, a tongue hinged to the center beam, and means for connecting the said tongue with either the front or the rear beam, substantially as set forth.

3. The combination of the center beam, the front and rear beams, the standards connecting the said front and rear beams with the center beam and having the triangular teeth, the tongue hinged to the center beam, and diagonal braces connected adjustably to the said tongue and having clevises, whereby they may be connected to either the front or the rear beam, substantially as set forth.

4. In a harrow of the class described, the herein-described tooth-carrying standard, consisting of a curved or angular beam, having flattened and perforated ends to receive the connecting-bolts, and terminating at its lower end in a plate having an overhanging flange and a transverse opening, and an equilateral triangular tooth secured to the said standard by a transverse bolt, the upper edge of said tooth fitting under the overhanging flange, substantially as set forth.

5. The combination of the center beam, the front and rear beams, the tooth-carrying standards connecting said front and rear beams with the center beam by means of vertical connecting-bolts, a shaft or axle journaled to the rear side of the center beam, and a vertically-perforated beam hinged upon the said shaft or axle, and adapted to receive the connecting-bolts of the front ends of the rear standards, substantially as set forth.

6. The combination of the center beam, the front and rear beams, the tooth-carrying standards pivotally connecting the said front and rear beams with the center beam, supporting-latches hinged upon the ends of the rear beam, a shaft or axle journaled to the rear side of the center beam, and rotary runners secured upon the ends of the said shaft or axle, substantially as set forth.

7. In a harrow constructed substantially as described, the herein-described rotary runner, consisting of an arm, a segmental felly secured to the end of the same, and a strap or tire secured to the said felly, and having its ends bent up and secured to the said arm at some distance from the felly, which is thereby braced and secured, substantially as set forth.

8. The combination of the shaft or axle having notched ends, the runners constructed substantially as described, and having notched sleeves or boxes, and the transverse securing-bolts engaging the notches in the said sleeves or boxes and in the ends of the shaft or axle, substantially as set forth.

9. The combination of the center beam, the front and rear beams, the tooth-carrying standards connecting the said front and rear beams with the center beam, the shaft or axle journaled to the rear side of the center beam, the rotary runners mounted upon the said axle and having loops or eyes at their front ends, and chains secured to the ends of the front beam, and capable of being connected detachably with the runners, substantially as set forth.

298,859. JOURNAL-BOX. CONRAD KAHLER, Chicago, Ill. Filed Mar. 1, 1884. (No model.)

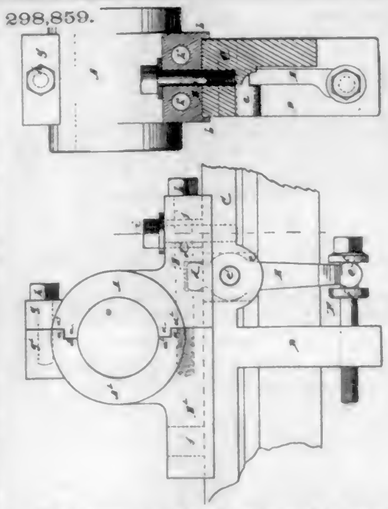
Claim.—1. A journal-box consisting of two half-boxes divided vertically, to enable wear to be taken up and prevent horizontal play, substantially as specified.

2. A journal-box consisting of two half-boxes, each having a lip or projection and a cut-away portion, *a'*, having a base, and means for connecting the half-boxes together, substantially as specified.

3. The half-boxes A A', each having a lip, *a*, and cut-away portion *a'*, base B B', and ears *g g'*, in combination with the bolts *h* and *k*, substantially as and for the purpose specified.

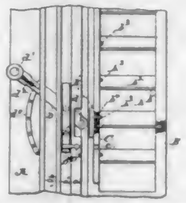
4. The half-boxes A A', constructed as described, base B B', ears *g g'*, and bolts *h k*, in combination with the guide-rail C and bolts *j*, substantially as and for the purposes specified.

298,859.



5. The half-boxes A A', base B B', and guide-rail C, in combination with the pendant D, lever E, and adjusting-bolt F, substantially as and for the purpose specified.

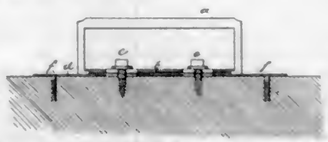
298,860. BLIND-SLAT OPERATOR. WILLIAM H. KEENAN, Auburn, Ind. Filed Sept. 18, 1883. (Model.)



Claim.—1. In a blind-slat operator, the combination, with the shutter having pivoted slats and movable bar arranged alongside the shutter and connected with the slats, as described, of the lever pivoted to the window-framing, and having its outer end connected with the movable bar and its inner end engaging a suitable rack, whereby the slats may be held at any desired angle, substantially as described, and for the purposes specified.

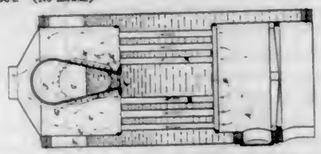
2. The blind-slat-operating device, substantially as described and shown, composed of the pivoted slats having extensions beyond their pivots, the vertically-movable bar provided on its inner edge with a slot, as described, crank-rods connecting the slats and movable bar, the pivoted lever provided with depending strap or bar having a stud projected into the slot in the movable bar, the rack, and a suitable detent secured to the lever and engaging the rack, all as and for the purposes specified.

298,861. LOCK-STRIKE. JACOB WILLIAM KOHN, Newark, N. J. Filed Nov. 30, 1883. (No model.)



Claim.—In combination, the plate *b*, having vertical slots to receive the screws *c*, and the keeper or strike *a*, adapted to work horizontally upon said plate and vertically with said plate without changing the position of the screws, substantially as set forth and shown.

298,862. STEAM-BOILER. HOSEA K. KRIEBEL, West Point, Pa., assignor of one-half to Frederick Light, Jr., same place. Filed Jan. 19, 1884. (No model.)



Claim.—1. A steam-boiler provided with a steam-dome located in its upper or combustion chamber, the said dome consisting of an inverted-pear-shaped center part, from which the steam is directly carried from the boiler, and two large egg-shaped tubular extensions extending from said pear-shaped center opening therein, and also through the inner walls of the combustion-chamber, to which they are secured, the said parts opening through the floor of said chamber between rows of tubes, thereby forming a rigid staying system for the boiler and allowing free circulation of the steam and water, substantially as and for the purpose specified.

2. In a steam-boiler, a cast-metal steam-dome located in the upper box, said dome opening through the inner walls and floor of said box into the steam and water spaces of the boiler, said dome extending across the said combustion chamber or box of the boiler, and secured to the walls thereof, and located between the outlets of two rows of tubes, substantially as and for the purpose specified.

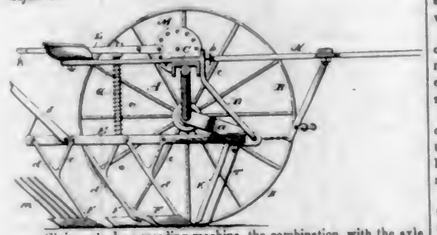
3. A cast-metal dome for steam-boilers, consisting of parts H H, J, and I, the parts H being for the circulation of both water and steam, and are secured to the inner walls or shell of the boiler, substantially as and for the purpose specified.

4. A cast-metal dome for steam-boilers, consisting of egg-shaped water and steam flues H H, dome J, and water-circulating flue I, the dome part J having steam-exit K, substantially as and for the purpose specified.

5. The upper combustion-chamber of a boiler, provided with a solid cast-metal steam-dome having branching tubular arms below and on its sides, the said integral cast dome being riveted to the bottom and sides of said combustion-chamber to form a circulatory system for the steam and water, and rigidly stay the boiler at this part, substantially as and for the purpose specified.

298,863. WEEDING-MACHINE. JOSEPH B. LADD, North Topeka, Kans. Filed June 22, 1883. (No model.)

Brief.—The plates carrying the levers and racks are swiveled so as to turn with the lateral movements of the drag-bars. The levers form handles with which to elevate the drag-bars. Spring to hold down to work. The yoke that carries the drag-bars and the draft is vertically the adjustable.



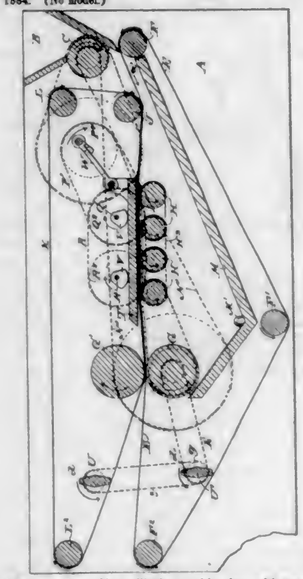
Claim.—1. In a weeding-machine, the combination, with the axle and a bail-piece, adjustably secured to the frame so as to be raised or lowered, and arms journaled at one end on the axle and secured at their outer ends to the bail, of drag-bars pivotally secured at their forward ends to the bail, and levers for raising and lowering said drag-bars, substantially as set forth.

2. The combination, with the vertically-adjustable bail and vertically and laterally adjustable drag-bars secured at their forward ends to the bail, of a lifting-lever pivoted to a laterally-adjustable plate or support pivoted to the main frame, substantially as set forth.

3. The combination, with the vertically-adjustable bail and vertically and laterally adjustable drag-bars, of a lifting-lever pivoted to a laterally-adjustable plate or support, a segment secured to said plate or support, and a holding-lever pivoted to the lifting-lever and adapted to engage said segment, substantially as set forth.

4. The combination, with the drag-bars E, lifting-lever K, rod G, and spring *e*, of the pivoted plate I, having a segment, M, secured thereto, and lever L, pivoted to lever K, and adapted to engage the segment M, substantially as set forth.

298,864. CIDER-MILL. ALPHEUS D. LAIR, Mexico, Ind. Filed Mar. 19, 1884. (No model.)



Claim.—1. In a cider-mill, the combination, with two endless fabric aprons or bands, of a series of presser-rollers, and of a reciprocating presser-plate held above the rollers, the endless bands or aprons passing between the rollers and the presser-plate, substantially as herein shown and described.

2. In a cider-mill, the combination, with two endless bands or aprons passing over rollers, of a series of rollers arranged below one band, and a presser-plate arranged above the other band, so that the adjoining parts of the two bands pass between the presser-plate and the rollers, substantially as herein shown and described.

3. In a cider-mill, the combination, with two endless bands or aprons passing over rollers, of a series of rollers arranged below one band, and a presser-plate arranged above the other band, so that the adjoining parts of the two bands pass between the presser-plate and the rollers, and of shafts carrying arms for pressing the presser-plate in the direction toward the rollers, substantially as herein shown and described.

4. In a cider-mill, the combination, with two endless bands or aprons, of rollers over which they pass, presser-rollers held under one band, a reciprocating presser-plate held above the other band, and cams or their equivalents for pressing it in the direction toward the rollers below it, substantially as herein shown and described.

5. In a cider-mill, the combination, with two endless fabric aprons or bands, of rollers over which the bands pass, a series of rollers arranged under one band, a reciprocating presser-plate arranged above the other band or apron and over the rollers, and of two presser-rollers, G and G', substantially as herein shown and described.

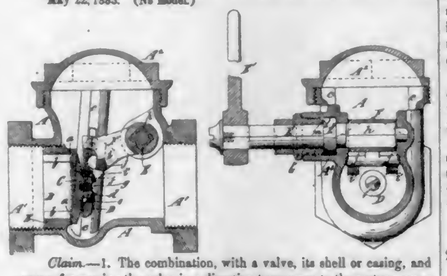
6. In a cider-mill, the combination, with two endless fabric bands or aprons, of a presser for pressing the pomace between the said bands, and of beaters for striking the bands after they have pressed the juice from the pomace, substantially as herein shown and described.

7. In a cider-mill, the combination, with two endless fabric bands or aprons, of rollers over which the bands pass, the shafts U and U', provided with wings *d*, and gearing or belting for revolving the said shafts to cause the wings to strike the said bands or aprons, substantially as herein shown and described.

8. In a cider-mill, the combination, with the grinding apparatus and two endless fabric bands or aprons passing over rollers, of the reciprocating presser-plate T, the connecting-rod W, connecting the said presser-plate with the crank-shaft, the rollers H, arranged below the presser-plate, and of the presser-rollers G and G', substantially as herein shown and described.

9. In a cider-mill, the combination, with a hopper, B, grinding-roller C, and the endless bands or aprons K and E, passed over rollers, of a reciprocating presser-plate, T, the rollers H below the presser-plate, the shafts R and Q, carrying cams V, for pressing the presser-plate downward, the presser-rollers G and G', the beater-shafts U and U', and of means for operating all the said rollers and parts from the shaft of the grinding-roller C, substantially as herein shown and described.

298,865. VALVE. JOHN S. LENG, West New Brighton, N. Y. Filed May 22, 1883. (No model.)



Claim.—1. The combination, with a valve, its shell or casing, and means for moving the valve in a direction transverse to the water way or passage, of an adjustable and removable seat screwed into one of the pipe sockets or openings of the shell or casing to a position inward of the outer end of the socket or opening, so as to leave on the outer side of said seat a screw-threaded portion of the socket or opening, for the reception of a pipe, substantially as herein described.

2. The combination of a valve shell or casing, a carriage sliding therein in a direction transverse to the water way or passage, a valve attached to the carriage, but capable of adjusting itself in all directions independently of the carriage, and an adjustable and removable valve-seat screwed into one of the pipe sockets or openings in the shell or casing to a position inward of the outer end of said socket or opening, so as to leave on the outer side of said seat a screw-threaded portion of the socket or opening, for the reception of a pipe, substantially as herein described.

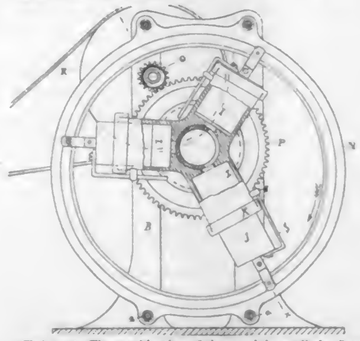
3. The combination, with the stuffing-box, of the valve-operating rock-shaft provided with a collar fitting in said box, and the outer side of which forms a valve-seat, and an externally-screw-threaded plug or gland screwed into the box, and having a valve-like face which bears upon and forms a tight joint with said collar to prevent leakage between the shaft and the plug or gland, the said collar being held between the rigid surfaces formed by the bottom of the stuffing-box and the inner end of said plug or gland, substantially as herein described.

4. The combination of the stuffing-box A^2, the shaft E, provided with a collar, E^2, in the outer side of which is a grooved seat, *l*, and the externally-screw-threaded plug or gland G, having a valve-like projection, *m*, which enters and forms a tight joint with said groove, the said collar being held by the rigid surfaces formed by the bottom of the stuffing-box and the inner end of said plug or gland, substantially as herein described.

5. The combination of the valve C, having a rounded back and a projection, *d*, the carriage D, having the hole *e* beveled in the back, and the washer *f* and screw *g*, substantially as herein described.

6. The combination of the valve C, carriage D, provided with the arms *i*, the lever F, fitting between said arms, and provided with horns *j*, projecting from opposite sides and engaging with the arms *i i*, and also provided with the portion *k*, bearing on the top of the carriage at a point between the arms *i i* and the rock-shaft E, substantially as herein described.

298,866. ROTARY PUMP. GEORGE LENHARD, Detroit, Mich. Filed June 27, 1883. (No model.)



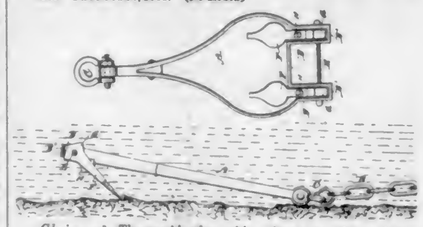
Claim.—1. The combination of the revolving cylinder I, piston J, grooved track N, and rod *c*, provided with an offset, *c'*, and a friction-roller traveling in the grooved track, whereby the pressure is exerted in a straight line, substantially as described.

2. In a combined rotary pump and motor provided with reciprocating pistons J, and track N, having a grooved channel, O, the combination of the piston-rods detachably connected to said pistons J, and having a pin extending at right angles thereto, and carrying an anti-friction roller, *b*, constructed to enter said channel O, all combined, arranged, and operating as specified.

3. In a rotary pump, the combination, with the cylinder I, piston J, and suitable means for reciprocating said piston, of the guide S, working in an eye in the projection *s*, whereby the piston J is guided in its movement, substantially as described.

4. In a combined rotary pump and motor provided with reciprocating pistons, as J, the rigid track N, having a channel, O, and the piston-rods *c*, each having an offset, *c'*, and carrying a friction-roller adapted to travel in said channel, and constructed to be detachably connected with said pistons, substantially as and for the purpose specified.

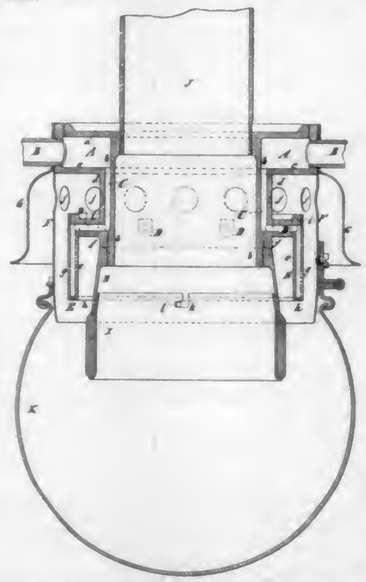
298,867. ANCHOR. WILLIAM LEWIS, St. John, New Brunswick, Canada. Filed Oct. 30, 1883. (No model.)



Claim.—1. The combination, with a frame or yoke, A, having pockets B, of the rod E, the flukes F, mounted loosely on the same, and having the pivoted ends beveled, substantially as herein shown and described.

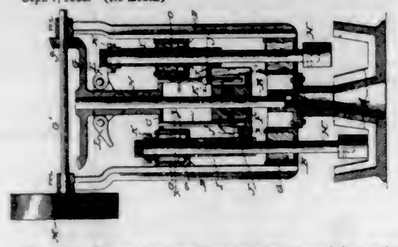
2. The combination, with the frame or yoke A, having pockets B, of the rod E, the flukes F, mounted loosely on the rod E, and having the pivoted ends beveled, and of the projections H on the flukes, substantially as herein shown and described.

298,868. GAS-BURNER. ANDREW B. LIPSEY, West Hoboken, N. J., assignor to William Bell, New York, N. Y. Filed July 2, 1883. (No model.)



Claim.—The combination, with a downwardly-extending annular burner-tip or a circular series of burner-tips, of an annular gas-chamber, an annular gas-passage leading from the annular gas-chamber, arms extending laterally from the annular gas-passage to the burner tip or tips, and a central flue extending through the space encircled by the burner tip or tips and through the annular gas-chamber, and serving to carry away the products of combustion, substantially as specified.

298,869. STAMP-MILL. GEORGE SHAW LONG, Petrolia, Pa. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination of a vertical shaft, a revolving vertical cam consisting of a central sleeve having laterally-projecting flanges at its lower end provided with triangular wings, forming an annular space between them and the sleeve, each wing having an inclined and a vertical edge, stamps corresponding in number with the number of the cam-wings, vertical ways or sleeves I, having laterally-projecting lugs provided with two anti-friction rollers each, and vertical rods corresponding in number and position with the stamps pendent from the frame, projecting with their lower ends into the annular spaces in the cam, and forming guides upon which the inner anti-friction rollers upon the lugs travel, as and for the purpose shown and set forth.

2. The combination, in a stamp-mill, of an annular trough, a frame composed of a circular bed or base piece having a central vertical box or bearing, a top plate or casting having a central upright sleeve and upright side pieces, square guide boxes or bearings O, vertical guide-rods *w*, drive-shaft G', bevel-pinion *g*, cam-shaft E, cam F, constructed as described, bevel-wheel G, stamps H, sleeves I, provided with projecting lugs J, and friction-rollers J' and *i*, ratchets K, and pawls L, adapted to engage said ratchets on the upstroke of the stamps, all constructed and arranged as and for the purpose shown and set forth.

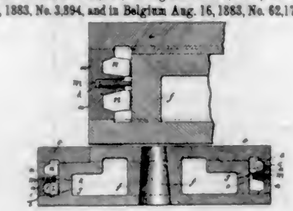
298,870. PAPER-BAG RACK. WILLIAM MACK, Indianapolis, Ind. Filed Mar. 6, 1884. (No model.)



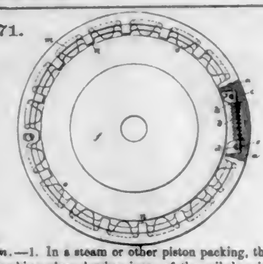
Claim.—1. A paper-bag rack consisting of a base-board, *a*, back-board *b*, circular side boards, *d d'*, quarter-circular boards *c* and *c'*, with door A, shelves $a\,a'\,a^2\,a^3\,a^4\,a^5\,a^6\,a^7$, all combined and arranged as specified, substantially in the manner and for the purpose set forth.

2. A quadrantal or fan-shaped paper-bag rack, the base-board of which is rectangular, the back-board being wedge-shaped, the sides formed of quadricircular boards fastened at the top to the back-board and at the front to the base-board, the space thus inclosed being provided with shelves, forming tapering receptacles for paper bags, substantially in the manner and for the purpose set forth.

298,871. PISTON-PACKING. ALEXANDER MACLAINE, Belfast, County of Antrim, Ireland. Filed Jan. 3, 1884. (No model.) Patented in France Feb. 24, 1883, No. 153,913; in England June 6, 1883, No. 2,802, and Aug. 11, 1883, No. 3,394, and in Belgium Aug. 16, 1883, No. 62,173.



298,871.



Claim.—1. In a steam or other piston packing, the combination, with the packing-rings having jaws, of the coiled springs, supporting bars or tubes, and means for securing the same in the jaws, whereby the springs may be introduced and secured in place without straining the rings, as set forth.

2. The combination, with the packing-rings having flanges, of the wave-springs K K, whereby the springs are held in place by the flanges, as set forth.

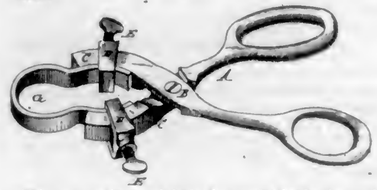
3. The combination, with the double expansion piston packing rings having a series of ribs, blocks, or projections, of the gun-lock or other springs bearing upon the body of the piston and extending between the projections, as and for the purpose set forth.

4. In a piston-packing, the double expansion packing rings provided with a series of ribs, blocks, snugs, or other projections on the inner side of the rings, approaching the body of the piston and adapted to prevent the rings being forced inwardly too far, as set forth.

5. The combination, with the expansion-rings, of the flat wave-like springs between the adjacent sides of the rings, the ends of which are provided with feet or stops, as set forth.

6. An expansion-packing consisting of flanged rings, wave-like springs secured between the flanges, lugs or stops upon the inside of the rings, and coiled springs and means for securing the same in the jaws of the rings, as set forth.

298,872. BOTTLE-CAPPER. CATHARINE MAY, Cleveland, Ohio, assignor to Walter L. Judd, Brooklyn, N. Y. Filed June 30, 1883. (No model.)



Claim.—1. An improved device for capping bottles, jars, and the like, the same consisting, essentially, of a pair of handles pivoted together, scissors-like, and having forwardly-extending jaws, and a loop or flexible strap having its ends connected adjustably with the said jaws, substantially as set forth.

2. The combination of a pair of handles pivoted together, scissors-like, having forwardly-extending jaws provided with binding-screws and clamps for fastening a flexible strap to the aforesaid forwardly-projecting jaws, with a flexible strap having its ends connected adjustably with the said jaws by means of the said clamps, so as to form a tightening-loop, substantially as set forth.

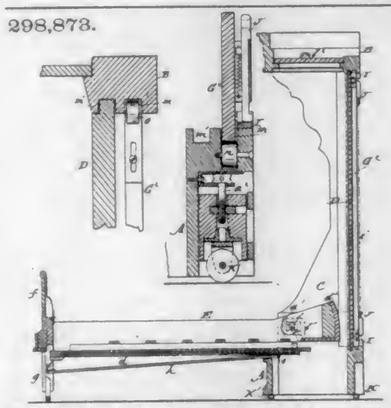
298,873. WARDROBE-BED. WILLIAM H. MCCLURE, New York, N. Y., assignor to James L. Plimpton, same place. Filed Apr. 23, 1883. (Model.)

Claim.—1. In a cabinet-bedstead, the combination, with the fixed head or stationary part and its sides, provided in their lower portions with the recesses and toothed frames, of the rolling fulcrum-plates, provided with teeth and tongues, as described, and the folding bed-bottom having its sides provided with oblique slots, said fulcrum-plates engaging the toothed frames, and their tongues engaging the oblique slots, substantially as and for the purpose set forth.

2. In a cabinet-bedstead, the combination, with the base and entablature, of the sliding sides composed of hinged-together sections provided with rolls, and adapted to move or slide in grooves in the entablature and base, substantially as shown and described, and for the purpose set forth.

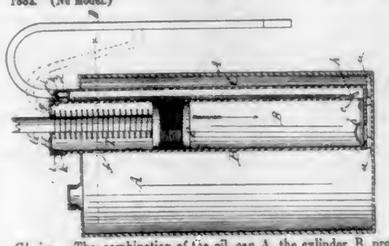
3. In a cabinet-bedstead, the combination of the entablature and base provided with stops having double-inclined surfaces and central notches, of the sliding sides composed of hinged-together sections pro-

298,873.



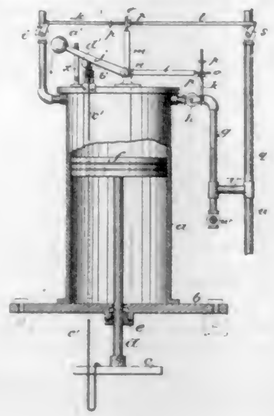
vided with rolls, and adapted to move in grooves in the entablature and base, and the spring-bolts having operating-cords, substantially as shown and described, and for the purpose set forth.

298,874. OIL-CAN. JAY C. MERRELL, Geneseo, N. Y. Filed Dec. 21, 1882. (No model.)



Claim.—The combination of the oil-can A, the cylinder B, provided with a valve in its bottom and discharge-holes near its top, the side tube, C, communicating with the cylinder by a port, the flexible tube D, attached to the top of the side tube, C, the plunger E, resting in the cylinder, the spring I, resting around the rod G and pressing on the plunger, and the cover H, provided with the hole *g*, for the insertion of the end of the flexible tube, as shown and described, and for the purpose specified.

298,875. PRESSURE-FEEDER FOR PULP-GRINDERS. EDWARD F. MILLARD, Marinette, Wis. Filed Oct. 22, 1883. (No model.)

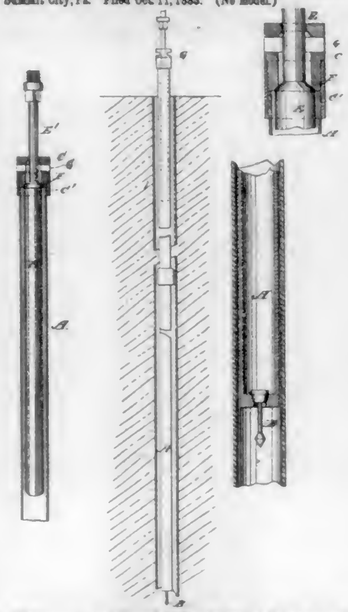


Claim.—1. In a water or steam pressure feed apparatus for pulp-grinders, the cylinder provided with means for raising or returning the piston by suction on the exhaust side, and the piston-rod having a bearing only, without packing, in the box *a*, secured within a tubular boss on the under side of the support *b*, below the cylinder, substantially as described.

2. In a steam-pressure feed apparatus for pulp-grinders, the exhaust-pipe *g*, provided with a steam-jet pipe, *q*, for producing suction on the exhaust side of the piston, for raising or returning the same, substantially as described.

3. The lever-arms *l m*, connected to the valve-rods *k*, between stop-nuts *p*, allowing play of the arms for starting the valves with a blow, substantially as described.

298,876. BAILER FOR CLEANING OIL-WELLS. JAMES S. MOODY, Summit City, Pa. Filed Oct. 11, 1883. (No model.)

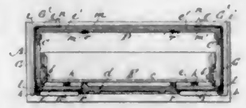


Claim.—1. An oil-well bailer having at its upper end a valve closing upwardly against its seat, and provided with a stem connected with the drill-line, whereby a sand-line is rendered unnecessary, the gas is allowed to escape, and the bailer may be entirely filled before it is drawn out of the well, as described.

2. In combination with the top of an oil-well bailer, a tubular neck, C, having a conical valve-seat at its bottom, from thence a straight bore nearly to the top, and there drawn in to fit a valve-stem, as shown and described.

3. An oil-well bailer having a valve-seat, a drop-valve, and a drill-line stem or connection, combined with a detachable screw-collar, C', as shown and described.

298,877. WARDROBE-BEDSTEAD. JOHN MORAN, Brooklyn, assignor to James L. Plimpton, New York, N. Y. Filed Apr. 24, 1883. (Model.)

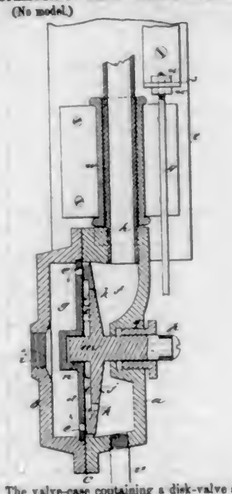


Claim.—1. The folding and sliding sides constructed of an intermediate section, G, provided with a front projecting face-strip, *k*, a front section, G', hinged to said section G, within or under cover of the face-strip *k*, and the back section, G², hinged to or near the opposite edge of the intermediate section, in combination with the stationary or head part of a cabinet-bedstead, the movable part, and a bed-bottom hinged to said head part, substantially as described.

2. In combination with the base A and entablature B, having grooves *m m'*, the stationary back piece, D, fixed sides C, the folding and sliding sides G G' G², the stops *n o*, and the hinged bed-bottom E, provided with a central panel-piece, *d*, substantially as specified.

3. The combination, with the base A, having ways *m m'* and stop *o*, the entablature B, having stop *o*, the fixed sides C C, and the panel *d*, having strips *r*, of folding and sliding sides formed of the sections G G' G², the front and back sections hinged to the opposite edges of the central section, and the back section provided with stops *n n*, as shown and described, whereby openings *s'* will be formed for ventilation of the bedclothes, as set forth.

298,878. STEAM-TRAP. ROBERT B. MORSE, Naugatuck, Conn. Filed Dec. 14, 1883. (No model.)



Claim.—1. The valve-case containing a disk-valve attached to the end of the steam-pipe A, and said valve having a crank-arm, *p*, outside of the case, connected to a fixed support, and causing the valve to turn for opening and closing the ports by the shifting of the case by the expansion and contraction of the pipe, substantially as described.

2. The valve-case consisting of two parts, *a b*, and having a circular valve-seat, *d*, and containing the disk-valve *j* centered in said valve-seat and in the stuffing-box, and connected by a crank-shaft or equivalent connection to a fixed support, said valve-case having chamber *f* connected to the steam-pipe A, and also having chamber *g* with a waste-pipe connection, *i*, substantially as described.

3. The improved steam-trap consisting of case *a b*, containing a disk-valve, *j*, attached to the end of the steam-pipe A, said valve having a stem, *m*, extending out through the valve-case at right angles to the pipe A, and said stem having a crank-arm also extending at right angles to the steam-pipe, and connected to a fixed object, substantially as described.

298,879. BOX COVERING AND TRIMMING MACHINE. GORDON MUNRO, Troy, N. Y., assignor, by mesne assignments, to the American Box Machine Company, of New York. Filed Mar. 13, 1883. (No model.)

Claim.—1. The described method of covering boxes, consisting in simultaneously winding upon the box a plurality of strips with their pasted sides all facing one way, and with the strips overlapping, all substantially as described.

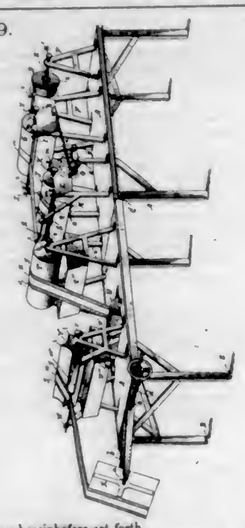
2. An apparatus for applying simultaneously a plurality of strips to a box, consisting of a rotatable box-support, reels for the strips, pasting mechanism, and guiding mechanism for the several strips, whereby they are caused to overlap, and a suitable supporting-frame, all substantially as described, whereby the strips are pasted, overlapped, and wound upon the box, as set forth.

3. An apparatus for applying simultaneously a plurality of strips to a box, consisting of a suitable supporting-frame, a rotatable box-support, reels for the strips, pasting mechanism, and laterally-adjustable guiding mechanism for the several strips, all substantially as described.

4. An apparatus for applying strips to a box, consisting of a suitable supporting-frame, a laterally adjustable and rotatable box-support, reels for the strips, pasting mechanism, and guiding mechanism, all substantially as described.

5. The combination of the pasting mechanism, the tempering-rollers, and the laterally-adjustable rotary box-support, substantially as and

298,879.



for the purpose hereinbefore set forth.

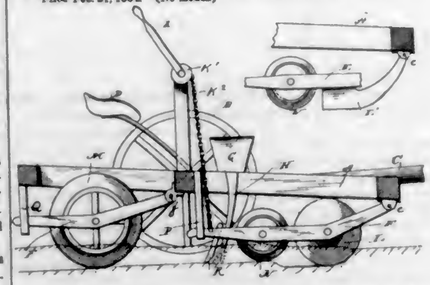
6. The trimming and covering strip reels, placed one above the other and laterally adjustable with reference to one another, for the purpose of regulating the overlapping of the strips, in combination with the pasting mechanism and the tempering-rollers, substantially as and for the purposes hereinbefore set forth.

7. The combination of the pasting mechanism, the tempering-rollers, the trimming and covering strip reels placed one above the other and laterally adjustable with reference to one another, and the laterally-adjustable rotary box-support, substantially as and for the purposes hereinbefore set forth.

8. In a box-covering machine, a tempering or supporting roller for the pasted strip, fluted or ribbed for the purpose of reducing the surface with which the pasted side of the strip makes contact, substantially as hereinbefore set forth.

9. The method herein described of producing the compound covering and trimming strip from a plurality of strips in the roll, consisting in feeding the covering and trimming strips continuously along, and doring their movement first automatically applying to one side or face of each strip paste, then bringing the several strips together, with their pasted faces all on the same side, and in such position that they shall overlap one another, and finally uniting them together in this position, thus producing a compound covering and trimming strip composed of a plurality of overlapping strips, and coated on one side or face only with adhesive substance, all substantially as hereinbefore set forth.

298,880. SEED-PLANTER. JOHN RANKIN NEWTON, Carthage, Ill. Filed Feb. 21, 1884. (No model.)



Claim.—1. The combination of a furrow-opener, a seed-bed roller, a seed-dropper, and a cover-roller, arranged in series.

2. The combination of a rolling-cutter, furrow-opener, a seed-bed roller, a seed-dropper, and a cover-roller, arranged in series, as set forth.

3. The combination of a seed-bed roller provided with a face having a large portion approximately flat, a seed-dropper, and a cover-roller, arranged in series.

4. The combination of a furrow-opener, a seed-bed roller, a seed-dropper, a coverer, and a cover-roller, arranged in series.

5. A seed-planter provided with a number of series of furrow-openers, seed-bed rollers, seed-coverers, and cover-rollers, each series arranged for separate self-adjusting vertical motion while held true in place laterally.

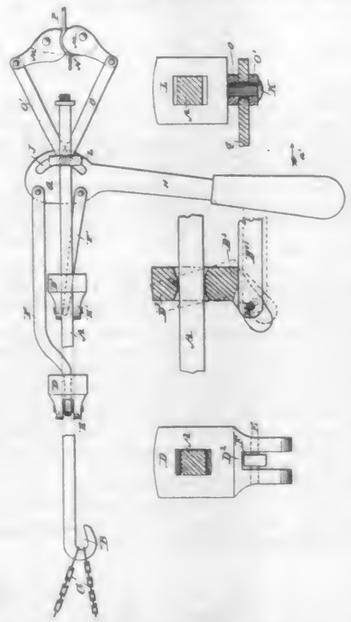
6. A grain-planter having carrying-wheels and provided with gangs of several frames bearing floating rollers, arranged in series of two—one before the other—so that both rollers are capable of rising or falling together, and to produce rolled beds above and below the seed.

7. A grain-planter having a gang of several frames held at each end from lateral motion, and bearing floating rollers arranged to run upon the covered rows while held from lateral movement, and provided with beveled sides to produce rolled ridges between the rows.

8. A grain-planter having a gang of several frames held at each end from lateral motion, and bearing separately floating rollers arranged to run one on each row, and provided with beveled sides to produce rolled ridges between the rows.

9. A grain-planter having a gang of several separate frames bearing floating rollers with beveled sides located before the seed-droppers, and arranged to form approximately level seed-beds with rolled inclined sides.

298,881. WIRE-STRETCHER. CHARLES STEPHEN OLDER and LEANDER LOWELL DEERING, Independence, Iowa. Filed May 7, 1883. (No model.)

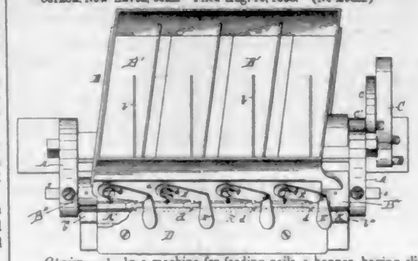


Claim.—1. In a wire-stretcher, the combination, with the gripping device and the gravity-clutches, the latter being arranged on a bar, of the lever connected to said gripping device and clutches, and a looped bolt forming the pivot of the lever, and with its loop adapted to receive the bar upon which the gravity-clutches are arranged, substantially as and for the purpose set forth.

2. In a wire-stretcher, the combination, with the bar A, of the gravity-clutches having the top and bottom edges of their apertures convexed, the connecting-rods, the lever, and the gripping device, the bolt connecting the lever and the connecting-rods of the gripping device having an eye or loop through which the bar passes, substantially as and for the purpose set forth.

3. In a wire-stretcher, the combination, with the bar A, of the gravity-clutches having the top and bottom surfaces of their apertures convexed, which clutches are provided with downwardly and backwardly projecting arms, the connecting-rods, the gripping device, and the lever, the bolt connecting the lever and the connecting-rods of the gripping device having an eye or loop through which the bar A passes, substantially as and for the purpose set forth.

298,882. NAIL-FEEDER FOR NAILING-MACHINES. HENRY P. OSTRUM, New Haven, Conn. Filed Aug. 10, 1883. (No model.)



Claim.—1. In a machine for feeding nails, a hopper having slits for feeding the nails cut at an oblique angle to the walls of the hopper, as set forth.

2. In a nail-feeder, the combination, with the tilting nail-feeding hopper, of a receiving-plate, and means, substantially as described, for bringing the hopper and plate together when the hopper is tilted forward and separating them when the hopper is tilted back, and a throw-off rod for removing the nails from the receiving-plate when the hopper is tilted back, as set forth.

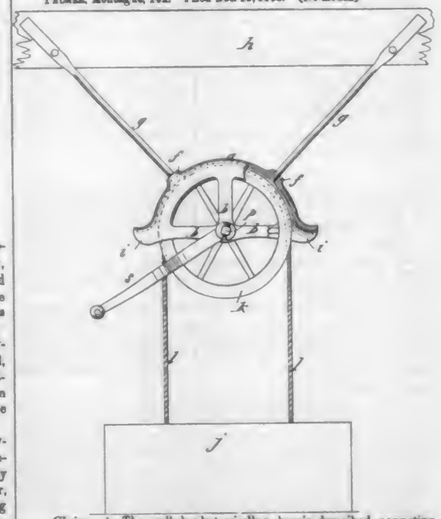
3. In a nail-feeder, the gate E, pivoted to the tilting hopper and operated thereby, and provided with the wing E', adapted to bear upon the receiving-plate, substantially as set forth.

4. In a nail-feeder, the combination of the tilting hopper having slits in its bottom for guiding the nails, and provided with projecting tongue or tongues b^*, with a receiving-plate and a swinging support therefor, and spring or springs D^2, substantially as set forth, whereby the plate is drawn toward the hopper when the latter is tilted up and forced away from it when the hopper is tilted back.

5. In a nail-feeder, the combination, with the tilting feeding-hopper D, provided with slits *b*, and the receiving-plate D, and means for operating them, of the gates E, provided with the wings E', by means of which the gates are raised when the hopper is tilted up, and pins e^*, which bear upon a nail or two in the mouth of each slit *b* when the hopper is tilted back and holds them in readiness for delivery.

6. The combination of the feeding-hopper B, having the teats b', and the slits *b*, cut into the bottom of the hopper and through the teats b', with the receiving-plate D, provided with the shoes D^3, cut away on one side, into which open side of the shoes the teats b' project, whereby the nails are guided directly into the shoes, substantially as set forth.

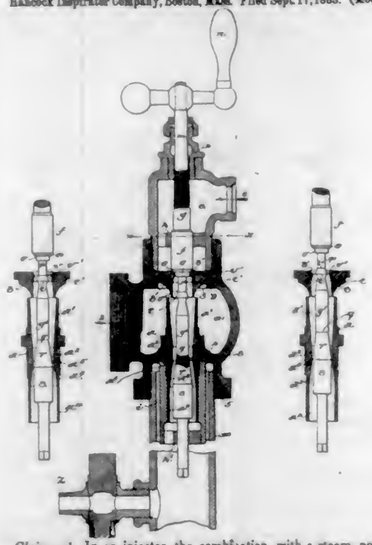
298,883. WELL-BUCKET WINDLASS. WILLIAM WASHINGTON PALMER, Montague, Tex. Filed Dec. 18, 1883. (No model.)



Claim.—1. The well-bucket windlass herein described, consisting of the pulley supporting-frame *a b*, screw-threaded rods *g g*, shaft *d*, a pulley mounted on the shaft within the pulley-frame and held to revolve with the said shaft, and a suitable crank on said shaft, substantially as set forth.

2. The combination of the pulley and its supporting-frame, with the shaft *d*, formed with a key, *m*, groove *q*, collar *o*, and squared portion *p*, the wire ring *t*, and a suitable crank, substantially as set forth.

298,884. INJECTOR. WILLIAM B. PARK, Taunton, assignor to the Hancock Inspirator Company, Boston, Mass. Filed Sept. 17, 1883. (Model.)



Claim.—1. In an injector, the combination, with a steam-nozzle, combining-tube, and delivery-tube, of a controlling-spindle movable longitudinally within such nozzle and tubes, and having a contour relative to the interior surfaces of such nozzle and tubes, as described, whereby when the spindle is moved the area of the throat at the junction of the combining and delivery tubes is decreased in proportion as the area for the inlet of steam at the nozzle is increased, and vice versa, substantially as and for the purpose described.

2. In an injector, the combination, with a steam-nozzle, combining-tube, and delivery-tube, and a controlling-spindle movable longitudinally within such nozzle and tubes, of an overflow-cock located between the discharge end of the delivery-tube and the check-valve in the pipe leading to the boiler, substantially as described.

3. In an injector, the combination, with a steam-nozzle, combining-tube, and delivery-tube, of a controlling-spindle movable longitudinally within such nozzle and tubes, and a guide, A', therefor, located at or near the lower end of the said spindle, whereby the latter is maintained in accurate concentric position within the injector, substantially as described.

4. In an injector, the combination, with a steam-nozzle, combining-tube, and delivery-tube, of a controlling-spindle of larger diameter near its ends than between said ends, made in two portions and fastened together within the injector, substantially as and for the purpose described.

5. In an injector, in combination with the steam-nozzle having an expanding bore, *v' t'*, a combining-tube, and the delivery-tube d^3, the controlling-spindle movable within said nozzle and tube, having the tapering enlargements *v*, *t*, and *r*, whereby the spindle may be adjusted to increase or decrease the quantity of water forced, substantially as shown and described.

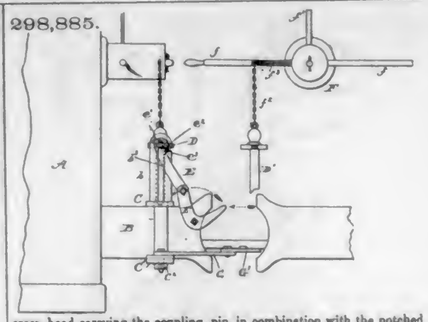
298,885. CAR-COUPLING. THOMAS PEACOCK, Auburn, and THEODORE WALLER, Scipio, N. Y. Filed Oct. 19, 1883. (No model.)

Claim.—1. The combination, with the draw-head, of the jointed arm or toggle-link, connected at one end through a sliding cross-head with the coupling-pin, and provided at its opposite end with a forward projection for adapting the arms to be tripped by an opposing draw-head, substantially as described.

2. The draw-head provided with the guideways for supporting the cross-head, in combination with the jointed arm or toggle-links for holding the cross-head, and with it the coupling-pin, in an elevated or suspended position, substantially as and for the purpose set forth.

3. The draw-head provided with the guideways for supporting the

298,885.



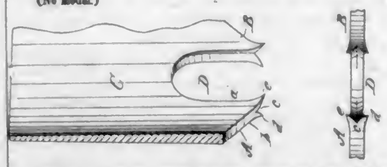
cross-head carrying the coupling-pin, in combination with the notched arm for engaging the pin or stud formed upon the standard for locking or holding the cross-head, and with it the coupling-pin, in its elevated position, substantially as and for the purpose set forth.

4. The cross-head carrying the coupling-pin mounted in the upright guideways, in combination with the windlass or chain wheel, provided with operating-arms for raising the cross-head, and with it the coupling-pin, into its elevated or suspended position, substantially as and for the purpose described.

5. The draw-head provided with the slotted standard, the sliding cross-head mounted thereon, and the toggle-link, in combination with the windlass or chain wheel for raising said cross-head and extending the toggle-link, substantially as and for the purpose set forth.

6. The combination, with the draw-head, of the pivoted jointed link-holders, arranged and operating substantially as and for the purpose set forth.

298,886. SAW. WALTER PEAK, Peakville, N. Y. Filed Apr. 2, 1884. (No model.)



Claim.—1. A saw-tooth substantially vertical upon its forward edge, having its back edge inclined at an angle of forty-five degrees, more or less, to the forward edge, having a groove formed in the said forward edge, and having the points formed by the back edge of the tooth and the V groove reversely swaged outwardly, substantially as shown and described.

2. A saw-tooth made integral with a saw-blade, having a groove formed in its forward edge, and two cutting-points swaged outwardly and oblique to each other and to the plane of the saw-blade, both points being in the same plane at right angles to the plane of the saw-blade, substantially as shown and described.

298,887. DITCHING-MACHINE. FAWCETT PLUMB, Streator, Ill. Filed Feb. 1, 1884. (No model.)

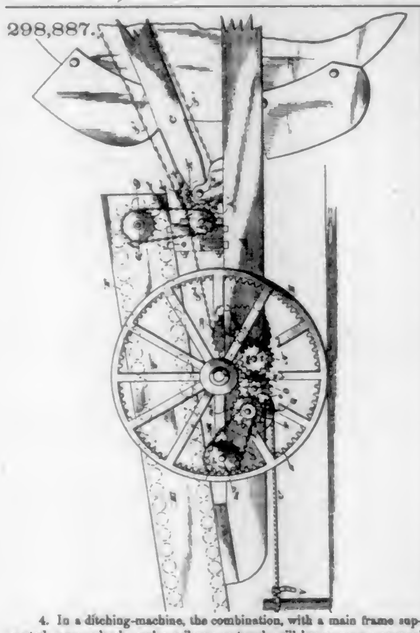
Brief.—On the wheeled frame of a ditching-wheel is mounted a tread-mill horse-power driving the ditcher-wheel and propelling the machine through gearing engaging the riding-wheel rim and a drum winding a propelling-rope.

Claim.—1. In a ditching-machine, the combination, with an excavator, of a railway or tread-mill horse-power combined with the supporting-frame of the excavator, and mechanism for transmitting motion from the horse-power to the excavator and propelling-wheel of the machine.

2. In a ditching-machine, the combination, with a rotary excavator, of a railway or tread-mill horse-power, combined with the supporting-frame of the excavator, and mechanism for transmitting the motion of the horse-power to the excavator and propelling-wheel, substantially as set forth.

3. In a ditching-machine, the combination, with a main frame supported upon wheels, and a railway or tread-mill horse-power secured upon the main frame, of a driving mechanism constructed to engage one of the supporting-wheels, and mechanism constructed to transmit the motion of the horse-power to the driving mechanism, substantially as set forth.

298,887.

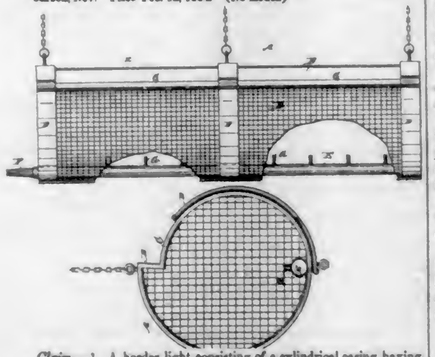


4. In a ditching-machine, the combination, with a main frame supported upon wheels, and a railway or tread-mill horse-power secured upon the main frame, of a toothed rim attached to one of the supporting-wheels, and mechanism constructed to transmit the motion of the horse-power to the toothed rim, substantially as set forth.

5. In a ditching-machine, the combination, with a main frame supported upon wheels, and a railway or tread-mill horse-power secured upon the main frame, of a drum and cable, and mechanism constructed and arranged to transmit the motion of the horse-power to the drum and cable, substantially as set forth.

6. In a ditching-machine, the combination, with a main frame supported upon wheels, and a railway or tread-mill horse-power secured upon the main frame, of a supporting-wheel provided with teeth, a drum constructed to wind a cable, and mechanism constructed to transmit the motion of the horse-power to the wheel and drum simultaneously, substantially as set forth.

298,888. BORDER-LIGHT FOR THEATERS. JOHN T. PRESDON, Carson, Nev. Filed Feb. 12, 1884. (No model.)

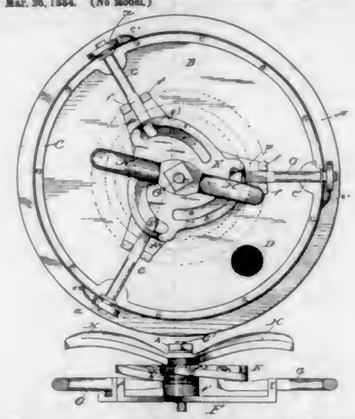


Claim.—1. A border-light consisting of a cylindrical casing having a wire-netting part, and provided in its top with a longitudinal offset which is open, substantially as herein shown and described.

2. In a border-light, a cylindrical casing having a wire-netting front and an open offset in its top, in front of which offset a reflector is secured to the inner surface of the casing, substantially as herein shown and described.

3. In a border-light, the combination, with a cylindrical casing having an offset in its top, of a reflector held on the inner surface of the casing in front of the offset, and of a hinged door or section, D, made of wire-netting, in front of the mirror, substantially as herein shown and described.

298,889. CHURN-COVER. JOHN G. PRITCHARD, Poultney, Vt. Filed Mar. 26, 1884. (No model.)



Claim.—1. In a cover for churns, barrels, and other vessels, the combination, with radial locking-arms, of a compound cam adapted to reciprocate the same vertically and radially, substantially as specified.

2. In a cover of the class described, a compound cam having vertical cam-grooves the boundary walls or rims of which are inclined, whereby said walls or rims effect a vertical and radial movement of the locking-arms, substantially as specified.

3. In combination with a cam having vertical cam-grooves a wall of each of which is inclined, as described, a radial locking-arm the inner end of which is constructed to pass through the vertical cam-grooves, and to embrace or partly inclose the inclined wall of said groove, substantially as specified.

4. In combination with a compound cam, a radial locking-arm having an inner end constructed to project into a cam-groove, and to embrace or partly embrace a wall of said groove, a cover constructed to form a fulcrum, and a head-ring provided with ears, substantially as shown and described.

5. The combination, with a head-ring having a series of closed ears, of a cover provided with locking-arms, and a compound cam constructed and operating, as described, to reciprocate the outer end of the locking-arms into and upwardly against the openings in said ears, substantially as specified.

6. The combination of the head-ring A, the cover B, provided with fulcrums c', and base F, having lugs f and hub f', compound cam E, having the cam-grooves e, bounded by an inclined rim, e', of locking-arms G, having projections g^3, and means for operating the cam, substantially as shown and described.

7. The combination of the base having the hub f', cover B, the cam E, handle H, bolt G', and washers f^2, and head-ring A, having ears a and locking-arms G, substantially as and for the purpose set forth.

8. In combination with a compound cam, a radial locking-arm having an inner end constructed to project into a cam-groove, and to embrace or partly embrace an inclined wall of said groove, a cover constructed to form a fulcrum, and a head-ring provided with ears, substantially as specified.

9. The combination of the cam E, the arm G, the base F, the washers f^2, handle H, and nut h, substantially as and for the purpose specified.

10. The combination of the base-plate F, having the lugs f, the locking-arms G, having the portions g' adapted to pass between said lugs, and the portions g^3 g^3 at its inner end, with a cam having vertical slots or grooves the outer walls or rims of which are inclined, substantially as shown and described.

298,890. INCUBATOR. JAMES RANKIN, South Easton, Mass. Filed July 6, 1883. (No model.)

Claim.—1. In an incubator, the combination, with the heating-tank c, having float-well t, the float s in said well, provided with the stem s', and the heating-lamps k, of the lever p, pivoted in a support on the upper part of the case and resting upon the stem of the float, the tubular regulators l, fitted to the wick-tubes of the lamp, and the connecting-rods m n o, substantially as herein shown and described.

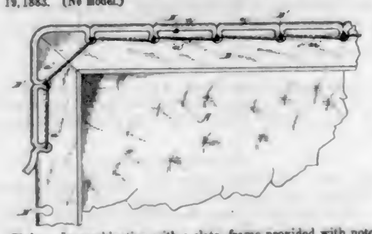
298,890.



2. In an incubator, the combination, with the heating-tank c, having float-well t, and the incubating-chamber having ventilating-tubes v, of the lever p, having its free end connected to a flame-regulator and provided with the arm y, the float s in said well, the valves u in the ventilating-tubes, and the rod w, journaled in the ventilating-tubes and provided with the crank x, substantially as herein shown and described.

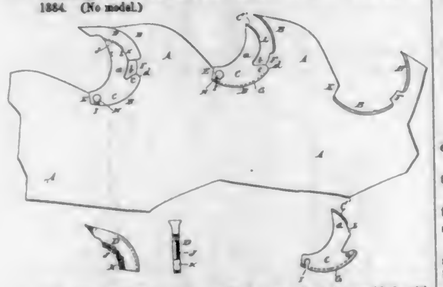
3. In an incubator, the combination, with the heating-tank c, having float-well t, the incubating-chamber having ventilating-tubes v, and the lamps k, of the flame-regulators l, the connecting-rods m n o, the lever p, provided with the arm y, the float s, and the rod w, journaled in the ventilating-tubes, substantially as herein shown and described.

298,891. NOISELESS SLATE. JOSEPH RIDER, Chicago, Ill., assignor to Augustus Warner and John H. Beers, both of same place. Filed Nov. 19, 1883. (No model.)



Claim.—In combination with a slate-frame provided with notches or recesses, the strip a, conforming to the indented edge of said frame, and the binding-cord a', drawn directly from notch to notch, substantially as and for the purpose set forth.

298,892. INSERTIBLE SAW-TOOTH. WILLIAM B. RIDDON, Trenton, N. J., assignor to the American Saw Company, same place. Filed Feb. 18, 1884. (No model.)

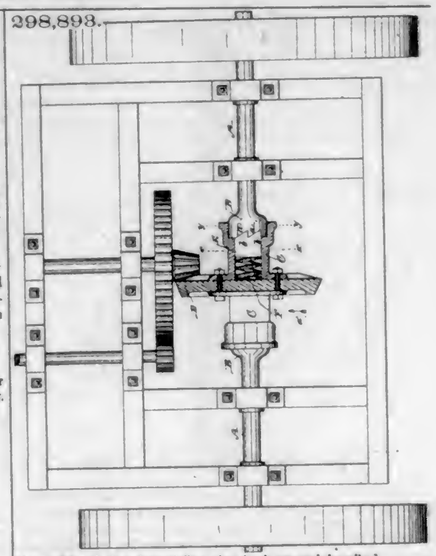


Claim.—The combination, with the saw-plate A, provided with the recess B, having the shoulder E, projection F, and recess d, of the bit-holding spring C, provided with the tongue a, having the rounded edge C' and flattened part L, the slit I and the toe c, and secured in the said recess between the shoulder and projection, with its toe in the recess of the said projection, by rivet H, and the bit D, provided with the groove J and the flattened part K, substantially as herein shown and described, whereby the bit-holding spring will be firmly held in the recess of the blade and the bit held in place by the said spring, thereby permitting the bit to be inserted and removed without removing the spring, as set forth.

298,893. MEANS FOR TRANSMITTING MOTION. WALTER A. ROLLINS, Wyattville, County of Surrey, England. Filed Mar. 7, 1884. (No model.)

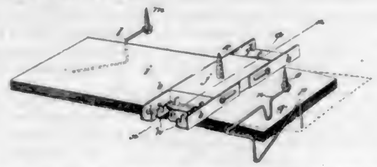
Claim.—1. In a device for transmitting motion, the combination, with a shaft having ratchet-teeth on its end, of a tubular bar, into which the end of the shaft projects on the other part of the machinery, and a spring-pressed block in said tubular bar, having ratchet-teeth engaging those of the shaft, substantially as herein shown and described.

298,893.



2. In a device for transmitting motion, the combination, with the shaft A, provided with the enlargement B, having ratchet-teeth a, of the wheel D, provided with the hollow boss C, the sliding block E, provided with ratchet-teeth b, and the spring F, substantially as herein shown and described.

298,894. BAG-HOLDER. HERBERT R. ROYSTON, Chicago, Ill. Filed Oct. 18, 1883. (No model.)



Claim.—1. The improved bag-holder constructed of a base, a, and elastic band e, in combination, substantially as described.

2. The combination of base a, having flanges b and slots c' f, with the elastic band e and connecting-pins d, substantially as described.

3. The combination of the base a, having flanges b, slots c' f, and the series of notches h, with the elastic band e and fastening-pins d, substantially as described.

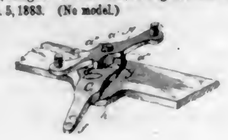
4. The combination of the base a, having flanges b and slots c' f, and being made in two sections, with the connecting-block j, elastic band e, and the fastening-pins d, substantially as described.

5. The combination of the bag-supporting arm l, with the bag-holder, consisting of base a and the elastic band e, constructed and arranged as described.

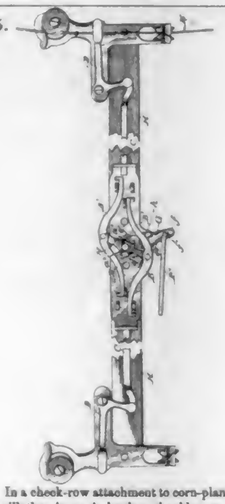
6. The end stop, p, in combination with the bag-holder, consisting of base a and elastic band e, substantially as described.

7. The combination of the end stop, p, and the top presser, q, with the bag-holder, consisting of the base a and elastic band e, substantially as described.

298,895. CORN-PLANTER CHECK-ROWER. WILLIAM B. RIDDLE, Decatur, Ill., assignor to Chambers, Bering Quinlan Company, same place. Filed Oct. 5, 1883. (No model.)



298,895.



Claim.—1. In a check-row attachment to corn-planters, in combination with the oscillating lever A, having shoulders *a a''*, the auxiliary lever G, having limbs *g g'*, adapted to receive motion alternately from the shoulders *a*, and to act alternately on the shoulders *a''* as stops, and to transmit motion through suitable mechanism to the planter seed-slides, substantially as and for the purpose specified.

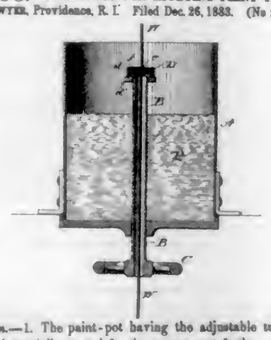
2. In combination with the rocking lever A, which receives motion indirectly from the forked levers D, and has lateral shoulders *a''*, the lever G, arranged between the lever A and mechanism connected with the planter seed-slides, and provided with limbs *g g'*, adapted to receive motion from the lever A, and to act alternately on the shoulders *a''* as stops, substantially as and for the purpose specified.

3. In combination with the tappet-wire E, forked lever D, push-bars C and B B', and rocking lever A, the auxiliary lever G, adapted to receive motion from the lever A, and its arms *g g'*, to act alternately on the shoulders *a a''* as stops, substantially as and for the purpose specified.

4. In combination with the forked lever D, push-bars C and B B', and rocking lever A, having shoulders *a a''*, the auxiliary lever G, having limbs *g g'*, adapted to coact with the shoulders *a a''*, substantially as and for the purpose specified.

5. In combination with the push-bars C and B B' and rocking lever A, the auxiliary lever G, provided with stops, and adapted to receive motion from and to the motion of the lever A, and to impart movement to the planter seed-slides, substantially as and for the purpose specified.

298,896. APPARATUS FOR APPLYING PAINT TO WIRE. WM. H. SAWYER, Providence, R. I. Filed Dec. 26, 1883. (No model.)



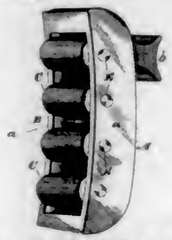
Claim.—1. The paint-pot having the adjustable tube through its bottom, substantially as and for the purpose set forth.

2. The combination, with the pot having a screw-threaded aperture in its bottom, of the correspondingly-threaded tube fitted through said aperture, substantially as described.

3. The combination, with the pot and the adjustable tube through its bottom, of the removable and replaceable head for the tube, substantially as described.

4. The combination, with the pot adapted to hold a paint or coloring-liquid, and the adjustable tube projecting into said pot and forming a wire-passage, of the two-part head attached to the inner end of the tube, and arranged to receive between its two parts a packing to hug the wire and prevent escape of liquid into the tube, substantially as described.

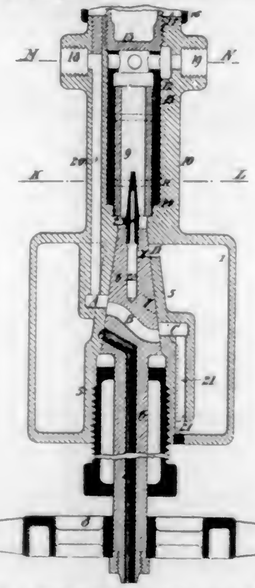
298,897. BRAKE-SHOE. GEORGE N. SCHEIB, Evansville, Ind. Filed Feb. 23, 1884. (No model.)



Claim.—1. The combination, with the body or shoe having a recessed front face, of a series of friction-rollers set into said recessed face, and adapted to simultaneously bear against the wheel, and the axles or arbors E, the opposite ends of which are secured in the side walls of the shoe, substantially as set forth.

2. The combination, with the body or shoe having a series of cavities formed in the front face thereof, of a friction-roller for each cavity, and an axle for holding the roller within its cavity, the ends of the said axles being secured in the side walls of the shoe, substantially as set forth.

298,898. SIGHT-FEED LUBRICATOR. WILLIAM A. G. SCHONHEYDER, Shepherds Bush, County of Middlesex, assignor of one-half to Harry Olrick, London, England. Filed Jan. 30, 1884. (No model.) Patented in England Sept. 5, 1883, No. 4,275.

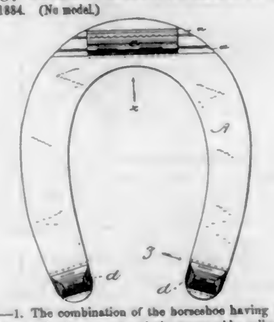


Claim.—1. A sight-feed lubricator consisting of a reservoir provided with condense-water inlet, and having a cock-casing and cock provided with index and pointer, the said cock being formed with a water-outlet and with an outlet for the oil, to a glass sight-tube communicating with the reservoir, and with the oil feed-pipe to the engine, the cock and casing being formed with ports and passages for putting the oil in the reservoir in communication with the oil-outlet, for putting the water in the reservoir in communication with the water-outlet or with the condense-water inlet, and for closing the cock toward the interior of the reservoir, means being also provided for letting air into the reservoir and for charging it with oil, substantially as and for the purposes set forth.

2. In a sight-feed lubricator, the reservoir 1, with cock-casing 5 and cock-plug 6, provided with index and pointer, and having water-outlet 24 and outlet 22 23 for the oil, which enters a glass sight-tube, 9, arranged in a neck continuation, 10, of the reservoir 1, and communicating with the oil-feed outlet 19 to the engine, the said neck continuation 10 being provided with condense-water inlet 18 and passage 20, the cock 6 and casing 5 being formed with ports and passages A B C, for admitting condense water to the reservoir-ports D and E for discharging the oil from the reservoir to the sight-tube 9 and outlet 19, passage F, for admitting water from the passage A into the glass sight-tube to clean it, and the passage G, for discharging the water from the reservoir into the water-outlet 24, the reservoir being provided with screw-stopper 2, for letting air into the reservoir and for charging it with oil, substantially as described.

3. In lubricators, the stopper 2 with spindle continuation, having enlarged screwed end 3, in combination with a correspondingly-screwed lug, 4, in the lubricator, substantially as and for the purposes set forth.

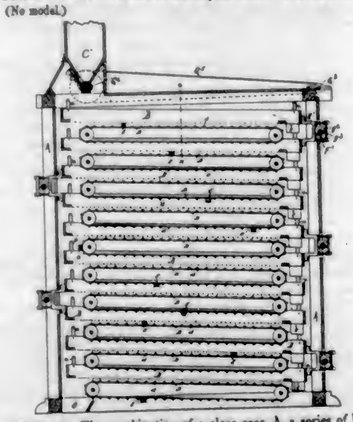
298,899. HORSESHOE. HOWARD B. SCHUREMAN, Newark, N. J. Filed Feb. 12, 1884. (No model.)



Claim.—1. The combination of the horseshoe having the parallel and oppositely-inclined grooves, and the removable calks having the ridges reciprocally inclined and parallel, substantially as set forth and shown.

2. The horseshoe having oppositely-inclined grooves therein, and having calks with oppositely-projecting ridges secured to said shoe, substantially as herein set forth and shown.

298,900. MACHINE FOR GRADING AND PURIFYING MIDDLINGS. JOH. MARTIN SCHUTZ, Minneapolis, Minn. Filed Sept. 10, 1883. (No model.)

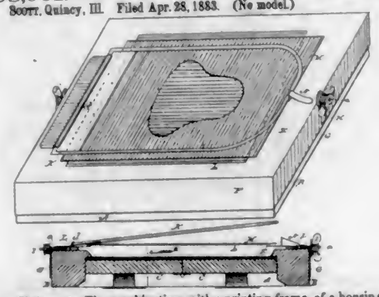


Claim.—1. The combination of a close case, A, a series of bolting-screens, B B, suspended in the case, and increasing in fineness from the uppermost to the lowermost, means for agitating the screens, and endless belts D D under the several screens, and provided with slots *d d* and brushes E E, substantially as specified.

2. The combination of a purifying-case, H', divided by partitions H^2 H^3 into compartments, separate fans M' M', connected with different compartments of the case, ratchet-faced plates K' K' in the several compartments, and means for agitating the said frames, for the purpose specified.

3. The combination of a series of shaking-screens successively increasing in fineness from the uppermost to the lowermost, means for conveying the screenings from one screen to another, separate means for conveying the tailings of the several screens, separate purifying-chambers ratchet-surfaced shaking-frames in the respective purifying-chambers, and a series of fans communicating separately with the purifying-chambers, substantially as herein specified.

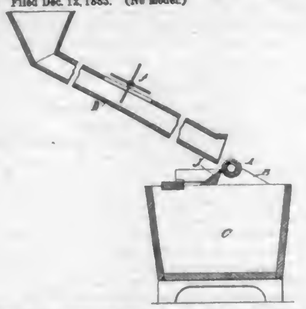
298,901. PRINTING AND VIGNETTING FRAME. OLIVER PERRY SCOTT, Quincy, Ill. Filed Apr. 28, 1883. (No model.)



Claim.—1. The combination, with a printing-frame, of a housing or vignetting attachment fitting over said frame, and adapted to be vertically adjusted thereon, having the central opening and the skeleton frame, the said wire frame being attached to the housing and operating to hold the paper, substantially as described.

2. In combination with a printing-frame, a vignetting attachment consisting of a housing fitting over said frame, and provided with a central opening, slotted sides, and thumb-screws for the adjustment of the attachment, the skeleton frame for holding the paper in place, and the spring or springs beneath the said vignetting attachment, to force it upward from the frame, substantially as described.

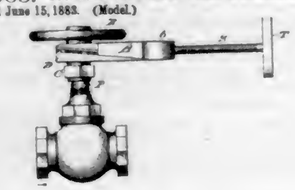
298,902. MACHINE FOR MAKING GREEN-SAND CORES. JAMES SOULL, Jersey City, N. J., assignor to himself and Samuel Vance, same place. Filed Dec. 12, 1883. (No model.)



Claim.—1. The combination, in a core-forming machine, of a support for a revolving mandrel, a guide-tube, and a wheel revolving with its blades projecting into said tube, to project green sand through said tube directly upon the mandrel, substantially as specified.

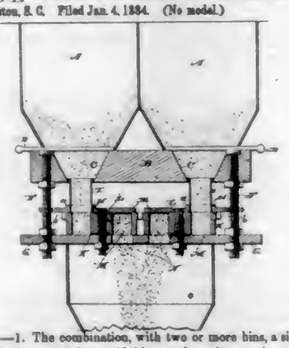
2. The combination of the mandrel, guide-tube, and means for projecting the sand through the tube against the mandrel, substantially as described.

298,903. STUFFING-BOX JACK. ALLEN R. SEAMAN, Astoria, N. Y. Filed June 15, 1883. (Model.)



Claim.—The combination, in a stuffing-box jack, of two blocks or forks, A D, having inclined or wedge-shaped surfaces where the one rests upon the other, lip-pieces, and grooves to connect the one fork or block with the other, and a screw passing through the head piece or yoke of one of the forks and acting upon the head piece or yoke of the other fork, substantially as set forth.

298,904. MACHINE FOR MIXING GRAIN. JOHN L. SHEPPARD, Charleston, S. C. Filed Jan. 4, 1884. (No model.)



Claim.—1. The combination, with two or more bins, a single commingling-bin located below said bins, and an intervening plate constructed to allow of the passage of grain from the bins through the plate and into the commingling-bin, of wheels or rotary carriers situated over said plate, and constructed and arranged to convey the grain from the exit-opening of the bins and discharge it into the commingling-bin, substantially as set forth.

2. The combination, with two or more bins, a single commingling-bin located below said bins, and an intervening plate constructed to allow of the passage of the grain from the bins through the plate and into the commingling-bin, of wheels or rotary carriers constructed with a series of receptacles arranged to register with the discharge-openings of the upper bins and the openings in the intervening plate, substantially as set forth.

3. The combination, with two or more bins, the bottoms of which are provided with openings, of plates provided with openings registering with those of the bins, two or more wheels located under said plates and provided with openings, and a plate under said wheel provided with central openings through which the grain falls, substantially as set forth.

4. The combination, with two or more bins, provided at their bottoms with openings, of plates E, located below the bins and also provided with openings, a plate located below said plates E and provided with openings, and wheels meshing with each other and provided with openings adapted to simultaneously discharge the grain through the openings in said latter plate, substantially as set forth.

5. The combination, with two or more bins provided with openings at their bottoms, of plates E, plate G, wheels pivoted to the plate G and provided with grooves K′, and with openings adapted, when revolved, to simultaneously discharge the grain through the plate G, tubes connecting the bins with openings in the plates E, and slides to cut off the supply of grain from the bins, substantially as set forth.

6. In a machine for mixing grain, &c., the combination, with two or more bins and two or more discharging-wheels situated below said bins, of a commingling-bin provided with the shelves R and T and the shelves S, all of the above parts combined as described.

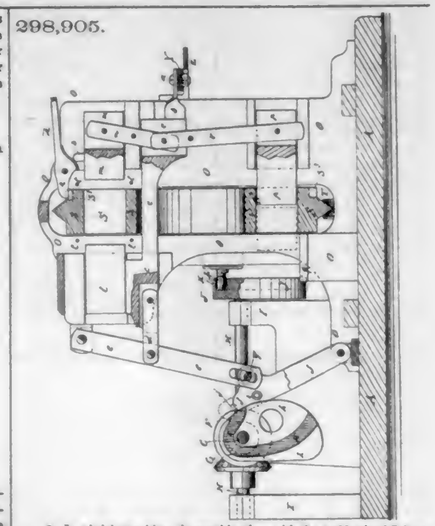
7. The combination, with two or more bins, of a lower common bin provided with inclined shelves or mixers, and intermediate mechanism for discharging said grain from the upper bins in desired proportions into and from the said lower bin, substantially as set forth.

298,905. BRICK-MACHINE. WILLIAM STEWART SMITH, Dayton, Ohio. Filed Nov. 26, 1883. (No model.)

Claim.—1. A brick-machine constructed substantially as herein shown and described, and consisting of a wheel provided with mold-openings, a cam-driven pawl for revolving the mold-wheel intermittently, and a series of plungers entering the mold-openings from opposite sides of the wheel, and worked by cam-driven levers connected by a bar passing through a central opening in the wheel, whereby the mold-openings will be filled with clay, the clay pressed into bricks, and the pressed bricks discharged from the wheel automatically, as set forth.

2. In a brick-machine, the wheel S, made, substantially as herein shown and described, with mold-openings S′, and provided with recesses S′ S′ upon the side parts of its rim, to receive the operating-pawl R and the locking-latch *r*, and having the middle part of its rim V-shaped to engage grooved supporting-rollers F, as set forth.

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3. In a brick-machine, the combination, with the mold-wheel S, having rim-recesses S′, of the cam J K and its driving mechanism, the sliding plate M, having pin L and bolt Q, and the pawl R, substantially as herein shown and described, whereby the said wheel will be revolved with an intermittent movement by the continuous revolution of the driving mechanism, as set forth.

4. In a brick-machine, the combination, with the mold-wheel S, of the cam *h k* and its driving mechanism, the levers *f e n*, connected to the sliding bar *c*, and the plungers *l m*, substantially as herein shown and described, whereby the said plungers will be moved forward and back intermittently by the continued revolution of the driving mechanism, as set forth.

5. In a brick-machine, the combination, with the feed-hopper V, the mold-wheel S, and the sliding bar *c*, the levers *e f*, the cam *h k*, and its driving mechanism, of the plunger W, the lever Y, and the fulcrum-bar Z, substantially as herein shown and described, whereby the feed-plunger will be operated from the mechanism that operates the pressing-plungers, as set forth.

6. In a brick-machine, the combination, with the mold-wheel S, the sliding bar *c*, connected to the levers *e f*, the cam *h k*, and its driving mechanism, of the lever *e* and the plunger *p*, substantially as herein shown and described, whereby the discharge-plunger will be operated from the mechanism that operates the pressing-plungers, as set forth.

7. In a brick-machine, the combination, with the mold-wheel S, having rim-recesses S′, and the plunger *m*, having pin *s*, of the latch *r*, substantially as herein shown and described, whereby the said mold-wheel will be locked in position and released automatically, as set forth.

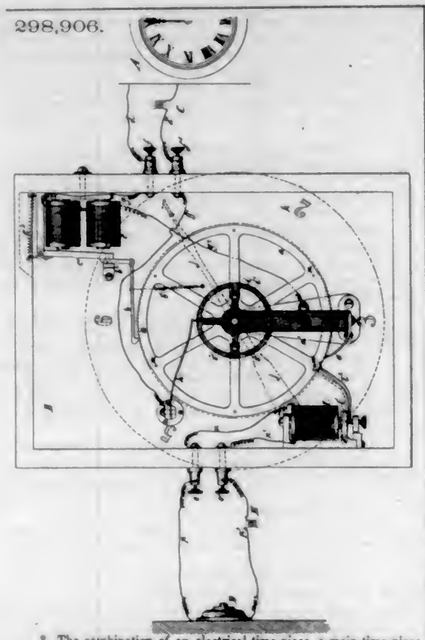
8. In a brick-machine, the combination, with the mold-wheel S, the pressing-plungers *l m*, and the frame O, of the guide-rods *t*, the scrapers *u*, the rods *v w*, the lever-pawl and spring *x y*, the trip-rod *z*, and the arm, cord, and weight 3 2 1, substantially as herein shown and described, whereby adhering clay will be scraped automatically from the faces of the said mold-wheel and plungers, as set forth.

298,906. WATCHMAN'S ELECTRIC TIME-DETECTOR. CHRISTIAN G. SPENGLER, Hoboken, N. J., assignor to the Electric Patrol Indicator Company, of New York. Filed Sept. 1, 1883. (No model.)

Claim.—1. The combination of an electrical time-piece, a main time-piece controlling the operation of the electrical time-piece, means for breaking at desired periods the electric circuit which extends between the electrical time-piece and the main time-piece, and mechanism adapted to be operated from a distant point for the purpose of re-establishing the electric circuit which extends between the electrical time-piece and the main time-piece, substantially as specified.

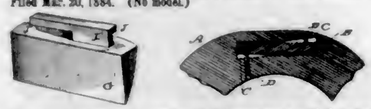
2. The combination of an electrical time-piece, a main time-piece controlling the operation of the electrical time-piece, the contact-piece *h* and wheel *i*, provided with pieces of insulating material, *i′*, for breaking the electric circuit which extends between the electrical time-piece and the main time-piece, and mechanism adapted to be operated from a distant point for the purpose of shifting the wheel *i* to remove one of its pieces of insulating mateial beyond the reach of the contact-piece *h*, substantially as specified.

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3. The combination of an electrical time-piece, a main time-piece controlling the operation of the electrical time-piece, means for breaking at desired periods the electric circuit which extends between the electrical time-piece and the main time-piece, and electro-magnetic mechanism adapted to be operated from a distant point for the purpose of re-establishing the electric circuit which extends from the electrical time-piece to the main time-piece, substantially as specified.

298,907. HORSESHOE. GEORGE E. SPRINKLE, South Whitley, Ind. Filed Mar. 20, 1884. (No model.)



Claim.—1. The combination, with a horseshoe provided at the toe and heel points with diagonal recesses having wedge-shaped extensions, of the calks provided with shanks having corresponding wedge-shaped extensions, substantially as herein described, and for the purpose shown and specified.

2. The combination of a horseshoe having diagonal recesses at the toe and heel points, provided with wedge-shaped extensions, and having screw-holes registering with the unextended portions of said recesses, the calks having shanks provided with wedge-shaped extensions, and suitable binding or fastening screws, substantially as set forth.

3. The herein-described calks for horseshoes, constructed with shanks the upper ends of which are provided with oppositely-extending wedge-shaped lugs or extensions, substantially as and for the purpose shown and specified.

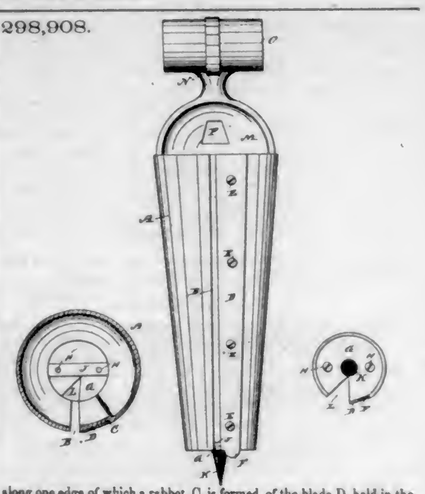
298,908. BUNG-BORER. GUSTAV A. STANGER, Chester, Conn. Filed Feb. 8, 1884. (No model.)

Claim.—1. A bung-borer consisting of a tapering casting provided with a longitudinal slot, at one edge of which the cutting-blade is held, and with a bottom plate having an aperture, one edge of which is a cutting-edge, substantially as described.

2. The combination, with the tapering casting A, having a longitudinal slot, B, of the blade D, held on one edge of the slot B, and provided at its lower end with a sharp-edged projection, F, the bottom plate, G, having an aperture, one edge of which is a cutting-edge, and of the gimlet-pointed screw K, projecting downward from the middle of the plate G, substantially as herein shown and described.

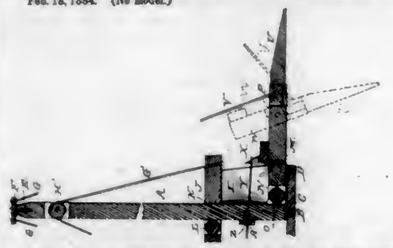
3. The combination, with the tapering casting A, having a slot, B, along one edge of which a rabbet, C, is formed, of the blade D, held in the rabbet, the bottom plate, G, having an aperture, L, and the gimlet-pointed screw K on the bottom of the plate G, substantially as herein shown and described.

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4. The combination, with the tapering casting A, having a rounded part, M, and a ring or loop, N, and a longitudinal slot, B, of the blade D, held at one edge of the slot, the bottom plate, G, having an aperture, L, and of the gimlet-pointed screw K, substantially as herein shown and described.

298,909. HAY-STACKER. JOHN J. STEPHENSON, Canton, Mo. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination of the upright post, the sliding casing, pulleys journaled upon one side of the casing, the cross-bar having trunnions, the rectangular carrier pivoted on said trunnions and having horizontal teeth and upright teeth, means for raising the carrier-frame, a spring-catch engaging the rear side of the carrier, a rope for disengaging the said catch, a weight, and a cord connecting the weight and carrier and passing over the pulleys upon the side of the sliding casing, as and for the purpose shown and set forth.

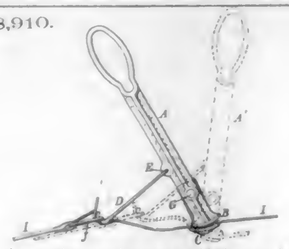
2. The herein-described hay-stacker, consisting of the upright pivoted pole having the guy-ropes, the sliding casing having the anti-friction rollers and formed with the cross-piece upon the forward end of its bottom piece, the carrier-frame pivoted upon the trunnions upon the ends of the cross-piece and having the horizontal and upright teeth, the spring-catch, the pulleys upon the side of the casing, the weighted rope, the hoisting-rope, and the capstan, all constructed and arranged as and for the purpose shown and set forth.

298,910. BELT-STRETCHER. JOHN W. I. STEVENSON, Rochester, N. Y., assignor to himself and James F. Gordon, same place. Filed July 12, 1883. (No model.)

Claim.—1. The combination, with the lever A, provided with clamping-jaw B and pivoted clamping-jaw C, of the hooks D D′, arranged to engage with the cross-bar of a buckle near its ends, substantially as and for the purposes set forth.

2. The combination, with the lever A, provided with clamping-jaw B and pivoted clamping-jaw C, of the hooks D D′, formed from one piece of metal, inserted through an opening in the lever and bent into

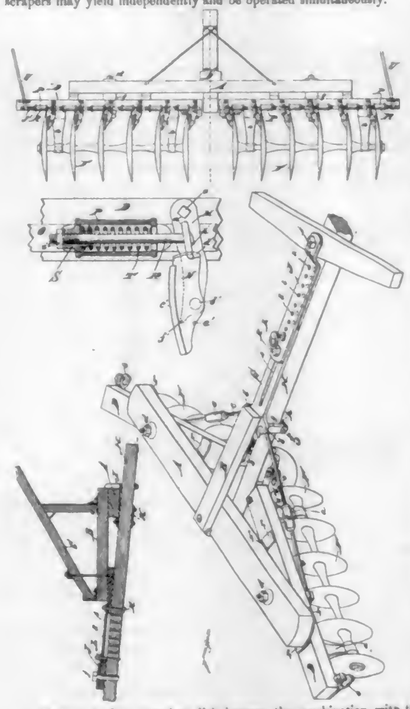
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suitable shape, and arranged to engage with the cross-bar of a buckle near its ends, substantially as and for the purposes set forth.

298,911. WHEEL-HARROW. E. FOWLER STODDARD, Dayton, Ohio. Filed Sept. 6, 1883. (Model.)

Brief.—Disk-gangs pivoted to main frame and connected with sliding tongue, so that their angle to line of draft will be changed by the forward and back movement of the tongue. Pivoted arm carrying a pivoted scraper which is adapted to adjust itself to surface of disk, said arm having a spring-connection with a reciprocating bar, whereby the scrapers may yield independently and be operated simultaneously.



Claim.—1. In a wheel or disk harrow, the combination, with the main frame and the wheel-gangs independently pivoted thereto, of the pole or tongue with connecting mechanism, whereby the sliding of said pole or tongue backward or forward carries the wheel-gangs and shifts their relative position from a straight line to any angle desired, or vice versa.

2. In a wheel or disk harrow, the combination, with the main frame and the wheel-gangs independently pivoted thereto, of the backwardly and forwardly sliding pole or tongue extending back between the adjacent ends of the gang-beams, and united thereto by adjustable connections, whereby the sliding of the pole in one direction will cause the wheel-gangs to be shifted from a straight line to a forward angle, or from a rearward angle to a straight line, and vice versa, as desired.

3. In a wheel or disk harrow having a main frame with independently-pivoted wheel-gangs, the tongue or pole working through fixed guides secured to the main frame and adjustably connected to the adjacent ends of the gang-beams, and provided with a series of perforations, in combination with a slotted plate or coupling secured to the main frame, a superimposed perforated plate, and a removable coupling-pin adapted to pass through said perforations and the slot in the coupling-plate, whereby the forward adjustment or play of the pole can be regulated at will to shift the wheel-gangs by the driver from his seat on the machine, as set forth.

4. In a wheel or disk harrow having a sliding pole or tongue for adjusting the wheel-gangs simultaneously from a straight to an angling position, or vice versa, the combination, with said pole of a stop for limiting the backward play of said pole, substantially as described.

5. In a disk-harrow having a sliding pole or tongue for adjusting the wheel-gangs simultaneously from a straight to an angling position, or vice versa, the main frame of the machine consisting, essentially, of the draft-beam A, cross-beam B, and brace-rods C, extending from the forward end of the beam B to the pivotal axes of the gang-beams, substantially as described.

6. In a wheel or disk harrow, the combination, with one or more series or gangs of harrow-disks, of a corresponding series of simultaneously-operated self-adjusting spring-scrapers, substantially as described.

7. In a wheel or disk harrow, the combination, with the rotating disk or disks, of a scraper-blade for each disk pivoted at a point between the axis and periphery of said disk, whereby said blade can adjust itself to the surface of the disk at all points of its scraping-surface from one end to the other.

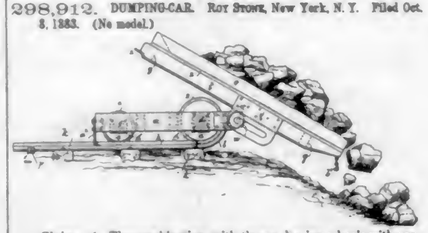
8. In a wheel or disk harrow, the combination, with a series of rotating harrow-disks, of a series of pivoted rocking arms carrying self-adjusting scrapers, which said arms are connected to and operated by a bar or rod, so as to be vibrated simultaneously through the medium of a lever or equivalent device.

9. In a wheel or disk harrow, the combination, with a series of rotating harrow-disks, of a series of scrapers adjustably united to a reciprocating bar by spring-connections.

10. In a wheel or disk harrow, the combination, with a series of rotating harrow-disks, of a series of pivoted arms carrying pivoted self-adjusting scrapers, and united to a reciprocating bar by spring-connections.

11. In a wheel or disk harrow, the combination, with a series of rotating harrow-disks, of a series of pivoted arms carrying pivoted self-adjusting scrapers, and united to a reciprocating bar by an adjustable spring-connection.

298,912. DUMPING-CAR. ROY STONE, New York, N. Y. Filed Oct. 8, 1883. (No model.)



Claim.—1. The combination, with the car having wheels with central flanges, of the main track A, the extensible rails *l*, having stops at the ends, and the cross-ties for the same, substantially as set forth.

2. The combination, with the frame *a b*, and wheels *c c*, of the car-body *t q o*, the slotted guide-plates *t'*, the axle *v*, and the rollers *w w*, substantially as set forth.

3. The frame *a b* and wheels *c c*, having central flanges to the treads thereof, in combination with the body *t q*, and lodges or box *o*, the guide-plates *t'*, and the rollers *w w*, substantially as set forth.

4. The combination, with the car-track having wheels with central flanges, of the sliding body resting upon the track, the main track A, the extensible rails *l*, having stops at the ends, and the cross-ties for the same, substantially as set forth.

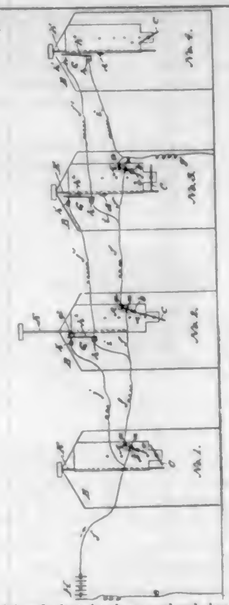
298,913. ELECTRIC BLOCK-SIGNAL FOR RAILWAYS. STEPHEN JAMES SWAYZE and JOHN CLARENCE LANE, Sag Harbor, N. Y. Filed Nov. 13, 1883. (No model.)

Brief.—As train passes station it mechanically sets a signal, thereby also closing a shunt-circuit around a locking-magnet at previous station, allowing signal thereat to fall to "safety."

Claim.—1. The signal-board E, adapted to be automatically elevated by the passage of a train, the clutching and retarding mechanism D, and the fan C, or its equivalent, in combination with the magnets *a*, lever *b*, spring *c*, and switch G, connected as described, and adapted to be opened and closed by the signal-board E, substantially as specified.

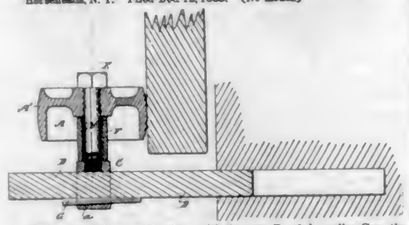
2. In a signaling system, the switches G, connected to the main wire

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f by wires *f'* and *i*, and adapted to be opened and closed by the signal-board E, in combination with the magnets *a* and the locking mechanism, whereby the setting of one signal will release the other, substantially as described.

298,914. STAY-ROLLER FOR SLIDING DOORS. LE GRAND TERRY, Horseheads, N. Y. Filed Dec. 12, 1883. (No model.)

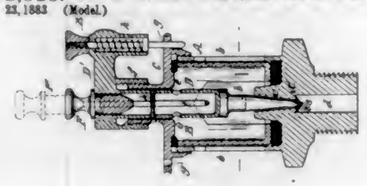


Claim.—1. The combination, with the arm D, of the collar C on the same, which collar is provided with a groove, *a*, the key G, the spindle B, removably secured to said collar, and the roller A, mounted on the spindle, substantially as herein shown and described.

2. The combination, with the arm D, of the collar C on the same, the spindle B, screwed in the collar C, the sleeve F, surrounding the spindle, and the roller A, mounted on the spindle, substantially as herein shown and described.

3. The combination, with an arm, of a collar mounted adjustably on the same, and provided with a key for locking it in place, a spindle on the collar, and a roller mounted on the spindle, substantially as herein shown and described.

298,915. OIL-CUP. WILLIAM H. THOMAS, Santa Ana, Cal. Filed Oct. 23, 1883. (Model.)

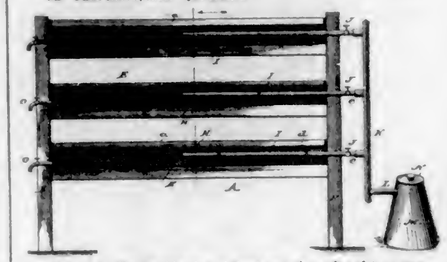


Claim.—1. In adjustable self-feeding oil-cups, the combination, with a hollow adjustable feeder or feeding-plug closed at its lower end, of a filling plug or stopper arranged to close the upper or mouth end of said feeder and stop devices within the feeder, arranged to admit of the raising of the filling-plug to charge the cup, but preventing its detachment from the cup, substantially as specified.

2. The filling-plug F, with its attached shackle *i*, in combination with the hollow feeder D, and its pin or stop *k*, substantially as and for the purpose specified.

3. The conical raising and lowering feeder D, having a series of longitudinal cuts or grooves, *s*, down and around its conical or pointed end, in combination with the seat *c* and lower portion of the cup, having a discharge-hole, *d*, and a countersunk recess, *d'*, outside of and around the base of said seat, essentially as and for the purpose herein set forth.

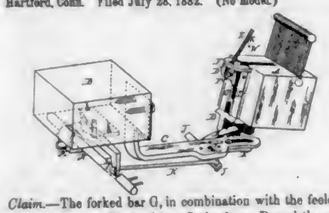
298,916. DRIER FOR FRUIT, &c. FRANCIS M. TRAVIS, New London, Va. Filed Nov. 5, 1883. (No model.)



Claim.—1. The combination of the frame, the series of trays supported therein, the transverse perforated partition within each tray, the steam-inlet pipes entering the chambers of the trays and said partitions, and terminating at or near the middle of the trays, and perforated for the escape of steam, the steam-supply pipe for connecting said pipes with a steam-generator, and valves for controlling the passage of steam from the steam-supply pipe to the several trays, substantially as described.

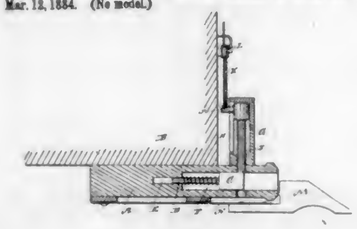
2. The combination of the hollow tray, the transverse perforated partition within the same, and the steam-inlet pipe entering the chamber of the tray and the said partition, and perforated for the escape of steam, substantially as and for the purposes set forth.

298,917. WEFT STOP-MOTION FOR LOOMS. FREDERICK O. TUCKER, Hartford, Conn. Filed July 28, 1882. (No model.)



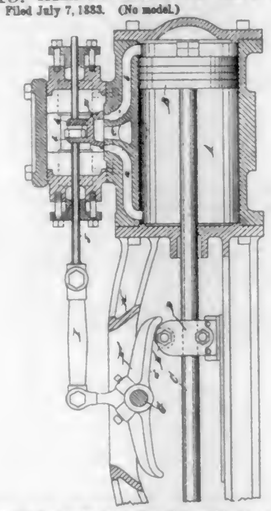
Claim.—The forked bar G, in combination with the feeler-block F, the feelers E, the cam H, the lever J, the frame D, and the arm C, said bar and feeler-block being connected to the frame D, adapted to be attached to the lay, and said cam and lever being connected with the arm C, adapted to be attached to the breast-beam or other stationary part of a loom, substantially as described.

298,918. CAR-COUPLING. CHARLES UEHLINGER, St. James, Ind. Filed Mar. 12, 1884. (No model.)



Claim.—The combination, with a draw-head, of a spring-bar secured beneath the same, and a beveled block secured to the free end of the spring and in front of the draw-head, whereby the coupling-links of high and low draw-heads may be guided within said draw-heads, substantially as set forth.

298,919. STEAM-ACTUATED VALVE. JOHN H. VAILE, Dayton, Ohio. Filed July 7, 1883. (No model.)



Claim.—1. In a pumping-engine, the combination, with the main valve and its ports, of a supplemental piston located to one side, as shown, of said main valve, and united thereto by a rigid connection with suitable ports and connecting mechanism, whereby the stroke of said main valve is rendered steady and gradual at all times, substantially as described.

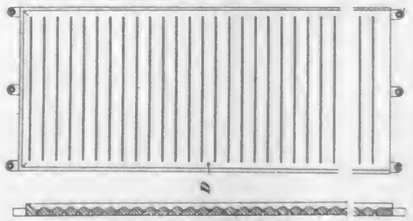
2. In a pumping-engine, in combination with the main valve and its rod, the supplemental piston located to one side, as shown, and within the steam-chest, said valve-rod, valve, and piston being united by a rigid connection, and both said valve and piston having suitable induction and exhaust ports, whereby the stroke of said main valve is rendered steady and gradual at all times.

3. In a pumping-engine having a main valve and a laterally controlling supplemental piston united thereto by a rigid connection, a main exhaust extending under and communicating with the valve of the supplemental piston, substantially as described.

4. In a pumping-engine, the steam-chest provided with a main valve, a supplemental-piston chamber, N, in which is fitted a valve-controlling piston united to the main valve by a rigid connection, substantially as described.

5. In a pumping-engine, the combination, with a main piston-rod provided with a cross-head carrying a friction-roller, of the double bell-crank lever F, link I, valve-rod J, and supplemental controlling piston M, located to one side of the valve, as shown, and united thereto and to the valve-rod by a rigid connection, the parts being relatively arranged in the manner and for the purpose specified.

298,920. OIL-PRESS MAT. JOHN H. VAILE, Dayton, Ohio. Filed Jan. 18, 1884. (No model.)



Claim.—1. A mat for oil-presses, having its upper surface corrugated, and with slots extending through it in the depressions of the corrugations, and with the under sides of said slots enlarged, substantially as and for the purpose specified.

2. In an oil-press having a series of telescopic boxes, the combination, with each of said boxes, of supplemental side walls extending up and bent in for some distance, and recessed in the under side of the box, whereby a smooth and unbroken pressing-surface is obtained, as and for the purpose specified.

298,921. DECORATIVE TILE. SAVILLION VAN CAMPEN, Jersey City, N. J. Filed Mar. 7, 1884. (No model.)



Claim.—1. As a new article of manufacture, a metal-faced tile composed of a sheet of metal and a sheet of felt or other coarse paper secured together by overlapping the edges of the metal on the paper with relief designs on its surface, as set forth.

2. The process of making metallic-faced tiles which consists in first securing together a sheet of thin metal and a sheet of paper of coarse texture by overlapping the edges of the metal over the paper and then submitting the same to electrotype dies, as set forth.

298,922. ARMATURE FOR ELECTRIC MOTORS AND DYNAMO-ELECTRIC MACHINES. JOSEPH C. VETTER and STEPHEN G. PUTNAM, New York, N. Y. Filed Dec. 5, 1883. (No model.)



Claim.—1. A rotary armature having a core which is doubled or returned upon itself, or, in other words, a core which extends from side to side of the armature in its coarse around, or in the direction of the circumference of the armature, substantially as and for the purpose herein described.

2. In a rotary armature, the combination of a core composed of a circular series of sections wound with wire and extending in the direction of the length of the axis of the armature, and side sections connecting the wound sections, so as to form a core which is magnetically continuous throughout the circumference of the armature, and disks or heads of non-magnetic material to which the side sections of the core are secured, substantially as and for the purpose herein described.

3. In a rotary armature, the combination of heads or disks of non-magnetic material, a core consisting of side sections, A', and sections A, and bobbins D, severally wound on tubes and slipped upon said sections A, substantially as herein described.

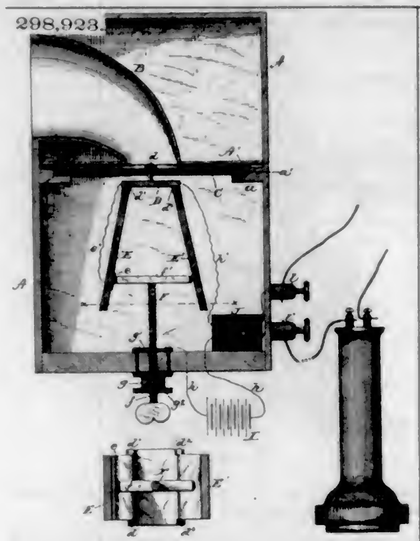
298,923. TELEPHONE-TRANSMITTER. HENRY E. WAITE, New York, N. Y., assignor to Charles F. Livermore, Trustee, same place. Filed Oct. 4, 1883. (No model.)

Claim.—1. In a telephone-transmitter, an electrode suspended from the sound-board and having a hinged pendent section, in combination with a second electrode adapted to be adjusted for varying the pressure of the hinged pendent section upon it, substantially as described.

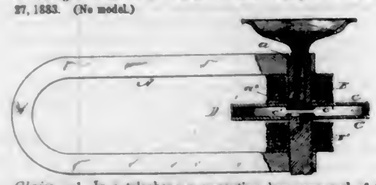
2. In a telephone-transmitter, the combination of the sound board or plate C, the electrode consisting of the plate D and hinged plates E and E', suspended from said sound-board, and the electrode F, provided with the cross-head *f'*, interposed and adjustable between the pendent plates E and E', substantially as described.

3. The combination, with the transmitter-case A, provided with the perforated partition A', of the mouth-piece or tube B, sound board or plate C, the electrode suspended therefrom, consisting of the plate D and the hinged pendent plates E and E', and the adjustable cross-head forming the second electrode, all substantially as described.

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298,924. TELEPHONE-RECEIVER. HENRY E. WAITE, New York, N. Y., assignor to Charles F. Livermore, Trustee, same place. Filed Nov. 27, 1883. (No model.)



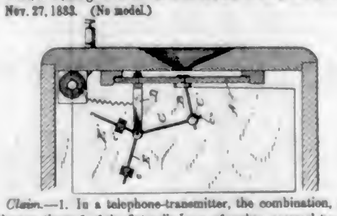
Claim.—1. In a telephone, a resonating-box composed of two parallel diaphragms connected at their edges by a suitable rim, an ear-tube communicating with the interior of said box, and the diaphragms thereof connected to a magnet, substantially as described.

2. A telephone resonating-box composed of two diaphragms united at their edges by a rim and connected to the poles of a magnet, and an ear-tube communicating with the interior of said resonating-box through one of the diaphragms.

3. A telephone-receiver consisting of a permanent magnet, the magnetic cores secured thereto in line one with the other, and a resonating-box mounted upon said cores and suspended between them.

4. In a telephone, the combination of the permanent magnet, the magnetic cores secured to poles of the magnet, the resonator-box mounted upon and supported between said cores, and an ear-tube communicating with the interior of said box through the tubular magnetic core, substantially as described.

298,925. TELEPHONE-TRANSMITTER. HENRY E. WAITE, New York, N. Y., assignor to Charles F. Livermore, Trustee, same place. Filed Nov. 27, 1883. (No model.)



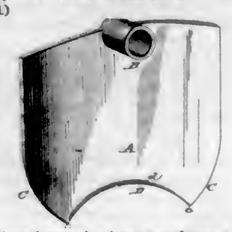
Claim.—1. In a telephone-transmitter, the combination, with the diaphragm thereof, of the flat cylinder *a*, of carbon, secured to a flanged hub projecting through a perforation in the diaphragm, whereby the said carbon cylinder is adapted to be revolved or adjusted, for the purposes and substantially as described.

2. In a telephone-transmitter, the combination, with the diaphragm thereof, carrying the electrode *a*, adjustable as and for the purpose described, of a pencil, B, balanced in contact with electrode *a* by means of the arms E, E', and C, secured to the hub D', pivoted within in a standard, D, secured to the diaphragm, the arms E E' being provided with adjustable weights or counterbalances for regulating and adjusting the pencil B relatively to the electrode *a*, substantially as described.

3. In a telephone-transmitter, the combination, with the diaphragm thereof, of a pencil-electrode, B, balanced in delicate contact therewith by means of an arm, C, and the arms E E', carrying the weights *c c'*, all of said arms C, E, and E' radiating from a common hub, D', pivoted between the arms of a standard-bracket, D, secured to the said diaphragm, the said weights *c c'* being adjustable lengthwise of the arms E E' for varying the amount of pressure of the pencil B upon the electrode *a*, substantially as specified.

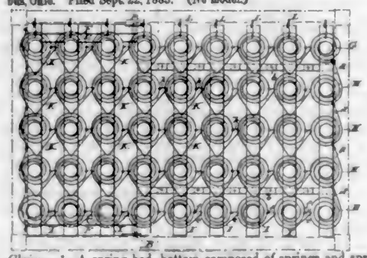
4. In a telephone-transmitter, the combination of a pencil-electrode, B, adjustable relatively to the diaphragm, in combination with pivoted arms C E E', provided with adjustable weights *c c'*, the arms E E' and weights *c c'* being so arranged that the pencil-electrode B may be balanced in contact with electrode *a* whatever may be the position or inclination of the diaphragm A.

298,926. HOE. SAMUEL WATSON, Marion, S. C. Filed Feb. 19, 1884. (No model.)



Claim.—As an improved article of manufacture, a turf-hoe or ditching-hoe having a curved blade cut away to form rounded corners, and having a concaved cutting-edge between the lower rounded corners, as and for the purpose shown and set forth.

298,927. SPRING BED-BOTTOM. LA FAYETTE WILDERMUTH, Columbus, Ohio. Filed Sept. 22, 1883. (No model.)



Claim.—1. A spring bed-bottom composed of springs and spring-bearing slats, and links pivoted to and connecting said slats, as described, in combination with the hinged and adjustable head-section A and supplemental frame F, as set forth.

2. A spring bed-bottom composed of sections A and A' and F, hinged together as described, section A consisting of slats and links pivoted to and connecting the same together, as set forth.

3. A bed-bottom composed of a series of spiral springs, said springs having arms *g*, bent to form two angles, *h* and *i*, which embrace the top coils of two adjacent springs, and return-arm *k*, adapted to hook over the top coil of its own spiral, in combination with slats and links pivoted to and connecting the same, as set forth.

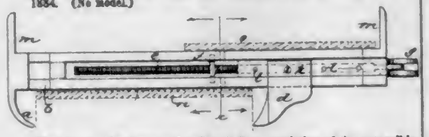
298,928. SAW-SHARPENING MACHINE. DANFORD WILLEY, Concord, N. H. Filed Dec. 15, 1883. (No model.)



Claim.—1. In a machine for sharpening circular saws, the combination of the saw-rest F, having flange *f* and teeth *f'*, and provided with the spindle G, to which are threaded the nuts H I, with the tilting table D having spring-catch S, said parts F and D being connected and rendered capable of rotary motion, substantially in the manner described.

2. In a machine for sharpening circular saws by means of an emery-wheel having an iron base, to which may be attached a sliding carriage, the tilting table D, hinged to said carriage, and provided with a spring-catch, S, in combination with the revolving saw-rest F, having flange *f* and teeth *f'*, and the spindle G, to which are threaded the nuts H I, operating substantially as and for the purposes specified.

298,929. PULLEY-BELTER. JAMES N. WILSON, Higginsville, Mo., assignor to himself and James H. Campbell, same place. Filed Mar. 23, 1884. (No model.)

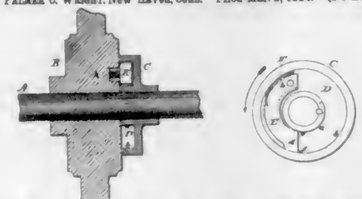


Claim.—1. The improved pulley-belter, consisting of the extensible clamp *a b c d*, adjusting-screw *e*, and the flanges *m*, combined and arranged substantially as described.

2. The combination of the extensible clamp *a b c d*, adjusting-screw *e*, and the clamping-lever *g*, substantially as described.

3. The adjusting-screw *e* and clamping-lever *g*, in combination with the extensible clamp *a b c d*, said screw being fitted to slide in the bearing *h*, and having the reacting-spring *i*, substantially as described.

298,930. DEVICE TO PREVENT RETROGRADE MOVEMENT. PALMER C. WRIGHT, New Haven, Conn. Filed Mar. 3, 1884. (No model.)



Claim.—1. The herein-described device for preventing retrograde movement in sewing-machines, consisting of the wheel or pulley B, loose on the shaft, the disk C, fixed on the shaft, one of said parts B C constructed with a concentric recess, D, on its side next the other part, and a dog arranged in said recess, constructed at its nose end to engage the two walls of the recess in the right direction of revolution, but free therefrom in the opposite direction, the said dog at its tail end connected with the said other part, B, by a stud, *h*, on the one part and corresponding slot in the other to permit play of the stud, and whereby the rotation of the one is communicated to the other when turned in the driving direction, but left free when turned in the opposite direction, substantially as described.

2. The combination of the disk C, fixed to the shaft, constructed with the concentric recess D in one of its sides, the dog E, arranged loosely in said recess, the bar *l* through the nose of the dog and arranged to take its bearing against the opposite walls of the recess in one direction, but free in the opposite, and the tail end of the dog constructed for engagement with a device loose upon the shaft, substantially as described.

298,931. PRESS. CHARLES H. ADAMS, Quincy, Ill. Filed Mar. 28, 1884. (No model.)

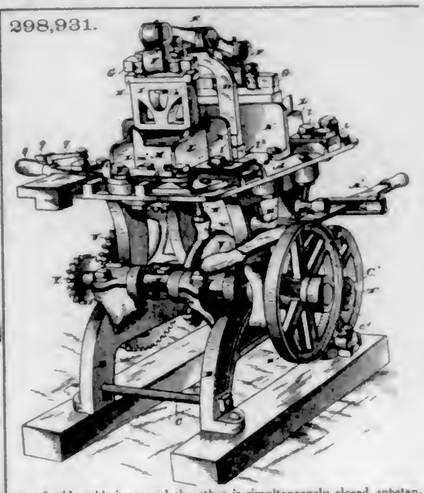
Claim.—1. As an improvement in tobacco-pressing machines, a mold composed of a stationary back and bottom and a movable front and ends which are closed inward by the operation of one lever, substantially as and for the purpose specified.

2. A tobacco-mold having a stationary bottom and back and a movable front and ends, which ends are first moved inward and said front then closed by the operation of one mechanism, substantially as and for the purpose shown.

3. A tobacco-pressing machine provided with two sets of compressing devices, which are adapted to be simultaneously operated in opposite directions by one mechanism, so as to alternately receive a charge of tobacco, and to compress the same into a lump, substantially as and for the purpose set forth.

4. A tobacco-press provided with two molds, which are each adapted to be opened and closed, in combination with mechanism whereby when

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one of said molds is opened the other is simultaneously closed, substantially as and for the purpose shown and described.

5. In combination with the front plates, M, the bar R, extending between and connected with said plates, and the levers Q, pivoted to the table A and upon said plates or their supporting-blocks, substantially as and for the purpose specified.

6. In combination with the end plates, L, the longitudinal bar R, adapted to be moved longitudinally by means of the levers Q, and provided with the cam-slots *r'*, and the transverse bars S, each connected at one end with one of said plates, and having its opposite end, through the bolt *s*, engaged with one of said cam-slots, substantially as and for the purpose shown.

7. The plunger I, secured to the bar H, and made vertically adjustable with reference to the cross-head G by means of the screws *g'*, substantially as and for the purpose set forth.

8. The combination of the cross-head G, provided with the journal *g*, the link F, and the walking-beam E, substantially as and for the purpose shown and described.

9. In combination with the plungers I, connected with and moved vertically by means of the walking-beam E, the shafts T and X, the gear-wheels U and Y, the belt-wheel Z, the eccentric V, the connecting-rod W, and the strap *w*, all arranged to operate substantially as and for the purpose specified.

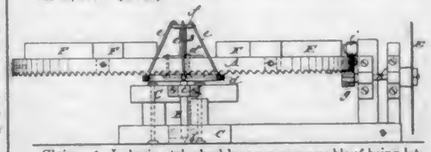
10. The combination of the shaft X, the pulley Z, provided with the hub *z*, having a toothed face, *z'*, the clutch-section z^2, the lever A', and the strap a^3, substantially as and for the purpose shown.

11. In combination with the shifting-lever A, adapted to operate the clutch-section z^2, and provided with the stud a^3, the wheel C', provided with a peripheral cam-groove, *c'*, substantially as and for the purpose set forth.

12. In combination with the wheel C', provided with the peripheral groove *c'*, the laterally-adjustable blocks c^3, fitted within the transverse grooves c^2, and provided each with an offset continuation, c^4, of said groove *c'*, substantially as and for the purpose shown and described.

13. The hereinbefore-described tobacco-pressing machine, in which the molds adapted to be closed and opened, the plungers, with their actuating mechanism, and the mechanism for starting and automatically arresting the motion of said actuating mechanism, are constructed and combined to operate in the manner and for the purpose substantially as specified.

298,932. HORSE-POWER. HOMER ADKINS, Concordia, Kans. Filed Oct. 27, 1883. (Model.)



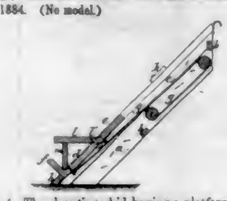
Claim.—1. In horizontal-wheel horse-powers capable of being laterally tipped or tilted to provide for the entry and removal of the draft-animals within and from the wheel, the combination of the balance-wheel A and its shaft B with the tipping or tilting lower supporting-frame, C, substantially as specified.

2. The horizontal balanced wheel A, having its hub constructed of plates *d d' f* and braces *e e*, arranged in relation to the wheel and its shaft B essentially as shown and described.

3. The combination of the wedge or shifting prop D with the lower supporting-frame, C, and the wheel A, arranged to tip or tilt laterally along with said frame, substantially as and for the purposes herein described.

4. In horizontal-wheel horse-powers capable of being laterally tipped or tilted, as described, the combination, with the tipping or tilting lower supporting-frame, C, of the shaft B and the balanced wheel A, provided with weight-holding receptacles F, to steady the run of the wheel, essentially as specified.

298,933. SKID-ELEVATOR. SYLVESTER BABCOX, Elba, Ohio. Filed Apr. 14, 1884. (No model.)



Claim.—1. The elevating-skid having a platform provided with an upper hinged section adapted, when raised, to fall out of the way over the end of the skid, substantially as described, for the purpose specified.

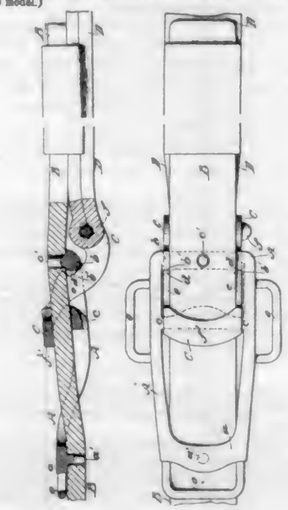
2. The elevating-skid having an inclined platform supplemented with a removable horizontal platform, substantially as described, for the purpose specified.

3. The supplemental platform having one end beveled and a cross-piece on one side near its other end, combined with the inclined platform and means for fastening the supplemental platform to the upper edge of the inclined platform, substantially as described, for the purpose specified.

4. The inclined platform having an upper hinged section, combined with a supplemental horizontal platform adapted to be supported upon and removably attached to the lower section of the inclined platform, the skid, and means for elevating the platform, substantially as described.

5. The elevating-skid herein described, consisting of the skid, the inclined platform of hinged sections, the attachable supplemental horizontal platform, the cord *g*, the roller *h*, the cranked winding-roller *i*, and the pivoted stop *k*, all constructed and arranged substantially as set forth.

298,934. TRACE-BUCKLE. CHAS. C. BAUDER, Barnside, Ill., assignor to himself and George E. Bauder, Valley City, Dak. Filed Dec. 10, 1883. (No model.)



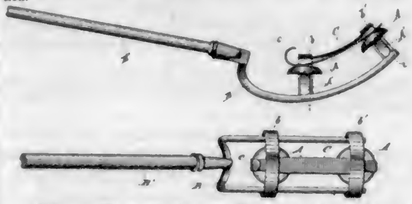
Claim.—1. The main part A, having the oppositely-arranged tongues *a' c'*, adapted for holding the tug B, in combination with the grip-loop C, arranged to grasp the tug B, substantially in the manner and for the purposes set forth.

2. The grip-loop C, formed with the notches *d*, in combination with the main part A, having the cross-piece *b*, and devices on opposite sides of its ends for holding the tug, substantially as and for the purposes set forth.

3. The grip-loop C, formed with the notches *d*, in combination with the bar *b*, formed with the lips *b'*, substantially as and for the purposes set forth.

298,935. RAILWAY-TORPEDO. JAMES H. BEVINGTON, Cleveland, Ohio. Filed Sept. 24, 1883. (No model.)

Brief.—The torpedo is provided with an attached signal-torch made of an easily-ignitible compound, and as the device for attaching the torpedo to the rail is being withdrawn therefrom it ignites the torch by friction.



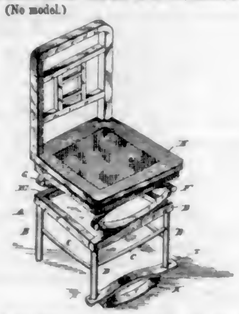
Claim.—1. The combination of a railway-torpedo provided with a signal-torch and an attaching device provided with means for igniting or lighting the torch.

2. A railway-torpedo provided with a phosphorescent or other easily-ignitible compound, and means carried by the attaching device for igniting or rendering luminous the said compound, substantially as set forth.

3. The bands *b* and *b'*, provided with suitable springs adapted to press upon the torpedoes and ignite or light a torch on the torpedoes, substantially as described, and for the purpose specified.

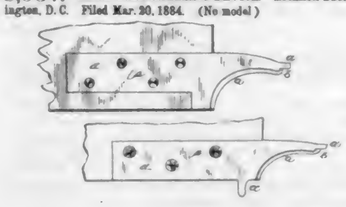
4. The combination, with the fork B, of the bands *b* and *b'* and the springs C and *c*, substantially as shown and described.

298,936. SPRING-CHAIR. ANDREW M. BLAKE, Columbus, Ohio. Filed June 7, 1883. (No model.)



Claim.—An elliptic spring, in combination with a metallic bar having slots at its ends, whereby the whole may be secured to the legs of chairs of different widths, substantially as and for the purposes specified.

298,937. HAND CORN-SHELLING DEVICE. LOCKRUM BLUE, Washington, D. C. Filed Mar. 20, 1884. (No model.)



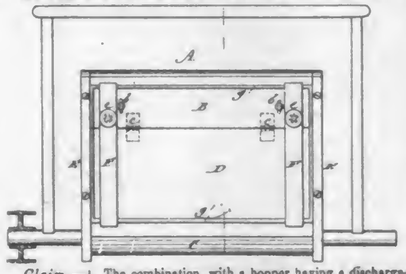
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Claim.—1. The shelling plate or blade formed with the starting or shelling tooth and the shelling-edge, and suitably adapted to be secured, substantially as described.

2. The plate or blade formed with the starting or shelling tooth, the shelling-edge, and the shank, in combination with a suitable support, substantially as described.

298,938. FEEDER FOR MILLS, PURIFIERS, &c. WM. S. BONNARD and WM. H. GRUPE, Terre Haute, Ind. Filed Feb. 8, 1884. (No model.)



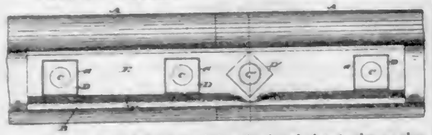
Claim.—1. The combination, with a hopper having a discharge-opening, *d*, and the feed-roller C, of the valve D, hinged to the hopper and provided with the flange *g'*, and the springs F, secured at their upper ends to the hopper, and having their free ends resting on the flange of the valve, substantially as herein shown and described.

2. The hopper having a discharge-opening, *d*, and the springs F, thickened at their upper ends and provided with grooves *f*, in combination with the strip B, arranged on the front of the hopper, over its opening, and provided with a rib or flange, *g*, constructed to fit within the grooves of the springs, the thumb-screws *e*, and the valve D, substantially as specified.

298,939. FERTILIZER. BENJAMIN C. BRIGGS, Paris, Me. Filed Dec. 1, 1883. (No specimens.)

Claim.—The within-described fertilizing compound, composed of bone-meal or plaster, ashes, hen-manure or guano, muck, chamber-lye, and salt, all the different ingredients treated as described, and united in the proportion substantially as set forth.

298,940. NUT-FASTENER. ISAAC BROOKS, Pottstown, Pa. Filed Jan. 9, 1884. (No model.)

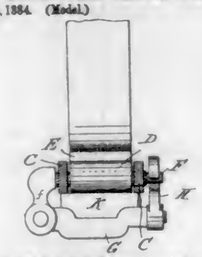


Claim.—A nut-fastener consisting of a slotted plate having an elastic lip, both plate and lip being formed integral of sheet metal, the lip extending unbroken the length of the plate, and curving outwardly from the plate across the path of the sides of the nuts, whereby, when the nut is turned, the angles or corners thereof compress the lip, and the latter then exerts its holding power on said corners, and thus on the nut, substantially as and for the purpose set forth.

298,941. PAINT. LOUIS BROWN, New York, assignor of three-fourths to Lacy Nichols White, Rye, N. Y. Filed June 2, 1883. (Specimens.)

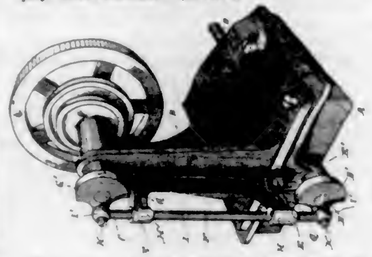
Claim.—A paint made of sublimated-zinc powder, of the character herein specified, combined with whiting or other suitable coloring or filling matter and a vehicle.

298,942. THILL-COUPLING. MILTON E. CAMPANY, Muskegon, Mich. Filed Jan. 22, 1884. (Model.)



Claim.—In a thill-coupling, the combination, with the coupling-pin F, provided with the arm *f* at one end, of the block G, pivoted to the end of the said arm, the hook H, pivoted to the free end of the block, and the cushion K, secured to the upper face of the block, substantially as herein shown and described.

298,943. MECHANICAL MOVEMENT. ANDREW C. CAMPBELL, Bridgeport, Conn., assignor to the Wheeler & Wilson Manufacturing Company. Filed Mar. 20, 1884. (No model.)



Claim.—1. As a means for transmitting isochronous rotary movement, a rod pivoted to crank-plates upon a driving and a driven shaft, said rod being supported by guides upon a rock-shaft, said shaft and rod being so adjusted that the rock-shaft acts to assist the rod at the points where a dead-center is otherwise possible.

2. The combination, with a rod and crank-pins which pivotally connect the same to disks upon a driving and a driven shaft, of oscillating guides which support said rod, as described, and for the purpose set forth.

3. A driving-shaft and a driven shaft having plates at their ends carrying crank-pins, and a rod carried by said pins and sliding freely thereon, in combination with a rock-shaft having guides which support said rod, substantially as described.

4. A rock-shaft having arms, at the outer ends of which are guides, and a sliding rod supported in said guides, in combination with rotating crank-pins which carry said rod, whereby the movement of the driving-shaft is transmitted to the driven.

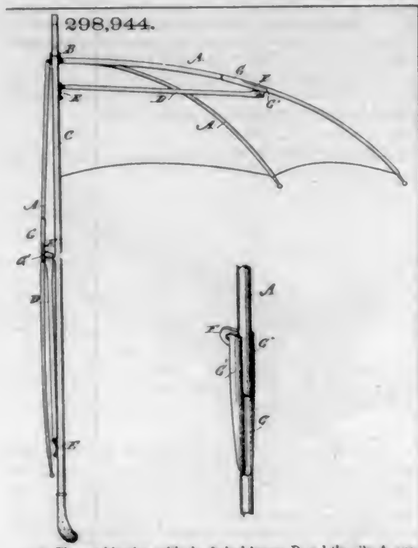
5. In a mechanical movement, guides H, which oscillate in an arc and support rod I, in combination with crank-pins which carry rod I, and which move in a circle whose diameter is equal to the chord of the arc described by the oscillations of guides H, as described, and for the purpose set forth.

6. A rod connecting two shafts and carried by crank-pins at the ends of said shafts, in combination with guides upon a rock-shaft, which support said rod and oscillate in an arc, said rock-shaft and rod being parallel, and the centers of the crank-pins and of the shafts being an equal distance apart.

298,944. UMBRELLA AND PARASOL FRAME. ANTONIO CARRARA, Newark, N. J., assignor to himself and Alfred Girardet, same place. Filed Feb. 12, 1884. (No model.)

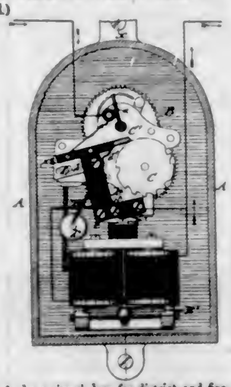
Claim.—1. The combination, with the forked braces D and the ribs A, provided on their under sides with perforated lugs F, of spring shanks or strips secured to the ribs on either side of the said lug, whereby the forked ends of the braces will engage said spring-shanks, substantially as set forth.

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2. The combination, with the forked braces D and the ribs A, provided on their under sides with the perforated lugs F, of the semi-tubular piece G, secured to the ribs to one side of the perforated lugs, and formed with two spring-shanks extending along the ribs on either side of the lugs, substantially as set forth.

298,945. SIGNAL-BOX FOR DISTRICT AND FIRE-ALARM TELEGRAPHS. CHARLES H. CARTER, Brooklyn, N. Y. Filed Sept. 27, 1883. (No model.)

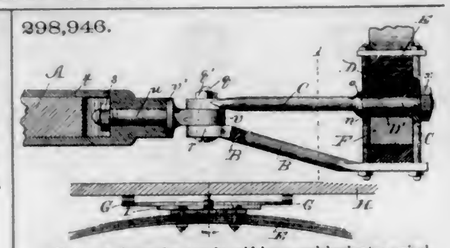


Claim.—1. In a signal-box for district and fire-alarm telegraphs, the combination, with a circuit-breaking wheel and its circuit-closing spring, of a switch arranged in contact with the break-wheel, and a signaling device which is thrown into circuit when the switch drops into the recesses of the break-wheel, substantially as set forth.

2. In a signal-box for district and fire-alarm telegraphs, the combination, with a circuit-breaking wheel and its circuit-closing spring, of a switch device placed in contact with the break-wheel, a signaling device that is thrown in or out of circuit by the switch, and means, substantially as described, whereby the switch may be actuated and the signaling device thrown into circuit for testing the line, substantially as and for the purpose specified.

298,946. VEHICLE RUNNING-GEAR. HARVEY W. CHAMBERLAIN and FREDERIK G. HARRIS, Lockport, Ill., assignors of one-half to Moses S. Greenebaum and MAYO A. LOEWE, both of Chicago, Ill. Filed Oct. 20, 1883. (No model.)

298,946.

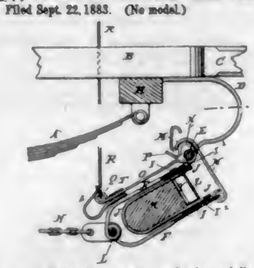


Claim.—1. In running-gear for vehicles, a reach having two swivel-joints, as shown, in combination with a third swivel-joint formed in line with the swiveled reach, the forward end of the said reach forming the pin of the said third swivel-joint, whereby the extreme swivels shall operate harmoniously to relieve the reach and wagon-body from strain, and at the same time cause the wagon-body to maintain its horizontal position when, from any cause, a front wheel shall assume a position higher or lower than its companion wheel, substantially as described.

2. A vehicle-gear comprising, in combination, a fifth-wheel secured to the under side of the wagon-body, a spring upon which the fifth-wheel is rigidly secured, an axle connected with the said spring by means of a swivel-joint, and a reach the forward end of which forms the pin for the said swivel-joint, the whole being constructed and arranged to operate substantially as described.

3. A swivel-joint in the forward part of a vehicle-gear in line with the reach, comprising the plate D, secured to the lower portion of spring E, and having downward-projecting bearings *n*, provided with apertures, and the plate D', secured to the upper side of the forward axle-bed, and having a socket, *n'*, with which the apertures in the said bearings *n* coincide, the said parts being secured together by means of a bolt or brace, C, forming the forward end of the swiveled reach, and provided with the nut or head *z* and the flange *e*, substantially as described.

298,947. DRAFT-CLEVIS. FOSTER HALLET CHENEY, Beaver City, Nebr. Filed Sept. 22, 1883. (No model.)



Claim.—1. A draft-clevis constructed substantially as herein shown and described, and consisting of a wide outer clevis connected with the body-frame of a wagon by bars or springs, with the running-gear by rods or chains, and with the double-tree by a wide inner clevis and a bolt or pin, as set forth.

2. In a draft-clevis, the combination, with the supporting bars or springs D, the draw rods or chains G H, and the double-tree K, of the outer clevis, F, the inner clevis, J, and the bolt or pin I, substantially as herein shown and described, whereby the said double-tree can be readily detached, as set forth.

3. In a draft-clevis, the combination, with the outer clevis, F, the inner clevis, J, the connecting bolt or pin I, and the double-tree K, of the spring Y, substantially as herein shown and described, whereby the double-tree will be protected from being broken and from slipping in its clevis, as set forth.

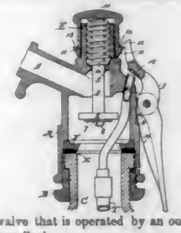
4. In a draft-clevis, the combination, with the outer clevis, F, of the catch M and the lever O, having projection N and the toe P, substantially as herein shown and described, whereby the said clevis will be held securely when closed and can be readily released, as set forth.

5. In a draft-clevis, the combination, with the outer clevis, F, and the locking and unlocking lever O, of the spring-catch S and the flanges T, substantially as herein shown and described, whereby the said lever will be held from accidental movement, as set forth.

298,948. VENT-FAUCET FOR BOTTLES. GEORGE W. CLARK, Brooklyn, assignor to Henry Downes, New York, N. Y. Filed Dec. 13, 1883. (No model.)

Claim.—1. A vent-faucet having a pouring-spout controlled by a reciprocating valve operated by an outside plunger and a stationary vent-

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pipe controlled by a valve that is operated by an outside vibrating lever, substantially as described.

2. In a vent-faucet, the combination, with an eduction-opening or pouring-spout and its reciprocating controlling-valve, of a vent-pipe the valve whereof is controlled by a vibrating lever, and means whereby the reciprocating valve actuates said lever to open the vent-pipe valve, substantially as described.

3. In a vent-faucet, the combination, with a spring-seated valve controlling the pouring-spout, of a valve operated by an independent lever for controlling the vent-pipe, and means whereby the said lever locks both valves open, substantially as described.

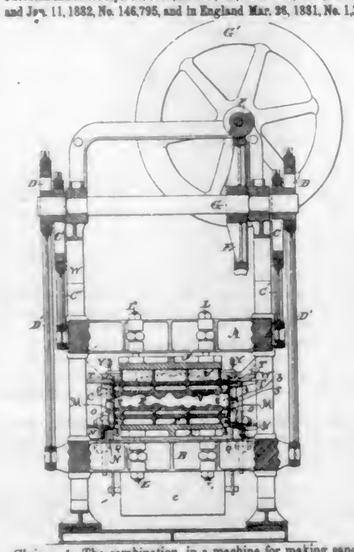
4. In a vent-faucet, the combination, with the spring-seated plunger, of the reciprocating valve that controls the pouring-spout, and with the spring-seated lever of the valve that controls the vent-pipe, and means whereby said lever locks both valves open, and when tripped permits their closing movement, substantially as described.

5. A faucet consisting of the case A, pouring-spout S, spring-seated reciprocating valve 2, cam 11, a vent-pipe, 6, and a valve, 18, carried by a spring-seated lever-valve, L, having a cam end, substantially as described.

6. A faucet consisting of the case A, pouring-spout S, spring-seated reciprocating valve 2, catch 13, a vent-pipe, 6, valve 18, lever L, and latch 12, substantially as described.

7. A faucet consisting of the case A, having spout S, spring-seated reciprocating valve 2, cam 11, catch 13, a vent-pipe, 6, valve 18, lever L, with cam end, and latch 12, substantially as described.

298,949. MACHINE FOR MAKING OR PREPARING MOLDS FOR CASTING METAL. JULES DEMOUBUY, Dunkirk, assignor to the Société L. Demouvilliers et Fils, Paris, France. Filed Jan. 16, 1884. (No model.) Patented in France Apr. 14, 1880, No. 136,124, and Jan. 9, 1882, No. 146,766, and Jov. 11, 1882, No. 146,795, and in England Mar. 26, 1881, No. 1,354.



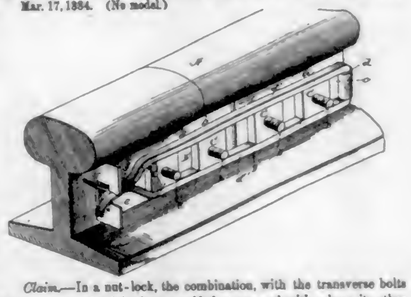
Claim.—1. The combination, in a machine for making sand molds for castings, of the boxes M and T, the flask S, the plates U and P, and the patterns V and R, all arranged substantially as set forth.

2. The combination, to form a mechanism for tilting the box T, of the post *b*, provided with a shoulder or projection, *l*, the slotted or grooved lever Z, bearing a pawl, *d*, and the weight *s*, all arranged to operate substantially as set forth.

3. The combination, with the box M, provided with wheels O, and four screws, Q, of the plate P, mounted or resting on said screws, and the pattern R, resting on plate P, all substantially as herein set forth.

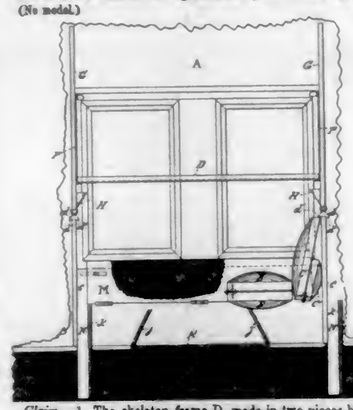
4. The combination, with the box T, provided with a flange, *b'*, and rods Y, of the plate U, springs X, and pattern V, all constructed and arranged substantially as and for the purposes set forth.

298,950. NUT-LOCK. MILLARD FILLMORE DILLON, Gillespia, Ill. Filed Mar. 17, 1884. (No model.)



Claim.—In a nut-lock, the combination, with the transverse bolts and their nuts, of a fish-plate provided at one end with a loop its other end being turned outwardly and provided with a T-shaped slot, and a locking-plate adapted to inclose said nuts, and provided at one of its ends with a bar engaged by the loop of the fish-plate, while its other end is formed with an extension, the end of which is split and bent to engage the T-shaped slot of said fish-plate, substantially as set forth.

298,951. SLEEPING-CAR. JOHN H. DOREE, Philadelphia, Pa., assignor of one-fifth to William H. Wigmore, same place. Filed Aug. 14, 1883. (No model.)



Claim.—1. The skeleton frame D, made in two pieces hinged together, in combination with the slotted braces F F, for the convenience in handling and connecting the frame with the wall of the car, either at the upper or lower part of the window, substantially as described.

2. The combination of textile fabric coated with dissolved gum-shellac with the frames of partitions G, the fabric being confined on each side of a frame between two frames, substantially as and for the purpose set forth.

3. The combination of the double hinged detachable back-cushions C and C' of the two seats of the section, with the skeleton frame D, to form the bed-bottom of the upper berth, substantially as described.

4. The combination of the middle curtains, I' I', with the side curtains, I I, which overlap them for the purpose of intercepting the view of the upper and lower berths, substantially as described.

5. In a sleeping-car having middle curtains, I' I', and overlapping side curtains, I I, made of bamboo, rattan, or wood splints, the combination of turn-buckles, substantially as described, with the curtains, to prevent the flapping of the latter.

6. In combination with the chamber L, a lining of textile fabric coated with dissolved gum-shellac, to preserve cleanliness and prevent the infection of bugs, substantially as described.

7. The combination of the door M with the skeleton frame D, for holding the latter in place when folded up, said door being connected with the wall A at the lower part of the window, in the manner and for the purpose set forth.

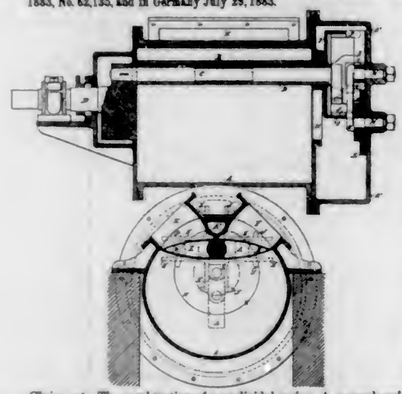
8. In combination with the floor and lower ceiling between two seats, the partition i, whereby to divide the space into two compartments, L' L', to be reached, respectively, from the openings under the seats, substantially as described.

9. The detachable boards *j j*, in combination with the seat-frames B B and wall A, for the purpose (by removing the boards) of making a free communication to the chambers L' L' for stowing the bedding therein or removing it therefrom, substantially as set forth.

10. The combination of textile fabric coated with dissolved gum-shellac with the compartments or chambers L' L', to preserve their cleanliness and protect them from the infection of bugs, substantially as described.

11. The pockets H, having slots *f* and *f'*, in combination with the partitions G, having headed pins *e* and *e'*, the lower slots, *f*, being open at their lower ends, and the upper slots, *f'*, having an enlargement at their lower ends, whereby the pockets can be instantly connected with the partitions when required for use, and also quickly removed therefrom when desired, substantially as described.

298,952. ROTARY PUMP. EDWIN BRYAN DOWLIN, Bermondsey, England. Filed Aug. 13, 1883. (No model.) Patented in England Jan. 13, 1883, No. 216; in France July 12, 1883, No. 156,519; in Belgium July 26, 1883, No. 62,135, and in Germany July 29, 1883.



Claim.—1. The combination of a cardioidal casing, A, a crank-axis, D, and crank-pin C, revolved therein, a piston, B, mounted upon the crank-pin, and caused to make one-half a revolution for each revolution of the crank-axis, and an inlet-port, E, and outlet-port F, separated by the inward bend A^x of the casing, such inward bend being made to fit to the piston, substantially as described.

2. The combination of a cardioidal casing, A, a crank-axis, D, and crank-pin C, revolved therein, a piston, B, mounted upon the crank-pin, a tubular neck, B', projecting from one end of the piston and carried through a disk, H, which is concentric with the crank-axis, and is capable of revolving in an aperture in the end of the casing, and mechanism situated outside this disk for causing the piston B to make one-half a revolution for each revolution of the crank-shaft.

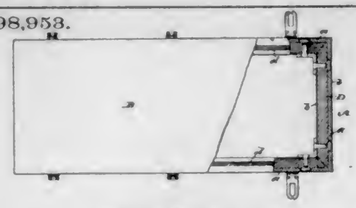
3. The combination of a cardioidal casing, A, a crank-axis, D, and crank-pin C, revolved therein, a piston, B, mounted upon the crank-pin, pairs of guide-bars K, carried by the piston, and blocks L, received between the guide-bars, and capable of turning on pins M, to control the movement of the piston, substantially as described.

4. The combination of a cardioidal casing, A, a crank-axis, D, and crank-pin C, revolved therein, a piston, B, mounted upon the crank-pin, pairs of guide-bars K, carried by the piston-blocks L, received between the guide-bars, and capable of turning on fixed pins M, a bar, N, carried by one or both pins M, and an arm, C^x, on the end of the crank-pin C, carrying a pin concentric with the crank-axis, which pin is received into a bearing in the bar N, substantially as described.

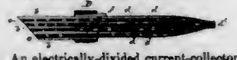
298,953. BURIAL-CASKET. EDWARD S. EARLEY, Philadelphia, Pa. Filed Mar. 26, 1884. (No model.)

Claim.—The method of protecting the body and lid of a burial-casket, consisting in forming the same of wood, heating the wood, coating it with asphalt, applying felt paper to the wood, and running a hot iron or tool over the paper, pressing the hot paper against the wood, whereby the wood and paper become saturated with asphalt, and the paper is united to the wood, the asphalt of the wood and of the paper becoming homogeneous, substantially as and for the purpose set forth.

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298,954. DYNAMO-ELECTRIC MACHINE. THOMAS A. EDISON, Menlo Park, N. J. Filed Dec. 12, 1883. (No model.)



Claim.—1. An electrically-divided current-collector each of whose divisions is of such width as not to bridge the space between the commutator-bars, in combination with a resistance external to said brush, forming a high-resistance bridge between said bars, substantially as set forth.

2. The current-collector formed of alternate layers of metal and insulation, in combination with resistances external to said current-collector through which the metal layers are connected, substantially as set forth.

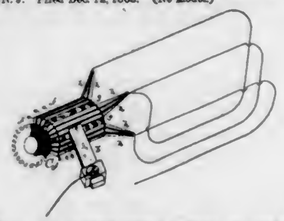
3. The combination of the metal bearing strips or wires of a current-collector, resistances attached thereto and connected together and to the main conductor, and insulating material between the bearing ends and between the resistances, substantially as set forth.

4. The combination, with the metal bearing-strips and the interposed insulation, of the insulating-sleeve holding them together, substantially as set forth.

5. The combination, with the metal bearing-strips and the interposed insulation, of the insulating-sleeve and wedge holding them together, substantially as set forth.

6. The current-collector formed of strips of metal and interposed insulation, in combination with resistance-strips attached at one end to said metal strips and all connected together at their other ends, substantially as set forth.

298,955. DYNAMO-ELECTRIC MACHINE. THOMAS A. EDISON, Menlo Park, N. J. Filed Dec. 12, 1883. (No model.)



Claim.—1. In a dynamo-electric machine, the combination, with the commutator-bars and the armature-coils, of high-resistance connections between them, substantially as set forth.

2. In a dynamo-electric machine, the combination, with the commutator-bars and the armature-coils, of connections between them of varying resistance, the highest resistance being in circuit when the current-collector leaves a bar, substantially as set forth.

3. In a dynamo-electric machine, the divided commutator-bars, all the divisions of a bar being connected at the same point to the armature-coils, substantially as set forth.

4. In a dynamo-electric machine, the combination, with the armature-coils and the commutator-bars, of connecting-strips of high-resistance material between them, substantially as set forth.

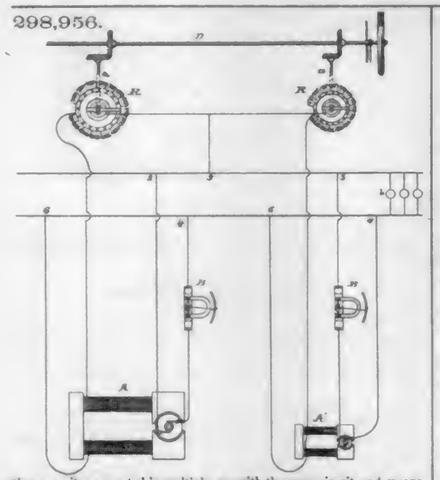
5. In a dynamo-electric machine, the combination of the divided commutator-bars, the armature-coils, and the connecting-pieces of high-resistance material, all the divisions of a bar being connected at the same point to the armature-coils, substantially as set forth.

298,956. MODE OF OPERATING DYNAMO-ELECTRIC MACHINES. THOMAS A. EDISON, Menlo Park, N. J. Filed Jan. 24, 1884. (No model.)

Claim.—1. The combination of two machines of different generative capacity connected in multiple arc with the same circuit, and having their respective electro-motive forces adjusted as described, substantially as set forth.

2. The combination of dynamo-electric machines of different gener-

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ative capacity connected in multiple arc with the same circuit, and means for regulating the electro-motive force of one or more or all of said machines, substantially as set forth.

3. The method of operating dynamo-electric machines of different generative capacity in multiple-arc connection with the same circuit, consisting in adjusting the electro-motive force of one or more or all of said machines until each gives its right proportion of the entire current, substantially as set forth.

4. The method of operating dynamo-electric machines of different generative capacity in multiple-arc connection with the same circuit, consisting in separately adjusting their electro-motive force until each gives its right proportion of the entire current, and then adjusting their electro-motive force simultaneously according to variations in the common load, substantially as set forth.

5. The combination of dynamo-electric machines of different generative capacity connected in multiple arc with the same circuit, and an adjustable resistance in the field-circuit of each, the coils of the resistances being proportioned to the machines, and said resistances being adjustable separately or simultaneously, substantially as set forth.

298,957. BUTTON-HOLE SEWING-MACHINE. FREDERICK EGGE, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed July 1, 1882. (Model.)

Brief.—A switch-cam operates, by means of a drive-bar connecting with a sliding plate, the mechanism carried by said plate, and the latter, by a pin projecting into a diagonal slot in a transversely-sliding piece carrying one end of the oscillator-bar pivoted thereto, oscillates the latter. From the front of the tray an arm projects, so as to operate dogs engaging with a grappling device to move forward or backward the bar carrying the cloth-clamp. This bar rests and slides upon the oscillator-bar.

Claim.—1. In a button-hole sewing-machine or attachment, the combination of the drive-bar, tray, jog-link, and mechanisms for operating the same, substantially as set forth.

2. The drive-bar D′, provided with pins E C, in combination with means for imparting motion to said bar, dogs *f*, pivoted to the standard H, and tray D^2, substantially as described.

3. The tray D^2, having a pin, I, in combination with means for operating said tray, jog-link D^3, provided with a diagonal slot, and the oscillator, substantially as shown and described.

4. The standard H, mounted on the tray D^2, and having pivoted spring-dogs *f*, in combination with means for raising said dogs, the drive-bar D′, having pin C, and mechanism for actuating said bar, substantially as set forth.

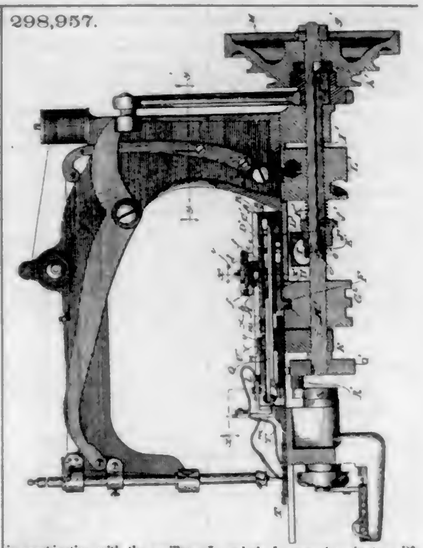
5. The spindle G, provided with the pin *i*′, disk *b*, with beveled trip C, and disk *d*, with beveled trip *e*, in combination with toothed wheel N′ and means for operating the same, dogs *f*, feed-bar Q, and push-bar S, and hook-arm R and means for actuating the same, as and for the purpose set forth.

6. The spindle G, extending through the standard H, and provided with trips *c e*, in combination with the dogs *f* and trigger C′, as set forth.

7. The drive-bar D′, provided with pins E C, in combination with the switch-cam G^2, having traveler F, dogs *f*, pivoted to the standard H, and tray D^2, substantially as set forth.

8. The jog-link D^3, provided with gating K, and diagonal slot A^3,

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in combination with the oscillator L, and pin I, secured to the tray D^2, and means for operating said tray, substantially as set forth.

9. In combination with the jog-link provided with a gating, the oscillator L, and adjustable plate O, as described.

10. The vibrating pocket M, arranged in the adjustable slide O, in combination with the oscillator L, jog-link D^3, provided with diagonal slot, and tray D^2, having secured thereto the pin I, substantially as described.

11. The arm A′, pivoted to the tray D^2, in combination with the pivoted dogs *u v* and adjusting-screw *a*′, substantially as described.

12. The vise V, provided with jaws *n o*, and pivoted nose S, in combination with the feed-bar Q, dogs *u v*, lever A′, provided with tooth *w* and tray D^2, and means for operating the same, substantially as described.

13. The vise V, pivoted at the forward end with spring-acting jaws, as described, in combination with the pivoted nose and means for operating the latter, and the feed-bar, substantially as described.

14. The jaw *o*, pivoted to the vise-bar V, in combination with the spring-jaw *n* and pivoted nose *s*, substantially as set forth.

15. The combination of the vise-bar provided with spring-jaws with the feed-bar and means for imparting an intermittent action to said jaws, and means for effecting a reciprocating movement of the vise-bar in a horizontal plane, whereby the feed-bar may be grasped by the said jaws and carried forward or backward, substantially as described.

16. The pivoted dogs *u v*, in combination with the nose *s*, jaws *n o*, feed-bar Q, and means for operating said dogs, substantially as shown and described.

17. The nose *s*, pivoted to the forward end of the vise V, and provided with inclined sides 1 2, and with its rear corners beveled, in combination with the jaws *n o* and means for operating said nose, substantially as set forth.

18. The combination of the arm A′ with the dogs *u v*, vise V, and feed-bar Q, substantially as set forth.

19. The feed-bar Q, with hook-arm R and adjustable arm S, in combination with mechanism for actuating the same, trip *e*, secured on the lower portion of the spindle G, and wheel N′ and means for operating the same, substantially as set forth.

20. The combination of the drive-bar D′ and tray D^2 with the oscillator L, jog-link D^3, arm A′, pivoted dogs *u v*, vise V, and feed-bar Q, whereby the forward portion, T, of the latter will have a forward and at the same time an oscillatory motion, as and for the purpose set forth.

21. The oscillator L, pivoted at its rear end to the jog-link D^3, and provided at its forward end with a groove, in combination with the forward portion, T, of the feed-bar and means for operating said oscillator and feed-bar, substantially as described.

22. The oscillator L, pivoted to the jog-link D^3, in combination with the vibrating pocket M in the adjustable block O and means for operating said jog-link, substantially as shown and described.

23. The combination of the spindle G, provided with the trips *c e*, pivoted dogs *f f*, feed-bar Q, with hook-arm R and adjustable arm S, wheel N′, pawls *j j*, standard H, pin C′, and cap O′, substantially as set forth.

24. The wheel N′, provided with teeth, and recessed as described, in combination with the spindle G, having pin *i*′, pawls *j*″ *j*′, sliding tray D^2, and mechanism for operating the same, feed-bar Q, with hook-arm R and adjustable arm S, and trip *e*, secured on the lower extremity of said spindle, substantially as set forth.

25. The cap-plate O′, with elongated central opening, and provided with spring-pawls *j*′, in combination with the spindle G, attached to the tray and carrying the toothed wheel N′, mechanism for actuating said tray, feed-bar Q, with hook R and adjustable arm S, and trip *e*, secured on the lower extremity of said spindle, substantially as shown and described.

26. The combination of the arms R S, trip *e*, trip *c*, trigger C′, dogs *f*, pivoted at the sides of the standard H, tray D^2, pin C, attached to the drive-bar D′, and wheel N′, and means engaging therewith to partly revolve it, substantially as set forth.

27. The catch-lock B′, provided with a central opening, a spring, D, and tooth *b*′, in combination with the bar E′ and spring-actuated collar J′, substantially as set forth.

28. The arm E′, arranged as shown and described, in combination with the tooth *b*′ on the catch-lock B′, and mechanism, as described, for throwing the shaft into connection with the driving-wheel, as set forth and described.

29. The trip *e* on the spindle G, in combination with the trigger C′ of the catch-lock B′, substantially as set forth and described.

30. The combination of the wheel N′, spindle G, with trips *e c*, standard H, with pivoted spring-dogs *f*, feed-bar Q, with arms R S, pin C and means for operating the same, pawls *j*″ *j*′, and trigger C′, substantially as described.

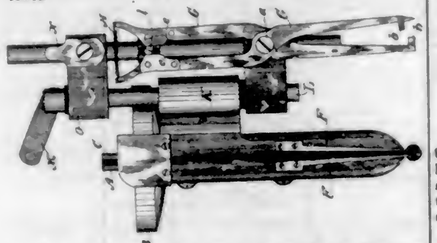
31. The combination of the drive-bar D′, tray D^2, and jog-link D^3, with pivoted arm A′, dogs *u v*, vise V, feed-bar Q, provided with arms R S, trip *e*, arranged on spindle G, trip *c*, dogs *f*, wheel N′, pawls *j*′, catch-lock B′, provided with trigger C′ and beveled tooth *b*′, arm E′, collar J′, spring K′, and feather I′, all arranged and operating as and for the purpose hereinbefore set forth.

32. The wheel Q′, with raised periphery *m*′, in combination with the pivoted arm R′, auxiliary presser-foot P′, and spring O′, substantially as and for the purpose set forth.

33. The catch-lock B′, with spring D, bearing upon the lower portion, and with the upper part extended through the casing or bed-plate of the machine, in combination with the trip *e* on the spindle G, arm E′, sliding collar J′, spring K′, feather I′, and driving-wheel M′, substantially as set forth.

298,958. BUTTON-SEWING MACHINE. FREDERICK EGGE, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed June 22, 1883. (No model.)

Brief.—The device feeds buttons having a shank-eye, and arranges them with their shanks in a horizontal plane, ready to be clamped by suitable mechanism and conveyed to the fabric to which they are to be sewed.



Claim.—1. In combination with means for feeding the buttons, as described, means connected with the needle-bar for operating on the loop of the button-eye intermittently, whereby the button is turned and the said loop brought into a plane parallel with the work-plate of the machine, substantially as set forth.

2. In a button-sewing attachment or sewing-machine, a device for feeding buttons arranged to swing on the machine and be locked in position, in combination with means for operating upon the loop of the button-eye, as described, substantially as set forth.

3. In a button-sewing attachment, the fingers pivoted to the frame of the machine and provided with lugs at the lower extremities, and connected by a coil-spring at the upper extremities, and having their inner upper edges beveled, in combination with a pin attached to the needle-bar collar, and means for feeding the buttons, whereby the loop of the button-eye may be operated upon and brought into the required position, substantially as set forth.

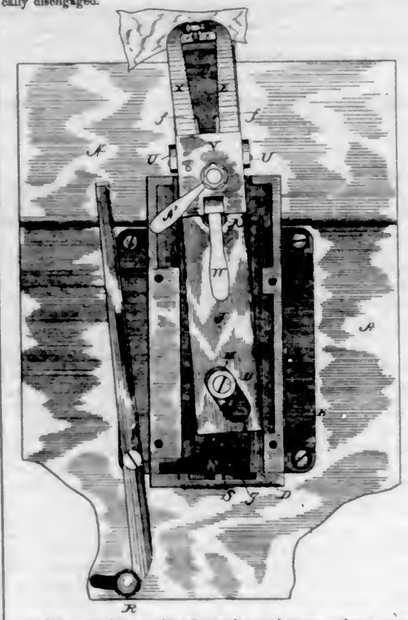
4. In a button-sewing attachment, fingers pivoted to the frame of the machine and adapted to operate on the loop of the button-eye, in combination with mechanism for vibrating said fingers, substantially as set forth.

5. In a button-sewing attachment, the fingers pivoted to the frame of the machine and adapted to operate on the loop of the button-eye, in combination with mechanism for vibrating said fingers, and means for feeding the buttons, substantially as shown and described.

6. The tube A, provided with longitudinal opening C, and having secured at its lower extremity the spring-rest D, with shoulder J, and spring-arms F F, in combination with mechanism for operating on the loop of the button-eye, substantially as set forth.

298,959. MACHINE FOR SEWING ON BUTTONS. FREDERICK EGGE, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed June 22, 1883. (No model.)

Brief.—The button is grasped by jaws and brought down into position for being sewed on. A switch-cam gives a longitudinal reciprocation to a pin carrying a roller and operating in a diagonal slot in the oscillator, whereby the latter moves the button so that the needle passes repeatedly first within and then without the eye of the button. On the completion of a certain number of stitches the driving-wheel is automatically disengaged.



Claim.—1. In a machine for sewing on buttons, a clamp secured to the oscillating mechanism, and having independently-pivoted arms held at their forward extremities, in a distended position, by means of a spring, in combination with means for operating the arms, whereby the buttons may be grasped and brought down to the proper position for sewing, substantially as set forth.

2. In a machine for sewing on buttons, the clamping-jaws pivotally attached to a block, which is pivoted within standards projecting upward from the oscillator, in combination with a spring for keeping the jaws distended and the block elevated at its forward portion, and means, substantially as described, for closing the jaws and elevating the rear end of said block, as set forth.

3. The block V, mounted in standards U, secured to the oscillator, and having spring-jaws X, pivoted to the under side, in combination with the post K, and suitable cams and levers for operating said jaws, substantially as shown and described.

4. The sliding plate C, having secured thereto mechanism for determining the number of oscillations, in combination with the switch-cam, the oscillator, and means for holding the shaft in connection with the driving-wheel.

5. The spring-dog S, beveled at its upper portion, and adapted to hold the shaft in connection with the driving-wheel, as described, in combination with mechanism for tripping said dog, whereby the action of the machine is stopped, substantially as shown and described.

6. The wheel C′, having peripheral teeth *g*, and teeth h, projecting downward from its face, in combination with means for rotating and re-

ciprocating the same, whereby the teeth A may act intermittently on the mechanism which holds the shaft in connection with the driving-wheel, substantially as described.

7. The wheel C', secured to the sliding plate C, and having teeth *g* h, projecting from its periphery and face, respectively, in combination with means for rotating the said wheel, and the pivoted spring-dog S, substantially as described.

8. The wheel C', secured to the sliding plate C, and having teeth *g* h, as described, in combination with the pawl D', connected with spring E', click F', and pivoted spring-dog S, substantially as set forth and described.

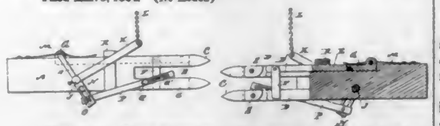
9. The spring-dog S, pivoted to the frame of the machine, in combination with the pivoted lever Q and sliding collar M, as set forth.

10. The block V, having jaws X, pivoted thereto, and pivoted lever A', operating the cam Z, in combination with the lever W, carrying cam B', and post K, substantially as described.

11. The oscillator pivoted within the frame B, in combination with the sliding plate C, provided with pin D, and carrying the wheel C', having peripherical and face teeth, as described, means for rotating said wheel intermittently, and the pivoted spring-dog S, substantially as set forth.

12. The combination, with the spring-dog S, pivoted to the frame B, and lever Q, pivoted to the bed-plate, of the collar M, and feather L, secured thereto, spring N, collar O, and driving-wheel P, having recess *b* and lug *c* therein, substantially as shown and described.

298,960. CAR-COUPLING. JOSEPH FLAVIOUS FAIRFIELD, Alma, Nebr. Filed Mar. 5, 1884. (No model.)



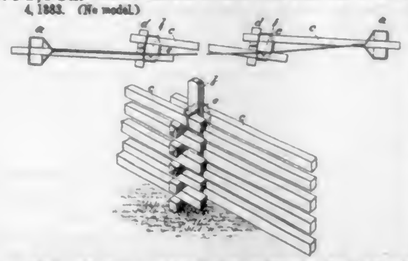
Claim.—1. The combination, with a draw-head, of a sliding bar held on the same, a coupling-pin pivoted in the sliding bar, and means for automatically sliding the bar carrying the pin forward when the draw-heads come together, whereby the pin will be caused to drop into a suitable coupling on the opposite draw-head, substantially as herein shown and described.

2. The combination, with the forked draw-head, of a sliding bar in the top of the same, a coupling-pin pivoted on the outer end of the sliding bar, a crank-frame, H, connected with the rear end of the sliding bar, the spring M, resting on the crom-piece of the frame H, and means for rocking the said frame, substantially as herein shown and described.

3. The combination, with a draw-head, of the sliding bar E, the coupling-pin F, pivoted in the same, the rocking frame H, mounted on the shaft J, the slotted arm N, projecting downward from the shaft J, and the bar P, held on the side of the draw-head and connected with the arm N, substantially as herein shown and described.

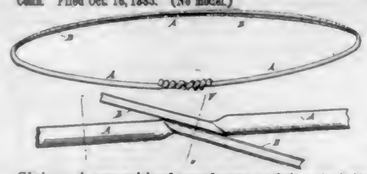
4. The combination, with a draw-head, of the sliding bar E, the coupling-pin F, pivoted in the same, the rocking frame H, mounted on the shaft J, the slotted arm N, projecting downward from the shaft J, the bar P, held on the side of the draw-head and connected with the arm N, and the projections or buttons S on the sides of the draw-head, substantially as herein shown and described.

298,961. FENCE. BENJAMIN FRANKLIN FORD, Hollis, Tex. Filed Oct. 4, 1883. (No model.)



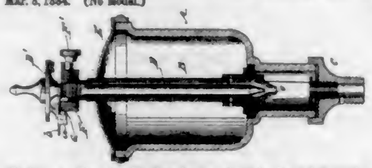
Claim.—The fence constructed substantially as described, having its rails arranged diagonally to the line of fencing, consisting of the double end posts, *a a*, bound together at their upper ends by means of the crown-wire, as shown, the intermediate single posts, *b*, the horizontal rails having their ends alternately lapping the inner and outer sides of the said single posts, the transverse blocks *d*, interposed between the respective rails *c*, and the top rails bound to the single posts by means of the wire loops *e*, all substantially as and for the purposes specified.

298,962. METALLIC BARREL-HOOP. ELLSWORTH FORD, Westville, Conn. Filed Oct. 16, 1883. (No model.)



Claim.—A new article of manufacture consisting of a half-round metal hoop-blank twisted at its opposite ends in reverse directions for a quarter-revolution, thus bringing toward each other the flat sides of the ends, as described.

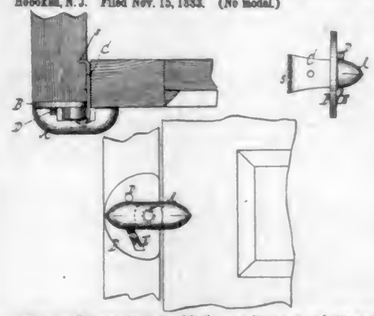
298,963. OIL-CUP. WILLIAM A. FOSTER, Fitchburg, Mass. Filed Mar. 3, 1884. (No model.)



Claim.—1. The ring F, placed upon the tube B, and formed with a suitable detent, in combination with the spring H, secured to the spindle or valve D, and arranged to engage with the detent, substantially as and for the purposes set forth.

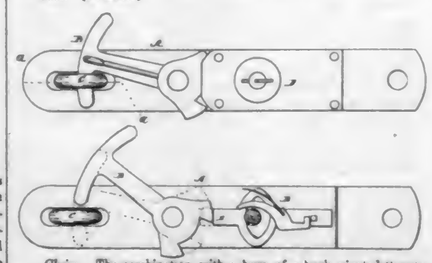
2. The ring F, formed with slot G, and provided with set-screw F', in combination with the spring H, formed with lip *a*, and adapted to be secured to the spindle D, substantially as and for the purposes set forth.

298,964. DOOR-SECURER. CHARLES FRANKE and AUGUST PETERS, Hoboken, N. J. Filed Nov. 15, 1883. (No model.)



Claim.—The combination, with the turn-button A and the supporting-plate B, of the fixed stop D and the yielding stop E, for holding the button in a locked position, substantially as shown and described.

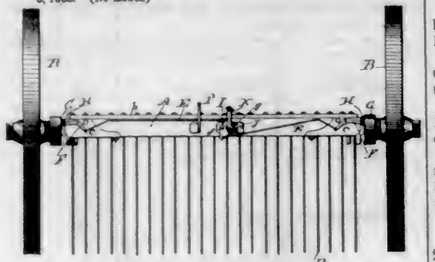
298,965. HASP-LOCK. WILLIAM FRY, Akron, Ohio. Filed Oct. 6, 1883. (No model.)



Claim.—The combination, with a hasp, of a hook pivoted thereto and provided with rearwardly-projecting lugs, and a lock attached to said hasp provided with a reciprocating bolt adapted, when thrown forward,

to engage one of said lugs and retain the hook in position, all constructed and arranged as shown, and for the purpose specified.

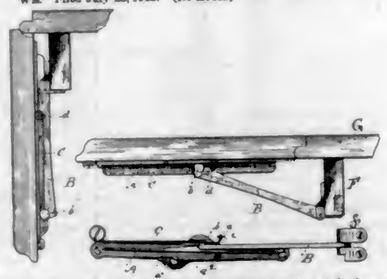
298,966. HORSE-RAKE. HENRY W. GETMAN, Ilion, N. Y. Filed Oct. 8, 1883. (No model.)



Claim.—1. The combination of the rods E, pawls F, ratchet-wheels G, disks H, having slots *e*, double crank-lever I, bracket J, bell-crank lever K, rod L, and foot-lever M, pivoted on the bracket M', substantially as shown, and for the purpose described.

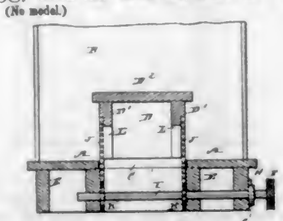
2. The combination of the rod O, secured by brackets *j* to the seat-standard, and provided with the foot-piece *k* and hook *k'*, the spring *l*, and rake-teeth D, substantially as shown, and for the purpose described.

298,967. TABLE-LEAF SUPPORT. HERBERT JAMES GOOLD, Boscobel, Wis. Filed July 23, 1883. (No model.)



Claim.—In a table-leaf support, the combination of the lever B, having angular hook *b*, projecting bar F, rail A, having base *a*, shoulder or stop a^2, spring C, eye *d*, and bracket *f*, substantially as shown and described.

298,968. STOCK-CAR. HENRY HESS, Canfield, Ohio. Filed Mar. 12, 1884. (No model.)



Claim.—1. The combination, with a car, of the vertically-movable platform D, having recesses L in its sides, the racks J, the shafts I, and the cog-wheels K, substantially as herein shown and described.

2. The combination, with a car, of the vertically-movable platform D, the racks J, the shafts I, the cog-wheels K, the ratchet-wheels G, and the pawls H, substantially as herein shown and described.

298,969. STRAP-FASTENING LOOP FOR CARRIAGE-CURTAINS. HENRY HIGGS, Newport, Ky. Filed Apr. 3, 1884. (No model.)



Claim.—1. A strap-fastening loop provided with a central recess, C, and projecting stud D, adapted to be secured to the base F, substantially as specified.

2. A strap-fastening loop provided with a central opening, C, formed of the blank B, struck up to form a joint in the bottom *b*, substantially as specified.

3. A strap loop, A, having a central opening, C, struck up from the blank B, provided with overlapping lips *c*, in combination with the stud D, substantially as specified.

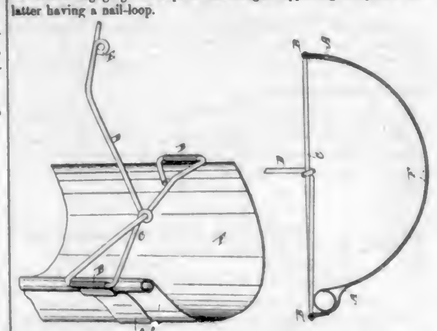
4. A strap-fastening loop, A, having a central opening, C, struck up from blank B, provided with overlapping lips *c*, in combination with the stud D and washer E, substantially as specified.

5. The strap-fastening loop A A, having central openiog, C, stud D, washer E, and tangs *a*, in combination with fastening-strip G, for securing the loop to its base, substantially as specified.

6. A strap-fastening loop having a central recess or opening, C, fastening-stud D, and washer E, and fastening-tangs *c*, for securing the loop to the base F, in combination with fastening-strip G, substantially as specified.

298,970. EAVES-TROUGH HANGER. HENRY JOHN HOEFTNER, Athens, Ohio. Filed Nov. 28, 1883. (No model.)

Brief.—The cross-piece and hanging-wire are made in one piece, the former engaging the loops of the trough-supporting strap, and the latter having a nail-loop.

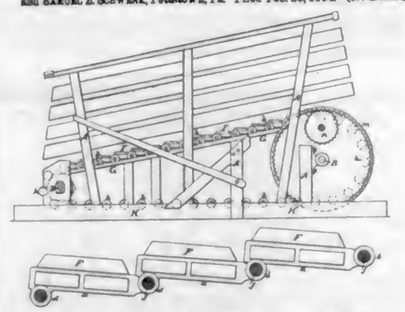


Claim.—1. The herein-described eaves-trough hanger, consisting of a metal strap or band secured to the ends of a cross-piece made of one continuous wire with the hanging-wire, substantially as herein shown and described.

2. In an eaves-trough hanger, the combination, with a cross-piece, C, made integral with the hanging-wire D, of a metal strap or band, A, provided at the ends with loops B, substantially as herein shown and described.

3. In an eaves-trough hanger, the combination, with the metal strap or band A, provided with the loops B, of the cross-piece C and the hanging-wire D, made integral with the cross-piece, and provided with the loop E, substantially as herein shown and described.

298,971. HORSE-POWER TREAD. NATHAN HOFFMAN, HIRAM ELLIS, and SAMUEL Z. SCHWINK, Pottstown, Pa. Filed Feb. 25, 1884. (No model.)



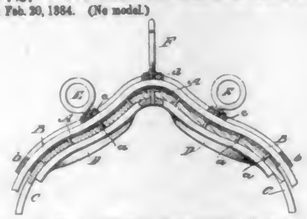
Claim.—1. The link having the rear eye, *d*, below and in advance of the rear edge of the body, whereby the connecting-rod *f* is covered and protected by the lug F, as set forth.

2. The link having the front eye, *b*, in line with the body, and the rear eye, *d*, below and in advance of the rear edge of the body, as set forth.

3. The combination of the chain and its supporting-rollers A with an end shaft having wheels for supporting the chain, and with a rotating guard-plate, whereby the rollers A are retained in place while the chain is passing around the wheels, as set forth.

4. The combination of the shaft B and its sprocket-wheels, the chain having supporting-rollers *h*, and the gear-wheel *m*, forming a guard for said rollers, as set forth.

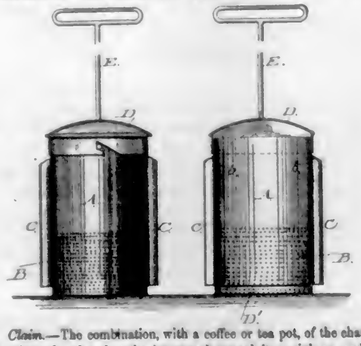
298,972. HARNESS-SADDLE. DANIEL B. HOLSBURG, Granville, Ill. Filed Feb. 20, 1884. (No model.)



Claim.—1. The combination of the channeled tree A, provided with cross-piece *b c d*, integral therewith, with the strap C and pads D, secured to the under side of the tree by rivets *a* passing through the bottom of the tree, and the strap B passing loosely through the channel, substantially as set forth.

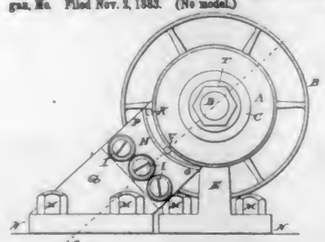
2. As an improved article of manufacture, the tree A, formed in channel shape, and provided at its center with cross-piece *d*, cross-pieces *c c* below the same, and cross-pieces *b* at the ends of the tree, all made in one piece with the tree, whereby supports for the check-hook and terrets and keepers to the main strap are provided, substantially as set forth.

298,973. ATTACHMENT FOR COFFEE-POTS. ROBERT A. HOLT, Lebanon, Me. Filed Dec. 4, 1883. (No model.)



Claim.—The combination, with a coffee or tea pot, of the chamber A, perforated at *b* and at the lower end around its periphery, and side pipes, C, having open lower ends and closed upper ends, and a cover, D, having handle E, and locked to the chamber A, all constructed to operate substantially as and for the purpose herein set forth.

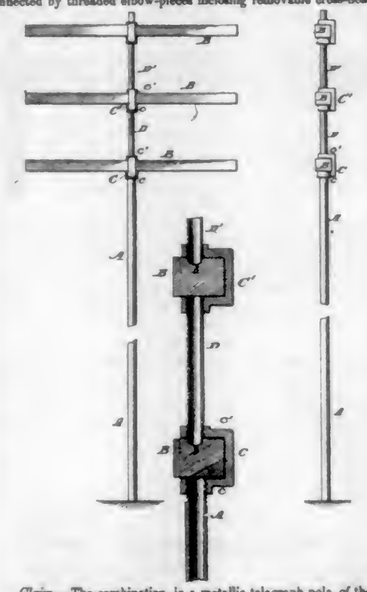
298,974. WIRE-CUTTING MACHINE. DARIUS HOUGHTON, Skowhegan, Me. Filed Nov. 2, 1883. (No model.)



Claim.—In a wire-cutting machine, the combination of the moving cutter with a stationary cutter, the two cutters being arranged with their cutting-edges directly opposite each to the other, forming a tapering and vanishing recess between them, substantially as described.

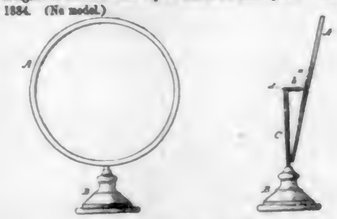
298,975. TELEGRAPH-POLE. JAMES HUNTER, Ruff's Dale, Pa. Filed Mar. 13, 1884. (No model.)

Brief.—A pole is provided with threaded sections or extensions connected by threaded elbow-pieces inclosing removable cross-heads.



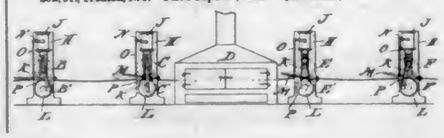
Claim.—The combination, in a metallic telegraph-pole, of the pole A, elbow-pieces C, removable arms or cross-heads B, and threaded clamping sections or extensions D, substantially as and for the purpose shown and set forth.

298,976. PLAQUE-HOLDER. DAVID M. IRELAND, Waterbury, Conn., assignor of one-half to Henry A. Matthews, same place. Filed Mar. 22, 1884. (No model.)



Claim.—A metal plaque constructed with a shank, *a*, extending from its back at an inclination to the plane of the surface of the plaque, combined with a holder consisting of a post arranged upon a suitable base, with a socket extending therefrom at substantially right angles, and so as to receive the shank of the plaque, substantially as specified.

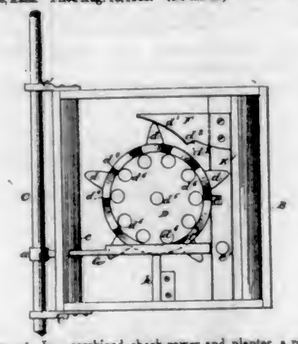
298,977. MACHINERY FOR ROLLING WIRE. WILLIAM H. JACKSON, Jr., Trenton, N. J. Filed Sept. 27, 1883. (No model.)



Claim.—1. The combination, with a pair of wire-reducing rollers mounted in suitable uprights, and one of said rollers having a crank-wheel, L, of the engine J, above said rollers and connected with the crank-wheel by its piston and the connecting-rod K, and a lever, M, pivoted on the upright and connected to the valve-rod N by rod O, substantially as set forth.

2. The combination, with a pair of wire-reducing rollers, of the engine J, the lever M, and brake-shoe P, the lever being connected to adapt it for cutting off steam to the engine, and at the same time for applying a brake to the wheel L, substantially as and for the purposes set forth.

298,978. CHECK-ROWER AND CORN-PLANTER. DANL. W. JACOBY, Abilene, Kans. Filed Aug. 18, 1883. (No model.)

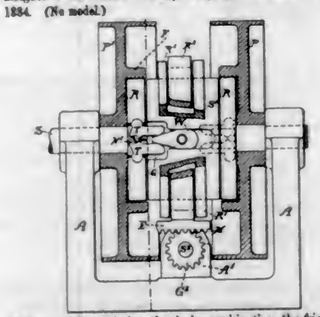


Claim.—1. In a combined check-rower and planter, a rock-shaft, C, carrying forked arms H, and arms *a* and *b*, the latter having a spring, *b'*, in combination with draw-rods entering the seed-boxes and provided with pawls, the seed-delivering wheels D, provided with projections *d* and *d'*, the slide E', having attachment F, with the curved edge, and pin *d'*, as shown, the seed-tube I, and the valve J, engaging with the slide, substantially as set forth.

2. In a planting-machine, a hopper, B, having therein a seed-delivering wheel, D, provided with cam-like projections *d*, in combination with slide E', having attachment F, with the curved edge, as shown, and pin *d'*, and a seed-tube having a valve engaging with the slide, substantially as and for the purpose set forth.

3. In a check-rower and planter, a hopper, B, with guide *h*, a wheel, D, having projections *d* and *d'*, and apertures *d*², and slide E', provided with attachment F and pin *d'*, in combination with tube I, having valve J, draw-rods G, with pawls, and suitable mechanism for operating them, substantially as set forth.

298,979. FRICTION-CLUTCH. MOSES C. JOHNSON, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. Filed Mar. 10, 1884. (No model.)

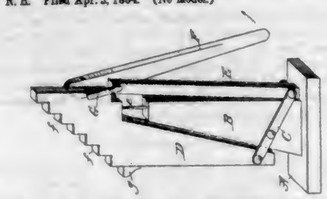


Claim.—1. In a friction-clutch, in combination, the friction-ring R, toggle-levers T, a block, N, and the taper-head screw N', substantially as and for the purpose described.

2. In a friction-clutch mechanism, in combination, the ring R', the ring R², having a rack, M, and a shaft, S², having a pinion gearing with that rack, combined and operating substantially as described.

3. In a friction-clutch mechanism, a shaft, S, having an enlarged portion, S', a wheel and friction devices upon said shaft, at each side of the said enlarged portion thereof, a ring, as R', adapted to have a reciprocating motion upon the enlarged portion of said shaft, ring R², shaft S², rack E, and pinion G², combined and operating substantially as described.

298,980. LIFTING-JACK. ADIN PHILLIPS JOY, New Market Junction, N. H. Filed Apr. 3, 1884. (No model.)

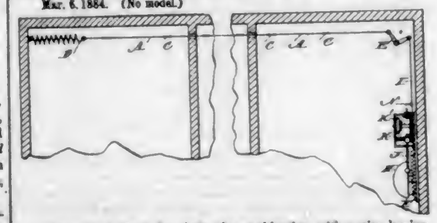


Claim.—1. In a lifting-jack, the combination, with the standard B and rest-piece D, of the levers C C, handle F, link G, and connecting rod or bar E, substantially as described.

2. In a lifting-jack, the combination, with the notched rest-piece D, of the supplemental rest *g*, having a spur, A, and secured to the rest-piece, substantially as described.

3. In a lifting-jack, the combination of the standard B, the notched and recessed rest-piece D, having a supplemental rest, *g*, the levers C C, handle F, link G, and connecting-bar E, substantially as described.

298,981. FIRE-ALARM. CHARLES H. JUDSON, Greenville, S. C. Filed Mar. 6, 1884. (No model.)



Claim.—1. In a fire-alarm, the combination, with a wire having fusible connections, of the spring D at one end of the same, a less powerful spring, F, at the opposite end, a mechanical bell-ringing mechanism, a gong or bell, H, the trigger-lever M, formed with two arms, one of which engages the alarm mechanism and the other of which projects outward therefrom, and the projection N, formed on the wire and adapted to act on the said outwardly-projecting arm of the trigger-lever M, substantially as herein shown and described.

2. The combination, with the bell-wire A', the elbow-lever O, and the cord or pull P, of a spring connected at the upper end with the elbow-lever, and with a wire having a fusible connection and holding the upper end of the spring and preventing it from pulling or turning the elbow-lever, substantially as herein shown and described.

3. The combination, with the bell-wire A', the elbow-lever O, and the cord or wire pull P, of the spring Q, secured to the wall and the elbow-lever, and the wire R, having a fusible connection and secured to the ceiling or wall and to the upper end of the spring Q, to prevent it from contracting, substantially as herein shown and described.

298,982. BREECH-LOADING FIRE-ARM. PIUS KAUL and CHARLES KAUL, Lancaster, Pa. Filed Feb. 20, 1884. (No model.)



Claim.—1. The combination of the hand-lever G, having the arms G' G², the sliding block L, having an opening, L², receiving arm G², and the hammer E, having the curved recess E², receiving arm G' and being engaged thereby, substantially as shown and described, whereby the lever is adapted to pull down the said block and cock the hammer simultaneously, and then to return the block and leave the hammer cocked.

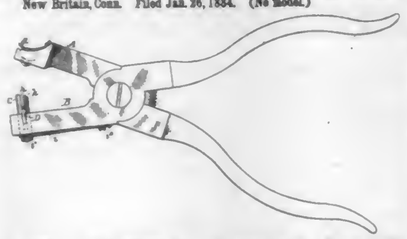
2. The combination of the lever G, having arm G^3, and the sliding block L, having the opening L^2, provided with a curved bottom, against which said arm G^3 may be made to bear to pull down the block, and a shoulder, *g*, at its top, against which the end of arm G^3 may be made to bear to hold the block in a raised position, substantially as shown and described.

3. The combination of the vertically-sliding block L, having the vertical longitudinal openings L^2 and *l*, the opening *l* being of greater vertical extent than the opening L^2, the lever G, having the arm G^3 placed in the opening L^2, and the cartridge-extractor having the arm O^2 placed in the opening *l*, whereby the block may be drawn down and the cartridge-extractor may be operated only at the end of the downward movement of the block, substantially as specified.

298,983. PROCESS OF PURIFYING MOLTEN IRON AND STEEL. HORATIO KEELER, Chicago, Ill. Filed Dec. 1, 1882. (Specimens.)

Claim.—The herein-described method of improving the grade and quality of iron and steel, consisting in combining them while in a molten state with a mixture formed of pure copper filings and pulverized resin in the proportions hereinbefore mentioned, substantially as specified.

298,984. BUTTON-SETTING INSTRUMENT. ELEAZER KEMPSHALL, New Britain, Conn. Filed Jan. 26, 1884. (No model.)



Claim.—1. The combination, with a shank-bending die, of a yielding guide-block slotted laterally and longitudinally, and an anvil within said slot, substantially as described, whereby a single T-shaped button-fastener can be inserted edgewise into said block, and the shank of the fastener bent by said die into the form of a hook, as set forth.

2. The combination, with a shank-bending die and a button-holding clamp for presenting the shank-eye of a button in line with said bending-die, of a yielding guide-block laterally and longitudinally slotted, for the edgewise reception of a T-shaped button-fastener and an anvil in said slot, substantially as described.

3. In a button-setting instrument, the combination of the slotted guide-block adapted to receive the head of a T-shaped fastener sliding in and through a guide-bearing, and a spring at the base of said block and outside of its bearing, substantially as described, whereby said block can yield under pressure and be longitudinally guided, as set forth.

4. The guide-block slotted to receive the head of a T-shaped fastener fitted to slide longitudinally in a guide-bearing, in combination with a spring connected to the base of said block, substantially as described, whereby said block is not only enabled to yield to pressure, but is also limited in its longitudinal movements, as set forth.

5. In a button-setting instrument, a yielding guide-block provided with a longitudinal slot having at one or both sides thereof a spring for compressing the shank of a button-fastener, and preventing it from tilting edgewise in said slot, substantially as described.

6. The combination, with a slotted yielding guide-block, of an anvil occupying said slot, and a shoulder near one end of said anvil, to serve as a gage for contact with one end of the head-bar of a single-shanked fastener, substantially as described, whereby the shank of the fastener can be readily located centrally and vertically in the slot of the guide-block, as set forth.

298,985. BIB. GEORGE E. KENDALL, Franklin, Mass. Filed Aug. 22, 1883. (No model.)

Claim.—1. A bib provided with a pocket at about the middle of its front for receiving and securely holding a nursing-bottle, substantially as herein shown and described.

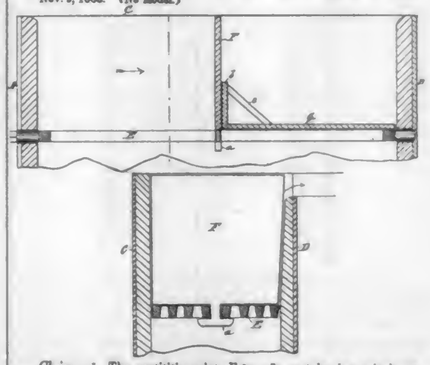
2. A bib provided with a pocket for receiving and holding a nursing-bottle, which pocket is provided at its top with a button and button-hole or other device for holding the top of the pocket closed on the bottle, substantially as herein shown and described.

3. In a bib provided with a pocket, B, neckbands C, and body-bands D, substantially as herein shown and described.

298,985.



298,986. COOKING-STOVE. ERNST J. KRAUSE, Carlisle, Pa. Filed Nov. 9, 1883. (No model.)



Claim.—1. The partition-plate F for a fire-pot, having at its lower end a bead of less width than the space between the grate-bars, and of greater length than the same, to adapt it to be inserted edgewise, and then turned to catch beneath the grate-bars to hold it in place, as described.

2. The combination, with the partition-plate of a fire-pot, of an obstruction-plate, G, having an upright flange, *b*, at one end, with handle-brace *c*, as and for the purpose described.

298,987. EAR-ORNAMENT FASTENER. GEORGE KREMENTZ, Newark, N. J. Filed Feb. 21, 1884. (No model.)



Claim.—1. The combination, with an ear-wire holding an ornament, of a hollow nut through which the ear-wire passes, provided with a clamp for engaging the ear-wire between its walls and locking the same to the wire, substantially as herein shown and described.

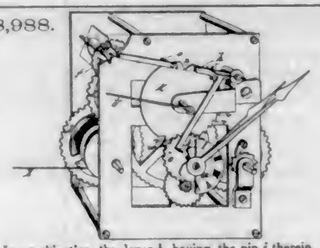
2. The combination, with a nut fitting on an ear-wire for holding an ear-ornament, of a clamping-frame hinged in the nut, substantially as herein shown and described.

3. The combination, with a nut fitting on an ear-wire for holding an ear-ornament, of a frame, E, hinged in the nut and provided with a projection, F, at its hinged end, which projection is adapted to clamp on the ear-wire, substantially as herein shown and described.

298,988. TIME PIECE FOR OPERATING MECHANICAL DEVICES. JAMES A. LAKIN, Westfield, Mass. Filed Feb. 1, 1884. (No model.)

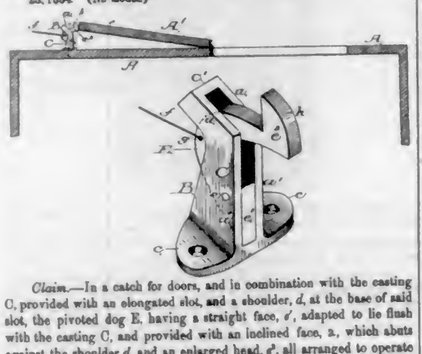
Claim.—1. The combination, with an actuating clock-train, substantially as described, and with a clock provided with the usual alarm-starting devices, of a lever having a pin projecting from its side, and adapted to have one end bear upon the alarm-cam, and to have its other end engage with one of the wheels of said train, the hour-wheel of the clock having a pin therein projecting from its face, and a toothed disk having a notch in its periphery, and carrying a pointer to rotate over a scale-plate on the clock-dial, and adapted to rotate under the pin projecting from the side of said lever, substantially as set forth.

298,988.



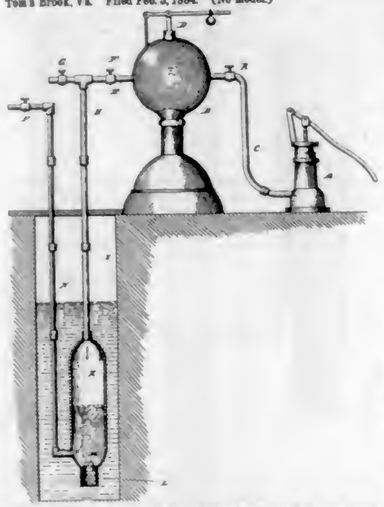
2. In combination, the lever A, having the pin *i* therein, the disk K, having teeth and the notch *x* in its edge, the wheel *c*, and means, substantially as described, for engaging said wheel with said disk, substantially as set forth.

298,989. DOOR-CHECK. JOHN J. LAMB, Waterloo, Iowa. Filed Feb. 23, 1884. (No model.)



Claim.—In a catch for doors, and in combination with the casting C, provided with an elongated slot, and a shoulder, *d*, at the base of said slot, the pivoted dog E, having a straight face, *e'*, adapted to lie flush with the casting C, and provided with an inclined face, *a*, which abuts against the shoulder *d*, and an enlarged head, e^2, all arranged to operate substantially as and for the purpose herein set forth.

298,990. COMPRESSED-AIR WATER-ELEVATOR. JOHN K. LEEDY, Tom's Brook, Va. Filed Feb. 5, 1884. (No model.)



Claim.—The combination, in a water-elevator, of an air-pump, an air-chamber connected thereto by a pipe provided with a stop-cock, said air-chamber having a safety-valve, a water-chamber connected to the air-chamber, said connection having an inlet and outlet stop-cock, and the water-chamber having a water-inlet properly valved, and an outlet-pipe for the water, also provided with a stop-cock, all the parts being arranged to operate as and for the purpose specified.

298,991. PLAYING-CARDS. EDGAR J. LEVEY, New York, N. Y. Filed Mar. 29, 1884. (No model.)

Brief.—Improvement on Patent No. 178,863, dated June 20, 1876.



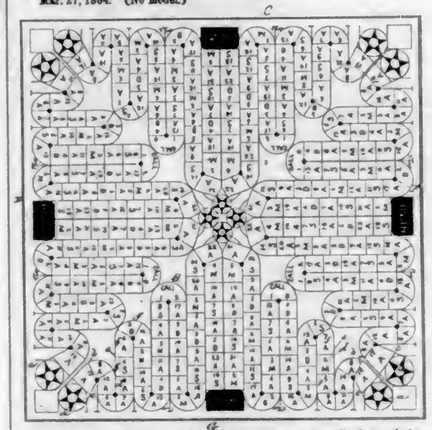
Claim.—1. A pack of playing-cards having cards in each suit which contain the picture of the court-card they are intended to represent, together with the spots or suit-pips they are intended to represent, substantially as described.

2. A pack of playing-cards having imprinted on one of each suit a picture to represent the knave and also eleven spots or pips, and a picture to represent the queen and also twelve spots or pips, and a picture to represent the king and also thirteen spots or pips, respectively, substantially as described.

3. A pack of playing-cards having in each suit a card containing eleven spots or pips and the head of a knave, a card containing twelve spots or pips and the head of a queen, and a card containing thirteen spots or pips and the head of a king, substantially as described.

4. A pack of playing-cards having in each suit a card containing eleven pips or spots and the head of a knave, a card containing twelve spots or pips and the head of a queen, and a card containing thirteen spots or pips and the head of a king, together with characters upon the upper left-hand margin of each of these cards, as follows: the first letter of the title of the court-card, a pip of the kind contained on the card, and a number corresponding with the number of pips on the card, substantially as described.

298,992. GAME-BOARD. JOSEPH M. LEWIS, Trenton, N. J. Filed Mar. 27, 1884. (No model.)



Claim.—1. The improved game-board herein described, consisting of two or more divisions, each containing a path or paths divided into a series of spaces, each containing a numerical character and a letter indicative of one of the mathematical divisions, substantially as set forth.

2. The improved game-board herein described, consisting of two or more divisions, each having one or more serpentine paths, merging at their respective ends with a symbol or character located in one of the corners, and with a goal or home, said paths being subdivided into a series of spaces, each containing a numerical character and a letter in that of one of the mathematical divisions, substantially as and for the purpose set forth.

3. The combination, in a game-board arranged and designed as herein described, of space *g*, containing a numerical character and the word "Call," or other word of like significance, as and for the purpose set forth.

298,993. COMBINED BUTTON AND CUFF-HOLDER. CHARLES H. LOWELL, Boston, Mass. Filed Mar. 27, 1884. (No model.)



Claim.—The combined sleeve-button and cuff-holder herein described, composed of the spring-clip having two arms adapted to grasp a cuff, and the button having a flat shank attached to said plate and extending crosswise thereof, whereby the shank and clip are prevented from turning when the shank is in place in the sleeve button-holes, as set forth.

298,994. TRICYCLE. MATTHIAS FRANKLIN MCMAHAN, Trappe, assignor of one-half to Matthias Merrick, Kirkham, Md. Filed Mar. 11, 1884. (No model.)



Claim.—1. In a tricycle, the combination, with the base provided with a central opening, of the turn-table carrying the operating mechanism, and wheels or pulleys secured to the turn-table and working on the base around the opening, as set forth.

2. In a tricycle, the herein-described hub, comprising the two side sections or disks, the circular rim, and the rollers or balls journaled in the side sections and bearing against the axle, whereby the friction is lessened and the machine runs with greater ease, as set forth.

3. In a tricycle, the herein-described brake, comprising the spring brake-lever, fitted to a U-shaped plate, a corresponding U-shaped plate to which it is pivoted, and an inclosing-frame, as set forth.

4. In a tricycle, the combination, with the base, of the turn-table moving in the same, a frame mounted on the turn-table and carrying the operating mechanism, and a handle formed on or attached to the rear end of the frame for steering the machine, as set forth.

5. In a tricycle, the combination, with the base and a frame arranged upon the same, of the turn-table moving in the base, a frame mounted on the turn-table and carrying the operating mechanism and swiveled in the frame of the base, a handle formed on or attached to the frame, and a seat arranged in rear of the frame, as set forth.

6. In a tricycle, the combination, with the base, of a turn-table moving in the same, a frame mounted on the turn-table, the steering-wheel journaled in the frame and working through the turn-table, a balance-wheel, treadle, and intermediate gearing connecting the balance-wheel and treadle to the steering-wheel, as set forth.

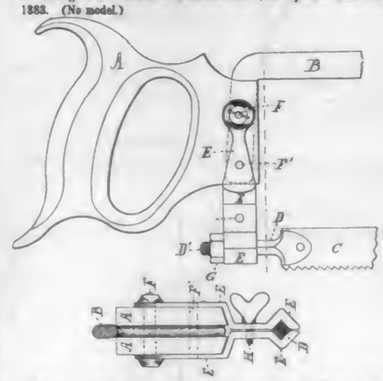
7. In a tricycle, the combination, with the base, of the turn-table moving in the same, a frame mounted on the turn-table, the steering-wheel mounted on a shaft journaled in the frame, a crank or handle connected by intermediate gearing with the steering-wheel, and a fly or balance wheel, as set forth.

8. In a tricycle, the combination, with the base, of a turn-table moving in the same, a frame mounted on the turn-table, the steering-wheel W, mounted on a shaft journaled in the frame, a driving-wheel, V^2, the intermediate gearing connecting the driving-wheel and steering-wheel, and operating means for the driving-wheel, as set forth.

9. In a tricycle, the combination, with the base, of the turn-table moving in the same, a frame mounted on the turn-table, the large wheel mounted on a shaft journaled in the frame, operating means for the same, and a balance or fly wheel connecting with the large wheel and adapted to start the machine, as set forth.

10. In a tricycle, the combination, with the base, of a turn-table provided with wheels or pulleys running on the base, the frame mounted on the turn-table, the large steering-wheel mounted in the frame, and operating means for the steering-wheel, as set forth.

298,995. CLAMP FOR FRAME-SAWS. ANDREW MCNIECE, Newark, N. J., assignor of one-half to Rowland Hilton, same place. Filed Oct. 25, 1883. (No model.)



Claim.—1. The combination, with the handle A, of the frame B, fitted into a slot in the handle, as described, and a stretcher-clamp formed in two parts, and provided with grooves to fit the stretcher D, and a screw, as G, to clamp the parts upon the stretcher.

2. The clamp for a saw-blade stretcher, consisting in two symmetrical parts secured to the opposite sides of the handle and clamped upon the stretcher by a screw, substantially as herein shown and described.

298,996. PROJECTILE. DAVID M. MEFFORD, Toledo, Ohio, assignor, by direct and mesne assignments, of part to Armor J. Fair, Detroit, Mich., and Harvey D. Wilmot, New York, N. Y. Filed Oct. 19, 1883. (No model.)

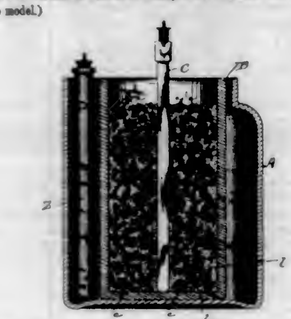


Claim.—1. The projectile described, consisting of the cylindrical front portion and the frusto-conical rear portion, having a closed or solid base, the whole being free from all projections for centering or rifling purposes, substantially as described.

2. The combination, with the cylindrical tubular portion B, of the frustum A, having a cylindrical portion, a' a^2, adapted to enter and close the rear of said tube, the whole constituting a projectile free from projections, substantially as described.

3. The combination of the hollow cylinder B, the frustum A, adapted to enter and close the rear of said tube, and the cap C, forming a cover to said tube, the whole constituting a projectile free from external projections for centering or rifling purposes, substantially as described.

298,997. ELECTRIC BATTERY. ORSON MILLARD, Flint, Mich., assignor of one-half to Charles B. Crampton, same place. Filed Oct. 3, 1883. (No model.)



Claim.—1. A galvanic battery in which lead chromate is an electrolyte.

2. A galvanic battery employing lead-chromate powder as an electrolyte in connection with an alkaline solution.

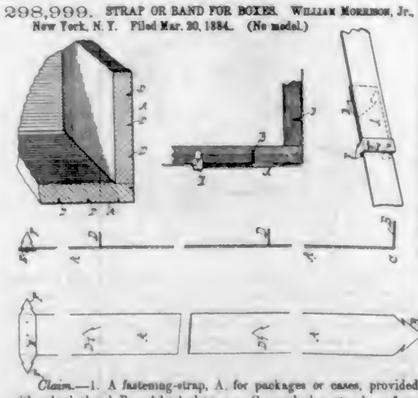
3. A galvanic battery in which lead chromate is arranged in contact with the negative electrode, and the two electrodes and said lead chromate are immersed in a solution or solutions which will act on the positive electrode and release hydrogen to combine with the oxygen of the lead chromate, essentially as set forth.

4. A galvanic battery in which a mixture of lumps of carbon and lead chromate in the form of a salt is placed in contact with a carbon negative electrode, substantially as described.

298,998. OBTAINING BROWN DYES FROM THE AROMATIC DIAMINES. PROSPER MONNET, St. Fons, Rhône, France, assignor to the Société P. Monnet et Cie., same place. Filed Jan. 26, 1884. (No specimens.)

Claim.—The herein-described method of dyeing materials brown, which consists in saturating the material in a bath composed of chlorhydrate of parasphenylene diamine, or its specified equivalent, sulphuric acid, and water, then wringing, and then treating the material to an oxidizing-bath for developing the color, substantially as set forth.

298,999. STRAP OR BAND FOR BOXES. WILLIAM MORRISON, Jr., New York, N. Y. Filed Mar. 20, 1884. (No model.)

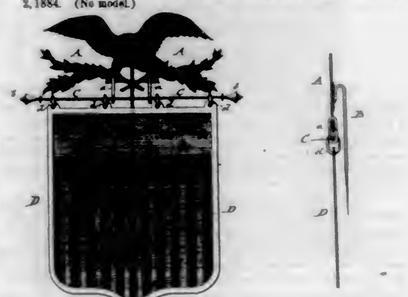


Claim.—1. A fastening-strap, A, for packages or cases, provided with a barbed end, B, and barbed tongues C, punched or struck out from the body of the strap, substantially as described.

2. The strap A, having its front end barbed, and having barbed tongues intermediate of its ends, as described, in combination with the transverse piece E, with barbs F F, secured to the rear end of the strap, substantially as described.

3. A fastening-strap for packages or cases, provided at its rear end with a fastening extending transversely to the strap, so that the barbs F F of the fastenings are outside of the edges of the strap when the rear end of the strap overlaps the front end, substantially as described.

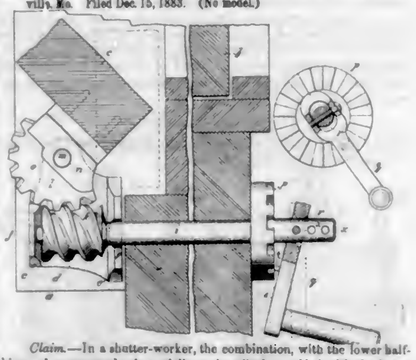
299,000. BADGE. FRANK NEUBERT, Springfield, Mass. Filed Apr. 2, 1884. (No model.)



Claim.—1. A badge consisting of a suspension-piece provided with a fastening device at the back, an intermediate transverse bar suspended from the suspension-piece, and a main piece suspended from the bar, substantially as and for the purpose set forth.

2. A badge composed of a suspension-piece provided with a pin or other fastening device at the back, an intermediate transverse bar suspended by links from the suspension-piece, and a main piece suspended by rings from the transverse bar, substantially as set forth.

299,001. SHUTTER-WORKER. DOCTOR FRANKLIN OLIVER, Huntsville, Mo. Filed Dec. 15, 1883. (No model.)

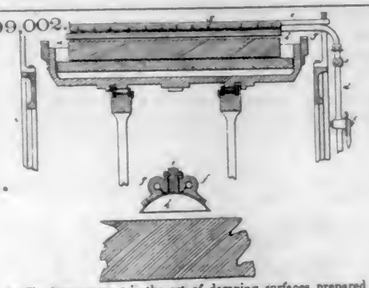


Claim.—In a shutter-worker, the combination, with the lower half-hinge, *d*, constructed substantially as described, provided with the lugs *e e'*, having bearings for the operating-shaft, as shown, and a bottom projection, *l*, having the pintle *m*, to engage the eye *n*, of the upper half-hinge, which is provided with a segmental gear, *o*, the shaft *i*, having the worm-gear *k* at its outer end, and its inner end provided with a plurality of perforations, the annular notched plate *p*, and crank *q*, having the oval slot *r* and pin *t*, whereby the crank-arm may be adjusted on the shaft with relation to the plate *p*, and the device adapted for window-casings or walls of various thicknesses, substantially as specified.

299,002. METHOD OF AND APPARATUS FOR DAMPING LITHOGRAPHIC SURFACES. JOHN W. OSBORNE, Washington, D. C., assignor to William H. Forbes, Boston, Mass. Filed June 18, 1881. (No model.)

Claim.—1. The improvement in the art of damping surfaces prepared for printing in the lithographic manner, which consists in mixing the vapor of water, or air saturated with the vapor of water, with air which has been cooled, for the formation of a cloud of condensed and suspended water particles, and then depositing said particles of atomized water upon the surface to be damped.

299,002.



2. The improvement in the art of damping surfaces prepared for printing in the lithographic manner, which consists in mixing the vapor of water, or air saturated with the vapor of water, with air which has been compressed, cooled to ordinary temperature, and then released from pressure, for the formation of a cloud of condensed and suspended water particles, and then depositing said particles of atomized water upon the printing-surface.

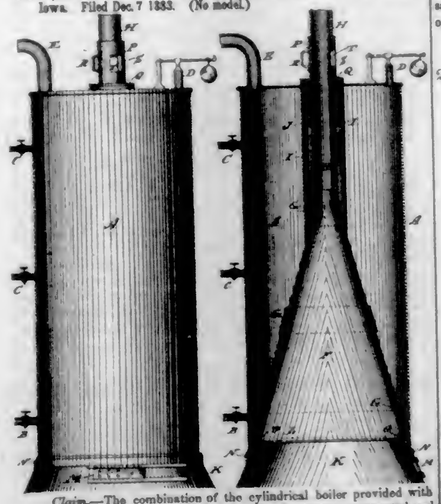
3. That improvement in the art of damping surfaces prepared for printing in the lithographic manner, which consists in bringing simultaneously upon the surface of a lithographic stone or its described equivalent, and upon the same part of it, water in the form of vapor at any temperature and air sufficiently below the dew-point of said vapor to effect the condensation and conversion of the same into a cloud of water particles, which latter by their propulsion against and attachment to the printing-surface accomplish its damping, substantially as and for the purpose described.

4. The combination, substantially as described, of a condensing-atomizer, with means, substantially as described, for controlling, directing, and circumscribing the quantity, movement, and distribution of the generated cloud of atomized water over a surface prepared for printing in the lithographic manner, and with a lithographic press, substantially as and for the purpose described.

5. In an apparatus for damping printing-surfaces by projecting atomized water against the same, two tubes provided with adjacent terminal openings, and communicating the one with a steam-generator and the other with a reservoir furnishing compressed air at ordinary temperatures, substantially as and for the purpose described.

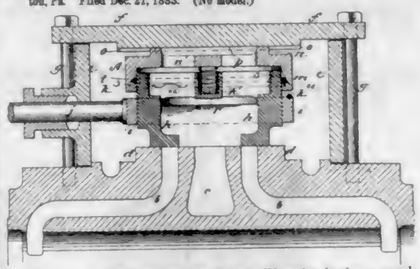
6. In an apparatus for damping printing-surfaces by projecting atomized water against the same, a mixing-chamber opening upon a lithographic stone or its described equivalent, and furnished with orifices for entering jets of steam, and for air cooled by expansion or otherwise, in combination with said printing-surface, substantially as and for the purpose described.

299,003. AGRICULTURAL BOILER. GEORGE PATTON, St. Charles, Iowa. Filed Dec. 7 1883. (No model.)



Claim.—The combination of the cylindrical boiler provided with the conical fire-box, the smoke-flue, and the flue-jacket, constructed and arranged as described, and the movable collar fitting the flue upon the top of the boiler, and provided with a bottom flange fitting over the air-chamber formed by the flue-jacket, and with an aperture adapted to register with a corresponding aperture in the flue, substantially as and for the purpose set forth.

299,004. BALANCED SLIDE-VALVE. WILLIAM A. PEARSON, Scranton, Pa. Filed Dec. 21, 1883. (No model.)



Claim.—1. The combination, with a slide-valve having a round neck, of a balance plate or cover, A, interposed between the valve and the top of the chest, and having a round neck engaging steam-tight with the neck of the valve, and having a square or rectangular abutting margin, *n*, to bear upon the top of the chest or its equivalent, and with means, substantially such as described, to prevent the rotation of the same, substantially as herein set forth.

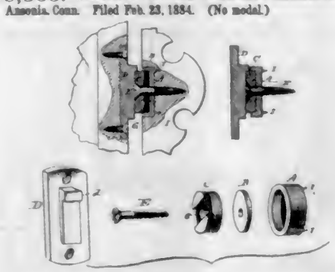
2. The combination, with a slide-valve having a cylindrical neck, *k*, of the balance-cover A, interposed between the valve and the chest-cover, having the circular neck *m*, engaging the neck *k*, and the rectangular abutting neck *n* with longitudinal guides *o o*, between which said neck fits, substantially as and for the purpose set forth.

3. The combination, with a steam-chest and its slide-valve, of a balance-cover fitting between the top of the chest and the valve, and engaging together in the manner of a piston and cylinder, the top of the balance-cover being rectangular, with the chest-cover *f*, formed with the raised bearing-surface *p* to receive said rectangular top, and with guides *o o* to embrace the same, substantially as and for the purpose set forth.

4. In combination with the slide-valve A and balance-cover A, engaging in the manner of a cylinder and piston, the oblique groove *s* in one of said engaging parts, with the split packing-ring *t* of soft metallic wire fitted in said groove, and the springs *u*, placed beneath the ring and serving to press it out upon the other part, substantially as herein shown and described.

5. The combination, with a slide-valve and a balance-cover, A A, having necks which engage in the manner of a cylinder and piston, of an oblique groove, *s*, formed in one of the necks, and a packing-ring, *t*, placed in said groove, and means, substantially as described, for pressing said ring up in the oblique groove, and thereby wedging it against the opposite neck, substantially as herein shown and described.

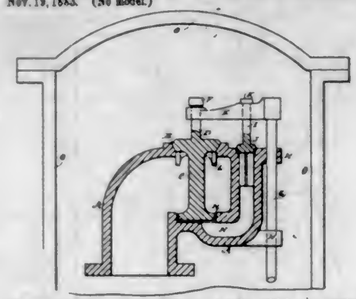
299,005. MIRROR-PIVOT. DON C. PECK and FREDERICK L. GAYLORD, Ansonia, Conn. Filed Feb. 23, 1884. (No model.)



Claim.—1. The combination of the metal socket A, disk C, having a dovetail-shaped groove, *c*, diametrically across its face, with screw E, and plate D, having a dovetail-shaped rib, *d*, on its face corresponding to the groove *c*, substantially as and for the purpose specified.

2. The combination of the metal socket A, disk C, having a dovetail-shaped groove, *c*, diametrically across its face, and a spring-disk, B between the socket A and disk C, with screw E, and plate D, having a dovetail-shaped rib, *d*, on its face corresponding to the groove *c*, substantially as and for the purpose specified.

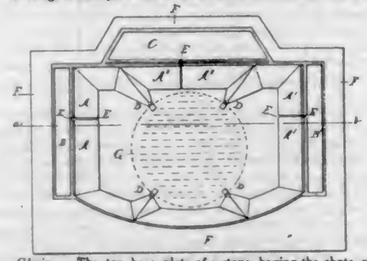
299,006. PUPPET-VALVE. WM. A. PEMBEY, Detroit, Mich. Filed Nov. 19, 1883. (No model.)



Claim.—1. In combination with a main valve which extends through its seat to a point near the opposite wall of the shell, a steam-passage in the shell extending from the steam side of the valve to a point opposite the extended end thereof, and a small auxiliary valve adapted to close said steam-passage, both the main and auxiliary valves being so connected with a valve-stem that the auxiliary valve will open before and close after the main valve, substantially as shown and described.

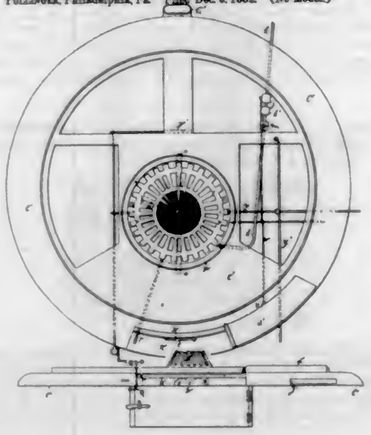
2. The combination of the valve-seat B, valve C, extending through its seat and terminating in the recess M in the opposite wall of the shell, steam-passage N, and valve J, said valves C and J being so connected with a valve-stem that the motion thereof will open valve J before opening valve C, substantially as shown and described.

299,007. STOVE-CASTING. GEO. H. PHILLIPS, Troy, N. Y., assignor to George H. Phillips & Co., same place. Filed Oct. 11, 1883. (No model.)

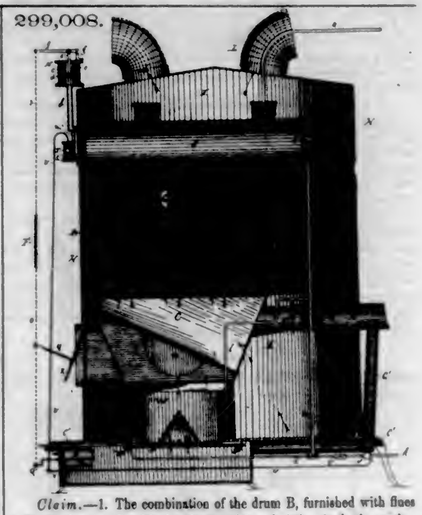


Claim.—The top base-plate of a stove, having the chute-plates integral with the rim-plate, but divided at E, as and for the purpose specified.

299,008. HOT-AIR AND STEAM GENERATING FURNACE. WM. PULLDOER, Philadelphia, Pa. Filed Dec. 6, 1882. (No model.)



299,008.

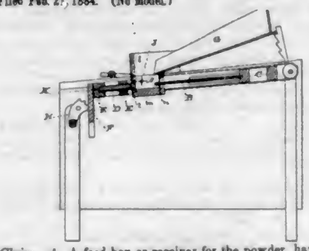


Claim.—1. The combination of the drum B, furnished with flues A B', air-chamber C, with chambers *u u'* for admitting fresh air, smoke-pipes G, jacket H, with pipes L for carrying off hot air, and fire-box W, all substantially as and for the purpose set forth.

2. In a hot-air and steam generating furnace, the air-chamber C, with cold-air inlets *u u'*, and passages D, corresponding to similar openings in drum B, in combination with said drum B, fire-box W, base-plate C', and jacket H, substantially as set forth.

3. The combination, in a hot-air and steam generating furnace, of the boiler J, flues A B', drum B, jacket H, fire-box W, water-pipes *l* and *m*, and steam-domes K, all substantially as and for the purposes set forth.

299,009. CARTRIDGE-LOADING APPARATUS. WILLIAM R. QUINAN and FRANK KIMPPEL, San Francisco, and JACOB OLSEN, Marin County, Cal. Filed Feb. 2?, 1884. (No model.)



Claim.—1. A feed-box or receiver for the powder, having two series of holes, one on each side, one series being equipped within the short tubes, in combination with the clamp E, for holding the cartridge-cases, board F, and lever H for bracing the cartridge-clamps, rods B, and supporting cross-head, with their operating mechanism, substantially as described.

2. An apparatus for packing powder into cartridge-cases in successive small charges, consisting of a feed-box into which the powder is placed, and through the lower part of which a number of parallel rods are adapted to reciprocate, short tubes through which the powder is forced by the rods, and a means for holding the cartridge-cases in line with the rods, so as to receive the powder as it is forced out by the rods, substantially as herein described.

3. A powder-packing apparatus consisting of a feed-box or receiver for powder, a series of parallel rods passing through opposite sides of the box, and having thin outer ends secured to a cross-head by which they may be caused to reciprocate, in combination with short tubes projecting from the side of the box opposite the cross-head to receive one end of the cartridges, and a clamp or means for holding the cartridges in line, substantially as herein described.

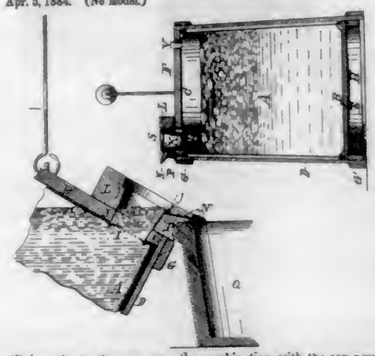
4. A powder-packing apparatus consisting of a feed box or receiver for powder, a series of parallel rods passing through opposite sides of the receiver near the bottom, and having a guide or cross-head by which

they are caused to reciprocate, in combination with a support or clamp by which the cartridge-cases are held in line with the rods, a board or backing against which the action of the rods is resisted, and a mechanism by which the board may be raised or lowered, substantially as herein described.

5. A powder-packing apparatus consisting of a feed-box or receiver, a series of parallel rods passing through opposite sides of the receiver near the bottom, and having one end connected with a cross-head by which they are reciprocated and guided, a clamp or holder by which the cartridge-cases are held in line to receive the powder, in combination with a device for stirring or agitating the powder within the receiver, substantially as herein described.

6. A powder-packing apparatus consisting of a receiver or feed-box, through opposite sides of which a series of parallel rods are caused to reciprocate by means of a sliding cross-head to which one end of the rods are fixed, a clamp or holder by which cartridges are held in line with the rods, so as to receive the powder forced out by them, in combination with agitators or stirrers supported upon a shaft within the feed-box, which shaft is actuated by a mechanism which transmits motion from the cross-head, substantially as herein described.

299,010. SHIPPING-CAN. GEORGE J. RECORD, Cornwall, Ohio. Filed Apr. 5, 1884. (No model.)



Claim.—1. In shipping-cans, the combination, with the can proper and its wooden jacket, of the nozzle J and the nozzle-protector L, having the spout N, as described, said protector consisting of an annular ring having the notch P and recess L'', as described, for the object stated.

2. In shipping-cans, a protector for the nozzle, consisting, essentially, of an annular ring of wood, having the central aperture, L', and recess L'', forming the shoulder *l*, said nozzle being provided with a flange, *j*, bearing upon said shoulder, as specified.

3. In shipping-cans, the combination, with the can A, having the nozzle J, of the annular protector L, having the aperture L', recess L'', the stopper K, and the seal S, substantially in the manner as and for the object stated.

4. In shipping-cases, the combination, with a nozzle-support, of the seal S, fixed to said support, substantially as described and specified.

299,011. WATCHMAN'S ELECTRIC RECORDER. JEROME REDDING, Malden, assignor to himself, and HARVEY REDDING, Everett, Mass. Filed Jan. 31, 1884. (No model.)

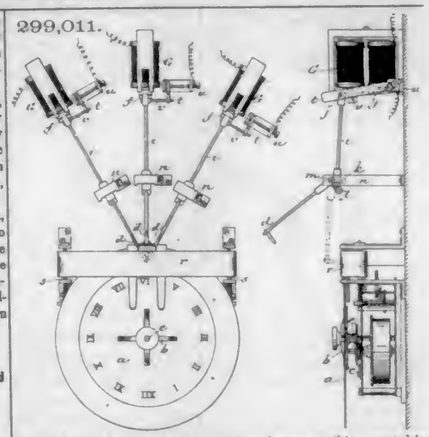
Claim.—1. In a watchman's electric register, the combination, with a rotating dial which carries the register-sheet, of a series of hammers or markers having types or printing-characters differing in each hammer from the others, and arranged to strike on the face of the dial, and means for operating said markers, comprising a series of electro-magnets mechanically connected with said markers and circuit-closers at different points, substantially as described.

2. In a watchman's electric register, a rotating dial which carries the register-sheet, a series of hammers or markers arranged, as described, to strike at the same point on the face of the dial, and electro-magnetic circuits which actuate said markers, all in combination substantially as described.

3. In a watchman's electric register, a rotating dial, an ink-ribbon placed adjacent to the face thereof, a series of marking devices or hammers arranged, as described, to make an impression at the same place through the ribbon on the dial, and an electro-magnetic circuit to actuate said hammer, all in combination as set forth.

4. In a watchman's electric register, the combination, with a sheet-carrying mechanism, of a marking type or hammer, an electro-magnetic device for actuating the same, and an automatic circuit-breaking device

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in the electric circuit, whereby the type or hammer will be actuated by a succession of impulses, substantially as described.

5. The combination, with a recording hammer or marker actuated by an electro-magnet and its armature in an electric circuit, of a metallic arm forming a part of said circuit and normally in yielding contact with said armature, said arm being adapted to momentarily break the circuit by momentum after the armature has been fully attracted by the magnet, and thereafter to automatically close the circuit, as set forth.

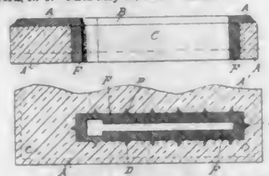
6. In a watchman's electric register, the combination of a rotating dial or its equivalent, a hammer or marker having a printing type or character adapted to make an impression on said dial, an electric circuit including a circuit-closer adapted to be operated by a watchman, and an electro-magnet having an armature adapted to operate said marker, and an automatic circuit-breaker, whereby the hammer may be caused to give a rapid succession of blows while the circuit is normally closed, as set forth.

7. In a watchman's electric register, the combination of a rotating dial or its equivalent, a hammer or marker adapted to make an impression on said dial, an electric circuit including a circuit-closer adapted to be operated by a watchman, and an electro-magnet having an armature adapted to operate said marker, and a gravitating metallic arm in circuit with said magnet and caused to break the circuit by momentum after the armature is attracted by its magnet, and thereafter to automatically close the circuit, whereby the hammer may be caused to give a rapid succession of blows while the circuit is normally closed, as set forth.

8. The method hereinbefore described of imprinting a character on a recording-sheet, which consists in actuating a hammer or marker by an electro-magnetic circuit, and causing said circuit to be broken repeatedly and automatically, whereby the character is imprinted by a series of taps, substantially as described.

9. In a watchman's electric register, the combination of the rotary dial or its equivalent, operating mechanism therefor, one or more markers electrically operated, as described, a case in which said dial, mechanism, and markers are contained, a lock for said case, a circuit-closer operated by the retraction of the lock-bolt, and an additional marker and operating devices therefor in circuit with said circuit-closer and contained in said case, whereby the unlocking of the case is indicated, as set forth.

299,012. MORTISED WOODEN BLOCK FOR ELECTROTYPE OR STEREOTYPE PLATES. FREDERICK A. RINGLER and EMIL I. ALFELD, New York, N. Y. Filed July 23, 1883. (Modal.)



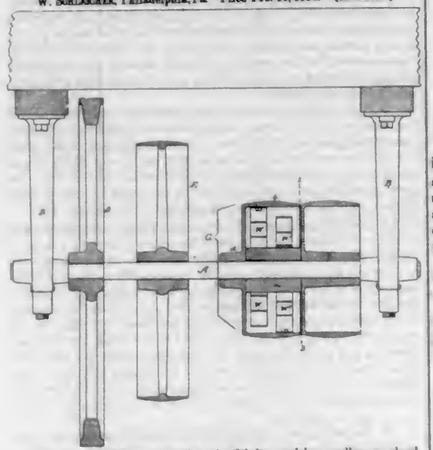
Claim.—1. An electro or stereo type plate having therein an opening of the size of the type to be used, in combination with a wooden block, a portion whereof is cut away and the space so made occupied by a metal collar having therein an opening corresponding with that in the plate, and forming therewith the mortise for the type, substantially as described.

2. A wooden block adapted to be used with electro or stereo type

plates by having therein an opening, within the sides of the walls of which are grooves or recesses, and a metal collar cast in the opening, and retained in position by the metal projecting into the grooves or recesses, such collar having an opening therein corresponding to the type to be used, whereby the same is made to form a part of the mortise for the type when the plate is attached to the block, substantially as shown and described.

3. A block for electrotype or stereotype plates, made of wood, having therein an opening larger than an opening in the plate, and within which is secured a metal collar, reducing the size of the opening in the block to that of the one in the plate, substantially as described.

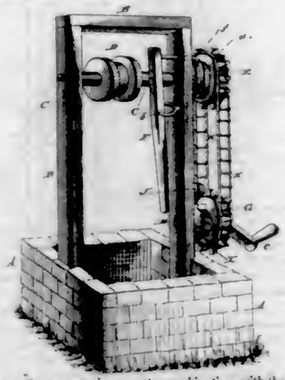
299,013. DRIVING-GEAR. ELIAKIM T. ROBB, Chester, and ADOLPH W. SCHLEICHER, Philadelphia, Pa. Filed Feb. 16, 1884. (No model.)



Claim.—1. The combination of a driving or driven pulley or wheel, a shaft, and a fly-wheel and hub carried thereby with a helical spring or springs contained within the pulley, interposed between the rim of the latter and the hub, and connected to both rim and hub, all substantially as set forth.

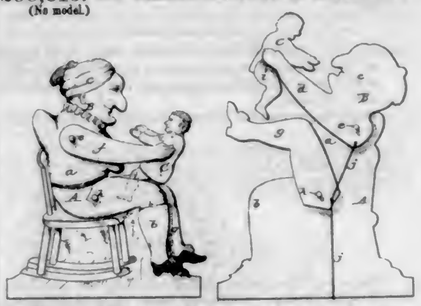
2. The combination of a driving or driven pulley or wheel, its shaft, and fly-wheel and hub carried thereby with two or more helical springs contained within the said pulley, and secured to the rim of the latter and to the hub at such points that the said springs will balance each other, substantially as set forth.

299,014. WATER-ELEVATOR. WILLIAM I. ROREX, Winfield, Kans. Filed Oct. 4, 1883. (No model.)



Claim.—In a water-elevator, the combination, with the shaft C, provided with a spline, of a sprocket-wheel mounted on said shaft and formed with an annularly-grooved shoulder and an internal groove, a lever fulcrumed upon the frame by means of a loop or yoke, *b*, and a rod secured at one end to the lever and passing through one side of the frame, and formed at its opposite end with arms to rest in the groove of the shoulder of the sprocket-wheel, substantially as set forth.

299,015. TOY. WILLIAM R. SALES, Oshkosh, Wis. Filed Mar. 3, 1884. (No model.)

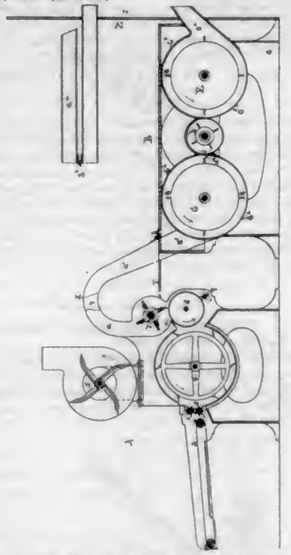


Claim.—1. The herein-described toy, consisting of part A, representing the body and leg of a human figure; part B, representing the head and arm thereof, pivoted to part A, part *g*, representing a leg of the figure, likewise pivoted to part A; part C, representing the figure of a child, and string *j*, or its described equivalent, connecting parts B and *g* in rear of their pivots, and extended downward, substantially as and for the purpose set forth.

2. In a toy, the combination of parts A, B, C, and *g*, parts B and *g* being pivoted to part A, and string *j* connecting said parts B and *g*, substantially as shown and described.

3. In combination with a figure of a man, arms pivoted to said figure, a child's figure carried by said arms, and a cord or its equivalent attached to said arm in rear of its pivot, substantially as shown and described.

299,016. MACHINE FOR BURRING AND CLEANING WOOL. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Oct. 21, 1881. (No model.)



Claim.—1. The combination of a burr-picker mechanism with a multiple-cone-duster mechanism, substantially as described, and means for conveying the material operated upon, whereby the wool will pass from the picker direct into the duster, as specified.

2. The combination of the burr-picker A and the cone-duster B with the discharge-pipes *a'* and *a⁴*, whereby the fibers passing from the picker may be made to pass either into the cone-duster or the fiber-compartment, substantially as described.

3. The combination of picker-cylinder 4, barring-cylinder 6, doffer 7, fiber-passage *a a'*, and cone-duster C, substantially as described.

4. The combination of picker-cylinder 4, barring-cylinder 6, doffer 7, fiber-passage *a a'*, and two or more cone-dusters, C D, substantially as described.

299,017. SEAMLESS MULTIPLY-FABRIC HOSE. JUNIUS SCHENCK and BENJAMIN L. STOWE, Brooklyn, assignors, by direct and mesne assignments, to the Eureka Fire Hose Company, New York, N. Y. Filed Oct. 17, 1883. (No model.)

Brief.—Improvement on Reissued Patent No. 7,442, dated December 19, 1876.



Claim.—1. In a seamless multiply-fabric hose, the combination, with the plies, of warp or longitudinal strands placed in and incorporated with the fabric so as to lie therein substantially straight and without corrugation or abrupt bend, substantially as and for the purposes hereinbefore set forth.

2. Seamless multiply-fabric hose containing straight longitudinal strands or cords for preventing elongation of the hose, in combination with coupling and clamps, whereby the ends of the said straight cords or strands are prevented from drawing back into the fabric when the hose is under pressure, substantially as hereinbefore set forth.

299,018. SEAMLESS MULTIPLY-FABRIC HOSE. JUNIUS SCHENCK and BENJAMIN L. STOWE, Brooklyn, assignors, by direct and mesne assignments, to the Eureka Fire Hose Company, New York, N. Y. Filed Oct. 17, 1883. (No model.)

Brief.—Improvement on Reissued Patent No. 7,442, dated December 19, 1876.

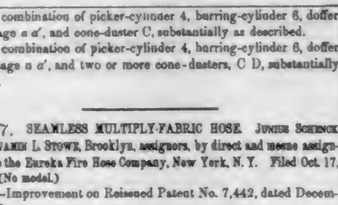


Claim.—1. Seamless multiply woven hose in which the outer ply or plies, tying-strands, and inner weft-strands are combined with straight longitudinal strands laid and held between the inner weft-strands and the adjoining ply, substantially as and for the purposes hereinbefore set forth.

2. Seamless multiply woven hose consisting of outer ply or plies, tying-strands, and inner weft-strands, combined with straight longitudinal strands laid between the inner weft-strands and the next adjoining ply, and the rubber lining, which, by its adhesion to the fabric, serves to assist in holding the strands in position, substantially as hereinbefore set forth.

299,019. EYELETING-MACHINE. GEORGE O. SCHNELLER, Ansonia, Conn. Filed Dec. 17, 1883. (No model.)

Claim.—1. In an eyeleting-machine, the combination of two slides arranged to reciprocate toward and from each other, the one carrying a series of dies and the other a corresponding series of punches, each series corresponding to the series of eyelets to be set, a work-plate between said dies and punches, and through which the said punches will pass, and a corresponding series of channels leading from a supply-hopper, said channels having a reciprocating movement imparted thereto, and each channel terminating in holding-fingers, whereby the lowermost eyelet in each channel will be presented over a corresponding die, the several punches constructed to pass through the fabric and eyelet, and also constructed with an upsetting-shoulder, whereby a series of eyelets will be set through the series of holes made by said series of punches, substantially as described.

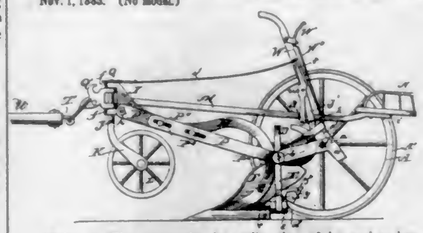


2. The combination of two slides arranged to reciprocate toward and from each other, the one carrying a series of punches, the other a corresponding series of dies, the said dies arranged loosely in their seats, a work-plate between said punches and dies, and through which the said punches work, and a corresponding series of channels terminating in fingers, whereby a series of eyelets will be presented between the said punches and dies, substantially as described.

3. In an eyeleting-machine, the combination of two slides arranged to reciprocate toward and from each other, the one carrying a series of punches, the other a corresponding series of dies, the punches constructed to enter said dies, and with a shoulder corresponding to the face of the respective dies, a series of channels corresponding to said series of punches and dies, and mechanism, substantially such as described, for imparting to said series of channels a reciprocating movement, said channels terminating in holding-fingers, which, by said reciprocating movement, are presented in a position between said punches and dies and then withdrawn therefrom, a hopper from which said channels lead, and a horizontal bar in said hopper, with mechanism, substantially such as described, for imparting reciprocating movement to said bar, substantially as and for the purpose described.

4. The combination of the two slides arranged to reciprocate toward and from each other, the one carrying a series of punches, the other a corresponding series of dies, a work-plate between said punches and dies, and through which the punches may pass, a slide arranged in guides at substantially right angles to the plane of the punch and die-carrying slides, mechanism, substantially such as described, to impart reciprocating movement to said slide, said slide carrying a series of channels corresponding to said punches and dies, through which eyelets are fed and presented between said punches and dies, and a locking-lever whereby said slide and the channels which it carries may be held out of feeding position or permitted to feed when required, substantially as described.

299,020. SULKY-PLOW. CHARLES SCHWEER, Eldon, Iowa. Filed Nov. 1, 1883. (No model.)



Claim.—1. The combination, in a sulky-plow, of the carriage having a main axle and carrying-wheels mounted on the ends thereof, a frame pivoted to the carrying-frame and supporting the plow proper, a pivoted pawl located at the lower portion of the plow-supporting frame, devices located on the main frame for raising the plow-supporting frame, so as to permit said pivoted pawl to engage the main axle and suspend the plow-supporting frame, and a bell-crank lever pivoted on the main frame, and having one portion located on the point of the main axle which the pivoted pawl engages, and connections on the main carriage connected to said bell-crank lever to move the same upon its pivot, substantially as and for the purpose set forth.

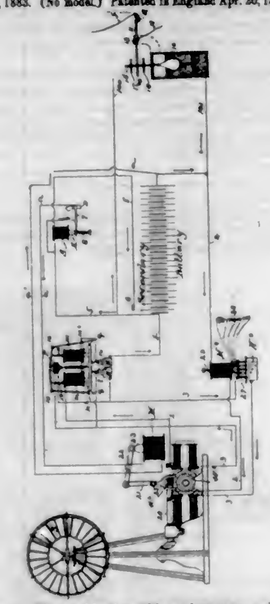
2. The combination, in a sulky-plow, of a carriage, of bars located at each side, keyed on the main axle, and extending forwardly, a plow-supporting frame pivotally secured to the forward ends of said bars, and provided with bars *n'*, spring-dogs located on the said bars of the main carriage, and devices for depressing the plow-supporting frame to cause the bars thereof to engage the said spring-dogs, substantially as set forth.

3. The combination, in a sulky-plow, of a carriage, a plow-frame pivoted thereto, provided with arms *n'* and braces O P, as described, and carrying the plow, a lever fulcrumed on the carriage-frame for effecting by its movement the elevation or depression of the plow-frame, and spring-dogs located on the carriage, and adapted to engage the arms *n'* for locking said plow-frame in its elevated position, substantially as set forth.

4. The combination, in a sulky-plow, of a carriage, a plow-supporting frame pivoted thereto, and provided with brace-rods O P, having curved or hooked ends *l*, adapted to be adjustably clamped in yoke-brackets *n*, secured to the side of bars *n'*, secured to the plow-frame, spring-dogs located on the carriage, connections and devices for effecting the elevation of the carriage and the engagement of the spring-dogs with the rods *n'*, and devices for effecting a disengagement of the same, substantially as specified.

5. The combination, in a sulky-plow, of a main carriage, a plow-supporting frame pivoted to said main carriage, levers and connections mounted on said main carriage to effect the elevation and depression of the plow-supporting frame, a guide-wheel supported in a yoke turning in bearings at the front of the machine, and having connected therewith a horizontal bar, each end of which is connected by a cable with a centrally-pivoted vertical bar provided with a stirrup at its lower end, each to receive one of the feet of the operator, substantially as set forth.

299,021. APPARATUS FOR CHARGING SECONDARY BATTERIES. ROBERT PERCY SELLON, Surbiton, County of Surrey, England. Filed Nov. 15, 1883. (No model.) Patented in England Apr. 20, 1883, No. 2,023.



Claim.—1. The combination, with a prime motor, a dynamo, and a secondary battery, of mechanism for throwing the dynamo into or out of gear with the said motor, and appliances, such as explained, for automatically operating said mechanism as the secondary battery is charged or discharged, substantially as described.

2. The combination, with the dynamo having its field excited in a derived circuit, of a contact-maker in said circuit, mechanism for operating said contact-maker to break the circuit, and a magnet in a loop around said contact-maker for re-establishing the broken circuit when it becomes sufficiently energized or excited, substantially as described.

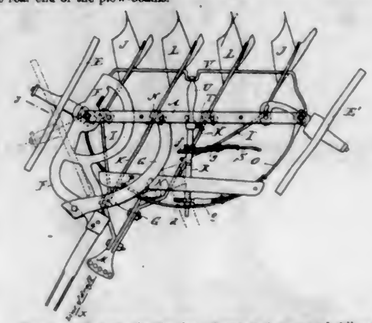
3. The combination, with the dynamo, the prime motor for driving the same, and the secondary battery to be charged by the dynamo, of the automatic mechanism, such as explained, for throwing the dynamo into and out of gear, and the automatic safety device, such as explained, for making and breaking the charging-circuit, substantially as described.

4. The combination, with a motor of variable speed, of the dynamo driven thereby, the storage or secondary battery, the mechanism, as explained, for automatically throwing the dynamo into and out of gear with said motor, and the automatic regulator for maintaining approximately constant the electro-motive force of said generator notwithstanding variations in the speed, substantially as described.

5. The combination, with the dynamo having its field excited in a derived circuit, of contact-makers in the main and field circuits, respectively, a magnet in the main circuit for operating said contact-makers to break the circuit, a loop derived from the field-circuit, a magnet in said loop, and connected devices for operating said contact-makers to close the circuit when said loop-magnet is sufficiently excited, substantially as described.

299,022. GANG-PLOW. ABRAHAM SHAFFER, Canopolis, Mich. Filed Aug. 1, 1883. (No model.)

Brief.—The swiveled wheel-post is governed by the tongue-plate. The latter may be locked at any angle or left free to turn. A shaft actuated by a lever has a cam upon it which raises or lowers a bail beneath the rear end of the plow-beams.



Claim.—1. A gang-plow having a frame, as A, arranged obliquely to the line of travel, an adjustable land-wheel, E', and a series of plow-beams carrying plows arranged to correspond with the angle of said frame, in combination with lever-frame F, tongue-socket *a*, guide-bar G, and spring-latch H, as and for the purposes set forth.

2. In a gang-plow, and in combination with the frame A, stub-axles, and wheels, as described, the vertical rods B, the frame O, the beams K, having staples which embrace rods B, and having draft attachments M, and the frame F, having pole-socket *a*, as set forth.

3. In combination with the oblique frame A of a gang-plow, the plow-beams I I K K and plows J L, said plow-beams having staples and attached to an equalizing draft-clevis, M, common to all, said clevis being adapted to engage with a hanger, P, for determining the elevation of the outer ends of the plow-beams and the pitch of the plows and the sliding brackets embracing said beams, substantially as and for the purposes described.

4. In combination with a gang-plow constructed substantially as herein described, the shaft R, lever S, bail V, and bar U and cam T, adapted to raise and lower the plows, substantially as set forth.

5. In combination with the frame A of a sulky-plow, constructed substantially as described, the bracket C, stub-shaft D, wheel E, and lever-frame F, carrying pole-socket *a*, for adjusting the line of travel of such wheel, the bar G, and spring foot-catch H, substantially as and for the purposes described.

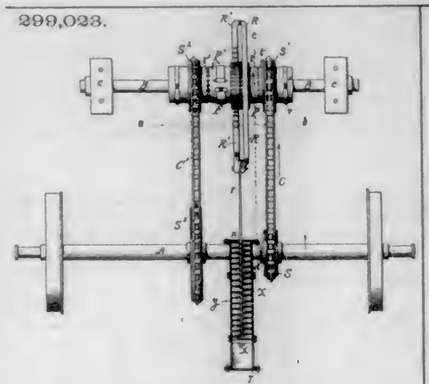
299,023. CAR STARTER AND BRAKE. BENJAMIN F. SHAKESPEARE, Chester, Pa. Filed Mar. 26, 1884. (No model.)

Claim.—1. The combination of the sliding drum S', adapted to engage with the pinion-drum P, rack R, pinion P', rack R', the sliding drum S², adapted to engage with pinion-drum P', the spring X, and rod *r*, connecting said spring and racks, together with means, substantially as described, for connecting said sliding drums with the axle of the car, all constructed and arranged in correlation and adapted to operate substantially as and for the purpose set forth.

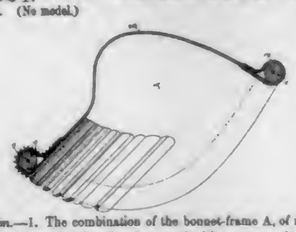
2. The combination, with the car-axle, of the sprocket-wheel S thereon, the loose ratchet and sprocket drum S', chain C, lever L, the loose pinion and ratchet drum P, its rack R, pinion and ratchet drum P', its rack R', (said racks being on opposite sides of said pinions, respectively,) the loose ratchet and sprocket drum S², lever L', chain C', and sprocket-wheel S², together with the spring X and connecting-rod *r*, substantially as and for the purpose set forth.

3. The combination, with the drum S', pinion P, rack R, pinion P', rack R', drum S², and spring X, connected to said racks, all constructed and adapted to operate substantially as set forth, of the friction brake or band F upon pinion-drum P', with means for tightening and releasing said band, substantially as and for the purpose described.

299,023.



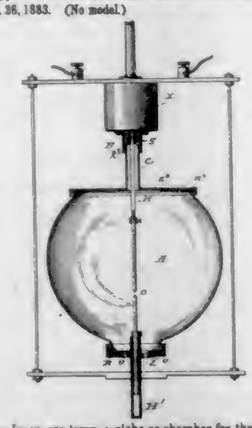
299,024. BONNET. DE LANA SHEPLEE, Boston, Mass. Filed MAY. 17, 1884. (No model.)



Claim.—1. The combination of the bonnet-frame A, of rice-lace or other similar material, the wire *d*, covered with a woven tubular jacket, *c*, attached to the edge of said frame, and the outer or finishing fabric, B, laid over and upon said frame and jacket in the form of a roll, substantially as described.

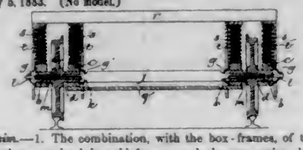
2. The combination of the bonnet-frame A, the covered wire *d*, attached to the edge thereof and having its ends brought together, and the clasp *e*, closed around the abutting ends of said wire *d* and its covering, substantially as described.

299,025. ELECTRIC-ARC LAMP. SIDNEY HOWE SHORT, Denver, Colo. Filed Oct. 26, 1883. (No model.)



Claim.—In an arc lamp, a globe or chamber for the arc, closed air-tight at the bottom and on all sides, a regulator above the globe or chamber, a tight tube forming a passage between the regulator and the globe or chamber, and a carbon-holder extending loosely through the said tube, whereby the gases are retained in the globe, undue pressure avoided, and free movement of the carbon secured, all substantially as described.

299,026. CAR-TRUCK. GEORGE W. SIMONDS, Boston, Mass. Filed May 5, 1883. (No model.)



Claim.—1. The combination, with the box-frames, of the tubular wheel-axles contained in said frames, and the connecting-bar passing through said tubular axles, and having rigid bearings resting on both sides of each frame, as set forth.

2. The box-frames having the hollow bosses *g g'*, forming oil-reservoirs and supports for the shoulders or bearings on the connecting-bar, as set forth.

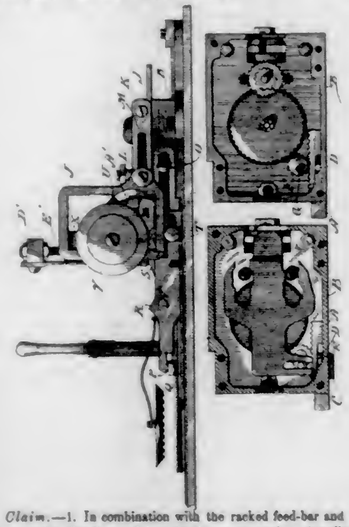
3. The combination of the box-frames having the oil-reservoirs and the boxes communicating therewith, the axles having the tapering longitudinal passages, and the connecting-rod having tapering portions fitting in said passages, the tapering form of said passages and rod facilitating the passage of oil from the outer to the inner box, as set forth.

4. The combination of the box-frames having the oil-reservoirs and the boxes communicating therewith, the tubular axles journaled in said boxes, and the connecting-bar having cylindrical portions passing through the axles, and longitudinal passages extending from one oil-reservoir to the other in each frame, as set forth.

5. In a car, the combination of the series of box-frames connected longitudinally by suitable bars and laterally by bars passing through the box-frames and through the wheel-axles, to form a rigid primary frame or structure, the wheels journaled independently in said box-frames, and the secondary load-supporting frame resting on springs interposed between the primary and secondary frames, as set forth.

6. In a car-truck, the combination of the box-frames, as *c*, which surround and inclose the wheels, said box-frames being connected longitudinally by rigid bars, the wheels and separate axles inclosed by said box-frames, the axles being connected by bars *j*, and the secondary body-frame *r*, supported on the box-frame by springs, all arranged to co-operate substantially as described.

299,027. BUTTON-HOLE SEWING-MACHINE. CARL J. A. SJOBERG, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed June 22, 1883. (Model.)



Claim.—1. In combination with the racked feed-bar and pinion and means for vibrating said bar, the frame recessed as described, and actuated by the intermittently-revolving wiper-wheel, substantially as set forth.

2. The wiper-wheel arranged on the same shaft with the ratchet-wheel having two long teeth and intermediate shorter teeth, in combination with the frame, means for imparting an intermittent motion to said ratchet-wheel, and mechanism for effecting the barring and reversing the feed, substantially as described.

3. In a machine for stitching button-holes or other similar machines, the sliding bar having inclined projections and connected with the feed-bar, in combination with means for actuating the feed-bar, the wiper-wheel, and mechanism for operating the same, substantially as set forth.

4. The sliding bar having inclined projections and connected with the feed-bar, in combination with means for feeding said bar, the wiper-wheel, ratchet-wheel, and means for operating the same, the frame recessed as described, pinion, and mechanism for vibrating the feed-bar, substantially as shown and set forth.

5. The wiper-wheel secured within the frame, in combination with the ratchet-wheel secured on the same shaft with said wiper, pivoted dog with pawl attached thereto, sliding bar having inclined projections, means for operating the ratchet-wheel, and the feed-actuating mechanism, substantially as described.

6. The frame connected to mechanism for operating the racked feed-bar laterally, whereby the pinion may be thrown in and out of gear with said bar, in combination with the wiper-wheel, ratchet and pawls for operating the same, pivoted dog, sliding bar having inclined projections, and feed-actuating mechanism, substantially as and for the purposes set forth.

7. The ratchet-wheel having two long teeth and intermediate shorter teeth, in combination with means for imparting an intermittent rotary motion to the same, the wiper-wheel, frame, the feed-bar and means for vibrating the same, and the feed-actuating mechanism, substantially as set forth.

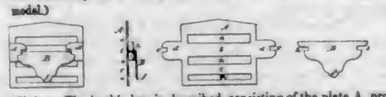
8. The ratchet-wheel W, having two long teeth and intermediate shorter teeth, in combination with the pivoted dog Z, carrying pawl A', pawl C', attached to the reciprocating cross-bar D', sliding bar N, attached to the feed-bar, and the feed-actuating mechanism, substantially as set forth.

9. The frame recessed as described, in combination with the wiper-wheel arranged interiorly therein, washers V, ratchet-wheel W and mechanism for operating the same, and the feed-actuating mechanism, substantially as set forth.

10. The sliding bar N, with inclined projections R S, the latter being adjustable, whereby the distance between said projections may be varied, in combination with the feed-bar and means for operating the feed, and the mechanism which operates to effect the barring and reverse the feed, substantially as described.

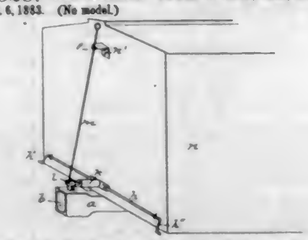
11. The frame J, recessed as described, and connected to the rack-bar A, in combination with the toothed crank-wheel F, racked feed-bar and means for vibrating the same, pinion and mechanism for actuating the same, wiper-wheel U, ratchet-wheel with two long teeth and intermediate shorter teeth, sliding bar N, having inclined projections R S, the latter adjustable as described, feeding mechanism, pivoted dog Z, carrying pawl A', and pawl C', attached to the reciprocating cross-bar D', substantially as described.

299,028. BUCKLE. DWIGHT L. SMITH, Waterbury, Conn., assignor to the Waterbury Buckle Company, same place. Filed Apr. 5, 1884. (No model.)



Claim.—The buckle herein described, consisting of the plate A, provided with ears *d d* at the right and left, each of said ears constructed with a notch, *e*, combined with the lever B, constructed with bearings corresponding to said notches *e* in the ears, the ears turned backward and over into a plane parallel with the plane of the frame, the lever introduced between them, the notches on the ears interlocking with the lever, and substantially as and for the purpose described.

299,029. CAR-COUPLING. GEORGE W. SMITH, Athol, Mass. Filed Mar. 6, 1883. (No model.)

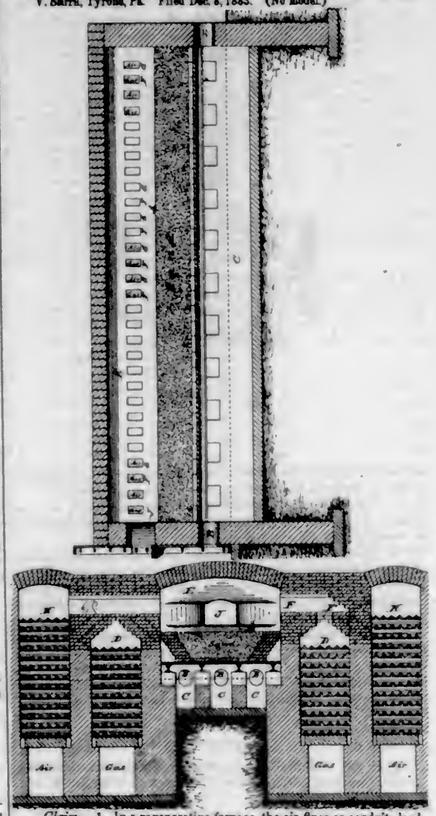


Claim.—1. In a car-coupler, in combination, car *n*, rotary rod *k*, bearing-sleeve *k*, fork *l*, pivoted to the coupling-pin *c*, and draw-bar *a*, all substantially as described.

2. In a device for supporting the rod *m*, a spring-clamp, *o*, having jaws with openings *p* and *q*, all substantially as described.

3. In combination, car *n*, draw-bar *a*, rotary rod *k*, having handles *k' k''*, and bearing-sleeve *k*, fork *l*, pin *c*, pivoted to said fork, rod *m*, and clamp, all substantially as described.

299,030. REGENERATIVE SKELP-HEATING FURNACE. MARTIN V. SMITH, Tyrone, Pa. Filed Dec. 8, 1883. (No model.)



Claim.—1. In a regenerative furnace, the air flues or conduits leading from the air-regenerators, extending across and over the gas-regenerators, and entering the combustion or melting chamber at the sides thereof, and on the same level and parallel to the gas flues or conduits, as set forth.

2. In a furnace of the character described, the air-regenerators of which open into the combustion or working chamber by a series of air flues or ports alternating with gas flues or ports opening into the combustion-chamber at the sides thereof, and on the same level with the air-flues, the bottoms of the air-flues forming the arch or cover of the gas-regenerator, as set forth.

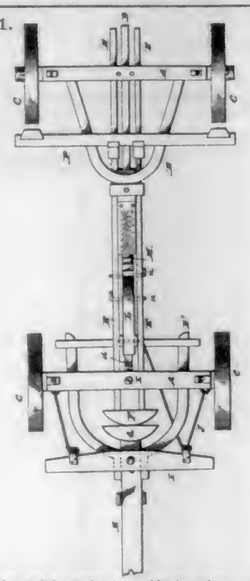
3. In a regenerative furnace, the air flues or conduits leading from the air-regenerators, extending across and over the gas-regenerators, the walls of said gas-regenerators being extended upward above said flues, to form the abutments or skewbacks for the support of the arch or roof of the combustion-chamber, as set forth.

4. A furnace for heating skelp, consisting of a long narrow heating and working chamber, with air and gas regenerators on each side, which connect with the combustion-chamber by ports or flues opening directly into the sides thereof and in alternate series, said air and gas ports being arranged on the same level, as set forth.

299,031. AUTOMATIC BRAKE. WALKER W. SMOOT and QUINN D WILCOXSON, Boston Station, Ky. Filed Feb. 23, 1884. (No model.)

Claim.—1. The combination, with the slotted perch and the hounds, of the sliding bars on each side of the perch, the brake-bar, the convex buffer at the forward end of the bars, the sliding pole adapted to abut

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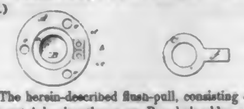
against the buffer, and the ratchet-bar and its detaining-pawl, all arranged to operate the brake and hold it against the wheels, as specified.

2. The combination, with the slotted perch, the hounds, and the brake, of the ratchet-bar, the spring actuating the same, the pawl, and its operating-lever, all arranged substantially as described.

3. The combination, with the recessed perch, the brake, and the sliding bars, of the ratchet-bar, the spring actuating the same, the pawl and lever, the pins securing the ratchet-bar in the perch, the whiffletree, and the cord adapted by means of the said whiffletree to operate the lever and pawl, for the purpose specified.

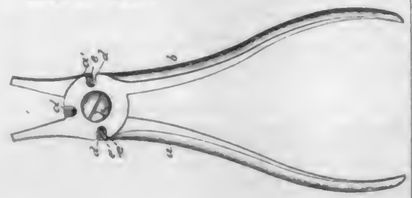
4. The combination, with the perch, the hound, and brake, of the sliding bars, the ratchet-bar, the spring, the buffer on the end of the bars, the sliding pole, the pawl and lever, the whiffletree, and the cord connecting the same to the lever, all the parts combining to automatically operate the brake, substantially in the manner and for the purpose specified.

299,032. FLUSH-PULL. JAMES SPENCE, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Nov. 10, 1883. (No model.)



Claim.—The herein-described flush-pull, consisting of the plate A cut from sheet metal, having the recess B and shoulder *a* struck therein, with the opening *b* and ears *d d* formed in said opening and turned downward, combined with a handle corresponding to the shoulder of the recess, and constructed with a knuckle to pass into the opening *b* and between the ears *d d*, and a pintle through said ears and knuckle, substantially as described.

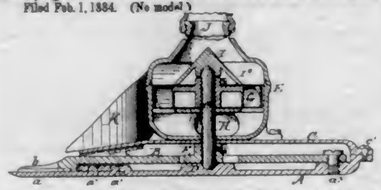
299,033. WIRE-CUTTER. ELISHA STEVENS, Middletown, Conn. Filed Dec. 28, 1883. (Model.)



Claim.—1. The combination of the pivoted lever-handles with the heads bearing the laterally-opening sockets and the disk-shaped blades bearing jaws and fixed against rotation in said sockets, all substantially as described.

2. The combination of the lever-handle *a* with the head *a'*, having sockets *c*, openings *d*, and lug *g*, lever *b*, with duplicate corresponding blade-socket, openings, and lug, a bolt, *h*, and the disk-shaped blades with peripheral jaws located and held in the respective sockets, all substantially as described.

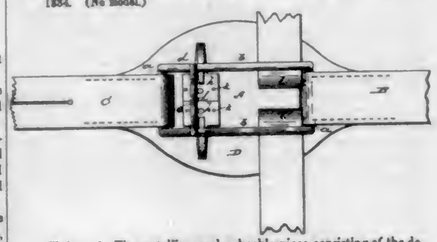
299,034. ANIMAL-SHEARS. EDWARD E. STONE, Washington, D. C. Filed Feb. 1, 1884. (No model.)



Claim.—1. An animal-shear provided with a curved guide secured to the casing, substantially as specified.

2. The combination of the case A C, having stop D, shear B, cam F, shaft *e*, and a water-motor secured to said shaft, substantially as shown and described.

299,035. TRACE-CARRIER. HANS TAY, Arcola, Ill. Filed Mar. 10, 1884. (No model.)

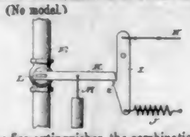


Claim.—1. The metallic guard or buckle-piece consisting of the depressed end bars, *a*, the raised side bars, *b*, having the loop portions *c*, formed with spurs *g*, the arched portions *d*, and the cross-brace *e*, substantially as specified.

2. The combination, with the metallic guard having the raised side bars and the depressed end bars connected to the back-strap and crupper-strap, of the leather pad under said guard, and the upwardly and inwardly turned hook secured to the leather pad and having their terminal portions under the side bars, substantially as specified.

3. In a trace-carrier, the combination, with the metallic guard, constructed as described, of the hooks E, having broad bases A, provided on their under sides with the spurs *k* to engage the pad D, the said hooks extending partially beneath the side bars, *b*, of the guard, substantially as and for the purposes specified.

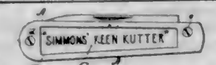
299,036. FIRE-EXTINGUISHER. GEORGE W. TAYLOR, ABNER R. COX, WILLIAM CARREL BROWN, and JOHN N. SUTHERLAND, Belton, S. C. Filed Jan. 9, 1884. (No model.)



Claim.—In a fire-extinguisher, the combination, with the inflammable cords arranged in each room of a building, of the water-distributing pipes communicating with each room, valves arranged in said pipes, weighted arms attached to the valves, levers supporting said arms, springs attached to one end of the levers, and the inflammable cords connecting with the other end, arranged and operating to cause the valve in any one pipe to open when the cords are burned, as set forth.

299,037. HANDLE FOR POCKET-KNIVES. GEORGE H. THOMPSON and EDWARD HOTTENDAN, New Haven, Conn. Filed Mar. 12, 1884. (No model.)

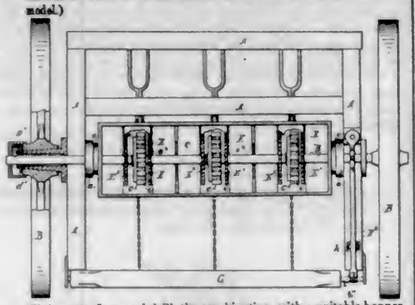
299,037.



Claim.—1. The herein-described improvement in cutlery-handles, consisting in the scale constructed in the form of a frame, so as to leave an opening upon the side, the edges of the opening projecting inward, combined with a panel introduced into said opening between the lining and the scale, substantially as described.

2. A handle for cutlery, having the scales constructed in the form of a frame, so as to leave an opening upon the side, the edges of the opening projecting inward, combined with a panel introduced into said opening between the lining and the scale, the scales secured to the lining by screws introduced through the scale on one side and into the scale on the opposite side, substantially as described.

299,038. SEED-DRILL. FRED E. TOWER, Milford, Mich., assignor of one-half to Solon H. Wilhelm, same place. Filed July 2, 1883. (No model.)



Claim.—1. In a seed-drill, the combination, with a suitable hopper, of a seed-tube provided with a vertical spout leading thereto, and a feed-wheel mounted upon a shaft, said wheel provided with buckets open to the periphery of the wheel, said buckets adapted to gather the grain upon the edges at the periphery of the wheel and to discharge it into said spouts from the opposite side, substantially as described.

2. In a seed-drill, the combination, with a suitable hopper provided with a seed-tube constructed with a spout leading thereto, of a feed-wheel mounted upon a shaft, said wheel provided with buckets opening upon the periphery of the wheel between two lateral faces, one of said faces provided with a flange adapted to project more or less over the top of the spout, substantially as described.

3. In a seed-drill, the combination, with a suitable hopper, of a seed-tube provided with a spout constructed in the form of a segment of a circle, and a feed-wheel having buckets located between two lateral faces, said buckets opening on the periphery of the wheel, the diameter of the wheel being such that the spout may be located within the circumference of the inner edges of the buckets, one of said faces of the wheel provided with a flange adapted to project more or less over the mouth of the spout, the construction being such that grain may be gathered upon the buckets at the periphery of the wheel and discharged from the opposite side into the spout as the wheel is rotated, substantially as described.

4. In a seed-drill, the combination, with a suitable hopper provided with a seed-tube and a vertical spout communicating therewith, of a feed-wheel mounted upon a shaft provided with buckets located between two lateral faces, said buckets opening upon the periphery of the wheel, said buckets adapted to gather seed thereon at the edges adjacent to the periphery and to discharge it into said spout from the opposite edge, one of said faces of the wheel constructed with a flange adapted to be projected more or less over the mouth of the spout, and mechanism for adjusting the relation of the feed-wheel and the spout, substantially as and for the purpose set forth.

5. In a seed-drill, one or more suitable hoppers, each provided with a seed-tube communicating with a vertical spout, a feed-wheel mounted upon a shaft provided with buckets located between two lateral faces, said buckets opening to the periphery of the wheel, and adapted to gather grain thereon at the periphery and to discharge it into the spout on the opposite side, and mechanism for regulating the adjustment of said shaft in relation to said spouts, substantially as described.

6. In a seed-drill, a feed-box consisting of one or more hoppers, each provided with a seed-tube communicating with a vertical spout, a feed-wheel mounted upon a shaft provided with buckets located between two lateral faces and opening at the periphery of the wheel upon the opposite edge, and means for regulating the adjustment of said wheels in relation to said spouts, consisting of a suitable collar and set-screw located upon one end of the shaft, the construction being such that the mouth of the spout may be more or less opened to receive seed from the buckets, substantially as described.

7. In a seed-drill, a feed-box consisting of one or more suitable hoppers, each of said hoppers provided with a seed-tube communicating with a vertical spout, a feed-wheel mounted upon a shaft, said wheel provided with buckets opening upon the periphery of the wheel and adapted to discharge grain into the spout from the opposite edge, said wheel constructed to project more or less over the mouth of the spout, said shaft extended at one end so as to pass through the hub of one of the drive-wheels, and provided at its outer end with a clutch, and means for engaging said clutch upon the hub and disengaging it therefrom, substantially as described.

8. In a seed-drill, a suitable bopper provided with a seed-tube communicating with an interior vertical spout and feed-wheel mounted upon a shaft, said wheel provided with buckets located between two lateral faces, said buckets opening upon the periphery of the wheel and adapted to discharge grain into said spout as the wheel is rotated, said wheel constructed to be projected more or less over the mouth of the spout, and in combination therewith a cap located over said wheel, substantially as and for the purpose set forth.

9. The combination, with a suitable frame, of a feed-box mounted thereon, said box and frame provided with mechanism whereby the box may be kept in a vertical position in going up and down hill, substantially as described.

10. In a seed-drill, the combination, with a suitable frame, of a feed-box weighted at the bottom, mounted thereon, said frame provided with supporting-collars, and said box provided with poises at its ends, adapted to be engaged with said supporting-collars, the construction being such that the box may be kept in a vertical position in going up and down hill, substantially as described.

11. In a seed-drill, a feed-box consisting of one or more hoppers, each provided with a seed-tube communicating with an interior vertical spout, a feed-wheel mounted upon a shaft and adapted to be rotated over the mouth of the vertical spout, said wheel provided with buckets opening to the periphery of the wheel and adapted to discharge seed into said spout, and a lever adapted to regulate the adjustment of said feed-wheels mounted upon said shaft in relation to the spouts, substantially as described.

12. The combination, of a feed-box consisting of one or more suitable hoppers, each provided with a seed-tube communicating with an internal spout, a feed-wheel mounted upon a shaft adapted to be rotated over the mouth of the spout, said wheel provided with buckets opening to the periphery and adapted to discharge grain into the spout, a lever adapted to regulate the adjustment of said wheels in relation to said spouts, mechanism for raising and lowering the drill-hoes, and mechanism connected therewith adapted to operate said lever simultaneously with the raising and lowering of the hoes, substantially as described.

13. The combination, in a seed-drill, of a feed-box consisting of one or more suitable hoppers, each provided with a seed-tube communicating with an interior spout, a feed-wheel mounted upon a shaft adapted to be rotated over the mouth of the spout, said wheel provided with buckets opening to the periphery and adapted to discharge grain into the spout, a lever adapted to regulate the adjustment of said feed-wheels and spouts in relation to each other, and mechanism for automatically operating said lever, substantially as described.

14. In a seed-drill, the combination, with a feed-box consisting of one or more suitable hoppers, each provided with a seed-tube communicating with an interior spout, of a feed-wheel mounted upon a shaft and adapted to be rotated over the mouth of the spout, said wheel provided with buckets opening to the periphery and adapted to discharge the grain into the spout as the wheel is rotated, a lever adapted to regulate the adjustment of the feed-wheels and the spouts in relation to each other, and a weight suspended in the frame of the drill and provided with a projecting arm adapted to engage with the arm of the lever, the construction being such that in passing over uneven ground said lever will be automatically adjusted, substantially as described.

15. In a seed-drill, the combination, with a drill-hoe, of a supplementary point adjustably secured therein, substantially as and in the manner described.

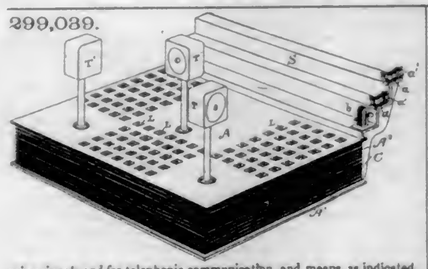
16. In a seed-drill, the combination, with a drill-hoe, of an auxiliary channel adjustably secured therein, substantially as and for the purpose set forth.

17. In a seed-drill, the combination, with a drill-hoe, of a supplementary point secured therein by means of a tongue, P', clipped upon the hoe, said tongue provided with a contracted orifice adapted for the sowing of grass-seed, substantially as described.

299,039. ELECTRIC MULTIPLE-SWITCH-BOARD SYSTEM. THEODORE N. VAIL, Boston, Mass. Filed Jan. 30, 1884. (No model.)

Claim.—1. In a multiple-switch system for a telephone central station, the series of horizontal switch-boards, each furnished, as described, with annunciators for a definite number of lines, and with line-plates equaling in number and connected with every line entering the station, the auxiliary manipulating-boards provided with apparatus for sending out-

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going signals and for telephonic communication, and means, as indicated, whereby an operator at one board may ascertain whether any line is in use at any other board, substantially as described.

2. In a multiple-switch-board telephone-exchange system, the combination of a horizontal switch-board composed of alternate layers of conducting connecting-strips and non-conducting insulating-plates, the whole surmounted by line-plates, with annunciators for receiving incoming signals, means for sending outgoing call-signals, and other means, substantially as indicated, for connecting the central-station telephones with one or more lines, as specified, and for the purposes set forth.

3. The combination, with a horizontal multiple switch-board constructed as herein described, of a series of annunciators to give incoming signals—one for each line—and means for automatically resetting the said annunciators, whereby they are adapted to subserve the purpose of a disconnecting-signal.

4. The combination, in a multiple-switch-board system, of the divided line-plates, spring-contacts for normally connecting two of the segments of said line-plates, circuit-connections uniting the spring-contact of the line-plate at each board with the main part of the line-plate at the next, a limit-pin for each spring-contact, and a wire connecting all the limit-pins of the same line together, with the telephone, its cord and plug, and a battery in a normally-open earth-circuit, whereby each line may be tested before use, substantially as specified.

5. In combination with the connecting-strips of a horizontally-disposed switch-board of the character hereinbefore described, the said strips being arranged in pairs, a generator of electricity, keys for directing the current of said generator to the said strips, and a normally-closed loop-circuit including a spring-circuit changer and a disconnecting-indicator extending from one strip of the pair to the other, for the purposes set forth.

6. In a multiple-switch-board exchange system, the switch-boards consisting of interleaved conducting-strips, and insulating-plates surmounted by line-plates, combined with the flexible cord and the detachable connecting-plug, the latter being adapted, when inserted, to unite one segment of the line-plate with one of the connection-strips, and with means, substantially as described, whereby call-signals or telephone-signals may be transmitted to the line through the said cord and plug, for the purposes described.

7. The combination, substantially as hereinbefore described, with a series of telephone-line circuits, of switching devices for connecting any two of said circuits in pairs through a loop including a disconnecting-indicator, and means for introducing the central-station telephones into said loop, whereby the central office may supervise conversation passing between any two lines.

8. The combination, substantially as hereinbefore described, of a series of line-plates, each representing a telephonic main line, with connecting-strips, constituting the normally-open ends of a loop, including a disconnecting-indicator, devices for introducing telephones into the said loop, plug-connectors for uniting any two line-plates with any pair of the said connecting-strips, means, as indicated, for sending call-signals through the loop simultaneously to line through both line-plates, and other means whereby the said loop may be severed and call-signals sent to either line independently, for the purposes specified.

9. The combination, in a telephone-exchange system, with the operators' telephones, and an electrical generator, of the spring-jaws *f* and knob K, the branch wires 43, the switches *s* and *s'*, the ground-wire *g*, key *k*, and the conducting cord and plug, all arranged as described, whereby the same calling and conversing apparatus may be used for working upon a single grounded circuit, and also for operating two circuits when connected together, dispensing with the central-station ground, as described.

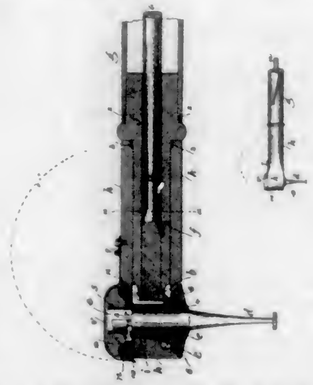
10. The combination, in a switch-board comprising alternating layers of connecting-strips and non-conducting plates, of the compound line-plate consisting of a number of quadrantal or segmental divisions perforated in the center, with a connecting-plug adapted to fit in the said perforation, and to rest mechanically upon all of the said segments or quadrants, and to make electrical contact with one of said strips, and means, substantially as indicated, for insulating the said plug from all of the said segments, except the one actually connected with the line-wire, for the purposes specified.

11. The combination, in an electric switch-board consisting of line-plates surmounting a structure of interleaved conducting-strips and insulating-plates, of the said conducting connecting-strips, with branch circuits leading to a key system, whereby any of the said strips may be connected with a telephone or with an electric generator, as described.

12. The combination, in a multiple-board telephone-exchange system, of two or more horizontal switch-boards of the character described, means, as indicated, for receiving incoming and for sending outgoing call-signals, other means for ascertaining at one switch-board whether the line is in use at another, and an automatic device whereby a line-annunciator located at any one of the switch-boards may be reset from any one of the other switch-boards.

13. The combination, in a telephone-exchange system, with two or more horizontal multiple switch-boards provided each with plug-sockets representing every line entering the exchange, of lines extending from each plug-socket on each board to the plug-socket of the same number on the next board, and contact-springs permanently connected with such lines, and normally maintaining the continuity of the main line through all the switch-boards, together with normally-discontinuous lines—one for each main line—provided with a limit screw or pin at each board immediately in the rear of each contact-spring, and adapted to limit the outward play of the same, and plug-connectors adapted, when inserted, to press aside the contact-spring, thus severing the main line from its normal termination through the switch-boards to earth, and simultaneously forcing the said contact-spring against the limit-pin of the normally-discontinuous line, connecting the same to earth, substantially as hereinbefore described, and for the purposes set forth.

299,040. ANGLE ATTACHMENT FOR DENTAL ENGINES. AUGUST WEBER, New York, N. Y., assignor of one-half to George E. Hodge, same place. Filed Jan. 28, 1884. (No model.)



Claim.—1. The combination, with the shaft *a*, the bevel-gears, and tool, of the tubular bearing *f* for the shaft *a*, the screw 3, and the stock A, screwed upon the tubular bearing, substantially as set forth.

2. The combination, with the tubular shaft *i*, the bevel-gears, and the tool, of a tubular split chuck within the shaft adapted to receive, clamp, and hold the tool, substantially as set forth.

3. The combination, with the shaft *a*, the bevel-gears, and the stock A, of a tubular shaft having a conical bearing at one end, a conical washer surrounding the other end, and a nut to secure the parts in place, substantially as set forth.

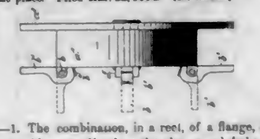
4. The combination, with the stock, shaft, and bevel-gears, of a tubular shaft having a conical end bearing, a chuck within such shaft for holding the tool, and a nut for closing the chuck and clamping the tool, substantially as set forth.

5. The combination, with the stock, shaft, and bevel-gears, of a tubular shaft having an end bearing, a chuck within such shaft, a washer forming a bearing against the stock, and a nut to act upon the chuck and hold the tool, substantially as specified.

6. The tubular shaft having an end bearing, in combination with the bevel-gearing, the washer, the nut, and a pin acting to insure the rotation together of the chuck, the tubular shaft, the washer, and the tool, substantially as set forth.

7. The combination, with the angle attachment for dental engines, containing a clamping chuck and nut, of a movable cap covering the nut, substantially as set forth.

299,041. REEL FOR NAILING AND OTHER MACHINES. HORACE WEEKS, Boston, Mass., assignor to the Corrugated Wire Fastening Company, same place. Filed Mar. 22, 1884. (No model.)



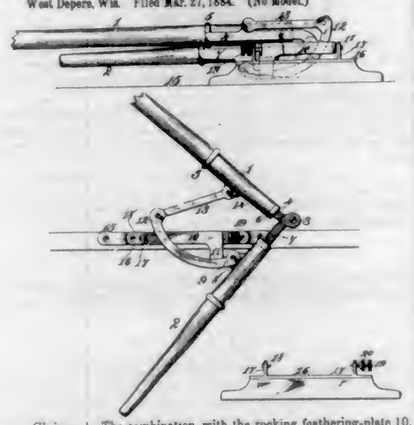
Claim.—1. The combination, in a reel, of a flange, a^3, and barrel a^4, and the movable arms b', adapted to be moved independently into and out of operative position, all substantially as and for the purposes described.

2. The combination of the barrel a^4 and flange a^3 of a reel with the movable arms b' and their independent automatic locking devices for locking the same in position, all substantially as and for the purposes described.

3. The combination, in a reel, of the flange a^4, drum or barrel a^4, with the arms b', hinged as described, and adapted to be separately and independently automatically locked at the end of their outward movement, all substantially as and for the purposes set forth.

4. In a reel, the combination of the barrel a^4 with the arms b', hinged as described, and the springs b^2, all substantially as and for the purposes described.

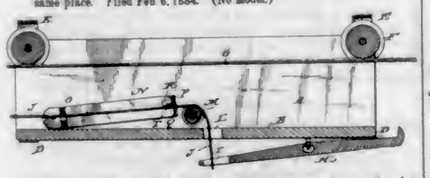
299,042. BOW-FACING ROWING MECHANISM. JOHN P. WILLARD, West Depere, Wis. Filed Mar. 27, 1884. (No model.)



Claim.—1. The combination, with the rocking feathering-plate 10, of the arm 9, rigidly secured to said plate, and projecting forwardly across the same, the toggle or link 13, pivoted to the outer end of said arm, and the oar 1 and lever 2, pivoted together, and jointed, respectively, to the toggle or link and the inner end portion of the arm, substantially as described.

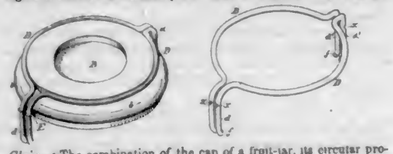
2. In a bow-facing rowing mechanism, the combination, with the oar 1, of the lever 2, connected together by the joint 3, the feathering-plate 10, to which the lever 2 is pivoted, and the toggle or link 13, connecting the oar with the gunwale, substantially as described.

299,043. WATER ELEVATOR AND CARRIER. JULIUS MARIAN WILLIAMS, Dutch Mills, Ark., assignor of one-half to James T. Williams, same place. Filed Feb 6, 1884. (No model.)



Claim.—The combination of the carriage having self-operating dog H, the bucket and bucket-rope having knot or enlargement T, the hinged latch consisting of parallel arms N N, cross-head P, having notch Q, and projecting arm R, and eye-piece O, forming a guide for the bucket-rope, as and for the purpose shown and specified.

299,044. FRUIT-JAR COVER. ALLEN F. WILSON, Clayton, N. J., assignor to John M. Moore, same place. Filed Feb. 18, 1884. (No model.)



Claim.—The combination of the cap of a fruit-jar, its circular projection A, and recess *c*, with a fastener consisting of the ring D, adapted to the said projection and having fingers *d d'*, and the retaining-wire E, attached to the fingers and fitting in the said recess of the cap, all substantially as set forth.

299,045. METALLIC HEEL-PLATE. CHARLES B. WILSON, Bridgeport, Conn. Filed Mar. 29, 1884. (No model.)



Claim.—A plate for the heels of shoes cut away at the center, and provided at its forward portion with a spur projecting upwardly and inwardly, and at its rear portion with a single screw-hole, substantially as set forth.

299,046. MARKING AND SHADING PEN. ELBERT E. ALDERMAN, Portville, N. Y. Filed Feb. 5, 1884. (No model.)

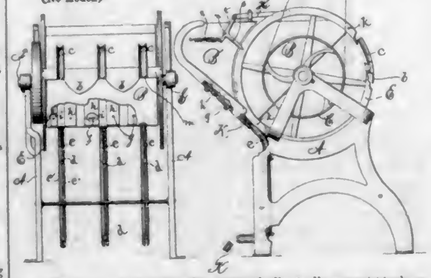


Claim.—1. In a fountain rubber marking or shading pen, the rubber piece or working-end portion B, of wedge shape at its lower end, as described, and provided with exterior feeding-grooves, *b*, down its sides, essentially as described.

2. In a fountain rubber marking or shading pen, the combination of the socket A, constructed to form a supply chamber or reservoir, with the rubber piece or working-end portion B of the pen, provided with externally-arranged feeding-grooves *b*, substantially as specified.

3. In a fountain rubber marking or shading pen, the combination, with the socket A, constructed to form a supply chamber or reservoir, of the rubber piece or working-end portion B of the pen, constructed to leave channels or spaces between it and the portion of the socket within which it fits, essentially as and for the purpose herein set forth.

299,047. SPOOL-FEEDER. EDWIN ALLEN, Norwich, Conn., assignor to the Allen Spool and Printing Company, same place. Filed Oct. 5, 1883. (No model.)



Claim.—1. As a means for automatically feeding spool-blanks or similar articles in which the length is equal to or greater than the diameter, and in combination with a fixed two-part receiver, B B', supported substantially as shown and described, one or more conducting-

pipes, *e*, pieces *k*, having means for lateral adjustment to provide gutters *i*, and a system of agitators which pass upward through the mass of blanks and downward on the outside of said receiver, as and for the purpose specified.

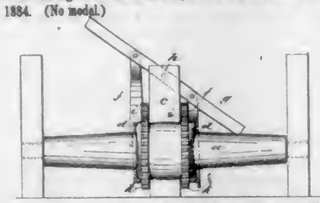
2. In combination with the two-part receiver, adjustable gutter-pieces *k*, and rotating agitators, one or more conducting-troughs, *e*, so made and secured that they may be adjusted or spread apart for the purpose of conducting blanks of different diameters, as hereinbefore described.

3. In combination with the two-part receiver, adjustable gutter-pieces, one or more adjustable conducting-troughs, and the rotating agitator-arms, one or more semicircular pieces, *c*, so located in line with said gutters and conducting-troughs that they tend to move said blanks and lay them lengthwise in the gutters in proper position to enter the troughs *e*, as described.

4. The combination of the supporting-frame, two-part receiver, gutters, conducting-troughs, the revolving rim E, carrying lugs *b* and semicircular pieces *c*, and the spurs *m*, located at any practical point in pieces *c*, for the purpose of turning such blanks as are nearly in line with the gutters, as described.

5. In combination with the two-part receiver and rotating rim E, carrying semicircular pieces *c*, the kicking or dislodging device herein described, consisting of a rocker-arm pivoted in B', having an arm, *o*, to engage pins *k*, an upward extension, *l*, having pivoted in its free end the reciprocating piece H, and a spring, *s*, said spring being secured to the rocker-arm below its pivotal point, the other end being secured to B', as and for the purpose specified.

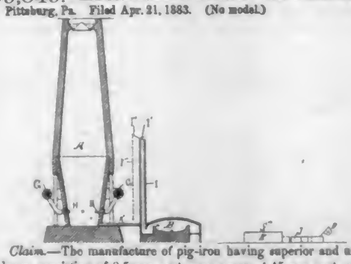
299,048. SHIP-WINDLASS. AMBROSE ARIRO, Pubnico, Nova Scotia, Canada, assignor to himself and Byron Hines, same place. Filed Feb. 16, 1884. (No model.)



Claim.—1. The combination of the centrally-pivoted lever *g*, and pawls *f*, pivoted thereto at their upper ends, and formed with hooks and guide-flange at their lower ends, with the ratchet-wheels and mechanism for connecting them with the drum of the windlass, substantially as set forth.

2. The hand-brake lever *g*, pivoted at the middle to the support *c*, located at the side of the drum *a* and midway between the ends, and having a hook-pawl, *f*, each side of its pivot, said pawls being forked to form guide-flanges *f'*, in combination with a ratchet-wheel, *d*, for each pawl, geared with the drum *a* of the windlass through the wheels *e*, intermediate wheel, *i*, and wheels *k*, substantially as described.

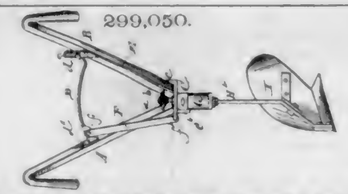
299,049. MANUFACTURE OF PIG-IRON. JOHN FRANCIS BENNETT, Pittsburg, Pa. Filed Apr. 21, 1883. (No model.)



Claim.—The manufacture of pig-iron having superior and uniform hardness, consisting of 8.5 per cent. manganese, 4.45 per cent. carbon, 05 per cent. silicon, with or without phosphorus, sulphur, aluminum, calcium, and other metals, and the remaining part of the percentage iron, by the process herein described, which consists in smelting iron and manganic ores, in the proportions herein indicated, in a blast-furnace, desiliconizing in a reverberatory furnace, and then casting onto a pig-bed or casting-molds, according to the form desired.

299,050. VINEYARD-PLOW. BYRON C. BRADLEY, Chicago, Ill., assignor to Furst & Bradley Manufacturing Company, same place. Filed Jan. 14, 1884. (No model.)

299,050.

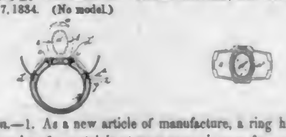


Claim.—1. The hinged handle A, in combination with the spring brace or rod D, for maintaining the handle in its extended position and allowing it to be folded, substantially as and for the purpose specified.

2. The hinged handle A and spring brace or rod D, in combination with the bar E and pivoted bar F, substantially as and for the purpose specified.

3. The hinged handle A, stationary handle B, and spring brace or rod D, in combination with the stationary bar E, pivoted bar F, and plow-beam G, substantially as and for the purpose specified.

299,051. FINGER-RING. RUDOLF BRETTNER, New York, N.Y. Filed Mar. 7, 1884. (No model.)

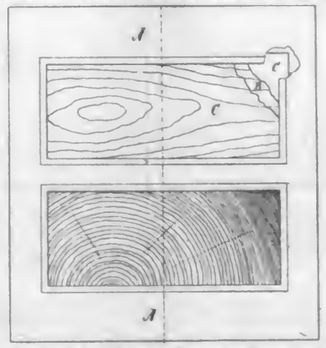


Claim.—1. As a new article of manufacture, a ring having apertures or openings for containing two or more pictures, &c., said apertures being covered by wings or coverings, substantially as shown, and for the purpose specified.

2. As a new article of manufacture, a ring having apertures or openings, with wings or coverings, and springs in combination with and operating said wings, substantially as described, and for the purpose specified.

3. As a new article of manufacture, a ring having apertures *b*, *b'*, and *b²*, wings *a a' a²*, operated or acted upon by springs *g g'*, and the studs *j* and *j'*, with holes *i i' i²* in said covers, substantially as described, and for the purpose specified.

299,052. WOOD-EXHIBITING CARD. HENRY BROOKS, West Medford, and WILLIAM E. REED, Boston, Mass. Filed Oct. 12, 1883. (No model.)

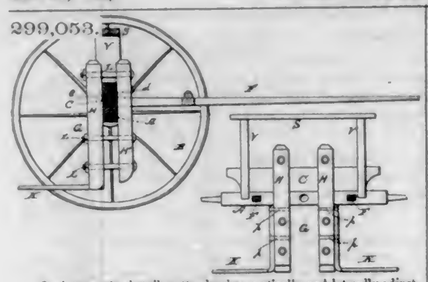


Claim.—A wood-exhibiting card having an opening therethrough, in which is held a veneer of wood covered on both sides by a glazed covering, whereby the wood is protected, and the grain of the wood can be examined when held between the light and the eye, substantially as set forth.

299,053. STALK-CUTTER. AZARIAH R. BROWN, Gainesville, Tex., assignor to O. T. Cottle, D. T. Jeffries, and M. N. Savior, all of same place. Filed Nov. 23, 1882. Renewed Dec. 4, 1883. (No model.)

Claim.—1. The combination, with an upright frame supported on two wheels, of the vertically and laterally adjustable standards G, each consisting of a front and rear upright beam and connecting-bolts, and the horizontal rearwardly and outwardly directed foot-knives K, having upright arms secured to said standards, substantially as specified.

299,053.



2. A two-wheel stalk-cutter having vertically and laterally adjustable standards G, and the horizontal oblique knives K, extending outwardly and rearwardly, and having vertical arms *m* secured to said standards, substantially as specified.

299,054. METHOD OF ENAMELING METAL FOR JEWELRY AND OTHER FANCY ARTICLES. NICOLAS A. BUELL, New York, N.Y. Filed Dec. 22, 1883. (Specimens.)



Claim.—The method herein described of enameling metal, which consists in covering a metallic foundation-plate with a layer of broken enamel of uniform thickness and then exposing the so-covered plate to white heat, whereby the enamel liquefies and forms a uniform coating on the metal plate, substantially as set forth.

299,055. PROCESS OF FASTENING DIAMONDS IN TOOLS. THOS. W. COLLINS, New York, N.Y., assignor of one-half to Alfred H. Smith & Co., same place. Filed June 19, 1883. (No model.)

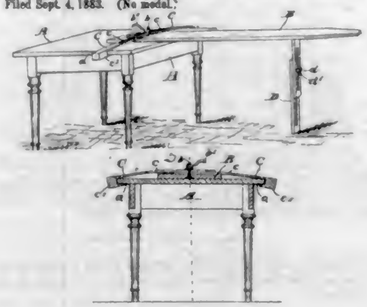
Brief.—Renders gems conductive by reduced gold or silver.



Claim.—1. The method of fastening diamonds or analagous substances in tools, consisting in providing the diamonds with a metal coating, placing the coated diamonds in notches in the tool, and then uniting the coated diamonds and the tool by means of electric deposits of metal, substantially as herein shown and described.

2. The method of fastening diamonds or analogous stones in tools, consisting in providing the diamond with a metal covering by means of metal deposited by electricity, depositing metal around the notches in the tool by electricity, then placing the coated diamonds in said notches, and then depositing metal in the notches and on the diamond and the tool, and thus uniting the covered diamonds and the tool, substantially as set forth and described.

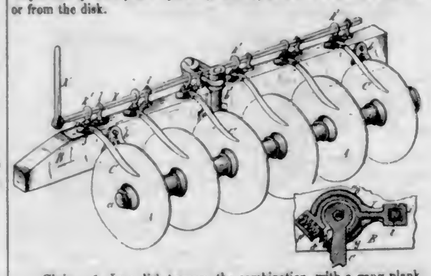
299,056. IRONING-TABLE. GEORGE W. COREN, Jamestown, Ind. Filed Sept. 4, 1883. (No model.)



Claim.—The combination, with the table A, of the ironing-board B, and clamps C and clamp-bolt *b*, for securing the same in position, said clamps being hooked to engage with the edges of the table at their outer ends, and extended past and overlapping each other at their inner ends, and said bolt extending up through said board and said clamps, and provided with a nut, *b'*, substantially as described, and for the purposes specified.

299,057. DISK-HARROW. GEORGE G. CROWLEY, Little Falls, N.Y. Filed Jan. 14, 1884. (No model.)

Brief.—Spring-pressed scrapers independently pivoted to gang-plank and connected by pivoted arms or carriers to a rock-shaft, whereby they are adapted to yield separately and may be moved in unison toward or from the disk.



Claim.—1. In a disk-harrow, the combination, with a gang plank or frame, of scrapers pivoted thereto, a rock-shaft mounted on said plank or frame, and pivoted arms or carriers, whereby the motion of the rock-shaft is transmitted to the scrapers, substantially as set forth.

2. In a disk-harrow, the combination, with a gang plank or frame, of scrapers pivoted thereto, a rock-shaft mounted on said plank or frame, pivoted arms or carriers connected with said rock-shaft, and springs interposed between said arms or carriers and the scrapers, substantially as set forth.

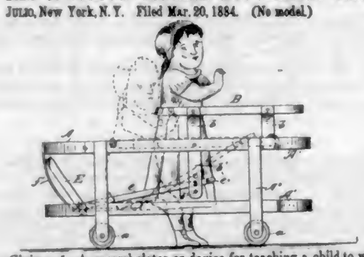
3. In a disk-harrow, the combination, with a gang-plank, B, of a scraper, C, pivot *d*, housing D, spring *f*, and rock-shaft *k*, substantially as set forth.

4. In a disk-harrow, the combination, with a gang-plank, B, of a scraper, C, pivot *d*, housing D, provided with an arm, I, rock-shaft *k*, and arm *l*, substantially as set forth.

5. In a disk-harrow, the combination, with the scraper C, of the housing D, provided with a shoulder, *g*, and socket F, a spring, *f*, seated in said socket, and a rock-shaft, *k*, substantially as set forth.

6. In a disk-harrow, the combination, with the scraper C, of the housings D, provided with arms I, pivots *d*, provided with eyes *k'*, shaft *k*, supported in said eyes, and arms *l*, secured to the shaft *k*, substantially as set forth.

299,058. COMBINED PERAMBULATOR FOR TEACHING CHILDREN TO WALK AND AUTOMATIC SEAT THEREFOR. ANGLO DE JULIO, New York, N.Y. Filed Mar. 20, 1884. (No model.)



Claim.—1. A perambulator or device for teaching a child to walk, provided with a yielding table for supporting the child, secured upon pivoted legs held in an upright position by springs, which allow the said table to be depressed when the child throws his weight upon it, substantially as set forth.

2. In a perambulator or device for teaching a child to walk, the combination, with the yielding support for the child, of a movable seat connected with the support, which will be thrust automatically under the child as the support is depressed and automatically withdrawn when the support is elevated.

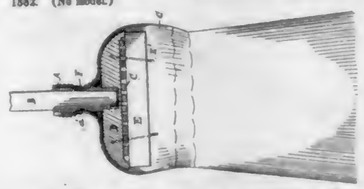
3. The combination of the frame A, support or table B, springs D, movable seat E, and connections thereto, arranged and combined to throw the seat under the child when it sits down and withdraw it again when the child rises automatically by the depression and elevation of the

table B, substantially as set forth.

4. The combination, with the frame A, support or table B, arms *b*, and springs D, the rear arms, *b*, being provided with downward extensions *b'*, of the connecting-rods *e*, pivoted to the extensions *b'*, and the seat E, swiveled on the connecting-rods *e*, substantially as set forth.

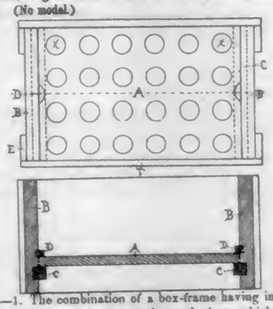
5. The combination of the frame A, provided with the seat-supports and guides *f f*, set in a horizontal position near the base of the frame, and the curved guide *f''*, suspended from the upper portion of the frame, with the pivoted movable seat E, yielding table or support B, and connections between said table or support and the seat, as set forth.

299,059. BROOM. CHARLES DOUGLAS, Detroit, Mich. Filed Dec. 27, 1882. (No model.)



Claim.—The broom consisting of the combination, with the head and clamp constructed as shown, and secured together by means of wires or fastenings, of the handle-socket having an interior tapering orifice and an exterior annular groove, a removable handle adapted to be received in said socket, and the broom-straw, a portion of which is held between the head and clamp, and a portion thereof brought around the head and fastened about said socket by a suitable wrapping of wire or twine, substantially as described.

299,060. BOX FOR CARRYING BOTTLES. THOMAS DRUMMOND, Chicago, Ill., assignor to Julius C. Wintermeyer, same place. Filed Dec. 24, 1883. (No model.)



Claim.—1. The combination of a box-frame having inner grooves on each end, a perforated bottle-carrier, and cleats which rest in the grooves and sustain the carrier.

2. The combination of a box-frame having inner grooves on each end, a perforated bottle-carrier, cleats which rest in the grooves and support the carrier, and fastenings which are secured to the frame above the carrier and serve to hold the same in position.

299,061. HORSE-POWER. JOHN ELLIS, Pottstown, Pa., assignor to George B. Ellis, same place. Filed Mar. 24, 1884. (No model.)

Claim.—1. The combination of bearing-wheels E' on the frame of the horse-power with endless chains, the links of which have flanges *a* projecting beyond the ends of the lags, so as to form a supporting-track for the chain on its return, as set forth.

2. The links having inner flanges *a* with guide-ribs *a'*, as set forth.

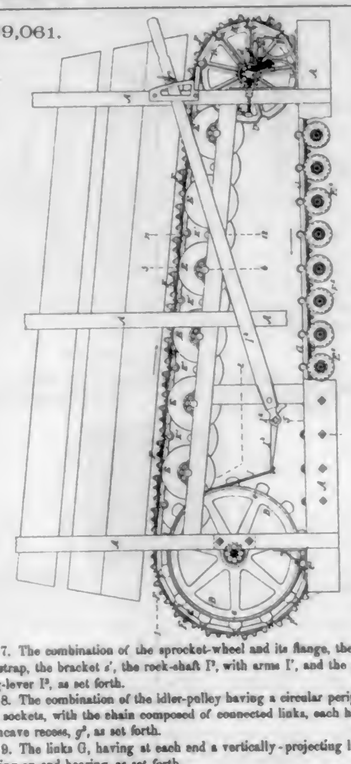
3. The combination of the links having inner flanges with ribs *a'*, the guide-wheels E', carried by shafts *a*², and means for confining said shafts laterally to the frame of the power, as set forth.

4. The combination of the shaft or spindle *b'* and the centrally-grooved anti-friction rollers *b*² with a wheel-hub open at both ends, internally chilled and having a central rib, *b*, as set forth.

5. The combination of the sprocket-wheel, idler-pulley, and chains of a horse-power, with the frame having brackets H with guides *d'*, the boxes *d*, carrying the shaft of the idler-pulley, and set-screws *d*² for adjusting said boxes, as set forth.

6. The combination of a friction brake-strap and operating-lever therefor with a sprocket-wheel having a flange for the action of said brake-strap, as set forth.

299,061.



7. The combination of the sprocket-wheel and its flange, the friction-strap, the bracket *c'*, the rock-shaft I², with arms I', and the operating-lever I², as set forth.

8. The combination of the idler-pulley having a circular periphery with sockets, with the chain composed of connected links, each having a concave recess, *g*², as set forth.

9. The links G, having at each end a vertically-projecting lug, A, forming an end bearing, as set forth.

10. The links G, each having at one end a hook, *g'*, and at the opposite end lugs *g*², carrying a hollow pin, *f*, as set forth.

11. A metallic lag for the tread of a horse-power, said lag comprising longitudinal ribs and transverse connecting-bars, as set forth.

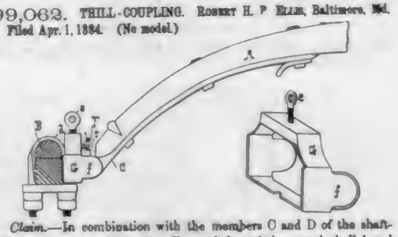
12. A metallic lag, F, comprising hollow longitudinal ribs *m* and transverse braces *n'*, extending between and across said ribs, as set forth.

13. A metallic lag, F, comprising longitudinal ribs *m*, tapered from the center toward each end, and having a top flange, *m'*, in combination with connecting plates and braces for said ribs, as set forth.

14. The combination of a link, G, having a tubular projection, *i*, with a metallic lag, F, having end plates with openings *i*², as set forth.

15. The combination of the lags F with the links G, each having inclined projections *n*², forming the bearings for the lag, as set forth.

299,062. THILL-COUPLING. ROBERT H. P. ELLIS, Baltimore, Md. Filed Apr. 1, 1884. (No model.)



Claim.—In combination with the members C and D of the shaft-coupling, the removable wedge F, consisting of the metal shell *b* and rubber block *c*, the pin E, and the clamp G, having the screw *e* and side plates, *f*, substantially as and for the purpose specified.

299,063. WIRE BALE-TIE. LEMUEL E. EVANS, East Orange, N. J., assignor to Charles G. Patterson, New York, N. Y. Filed Apr. 16, 1884. (No model.)



Claim.—1. A wire bale-tie having a loop on one end of the band and the hook upon the other end of the band, said hook being braced by having its downward and forward projecting end bent backward upon itself, and secured by passing the loop on the end thereof over the head of the hook, substantially as described.

2. A wire bale-tie, substantially as described, consisting of a hook formed on one end of the band, braced by bending the downward and forward projecting portion of said hook back upon itself and over the head of the hook, and a loop on the other end of the band, adapted to be passed over said braced hook to secure the tie.

3. In a bale-tie, a loop or eye at one end of the band and a hook at the opposite end, adapted to receive said loop, said hook being provided with downward-projecting braces adapted to rest upon the upper and opposite sides of the said loop when the band is under strain, substantially as described.

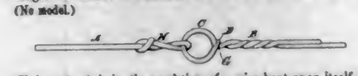
4. In a bale-tie, a loop or eye at one end of the band and a hook at the opposite end, adapted to receive said loop, said hook being provided with three braces, two resting upon the upper and opposite sides of the loop and the third adapted to be passed over the head of the hook, said hook forming a bearing, substantially as described.

5. A braced hook, D, on one end of the band, formed by bending the doubled wire, as shown, in combination with the loop C on the other end of the band, and adapted to serve together, as and for the purpose set forth.

6. The combination, with the bale-tie hook D, of the downwardly-projecting braces G' G' and backwardly-bent brace H, made continuous therewith, substantially as described.

7. In a bale-tie, the combination of the wire A, having a loop at its extremity, and the wire B, having at its end a loop longer than the loop C, said loop last mentioned being bent to form the hook D, bights E and F, and brace H, substantially as described.

299,064. WIRE BALE-TIE. LEMUEL E. EVANS, East Orange, N. J., assignor to Charles G. Patterson, New York, N. Y. Filed Apr. 16, 1884. (No model.)



Claim.—1. A bale-tie consisting of a wire bent upon itself at one end to form a loop within which the doubled wire is located to form a circular eye, and said double wire bent backward to form a shoulder, upon which the eye of the loop bears when under strain, said eye adapted to receive the free or straight end of the band and be knotted or twisted to secure the tie, substantially as described.

2. A wire bale-tie made by bending one end of the band upon itself to form a loop, and passing the ends of the wire through the loop to form a circular eye, then bending the wires and twisting, for the purpose of forming a bearing for the eye in the same plane as that in which the strain is applied, said eye being adapted to connect with the free end of the band, substantially as described.

3. In a wire bale-tie consisting of a loop on one end of the band, adapted to receive the straight end of the band, said eye formed by bending the wire upon itself to form a loop by inserting the ends of the wire within the eye of the loop, and bending to form a shoulder, upon which the loop rests, and securing the end of the wires beyond the loop by twisting them upon themselves, substantially as described.

4. A bale-tie fastener consisting of a wire band which is doubled at one end and bent to form a loop, the said loop being bent in such a manner as to include the strands of wire within it, said strands being bent backward and twisted to form a socket or shoulder, in which and on which the eye of the loop rests and bears, said eye so formed adapted to receive and connect with the free end of the band, substantially as and for the purpose set forth.

5. In a wire bale-tie, an eye formed of two strands of wire at one end of the band, said strands forming the loop, being secured by inserting them within the eye of the loop, and bending to form a socket and shoulder, in which the eye of the loop rests and upon which it bears, and twisting the ends of the strands together, the said eye receiving and connecting with the free end of the band.

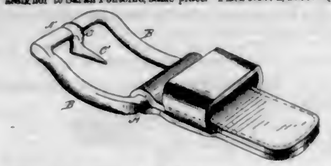
6. A wire bale-tie of one piece of wire, having an eye on one end formed by doubling the wire upon itself and then bending the double portion to form a locked eye, said eye being adapted to connect with the free end of the band to secure the tie, substantially as described.

7. A bale-tie consisting of a wire bent upon itself to form a loop, through which the ends of the wire are passed to form a circular eye, then bent backward to form a shoulder, on which the loop bears, and finally twisted, said eye adapted to receive the free end of the wire and be secured, substantially as described.

8. In a bale-tie, the combination of the free or straight end of the wire A with the end of the wire B, having the eye C at its extremity, said eye C being adapted to receive the free end A, which is twisted to secure the tie, substantially as described.

9. A wire bale-tie bent, locked, and twisted at one end to form the eye C, said eye being adapted to receive the straight end of the band to secure the tie, substantially as described.

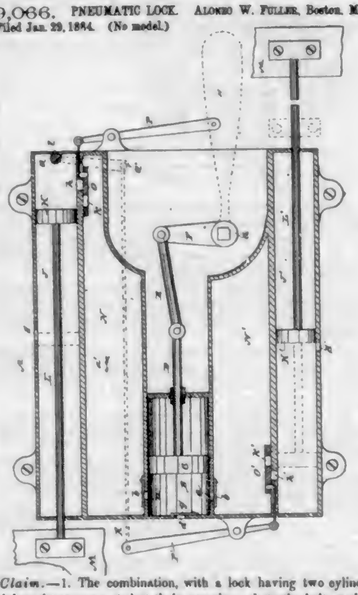
299,065. HARNESS-BUCKLE. HERMAN A. FONTEINE, Auburn, N. Y., assignor to Sarah Fonteine, same place. Filed Nov. 1, 1883. (No model.)



Claim.—1. A trace-buckle composed of the side and end bars, and having a rigid tongue depending from one of its end bars, made in angle form, whereby the draft portion of the tongue shall be at right angles to the end bar, with its end portion at right angles to the draft portion, substantially as and for the purpose set forth.

2. A trace-buckle made in rectangular form, and having the curved side bars, in combination with the rigid tongue depending from the end bar, made in angle form, and having the draft portion at right angles to the end bar and its end portion at right angles to the draft portion, substantially as and for the purpose described.

299,066. PNEUMATIC LOCK. ALONZO W. FULLER, Boston, Mass. Filed Jan. 29, 1884. (No model.)



Claim.—1. The combination, with a lock having two cylinders containing pistons connected at their opposite ends to the bolt mechanism of the lock, of a third cylinder on said lock containing an air-compressing piston and connected with the other two cylinders by suitable valve mechanism, to admit air alternately on opposite sides of said pistons, substantially as herein shown and described.

2. The combination, with the casing A, having the cylinders B and J J', of the pistons C K K', the bolt-frame M, connected with the pistons K K', and of means for working the piston C in the cylinder B, substantially as herein shown and described.

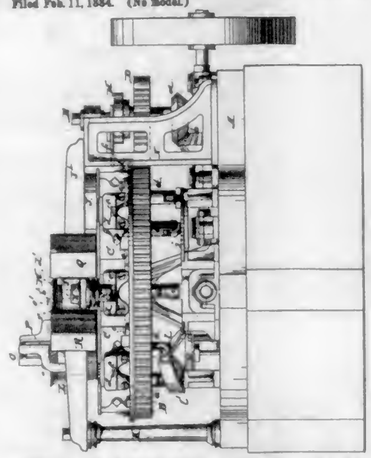
3. The combination, with a casing, A, having cylinders B and J J', and the chambers N N', of the valves O O', connecting said chambers with cylinders J J', and located in rear of the pistons C K K', a bolt-frame connected with the pistons K K', at their opposite ends, and means for operating the piston C in the cylinder B, substantially as herein shown and described.

4. The combination, with the casing A, having the cylinders B J J' and the compartments N N', of the pistons C K K', the valves O O', connecting chambers N N' with cylinders J J', as shown, the levers P P', outside of the casing and connected to said valves, a bolt-frame connected

with the pistons K K', as shown, and of means for operating the piston C in the cylinder B, substantially as herein shown and described.

5. The combination, with a lock-casing having two cylinders, each containing a piston connected to the bolt mechanism of a lock, which pistons work in opposite directions, of an air-compressor, openings for admitting compressed air into the cylinders, and connected mechanism for permitting the compressed air to escape from one cylinder at the same time that the air is being admitted into the other cylinder, substantially as herein shown and described.

299,067. BRICK-MACHINE. WILLIAM L. GREGG, Philadelphia, Pa. Filed Feb. 11, 1884. (No model.)



Claim.—1. In a brick-machine, a pressure-plate, J, provided with holes or vents for the purpose of permitting the escape of air and surplus clay from the mold when pressure is applied to its contents, in combination with an intermittently-rotating mold-table and an agitated hopper, substantially as and for the purpose specified.

2. In a brick-machine, a movable receptacle, Q, automatically operated for the purpose of distributing coloring material or other material over the upper surface or edge of a brick while being made, substantially as specified.

3. In a brick-machine, a movable box, R, automatically operated for the purpose of pushing the brick from the table, and at the same time applying coloring material or other material to the surface of the piston or follower, substantially as specified.

4. The combination of the shaft T, mutilated gear-wheel *t*, gear-wheel *u*, shaft W, and arm *v*, for the purpose of operating the stamp and receptacles Q R, substantially as specified.

5. The combination of the shaft T, mutilated gear-wheel *t*, gear-wheel *u*, shaft W, arms *v* and *c*, rod *r*, lever P, arm *p*, and stamp N, substantially as and for the purpose specified.

6. The combination of the shaft T, mutilated gear-wheel *t*, gear-wheel *u*, shaft W, arms *v* and *b'*, and receptacle Q, substantially as and for the purpose specified.

7. The combination of the shaft T, mutilated gear-wheel *t*, gear-wheel *u*, shaft W, arms *v d' d'*, and receptacle R, substantially as and for the purpose specified.

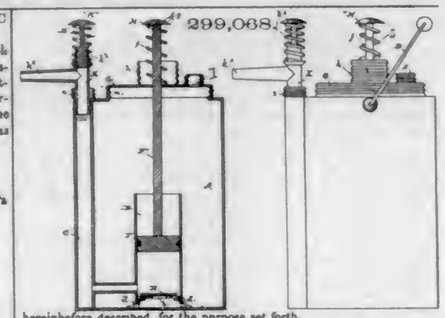
299,068. OIL-CAN. JOHN A. GRISWOLD, San Francisco, Cal. Filed Oct. 10, 1883. (No model.)

Claim.—1. The combination, with the can or holder A, of the fixed cylinder with valved inlet *b*, piston F, and rod F', fixed outlet tube or passage C, terminating in the socket or coupling *c*, head or handle H, to operate the piston-rod from the outside of the can, and the cut-off spout K, with valve and valve-spring, substantially as hereinbefore described.

2. The combination, with the can or holder A, having the socket or coupling *c*, for connection of a nozzle, and the piston-rod F', arranged to be returned into the can through the aperture in the can-top, of the screw-threaded rims around the apertures *c h*, and screw-caps to fit thereon, substantially as hereinbefore described, for the purpose set forth.

3. The combination, with the can or holder A, of the fixed cylinder having valved inlet *b* and an outlet, the piston F, and piston-rod F', working through the top of the can, the fixed outlet tube or passage C, the screw-threaded rims *c h*, and caps or nozzles therefor, substantially as

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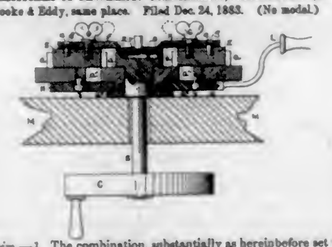


hereinbefore described, for the purpose set forth.

4. The combination, with the can or holder A, having the fixed outlet tube or passage C, terminating in the socket or coupling *c*, of the cut-off faucet K, with valve k^2, spring L, and spout *k'*, adapted to receive attachment of a nozzle, substantially as described.

5. The can or holder A, having socket or couplings *c* on the outside, the piston-rod aperture *h* and surrounding rim, fixed cylinder B, fixed outlet-passage C, a piston-rod, F', of suitable length to be returned into the holder through its aperture, the caps or covers to close said parts *c h*, and the removable head or top, all in combination, substantially as hereinbefore described.

299,069. MACHINE FOR ATTACHING THE BACKS AND FRONTS OF ARTICLES OF JEWELRY. JOHN HAGERTY, Providence, R. I., assignor to Cooke & Eddy, same place. Filed Dec. 24, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a work-holder adapted to be rotated, one or more bending-tools arranged, as described, to be slid over upon the work, and thereby to turn down the rim thereof, suitable guides for determining the path of movement of said bending tool or tools, and suitable means, as described, for forcing said tool or tools over the work and for retracting the same.

2. The combination, substantially as hereinbefore set forth, of a work-holder adapted to be rotated, oppositely-located bending-tools arranged, as described, to be slid over upon the work, and thereby to turn down the rim thereof, and to hold down said work, suitable guides, as described, for determining the path of movement of said bending-tools, and suitable means, as described, for forcing said tools toward each other over the work and for retracting the same.

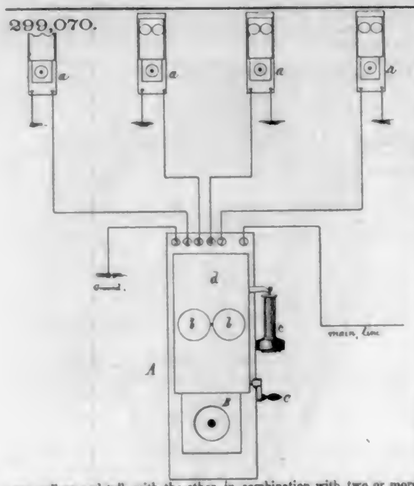
3. The combination of a bed, A, a work-holding spindle, B, mounted to revolve on said bed, bending-tools F F, blocks E E, having studs K K, and a pivoted plate, H, having cams A, and provided with a handle, substantially as described and shown.

299,070. TELEPHONE-EXCHANGE SYSTEM. F. REDMOND HERRON, New York, N. Y. Filed Jan. 29, 1884. (No model.)

Claim.—1. A telephone-exchange system consisting of the following elements: a number of subscribers' telephone-circuits electrically connected with the central office of the system, one of said telephone-circuits being provided with a telephone and calling apparatus for communicating with the central office, which telephone is centrally located, so as to form a common telephone for the general use of a number of subscribers whose offices are near, electrical signaling or calling apparatus arranged at each of the common subscribers' offices, and electrical connections and means for operating each common subscriber's calling apparatus from the central office, whereby the central operator may call up any desired one of said subscribers in his office.

2. The herein-described common-telephone system, consisting of two main offices electrically connected by a telephone-circuit, and provided with telephone and calling apparatus, whereby each main office

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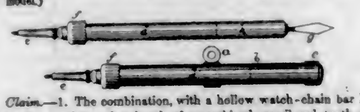


may call up and talk with the other, in combination with two or more branch or local offices situated near one of the said main offices, and provided with electric call-bells or signal-receiving apparatus, circuits connecting each of these local electric call-bells or signal-receiving apparatus with the said main office, and mechanism at the latter office whereby an operator at the distant main office may cause an electric current or impulse to be transmitted over any of the branch circuits, so as to operate the calling apparatus of any desired local office at pleasure, substantially as described.

3. The herein-described common-telephone system, consisting of two main offices electrically connected by a telephone-circuit, and provided with telephone and calling apparatus, whereby each main office may call up and talk with the other, in combination with two or more branch or local offices situated near one of the said main offices, and provided with independent electric call-bells or signal-receiving apparatus, a circuit connecting each local call-bell or signal-receiving apparatus with the said main office, and electro-magnetic switching mechanism at the latter office, constructed to be operated by electric currents sent over the main circuit from the distant main office, and to connect the said main circuit with any of said local circuits, respectively, as desired, substantially as described.

4. The combination, with the electro-magnet J, lever H, and step-by-step contrivance E, constructed to be actuated by the said electro-magnet, and set as desired by a predetermined number of electrical impulses, of the lever or hook R, upon which the telephone is hung, said lever being mechanically connected with the said step-by-step contrivance, so as automatically to restore said contrivance to normal condition when the telephone is removed from its hook, substantially as described.

299,071. WATCH-CHAIN BAR. JOHN HOAGLAND, Providence, R. I., assignor to Pearce & Hoagland, same place. Filed Nov. 19, 1883. (No model.)



Claim.—1. The combination, with a hollow watch-chain bar having one open and one closed end, of a combined pencil and tooth-pick case composed of two parts arranged to turn upon each other, and adapted for insertion into and removal from the said bar, as described.

2. The combination, with a hollow watch-chain bar having one closed and one open end, of a pencil and tooth-pick case formed in two sections, one of which carries a turning cap, and adapted to be inserted removably within the said bar, the tooth-pick being operated by turning the sections upon each other, as described.

3. The combination, with the tubular bar *b*, having one of its ends closed by the cap *c*, of the case *d h*, formed in two sections, and arranged to fit tightly within the bar and provided with the cap *f*, and containing a pencil, *e*, and tooth-pick *g*, as described.

299,072. FENCE-ROD. WM. G. HOWELL, Philadelphia, Pa., assignor of one-half to Bernard C. Leath, same place. Filed Feb. 4, 1884. (Model.)

Claim.—1. As a new manufacture, the within-described fence-rod,

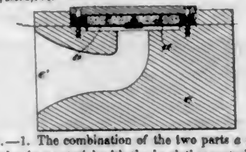
299,072.



the same consisting of a rolled strip of iron or steel having at intervals flattened roll-finished sharp-edged fin-like projections *a'*, forming integral parts of the rod, and extending from the middle portion of the same, as set forth.

2. The within-described twisted fence-rod, the same consisting of a rolled and twisted strip of iron or steel having at intervals flattened, roll-finished, sharp-edged, and fin-like projections extending from the middle portion of the rod, and forming integral parts of the same, as described.

299,073. TELEPHONIC TRANSMITTER. JOSÉ DOTTIN HENRARDS, London, England, assignor to the American Bell Telephone Company, Boston, Mass. Filed Jan. 4, 1883. (No model.) Patented in England June 24, 1882, No. 3,008.



Claim.—1. The combination of the two parts *a a* of the divided disk of a conducting material with the insulating material *b*, uniting the said halves or parts and the bridge of carbon or other suitable material, substantially as described.

2. The combination of the parts *a a* of the divided metallic disk forming the diaphragm and the electrodes, the carbon bridge between the parts *a a*, and means for holding the carbon bridge in contact therewith, substantially as described.

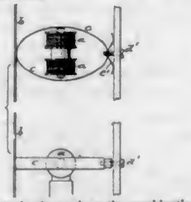
3. In an electric transmitting-telephone, a compound diaphragm consisting of two segments of conducting material mechanically united by a non-conducting partition, but electrically insulated one from another, as described.

4. In an electrical transmitting-telephone, the combination of a diaphragm or vibrative disk, the said disk consisting of two segments of conducting material electrically separated but mechanically united by a non-conducting partition, a mass of carbon or other conducting material connected with both segments of the said disk and adapted to vary the resistance between them, and a suitable tube or mouth-piece leading to the said disk and adapted to concentrate sound-waves thereon for the purpose of vibrating the same.

5. The combination, substantially as hereinbefore described, in an electric transmitting-telephone, of a compound diaphragm consisting of two conducting-segments united by a non-conducting partition, carbon or other conducting material in a granulated or finely-divided condition disposed upon the said disk in contact with both segments and adapted to vary the resistance between them, leading-out wires—one for each segment—whereby the said disk may be connected in an electric circuit, and a mouth-piece or directing-tube leading to the said disk, whereby sound-waves may be directed thereon.

6. A transmitting-telephone consisting, substantially as hereinbefore described, of a compound diaphragm or vibrating disk composed of two metallic segments mechanically united by a non-conducting partition, a mass of granulated carbon or like conducting material placed on the said disk, and a containing-case perforated by a mouth-piece or directing-tube, whereby sound-waves may be directed to the under side of the said disk for the purpose of vibrating the same, and thus varying the resistance between the two segments thereof.

299,074. TELEPHONIC RECEIVING-INSTRUMENT. JOSÉ DOTTIN HENRARDS, London, England, assignor to the American Bell Telephone Company, Boston, Mass. Filed Jan. 4, 1883. (No model.) Patented in England June 24, 1882, No. 3,006.



Claim.—1. In a telephonic receiver, the combination of an electro-magnet, an elastic armature therefor and controlled thereby, and a diaphragm, the elastic armature being in contact at its center with the diaphragm, and thence projecting angularly in opposite directions into magnetic proximity to the poles of the magnet, opposite parts of the

armature being in such proximity to the opposite poles of the electro-magnet, substantially as described.

2. In a telephonic receiver, the combination of a diaphragm, an elastic or flexible armature in contact therewith and controlling the vibrations thereof, and extending therefrom in opposite directions from the point of contact, and an electro-magnet arranged with its poles in magnetic proximity to opposite parts of the flexible or elastic diaphragm and controlling its movements, substantially as described.

3. In a telephonic receiver, the combination, with an electro-magnet, of a flexible or elastic armature, opposite portions of which are in proximity to the poles of the magnet, and a diaphragm, with which the armature is in contact between its portions opposite the poles of the magnet, substantially as described.

4. In a telephonic receiver, the combination of a diaphragm, an elastic or flexible armature contacting therewith and extending angularly therefrom in opposite directions, an electro-magnet having its poles in magnetic proximity to the portions of the armature so extending, and means for regulating the proximity of the armature to the poles of the electro-magnet, substantially as described.

5. In a telephonic receiver, the combination of a diaphragm, an elastic or flexible armature contacting therewith and extending angularly therefrom in opposite directions, an electro-magnet having its poles in magnetic proximity to the portions of the armature so extending, and means for regulating and varying at the same time the tension of the contact of the diaphragm and armature and the proximity of the armature to the poles of the electro-magnet, substantially as described.

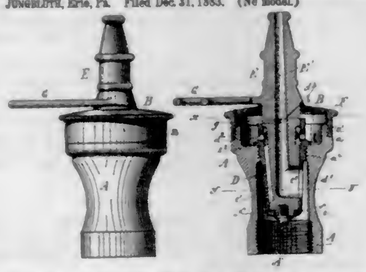
6. In a telephonic receiver, the combination of a diaphragm, an elastic or flexible armature contacting therewith and extending angularly therefrom in opposite directions, an electro-magnet having its poles in magnetic proximity to the portions of the armature so extending, and a set-screw, *d'*, whereby at the same time the tension of the contact of the armature and diaphragm and the proximity of the armature to the poles of the electro-magnet may be controlled and regulated, substantially as described.

299,075. SAFETY-PIN. JOEL JENKINS, Montclair, N. J., assignor of one-half to George P. Farmer, same place. Filed Apr. 7, 1884. (No model.)



Claim.—A safety-pin with its shield made integral with the wire of the pin, and consisting of three parallel folds of wire doubled over and forming the shield B, with a central bar, *a*.

299,076. COMBINED STREET AND LAWN SPRINKLER. JOSEPH JUNGBLUTH, Erie, Pa. Filed Dec. 31, 1883. (No model.)

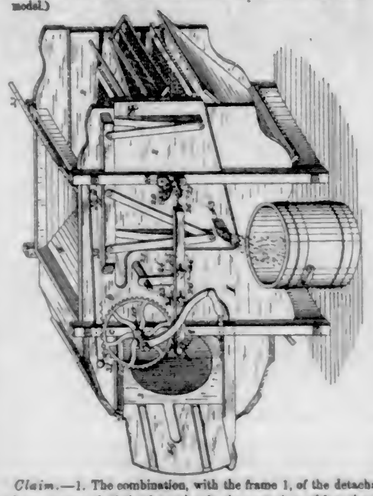


Claim.—1. A combined street and lawn sprinkler consisting of a hollow main part having a rose attached thereto, a fixed interior bushing provided with openings to communicate with the main part and the rose, a nozzle provided with means to communicate with the main part and the rose, said nozzle being adapted to turn axially in the bushing, so as to shut off the water or conduct it to the nozzle or to the rose, substantially as set forth.

2. The combination of a main part, A, having a rose, B, a bushing, D, secured into the main part and having a side opening, d^2, and openings d^3, a nozzle, E, turning axially in the bushing and provided with a side opening, e^2, and a channel, e' e^3, substantially as specified.

3. The combination of a hollow main part or shell having a contracted neck, a rose, B, attached to the shell, an interior bushing having a shoulder, *d*, abutting against said contracted neck, side openings, d^2, below and radial openings d^3 above said neck, and a nozzle, E, fitted into the bushing, so as to turn axially therein, and provided with a side opening, e^2, and channel e', substantially as set forth.

299,077. FANNING-MILL. ANDREW W. KENDRICK, Brooklyn, and CHARLES A. VAN DUZEE, Gouverneur, N. Y. Filed Jan. 30, 1884. (No model.)



Claim.—1. The combination, with the frame 1, of the detachable fan-drum, composed of the drum-heads, the central partition, the thin boards, the thick boards rabbeted and grooved to receive said heads and partition, the grooved and rabbeted boards alternating with and overlapping the thin boards, and means for securing the overlapping boards upon the drum-heads, substantially as and for the purpose set forth.

2. In a fanning-mill, the combination of a main frame or casing made in detachable sections and rectangular in form, a fan-drum made in detachable sections, and a fan having separately detachable blades and detachable shaft, whereby the fanning-mill frame and fan are rendered reducible to a single compact package, as hereinbefore set forth.

3. The combination of the fan-shaft having plain faces or sides, the detachable fan-blades having arms halved or cut away at their inner ends and adapted to fit over each other in succession upon the fan-shaft, and means for detachably securing them to the fan-shaft, substantially as and for the purpose set forth.

4. The combination of the screens, the fan having a double or divided set of blades, the single continuous fan-drum having air-inlets, and the stationary vertical central partition dividing the drum into two non-communicating air-chambers, substantially as and for the purpose set forth.

5. The combination of the shaking screens, the fan having a double or divided set of blades, the single continuous fan-drum having an air-inlet at each end, and the stationary vertical central partition dividing said drum into two non-communicating air-chambers, said partition being cut away on the rear edge within the circle described by the fan, substantially as and for the purpose set forth.

6. The combination of the fan, the fan-drum, the grooved cleats, and the valve-board having the top and bottom projections at its inner edge adapted to enter the grooves, substantially as and for the purpose set forth.

7. The combination of the main frame, the hopper constructed with the feed-slide, the lever pivoted at one end to the frame and at its middle engaging the feed-slide, the casing having the inclined guide-slot, the post mortised below the upper line of the casing, the rest-pin, and the push-bar connected with the lever at one end, and notched on its under side and extending above the crank-wheel through the mortise, substantially as and for the purpose set forth.

8. The combination of a blast-fan, a reciprocating screen inclined downwardly toward the blast-fan, with its upper surface exposed thereto, a knocker, and means for causing it to deliver a blow endwise against the end of the screen nearest the fan, substantially as and for the purpose set forth.

9. The combination of a fan, a pitman, a screen receiving its motion from the fan-shaft through the pitman, a rock-shaft, a knocker suspended from the rock-shaft, and means connecting said rock-shaft with said pitman, substantially as and for the purpose set forth.

10. The combination of a crank-shaft, a pitman, a screen receiving its motion therefrom, a swinging knocker, and means, substantially as described, by which said knocker and pitman may at will be connected positively or loosely to give a swinging blow, substantially as set forth.

11. The combination of a blast-fan, a shaking screen, a knocker suspended between said fan and said screen, and mechanism, substantially as described, for operating the screen and knocker.

12. The combination of a pitman, means for reciprocating said pitman, the screen, the knocker, the rock-shaft having the depending arm, and the adjustable blocks, substantially as and for the purpose set forth.

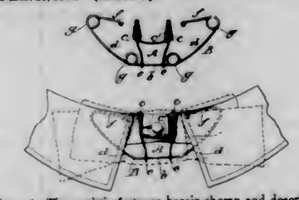
13. The combination of the shoe, the screen, the knocker striking the end of the screen, the buttons for retaining the screens in place against the blows of the knocker, and means, substantially as described, for operating the knocker and screen, substantially as and for the purpose set forth.

14. The combination, with the crank-shaft, the shoe, the swinging knocker, and the mechanism connecting it to the pitman, of the pitman adjustable in length, the elbow-lever, and the link connecting it to the shoe, substantially as set forth.

15. The combination of the shoe having the opening in the side plate, the detachable cockle-screen and box, the detachable spout having the flange, and the pivoted plate, substantially as and for the purpose set forth.

16. The combination of the shoe having the discharge-opening in the side plate, the detachable spout having the flange on its upper side, and the pivoted plate, said plate being adapted to confine the spout in position and to close the discharge-opening in the absence of the spout, substantially as set forth.

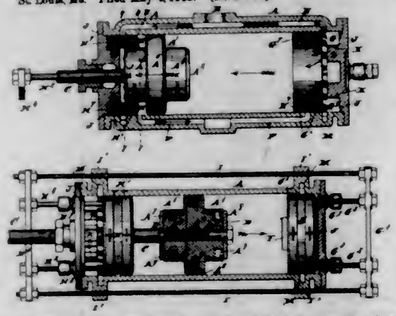
299,078. NECKTIE-FASTENER. FREDERICK KUSEL, Riverside, Iowa. Filed Mar. 25, 1884. (No model.)



Claim.—1. The necktie-fastener herein shown and described, consisting of the hooked central wire, A, and outer wire, B, bent to form spring-arms *d*, substantially as and for the purpose set forth.

2. The wire B, bent to form the spring-arms *d* and horizontal arm *f*, in combination with the centrally-attached wire A, bent to form hooks *c*, the arms *f* being held by arms *d* slightly above the hooks *c*, substantially as and for the purposes described.

299,079. MEANS FOR OPERATING VALVES. FRANCIS M. LUDLOW, St. Louis, Mo. Filed May 4, 1883. (No model.)



Claim.—1. The combination, with a piston, of a valve, the piston adapted to force a part of the fluid in advance thereof to the inlet side of the valve, to move the valve toward the piston to open the inlet and close the outlet, as set forth.

2. The combination, with a piston, of a valve having a passage through it to permit a part of the fluid in advance of the piston to pass to the opposite side of the valve, to force the valve toward the piston, as set forth.

3. In a steam or other engine, the combination, with the piston, of the ring-valves adapted to be operated by the piston through means of compressed air, vapor, or other similar matter, substantially as set forth.

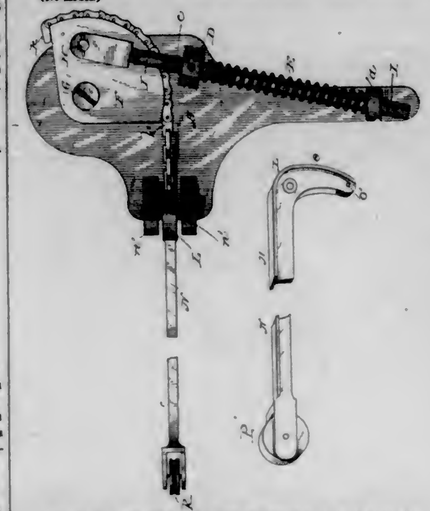
4. In a steam or other engine, the combination, with the piston having a hub, of the ring-valves adapted to receive the hub of the piston, and having chambers behind them to receive the compressed air, vapor, or other similar matter, for the purpose of causing the valves to be moved in the opposite direction to which the piston is traveling, to open and close the inlet and exhaust ports, as set forth.

5. In a steam or other engine, the combination, with the piston having a hub provided with compressible packing-rings, of the valves adapted to receive the hub of the piston to be operated thereby, as set forth.

6. In a steam or other engine, the combination, with the piston, of the valves adapted to be operated by the piston, and having collapsible packing-rings, substantially as shown and described, for the purpose set forth.

7. In a steam or other engine, the piston and valves, the latter adapted to be operated by the former, substantially as shown and described, in combination with a suitable mechanical device for insuring an operation of the valves at all times, as described.

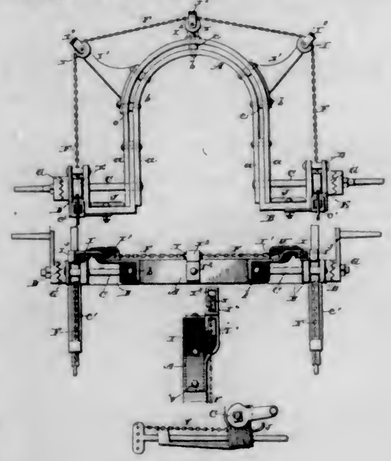
299,080. DOOR-SPRING. PHILIP MCALEER, Washington, D. C., assignor of one-half to Elisha R. Bradford, same place. Filed Jan. 21, 1884. (No model.)



Claim.—1. The bed-plate A, having lugs *a* *a'* *a'*, in combination with the pitman I, spring E, quadrant F, chain K, and arm N, as set forth.

2. The bed-plate A, having lugs *a* and *a'* *a'*, in combination with the pitman having adjustable nut D and spring E, and the chain K and arm N, having cam portion L, as set forth.

299,081. TONGUELESS CULTIVATOR. JOHN J. MCCLEN, Bushnell, Ill. Filed Nov. 8, 1883. (No model.)



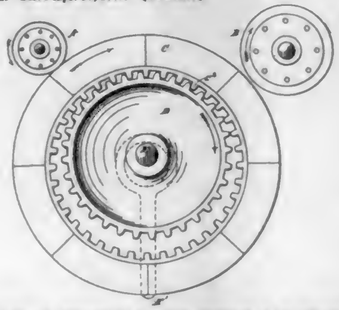
Claim.—1. The combination, with an arched frame provided with forwardly-extending arms, axles rigidly secured to said frame, and drag-bars secured to the axle or frame, of longitudinally-sliding draft-bars upheld by said arms, and chains or equivalent devices connecting said draft-bars and passing around or over the arched frame, substantially as set forth.

2. The combination, with the arched frame provided with forwardly-extending arms, axles rigidly secured to the frame, and pulleys journaled to the axles, of draft-bars resting on the forwardly-extending arms of the frame, and equalizing devices connecting the draft-bars, substantially as set forth.

3. The combination, with the frame provided near opposite sides with forwardly-extending arms, each of which is provided with an angular collar, axles rigidly secured to the frame, and pulleys journaled to the axles, of the angular draft-bars, and chains passing over the arched frame and connecting the draft-bars, substantially as set forth.

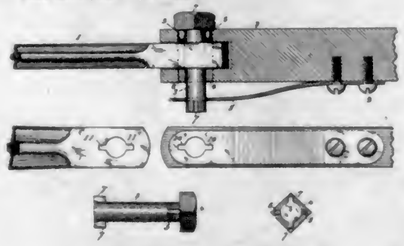
4. The combination, with an arched frame provided with forwardly-extending arms, the arms I', having pulleys journaled thereto, and axles rigidly secured to said frame, of longitudinally-sliding draft-bars upheld by said forwardly-projecting arms, and chains connecting the forward ends of said draft-bars and passing over the pulleys, substantially as set forth.

299,082. **MECHANICAL MOVEMENT.** JOHN MCEWEN, Wellsville, N.Y. Filed Apr. 17, 1884. (No model.)



Claim.—A mechanical movement consisting of the combination, substantially as shown, of the following elements: three shafts having fixed bearings and provided with proper gears, such as A, B, and D, an eccentric sleeve loosely mounted, so as to be rolled upon the intermediate shaft, and an intermediate communicating gear mounted loosely on said eccentric sleeve, and adapted, as shown, to be always in gear with the gear on the intermediate shaft, and to be thrown into gear with either of the gears on the other shafts by properly moving the said sleeve on the intermediate shaft.

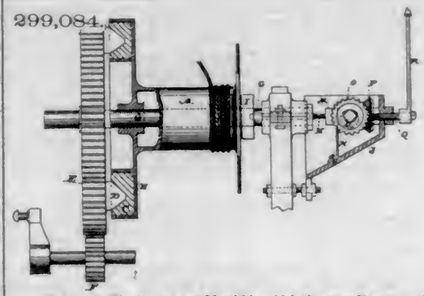
299,083. **COUPLING-PIN.** JAS. C. MURRAY, South Charleston, Ohio. Filed Jan. 16, 1884. (No model.)



Claim.—A coupling-bolt, 3, provided with one or more ribs or feathers, 7, near its point, in combination with a slotted plate pressed outward against the said rib or feather when the bolt is turned after insertion, and a locking device to prevent the spontaneous turning of the bolt.

299,084. **HOISTING APPARATUS.** WILLIAM F. MURRAY, San Francisco, Cal. Filed Mar. 3, 1884. (No model.)

299,084.



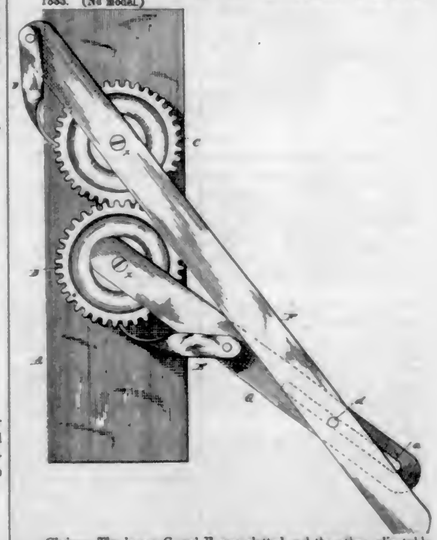
Claim.—1. The box or step M, within which the stem H turns, and the cam or eccentric mounted behind the step with an operating-lever, in combination with a rope-drum turning loosely upon a driving-shaft, a driving-gear, and intermediate frictional surfaces, substantially as herein described.

2. In a hoisting apparatus, the driving-gear and loosely-revolving rope-drum with intermediate frictional surfaces, a stem extending axially into the shaft and having a transverse bar extending out through slots, so as to act against the end of the drum, in combination with the eccentric or cam L, and operating-lever, the step or box M, interposed between the eccentric and the stem, and the spring-arm N, upon which the box is mounted, and by which it is retracted when relieved of pressure, substantially as herein described.

3. The driving-gear and loosely-moving rope-drum with intermediate frictional surfaces, the stem H, acting to force the surfaces into contact, and a cam or eccentric by which the stem is moved, in combination with a frame upon which the eccentric is supported, and the screw-bolts and adjusting-nuts by which it is secured to the main frame, substantially as herein described.

4. In a hoisting apparatus, the driving-gear, and loosely-revolving rope-drum with adjacent frictional surfaces, a stem extending axially into the end of the shaft, and having a transverse bar extending out through slots to act against the end of the drum and force the frictional surfaces into contact, in combination with an eccentric or cam fixed to a shaft, so as to act against the end of the stem or an interposed step, and gears and levers by which the cam-shaft may be rotated, substantially as herein described.

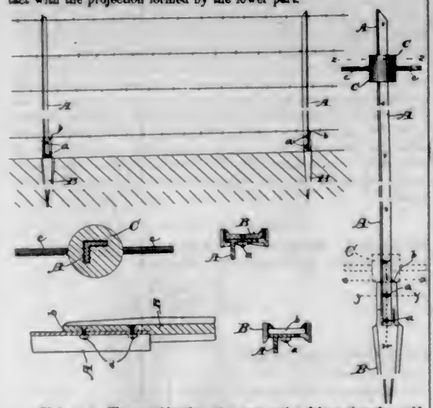
299,085. **MECHANICAL MOVEMENT.** FRANCIS M. NIXON, Luna, Ill., assignor of one-half to Edward W. Shoesmith, same place. Filed Dec. 27, 1883. (No model.)



Claim.—The levers G and F, one slotted and the other adjustably pivoted or connected thereto, and each carrying a pawl, in combination with two intermeshing gear-wheels, B and C, substantially as and for the purpose herein set forth.

299,086. **POST-DRIVER.** EWALD OVER, Indianapolis, Ind. Filed Jan. 29, 1884. (No model.)

Brief.—A post formed of two parts, the lower part formed with a projection. A suitable driver slides on the upper part and comes in contact with the projection formed by the lower part.

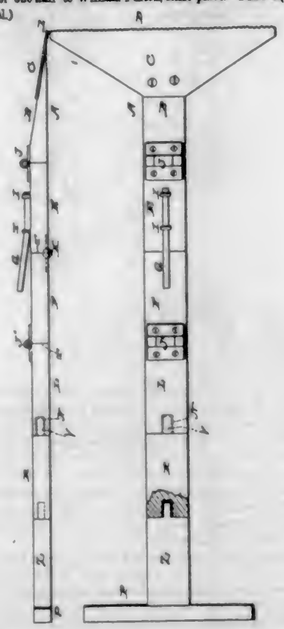


Claim.—1. The combination of a post and a driver therefor, said post consisting of a straight upper portion and an enlarged lower portion having a projecting portion, *b*, with which the driver is adapted to come in contact, and said driver consisting of a solid heavy block having a hole which is adapted to slip over the straight portion and come in contact with said projection as it descends, substantially as shown and specified.

2. The combination, with a fence-post consisting of the parts A and B, the latter of which has a portion, *b*, forming a projection on said post, of a driver, C, adapted to slide up and down the portion A and drive the post by coming in contact with the projection *b*, substantially as set forth.

3. The combination of the fence-post A B, having projection *b*, and the driver C, having a hole therein and handles *c*, substantially as shown and described, and for the purposes specified.

299,087. **CARPET-STRETCHER.** HARVEY M. PRESLEY, Oakdale, Ill., assignor of one-half to William Fulton, same place. Filed Apr. 5, 1884. (No model.)



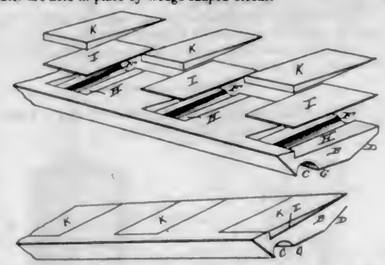
Claim.—A sectional carpet-stretcher extending lineally from one wall of a room nearly to another, and consisting of a base-section at one end, an engaging section having an inclined serrated plate at the other, a toggle-joint hinged to the engaging section, an intermediate section or sections between the toggle-joint and the base portions, and an operating-lever connected to the first member of the toggle-joint, substantially as specified.

299,088. **COMPOSITION OF MATTER TO BE USED AS A FIRE AND WATER PROTECTIVE PAINT.** FRANKLIN I. PUTT and J. B. STRATTON, Middlebury, Ind. Filed Jan. 23, 1884. (No specimens.)

Claim.—The herein-described composition of materials to be used as a paint, consisting of coal-gas tar, chloride of sodium, Wisconsin mineral paint, Venetian red, sulphur sublimate, resin, (merchant,) asphaltum, pulverized alum, biborate of soda, and opaline, mixed in suitable proportions, and in the manner described.

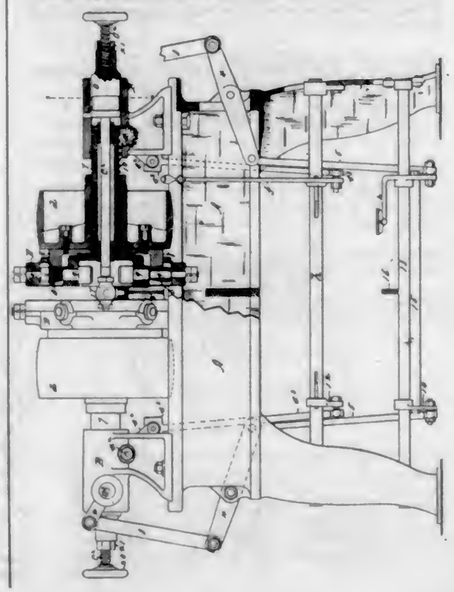
299,089. **WEATHER-STRIP.** PERRY E. REYNOLDS, King City, assignor of one-half to William Hawkins, Albany, Mo. Filed Sept. 22, 1883. (No model.)

Brief.—A weather-strip consisting of a grooved sill, apertures, and channels. The channels are in wedge-shaped recesses, and the bottom plates are held in place by wedge-shaped blocks.



Claim.—The combination, in a weather-strip, of the sill B, having longitudinal groove C, provided with apertures E and channels F, located in wedge-shaped recesses H, in which are secured the plates I and wedge-shaped blocks K, as shown and described.

299,090. **VALVE-BODY MILLING-MACHINE.** FRANCIS H. REMARDS, Cleveland, assignor to the Joel Hayden Brass Company, Lorain, Ohio. Filed Aug. 14, 1883. (No model.)



Claim.—1. A valve-body milling-machine consisting of the following elements, viz: two cutter-heads each provided with a series of cutter-shafts, arranged in lines radiating from its center, two center spindles passing through said cutter-heads from each end of the machine, means, substantially as described, for rotating said cutter-shafts, and means, substantially as described, for imparting to said cutter-heads and to said center spindles, respectively, simultaneous movements toward and from each other, combined and operating substantially as set forth.

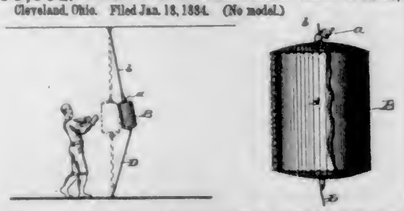
2. A cutter-head for operating a series of cutters around a common center, consisting of a suitable case having a series of cutter-shafts arranged in lines radiating from its center, a driving face-gear wheel, 8, supported in one side of said case, and having geared connections with all the cutter-shafts, and a belt-pulley concentric with and secured to said driving-gear wheel, whereby all the cutter-shafts are driven simultaneously, substantially as described.

3. In combination, the head-stock B, the nut *c*, capable of a sliding movement in said head stock, the center spindle, c^3, passing through said nut, and means, substantially as described, for imparting to said nut a forward or backward movement, combined with cutter-heads of the character described surrounding said spindle in said head-stock, all as set forth.

4. In combination, the cutter-head D, having a bearing on the bed A and a pulley-shaft thereon entering the head-stock B, and provided with a rack, 10, the pinion *d'*, engaging with said rack, the head-stock B, and means, substantially as described, for giving to said pinion a reciprocating rotary motion, as set forth.

5. In combination, the support *i*, provided with the stud 18, the spindles c^3 c^3, and means, substantially as described, for imparting to said spindles simultaneous and equal movements toward and from said support, substantially as set forth.

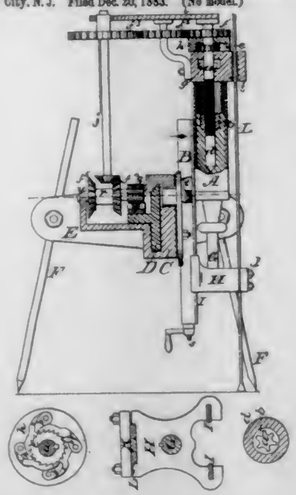
299,091. STRIKING-BAG FOR EXERCISING. ALBERT R. RIDDY, Cleveland, Ohio. Filed Jan. 18, 1884. (No model.)



Claim.—1. An exercising device consisting, essentially, of an inner rubber bag, an outer bag or covering, preferably made of canvas, and a suspending-cord secured to the outer bag, substantially as set forth.

2. The combination, with an inner elastic bag and an outer bag or covering, preferably made of canvas, of an inelastic cord for suspending the bag and an elastic cord secured to the outer bag and adapted to operate as set forth.

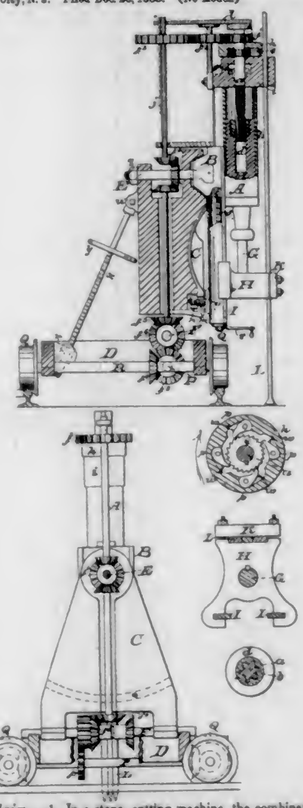
299,092. STONE-CHANNELING MACHINE. WILLIAM L. SAUNDERS, Jersey City, N. J. Filed Dec. 20, 1883. (No model.)



Claim.—1. In a stone-channeling machine, the combination, with the cutting-tool, of a piston to which said tool is attached, means for communicating a reciprocating motion to said tool, and supporting mechanism consisting of a horizontal bar and suitable transverse supports therefor, a train of gearing operating to move the drill-carriage along said bar, said gearing being actuated by the to-and-fro movement of the piston, whereby said reciprocating action will automatically move the cutting-engine in a horizontal path in the direction of the cut.

2. In a stone-channeling machine, the combination, with a cutting-tool, of a piston to which said tool is attached, means for communicating a reciprocating motion to said piston, and mechanism consisting of the horizontal bar D and supports E E therefor, a train of gearing attached to the drill-carriage, and engaging and being supported upon the horizontal bar, and a rifled bar operated by the piston to impart motion to said gearing at each stroke of the piston, whereby the cutting-engine is moved step by step along the horizontal bar, substantially as herein described.

299,093. STONE-CUTTING MACHINE. WILLIAM L. SAUNDERS, Jersey City, N. J. Filed Dec. 20, 1883. (No model.)



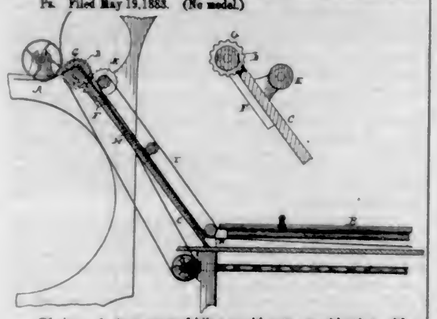
Claim.—1. In a stone-cutting machine, the combination, with a gang of drills, of a piston to which said gang is attached, mechanism for giving a reciprocating motion thereto, a spirally-formed or rifled bar and corresponding nut, said nut being fixed to the piston, and said rifled bar being provided at its outer end with connections for actuating a train of gearing and arranged to slide through said nut and within the piston when the latter is operated, whereby the to-and-fro motion of the piston and gang is converted into rotary motion of the train of gearing and connecting-rods extending to and connected with the shaft of the carriage which supports the machine.

2. The combination, with the shell B and cylinder A and means for moving said cylinder vertically within its shell, of the supporting-piece C, a horizontally-moving carriage to which the support C is attached, and a bolt or shaft E, extending between and serving to detachably connect the shell and its support, said bolt being provided with and forming

the axis for an idle wheel or gear, f^4, for completing a train of gearing extending from the cutting-tool to the wheels of the carriage.

3. In a stone-cutting machine where the cutting-tool is attached to the piston-rod, the combination of the rifled bar *a*, operated by the piston, and carrying ratchet *e* and pawl *p*, the head-piece *h*, revolved by said ratchet and pawls, the gears *f*, axle R, and the wheels Q, by which mechanism the reciprocating motion of the piston causes the propulsion of the said engine and cutting-tool in the direction of and parallel with the cut.

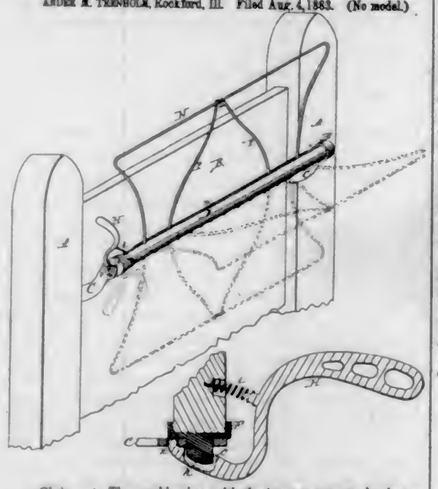
299,094. PAPER-FOLDING MACHINE. JOHN H. STONEBRETS, Erie, Pa. Filed May 19, 1883. (No model.)



Claim.—1. In a paper-folding machine, the combination, with a system of conveyer-tapes, of a roller having milled or corrugated disks or sections of a larger diameter than the tape bearing or supporting surfaces of said roller, whereby the milled sections of the roller project beyond the tapes and have a faster surface-speed, substantially as and for the purpose set forth.

2. In a sheet-conveying attachment for paper-folding machines, the combination, with a board or table having a system of conveyer-tapes and adapted to bridge the space between a folding-machine and printing-press, of an upper tape-guiding roller having milled or corrugated disks or sections of a larger diameter than the tape bearing or supporting surfaces of said roller, substantially as and for the purpose herein set forth.

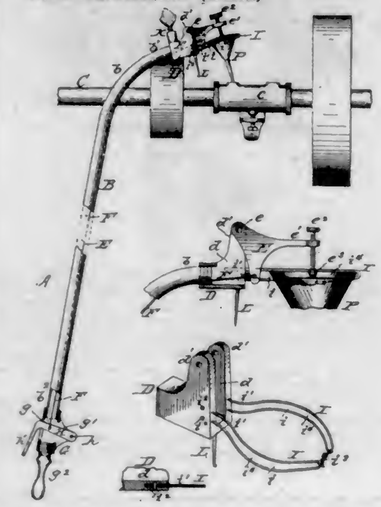
299,095. PILLOW-SHAM HOLDER. EZRA W. TRENHOLM and ALEXANDER M. TRENHOLM, Rockford, Ill. Filed Aug. 4, 1883. (No model.)



Claim.—1. The combination, with the bracket-supports having an open bearing, of a roller having end journals, one of which is reduced on opposite sides to enter said open bearing, a lever pivotally secured to one end of said roller, and means, substantially as described, for securing the pillow-sham holder at different angles to the head-board, as set forth.

2. The combination, with the roller and bracket supports formed with openings to receive the pin of a lever-detent having a pivotal connection with the stud-journal of the roller, and provided with a pin to enter the openings, of the bracket-supports and a spring for holding the detent in engagement with the bracket-supports, substantially as set forth.

299,096. DEVICE FOR OILING SHAFT-BEARINGS. THOMAS Y. WHITE, Philadelphia, Pa., assignor of one-half to Alfred Whitney, Camden, N. J. Filed Feb. 28, 1884. (No model.)



Claim.—1. An oiling device comprising a handle or bracket, a clutch, an oil can or receptacle, and means for ejecting oil from said can, substantially as shown and described.

2. An oiling device comprising a handle or bracket, a spring-clutch, an oil can or receptacle, means for ejecting oil from said can, and a picker for cleansing the oil-holes of a shaft box or bearing, substantially as shown and described.

3. An oiling device substantially as herein shown and described, having a lamp, K, and a picker, L, as and for the purpose set forth.

4. An oiling device comprising a tubular handle or bracket with bell-crank levers at each end, one of which is provided with an adjustable screw, means for vibrating said screw, and a clutch with removable oil-can, substantially as shown and described.

5. An oiling device comprising a tubular column, B, having hollow slotted end boxes, D G, pivoted levers E H, connection F, adjustable screw e^3, clutch I, and can P, substantially as shown and described.

6. An oiling device comprising a tube, B, boxes G D, pivoted levers H and E, having, respectively, handle A and adjustable stud or screw e^3, connection F, and clutch I, with can P, substantially as shown and described.

7. In an oiling device as shown and described, the adjustable vibrating finger e^3, having pad e^3, as and for the purpose set forth.

8. In combination with stem B, the box D, having lever E, with screw or finger e^3, clutch I, can P, and box G, having lever H, with connection F, substantially as shown and described.

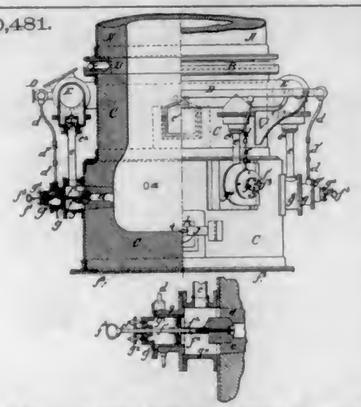
9. In an oiling device as shown and described, the clutch I, composed of slotted spring-fingers *i i*, substantially as and for the purpose set forth.

10. In an oiling device as shown and described, the spring fingers or arms *i i*, having elastic connection i^3, as and for the purpose set forth.

REISSUES.

10,481. CUPOLA-FURNACE. WILLIAM JOHN CLAPP, Nantyglo, and THOMAS GRIFFITHS, Blaenavon, County of Monmouth, England, assignors to James Porter Witherow and Henry Wm. Oliver, Jr., both of Pittsburg, Pa. Filed Apr. 15, 1884. Original No. 271,663, dated Feb. 6, 1883; Reissue No. 10,432, dated Jan. 1, 1884. Patented in England Mar. 28, 1881, No. 1,372; in France Sept. 27, 1881, No. 145,039; in Belgium Sept. 27, 1881, No. 55,846; in Germany Sept. 27, 1881, No. 18,250; in Austria Sept. 27, 1881, and in Spain Oct. 1, 1881.

10,481.



Claim.—1. In a cupola-furnace, the combination of a bottom section or vessel having a tuyere-opening and external blast and steam chambers, and a plug provided with a stem and a piston fitted in said chambers, with a pipe for admitting steam in rear of the piston for forcing the plug into the tuyere-opening, and an air-blast pipe leading into the chamber in front of said piston, for removing the plug from the tuyere-opening and admitting air through the latter into the bottom section of the furnace, substantially as and for the purposes described.

2. The combination of the vessel C, having the tuyeres *a*, external air-chamber, g^4, and vertical pipes *e*, leading into said chamber, and the stationary air-pipe E, having bottom openings for the reception of the pipes *e*, and valves for closing said openings, with the shaft of the furnace, and means for elevating and transporting the vessel C, as and for the purpose set forth.

3. The combination of the vessel C, having tuyeres *a* through its sides, external air-chamber, g^4, attached to the vessel, stopper *f*, and hollow stem f', communicating with both air-chamber and tuyere when the tuyere is closed by the stopper, substantially as and for the purposes described.

4. A cupola-furnace or converter having a removable lower section or crucible, tuyeres in said lower section below the metal-line, a blast-pipe, detachable connections between said blast-pipe and tuyeres, and means for simultaneously closing the tuyeres against the passage of the metal therethrough, substantially as and for the purposes described.

5. A cupola-furnace or converter having a removable lower section or crucible provided with tuyeres in its sides, a blast-pipe supported on the fixed section of the converter, detachable connections between said blast-pipe and tuyeres, and means for closing the openings of the blast-pipe when the connections are removed, substantially as and for the purposes described.

6. A cupola-furnace or converter having tuyeres fixed in its sides below the metal-line, a blast-pipe, and external air-chambers fixed to its sides, with which the tuyeres communicate and from which they receive the blast, in combination with plugs, stoppers, or valves situate in said chambers, and means for simultaneously operating the stoppers from the outside to open or close the tuyeres at pleasure, substantially as and for the purposes described.

7. A cupola-furnace or converter having a tuyere or tuyeres, and an external air chamber or chambers with which the tuyere communicates and from which it receives the blast, in combination with a plug, stopper, or valve to close the tuyere to prevent the escape of the molten metal therethrough, means for operating the stopper, and a passage for admitting a small stream of air through the tuyere when the stopper is closed, substantially as and for the purposes described.

8. The combination of a fixed converter or cupola-furnace for treating molten metal, having all of its pneumatic tuyeres provided with plugs, stoppers, or valves, and organized means for seating and unseating said plugs, stoppers, or valves simultaneously during the operation of the converter, substantially as described.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

COCHRANE *et al.* v. BADISCHE ANILIN AND SODA FABRIK

Decided April 14, 1884.

1. The claim in Reissue Letters Patent No. 4,321, granted to Charles Graebe and Charles Liebermann, April 4, 1871, is: "Artificial alizarine produced from anthracine or its derivatives by either of the methods herein described, or by any other method which will produce a like result." Unless it is shown that the method described in this patent was followed to produce the defendant's article, or unless it is shown that that article could not be produced by any other process, the defendant's article does not infringe the patent.
2. Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process.
3. While a new process for producing the old article (alizarine) was patentable, the product itself could not be patented, even though it was a product made artificially for the first time, in contradistinction to being eliminated from the madder-root. Calling it "artificial alizarine" did not make it a new composition of matter, and patentable as such by reason of its having been prepared artificially for the first time from anthracine, if it was set forth as alizarine, a well-known substance.
4. The reissue patent certainly is for a different invention from that described in the original patent, unless the product claimed in the reissue is precisely that product, and no other, which the process described in the original patent produces.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. E. N. Dickerson for the appellants.

Mr. B. F. Thurston for the appellee.

Mr. Justice BLATCHFORD delivered the opinion of the Court.

This is a suit in equity brought in the Circuit Court of the United States for the Southern District of New York by Badische Anilin and Soda Fabrik, a corporation organized under the laws of the Grand Duchy of Baden, in the Empire of Germany, against the appellants for the infringement of Reissue Letters Patent No. 4,321, granted to Charles Graebe, of Frankfort-on-the-Main, and Charles Liebermann, of Berlin, Prussia, April 4, 1871, for an improvement in dyes or coloring-matter from anthracine. The original patent (No. 95,465) was granted to the same persons October 5, 1869, for an improved process of preparing alizarine. It was reissued on two separate amended specifications, Division A and Division B. No. 4,321 is Division B.

The following is the text of the specifications of No. 4,321 and No. 95,465. Reading in it what is outside of brackets and what is inside of brackets, omitting what is in italics, gives the specification of No. 4,321. Reading what is outside of brackets, including what is in italics, omitting what is inside of brackets, gives the specification of the original patent:

Be it known that we, Charles Graebe, of Frankfort-on-the-Main, and Charles Liebermann, of Berlin, in the Kingdom of Prussia, have invented a [new and useful Improvement in the Manufacture of Alizarine:] *Process for Preparing Alizarine from Anthracine;* and we do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same.

We first change the anthracine into anthrakinon, (oxanthracine,) a substance known to [the] chemists by the investigations of Anderson. For this purpose we take one part, by weight, of anthracine, two and a half parts, by weight, of bichromate of [potash] *potassa*, and ten or fifteen parts, by weight, of concentrated acetic acid, and we heat these substances together in a vessel, either of glass or clay, to about 100° centigrade to 120° centigrade, till nearly all of the bichromate of [potash] *potassa* is dissolved and the liquid has acquired a deep green color. We then recover the acetic acid not consumed in the reaction by distillation and treat the residuum with water to remove the chromic acetate. From the insoluble mass we obtain the anthrakinon in a pure state by distilling the whole from a retort of glass or iron. In the place of *the* acetic acid, sulphuric acid, diluted with one or two parts of water, may be employed.

Instead of the method just described, we also employ the following one: We heat *the* anthracine in a vessel of glass or clay, with ten parts of concentrated acetic acid, to about 100° centigrade, or a little higher, and we add nitric acid of about 1.3 specific gravity, in small portions, till the violent reaction ceases. After distillation of the acetic acid we purify the residuum, as before. We then convert the anthrakinon, prepared by one of the methods described, into bibromanthrakinon. For this purpose we take three parts of anthrakinon, five parts of bromine, and we heat these substances for ten or twelve hours, or until nearly the whole of the bromine has disappeared, to a temperature, by preference, of about 100° centigrade, in a suitable close vessel, either of glass or enameled or glazed iron, which is capable of sustaining the pressure [which is] generated by the reaction. The apparatus is then allowed to cool. It is opened in order to permit the escape of [bromic] *hydrobromic* acid, which can be recovered by absorption either in water or in *an* alkaline solution. We purify the bibromanthrakinon remaining in the vessel as a solid substance by crystallization from benzole.

Instead of the method above described for preparing bibromanthrakinon, we also employ the following: We convert first the anthracine into a bromine derivative, into the tetrabromanthracine, known to chemists by the investigations of Anderson. We take one part of this tetrabromanthracine and we heat it in a retort of glass or clay with about five parts of nitric acid of about 1.3 specific gravity to 100° centigrade, as long as vapors of bromine are evolved. We distill off the greater portion of the nitric acid, wash the residuum with water, and purify it by crystallization from benzole. We thus receive the bibromanthrakinon, as before, in *the form of* a yellow, solid mass. We then convert the bibromanthrakinon into alizarine. For this purpose we take one part of bibromanthrakinon, two to three parts of caustic potash or soda, and so much water as is necessary to dissolve the alkali, and we heat the whole in an open vessel of glass, glazed or enameled iron, or silver, to about 180° to 260° centigrade for one hour, or [till] *until* the mass has acquired a deep blue color. We then dissolve it in water and filter the violet solution, from which we precipitate the alizarine by *an* inorganic *or organic* acid. We collect the yellow flocks of alizarine thus obtained on a filter and wash them with water.

By these methods we receive the alizarine in a form in which it can be employed in the same manner as the different preparations from madder.

In the place of bromine, chlorine [also] may *also* be employed, but not so conveniently, as the reactions above described are more difficult to accomplish with chlorine than with bromine.

Having thus described the nature of our invention and the manner of performing and carrying out the same, we would have it understood that we do not confine ourselves to the exact details hereinbefore given.

The claim of No. 4,321 is as follows:

Artificial alizarine produced from anthracine or its derivatives by either of the methods herein described, or by any other method which will produce a like result.

The claim of the original patent was in these words:

The within-described process for the production of alizarine, by first preparing bibromanthrakinon or bichloranthrakinon, and

then converting these substances into alizarine, substantially as above set forth.

The bill of complaint alleges that No. 4,321 was issued "for a distinct and separate part of the same invention, on a corrected specification," on the surrender of No. 95,465; and No. 4,321 states on its face that on such surrender new letters were ordered to issue "on two separate amended specifications." But Division A, No. 4,320, is not in the record before us. The bill alleges the infringement to have been committed by making, selling, or using the invention or dyes containing it. The answer denies the manufacture of alizarine, but avers that the defendants have sold in the United States alizarine lawfully made in Germany and imported as an article of commerce, which was not made by the process described in No. 4,321, or any process substantially the same, but was made according to processes which were invented subsequently to the date of No. 95,465, and are the subject of different and independent letters patent. The answer also avers—

That alizarine is a natural product, having a well-known definite constitution; that it is not a composition of matter within the meaning of the statute, but has been well known in the arts from time immemorial for the purpose of dyeing, and has generally been extracted from "madder-root" and from other analogous products by various processes suitable for that purpose; that therefore there can be no valid patent granted for alizarine, and that No. 4,321 is void.

The answer refers to "Watts' Chemical Dictionary," published before 1869, under the title "Alizarine," to show that alizarine was well known long before the said patent, and also sets up that the patent had expired because prior patents granted to the patentees in foreign countries for the same invention had expired. Proofs were taken, and on final hearing the circuit court decreed that No. 4,321 was valid, and had been infringed, and ordered a reference as to profits and damages and a perpetual injunction against the making, using, or selling of the article designated in No. 4,321, "artificial alizarine," or dyes containing the invention described in and secured by No. 4,321. Afterward there was a final decree against the defendants for $13,326.65 and costs, of which $12,871.86 was for profits made by the defendants, "by the sale of artificial alizarine, in infringement" of No. 4,321. From this decree the defendants have appealed. This reissued patent (No. 4,321) has been adjudicated in the circuit courts in several cases. It was before the circuit court in Massachusetts, in February, 1878, and the decision of Judge Shepley is in *Badische Anilin and Soda Fabrik* v. *Hamilton Manufacturing Company*, (3 Banning & Arden, 235, and 13 O. G., 273.) It was also before the Circuit Court for the Southern District of New York, in September, 1878, and the decision of Judge Wheeler is in *Badische Anilin and Soda Fabrik* v. *Higgin*, (15 Blatchf. C. C. R., 290, and 3 Banning & Arden, 462, and 14 O. G., 414.) The decision of Judge Wheeler in the present case, in April, 1879, is in 16 Blatchf. C. C. R., 155, and in 4 Banning & Arden, 215. The patent was also before the circuit court in Massachusetts in September, 1879, and the decision of Judge Lowell is in *Badische Anilin and Soda Fabrik* v. *Cummins*, (4 Banning & Arden, 489.) In all of these cases the validity of No. 4,321 was sustained.

In the case before Judge Shepley it was held that No. 4,321 was a valid patent for a manufacture and composition of matter, an artificial dye-stuff, called "artificial alizarine," being a new product, produced by a new process, not a chemically pure alizarine, but having combined with the alizarine in it anthrapurpurine, isopurpurine, and other bodies not known to have existed before they were produced by Graebe and Liebermann, the presence of some of which bodies appeared to much enhance the value of the dye-stuff. It was decided that the defendants had used that article.

In the case against Higgin it was held that the product of the process described in No. 4,321 contains isopurpurine, anthrapurpurine, monoxanthraquinone, and other ingredients, which were not only not ingredients in pure alizarine or madder alizarine, but did not exist in any dye-stuff with chemically-pure alizarine, $C_{14}H_8O_4$, before that of Graebe and Liebermann, and are useful coloring-agents, so that the product invented is a new composition of matter. It was decided that the defendants had used or sold dye-stuffs substantially the same, though claimed to be the product of a different process.

In the present case it was insisted in the circuit court by the defendants that the patented product was the same thing as the natural dye-stuff, alizarine, found in the root of the madder plant, and chemically known by the formula $C_{14}H_8O_4$, and not patentable. But it was decided that the article which Graebe and Liebermann had made synthetically from anthracine, though having the same chemical formula as madder alizarine, was essentially different in capabilities and properties from chemically-pure alizarine, madder alizarine, or any coloring-matter before known; that the article dealt in by the defendants was produced by the process of United States Letters Patent No. 154,536, granted July 28, 1874, to Heinrich Caro, Charles Graebe, and Charles Liebermann; that the use of sulphuric acid in the process of the latter patent performs the same office in the same way as the bromine in the process of No. 4,321, and that the products of the two processes are identical.

In the case before Judge Lowell he held that what Graebe and Liebermann sought to discover, and supposed they had discovered, was the alizarine, which is the dye-stuff of madder; that what is called "artificial alizarine" contains important dyeing substances not found in madder—namely, anthrapurpurine and isopurpurine (accordingly as these may be two substances or one and the same substance) and flavopurpurine—which substances produce valuable effects not produced by any extracts from madder; that although the defendant insisted that those new purpurines were not found in the artificial alizarine made by the bromine process of No. 4,321, and were found only in artificial alizarine made by methods invented since Graebe and Liebermann invented that process, and the evidence on that point was in much conflict, yet it was shown that pure alizarine, pure isopurpurine, and pure flavopurpurine were all contained in the patented article; that the artificial alizarine of No. 4,321 is different in some important respects from any article known before; that the new article of manufacture claimed in No. 4,321 was new in fact, and that the infringement was made out.

In Watts' Dictionary of Chemistry, volume I, page 113, published in 1866, *Alizarin* is stated to be a red coloring-matter obtained from madder, first prepared by Robiquet and Colin. This was in 1826. The correct formula of alizarine, $C_{14}H_8O_4$, was first arrived at by Strecker in 1866. It means that there are fourteen

atoms of carbon, eight atoms of hydrogen, and four atoms of oxygen in each molecule. At this stage Graebe and Liebermann took up the subject, and treated madder alizarine with the view of determining what was its mother substance. They tell the story themselves in a paper in the record entitled "Artificial Alizarine," which is a translation from the original, prepared in German by them, contained in the Official Report of the Vienna Exhibition of 1873, and also published separately in 1876. They heated madder alizarine with zinc dust, and made the alizarine give up its four atoms of oxygen, and take up two atoms more of hydrogen. They thus obtained a hydrocarbon identical with that found in coal-tar, called "anthracine," and having the formula $C_{14}H_{10}$. They then conceived the idea of converting anthracine into alizarine. Anthracine was difficult to obtain, and the experiment was conducted on a small scale. But it resulted in the process described in No. 4,321, of converting anthracine into anthrachinon, the formula of which was $C_{14}H_8O_2$, and then heating the anthrachinon with bromine and obtaining bibromanthrachinon, and heating that with caustic potash or soda and obtaining alizarine. Graebe and Liebermann thus solved the problem of the synthesis of alizarine. It was a matter of great scientific interest, and gave them much reputation. The paper states that the first method described in No. 4,321 for preparing the bibromanthrakinon was so laborious that they devised the other method described of first converting anthracine into tetrabromanthracine, and then treating that with nitric acid to obtain bibromanthrakinon. "This method," they state, "made it possible to obtain the alizarine more readily, and aroused hopes of its technical execution," although it involved two more reactions than the first method.

In regard to the alizarine thus obtained, the same paper says:

The artificial alizarine, besides having the same composition, had also the same properties as vegetable alizarine. In hydrated alkalies it is soluble, with a blue violet to purple color. The solutions of the alkali salts give with lime, baryta, lead, iron, alumina, and tin salts, lakes corresponding to the madder lakes. Cloth printed with mordants dyes exactly alike with both coloring-matters. From these salt-like compounds yellow flocculent alizarine is set free by the addition of a mineral acid. The artificial coloring-matter shows the same solubilities, and the solutions of the alkaline salts the same absorption spectra, which are known of the natural coloring-matter. The free coloring-matter sublimes in beautiful yellow to red needles, which cluster together like feathers. On oxidizing with nitric acid, phthalic acid and oxalic acid are formed. Heated with zinc dust, the artificial alizarine is again converted into anthracine.

The paper then proceeds:

The above methods, which now, from a technical point of view, have only a historic interest, and are therefore described without further detail, make up the subject of the patents taken out in England on the 18th of December, 1868, and then also in France, Prussia, most German States, Austria, Russia, and America.

The provisional specification deposited in the English Patent Office December 18, 1868, which was the date of the patent, gives a short description of the process, and says:

The alizarine prepared in this artificial way is perfectly pure, and can be employed in all the applications for which the different preparations of madder are used.

The full specification, filed June 17, 1869, is substantially identical with the specification of No. 95,465, and claims—

The artificial production of alizarine by first preparing bibromanthrakinon or bichloranthrakinon, and then converting these substances into alizarine, as herein described.

In further pursuing the history of the matter the same paper proceeds:

The discoverers of the synthesis of alizarine soon found it necessary to enter into connection with some large dye-factory. This was necessary in order that the raw material could be more easily obtained, and that the experiments could be made on a large scale and further developed. This could be done best with an establishment already in existence, where the doubtful question, whether this might be the basis of an industry with hopes of success could be solved. One of the chief difficulties experienced was the fact that the raw material was not only known in commerce, but also in the tar industry, and it was difficult to say whether it could ever be obtained in sufficient quantity. It was also doubtful whether the artificial alizarine could compete with the natural. Furthermore, there was much difficulty in transferring the above methods to a large scale. Graebe and Liebermann therefore entered into connection with the Baden Anilin and Soda Works in Ludwigshafen, on the Rhine, the largest works of the kind in Germany, even on the continent. [Originally the experiments were limited to the purification of the anthracine and the manufacture of anthrachinon by the second-mentioned bromine method, because this, notwithstanding its difficulties, showed some hopes of success.]

The passage above in brackets, by another translation, reads thus:

The first trials principally embraced the purification of anthracine, the manufacture of anthrachinon, and the practical application of the second above-mentioned bromine method as the same, notwithstanding the great difficulties, still gave assurance that it could be used practically.

The paper then goes on:

The latter (meaning the second-mentioned bromine method) was dropped as soon as the observation was made that the alizarine could be made more simply by means of anthrachinon sulpho-acids. Graebe and Liebermann had originally attempted to obtain anthrachinon sulpho-acids by acting on anthrachinon with sulphuric acid. But they made the mistake of using too low heats. The temperatures they employed were not high enough, being not greater than those generally employed in the preparation of sulpho-acids. They had also been misled by the observation that anthrachinon could be sublimed unchanged from strongly-heated sulphuric acid. Therefore they hoped little from sulpho-acids, and gave all their attention to improving the above methods. This mistake was avoided, and the modification of the synthesis of alizarine, which forms the basis of the industry of to-day, was discovered first by Heinrich Caro, who, as an officer at the Baden Anilin and Soda Works, made it his task to give, in combination with Graebe and Liebermann, life to the alizarine industry. Caro first noticed that anthrachinon, if heated with sulphuric acid to above 200°, would give sulpho-acids, which, on fusing with hydrate of potash, formed alizarine, the same as the bromine compound. Perkin noticed the same fact shortly after or at about the same time. This method was further developed by Caro and the original discoverers, and the English patent was taken out on June 25, 1869, (Caro, Graebe, and Liebermann, English patent, 1869, No. 1,936.) The patent of Perkin is dated June 26th. (Perkin, English patent, 1869, No. 1,948.) Two methods were discovered analogous to the two bromine methods. In the first and most important the anthracine is oxidized to anthrachinon. This is converted into sulpho-acids by heating with sulphuric acid to 200° to 260°, and these, by the beautiful method of Kekulé, Wurtz, and Dusart, by fusing with caustic potash or soda, are converted into alizarine. The first process is therefore identical with the first bromine method given above. In the second method, the sulphuric acid acts on the anthrachinon in such a manner that, besides the anthrachinon monosulpho-acid as principal product, a small amount of anthrachinon bisulpho-acid is also formed. This was subsequently determined analytically by Graebe and Liebermann. In the patent only the anthrachinon sulpho-acids are mentioned. From analogy, Perkin, in his paper, (Jour. Chem. Soc., (2) viii, 133, and Ann. Chem. Pharm., clviii, 335,) considered the bisulpho-acid only. It is also formed in larger quantity by the excess of acid he employs in his method than it is by the method of Caro, Graebe, and Liebermann.

The reactions in the second method are then given by formulas, in reference to anthrachinon monosulpho-acid and anthrachinon bisulpho-acid, and it is then said:

On fusing the two sulpho-acids they give alizarine exactly like the monobrom and bibrom anthrachinon. The anthrachinon bisulpho-acid behaves for the greater part, if not altogether, like the monosulpho-acid, and furnishes, instead of the corresponding bioxyanthrachinon, [which is the alizarine of the process of No. 4,321,] essentially trioxyanthrachinon—the isopurpurin.

They then give the two sets of chemical equations, one producing alizarine and the other producing isopurpurin. Further on in the same paper they say:

As far as has been observed, it seems that only the anthrachinon monosulpho-acid will produce alizarine, while the anthrachinon bisulpho-acid produces isopurpurin.

In an article by Graebe in the "New Handbook of Chemistry," published in 1871, he had said:

Alizarine, lizaric acid, madder red, matière colorante rouge, first prepared from madder by Robiquet and Colin, (1826;) artificially by Graebe and Liebermann, (1868,) from anthracine. Formula, $C_{14}H_8O_4$, is derived from anthracine, and is to be considered as bioxyanthrachinon, $C_{14}H_6(O_2)''(OH)_2$.

In another publication by Graebe and Liebermann, in 1868, they had said:

By treating alizarine with zinc dust a hydrocarbon was produced having the composition $C_{14}H_{10}$, and coinciding exactly in its properties with anthracine. * * * According to our experiments alizarine, which is hence a derivative of anthracine, must have the formula $C_{14}H_8O_4$.

In another publication by them, in 1869, they had said:

We have produced from anthracine artificial alizarine. The properties of the product obtained by us, as well as the colors which we have produced with the same on mordanted cotton, exhibit perfectly the identity of the artificial alizarine with that obtained from madder-root. * * * The methods which have led to the above results, and which we shall describe later, confirm the accuracy of the rational formula for alizarine recently advanced by us.

Again, in a further publication in 1869, they had said:

In our first notice we have already hinted that we have detected no difference between the natural and artificial alizarine, and that the very characteristic colors which both possess when fixed on cotton mordanted with alumina and iron are perfectly identical. We believe, therefore, that it is with one and the same chemical individual we have to deal, and not with isomerous compounds, of which an extraordinarily great number is conceivable, and of which an example already exists, as we have hinted, in chrysophanic acid. In conclusion, we will call attention to the fact that our production of alizarine is the first example of the artificial formation of a coloring-matter occurring in plants.

The various papers thus referred to are, it is understood, put in evidence by stipulation, with like effect as if the authors of them had testified to the facts stated in them.

In Prussia a patent for five years was granted to Graebe and Liebermann, March 23, 1869, for their bromine process, on condition that it should be put into practical operation in twelve months within the kingdom. On the 7th of July, 1870, after several notices to them, the patent was declared extinct, because proof had not been produced of the carrying out of the patented methods. In view of what Graebe and Liebermann themselves state in the publication before cited, it is manifest that the Prussian patent was revoked because the process described was not a practical one. There was nothing practical until the sulpho-acid discoveries were made. In regard to this the paper first cited says:

The patent of Caro, Graebe, and Liebermann is dated one day earlier than that of Perkin. If any value at all is to be placed in the date, then Caro must certainly be mentioned first, since the application for a patent by the German chemist was delayed by an error. The signing took place at the patent agent's in Berlin. In reference to the above two English patents, Perkin and the Baden Anilin and Soda Works, proprietors of Caro and Graebe and Liebermann's patent, made an agreement, in consequence of which the patents became common property. By the publication of these patents the sulpho-acid methods of preparing alizarine became known, and a series of works were erected in States which gave no or insufficient protection to the patentees.

This shows that the only methods practiced commercially were the sulpho-acid methods. The English patent for the bromine methods expired December 18, 1871, for the want of payment of a further fee.

The statement of Graebe and Liebermann is that Caro discovered that, by using anthrachinon with sulphuric acid, he could obtain sulpho-acids, and then, with hydrate of potash, procure alizarine, "the same as the bromine compound"—that is, the alizarine of the process of No. 4,321; but that the bisulpho-acid process developed by Perkin produces, not the alizarine of the process of No 4,321, which is bioxyanthrachinon, but trioxyanthrachinon or isopurpurin. The article sold by the defendants is this last substance made by the bisulpho-acid process, carried on abroad at the present day, and containing large proportions of coloring-matters not shown to be found to any practically useful extent in the alizarine of the process of No. 4,321, such as isopurpurine or anthrapurpurine, one or both—two articles, if they are different, or one, if they are the same, as seems to be shown. No. 4,321 furnishes no test by which to identify the product it covers, except that such product is to be the result of the process it describes. The process by which the defendant's article is made is not shown to be the same process as that described in No. 4,321. Graebe and Liebermann, as appears from their own statement, experimented with sulphuric acid and failed. It was not obvious that sulphuric acid would accomplish any result, nor was it obvious how to employ it. Their experiments with it led them to hope little from it and to withdraw their attention from it and devote themselves to improving the bromine and chlorine methods. They state that Caro avoided their mistakes, and was the first to discover the modification which led to success, and that Perkin was an independent discoverer of it about the same time. It is therefore impossible to say that the sulphuric-acid process was a known equivalent process at the time. It is easy now, after the event, for scientific men to say, with the knowledge of to-day, that the thing was obvious; but the crucial facts contradict the assumption.

It does not satisfactorily appear that the process of No. 4,321 will produce the defendant's article to any useful extent, if at all. The process of No. 4,321 never was, and is not now, practically carried on anywhere. The article of No. 4,321 was called "artificial alizarine," and the article now in the market is called by the same name; but the identity, in the sense of the patent law, between them and between the processes for producing them is not shown.

The English patent to Caro and Graebe and Liebermann having been granted June 25, 1869, and the full specification filed January 13, 1870, an application for a patent in the United States for producing artificial alizarine by the sulpho-acid processes was filed by them January 26, 1870. It was granted as No. 154,536 July 28, 1874. The full specification of the English patent and that of No. 154,536 are identical. The specifications state that the invention relates to improvements on the invention described in the English patent to Graebe and Liebermann of December 18, 1868, and in No. 95,465, "in which the preparation of artificial alizarine is based upon the action of caustic alkalies upon bibromanthrakinon or bichloranthrakinon."

They then proceed:

We have now discovered that a similar result may be obtained by substituting sulphuric acid for bromine or chlorine in the above process. We thus obtain the sulpho-acids of anthrakinon, which, by being dissolved in and heated with an excess of caustic alkali, are converted into alizarine. This invention relates to improvements in the production of coloring-matters, and more especially to improvements in the method of producing what is known as "artificial alizarine" from anthracine, a method of producing which was described in [the English patent of December 18, 1868, and in No. 95,465,] and consisted in the production of artificial alizarine by converting anthracine into either bibromanthrakinon or bichloranthrakinon, and then acting upon the same by means of an alkali, and precipitating the alizarine contained in the alkaline solution by means of an acid. In the complete specification of the aforesaid letters patent, granted to Charles Liebermann and Charles Graebe, two different series of processes are described for obtaining the brominated or chlorinated derivatives of anthrakinon. In the first of these processes the anthracine is submitted to the action of oxidizing agents, as is well understood, and the oxidized anthracine or anthrakinon is then treated with bromine or chlorine. In the second of these processes the anthracine is first treated with bromine or chlorine, and subsequently submitted to an oxidizing process, in order that the desired compound—videlicet, bibromanthrakinon, or bichloranthrakinon—may be obtained. In an analogous manner we now employ sulphuric acid as a substitute for the bromine or chlorine employed in the processes above referred to, and we thus obtain the sulphuric acid derivatives of anthrakinon, which we call "the sulpho-acids of anthrakinon."

The specifications then go on to describe the two new processes. The first is to alter the anthrakinon by heating it with sulphuric acid. The product is then put in solution and treated with carbonate of lime, and then with carbonate of potash or of soda, and potash or soda salts of the sulpho-acids of anthrakinon are produced. These are treated with caustic soda or potash under heat, and the artificial alizarine is precipitated by an acid. In the second process anthracine is heated with sulphuric acid, the product is put in solution and treated with peroxide of manganese under heat. Caustic lime is then added in excess till there is an alkaline reaction. The mixture is then filtered and carbonate of potash or soda is added to it, and the potash or soda salts of the sulpho-acids of anthrakinon are produced. These are treated with caustic potash or soda under heat, the product is put in solution, and the artificial alizarine is precipitated by an acid. It is stated in regard to this substance, made by either of these two processes, that it may be employed for the purposes of dyeing and printing, either in the same way as preparations of madder are now used or otherwise.

In each of the two specifications there are two claims, in these words:

1. The manufacture of coloring-matters by submitting anthrakinon to the action of sulphuric acid, so as to obtain soluble compounds, which we have called "sulpho-acids of anthrakinon," treating the products of such operation with an alkali, and precipitating the coloring-matters therefrom by means of an acid, as herein described.

2. The manufacture of coloring-matters by submitting anthracine to the action of sulphuric acid, oxidizing the product thereby obtained, heating such oxidized product with an alkali, and subsequently precipitating the coloring-matters therefrom by means of an acid, as herein described.

After the granting of the English patent for the sulpho-acid process, on June 25, 1869, to Graebe and Liebermann, and their application for the United States patent on January 26, 1870, it became apparent that the sulpho-acid processes and products were to be commercially valuable. Then, during the interval of the four years and a half delay in the issuing of No. 154,536, No. 95,465 was surrendered and reissued in two parts, April 4, 1871, one for the process and the other for the product, the claim in the latter (No. 4,321) being so worded as to cover "artificial alizarine produced from anthracine or its derivatives by either of the methods herein described, or by any other method which will produce a like result." Afterward Graebe and Liebermann assigned the two reissued patents of April 4, 1871, to the plaintiff on March 1, 1872.

It is very plain that the specification of the original patent (No. 95,465) states the invention to be a process for preparing alizarine, not as a new substance prepared for the first time, but as the substance already known as "alizarine," to be prepared, however, by the new process, which process is to be the subject of the patent, and is the process of preparing the known product alizarine from anthracine. The specification states that "the alizarine" is precipitated, that "the yellow flocks of alizarine" are obtained, and that "the alizarine" is in such a form that it can be employed in the same manner as the different preparations from madder, and the claim is for the "process for the production of alizarine." The provisional specification deposited in England, December 18, 1868, states that "yellow flocks of alizarine are precipitated," and that "the alizarine prepared in this artificial way is perfectly pure," and the full specification, filed in England, June 17, 1869, claims "the artificial production of alizarine." No other conclusion can be reached than that Graebe and Liebermann, in the specification of No. 95,465, intended by "alizarine" the chemical substance known by the formula $C_{14}H_8O_4$, and thought that was what their process produced. There is no suggestion of anthrapurpurine or isopurpurine or of any process for producing them. Their published statements show that it was the synthesis of the alizarine of madder which they were making, the specification of No. 95,465 shows that and nothing else, and it is not contended that the alizarine of madder contains anthrapurpurine or isopurpurine. It is very clear from the testimony that it is to anthrapurpurine or isopurpurine that the artificial alizarine sold by the defendants owes its efficiency as a dye-stuff and its practical success in the market, and that such product is produced by the bisulpho-acid process of Perkin; and it is not satisfactorily shown that the monosulpho-acid process of Caro or the bromine process of No. 4,321 will either of them practically produce that product.

Inasmuch as the defendant's article is produced from anthracine or its derivatives by some method, and is a dye-stuff called "artificial alizarine," it is contended that the sale of it infringes No. 4,321. The articles in market, called "artificial alizarine" at the present day, are substances all of which are made from anthracine; but they vary all the way from nearly pure alizarine made by the monosulpho-acid process through the products of the bisulpho-acid process, which contain combinations of alizarine and anthrapurpurine, up to an article of pure purpurine, free from alizarine. All of these are used as dye-stuffs, according to the shade of color and other qualities desired. The specific article put in evidence in this case as an infringement contains about sixty per cent. of anthrapurpurine. It is claimed by the plaintiff to be the artificial alizarine described in No. 4,321, and to be physically, chemically, and in coloring properties similar to that. But what that is is not defined in No. 4,321, except that it is the product of the process described in No. 4,321. Therefore, unless it is shown that the process of No. 4,321 was followed to produce the defendant's article, or unless it is shown that that article could not be produced by any other process, the defendant's article cannot be identified as the product of the process of No. 4,321. Nothing of the kind is shown. On the other hand, the defendant's article is made abroad and by a process different from that of No. 4,321. It therefore cannot be the product of that process. If the words of the claim "by any other method which will produce a like result" mean any other method which will produce the only product mentioned in the description—namely, alizarine, as then understood, having the formula $C_{14}H_8O_4$, the defendant's article is not that product, for it contains other dyeing ingredients which the alizarine of the patent does not contain. If the words of the claim are to be construed to cover all artificial alizarine, whatever its ingredients, produced from anthracine or its derivatives by methods invented since Graebe and Liebermann invented the bromine process, we then have a patent for a product or composition of matter which gives no information as to how it is to be identified. Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process. The circuit court found as a fact that the de-

fendant's article was produced by the process described in No. 154,536. But it regarded that process as the same process chemically as the process of No. 4,321, on the view that the bromine used in the latter was merely a vehicle, and in the former sulphuric acid was substituted as a vehicle, and though superior performed the same office in the same way; and so, as it regarded the two processes as the same, it held the two products to be the same. We consider it, however, to be established that the defendant's article is not made by the process of No. 4,321, but is made by the bisulpho-acid process of Perkin, which yields anthrapurpurine, and which, while it may involve the process of No. 154,536, goes beyond it. The bisulpho-acid process puts in two atoms of anhydrous sulphuric acid instead of one, and additional oxygen is carried in and anthrapurpurine is produced, the formula of which is $C_{14}H_8O_5$. Aside from this, it is shown that the dyeing qualities of the defendant's article depend on the anthrapurpurine or isopurpurine it contains, and not on the alizarine. As the only alizarine mentioned in No. 95,465 or in No. 4,321 is alizarine the formula of which is $C_{14}H_8O_4$, the alizarine of madder, the process described in those patents, to be a sufficient support for a valid patent, as being properly described, must be a process which will produce that article and no other; and No. 4,321, to be valid as a patent for a product, must be a patent which will produce, by the process it describes, that article and no other. Unless that process will practically produce the defendant's article, No. 4,321 is not infringed; and it is not established by the evidence that it will.

There is another view of the case. According to the description in No. 95,465 and in No. 4,321 and the evidence, the article produced by the process described was the alizarine of madder having the chemical formula $C_{14}H_8O_4$. It was an old article. While a new process for producing it was patentable, the product itself could not be patented, even though it was a product made artificially for the first time, in contradistinction to being eliminated from the madder root. Calling it artificial alizarine did not make it a new composition of matter, and patentable as such, by reason of its having been prepared artificially for the first time from anthracine, if it was set forth as alizarine, a well-known substance. (*The Wood Paper Patent*, 23 How., 566, 593.) There was therefore no foundation for Reissue No. 4,321 for the product, because on the description given no patent for the product could have been taken out originally.

Still further, the claim of No. 4,321 is not a claim merely for the product of the process described in it, but is a claim for anything which may be called "artificial alizarine," produced from anthracine or its derivatives, by either of the methods described, or by any other method, equivalent or not, which will produce anything called "artificial alizarine." The scope of such a claim is seen in this suit. An article is sought to be covered by the reissue, which it is demonstrated Graebe and Liebermann never made by their bromine process, which they knew that process would not produce, which they recognized as produced first by some one else by a different process, and which has become the subject of a large industry abroad and an extensive use in this country, through discoveries made, as they acknowledge, since their bromine process was invented. After those discoveries were made, after it was seen that the bisulpho-acid process would produce desirable dye-stuffs, and could be worked practically and profitably to that end, it was sought to control the market for the product in the United States by obtaining this Reissue No. 4,321.

We have not deemed it necessary to consider more particularly the question whether the Reissue Patent No. 4,321 is or is not for a different invention from that described in the original patent. It certainly is, unless the product claimed in the reissue is precisely that product, and no other, which the process described in the original patent produces. There can be no better evidence, as against the appellee, of what that product is than the declarations of the original patent itself and of the patentees elsewhere, as already shown. Nor have we deemed it necessary to inquire or determine whether, even if the product claimed in the reissue were the same as that which the process described in the original patent produces, it could have been made the subject of a reissued patent at the time when and under the circumstances in which this reissue was made. It is so clear that the defendants are not shown to have infringed that we have not deemed it necessary to consider other questions any further.

It results from these considerations that, if the claim of No. 4,321 is to be construed so broadly as to cover the defendant's article, it is wider in its scope than the original actual invention of Graebe and Liebermann, and wider than anything indicated in the specification of the original patent; and that, if it is to be construed as to cover only the product which the process described in it will produce, it is not shown that the defendant's article is that product or can be practically produced by that process. In either view the decree of the circuit court must be reversed and the case be remanded to that court, with direction to dismiss the bill of complaint.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 27—No. 9. TUESDAY, MAY 27, 1884. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 20, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that W. C. Berringer, of Pittsburg, Pennsylvania, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of May 27, 1884.

Patents	403	No. 299,097 to No. 299,499, inclusive.
Designs	30	No. 15,014 to No. 15,033, inclusive.
Trade-Marks	17	No. 11,194 to No. 11,210, inclusive.
Labels	6	No. 4,127 to No. 4,132, inclusive.
Reissues of patents	1	No. 10,482.
Total issue	447	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	4	.....
Austria-Hungary	.....	.....	Holland	.....	.....
Barbadoes	.....	.....	India	1	.....
Belgium	.....	.....	Mexico	.....	.....
Bermuda	.....	.....	New Zealand	.....	.....
British Guiana	.....	.....	Norway	.....	.....
Canada	7	.....	Roumania	.....	.....
Chili	.....	.....	Scotland	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	.....	.....
Cuba	2	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	21	.....
England	7	.....			
France	.....	.....			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	.....	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	.....	1	New Hampshire	2	.....
California	16	.....	New Jersey	22	.....
Colorado	2	.....	New Mexico Territ'y	.....	.....
Connecticut	15	2	New York	80	.....
Dakota Territory	.....	.....	North Carolina	1	1
Delaware	1	.....	Ohio	40	.....
District of Columbia	4	.....	Oregon	1	.....
Florida	.....	.....	Pennsylvania	40	2
Georgia	1	.....	Rhode Island	7	.....
Idaho Territory	.....	.....	South Carolina	2	.....
Illinois	30	3	Tennessee	5	.....
Indiana	14	.....	Texas	2	.....
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	12	.....	Vermont	1	1
Kansas	5	.....	Virginia	3	3
Kentucky	1	.....	Washington Territ'y	.....	.....
Louisiana	2	.....	West Virginia	1	.....
Maine	7	4	Wisconsin	8	.....
Maryland	9	4	Wyoming Territory	.....	.....
Massachusetts	35	1	United States Army	.....	.....
Michigan	15	1	United States Navy	.....	.....
Minnesota	3	.....			
Mississippi	1	.....	Total to citizens of the United States	402	23
Missouri	12	.....			
Montana Territory	.....	.....			

DESIGNS.

15,014.—BURIAL-CASKET KNOB.—*William H. Hutchinson*, Rochester, N. Y. Application filed November 12, 1883. Term of patent 7 years.

15,015.—LADY'S COLLAR.—*Sali Loewenstein*, New York, N. Y. Application filed February 5, 1884. Term of patent 3½ years.

15,016 to 15,021, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed April 8, 1884. Term of patents 3½ years.

15,022.—MONUMENT.—*Aaron J. Nellis*, Pittsburg, Pa. Application filed March 31, 1884. Term of patent 14 years.

15,023.—LADY'S COSTUME.—*John Quincy Reed*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed March 27, 1884. Term of patent 3½ years.

15,024 to 15,026, inclusive.—LADY'S COSTUME.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Applications filed March 27, 1884. Term of patents 3½ years.

15,027. and 15,028.—MISS'S COSTUME.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Applications filed March 27, 1884. Term of patents 3½ years.

15,029 and 15,030.—LADY'S COSTUME.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Applications filed March 27, 1884. Term of patents 3½ years.

15,031.—LADY'S BASQUE.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company, (Limited,)* same place. Application filed March 27, 1884. Term of patent 3½ years.

15,032.—MOLDING.—*Albrecht Vogt*, Rochester, N. Y. Application filed December 26, 1883. Term of patent 7 years.

15,033.—BURIAL-CASKET HANDLE.—*Albrecht Vogt*, Rochester, N. Y. Application filed December 26, 1883. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

11,194.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed April 22, 1884.

"The pictorial representation of a blue jay."

11,195.—CANNED CORN.—*Charles P. Mattocks*, Portland, Me. Application filed March 20, 1884.

"The figure of a bear, nually black in color, seated on his haunches nearly erect, the fore paws represented as grasping an ear of partially-husked corn or maize, with the end of the ear in the mouth of the animal."

11,196.—CIGARS.—*Reid, Murdoch & Fischer*, Chicago, Ill. Application filed April 14, 1884.

"The words 'THE PALM,' a palm-leaf fan, a banana-tree on the right, scrub-palms at its base, and the top of a palm-tree in the rear of the fan."

11,197.—SMOKING-TOBACCO.—*Tallulah Ann Richardson*, Reidsville, N. C. Application filed April 24, 1884.

"The word-symbol 'OLD UNITED STATES.'"

11,198.—SMOKING-TOBACCO.—*Timberlake, Woodson & Co.*, Lynchburg, Va. Application filed April 24, 1884.

"The word-symbol 'BUCK' and the representation of a human eye."

11,199.—SMOKING-TOBACCO.—*Timberlake, Woodson & Co.*, Lynchburg, Va. Application filed April 24, 1884.

"The word-symbol 'GREEK SLAVE' with the accompanying figure of a woman."

11,200.—STICK CANDY, CAKES, DROPS, BALLS, AND DICE.—*Darby & Co.*, Baltimore, Md. Application filed February 28, 1884.

"The representation of a striped stick of candy, in red and white, extending diagonally across a rectangular space inclosed by a border-line."

11,201.—ALLOY HAVING THE APPEARANCE OF NICKEL.—*John B. Fitch*, New Haven, Conn. Application filed April 14, 1884.

"The letter 'Z.'"

11,202.—ALLOY HAVING THE APPEARANCE OF NICKEL.—*John B. Fitch*, New Haven, Conn. Application filed April 14, 1884.

"The word 'ZENITH.'"

11,203.—CIGARS.—*Charles Gross & Co.*, Philadelphia, Pa. Application filed April 18, 1884.

"The word 'MATINEE.'"

11,204.—REMEDY FOR COUGHS AND DISEASES OF LIKE NATURE.—*Higgins, Greene & Hyde*, Rutland, Vt. Application filed February 15, 1884.

"The words 'HIGGINS' COMPOUND,' arranged in a circle, with an inner circle surrounding the letters 'T & C.'"

11,205.—PLUG AND TWIST CHEWING-TOBACCO.—*J. W. & O. G. Holland*, Danville, Va. Application filed April 22, 1884.

"The words 'BOB LEE.'"

11,206.—CANNED ROAST TURKEY.—*Charles P. Mattocks*, Portland, Me. Application filed March 20, 1884.

"The arbitrary symbol or representation of a lily of the kind known as 'calla' lily, fully blown, with leaves attached to the stem below the flower."

11,207.—CANNED CORN.—*Charles P. Mattocks*, Portland, Me. Application filed March 20, 1884.

"The arbitrary symbol of a swan colored black and swimming upon the surface of water."

11,208.—CANNED ROAST MUTTON.—*Charles P. Mattocks*, Portland, Me. Application filed March 20, 1884.

"The arbitrary symbol of a rose blown fully and surrounded by green leaves."

11,209.—MINERAL WATER.—*Sprudel Water Company*, Mount Clemens, Mich. Application filed April 28, 1884.

"The word 'SPRUDEL.'"

11,210.—CORDS, LINES, TWINES, AND ROPES.—*James P. Tolman*, West Newton, Mass. Application filed April 7, 1884.

"The designation 'SAMSON,' expressed either pictorially or by word."

LABELS.

4,127.—Title: "THE HEALTH RESTORER" (FOR A MEDICINE.)—*Joseph Bard*, Chicago, Ill. Application filed May 5, 1884.

4,128.—Title: "THE PAIN DESTROYER." (FOR A MEDICINE.)—*Joseph Bard*, Chicago, Ill. Application filed May 5, 1884.

4,129.—Title: "DIME" (FOR COLOGNE.)—*F. Hoyt & Co.*, Philadelphia, Pa. Application filed April 28, 1884.

4,130.—Title: "DR. MOORE'S JUNIPER BALSAM."—*T. Edward Kirby*, Baltimore, Md. Application filed April 30, 1884.

4,131.—Title: "UNION MADE LOAF BREAD."—*Conrad J. Kraft* and *Conrad Bernhard*, Baltimore, Md. Application filed May 2, 1884.

4,132.—Title: "FRESH HOME ROASTED COFFEE."—*E. Metzenaur*, Little Rock, Ark. Application filed May 3, 1884.

DISCLAIMER.

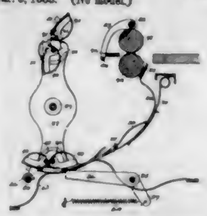
234,286.—*Warren P. Jennings*, Brooklyn, N. Y., assignor of one-half to *Abraham G. Jennings*, same place. Patent dated November 9, 1880. IMPROVEMENT IN MITT-SHAPING MACHINES. Disclaimer filed May 21, 1884, by the present owners, *Abraham G. Jennings, Warren P. Jennings*, and *Oliver T. Jennings*.

Enter their disclaimer "to the word 'seamless,' contained in the seventh claim of said letters patent."

PATENTS

GRANTED MAY 27, 1884.

299,097. PAPER-BAG MACHINE. OSCAR W. ALLISON, Rochester, N. Y., assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Mar. 3, 1883. (No model.)

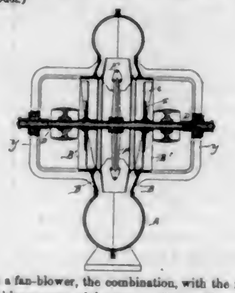


Claim.—1. The combination, with the revolving arms or carriers 87, of the revolving jaws 92 93 and the oscillating arm 32, having hook 37, substantially as described.

2. The combination, with the revolving arms or carriers 87, of the revolving jaws 92 93 and the oscillating arms 34, substantially as described.

3. The combination, with the revolving arms or carriers 87, of the revolving jaws 92 93, the oscillating arm 32, provided with hook 37, and the oscillating arms 34, substantially as described.

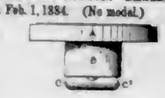
299,098. FAN-BLOWER. FREDERICK C. ANDERTON, San Francisco, Cal., assignor of one-half to Samuel Dinsmore, same place. Filed Mar. 7, 1883. (No model.)



Claim.—1. In a fan-blower, the combination, with the main fan F, set in line with the blower-case, of the two smaller auxiliary fans E, set one on each side of the main fan, and each having one side exposed to the atmosphere without cover, and having blades *e*, drawing in the air and delivering it to the center of the main fan, as set forth.

2. In a fan-blower, the combination of the blower-case and annular disks or plates B, having the wide flanges B', surrounding the circular openings, the yokes *y y*, shaft D, central fan, F, and side fans, E, revolving in the circular openings surrounded by the flanges B', substantially as set forth.

299,099. DETACHABLE BUTTON. BENJAMIN J. ANGELL, Attleborough, Mass. Filed Feb. 1, 1884. (No model.)



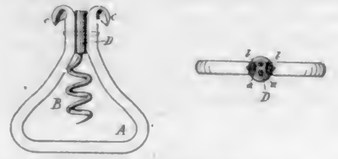
299,099.



Claim.—1. A detachable button composed of a head, a hollow stem, B, rigidly secured thereto, a T-shape member mounted to revolve axially in said stem and with relation to the button-head, and having cam-surfaces on its shank portion, as described, and springs located within the hollow stem and engaging the shank of the T-shape member to hold the head of said member in a position to lock the button in place, substantially as set forth.

2. The combination of the stem B, the T-shape member C, having cam-surfaces upon its shank portion, as described, and provided with a shoulder, c^2, and springs D, which engage the shank of the stem and the shoulder thereon and hold the T-shape member in the stem, substantially as set forth.

299,100. CORKSCREW. JOSHUA BARNES, Brooklyn, N. Y. Filed Jan. 19, 1884. (No model.)



Claim.—1. A corkscrew with a folding handle provided with convex jaws fitting into corresponding concavities in the shank of a screw-coil.

2. In a corkscrew, a screw-coil, either single or double, provided near its point or points with a cutting-edge.

3. The screw-coil of a corkscrew, formed with the portion at or near its point wider than the remainder of the screw-coil, and forming a cutting-edge.

4. A corkscrew with a folding handle, provided with convex jaws fitting into corresponding concavities in the shank of the screw-coil, and provided with a hook or hooks, substantially as described.

5. In a corkscrew, a folding handle provided with convex jaws fitting into corresponding concavities in the shank of a double or single screw-coil, which has near its point or points a cutting-edge.

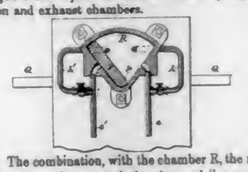
6. In a corkscrew, a folding handle provided with convex jaws fitting into corresponding concavities in the shank of a single or double screw-coil which has the portion at or near the point or points formed into a cutting-edge and made wider than the remainder of the screw-coil, substantially as described.

7. In a corkscrew, the shank of a screw-coil formed of parallel wires, provided with a hole drilled therein, and prevented from separating by means as described.

299,101. RAILROAD-SIGNAL. WALTER C. BECKWITH, Allegheny, assignor to the Beckwith Auto-Pneumatic Railway Signal Company, Pittsburg, Pa. Filed Feb. 8, 1883. (No model.)

Brief.—A device to be operated by a train passing the signal-section to set and to withdraw the signal by air-pressure in case of a train passing in one direction, and by air-suction in case of a train passing in

the opposite direction. An air-pump at each end of the signal-section is connected by a pipe with a chamber mounted on the signal-post and containing an oscillating signal-carrying plate, the two pipes opening into the chamber on opposite sides of the plate, and communicating by way of the chamber by means of branch pipes arranged as described, and having outwardly-opening valves. Each pump is connected by described reducing mechanism with a vibrating operating-lever arranged by the rail to receive the tread of the wheels. Pivoted to said lever is a latch having a stud adapted to engage the swinging operating-lever of a four-way cock in the air-pump, said latch being adapted, as described, to receive the impact of the first wheel before the wheel strikes the lever, whereby the cock is shifted to determine the action of the pump to suction or pressure before the pump is operated. The two pumps are reversely arranged relatively to the latches. Each pump is provided with compression and exhaust chambers.



Claim.—1. The combination, with the chamber R, the reciprocating piston P, the signal-vane Q, operated thereby, and the main pipes *e e'*, entering the chamber at the ends of the stroke of the piston P, of the branch run-around pipes *h h'*, each provided with a check-valve preventing the passage of air through it into the chamber R, but permitting its passage from said chamber, substantially as specified, whereby air moving in the main pipes may first operate the piston P, and then pass around it through the chamber R, to operate other pistons and signals, as described.

2. A lever pivoted to some fixed object on a railroad, having an arm shaped to be depressed by trains passing either way to actuate a pump, in combination with a two-armed latch pivoted to said lever to project its arms alternately beyond the sides of the lever, substantially as shown and described, whereby a passing train will first actuate the latch, and then operate the lever, and whereby the depressing of either end of the latch raises the other end, for the purpose specified.

3. The lever-arm C', pivoted to some fixed object on a railroad, the latch *l*, pivoted on said lever and having a stud, M, in combination with the lever L, having a loop-shaped aperture in it, substantially as described, whereby said latch will operate said lever when said stud is in the upper part of the loop, but will not operate the same when in the lower part thereof, nor when playing vertically therein.

4. The latch *l*, pivoted to the lever-arm C', and having two arms, *l'* and *l''*, and a stud, M, in combination with the loop-shaped lever L, connecting-rod *k*, and lever K, as shown and described.

5. The combination, with the chamber D, of the air-compression chamber F, the check-valve *f*, the exhaust-chamber F', the check-valve *f''*, and the four-way valve G, as shown and described.

299,102. RAILROAD-SIGNAL. WALTER C. BECKWITH, Allegheny City, assignor to the Beckwith Auto-Pneumatic Railway Signal Company, Pittsburg, Pa. Filed Aug. 15, 1883. (No model.)

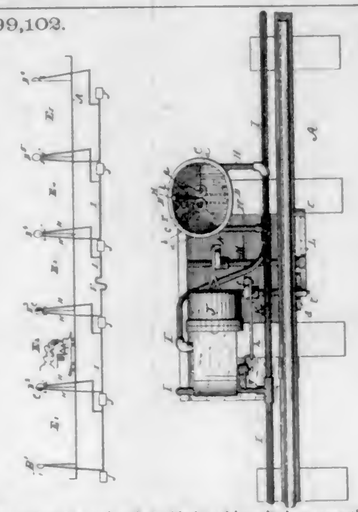
Brief.—At each station at the end of a block or signal-section are two independent oppositely-facing signals and an air-pump. Each signal is adapted to be set by air-pressure and withdrawn by air-suction, or the opposite, through a pipe-connection between the signal and the air-pump at that station and the air-pump at that one of the two next adjacent stations from which the signal faces. Each air-pump is arranged to be operated by the passing train, and is constructed to exert pressure through one port communicating with an adjacent and an advance signal, the two facing in opposite directions, and suction through the other port, communicating with an adjacent and a rear signal facing also in opposite directions. Each air-pump is provided with mechanism whereby its action, as respects pressure or suction, may be reversed by a train moving in an opposite direction.

Claim.—1. A series of pumps located along a railroad and a line of pipe joining said pumps, in combination with two sets of signals independent of each other, one set facing each way along the road, and branch pipes connecting with the main pipe adjacent to pumps, one branch connecting with a signal facing one way and another with a signal facing the other way, substantially as and for the purpose specified.

2. On a railroad divided into sections or blocks, a pump located at or near each end of a block, and a line-pipe connecting said pumps, in combination with two independent signals, facing in opposite directions, at each end of a block, and branch pipes connecting the two signals facing outward at the ends of a block with the line-pipe, which connects the pumps located at the ends of said block, substantially as described.

3. On a railroad divided into sections or blocks, a pump located at or near each end of a block, and a line of pipe connecting said pumps, in combination with two independent signals facing in opposite direc-

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tions, stationed at each end of a block, and branch pipes connecting the two signals of a station with the line-pipe at opposite sides of the pump at that station, as shown and described.

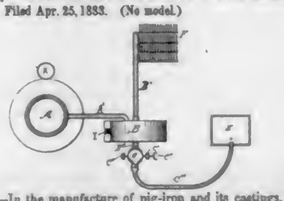
4. A series of railway-signals arranged with two oppositely-facing independent signals at each station, connected with a line-pipe, one of said signals at each station being constructed to be exposed by pressure and the other to be concealed by suction, or vice versa, the air to expose the first being drawn from the second, as shown and described.

5. Two independent oppositely-facing signals at each of two or more stations along the road, constructed to be exposed by pressure and concealed by suction, or vice versa, and a series of pumps, and a line of pipe connecting them with each other and with the signals, constructed to be operated by a passing train to draw air from one portion of the line-pipe and the signals connected therewith, and to press the same air into another portion of said line-pipe and into the signals connected therewith, substantially as described.

6. A series of signals consisting of two sets of oppositely-facing independent signals, arranged along a railroad, in combination with a series of pumps, also arranged along said road, a line-pipe connecting said pumps, branch pipes connecting said signals with the pressure and suction of said pumps, as described, and means for operating said pumps by the action of a passing train, whereby a train passing in one direction will alternately expose and conceal said signals in outwardly-facing pairs, and a train passing in the other direction will also alternately expose and conceal the same signals, but in the reverse order, as shown and described.

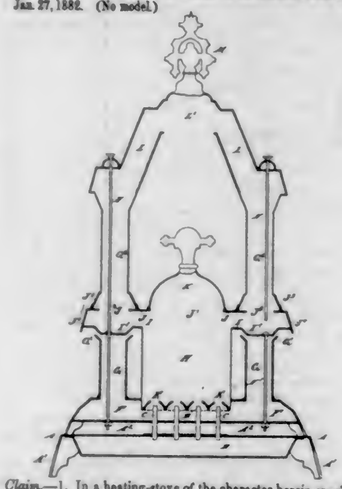
7. A series of railway-signals arranged with two oppositely-facing independent signals at each station, and a series of pumps located one at or near each of said stations, and pipes connecting said signals with said pumps, substantially as described, whereby the passing of a train in either direction will act by pressure and suction to set to "danger" the outward-facing signals of the section on which the train is entering, and will conceal the signal facing to the rear at a station to the rear of the train, by the operation of a single pump.

299,103. MANUFACTURE OF PIG-IRON. JOHN F. BENNETT, Pittsburg, Pa. Filed Apr. 25, 1883. (No model.)



Claim.—In the manufacture of pig-iron and its castings, such as herein described, the process herein specified, which consists in smelting iron and manganese ores in a blast-furnace, desiliconizing the fluid mass in a reverberatory furnace, and then discharging the fluid contents onto a pig-bed or into a ladle for distribution to the casting-molds, substantially as described.

299,104. HEATING-STOVE. LEWIS F. BEITS, Morton, Pa., assignor to John H. Irwin, same place, and Robert E. Dietz, New York, N. Y. Filed Jan. 27, 1882. (No model.)



Claim.—1. In a heating-stove of the character herein specified, the combination, with the burners C, surrounded by an air-chamber, F, of fresh-air conduits G, extending upward from said air-chamber upon each side of the flame-space, hot-air conduits or flues G^2, leading from a horizontally-extending chamber at the top of the flame-space to conduits I, terminating in a chamber, L', open at bottom, substantially as shown and described.

2. In a heating-stove of the character herein specified, the combination, with conduits G, bearing plates G', of plate I, containing depressions I', substantially as shown and described.

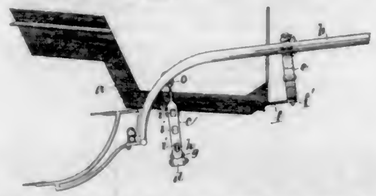
3. The combination with chimney H, of plate I, plate J, perforated at J' and J^2, and the removable dome K, substantially as shown and described.

4. In a heating-stove of the character herein specified, the combination, with chimney H, of plate I, plate J, having perforations J' and J^2 therein, and the conduits or flues G^2 and L, terminating in chamber L', said chamber being open at bottom, substantially as and for the uses and purposes shown and described.

5. In a stove of the character herein specified, the combination, with a flame-space surmounted by a horizontally-extending chamber having a radiating-surface thereabove, of two or more conduits laterally situated to said flame-space, and leading from the chamber surmounting said flame-space to a point thereover, substantially as shown and described.

6. In a stove of the character herein specified, the combination, with the flame-space surmounted by a laterally-extending chamber having a radiating-surface above said flame-space, of two or more flues or conduits extending to a point substantially over said flame-space and radiating-chamber, and adapted and arranged to direct the escaping products of combustion in a downward direction, substantially as shown and described.

299,105. TWO-WHEELED VEHICLE. JOHN C. BLOCHER, Lima, Ohio. Filed Feb. 2, 1884. (No model.)

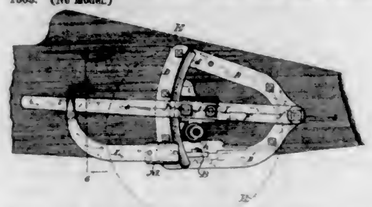


Claim.—1. The body of a road-cart swung freely from the shafts by straps or hangers *c*, and pivoted on a vertical pivot at point *f''*, as and for the purpose set forth.

2. The combination, with the body of a road-cart pivoted on a vertical pivot at the front to the spring *e*, of hangers *c*, clips *g*, and spring *d*, as and for the purpose set forth.

3. The combination, with a road-cart pivoted on a vertical pivot at its front to the spring *f*, of the vertically-adjustable hangers *c* and spring *d*, as and for the purpose set forth.

299,106. HARVESTER. REED V. BOKE, Toledo, Ohio. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the finger-beam, the grain-board, the guideway-bracket secured to the finger-beam and grain-board, the grain-wheel lever pivoted at its front end to the guideway-bracket, and having vertically-adjustable connection with said bracket, and the grain-wheel, for the purpose described.

2. The combination, substantially as hereinbefore set forth, of the finger-beam, the cranked rod, the grain-board, the guideway bracket, the grain-wheel lever pivoted at its front end, and having vertically-adjustable connection with said bracket, and the arm at the outer end of the cranked rod, with which the lever has sliding connection, for the purpose described.

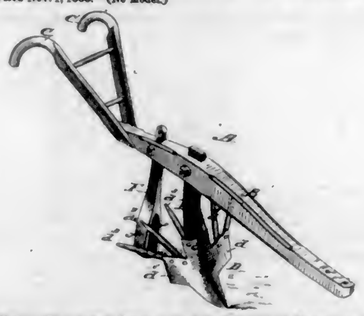
3. The combination, substantially as hereinbefore set forth, of the finger-beam, the cranked rod, the grain-board, the guideway-bracket, the grain-wheel lever pivoted at its front end, the journal-bracket secured to said lever, and having sliding engagement with the guideway-bracket, the grain-wheel, and the arm of the cranked rod, with which the grain-wheel lever has sliding connection, for the purpose described.

4. The bracket D, adapted to be secured to the grain-board, having the cranked-rod bearing, and the socket *g* for attachment to the finger-beam, and provided with the boss at its front end and the guideway at its rear end, substantially as and for the purpose hereinbefore set forth.

5. The combination of the grain-wheel lever, the journal-bracket secured thereto, the bracket to which the lever is pivoted, and having the guideway with which the journal-bracket has sliding engagement, and the cranked-rod arm with which the grain-wheel lever has sliding connection, substantially as and for the purpose hereinbefore set forth.

6. The combination of the finger-beam, the cranked rod, the arm at the outer end thereof, the grain-board, the grain-wheel lever pivotally supported at its front end, and having adjustable connection at its rear end with the arm of the cranked rod, and the grain-wheel, substantially as and for the purpose hereinbefore set forth.

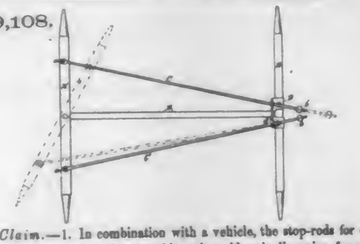
299,107. POTATO-DIGGER. CHRISTOPHER BOUL, West Belleville, Ill. Filed Nov. 1, 1883. (No model.)



Claim.—In a potato-digger, a vertical rear support, F, formed of a single piece adjustably secured directly to the beam B, and constructed with forks *f f*, which bear on the ground, in combination with a potato-digging shovel having wings *d d*, a central upward extension, d^3, and radiating fingers d^3, all constructed and adapted to operate substantially in the manner and for the purposes described.

299,108. TURNING-GEAR FOR VEHICLES. FREDERICK BRENGMAN, Indianapolis, Ind., assignor to the Emerson, Fisher Company, Cincinnati, Ohio. Filed Dec. 12, 1882. (No model.)

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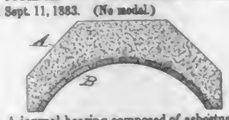
Claim.—1. In combination with a vehicle, the stop-rods for controlling the rotation of the movable axle, said rods diverging from the point where they are attached to the stationary part of the vehicle to the movable axle, and stops and devices for regulating the amount of rotation of said axle, substantially as and for the purposes specified.

2. The combination of the front and rear axles, A A′, connected by the perch B, and the stop-rods C, connected at one end to one of the axles, the other ends passing through openings *e* in the stop-plate D, connected to the opposite axle, the free ends of the rods being provided with stops to engage with the stop-plate, substantially as and for the purposes specified.

3. The combination of the front and rear axles, A A′, connected by the perch B, and the stop-rods C, connected at one end to one of the axles, the other ends passing through openings *e* in the stop-plate D, connected to the opposite axle, the free ends of the rods being provided with nuts *b*, to engage with the stop-plate, substantially as and for the purposes specified.

4. The combination of the front and rear axles, A A′, connected by the perch B, and the diverging stop-rods C, connected at one end to one of the axles, the other ends passing through openings *e* in the stop-plate D, connected to the opposite axle, the free ends of the rods being provided with nuts *b*, to engage with the stop-plate, substantially as and for the purposes specified.

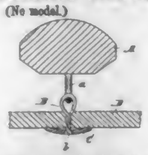
299,109. JOURNAL-BEARING. CHARLES F. BINGHAM, Worcester, Mass. Filed Sept. 11, 1883. (No model.)



Claim.—1. A journal-bearing composed of asbestus and paper-pulp treated with oxide and chloride of magnesium, in the manner and for the purpose herein specified.

2. A journal-bearing composed of asbestus and paper-pulp treated with oxide and chloride of magnesium, as herein described, and provided with a perforated metal lining on its journal side, all as described, and for the purpose set forth.

299,110. BUTTON-FASTENER. HUBERT BROSSEL, Indianapolis, Ind. Filed Nov. 12, 1883. (No model.)



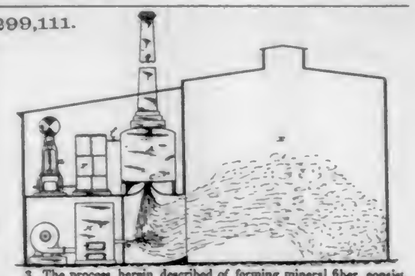
Claim.—The combination, with a button provided with a shank and eye, of the fastener B, formed out of wire twisted into a loop to receive the eye *a* of the button A, and having a flattened head, *b*, and the rounded washer-plate C, provided with a slot, *c*, to receive the fastener B, substantially as described, and for the purpose specified.

299,111. PROCESS OF AND APPARATUS FOR FORMING MINERAL FIBER OR WOOL FROM FURNACE-SLAG. ROBERT BURNS, Chicago, Ill. Filed Oct. 25, 1883. (No model.)

Claim.—1. The process herein described of forming mineral fiber, consisting in forcing molten slag or scoria under a heavy pressure through a perforated head, substantially as described.

2. The process herein described of forming mineral fiber, consisting in forcing molten slag or scoria under a heavy pressure through a perforated head, so as to form slender filaments or fibers, and means for supplying a blast of air to cool and convey the fiber into a proper receiving or settling chamber, substantially as described.

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3. The process herein described of forming mineral fiber, consisting in forcing molten slag or scoria under a heavy pressure through a perforated head, so as to form slender filaments or fibers, and means for supplying a blast of air of the required temperature, so as to produce a fiber of the required toughness or fragility, substantially as described.

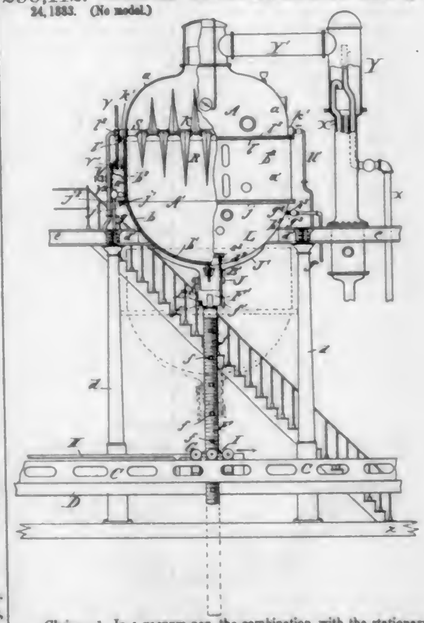
4. In an apparatus for making mineral fiber, the combination of furnace A, slag-tank B, perforated head C, and accumulator F, as described, and for the purpose set forth.

5. In an apparatus for making mineral fiber, the combination of the furnace A, slag-tank B, perforated head C, accumulator F, and valve *f*, controlling communication between the accumulator and the slag-tank, as described, and for the purpose set forth.

6. In an apparatus for making mineral fiber, the combination of the furnace A, slag-tank B, perforated head C, accumulator F, and blast-pipe D, as described, and for the purpose set forth.

7. In an apparatus for making mineral fiber, the combination of the furnace A, slag-tank B, perforated head C, accumulator F, blast-pipe D, and hot-blast stove H, substantially as described, and for the purpose set forth.

299,112. VACUUM-PAN. LUCAS M. CAMPI, Havana, Cuba. Filed Aug. 24, 1883. (No model.)



Claim.—1. In a vacuum-pan, the combination, with the stationary dome, of the receiver, movable to and from the dome, substantially as and for the purposes set forth.

2. In a vacuum-pan, the combination, with the stationary dome, of the receiver, movable vertically to and from the dome and horizontally from its vertical plane of movement, substantially as and for the purpose set forth.

3. In a vacuum-pan, the receiver pivotally connected to its support, whereby it is adapted to be tilted to empty its contents, substantially as described, and for the purpose set forth.

4. In a vacuum-pan, the receiver pivotally connected to its support and held from accidentally tilting, and, when tilted, from being suddenly precipitated by the action of springs, substantially as set forth.

5. The combination, with the stationary dome A of the vacuum-pan, of the receiver A′, placed upon the screw F, whereby the receiver may be raised and lowered, substantially as and for the purposes set forth.

6. The receiver A′ of the vacuum-pan, pivoted upon its support, whereby the receiver may be tilted for emptying out its contents, substantially as described.

7. The receiver A′, held upon the screw F, which works through the truck G, in combination with the supporting-track for the truck, whereby the receiver may be raised and lowered and moved to and from the dome A, substantially as and for the purposes set forth.

8. The trucks G G, placed upon tracks C C and connected by rods or plates H, in combination with screw F, receiver A′, and stationary dome A, substantially as and for the purposes set forth.

9. The dome A, having the lower ring-casting, *a′*, in combination with the receiver A′, having the upper ring-casting, b^2, the casting *a′* being adapted to inclose the casting b^2, substantially as and for the purposes set forth.

10. The upper casting, b^2, of the jacket of the receiver, formed with the flange j' and lip j^3, in combination with the dome formed with the lower casting, *a′*, adapted to surround the casting b^2 and rest at its lower edge upon the flange j', substantially as and for the purposes set forth.

11. The dome A, formed with the recess *m*, in combination with the packing N, placed in said recess, and the receiver A′, adapted to be brought up to the packing, substantially as and for the purposes set forth.

12. In a vacuum-pan, the casting b^2, formed with the flange P and vertical plate Q, substantially as and for the purposes set forth.

13. In a vacuum-pan, the casting b^2, formed with the recess *m′*, in combination with the dome A, formed with the lip O, substantially as and for the purposes set forth.

14. The shell S and arms R, formed with the heating-space R^1, in combination with the pipe T and short pipes T′, through which steam is admitted to the spaces R^2, the arms being provided with the valves *q* and short passages *q′*, for exhausting the steam from the space R^2 into the shell S, substantially as and for the purposes set forth.

15. In a vacuum-pan, the hollow agitator K, having hollow arms R, in combination with the hollow-journal U, and means, substantially as described, for supplying steam to and revolving the agitator, substantially as and for the purposes set forth.

16. In a vacuum-pan, the coupling-pipe g^2, arranged to connect the steam-pipe *g* with the space *h* and to lock the dome and receiver together, substantially as described.

17. The box A^3, having the elongated space i^2, in combination with the longitudinally-movable screw-coupling pipe g^2, arranged to operate substantially as and for the purposes set forth.

18. In a vacuum-pan, the agitator composed of a series of hollow arms, R, connected to a shell, S, journaled in the lower edge of the dome, in combination with the pipe T and short pipe T′, the former being inclosed in the shell S, and the latter inclosed in the arms R, substantially as and for the purpose set forth.

19. In a vacuum-pan, the combination, with the agitator provided with hollow arms R, connected to the shell S, having steam-tight packed journals, of the pipe U and gear-wheel V, gearing with the pinion V′, driven by suitable means, substantially as and for the purpose set forth.

20. In a vacuum-pan, the combination, with the agitator provided with hollow arms R, having the short pipes T′, and connected to the shell S, having the pipe T, of the hollow steam-tight packed journals, the pipes U and T^3, the gear-wheel V, and pinion V′, driven by suitable means, substantially as and for the purpose set forth.

21. In a vacuum-pan, the combination of the shell S, inclosing the pipe T and carrying the agitator-arms R, provided with steam-spaces R^2 and short pipes T′, the pipe U, pipe T^3, nut W, coupling and clutch nut W′, packing W^2, ring *k′*, gear-wheel V, and pinion V′, driven by suitable means, substantially as and for the purpose specified.

299,113. CUSHIONING DEVICE FOR SHAFTS. WM. H. CLARK, Chicago, Ill. Filed Aug. 6, 1883. (No model.)

Claim.—1. A cushioning device located between the power and the load, and operating to relieve the strain in use under varying resistance on either a forward or reverse movement of the shaft, substantially as specified.

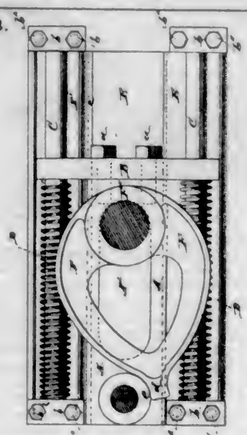
2. A cam or eccentric, a sliding plate carrying a roller, a supporting-plate for the sliding plate, and resisting-springs for the sliding plate, in combination with a driving-crank and shaft, substantially as and for the purpose specified.

3. The combination of the cam or eccentric F and sliding plate A, having the roller *e*, with resisting-springs D, and interposed between the power and the load to receive the shock of the resistance, substantially as specified.

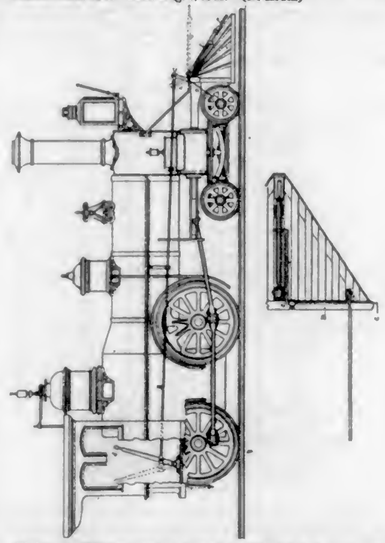
4. The sliding plate A, carrying the roller *e*, supporting-plate E, guide-rods C, and springs D, in combination with the cam or eccentric F, and interposed between the power and the load, substantially as and for the purpose specified.

5. The sliding plate A, carrying the roller *e*, cross-head B, guide-rods C, springs D, and supporting or backing plate E E′, in combination with a cam or eccentric, F, substantially as and for the purpose specified.

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299,114. LOCOMOTIVE DRAW-BAR LIFTER. CHAS. K. CORDREY, Bellefontaine, Ohio. Filed Aug. 6, 1883. (No model.)



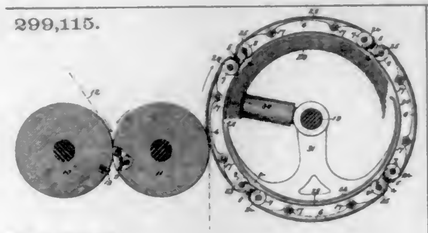
Claim.—1. The combination, with the coupling-bar of a locomotive, of the lever E, revolving rod D, crank C, connecting-rod B, and handle A, as and for the purpose set forth.

2. The combination, with the coupling-bar of a locomotive, of the lever E and revolving rod D, having a crank-handle, G, convenient for operation by the brakemen when on the ground alongside the pilot, substantially as set forth.

299,115. SHEET-DELIVERY APPARATUS. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Sept. 27, 1883. (No model.)

Claim.—1. The combination, with the rotating carrier provided with a number of pathways arranged to receive the sheets from the previous mechanism and deliver them upon the piling-table, of means for directing the leading ends of the sheets into said pathways, all substan-

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tially as described.

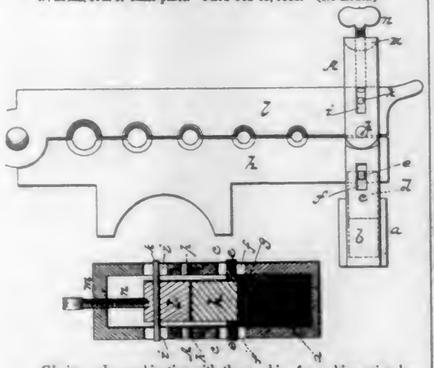
2. The combination, with a web-severing mechanism, of a rotating carrier provided with a number of pathways arranged to receive the sheets from the previous mechanism and deliver them upon the piling-table as they are carried over the same, of means for directing the leading ends of the sheets into said pathways, all substantially as described.

3. The combination, with the rotating carrier provided with a number of pathways formed of series of tapes, as 2 3, which tapes have a motion independent of that of the carrier and are arranged to receive the sheets from the previous mechanism and deliver them upon the piling-table as they are carried over the same, of means for entering the successive sheets into said pathways, and means for driving said carrier at a less speed than said previous mechanism, all substantially as described.

4. The combination, with the cutting-cylinders 10 11, provided with the switch 14, of a sheet-laying mechanism consisting of a rotating carrier provided with a number of pathways, into which the sheets are successively directed by said switch and from which they are delivered to the piling-table as they are carried over the same, all substantially as described.

5. The combination, with the rotating carrier provided with a number of pathways formed of series of tapes, as 2 3, and arranged to receive the sheets from the previous mechanism and deliver them upon the piling-table as they are carried over the same, of means for driving said tapes and carrier, so that their combined speed will be equal to that of the previous mechanism, and means for entering the sheets into said pathways, all substantially as described.

299,116. MACHINE FOR MAKING REINS. ORANGE ARMSTRONG DEAN, Parkville, Ill., assignor of two-thirds to Isaac N. Dart and Taylor W. Brian, both of same place. Filed Oct. 13, 1883. (No model.)



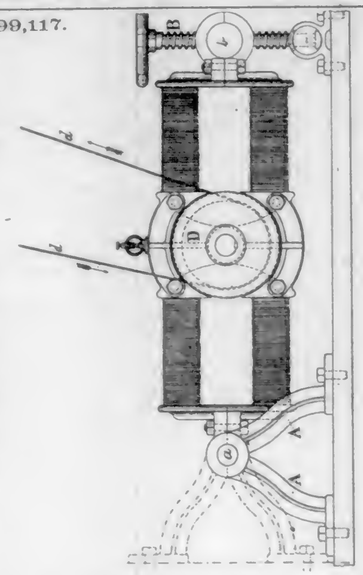
Claim.—In combination with the machine for making reins, having the pivoted jaws *h* and *l*, the rectangular frame A, having the receptacle *a* to receive the spring *b*, the block *d*, having lugs *e e*, engaging the slots *f f*, and thumb-screw *n*, the whole operating as described, and for the purpose specified.

299,117. CONSTRUCTION OF ELECTRIC MACHINES. PHILIP DIEHL, Elizabeth, N. J. Filed Apr. 5, 1883. (No model.)

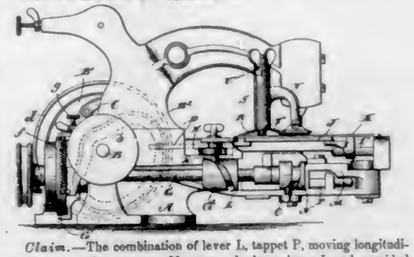
Claim.—1. An electric machine having a driving-pulley, in combination with pivotal supports for said machine, and with means for adjusting the height of one of said supports, and thus varying the tension of the driving-belt for said pulley, substantially as described.

2. An electric machine having a driving-pulley, and constructed with a fixed pivotal support at one end and an adjustable support at the other, combined with means for changing the height of said adjustable support, and thus varying the tension of the driving-belt for the said pulley, substantially as described.

299,117.

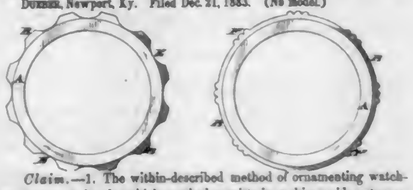


299,118. BUTTON-HOLE SEWING-MACHINE. JAMES DOWLING and JOHN CONNOLLY, London, England. Filed July 27, 1881. (Model.) Patented in France Nov. 10, 1882, No. 152,174.



Claim.—The combination of lever L, tappet P, moving longitudinally in guides thereon, arm M, arranged above lever L and provided with downwardly-extending prongs which straddle said tappet, the transversely-moving slide which carries the feeding-plate and is connected to said arm, a shaft which vibrates said lever transversely, and devices whereby said tappet may be shifted longitudinally, so as to cause the machine to sew on one side of the button-hole or the other, substantially as described.

299,119. MANUFACTURE OF WATCH-CASE CENTERS. JOHN C. DUBBER, Newport, Ky. Filed Dec. 21, 1883. (No model.)



Claim.—1. The within-described method of ornamenting watch-case centers or bands, which method consists in making said centers or bands with an integral annular flange or rib, and then subdividing said flange, so as to afford a series of projecting members arranged circumferentially around said center, substantially as described.

2. As a new article of manufacture, a watch-case center armed with a series of projecting ornaments extending circumferentially around the periphery of said center, said ornaments being integral with said center, substantially as herein described.

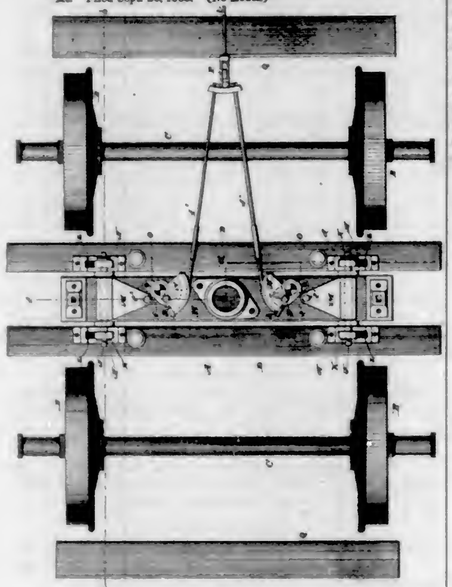
299,120. WHEEL. REUBEN ELLWOOD and HANS HANSON STAUGAARD, Sycamore, Ill., assignors to the R. Ellwood Manufacturing Company, same place. Filed Dec. 11, 1883. (No model.)



Claim.—1. The hub A A′, having openings *a*, and spokes B, having heads *b*, in combination with a pipe-box, C, substantially as and for the purpose specified.

2. The hub A A′, having openings *a*, and spokes B, having heads *b*, in combination with the pipe-box C and cap or cover D, substantially as and for the purposes specified.

299,121. CAR-BRAKE. HENRY FLAD and FRITZ HÖPFNER, St. Louis, Mo. Filed Sept. 20, 1883. (No model.)



Claim.—1. In a car-brake, the combination, with a movable bolster and boxes or equivalent devices, each having an inclined bearing-face, of rollers adapted to move on the inclined faces of the boxes, suitable braking mechanism, and devices connecting the rollers to the braking mechanism, whereby the movement of said rollers in one direction operates to set the brakes, substantially as set forth.

2. In a car-brake, the combination, with a movable bolster and boxes or equivalent devices, each having an inclined bearing-face, of rollers adapted to move on the inclined faces of the boxes, devices for indirectly connecting the rollers to the bolster, suitable braking mechanism, and devices connecting the rollers and braking mechanism, substantially as set forth.

3. In a car-brake, the combination, with a truck having transverse parallel beams, boxes secured to said beams, each of said boxes being provided with an inclined bearing-face, and a movable bolster situated between the transverse beams, of bars having rollers thereon which move on the inclined faces of the boxes, links for suspending the bolster from the bars, a suitable braking mechanism, and devices connecting the braking mechanism and bars, substantially as and for the purpose set forth.

4. The combination, with a truck having two transverse parallel beams, boxes or plates secured to said beams, and a movable bolster situated between the beams, of the bars J, rollers secured to said bars and adapted to move on the inclined faces of the boxes, stirrups for suspending the bolster from the bars J, and devices whereby the weight of the car operates to draw the bars toward each other and elevate the bolster.

5. The combination, with a car-truck having two parallel transverse beams, the boxes secured to said beams, and a movable bolster, of stirrups, the bars J, rollers secured to said bars, and brake mechanism indirectly connected to said bars, whereby the movement of said bars operates to control the brakes.

6. The combination, with the truck, boxes provided with abutments and inclined bearing-faces, and a movable bolster, of the bars J, rollers secured to said bars, stirrups connected to said bars and supporting the bolster, straps connected to the bars, and brake mechanism indirectly connected to said straps.

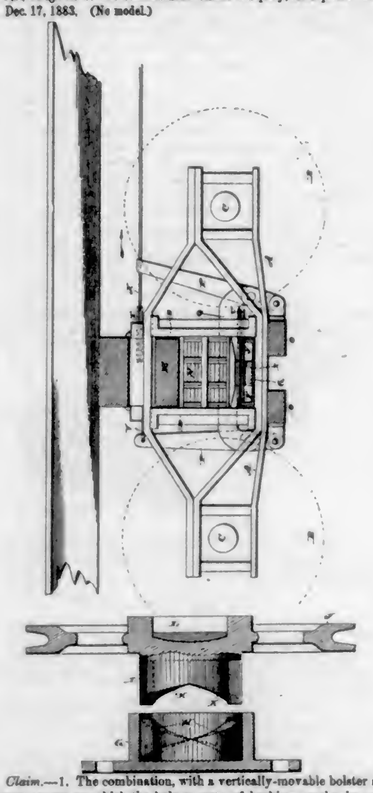
7. The combination, with a car-truck, transverse beams, the boxes, and bolster, of the bars J, rollers secured to said bars, stirrups suspended from the bars and supporting the bolster, sector-levers pivoted to the bolster, chains or equivalents connecting the sector-levers and the bars J, chains or equivalents connecting the sector-levers and brake mechanism, and means connected to the brake-lever for elevating the car-body.

8. The combination, with the car-truck, the boxes, bolster, and brake mechanism, of the bars J, rollers secured to said bars, stirrups for supporting the bolster, sector-levers pivoted to the bolster and connected to the bars, and chains connecting the sector-levers and brake mechanism.

9. The combination, with the car-truck, boxes, movable bolster, and brake mechanism, of the bars J, rollers, stirrups, straps, sector-levers, chains connecting the straps and sector-levers, and chains or equivalents connecting the sector-levers and brake mechanism, all of the above parts combined and adapted to operate as described.

10. The combination, with the truck, boxes, and brake mechanism, of the bars J, rollers, stirrups, spring-board, spring, bolster, straps connected to the bars J, sector-levers, chains or equivalents connecting the sector-levers, and straps, chains, or equivalents connecting the sector-levers and brake mechanism, and devices connected to the brake-lever for elevating the car-body, all of the above parts constructed, combined, and adapted to operate as described.

299,122. CAR-BRAKE. HENRY FLAD and FRITZ HÖPFNER, St. Louis, Mo., assignors to the Mallinckrodt Brake Company, same place. Filed Dec. 17, 1883. (No model.)



Claim.—1. The combination, with a vertically-movable bolster and two-part screws on which the bolster rests, of braking mechanism and devices for connecting the latter with the two-part screws, substantially as set forth.

2. The combination, with a vertically-movable bolster and two-part screws on which the bolster rests, of braking mechanism connected to the screws and devices for turning said screws and operating the said

braking mechanism, substantially as set forth.

3. The combination, with a car-truck and a spring-board secured thereto, of two-part screws secured to opposite ends of said board, a vertically-movable bolster, braking mechanism, and devices for raising or lowering said bolster and operating the brake mechanism, substantially as set forth.

4. The combination, with a car-truck and a spring-board secured thereto, of two-part screws secured to the latter, a vertically-movable bolster connected to said screws, brake mechanism, pulleys, and ropes or their equivalents for raising or lowering said bolster and operating the brake mechanism, substantially as set forth.

5. The combination, with a car-truck and a spring-board secured thereto, of two-part screws secured to the latter, a vertically-movable bolster connected with said screws by intermediate springs, brake mechanism, pulleys, and ropes or their equivalents for raising or lowering and operating the brake mechanism, substantially as set forth.

6. The combination, with a car-truck and a spring-board secured thereto, of a vertically-movable bolster, two-part screws between said bolster and board and provided with pulleys, brake mechanism, a shaft connecting said bolster and board and provided with a pulley, and ropes or their equivalents connected with and passing around said pulleys, and adapted to raise or lower said bolster and operate the brake mechanism, substantially as set forth.

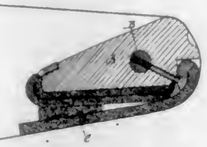
7. The combination, with a car-truck and a spring-board secured thereto, of two-part screws situated between the spring-board and bolster, provided with pulleys, a vertically-movable bolster, a shaft connecting said bolster and board and provided with a pulley, and ropes or chains connected to opposite sides of said latter pulley, and connected with said former pulleys and passing around the same in opposite directions, substantially as and for the purpose set forth.

8. The combination, with a truck, spring-board, and movable bolster, of two-part screws connecting said bolster and board, a rod connecting said board and bolster and provided with pulleys, brake mechanism secured to the spring-board, and ropes or chains connecting said pulleys and screws, adapted to operate the brake mechanism, substantially as set forth.

9. The combination, with a truck, spring-board, and movable bolster, of two partial screws working upon each other and connecting said bolster and spring-board, a rod connecting said bolster and board and provided with pulleys, brake-beams secured to said board and provided with brake-shoes, brake-levers, and ropes or chains connecting said screws with said pulleys and adapted to operate the brake-lever, substantially as set forth.

10. The combination, with the truck, spring-board, and movable bolster, of partial screws situated between the spring-board and bolster, pulleys, brake mechanism, and ropes or chains, all of the above parts combined and adapted to operate as described.

299,123. BELT-SUPPORT FOR MACHINES FOR BUFFING BOOT AND SHOE SOLES. GEORGE H. P. FLAGG, Boston, and JAMES W. MALOY, Somerville, Mass., assignors to George H. P. Flagg, Trustee. Filed Apr. 4, 1884. (No model.)



Claim.—The device above described for supporting belts, consisting of the rigid block A and the cushion C, constructed and combined together substantially as set forth.

299,124. TWO-WHEELED VEHICLE. WALTER S. FRAZER, Aurora, Ill. Filed Mar. 22, 1883. Renewed Feb. 29, 1884. (No model.)

Claim.—1. The seat G, composed of a frame, substantially as described, with removable seat-board *a*, having the projections *b* and back *d*, substantially as specified.

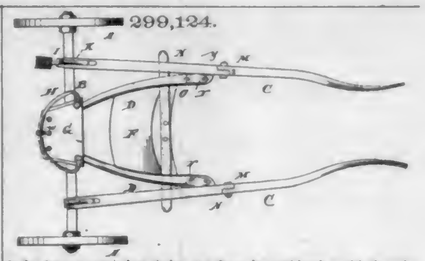
2. The seat composed of the frame *g h i*, attached to the arms D, and thereby forming the ledges *f*, in combination with the removable seat-board *a*, substantially as specified.

3. The combination of the seat-frame, constructed substantially as described, with the removable seat-board *a* and the removable box I, both resting upon and supported by the arms D, substantially as set forth.

4. The combination of the removable seat-board *a*, having the spring-back *c d*, with a seat having a rail, H, substantially as set forth.

5. The extension or plate *r*, arm D, and bolt *u*, in combination with the arm E, and plates *s* and *t*, and shaft C, substantially as specified.

6. The axle B, having at each end two depending projections, *j* and



k, the former serrated on their outer faces, in combination with the spindles B′, passing through the depending projections, and having collars *l*, serrated on their inner faces, and nuts *m*, securing the spindles, substantially as described.

7. The step-shank I, having the groove or recess *q*, in combination with the axle B and the brace J, substantially as and for the purpose specified.

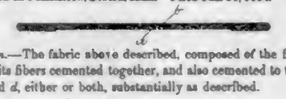
299,125. HEEL-STIFFENER FOR BOOTS OR SHOES. GEORGE A. FULLERTON, Boston, Mass. Filed Dec. 20, 1883. (No model.)



Claim.—1. The heel-stiffener above described, composed of felt, the fibers of which are cemented together.

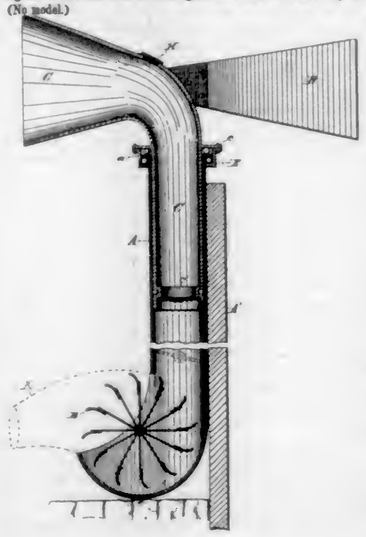
2. The stiffener above described, composed of the fibrous sheet *a*, having its fibers cemented together, and also cemented to the covering *b* or lining *d*, either or both, substantially as described.

299,126. FABRIC OR SUBSTITUTE FOR LEATHER FOR INSOLES. GEORGE A. FULLERTON, Boston, Mass. Filed Jan. 31, 1884. (No model.)



Claim.—The fabric above described, composed of the fibrous sheet *a*, having its fibers cemented together, and also cemented to the sheets of cloth *b* and *d*, either or both, substantially as described.

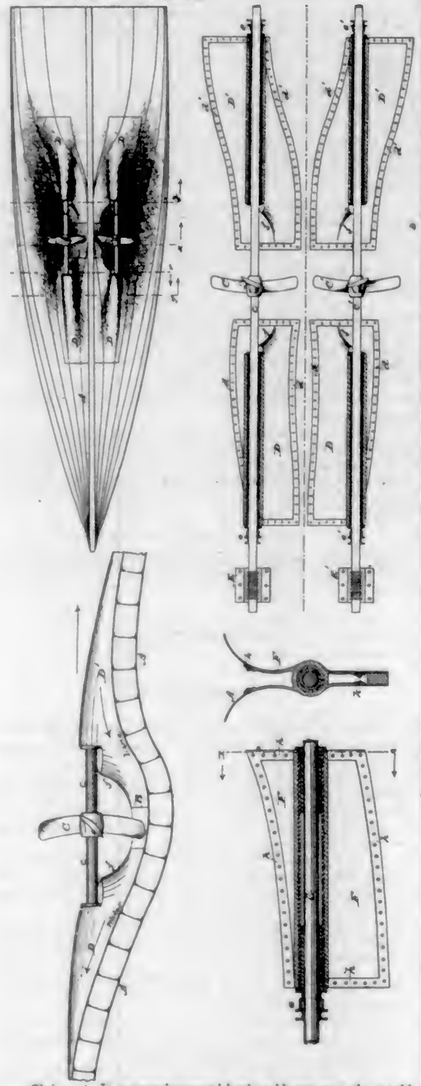
299,127. WIND-POWER. CULBERSON S. GARRIGUS, Tiffin, Ohio, assignor of one-half to J. H. Pittenger, same place. Filed July 3, 1883. (No model.)



Claim.—1. The combination, with a stationary tube provided at its lower end with a wind-wheel, and a tube swiveled to the stationary tube, and provided with an open flaring mouth and vane, of a damper located above the wind-wheel, and adapted to regulate the supply of air to the latter, substantially as set forth.

2. The combination, with a stationary tube provided at its lower end with a wind-wheel, and a tube swiveled to the stationary tube, and provided with an open flaring mouth and a vane, of a damper situated above the wind-wheel, and a relief-valve situated above the damper, substantially as set forth.

299,128. SEA-GOING VESSEL. JOHN GARTNER, Rochester, N. Y. Filed Oct. 22, 1883. (No model.)



Claim.—1. In a sea-going vessel having side recesses, the combination of the propellers B, arranged therein, with the separate pillow-block castings D D′, forming parts or sections of the skin or plating A of the vessel, the pillow-bearings for the shafts projecting from the surface of said castings in lines conforming to the walls of the recesses and to the side water-lines of the vessel, entering and emerging from said recesses on each side of said pillow-block bearings, substantially as described, for the purpose specified.

2. In a sea-going vessel constructed with side recesses and having side propellers arranged therein, the separate pillow-block castings D D′, for the propeller-shafts, constructed to form parts or sections of the skin or plating A of the vessel, with the pillow-bearings projecting longitudinally in line with the sides of the vessel into said recesses, conforming to the contour of the water-lines of the vessel, and provided with suitable bushings and packings for the propeller-shafts, substantially as described.

3. In a sea-going vessel, the combination, with the separate pillow-block castings D D′, forming parts or sections of the skin or plating of a vessel constructed with side recesses to the water-lines, whereof the bearing-projections of said pillow-blocks conform, of the propellers, their shafts passing through the bearings of said separate pillow-castings and the end thrust-bearings E E′, substantially as described.

4. In a sea-going vessel, the combination, with a stern propeller, of a pillow-block casting, F, forming a part or section of the skin or plating of the vessel, conforming to the water-lines of both sides of the stern, having the pillow-bearing extending through it between the plating, and provided with suitable bushings and packing, substantially as described.

5. In a sea-going vessel having both side and stern propellers, the former arranged within side recesses, the separate pillow-block castings D, D′, and F, constructed to form the bearings for the propeller-shafts and a part or section of the skin or plating of the vessel, conforming to the water-lines of the vessel's sides and stern, and provided with suitable bearings, substantially as described.

6. The combination, in a sea-going vessel constructed with side recesses, of side propellers arranged therein, with pillow-block castings forming a part or section of the skin or plating of the vessel, their bases conforming to the contour or side water-lines thereof, and having integral cut-waters, substantially as described, for the purpose specified.

7. A sea-going vessel, provided with separate pillow-block castings D, D′, and F, for the sides and stern, constructed to form parts or sections of the skin of the vessel, to conform to the water-lines thereof, substantially as described, in combination with the propellers and their shafts, having suitable bearings, bushings, and oiling appliance in said pillow-block castings, substantially as described.

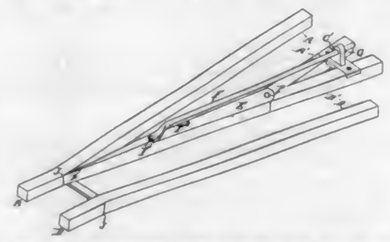
8. The pillow-block castings for the side-propeller shafts of a sea-going vessel, having side recesses for the propellers, conforming to the water-lines of the vessel, said pillow-block castings provided with integral cut-waters, and having their bases conforming to the water-lines of the vessel.

299,129. CAR-AXLE BOX. NATHAN M. GEORGE, Danbury, Conn. Filed Nov. 3, 1883. (No model.)



Claim.—A dust-guard for car-axle boxes, substantially as herein described, consisting of one apertured board, *d*, and a thin apertured piece, *c*, made of vulcanized fiber or leather, as described, the wooden board *d* having a spring, *e*, operated against its lower end, as described, and for the purpose herein specified.

299,130. STORE-SERVICE SWITCH. EDWIN L. GILES, Lowell, assignor to the Lamson Cash Railway Company, Boston, Mass. Filed Aug. 27, 1883. (No model.)



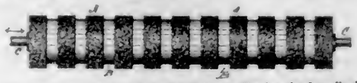
Claim.—1. The combination, with two tracks which converge into a single track, of a movable switch-rail, and means whereby a spheri-

cal carrier traveling one of said converging ways toward said switch-rail will operate said switch-rail before coming in contact with the same.

2. The combination of the two tracks converging into one, the movable switch-rail, and a movable rod placed above and pivoted to said switch-rail, between the ends of the same, and pivoted to the inner rails of said converging tracks, said rod being adapted to slide at one of said pivoted points.

3. The combination of the converging tracks, the single track, the bracket secured to the inner rails of said single track and provided with a hole, the switch-rail, and the rod pivoted to said switch-rail, as and for the purpose specified.

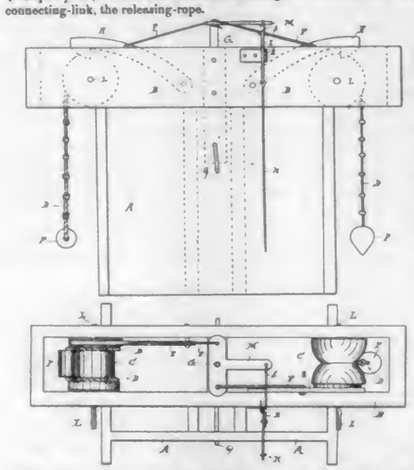
299,131. CARD-GRINDING ROLLER. WALTER B. GOULD, Boston, Mass. Filed Oct. 24, 1883. (No model.)



Claim.—The improved card-grinding roller herein described, extending the full width of the card, and consisting of a series of cylindrical grinding-sections, A, separated by independent circumferential grooves B, having the ventilating and edge-grinding capabilities, substantially as set forth.

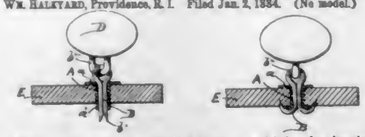
299,132. FIRE-ESCAPE. JACOB HABER, Garfield, Kans. Filed MAR. 6, 1884. (No model.)

Brief.—The pawls which hold the ladder-reels are connected to a T-shaped plate, to which is also attached, through a bell-crank lever and connecting-link, the releasing-rope.



Claim.—In a fire-escape, the frame B, and the rollers C C', having shafts L, provided with ropes or flexible ladders D, in combination with pawls E, rods or links F, plate M, and bell-crank lever I, provided with cord K, substantially as described, and for the purposes set forth.

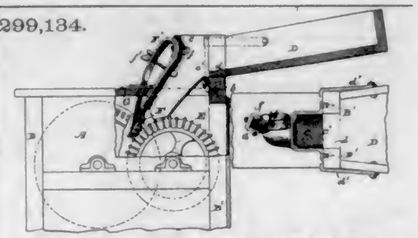
299,133. METHOD OF ATTACHING BUTTONS TO SHOES, &c. WM. HALKYARD, Providence, R. I. Filed Jan. 2, 1884. (No model.)



Claim.—The method of attaching buttons to fabrics, &c., herein described, which consists, first, in passing a staple through the eye or shank of the button, then inserting said staple through the neck of a flanged eyelet, after which the eyelet and staple are inserted through the fabric and clinched thereunder by suitable means at one operation, substantially as shown and set forth.

299,134. CORN-SHELLER. WILLIAM H. HALL, Tiffin, Ohio. Filed May 22, 1883. (No model.)

299,134.



Claim.—1. In a corn-sheller, the combination of the shelling mechanism, the long rear posts, and the metal hopper opening horizontally between said posts to receive from a wood hopper, chute, or conveyer, and bulging out in front of them to afford a vertical mouth for feeding by hand.

2. In a corn-sheller, the combination, with a metal hopper having a mouth opening horizontally between the long rear posts, of a wood hopper having a bottom prolonged into a tongue to fit snugly between said rear posts and come flush with the under lip of said metal hopper, and sides abutting against the rear faces of said posts, and hooks whereby said wood hopper is secured to the sheller-frame, substantially as described.

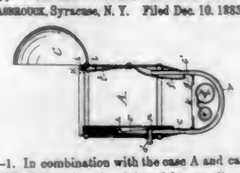
3. The combination of the rear posts of the casing, the wood hopper having its bottom prolonged into a tongue, which fits snugly between said posts and sits upon their tie-piece, and its sides arranged to abut against the rear faces of said posts, and the strap-hooks pivoted near the top of the hopper sides, and taking by their bent ends over the projecting front faces of said posts.

4. The combination, with the metal hopper bulging in front to form a secondary or vertical mouth, of the rub-iron having its shank bent at its upper end to fit the curve of said bulge, the spring bent re-enteringly at its upper end to sit over the upper end of the rub-iron shank, and the through-bolt securing them to the hopper.

5. The combination, with the metal hopper, shelling-disk, and rub-iron, of the slotted casting or keeper for said rub-iron secured to the top board of the casing.

6. The combination, with the metal hopper and shelling-disk, of the rub-iron and spring secured to the hopper by a bolt at their upper ends, and a slotted casting receiving them near their lower ends, and adapted to be secured to the top board of the casing after they have been set in proper relation to the shelling-disk to retain them permanently in such relation.

299,135. COMBINED POCKET-CASE AND CIGAR-CLIPPER. ELI PERRY HARBROUCK, Syracuse, N. Y. Filed Dec. 10, 1883. (No model.)



Claim.—1. In combination with the case A and catch *d*, the branch *c*, provided with the notch *n*, head *h*, and intermediate beveled portion *r*, substantially as described and shown.

2. In combination with the case A and knife *b*, the catch *d*, provided with the beveled cross-bar *d''*, and the branch *c*, provided with the notch *n*, undercut head *h*, and the intermediate beveled portion, *r*, having the face of its thickest part back of the line of the rod, substantially as and for the purpose shown and set forth.

3. In combination with the branch *c*, the catch *d*, consisting of a strip of sheet metal bent into rectangular form, and having its extremities folded one over the other across one end of the rectangle and along one side of the same, substantially as shown and described.

4. In combination with the case A and knife-carrying rod having branches *c c'*, the shield *f*, having flanges *g*, as and for the purpose shown and described.

5. In combination with the case A, the hinged cover C, provided with the cam *i*, and the spring *t*, provided with the projection *u*, substantially as specified and shown.

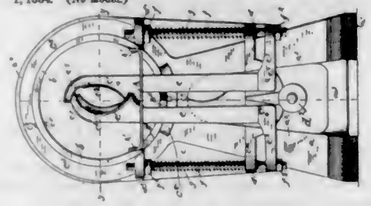
6. In combination with the case A and the hinged cover C, provided with the cam *i*, the spring *t*, provided with the projections *u* and with the side flanges, *l*, as described and shown.

7. The spring *t* and shield *f*, formed in one piece of metal, attached at the junction of said parts to the case, substantially as described and shown.

8. In combination with the case A, cover C, and knife-carrying rod having branches *c c'*, the spring *t*, and shield *f*, formed in one piece, and provided at their junction with an eye for the attaching screw or rivet, and with re-enforcing ribs *m m* at opposite sides of said eye, substantially as and for the purpose specified.

9. The combination of the case having the slit or mortise *k*, extended part way across the end of the case, and the knife *a*, formed with the tenon *o*, and with the shoulders *p* at the ends of said tenon, substantially as specified and shown.

299,136. CORN-SHELLER. JAMES M. HAWLEY, Odin, Ill. Filed MAR. 1, 1884. (No model.)



Claim.—1. In a hand corn-sheller, the annular shell *b*, provided with the cut-away portion b^4, the central triangular projection, b^2, the rear flange, *b'*, and the crank-arm b^3, all cast in one piece, substantially as specified.

2. In a hand corn-sheller, the flat plate or casting *c*, provided with the opening c^2 in its upper portion, surrounded by the annular rim c^3, provided with the curved projecting rib c^4 above the lower opening, c^5, the lugs *d d'*, horizontal flange c^{10}, and crank-handle d^3, all cast in one piece, substantially as specified.

3. In a hand corn-sheller, the combination of the standards a^2 a^2, having the vertical annular rim a^4, the annular shell *b*, having the cut-away portion b^4 and the triangular projection b^2, the cross-bar *h* over the space b^4, the rear flange, *b'*, and the crank-handle b^3, and the flat casting *c*, having the openings c^2 for the annular shell *b*, the projecting rib c^4, perforated lugs *d d'*, the shelling-jaws *e' e'*, the arms *e e*, and perforated angular extensions c^3 c^3 at their lower ends, the spring-rods *f f*, springs *g g*, and regulating-nuts *f' f''*, substantially as specified.

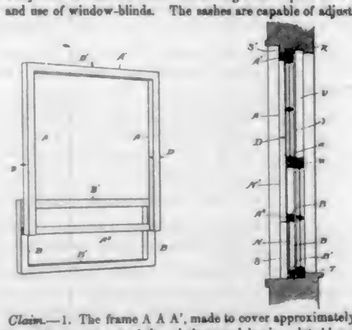
4. In a hand corn-sheller, the combination, with the flat casting having the openings c^2 for the annular shell *b*, and the perforated lugs *d d'* on its front face, of the pivoted angular arms *e e* e^2 e^2, carrying the shelling-jaws at their upper ends, the spring-rods, spiral springs, and regulating-nuts, substantially as specified.

5. In a hand corn-sheller, the combination, with the pivoted angular arms *e e* e^2 e^2, the casting *c*, having the horizontal flange c^{10}, the spring-rods, spiral springs, and regulating-nuts, of the curved shelling-jaws provided with two teeth, e^3 e^3, each, and provided on their inner faces, and cast solid therewith, with two screw-threads, e^7 e^7, arranged diagonally of the jaw-faces and in directions opposite on opposite faces, substantially as specified.

6. In a hand corn-sheller, the combination, with the pivoted angular arms *e e* e^2 e^2, carrying the shelling-jaws *e' e'*, of the standards a^2 a^2, flat casting *c*, and the annular shell *b*, provided with the triangular projection b^2 between the pivoted arms, substantially as specified.

299,137. WINDOW-SCREEN. SEDGWICK R. HAZEN, West Jersey, Ill. Filed July 23, 1883. (No model.)

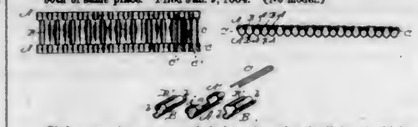
Brief.—An outside window-screen consisting of two frames—one stationary and the other movable—so arranged as to permit the operation and use of window-blinds. The sashes are capable of adjustment.



Claim.—1. The frame A A A', made to cover approximately three-fourths of the upper part of the window, and having slat A' and suitable netting, in combination with the low frame B B B' B', having suitable netting secured to its exterior face, and the strips C C, whereby it is retained in the channels below the upper sash of the window, substantially as and for the purpose herein set forth.

2. As a means whereby a frame, B, can be removable in the channels of a window-sash, the strips C C, made L-shaped in cross-section, substantially as and for the purpose described.

299,138. ORNAMENTAL CHAIN. LOUIS HECKMANN, Wrentham, Mass., assignor of two-thirds to Edward P. Davis and William H. Wade, both of same place. Filed Jan. 9, 1884. (No model.)

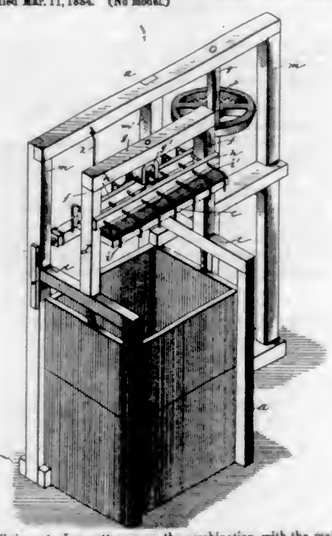


Claim.—1. An ornamental chain or bracelet the links of which are constructed of trefoil or quarterfoil tubing, otherwise known as "clover-leaf wire," said links being suitably secured together, as an improved article of manufacture.

2. An ornamental chain or bracelet the links of which are constructed of trefoil or quarterfoil tubing laid side by side, and secured together by means of wire staples, substantially as and for the purpose set forth.

3. An ornamental chain or bracelet the links of which are constructed of trefoil or quarterfoil tubing laid side by side, and secured together by the wire staples C, having the bent-back ends C', substantially as and for the purpose described.

299,139. COTTON-PRESS. CYRUS DAVID HEFLIN, Roanoke, Tex. Filed MAR. 11, 1884. (No model.)



Claim.—1. In a cotton-press, the combination, with the main frame supporting the horizontal shaft provided with the drum and miter-pinion, and the vertical shaft having small band-wheel and large segmental miter-wheel, and the press-box, of the auxiliary frame above the press-box, provided at its top with a pulley, and the press-block connected to the rope running over said pulley to the drum, substantially as specified.

2. In a cotton-press, the combination, with the press-box, auxiliary frame, the press-block, and mechanism, substantially as described, for operating it, of the guide-crate adapted to slide upon the vertical ways of the auxiliary frame, substantially as specified.

299,140. LOCKING DEVICE FOR COFFINS. EDWIN F. HILL, Springfield, Ohio, assignor of one-half to Joseph G. Jacobs, same place. Filed May 7, 1883. (Model.)

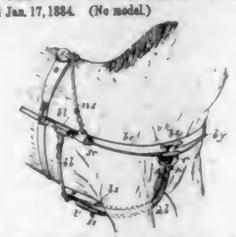


Claim.—1. In a metallic coffin, the combination, with a self-locking device, of an upright extending from the bottom plate to the upper edge of the coffin-body, within the latter, said upright being unattached to the sides of said coffin, and having a right-angled foot-piece, by which it is secured to the bottom plate, for the purpose hereinbefore set forth.

2. In a metallic coffin, the combination, with the flat upright bar extending from the bottom plate to the top of the coffin sides and ends, and unattached to either of the latter, and having an angular foot-piece secured to said bottom plate, as described, of the self-locking device at the top end of said bar, adapted to automatically engage with the catch of the lid, for the purpose set forth.

3. In a self-locking device for a metallic coffin, the combination, with the upright bar connected with bottom plate of the coffin, and having a lock upon the top end of the same, of the catch provided with a screw-threaded shank, and adapted to be attached to and detached from the lid of said coffin by means of the fingers, as hereinbefore set forth.

299,141. BREAST-COLLAR FOR HARNESS. LEVI H. HILLS, Kokomo, Ind. Filed Jan. 17, 1884. (No model.)



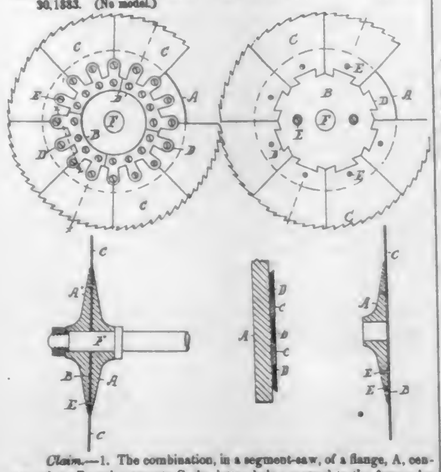
Claim.—1. The breast-yoke *by*, secured by side clamps, *sc*, to the harness-collar in the rear, said clamps adapted to be loosened to permit the removal of the breast-yoke, all combined substantially as described.

2. The breast-yoke *by*, the adjustable brace *ab*, the clamp *c*, connecting the two, the tube *t*, set-screw *as*, and the belly-band *bb*, all combined substantially as described.

3. The box-loop *bl*, provided with metal lining inside, and the breast-collar *bc*, having a metal backing, with openings to receive screws, whereby the box-loop may be secured to the breast-collar without stitches, substantially as described.

4. The breast-yoke *by*, connected by clamp *c* to the adjustable brace *ab*, moving in tube *t* at the rear, the breast-strap *bs*, neck-strap *ns*, side clamp, *sc*, securing breast-yoke to the breast-collar, the belly-band *bb*, and box-loop *bl*, secured to breast-collar *bc* by screws passing through metal plates, all combined substantially as described.

299,142. SEGMENT-SAW. JAMES HILTON, Newark, N. J. Filed Oct. 30, 1883. (No model.)

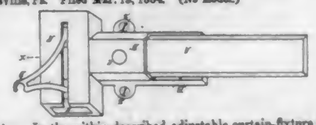


Claim.—1. The combination, in a segment-saw, of a flange, A, center plate, B, and segments C, the latter being secured to the former by the tongues and slots herein shown and described, and for the purpose set forth.

2. The combination of the flange A, center plate, B, having tongues D, secured thereto by screws E, and beveled on their edges, as described, and segments C, having slots fitted to the beveled edges of the tongues, and removable by sliding radially, as and for the purpose set forth.

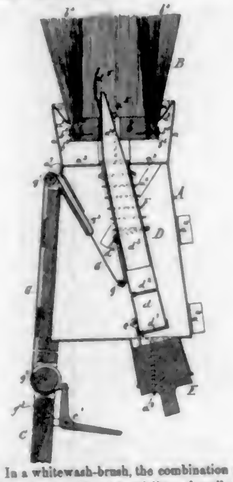
3. The combination, with the center plate and segments united by tongues and slots, as described, of flanges clamped on both sides of the segments, as and for the purpose set forth.

299,143. ADJUSTABLE CURTAIN-FIXTURE. CHARLES F. HINDT, Pottsville, Pa. Filed Mar. 12, 1884. (No model.)



Claim.—In the within-described adjustable curtain-fixture for holding brackets for curtain-rollers, the combination of the stationary plate B, having inclosed portion B' and screws S S, the slide A, having attached the bracket-holder A', containing slot H, adapted to hold the bracket, and the set-screw C, as and for the purpose set forth.

299,144. FOUNTAIN-BRUSH. THOMAS HUNTSAKER, Geneva, Iowa. Filed Oct. 31, 1883. (No model.)



Claim.—1. In a whitewash-brush, the combination of a brush, B, a reservoir, A, and an elevator, D, substantially as described.

2. In a whitewashing or calciminiog brush, the combination of a fluid-reservoir, a rigid tube, *d*, having valves *d'* *d²*, a reciprocating tube, *d³*, having nozzle *d⁴*, and suitable mechanism for operating the tube *d³*, substantially as and for the purpose described.

3. In a whitewashing or calcimining brush, the combination of the reservoir A, having looped studs *a⁴*, with locking-pins *a⁵*, and adjusting-washers *b²*, and the brush B, substantially as and for the purpose described.

4. The combination of the brush B, the rims *a a'*, the chamber or reservoir A, tube *d³*, stopper E, and elevator D, substantially as and for the purpose described.

5. The combination of the spraying-deflector *d⁵* with the brush B and the liquid-elevator D, substantially as and for the purpose described.

6. The combination of the reservoir A, having top rims, *a a'*, forming space *a³*, spout *a⁶*, and the brush B, substantially as and for the purpose described.

299,145. MACHINE FOR SETTING OR MOLDING THE EDGES OF BOOT OR SHOE SOLES. EDMUND BURR KELSEY, Beverly, Mass. Filed Mar. 14, 1884. (No model.)

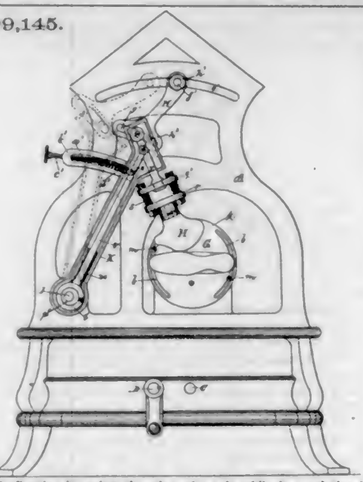
Claim.—1. The combination of the jack provided with mechanism for automatically revolving it, with the setting or molding tool having mechanism, substantially as described, for pressing and vibrating it against the edge of a shoe-sole while in revolution by means of the jack.

2. The combination of the two jacks applied to one shaft, having mechanism for automatically revolving it, with the two setting or molding tools having to each mechanism, substantially as described, for pressing and vibrating it against the edges of a sole while in revolution by means of the jack supporting the last carrying the shoe of such sole.

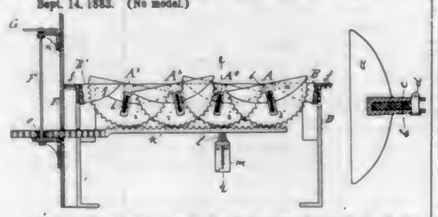
3. The combination of the toggle M, adapted to the frame A by mechanism, substantially as described—viz., the headed screw, its nut, and the curved slot in the frame—with the arm K, pivoted to the frame, and provided with the vibratory tool-carrier and operative mechanism thereof, all being substantially as described.

4. The jack having slots in it, substantially as described, and pivoted to its carrier and connected thereto by clamp-screws, and a lever and springs, all being substantially as set forth.

299,145.

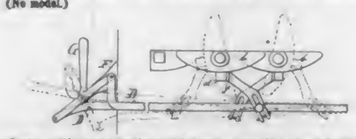


299,146. FURNACE-GRATE. THOS. KIRKWOOD, Chicago, Ill. Filed Sept. 14, 1883. (No model.)



Claim.—The plates *a*, provided with downwardly-projecting lugs *c*, and adapted to fit over bars *b*, in combination with said bars, means for holding them in position, and means for shaking such bars and plates, as and for the purpose set forth.

299,147. GRATE. THOS. KIRKWOOD, Chicago, Ill. Filed Dec. 19, 1883. (No model.)



Claim.—The combination, with bars *a*, carrying plates *b*, of the inclined, bent, and slotted arms C, and suitable means for operating such parts, as described and shown.

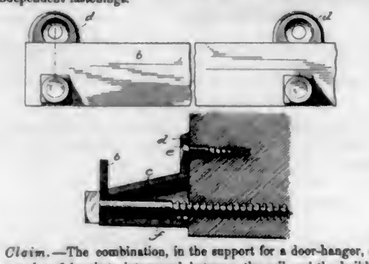
299,148. METHOD OF GILDING GLASS SIGNS AND LABELS. CHAS. E. KOKEN, St. Louis, Mo. Filed Mar. 27, 1883. (No model.)



Claim.—The within-described process of gilding glass signs, the same consisting in first cleaning the glass plate, applying the design upon reverse side of the glass with a thin solution composed of chloride of gold, sulphur, oil of lavender, and oil of turpentine, in about the proportions specified, and subjecting the glass to a temperature of about 800° Fahrenheit, and finally gradually cooling the glass, all substantially as described.

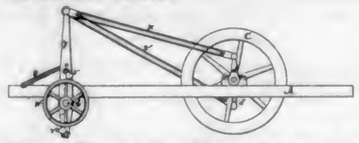
299,149. DOOR-HANGER. WILLIAM J. LANE, Poughkeepsie, N. Y. Filed Feb. 21, 1884. (No model.)

Brief.—A series of brackets are interposed between the rail and the building, the rail and brackets being secured directly to the building by independent fastenings.



Claim.—The combination, in the support for a door-hanger, of a rail, a series of brackets interposed between the rail and the building, both rail and brackets being directly secured to the building by independent fastening devices, substantially as described.

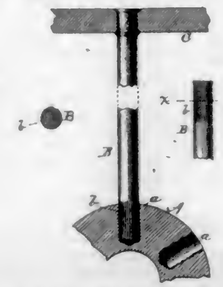
299,150. ROAD-LOCOMOTIVE. CHARLES P. LEAVITT, Memphis, Tenn. Filed Oct. 5, 1883. (No model.)



Claim.—1. The springs X and X', the cranks *d* and *d'*, the shaft *b*, the fly-wheel C, the arms T and T', the pawls V and V', the springs Y and Y', and the wheels W and W' upon the shaft E, combined, arranged, and operated substantially as described, and for the purpose set forth.

2. The springs Y and Y', in combination with the bars T T' and springs X and X', substantially as described, and for the purpose set forth.

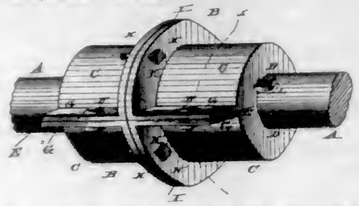
299,151. IRON WHEEL. JAMES R. LITTLE, Quincy, Ill., assignor of three-fourths to Cyrus Smith, Thomas Hill, and Pliny Bliss Williams, all of same place. Filed Aug. 11, 1883. (No model.)



Claim.—1. In an iron wheel, the combination, with an iron hub having holes *a* for the spokes, of spokes having longitudinal corrugated ends fitted to and driven or forced firmly into the holes *a*, substantially as and for the purpose specified.

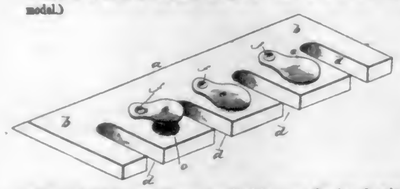
2. In an iron wheel, the combination, with an iron hub having holes *a* for the spokes, of spokes having longitudinal corrugated inner ends fitted to and driven or forced into the holes *a* in the hub, and outer ends riveted to the rim, substantially as and for the purpose specified.

299,152. SHAFT-COUPLING. SERENO S. LUKENS, Rock Falls, Ill. Filed Apr. 5, 1884. (No model.)



Claim.—The combination of the shaft A, bolts F and K, and coupling B, the latter composed of the four corresponding parts C, provided with faces E and J, substantially as shown, and for the purpose described.

299,153. PLANER-KNIFE. PETER MCCOURT, Appleton, Wis., assignor of one-half to James H. Simpson, same place. Filed Mar. 28, 1884. (No model.)



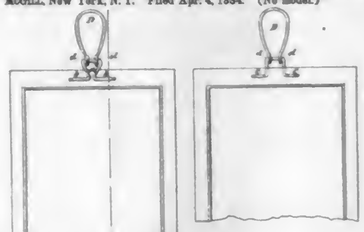
Claim.—A set of planer-knives provided between the slots forming the knife-sections with weight-receptacles having swinging covers, and balancing material or filling in said receptacles, substantially as specified.

299,154. TAG-FASTENER. GEORGE W. MCGILL, New York, N. Y. Filed Apr. 2, 1884. (No model.)



Claim.—As an article of manufacture, a ticket-holding pin consisting of a single piece of spring-wire pointed at one end, and its other end terminating in the elongated clamping-loop folded over on a line nearly parallel with the pin-shank, substantially as and for the purposes herein specified.

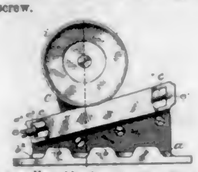
299,155. RING-SUSPENDING DEVICE FOR PAPERS. GEORGE W. MCGILL, New York, N. Y. Filed Apr. 4, 1884. (No model.)



Claim.—As an improved article of manufacture, the adjustable ring-staple for holding and suspending papers, &c., consisting of a staple and a loop or ring, each made of a single piece of wire and hinged together, substantially as shown, to enable the loop or ring to be opened or closed, substantially as set forth and shown.

299,156. DOOR-HANGER. EDWARD Y. MOORE, Chicago, Ill. Filed Feb. 18, 1884. (Model.)

Brief.—An inclined raceway has a guide-slot extending from end to end of the raceway. The roller-bearing has a shank which is fitted to slide in such guide-slot. The adjusting-screw has its bearings in the inclined raceway. The weight of the door is borne by the raceway and not by the adjusting-screw.



Claim.—1. In an adjustable door-hanger, the combination of a raceway inclined at an angle of repose, the same being less than twenty degrees from a horizontal line, and a roller-bearing shank provided with a similarly-inclined block, substantially as described, whereby all vertical strains on said hanger, when in use, will be borne by said block and raceway, as set forth.

2. In an adjustable door-hanger, a hanger-plate having an inclined raceway provided with a lateral supporting-flange, and with a guide-slot in the top thereof, in combination with a roller-bearing having a shank which occupies said guide-slot, and has an inclined block or lateral flange in contact with the flange of the raceway, and is movable longitudinally therein throughout the length of the guide-slot, substantially as described.

3. In an adjustable door-hanger, the hanger-plate and the roller-bearing coupled together by the inclined block and the door-supporting raceway, in combination with the adjusting-screw within said raceway, substantially as described, whereby the weight of the door is wholly borne by the raceway and the screw relieved from strain, as set forth.

4. In an adjustable door-hanger, the combination of the inclined sliding block, the inclined raceway, and the rotating adjusting-screw confined longitudinally in said raceway, and connected to the block by means of the nut and its recess, substantially as described, whereby said block is adjustably moved longitudinally in the raceway by the rotation of the screw, and held by said screw in its various positions of adjustment.

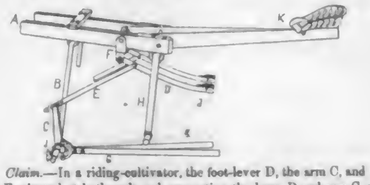
5. In an adjustable door-hanger, a rotative adjusting-screw, in combination with a hanger-plate having an inverted step-bearing for the upper end of said screw, substantially as described, whereby all strains to which said screw may be subjected will be borne with an endwise thrust toward its inverted step-bearing, as described.

6. The door-hanger plate constructed in two parts or sections oppositely recessed to form an inclined raceway, and having at the lower edge of said plate lateral flanges, substantially as described.

7. A door-hanger plate having a straight lower edge and lateral flanges, in combination with a detachable base-plate which is longitudinally slotted and laterally recessed for the reception of the flanged edge of the hanger-plate, and provided with a locking-pin hole, and with screw-holes by which it may be attached to the top edge of a door, substantially as described.

8. The double rollers coupled by the axle and locking-bolt, in combination with the flat shank, and the friction-rollers confined within a chamber formed by an annular hole in said shank and the inner sides of both rollers, substantially as described.

299,157. FOOT-LIFT FOR RIDING-CULTIVATORS. JOB B. NEFF, Burlington, Iowa, assignor to the Burlington Plow Company, same place. Filed Nov. 23, 1883. (No model.)

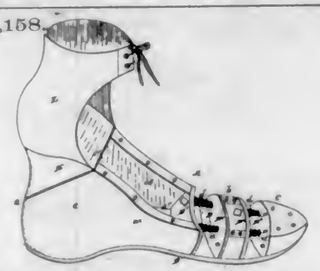


Claim.—In a riding-cultivator, the foot-lever D, the arm C, and the link E, pivoted at both ends and connecting the lever D and arm C, said arm C being rigidly attached to a coupling device, preferably a pipe-box, whereby it remains stationary while the beam can be adjusted laterally, in combination with said coupling device to which said beam is attached, as and for the purpose specified.

299,158. ARTIFICIAL FOOT AND SHOE. EDWARD L. O'CONNOR, Cincinnati, Ohio. Filed Feb. 9, 1883. (No model.)

Claim.—1. The artificial foot A, consisting of a heel-section, *a*, and one or more toe-sections, *b*, said sections being connected by a spring-connection, to permit the foot to bend in imitation of the natural foot, the surface *m* of said artificial foot being shaped to correspond with the bottom of the natural foot, and adapted to receive said natural foot, substantially as and for the purposes specified.

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2. The artificial foot A, consisting of the heel-section *a* and the toe section or sections *b*, said sections being secured to a spring sole-plate, B, and separated by spaces, in which spaces are placed springs D, capable of being compressed between the sections when the foot is bent, substantially as and for the purposes specified.

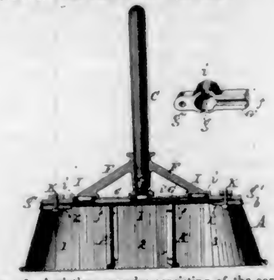
3. The combination of the heel-section *a*, having plate B', and the toe section or sections *b*, having plates B², said sections being secured to a plate, B, and the springs D, located between said heel and toe sections, and retained in position by the rods or bolts *d*, substantially as and for the purposes specified.

4. In an artificial foot, the heel-section *a*, consisting of the lower portion or base, *c*, and the upper portion or block, E, the two portions being hinged together at the front edge of said block by a hinge, *c'*, substantially as and for the purposes specified.

5. The heel-section *a*, consisting of the base *c* and the block E, hinged together, as described, in combination with the bolt F, passing through said block and base, and secured to the plate B, and the spring G, located in the recess *f* in the block E, and surrounding the upper end of the bolt F, and compressed between the head F' of said bolt and the bottom of the recess *f*, substantially as and for the purposes specified.

6. In combination with a false foot provided with a surface, *m*, shaped substantially as shown, and terminating at rear above the ordinary heel portion of a shoe or boot, the upper *n*, provided with recess *p*, substantially as and for the purposes specified

299,159. WASHING-MACHINE. WILLIAM PARK and JOHN S. PARKER, Fredonia, N. Y. Filed Feb. 13, 1883. (No model.)

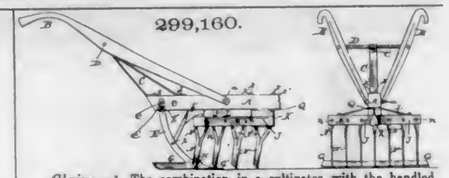


Claim.—1. A clothes-pounder consisting of the combination of a sheet-metal base portion divided into compartments, each of which has an escape-opening in its top, a stiffening-frame having a handle-socket and attached to said base portion by means of arms extending over the top of each compartment and covering their openings, said frame being provided with recesses over each opening, and escape-apertures communicating with said recesses, and valves situated over said openings and in the recesses of the frame, substantially as set forth.

2. A clothes-pounder consisting of the combination of a base portion divided into compartments, each of which has an escape-opening in its top, a handle-supporting frame attached to the top of the base portion and having arms extending over said openings, recesses formed in said frame and situated over the openings, escape-apertures communicating with said recesses, valves situated over the openings and in the recesses, and ducts *f*, formed in the arms of said frame and connecting said recesses with one another, substantially as and for the purpose set forth.

299,160. CULTIVATOR-PLOW. HENRY FARRIS, Horace, Ga. Filed Nov. 14, 1883. (No model.)

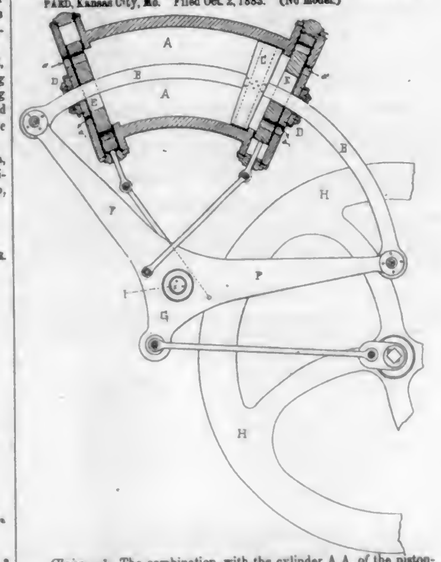
299,160.



Claim.—1. The combination, in a cultivator, with the handled beam A B C, of the plow or sweep G, with curved standard E, secured at the rear of the beam and adapted for adjustment to gage the angle and depth of cut of the same, V-shaped frame J, also secured to the beam A directly in front of the sweep, teeth N, having a curved body, divided top end, by which they are secured to the frame J, and sharp front edge, *o*, and point *o'*, strap K *k*, and wedges Q, whereby the pulverizer-frame may be adjusted vertically to regulate the depth of cut of the teeth, substantially as described, for the purposes specified.

2. In a cultivator, the combination, with the frame J and metal strip M, of the colters or teeth N, the body of which is curved in cross-section, with a sharp front edge, *o*, and point *o'*, and divided ends N', which ends pass between the said band M and the frame J on alternate edges thereof, and are secured by screws *n*, which secure both the band M and teeth N, substantially as described, for the purposes specified.

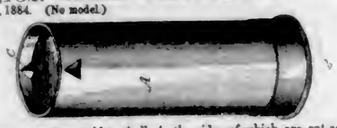
299,161. STEAM-ENGINE OR WATER-MOTOR. GERRITT S. PREPARD, Kansas City, Mo. Filed Oct. 2, 1883. (No model.)



Claim.—1. The combination, with the cylinder A A, of the piston-rod of this form B, the arms F F and G, the main pin I, and the packing-boxes D, arranged for operation substantially as shown and described.

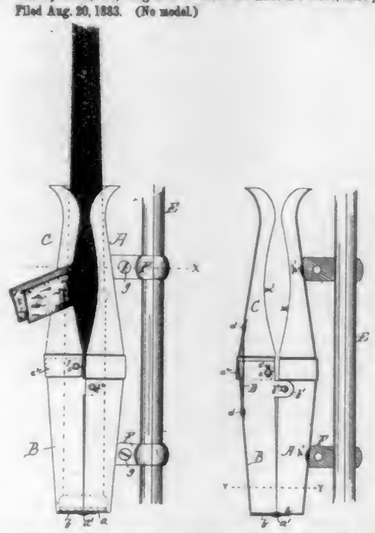
2. In an engine for motive power, a radially-bored cylinder, a piston-rod conforming to the circle of the same, and having attached the piston C, and a balanced slide-valve, with openings, as shown, at each end of the cylinder, all arranged for operation substantially as set forth.

299,162. CARTRIDGE. G. MOORE PETERS, Xenia, Ohio. Filed MAY 24, 1884. (No model.)



Claim.—A cartridge-shell, A, the sides of which are cut so as to leave two inwardly-projecting holding-pieces, C, the pieces being so cut that their faces form a triangular edge, the shell being entirely cut away at the bottom of said pieces C, which are forced inward so that their lower edges press against the wad or ball.

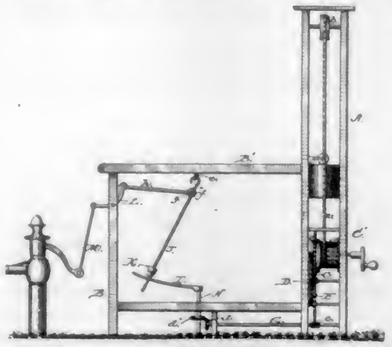
299,163. COMBINED WHIP AND LINE HOLDER. HENRY B. PITMER, Plymouth, Ind., assignor to himself and Kain K. Brooks, same place. Filed Aug. 20, 1883. (No model.)



Claim.—1. The combined whip and line holder, consisting of rigid section A, rigid section B, secured thereto, and movable section C, secured to section B by rivets passing through slots in one of said sections, and spring D, said sections A and C having their edges or sides cut out or gored, so as to admit the lines between the pivotal section and the whip, substantially as specified.

2. The combination of section A, provided with ear or lug *a*, and section B, provided with ears or lugs *b* and *b'*, and riveted to said section A, movable section C, secured to said section B by rivets passing through slots in one of said sections, and spring D, riveted to said sections B and C, substantially as specified.

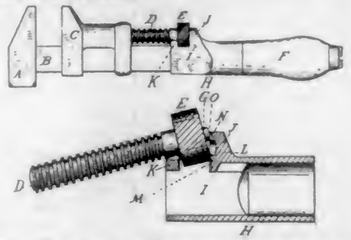
299,164. MECHANICAL MOTOR. GEO. W. REAMS, Burlington, Kans., assignor to Franklin D. Jones, same place, and Hamilton Milton Hart, Perry, Iowa. Filed Apr. 7, 1884. (No model.)



Claim.—1. The herein-described mechanical motor, consisting of the frame A B, provided with the weight F, cord *a*, pulley *b*, drum C', cog-gears C, D, E, and *c*, shafts G and H, provided with bevel-gears *d d'*, arm I, pendulum J, having weight or ball K, collar *f*, and set-screw *g*, elbow-lever L, and pitman M, the several parts being constructed and arranged substantially as and for the purpose specified.

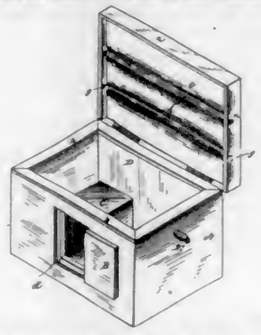
2. The frame A, provided with the cog-gears C, D, E, and *c*, drum C', weight F, cord *a*, and pulley *b*, in combination with the frame B, provided with the shafts G and H, bevel-gears *d d'*, arm I, pendulum J, ball K, elbow-lever L, and pitman M, constructed and arranged substantially as and for the purpose specified.

299,165. WRENCH. SQUIRE ROBINSON, Southington, Conn. Filed Dec. 29, 1883. (No model.)



Claim.—The integral piece H, constructed with the concave grooves M and N on the face O of the step J, and constructed otherwise substantially as described.

299,166. COMBINED MILK-COOLER AND REFRIGERATOR. RICHARD M. ROCKEY, Nora, Ill. Filed Mar. 12, 1884. (No model.)



Claim.—1. In a combined milk-cooler and refrigerator, the combination, with an outer box or casing, of an inner casing constructed of thin sheet metal, and arranged within the outer casing to form an air-space, and a box or casing arranged upon the inner side of the inner casing, access being had thereto by means of an opening in the side of said casing, and a door for closing the same, substantially as set forth.

2. In a combined milk-cooler and refrigerator, the combination, with an outer and an inner casing, of a hinged cover having a lining of sheet metal provided with longitudinal grooves or recesses, and open-lugs in the sides of the cover communicating therewith, substantially as and for the purpose set forth.

3. In a combined milk-cooler and refrigerator, the combination of an outer and an inner casing, a box or casing secured therein, an opening in the side of the inner casing, a door communicating with said box, inlet and outlet tubes suitably arranged, and a hinged cover having a lining of sheet metal provided with longitudinal grooves, the sides of the cover having openings registering with said grooves, substantially as set forth.

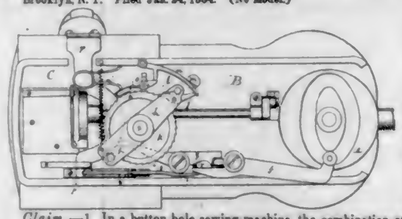
299,167. PROCESS OF BLEACHING, DEODORIZING, AND SWEETENING BENZINE. JOHN ROWELL, Chicago, Ill., assignor of one-half to De Golyer & Bro., same place. Filed Mar. 24, 1883. Renewed Mar. 31, 1884. (No specimens.)

Claim.—1. The process of deodorizing, &c., petroleum-benzine wherein a given mass of the same is first treated to an application of sulphuric acid, then to a solution of a suitable alkali, and lastly to a solution of saltpeter and sulphuric acid, a washing with water being preferably resorted to after and between each of the aforesaid applications, said chemicals being used in the proportions and in the manner specified.

2. The process of deodorizing, &c., petroleum-benzine wherein a given mass is treated to, first, an application of sulphuric acid; second, an application of a solution of a suitable alkali; third, an application of a solution of saltpeter and sulphuric acid, and, fourth, an application of a solution of sugar of lead and blue copperas, all of which are used in the proportions and manner specified.

3. The process of treating petroleum-benzine wherein a given mass is treated, first, to an application of sulphuric acid; second, to a solution of a suitable alkali; third, to a solution of saltpeter and sulphuric acid; fourth, to a solution of sugar of lead and blue copperas, and, fifth, to an application of a chromate or bichromate of either potassium, sodium, or ammonium, said chemicals being used in the proportions and manner hereinbefore stated.

299,168. BUTTON-HOLE SEWING-MACHINE. FREDERICK E. SCHMIDT, Brooklyn, N. Y. Filed Jan. 24, 1884. (No model.)



Claim.—1. In a button-hole sewing-machine, the combination of cam *e*, reciprocating work-plate C, and reciprocating cloth-clamp D, having carved rack *b*, with the pinion *d*, to which revolving but no reciprocating motion is transmitted from cam *e*, the teeth of pinion *d* being longer than the extent of lateral motion of the cloth-clamp, substantially as specified.

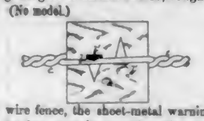
2. In a button-hole sewing-machine, the combination of the following elements: work-plate C, cloth-clamp D, pinion *d*, bar *h*, mechanism for transmitting motion from operating-cam to bar *h*, pawls *j j'*, ratchet-wheel *k*, spring *l*, and arbor *i*, substantially as specified.

3. In a button-hole sewing-machine, the combination of pinion *d* and cloth-clamp D, having pin *a*, that projects through slot of the work-plate C, and has shoulder *a'*, with spring *p*, having raised portion, all so constructed that when pin *a* bears on raised portion of spring *p* the motion of pinion *d* is changed by means of lever or levers acting upon the feeding device, substantially as specified.

4. In a button-hole sewing-machine, the combination of work-plate C with sectional arm T, having sections *t t'*, and with the upright *u* and slotted lug *v*, the lug *v* being pivoted at one end to upright *u* and at the other end to arm *t'*, and between the two to arm *t*, substantially as specified.

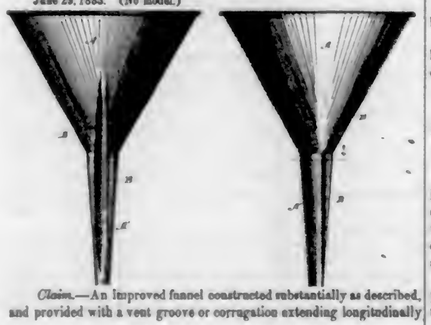
5. In a button-hole sewing-machine, the combination of work-plate C with arm T, which imparts to it reciprocating motion from a cam on operating-shaft, the arm T being provided with mechanism *z b² b³*, for shifting the work-plate C, substantially as specified.

299,169. WARNING DEVICE FOR WIRE FENCES. RAPHAEL SHUMAKER, Pittsburg, assignor to Thomas B. KETT, Allegheny City, Pa. Filed May 19, 1883. (No model.)



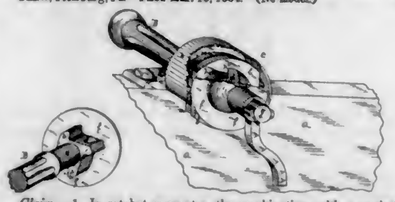
Claim.—In a wire fence, the sheet-metal warning-plate *a*, having two projections, *b*, cut from near its central portion and turned in opposite directions and at right angles to the plate, in combination with twisted wires *c c*, the plate being secured between the twists of the wire and the wire on one side of the plate passing under the projection, while on the opposite side it passes over the projection, substantially as and for the purposes set forth.

299,170. FUNNEL. CASPER B. SHAFER, Washington, D. C. Filed June 29, 1883. (No model.)



Claim.—An improved funnel constructed substantially as described, and provided with a vent groove or corrugation extending longitudinally upon the exterior side of the body and neck, said groove having its lower terminus above the lower extremity of the neck, and its upper terminus at or below the upper extremity of the body, substantially as and for the purposes set forth.

299,171. RATCHET APPARATUS FOR CHAIN-PUMPS. GENIO M. SHAW, Pittsburg, Pa. Filed Mar. 10, 1884. (No model.)



Claim.—1. In ratchet apparatus, the combination, with a ratchet-wheel, of one or more sliding tumblers supported around said wheel, and having two or more teeth, substantially as and for the purposes set forth.

2. In ratchet apparatus, the combination, with a ratchet-wheel, of two or more sliding tumblers supported around said wheel and having engaging teeth, the teeth of said tumblers being arranged alternately with each other, substantially as and for the purposes set forth.

3. In ratchet apparatus, the combination, with the ratchet-wheel *d*, of the bearing *h*, case *k*, supported thereby, guides *k'*, and one or more sliding tumblers having engaging teeth, substantially as and for the purposes set forth.

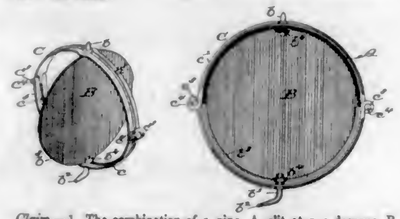
4. The combination of the power-shaft having the disk *f*, bearing *h*, case *k*, supported thereby, and ratchet apparatus supported within the box formed by the case and disk, substantially as and for the purposes set forth.

5. The combination of the power-shaft having the disk *f*, bearing *h*, case *k*, open at the base, ratchet-wheel *d*, and one or more sliding tumblers extending below said disk, substantially as and for the purposes set forth.

6. The combination of the power-shaft, ratchet-wheel *d*, bearing *h*, having the rib h^3, case *k*, supported on said bearing, and sliding tumblers substantially as and for the purposes set forth.

7. The combination, with the ratchet-wheel and case, of the sliding tumblers having the ribs *r*, substantially as and for the purposes set forth.

299,172. DAMPER. JOSEPH W. SHAW, St. Louis, Mo. Filed Nov. 12, 1883. (No model.)



Claim.—1. The combination of a pipe, A, slit at *a*, a damper, B, and a band encircling the pipe opposite the slit, for the purpose described.

2. The combination of the pipe A, slit at *a*, the damper B, and a band having the rib c^3, substantially as described.

3. The combination of the pipe A, slit at *a*, the damper B, and the band C, made in the parts *c c'*.

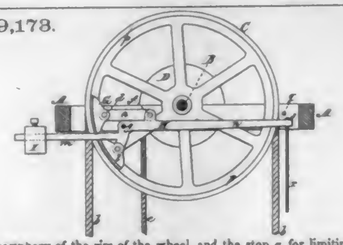
4. The combination of the pipe A, slit at *a*, the damper B, and the band C, made in the parts *c c'*, and having the rib c^3, substantially as described.

299,173. AUTOMATIC-BRAKE MECHANISM FOR HAND-POWER ELEVATORS. LORING D. SHAW, Melrose, assignor of one-eighth to Edward Howard, Boston, Mass. Filed Dec. 3, 1883. (No model.)

Claim.—1. The combination, with the wheel C, of the brake-shoe G, hinged to an arm, *e*, pivoted to the lever H, means, substantially as described, for operating the said lever to keep the shoe G in contact with the inner periphery of the wheel, and a stop, *g*, for limiting the movement of the lever in one direction, all operating substantially in the manner and for the purpose set forth.

2. The combination, with the wheel C, of the adjustable lever H, provided with an arm, *m*, and weight I, and having pivoted thereto at *f* the arm *e*, carrying the brake-shoe G, adapted to be brought against the

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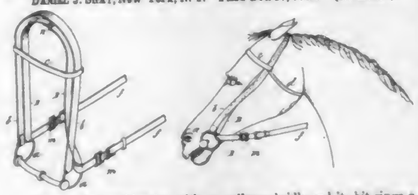


inner periphery of the rim of the wheel, and the stop *q*, for limiting the movement of the lever in one direction, all constructed to operate substantially as described.

3. The combination of the main brake-shoe G, arm *e*, and the lever H, provided with an auxiliary brake-shoe, *l*, adapted to be brought against the inner periphery of the rim of the wheel C when the lever is operated to release the main brake, substantially as and for the purpose set forth.

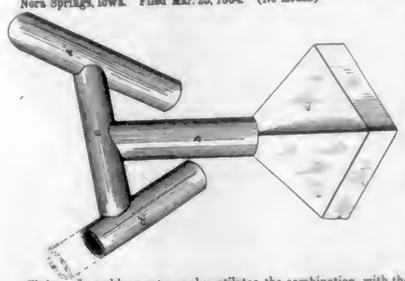
4. The combination, with the wheel C, of the lever H, having pivoted thereto the arm *e*, carrying the brake-shoe G, and having its fulcrum *g* made adjustable upon its support toward and from the periphery of the wheel, substantially in the manner and for the purpose described.

299,174. DEVICE FOR CONTROLLING RUNAWAY HORSES. DANIEL J. SHAY, New York, N. Y. Filed Dec. 17, 1883. (No model.)



Claim.—In combination with an ordinary bridle and its bit-rings *a*, the independent and removable strap B, adapted to be passed over the horse's head and through said bit-rings, as described, and provided with rings *m m*, to receive and to attach it to the reins *f f*, as and for the purpose set forth.

299,175. CHIMNEY-TOP AND VENTILATOR. JOHN M. SHEETS, Nora Springs, Iowa. Filed Mar. 25, 1884. (No model.)

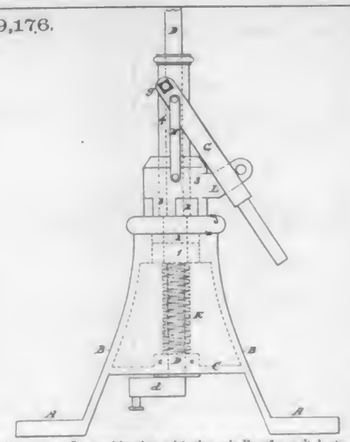


Claim.—In a chimney-top and ventilator, the combination, with the base and vertical flue rising therefrom, of the horizontal cross-flue secured upon and communicating with the vertical flue, and the end flues diverging from below upward and secured to and communicating with the horizontal cross-flue, substantially as specified.

299,176. SWITCH-STAND. FRED. W. SNOW, Ramapo, N. Y. Filed Oct. 9, 1883. (No model.)

Brief.—An unyielding clutch-lock placed upon a switch-shifting crank shaft or spindle immovable in the line of its axis, the engagement and disengagement of the clutch being controlled by the switch-operating hand-lever. Together therewith a supplemental lock consisting of a yielding clutch with beveled engaging-surfaces normally in engagement, urged by a spring of strength regulated to resist hand operation and to yield to permit the clutch to slip when a passing train shifts the switch.

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Claim.—1. In combination with the spindle of a switch-stand, the clutch-locking mechanism in which the two parts of the clutch are placed upon the spindle and engage by means of beveled teeth by spring or other yielding power, so as not to hold against large powers, and provided with means for releasing the spindle from the yielding non-rotating part of the clutch, substantially as described.

2. A yielding locking device for spindle switch-stands, consisting of the following combination of parts: first, a clutch-box on the spindle, yielding but not rotating with it; second, a rotating clutch-box on the spindle, a spring tending to engage the two clutch-boxes, but permitting them to rotate under power when locked, and a locking-lever or its equivalent by means of which the spindle can be released from and rotate free of the non-rotating part, substantially as described.

3. In a switch-stand, the combination of the spindle, a clutch upon the spindle, the rotating parts of which can move upon the yielding non-rotating parts to specified positions when subject to great strain, although locked, and means for releasing the spindle from the engaged rotary part of the clutch for operation by hand, substantially as described.

4. The combination of the spindle D, the spring E, the non-rotating clutch-box 1, the rotating clutch-box 2 3, the locking-lever and links G H, and the sleeve 4, substantially as described.

5. The combination of the spindle D, the spring E, the non-rotating clutch-box 1, the rotating clutch-box 2 3, and the locking-lever and links G H, without the sleeve 4 interposed between them and the spindle, substantially as described.

6. The combination of the standard A B, spindle D, spring E, clutch-box 1, clutch-box 2, and clutch-box 3, links H, and lever G, with the sleeve 4, substantially as described.

7. In a spindle switch-stand, the combination of a rotating spindle having no vertical movement, a non-rotating spring-locking part, 1, a rotating locking part, 2, the two locking parts being capable of sliding upon each other under great strain, an engaging part, 3, sliding on the spindle to lock part 2 to the spindle, and an operating-lever and links, or their equivalent, substantially as described.

299,177. SECONDARY BATTERY. WILLIAM STANLEY, Jr., Englewood, N. J. Filed June 19, 1883. (No model.)



Claim.—1. A plate or electrode for secondary batteries, consisting, primarily, of a mixture of carbonate of lead and chloride of sodium, hardened as described, and attached to a suitable frame or support, substantially as set forth.

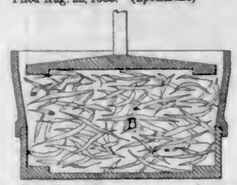
2. In a secondary battery, the combination of plates or electrodes consisting, primarily, of carbonate of lead with an electrolyte of acidulated salt-water, substantially as and for the purposes set forth.

3. In a secondary battery, the combination of plates or electrodes consisting, primarily, of a mixture of carbonate of lead and chloride of sodium with an electrolyte of acidulated salt-water, substantially as and for the purposes set forth.

4. In the manufacture of secondary batteries, the hereinbefore-described process, consisting of, first, treating plates of carbonate of lead with a solution of chloride of lime to form the positive or peroxide plate of the battery, and, second, then combining such plates in an electrolyte with a suitable negative plate to complete the battery, substantially as set forth.

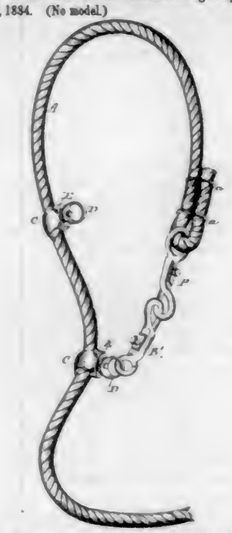
5. In the manufacture of secondary batteries, the hereinbefore-described process, consisting of, first, treating plates consisting of a mixture of carbonate of lead and chloride of sodium with a solution of chloride of lime to form the positive or peroxide plate of the battery, and, second, then combining such plate in an electrolyte with a suitable negative plate to complete the battery, substantially as set forth.

299,178. SECONDARY BATTERY. WILLIAM STANLEY, Jr., Englewood, N. J. Filed Aug. 22, 1883. (Specimens.)



Claim.—An electrode or element for secondary batteries, consisting, primarily, of tubes or hollow scraps of lead pressed together to form a plate, substantially as and for the purposes set forth.

299,179. HALTER OR TIE FOR ANIMALS. MILES SWEET, Troy, N. Y., assignor to the Sweet & Clark Manufacturing Company, same place. Filed Apr. 3, 1884. (No model.)



Claim.—1. In an animal-tie, the combination of a tubular ring having a laterally-projecting stem, a nut provided with a bail or eye, and a plate provided with a central perforation and prongs, substantially as and for the purpose described.

2. The combination of the tie A, the tube C, having a laterally-projecting stem, the nut D, provided with a bail, *d*, a snap-fastening, and a plate, E, provided with a central perforation, and prongs at both ends, substantially as and for the purpose described.

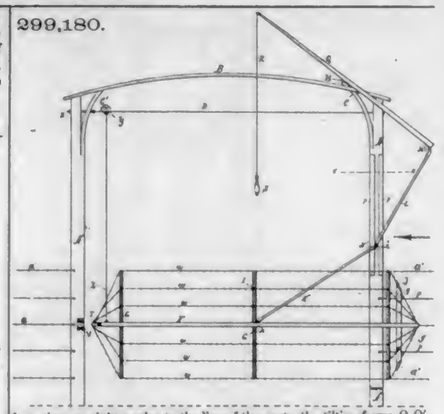
299,180. FARM-GATE. LEMUEL TAYLOR and MINER TAYLOR, Jordan, Wis. Filed June 20, 1883. (No model.)

Claim.—1. The combination of the posts A A" A'", the tilting frame Q Q' W, hinged to said posts, the pitmen L K, the hinge-joint N", connecting said pitmen, and moving in suitable vertical guides on the post A, and a sliding gate to which the lower end of the pitman K is attached, the upper end of the pitman L being attached to said tilting frame, substantially as shown and described, and for the purpose set forth.

2. The combination of the vertical cross-bars G, the central timber, F, rigidly attached to said cross-bars, and extending beyond them at both ends, and the wires *w*, strained upon said cross-bars, and meeting at the ends of said timber F, substantially as shown and described, and for the purpose set forth.

3. The combination of the posts A A" A'", a sliding gate moving

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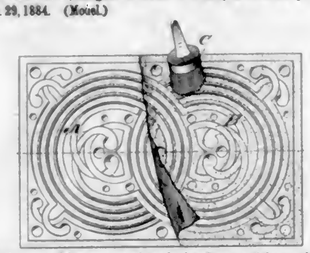


in a plane at right angles to the line of the posts, the tilting frame Q Q' W, hinged to said posts, the pitmen L K, united by a hinge-joint at their intersection, and connecting said tilting frame and gate, the roller *i*, attached to and moving with the hinge-joint at the intersection of said pitmen L K, and the cleats *f* and guides *p*, attached to the post A, and forming a guide for the roller *i*, substantially as shown and described, and for the purpose set forth.

4. The combination of the tilting frame, the rolling or sliding gate shown and described, the pitmen L K, attached to said frame and gate, respectively, and moving in the same vertical plane, and the roller *i*, forming a joint between said pitmen, substantially as shown and described, and for the purpose set forth.

5. The combination of the plate *m'*, the cap *m*, and the grooved pulley *k*, rotating in the space between said plate and cap, said cap being horizontally bored for the passage of a wire, P, on which said roller moves, thereby forming a guide for said wire, substantially as shown and described, and for the purpose set forth.

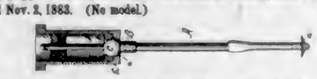
299,181. PANEL FOR WALLS, CEILINGS, &c. LOUIS C. TIFFANY, New York, N. Y., assignor to Louis C. Tiffany & Co., same place. Filed Jan. 29, 1884. (Model.)



Claim.—1. The process of producing fire-proof decorative tiles by moistening asbestus sheets and then forcing such sheets into a die containing a negative of the desired decorative relief, substantially as described.

2. A fire-proof panel composed of asbestus paper on which is placed a surface or decorative relief, substantially as described.

299,182. CAPSULE-CUTTER. WILLIAM A. TUCKER, New York, N. Y. Filed Nov. 2, 1883. (No model.)

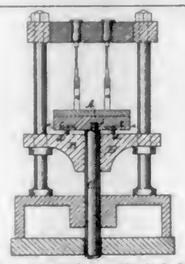


Claim.—The combination of the stem A, carrying the cutter *a*, with the shaft B, ball C, pin D, cylinder E, having countersunk opening *e*, its cap F, having reversely-countersunk opening *f*, and the elastic washers G, constructed and arranged to operate as and for the purpose specified.

299,183. MECHANICAL MOVEMENT. WILLIAM A. TUCKER, New York, N. Y. Filed Nov. 30, 1883. (No model.)

Claim.—The combination of the plate B, provided with the studs *d*, the plate A, provided with the openings *c*, into which said studs project,

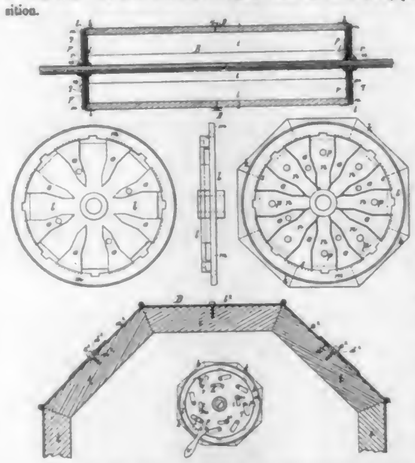
299,183.



and the rotary shaft C, provided with a crank-pin, *b*, fitted into a sleeve or hole in the plate A, whereby when the said shaft is rotated all points in plate A are severally carried in the same plane around equal independent circles with different centers, as and for the purpose described.

299,184. SEED AND FERTILIZER DISTRIBUTER. GEO. TYLER, Waltham, Mass. Filed Feb. 18, 1884. (No model.)

Brief.—The lag-supporters are radially adjustable separably and collectively in a flanged sustaining end wheel. The handle turns one disk upon the other, and the slots in the first, in which the guide-pins of the second move, being straight and oblique, the free lag-supporters are thrown straight in or out, diminishing or increasing the periphery and the spaces between the lags, and therefore regulating the supply of fertilizer or seed. Set-screws in the arcal slots secure the disks in any position.



Claim.—1. The expansive and contractile distributer, substantially as described, consisting of the series of lags, their two sets of radially-movable supporters, their sustaining-wheels and operative studs, and slotted disks, arranged and combined substantially in the manner and to operate as set forth.

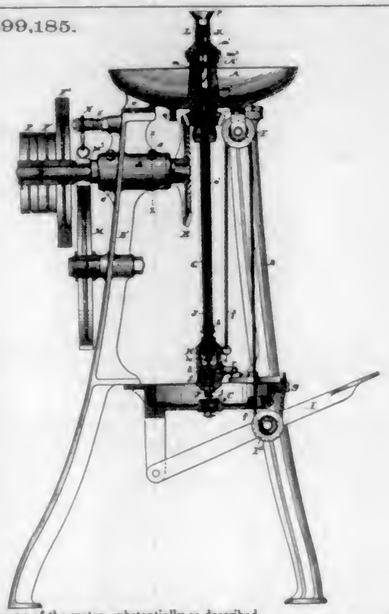
2. The combination of the clamping-screws with the disk having the oblique and arcal slots, as described, and with the series of radially-movable lag-supporters and their sustaining-wheel, all being arranged and adapted substantially as represented.

3. The expansive and contractile band D, constructed and applied to the lags of the distributer substantially as described—that is to say, made of slotted sections lapped on each other, and each composed of three bars hinged together as represented, and secured to the lags by screws, as set forth.

299,185. BOTTLE-WASHER. ADOLPH VON SCHADE, Newport, R. I. Filed Apr. 12, 1883. (No model.)

Claim.—1. In machine for washing bottles, the combination of a tubular or sleeve shaft mounted in a fixed bearing, mechanism for revolving said sleeve-shaft, a second hollow shaft carrying a brush or brushes at one end, and arranged to be revolved with and moved endwise through said sleeve, and a trumpet-shaped stationary socket to receive the neck of the bottle, and provided with one or more holes for the

299,185.



escape of the water, substantially as described.

2. The combination of the sleeve-shaft *a*, the hollow spindle J, connected to the sleeve-shaft by a spline-groove and key, mechanism for revolving the sleeve-shaft, the cross-head H, the cord or chain *f*, the pulleys I' I², and the treadle-lever I, all arranged and adapted to operate substantially as and for the purposes described.

3. The cross-head H, provided with the chamber *h* and the passages *i* and *i'*, in combination with the hollow spindle J, arranged to be revolved therein, and to be moved endwise therewith, the water-supply pipe *r r'*, and valve *j'*, provided with the pendent stem *j²*, and arranged to be opened by the pressure of the water, substantially as described.

4. The combination of the cross-head H, provided with the chamber *h* and passages *i* and *i'*, the water-supply pipe *r r'*, the valve *j'*, provided with the pendent stem *j²*, and the slightly-yielding stop *k*, all arranged and adapted to operate substantially as described.

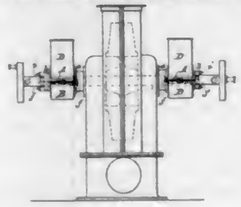
5. In a machine for washing bottles, the combination, with a revolving and endwise-reciprocating jet tube or spindle carrying a brush or brushes at one end, of a cross-head connected to the other end of said jet tube or spindle, and arranged to be reciprocated upon suitable guides, and adjustable stops to limit the movement of said cross-head, substantially as described.

6. In a machine for washing bottles, the combination of the sleeve-shaft *a*, the bevel-gear wheels *b* and E, the shaft D', the pinion M', the spur-gear wheel M, the grip-jaws *l' l'*, the pawl *l*, the link N', and the hand-lever N, all arranged and adapted to operate substantially as described.

7. The brush K, composed of the mass of radiating bristles *n* and the tuft *n'*, of combined bristles and fine wire, substantially as described.

8. The brush-holder J', composed of the ring *m*, the spring-arm *m²*, and the socket *m³*, in combination with the spindle J and the grooved thimble *m²*, all arranged and operating substantially as described.

299,186. WATER-JACKET FOR ROTARY PUMPS. ALEXEY W. VON SCHMIDT, San Francisco, Cal. Filed July 23, 1883. (No model.)



Claim.—1. In a packing-box for pump-shafts, the combination, with the collars *a* and *b*, of the water-tank, adapted to contain water to envelop the said shafts, substantially as described.

2. In a packing-box for pump-shafts, the combination of the collars *a b*, the frames A A', and tanks D B, substantially as described.

3. The combination, with a pump-shaft, of the collars *a* and *b*, frames A A', and packing-ring A, substantially as described.

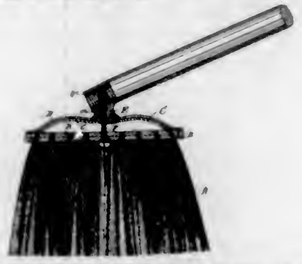
4. The combination, with a pump-shaft, of the collars *a* and *b*, frames A A', tanks D and B, and the packing-ring *d*, all substantially as described.

299,187. DRIVE-CHAIN. CHESTER C. WATERS, Moline, Ill. Filed Apr. 28, 1883. (Model.)



Claim.—A detachable link for drive-chains, having the side bars connected by a bar at one end and having the other ends free, the free ends being provided with knuckles in which are key-hole slots or apertures in a plane parallel with the side bars, the connected end being formed with duplex knuckles, the outer ones of which are provided with key-hole slots or apertures at an angle to the horizontal plane of the side bars, and the inner ones with circular apertures and adapted to receive splined pintles in the operation of coupling with adjacent links to form a chain, substantially as set forth.

299,188. WINDOW-BRUSH. JOHN STAPLES WHITE, Portland, Me. Filed Jan. 16, 1884. (No model.)



Claim.—The improved window-brush substantially as described, consisting of the mass of bristles, flexible backing, concavo-convex stiffening-plate and its cover, and the handle-socket and its fastening-screw arranged as set forth, and having said cover secured or sewed to the backing around the periphery of the stiffening-plate.

299,189. DOOR-PLATE. ALFRED T. ABBOTT, New York, N. Y. Filed Feb. 12, 1883. (Model.)

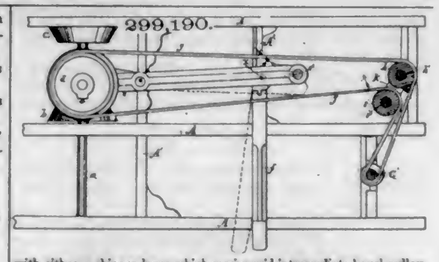


Claim.—The combination, in a door-plate, of the frame A, having a name-plate adapted to be removed at the end of the frame, with a detachable end piece secured to the frame by bolts B B, by means of screw C, nut D, and hinges F F, the bolts being withdrawn by spring E, as shown and described, and for the purpose set forth.

299,190. WOOD-WORKING MACHINE. REUBEN HENRY ANDREWS, Washington, D. C. Filed Oct. 2, 1883. (No model.)

Claim.—1. The combination, with a shaping-cutter and the driving-belt thereof, of bevel friction-pulleys, as *b c*, a bevel friction-pulley arranged, as described, between the two, so as to be brought in contact

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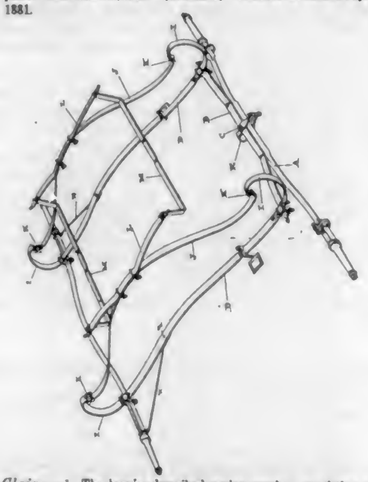


with either, a shipper-lever which carries said intermediate bevel-pulley, and a lever for operating said shipper-lever, substantially as described.

2. The bell-crank lever pivoted to the frame and to the shipper-lever, as shown, the shipper-lever carrying the friction driving-pulley, as described, the friction-pulleys arranged to be engaged by said driving-pulley, the guide-pulleys arranged as shown, the belt, and the cutter-carrying shaft and pulley, all arranged and combined in a wood-working machine of the character described, as and for the purposes set forth.

3. The combination, with the cutter driving-pulley, of the friction driving-pulley and its shifting mechanism, substantially as described, the idler A, mounted on shaft *h'*, and the idler *i*, mounted on a spindle on arm K, said arm being adjustably secured to shaft *h'*, substantially as shown and set forth.

299,191. SPRING-VEHICLE. JOHN B. ARMSTRONG, Guelph, Ontario, Canada, assignor to the Guelph Carriage Goods Company, (Limited,) same place. Filed Feb. 15, 1883. (No model.) Patented in Canada Sept. 17, 1881.



Claim.—1. The herein-described spring-washer, consisting of a loop-shaped plate of resilient material inclosing the head-plate, axle, and king-bolt, and a piece or bolt secured between the ends of said loop, so as to form a closed link adapted to operate as a safety-clevis and double-spring washer combined, substantially as set forth.

2. The combination, with spring-clevis E and a suitable axle, A, of the spring B, provided with the boss or thimble *a*, and a king-bolt, C, passing therethrough, and a suitable washer adapted to inclose said boss to form a solid bearing for the spring and to prevent wear of the king-bolt, substantially as specified.

3. The combination of the side springs, J, provided with flexible connections at either end, with the superposed springs L and suitable cross-bars, M, substantially as described.

4. The side springs, J, provided with flexible connections at either end, and having the springs L and cross-bars M, rigidly attached thereto, in combination with springs I and the elastic perches D, substantially as set forth.

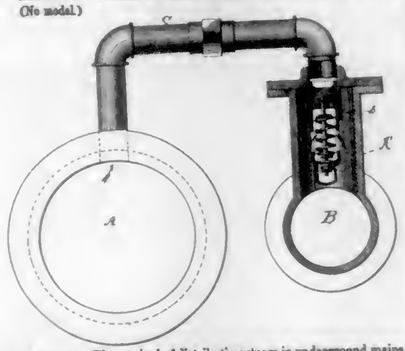
5. The perch D, formed with transverse extension *e*, in combination with a suitable spring provided with extension *d*, and suitable clips, all arranged and operating substantially as specified.

6. In combination with the axle H, formed with an indentation or indentations, the perch D, formed with extension *e*, fitting therein, the

spring I, having similar extension, *d*, adapted to be retained within the depression formed by the extension *e*, and suitable clips or clamps, substantially as set forth.

7. The combination, with the single-plate C-spring I, tapering in thickness, of the single-plate side spring, also tapering in thickness, and a swinging flexible connection between the two, substantially as described.

299,192. AUTOMATIC RELIEF DEVICE FOR STEAM-DISTRIBUTING PIPES. EDWARD H. ASHCROFT, Lynn, MASS. Filed Jan. 27, 1883. (No model.)



Claim.—1. The method of distributing steam in underground mains, which consists in conveying steam of high and low pressure in separate and adjoining conduits, and permitting the excess of steam to automatically escape from the high to the low pressure conduit at various points along the line, substantially as described.

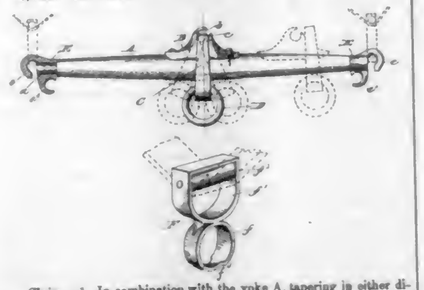
2. The combination, in an apparatus for the distribution of steam, of the main A with the auxiliary main B, having branch A', and a valve located within said branch, said mains being connected by the intermediate pipe and permitted to communicate by the automatic action of the valve, substantially as and for the purpose set forth.

3. A steam-distributing main, A, connected with an auxiliary main, B, which is provided at intervals throughout its length with safety or blow-off valves, whereby the pressure in A is relieved by the escape of steam to B, substantially in the manner and for the purpose described.

4. The combination, with a steam-distributing main, of an auxiliary main connected thereto at intervals by steam-connections containing safety-valves for permitting the escape of steam from the main to the auxiliary main, substantially in the manner and for the purpose set forth.

5. The combination of main pipe A, relief-pipe B, having branch A', which is provided with valve *b*, and the connecting-pipe C, as set forth.

299,193. NECK-YOKE. ALVA S. BAILEY, Rossville, Ill. Filed Mar. 5, 1884. (No model.)

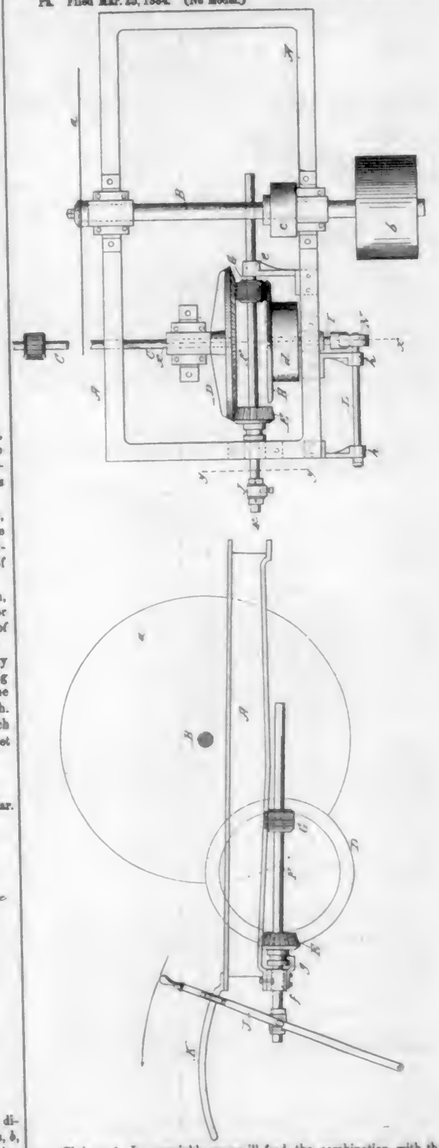


Claim.—1. In combination with the yoke A, tapering in either direction from the center, and removable cap B, having a single recess, *b*, the pole-coupling C, having bar *c* and pole-bearing, the said coupling being locked in said recess *b* except when the cap is moved toward one end of the yoke sufficiently to allow the disengagement without entirely separating the cap and yoke, as set forth.

2. In combination with a neck-yoke having hook-bands, as E *e e'*, and with the ordinary breast-strap of a harness, the coupling F, having ring *f*, stirrup *f'*, and friction-roller *f*², adapted to be kept on the said breast-strap, and the whole to serve as and for the purpose set forth.

3. In combination with the yoke A and removable cap B, having recess *b*, the pole-coupling C, having removable screw-threaded bolt G and tag H, substantially as herein shown and described.

299,194. CIRCULAR-SAW MILL. ROBERT M. BEEM, Chambersburg, Pa. Filed Mar. 25, 1884. (No model.)



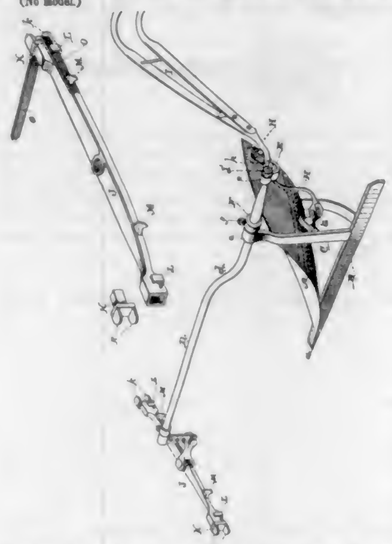
Claim.—1. In a variable saw-mill feed, the combination, with the feed-shaft C, having gear D, of the adjustable friction-disk H, actuated from the saw-mandrel, and the independent shaft F, arranged at a right angle to the feed-shaft between the feed-shaft and friction-disk, and carrying a pinion, E, and a friction-roller, G, said shaft F having an adjustment endwise, whereby the friction-roller and friction-disk can be brought into contact at any desired point to vary the feed of the log-carriage, substantially as described.

2. The combination, with the saw-mandrel B and feed-shaft C, having gear D, of the adjustable friction-disk H, the adjustable shaft F, arranged at a right angle to the feed-shaft between it and the friction-disk, the friction-roller G, mounted on the shaft F, the pinion E, feathered to the friction-roller shaft, and the lever J, for adjusting said shaft, substantially as described.

3. The combination, with the saw-arbor B, feed-shaft C, having gear D, and the independently-adjustable shaft F, arranged at a right angle to the saw-arbor and feed-shaft, and carrying friction-roller G, and pinion E, of the friction-disk H, mounted on one end of a shaft, I, means for connecting the saw-arbor and friction-disk, and mechanism for adjusting said disk to and from the friction-roller G, substantially as described.

4. The combination of the saw-mandrel B, having pulley *c*, the adjustable friction-disk H, having belt-rim *d*, the shaft F, carrying friction-roller G, and pinion E, the feed-shaft C, having gear D, and means for adjusting the roller G and shaft F independent of the pinion E, substantially as described.

299,195. PLOW. JOHN A. BILS, Pleasanton, Cal. Filed Mar. 5, 1884. (No model.)



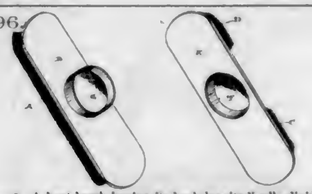
Claim.—1. In a plow, the mold-board A, provided with a slotted arm, E, extending laterally from its inner side, its outer end terminating in a bearing for the beam D, in combination with the handles I, curved arm H, secured by flanges and bolt to a projecting lug formed on the piece G, secured between the mold-board and a standard, C, which extends upward and terminates in a bearing for the beam, a collar, F, and set-screw *f*, all constructed to operate as and for the purpose herein set forth.

2. In a plow, and in combination with an adjustable beam, as shown, the whiffletree J, provided on its rear with guides L and lugs M, for securing the traces, the said whiffletree having squared ends recessed, as shown, for the reception of the rubber cushion K, which is provided with flanges, between which the traces pass, and a squared extension adapted to fit the recess or socket formed in the ends of the said whiffletree, all constructed to operate substantially as and for the purpose set forth.

3. In a plow, the mold-board A, having bar E, with socket-bearing *e*, and the standard C, having socket-bearing *c* in its top, in combination with the bent or curved beam D, journaled in said bearings, the nut *d'* on its end, and the adjustable collar F, substantially as herein described.

4. In a plow, the mold-board A, having the slotted bar E, with a socket-bearing, *e*, formed in its end, the standard C, having socket-bearing *c* in its end, and the bent or curved beam D, journaled and secured in said bearings, in combination with the handles I, having arm H, pivoted to a bearing, G, and guided on bar E by a bolt, A, through its slot, substantially as herein described.

299,196. BOOT-BRUSH. CHARLES BOEHME, Toronto, Ontario, Canada. Filed Sept. 14, 1883. (No model.) Patented in Canada Oct. 10, 1883, No. 17,845.

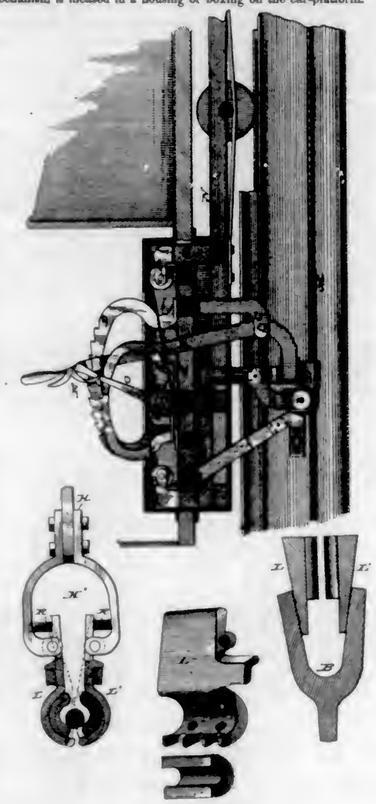


Claim.—1. A boot-brush having its back longitudinally divided in the center, one half carrying the polishing-brush and blacking-tin and the other half having attached thereto the blacking and mud brushes, and provided with a central recess having a cover, F, designed to fit over the blacking-tin, whereby the two halves may be detachably connected, substantially as and for the purposes set forth.

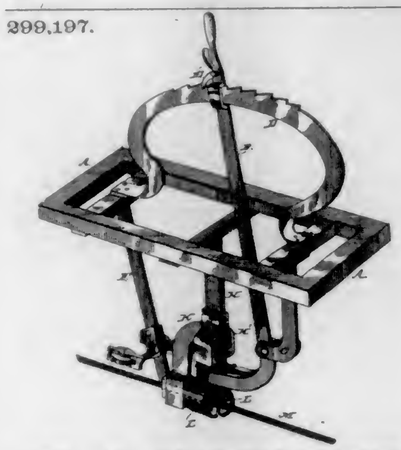
2. A boot-brush having the polishing-brush attached to one side of its back and the mud and blacking brushes attached to its other side, the back being divided in the center and detachably connected together by the blacking-tin, as specified, jointly with an open-ended tin case, H, arranged to hold the two parts of the brush together, substantially as and for the purpose specified.

299,197. GRIP DEVICE FOR THE PROPULSION OF CARS BY CABLE. ZACCUR PRALL BOYER, Philadelphia, Pa. Filed Apr. 23, 1884. (No model.)

Brief.—The grip is carried by beams supported upon the car-axles and extending under the car-platform at either or both ends of the car. It is secured in a vertically-adjustable frame in an opening in the platform and is supported from the framing of the main beams. An inclined draw-bar supports the grip when the cable is engaged. Spring clamping-jaws are made to grasp the cable by wedge-jaws upon a pivoted starting bar or lever. The framing carrying the grip and its operating mechanism is incased in a housing or boxing on the car-platform.



299,197.



Claim.—1. In a grip for a cable road, the combination, with the grip-shank and the supporting-frame, of the inclined brace-bar F, adapted to support the said shank when under the drawing-strain of the cable.

2. The combination of the grip with the beams or sills resting on the axles of the car, and extending longitudinally under the platform at either or both ends of the car, as described.

3. The combination, with the car-platform having the opening, as described, of the beams or sills mounted on the car-axles, and extended beneath said opening, and the grip mounted in said opening, as described.

4. The combination, with the pivoted gripping-jaws, of the pivoted starting bar or lever, having the wedging jaws, and adapted to compress the gripping-jaws upon the cable, substantially as described.

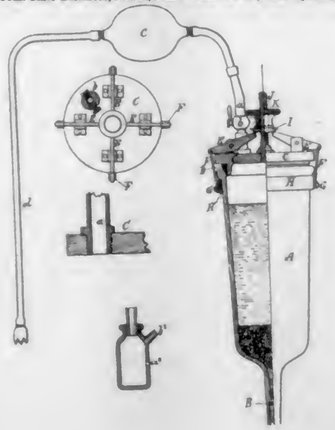
5. In a car for cable railways, a grip therefor mounted in an opening of the platform at the end of the car upon a frame independent of the car-body, and unaffected by vertical oscillations of the same, as described.

6. The combination, with the sub-frame and the supports thereon, of the movable frame, the drum, its lever, and the raising and lowering chains, substantially as set forth.

7. The combination, with the car and its grip mounted upon framing at the end thereof, as described, of the case inclosing the said framing, and the operating mechanism, as set forth.

8. In a car for cable railways, the platform having the opening, the sub-frame mounted on the car-axles and independent of the car-body, and a movable frame suspended from supports on the sub-frame by adjustable connections, and the grip mounted upon the secondary frame, all combined and operating substantially as described.

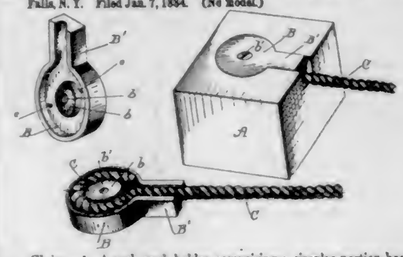
299,198. PERCOLATOR. CHARLES KEMPTON BRADFORD, Lynnfield, and JOHN GANO BENEDICT, Boston, Mass. Filed Oct. 22, 1883. (No model.)



Claim.—1. A drug-percolator consisting of vessel A, provided with detachable cover C, in combination with an air-forcing device attached to said cover, and clamping mechanism for holding said cover in place on said vessel, substantially as set forth.

2. In a drug-percolator, the combination, with the vessel and its cover, of the levers E, mounted on said cover, the screw-threaded rod and nut whereby the inner ends of said levers are acted on, and the links F, connecting the outer ends of said levers with said vessel, substantially as set forth.

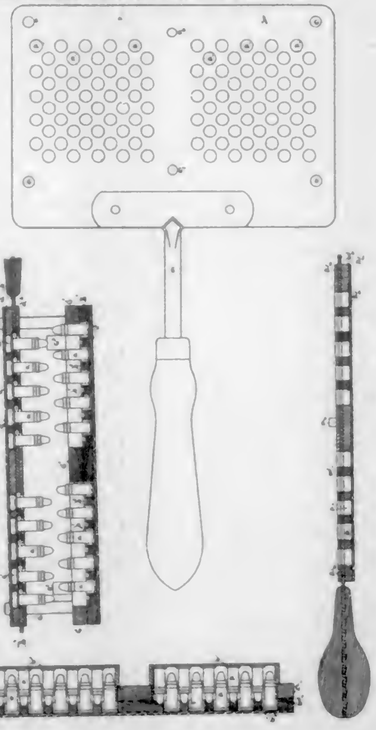
299,199. SASH-CORD FASTENER. ROSWELL N. BROWN, Hoosick Falls, N. Y. Filed Jan. 7, 1884. (No model.)



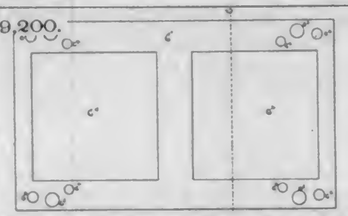
Claim.—1. A sash-cord holder comprising a circular portion having a circular groove and a central boss therein, and a rectangular portion, grooved also, for the reception of a cord, substantially as described.

2. A sash-cord holder having a rectangular grooved part, B', a circular part, B, provided with a circular groove, and points *c*, projecting therein, and a central boss, *b*, provided with a central perforation for the passage of a screw, whereby the device is secured to a window-stile, substantially as described.

299,200. MECHANISM FOR PACKING CARTRIDGES. PAUL BUTLER, Lowell, Mass. Filed Mar. 1, 1884. (No model.)



299,200.



Claim.—1. The greasing-plate A, provided with the holes *a'*, fitting the body of the cartridges and arranged regularly in alternating rows, and in position with relation to each other substantially the same as the cartridges placed in said holes occupy in the packing-box when packed with their heads adjacent to each other, substantially as described.

2. The plate A, provided with holes *a'*, fitting the body of the cartridge and arranged regularly in alternating rows, and with guide-holes *c* placed between the rows of holes *a'* and the margin of the plate, substantially as described.

3. The plate A, provided with holes *a'*, fitting the body of the cartridge and arranged regularly in alternate rows, and with guide-holes c^2 placed between the rows of holes *a'* and the margin of the plate, substantially as described.

4. The cartridge-holding plate B', provided with cavities *b'*, adapted to fit the cartridge-heads and hold a series of cartridges with their bullets in one direction in the alternating rows in which they are to be packed in the box and form one course or layer therein, adjusted to alternate with another course, substantially as described.

5. The holder B', provided with cavities *b'*, for holding a series of cartridges with their bullets in one direction, and the cavities b^2, for holding an alternate series of cartridges with their bullets in the opposite direction, substantially as described.

6. The cartridge-holder B', provided with the series of cavities *b'* and the guide studs or rods *c'*, substantially as described.

7. The cartridge-holder B', having the series of cartridge-holding cavities *b'* and the guide-holes c^2, situated and adapted to receive the studs c^1 of the frame C', substantially as described.

8. The frame C', provided with holes C^2 of the size to receive and guide the cartridge-packing box around the cartridges, and guide-holes c^2, corresponding to guide-studs *c'* of holder B', substantially as described.

9. The frame C', provided with holes C^2, adapted to receive and guide the cartridge-box around the cartridges, guide-holes c^2, and studs c^1, substantially as described.

10. The combination of the holder B', provided with cavities *b'* of proper size to receive the cartridge-head, and the plate A, provided with corresponding holes, *a'*, of proper size to receive and fit the cartridge-body, substantially as described.

11. The combination of the plate B', provided with cavities *b'* and intermediate cavities, b^2, with the plate A, provided with one or more series of holes corresponding with the series of cavities *b'*, substantially as described.

12. The combination of the plate B', provided with cavities *b'* and guide-rods *c'*, with the plate A, provided with corresponding holes *a'* and corresponding guide-holes *c*, substantially as described.

13. The combination of the plates d^2 d^3, provided with holes or cavities *c'*, with the sliding plate D^2, placed between them, substantially as described.

14. In combination with the holder D', provided with a series of holes or cavities, *c'*, the guide-holes c^2, and the guide-studs c^3, the sliding plate D^2, substantially as described.

15. The combination, with the holder B', provided with a series of holes, *b'*, adapted to receive cartridges, of the surrounding packing-box guide-frame C', substantially as described.

16. The combination, with the holder B', provided with the series of cavities *b'* and the series of intermediate cavities, b^2, of the surrounding packing-box guide-frame C', substantially as described.

17. In combination with the holder B', provided with the series of cavities *b'* and intermediate series of cavities, b^2, the inclosing-frame C', provided with posts c^3, substantially as described.

18. The combination of the holder B', provided with a series of cavities, *b'*, and the guide-studs *c'*, with the inclosing-frame C', provided with guide-holes c^2, sliding on said guide-studs *c'*, substantially as described.

19. The combination of the holder B', carrying and supporting a series of cartridges heads downward and points upward, with the holder D', carrying and supporting its series of cartridges heads upward and points downward, in such position that the latter shall be deposited alternately between the upwardly-projecting cartridges of holder B', substantially as described.

20. The combination of the holder B', provided with a series of cavities, *b'*, with the holder D', provided with a series of alternate cavities, *c'*, substantially as described.

21. The combination of the holder B', provided with cavities *b'* and alternate cavities b^2, with the holder D', provided with cavities *c'*, coming opposite to the cavities b^2, substantially as described.

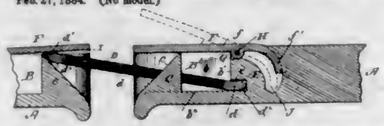
22. The combination of the holder B', provided with a series of cavities, *b'*, and guide-studs *c'*, with the holder D', provided with an alternate series of cavities, *c'*, and the guide-holes c^2, fitting said guide-studs *c'*, substantially as described.

23. The combination of the holder B', provided with the series of cavities *b'*, with the surrounding frame C' and the holder D', provided with the series of alternate cavities *c'*, substantially as described.

24. The combination of the holder B', adapted to receive and hold a series of cartridges points upward, and provided with guide-studs *c'*, with the surrounding frame C', provided with guide-holes c^2, fitting said studs, and the holder D', adapted to receive and hold a series of alternate cartridges points downward, and provided with guide-holes c^2, fitting said guide-studs, substantially as described.

25. The method of accomplishing the greasing and packing of ball-cartridges in boxes, which consists in arranging the cartridges of each layer in the greasing-plate in the position relative to each other which they are to occupy in the packing-box, and in holding and retaining them in such relative position while being transferred by a suitable perforated plate or plates into the packing-box, and deposited therein in two layers, heads and points, substantially as described.

299,201. CAR-COUPLING. EDWIN S. CLARK, The Plains, Va. Filed Feb. 27, 1884. (No model.)



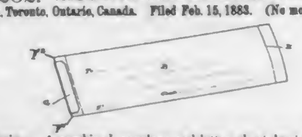
Claim.—1. The herein-described improved draw-head, provided at its front end with the recess comprising the side and rear walls and the horizontal bottom, and having the auxiliary recess formed in the rear wall at its bottom and extending transversely between the said walls, the auxiliary recess being adapted to receive the corresponding end of the coupling-link to retain the same elevated and from displacement, substantially as set forth.

2. As an improvement in car-couplings, the combination, with the draw-head provided at its front end with the recess comprising the side and rear walls, the auxiliary recess formed in the rear wall at its bottom and extending transversely between said side walls, and of the central projection extending up between the said side walls, of the coupling-link beveled across one side of its ends, substantially as set forth.

3. The combination, with the draw-head comprising the open recess at its front portion, the projection extending from the bottom of this recess, and provided with a segmental or curved recess formed in its top in rear of the link-recess, of a spring-plate having a curved or segmental rear end seated in the curved recess and fulcrumed to the draw-head in front of this curved end, substantially as and for the purpose set forth.

4. The combination, with the draw-head having the open recess at its front portion, the projection extending from the bottom of this recess, the recesses I I, and the curved recess formed in its top in rear of the link-recess, of the spring-plate comprising the flat main portion having the lateral extensions at its front end, and formed with the curved or segmental rear end, the said plate being fulcrumed to the top of the draw-head at the rear wall of the link-recess, substantially as set forth.

299,202. COMBINED ENVELOPE AND LETTER-SHEET. ARTHUR COX, Toronto, Ontario, Canada. Filed Feb. 15, 1883. (No model.)

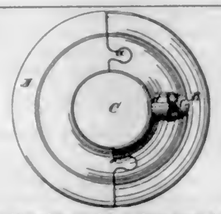


Claim.—A combined envelope and letter-sheet having a row of perforations down each side, and arranged to fold so as to hide the communication from view, in combination with an adhesive seal folded to embrace and adhere to both sides of the letter outside of the perforations when the sheet is folded, whereby the seal may be torn off without injuring the body of the letter, substantially as and for the purpose specified.

299,203. CEILING-PLATE. RICHARD T. CRANE, Chicago, Ill. Filed Apr. 22, 1884. (No model.)

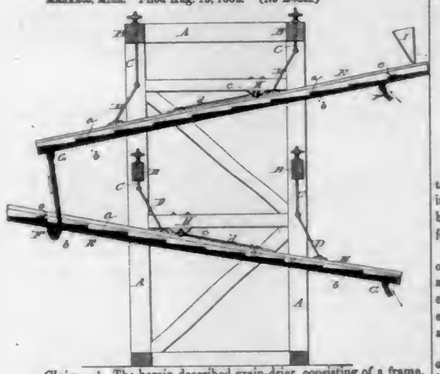
Brief.—A two-part ceiling-plate, one part provided with holding-projections and the other with corresponding recesses.

299,203.



Claim.—A ceiling-plate consisting of two parts, A B, one provided with projections *a*, the other with recesses *b*, substantially as and for the purpose specified.

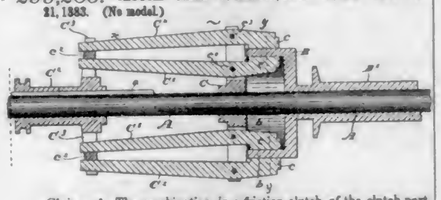
299,204. MACHINE FOR DRYING GRAIN. BENTLEY S. CULLEN, Mankato, Minn. Filed Aug. 18, 1882. (No model.)



Claim.—1. The herein-described grain-drier, consisting of a frame, adjustable rods C, links D, pan E, having corrugated steam-jacketed bottom, and means, substantially such as shown and described, for imparting a reciprocating motion to the pan.

2. In combination with the frame and with a pan or grain table of a grain-drying apparatus, suspending-links for said pan, and vertically-adjustable rods carrying said links, whereby the pan may be inclined as required.

299,205. CLUTCH. JAMES W. DAWSON, Rushville, Ind. Filed Dec. 21, 1883. (No model.)



Claim.—1. The combination, in a friction-clutch, of the clutch part B, loosely mounted on the shaft A, and the clutch part C, rigidly mounted on said shaft, and having pairs of arms C', bearing friction-plates *c* on one end, pivoted thereto, with means for operating the same, substantially as described, and for the purposes specified.

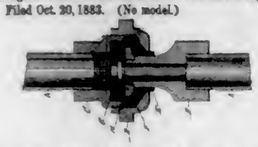
2. In a friction-clutch, the combination of the clutch part B, loosely mounted on the shaft A, and provided with a circular flange or rim, *b*, the clutch part C, having pairs of arms C', pivoted thereto, said arms having friction-plates *c* on the end next the clutch part B, the friction-plate of one arm of each pair being adapted to engage with the inside surface of the flange *b*, and the friction-plate of the other arm being adapted to engage with the outside surface of said flange, and a shifter, C^3, which engages with the other ends of the pairs of arms C', and operates to throw the friction-plates into or out of contact with the flange *b* of the clutch part B, substantially as set forth.

3. The combination, in a friction-clutch, of the clutch part B, loosely mounted on the shaft A, the clutch part C, rigidly mounted on said shaft, provided with pairs of arms C', each arm bearing a friction-plate, *c*, on one end, and one arm of each pair being pivoted at the periphery of the part C, and the other near its center, whereby the friction-plate on one arm of each pair is adapted to engage with the outside surface of the clutch part B, and the other with its inside surface, and the shifter C^3, as a means for operating said arms, substantially as set forth.

4. In a friction-clutch, the combination of the clutch part B, loosely mounted on the shaft A, the clutch part C, rigidly mounted on said shaft, having pairs of arms C', pivoted in a disk bearing friction-plates on their short ends, and the shifter C^3, provided with arms C^3, which extend outward, one on each side of the ends of each pair of arms C', and are provided with a wedge-block, c^3, between the ends of said arms C', whereby said arms are operated, substantially as set forth.

5. The combination, in a friction-clutch, of the shaft therefor, a clutch part rigid with said shaft, a clutch part revoluble on said shaft, and a shifter, one of said clutch parts having a flange and the other having pairs of expansible and contractible friction-plates adapted to be forced into contact with said flange, or to be freed therefrom, by the operation of said shifter without moving either of said clutch parts longitudinally of said shaft, substantially as set forth.

299,206. INSULATING PIPE-UNION. CHARLES DRAVE, New York, N. Y., assignor to the Archer & Pancoast Manufacturing Company, same place. Filed Oct. 20, 1883. (No model.)



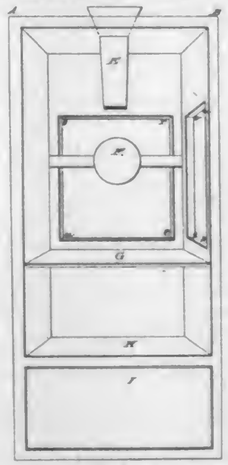
Claim.—1. The herein-described insulating pipe-union composed of the end pieces for receiving the pipe-sections, the coupling-nut for drawing said pieces together, the non-conducting disks or plates interposed between the parts, and the securing-ring, substantially in the manner and for the purposes set forth.

2. In an insulating pipe-union, the coupling-nut, the two end pieces, one of which projects through the nut, the perforated non-conducting disk, and the non-conducting shell interposed between the nut and projecting end piece, said shell being held in place by the ring upon said projecting end piece, these parts being combined and arranged substantially as shown and described.

3. In an insulating pipe-union, the combination, as before set forth, of the end pieces, the coupling-nut, the non-conducting disks, and the holding-ring having a flat bearing-face, arranged substantially as shown and described.

4. In a pipe-union of the character herein set forth, the end pieces, the removable disks, the holding-ring having a flat bearing-surface, the perforated compressible disk, and the coupling-nut, arranged and combined substantially as shown and described.

299,207. STREET-CAR FARE-BOX. GUSTAVE S. DE BLANC, New Orleans, La. Filed Mar. 5, 1884. (No model.)



Claim.—The combination, with a fare-box having an orifice or chute for the introduction of the fare, of a bell or gong placed beneath the discharge of said chute or opening to be struck by the fare as it drops from the chute, as and for the purpose described.

299,208. LAYING AND SECURING RAILS IN ROAD-BEDS OF RAILWAYS. JEANTY DESCHAUD, Sr., San Francisco, Cal. Filed Dec. 17, 1883. (No model.)

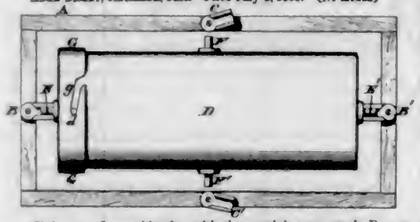
Brief.—A reversible rail with a projecting flange on one or both treads is combined with a brace-block conforming to the outer surface of the rail, said rail and block being embedded in the ties.



Claim.—1. In the road-bed of a railway having cross-ties B, the rail A, having a flange, *a'*, the base of said rail and its flange being embedded in the cross-tie, in combination with the L-shaped brace or clamp C, having a curvilinear or bulging face, *d*, fitting the outer groove of the rail, said clamp being bolted to the rail, and having its base embedded in the cross-tie and spiked thereto, substantially as herein described.

2. In the road-bed of a railway having cross-ties B, the rail A, having the lateral flanges *a a'*, and side grooves, in combination with the L-shaped clamp or brace having a curvilinear or bulging lug *d* on its face, fitting the outer groove of the rail, and a means for securing the clamp to the rail and the rail and clamp to the cross-tie, substantially as herein described.

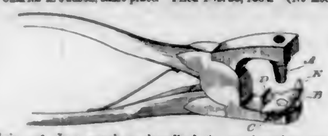
299,209. MIXING-MACHINE FOR DRUGS AND CHEMICALS. ADAM DICKEY, Cincinnati, Ohio. Filed July 2, 1883. (No model.)



Claim.—1. In combination with the revolving receptacle D, a series of blades, K, fixed to the interior of said receptacle, the blades of one rank being set in an opposite oblique manner with reference to the blades of the other rank, as herein described.

2. In combination with the cylinder D, having two pairs of gudgeons, E E' and F F', located as herein described, the frame A, provided with two distinct sets of swinging journal-bearings, B B' and C C', for the purpose specified.

299,210. PUNCH. ISAAC M. DUNCKLEBURG, Rochester, N. Y., assignor to Charles K. Judson, same place. Filed Feb. 25, 1884. (No model.)



Claim.—1. In a punch, as described, the spacing-plate attached to one jaw thereof and provided with projections, as shown, whereby the holes cut by the punch may be accurately spaced, both from the edge of the material and from one another.

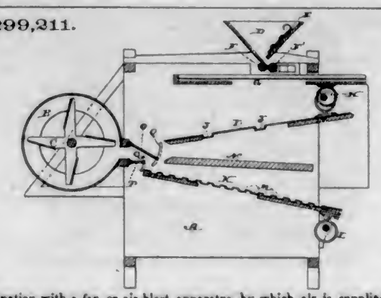
2. In a punch, an attachable spacing-plate provided with two projections turned up at an angle from the face of the plate, in combination with the jaw of the punch, and means for attaching it thereto, substantially as set forth.

3. The combination, with a punch, of the plate B, having upward projections D and E, and attached to the jaw of the punch by the rivet or screw C, substantially as described, and for the purpose set forth.

299,211. DRY SEPARATOR AND AMALGAMATOR. HERBERT EARHART, Santa Maria, assignor of two-thirds to H. D. Livingston and Joseph Kaiser, both of San Francisco, Cal. Filed Feb. 21, 1884. (No model.)

Claim.—1. An apparatus for separating gold from sand or earthy material, consisting of a sieve or screen upon which the material is distributed and agitated, two or more inclined shaking-tables situated one below the other beneath the screen, and so placed that the uppermost one discharges upon the one next below, said tables having mercury-containing troughs or channels extending across their surfaces, in combination with a fan or air-blast apparatus, by which air is supplied to separate the dust from the gold, substantially as herein described.

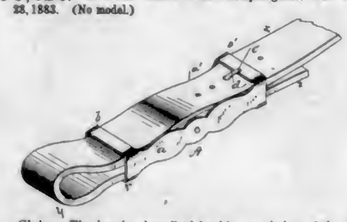
299,211.



2. An apparatus for separating gold from sand or earthy material, consisting of a series of inclined superposed tables with transverse troughs for mercury, a screen upon which the material is first delivered, and a fan or blast apparatus, in combination with a feed-hopper with an extended transverse outlet and regulating-gate, and self-adjusting rollers, between which the material may pass before falling upon the screen, substantially as herein described.

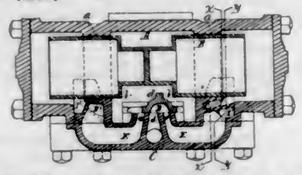
3. An apparatus for separating gold from sand or earthy material, consisting of the inclined amalgamating-surfaces, screen, and feed-hopper, arranged with relation to each other as shown, in combination with a fan or blast apparatus, the wind-board N, and the adjustable direction-boards O P, substantially as herein described.

299,212. BUCKLE. LEWIS P. EDWIN, Springdale, Wis. Filed Nov. 23, 1883. (No model.)



Claim.—The herein-described buckle, consisting of the sides *a a'*, connected at their ends by transverse bars *b b' b^2 b^3*, forming tack-loops at each end of the said frame, a tongue-bar, B, and tongues C C', mounted thereon, substantially as set forth.

299,213. WATER-METER. BENAIAH FITTS, Worcester, Mass., assignor to the Union Water Meter Company, same place. Filed Aug. 25, 1881. (Model.)

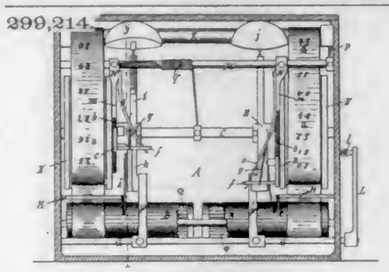


Claim.—The combination of the cylinders A A', having internal bearing-surfaces, *a a*, said cylinders being separated below by a triangular shaped space, the pistons B B', provided with shoulders *b b*, the removable valve-seat plate C, having guideways *c c* and ports *e e' i i''*, and the valves D D, provided with projections *d*, the valve-seat ports being connected with the ends of the cylinders by straight parallel passages E I, located in the ends of the valve-seat plate, and spirally-crossed passages E' I', located in the triangular space beneath the cylinders, substantially as shown and described.

299,214. DEVICE FOR REGISTERING FARES. CHARLES SIDNEY FOSS, Boston, Mass. Filed Dec. 5, 1883. (No model.)

Claim.—1. In a railway-registering device, the rod *l*, in combination with the shaft G, provided with its two oppositely-disposed levers F F', the printed ribbons, and the three-armed lever E and its connecting mechanism to feed the printed ribbons *a a'* forward at every movement of said rod, and thereby register a fare.

299,214.

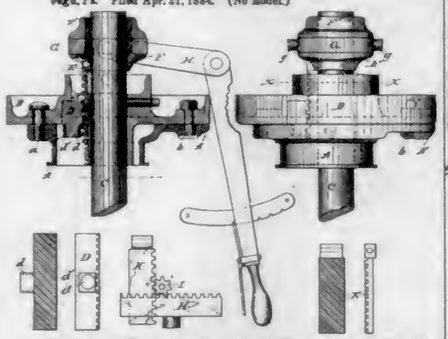


2. The combination of the spring-rollers B B and receiving-drums B' B', provided with the ratchet-wheel *b b*, the spring-actuated lever E and its attendant mechanism, as herein described, the operating-lever F, rocking-shaft G, and rod *l*, substantially as and for purposes described.

3. In a railway-registering device, the combination, with the spring-actuated rollers and receiving-drums for storing the printed ribbons, of the releasing mechanism, as herein described, whereby the strip is restored to its normal position upon the rollers, substantially as and for purposes set forth.

4. In a railway-registering device, the combination of the rollers B, the shaft G, arms F F', and pawl and ratchet mechanism, and the receiving-drums B', with the spring-actuated shaft M, pawls *w*, and trip-levers *o*, actuating the studs *f*, as and for purposes herein described.

299,215. VARIABLE ECCENTRIC. ABRAHAM O. FREE, Waynesborough, Pa. Filed Apr. 21, 1884. (No model.)

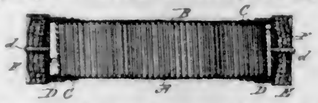


Claim.—1. The combination, substantially as before set forth, of the fixed disk on the crank-shaft, the eccentric pivoted to said disk, and the cross-sliding rack for shifting the eccentric, said rack being mounted in a rectilinear cross-guideway of the fixed disk.

2. The combination, substantially as before set forth, of the fixed disk on the crank-shaft, the eccentric pivoted to said disk, the cross-sliding rack for shifting the eccentric, and the toothed shifting-bar fitted in a longitudinal guideway in the hub of the fixed disk.

299,216. FLEXIBLE CARRIER FOR PNEUMATIC TUBES. RICHARD J. P. GOODWIN, Manchester, N. H. Filed Nov. 20, 1883. (No model.)

Brief.—A flexible carrier for use in curved pneumatic dispatch-tubes, the carrier consisting of a spiral spring having an elastic fibrous covering, and provided with collars, detachable caps, and washers.



Claim.—1. In a flexible cash box or carrier for pneumatic tubes or transmitters, the combination of a spiral spring, a fibrous covering or envelope inclosing said spring, a metallic collar secured to each end of the spring, and a cap detachably connected to each of said collars, substantially as described.

2. The combination, with a cash box or carrier for pneumatic tubes or transmitters, of a metallic cap, D, provided with felt, cloth, or leather washers E, and a metallic washer, F, substantially as described.

3. In a flexible cash box or carrier for pneumatic tubes or transmitters, the combination of the spiral spring A, envelope B, collars C C, caps D D, and washers E F, substantially as described.

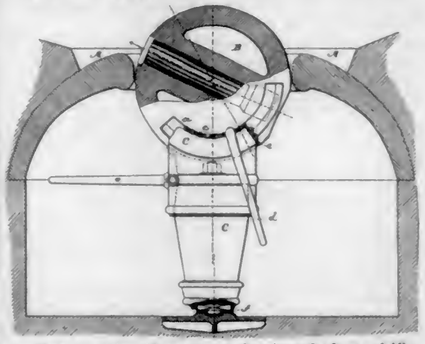
299,217. SASH-HOLDER. GEORGE E. GORHAM, Albany, N. Y. Filed Feb. 16, 1884. (No model.)



Claim.—1. In devices for producing friction between the meeting-rails of window-sashes when closed and between the parting-strips and sashes when open, the combination of the springs *a*, having upper and lower bulges, and secured at their outer ends to the stiles, as described, and pins extending from the frame across the springs, against which the bulges bear, substantially as and for the purpose set forth.

2. The combination, with the sashes and frame of a window, of the spring secured at its outer ends to the sash, and having upper and lower bulges, and formed with the semicircular bend *f*, the staple *g*, and pins extending from the sides of the frame against which the bulges of the spring bear, substantially as and in the manner described.

299,218. MORTAR AND GLOBULAR SHIELD FOR THE SAME. HERMANN GRUSON, Buckau, near Magdeburg, Prussia, Germany. Filed Dec. 21, 1883. (No model.)



Claim.—1. A barrel for mortars or other pieces of ordnance, rigidly secured within and completely closing an opening in a spherical or nearly spherical shell or casing whereby it is carried, in combination with suitable means for supporting said shell or casing, substantially as and for the purpose set forth.

2. A barrel for mortars or other pieces of ordnance, rigidly secured within and completely closing an opening in a spherical or nearly spherical shell or casing, in combination with a covered place or turret for the gunner, having a circular opening, within which said shell fits and turns, as set forth.

3. A barrel for mortars, &c., located within a spherical or nearly spherical shell or casing, in combination with suitable means for turning said shell on an imaginary horizontal axis drawn through it at right angles to the axis of the bore, as and for the purpose set forth.

4. The combination, with a barrel rigidly secured within and completely closing an opening in a spherical or nearly spherical shell or casing, of means for revolving said shell horizontally, as and for the purpose set forth.

5. The combination, with a barrel rigidly secured within a spherical or nearly spherical shell or casing, and means for turning said shell to change the inclination of the barrel, of means for revolving said shell horizontally, as and for the purpose set forth.

6. The combination, with a globular shell or casing carrying a barrel, and formed on its lower side with circular tracks or ways, and a supporting-base having corresponding tracks, of anti-friction rollers located between the tracks on the respective sides of the shell, as set forth.

7. The combination, with a globular shell or casing carrying a barrel, and formed on its lower side with circular tracks or ways, and a supporting-base having corresponding tracks, of a series of anti-friction rollers coupled together and located between the tracks on the respective sides of the shell, as set forth.

8. The combination, with the globular shell or casing B, carrying the barrel, and the base-piece C, of the anti-friction balls *k*, annular bearing-ring *l*, and support D, as and for the purpose set forth.

9. The combination, with the barrel of a gun, having a suitable carriage, of a universally-swinging weight depending therefrom, and a suitable frame for supporting said carriage, so constructed as to allow free lateral movement to said weight to compensate for the rolling of the vessel or to take up the recoil of the gun, or both, substantially as set forth.

10. The combination, with the shell B, carrying the barrel, and the pillar C, having weight G depending therefrom, of the support D and anti-friction balls *k*, located between said support and the pillar C, substantially in the manner and for the purpose set forth.

299,219. FOUNTAIN-PEN. JAMES R. HAIGHT, Adrian, Mich. Filed Oct. 1, 1883. (No model.)

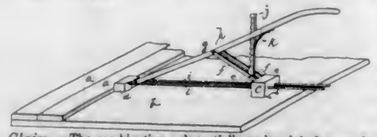


Claim.—1. The combination of the cylinder-reservoir closed at the top, the porous material or sponge in the chamber formed by the pen, and a shoe or cap, a central plug with an orifice and slot affording communication between said reservoir and such porous material, said slot also opening to the air through coincident openings in the cap or shoe, substantially as and for the purposes set forth.

2. The cylindrical ink-reservoir, open at its lower end only, in combination with a detachable holder inclosing a central plug, slotted and bored to afford communication between such fountain and the pen, the shoe or cap and pen, by means of which a chamber is formed to receive the porous material, the parts being constructed and operating substantially as described and shown.

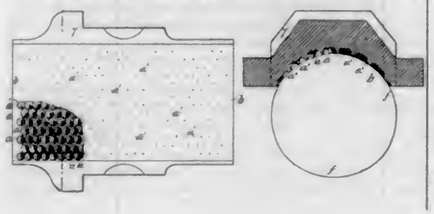
3. In a fountain-pen, the reservoir, pen, shoe, or cap, such pen and shoe inclosing the porous material, with a central plug slotted and bored as described, and adapted to furnish the requisite atmospheric pressure at a point between such porous material and the fountain, substantially as set forth.

299,220. FLOOR-CLAMP. HIRAM E. HATCH, Dexter, Me. Filed Jan. 11, 1884. (No model.)



Claim.—The combination, substantially as hereinbefore set forth, of the block *c*, provided with teeth adapted to hold it in position, the sliding block *d*, the rods *i i*, secured to said block *d*, and sliding in openings in the block *c*, the lever *g*, pivoted to block *d*, the straps *f f*, pivoted both to the block *c* and lever *g*, the ratchet *j*, operating to hold the lever in position, and the spring *k*, serving to hold said ratchet in place.

299,221. JOURNAL-BEARING. HERBERT H. HEWITT, New York, N. Y. Filed Feb. 19, 1884. (No model.)

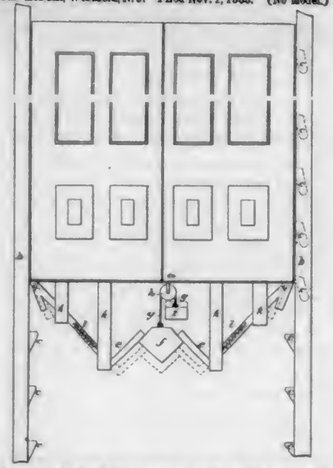


Claim.—1. A journal-bearing of brass or hard metal, the bearing side of which consists of taper projections integral therewith, in combination with a soft-metal lining surrounding the said projections, substantially as and for the purpose set forth.

2. A journal-bearing of hard and soft metal, the bearing-surface of which is composed of the soft metal and projecting points or edges forming parts of and extending from the hard metal entirely through the soft metal, substantially as and for the purpose set forth.

3. In a journal-bearing, a hard-metal bearing-block provided on its bearing side with a series of conical projections integral therewith, in combination with a soft-metal lining covering the said conical projections, substantially as described.

299,222. AUTOMATIC SAFETY APPLIANCE FOR ELEVATORS. JOHN HODGES, Westfield, N. J. Filed Nov. 1, 1883. (No model.)

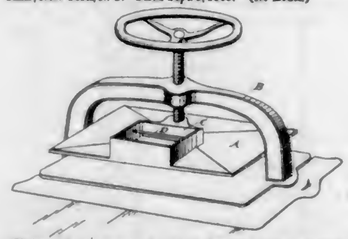


Claim.—1. Projections adapted to arrest an elevator-car, in combination with mechanism to engage the projections and throw them out of the way of the elevator-car as it descends, and a spring or springs operating to withdraw said mechanism which engages the projections, so as to allow the projections to stop the descending car, and mechanism adapted to hold the mechanism engaging the projections in the position which engages the projections, except in case of accident, substantially as described.

2. The projections *c*, the beveled piece *d*, the spring *l*, and the weight *i*, or its equivalent, arranged and operating substantially as described.

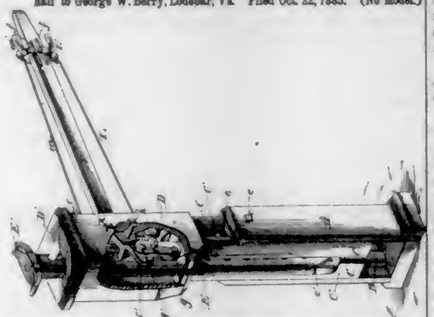
3. The projections *c*, the pieces *d e*, the piece *f*, the spring *l*, the rope *g*, with suitable pulley or support, and the weight *i*, arranged and operating substantially as described.

299,223. UPPER PLATE OF COPYING-PRESSES. HENRY N. HUBBARD, New York, N. Y. Filed Sept. 5, 1883. (No model.)



Claim.—As an improved article of manufacture, the upper movable plate, A, of a copying-press, provided with the water-receptacle C on its upper face, arranged at the middle of the length of the plate A, and having its outer side flush with one of the longitudinal edges of said plate, the inner longitudinal side of said water-receptacle C having a central boss-socket, E, formed on it, and the upper plate, A, water-receptacle, and boss-socket being integral with each other, as set forth, whereby the socket is strengthened by the inner side of the water-receptacle, as specified.

299,224. LIFTING-JACK. JAMES H. HUBBERT, OMAR, assignor of one-half to George W. Berry, Lodebar, Va. Filed Oct. 22, 1883. (No model.)



Claim.—1. In a lifting-jack, the combination of the frame A and sliding frame D, the bar E, having ratchets *s*, the lever F, lug G, and spring *i*, the connecting-rods L *m*, and pawl J, all substantially as shown and described.

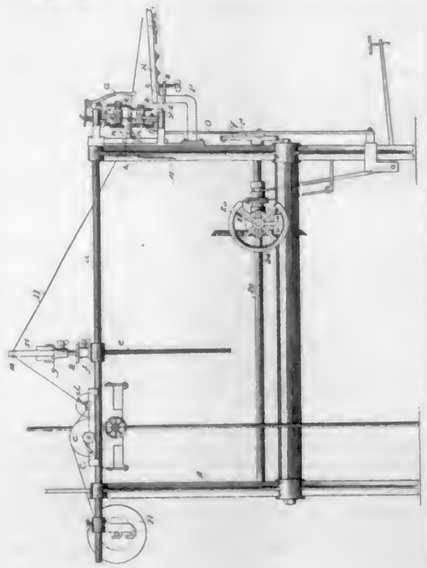
2. In a jack, the frame or pedestal A and adjustable sliding frame D, having the projection C, forming grooves C' C' C', the notched bar E, and inclined slots *d'*, in combination with the forked lever F, slots *f f*, the depending lug G, pawl J, and springs *i J'*, adapted to engage with the ratchet *s*, the rods *m* L, and pawl *m'* L, connected to the slots *f f*, substantially as shown and described.

3. In combination, the stationary and adjustable frames having a notched bar adapted to be raised and held in position by a lever and pawl connected by rod to the lever-arm and held in position by a pin or bolt, all substantially as shown, and for the purpose described.

4. In a lifting-jack, the pedestal having tongues B B, adjustable frame having downwardly-extending arms forming grooves, in combination with a lever-arm provided with a depending lug connected to an operating-rod, pawls J, and connecting-rod, whereby the bar is held in a rigid position, substantially as described, and for the purposes set forth.

5. In a lifting-jack, the vertically-adjustable notched bar E, provided with the downwardly-inclined portion *d'*, adapted to receive a hook, the lever F, lug G, and pawl J, connected to said lever by operating-rod *m* L, all substantially as described, and for the purposes set forth.

299,225. MACHINE FOR LABELING OR COVERING THE TOPS OF BOXES. HORACE INMAN, Amsterdam, N. Y. Filed May 12, 1883. (No model.)



Claim.—1. A machine for labeling or covering the tops and bottoms of boxes, consisting of a suitable supporting-frame having bearings for the roll of paper, of paste or glue applying devices, non-revolving box, supporting devices, and mechanisms for supporting and cutting the web, all substantially as described.

2. The combination of the bracket, the box-form pivoted therein, and the adjusting devices, substantially as described, whereby the inclination of the box may be varied, substantially as described.

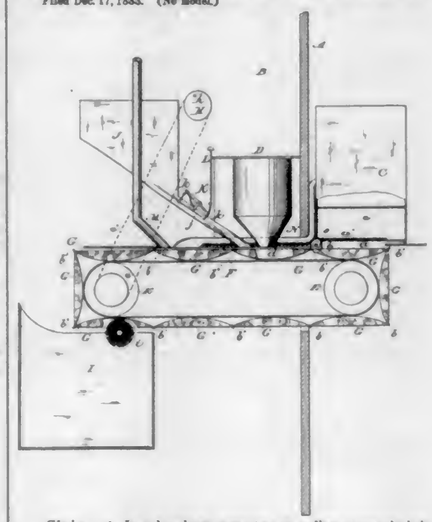
3. In the described machine, the positively-operated cutters *k k*, adapted to move transversely across the web, substantially as described.

4. The transversely-moving carriage having rotary cutters, and pinions on the journals of said cutters, said pinions being connected to rack-bars by intermediate loose pinions, whereby the cutters are made to revolve as the carriage moves, substantially as described.

5. The laterally-moving carriage having positively-revolving cutters, and a lever and suitable connections to a crank, in combination with devices, substantially as described, for stopping and starting the cutting mechanism, substantially as described.

6. In combination with the web-cutting devices, the frame F, and mechanism, substantially as described, to actuate the same, said mechanism being operated by the treadle-lever to throw the said frame forward and return the same, substantially as described.

299,226. DRY-CLOSET. THOMAS W. JACKSON, San Francisco, Cal. Filed Dec. 17, 1883. (No model.)



Claim.—1. In a dry-closet apparatus, an endless-receptacle belt mounted under and adapted to receive the excrement or feces from a closet, means for depositing therein a charge of ashes, sand, earth, or other suitable or similar substances, means for introducing hot air upon the contents of the receptacle to dry it, and a mechanism for causing the movement of said endless receptacle to carry off and discharge its contents, substantially as and for the purpose herein described.

2. In a dry-closet apparatus, a stove or other fuel-consuming device and an adjoining closet, in combination with an endless-receptacle belt mounted under said stove and closet, and adapted to receive the ashes from the former and the excrement or feces from the latter, and a mechanism for causing the movement of said endless receptacle to carry off and discharge its contents, substantially as herein described.

3. In a dry-closet apparatus, a stove or other fuel-consuming device and an adjoining closet, in combination with an endless-receptacle belt mounted under said stove and closet, and adapted to receive the ashes from the former and the excrement or feces from the latter, a hot-air pipe communicating with the stove and with the receptacle-belt to dry its contents, and a mechanism for causing the movement of the belt to carry off and discharge its dried contents, substantially as herein described.

4. In a dry-closet apparatus, the stove C, having ash-pit *c*, and the closet-seat D, in combination with the underlying endless belt F, mounted on drums E, the succession of separate pans G on said belt, and adapted by its movement to be brought successively under the ash-pit of the stove and under the discharge of the closet-seat, a means automatically depositing a charge of ashes in each pan when under the ash-pit, and a mechanism for causing a periodic movement of said belt to carry a pan from under the closet and substitute a fresh one, substantially as herein described.

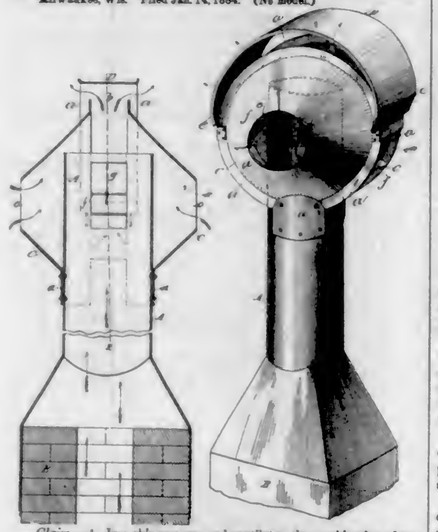
5. In a dry-closet apparatus, the stove C, having an ash-pit, *c*, with a grated double bottom consisting of a stationary plate, *a*, and sliding plate *a'*, having arm *b*, and returning-spring *s*, in combination with the endless periodically-moving belt F, having pans G, each pan having a raised cam portion, *b'*, for engaging with the arm *b* of the sliding grate-plate *a'*, to cause a discharge of ashes into the pan, substantially as and for the purpose herein described.

6. In a dry-closet apparatus, the stove C, having an ash-pit, *c*, and the closet-seat D, in combination with the underlying endless belt F, mounted on drums E, the succession of separate pans G on said belt, and adapted by its movement to be brought successively under the ash-pit of the stove and under the discharge of the closet-seat, and the means for causing the periodic movement of the belt and pans, consisting of the pulley *e* on drum E, the crank-pulley H, and the belt *e'*, arranged to operate substantially as and for the purpose herein described.

7. In a dry-closet apparatus, the stove C, having ash-pit *c*, and the closet-seat D, in combination with the periodically-moving endless belt F, having pans G, arranged with relation to the stove and closet, as described, the hot-air pipe N, communicating with the stove and pans, and the vent-pipe M, substantially as and for the purpose herein described.

8. In a dry-closet apparatus, the endless belt F, adapted to be rotated, and having pans G, for the purpose described, in combination with the brush *i*, over which the returning inverted pans pass, whereby they are cleaned, substantially as herein described.

299,227. CHIMNEY CAP AND VENTILATOR. WILLIAM J. KAYSER, Milwaukee, Wis. Filed Jan. 14, 1884. (No model.)



Claim.—1. In a chimney cap and ventilator, the combination of two open cone-frustums attached opposite each other close to the top of the chimney-pipe, and adapted to direct forced drafts upward toward the top of said pipe, with a sheet-metal band fastened to the base of said opposing cones and adapted to cover the upper half of the open space left between them, to protect the chimney-pipe against return-drafts and rain or snow, substantially as set forth.

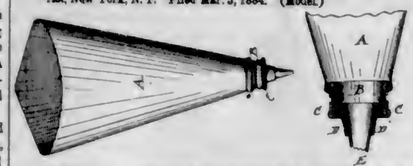
2. In a chimney cap and ventilator, the cone-frustums C C, having a flange, *a*, around their open base, and top openings, *c*, in combination with the protecting-band D and the chimney-pipe A, substantially as shown and described, and for the purpose set forth.

3. In a chimney cap and ventilator, the cone-frustums C C, having the dividing-strips *f f*, in combination with the pipe A, having the band D and the slots *g g* and strips A A, substantially as shown and described, and for the purpose set forth.

4. In a chimney cap and ventilator, a pipe having side openings and cone-frustums secured opposite each other, and having open tops located alternately with and midway between the openings in the pipe, to create a blast-draft straight out through the top of the pipe, substantially as set forth.

5. A combined ventilator and chimney cap consisting of a pipe having side openings and top opening protected by a weather-band, and open cone-frustums, as described, whereby a straight forced upward draft is insured, irrespective of the direction of the wind, substantially as set forth.

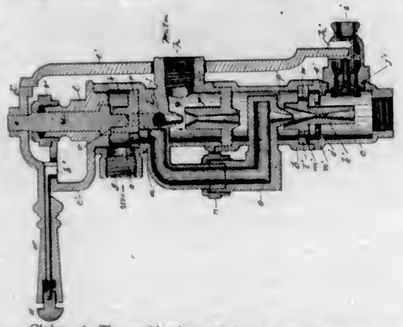
299,228. CONFECTIONER'S ORNAMENTING-TUBE. JULIUS KIRSTEN, New York, N. Y. Filed Mar. 3, 1884. (Model.)



Claim.—1. A confectioner's ornamenting-tube consisting of a flexible water-proof funnel or receiver, A, a tubular socket, B, applied to the lower end of the receiver A, a detachable collar, C, and a flanged and conically-tapering socket D, retained between flanges of the socket B and collar C, substantially as set forth.

2. The combination of a funnel or receiver, A, a socket, B, having a flange, *b*, at its lower end, means to attach the socket to the lower end of the receiver, a flanged detachable collar, C, applied to the socket B, a flanged conically-tapering socket, D, and an interchangeable ornamenting-tube E, substantially as set forth.

299,229. INJECTOR. FRANKLIN W. KREMER, Wadsworth, Ohio. Filed Sept. 21, 1883. (Model.)



Claim.—1. The combination, with the steam inlet and valve, of an operating-lever provided with a spring push-piece and a toothed or notched segmental rack, with which said lever engages to govern the position of the valve, substantially as described.

2. The combination, with the steam-inlet, the valve therefor, an operating-lever provided with a spring-catch and a cam, and a toothed segment engaged by said spring-catch, of the overflow, a check-valve therein, and a lever for said check-valve under the control of the cam of the steam-inlet-controlling valve-lever, substantially as and for the purpose described.

3. The combination, in an injector, of a perforated or ported base or diaphragm for the combining or mixing tube, and an annular valve or plate automatically opening or closing such perforations or ports, substantially as shown and described.

4. The combination, with the overflow, of an automatically-seated check-valve, a lever to unseat or open the same, and the live-steam-valve-actuating lever operating in connection with said check-valve lever, substantially as described.

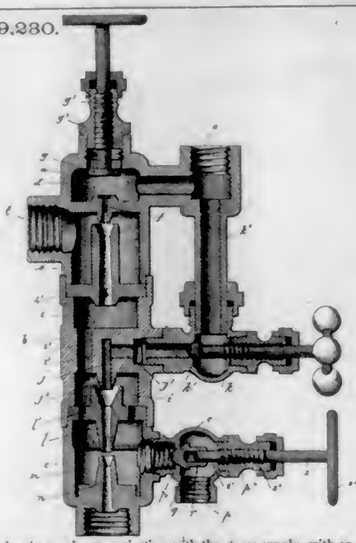
5. The combination, with the steam inlets and ports *j m* and the lifting and forcing tubes *i* and *p'*, respectively, of the steam-valve *r*, having the single opening *s* for ports *j m*, controlling such ports independently of one another, and operable with relation thereto to admit of the grading of the water-supply, and also the conversion of the machine from a lifting to a non-lifting injector, and vice versa, substantially as shown and described.

299,230. INJECTOR. FRANKLIN W. KREMER, Wadsworth, Ohio. Filed Nov. 19, 1883. (Model.)

Claim.—1. In an injector, the steam-chamber *d*, the valve *g* therein, the suction-chamber *e*, with which the steam-chamber communicates through the lifting jet-tube *f*, under control of the said valve, the combining-tube *h*, aligned with the said lifting jet-tube, the overflow-chamber *m*, the overflow-cock *o* therein, provided with the valve *q*, having automatic play on its stem, and also by said stem adapted to be positively operated to close said overflow, all combined and arranged to operate substantially as shown and described.

2. In an injector, the steam-chamber *d*, the valve *g* therein, the suction-chamber *e*, with which the steam-chamber communicates through the lifting jet-tube *f*, under control of the said valve, the combining-tube *h*, aligned with the said lifting jet-tube, the forcing jet-tube *f*² in the sup-

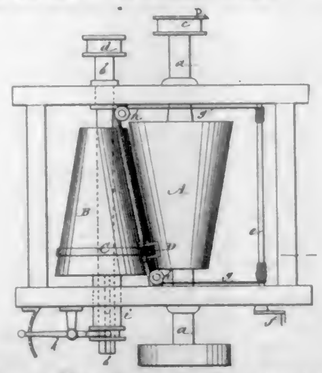
299,230.



ply-chamber, and communicating with the steam-supply, with an interposed valve, *k'*, the combining-tube *l*, having ports *l'* in its base or flange to open independent communication between the suction and overflow or exhaust chambers, and the overflow-valve *q*, having an automatic and also a positive operation, all combined and arranged to operate substantially as shown and described.

3. In an injector, the steam-chamber *d*, the valve *g* therein, the suction-chamber *e*, with which the steam-chamber communicates through the lifting jet-tube *f*, under control of the said valve, the combining-tube *h*, aligned with the said lifting jet-tube, the forcing jet-tube *j''* in the supply-chamber, and communicating with the steam-supply, with an interposed valve, *k'*, the combining-tube *l*, having ports *l'* in its base or flange to open independent communication between the suction and overflow or exhaust chambers, the discharge-tube *n* in the suction or exhaust chamber *m*, aligned with the force-combining tube, and the overflow-valve *q*, having an automatic and also a positive operation, all combined and arranged to operate substantially as shown and described.

299,231. DEVICE FOR TRANSMITTING MOTION. WESLEY R. LAIRD, East Calais, Vt. Filed Apr. 4, 1884. (No model.)



Claim.—1. The combination of the reversely conical or tapering pulleys A B, fitted on shafts parallel with one another, arranged at such a distance apart as to bring the surfaces of said pulleys in close proximity to but free from contact with each other, and an endless belt or band, C, arranged to freely receive the one pulley through it, and capable of adjustment thereon or along, and of being gripped by the two pulleys between which it passes, substantially as and for the purposes specified.

2. The combination of the belt shifter or carrier D and means for operating the same with the reversely-conical pulleys A B and the endless belt or band C, arranged to freely receive through it the one pulley and to pass between both pulleys, essentially as shown and described.

3. In a device for transmitting motion from one conical or tapering pulley to another by pressure of said pulleys upon a belt or band arranged to pass in between them, as described, the one of said pulleys made adjustable in direction of its length, and means for so adjusting the same, whereby the grip of the pulleys on the band may be increased or diminished, or the driven pulley may have its motion arrested without affecting the movement of the driver, substantially as specified.

299,232. BASE-PLATE FOR THE TEETH OF ORE-WASHER SHAFTS. GEORGE LAUDER, Pittsburg, Pa. Filed Nov. 26, 1883. (No model.)



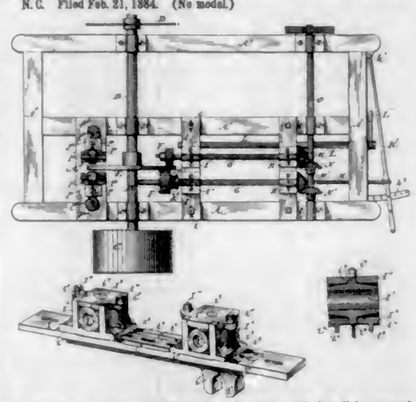
Claim.—1. A base-plate for ore-washer shafts, having a spirally-curved projecting flange to which the teeth may be secured, substantially as and for the purposes specified.

2. A base-plate for ore-washer shafts, having a spirally-curved vertically-slotted flange projecting at right angles from the base-plate, substantially as and for the purposes specified.

3. A base-plate for ore-washer teeth, having a flange which projects at right angles from the base-plate, said flange having a transverse tooth slot or groove at right angles to and extending into the base-plate, substantially as and for the purposes specified.

4. A base-plate for ore-washer shafts, having a spiral curve and of T form in cross-section, substantially as and for the purposes specified.

299,233. CIRCULAR-SAW MILL. WALTER J. F. LIDDELL, Charlotte, N. C. Filed Feb. 21, 1884. (No model.)



Claim.—1. In a saw-mill feed mechanism, a friction-disk secured to the saw-mandrel, in combination with friction-wheels arranged to bear upon the opposite faces of said disk in such manner that one only of said wheels shall bear upon the friction-disk at a time, said friction-wheels being secured to parallel shafts geared to and actuating the saw-mill carriage and mounted in movable bearings and connected by bevel-gears with the shaft actuating the saw-mill carriage, substantially as described.

2. In a saw-mill feed mechanism, a friction-disk secured to the saw-mandrel, in combination with parallel shafts carrying friction-wheels arranged upon opposite sides of said disk, but at such a distance apart as will adapt them to be brought one only at a time into operative contact with said friction-disk, movable bearings for adjusting said friction-wheels relatively to the friction-disk, and beveled pinions mounted upon said parallel shafts, and meshing with corresponding pinions on a shaft substantially at right angles thereto, for actuating the saw-mill carriage, substantially as described.

3. The combination, in a saw-mill feed mechanism, of a friction-disk secured to or actuated by the saw-mandrel, friction-wheels arranged to bear upon the opposite faces of said disk, and secured to shafts geared to and actuating the saw-mill carriage, and friction-rollers secured to the

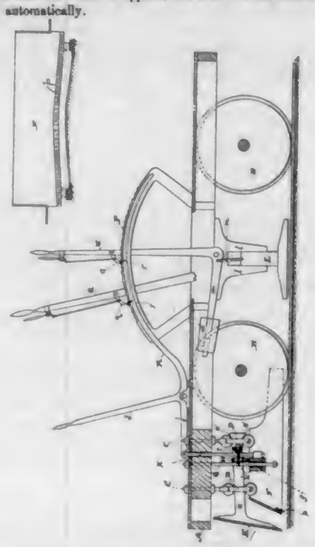
4. The combination, in a saw-mill feed mechanism, of a friction-disk secured to or actuated by the saw-mandrel, the shafts provided with friction-wheels arranged to bear upon the opposite faces of said disk, the friction-rollers arranged diametrically opposite the friction-wheels, to bear against the opposite faces of the friction-disk and supported in adjustable bearings secured to the frame.

5. In a saw-carriage feed mechanism, the combination, with the movable ends of the parallel friction-wheel shafts, of the adjustable bearings consisting of the longitudinally-adjustable bed-plate I, formed with elevated side flanges, and a longitudinally-slotted bottom, bearing-boxes formed with serrations to engage with the corresponding serrations of the bed-plate, and clamping-bolts for securing the boxes adjustably to the bed-plate, substantially as described.

6. In a saw-mill feed mechanism, a longitudinally-adjustable bearing-block, in combination with a bearing-box adjustable longitudinally upon said bearing-block, and a sleeve-bearing pivoted within said box by means of trunnion-hubs journaled therein, substantially as and for the purpose specified.

299,234. SAFETY-GUARD FOR CARS. FRANK P. H. LOFTIS, San Francisco, Cal. Filed Nov. 17, 1883. (No model.)

Brief.—A track-clearer in which a vertically-adjustable shield is suspended under the car, which, when tripped by the sliding guard, falls and completely incloses the space in front of and at the sides of the forward wheels. A brake-lever is connected to the shield, whereby when the shield falls the brake is applied, and if on a cable road the grip is released automatically.



Claim.—1. A safety-guard or fender for cars, consisting of a shield suspended under the car, and adapted, when dropped, to rest on the road-bed and tracks, inclosing the space in front of the forward wheels, and a tripping mechanism, operated by the impact or contact of the obstructing body, to trip the shield to allow it to fall, substantially as herein described.

2. A safety-guard or fender for cars, consisting of a shield having a front and sides suspended under the car, and adapted, when dropped, to rest its lower edge on the road-bed and tracks, inclosing the space in front and on each side of the forward wheels, and a means, operated by the impact or contact of the obstructing body, to trip the shield to allow it to fall, substantially as herein described.

3. A safety-guard or fender for cars, consisting of a shield suspended under the car, and adapted, when dropped, to rest its lower edge on the road-bed and tracks, inclosing the space in front of the forward wheels, a means, operated by the impact or contact of the obstructing body, to trip the shield to allow it to fall, and a mechanism, operated by the falling shield, to apply the brakes to check the car, substantially as herein described.

4. A safety-guard or fender for cars, consisting of a shield suspended under the car, and adapted, when dropped, to rest its lower edge on the road-bed and tracks, inclosing the space in front of the forward wheels, a means, operated by the impact or contact of the obstructing body, to trip the shield to allow it to fall, and a mechanism, operated by the falling shield, to apply the brakes to check the car, and to release the gripping device by which, through the traveling cable, the car derives its motion, substantially as herein described.

5. The outer or forward guard, E, mounted under or in front of the car, and having backwardly-extending arms *e*, passing through roller-guides D, by which it is suspended, and adapted to be forced back by an obstructing body, in combination with the shield F under the car and between the guard E and the forward wheels, and a trip-connection between said shield and the arms of the guard E, whereby said shield is suspended above the road-bed and dropped to rest its lower edge on the road-bed and tracks when the guard E is forced back, substantially as herein described.

6. The guard E, having arms *e*, cross-bar I, and adjustable pin *i*, and the roller-guides D, in which the arms are fitted and adapted to move, the rear guides being higher than the forward ones, to permit the guard to move forward to position by gravitation, in combination with the shield F, having cross-bar *f* and slotted arm H, with which the pin *i* engages to suspend the shield, and from which it withdraws to drop it when the guard is forced back, substantially as herein described.

7. The guard E, having arms *e*, cross-bar I, and adjustable pin *i*, and the roller-guides D, arranged as shown, to support the arms and provide for its movement, in combination with the shield F, having a cross-bar, *f*, guided on rods G, a slotted arm, H, for engagement with the pin, and the means for raising the shield after being dropped, consisting of the lever J, arm *j*, and connecting-bar K, substantially as herein described.

8. In a safety-guard for cars, the sliding trip-guard E and the drop-shield F, arranged to operate as shown and described, and the lever J, with its arm *j*, and connecting-rod K, in combination with vertically-moving brakes L, the lever M, having weighted arm *m*, the rod *n*, the rack P, and pawl *o* on the lever M, and the long arm R of lever J, having a side pin, *r*, under the pawl *o*, substantially as herein described.

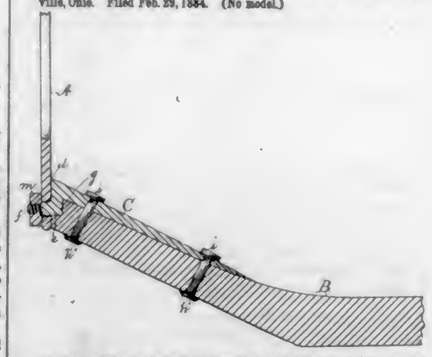
9. In a safety-guard for cars, the sliding trip-guard E and the drop-shield F, arranged to operate as shown and described, and the lever J, with its arm *j*, and connecting bar or rod K, in combination with the grip-lever Q, having pawl *q*, the rack P, and the arm R of lever J, having side pin, *r*, under said pawl, substantially as herein described.

299,235. ORE-CONCENTRATOR. JOHN LEWIS LOOMIS, Leadville, Colo. Filed Sept. 14, 1883. (No model.)



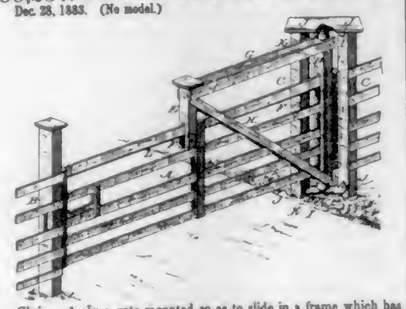
Claim.—In an ore-concentrator, the combination, with the inclined sluices constructed to abruptly change the course of the current at numerous intervals down them, of water-pipes provided with jet orifices or tubes to increase the volume of water in the sluices, and to disturb the pulp in the current, essentially as and for the purposes specified.

299,236. VEHICLE DASH-BOARD. THEODORE H. MADER, Zanesville, Ohio. Filed Feb. 29, 1884. (No model.)



Claim.—The dash-foot C, provided with the shoulder to abut against the dash-frame, and the screw-threaded projection *e*, extending through a slot in the dash-frame, in combination with the body, mortised, as shown, to receive said projection, substantially as described.

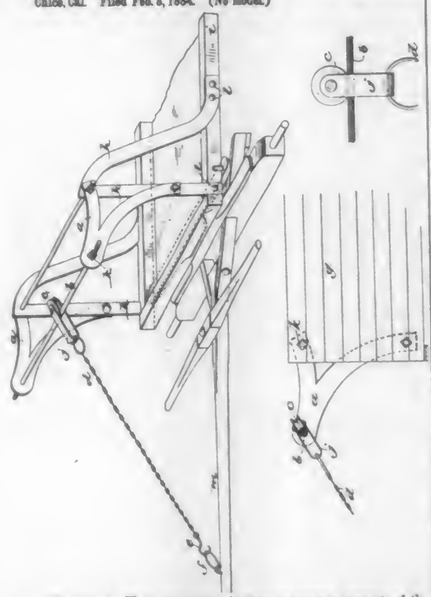
299,237. FARM-GATE. CHARLES W. MANN, Hayward, Cal. Filed Dec. 28, 1883. (No model.)



Claim.—1. In a gate mounted so as to slide in a frame which has its pivot-post standing between two diagonally-fixed posts, C, the braces I, having flanges J turned up on their ends, so as to clasp two sides of the posts to which they are secured, substantially as herein described.

2. The combination, in a gate mounted so as to slide in a frame which has a pivot journaled between two diagonally-fixed posts, C, of pivot-pins turning in horizontal braces I, having flanges J, with the tapering or conical washers K, surrounding the pivots of the slotted post D, all constructed to operate substantially as and for the purpose set forth.

299,238. WAGON-TONGUE SUPPORT. WILLIAM PENN MARTIN, Chico, Cal. Filed Feb. 8, 1884. (No model.)

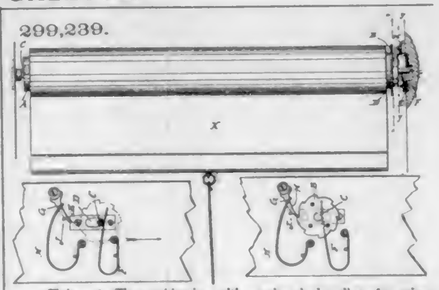


Claim.—1. The combination, in a wagon-tongue support, of the brackets *a*, rod *b*, sheave *c*, chain *d*, and hook *e*, said brackets *a* being adapted to connect with the sides of a box, *g*, uprights *h*, or other parts of a wagon-body, substantially as described.

2. The combination, in a wagon-tongue support, of the brackets *a*, uprights *h*, rod *b*, sheave *c*, chain *d*, and hook *e*, said uprights being adapted to connect with the sides of a wagon-bed, *i*, substantially as described.

3. The combination, with the box or other supporting part of a wagon-body and with the tongue *m*, of the brackets *a*, rod *b*, sheave *c*, chain *d*, hook *e*, and ring *f*, substantially as described.

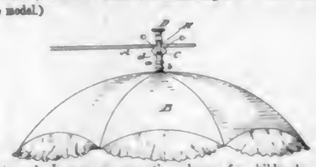
299,239. SPRING SHADE-ROLLER. GIDEON B. MASKEY, Mount Vernon, N. Y. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination, with a spring shade-roller, of a spring for pressing the end provided with a ratchet-wheel upward, a pawl adapted to engage with the ratchet-wheel, and a spring for holding the pawl raised to a certain position, substantially as herein shown and described.

2. The combination, with a spring shade-roller, of a spring for pressing the end provided with a ratchet-wheel upward, the pawl G, adapted to engage with the ratchet-wheel, the check-stud J, and the spring H, for drawing the pawl against the stud J, substantially as herein shown and described.

299,240. TOP FOR CHILDREN'S CARRIAGES. URIAH MCCLINCHIE, New York, and JAY F. BUTLER, Williamsburg, N. Y. Filed Nov. 15, 1883. (No model.)



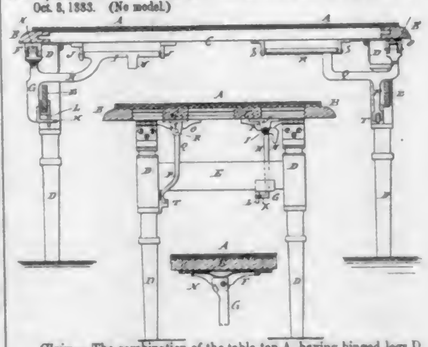
Claim.—1. In canopy-supporting clamps for children's carriages, the combination of the canopy attachment C, constructed with two or more bearing sides or surfaces, *c*, arranged to occupy different angular positions, as described, and the attached locking-screw D, essentially as specified.

2. The polygonal-shaped clamping attachment C, in combination with the strap E, pivoted thereto, and the locking-screw D, substantially as specified.

3. The canopy attachment portion C of the clamp, constructed to present different angular bearing surfaces or sides *c c*, of a grooved shape in direction of their length, essentially as and for the purposes herein set forth.

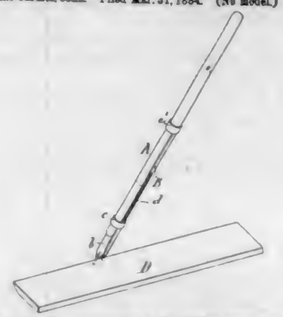
4. The combination of the canopy portion C of the clamp, of grooved polygonal shape on its bearing-surfaces *c c*, and constructed with a lower socket, *a*, the locking-screw D, and the pivoted strap or saddle E, substantially as shown and described.

299,241. FOLDING TABLE. JOHN MCGRATH, New York, N. Y. Filed Oct. 8, 1883. (No model.)



Claim.—The combination of the table-top A, having hinged legs D, cross-bars E, and lugs L on said cross-bars, with the folding brackets G H I, bearings F J, springs N, and the catches K M for engaging said lugs L to hold the hinged legs either in their folded or unfolded positions, substantially as set forth.

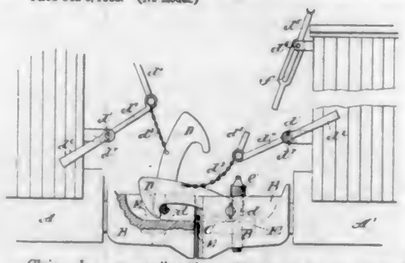
299,242. ATTACHMENT FOR PEN-HOLDERS. EDWIN P. MCLANE, Mount Carmel, Conn. Filed Mar. 31, 1884. (No model.)



Claim.—1. The combination of the sliding protector B with a pen-holder, A, loops or bands *c c'*, and pen *b*, substantially as and for the purpose described.

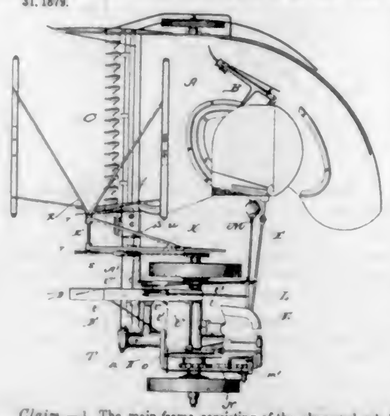
2. The sliding protector B, having a roughened surface, *d*, and arranged upon a pen-holder so as to come in contact with the thumb of the person holding the same in position for ruling and writing, substantially as described.

299,243. CAR-COUPLING. JOHN MEALEY, Prescott, Ontario, Canada. Filed Oct. 6, 1883. (No model.)



Claim.—In a car-coupling, the combination of the draw-heads B, each having a socket, E, and two deep grooves, *b*, one arranged on each side of the socket, and having a transverse pin, *d*, passing through its grooves, said pin having a pivoted hook, D, and said hooks being connected to a crank-arm, d^4, of a shaft, *d'*, having a second crank-arm, d^3, and said crank-arm *d* being connected to a slotted lever, d^5, substantially as and for the purpose set forth.

299,244. HARVESTER. LEWIS MILLER, Akron, Ohio. Filed Dec. 31, 1879.

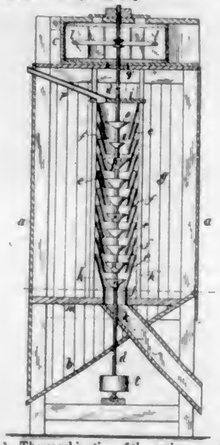


Claim.—1. The main frame consisting of the elongated tubular portion to accommodate the crank-shaft, the transverse tubular portion by which it is pivoted on the main axle, and the lateral extension or arm provided with a head to be attached to the casting which supports or guides the tongue, substantially as described.

2. In a harvester, the combination, with the main frame of the machine and its platform, of the front and rear coupling-bars, connected, respectively, to the front and rear of the frame and platform, the lever mounted in the main frame, and the connections between said lever and the front and rear coupling-bars, whereby both coupling-bars are either raised or lowered by the operation of the lever, substantially as described.

3. In a harvester, the combination, with the main frame, of the removable hanger supported at the rear of the main frame, and the tumbling-rod, sprocket-wheel, clutch, and lever for operating the clutch, all mounted upon the hanger, whereby the attachment or detachment of the hanger to or from the main frame will effect the attachment or detachment of all the parts carried by it, substantially as described, for the purpose specified.

299,245. FLOUR-REFINER. ISAAC MORGAN, St. Louis, Mo., assignor of one-fourth to Carol H. Coggeshall, same place. Filed Oct. 4, 1882. Renewed Jan. 26, 1884. (No model.)

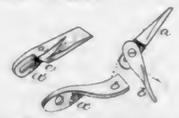


Claim.—1. The combination of the casing *a*, rotary shaft *d*, suction-fan and chamber *c l*, distributers *n o*, feed-pipe *p*, and funnels *e*, the uppermost of said funnels having a closed top, as described.

2. In a flour-refiner, the combination of a fan, a feed-spout, a vertical row of funnels, and a cover, *i*, arranged over the top funnel, and the latter communicating by an aperture at one side of the cover with the feed-spout, as shown and described.

3. In a flour-refiner, the combination of a fan, a succession of vertically-arranged funnels, a central revolving shaft, a series of agitators, and a conical feeder, *p'*, arranged on said shaft at a point below one or more of the agitators *o*, and made larger in diameter at its upper end than the lower end of the funnel which surrounds it, as shown and described.

299,246. SASH-FASTENER. ROBERT T. MURPHY, Westminster, S. C. Filed Mar. 12, 1884. (No model.)

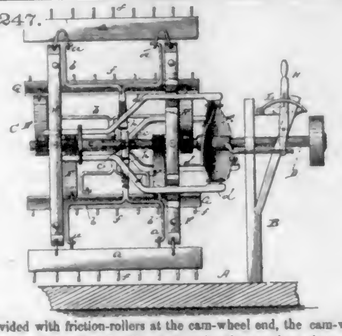


Claim.—In sash-holders, the combination, with button *a*, provided with the elongated hole in its shank and formed with the shoulder *c*, of the button *b*, formed with the elliptical shank, on which the shoulder *c* turns and rests, each of said buttons being on a pivot in the frame that is common to both.

299,247. HARVESTER-REEL. GEO. T. MURRAY and DANL. MURRAY, Waseca, MINN. Filed Apr. 20, 1883. (No model.)

Claim.—1. In a harvester-reel, the combination of the hinged rake-heads, adapted to swing at any angle to the arms, with the forks *b*, slotted to receive the rods *d*, which move the rake-heads, and which said rods

299,247.

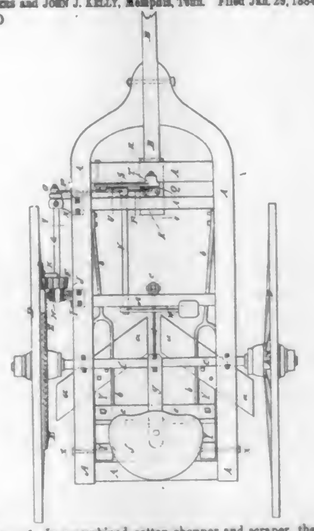


are provided with friction-rollers at the cam-wheel end, the cam-wheel E, lever H, and lock-bar L, all constructed and operating substantially as described.

2. The combination, with the platform of a harvester, of the standard B, the reel-shaft D, provided with keepers *c* and sleeve *a*, the cam-wheel E, the rods *d*, having fingers and friction-rollers, the forks *b*, the reel-arms F, and the rake-heads G, provided with teeth *f*, all as described.

3. The combination, in a harvester-reel, as described, of the reel-shaft D, adjustable cam-wheel E, lever H, rods *d*, slotted forks *b*, reel-arms F, and hinged rake-heads G, all substantially as shown and described.

299,248. COMBINED COTTON CHOPPER AND SCRAPER. SAMUEL A. MYERS and JOHN J. KELLY, Memphis, Tenn. Filed Jan. 29, 1884. (No model.)



Claim.—1. In a combined cotton chopper and scraper, the combination, with the chopper-standard and the connecting-rod, of the shaft connected by a crank to said rod, and having a pinion gearing with a cog or gear wheel on the driving-wheel, said pinion carrying a block sliding on smooth-faced segments disposed at intervals along the outer edge of the gear-wheel, substantially as and for the purpose set forth.

2. In a combined cotton chopper and scraper, the combination, with the chopper-standard Q and the frame A, of the pivoted and slotted bar S and the shaft V, having crank-arms U W, substantially as herein shown and described, whereby the chopper can be readily raised from the ground, as set forth.

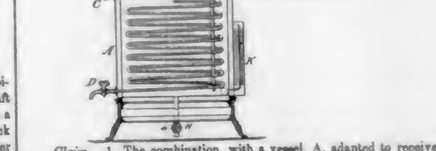
299,249. NEWSPAPER-FILE. GEO. V. NAUERTH, Cincinnati, Ohio, assignor to the Globe Files Company, same place. Filed Nov. 15, 1883. (No model.)



Claim.—In a newspaper-file, the combination, with spring-clamp C *c* and grooved staff A *a*, of the slotted locking-sleeve F *f* and the stud G, substantially as set forth.

299,250. HILLSIDE-PLOW. JOHN NEFF, Jr., Pultney, N. Y. Filed Sept. 15, 1881. (Model.)

Brief.—A spring between standard and beam; pivoted handles to sit straight with the beam or adjust obliquely on either side; a clevis with friction-roller to slide right or left as the plow is reversed.



Claim.—The combination of the handle F and beam C, clasp H, bolt G, and pin I, with the bolt E, having spring D, and the slot in the landside A, to allow said bolt E to move up and down, as and for the purpose herein specified.

299,251. PORTABLE APPARATUS FOR HEATING MINERAL WATER IN BOTTLES OR FLASKS. EDWIN D. NEWTON, New York, N. Y. Filed June 25, 1883. (No model.)

Claim.—A portable apparatus for heating mineral water in bottles or flasks to a certain temperature, consisting of the elevated hot-water vessel F, having suitable heating means, the receiving-tank A, having non-conducting walls, a valved discharge-pipe leading from the bottom, a tight cover, and an attached thermometer, and the valved pipe G, connecting the hot-water vessel and the receiving-tank, the whole arranged to permit the maintenance at the desired temperature of the water in the receiving-tank by the proper manipulation of the hot-water supply and cold-water-discharge valves, substantially as specified.

299,252. THERMO-RESERVOIR. EDWIN D. NEWTON, New York, N. Y. Filed June 25, 1883. (No model.)

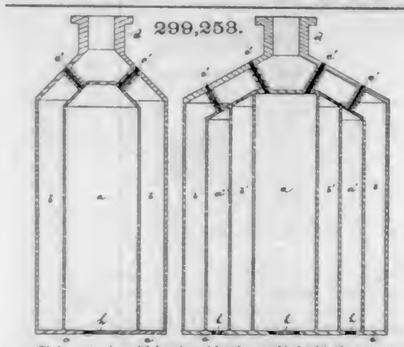
Claim.—1. The combination, with a vessel, A, adapted to receive and contain hot water, of the vessel B, having a coil, P, extending through the vessel A, substantially as herein shown and described.

2. The combination, with a vessel, A, adapted to receive and contain hot water, of the vessel B, provided with a coil, P, extending through vessel A, the vessel E, and the pipe F, extending from the bottom of the vessel E to the bottom of the vessel A, substantially as herein shown and described.

3. The combination, with the vessel A, the vessel B, and the coil P, extending through vessel A, of the vessel E, pipe F, outlet-pipe H, and thermometer K, substantially as shown and described.

299,253. MULTICHAMBERED BOTTLE. EDWIN D. NEWTON, New York, N. Y. Filed Dec. 20, 1883. (No model.)

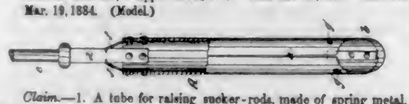
299,253.



Claim.—1. A multichambered bottle provided with thermic chambers open at their lower ends and closed at their upper ends, and having air-vent tubes extending from the thermic chambers through the exterior walls of the bottle, whereby the filling-opening of the bottle is unobstructed and the liability of the ingress of the liquid to be warmed into the thermic chambers is avoided, as set forth.

2. A multichambered bottle provided with thermic chambers open at their lower ends and closed at their upper ends, and having air-vent tubes extending from the thermic chambers through the exterior walls of the bottle, and provided with a bottom, *c*, formed of one piece, and having orifices *h*, each leading to a thermic chamber, as set forth.

299,254. TOOL FOR RAISING SUCKER-RODS FROM WELLS. MARVIN NEWTON, Knapp's Creek, N. Y. Filed Dec. 12, 1882. Renewed Mar. 19, 1884. (Model.)

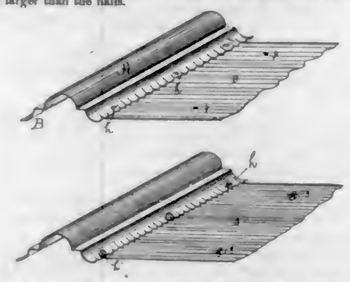


Claim.—1. A tube for raising sucker-rods, made of spring metal, and with the slit *a*, whereby the lower end of the metal will spring outwardly when passing a joint, as described.

2. A tube for raising the sucker-rods of a pump, provided with the holes *g* and spring *c*, arranged with respect to each other to allow the insertion of a rod for releasing the spring from the pump-rod, as described.

299,255. METALLIC CEILING. ALBERT NORTHROP, Pittsburg, Pa. Filed Sept. 19, 1883. (No model.)

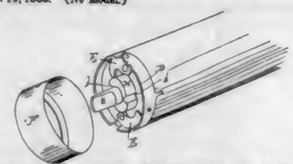
Brief.—A metallic cap having corrugated edges, said edges being provided with openings for the reception of nails. Said cap overlaps the edge of a corrugated plate provided on its edge with openings adapted to register with the openings in said cap, said cap and plate openings being larger than the nails.



Claim.—1. The cap or molding A, the edges B of which are provided with corrugations or crimps C, in combination with a sheet of metal having corrugations or crimps, substantially as hereinbefore described, and for the purpose set forth.

2. In a metallic ceiling, a cap having corrugated edges, said edges being provided with openings for the reception of nails, in combination with a corrugated plate provided on its edge with openings adapted to register with the openings in the corrugated cap, said plate and cap openings being larger than the nails, whereby the parts may expand and contract without displacing the nails, substantially as described, and for the purposes set forth.

299,256. SPRING CURTAIN-ROLLER. WALTER B. NOYES, Detroit, assignor to the Saginaw Manufacturing Company, Saginaw, Mich. Filed Dec. 19, 1883. (No model.)

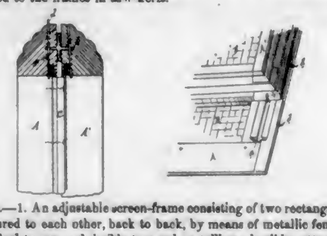


Claim.—1. In a spring-roller, the pivot-spindle G, cast in one piece, and provided with a notched annular flange, in combination with a disk, D, arranged between the flange and the roller, carrying pivoted dogs E, substantially as and for the purposes described.

2. In a spring-roller, the disk D, carrying dogs E, and provided with an outwardly-projecting flange, *a*, and a central depression, *g*, in combination with the ferrule F, roller A, and pivot-spindle G, provided with a notched annular flange, H, substantially as and for the purposes specified.

299,257. WINDOW-SCREEN. S. EUGENE PARRISH, Lowell, Mich. Filed Dec. 19, 1883. (No model.)

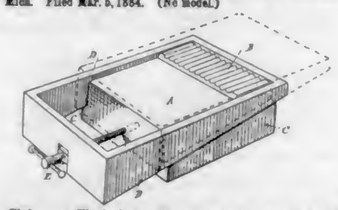
Brief.—A window-screen consisting of two frames secured back to back by means of the double female and double male metallic slides, both secured to the frames in saw-kerfs.



Claim.—1. An adjustable screen-frame consisting of two rectangular frames secured to each other, back to back, by means of metallic female slides attached to one and double-tongued metallic male slides attached to the other, whereby a continuous bearing is obtained in adjusting the relative position of such two parts of the frame, substantially as described.

2. An adjustable screen-frame consisting of two rectangular frames secured to each other, back to back, by means of metallic female slides secured in a saw-kerf in one and double-tongued metallic slides secured in a saw-kerf in the other, substantially as and for the purpose specified.

299,258. PILL-MAKING DEVICE. EDWARD B. PATTERSON, Detroit, Mich. Filed Mar. 5, 1884. (No model.)



Claim.—1. The bed of a pill-making device, provided with inclined ways upon which guideways can be adjusted to varying heights with relation to such bed, substantially as described.

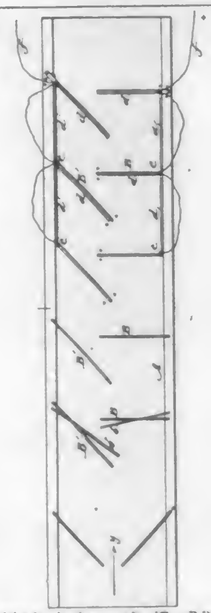
2. In combination with the bed of a pill-making device, provided with inclined ways upon its sides, the guide-bars herein described, substantially as and for the purposes specified.

3. In combination with the bed and guideways of a pill-making device, constructed substantially as described, means for adjusting said guideways with relation to the plane of the bed, substantially as and for the purposes set forth.

299,259. AMALGAMATOR. EDWARD PIKE, Salt Lake City, Utah. Filed Oct. 10, 1883. (No model.)

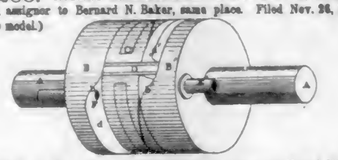


299,259.



Claim.—A sluice-box having opposite riffles, B B', faced with amalgamated plates *d*, and connected with wires *f*, leading to a generator of electricity, as shown and described.

299,260. ROTARY STEAM-ENGINE. GEORGE W. PRICE, Baltimore Md., assignor to Bernard N. Baker, same place. Filed Nov. 26, 1883. (No model.)



Claim.—1. In a rotary steam-engine, the abutments B and B', provided with the ring K, in combination with the packing-ring L, provided with means for adjusting said ring, substantially as described, and for the purposes set forth.

2. In a rotary steam-engine, the sliding piston D, operated as set forth, formed of two plates bolted together, in combination with an interior packing device, substantially as described.

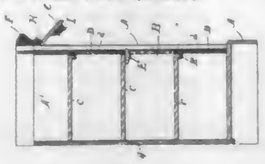
3. In a rotary steam-engine, the sliding piston D, containing the internal packing device, consisting of the parts 4 4 4 4, the wedges 2 2, the slots 3 3 3 3, and the spring 5, inclosed within the piston-plates and secured together, substantially as described.

4. In a rotary steam-engine, the piston D, provided with the internal packing, and means to prevent the outer plates from bearing upon the packing and preventing its proper action, substantially as described.

5. In a rotary steam-engine, the hub *c*, having exterior circumferential grooves, and the slots *f*, in combination with the packing-rings, formed as shown, and arranged upon the hub, substantially as described.

6. In a rotary steam-engine, the hub *c*, provided with sockets O, in combination with the packing-rings R and R', substantially as described, and for the purposes set forth.

299,261. PIGEON-HOLES. HARRY D. PURSELL, Washington Court-House, Ohio. Filed Mar. 26, 1884. (No model.)



299,261.



Claim.—1. A nest of pigeon-holes whose inclosing vertical walls and partitions project slightly in front of the horizontal partitions, and have vertical grooves on each side containing sliding shutters resting edge upon edge, in combination with a door, substantially as set forth.

2. A nest of pigeon-holes whose inclosing vertical walls and partitions project slightly in front of the horizontal partitions, and whose vertical grooves contain sliding shutters resting edgewise upon one another, in combination with a hinged door provided with a rear lug or projection, as and for the purpose set forth.

3. A nest of pigeon-holes whose inclosing vertical walls and partitions project slightly in front of the horizontal partitions, and are grooved for sliding shutters, which rest upon one another edgewise, in combination with a hinged door provided with a rear lug or projection and a lock, substantially as and for the purpose set forth.

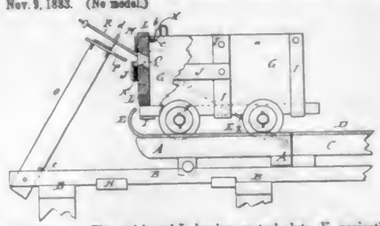
4. In a nest of pigeon-holes, the combination of a case, A, forwardly-projecting and grooved vertical walls and partitions B, horizontal partitions C, slides D, buttons E, and hinged door G, having the rear lugs, I, lock J, and prop L, substantially as set forth.

299,262. COMPOUND FOR CALCIMINING AND FRESCOING WALLS, &c. JAMES QUINN, Jr., Grand Rapids, Mich. Filed Feb. 14, 1884. (No specimens.)

Claim.—1. The herein-described compound to be used for finishing or coating walls, ceilings, &c., consisting of a mixture of sulphate of barium for a base and body, finely-pulverized calcined gypsum, pulverized glue, rock-salt, gum-arabic, and alum, in the proportions substantially as described.

2. In a coating for walls, the ingredients herein specified, or their equivalents, in combination with the sulphate of barium as a base or body, substantially as described.

299,263. DUMPING-CAR. TERRENCE REYNOLDS, Atalla, Ala. Filed Nov. 9, 1883. (No model.)



Claim.—1. The end-board L, having central plate, K, projecting past the edges of the board, and provided near its upper end with arms *b* and rod N, in combination with the car-body G, notched, as at *c*, and provided with the holding-plates J, substantially as and for the purposes described.

2. The car-body G, provided with the bent straps J, in combination with the end-board L, provided with the plate K, substantially as and for the purposes set forth.

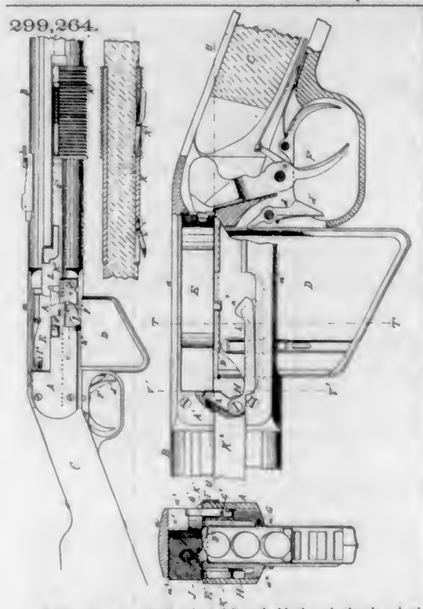
3. The lifter O, pivoted to the frame B, and provided with the point P, and attached to tilting platform A by rod R, substantially as and for the purposes set forth.

4. The lifter O, attached to tilting platform A, and provided with point P, in combination with the end-board L, provided with opening Q, substantially as and for the purposes set forth.

5. The lifter O, pivoted to frame B, and provided with stop-pin *c*, to limit its angle of inclination, substantially as described.

299,264. MAGAZINE FIRE-ARM. RICHD. RIDDEN, Hartford, Conn., assignor to the Spencer Arms Company, New York, N. Y. Filed July 31, 1883. (No model.)

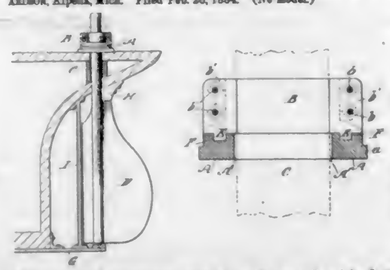
299,264.



Claim.—1. A vertically-pivoted breech-block swinging in a horizontal plane at the top of the receiver, and means for actuating the same, as set forth, and a magazine inserted in the bottom of the receiver for containing a supply of cartridges superposed sidewise, in combination with a magazine-check and means for automatically releasing the said check at the proper time, and afterward moving it into the path through which the cartridges are fed upward from the magazine, for the purpose of holding down the uppermost cartridge in the magazine out of the way of the breech-block when the breech-block is swinging inward into the firing position.

2. The receiver A and the magazine or cartridge-box D, for containing a supply of cartridges superposed sidewise, in combination with the check G, provided with the ear G^2, and the sliding arm K', provided upon a portion of its inner side with the longitudinal groove G^4, for receiving the ear G^2, and thus at the proper time allowing the check G to swing outward and release the uppermost cartridge in the magazine, substantially as and for the purposes set forth.

299,265. RUDDER HOLDER AND SUPPORT. CHARLES A. RICHARDSON, Alpena, Mich. Filed Feb. 20, 1884. (No model.)



Claim.—1. The combination, with the rudder-post C and its fixed collar B, of the bed-plate A, fixed to the vessel, tongued and grooved to the collar to enable the collar to turn upon it, and having an aperture, A', of such diameter as to isolate said plate or support from the rudder-post, substantially as and for the purpose set forth.

2. The combination, with the rudder-post C and its fixed collar B, of the bed-plate A, fixed to the vessel, and tongued and grooved to the collar to enable the collar to turn upon it, said plate also having an aperture, A', of such diameter as to isolate it from the rudder-post, and the collar having a flange covering the upper surface of the plate, substantially as and for the purpose set forth.

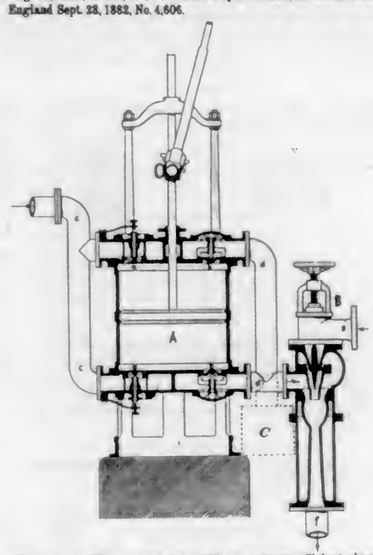
3. The combination of the rudder-post C, collar B, fixed to the latter, the bed-plate A, fixed to the vessel, and tongued and grooved to the plate to enable the collar to turn upon it, said plate having an aperture, A', of such diameter as to isolate it from the rudder-post, the shoe G, and block H, substantially as and for the purpose set forth.

299,266. BASIN OR BOWL. JOHN S. RICHARDSON, Lowell, Mass. Filed Oct. 5, 1883. (No model.)



Claim.—As a new article of manufacture, a circular sheet-metal basin having a segment of its body corrugated to form a wash-board, and provided with a handle at its corrugated side, substantially as and for the purpose set forth.

299,267. COMPOUND VACUUM-PUMP. WILHELM RICHTER, Berlin, Germany, assignor to the Internationaler Vacuum-Eismaschinen-Verein, same place. Filed June 6, 1883. (No model.) Patented in Germany Aug. 24, 1882, No. 22,208; in France Sept. 27, 1882, No. 151,286, and in England Sept. 23, 1882, No. 4,606.



Claim.—1. The combination, with an ordinary efficient air-pump provided with suitable valves, of an ejector of any suitable construction, in the manner and for the purpose described.

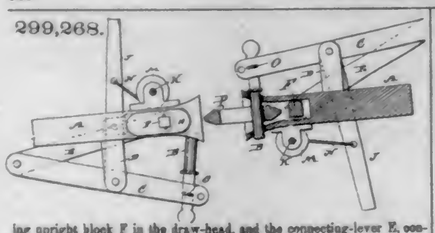
2. The combination of a vacuum-pump having an ordinary efficient air-pump provided with suitable valves, and an ejector operating by means of a jet of water and adapted to remove condensable vapors, substantially as specified.

299,268. CAR-COUPLING. WILLIAM M. ROBINSON, New Franklin, Mo. Filed Mar. 31, 1884. (No model.)

Claim.—1. The combination, with the draw-head A, of the vertical block or bar F, held to slide in the draw-head in the direction of the length of the draw-head, the pivoted lever C, the laterally-movable pin connected with the front end of the lever C, a connecting-bar connecting the rear end of the lever C with the bar or block F, and means for moving the bar or block toward the front or rear of the draw-head, substantially as herein shown and described.

2. The combination, with the draw-head A, having side openings for the coupling-pin, of the lever C, pivoted on the side of the draw-head, a coupling-pin held detachably in the front end of the lever C, the slid-

299,268.



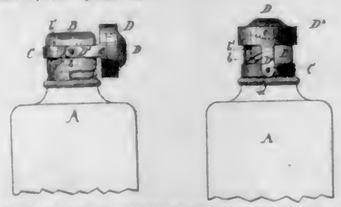
ing upright block F in the draw-head, and the connecting-lever E, connecting the inner end of the lever C with the block or bar F, substantially as herein shown and described.

3. The combination, with the draw-head A, of the lever C, pivoted at the side of the same, the sliding upright block or bar F, the top and bottom plates, H and G, the bar E, connecting the inner end of the lever C with the bottom plate, G, the coupling-pin B in the outer end of the lever C, and of means for moving the bar F in the direction of the length of the draw-head, substantially as herein shown and described.

4. The combination, with the draw-head A, of the pivoted lever C, the coupling-pin B, held in the front end of the said lever, the sliding bar F, the bar E, connecting the bar F with the lever C, and the lever J, pivoted on the draw-head and connected with the bar F, substantially as herein shown and described.

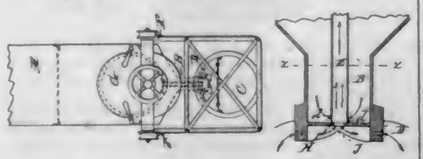
5. The combination, with the draw-head A, of the pivoted lever C, the coupling-pin B, held on the front end of the same, the sliding bar F, the bar E, connecting the bar F with the inner end of the lever C, the lever J, pivoted on the draw-head, and connected with the bar F, the upright shaft K, held in the draw-head, the pulley M on the lower end of the same, and the rope or chain N, secured on the pulley M and connected with the lever J, substantially as herein shown and described.

299,269. BOTTLE-STOPPER. MAX RUBIN, Philadelphia, Pa. Filed Mar. 17, 1884. (No model.)



Claim.—In a bottle-stopper, the combination of a bottle-neck, B, having spiral grooves *b b* and vertical grooves *b' b'* at intermediate points of the spiral grooves, a neck-band, C, a bottle-cap, D, having arms D' pivoted to said neck-band, and an interior elastic packing, D^2, the pivot-pins of the cap projecting into and being guided in said grooves, substantially as set forth.

299,270. SAND-BLAST APPARATUS. JOSEPH JULIUS SACHS, London, England. Filed July 17, 1883. (No model.)



Claim.—1. In a sand-blast apparatus, the combination of a sand-trunk inclosing the air-jet and connecting therewith by perforations, as specified.

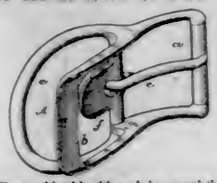
2. In a sand-blast apparatus, the combination of the sand-trunk inclosing the air-jet connecting therewith by perforations, and the baffle-plate below the said perforations, substantially as specified and set forth.

3. In a sand-blast apparatus, the combination of a sand-trunk inclosing the air-jet connecting with perforations, and a deflecting-plate beneath the same, substantially as specified.

4. In a sand-blast apparatus, the combination of a sand-trunk inclosing the air-jet connecting with perforations, a baffle-plate, and deflecting-plate, as specified.

5. The carriage consisting of a frame having two sides and only one end piece, and a door, G, substantially as specified and set forth.

299,271. COMBINED BUCKLE AND RING. JAMES BENJAMIN SAYER, Sacramento, Cal. Filed Mar. 13, 1884. (No model.)

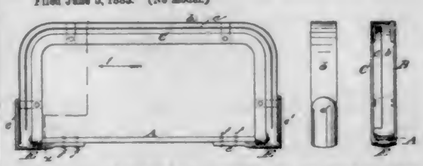


Claim.—1. The combined buckle and ring, consisting of the buckle-frame *a* and the tongue *s* on the base-bar of said frame, and the keeper *b* and ring *c*, extending from the base of the buckle-frame and diverging or separating from each other, and a plate, *f*, substantially as herein described.

2. The combined buckle and ring, consisting of the buckle-frame *a*, tongue *s*, and the keeper *b* and ring *c*, extending from the base of the buckle-frame and diverging or separating from each other, and the guide lip or plate *f*, extending and lying between said keeper and ring, substantially as herein described.

3. The combined buckle and ring, consisting of the concaved face or bent buckle-frame *a*, having tongue *s*, the upwardly-inclined keeper *b*, and the straight ring *c*, substantially as herein described.

299,272. TRAVELING-BAG. MATTHÄUS SCHMEKEL, New York, N. Y. Filed June 5, 1883. (No model.)



Claim.—1. In the frame of a traveling-bag, the hinge-joint hereinbefore described, formed by pivoting the loops *b' c'* of the frames B C upon separate studs or pivots *a a'* upon the bottom bar, A, for the purpose specified.

2. In the frame of a traveling-bag, the combination of the bottom bar, A, having at either end two pivots, *a a'*, with the hinge-loops *b' c'* of the frames B C, and the plate D, having holes for receiving and securing it upon the inside of the said pivots *a a'*, substantially as specified.

3. The frame of a traveling-bag herein described, consisting of the flat bottom bar, A, bifurcated at each end to form pivots *a a'*, the frames B C, the ends of which form hinge loops *b' c'*, the plate D outside of said loops, and against which the pivots *a a'* are riveted, and the guard-plate E, the arm *e* of which is secured to the bottom bar, A, and its vertical arm *e'* free from the folding frame, the parts being constructed, arranged, and operating substantially as and for the purposes specified.

299,273. PUNCH AND DIE FOR EYELETING-MACHINES. GEO. O. SCHNELLER, Ansonia, Conn. Filed Feb. 23, 1884. (No model.)



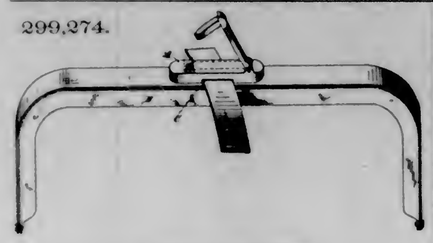
Claim.—1. As an article of manufacture, the herein-described die for eyelet-setting machines, consisting of the tubular die, its face corresponding in shape substantially to the flange of the eyelet, the body of the die enlarged from a point below its face, and so as to form a shoulder, *f*, substantially as described.

2. As an article of manufacture, the herein-described punch for eyelet-setting machines, consisting of the punch in diameter corresponding substantially to the internal diameter of the eyelet, having its point of lancet shape, and constructed with the shoulder *a*, corresponding substantially to the shape of the flange of the eyelet, substantially as described.

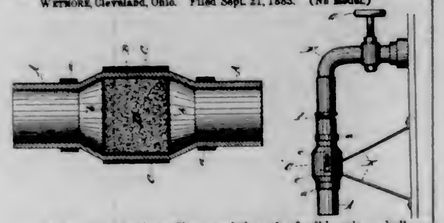
299,274. COMBINED BAG-CATCH AND STRAP-LOOP. MORRIS SCHWERIN, New York, N. Y. Filed Mar. 28, 1884. (No model.)

Claim.—The combination, with the bag-frame, of a frame for a spring-catch, provided with an opening through it for the strap D to pass through, substantially as shown.

299,274.



299,275. HYDRANT-FILTER. GEORGE W. SHAWK and ALBERT S. WITMORE, Cleveland, Ohio. Filed Sept. 21, 1883. (No model.)



Claim.—1. A hydrant-filter consisting of a flexible tube, a hollow cylinder adapted to inclose the filtering material and forced into said tube, and means for holding the same therein against displacement, substantially as set forth.

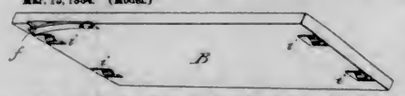
2. In a hydrant-filter, a flexible tube distended by an inclosed hollow cylinder, in combination with an outside band adapted to press the said tube upon the inclosed cylinder, substantially as described, and for the purpose set forth.

3. In a hydrant-filter, the combination, with a flexible tube, a cylinder provided with filtering material and inserted in said tube, and means for holding the same therein against displacement, of a movable band, *d*, encircling said tube, and adapted to hold it in position on the hydrant-nozzle, substantially as set forth.

4. The combination, with cylinder B, provided with the gauze ends, of the flexible tube A and the band C, substantially as and for the purpose set forth.

5. The bracket E, provided with the trunnions *e*, in combination with the band C, provided with the slotted bosses *c*, substantially as described, and for the purpose specified.

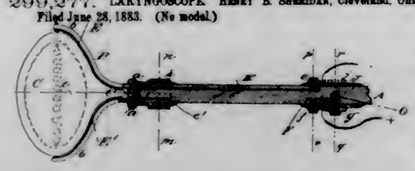
299,276. MEANS FOR SECURING BOX-COVERS. HENRY ALLEN SHAW and EDWARD DEACON CHIDLEY, Toronto, Ontario, Canada. Filed Mar. 15, 1884. (Model.)



Claim.—1. The box A, provided with headed pins *h* on its upper edges, and formed with an offset, *e*, at the upper edge of one of its side pieces, in combination with the cover B, provided with plates *i*, having open slots therein, and the locking-spring *f* on the under side of the lid, and arranged to engage the offset *e* when the cover is in place, substantially as set forth.

2. The box A, the end pieces of which are cut away on their upper edges at *b*, headed screws or pins *h* within said cut-away portions, and the offset *e*, formed between the end piece and side of the box, as shown, in combination with the cover provided with plates *i*, having flaring open slots beveled on their under edges, and the plate-spring *f* on the under side of the cover at the corner, and constructed to engage the offset when the cover is in place, substantially as set forth.

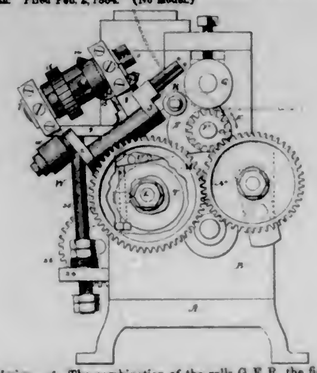
299,277. LARYNGOSCOPE. HENRY B. SHERIDAN, Cleveland, Ohio. Filed June 28, 1883. (No model.)



Claim.—1. A laryngoscope or similar optic instrument, consisting of a transparent hollow or concave lens, C, a handle supporting the said lens, an electro-incandescent substance, *c*, arranged inside of the said hollow lens, and means, substantially as described, for placing the said substance in a circuit, for the purpose set forth.

2. The combination of the hollow reflector-lens C, arranged on forks *b* in a handle, A, the platinum wire or its equivalent *c*, arranged inside of the said hollow lens, the conductors E E', arranged in or about the handle A, a circuit-breaker, H G, and means for forming connection with an electric source, substantially as and for the purpose set forth.

299,278. MACHINE FOR BENDING HAT-WIRES. GEORGE B. SHERMAN and JOSEPH NUTT, Danbury, Conn.; said Nutt assignor to said Sherman. Filed Feb. 2, 1884. (No model.)



Claim.—1. The combination of the rolls G E R, the fingers 4 4, arranged with their axes in a plane at right angles to the axes of the rolls G E R, and mechanism, substantially such as described, for imparting rotation to said rolls G E and a rocking movement to said fingers 4 4, said rocking movement being across the plane of said rolls G E R, substantially as specified.

2. The combination of the rolls G E and mechanism, substantially such as described, for imparting rotation to said rolls G E, the roll R, arranged upon an axis parallel with the rolls G E, and mechanism, substantially such as described, to automatically impart a movement to said roll R toward and from the rolls G E, the rocking fingers 4 4, and mechanism, substantially such as described, for imparting rocking movement to said rolls across the plane of the rolls G E R, substantially as specified.

3. The combination of the rolls G E, mechanism, substantially such as described, for imparting rotation thereto, the lever S, hung loose upon the axis of the roll E, the roll R, hung upon said lever S, with its axis parallel with the axis of the rolls G E, an eccentric, T, arranged to act upon said lever S, and the adjustable stop V, substantially as described.

4. The combination of the rolls G E R, mechanism, substantially such as described, for imparting rotation thereto, the lever S, hung loose upon the axis of the roll E, the roll R, hung upon said lever S, with its axis parallel with the axis of the rolls G E, an eccentric, T, arranged to act upon said lever S, and the adjustable stop V, the fingers 4 4, arranged in a plane at right angles to the axis of the rolls G E, and mechanism, substantially such as described, to impart a rocking movement to said fingers 4 4 across the plane of the rolls G E, substantially as described.

5. The combination of a feeding device for wire, consisting of a pair of continuously-revolving rolls and a pair of revolving cutters, their axis of rotation being substantially at right angles to the axis of the feeding-rolls, the edge of the cutters substantially parallel with their axis of rotation, whereby at a predetermined time said revolving cutters will cut the wire without interrupting the feed of the wire, substantially as described.

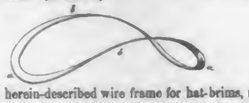
6. The combination of a feeding device for wire, consisting of a pair of continuously-revolving rolls and a pair of revolving cutters, their axis of rotation being substantially at right angles to the axis of the feeding-rolls, the edge of the cutters substantially parallel with their axis of rotation, said revolving cutters arranged in a frame movable to present the cutters into the line of the wire at predetermined times, to cut the wire and then take them out of the line of the wire, with mechanism, substantially such as described, to impart the said movement to the said frame, substantially as described.

7. The combination of the rolls G E R, the fingers 4 4, and the continuously-revolving cutters 9 9, the said revolving cutters arranged in a frame movable to present the cutters into the line of the wire at predetermined times to cut the wire, and then take them out of the line of the wire, with mechanism, substantially such as described, to impart the said movement to the said frame, substantially as described.

8. The combination of the rolls G E, mechanism, substantially such as described, for imparting rotation thereto, the frame 8, arranged to swing upon an axis substantially parallel with the axis of said rolls G E, a pair of revolving cutters arranged in said frame, with their axes at substantially right angles to the axis of the said rolls G E, the edge of the cutters substantially parallel with their axis of rotation, mechanism, substantially such as described, to impart constant rotation to said cutters, a revolving cam, 22, arranged to bear upon said frame and impart to it a swinging movement, whereby at predetermined times the said cutters are advanced to their active position and then permitted to retreat, substantially as described.

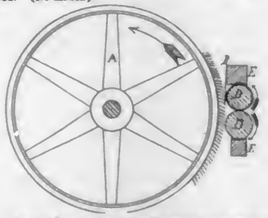
9. The combination of the rolls G E, mechanism, substantially such as described, for imparting rotation thereto, the frame 8, arranged to swing upon an axis substantially parallel with the said rolls G E, a pair of revolving cutters arranged in said frame, with their axes at substantially right angles to the axis of the said rolls G E, the edge of the cutters substantially parallel with their axis of rotation, mechanism, substantially such as described, to impart constant rotation to said cutters, a revolving cam, 22, adjustable bearing 23 on said frame, and against which said cam operates to impart a swinging movement to said frame, substantially as described.

299,279. **WIRE FRAME FOR HAT-BRIMS.** GEORGE H. SHERMAN and JOSEPH NUTT, Danbury, Conn.; said Nutt assignor to said Sherman. Filed Mar. 17, 1884. (No model.)



Claim.—The herein-described wire frame for hat-brims, made from flat wire bent edgewise into hoop shape and curved flatwise from the center sides downward to the front and rear, the plane of the wire being horizontal at all points radially, substantially as specified.

299,280. **CARDING-MACHINE.** JOHN SHIDY, Philadelphia, Pa. Filed June 25, 1883. (No model.)



Claim.—1. In a doffing device for a fiber-carding machine, the combination of a doffer-cylinder, A, stationary comb B, rollers D D, and cleaners E E, substantially as set forth.

2. In a doffing device for a fiber-carding machine, the combination of a doffer-cylinder, A, stationary comb B, and rollers D D, substantially as described.

299,281. **ORNAMENTAL CHAIN.** ROBT. F. SIMMONS, Attleborough Falls, Mass. Filed Mar. 18, 1884. (No model.)

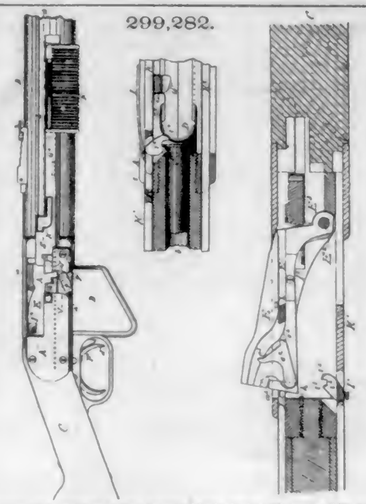


Claim.—1. An improved ornamental chain composed of a series of plate-links formed of stamped metal, as described, secured together by tubular links inserted into openings formed in the plate-links, as described.

2. The combination, with the links A, having a slot, *a*, at each end, and plated only on one side, of the tubular links B, also plated only on one side, said links being arranged as described.

299,282. **MAGAZINE-GUN.** CHRISTOPHER M. SPENCER and RICHARD RHODES, Windsor, Conn. Filed Feb. 23, 1884. (No model.) Patented in England July 23, 1883, No. 3,616; in France July 25, 1883, No. 156,732, and in Belgium July 26, 1883, No. 62,137.

Claim.—1. In a magazine-gun, a breech-block oscillating upon a vertical axis at its rear end in a plane at the rear of the chamber, in combination with an actuating-slide situated forward of the receiver and reciprocating in a path parallel with the axial line of the barrel, and a connection between the said actuating-slide and the said breech-block,



299,282.

whereby the position of the breech-block during all parts of its movement in either direction is controlled by the position of the said actuating-slide, substantially as specified.

2. A breech-block swinging in a horizontal plane in the rear of the chamber and provided upon one of its horizontal sides with a suitably-shaped cam-groove, in combination with a cam-pin working in said groove, connected with an actuating-slide situated forward of the receiver and reciprocating in a path parallel with the axial line of the barrel, whereby the laterally-outward swing of the breech-block is effected by the first portion of the backward excursion of the actuating-slide, and the return movement of the breech-block to its firing position is effected by the last portion of the forward excursion of the actuating-slide, substantially as shown and described.

3. A breech-block in the rear of the receiver, swinging upon a vertical axis, an actuating-slide situated forward of the receiver, and an arm carried by said actuating-slide, engaging with said breech-block for rocking the said breech-block outward to permit the withdrawal of the shell from the chamber, in combination with a magazine for successively delivering cartridges into the lower part of the receiver, a spring for thrusting such cartridges upward, and an inserter provided with a shoulder adapted to bear upon the base of the cartridge which has been so thrust upward, and connected with and partaking of the motion of the actuating-slide for the purpose of pushing the said cartridge into the chamber during the first portion of the forward excursion of the actuating-slide, substantially as described.

4. A plate upon the forward end of the breech-block adjustable toward and from said breech-block, in combination with a cam for forcing the said plate forward and holding it against the base of a cartridge in the chamber when the breech-block is in firing position, a lever on said breech-block for operating the said cam, and an actuating-slide adapted to impart motion to said lever, substantially as and for the purposes set forth.

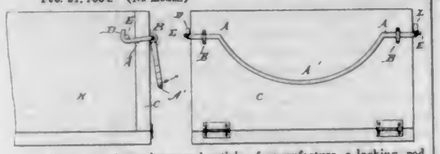
5. The hinged plate *a*, the cam *a'*, the bifurcated lever a^2, the spring a^3, all arranged upon the forward end of the breech-block, and the groove E' in said breech-block, in combination with the ear *k'*, working in said groove and connected with and partaking of the reciprocating motion of the actuating-slide K, as and for the purposes set forth.

299,283. **PEN.** CHRISTIAN G. SPENGLER, Hoboken, N. J., assignor to James Dickie, Brooklyn, N. Y. Filed Aug. 16, 1883. (No model.)



Claim.—In a pen, the combination of a tube of rigid material and a tubular point-section made of india-rubber, slightly smaller internally than the exterior of the end portion of the rigid tube and slipped over the same, and having an elliptical or ellipsoidal lower end, substantially as herein described.

299,284. **LOCK FOR WAGON END-GATES.** ANDREW SPROUL, Hannibal, Mo., assignor to himself and Fred C. Stevens, Attica, N. Y. Filed Feb. 21, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a locking-rod for wagon end-gates, consisting of the rod A, provided with the bent hooked ends D and the bend A' between said bent ends, as set forth.

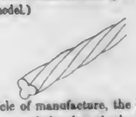
2. The combination, with a wagon end-gate and studs on the body, of a rod pivoted on the outer surface of the end-gate, and provided with bent ends to engage the said studs, and with a bend between said bent ends, substantially as herein shown and described.

3. The combination, with a wagon end-gate, C, and studs E on the body, of the pivoted rod A, having the bend A', and the bent hooked ends D, substantially as herein shown and described.

4. The combination, with a wagon end-gate, of a rod held to turn on the same, which rod has its ends bent over the ends of the gate, and of projections on the outer surfaces of the side boards, substantially as herein shown and described.

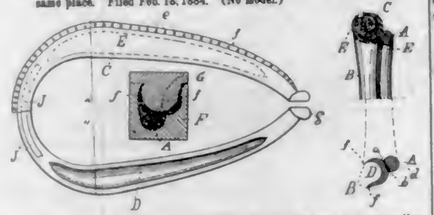
5. The combination, with a wagon end-gate, of a rod pivoted to the outer surface of the gate, and provided with a central bend and bent ends, the said rod being made in two sections adjustably connected together, substantially as herein shown and described.

299,285. **IMITATION TWISTED WIRE.** JAMES SPRUCE, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Dec. 17, 1883. (No model.)



Claim.—As an article of manufacture, the herein-described wire in imitation of twisted wires, consisting in a single or solid wire the surface of which represents two or more round wires laid together, the said wire twisted to give to it the appearance of several round wires twisted together, substantially as described.

299,286. **HORSE-COLLAR.** JAMES STANLEY and THEODORE F. LEISENA, Newark, N. J., assignors to the Stanley Horse Collar Company, same place. Filed Feb. 18, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a horse-collar formed of scraps of leather united by suitable cement, and having a recess formed in the front side, and provided with means, substantially as described, for securing a pad in such recess, as and for the purpose set forth.

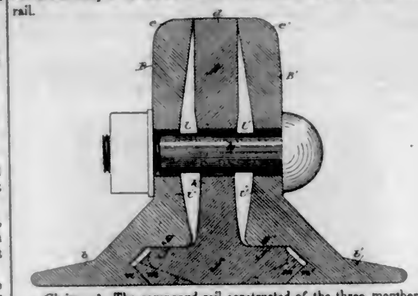
2. As an improved article of manufacture, a horse-collar formed of scraps of leather united by suitable cement, and having a recess formed in the front side and covered by flaps integral with the back of the collar.

3. The process of forming a hollow collar, consisting in first pressing or molding the collar with flaps at the sides of the intended hollow, then pasting down the flaps to cover the hollow, and then drying and finally pressing the pasted flaps to the finished or desired form.

4. The combination, with a collar molded of scraps of leather, as described, of a strip or strips of rawhide inserted in the bottom of the collar, substantially as and for the purpose set forth.

299,287. **RAILWAY-RAIL.** FRANCIS BOWES STEVENS, Hoboken, N. J. Filed Sept. 13, 1883. (No model.)

Brief.—In a compound rail having a three-part tread, the portions having the outer treads have recessed flanges which rest upon and fit over the base upon the central tread. To connect this rail to the ordinary T, the sides of the treads and portions of the flanges of the latter are so cut away as to match with the outer sections of the compound rail.



Claim.—1. The compound rail constructed of the three members, substantially as described.

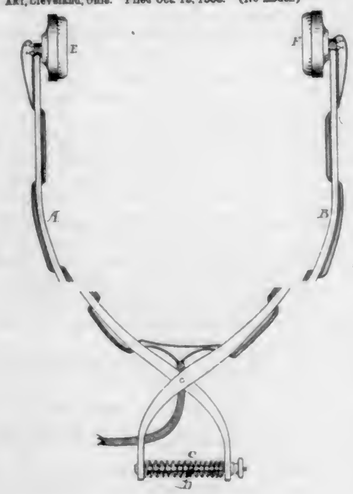
2. The compound rail constructed, substantially as described, of a central member having a narrow tread and a flanged base, combined with two side members, each of which has a narrow tread and a flanged base, the three when combined forming a compound rail with a three-part tread and a three-part base.

3. The combination, substantially as before set forth, of the central member of the rail having a narrow tread, a flanged base, side bearings for the side members of the rail, and inclined shoulders, with two side members, each having a narrow tread, a flanged base, a bearing to rest upon the flanged base of the central member, and an inclined ledge to sustain the inclined shoulders of the central member, the said three members when combined forming a central and side member supporting compound rail, having a three-part tread and a three-part base, with the central member sustained by the side members and the side members sustained by the central member.

4. The combination, substantially as before set forth, of the central member of the rail having a narrow tread, a flanged base, side bearings for the side members of the rail, and inclined shoulders, with two side members, each having a narrow tread, a flanged base, a concave inner side, a bearing to rest upon the flanged base of the central member, and an inclined ledge to sustain the inclined shoulders of the central member, the said three members when combined forming a central and side member supporting elastic compound rail, having a three-part tread and a three-part base, with the central member sustained by the side members and the side members sustained by the central member.

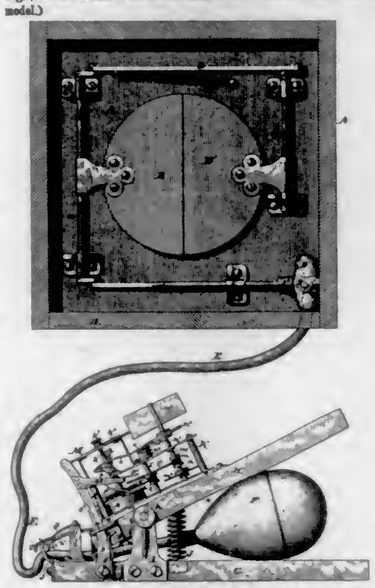
5. The combination of the compound rail constructed of three members, substantially as described, with an ordinary T-rail having portions of each side of its head and of each side of its base removed, as described.

299,288. **HOLDER FOR TELEPHONE-RECEIVERS.** JOHN N. STEWART, Cleveland, Ohio. Filed Oct. 15, 1883. (No model.)



Claim.—In double telephonic receivers, two levers, A B, crossed and pivoted together and provided with spring C and adjusting screw-rod D, said levers supporting two receivers connected in the electrical circuit by wire, combined and operating as and for the purpose specified.

299,289. PHOTOGRAPHIC CAMERA. CHARLES W. STIFF, Foxborough, and NATHANIEL C. BOGSLEY, Salem, Mass. Filed Aug. 27, 1883. (No model.)



Claim.—1. In combination with a photographic camera, a mechanism to be worked by the operator, and arranged and adapted to open the lids or shutters of the lens-tube, a device for automatically locking and retaining said lids or shutters in their open positions, and a timing mechanism arranged to be set in motion by the operation of the shutter-opening mechanism, and to release said locking device and permit the closing of said lids or shutters at the end of any predetermined interval of exposure.

2. A pneumatic device adapted to open the lids or shutters of a photographic camera, and at the same time set in motion a timing mechanism, which will automatically close the same at the end of any predetermined interval of exposure.

3. A presser adapted to open the shutters of a photographic camera by forcing air into an expanding-chamber, to keep said shutters open by preventing the return of the air by any suitable mechanism, and at the same time to set in motion a mechanism that will automatically release the air from said chamber at the end of any predetermined interval of exposure, thus allowing the lids to close.

4. The combination of the lever H, pivoted to the frame G in any suitable way, the bracket r', with its slotted horizontal projection r, the spring-actuated lever s, provided with the notch s^2, the bulb F, the tube E, and the bulb D, in conjunction with a suitable mechanism for operating the lids or shutters of a photographic camera, substantially as and for the purposes specified.

5. The combination of the spring-actuated nipper-lever i', the forked bracket j, the spring-actuated hook j'', all attached to the frame G, and the projection u and plate z, secured to the shorter arm of the lever H, all adapted to operate substantially as and for the purposes described.

6. The combination of the presser G H, spring J, the projection r, the lever s, provided with the notch s^2 and bent arm s^3, and the arm w, attached securely to the shaft k of the clock-work, all adapted to operate substantially as and for the purposes described.

7. The combination of the dial M, the pointer k^2, the ratchet-wheel k^3, the pawl k^4, the gear k^5, and the spring k', all adapted to operate substantially as and for the purposes described.

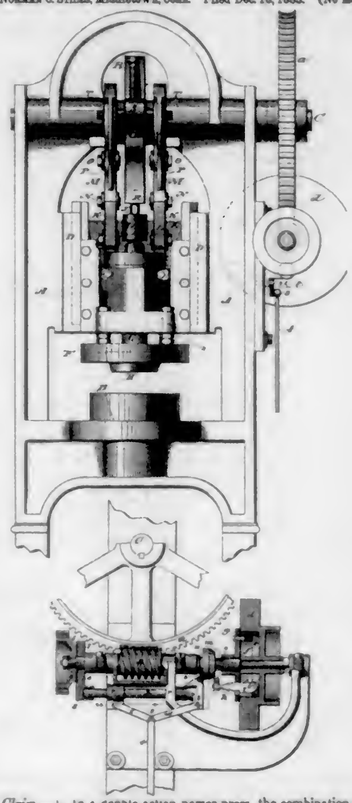
8. The combination of the friction-disk n^2, mounted upon the shaft n' of the clock-work, the spring-actuated lever o, the bent lever p, and the bent stationary arm p', all adapted to operate substantially as and for the purposes described.

9. The combination of friction-disk n^2, mounted upon the shaft n' of the clock-work, the spring-actuated brake-lever o, the bent lever p, the spring-actuated dog q, the arm v, securely fastened to the shaft k, and means for operating the lever p, substantially as and for the purposes specified.

10. The combination of the lids or shutters B B', adapted to close the inner end of the lens-tube of a photographic camera, the shafts a a', the rocker-arms c c', the connecting-rod d, and means for operating the same, substantially as and for the purposes specified.

11. The combination of the lids or shutters B B', adapted to close the inner end of the lens-tube of a photographic camera, the shafts a a', the rocker-arms c c', the connecting-rod d, and the spring d'', all substantially as and for the purposes described.

299,290. PRESS FOR HOLDING AND CUTTING SHEET METAL. NORMAN C. STILES, Middletown, Conn. Filed Dec. 10, 1883. (No model.)



Claim.—1. In a double-action power-press, the combination of the vertical slide carrying the movable holding-surface, a vertical movable slide carrying the punch, mechanism, substantially such as described, to impart reciprocating movement to the punch-slide, a toggle or toggles, one link of which is hinged to the slide which carries the holding-surface, the other link hinged to a fixed point in the frame, and mechanism, substantially such as described, between the links and the driving-shaft, whereby said links are forced into line to bring the holding-slide to its grasping position in advance of the punch, and retain said links in line during the operation of the punch, and then to turn said links out of line to withdraw the holding-slide, substantially as described.

2. In a double-action power-press, the combination of the vertical slide carrying the movable holding-surface, a vertical movable slide carrying the punch, mechanism, substantially such as described, to impart reciprocating movement to the punch-carrying slide, a toggle or toggles, one link of which is hinged to the slide which carries the holding-surface, the other link hinged to the frame, an arm extending from one of the links, and mechanism, substantially such as described, to operate upon said arm, whereby the reciprocating movement is imparted to said holding device, substantially as described.

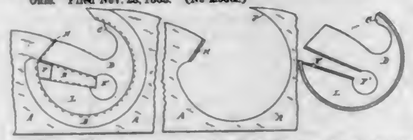
3. In a double-action power-press, the combination of the two vertical reciprocating slides, the one carrying the blank-holding device, the other the punch, a revolving driving-shaft, an eccentric thereon, a ring upon said eccentric and within which the eccentric revolves, the said ring in connection with the punch-carrying slide, whereby in the rotation of the eccentric a reciprocating movement is imparted to said punch-carrying slide, and a toggle or toggles, one link of which is hinged to the blank-holding slide, the other link hinged to the frame, one of said links provided with an arm extending therefrom toward the eccentric-ring, the said ring provided with a stud arranged to operate upon said arm to impart to it a swinging movement, whereby the eccentric-ring in imparting reciprocating movement to the punch-carrying slide also imparts a vibratory movement through said arm to the toggles, and thence a reciprocating movement to the blank-holding slide, substantially as described.

4. In a double-action power-press, the combination of the two vertical reciprocating slides, the one carrying the blank-holding device and the other the punch, a revolving driving-shaft, an eccentric thereon, a ring on said eccentric and within which said eccentric revolves, said eccentric-ring connected to the punch-carrying slide, and whereby reciprocating movement is imparted to said punch-carrying slide, a toggle or toggles, one link of which is hinged to the blank-holding slide, the other to the frame, one of the links constructed with an arm extending therefrom toward the eccentric, and constructed with a cam-shaped slot, and a stud on the eccentric-ring working in said cam-shaped slot, whereby through said arm and toggles reciprocating movement is imparted to said blank-holding slide, substantially as described.

5. The combination of the shaft c, the driving-pulleys loose thereon, a frictional clutch between said pulleys and shaft, the collar m, longitudinally movable on said shaft, the sliding bar p, in connection with said collar, and the toggle t w, one link hinged to the frame, the other to the bar p, and a connection from the toggle, whereby reciprocating movement may be imparted to said slide, substantially as described.

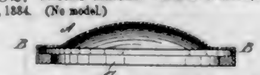
6. The combination of the shaft c, the driving-pulleys loose thereon, a frictional clutch between said pulleys and shaft, the collar m, longitudinally movable on said shaft, the sliding bar p, in connection with said collar, and the toggle t w, one link hinged to the frame, the other to the bar p, and a connection from the toggle, whereby reciprocating movement may be imparted to said slide, the frictional plate 5, fixed to the shaft, and the frictional plate 6, loose upon the shaft, but prevented from rotation, substantially as described.

299,291. ADJUSTABLE SAW-TOOTH. GEO. W. STINEERING, Shreve, Ohio. Filed Nov. 23, 1883. (No model.)



Claim.—The segmental-shaped tooth B, the saw-plate A, having opening J, of a form to closely embrace the outer contour of the tooth, and provided with a tongue, H, the expansive fastener of shape approaching a complete circle, having a point, C, parts D I, partly separated by the tapered slot F, and circular opening F', adapted to receive a wrench, K, in combination with wedge E, as shown and described, and for the purposes set forth.

299,292. FLYING TARGET. CHARLES F. STOCK, Peoria, Ill. Filed Feb. 1, 1884. (No model.)



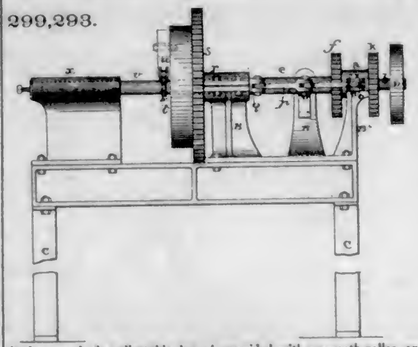
Claim.—1. The combination of the fragile target A, formed with an imperforate flange, B, with an irrefragable re-enforcing strip firmly secured to the said flange, whereby the flange will be strengthened at that part to be grasped by the fingers of the target-throwing arm, substantially as set forth.

2. The fragile target A, formed with a flange, B, and a separate re-enforcing strip, C, extending around the inner periphery of said flange, and formed of an irrefragable material.

299,293. MACHINE FOR BENDING NUT-LOCKS. JOHN B. SUTCH, Pittsburg, Pa. Filed Feb. 17, 1883. (Model.)

Claim.—1. In a machine for bending metal, the combination of the wheel s and a suitable operating mechanism, with the disk which is attached to the wheel, the adjustable bars u u', attached to the disk, the plunger q, and the mandrel v, substantially as shown.

2. The combination of the wheel s and a suitable operating mechanism therefor, the plunger q, and the mechanism for reciprocating it, with the disk t, the adjustable bar u, provided with a grooved roller at its inner end, the adjustable bar u', provided with a smooth roller, and the mandrel v, substantially as described.



3. The combination of the driving-shaft b, having upon one end the pinion d, and the wheel s, which is driven by the pinion, and which carries the disk t, provided with the adjustable arms u u', with the cam a^3, which is operated by a mechanism of its own, a yoke, m, which operates the toggle-joint connected with the plunger q, and the mandrel v, the parts being constructed and arranged to operate substantially as specified.

299,294. DUST-PAN. SALATHIEL C. SWERTSON, Island Falls, Me. Filed Apr. 10, 1884. (No model.)



Claim.—1. A dust-pan made substantially as herein shown and described, and consisting of sheet-metal plate A, having two side flanges, B and B', of which the former is higher than the latter, substantially as herein shown and described.

2. A dust-pan made of a sheet-metal plate having two side flanges, B B', of which the latter has its upper edge inclined from the back of the pan down to the front, substantially as herein shown and described.

3. A dust-pan made of a sheet-metal plate having two side flanges, B and B', of which the former is curved, as shown, and the other flange, B', has its upper edge inclined from the back down to the front, substantially as herein shown and described.

4. In a dust-pan, the combination, with a plate, A, having a flange at each side edge, of the cross-piece C, having a handle, D, substantially as herein shown and described.

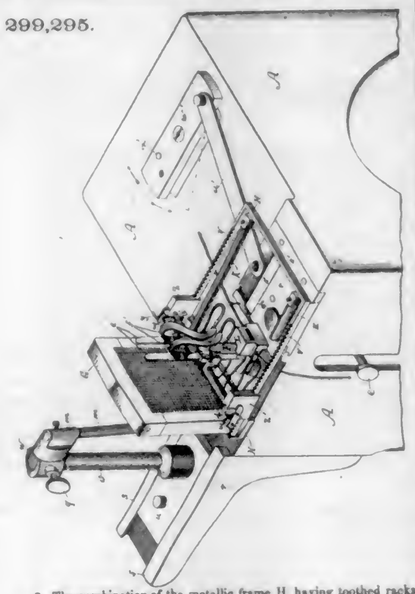
299,295. MACHINE FOR KNITTING RATTAN CHAIR-BACKS. EDWARD LOVELL TAFT, Gardner, and HENRY MURDOCK RICH, Athol, Mass. Filed Oct. 9, 1883. (No model.)

Brief.—The invention comprises (*a*) a looper or loop-former and its operative mechanism; (*b*) mechanism for supporting each loop, in order for the looper, in the formation of another loop, to pass with its loop through the loop so supported; (*c*) mechanism for turning each range of loops, after its formation, downward, for the reception of the looper while making each loop of the next succeeding range of loops; and (*d*) mechanism for retracting the work after the range of loops may have been so turned down, such retraction of the work being to carry the said range of loops into a position for each loop of it to receive at the proper time the looper and a loop in the process of being made thereby.

Claim.—1. The combination of the stationary strand-guide K, and the looper F, the series of standards e', sliders g', U-shaped tongues h', the series of springs f'', the movable loop-holding abutment I, and the strand-coverer M, provided with mechanism for operating them, substantially as set forth.

2. The combination of the wedge-pointed stud R, having mechanism for operating it, substantially as described, with the stationary strand-guide K, and the movable looper F, the series of U-shaped tongues, their carrying-slides, and the furcated sustaining-bars e' thereof, the springs f'', the movable loop-holding abutment I, and the strand-coverer M, provided with mechanism for operating them, essentially as represented.

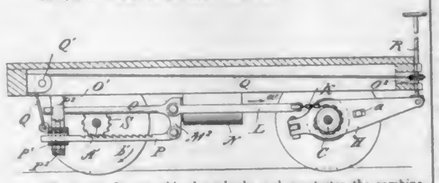
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3. The combination of the metallic frame H, having toothed racks, as set forth, and the carriage I, having a cranked shaft, *x*, and pinions *w w*, to operate with the said racks, as described, with the stationary strand-guide K, and with the series of slides *b'*, standards *c'*, curved springs *f*, sliders *g'*, U-shaped tongues *h'*, the movable looper F, loop-holding abutment L, and strand-coverer M, having mechanism for operating them, substantially as set forth.

4. The combination of the chair-seat and post-supporting and operating mechanism, substantially as described, (consisting of the spider, the pendulous arm, the vertical slide, and adjustable post, arranged and adapted as set forth,) with mechanism substantially as represented, for knitting work or a chair-back between the posts of a chair, as explained.

299,296. CAR BRAKE AND STARTER. FRANK TOMPKINS, New York, N. Y. Filed Nov. 24, 1883. (No model.)



Claim.—1. In a combined car-brake and car-starter, the combination, with a ribbed wheel mounted on the front axle, of sliding sleeves provided with ribbed disks adapted to engage with the ribbed wheel, means for engaging the ribbed disks with the ribbed wheel, a plunger or piston connected with the said sleeves and adapted to compress air in a cylinder, a ratchet-wheel mounted on the rear axle, a rack connected with the piston and adapted to be engaged with the ratchet-wheel on the rear axle, and of means for engaging the rack with the said ratchet-wheel, substantially as herein shown and described.

2. In a combined car-brake and car-starter, the combination, with a ribbed wheel mounted on the front axle, of sliding sleeves mounted on the front axle and provided with ribbed disks adapted to engage with the ribbed wheel, two pivoted levers through which the sleeves pass, a brake-shaft for drawing the outer ends of the levers together and pressing the ribbed disks against the outer faces of the ribbed wheel, springs for drawing the ribbed disks from the ribbed wheel, chains secured on the sleeves, a piston connected with the said chains, a cylinder in which the piston works, a ratchet-wheel mounted on the rear axle, a rack adapted to engage with the said ratchet-wheel, and means for engaging the ratchet-wheel and rack, substantially as herein shown and described.

3. In a combined car-brake and car-starter, the combination, with a front axle, of a ribbed wheel mounted on the same, sliding sleeves mounted on the axle and provided with ribbed disks adapted to engage with the ribbed wheel, means for engaging the ribbed disks with the ribbed wheel, chains secured on the sleeves and connected with the piston M contained in the cylinder N, guide-rods O, projecting from the piston, the ratchet-wheel S on the rear axle, the rack P, hinged to the head of the piston, and of means for engaging the said rack with the ratchet-wheel S, substantially as herein shown and described.

4. In a combined car-brake and car-starter, the combination, with the front axle, of a ribbed wheel mounted on the same, sliding sleeves mounted on the axle and provided with ribbed disks adapted to engage with the ribbed wheel, means for engaging the ribbed disks with the ribbed wheel, chains secured on the sleeves and connected with the piston M contained in the cylinder N, guide-rods O, projecting from the piston, the ratchet-wheel S on the rear axle, the rack P, hinged to the head of the piston, the rope or chain Q, secured to the free end of the brake-shaft, the pulley Q', and the shaft R, on which the free end of the rope is fastened, substantially as herein shown and described.

5. In a combined car-brake and car-starter, the combination, with the front axle, A, of the ribbed wheel B on the same, the sliding sleeves C, provided with ribbed disks adapted to engage with the ribbed wheel B, the levers H, pivoted to each other, the chains I, fastened to the outer ends of the levers H, the shaft J', the wheel J, mounted on the shaft J', to which wheel the ends of the chains I are fastened, the chains K, secured on the sleeves C, a piston connected with the chains and working in a cylinder, and means for revolving the rear axle from the said piston, substantially as herein shown and described.

6. In a combined car-brake and car-starter, the combination, with the front axle, A, of the ribbed wheel B, mounted on the same, the sliding sleeve C, provided with ribbed disks adapted to engage with the wheel B, the pivoted levers H, the chains I, the shaft J', the forked levers D, pivoted to the car-bottom and passing into grooves in the sleeves C, and of springs D', for withdrawing the sleeves from the ribbed wheel, chains K, secured on the sleeves C, and of the piston connected with the chain and working in a cylinder, and means for revolving the rear axle from the said piston, substantially as herein shown and described.

7. In a combined car-brake and car-starter, the combination, with the axle A, of the ribbed wheel B, mounted on the same, the sliding sleeves C, having end disks, F, the ribbed plates G, secured to the end disks, and means for engaging the ribbed plates G with the ribbed wheel B, means for operating an air-compressing piston contained in a cylinder, and means for operating the rear axle from the said piston, substantially as herein shown and described.

8. In a combined car-brake and car-starter, the combination, with the axle A, of the ribbed wheel B, mounted on the same, the sliding sleeve C, having ribbed end disks, the disks E', held in the sleeves, the springs E for pressing the end disks against the ribbed wheel, and of means for engaging the ribbed disks with the ribbed wheel, means for operating an air-compressing piston contained in a cylinder from the sleeves on its front axle, and means for revolving the rear axle from the said piston, substantially as herein shown and described.

9. In a combined car-brake and car-starter, the combination, with the front axle, of a ribbed wheel mounted on the same, sliding sleeves mounted on the axle and provided with ribbed disks adapted to engage with the ribbed wheel, friction-disks held in the inner ends of the sleeves, springs for pressing the friction-disks against the middle of the ribbed wheel before the ribbed disks engage with the ribbed wheel, means for operating an air-compressing piston from the said sleeves, and means for operating the rear wheel from the said piston, substantially as herein shown and described.

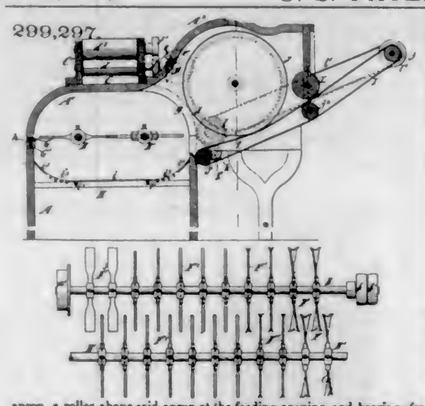
10. In a combined car-brake and car-starter, the combination, with a cylinder and air-compressing piston therein, of means for operating the piston, the rack P, pivotally connected with the piston, the ratchet-wheel S on the rear axle, the vertical guides I^2, secured to the under side of the car, the box or loop P', sliding on the same, through which box or loop the rack P is passed, and of means for raising the said box or loop to engage the rack with the ratchet-wheel S on the rear axle, substantially as herein shown and described.

11. In a combined car brake and starter, the combination, with a cylinder and air-compressing piston therein, of means for operating the piston, the guide-rods O of the piston passing through perforations in the upper part of guides I^2, the rack P, pivoted to arm M^3 of the piston, the ratchet-wheel S on the rear axle, the vertical guides I^2, the box or loop P', sliding within the same, through which box or loop the rack P is passed, and of means for raising the said loop to engage the rack with the ratchet-wheel S on the rear axle, substantially as set forth.

299,297. OPENER AND CLEANER FOR FIBROUS MATERIALS. JOHN E. VAN WINKLE, Paterson, N. J. Filed Jan. 2, 1883. (No model.)

Claim.—1. The combination, with the casing provided with a feed-opening in the top at one end and a delivery-opening at the other end, of beater-shafts and beaters arranged in said casing, mechanism for rotating said beater-shafts, a feeding trough or receptacle arranged on top of said casing lengthwise thereof and parallel with the beater-shafts, a feeding-apron in said trough or receptacle, and means for operating said

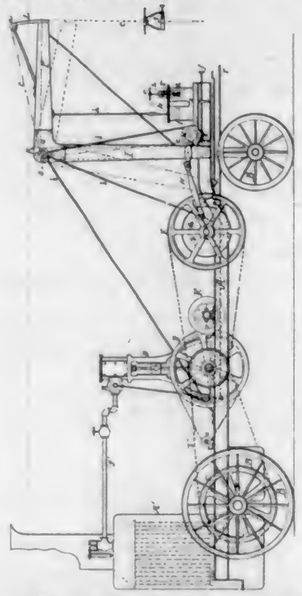
299,297.



apron, a roller above said apron at the feeding-opening, and bearings for said roller, which permit of its rising and falling as the quantity of material on the feeding-apron varies, substantially as herein described.

2. The combination, with the casing provided with a feeding-opening at one end and a delivery-opening at the other end, of the beater-shafts B B', mechanism for rotating said shafts, the beaters F F' F^2 F^3 on the shaft B, and the beaters F F' F^2 on the shaft B', substantially as herein described.

299,298. WELL-BORING MACHINE. WILLIAM VELTE, Pittsburg, Pa. Filed Dec. 7, 1883. (No model.)



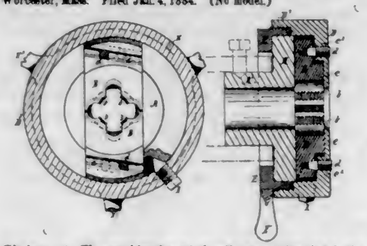
Claim.—1. The combination of the vibrating beam I with piston-rod *h*, secured thereto, with the air-pump, provided with two chambers and two pistons, one of the pistons being provided with a screw-handle and spring, substantially as shown.

2. The combination of the vibrating beam I with the air-pump N, substantially as shown and described.

3. The vibrating beam I, with the bent arm P, fulcrumed at K, and supported by braces *b*, in combination with the rod H, substantially as set forth.

4. The combination of the vibrating beam I, and a mechanism for operating it, with an air-pump, which is operated by the downstroke of the beam, the compressed air in the pump serving to assist on the upstroke, substantially as specified.

299,299. DEVICE FOR THREADING BOLTS. WM. F. WALKER, Worcester, MASS. Filed Jan. 4, 1884. (No model.)



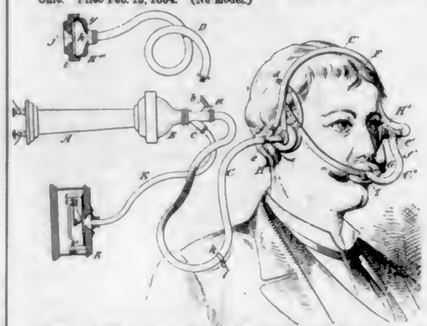
Claim.—1. The combination of the die-supporting head, the radially-moving dies having inclined slots in their surface, a face-plate provided with studs which enter said slots, adapted for moving the dies by rotative action of said plate, and a screw-threaded ring for clamping said dies at positions of adjustment between the head and plate, substantially as set forth.

2. The combination of the head-piece A, the dies B, guided and supported in said head, the face-plate D, having studs *d d* engaging with inclined slots in said dies, and the ring E, screw-threaded to said face-plate and bearing against said head-piece, substantially as and for the purpose set forth.

3. A conically-pointed screw-stud, as I, in combination with the dies and die-supporting head, having a recess, as *a*, and the rotative face-plate D, substantially as and for the purpose set forth.

4. The combination, with the head A and dies B and die-operating studs *d d*, of a face-plate having a thin central portion, *e*, and annular re-enforce or thicker portion *e'*, substantially as and for the purpose stated.

299,300. TELEPHONE-SUPPORT. NATHANIEL G. WARTH, Canton, Ohio. Filed Feb. 13, 1884. (No model.)



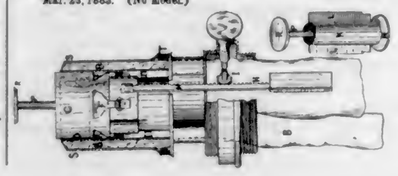
Claim.—1. The combination, with the receiving-telephone A, of two ear-pieces, H H', the curved spring F, for holding the said ear-pieces to the ears, and the tubes C C', connecting the ear-pieces and receiver, as described.

2. The combination of the ear-pieces H H' and mouth-piece I with the frame composed of the curved springs F G and brace *d*, as described.

3. The combination, with the receiving-telephone A and transmitting-telephone K, of the ear-pieces H H', mouth-piece I, and the connecting-tubes C, C', C'', and E, as described.

4. The combination, with the receiving-telephone A, provided with the extension B, having branches *a b c*, and the transmitting-telephone K, of the ear-pieces H H' H''', the ear-piece H''' being provided with the diaphragm *j*, the mouth-piece I, and the connecting-tubes C C' C'' D E, substantially as herein shown and described.

299,301. LAMP-BURNER. NEWMAN S. WAX, Boston, Mass. Filed Mar. 29, 1883. (No model.)



Claim.—1. The combination, in an Argand lamp-burner having a cylindric draft-tube, E, of the air-tube K, provided with an annular flange, N, and deflecting-button R, secured to the vertical rod P, and the flanges L, constructed and arranged substantially as described, as and for the purposes set forth.

2. In an Argand lamp-burner, the combination, with the draft-tube E, of the auxiliary wick B, combustion-wick C, and conical tube S, having an inward-projecting flange at its upper end and a screw-thread at its lower end, by which it is connected to the socket-ring T, substantially as described, as and for the purposes set forth.

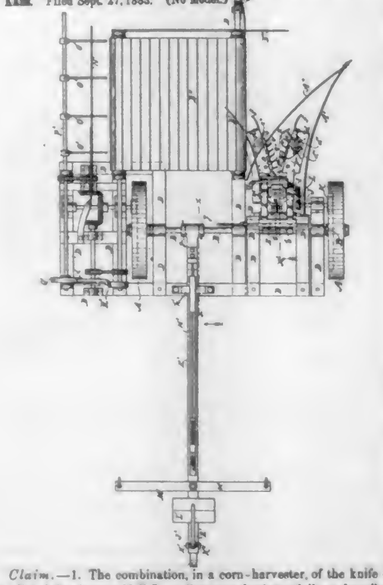
3. In an Argand lamp-burner, the combination, with the draft-tube E, of the auxiliary wick B, combustion-wick C, adjusting-clamp F, skeleton frame tube D, adjusting-tube G, vertical rack-bar H, and toothed adjusting-wheel I, whereby the said combustion-wick may be raised or lowered independent of the said auxiliary wick, as and for the purposes set forth.

299,302. SHELL-EXTRACTOR FOR FIRE-ARMS. NORRIS O. WAYMIRE, Garfield, Kans. Filed Dec. 12, 1883. (No model.)



Claim.—An improved cartridge-extractor, consisting of the stem a and a head, b, connected together by the brace c, which extends along the upper surface of the stem and flush with the top of the head, the said brace being beveled at c', and serving as a guide as well as a brace, substantially as set forth.

299,303. CORN-HARVESTER. SOLOMON F. WEAVER, near Portis, Kans. Filed Sept. 27, 1883. (No model.)



Claim.—1. The combination, in a corn-harvester, of the knife or cutter F and the elevator H H I c c, all arranged substantially as described with relation to each other, for the purposes set forth.

2. The combination, in a corn-harvester, of the knife or cutter F, an elevator-belt I c, arranged behind the said knife, and the inclined guard U, arranged in front of the said elevator, substantially as and for the purposes set forth.

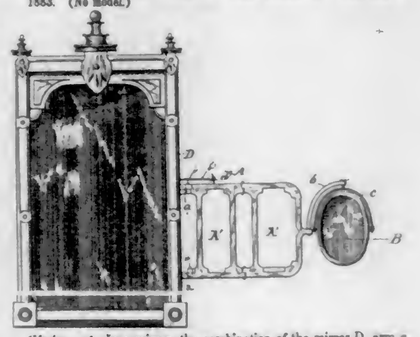
3. The combination, in a corn-harvester, of the inclined spring-guide A' A'', the guard or guide B', and the guide or arm B''', all arranged substantially as shown and described with relation to each other, the cutter and the delivery belt or apron, for the purpose of laying the tops of the cut stalks on the delivery-belt.

4. The combination, in a corn-harvester, of the knife or cutter F, the elevator I c, the guard A' A'', the inclined guide or guard U, the guard or arm B', the guard or arm B''', and the delivery belt or apron B'', substantially as and for the purposes specified.

5. The combination, in a corn-harvester, of the knife or cutter F, the rollers *e e*, the endless belts *d' d'*, the fingers *d'' d''*, the ratchets *d''' d'''*, the pawls *d'''' d''''*, and the bearings *d d*, substantially as and for the purposes specified.

6. The combination of the vertically-sliding frame E, the knife or cutter F, attached to the said frame, an endless elevator-belt arranged behind the said knife and running on rollers mounted in the said frame, the drive-wheel L, the pulleys M M, the driving cord or belt N, arranged as specified with relation to the said drive-wheel and pulleys, and the main frame of a corn-harvester, substantially as and for the purposes specified.

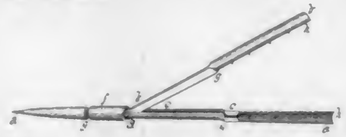
299,304. MIRROR. FRANK F. WEBER, Atlanta, Ill. Filed Aug. 21, 1883. (No model.)



Claim.—1. In a mirror, the combination of the mirror D, arm a, plate a^2, having eye a^3, hook d', for holding the bracket-sections in an extended position, bracket A, arm b, and mirror B, having frame C, substantially as shown, and for the purpose described.

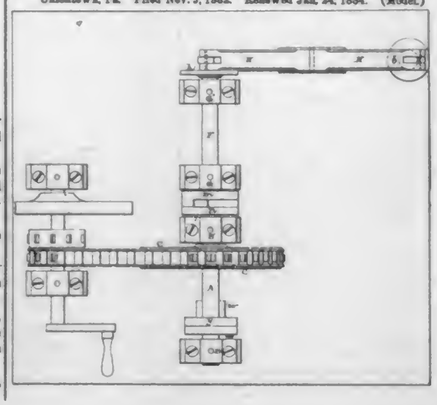
2. The combination of the mirror D, the bracket mechanism for adjustably connecting it with mirror B, and the hook for holding the bracket-sections in an extended position, substantially as shown, and for the purpose described.

299,305. NEEDLE. JOHN W. WEED, Flushing, N. Y. Filed Dec. 18, 1883. (No model.)



Claim.—A needle consisting of a pointed stem having an arm pivoted thereto, said stem and arm each concaved at their outer ends, and a sleeve to bind the stem and arm together to secure the cord, substantially as set forth.

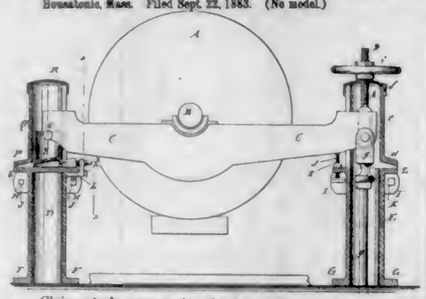
299,306. WELL-DRILLING MACHINE. LEBBEUS C. WEAVER, Uniontown, Pa. Filed Nov. 9, 1882. Renewed Jan. 24, 1884. (Model.)



Claim.—1. In a machine for drilling wells, the two independent shafts A and F, carrying at their ends the clutches *m n*, operating substantially as described.

2. The combination of the shafts A F, driving-wheel C, weighted rod D, clutches *m n*, and crank A, all arranged substantially as described.

299,307. RAG-ENGINE FOR PAPER-MAKING. WILLIAM WHITELY, Housatonic, Mass. Filed Sept. 22, 1883. (No model.)



Claim.—1. In a rag-engine, the lighter-supporting posts made in two parts, flanged at their adjacent ends to receive the connecting-bolts, the upper parts being slotted to receive the ends of the lighters, and provided at their upper ends with caps, substantially as herein shown and described, whereby the lighters can be readily removed, as set forth.

2. In the lighter-supporting posts of rag-engines, the combination, with the top flange of the lower part provided with slots parallel with the side of the tub, of the base-flange of the upper part having slots at right angles with the side of the tub, and the fastening-bolts, substantially as herein shown and described, whereby the upper parts of the posts can be readily adjusted to adjust the roll, as set forth.

3. In a rag-engine, the combination, with the lower part, D, of the post, having a close top, and the slotted upper part, Q, of the slotted shell S, having slot-bearings T, substantially as herein shown and described, to provide a movable fulcrum for the lighters, as set forth.

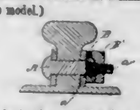
4. In a rag-engine, the combination, with the lower part, D, of the post having closed upper end, the slotted upper part, Q, and the bearing-shell S, having an inclined groove, V, in its bottom, of the wedge W, the adjusting-screw X, and the slotted lug Y, substantially as herein shown and described, whereby the said shell-bearing can be readily adjusted, as set forth.

5. In a rag-engine, the combination, with the post made in two parts, E *e*, and the lighter C, of the lifting-rod *g*, placed within the post, substantially as herein shown and described, whereby the machine is made more compact, as set forth.

6. In a rag-engine, the combination, with the post E *e*, the perforated cap *f*, the lighter C, and the lifting-rod *g*, of the screw A and the hand-nut *i*, substantially as herein shown and described, whereby the lighter can be readily raised and lowered, as set forth.

7. In a rag-engine, the combination, with the flange Z of the lower part, E, of the post, and the lighter C, of the stop-screw *j*, substantially as herein shown and described, whereby the lighter will be caught in case of breakage, to prevent the roll from dropping upon and injuring the bed-plate, as set forth.

299,308. NUT-LOCK. CHARLES A. WILLIAMS, Lawsonham, Pa. Filed Feb. 25, 1884. (No model.)



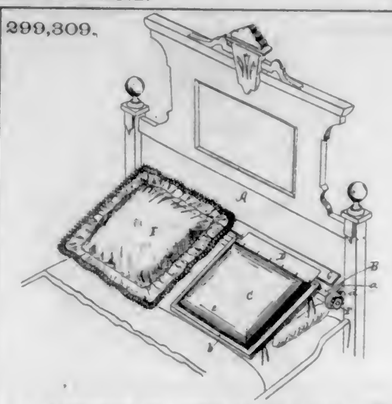
Claim.—In a nut-lock, the combination, with the bolt having the right and left hand screw-threads offset from each other, of the notched nuts, any one or more of the tongues of one of which nuts, formed by notching said nut, entering the coincident notch or notches of the other nut, substantially as and for the purpose set forth.

299,309. PILLOW-SHAM AND HOLDER. DAVID R. WILSON, Fenton, Mich. Filed Apr. 26, 1883. (No model.)

Claim.—1. A pillow-sham holder consisting of the pillow-form C, supported on a frame, *b*, attached to the bar B, in combination with such bar B and means, substantially as described, for holding the forms in any desired position, as and for the purpose set forth.

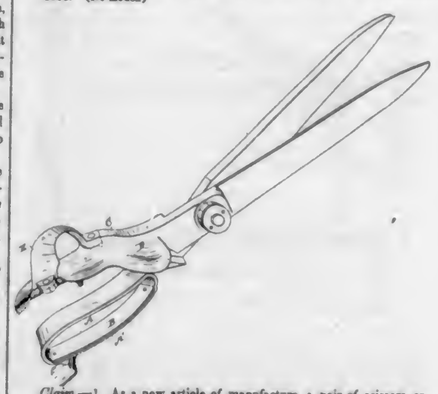
2. The combination of a bedstead, the bar B, pillow-forms C, the frame *b*, attached to said bar and supporting the forms C, with the brackets *a*, the ratchet-wheel E, and dog *d*, as set forth.

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3. In combination with a bedstead, the bar B, brackets *a*, pillow-forms C, and shams F, the fly D, resting against a projection on the head of the bedstead, all constructed, arranged, and operating substantially in the manner and for the purposes specified.

299,310. SHEARS. KARL WITTE, Hartford, Conn. Filed Oct. 24, 1883. (No model.)



Claim.—1. As a new article of manufacture, a pair of scissors or shears the upper handle of which is provided with a flaring thumb-loop, the lower half of which is formed integral with its blade, and the upper half of which is formed of india-rubber and riveted to the lower portion, and the lower handle formed with the usual hand-loop having a rubber lining in the lower portion thereof, whereby the back of the thumb and fingers will be afforded a contact-surface not liable to chafe or harden the skin, substantially as set forth.

2. Hand-shears having a lining of soft rubber or analogous material on one handle-loop and having a hard-rubber bow secured to the other handle, substantially as herein shown and described.

299,311. POLISHING-WHEEL. DANIEL W. ABBOTT, Leelonia, Ohio. Filed Oct. 25, 1883. (No model.)

Claim.—1. In a polishing-wheel, the key-pieces B of the leather facing, secured in the holes *a* and slits *a'*, in combination with the filling-pieces *b*, toe-nailed to the face of the disk, and also nailed to the key-pieces, substantially as described.

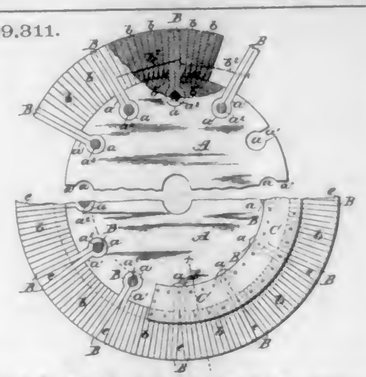
2. The key-pieces B of the leather facing, having wedge-pieces *c*, and being secured in the holes *a* and slots *a'*, in combination with the filling-pieces *b*, substantially as described.

3. The doubled key-pieces B, having an eye in the bend, and being secured in the holes *a* and slits *a'* by a pin or key, a^2, in combination with the filling-pieces *b*, substantially as described.

4. The combination of the metal rings C with the disk A, the keys *c*, and intermediate filling-pieces, *b*, and the leather facing B *b*, substantially as described.

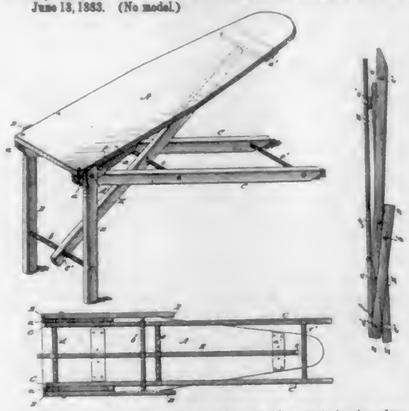
5. The improved polishing-wheel, consisting of the wood disk A and leather facing composed of key-pieces B and intermediate pieces, *b*,

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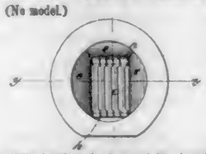
secured to the disk, as described, and re-enforced by the metal rings C, substantially as described.

299,312. IRONING-TABLE. FRANKLIN F. ADAMS, Erie, Pa. Filed June 13, 1883. (No model.)



Claim.—An ironing-table consisting of the top A, having cleat *a'* and ears *a*, legs B, pivoted to the ears *a*, and having round *b*, brace C, pivoted to the ears *a*, and having round *c'*, and a swinging brace, E, attached at or near its middle to the round *c*, and having notch *d'* to slip over round *b*, all arranged and combined substantially as described.

299,313. LIMEKILN. BERNHARD ALDERS, Conception, Mo. Filed Mar. 4, 1884. (No model.)



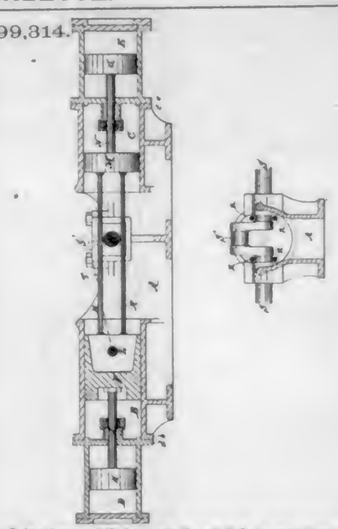
Claim.—The kiln having the base of its chamber provided with rounded convergent shoulders *c*, said chamber being provided below the outer edges of said shoulders with ledges *h*, upon which is supported a fire-grate, *f*, substantially as shown and described, and for the purpose set forth.

299,314. AIR-COMPRESSOR. JOHN F. ALLEN, Brooklyn, N. Y. Filed Apr. 16, 1883. (No model.)

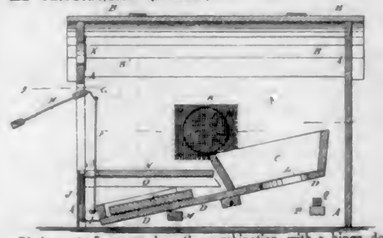
Claim.—1. In an air-compressor having the steam-cylinder and the air-compressing cylinder placed in one line, the steam-cylinder E and the air-compressing cylinder D, attached to the ends of the main frame A, and overhanging the same, substantially as described.

2. In an air-compressing machine having the steam-cylinder and the air-compressing cylinder placed in the same line, with the crank-shaft between said cylinders, the combination of the steam-cylinder piston G, its piston-rod N, the block M, rods R R, passing above and below the crank-shaft S, the block F, piston-rod J, and air-compressing piston H, with connecting-rod T and crank-shaft S, substantially in the manner and for the purpose herein set forth.

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299,315. NEST-BOX FOR FOWLS. WILLIAM ENOS ALLEN, Monrovia, Ind. Filed Dec. 8, 1883. (No model.)



Claim.—1. In a nest-box, the combination, with a hinge-door, of a balanced nest connected to and operating said door, and a vertically-sliding locking-bolt connected to and operated by said nest, substantially as herein shown and described.

2. In a nest-box, the combination, with the box A, provided with the platform N, of the balancing-board D, provided with the nest C, the hinged door H, the arm G, the connecting-rod F, and the locking-bolt J, substantially as herein shown and described.

3. In a nest-box, the combination, with the balancing-board D and the hinged door H, of the arm I and the bolt J, substantially as herein shown and described, whereby the said door will be fastened and released by the movements of the said board, as set forth.

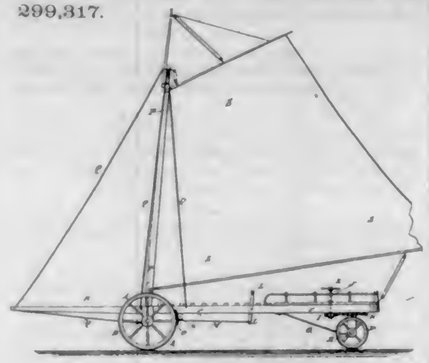
299,316. SHEET-METAL CAN. FRIEDRICH HELVIG ARND, Weimar, Germany. Filed Apr. 2, 1883. (No model.)



Claim.—The combination of the body of a can or similar package having an inward overlap, A, flanged at C, with a ripping-wire, B, held between the overlap and body of the package, and a lid, E, adapted to be applied and soldered over the flange C, substantially as set forth.

299,317. SAIL-WAGON. JOHN A. ASPINWALL, Bay Ridge, N. Y. Filed Mar. 24, 1884. (No model.)

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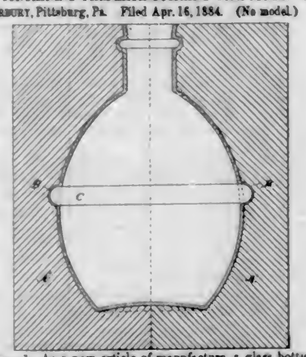


Claim.—1. In a sail-wagon, the combination, with the triangular frame C, provided with mast P and sails S, and the forward axle, B, provided with wheels A, of the short rear axle, E, pivoted to the rear end of said frame and provided with the wheels D, and means for turning the said short axle on its pivot for guiding the wagon, substantially as herein shown and described.

2. In a sail-wagon, the combination, with the triangular frame C, of the forward axle, B, attached to the wide forward end of the said frame, the wheels A, the pivoted rear axle, E, the wheels D, the gear-wheel H on the rear axle, the gear-wheel I, and the upright shaft J, substantially as herein shown and described.

3. In a sail-wagon, the combination, with the triangular frame C, mounted on wheels A D, of the lever L, pivoted in a slot of the said frame, the levers N, pivoted to the under side of the frame and provided with brake-shoes O on the outer ends, and the rods M, connected to the inner ends of the brake-levers and to the operating-lever, substantially as herein shown and described.

299,318. MANUFACTURE OF GLASS BOTTLES AND VESSELS FOR CONTAINING FIRE-EXTINGUISHING COMPOUNDS. THOMAS B. ATTERBURY, Pittsburg, Pa. Filed Apr. 16, 1884. (No model.)



Claim.—1. As a new article of manufacture, a glass bottle or vessel for containing a fire-extinguishing chemical, consisting of frangible sections 1 2, connected by the homogeneous and more fragile sections or ribs C, as set forth.

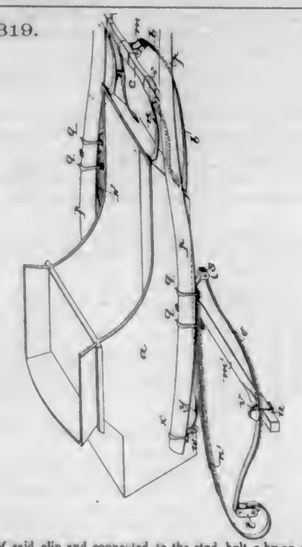
2. As a new article of manufacture, a glass bottle or vessel for containing a fire-extinguishing compound or chemical, consisting of upper or lower sections having ribs or corrugations *a*, connected by the thinner and more fragile rib C, as set forth.

299,319. TWO-WHEELED VEHICLE. JOHN C. BACK, Hillsdale, Mich., assignor to himself and Henry Allen, same place. Filed Jan. 17, 1884. (Model.)

Claim.—1. In a road-cart, having the front portion of the body suspended from the front cross-bar, *c*, by a bow-spring, *b*, the said spring connected to the bottom of the body at the bow *d* by a clip, *e*, and extended forward of said clip and connected to the stud-bolt *g*, substantially as described.

2. In a road-cart, having the front portion of the body suspended from the front cross-bar, *c*, by the bow-spring *b*, the said spring connected to the bottom of the body at the bow *d* by a clip, *e*, and extended

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forward of said clip and connected to the stud-bolt *g* by an eye in the spring and adjusting-nuts *f* on the bolt, enabling the body to be adjusted with relation to the supporting-frame, substantially as described.

3. The body suspended at its forward end from the front cross-bar, *c*, of the shafts by the longitudinal center spring, *b*, and suspended at its back end from the rear ends of the shafts by transverse flexibly-jointed devices for allowing side-play of the body, substantially as described.

4. In a road-cart, the shafts *p*, mounted on the axle *m'* by the side springs, *n' o*, and the body suspended from the shafts by the center spring, *b*, at the fore end, and by the flexibly-jointed suspending devices at the hind end, substantially as described.

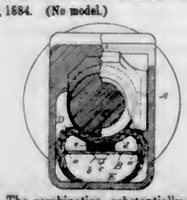
5. In a road-cart, having the shafts mounted on the axle by side springs, *n' o*, and the hind end of the body suspended from the shafts by flexibly-jointed devices, the hind ends *o'* the shafts bent inward for clearance of the suspending devices and springs, substantially as described.

6. In a road-cart, having the shafts mounted on the axle by elliptic side springs, the shafts clipped to the upper members of the side springs near the front end, and the springs clipped to the axle near the hind ends of the springs, substantially as described.

7. In a road-cart, having the shafts mounted on the axle by elliptic side springs, the shafts clipped to the upper members of the side springs near the front end, and the springs clipped to the axle near the hind end of the springs, and the two members of the springs connected by an ear and pivot joint at the front end and by a link-joint at the hind end, substantially as described.

8. In a road-cart, having the front end of the body suspended from the cross-bar *c* by a spring, *b*, the flexible safety-straps *n* secured to the front of the body at their free ends and connected at their bends to the cross-bar by clips or plates n^2, substantially as described.

299,320. CAR-AXLE BOX. WILLIAM S. G. BAKER, Baltimore, Md. Filed Feb. 23, 1884. (No model.)



Claim.—1. The combination, substantially as set forth, of the box, the partition, which extends horizontally entirely across the box at its rear end, and is formed with side openings or recesses, and the lubricating-pad, which extends up through one of said openings, under the journal, and down through the other opening, so as to present an extended lubricating-surface to the journal.

2. The combination, substantially as set forth, of the box, the partition, which extends through the box from end to end and horizontally entirely across the box at both ends, and is formed with side openings or

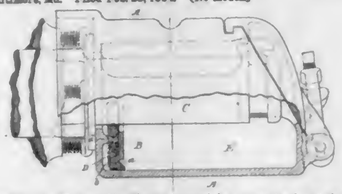
recesses, and the lubricating-pad, which extends through the openings, so as to completely fill the same from end to end, and which presents an extended lubricating-surface to the journal.

3. The combination, substantially as set forth, of the box, the lubricant-chamber, the partition located over the lubricant-chamber, and the concave pad-holder mounted on the partition.

4. The combination, substantially as set forth, of the box, the lubricant-chamber, the partition located over the lubricant-chamber, and the pad-holder yieldingly mounted on the partition.

5. The combination, substantially as set forth, of the box, the partition, the dowel-sockets formed therein, the pad-holder, and the dowels connected thereto that work in the sockets in the partition.

299,321. CAR-AXLE-LUBRICATING DEVICE. WILLIAM S. G. BAKER, Baltimore, Md. Filed Feb. 25, 1884. (No model.)

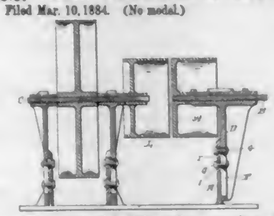


Claim.—1. The combination, substantially as set forth, of the box, the transverse partition located near the rear end of the box, an opening formed in the partition below the level of the lubricant in the box, whereby a communication is established between the front and rear chambers formed in the box by said partition, and the absorbent pad located between the partition and the rear end of the box, which lubricates the journal at that point and returns to the main receptacle or cellar any excess of lubricant.

2. The combination, substantially as set forth, of the box, the journal, the pad applied to the journal at the rear end of the box, and the lug formed on the box for holding the pad away from the rear end of the box.

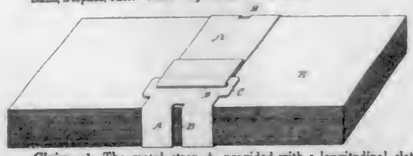
3. The combination, substantially as set forth, of the box, the journal, the pad, the spring which holds the pad against the journal and permits the pad to be compressed to allow for the play of the journal, the lug formed on the box, which holds the pad away from the rear wall of the box, the chamber in which the pad works, and a communication between said chamber and the front of the box.

299,322. PULLEY. WILLIAM T. BAKER and JOHN H. SHULL, Findlay, Ohio. Filed Mar. 10, 1884. (No model.)



Claim.—The combination of the pulley secured to a short shaft and the bearing in which the shaft is journaled, and which is provided with a vertical slot, with a base or hanger provided with transverse slots, and the clamping-bolts for securing the bearing in position, substantially as shown and described.

299,323. ENVELOPE FOR CURRENCY, CHECKS, &c. CHARLES A. BALL, Delphos, Ohio. Filed July 23, 1883. (Model.)



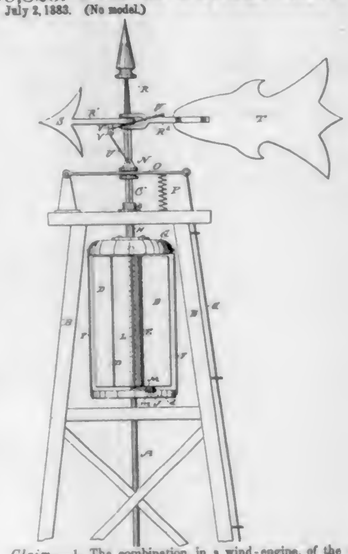
Claim.—1. The metal strap A, provided with a longitudinal slot, B, and at one end with a cross-piece, C, having a longitudinal slot, D, at right angles to the slot B, substantially as herein shown and described.

2. The combination, with a series of bank-notes, bills, &c., forming a pack, of a slotted strap for holding them together, and of a covering or wrapper for the pack, which wrapper has an opening over the slotted part of the strap to expose part of the edges of all the bills, &c., in the pack, substantially as herein shown and described.

299,324. PROCESS OF PURIFYING OR REFINING PETROLEUM AND OTHER DISTILLABLE OILS. RICHARD HATNES and JOHN PEARSMORE, Jr., Liverpool, County of Lancaster, England. Filed Nov. 14, 1883. (No specimens.)

Claim.—The process of bleaching and purifying dark-colored distillable oils, which consists in adding to the oil pulverized dry coke or charcoal impregnated with anhydrous chloride of zinc, such as described, till it arrives at the consistency of mud, subjecting it to distillation, and then condensing the distillate, substantially as described.

299,325. WIND-ENGINE. DAVID H. BAUSMAN, Lancaster, Pa. Filed July 2, 1883. (No model.)



Claim.—1. The combination, in a wind-engine, of the shaft A, carrying the horizontal wheel D E, with the shield F, secured to the disk G and ring J, the said disk G being supported by the shaft H and its collar, and provided on its under side with a bearing for the upper end of the shaft A.

2. In a wind-engine, the combination, with a horizontal wind-wheel, of an independent semi-cylindrical shield partly surrounding it, and of an adjustable regulator-wing pivoted in the frame of the shield and opposite the shield proper, substantially as shown and described.

3. In a wind-engine, the combination, with a horizontal wind-wheel, of the shield F, partly surrounding it, the disk G, the ring J, and the vertical adjustable wing L, pivoted in the ring J and in the disk G, substantially as herein shown and described.

4. In a wind-engine, the combination, with a horizontal wind-wheel, of a semi-cylindrical shield, F, partly surrounding it, the disk G, the ring J, the vertical wing L, the arm M, the arm *m*, provided with apertures *b*, and of the pin *d*, substantially as herein shown and described.

5. In a wind-engine, the combination, with a horizontal wind-wheel, of an independent shield partly surrounding it, a vane connected with the shield and provided with a joint between the ends, and of devices for giving the two parts of the vane the desired inclination to each other, substantially as herein shown and described.

6. In a wind-engine, the combination, with a horizontal wind-wheel and an independent shield partly surrounding it, of the shaft C, connected with the shield, a jointed vane, R, on the shaft C, the lever O, and the chain U, fastened to the vane-section R^2 and to the lever O, and passing over a pulley, V, on the vane-section R', substantially as herein shown and described.

7. In a wind-engine, the combination, with a horizontal wind-wheel and an independent shield partly surrounding it, of the shaft C, the jointed vane R, the lever O, the spring P, the rod or wire Q, the sleeve N, and the chain U, secured to the sleeve N and to the vane-section R^2, and passing over a pulley on the vane-section R', substantially as herein shown and described.

8. In a wind-engine, the combination, with a horizontal wind-wheel and an independent shield, of the shaft C, the jointed vane R, the spring

I, fastened to the vane part R^2 and the arm W of the part R', and of devices for inclining the vane part R^2 to the vane part R', substantially as herein shown and described.

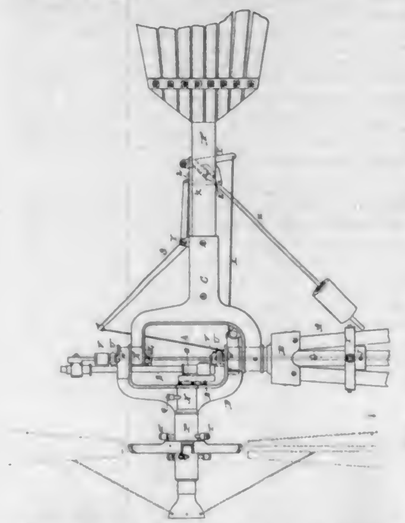
299,326. CORSET-STEEL FASTENING. THEODORE C. BATES, North Brookfield, Mass. Filed Sept. 3, 1883. (No model.)



Claim.—1. In a corset-steel fastening, the steel A and its attached headed stud, combined with steel B, and attached lock-clasp, composed of upper and lower plates and having two spring-arms, the free ends of which are made to enter the space between the said plates, the said spring-arms being guarded by the said plates and prevented from being sprung or bent up or down with relation to the face of the said steel, and being movable at right angles to the length of the slot in the said plate, whereby the arms are adapted to yield laterally to the movement of the stud in the slot, and to then spring behind the said stud, substantially as described.

2. In a corset-steel fastening, the spring-arms having the large opening and the contracted space between them, combined with a plate above and below them, between which the said arms may move in a direction parallel with the broad side of the steel to which the said fastening is attached, substantially as described.

299,327. WINDMILL. GEORGE M. BEARD, Auburn, Ind. Filed Sept. 7, 1883. (No model.)



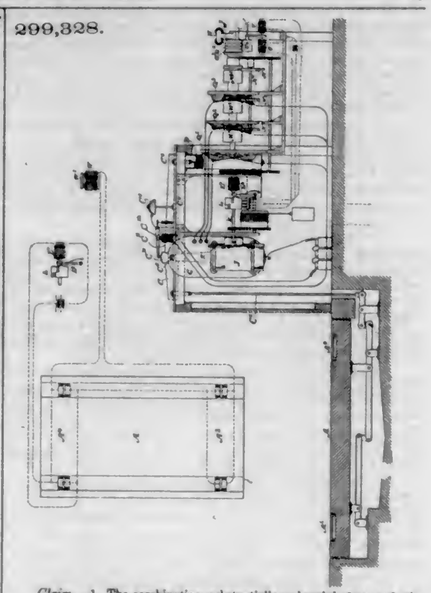
Claim.—1. In a windmill, the combination of the two castings C D and tube G, the casting C being provided with the bearing E, and having the end of the tube G to project above the top of its lower portion, and the casting D being provided with an opening in its lower end to catch over the top of the tube G, and having a tubular portion for passing down through the bearing E, substantially as shown.

2. The combination of the guides and the slotted adjusting-plates, which are made to bear against opposite sides of the pump-rod, substantially as described.

3. The combination of the vane and the triangular-shaped lever, which is connected with the casting D by means of a connecting-rod, and with an operating-lever, and which triangular-shaped lever has the weighted rod clamped to it, substantially as specified.

299,328. ELECTRIC AUTOMATIC RECORDING APPARATUS FOR WEIGHING-MACHINES. WILLIAM H. BECKLER, Newport, R. I. Filed Sept. 20, 1881. (No model.)

299,328.



Claim.—1. The combination, substantially as hereinbefore set forth, of a weighing-platform, a pendulum or suspended weight swinging on an axis turning in bearings attached to said platform, a treadle projecting above the surface of said platform and adapted to swing said pendulum in either direction from its normal position of rest, a contact-point depending from said axis and moving with said pendulum, a stationary contact-point, and an electric circuit closed by the contact of said contact-points.

2. The combination, substantially as hereinbefore set forth, of a platform, two treadles upon said platform, constructed substantially as described, so that one actuates a circuit-closer only when depressed by a vehicle passing over the platform in one direction, while the other actuates a like circuit-closer only when depressed by a vehicle in the opposite direction, and an electric circuit which is completed by the action of either of said circuit-closers.

3. The combination, substantially as hereinbefore set forth, of a platform, a balanced lever, an antagonistic spring, a toothed segment actuated by the movements of said lever upon its fulcrum, a train of multiplying wheel-work actuated by said segment, and a circuit-closing arm actuated by said wheel-work and moving over a series of contact-points, but normally not in contact therewith.

4. The combination, substantially as hereinbefore set forth, of a platform, a balanced lever, an antagonistic spring, a toothed segment actuated by the movements of said lever upon its fulcrum, a train of multiplying wheel-work actuated by said segment, and two or more circuit-closing arms moved by dependent arbors in said train of wheel-work, but at different angular velocities, over a series of contact-points, but normally out of contact therewith.

5. The combination, substantially as hereinbefore set forth, of the movable arm, the spring push-button and contact-roller mounted thereupon, and the insulated contact-points.

6. The combination, substantially as hereinbefore set forth, of the movable arm, the spring push-button and contact-roller mounted thereupon, the laterally-flexible supports of said contact-roller upon the arm, the insulated contact-points, and the inclined guides for insuring the contact of said roller with the insulated contact-points.

7. The combination, substantially as hereinbefore set forth, of a disk or dial having a series of pairs of electrical contact-points upon its face, inclined guides between each pair of contact-points, a rotating arm moving over the face of said disk or dial, and a contact-roller mounted upon said arm by means of yielding supports, substantially such as described whereby said roller is capable of a lateral movement with reference to its supporting-arm when deflected by the inclined guides.

8. The combination, substantially as hereinbefore set forth, of a platform, a balanced lever, an antagonistic spring, one or more circuit-closing arms actuated through suitable intermediate mechanism by the movements of said balanced lever, and moving over but not normally in contact with a series of contact-points, and independent mechanism actuated by a time-train for closing an electric circuit by pressing the said circuit-closing arm or arms against the opposite contact-points.

9. The combination, substantially as hereinbefore set forth, of a series of contact-points, a movable circuit-closer passing in front of said series of contact-points, but not normally in contact therewith, a platen for pressing said circuit-closer against the contact-points confronted thereby, a shaft driven by a time-train, and a system of compound levers actuated by said shaft for bringing said platen into contact with the circuit-closing devices and then returning it to its normal position.

10. The combination, substantially as hereinbefore set forth, of a shaft driven by a time-train, a detent for arresting said shaft at a determinate point in its revolution, an electro-magnet for withdrawing said detent and releasing the shaft and time-train, devices actuated by said shaft for closing an electric circuit, printing or recording mechanism, and an electro-magnet included in said electric circuit for actuating said printing or recording mechanism.

11. The combination, substantially as hereinbefore set forth, of a type-wheel driven by friction from a constant motor, a stop mechanically attached to and revolving with said type-wheel, a series of detents equal in number to the characters or divisions upon said type-wheel, and a series of electro-magnets for actuating said detents, each one of which, when vitalized, throws its associate detent into the path of the revolving stop upon the type-wheel, and thereby arrests the latter at a determinate and corresponding point in its revolution.

12. The combination, substantially as hereinbefore set forth, of a type-wheel and drum rotating upon a common axis, a series of stationary electro-magnets placed circumferentially around said drum, with their armature-levers extending toward the periphery of the drum in a direction tangential thereto, and a stop projecting from the periphery of the drum which takes against any one of said levers when it has been moved in a direction parallel to the axis of the drum.

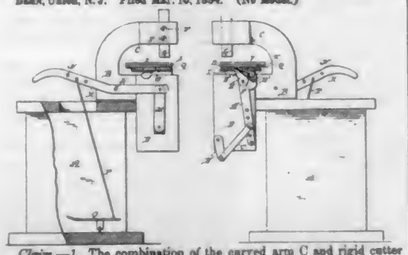
13. The combination, substantially as hereinbefore set forth, of one or more type-wheels, a platen, an armature attached to said platen, a paper-feeding roller, and two electro-magnets acting independently upon the same armature, one to impel said platen toward the type-wheel, and the other to withdraw said platen from the type-wheel, and simultaneously to throw the paper-feeding roller into gear with a constant motor.

14. The combination, substantially as hereinbefore set forth, of a platform, two treadles upon said platform, constructed substantially as described, so that one actuates a circuit-closer only when depressed by a vehicle passing over said platform in one direction, while the other actuates a like circuit-closer only when depressed by a vehicle passing in the opposite direction, an electric circuit which is divided into two branches, one of said circuit-closers being included in each branch, an electro-magnet included in the undivided portion of the circuit, a printing or recording mechanism actuated by said electro-magnet, an independent electro-magnet included in one of said branches, and an independent recording mechanism actuated thereby.

15. The combination, substantially as hereinbefore set forth, of one or more type-wheels, one or more electro-magnets for controlling the position of said type-wheels, a platen, an independent printing, stamping, or recording device and an independent electro-magnet for bringing said device into line with said type wheel or wheels and facing said platen.

16. The combination, substantially as hereinbefore set forth, of a main platform, an electric circuit-closer actuated by the depression of a treadle mounted upon said platform, an electro-magnet, a detent actuated thereby, a time-train, printing or recording mechanism actuated by said time-train, one or more supplementary platforms, and one or more circuit-breakers actuated thereby, whereby the action of the time-train is prevented by the depression of the supplementary platform or platforms.

299,329. MACHINE FOR CUTTING BUTTON-HOLES. HENRY A. BEEN, Union, N. J. Filed Mar. 10, 1884. (No model.)



Claim.—1. The combination of the curved arm C and rigid cutter G with a vertically-moving table and an operating mechanism, substantially as shown, for both raising the table and revolving it, substantially as described.

2. The combination of the rigid cutter, a vertically moving and revolving table, a standard on which the table is placed, an operating-lever, and a mechanism for revolving the table, substantially as shown.

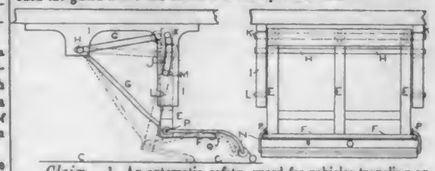
3. The combination of the table, the two extensions C D, the standard I, which is moved vertically by the operating-lever, the revolving table, the pawl-and-ratchet mechanism for causing the table to revolve, and the stationary cutter, substantially as set forth.

4. The combination of the vertically moving and revolving table, the standard I, lever K, and link M with levers A' B', connecting-rod C', and spring-pawls and a stationary cutter, substantially as specified.

5. The combination of the bracket B, having extensions C D and grooves or ways E H, with the cutting-blade G, standard H, standard I, disk S, (having teeth T,) pivoted thereon, lever K, link M, lever D', link C', and pawl E', substantially as shown and described.

299,330. PILOT OR WHEEL-GUARD. GEORGE W. BENNETT and THADDEUS S. FITCH, San Francisco, Cal. Filed Nov. 7, 1883. (No model.)

Brief.—A frame forming a guard in front of the wheels is hung up out of the way when not in use, and a light trigger-frame extends in front of it, which, when struck by an obstruction on the track, pushes back the guard-frame and allows it to fall upon the track.

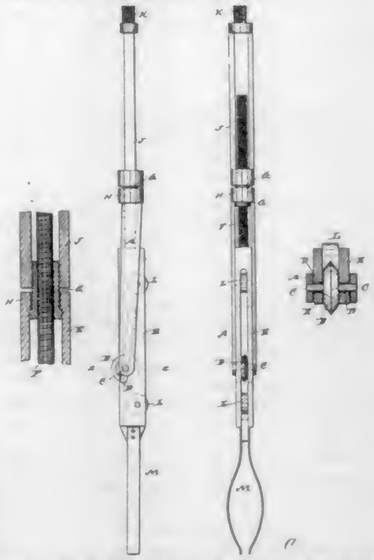


Claim.—1. An automatic safety-guard for vehicles traveling on rails, consisting of the combination of a frame to form the guard, hung up above the track upon supports when out of service, and a light trigger-frame attached thereto, capable of running close to or upon the track, but not in itself acting as a wheel-guard, which, upon striking an obstacle, will push back the guard to release it from its supports to fall upon the rails, substantially as and for the purpose described.

2. The combination of the drop-frame E, shelf F, trigger-frame N, hangers I I, braces G, and fulcrum-rod H, all arranged and operating together substantially as and for the purpose described.

3. The light trigger-frame N, not being in itself a wheel-guard, passing close to or upon the track, and acting, immediately upon striking an obstacle, to bring into operation any suitable wheel-guard, substantially as and for the purpose described.

299,331. WELL-PIPE CUTTER. ALFRED WILLARD BENSON, San Bernardino, Cal. Filed Mar. 3, 1884. (No model.)



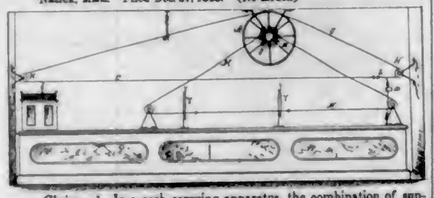
Claim.—1. In a well-pipe cutter, the combination, with the forked part A, of the forked part E within it, the cutter-roller B, pivoted in the lower part of the part A, the pintle C, passing through diagonal slots D in the part E, and of means for adjusting the part E higher or lower in the part A, substantially as herein shown and described.

2. In a well-pipe cutter, the combination, with the forked part A, of the forked part E within it, the cutter-roller B in the lower end of the part A, the pintle of the roller passing through diagonal slots D in the part E, means for adjusting the part E higher or lower in the part A, and of the springs M on the lower end of the part E, substantially as herein shown and described.

3. In a well-pipe cutter, the combination, with the forked part A, of the forked part E, having diagonal slots D, the cutter-roller B, held in the part A, the springs M on the lower end of the part E, and the rollers L on the part E, substantially as herein shown and described.

4. In a well-pipe cutter, the combination, with the forked part A, of the forked part E within the same, and provided with diagonal slots D, the cutter-roller B in the lower end of the part A, the internally-threaded sleeve G, held to turn in the upper end of the part A, and of the swivel J, secured to the sleeve G, substantially as herein shown and described.

299,332. CASE AND PARCEL CARRIER. WILLIAM P. BIGELOW, Natick, Mass. Filed Dec. 27, 1883. (No model.)



Claim.—1. In a cash-carrying apparatus, the combination of supporting and driving wheels carrying a moving belt, and a cash-receptacle borne thereon, with multiplying-wheels and means of actuating them, so as to give increased speed to the belt-driving wheel, substantially as set forth.

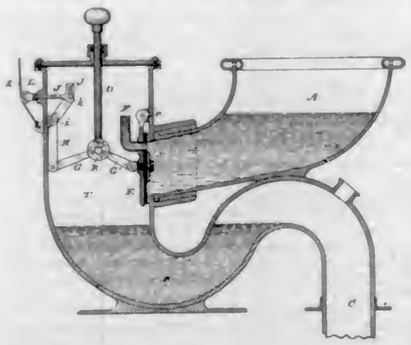
2. In a carrying apparatus, supporting and driving wheels and a moving carrying-belt and receptacle traveling thereon, in combination with means of accelerating the speed of said parts, and a spring for effecting a return movement, substantially as set forth.

3. In a cash or parcel carrying apparatus, two or more supporting and driving wheels upholding and giving a traveling motion to an endless carrying-belt and a suitable receptacle carried thereon, in combination with a band-belt or equivalent device for actuating the apparatus, when desired, at a speed and to a distance beyond that of the actuating device, a spring serving to return the receptacle when desired, and a suitable catch to prevent its premature return, substantially as set forth.

4. In a carrying apparatus, a carrying-belt mounted on a driving-wheel and on one or more supporting-wheels, in combination with an accelerating-spring secured at one end to a stationary casing, which incloses it, and at the other end to a part of the driving-wheel, for the purpose set forth.

5. The driving-wheel A, supporting-wheel H, and carrying-belt C, in combination with the multiplying-wheel E, pulley F, and hand-belt G, substantially as set forth.

299,333. WATER-CLOSET ATTACHMENT. JAMES W. BURKETT, Brooklyn, N. Y. Filed Jan. 14, 1884. (No model.)

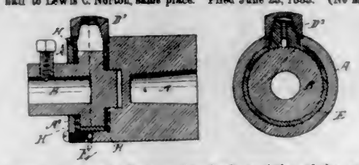


Claim.—1. In a water-closet, a toggle-lever having vertically-moving connecting-link, and the outer ends of its arms pivoted to and supported, respectively, by the exit-valve and the water-supply-operating lever, as set forth.

2. In a water-closet, the pull-handle D, push-rod J, pivoted bent lever H, and suitable connecting mechanism, in combination with a valve-controlling cord fixed at one end and adapted to be drawn downward by the thrust of said push-rod, substantially as described.

3. In a water-closet, the combination of exit-valve E, provided with suitable overflow, the toggle-levers G G', and connecting-link R, interposed between said toggle-levers and the pivoted bent lever H, said lever H also being connected to and operating the water-supply-controlling devices, substantially as shown and described.

299,334. CHUCK. JOHN G. BLOUNT, Boston, Mass., assignor of one-half to Lewis C. Norton, same place. Filed June 23, 1883. (No model.)

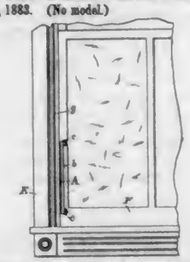


Claim.—1. The chuck above described, consisting of the parts A and B, the one adapted to be attached to and form a part of the lathe-spindle and the other to carry the work or tool, the two being held together by means of one or more friction-clamps, each provided with suitable means of adjustment, all substantially as and for the purposes set forth.

2. In a chuck, the combination of the piece A, forming a part of the lathe-spindle, and the piece B, adapted to hold the work or tool with a suitable clamp and one or more set-screws, the said pieces abutting against each other, and the said clamp and set-screws serving to hold said pieces together and regulate the friction between said abutting surfaces, all substantially as described.

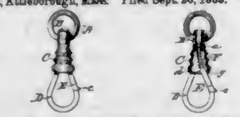
3. In a chuck, the combination of the piece A, forming a part of the lathe-spindle, and the piece B, adapted to hold the work or tool, with a suitable clamp and one or more set-screws, the said pieces being suitably connected, as described, and free to rotate independently of each other, and the said clamp and set-screws serving to regulate the friction between said pieces, all as set forth.

299,335. SASH-HOLDER. GILBERT C. BOLGIANO, Baltimore, Md. Filed Sept. 22, 1883. (No model.)



Claim.—A sash-holder consisting of a vertical bar pivoted to the window-case, and provided with two rollers—one above and one below the pivot—the said rollers turning upon axes at right angles with the front side of the bar, whereby the rollers may bear against the front face of the sash, as set forth.

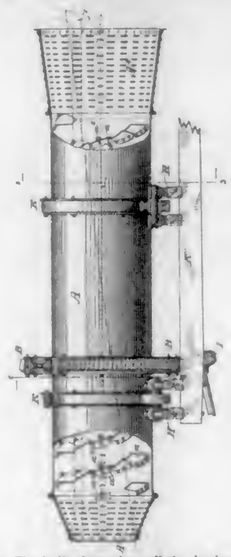
299,336. SWIVEL-HOOK FOR ORNAMENTAL CHAINS. DANIEL F. BRIGGS, Attleborough, Mass. Filed Sept. 20, 1883. (No model.)



Claim.—1. In a swivel-hook for ornamental chains, the combination of the barrel, the swivel-ring, and the fixed hook, the end of which serves to form a stop for a spring-bolt, with the spring and bolt provided with a safety-stop adapted to prevent the loss of the bolt in case of the accidental bending of the hook, substantially as described.

2. In a swivel-hook for ornamental chains, the combination of the barrel C, provided with the lip *d*, swivel-ring A, and fixed hook D, with the spring F and bolt E, provided with the shoulder *d*, adapted to form a safety-stop, substantially as described.

299,337. APPARATUS FOR WASHING PHOSPHATE ROCK, ORES, &c. FRED BROTHERHOOD, Charleston, S. C. Filed Jan. 23, 1884. (No model.)



Claim.—1. The inclined rotating cylinder having the inwardly-flaring perforated lower section, the outwardly-flaring perforated upper section, and spirally-arranged rib-sections, substantially as and for the purpose hereinbefore set forth.

2. The combination of the inclined rotating washing-cylinder imperforate for the greater portion of its length, and having the rib-sections, the perforated outwardly-flaring outer section of the cylinder, and the chute by which refuse material passing through the perforations of said outer section is conveyed away beneath the imperforate portion of the cylinder and toward its lower end, substantially as and for the purpose hereinbefore set forth.

3. The combination of the cylinder, the ring C', having the peripheral edge-flange *c'*, the ring-gear constructed independently of said ring, and the securing bolts and nuts by which the ring and ring-gear are detachably connected with each other, and these parts secured to the cylinder, substantially as and for the purpose hereinbefore set forth.

4. The combination of the cylinder, the ring F, the flanged ring-wheel, and the bolts and nuts by which it is secured in place, substantially as and for the purpose hereinbefore set forth.

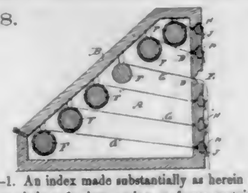
5. The combination of the cylinder, the ring C', secured thereto, and having inner and outer flanges, *b' c*, and the peripheral flange *c'*, the ring-gear, and the securing bolts and nuts by which it is detachably secured about the ring and against its peripheral flange, substantially as and for the purpose hereinbefore set forth.

6. The combination of the cylinder, the band C, the ring C', bolted to the cylinder with the band, and having the inner and outer flanges, *b' c*, and the peripheral flange *c'*, the ring-gear, and its securing bolts and nuts, substantially as and for the purpose hereinbefore set forth.

7. The combination of the cylinder, the ring F, secured thereto, and having the shouldered flange G, and shorter flange *g* upon its opposite edges, the flanged ring-wheel, and the securing bolts and nuts by which the ring-wheel is secured in place, substantially as and for the purpose hereinbefore set forth.

8. The combination of the cylinder, the band E, the ring F, bolted to the cylinder with the band, and formed with the cross-ribs *n*, the shouldered flange G, and the shorter flange *g*, the flanged ring-wheel, and the bolts and nuts by which the ring-wheel is secured in place, substantially as and for the purpose hereinbefore set forth.

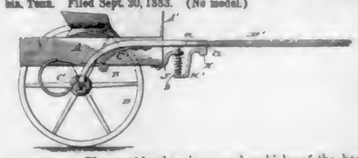
299,338. INDEX. THOMAS C. BROWN, Norborne, Mo. Filed Aug. 29, 1883. (No model.)



Claim.—1. An index made substantially as herein shown and described, and consisting of a box, casing, or frame containing a series of spring-rollers to which the index-sheets are fastened and on which they are wound, as set forth.

2. In an index, the combination, with a box having its front slotted and grooved longitudinally, of spring-rollers journaled in the said box, index-sheets secured to the said rollers and passing through the slots, and slats secured on the outer ends of the sheets, substantially as herein shown and described.

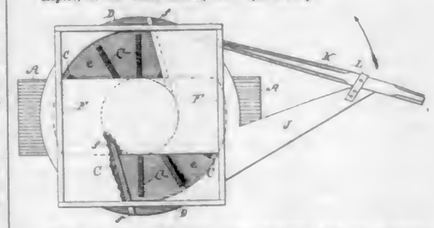
299,339. TWO-WHEELED VEHICLE. WILLIAM M. BUCHNAN, Columbia, Tenn. Filed Sept. 20, 1883. (No model.)



Claim.—1. The combination, in a road-vehicle, of the body A, mounted on a transverse bar, B, forward of the axle C, to which the thills are rigidly attached, and the springs C C', to which the ends of the cross-bar are pivotally attached, substantially as and for the purposes specified.

2. The combination, in a road-wagon, of the body A, mounted on a transverse bar, B, the axle C, and thills D', the springs C' C, goose-necks J, the springs S, and the pins *a*, and supporting angle-irons H', all arranged substantially as specified.

299,340. GRINDING-MILL. CHARLES CAMERON BURNER, Traveller's Repose, W. Va. Filed Mar. 23, 1884. (No model.)



Claim.—1. The combination, with a stationary hub and grinding-surfaces projecting beyond the hub and supported thereon, of a wheel journaled to revolve on said hub, cogs loosely fitted in said wheel, and means, substantially as described, for raising and lowering the cogs, for the purpose specified.

2. The combination, with the stationary hub B and the spiral flanges *a*, fixed thereon, of the radially-slotted wheel D and the cogs C, fitted to slide in said slots, and notched to ride upon the flanges *a*, as and for the purpose specified.

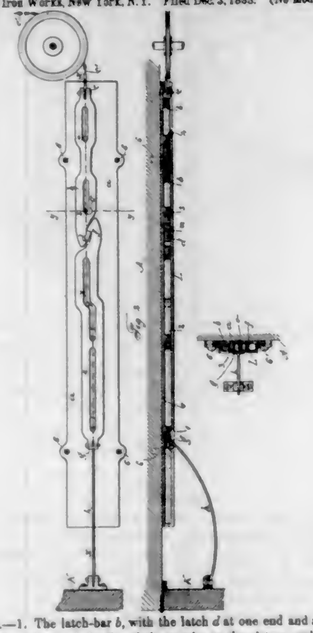
3. The combination, with the stationary hub B, the slotted wheel D, fitted to revolve thereon, cogs C, loosely fitted in said slots, and means, substantially as described, for raising and lowering the cogs, of the radial teeth *d*, fixed upon the hub B, substantially as shown and described.

4. The combination, with a slotted wheel, cogs fitted therein, and means, substantially as described, for raising and lowering said cogs, of a series of teeth gradually decreasing in height, radially fixed relatively to the said cogged wheel, as and for the purpose specified.

5. The combination, with the stationary hub B, the slotted wheel D, the cogs C, loosely fitted therein, means for raising or falling said cogs, and means for opposing them with a stationary grinding device, of the hopper F, having two inlets, *e*, to the mill, said hopper resting on the wheel D, and provided with the scraping-edges *f*, as and for the purpose specified.

6. The combination, with the slotted wheel D, of the cogs C, fitted therein, and means, substantially as described, for operating the same, the walls of said slots being recessed, as and for the purpose specified.

299,341. ATTACHMENT FOR OPERATING CISTERN-VALVES FOR WATER-CLOSETS. DANIEL BURROWS, Brooklyn, assignor to the J. L. Mott Iron Works, New York, N.Y. Filed Dec. 3, 1883. (No model.)

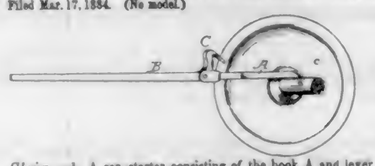


Claim.—1. The latch-bar *b*, with the latch *d* at one end and a connection at the other end for the chain or wire to the cistern-valve, in combination with the slide-bar *e*, latch *f*, and link A, or connection to the door or moving device, for the purposes and substantially as set forth.

2. The slotted latch-bar *b*, latch *d*, plate *a*, and studs 3 and 4, in combination with the slide-bar *e*, slotted longitudinally and zigzag, and the studs 1 and 2 on the plate *a*, and the cover or case L, substantially as set forth.

3. The latch-bar *b*, slotted and having the end of the slot widened at *o*, in combination with the plate *a*, studs 3 and 4, the slide-bar *e*, with the latch *f*, the zigzag or offset at the slot in said bar *e*, and the studs 1 and 2, substantially as set forth.

299,342. CAR-STARTER. WALLER JAMES CALDWELL, Rives, Tenn. Filed Mar. 17, 1884. (No model.)



Claim.—1. A car-starter consisting of the hook A and lever B, having a long arm, as shown, and a short arm, C, extending at right angles therefrom, and having its end curved, as shown.

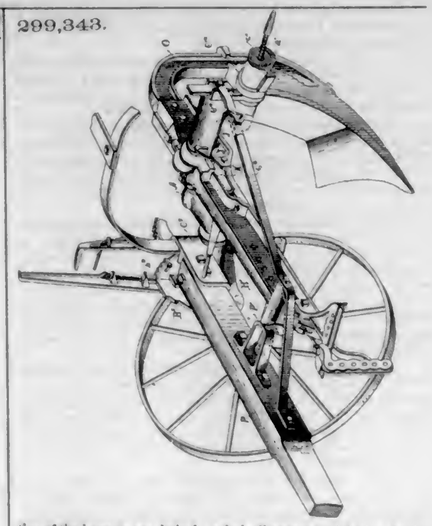
2. The combination, with the attaching-hook A, of the lever B, having a long arm, and having a short arm, C, extending at right angles therefrom, and having its end provided with a V-cut, whereby it is enabled to straddle the flange of a car-wheel, substantially as set forth.

299,343. SULKY-PLOW. WILLIAM L. CASADAY, South Bend, Ind., assignor of one-half to the South Bend Iron Works, same place. Filed Feb. 12, 1884. (No model.)

Claim.—1. In a sulky-plow, the combination, with the supporting-wheels, of a crank having a jointed plow-beam journaled thereon, and devices for detachably locking the crank to one of the supporting-wheels for elevating the plow by the draft of the team, substantially as set forth.

2. In a sulky-plow, the combination, with the supporting-wheels and tongue, of a crank-axle, and a jointed plow-beam journaled at its jointed portion on the crank-axle, means for securing the forward section of the beam to any desired vertical adjustment, and devices for detachably locking the crank to one of the supporting-wheels, substantially as set forth.

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3. In a sulky-plow, the combination, with the supporting-wheels, a crank-axle, one end of which is journaled in a sleeve, and a tongue secured to said sleeve, of a hinged plow-beam constructed to be locked to form a rigid beam, and devices for locking the crank-axle to one of the supporting-wheels for raising the plow, substantially as set forth.

4. In a sulky-plow, the combination, with a crank-axle, a plow-beam journaled on the crank-axle, and supporting-wheels, one of which is provided with an annular series of pockets or recesses, of a sliding dog supported in the hollow spindle of the crank-axle, and devices for moving the dog into and out of engagement with the pockets or recesses on the supporting-wheel, substantially as set forth.

5. The combination, with a cranked axle supported on wheels and a jointed plow-beam journaled on the axle, of devices for rigidly locking the two parts of the beam together, and devices for locking the axle to one of the wheels, substantially as set forth.

6. The combination, with a cranked axle, wheels supporting the axle, a jointed plow-beam journaled to the said axle, and devices for locking the axle to one of the wheels, of a device for locking the two parts of the jointed beam, and a lever for simultaneously unlocking the two parts of the beam and locking the axle to one of the ground-wheels.

7. The combination, with a cranked axle, a jointed plow-beam journaled on said axle, wheels supporting the axle, and devices for locking one of the wheels to the axle, of a sliding tongue for locking the two parts of the jointed beam, a spring-actuated dog indirectly connected to said tongue, and a lever for simultaneously moving the tongue and dog.

8. The combination, with a cranked axle having spindles formed on the opposite ends thereof, sleeves in which the said spindles rest, and wheel-spindles connected to the sleeves, of a sector secured to the axle-spindle on one side of the machine, and a hand-lever connected to the sleeve on the same side of the machine and provided with a dog for engaging the sector, and a hand-lever connected to the axle-spindle on the opposite side of the machine, and provided with a dog for engaging a sector secured to the sleeve on the same side of the machine.

9. The combination, with a cranked axle supported in sleeves and wheel-spindles connected to the sleeves and forming cranks, of a jointed plow-beam, tongue for locking the two parts of the beam, a sliding dog for locking the axle to one of the wheels, and mechanism connecting the tongue and dog, whereby they are operated simultaneously, substantially as set forth.

10. The combination, with the cranked axle provided with the spring-actuated dog, the wheels, one of which is provided with a recessed plate, and a jointed plow-beam journaled to the axle, of a tongue for locking the two parts of the jointed beam, and provided with a plate having a cam-slot formed therein, a bell-crank lever, one end of which is connected to the dog, while the opposite end rests within the cam-slot, and a lever for operating the tongue and dog simultaneously.

11. The combination, with the cranked axle and spring-actuated sliding dog seated within the axle, wheels, one of which is provided with a recessed ring or plate, and a jointed plow-beam journaled on the axle,

of a spring-actuated sliding tongue for locking the two parts of the beam, and intermediate devices connecting the dog and tongue, whereby both are operated simultaneously.

12. The combination, with a cranked axle and supporting-wheels, of a jointed plow-beam made up in sections and embracing the axle at the joint, the said sections being provided with lips or projections for holding the two portions of the beam in the same plane.

13. The combination, with a cranked axle and supporting-wheels, of a jointed plow-beam consisting, essentially, of two rear sections secured together and embracing the axle, and two front sections secured together and embracing the rear section, one or more of the said sections being provided with projections for holding the parts of the beam in the same plane, substantially as set forth.

14. The combination, with a cranked axle and supporting-wheels, of a jointed plow-beam consisting, essentially, of two rear sections secured together, each of which is provided with a semicircular bearing for embracing the axle, and a rearward extension and two front sections secured together and provided with bearings for embracing the bearings of the rear sections, one or more of the said sections being provided with lips for holding the two parts of the beam in the same plane, and a plow-standard secured between the rearward extensions of the rear sections, substantially as set forth.

15. The combination, with a crank-axle having spindles on opposite ends, a spring-actuated dog seated in one of the said spindles, devices for operating the dog, and a spindle-sleeve having a wheel-spindle formed integral therewith, of a sector secured to the axle-spindle, a hand-lever secured to the sleeve and provided with a spring-actuated dog, and a land-wheel provided with a recessed ring, with which the spring-actuated dog engages.

16. The combination, with an axle having spindles formed on opposite ends thereof, of a sleeve rigidly secured to the draft-tongue, a wheel-spindle pivotally secured to the sleeve, and a lever for moving the spindle horizontally.

17. The combination, with an axle having a spindle on one end thereof, of a sleeve, C, rigidly secured to the draft-tongue and provided with a sector, a lever, B^4, loosely secured to the spindle, and provided with a dog for engaging the sector, and a plate, B^3, rigidly secured to the spindle and connected to the lever B^4.

18. The combination, with an axle having a spindle on one end thereof, of the sleeve C, rigidly secured to the draft-tongue and supporting said spindle, the levers B^4 and B^3, and the sector for engaging the dog on the lever B^4, all of the above parts constructed as described.

19. The combination, with the axle having spindles on opposite ends, of the sleeve C, rigidly secured to the draft-tongue and supporting one end of the axle, the pivoted block secured to the under side of the sleeve, devices for turning the block, and a wheel-spindle secured to the block, substantially as set forth.

20. The combination, with the sleeve C, supporting one end of the axle, and provided with a two-part sector, one part of which is adjustable on the other, of a hand-lever rigidly secured to the axle, and provided with a dog for engaging the two-part sector.

21. The combination, with the sleeve C, supporting one end of the axle, and provided with a two-part sector, one part of which is provided with ordinary pinion-teeth and adjustably secured to the other, which is provided with ratchet-teeth, of the hand-lever rigidly secured to the axle, and provided with a dog for engaging the sector, substantially as set forth.

22. The combination, with a sulky-frame having a tongue, a laterally-projecting bracket secured to the tongue, and a plow-beam situated under the bracket, of a sleeve loosely journaled to the bracket, and provided with an extensible arm, the lower end of which is loosely secured to the front end of the beam, substantially as set forth.

23. The combination, with a plow-standard provided at its lower end with a transverse slot, of a plow provided on its rear face with a block, R', the arm R^3, bolt r^3, for clamping the standard between the arm and block, and a bolt for securing the lower end of the standard to the plow, substantially as set forth.

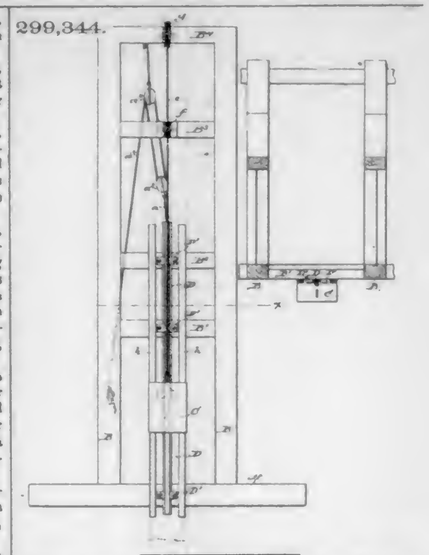
24. In a sulky-plow, the combination, with the supporting-wheels, of a crank-axle journaled at its opposite ends in sleeves connected with short axles, on which the supporting-wheels are mounted, a jointed plow-beam journaled on said crank-axle, said jointed beam being adapted to be locked together and form a rigid beam, and devices for detachably locking the crank-axle to one of the supporting-wheels, substantially as set forth.

299,344. PILE-DRIVER. GEORGE H. CAVANAGH, Boston, Mass. Filed Jan. 23, 1884. (No model.)

Brief.—A pile-driver provided with a vertically-adjustable track running in guides to guide the hammer below the level of the pile-driving machine.

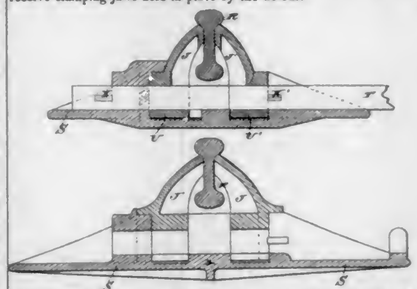
Claim.—In an apparatus for driving piles or plank, a frame-work, track guides or chairs on the outer side of said frame, a vertically-adjustable track placed in said guides or chairs, and means to move and retain said track in proper position, combined with a hammer arranged to slide upon said track, substantially as described.

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299,345. RAILWAY SLEEPER AND CHAIR COMBINED. JOSEPH CRATER, Seetarampore, Burdwan, Bengal, India. Filed Mar. 24, 1884. (No model.) Patented in India Dec. 8, 1883, No. 203; in England Jan. 18, 1884, No. 1,722; in France Feb. 1, 1884, and in Germany Feb. 7, 1884.

Brief.—Railway-sleepers consisting of recessed chair-plates which receive clamping-jaws held in place by the tie-bar.



Claim.—A combined railway sleeper and chair, consisting of a sleeper in recesses of which jaws holding the rail are fixed by a tie-bar passed through them and secured by keys, substantially as herein described.

299,346. TACK-MACHINE. HARVEY B. CHESS, Pittsburg, Pa. Filed Nov. 8, 1883. (Model.)

Claim.—1. In a tack and nail machine, the shaft A, having a prolongation, *a*, and spherical wrist-pin B, in combination with the pitman H and heading-lever G, substantially as and for the purpose set forth.

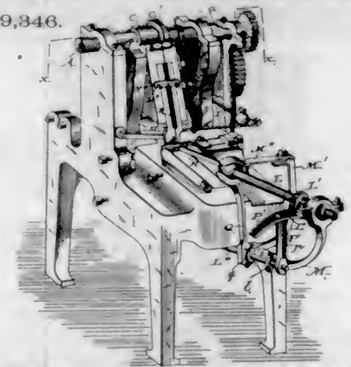
2. In a tack-machine, the shaft A, having an extension, *a*, and spherical wrist-pin B, and provided with cutter-cams C C', of unequal width, and a haul-off cam, C'', cast solid with the said shaft, in combination with the cutter-jaws, the leader D, and logy D', and the spring-lever V, all constructed to operate substantially as and for the purpose herein set forth.

3. The rear adjusting-screws, E, threaded at the point *s* in the base of the arch, in combination with the cutter-jaws and cutters, substantially as and for the purpose set forth.

4. The moving die F and gripping-lever F', in combination with the L-shaped piece F''' and reversed wedge-like plate F'''' and set-screw *f'''*, all constructed to operate substantially as and for the purpose set forth.

5. The bearer I and the herein-described means for moving the bearer in or out, in combination with the stop K and haul-off spring-lever V, substantially as and for the purpose set forth.

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6. The bearer I and stem J, in combination with the adjustable clamp I' and leader-jaw, all constructed to operate substantially as and for the purpose set forth.

7. The feeder-barrel L, provided with the pinion L' and the rock-shaft L''', in combination with the arc-rack L'', the arc P, the arm P', and spring-latch *p*, all constructed to operate substantially as and for the purpose set forth.

8. The rock-shaft L''', having bearings *l l*, attached to the rest M, the arm P', provided with the spring-latch *p*, the arc-rack L'', pinion L', and the arc P, in combination with the feeder-barrel L and barrel-rest M, all constructed to operate substantially as and for the purpose set forth.

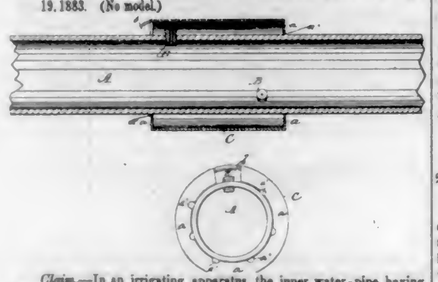
9. The barrel-rest M, provided with the slots *m* and screws *n*, and adjusting-screw *l'*, in combination with the feeder-barrel L, provided with the pinion L', the rock-shaft L''', carrying the arm P', the arc P, and arc-rack L'', the arm M', and the barrel-spring M'', all constructed to operate substantially as and for the purpose set forth.

10. The rock-shaft L''', provided with the crank or lever *l''* on its end, and provided with a spherical wrist, in combination with the pitman N and counter-shaft N', substantially as and for the purpose described.

11. The rock-shaft L''', provided with the cam *q*, arm P', arc P, and arc-rack L'', in combination with the lifting device Q and feeder-barrel L, provided with the pinion L', substantially as and for the purpose described.

12. The nose-piece R, provided with the perforated shank *r*, in combination with the feeder-barrel L, provided with the stud *r'*, and ball-ferrule S, provided with a recess to receive the shank and the screw *r''*, substantially as herein described, and for the purpose set forth.

299,347. IRRIGATING APPARATUS. WILLIAM R. CHISHOLM, Laredo, Tex., assignor of one-half to Albert L. McLane, same place. Filed Sept. 19, 1883. (No model.)



Claim.—In an irrigating apparatus, the inner water-pipe having the nozzles projecting from the inner and outer surfaces of said pipe, in combination with the outer pipe or casing inclosing the outer ends of the nozzles, said outer pipe or casing having water passages or apertures in its ends, substantially as shown and described, and for the purpose set forth.

299,348. METHOD OF MAKING ROTARY CUTTERS. DUANE H. CHURCH, Waltham, Mass. Filed Dec. 29, 1883. (No model.)

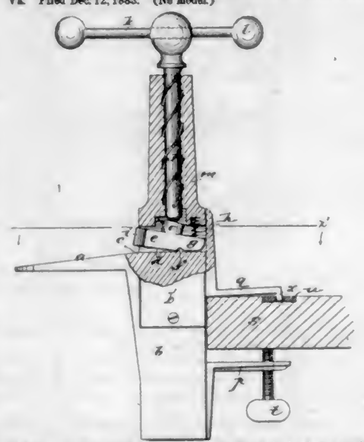
Claim.—1. The improved method of making rotary cutters herein described, the same consisting in slotting a disk to form the front edges of the cutting-teeth, then slotting the disk at the rear portions of the teeth, and then bending the rear portions of the teeth inwardly, as set forth.

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2. The improved rotary cutter, having the transverse slots at *b b*, forming the front surfaces of the teeth, and the slots *c c* at the rear portions of said teeth, whereby the backs of the teeth are enabled to be bent, and thus given the requisite clearance, as set forth.

299,349. SAW-SET. GEORGE ALBERT FRANCIS CLAYTON, Masonville, Va. Filed Dec. 12, 1883. (No model.)



Claim.—1. The stock *b*, having the inclined bed-plate *a*, with its inner upper surface forming an angle, *c*, with the floor of the mortise in said stock, in combination with the pivoted die *e*, press-screw *j*, and the spring *h*, substantially as described.

2. In a saw-set, a press-screw, *j*, having a quick or sharp pitch, and the weighted lever-handle *k l*, combined with a pivoted setting-die, *e*, and the stock *b*, having the inclined bed-plate *a*, with its inner upper surface forming an angle, *c*, with the floor of the mortise in said stock, substantially as and for the purpose set forth.

3. In a saw-set, a setting-die, *e*, pivoted on a rib, *f*, of the floor of the mortise in the stock, and having a press-screw, *j*, and spring *h* for operating it, in combination with the stock *b*, having the inclined bed-plate *a*, with its inner upper surface forming an angle, *c*, with the floor of said mortise, substantially as and for the purpose set forth.

4. The combination, in a saw-set, with the stock *b*, having the inclined bed-plate *a*, with its inner upper surface forming an angle, *c*, with the floor of the mortise in said stock, and also having chambered extension-stock *m*, of the setting-die *e*, spring *h*, press-screw *j*, and weighted lever-handle *k l*, said stock having the attaching-clamp *p q* and screw *t*, substantially as and for the purpose set forth.

299,350. ROTARY ENGINE. IRA LOCHIS CLOUGH, Williamsport, Pa. Filed Dec. 1, 1883. (No model.)

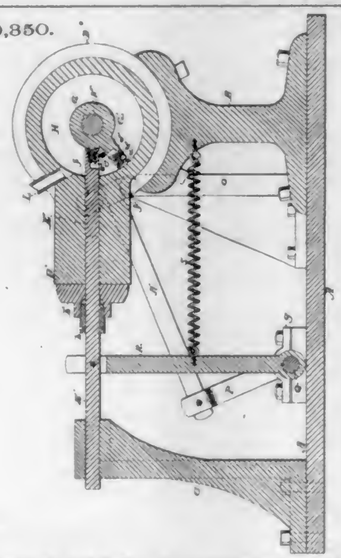
Claim.—1. In a rotary engine, a revolving spool mounted in the center of a stationary cylinder, and carrying a radial wing or piston, and two beveled heads provided each with a steam-port opening into the cylinder, and a groove extending from said port about seven-twelfths of the distance around the outer face of the head, substantially as and for the purpose set forth.

2. In a rotary engine, the combination of a revolving spool carrying a radial wing or piston and two beveled heads, a beveled ring fitting over each of said heads, and a head-plate fitting within each of said rings, and having steam-ports corresponding with those in the spool and cylinder heads, substantially as and for the purpose set forth.

3. In a rotary engine, a stationary cylinder having a radial extension inclosing a horizontally-sliding valve operating in and out of the cylinder at regular intervals, and provided with ports *c'* and chambers *d*, inclosing a packing, *c*, with shoulders *d'*, substantially as and for the purpose set forth.

4. In a rotary engine, a horizontally-sliding valve moved at regular intervals during the revolution of the piston by a cam mounted on the piston-shaft, and operating a rod supported between friction-rollers and

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connecting with a rock-shaft carrying an arm connecting with the valve-stem, substantially as and for the purpose set forth.

5. In a rotary engine, the combination of the cam M on shaft F, cam-rod N, rock-arm P, rock-shaft Q, connecting with the valve-stem E', and spring S, connecting with the cylinder-support, substantially as described and shown.

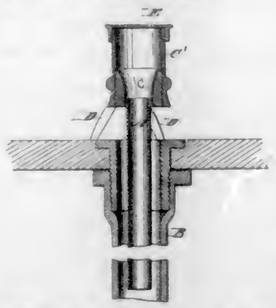
6. In a rotary engine, the combination, with the stationary cylinder and revolving spool mounted therein, of a steam-pipe branching and entering the opposite ends of said cylinder, and terminating in head-plates located next to the spool-heads and covering the grooved parts therein, substantially as and for the purpose set forth.

7. In the rotary engine described, the combination of the beveled packing-rings, head-plates, and cylinder-heads, held together and rendered adjustable by means of set-screws, substantially as described.

299,351. COMPOUND FOR CLEANING PAINT. ANTHONY SANDBERT CLOFF, Cincinnati, Ohio. Filed Nov. 7, 1883. (No specimens.)

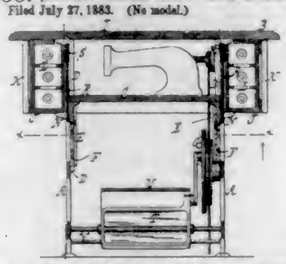
Claim.—A compound for cleaning painted surfaces of wood, iron, &c., consisting of lime, borax, sal-soda, sapolio, Georgia clay, whiting, ammonia, oil of vitriol, and water, substantially in and about the proportions herein described.

299,352. DEVICE FOR THAWING OUT SINK-SPOUTS. JOHN G. COBURN, South Carthage, assignor of one-half to James Ross Kittredge, Carthage, Me. Filed July 7, 1883. (No model.)



Claim.—The combination, with the hot-water pipe, end-threaded on the outside, of the cup C and the internally-threaded case C', having legs D, the cup screwing on the pipe, and the case on the cup, as shown and described.

299,353. SEWING-MACHINE TABLE. DAVID H. COLES, New York, N. Y. Filed July 27, 1883. (No model.)



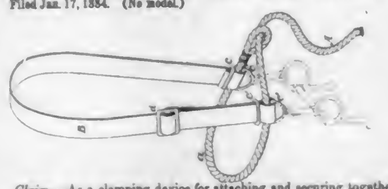
Claim.—1. The combination, substantially as hereinbefore set forth, of the drop-platform supporting the sewing-machine, the pendent slides of the platform arranged in pairs at its opposite ends, the fly-wheel and its supporting-shaft, the arched web connecting each pair of slides, and the sewing-machine stand comprising the legs, having vertical ways for the platform-slides, substantially as described.

2. A sewing-machine stand consisting of the drop-platform C, carrying the sewing-machine, the legs A, having lateral lugs N, the table B, having an opening to receive the drop-platform, the drawer-cases L, arranged on the outer sides of the legs and resting on and secured to the lateral lugs, the stationary back board secured to the rear ends of the drawer-cases, and the doors K, hinged to the drawer-cases, substantially as and for the purpose described.

3. The combination, with a sewing-machine table, of the drop-platform, the cams, the ropes connecting the cams with the platform, the guide-pulleys for the ropes, the cam-shaft, and the coiled springs connected to the cam-shaft to counterbalance the platform, substantially as described.

4. The combination, with a sewing-machine stand and the treadle thereof, of a cover hinged at its rear to a part of the machine-stand, substantially as described, to swing forward over and backward from the treadle, substantially as and for the purpose described.

299,354. HARNESS-FITTING. JAMES C. COVERT, West Troy, N. Y. Filed Jan. 17, 1884. (No model.)



Claim.—As a clamping device for attaching and securing together flexible bands or straps composing halters, bridles, and other parts of a harness, the clamp-loops *c c'*, and in combination therewith the adjusting-buckle *d* and pendent rings *e e'*, respectively, for the adjustment and connection of said parts, all substantially as herein shown and described.

299,355. SPITTOON. PHILIP H. DEM, Canal Dover, Ohio. Filed Apr. 14, 1884. (No model.)



Claim.—1. A cuspidor provided with a discharge-opening, and a slotted tube projected upward around said opening and closed at its upper end, substantially as set forth.

2. The herein-described cuspidor having a slotted tube projected upward around its discharge-opening, and a tube slipped over and removable from said slotted tube, and having its lower end held above the lower end of said tube, substantially as set forth.

3. The combination, with the receptacle having discharge-opening, and provided with a slotted tube projected up around said opening, of the grating supported on said receptacle, and provided with a depending tube fitting over and having its lower end arranged above the base of the slotted tube, substantially as set forth.

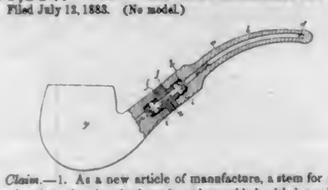
4. The combination of the receptacle A, slotted tube projected upward around the discharge-opening thereof, and a tube supported on the receptacle and depending over and having its end arranged above the base of the slotted tube, substantially as set forth.

299,356. CARPET-FASTENER. JAMES DENTON, Amsterdam, N. Y. Filed Mar. 19, 1884. (No model.)



Claim.—A carpet-fastener consisting of a metal plate having one end adapted to pass under the base-board, the opposite end provided with downward-projecting spurs or prongs, and the center provided with an upward-projecting hook, substantially as described and shown.

299,357. TOBACCO-PIPE. MYER DITTENHOEFER, New York, N. Y. Filed July 12, 1883. (No model.)



Claim.—1. As a new article of manufacture, a stem for pipes, having a chamber closed at both ends and provided with lateral openings, and having its lower end cut away or grooved exteriorly to form the flue or passage to the pipe, as and for the purpose set forth.

2. The combination, with a pipe, of a stem provided with a closed screw-threaded end, having side openings communicating by a side flue or passage with the central chamber of the pipe, as set forth.

3. The combination, with the stem *a*, provided with side openings, *d*, of the union *f*, having a central chamber opening at the side, and having its engaging ends cut away or grooved to form the connecting flue or passage with the smoke-aperture in the pipe, as set forth.

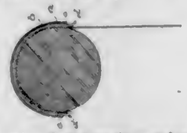
299,358. ENVELOPE. JAMES F. DODD, Delaware, Ohio, assignor to Otis F. Presbrey and Frank M. Green, both of Washington, D. C. Filed Apr. 4, 1883. (No model.)



Claim.—A combined letter-sheet and envelope, consisting of a rectangular body portion capable of being folded upon itself and having gum upon its outer side, a narrow perforated end flap adapted to be folded upon the back of the body, and side flaps adapted to be folded upon the perforated end flap and body of the sheet, whereby the envelope is securely sealed, as set forth.

299,359. CURTAIN-FIXTURE. JOHN C. DOTY, Mount Vernon, Ohio, assignor to Frank L. Bear, Walter L. Vance, and Theodore Seymour, all of same place. Filed Jan. 12, 1884. (No model.)

Brief.—The interior of the metal clip is lined with felt or rubber to act as a cushion for the fabric over which it is placed and prevent any abrasion thereof. It has also a frictional effect upon the curtain, and in no case can it slip from beneath the clip.



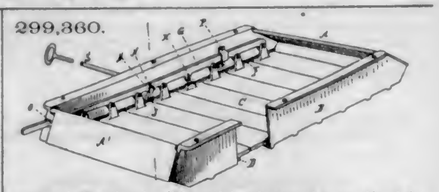
Claim.—1. A spring-clip for securing curtains to their rollers, provided with a lining, substantially as described, and for the purpose set forth.

2. The described fastening for curtains, consisting of the clip *a* and the lining *b*, having the extension *d*, substantially as described, and for the purpose set forth.

299,360. ASH-PAN FOR LOCOMOTIVES. SAMUEL H. EDGERLY, Jackson, Mich. Filed Mar. 14, 1884. (No model.)

Claim.—1. A locomotive ash-pan consisting of a frame, a series of slats hung on pintles journaled in the lower edges of said frame, and each having at one end a perpendicular arm carrying a pin near the

299,360.



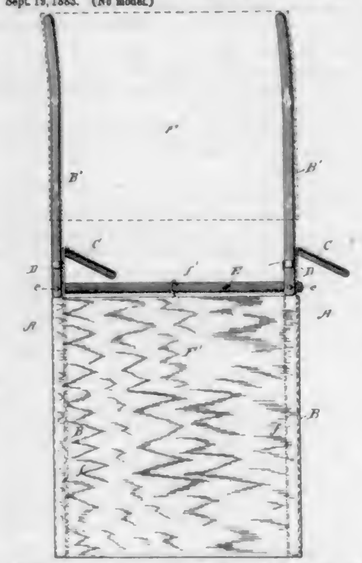
upper end thereof, and a sliding rod loosely secured to one side of the frame, and having therein slots open at their lower ends, and adapted to engage with said pins, substantially as shown and described.

2. In a locomotive ash-pan, the combination, with a supporting-frame, of the bottom slat, and the pintles arranged in line with the longitudinal central line of the slat, said slat having a counter-weight at one side of the central line of the slat for restoring the latter to its normal position to make a close joint with the adjoining slat, substantially as described.

3. The combination, with the frame B, having dampers A A' secured thereto, of the slats C, having arms F and pins I, rod G, adapted to slide in slot O, and keeper P, and slots H, open at their lower ends, substantially as shown and described.

4. In combination with the sliding rod G, connected with the tilting slats C, the rock-shaft L, having on one end thereof the lever K and on the other end the arm J, adapted to engage with a slot, N, in said rod G, substantially as shown and described.

299,361. HEAD-REST. THADDEUS B. EITER, Baltimore, Md. Filed Sept. 19, 1883. (No model.)



Claim.—1. The combination, with a frame whose sides each consist of upper and lower folding sections, of arms for securing the device to the top edge of a seat, stops for supporting the upper sections of the sides, a transverse brace securing the sides together, and flexible covers, substantially as set forth.

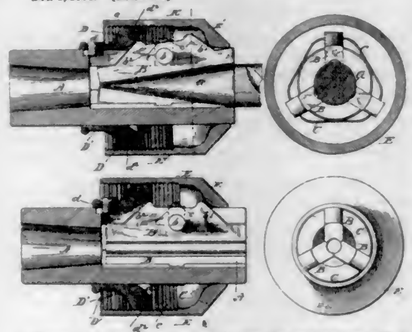
2. The combination, with a folding frame whose sides each consist of sections pivoted together and formed with extensions and stops, substantially as described, of a transverse brace pivotally secured to the side sections, and transverse flexible strips or covering connecting said sections, substantially as set forth.

3. The combination of the sides of the folding frame, each consisting of a lower section formed with a rearward extension and a stop, substantially as described, and a top section pivoted to the lower section, a transverse brace pivotally secured to the pivot of the side sections, and transverse flexible strips or coverings connecting the said top and lower sections, substantially as set forth.

4. The combination of the lower side sections, each formed with a rearward extension and a forwardly-projecting stop at its top, the top sections pivotally secured to the lower sections below said stops and en-

gaging the same, as set forth, the transverse brace, a transverse flexible removable strip or covering connecting the top sections, and a corresponding removable strip or covering connecting the lower sections, substantially as set forth.

299,362. CHUCK. AUGUSTUS E. ELLENWOOD, Akron, Ohio, assignor of two-thirds to Lewis Miller and Henry Young, both of same place. Filed Dec. 1, 1883. (No model.)



Claim.—1. In a chuck or tool-holder, the combination, with the mandrel and its clamping jaws or dies, of two sleeves or collars, one mounted and adjustable upon the mandrel, and the other adjustable upon and covering the former and the spaces surrounding the mandrel in which the jaws move.

2. The combination, with the mandrel and its jaws or dies, of two sleeves or collars, one mounted and adjustable upon the mandrel and the other adjustable upon and covering the former and operating to adjust the jaws, substantially as described.

3. The combination, with the slotted mandrel, of the radially-moving jaws B, provided with centrally-located guiding-pins *b*, working within grooves in the side walls of the radial slots in the mandrel, substantially as specified.

4. The combination, with the slotted mandrel and the radially-moving jaws provided with guiding-pins working in grooves in the side walls of the radial slots in the mandrel, of the spring or springs in angular form surrounding said mandrel and jaws, and adapted by the inward movement of the jaws to approximate an annular form, substantially as shown and specified.

5. The combination, with the slotted mandrel, of the radially-moving jaws, the spring surrounding said mandrel and jaws, and the two threaded sleeves surrounding said mandrel and jaws, one mounted upon the mandrel and adapted to be adjusted lengthwise thereon, and the other working over and covering and protecting the former, substantially as described.

6. The slotted cylindrical mandrel, in combination with the jaws provided with centrally-located guiding-pins and outwardly-converging inclines, and two sleeves, one mounted and adjustable upon the said mandrel and the other adjustable upon and covering the former, for the purpose and substantially as described.

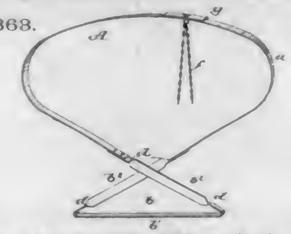
7. The combination, with the smooth cylindrical mandrel provided with jaws, having centrally-located guiding-pins working in grooves in the side walls of the radial slots in the mandrel, and having inclines upon their outer edges, of two moving sleeves, one adjustable lengthwise upon the mandrel and the other adjustable upon the former for adjusting the jaws, substantially as described.

8. The combination, with the mandrel and the clamping-jaws provided with the guiding-pins *b*, located centrally thereof and working in grooves in the side walls of the radial slots in the mandrel, of two sleeves having internal inclines working over and upon the correspondingly-inclined outer edges of said jaws, said sleeves being provided, one with an external and the other with an internal screw-thread, the one working over the other for effecting the adjustment of the jaws, substantially as described.

9. The longitudinally-slotted mandrel and the clamping-jaws working loosely therein, and provided with pins or spurs working in grooves in the side walls of the radial slots in the mandrel, and projecting inclines, in combination with two sleeves or collars, both adjustable upon the mandrel and provided with intermeshing screw-threads, adapting them to be simultaneously moved endwise upon the mandrel, one over the other, for effecting the adjustment of the jaws, substantially as specified.

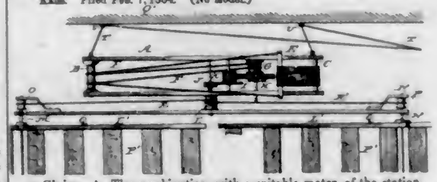
299,363. VEHICLE-SPRING. WILLARD S. EVERETT, Hyde Park, Mass. Filed Jan. 12, 1884. (No model.)

299,363.



Claim.—The spring A, composed of the curved portion *a* and base *b*, in combination with the chains *f* or equivalent means for supporting the load within the interior of the spring part *a*, substantially as described.

299,364. AUTOMATIC FAN. LOGAN WALLACE EVERHART, Parsons, Kans. Filed Feb. 7, 1884. (No model.)

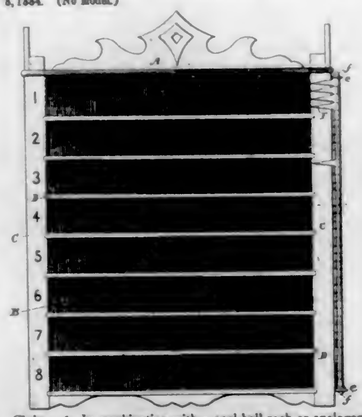


Claim.—1. The combination, with a suitable motor, of the stationary pulley L, rotary shaft J, carrying cross-bar L', rotary brush holders Q, and pulleys O P, supported at the ends of bar L', and the endless bands R R', connecting pulleys O P with the stationary pulley L, substantially as shown and described.

2. The combination of the rotary fans, the train of gears and the rubber spring and cord, and the pulley and drum for winding the cord to put the spring under tension, substantially as shown and described.

3. The combination of the rotary fans, the clock-work for operating the same, and the cord having branches T T, attached to opposite ends of the fan-case, and supports for suspending the same adjustably from a ceiling, substantially as shown and described.

299,365. POOL-RACK. JACOB FELDEL, New York, N. Y. Filed Apr. 8, 1884. (No model.)



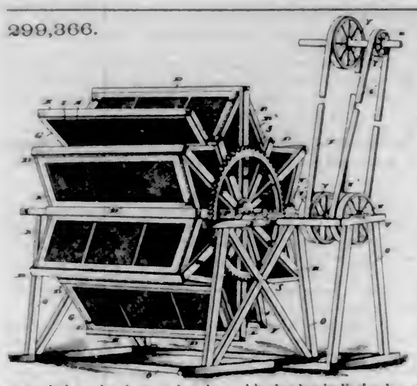
Claim.—1. In combination with a pool-ball rack or analogous implement, a series of devices adapted to indicate the marks or forfeiture-scores of the players, substantially as set forth.

2. In combination with a pool-rack, marking fingers or devices adapted to be held in either one of the two positions in which they may be set against causal displacement, as set forth.

299,366. RAG AND SCRAP DUSTER. THOS. FERRY, Wilmington, Del. Filed Feb. 25, 1884. (No model.)

Claim.—1. A rag and paper scrap duster consisting of the cage or drum having its periphery formed with a series of panels extending alternately inward and outward, each panel having longitudinal rods and a covering of netting, substantially as shown and described.

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2. A rag and paper scrap dusting drum consisting of a cage having open ends covered with netting, and its periphery formed of alternately inwardly and outwardly extending panels provided with longitudinal rods, and a covering of netting outside of the rods, substantially as and for the purpose described.

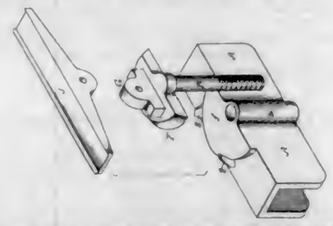
3. A rag and paper scrap dusting drum consisting of a cage having open ends covered with netting, and a periphery formed of alternately inwardly and outwardly extending panels provided with a covering of netting, substantially as shown and described.

4. In a rag and paper scrap dusting machine, a drum or cage having its periphery formed of panels extending alternately forward and inward and forward and outward, and discharge-doors situated in or forming one or more of the forward and outwardly extending panels, substantially as and for the purpose described.

5. In a rag and paper scrap dusting machine, a revolving drum or cage having its periphery formed of alternately forward and inwardly and forward and outwardly extending panels, one or more feed-doors situated in the forward and inwardly extending panels, and one or more discharge-doors situated in the forward and outwardly extending panels, substantially as shown and described.

6. In a rag and paper scrap dusting machine, a drum or cage having its periphery formed of alternately forward and inwardly and forward and outwardly extending panels, one or more discharge-doors situated in or forming one or more of the latter panels, in combination with means for revolving the drum to dust the contained scrap, and means for revolving it at a slower rate of speed to allow the dusted scrap to discharge itself through the discharge-doors, substantially as shown and described.

299,367. COMBINED KING-BOLT AND CIRCLE FOR VEHICLES. NICHOLAS FINK, Edmore, Mich. Filed Mar. 17, 1884. (No model.)

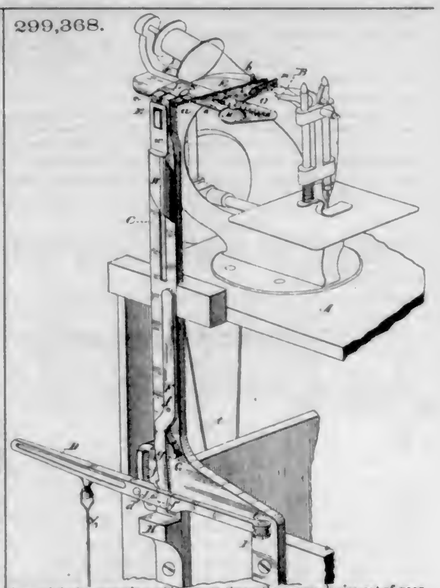


Claim.—The combination of the box A, having a tubular projection, *b*, and bearing *f*, and the king-bolt B, having a segmental head, F, with the guiding and retaining lugs *g*, as set forth.

299,368. SEWING-MACHINE. ALFRED A. FISHER and ALBERT HART, San Francisco, Cal., assignors to the Pacific Tucking and Manufacturing Company, same place. Filed June 26, 1883. (No model.)

Claim.—1. In a sewing-machine, a lever by the operation of which a power device is thrown in and out of gear with said sewing-machine, in combination with an arm held in position by the thread of the sewing-machine, a weight sliding in guides and tripped by the release of said arm upon the breaking of the thread, and a means affected by the falling weight for operating said lever to throw the power device out of gear with the sewing-machine, substantially as herein described.

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2. In a sewing-machine, a lever by the operation of which a power device is thrown in and out of gear with said sewing-machine, in combination with an arm held in position by the thread of the sewing-machine, a vertically-sliding weight tripped by the release of said arm upon the breaking of the thread, and a swinging ratchet-lever engaging with the power-lever and operated by the falling weight to disengage and release said power-lever to throw the power device out of gear with the sewing-machine, substantially as described.

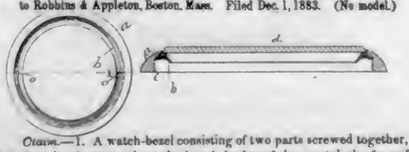
3. In a sewing-machine, the pivoted lever D, having a pin, *d'*, and connected with the power device, and operating to throw said power device in and out of gear with the sewing-machine, in combination with the standard C, the arm E, pivoted in its top, and having one end extending under the thread of the machine, the sliding weight W in the standard, adapted to be suspended from the other end of said arm, and having a beveled lower end, and the pivoted ratchet-lever F, adapted to receive the weight W upon its upper end and to engage with the pin *d'* of lever D with its lower end, substantially as and for the purpose herein described.

4. In a sewing-machine, the power-lever D and slotted standard C, having a pin, *c*, at its top, in combination with the pivoted arm E, the weight W, having a slotted spring-strip, *w*, whereby it is suspended from pin *c* or arm E at will, and the pivoted ratchet-lever F, all arranged and operating substantially as and for the purpose herein described.

5. In a sewing-machine, the standard C and the power-lever D, having pin *d'*, horizontal pivot I, and vertical pivot *i*, in combination with ratchet-lever F, substantially as and for the purpose herein described.

6. In a sewing-machine, the standard C, having slotted guide *j*, and the power-lever D, having pin *d'*, horizontal pivot I, and vertical pivot *i*, the bolt J, passing through said lever and slotted guide, and having a spring, K, in combination with the ratchet-lever F, having spring G and the stop *g*, substantially as and for the purpose herein described.

299,369. WATCH-CASE BEZEL. EZRA C. FITCH, Newton, assignor to Robbins & Appleton, Boston, Mass. Filed Dec. 1, 1883. (No model.)



Claim.—1. A watch-bezel consisting of two parts screwed together, and clamping between them the beveled edge of the crystal, the face of which is beyond the outer part of the bezel, substantially as described.

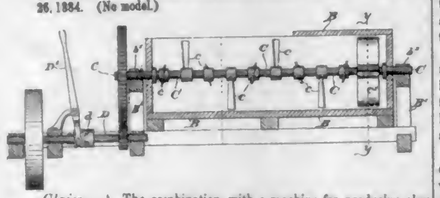
2. A watch-case bezel composed of two metallic parts detachably

connected, one of said parts having a flexible seat adapted to conform to inequalities in the margin of the glass, as set forth.

3. In a watch-case bezel, the outer portion or body, *a*, adapted to be applied to the case, and having a flexible seat for the margin of the glass, combined with a device for pressing and holding the glass against said seat, as set forth.

4. A watch-case bezel composed of the outer portion or body, *a*, internally threaded, and provided with a flexible seat, *a'*, for the margin of the glass, and the inner part or follower threaded to enter the threaded portion *c*, and provided with a shoulder adapted to bear against the inner surface of the glass, the arrangement being such that there is a space between the flexible seat and the shoulder, as set forth.

299,370. PUG-MILL. STEPHEN K. FLETCHER and ROBERT THOMAS, Indianapolis, Ind., assignors to Fletcher & Thomas, same place. Filed Feb. 26, 1884. (No model.)



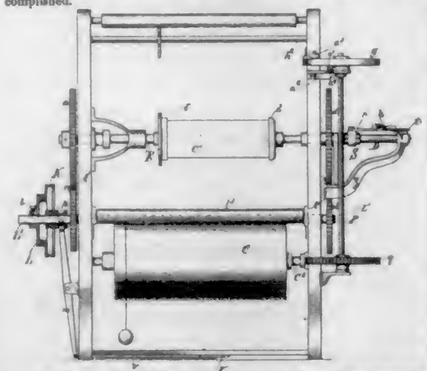
Claim.—1. The combination, with a machine for producing clay manufactures, of a pug-mill for mixing and pulverizing the clay and delivering it to said machine, said pug-mill consisting, essentially, of a casing, a shaft extending horizontally through said casing, and wings mounted on said shaft, said casing having an orifice at or near one end, through which the clay can be discharged into the machine, and said wings being partly screw-shaped and partly straight in relation to the shaft, and thus adapted to pulverize said clay and force it through said orifice.

2. The combination, with a brick-machine, A, of a horizontal pug-mill, B, arranged to discharge into said brick-machine near the top, being provided with an orifice, *b*, for that purpose, said pug-mill having a horizontal shaft, C, provided with screw-shaped pulverizing and conveying-wings *c* and discharging-wings *c'*, straight in relation to the shaft, but curved in the direction of their own length, all substantially as shown and specified.

3. The combination of the brick-machine A, the pug-mill B, its shaft C, said shaft being provided with wings *c* and *c'*, the counter-shaft D, and water-supply pipe E, said several parts being constructed, arranged, and operating substantially as shown and described, and for the purposes specified.

299,371. CLOTH FOLDING AND MEASURING MACHINE. PHILIP H. FOWLER, Gloucester City, N. J. Filed Aug. 4, 1883. (No model.)

Brief.—A clutch-pulley upon the main driving-shaft can be thrown into and out of operation for stopping the rotation of the winding-shafts when necessary. A lever mechanism is attached to the frame and carries one of the shafts for clamping the folding-board, whereby the clamping and unclamping of said folding-board is easily and expeditiously accomplished.



Claim.—1. The cloth folding and measuring machine comprising frame A' with bracket *z*, shafts D and E with grooved heads *d d'*, adapted for supporting a folding-board, C', when the machine is in operation, the key-seat *y* in shaft D, the gears *a n*, *a' n'*, the key *y'* on gear *a'*, means for sliding the shaft D in and outward and locking it in position, the shaft L', and clutch-pulley, composed of beveled flanged portions K and L, substantially as and for the purpose described.

2. The cloth folding and measuring machine comprising frame A' with bracket *z*, the revolving clamping-shaft E, having a grooved head, *d'*, gearing *a n* for operating said shaft, sliding and revolving clamping-shaft D, having a grooved head, *d*, and a longitudinal groove or key-seat, *y*, wheel *a'*, for operating shaft D, having a key, *y'*, the lever F, with its connecting-collar S, rod *r*, fastening *u*, and arc *t*, and the shaft L', gear *n'*, and pulley K L, substantially as and for the purpose described.

3. In combination with two shafts, D and E, adapted to support a removable board, C', during the operation of the machine, the measuring-roller C, the registering-dial G and its indicator-hand and its operating mechanism, the shaft L', gearing for operating the shafts D and E, and the clutch-pulley contrivance and its adjuncts, comprising the portion K with beveled flange, and the portion L with a beveled flange, and means for engaging and disengaging the portions L and K, substantially as described.

4. In combination with the frame A' and bracket *z* of a cloth-folding machine, the revolving and sliding clamping-shaft D, having a grooved head, the lever F, connected to the shaft D, the mechanism by which the lever is locked in a desired position, the revolving clamping-shaft E, having a grooved head, the gearing for operating the shafts D and E, and the shaft L', substantially as and for the purpose described.

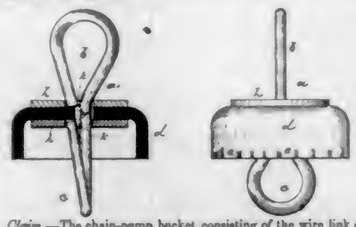
5. The combination of the friction clutch-pulley K L, having beveled surfaces, with shaft L', sliding revolving clamping-shaft D, revolving clamping-shaft E, and gears *a n*, *a' n'*, substantially as and for the purpose described.

6. The combination of the friction clutch-pulley K L, having beveled surfaces, lever *m*, rod *v*, and lever V, with shaft L', revolving and sliding clamping-shaft D, revolving clamping-shaft E, and gearing *a n*, *a' n'*, substantially as and for the purpose described.

299,372. COMPOSITION OF MATTER FOR GIVING A METALLIC SURFACE TO PAPER. JULIUS FRANSECKY, East New York, N. Y. Filed Dec. 10, 1883. (Specimens.)

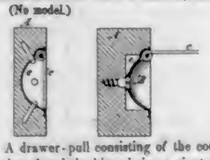
Claim.—The herein-described composition, consisting of argentine, vermilion, silver-bronze, glue, and water, in about the proportions stated.

299,373. PUMP. JOHN J. GARDNER, North Madison, Ind. Filed June 11, 1883. (No model.)



Claim.—The chain-pump bucket consisting of the wire link *a*, having a loop at opposite ends thereof twisted at right angles with relation to each other, the rubber or leather disk thereon between the loops, and the washers on each side of said disk, both washers and disk having central apertures of larger diameter than the link-wire to provide a drip-passage, substantially as specified.

299,374. DRAWER-PULL. OWEN F. GARVEY, Pawtucket, R. I. Filed May 14, 1883. (No model.)



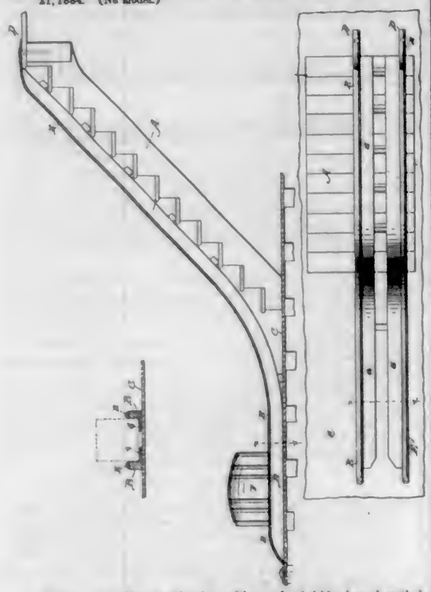
Claim.—1. A drawer-pull consisting of the concave *c*, provided with annular face-plate *d*, and the hinged ring *e*, pivoted to said plate so as to close into the same, substantially as set forth.

2. A drawer-pull consisting of the concave *c*, having suitable securing devices in its interior, and provided with annular face-plate *d*, and the hinged ring *e*, pivoted to said plate so as to close inside of the same, as shown and set forth.

299,375. METHOD OF REDUCING LOBATED GRAIN. LOUIS GATHMANN, Chicago, Ill. Filed Oct. 11, 1883. (No specimens.)

Claim.—The method hereinbefore described, which consists in splitting and dividing lobated grain through the crease and decorticating the half-kernels, then separating the impurities from the half-kernels, then reducing the half-kernels, and thereafter separating the inner bran-film from the product of reduction, whereby a large percentage of pure food substance is produced, substantially as set forth.

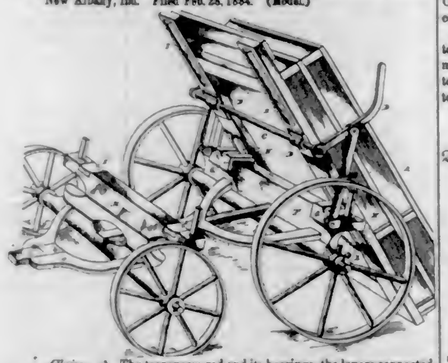
299,376. SKIDWAY. JOSHUA L. GIVEN, Philadelphia, Pa. Filed Apr. 21, 1884. (No model.)



Claim.—1. The combination, with a pair of skids shaped at their lower ends to rest upon a floor parallel therewith, shaped at their upper ends to rest on a flight of stairs parallel therewith, and shaped midway in a curve to which the two ends are tangent, of a pair of shoes secured upon the upper sides of the said skids, conforming to their shape, as shown and described.

2. The combination, with a pair of skids shaped as described, of a pair of bottom strips secured between them near their bottoms at a little distance apart, as and for the purpose specified.

299,377. DUMPING-WAGON. FRANCIS A. GRAFF and LOUIS C. HIPPLE, New Albany, Ind. Filed Feb. 28, 1884. (Model.)



Claim.—1. The transverse rod and its bearings, the levers connected to the ends thereof, and the movable fulcrum pivotally connected and supported, all operating to tilt and replace a body of a wagon or other vehicle for the purpose of dumping the load, as specified.

2. In combination with the dumping devices, the rear V-grooved plates embracing and secured to the rear bolster of the running-gear, and the V-tongued plates secured to the body, the parts adapted to allow a longitudinal guided movement of the said body, and also forming the fulcrum-point of the same, substantially as described.

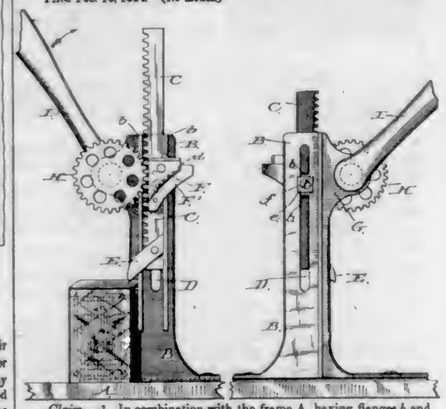
3. In combination with the dumping devices, the front grooved plates let into the front bolsters of the running-gear, and the convex plates secured to the wagon-body, and adapted to guide the longitudinal movement of the front of the said body before it tilts in dumping, substantially as described.

4. The combination, in a dumping wagon or vehicle, of the levers with their connecting-rod and its bearings, the pivoted fulcrum-rod, the rear grooved and tongued plates, and the forward grooved and convex plates, all operating as and for the purpose specified.

299,378. REMOVING FIBER FROM COTTON-SEED. JOSHUA J. GREEN, Jackson, Miss. Filed Mar. 12, 1884. (No specimens.)

Claim.—The described improvement in the art of removing lint from cotton-seed, consisting in subjecting the seed to the action of dilute sulphuric acid and heat, adding water to the heated mass to complete the carbonizing operation, and subsequently washing the seed free from the acid and burnt lint, all substantially as hereinbefore set forth.

299,379. CAN-OPENER. JEREMIAH GREENWOOD, Fitchburg, Mass. Filed Feb. 16, 1884. (No model.)



Claim.—1. In combination with the frame A, having flanges *b* and a slot, D, the vertical toothed bar C, provided with the knife F and guard F', and the means herein described for operating the said bar, consisting of the toothed wheel H and lever I, all constructed to operate substantially as and for the purpose herein set forth.

2. In a can-opener, the frame A, provided with a slot, D, and flanges *b*, and having an extension, G, in which is journaled a shaft on which is mounted the toothed wheel H and lever I, in combination with the bar C, constructed as shown, a pin, *d*, knives E or F, and a guard, F', all constructed to operate substantially as and for the purpose set forth.

3. In a can-opener, the knife E, rigidly secured to the side of a toothed bar and set at an angle thereto, the said bar having a vertical movement between flanges formed on an upright frame by means of a toothed wheel, H, mounted as described, and a lever, I, all constructed to operate substantially as herein set forth.

299,380. AUTOMATIC FIRE-EXTINGUISHER. EDWARD W. GRINNELL and FREDERICK GRINNELL, Providence, R. I. Filed Jan. 22, 1883. (No model.)



Claim.—The combination, with the extinguisher-body provided with one or more radial sockets, and the valve or valve-stem provided with a corresponding number of recesses, of one or more pins seated in the said sockets, and having tapered ends to enter the said recesses, the said valve or valve-stem and the pins being held by solder, substantially as described.

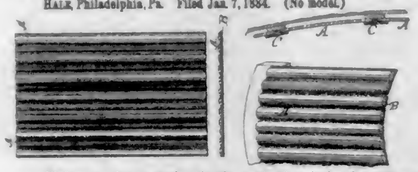
299,381. SAFE. J. ROSS GROVE, York, Pa. Filed Mar. 1, 1884. (No model.)



Claim.—1. The combination, with two metallic parallel plates, each formed with a dovetail recess, of a wedge-bar driven into said recesses to draw said plates together and secure them, substantially as set forth.

2. The combination, with two metallic plates, each formed with a dovetail recess, of a wedge-bar of double dovetail form, the beveled edges of said bar being at a less angle than the inclined walls of the recesses, substantially as set forth.

299,382. FABRIC FOR WALLS OF APARTMENTS. HENRY S. HALE, Philadelphia, Pa. Filed Jan. 7, 1884. (No model.)



Claim.—1. As a covering for the walls of an inclosed apartment, the herein-described fabric, having narrow strips of wood which are flat upon one side, and having their opposite sides formed in curved or broken lines, in combination with a backing, and secured to the strips and forming a support therefor, substantially as set forth.

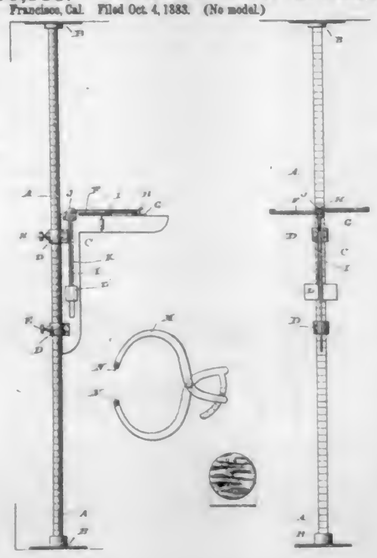
2. As a covering for the walls of an inclosed apartment, the herein-described fabric, having narrow wooden slats combined with and supported by a thin sheet of wood, substantially as set forth.

3. As the covering for the walls of an inclosed apartment, the herein-described fabric, having narrow strips of wood combined with and supported by a thin sheet of wood arranged with its grain transverse to the grain of the wooden strips, substantially as set forth.

4. As a covering for the walls of an inclosed apartment, the herein-described fabric, having thin strips of wood combined with and supported by a flexible backing, curved supports, and means for attaching the fabric to the curved supports, substantially as set forth.

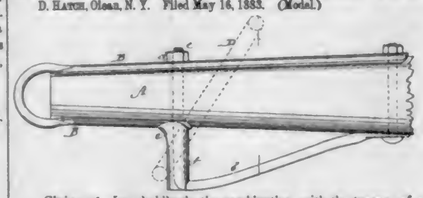
5. As a covering for the walls of an inclosed apartment, the herein-described fabric, having thin strips of wood combined with and supported by a flexible backing, means for attaching the fabric to the walls of the apartment, and a molding covering the joints which unite cut portions of the fabric, substantially as set forth.

299,383. TAILOR'S MEASURING DEVICE. JOHN S. HAMD, San Francisco, Cal. Filed Oct. 4, 1883. (No model.)



Claim.—A tailor's measuring device consisting of a fixed vertical graduated rod, upon which is adjustably secured the try-square C, for the purpose of obtaining vertical measurements, and the lazy-tongs F, pivoted upon said try-square, and provided with a weighted measuring-tape to determine the projection of the point of the lazy-tongs when taking horizontal measurements therewith, substantially as shown, and for the purpose set forth.

299,384. HOLDBACK FOR POLE-IRONS OF WAGONS. WILLIAM D. HATCH, Olean, N. Y. Filed May 16, 1883. (Model.)



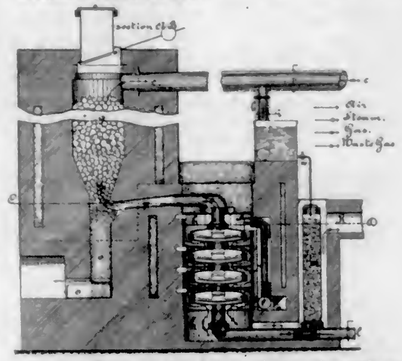
Claim.—1. In a holdback, the combination, with the tongue, of a longitudinally-apertured post or ferrule, *f*, and a holdback-rod, C, inserted through the post and bent to form a brace, substantially as described.

2. A holdback consisting of a brace-rod, C, and a post or ferrule, *f*, having its upper end concaved to abut against the tongue, whereby said post is restrained from rotation when secured in position, substantially as described.

3. A holdback consisting of a bent rod, C, and an apertured post or ferrule, *f*, having a notch at its bottom end straddling said rod, as and for the purpose described.

4. The holdback-rod C, having the brace *b* and bolt end *c* all constructed in one piece, in combination with the pole-iron B and the post or ferrule *f*, formed with the swell *s*, fitting against the pole-iron, the bolt of the holdback passing through the ferrule, and also through the pole-iron, substantially as shown and described.

299,385. PROCESS OF AND APPARATUS FOR PRODUCING HEATING-GAS. HERMANN HAUB, Dortmund, Prussia, Germany. Filed Mar. 1, 1883. (No model.) Patented in Germany Aug. 16, 1879, No. 13,733; in France Nov. 19, 1879, No. 133,733; in Belgium Nov. 26, 1879, No. 49,927, and Nov. 10, 1881, No. 56,196; in England July 19, 1881, No. 3,145, and in Austria Jan. 15, 1882, No. 33,269.



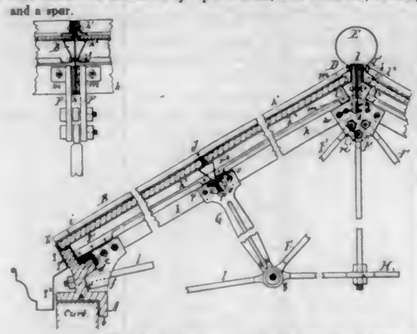
Claim.—1. The process of producing heating-gases from crude carbonaceous materials, which consists, first, in starting the production of gas by the partial combustion of the crude material with cold air; second, in starting the heating of the superheaters by the combustion of the resulting gas, as a minor product, with some air; third, in replacing part of the air for the combustion of the crude material by steam (or its equivalent, carbonic-acid gas) and carrying this mixture (or merely the steam) through the superheater in order to superheat it before its enters the crude material, to produce from it a gas containing more combustible matter than before; fourth, in continuing to use part of this purer gas now turning to be chief product within the combustion-chambers of the superheaters, whereby their temperature and the temperature of the converting material to be superheated in them will increase, and will allow of the admixture of an increasing amount of steam to a diminished amount of air, so as to give a still more concentrated heating-gas, whereby there results a circle of chemical and physico-mechanical actions in which the increase of the purity of the converting agent being at last pure steam,

(or carbonic acid, or mixtures of both,) the increase of the purity of the produced heating-gas, the increase of temperature of its flame within the superheaters, and the increase of temperature and degree of dissociation of the converting agent will react mutually until the maximum of effect as to purity of the heating-gas and as to the quantity of it available for external purposes be attained, the said steps being conducted in continuous operation, as described.

2. The combination of the following elements: the generator *g*, provided with pipe *c*, and branch pipe *b*, the continuously-acting counter-current steam-superheater *n*, opening at the top into the generator *g*, the surrounding chamber *h*, having communication with the branch pipe *b*, and air-inlets at the top, and the dry-steam generator *m*, placed in the smoke-stack, and provided with a water-supply above, and an air-injector below communicating with the interior of the steam-superheater *n*, substantially as and for the purpose described.

299,386. GLAZED METALLIC ROOF AND SKYLIGHT. GEORGE HAYES, New York, N. Y. Filed May 23, 1883. (No model.)

Brief.—Employs a shoe having a bed portion, a depending flange, a vertical portion, and a laterally-projecting flange. To the shoe is bolted an angle-iron base-plate, an inner gutter, and an outer gutter with a casing forming a base-frame. To a ridge-block is secured a ridge-plate, a ridge-bar, and cap. The main rafters and purlins and intermediate rafters are connected by a purlin-brace, main brace-rod, tie-rods, and a spur.



Claim.—1. The shoe A, constructed with bed portion *a*, flange *b*, vertical portion *c*, and flange *d*, all combined substantially as shown and described.

2. In combination with the shoe A, the angle-iron base-plate *e*, substantially as shown and described.

3. In combination with shoe A, the inner gutter, *g'*, outer gutter, *g²*, and casing comprising base-frame *g*, essentially as shown and described.

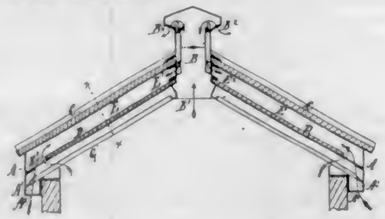
4. In combination with ridge-block F, constructed as shown, the ridge-plate *k*, and casing or ridge bar *l*, and cap E, all constructed, arranged, and combined substantially as shown and described.

5. In combination with ridge-block F and shoe A, the rafters B, purlin-brace G, main brace-rod H, and tie-rods I and I', all combined substantially as shown and described.

6. In combination with shoes A, base angle-iron *e*, ridge-block F, ridge-plate *k*, main rafters B, purlin-brace G, rods H and I, brace-rods I', rods L, purlins *o*, intermediate rafters, C, and spur K, all combined, constructed, and arranged substantially as shown and described.

299,387. SKYLIGHT. GEORGE HAYES, New York, N. Y. Filed July 27, 1883. (No model.)

Brief.—Sheet-metal skylight frame and rafters are made to hold upper panes of plain glass and under panes of ornamental glass. Inlet-apertures through the lower set of panes and outlet-apertures through the upper set of panes are provided for the space between such sets, the outlet-apertures being under cover.

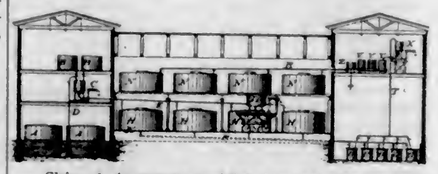


Claim.—1. A double-glazed metallic skylight the skeleton of which consists of sheet-metal bars or rafters, sheet-metal ridge, and sheet-metal base-frame, the glazing consisting of exterior plates of plain or uncolored glass and interior plates or pieces of colored, stained, or ground glass, substantially as shown and described.

2. In a metallic skylight, the combination of outside plates of plain or uncolored glass, C, with inside plates or pieces of stained or ground glass, D, having between them air passage or chamber E, provided with inlet-aperture E' and outlet-aperture E², substantially as shown and described.

3. In a double-glazed metallic skylight, a flue space or chamber, E, between the upper and under sheets of glass, having inlet-aperture E' leading thereto, and protected outlet-aperture E² leading therefrom, for the purpose of ventilating apartments and halls in buildings, substantially as shown and described.

299,388. APPARATUS FOR THE MANUFACTURE OF NITRO-CELLULOSE. JOHN W. HYATT, FRANK V. POOL, JOHN EVERDING, JOHN H. STEVENS, and WILLIAM H. WOOD, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed Feb. 19, 1884. (No model.)



Claim.—1. An apparatus consisting of one or more storage-tanks, one or more settling-tanks, and a weighing or measuring tank, the weighing or measuring tank being connected with the storage-tanks and with the settling-tanks, for the uses and purposes substantially as described.

2. The weighing-tank L, in combination with a series of clarifying or settling tanks and storage-tanks, substantially as set forth.

3. The combination of the weighing-tank C and pipe E with the storage-tanks H, for the uses and purposes substantially as described.

4. The combination of the weighing-tank L, having the pipe P, with the settling-tanks having the pipe O, and with the storage-tanks, for the uses and purposes substantially as described.

5. The pipe P, connected with the weighing-tank, and the series of storage-tanks H, for the uses and purposes set forth.

6. An apparatus in which settling-tanks, storage-tanks, and a weighing tank or tanks are employed, substantially as set forth.

7. An apparatus in which a movable weighing-tank is used, in combination with a series of clarifying or settling and storage tanks, for the purpose of delivering a given quantity of spent acids into any particular storage-tank, substantially as set forth.

8. The combination of the tempering-pots U, pipe T, auxiliary weighing or measuring tank X, and the converting-pots V, substantially as set forth.

9. The arrangement of tanks and pipes by means of which the acids are conveyed from the pots V through the various processes until they reach the pots U, substantially as shown.

10. The arrangement of tanks and pipes by means of which the acids are conveyed by gravity from the pots V through the various processes until they reach the pots U, substantially as shown.

11. The arrangement of tanks and pipes by means of which the acids are conveyed by gravity from the settling-tanks N through the various processes until delivered into the pressure-pot W, substantially as shown.

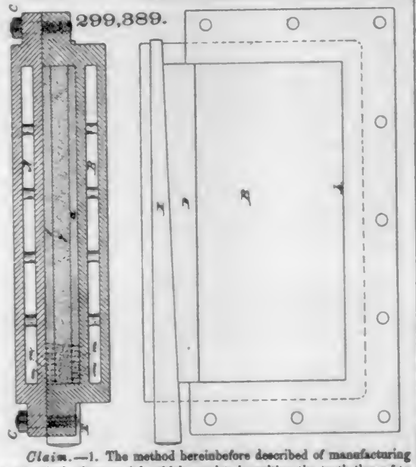
12. The arrangement of tanks and pipes by means of which the acids are conveyed by gravity from the converting-pots V through the various processes until they reach the temperature-regulating pots U, and then returned to the pots V by air-pressure or other means which overcome the gravity, substantially as set forth.

13. The arrangement of tanks and pipes by means of which the acids are conveyed by gravity from the settling-tanks N through the various processes until they reach the pressure-pot W, and then returned to the settling-tanks N by air-pressure or other means that overcome the gravity.

14. An apparatus consisting of settling-tanks, storage-tanks, fresh-acid tanks, weighing or measuring tanks, temperature-regulating pots, converting-pots, centrifugal machine, and pipes for conveying acids, connected as described, and for the uses and purposes substantially as set forth.

299,389. MANUFACTURE OF COMBS FROM CELLULOID AND OTHER PLASTIC MATERIAL. JOHN W. HYATT, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Apr. 23, 1884. (No model.)

299,389.



Claim.—1. The method hereinbefore described of manufacturing combs of plastic material, which consists in uniting the teeth thereof to the back by the application of heat and pressure.

2. The method hereinbefore described of manufacturing combs of plastic material, which consists in providing separate pieces for the back teeth and ends and uniting them by heat and pressure.

3. The method hereinbefore described of manufacturing combs of plastic material, which consists in welding into a block form pieces of the material appropriately arranged to constitute the teeth, ends, and back of the comb, and then cutting therefrom strips or pieces approximating to the contour of a comb.

4. The method hereinbefore described of manufacturing combs of plastic material, which consists, first, in preparing a form consisting of four outer walls of the material inclosing longitudinal alternating layers of the material and a foreign substance; second, cutting from said form transverse strips approximating to the contour of a comb; and, third, removing the pieces of foreign substance from the strips.

5. The apparatus hereinbefore described, consisting of the platen A, receptacle B, and follower D, the parts A B being in the nature of steam-tables.

299,390. MANUFACTURE OF COMBS FROM CELLULOID AND OTHER PLASTIC MATERIAL. JOHN W. HYATT, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Apr. 23, 1884. (No model.)



Claim.—1. The method hereinbefore described of manufacturing combs of plastic material, which consists in providing strips approximating to the size of the teeth of the comb and welding them to a piece of the material of suitable dimensions to constitute the back of the comb, substantially as set forth.

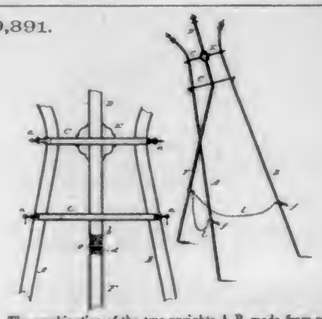
2. The method hereinbefore described of manufacturing combs of plastic material, which consists in providing strips approximating to the teeth and a rod approximating to the back of the comb, and welding the whole together at a single operation, substantially as set forth.

3. The apparatus hereinbefore described, composed of the recessed part A, having the groove *a*, and the corresponding parts, B C, in which are formed the matrices for the teeth of the comb, substantially as set forth.

299,391. EASEL. DAVID M. IRELAND, Waterbury, Conn., assignor of one-half to Henry A. Matthews, same place. Filed Mar. 22, 1884. (No model.)

Claim.—1. The herein-described easel, consisting of the two uprights A B, connected by cross-pieces C C, the vertical central piece, D, arranged upon said cross-pieces, and the brace F, hinged to said vertical piece D, the said uprights and brace made from tubing, all substantially as described.

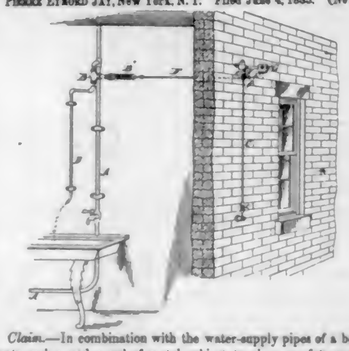
299,391.



2. The combination of the two uprights A B, made from metal tubing, connected near their upper end by cross-pieces C C, the vertical central piece, D, and brace F, also made from tubing, the meeting ends of said brace and piece D provided with corresponding plugs *b d*, constructed to form the hinge, substantially as described.

3. The combination of two uprights, A B, made of metal tubing, connected near their upper end, the hinged brace F, also made of tubing, the holders *f f*, each constructed with a divided ring, *g*, to embrace the standard, the ends of the ring having ears, with a binding-screw, *i*, through said ears, whereby the holders may be clamped upon the uprights, substantially as described.

299,392. PROTECTOR FOR WATER-PIPES AGAINST FREEZING. PIERRE EYMORD JAY, New York, N. Y. Filed June 4, 1883. (No model.)



Claim.—In combination with the water-supply pipes of a building, a waste-valve and a rod of metal subject to changes of temperature, whereby it may contract or expand, constructed and arranged so that, upon the falling of the temperature below a predetermined point, the valve will be automatically opened, and automatically closed upon the restoration of the normal temperature, substantially as and for the purpose set forth.

299,393. CABLE TRAMWAY. SAML. H. JENKINS, New York, N. Y. Filed Jan. 9, 1884. (No model.)

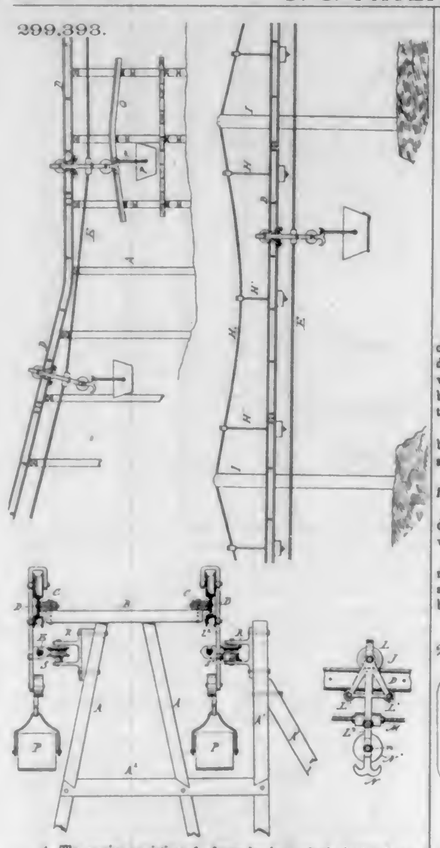
Brief.—Double-headed rails the webs of which are secured to string-pieces which rest upon the ends of cross-beams supported by rods or chains suspended from cables. Cable-clips have cut-away portions to prevent injury to cable, and extended flexible thimbles between cable and clip-jaws, and projections which bear against sheaves, whereby to guide the load. The carriers have one supporting-wheel on top and two guide-wheels below, and a pivoted double hook for automatically dropping the buckets or cars.

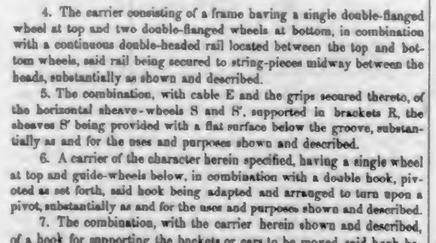
Claim.—1. In a tramway of the character herein specified, the cross-beams held in place by vertical rods or cables engaging with supporting-cables, as set forth, in combination with string-pieces affixed to the extremities of said cross-beams, and double-headed rails secured to the outer faces of the string-pieces, substantially as and for the uses and purposes shown and described.

2. Suspending-cables H, piers I, vertical rods or cables H', cross-beams B, string-pieces C, and double-headed rails D, the whole combined and arranged substantially as shown and described.

3. In a tramway of the character herein specified, the cross-beams B, rigidly supported by uprights A, and bearing upon their extremities string-pieces C, in combination with the double-headed rail D, the heads of said rail projecting above and below the string-piece in close proximity thereto, substantially as shown and described.

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4. The carrier consisting of a frame having a single double-flanged wheel at top and two double-flanged wheels at bottom, in combination with a continuous double-headed rail located between the top and bottom wheels, said rail being secured to string-pieces midway between the heads, substantially as shown and described.

5. The combination, with cable E and the grips secured thereto, of the horizontal sheave-wheels S and S', supported in brackets R, the sheaves S' being provided with a flat surface below the groove, substantially as and for the uses and purposes shown and described.

6. A carrier of the character herein specified, having a single wheel at top and guide-wheels below, in combination with a double hook, pivoted as set forth, said hook being adapted and arranged to turn upon a pivot, substantially as and for the uses and purposes shown and described.

7. The combination, with the carrier herein shown and described, of a hook for supporting the buckets or cars to be moved, said hook being adapted and arranged to automatically release the buckets, substantially as shown and described.

8. The combination, with a carrier having a double hook, pivoted as set forth, of wheel N and rail Q, substantially as shown and described.

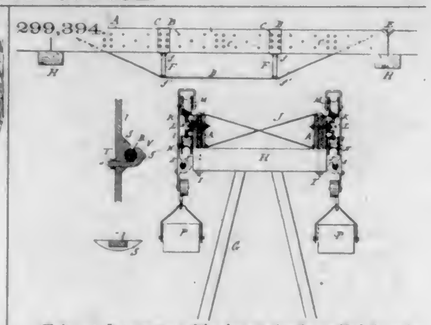
9. The combination, with the grip formed of parts K and K', of the rubber thimble M, extending beyond the grip, as set forth, and the cable E, the whole arranged substantially as shown and described.

10. The grip consisting of two parts, K and K', the inner face of each part forming a segment of a circle, and curving in contrary directions to each other, substantially as shown and described.

299,394. CABLE TRAMWAY. SAML. H. JENKINS, New York, N. Y. Filed Feb. 18, 1884. (No model.)

Brief.—Double-headed rails having an offset web are secured to the sides of double truss-beams composed of planks upon edge secured together and trussed and cross-braced. The cable-clip has one of its bearings upon the carrier-arm and the other upon an adjustable arm passing through the former.

299,394.



Claim.—1. In a tramway of the character herein specified, the series of trusses, each consisting of two parallel beams formed of planks secured directly to each other, as set forth, and provided with longitudinal tie-wires, in combination with the braces located at right angles to the truss-beams and tie-wires, and the cross brace-wires extending between the truss-beams, substantially as shown and described.

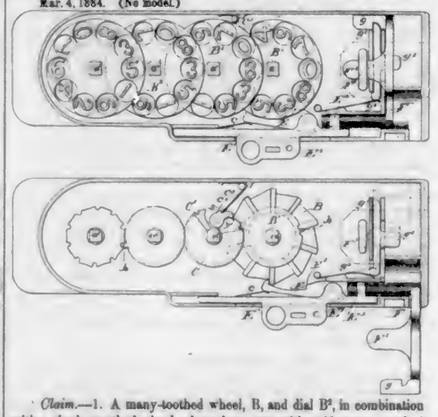
2. The trusses formed of planks A, united by means of plates B and bolts C, tie-wires D, secured to cleats E, and transversal braces F, substantially as shown and described.

3. A double-headed rail, K, having an offset, *k*, substantially as and for the uses and purposes shown and described.

4. The combination, with supporting-trusses or string-pieces, of a double-headed rail affixed to the outer face thereof, said rail being provided with an offset, *k*, substantially as shown and described.

5. The grip consisting of the stationary jaw formed upon the carrier-bar, as set forth, in combination with the movable jaw bearing the screw-threaded shank adapted and arranged to pass through the carrier-bar and engage with a nut, substantially as shown and described.

299,395. INDICATOR-LOCK. FRANK A. JILLSON, Racine, Wis. Filed Mar. 4, 1884. (No model.)



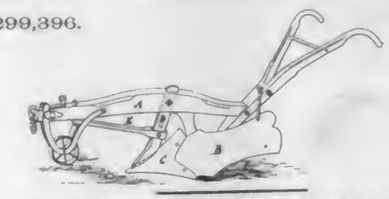
Claim.—1. A many-toothed wheel, B, and dial B^3, in combination with a single-toothed wheel adapted to turn with said many-toothed wheel and dial, an interdental wheel, and another dial, the two latter revolving together, whereby the latter is jigged once at each revolution of wheel, the teeth of which have crowns that are concaved to conform to the periphery of the single-toothed wheel B', as described.

2. The wheel B, having raised teeth, in combination with the slide and its pawl, the latter having a rear dog, F^5, to aid the head of the pawl in locking the wheel B and preventing it from being turned except through the slide, as set forth.

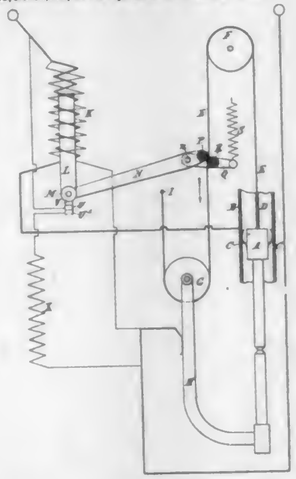
299,396. PLOW-COLTER. JAMES JOHNSON, East Hampstead, N. H. Filed Apr. 23, 1883. (No model.)

Claim.—The colter D, having a sharp edge, *d*, on the upper part of the lower portion, and a sharpened end, *e*, in combination with the beam A and brace E, and the reversible plow-point C and reversible mold-board B, whereby the lower end of the colter is made to bear against the land side of the plow-point at every reversion of the mold-board, as set forth.

299,396.



299,397. ELECTRIC-ARC LAMP. EDWARD JOHNS and ALBERT EDWARD JONES, Church Terrace, Queen's Road, Battersea, County of Surrey, England. Filed June 13, 1883. (No model.) Patented in England Mar. 6, 1883, No. 1,302; in France June 1, 1883, No. 155,798; in Germany June 23, 1883, No. 26,443; in Belgium July 23, 1883, No. 62,105; in Italy Aug. 10, 1883, No. 15,769, and in Spain Nov. 21, 1883, No. 3,573.



Claim.—1. In an electric-arc lamp, the combination, with two carbons and a tape, cord, or other flexible connection supporting them, of a gripping device consisting of a lever carrying one member of said gripping device and a yielding abutment forming the other member of said device, an electro-magnet or solenoid for actuating said lever, and cut-out studs controlled by said lever, whereby the electric current will be shunted around the lamp in case of the carbons breaking, substantially as herein described.

2. The variable-pressure gripping device above described, consisting of a lever, N, actuated by a solenoid or electro-magnet, yielding abutment Q, gripping surfaces or projections P R, adjustable spring S, attached at one end to a fixed point outside the lever N, and stop T, for the purpose set forth.

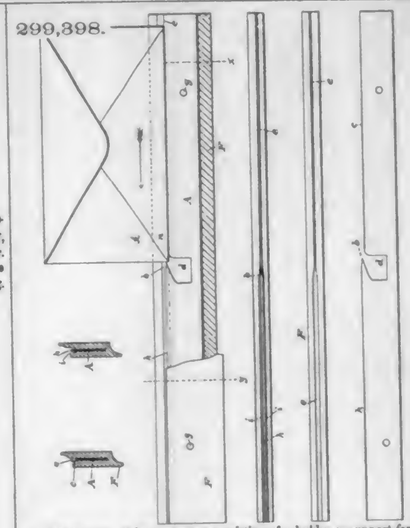
3. The combination, with the gripping-lever N, actuated by a solenoid or an electro-magnet, as described, of the yielding bearing or abutment Q, pivoted at one end and supported by means of a spring, S, attached to a part of the lamp which remains unaffected by the movements of the lever N, as and for the purpose set forth.

4. In an electric lamp, the combination, with the lever N, cord or tape E, core L, and differential solenoid K, of a hinged or pivoted link or arm, Q, upheld by a spring or an elastic support in such a manner as to coact with the lever N and grip the cord or tape when the said lever is actuated by a varying tension due to the expansion or contraction of the said spring or elastic support, as set forth.

5. The combination, with the central guide-tube, B, forming a backbone for an arc-lamp, and a cord or tape, E, serving to support the electrodes, of the automatic regulating-lever N, mounted upon the said tube B, pivoted abutment or bearing Q, upheld by an elastic support, S, attached to or supported by a non-movable part of the lamp, gripping projections or surfaces P and R, and means for limiting the movement of the abutment or bearing in one direction, all as and for the purpose set forth.

299,398. LETTER-OPENER. JACOB JOHNS, Baltimore, Md. Filed Mar. 13, 1884. (No model.)

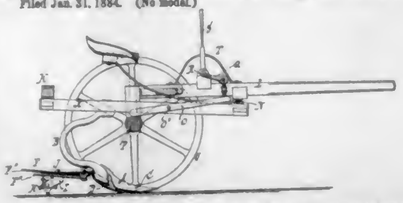
299,398.



Claim.—1. A letter-opener consisting of a holder or support for the blade, as described, having a groove formed in it, and a straight blade occupying the groove, extending lengthwise thereof and having a cutter-prong projecting from its exposed edge, as set forth.

2. A letter-opener consisting of a holder or support for the blade, having a groove, and a blade occupying the groove, extending lengthwise thereof, and having an edge, *c*, on which to seat the edge of an envelope, and provided with a cutter-prong, *b*, projecting beyond said edge, as set forth.

299,399. POTATO-DIGGER. CHARLES W. KATTELL, New York, N. Y. Filed Jan. 31, 1884. (No model.)



Claim.—1. The combination, in a potato-digger, of a wheeled frame, the plowshare A, the supporting-arms B B, the screen composed of the head F', pivoted to the rear of the share and provided with the rearward teeth, F'', and the spur-wheel H, journaled in a stock, I, swiveled directly to the pivoted head of the screen by the vertical pivot J, substantially as and for the purpose described.

2. The combination of the share-supporting frame, jointed at its forward end to the draft-pole of a wheeled truck, the lifting-levers resting on the axle and jointed intermediate of their ends to the said frame, the crank-shaft having two cranks connected to the lifting-levers, the pawl-arm fixed to the crank-shaft, and the toothed segment engaging with the pawl-arm, substantially as described.

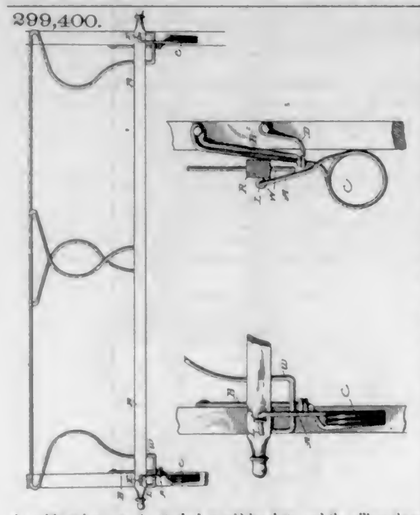
3. The combination of the share-supporting frame jointed to the draft-pole and free to be raised from off the axle, the truck-axle bent upward at right angles within the sides of the frame, to serve as a guide for the latter in its vertical movement, and the levers resting on the axle and jointed to said frame, substantially as described.

299,400. PILLOW-SHAM HOLDER. JOS. J. KELSEY, Detroit, Mich. Filed July 23, 1883. (No model.)

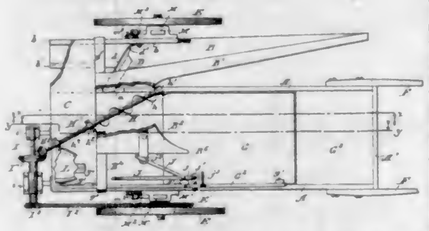
Claim.—1. Supporting-brackets having arms B and D, provided with openings to receive the means for attaching them to a bedstead, in combination with spring-arms A, attached to said brackets, and the pillow-sham support having the angular bar R, said bar being pivoted to said spring-arms, as and for the purpose set forth.

2. Supporting-brackets having arms B and D, provided with openings to receive the means for attaching them to a bedstead, in combination with spring-arms A, attached to said brackets, and the pillow-sham support having a bar, R, with projections *u*, said bar being pivoted to said arms A, as and for the purpose set forth.

299,400.



299,401. CORN-HARVESTER. SAMUEL C. KINSAGA, Kankakee, Ill. Filed July 2, 1883. (No model.)



Claim.—1. The combination, with the frame of a corn-harvester and a stationary knife for cutting the stalks below the ears, of a second vertically-movable knife for severing the standing stubs supported from the machine-frame, and constructed to move vertically independently thereof, substantially as described.

2. The combination, with the frame of a corn-harvester, of a stationary knife for cutting the stalks below the ears, a second knife for severing the standing stubs, and a support for said second knife connected with the machine-frame, and constructed to permit said second knife to move vertically with reference to the said frame, and to sustain it at a uniform distance above the ground, substantially as described.

3. In a corn-harvester, the combination, with the longitudinal frame of the machine, a guide-piece, B, and a knife, D, located between said frame and said guide-piece, of a knife, K, a support, K', for said knife, flexibly connected at its front end to said guide-piece, and constructed to rest upon the ground at its rear end, and a vertical rod, K^3, attached to said rear end of the support K', and guided at its upper end in apertures in the guide-piece B, whereby lateral motion in said support is prevented, substantially as described.

4. In a corn-harvester, the combination, with the machine-frame and with the guide-piece B, of a knife, K, a support, K', flexibly attached at its front end to the said guide-piece, and a guide-rod, K^2, provided with an adjustable nut, K^4, for limiting the downward movement of said support, substantially as described.

5. In a corn-harvester, the combination, with the machine-frame and with the guide-piece B, of a knife, K, a support, K', flexibly connected at its front end to said guide-piece, a guide-rod, K^2, and a plate, K^3, attached to said support K', and constructed to afford attachment for said rod and said knife, substantially as described.

6. In a corn-harvester, the combination, with an inner guide-piece, A, and an outer guide-piece, B, of a backwardly-yielding knife having its end extended to a point inside of the outer face of the guide-piece A, substantially as and for the purpose set forth.

7. In a corn-harvester, the combination, with a longitudinal frame-piece, A, and an outer guide-piece, B, of a cutter-knife located between said frame and guide-piece, and having a spring-connection with the outer guide-piece, and having its free end extended past the outer face of the frame-piece, substantially as and for the purpose set forth.

8. In a corn-harvester, the combination of a longitudinal frame-piece, A, an outer guide-piece, B, and an upwardly rearward and inwardly inclined knife, D, attached by a spring-connection to the said guide-piece, said frame-piece A being provided with a notch, *a*, to admit the free end of the knife, substantially as described.

9. The combination, with a cutting-knife, a receptacle for the cut corn, and means constructed to direct the tops of the cut corn into the receptacle, of a spiral conveyer constructed to deliver the butts of the cut corn into said receptacle, and means for rotating said conveyer, substantially as shown and described.

10. In a corn-harvester, the combination, with a knife, a receptacle for the cut corn, and means for directing the tops of the corn forwardly into the receptacle, of a spiral conveyer arranged diagonally of the machine-frame, with its front end in advance of the knife and in position to engage the butts of the cut corn, and means for rotating said conveyer, substantially as described.

11. In a corn-harvester, the combination, with a longitudinal frame-piece, A, cross-piece C, and knife D, of the conveyer-shaft H', mounted at one of its ends in a bearing, A', supported upon the piece A in advance of the said knife, and at its opposite end in bearings A^2 upon the cross-piece C, and means for rotating the said shaft H', substantially as described.

12. In a corn-harvester, the combination, with the machine-frame, a knife, a tilting receptacle for the cut corn and means for directing the cut corn into the receptacle, of means for temporarily supporting the butts of the cut corn, operated by the movement of said tilting receptacle, substantially as described.

13. The combination, with the machine-frame and a knife for severing the standing corn, of a rearward-tilting platform to receive and discharge the corn-tops, means constructed to deposit the tops on said platform with their butts to the rear, and means for tilting the platform, substantially as described.

14. The combination, with the machine-frame and a knife for severing the standing corn, of a rearward-tilting platform for the reception and discharge of the corn-tops, arranged in advance of the knife, whereby the corn falls forward thereon with its butts to the rear, and means for tilting the platform, substantially as described.

15. The combination, with the machine-frame and a knife for severing the standing corn, of a rearward-tilting platform located with its rear edge in advance of the knife, means to cause the corn-tops to fall forwardly upon said platform, and means for tilting the platform, substantially as described.

16. In a corn-harvester, the combination, with the machine-frame, a knife, a tilting receptacle for the cut corn, and means for delivering the cut corn into the receptacle, of an arm, J, pivoted to a movable part attached to the said tilting receptacle, and constructed to engage a stationary part of the machine-frame, substantially as and for the purpose set forth.

17. In a corn-harvester, the combination, with the machine-frame, of a lever, G, pivoted to the frame, an eye, j^2, upon said frame, and an arm, J, pivoted by a universal joint to said lever, and provided with a projecting portion, J', constructed to engage the said eye j^2, substantially as described.

18. In a corn-harvester, the combination, with the machine-frame, of a tilting platform, G, a lever, G^2, rigidly secured thereto, and provided with an eye, j', an eye, j^2, secured upon a stationary part of the machine-frame, and an arm, J, having an eye, j, engaged with the eye j', and an upwardly-extended portion, J', constructed to engage the eye j^2, substantially as described.

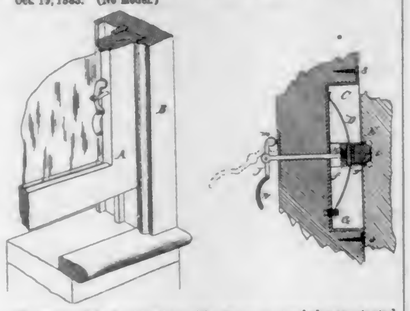
19. In a corn-harvester, the combination with the machine-frame, of a hand-lever, G^2, an eye, j^2, attached to a stationary portion of the frame, an arm, J, pivoted to the said hand-lever, and having a projecting portion, J', constructed to engage the said eye j^2, and a pin, j^3, upon the lever G^2, for limiting the forward motion of said arm J, substantially as described.

20. In a corn-harvester, the combination, with the knife, and with an upwardly and inwardly inclined guide, B', of a deflector, B^2, provided with a forwardly-projecting point, B^4, substantially as and for the purpose set forth.

21. In a corn-harvester, the combination, with the machine-frame, a guide-piece, B, and a knife located between the said frame and guide-piece, of an upwardly and inwardly inclined guide, B', a deflector, B^2, and standards B^3 and cross-piece B^4, for supporting said guide and deflector, substantially as described.

22. In a corn-harvester, the combination, with the horizontal frame-pieces A and cross-pieces A' and C, of the outer guide-piece, consisting of a horizontally-placed board, B, and side pieces, *b* and *b'*, substantially as described.

299,402. SASH-FASTENER. HENRY LEPPER, New York, N. Y. Filed Oct. 19, 1883. (No model.)

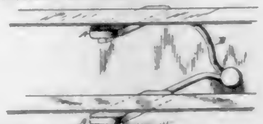


Claim.—1. The combination, with a narrow extended case adapted for insertion in the edge of a window-sash, of a stop-block moving transversely in the case, a semi-elliptic spring fitted therein to force out the stop-block, an actuating-rod extending from the stop-block through the bottom of the case, and lever J of the tip *e*, secured in the outer end of the stop-block, substantially in the manner and for the purpose herein set forth.

2. The combination, with a narrow extended case adapted for insertion in the edge of a window-sash, of a stop-block moving transversely in the case, a semi-elliptic spring fitted therein to force out the stop-block, and an actuating-rod extending from the stop-block through the bottom of the case, all substantially in the manner and for the purpose herein set forth.

3. The combination, with the case C, stop-block E, and semi-elliptic spring D, of a slot in either end of the spring engaging an annular groove in the outer end of an adjusting-screw, G, working in the bottom of the case, substantially in the manner as herein described.

299,403. BELT-CLEANER. ALBERT E. KINGSLEY, Saccarappa, Me. Filed Apr. 7, 1884. (No model.)

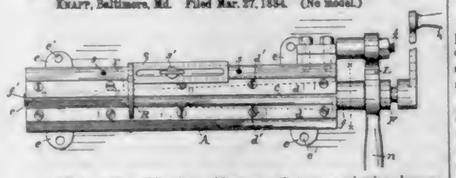


Claim.—1. An improved belt-cleaning device supported in proximity to the belt, and having a flexible portion contacting with said belt and extending diagonally across the same, substantially as set forth.

2. The improved belt-cleaner consisting of a suitable friction-section, A, attached rigidly to a suitable support for holding the cleaner or scraper stationary against the belt, substantially as set forth.

3. In a belt-cleaner, the friction-section A and support B, having one end attached to the section A, substantially as shown.

299,404. MACHINE FOR FORMING TAPER TUBES. GEORGE W. KNAPP, Baltimore, Md. Filed Mar. 27, 1884. (No model.)



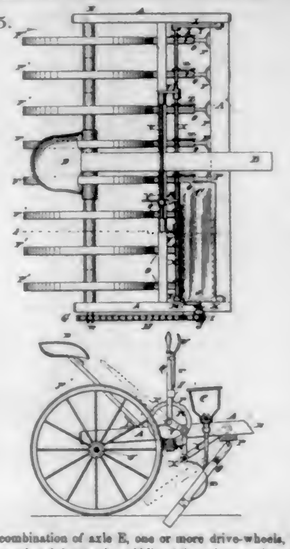
Claim.—A machine for making tapered sheet-metal tubes, having a block with a tapered bore, and provided with a slot opening into the said bore, a tapered grooved mandrel, and a guide projecting across the slot, as set forth.

299,405. GRAIN-DRILL. CHARLES F. KULP, Brussels, Ill. Filed Dec. 19, 1883. (No model.)

Claim.—1. A grain-drill having central wheels, F, fast to the axle, and wheels F' on each side of the central wheels loose upon the axle, substantially as set forth.

2. A grain-drill having one or more ground-wheels, F, fast upon the middle of the axle and wheels upon each side of the same, turning loose on the axle.

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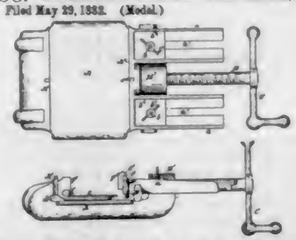


3. The combination of axle E, one or more drive-wheels, F, turning on the ground and fast to the middle of the axle, sprocket-wheels G I, chain H, shaft J, and clutch-wheel K, substantially as and for the purpose set forth.

4. The combination, in a grain-drill, of lifting-arm Y, connected to the furrow-openers, bell-crank M, with toes *m m'*, slip-clutch wheel K, and drive-wheel I, turning loosely on seed-shaft J, substantially as and for the purpose set forth.

5. The combination, in a grain-drill, of furrow-openers O, flexible links Z, lifting-bar X, link or links W, arm or arms V', shaft V, and lever Q, substantially as set forth.

299,406. HARNESS-LOOP MACHINE. PETER LANDFRIT, Cincinnati, Ohio. Filed May 29, 1883. (Model.)



Claim.—1. The base or frame A, having jaw A', provided with projections *y*, and sliding jaw A^2, having projections X, adapted to receive interchangeable jaws or dies, in combination with arms *a*, having slots *a'*, and nuts *b*, and screw B, substantially as and for the purposes specified.

2. The body A, provided with stationary jaw A', and the bolts *b*, having thumb-nuts *b'*, in combination with the sliding jaw A^2, provided with arms *a*, having slots *a'*, to engage with said bolts, and means for advancing and retracting said sliding jaw, substantially as and for the purposes specified.

3. The body A, having stationary jaw A' and channel *d*, and the stationary nut B', in combination with the sliding jaw A^2, provided with the feet or lugs D, resting on the body A at or near the edge thereof, and means for advancing and retracting said sliding jaw, substantially as and for the purposes specified.

4. The herein-described clamp, in combination with the supplemental stationary jaw G, attached to the jaw A', and the supplemental sliding jaw J, connected to the jaw A^2, the jaw J consisting of the body *j* and the head or face *k*, an opening, H, being left between said body and head, substantially as and for the purposes specified.

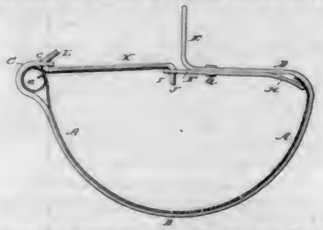
5. The jaw J, provided with longitudinal slot, in combination with the jaw A^2 of the clamp, and the slotted arms *a*, and the clamping-bolts *b*, and thumb-nuts *b'*, and screw B, substantially as and for the purposes specified.

6. In combination with the jaw A^2 of the clamp, having dovetail projections X, the jaw J, provided with longitudinal slot, and with dovetail flanges *m*, fitting over the projections X, substantially as and for the purposes specified.

7. The jaw G, provided with feet G', and attached to the jaw A', in combination with the jaw J, attached to the jaw A^2, and consisting of a body and head, *k*, the head being raised above the body by the arches *k'*, substantially as and for the purposes specified.

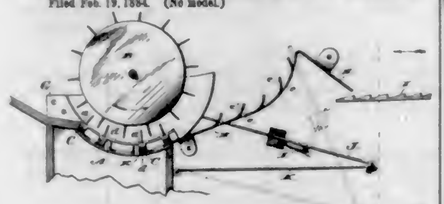
299,407. EAVES-TROUGH HANGER. MILO R. LEE, Plymouth, Ohio. Filed Apr. 3, 1884. (No model.)

Brief.—The supporting-strap is formed with a perforated lip at one side and a right-angled arm at the other, to which is secured a strap with a lip at one end engaging the trough and an aperture at the other. A double-hooked bar connects said strap with the lip of the supporting-strap.



Claim.—The improved eaves-trough hanger herein shown and described, the same consisting of the strap B, bent to form the lip C, and right-angled arm D E, strap F, fixed to the under side of arm D, and having lip H at one end and aperture I at its projecting other end, and double hook J K L, adapted to connect the outer end of the part F to the lip C, the whole constructed and combined substantially as and for the purpose shown and set forth.

299,408. THRASHING-MACHINE. DAVID LIPPY, Mansfield, Ohio. Filed Feb. 19, 1884. (No model.)



Claim.—1. The combination, with a thrashing-machine cylinder, of a concave consisting, essentially, of a rectangular frame having an open center, the two sides of said frame being provided on their upper surfaces with transverse grooves and with teeth situated between the grooves, and a grate secured to the lower face of said frame, substantially as set forth.

2. In a thrashing-machine, the combination, with a cylinder, of a concave composed of two small concaves and an intermediate grate, each small concave being provided with teeth, and with grooves or gutters between the teeth, open center, and a grate forming a bottom to the said open center, substantially as set forth.

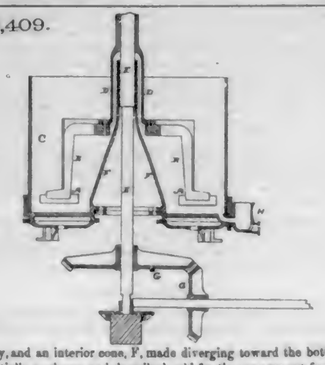
3. The combination, with a cylinder and a concave, the latter provided with an extension having slots therein, and with steps for preventing the straw from moving back toward the cylinder, of a rake situated under said extension and provided with teeth, which latter enter the slots and carry the straw up and over said extension, substantially as set forth.

4. In a thrashing-machine, the combination, with a cylinder and concave, of the slotted extension H, provided with steps formed as described, and the rake and bar for holding the rake in position, all of the above parts operating as described.

299,409. AMALGAMATING-PAN. GEORGE H. MALTBY, San Francisco, Cal. Filed Sept. 18, 1883. (No model.)

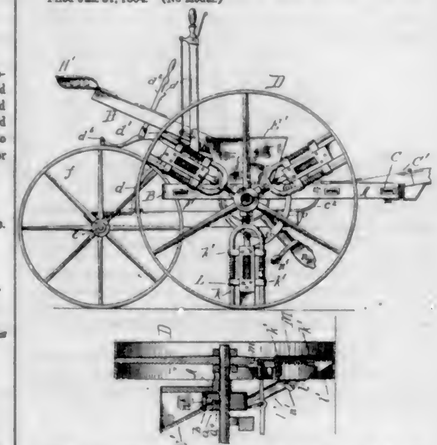
Claim.—In an amalgamating-pan, a series of radial arms extending outward from a central driving-shaft, E, and carrying shoes upon their lower ends to dip into a body of mercury in a receptacle formed by the bottom of the pan, in combination with a band or ring surrounding the arms and traveling in the same direction with the pulp, and forming a cylindrical diaphragm extending upward from near the surface of the

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mercury, and an interior cone, F, made diverging toward the bottom, all substantially as shown and described, and for the purpose set forth.

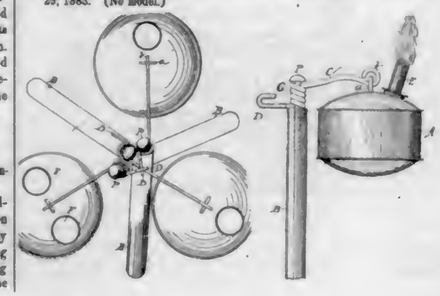
299,410. CORN-PLANTER. ALBERT R. MCMULLEN, What Cheer, Iowa. Filed Jan. 31, 1884. (No model.)



Claim.—1. The combination, in a corn-planter, of a feed-disk, inclined spout, and gravity-valve, arranged as described, a series of yokes located in the wheels, and carrying at their lower ends expanding drills, and a plunger playing on said yoke and adapted to expand said drills, substantially as specified.

2. The combination, in a corn-planter, of a feed-disk, inclined spout, and gravity-valve, arranged as described, a series of yokes located in the wheels, and carrying expanding drills at their lower ends, and plungers playing on said yokes, and devices for moving said drills and plungers, substantially as specified.

299,411. TORCH. JAS. A. MCPHERSON, Brunswick, N. Y. Filed Dec. 29, 1883. (No model.)



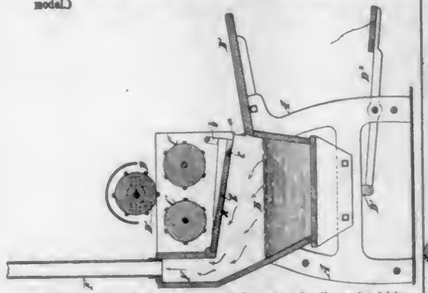
Claim.—1. In a torch, the combination of the staff, the single lamp-supporting arm projecting to one side of the staff and twisted to form an eye, the pin passing through the eye into the staff to form a swivel, and a lamp pendent from the projecting end of said arm, substantially as and for the purposes described.

2. A single torch-supporting arm, C, composed of wire bent to form the socket G and link D, both integral therewith, in combination with pin P and staff B, substantially as described, and for the purposes set forth.

3. A torch staff or handle having a lamp-support pivoted thereon, in combination with a torch-lamp and a connecting-link, by which two or more torches are linked together when stacked, substantially as described, and for the purposes set forth.

4. A torch-bowl provided with a central projecting link on its upper surface, by which it is suspended from a pivoted support, in combination with said support and the staff or handle upon which the support is pivoted, substantially as described, and for the purposes set forth.

299,412. FELTING-MACHINE. CHARLES H. MERRITT, Danbury, Conn., assignor to John T. Waring, New York, N. Y. Filed Apr. 28, 1883. (No model.)

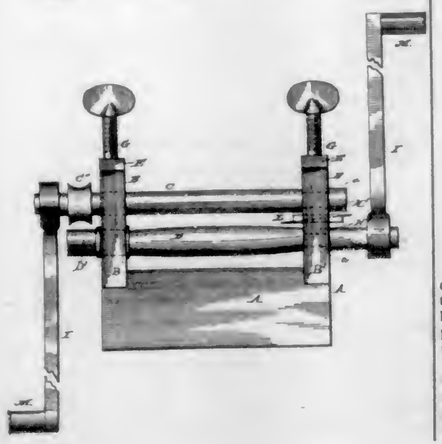


Claim.—1. The combination, with the vat and rollers of a felting-machine, of a board or shelf arranged over the vat and below the rollers, and a flue or escape-pipe leading from the vat below said board or shelf, substantially as and for the purpose described.

2. The combination, with the vat and rollers of a felting-machine, of a board or shelf arranged over the vat and below the rollers, and pitching from the back forward, and a flue or escape-pipe leading from the back of the vat upward behind the rollers, substantially as and for the purpose described.

3. The combination, with the vat and rollers of a felting-machine, of a board or shelf removably secured over the vat and below the rollers, and a flue or escape-pipe leading from the vat below said board or shelf, substantially as and for the purpose described.

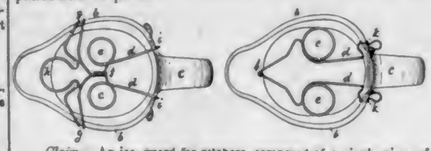
299,413. DEVICE FOR EXPANDING FINGER-RINGS, FERRULES, &c. JOHN GEORGE MESSMER, Lebanon, Ohio. Filed Dec. 6, 1883. (No model.)



Claim.—The combination, in a device for expanding finger-rings, ferrules, &c., of the shaft C, having a crank, I, and handle M, and provided with a removable roll, C'', shaft D, having crank I, handle M, and roll D', sliding blocks H H' H'', wedge-blocks L, and thumb-screws G, the rolls being outside the housings, as and for the purpose shown and set forth.

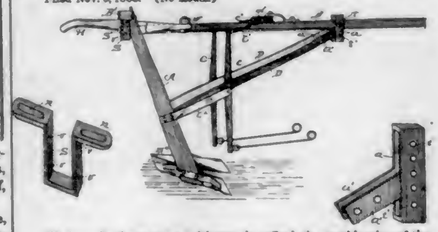
299,414. ICE-GUARD FOR PITCHERS. LEVERETT MESSER, Haverhill, Mass. Filed Nov. 1, 1883. (No model.)

Brief.—A single piece of wire is so bent and curved as to be readily attached to and detached from a pitcher, and be securely held in position thereon to prevent the escape therefrom of ice when water is being poured from the pitcher.



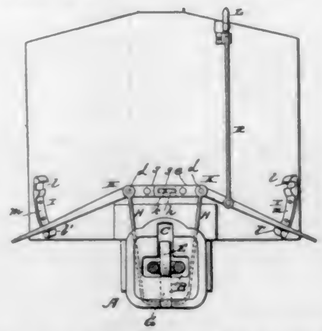
Claim.—An ice-guard for pitchers, composed of a single piece of wire bent and curved, essentially as shown, and provided with loops or catches, whereby the device is detachably secured to the rim of the pitcher, substantially as shown and described.

299,415. SCRAPER-CULTIVATOR. HENRY L. MILLER, Morris, Ill. Filed Nov. 6, 1883. (No model.)



Claim.—In the scraper-cultivator described, the combination of the tongue B, frame B', clip S, having the slots *n n* for lateral adjustment, and vertical row of holes V, and clip *a*, having the vertical row of holes *t*, and arms *a' a'*, as and for the purpose set forth.

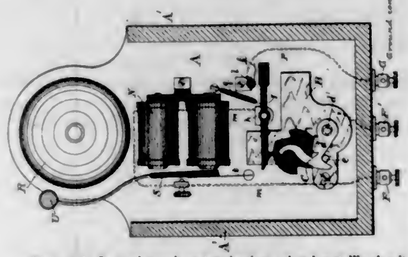
299,416. CAR-COUPLING. WILLIAM F. NIDE, Sulley, Iowa. Filed Mar. 31, 1884. (No model.)



Claim.—1. In a draw-bar having a central upward extension of its cavity, and a central slot through its floor at the back part of the throat, the drop-catch E, pivoted at its rear end to the sides of the draw-bar, and having the bearing lug or arm G, extending downward from its middle part through the slot of the draw-head, and engaging said slot by its convex front edge, substantially as specified.

2. The combination, with the draw-head and its pivoted drop-catch, having a bearing-lug, G, extending downward through a slot in its floor, of the compound uncoupling-lever consisting of the branch levers K K, connected by a slip-joint, the foot-lever at the top of the car, the vertical connecting-rod, and the lateral holding-racks, substantially as specified.

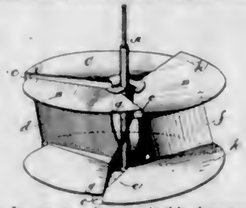
299,417. CALL-BOX FOR DISTRICT-TELEGRAPHS. MENAHEM J. O'SULLIVAN, Baltimore, Md., assignor of three-fourths to J. Frank Morrison, same place. Filed Aug. 24, 1883. (No model.)



Claim.—1. In a telegraph system having a closed metallic circuit-connection, the combination, with the circuit-breaking wheel, of a post having a ground-connection, and a vibrating finger centrally pivoted and adapted for one end to make contact with the circuit-breaking wheel, and the other end with the said ground-post, substantially as set forth.

2. In a telegraph system having a closed metallic circuit-connection, the combination, with the circuit-breaking wheel, of a post having a ground-connection, and provided with a plate-spring, *k*, and a vibrating finger centrally pivoted and adapted for one end to make contact with the circuit-breaking wheel, and the other end with the said plate-spring, as set forth.

299,418. REVOLVING DRUM FOR GAS-METERS AND LOW-PRESSURE WATER-METERS. WILLIAM COULSON PARKINSON, London, England. Filed Dec. 30, 1882. (No model.) Patented in England May 6, 1882, No. 2,134, and in France Sept. 20, 1882, No. 149,495.



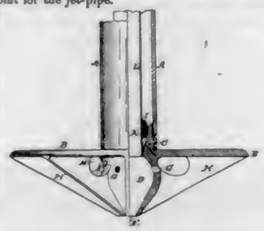
Claim.—1. In a meter, a drum or wheel having screw-shaped segmental blades connected by inclined partitions and forming an unobstructed opening or passage around the shaft, substantially as described.

2. In a meter, a drum or wheel provided with three or more compartments formed by screw-shaped segmental blades or vanes overlapping each other at their outer circumference and forming a central unobstructed passage and passages between their overlapping edges, substantially as described.

3. In a meter, a drum or wheel composed of an upper and a lower series of segmental plates, the plates of each series having angular inner edges and overlapping each other at their outer edges to form intervening passages, and inclined partitions connecting the plates of the upper and lower sections, as shown, in combination with a casing having inlet and outlet openings, substantially as described.

299,419. SINKING PILES. ROBERT E. PEARY, Cape Elizabeth, Me. Filed Jan. 17, 1884. (No model.)

Brief.—A pile having at its lower end a disk the downwardly-projecting part of which is provided with a distributing-chamber having a vertical and a series of lateral ports, the disk also having radially-arranged perforated ribs or vanes, and conical seat and packing-ring to form a tight joint for the jet-pipe.



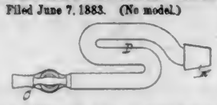
Claim.—1. In combination with the pile, a disk provided with a central distributing-chamber having a vertical port and a series of lateral ports, substantially as and for the purpose described.

2. A disk having a central distributing-chamber provided with ports, substantially as described, and having also radially-arranged ribs or vanes provided with perforations M, in combination with a pile, A, as set forth.

3. A disk having a conical seat, in combination with a jet-pipe carrying a packing-ring on its exterior, and a pile, substantially as set forth.

4. In combination with a pile, a disk provided with a downwardly-projecting part having therein a vertical port, and a series of lateral ports, substantially as and for the purpose described.

299,420. REFRIGERATING-FAUCET. FREDERICK A. PRESKO, New York, N. Y. Filed June 7, 1883. (No model.)



Claim.—As an improved article of manufacture, a beer-refrigerating faucet having its shank formed with a coil, D, and a tapering inner extremity, E, for insertion directly into the bung-hole of a barrel, substantially as described.

299,421. PROCESS OF MANUFACTURING SHOES. CHARLES W. REYNOLDS, Detroit, Mich., assignor of one-half to William H. Bartenshaw, same place. Filed Dec. 29, 1883. (No model.)



Claim.—The herein-described process in manufacturing a flexible shoe, consisting in placing upon the last a false insole, drawing the upper over the last, and tacking its edge to said false insole by a row of tacks, which first pass through a strip of rawhide or similar suitable material laid along the edge of said upper to the toe of the shoe, and thence doubled back and led to a point near the heel, then uniting the sole and upper in any usual manner, and then pulling out said false insole and said rawhide strip, substantially as shown and described.

299,422. PROCESS OF MAKING SHOES. CHARLES W. REYNOLDS, Detroit, Mich., assignor of one-half to William H. Bartenshaw, same place. Filed Feb. 29, 1884. (No model.)

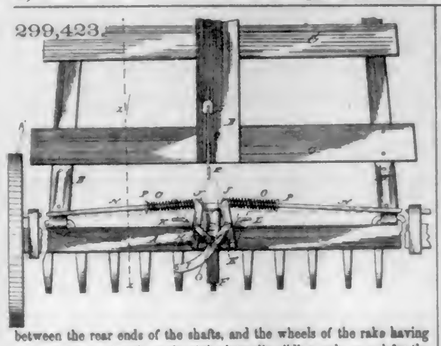


Claim.—The herein-described process in manufacturing a flexible shoe, consisting in placing upon the last an insole, drawing the upper over the last, and tacking its edge to said insole by a row of tacks, which first pass through a strip of rawhide or similar suitable material laid along the edge of said upper to the toe of the shoe, and thence doubled back to a point near the heel, then uniting the sole, upper, and insole in any usual manner, and then pulling out said rawhide strip, substantially as shown and described.

299,423. TRIP MECHANISM FOR HORSE HAY-RAKES. WM. M. SAUNDERS, Alfred Centre, N. Y. Filed Sept. 26, 1883. (No model.)

Claim.—In a self-dumping horse-rake, the combination of a rake-head having a plate upon its upper side provided with sliding bearings, a bolt sliding in said bearings, a long and a short toggle-arm pivoted upon a pin upon said bolt, the long toggle-arm being adapted to be drawn forward, two arms pivoted at one end and provided with horizontally-perforated lips at their forward ends, the toggle-arms pivoted upon the middle of said arms, a coiled spring having its ends also secured at the middle of said arms, two horizontal rods sliding in said perforated lips and in bearings upon the rake-head, and having pins or enlargements at their inner ends, spiral springs wrapped around the inner portions of said rods and bearing against the perforated lips of the pivoted arms and against enlargements upon the rods, a lever having a notched upwardly-turned inner or rear end, and pivoted upon the frame

299,423.



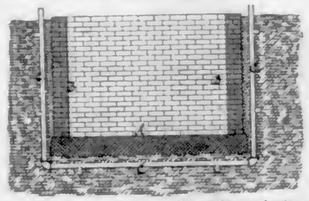
between the rear ends of the shafts, and the wheels of the rake having means for engaging the ends of the laterally-sliding rods, as and for the purpose shown and set forth.

299,424. TOOL-HOLDER. RUDOLPH J. SCHEMMEL, Wapakoneta, Ohio. Filed Apr. 5, 1884. (No model.)



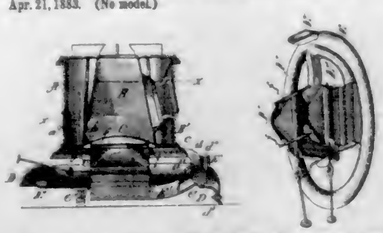
Claim.—The tool-holder herein described, consisting of the cylindrical tang-bearing A, having its outer end provided with the serrations C and its inner end provided with the prongs P, to engage the recessed handle, as shown, the rotary portion E, having its inner end provided with serrations to engage the serrations of the tang-bearing, and its outer end provided with a socket, F, carrying a set-screw, and the cylindrical socket-shank having at its inner end a stud, V, which is seated in the tang portion against a spring therein, the said shank having an annular recess, H, and the tang-bearing having a threaded perforation, D, for the reception of the stop-screw I, all adapted to operate substantially as specified.

299,425. WATERPROOFING CELLARS, &c. JOHN J. SCHILLINGER, New York, N. Y. Filed Apr. 24, 1884. (No model.)



Claim.—The process of waterproofing cellars and other subterranean structures, which consists in providing such structures with a suitable floor and walls, and then charging the spaces beneath the floor and outside of the walls with bitumen or equivalent material for filling the crevices and cracks existing in said floor and walls from the outside, substantially as set forth.

299,426. OIL-STOVE. CHAS. O. SCHWARTZ, Milwaukee, Wis. Filed Apr. 21, 1883. (No model.)

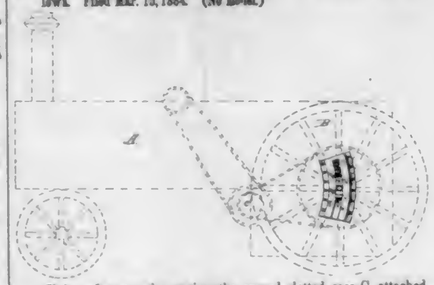


Claim.—1. In combination with the base and reservoir of an oil-stove, a V-shaped pipe united at its apex with the reservoir, the branches thereof leading to the wick-tubes, as set forth.

2. In combination with the base and reservoir of an oil-stove, a V-shaped pipe united at its apex with said reservoir, the branches of said pipe inclined downwardly toward the wick-tubes, as set forth.

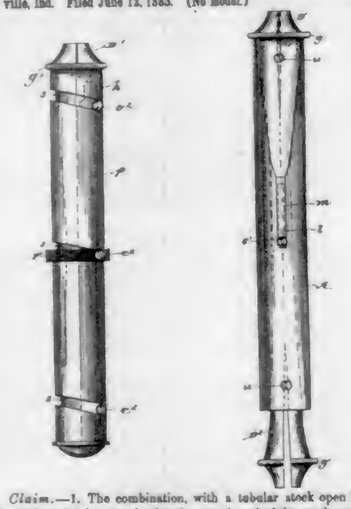
3. In combination with the base of an oil-stove, having an annular concave recess underneath the same, an annular reservoir secured in said recess by suitable mechanism, substantially as described, and a V-shaped pipe united to the reservoir at its apex and inclined downward toward the wick-tubes, substantially as described, and for the purpose stated.

299,427. TRACTION-ENGINE. WILLIAM L. SHEPHERD, Danville, Iowa. Filed Mar. 15, 1884. (No model.)



Claim.—In a traction-engine, the curved slotted case C, attached thereto and provided with a spring, and a sliding block, D, having a stub-axle, substantially as shown, and for the purpose set forth.

299,428. TOOL STOCK OR HANDLE. ROBERT A. SMALL, Jeffersonville, Ind. Filed June 12, 1883. (No model.)



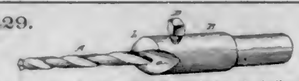
Claim.—1. The combination, with a tubular stock open at both ends, of clamping-jaws projecting from each end of the stock, said jaws being connected together and of greater length than the stock, whereby when one pair of jaws are drawn into the stock and clamped the other pair are protruded from the opposite end and released, substantially as described.

2. The combination, with a hollow tubular stock, of two pairs of clamping-jaws set therein, and constructed so that when drawn into the end of the stock the jaws will be clamped, a pin rigid with said jaws and protruding through a slot in the stock, and means for actuating said pin within the slot to throw the jaws in and out, substantially as described.

3. The combination, with the tubular stock, of grasping-jaws set within its open end, a pin rigid with the jaws and traveling in a slot in the stock, and a stud rigid on the stock and projecting inwardly between the jaws, substantially as and for the purpose described.

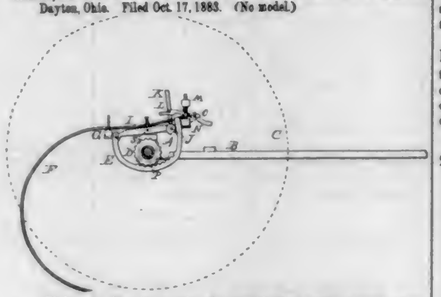
299,429. COMBINED DRILL AND COUNTERSINK. ALBERT J. SMART, Greenfield, Mass., assignor to the Wiley & Russell Manufacturing Company, of Massachusetts. Filed July 10, 1883. (No model.)

299,429.



Claim.—The countersink metal drill consisting of a hollow supporting-cylinder, upon the end of which is formed a countersink, a drill-spindle capable of passing through the chamber of the cylinder, and a set-screw located near the countersink end of the cylinder, all combined as and for the purposes described.

299,430. HORSE HAY-RAKE. GEORGE H. SMITH and JOHN KENNARDY, Dayton, Ohio. Filed Oct. 17, 1883. (No model.)



Claim.—1. In a horse-rake, the combination of the ground-wheel provided with the cog-wheel D, the rocker-arm I, the curved bar E, provided with the segment-racks, and the segment-gear J, substantially as and for the purpose set forth.

2. The combination of the ground-wheel provided with the cog-wheel D, the rocker-arm I, the rack-bar E, segment-gear J, lever K, and pawl O, substantially as and for the purpose set forth.

299,431. DIE FOR FORMING AXLES. JAMES SMITH, Boston, Mass. Filed Dec. 1, 1883. (No model.)

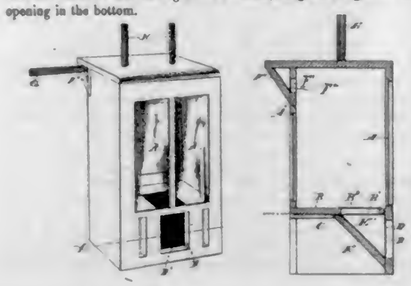


Claim.—1. As a means for forging the journals of car-axles, the dies *s e*, having faces *d' d'* of less than the length of the completed journal, jointly with the dies *f f*, having faces *f' f'* of substantially the same length as the completed journal, the hammering portions of said dies *f* forming arcs of a circle whose center is in the plane of the meeting faces of the die-blocks, whereby the journal is forged to a substantially perfect cylindrical form with a predetermined diameter, as set forth.

2. The dies *f f* in the blocks *a a'*, for forming the arms of axles, each die presenting a hammer-face that is a short arc only (less than the half) of a circle drawn from a point in the parting-line of the dies, and the two dies jointly having such configuration (indicated by *f*, *f'*, *f''*, and *f'''*) as would mold the axle-arm, its journal, shoulders, and wheel-seat to the finished form represented by Fig. 3 of the drawings.

299,432. WINDOW. WILLIAM D. SMITH, Chester, Pa. Filed Dec. 18, 1883. (No model.)

Brief.—A window provided with a lower air-inlet and upper air-exits, the latter connected with flues or chimneys. Said inlet, being covered with screens and having a valve running in guides, regulates the opening in the bottom.



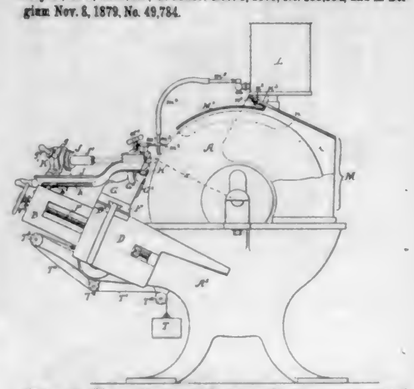
Claim.—1. The window substantially as described and shown, provided in its lower end with an air-inlet, and in its upper end with an air exit or exits, communicating with the flues or chimneys, substantially as and for the purposes set forth.

2. The combination, with a box or show window, substantially as herein described, having an air-inlet in its lower end, of pipes, as G H, extended from its upper end and projected into flues or chimneys, substantially as described, and for the purposes set forth.

3. The improved box or show window, substantially as described and shown, having an opening, B', in its bottom, and provided in its front side, below said bottom, with an opening, D, connected by passage E E' with opening B', the hinged door A', the offset F at its upper rear side, and pipes G H, all arranged and operating substantially as and for the purposes set forth.

4. The combination, with the window provided with inlet-opening D in its outer side below its bottom B, and a bottom, B, provided with the grated opening B', connected by suitable passages with opening D, of the valve C, supported in suitable guides close to the under side of opening B', and adapted to be operated from the inner side of the window, substantially as set forth.

299,433. MACHINERY FOR GRINDING OR SHARPENING DRILLS. W. FORD SMITH and ARTHUR COVENTRY, Salford, Manchester, County of Lancaster, England. Filed July 5, 1881. (Model.) Patented in England July 13, 1879, No. 2,921; in France Nov. 5, 1879, No. 133,534, and in Belgium Nov. 8, 1879, No. 49,784.



Claim.—1. The combination of the stone, the transversely-guided slide F, having a bearing, G', the spindle H, adapted to said bearing, and the arm J, secured to the spindle and provided with means for clamping the drill, as set forth.

2. The combination of the stone, the transversely-guided slide F, having a bearing, G', the spindle H, adapted to said bearing, and the arm J, secured to the spindle and having clamping-jaws *d d'*, and a head-stock, K, with sleeve *f*, as set forth.

3. The combination of the arm J and its clamping-jaws *d d'* with the head-stock having a sleeve, *f*, and comprising a base, *k*, bolted to the arm, and an upper portion, *k'*, adjustable laterally on said base, as set forth.

4. The combination of the slide F and its bearing G', the spindle H, adapted to said bearing, and the arm J, having drill-holding jaws *d d'* and adjustable on the spindle at an angle in respect to the longitudinal axis of the clamping-jaws, as set forth.

5. The combination of the slide F and its bearing G', the spindle H, adapted to and projecting beyond said bearing, the drill-holding arm J, secured to the end of the spindle, and the coiled spring W, connected at one end to the spindle and at the other end to the bearing, and serving to counterbalance or partially counterbalance the weight of the arm J, as set forth.

6. The combination of the stone A, the slide F, and the pivoted drill-holder having clamps the axis of which is above the center of the stone, with the slide D, carrying the slide F, and guided at an angle parallel with a radial line, *x*, passing through the point at which the drill bears upon the stone, as set forth.

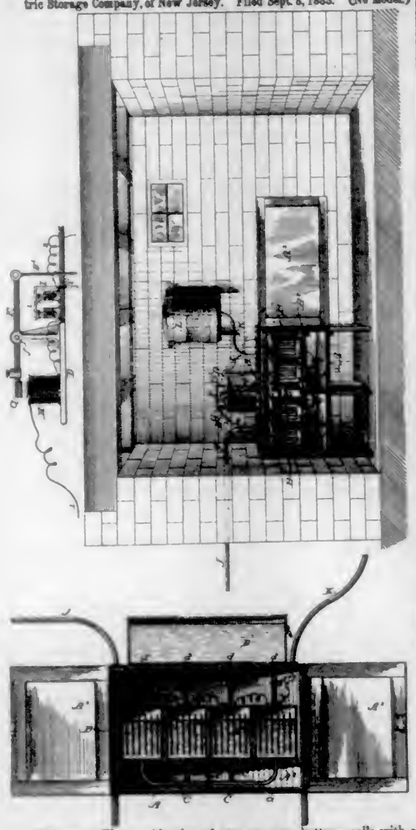
7. The combination of the inclined arm B, the screw P, adapted to bearings therein, the slide D, guided on the arm B, and having a nut, S, adapted to the screw P, and means for elevating the slide and nut and causing the same to have an upward thrust against the screw P, as set forth.

8. The combination of the arm B, the screw P, adapted to bearings therein, the slide D, guided on the arm and having a nut, S, the nut S' on the screw P, and the spring S'', interposed between the two nuts, as set forth.

9. The combination of the arm B, its screw P, the slide D, having a nut, S, the grooved nut S', locking-plate S^2, and the spring S^3, as set forth.

10. The combination of the stone with the hood comprising the rear portion, M, with inclined top *n* and the front segmental portion, M', adjustable on said inclined top *n*, as set forth.

299,434. SECONDARY ELECTRIC BATTERY. ELI T. STARR, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Starr Electric Storage Company, of New Jersey. Filed Sept. 8, 1883. (No model.)

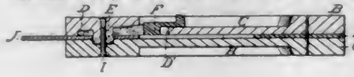


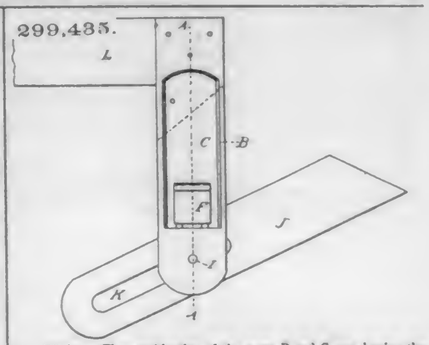
Claim.—1. The combination of two or more battery-cells with a pipe-connection between them, provided with an insulating cut-off, substantially as described.

2. The combination, with a battery, of a reservoir-tank, a feed-pipe connection between said battery and said tank, a valve or cock controlling the communication between said reservoir and said battery, an independent pipe-connection between the cells of said battery, and a cut-off in said independent pipe-connection, substantially as described.

3. The combination, with a battery, of a reservoir-tank, a feed-connection between said tank and said battery, a valve or cock controlling the communication between said tank and said battery, an electro-magnetic device controlling the operation of said valve or cock, a contact device to make and break the circuit, including said electro-magnetic device, and a device controlled by the liquid of the battery to operate said contact device, substantially as described.

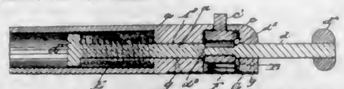
299,435. COMBINED CARPENTER'S SQUARE AND BEVEL. RANSOM STERLE, New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed Feb. 13, 1884. (No model.)





Claim.—The combination of the parts B and G, one having the boss E and the other having the recess for the reception of that boss, with the adjustable arm J and the bifurcated wedge F, all combined and operating together substantially as described.

299,436. TOY GUN. LAWRANCE STOCKMAN, Philadelphia, Pa. Filed Mar. 18, 1884. (No model.)



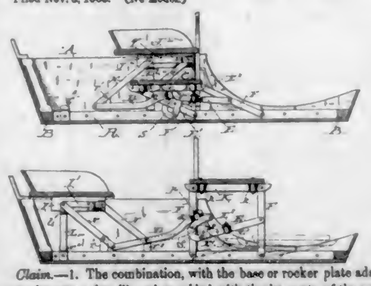
Claim.—1. In a toy gun substantially as described, a spring-plunger having an annular shoulder and working loosely through a trigger-block, combined with trigger-block, as C, having flat face and transverse passage, and the whole adapted to serve as set forth.

2. In combination with the spring-plunger, the pistol-body having transverse opening B *b*, the trigger-block, as described, trigger-spring F, and plate G, forming one side of the trigger-chamber, and affording a bearing for the spring, as set forth.

3. In a toy pistol, as described, the combination of the body A, as described, with the plunger, the trigger-block, and actuating-springs, the plunger operating loosely in and through an aperture formed in such block, as set forth.

4. In a toy pistol, the combination of the following-named elements, to wit: a body, A, having axial bores A' A^2 and transverse apertures B *b*, plunger D, having a rod, *d*, provided with annular groove d^2, plug *d'*, button d^4, normally held in a projected position by spring E, plug C, having body *c*, extension c^2, spring F, and plate G, arranged and combined substantially as described, and for the purpose set forth.

299,437. WAGON JUMP-SEAT. CHARLES H. STRATTON, Salem, Ohio. Filed Nov. 8, 1883. (No model.)



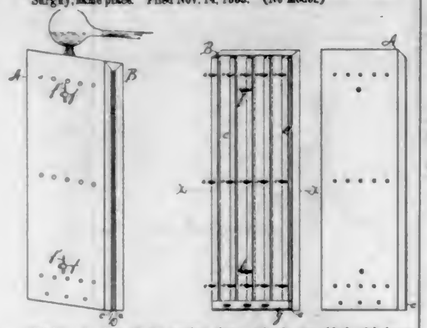
Claim.—1. The combination, with the base or rocker plate adapted for attachment to the sill, and provided with the leg-rests, of the swinging back seat having a leg, L, the front seat, and connecting mechanism, whereby when the front seat is shifted the back seat will be also shifted, and its leg changed from one rest to the other, substantially as described.

2. The combination, with the front and back seats, of the lever N and link N', pivoted at their upper ends to the back seat and below to permanent supports, the arms F F, pivotally connected with the front seat at the top and to permanent supports at their lower ends, the coupling-lever S, pivoted to the rear arm F, the link E', and locking-arm E, connecting the short arm of the coupling-lever with front arm F, and connecting-bar D, connecting the long arm of the coupling-lever with the short arm of the operating-lever N of the back seat, substantially as described.

3. The combination, with the front and back seats, lever N, link N', and arms F F, of the coupling-lever S, link E', locking-lever E, provided with toe *s*, the pin *p*, projecting from rear arm F, and the connecting-bar D, bowed upward at its front portion and having the indentation *s*, all connected and arranged for operation substantially as described.

4. The front-seat supporting-bar K, having the bends *i k*, substantially as described, and for the purpose set forth.

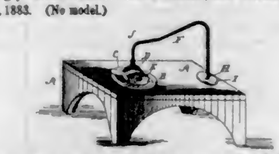
299,438. MOLD FOR CASTING SLUGS AND LEADS FOR PRINTERS' USE. GEORGE W. SURGUY, Columbus, Ohio, assignor to Thomas N. Surguy, same place. Filed Nov. 14, 1883. (No model.)



Claim.—1. A mold for casting slugs or leads, provided with inner strips of wood, or of similar non-conducting material, substantially as and for the purposes herein described.

2. A mold for casting slugs or leads, comprising two plates lined with a non-conducting substance, in combination with inner strips of wood or similar non-conducting material, substantially as described.

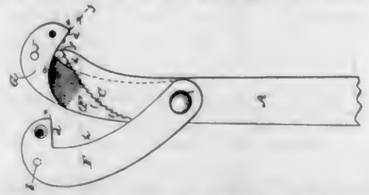
299,439. MEAT-CLAMP. JOS. H. TABONY, New Orleans, La. Filed Aug. 22, 1883. (No model.)



Claim.—1. The combination, with the curved bar F, having the straight shank H, and the concave corrugated jaw D, of the bench A, having a vertical hole somewhat larger than shank H, substantially as and for the purpose specified.

2. A meat-clamp consisting of the curved bar F, having the straight shank H, and the concave corrugated jaw D, substantially as and for the purpose specified.

299,440. PIPE-WRENCH. CONRAD D. VOLKMANN and WILLIAM F. PEDDYCORD, Nappanee, Ind. Filed Jan. 18, 1884. (No model.)

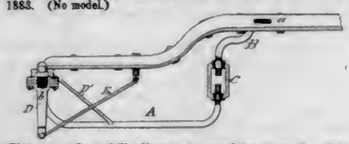


Claim.—1. The combination, with bar A, having the curve provided with teeth C, of the two independent hooks F, each provided with the projection G, substantially as described, whereby each face *d* is extended in front of teeth C, for the purpose specified.

2. The combination, with the bar A, having teeth C, of the two independent hooks F, each provided with the projection G, the dowel J, and the removable screw K, as and for the purpose specified.

3. The combination, with the bar A, having teeth C, of the hooks F, pivoted thereto, having projections G, each extended at *c*, as shown and described, whereby the hooks are prevented from swinging past the point of the bar, for the purpose specified.

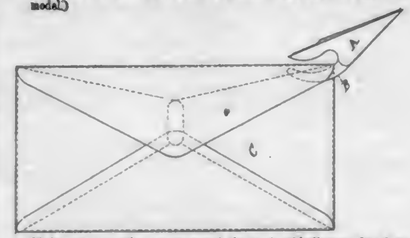
299,441. ROAD-CART. HENRY M. WALLIS, Racine, Wis., assignor to the Mitchell & Lewis Company, (Limited,) same place. Filed Aug. 27, 1883. (No model.)



Claim.—1. In a thill-adjuster, a curved bar secured and braced to the axle, and having its free end bent up and threaded, a bent hanger projecting from cross-bar, and having its threaded end in line with that of the first-mentioned bar, and a turn-buckle, which connects the ends of the two bars, substantially as described, and for the purpose set forth.

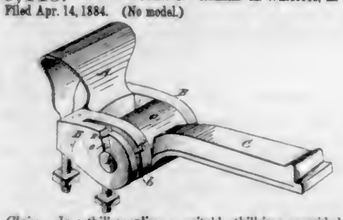
2. In a thill-adjuster, the combination, with the shafts and axle, of the curved adjuster-bar A and the curved hanger B, arranged as shown, and connected by turn-buckle, and the hanger D, having brace E, connecting to the shafts, substantially as shown and described.

299,442. ENVELOPE-OPENER. CHARLES S. WATSON, Philadelphia, Pa., assignor to James R. Bisser, same place. Filed Sept. 14, 1883. (No model.)



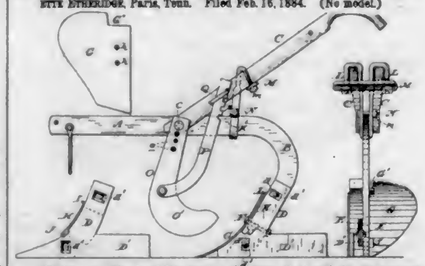
Claim.—An envelope opener and closer, A, of hollow wedge form, provided with the cotter B at one of its diverging sides, for severing the flap *a* from the body C of an envelope, substantially as described.

299,443. THILL-COUPLING. CHARLIE M. WESTCOTT, El Paso, Ill. Filed Apr. 14, 1884. (No model.)



Claim.—In a thill-coupling, a suitable thill-iron provided with an eye, and a bolt having a pin thereon, in combination with a clip cast with ears, one of which is divided in sections by a slit extending through it, one of said sections having an open slot joining with the hole in the ear, substantially as and for the purpose set forth.

299,444. PLOW. THOMAS HARDEN WHITLOCK and CARROLL LAFAYETTE ETHERIDGE, Paris, Tenn. Filed Feb. 16, 1884. (No model.)



Claim.—1. The landside having the slots *d' d'* and the open recess E, combined with the plowshare G, the beam and the bolts *d d* and F, the said slots being arranged to allow the landside to be turned upon its securing-bolts, substantially as described, for the purpose specified.

2. The combination, with the plow-beam, of the adjustable land side D D', the plowshare G, the adjustable carrier H for the plowshare and means, substantially such as described, whereby the plowshare and its carrier are secured to the landside, and the latter to the standard, substantially as described.

3. The colter curved at its lower end toward the plowshare, combined with the brace P, pivoted to the colter near its lower end, having its upper end adjustably confined in a loop, Q, of the handle, the said colter being pivoted to the beam, and adapted to be adjusted vertically and to bring its curved end nearer to the plowshare, as may be desired, substantially as shown and described.

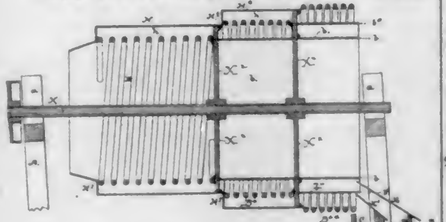
4. In combination with the beam and the handles pivoted thereto, the yoke K, embracing the beam having screw ends L L bent over the handles, the clamping tie-bar M, connecting said ends beneath the handles, and the bolt N, clamping the yoke to the beam, the said yoke being adapted to be adjusted by sliding on the beam and upon the handles to adjust and hold them, as shown and described.

299,445. SALT-CELLAR. STEPHEN C. WILCOX, Dubuque, Iowa, assignor to Le Roy Delos Randall, same place. Filed Mar. 10, 1884. (No model.)



Claim.—The salt-cellar, as a new manufacture, comprising perforations in the cellar for the egress of salt, a cap, and the device for automatically closing the perforations to prevent the salt from caking, substantially as described.

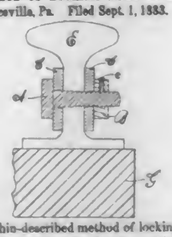
299,446. MACHINE FOR SEPARATING, SORTING, AND GRADING GRAIN. WM. E. WILD, Loveland, Colo. Filed Aug. 17, 1883. (No model.)



Claim.—1. The combination of the perforate cylinders B B*, having the imperforate extensions *b b**, with the casings H H*, arranged and combined so that the matter retained in each perforate cylinder shall be passed directly out of the machine over the imperforate extensions, and the matter passed through each perforate cylinder shall be conveyed by the casing surrounding the same to the front of the next cylinder, substantially as described.

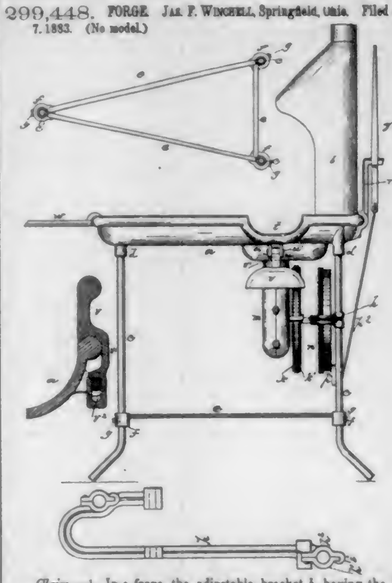
2. The combination, with a series of screen-cylinders graduated in mesh or size of opening, of a series of casings surrounding said cylinders, perforated in reverse order to the screens, the coarsest-meshed screen having the finest-meshed casing, as set forth.

299,447. METHOD OF LOCKING NUTS TO BOLTS. BENJAMIN H. WILLIAMS, Lawrenceville, Pa. Filed Sept. 1, 1883. (No model.)



Claim.—The within-described method of locking nuts to bolts, consisting of perforating the nut, as at *c*, the inner side of said perforation being somewhat enlarged, screwing said nut firmly onto the bolt, inserting a prick-punch in *c*, and indenting the bolt or nut-seat, then inserting a pin whose outer end remains above the surface of said nut, and riveting said pin, thereby upsetting both its outer and inner ends and filling the prick-punched indentation, as and for the purpose specified.

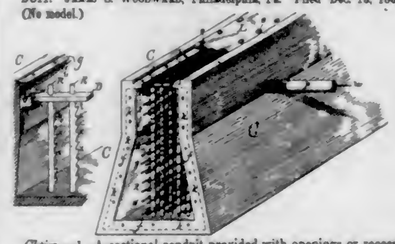
299,448. FORGE. JAS. F. WINCHELL, Springfield, Ohio. Filed Sept. 7, 1883. (No model.)



Claim.—1. In a forge, the adjustable bracket A, having the half-sleeves A^2, secured to the legs *c c* by the half-sleeves A' and A^2, and securing-screws, nut-bolts, or the like, substantially as specified.

2. In a forge, the combination, with the top plate, *a*, having the depressions *t t* at the front and rear edges of the fire-pot, and the lug-bearings below the same, of the drop-doors *v*, connected by their slotted arms to their bearings, and provided in their edges with grooves to fit the molding along the depressions *t t*, substantially as specified.

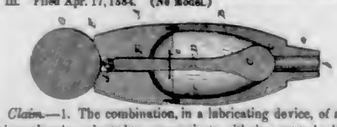
299,449. COMBINED CURBSTONE AND TELEGRAPH-WIRE CONDUIT. JAMES S. WOODWARD, Philadelphia, Pa. Filed Dec. 13, 1883. (No model.)



Claim.—1. A sectional conduit provided with openings or recesses in the floor thereof, and a transverse removable cross-bar provided with openings, in combination with rack-rods the ends of which are adapted to fit within the openings aforesaid, whereby the racks are maintained in an upright position for the support of the conductor-wires, as described and set forth.

2. A sectional conduit provided with openings or recesses in the floor thereof, the brackets *b*, and the removable cross-bar D, provided with openings, as specified, in combination with the rack-rods E, substantially as described, and for the purposes set forth.

299,450. LUBRICATING-CUP. WILBUR SARGENT YOUNG, Gillespie, Ill. Filed Apr. 17, 1884. (No model.)

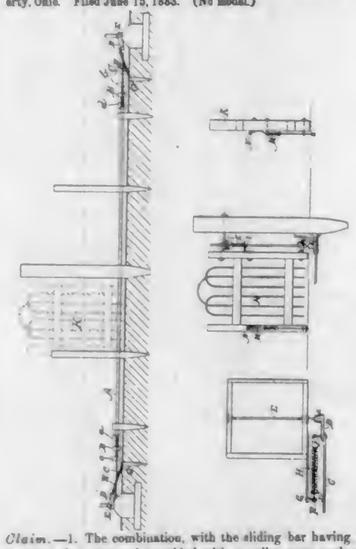


Claim.—1. The combination, in a lubricating device, of an oil reservoir or chamber adapted to communicate with the part to be lubricated, a valve controlling such communication, and a sphere or light body connected to said valve, and adapted to be moved, as described, to raise the valve, substantially as set forth.

2. The combination, in a lubricating device, of two sections adjustably secured together, the lower section forming an oil reservoir or chamber adapted to communicate with the part to be lubricated, a valve controlling such communications, the upper section provided with a horizontal partition and top, a sphere bearing on said top and connected to the valve by a rod or connection playing through said top or partition, said sphere being adapted to be moved to lift the valve, substantially in the manner and for the purpose set forth.

3. The combination, in a lubricating device, of an oil chamber or reservoir adapted to communicate with the part to be lubricated, a valve controlling such communication, a sphere or light body connected to said valve by a spindle having a stop or pin, adapted to contact with a transverse partition or support in said chamber, substantially as set forth.

299,451. GATE. JOSIAH AUSTIN and ROSSCO CHAMBERLAIN, East Liberty, Ohio. Filed June 15, 1883. (No model.)



Claim.—1. The combination, with the sliding bar having means for operating the gate, and provided with a collar near each end, of the two crank-shafts supported in bearings above the surface of the ground, and having each an arm, which is rigidly attached thereto and turned toward the gate, the pull-rods connected to the two arms, and having loops engaging with the collars on the ends of the sliding bar, and the returning-springs, substantially as shown and described, whereby either pull-rod shall be drawn in a direction from the gate, whether the crank-shaft to which it is connected be deflected toward or from the gate, and whereby the operation of one crank-shaft and pull-rod will leave the other unmoved.

2. The combination, with the sliding bar for operating the gate, of the crank-shafts having rigid arms turned toward the gate, the two pull-rods, one connecting each arm with the said bar, and the returning device consisting of the tubular case, sliding rod, and spring, arranged and adapted to operate substantially as shown and described.

299,452. SULKY-PLOW. NATHANIEL S. BARGER, Hampton, Iowa, assignor of one-half to T. B. Taylor and W. D. Evans, both of same place. Filed Dec. 31, 1883. (No model.)

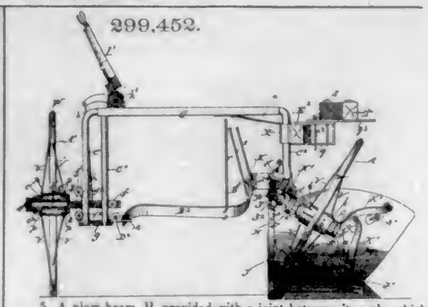
Claim.—1. A plow-sulky having an arched support or axle-tree with a horizontal axle, *a'*, carrying vertical land-wheel A', an oblique axle, *a*, carrying an oblique wheel-landside, A, and a ball-and-socket-joint connection, whereby the axle *a* is adjustable to a horizontal position and the oblique wheel-landside A to a vertical position, both of said wheels at all times serving as the sulky-wheels and being in the rear of the plow proper, substantially as and for the purpose described.

2. The combination, with a plow, of an oblique wheel-landside having a periphery which is in cross-section curved, and is formed of a tube, substantially as and for the purpose described.

3. The bail B^2, with its pivot B^3, and hinge and pivot connection D *e*, in combination with the jointed beam and the arched support or frame, substantially as and for the purpose described.

4. The bail, in combination with the pivot *e* and hinge D, rods or bars *s s'*, and lever L, substantially as and for the purpose described.

299,452.



5. A plow-beam, H, provided with a joint between its ends, which is flexible in an upward direction and rigid in a downward direction, in combination with the arched support, wheels A A', and the bail B^2 and its lifting devices, substantially as and for the purpose described.

6. The combination, with the plow proper, M, of the oblique wheel-landside A, the two-part plow-beam H H', having a vertical joint at B^3, and the arm K, with braces K', bolted to the mold-board and forming, with the rear part of the plow-beam, bearing for the wheel-landside, substantially as and for the purpose described.

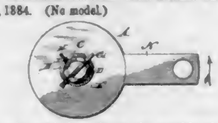
7. The three rollers *f' f' f'*, all attached to the movable axle or spindle *a'*, one being inside on the inner vertical leg, C^4, and two outside on the outer leg, C', of the arch-support, and the inside one being on a plane between the outer rollers, in combination with the arched support, its vertical legs C' C^4, plate *g*, movable axle arm or spindle *a'*, the connecting rods or bars A, and lever L', whereby either the upward or downward strains are caused to fall upon the rollers and binding avoided, substantially as described.

8. The combination, with a frame of a sulky-plow provided with wheels A A' in the rear of the plow proper, of a plow-beam having a joint, B^3, between its ends, and the bail B^2, provided with pivot *e* and hinge D, the rods or bars *s s'*, and lever L, substantially as and for the purpose described.

9. The tongue-extension E^2, in combination with its strap X, brace *u*, and beam-strap O, latch *r*, and tongue-supports *q q'*, substantially as and for the purpose described.

10. The combination of the arched support, the two wheels, one having a ball-and-socket-joint connection, the plow proper, the jointed beam, the bail having a pivot and hinge, and means for raising and lowering the plow proper, as well as adjusting the wheel-landside, substantially as and for the purpose described.

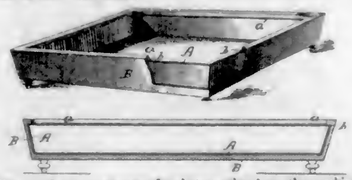
299,453. FRICTION-CLUTCH. JOHN WESLEY BLODGETT, Chicago, Ill. Filed Mar. 6, 1884. (No model.)



Claim.—1. In a friction-clutch, the combination of a cylindrical casing having a central perforation, an annular post, a sleeve or hub on this post, provided with notches, a feather or key adapted to enter a notch, I, in the sleeve D, applied to the cap F, a pawl, L, an arm, J, and a spring, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination of the casing, its cap F, an annular post, a sleeve or hub having notches, the feather H, and the spring-actuated dog or pawl, substantially in the manner and for the purposes described.

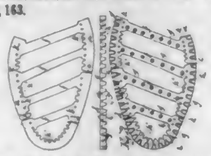
299,454. BATH-TRAY. EDWARD BLOOMFIELD, Chicago, Ill. Filed Feb. 12, 1884. (No model.)



Claim.—In a tray structure for photographers' use, the combination, with an inner tray, as described, of an outer inclosing companion tray, provided around the top with an inward projecting bead having a con-

tinuous groove in the under side of the same for the engagement of the upper edge of the inside tray, whereby said trays are closely locked together to form a solid structure, substantially as and for the purpose set forth.

299,455. BOOT OR SHOE SOLE PROTECTING PLATE. JOSEPH BORRETT, London, England. Filed Nov. 17, 1883. (No model.) Patented in England Apr. 30, 1883, No. 2,177; in Germany June 7, 1883, No. 25,320; in France June 8, 1883, No. 155,929; in Belgium Nov. 8, 1883, No. 63,157; in Canada Nov. 24, 1883, No. 18,169, and in Italy Dec. 31, 1883, XVII, 16,123, XXXII, 163.



Claim.—1. The improved boot or shoe sole protector for protecting all or a part or parts of a sole, consisting of a metal frame having connecting cross-bars, and all in one piece, but cut through or reduced to a flexible thinness at suitable places, and having projecting pins, into the spaces between which a layer of leather or the like is forced by pressure, substantially as shown and described.

2. A sole-protecting plate having the cuts or reduced portions on the same, as set forth, the cross-bars, and the projections, the layer of leather forced into the spaces between the pins, and the spaces between the under sole or welt and the upper surface of the plate being filled in with cork or other suitable water-proof material, all substantially as and for the purposes shown and described.

3. A metallic boot or shoe sole plate having the reduced portions or cuts, the cross-bars, and the projections on both, as shown and described, and also having at the inner edge of the frame holes suitable for stitching or pegging the plate to the boot or shoe.

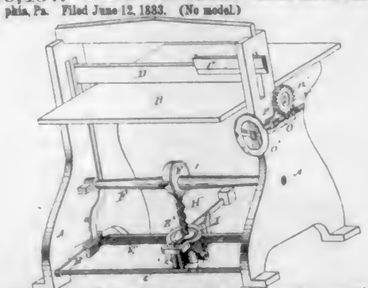
4. A boot or shoe having an outer sole composed of a metal frame made with cuts or reduced portions, as set forth, and with the projections on such frame and cross-bars, and with the spaces between such projections filled in with leather or the like, and with the spaces above such outer sole and between the cross-bars filled in with cork or water-proof material, such sole being stitched or nailed to the upper or shoe, all as set forth.

299,456. EXTENSION-KEY. JOHN BROUGHTON, Brooklyn, N. Y.; Mary Broughton Administratrix of said Broughton, deceased, assignor to Daniel H. Fitzgerald, Reading, Pa. Filed June 8, 1881. Renewed Oct. 10, 1883. (No model.)



Claim.—The extension-key herein described, comprising the barrel A, the wire stem B, provided with grooves *b c*, the shoulder *c* in the groove *b*, and the stop-pin *d* in the barrel, the spring D, fitting in the groove *c*, and having the shoulder *f* and projecting lip *g*, and the bow C, into which the stem and the spring are driven, all combined substantially as specified.

299,457. PAPER-CUTTING MACHINE. SAMUEL BROWN, Philadelphia, Pa. Filed June 12, 1883. (No model.)



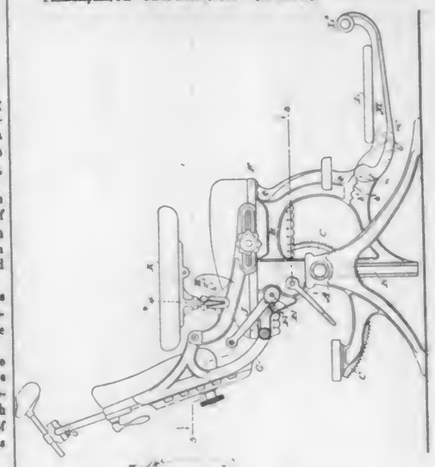
Claim.—1. The combination, with shaft F, having eccentric F', and rocking frame E, of an intermediate swiveled worm and nut, substantially as shown and described.

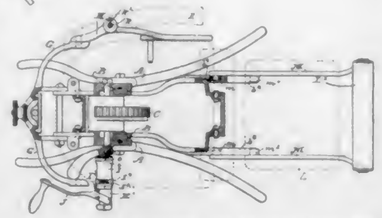
2. The combination, in a paper-cutting machine, of a clamp-bar connected by bars or connecting-rods with a rocking frame, E, a shaft, F, having an eccentric, F', and a swiveled worm and rock-nut forming a connection between said shaft and rocking frame, whereby the rotation of said shaft will depress said frame and cause said worm to enter and withdraw from said nut, substantially as and for the purpose set forth.

3. In combination with rocking frame E, having cross-bar E', with yoke E², the nut I, having trunnions and sustained on screws or centers, whereby said nut may rock during the movement of said frame, substantially as shown and described.

4. In combination with eccentric F', having strap *f*, the spindle or bolt G, having swiveled worm-collar H, adjustable split nut I, and rocking frame E, substantially as shown and described.

299,458. ADJUSTABLE CHAIR. ARTHUR W. BROWNE, Pleasant Plains, N. Y., assignor to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Nov. 3, 1883. (No model.)





Claim.—1. The combination, with the turning crank-shaft and frame in which it is mounted, of a crank jointed to said shaft, clutch mechanism controlled by said crank, and a spring acting on said crank to throw it into a normal position, substantially as described.

2. The combination, with a turning crank-shaft and frame in which said shaft is mounted, having locking-surfaces thereon, of a sleeve movable on said shaft, and having locking-surfaces to engage the locking-surfaces of said frame, a spring acting on said sleeve, and a crank pivoted to said crank-shaft and connected with said sleeve to operate it, substantially as described.

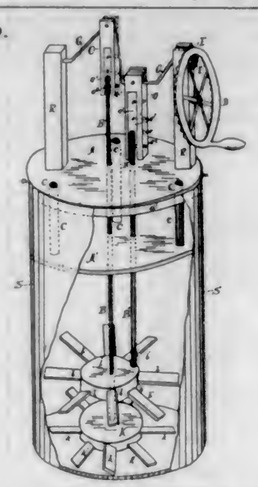
3. The combination, with a chair-frame provided with locking-notches and inclined surfaces, of arms (carrying the foot-board of the chair) provided with lugs to engage said locking-notches, and with projections or shoulders to ride upon said inclined surfaces, substantially as described.

299,459. CHURN. JOHN BURI, Springfield, Me. Filed Dec. 27, 1883. (No model.)

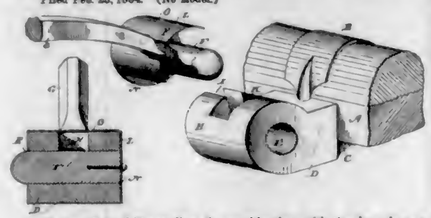
Claim.—1. In a double-dash churn, the combination of a double head, A A', two dasher-heads, I K, having paddles *b b' k k'* placed in two rows in each head and in oblique positions, pinion E, crank-shaft G, drive-wheel D, and adjustable arms O O, having slots *o' o'*, bolts *o²*, and holes *o*, all substantially as shown and described, for the purpose set forth.

2. The combination, in a churn, of a vessel, S, having two heads, A A', with two dasher-rods, B B', having heads I K and paddles *b b' k k'*, adjustable arms O O, crank-shaft G, drive-wheel D, and pinion E, all substantially as shown and described, for the purpose set forth.

299,459.

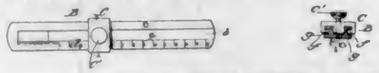


299,460. THILL-COUPLING. EDWIN S. BUSEY, Bordentown, N. J. Filed Feb. 23, 1884. (No model.)



Claim.—In a thill-coupling, the combination, with the draw bar or iron, of the thill fitted therein, and a metallic sheathing formed in one piece and secured to the end of the thill, and comprising a circular cap and a convex guard, said guard being provided with a slot to enable it to fit around the thill, for the purpose set forth.

299,461. CALCIMETER. LUCAS MAVIK CAMPI, Havana, Cuba. Filed Dec. 10, 1883. (No model.)



Claim.—1. As an improved article of manufacture, a calcimeter consisting of a bar having a longitudinal lime-receptacle, *b*, open at one end and graduated along one edge, as at *d*, and a slide, C, having a tongue, *c*, integral therewith, and adjustably held in said lime-receptacle, as set forth.

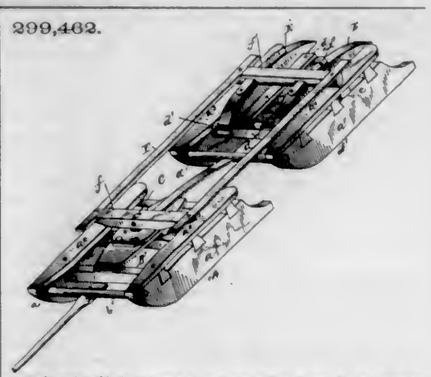
2. The measure B, formed with groove *b* and side grooves, *g g*, in combination with the slide C, having central projection, *e*, and lips *f f*, that run in the grooves *g g*, and provided with the screw C', for holding the slide at any desired position, substantially as described.

299,462. BOB-SLEIGH. WILLIAM CAMPBELL CASE, Limerick, N. Y. Filed Dec. 31, 1883. (No model.)

Claim.—1. The combination, with the sleds A A', the sled A being provided with a strip, *b'*, having an opening, *b²*, to receive the end of the king-bolt, and a metal plate, *c*, retaining said king-bolt in position, and the sled A' being provided with beams E, adapted to slide upon plates *d'*, and connected on their under sides by a beam, *e*, of a supporting-frame, F, the forward end of which is secured to the king-bolt, while the rear end is secured to the beams E, and a reach for connecting the sleds, substantially as set forth.

2. The combination, with the sleds A A', the sled A being provided with a strip, *b'*, having an opening, *b²*, to receive the end of the king-bolt, and a metal plate, *c*, retaining said king-bolt in position, and the sled A' provided with beams E, adapted to slide upon plates *d'*, said beams being provided upon their under side with rollers, and connected

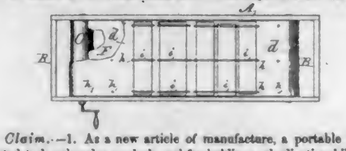
299,462.



on their under side by a beam, *e*, of a supporting-frame, F, the forward end of which is secured to the king-bolt, while the rear end is secured to the beams E, and a reach for connecting the sleds, substantially as set forth.

3. The herein-described bob-sled, consisting of the sleds A A', the sled A being provided with a king-bolt, as described, a reach for connecting the sleds, the same being secured to the king-bolt and to the forward end of the rear sled, the sled A' provided with beams E, adapted to slide upon plates *d'*, and connected upon their under side by a tie-beam, *e*, a supporting-frame, F, connected at its forward end to the king-bolt, and at its rear end to the beams E, substantially as set forth.

299,463. CABINET FOR HOLDING AND ADJUSTING BILL-HEADS, &c. HENRY A. CLOW, Des Moines, Iowa. Filed Sept. 17, 1883. (No model.)

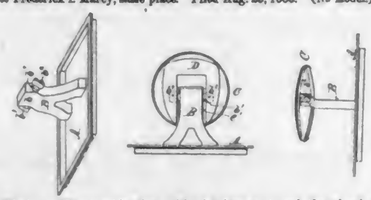


Claim.—1. As a new article of manufacture, a portable cabinet adapted to be placed on a desk, and for holding and adjusting bill-heads and other blanks, composed of a case, an endless carrier on rollers, provided with paper-fastening devices, and a fixed tablet under the movable carrier, in the manner set forth.

2. In combination with a table or desk having an open section in its top surface, an endless carrier having paper-fastening devices on its outside surface, a pair of rollers placed in bearings underneath the top of the table or desk, and an auxiliary table or tablet fixed beneath the endless carrier, to operate in the manner set forth, for the purposes specified.

3. The rollers C C, an endless carrier, *d d*, having paper-fastening devices on its surface and edges, and a fixed tablet, F, arranged and combined relatively to each other within a portable case, table, or desk, to operate in the manner set forth, for the purposes specified.

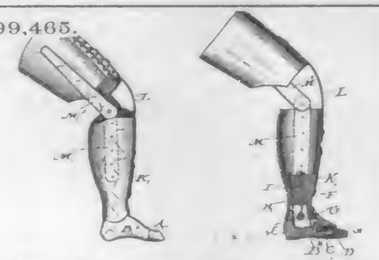
299,464. BUTTON. WILLIAM W. COVELL, Providence, R. I., assignor to Frederick I. Marcy, same place. Filed Aug. 25, 1883. (No model.)



Claim.—The combination, with the button A and the shank B, having the trunnions *b'* and cams *b²*, and also having the bend *b*, of the shoe C, the inner plate, E, having the slot *e* and the bearings *d' d'*, and the U-shaped spring D, all constructed and arranged to operate substantially as described.

299,465. ARTIFICIAL LEG. LYSANDER CROSBY and ALMON E. CROSBY, Albia, Iowa. Filed Nov. 23, 1883. (No model.)

299,465.

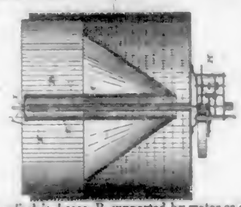


Claim.—1. The toe-joint A, provided with the transverse bar D, in combination with the hook C, rubber spring E, and block B, all constructed to operate substantially as and for the purpose set forth.

2. The toe-joint A, provided with the transverse bar D, in combination with the hook C, spring E, block B, elastic cord G, and ankle-block F, all constructed to operate substantially as and for the purpose set forth.

3. The block B, elastic cord G, and ankle-block F, provided with the transverse roll J, heel-cord H, and ankle-hook I, in combination with the toe-joint A, provided with the transverse bar D, the hook C, and spring E, all constructed to operate substantially as and for the purpose set forth.

299,466. REVOLVING SHOW-STAND. SAMUEL THADDEUS CULP, Toronto, and THOMAS TICKNOR, Arkona, Ontario, Canada; said TICKNOR assignor to said Culp. Filed Dec. 21, 1883. (No model.) Patented in Canada Jan. 15, 1884, No. 18,448.



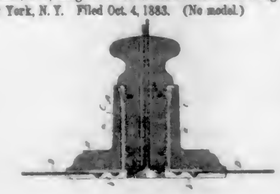
Claim.—1. A cylindrical case, B, supported by water or other fluid, and having a hole centrally located in its bottom, and a tube, E, extending upwardly from the said hole, in combination with a tube, F, surrounding a hole in the bottom of the stand or vessel A, and extending upwardly into the tube E, the tube F inclosing and protecting the spindle G, for transferring the motion from the clock-work to the carrying device, substantially as and for the purpose specified.

2. A cylindrical case, B, having a cone-shaped bottom, C, designed to extend below the surface of the fluid supporting the said case as a counter-balance to prevent tipping of the tray D, and contained within the vessel A, in combination with driving mechanism arranged to impart a rotary movement to the said case, substantially as and for the purpose specified.

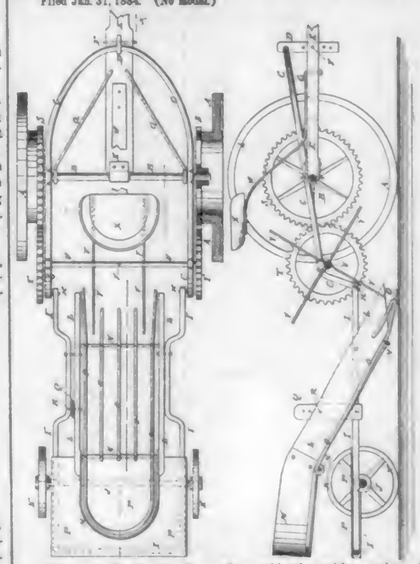
3. A cylindrical case, B, supported by water or other fluid contained within a stand or vessel, A, the said vessel having a tube, F, extending upwardly from its bottom, to protect the spindle G of the driving mechanism, as specified, in combination with a head, I, adjustably fitted to the spindle and flexibly connected to the tube E, which encircles the tube F, which surrounds the spindle and is connected to the floating case, substantially as and for the purpose specified.

4. The spindle G, connected at its lower end with the clock-movement H, and provided with the head I, adjustably fitted onto the said spindle, in combination with the cords or wires J, arranged to flexibly connect the head I to the floating cylindrical case B, substantially as and for the purpose specified.

299,467. ELECTRIC-CIRCUIT CONNECTION. DAVID E. DRAKE, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Oct. 4, 1883. (No model.)



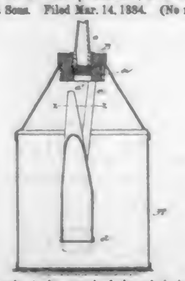
299,468. POTATO-DIGGER. BALTUS FREEMAN, Factoryville, Pa. Filed Jan. 31, 1884. (No model.)



Claim.—1. In a potato-digger, the combination, with a carriage, A B C, of the carriage I J K, having a platform, P, and the pivoted frame L M and screen N O, substantially as herein shown and described, whereby the potatoes will be raised from the ground, separated from the soil, and delivered into a basket or bag, as set forth.

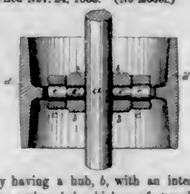
2. In a potato-digger, the combination, with the two carriages A B C and I J K and the frame L M and screen N O, of the gear-wheels S T and the shaft U, having radial rods V, substantially as herein shown and described, whereby the soil is loosened in advance of the said screen, as set forth.

299,469. OIL-CAN. SETH J. GETCHELL, Woonsocket, R. I., assignor to George Draper & Sons. Filed Mar. 14, 1884. (No model.)



Claim.—The body A, its attached threaded ring, and the threaded collar secured therein, and provided with the openings b b^2, combined with an induction and eduction pipes, constituting an air-chamber in connection with and made removable from the body A, with the said collar or neck, the air-chamber having a removable bottom-closing device, to operate substantially as described.

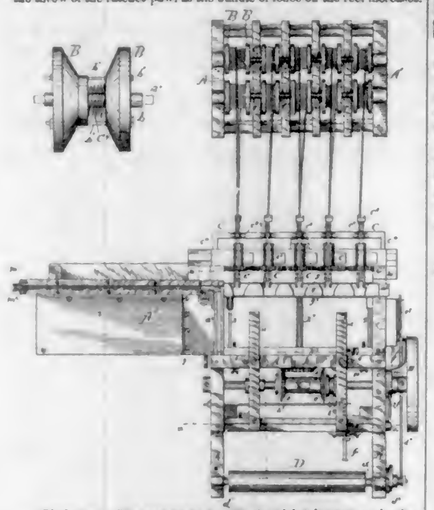
299,470. SELF-ADJUSTING PULLEY. WILHELM A. GRØNDAHL, Portland, Oreg. Filed Nov. 24, 1883. (No model.)



Claim.—A pulley having a hub, b, with an intermediate ring, c, fastened to b by taps or spokes c' c', which are fastened to the ring c by keys or pins or other suitable mechanism, and allowed to swing in the hub b, the taps or spokes c'' c'' fastened to d in a similar way as c' c' to c, and d allowed to swing on taps or spokes e'' e'', all substantially as set forth, and for the purposes specified.

299,471. MACHINE FOR MAKING WIRE-AND-PICKET FENCING. THOMAS B. HARRISON, Clinton, and JEROME W. MARTIN, Kirksville, Mo. Filed Mar. 11, 1884. (No model.)

Brief.—The pickets are pushed between the wires projecting through the twister-heads by an automatic device. After the beater has pushed a picket into the bight of the wire, the pivoted arms of the twisters are moved toward each other to twist the wires close to the picket by a sliding spindle operated from the beater-frame. As the beater-frame swings forward, its front plate slides downward, allowing the picket to pass. A sleeve on the main shaft carries two bevel-gears, and it is shifted along the shaft to bring first one gear and then the other into engagement with the gear that runs the twisters. The twisters are thereby run in one direction, then allowed to remain idle while a picket is fed, and then run in the other direction. The reel is moved by a ratchet, and a push-bar in front of the reel is connected to devices which decrease the throw of the ratchet-pawl as the bundle of fence on the reel increases.



Claim.—1. The combination, with the picket-inserter m, having spring-finger m^2, of the operating-cam, the lever, arranged, as described, to be moved by said cam, the cord attached to said lever and leading to the spring-bearing shaft, the spring for driving said shaft, and the endless belt and its driving-pulley, actuated by said spring to move the picket-inserter forward, all relatively arranged substantially as described.

2. The combination, with the beater G, of the sliding guard-plate g^3, and mechanism, substantially as described, whereby the guard-plate is raised or lowered with the movement of the beater.

3. The combination, with the swinging beater G, of the sliding plate g^3, bars g^4, supporting the same, links supporting said bars and pivoted to the beater-standards, and a lever and stop, arranged substantially as described, whereby the bars and plate are raised as the beater moves back, and permitted to fall as the beater moves forward.

4. The combination, with the sliding stops i i, of the swinging beater G, and mechanism, substantially as described, whereby the stops are held up while the beater swings forward, and depressed to permit the winding of the fencing, substantially as described.

5. The combination, with the shifting sleeve on the driving-shaft, a shaft and gears driven thereby alternately in one or the other direction, and the twisting-jaws driven from said shaft, of an arm on the shaft, and a sliding piece, k^3, bearing a stop which said arm engages alternately, substantially as described.

6. In a wire-and-picket-fence machine, and in combination with the picket-inserter and beater mechanism thereof, a series of wire-twisting jaws, and mechanism, substantially as described, whereby the jaws are closed to twist the wire in close proximity to the picket, as set forth.

7. The combination, with a series of rotating jaws, connected together so as to rotate in unison, of mechanism, substantially as described, whereby the jaws are opened or closed during the rotation, as set forth.

8. The combination, with the rotating gear C', of jaws c c', connected to said gear by pivoted links, and a spindle connected to the pivot of the jaws, whereby the jaws may be expanded and contracted by the movement of the spindle during the rotation of the gear.

9. The series of gears C', arranged for uniform rotation, substantially as described, expansible jaws carried by said gears, the spindles connected to said jaws, and connections, substantially as described, whereby all the spindles may be advanced or retracted together, as set forth.

10. In combination with a rotating spindle of wire-twisting jaws, a yielding spreader carried by said spindle, having perforations through which the wires pass.

11. The combination, with the pivoted jaws and the spindle connected to the pivot thereof, of a spreader mounted on said spindle, and a spring against which spreader bears, substantially as set forth.

299,472. NUT-LOCK. ARTHUR HERBERT, Montebello, and THOMAS PAGE BUTLER, Montreal, Quebec, Canada. Filed Jan. 15, 1884. (No model.)

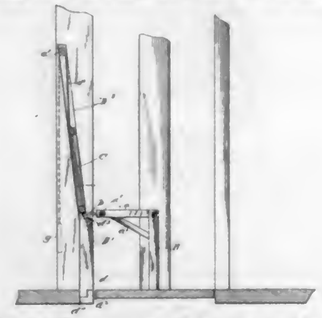


Claim.—1. The combination, in a railway-joint, of the fish-plates, the bolts, the nuts, a flat bar slotted or recessed to fit upon the nuts, and provided with a hook at one end and a key-hole at the other end, and a removable key adapted to be wedged between the web of the rail and one end of the fish-plate, and having a turn-button adapted to fit the key-hole in the lock-plate, substantially as set forth.

2. The combination, with the fish-plates and nuts of a railway-joint, of the lock-plate F, constructed as described, and the removable key L M N, adapted to interlock with the key-hole in the plate, substantially as set forth.

3. The key consisting of the stud L, wedge-shaped lip M at right angles to the stud, and turn-button N, substantially as described.

299,473. HATCHWAY-GATE FOR ELEVATORS. LELAND HERRON, Washington, D. C., assignor of two-thirds to Robert A. Tucker and Henry L. Strang, both of same place. Filed Dec. 4, 1883. (No model.)



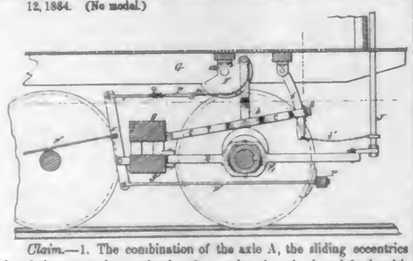
Claim.—1. The combination, with the platform-uprights having horizontal or outwardly-projecting arms, of the gate arranged to close the entrance to the hatchway-opening from the floor having said opening, and adapted to have perpendicular movement through the action of the arms, and be retained in its elevated or open position thereby, said gate being lowered to its closed position upon the descent of the platform, substantially as set forth.

2. The combination, with the elevator-platform having the armed uprights provided with spring-bolts, of the gate arranged to move in a perpendicular and in an oblique plane upwardly and downwardly through

the action of the arms of the platform-uprights, substantially as and for the purpose set forth.

3. The combination, with the elevator-platform uprights having arms provided with spring-bolts, of the gate sliding in grooves perpendicular a portion of their lengths, and extending obliquely the remainder of their lengths, said gate being elevated through the direct action of the bolts and retained in an elevated position at a certain height, but allowed to return or descend after passing said height, substantially as and for the purpose specified.

299,474. CAR-BRAKE. ADAM HOFFMANN, Allegheny, Pa. Filed Feb. 12, 1884. (No model.)

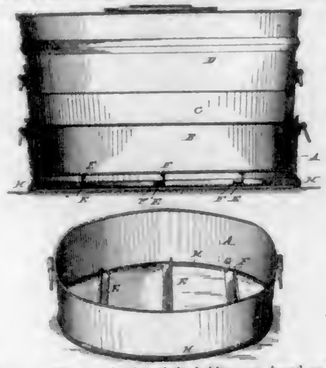


Claim.—1. The combination of the axle A, the sliding eccentrics placed thereon, and a mechanism for moving them back and forth, with a brake mechanism which is operated by the eccentrics, substantially as shown.

2. The combination of the axle A, the sliding eccentrics placed thereon, and an operating mechanism for moving them back and forth, with the lever *c*, rod *b*, wheel F, and the brake-connections, substantially as set forth.

3. The combination of the lever *c*, rod *b*, wheel F, and the brake-connections, with the hanger *i*, chain *i'*, and shaft J, substantially as described.

299,475. BAKING-PAN. PATRICK HOWARD, Piqua, Ohio, assignor of one-half to David Young, same place. Filed Oct. 9, 1883. (No model.)



Claim.—1. The combination of the baking-pan A and removable cleats E, consisting each of a strip of sheet metal bent at right angles, with its edges doubled upon itself, substantially as and for the purpose shown and set forth.

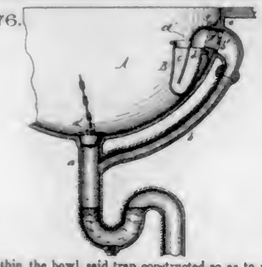
2. The combination of the baking-pan A, having a groove or channel, H, near its bottom, and removable cleats E, composed each of a strip of sheet metal bent at right angles, and having the ends cut off or beveled to adapt them to fit into the groove or channel H, substantially as and for the purpose shown and set forth.

299,476. OVERFLOW-TRAP FOR WASH-BASINS, BATH-TUBS, &c. WILLIAM T. JEBB, Buffalo, N. Y. Filed Mar. 24, 1884. (No model.)

Claim.—1. As a new article of manufacture, a trap for application to the inlet end of overflow-pipes of wash-basins, sinks, and the like, provided with descending and ascending passages constructed to maintain a body of water at a permanent level within the trap, and with a fastening device at its discharge end, whereby it can be secured in position, substantially as set forth.

2. The bowl of a wash-basin or similar structure, provided with the usual overflow-pipe, combined with a trap attached to the overflow-

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opening within the bowl, said trap constructed so as to maintain a permanent water-level within its limbs, substantially as set forth.

3. A trap consisting of a bowl of the requisite depth, whose descending and ascending limbs, as well as its inlet and outlet openings, are formed by a division-plate which extends nearly to the bottom of the bowl and projects beyond its rim in a curve, substantially as set forth.

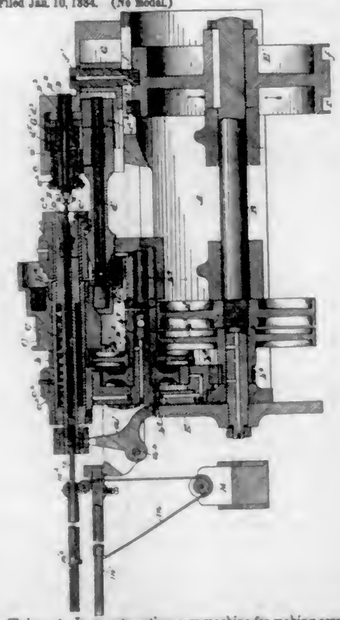
4. A trap consisting of a bowl of the requisite depth, whose descending and ascending limbs, as well as its inlet and outlet openings, are formed by a division-plate which extends nearly to the bottom of the bowl and projects beyond its rim in a curve, the outlet of the trap being provided with suitable means for securing it in position for use, substantially as set forth.

5. An overflow-trap composed of a receiving-bowl, *c*, open at the top, and a discharge-pipe, *d*, having its lower end arranged in the bowl *c* and its upper end adapted to cover the overflow-aperture, substantially as set forth.

6. The combination, with an overflow-trap, of a flanged discharge end adapted to be permanently secured to the basin or tub, to cover the overflow-aperture, and provided with a screw-joint, whereby the body of the trap is detachably connected with the flanged discharge end, substantially as set forth.

7. The combination, with the overflow-trap B, composed of a receiving bowl or pipe, *c*, and an ascending discharge-pipe, *d*, of a flanged discharge end, E, connected with the trap by a screw-joint, *g*, substantially as set forth.

299,477. SCREW-MACHINE. ALLEN JOHNSTON, Ottumwa, Iowa. Filed Jan. 10, 1884. (No model.)



Claim.—1. In an automatic screw-machine for making screws from a long rod or screw-stock, a chuck, a turning-down tool, and a threading-tool, combined, arranged, and operating substantially as described, so as

to thread the turned-down portion at the end of the rod or screw-stock, and simultaneously therewith to turn down the rod at a screw's length from the end in order to form the shank of a second screw, whereby the time heretofore consumed in threading after turning down is saved, as set forth.

2. The combination, with the chuck and the rotatory threading-tool, of the cutters arranged between said threading-tool and the chuck, the turning-down cutter on the side of the chuck, and the severing-cutter on the side of the threading-tool, said threading-tool being movable lengthwise of the screw-stock independently of the said cutters, substantially as described.

3. The combination of the machine-frame, the chuck, the cross-slide supported in ways of said frame, the turning-down and severing cutters carried by said cross-slide, the longitudinal slide, also supported in ways of said frame, and the rotatory threading-tool carried by said longitudinal slide, the cutter for turning down being arranged on the side of the chuck, and the cutter for severing on the side of the threading-tool, substantially as described.

4. The combination, with the chuck, the threading-tool, and the cutter for turning down the rod or screw-stock, arranged to act upon the same a screw's length from the end, of the mechanism for bringing the said tools into action, so that the turning down and threading proceed together, substantially as described.

5. The combination, with the chuck, the threading-tool, the cutter for turning down and the cutter for severing the rod or screw-stock, the former cutter arranged between the latter and the chuck, of the mechanism for bringing said tools into action so that the threading, severing, and turning-down operations proceed together, substantially as described.

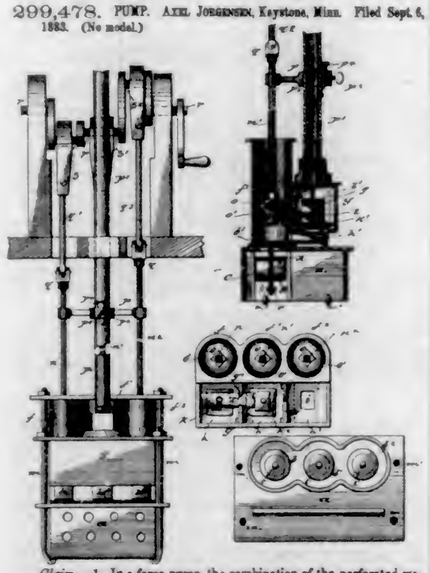
6. The combination, with the chuck, the threading-tool, and the cutter for severing the rod or screw-stock, of the mechanism for simultaneously moving said tools, the threading-tool lengthwise of the rod or screw-stock and the cutter across the same, so that the severing takes place partly during the threading operation or in the removal of the die, substantially as described.

7. The combination, with the chuck, the threading-tool, the cutter for turning down the rod or screw-stock, and the cutter for severing the same, of the longitudinal slide carrying the threading-tool, the transversely-moving carrier supporting the two cutters, and the operating mechanism, substantially as described.

8. The combination, with the chuck, one or more cutters, and the length-gage, of the transversely-moving carrier mounted on a stationary part of the machine, and supporting both the length-gage and the said cutters, substantially as described.

9. The combination, with the chuck, of the longitudinal slide, and the threading-tool carried thereby, the transversely-moving carrier, and the length-gage and cutters carried thereby, substantially as described.

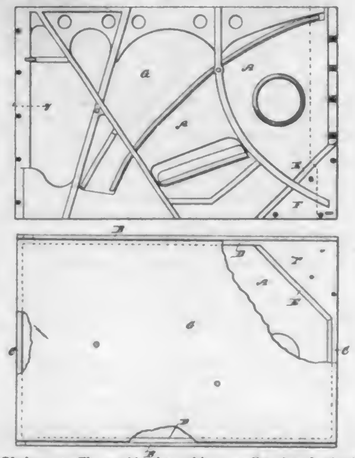
299,478. PUMP. AXEL JORGENSEN, Keystone, Minn. Filed Sept. 6, 1883. (No model.)



Claim.—1. In a force-pump, the combination of the perforated water-box *a*, provided in its top plate with the drop-valves *b b' b²*, and the cylinders *f f' f²*, water-chest *g*, and the water-ducts *h h' h²* connecting them, the loose drop-valves *k k' k²* in the water-chest, and the plungers *o* on the plunger-rods *n n' n²*, packed to fit loosely within the cylinders, whereby the pump may be submerged and the water caused to serve as an auxiliary packing for the plungers, substantially as specified.

2. In a submerged force-pump, the water-chest *g*, provided with the vertical strips *g'*, extending between the drop-valves *k k' k²* and the longitudinal strips *l l'*, and the valves *k k' k²*, having bearings in the strips *l l'*, in combination with the cylinders, water-ducts, and plunger-rods and plunger, substantially as specified.

299,479. PIANO-FORTE FRAME. HENRY KROMER, New York, N. Y. Filed Nov. 16, 1883. (Model.)

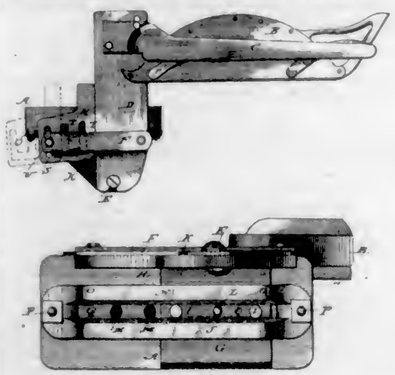


Claim.—1. The combination, with a sounding-board, of a frame provided on its rear side with bearing-surfaces for the sounding-board along all the edges of the same, and with a corner forming a bearing for a corner of the sounding-board, substantially as herein shown and described.

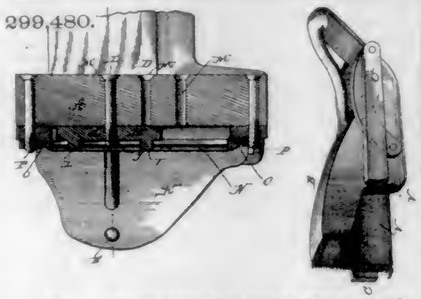
2. A piano-frame provided with rabbeted flanges B and end flanges, C, the edges of which are in the same plane with the surfaces of the shoulders or offsets formed by the rabbets in the flanges B, substantially as herein shown and described.

3. A piano-forte frame constructed with top and bottom flanges, B, having offsets or shoulders D, formed in the inner surfaces, with end flanges, C, the edges of which are on the same plane with the shoulders D, and with a triangular part, F, forming an offset, E, in the frame, and having its inner surface on the same plane with the shoulders D and the inner edges of the flanges C, substantially as herein shown and described.

299,480. SAW-GUARD. HENRY F. KUHLMANN, MERRITT F. ROBINSON, and EDWARD S. IRVIN, Indianapolis, assignors to the National Saw-Guard Company, Marion County, Ind. Filed Oct. 15, 1883. (No model.)



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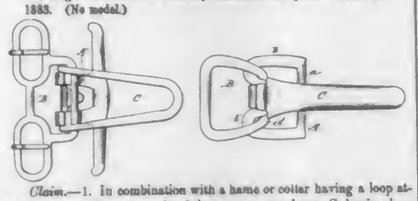


Claim.—1. The combination of the hood and upright, a fastening-plate having a vertical portion provided at its lower end with the pivotal bolt for the upright, a transverse plate fastened across the upper portion of the vertical portion of the fastening-plate by means of two screws, one at each end, and a wedging-plate having a transverse slot at its lower end, and a number of longitudinal slots parallel with each other, and having their inner edges slightly inclined toward the lower inner corner of the plate, as and for the purpose shown and set forth.

2. The combination of the fastening-plate having the upright carrying the hood attached adjustably to it, and provided with two lugs and a female threaded perforation, all in a longitudinal line, the saw-table having a longitudinal series of perforations, a screw fitting in the perforations in the table and in the female threaded perforation in the fastening-plate, and a longitudinally-slotted plate or bar spanning the fastening-plate, and having the lugs and the end of the screw projecting into the slot and fastened to the under side of the saw-table, as and for the purpose shown and set forth.

3. A hood for a saw-guard having the inner surfaces of its sides lined with rubber, as and for the purpose shown and set forth.

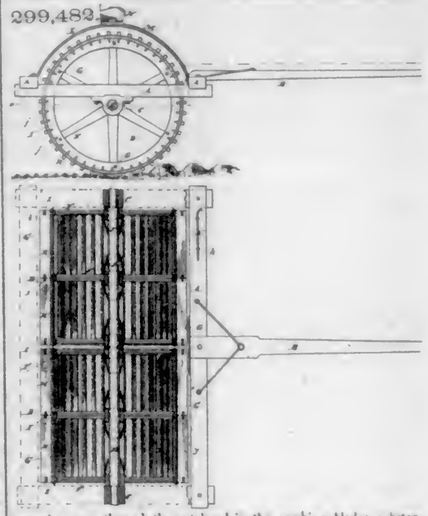
299,481. HORSE-COLLAR LOCK. ERASTUS S. LAFFERTY, Indiana, Pa., assignor of one-half to Godfrey Marshall, same place. Filed June 11, 1883. (No model.)



Claim.—1. In combination with a hame or collar having a loop attached to one of the free ends of the same, a cam-lever, C, having lugs *c c* formed on its upper side, which are adapted to be upset so as to embrace a cross-bar of a loop attached to the opposite free end of the hame or collar, said lever being provided with a hook on its under side, substantially as shown, and for the purpose set forth.

2. In a hame or collar fastener, the loop A, provided with rounded cross-bar *a'*, raised above the plane of the portions *a* and *b*, in combination with the cam-lever C, with lugs *c c*, embracing the bar *a'*, and loop B, attached to the opposite side of the hame or collar, the parts being organized substantially as shown.

299,482. CLOD-CRUSHER. BURNET LANDRETH, Philadelphia, Pa. Filed Nov. 12, 1883. (No model.)



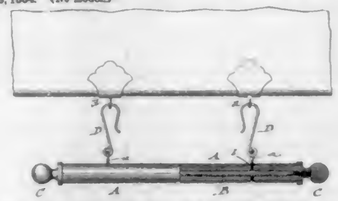
Claim.—1. A crushing-cylinder for a clod-crusher, consisting of wheels F, having tapering notches *f* in their flanges, in combination with wedge-shaped crushing-blades H, adapted to set into said notches, and having notches A upon their ends, and bands I, shrunk on the flanges of said wheels F, and arranged to pass through the notches A in the crushing-blades, substantially as shown.

2. A crushing-cylinder for a clod-crusher, consisting of wheels F, having tapering notches *f* in their flanges, in combination with wedge-shaped crushing-blades H, adapted to set into said notches, and having notches A upon their ends, rods G, to prevent spreading of the wheels, and bands I, shrunk on the flanges of said wheels F, and arranged to pass through the notches A in the crushing-blades, substantially as shown.

3. A crushing-cylinder for a clod-crusher, consisting of three wheels, F, having tapering notches *f* in their flanges, in combination with two sets of wedge-shaped crushing-blades, H, adapted to butt against each other, as shown, set into said notches, and having notches A upon their ends, and three bands, I, shrunk on the flanges of said wheels F, and arranged to pass through the notches A in the crushing-blades, substantially as shown.

4. A crushing-blade for a clod-crusher, made tapering in cross-section and having one or both of its sides curved, substantially as and for the purpose specified.

299,483. WINDOW-SHADE PULL. WILLIAM LAWS, Brooklyn, assignor to himself and Krickl, Gould & Co., New York, N. Y. Filed Apr. 18, 1884. (No model.)



Claim.—1. The combination, with a tubular shade bar or pulley having transverse slots or mortises, of links or eyes passing through said mortises, and a rod within the tubular bar for securing the links thereto, substantially as set forth.

2. The combination, with a tubular shade-bar, of a central rod passing through the bar, and of end tips attached to the ends of the rod, substantially as set forth.

3. The combination, with a tubular shade-bar, of eyes or links passing through mortises of the bar, a rod within the bar for holding same, and end tips attached to the ends of the rod, substantially as described.

4. The combination, in a shade-pull, of a tubular bar, links or eyes passing through mortises of the bar, a rod passing longitudinally through said bar and said links or eyes, and end tips attached to the ends of the rod, substantially as set forth.

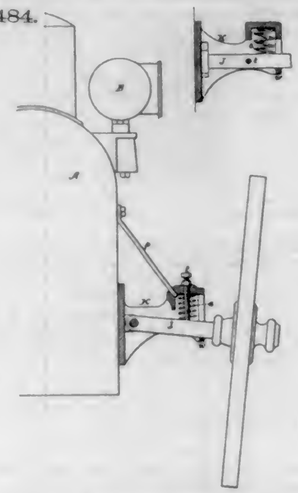
5. The combination of a tubular bar having transverse mortises, eyes or links passing through said mortises, a rod passing through said bar and said eyes or links, and end tips attached to the ends of said rod and fitting by cup-shaped bases over the ends of the bar, substantially as set forth.

299,484. PORTABLE ENGINE. HENRY R. LARZELERE, Greencastle, Pa., assignor to the Crowell Manufacturing Company, same place. Filed Feb. 13, 1884. (No model.)

Claim.—1. The combination of the boiler, the hangers K thereon, the short axles J, capable of yielding vertically independently of the hangers, the springs *s*, and bolts for locking the axles to the hangers, as set forth.

2. The combination of the boiler, the hangers K thereon, the short axles J, capable of yielding vertically independently of the hangers, the springs *s*, and screw-bolts *t*, adapted to bear upon the axles, and the bearings *w*, forming seats for said axles, as set forth.

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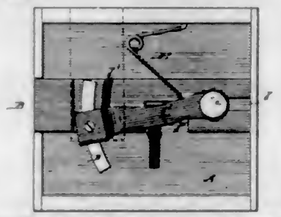


299,485. GRATE FOR BURNING SAWDUST. MICHAEL J. LYONS, Saginaw, Mich. Filed Mar. 20, 1884. (No model.)



Claim.—The hollow supplemental grate herein described, to be used in furnaces in which sawdust is used for fuel, being of A form at one end, and provided with a straight closed perforated wall, and of tapering triangular form at its opposite end, the walls of which are also provided with perforations, being of greater diameter at their inner than their outer ends, substantially as specified.

299,486. LOCK. JONAS G. MATTHEIN, Chicago, Ill. Filed June 1, 1883. (Model.)

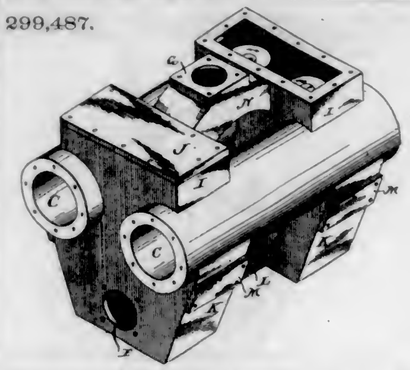


Claim.—In a lock, a lock-bolt provided with transverse grooves and notches for engagement with the key, in combination with a movable spring-actuated arm carrying a locking dog or slide adapted to be adjusted in the arm and secured by a set-screw, and formed with a notch, as shown, substantially as and for the purpose set forth.

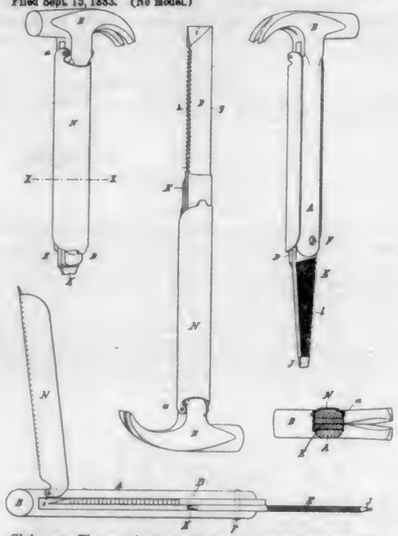
299,487. PUMP. JAS R. MAXWELL, Cincinnati, assignor to the Gordon & Maxwell Company, Hamilton, Ohio. Filed Sept. 15, 1883. (No model.)

Claim.—In a duplex pump, the combination of two parallel pump cylinders or barrels, a pair of discharge-valve boxes disposed across the ends of the cylinders or barrels and cast integrally therewith, and a trunk-pipe placing the two discharge-valve boxes in free communication disposed centrally over the two cylinders or barrels, cast integrally with the two cylinders or barrels and the two discharge-valve boxes, and provided with a junctare-seat for a discharge-pipe or air-chamber, substantially as set forth.

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299,488. COMBINATION-TOOL. JAS. A. MORRELL, New York, N. Y. Filed Sept. 15, 1883. (No model.)



Claim.—1. The combination, with the handle fitted with the hammer-head at one end and bifurcated at the opposite end, of the pivoted blade D, comprising the knife *g*, saw *h*, and chisel *i*, substantially as described.

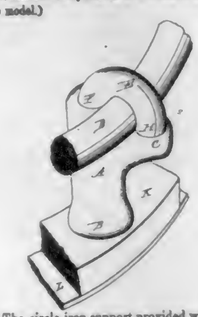
2. The combination, with the handle fitted with the hammer-head at one end and bifurcated at the opposite end, of the blade D, comprising a knife, saw, and chisel, and the U-shaped clasp pivoted to the handle, substantially as and for the purpose described.

299,489. SHEET-METAL BOX. JOSEPH MUNGER, Waterbury, Conn., assignor to the Scovill Manufactaring Company, same place. Filed Apr. 5, 1884. (No model.)



Claim.—A sheet-metal box having one of its sides constructed with an opening, D, a plate having the raised surface E corresponding to said opening, introduced from the inside of the box, the said raised surface into said opening, the surrounding surface of the plate lying upon the inner surface of the side of the box and secured thereto, substantially as described.

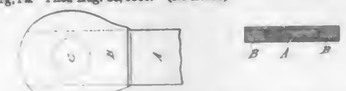
299,490. CIRCLE-IRON SUPPORT. FREDERICK MUTNER, Rockford, Ill., assignor of one-half to Sylvester B. Wilkins, same place. Filed Mar. 5, 1883. (No model.)



Claim.—1. The circle-iron support provided with the tubular openings, in combination with the hook-staple adapted to enter said openings and clamp the circle-iron between it and said support, substantially as described.

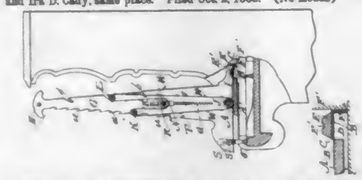
2. The circle-iron support, grooved to receive the circle-iron, and provided with tubular openings arranged upon each side of the groove, in combination with the hook-staple adapted to enter the tubular openings and embrace the circle-iron, substantially as described.

299,491. CONSTRUCTING EYE-BARS. JOHN NABOBLEY, Jr., Pittsburg, Pa. Filed Aug. 23, 1883. (No model.)



Claim.—As an improvement in forming re-enforced heads to eye-bars, the construction of the re-enforcing pieces—one for each side and edge of the bar—of two rabbeted plates whose shoulders respectively abut against the edges, and whose plane portions lie upon the faces of the bar, substantially as shown and described.

299,492. KEY-BOARD ATTACHMENT FOR MUSICAL INSTRUMENTS. EDWARD FORBES O'NEILL, Storm Lake, Iowa, assignor to himself and Ira D. Cady, same place. Filed Oct. 2, 1883. (No model.)



Claim.—1. The combination, with a series of false keys hinged to a strip and adapted to pass between the black keys of a key-board, of a frame resting partly on the strip to which the false keys are hinged, and of an endless music belt or band held on the frame which is provided with means for moving the belt or band, substantially as herein shown and described.

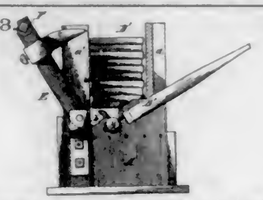
2. The combination, with the strip C, the false keys A, the grooved strip E, the standards G, and the rod I, fitting in the grooved strip E, of means for passing an endless music belt or band provided with projections over the keys, substantially as herein shown and described.

3. The combination, with the strip C, the false keys A, the grooved strip E, the standards G, the rod I, fitting in the groove in the strip E, and the adjustable front legs, S, of means for passing an endless music belt or band provided with projections over the keys, substantially as herein shown and described.

4. The combination, with the standards G, of the adjustable rollers K and L, the roller J, the roller M, provided with friction-rings R, the slides N, the springs Q, and an endless band or belt provided with projections W, substantially as herein shown and described.

299,493. STAVE-PACKING MACHINE. JEREMY H. OVERTON, Norris, Mich. Filed Mar. 23, 1884. (No model.)

Claim.—1. The combination, in a stave-packing machine, of a supporting-frame, A, standards E, pivoted to swing back and forth on the



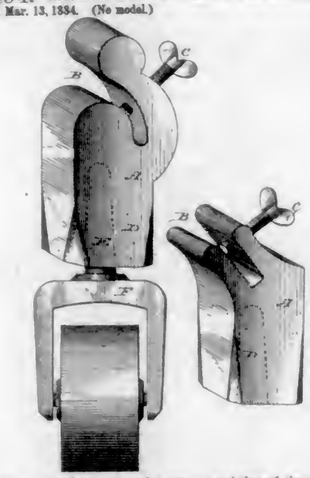
frame and provided with lateral arms *e* and *e'*, to be brought upon the package, and cam mechanism for compressing the package, substantially as described.

2. The combination, in a stave-packing machine, of the frame A, the swinging standards E, pivoted at one end to the frame, the arms *e e'*, adjustable along the length of the standards, and cam mechanism for compressing the package, substantially as described.

3. The combination, in a stave-packing machine, of the frame A, the swinging standards E, pivoted at one end to the frame and having lateral arms *e e'*, to be brought over the package, and the cam-shaft B, journaled in the frame, substantially as described.

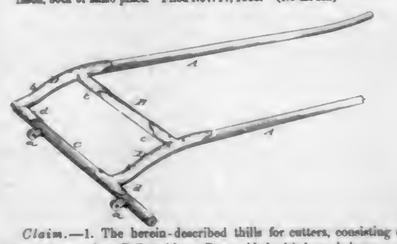
4. The combination, in a stave-packing machine, of the frame A, the swinging standards E, pivoted at one end to the frame and connected at the other end by the handle F, the arms *e e'* on the standards, and the cam-shaft B, substantially as described.

299,494. CASTER FOR STOVES. ANNA J. PECK, Frostburg, Md. Filed Mar. 13, 1884. (No model.)



Claim.—A roller-support for stoves, consisting of the socket A, having slot B and clamping-screw C, and taper hole D, in combination with the caster F, having taper shank E, as and for the purposes set forth.

299,495. IRON FOR SLEIGH-SHAFTS. HEZEKIAH H. RICHARDS, Racine, Wis., assignor of one-half to William S. Buffham and Thomas Dickinson, both of same place. Filed Nov. 17, 1883. (No model.)



Claim.—1. The herein-described thills for cutters, consisting of shafts A A, cross-bars B C, and irons D, provided with lateral sleeves *c d*, substantially as and for the purpose explained.

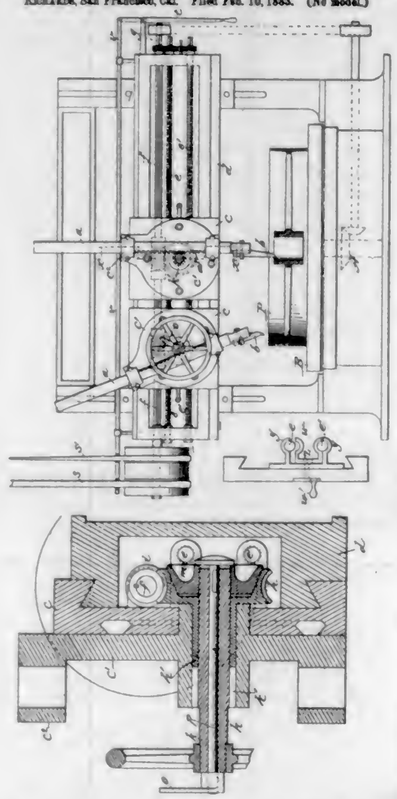
2. A thill-iron consisting of concave body *b*, provided with lateral sleeves *c* and *d*, substantially as shown and described.

3. A pair of thills for a cutter, consisting of shafts A A, irons D, provided with lateral sleeves *c d*, cross-bar B, extending from one shaft to the other, and cross-bar C, extending from one thill to and beyond the other, as shown.

4. In a pair of cutter-thills, the combination of shafts A A, irons D D, each provided with lateral sleeves *c d*, one of said sleeves, *d*, being open at both ends, and cross-bars B C, the former extending from shaft to shaft, the latter extending from one sleeve, *d*, to and through the other, and projecting beyond the side of the thills.

5. A thill-iron consisting of hollow body *b*, curved upward in the direction of its length, and provided with hollow lateral sleeves *c d*, as shown.

299,496. METAL BORING AND SLOTTING MACHINE. JOHN RICHARDS, San Francisco, Cal. Filed Feb. 10, 1883. (No model.)



Claim.—1. The combination of the saddle *c*, reciprocating cutter-bar *a*, having rack *a'*, the motion-rod *f*, provided with worm-gear *i*, the worm-wheel *h*, cone-plate *m*, the shaft *k*, carrying pinion *l'*, the rod *p*, and nut *o*, substantially as shown and described.

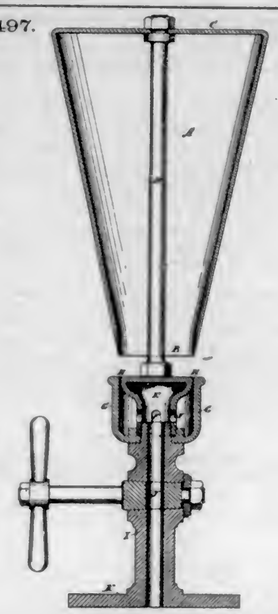
2. The combination, with the saddles *c c*, carrying half-nuts *w*, and reciprocating cutters *a*, of the feed-screws *e e'*, and means for actuating the same, substantially as shown and described.

3. The combination of the saddles *c c*, reciprocating cutter-bars *a a*, having racks *a' a'*, the feed-screws *e e'*, motion-rod *f*, having worm-gear *i*, the worm-wheel *h*, pinion *l'*, and suitable connecting and actuating mechanism, substantially as shown and described.

299,497. WHISTLE. EDWARD E. SWETT, Biddeford, Me. Filed Aug 21, 1883. (No model.)

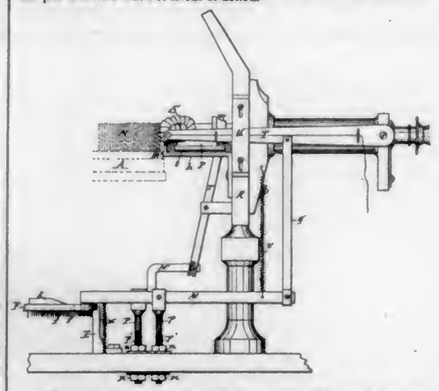
Claim.—A steam-whistle the bell of which enlarges from its base to its crown, so that the width of the chamber will gradually increase from base to crown and be wider at the crown than at the base, substantially as described.

299,497.



299,498. KNITTING-MACHINE. JOHN TERWILLIGER, Amsterdam, N. Y., assignor of one-half to the Greene Knitting Company, of New York. Filed Feb. 8, 1883. (No model.)

Brief.—The machine is designed to knit a circumferentially-striped single-threaded striped fabric. Two loop-wheels and thread-guides are arranged side by side and supplied with different-colored threads, the striping of the fabric being effected by alternately and at predetermined intervals of time withdrawing and severing one of said threads and immediately introducing the other. The end of the severed thread is clamped and held while it is out of action.



Claim.—1. In combination with the needle-cylinder, needles, and loop-wheel of a knitting-machine, a thread-supporting plate arranged beneath the loop-wheel, an oscillating thread-guide adapted to throw the thread off the loop-wheel onto the aforesaid plate, a stationary shearing-blade fixed to said plate, a cutter arranged to move across the shearing-blade, a clamping device for holding the severed thread, and mechanism for operating the thread-guide and thread-severing and thread-clamping devices, substantially as set forth.

2. In combination with the needle-cylinder, needles, and loop-wheel of a knitting-machine, a vertical oscillating thread-guide, a thread-supporting plate arranged beneath the loop-wheel and provided with a stationary shearing-edge and with a stationary thread-clamping shoulder

a thread-clamping plate sliding on the thread-supporting plate and having integral with it a cutter arranged in line with the stationary shearing-edge, and mechanism for transmitting motion to the thread-guide and to the thread-severing and thread-clamping devices, substantially as specified.

3. In combination with the loop-wheel, the plate *h*, having the front shoulder, *m*, with the cutting-edge O on one end thereof, the sliding plate *p*, having the abutting-edge *p'*, provided with the knife p^3, in range with the cutting-edge O, the lever *r*, connected with the plate *p*, the oscillatory thread-guide T, adapted to throw the thread off the loop-wheel onto the plate *p*, and mechanism for operating the lever *r* and the thread-guide, substantially as shown and described.

4. In combination with the plate *h*, provided with the cutting-edge O, and with the stationary guide *s*, and the sliding plate *p*, provided with a knife, p^3, the adjustable guide *t'*, and spring *t*, pressing against the outer side of said guide, substantially as described and shown, for the purpose set forth.

5. In combination with the spindle A', needle-cylinder A, oscillatory thread-guide T, and the within-described thread-severing mechanism, the collar B, provided with cams *a*, the annular disk F, arranged concentric around the spindle and adapted to rotate independently thereof and provided with the ratchet G and pins *f f*, the arms C, pivoted outside of the disk F, and having the pawl *d*, engaging the ratchet G, the dog H, the cams K, K', K^2, and K^3, and the levers M and M', pitman *g*, and lever *r*, substantially as described and shown.

299,499. DETACHABLE RESERVOIR FOR PENS. GEORGE WASHINGTON WOOLLEY, Washington, D. C. Filed Oct. 25, 1883. (No model.)



Claim.—1. An ink-holding attachment for pens, consisting of a reservoir and a shank, each provided with an air-opening near the upper end of the bulb of the reservoir, substantially as set forth.

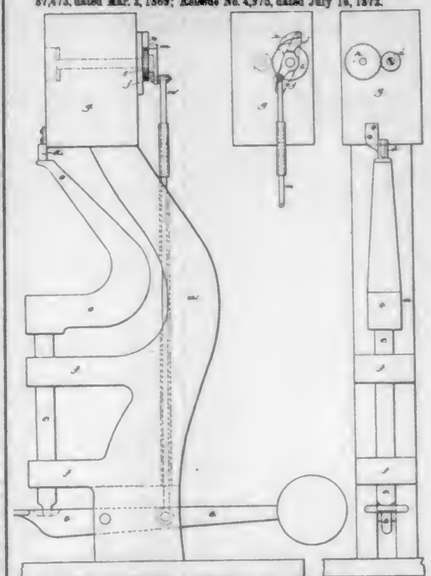
2. The ink-holding attachment for writing and drawing pens, consisting of a reservoir and a shank, and provided with an air-duct in the former and an under-cut at and near the point, substantially as and for the purpose set forth.

3. The ink-holding attachment for writing and drawing pens, consisting of a reservoir and a shank, the former provided with a cut-away portion, *g*, at and near its point, substantially as and for the purpose set forth.

4. The ink-holding attachment for writing and drawing pens, consisting of a reservoir and a shank, and provided with an air-transmission duct, and cut-away portion *g* at and near the point, as set forth, combined with a tongue or valve, *d*, substantially as described and shown.

REISSUES.

10,482. NAILING OR PEGGING MACHINE. JOSEPH R. CROSBY, Boston, assignor, by mesne assignments, to Gordon McKay and James W. Brooks, Trustees, Cambridge, Mass. Filed Dec. 15, 1883. Original No. 87,473, dated Mar. 2, 1869; Reissue No. 4,975, dated July 16, 1872.



Claim.—The combination of the vertically-moving horn with the feeding mechanism of the wire-like material, so that the feed of said material shall be in proportion to the thickness of the stock at the points at which fastenings are to be inserted, substantially as described.

PHOTO-LITH. NORRIS PETERS WASHINGTON, D.C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

MCMURRAY *et al. v.* MALLORY *et al.*

Decided March 24, 1884.

1. The specification and drawings of the reissue upon which the suit is brought being substantially the same as those of the original patent, it follows that the reissue was not for the purpose of making the original specification more full, accurate, or intelligible, or for the purpose of eliminating from it what the inventor had not the right to claim as new.
2. A claim to a combination of parts which specifies that such parts are constructed in a particular way for a special purpose cannot be expanded by reissue so as to include combinations of those parts, expressed so as to cover them broadly and without limitation as to their construction or advantages.
3. It is not competent for the patentee or his assignees by merely disclaiming all the changes made in a reissue patent to revive and restore the original patent. This could be done only, if it could be done at all, by surrender of the reissued patent and the grant of another reissue.
4. The reissue patent granted July 1, 1879, to Edward M. Long as assignee of Abel Barker, construed and held to be invalid as to the first three claims and not to be infringed as to the remaining claims, and the reissue patent to Long as assignee of Bostwick held to be invalid as to the first claim and not to be infringed as to the other claim.

APPEAL from the Circuit Court of the United States for the District of Maryland.

STATEMENT OF THE CASE.

The bill was filed September 2, 1879, by Louis McMurray, Edward M. Lang, and George Burnham, doing business as a firm under the name of McMurray, Lang & Burnham, against Dwight D. Mallory and Jesse C. Luddington, doing business as a firm under the name of D. D. Mallory & Co., to restrain the infringement by them of two certain letters patent. The first was a reissued patent "for certain new and useful improvements in soldering-machines," the original of which had been granted to Abel Barker, May 17, 1870, reissued to Edward M. Lang, one of complainants, January 11, 1876, and again reissued to him July 1, 1879. The second was a reissued patent for an "improvement in soldering-irons," the original of which had been granted to Jabez A. Bostwick, June 21, 1870, and reissued October 29, 1878, to E. M. Lang & Co. The answer of the defendants denied the infringement of either of the patents on which the suit was brought; denied that either Barker or Bostwick was the original inventor of the improvements for which the original letters patent were issued to them respectively; denied that either of the letters patent were ever surrendered according to law, and alleged that the reissues were not for the same inventions as those described in the original letters patent. Upon final hearing the circuit court dismissed the bill, and the complainants have brought that decree under review by this appeal.

Mr. Benj. Price for the appellants.

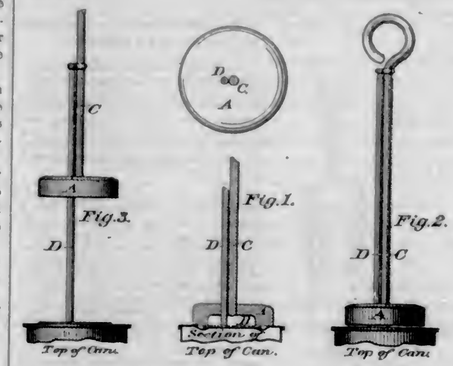
Mr. S. H. Brown and *Mr. R. H. Smith* for the appellees.

Mr. Justice WOODS delivered the opinion of the Court.

We shall first consider the Barker patent. The original patent was described in the specification as—

A new and useful machine for opening and closing or sealing fruit, oyster, and all other cans hermetically sealed.

The specification was illustrated by drawings, as follows:



They were described thus:

Figure 1 is a vertical section. Fig. 2 is a representation of the machine as applied to the can in opening; Fig. 3 as applied in closing or sealing, with the disk withdrawn and the sliding rod pressed upon the cover to hold it until the solder or sealing material hardens.

The specification then proceeds as follows:

In constructing this machine I make the disk or casting A of sufficient thickness to retain the heat, and of suitable size to cover the lid of the can, with the recess B in the under side to give room for the convex lid of the can, and to confine the soldering process to the outer edge of the lid or cover. To this disk I connect the handle C, of sufficient length to hold when heated. At the side of, and parallel with, the handle I connect the small rod or wire D with a loop or ring connecting it with the handle at the top and the bottom, passing through the disk A, so as to allow it to slide up and down.

The process of sealing a can was thus described:

The disk A is sufficiently heated to melt the solder. The rod D is pushed down through the disk and placed upon the center of the cover to hold it. The heated disk is then to be pushed down in contact with the solder or sealing material till it is melted, then turned back and forth till the solder is spread evenly around the lid. The disk is then to be withdrawn, with the rod D still pressed upon the lid, till the solder or sealing material sets or hardens, when the operation is completed.

The claim was as follows:

The disk A, with the recess B in the under side, as set forth, in combination with the movable rod or wire D, to hold the lid while sealing or closing.

The specification of the reissue upon which the suit is brought, and the drawings and the description of the drawings, were substantially the same as for the original patent. It is apparent, therefore, that the reissue was not for the purpose of making the original specification more full, accurate or intelligible, or for

the purpose of eliminating from it what the inventor had not the right to claim as new.

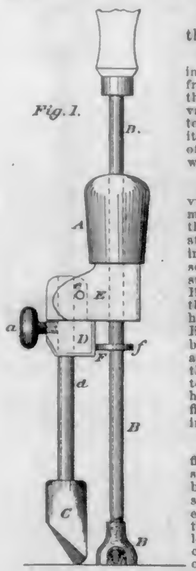
The claims of the reissue, which were five in number, were as follows:

1. In a soldering-machine, a rod adapted to hold the can cap or lid in place, in combination with a soldering-iron mounted upon and arranged to be rotated about said rod, substantially as described.
2. In a soldering-machine, a rod adapted to hold the can cap or lid in place, in combination with a soldering-iron sliding upon said rod and adapted to be rotated about it, as set forth.
3. In combination with a soldering tool or die, the rod D, in passing through said tool or die to hold the can cap or lid in the process of soldering, substantially as described.
4. In a soldering-machine, the combination, with a soldering-tool conforming in shape to the cap to be soldered, of an independently movable rod, D, upon which the said tool is mounted, substantially as described.
5. The disk or tool A, with the recess B in its under side, in combination with and mounted upon the independently movable rod or wire D, as set forth.

The proof showed that defendants used the instrument described in the letters patent issued to Tillery and Ewalt, May 21, 1872.

The specification of these letters was illustrated by the following drawing:

Fig. 1.



The specification described the invention as follows:

The invention consists, first, in making a soldering-tool adjustable radially from a hinge-joint, in order to adapt the same tool to be used with caps of varying size; second, in moving said tool out and in, at the same time fixing it at any point of adjustment by means of a screw that has a loop-head through which passes the holder.

A represents our soldering-tool, provided with the cap-holder B, which maintains the cap in position while the soldering-iron C is rotated. D is a stock, in which the shank *d* of soldering-iron is held at any point by a clamp-screw, *d*. E is the body, in which the stock D is hinged at *e*, while the holder B passes vertically and loosely therethrough. F is a screw, having loop-head *f*, which connects the said holder B and stock D, while it allows them to be spaced at any desired distance apart. In order to effect a change in the radial distance between the centering-holder B and the stock D, that holds the soldering-iron, the holder is first removed and the screw F moved in or out. * * *

The advantages of this tool consist, first, in the arc shape, by which we can see at a glance any point which has been left unsoldered or imperfectly soldered, and which defect can be remedied at once without removing the tool; second, in the option that it allows us using either wire-solder or the cheaper drop-solder, thereby saving one-half the expense.

There is no doubt that the first three claims of the reissued patent of Barker cover the device here described, but are void because they are each of them broader than the claim of the original patent. The claim of the original patent was for a combination—that is to say, a combination of the disk A with the recess B on its under side, and the movable rod D, to hold the lid of the can while resealing or closing. The specification mentioned a disk and particularly described and illustrated it as forming a part of the combination. By its size, shape, and the recess in its under surface, it was designed to perform certain specified functions. It was made thick so as to retain the heat. It was made circular, like the lid of the can, and of sufficient diameter to cover the lid, so as to reach its outer edge, where the soldering was to be done, and it had the recess in its under side sufficient to give room for the convexity of the lid, so as to confine the soldering process to the outer edge of the lid. The patent did not, therefore, include every soldering-iron of whatever form and shape. In the case of *Brooks* v. *Mears* (16 Pet., 336) it was said of a patent for a combination consisting of three parts that "the use of any two of these parts only, or of two combined with a third, which is substantially different in form or in the manner of its arrangement and connection with the others," is not an infringement. "It is not the same combination if it substantially differs from it in any of its parts." The disk therefore in the Barker patent, substantially as described, is an essential element of the combination covered by that patent.

In the reissue the first three claims of the Barker patent are expanded so as to include all soldering-irons, no matter what their shape or size or specific advantages, in combination with the movable rod D. The contention of the appellants that a device so unlike the soldering-tool described in the original Barker patent as the Tillery & Ewalt tool is embraced by the first three claims of the reissue is striking proof of the expansion of the original claim. It is plain that the claims mentioned include many soldering devices not covered by the original patent. The claims are therefore void. (*Gill* v. *Wells*, 22 Wall., 1; *The Wood Paper Patent*, 23 Id., 566; *Powder Company* v. *Powder Works*, 98 U. S.; *Ball* v. *Langles*, 102 Id., 28; *Miller* v. *Brass Company*, 104 Id., 350; *James* v. *Campbell*, Id., 356; *Heald* v. *Rice*, Id., 737; *Johnson* v. *Railroad Company*, 105 Id., 539; *Bantz* v. *Frantz*, Id., 160; *Wing* v. *Anthony*, 106 U. S., 142.)

The fourth and fifth claims of the reissued Barker patent are not, in our opinion, infringed by the defendants. The fourth claim embraces as one element of the combination a soldering-iron in shape of the cap or lid to be soldered. The shape of the iron is expressly made an essential part of the combination. This element is wanting in the Tillery & Ewalt device used by the defendants. The soldering-iron used by them is totally unlike in shape a cap or lid or the disk described in the Barker patent. One of the two elements of the combination covered by the fourth claim of the Barker reissue is therefore clearly wanting in the Tillery & Ewalt device, and there can consequently be no infringement. The fifth and last claim of the reissued Barker patent is identical with the claim of the original patent, and is therefore free from the objection to which the first three are open. But we think it also is not infringed by the device used by the defendants. The soldering-iron described in both the original and reissued Barker patent is a disk of suitable size to cover the lid of the can to be soldered, with the recess B in the under side, to give room for the convex lid of the can and to confine the soldering process to the outer edge of the lid or cover. This is entirely unlike the soldering-iron described in the Tillery & Ewalt patent, the tool used by the defendants. The latter is not a disk, but closely resembles the common soldering-iron, which is an old and familiar tool, and differs from it only in not having a pointed end, but one made so as to form a short arc of a small circle. The device covered by the Tillery & Ewalt patent was contrived for two purposes, neither of which the Barker contrivance is capable of accomplishing—namely, the adjustment of the soldering-iron radially from a hinge-joint in order to adapt the same

tool to be used with caps or lids of different sizes, and, second, the giving of the soldering-iron such a shape as that it would not hide the process of soldering, but made it possible to see at a glance, without removing the tool, any part of the cap which had been left unsoldered.

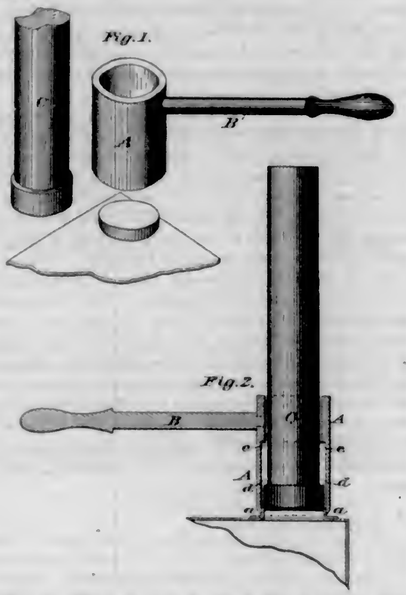
The contention of the appellants that the soldering-iron of the Tillery & Ewalt patent is merely the disk of the Barker patent with a large part of its circumference removed defeats itself, for when a large part of the disk is removed it ceases to be a disk, and becomes the mere soldering-iron of the Tillery & Ewalt device, whereas, as we have seen, a disk is an essential element in the invention covered by the Barker patent. We think that by no stretch of construction can the device used by defendants be included in the fourth and fifth claims of the Barker reissued patent, and that the defendants do not infringe those claims.

It remains to consider whether the appellants were entitled to relief against the defendants for the alleged infringement of the Bostwick patent.

The original Bostwick patent was for "a new and useful soldering-iron for soldering metallic caps or other projecting pieces on metallic vessels." It related, so the specification states—

To the construction and use of a hollow soldering-iron for soldering metallic caps or other projecting pieces upon metallic oil-cans or other vessels; said iron, when made with an inclosing edge of the dimensions and form of the rim or edge of the cap or piece to be soldered, so as to conform thereto when placed thereon, and so extended and formed interiorly as to receive and embrace loosely a guiding-rod to be placed upon the cap to be soldered, to hold the latter down firmly until it has been secured by the solder, and at the same time guide the iron to its proper place upon or against the rim or edge of the cap.

The specification was illustrated by drawings, as follows:



The manner in which the device was to be used was thus stated:

After the iron has been properly heated it is slipped over this rod, and the rod, being then placed upon the cap, is held thereon firmly, while the lower rim of the heated iron, duly supplied with solder, bearing upon the joint of the cap with the vessel, will instantly solder and secure the same about its entire circumference. By lifting the rod, its shoulder, engaging with the offset within the iron, will take up the latter with it in readiness to be placed upon another cap, and thus a number of caps may quickly and thoroughly be soldered at one heat of the iron.

The specification then proceeds:

I contemplate making the soldering-iron A and its guiding-rod C of any form in transverse section which may be required, to cause it to fit upon any form of cap or other projection, whether round, square, oval, or of any other curved or polygonal shape. Its lower rim or edge need not be made continuous, but may be broken or slotted.

The claim was as follows:

The hollow soldering-iron A, having a handle, B, and beveled rim *a a*, in combination with the rod C, substantially as herein described and set forth.

On September 3, 1878, Bostwick, with the assent of E. M. Lang & Co., the assignees, made application to the Patent Office for a reissue of his patent. His application was granted, and his patent reissued with a largely expanded specification, and with two claims instead of one, which were as follows:

1.-A tool for soldering the caps on can, consisting of a soldering-iron revolving about a central pivotal rod, which is made to rest upon and steady the cap during the operation of soldering.
2. The combination of a hollow iron for soldering caps on cans with a separate and inclosed weight for steadying the cap on the can during the operation of the soldering.

Comparing the first claim of the reissue with the claim of the original patent, it appears that the former has been greatly broadened. The claim of the original patent was for a combination. One element of the combination was a hollow soldering-iron, A, with the handle B and beveled rim *a a*. This was described in the specification as a hollow cylinder, of metal, made to fit over and inclose the metallic cap to be soldered, its inner diameter at its lower end being somewhat greater than that of the cap. This was nothing more than the annular soldering-iron, which it is conceded was old when the Bostwick patent was issued. The second element was the rod C, whose lower end was described to be about equal in diameter to that of the cap to be soldered.

The first claim of the reissued patent is expanded to embrace as the first element of the combination any "tool for soldering caps," no matter what its shape or size. This tool is made to revolve about a central pivotal rod. The idea of revolving the soldering-tool about the pivotal rod is not suggested in the original patent, but is excluded by the statement in the specification that the inventor contemplated making the soldering-iron and the guiding rod of any form in transverse section necessary to fit in any form of cap, whether round, square, oval, or of any other curved or polygonal shape.

The claim under consideration does not describe with any accuracy the device covered by the original patent, but is made broad enough to include any soldering-iron which is constructed to revolve about a central pivotal rod resting on the cap to be soldered. This claim, however, does accurately describe the Tillery & Ewalt device, and it is apparent from the record that it was drawn for the purpose of making the use of the latter an infringement on the reissued patent. It could not do this without expanding the claim of the original patent. In our judgment, therefore, the invention thus described and claimed is a different invention from that described and claimed in the original patent, and the claim is therefore void.

The second claim of the reissued patent, it is clear, is not infringed by the use of the Tillery & Ewalt de-

vice. The latter employs no hollow soldering-iron, nor does it have a separate and inclosed weight for steadying the cap in the can during the process of soldering, both of which are essential, and they are the only elements of the claim.

The appellants have endeavored to avoid the objection to the reissued Bostwick patent by filing a disclaimer in the Patent Office. The disclaimer was filed September 24, 1883, more than two years and a half after the final decree in the circuit court, and while the case was pending on appeal in this court. If the appellants are, under these circumstances, entitled to have the disclaimer considered, it cannot aid their case.

In support of the application for reissue of his original patent, which was made by Bostwick with the assent and in behalf of the appellants, he took an oath as follows:

That he believes that by reason of an insufficient or defective specification his aforesaid letters patent are inoperative or invalid.

By the disclaimer referred to, the appellants declare that they thereby "di claim all words, phrases, and sentences introduced in the specification" of the reissued patent "which may mean or may be construed to contain any other or different invention than that justly belonging to the inventor, and fairly included in the invention as originally described and claimed," and that they "desire that the reissued patent, when the disclaimed matter is canceled, should read as follows." Then follows a specification and claim, which, with the exception of six consecutive words, not affecting its meaning, is identical with the specification and claim of the original patent. The purpose of the disclaimer and its effect, if valid, was to abandon the reissued patent and resume the original. We are of the opinion that this could not be done by a disclaimer. The original patent had been declared on the oath of the patentee to be invalid and inoperative. It had been surrendered and canceled and reissued letters patent granted in its place. It is not competent for the patentee or his assignees, by merely disclaiming all the changes made in the reissued patent, to revive and restore the original patent. This could be done only, if it could be done at all, by surrender of the reissued patent and the grant of another reissue.

It follows from these views that the decree of the circuit court dismissing the appellants' bill was right and must be affirmed.

U. S. Circuit Court—Southern District of New York.

SIMON *v.* NEUMANN *et al.*

Decided May 10, 1884.

An expansion of claims by reissue nearly five years after the issuance of the original patent is not warranted according to the recent decisions upon this subject.

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Mr. Frederic H. Betts and *Mr. J. S. Hindon Hyde* for the orator.

Mr. W. C. Hauff and *Mr. John Van Santvoord* for the defendants.

WHEELER, *J.*:

This suit rests upon Reissue Letters Patent No. 9,772, dated June 21, 1881, the original of which was No. 177,020, dated May 2, 1876, and granted to the orator for an improvement in traveling-bags. The improvement consisted in making the lock-plate long enough to support, not only the lock itself and its fastenings, but also ring-loops for the handle attached to raised portions of the plate, and having creases under the ends of the plate for rings or other devices for a carrying-strap, so that attaching the plate to the frame would attach all these parts to the bag.

There were three claims in the original patent—one for the lock-plate, having secured to it the lock, fastening, and ring-loops; one for the lock-plate, having the recesses formed by the raised portions for receiving the ring-loops; and one for the combination of the plate, the lock, and the fastening device secured together and adapted to be fastened to the frame. The ring-loops and the mode of attaching them to an extended plate, and the creases under the ends of the plate for the rings of a carrying-strap, appear to have been new. A lock and fastening secured to a plate adapted to be attached to a bag-frame appear to have been old. The first two claims would, therefore, be valid; but the defendants do not have the ring-loops nor their mode of attachment to the plate, and do not infringe those claims. The third claim, not calling for anything peculiar about the plate more than that it should be combined with the lock and fastening device and adapted to be attached to the frame, by its terms covered nothing that was new and appears to be invalid. Nothing in respect to the creases under the ends of the plate was claimed.

The reissue has two new and additional claims—one for a lock provided with means whereby the rings of the carrying-strap can be attached directly thereto, substantially as specified, and one for a lock having its bottom plate provided with creases for the rings for the handles. These claims have reference to the creases for the rings of the carrying-strap or handle under the ends of the extended lock-plate. They are extended to cover this feature. The defendants have the extended plate and this feature. There is no claim anywhere for the extended plate by itself, and none that is infringed, except these expanded claims made to cover the infringement by the expansion. The expansion was nearly five years after the original, and does not seem to be warranted according to the recent decision upon this subject. Therefore the defendants do not infringe any valid claim, and the bill must be dismissed. Let a decree be entered accordingly, with costs.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 27—No. 10. TUESDAY, JUNE 3, 1884. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 23, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that William Pease, of Batavia, Ohio, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 23, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that John Sandford, of Paterson, New Jersey, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 26, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Troy W. Jones, of Decaturville, Tennessee, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.
The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., May 26, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Robert J. Dyer, of Shady Hill, Henderson county, Tennessee, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.
The Commissioner of Patents.

Issue of June 3, 1884.

Patents	444	No. 299,500 to No. 299,943, inclusive.
Designs	12	No. 15,034 to No. 15,045, inclusive.
Trade-Marks	16	No. 11,211 to No. 11,226, inclusive.
Labels	6	No. 4,133 to No. 4,138, inclusive.
Reissues of patents	4	No. 10,483 to No. 10,486, inclusive.
Total issue	482	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	.....	.....	New Hampshire	3	1
California	9	.....	New Jersey	17	1
Colorado	3	.....	New Mexico Territ'y	1	.....
Connecticut	23	.....	New York	79	8
Dakota Territory	.....	.....	North Carolina	1	.....
Delaware	2	.....	Ohio	38	.....
District of Columbia	4	.....	Oregon	1	.....
Florida	1	.....	Pennsylvania	37	2
Georgia	2	1	Rhode Island	9	.....
Idaho Territory	.....	.....	South Carolina	1	.....
Illinois	38	1	Tennessee	1	.....
Indiana	7	.....	Texas	1	1
Indian Territory	.....	.....	Utah Territory	1	.....
Iowa	9	.....	Vermont	4	.....
Kansas	3	.....	Virginia	1	1
Kentucky	6	.....	Washington Territ'y	4	.....
Louisiana	.....	.....	West Virginia	2	.....
Maine	5	.....	Wisconsin	7	1
Maryland	2	1	Wyoming Territory	.....	.....
Massachusetts	53	1	United States Army	1	.....
Michigan	11	1	United States Navy	.....	.....
Minnesota	7	.....			
Mississippi	1	.....	Total to citizens of the United States	418	20
Missouri	18	.....			
Montana Territory	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	Germany	7	.....
Austria-Hungary	2	.....	Hawaiian Islands	.....	.....
Barbadoes	.....	.....	Hayti	.....	.....
Belgium	.....	.....	Japan	1	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
Canada	9	.....	Russia	.....	.....
Central America	.....	.....	Scotland	.....	.....
Colombia, U. S. of	.....	.....	Sweden	.....	1
Cuba	.....	.....	Switzerland	.....	1
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	38	2
England	11	.....			
France	8	.....			

DESIGNS.

15,034.—TYPE.—*David Wolfe Bruce*, New York, N. Y. Application filed April 10, 1884. Term of patent 14 years.

15,035 and 15,036.—SPOON OR FORK.—*Hiram W. Hayden*, Waterbury, Conn., assignor to *Holmes, Booth & Haydens*, Connecticut. Applications filed April 7, 1884. Term of patents 7 years.

15,037.—ORGAN-CASE.—*Thomas Hill*, Chicago, Ill. Application filed March 25, 1884. Term of patent 3½ years.

15,038.—TYPE.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *David Wolfe Bruce*, New York, N. Y. Application filed April 10, 1884. Term of patent 14 years.

15,039.—CHENILLE PENDANT.—*Joseph Loeb*, Philadelphia, Pa. Application filed March 24, 1884. Term of patent 3½ years.

15,040.—ORGAN-CASE.—*Charles W. Newman*, Chicago, Ill. Application filed March 27, 1884. Term of patent 3½ years.

15,041.—NAIL-TRIMMER.—*J. Parker Pray*, New York, N. Y. Application filed December 18, 1883. Term of patent 14 years.

15,042.—FIRE-PLACE FRONT.—*Joseph A. Read* and *John E. McMenomay*, Philadelphia, Pa. Application filed April 21, 1884. Term of patent 7 years.

15,043.—COFFIN-SCREW ESCUTCHEON.—*William M. Smith*, Meriden, Conn., assignor to *The Meriden Britannia Company*, same place. Application filed March 17, 1884. Term of patent 14 years.

15,044.—COFFIN-SCREW.—*William M. Smith*, Meriden, Conn., assignor to *The Meriden Britannia Company*, same place. Application filed March 17, 1884. Term of patent 14 years.

15,045.—DISH-HANDLE.—*Gustav Vogt*, Limoges, France. Application filed April 11, 1884. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

11,211.—CIGARS, CIGARETTES, SMOKING AND CHEWING TOBACCO, AND SNUFF.—*H. Breitwieser & Bros.*, Buffalo, N. Y. Application filed April 29, 1884.

"The words 'THE PRESS,' the pictorial representation of a printing-press, and the pictorial representation of a group of two or more newspapers."

11,212.—OIL OR WATER PROOF CLOTHING.—*John Francis Carter*, Beverly, Mass. Application filed April 14, 1884.

"A five-pointed star."

11,213.—CIGARS, CIGARETTES, AND MANUFACTURED TOBACCOS.—*Gustav Fuchs*, Chicago, Ill. Application filed April 25, 1884.

"The arbitrarily-selected words 'ON TRACK.'"

11,214.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed April 22, 1884.

"The word-symbol 'THE KRONER' and the coat of arms of Norway."

11,215.—PLUG AND TWIST TOBACCO.—*Hardgrove & Co.*, Richmond, Va. Application filed March 10, 1884.

"The word 'PEACH.'"

11,216.—BALSAMS, LOTIONS, AND LINIMENTS.—*Adolph Hofmann*, Milwaukee, Wis. Application filed March 18, 1884.

"The arbitrarily-selected word-symbol 'UNION.'"

11,217.—FLOUR.—*Samuel Jacoby*, New York, N. Y. Application filed April 11, 1884.

"The arbitrary word 'ESQUISITA.'"

11,218.—SHOE AND GLOVE LEATHER.—*James Kent*, Gloversville, N. Y. Application filed April 7, 1884.

"The word 'DAISY' and the picture of a daisy."

11,219.—CURATIVE PLASTERS.—*Charles F. Fish*, Saratoga, N. Y. Application filed March 29, 1884.

"The picture of a helmet and visor."

11,220.—DENTIFRICK.—*Morley Bros.*, Austin, Tex. Application filed April 29, 1884.

"The word 'ORIDONTO.'"

11,221.—SUPPOSITORIES.—*Mansfield B. Snevily*, Brooklyn, N. Y. Application filed April 14, 1884.

"The word 'VITA.'"

11,222.—INTERNAL REMEDIES.—*Walter A. Taylor*, Atlanta, Ga. Application filed May 2, 1884.

"The words 'DR. BIGGERS.'"

11,223.—MATCHES.—*Aktiebolaget Jönköpings Östra Fabriker*, Jönköping, Sweden. Application filed January 19, 1884.

"The representation of a castle or the word 'CASTLE.'"

11,224.—CHAINS, BRACELETS, BUTTONS, AND OTHER ARTICLES GENERALLY DESCRIBED BY THE TERM JEWELRY.—*Carter, Sloan & Co.*, New York, N. Y. Application filed April 21, 1884.

"The arbitrary symbol of an Indian arrow-head with the letter 'C' marked thereon."

11,225.—WATCHES.—*Georges Favre-Jacot*, Locle, Switzerland. Application filed October 11, 1883.

"The firm-name 'GEORGES FAVRE-JACOT.'"

11,226.—SOFT AND ELASTIC RUBBER GOODS, SUCH AS ARTICLES OF WEARING-APPAREL AND THE LIKE.—*Goodyear Rubber Company*, New York, N. Y. Application filed April 12, 1884.

"The words 'GOLD SEAL' and a gold seal, (or its representation,) either separately or together."

LABELS.

4,133.—Title: "WATERTOWN WOOLEN YARN."—*George A. Lance*, Watertown, N. Y. Application filed April 30, 1884.

4,134.—Title: "ROBERT SHOEMAKER & CO., PURE GROUND SPICES AND DRUGS, PHILADELPHIA."—*Robert Shoemaker & Co.*, Philadelphia, Pa. Application filed May 6, 1884.

4,135.—Title: "SURE HEAVE CURE."—*Thomas K. Smith*, Girard, Erie county, Pa. Application filed April 7, 1884.

4,136.—Title: "NELSON'S FOOD DIGESTER."—*J. Nelson Solomons*, East Orange, N. J. Application filed May 7, 1884.

4,137.—Title: "J. H. TAYLOR'S GREAT KIDNEY AND LIVER CURE."—*John Henry Taylor*, Three Rivers, Mich. Application filed April 4, 1884.

4,138.—Title: "BLOOD'S IMPROVED GOUT AND RHEUMATIC PILLS."—*Milton S. Woodman*, Lebanon, N. H. Application filed May 12, 1884.

PATENTS

GRANTED JUNE 3, 1884.

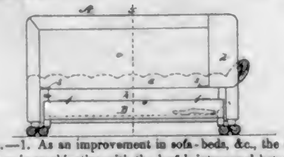
299,500. GEM-SETTING. DEWEY F. ADAMS, Providence, R. I. Filed Feb. 11, 1884. (No model.)



Claim.—1. A gem-setting consisting of a frame or cup, a stone or other object to be set, having a channeled face, as described, and inserted into said frame from the face side thereof, and a cap member which is secured to the frame, and has arms or bars adapted to occupy the channels in the face of the stone, substantially as set forth.

2. A gem-setting consisting of a frame, B, a stone or object, A, having channels *a* in its face, a cap member, C, having arms or bars *c*, adapted to occupy the said channels, and a rim, *c'*, which surrounds the stone and is secured to the frame to hold the stone in place, substantially as set forth.

299,501. SOFA-BED. HENRY L. ALDEN, Boston, Mass. Filed June 7, 1883. (No model.)

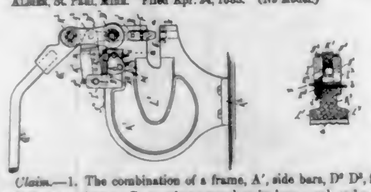


Claim.—1. As an improvement in sofa-beds, &c., the drawer B and the back *c*, in combination with the leaf *h*, interposed between them for supporting the back in an upright position, constructed to operate substantially as described.

2. In combination with the drawer B and an auxiliary head-rest, *d*, the brace *i*, for supporting the latter when the bed is in use, substantially as set forth.

3. The auxiliary head-rest *d*, the drawer B, with its caster-leg *l*, beveled at its top, and the supporting-brace *i*, pivoted to the inside of the drawer, all combined and arranged to operate as and for the purpose specified.

299,502. PUNCHING AND SHEARING MACHINE. ALEXANDER ALBEE, St. Paul, Minn. Filed Apr. 24, 1883. (No model.)



Claim.—1. The combination of a frame, A', side bars, D^2 D^2, fixed to said frame, a plunger, C, carrying a punch at its lower end, and means adapted to give said plunger an up-and-down movement between said bars, and a shear-jaw, K', pivoted at one end to the frame A' and at the other end to the plunger C, substantially as set forth.

2. The combination of a frame, A', side bars, D^2 D^2, fixed to said frame, a plunger, C, carrying a punch at its lower end and inclosed between said side arms, a forked lever-head, G', adapted to embrace the upper end of said plunger C, a shaft, H', fixed to the lever-head and passing loosely through an aperture in the upper end of the plunger, and provided with eccentric studs H^2 H^2, which turn in bearings in the side arms, D^2 D^2, whereby the plunger is given a vertical movement, and a shear-jaw, K', pivoted at one end to the frame A' and at the other end to the plunger C, whereby it is operated together with said plunger, substantially as set forth.

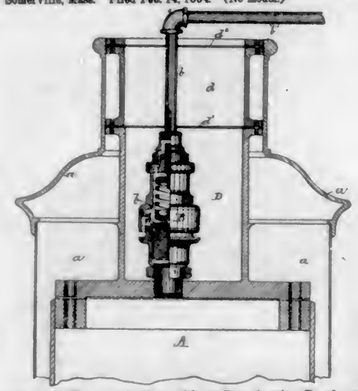
3. The combination of the frame A', plunger C, eccentric-shaft H' H^2 H^2, lever-head G', side bars, D^2 D^2, shear-jaw K', and graduated plate M, substantially as set forth.

4. The combination of a frame, A', having shear-blade K^3, set-screws *k i*, and shear-jaw K', pivoted adjustably by its rear end upon said frame and movable by its front end, substantially as set forth.

5. The combination of a frame, A', having a shear-blade, K^3, a shear-jaw, K', pivoted adjustably by its rear end upon said frame and movable by its front end, and movable graduated plate M, pivoted to said frame, substantially as set forth.

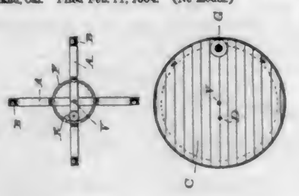
6. The combination of a frame, A', having a shear-blade, K^3, set-screws *k i m*, a shear-jaw, K', pivoted adjustably by its rear end upon said frame and movable by its front end, and provided with a cutting-blade, K^3, and a movable plate, M, provided with a series of graduated openings, substantially as set forth.

299,503. MUFFLER FOR SAFETY-VALVES. HENRY G. ASHTON, Somerville, Mass. Filed Feb. 14, 1884. (No model.)

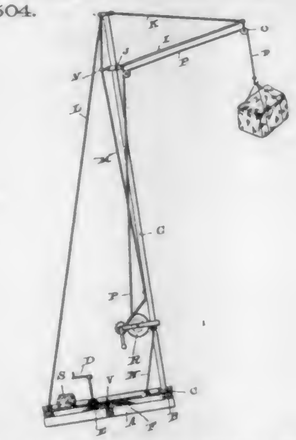


Claim.—The combination, with muffler-chamber D, of a safety-valve and a chamber, *b*, communicating with the air and inclosing the outer part of the valve, substantially as and for the purpose set forth.

299,504. PORTABLE DERRICK. HARRIS AUSTIN and IVES SCOVILLE, Oakland, Cal. Filed Feb. 11, 1884. (No model.)

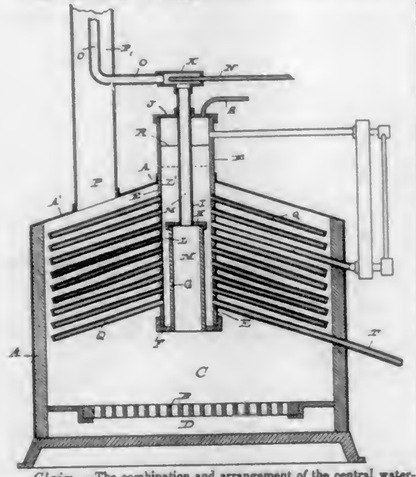


299,504.



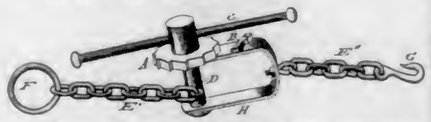
Claim.—In a derrick, the combination of the base A, provided with the internally-toothed gear F, friction-rollers B, and supporting the revolving counterbalanced platform C, adapted to be rotated by the crank-handle D and pinion E, and carrying the king-post G, and boom I, all when constructed and arranged to operate substantially in the manner and for the purpose herein shown and set forth.

299,505. STEAM-BOILER. EDGAR B. BADLAM, San Francisco, Cal. Filed Dec. 19, 1883. (No model.)



Claim.—The combination and arrangement of the central water-chamber, E, pipes G I, T piece or joint K, and the pipes N and O, the former leading into the furnace and the latter leading into the funnel, substantially in the manner and for the purpose as set forth and described.

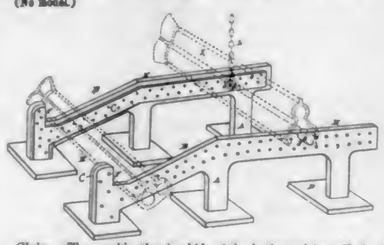
299,506. LOAD-BINDER. HORACE B. BANKER, Minneapolis, Minn. Filed Nov. 19, 1883. (No model.)



Claim.—1. The combination, in a log and lumber binder, with the lever C, spindle D, ratchet A, and pawl B, attached to the frame H, of the chains E' and E'', with their ring F, and grab-hook G, substantially as described, to operate in the manner and for the purpose set forth.

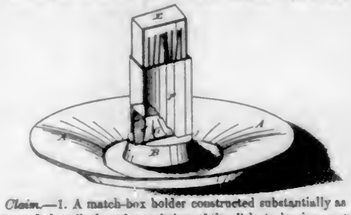
2. The combination, in a log and lumber binder, of the ratchet A, pawl B, lever C, spindle D, chains E' and E'', ring F, grab-hook G, and frame H, all combined for operation with the long binding-chains thrown around the logs or lumber, and with the clevis or bolster of the wagon or other conveyance, as described.

299,507. SKID. JAS. BARNETT, Louisville, Ky. Filed Nov. 30, 1883. (No model.)



Claim.—The combination in skids of the horizontal faces E, the inclined faces B, and the lugs F, substantially as described.

299,508. SELF-ADJUSTING MATCH-BOX HOLDER. HENRY BEEUWKES, Jr., Paterson, N. J. Filed Sept. 17, 1883. (No model.)



Claim.—1. A match-box holder constructed substantially as herein shown and described, and consisting of the dish A, having central upward projection, B, and the U-spring C, as set forth.

2. In a match-box holder, the combination, with the dish A, having a central upward projection, B, of the U-shaped spring C, having its ends bent inward, and provided with side springs, G, substantially as herein shown and described, whereby the holder is adapted to receive and hold different-sized match-boxes, as set forth.

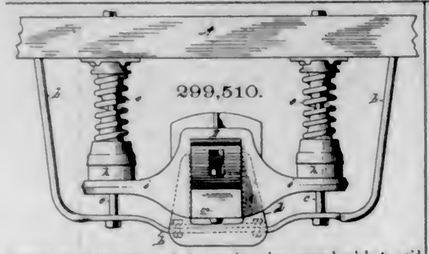
299,509. BOOT. ALBERT BELTZ, Warsaw, Wis. Filed Jan. 24, 1884. (No model.)



Claim.—As an improved manufacture, a boot composed of felt foundation throughout, the foot portion of which is covered with leather attached to a leather outsole, such leather foot-covering having an upward extension at the heel, as shown, and the parts all united by stitches, substantially as described.

299,510. CAR-TRUCK. SUMNER A. BEMIS, Springfield, Mass. Filed Dec. 5, 1883. (No model.)

Claim.—1. The within-described improved car-box connection consisting of a strap secured to the car on opposite sides of the car-box and



299,510.

passing under the latter, and of a car-box shoe secured solely to said strap under the car-box, and having jaws projecting upward on opposite sides of the latter, substantially as set forth.

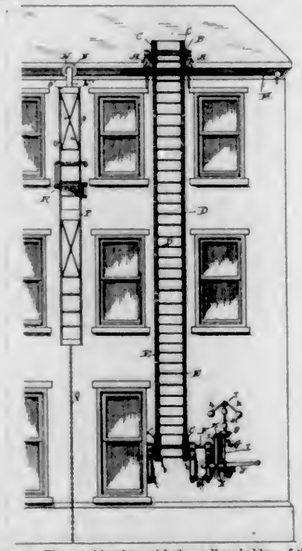
2. An improved car-box connection consisting of a strap secured to the car on opposite sides of the car-box and passing under the latter, and of a car-box shoe secured to said strap under the box, having jaws projecting upward on opposite sides of the latter, which permit of a certain degree of lateral movement of the car-box therebetween, substantially as set forth.

3. In combination with the strap *b*, and with a car-box having perforated spring-steps thereon, substantially as described, the spring-studs passing loosely through said steps and rigidly secured to the car-frame and to said strap, the springs supported on said studs having rubber bases loosely fitted on the latter and bearing on said spring-steps, and a car-box shoe secured on said strap under the car-box, having jaws thereon projecting upward on each side of the car-box, which permit the latter to move laterally between them, substantially as set forth.

4. In combination with the strap *b*, and with a car-box provided with the braces *i*, and the perforated spring-steps, the spring-studs passing loosely through said steps and rigidly secured to the car-frame and to said strap, the springs supported on said studs having rubber bases loosely fitted on the latter and bearing on said spring-steps, and a car-box shoe secured on said strap under the car-box, having jaws thereon projecting upward on each side of the car-box and between said braces, substantially as set forth.

299,511. FIRE-ESCAPE. LOUIS BLESSING, Jackson, Mich. Filed June 15, 1883. (No model.)

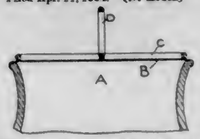
Brief.—A carrier traveling on a ropeway is made to travel to and from the endless ladder, and swinging platforms are arranged adjacent to the windows.



Claim.—1. The combination, with the endless ladder, of the carrier arranged to travel toward and from the ladder, substantially as set forth.

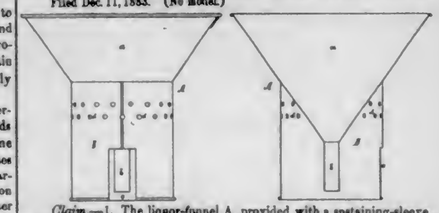
2. The combination, with the endless ladder and the carrier, of the swinging rests, substantially as set forth.

299,512. JUG OR PITCHER COVER. WILLIAM C. BODRETEL, San Francisco, Cal. Filed Apr. 11, 1884. (No model.)



Claim.—The pitcher-cover herein described, consisting of the combination of the wire-netting with curled-over edges closely hugging the rim of the pitcher, and the stiffening-rim C, soldered thereto, as and for the purpose described.

299,513. LIQUOR-FUNNEL. JOSEPH WARREN BOLTON, Lewiston, Me. Filed Dec. 11, 1883. (No model.)

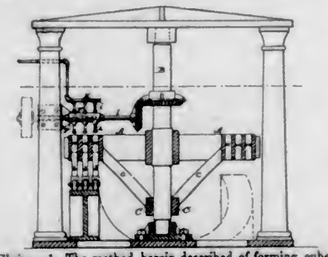


Claim.—1. The liquor-funnel A, provided with a sustaining-sleeve, B, extending downward from the body *a*, and around and below the educt or nose *b* of such funnel, and provided with the notch *c*, to receive a jug-handle, when the sleeve may be on the body, and the educt may be within the mouth of such jug, all being substantially as set forth.

2. The liquor-funnel A, provided with a sustaining-sleeve, B, extending downward from the body *a*, and around and below the nose *b* of such funnel, and perforated where around the body, and provided with a notch, *c*, to receive a jug-handle, when the said sleeve may be resting on the body, and the nose may be within the mouth of the jug, all being substantially as represented.

299,514. METHOD OF AND APPARATUS FOR COMPRESSING PLASTIC, PULVERIZED, AND OTHER MATERIALS. THEODORE C. BRECHT, Washington, D. C. Filed Nov. 6, 1883. (No model.)

Brief.—Improvement on the invention of Letters Patent No. 279,384.



Claim.—1. The method herein described of forming cubes, cakes, &c., composed of pulverized, granulated, or plastic material, which consists in subjecting the molds and the ends of the plungers to a jet or jets of sprayed or comminuted water prior to the filling of the molds with the material, and then compressing it in said molds, as set forth.

2. The process herein described of compressing material into any desired size or shape, consisting in subjecting the molds and the ends of the plungers to one or more jets of sprayed or comminuted water or its equivalent, automatically, just prior to the filling of the molds with the material, and then compressing it within the molds, as specified.

3. In a compressing-machine, a plug, E, provided with one or more cavities arranged in a cylinder provided with openings and spraying-nozzles for injecting jets or sprays into the molds of said machine, as and for the purpose set forth.

4. In a compressing-machine, a rotary plug, E, provided with one or more cavities in its periphery, arranged in a shell, F, having spraying-nozzles, and connected to a source of supply, so as to automatically and intermittently inject into the molds and against the ends of the plungers of said machine one or more jets of water, &c., as and for the purpose specified.

5. In a compressing-machine, a mold-wheel provided with an auxiliary or extended hub having arms or braces cast or secured to said mold-wheel, substantially as shown, and for the purpose set forth.

6. The process herein described of compressing pulverized, granulated, plastic, or other materials into suitable shape and size, which consists in subjecting the molds and ends of the plungers to a jet or jets of sprayed or comminuted water or other fluid, and then compressing it, as and for the purpose specified.

299,515. PROCESS OF TREATING THE WASTE OF SALT FISH.

REUBEN BROOKS, Gloucester, Mass., assignor to the Russia Cement Company, same place. Filed Mar. 3, 1884. (No specimens.)



Claim.—1. The process of preparing the waste portions of salt fish for the manufacture of glue, consisting in, first, crushing, tearing, or otherwise mechanically disintegrating the waste, and, secondly, removing the salt therefrom by the use of water or dilute sulphuric acid, substantially as set forth.

2. The process of preparing the waste portions of salt fish for the manufacture of glue, consisting in, first, crushing, tearing, or otherwise mechanically disintegrating the waste, and, secondly, removing the salt therefrom by exposing the waste to the action of flowing water, substantially as set forth.

3. The process of preparing the waste portions of salt fish for the manufacture of glue, consisting in, first, crushing, tearing, or otherwise mechanically disintegrating the waste, and, secondly, removing the salt therefrom by exposing the waste to the action of flowing water, said water passing downward through the mass, and leaving the material through which it has passed by the pressure of the water in the tank, substantially as set forth.

4. The process of extracting glue from the waste of salt fish, consisting in, first, mechanically disintegrating the waste; secondly, removing the salt therefrom by the use of flowing water, or water with an antiseptic in solution; thirdly, cooking; fourthly, straining, and, fifthly, evaporating, substantially as set forth.

5. The process of extracting glue from the waste of salt fish, consisting in, first, mechanically disintegrating the waste; secondly, removing the salt therefrom by the action of flowing water or dilute sulphuric acid; thirdly, steaming the desalted mass; fourthly, straining, and, fifthly, evaporating, substantially as set forth.

299,516. ORNAMENTATION OF GLASS IN IMITATION OF FROSTING.

DAVID F. BROWN, Omaha, Nebr. Filed Nov. 15, 1883. (Specimens.)

Claim.—1. The method herein described for the production of ornamental imitation frosted glass, which consists in first coating the surface to be ornamented with a varnish or like adhesive material, and then applying thereto a coating of the translucent, scaly, silicious matter herein specified.

2. Glass or like vitreous ware having a frosted surface of adhesive material, and the scaly, translucent, silicious material herein specified.

299,517. CUFF-BUTTON.

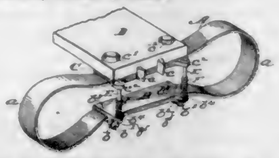
JOSEPH BULOVA, New York, N. Y. Filed Mar. 27, 1884. (No model.)



Claim.—The combination of a face-plate, *a*, having shank *b*, with back plate, *c*, lugs *d*, spring *f*, and pin *e*, all being so arranged that the spring is loosely laid on the back plate, and that a space is left between the spring and back plate, substantially as specified.

299,518. WAGON-BOLSTER SPRING.

JOHN R. CALHOUN, St. Louis, Mo. Filed July 16, 1883. (No model.)



Claim.—1. The combination of the spring A, the saddle B, the plate C, and the bolts E E, substantially as described.

2. The combination of the spring A, made of one piece, bowed at *a a*, as described, the saddle B, having ears formed on it, the plate C, having side flanges to receive the edges of the spring A, and the bolts E, substantially as specified.

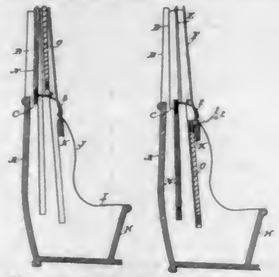
3. The combination of the single spring A, bowed at *a a*, the saddle B, the plate C, having flanges on its sides, the bolts E, and the spring F, and the wagon-bed support D, substantially as described.

4. The spring A, formed in one piece flattened on top at or near its mid-length, having bow *a a* and crooked ends a^2, combined with the plate C and the saddle B, substantially as described.

299,519. WINDOW-GUARD.

GEORGE W. CLARK, Brooklyn, N. Y. Filed Feb. 4, 1884. (No model.)

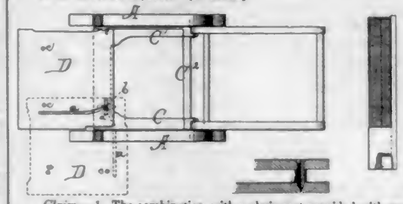
Brief.—A pivoted window-guard hinged to the car-belt closes the mouths of the window and blind chamber at the rear of the seats. The guards also prevent rattling of the windows.



Claim.—The combination, with the sliding windows of a vehicle and the chamber for their reception when dropped, of a movable guard constructed substantially as described, and operating to rest snugly against the sash, and thus close the opening to said chamber, as set forth.

299,520. GYNECOLOGICAL CHAIR.

MONROE M. COFF, Batavia, N. Y. Filed Oct. 11, 1883. (No model.)



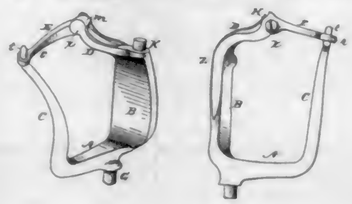
Claim.—1. The combination, with a chair-seat provided with ways, substantially as described, of a slide fitted to said ways and pivoted to the seat-frame, substantially as set forth, whereby the same may rest beneath the cushion of the seat or be withdrawn in front of the seat or turned to one side, as and for the purpose specified.

2. The combination, with the seat of a chair having ways, substantially as described, of a slide provided with the slot *a*, fitted to said ways, and a bolt, *b*, passing through said slot, substantially as and for the purpose set forth.

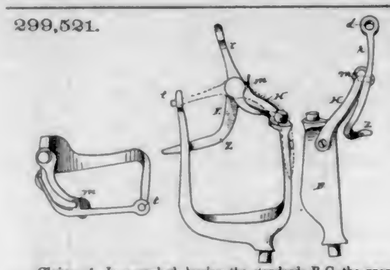
3. The combination, with the chair-seat provided with ways, substantially as described, and having the locking-lug *e*, of the slide D, having the slot *a* and recess *d*, and the bolt *b*, passing through the slot in the slide and uniting the two parts of the frame, substantially as set forth.

299,521. ROWLOCK.

JOHN F. CUMMING, Boston, Mass. Filed Mar. 15, 1884. (No model.)



299,521.



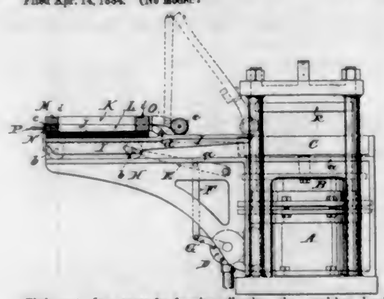
Claim.—1. In a rowlock having the standards B C, the guard E, said guard being pivoted upon one of said standards and adapted to engage the other by means of its apertured end, in combination with a spring for pressing the guard into its engaging position and holding it open, substantially as set forth.

2. In a rowlock having the standards B C, the guard E, provided with the arms *r s*, and projection *m*, said guard being centrally pivoted to one of said standards, in combination with the spring H, all constructed and arranged to operate substantially as specified.

3. In a rowlock, a guard for closing the lock and acting as a brace to its standards, said guard being provided with two arms standing at an angle to each other, one of said arms being adapted to engage one of the standards by its apertured end, and the other adapted to engage the oar when it is inserted in the lock, and thereby close the guard, said guard being centrally pivoted to one of the standards, substantially as set forth.

299,522. PRESS FOR OIL-CAKES.

THOS. DE ARMON, Dayton, Ohio. Filed Apr. 14, 1884. (No model.)



Claim.—1. In a press for forming oil-cakes, the meal-box having removable connected side and end walls, substantially as described.

2. In a press for forming oil-cakes, the meal-box mounted upon a traveling carriage and having sectional side and end walls connected and hinged together and hinged to the carriage, whereby said walls may be lifted from the bottom of the box, substantially as and for the purpose described.

3. In a press for forming oil-cakes, a traveling or sliding meal-box composed of the side pieces, I, mounted on rollers *b*, bed-plate J, end walls, K L, and side walls, M N O, said end walls being hinged to the side pieces, I, and provided with rollers *a*, the parts constructed and united substantially in the manner and for the purpose specified.

4. In a press for forming oil-cakes, the combination, with the meal-box, of the enfolding-cloth having side and end flaps, as and for the purpose described.

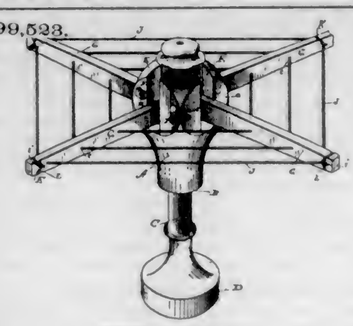
5. In a press for forming oil-cakes, the combination, with the meal-box having removable side and end walls, of the enfolding-cloth having side and end flaps, substantially as described.

299,523. CLOTHES-DRIER.

GEORGE W. DEKER, Canandaigua, N. Y. Filed Sept. 5, 1883. (No model.)

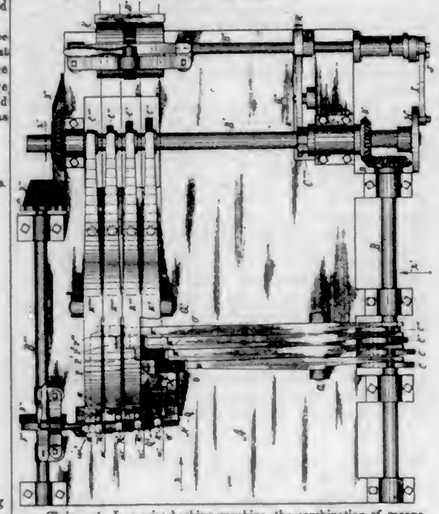
Claim.—As an improvement in clothes-driers, a standard, C, in combination with the head A, provided at its lower end with a socket loosely fitting the upper end of the standard, and having sides or faces *a*, each of which is formed with vertical slots E, recesses F in the rear of the slots, and arranged above the bottom wall of the same, thereby forming shoulders *e*, the arms G having an elongated slot at the inner end, and bolts passing through the head and arms within the slots, the said bolts being located as shown, whereby the arms may be held in an extended or a vertical position, as set forth.

299,523.



299,524. WIRE-BARBING MACHINE.

THOMAS H. DODGE, Worcester, Mass. Filed Feb. 23, 1884. (No model.)



Claim.—1. In a wire-barbing machine, the combination of means for supporting a series of main wires to be barbed, means for feeding a single barb-wire across and in contact with all the main wires, and means for forming from said single barb-wire a series of barbs, and for applying one of them upon each of the main wires of said series.

2. In a wire-barbing machine, the combination of a series of wire-supporting spindles, each adapted to support a main wire to be barbed, means for feeding a single barb-wire across the entire series of main wires so supported, and in front of said wire-supporting spindles, and means for forming from said single barb-wire a series of barbs and for applying one of them upon each of said main wires.

3. In a wire-barbing machine, the combination of a series of parallel spindles, axially perforated for the passage and support of a corresponding series of main wires separated by uniform spaces, each equal to the length of wire required to form a barb on one of said main wires, means for feeding a single barb-wire across said main wires and in front of said spindles, and means for successively forming from said single barb-wire a series of barbs and for applying them successively one on each of said main wires.

4. In a wire-barbing machine, the combination of a series of parallel spindles axially perforated for the passage and support of a corresponding series of main wires separated by uniform spaces, each equal to the length of wire required for a barb upon one of said wires, suitable wrapping-pins fixed in the front faces of said spindles, means for feeding a single barb-wire across said main wires in front of said spindles, and between said main wires and said wrapping-pins, a series of cutting devices adapted to sever said barb-wire in the spaces between said spindles, means for successively rotating said spindles at suitable intervals of time, and means for successively operating said cutting devices in the intervals of time between the movements of said spindles, whereby from

said single wire barbs are successively wrapped about said main wires by said wrapping-pins, and severed by said cutting devices.

5. The combination of the series of parallel axially-perforated spindles Q Q′ Q″ Q‴, and a suitable stationary bearing in which they are journaled, the series of pinions P P′ P″ P‴, mounted on the rear ends of said spindles, respectively, each pinion of the series lying wholly in rear of the one next preceding it in the series, the series of segments O O′ O″ O‴, engaging with said pinions, respectively, and means, substantially as described, for imparting reciprocal motion to said segments, whereby said spindles are rotated reciprocally, substantially as shown and described, and for the purpose set forth.

6. The combination of the journaled barb-wrapping spindles Q Q′ Q″ Q‴, pinions P P′ P″ P‴, mounted on said spindles, respectively, segments O O′ O″ O‴, engaging with said pinions, respectively, and adapted, when moving downward, to rotate said spindles in the direction for wrapping, and when moving upward to rotate said spindles in a reverse direction, the pivoted levers E E′ E″ E‴, formed integrally with said segments, respectively, and the cams C C′ C″ C‴, operating said levers, respectively, and adapted, through the operation of said levers, to depress said segments successively, and raise them simultaneously, substantially as and for the purpose set forth.

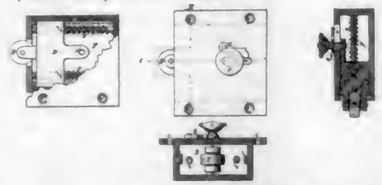
7. The combination of the series of knives R′, fixed in suitable stationary bearings, the vertically-reciprocating levers E′ E‴ E⁴ᵗʰ E⁵ᵗʰ, pivoted on a suitable horizontal axis, the knives R, fixed in seats in the front faces of said levers, respectively, and the cams C′ C‴ C⁴ᵗʰ C⁵ᵗʰ, mounted on the shaft B′, and adapted to depress the knife-carrying ends of said levers successively, whereby said knives R co-operate successively with the knives R′, substantially as shown and described, and for the purpose set forth.

8. The combination of the series of stationary knives R′, the series of vertically-reciprocating knives R, co-operating therewith, and the series of slotted wire-guides T, attached to the heads carrying said knives, and moving reciprocally therewith, substantially as shown and described, and for the purpose set forth.

9. The combination of the geared barb-feeding rolls F′ F″, the shaft B‴, on which the lower of said rolls is mounted, the shaft B′ at right angles to said shaft B‴, the mutilated gear D″, mounted on the shaft B′, and provided with a circumferential flange, d''', which is cut away on the arc subtending the toothed surface of said gear, and the pinion D‴, mounted on the shaft B‴, and provided with the opposite cam-faces, d, adapted to engage with the flange d''' and prevent the rotation of said pinion when not in engagement with the toothed portion of the mutilated gear, substantially as shown and described, and in combination with the obliquely-placed front faces of the spindles Q Q′ Q″ Q‴.

10. The combination of the series of wire-supporting spindles Q Q′ Q″ Q‴, whose front ends are in a line slightly oblique to the lines of their axes, and means, substantially as described, for feeding a barb-wire along the oblique line of said front ends, and in contact with the faces of said spindles, substantially as and for the purpose set forth.

299,525. WINDOW-SASH HOLDER. JOHN E. DOHEN, Charleston S. C. Filed June 3, 1883. (Model.)



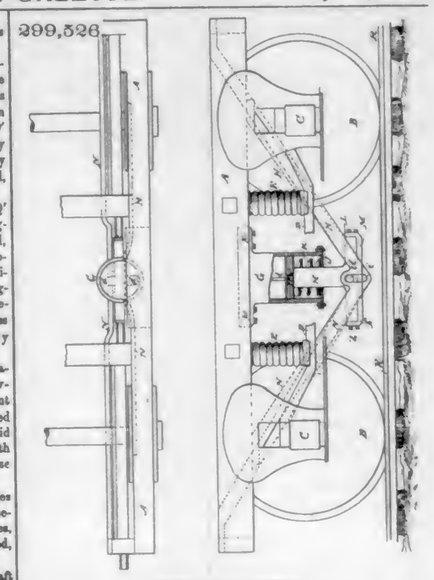
Claim.—The combination of the slide D, having rubber or other wheel, E, and compressed into place by the springs H, the whole inclosed in box F, with a knob, C, connecting with the slide D and running in the slot a', and the catch G, as and for the purpose specified.

299,526. CAR-BRAKE. THOMAS WM. DUFFY, Medford, Mass., assignor to Dudley G. Hall, same place. Filed Mar. 19, 1884. (No model.)

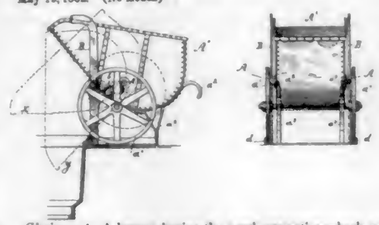
Claim.—1. In a car-brake substantially such as described, the following instrumentalities, to wit: an air-cylinder provided with a piston, a piston-rod connected with said piston within the cylinder and carrying a brake-shoe at its outer end adapted to engage the rail, a spring disposed within the cylinder and adapted to retract the piston-rod, and a brace, substantially as described, adapted to resist the end-thrust of the brake-shoe when said shoe is in frictional contact with the rail, in combination with suitable operative mechanism, substantially as set forth.

2. In a car-brake substantially such as described, the cylinder G, provided with the piston m and spring K, the rod H, provided with the bar L, shoe M, and stud d, and the braces N, provided with the slots i, constructed, combined, and arranged to operate substantially as specified.

299,526



299,527. BARROW. JULIUS AARS DYBLIE, Cummings, Ill. Filed May 19, 1882. (No model.)



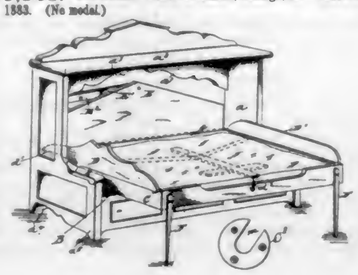
Claim.—1. A barrow having the usual supporting-wheels and a set of supplemental trunnions, about which the entire barrow, with its wheels, may temporarily turn, substantially as described.

2. The combination, with the barrow having the usual supporting-wheels and a set of supplemental trunnions, of the tip-stands adapted to receive and support said trunnions and to allow the barrow to turn thereon, substantially as described.

3. The combination, with the barrow A′, having supporting-wheels a' and supplemental trunnions A, of the tip-stands B, having lips b, substantially as described.

4. The combination, with the barrow A′, having supporting-wheels a' and supplemental trunnions A, of the tip-stands B, having lips b and guides D, substantially as described.

299,528. SOFA-BED. PHILIP A. EMERY, Chicago, Ill. Filed July 5, 1883. (No model.)



Claim.—1. The combination of the frame A, constructed substantially as shown and described, with the bed-frame C and head-board D, the latter being reduced at its inner end, and adapted to operate as set forth, said frame and head-board being independently pivoted to the frame, as shown and described.

2. The combination, with the pivoted bed-frame C, of a hinged side board, E, hook d^3, and the folding bars E′ and E², as and for the purpose set forth.

299,529. LIFTING-JACK. HENRY J. ENGLAND, Falls Church, Va. Filed May 2, 1884. (No model.)



Claim.—1. A lifting-jack, consisting of a bent body formed of a single piece of wood or metal, a central lifting-bar pivoted within said body and provided with a bracket secured a short distance from the outer end of the same, said bracket and outer end of said lifting-bar being provided with corrugated plates, substantially as shown.

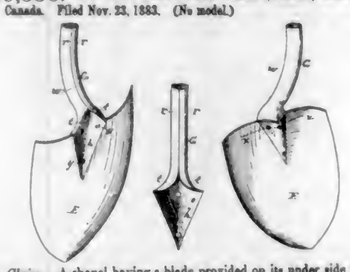
2. A lifting-jack, consisting of a body formed of a single piece of wood or metal, the center cut out to form a lifting-bar, which is pivoted between the cut sides, the free ends of said piece being held in place by a straight hand-piece and bolt, substantially as shown.

3. A lifting-jack, consisting of a body formed of a single piece of wood or metal, the center cut out to form a lifting-bar, which is pivoted between the cut sides, the free ends of said piece being held in place by a curved hand-piece secured by screw-bolts, substantially as shown.

4. In a lifting-jack, the bent body A, the thickened bearing part B, having points C, the tie-bolt E, the pivot-bolt G, the holding-bolt H, and the rounded handle part A′, in combination with the lifting-bar F, having bracket e, provided with corrugated plate f, and the flexible connecting-strap I, all arranged and operated substantially as shown and specified.

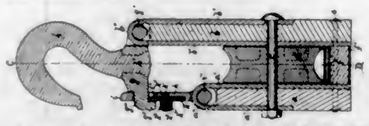
5. In a lifting-jack, the body A², having end bearing, B², and straight sides A⁴, the pivot-pin G, the binding-bolt H, and the curved handle L, secured by screw-bolts g, in combination with the lifting-bar, F, pivoted between sides A⁴, and having bracket e and the flexible strap C, connecting-bolt H, and bar F, all arranged and operated substantially as shown and specified.

299,530. SHOVEL. EDWD. LAWSON FENERTY, Halifax, Nova Scotia, Canada. Filed Nov. 23, 1883. (No model.)



Claim.—A shovel having a blade provided on its under side with a depression which gradually decreases in depth and diminishes in size from its outer to its inner end for receiving the attaching tang or flange of the handle-socket, said depression being V-shaped in area and A-shaped in cross-section, and a handle-socket provided with an attaching tang or flange which is V-shaped in area and A-shaped in cross-section, and adapted to fit said depression, said tang or flange being integral with the body of the socket and riveted to the blade of the shovel by rivets, the lower ends of which are within said depression and above the plane of the under side of the blade at said depression, substantially as set forth.

299,531. SNATCH-BLOCK. THOS. R. FERRALL, Boston, Mass. Filed Apr. 28, 1884. (No model.)



Claim.—1. In a snatch-block, the head g, hinged to the bow-strap b' on the side piece b, as and for the purpose set forth.

2. In a snatch-block, the side pieces, a b, having the bow-straps a' b', as described, and the head g, hinged to bow-strap b', and link i, hinged to the bow-strap a', as and for the purpose set forth.

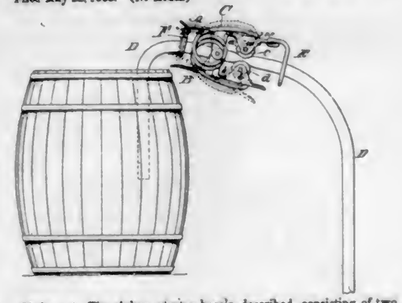
3. In a snatch-block, the side pieces, a b, and their respective bow-straps a' b', in combination with the head g, hinged to bow-strap b', and having locking projection g''', with lip g^4, adapted to be locked to the link i, hinged to bow-strap a', or its equivalent, and having locking-disk k, as and for the purpose set forth.

4. In a pulley-block, the sides a b, in combination with the end piece, f, and its metal shield or casing f', as and for the purpose set forth.

5. In a snatch-block, the sides a b, with their two bow-straps a' b', as and for the purpose set forth.

6. In a snatch-block, the hinged link i and its locking button or disk k, combined with the frictional or equivalent retaining device, substantially as and for the purpose set forth.

299,532. SIPHON-STARTER. EUGENE L. FITCH, Des Moines, Iowa. Filed May 22, 1883. (No model.)



Claim.—1. The siphon-starter herein described, consisting of two spring-pressed plates hinged to each other, and carrying opposite rollers for grasping a tube, one of the spring-pressed plates being provided with a ring at one end for engaging with the rear end of the other plate, substantially as shown and described.

2. The siphon-starter herein described, consisting of two spring-pressed plates hinged to each other, and carrying opposite rollers for grasping a tube, one of the spring-pressed plates being provided with a ring at one end for engaging with the rear end of the other plate, and a guide-loop for the tube at its opposite end, substantially as shown and described.

3. In a siphon-starter, the combination, with the hinged plates A B, formed with side arms, a b, by which the plates are hinged together, and with the side arms, a' b', of the rollers c d, journaled in the arms a' b', substantially as shown and described.

4. In a siphon-starter, the plate A, provided with the loop E and ring F, in combination with the hinged plate B, the plates A B being adapted for grasping and collapsing the siphon-tube, substantially as described.

299,533. DOUBLE BUCKLE. CHARLES H. FREER and MAYNARD M. FREER, Blue Earth, Minn. Filed Mar. 26, 1884. (No model.)



Claim.—1. In a buckle, the combination, with the sides having the cross-bars a and end cross-bars, b, of the tongue-bar c and cross-bar d, substantially as set forth.

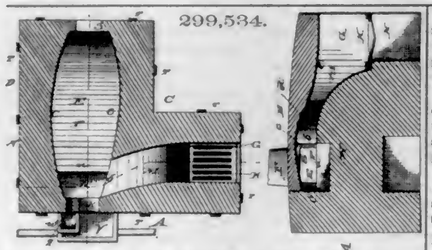
2. The herein-described buckle A, consisting of the sides B, having the cross-bars a, and having their ends bent upwardly and connected by cross-bars b, one of which is provided with a bushing or roller, a tongue-bar, c, carrying a pivoted tongue, and the cross-bar a, having an upwardly-projecting stud, and a bar, d, forming, in connection with the bar b, a tuck-loop, substantially as set forth.

299,534. SMELTING-FURNACE. ABRAM GIBSON, Hughesville, Mont. Filed June 23, 1883. (No model.)

Claim.—1. In a smelting-furnace of angular or L form, the inclined transverse oven-floor P, terminating in a lip at a, and at the end of the floor below the lip, and directly in rear of the flame-throat a lead-well or crucible, w, having an opening, k, through the furnace-wall for the escape of the slag, substantially as specified.

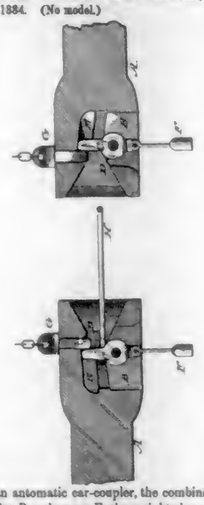
2. The combination, with the L-shaped furnace having the inclined

299,534.



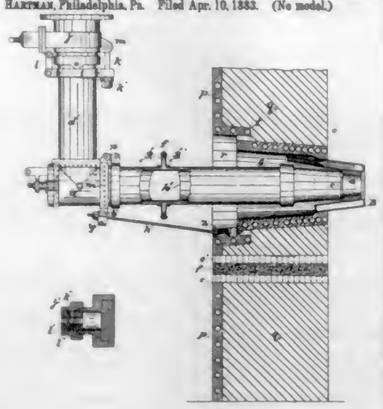
oven-floor, and the crucible or lead-well *w*, having a discharge-opening, *k*, of a cooling-tank, V, having a supply-pipe for cold water and a discharge-pipe for the water which is warmed by the slag passing over from the crucible, substantially as specified.

299,535. CAR-COUPLING. MAHLON HARROLD, Fort Worth, Tex. Filed Mar. 27, 1884. (No model.)



Claim.—In an automatic car-coupler, the combination of the drawhead having the slot B and recess E, the weighted and pivoted lever C, extending up into said recess, and a locking-pin, G, with which said lever engages, substantially in the manner as and for the purpose herein shown and described.

299,536. TUYERE AND ATTACHMENT THEREFOR. JOHN M. HARTMAN, Philadelphia, Pa. Filed Apr. 10, 1883. (No model.)



Claim.—1. The combination, with the tuyere, of a detachable nozzle-piece made of metal having higher conducting-power than iron, and fitting the interior of the tuyere, metal and metal, in immediate proximity to the tuyere-nose, substantially in the manner and for the purposes specified.

2. The combination, with the tuyere and the hinged tuyere-pipe *c*, of the detachable nozzle-piece *a*, fitting closely within the tuyere in immediate proximity to the nose thereof, and having its rear end countersunk to receive the convex end of said tuyere-pipe, substantially as specified.

3. The combination, with the tuyere-pipe *c*, formed in two sections, of the annular flanges *g g'*, and washer *f*, forming a flexible joint between said sections, and the freely-suspended inner pipe, A, constituting a continuous lining for said sectional tuyere-pipe, substantially as and for the purposes set forth.

4. The combination of the downwardly-depending pipe *d'*, having the tuyere-pipe hinged to its lower end, and lugs *o* at its upper end, with the hinged swivel-bridle *i*, upon which said projections rest, and suitable attaching devices for securing said bridle, substantially as set forth.

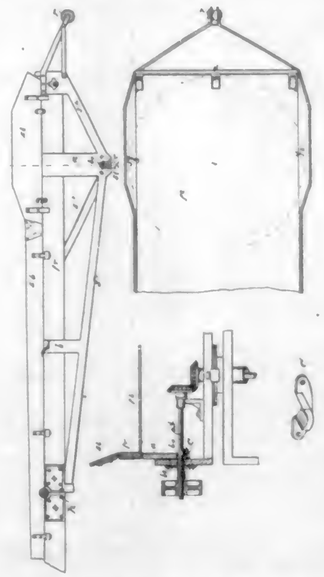
5. The combination of the elbow *a'*, having a flange, *m'*, the tuyere-pipe *c*, hinged to said flange, the tie-rod A, and lug *z*, whereby said pipe and elbow are secured together and stayed against the pressure within the furnace, substantially as specified.

6. The combination, with the flange *m'* and tie-rod, of the lug *y*, opening at the side, substantially as specified, and for the purposes set forth.

7. The combination, with the crucible-jacket and the tuyere-breast, of the flange *t*, formed upon said jacket, and adapted to receive and sustain said breast, substantially as specified.

8. As an improvement in eye-pieces for tuyeres, the combination, with the glass thereof, of washers of fire-proof, non-conducting, pliable material arranged upon each side of said glass, substantially in the manner set forth.

299,537. STRAW-CARRIER. LEWIS W. HASSELMAN, Indianapolis, Ind. Filed Nov. 5, 1883. (No model.)

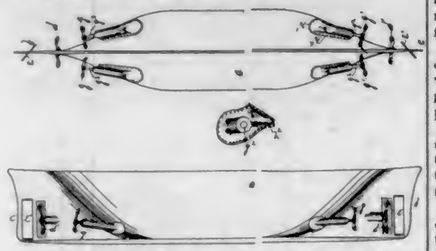


Claim.—1. The straw-carrier frame *fr*, the tilting arm *a*, connected by struts *s' s²* to the frame, the boxing *bo*, cap *c*, and shaft *ax*, all combined substantially as described.

2. The straw-carrier frame *fr*, tilting arm *a*, mounted on shaft *ax*, boxing *bo* and cap *c*, struts *s s' s²*, and brace *b*, all combined substantially as described.

3. The carrier-frame *fr*, tilting arm *a*, shaft *ax*, boxing *bo*, cap *c*, hinge *h*, and struts *s²* and *s*, the latter fitting into a socket formed under the inner part of hinge *h*, all combined substantially as described.

299,538. SCREW-PROPELLER FOR VESSELS. ELIAS S. HAWLEY, Buffalo, N. Y. Filed Nov. 28, 1882. (No model.)



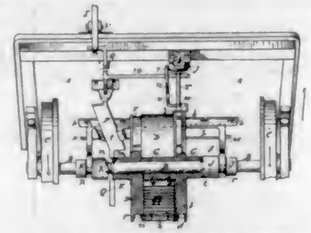
Claim.—1. A vessel having its bow and stern of like tapering configuration, and being provided with three propeller-screws at each end, one screw being located in the dead-wood in the line of the keel, and the other two being twin screws, located substantially as shown, the six screws having their combined working area at least equal to or somewhat greater than the maximum immersed transverse section of the vessel, substantially as shown and described.

2. A vessel having its bow and stern of like tapering configuration, and provided with twin screws in both bow and stern, the shafts of which are inclined in an upward direction, substantially as shown, and for the purpose stated.

3. A vessel having its bow and stern of like tapering configuration, and provided with twin screws in both bow and stern, the shafts of which are inclined in an upward direction and converge toward the bow and stern, substantially as shown, and for the purpose stated.

4. The sheath for the protruding ends of the shafts of the twin screws *g g g' g'*, consisting of the cylindrical portion A and the extension A', having the sharp edge A^3 between the end of the shaft and the side of the vessel, substantially as shown and described.

299,539. CAR-STARTER. SAMUEL HENRY, Braintree, Mass. Filed Mar. 19, 1884. (No model.)



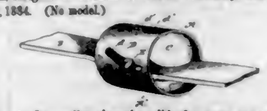
Claim.—1. The improved car-starter herein described, the same consisting of the case D, spring H, sleeve G, clutches J K, bar I, rods T F, levers U W, arms 10 and 23, rod Q, slide P, levers R S, axle B, and wheels C, constructed, combined, and arranged to operate substantially as specified.

2. In a car-starter, the lever W, in combination with the rod F, rod Q, arm 23, and case D, substantially as and for the purpose set forth.

3. In a car-starter, the lever U, in combination with the rod T, rod Q, arm 10, and sleeve G, substantially as and for the purpose specified.

4. In a car-starter, the plate P, in combination with the rod Q, bar I, arms N, clutches J K, and levers R S, substantially as and for the purpose set forth.

299,540. CLAMPING-SLIDE FOR STRAPS. JACOB HERRINER, Chicago, Ill., assignor of one-half to Robert V. Stanley, same place. Filed Mar. 27, 1884. (No model.)



Claim.—1. In a roller clamping-slide for straps or strips, the combination, with a roller, of a slide-body provided with a wall opposed to the roller, a guide or guides for the roller inclined with reference to said wall, and a prominence at *a*, whereby the strap is borne into engagement with the roller before the latter is brought into clamping position, all substantially as described, and for the purposes set forth.

2. In a roller clamping-slide, the combination, with a ribbed or serrated roller, of a slide-body provided with a wall opposed to the roller, and a roller guide or guides inclined with reference to said wall and serrated to positively engage the roller, all substantially as described, and for the purposes set forth.

3. In combination with the wall of the slide having a prominence, *a*, a roller guiding surface or surfaces inclined to said wall and provided with serrations, and a roller serrated to positively engage the serrated guiding surface or surfaces, substantially as described, and for the purposes set forth.

4. A reversible cylindric clamp-slide having a central stop-passage, side walls provided with oblique slots, a clamping-roller movably retained in said slots, and two oppositely-arranged prominences at *a a* in the strap-passage, whereby the strap is brought into engagement with the clamp-roller, all substantially as described.

5. The combination, in a clamping-slide for a strap or strip, of an oppositely and obliquely slotted shell, D, a roller movably retained in the slots, and oppositely-arranged parts C and C', secured within the shell and provided with rounded ends and prominences *a*, all substantially as described.

6. The combination, with a harness-rein, of an adjustable clamp-button constructed with a passage for a strap having one or more prominences, *a*, a clamping-roller, and oblique roller-guides, all substantially as described.

299,541. MACHINE FOR ATTACHING TAGS AND LABELS TO PLUG-TOBACCO. NAPOLEON B. HEATT and EDWIN R. HEARN, Jersey City, N. J., assignors to P. Lorillard & Co., same place. Filed Aug. 9, 1881. (No model.)



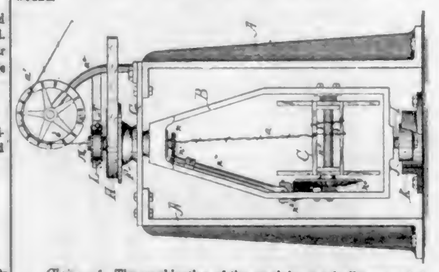
Claim.—1. In a machine for attaching tin tags to plug-tobacco, the combination, with the vertically-sliding platform A' A^2, of the independent and removable strip E, provided with apertures *f*, and of the posts or uprights G below the strip E, substantially as herein shown and described, and for the purpose set forth.

2. In a machine for attaching tin tags to plug-tobacco, the combination, with the vertically-sliding platform A' A^2, of the apertured independent and removable strip E, the posts or uprights G, the springs J, and the stops K, substantially as herein shown and described, and for the purpose set forth.

3. In a machine for attaching tin tags to plug-tobacco, the combination, with the platform A' A^2, of the apertured strip E, the posts G, and the adjustable gages L and N, substantially as herein shown and described, and for the purpose set forth.

299,542. BARBED-WIRE TWISTING AND SPOOLING MACHINE. CHRISTIAN C. HILL, Chicago, assignor to George Monroe Fish, Oak Park, Ill. Filed June 18, 1883. (No model.)

Brief.—The revolving spool-frame is suspended from a ball-and-socket joint. The lower end of said frame has no fixed bearing, but is provided with a friction-pulley which fits within a large cup or shell secured to the base of the machine, so as to prevent the frame from being swung or oscillated too much out of position. Suitable mechanism is provided for revolving the spool upon which the twisted strands are wound.



Claim.—1. The combination of the revolving vertically-suspended frame with a universal joint or bearing from which said frame is suspended, means for supporting said joint or bearing, and a spool mounted on said frame, so that the center of gravity and rotation may always coincide, substantially as specified.

2. The combination of the spool with a vertically-suspended revolv-

ing frame, a ball-and-socket joint or bearing from which said frame is suspended, means for supporting said joint or bearing, and mechanism for revolving the spool to wind the twisted strands thereon, substantially as specified.

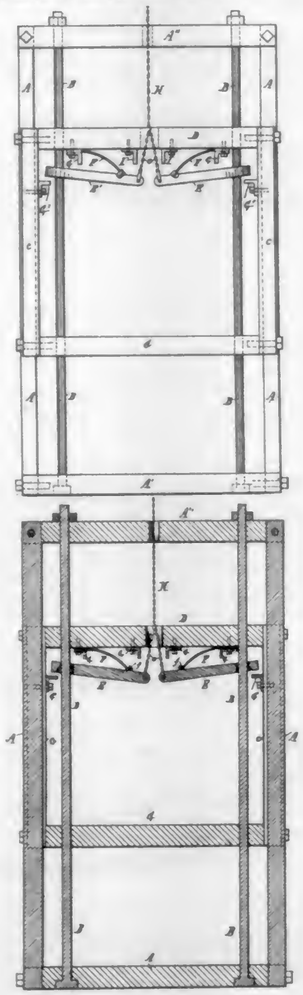
3. The combination, with the spool, of the vertically-suspended revolving frame, a universal joint or bearing from which said frame is suspended, means for supporting said joint or bearing, a cup or shell loosely confining the lower end of said frame so that the same may adjust its center of gravity to its center of rotation, and mechanism for revolving the spool to wind the twisted strands thereon, substantially as specified.

4. The combination, with spool C, of revolving suspended frame B, sleeve D, ball E, socket F, means for supporting said socket, pulley H, and mechanism for revolving the spool to wind the twisted strands thereon, substantially as specified.

5. The combination, with spool C, of revolving frame B, sleeve D, ball E, socket F, pulley H, stud I, friction-pulley J, cup K, and mechanism for revolving the spool to wind the twisted strands thereon, substantially as specified.

299,543. AUTOMATIC SAFETY-BRAKE FOR ELEVATORS.

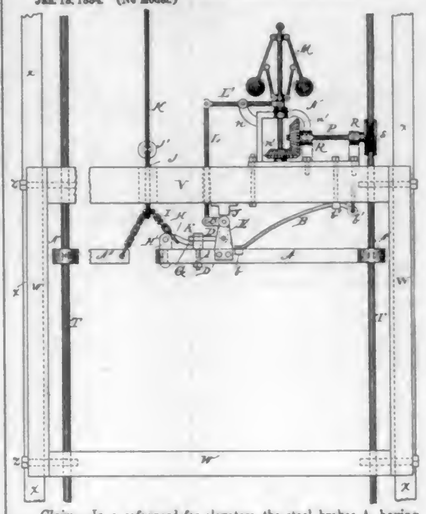
CHARLES A. HOFFNAGLE, Vergennes, Vt., assignor of one-half to Frederick W. Cox, same place. Filed Dec. 3, 1883. (No model.)



Claim.—In an automatic safety-brake for elevators, the steel brakes E E', provided with oval slots beveled inwardly from below, in combination with the rods B, springs F, flanged plates G', secured to the hoisting-frame sides C, and the hoisting-beam D, provided with flanged plates G and I, all constructed and arranged to operate substantially as specified.

299,544. SAFEGUARD FOR ELEVATORS.

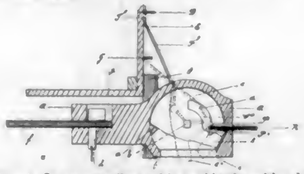
CHARLES A. HOFFNAGLE, Vergennes, Vt., assignor of one-half to Frederick W. Cox, same place. Filed Jan. 18, 1884. (No model.)



Claim.—In a safeguard for elevators, the steel brakes A, having oval slots beveled inwardly from below, and provided with trigger H, bell-crank lever C, and sliding bar D, in combination with the chain I, springs B, governor M, and friction-wheel S, all constructed and arranged to operate substantially as specified.

299,545. CAR-COUPLING.

WILLIAM H. HOLLEY, Kansas City, Mo., assignor of one-fourth to Mathew T. Whipple, same place. Filed Apr. 4, 1884. (No model.)

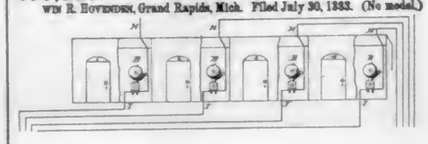


Claim.—1. In a car-coupling and in combination with a draw-head that is devoid of openings in its upper side, the vertical disk-chamber *i i*, provided with projecting stop *a*, the link-opening P P', formed with a convexity near its outer end, upon which the link is adapted to be oscillated, and with the described angular surfaces at its inner extremity for the purpose of raising and lowering and thrusting outward the said link, the unbalanced coupling-disk *c*, provided with segmental coupling-hook W, annular cam-slot *d*, and stop-lug *e d'*, all arranged substantially as shown and described.

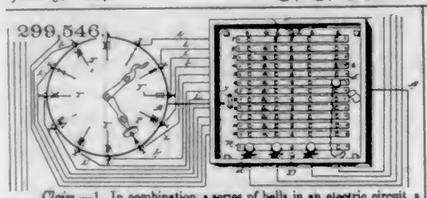
2. In an apparatus for coupling cars, the combination of the unbalanced coupling-disk *c*, the journal N N', cranks M M', bail F F', and chains T T', substantially as shown and described.

299,546. ELECTRIC FIRE-ALARM.

GEORGE E. HOVENDEN and EDWIN R. HOVENDEN, Grand Rapids, Mich. Filed July 30, 1883. (No model.)



299,546.



Claim.—1. In combination, a series of bells in an electric circuit, a clock mechanism having the hand connected to one pole of the battery, and its face connected at suitable points by wires adapted to close the circuit successively by the movement of the hand, and a switch-board in the circuit, with mechanism for connecting the bells of any room or rooms with the wire to any given point on the clock-face, all substantially as described.

2. In combination, the series of bells, wires I, and wires H, a switch-board having perforated strips adapted to receive the pins *d*, of the wires H, the wires *i*, connected to strips set in the clock-face, the hand and wheel P, and the wires A A', all substantially as described.

3. In combination with the bells and with the clock, both in the circuit, and the latter constructed to close the circuit successively on a series of wires, a switch-board having a series of strips, *a*, in electric connection, respectively, with the various points on the dial-face of the clock, and wires H, leading from the bells, with flexible ends, and devices adapted to form electrical connection with the strips *a*, substantially as described.

4. In combination with a series of electric bells, a clock having circuit-connections, as described, with the hands, and having points on its face, and a switch-board adapted to connect said bells with the points or strips of the clock-face, a device, substantially as described, for connecting all the bells directly with the line, or for including the clock in the circuit at the will of the operator, all substantially as set forth.

5. In combination, the clock provided with points and electric wires constructed as described, the bells in an electric circuit, the switch-board having strips *a* and R connected to the clock-face points or strips, the pins connecting wires H to strips of the switch-board, and the strips K and bar having electrical connection and operating devices, whereby the clock may be included in the circuit and the bell sounded thereby or excluded from the circuit, and all the bells may be sounded at once, substantially as described.

299,547. PASSENGER OR OTHER ELEVATOR.

MERRILL N. HUTCHINSON, New York, N. Y. Filed Nov. 1, 1883. (No model.)



Claim.—1. The combination of the posts C, car or cage A, having guide-bars D, arranged with wedge-shaped spaces between their inner edges and the adjacent sides of the post C, wedges E, placed in the said spaces upon opposite sides of the said posts C, and levers F, having their inner arms connected with the draft rope or chain B, whereby, in the event of the breaking of the said draft rope or chain, the wedges E may rise to grip the post C between them, all substantially as and for the purpose herein set forth.

2. The combination of the post C, the car or cage A, having guide-bars D, arranged with wedge-shaped spaces between their inner edges and the adjacent sides of the said post C, wedges E, placed in the said spaces, levers F, having their outer arms connected with said wedges and their inner arms connected with the draft rope or chain B, and springs *k*, arranged to force downward the inner arms of the levers F, when the latter are relieved from the upward strain exerted by the draft-rope in raising or lowering the car or cage A, all substantially as and for the purpose herein set forth.

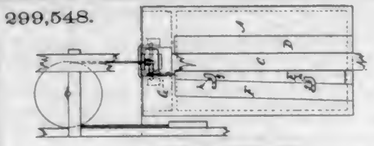
3. The combination of the posts C, the car or cage A, having guide-bars D, with wedge-shaped spaces between their inner edges and the adjacent sides of the aforesaid posts C, links or connections *c*, levers F, head *g*, recessed block G, yoke H, and a draft rope or chain, B, connected with the said block G, all substantially as and for the purpose herein set forth.

299,548. PASSENGER OR OTHER ELEVATOR.

MERRILL N. HUTCHINSON, New York, N. Y. Filed Dec. 27, 1883. (No model.)

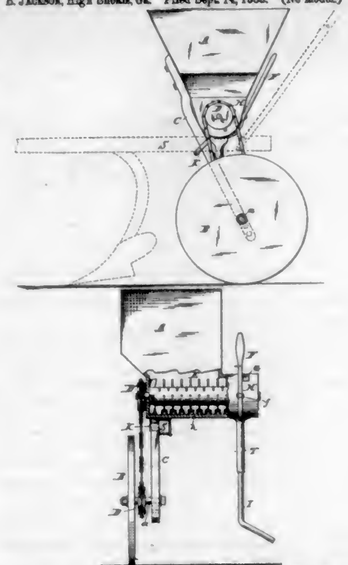
Claim.—The combination, with the posts and car or cage A, of the shoulders D, fixed on said car or cage, and arranged to grip in immediate contact with said posts, the inclined guides F upon the car or cage, and the wedges placed between said guides and posts, the whole arranged substantially as and for the purpose herein set forth.

299,548.



299,549. SEED-PLANTER AND GUANO-DISTRIBUTER.

WILLIAM B. JACKSON, High Shoals, Ga. Filed Sept. 14, 1883. (No model.)



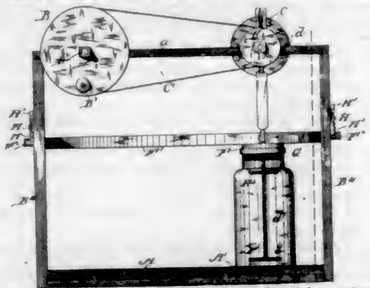
Claim.—1. In a seed and fertilizer distributer, the combination, with beam or bracket C, carrying a driver-wheel at one end, of a hopper supported on said beam, having a mixing and feeding cylinder and distributing-pipe, and connections between the driving-wheel and the cylinder, the whole being adapted to be detachably secured to an ordinary plow.

2. The combination, with the mixing-chamber H, having a suitable regulating-valve, of a flexible pipe secured over the valve, and a bent rigid pipe adjustably connected to the flexible pipe, as set forth.

3. The combination, with a beam or bracket, carrying a driving-wheel at one end, of a feed-hopper having a mixing-chamber and stirrer therein, adjusting-regulator, and a flexible pipe having a rigid bent nozzle attached thereto, the arrangement being such that the whole is adapted to be attached to an ordinary plow.

299,550. CHURN.

EDMOND W. JETER, Conyers, Ga., assignor of one-half to John H. Dabney, same place. Filed Jan. 17, 1884. (No model.)



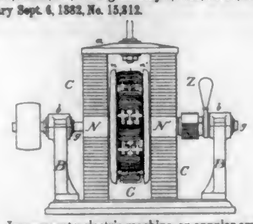
Claim.—1. In a churn, the combination of the driving mechanism, the dasher-sections E and E', cover F, clamp F', slide H, secured by

cleat-guides H', and slotted standards B'', substantially as shown, and for the purpose described.

2. The combination of the churn having cover F, cover-clamp F', slide H, secured by cleat-guides H', and slotted standards B'', substantially as shown, and for the purpose described.

3. In a churn, the combination of pulley B', secured by bracket K, the double crank C, the dasher-sections E and E', cover F, having clamp F', slide H, secured by cleat-guides H', and slotted standards B'', substantially as shown, and for the purpose described.

299,551. MAGNETO-ELECTRIC MACHINE. HENRY FRANCIS JOEL, London, England. Filed Oct. 2, 1883. (No model.) Patented in England Oct. 21, 1831, No. 4,607; in France Apr. 21, 1882, No. 143,533; in Germany Apr. 23, 1882, No. 21,193; in Belgium May 5, 1882, No. 57,513, and in Austria-Hungary Sept. 6, 1882, No. 15,812.



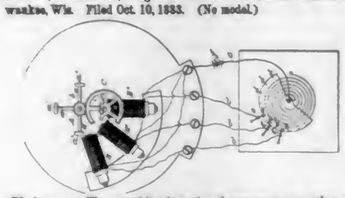
Claim.—1. In a magneto-electric machine, an annular armature-core composed of two parallel magnetically-insulated rings, formed by overlapping plates, attached by transverse screws to a spoked frame, substantially as hereinbefore described.

2. In a magneto-electric machine, the combination, in an annular armature, of a core composed of two parallel magnetically-insulated rings, formed by overlapping plates in pairs, attached by transverse screws to a spoked frame, and insulated armature-coils surrounding the respective pairs of core-plates, substantially as described, for the purposes set forth.

3. In a magneto-electric machine, the combination, in an annular armature, of a core composed of two parallel magnetically-insulated rings, formed by overlapping plates in pairs, attached by transverse screws to a spoked frame, insulated armature-coils surrounding the respective pairs of core-plates, and the within-described cheeks attached to the respective sides of the armature between its coils, substantially as shown.

4. In a magneto-electric machine, the combination, with the coiled-plate armature and side cheeks, of stepped or overlapped field-magnet poles, and projections thereon to obtain many magnetic makes and breaks, substantially as described.

299,552. ELECTRO-MAGNETIC INDICATOR. WARREN SEYMOUR JOHNSON, Whitewater, assignor of one-half to William Blankinton, Milwaukee, Wis. Filed Oct. 10, 1883. (No model.)



Claim.—1. The combination of a thermometer or other gage, a wheel having contact-points arranged at equal distances from each other and electrically connected, contact pieces or levers arranged in an arc contiguous to the circumference of said wheel, said contact pieces or levers electrically insulated from each other and adapted to make successive contact with the points on the wheel, suitable electric generators and conductors, and an electro-magnetic indicating device at a remote point, whereby the movements of the thermometer or other gage are reproduced, substantially as set forth.

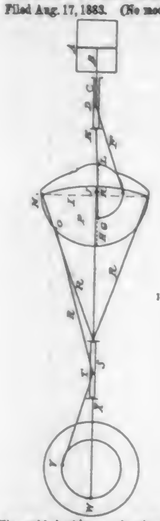
2. A thermometer or gage and a disk or wheel operated thereby and carrying a series of contact-points, in combination with fixed contact-points, each wired to one of a series of electro-magnets that are arranged just outside of the path of an indicator-wheel having armatures on its spokes, and with a battery which serves to magnetize the core of the electro-magnet that is brought into circuit as the contact-disk is turned by its thermometer or gage to indicate the amount of heat or pressure acting on the thermometer or gage, as set forth.

3. In an electro-magnetic indicator, the combination, with a contact wheel or disk operated by a thermometer or gage, of slightly overbalanced levers having contact-points for engagement with those of the contact wheel or disk, electro-magnets arranged about the periphery of a remote armatured indicator-wheel, and a battery with suitable connections, whereby the movement of the contact wheel or disk on an arc of a circle will break connection with one of the cores, and by making connection with another cause the latter to attract the nearest armature of the indicator-wheel to it, and thus change the position of the indicator, as set forth.

4. The combination, with a thermometer or gage, of a contact-plate, D, having contact-points *d*, with other contact-points, arranged in the path of the points *d*, wires leading to electro-magnets B B' B², an armatured indicator-wheel, and a battery wired to the cores and plate D, as set forth.

5. An armatured indicator-wheel adapted for being revolved by electro-magnets, and carrying a band lettered or figured, as described, in combination with a cover having a slot for exposing one of the letters or figures at a time, as set forth.

299,553. DUPLICATING-ENGINE. MARMADUKE B. KELLOGG, San Francisco, Cal. Filed Aug. 17, 1883. (No model.)



Claim.—1. The said double-crank wheel or crank with its said crank-pins, constructed as aforesaid, to be operated by the half-motion aforesaid from the applied power, and the combination thereof with the connecting-rods F and R, and the slide-block T, constructed and operated substantially as above described, and substantially as and for the purpose of producing the said double motion of a drive or pulley wheel, or said other appliance from a single motion from the applied power.

2. The said crank-wheel or crank and the said crank-pins located therein, as above described, and operated as above set forth, for producing the said forward and backward motion of said second crank-pin and connecting-rod R therefrom at each forward or at each backward motion of said connecting-rod F.

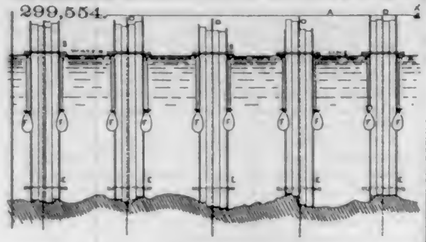
3. The said crank-wheel or crank with said second crank-pin, so located therein, as above described, that said connecting-rod R may operate to the right or left or above or below the center thereof to either a slide-block or drive or pulley wheel or walking-beam, or such other appliance as may be desired, substantially as above set forth, for the purposes above described.

299,554. BUILDING AND SETTING MOLDING-CAISSONS. PHILIP A. KEWLEY, San Francisco, Cal. Filed Aug. 21, 1883. (No model.)

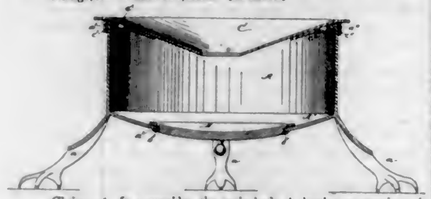
Brief.—To construct a mold for forming in the water a pier of concrete a centering anchoring-iron rod is driven into the bed-rod, a wooden frame is placed thereon, the rod passing through a hole in a cross-piece of the frame, and staves to form the sides of the mold are then set on end upon the rocky bottom and nailed to the inside of the frame. Upon projecting side pieces of the frame weights may be hung to keep the mold down.

Claim.—The method of erecting caissons in the water for molding concrete piers herein described, consisting of driving the anchoring-rod D into the bed-rock below the water, placing thereon a frame, B, and to this frame securing in the water the narrow boards forming the sides of the caisson, in the manner substantially as and for the purpose described.

299,554.



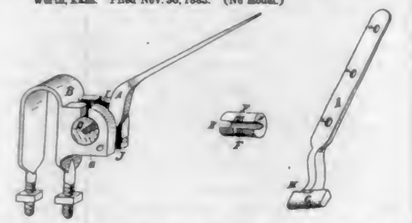
299,555. CUSPIDOR. CHARLES F. LARSEN and BERNT A. S. NIELSEN, Chicago, Ill. Filed Feb. 7, 1884. (No model.)



Claim.—1. In a cuspidor, the main body A, having an opening, *a'*, in its bottom, in combination with a flanged disk, B, provided with lugs *b b*, substantially as and for the purpose set forth.

2. In a cuspidor, the main body A A' and legs or feet *a a*, cast in one piece, with the opening *a'* and flanges *a²*, in combination with the disk B, having legs *b*, and cover C, having flange *c'* and lugs *c²*, substantially as and for the purpose set forth.

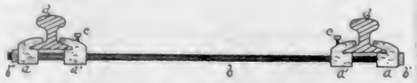
299,556. THILL-COUPLING. SAMUEL DEXTER LECOMPTE, Leavenworth, Kans. Filed Nov. 30, 1883. (No model.)



Claim.—The clips made with the ears or legs, as described, the peculiar formation of the head or end of the thill-iron, the roller as shaped and slotted and as held in place by the projections of the said end or head, all constructed as described and combined, for the purposes set forth.

299,557. CLAMP FOR RAILWAY-RAILS. JESSE LOCKHART, Niantic, Ill. Filed Nov. 20, 1883. (No model.)

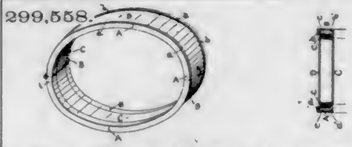
Brief.—Tie-rods consisting of sliding blocks upon headed and screw-threaded rods, the inner blocks being secured in position by set-screws, and the outer ones being drawn to the rails through the nuts on the screw ends of the rods.



Claim.—The combination, in a clamp for railway-rails, of bolt *b*, provided with head *b'* and nut *b''*, loose mounted blocks *a a*, adapted to be adjusted with relation to one another by means of head *b'* and nut *b''*, and loose mounted blocks *a' a'*, adapted to be adjusted with relation to the railway-rails by means of set-screws *c c*, as and for the purpose set forth.

299,558. BRACELET. CHARLES W. LORD, Pawtucket, R. I., and ANALDO M. ENGLISH, Boston, Mass. Filed Mar. 29, 1884. (No model.)

299,558.

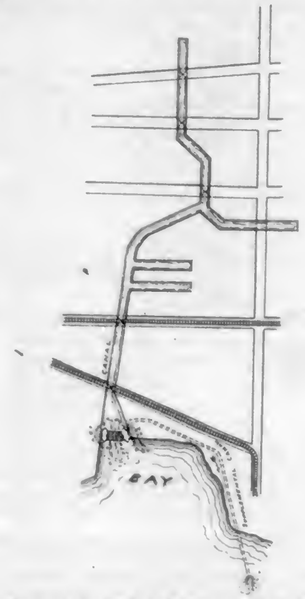


Claim.—1. The combination of the two distinct edge members A B, having inwardly-projecting top flanges, *a b*, and upwardly-projecting bottom flanges, *a' b'*, and the intermediate member, C, having side flanges, which are interlocked with the side members, substantially as set forth.

2. The combination of the two distinct side members, A B, having inwardly-projecting flanges *a b* and upwardly-projecting flanges *a' b'*, the flanged member C, interlocked with said side members, and the face-member D, substantially as set forth.

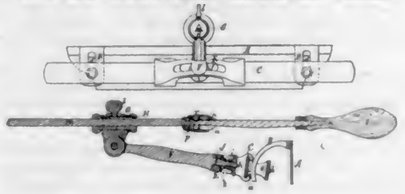
299,559. METHOD OF PURIFYING CANALS AND BASINS CONNECTING WITH TIDAL WATERS. ARTHUR J. L. LORETZ, Brooklyn, N. Y. Filed Aug. 13, 1883. (No model.)

Brief.—A triangular canal-basin with its inlet at one angle and a dam on the subtending side facing tidal water and fitted with controllable outlets and inlets, as described, by means of which, from time to time, the canal may be flushed at low tide without too rapid current at the dam, and a supply of purer water to the canal at high tide may be insured.

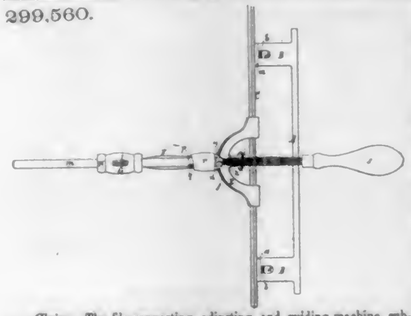


Claim.—A triangular basin, B, whose apex A is the inlet of a canal, and its base C forming a dam, arranged substantially as and for the purpose described, with locks, gates, weirs, run-arounds, and supplemental canals.

299,560. MACHINE FOR FILING SAW-TEETH. HENRY LUTTS and FRANK WARREN LUTTS, Malden, Mass. Filed Aug. 7, 1883. (No model.)

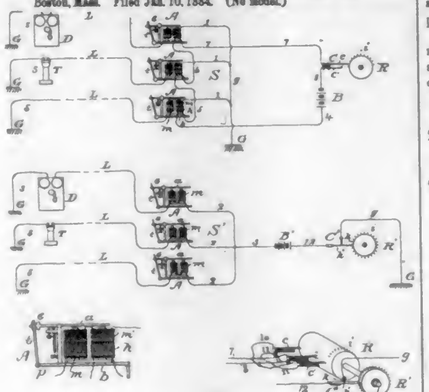


299,560.



Claim.—The file supporting, adjusting, and guiding machine, substantially as described, consisting of the bar A, slotted and curved projections B B, bar C, sliding and slotted arch E, arm F, pivoted box G, prismatic bored sleeve H, the bar *m*, and the clamping devices of such bar C, arm F, box G, and bar *m*, all adapted and arranged essentially in manner to operate as set forth.

299,561. METHOD OF AND APPARATUS FOR INDIVIDUALIZING TELEPHONE TIME-SIGNALS. HENRY B. LITTLE and JOHN J. CAREY, Boston, Mass. Filed Jan. 10, 1884. (No model.)



Claim.—1. The hereinbefore-described method of regulating or individualizing the supply of time-signals to the subscribers of a telephone-exchange system by producing induced currents corresponding to the time-signals in the line-circuits to be supplied, and simultaneously sending a confusing signal or succession of signals over the line-circuits which are not to be supplied.

2. The method herein described of compensating for the involuntary distribution of time-signals by induction and leakage over telephone-circuits which are not intended to receive the same, which consists in transmitting over the said circuits a confusing or obliterating signal, whereby the induced time-signals are confused and made incomprehensible.

3. The method hereinbefore described of producing induced currents corresponding to time-signals in a series of telephone line-circuits, which consists in passing battery-currents equal in number and duration to the said time-signals through a series of helices (one for each line) placed on the core of the annunciators of the said telephone line-circuits, and in juxtaposition to the helices thereof, substantially as specified.

4. The combination, in a telephone-exchange system, of a series of main lines and central-station annunciators therefor, the said annunciators each being provided with an extra helix, a local battery-circuit including the said helices, and a circuit-closer for said local circuit adapted to be operated by a clock-actuated time-cylinder, and to send time-signals to line, with a second series of main lines and a battery and circuit-closer in the main ground-wire thereof, the said circuit-closer being adapted to alternately make and break the circuit of the said battery and ground-wire during the time of transmission of time-signals over the first series of lines, for the purposes specified.

5. In a telephone-exchange, a time-transmitting system therefor, consisting of the combination of a series of main lines, receiving-instruments at the respective sub stations of the said main lines, an annunciator for each line at the central station, an auxiliary helix placed on each of the said annunciators, a local battery, a local circuit including the battery and the said auxiliary helices, and a circuit-closer actuated by a rotating cylinder and arranged to close the circuit under the influence of the said cylinder a number of times corresponding to the hour and minute, whereby currents of similar number and character may be induced in the main lines and the time-signals reproduced in the receiving-instruments thereof, substantially as described.

6. The combination, substantially as described, with a main telephone-line and a sub-station bell included therein, of the hereinbefore-described time-transmitting devices, consisting of the local battery, circuit-closer, time-repeating cylinder, auxiliary annunciator-helix, and the annunciator, provided, as described, with a polarized armature, whereby when the actuating current is strong enough to ring the bell it is prevented from giving the annunciator-signal.

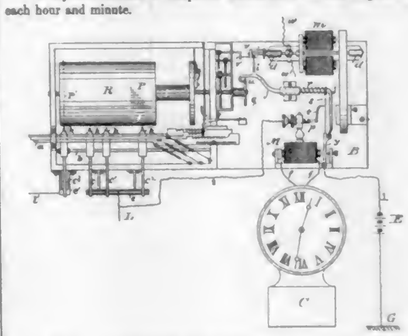
7. The combination, in an electric annunciator, of an electro-magnet provided with two separate helices, the larger of the said helices being adapted for inclusion in the main line, and the smaller in a local circuit, and a polarized armature therefor adapted to respond to the magnetism of the electro-magnet when induced by the main-line helix, but not when induced by the local circuit, as described.

8. The combination, with a series of telephone-lines, of a series of local circuits arranged in inductive proximity to a portion of said main lines, and adapted to generate induced currents therein, a series of local circuit-closers adapted to open and close the said local circuits, a separate circuit-closer included in the common ground-wire of the remaining portion of the series of main lines, and a revolving clock-controlled cylinder actuating the said circuit-closers, and adapted to close the local circuit-closers in correspondence with time-signals, and simultaneously open and close the main-line circuit-closer without reference to time, for the purposes specified.

9. In combination with a series of telephone-lines and time-transmitting signaling apparatus for a portion of the said lines, means, substantially as described, for sending a confusing signal over the remainder of the said telephone-lines, for the purpose specified.

299,562. TELEPHONE TIME-SIGNAL APPARATUS. HENRY B. LITTLE and JOHN J. CAREY, Boston, Mass. Filed Jan. 16, 1884. (No model.)

Brief.—Transmits to telephone subscribers an audible signal for each hour and minute.



Claim.—1. The combination, substantially as hereinbefore described, in a telephone time-repeating system, of a controlling-clock, a repeating mechanism controlled thereby and acting to transmit a designating time-signal to a number of telephone-lines, and a short-circuiting relay adapted to short-circuit the repeating mechanism and send a vibratory current to line to indicate the precise occurrence of the designating-time.

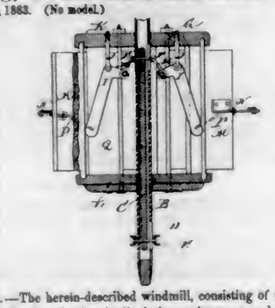
2. In a telephone time-distributing system, the combination of a repeating mechanism adapted to transmit successive currents to a number of telephone-lines to indicate the designating-signal of each minute, with means, substantially as indicated, for sending a special momentary vibratory signal over the said lines, to indicate the precise occurrence of the minute designated.

3. The combination, in a telephone time-distributing system, of a repeating mechanism adapted to transmit a series of signals to a number of telephone-lines to designate each minute of the day, and means for throwing the same into and out of gear, other means for sending a momentary vibratory signal to indicate the precise occurrence of the minute immediately following the said signal, an electro-magnet actuating simultaneously the starting and signaling devices, and a controlling-clock adapted to energize the said electro-magnet, substantially as and for the purposes described.

4. In combination with a group of telephone-lines leading to sub-stations, and provided with receiving-instruments at said sub-stations, circuit-closing devices adapted, as described, to transmit to the said lines successively electrical pulsations representing the hour and minute, a source of electricity for supplying electricity therefor, and means for sending a signal to denote the precise occurrence of the designated minute, said means consisting of an electro-magnet, a circuit-closer operated thereby, and circuit-connections leading from the said source of electricity to a point connected with the main lines outside of the designating circuit-closers, substantially as specified.

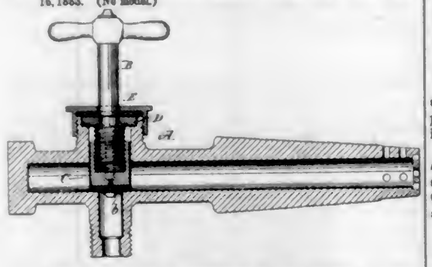
5. In a telephone time-signal distributing system, the combination, substantially as hereinbefore described, of a repeating mechanism of the character indicated and normally at rest, a group of telephone-circuits connected therewith by a common wire, and an electric battery with a controlling-clock, an electro-magnet adapted to be energized periodically by the action of said clock, devices operated by the armature of said magnet to start the said repeating mechanism, and a normally-open short circuit from said battery to the common terminal wire of said telephone-lines adapted to be closed upon the energization of said electro-magnet, and thereupon to momentarily close the circuit of said battery directly to line, and to produce a short vibratory signal in the receiving-instruments of said lines.

299,563. WINDMILL. ALBERTUS MARTIN, Plainville, Kans. Filed June 29, 1883. (No model.)



Claim.—The herein-described windmill, consisting of the hollow vertical shaft having the longitudinal slots at its upper and lower portions, the circular disks or plates fastened upon the shaft, and connected and braced by the stationary inner vanes, the pivoted vanes, the horizontal plates fastened upon the outer sides of the vanes, the connecting-rods hinged to the inner ends of the horizontal plates, and to the outer ends of the horizontal plates to the rear of the plates to which they are hinged with their forward ends, the arms hinged to the vanes and bell-cranks, the bell-cranks, the arms hinged to the bell-cranks and the lugs upon the sliding rod, the sliding rod having the laterally-projecting lugs upon its upper end and sliding in the shaft and the sleeve sliding upon the lower portion of the hollow shaft fastened to the lower end of the sliding rod and connected to a speed-governor, as and for the purpose shown and set forth.

299,564. FAUCET. FRANK MCCABE, Providence, R. I. Filed May 16, 1883. (No model.)



Claim.—In a faucet, the combination of a split washer, D, a spindle, B, having an annular groove just above its thread to receive said washer, a valve-case rabbeted on the inside of its upper end to rigidly support the ring, and the screw-cap E, whereby the spindle is prevented from moving longitudinally as well as laterally, and thus all lost motion is avoided.

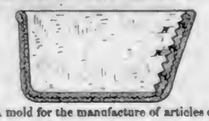
299,565. BILLIARD-TABLE TOP. JOHN WESTLEY MCKNIGHT, Washington, D. C. Filed Nov. 5, 1883. (No model.)



Claim.—1. A billiard-table top formed of artificial slate having embedded therein sheets or strips of wire gauze or netting, as set forth.

2. A billiard-table top formed of artificial slate, having a smooth upper surface, the body of which is of varying thickness, and having embedded therein sheets or strips of wire gauze or netting, as set forth.

299,566. COMPOSITION AND MOLD FOR THE MANUFACTURE OF ARTICLES FROM ARTIFICIAL SLATE. JOHN WESTLEY MCKNIGHT, Washington, D. C. Filed Nov. 7, 1883. (No model.)



Claim.—1. A mold for the manufacture of articles of artificial slate, stone, or marble, having a facing of vitreous or vitrifiable material fused thereon, as set forth.

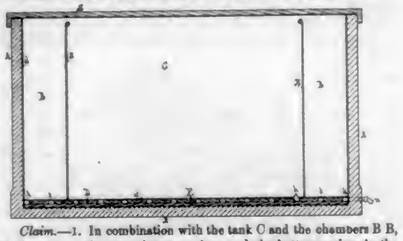
2. A composition for artificial slate, consisting of cement, oxide of iron, metallic red, drop-black, lamp-black, Venetian red, soluble glass, pulverized alum, and solution of iron-rust and vinegar, in substantially the proportions set forth.

3. The method herein described of finishing artificial slate, which consists in coating the same with boiled linseed-oil or glycerine, and rubbing the same thoroughly into the article with French putty-powder or finely-ground litharge, suitably colored, as set forth.

4. As a new article of manufacture, a wash-tub having a washing-surface of a sheet of corrugated zinc, the edges of which are embedded in the artificial slate of which the body of the tub is composed, as set forth.

5. A wash-tub composed of artificial slate, artificial stone, or artificial marble, having a washing or rubbing surface of corrugated sheet-zinc or other suitable metal, the edges of which are embedded or otherwise secured to the sloping inner surface of said tub, as set forth.

299,567. REFRIGERATING CORNED-BEEF TANK. HENRY MENSLAGE, South Boston, Mass. Filed June 8, 1883. (No model.)



Claim.—1. In combination with the tank C and the chambers B B, and the connected spaces between them and the bottom casing A, the passages *k k*, and the cover S, so arranged that a space is left between it and the walls H H, substantially as described.

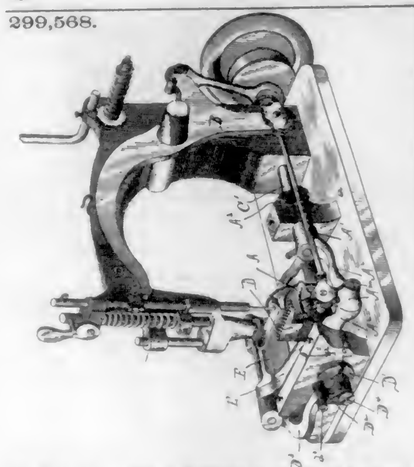
2. In combination with the tank C, the chambers B B, the passages *k k*, and the series of slats with intervening spaces opening on their lower sides extending transversely across and adjacent to the bottom of the tank C, and forming spaces within which the air is compressed, substantially as described.

299,568. SEWING-MACHINE. LORENZ MUTHER, Chicago, Ill., and CHARLES A. DEARBORN, New York, N. Y., assignors to the Union Bag Machine Company, Chicago, Ill. Filed May 11, 1883. (No model.)

Brief.—The looper is oscillated by the rear end of the needle-arm in one direction and by a pivoted swinging arm and rock-shaft in the cross direction. The cloth-feeder is operated by a wrist-pin adjustably secured in a disk on the end of the main shaft, said pin being connected by a link with the rocking frame to which the feeder-bar is hinged.

Claim.—1. The combination, with the needle and the feeding mechanism, of a pivoted looper-frame whose axis of oscillation is substantially at right angles to the line of feed, a looper pivoted to said frame and

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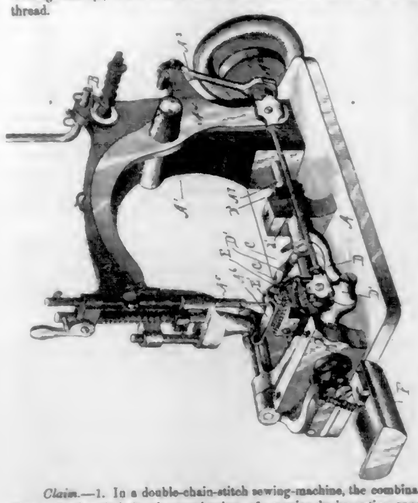
having an axis of oscillation substantially at right angles to the axis of the frame, and means for oscillating said frame and said looper, respectively, the whole operating substantially in the manner specified.

2. In a sewing-machine having an eye-pointed needle, the combination, with said needle, of the oscillating looper-frame A^2, the looper pivoted thereto upon an axis at right angles to the axis of the frame, and the pitman A', connected with the looper by means of a ball-and-cocket joint, whereby the oscillation of the looper-frame at right angles to the movement of the pitman is permitted.

3. The combination of the rocking frame having the feed-dog mounted thereon, the driving-shaft provided with a lifting-cam beneath said feed-dog, and also provided on its outer end with a radially-adjustable crank-pin, and the freely-pivoted link connecting said crank-pin and said frame, whereby the length of feed may be altered without varying the time of feed movement, substantially as set forth.

299,569. SEWING-MACHINE. LORENZ MUTHER and RUSSELL G. WOODWARD, Chicago, Ill., assignors to the Union Bag Machine Company, same place. Filed May 14, 1883. (No model.)

Brief.—A revolving take-up consisting of two disks of cam shape, and affording a channel between them for the reception of one end of a throw-off, a throw-off arm, thread-guides, (one on each side of the revolving take-up,) and a thread stop or clamp serve to control the lower thread.

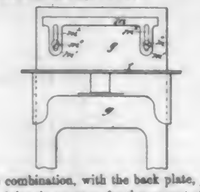


Claim.—1. In a double-chain-stitch sewing-machine, the combination, with the stitch-forming mechanism, of a tension device acting upon the upper thread, and an intermittently-operating stop and take-up acting upon the lower thread, substantially as specified.

2. As an improvement in take-up devices for sewing-machines, the combination of a cam-disk arranged with its periphery in contact with the thread, mechanism whereby said cam is rotated in proper relation to the action of the stitch-forming mechanism, and a throw-off arm extending within the line of rotation of the cam's periphery, the whole operating substantially as set forth.

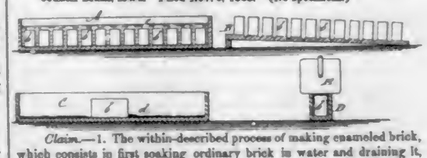
3. As an improvement in take-up devices for sewing-machines, the combination of a cam-disk and mechanism for rotating the same, with thread-guides arranged on each side of said cam and having eyes for the passage of the thread, said eyes being located within the outer periphery of the cam, substantially as and for the purposes set forth

299,570. BOX-NAILING MACHINE. FREDERICK MYERS, New York, N. Y. Filed June 26, 1882. (No model.) Patented in England Jan. 28, 1882, No. 442, and in France Apr. 18, 1882.



Claim.—The combination, with the back plate, *g*, and table *f* of a nailing-machine, of the cleat-rest *m*, for the support of the narrow strips or cleats of made-up box-ends, said cleat-rest *m* being attached to said back plate, and also being adjustable thereon for adaptation to box-ends of various dimentions, substantially as described.

299,571. MANUFACTURE OF ENAMELED BRICK. CHAS. NEWTON, Council Bluffs, Iowa. Filed Nov. 6, 1883. (No specimens.)



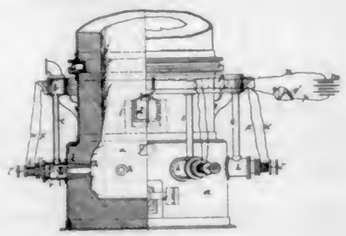
Claim.—1. The within-described process of making enameled brick, which consists in first soaking ordinary brick in water and draining it, next rubbing, under pressure, hydraulic cement of a cream-like consistency onto and into its surface to be enameled, afterward applying a second coating of pure cement, with or without coloring-matter, to said surface and leveling the same; also, where necessary, smoothing or finishing off the head end of the brick, and subsequently drying and hardening the brick, essentially as specified.

2. In the within-described process of making enameled brick by the application of hydraulic cement to its surface, hardening the brick so coated or surfaced by exposing it to the action of carbonic-acid gas, essentially as specified.

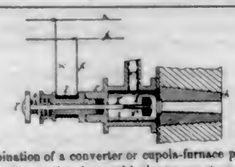
3. Brick having its surface or surfaces enameled by rubbing in and applying hydraulic cement thereto, and afterward drying and hardening the same, essentially as described.

299,572. DEVICE FOR OPERATING TUYERE-STOPPERS. HENRY W. OLIVER, Jr., Pittsburg, Pa. Filed Jan. 23, 1884. (No model.)

Claim.—1. The combination of a converter or cupola-furnace provided with tuyeres, with the tuyere-stoppers and their stems or shafts and an electro-magnet or helix for closing or opening the stoppers, substantially as and for the purposes described.

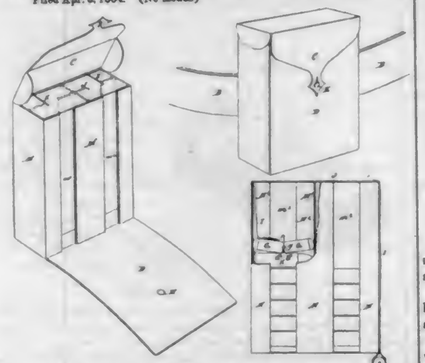


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2. The combination of a converter or cupola-furnace provided with tuyeres and external blast-chambers, with the tuyere-stoppers and their stems or shafts, an electro-magnet or helix for moving the stoppers in one direction, and devices for moving them in the other direction, substantially as and for the purposes described.

299,573. CARTRIDGE-BOX. EDWARD O. C. ORD, United States Army. Filed Apr. 8, 1884. (No model.)



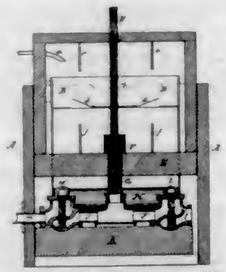
Claim.—1. The cartridge-box M, having one or more pockets, *m*, with a narrower slit, m^2, extending up and down the front of each, adapted to allow cartridges to lie in tiers and be removed, as shown, in combination with means, A, for attachment to a belt, and arranged to serve as herein specified.

2. In a cartridge-box of the construction herein shown, the arrangement of two or more pockets, *m*, side by side, each with a slit, m^2, in its front, in combination with a single flap, C, covering the whole, adapted to allow the cartridges to be removed from one or more of the several tiers singly or in quantities, as specified.

3. In a cartridge-box, a holding-down device composed of two parts, G and G, with the hinge *g* and spring H, combined and arranged to serve as herein specified.

4. The cartridge-box M, having a pocket, *m*, and vertical slit m^2, in combination with a holding-down device, G G, and a flexible attachment, I, arranged to serve the double function of displacing the holder and keeping it attached to the box, as herein specified.

299,574. PUMP. NATHAN C. PAGE, Monkton, Vt. Filed Nov. 20, 1883. (No model.)



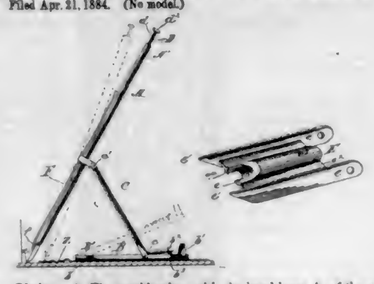
Claim.—A balance force-pump consisting of a tank, A, containing a water-receiver, B, attached to the piston, and provided with one or more valves, *d*, in its bottom, which are actuated by the rods *e* and *f*, and to which are suspended one or more floats, H, in combination with a cylinder, G, and pipe J, having reciprocating check-valves, substantially as specified, and for the purpose set forth.

299,575. VEHICLE-SPRING. JAS. PERCY, Chicago, Ill. Filed Jan. 30, 1884. (No model.)



Claim.—In a buggy-spring, the variably-curved reaches A A', having opposite parallel lateral inclinations curved inwardly at their ends *a*, and continued integrally through short reverse curves *a''* into a bow-shaped curve, A'', to be centrally connected to the side bars, and thereby arranged for operation throughout its entire body, substantially as specified.

299,576. CARPET-STRETCHER. ELIAS F. PERSONS, Westfield, N. Y. Filed Apr. 21, 1884. (No model.)



Claim.—1. The combination, with the hand-lever A, of the connecting-rod C and the foot-lever B, provided with the spurs *b*, stirrup *b'*, and spring-spur b^2, substantially as specified.

2. The hand-lever A, provided with the driving-rod D, having the knob d^3, spring *d*, and the end casting, E, having the pointed flanges *e* and the central internally-grooved tube, e^2, substantially as specified.

3. The combination, with the hand-lever A, of the casting E, provided with the internally-grooved tubular portion, the driving-rod D, and the central and longitudinally slotted and curved feed-tube, substantially as specified.

4. The combination of the hand-lever A, connecting-rod C, foot-lever B, having the stirrup *b* and spurs b^2, the longitudinally-slotted feed-tube F, and the driving-bar D, the whole constructed and arranged and operating substantially as shown and described.

5. The combination of the hand-lever A, connecting-rod C, and foot-lever B, having the metallic T-head casting B', provided with spurs, substantially as specified.

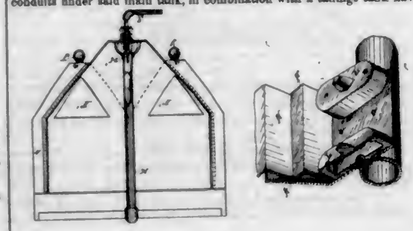
6. The casting B', with spurs cast or otherwise secured thereto, and having the bent portion B^2, in combination with the lever B, substantially as specified.

299,577. HYDRAULIC CONCENTRATOR AND AMALGAMATOR. HENRY E. PICKET, Bradford, Pa. Filed Jan. 29, 1884. (No model.)

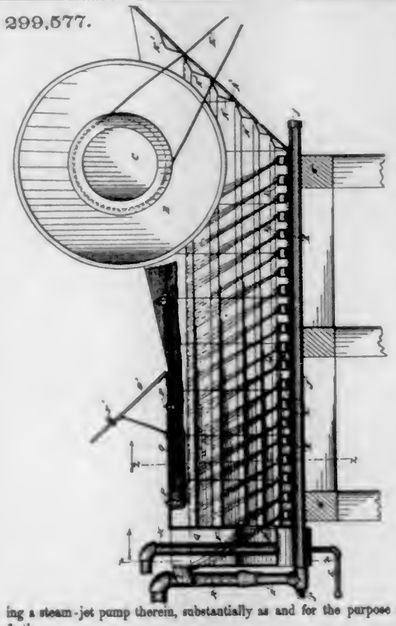
Claim.—1. In a hydraulic concentrating and amalgamating machine, a tank having a longitudinal angular bottom, in combination with one or more rows of diagonal jets and jet-tubes projecting through the bottom of said tank into conduits under said tank, substantially as and for the purpose set forth.

2. In a hydraulic concentrating and amalgamating machine, a main tank having a longitudinal angular bottom, a revolving screen mounted over one end of said tank, and a tailings-tank at the opposite end of said tank, provided with means for removing tailings therefrom, in combination with one or more rows of adjustable diagonal jets, and conduits under said tank communicating through the bottom thereof with said jets, substantially as and for the purpose set forth.

3. In a hydraulic concentrating and amalgamating machine, a main tank having longitudinal V-shaped angles in the bottom thereof, provided with jet-tubes extending through the bottom of said angles into conduits under said main tank, in combination with a tailings-tank hav-



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ing a steam-jet pump therein, substantially as and for the purpose set forth.

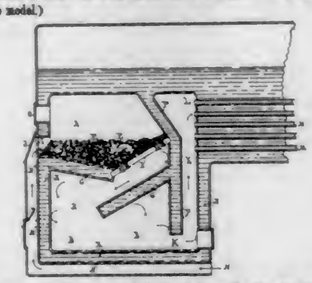
4. In a hydraulic concentrating or amalgamating machine, the combination and arrangement of the conduits J, the nipples K K, and jet-caps L L, substantially as and for the purpose set forth.

5. In a hydraulic concentrating or amalgamating machine, the adjustable jet-tubes L^2 L^2, in combination with the jet-caps L L, substantially as and for the purpose set forth.

6. In a hydraulic concentrating or amalgamating machine, the nipples K, extending through the bottom of the angle *a* in the tank A into conduits under the said tank, in combination with an alternate arrangement of the jet-caps L L with the adjustable jet-tubes M M, substantially as and for the purpose set forth.

7. In a hydraulic concentrating or amalgamating machine, the tank A, in combination with the conduits J J, provided with caps *j j* and plugs *j' j'*, substantially as and for the purpose set forth.

299,578. STEAM-BOILER AND FURNACE. WILLIAM S. POST, Boston, and HOWARD DE WOLF SAWYER, Revere, Mass. Filed Sept. 7, 1883. (No model.)



Claim.—1. In a steam-boiler or furnace, the fire-box having an oblique depending water-leg, forming a deflecting-wall opposite the feed-door, in combination with the hearth C and water-grate D, extending obliquely from the hearth to said water-leg, substantially as and for the purposes set forth.

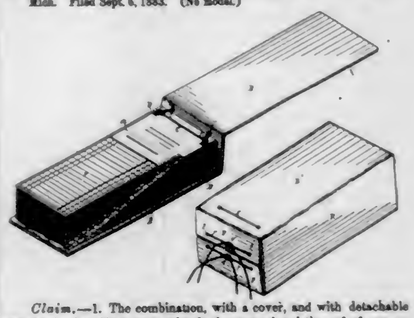
2. In a steam-boiler or furnace, the oblique water-grate D, in combination with the water-legs C F G, substantially as and for the purposes set forth.

3. The water-spaces H, forming walls for the fire-box and ash-box, and the water-legs F G, communicating therewith, in combination with the hollow hearth C and grate D, serving together to support the fuel and promote a lateral and oblique draft through it, for the purpose set forth.

4. In a steam-boiler or furnace, the combination of the fire-box A, the door J, and the vertical and separable grate I, located below the feed-door, and forming a lateral support and guard for the fuel, substantially as set forth.

5. The fire-box and the ash-box, separated from each other by the oblique water-hearth C and grate D, in combination with the flue K and its terminal enlargement L, separated from the ash-box and fire-box by the unperforated water-leg F, extending below the grate nearly to the bottom of the ash-box, whereby the caloric current is at all times indirect, substantially as set forth.

299,579. TEMPORARY BINDER. HERBERT L. PRATT, Kalamazoo, Mich. Filed Sept. 6, 1883. (No model.)

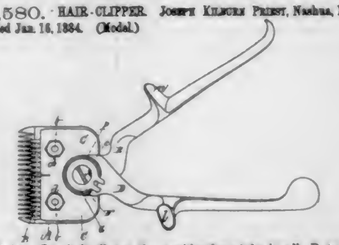


Claim.—1. The combination, with a cover, and with detachable contents having side open notches in the secured end thereof, of a securing-cord and guide-rod, substantially as described.

2. A cover formed with the central end notch and a lid each side of said notch, adapted when folded in book form to close one end, substantially as set forth.

3. The combination, with the detachable contents and securing-cord, of a folding cover having the end lids and central notch adapted to fold in book form and close one end, substantially as set forth.

299,580. HAIR-CLIPPER. JOSEPH KILBURN PRIEST, Nashua, N. H. Filed Jan. 16, 1884. (Model.)



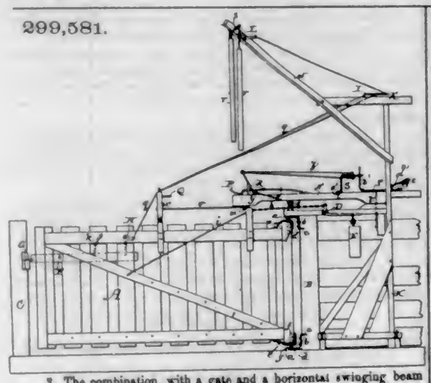
Claim.—In a hair-clipper, the combination of the handle D, having the head *c*, provided with a tubular cylindrical neck, *d''*, the cutter-plate-operative lever E, having a cylindrical fulcrum, A, which enters the neck *d''*, such fulcrum having a substantially prismatic neck, the bifurcated arm F, which is secured on the neck of the fulcrum, and the spring G, secured at one end to the head *c* and at the other in the yoke of the arm F, whereby the position of the arm can be changed on the fulcrum and the tension of the spring varied, as set forth.

299,581. GATE. ADDISON F. PURIFOY, Wake Forest, N. C. Filed Oct. 17, 1882. (No model.)

Claim.—1. The combination of the gate-post, the gate hinged thereto, the separate post or support in the rear of said gate-post, and the horizontal swinging beam pivoted to said separate post or support and connected with the gate, substantially as described.

2. The combination of the gate-post, gate hinged thereto, separate post or support in the rear of the gate-post, and the horizontal swinging beam pivoted to said separate post or support and connected with the gate, the said parts being disposed, as explained, so that when the gate is opened the beam makes an angle therewith of about forty-five degrees, and when closed the middle of the front arm of the beam is about over the gate-post, substantially as described.

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3. The combination, with a gate and a horizontal swinging beam for shifting said gate, of a stop on the gate for arresting the motion thereof by contact with said beam, substantially as described.

4. The combination of the gate-post, the gate hinged thereto, the swinging beam pivoted to a support in the rear of said post, and the arresting-stop on the gate, substantially as described.

5. The combination, with the gate and the mechanism for opening and closing the same, of the positive catch attached to and carried by the gate-shifting mechanism for locking said mechanism in position to hold the gate open, and connections whereby the catch may be released through said mechanism, substantially as described.

6. The combination, with the gate and gate-shifting beam, of a catch for engaging and locking together the said gate and beam, so as to hold the gate open, substantially as described.

7. The combination of the gate, gate-shifting beam, catch for locking said beam to the open gate, mechanism for swinging the beam to open and close the gate, and connections whereby the catch may be released through said mechanism, substantially as described.

8. The swinging beam having between its front end and the gate a connection, such as the eye and rod or its equivalent, for permitting the said end to slide lengthwise of the gate, in combination with a catch for locking the open gate to said beam, substantially as described.

9. The combination of the gate, the swinging beam, the devices for making a sliding connection between the beam and gate, and the stop for arresting the motion of the gate by contact with said beam, substantially as described.

10. The combination of the gate, the beam, the rod fixed to the gate, and the eye on the beam embracing said rod, substantially as described.

11. The combination, with the latch-releasing and gate-shifting mechanism, of a spring, such as P, separate from the latch-spring and connected with said mechanism, substantially as described.

12. The combination, with the three-armed lever S, of the rock-shaft T for turning said lever, a latch or catch, such as P, and connecting devices for withdrawing said latch or catch on turning said lever, substantially as described.

13. The combination, with the hinged gate, its latch, the horizontal swinging beam, the pivoted upright, and the devices for releasing the latch and for operating said upright and beam to open the gate, of the means for operating said upright and beam to close the gate without danger of withdrawing the latch, said means including a device separate from the latch and latch-spring as the point of resistance to the pull of the passer-by in closing the gate, substantially as described.

14. In a gate, the combination, with the pivoted upright and the operating arm or arms fixed thereto, of the latch and the latch-releasing devices connected with and carried by said upright and its arms, and capable of a slight independent movement, so that the latch may be withdrawn before the upright is turned to swing the gate, substantially as described.

15. The combination, with a gate, a latch for holding it closed, and a catch for holding it open, of the devices for releasing the latch, the devices for releasing the catch independently of the latch, and the mechanism for shifting the gate, substantially as described.

16. In combination with the gate-post, gate, and gate-operating mechanism, the hinges for connecting the gate with the gate-post, the said hinges, one or both, having an attaching-plate split and spread apart, and being secured to said post by said plate, substantially as described.

17. In combination with the gate-post, gate, and gate-operating mechanism, the hinges for connecting the gate with the gate-post, the said hinges, one or both, being provided with a flexible steady-plate attached to the gate, substantially as described.

18. The combination, with the swinging gate and a stationary support above the axis on which the gate swings, of a counterpoise and a flexible cord or connection connecting the gate and counterpoise, and running through an opening in a device or between devices on the aforesaid stationary support, substantially as described.

19. The combination of the swinging gate, the counterpoise, the lever, the flexible cord or chain, the rollers or their equivalent over the gate-hinges, and the stationary support for the said rollers, substantially as described.

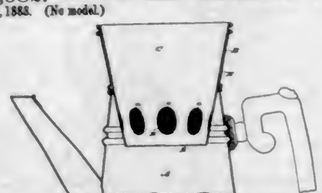
20. The combination of a gate, its counterpoise, a lever, a stationary support above the gate-hinges, and a flexible connecting cord or chain running through an opening in said support, said counterpoise being adjustable on an arm of said lever, substantially as described.

21. The pivoted upright having a long pivot-piece with its opposite ends journaled in bearings, and braces connecting the body of the upright to said pivot-piece, substantially as described.

22. In a gate, the combination, with the gate-shifting lever turning upon a fulcrum exterior to the gate and its hinges, such as the pivoted upright shown, of the latch, the latch-releasing devices carried by said lever, and capable of a limited movement independent thereof, but adapted when said movement is completed to engage and operate said lever, and the means for operating the lever independently of said devices, substantially as described.

23. The herein-described automatic gate, comprising in combination the gate, gate-posts, hinges, latch, catch on the front gate-post, counterpoise, horizontal swinging beam, spring-catch thereon, arresting-stop on the gate, and device for engaging the spring-catch also on the gate, together with the various levers and connecting and operating means, substantially as set forth.

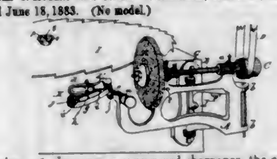
299,582. COFFEE-POT. HENRY C. RICE, Louisiana, Mo. Filed Oct. 27, 1883. (No model.)



Claim.—1. The combination, with the coffee pot or vessel having a conical mouth-piece, B, of the conical filter C, adapted to fit snugly into the said mouth-piece, and the filtering-cloth E, the said cloth being arranged to cover the lower end of the filter and to be clamped between the filter and the mouth-piece, as set forth.

2. The combination of the pot or vessel A, provided with a conical mouth-piece, B, secured to it as set forth, the conical filter C, constructed to fit snugly into said mouth-piece, and the filtering fabric clamped between the filter and the mouth-piece, the said filter being arranged to project through the mouth-piece into the pot, substantially as set forth.

299,583. MACHINE FOR GUMMING AND SHARPENING SAWS. SAMUEL C. ROGERS and JAMES T. BARNARD, Hamilton, Ontario, Canada. Filed June 18, 1883. (No model.)



Claim.—1. In a saw gummer and sharpener, the combination of the plate G, when secured vertically to its support, the frame F, attached thereto, the horizontally-movable frame A, and non-sliding spindle B, carrying the grinding-wheel E, to operate on a saw placed horizontally, substantially as shown and described.

2. In a saw gummer and sharpener, the combination of the hinged guide-arm *f*, slotted plate *d*, and the screw *j*, substantially as and for the purpose specified.

3. In a saw gummer and sharpener, the combination of the slotted plate *d*, the same being formed at one end with a lug, *d'*, and projection *k*, the guide-arm *f*, hinged to the plate *d*, a spring, *g*, attached to guide-arm *f*, and made adjustable by thumb-screws *h*, *i*, and *i'*, and a stop-screw, *j*, all constructed substantially as and for the purpose specified.

4. In a saw gummer and sharpener, the combination, with the guide-frame H and frame A, of the adjustable stop-pin *e*, provided with a lock-nut, *r*, substantially as and for the purpose specified.

5. In a saw gummer and sharpener, the saw-support having a circular spiked base-piece, *m*, the same being provided with a cone, screw-pin, and nut, all constructed to hold a saw while being gummed and sharpened.

6. In a saw-gummer, the combination, with arm J, of frame A,

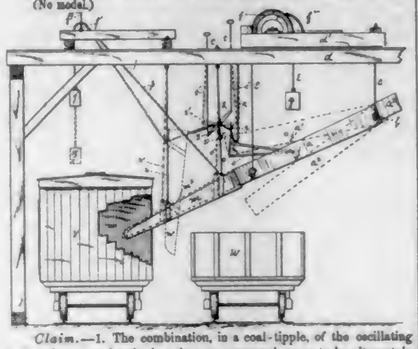
provided with pin *s*, spindle *x*, wheel *y*, and pulleys *a'* and *z*, for grinding wood and crosscut saws on a bevel, substantially as specified.

7. In a saw gummer and sharpener, the combination of a spring-templet, *g*, and guide-arm *f*, substantially as and for the purpose specified.

299,584. TOBACCO-SOAP. CARL L. F. ROSE, New York, N. Y. Filed Sept. 20, 1883. (No specimens.)

Claim.—A bar or cake of soap composed of the usual ingredients, to which is added the extract of tobacco, substantially in the proportions specified.

299,585. COAL-TIPPLE. WILLIAM ROSENSTIEL, Pittsburg, Pa., assignor to Oliver Brothers & Phillips, same place. Filed Mar. 31, 1884. (No model.)

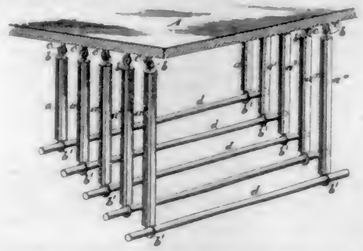


Claim.—1. The combination, in a coal-tipple, of the oscillating basket-chute *a* and swinging chute *m*, arranged so as to be alternately connected and detached, substantially as and for the purpose specified.

2. In a coal-tipple, the combination of an oscillating basket-chute, *a*, having a swinging gate at the free end thereof, and a swinging chute, *m*, the swinging gate being arranged so as to be alternately connected and detached with and from the oscillating basket-chute *a*, substantially as and for the purpose specified.

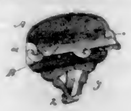
3. The combination, in a coal-tipple, of the oscillating basket-chute *a*, having a swinging gate at the free end thereof, with the hook *r*, operated by suitable arms, *t*, and capable of connecting and detaching said oscillating basket-chute *a* with and from the supports of a swinging chute, *m*, substantially as and for the purposes described.

299,586. FRAME FOR DISPLAYING GOODS. MILLARD F. SAGER, Pittston, Pa. Filed Nov. 3, 1883. (No model.)



Claim.—In a device for displaying goods, the hangers *a a' a² a³ a⁴*, formed of different lengths, and having screw-hooks *b* and *b'* and cross-rods *d*, one above the plane of the other, in combination with the eyebolt *c*, secured to the ceiling, substantially as shown and specified.

299,587. SUSPENDER-BUCKLE. CHRISTOPHER C. SHELEY, New York, N. Y. Filed Apr. 10, 1884. (No model.)



Claim.—1. The lever-catch having the pivot-studs *b b* and the wings *c c*, in combination with the buckle-frame, substantially as described.

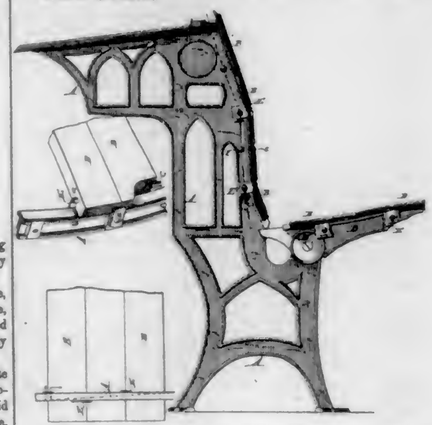
2. The combination, with the buckle-frame having the perforated ears, of the lever-plate for locking the webbing, having the pivots for engaging perforations in the ears, and having the wings turned down on the outside of the said ears, so as to cover the ends of the pivots, substantially as described.

3. The combination, with the buckle-frame having the perforated ears, of the locking-lever plate having the pivots and the turned-down wings provided with the struck-out or recessed portions for receiving the ends of the pivots, substantially as described.

4. The combination, with the buckle-frame having a catch at its lower end for engaging the eye or ring of a suspender-end, and having also the perforated ears, of the locking-lever plate provided with the pivots and turned-down wings.

5. The buckle-frame having the hook *k*, in combination with the slide *s*, working in guides formed by the turned-down wings or ears of the buckle-frame, substantially as described.

299,588. FURNITURE. PITT LEE SHEPLER, Toledo, Ohio. Filed July 3, 1883. (No model.)

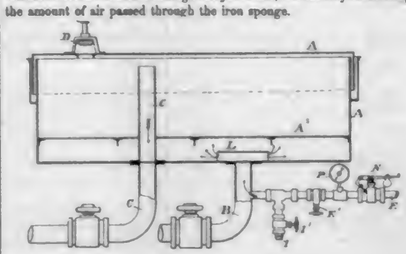


Claim.—1. As an improvement in furniture, the combination of a standard, parallel slats provided in their rear faces with thin slits at right angles to their edges partially across the slat, and flat connecting-plates, each secured at the rear end to the standard and seated at the forward end firmly in the recesses of the two contiguous slats.

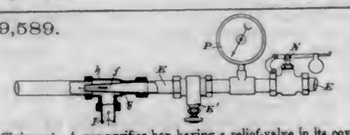
2. In combination with the standards and the series of slats provided with narrow slits at right angles to their edges, the series of flat connecting-plates applied to the two sides of the standard alternately, and seated in the slits, whereby the edges of the plates are caused to assist in maintaining the rigidity of the structure.

299,589. GAS-PURIFIER AND METHOD OF REVIVIFYING IRON SPONGE. OLIVER H. SHIRAS, New Castle, Pa. Filed July 19, 1883. (No model.)

Brief.—Iron sponge used for purifying gas, after having become fouled, is reoxidized and revivified in the purifying-box by means of a current of steam and air blown through it, while the air and gases or vapors escape through a relief-valve. The temperature of the sponge is controlled during the operation by controlling the pressure and the volume of steam admitted through the jet-nozzle, and thereby controlling the amount of air passed through the iron sponge.



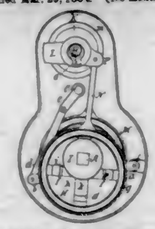
299,589.



Claim.—1. A gas-purifier box having a relief-valve in its cover, a steam-jet blower and an air-inlet adapted to force mixed steam and air into the box, a steam-pressure regulator attached to the steam-pipe, and a gage, as shown and described.

2. The method of regulating the temperature of the iron sponge or other oxide while undergoing reoxidation, consisting in confining the iron sponge or other oxide in a box, passing steam and air together through the mass of oxide, and increasing or diminishing the pressure of the steam as it passes into the box, as set forth.

299,590. VARIABLE-SPEED MOVEMENT. CHARLES L. SMITH, Jamestown, N. Y. Filed Mar. 29, 1884. (No model.)



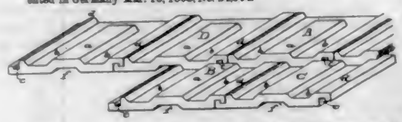
Claim.—1. In a variable-speed movement, an eccentric upon the driving-shaft, constructed of an adjustable ring, F, and a second ring, G, revolving inside of and concentric with it, a fixed collar, I, upon the driving-shaft, and with the eccentric ring H between the fixed collar I and the ring G, all connected and operated as shown, whereby the throw of the eccentric ring H may be increased or diminished at will and while the machinery is in motion, substantially as described.

2. In a variable-speed movement, the adjusting-ring F, hinged to the case on the one side, and on the other connected by rods and shafts to the index-lever D, whereby the throw of the eccentric H may be increased or diminished by the operator at will and while the machinery is in motion, substantially as shown and described.

3. In a variable-speed movement, the locking-arm L, working loosely over the driven shaft B, and held in position against the shaft by a spring, O, and with lugs *n n*, so arranged as to grip the rim of a pulley on the driven shaft on the forward motion, but releasing the grip on the backward motion, of the arm, substantially as shown and described.

4. A mechanical device for producing a variable-speed movement, consisting of two or more adjustable eccentrics upon the driving-shaft, connected with and operating on two or more locking-arms, operating on a pulley on the driven shaft, the adjustable eccentrics and the locking-arms being constructed and connected together as described, the adjusting-ring of the eccentrics being connected with and controlled by the movement of the index-lever on the outside of the case, whereby the throw of the eccentric, and consequently the relative speed of the driven shaft, is varied at will by the operator while the machinery is in motion, all the parts working in combination, and constructed substantially as shown and described.

299,591. BRICK AND TILE MACHINE. JOHN GEORGES STADLER, Rothenbach, Bavaria, Germany. Filed Jan. 11, 1884. (No model.) Patented in Germany Mar. 10, 1883, No. 24,564.



Claim.—1. In roofing devices, as a new article of manufacture, the parallel-ridge tile A, provided with the two border ridges *d d*, wherein the side joints, *c c*, are spared, in combination with the partly-cut-off middle ridge, *a*, and the channel *f*, formed thereby at the bottom of the tile, the grooves *b b*, formed between the ridges *d a d*, and the ears *e e* at the upper end of the bottom face of the tile all substantially as shown, and for the purpose set forth and described.

2. In combination with a tile-machine, the die or mold, substantially as shown in Figs. IV, V, VI, and VII of the accompanying drawings, with the delivery end D and the feed end F, said mold provided at the middle portion of the hole with a swelling or thickening, and with greater taper on the walls on said portion of the hole than on the side borders of the same, for the purpose set forth and described.

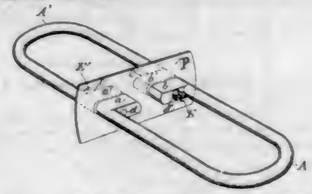
3. In a tile-machine, the combination of an attachment for simultaneously trimming the middle ridge and the ears of the tiles, consisting of horizontal cutting-wires strained within a vertical frame, said frame being movable, in the vertical sense, by means of a hand-lever within suitable guides attached to the cutting-table of the machine, the cutting-table constructed of a rectangular frame set on wheels, and supporting the suitably-shaped conveying-rollers for the clay band, and the device for cutting the tiles to their proper lengths, substantially as shown and described.

4. In a tile-machine, the combination of an attachment consisting of wires *i i*, bracket u_4, studs u_1 u_4, cross-bars q_7 q_8 q_9, studs q_7 q_8, sleeves on frame q_7 q_8, lever k_4, with handle k_5, link k, and bracket k_6, the cutting-table consisting of frame q_1 q_2 q_3 q_4, wheels W W, bearings *g g*, shaft s_5, brackets u_4 u_6, wires *i i*, rollers r_1 r_2, rollers r_3 r_4, r_5 r_6, roller r_8, bracket q_5, and cross-piece q_6.

5. In combination with a cutting-table of a machine for manufacturing parallel-ridge tiles, side rollers for guiding and supporting the clay band at its borders, constructed with hollow cast-iron caps journaled on pins secured to the frame of the cutting-table, said caps provided with inside bearings, and recessed corresponding to forked angles bolted to the frame of the cutting-table, substantially as shown, and for the purpose set forth and described.

6. In combination with the cutting-table of a machine for manufacturing parallel-ridge tiles, the recessed side rollers, r_1 r_2, mounted on beam q_1 of the cutting-table, and supporting the borders of the clay bands, stands r_7, and forked angles r_8, substantially as shown, and for the purpose set forth and described.

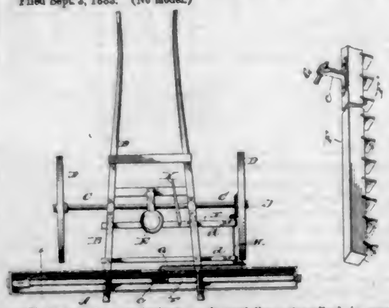
299,592. LINK FOR CHAIN CONVEYERS. LOUIS O. STEVENS, Burlington, Iowa, assignor of one-half to George H. Lane, same place. Filed Jan. 28, 1884. (No model.)



Claim.—1. A link for chain conveyers, consisting of two parts or halves, each half provided with two separate perforated shoulders, the shoulders of one half abutting against those of the other half, and united by a securing device, which is held in perforations of said shoulders, as set forth.

2. A link for chain conveyers, consisting of two parts or halves, A A', provided with the shoulders *a a'* and *b b'*, respectively, each shoulder having perforations *c* and *c'*, *d* and *d'*, united by suitable locking-bolts inserted through the perforations, in combination with a push-plate, P, substantially as set forth.

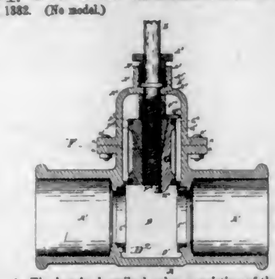
299,593. SEED-PLANTER. WILLIAM STODDARD, Valparaiso, Ind. Filed Sept. 3, 1883. (No model.)



Claim.—1. In a seed-planter, substantially as described, in combination with the hopper, cut-off, and feed-operating gear, as G H I J, the bar F, having a series of rigid depending plates, F', of equal width throughout and in number and location corresponding to the feed-apertures, as set forth.

2. The removable hopper A, secured to the rear of the shafts B, the feed-bar F F', as described, the gear-connections, as G H, the gear I, and lever K, all constructed and arranged to serve with the parts B C D J of an ordinary hay-rake, as set forth.

299,594. GATE-VALVE. JOS. H. STRENELL, Cincinnati, Ohio. Filed July 11, 1883. (No model.)

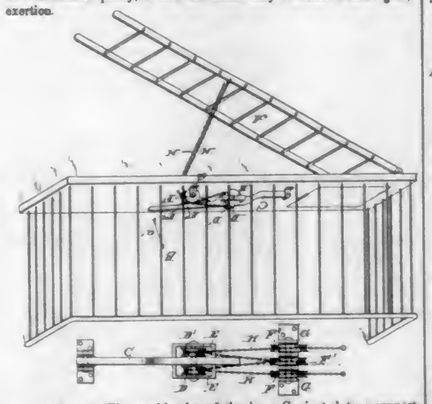


Claim.—1. The herein-described valve, consisting of the portions F and G, the outer faces of said portions being at all times parallel and the inner faces being beveled in opposite directions, as shown, and in contact with each other throughout their entire extent, the portion G being provided with ribs or projections G^2, and the portion F with recesses F^2, to receive said ribs to prevent lateral motion, substantially as and for the purposes specified.

2. The herein-described valve, consisting of the portions F and G, the outer faces of said portions being at all times parallel, and their inner or meeting faces being beveled in opposite directions, the portion F being connected to the valve-stem, and the upper edge of the portion G being provided with a projection, G^3, to engage with the lug or projection at the upper part of the valve-box, to stop said portion G at the proper point, substantially as and for the purposes specified.

299,595. FIRE-ESCAPE. JAMES TAYLOR, New York, N.Y. Filed Oct. 5, 1883. (No model.)

Brief.—The fixed pulleys on the balcony, over which and the pulleys journaled on the lever the rope is passed, are arranged to act as a differential pulley, so that the ladder may be raised without great exertion.



Claim.—1. The combination of the lever C, pivoted to a support or balcony, provided with the pulleys D D', the chain H, and the pulleys F F^2 F^3, substantially as described, for operation as set forth.

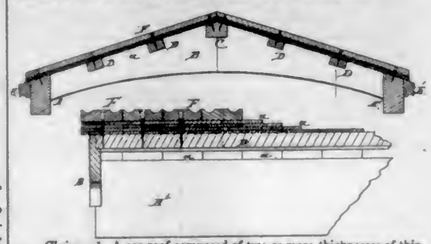
2. The combination, with a ladder, of a support to which it is pivoted, a lever, a differential pulley formed by pulleys on the lever and on the support, and of a chain secured to the side bars of the ladder and passing over the pulleys, substantially as herein shown and described.

3. The combination, with a ladder, of a support to which it is pivoted, a lever pivoted on the support, pulleys pivoted on the lever, and pulleys pivoted on the support, and of a chain secured to the side bars of the ladder and passed over the several pulleys, substantially as herein shown and described.

4. The combination, with a ladder, of a support to which it is pivoted, the lever C, pivoted on the support, the pulleys D D', pivoted to the lever, the pulleys F F^2 F^3, pivoted to standards G on the support, and of the chain H, secured to the side bars of the ladder and passed over and around the several pulleys, substantially as herein shown and described.

299,596. CAR-ROOF. HIRAM S. TIPTON, Chicago, Ill. Filed Oct. 26, 1883. (No model.)

Brief.—Consists of two or more thicknesses of thin narrow strips and battens, the strips and battens being of uniform width and arranged over each other to break joints, all held in place by bolts passing through the center of the battens and between the edges of one series of strips and through the center of another series. The outer ends of the battens terminate back of the outer edges of the side strips of the roof.

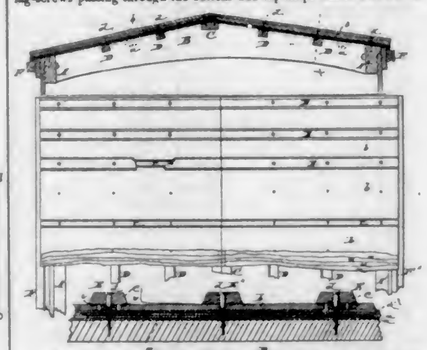


Claim.—1. A car-roof composed of two or more thicknesses of thin narrow strips, *a*, in combination with battens F, such thin narrow strips and the battens being of uniform width, and arranged over each other so as to break joints, all held in place by screws or bolts, which pass through the center of the battens, and between the edges of one series of strips and through the center of another series of strips, substantially as and for the purpose specified.

2. In a car-roof, the thin narrow strips *a* and the battens F, having their outer ends terminating back of the outer edges of the side strips, E E', for the purpose of protecting the ends of the roof-boards from injury, substantially as specified.

299,597. CAR-ROOF. HIRAM S. TIPTON, Chicago, Ill. Filed Jan. 19, 1884. (No model.)

Brief.—Consists of a top layer of strips and battens and two or more thicknesses of thin strips arranged so as to break joints, and so that lag-screws passing through the battens and top stripe will be in one line.



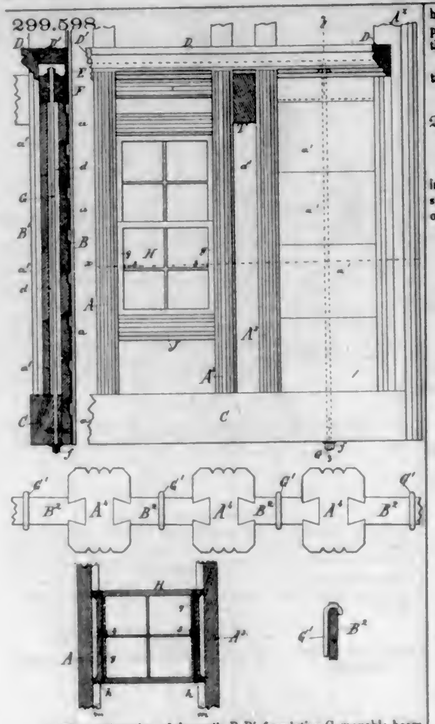
Claim.—A car-roof composed of two or more thicknesses of thin stripe, *a*, in combination with stripe *b* and battens, all arranged and held in place substantially as described, whereby the lag-screws or other fastenings do not pass through any one of the stripe *a* in more than one line, substantially as and for the purposes specified.

299,598. MODE OF CONSTRUCTING FRAME HOUSES. EDSELL TUTHAM, Hinsdale, Ill. Filed Mar. 8, 1884. (No model.)

Brief.—A movable timber upon top of side walls is adjusted to keep the cracks closed, said timber moving behind a stationary frieze-board. Grooved sashes receive wooden springs which are regulated by springs.

Claim.—1. A frame house having wooden walls provided with vertical tie and tightening rods, boarding E, and foundation C, whereby wind and water cracks are closed, substantially as described.

299,598.



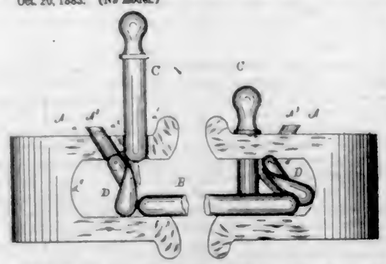
2. The combination of the walls B B', foundation C, movable beam F, screw-bar G, and means for tightening the same, substantially as and for the purpose described.

3. The frieze-board E, in combination with the movable beam F, walls B B', and foundation C, substantially as and for the purpose described.

4. A frame house provided with upright studs having longitudinal dovetail grooves to receive the planking which constitutes the walls of the house, and with vertical tightening-rods G, movable beam F, and frieze-board E, substantially as and for the purpose described.

5. The combination of upright studs A A^2, sash H, wooden springs A A, and tightening-screws *s s*, substantially as and for the purpose described.

299,599. CAR-COUPLING. ISAAC H. TRABUE, Louisville, Ky. Filed Oct. 20, 1883. (No model.)



Claim.—1. In a coupling, the combination of a swinging pendulum having a projection immediately under the pin-hole, and a pin having a recess in its lower end, substantially as described.

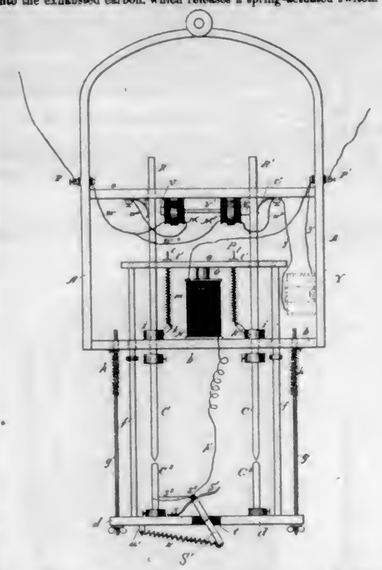
2. In a coupling, the combination of a bolt having a slotted end, and a pendulum suspended from said bolt by a pintle passing through said slot, substantially as described.

3. In a coupling, the combination of a draw-head having a bolt-hole, a bolt passing through said hole and having a slotted end, and a pendulum having ears connected with said bolt by a pintle, which passes through said slot, substantially as described.

4. In a coupling, a pendulum having a U-shaped groove, substantially as described.

299,600. ELECTRIC-ARC LAMP. THOMAS G. TURNER, New York, N. Y., assignor, by mesne assignments, to H. A. Seymour, Washington, D. C. Filed Nov. 16, 1882. Renewed Jan. 29, 1884. (No model.)

Brief.—A double lamp. The inactive carbon is held locked by an independent magnet in the active branch of the main line. Current is switched into the fresh carbon by the burning of a fusible wire looped onto the exhausted carbon, which releases a spring-actuated switch.



Claim.—1. In a double-carbon electric-arc lamp, the combination, with two upper and two lower carbon pencils, of an electro-magnet arranged to move the lower away from the upper carbons, automatic devices controlled by said magnet for feeding the carbons, and two electro-magnets arranged to automatically prevent the feeding of one or the other of the upper carbons, substantially as described.

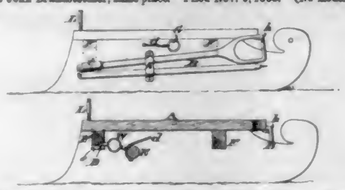
2. In a double-carbon electric-arc lamp, a movable support for the lower carbons, in combination with a single electro-magnet arranged to move said support for separating the upper from the lower carbons, clamping devices operated by said magnet for preventing the upper carbons from falling as the lower are moved away, and an automatic switch for throwing a second set of carbons into circuit when a first set has been consumed, substantially as described.

3. In a double-carbon electric-arc lamp, the combination, substantially as before set forth, of electro-magnetic devices in the main circuit for separating the carbons to form the arc and to control the feed of the upper carbon, which is in circuit, and independent electro-magnetic devices in, and actuated by, the main circuit, to prevent the feeding of the upper carbon, which is not in circuit.

4. The combination, with the lower-carbon-supporting frame constructed and supported, substantially as described, of the core O, projecting from the upper bar of said frame, the helix N, surrounding said core, the upper-carbon holders mounted in suitable guides, the clamping devices connected with said lower-carbon-supporting frame, and automatic and electro-magnetic devices arranged to be automatically thrown into circuit for alternately locking said upper-carbon holders, substantially as and for the purpose set forth.

5. In a double-carbon electric-arc lamp, the combination, with the movable lower-carbon-supporting frame, the electro-magnet arranged to move said frame, the suitably-guided upper-carbon holders, the clamps connected with the lower-carbon frame and arranged to hold said upper-carbon holders, and the automatic switch arranged to change the circuit from one pair of carbons to the other, of the helices M M', and their movable cores arranged to lock the upper-carbon holders alternately, and the intermediate electrical connections, essentially as set forth.

299,601. SLED. EMIL WAGNER, Cincinnati, Ohio, assignor of one-half to John Brandstattner, same place. Filed Nov. 9, 1883. (No model.)



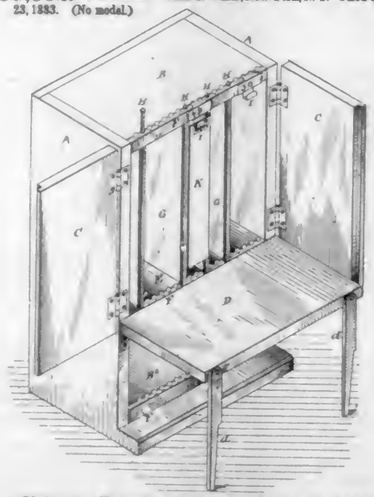
Claim.—1. In a sled, the combination of longitudinally-movable pushers projecting in rear of the sled, and locks to guide the pushers, arranged substantially as shown and described.

2. The combination, in a sled, of longitudinally-movable pushers, locks, and concave bearings R, in which the pushers work, substantially as and for the purpose set forth.

3. The strap or spring S and hook A, arranged on each side of a sled, for the purpose described.

4. In combination with sled A, rock-shaft E, provided with weighted detents D, cord *d*, wound upon said shaft, and provided with a ring, and hook G, adapted to receive the ring, as shown.

299,602. BOOK-CASE. CALEB T. WARD, New York, N. Y. Filed Mar. 23, 1883. (No model.)



Claim.—1. The combination, substantially as herein set forth, of the rods with the vertical partitions having their front edges constructed as described, to engage the rods, and the book-case having its horizontal walls provided on the front edges with vertical passages to receive and hold the rods in position.

2. The combination, substantially as herein set forth, of the rods with the vertical partitions having their front edges bent to form tubes for engaging the rods, and the book-case having its horizontal walls provided on the front edges with vertical passages to receive and hold the rods in position.

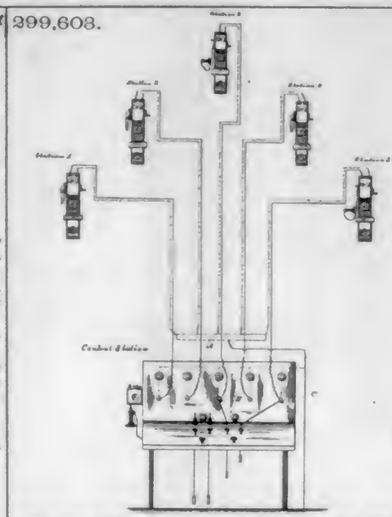
3. The combination, substantially as herein set forth, of the rods with the vertical partitions having their front edges constructed, as described, to engage the rods, and the book-case having its horizontal walls provided on the front edges with grooved plates to form vertical passages for receiving and holding the rods in position.

299,603. METALLIC CIRCUIT FOR TELEPHONE-EXCHANGES. JAMES C. WARNER and ERNEST P. WARNER, Chicago, Ill., assignors to the Western Electric Company, same place. Filed Nov. 5, 1883. (No model.)

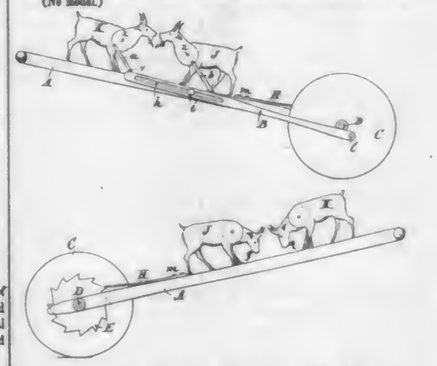
Claim.—1. The combination of a group of metallic circuits with a common connecting-piece from which the lines branch severally through an annunciator and spring-jack or switch upon the switch-board, and thence to a subscriber's station, and thence back to the common connecting-piece, whereby any two of these lines may be connected together by ordinary cords and plugs, substantially as set forth.

2. The combination of a group of telephone-stations and a central station, each telephone-station being connected to said central station by a metallic circuit, said metallic circuits each including a signaling device, a connecting-switch, and a connecting-piece at the central station, said connecting-piece being common to all the lines of the group, and provided with a permanent branch to ground, substantially as and for the purpose set forth.

299,603.



299,604. TOY. JESSE G. WEBB, Boston, Mass. Filed Apr. 14, 1884. (No model.)



Claim.—1. In a toy substantially such as described, the image K, mounted on the body A and provided with a pivoted head, in combination with the jointed lever *a*, and arranged to be operated by the pitman B and wheel C, substantially as set forth.

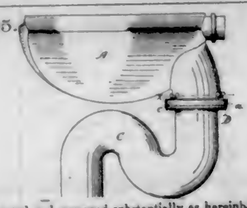
2. In a toy substantially such as described, the image J, provided with a pivoted head and mounted on the body A, in combination with the jointed lever *b*, and arranged to be operated by the pitman B and wheel C, substantially as specified.

3. In a toy substantially such as described, the images J K, provided with movable or pivoted heads, and arranged to face each other on the body A, in combination with the jointed levers *a b*, pitman B, ratchet-wheel E, spring-pawl H, and wheel C, substantially as set forth.

299,605. WATER-CLOSET CONNECTION. HENRY C. WEEDEN, Boston, Mass. Filed Jan. 12, 1884. (No model.)

Claim.—1. The combination, with an earthenware bowl, A, having the continuous perforated terminal flange *a* integral with said bowl, of the lead trap C, having the continuous flange *c* integral with said trap, clamp-screws B, passing through the two flanges, and the suitably-perforated stay-plates D, adapted to engage with and hold said screws, all

299,605.

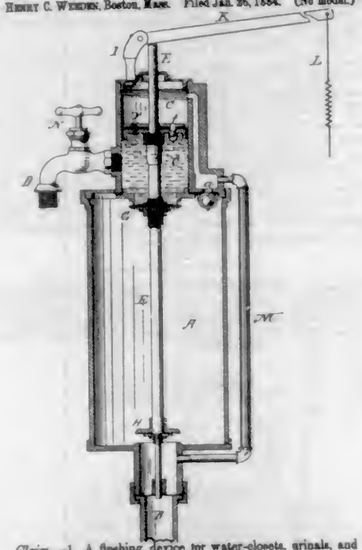


being constructed and arranged substantially as hereinbefore set forth.

2. The combination, with the earthenware bowl A, having the perforated flange *a*, and the lead trap C, having a corresponding unperforated flange, *c*, of the gimlet-pointed clamping-screws B, and the suitably-perforated and screw-threaded segmental stay-plate D, all substantially as herein described and shown, and for the purposes set forth.

3. The combination of the earthenware closet or bowl A, having the perforated flange *a*, with the lead trap C, having a corresponding unperforated flange, *c*, the gimlet-pointed clamping-screw B, and the upper and lower clamping-segments, D' and D, all substantially as herein specified, and for the purposes herein set forth.

299,606. FLUSHING APPARATUS FOR WATER-CLOSETS, &c. HENRY C. WEEDEN, Boston, Mass. Filed Jan. 26, 1884. (No model.)



Claim.—1. A flushing device for water-closets, urinals, and similar structures, consisting of a water-chamber connected with the source of water-supply and kept normally closed by the pressure of said supply, and a second or flushing chamber connected with the first and also with the closet or basin to be flushed, and means whereby the passage from the first chamber into the second and from the second chamber to the closet may be successively opened by the occupant of the closet, all substantially as herein set forth.

2. In a flushing device for water-closets, urinals, and similar structures, the combination, with a water-retaining chamber connected with the source of water-supply, and having an outlet toward the closet, of a water-tight head or packing closing said chamber above the entrance of the water-supply, and a valve closing the outflow from the said chamber toward the closet, the packing or head and the valve being connected by a common rod or piston, all substantially in the manner herein described and shown.

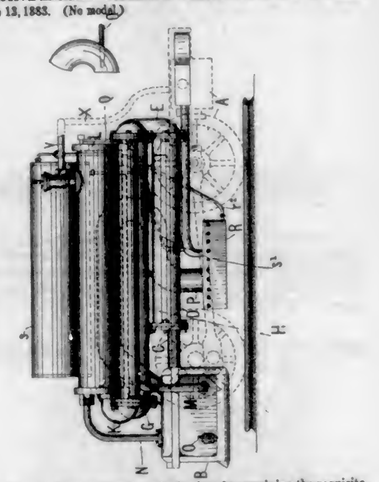
3. In a flushing device for water-closets, urinals, and similar structures, the combination, with a water-retaining chamber connected with the source of water-supply, and a second or flushing chamber communicating with the first and also with the closet or urinal to be flushed, of a water-tight packing or piston-head, F, and valves closing the passages between the chambers and from the flushing-chamber to the closet, respectively, said piston-head and said valves being attached to a common stem, whereby they may be simultaneously moved or depressed, all substantially as and for the purposes herein set forth.

4. In a flushing device for closets, urinals, and similar structures, the combination of the water-retaining chamber C and flushing-chamber A, provided with a valved air-escape, *a*, of the piston-head F, provided with the valved air-passage *f*, the valves G and H, and the common valve-rod, E, attached to and carrying said piston-head and said valves, all substantially as herein described.

5. In a flushing device for water-closets, urinals, and similar structures, the combination, with the communicating water-chambers C and A, of the rod E, carrying the piston-head F and valves G H, the lever I K, and the cord or connection L, extending to the closet or urinal to be flushed, all substantially as herein described.

6. In a flushing device for water-closets, urinals, and similar structures, the combination, with the communicating chambers C and A, of the piston-head F, valves G H, closing the passage between the chambers and the passage from the chamber A, respectively, said piston-head and valve being mounted upon a common rod or support, E, the piston-head F and lower valve, H, being fixedly attached thereto, and the intermediate valve, G, being movably or adjustably attached thereto, all substantially as and for the purposes set forth.

299,607. STEAM-GENERATOR FOR STREET-CAR OR OTHER LOCOMOTIVE ENGINES. FREDERICK G. WHEELER, New York, N. Y. Filed June 13, 1883. (No model.)



Claim.—1. The combination of a fire-box for supplying the requisite heat to produce the steam or to sustain that already produced in a separate stationary boiler with a water-chamber in contact with the fire-box and a system of water-tubes communicating therewith, not in contact with the fire-box, substantially as described.

2. In combination with the water-chamber surrounding the fire-box, the circulating system of pipes and tubes, and the auxiliary pipes M M and N N, as described.

3. The water-box having the basin, the chamber, and the injector-pipe, as described.

4. A steam street-car or locomotive containing the following elements working in combination, substantially as herein described, namely: a fire-box and surrounding water-chamber, a tube system connected with water-chamber, an engine taking steam from tube system, a water-box communicating with the chimney of the fire-box, a steam-jet in the chimney to eject and cool the products of combustion and regulate chimney-draft, a water-tank and spray to condense the exhaust-steam, an ejector-pipe to return the water of the water-box to the tank, all as set forth.

5. In a steam street-car or locomotive, the water-box R, constructed with an interior water-basin, *r*, the flanges of which have openings to allow the descent of the surplus water into the bottom of the box R, substantially as herein shown and described.

6. In the combination of the fire-box and smoke-flue with a water-box having perforations, as described, the products of combustion being discharged upon the top of the water, and not into the same, as and for the purpose described.

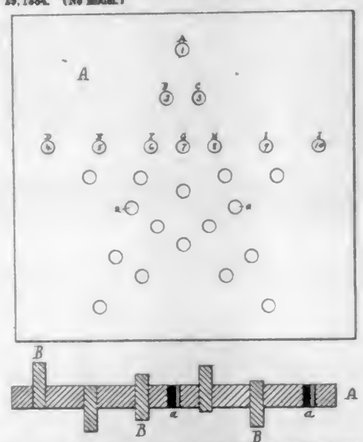
7. In combination with a water-chamber in contact with the fire-box and a system of water-tubes not in contact with the fire-box, a cock, O, for receiving a heated water-supply from a stationary boiler, as described.

8. In combination with the steam-jet pipe Q, the flue P, and the water-box R, having the series of openings r^3, as described.

9. A steam-generator for street-cars, consisting of a fire-box, a system of water-tubes remote from the source of heat, and a steam-dome, substantially as described.

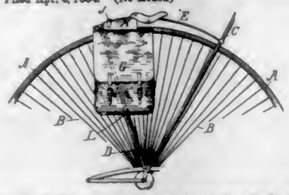
10. In combination with a steam-dome supplying a locomotive or street-car engine, a reservoir of connected water-tubes remote from the source of heat, and forming a storage and circulating system for water heated before entering the tubes to a degree which shall evolve steam.

299,608. TOY. ARTEMAS WILHELM, Wilmington, Del. Filed Mar. 29, 1884. (No model.)



Claim.—A toy composed of a board provided with a number of holes extending entirely through the board, and of uniform size throughout their length, in combination with pins of a length exceeding the thickness of the board, and adapted to fit tightly in said holes, substantially as and for the purpose herein specified.

299,609. SADDLE-BAGS FOR BICYCLES. JOHN B. WOOD, Camden, N. J. Filed Apr. 4, 1884. (No model.)



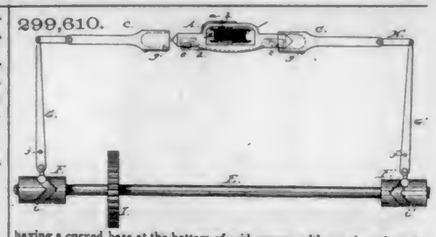
Claim.—1. In a bicycle of the class herein described, and in combination therewith, saddle-bags supported upon and attached to the bicycle-frame or to an attachment thereof at a point in the rear of the saddle and nearly central over the carrying-wheel, as specified.

2. In a bicycle of the class hereinbefore referred to, saddle-bags the pouches of which at their upper extremities are connected together by a strip of leather or other pliable material, in combination with the saddle-bar and rear upright rod, said saddle-bags being supported by having the strip of leather or other material connecting their upper ends slung across said saddle-bar and fixed thereto by a buckle or other suitable device, and having the pockets or pouches thereof secured at their lower extremities to said rear upright rod by a thumb-screw and clamp or other suitable fastening device, as and for the purpose specified.

3. In combination with the saddle-bar E and rear upright rods, D D, of a bicycle, saddle-bags the lower extremities of the pockets of which are fixedly attached to the respective rods D D, and the upper extremities of said pockets or pouches of which are connected by a strip, H, of leather or other yielding material, which at its central portion is supported upon and fixedly attached to the saddle-bar E in such manner that yielding portions A A are provided, as and for the purpose specified.

299,610. POSITIVE SHUTTLE-MOTION FOR LOOMS. FREDERICK K. WRIGHT, Homer, N. Y. Filed Jan. 23, 1883. (No model.)

Claim.—1. The combination of a shuttle-body formed with a central opening for a bobbin and a longitudinal groove in one of its sides, and



having a curved base at the bottom of said groove, with a spring adapted to move longitudinally to the right and left over the said curved base at the bottom of said groove, said spring having slots at its ends and pins fixed in the shuttle-body across the ends of the said longitudinal groove passing through said slots, and serving to limit the longitudinal movement of said spring, and to cause the ends of the same to be retracted within the shuttle-body, substantially as described.

2. The combination, with the shuttle, formed as described, and provided with the spring *d* and means for limiting the longitudinal and lateral movement of said spring, of the reciprocating carriers C C', provided with springs *g g'*, all arranged substantially as set forth.

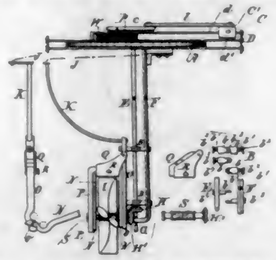
299,611. PROCESS OF REFINING PETROLEUM. LESLIE A. BAKER, Olean, N. Y., assignor of one-half to Edward A. Gould, same place. Filed Jan. 17, 1883. (No specimens.)

Claim.—1. A process of separating crude petroleum into its light and heavy constituents, consisting in mixing with the crude petroleum a cold medium, and thereby reducing its temperature, and then filtering the same, substantially as set forth.

2. A process of separating crude petroleum into its light and heavy constituents, consisting in mixing with the crude oil snow or its equivalent, and then filtering the oil while at a temperature below the freezing-point of water, substantially as set forth.

3. A process of separating crude petroleum into its light and heavy constituents, consisting in reducing the temperature of the crude petroleum and then filtering it by gravity, and collecting the filtrate or lighter constituent from below the filtering medium and heavier constituent from above the filtering medium, substantially as set forth.

299,612. PROPELLING-RUDDER. JEAN LOUIS FREDERIC BARNIER, Havre, France. Filed Jan. 3, 1883. (No model.) Patented in France Aug. 8, 1882, No. 150,476; in Belgium Dec. 18, 1882, No. 59,861; in Germany Dec. 18, 1882, No. 52,262, and in England Dec. 18, 1882, No. 5,994.



Claim.—1. The combination, with the rudder-post O P, the frame N, connected therewith, as described, the propeller-shaft and propeller, a driving-shaft to rotate said propeller, a false stern-post from which the shaft and rudder-posts are supported, of hinge-joints for flexibly connecting the rudder-post with the false stern-post and of which said driving-shaft forms the pintle, substantially as and for the purposes specified.

2. The combination, in a steering-propeller, of a false stern-post, a driving-shaft for the propeller, and a rudder-post from which the rudder and propeller are supported, both the driving-shaft and rudder-post being supported from the false stern-post, of hinge-joints for flexibly connecting the rudder-post with the false stern-post, of which the driving-shaft forms the pintle, substantially as and for the purposes specified.

3. The combination, with the false stern-post, the rudder-post O P, the frame N, and braces B, of the shaft E, arranged to form the pintle for the braces, whereby both the rudder-post and parts connected therewith are hinged to and supported from the false stern-post, substantially as described, for the purpose specified.

4. The combination, with the propeller-shaft S, carrying pinion H' and the propeller, the rudder-post O P and frame N, forming a housing

and support for said propeller-shaft and propeller and constituting the rudder, the shaft E and pinion H for rotating the propeller, of the false stern-post F, the frame D, from which shaft E is supported, and the braces B, by means of which the rudder-post is hinged to the false stern-post through the medium of said shaft E, substantially as described, for the purpose specified.

5. The combination, with the false stern-post and the propeller-shaft, of the rudder composed of the rudder-post O P and the frame N, hinged together at o and secured to the false stern-post, as described, and the clamp Q, and retaining bolt and nut R, all arranged for co-operation, substantially as described, for the purposes specified.

6. The combination of the frame D, the false stern-post F, the braces B, the pivoted rudder-post O P, the frame N, and tiller K, the shaft E, having its bearings in post F and frame D, the pinion H, the propeller-shaft S, pinion H', and suitable mechanism for rotating shaft E, all constructed and arranged for operation as described.

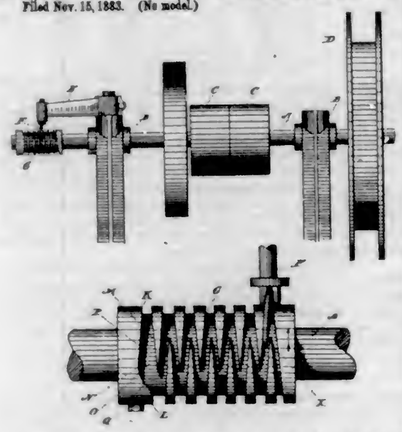
299,613. COMBINATION METALLIC LAST. JOHN BLAKEY, Leeds, County of York, England. Filed Feb. 25, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a combination metal last comprising the lasts *a* and *b* and the heel-anvil *c*, formed in one piece, and constructed and arranged with respect to each other substantially as described.

2. As an improved article of manufacture, a combination metal last comprising the larger last, *a*, and its shank *a'*, the smaller last, *b*, and its shank *b'*, the heel-anvil *c*, and the projection *g*, all formed in one piece, and constructed and arranged substantially as set forth.

299,614. SWITCH-THREAD. HUGO BORCHARDT, Bridgeport, Conn. Filed Nov. 15, 1883. (No model.)



Claim.—1. A switch thread or worm in which the wall at each end diverges outward from the inner wall in a mechanical ratio equal to the pitch of the thread, beginning at the point where the thread reverses and extending into an open space or pocket, from the bottom of which the wall extends inward toward the inner wall.

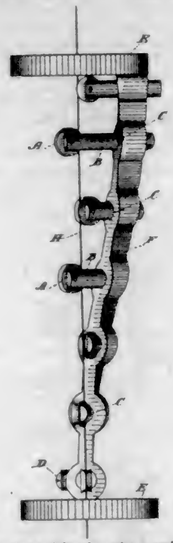
2. A switch-thread whose outer walls at each end are cut away to form open spaces or pockets O, substantially as and for the purpose set forth.

3. A switch-thread in which the outer wall between point K and point N is a straight line diverging outward from wall M in a mechanical ratio equal to the pitch of the thread, and from point N to point L diverging inward toward the opposite wall, substantially as described.

299,615. WIRE-STRAIGHTENER. HUGO BORCHARDT, Bridgeport, Conn. Filed Nov. 15, 1883. (No model.)

Claim.—1. In a device for straightening wire, a series of stationary rolls arranged in spiral form, and acting on alternate sides of the wire, whereby the surface is acted on from all directions.

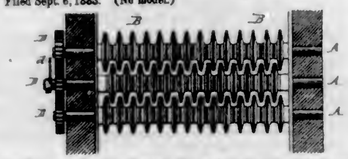
299,615.



2. In a device for straightening wire, a series of rolls journaled in the ends of pins, which are capable of adjustment in sockets arranged in spiral form, whereby each roll is caused to act on the surface of the wire in a plane at an acute angle to the adjacent rolls.

3. In a wire-straightener, the plates or rings E, through which the wire passes, and a single strip, F, connecting said plates or rings, and constructed to make a partial turn about the center, said strip being provided with a series of sockets, in combination with a series of pins adjustably arranged in said sockets, substantially as described.

299,616. FURNACE-GRATE. EDUARD BRESLAUER, Berlin, Germany. Filed Sept. 6, 1883. (No model.)



Claim.—1. The combination of a series of rotary shafts, each shaft provided with a series of removable circular disks beveled from their hubs to their peripheries, and having projecting separating hubs, the disks of one series extending into the spaces between the disks of adjoining series, and means for rotating said shafts, substantially as described.

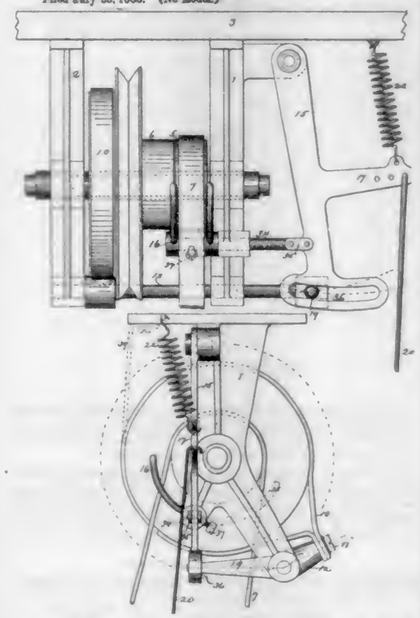
2. The combination of a series of fixed shafts and independent separable disks movable on said shafts, said disks being provided with projecting hubs having interlocking recesses and projections, substantially as described.

299,617. ONE-WHEELED VELOCIPEDE. BERNERD G. EHRLINGHAUSEN, Cleveland, Ohio. Filed Mar. 10, 1884. (No model.)



Claim.—In a one-wheel velocipede, the combination, with the hubs, the hangers D, depending from said hubs, and cranks secured to the hubs for revolving the wheel, of the cross-piece E, the balance-rod provided with the adjustable foot-rest, and the seat secured to the upper surface of the cross-bar, substantially as described.

299,618. SPEED-GOVERNOR. THOMAS L. CALKINS, Newark, N. J. Filed July 25, 1883. (No model.)



Claim.—1. The combination, in a speed-governor, of an idle and driving pulley, said driving-pulley having a friction-drum, a friction band or brake bearing upon said drum and connected to a stud upon the rocking shaft 13, a belt-shipping lever and shipper, connections between shipping-lever and the rocking shaft, and means for operating said rocking shaft, whereby the shifting of the belt and friction of the brake are controlled relatively to each other, substantially as set forth, to produce the required rate of speed, as described.

2. The combination, in a speed-governor, of idle and driving pulleys, said driving pulley having a friction-drum, a friction band or brake bearing upon said drum and connected to the rocking lever 13, a belt-shipper and lever, also connected to said rocking shaft, a retracting-spring, as 22, and a treadle and connections to the rocking shaft, whereby the shaft may be operated and the shifting of the belt and friction of the brake controlled relatively to each other, substantially as set forth.

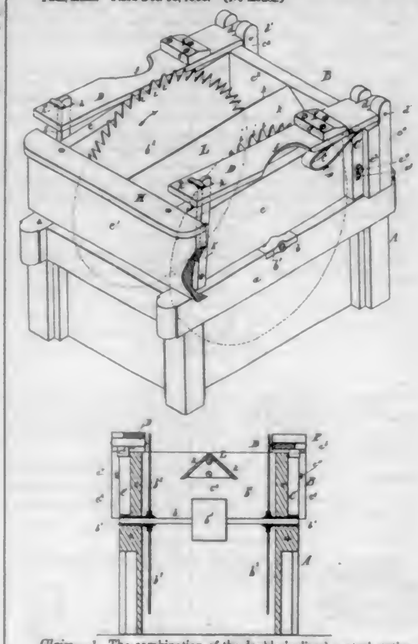
3. The combination, in a speed-governor, of the idle and driving pulleys, the latter being provided with a friction-drum, a rocking shaft, as 13, supported in the brackets of the governor, a friction-brake adjustably connected to a stud upon the shaft, a pivoted belt-shifter lever and shipper connected by the rod 18 and lever 19 to the rocking shaft, and means for operating the shaft, and thereby controlling the relative movement of the brake and belt-shifter, substantially in the manner set forth.

4. In a speed-governor, a belt-shifting lever provided with a curved slot and a belt-shipper, and means for adjusting the shipper in the slotted lever, so as to accommodate it to the varying angles of the driving-belt, as set forth.

5. The combination, with loose pulleys, of a hollow stationary shaft closed at both ends, and provided with an oil-feeding hole at or near one end, and having oppositely-arranged oil-holes in the top and bottom of the shaft, whereby the oil is kept in constant circulation and lubricates the bearings of the loose pulleys, as set forth.

6. The combination, with loose pulleys, of a hollow stationary shaft closed at both ends, and provided at or near one end with an oil supply or feeding hole, and having oppositely-arranged oil-holes in the top and bottom of the shaft, the upper holes being provided with gutters leading thereto, whereby the loose pulleys are lubricated and the excess of oil is returned to the hollow shaft, as set forth.

299,619. SHINGLE-JOINTING MACHINE. WILLIAM CARSON, St. Paul, Minn. Filed Dec. 13, 1883. (No model.)

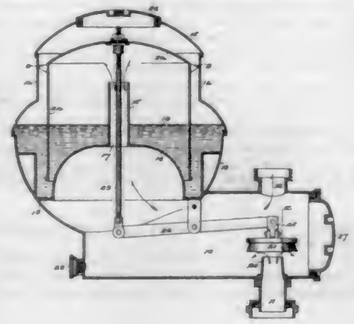


Claim.—1. The combination of the double-inclined central stationary guard, L, affixed to the frame above the driving-pulley, with the single supporting-frame A, carrying shaft *b*, with driving-pulley, and provided with two hinged adjustable tables, D, arranged outside of the outer face of the saws, for supporting the shingles while being jointed, and with two disk-saws, b^2, arranged on the inside of the frame A on shaft *b*, and outside of the said inclined stationary guard L, substantially as described.

2. A machine for jointing shingles, comprising in its construction a table, D, pivoted at its rear end to a post, c^2, and provided with an actuating-spring, as c^3, which has its rear end applied to an adjustable post, C, whereby the tension of the spring can be increased or diminished, substantially as and for the purpose described.

3. A machine for jointing shingles, which comprises in its construction a table, D, pivotally hinged at its rear end to a rear portion of the machine and slotted at its forward end, as at A, in combination with a stationary obliquely-set post, h', having a stop, h^2, to limit the upward throw of the table, and a spring, c^3, for actuating the table D in an upward direction, substantially as described.

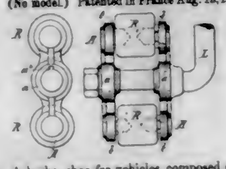
299,620. GAS-REGULATOR. DAVID CHANNERS, New York, N. Y., assignor to William C. Howard, same place. Filed Nov. 12, 1883. (No model.)



Claim.—1. The combination, with the casing 13 14, of the dome-shaped plate 16, having an aperture, 17, at its summit, and surmounted by the tubular extension 18, of the sealing-fluid 19, cup 24, rod 23, passing through said aperture and tubular extension, and the horizontal pivoted lever 22, attached at one end to the rod 23 and carrying at its other the regulating-valve 21, secured thereto by a universal joint, substantially as described.

2. In a gas-regulator, the combination, with the cup 24, rod 23, and horizontal lever 22, of the valve-seat 20 and the flat valve 21, connected to said lever by a universal joint, 25, substantially as described.

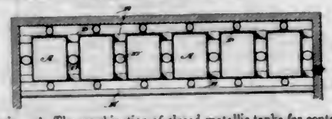
299,621. BRAKE-SHOE. GABRIEL CHANIER, Le Donjon, France. Filed Feb. 21, 1884. (No model.) Patented in France Aug. 13, 1883, No. 156,983.



Claim.—1. A brake-shoe for vehicles composed of one or more rollers and of two cheek-pieces, A, provided with bearings for the reception of the end of a brake-lever and conical bearings for the said rollers, as described, for the purpose specified.

2. A brake-shoe for vehicles, composed of one or more rollers and of two cheek-pieces, having bearings for the reception of the end of a brake-lever, in combination with the pointed screw-bolts B, and suitable tightening and check nuts, substantially as and for the purpose specified.

299,622. REFRIGERATING APPARATUS. WARREN A. CHASE, Boston, Mass. Filed Aug. 17, 1883. (No model.)

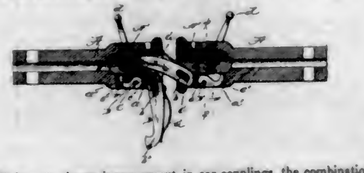


Claim.—1. The combination of closed metallic tanks for containing the refrigerating material, and the air-circulating tubes fixed vertically to the exterior of the walls of the tanks, and having their upper and lower ends open and their upper ends terminated below the tops of the tanks, whereby the condensed moisture is collected upon the interior and exterior of the tubes, substantially as described.

2. The combination of closed metallic tanks for containing the refrigerating material, and the metallic air-circulating tubes fixed vertically upon all sides of the exterior of the tanks and having upper and lower open ends, the open upper ends terminating below the tops of the tanks, whereby the tanks are braced and the condensed moisture collected upon the interior and exterior of the tubes, substantially as described.

3. The combination of a preserving-compartment, a series of closed metallic tanks arranged therein adjacent to but separated from one wall of the preserving-compartment, the metallic air-dividing and condensing partition arranged at a distance from one side of the tanks, the air-circulating pipes fixed vertically to the sides of the tanks between their outer sides and the walls of the preserving-compartment, similar pipes interposed between the tanks, and air-circulating pipes fixed vertically to the sides of the tanks between the latter and the air-dividing and condensing partition, said pipes having upper and lower open ends, and their upper ends terminated below the tops of the tanks, substantially as described.

299,623. CAR-COUPLING. HENRY C. COBBETT, ANDREW B. HOLDEN, and DAVID BOOCHER, Scranton, Pa. Filed Apr. 11, 1884. (No model.)



Claim.—1. As an improvement in car-couplings, the combination of the draw-head, a coupling-hook pivoted therein and provided with the shoulder at its rear end, and a cam-piece arranged at the bottom of the draw-head in rear of the hook and provided with a front shoulder to engage the shoulder upon the hook, substantially as set forth.

2. The combination of the draw-head, the coupling-hook having the pivot-slot in its rear end, and provided with the shoulder in rear of this slot, the transverse pivot-pin passing through the slot, the rock-shaft arranged in rear of the pivot-pin, and a cam-piece secured upon the rock-shaft and provided with a shoulder adapted to engage the shoulder of the coupling-hook, substantially as set forth.

3. The combination of the draw-head having the front chamber or recess and the slotted bottom, the coupling-hook having the slot at its rear end and the shoulder in rear of the slot, a transverse rock-shaft, a cam-piece secured upon this shaft and having the shoulder, and the transverse coupling-pin arranged on a horizontal plane above the cam-piece, substantially as set forth.

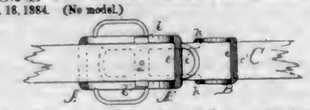
4. The herein-described improved car-coupling, comprising the draw-head having the chamber or recess and the longitudinally-extending slot in the bottom thereof, the transverse pivot-pin extending through this slot, the coupling-pin having the pivot-slot and the shoulder at its rear end and provided with the flat retaining-spring at its top, the rock-shaft arranged in rear of the pivot-pin, the cam-piece secured centrally upon this shaft and having the front shoulder and the projecting rear end, the rear end of the slot in the draw-head being adapted to support this rear end of the cam-piece and corresponding therewith, and a transverse coupling-pin arranged above the cam-piece, substantially as set forth.

5. As an improvement in car-couplings, the combination, with a draw-head having a transverse coupling-pin over which the coupling-hook of an adjoining draw-head is adapted to engage, of a cam-piece secured upon an operating-shaft below this coupling-pin and projecting in rear of the latter to act directly upon the nose of the hook and elevate it above the pin, substantially as set forth.

6. The combination, with a draw-head having a transverse coupling-pin and a coupling-hook pivoted in front of the same, of a cam-piece arranged upon an operating shaft in rear of said hook and under the said coupling-pin, the front portion of the cam being adapted to engage the hook, and the rear end of the cam being adapted to act in relation to the coupling-pin, substantially as and for the purpose set forth.

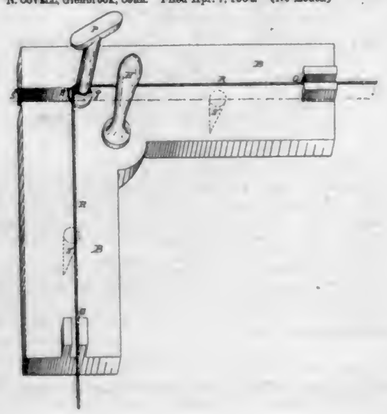
7. The combination, with the draw-head having the recess or chamber and the longitudinally-extending slot provided in the bottom thereof, and having a curved rear end, of a transverse rock-shaft, and a cam-piece secured thereto and having a projecting rear end corresponding to and normally resting upon the rear end of the said slot, substantially as set forth.

299,624. TRACE-BUCKLE. FREDERICK CONWAY, Buffalo, N. Y. Filed Jan. 18, 1884. (No model.)



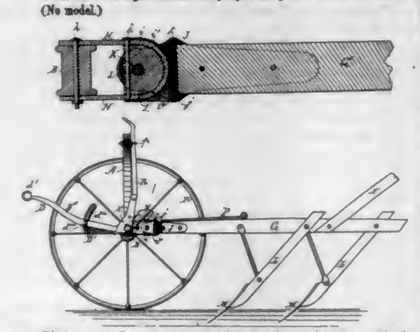
Claim.—The trace-buckle consisting of the two parts A and B, the latter having the curved bottom *d* and tongue-bar *b*, and with its projections b' b' resting on the sides of frame A, all constructed and arranged substantially as specified.

299,625. DEVICE FOR LAYING OUT TENNIS-GROUNDS. HARRY N. COVELL, Glenbrook, Conn. Filed Apr. 7, 1884. (No model.)



Claim.—In an apparatus for laying out lawn-tennis grounds, the combination of the bars B B, connected at their ends to form the corner of a square, the guides G on the ends of each of the bars, the slot or opening S^2, arranged as shown, the laying-off pin P, and the spikes S' on the bottom of the bars, with the said parts constructed to be used in the manner and for the purposes set forth.

299,626. CULTIVATOR. RICHARD CRACRAFT, Berwick, Ill., assignor to the Berwick Agricultural Company, same place. Filed Dec. 14, 1883. (No model.)



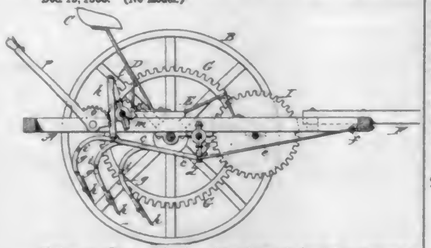
Claim.—1. In a tongueless cultivator, in combination with the arched axle and wheels, and plow-gangs connected to the axle by a joint which permits free movement of the gangs upwardly, but limits their downward movement, a draft-plate constructed in two parts, an angular part, D', rigidly connected with the wheel-spindle plate, and the part D'', hinged to the angular part D' at its rear end and its forward end adjustable vertically with reference to the parts D', substantially as and for the purpose specified.

2. In combination with the arched axle and wheels, vertically-adjustable draft-plate, and plow-gangs hinged to the axle, the blocks I, constructed as described, and adapted to coact with the beam-plate J, having shoulders *j*, substantially as and for the purpose specified.

3. In a tongueless cultivator, in combination with an arched axle and plow-gangs hinged thereto, and provided with devices for suspending the gangs to the axle, a shoe constructed as described and reversibly attached to the axle, substantially as and for the purpose specified.

4. In a cultivator, in combination with the plow-beams and plow-carrying standards, the plate *l*, having hole *l'* and stud *l''*, and the plate *m*, having tubular stud *m'* and bent brace *m''*, substantially as and for the purpose specified.

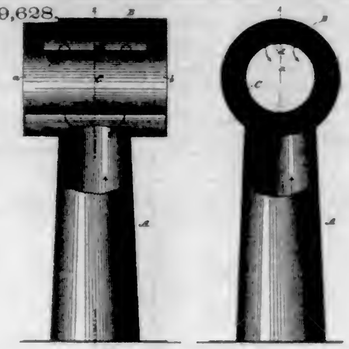
299,627. CULTIVATOR. BURWELL J. CURRY, Huntsville, Ala. Filed Dec. 15, 1883. (No model.)



Claim.—1. The combination of the frame A, having a transverse rod or shaft, *a*, provided with laterally-adjustable pendants *b b*, the brace-rods *a c*, the cultivator-stocks *c c'*, carrying suitable blades, the rock-shaft *m*, having adjustable arms *l l*, and the rods or bars *k k*, for connecting said arms to the cultivator-stocks, whereby the latter may be raised or lowered, substantially as described.

2. The combination of the cultivator-frame A, having transverse shaft *a*, the two-part box pendants *b b*, mounted on said shaft, the brace-rods *a c*, and the adjustable cultivator stocks or beams *c c'*, pivoted in the slotted lower ends of the pendants *b*, and carrying cultivator-blades, substantially as described.

299,628. CHIMNEY-CAP. HENRY S. DICKINSON, Jersey City, N. J. Filed Jan. 28, 1884. (No model.)



Claim.—As a new article of manufacture, a chimney-cap consisting of the cap B, having a transverse tube, C, provided with openings *a*, *b*, and *d*, substantially as and for the purposes set forth.

299,629. TENSION DEVICE FOR SEWING-MACHINES. CHARLES R. EDWARDS, Buffalo, N. Y. Filed Sept. 6, 1883. (No model.)



Claim.—1. In a tension device for sewing-machines, the combination, with a tension-member, of the tension-screw *c*, provided with the stop finger or projection *c'*, and of a stop by means of which the stop-finger is restricted in its movement to one revolution of the tension-screw, as and for the purpose stated.

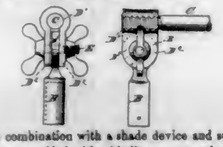
2. In a tension device for sewing-machines, the combination, with a tension-member, of the tension-screw *c*, provided with indicating-figures and the stop finger or projection *c'*, and of a stop by means of which the stop-finger is restricted in its movement within a single revolution of the tension-screw, as and for the purpose stated.

3. In a tension device for sewing-machines, the combination of the plate *f*, having its end at *d* immovably fastened to the supporting-frame *a'*, and the plate *b*, having its forward end touching and bearing on that portion of plate *f* between its fastened end *d* and its inner end, substantially as and for the purpose stated.

4. In a tension device for sewing-machines, the plate *f*, having its end immovably secured to the supporting-frame *a'*, and the plate *b*, having its forward end touching and bearing on the elastic portion of the plate *f*, between its fastening at *d* and its inner end, in combination with the tension-liberating lever *k*, pivoted to frame *a'*, and acting upon plate *b* from beneath, and between the elastic end of plate *f* and its rigid fastening at *d*, substantially as and for the purpose stated.

5. In a tension device for sewing-machines, the tension-plate *b*, in combination with the screw *c*, provided with shoulder *c'*, and the tension-screw *a*, provided with stop-finger *d'*, substantially as and for the purposes set forth.

299,630. CANOPY-HOLDER FOR VEHICLES. HENRY EICHLING, New York, N. Y. Filed July 14, 1883. (No model.)

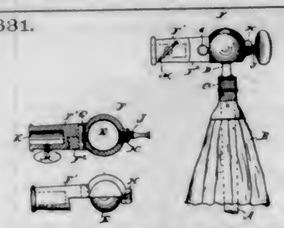


Claim.—In combination with a shade device and support therefor, an adjustable clamp provided with a binding-screw, and adapted to simultaneously and rigidly grasp the said support and the ferrule or similar part of said shade device, for the purpose set forth.

299,631. CANOPY-HOLDER FOR CHILDREN'S CARRIAGES. HENRY EICHLING, New York, N. Y. Filed July 27, 1883. (No model.)

Claim.—1. In a canopy or umbrella holder, the combination, with the socket F, provided with a threaded neck, H, at one end, and a cavity,

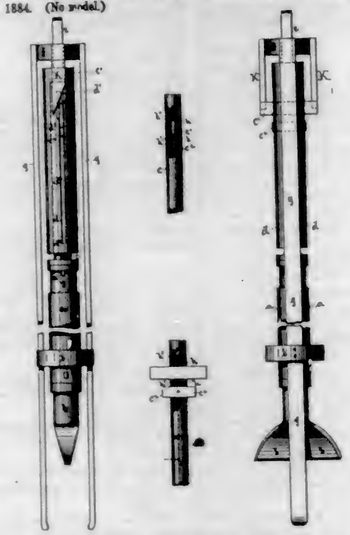
299,631.



K, at the opposite end, of the binding-screws J M and the ball E, connected to the canopy or umbrella, substantially as herein specified.

2. In a canopy or umbrella holder, the combination, with a socket, F, of the ball E, united with a ferrule, C, secured permanently with a canopy or umbrella, and of the binding-screw J, substantially as herein specified.

299,632. BORING-TOOL OR DETENT-TERRIER FOR OIL-WELLS, &c. ALBERT FADER, Kleczany, Galicia, Austria-Hungary. Filed Mar. 5, 1884. (No model.)



Claim.—1. The combination of a guide-frame, *g g*, having fixed rails K K, inclined at the ends, a slotted sleeve, *d*, having a square rod, *e*, a detent-piece, *c*, carrying the boring-tool *a*, the detent-piece *c* having a longer oscillating cross-piece, *c'*, and a fixed lower cross-piece, c^3, the cross-piece *c'* being engaged by the rails K and automatically disengaged by the same during the ascent of the boring-tool, substantially as set forth.

2. The combination of a guide-frame, *g g*, having fixed rails K K, with inclined ends, a sleeve, *d*, having a fixed rod, *e*, and longitudinal guide-slots d^2, with inclined upper ends, *d'*, and seats d^3, a detent-piece, *c*, carrying the boring-tool *a*, and having a transverse longer oscillating cross-piece, *c'*, and a fixed shorter cross-piece, c^3, substantially as and for the purpose set forth.

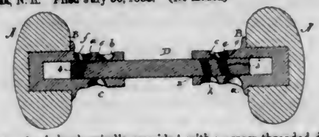
3. In detent-terriers, the combination of the detent-piece *c*, having an oscillating cross-piece, *c'*, with rails K, having inclined ends, said rails being fixed to the head of the guide-frame *g g*, substantially as described.

4. The combination of the boring-tool *a* with the detent-piece *c* by means of a double key, *a' a'*, which facilitates the taking apart of the different parts of the apparatus, substantially as described.

5. In detent-terriers, a guide-frame composed of side rails, a head, and a connecting-ring at the lower part of the side rails, substantially as set forth.

6. In detent-terriers, the detent-piece *c*, having a fixed lower cross-piece, c^3, and an upper longer cross-piece, *c'*, that is centrally pivoted to transverse steel bearings *h h*, secured by wedge-keys *h' h'*, substantially as set forth.

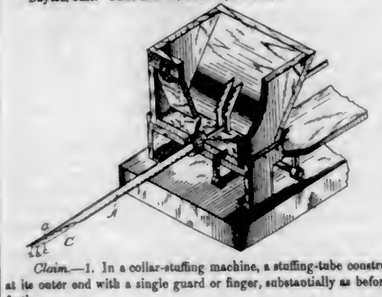
299,633. DOOR-KNOB ATTACHMENT. WILLIAM HENRY FLINN, Nashua, N. H. Filed July 30, 1883. (No model.)



Claim.—1. A knob-spindle provided with a screw-threaded diagonal hole combined with a knob-shank provided with a screw-hole, whereby by a partial rotation of the knob-shank on the knob-spindle the hole in the shank may be placed opposite either of the two ends of the hole made diagonally through the spindle, to enable a screw inserted through the hole in the shank and into one or the other end of the same diagonal hole to alter the effective length of the knob-shank, substantially as described.

2. The spindle having a diagonally-placed threaded hole and a screw combined with a knob-shank having holes at opposite sides thereof and at different distances from its end, as and for the purposes set forth.

299,634. COLLAR-STUFFING MACHINE. WASHINGTON FOGLESONG, Dayton, Ohio. Filed Dec. 15, 1883. (No model.)

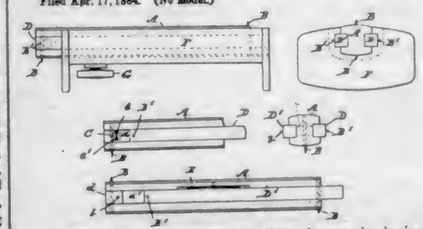


Claim.—1. In a collar-stuffing machine, a stuffing-tube constructed at its outer end with a single guard or finger, substantially as before set forth.

2. In a collar-stuffing machine, a stuffing-rod constructed with a slanting end formed with a series of teeth, substantially as before set forth.

3. The combination, substantially as before set forth, of the stuffing-tube provided with the single guard or finger on the outer end thereof, and the stuffing-rod having a slanting end formed with a series of teeth.

299,635. CARPENTER'S GAGE. GEORGE S. FORREST, Concord, N. H. Filed Apr. 17, 1884. (No model.)



Claim.—1. In a carpenter's gage consisting of a gage-bar having suitable marking-points, and a movable head provided with a thumb-screw for setting the same, the adjustable tongues D D', having marking-brads B' B', for use as a gage, fitted to grooves in said gage-bar and movable head, forming ways upon which said head may move, substantially in the manner and for the purpose set forth.

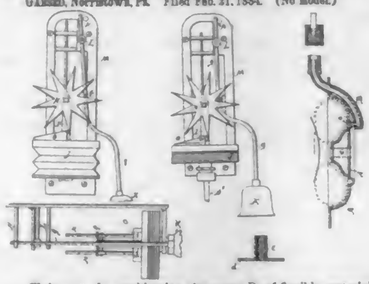
2. In a carpenter's gage consisting of a gage-bar having suitable marking-points, and a movable head provided with a thumb-screw for setting the same, the adjustable tongues D D', having marking-brads B B', for use as a gage, fitted to grooves in said gage-bar and movable head, forming ways upon which said head may move, and suitable springs, E, secured within the grooves in said head and bearing against said tongues D D', substantially as and for the purpose set forth.

3. In a carpenter's gage consisting of a gage-bar having suitable marking-points, and a movable head provided with a thumb-screw for setting the same, the adjustable tongues D D', having marking-brads

B B', for use as a gage, fitted to grooves in said gage-bar and movable head, forming ways upon which said head may move, and suitable springs, E, fastened upon the tongues D D', and bearing against one side of the grooves in the movable head, substantially as described, and for the purpose specified.

4. In a carpenter's gage, the following combinations: the adjustable tongues D D' and tongue *d*, having marking-brads B' *b*, with the gage-bar A, having grooves *a a'*, the adjustable tongues D D'' and tongue *d*, having marking-brads B' *b*, with the movable head F, having suitable grooves for their reception, the spring E, with the tongues D D', gage-bar A, and movable head F, and the fastening-pin C, having flattened side *c* and slot *c'*, with the marking-brads, all constructed and operating substantially in the manner and for the purpose specified.

299,636. PNEUMATIC BELL-RINGING APPARATUS. ROBERT P. GARSED, Norristown, Pa. Filed Feb. 21, 1884. (No model.)



Claim.—1. In combination, the pump D, of flexible material, with central walled opening, and supported by metal holder A, having a peripheral raise on its outside bottom and a hollow central upwardly-extending form on its inside adapted to extend within the pump D, and the metal disk *d*, suited for being held within the hollow opening, and forming a guide for the plunger-stem, and said plunger-stem, as and for the purposes set forth.

2. In combination, the pump D, of flexible material, with central walled opening, and supported by the metal holder A, having a peripheral raise on its outside bottom, with hole for the passage of air, and a tube with a connecting-hole on its face, and with a coupling device on its end, and so shaped as to pass through a hole in pump-holder flange around pump-holder, and form a connecting device for an air-conveying pipe with pump, as and for the purposes set forth.

3. In combination with a bell, a connected pump, pipe, and bellows, and a star supported upon the latter, which upon one motion of the bellows remains rigid and actuates the bell and upon the other motion revolves, whereby it is again placed in position to actuate the bell, substantially as set forth.

4. A free vibrating bell actuated through a pump, pipe, and bellows, and a supported star carried upon the latter, and whose rigidity is maintained in one direction by a shouldered head attached to the bellows, in combination with a supported shaft for such star, substantially as set forth.

5. In combination, a suspended vibrating bell, a pump, connected pipe, inflatable bellows, and an inclined sliding arm supported by said bellows, and adapted by its movement to actuate the bell, a vertical-moving guide pin or standard connected with bellows, and guiding the same in its motions as well as supporting sliding arm, and the bracket M, with guide-piece attached thereto, substantially as and for the purposes set forth.

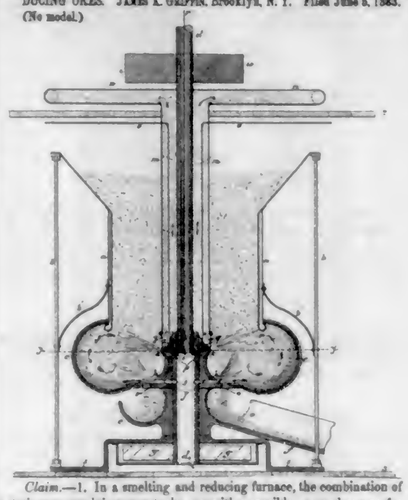
6. In combination, the pump-supporting bracket C, adapted by reversal of position of its parts for ceiling or wall attachment, the air-pump, with plunger and tubular rod attached thereto, the handle, with cord passing through the plunger-rod, an air-conveying pipe attached to pump, and an air-operated bell, substantially as and for the purposes set forth.

7. In combination, a pump-supporting bracket adapted by reversal of its parts for ceiling or wall attachment, an operative air-pump, connected pipe, and an actuated bell, substantially as and for the purposes set forth.

8. In combination, a supported air-pump, an actuating-plunger having a tubular rod passing through the pump, a handle with attached cord passing through the rod, an air-conveying pipe attached to pump, and an actuated bell substantially as and for the purposes set forth.

9. In combination, a pump-supporting bracket with vertical and horizontal arm, an air-pump with tubular plunger-rod passing through its center, a handle with cord passing through plunger-rod, a spring surrounding said rod and supported upon one of the arms of the bracket, an air-conveying pipe, and an operative bell, substantially as and for the purposes set forth.

299,637. PROCESS OF AND FURNACE FOR SMELTING AND REDUCING ORES. JAMES K. GRIFFIN, Brooklyn, N. Y. Filed June 5, 1883. (No model.)



Claim.—1. In a smelting and reducing furnace, the combination of a stationary supplying-receptacle, *a a*, with a crucible, *c c*, and means for rotating the same, the receptacle and crucible arranged in relation to each other, as shown and described, whereby one vessel is practically formed for containing the ore to be reduced, while a division-line of attrition is established between the stationary receptacle and the crucible, as and for the purpose set forth.

2. In a smelting-furnace, the stationary supplying-receptacle *a a* and rotating crucible *c c*, in combination with the discharge-pipe *m m*, substantially as described.

3. In a smelting-furnace, the stationary supplying-receptacle *a a* and rotating crucible *c c*, in combination with discharge-pipe *m m* and rotating exhaust-pipes *n n*, substantially as described.

4. In a smelting-furnace, the combination of stationary supplying-receptacle *a a*, rotating crucible *c c*, with blower *g*, vertical tubular axle *d*, tuyeres *h h*, and burner *k k*, substantially as described.

5. In a smelting-furnace, the combination of stationary supplying-receptacle *a a*, rotating crucible *a a*, with blower *g*, vertical tubular axle *d*, and tuyeres *h h*, substantially as described.

6. In a smelting-furnace, the combination of stationary supplying-receptacle *a a*, rotating crucible *c c*, with blower *g*, vertical tubular axle *d*, and burner *k k*, substantially as described.

7. In a smelting and reducing furnace such as described, the combination of the crucible *c* with the discharge-pipe *m m*, provided with the exhaust-pipes *n n*, substantially as set forth.

8. In a smelting and reducing furnace, the combination of the rotating crucible and stationary hopper with the central burner, *k k*, arranged to extend up within the crucible to a height approximating the line of attrition between the stationary receptacle and the crucible, substantially as and for the purpose set forth.

9. In a smelting and reducing furnace, the combination of the rotating crucible *c* and stationary receptacle with the central burner, *k k*, arranged to extend up within the crucible to a height approximating the line of attrition between the stationary receptacle and the crucible, the tubular axle *d*, and blower *g* for supplying air thereto, substantially as set forth.

10. In a smelting-furnace, the following elements in combination: stationary receptacle *a a*, discharge-pipe *m m*, rotating crucible *c c*, and burner *k k*, arranged and operated substantially as described.

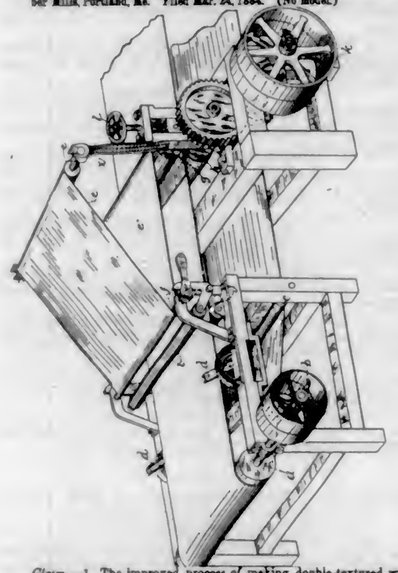
11. The process of reducing and smelting ores which consists in rotating one mass or division thereof, while being held and smelted in the crucible *c c*, under the weight of and against another stationary mass or division thereof, held in the stationary supplying-receptacle *a a* while the said ores are under the influence of heat generated on the line of attrition between the stationary and rotating masses or divisions of ore, and forced between and among the particles thereof by the combustion of coal or other fuel, substantially as described.

12. The process of smelting and reducing ores which consists in rotating one mass or division thereof, while being held and smelted in the crucible *c c*, under the weight of and against another stationary mass or division thereof, held in the stationary supplying receptacle *a a* while the said ores are under the influence of heat generated on the line of attrition between the said masses or divisions of ore, and forced between and among the particles thereof, by the combustion of coal or other fuel, and at the same time separating and carrying off the waste materials upwardly by the pneumatic force described, while the metal is being separated and forced outwardly and downward within the crucible *c c* by centrifugal force, substantially as described.

13. The method herein described of separating the impurities from the molten metal, which consists in subjecting the molten mass at its point of exit from the crucible to a blast of air projected within the crucible and across the line of discharge, substantially as described.

14. The process of smelting and reducing ores which consists in rotating one mass or division thereof, while being held and smelted in the crucible *c c*, under the weight of and against another stationary mass or division thereof, held in the stationary supplying-receptacle *a a* while the said ores are under the influence of heat generated on the line of attrition between the said masses or divisions of ores, and forced between and among the particles thereof, by the combustion of coal or other fuel, and at the same time separating and carrying off the waste material upwardly by the pneumatic force developed in the furnace by combustion while the metal is being separated and forced outwardly and downward within the crucible *c c* by centrifugal force, when by its gravity it is pressed back to and through the discharge-ports *o o*, under and against a current of air from the tuyeres *h h*, over the said ports within the crucible *c c*, in the manner substantially as described.

299,638. PROCESS OF MANUFACTURING GOSSAMER WATER-PROOF CLOTH. FRANK E. HALL, Boston, Mass., assignor to the Hall Rubber Mills, Portland, Me. Filed Mar. 24, 1884. (No model.)

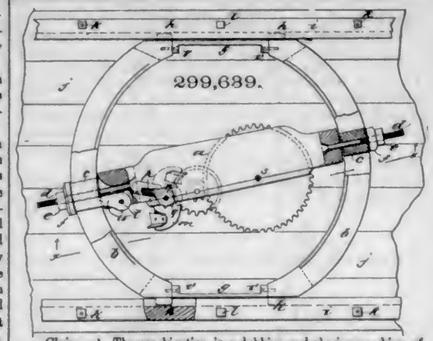


Claim.—1. The improved process of making double-textured water-proof cloth by uniting a fabric designed as the outer part of the cloth with that intended for the lining by first covering one or both with an adhesive and water-proof substance, and then uniting the two fabrics while one is in the form of an endless belt, substantially as above described.

2. The improved process of making water-proof cloth of two fabrics by coating one of said fabrics with an adhesive and water-proof substance, the said fabric for that purpose being made in the form of an endless belt, to which the other fabric is caused to adhere, the two for that purpose passing between rolls, one of which is heated, and the other is a rubber covered or cushioned roll, and afterward cutting the belt so as to form a strip, substantially as above described.

3. The improved process of making a double-textured water-proof fabric by uniting two pieces of cloth with an adhesive substance, one of said pieces being made in the form of an endless belt, while the other is rolled thereon, and afterward cutting the belt so as to form a strip, and curing the double-textured fabric thus formed in the sun, substantially as described.

299,639. MACHINE FOR DRESSING SHIPS' SIDES. OWEN HAMILTON, St. Johns, New Brunswick, Canada. Filed Oct. 20, 1883. (No model.)



Claim.—1. The combination, in a dubbing and planing machine, of a beam, *a*, having a cutter and driving-gear mounted on it, curved supports *b*, in which said beam is adjustably mounted, and guides *i*, attached to the ship's side and having the supports *b* arranged to be shifted along them, substantially as described.

2. The beam *a*, having the cutter and driving-gear mounted on it, in combination with curved supports *b*, arranged in the guides *i*, the beam *a* being connected to the supports *b* by the blocks *c* and bolts *d*, the blocks being adjustable along the supports, and the bolts being arranged to clamp the beam fast to the supports, substantially as described.

3. The beam *a*, having the cutter and driving-gear mounted on it, in combination with the supports *b*, arranged in guides *i*, the beam being connected to supports *b* by clamping and pivot bolts *d*, whereon the beam is adjustable to adjust the cutter to the surface of the ship's side, substantially as described.

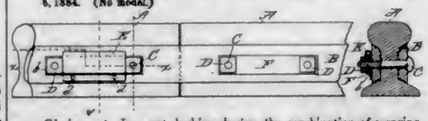
4. The beam *a*, having the cutter and driving-gear mounted on it, in combination with the supports *b*, arranged in the guides *i*, and being pivoted on the connecting-bolts *d*, and having an adjusting-screw, *l*, to set it on said pivot-bolts, substantially as described.

5. The beam *a*, having the cutter and driving-gear mounted on it, in combination with the supports *b*, arranged in the guides *i*, the cutter *m* being adjustable to and from the beam by an extensible arbor, to adjust it to the work and to regulate the depth of the cutting, substantially as described.

6. The beam *a*, having the cutter and driving-gear mounted on it, in combination with the supports *b* and guides *i*, and being adjustable on its pivot-supports *d*, and the cutter being arranged on an extensible arbor, substantially as described.

7. The combination, with guides *i*, attached to the sides of the ship by bolts *k*, and temper-screws *l*, for springing them to the curves of the ship, of the beam *a*, having a cutter and driving-gear mounted on it, and the supports *b* for said beam, said supports *b* being connected by bars *g*, and having lugs *h* arranged in the grooves of said guides *i*, substantially as described.

299,640. NUT-LOCK. JOHN W. HAWK, Huntsville, Ala. Filed Mar. 6, 1884. (No model.)



Claim.—1. In a nut-locking device, the combination of a spring locking-plate, E, supporting and connecting strap F, washers *b b*, nuts D D, bolts C C, fish-plates B, and rails A A, substantially as shown and described.

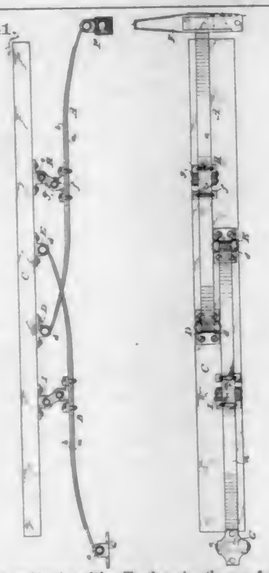
2. A nut-locking device consisting of a locking-plate, E, provided with lugs *d d* and lip *c*, a supporting-strap, F, for holding said locking-plate in place, and washers *b b*, for affording a space for the insertion of said locking-plate, substantially as shown and described.

3. A spring nut-locking plate, E, formed from one piece of metal so bent as to form a lip, *c*, and spring *e*, and provided with lugs *d d*, or equivalents, for the purpose described.

299,641. VEHICLE-SPRING. JACOB HERBRAND, Fremont, Ohio; E. Loudenslager, Administrator of said Herbrand, deceased. Filed June 16, 1883. (No model.)

Claim.—1. The combination of the sills, the axles, the springs hinged at their ends directly to the sills and the axles, and the hinged hangers for supporting the springs about at their middle, substantially as described.

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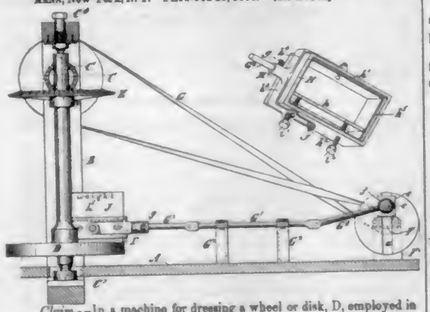


2. The combination of the sills, the axles, the re-enforced overlapping springs hinged to the sills and the axles, and the hinged hangers, which hold together the leaves of the springs and support them, substantially as described.

3. The spring-supporting hanger consisting of the bracket, the clip, and the links hinged to the bracket and the clip, substantially as set forth.

4. The spring-supporting hanger herein described, composed of the bracket, the sleeve-bearing therein, the clip, the sleeve-bearing therein, the links with hollow bearing-studs, and the bolts for holding the links in position, substantially as set forth.

299,642. MACHINE FOR DRESSING THE FACES OF WHEELS FOR GRINDING DIAMONDS AND OTHER ARTICLES. ISAAC HERMANN, New York, N. Y. Filed Oct. 25, 1883. (No model.)

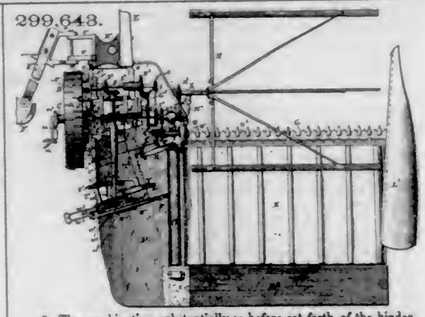


Claim.—In a machine for dressing a wheel or disk, D, employed in grinding diamonds and other articles, the combination of the frame B, the bearings C^3 C^4, one of which is adjustable, the gear-wheel E on the spindle of the wheel or disk D, the wheel C', the shaft C, the pulley C^2, the band or belt G, the pulley F^2, the shaft F, the pulleys F^3 F^4, &c., arranged on said shaft and adapted to receive a belt, whereby motion is transmitted to the said shaft, the head F^1, the wrist J, adjustably connected to the head F^1, the holder H, for the material used to dress the wheel or disk D, and the pitman-rod G^4, connected to the wrist d and adapted to impart a reciprocating motion to the holder H.

299,643. PLATFORM SELF-BINDER. PLINY F. HODGES, Chicago, Ill. Filed June 13, 1883. (No model.)

Claim.—1. The combination, substantially as before set forth, of a butt-hastening rake and a packer, both arranged as described, so as to move in vertical planes oblique to the line of the cutting apparatus and operating mechanism.

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2. The combination, substantially as before set forth, of the binder-table, the oblique butt-hastening rake suspended above it, and the oblique packer.

3. The combination, substantially as before set forth, of the endwise butter and the independent butt-hastening rake.

4. The combination, substantially as before set forth, of the endwise butter, the independent butt-hastening rake, and the packer.

5. The combination, substantially as before set forth, of the endwise butter, the binder-table, the oblique butt-hastening rake, and the oblique packer.

6. The combination, substantially as before set forth, of the endwise adjustable binder, the fixed oblique butt-board, and the fixed oblique butt-hastening rake.

7. The combination, substantially as before set forth, of the endwise adjustable binder, the packer connected to and adapted to move with the binder in adjusting the same endwise, the fixed butt-board, and the fixed butt-hastening rake.

8. The combination, substantially as before set forth, of the adjustable binder-table, the oblique packer connected to and adapted to move therewith, the fixed oblique butt-hastening rake, and the fixed oblique butt-board.

9. The combination, substantially as before set forth, of the binder-table, the oblique butt-hastening rake suspended above the same, the oblique packers, and the oblique binding-arm.

10. The combination, substantially as before set forth, of the main binder-shaft, the oblique counter-shaft, and the binding-arm connected with and moved by said oblique counter-shaft.

11. The combination, substantially as before set forth, of a binding-arm, the packer, and a rotating segmental cut-off which checks the flow of the grain to the packer.

12. The combination, substantially as before set forth, of a binding-arm, the independent cut-off for checking the flow of the grain to the packer, and a cord-tucking device attached to said cut-off.

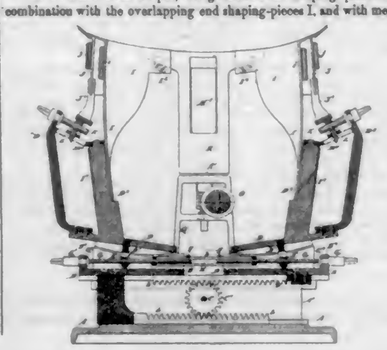
13. The combination, substantially as before set forth, of the platform-carrier, the endwise butter, the roller for stripping the grain from said platform-carrier, the butt-hastening rake, and the packers.

299,644. APPARATUS FOR SHAPING HAT-BRIMS. LOREN H. HOTT, Danbury, Conn. Filed Oct. 25, 1883. (No model.)

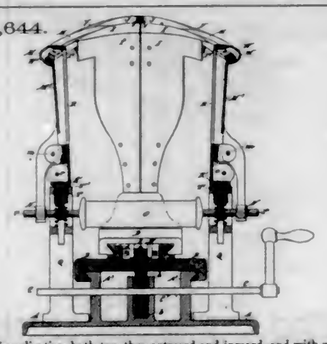
Brief.—Improvement on Patent No. 277,035, dated May 8, 1883.

Claim.—1. In a hat-brim-shaping machine, the single gear-wheel C', in combination with the racks b and slides B, carrying the end shaping parts, arranged to serve as herein specified.

2. In a hat-brim shaper, the graduated end shaping-pieces J, in combination with the overlapping end shaping-pieces I, and with means,



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as b C', for adjusting both together outward and inward, and with means J' K, for adjusting the breadth of the brim, and springs L, pressing the parts J I in contact, all substantially as herein specified.

3. In a hat-brim shaper, the combination of end shaping parts, divided vertically, with means for engaging the same with the side shaping parts, and with provisions for increasing and diminishing the width of the space for the hat-body, substantially as and for the purposes herein specified.

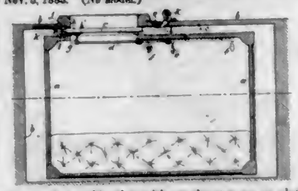
4. In a hat-brim shaper, the top slides, D, carrying the end shaping-surfaces, in combination with the curved supporting-ways B', and means, as G, for traversing the one relatively to the other, so as to change the scope without changing the position of the shaping parts, substantially as herein specified.

5. The adjustable brackets Q, carrying the side shaping-pieces R, in combination with the pinching-screws U, engaging in the slots q', arranged to serve relatively to each other and to suitable end shaping-pieces J J, substantially as specified.

6. The movable side shaping-pieces M, carried on levers M', in combination with the screws P, and means O, for connecting and turning them, arranged to adjust the hat-brim-shaping surfaces on the two sides by a single motion, substantially as herein specified.

7. In a hat-brim-shaping machine, the screws P, connected together as shown, in combination with the swiveling-nuts N, levers M', and side shaping-pieces M, and inner side shaping-pieces R, arranged to serve as herein specified.

299,645. ELEVATOR. MERRILL N. HUTCHINSON, New York, N. Y. Filed Nov. 5, 1883. (No model.)



Claim.—1. In combination with an elevator car or platform and the door of the passage leading thereto, the hooks i and j, and the projection k, whereby the said door is held closed, excepting when the elevator-car is in proper position for it to be opened, substantially as set forth.

2. In combination with the elevator-car and the door of the passage leading thereto, the flanges h h', and the finger g, arranged to engage therewith as the elevator is passing the landing, substantially as and for the purpose set forth.

3. In combination, the elevator car or platform, the door of the passage leading thereto, the rope or other device whereby the motion of the elevator is controlled, and mechanism, substantially as described, whereby said rope or other device is locked when the door is open, as and for the purpose set forth.

4. In combination, the elevator car or platform, the door of the passage leading thereto, the handle e, and the rod d, connected therewith, and provided with mechanism, substantially as described, for engaging with the door when the elevator is in proper position for the same to be opened, as set forth.

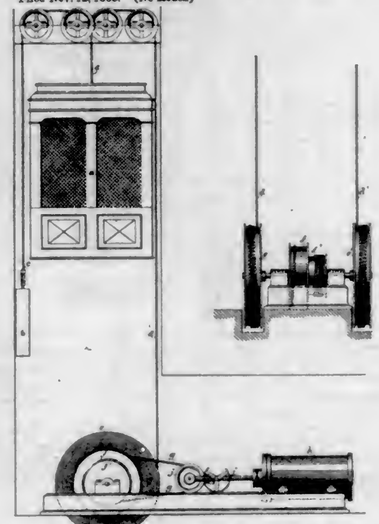
5. In combination, the elevator-car, the door of the passage leading thereto, the hooks i and j, the projection k, and the finger g, engaging the said door when the elevator is opposite the landing, substantially as described.

6. In combination, the elevator-car, the door of the passage leading thereto, the finger g, engaging the said door when the elevator is opposite the landing, and a locking mechanism, substantially as described, for arresting the operation of the elevator-rope when the door is open.

7. In combination, the elevator car or platform, the door of the passage leading thereto, the hooks i and j, and the projection k, whereby the door is automatically secured when the elevator-car is passing between landings, and unfastened when opposite landings, and the locking mechanism, substantially as described, whereby the starting of the elevator-car is prevented when the said door is open.

8. In combination, the elevator car or platform, the door of the passage leading thereto, the hooks i and j, the finger g, engaging with the door, and the locking device k', substantially as and for the purpose set forth.

299,646. ELEVATOR. MERRILL N. HUTCHINSON, New York, N. Y. Filed Nov. 12, 1883. (No model.)



Claim.—1. The combination, substantially as described, of the differential windlass and hoisting-drum interposed between the elevator car or platform and the motor, as and for the purpose set forth.

2. In combination, the elevator car or platform a, the hoisting-rope d, the differential windlass $f f'$, the rope g and pulley j, and cylinder h and piston thereof, substantially as described.

3. In a hoisting apparatus, the combination, with the piston-rod of the motor, of the rope g and the differential windlass, the said rope being attached to said windlass, substantially as described, whereby the line of pull on said piston-rod is preserved constant, as and for the purpose set forth.

4. In combination with the differential windlass $f f'$, the two hoisting-drums e e', each connected by a rope or chain with an elevator car or platform, substantially as and for the purpose set forth.

5. In a hoisting apparatus, the combination of the differential windlass, the rope g, connected with the motor, substantially as described, and the rope c c', and the pulley l, connected with the counter-weight, as and for the purpose set forth.

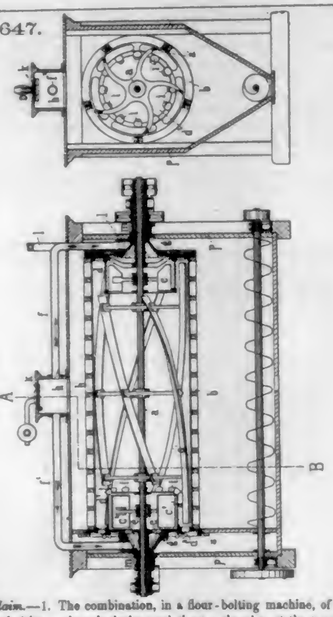
6. In combination with the hoisting-drum of an elevator and the motor whereby the same is operated, the counter-weight and ropes connected with said hoisting-drum and suspending said counter-weight, whereby the pull of said counter-weight assists said motor by exerting its force upon the said drum, substantially as set forth.

7. In combination with the double-acting motor and the elevator cars or platforms a a', to be operated therefrom, the differential windlass $f f'$, the rope g g' g'' g''', and the hoisting-drum e, substantially as and for the purpose set forth.

8. In combination with the hoisting-rope of an elevator car or platform, the pulley j, attached thereto, and combined with a differential windlass connected with the motor A, substantially as and for the purpose set forth.

299,647. FLOUR-BOLTING MACHINE. GEORG CARL FRIEDRICH PAUL JANSSEN, Hamburg, Germany. Filed Jan. 18, 1884. (No model.)

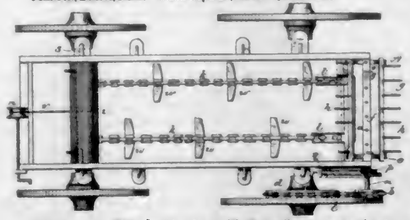
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Claim.—1. The combination, in a flour-bolting machine, of a revolving bolting-reel, an inclosing reel-chest, a chamber at the top of the reel-chest, interior fan-casings attached to the head of the reel, fans secured to the stirrer-shaft, fixed funnels at both ends of the reel, and air-pipes connecting the same with the chamber at the top of the reel-chest, substantially as described.

2. In a machine for bolting flour, the combination of a reel-chest, *p*, a revolving reel, *b*, having fan-casings *d d'* attached to its heads, fans *c c'*, attached to the stirrer-shaft *a*, funnels *g g'*, connecting air-pipes *f f'*, a chamber, *h*, located in the top of the reel-chest, and a valve, *k*, substantially as described.

299,648. MANURE PULVERIZER AND DISTRIBUTER. PETER JOHNSON, Dassel, Minn. Filed Sept. 10, 1883. (No model.)

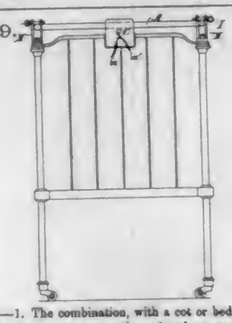


Claim.—1. The combination, with the ordinary wagon having a fixed or closed bottom, of the shaft *a*, journaled at the rear end of said wagon, heads *e*, and bars *f*, the latter having the pins *h* and knives *g* thereon, the eccentrics *p*, and spring-pressed pawls *o* on said shaft, the scraper *i*, chains *k*, connected therewith, the shaft *m*, having chain-wheels *l* thereon, and also the ratchet-wheel *n*, to be operated by pawls *o*, and the gearing, substantially as shown, for rotating the shaft *a*, and consequently the shaft *m*, all operating as set forth.

2. In a manure-distributing wagon, substantially as described, the distributing-wheel A at the rear end of the wagon-body, and having cutters or knives *g* and pins *h* thereon, for the purposes specified.

3. The combination, in a manure-distributer constructed as shown and described, of the scraper *i*, chains *k*, connected to said scraper, and the auxiliary plates *w* on said chain, for the purpose set forth.

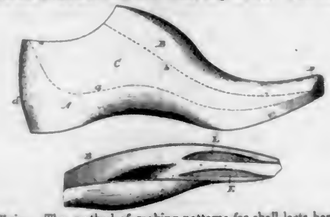
299,649. ELECTRIC ALARM APPLIED TO COTS, &c. WILLIAM F. KEEP and WALTER H. KEEP, 11 Hazellville Road, Hornsey Lane, County of Middlesex, England. Filed Feb. 9, 1884. (No model.) Patented in England Sept. 5, 1883, No. 4,265.



Claim.—1. The combination, with a cot or bedstead, of a movable frame attached to the upper part thereof, and an apparatus, substantially as herein described, for making and breaking the electric circuit of an alarm or bell, substantially as herein set forth.

2. The combination, with a bedstead or cot and a movable frame hinged to the upper part thereof at one side or end, of the circuit-closing device of an electric alarm interposed between the cot or bedstead and said movable frame on the side or end opposite to that at which they are hinged together, substantially as herein described.

299,650. METHOD OF MAKING PATTERNS FOR METAL LASTS. EDWARD S. KINGSTON, Utica, N. Y. Filed Aug. 18, 1883. (No model.)



Claim.—The method of making patterns for shell lasts herein described, which consists in cutting from a solid last the transverse section *C*, and hollowing out the separated sections of said lasts, so as to leave flaring sides, in order that the shell-castings may be made without the use of cores, substantially as set forth.

299,651. LEVELING ATTACHMENT FOR TABLES, &c. GUSTAV LADEMIN, Stettin, Prussia, Germany. Filed Apr. 12, 1884. (No model.)



Claim.—The combination of the leg A of a table or other piece of furniture, a socket, *a*, attached to the leg, a slide-bolt, *b*, guided vertically in said socket and provided with serrations at one side, and a horizontally-guided and spring-actuated pin, *f*, having a toothed head, *e*, interlocking with the serrated bolt, substantially as set forth.

299,652. SIGN. JOHN C. LAFE, Big Prairie, Ohio. Filed July 24, 1883. (No model.)

Brief.—In lieu of the card, the body of the sign may be painted with ordinary or illuminated paint, so as to show through the stenciled letter-plate.

Claim.—1. The combination, with the main strip or backing of the sign, of the top plate presenting the smooth top surface and having its rear edge turned down to form a securing-flange, and its front edge projecting from the front edge of the backing to form a projecting cap and turned down and under to provide a strengthening-edge, substantially as and for the purpose set forth.

2. The combination of the main strip or backing, a face-plate independently removable from the same, and a top plate projecting from the front edge of the strip to form a protecting cap or flange and removably connected to the face-plate, substantially as and for the purpose set forth.

3. The combination of the longitudinal main strip or backing, the top plate secured thereto and projecting forwardly to form the top cap

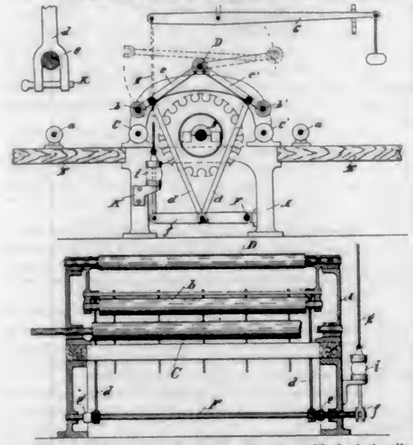
299,652.



or flange, and having its extreme front edge bent down and under to form a ⊃-shaped edge, and the face-plate secured to the face of the strip and having a forwardly-projecting top flange arranged at right angles to its main portion, and having its edge received and retained by the ⊃-shaped edge, substantially as and for the purpose set forth.

4. The combination of the main strip or backing, the top plate having the smooth top surface, the downwardly-bent rear edge by which it is secured to the rear face of the strip, and the front projecting cap or flange having the downwardly and under bent extreme edge in ⊃ shape, and the front plate secured to the face of the main strip and having the top forward flange received into the down and under bent edge of the top plate, and having the letters forming the sign cut in its main portion to expose a color-backing in rear of the face-plate, substantially as and for the purpose set forth.

299,653. PRESSER-ROLL FOR GANG-EDGERS. PHILANDER P. LANE and JAMES B. STANWOOD, Cincinnati, Ohio, assignors to the Lane & Bodley Company, same place. Filed Apr. 11, 1884. (No model.)



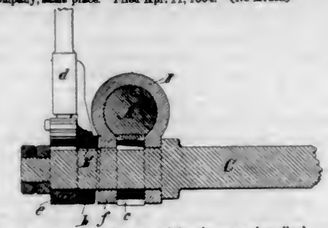
Claim.—1. In a gang-edger, the combination, with the bed-rolls, of upper feed-rolls mounted in swinging arms over the saws, links connected to and supporting said arms, a crank-shaft beneath the saws having cranks, to which said links are connected, and operative mechanism, substantially as described, whereby the links may be raised, as set forth.

2. The combination, with the bed of a gang-edger, of a bearing-roll journaled in swinging arms, link-supports for said arms, a crank-shaft having cranks, with which said links are connected by a loose adjustment, and operative mechanism for said crank-shaft, substantially as described.

3. The combination, with the bed of a gang-edger, of bearing-rolls mounted in swinging arms above said bed, links connected to said arms, a crank-shaft having cranks, to which said links are connected, an operating-crank for the crank-shaft, and a draw-rod and lever connected to said operating-crank, substantially as described.

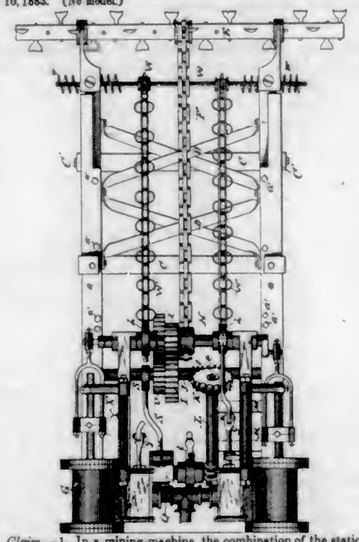
4. The combination, with bearing-rolls journaled in swinging arms supported by links, of the crank-shaft and cranks to which said links are connected, the operating-crank, draw-rod and lever, and the spring placed between the draw-rod and lever to take up the shock, all substantially as set forth.

299,654. LOCKING DEVICE FOR RATCHETS. PHILANDER P. LANE and JAMES B. STANWOOD, Cincinnati, Ohio, assignors to the Lane & Bodley Company, same place. Filed Apr. 11, 1884. (No model.)



Claim.—In ratchet devices of the character described, a rotating collar having its bearing-surfaces and its abutment inclined to the plane of its rotation, substantially as set forth.

299,655. MINING-MACHINE. BENJAMIN A. LEGG, Columbus, Ohio, assignor to the Lechner Manufacturing Company, same place. Filed Oct. 10, 1883. (No model.)



Claim.—1. In a mining-machine, the combination of the stationary bed-frame having parallel side pieces, the sliding frame having its side bars fitted to slide in the side pieces of the bed-frame and provided with inwardly-projecting ribs, the cutter-bar and cutters mounted across the front end of the sliding frame, means connecting the cutter-bar with the engine-shaft for driving the cutters, cogged racks projecting inwardly from the upper edges of the side pieces of the bed-frame, a horizontal shaft provided with pinions upon its outer ends meshing with the cogged racks, bearings for the horizontal shaft attached to the inwardly-projecting ribs of the sliding frame, an engine-shaft, and means connecting the engine-shaft with the horizontal shaft for advancing the cutters into the coal, substantially as set forth.

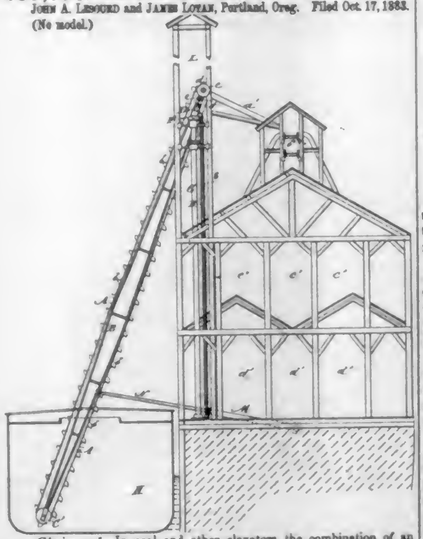
2. In a mining-machine, the combination of a stationary bed-frame having parallel side pieces, the sliding bed-frame having its side bars fitted to slide in the side pieces of the bed-frame, cogged racks projecting inwardly from the side pieces, a horizontal shaft supported at its ends in bearings which are attached to and project inwardly from the side bars of the sliding frame, the pinions mounted on the ends of the horizontal bars between its bearings and the side pieces of the main frame, and openings in the side pieces of the sliding frame to receive the pinions, substantially as set forth.

3. In a mining-machine, the combination of a stationary bed-frame having parallel side pieces, the sliding frame having its side bars fitted to slide in the side pieces of the bed-frame, the cutter-bar mounted across the front ends of the sliding frame, means connecting the cutter-bar with the engine-shaft for driving the cutters, cogged racks projecting inwardly from the side pieces, a horizontal shaft supported between the side bars of the sliding frame and in the same horizontal plane, or thereabout, pinions mounted on the ends of the horizontal shaft, a continuously-rotating cogged gear mounted loosely on the horizontal shaft, and a clutch adapted to connect the continuously-rotating gear with the horizontal shaft, substantially as set forth.

4. In a mining-machine, the combination of a stationary bed-frame having parallel side pieces, the sliding frame having its side bars fitted to slide in the side pieces of the bed-frame, means connecting the cutter-bar with the engine-shaft for driving the cutters, the cutter-bar mounted across the front end of the sliding frame, cogged racks projecting inwardly from the side pieces, a horizontal shaft supported between the side bars of the sliding frame, two wheels mounted loosely on the horizontal shaft and rotating in opposite directions, and clutches adapted to connect the oppositely-rotating wheels with the horizontal shaft alternately, substantially as set forth.

5. In a mining-machine, the combination of a stationary bed-frame, a sliding frame carrying a cutter-bar, and having its side bars fitted to slide on the bed-frame, cogged racks attached to the bed-frame, a horizontal shaft mounted on the sliding frame and carrying pinions which mesh with the cogged racks, two rotating wheels loosely mounted on the pinion-shaft, devices connecting one of the loosely-mounted wheels with the engine-shaft and adapted to advance the cutter-bar slowly into the coal, and devices connecting the other loosely-mounted wheel with the engine-shaft for withdrawing the cutter-bar from the coal at a higher rate of speed, substantially as set forth.

299,656. ELEVATOR FOR COAL AND OTHER SUBSTANCES. JOHN A. LEGOURD and JAMES LOVAN, Portland, Oreg. Filed Oct. 17, 1883. (No model.)



Claim.—1. In coal and other elevators, the combination of an endless chain of buckets, a laterally-swinging frame carrying the same, and one or more raising and lowering rams or jacks, on which said swinging frame is mounted, essentially as and for the purposes herein set forth.

2. In coal and other elevators, the combination, with one or more raising and lowering rams or jacks, of an endless chain of buckets, a laterally-swinging frame carrying said chain, and one or more engines, with mechanism for operating the chain, all mounted on or carried by the raising and lowering ram or rams, substantially as herein described.

3. The combination of one or more raising and lowering hydraulic jacks or rams, one or more hydraulic engines carried by said jacks or rams, and a laterally adjustable or swinging endless chain and bucket elevator arranged for operation by said engine or engines, substantially as specified.

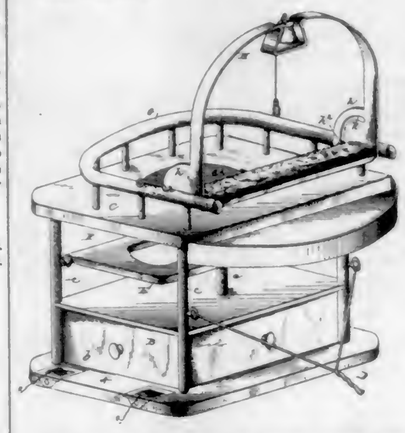
4. The combination of the hydraulic jacks or rams G G, the intermediately-arranged endless chain A of buckets, with its drums C C′ and frame B, the cross-shaft F, and the engines D D, with mechanism for driving the upper drum of the chain, essentially as described.

5. The combination, with the laterally adjustable or swinging frame B and endless chain A of buckets, with its drums C C′, of the metallic frames E E′, the engines D D, carried by the one of said frames, and the rock-shaft F, on or by which the whole are carried, substantially as specified.

6. The telescoping inlet and outlet pipes R S and their flexible connections *r s*, in combination with the raising and lowering jacks or rams G G and the engines D D, and laterally adjustable or swinging endless chain and bucket elevator carried by said jacks or rams, essentially as described.

7. The maneuvering-ram M N, in combination with the laterally-swinging endless chain and bucket elevator, and one or more raising and lowering rams, on which said elevator is mounted, substantially as specified.

299,657. BABY-WALKER. SOLOMON LEVY, Ware, Mass. Filed Mar. 3, 1884. (No model.)



Claim.—1. The combination, with a suitable base or platform mounted upon rollers, of a stand supported thereon and having a central opening and a box having doors, the roof or top of which forms a rest or support for the user, substantially as set forth.

2. The combination, with a suitable base or platform mounted upon rollers, of a stand supported thereon and having a central opening, to the sides of which are hinged doors upholstered or cushioned on their under sides, and a box located below said opening and resting on the platform, the roof or top of said box forming a support for the user, substantially as set forth.

3. The combination, with the legs of a baby-walker, of two hinged sections recessed to form an opening, and secured to said legs by means of screw-eyes, which engage trunnions formed on one of said sections, and a pivoted upright or standard for supporting the same, substantially as set forth.

4. The combination, with the legs of a baby-walker, of two hinged sections, one of which is provided with trunnions to engage screw-eyes secured to said legs, a pivoted support having a pin, and a hook secured to the top of the stand or table, whereby said sections may be folded and supported outside of the legs, substantially as set forth.

5. The combination, with the top portion of a baby-walker, of a pivoted bracket carrying a bell, and a cord for operating the same, substantially as set forth.

6. The combination, with the top portion of a baby-walker, of a pivoted U-shaped bracket formed with a depending loop at its upper end, a bell pivoted in the sides of said loop, and a cord for operating the same, substantially as set forth.

7. The combination, with a baby-walker, of a pivoted U-shaped bracket having a depending loop, a bell pivoted in said loop, a cord for operating the same, and a pin projecting from the frame of the top portion adapted to engage a slot formed at the bottom of the said bracket, substantially as set forth.

8. The combination, with a stand having a railing, as shown, of a U-shaped bracket having enlargements A, secured to said railing, and provided with a depending loop, in which is mounted a bell having a cord attached thereto for operating the same, one of the enlarged ends A being formed with a curved slot to engage a pin projecting from the railing, and the other with a perforation to receive a hook, whereby the bracket may be locked in a raised position, substantially as set forth.

299,658. BRACELET. HUGO LIEBE, North Attleborough, Mass. Filed Mar. 29, 1884. (No model.)



Claim.—1. A bracelet composed of the open frames A A′, jointed together and having the spring-fulcrum plates *a a′*, the wing-pieces B B′, secured to the frame, and a spring, C, located in said frames, substantially as set forth.

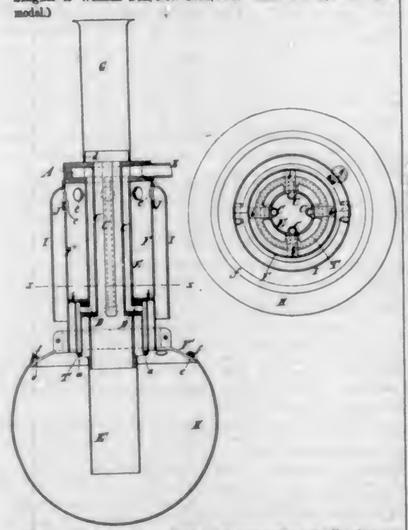
2. A bracelet composed of the open frames A A′, jointed together and having the spring-fulcrum plates *a a′*, the wing-pieces B B′, secured to the frames, a spring, C, located in said frames, the keepers D D′, and joint-covering plate E, substantially as set forth.

299,659. SUPPORT FOR PICTURES. KARL GUSTAV E. LIERSCH and L. REINHOLD ERCHE, Berlin, Germany. Filed Mar. 26, 1884. (No model.)



Claim.—A support for pictures, consisting of a curved spring-plate provided with retaining-hooks integral therewith at the upper and lower ends, and of a brace that is hinged to the back of the spring-plate, substantially as set forth.

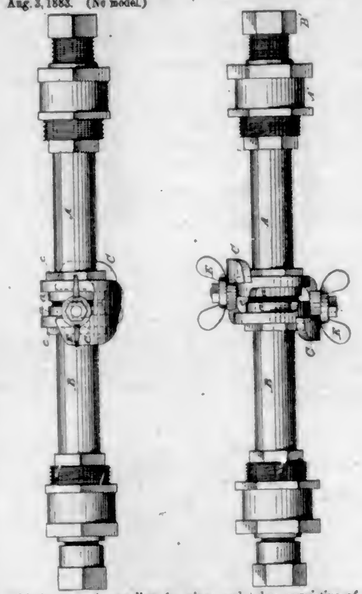
299,660. GAS-BURNER. ANDREW B. LIPSKY, West Hoboken, N. J., assignor to William Bell, New York, N. Y. Filed Nov. 18, 1882. (No model.)



Claim.—1. A gas-burner having a downwardly-extending burner-tip or downwardly-extending burner-tips, a flue or passage for carrying air downwardly to the burner tip or tips, a conduit or conduits for conveying gas downwardly to the burner tip or tips, and a flue or passage serving to convey away the products of combustion, the last-named flue or passage being arranged inward of the burner tip or tips, and extending a considerable distance below the same, and all the parts being so combined and organized that a flame will be caused to burn around the exterior of the lower portion of the last-named flue or passage, the waste products of combustion will be caused to pass around the end thereof and into its interior, and in passing away will heat the downwardly-coming air and gas before their arrival at the burner tip or tips, substantially as specified.

2. In a gas-burner, the combination, with a downwardly-extending burner tip or tips, of a flue or passage serving to convey air downwardly to the same, a conduit or conduits for conveying gas downwardly to the burner tip or tips, and a flue or passage located within the air flue or passage inward of the gas conduit or conduits, extending considerably below the burner tip or tips, and serving to convey products of combustion upward, substantially as specified.

299,661. PIPE-COUPLING. WILLIAM MARTIN, Tidioute, Pa. Filed Aug. 3, 1883. (No model.)



Claim.—1. A coupling for pipes and tubes, consisting of rings loosely secured to the ends of the sections to be joined or coupled together, said rings being provided with a hook and cam thumb-nuts, the hooks being adapted to engage with the thumb-nuts of the adjacent sections, and the sections drawn together by the impingement of the thumb-nuts against the inner faces of the hooks, as set forth.

2. As a means for coupling pipes and tubes, the rings *b*, provided with hooks C and cam-nuts E, said rings being attached to the ends of the sections to be coupled, and the hooks of one section adapted to engage with the thumb-nuts of the adjacent section, as set forth.

3. The combination of the sections A and B, provided with the rings *b*, hooks C, and cam thumb-nuts E, with the packing *e*, as and for the purpose set forth.

299,662. PIPE-COUPLING. WILLIAM MARTIN, Tidioute, Pa. Filed Aug. 27, 1883. (No model.)

Claim.—1. In a pipe-coupling, a pipe, A, provided with a hemispherical shell, B, a pipe, D, provided with a ball, C, combined with an incasing-shell having a screw-threaded extension, *c*, and nut G, as set forth.

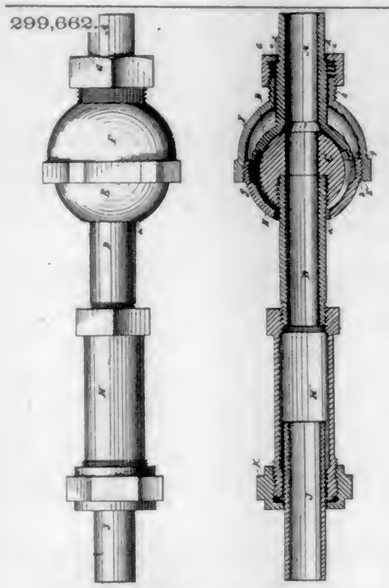
2. In a pipe-coupling, a pipe, A, provided with a shoulder or offset, *d*, and shell B, combined with a nut, G, an incasing-shell and pipe, D, provided with a ball, C, as set forth.

3. In a pipe-coupling, the hemispherical shell, B, ball C, and external casing provided with the screw-threaded extension *c*, combined with the pipe A and screw-nut G, as set forth.

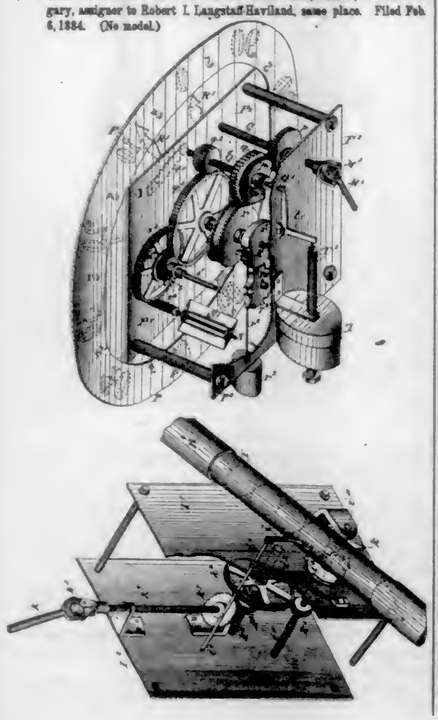
4. In a ball-and-socket pipe-coupling, the external casing provided with a screw-threaded extension, *c*, combined with the nut G, pipe A, and shoulder *d*, as set forth.

5. The hemispherical disk B, provided with a groove, *f*, for packing material, combined with the outer casing and the ball C, as set forth.

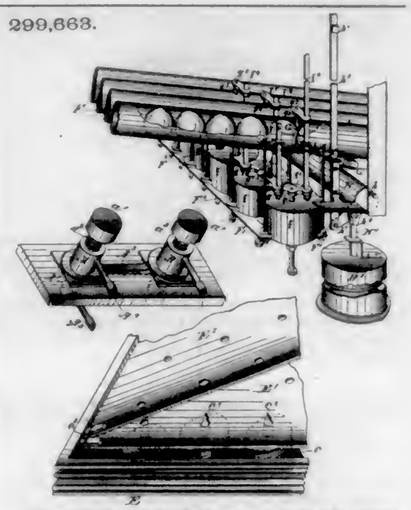
299,662.



299,663. MECHANISM FOR AUTOMATICALLY CASTING AND RECORDING BALLOTS ACTUATED BY THE PRESSURE OR EXPANSION OF FLUID. CHARLES ALBERT MAYERHOFER, Vienna, Austria-Hungary, assignor to Robert I. Langstaff-Haviland, same place. Filed Feb 6, 1884. (No model.)



299,663.



Claim.—1. In a system of balloting, the combination of mechanism whereby a ballot is cast or delivered from a holder or receiver, and mechanism whereby a permanent or indelible record of the ballot cast or delivered from the holder is made, said parts being operated by the pressure or expansion of a fluid, with a key or valve, on the depression of which a ballot is cast or delivered from its holder and a permanent record thereof made by the power exerted by the pressure or expansion of the fluid.

2. In a system of balloting, the combination of mechanisms whereby ballots differing in nature (affirmative and negative) are cast or delivered from their holders or receivers, and mechanisms whereby a permanent or indelible record is made of the ballots cast or delivered, said mechanisms being operated by the pressure or expansion of a fluid, with a compound key lever or valves, on the depression of which an affirmative or negative ballot is cast or delivered from their respective holders and a permanent record thereof made by the power exerted by the pressure or expansion of a fluid.

3. In a system of balloting, the combination of mechanism whereby a ballot is cast or delivered from a holder or receiver, and mechanism whereby a permanent record of the ballot cast or delivered and by whom cast is produced, said parts being operated by the pressure or expansion of a fluid, with a key lever or valve, on the depression of which the ballot is cast or delivered from its holder and a permanent record thereof and by whom cast is made by the power exerted by the pressure or expansion of such fluid.

4. In a system of balloting, the combination of mechanisms for casting or delivering ballots differing in nature (affirmative and negative) from holders or receivers, and mechanisms for producing a permanent record thereof and showing by whom such ballots were cast, said mechanisms being operated by the pressure or expansion of a fluid, with compound key levers or valves for controlling the fluid actuating medium, whereby ballots differing in nature may be cast or delivered from their holders and a permanent record thereof simultaneously produced, such record showing the totality of votes, their nature, and by whom cast.

5. In a system of balloting, the combination of mechanism for casting or delivering a ballot from a holder or receiver with appliances for locking said ballot-delivering mechanism out of operation, to prevent the casting of a second ballot until said ballot-delivering mechanism is released from the locking appliances, said appliances being operated by the pressure or expansion of a fluid.

6. In a system of balloting, the combination of mechanism for casting or delivering a ballot from a holder or receiver, a key or valve lever, on the depression of which a ballot is delivered from said holder, and appliances for automatically locking the ballot-delivering mechanism out of operation after the delivery of a ballot, with a key or valve lever for releasing the locking appliances from the ballot-delivering appliances by the power exerted by the pressure or expansion of a fluid, for the purposes described.

7. In a system of balloting, the combination of mechanism for casting or delivering a ballot from a holder adapted to be operated by the pressure or expansion of a fluid, and a key or valve lever for controlling the fluid operating medium, with mechanism set in operation by the ballot cast or delivered, whereby said ballot is counted, as and for the purposes set forth.

8. In a system of balloting, the combination of mechanism whereby a ballot is delivered from the holder by the power exerted by the pressure or expansion of a fluid, and mechanism actuated by the delivered ballot, whereby the latter is counted, with appliances for locking the ballot-delivering mechanism out of operation after a ballot has been delivered without locking the counting mechanism out of operation, for the purposes specified.

9. In a system of balloting, the combination of mechanism whereby a ballot is delivered from a holder or receiver, mechanism whereby a permanent record of such ballot is made, said mechanism being operated by the pressure or expansion of a fluid, and mechanism whereby the delivered ballot is counted, with a key or valve lever, on the depression of which said mechanisms are simultaneously set in operation, for the purposes specified.

10. In a system of balloting, the combination of mechanism whereby a ballot is cast or delivered from a holder and operated by the pressure or expansion of a fluid, and a suitable fluid main and distributing pipe, the latter being connected with said mechanism, with a valve interposed in the main and distributing-pipe, whereby the communication between the two is established or cut off, for the purposes specified.

11. In a system of balloting, the combination of mechanism operated by the pressure or expansion of a fluid, whereby a ballot is cast or delivered from a holder, a suitable conduit connected therewith, and a fluid-main, with a valve interposed between said main and conduit, whereby the communication between the main and conduit can be established and cut off and the fluid in the latter exhausted, for the purposes specified.

12. In a system of balloting, the combination, with mechanism whereby a ballot is cast or delivered from a holder, mechanism whereby a permanent record of the delivered ballot is simultaneously produced, both operated by the pressure or expansion of a fluid, and a suitable distributing-pipe and main connected together and with said mechanism, of a valve interposed in the main and distributing pipe or pipes, whereby communication between the two is established or cut off and the fluid exhausted from the distributing-pipe, for the purposes described.

13. In a balloting system, the combination of mechanism whereby a ballot is cast or delivered from a holder, mechanism whereby a permanent record of the delivered ballot is simultaneously produced, appliances for operating said mechanisms by the pressure or expansion of a fluid, a suitable fluid distributing pipe or pipes and main, and mechanism actuated by the delivered ballot, whereby said ballot is counted, with a valve interposed in said main and distributing-pipe, whereby the fluid is admitted to the distributing-pipe from the main to actuate the ballot-delivering and permanent-record-producing mechanisms, whereby a ballot is delivered from its holder, a permanent record thereof made, and the ballot counted simultaneously, for the purposes specified.

14. In a balloting system, the combination of mechanism whereby a ballot is cast or delivered from a holder, mechanism whereby a permanent record of the ballot delivered is simultaneously produced, and appliances for operating said mechanism by the pressure or expansion of a fluid, with a valve for admitting compressed air to the actuating appliances, and through which valve said compressed air is exhausted after having done its work, for the purposes specified.

15. In a balloting system, the combination of mechanism whereby a ballot is cast or delivered from a holder, appliances for operating such mechanism by means of compressed air, and a valve for admitting compressed air to and exhausting the same from said operating appliances, and mechanism for automatically locking the ballot-delivering mechanism out of operation after a ballot has been delivered, with a bellows or its equivalent for operating the locking devices by means of compressed air, to release said ballot-delivering mechanism, for the purposes set forth.

16. In a balloting system, the combination of mechanism whereby a ballot is cast or delivered from a holder, a bellows or piston for actuating said mechanism, a valve for admitting a fluid to and exhausting it from said bellows, and mechanism for automatically locking the ballot-delivering mechanism out of operation, with a bellows or piston for actuating the locking-out mechanism and a valve for admitting a fluid under pressure to and exhausting the same from the latter bellows, for the purposes described.

17. In a balloting system, a ballot-holder containing a number of ballots, combined with mechanism operated by the pressure or expansion of a fluid for releasing said ballots one at a time and delivering the same from the holder.

18. In a balloting system, a ballot-holder containing a number of ballots, combined with mechanism operated by the pressure or expansion of a fluid for releasing the ballots one at a time, and with a key or valve lever for setting the ballot-delivering mechanism into operation from a point distant from such mechanism, for the purposes described.

19. In a balloting system, the combination of ballot-holders arranged in parallel horizontal series, mechanism operated by the pressure or expansion of a fluid, whereby a ballot is cast or delivered from the holders, a valve for each holder, whereby the fluid is controlled, and appliances for automatically locking the ballot-delivering mechanism of the holders out of operation, with mechanism whereby all the ballot-delivering devices are simultaneously released from the locking appliances, for the purpose stated.

20. In a balloting system, the combination of ballot-holders arranged in horizontal and vertical parallel series, mechanism for each holder operated by the pressure or expansion of a fluid, whereby a ballot is cast or delivered from the holders, a valve for each holder for controlling the fluid, and appliances for automatically locking the ballot-delivering mechanism for each holder out of operation, with mechanism operated by the pressure or expansion of a fluid, whereby the ballot-delivering mechanisms of the series of holders are simultaneously released from the locking-out mechanism, for the purposes specified.

21. In a balloting system, the combination of ballot-holders arranged in horizontal or vertical parallel series, or both, operated by the pressure or expansion of a fluid, mechanism for each holder whereby a ballot is cast or delivered from said holders, a valve for each holder for controlling the fluid and exhausting the same from the ballot-delivering mechanism, and appliances for each holder whereby the latter mechanism is automatically locked out of operation after the delivery of a ballot from a holder, with mechanism operated by the pressure or expansion of a fluid, whereby the ballot-delivering mechanisms of all the holders are simultaneously released from their locking-out appliances, and a valve for admitting the fluid to and exhausting the same from the releasing mechanism, for the purposes specified.

22. In a system of balloting, the combination, with a ballot-holder, mechanism operated by the pressure or expansion of a fluid for casting or delivering a ballot therefrom, and mechanism actuated by the released ballot to count the same, of a registering mechanism for making a visible record of the ballot cast or delivered from the holders, operated by the counting mechanism.

23. In a system of balloting, the combination, with the mechanism whereby the ballots are counted, of a relay or auxiliary power transmitting mechanism to transmit the movements of the counting mechanism, for the purposes stated.

24. In a system of balloting, the combination, with a ballot-holder, mechanism for casting or delivering a ballot therefrom, mechanism actuated by the ballot delivered from the holder for making a count thereof, and mechanism operated from the counting devices to make a visible record of the ballot cast or delivered from the holder, of an auxiliary power or relay interposed between the counting and registering mechanism, for the purposes stated.

25. In a system of balloting, the combination of the following elements: a series of ballot-holders, mechanism operated by the pressure or expansion of a fluid to cast or deliver the ballots therefrom, a counting mechanism operated by the ballots, a registering mechanism operated from the counting mechanism, mechanism to automatically lock the ballot casting or delivering appliances out of operation, and mechanism operated by the pressure or expansion of a fluid to release said appliances after a vote has been taken, for the purposes specified.

26. In a system of balloting, the combination of the following elements: a series of ballot-holders, mechanism for casting or delivering the ballots therefrom, mechanism operated by the ballots delivered from the holder to transmit a count thereof, a registering mechanism operated from said counting mechanism, a relay or auxiliary power operated by a weight to transmit the movements of the counting mechanism to said registering mechanism, and appliances for automatically winding up the weight after each ballot, for the purposes stated.

27. In a system of balloting, the combination, with a series of ballot-holders, mechanism to cast or deliver the ballots therefrom, mechanism operated by the ballots delivered from the holders, whereby a count of such ballots is made, a registering mechanism operated from the counting mechanism, and a relay or auxiliary power operated by a weight for transmitting the count made by the counting mechanism to the registering mechanism, of appliances for automatically winding up the weight of the relay and automatically and simultaneously returning the registering-indexes to their starting-point, for the purposes described.

28. In a system of balloting, the combination, with the mechanism whereby the ballots are registered and appliances for returning the index hand or hands thereof to their starting-point, of mechanism operated by the pressure or expansion of a fluid, whereby the appliances for returning the said hand or hands to their starting-point are set in operation, as described, for the purposes specified.

29. In a system of balloting, the combination and co-operation of the following elements: a series of ballot-holders, mechanism operated by the pressure or expansion of a fluid, whereby a ballot is cast or delivered from said holders, mechanism to lock the ballot-delivering devices out of operation after the delivery of a ballot, mechanism whereby a count of the ballots is effected, mechanism for registering the count, mechanism for transmitting the count to the registering devices, mechanism operated by the pressure or expansion of a fluid, whereby a permanent record of each ballot cast is obtained, and appliances operated by the pressure or expansion of a fluid for simultaneously releasing the ballot-delivering mechanism, for the purposes specified.

30. In a system of balloting, the combination of the following elements: a series of ballot-holders, mechanism for casting or delivering a ballot therefrom, and mechanism whereby a permanent record of each

ballot cast is simultaneously obtained, said parts being operated pneumatically by means of a valve or key interposed in the compressed-air main and the delivering or distributing pipes, whereby the compressed air is admitted to and exhausted from the latter pipes, mechanism for automatically locking the ballot casting or delivering appliances out of operation after the delivery of a ballot, mechanisms whereby a count of each ballot is made and registered, and an intermediate auxiliary transmitting power or relay to transmit the count to the registering mechanism, said locking-out mechanism, relay, and registering mechanism being arranged in a pneumatic circuit and operated pneumatically and simultaneously by means of a valve lever or key, whereby the compressed air is admitted to operate said devices and exhausted from said distributing-pipes after the automatic and simultaneous release of the ballot-casting devices, the return of the registering devices to their normal position, and the return of the auxiliary power to its operative condition, for the purposes stated.

31. In a system of balloting, the combination of the following elements in duplicate: a series of ballot-holders, mechanism to cast or deliver a ballot therefrom, mechanism to lock the ballot-casting levices out of operation after a ballot has been cast, mechanism for automatically producing a permanent record of each ballot cast, mechanism for producing a count, and mechanism for temporarily registering each ballot and indicating the totality of ballots cast, said duplicate elements being arranged in two pneumatic circuits, one of which circuits is under the independent control of each voter, whereby by means of valves or keys he may cast an affirmative or negative ballot, and is prevented from casting such ballot a second time during the taking of a vote, the second circuit being under the control of a single person, whereby by means of a single valve said person is enabled to return all the duplicate mechanisms automatically and simultaneously into their operative or normal conditions, or to their initial or starting point, as described, for the purposes stated.

32. The ballot casting or delivering mechanism, consisting, essentially, of ball-holders arranged in series with their longitudinal axes inclined in the same direction, and containing each a number of balls, and controlling devices operated by the pressure or expansion of a fluid, consisting of co-operating retaining-pins arranged in front of each other and operating to release the balls from their holders one at a time, as and for the purposes specified.

33. The ball casting or delivering mechanism, consisting, essentially, of ball holders or receivers containing a number of balls each, and arranged in horizontal or vertical parallel series, or both, in combination with controlling appliances operated by the pressure of a fluid controlled by a valve consisting of two co-operating retaining-pins arranged in different horizontal planes, the free ends of which move simultaneously in reverse directions, whereby a ball is released by one pin and the remaining balls of the series held in check by the other when the pins move in one direction, and the remaining balls released by the check-pin and checked by the releasing-pin when said pins move in a reverse direction, substantially as described, for the purpose specified.

34. The combination of an inclined tubular ball-holder, F, adapted to contain a number of balls, and provided with slots in opposite sides, in combination with a bellows, carrying bars f^4 g, and the pins g' g^2, arranged to move in the plane of the said slots and penetrate into said tubular ball-holder when the bellows is distended, substantially as described, for the purpose specified.

35. The combination of the inclined tubular ball-holder, slotted on opposite sides, with a bellows, the rod f'', cross-head f^3, arm g, bars f^4 f^5, the arm g^2, and the pins g' g^2, said parts being arranged for co-operation substantially as described, and for the purposes specified.

36. The combination, with an inclined ball-holder and the arm g^2 and bar f^4 of the ball casting or delivering devices thereof, arranged for operation as set forth, of a gravity pawl or stop for automatically locking the bars against downward movement when in an elevated position, as described, for the purpose stated.

37. The combination, with a tubular, slotted, and inclined ball-holder, the pins g' g^2, and the bar f^4, having lug or abutment F^3, of the gravity-pawl G, said parts being arranged for co-operation substantially as described, for the purposes specified.

38. The combination, with the ball-holder adapted to contain a number of balls, mechanism to release said balls one at a time, and mechanism for locking the releasing devices out of operation when a ball has been released, of appliances for disengaging the locking devices from the releasing mechanism, consisting of a bellows carrying an actuating-rod, a tripping-bar in the path of said rod, and actuated thereby, and an abutment on said bar in the path of an arm of the locking-pawl, operating to trip the latter, as described, for the purposes specified.

39. The combination, with the bar f^4, its arm g^2, the pin g^2, and the lug F^3, of the pawl G, its arm G', the bar h^2, plate h^3, abutment h^4, and a bellows or piston connected with said bar h^2, said parts being arranged for co-operation substantially as and for the purposes specified.

40. The combination, with ball-holders arranged in vertical or horizontal series of parallel rows, or both, each holder having a locking-pawl, G G', pivoted thereto, the bar f^4 of the ball casting or delivering mechanism, the lug F^3, and arm g^2 of said bar, of a bellows carrying a rod, H', the shaft H, and a tripping-bar, h, for each ball-holder, each of said bars h having one or more abutments, h^3, and a plate, h^2, and the cranks h', that connect the bars with said shaft, said parts being arranged for co-operation substantially as described, for the purposes specified.

41. The combination, with a ballot-holder, mechanism operated by the pressure or expansion of a fluid for casting or delivering the ballots therefrom, and a fluid conduit and main, of a valve interposed between said conduit and main, consisting of a valve-casing divided by diaphragm in two chambers, 1 2, the former connected with the conduit and the latter with the main, a valve having a hollow stem provided with valve-ports 4 and 5, and operating to open or close a port in the diaphragm 3 of the casing, as described, for the purposes specified.

42. The combination, with two independent eduction-pipes and a supply-main, of a compound valve interposed between the main and said pipes, composed of two valve-casings, each divided horizontally into two chambers, 1 and 2, by a diaphragm, 3, the former chambers being in communication with the eduction-pipes, and the latter with each other through a connecting-pipe, and with the main through one of said chambers, 2, substantially as and for the purposes specified.

43. The combination of the valve-casing A, divided into chambers 1 and 2 by a partition or diaphragm, 3, having a valve-port, the valve a, its hollow stem a^2, having ports 4 and 5, the button a', and coiled spring a^3, with the pipes A^2 A^3 A^4, said parts being arranged for co-operation substantially as described, for the purposes specified.

44. The appliances whereby a permanent record of the ballots is produced, consisting of a series of pistons or bellows, e, each provided with a perforator, e^2, and arranged in parallel rows, in combination with hinged clamping-plates E' E^2, having perforations that register with the perforators e^2, between which a sheet of paper extending over all the perforators and in the path thereof may be clamped, and suitable conduits for supplying the motive fluid to said bellows, as described, for the purposes specified.

45. The combination, with the supply-pipe B, eduction-pipe B', and the bent pipe C C', connected therewith, of a three-way valve or cock, C^4, a valve-lever, C^5, and means for locking said lever in position to establish communication between pipes B C and B' C', and appliances to automatically release the lever to shift the valve, substantially as described, for the purpose specified.

46. The combination, with fluid supply and distributing pipes and a valve interposed in said pipes, of mechanism to lock the lever in position to establish communication between said pipes, and appliances operated by the pressure or expansion of the fluid admitted to the distributing-pipe to release the lever and shift the valve, substantially as and for the purposes set forth.

47. The combination, with a fluid supply and distributing pipes and a valve interposed in said pipes, of mechanism to lock the valve in position to establish communication between said pipes, and appliances operated by the pressure or expansion of the fluid admitted to the distributing-pipe to release the same, shift the valve to cut off said communication, and establish communication between the distributing-pipe and the outer atmosphere, substantially as described, for the purposes set forth.

48. The combination, substantially as herein described, of a fluid-main, a distributing-pipe, a valve interposed in said pipes, and operating to establish or interrupt the communication between the two pipes, appliances for automatically locking the valve in position when the communication between the pipes is established, and appliances for automatically interrupting said communication by the pressure or expansion of the fluid admitted from the main to the distributing-pipe, for the purposes set forth.

49. The combination, substantially as herein set forth, of a fluid-main, a distributing-pipe, a three-way valve interposed in said pipes, appliances for automatically locking the valve into position when set to establish the communication between the pipes, and appliances for automatically interrupting said communication and placing the distributing-pipe in communication with the outer atmosphere by the pressure or expansion of the fluid admitted from the main to the distributing-pipe, for the purposes described.

50. The combination, with the pipes B B', the bent pipe C C', the valve C^4, and valve-lever C^5, provided with a harp or slotted plate, c^3, of the pivoted gravity bell-crank lever c, the vertical arm of which has a catch, c', arranged to engage the slot of plate c^3 when the lever C^5 is depressed, said parts being arranged for co-operation substantially as described, for the purposes set forth.

51. The combination, with the pipes B B', the bent pipe C C', the valve C^4, lever C^5, slotted plate c^3, the pivoted gravity bell-crank lever c, and the catch c' thereof, of the bellows or piston b', connected with pipe B' and operating to tilt or trip the bell-crank lever, substantially as described, for the purposes specified.

52. The herein-described mechanism for producing a count of the ballots, which consists in the combination, with an inclined ball-conduit and a train of suitable transmitting-gearing, of the escapement composed of the shaft i^3, carrying a transmitting-pinion, k', the ratchet-wheel i^4, and star-wheel k, and the shaft i', carrying the pawl i and spring-pawl i^2, said parts being arranged for co-operation substantially as described, for the purposes set forth.

53. The combination, with the tubular inclined ball-conduit, slotted on opposite sides, the star-wheel k, ratchet i^4, pinion k', shaft i^3, the pawl i, the spring-pawl i^2, and shaft i, of the transmitting-gear l^2 l^3 on shaft l^2, and l^2 on shaft l^4, said parts being constructed and arranged for co-operation substantially as described, for the purpose specified.

54. The herein-described relay, consisting of a transmitting-gear operated by a prime motor, and an auxiliary driving-gear operated by an independent power to assist in driving said transmitting-gearing, and, in combination therewith, of appliances to wind up the auxiliary power by the pressure or expansion of a fluid, substantially for the purposes specified.

55. The combination, with the transmitting-gearing l l^2 l' l^3, operated by a prime motor, of the auxiliary gearing m m' m^2, the winding-drum N, and weight N^2, said parts being arranged for co-operation substantially as and for the purposes set forth.

56. The combination, with the shaft L^2, ratchet n, rigidly secured to said shaft, the winding-drum N and pinion n', connected together and loosely mounted on the shaft, and the pawl n^2, pivoted on the side of the pinion in position to engage the teeth of the ratchet, whereby said pinion and drum are locked to the shaft and rotate therewith, of the rack-bar o, connected to a bellows or piston and meshing with the pinion n', whereby said pinion and the winding-drum are rotated without rotating the shaft L^2, said parts being arranged for co-operation substantially as described, for the purposes specified.

57. In a system of balloting, a counting mechanism, a relay for transmitting the movements of said counting mechanism, a registering mechanism for registering the operation of the counting mechanism as transmitted thereto by the relay, and rigid transmitting-shafts coupled to the motor-shafts of the relay and the recording mechanisms and to the transmitting-shaft of the counting mechanism by means of universal couplings, whereby said mechanisms may be located at a distance from each other, as described.

58. The herein-described registering mechanism, consisting of a suitable train of registering-gearing, a hand or hands operated thereby, and appliances for stopping said train of gearing, returning the hands to their starting-point, and placing the registering mechanism in condition for operation by the pressure or expansion of a fluid, for the purposes specified.

59. The herein-described registering mechanism, consisting of a suitable train of registering-gearing, and, in combination therewith, of appliances operated by the pressure or expansion of a fluid, whereby the operation of said mechanism is arrested independently of the power from which it is driven, for the purposes specified.

60. In a registering mechanism, a train of gearing and a hand or hands operated thereby, in combination with appliances for automatically returning the hand or hands to their starting-point by the pressure or expansion of a fluid, as described, for the purposes specified.

61. The combination, substantially as described, of a train of registering-gearing, a hand or hands operated thereby, mechanism for returning the hands to their starting-point, and mechanism for controlling the return movement of said hands and their operating devices, consisting of a train of gearing and a fly.

62. The combination, with the shaft R of the registering mechanism, the gear-wheel q^2, the winding-drum r, cam r', and star-wheel r^2, of the shaft Q, pinion q^3, gear-wheel q and q', the latter having a laterally-projecting locking-tooth and loosely mounted upon the shaft and held against longitudinal movement therewith, and means whereby said shaft is displaced longitudinally in its bearings, substantially as described, for the purposes set forth.

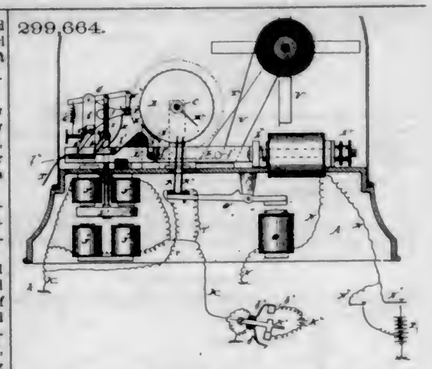
63. The combination, with the shaft Q', the gear-wheel q, rigidly secured thereto, and the gear-wheel p', loosely mounted thereon and held against longitudinal movement therewith, said wheel p' being provided with a locking-tooth adapted to engage the gear-wheel q, of the bell-crank or angle lever t and a bellows or piston, whereby said lever is made to displace the shaft Q' longitudinally by the pressure or expansion of a fluid.

64. The combination, with the shafts M^2 Q, coupled together by means of a universal coupling, the pinion p, shaft R, and gear-wheel q^3, of the shaft Q', pinion q', gear-wheel q, the gear-wheel p', provided with a locking-tooth, p^2, in engagement with the gear-wheel q, and means, substantially as described, for displacing shaft Q' longitudinally to throw the wheels q p' out of engagement, said parts being constructed and arranged for co-operation substantially as described, for the purposes specified.

299,664. PRINTING-TELEGRAPH. WILLIAM J. MCCAUSLAND, Philadelphia, Pa., assignor to William W. Kurtz, same place. Filed June 6, 1883. (No model.)

Claim.—1. In a printing-telegraph, the combination of a type-wheel and a spur-wheel secured thereto with a pinion adapted to mesh with said spur-wheel, a crank to rotate said pinion, means to overcome the dead-centers of said crank, and cause said crank to assume a position substantially at right angles to dead-centers, and means to rotate said crank, said means being controlled by electric currents transmitted over a line-wire, substantially as and for the purpose specified.

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2. In a printing-telegraph, the combination of a type-wheel and a spur-wheel secured thereto with a pinion adapted to mesh with said spur-wheel, a crank to rotate said pinion, means to overcome the dead-centers of said crank, and cause said crank to assume a position substantially at right angles to dead-centers, and means to rotate said crank, said means being controlled by electric currents transmitted over a line-wire, substantially as and for the purpose specified.

3. In a printing-telegraph, the combination of a type-wheel and a spur-wheel secured thereto with a pinion adapted to mesh with said spur-wheel, a crank to rotate said pinion, means to overcome the dead-centers of said crank, electro-magnets, and connecting mechanism to rotate said crank upon changing the polarity of line-current, substantially as and for the purpose specified.

4. In a printing-telegraph, a type-wheel and its shaft, in combination with a spur-wheel secured to said shaft, a pinion adapted to mesh with said spur-wheel, a crank to rotate said pinion, an electro-magnet and armature connected to said crank and adapted to turn said crank up or down and hold it on the dead-centers, and mechanism, substantially as set forth, to throw said crank over the dead-centers upon the armature, releasing it, so that said crank and its pinion may be held in four positions in its revolution, substantially as and for the purpose set forth.

5. The combination of type-wheel B and pin R^2 with electro-magnets and connecting mechanism to rotate said type-wheel, armature O', provided with spring-conductors R R', electro-magnet O, line N, line K, and conductors r r', connected with the line K on each side of type-wheel magnets, substantially as and for the purpose specified.

6. The combination of type-wheel B and pin R^2 with electro-magnets, and connecting mechanism to rotate said type-wheel, electro-magnet O, armature O', line K, and means secured to said armature, which, when in contact with pin R^2, short-circuits line K around the type-wheel magnets, substantially as and for the purpose specified.

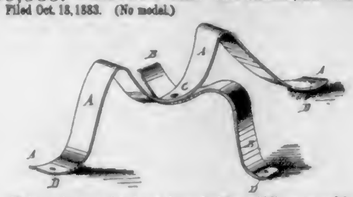
7. The combination of the type-wheel and press-magnets with a press-armature, a reciprocating press-frame made integral with said armature, and provided with a press-block and a feed-plate, means to guide the paper over said feed-plate and press-block, a stationary pawl, and a moving pawl carried by said press-frame, both of said pawls having sharp points and provided with springs to press them down upon the paper as it passes over the feed-plate, and arranged to feed the paper as the press-frame is reciprocated in the act of printing, substantially as set forth.

8. The combination of the type-wheel and horizontally-reciprocating press-frame L, arranged tangential to the type-wheel, having printing-block L', guides for the paper to cause said paper to pass under and around said type-wheel, and means to feed said paper upon reciprocating said frame, substantially as and for the purpose specified.

9. The combination of a type-wheel and horizontally-reciprocating press-frame L, arranged tangential to the type-wheel, having printing-block L', guides for the paper to cause said paper to pass under and around said type-wheel, means to feed said paper upon reciprocating said frame, two or more press-magnets, a single press-armature adapted to be attracted by all of said press-magnets simultaneously and actuate said press-frame, and a single line-wire, N, the current of which is divided between said electro-magnets to increase their power in printing, substantially as and for the purpose specified.

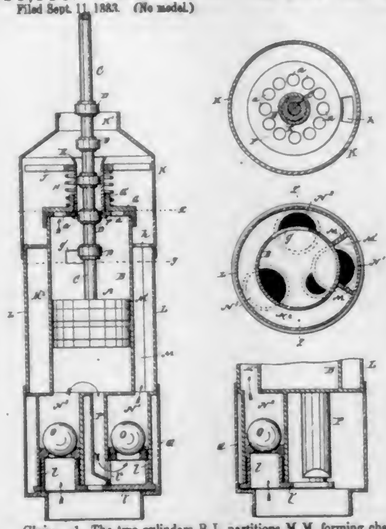
10. The combination of type-wheel B, having letters and figures arranged upon its periphery and in different parallel planes, the letters being arranged in line with the spaces between the figures, and vice versa, means to press the paper against said type-wheel, and a stationary slotted screen, the slot in which is the full width of the type-wheel, to prevent the printing of more than one letter or figure at a time, substantially as and for the purpose specified.

299,665. CORPSE HEAD-REST. JOHN MCGRATH, New York, N. Y. Filed Oct. 18, 1883. (No model.)



Claim.—A corpse head-rest formed of the middle concaved bar, A, and end concaved bar, B, pivoted at C, both bars being provided with feet D, as shown and described.

299,666. DOUBLE-ACTING PUMP. JAMES MCGWIN, Fulton, Mo. Filed Sept. 11, 1883. (No model.)



Claim.—1. The two cylinders B L, partitions M M, forming channels M' M², connecting with the piston-cylinder and the chamber above said cylinder, respectively, tubes N' N³ N², provided with valves and communicating with the said channels and piston-cylinder, as shown, and duct P, in combination with the top F, having apertures *a*, the spring-pressed annular valve G, and the piston A C, all arranged substantially as shown, and for the purpose set forth.

2. The combination of the piston-cylinder B and piston A C with the apertured cap F, tube E, annular valve G, spring H, and cross-bar J, substantially as set forth.

3. The combination, in a double-acting pump, of the tubes N' N³ N² and duct P with the tubular seats *l*, formed on a base, *l'*, and of smaller diameter than said tubes, one of the seats being provided with an opening, *l²*, registering with the duct, as shown and described.

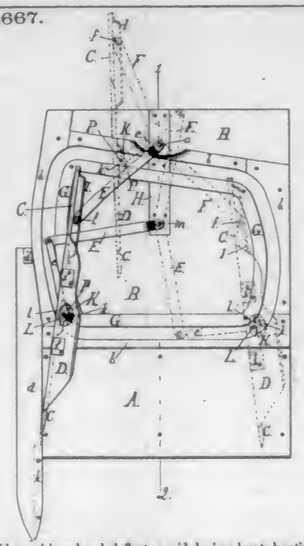
299,667. GAVEL-DELIVERER FOR HARVESTERS. AARON MILLER, Brockport, N. Y. Filed Oct. 18, 1883. (No model.)

Claim.—1. In a harvester, the combination, with the platform A, of the gavel-board C, crank E, connecting-rod *e*, shaft L, bearings *l*, crank F, shaft *f*, guide-strips I, means for supporting and revolving said cranks E and F, roller P, track G, guide *b*, and means for supporting said track and guide, each constructed, arranged, and operating substantially as and for the purpose set forth.

2. The combination, with the platform A, gavel-board C, crank E, connecting-rod *e*, shaft L, bearings *l*, crank F, shaft *f*, guide-strips I, means for supporting and revolving the cranks E and F, roller P, track G, guide *b*, and means for supporting said track and guide, of the deflector D, articulated to the board C, spring *c*, and plate K, provided with the projection *k*, all constructed, arranged, and operating substantially as shown and described.

3. In a harvester, the combination of a platform, a gavel-board, a deflector hinged to said gavel-board, and devices to support and actuate

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both said gavel-board and deflector, said devices located entirely at the rear of the platform, and constructed, arranged, and operating in such a manner as to cause the gavel-board to traverse a course in a plane parallel with the platform and to pass over and across said platform only in a direction from the outer to the inner edge of the same, substantially as set forth.

4. The combination of a harvester-platform, a track, a gavel-board, a deflector hinged to said gavel-board and actuated by the same means, cranks arranged to actuate said gavel-board, and means for confining the movements of the gavel-board to a course described by said track, all of the devices for operating the gavel-board being located in the rear of the platform.

5. In a harvester, the combination, with the gavel-board, of a deflector hinged thereto and means for operating the deflector, whereby it will also act as a compressor, substantially as set forth.

6. In a harvester, the combination of the gavel-board, a combined deflector and compressor articulated thereto, and means for changing the angle of inclination between said gavel-board and compressor at different points in the course traversed by said gavel-board, substantially as and for the purpose set forth.

7. In a harvester, the combination of the gavel-board, a gavel-compressor attached thereto, and means for actuating both board and compressor, substantially as and for the purpose set forth.

299,668. COMBINED PEN-HOLDER AND BLOTTER. J. FRANKLIN MILLER, Oakland, Cal. Filed Jan. 30, 1884. (No model.)



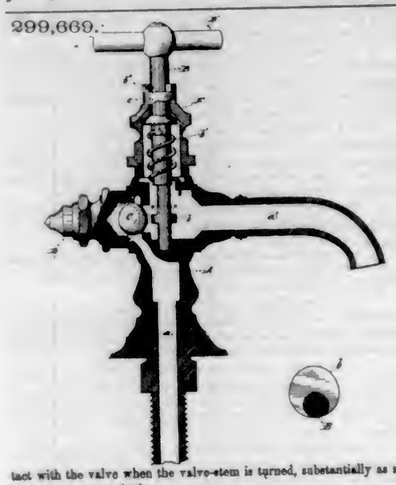
Claim.—1. A combined pen-holder and blotter consisting of the pen-holder A, the plate B, having the socket *b* fitting over the top of the staff of the pen-holder, and the blotting-sheet C, secured to the face of the plate, substantially as herein described.

2. A combined pen-holder and blotter consisting of the pen-holder A, the staff of which has a beveled top, the backwardly-curved plate B, having socket *b*, through which the top of the staff of the pen-holder fits and projects, bearing against the back of the plate, and the blotting-sheet C, secured to the face of the plate, substantially as herein described.

299,669. AUTOMATIC BALL SAFETY-FAUCET. HARRY C. MONTGOMERY, Cleveland, Ohio, assignor to Auguste Romeau, same place. Filed May 31, 1883. (No model.)

Claim.—1. The combination, with a faucet provided with a removable plug adapted to form the valve-chamber and a valve, the latter adapted to be held against its seat by the pressure of water, of a valve-stem provided with a projection, which latter is adapted to come in con-

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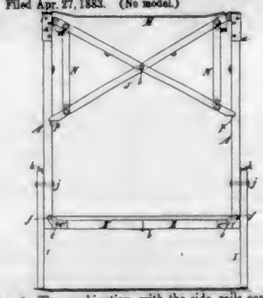
tact with the valve when the valve-stem is turned, substantially as and for the purpose set forth.

2. The combination, with a faucet provided with a valve-chamber, and a valve located within said chamber, of a valve-stem provided with a projection adapted to come in contact with the valve when the stem is turned, and a spiral spring encircling said stem, one end of the spring being secured to the stem, while the opposite end thereof is secured to the faucet, the said spring being adapted to hold the projection on the valve-stem away from the valve, substantially as set forth.

3. The combination, with a faucet provided with a removable valve-chamber and a socketed cap, E, of a ball-valve, the valve-stem provided with an eccentric, and a spring encircling the stem, for the purpose set forth.

4. The combination, with a faucet provided with a valve-chamber, a ball-valve located in said chamber, and a spring-actuated valve-stem provided with an eccentric for moving the ball-valve away from its seat, and the pin b^3, of the screw-cap E, provided with shoulders, against which the pin b^3 strikes, substantially as set forth.

299,670. COMBINED COT-BED, LITTER, AND CHAIR. CALEB P. NASH, Brattleborough, Vt., assignor of one-half to J. Eugene Jacobs, same place. Filed Apr. 27, 1883. (No model.)



Claim.—1. The combination, with the side rails composed of sections hinged together, one pair of sectional side rails being provided with notches *p*, and brackets or pieces *m*, pivoted to the inner sides of the same pair of sectional side rails, of crossed legs J, pivoted together between their ends, and at their upper ends pivoted to the pieces *m*, all substantially as specified, whereby the said legs may be adjusted at right angles to the side rails, or between and parallel with the side rails.

2. The combination, with the side rails, of crossed legs J, and connecting-pieces *m*, to which the upper ends of the crossed legs are pivoted, and which are pivoted to the side rails, substantially as described, whereby the ends of the legs may be moved toward and from each other, and the legs may be adjusted bodily at right angles to the side rails, or between and parallel with the side rails, and means, substantially such as described, for preventing the movement of the legs relatively to each other when they are swung between the side rails, to cause them to brace and hold the side rails at a proper distance apart, substantially as set forth.

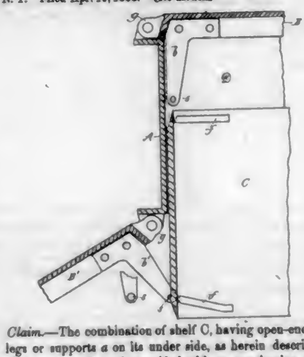
299,671. LOCK-BOLT. HENRY C. NESS, Park Ridge, N. J. Filed Oct. 3, 1881. (No model.)



Claim.—1. In a lock, the spring-bolt A, provided with a transverse hole, the catch C, having the shoulders *e e* and shank *m*, all in one piece and movable longitudinally in the aforesaid hole, combined with the plate B, provided with a T-shaped slot, whereby the bolt can be fastened in the locked and unlocked positions, as shown and described.

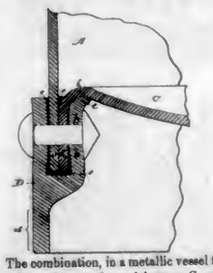
2. A lock consisting of the plate B, spring-actuated bolt A, provided with the hole *i*, and the dog *k* to engage said hole *i* by means of a key, combined with the catch C, to operate and lock said bolt in locked or unlocked positions independent of said dog *k*, and the key for operating it, substantially as shown and described.

299,672. AUTOMATIC OVEN-SHELF. LEWIS T. NEWELL, Albany, N. Y. Filed Apr. 19, 1883. (No model.)



Claim.—The combination of shelf C, having open-ended grooves *f*, and legs or supports *a* on its under side, as herein described, with the oven door or doors B, each provided with an arm having at its free end a stud, *s*, adapted to traverse in said groove during a part only of its forward and backward movement, whereby the said shelf is slid forward and backward by the said arm by a partial movement of the door, and is out of engagement therewith at the beginning and end of its movement, as and for the purpose set forth.

299,673. METALLIC VESSEL. ADAM O'HARA, New York, N. Y., assignor of one-half to Horatio Nelson Holt, same place. Filed Mar. 11, 1884. (No model.)



Claim.—1. The combination, in a metallic vessel for resisting heavy internal pressure, of the sides A, flanged bottom C, and channeled ring D, of rigid cast metal, embracing the flanges on the sides and bottom, and riveted through said flanges, whereby a strong bottom joint is formed, substantially as set forth.

2. The combination, in a metallic vessel for resisting heavy internal pressure, of the sides A, the bottom C, having a down-turned flange, *c*, fitting within the sides, and a channeled ring, D, the channel in which is deeper than the flange *c*, whereby the bottom C is supported by contact at the bend of its flange with the top of the inner flange of the ring, substantially as shown and described.

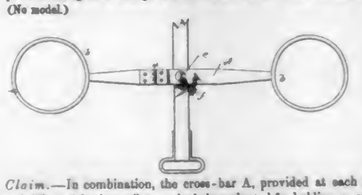
3. The combination, in a metallic vessel for resisting heavy internal pressure, of the sides A, the bottom C, having a turned-down flange, *c*, and a channeled ring, D, the inner flange, *b*, of which is formed with a rounded lip, *e*, and the channel in which is deeper than the flange *c*, the said channeled ring embracing the lower portion, *a*, of the sides A and the flange *c*, of the bottom C, and fastened thereto by rivets passing

through it and them, substantially as set forth, whereby the bottom is supported by said lip *e* at the bend of its flange.

4. The combination, in a metallic vessel for resisting internal pressure, of a channeled ring, D, the sides A, arranged with their lower edges or flanges *a* in the channel of said ring, but raised above the bottom thereof, the bottom C, resting on the upper edge of said ring, and having a turned-down flange, *c*, fitting within the sides A, arranged within the channel of said ring and of less depth than said channel, consequently not extending to the bottom thereof, rivets passed through said ring, and the flanges *a* and *c*, and a filling of solder or its described equivalent in said channel, extending beneath the edges of *a* and *c* and occupying the interstices of the joint, substantially as and for the purposes set forth.

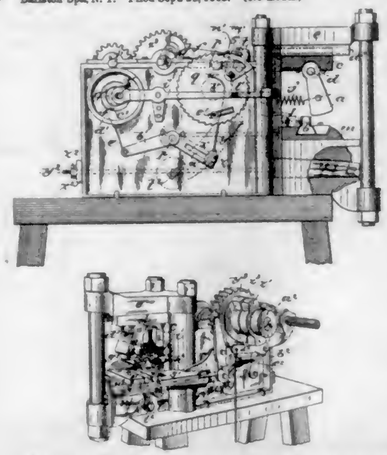
5. The combination, in a vessel for resisting heavy internal pressure, of the sides A, having flange *a*, the bottom C, having turned-down flange *c*, and a ring, D, having a channel which receives and embraces the flanges *a* and *c*, and with a downwardly-extending flange, *d*, beneath the bottom of said channel, forming a foot or base for the vessel, substantially as set forth.

299,674. FEED-BAG FOR HORSES. WILLIAM H. PACK, Philadelphia, Pa., assignor to George E. Pack, Camden, N. J. Filed Feb. 20, 1884. (No model.)



Claim.—In combination, the cross-bar A, provided at each end with a rigidly and horizontally attached ring adapted for holding an open feed bag or pail, as set forth, a saddle or bracket on the pole or tongue of a wagon, arranged to hold this bar firmly in its proper horizontal position, and a fastening device, substantially as described, for securing the bar to the pole and bracket.

299,675. MACHINE FOR FORMING SCYTHES. LUCIUS C. PALMER, Ballston Spa, N. Y. Filed Sept. 21, 1883. (No model.)



Claim.—1. The combination, in a swaging-machine, of a reciprocating oscillating die with an adjustable bed-die, substantially as set forth.

2. The combination, in a swaging-machine, of the oscillating die *a*, arranged on the reciprocating slide *c*, the bed or anvil die *b*, and a spring or analogous device for raising said oscillating die in its backward movement over the bed-die, substantially as set forth.

3. The combination, in a swaging-machine, of the reciprocating oscillating die *a*, a bed-die, a spring or analogous device for causing the oscillating die to clear the bed-die in its backward movement, and a stop in the path of the oscillating die for arresting said die in its backward movement at a point over the blank for allowing said die to bite on the blank in its forward movement, substantially as set forth.

4. The combination, in a swaging-machine, of the oscillating die *a*, sliding block *c*, having said oscillating die pivoted on it, the arm *i*, connected to the vibrating rod *f*, and the spring *j*, connecting said oscillating die *a* and arm *i*, substantially as described.

5. In a swaging-machine having an oscillating die, *a*, pivoted to a reciprocating block, *c*, a die-block, *m*, mounted on an inclined bed, *n*, and connected to an eccentric, *o*, having intermittent rotary motion to raise or shift die *b* toward die *a* during the intervals between the passes of said oscillating die *a*, substantially as described.

6. In a swaging-machine having an oscillating die, *a*, pivoted on a reciprocating slide, *c*, the die-block *m*, arranged on an inclined bed, *n*, and connected to eccentric *o* on a shaft, *p*, having an arm, *x*, connected by a chain, *y*, to the hub of a ratchet-wheel, *q*, having a pawl, *s*, that is worked by the reciprocating slide *c*, substantially as described.

7. The tripper *k'* on the pawl-lever *t*, in combination with pawl *s*, having stud *n'*, and with the stud-pins *o'* and *p'* of the ratchet-wheel *q*, substantially as described.

8. The friction-wheel *d''*, lever *i''*, drum *c'*, strap *e'*, arm *b'*, and shaft *j'*, in combination with the shaft *p*, having eccentric *o*, connected with die-block *m*, substantially as described.

9. The friction-wheel *d''*, lever *i''*, drum *c'*, strap *e'*, arm *b'*, and shaft *j'*, in combination with shaft *p*, having eccentric *o*, connected with die-block *m* and with the ratchet-wheel *q*, connected to said shaft *p*, and having the tripper *k'* to its pawl *s*, substantially as described.

10. In a swaging-machine, the stationary bending-die *q'*, movable bending-die *t'*, slide *u'*, connected thereto, pivoted lever *x'*, rod *w'*, pivoted to the lower end of lever *x'* and to slide *u'*, and a cam, *y'*, for operating on the free end of the lever *x'*, substantially as shown and described.

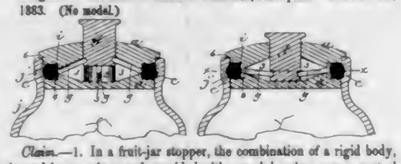
11. In a swaging-machine, the combination of the bending-dies *q' t'* and pivoted lever *x'*, connected to the movable die thereof, with the shaft *h*, gear-wheel i^2, clutch mechanism $i' i^2 y^2$, cam *y'*, and lever b^2, provided with a wedge-tongue, d^2, substantially as set forth.

12. In a swaging-machine, the gage *l*, in combination with the bed-die *b* and the oscillating die *a*, said oscillating die being arranged on a reciprocating slide, *c*, substantially as described.

13. In a swaging-machine, the bunter g^3, in combination with the gage *l*, bed-die *b*, and the oscillating die *a*, said oscillating die being arranged on the reciprocating slide *c*, and the bunter being operated by the slide *s'*, substantially as described.

14. The combination, in a swaging-machine, of the bed-die *b*, the oscillating die *a*, arranged on the reciprocating slide *c*, arm *i* of the vibrating rod *f*, spring *j*, connecting said die to said arm, and the stud *k* of the gage *l* to stop the die *a* in the relation to die *b* for allowing said die *a* to bite on the blank in the forward movement of the said die, substantially as described.

299,676. FRUIT-JAR STOPPER. EDWARD F. POLAND, Boston, Mass., assignor of one-fourth to James G. Crawford, same place. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a fruit-jar stopper, the combination of a rigid body, *a*, formed in one piece, and provided with a peripheral groove, a central cavity, and slots extending from said cavity outwardly to said groove, an elastic packing-ring in said groove, an expansible support behind said ring, and devices, substantially as described, contained in and held in place by the cavity and slots of the body *a*, whereby the expansible support and packing-ring are expanded outwardly in all directions from the center of the body *a*, as set forth.

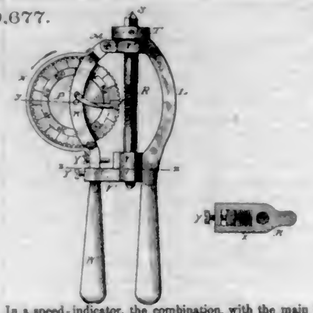
2. In a fruit-jar stopper, the combination of the rigid body *a*, having the peripheral groove 4, the elastic packing-ring *c*, located in said groove, the expansible support *i*, behind said ring, the plunger or pusher *f*, adapted to slide in a socket in the body *a*, and the links *g*, interposed between the pusher *f* and support *i*, and contained in radial slots or apertures in the body *a*, as set forth.

3. In a fruit-jar stopper, the rigid body *a*, having the flange 6, the central socket, 2, extending downwardly from its upper side, the peripheral groove 4, and the radial tapered slots 3, connecting the socket 2 with the groove 4, combined with the elastic ring *c*, located in said groove, the expansible support *i*, behind said ring, the pusher *f* in the socket 2, and the links *g*, passing through the slots 3, and engaged at their inner ends with the pusher *f*, and bearing at their outer ends against the support *i*, as set forth.

299,677. SPEED-INDICATOR. ROBERT JAMES PRATT, Greenbush Heights, N. Y. Filed Jan. 2, 1884. (No model.)

Claim.—1. In a speed-indicator, the combination, with the main frame L, within which is journaled the loosely-turning worm-spindle R, of a hinged arm, W, carrying a toothed dial, P, the main frame and arm being provided with hand-grasps, substantially as described.

299,677.



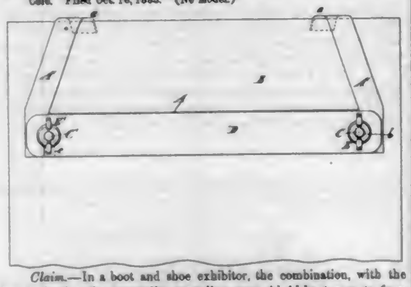
2. In a speed-indicator, the combination, with the main frame L, within which is journaled the loosely-turning worm-spindle R, of a hinged arm, W, and a spring, X, interposed between the main frame and arm, substantially as described.

3. In a speed-indicator, the combination, with the main frame L, within which is journaled the loosely-turning worm-spindle R, of the hinged arm W, the main frame and arm being provided with hand-grasps, and an interposed spring, whose recoil forces the dial from the spindle at the end of the recording operation, substantially as described.

4. In a speed-indicator, the combination, with the frame L, carrying the loosely-journaled worm-spindle R, of the hinged arm W, carrying the graduated toothed dial P, and provided with the set-screw Y', for limiting the inward movement of the arm, substantially as shown and described.

5. In a speed-indicator, the combination, with the frame L, provided with the loosely-journaled worm-spindle R, of the hinged arm W, carrying the graduated toothed dial P, said arm extending through an offset, V', on the frame, and provided with the spring X and set-screw Y, substantially as shown and described.

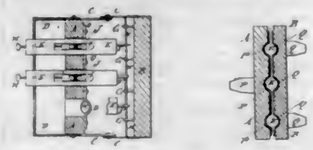
299,678. BOOT AND SHOE EXHIBITOR. ABRAM RAPP, Durango, Colo. Filed Oct. 16, 1883. (No model.)



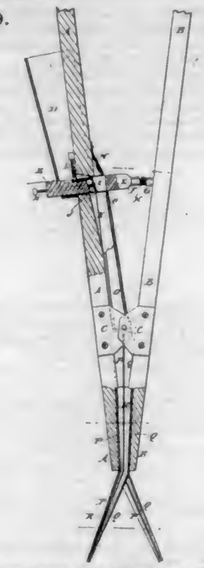
Claim.—In a boot and shoe exhibitor, the combination, with the bar A, having the upwardly-extending arms A' A' bent over to form the hooks *a a*, adapted to be attached to a box, of the pivoted clamping-bar D, having the notch *c*, and secured to the bar A by screws C C' and nuts E E', as shown and described, and for the purpose set forth.

299,679. HAND CORN-PLANTER. JOHN THOMAS RICKETS, Cadiz, Ky. Filed Feb. 1, 1884. (No model.)

Claim.—1. In a hand corn-planter, the combination of the hinged bars A B, provided, respectively, with semi-tubular plates P Q at or below the point of hinging, two pairs of said plates being bent forward and one pair rearward, as shown, with the semi-tubular plates O, and an arm, A, leading from the seed-hopper to the plates P Q, said hopper being provided with separate dropping-slides each communicating with one pair of the transversely-arranged plates P Q through the plates O, as set forth.

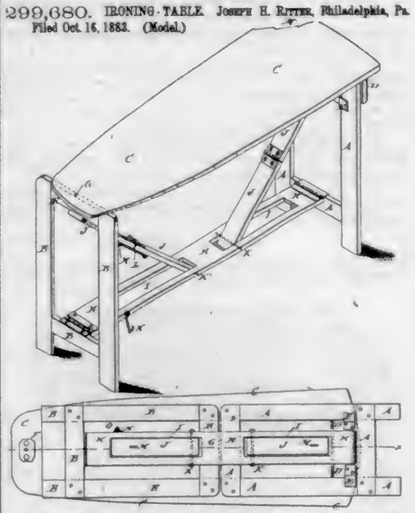


299,679.



2. In a seed-dropper having hinged arms, the plate P, formed in one piece with three semi-tubular grooves, two of the said tubular portions being bent in a forward direction and one in a rearward direction, in combination with a similarly-constructed plate, Q, whereby when the semi-tubular portions of the plates P Q come together separate passages R are formed, substantially as set forth.

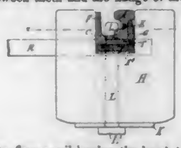
299,680. IRONING-TABLE. JOSEPH H. RITTER, Philadelphia, Pa. Filed Oct. 16, 1883. (Model.)



Claim.—The combination of the table-top C, provided with a socket-plate, F, at one end, and a bar, D, hinged to the opposite end, and having keepers E thereon to receive the upper ends of legs A, with the legs B A, board H, hinged to the lower cross-bars of said legs and slotted at I I, hinged braces J, pivoted at their lower ends within the inner ends of the slots and hinged at their upper ends to the upper cross-bars of legs B A, and a pin, G, on the upper cross-bar of legs B, whereby when the top is raised from legs B to a vertical position the legs A may slide within the keepers, the braces may be folded within the slots, and the legs B folded between the board H and the top, substantially as set forth.

299,681. TRAMWAY. ARTHUR H. ROWAN, 6 Westminster Chambers, County of Middlesex, England. Filed Feb. 26, 1883. (No model.) Patented in England Nov. 25, 1880, No. 4,911; in Belgium Apr. 2, 1881, No. 54,278, and in Germany June 4, 1882, No. 20,432.

Brief.—A compound tram-rail consisting of two sections, one having a tread, web, and horizontal flange, and the other being a channel-rail, one vertical arm of which supports the tread of the other section, and the other vertical part forming a channel for the wheel-flanges. The rail is secured in channeled paving-sets through vertical fastenings having wedges between them and the flange of the tread-rail.



Claim.—1. The flange-rail having the head A, vertical rib B, and base-flange C, in combination with the channel-rail E F G, having the rib F, extending upward, as shown, so as to form a guard-rail and protect the pitching, substantially as herein specified.

2. The combination, in a tram-road, of a tram-rail and a base-plate with intermediate channeled paving-sets, H, secured together by removable fastenings, adjustable substantially as herein set forth.

3. The combination of the bolt L, projecting upward into the groove of the channel-rail E F G, with such channel-rail, and with the flange-rail A B C, operating substantially as herein set forth.

4. The combination, in a tram-road, substantially as described, of a channel-rail, E F G, flange-rail A B C, packing I I', and a base-plate, K, with intermediate paving-sets, H, all arranged substantially as set forth, and secured together by adjustable fastenings, as specified.

299,682. ROLLER-SKATE. LUCIUS LORENZO RYERSON, Boston, MASS. Filed Apr. 17, 1884. (No model.)



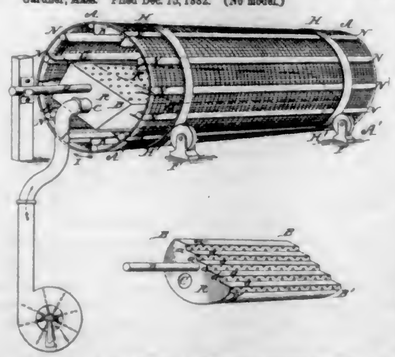
Claim.—1. A strengthening-rib, C, secured to the under side of the heel-plate A and turned up at its rear to serve as a stop for the heel, in combination with a sole-support, B, capable of adjustment upon said rib, for the purpose set forth.

2. A goose-neck axle-bearing and a goose-neck journal-bearing, with an arm, *l*, secured to the lower bend, *i*, of the goose-neck, in combination with a pair of springs, H H, and a holder or bracket, I, therefor, secured to the under side of a portion of the foot-support or around the central rib, as and for the purpose described.

3. A goose-neck, G, with an arm, *l*, projecting therefrom, in combination with a pair of springs located within a holder and having their tension regulated by an adjusting-screw, substantially as set forth.

4. A clip, *m*, extending over the rib C, in combination with and secured to a spring-holder, I, thereunder, substantially as and for the purpose specified.

299,683. MACHINE FOR DRYING GRAIN, &c. EDWD. H. SAWIN, Gardner, MASS. Filed Dec. 15, 1882. (No model.)



Claim.—1. An air-box, as R, adjustable sidewise and endwise in relation to the cylinder A A' at any desired angle, and having the perforated surface B B B' B', substantially as described, and for the purposes specified.

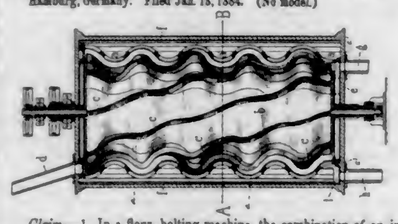
2. An air-box, as R, adjustable sidewise and endwise in relation to the cylinder A A' at any desired angle, with the upper surface, B B B' B', broken, as at *a a'*, more or less perforated, substantially as described, and for the purposes specified.

3. A revolving cylinder, as A A', in combination with an adjustable air-box, as R, substantially as described.

4. The cylinder A A', with the shelves K, rings H H', and trucks F F, in combination with the air-box R, inlet C, and also at the end opposite C, and the perforated surface B B B' B', adjusted with a partition for the use of different kinds of air at the same time, substantially as described, and for the purposes specified.

5. The cylinder A A', rings H H', trucks F F, shelves K, and the perforated spaces between the straight pieces N N, in combination with the air-box R, surface B B B' B', shaft D, support *f*, inlet C, and also at the end opposite C, and the mechanism whereby the end supported by the shaft D is raised or lowered, substantially as described.

299,684. MACHINE FOR BOLTING FLOUR OR OTHER PULVERIZED SUBSTANCES. LOUIS JOHANNES FREDERICH WILHELM SCHARRAU, Hamburg, Germany. Filed Jan. 18, 1884. (No model.)

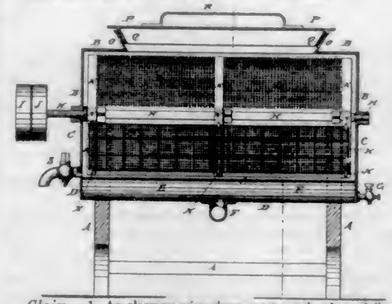


Claim.—1. In a flour-bolting machine, the combination of an interior vertical cylinder, having horizontal corrugations and exterior spiral beaters, with a concentric corrugated exterior bolting-reel and means for causing them to revolve in opposite directions, substantially as described.

2. In a flour-bolting machine, the combination of an interior vertical cylinder, having horizontal corrugations and exterior spiral beaters, with a concentric corrugated bolting-reel, means for causing them to revolve in opposite directions, and an inclosing-box provided with a top supply-pipe and bottom discharge-pipes, substantially as described.

3. The combination of an interior vertical horizontally-corrugated cylinder, *b*, having spiral beaters *c*, a concentric corrugated bolting-reel, *e*, having bottom scrapers, *i* and *z*, an inclosing-box, *f*, a supply-pipe, *d*, and discharge-pipes *h* and *g*, substantially as described.

299,685. JACKETED OLEOMARGARINE-CHURN. SAML. SCHWARZSCHILD, New York, N. Y. Filed Mar. 11, 1884. (No model.)

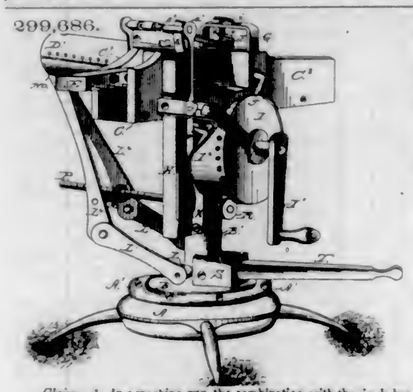


Claim.—1. An oleomargarine-churn constructed, substantially as herein shown and described, with a jacket to receive steam or hot water, and revolving screens to mix the ingredients, as set forth.

2. In an oleomargarine-churn, the combination, with the churn-body B C and the rotary shaft H, of the rows of radial arms K, the fine wire screens L, and the coarse wire screens M, substantially as herein shown and described, whereby the ingredients will be finely divided and thoroughly intermingled, as set forth.

299,686. MACHINE-GUN. CHARLES R. SCOTT, Las Vegas, N. MEX. Filed Jan. 3, 1884. (No model.)

299,686.



Claim.—1. In a machine-gun, the combination, with the single barrel D, having a surrounding jacket, D', provided with inlet and outlet connections, said jacket bearing against the frame C, and serving to support the barrel, of the frame C, the breech-block E, sliding horizontally therein, and mechanism for operating said breech-block and for discharging the cartridges as they are fed into position at the breech of the gun, all substantially as shown and described.

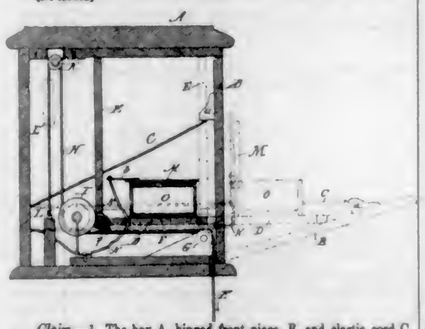
2. In a machine-gun, the combination, with the barrel D, of the slotted frame C, having its bottom provided with a continuous series of anti-friction rollers, *a*, the breech-block reversely ratcheted on opposite sides of top and bottom, and supported on such rollers, together with suitable pawl mechanism, whereby the breech-block is moved endwise and the chambers brought into alignment with the barrel of the gun in proper sequence for firing, all substantially as shown and described.

3. In a machine-gun, the combination, with the frame C, having the horizontal sliding breech-block E and slotted cover C', the uprights *e e'*, pivoted to the frame, and provided with cross-arm e^2, of the arms F F', journaled at their outer ends on the arm e^2, the inner end of the arm F' passed into the slot of the cover to engage the ratchet of the block, and the spring *f*, holding the arm in contact with the ratchet, and the arm F, having its inner end engaging the lug on the rod A, said arm passing through an opening in the cross-arm G, and the spring *i*, for depressing said rod, as shown and described.

4. In a machine-gun, the combination, with the cross-arm L upon the hinged upright B', and the frame C, mounted on said upright, and carrying the gun D, of the arms L' L', pivoted to the cross-arm, and the rods L^2 L^2, pivoted to the end of the gun and to the arms L' L', and provided with cross-bar N, having the screw-rod P, as and for the purpose set forth.

5. The combination of the upright B', carrying the frames C and H and gun D, and provided with the circular base B, cross-frame S, and bar or lever T, with the tripod-shaped base A and flange A', substantially as and for the purpose specified.

299,687. SNUFF AND MATCH BOX. PHILIPP SKILLE, Chicago, Ill., assignor of one-half to William Einfeldt, same place. Filed Mar. 25, 1884. (No model.)



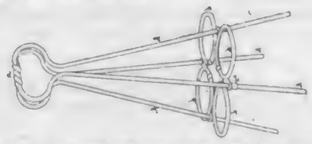
Claim.—1. The box A, hinged front piece, B, and elastic cord C, in combination with the platform D and cord F, secured thereto, as and for the purpose set forth.

2. The box A, hinged front piece, B, and elastic cord C, in combination with weighted platform D and cord F, secured thereto, as and for the purpose set forth.

3. The box A, hinged front piece, B, and elastic cord C, in combination with platform D, a match or snuff receptacle mounted thereon, and cord F, secured to said platform, as and for the purpose set forth.

4. The box A, hinged front piece, B, and elastic cord C, in combination with platform D, match or snuff receptacle O, mounted thereon, a hinged lid secured to said receptacle, an elastic cord, N, for opening said lid, and a cord, F, for operating the platform, as and for the purpose set forth.

299,688. WIRE TABLE-CASTER. DANIEL SHERWOOD and GEORGE D. DUDLEY, Lowell, MASS., assignors to Woods, Sherwood & Co., same place. Filed Jan. 21, 1884. (No model.)



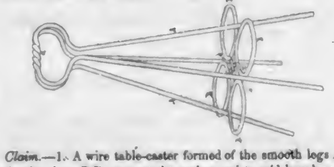
Claim.—1. As a new article of manufacture, a table-caster formed of smooth wire legs and smooth wire wings joined together by clasps and soldering metal, substantially as described.

2. In combination with the legs A A, the smooth wire rings *b b*, having their joints covered with metal clamps c^2 c^2, substantially as described.

3. The combination of the smooth wire legs A A, the smooth wire rings *b b*, and the binders *c c*, substantially as described.

4. In combination with the rings *b b*, the smooth wire legs A A, twisted together at *a* and bent on each side of said twist, to form the handle of the caster, substantially as described.

299,689. TABLE-CASTER. DANIEL SHERWOOD and GEORGE D. DUDLEY, Lowell, MASS., assignors to Woods, Sherwood & Co., same place. Filed Jan. 21, 1884. (No model.)



Claim.—1. A wire table-caster formed of the smooth legs A A and smooth wire rings B B, connected together and to said legs by soldering metal.

2. The wire rings B B and bridge-piece *c*, formed of a single continuous piece of smooth wire, substantially as described.

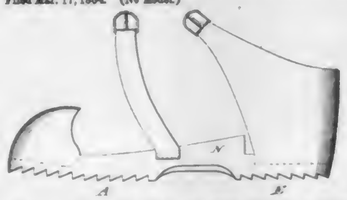
3. The wire ring B, formed with the bridge-piece *c*, of a single piece of wire, and having its grooved end *d* overlapping the wire against which it abuts, substantially as described.

299,690. FISHING-BAIT KETTLE. WILLIS H. SHERWOOD, St. Joseph, Mo. Filed May 29, 1883. (No model.)



Claim.—The pail A, in combination with the perforated pail B, provided with the rim *b* and flange *c*, by which the perforated pail is suspended within the outer pail, and provided with the dipper E, substantially as and for the purpose specified.

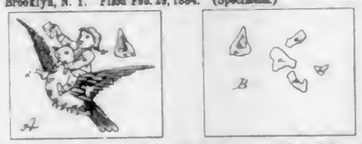
299,691. CARPET-STRETCHER. WILLIAM K. SMITH, La Harpe, Ill. Filed Mar. 17, 1884. (No model.)



Claim.—1. An india-rubber sole carpet-stretcher, to be operated by the foot, as set forth.

2. The serrated inclined teeth A and E, either extending across the sole of stretcher or in sections, substantially as and for the purpose herein set forth.

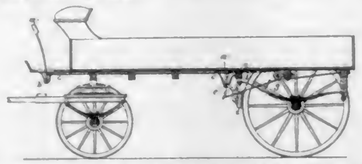
299,692. PROCESS OF PRODUCING PICTURES. ROBT. SNEIDER, Brooklyn, N. Y. Filed Feb. 29, 1884. (Specimens.)



Claim.—1. The process of producing a picture, E, which consists in first printing on background C impressions *b*, pasting thereon sections *d*, of suitable material, and finally printing or stamping the complete picture over and around sections *d*, substantially as specified.

2. In the process of producing picture E, the employment of the following steps: gaging background C, printing thereon sections *b*, mounting silk or other fabric on back, and cutting out sections *d*, pasting these over impressions *b*, and finally printing or stamping the complete picture over and around sections *d*, substantially as specified.

299,693. WAGON-BRAKE. ABNER J. STEELE, Allegheny, Pa. Filed Dec. 14, 1883. (No model.)

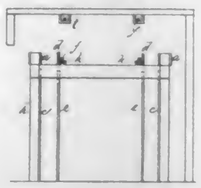


Claim.—In a wagon-brake, the double lever *d*, in combination with the bar *e*, chain *f*, and pulley *g*, substantially as described.

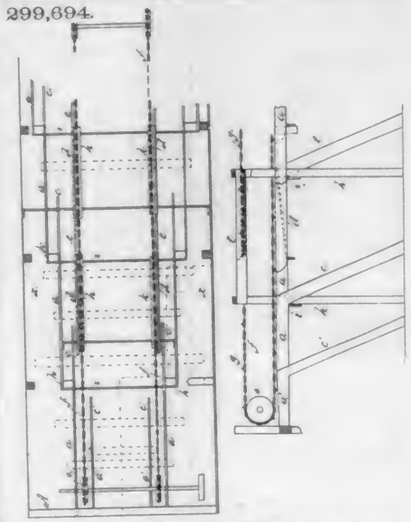
299,694. APPARATUS FOR SORTING LUMBER. WARREN C. STETSON, Minneapolis, Minn. Filed Aug. 24, 1883. (No model.)

Claim.—1. The apparatus for sorting lumber, consisting of a series of rails or ways in sections successively wider one than another, inclines at the ends of the rails, and an endless traveling chain above the ways, and fitted with lugs or hooks for carrying the material forward, substantially as shown and described.

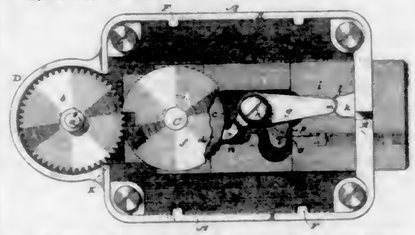
2. In lumber-sorters, the combination of the rails *a*, placed in sections widening successively, and the endless traveling chains *f*, provided with hooks or lugs, the chains being fitted above the rails and operated by suitable mechanism, so as to act on lumber placed on the rails, substantially as described.



299,694.



299,695. PERMUTATION-LOCK. EMORY STOCKWELL, Stamford, Conn., assignor to the Yale & Towne Manufacturing Company, same place. Filed Sept. 26, 1883. (No model.)

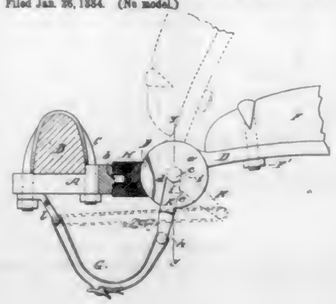


Claim.—1. The combination, with the lock-case of a combination-lock, of a back plate and rotating notched tumblers of ordinary construction, the back plate being provided with a rib, P, or equivalent projection, whereby the tumblers serve normally to lock the plate in place, substantially as and for the purpose set forth.

2. The combination of a lock-case and the separable back plate provided with a fence or rib, P, and a tumbler-curb, all so constructed and arranged that when the plate is locked in position by the tumblers the fence will hold the curb in place, substantially as set forth.

3. The combination, with the tumblers, of the fence, the dog, the bolt, the lug for tilting the fence away from the tumblers, and the spring-bolt bearing against the dog, substantially as set forth.

299,696. THILL-COUPLING. CHARLES E. STRUCK. Newark, N. J. Filed Jan. 26, 1884. (No model.)



Claim.—1. The combination of the clip A, formed with cheek-piece *a a'* and pin *c*, the cheek-piece *a* being provided with an irregularly-shaped slot, with the thill-iron D, also provided with an open irregularly-shaped slot, and a key, E, of irregular form, to correspond with the slots in the cheek-piece and thill-iron, whereby, when the key is passed through the slot in the cheek-piece into the slotted thill-iron, the said iron will be securely hinged to the pin *c*, substantially as set forth.

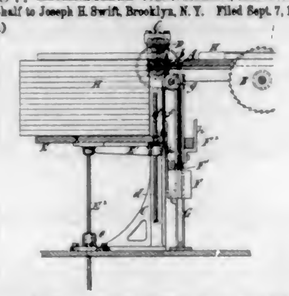
2. The combination of the clip A, formed with pin *c* and cheek-pieces *a a'*, the former having an inclined grooved slot, *d*, and the latter having an aperture, *f*, with the thill-iron D, having an inclined grooved slot, *g*, the said slots inclining in opposite directions, and the tongued key E, constructed to be passed through the slot *d* into the slot *g* when said slots are in alignment, and to be forced therefrom by a suitable implement passed through the aperture *f*, substantially as set forth.

3. The combination of the thill and clip irons A D, slotted as described, with the key E, formed with a loop, *i*, whereby said key may be connected to the axle by a suitable strap, substantially as set forth.

4. The combination of a thill-iron, D, formed with an open slot, one of the walls of which has a transverse groove therein, with a key formed with a tongue on one of its sides to register with said groove, whereby, when the said key is inserted in the slot, the slot will be closed, and a central aperture formed in the said thill-iron between the upper end of the key and the upper end of the slot, substantially as set forth.

5. In a thill-coupling, the thill-iron D, formed with slot *g* and cavity *h*, in combination with the clip A, having slot *d* and cavity *e*, and the key E, having tongue *i*, substantially as and for the purposes set forth.

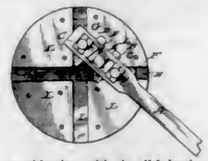
299,697. MACHINE-TABLE. JOHN J. SULLIVAN, Green Point, assignor of one-half to Joseph H. Swift, Brooklyn, N. Y. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination, with a circular-saw table, of a pair of holding and drawing rolls which are adapted to grasp a board before it leaves the saw and to draw it forward, a rising and falling receiving-table arranged at the end of the saw-table, a counterbalance-weight connected with the said receiving-table, and a number or series of supplemental weights which are arranged to be picked up by the ascending counterbalance-weight as the receiving-table descends by the increasing weight of boards received upon it, substantially as and for the purpose herein described.

2. The combination of the saw or other table, A, the standards C, the receiving-table E, fitting between and guided by the standards C, the counterbalancing-weight F, connected with said receiving-table, one or more supplemental weights, and supports *h* for the supplemental weights, at different heights, substantially as and for the purpose described.

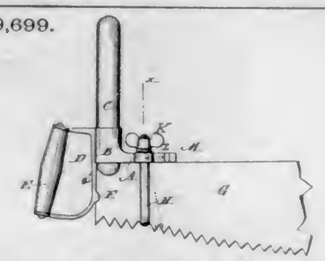
299,698. PITMAN. HENRY HAMLET TRAVIS, Modena, Wis., assignor of one-half to Frank Beandreau, same place. Filed Apr. 10, 1884. (No model.)



Claim.—The combination, with the disk having diametrical ways in its face, crossing each other at right angles, and the detachable sector-shaped plates partly overlapping the ways with their edges, of the blocks having flanged inner portions sliding in the ways, and the pitman, pivoted at its head to the blocks, as and for the purpose shown and set forth.

299,699. HANDLE FOR CROSSCUT-SAWS. ANDREW UREK, Seattle, Wash. Filed Mar. 21, 1884. (No model.)

299,699.

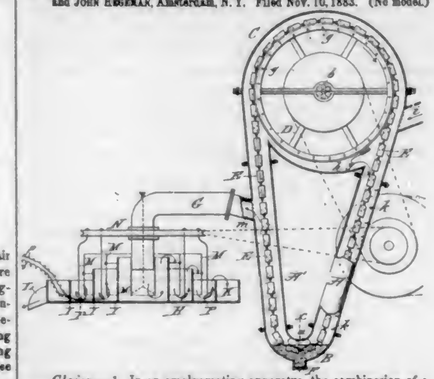


Claim.—1. The combination, with the saw-blade G, of the flat bar A, having a socket, B, and a U-shaped bracket, D, provided with a handle, E, and a vertical post, *a*, abutting against the end of the saw-blade, and having lugs F, straddling the end of the blade, and upright handle C, slotted at its lower end to receive the upper edge of the saw-blade, substantially as shown and described.

2. The combination, with the saw-blade G and flat bar A, having an aperture, L, socket B, and bracket D, provided with a handle, E, and lugs F, of the slotted rod H, nut K, and upright handle C, slotted at its lower end, substantially as shown and described.

3. In a saw-handle, the combination, with the bar A, adapted to be held on the saw end, of a cushion or buffer, M, on the inner end of the handle, substantially as herein shown and described.

299,700. AMALGAMATING APPARATUS. MILTON T. VAN DERVEER and JOHN HEDEMAN, Amsterdam, N. Y. Filed Nov. 10, 1883. (No model.)



Claim.—1. In an amalgamating apparatus, the combination of a casing or chamber, C, a pair of tubular channels, A A', communicating with said chamber, a mercury-reservoir, B, connecting the lower ends of said tubes, a wheel or pulley, D, mounted in the chamber C, an endless belt or chain passed over said wheel and carrying perforated buckets E E, for raising mercury from the reservoir and spattering it over the pulp that is passed through the tubes A A', and a settling-pan, H, connected to one of said tubes, substantially as described.

2. In an amalgamating apparatus, the combination of the tubes A A', mercury-reservoir B, chamber C, wheel D, having a grooved periphery provided with perforations *g g*, the shelves or brackets *k k*, and the buckets E E, attached to a belt or chain, substantially as described.

3. In an amalgamating apparatus, the settling-pan H, having concentric partitions I I I, of varying height, and adjustably-suspended partitions or plates M M M, connected by wires to a battery, substantially as described.

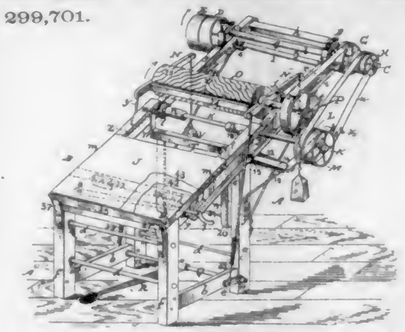
4. In an amalgamating apparatus, the settling-pan H, having concentric partitions I I and M M, trough K, spout L, and stirrers P P, substantially as described.

5. In an amalgamating apparatus, the combination, with the tubes A A', mercury-reservoir B, and buckets E E, of the tube G, settling-pan H, having partitions I M, and the wheel N, carrying stirrers P P, substantially as described.

299,701. PUTTING-OUT MACHINE. JOSEPH W. VAUGHN, Peabody, Mass., assignor to the Vaughn Morocco Machine Company, Portland, Me. Filed Feb. 11, 1884. (No model.)

Claim.—1. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the combination of the following instrumentalities,

299,701.



to wit: an inclined table for holding the hide or skin, said table being adapted to traverse or move in a line corresponding with the angle at which it is inclined; a clamp or clamps for securing the hide or skin to the table; a roll adapted to scrape, scour, flesh, put out, or unhair the hide or skin, as the case may be; a treadle for causing the roll to press upon the hide or skin; an automatic belt-shipping device, substantially as described; mechanism for causing the table to move back and forth under the roll, and operative mechanism for the roll, substantially as set forth.

2. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the brush 24, mounted in the levers N, pivoted on the shaft t, in combination with the roll O, substantially as and for the purpose specified.

3. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the roll O, provided with a series of flanges, 25, having the sections 29, 30, and 31, constructed and arranged to operate substantially as specified.

4. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the flange 25, having the sections 29 and 30, arranged, respectively, at different angles to the central axial line of the roll O, and provided with the flange 26, for attaching it to the roll, substantially as and for the purpose set forth.

5. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the swinging bar T, provided with the bars 19, in combination with the rollers n and table J, substantially as specified.

6. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the stud 22, in combination with the table J, bar 19, and bar T, substantially as and for the purpose set forth.

7. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the roll O, shaft l, levers N, and weight v, in combination with a treadle or device for causing the roll to press on the hide or skin, substantially as specified.

8. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the rod y, provided with the spring 33, in combination with the roll O, lever N, and a treadle or means for exerting a pressure on said roll, substantially as and for the purpose set forth.

9. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, and having an inclined table, a shipping mechanism, substantially as described, adapted to be operated automatically by the advancing table, whereby the table may be released and permitted to descend by gravitation to the lower end of its course, substantially as specified.

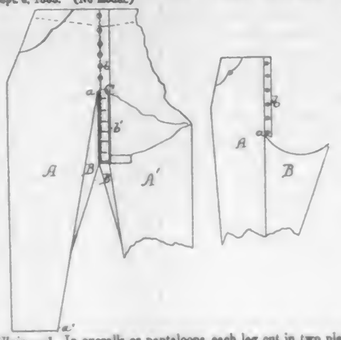
10. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the bars 6 and 7, bell-crank lever 14, provided with the studs 16, and bar 2, provided with the stud 3, in combination with the table J and operative mechanism, substantially as set forth.

11. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the shaft K, provided with the pinions l, rollers n, and pulleys L M, in combination with the table J, provided with the racks z, bar T, provided with the bars 19, and operative mechanism, substantially as set forth.

12. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the inclined table J, having the side rails, m, projecting in advance of its rear edge, as shown at i, and provided with racks z, in combination with the shaft K, pinions l, rollers n, bar T, and operative mechanism, substantially as specified.

13. In a machine for putting out, scouring, fleshing, or unhairing hides or skins, the body consisting of the upright frame-work or structure A and inclined frame-work or structure B, the shaft C, provided with the pulleys E D G H, the shaft l, carrying the roll O and pulley P, the shaft K, provided with the pinions l, rollers n, and pulleys L M, the levers N, provided with the weights v and rods y, the treadle, consisting of the rocker-shaft Q, arms e, and part R, the shipping device, consisting of the bars 2, 7, and 6, and lever 14, the table J, provided with the racks z, and the bar T, lags 17, bars 19, studs 22, and brush 24, combined and arranged to operate substantially as specified.

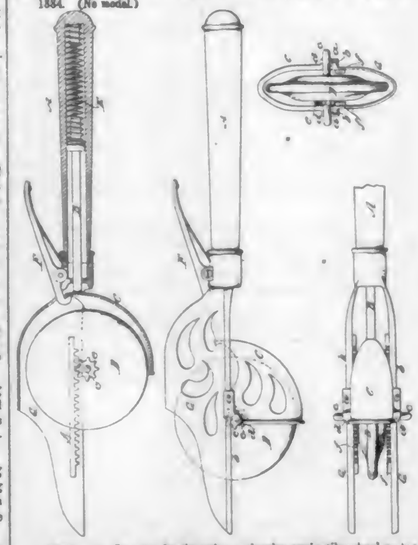
299,702. OVERALLS. WILLIAM G. VEDDER, Hamburg, N. Y. Filed Sept. 6, 1883. (No model.)



Claim.—1. In overalls or pantaloons, each leg cut in two pieces, a front, A, and back B, the inside seam of the front A cut in a straight line from the point of the fly at *a* to the bottom at *a'*, and the back B cut into a curved and widened point at the crotch, and the point *c* sewed to the point *a* of the front and straight to the bottom *a'*, as and for the purpose specified.

2. A pair of overalls or pantaloons, each leg of which is formed of only two pieces of material, the fronts being cut out beside the fly, and the backs having extensions curved on top to fit the crotch, and of a form to fit the cut-away portions of the fronts and bring the inside seams forward on the leg, one of the fronts being cut with a strip, *b'*, forming a part thereof, and adapted to extend over upon the opposite fly, and a cord, as *d*, inserted in said fly on both sides, all substantially as herein set forth.

299,703. TOY. CHARLES AUGUST VOLKE, Kobe, Japan. Filed Apr. 8, 1884. (No model.)



Claim.—1. In a toy for throwing a circular projectile wheel or top, the combination, with the stock or handle and guide for said projectile, of a carrier for imparting the necessary impulse to the projectile, and means for giving a rapid rotary motion to the projectile while in its guide and carrier, substantially as specified.

2. In combination with the guide for the wheel or top and the sliding carrier by which said wheel or top is projected out of the guide, the wheel or top provided with a spindle and one or more disks or pinions

for operation in connection with one or more rails or racks on the guide, essentially as described.

3. The combination, substantially as hereinbefore described, of the spring-propelled carrier, the trigger for retaining and releasing the carrier, and the guide.

4. The carrier C, constructed with open-mouthed recessed bearings *d* in its forward end, substantially as and for the purpose herein set forth.

5. The combination, substantially as hereinbefore described, of the spring-propelled carrier, the trigger for retaining and releasing the carrier, the guide, the ledge, rail, or rack on the guide, the wheel to be placed within the carrier, and the disk or pinion formed on or connected to the wheel and bearing against or engaging with the ledge, rail, or rack on the guide.

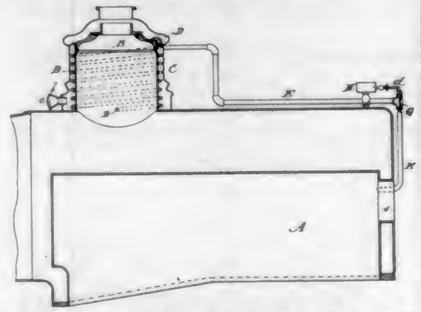
6. In a toy for throwing and rotating a wheel or circular projectile, the method herein described of giving to said wheel a return rolling motion after the inertia as derived from its projection has been expended, by communicating a back rotary motion to the wheel while in the act of being projected, essentially as specified.

299,704. DRESSING COMPOUND FOR THREADS, YARNS, &c. JOHN S. WATTLES, Canton, Mass. Filed Mar. 21, 1884. (No specimens.)

Claim.—1. The improved dressing compound composed of starch, flour, grease, spirits of turpentine or its equivalent, and alum and water, substantially as set forth.

2. The improved dressing compound composed of starch, flour, grease, spirits of turpentine or its equivalent, alum, water, and paraffine-wax, substantially as set forth.

299,705. FEEDING AIR TO LOCOMOTIVE-FURNACES. JAMES N. WEAVER, Sayre, Pa. Filed Apr. 3, 1884. (No model.)



Claim.—1. In apparatus for heating air and supplying the same to the furnaces of steam-boilers, the combination, with the boiler and its furnace, of a jacketed air-space and spaced steam-circulating pipes therein, which pipes are connected at both ends with the interior of the boiler, and a pipe or pipes for conducting the heated air from the jacketed space to the furnace and over the fire, substantially as set forth.

2. The combination, with the steam-dome B of a locomotive-boiler and its furnace A, of the air-jacket C, having a front inlet at or near its one extremity, a coil of steam-circulating pipes around the dome, with an air-circulating space between them, and a pipe or pipes connected with the opposite end portion of the jacket to that at which the air is received, and arranged to conduct the heated air to or over the fire, essentially as described.

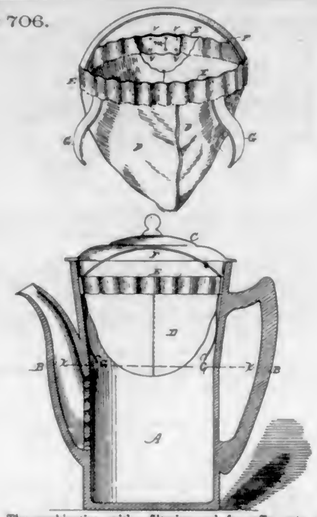
3. The combination, with the steam-dome B of the boiler, furnace A, and the air-jacket C, having a front inlet, of the coiled steam-pipes D, pipes E, leading from the outlet of jacket C to the furnace over the fire, and the steam-injecting nozzles G within the said hot-air pipes, substantially as set forth.

4. The combination, with the steam-dome B and its boiler and furnace, of the air-jacket C, having a front inlet-passage, a coil of spaced steam-circulating pipes, D, connected to the upper and lower ends of the said dome, pipes E, leading from the outlet of the jacket to the rear end of the furnace, and nozzles G, passing within the pipes E, as shown, and connected to the boiler by pipes *d*, provided with valves H, substantially as set forth.

299,706. COFFEE-POT. HUMPHREY P. WEBSTER, Boston, Mass. Filed Sept. 28, 1883. (No model.)

Claim.—1. A filter for coffee-pots, consisting of an adjustable hoop, a filtering-sack suspended therefrom, and springs attached at their upper ends to said hoop and extending outwardly and downwardly therefrom outside of the sack, substantially as described.

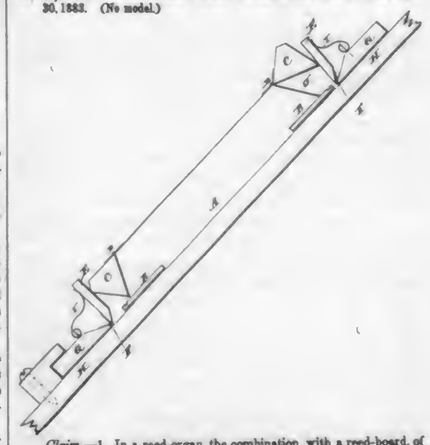
299 706.



2. The combination, with a filtering-sack for coffee-pots, of a corrugated adjustable hoop for supporting said sack, the ends of said hoop being overlapped, intermeshed, and attached together, substantially as described.

3. The combination, with a coffee-pot, of a filter consisting of an adjustable hoop, a filtering-sack suspended therefrom, and springs attached at their upper ends to said hoop and extending outwardly and downwardly therefrom outside of the sack, substantially as described.

299,707. REED-ORGAN. HENRY WREHAN, Ithaca, N. Y. Filed Apr. 30, 1883. (No model.)



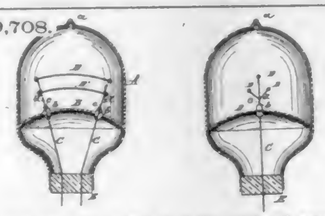
Claim.—1. In a reed-organ, the combination, with a reed-board, of a mute, a device, E, hinged at its lower end, and a spring arranged to maintain the device E in constant engagement with the mute, substantially as set forth.

2. In a reed-organ, the combination, with a reed-board and reeds, of a mute, a device, E, hinged at its lower end to a strip arranged parallel with the mute, and a spring secured to said strip and arranged to maintain the device E in constant engagement with the mutes, substantially as set forth.

299,708. ELECTRIC LAMP. ALEXANDER WELSH, St. Denis, Md., assignor to the Viaduct Manufacturing Company of Baltimore City. Filed Aug. 9, 1883. (No model.)

Claim.—1. An incandescing electric lamp having two opposite metallic filament-supports common to a series of separate carbon filaments,

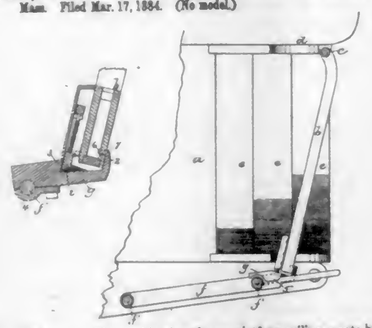
299,708.



all of which are at the same time in circuit through said supports, and each independently and removably connected directly thereto, substantially as described.

2. An incandescing electric lamp having two opposite branched metallic filament-supports carrying a series of separate and independently-connected carbon filaments, each of which is supported by two opposite metallic branches of the said two supports, and all in the lamp-circuit simultaneously, substantially as described.

299,709. CAR-PLATFORM GATE. ANDREW J. WILLCUTT, Boston, Mass. Filed Mar. 17, 1884. (No model.)



Claim.—1. The combination of a car-platform railing, a gate hinged to the end of the car and adapted to swing outwardly toward the railing, and a stop-plate adapted for attachment to the railing, and provided with a stop adapted to limit the outward movement of the gate, and a shoulder to engage a spring lock-bolt on the gate, as set forth.

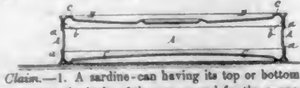
2. The combination of a car-platform railing, a gate hinged to the end of the car and adapted to swing outwardly toward the railing, and provided with a slotted plate, and a stop-plate adapted for attachment to the railing, and provided with a stop adapted to limit the outward movement of the gate, a shoulder to engage a spring lock-bolt on the gate, and a lug adapted to enter the slot in the gate, and thereby prevent the separation of the platform and gate, as set forth.

3. The improved plate *g*, having a gate-arresting stop or stops, and a clamping-lug, whereby it may be secured to one of the uprights of the car-platform railing, as set forth.

4. The improved plate *g*, having a gate-arresting stop or stops, a clamping-lug adapted to grasp one of the uprights of a car-platform railing, and a flange, 5, adapted to bear upon the top of said railing, as set forth.

5. The car-platform gate having a lock-bolt, *i*, and a slot, 7, combined with a plate, *g*, attached to the platform-gate, and provided with a shoulder adapted to engage the lock-bolt, and with a lug having an offset, 6, adapted to enter the slot 7 in the gate, whereby the railing is prevented from being separated from the gate, as set forth.

299,710. SARDINE-CAN. JULIUS WOLFF, New York, N. Y. Filed Apr. 8, 1884. (No model.)

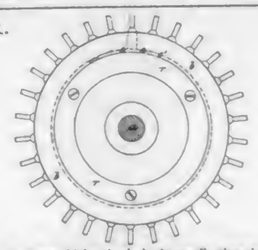


Claim.—1. A sardine-can having its top or bottom concaved and secured within the body of the can, as and for the purpose set forth.

2. In a sardine-can, the combination, with the body A, provided with the offsets *a*, of the concave top B, provided with the flange *b* and bead *c*, substantially as herein shown and described.

299,711. WHEEL. ROBERT ADAMS, Southwark, County of Surrey, England. Filed Nov. 6, 1883. (No model.) Patented in England Oct. 16, 1882, No. 4,922.

299,711.



Claim.—1. In a vehicle-wheel, the internally-threaded nut held in a stationary position in the disk of the hub, in combination with the spoke having a screw-threaded end adapted to the internal thread of the nut for tightening and repairing the spokes, substantially as described.

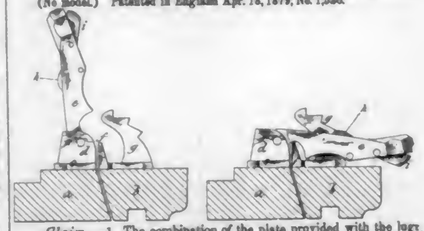
2. In a vehicle-wheel, the combination of the disk having an annular rim provided with perforations to receive the ends of the spokes, with the internally-threaded nuts applied to the rim and held against rotation, and the spokes having screw-threaded ends passing through the rim of the disk and screwed into the nuts, substantially as described.

3. The combination in a vehicle-wheel, of the disk, the internally-threaded nuts held against rotation around the periphery of the nuts, the spokes having screw-threaded ends screwed into the nuts, and an annular covering-plate arranged over the inner ends of the nuts, substantially as described.

4. The combination, with the central disk of a vehicle-wheel having an annular grooved rim, of the internally-threaded nuts arranged in the groove, and provided with wings *c* to prevent their rotation, and the spokes having screw-threaded ends screwed into the nuts, substantially as described.

5. The combination, in a vehicle-wheel, of the center disk, the detachable internally-threaded nuts held against rotation around the periphery of the disk, and the wheel-spokes having screw-threaded ends screwed into the nuts, substantially as described.

299,712. FASTENER FOR MEETING-RAILS OF SASHES. ROBERT ADAMS, Southwark, County of Surrey, England. Filed Nov. 6, 1883. (No model.) Patented in England Apr. 18, 1879, No. 1,590.

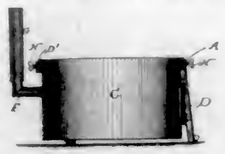


Claim.—1. The combination of the plate provided with the lugs, the lever pivoted to said lugs, the pawl pivoted to said lever, and the plate provided with the fulcrum for the said lever to bear down on, and the ratchet-bar for the pawl to engage with, substantially as and for the purpose set forth.

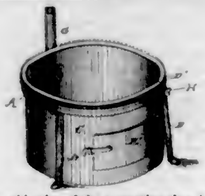
2. The combination of the plate provided with the lugs and spring-plate, the lever pivoted to said lugs, and having a pointed end to bear against said spring-plate, the pawl pivoted to said lever and operated by the spring-actuated thumb-piece, and the plate provided with the fulcrum for the said lever to bear down on, and the ratchet-bar for the pawl to engage with, substantially as and for the purpose set forth

3. The combination of the plate provided with the lugs, the lever pivoted to said lugs, and provided with a pinion at its lower end, the pawl pivoted to the said lever, and the plate provided with the toothed fulcrum to engage with the pinion of the lever, and the ratchet-bar for the pawl to engage with, substantially as and for the purpose set forth.

299,713. PORTABLE FURNACE. JOSEPH WALTER BARRET and GEORGE WASHINGTON MORRIS, Aroma, Ind. Filed Dec. 27, 1883. (No model.)



299,713.



Claim.—The combination of the supporting-ring A, having feet B and set-screws H, and sheet-metal cylinder C, open at the top and bottom, and having the flange D', door E, and elbow F, substantially as set forth.

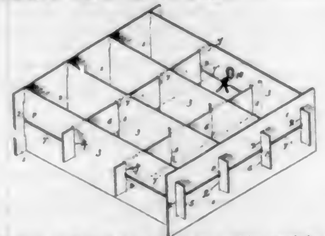
299,714. INTERNAL BOTTLE-STOPPER. ERNEST BAGNER, Findlay, Ohio, assignor of one-half to Vincent H. Coons, same place. Filed Dec. 8, 1883. (No model.)



Claim.—1. In an internal bottle-stopper, the combination, with the rubber valve and upper and lower metal washers having the Y-shaped stem with eyes at the ends of the Y, of the swinging spring-bow held in the eyes of the Y, substantially as specified.

2. In an internal bottle-stopper, the combination, with the rubber valve and metal washers, of the stem flaring outwardly at its upper end, and of the spring-bow secured to the enlarged portion of the stem and extending downwardly on both sides thereof, substantially as specified.

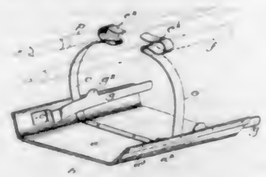
299,715. CELL-CASE FOR CARRYING EGGS, &c. THOMAS BACON, Jr., Laurel, Del. Filed Mar. 13, 1884. (Model.)



Claim.—1. A cell-case for eggs and other articles, consisting of the series of subdividing-partitions arranged to form the series of cells, some of the partitions parallel with each other having their longitudinal edges lying in different horizontal planes, and some of them having end tongues passed through slots in the outer partitions and a cord or string passing around the cell-case through perforations in the said projecting tongues and tied, said cord at the corners of the case passing around the same outside of the cells, substantially as described.

2. A cell-case for eggs and other articles, consisting of a series of subdividing-partitions arranged to form a series of cells, the ends of the partitions extending through the outside partitions, and a cord passed around the case through the extending ends of the partitions, and at the corners of the case passing around the same outside of the cells, substantially as and for the purpose set forth.

299,716. BLOTTING-PAD. CHARLES J. BAILEY, Newton, Mass. Filed Feb. 27, 1884. (No model.)



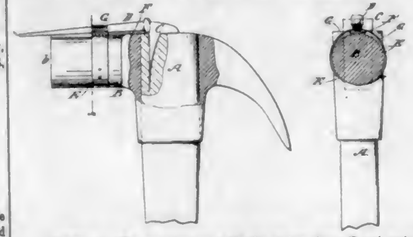
Claim.—1. As an improved article of manufacture, a blotting-pad provided with metallic spring-arms c c, adapted to be sprung apart at its ends to embrace the sleeve or arm and hold the pad in place, substantially as described.

2. A blotting-pad provided with a spring-clip having a holder for a pen or pencil, substantially as described.

3. A blotting-pad provided with spring-fingers to enter the sleeve or cuff, to hold the pad in place, substantially as described.

4. A blotting-pad provided with a spring-clip, c, and spring-fingers *g*, the former to embrace and the latter to enter the sleeve or cuff, substantially as described.

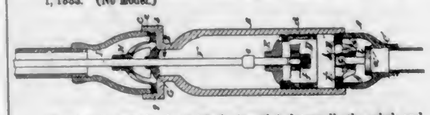
299,717. NAIL-HOLDING ATTACHMENT FOR HAMMERS. GEO. F. BARBER, De Kalb, Ill. Filed Mar. 31, 1884. (No model.)



Claim.—1. The combination, with the spring-clamp E and spring-jaws G G, of the tongue F, attached to the spring-clamp, and constructed at its rear end to enter the handle of the hammer for the purpose of anchoring the clamp on the head of the hammer, substantially as specified.

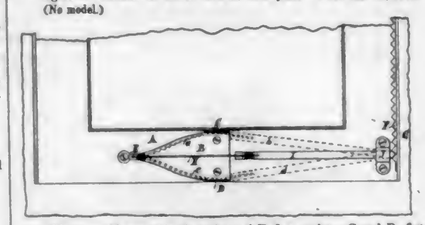
2. The combination, with the handle A and hammer-head B, of the wedge or stop C in the outer end of the handle, the removable spring-clamp E, constructed to partly encircle and hug the nose of the hammer, the nail-holding spring-jaws G G, attached to the clamp, and the tongue F, constructed to enter the outer end of the handle and to anchor the clamp to its place, essentially as and for the purposes herein set forth.

299,718. PUMP. EMORY BARNES, Mount Pleasant, Mich. Filed Oct. 1, 1883. (No model.)



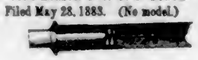
Claim.—In combination with the barrel A, internally threaded, and the inverted dome A', externally and internally threaded, the spider D', provided at its top with an annular ring, E', exteriorly threaded, and a centrally-located socket, *c'*, formed in the hub *h*, situated between and held by the downward-projecting arms *i* of the spider, and the flat valve *b'*, having a stem working through said socket, all constructed and arranged substantially as described.

299,719. SASH-FASTENER. GEORGE S. BARNES, Boston, Mass., assignor of one-half to Elizur Barnes, same place. Filed Jan. 16, 1884. (No model.)



Claim.—The combination of stand E, finger-plates C and D, flat spring H, bolt I, guide J, and rack F, said spring being fastened at one end to said stand and at the other end to said bolt, substantially as and for the purposes set forth.

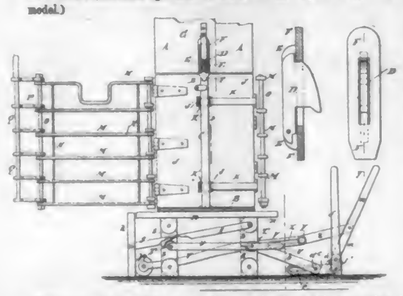
299,720. CONNECTION FOR GAS-TUBES. SAMUEL BARR, Providence, R. I. Filed May 23, 1883. (No model.)



Claim.—1. The combination of the internal wire-supported flexible tubing, the casing surrounding the same at the end thereof, and the tube inserted within the end of the tubing inside of the wire support and extended below the lower end of the outer casing, substantially as described.

2. The combination of the flexible gas-tubing, the casing formed with an annulus between its ends and fitted over the end of the tubing, and the tube formed with a flaring end and fitted within the tubing, with the flaring end opposite the annulus of the casing and its other end extended below the lower end of the casing, substantially as described.

299,721. PRESS FOR SACKING BRAN, SAWDUST, &c. ARTHUR LEE BATSON, Morrisburg, Ontario, Canada. Filed Apr. 16, 1884. (No model.)



Claim.—1. In a sacking-press, the combination, with the casing A and the ends of the hoop-bar C, of the spring-catches D G, substantially as herein shown and described, whereby the sack cover-plate, when forced down by the follower, will be caught and held as the package is lowered from pressure, as set forth.

2. In a sacking-press, the combination, with the bottom plate, B, and the bent bar C, of the inner case, J, having hinged sides, and the outer skeleton case, M N O, having hinged sides, substantially as herein shown and described, whereby the sack will be securely held while being filled, as set forth.

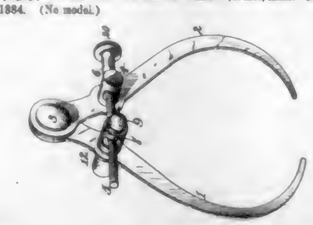
3. In a sacking-press, the combination, with a side plate of the inner case, J, having recesses or slots J', and an arm of the bent bar C, of the free hinge-straps K, having offsets, K', and the button L, substantially as herein shown and described, whereby the said case will be securely fastened shut and held in place, as set forth.

4. In a sacking-press, the combination, with the skeleton case M N O, having hinged sides, of the series of cams P and their connecting-rod Q, substantially as herein shown and described, whereby the case can be readily locked and released, as set forth.

5. In a sacking-press, the combination, with the base-plate R, of the toggle-bars S, the connecting-bars U Z, the bent bar V, having roller W and slot X, and the lever *a*, substantially as herein shown and described, whereby the said toggle-bars can be readily opened to raise the said plate, as set forth.

6. In a sacking-press, the combination, with the toggle-bars S, of the connecting-bars U *b*, the connecting-bar *c*, having slot *e*, and the lever *f*, substantially as herein shown and described, whereby the said toggle-bars can be readily closed to lower the base-plate of the press, as set forth.

299,722. CALIPERS. STEPHEN H. BELLOWS, Athol, Mass. Filed Mar. 22, 1884. (No model.)



Claim.—1. In calipers, the combination of two legs or jaws, a stud mounted upon one thereof, a screw-threaded rod secured in such stud, a cylinder or case swiveled or mounted in or upon the other leg or jaw, and a nut for engagement with the rod swiveled or rotatably mounted and spring-seated within the cylinder or case, substantially as described.

2. In calipers, the combination, with a screw-rod mounted or secured, through the medium of a stud, upon one leg or jaw, of a nut for engagement therewith secured within a case or cylinder mounted upon the other leg or jaw and provided with an aperture, part of which is adapted to engage with and fit upon the screw-rod, while the remaining portion is constructed to be free therefrom and not impede the movement of the rod therethrough, substantially as described.

3. In calipers, the combination, with the screw-adjusting rod, of a nut having an aperture, part of which is adapted to take upon and engage with the rod, while part is constructed to be free therefrom, and means, substantially as described, for throwing the part adapted to engage with the rod out of engagement therewith, substantially as described.

4. In calipers, the combination, with the nut adapted to engage with the adjusting screw-rod, of a containing case or cylinder mounted upon one leg or jaw, and means, substantially as described, for controlling the position of the nut therein and its relation to the adjusting-rod, substantially as specified.

5. The combination, in calipers, of the stud 4, screw-rod 5, case 8, nut 9, having aperture 11, and spring 13, arranged and operating substantially as described.

299,723. CAR-COUPLING. THOMAS ELANDER, Boston, Mass. Filed Mar. 29, 1884. (No model.)



Claim.—1. In a car-coupling, the combination of a draw-head having a curved coupling-pin socket, a shoulder behind the socket, and a slot extending backwardly from the socket, combined with a curved pin adapted to enter said socket, and a weighted dog pivoted to the upper end of said pin and projecting backwardly from the pin into the slot, said dog being adapted to engage with the shoulder and support the pin in a raised position, and to be displaced by the link, so as to release the pin, as set forth.

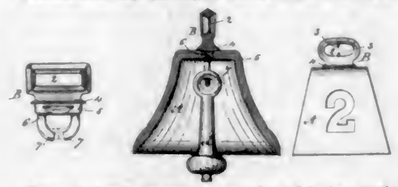
2. The combination of a draw-head having a curved socket, a shoulder behind the socket, and a slot extending backwardly from the socket, combined with a curved coupling-pin, and an automatic supporting device or dog pivoted to the pin and projecting backwardly into the slot of the draw-head, said dog being adapted to automatically hold the pin and support it laterally in a raised position, to be displaced by the link, and to guide the curved pin in its forward and downward movement, as set forth.

3. The combination, with a socketed and slotted draw-head, of a pin adapted to enter the socket, and a dog pivoted to said pin adapted to enter the slot, as set forth.

4. The combination, with a socketed and slotted draw-head, of a pin adapted to enter the socket, and a dog pivoted to said pin and adapted to enter the slot, and provided with a shoulder, 3, adapted to bear on the link, as set forth.

5. The combination, with the draw-head having the curved socket *c*, shoulder 5, and recessed slot *g*, of the curved pin *b* and the dog *f*, pivoted to said pin, and provided with the toe 2, shoulder 3, and offset 4, as set forth.

299,724. BELL. ELLISON L. BRAINARD, East Hampton, Conn., assignor to the Barton Bell Company, same place. Filed Dec. 27, 1883. (No model.)



Claim.—1. A malleable-metal loop-piece for a bell, having a mortise for the strap, a body portion for the metal of the bell to be cast around, and an open horn or projection for the reception of the clapper, substantially as set forth.

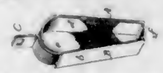
2. The malleable-metal loop-piece for a bell, having a mortise for the reception of the strap, points for penetrating and holding such strap, a body portion around which the metal of the bell is to be cast, and horns or projections for the reception of the clapper, substantially as set forth.

3. In a bell having a clapper suspended from a malleable loop or hook within the bell, the two horns with wide ends adapted to be closed together after receiving the eye of the clapper, whereby the clapper will be made to hang upon either horn, instead of between them, substantially as set forth.

4. In combination with the bell and clapper, a loop-piece having a flange that comes at the top surface of the bell, a mortise for the strap, a suspending device for the clapper, and a body portion around which the bell-metal flows in casting, substantially as set forth.

5. The combination, with the bell and clapper, of a loop-piece having a mortise for the suspending device, and an eye for the clapper, and a body portion that is perforated or recessed for the metal of the bell to pass into in casting, so that such loop-piece is held from moving in either direction, substantially as specified.

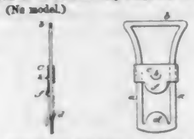
299,725. GARMENT-CLASP. MORRIS P. BRAY, New Haven, Conn., assignor of one-half to the Elm City Suspender Co., same place. Filed Mar. 3, 1884. (No model.)



Claim.—1. The herein-described garment-clasp consisting of the jaws A B, hinged together, provided with a spring between them tending to force the jaws together, the one jaw, B, extended above the pivot to form the flat tail *b*, the other jaw extended above the pivot to form the tail *d*, its upper end bent over and downward toward the jaw B in semicircular shape, its extreme end substantially meeting or in the same plane with the tail of the jaw B, the semicircular bend provided with a loop, C, at the center and in the vertical central plane, substantially as described.

2. The herein-described garment-clasp, consisting of the jaws A B, hinged together, provided with a spring between them tending to force the jaws together, the one jaw, B, extended above the pivot to form the flat tail *b*, the other jaw extended above the pivot to form the tail *d*, and bent over and downward semicircular shape to substantially meet and stand in the same plane with the jaw B, the extension turned back upon itself to double the end of the extension, the extreme end of the extension turned up into a vertical central plane and provided with a loop, substantially as described.

299,726. GARMENT-CLASP. MORRIS P. BRAY, New Haven, Conn., assignor of one-half to the Elm City Suspender Co., same place. Filed Mar. 3, 1884. (No model.)



Claim.—The herein-described clasp, consisting of a frame composed of two parallel sides, *a a*, connected at one end by a bar for attachment to the strap, also connected at the opposite end, and there constructed with a tongue, *d*, projecting upward between the bars, combined with a slide, *c*, arranged to move upon the parallel sides of the frame toward and from the tongue, the said slide constructed with a tongue, *f*, corresponding to the tongue *d*, and so that as the slide approaches the lower end of the frame the one tongue will overlap the other, substantially as described.

299,727. MACHINE FOR STRAIGHTENING ROUND BARS OF METAL. LATHAN BRIGHTMAN, Youngstown, Ohio. Filed Nov. 9, 1883. (No model.)

Claim.—1. In a machine for straightening round bars of metal, the combination, with the rotating frame having hollow journals, of the diagonally-arranged pairs of rollers journaled in said frame, substantially as set forth.

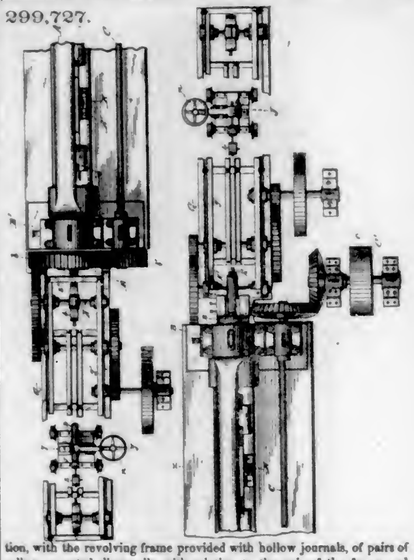
2. In a machine for straightening round metal bars, the combination, with the rotating frame having hollow journals, of the obliquely-arranged rollers journaled in said frame, and guides secured in the frame opposite the respective rollers, substantially as described.

3. In a machine for straightening round metal bars, the combination, with the rotating frame having hollow journals, of the obliquely-arranged rollers, the guides, and the means for adjusting said rollers or guides (either or both) crosswise of the axis of the revolving frame, substantially as described.

4. In a machine for straightening round metal bars, the combination, with the revolving frame provided with hollow journals, of pairs of rollers having crowning faces and conical or conoidal journals, said rollers being mounted in the frame obliquely to the axis thereof, substantially as set forth.

5. In a machine for straightening round metal bars, the combination, with the revolving frame provided with hollow journals, of pairs of rollers mounted diagonally with relation to the axis of the frame and alternating at opposite sides of said axis, substantially as set forth.

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6. In a machine for straightening round metal bars, the combination, with the revolving frame provided with hollow journals, of carriages having clamps adapted to support a bar in line with the hollow journals of the frame, a chain traversing beneath the carriages, and a hook secured to each carriage for engaging the chain, substantially as described.

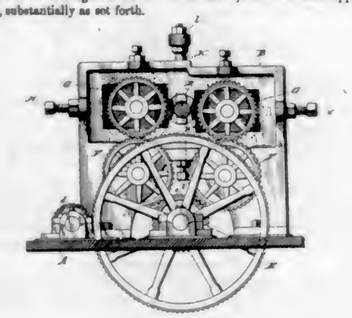
7. In a machine for straightening round metal bars, the combination, with the revolving frame having hollow journals, of carriages provided with clamps adapted to support a bar in line with the hollow journals of the frame, chains traversing beneath the carriages, and a counterbalanced hook secured to each carriage, substantially as described.

8. In a machine for straightening round metal bars, the combination, substantially as before set forth, of the feed-chain, the carriage provided with a bar-clamp, a hook to engage the chain, the revolving frame having hollow journals, and the rollers journaled obliquely in the frame to traverse the bar in spiral paths and draw it endwise, substantially as set forth.

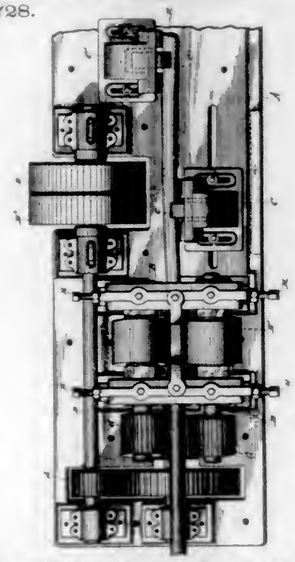
299,728. MACHINE FOR STRAIGHTENING ROUND BARS OF METAL. LATHAN BRIGHTMAN, Youngstown, Ohio. Filed Nov. 15, 1883. (No model.)

Claim.—1. In a machine for straightening round bars of metal, the combination of feed-rollers for revolving and feeding the bar and straightening-rollers so arranged as to bear against the bar at different points and from opposite sides, substantially as set forth.

2. In a machine for straightening round bars of metal, the combination of feed-rolls, adjustable guides adapted to hold the shaft in position between the feed-rollers, and adjustable straightening-rollers so arranged as to bear against the bar at different points and from opposite sides, substantially as set forth.

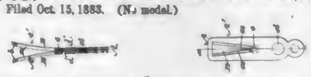


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3. In a machine for straightening round bars of metal or shafting, provided with feed-rollers for revolving and feeding the shaft or bar through the machine, straightening-rollers set in pairs in suitable bearings, and so arranged that different pairs of rollers will engage the shaft or bar at different points and from opposite sides, and with the bearing of one or more of the pairs of rollers made adjustable crosswise of the shaft, so that they may be made to press against and deflect the shaft, substantially as set forth.

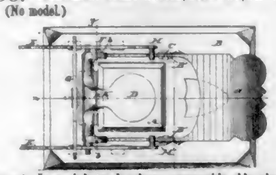
299,729. SLATE-PENCIL SHARPENER. ISAAC BROOKS, Pottstown, Pa. Filed Oct. 15, 1883. (No model.)



Claim.—1. A slate-pencil sharpener formed of two cast metallic plates, each having a circular depression, *b*, cutting-edges *a*, slots B, extending the length of the cutting-edges, and a handle portion, *d*.

2. Two cast metallic plates, each having a circular depression, *b*, cutting-edges *a*, slots B, handle portion *d*, and cavity *e*, forming an improved slate-pencil sharpener, substantially as set forth.

299,730. INKSTAND. ISAAC BROOKS, Pottstown, Pa. Filed Feb. 27, 1884. (No model.)



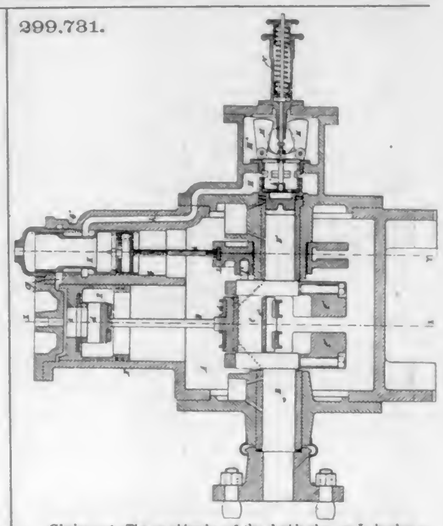
Claim.—1. In an inkstand, a base, removable side pieces, the inkwell and its cover, in combination with a binder having at bottom an eye which is passed through said base, and a wedge which is fitted in said eye, substantially as and for the purpose set forth.

2. In an inkstand, a cover of the ink-well pivotally connected with the frame, and provided with a pad which abuts against the binder or back piece of said frame, substantially as and for the purpose set forth.

3. An inkstand consisting of a rising, falling, and laterally-moving cover and an operating-lever therefor, a base and side pieces, said cover having a lug, and the side pieces—one or both—formed with a notch to receive said lugs when the cover is elevated, substantially as described.

299,731. MULTIPLE-CYLINDER ENGINE. PETER BROTHERHOOD, Lambeth, County of Surrey, England. Filed Nov. 24, 1883. (No model.) Patented in England May 18, 1883, No. 2,494.

299,731.



Claim.—1. The combination of the double sheaves L, having a T-shaped eccentric groove for the end of the valve-rod *k*, with a trunnion cast on one of the casing-heads, forming also an end bearing for the end B′ of the crank-shaft, all arranged substantially as described.

2. The combination of the double sheaves L, having T-shaped eccentric groove for the end of the valve-rod *k*, with a trunnion cast on one of the casing-heads, forming an end bearing for the end B′ of the crank-shaft, and said sheaves operated by a pin, *l*′, secured to the crank, substantially as described.

3. The combination of the crank-shaft of the engine, having an end bearing for the part B′ of said shaft, and forming a trunnion with the double sheaves L, provided with a T-shaped eccentric groove, and operated by a pin, *l*′, secured in the crank, as specified.

4. In combination with an engine having radiating cylinders, a bearing on one of the casing-heads for the end B′ of the crank-shaft, serving, with its outer surface, as a trunnion, upon which the eccentrics or sheaves for operating the valves are mounted, substantially as described.

299,732. MACHINE FOR DECORATING OIL-CLOTH. ALEXANDER F. BUCHANAN, Montrose, N. Y. Filed Feb. 14, 1884. (No model.)

Claim.—1. The process of decorating oil-cloth which consists in first applying the ground-color, then rubbing said color into the fabric, then applying the top color, then blending the surface color, and, finally, drying the colored web, all substantially as set forth.

2. In a machine for decorating oil-cloth, the combination of the trough B for containing the ground-color, the rotating roller C for delivering the ground-color to the oil-cloth, and the revolving roller D for rubbing the ground-color into the oil-cloth, substantially as described.

3. In a machine for decorating oil-cloth, the combination of a trough, B, for containing the ground-color, the roller C for delivering the ground-color to the oil-cloth, the wiper K for removing foreign matter, and tending to rub in the ground-color, and the rotating roller D for rubbing in the ground-color, said wiper being arranged intermediate the roller for applying the ground-color and the roller for rubbing in each color, substantially as described.

4. In a machine for decorating oil-cloth, the combination of a trough, B, for containing the ground-color, the roller C for delivering the ground-color to the oil-cloth, the revolving roller D for rubbing in the ground-color, the roller E for applying the top color, and the spreader O for spreading the ground-color prior to the application of the top color, substantially as described.

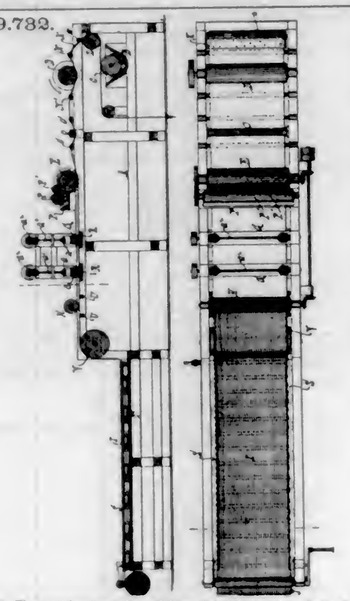
5. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, and the top-color roller or rollers.

6. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, and the pattern-roller.

7. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, the top-color roller or rollers, and the pattern-roller.

8. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, the top-color roller or rollers, and the blending-brushes.

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9. The combination, substantially as hereinbefore described, of the ground-color roller, the rubbing-in roller, the top-color roller or rollers, the blending-brushes, and the pattern-roller.

10. The combination, substantially as hereinbefore described, with suitable coloring devices, of the steam-coil arranged in a horizontal plane to receive the cloth as it leaves the coloring devices.

11. The combination, substantially as hereinbefore described, with suitable coloring devices, of the steam-coil arranged in a horizontal plane, to receive the cloth as it leaves the coloring devices, and the deflectors arranged to overlap the edges of the cloth upon the coil.

299,733. CYCLOMETER. ROWT. BURNS, Chicago, Ill., assignor of one-half to John S. Williams, same place. Filed Oct. 23, 1883. (No model.)



Claim.—1. A cyclometer adapted for insertion in the axle-nut cavity of vehicle-wheels, consisting, essentially, of two ratchet-disks having different number of ratchet-teeth, a lever and pawl common to both ratchet-wheels, and a fixed operating-cam axially arranged and connected to the axle or axle-nut, all essentially as herein shown and described.

2. In a cyclometer, as hereinbefore described, the combination of the ratchet-wheel *c*′, formed with a dial-face, C′, the ratchet-wheel *c*, provided with a hand or pointer, and cam-lever and pawl-operating mechanism, all essentially as herein described and shown.

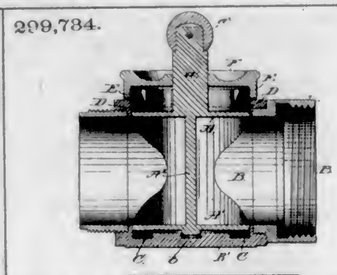
3. In a cyclometer, a pair of registering ratchet-disks whose centers are in the same line as the center of the axle of the vehicle-wheel, and so arranged that the dial and pointer will face inward, for the purpose set forth.

299,734. CUT-OFF FOR VALVES. CORNELIUS CALLAHAN, Chelsea, Mass. Filed Oct. 6, 1883. (No model.)

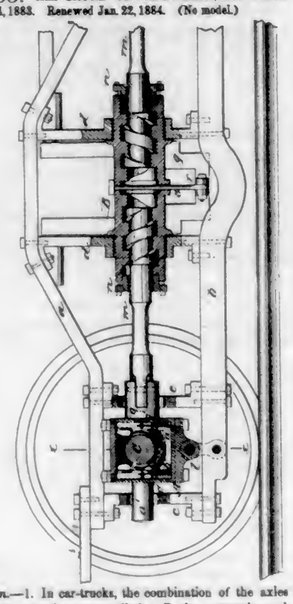
Claim.—1. The cut-off composed of a case or shell and disks A A′ held together by a thin web, A^2, having its edges provided with packing, substantially as described.

2. The combination, with the case or shell, which is closed at its bottom and provided with the packing-annulus C, of the valve composed of the disks A A′, and web A^2, having the packed working edges a^2, the said valve being stepped in the bottom of the shell or case, as described, and with the packing-annulus D and retaining-nut E, substantially as set forth.

299,734.



299,735. CAR-TRUCK. CHARLES E. CANDEE, New York, N. Y. Filed May 24, 1883. Renewed Jan. 22, 1884. (No model.)



Claim.—1. In car-trucks, the combination of the axles C, the oscillating boxes A, the screw-cylinders B, the connecting-rods *m r*, and the crank-shaft *q*, fitted for movement by the swing of the car, substantially as described, for operation as set forth.

2. In car-trucks, the combination of the box A, the jointed links *l*, the screw-rods *m*, and screw-cylinders B, substantially as shown and described.

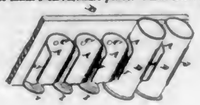
3. In car-trucks, the combination of the rods *u u*, connected to the car, the crank-shaft *q*, the connecting-rods *r*, the screw-cylinders B, the screw-rods *m*, and the oscillating boxes A, substantially as described, for operation as set forth.

4. The adjustable crank-arm *l*, combined with rock-shaft *q*, oscillating boxes A, and connections between the shaft and boxes, substantially as described.

5. The combination, in a car-truck, of the apertured pedestals c and boxes A, provided with arms *o o*′, substantially as shown and described.

6. The combination, in a car-truck, of the screw-cylinders B and pedestals *d*, formed with bearings to receive the cylinders, substantially as described.

299,736. CARTRIDGE-HOLDER. NATHANIEL T. B. CARLIN, Kirkwood, Mo., assignor to Hans Nelson, same place. Filed Mar. 3, 1884. (No model.)

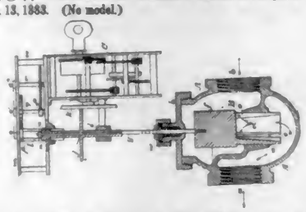


299,736.



Claim.—A cartridge-holder, A, having outturned edges J, and its bottom piece, I, bent outward, as shown, at the lower end of the holder.

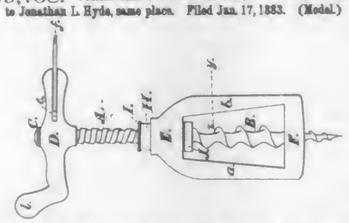
299,737. FLUID-METER. WILLIAM G. CHAPIN, Brooklyn, N. Y. Filed Aug. 13, 1883. (No model.)



Claim.—1. The combination, to form a fluid-meter, of the shell constructed as shown, its valve B, provided with a weight, *f*, or a spring, a slotted cylindrical portion, *d*, and a stem, *g*, and means, substantially as shown, for indicating the rise and fall of the valve, all constructed substantially as set forth.

2. The combination, in a fluid-meter, of the shell A, constructed as shown, the loaded valve B and its stem, the hollow shaft or sleeve i on the valve-stem, provided with lugs *n*, the wheel *j*, the wheel or disk *k*, and means, substantially as described, for imparting rotary motion thereto, the shaft *l*, and pointer *o*, all arranged to operate substantially as set forth.

299,738. CORKSCREW. CHAS. CHENNOCK, New York, N. Y., assignor to Jonathan L. Hyde, same place. Filed Jan. 17, 1883. (Model.)



Claim.—1. The combination, in a corkscrew, of a screw having a left-hand and a right-hand thread, a handle running upon said left-hand thread, and a bridge having its top formed into a sleeve, through which said screw passes, and its base terminating in a circular collar, all substantially as and for the purposes set forth.

2. The combination, in a corkscrew, of a screw having a left-hand and a right-hand thread, a handle running upon said left-hand thread, and a bridge with converging sides, and having its top formed into a sleeve, through which said screw passes, and its base terminating in a circular collar, all substantially as and for the purposes set forth.

3. The combination, in a corkscrew, of a screw having a left-hand and a right-hand thread, a handle running upon said left-hand thread, and a bridge with wedge-shaped converging sides, and having its top formed into a sleeve, through which the screw passes, and its base terminating in a circular collar, all substantially as and for the purpose set forth.

4. The combination, in a corkscrew, of a screw having a left-hand and a right-hand thread, a handle running upon said left-hand thread and provided with a cutting-blade, and a bridge with converging sides, and having its top formed into a sleeve, through which said screw passes, and its base terminating in a circular collar, all substantially as and for the purposes set forth.

5. The combination, in a corkscrew, of a screw having a left-hand and a right-hand thread, a handle running upon said left-hand thread and provided with a cutting-blade pivoted to said handle, and a bridge with wedge-shaped converging sides, and having its top formed into a sleeve, through which said screw passes, and its base terminating in a circular collar, all substantially as set forth and described.

6. In a corkscrew, a handle with a wire-cutting blade, *f*, pivoted within a slot in said handle, substantially as set forth and described.

7. In a corkscrew, a bridge having converging sides or standards, substantially as set forth and described.

8. In a corkscrew, the bridge E, with wedge-shaped converging sides *a b*, substantially as set forth and described.

299,739. THREAD-SPOOL. WILLIAM J. CLARK, Birmingham, Conn. Filed Sept. 3, 1883. (No model.)

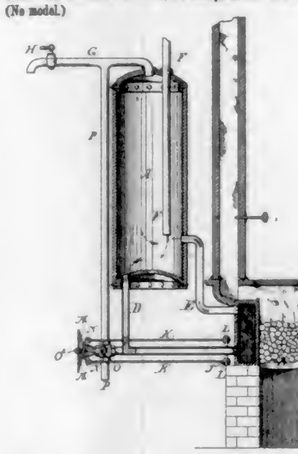
Brief.—An annular groove is formed around the head of the spool, in which is arranged a loose ring. The thread is drawn from the spool beneath said ring, which acts to hold said thread and prevent the accidental unwinding thereof.



Claim.—1. A spool constructed with an annular groove, *a*, around its head, combined with a ring, *b*, loose in said groove, and adapted to permit the thread from the spool to run off around the head within the ring, substantially as and for the purpose described.

2. A spool constructed with an annular groove, *a*, around its head, combined with an endless ring, *b*, made from thread or like flexible material arranged loosely in said groove, and adapted to permit the thread from the spool to run off around the head within the ring, substantially as described.

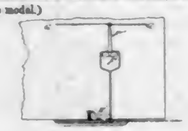
299,740. AUTOMATIC HOT-WATER REGULATOR. WILLIAM S. CLARK and EDWARD R. CLARK, Philadelphia, Pa. Filed June 28, 1883. (No model.)



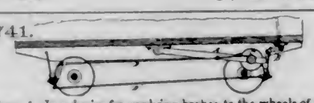
Claim.—1. In an apparatus for heating water by a fire adapted to be used and regulated for other purposes, the combination of an expansible tube through which water circulates by heat near the lower part of said heating apparatus, with a valve arranged to be automatically opened by the expansion of said tube and connected with a pipe for wasting hot water from the upper portion of the said water-heating apparatus, and thereby permitting an influx of cold water and automatically moderating and regulating the temperature of the water in said apparatus, substantially as set forth.

2. The combination of the boiler A and water-back C, connected therewith by circulating-tubes E and D, and arranged to be heated by the culinary-furnace B, with a cold-water-supplying pipe, F, hot-water-delivery pipe G, an expansible circulating-pipe, D, and fulcrums N, levers M, rods K, and valve O, arranged to automatically close and open in a waste-pipe, P, and regulate the temperature of the water in the apparatus, substantially as set forth.

299,741. CAR-BRAKE. LYMAN S. COLSTON, Oberlin, Ohio. Filed Dec. 17, 1883. (No model.)



299,741.

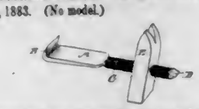


Claim.—1. In a device for applying brakes to the wheels of steam-cars, a U-shaped frame or hanger, A, carrying a friction-wheel, C, in connection with a rock-shaft operated by upright lever B', and coupled with the end of hanger A, by means of arm B and chain or link, with locking spring-catch E, tripping device F, F', and G, or their equivalents, constructed and arranged substantially as and for the purpose stated.

2. In a device for applying brakes to steam-car wheels, the tripping device F F', with locking spring-catch E, and tripping-cords G G, or their equivalents, constructed and arranged substantially as described, and for the purpose stated.

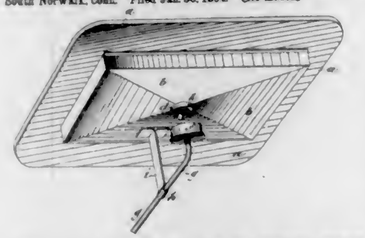
3. In automatic apparatus for applying brakes to wheels of steam-cars, the combination of friction-wheel C, hanger A, rod and chain D, lever E, rod D', right-angled lever B B', locking spring-latch E', tripping device F, F', and G, or their equivalents, all constructed and arranged substantially as shown and described, and for the purpose stated.

299,742. DOOR-SECURER, &c. EDWARD P. CONNER, Santa Rosa, Cal. Filed Aug. 23, 1883. (No model.)



Claim.—A combined door-lock and tool, formed of the flat plate A, having the right-angled and sharp-edged flange B, the thread C, the transverse cutting-ridge D, and the hammer-nut E, said tool having an end adapted to be used as a screw-driver, and one for drawing tacks, all as shown and described.

299,743. DRIP-PAN FOR SEWING-MACHINES. WM. CONNOLLY, South Norwalk, Conn. Filed Jan. 30, 1884. (No model.)



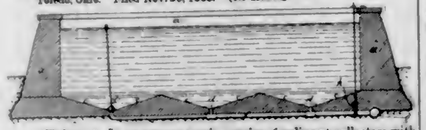
Claim.—1. A drip-pan for sewing or other machines, constructed with an inclined apertured bottom, and a fixed screw-neck, *d*, adapted to receive a drip cup, *e*, substantially as shown and described.

2. The combination, with the machine-table *a*, of an oil drip-pan, *b*, having an inclined apertured bottom, a discharge-neck, *d*, and an oil-receptacle, *e*, fitted on the neck, substantially as shown and described.

3. The combination, with the machine-table *a*, of an oil drip-pan, *b*, having an inclined apertured bottom, and a strainer, *c*, fitted over the discharge-neck *d*, substantially as shown and described.

4. The combination, with the table *a* of a sewing or other machine, and the drip-pan *b*, provided with an inclined bottom having a discharge aperture or neck, of the cup *f*, for receiving the drip from the pan, and fitted to a pipe, *g*, leading to a receiver for the oil, substantially as shown and described.

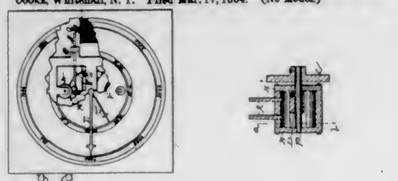
299,744. MEANS FOR CLEANING RESERVOIRS. JOSIAH D. COOK, Toledo, Ohio. Filed Nov. 30, 1883. (No model.)



Claim.—1. In a water-reservoir, a series of sediment-collectors with inclined sides composing the bottom of such reservoir, in combination with pipes passing off from the lowest portions of such sediment-collectors, and suitable valves or stoppers in such pipes, whereby the materials at the lower portions of such collectors can be discharged, substantially as specified.

2. The combination, in a water-reservoir, of the inclosing-walls, ranges of sediment-collectors with inclined sides, forming the bottom of the reservoir, pipes opening into the lowest portions of the sediment-collectors to convey away the sediment by the action of the water, and cocks, gates, or stoppers to regulate the discharge of such sediment, substantially as set forth.

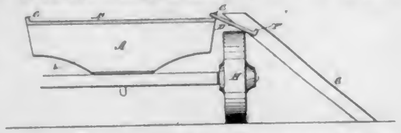
299,745. APPARATUS FOR MEASURING THE LINEAL FEET OF WORK DONE BY A WOOD-WORKING MACHINE. FRANCIS CROSBY COOKE, Whitehall, N. Y. Filed Mar. 17, 1884. (No model.)



Claim.—1. In a wood-working machine, a friction-wheel adapted to ride upon the wood, and provided with a mechanism for making and breaking an electric circuit, in combination with an electric circuit and electro-magnet actuated by said circuit, a registering-dial, indicating hand or hands, a spring or weight actuated train of wheels, and a connecting mechanism between said train of wheels and the armature of said magnet, whereby the movements of the wheels are controlled by the magnet, all the parts being arranged substantially as and for the purposes set forth.

2. The method of registering the number of lineal feet of work performed by a wood-working machine, consisting of actuating a circuit-breaker by contact with the wood to make and break an electric circuit at regular known space-intervals and registering or indicating the number of said intervals upon a spaced dial by one or more hands moved by a train of spring or weight actuated wheels controlled in their movements by the armature of a magnet operated by said circuit.

299,746. SKID-HOLDER. JOHN D. COPPES, Nappanee, Ind., assignor of one-half to Frank Coppes, same place. Filed Jan. 7, 1884. (No model.)

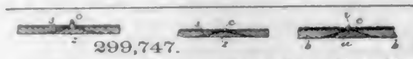


Claim.—1. A skid-holder having means for attaching it to a part of a wagon, and provided with projections between which one end of a skid is to be placed, substantially as shown and described.

2. A skid-holder having an approximately V-shaped form, and provided with a loop at its apex and with projections at its ends, substantially as and for the purpose specified.

3. The combination, with a wagon-bolster having means of attachment at its ends, of a skid-holder adapted to be connected to said bolster and supported on a wheel of the wagon, substantially as and for the purpose set forth.

299,747. ABRASIVE BELT. FREDERICK W. COY, Boston, Mass. Filed Apr. 12, 1884. (No model.)



299,747.

Claim.—1. As a means for securing the ends of a strip or strips having an abrasive coating, a connecting-piece formed to fit the scarfed ends of said strip and provided with a central compressible rib, as set forth.

2. An abrasive belt composed of a strip or strips having an abrasive coating, and a flexible connecting-piece having a rib projecting between the proximate ends of the abrasive coating and incorporated into or upset upon said ends, as set forth.

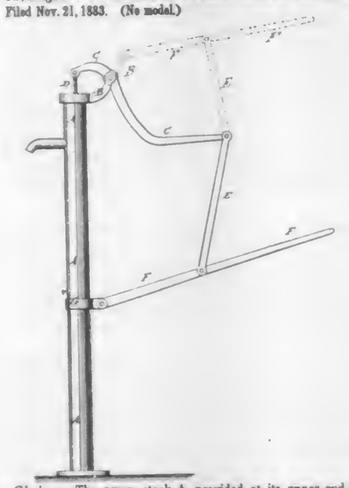
3. An abrasive belt composed of a strip or strips having an abrasive coating and a flexible connecting-piece interrupting the continuity of the abrasive coating and adapted to be bent or folded, as set forth.

4. An abrasive belt composed of two strips having abrasive coatings and two flexible connecting-pieces interrupting the continuity of the abrasive surface, whereby the belt is adapted to be flattened without injury to to its abrasive surface, as set forth.

5. An abrasive belt composed of a coated strip, and a connecting-piece composed of a body, 2, and a textile covering, 3, having its central portion formed into a rib interposed between the ends of the abrasive coating and compressed or upset thereon, as set forth.

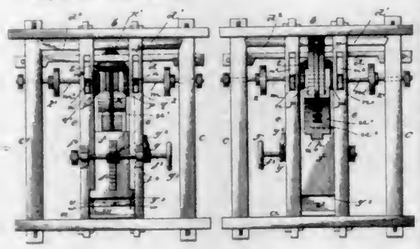
6. An abrasive belt composed of a strip or strips having an abrasive coating and a connecting-piece, *a*, secured to the ends of said strip and partially severed or divided to act as a hinge, as set forth.

299,748. PUMP-HANDLE. JAMES ALEXANDER CRAIG, Philadelphia Pa., assignor to himself and Elizabeth Edith Barvagh, Merchantville, N. J. Filed Nov. 21, 1883. (No model.)



Claim.—The pump-stock A, provided at its upper end with a bracket, B, and at or near its center with a band, G, in combination with the pump-handle C, pivoted to said bracket and to the piston-rod D, a lever, F, pivoted at the band G, and a connecting-rod, E, pivoted to the outer end of the pump-handle and to the center of the lever F, substantially as set forth.

299,749. BRAN-PACKER. DAVID J. DAVIS, Newark, Ohio. Filed Sept. 17, 1883. (No model.)



Claim.—1. The combination, with the grooved studs *e e e e*, of the piston-box *f*, working vertically therein and provided with a rack-bar, and a shaft having its bearings in boxes secured to the two front studs *e e*, and provided with a pinion, pawl and ratchet, and a hand-wheel, substantially as specified.

2. The combination, with the power-screw *k*, having the miter-gear *l*, of the miter-gear *p* on the inner end of the shaft *m*, having its bearings in the post *c* and pivoted bar *n*, and the pivoted arm *q*, carrying the lever *r*, the trigger *t* in recess in the upper edge of the piston-box *f*, and the piston on said screw *k*, substantially as specified.

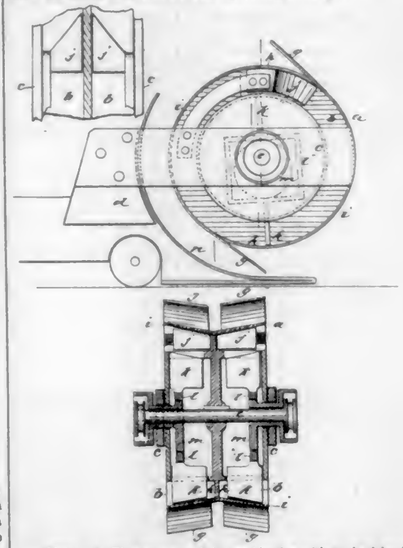
3. The combination, with the piston-box *f*, having the trigger *t'*, the piston *i*, and the power-screw *k*, having the miter-gear *l* at its upper end, of the horizontal shaft *m'*, having its bearings in the stud *c'*, and the pivoted bar *n'*, and the pivoted arm *q*, carrying the lever *r'*, substantially as specified.

4. In a bran-packer, the combination, with the piston-box *f*, having the aperture *h* in its rear wall near the top, of the adjustable bran-spout *u u'*, having the ratchet and spring-pawl, substantially as specified.

5. The packing-box *v*, of the same size in cross-section as the piston-box *f*, provided with a door, and having half-staples or top slots, in combination with the grooved studs *e e e e* and the piston-box *f*, having a rubber gasket on its lower edge, substantially as specified.

299,750. SNOW-PLOW. JOHN Q. DAY, Red Cliff, Colo. Filed Sept. 24, 1883. (No model.)

Brief.—A wheel with annular side grooves and dischargers has stop-gates mounted on a yoke revolving by stationary eccentrics. The rim of the wheel flares outward from the bottom of the grooves.



Claim.—1. The stop-gates *k*, in combination with a wheel having annular side grooves, *b*, shovels *g*, and dischargers *j*, said stop-gates being arranged for and provided with means to cause them to project at the lower part of the wheel to stop the snow in the grooves and withdraw at the upper part to pass the dischargers, substantially as described.

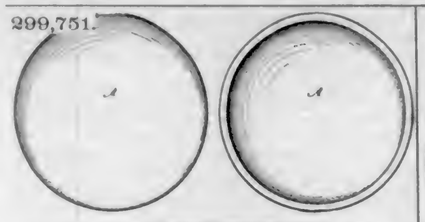
2. The stop-gates *k*, the yoke *l*, and the stationary eccentrics *m*, in combination with a wheel having annular side grooves, *b*, shovels *g*, and dischargers *j*, said stop-gates being arranged to project at the lower part of the wheel to stop the snow in the grooves and to withdraw in the upper part of said wheel to pass the dischargers, substantially as described.

3. In a snow-wheel having annular grooves *b* in the sides, shovels *g*, for gathering the snow, and the dischargers *j*, for throwing out the snow, the outer rim, *i*, arranged to flare from the bottom of the grooves outward, to facilitate the discharge of the snow, substantially as described.

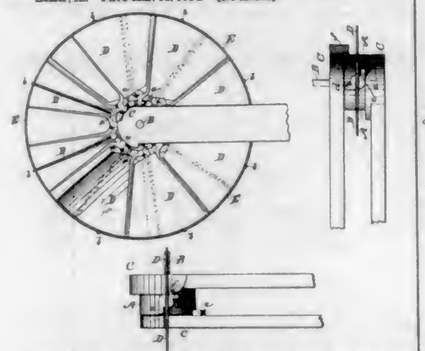
299,751. PLAQUE AND PANEL. LOUIS A. DE PLANQUE, Jersey City, N. J. Filed Mar. 15, 1884. (No model.)

Claim.—A plaque consisting of a piece of leather-board pressed into suitable shape, coated with a mixture of glue and whiting, and then provided with a coat of paint, substantially as herein shown and described.

299,751.



299,752. FEATHERING PADDLE-WHEEL. MICHAEL H. DEPUE, Homer, Ill. Filed Mar. 12, 1884. (No model.)



Claim.—The combination, in a wheel having a rim and hub, of radial blades journaled therein, the journal of each blade being provided with two transverse arms in the same plane, forming a single right angle on the external faces of the said arms tangent to the journal, the said arms being at equal distances from the center of the wheel, with cams fixed stationarily in the path of the said arms and beside the path of the journals, said cams being at equal distances from the center of the wheel, as shown and described.

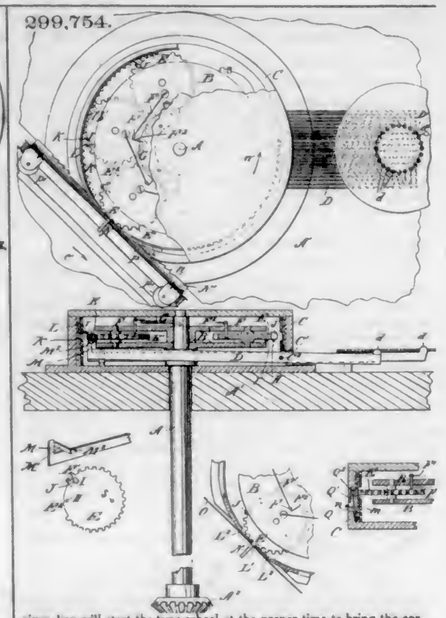
299,753. TAG-HOLDER. WILLIAM DICKIE, Gillespie, Ill. Filed Apr. 15, 1884. (No model.)



Claim.—As an improved article of manufacture, the double-pointed tag hook or fastener herein shown and described, the same consisting of a double-pointed piece of wire, A, bent at opposite ends to form the spring-coils B B and loops C C, having pointed hooks D, the points of which are held by the tension of the spring-coils up against the same, substantially as and for the purpose herein shown and described.

299,754. TYPE-WRITING MACHINE. DARIEN W. DODSON, Town Line, Pa. Filed May 4, 1883. (No model.)

Brief.—Within a circular case, C, having a curved inking-pad, I, on its inner side, and slotted at the printing-point, a wheel with type-carrying teeth E' on the greater part of its periphery is pivoted between two disks secured to a constantly-rotating shaft, A. Depressing a key interposes a lug, M, on the key-lever in the path of a stud, H, on the under side of the type-wheel, which thus gets an initial movement on its own axis. This movement is kept up by contact of the type-teeth with the inking-pad, and regulated by engagement of triangular tooth J with curved toothed rack K at the beginning of the movement. Projections on key-levers and type on wheel are relatively so arranged that depression of a



given key will start the type-wheel at the proper time to bring the corresponding type opposite the slot L', through which the impression is made against bar N; type-wheel locked in normal position after printing by spring-pin F entering hole S, and released by bent end F² of spring riding up incline G; key-lever returned to position by stud I striking projection M²; letter-space given by means of rack N' on paper-carriage and tooth *m* on spring Q', which is pressed outward by type-wheel after printing. In the machine shown a series of duplicate type-wheels are used for speed.

Claim.—1. In a type-writer, the combination, with a revolving disk, of a type-wheel journaled on the outer rim of said disk, and having at the same time two independent horizontal motions—one on its own axis, and the other on the axis of the disk on which it is journaled—substantially as herein shown and described.

2. In a type-writer, the combination, with a casing, a revolving disk, and a type-wheel journaled on said disk, of a pad or cushion on the inner surface of the casing, substantially as herein shown and described, whereby the said pad or cushion is made to serve the double purpose of an inking-pad and also a means for revolving the type-wheel by frictional contact, as set forth.

3. In a type-writer, the combination, with the revolving disks, of one or more type-wheels journaled in the same, a pad or cushion partly surrounding the said disks, and of key-levers adapted to act on the said type-wheels, substantially as herein shown and described, and for the purpose set forth.

4. In a type-writer, the combination, with revolving disks, of one or more type-wheels journaled in the same, a circular inking pad or cushion partly surrounding the disks, a series of levers adapted to act on type-wheels, and of a spring adapted to be acted upon by the type-wheels, and provided with a tooth for acting on the teeth of the rack in the paper-holder, substantially as herein shown and described, and for the purpose set forth.

5. In a type-writer, the combination, with revolving disks, of one or more type-wheels journaled in the same, pins attached to springs for the purpose of locking the type-wheels in position in the disks, devices, substantially as described, for raising the said springs to release the type-wheels, an inking pad or cushion partly surrounding the disks, and levers for acting on the type-wheels, substantially as herein shown and described, and for the purpose set forth.

6. In a type-writer, the combination, with the revolving disks, of type-wheels journaled in the same, a segmental rack surrounding the disks, and a tooth on each type-wheel, which tooth is adapted to pass in between the teeth of the rack, substantially as herein shown and described, and for the purpose set forth.

7. In a type-writer, the combination, with the revolving disks, of type-wheels journaled in the same, an inking pad or cushion partly surrounding the disks, which cushion is provided with a vertical slot through

which the teeth carrying the type can pass, and of a bar held outside of the said slot, substantially as herein shown and described, and for the purpose set forth.

8. In a type-writer, the combination, with the revolving disks B B, of one or more type-wheels, E, journaled in the same, which type-wheels are provided with apertures *s*, with pins F, and with springs F', having bent ends F², and the semicircular cam-track G, substantially as herein shown and described, and for the purpose set forth.

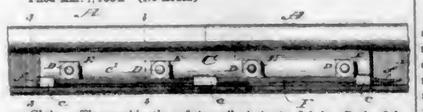
9. In a type-writer, the combination, with the disks B, of one or more type-wheels, E, journaled in the same, and provided with a downwardly-projecting stud, H, on the under surface, the inking cushion or pad L, partly surrounding the disks B, and the levers D, pivoted in such a manner as to adapt their upper ends to be raised to such an extent that the studs H will strike against the same, substantially as herein shown and described, and for the purpose set forth.

10. In a type-writer, the combination, with the revolving disks B, of a pad or cushion, L, partly surrounding the same, one or more type-wheels, E, journaled in the disks B, which type-wheels are each provided on the under side with a stud, H, and a beveled stud, I, and the key-levers D, provided at the inner ends with arms M, having arms M', provided at the outer ends with beveled teeth M², substantially as herein shown and described, and for the purpose set forth.

11. In a type-writer, the combination, with the disks B, of the inking pad or cushion L, partly surrounding the same, one or more type-wheels, E, journaled in the said disks, and the spring Q, provided with the head Q², and with the tooth *m*, substantially as herein shown and described, and for the purpose set forth.

12. In a type-writer, the type-wheel E, constructed, as herein shown and described, with a series of teeth, E', at the outer ends of which the types are fastened, and with a recess or blank space, E², substantially as set forth.

299,755. NUT-LOCK. ROY DODSON, Central, St. Louis County, Mo. Filed Mar. 1, 1884. (No model.)



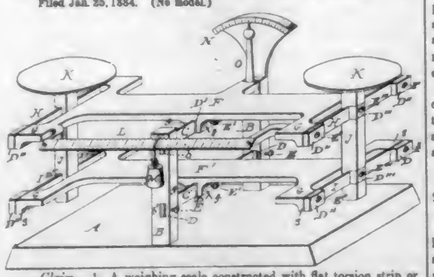
Claim.—The combination of the rails A A, the fish-bar B, the fish-bar C, having lips *c c*, the bolts D D, the nuts E E, and the spring locking-rod F, having the head *f* and the crooked end *f'*, substantially as and for the purposes described.

299,756. OYSTER-CLAMP. CUNNGHAM DRAKE, Philadelphia, Pa. Filed May 2, 1884. (No model.)



Claim.—The oyster clamp or holder consisting of the recessed bottom part, A, and short recessed top part, B, hinged together at C, the bottom part projecting beyond the top, as shown, substantially as and for the purpose set forth.

299,757. WEIGHING-SCALE. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Jan. 25, 1884. (No model.)



Claim.—1. A weighing-scale constructed with flat torsion strip or strips stretched horizontally and set up edgewise, substantially as and for the purpose specified.

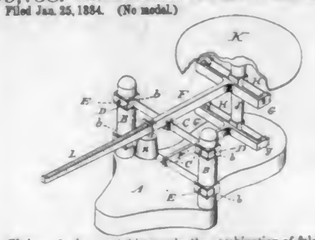
2. In a weighing-scale, the combination of a beam, a torsional rod horizontally secured to the end of the beam, and a vertical pan-support rigidly and directly connected to the torsional rod, substantially as and for the purpose set forth.

3. In a weighing-scale, the combination of horizontal beams centrally pivoted to torsion-rods, torsion-rods secured rigidly and directly to the ends of the beams, and pan-support connected rigidly and directly to the torsion-strips on the ends of the beams, as set forth.

4. In a weighing-scale, the combination of beams centrally pivoted, horizontal torsion-rods secured at the ends of the said beams, and pan-supports rigidly and directly connected to the end torsion-rods, and projecting downwardly below the lowest torsion-rods, to form stops, as set forth.

5. In a weighing-scale, the combination of a beam centrally pivoted and having extended arms at the end, a torsion-rod secured directly and rigidly to said arms, and a pan-support secured directly and rigidly to the end torsion-rod, as set forth.

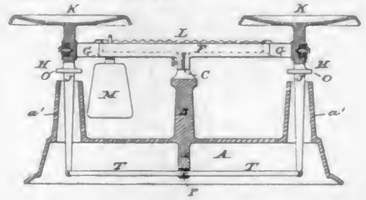
299,758. WEIGHING-SCALE. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Jan. 25, 1884. (No model.)



Claim.—1. In a weighing-scale, the combination of fulcrum torsion strips, bars, or rods, scale-beam, connecting-bar, sliding weight on the scale-beam on one side of the fulcrum, torsion strips, bars, or rods secured rigidly and directly to the pan ends of the scale-beam and connecting-bar on the other side of the fulcrum, and a pan-support rigidly and directly secured to the end torsion strips, bars, or rods, substantially as set forth.

2. In a weighing-scale, the combination of pivoted weight-beam, short connecting-bar, base, and a pan-support rigidly and directly attached to torsion strips, bars, or rods rigidly and directly attached to the outer ends of the weight-beam and connecting-bar, substantially as set forth.

299,759. WEIGHING-SCALE. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Jan. 25, 1884. (No model.)



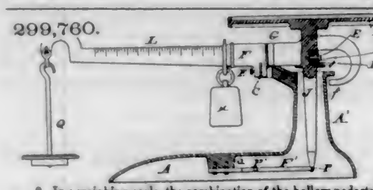
Claim.—1. In a weighing-scale, the combination of a base, a beam having its fulcrum-support acting torsionally, torsion strips, bars, or rods, secured rigidly and directly to the ends of the beam, pan-supports rigidly and directly fastened to the end torsion strips, bars, or rods, and link-rods connecting the lower portions of the pan-supports to the base, as set forth.

2. In a weighing-scale, the combination of a base, beam pivoted to oscillate on the base, torsion strips, bars, or rods fastened to the ends of the beam, pan-supports attached directly and rigidly to the end torsion strips, bars, or rods, and links connecting the pan-supports to the base, as set forth.

299,760. WEIGHING-SCALE. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Jan. 25, 1884. (No model.)

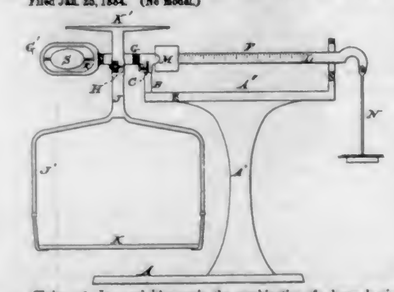
Claim.—1. In a weighing-scale, the combination of a base, a beam having a weight at one end, fulcrum-support for the beam acting torsionally, torsion strip, bar, or rod secured to the other end of the beam, pan-support rigidly secured to the end torsion strip, bar, or rod, and a single link-rod hinged to the base and stem of the pan-support, as set forth.

299,760.



2. In a weighing-scale, the combination of the hollow pedestal having lugs B, torsion strip, bar, or rod secured to said lugs, beam having a weight at one end and fastened to the torsion strip, bar, or rod, torsion strip, bar, or rod fastened to the other end of the beam, pan-support rigidly attached to the end torsion strip, bar, or rod, and link-rod pivoted to the base and stem, as set forth.

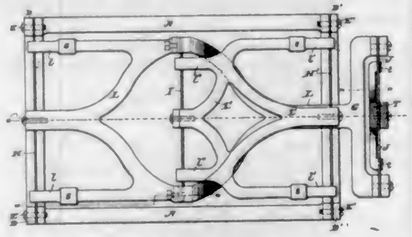
299,761. WEIGHING-SCALE. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Jan. 25, 1884. (No model.)



Claim.—1. In a weighing-scale, the combination of a beam having its fulcrum support acting torsionally, a torsion strip, bar, or rod fastened rigidly to the beam, and a platform secured directly and rigidly to and suspended from the torsion strip, bar, or rod, as set forth.

2. In a weighing-scale, the combination of a beam having its fulcrum-support acting torsionally, a torsion strip, bar, or rod secured by its ends rigidly to the beam, and a platform secured directly and rigidly to and suspended from the torsion strip, bar, or rod, and having a light supplementary pan above the beam, as set forth.

299,762. PLATFORM-SCALE. NAPOLEON DU BRUL, Cincinnati, Ohio. Filed Jan. 23, 1884. (No model.)



Claim.—1. In a platform-scale, the combination of a bed or frame, platform-levers, and torsional fulcrum bars or plates rigidly attached at their ends to the bed or frame, and at their centers to the platform-levers.

2. In a platform-scale, the combination of a bed or frame, platform-levers, torsional fulcrum bars or plates rigidly attached by their ends to the bed or frame, and torsional fulcrum bar or plate firmly secured and connecting the platform-levers.

3. The combination of a bed or frame, torsional fulcrum bars or plates, and a lever having projections to rest on the torsional fulcrum bars or plates, as set forth.

4. The combination of a bed or frame having flat torsion bars or plates, edge up, and platform-levers, as set forth.

5. The combination of platform-levers, torsion bar or plate fixed at its ends to one of the levers and at its center to the other, to connect them, and lugs or projections resting on said torsion bar or plate, as set forth.

6. The combination of the main lever, the beam-rod, and a torsion bar or plate connecting the main lever and the beam-rod, as set forth.

7. The combination of the platform-lever, beam-rod, flat torsion bar or plate connecting the platform-lever and the beam-rod, and lugs or stays to prevent oscillation or bending of the torsion bar or plate, as set forth.

299,763. BARB FOR WIRE FENCES. WILLIAM EDINBORN, St. Louis, Mo. Filed Sept. 26, 1883. (No model.)



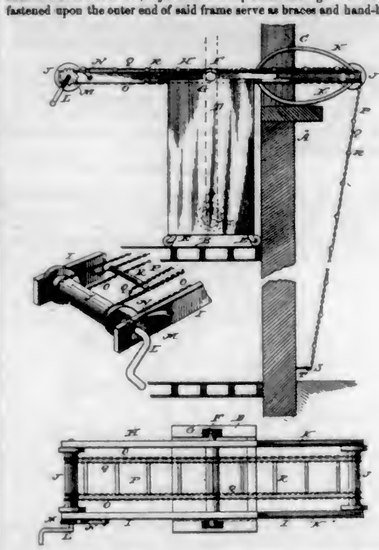
Claim.—1. A barb-blank in the form of a rhomboid, having a longitudinal slot extending from one end toward the center, substantially as described.

2. A three-pointed barb-blank in the shape of a rhomboid, consisting of two pieces of wire connected together by a thin web at one end, as set forth.

3. A three-pointed barb formed of two pieces of wire connected together at one end by a thin web, and having one of its points bent around to form a loop to surround a main wire, and at right angles to the body of the barb, as set forth.

299,764. FIRE-ESCAPE. JAMES HOWARD ELLIS, MYERS WILSON, and FRANCIS TANNER, Wa'kerville, Ontario, Canada. Filed Mar. 11, 1884. (No model.)

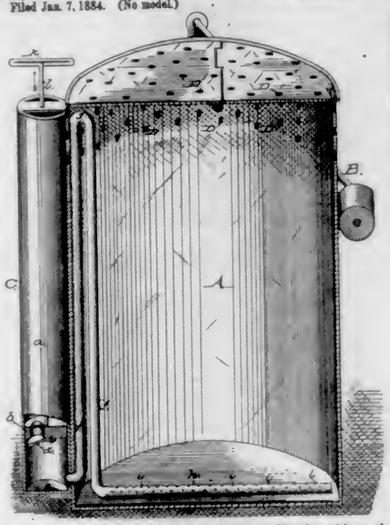
Brief.—A reel-frame carrying two endless chains, to which the flexible ladder is secured, is journaled in a portable casing. Curved rods fastened upon the outer end of said frame serve as braces and hand-holds.



Claim.—1. In a fire-escape, the combination of a casing mounted upon casters and provided with bearings in the upper edges of its sides, and having its inner side adapted to be opened, a reel-frame rocking upon trunnions at the middle of its side pieces, and having arched upwardly and downwardly projecting rods upon its outer end, and a metallic flexible ladder having means for being wound upon or unwound off the reel-frame, as and for the purpose shown and set forth.

2. The combination, in a fire-escape, of a casing mounted upon casters and having bearings in the upper edges of its sides, a frame having trunnions at the middle of its side pieces and forming transverse bearings at its ends, an outer roller or reel journaled in the outer bearings in the frame, a roller or reel journaled in the inner end of the frame and having a crank and a ratchet-wheel at one end, a pawl engaging the ratchet-wheel, endless chains passing over the reels, a flexible metallic ladder secured at its upper end to the endless chains, and having hooks at its lower end, bails secured at the bottom of the wall of the building, below the end of the apparatus, and arched rods secured to the upper and lower edges of the outer ends of the side pieces of the frame, all constructed to operate as and for the purpose shown and set forth.

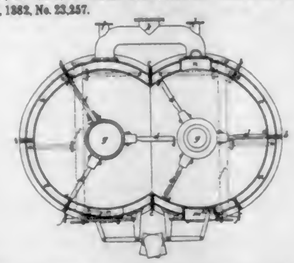
299,765. BAIT-FISH CAN. RICHARD K. EVANS, Washington, D. C. Filed Jan. 7, 1884. (No model.)



Claim.—1. The portable bait-can A, in combination with an air-pump, C, and a pipe to conduct the air from the pump to a point below the surface of the water in the bait-can, for the purpose set forth.

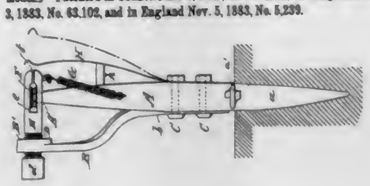
2. The can A and air-pump C, in combination with the pipe *f*, provided with the return-bend *g* and perforated section h, all constructed, arranged, and operated as described.

299,766. APPARATUS FOR DRYING AND PULVERIZING BLOOD, &c., FOR FERTILIZERS. JAMES FARMER, Salford, County of Lancaster, England. Filed Dec. 26, 1882. (No model.) Patented in England June 7, 1882, No. 2,663; in France Dec. 7, 1882, No. 152,436, and in Germany Dec. 9, 1882, No. 23,257.



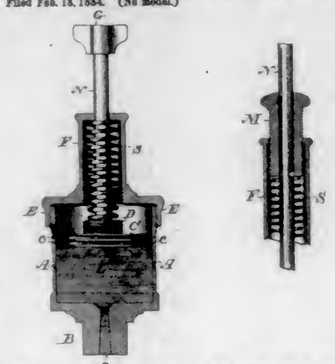
Claim.—The combination of a jacketed casing of a twin cylindrical form with a pair of revolving beaters having scrapers in contact with the interior surface of the casing and differently pitched around the axes, substantially as described, whereby all the scrapers in conjunction in one revolution entirely scrape the inside surface of the casing.

299,767. MACHINE FOR SETTING AND SHARPENING SCYTHES. JEAN FAUDERE, Montignac de Lauzun, France. Filed May 1, 1884. (No model.) Patented in France June 2, 1883, No. 155,883; in Belgium Nov. 3, 1883, No. 63,102, and in England Nov. 5, 1883, No. 5,239.



Claim.—The combination of the pointed stem A, having stops *a* and anvil A′, forked arm *b*, having bearings B′ at its upper end, adjusting-screws D, arms E, connected to the adjusting-screws, and having slots *f* and recesses *e*, grooved guide-rollers F, and springs G and H, the whole constructed and combined to operate substantially in the manner and for the purpose herein shown and set forth.

299,768. AUTOMATIC LUBRICATING-CUP. BARRETT W. FELTHOUSEN, Milwaukee, Wis., assignor to Wadhams, Magie & Co., same place. Filed Feb. 13, 1884. (No model.)



Claim.—1. The combination, in a lubricating-cup, of the receptacle A, piston C, provided with the stem N, and threaded shoulder D, raised upon its upper face about said stem, spiral spring S, and cover E, provided with the cylindrical chamber F, for the reception of spring S and guidance of said stem, substantially as and for the purposes set forth.

2. In a lubricating-cup, the combination of receptacle A, piston C, provided with stem N, rising from the center of its upper side, and with the annular grooves or channels *c c* about its bearing-face, spring S, cover E, provided with chamber F, for the reception of said spring S, and adjusting-nut M, perforated to receive and furnish a bearing for the stem N, substantially as and for the purposes set forth.

3. The combination, in a lubricating-cup, of the receptacle A, provided with neck B and feeding-passage *a*, diverging from a point near the top toward its base, piston C, provided with stem N, spiral spring S, cover E, provided with chamber F, and adjusting-nut M, substantially as and for the purposes set forth.

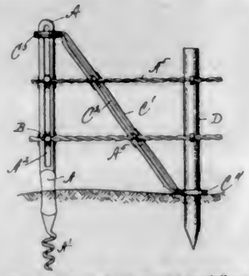
4. In a lubricating-cup, the combination of receptacle A, piston C, provided with stem N, spiral spring S, cover E, provided with chamber F, and perforated tension-nut M, for adjusting the tension of said spring and for the reception and guidance of stem N, substantially as and for the purposes set forth.

299,769. CLOTHES-DRIER. FRANK J. FERRELL, New York, N. Y. Filed Feb. 28, 1883. (No model.)



Claim.—The combination of the detachable bars *l l* with the arms *i i*, the head *h*, the rod *e*, the truss-bars *j j*, pivoted to the arms *i i*, and the notched flange *k*, substantially as set forth.

299,770. FENCE. EMIL FISCHER, Calliope, Iowa. Filed Nov. 14, 1883. (Model.)



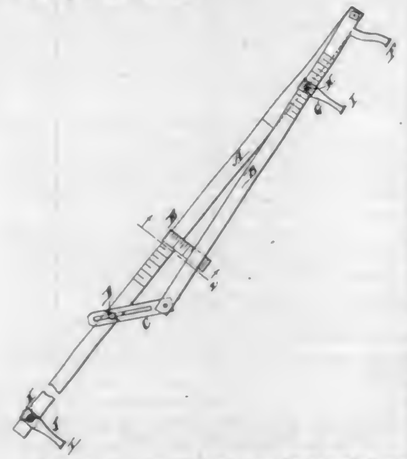
Claim.—1. In a wire fence, the brace, substantially as specified, composed of the main portion slotted longitudinally, and the eyes formed on its opposite ends and at an angle to the main portion, substantially as and for the purposes specified.

2. The wire fence, substantially as hereinbefore described and shown, consisting of the cables, the post slotted vertically, the cable-clamps adjustable in said slots, the brace slotted longitudinally and having an eye on its upper end fitted over the post, and one on its lower end rested on the ground, cable-clamps adjustable in the said slot, and the brace-post having the cables secured to it and driven through the lower eye of the brace, substantially as specified.

3. In a wire fence, the combination, substantially as specified, of the post and the brace having its upper end secured to the post and its lower end secured to the ground, the said post and brace being slotted longitudinally and provided with wire-clamps adjustable in said slots, substantially as set forth.

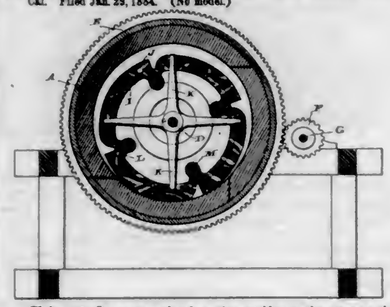
4. The combination of the cables, the fence-post, the strut-brace having its upper end secured to the post and its lower end to the ground, and the wire-clamps, constructed substantially as described, said wire-clamps being adjustable or movable longitudinally along said post and brace, substantially as set forth.

299,771. AXLE-BEVEL. FRANCIS WILLIAM FLYNN, Woodstock, Conn. Filed Apr. 17, 1884. (No model.)



Claim.—The improved axle bevel or gage herein described, consisting of the bar A, provided at one end with a sliding arm, J, and its clamp-screw K, sliding gage E near its center, bar B, pivoted to the opposite end of bar A from the arm J, and provided near its pivoted end with a fixed arm, F, a sliding arm, G, and clamp-screw H, and with a pivoted slotted arm, C, at its free end, and a clamp-screw, D, connecting the slotted arm with the bar A, substantially as shown and described.

299,772. ROTARY ORE-PULVERIZER. JOHN B. GAGNON, Oakland, Cal. Filed Jan. 29, 1884. (No model.)



Claim.—1. In an ore-pulverizer, the outside rotating case or shell having the solid or closed side B, the die A, and conical screen side C, in combination with an independent crushing and grinding wheel having projections L, the central shaft, D, and arms K, substantially as described.

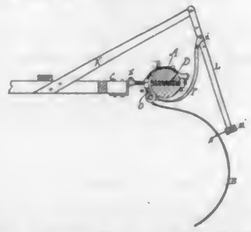
2. The combination of a rotary case or shell, the crushing and grinding wheel or ring I, having shoes J and projections L, the radial arms K, and central shaft, D, substantially as described.

3. The crushing and grinding wheel or ring I, provided with projections L and shoes J, substantially as described.

4. The case or shell provided with an annular die, A, in combination with a loose crushing and grinding wheel, the shaft D, and suitable mechanism for rotating said case or shell and grinding-wheel at different speeds in the same direction, substantially as described.

5. The case or shell provided with the annular die A, in combination with a loose crushing and grinding wheel, I, provided with shoes J, projections L, and friction-rollers M, the radial arms K, and the shaft D, substantially as described.

299,773. HORSE HAY-RAKE. HORATIO GALE, Albion, Mich. Filed Nov. 3, 1883. (No model.)



Claim.—1. The combination, in a spring-tooth rake, of the rolling head B, carrying the teeth, the clearer-bar M, the swinging arms L, carrying said bar M, and the bars P, pivoted at their opposite ends to said head B and arms L, substantially as and for the purpose specified.

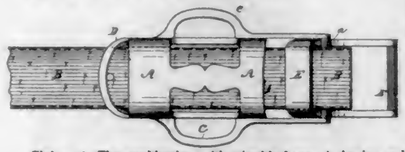
2. In a spring-tooth rake, in combination with a rolling rake-head, the arms K and L, the bar M, and the bars P, pivotally secured to said head at one end and adjustably pivoted at their other ends to the arms L, the parts being constructed, arranged, and operating substantially as and for the purposes described.

3. In a spring-tooth rake, in combination with a rolling rake-head adjustably pivoted to the thill-frame, the arms L, pivoted at their upper ends to the arms K, and carrying the clearer M N, the bars P, adjustably pivoted to said arms L, and curving around and pivoted to the forward under side of said rake-head, whereby the clearer may be adjusted to correspond with the lateral adjustment of the head and prevented from impinging against the rake-teeth, substantially as set forth.

299,774. WASHING AND PURIFYING SALT. SAMUEL S. GARRIGUES, Ann Arbor, Mich. Filed Jan. 30, 1884. (No specimens.)

Claim.—The process herein described of washing and purifying salt, which consists in first placing the salt in storage-bins having perforated bottoms, then preparing a pure solution of salt in the proportion of one of salt to three of water, then allowing said solution in the proportion of four gallons of the solution to a barrel of salt to slowly percolate through the salt in the bins to be washed, the solution passing through the perforated bottoms of the bins, as set forth.

299,775. HARNESS-BUCKLE. JAMES ALEXANDER GAVITT, Walla Walla, Wash. Filed Nov. 26, 1883. (No model.)

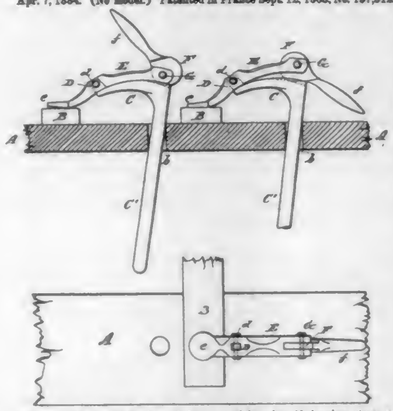


Claim.—1. The combination, with a buckle-frame, A, having end bar, *a*, of the curved tug-frame E, passing under the end bar and up through the buckle, and having the stud *c*, adapted to enter the perforations of the trace, substantially as described.

2. The combination, with the buckle-frame A, having loops C C and D and notches *e*, with spurs *f*, of the separate or independent base-bar *d*, held in said notches and riveted by the spurs, as shown and described.

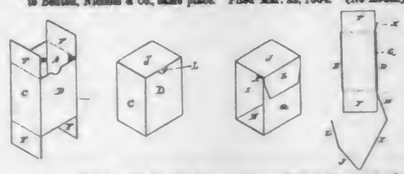
3. The combination of the buckle-frame A, having loops C C and D and end bar, *a*, with perforated plate portion, and the tug-frame E, curved as described, and having stud *c*, adapted to pass through the trace, and the perforated plate beneath, substantially as shown and described.

299,776. CLAMP. JEAN GIRAUD, Candebec-les-Elbeuf, France. Filed Apr. 7, 1884. (No model.) Patented in France Sept. 12, 1883, No. 157,512.



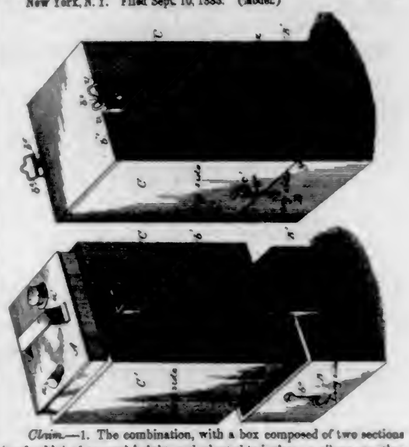
Claim.—The combination of the curved bearing C, having stem or hank C' and projecting lips D at its outer end, arm E, pivoted upon and adapted to bear against the bearing C between its lips D, thus relieving the fulcrum-bolt *d* from strain, and cam or eccentric F, having handle *f*.

299,777. PAPER BOX. JOHN F. GOODING, New Haven, Conn., assignor to Benton, Nichols & Co., same place. Filed Mar. 22, 1884. (No model.)



Claim.—The herein-described paper box made from two parts, the one part forming the four sides of the box, two opposite sides having flaps projecting therefrom, which, when turned down, will partially close the respective ends of the box, the second part consisting of a strip in width corresponding to the width of the sides of the box from which there are no projections, and in length corresponding to the length of the said two sides plus the two ends of the box and the tucking-flap, the said second part bent and introduced into the box to bring the corresponding sides of the two parts together, one end portion of the second part covering the turned-in flaps of the first part, and forming the bottom, the other end portion of the second part forming the cover over the flaps turned in at that end, its flap fitted to be introduced between the two thicknesses of the opposite side, substantially as described.

299,778. BOX FOR CANS OF OILS, PAINTS, &c. JOHN GRAVES, New York, N. Y. Filed Sept. 10, 1883. (Model.)



Claim.—1. The combination, with a box composed of two sections (preferably) of unequal height, and adapted to inclose an oil-can or other receptacle, of the two opposite vertical standards *b'*, rigidly attached to the exterior of the lower section, and provided with the handles *b²*, adapted, when the case is opened, to sustain within the same the upper section in a swinging relation, and adapted, when the box is closed, to serve for the purpose of carrying the case, substantially as described.

2. In a case adapted to inclose cans for liquids, and constructed of two sections, C C' B B', of rectangular shape, longer on two horizontal opposite sides than on the other two horizontal sides, the combination, with the two opposite vertical standards *b'*, rigidly attached to the exterior of the shorter sides of the section B B', of the section C C', adapted either to fit or to swing loosely between the standards *b'*, accordingly as the longer sides C or the shorter sides C' are placed adjacent to the standards *b'*.

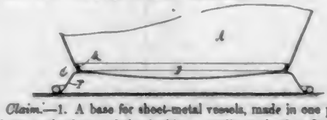
3. In a case adapted to inclose cans for liquids, and composed of two sections, the combination, with the screw-heads *c*, rigidly attached to two opposite longer horizontal sides of the upper section, of the vertical standards *b'*, secured to the lower section, and provided with the handles *b²*, adapted to sustain the upper section of the case in a swinging relation by means of the screw-heads *c*, and also provided with the longitudinal wedge-shaped grooves *b³*, adapted to interlock with the screw-heads *c'*, rigidly attached to the two opposite shorter horizontal sides of the upper section when the case is closed, the standards being thereby adapted to be kept from being pulled away from the sides of the case when the handles are used to carry the case, substantially as described.

4. In combination with a box adapted to hold cans for liquids, and consisting of two sections, B B' C C', and provided with the standards *b'*, the handles *b²*, adapted, when the two sections are closed or attached together by the hooks *b⁴* and screw-heads *c'*, for purposes of transportation, and also adapted, by means of the U-shaped bearings *b²* and the screw-heads *c'*, to sustain the section C C' in a swinging relation for purposes of pouring, substantially as described.

5. The combination, with a box adapted to hold cans for liquids, and provided with two screws, *c*, and two screws, *c'*, rigidly attached to the same, of standards *b'*, adapted, by means of U-shaped bearings of handles *b²*, to interlock with the screws *c'*, and also adapted, by means of the longitudinal wedge-shaped grooves *b³*, to interlock with the screws *c*, substantially as and for the purpose set forth.

6. The combination, with the can A and inclosing-case B B' C C', of the vertical standards *b'*, handles *b²*, having U-shaped bearings *b²*, wedge-shaped grooves *b³*, screws *c c'*, and hooks *b⁴*, substantially as described.

299,779. SHEET-METAL VESSEL. FREDERICK HABERMAN, New York, N. Y. Filed Apr. 17, 1884. (No model.)

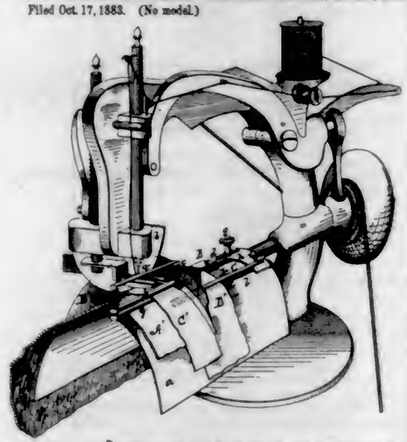


Claim.—1. A base for sheet-metal vessels, made in one piece with the bottom, the foot, and the double upwardly-projecting flange at the junction of the bottom and foot to connect with the body of the vessel, substantially as shown and described.

2. The combination, with the body of a sheet-metal vessel, of the base made in one piece with the bottom, the foot, and the double upwardly-projecting flange at the junction of the bottom and foot connected to the body, substantially as shown and described.

3. The combination, with the body of a sheet-metal vessel diverging upwardly, of the base made in one piece with the bottom, the foot, and the double upwardly-projecting flange at the junction of the bottom and foot lapping against the inner surface of the body in the plane thereof for its connection therewith, substantially as shown and described.

299,780. MECHANISM FOR SIMULTANEOUSLY SEWING TO A HAT ITS BAND AND LINING. JOHN FISHER HAMILTON, Medfield, Mass. Filed Oct. 17, 1883. (No model.)



Claim.—1. In combination with the stitch-forming mechanism of a hat-sewing machine, the brim-guide consisting of the part *d*, having the shank A, and provided with means whereby it may be attached to the bed-plate of the sewing-machine, and the T-shaped part C, connected to the part *d* by a rule-joint, combined with the stop *a*, whereby the said part *c* may be securely clamped in its operative position, all as set forth.

2. In combination with the stitch-forming mechanism of a hat-sewing machine, the brim-guide provided with the shank A, having the slot *m* therein, the lining-guide composed of the two bars *k l*, connected together at their outer ends, and adapted at their inner ends to receive the shank A between them, the screw-bolt *h'*, passing from the bar *l* through the slot *m* and bar *k*, and the nut *i*, whereby the lining-guide is rendered laterally adjustable upon the brim-guide, as set forth.

299,781. STREET-CAR COUPLING. CHARLES HANSON, Rock Island, Ill., assignor of one-half to Frederick Applequist, same place. Filed Mar. 31, 1884. (No model.)



Claim.—1. In a street-car coupling, a single or double tree pivoted to a coupling-link, in combination with a pivoted draw-head cast with a protecting-hood and a platform at its front, and provided with a coupling-pin, substantially as and for the purpose set forth.

2. In a street-car coupling, a suitable casing containing a spring, and provided at its sides with shouldered plates and a grooved cap-plate, the whole connected to the under side of the car, in combination with a tongue having a flange working in the groove of the cap-plate and a bearing for the end of the spring, and having pivoted at its front end a draw-head with coupling-pin, substantially as and for the purpose specified.

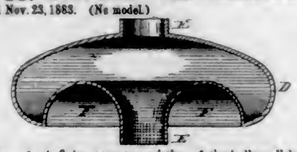
299,782. SPRING-SHADE FIXTURE. STEWART HARTSHORN, Millburn, N. J. Filed Apr. 1, 1884. (No model.)

Claim.—A shade-fixture consisting of a spring shade-roller having a weighted shade and an automatically-acting pawl and ratchet, all arranged and operating substantially as and for the purposes set forth.

299,782.



299,783. FLYING TARGET. ALBERT H. HENNARD, Knoxville, Tenn. Filed Nov. 23, 1883. (No model.)



Claim.—1. A flying target consisting of the hollow disk concaved on its lower side and having flanges on its upper and lower portions to form journals, all substantially as described, and for the purpose set forth.

2. A flying target consisting of the curved portion D, provided with a side journal, and an integral concaved portion, F, provided with a journal, in combination with a trap or sender provided with the forked arms B and the curved arm A', whereby the target is held in said trap by its journals and periphery, and when forced or thrown out receives a spinning axial rotation through the air, substantially as described and set forth.

3. A flying target consisting of a concaved disk having side journals, E, as specified, in combination with a trap provided with an arm having an inside facing of soft elastic material, the outer and inner ends of said arm being straight, the central portion thereof being curved, and a straight bifurcated arm, B, pivoted to the inner end of the curved arm, substantially as described, and for the purposes set forth.

4. A flying target consisting of a concaved disk having side journals, E, as specified, in combination with a trap provided with an arm having an inside facing of soft elastic material, the outer and inner ends of said arm being straight, the central part thereof being curved, and a straight bifurcated arm, B, provided with a rear projection, C, said arm being pivoted to the arm A, and a spring interposed between said arms, substantially as described, and for the purposes set forth.

299,784. CENTRIFUGAL FLOUR-BOLT. AUGUST HEINE, Silver Creek, N. Y. Filed Dec. 10, 1883. (No model.)

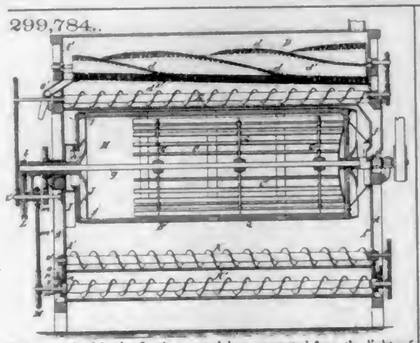
Claim.—1. The combination, with a bolting-cylinder, of a preliminary separator composed of a tapering perforated trough and a tapering brush made lengthwise adjustable in said trough, substantially as described.

2. The combination, with a bolting-cylinder, of a preliminary separator composed of a tapering brush and a tapering perforated trough decreasing in area toward its discharge end, substantially as described.

3. The combination, with a bolting-cylinder, of rotating beaters arranged in the head portion of the cylinder only, leaving a sifting chamber or space near the tail end of the cylinder, and a head or deflector surrounding the axis of the bolting-cylinder at its tail end, whereby the floating material is compelled to pass toward the bolting-surface in said sifting-chamber before escaping from the bolting-cylinder, substantially as described.

4. The combination, with a bolting-cylinder, of rotating beaters arranged in the head portion of the cylinder only, leaving a sifting chamber or space near the tail end of the cylinder, in which the valuable par-

299,784.



ticles contained in the floating material are separated from the light refuse by gravity and sifted out, and a central discharge through which the tailings escape from the bolting-cylinder, substantially as described.

5. The combination, with a bolting-cylinder, of rotating beaters arranged in the head portion of the cylinder only, leaving a sifting-chamber, H, near the tail end of the cylinder, a central discharge, A, for the tailings, and a head or disk, J, whereby the floating material is compelled to pass toward the bolting-surface before it passes through the discharge-opening *h*, substantially as described.

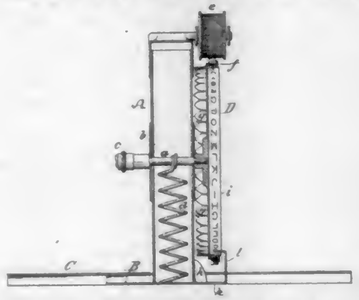
6. The combination, with the conveyers K K', chain belt *m*, and wheel M, of the standards O, provided with fixed bearings O', for one of the conveyer-shafts, vertical guides *n*, set-screw *p*, and the adjustable bearings N for the other conveyer-shaft, substantially as described.

7. A clothing for bolting-reels, composed of a bolting-cloth, Q, having longitudinal edge strips, a stretching device connecting said strips, and an auxiliary intermediate stretching device arranged lengthwise on the clothing, substantially as set forth.

8. A clothing for bolting-reels, composed of a bolting-cloth, Q, longitudinal edge strips, *q q*, of strong material, a lacing connecting said strips, an intermediate longitudinal strip, R, of strong material, and a lacing applied to said strip, substantially as set forth.

9. The combination, with the reel-frame, of a clothing composed of a bolting-cloth, Q, having longitudinal edge strips, a stretching device connecting said strips, and an auxiliary intermediate stretching device arranged lengthwise on the clothing, substantially as set forth.

299,785. TYPE-WRITING MACHINE. GEORGE H. HERRINGTON and DAVID G. MILLIKEN, Wichita, Kans. Filed May 23, 1883. (No model.)



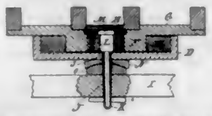
Claim.—1. The combination of the vertically-slotted hollow post A, the grooved fixed ruler C, the slide-base B, detachable from either end of said ruler, the type-wheel D on axis *a*, the upwardly spring-pressed slide-box *b*, carrying said axis, and the inking-pad *e*, journaled on a shaft fixed on top of the post, whereby there is formed a type-writer, adapted to be used as described.

2. In a type-writer, the combination, with the standard A, having the slotted base B, and the inking-roller *e*, secured to the upper end of said standard, of the type-wheel D, constructed substantially as herein shown and described, and journaled in yielding bearings on said standard, as and for the purpose set forth.

3. In a type-writer, the combination, with the hollow slotted standard A, the base B, and the inking-roller *e*, secured to the upper end of said standard, of the type-wheel D, axis *a*, sliding boxes *b*, and spring *d*, arranged within the post and secured to said axis and base, substantially as herein shown and described.

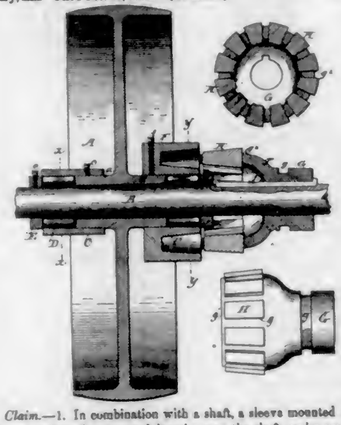
4. In a type-writer, the combination, with the hollow standard A and the vertically-movable type-wheel D, having letters or characters on its inner and outer faces, and provided with the lateral projections *g*, of the base B, provided with the guide *h*, the opening *k*, and the flange *l*, integral with the base-plate, and projecting over the rim of the type-wheel, substantially as herein shown and described.

299,786. CAR-TRUCK. JAS. NELSON HEED, Marysville, Pa., assignor of one-half to Daniel H. Fisher, same place. Filed Feb. 20, 1884. (No model.)



Claim.—The combination of the intermediate truck having a perforation, J, in the bolster and body, the car having a longitudinal slot, H, in the beam G, and means for forming a sliding joint with the bolster, and the king-bolt K, having squared portion L, adapted to fit in the slot H, substantially as shown and described.

299,787. FRICTION-CLUTCH PULLEY. HARRY W. HILL, Montgomery, Ala. Filed Feb. 23, 1884. (No model.)



Claim.—1. In combination with a shaft, a sleeve mounted loosely thereon, a pulley also mounted loosely upon the shaft, and a receiving-member of a clutch, said sleeve and said member being fitted concentrically to the hub of the pulley, substantially as specified.

2. The combination of a shaft, a pulley mounted loosely thereon, a sleeve, and a receiving-member of a clutch fitted exteriorly to the hub of a pulley, and a movable member of a clutch, substantially as specified.

3. The combination of the pulley A, having a hub exteriorly finished, as at *a a*, the sleeve C, secured thereon, the friction-rollers D, collars E, and the member F, substantially as shown and described.

4. The receiving-member of a clutch, comprising a collar having a cup-shaped projection, *g'*, provided with wooden wedges located in and extending through the walls of the cup, substantially as specified.

5. The combination of the pulley A, sleeve C, collars E, member F, and movable member G, provided with wedges H, substantially as shown and described.

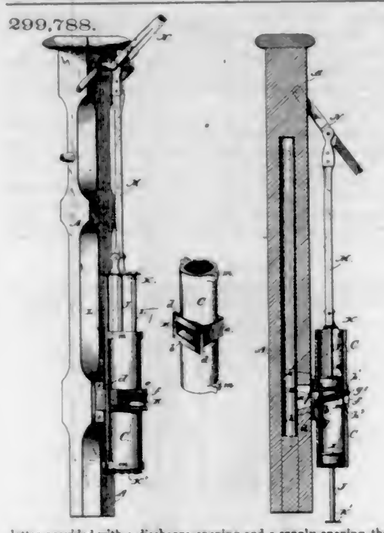
6. The combination of the pulley A, having hub exteriorly finished, as at *a a*, the sleeve C, secured to said hub-member F, segmental cages at both ends thereof, and friction-rollers D, within said cages, substantially as and for the purpose described.

299,788. DOUBLE-PISTON PUMP. GEO. W. HOLMES, Council Bluffs, Iowa. Filed Aug. 21, 1883. (No model.)

Claim.—1. The combination, with a pump-stock and a pump-cylinder, the latter provided with a supply-opening and a discharge-opening, the said opening being in the same horizontal plane, of the valve D, and the valve E, the latter pivoted in the cylinder between the two openings, and dividing the cylinder into two parts, and suitable pistons above and below the valve E, all of the above parts combined and operating substantially as set forth.

2. The combination, with a pump-stock and a pump-cylinder, the

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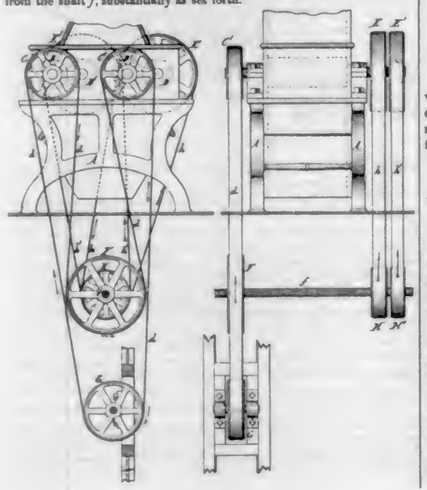


latter provided with a discharge-opening and a supply-opening, the said openings being in the same horizontal plane, of a valve pivoted in the cylinder between the said openings and dividing the cylinder into two parts, and adapted to be moved so as to close the supply and open the discharge opening to one portion of the cylinder and open the supply-opening and close the discharge to the other, and suitable pistons above and below the said valve.

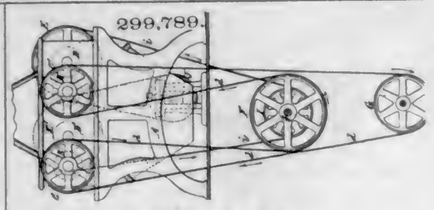
3. The combination, with a pump-stock, the cylinder communicating therewith and provided with a square portion, *e*, having the supply and discharge openings formed therein, of a pivoted valve situated within this squared portion, and operating substantially as described.

299,789. ROLLER-MILL. NOAH W. HOLT, Buffalo, N. Y. Filed Oct. 21, 1882. (No model.)

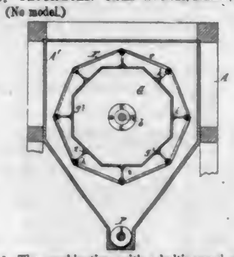
Claim.—In a roller-mill provided with two pairs of rollers, the combination, with one of the rollers of each pair provided with corresponding pulleys, C C', of a driving-shaft, *f*, arranged below the roller-mill, a pulley, F, secured to said shaft underneath the pulleys C C', an idler-pulley, G, arranged below the pulley F, and an open endless belt, *d*, running around said pulleys, and an open-belt-driving mechanism, whereby the remaining two rollers are rotated in an opposite direction directly from the shaft *f*, substantially as set forth.



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299,790. FLOUR-BOLT. NOAH W. HOLT, Buffalo, N. Y. Filed Mar. 11, 1884. (No model.)

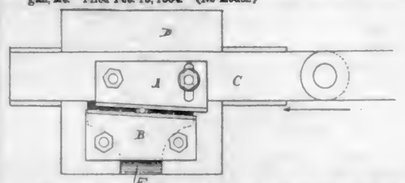


Claim.—1. The combination, with a bolting-reel, of a drum, G, secured within the reel, to revolve at the same speed and in the same direction with the reel, and having its sides *g'* arranged at an angle to the sides of the reel, substantially as set forth.

2. The combination, with a bolting-reel, of a drum, G, having tight heads *g g'*, and secured within the reel, to rotate in the same direction and with the same speed as the reel, and longitudinal ribs or buckets *i*, secured to said drum and projecting toward the inner surface of the reel, whereby some of the material is elevated and carried from the ascending side to the descending side of the reel, substantially as set forth.

3. The combination, with the shaft *b*, of the reel-heads C D, longitudinal ribs *d*, secured to said heads, drum G, provided with tight heads *g g'*, and secured to the shaft, and braces *h*, connecting the ribs *d* with said drum, substantially as set forth.

299,791. WIRE-CUTTING MACHINE. DARIUS HOUGHTON, Skowhegan, Me. Filed Feb. 18, 1884. (No model.)



Claim.—The combination of a fixed and a movable cutter arranged with their cutting-edges opposite and parallel and at an angle to the line of motion of the movable cutter, the movable cutter being arranged to move lengthwise along the face of the other cutter and to meet it, as and for the purpose set forth.

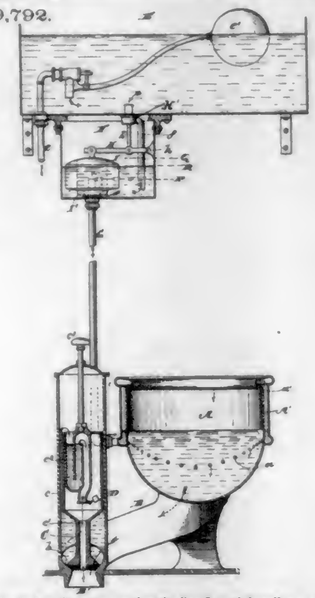
299,792. WATER-CLOSET AND PRESERVING THE SEALS OF THE TRAPS THEREOF. JAMES P. HYDE, New York, N. Y. Filed May 8, 1883. (No model.)

Claim.—1. In a device for preserving, maintaining, or restoring the seal in traps, closets, and the like, the combination, with a pipe connecting a tank with such trap below the sealing-line, of a concavo-convex bell attached to an inlet-valve, and having a cylinder to receive the upper end of the connecting-pipe, substantially as described.

2. In a device substantially as described, the combination, with a tank having a float-valve connection with the water-main, and a sub-tank having a valve connected with the main tank, of a pipe extending within and above the bottom of the sub-tank and connecting it with a basin below the sealing-line, and a bell adapted to surround the upper end of the pipe and serve as a balance air-chamber, substantially as described.

3. The combination of the supply-tank, the sub-tank, the bell-float I in the sub-tank, and the supply-controlling valve H', the bell-float and supply-valve being arranged, substantially as set forth, to close the sup-

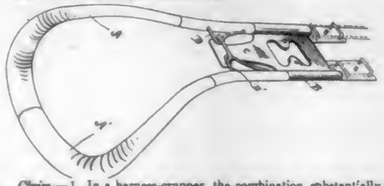
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ply-valve before the water reaches the line Q, or siphon-line, as described.

4. The combination, with the elevated main tank E, of the sub-tank having an open top and suspended directly beneath the bottom of the main, to provide an air-space between the latter and the top edge of the tank, substantially as described.

299,793. HARNESS-CRUPPER. FERDINAND J. INGRESE, Libertyville, Ill. Filed Nov. 24, 1883. (No model.)



Claim.—1. In a harness-crupper, the combination, substantially as hereinbefore set forth, of the loop, divided as described, with the plate to which the two parts of the frame of the loop are journaled, the flat spring attached to said plate, and means whereby the spring, when depressed, turns the said part of the frame in opposite directions, thereby separating the two parts of the loop, substantially as and for the purpose specified.

2. The combination, in a crupper, the loop divided in two parts, of the spring adapted to turn the two parts in opposite directions, and means, substantially as described, between the two opposite ends of said divided loop, for locking the two parts together, substantially as and for the purpose specified.

3. The combination, with the metallic core divided in two parts, of the covering pinched between the edges thereof, substantially as shown and described.

4. The combination, with the parts A A', journaled to the plate B, of spring C and ears D D', substantially as and for the purpose set forth.

5. The two parts A A' of a harness-crupper journaled on the plate B, and adapted to be turned together so as to form the loop, substantially as set forth.

299,794. FREIGHT-CAR DOOR-GUARD. SAMUEL IRVIN, Sedalia, Mo. Filed Apr. 11, 1884. (No model.)

Brief.—A slotted plate secured to a car-door is connected with a rod secured to the car by a headed bar having an eye which receives the rod, and a key inserted in a hole of the bar between the head and eye locks the door in its closed position.

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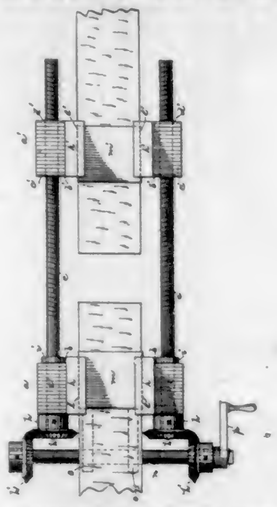


Claim.—1. In combination with a car and car-door, the plate, bar, and rod, the plate being secured to the door, the rod to the car, and the bar forming a connection between them, substantially as and for the purpose set forth.

2. In combination with a car and car-door, the plate, bar, and rod, the plate being secured to the door, and having a slot to receive the head of the bar, and the rod being secured to the car and adapted to fit in an eye of the bar, substantially as and for the purpose set forth.

3. In combination with a car and car-door, the slotted plate secured to the door, the rod secured to the car, the bar having a head and an eye and connecting the plate and rod, and the key fitting in a hole made in the bar between its head and the plate, substantially as and for the purpose set forth.

299,795. BELT-STRETCHER. GARRISON H. JONES, Larwill, Ind., and JAMES M. CHILCOTE, Edgerton, Ohio. Filed Nov. 8, 1883. (No model.)



Claim.—1. The combination of the head-block *a*, provided with the parallel lugs *k k*, having inclined planes *l l* on their inner faces, the highest part of said planes being at the outer ends of the lugs *k*, and wedge *w*, substantially as shown and described, whereby the outer strain on the end of the belt in stretching it will tighten the wedge, as set forth.

2. The combination, with the stationary head-block *a*, provided with the orificed end, projecting blocks *c*, and lugs *k*, having inclined planes *l l*, constructed as set forth, and reciprocating head-block *a'*, of the same construction as head-block *a*, of the wedges *w w'*, bolts *c c'*, each threaded near one end, pinions A, and shaft *a*, carrying pinions *h' h'*, substantially as shown and described.

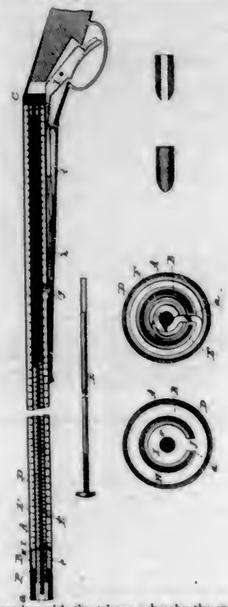
299,796. TOY GUN. JOB L. JOYCE, New Haven, Conn. Filed Apr. 11, 1884. (No model.)

Claim.—1. The combination of the two tubes A B, arranged the one within the other and fixed to the stock, the helical spring F between the inner and the outer tube, and the spring E within the inner tube, the outer end of the two springs united through a slot in the inner tube, and mechanism, substantially such as described, to engage said springs in their compressed condition, said mechanism in connection with the trigger whereby the spring may be released, substantially as described.

2. The combination of a tubular barrel, a spindle longitudinally located in said barrel and fixed at the breech end, a helical spring within the barrel around the spindle, and mechanism, substantially such as described, to engage said spring in its compressed condition, said mechanism in connection with the trigger whereby the spring may be released, substantially as described.

3. The combination of the outer tube, A, the inner tube, B, the spindle *c*, arranged longitudinally in the inner tube, fixed at the breech end, the spring F between the outer and inner tube, and spring E in the inner tube around the spindle, with mechanism, substantially such as described, to hold said springs in their compressed condition, said

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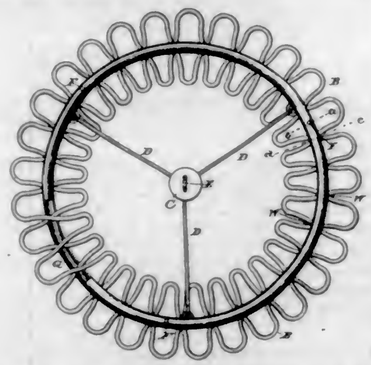


mechanism in connection with the trigger whereby the springs may be released, substantially as described.

4. The combination of the outer tube, A, the inner tube, B, the spindle *c*, arranged longitudinally within the inner tube and fixed at the breech end, the spring F between the outer and inner tube, spring E within the inner tube, the double ring-shaped collar H I, and mechanism, substantially such as described, to hold said springs in their compressed condition and to release them therefrom, substantially as specified.

5. The combination of the outer tube, A, inner tube, B, spring F between the outer and inner tube, and spring E within the inner tube, the plug G at the muzzle end between said two tubes, and the cushion-spring P, substantially as and for the purpose described.

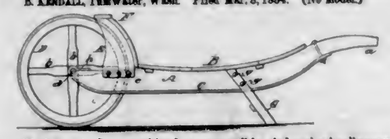
299,797. WHIP-RACK. WILLIAM P. KELLOGG, Troy, N. Y. Filed Feb. 17, 1883. (No model.)



Claim.—1. A whip-rack composed of a ring provided with a double row of oppositely-projecting wire loops and suitable means for supporting the ring, substantially as described, and for the purposes set forth.

2. A sectional ring, A, provided with slots N, in combination with a plurality of wire loops, B, and suitable means for fastening said sections together and supporting the same, substantially as and for the purposes set forth.

299,798. COMBINED WHEELBARROW AND SLED. FRANKLIN B. KENDALL, Tumwater, Wash. Filed Mar. 8, 1884. (No model.)

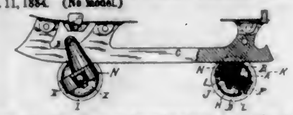


Claim.—1. In a combined or convertible sled and wheelbarrow, the sides A A of the barrow, constructed to run either end foremost when converting the vehicle into a sled, and provided with metal shoes or runners C, in combination with the removable wheel D of the barrow, and detachable legs G G, substantially as specified.

2. The detachable legs G G of the barrow, constructed with an upper slot, *f*, in combination with the sides A A of the wheelbarrow, having metal runners or shoes C, substantially as and for the purpose described.

3. The combination, with the sides A A, having runners C, of the uprights E, and cross hood-piece F, essentially as shown and described.

299,799. ROLLER-SKATE. BENNETT KINDELADE, Batavia, Ill. Filed Mar. 11, 1884. (No model.)



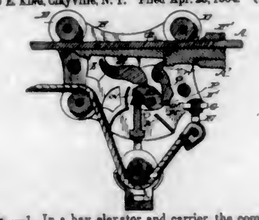
Claim.—1. An axle-pivot for roller-skates, consisting of the ball J, rigidly attached to the arms I I, and provided with pivots H K, which have bearings *z z*, respectively, in the plates A D, and the ball J, having concave seats G in said plates, as and for the purpose specified.

2. In an improvement in roller-skates, the case consisting of the plates A D, the plate D provided with the segment-flanges E E, screw-lugs F F, concave bearings *z*, in combination with the ball-axle J I I, and rubber L, as specified.

3. In roller-skates, the two-plated case A D, with the lugs F, countersunk to the thickness of the plate A below the upper margins of the flanges E, to allow plate A to come down to the arms I I, and the lug N, projecting down from the plate A and engaging the groove M' in one of the flanges E, to assist in preventing the plate D from rotating, as specified.

4. In roller-skates, the case A D, combined with the shank B, to form an attachment to a skate-runner or the foot-plate of a skate, as specified.

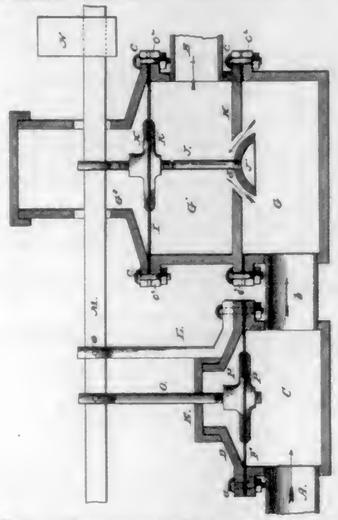
299,800. HAY ELEVATOR AND CARRIER. ARMON H. KING and ALFRED E. KING, Clayville, N. Y. Filed Apr. 23, 1884. (No model.)



Claim.—1. In a hay elevator and carrier, the combination of the stop-block having a beveled shoulder at its outer end and a shoulder at its inner end, with the carrier having the recessed catch-block provided with an upwardly-facing shoulder, the weighted trigger-block having the beveled upper end, the weighted catch-block having the upwardly-turned outer end, and the hoisting-block having the headed shank, the upper portion of the catch-block being the most eccentric, as and for the purpose shown and set forth.

2. The stop for the track of a hay carrier and elevator, consisting of the long block having a beveled shoulder at its outer end, a shoulder having a longitudinal rib at its inner end and a longitudinal groove in its upper side, the lower clamping-block having a slot in its outer end and provided with a laterally-projecting ear having a threaded perforation, and a laterally-projecting ear having a smooth perforation, the lower clamping-block having a laterally-projecting ear provided at its outer end with a downwardly and outwardly projecting hook, and a laterally-projecting ear having a threaded perforation, and the screw passing through the threaded perforations, all constructed and combined as and for the purpose shown and set forth.

299,801. GAS-REGULATOR. CHESTER S. KING, Smethport, Pa. Filed Jan. 19, 1884. (No model.)

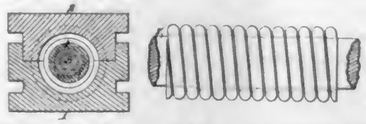


Claim.—1. The combination, with a gas-regulator consisting of a suspended valve, a valve-stem, a diaphragm, and a valve-seat located above the valve, of a separate diaphragm arranged nearer the source of supply than the valve, and an external lever connected to both this diaphragm and the valve, to balance the latter against variations of pressure, substantially as shown and described.

2. The chambers G G' G², having flanges at their edges, with open slots in the same at regular intervals, in combination with bolts *c*, diaphragm I, the valve, valve-stem, and valve-seat, as and for the purpose described.

3. The combination of the chamber C, pipe *b*, the connected chambers G G' G², with perforated partition H and diaphragm I, valve and valve-stem J J', lever M, standard L, stem O, and diaphragm F, as and for the purpose described.

299,802. PROCESS OF AND APPARATUS FOR MAKING SOLID RINGS OF PLASTIC COMPOUNDS. EMIL KIPPER, Adams, Mass. Filed Nov. 13, 1883. (No model.)



Claim.—1. The die composed of two sections constructed on the interior with a series of concentric grooves of semicircular form, and devices, such substantially as described, arranged in said die, for converting a spiral rod into detached concentric completed rings, as set forth.

2. The combination of the die composed of two sections constructed on the interior with a series of concentric grooves of semicircular form, and a spindle supported in the die, and provided with a series of forming-rings having annularly-grooved peripheries for converting a spiral rod into detached concentric completed rings, substantially as described.

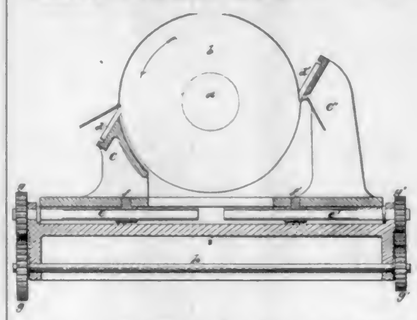
3. The combination of the die composed of two sections constructed with a series of concentric grooves of semicircular form, the removable heads closing the ends of the die, the spindle supported centrally in the die by the heads, and the forming-rings on the spindle, provided with annularly-grooved peripheries, for converting a spiral rod into a series of detached concentric completed rings, substantially as described.

4. The process herein described of making solid rings from plastic material, which consists in first converting the material into spiral form, and then pressing it into concentric solid rings, substantially as specified.

5. The process herein described of making solid rings from plastic material, which consists in converting material into a spiral rod, placing it into a die having concentric annular grooves, and pressing the spiral rod into the grooves to convert it into concentric solid rings, substantially as described.

6. The process herein described of making solid rings of a plastic substance, which consists in enveloping a compound mandrel with the material to serve as a supply from which to mold rings concentrically in such die, substantially as specified.

299,803. CUTTING SHEETS OF XYLONITE AND OTHER PLASTIC COMPOUNDS FROM A CYLINDRICAL BLOCK. EMIL KIPPER, Adams, Mass. Filed Dec. 26, 1883. (No model.)



Claim.—1. The within-described method of cutting sheets of xylonite, celluloid, and like compounds, consisting in simultaneously cutting spirally from a roll of such material a series of sheets on a line at any angle to the axis of the roll, whereby are produced sheets of unequal thickness with their surfaces out of parallelism with each other, substantially as described.

2. In combination with a revolving mandrel suitable for carrying a cylinder of compound, and means for revolving the same, and for supporting and feeding the knives for cutting the cylinder into sheets, two knives, one of which has its edge set and maintained and fed at an angle to the axis of such mandrel, whereby sheets having edges of unequal thickness and surfaces inclined to each other may be cut spirally, substantially as described.

3. The method herein described of cutting sheets of xylonite, celluloid, and like compounds, consisting in simultaneously cutting spirally from a roll of such material a series of sheets flat or plain on one side and corrugated upon the other side, substantially as described.

4. The within-described method of cutting sheets of xylonite, celluloid, and like compounds, consisting in simultaneously cutting spirally from a roll of such material a series of sheets on a line at an angle to the axis of the roll, and having each at least one surface of the form of a series of inclines, substantially as described.

299,804. MANUFACTURE OF BRUSH-BODIES, &c., FROM PYROXYLINE COMPOUNDS. EMIL KIPPER and JARVIS B. EDSON, Adams, Mass. Filed Jan. 24, 1884. (No specimens.)

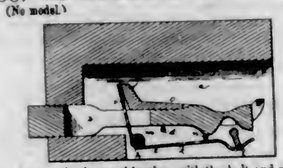
Claim.—1. The process herein described of making the bodies or backs of brushes and other articles, which consists in first producing a body or core from plastic xylonite or other pyroxyline compound of substantially the form and dimension of the finished article, and then attaching thereto a sheet or film of xylonite or other pyroxyline compound of the grade which it is desired to have the exterior of the article possess, as set forth.

2. The process herein described of making the bodies or backs of brushes and other articles, which consists in first molding a body or core from plastic xylonite or other pyroxyline compound in a die or mold into substantially the complete and finished dimension and form, subsequently placing the body or core on a thin sheet or film of xylonite or other pyroxyline compound of the grade it is desired that the exterior of the article possess, and subjecting the whole to the action of a die or mold to unite the sheet or film and the core, as set forth.

3. The process herein described of making the backs of brushes and other articles, which consists in first molding a body or core of scraps or an inferior grade of plastic xylonite or other pyroxyline compound, then placing the body or core on a thin sheet of xylonite or other pyroxyline compound of the superior grade it is desired that the exterior of the article possess, and finally subjecting the whole to the action of a die or mold to unite the body or core and the exterior sheet or film, as set forth.

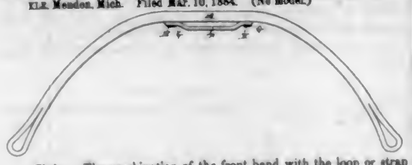
4. A body and back for brushes and similar articles, composed of a body or core of an inferior grade of xylonite or other pyroxyline compound having an attached exterior covering composed of a sheet or film of the superior grade of the said compound which it is desired that the article possess, substantially as described.

299,805. LOCK. JOHN J. KNAPP, Richland, W. Va. Filed Mar. 17, 1884. (No model.)



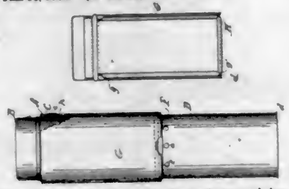
Claim.—In a lock, the combination, with the bolt and pivoted dog engaging the bolt, of the spring-lever having the coil tension-bearing secured upon a fulcrum-post within the lock-case, and having one of its arms engaging the short arm of the pivoted dog, and the other arm provided with a bead for engaging the lower end of the key-guard, and a stop-pin for preventing the latter arm from obstructing the key-hole, substantially as specified.

299,806. HARNESS-BRIDLE. LEVI J. KNAUSS and GEORGE W. HINKLE, Mendon, Mich. Filed Mar. 10, 1884. (No model.)



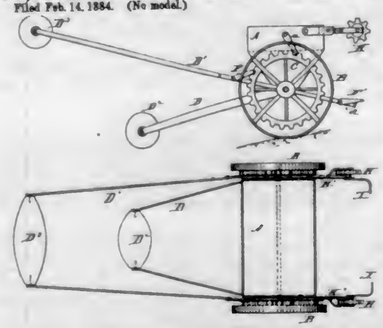
Claim.—The combination of the front band with the loop or strap B, which is made of rubber, and which is attached to the inner side of the front band, for the purpose of forming a guide for the winker-brace, substantially as shown.

299,807. POCKET MATCH-BOX. EZRA B. LAKE, Ocean City, N. J. Filed Jan. 18, 1884. (No model.)



Claim.—The combination, with the pocket match-box A, having the cap or lid B on one end, of the tubular light-protecting screen D, embracing and adapted to slide lengthwise of said box, and the non-conducting shield G, also embracing said box attached thereto, and constructed and arranged to inclose said screen, which is located between its inner surface and the wall of the box when said screen is not in use, substantially as described and shown

299,808. LIFE-SAVING VEHICLE. EZRA B. LAKE, Ocean City, N. J. Filed Feb. 14, 1884. (No model.)



Claim.—1. A life-saving vehicle consisting of a body or frame provided with wheels, and having buoyant or floating levers, which turn said wheels through the action of the waves and cause the vehicle to move, substantially as set forth.

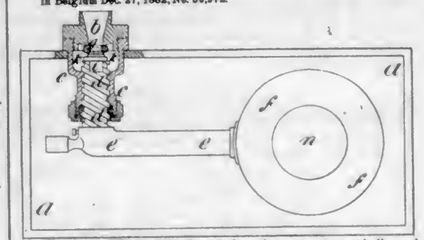
2. The combination of the body A, mounted on wheels B B, with mechanism, operated by the action of the waves on suitable floating buoys, whereby said wheels are turned and the vessel propelled through the action of the waves.

3. The combination of the body A, mounted on wheels B B, to which are connected the toothed wheels C, with the floating or buoyant levers D D', carrying pawls which engage with the toothed wheels and effect the propulsion of the vehicle, as described.

4. The combination, with the body A, provided with toothed propelling-wheels and devices for turning the same through the action of the waves, of an adjustable pinion adapted to engage the toothed propelling-wheels, and provided with means of operation, substantially as described.

5. The combination, with a marine wagon adapted to run or travel on the bar or shoal bottom, and provided with toothed propelling-wheels, and floating or buoyant levers for moving said wheels through the action of the waves, of mechanism, substantially as set forth, whereby said vehicle may be operated from the body of the wagon or by hand, as described.

299,809. STEAM-TRAP. HENRY LANCASTER, Manchester, County of Lancaster, England. Filed Dec. 11, 1883. (No model.) Patented in England Aug. 2, 1882, No. 3,663; in France Dec. 26, 1882, No. 152,846, and in Belgium Dec. 27, 1882, No. 59,972.



Claim.—1. The combination of the valve-seat, screw-spindle, and float of a steam-trap with a valve, *g*, loosely mounted on the screw-spindle and free to turn thereon, substantially as and for the purpose set forth.

2. The combination of the valve-seat, hollow float, and hollow screw-spindle having a reduced end, *d'*, and conical shoulder *d²*, with a valve mounted but free to turn upon the end *d'* and pressed to its seat by the turning of the said spindle, substantially as set forth.

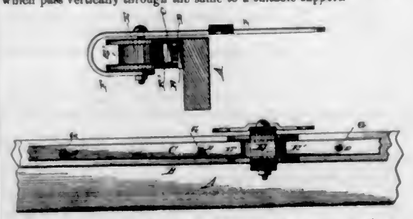
299,810. MANUFACTURE OF ARTIFICIAL STONE. BERNARD LAUDE, New York, N. Y., assignor of one-half to Samuel B. Wellington, same place. Filed May 3, 1884. (No specimens.)

Claim.—1. An artificial stone composed of cement, pulverized iron slag, and water or other moistening material, as set forth.

2. As a new article of commerce, cement and pulverized iron slag, mixed in suitable proportions in a dry state for transportation and use, as set forth.

299,811. TRACK FOR BARN-DOOR HANGERS. JOHN H. LAWRENCE, Sterling, Ill. Filed Nov. 2, 1883. (No model.)

Brief.—A track having a portion extending into the groove of a roller is built up of plates and intervening posts, and is secured by bolts which pass vertically through the same to a suitable support.



Claim.—In a track for barn-door hangers, the combination, with a suitable support or ledge, A, of a track to support the roller, having tongue to extend into the groove in the roller, built up of a plate, B, posts or bolsters D, and narrow plate or bench C, substantially as described.

299,812. ALBUM-SATCHEL. LOUIS LAZARUS, Allegheny, Pa. Filed Apr. 7, 1884. (No model.)

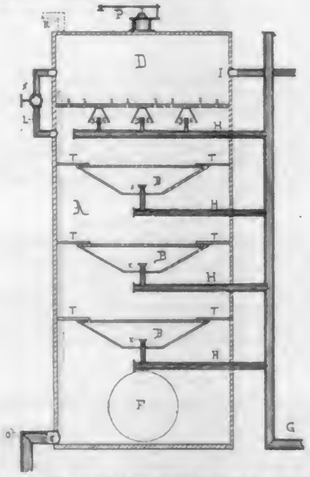


Claim.—1. In a satchel, the combination, with three or more boxes, each provided with partitions forming compartments, of hinges each having two or more joints, secured to the several boxes, substantially as and for the purpose specified.

2. The combination, with three or more boxes hinged together as a satchel, of a series of double hooks, substantially as described, and a series of pins, each double hook to engage two pins on different boxes, as shown and described.

3. The combination, with a series of boxes hinged together, each box having separate compartments and elastic straps across them, substantially as described, of one or more bags secured to said straps, as and for the purpose specified.

299,813. DEVICE FOR THE ABSORPTION OF THE GASEOUS PRODUCTS OF COMBUSTION. CHAS. J. LE ROY, Chicago, Ill., assignor to Le Grand S. Burton and Burton & Parker, all of same place. Filed Oct. 23, 1883. (No model.)



Claim.—1. The method of condensing the gaseous products of combustion, which consists in spraying them with water while detained under pressure, and subjecting them to increased heat during the latter part of the process, substantially as set forth.

2. The method of condensing the gaseous products of combustion, which consists in spraying them with water while detained under pressure, and discharging steam upon the unabsorbed portion, substantially as set forth.

3. The method of condensing the ascending gaseous products of combustion, which consists in trapping them, as shown, by virtue of their levity, and spraying them with water while so trapped.

4. The method of disposing of the gaseous products of combustion, which consists in spraying them with water while detained under pressure, and discharging steam upon the portion uncondensed, and conducting the portion still remaining uncondensed back to the furnace, substantially as set forth.

5. In a device for condensing the gaseous products of combustion, the combination of a box or chamber open at the bottom with spray-pipes arranged to discharge within such box or chamber, substantially as and for the purpose set forth.

6. In a device for condensing the gaseous products of combustion, in combination, the downwardly-opening and upwardly-expanded smoke-traps B and the spray-pipes X, arranged to discharge within said smoke-traps, substantially as set forth.

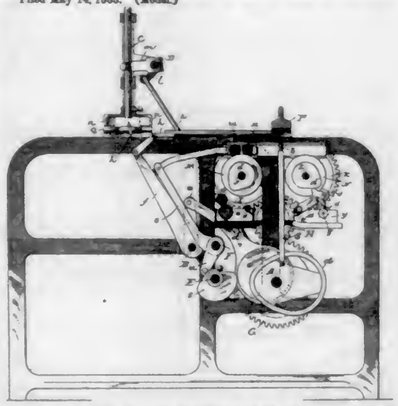
7. In a device for condensing and absorbing the gaseous products of combustion, the combination of a smoke-receiving chamber, a box or boxes therein opening downwardly, and spray-pipes arranged to discharge within said boxes, substantially as and for the purpose set forth.

8. In a device for condensing the gaseous products of combustion, the combination of a condenser having a steam-chamber at the top, means for driving the smoke into such condenser, water-supply pipes thereto, waste-pipe therefrom, and smoke-arresting plates therein, substantially as set forth.

9. In a device for condensing the gaseous products of combustion, the combination of a condenser, means for driving the smoke thereinto, smoke-arresting plates therein, water-supply pipes thereto, and waste-pipe therefrom, an upper heating-chamber, and a safety-valve, substantially as set forth.

10. In a device for condensing or absorbing the gaseous products of combustion, a condensing-chamber, in combination with means for driving the smoke thereinto, smoke arresting and condensing boxes therein, water-spray pipes arranged to discharge within said boxes, and a waste-pipe leading from such condensing-chamber, substantially as set forth.

299,814. ENVELOPE-MACHINE. DANIEL M. LESTER, Norwich, Conn. Filed May 14, 1883. (Model.)



Claim.—1. In an envelope-machine, printing and gumming mechanisms, combined with devices for moving the blanks from the printing to the gumming mechanism, and with means, substantially as described, for imparting motion to the specified mechanisms, all substantially as described.

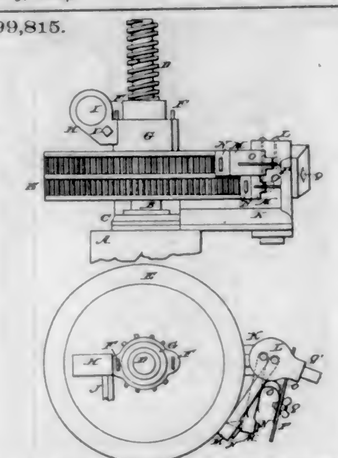
2. In combination with the vertically-reciprocating gummer and the plate for supporting the blanks to be gummed, the tilting levers or stops adapted to be swung aside by the passage of the blank to the plate, and to limit the movement of the gummer when no blank is received by the plate, all substantially as described.

3. In combination with the gummers *a a*, one or more tilting levers, *h'*, pivoted in the bed Q, and operating as and for the purpose set forth.

299,815. FRUIT-PRESS. DOMINGUE LILLE, Troncens, France. Filed Apr. 7, 1884. (No model.) Patented in France May 21, 1883, No. 155,630; in Belgium Oct. 6, 1883, No. 62,307; in England Oct. 11, 1883, No. 4,841; in Luxemburg Oct. 14, 1883, No. 310; in Sweden Oct. 15, 1883; in Italy Oct. 18, 1883, No. 16,021; in Denmark Oct. 22, 1883, and in Norway Nov. 10, 1883.

Claim.—1. In a fruit-press, the combination of the vertically-movable follower-stem having a screw-threaded upper end, a female-threaded disk or wheel connected with the cover of the press in such a manner as to be capable of revolving freely, a female-threaded collar placed upon and connected with the said disk, and having means, substantially as described, for the attachment of a sweep or lever, a fixed bracket having a pivoted disk, with means, substantially as described, for the attachment of an operating-lever, and a pair of levers pivoted to the said disk on opposite sides of its fulcrum, and having means, substantially as described, for alternately engaging the wheel resting upon the cover of the press-box, substantially as set forth.

299,815.



2. In a fruit-press, the combination of the screw-threaded follower-stem, the cover, the double spur-wheel resting upon and connected with the cover, a fixed bracket, a disk pivoted to the latter, and having means, substantially as described, for the attachment of a lever, a pair of levers pivoted in the said disk on opposite sides of its fulcrum, and provided at their ends with spurs or dogs engaging the upper and lower gearing of the double spur-wheel, respectively, an arm or bracket, and springs attached to the latter and bearing against the outer sides of the levers, which are thereby held in engagement with the spur-wheel, substantially as and for the purpose herein set forth.

3. In a fruit-press, the combination of the cover, the screw-threaded follower-stem moving vertically through the same, an inturned flange formed annularly upon the cover, a female-threaded wheel or disk resting upon said cover, and having a flange extending under the flange of the latter, and the described mechanism for revolving the said wheel or disk with different degrees of speed and power, substantially as and for the purpose set forth.

299,816. BRACELET-CLASP. HARRY C. LINDOT, Providence, R. I., assignor to John C. Harrington, same place. Filed Mar. 22, 1884. (No model.)



Claim.—The improved clasp for bracelets, consisting of the oppositely-arranged cups D D', combined with the bolt E, pin F, and spring H, secured to one arm of the bracelet, and the ring C, provided with an eye, *b*, secured to the opposite arm of the bracelet, substantially as described.

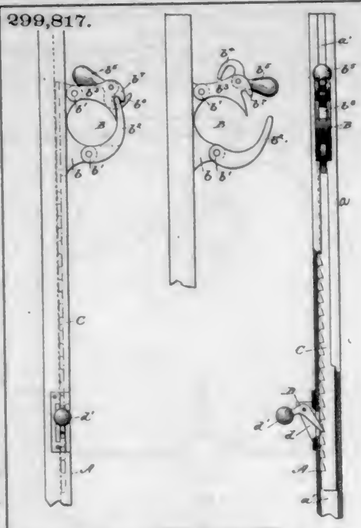
299,817. HAY-BINDER FOR WAGON-RACKS. JOEL MADISON, Farmington, Minn. Filed Mar. 17, 1884. (No model.)

Claim.—1. The toothed sliding bar C, provided with the hinged opening ring B, in combination with the standard A, provided with the slotted plate *a* and pawl D, constructed and arranged as and for the purposes substantially as set forth.

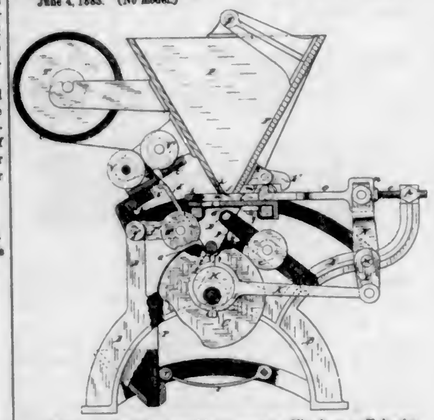
2. The hinged opening ring B, consisting of the segmental bar b^3, provided with the slot b^4, in combination with the segmental bar b^2, provided with the locking-hook b^5, having the weighted handle b^6, and the lug or lip b^7, constructed and arranged substantially as described, as and for the purposes set forth.

3. The combination of the hinged opening ring B, constructed as described, with the toothed bar C and the standard A, provided with the slotted plate *a* and the pawl D, constructed and arranged as and for the purposes substantially as set forth.

299,817.



299,818. CIGAR-MACHINE. WILLIAM I. MANN, Braddock, Pa. Filed June 4, 1883. (No model.)



Claim.—1. In a cigar-machine, a scrap or filler hopper, E, having the swinging back F and slit *f*, in combination with suitable means for oscillating said back to facilitate the discharge of scrap, substantially as described.

2. In a cigar-machine, the combination of the hopper E, having swinging back F and slit *f*, and knife-edge *k*, with the reciprocating plunger *l*, having cutting-edge, whereby a single filler is cut off, substantially as described.

3. The combination of the swinging hopper-back F, having hook *k'*, with plunger *l*, having tappet *m'*, substantially as described.

4. The combination, with feed-rollers V V' and knives *b' c'*, of the hinged apron *d'*, substantially as described.

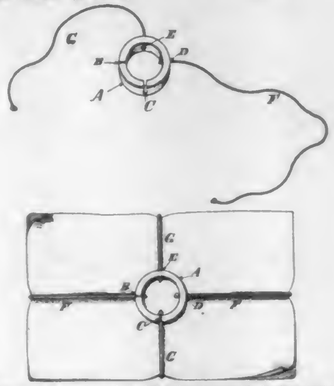
5. In a cigar binding or wrapping mechanism, the combination of a flexible band, means for forming said band into a pocket to receive the filler and one end of a binder, a segmental table, and a revolving sweep adapted, in its continuous revolution, to travel at regular intervals over said table under the band, to form the latter into a bight containing the filler and binder, and in its sweeping movement cause a rotation of the filler to take place, substantially as described.

6. In a cigar-machine, the combination of the sweep S, adapted for continuous revolution, suitable means for revolving the same, table Q, and band P, adapted to be intermittently formed into a bight or loop during a part of the continuous revolution of said sweep, and thereby rotate any body lying in said bight, substantially as described.

7. The combination, with cam C, of the pivoted arm *d*, carrying roller *c* and whip D, substantially as described.

8. The combination of band P, rotating shaft A, arm R, and revolving sweep S, having suitable means for revolving it, with the concave table Q, curved concentric with the axis of shaft A, substantially as described.

299,819. LETTER-FILE. GEORGE MASON, Catlettsburg, Ky. Filed Apr. 11, 1884. (No model.)



Claim.—The combination of the ring A, provided with notches and perforations, with cords F and G attached, substantially as and for the purpose described.

299,820. FIRE-PROOF CEILING. HENRY MAUREL, New York, N. Y. Filed Dec. 5, 1883. (No model.)

Brief.—Employs skewbacks with arch-blocks, the former having flanges provided with longitudinal passages, and meeting beneath the I-beams.



Claim.—1. The combination, substantially as hereinbefore described, with the beams and arch-blocks, of the skewbacks having flanges or extensions for protecting the under portions of the beams, provided with longitudinal spaces or passages.

2. The combination, substantially as hereinbefore described, with the beams and arch-blocks, of the skewbacks having the lower edges in planes below the beams, having flanges or extensions meeting under the beams, and having longitudinal spaces or passages in the entire lower portions thereof.

3. As a new manufacture, a skewback of the character hereinbefore described, having a flange or extension for protecting the under portion of a beam, provided with a longitudinal space or passage.

299,821. APPARATUS FOR RENDERING LARD, &c. DAVID W. MCELROY, Keokuk, Iowa. Filed Apr. 1, 1884. (No model.)

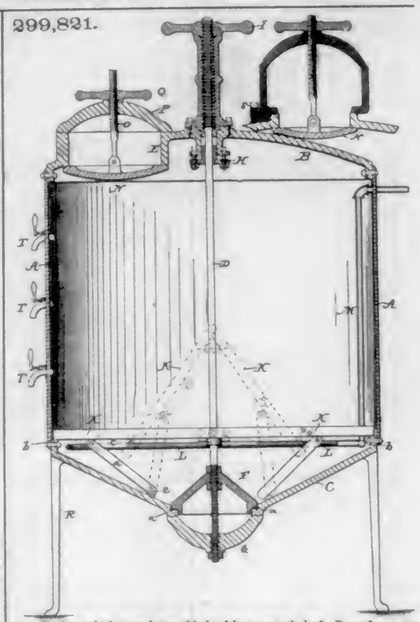
Claim.—1. In a rendering-tank or other analogous device, a false or supplemental bottom, substantially such as described, and of essentially the same diameter as the greatest internal diameter of the tank, as and for the purpose set forth.

2. In a rendering-tank, a false or supplemental bottom, on which the material to be treated is placed, said bottom being composed of two or more slotted or perforated and folding sections pivoted to an operating shaft or rod, and adapted to be raised and folded, so as to permit the refuse matter to fall into and through the bottom of the tank, as set forth.

3. In a rendering-tank, a false or supplemental bottom composed of two or more folding slotted or perforated sections pivoted to an operating-rod, as described, in combination with the links *c d*, as and for the purpose set forth.

4. In a rendering-tank, a false or supplemental folding or flexible bottom, substantially such as described, pivoted to an operating-rod, as set forth, in combination with the links *c d* and ledge *b*, as and for the purpose set forth.

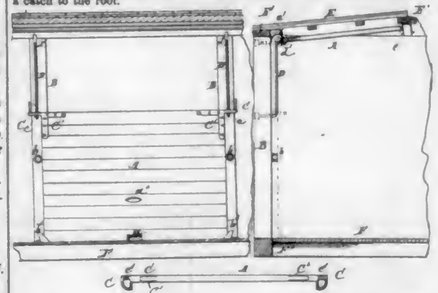
299,821.



5. A rendering-tank provided with a central shaft, D, and operating-wheel I, in combination with the folding bottom K and valve T, as set forth.

299,822. GRAIN-CAR DOOR. WILLIAM MCGUIRK, Chicago, Ill., assignor to himself and Frank Jagar, same place. Filed Mar. 25, 1884. (No model.)

Brief.—The door has on each end a loop or guide, in connection with rods and curved retaining-hooks, which are shaped to throw the loops or guides into a position for hanging up the door, which is held by a catch to the roof.



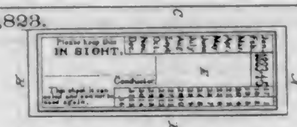
Claim.—1. A door having on each end a guide or loop, in combination with retaining hooks or supports, the main or body portion of which is bent or curved to throw the guide or loop into the holding portion thereof, and a catch for maintaining the door in an elevated position, substantially as and for the purpose specified.

2. A door having on each end a guide or loop, in combination with guideways or rods and retaining hooks or supports, the main or body portion of which is bent or curved to throw the guide or loop into the holding portion thereof, for hanging up the door, substantially as specified.

299,823. CONDUCTOR'S PASSENGER-CHECK. JAS. G. MCMICHAEL, Louisville, Ky. Filed Apr. 23, 1883. (No model.)

Claim.—The conductor's check described, having top A, with annual dates, the side C, with a table of the names of the months, side D,

299,823.



with a table of days, the request to keep the check in sight, and the blank space E, arranged both centrally and longitudinally of the check for official notes or memorandums, substantially as specified.

299,824. ROTARY STEAM-ENGINE. JAMES H. MCVAY, South Chicago, Ill. Filed Aug. 20, 1883. (No model.)

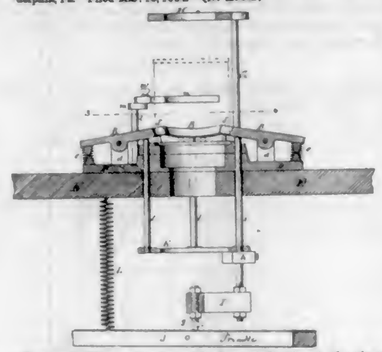


Claim.—1. In rotary steam-engines, a single central piston whose buckets are adjustable by set-screws, and the annular fabric packing in the ends of the piston, extending through the grooves in the ends of the buckets, as specified.

2. In rotary steam-engines, a single central piston combined with rotary cut-offs—one at each side thereof—which are adjustable to the piston, and the bearings *b c d* to the cut-offs being adjustable in the ends of the case, to compensate for the wear of the parts, as specified.

3. The slotted boxes *b*, attached to the outside of the case, in combination with the rotary partitions B B', adjustable bearings 6 7, and piston A, as set forth.

299,825. CAN-HEADING MACHINE. CHARLES R. MERRIAM, Philadelphia, Pa. Filed May. 10, 1884. (No model.)



Claim.—1. The combination of the base D, the ring A, the pivoted segments B, springs for acting thereon, the treadle J, and the can-depressing ring H, and segment-elevating rods *i*, controlled by said treadle, as set forth.

2. The combination of the ring A, the pivoted segments B, the operating-rods *i* therefor, the treadle J, and the ring K, carrying said rods and supported by but adjustable in respect to the treadle, as set forth.

3. The combination of the ring A, having dowel-pins *f*, with the segments B, having end recesses to which said dowel-pins are adapted when the segments are depressed, as set forth.

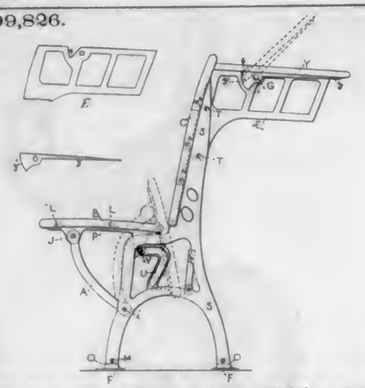
4. The combination of the ring A and segments B, means for operating said segments and depressing a can, and an adjustable gage, *n*, whereby said can is centered in respect to the ring and segments, as set forth.

299,826. SCHOOL DESK AND SEAT. CHARLES A. MERRILL, Grand Rapids, Mich. Filed Apr. 9, 1883. (No model.)

Claim.—1. The seat B, having pin V, and the arm A, pivoted at one end to the seat B and at the other to the standard S, in combination with such standard, having a continuous slot, as U, extending horizontally for a portion of its length, and then turning downward, and constructed to receive the pin V, whereby the seat is supported in either position and adapted to be folded backward and downward by one and the same operation, substantially as specified.

2. A standard for a seat or desk, provided with sets of interchangeable feet, as F, of varying heights, constructed to be detachably but firmly

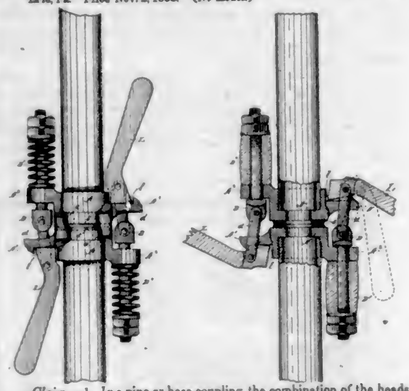
299,826.



secured to the bottom of said standard, whereby said desk or seat may be fitted for the use of children of different sizes, substantially as described.

3. In a school-desk, the lid Y, provided with a support, *y*, having the extension *y'*, and hinged from beneath at G, in combination with the frame E, having recess *e*, substantially as described.

299,827. PIPE AND HOSE COUPLING. FREDERICK E. MERTENS, Erie, Pa. Filed Nov. 2, 1883. (No model.)



Claim.—1. In a pipe or hose coupling, the combination of the heads A A, having bearing-lugs A' A' and A^2 A^2, connected together by a link, with the cam-levers L L, adjusted substantially as shown, to act upon said bearings and against springs, substantially as shown.

2. In a pipe or hose coupler, the combination, substantially as shown, of the heads A A, having bearing-lugs A' A' and A^2 A^2, cam-levers L L, draw-bars D D, links *d d*, and springs D' D', said parts being arranged to operate together substantially as shown.

3. In a pipe or hose coupling, substantially as shown, the heads A A, provided with guide horns or lugs *a a*, projecting in front of the seating faces of said heads, and means, substantially as described, for fastening the heads together, for the purpose set forth.

4. In a pipe or hose coupling, substantially as shown, the combination, with the heads A A, of the lugs or projections A' A' A^2 A^2, the guide horns or lugs *a a a a*, the seats S S, draw-bars D D, links *d d*, springs D' D', and levers L L, all substantially as and for the purposes named.

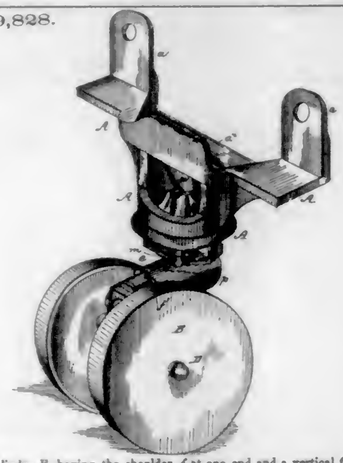
299,828. CASTER. JAMES T. MILLER, Urbana, Ohio. Filed Mar. 1, 1884. (No model.)

Clcim.—1. A two-wheeled caster in which the wheels are unconfined by housings, the bearings *b* of the wheels being independently mounted in the cylinder C', as and for the purpose set forth.

2. A caster the wheels of which are provided with independent bearings *b*, said bearings moving within a cylinder, C', through which and the bearings *b* the axle passes, as and for the purpose set forth.

3. In a caster, the combination, with the cylindrical bearing C, having a transverse cylinder, C', integral therewith, and stop-lugs *e e*, of

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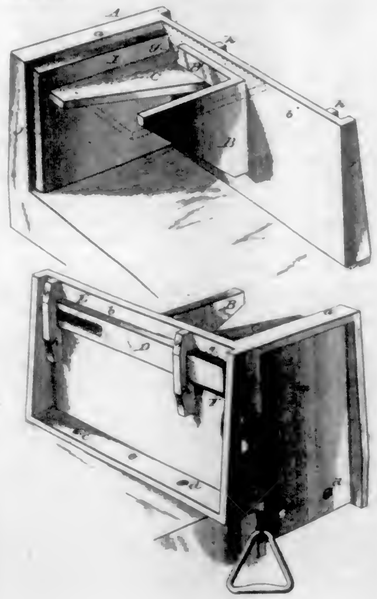


the cylinder F, having the shoulder *f* at one end and a vertical frame and roller-box at the other end, substantially as and for the purpose set forth.

4. In a caster, the combination, with the oscillating cylinder F, having a vertical frame, F', provided with a roller-box and two vertical journal-boxes, of the frame A, having the bearing *a'* for the shank of frame F', the journal boxes *g* being in rear of the pivot *h*, substantially as and for the purpose set forth.

5. In a caster, the combination, with the frame A and the vertical frame F', carrying the horizontal cylinder F, of the cylinder C, having the cylinder C' at right angles thereto, and the wheels having the bearings *b*, the cylinder C having a bearing in the cylinder F, and the wheels journaled in the cylinder C', substantially as and for the purpose set forth.

299,829. CLAMP. SAMUEL MITCHELL, Hornellsville, N. Y., assignor to the Shipping Package Company, same place. Filed Apr. 12, 1884. (No model.)



Claim.—1. The herein-described clamp or holder for use in manufacturing boxes, consisting of a frame composed of two sides joining each other at an angle corresponding to the desired angle of the box, a bracket projecting horizontally from the frame to sustain the applied side or board, a slide provided with a projecting arm to press the side or board of the box against the frame, a spring attached to and serving to retract the slide, and a band attached to the slide and serving to move it in opposition to the spring, all substantially as described and shown.

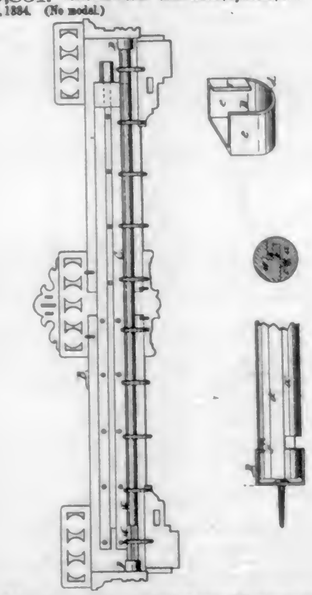
2. In a clamping device for use in box-making, the combination of a stationary upright plate or support having a plane face, a slide movable to and from said support and provided with a horizontally-projecting arm parallel with said face, a band attached to the slide, and a foot-piece attached to the band, all substantially as described and shown, whereby the operator is enabled to force the slide against the flat face of the board or box-side by the pressure of his foot, and to clamp said board between the face of the support and the arm, thereby taking out any bends or irregularities in its face.

3. In a clamp for use in nailing boxes, the combination of a frame having two sides joining each other at an angle, a slide provided with a projecting arm movable to and from one of said sides to press and clamp a board against the same, a bracket and ledge projecting from the other side to support the piece to be nailed, a spring attached to the slide at one end and to the frame at the other end to retract the slide, and a band attached to the slide and provided with a foot-piece, whereby the slide may be moved against the board in opposition to the force of the spring.

299,830. PROCESS OF OBTAINING HYDROCHLORIC ACID FROM THE RESIDUES OF AMMONIA-SODA MANUFACTURE. LUDWIG MOND, Northwich, County of Chester, England. Filed Jan. 9, 1884. (No specimens.)

Claim.—The method of producing hydrochloric acid from the liquors obtained in the manufacture of soda by the ammonia process, and containing chloride of ammonium and chloride of sodium, which consists in evaporating these liquors, separating therefrom the chloride of sodium, which salts out during the evaporation, and treating the remaining product by sulphuric acid, substantially as described.

299,831. CURTAIN-POLE. JOHN MOORE, Syracuse, N. Y. Filed Apr. 9, 1884. (No model.)

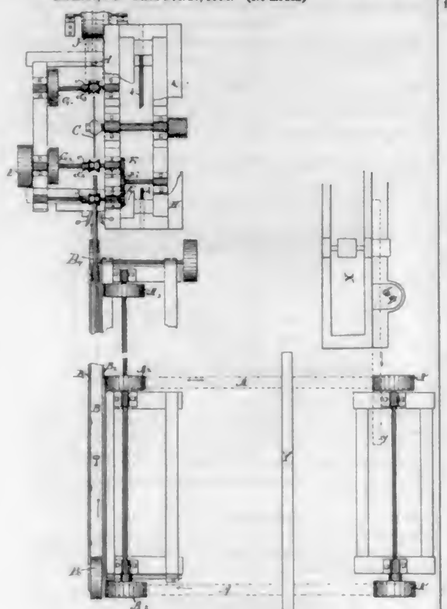


Claim.—1. In combination with an extensible curtain-pole, supporting-brackets provided with a grip adapted to engage the side of one end of the pole-section, substantially as and for the purpose set forth.

2. The combination of the pole-sections *a a*, each provided at its outer end with the transverse groove *n*, and the brackets D, provided with the flange *r*, adapted to engage the groove *n*, substantially as described and shown, for the purpose set forth.

3. The combination of an extensible window-cornice and extensible curtain-pole connected therewith, and adapted to adjust itself automatically with the adjustment of the said cornice, substantially as set forth.

299,832. MACHINE FOR MAKING BED-SLATS. WM. H. MOORE, Gardiner, Me. Filed Feb. 27, 1884. (No model.)



Claim.—1. In a machine for splitting bed-slat bolts, the combination of the feed-belt delivering the bolts from the planer lengthwise to the feed-belt B, having guides on each sides, with the guides O and the rolls d' D' d^2 D^2 d^3 D^3 and saw C, whereby the bolt is delivered to and passed beyond the saw, and the spreader I to separate the split bolt, all substantially as set forth.

2. In a machine, as described, the combination of the endless feed-belt B, which is provided with side guides, B' B^2, whereby the bolt is delivered lengthwise from said belt, with weighted friction-rolls d' D' d^2 D^2 d^3 D^3, whereby said bolts are held in position, and the splitting-saw C, all as set forth.

3. The combination, in a machine, as described, of the feed-belt A, which carries the bolt sidewise from the planer, with the feed-belt B, having side pieces, B' B^2, and dog *b*, whereby the bolt is fed lengthwise to the splitting mechanism, all as set forth.

4. In a machine, as described, and in combination with the friction-rolls d' D' d^2 D^2 and splitting-saw C, the rolls d^3 D^3, having the separator d^3, and upright spreader I, having the groove *i* on each side of its face, whereby the two parts of the sawed bolt are separated and set sawed edge up, all as set forth.

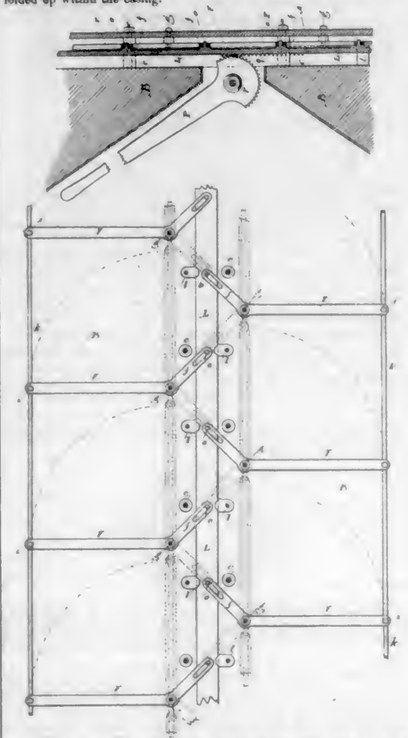
5. In a machine, as described, the combination of the rolls d^3 D^3, having separator d^3, with the upright spreader I, having grooves *i* on each side of the base, substantially as described.

6. In a machine, as described, for making bed-slats, the combination of the rolls d^3 D^3, having separator d^3, and the upright spreader I, having grooves *i* on each side of the base, with a belt and planer, whereby the split bolt is separated and each part, sawed side up, delivered to the planer, to be smoothed, substantially as described.

7. In a machine, as described, for making bed-slats, the combination of the following elements, viz: a belt from the planer to deliver the planed bolts sidewise to the longitudinally-carrying belt, rolls to receive said bolt, which rolls are properly weighted to hold the bolt while it passes the splitting-saw, the saw, and devices for turning the parts of the split bolt sidewise, and a belt to deliver the bolt-pieces, sawed edge up, to a planer, as set forth.

299,833. FIRE-ESCAPE. JORDAN L. MOTT, Jr., New York, N. Y. Filed Apr. 5, 1884. (No model.)

Brief.—A plate is bolted to the building at a certain distance therefrom, to which are pivoted two sets of ladder-rungs, one opening out of one side and the other out of the other side. The inner slotted ends of the rungs are attached to a vertically-movable rack-bar raised and lowered by a racked lever within the building, and by which the ladders are opened and closed. Spring-hinged doors inclose the ladders when folded up within the casing.



Claim.—1. The combination, with the stationary plate A, of the ladder-arms F, pivoted to said plate, and having slotted inner ends, the vertical rack-bar L, with studs entering such slotted ends, and mechanism for moving the rack-bar endwise to open or close the ladders, substantially as set forth.

2. The combination, with the rack-bar L, of the lever P, for moving the same endwise, the pivoted arms forming the ladder-rungs, the bar *k*, connecting the outer ends of the rungs, and the connections between the pivoted arms and the rack-bar, substantially as set forth.

3. The combination, with the plate A, of the shutter-strips *l*, hinged to such plate, the pivoted arms forming the ladder, the rack-bar and supports for the same, and the levers for giving end motion to such rack-bars, said levers acting in openings provided in the wall of the building, substantially as set forth.

299,834. HOMINY-MILL. MARTIN L. MOWRER, Newark, N. J. Filed Jan. 22, 1884. (No model.)

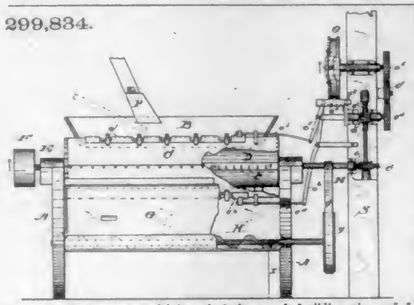
Claim.—1. In combination, a cam or grooved wheel, O, the grooved piece c^{31}, sliding piece c^2, provided with a pin, c^{30}, lever c^4, rod c^5, sliding plate c^3, and a cylinder, C, having openings therein, as set forth.

2. In combination, a cam or grooved wheel, O, the grooved piece c^{31}, sliding piece c^2, provided with a pin, c^3, lever c^4, rod c^5, sliding plate c', and a cylinder, C, having openings therein, as set forth.

3. In combination, a cam or grooved wheel, O, said groove being diverted from the normal plane thereof at a certain part of the periphery, as *o*, sliding pieces having projections moving in the groove in said cam, sliding plates c' and c^3, and means for connecting said sliding pieces and plates, substantially as set forth.

4. In combination, in a hominy-mill, a perforated receiving-cylinder, perforated sliding plates adapted to cover and uncover said perforations in the receiving-cylinder, a knife-cylinder arranged within said re-

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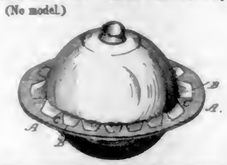


ceiving-cylinder upon a driving-shaft, levers c^7 c^7, sliding pieces c^8 c^8, provided with pins c^9 c^{10}, a cam, and mechanism, substantially as described, whereby the motion of the driving-shaft is communicated to said cam, for the purpose set forth.

5. In combination, in a hominy-mill, a grooved wheel, O, the groove therein being diverted from the normal plane thereof at a certain portion of the periphery, as *o*, the gear-wheels d^4 d^5, the slotted plate *m*, provided with holes therein, and an adjustable gear-wheel, all the said parts arranged and operating substantially as set forth.

6. In combination, a cylinder having longitudinal grooves, as *d*, therein, bars having slots in the sides thereof, and recesses d^2 in their bottoms, said bars being adapted to fit in said longitudinal grooves, and knives d^1, provided with lugs d^3, said knives being adapted to fit the slots and recesses in said bars, substantially as set forth.

299,835. FLYING TARGET. FRANK J. MOYER, Lockport, N. Y. Filed Feb. 1, 1884. (No model.)

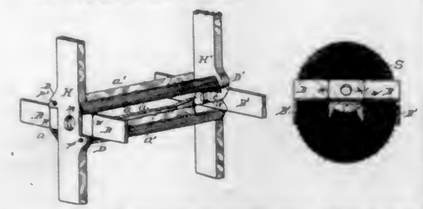


Claim.—1. The combination, with a flying target, consisting of a shell molded of frangible material, of a rim or flange connected annularly to the said shell, and having a coating of waterproofing material, as set forth.

2. The combination, with a target-shell molded of frangible material, of a rim or flange having notches, which are filled by a portion of the material constituting the body of the shell, and tongues which enter the body of the said shell, thus forming a rigid connection between the said shell and flange, substantially as set forth.

3. As an improvement in flying targets, the combination, with a shell or body of fusible and frangible material, of an annular rim or flange composed of light infrangible material connected to said shell by means of tongues or points entering the body of the latter, and waterproof material covering the joints, substantially as set forth.

299,836. BARBED-WIRE SPOOL. JOHN W. NADELHOFFER, Joliet, Ill. Filed Mar. 25, 1884. (No model.)



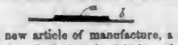
Claim.—1. The combination of the cross-head H, having the cross-bars *a a* rigidly attached thereto, and the cross-head H', having the cross-bars *a' a'* rigidly attached thereto, said cross-bars *a a'* being respectively provided with the lugs *c c'* and dowel-pins P and P', for the purpose of rendering the two heads H and H' separable from each other, and the cross-bars *a* and *a'* removable from the barbed-wire bale, as and for the purpose set forth.

2. A separable barbed-wire spool composed of the heads H and H', each provided with a pair of permanently-attached cross-bars, *a* and *a'*, and means for detachably securing the heads H H' and cross-bars B B', as and for the purpose set forth.

3. The combination of the cross-bars B and B', having apertures *m m'*, and ties W W, as and for the purpose set forth.

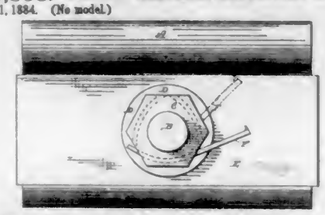
4. In a spool for spooling barbed wire, the removable cross-bars B and B', connected by means of the ties W W, as set forth, and adapted to secure the barbed wire, substantially as described.

299,837. WATER-PROOF WAFER FOR TORPEDOES. CHARLES NELSON, East New York, N. Y. Filed Nov. 30, 1883. (No model.)



Claim.—As a new article of manufacture, a wafer for toy torpedoes made water-proof by inclosing the fulminate in a flexible or yielding integument impervious to moisture, substantially as described.

299,838. NUT-LOCK. ALLEN NEUTASCHER, Mendota, Ill. Filed Mar. 11, 1884. (No model.)



Claim.—The combination of a nut having curved grooves made in its inner face with the curved key capable of being inserted into the groove after the nut is screwed down nearly or quite to its seat, which has its outer end to project a suitable distance beyond the side of the nut, and which may be provided at its outer end with a sharp point to catch in the surface of the article against which the nut is clamped, substantially as shown.

299,839. HAIR-CLIPPER. GEORGE H. NOBLE, Providence, R. I., assignor to the Brown & Sharpe Manufacturing Company, same place. Filed June 9, 1883. (Model.)



Claim.—The combination, with the cutter-plate and the operative connections of a hair-clipper, of the comb-plate provided with the cutter-teeth, and formed with the grooves extending across its under side, substantially as and for the purposes specified.

299,840. BOOT OR SHOE. LAWRENCE F. NORMAN, Boston, Mass. Filed Mar. 3, 1884. (No model.)



Claim.—1. In a boot or shoe, an inner sole and upper and a sole-holding welt attached directly thereto, the said welt being provided at its inner edge with a chamber, recess, or pocket for the reception of the edge of an outer sole, the edge of the welt being secured to the outer sole, which it overlaps, substantially as described, and for the purpose set forth.

2. The herein-described shoe, composed of an inner sole, upper, and narrow welt extended from the heel forward about the shank, fore part, and toe, and attached directly to the upper by stitches made through the welt, and an india-rubber outer sole cemented to the inner sole with its edges under the projecting inner and beveled or recessed edges of the welt, substantially as described.

299,841. SHEET-METAL SCREW-NOZZLE. MICHAEL O'CONNOR, New Brunswick, N. J. Filed Apr. 18, 1883. (Model.)

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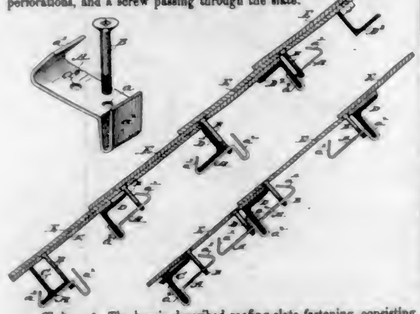


Claim.—1. A screw-nozzle consisting of a body of taggers tin or other thin metal formed with suitable screw-threads, and a re-enforcing collar or band of heavier or stiffer metal introduced and secured within the body, substantially as described.

2. A screw-nozzle consisting of a body of taggers tin or other thin metal having a shoulder for attachment to a vessel and formed into a screw-thread upon the part of the body at a right angle thereto, and a re-enforcing band or collar having a shoulder and a body at a right angle thereto, introduced into and secured within the body of the nozzle, substantially as described.

299,842. ROOFING-SLATE FASTENING. BERNARD M. O'NEILL, St. Louis, Mo. Filed Mar. 7, 1884. (No model.)

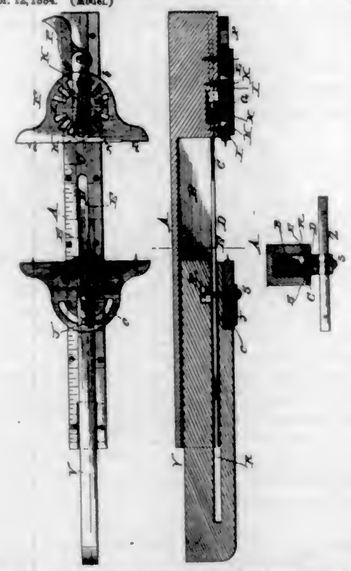
Brief.—Consists of a plate having its ends crimped, two threaded perforations, and a screw passing through the slate.



Claim.—1. The herein-described roofing-slate fastening, consisting of the plate A, having the crimps *a'* and *a²*, and the two threaded perforations *a a²*, in combination with the screw B, as described.

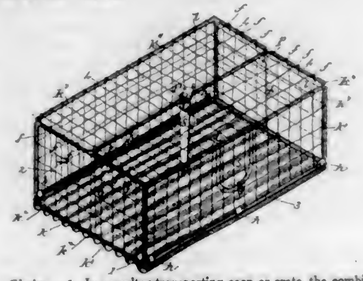
2. The combination, substantially as described, of the slates E, the plates A, the screws B, and the laths, said plates having the two crimps and the two threaded perforations.

299,843. GAGE. CHARLES B. OSBORN, Canandaigua, N. Y. Filed Apr. 12, 1884. (Model.)



Claim.—A dado-guide consisting of the longitudinally-recessed rule, carrying a slotted guide-plate, a radially-adjustable clamp-jaw, and cam, the slotted extension-bar engaging the guide-plate, a second radially-adjustable clamp-jaw pivoted to said extension-bar, and devices for holding the extension-bar and clamp-jaws in position after adjustment, substantially as specified.

299,844. POULTRY-COOP. LYMAN S. PAINE, St. Louis, Mo. Filed Oct. 22, 1883. (Model.)



Claim.—1. In a poultry-transporting coop or crate, the combination, with the side, end, and top pieces, of a bottom, corrugated, as described, and the corrugations being open at one or both ends, whereby the coop is stiffened and its drainage facilitated, as set forth.

2. In a poultry-transporting coop or crate, the combination of the sheet-metal bottom 1, having a bordering rod or brace secured thereto, said rod being bent, as described, so that upon two opposite sides of the bottom it is higher above the same than upon the other sides, and the side and end pieces hinged, as described, to said rod, as set forth.

3. In a poultry-transporting coop or crate, the combination, with the bottom portion, 1, of the side, end and top portions, said portions consisting of frames and wire-netting, the frames being hinged together by the ends of the wire composing the netting, as set forth.

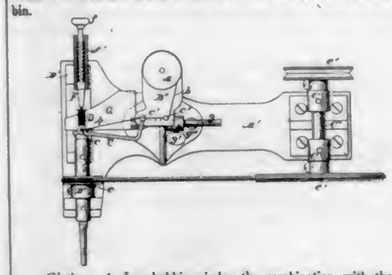
4. In a poultry-transporting coop or crate, the combination, of the bottom portions, 1, end portions, 2, hinged as described, side portions, 3, and top portions, 4, hinged to said side portions, said top portions having the ends of the netting-wires bent down to engage with the end portions and hold the latter in position, as set forth.

5. In a poultry-transporting coop or crate, the combination, with the bottom and side and end panels, of the top portion folding downwardly, and a folding or hinged brace, S, adapted to connect and stiffen the top and bottom, and to be held in place by a fastening, substantially as described.

6. In a poultry-transporting coop or crate, the combination, with the bottom 1, ends 2 2, and sides 3 3, of the folding top portions, 4 4, and brace S, connected with the bottom 1, reaching to the top portions at their line of junction, and constructed to be held by the locking device of the top portions, substantially as described, and for the purposes set forth.

299,845. BOBBIN-WINDER. EDWARD PARKINSON, Providence, R. I., assignor of two-thirds to Jabez E. Walcott and Frederick I. Marcy, both of same place. Filed June 28, 1883. (No model.)

Brief.—The device is designed to wind bobbins of sewing and other machines, and may be attached to and operated by the particular machine the bobbins of which it is employed to wind, or may be used independently for winding bobbins, being driven by any suitable motor. The guide-plate is narrow at one end, and adapted to be adjusted by means of a stem in a standard and set-screw to fit the width of the bobbin.



Claim.—1. In a bobbin-winder, the combination, with the bed-plate A', having the standards C', B', and D', of the driving-shaft C'', mounted upon the standard C', thread-guides and a swinging arm mounted on the standard B', the arbor E and spindle F, constituting a bobbin

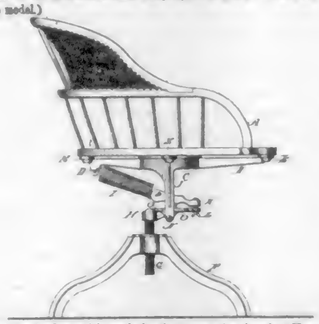
holder and turner, mounted on the standard D', band-wheels *c' c''*, mounted on the shaft C'', and the band-wheel *e*, mounted on the arbor E, as and for the purpose described.

2. The combination, with the bed-plate A', the standard C', mounted thereon, and carrying the shaft C'', having the band-wheels *c' c''*, and the standard B', carrying the thread-guides and swinging arm, of the standard D', carrying the spindle E, provided with the band-wheel *e*, and the spindle F, having the handle *f* and spring *f''*, arranged and operating as described.

3. The combination, with the bed-plate A' and the standards C' B', mounted thereon, carrying, respectively, the driving-shaft and the swinging arm and thread-guides, of the standard D', carrying the spindle and arbor, the pattern G, mounted on the stem *g*, and the standard *g''*, arranged to receive the stem, and provided with the clamp-screw *g'*, as and for the purposes set forth.

4. The combination, with the bed-plate A', having the standards C' and D', carrying, respectively, the driving-shaft and the bobbin holder and turner, of the standard B', provided with the bracket B'', spindle *b'*, thread-guides *c' c''*, and swinging arm C, provided with guide-eye *c*, and the pattern G, with its stem *g*, mounted in the standard *g''*, the coiled spring *h*, located beneath the said pattern, and the post *h'*, for retaining said spring in its operative position, substantially as described.

299,846. TILTING-CHAIR. HENRY PARRY, Milwaukee, Wis., assignor to the Milwaukee Chair Company, same place. Filed Sept. 3, 1883. (No model.)

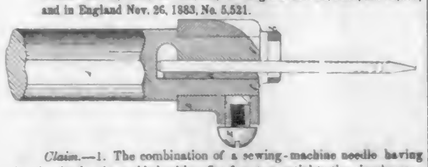


Claim.—1. In a tilting-chair, the supporting-bracket H, provided with downward-projecting lugs M, formed below the plane of its upper surface, and stops O O, formed on line with its upper surface, in combination with the bracket C, provided with radial arms D, pivotal arms J, and pivotal bolt N, whereby the said stops O are interposed between the pivotal bolt and the swinging end of said bracket, and adapted to support the seat at the extremity of its backward and forward movement, substantially as set forth.

2. The combination of bracket H, provided with pivotal bearing Q, lever K, centrally pivoted on said bearing Q, screw G, swinging arms J, bracket C, and arms D, formed in a single piece, and attached to said bracket H by pivotal bolt N, pivotal bolt N, and spring I, connected at one end with the rearward-projecting arm D, and at its other end with said lever K, all substantially as and for the purpose specified.

3. The combination of four-arm bracket C, provided with pivotal arms J, bracket H, provided with lugs M and stops O, adjusting-lever K, adjusting-screw L, and spring I, said spring being arranged beneath the rear supporting-arm of said bracket C, whereby the seat is shielded from contact therewith, the adjusting-screw of said lever K being located in front of the supporting-screw, whereby the tension of the spring is conveniently adjusted, all substantially as and for the purpose specified.

299,847. SEWING-MACHINE-NEEDLE CLAMP. JULES ETIENNE PICHARD, Paris, France. Filed Dec. 18, 1883. (No model.) Patented in France Nov. 3, 1883, No. 158,344; in Belgium Nov. 24, 1883, No. 63,321, and in England Nov. 26, 1883, No. 5,521.

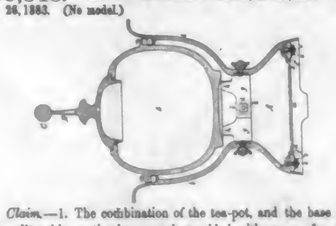


Claim.—1. The combination of a sewing-machine needle having its circular head provided with a flat face tangential to the circular section of its shank, with a needle-holder bored to receive the needle-head, and provided with a transverse slot, a flat plate held in the slot to bear against the flat side of the needle-head, and means for forcing the plate and needle-head together, substantially as described.

2. The combination of a sewing-machine needle having its circular head provided with a flat face, C', tangential to the circular section of its shank, with a holder having a slot to form limbs *f*, and bored to receive the needle-head, a flat plate, D, arranged in the slot to bear against the flat face of the needle-head, and devices for forcing the limbs together to grip the needle-head and press its flat face against the flat plate, substantially as described.

3. The combination of a sewing-machine needle having a circular head provided with a flat face, C', with a holder bored to receive the needle-head, and provided with a transverse slot to form two limbs, *f*, the ring B, attached to one of the limbs, and provided with a screw, E, and a flat plate arranged in the slot to bear against the flat face of the needle-head, and having shoulders engaging over the ring, substantially as described.

299,848. TEA-POT. NATHANIEL PLYMPTON, Boston, Mass. Filed Nov. 26, 1883. (No model.)

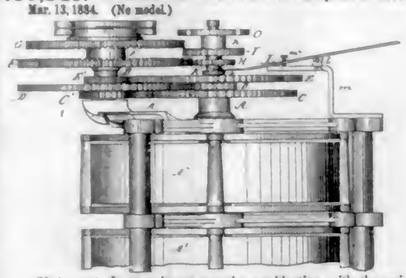


Claim.—1. The combination of the tea-pot, and the base with the posts adjustable on the latter, and provided with means for clamping them thereto, and with two slotted and curved arms lapping on each other, and having devices for clamping them together, all substantially as set forth.

2. The combination of the tea-pot and the base with the posts adjustable on the latter, and provided with means for clamping them thereto, and with two slotted and curved arms lapping on each other, and having devices for clamping them together, and stops, as described, for preventing the tea-pot and body from being tilted backward, all being substantially as represented.

3. The combination of the tea-pot body having perforated ears, as described, with the handle and its two hooked wire standards, the clasps applied thereto, and the guard projected from one of such clasps, all being substantially as set forth.

299,849. SPRING-MOTOR. JOHN B. POWELL, Philadelphia, Pa. Filed Mar. 13, 1884. (No model.)



Claim.—1. In a spring-motor, the combination, with the main gear-wheel, of two pairs of gears relatively different in size, and means, substantially as described, for alternately bringing into play the said pair of gears, as set forth.

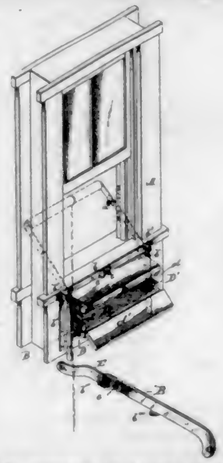
2. The combination, with the train of gearing of a spring-motor and two pairs of gear-wheels of relatively different size connected thereto, of a lever adapted and designed to bring said pairs of gear-wheels alternately into play, substantially as described.

3. The combination, with the gearing of a spring-motor, of the gear-wheels H and I, mounted upon the main shaft A, and adapted to be geared alternately with the gear-wheels F and G, mounted upon the supplemental shaft B, and the shifting-lever L, all constructed and arranged substantially as described.

299,850. FIRE-ESCAPE. HENRY REINCH, Quincy, Ill. Filed Mar. 15, 1884. (No model.)

Brief.—An improvement on Patent No. 281,136, dated July 10, 1883. A receptacle having a hinged front and cut-away sides for storing the roller, which is secured to the pivoted side arms.

299,850.

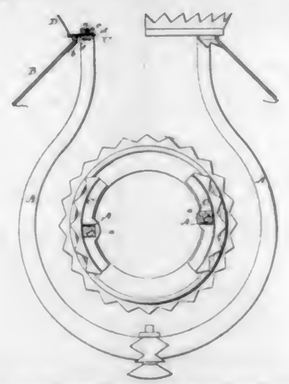


Claim.—1. The receptacle or box provided with a hinged front and cut-away sides, in combination with a roller attached to pivoted side arms, substantially as shown.

2. In a fire-escape, the pivoted arms B, with upturned ends *b'''* and lug *b''''*, the arms E, pivoted thereto, and provided at their ends with a roller, and brackets *e*, attached to the window-casing, substantially as shown, and for the purpose set forth.

3. In combination with the pivoted arms B, having lugs *b''''*, the short arms E, pivoted as shown, and provided with a roller and a receptacle for the reception of the roller, having a hinged front, substantially as shown, and for the purpose set forth.

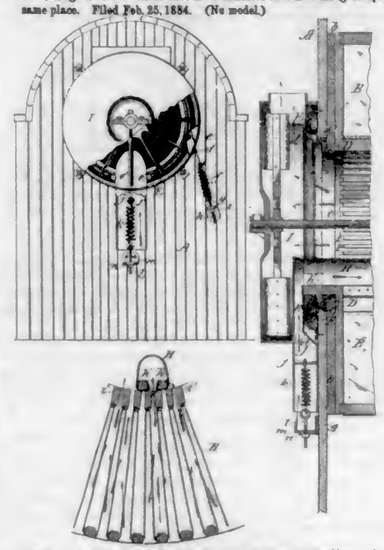
299,851. HANGING LAMP. JOHN T. RICH, Meriden, Conn., assignor to the Meriden Malleable Iron Company, same place. Filed Jan. 14, 1884. (No model.)



Claim.—1. In a hanging-lamp fixture, the combination of the frame A A, constructed to support the fount between its two arms, the segments C, set upon the arms of the frame and constructed with an outwardly and downwardly projecting flange, upon which the shade B will rest, and the crowning-ring D, set over the segments, and the segments and ring secured to the end of the frame by a single screw or bolt at the end of each arm, substantially as described.

2. In a hanging-lamp fixture, the combination of the frame A A, constructed to support the fount between its two arms, the segments C, set upon the arms of the frame and constructed with an outwardly and downwardly projecting flange, upon which the shade B will rest, and the crowning-ring D, set over the segments, the segments and ring secured to the end of the frame by a single screw or bolt at the end of each arm, the said segments constructed with a transverse slot, through which the screw or bolt passes, and whereby said segments may be adjusted to different diameters, substantially as described.

299,852. DUST-COLLECTOR. WILLIAM RICHARDSON, Milwaukee, Wis., assignor to the Milwaukee Dust Collector Manufacturing Company, same place. Filed Feb. 25, 1884. (No model.)



Claim.—1. In a dust-collector, the combination, with the revolving balloon B and the casing A, of the rings C, D, E, and F, the cord *d*, coil-spring *f*, threaded bolt *g*, bracket *h*, and adjusting-nut *i*, substantially as shown and described, and for the purpose set forth.

2. In a dust-collector, in combination with the balloon B, casing A, and inverted trough H, having longitudinal bars *h' h'*, the flue J, having pin *j*, the coil-spring *k*, threaded bolt *l*, bracket *m*, and nut *n*, substantially as shown and described, and for the purpose set forth.

3. In a dust-collector, the combination, with the balloon B, trough H, the flue J, fastening-pin *j*, spring *k*, bolt *l*, bracket *m*, and nut *n*, of the guide-pins *c' c'*, held in the casing A, substantially as shown and described, and for the purpose set forth.

4. In a dust-collector, the combination, with a revolving balloon, a case inclosing the same, and metallic rings fastened to each of said parts and interposed between their respective bearing-edges, of an annular band of felt or of any other flexible material interposed between said metallic rings and having one of its rims fastened to the case, while its other rim is suitably held against a projection of the ring of the balloon, so as to form an air-tight joint between the bearing parts, substantially as set forth.

5. In a dust-collector, the combination, with a revolving balloon, a case inclosing the same, and metallic rings fastened to each of said parts and interposed between their respective bearing-edges, of an annular band of felt or of any other flexible material interposed between said metallic rings, and having one of its rims fastened to the case, and an elastic binder adapted to keep the other rim of the annular band in constant contact with the projecting periphery of the revolving balloon-ring, substantially as set forth.

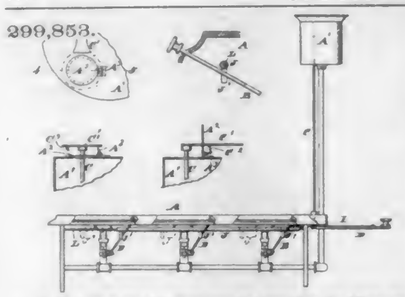
6. In a dust-collector, the combination, with a revolving balloon, a case inclosing the same, and an inverted trough held in the open center of said balloon, of a flue hung over each end of said trough, and connected to the sides of the case by an elastic binder, by means of which an air-tight joint is secured between the edges of the trough and balloon-bars, substantially as set forth.

299,853. GASOLINE-STOVE ATTACHMENT. JOHN RINGEN, St. Louis, Mo., assignor of one-half to Louis Stockstrom, same place. Filed Sept. 14, 1883. (No model.)

Claim.—1. In combination with the reservoir of a vapor-stove, a movable guard-plate adapted to control the filling-opening, and so connected with a burner-valve that on moving the guard-plate for the purpose of filling the reservoir the flow of the vapor to the burner will be cut off, while moving the guard-plate over the opening will not operate the valve.

2. The combination, with a burner and guard-plate shaft, of a sleeve or rod connected to the shaft, and having a projection operative to close the burner when moved in one direction, and inoperative to open the burner when moved in the opposite direction.

299,853.

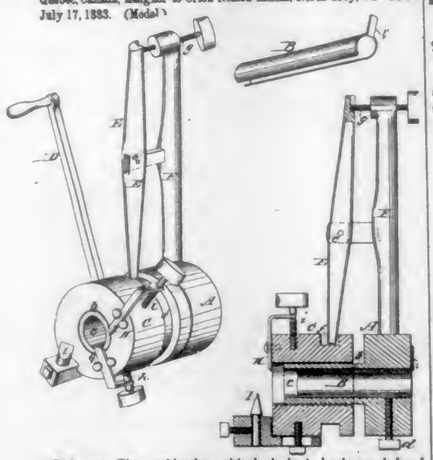


3. In a vapor-stove, a guard-plate for controlling the filling-opening of the reservoir, secured to the upper end of a rock-shaft, in combination with a lever for turning the shaft, and a suitable mechanism connected to the lever, whereby the supply-valves are turned off, but not opened.

4. In a vapor-stove, the combination of a vertical rock-shaft, a guard-plate secured to the upper end of the shaft, for controlling the oil-hole of the reservoir, a lever secured to the shaft, for operating it, and a sliding sleeve connected to the said lever and provided with projections which come against suitable valve-levers to turn off but not open the valves as the rock-shaft is turned, for the purpose set forth.

5. In a vapor-stove, the combination of a vertical rock-shaft, a plate secured to the upper end of the shaft, a lever secured to the shaft, a sliding sleeve supported on a stationary rod and provided with projections, an arm or rod for connecting the sleeve and lever of the rock-shaft, and the valve-levers to receive the impact of the projections by which the valves are turned off, but not on, all arranged and operating substantially as and for the purpose set forth.

299,854. VEHICLE-AXLE CUTTER. AUSTIN N. RUTTER, Abercorn, Quebec, Canada, assignor to Orion Nelson Elkins, North Troy, Vt. Filed July 17, 1883. (Model.)



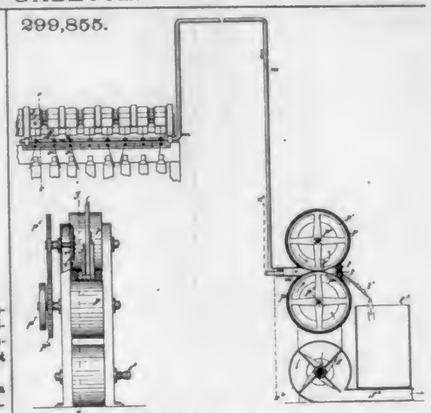
Claim.—1. The combination, with the body A, having neck *b* and aperture *c*, and the rotary head C, provided with cutters G H, of a sleeve, B, having a longitudinal slit, and provided with a handle, *b'*, serving the double purpose of limiting the inward movement of the sleeve and a means for operating the same, and screw *d*, passing through the slit of the sleeve and adapted to bear on the axle, substantially as described, and for the purpose set forth.

2. The combination, with the body A and head C, of the arm F on said body, the screw-stop *g*, and the feed-lever E, pivoted on a lateral stud of said arm and projecting into a groove of said head, as shown and described.

299,855. SCAVENGER MECHANISM FOR SPINNING, DRAWING, AND TWISTING MACHINERY. ELNATAN W. SARGENT, Lowell, Mass. Filed Sept. 24, 1883. (No model.)

Brief.—The flyings and broken ends of the yarn are received into the mouths of exhaust-pipes and conveyed to condensing-drums.

299,855.



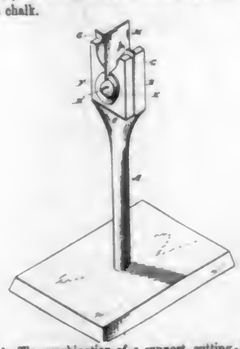
Claim.—1. The combination, with rollers between which pass rovings, slivers, or yarns, of an exhaust pipe or passage to receive the broken ends of the same, and means to create an exhaust-current or indraft of air through the said pipe, to operate substantially as and for the purposes set forth.

2. The front roller and exhaust-pipe and means to exhaust the air from or through the same, combined with condensing apparatus to condense the fibrous material drawn into and through the said pipe, substantially as described.

3. The front roller, *b*, and the exhaust-pipe provided with an open mouth opposite each roving, sliver, or yarn passing over the said roller, combined with means for producing an exhaust-current into and through the said pipe, and with a receptacle for the fibrous material drawn into and through the said pipe, substantially as described.

299,856. CHALK-SHARPENER. THEODORE SCHAFER, Marne, Ill. Filed Mar. 31, 1884. (No model.)

Brief.—The device is designed to sharpen chalk for tailors' use, and the partition-plate is used when it is desired to bevel only one side of the edge of the chalk.



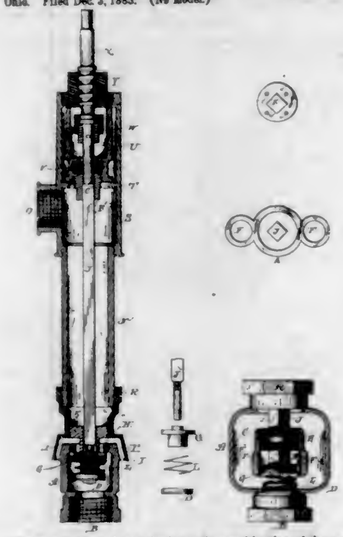
Claim.—1. The combination of a support, cutting-blades that are secured thereto, and a partition-plate that is adapted to be secured upon the support between the blades, for the purpose set forth, substantially as described.

2. The combination of a support, cutting-blades that are pivoted together, a clamping device for securing them at any desired angle, and a partition-plate that is adapted to be secured between the blades, substantially as described.

299,857. PREPARATION OF COLLODION. ERNST SCHERING, Charlottenburg, Prussia, Germany, assignor to Bachrach & Bro., Baltimore, Md. Filed Nov. 21, 1883. (No specimens.) Patented in Germany Apr. 7, 1878, No. 2,660.

Claim.—A new and improved composition of matter intended for the preparation of collodion, as hereinbefore described, which is elastic and transparent while fresh, and becomes hard on drying, and is neither explosive on concussion nor spontaneously combustible, and is therefore free from danger in transportion.

299,858. FIRE-PLUG AND HYDRANT. HUGO SCHNEIDER, Cleveland, Ohio. Filed Dec. 3, 1883. (No model.)



Claim.—1. In a plug or hydrant, the combination of the vertically-moving valve-rod, a valve which is rigidly secured thereto, a sliding valve which is placed loosely upon the valve-rod, a spring for separating the two valves, and a perforated plug which is placed in the upper part of the chamber, the valve-rod being provided with a shoulder for forcing the sliding valve downward when the stationary valve is closed, substantially as shown.

2. In a plug or hydrant, the combination of the water-chamber, the endwise-moving valve-rod having a stationary compression-valve secured to its lower end, with the sliding valve which is placed upon the rod, and a spring which is placed between the two valves, for the purpose of moving the sliding valve upward when the valve is left free to operate, substantially as set forth.

3. The combination of the stand-pipe N, the flange T, the valve-rod J being made angular where it passes through the plug, so as to cause it to revolve with it, the shell U, provided with the nut B' in its lower end, and the nut Y, the shaft being made square where it passes through the nut B', substantially as described.

4. In a plug or hydrant, the combination of the upper part, S, the stand-pipe provided with the flange T, the packing-shell U, the nut or plug Y, for forcing the shell down upon the flange, the valve-rod, and the screw-shaft X, substantially as shown and described.

299,859. HEEL-RING FOR SCYTHES. JOHN A. SCHWOB, Moundsville, W. Va. Filed July 12, 1883. (No model.)



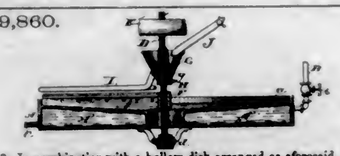
Claim.—The combination, with a swath having the recess *a*, of a scythe having a tang provided with a bent end adapted to enter said recess, a tang-ring recessed to form a shoulder, *d*, adapted to fit snugly against the back of the tang, and a wedge adapted to rest against the shoulder *d* of the ring, substantially as set forth.

299,860. PARAFFINE-FREEZER. WILLIAM C. SCOFIELD, Cleveland, Ohio. Filed Mar. 17, 1884. (No model.)

Claim.—1. A hollow disk provided with pipes to supply cooling-liquid to the chamber in the disk, and provided with suitable means for sprinkling liquid paraffine on the disk and automatically removing it when it is frozen, substantially as set forth.

2. A hollow disk provided with tubes for supplying liquid to the chamber thereof, and with the upper surface concaved and provided with an upwardly-projecting rim, and a vertical central opening through the disk, substantially as set forth.

299,860.

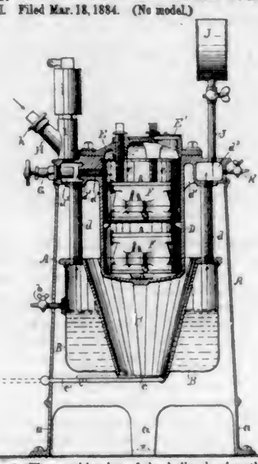


3. In combination with a hollow disk arranged as aforesaid, a vertical shaft located at the axis of the disk, and provided with an arm and scraper, preferably curved, as shown, and adapted to remove the frozen paraffine from the disk, substantially as set forth.

4. In combination with a hollow disk arranged as aforesaid, a vertical shaft and an arm and scraper, preferably curved, and adapted to scrape the frozen paraffine from the disk and discharge it through the central opening thereof, substantially as set forth.

5. In a paraffine-freezer, in combination with the hollow disk and revolving vertical shaft, as aforesaid, an adjustable funnel provided with a central sleeve embracing the shaft, and a tube to supply liquid paraffine to the funnel, and a sprinkling-pipe leading from the funnel to near the periphery of the disk, and from thence curved back of the scraper and perforated, so as to discharge the paraffine just back of the scraper, substantially as set forth.

299,861. DENTAL VULCANIZER. FREDERICK W. SEABURY, Providence, R. I. Filed Mar. 18, 1884. (No model.)



Claim.—1. The combination of the boiler having the conical flue with the oven and the steam-pipes, all constructed and arranged substantially as set forth.

2. The boiler B, having the conical flue C, in combination with the oven D, having the flange *d''* and the pipes *d*, substantially as described.

3. The combination, with the case or body A, of the oven D, having the flange *d'*, provided with the channel *d³* and the chamber *d³*, the boiler B, having the conical flue C, and the tubes *d*, substantially as set forth.

4. The combination, with the boiler, the conical flue, the pipes *d*, and the oven provided with the channeled and chambered flange, of the feeder or spout H, substantially as described.

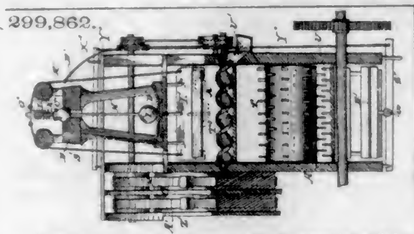
5. The combination, with the boiler and the conical flue, of the damper *c*, constructed and arranged substantially as described.

6. The combination of the case A, the oven D, having the chambered and channeled flange, the cover E, screws *e*, lid E', boiler B, conical flue C, damper *c*, pipes *d*, and the valve G, the pop-valve, gage, spout, and cocks *b k*, all arranged substantially as and for the purposes set forth.

299,862. THRASHING-MACHINE. CHARLES SHIRLEY, Luzerne, Iowa. Filed Dec. 20, 1883. (No model.)

Claim.—1. In a thrashing-machine, the combination of the drive-wheels, the thrashing mechanism operated by the said wheels, means for conveying the cut grain from the swath to the thrashing-cylinder, and the straw-carrier and separating-shoes suspended so as to remain level without regard to the position of the machine, as and for the purpose shown and set forth.

299,862.



2. In a thrashing-machine constructed with a thrashing-cylinder, means for conveying the grain from the swath to the thrashing-cylinder, carrying-wheels, and mechanism whereby said cylinder is operated from said wheels, the combination of a pendulum having a universal play, the straw-carrier and separator-shoes, and cords for suspending the said carrier and shoes within the machine-frame connected to the pendulum, the position of the pendulum regulating the position of the carrier and shoes, as and for the purpose shown and set forth.

3. The combination of an upright frame forming an annular concave socket or bearing, a weighted pendulum having a ball near its upper end rocking in the said bearing, vertical pulleys journaled upon the top of the frame, cords or chains attached to the upper end of the pendulum above the ball and passing over the pulleys, and a separator-shoe suspended from the ends of the said cords or chains, as and for the purpose shown and set forth.

4. The combination of an upright frame forming an annular concave socket or bearing at its upper end, a concave rubber-covered plate placed between the supports of the frame at their lower ends, a ball having a perforation passing through its center, a rod having a weight at its lower end and passing through the perforated ball, a washer resting upon the top of the perforated ball, a spiral spring wrapped around the upper end of the rod, a nut fitting upon the upper end of the rod and securing a perforated plate having eyes in its edges, palleys journaled to turn in a vertical plane at the top of the upright frame, and cords or chains attached to the eyed plate upon the upper end of the rod and supporting the separator-shoes at their lower ends, as and for the purpose shown and set forth.

5. The combination of a pendulum suspended at the upper end of an upright frame, a cord or chain attached to the upper end of the pendulum above the point of suspension and passing over a suitable guide-pulley, a shaft journaled transversely in the machine-casing above the straw-carrier, and having a pulley at its middle, to which the end of the cord or chain is attached, and upon which it winds, two pulleys or segments secured upon the ends of the transverse shaft, and having forwardly-projecting levers provided with sliding poises, a straw-carrier hinged at its inner end, and cords or chains secured to and winding upon the pulleys or segments, and secured at their lower ends to a cross-bar upon the straw-carrier, as and for the purpose shown and set forth.

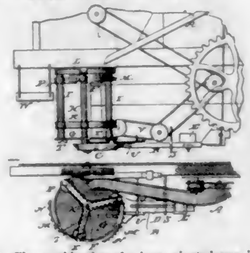
6. In a machine for taking the cut grain from the swath and thrashing it, the combination of the conveyers hinged at their upper ends, means for raising and lowering the lower conveyer, an arm hinged upon the side of the upper conveyer, having a notched and flanged edge, a bail secured upon the side of the lower conveyer, and a hook pivoted upon the side of the lower conveyer and having the outer side of its hooked end flanged, as and for the purpose shown and set forth.

7. The combination of two conveyer-frames hinged at their upper ends and inclined forwardly, means for adjusting them relatively to each other, means for raising and lowering them, the endless conveyer-aprons having flexible teeth upon their faces, and means for revolving the aprons with their facing portions in an upward direction, as and for the purpose shown and set forth.

8. The combination of the thrashing-cylinder and concave, the straw-carrier having the inclined bottom, the lower separating-shoe, the lower fan, the lower grain-conveyer, the lower head-conveyer, the double elevator having the lower end of the inner elevator opening into the grain-conveyer, and the lower end of the outer elevator opening into the head-conveyer, the grain-spout opening from the upper end of the inner elevator down to the upper separating-shoe, the head-conveying spout opening into the thrashing-cylinder from the upper end of the outer elevator, the upper cleaning-shoe, the upper fan, the grain-conveyer, the grain-spout, the tailings-conveyer, and the tailings-spout, all constructed and arranged as and for the purpose shown and set forth.

9. The combination of the lower separating-shoe having a socket or bearing upon the middle of its lower rear edge, the lever pivoted at its one end upon the bottom of the machine-casing, and having a bolt at its middle fitting and turning in the socket upon the shoe, a bar secured transversely upon the bottom of the shoe and pivoted at its center upon a pin upon the bottom of the machine-casing, a pendulum suspended upon the top of the machine by a univeral joint, and cords or chains passing over suitable pulleys attached to the upper end of the pendulum above the point of suspension, and attached at their lower ends to the free end of the lever and to one end of the transverse bar, respectively, as and for the purpose shown and set forth.

299,863. RAG HOLDER AND WEIGHER. CHARLES SHIRLEY, Lascarne, Iowa. Filed Mar. 20, 1884. (No model.)

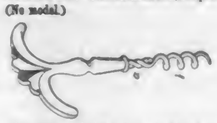


Claim.—1. The combination of a lever pivoted near its end under the discharge-spout, and having a sliding weight upon its long end, an upright secured in an inwardly-inclined position upon the short end of the lever, a bag-supporting frame having compartments for the bags to be filled, and turning upon the upright under the end of the discharge-spout, notched catches secured under each bag-compartment, a spring-catch secured at one end upon the upper side of the lever adapted to engage the notched catches, and a laterally-projecting arm upon the machine-frame adapted to strike the free end of the spring-catch when the long end of the lever is raised, as and for the purpose shown and set forth.

2. The combination of a lever pivoted near one end under the discharge-spout, and having a sliding weight upon its long arm, an upright secured in a slightly inwardly-inclined position upon the short end of the lever, a bag-supporting frame pivoted upon the upright, having means for securing the mouths of the bags open, and having outwardly-opening doors or bars, closing the outer sides of the compartments for the bags, provided with catches closing by being forced outward by the grain in the bags, and means for holding one compartment under the grain-spout at the time, and for allowing the frame to turn when the lever is tilted by the weight of the filled bags, as and for the purpose shown and set forth.

3. The combination of a lever pivoted near one end at the grain-discharging spout, and having a sliding weight upon its long arm, an upright secured to a slightly inwardly-inclined position upon the short arm of the lever, a bag-supporting frame consisting of a bottom plate, a central upright sleeve turning upon the upright, a number of uprights secured at equal distances at the edge of the bottom plate, and a corresponding number of radial arms having upwardly-pointing pins, curved arms having outwardly-pointing pins at their outer ends and pivoted upon the upper ends of the uprights, adapted to meet and engage with the perforated curved arms, curved arms hinged at the lower ends of the uprights, and having means for catching their free ends in catches upon the adjoining uprights, and means for holding one of the compartments formed by the uprights and the radial arms under the grain-spout at the time, and for releasing it when the lever is tilted by the weight of the filled bag, allowing the frame to turn and bring a new compartment under the spout, as and for the purpose shown and set forth.

299,864. CORKSCREW. JOSEPH A. SMITH, Deep River, Conn. Filed Oct. 3, 1883. (No model.)



Claim.—A corkscrew consisting of a twisted shank and screw, having a handle cast upon the shank, substantially as specified.

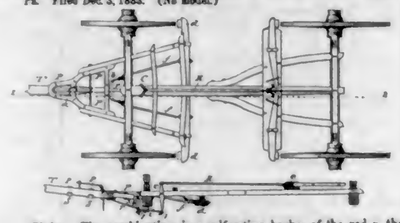
299,865. RAZOR-STROP. RACHEL P. SMITH, Chicago, Ill. Filed Nov. 2, 1883. (No model.)



Claim.—1. The combination, in a razor-strop, of the flexible sides, the end blocks, B, hinged together so as to permit the sides to be expanded, and suitable intermediate mechanism for expanding said sides, substantially as specified.

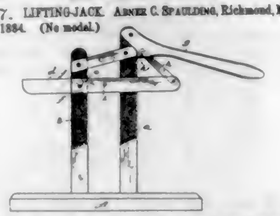
2. The combination, in a razor-strop, of the flexible sides, the hinged blocks, the surface-strap, the movable handle, and hinged plate, all arranged to operate substantially as specified.

299,866. WAGON-BRAKE. THOMAS W. SOUTHARD, Rose's Valley, Pa. Filed Dec. 3, 1883. (No model.)



Claim.—The combination, in a self-acting brake, of the rod *r*, the lever *c*, the rod R, the hook *l*, the bail *b*, and the rods *f f*, all substantially as described.

299,867. LIFTING-JACK. ABNER C. SPAULDING, Richmond, Me. Filed Apr. 16, 1884. (No model.)

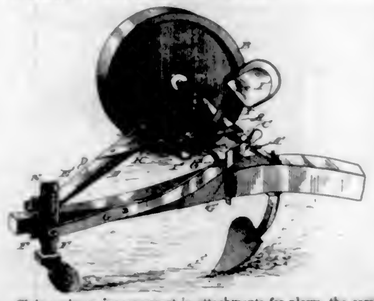


Claim.—1. A lifting-jack consisting of a base, front and rear standards supported thereon, a lifting-lever pivoted loosely in the front standards, a handle-lever, and a link connecting the same with the free end of the lifting-lever, substantially as described.

2. A lifting-jack consisting of a base and front and rear standards supported thereon, the open slots in the front standards, the lifting-lever adjustable in said slots, a hand-lever, and a link connecting said lifting and hand levers, substantially as described.

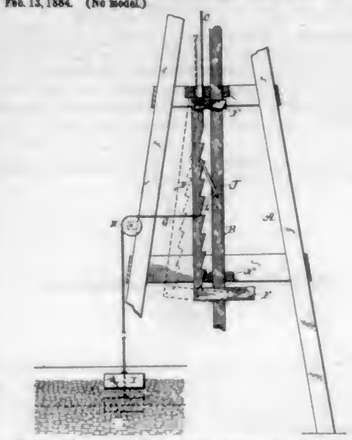
3. In a lifting-jack, the frame mounted in a suitable base, a lifting-lever, *d*, fulcrumed in the front posts of said frame and extending to the rear, and a hand-lever provided with an offset, *h*, and connected to lever *d* by a suitable link, the parts being arranged in relation to each other substantially as described.

299,868. ATTACHMENT FOR PLOWS. MARLON J. STAFFORD, Wheatland, Ind. Filed Mar. 15, 1884. (No model.)



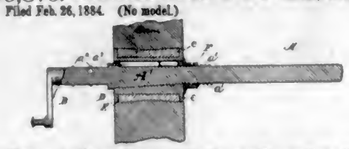
Claim.—As an improvement in attachments for plows, the combination of an auxiliary axle provided with a vertical bearing and having its outer extremity connected to the front portion of the attachment-frame by means of a suitable connecting brace or rod, a main hinged axle, upon the outer end of which the main wheel of the attachment is secured and adapted to be adjusted vertically in the vertical bearing of the auxiliary axle of the attachment, and a caster or roller of suitable size, the standard of which slides in a vertically-recessed bearing on the front end of the attachment-frame, and which is provided with a pivoted operating-lever having secured upon it, near its rear end, a lug or projection adapted to engage with the teeth of a suitable curved rack secured upon the side of the plow-beam, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

299,869. WINDMILL. JAMES OLIVER STATNER, Angola, Ind. Filed Feb. 13, 1884. (No model.)



Claim.—The combination, with the vertically-moving pumping-rod of a windmill and a connecting-latch which is loosely attached thereto, of a ratchet-bar which has both a vertical and a horizontal motion, and which is connected at its upper end by means of a cord, wire, or chain with the wind-wheel, and at its lower end with a weighted float, which is placed in the tank into which the water is pumped, substantially as shown and described.

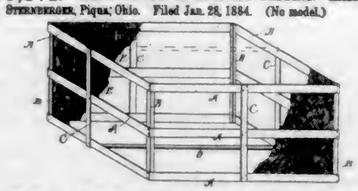
299,870. GRINDSTONE-HANGINGS. FRANK M. STEARNS, Berea, Ohio. Filed Feb. 26, 1884. (No model.)



Claim.—1. The combination, with the spindle provided with the elongated tapering raised seat, and with a threaded part joining the raised seat on the smaller end, of a sleeve formed in a single piece and provided throughout its entire length with a conical or tapering bore, which latter fits the seat on the spindle, and a nut for locking the sleeve on the raised seat, substantially as set forth.

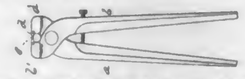
2. In grindstone-hangings, a spindle provided with a raised tapering seat, with a groove in the face of the seat extending longitudinally with the spindle, but terminating at either end inside of the raised seat, and with a threaded part joining the tapering seat on the smaller end, and provided with a nut, in combination with a sleeve with a tapering bore adapted to fit the tapering seat of the spindle, and provided with an internal longitudinal groove running from end to end of the sleeve, the wings E and the ribs *e*, and the key a^2, substantially as set forth.

299,871. CRATE FOR MATTRESSES AND BEDDING. HERMAN S. STERNBERGER, Piqua, Ohio. Filed Jan. 28, 1884. (No model.)



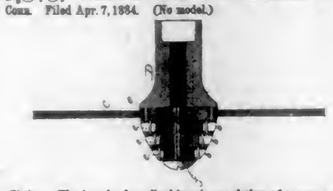
Claim.—A crate for transporting mattresses and like square-shaped articles, consisting of the side pieces, A, the corner-posts B, vertical braces C, the top and bottom cross-pieces, D, and the lining E, secured flatly and permanently to the inside of the frame, substantially as described.

299,872. CUTTING-PLIERS. ELISHA STEVENS, Middletown, CONN. Filed Sept. 1, 1883. (No model.)



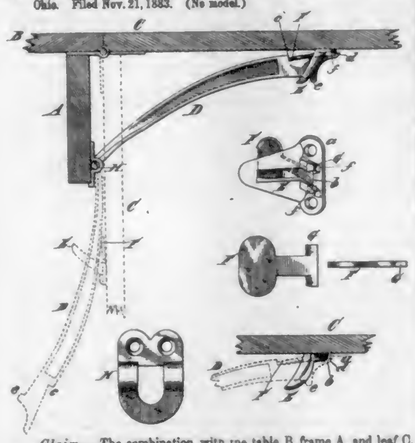
Claim.—In combination, in cutting-pliers, the pivoted levers, the heads of which are provided with shallow mortises open on front, rear, and top, with the limiting sides undercut and tapered from front to rear, and the removable cutting-blades without depthwise projecting bearing-shoulders, and shaped and tapered to fit said mortises, all substantially as described.

299,873. POLISHING-BRUSH. WILLIS A. STEVENS, Wallingford, CONN. Filed Apr. 7, 1884. (No model.)



Claim.—The herein-described brush, consisting of one or more metal disks, A, the periphery of the disks having holes or recesses to receive the doubled ends of tufts, the tufts doubled and introduced into said holes, and a pin, *e*, transversely through the disks and over the bend of the taft, substantially as described.

299,874. TABLE-LEAF SUPPORT. STEPHEN W. STILWELL, Dayton, Ohio. Filed Nov. 21, 1883. (No model.)



Claim.—The combination, with the table B, frame A, and leaf C, of the slotted bracket E, provided with depressions forming lugs *f*, the latch F, having pivotal bearings in the depressions made in the bracket, and the arm D, hinged to the frame A, and formed at its outer end with a shoulder, *e*, on its upper face, for the latch F to bear against, substantially as described.

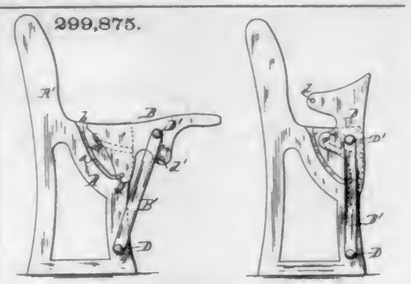
299,875. FOLDING SEAT FOR SCHOOL-FURNITURE. IRVING L. STONE, Battle Creek, Mich. Filed Nov. 1, 1883. (No model.)

Claim.—1. The combination, with the standards and seat provided with grooves and pins fitting the grooves, substantially as described, of the links or braces connecting the standards and seat, as and for the purposes set forth.

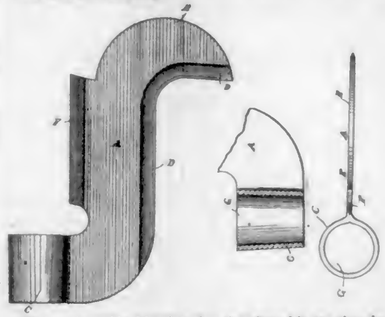
2. The combination, with the standards, grooved substantially as described, of a seat provided with pins fitting the grooves in the standards, and links or braces connecting the standards and seat, as and for the purposes set forth.

3. The combination, with the standards provided with the grooves or slots opening outward in opposite directions, of the seat provided with pins fitting the grooves, and links or braces connecting the seat and standards, substantially as and for the purpose set forth.

299,875.

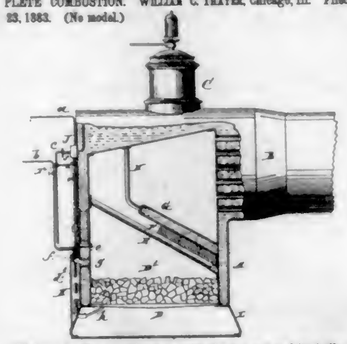


299,876. COMBINED BRUSH-HOOK AND AX. EDWIN H. SUBLETT, St. Louis, Mo., assignor to Simmons Hardware Company, same place. Filed Feb. 27, 1884. (No model.)



Claim.—A combined brush-hook and ax formed in one piece, having body A, hook B, cutting-blade D on one edge of the body, long cutting-blade F on the other edge of the body, and a projection, C, having a tapering socket or eye in advance of the long cutting-blade, as set forth.

299,877. METHOD OF AND MEANS FOR PRODUCING COMPLETE COMBUSTION. WILLIAM C. TRATER, Chicago, Ill. Filed June 23, 1883. (No model.)



Claim.—1. The combination, with the furnace and its boiler, of the steam-pipe *c*, leading from the dome of the boiler to the box J, and thence downward along the outside of the furnace, the superheating-tube *e*, connecting with pipe *c*, and extending across the inside of the fire-box, and thence to the outside and downwardly to the pipe *f*, contained within the air-chamber K, and the injector connecting with said pipe *f*, substantially as described.

2. The combination, with the furnace and its boiler, of the steam-pipe *c*, leading from the dome of the boiler, the superheating-tube *e*, connecting with pipe *c*, and extending transversely across the inside of the fire-box and then to the outside thereof, the pipe *f*, inside the heating-chamber K, and connecting with the pipe *e*, the injector having a steam-passage connecting with pipe *f*, and an oil-passage outside of the steam-passage, and an oil-tube connecting with said oil-passage, substantially as described.

3. The combination of the steam-pipes *c e*, oil-pipe *b*, dust-pipe *a*, the injector above the grate-bars, provided with the steam, oil, and dust passages communicating with said pipes, the steam-pipe *d*, and the injector below the grate-bars, communicating with said pipe *d*, substantially as and for the purpose set forth.

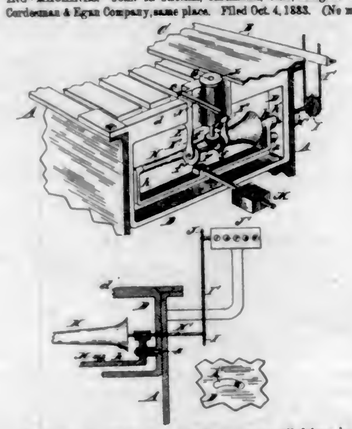
4. The combination of the steam-pipes *c e* and the injector above the grate-bars with the steam-pipe *d*, having the returns *d'* within the chamber K, and the injector below the grate-bars, substantially as and for the purpose set forth.

5. The injectors composed of the casting having the steam-passage and portion of the dust-passage formed in one piece therewith, and the outer shell adjustably secured to said casting, and held in place by the lock-nut, whereby the space adjustment between the blast-exits of the steam and dust passages and the alignment of such exits are preserved, substantially as and for the purpose set forth.

6. The method herein described of producing complete combustion and preventing the formation of visible smoke, consisting in injecting superheated steam, finely-divided carbonaceous material, and air in a broad sheet over the surface of the burning fuel, and at the same time injecting superheated steam and air under the body of the burning fuel, substantially as and for the purpose set forth.

7. The combination, in a steam-generator furnace, of the water-tubes E, fire slab or bricks F, and water-leg G, with injectors, substantially as specified.

299,878. MEASURING AND REGISTERING DEVICE FOR PLANING-MACHINES. JOHN R. THOMAS, Cincinnati, Ohio, assignor to the Cordesman & Egan Company, same place. Filed Oct. 4, 1883. (No model.)



Claim.—1. A lumber-meter having a taper roll driven by an adjustable roller in frictional contact therewith, and which is in turn driven by a frictional roller traveling in contact with the lumber passing through the machine, substantially as herein set forth.

2. A lumber-meter operated by means of a taper friction-roller driven by an adjustable friction-roller, in combination with a registering apparatus driven by a transmitter on the shaft of the taper roller, substantially as herein set forth.

3. A lumber-meter adapted to be attached to the frame of a planer and operated by means of a roller in frictional contact with the lumber, which roller transmits motion to a second roller laterally adjustable with and driving a taper roll, the shaft of which taper roll transmits motion to a counting apparatus which registers the surface-feet of the lumber passing through the machine, substantially as herein set forth.

4. A lumber-measure having a taper roll, H, driven by the frictional contact of a pulley which is made laterally adjustable thereto, so as to increase or decrease the speed of the shaft of the taper roll to record the surface-measure of varying widths of lumber planed, substantially as herein set forth.

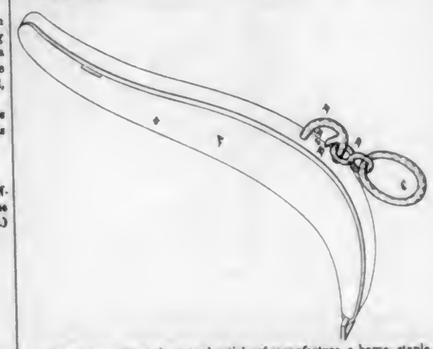
299,879. HEAD-COMB. STEPHEN A. TISDALE, Leominster, MASS. Filed Sept. 11, 1883. (No model.)



Claim.—1. A comb, hair-pin, or other like article having attached to or connected with it an ornament or ornaments by means of a spring adapted to support the ornament or ornaments above or out of contact with the hair, and to allow of free vibration of the same, substantially as shown and described.

2. In combination with a comb, hair-pin, or other like article, an ornament or ornaments attached thereto by means of a Z-shaped flat bent spring adapted to hold the ornament or ornaments above or out of contact with the hair or head-dress, and light enough to allow them to vibrate as the wearer moves about, substantially as shown and described.

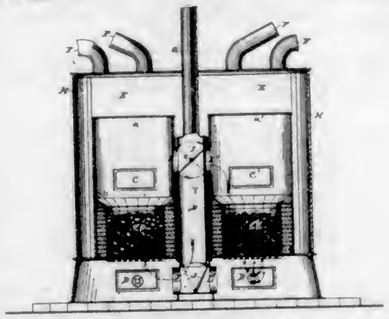
299,880. HAME-STAPLE. JOHN TOERPER and FRANK KREIN, St. Louis, Mo.; said Toerper assignor to said Krein. Filed Sept. 22, 1883. (No model.)



Claim.—1. As an improved article of manufacture, a hame-staple of the form shown, having a single horn, B^3, to partition off a portion of the loop for the breast-strap ring, as set forth.

2. A hame-staple, B, having a small horn, B^3, to divide the tug-clip loop, a link having two eyes, and a breast-strap ring, one eye of the link being secured beneath the horn, and the other eye of the link receiving the breast-strap ring, all combined and arranged substantially as shown and described.

299,881. FURNACE. JOHN A. TOPLIFF, EDWARD S. CROSS, WILLIAM S. COX, and JOHN A. MCCOLLUM, Elyria, Ohio. Filed Aug. 6, 1883. (No model.)



Claim.—The combination, with two stoves or furnaces and a chimney, of a single flue provided with separate openings connecting with each of said stoves above and below their fire-grates and with said chimney, and dampers therein, substantially as described.

299,882. DEVICE FOR CONNECTING AND SUPPORTING THE SECTIONS OF DREDGER-DISCHARGE PIPES. ALEXEY W. VON SCHMIDT, San Francisco, Cal. Filed Jan. 22, 1884. (No model.)

Brief.—A sectional discharge-pipe is supported on pontons having end cleats for securing them together. The joint at the discharge end of the pipe is a ball-and-socket, the intermediate joints being of rubber hose clamped to the adjoining pipe ends. Strain on such rubber hose is prevented by lacing the ends of main-pipe sections together by ropes passing around hooks thereon.

299,882.



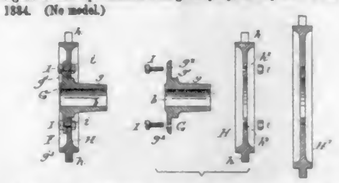
Claim.—1. A dredger-conduit consisting of sections of pipe supported upon pontons, and having its end sections near the point of deposit connected by ball-and-socket joints, its intermediate sections connected by flexible sections, substantially as described, and connected to the dredger by a flexible pipe.

2. A ponton for supporting dredger-pipe, consisting of the body C, provided with the cross-pieces *c*, and the cleats near the end for the attachment of ropes, substantially as described.

3. In a joint for dredger-pipes, the combination, with the contiguous ends of said pipe, of a section of rubber pipe clamped thereto, and the hooks secured near the ends of the pipe, adapted for the reception of cord, whereby the strain is taken off the rubber connection, substantially as described.

4. The combination, in a dredger-conduit, of the pipe B, connected by flexible joints, as described, and the pontons A, provided with cross-pieces *c*, and joined together by ropes or the like, substantially as described.

299,883. VELOCIPEDE. ALBERT E. WALLACE, Hartford, Conn., assignor to the Pope Manufacturing Company, same place. Filed Apr. 11, 1884. (No model.)



Claim.—1. A compound wheel for transmitting power, consisting in a central nave and a removable crown, essentially as set forth.

2. A nave of a wheel for transmitting power, constructed and adapted to be secured to a shaft, and to receive one or more crowns interchangeably, essentially as set forth.

3. A removable crown of a wheel for transmitting power, constructed and adapted to be secured interchangeably to and combined with a nave to connect it with a shaft, essentially as set forth.

299,884. EGG-BEATER. JOHN EDWARD WELLING, Georgetown, Ky., assignor of two-thirds to Justice Webb and James E. Castril, both of same place. Filed Mar. 24, 1884. (No model.)

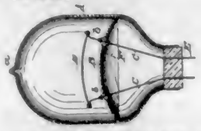
Claim.—1. The combination of the open cylindrical shell A, having the threaded bottom flange, B, removable cone bottom C, having threaded flange D, conical beater F, having the staff G, and cross-head H, and removable cover J, having the central flanged aperture, I, substantially as and for the purpose herein shown and specified.

299,884.



2. In an egg-beater of the described class, the combination, with the cylindrical shell or casing A, of the removable cone bottom C, projecting into the cylinder, substantially as and for the purpose herein shown and specified.

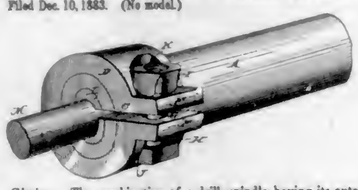
299,885. ELECTRIC LAMP. ALEXANDER WEIN, St. Denis, Md., assignor to the Viaduct Manufacturing Company of Baltimore City. Filed Aug. 9, 1883. (No model.)



Claim.—1. An incandescing electric lamp having its filament-chamber separated from an attached closed chamber by a wall which has its surface outside of the filament-chamber covered by a metallic reflecting-covering, substantially as described.

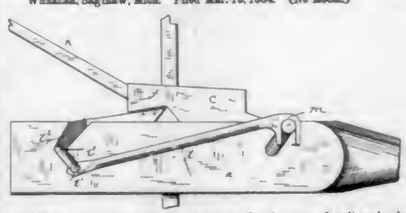
2. In an incandescing electric lamp, the filament-chamber having a portion of its transparent inclosing wall provided with two outwardly-projecting teats through which the leading-in wires are sealed, said portion of wall having its outer surface provided with a metallic reflecting deposit through which said teats project and insulate the same from the leading-in wires, substantially as described.

299,886. DRILL-CHUCK. CHAS. S. WHITEBOOK, Springsville, N. Y. Filed Dec. 10, 1883. (No model.)



Claim.—The combination of a drill-spindle having its outer end tubular, and provided with two diametrically-opposite longitudinal slots, a chuck or clamp clamping the outer end of the drill-spindle, and having perforated lips for the reception of a screw-bolt, and having recesses in its outer sides near the lips for the reception of the head of the bolt and of the nut, a soft-metal bushing having two diametrically-opposite longitudinal slots, and a drill-bit, as and for the purpose shown and set forth.

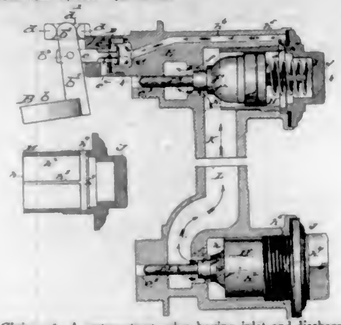
299,887. CLAMP FOR HOLDING WELL-POLES. BRAYTON WHEELER, Saginaw, Mich. Filed Mar. 15, 1884. (No model.)



Claim.—1. In a device for stopping the descent of well-poles in salt-wells when the draw-rope or drawing mechanism becomes broken, the combination, with the slotted frame, of the pivoted dogs having beveled biting edges provided with semi-oval recess in said biting edges, said dogs being pivoted on crank-shafts having bearings in the frame, the cranks of said shafts being connected by a hook-rod, one of the dogs being provided with projecting arms above its biting edge, and the other dog being pivoted on a removable shaft, substantially as specified.

2. The combination, with the slotted frame, the pivoted dog having the inwardly-projecting arms and the semi-oval recess in its biting edge, and the other dog pivoted to a removable crank-shaft, and having a semi-oval recess in its biting edge, of the rod for connecting the cranks of the crank-shafts and the lever for operating said dogs, substantially as specified.

299,888. WATER-CLOSET VALVE. PETER WEITZ, St. Louis, Mo. Filed June 19, 1883. (No model.)



Claim.—1. A water-closet valve having inlet and discharge passages above the main valve, and an outlet-passage leading from below this valve to a chamber, H, below the relief-valve, and also having a groove in the wall of chamber H, in combination with the main valve having its stem *f'* working loosely through the perforation *e'*, substantially as described.

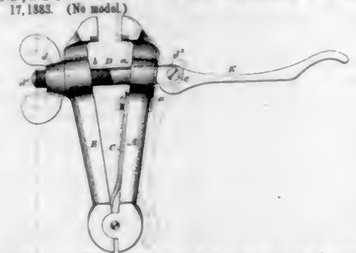
2. The combination, in a water-closet valve, of the chamber H, the groove *h'* therein, the outlet h^4, the valve F, and the stem *f''*, having the part f^3, constructed substantially as described.

3. The combination of the chamber E, the passage h^4, the chamber H, having the groove *h'* and the outlet h^4, with the inlet and discharge passages, and the main valve F, substantially as described.

4. In a water-closet valve having inlet and discharge passages above the main valve, a chamber with an outlet below this valve, a groove, *h'*, a passage, h^3, a relief-valve, C, the extension *d''*, lugs *d d*, cap D, and a float-lever attached to the stem of the relief-valve, substantially as described.

5. In combination with a valve constructed with a side outlet-passage, h^3, leading from a chamber below the main valve having a groove *h'*, the relief-valve C, having a float-lever pivoted to its stem, substantially as described.

299,889. VISE. WILLIAM M. WHITING, Elizabeth, N. J. Filed Oct. 17, 1883. (No model.)



Claim.—1. The combination, with the pivoted jaws of a vise, of a threaded bolt whose axis coincides with a vertical plane passing longitudinally through the middle of both jaws, a nut turning upon said bolt bearing against one jaw, and a cam-lever pivoted to said bolt and movable in a vertical plane bearing against the other jaw, said nut and cam-lever being capable of either independent or conjoint action, as set forth.

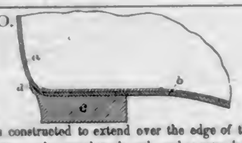
2. The combination, with the pivoted jaws of a vise, of a threaded bolt whose axis coincides with a vertical plane passing longitudinally through the middle of both jaws, a nut turning upon said bolt bearing against one jaw, a cam-lever pivoted to said bolt and movable in a vertical plane bearing against the other jaw, said nut and cam-lever being capable of either independent or conjoint action, and a spring for keeping said jaws normally separated, as set forth.

299,890. RUBBER BOOT. MOSES W WHITNEY, Bristol, R. I. Filed Apr. 23, 1883. (No model.)

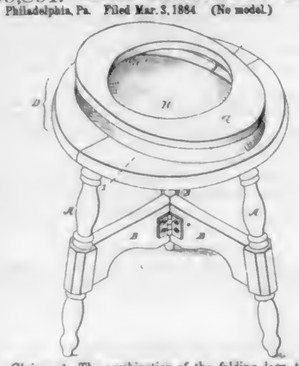
Claim.—1. In a rubber boot, the combination, with the sole and counter, of a heel provided with a rearward and upward integral extending flange, as constructed to extend over the edge of the sole and lap onto the counter, and secured to the sole and counter by cementation.

2. A molded rubber heel provided with an integral flange extending upward around the rear of the heel, adapted for cementation to the bottom of the sole and to the counter, as described.

299,890.



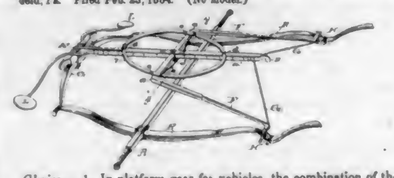
299,891. COMBINED COMMODE AND BIDET. ISAAC S. WILLIAMS, Philadelphia, Pa. Filed Mar. 3, 1884. (No model.)



Claim.—1. The combination of the folding legs, the annular top having an opening with internal flange, *f*, and the removable ring G, substantially as set forth.

2. The combination of the folding legs, the folding top D, having an opening with internal flange, *f*, the removable ring G, and the bidet-pan H, having a flange, *i*, as set forth.

299,892. VEHICLE PLATFORM-GEAR. CHARLES C. WILSON, Mansfield, Pa. Filed Feb. 23, 1884. (No model.)

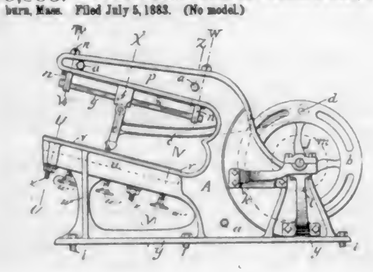


Claim.—1. In platform-gear for vehicles, the combination of the center piece, D, and the side arms, F F, having the extensions *a'*, secured to the sides of said center piece, substantially as described.

2. In platform-gear for vehicles, the combination, with the center piece, of the side arms, front braces, and side springs, secured together at their forward ends by the shaft-couplings, substantially as described.

3. In platform-gear for vehicles, the combination of the center piece, side arms, fifth-wheel, and bottom brace with its ends fitting in notches in said side arms, substantially as and for the purpose set forth.

299,893. LEATHER-GLASSING MACHINE. WILLIAM H. WOOD, Woburn, Mass. Filed July 5, 1883. (No model.)



Claim.—1. The frame having the two parts or halves A B formed or secured one to the other at the points of connection, substantially as described, and with space between the same for the crank-wheel and pitman, substantially as specified.

2. The frame formed with two parts or halves A B, with space between the same for the pitman, with one of said halves formed with an offset or recess, *a'*, to receive the crank-wheel, substantially as specified

3. The frame formed with parts A B and with the guide-supporting arm *p*, bed-supporting arm *u*, and base *y*, the same being in each half or part of the frame, united as part and parcel of a unitary casting, substantially as specified.

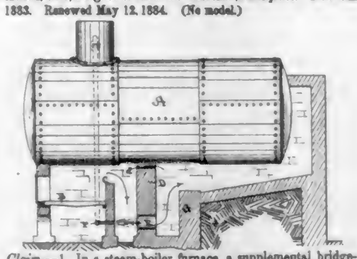
4. The frame formed with the halves or parts A B, with a seat or recess, *i*, correspondingly formed in each said halves at or near the lineal center of arm *p*, and adapted to receive and sustain the fusible metal *s* to support rod *h*, substantially as specified.

5. The cast-metal frame formed in two parts or halves, A B, with one half offset, as at *a'*, to receive wheel *b*, and with an upper arm, *p*, and bed-supporting arm *u*, arranged in a right line coincident with the outer plane of said wheel when arranged in said recess, substantially as specified.

6. In combination with the frame, formed as specified, and the crank-wheel, with its arbor, the hanger *k*, and standard *l*, secured to said frame, and arranged to form an outer bearing and support for said arbor, substantially as specified.

7. In a leather-surfacing machine, a cast-metal frame having halves A B, united as specified, with an interior space for the balance-wheel and pitman, and having the leather-supporting bed and the guides of the reciprocating head arranged in a right line with the plane of said wheel, substantially as specified.

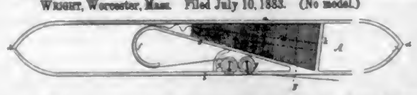
299,894. STEAM-BOILER FURNACE. GRANVILLE T. WOODS, Cincinnati, Ohio, assignor to Ezra W. Vanduzen, same place. Filed June 19, 1883. Renewed May 12, 1884. (No model.)



Claim.—1. In a steam-boiler furnace, a supplemental bridge-wall, D, in rear of the ordinary bridge-wall, arranged with apertures E below the grate-level, and a space, *d*, adjacent to the boiler, in combination with a blast-pipe, F, provided with nozzles arranged to discharge rearward through the apertures E, substantially as and for the purpose specified.

2. In a steam-boiler furnace, the ordinary grate and bridge-wall, the supplementary bridge-wall D, having apertures, as described, and a space adjacent to the boiler, the wall G in rear of wall D, and an inclined surface extending backward from the top of said wall, and a series of blast-pipes corresponding with the apertures in wall D, all the elements in combination, substantially as set forth.

299,895. SHUTTLE FOR WEAVING WIRE-CLOTH. GEO. FLETCHER WRIGHT, Worcester, Mass. Filed July 10, 1883. (No model.)

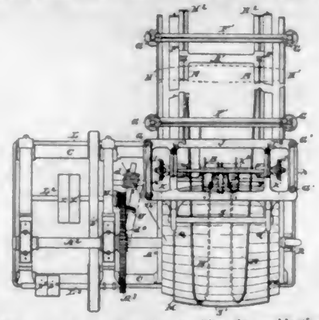


Claim.—1. The shuttle-body having at or near the middle of one wall an educt, *h*, and guide-rollers *g g* arranged therein, a cop-holding chamber along the opposite wall of the body, with the axis of such chamber oblique to that of the body, and a curved guide extending from the lesser end of such chamber nearly to the opposite wall of the body, such rollers and curved guide being for so directing the wire from the cop to and through the educt as to prevent kinking or accidental improper bending of such wire in passing from the cop through and out of the shuttle, substantially as set forth.

2. The shuttle having within it a cop-holding chamber formed in its body by its bottom and one of its walls, a partition extending across such body from one to the other of such walls, and another partition extending from or near one end of the first partition obliquely to and across the longer axis of the body and nearly to the opposite wall, and curved, as described, an educt arranged at or near the middle of one side, and friction-rollers disposed in said educt, all being substantially as set forth.

299,896. BARREL-MAKING MACHINE. SAML. WRIGHT, Egremont, County of Chester, England. Filed Feb. 26, 1883. (No model.) Patented in England May 12, 1882, No. 2,250, and July 28, 1883, No. 3,589; in France Nov. 10, 1882, No. 152,028, and in Canada Mar. 1, 1883, No. 16,424.

Brief.—The staves are fed to a collapsible form between end, side, upper, and adjustable lower guides, whereby they are bent to the proper bulged form. They are fed by a feeding-board placed behind the rearmost stave, which is pulled forward by ropes attached to it and passing over the staves, over and under the form, and over a spring-roller to a windlass. The form is surrounded by encircling arms, and the staves are partially trussed by the ropes. They are crozed while passing to the form.



Claim.—1. In a barrel-making machine, the combination, with a collapsible barrel form or drum and guide-hoops encircling said barrel form or drum, of a feeding-table composed of end, upper, and lower guide-bars, as described, and a rope or ropes, or their equivalent, attached to a feeding-board behind the staves, to be fed to the barrel form or drum, and passing around said barrel form or drum, whereby the staves are fed onto the barrel form or drum between said form or drum and the encircling guide-hoops and retained in position thereon, substantially as set forth.

2. In a barrel-making machine, a collapsible barrel form or drum, guide-hoops encircling said barrel form or drum, and tightening-pulleys, in combination with a feeding-table composed of end, upper, and lower guide-bars, as described, and a rope or ropes, or their equivalent, which pass around the barrel form or drum, and are adapted to draw or force the staves along the feeding-table and onto the barrel form or drum between said form or drum and the encircling guide-hoops, and also to partially truss the staves when on said barrel form or drum, substantially as set forth.

3. In a barrel-making machine, a feeding-table comprising end guide-bars, H' H', and lower intermediate guide-bars, H^3 H^3, in combination with an adjustable lower central guide-bar, N^3, and upper adjustable guide-bars, F F, substantially as set forth.

4. In a barrel-making machine, the combination, with a collapsible barrel form or drum, of top, bottom, and end guide-bars, means for adjusting the top guide-bars, cutters for shaping the ends of staves, top guide-rollers or their equivalent, and a rope or ropes, or the equivalent thereof, the arrangement being such that the staves, while being drawn toward the collapsible barrel form or drum by a rope or ropes, or the equivalent thereof, are subject to the action of the cutters which shape their ends, as above set forth.

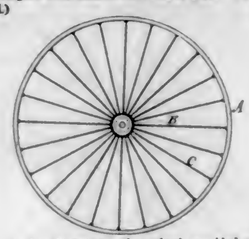
5. In a barrel-making machine, in combination with a collapsible form or drum and encircling guide-hoops, the top roller-shaft, K^3, bevsled rollers K, or their equivalent, the central lower guide-bar, N^3, fixed on the lower frame, J', and means for adjusting said guide-bar to suit the curvature the staves are required to take before entering between the collapsible barrel form or drum and its encircling hoops, substantially as set forth.

6. In a barrel-making machine, a collapsible barrel form or drum, and guide-hoops encircling said barrel form or drum, in combination with a feeding-table, a rope or ropes, or their equivalent, passing around the barrel form or drum, and adapted to draw or force the staves along said feeding-table onto said form or drum between it and the encircling guide-hoops, and means, substantially as described, for automatically regulating the tension of said ropes, whereby they are adapted to truss the staves upon said drum, substantially as set forth.

7. A collapsible barrel form or drum composed of four segments, *f f f' f'*, of which two opposite segments, *f f*, extend through a shorter circular arc than the two adjacent or connecting segments *f' f'*, in combination with the shaft A^2 of the drum, a collar, X', fixed to said shaft, a movable collar, X, adapted to slide on said shaft, links W W W W, connected at opposite ends to the fixed collar X' and the segments *f f f' f'* by pivotal connections, links W' W', connected at opposite ends to the sliding collar X and the short segments *f f* by pivotal connections, and links W^2 W^2, connecting the long segments *f' f'* to the sliding collar X, which links are pivoted to the segments *f' f'*, and are connected to the sliding collar X by pins working in slots W^4 W^4, formed in said collar, whereby the short segments are adapted to travel in advance of the long segments when the drum is being collapsed, substantially as set forth.

8. In a barrel-making machine, the combination, with a collapsible barrel form or drum and a feeding-table, of feeding-ropes E, winding-drum B, guide-roller D, shaft D', sliding pedestal D^2, fixing D^2, frame O, and springs E', all substantially as and for the purpose specified.

299,897. WHEEL FOR BICYCLES. WILBER S. WRIGHT, Philadelphia, Pa., assignor to Needham M. Wilson, same place. Filed Oct. 5, 1883. (No model.)

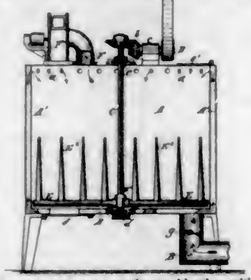


Claim.—1. In a bicycle or other wheel provided with spokes, a felly or rim composed of an endless ring of vulcanized fiber, substantially as set forth.

2. In a bicycle or similar wheel, the combination, with the ordinary felly, of an endless rim or tire of vulcanized paper fiber, as set forth.

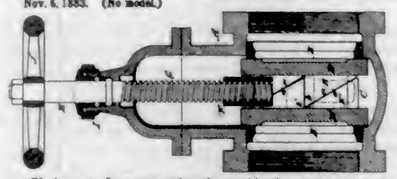
3. A bicycle or other wheel, consisting of the endless rim A of vulcanized fiber, a hub, B, formed of a single piece of the same material, and spokes C, substantially as set forth.

299,898. APPARATUS FOR DRYING FERTILIZERS. WILLIAM WRIGHT, New York, N. Y. Filed June 4, 1883. (No model.)



Claim.—In a drying apparatus, the combination, with a vessel for the reception of material to be dried, provided with a surrounding jacket for hot air which communicates with the interior of the vessel, and a pipe for supplying hot air to the vessel, of a stirrer in said vessel for agitating or moving the drying material, and an exhaust-fan connected directly with the interior of the vessel, and serving by its action to promote the circulation of heated air in the jacket and to convey away from the vessel the air entering from the jacket and the vapors emanating from the drying material, all substantially as and for the purpose herein described.

299,899. GATE-VALVE. JAMES ARTHUR, Jersey City, N. J. Filed Nov. 6, 1883. (No model.)



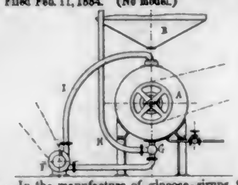
Claim.—1. In a gate-valve, the combination of two valve-disks having series of oppositely-arranged parallel inclined planes capable of engaging each other, stops for arresting the motion of one of the valve-disks, and a screw for sliding one disk upon the other, as described.

2. In a gate-valve, the combination of the valve-disk D, provided with inclined planes *a*, and adapted to receive the double-flanged lifter F, the valve-disk D', provided with inclined planes *a'*, and having stops K, and the valve-casing A, provided with abutments L, as specified.

3. In a gate-valve, the combination, with the body A, provided with parallel seats B, of the valve-disks D D', having oppositely-arranged series of parallel inclined planes *a a'*.

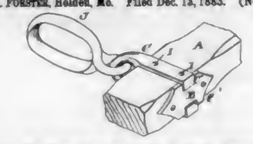
4. In a gate-valve, the valve-disks D D', provided with oppositely-arranged parallel inclined planes *a a'* and shoulders *b b'*.

299,900. MANUFACTURE OF GLUCOSE. LÉON BARRIER, Besançon, France. Filed Feb. 11, 1884. (No model.)



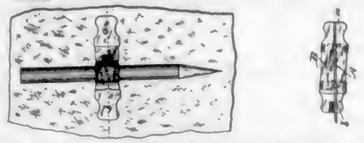
Claim.—In the manufacture of glucose-sirups, the improvement consisting in applying the processes of defecation used in sugar-works—such as the process of carbonation or treatment with carbonic acid—to the impure sirups obtained by the saccharification direct and under pressure of the amylaceous or other materials previously cooked, disintegrated, and diluted, the whole being substantially as hereinbefore set forth.

299,901. CLIP FOR NECK-YOKES, &c. EDWARD P. BARRETT and JOHN A. FORSTER, Holden, Mo. Filed Dec. 13, 1883. (No model.)



Claim.—The combination of a block, A, U-shaped clip C, having shoulders C' and interned ends C', and the plate B, having recesses B' to receive the clip ends, as set forth.

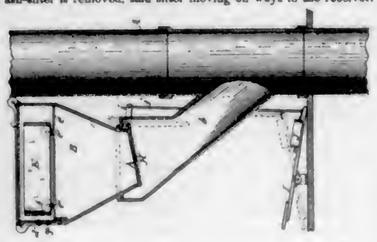
299,902. PENCIL-CLASP. JOB BATCHELOR, Camden, N. Y., assignor of one-half to Augustus G. Wood, same place. Filed Mar. 31, 1884. (No model.)



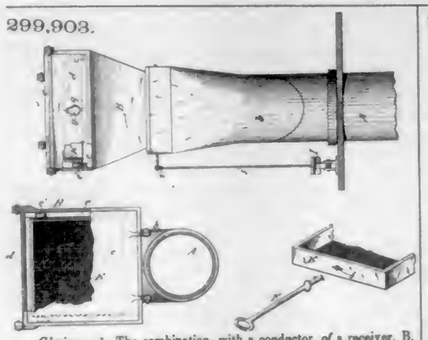
Claim.—The improved pencil-clasp, consisting of an elastic or spring central portion secured at one end to an attaching-pin and provided on its free end with a socket adapted to fit over the point of said attaching-pin, substantially as shown and described.

299,903. CONDUCTOR FOR ASHES, GARBAGE, &c. JAMES BERRY, Buffalo, N. Y., assignor of one-half to William I. Williams, same place. Filed Jan. 14, 1884. (No model.)

Brief.—A receiver connected with a conductor-pipe has a hinged cover at its upper end, and a valve at its lower end operated by a treadle and connecting-rod. The receiver also has a hinged door through which an ash-sifter is removed, said sifter moving on ways in the receiver.



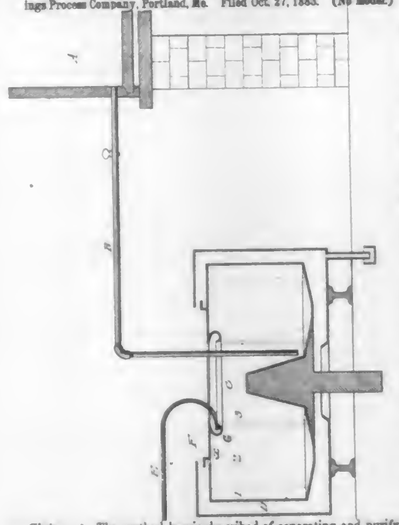
299,903.



Claim.—1. The combination, with a conductor, of a receiver, B, having a hinged cover, *c*, and hinged door *d*, and an ash-sifter, E, moving on ways formed in the receiver, and adapted to be introduced and removed upon opening the door *d*, substantially as set forth.

2. The combination, with a conductor-pipe, A, and receiver B, connected therewith, of a pivoted valve, H, treadle I, and rod *j*, substantially as set forth.

299,904. SEPARATING AND PURIFYING CERTAIN COMPOUNDS OF THE SCOURINGS OF WOOL. JOHN ALBERT WILLIAM BORCHERS, West Medford, Mass., assignor, by mesne assignments, to the Wool Scourings Process Company, Portland, Me. Filed Oct. 27, 1883. (No model.)

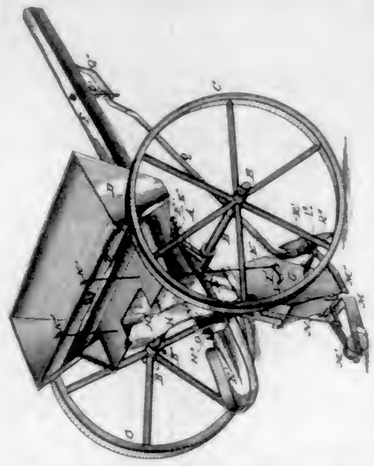


Claim.—1. The method herein described of separating and purifying the heavy insoluble component, the soluble component, and the lighter insoluble component of wool scourings by conducting the latter into a revolving basin having a tight bottom, a tight peripheral wall, and a flange tightly joined to and extending from said wall and partially covering said basin, said flange having an opening or openings, the soluble component passing out of the basin through said opening or openings without passing through the heavy insoluble component, and the lighter insoluble component passing out of the basin, each while the basin is revolving, substantially as described.

2. The herein-described soluble component for scouring wool, obtained by the method substantially as described.

3. The construction and arrangement of a revolving basin for separating and purifying the three herein-described components of wool scourings into which the latter are conducted, said basin having a tight bottom, a tight peripheral wall, and a flange tightly joined to and extending from said wall and partially covering said basin, said flange having an opening or openings at such a distance from said wall that the soluble component may pass out from said basin through the opening or openings while the basin is revolving without passing through the heavy insoluble component, substantially as described.

299,905. CONVERTIBLE SEEDING-MACHINE. THEODORE L. BROOKS, Port Byron, N. Y. Filed Feb. 27, 1884. (No model.)



Claim.—1. The combination, with the main frame, of the seed-box, having one of its sides extended rearwardly to form a shelf, provided with a suitable opening through which the seed may pass, and provided with a suitable rear opening and a sliding cover for the same, to admit the seed to roll out freely upon the said shelf, a dropping device open at each end and provided with a central shaft having its ends bent at right angles, and having its inner surface corrugated at its lower end, a valve centrally secured upon the said shaft, and having its lower end corrugated on either side, a flexible tubing connecting the upper end of the dropping device to the shelf of the seed-box, a spiral spring for holding the valve in its closed position, and operating-cords extending up through suitable apertures in the seed-box shelf, and by means of which the valve of the dropping device is operated, as and for the purpose shown and set forth.

2. The combination, with the main frame, of the seed-box, having one of its sides extended rearwardly to form a shelf, provided with a suitable opening through which the seed may pass, and provided with a suitable rear opening and a sliding cover for the same, to admit the seed to roll out freely upon the said shelf, a dropping device open at each end, and provided with a central shaft having its ends bent at right angles, and having its inner surface corrugated at its lower end, a valve centrally secured upon the said shaft, and having its lower end corrugated on either side, a flexible tubing connecting the upper end of the dropping device to the shelf of the seed-box, a spiral spring for holding the valve in its closed position, and operating-cords extending up through suitable apertures in the seed-box shelf, and by means of which the valve of the dropping device is operated, an adjustable seat-support having upwardly-projecting teeth or racks on each of its side pieces, a double handle secured to the seed-dropping device, and provided with lugs adapted to fit between the teeth of the said racks, and a plow-beam secured removably beneath the tongue of the machine, and having secured upon its lower end a reversible shovel-blade, all constructed and arranged to operate substantially in the manner and for the purpose shown and described.

299,906. VEHICLE-WHEEL. JAMES J. BUSH, Tacoma, Wash. Filed Dec. 5, 1883. (No model.)

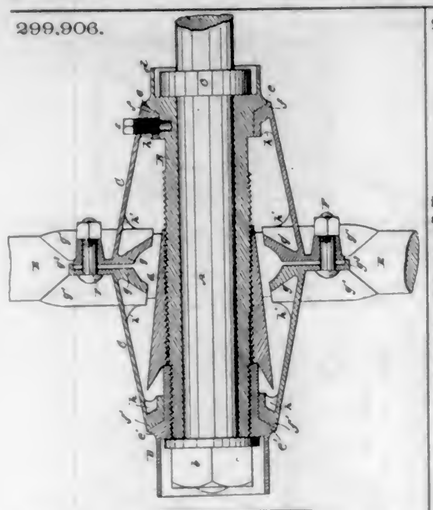
Claim.—1. In an adjustable and expanding vehicle-wheel, as described, the inner and outer flanges, *g g'*, of the half-hub sections C C, constructed to form tapering oval sockets g^2, in combination with the tapering oval-shaped spokes E and the bolts F, arranged to pass in between the spokes and free of them, substantially as specified.

2. The hub-sections C C, having inner and outer flanges, *g g'*, forming sockets for the spokes of the wheel, constructed or provided with outer annular lips or branch flanges, g^3, arranged to close the dividing-space between said hub-sections, essentially as and for the purpose herein set forth.

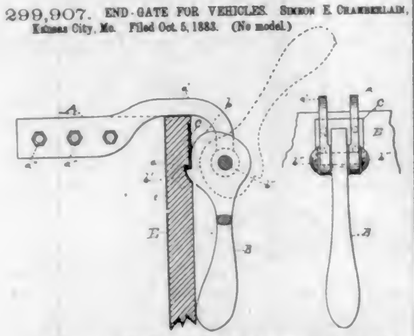
3. The set-screw *s*, in combination with the hub-sections C C, the box B, the hollow screw-cone G, and the axle A, substantially as specified.

4. The metallic half-hubs C C, having bodies of shell-like construction stiffened internally by end brackets, *h h'*, and constructed with inwardly-bent outer end flanges, *f f'*, essentially as described.

299,906.



299,907. END-GATE FOR VEHICLES. SIMEON E. CHAMBERLAIN, Kansas City, Mo. Filed Oct. 5, 1883. (No model.)

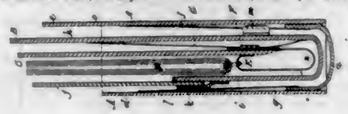


Claim.—1. A locking device for the end-gate to a vehicle, consisting of a bar one end of which is adapted to be attached fixedly to the end-gate and its opposite end constructed with a curved arm, and an eccentric provided with a suitable lever pivotally attached to said curved arm below the point of attachment of the said bar to the vehicle, as and for the purpose specified.

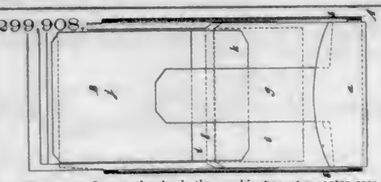
2. The combination, in a locking device for the end-gate to a vehicle, of a bar one end of which is adapted to be attached fixedly to the end-gate and its opposite end constructed with a curved arm, and an eccentric provided with a suitable lever pivotally attached to said curved arm below the point of attachment of the said bar to the vehicle, and a lip projecting beyond the curve of the eccentric, and between the same and the free end of the lever, which is adapted to engage with an offset on the side of the vehicle and lock the lever, in the manner shown and specified.

3. The combination, with the bar having an extended arm and adapted to be secured to the end-gate of a vehicle, and a lever one end of which is provided with an eccentric and pivotally attached to said arm, of a catch-plate having a suitable offset which is adapted to be attached to the side of the body of the vehicle, as and for the purpose specified.

299,908. POCKET-BOOK. HENRY A. CRAPEN, New York, assignor to Edwin H. Brown, Brooklyn, N. Y. Filed Oct. 26, 1883. (No model.)



299,908.

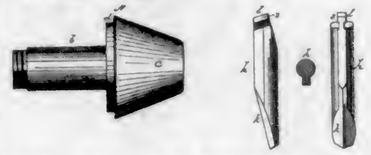


Claim.—1. In a pocket-book, the combination of an outer case, an independent bottom secured therein, an inner case adapted to be slid into and out of said outer case, and a memorandum-paper holder within said inner case, adapted to be slid into and out of said inner case, substantially as specified.

2. In a pocket-book, the combination of an outer case, and an inner case adapted to be slid into and out of said outer case, with a slate, *j*, hinged thereto, substantially as specified.

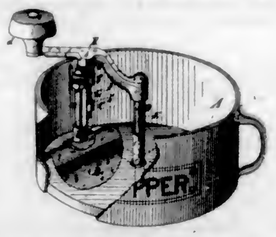
3. In a pocket-book, the combination of an outer case, an independent bottom secured therein, an inner case adapted to be slid into and out of said outer case, a holder for memorandum-paper within said inner case, a shoulder upon said memorandum-holder, upon which memorandum-paper may rest, and a loop for retaining memorandum-paper in the said memorandum-holder, substantially as specified.

299,909. DRILL-CHUCK. CHARLES E. CHURCH, Cleveland, Ohio. Filed Dec. 7, 1882. (No model.)



Claim.—The chuck-body A, consisting of the head C, having the peripheral shoulder *d* and stem *b* made integral therewith, and provided with the converging guideways *e*, in combination with the internally-threaded nut E, having an inner annular flange, *v*, the externally-threaded pressure-head D, provided with grooves *n* for the T-lugs *l*, the nut *r*, and the chuck-jaws *h*, beveled at *k*, and provided with the T-shaped lug *l*, all adapted to operate substantially as and for the purposes specified.

299,910. MACHINE FOR CUTTING MEAT AND VEGETABLES. SIMEON S. COOK, Woonsocket, R. I. Filed May 26, 1883. (No model.)

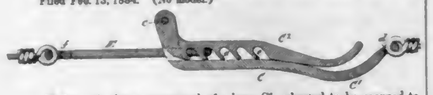


Claim.—1. In a cutter for meats, vegetables, and other substances, the combination of a vessel having its wall made by bending a piece or pieces of wood longitudinally into circular form, so that the grain of the wood will extend circumferentially, and a knife adapted to travel in contact therewith, and consisting of two wings diverging downwardly at an angle, substantially as specified.

2. In a cutter for meats, vegetables, and other substances, the combination of a circular vessel and a knife adapted to travel in contact with the wall of the vessel, and having two wings which diverge downwardly, and at their extremities are bent laterally outward, so as to present the edge in about a horizontal position, substantially as specified.

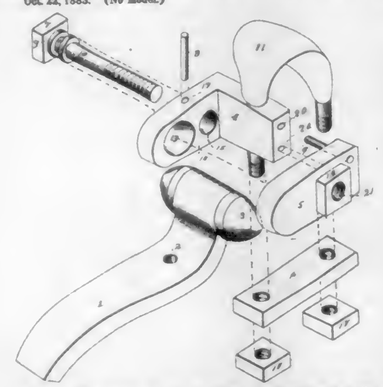
3. In a cutter for meats, vegetables, and other substances, the vessel A, the arm F, provided with the spindle E and stud G, the knife B, attached to the shaft *a*, the frame C, fitting on the stud G, and supporting the shaft *a* in a position beyond the arm F, and the spring H, all being so combined and organized that the knife will be forcibly pressed against the wall of the vessel, and when revolved around the vessel will derive a rotary motion from contact with the wall of the vessel, substantially as herein described.

299,911. FASTENING DEVICE FOR WIRE FENCES. EDWARD A. COOPER, Buffalo, N. Y., assignor of one-fourth to Frank Sibley, same place. Filed Feb. 13, 1884. (No model.)



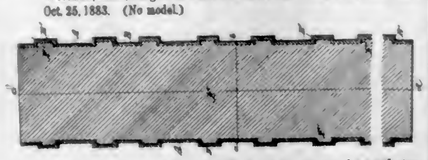
Claim.—A clamp composed of a jaw, C', adapted to be secured to one end of the wire, a jaw, C', pivoted to the jaw C', and provided on its inner side with a series of notches, *c*, and a bail, E, adapted to be engaged in said notches, and to be secured to the other end of the wire, the parts being combined substantially as set forth.

299,912. THILL-COUPLING. SAMUEL CRAIG, Holmesburg, Pa. Filed Oct. 22, 1883. (No model.)



Claim.—The herein-described coupling, consisting of the clip provided with the plate 4, having in one end the openings 20, arranged in vertical series, and the jaw 18, extended forward from the opposite end of plate 4, and provided with socket 13, and intersecting openings 15 19, the movable jaw provided with socket 13, and transverse threaded opening 21, the pins 6, extending from the rear end of the movable jaw in position to enter the openings 6, the bolt 10, inserted through openings 15 and turned through openings 21, and provided with an annular groove, 12, formed in position to register with opening 19, the pin 8, and the thill provided with lateral bosses 3, all arranged substantially as and for the purposes set forth.

299,913. PAPER BACK FOR BOOK-COVERS. JAMES A. CRANE, Westfield, Mass., assignor of one-half to Robert B. Crane, same place. Filed Oct. 25, 1883. (No model.)

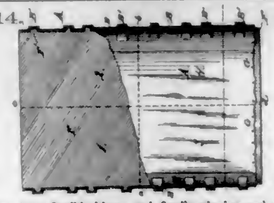


Claim.—The hereinbefore-described art or process of manufacturing paper backs for book-covers, which consists in forming the backs in pairs from an endless or seamless tube composed of successive layers of paper over a shaped form or core by drying and shrinking the paper tube upon the form, cutting the dried and shrunk paper tube longitudinally across the middle, and finishing the backs, substantially in the manner and for the purpose shown and set forth.

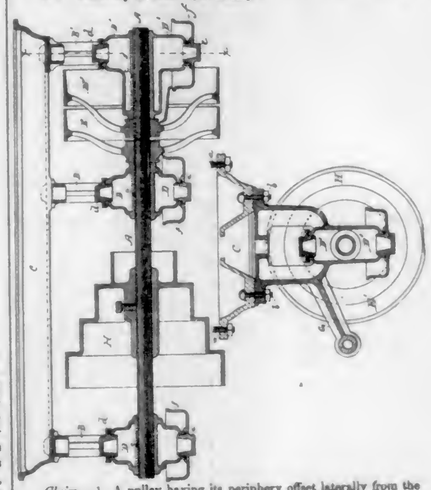
299,914. BOOK COVER. JAMES A. CRANE, Westfield, Mass., assignor of one-half to Robert B. Crane, same place. Filed Oct. 25, 1883. (No model.)

Claim.—The hereinbefore-described art or process of manufacturing book-covers, which consists in forming the covers in pairs from an endless or seamless tube composed of successive layers of paper over a shaped form or mold by drying and shrinking the paper tube upon the form, cutting the dried and shrunk paper envelope lengthwise on both sides of the form, waterproofing the paper body thus formed, disconnecting or severing the rigid sides of the cover from the back and again uniting the same by a flexible hinge, and finally planing and finishing the sides and back, substantially in the manner and for the purpose shown and set forth.

299,914.



299,915. COUNTER-SHAFT. DE WITT CLINTON CURRIER, Carthage, N. Y. Filed July 30, 1883. (No model.)



Claim.—1. A pulley having its periphery offset laterally from the plane of its hub, but within the plane of its rotary central bearing, combined with a counter-shaft, and arranged rigidly upon an independent shaft in line with the counter-shaft, substantially as shown and described.

2. The hangers B, having cast therewith bearings for the shaft and an air-tight oil-chamber about the same, as and for the purpose described.

3. The hangers B, formed with bearings and an air-tight oil-chamber about the same, in combination with the filling-plug *d* and the discharge-plug *e*, having drip-cup *f*, as and for the purpose described.

4. The combination, with a shaft and its driving-pulley, of an independent shaft arranged concentrically in line therewith, and an idle-pulley fixed on said independent shaft side by side with the driving-pulley, as set forth.

5. The combination, with a driving-shaft and the independent short shaft arranged in line therewith and having a long bearing, as described, of the two pulleys E and E', fixed, respectively, upon the adjacent ends of said shafts, and having their arms bent or offset, so as to bring the periphery of the idle-pulley E in the plane of its bearing, as and for the purpose described.

299,916. BARB-FENCE. ALEXANDER C. DECKER, Bushnell, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Filed July 9, 1878.

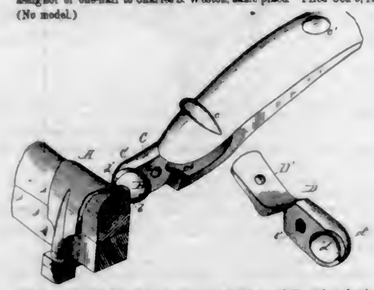
Claim.—1. The barbed fencing comprising the two twisted longitudinal wires and the barbs secured thereon, each barb consisting of a wire bent to form the two loops which receive each one of the longitudinal wires, the middle portion connecting the loops, and the points extending beyond the loops, said loops being both on the same side of the middle portion of the barb, substantially as described.

2. The combination, in a barbed fencing, of the twisted longitudinal wires and barbs secured thereon, each barb consisting of a wire bent to form the two loops which receive each one of the longitudinal wires, the long middle portion connecting the loops and spacing or holding apart the longitudinal wires between the twisted portions, and the points extending beyond the loops, substantially as described.

299,916.

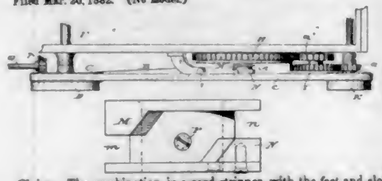


299,917. THILL-COUPLING. LAURISTON J. DERRICK, Uxbridge, Mass., assignor of one-half to Charles S. Weston, same place. Filed Oct. 6, 1883. (No model.)



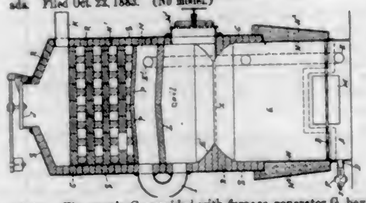
Claim.—In a thill-coupling constructed substantially as herein shown and described, and consisting of an axle-clip, A, having a vertically-enlarged front portion, *a*, from which projects a cylindrical neck, *b*, having formed integral therewith a ball, B, in combination with the members attached to the thills, consisting of a rigidly-attached member, C, with recessed or depressed portions c^2 and socket *d*, with segmental cut-away portion *d'* and perforation *e*, and member D, with a projecting portion, D', adapted to be within the recess c^2 under the end of the thill, the lower end of this member being of the same configuration as its opposite member, and provided with a screw-threaded perforation, *d'*, of less diameter than the perforation *e*, and bolts for securing the parts to each other, for the purpose set forth.

299,918. CARD-STRIPPER. JOSEPH M. DUNHAM, Holyoke, Mass. Filed Mar. 20, 1882. (No model.)



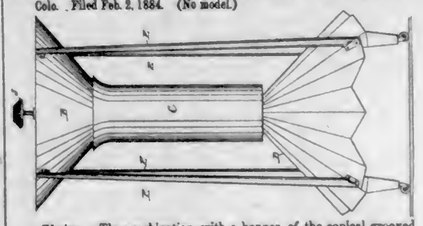
Claim.—The combination, in a card-stripper, with the fast and slow motion pulleys, the stripping mechanism, the belt, and the belt-shipper, of a sectional shipper-controlling cam provided with fast-motion and slow-motion swells adjustable with relation to one another, substantially as and for the purposes hereinbefore set forth.

299,919. GAS-GENERATOR. PETER ENGLISH, London, Ontario, Canada. Filed Oct. 22, 1883. (No model.)



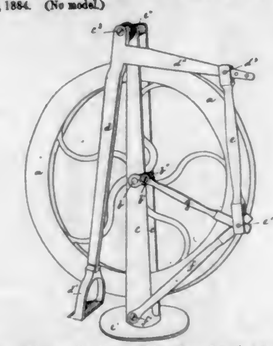
Claim.—The cupola C, provided with furnace-generator G, beveled conductor G', and metallic casing N, water-jacket N^3, superheating-chamber H, provided with brick-work H', conducting-tube I, and central partition, L, substantially as shown and described, and for the purpose specified.

299,920. ORE-SAMPLING MACHINE. THOMAS T. EYRE, Decatur, Colo. Filed Feb. 2, 1884. (No model.)



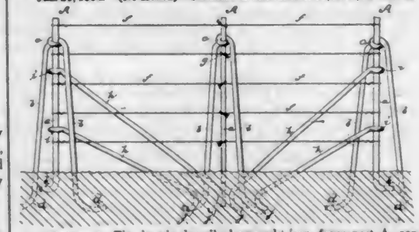
Claim.—The combination, with a hopper, of the conical grooved divider described, and a cylinder having a screw-thread, and a vertical shaft journaled to rotate in the said hopper upon the apex of said divider, substantially as and for the purpose specified.

299,921. TREADLE-MOTION. DAN P. FOSTER, Waltham, Mass. Filed Apr. 24, 1884. (No model.)



Claim.—The treadle-lever *d*, hinged at c^2 to the standard *c*, and having stirrup *d'* and arm *d''*, combined with the toggle-levers *e f*, connecting-rod *g*, and crank *b' b''* on the spindle *b*, substantially in a manner and for the purpose as set forth and described.

299,922. WROUGHT-IRON FENCE-POST. JACOB G. GUNMAN, St. Marys, Ontario, Canada, assignor to William N. Ford, same place. Filed Jan. 28, 1884. (No model.) Patented in Canada Jan. 30, 1882, No. 14,093.



Claim.—1. The herein-described wrought-iron fence-post A, consisting of the vertical rod *a*, provided with notches *e*, and the inverted-U-shaped lateral braces *b*, formed of a single rod, and having an eye, *c*, to receive the rod *a*, and provided with the feet *d*, substantially as herein shown and described.

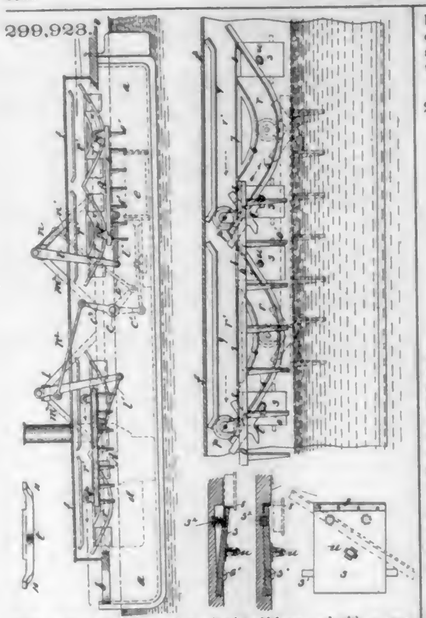
2. In a fence-post, the combination, with the rods *a*, provided with the feet *k*, of the inverted-U-shaped lateral braces *b*, provided with the eye *c* and the feet *d*, substantially as herein shown and described.

3. The combination, with the post A, consisting of the vertical rod *a* and the inverted-U-shaped braces *b*, provided with feet *d*, of the braces A, provided with eyes *i* and feet *j*, substantially as herein shown and described.

299,923. MARINE PROPELLER. EVAN T. GRIFFITH, Brooklyn, N. Y. Filed Feb. 28, 1884. (No model.)

Claim.—1. In a propelling apparatus, the combination, with a reciprocating paddle-truck, of ways therefor, having the propelling or active path formed into two arcs or loops tangent to the water-line, with

299,923.



rollers on each end of the truck moving in said loops, and with an overlying straight way extending the length of both loops and intersected by each end of said loops, with suitable switching devices at the said points of intersection for shifting the truck-wheels from the rails of one set of ways to the other, and suitable means for imparting motion to the said truck, substantially as herein set forth.

2. In a propeller apparatus, the combination, with a reciprocating paddle-truck and a propelling and a return way in which the same is movable, of the pivoted switching-gates *s* 8, arranged at the intersections of the two ways, and cams or projections on the ends of the truck, arranged to actuate said switches at each end of the stroke, substantially as and for the purpose set forth.

3. The combination, with the reciprocating paddle-truck A, having wheels, of the return-way *r'* and propelling-ways *r*, formed with the straight rails 7 and curved or inclined rails 5, with the switch-plates *s*, having rails 8, arranged at the intersection of the two ways, and cam-shoes *t* on the ends of the truck for operating said switch-plates, substantially as herein set forth.

4. In a propelling apparatus, the combination, with the shaft *c* and an engine for revolving the same, of the pendulous levers *l l* and reciprocating paddle-trucks A, with cranks on the said shaft, links n^2, connecting said cranks and levers, and links *l'*, connecting said levers and trucks, substantially as herein shown and described.

5. In a propelling apparatus, the combination, with the main shaft *c* and an engine for imparting motion thereto, of two cranks, c^3 c^3, set reversely on said shaft, two paddle-trucks arranged to act reversely with the two pendulous levers *l l*, connected with said trucks, and links *n'* and n^3, connecting said cranks and levers in reverse order, whereby one truck will advance while the other retires, substantially as herein set forth.

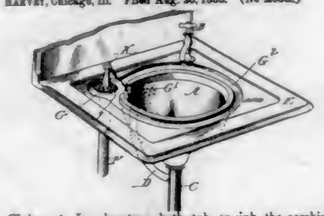
299,924. SKATING-RINK FLOOR. GEORGE COLE HARKINS, Salt Lake City, Utah, assignor of three-fourths to Manual L. Causey, Edward D. Egan, and Leila Kaighn. Filed Feb. 21, 1884. (No model.)



Claim.—1. The combination, in a skating-rink floor, of a foundation or base, A, composed of a compound or mixture of coarse, clean gravel with Portland cement, and water sufficient to make the mass cohere, and a top surface or dressing, B, consisting of a compound or mixture of fine, clean sand, Portland cement, water, and quicklime in the proportions specified.

2. The method of laying and forming a skating-rink floor which consists in spreading upon leveled ground a mixture or composition of coarse gravel and cement moistened with water sufficient to make the mass cohere, said foundation being laid in strips of suitable width and length, and covering the same with a surface or top-dressing composed of fine, clean, sharp sand, Portland cement, quicklime, and water in about the proportions specified.

299,925. AUXILIARY OVERFLOW FOR LAVATORIES. PATRICK HARVEY, Chicago, Ill. Filed Aug. 20, 1883. (No model.)

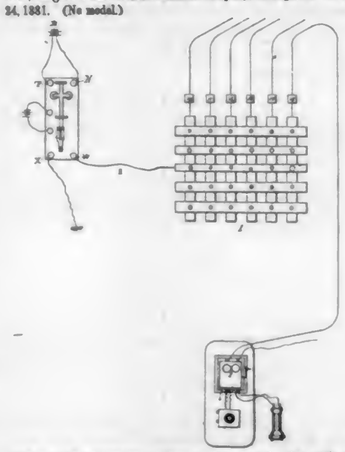


Claim.—1. In a lavatory, bath-tub, or sink, the combination of a basin, a waste-pipe, and an independent auxiliary overflow escape-conduit connecting with the upper part of the basin, but not with the waste-pipe, so as to relieve the basin when the waste-pipe and ordinary overflow are closed.

2. In a lavatory, bath-tub, or sink, the combination of a basin, a waste-pipe, a containing-slab having the groove in its upper surface, and an independent auxiliary overflow escape-conduit connected with the groove in the surface of the slab, but not with the waste-pipe, substantially as described and shown.

3. In combination with the slab of a wash-basin or sink, having a cavity, G, communicating by a groove or spout, G', with the wash-bowl, a conduit leading from such cavity apart from the ordinary waste-pipe, provided with a strainer, J, over the mouth of such conduit, and a chain stay secured to such strainer, substantially as set forth.

299,926. TELEPHONE SYSTEM. CHARLES H. HASKINS, Milwaukee, Wis., assignor to the Western Electric Company, Chicago, Ill. Filed June 24, 1881. (No model.)

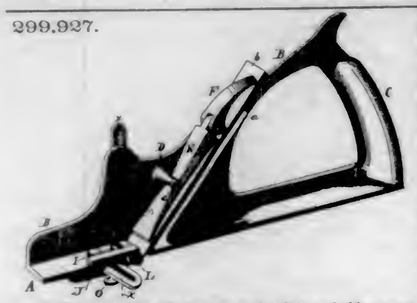


Claim.—In a telephone system, and in combination with the central-office switch-board thereof, a pole-changer adapted for continuous operation, bells adapted to be operated by reversed electric currents, electric circuits connecting said bells with the switch-board, and means for connecting the pole-changer to any line centering in said switch-board, substantially as described.

299,927. PLANE. SAMUEL E. HELLER, Cincinnati, Ohio. Filed Mar. 19, 1884. (No model.)

Claim.—1. The combination, in a plane, of the right-angled stock A B, having the flange *a*, and attached lateral boss D, constructed with a longitudinal groove on its under side, the cap E, having a lug, *e*, extending transversely across its upper face, and adapted to be slipped sidewise into engagement with the groove of the boss to prevent movement of the cap in the direction of its length, and the swinging cam F, pivoted to the upper end of the cap, for clamping the cutter *b* upon the flange *a*, substantially as described.

299,927.

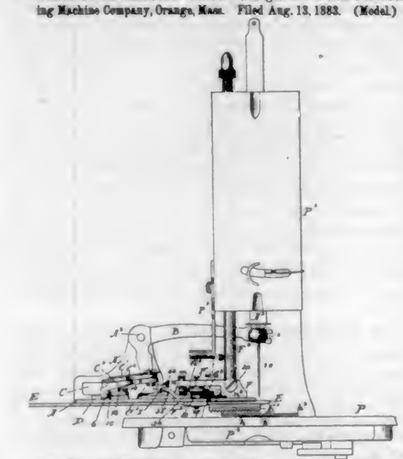


2. The combination, with the plane-stock A B, formed with a groove, *c*, in one side of the part B, but not extending through it, of the adjustable gage G, slotted vertically and provided with the lug *d*, and the set-screw H, passed through the slot of the gage and tapped into the part B of the stock, substantially as described.

3. The combination, with the right-angled stock A B, having the boss I on the top face of the part A, of the gage-stock J, provided with lugs *l*, resting on the face of stock A, and the thumb-nut I_4, inserted through the stock J, and tapped into the boss I to secure stock J in position, substantially as described.

4. The combination of the right-angled stock A B, provided with the boss I on the face of the part A, the gage-stock J, provided with lugs *l*, resting on the face of stock A, and formed with the transverse gain *n*, and secured to the stock by screw I_5, the gage M, formed with slotted shank N, entering gain *n*, and screw O, for attaching gage M to stock J, substantially as described.

299,928. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. THOMAS S. HUNTINGTON, New York, N. Y., assignor to the New Home Sewing Machine Company, Orange, Mass. Filed Aug. 13, 1883. (Model.)



Claim.—1. The base-plate A, the elbow-lever, the pawl C^9, moved by it, the arm D, the cam D^2, moved by it, and the adjustable shouldered block carried by the said arm, combined with the feed-lever E and the pivoted fulcrum slide or plate F^2, to operate substantially as described.

2. The base-plate and the feed-lever toothed or serrated at its under side to engage the upper side of the material, and means to move the same longitudinally and laterally, combined with a rocking plate having its pivot-connection with the needle-throat *h'* on the throat-plate, substantially as described.

3. The bed-plate A, the elbow-lever, the carriage moved by it, the feeding-lever having teeth 29 30, a cam to vibrate it, the pinion to engage and move the said lever longitudinally, and a pawl and ratchet to move the said pinion, combined with a pawl, H, and with a barring-lever, I, having the toe 44 and depressions 45 46, and the lever 33 to engage it, to enable the longitudinal movement of the said feeding-lever to be suspended at will, substantially as described.

4. The base-plate A and the presser-bar, to which it is attached and held by it above the bed-plate of the sewing-machine, the toothed feed-lever E, the fulcrum-slide to receive it, the shaft to hold the said lever at the under side of the plate A, and the pinion G, combined with the lever 33, to move the said fulcrum-slide, substantially as described.

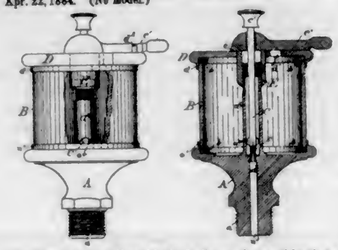
5. In a button-hole-stitching mechanism, a feeding-lever provided with feed-teeth on its under side to operate upon the upper side of the material to feed it, means to vibrate said lever, and the pinion to move it and the material forward, combined with a pawl and ratchet to move the said pinion tooth by tooth, and with a pawl, H, and barring-lever I, to actuate or leave at rest the said pawl and ratchet, which directly operate the said pinion, substantially as described.

6. The base-plate A, having a portion, A', upwardly turned and slotted, the bridge provided with a hole to receive the presser-bar, the elbow-lever, and the carriage moved thereby, the toothed feeding-lever provided with slot D^3, and teeth 29 30, arm D, block 13 thereon, and cam D^2, constituting a vibrator, and the pinion G, combined with a pawl, G^3, to move the vibrator, and means to rotate the said pinion, substantially as described.

7. The combination, with a button-hole attachment for sewing-machines and the bed-plate, of a conical needle-throat, *h'*, and the plate h^3, having a conical recess, and thereby seated on said throat to tip or rock thereon, substantially as described.

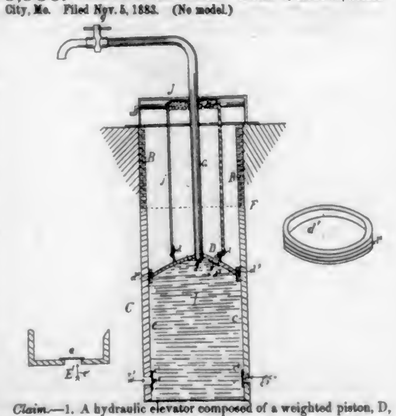
8. The combination, with a button-hole attachment and sewing-machine bed, of a throat-plate, its upwardly-extended throat having a conical tip, and the rocking plate seated or pivoted on said tip, substantially as and for the purpose described.

299,929. OIL-CUP. EDMUND LINKENHEIMER, Cincinnati, Ohio. Filed Apr. 22, 1884. (No model.)



Claim.—In an adjustable-feed oil-cup, the combination of the cap D, provided with orifice *d'* and stop-pin d^2, and the nut E, provided with shoulder *e* and arm *d'*, when arranged and operating substantially as and for the purpose described.

299,930. HYDRAULIC ELEVATOR. GEORGE Q. MCGOWN, Golden City, Mo. Filed Nov. 5, 1883. (No model.)



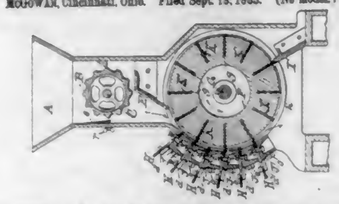
Claim.—1. A hydraulic elevator composed of a weighted piston, D, concave on its lower side, having an orifice, *g'*, hole d^4, hooks *d d*, and tube G, in combination with walls C, having inlet-valves, as and for the purpose set forth.

2. A weighted piston, D, concave on its lower side, having an orifice at its center, and hooks *d d*, combined with a tube, G, having a faucet, *g*, and a well, A, having walls B C, the part C having smooth inner sides, *c c*, valves c^3 c^3, and a bottom, E, all arranged and constructed substantially as shown and described, for the purpose set forth.

3. A weighted piston, D, concave on its lower side, having an orifice, g', at its center, tube G, bole d^4, hooks d d, and an encircling-band having a groove, d^3, in which is placed a rubber band, d^2, combined with walls C, substantially as shown and described.

299,931. MACHINE FOR HULLING COTTON-SEED.

THEODORE J. MCGOWAN, Cincinnati, Ohio. Filed Sept. 13, 1883. (No model.)



Claim.—1. In a hulling-machine, a hulling-cylinder consisting of a longitudinally-grooved body, F, heads L, provided with overhanging annular flanges A, and blades K, seated in the grooves of the cylinder and projecting beneath the flanges A, as shown and described.

2. In a hulling-machine, a hulling-cylinder consisting of body F, having longitudinal slots g and recessed ends, knives K, seated in said slots, and end plates or heads, L, bolted to the ends of the body F, and provided with flanges h i, the former overhanging the ends of the knives, and the latter seated in the recessed ends of the body F, as shown.

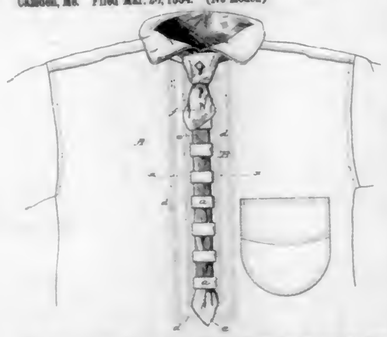
3. A hulling-cylinder consisting of body F, having longitudinal slots g and recessed ends, knives K, seated in said slots, heads or plates L, secured to the ends of the body F, and provided with annular flanges h i, the former overhanging the outer edges of the blades, and the latter seated in the recessed ends of the body, and set-screws b, passing through flanges i and bearing against the inner edges of the knives, substantially as and for the purpose set forth.

4. A hulling-cylinder consisting of body F, having longitudinal grooves g, knives K, seated in said grooves, heads L, secured to the ends of the body F, and provided with the slots or openings k and annular flanges h i, projecting inward, respectively, over the outer and inner edges of the knives, and set-screws b, passing through the flanges i and bearing against the inner edges of the knives, as and for the purpose explained.

5. In a hulling-machine substantially such as shown and described, a concave composed of bars J, slotted knives H, bolts n, passing through the knives and bars, and bolts d, seated in the knives, and provided with eccentrics, arranged, as shown, to bear against the bars J, whereby they are adapted to withdraw the blades or limit their inward movement, substantially as set forth.

299,932. SHIRT.

CHARLES K. MILLER and GEORGE H. CLEVELAND, Camden, Me. Filed Mar. 20, 1884. (No model.)

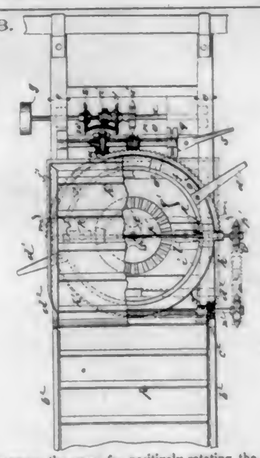


Claim.—A shirt having an entire or closed front provided with a series of transverse strips or loops arranged centrally on said front, combined with an inserted ornamental strip or tie, the whole being constructed and arranged as shown.

299,933. STRAW-STACKER.

SAMUEL M. MILLER and EMANUEL F. BROWN, Nebraska, Ohio. Filed Nov. 20, 1883. (No model.)

Claim.—1. The combination, with a thrashing-machine, of a turn-table, a straw-elevator partaking of the turning movement of the table, a driving-shaft capable of adjustment toward and from the table to engage and disengage the same for positively rotating the turn-table or permitting it to stand stationary or be freely turned, substantially as described.



2. The combination, with a thrashing-machine, of a turn-table, a straw-elevator partaking of the turning movement of the table, a shaft adjustable toward and from the table to engage and disengage the same, a driving-shaft, gearing for rotating the adjustable shaft, a shifting-clutch for reversing the motion of the gearing, and a clutch-shifting lever, substantially as described.

3. The combination, with a thrashing-machine, of a turn-table, a circular toothed rim thereon, a straw-elevator partaking of the turning movement of the table, a shaft engaging the toothed rim, a driving-shaft, reversing gear-wheels on the driving-shaft for revolving the shaft which engages the rim, a shifting-clutch between the reversing gear-wheels, and a clutch-shifting lever automatically operated by the turn-table to reverse the turning movement of the latter, substantially as described.

4. The combination, with a thrashing-machine, of a straw-elevator, a straw-conveyer intermediate of the elevator and the machine, and capable of moving around in a circular path, together with the elevator, gearing for so moving the intermediate conveyer and elevator, and an automatically-operated clutch for reversing the circular movement of the intermediate conveyer and elevator, and continuously moving them back and forth to uniformly distribute the straw, substantially as described.

5. The combination, with a thrashing-machine, of a turn-table, a straw-elevator partaking of the turning movement thereof, a traveling conveyer supported on the turn-table intermediate of the machine and the elevator, gearing for turning the table, and an automatically-operated clutch for reversing the movement of the table and continuously moving the straw-elevator back and forth in a circular path, substantially as described.

6. The combination, with a thrashing-machine, of a turn-table, a straw-elevator partaking of the turning movement of the table, a traveling conveyer supported on the table intermediate of the machine and the elevator and movable around with it, a driving-shaft capable of adjustment toward and from the table to engage and disengage the same, for positively rotating the turn-table, intermediate conveyer, and the elevator in a circular path, or permitting them to stand in a stationary position or to be freely turned to any desired position, substantially as described.

7. The combination, with a thrashing-machine, of a turn-table, a straw-elevator partaking of the turning movement of the table, a traveling conveyer supported on the table and moving around with it and the elevator, a shaft adjustable toward or from the table to engage and disengage the same, gearing for rotating the said shaft, a shifting-clutch for reversing the motion of the gearing, and a clutch-shifting lever, substantially as described.

8. The combination, with a thrashing-machine, of a turn-table, a circular toothed rim thereon, a straw-elevator partaking of the turning movement of the table, a traveling conveyer supported on the table intermediate of the machine and the elevator and moving around with the elevator and the table, a shaft engaging the toothed rim, a driving-shaft, reversing gear-wheels on the driving-shaft for revolving the shaft engaging the rim, a shifting-clutch between the reversing gear-wheels, and a clutch-shifting lever automatically operated by the turn-table to reverse the turning movements of the latter, substantially as described.

9. The combination, with a thrashing-machine, of a turn-table, a circular bed serving as the sole support for the table, and on which the latter is adapted to turn, a guide-flange for confining the table on the bed, a straw-elevator partaking of the turning movement of the table, a traveling conveyer supported on the table intermediate of the machine and the elevator and moving around with said table and elevator, a counter-shaft, p', extending continuously across the table, and having a pinion, q^2, bearings on the table supporting the ends of said counter-shaft, a vertical driving-shaft, s', and a drive-wheel, q', on the vertical shaft, substantially as described.

10. The combination of the turn-table f, the rack m, worm n, shaft o, wheel t, worm u, shaft v, and bevel-wheel w, with the driving-shaft x, reversing-wheels y z, shifting-clutch a', weighted shifting-lever b', and the arms d', arranged to shift said reversing-lever automatically, substantially as described.

11. The weighted clutch-shifting lever b' and the slotted fulcrum-plate e', in combination with the clutch a', reversing-wheels y and z, driving-wheel w, and the shifting-arms d' on the turn-table, substantially as described.

12. The combination, in a straw-stacker for thrashing-machines, of the turn-table f, separator b, and the carrier h^5, located on the turn-table, pivots v', and legs x', enabling the carrier to be set up and rested against the separator, substantially as described.

13. In a straw-stacker for thrashing-machines, the combination of the turn-table f, the carriers h' and p, driving-shaft p', the drive-wheels o', a^2, and n', a suitable chain, the vertical shaft s', chain-wheels t' and u', and a chain, substantially as described.

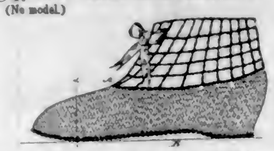
14. The combination of the jointed straw-carrier frame b^3, slotted bearing-plates c^3, roller-shaft r', carrier p, arranged on it, slotted bearings d^3, and the turn-table, substantially as described.

15. The combination of the turn-table f, guard-rim A, and bed g, with the brackets k and rollers j, working in a rabbet, i, on the inner periphery of the turn-table, whereby the turn-table is held in position on the bed, substantially as set forth.

16. The combination, with the turn-table f, its segmental toothed rim, and mechanism, substantially as described, for automatically oscillating the same, of the shaft o, provided with worm n, and mounted at one end in a sliding box, q, operated by the pivoted lever s, whereby the toothed rim and worm may be disconnected to cause the automatic oscillation of the turn-table to cease when it is desired to discharge the straw in one place, substantially as set forth.

299,934. SHOE.

JOHANNA MÜLLER, Philadelphia, Pa. Filed Apr. 2, 1884. (No model.)

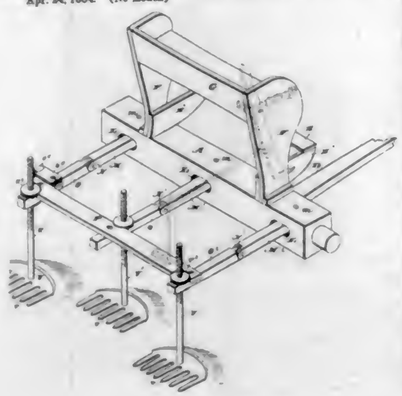


Claim.—1. A shoe having its upper and sole formed of knitted material, the stitches of the upper being united by knitting to those of the sole, substantially as and for the purpose set forth.

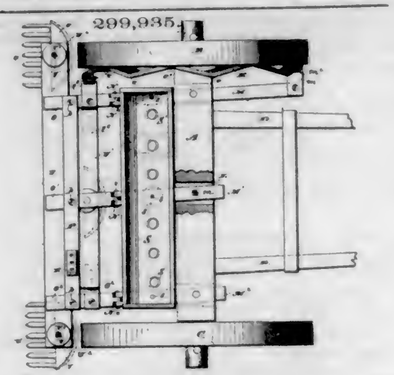
2. An improved shoe having a knitted upper and a knitted sole connected therewith, formed with a ribbed surface.

299,935. CULTIVATOR.

RICHD. B. NORMENT, East Lake, Fla. Filed Apr. 24, 1884. (No model.)



299,935.



Claim.—1. In combination with the series of vibrating arms, the bars hinged to the rear ends of the arms, the frame carrying the knives supported upon these bars, means for imparting a vibrating motion to the arms and bars, and means for raising and lowering the knife-frame, substantially as shown and described.

2. In combination with the series of jointed vibrating arms and the bar connecting their rear ends, the cultivator-knives, suitably supported at or near the rear ends of the arms, means for causing the arms to vibrate, and means for raising and lowering the rear ends of the series of arms to raise and lower the knives, substantially as shown and described.

3. In combination with the series of jointed vibrating arms connected together and carrying the knife-frame, the wave-track on one of the drive-wheels, the roller at one end of the series of arms, adapted to engage the wave-track on the wheel, and means for swinging up the rear ends of the jointed arms and the attached frame, to carry the roller out of engagement with the wave-track and stop the vibration of the bars and frame, substantially as shown and described.

4. In combination with the vibrating bar or arm M, pivotally attached to the main axle or frame, and carrying on its forward end a roller adapted to engage a wave or cam track on one of the drive-wheels, vibrating arms M′ M^2, the bars O O′ O^2, hinged to the vibrating arms, a roller carried on the arm O and adapted to engage the wave-track on wheel, the knife-frame supported upon and carried by the bars O O′ O^2, and the connecting bar or rod between such bars, substantially as shown and described.

5. In combination with the series of vibrating arms consisting of the portions pivoted to the axle or frame on vertical pins, and the bars hinged to the rear ends of such portions, the connecting-rod between the bars, the cultivator-knife frame supported on the end bars of the series, the standard attached to the connecting bar or rod, the adjusting-lever, and suitable connecting means between the standard and lever, substantially as and for the purpose described.

6. In combination with the series of vibrating arms for carrying the vibrating knife-frame, the fertilizer box or hopper provided with suitable discharge-openings supported upon and pivotally connected with the arms, so as to be reciprocated or shaken as the arms vibrate, substantially as and for the purpose described.

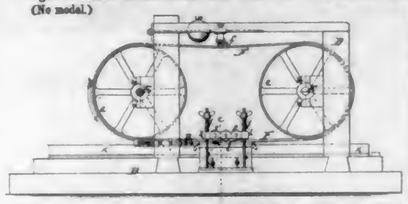
7. In combination with the series of vibrating knife-carrying arms consisting of the horizontally-vibrating portions M M′ M^2 and the bars O O′ O^2, from which are supported the knives, the fertilizer box or hopper provided with suitable discharge-openings supported on and attached to portions M M′ M^2 by means of pivot bolts or pins, substantially as and for the purpose described.

8. In combination with the arm M, passing through and pivoted in the axle A, and carrying at or near its front end a roller adapted to engage the wave-track E on the wheel B, the arms M′ M^2, also pivoted to the axle, the bars O O′ O^2, hinged to the rear ends of the arms, the connecting-bar I′ between them, and the board U, carrying the cultivator-knives, and supported from bar O^2 by standard T^2, and from bar O by standard T, bent over the bar, and carrying the roller t^3, adapted to engage the wave-track on wheel B, substantially as and for the purpose described.

9. In combination with the horizontally-vibrating knife-frame and means for vibrating it, the series of horizontal knives carried by the frame, each provided with a series of teeth or tines projecting from its rear side, substantially as and for the purpose described.

10. In combination with the vibrating knife-frame, and means for vibrating it, the horizontal knives, made sharp on their front sides, having the teeth or tines extending from their rear sides, and provided with the shanks extending upward and attached to the frame, substantially as shown and described.

299,936. CAPSULE-MACHINE. GUSTAV OTTO, Jersey City, N. J., assignor to Robert H. McCutcheon, New York, N. Y. Filed Mar. 13, 1884. (No model.)



Claim.—1. In a capsule-machine, the spindle-carrying frame B, having parallel rods *a a*, combined with the swiveled spindles A A, that are hung in said rods, substantially as described.

2. In a capsule-machine, the spindle-carrying frame B, having parallel rods *a a*, combined with the swiveled spindles A A, that are hung in said rods, and that are provided with the pulley enlargements *d*, substantially as described.

3. In a capsule-machine, the spindle-carrying frame B, having parallel rods *a a*, combined with the swiveled spindles A A, that are hung in said rods, and that are provided with the pulley-enlargements *d*, having circumfential grooves for guiding purposes, as specified.

4. The combination of the endless belt F with the platforms *l*, guide-rails *k*, and pressure-rollers *g*, substantially as and for the purpose described.

5. The combination of the endless belt F with the rollers *g*, springs *j*, platforms *l*, springs *n*, and rail or rails *k*, all arranged, substantially as described, for oiling the ends of spindles A A, that are swiveled in frames B, substantially as described.

6. The combination of the belt F^3 and rail or rails k^3 with the cushioned knives G G, for use on frames B, having swiveled spindles A, substantially as described.

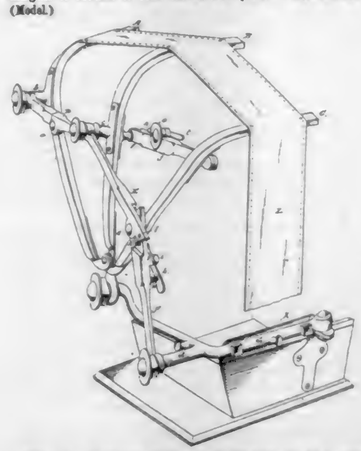
7. The combination of the belt F^3 and rail or rails k^3 with the adjustable cheek-pieces *r r* and with the cushioned knives G G, substantially as described.

8. In a capsule-cutting machine, the knives G G, made sectional, substantially as herein shown and described.

9. The combination of the belt F^3 with the rollers g^3, adjustable roller-frame k^2, rail or rails k^3, sectional cushioned knives G G, and adjustable cheek-pieces *r*, for use on frames B, carrying swiveled spindles A A, substantially as and for the purpose herein shown and described.

10. The combination of the hook *t*, and means, substantially as described, for reciprocatiog it, with the gripping-plates *u* and *w*, and means, substantially as described, for bringing them together, and with the frame B, having the spindles A A, substantially as specified.

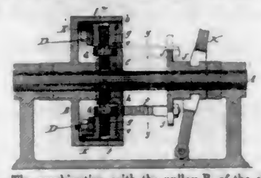
299,937. CARRIAGE-TOP. CHARLES L. PRITCHARD, Dubuque, Iowa, assignor of one-half to John Kuntz, same place. Filed Nov. 26, 1880. (Model.)



Claim.—1. A carriage-brace for the purpose set forth, consisting of the parts E F, pivoted together to break upward, said pivoted ends being provided with holes *l*, and adapted to be opened and closed by means of the lever *h*, having a projection, *k*, and the spring *n*, all constructed, arranged, and operating substantially as described and shown.

2. The combination, with the perforated convex shifting-rail G, of the concave metal strip K, provided with bolts *v v'*, whereby the two are held together, and between which the back quarter-curtain is clamped and held between the said rail and strip without being perforated, substantially as described and shown.

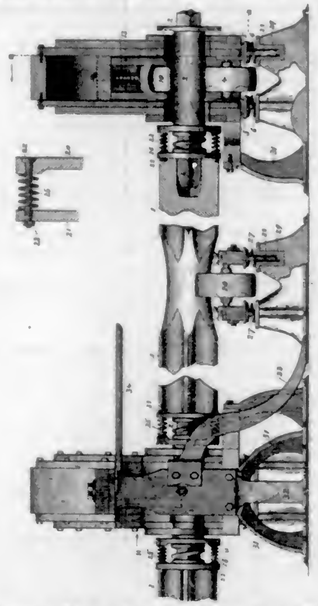
299,938. FRICTION-CLUTCH. THOS. RYAN, Lockport, N. Y., assignor of one-half to William McLean, same place. Filed Mar. 11, 1884. (No model.)



Claim.—The combination, with the pulley B, of the clutch-head C, having guide-lugs D, segments E, provided with stems *a*, sliding in the lugs D, adjusting-screws *g*, extending from the hub *c* of the clutch-head to the segments E, gear-wheels G, secured to the screws *g* between the hub *c* and the lugs D, rack-bars I, meshing with the wheels G, and a movable sleeve, J, to which the rack-bars are attached, substantially as set forth.

299,939. WITHDRAWN.

299,940. SHAFTING AND BEARING. THOMAS SUTTON, Cheboygan, Mich., assignor of one-half to George F. Raynolds, George E. Frost, and William McArdle, all of same place. Filed Apr. 17, 1884. (No model.)



Claim.—1. The shafting constructed, substantially a herein set forth, in sections 1 and interposed journal-sections 2 3, for the purpose set forth.

2. The combination, with the journal-sections 2, of the bearing-rolls 4 and their housings 5, and springs 6, substantially as and for the purpose set forth.

3. The combination, with the journals 3, of the anti-friction rolls 4, 9, and 10, surrounding the said journals, so as to support the same, and provided with springs to yield to sudden shocks or strains and restore the journals to their normal position.

4. The combination, with the journals 3, of the anti-friction bearing-rolls and their housings guided in vertical and horizontal direction, as described, to yield to strains and shocks and restore the journals to normal positions.

5. The combination, with the shaft-sections 1 and journals 2, of collars 20 21 and connecting-bolts 22, as and for the purposes set forth.

6. The combination, with the shaft-sections 1, journals 3, and collars 20 21, of springs 24 25, as and for the purposes set forth.

7. The combination, with the shafting 1 2 3, constructed in sections, as herein described, of bearing-rolls 26 for supporting the centers of the main shaft-sections, as herein shown and described.

299,941. BACK-BAND BUCKLE. ROBERT D. TUCKER, Booneville, Miss., assignor of one-half to Pink Washington McCarley, same place. Filed Dec. 21, 1883. (No model.)



Claim.—In a back-band buckle, the frame A, having recessed lug A', middle bar, B, and teeth C, in combination with hook D, pivoted thereto, substantially as described, and for the purposes set forth.

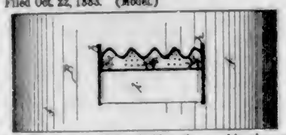
299,942. ART OF CONSTRUCTING SEAMS OF SHEET-METAL VESSELS. FRANCIS A. WALSH, Chicago, Ill. Filed June 11, 1883. (No model.) Patented in Canada Aug. 4, 1883, No. 17,414.



Claim.—1. The improvement in the art of constructing seams which consists in placing within the can-body an end provided with a wall, *i*, whereof a part, *l*, projecting beyond the can-body, is turned down in one or more successive steps, substantially as specified.

2. The improvement in the art of constructing a seam for sheet-metal vessels which consists in placing within the body an end provided with wall *i*, whereof a part, *l*, projects beyond the can-body, and then turning said part outward and down against the can-body, and then turning said part and a part or all of the wall *i* outward and down against the can-body, substantially as specified.

299,943. EMBROIDERY-HOLDER. JONATHAN B. WEST, Rochester, N. Y. Filed Oct. 22, 1883. (Model.)



Claim.—In an embroidery-holder, the combination, with a two-headed spool, A, of an inclosing cylindrical box, B, provided with a flange, *g*, at one end, and with slots *h h* in the rim, through which a portion of the embroidery may be exposed to view, the spool fitting into and forming the heads of the box, substantially as and for the purpose herein specified.

REISSUES.

10,483. SASH-FASTENER. EWELL B. ATTWELL, Leesburg, Va., assignor to Attwell Manufacturing Company, Covington, Ky. Filed Aug. 27, 1883. Original No. 260,271, dated June 27, 1882.



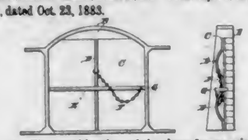
Claim.—1. The combination, as herein set forth, of a pair of individual sash-fastners, F F, and a removable key, K, each of said individual sash-fasteners comprising a spring-projected fastener-dog, *d*, having an orifice, *o*, to receive and coact with the shaft of said key, and supplemental pivots *p*, working in slots *w* in a metallic housing, to support the individual fastener-dogs independently of said key, substantially as specified.

2. In a sash-fastener of the class herein set forth, the combination, with a pair of spring-projected fastener-dogs having flanged heads, of recessed tubular bushings *u* within the socket-holes in the edges of the respective sashes, to prevent accidentally unfastening either sash, as herein specified.

3. In a sash-lock, the combination of the housing and its segmental slots, the spring-projected dog pivoted in said slots, and the removable key engaging the dog and forming the pivot upon which the latter is oscillated to release the window, substantially as described.

4. In combination with the movable window-sashes and the frame therefor, two spring-projected dogs hung in independent housings upon supplemental sustaining-pivots, and a removable key operating upon both dogs, substantially as described.

10,484. COKE-OVEN DOOR AND FRAME THEREFOR. JOHN HERRON and ROBERT T. WRAY, Dunbar, Pa. Filed Apr. 1, 1884. Original No. 237,285, dated Oct. 23, 1883.

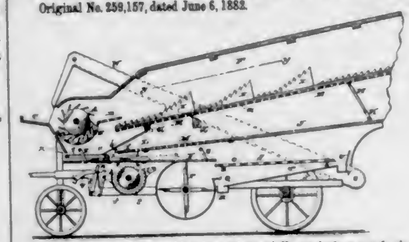


Claim.—1. The combination of the door-frame with a brick filling which is built therein, the air passage or flue between the top of the filling and the top of the frame, and a removable door or plate, C, substantially as shown.

2. The combination of the metallic frame, the brick filling which is built therein, the metallic door C, and an air-inlet through which the air passes into the oven, substantially as described.

3. The door-frame provided with the flanges K, a refractory brick filling which is built inside of the frame, and the door C, substantially as specified.

10,485. COMBINED GRAIN-THRASHER AND CLOVER-SEED HULLER. CHARLES H. HORTON, Wellington, Ohio. Filed Jan. 9, 1884. Original No. 259,157, dated June 6, 1882.



Claim.—1. The combination, substantially as before set forth, of the separator consisting, essentially, of a series of flat perforated strips arranged side by side, each strip being provided with a series of independent triangular straw-carriers having toothed upper edges, the cranks supporting the inner ends of the strips, and oscillating arms supporting the outer ends of said strips, all of the above parts combined and adapted to operate substantially as set forth.

2. The combination, with the vibrating separator, consisting of a series of parallel perforated strips, each provided on its upper face with a series of independent triangular straw-carriers having toothed upper edges, of the cranks supporting the lower inner ends of the strips, the oscillating arms pivoted at their upper ends to the strips and near their lower ends to fixed fulcrums, and the vibrating bottom secured at its rear end to the oscillating arms below their fulcrums and at its forward end to oscillating links.

3. The combination, substantially as before set forth, of the vibrating bottom having a perforated section, the shaker, the fan, the tailings-spout V, the elevator W, the conveyer X, discharging above the perforated section of the vibrating bottom, and means for opening communication between the elevator and the conveyer.

4. The combination, with a concave and an inclined perforated apron forming a continuation of said concave, of the separator consisting of the flat perforated strips, the front ends of which rest under said apron, each strip being provided with a series of independent triangular straw-carriers having toothed upper edges, the cranks supporting the lower ends of the strips, and the oscillating arms supporting the upper ends thereof, substantially as set forth.

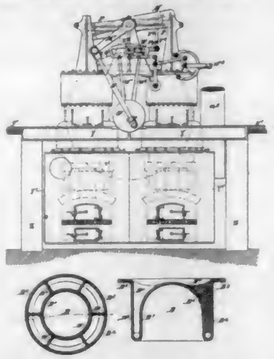
5. The combination, with the separator E and shaker N, of the vibrating bottom J, constructed with a removable perforated section, M, as and for the purpose specified.

6. The combination, with a thrashing-cylinder and concave, of the shaker N, having the ways *u*, the clover-screen *t*, mounted thereon, and

the clover-huller *d f*, substantially as and for the purpose set forth.

7. The combination, with the frame, of a clover-huller, *d f*, adjustably connected therewith, a shaker, N, having an aperture, and a removable section, *s*, for covering said aperture, as shown and described.

10,486. HOT-AIR ENGINE. STEPHEN WILCOX, Brooklyn, N. Y. Filed Apr. 17, 1884. Original No. 289,432, dated Dec. 4, 1883.



Claim.—1. In a hot-air engine, the inner cylinder, C, furnished on both its inner and outer surfaces with means, substantially as described, for circulating a current of water in the upper portion thereof, in combination with the inner piston, D, and annular outer piston, E, as herein specified.

2. In a hot-air engine, the inner cylinder, C, and outer cylinder, G, having means, substantially as described, for circulating a single current of water through both cylinders C and G, in combination with each other and with the inner piston, D, and annular piston E, as herein specified.

3. In a hot-air engine, the cylinder C between the working-piston and the changing-piston, constructed with double cast-metal water-chambers in the upper part, and a double sheet-metal chamber inclosing a non-conductor in the lower part, substantially as herein specified.

4. In a hot-air engine, the cylinder G, having its upper portion of cast metal in two thicknesses, forming a chamber adapted to receive a current of water, and its lower portion of less thickness, faced with a rigid non-conducting material, as herein specified.

5. In a hot-air engine, the inner cylinder, C, and outer cylinder, G, inner piston, D, with its rod *d*, and annular piston E, with its rods *e e*, in combination with each other, and with slides and suitable cross-heads, and with links connecting these cross-heads to cranks mounted oppositely on the shaft O, as herein specified.

6. In a hot-air engine, in combination with the working-piston D and changing-piston E, the regenerator J, mounted in a passage, I, outside of both, substantially as herein specified.

7. In a hot-air engine, the regenerator J and cooler K, in combination with each other, and with the passage I and removable bonnet I', adapted to allow their ready removal, and with the working-piston D and annular piston E, mounted concentrically in suitable cylinders, as herein specified.

8. In a hot-air engine, the changing-cylinder G, having a passage, *g'*, extending around above the heater, and forming a connection between the bottom space, *z*, connected through the thin space in the heater B, and the upper space, *y*, connected through the cylinder or passage H, as herein specified.

9. In a hot-air engine, the working-pistons D D, connected to the same beam, M, in combination with the cylinder C C therefor, and the two annular changing-pistons E E, with the inclosing-cylinders G, concentric to C, and having a connecting-passage, X, between the upper portion of the working-cylinders, for the rapid and easy transfer of the air above the piston, as herein specified.

10. In a hot-air engine, the link W, with its rods W' W², operated as shown, in combination with the block V² and suitable mechanical connections to a changing-piston, E, arranged to serve as herein specified.

11. In a hot-air engine, the combination of two pairs of working-pistons, with their respective working means M' M' and links N N, arranged to act on the shaft O', located between the cylinders G G, as herein specified.

12. The heater B and cylinder C, in combination with each other and with the girders Y, arranged to relieve the heated parts from strain, as herein specified.

13. The cross-girders Y, in combination with the heaters B and cylinders C and their several attachments, and with supporting-walls Z, arranged to present a clear passage between the latter, substantially as herein specified.

14. The partition *y'*, arranged relatively to the furnace and to the working parts of the engine, substantially as herein specified.

15. The webs or stays B', connecting the inner shell, B', with the outer shell, B², of the heater, in combination with a base-casting, H, formed with corresponding divisions, as herein described.

16. In combination with the heater B of a hot-air engine, the air-heating pipes S, conducting through the escaping hot gases the air to support the combustion in the furnace, substantially as herein specified.

17. The economizer S, for returning to the furnace a portion of the heat in the gases escaping therefrom, and the regenerator J, for the alternately absorbing and giving out of heat in the compressed air, in combination with each other and with the working parts of an air-engine, arranged for joint operation as herein specified.

18. In a hot-air engine, the casing Y', inclosing the furnace and making the whole conveniently portable, in combination with means, Y, for supporting the engine by its upper portion, as herein specified.

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DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF
UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF STATE COURTS.

Kentucky Court of Appeals.

AVERY & SONS v. MEIKLE & CO.

Decided March 27, 1883.

1. A trade-mark is a sign or symbol primarily confined, exclusively, to the indication of the origin or ownership of the goods to which it is attached, and it may be composed of any name, device, line, figure, mark, word, letter, numeral, or combination or arrangement of any or all of these, which will serve the sole purpose of a trade-mark, and which no other person can adopt or use with equal truth.
2. Terms which designate merely the name, quality, kind, size, number, or elements of an article, or have become its proper appellation, or that merely describe it or direct the mode of its use, or purely generic or geographical terms, and the necessary and common uses in which the English language and Arabic numerals are employed by the people to express the truth, their ideas and feelings, are common property which all may use, but which none can appropriate exclusively to himself as a trade-mark.
3. A trade-mark becomes the exclusive property of one only when he has, prior to any one else, appropriated and used it to indicate the origin, ownership, and quality of an article to which it is attached. Its value rests on reputation and on its implied guaranty that the article is of a certain quality. Its object is to prevent one person from selling his goods as those of another of established reputation to the injury of that other.
4. When plaintiff shows that he has adopted a legal trade-mark, that it has been infringed, and that actual, probable, or possible damages have or may result from its infringement, he is entitled to relief usually in the form of an injunction and an account of profits.
5. Where no patent is held by the owner of plows, any one may make plows in exact similitude, may brand the name of the manufacturer and the place of the manufacture on such part of the plow as he pleases, taking care so to use the brand as not to deceive the public into the belief that the plow is the manufacture of another.
6. Although certain letters and numerals may have come to indicate to the public the origin or ownership of appellant's plows, as they did not appropriate them by adoption, use, or claim as a part of their trade-mark, they cannot be treated as a part of it simply because they appear capable of serving the same purpose.
7. Courts of equity afford a remedy against the infringement of a trade-mark or of the trade reputation of its owners, on the principle of protecting property, of promoting fair dealing, and of protecting the public. Where a trade-mark itself has been infringed, neither fraud nor the inferior quality of defendant's article need be proved. But where a property right, not amounting to a trade-mark, has been infringed, it is essential to show fraudulent intent. But courts of law require proof of deceit, fraudulent intent, or special damage (unless damage is presumed) in both cases.
8. Where the action is brought to restrain the fraudulent usurpation of plaintiff's trade reputation, plaintiff need not make out a legal title to an exclusive trade-mark, by the usurpation of which defendant has done the wrong. It is enough that defendant sells his goods as those of plaintiff, either by the use of plaintiff's trade-mark or any other means, that such fraudulent sales result or are likely to result in damage to plaintiff. It is the purpose or design of the act that constitutes the wrong, and though a man may use any letters and figures (which are common property) to indicate the size, quality, and description of his goods, yet he cannot do this in such way as to mislead others into the belief that goods made by himself were made by another.
9. If one, with a bad motive, exercises his rights in a lawful and proper way, and injury results, there is damage without legal injury; but if with a bad motive he exercises his rights in an unlawful manner, there is both damage and legal injury.
10. As to what facts constitute infringement of a trade-mark or trade reputation, no rule can be formulated that will embrace every act of infringement, and the original and alleged imitation are of primary importance. The resemblances need not be such as would mislead an expert or could not be easily detected, if each case must depend mainly on itself. But resemblances and differences between the original and the spurious were seen together. It is enough if such resemblances exist as would lead an ordinary purchaser to suppose he was buying the genuine article, and not an imitation. If the differences are only colorable, and there is no reason for the resemblances, except the purpose of deceiving the purchaser of one article into the belief of its being the manufacture of another, the court will presume a fraud was intended.
11. Though the particular combinations of letters and figures used by appellees were not entitled to protection as part of appellants' trade-mark, yet it appearing that appellees copied those combinations, not for the purpose of indicating the size and quality of their plows, but for the purpose of misleading the public into the belief that appellees' plows were of a kind made by appellants, having an established reputation and large sale, *Held*, appellees are liable to appellants for damages resulting from loss of trade in consequence of such copying and to an injunction restraining the further sale of such plows.

APPEAL from Louisville Chancery Court.

Messrs. W. O. & J. L. Dodd, Mr. John Mason Brown, Mr. P. B. Muir, and *Mr. John Marshall* for the appellants.

Mr. W. Lindsay, Mr. Geo. M. Davie, and *Mr. James S. Pirtle* for the appellees.

Opinion of the court by Chief Justice Hargis.

The appellants brought this action to restrain the infringement of their trade-mark and to prevent the fraudulent usurpation of their trade reputation by the appellees, and to compel them to account for resulting profits. The appellants are manufacturers of plows in the city of Louisville. They brand on the right side of the beam their trade-mark, which is composed of a Maltese cross, with the letters "A V E R Y" distributed in its center and arms. Immediately above the cross are the words "Trade Mark," and below it is the word "Copyrighted." To the left of it are the words "B. F. Avery's, Patented," and to its right "Louisville Steel, July 11, 1871." The steel series of their plows are branded on the top and near the rear of the beam "Pony," "AO," "BO," and "CO," and their cast series at the same point with "½," "1," "2," "3," and "8."

Upon the top of the fore part of the beam of each series are stenciled the cautionary words "Keep all taps screwed up." The appellants' trade-mark, which they printed and referred to in their catalogues and described in their advertisements, is composed of the Maltese cross, with the name "A V E R Y" distributed in its arms and center, surrounded by the words "Trade Mark" above and "Copyrighted" below it.

The appellees, who are also engaged in the manufacture of plows in the city of Louisville, dismantled plows of appellants' steel and cast series, and with great accuracy copied every important and ordinarily noticeable part of them. They then began the structure of two series of plows, one steel and the other cast, so much like appellants' that an ordinary person could not tell the one from the other. They also imitated, almost to perfection, the interchangeable metal points of appellants' plows. They branded the steel series "PO," "AO," "BO," "CO." The "PO" was followed by the word "steel," and "Louisville" was placed on top of the beam. Their cast series was branded "½," "1," "2," "3," "8." Upon the top of the front part of the beam of each series were stenciled the cautionary words, "keep all taps screwed up." These letters, numerals, and the words of caution were of the same size and character of type, and placed in precisely the same position on their plows as on those of appellants. The plows were varnished as appellants' were varnished. The resemblance of appellees' plows to those of appellants was complete, the only substantial difference being that the appellees placed on both sides of the beam their trade-mark, which consists of an oblong figure and diamond whose angles project over the lines of the oblong, with the letter "M" in the center of both, and encompassed by the name, "Thos. Meikle & Co." above, and "Louisville, Ky.," below. The appellees held a consultation before they attempted the imitation above described, and after due deliberation and quieting Mr. Meikle's conscience, in the rough but significant language of one member of the firm, who seems to be its guiding spirit, they determined, "come what may, to take the bull by the horns." Then the work of dismantling and imitation began. Soon their newly-dressed and formed series of cast and steel plows were thrown upon the market, and a business of thirty plows per day sprang up to nearly one hundred per day. These increased sales were made to a considerable extent to jobbers, whose names were substituted for appellees' trade-mark and its surroundings, and stenciled on the beams where their trade-mark and name had stood. These jobbers did not pretend to be the originators or manufacturers of the plows, and it appears that many persons have been deceived, and unable to distinguish the imitation from appellants' plows.

In order to make the imitation series the appellees abandoned their brands, "A," "B," "C," "D," and "F," on their cast and the numerals "0," "1," "2," "3," "4," "5," and "6" on their steel plows, which they had been using, and substituted appellants' brands in their stead, placing the letters on the steel and the numerals on the cast series, so as to correspond precisely with appellants' mode of using them.

Whether the conduct of the appellees amounts to an infringement of appellants' trade-mark, or an injury to their legal or equitable rights, is the question to be considered. The object of trade-mark law is to prevent one person from selling his goods as those of another, to the injury of the latter and of the public. It grew out of the philosophy of the general rule that every man should so use his own property and rights as not to injure the property or rights of another, unless some priority of right or emergency exists to justify a necessarily different manner of use. The intermediate instrument of prevention, which the law protects in its office, is called a "trade-mark," which an owner of goods may adopt and use to indicate their origin or ownership, and to distinguish them from goods of a similar nature belonging to somebody else. This right of adoption and use is subject to various limitations and qualifications. A trade-mark is a sign or symbol primarily confined exclusively to the indication of the origin or ownership of the goods to which it may be attached, and it may be composed of any name, device, line, figure, mark, word, letter, numeral, or combination or arrangement of any or all of these, which will serve the sole purpose of a trade-mark, and which no other person can adopt or use with equal truth. Fancy names, whether invented or arbitrary, the names of places, words, where applied to a new process by the inventor; the name of an article, which alone designates its origin or ownership; letters and numerals combined in unusual and peculiar forms, or with other parts composing trade-marks, have been held, under the particular circumstances of the various cases where their exclusive appropriation and use were in question, to be trade-marks or component elements thereof. See *Congress Spring Co.* v. *High Rock Spring Co.*, (45 N. Y., 290;) *Burnett* v. *Phalon*, (3 Keys, 594;) *Marsh* v. *Billings*, (7 Cushing, 322;) *Woodward* v. *Lazar*, (21 California, 444;) *Ford* v. *Foster*, (L. R., 7 Ch., 611;) *Taylor* v. *Carpenter*, (3 Story, 458;) *Davis* v. *Kendall*, (2 R. I., 566,) in which the words "Eureka Shirt," "Persian Thread," "Vegetable Painkiller," "Congress Spring," "Cocoaine," "New Era," "Revere House," "What Cheer House," were held subject to exclusive appropriation as trade-marks.

In the cases of *Wotherspoon* v. *Currie*, (5 H. L., 508,) *McAndrew* v. *Bassett*, (10 Jur., N. S., 550,) *Seixo* v. *Provezende*, (L. R., 1 Ch. Ap., 192,) *Newman* v. *Alvord*, (49 Barb., 588,) the words "Glenfield Starch," "Anatolia Liquorice," "Seixo Wine," "Akron Cement," were protected as trade-marks. For the word "original" as a trade-mark, see *Cocks* v. *Chandler*, (L. R., 11 Eq., 446.) Numerals in the cases of *Boardman* v. *The Meridian Britannia Co.*, (35 Conn., 402,) *Gillott* v. *Esterbrook*, (47 Barb., 455,) were held to be, in connection with the manufacturer's name, a lawful trade-mark.

Browne on Trade-Marks, section 87, says:

> The mark may consist in the name of the manufacturer or the merchant, (provided it be written, printed, branded, or stamped in a mode peculiar to itself,) in a seal, a letter, a cipher, a monogram, or any other sign or symbol that can serve to distinguish the products of one man from those of another. It may be any symbol or emblem, however unmeaning in itself.

Terms which designate merely the name, quality, kind, size, number, or elements of an article, or have become its proper appellation, or that merely describe it, or direct the mode of its use, purely generic and geographical terms, and the necessary and common uses in which the English language and Arabic numerals are employed by the people to express their ideas and feelings and to tell the truth, are common property which all may use, but which none may exclusively appropriate as a trade-mark or acquire as

absolute individual property. Many authorities have been examined, and might be here cited, to establish each clause of this general statement of the law, but it is not necessary to do so. It must not be overlooked, however, in these exclusions, that a trade-mark is indirectly the guaranty of the quality of an article to which it is attached, as well as of its origin and ownership, for in all cases the trade-mark, in indicating the origin by necessary implication, represents the quality of the article, which is the true source of its reputation in the market. There is no abstract right in a trade-mark. It is property only when appropriated and used to indicate the origin or ownership of an article or goods. And its real value consists in the confidence and patronage of the public, secured through its instrumentality in acquainting them with the origin and ownership of an article which thus gains reputation for its superior qualities. Of this reputation its owner cannot be deprived without his consent, either by the use of forbidden means or the illegal employment of things otherwise lawful. When a workman or manufacturer has, by skill, care, and fidelity, manufactured a good article, it becomes of the utmost importance to him that its origin and ownership should be known, and the law points out to him the means and how he may appropriate them to indicate this important fact, and when he adopts and uses them, and his reputation is thereby built up, it is to him the most valuable of property rights. Sound policy which dictates the protection of the public from imposition, the security of the fruits of labor to the laborer, the encouragement of skillful industry, and, above everything, the inculcation of truth and honor in the conduct of trade and commerce, and the requirement that all the contractual relations of life—natural, abstract, and relative—shall be honestly observed, demands that such a reputation, so gained, shall be free from the grasp of piracy and its infringement accorded the safest and best remedy for redress known to the courts of equity. And this is the law of both principle and authority. Therefore the lawful adoption and use of a trade-mark is the invocation of the law applicable to it by the originator or owner of an article for the protection of his reputation as such. When this essential state of facts is shown by a complainant, and that his trade-mark has been infringed, and actual, probable, or possible injurious consequences are or may be the result of the infringement, he is entitled to relief, which is usually granted by injunction and an account of profits.

Having premised these general rules of the law of trade-mark, the field of investigation we shall first explore is, whether the appellants' trade-mark embraces either the word "Pony," the letters "AO," "BO," "CO," or the numerals "½," "1," "2," "3," "8," or the shape and construction of their plows. We will dispose of the last point first. The shape and construction of the plows do not form any part of the trade-mark of the appellants further than their subjection to the use of the mark to indicate their origin and make it necessary to render the trade-mark property, for, as held in *Candee, Swann & Co.* v. *Deer & Co.*, (54 Ill., p. 461,) where no patent is held by the owner of plows, "any one, therefore, has a perfect right to make plows in their exact similitude, even to 'the curve of the mold-board' and 'the tip of the handles'—in the minutest as well as in the most important points—all have a right to manufacture them, no matter where the maker may reside, and has the right to put the name of the place where manufactured, as well as his own name, on such part of the plows as he pleases, taking care, however, so to use the brand as not to deceive the public, so as not to create a belief that the plow is the manufacture of another." Other cases, which express it differently, are to the same effect. *Fairbanks* v. *Jacobus*, 14 Blatchford, 339. The evidence shows that as early as the year 1868 the word "Pony" was adopted and used by Kelley, of Texas, on a small one-horse plow, which he was then engaged in the manufacture of, and that the appellants did not adopt or use it prior to 1871. Hence they have not the merit of first appropriation, which is necessary to the exclusive right to the word "Pony," even as a trade-mark. But where the evidence, as in this case, establishes that the word "Pony" is used to indicate quality and size—to wit, a small steel plow—it cannot for such use become a trade-mark. And it does not matter that "Pony" is not in itself the sign of the idea of size or quality, for if it was substituted for the words which would convey such meaning, and used by appellants for that purpose, they could not have acquired, even by prior adoption, an exclusive right to the use of the word "Pony." *Amoskeag Manufacturing Co.* v. *Spear*, Cox T. M. C., 102. Many years before the appellants adopted "AO," "BO," "CO," it was customary to use letters and combinations of letters to indicate quality, size, and series of plows. "CO" was in use before appellants used it, but whether they used the combination of these letters first or not the evidence shows that they used it to indicate the size and quality of the steel series. As to the numerals "½," "1," "2," "3," "8," they were used by appellants to denote the size and quality of their cast series. This is the evidence, and although the letters and numerals on both series may have come to indicate to the public the origin or ownership of appellants' plows, as they did not appropriate them by adoption, use, or claim as a part of their trade-mark, they cannot be treated as a part of it simply because they appear capable of serving the same purpose.

The printed catalogues and advertisements of the appellants do not claim that these letters or numerals form any part of their trade-mark, yet all through them attention is called to the Maltese cross, and the words in and immediately around it as their trade-mark. Had "AO," "BO," "CO," and "½," "1," "2," "3," and "8," or any of them, formed a part of appellants' trade-mark, it is unreasonable and contrary to human experience to suppose that the fact would have been ignored for years and excluded from their carefully prepared and printed annual catalogues and advertisements. The cautionary words "Keep all taps screwed up" are not the subject of a claim to exclusive use, as has been held and well settled in the cases of *Falkinburg* v. *Lucy*, (Cox, T. M. C., 465-6,) *Gillott* v. *Esterbrook*, (Id., 350,) *Gilman, &c.* v. *Hunnewell, &c.*, (122 Mass., 149,) and because they are words of caution which the appellees may use with equal truth, sincerity, and from a necessity common to the use and handling of plows. The alphabet, English vocabulary, and Arabic numerals are to man, in conveying his thoughts, feelings, and the truth, what air, light, and water are

to him in the enjoyment of his physical being. Neither can be taken from him. They are the common property of mankind in which all have an equal share and character of interest. From these fountains whosoever will may drink, but an exclusive right to do so cannot be acquired by any. And the appellants having drawn from the common fountain, the letters and numerals named cannot claim an exclusive right to them or their use.

Having disposed of the appellants' alleged title to the exclusive use of the letters "AO," "BO," "CO," the word "Pony" and the numerals "¼," "1," "2," "3," "8," we are brought face to face with an exceedingly important question, whose solution will settle the merits of this controversy. It is whether courts of equity will afford a remedy against the invasion of and injury to a trade-mark or the trade reputation of its owners, which he has acquired through the trade-mark itself, or its accompanying *indicia*, which represents only the quality, size, character, description, or caution in the use of the article to which the trade-mark is attached. The ground of jurisdiction is one thing, and the evidence or fact of infringement is another. Courts of equity proceed "on the principle of protecting property alone" and the promotion of honesty and fair dealing. The protection of the public alone is not sufficient ground for the jurisdiction. However, it is an element which enters, and ought to enter, into every case. The property really consists in the exclusive right of a manufacturer or owner to sell his products or goods as his own, and in being protected in the exercise of that right by the exclusion of all others from its enjoyment, either by selling theirs for his, or causing others to do so. It is not necessary to a recovery in equity where the trade-mark itself, in whole or part, has been appropriated, to prove fraud or an inferiority of quality of the article of the defendant. This principle is based on the ground that a trade-mark when in use is property itself. *Edelston* v. *Edelston*, 1 DeG. J. & S., 185. But when the infringement of the property right has been committed by other means than the appropriation of the trade-mark itself, it is essential, even in equity, to show a fraudulent intent, otherwise there could be no safety in the use of those things which are common to all, and which cannot be exclusively appropriated, as to them no legal injury can flow from their innocent, ordinary, or proper use. At law special damage, unless damage is presumed, deceit, or fraudulent intent must be proved in all cases to warrant a recovery. This is not, as we have stated, universally so in equity, but it is common both in law and equity where the infringement is perpetrated by other modes and means than the use of any part of a trade-mark itself. The remedy at law is not adequate in all cases to the protection of this species of property commonly known as "trade reputation," because no injunction can be had against a continuation of the injury, and nothing but nominal recovery unless special damages are shown. *Blofield* v. *Payne*, 4 B. & Ad., 410. The deficiency of the remedy at law has caused the courts of equity to take jurisdiction of this class of cases and extend protection to this great right of property in whose exercise the public are deeply interested, and in whose maintenance the commercial honor and trade integrity of our fair State are profoundly concerned. The ascertainment and explanation of that jurisdiction will be followed by the discussion of the law of infringement and the analysis and application thereto of the facts of this record.

In the rather noted case of the *Leather Cloth Co.* v. *American Leather Cloth Co.*, (House of Lords, reported in Cox, T. M. C., 688,) on which the appellees rely for the remarkable doctrine that no protection can be given unless the appellants show they have a technical trade-mark, all or some part of which has been appropriated and used by the appellees to their injury, the Lord Chancellor reversed the Vice Chancellor because the plaintiff's alleged trade-mark was not a trade-mark, and it contained misrepresentations amounting to a fraud upon the public. In criticising the views of the lower court, the Lord Chancellor stated the doctrine to be—

> First. The goods of one may be sold as the goods of another without giving to that other person a right to complain, unless he sustains, or is likely to sustain, from the wrongful act some pecuniary loss or damage. * * * Second. It is not requisite for the exercise of the jurisdiction there should be fraud or imposition practiced by the defendant at all.

The last proposition was laid down with reference to a trade-mark proper, and is undoubtedly the law. The first proposition is equally sound, and is applicable, whether there is a trade-mark shown to have been dismembered or not, if the goods of one have been intentionally and fraudulently sold as the goods of another, and he has sustained damage, or the former threatens to continue his acts, which the court is bound to conclude will result in damage. This extension of the Lord Chancellor's unnecessarily restricted views is justified by what was said in the House of Lords, on appeal in the same case, by Lords Cranworth, Kingsdown, and the Lord Chancellor himself.

Lord Kingsdown declared it to be the law, and no one disputed it, that the defendants—

> Had no right, directly or indirectly, to represent that the article which they sold was manufactured by Crocketts, or by any person to whom Crocketts had assigned their business or their rights. They had no right to do this either by positive statement or by adopting the trade-mark, * * * or by using a trade-mark so nearly resembling that of plaintiffs as to be calculated to mislead incautious purchasers.

He makes a manifest distinction between making a positive statement and usurping a trade mark as a means of infringement.

Lord Cranworth said that "the Lord Chancellor observes that the ground on which courts of law and courts of equity have interfered in the case of trade-marks has not been well defined, and has not been made to rest on any satisfactory principle;" that he did not think it necessary to go into the question whether the trade-mark, if it could be one, of appellants, as used by them, was entitled to protection, as it was a question of some nicety, for he thought "it clear that there was in this case no infringement." The Lord Chancellor concluded by saying he was satisfied "that I assigned for my decision in the court below a ground narrower than I might have taken as the basis of that judgment," and admitted that he did not "enter into the consideration of the wider view of the subject, which has been so forcibly urged by my noble and learned friends," and concluded that the appellant had no trade-mark at all; that it was nothing more than an advertisement, which had not been substantially imitated by the appellees.

It results from these observations that the grounds of jurisdiction were laid down too narrowly by the Lord Chancellor, and in a manner not necessary to the decision of the case, and that so far from that case contracting the jurisdiction of the courts of equity to the narrow limits of an action at law, or within the bounds prescribed by the instruments with which the wrong may be done, it virtually concedes the jurisdiction to protect the complainants, had they come with clean hands, and shown that the defendants, either directly or indirectly, by positive statement or adoption of a known or rightfully possessed and used trade-mark, represented the article they sold as manufactured by the complainants, and that they had sustained or were likely to sustain damage by reason of the wrongful act.

After repeating the principle that no man has a right to sell his own goods as the goods of another, nor to dress himself in colors and symbols to which he has no exclusive right, and thereby personate another, or represent that he is selling the manufacture of such other, while in reality he is selling his own, the master of the rolls, in *Craft* v. *Day*, (Cox T. M. C., 657,) said:

> The rights which any person may have to the protection of this court does not depend upon any exclusive right which he may be supposed to have to a particular name or to a particular form of words. His right is to be protected against fraud, and fraud may be practiced against him by means of a name, though the person practicing it may have a perfect right to use that name, provided he does not accompany the use of it with such other circumstances as to effect a fraud upon others.

This doctrine was quoted and approved in the case of *Stone* v. *Carlan*, (13 L. R., 360; Cox T. M. C., 116,) where the false pretenses of the defendant are made the basis of the relief, and the badges, symbols, and similar carriages, all of which might have been properly used, as they were not exclusively the property of the complainant, were held to have been so used, under the circumstances of that case, as to amount to fraud, although it is clear that the name of the hotel, "Irving Hotel" or "Irving House," was the only thing among the complainant's signs and symbols that could be treated as exclusively appropriated by him as a trade-mark within the meaning of the law.

So, in the case of *Knott* v. *Morgan*, (2 Keen, 213,) the words "Conveyance Company" and "London Conveyance Company," and other words used by complainants were held to be common property, and therefore not the subject of exclusive right, yet the court said:

> They have a right to call upon this court to restrain the defendant from fraudulently using precisely the same words and devices which they have taken for the purpose of distinguishing their property, and thereby depriving them of the fair profits of their business by attracting custom on the false representation that carriages really the defendant's belong to and are under the management of plaintiff.

What were those words and devices? They were not trade marks, just as "AO," "BO," "CO," "Pony," and "¼," "1," "2," "3," and "8" are not trade marks, yet their combination and use, not to designate the defendants' omnibuses and business, but to imitate the plaintiff's, and thereby attract his custom and take his profits, were held to be illegal.

The case of *Lemoine* v. *Canton* (2 E. D. Smith, 343) was where the complainant had abandoned one trade-mark and adopted another, and a verdict for nominal damages was sustained in his favor against the defendant, who had assumed the discarded trade-mark, and thereby sold his calf-skins as the manufacture of the complainant, the court saying:

> It makes no difference whether that object was effected by counterfeiting the trade-mark which he uses at present or one that he formerly used.

In that case, certainly, title to the trade-mark by which the fraud was committed was not shown, and it was not necessary to show it.

The Supreme Court of the United States used this language in *McLean* v. *Fleming*, (96 U. S., 254:)

> Nor is it necessary, in order to give a right to an injunction, that a specific trade-mark should be infringed; but it is sufficient that the Court is satisfied that there was an intent on the part of the respondent to palm off his goods as the goods of the complainant, and that he persists in so doing after being requested to desist.

The Court, with approval, cites the case of *Woolam* v. *Ratcliff* (1 Hen. & M., 259) in support of their opinion.

Such is the ruling of the Supreme Judicial Court of Massachusetts in the case of *Thompson* v. *Winchester*, (19 Pick., 214.) Thompson invented certain medicines, which he designated "Thompsonian Medicines," and the evidence offered by him to make out his case was to the effect that the defendant had prepared medicines of an inferior quality, and had sold the same as pure Thompsonian medicines, and as and for medicines prepared by plaintiff himself. The court rejected this evidence, and the jury, under instructions, in accord with that ruling, found for defendant; but the supreme court reversed the case, and said "that if the defendant made and sold medicines, calling them 'Thompsonian Medicines,' and sold them, or placed them in the hands of others to sell, as and for medicines made and prepared by the plaintiff, so that persons purchasing the same supposed and believed that they were purchasing the medicines made and prepared by the plaintiff, it was a fraud upon the plaintiff and an injury to his rights, from which the law will presume some damage," citing *Sykes* v. *Sykes*, (3 B. & C., 541,) which is to the same effect. The words "Thompsonian Medicine" had become their proper appellation, and therefore not subject to exclusive appropriation, and the defendant had the right to prepare medicines of an inferior quality and call them by that name, yet he was held responsible for selling his medicines as those of the plaintiff. This case illustrates the rule suggested in the beginning of this opinion—that at law the plaintiff, who has an exclusive right to a trade-mark, has no right to recover where the trade-mark alone has been taken, unless special damages be shown—and that, whether he has a trade-mark proper or not, if, by fraudulent means and with fraudulent intent, the defendant sells his goods as and for those of the plaintiff, the law will presume some damages, and he "will be entitled to recover nominal damages at least, and something more, if he can make it appear that he has sustained more than nominal damages." It is plain, from these authorities, that the damage at law does not grow out of the mere adoption of a trade-mark, but it arises from the fact that sales have been made by defendant of his goods as and for the plaintiff's goods. This results in damages, either by curtailing the amount of plaintiff's sales or substituting inferior goods for his, which injures his reputation. For this damage he has his remedy, because it grows out of a legal injury.

In *Singleton* v. *Bolton* (3 Doug., 293) Lord Mansfield said "that if the defendant had sold a medicine of his own under the plaintiff's name or mark, that would be a fraud for which an action would lie;" but he nonsuited the plaintiff because he and defendant used the name of the original inventor, which had become evidently the proper appellation of the ointment, and because "no evidence was given of the defendant having sold it as if prepared by the plaintiff."

The case of *Morgan, Sons & Co.* v. *Troxell* (Cox Man. T. M. Cas., 414) is important because no trade-mark was there dismembered and the parts appropriated for the accomplishment of the fraud, yet the court granted relief, saying:

> We deem it, then, to be well settled that, to justify the interference by injunction of a court of equity, it is sufficient that there is a fraudulent intention of palming off the defendant's goods as those of the plaintiffs, and that such intention is being carried into execution.

In *Perry* v. *Truefitt* (6 Beavan, 66) Lord Langdale said:

> I think that the principle on which both the courts of law and equity proceed in granting relief and protection in cases of this sort is very well understood. A man is not to sell his own goods under the pretense that they are the goods of another man. He cannot be permitted to practice such a deception nor to use the means which contribute to that end.

In *Singer Manufacturing Co.* v. *Brill* (Superior Court, Cincinnati, Cox Man. T. M. Cas., 409) the judge delivering the opinion said:

> It is competent for one engaged in business to protect that business and the reputation he may acquire by more ways than one, and the law will not allow a man, when called to account for an infringement of an adopted means of protection, to defend by answering that the complainant has still other marks or means whereby to protect himself that he has not interfered with. And accordingly it has been held that 'it will make no difference that the plaintiff has also a trade-mark which has not been taken by the defendant.' (*Braham* v. *Bustard*, 1 Hen. & M., 447.)

The Supreme Court of New York, 1872, in *Cook* v. *Starkweather*, (Cox M. T. M., p. 221,) held—

> That whether the plaintiffs were or were not entitled to the exclusive use of the words "Valley Whisky" or "Old Valley Whisky," which was not clearly established, the course of conduct adopted by the defendants was intended and calculated to deceive, and the plaintiffs were therefore entitled to an injunction.

Kenney v. *Basch* is analyzed by Cox M. T. M., page 364, where it is said:

> The plaintiff being a manufacturer of cigarettes, on which he used a label containing a device of sun's rays, the words "St. James," and symbol "¼," the defendants sold other cigarettes with a label containing the words "St. James Parish Perique Cigarettes," (of which the words "St. James" were much more conspicuous,) and the symbol "¼" in the same style as the plaintiff's, but the labels were in other respects different. Injunction granted to restrain the defendants from using the device of the sun's rays

and also the symbol "½" and words "St. James," alleged to be the plaintiff's trade-marks, on the ground that, whether the plaintiff had or had not an exclusive right in the marks, the defendant had so acted to deceive.

Judge Van Brunt places the jurisdiction on the ground of fraud upon the public, even at the suit of a plaintiff who has not the exclusive right to the use of the words, numerals, or symbols. While we think fraud upon the public may enter into the ground of jurisdiction, it, of itself, in our judgment, is not sufficient, unless some probable or possible injury to the plaintiff is shown. If the plaintiff cannot show that his rights or interests are injured or taken from him, he can have no standing in court, for strictly he represents the public no more than any one else. The confusion which prevails in the argument against the jurisdiction in this case results from assuming that in all cases the complainant must make out a legal title to an exclusive trade-mark by means of which or some part of which the defendant has done the wrong and injury to his rights. The authorities do not sustain this assumption, but, on the contrary, are numerous and strong that the wrong consists in one person fraudulently selling his goods as and for those of another, either by the use of the other's trade-mark or *indicia* or by any means whatever, if such fraudulent practices result or are likely to result in damage to the complainant. In fact, none of the cases at law which we have examined require the plaintiff to prove the existence of a trade-mark strictly and his title thereto in order to recover for the fraudulent sale by another of his goods as those of the plaintiff. There is good reason in support of this principle. Suppose A has earned a great reputation for making and selling plows, which he does not mark at all, but which are known in the market by their perfection in shape and finish, and B makes a plow precisely like it in appearance, but not one-fourth so valuable intrinsically, could B go about, with impunity, for his own gain, to injure A and deceive the public, selling his plows as and for those of A by orally misrepresenting them as A's plows? We are inclined to the view that A would have his action for this deceit and fraud, which would, if not checked, finally break down his reputation for making a good article. This view is not, however, in its full breadth, necessary to the decision of this case, but it illustrates the reason which underlies the well-understood jurisdiction of courts of equity, which they now exercise in preventing the unjust work of deceit, misrepresentation, and fraud by intercepting their gains and restraining the use of their chosen weapons. As the object of the courts of equity is to prevent one man injuring another's rights by selling his goods as those of the other, why not prevent all fraudulent misrepresentation, whether oral, by signs, symbols, trade-marks, labels, words, or figures, by which that wrong is accomplished? The injury is the same, no matter how nor by what means it may be done, and the responsibility should attach when that injury is deliberately and fraudulently committed. This limitation must be observed, that if the means used are such as are common to all or not exclusively appropriated by another, and injury follows which is not the result of design and improper use of those means, no remedy exists. There may be a design in adopting lawful means to absorb another's trade reputation, yet if those means are the common property of all and are used in a lawful manner, and damages ensue, it would be *damnum absque injuria*. But where such means are perverted and so combined and used as to represent the goods of one as the manufacture of another, and for the purpose of selling them as such, there is no room to doubt the power of a court of equity to grant relief. Care should be taken not to interfere with the freedom of trade or to foster monopolies on the one hand, nor to refuse relief in a proper case where the cry of monopoly and interference with trade is deceptive on the other. The fraud is most frequently accomplished by the illegal use of names, forms, words, and numerals which ordinarily belong to the common stock and are not the subject of exclusive appropriation. Instead of employing them in their proper sphere to designate number, size, elements, quality, description, or give directions or caution, they are selected because of the known innocent purposes they generally serve, and combined so as not to represent quality or other particles within the scope of their lawfully-prescribed functions, but to cause the goods or articles to which they are attached to be purchased by the public as the make or manufacture of another, thus violating that great generic rule, which lies at the foundation of all law, that a man must so use his own property as not to injure the property of another. The logic of this position would be conclusive even were it without the support of authority.

Mr. Justice Gray, in *Gilman* v. *Hunnewell*, (122 Mass., 150,) and the master of the rolls, in *Croft* v. *Day*, (7 Bevan, 84,) said that each case of trade-mark, and what is proper to be done in each, depends upon its own circumstances. These observations of those learned judges belong to the necessity of such cases, for were the rules of law applicable to trade marks so fixed and invariable as to try all future cases by the past alone, the wary and cunning would by evasion soon abrogate their efficiency. This suggestion is aptly sustained by the present case, where each particle simulated is the common fund of all for the attainment of the ends they commonly subserve.

The law says you may use anything which is the common property of all, or that cannot be exclusively appropriated, but you must use it to convey the ideas which it commonly expresses and of which it is the accepted sign. You must use it to tell the truth, the whole truth, and nothing but the truth. You cannot, under pretense of exercising a common right of use, and by reason of the fact that the means used represent the quality and size of your goods, so use them that while they perform this simple and innocent purpose apparently of representing quality and size, caution and description, you cause them to do more, to represent your goods as those of another, and, by the seeming fairness which follows the selection of a legal or innocent instrument or means, escape the consequences of an illegal use thereof. This would be stealing the livery of heaven to serve the devil in. This would be perverting the privileges and uses of our language under the pretense of describing one's own to take another's from him. Can such illegal use be made of written or oral language because it is no harm to use that language about matters not foreign to its objects? Quality, size, description, caution, elements, &c., may be indicated or named by the use of the words, letters, and numerals described above. This is the appellee's right, but it is not because the words, letters, and figures do that that he is complained of, for he has the right to use them for those purposes. But the complaint is that these letters and figures have been used not to do this alone, which was rightful, but they have been used for an ulterior purpose. The appellees selected the same letters, the same words, the same numerals, and put them in the same colors and upon the same places on their plows as were used by appellants on their plows. For what? To represent quality and size alone! Who could believe it? Why not take type from a different font? Why not take other numerals that would serve the same purpose better? Why adopt as a number "1," "1," "2," "3," "8?" Why "AO," "BO," "CO," "PO?" No answer can be given except that a man intends the natural consequences of his own act, and the consequences of this act are to take appellant's trade, built up on his reputation, and transfer it to appellees by using that reputation to sell appellees' plows. This departure from the easy and common way of using those letters and figures and the adoption of a troublesome, costly, and painfully-prepared imitation, both of plows and letters, is attempted to be excused on the alleged ground that appellees were making better plows than appellants. This excuse is so transparent a subterfuge to escape the effects of their conduct that it deserves to be mentioned because of its boldness only, and as an illustration of the intent of appellees. Would they take to pieces one of appellants' plows, then make theirs like it, brand them at the same point and in the same way, paint them alike, make the same interchangeable metal points, abandon their old letters and adopt the letters and numerals of defendants, if they were making a better plow, and thus run the risk of confusion with

inferior plows? Who would thus dig a ditch to fall into himself? The eyes of capital, trade, and commerce are too keen not to see and avoid such folly. No man in his senses would commit it, and we cannot believe the appellees did so. If they did not, then the reason assigned by them for this elaborate imitation is false, and we must look for another and true reason, which may be easily found, for it lies upon the surface; it is pointed out by the experience of the race. Those letters and figures on the skillful imitations, unless we deny the evidence of our senses, the plows having been exhibited to us, were used to enable appellees to sell their plows as and for those of the appellants, and thereby injure their trade reputation, lessen their sales, and share their profits and customers. The question must not be confined to what the appellees used, but how and for what purpose they used the *indicia* copied from appellants' plows. If so restricted, the case is plain, for what they used they had the right to use, but the manner in which they used these letters and figures constitutes the wrong. They have used lawful things in an illegal way. Instead of using them to designate quality and size merely, which is allowable, they did not content themselves, but under the pretense of designating quality and size, which the letters and figures really do, they "pressed them into another service" by placing them at points and in positions on their plows that corresponded with the manner of their use by appellants. For this reason the appellant's trade-mark could not perform its legitimate functions; its power of designating their make of plows was lessened, and to that extent their trade, coming to them from their reputation, as evidenced by their trade-mark, was destroyed, and the way opened for appellees to claim that loss as their gain, thus usurping the trade reputation of appellants by the artful manner of using and combining artificial signs common to all as signifying quality and number generally.

Appellees' counsel cite the following text in support of their view: "If through the lawful and proper exercise by one man of his own rights a damage results to another, even though he might have anticipated the result and avoided it," it is *damnum absque injuria*. (Cooley on Torts, 31.) This is sound law; but if he uses his lawful rights and property in an unlawful or improper manner, then, if damage follow, it is damage with injury where he so uses his own as intentionally to injure another. This no man has a right to do, and this is the distinction which appellees' counsel fail to recognize. It is also said that a bad motive may render a bad act worse, but it cannot render a lawful act unlawful. This is also true; for if a man with a bad motive exercises his rights in a lawful and proper way, and injury ensues, it is damage without legal injury; but if he, with a bad motive, exercises his rights in an unlawful manner, and injury is thereby done to another, there is damage and a legal injury. For, instead of exercising his rights in order to their legitimate and full enjoyment, which he may do although it injures another, if he so exercises his rights as not only to enjoy them himself, but to do more, to go beyond and use them in such a manner as to intentionally and fraudulently injure another man's right, it is wrong in principle, condemned by authority, and unsupported by a single analogy, fairly and logically applied. The whole argument of appellees' counsel is based upon the false assumption that a legal injury cannot be done by the improper use of lawful means, and that the very act in question is legal. There is a difference between lawful means and the unlawful use of those means. A bad intent, it is indubitably true, cannot render a legal act worse, but this rule must not be misapplied. A bad intent cannot render legal means or things illegal, nor can it render a legal act worse, but a bad intent does make an illegal act done by the use of legal things a good deal worse. This position of the appellees illustrates the difficulty which courts of equity meet in the enforcement of justice in cases of this character. While the limitation to the exclusive use of the language confines the selfish monopolist to those words, letters, numerals, and symbols which indicate the origin and ownership of his goods, and which no other person can use with like truth, there is a qualification to the manner in which the residue or common stock may be used. No part of it can be diverted from its ordinary functions and perverted to the work of piracy. Though innocent in itself to communicate ideas and represent the product of all labor, its quality, kind, and most minute and general description, they are the most dangerous means with which to misrepresent the goods of one as and for those of another, for it is hard to see the difference at first blush between the lawful and unlawful use of that common stock which it is conceded belongs equally to mankind.

Confounding the legality of the means used with the charge alleged in the bill, we are met with the skillful excuse that a bad motive never renders a legal act worse, and particles which, when properly used for lawful purposes would be harmless, are piled up one after another in such a disconnected way as obscures the effect of their combined power until the innocent instruments, having done the work of invading appellants' trade reputation, are made the defense to their own misuse. But whether arising from the common stock or that which is exclusively appropriated, the use must not be fraudulently abused and the rights of others wrongfully taken from them; hence we say that courts of equity have jurisdiction, no matter what the means may be, if perverted from their true objects, by which one manufacturer represents and sells his goods as and for those of another.

The general rule as to what constitutes infringement is attempted to be laid down in various cases; but it will be found that no rule can be formulated that will anticipate and embrace every act of infringement. So each case must depend mainly upon itself for the rule and proof of this essential prerequisite to recovery. It is not necessary that the resemblance produced should be such as would mislead an expert or such as would not be easily detected if the original and the spurious were seen together. It is enough that such similitude exists as would lead an ordinary purchaser to suppose that he was buying the genuine article, and not an imitation. S. C., 129 Mass., 325.

Although the mark might not deceive if placed side by side with the plaintiffs' mark, it was calculated to obtain for the defendants' goods the same name as that by which the plaintiffs' were known and to deceive an ordinary purchaser who had not an opportunity of comparing the marks. (*Mores* v. *Sargood, Ewen & Co.*, Cox, M. T. C., 636.)

"It is a mistake to suppose that the resemblance must be such as would deceive persons seeing the two trade-marks placed side by side," as was said by Judge Clifford. *Manufacturing Co.* v. *Trainer*, 101 U. S., 64.

In the case of *McAndrews* v. *Bassett* much importance was attached to the fact that the defendant had laid aside the mark he had previously used and took up that of the complainant. The Lord Chancellor said:

The fact of its adoption by the defendants is itself pregnant with proof that they regarded it as a thing desirable to be done. They thenceforth use it in preference to what they previously used, and the reason is clearly to be collected from the letter which was the occasion of the first introduction to them of the mark and the occasion of their adopting it. 10 Jur., N. S., 550; Cox's T. M. Cases, 573.

In every case [says Vice-Chancellor Wood in the *Taylor Persian Thread Case*] the court must ascertain whether the differences are *bona fide*, in order to distinguish the one article from the other; whether the resemblances and the differences are such as naturally arise from the necessities of the case, or whether, on the other hand, the differences are simply colorable, and the resemblances are such as are obviously intended to deceive the purchaser of the one article into the belief of its being the manufacture of another person. Resemblance is a circumstance which is of primary importance for the court to consider, because if the court finds, as it does almost invariably find in such cases as this, that there is no reason for the resemblance, except for the purpose of misleading, it will infer that the resemblance was adopted for the purpose of misleading. *Taylor* v. *Taylor*, 2 Eq. Rep., 290; Cox's M. T. M. Cases, 70.

In *Seixo* v. *Provizende* it was said:

If a purchaser, looking at the article offered to him, would naturally be led, from the mark impressed on it, to suppose it to be the production of the rival manufacturer, and would purchase in that belief, the court considers the use of such a mark to be fraudulent. But I go further. I do not consider the actual physical resemblance of the two marks to be the sole question for consideration. If the goods of a manufacturer have, from a mark or device he has used, become known in the market by a particular name, I think the adoption by a rival trader of any mark which will cause the goods to bear the same name in the market may be as much a violation of the right of that rival as the actual copy of his device. L. R., 1 Chy., 192; Cox's M. T. M. Cases, 146.

Vice-Chancellor Malins said:

The rule of the court is, that a man who has adopted a distinguishing mark has a right to be protected against any other person adopting one sufficiently like it to mislead an unwary public.

In the same case, upon appeal, the Lord Chancellor, in 1872, said:

Though no one particular mark is exactly imitated, the combination is very similar, and likely to deceive. It is true that there is no proof that any one has been deceived, or that the plaintiffs have incurred any loss; but where the similarity is obvious, that is not of importance. *Abbott* v. *Bakers' and Confectioners' Tea Association*, Cox, M. T. C., 213.

In the justly-celebrated opinion of Judge Duer, in the *Amoskeag Man. Co.* v. *Spear*, he said:

In an imitation of the original mark upon an article or goods of the same description, the name of the proprietor may be omitted, another name, that of the imitator himself, may be substituted; but if the peculiar device is copied, and so copied as to manifest a design of misleading the public the omission or variation ought to be wholly disregarded. Its object, we may be certain, was not to communicate the truth, but to escape the penalty of falsehood. A fraud is intended, an unlawful gain is meant to be realized; but it is believed or hoped that an injunction may be avoided and claim for profits or damages be repelled. The fraud, however, if a court of equity is true to its principles, will be suppressed and its fruits be intercepted or restored. My conclusions on this branch of the subject are that an injunction ought to be granted whenever the design of a person who imitates a trade-mark, be his design apparent or proved, is to impose his own goods upon the public as those of the owner of the mark, and the imitation is such that the success of the design is a probable or even possible consequence. *Amoskeag Manufacturing Co.* v. *Spear*, 2 Sand., S. C., 599; Cox T. M. Cases, 95.

"Even if the wholesale buyer is not misled, but the small retailer or the consumer is, the right of action exists," was the language used in *Dixon Crucible Co.* v. *Guggenheim*, (2 Brewster, Penn., 335.) See also *Clark* v. *Clark*, (25 Barb., 76,) and *Brooklyn White Lead Co.* v. *Masury*, (Ibid, 416.)

In the case of *Coats* v. *Holbrook*, Vice-Chancellor Sanford said:

A man is not to sell the goods or manufacture of B under the show of pretense that they are the goods or manufactures of A, who, by superior skill or industry, has established the reputation of his articles in the market. The law will permit no person to practice a deception of that kind, or to use the means which contribute to effect it. He has no right and he will not be allowed to use the names, letters, marks, and other symbols by which he may palm off upon buyers as the manufacture of another the article he is selling, and thereby attract to himself the patronage that, without such deceptive use of such names, &c., would have inured to the benefit of that other person who first got up or was alone accustomed to use such names, marks, letters, or symbols. *Coats* v. *Holbrook*, 2 Sand. Chy. R., 594; Cox's T. M. Cases, 221.

The court said in *Gillott* v. *Esterbrook, supra:*

The design to defraud by manufacturing and packing pens in all respects similar to the plaintiff's, excepting only in the use of the name, appears very plainly. I cannot reason so artificially as to disguise this conclusion from myself.

The language of Lott, Senator, in *Taylor* v. *Carpenter* shall close our quotations on the manner infringements have been made and the means and acts which have been declared to be infringements. He said:

Honest competition relies only on the intrinsic merits of the article brought into market, and does not require a resort to a false or fraudulent device or token. That certainly cannot deserve the appellation which studiously gives to the product of pretended superior skill the name and exact resemblance and imitation of the article with which it professes to compete. A disguise is not usually assumed for an honest object. It is a mark more characteristic of deception and fraud. It defeats the very end and object contemplated by legitimate competition, the choice to the public to select between the articles sold, and operates as a deception and imposition on the dealer. 2 Sand. Chy. Rep., 613; S. C. Cox T. M. Cases, 45.

What is lacking in authority to reach every case of infringement may be easily supplied from the never-failing fountain of justice, where principle finds universal application. What are the facts of this case? The appellees have not used a single letter, figure, or word that belongs to appellants' trade-mark proper, yet by the exact similation of the plow in every perceivable point exposed to an ordinary observer and purchaser, and the use of the same coloring and staining, the same relative position of the letters and figures as employed and used by the appellants, avoiding the literal appropriation of any part of their trade-mark, the appellees have obscured their own and appellants' trade-mark, but at the same time sought to avoid detection and responsibility in doing so, and to cause their plows to be taken for and purchased as those of appellants. Thus by skillful combination of legal particles, taken one at a time and in the aggregate, leaving the mere trade-mark untouched, they have so confused its force and effect as to destroy its office and real efficiency to distinguish the appellants' plows from all others.

1. The appellees laid aside their own letters and numerals, which they commonly used to indicate the size, series, and quality of their plows, and literally took up those of the appellants.

2. They quit lettering cast and figuring steel plows, and reversed that order and adopted the order of use by appellants.

3. They consulted and deliberated before adopting the letters and numerals or imitating the construction of appellants' plows.

4 After the deliberation they so imitated the construction, numerals, and lettering of appellants' plows that nothing but the reading of their trade-mark and close inspection could distinguish the difference.

5 They made large quantities of plows, leaving off their own trade-mark and name, and substituted therefor the names of jobbers, who were well known in the market to be venders and not makers of plows, making it in their hands therefore impossible, without the aid of expert knowledge, to tell the difference between a Meikle and Avery plow, as they both had the same *indicia* and were constructed alike, the maker's name being altogether suppressed.

6. They have employed small salesmen to sell their plows, who place them on the market one-half dollar cheaper than the Avery plow, and so advertise them as to be taken for those of the appellants.

The combined force of this evidence is irresistible. It shows an intentional infringement, and not only possible injury, but such facts from which the law presumes some injury at least to be the necessary consequence. If such infringement as this be not enjoined and the profits resulting from it returned, then trade-mark law will never accomplish its prime object, named in the first sentence of this opinion on that branch of the subject we have discussed. The trade-mark and trade-reputation pirate always undertakes the difficult task of sailing between the Charybdis and Scylla of the law, but he should never be allowed a successful voyage. If, on the one hand, he escapes the rock by not infringing through the instrumentality of the trade-mark itself, he will not, on the other, if courts of equity are true to the principles of their own existence, be allowed a safe passage by the use of any means of deceit or false representations known to the inventive brain of man. Courts of law and equity have finally become possessed of jurisdiction, through the unfolding process of adjudication, ample to protect a trade-mark, which may be used by all to distinguish their goods from others; to prevent the sales of the goods of one as being those of another by means of fraud and misrepresentation in the use of marks, signs, words, numerals, or symbols; to afford redress for such sales of goods which are a misleading imitation of those of another, for whose manufacture they may be sold, where intentional false representations or fraud, from which damage the sales are made by the use of a trade-mark, or direct or indirect, is presumed and its extent may be proven. In all cases, however, the conduct or adopted means of the imitator must be such as does or would probably deceive the ordinary mass of purchasers.

In conclusion, we repeat that this law grows out of the common principle of justice that the rights of each should be so used as not unnecessarily to injure those of others whose skill has made their goods valuable in their reputation that finally compensates them for their enterprise, industry, and fidelity. We are therefore of the opinion that the relief prayed for should have been granted.

The thanks of the court are tendered to the able counsel on both sides of this case for the great assistance they have rendered us in our efforts to arrive at a conclusion in strict obedience to authority and principle.

Wherefore the judgment is reversed and cause remanded for further proceedings consistent with this opinion.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., June 4, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Theodore F. Dewey, of Osborne, Ohio, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of June 10, 1884.

Patents	392	No. 299,944 to No. 300,335, inclusive.	
Designs	16	No. 15,046 to No. 15,061, inclusive.	
Trade-Marks	29	No. 11,227 to No. 11,255, inclusive.	
Labels	10	No. 4,139 to No. 4,148, inclusive.	
Reissues of patents	2	No. 10,487 to No. 10,488, inclusive.	
Total issue	449		

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	2	
Austria-Hungary	1		Holland		
Barbadoes			India		
Belgium			Mexico		
Bermuda			New Zealand		
British Guiana			Norway		
Canada	4		Russia	2	
Chili			Scotland		
Colombia, U. S. of			Switzerland	1	2
Cuba		1	West Indies		
Denmark			Total to citizens of foreign countries	16	4
Ecuador					
England	4				
France	2	1			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2		Nebraska	5	
Arizona Territory			Nevada		
Arkansas			New Hampshire	2	
California	13		New Jersey	19	2
Colorado	4		New Mexico Territ'y		
Connecticut	6	6	New York	75	3
Dakota Territory			North Carolina	2	
Delaware			Ohio	29	
District of Columbia	2	1	Oregon	2	
Florida	1		Pennsylvania	46	2
Georgia	3		Rhode Island	9	
Idaho Territory			South Carolina		
Illinois	37	6	Tennessee	1	
Indiana	16		Texas	4	
Indian Territory			Utah Territory		
Iowa	9		Vermont	2	
Kansas	7		Virginia	3	
Kentucky	5	1	Washington Territ'y		
Louisiana	2		West Virginia	1	
Maine	3		Wisconsin	14	1
Maryland	4	5	Wyoming Territory		
Massachusetts	35	3	United States Army		
Michigan	9		United States Navy		
Minnesota	8	1			
Mississippi	1		Total to citizens of the United States	392	35
Missouri	11	4			
Montana Territory					

DESIGNS.

15,046.—CHURN-FRAME.—*Theodore Dickman* and *John W. Elliott*, Wapakoneta, Ohio. Application filed March 15, 1884. Term of patent 14 years.

15,047.—HANDLE FOR SPOONS OR FORKS.—*Charles Sanford Dikeman*, Newburyport, Mass., assignor to *The Towle Manufacturing Company*, same place. Application filed April 23, 1884. Term of patent 7 years.

15,048.—SPOON-HANDLE.—*Alexander Dominick*, New York, N. Y. Application filed April 25, 1884. Term of patent 7 years.

15,049 and 15,050.—JEWELRY-PIN.—*Theodore W. Foster*, Providence, R. I. Applications filed March 17, 1884. Term of patents 7 years.

15,051.—DIPPER.—*William O. Freeman*, Louisiana, Mo. Application filed June 9, 1883. Term of patent 14 years.

15,052.—PIANO-CASE.—*Anton Gunther*, Toronto, Ontario, Canada. Application filed February 11, 1884. Term of patent 3½ years. Registered in Canada February 19, 1884, No. 4.

15,053.—END FRAME FOR CAR-SEATS.—*Henry S. Hale*, Philadelphia, Pa. Application filed February 14, 1884. Term of patent 14 years.

15,054 to 15,057, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed April 26, 1884. Term of patents 3½ years.

15,058.—WINE-GLASS.—*Gustav Otto*, Hoboken, N. J. Application filed March 22, 1884. Term of patent 3½ years.

15,059.—HEATING-STOVE.—*Andrew S. Phelps*, Chicago, Ill., Application filed November 19, 1883. Term of patent 14 years.

15,060.—PENCIL-CASE OR SIMILAR ARTICLE.—*Edward Todd*, New York, N. Y. Application filed April 12, 1884. Term of patent 7 years.

15,061.—LAMP-FIXTURE.—*Giovanni Sieckenberger*, New York, N. Y. Application filed March 24, 1883. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

11,227.—CORSETS.—*Theodore C. Bates*, Worcester, Mass. Application filed March 22, 1884.
"The arbitrary word 'IRONCLAD.'"

11,228.—CIGARS AND SMOKING AND CHEWING TOBACCO.—*George W. Cochran & Co.*, Washington, D. C. Application filed May 8, 1884.
"The arbitrary word-symbol '1836. THE OLD GUARD. 1884,' in connection with the representation of an armory."

11,229.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed May 6, 1884.
"The word-symbol 'LOOM' and the pictorial representation of a loom."

11,230.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed May 6, 1884.
"The word-symbol 'GOLDFINCH' and the pictorial representation of a goldfinch, which may be used either separately or in connection with each other."

11,231.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed May 7, 1884.
"The word-symbol 'ALLIGATOR' and the pictorial representation of an alligator, which may be used either separately or in connection with each other."

11,232.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed May 7, 1884.
"The word-symbol 'L'ROAD' and the pictorial representation of an elevated railroad."

11,233.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed May 7, 1884.
"The word-symbol 'KING BLUE BEARD' and the pictorial representation of Blue-beard, which may be used separately or in connection with each other."

11,234.—CIGARETTES.—*William S. Kimball & Co.*, Rochester, N. Y. Application filed May 12, 1884.
"The word 'EXCELSIOR.'"

11,235.—TOILET-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed May 8, 1884.
"The arbitrarily-selected word 'EUTOCA.'"

11,236.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed April 10, 1884.
"The word 'ARCADE.'"

11,237.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed April 11, 1884.
"The arbitrarily-selected word 'COSMO.'"

11,238.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed April 21, 1884.
"The words 'OUR UNION.'"

11,239.—SIRUP, SUGAR, AND MOLASSES.—*David Nicholson*, St. Louis, Mo. Application filed March 31, 1884.
"The representation of a bunch of thistles, an eagle, and a lion."

11,240.—CIGARS.—*Rosendo Rendules*, Havana, Cuba. Application filed May 12, 1884.
"The designation 'LA GRATITUD.'"

11,241.—CIGARS AND CIGARETTES.—*Herman Segnitz & Co.*, Milwaukee, Wis. Application filed May 8, 1884.
"The arbitrary words 'ON TOAST.'"

11,242.—BUILDING-STONE.—*The Belknap & Dumesnil Stone Company*, Louisville, Ky. Application filed January 14, 1884.
"The words 'BOWLING GREEN.'"

11,243.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed April 8, 1884.
"The word 'ARGENTA.'"

11,244.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed April 9, 1884.
"The words 'GOLD OF OPHIR.'"

11,245.—BLACK RIBBONS.—*Walter H. Lewis*, New York, N. Y. Application filed March 22, 1884.
"A design composed of a wreath, the arms of Italy and France, and the ribbon and order of the Legion of Honor."

11,246.—FAMILY FLOUR.—*Edmund H. Readshaw*, Danville, N. Y. Application filed March 4, 1884.
"A monogram composed of the letters 'E H R.'"

11,247.—BOLTING-CLOTH FOR MILLING PURPOSES.—*C. Schindler-Escher*, Zurich, Switzerland. Application filed August 4, 1883.
"The representation of a lion standing upright and holding a shield."

11,248.—METALLIC AND PAPER SHELLS FOR BREECH-LOADING FIRE-ARMS.—*Union Metallic Cartridge Company*, Bridgeport, Conn. Application filed April 26, 1884.
"The letters, marks, or characters 'X X.'"

11,249.—SHELLS COMPOSED OF PAPER WITH A METALLIC BASE.—*Union Metallic Cartridge Company*, Bridgeport, Conn. Application filed April 26, 1884.
"The letters 'S. G.'"

11,250.—MATERIAL FOR PLUMPING AND SOFTENING THE UPPERS OF BOOTS AND SHOES.—*Samuel A. White*, Boston, Mass. Application filed March 20, 1884.
"The arbitrary word 'GUMOLIA.'"

11,251.—CARTRIDGES FOR BREECH-LOADING FIRE-ARMS.—*Winchester Repeating Arms Company*, New Haven, Conn. Application filed May 5, 1884.
"The word 'CASSADY.'"

11,252.—CORDIALS AND LIQUORS.—*Les Héritiers de Marie Brizard & Roger, M. B. Glotin, Achard & Glotin*, Bordeaux, France. Application filed March 19, 1884.
"An ornamental border and the signature 'MARIE BRIZARD & ROGER' in fac-simile."

11,253.—BUTTER, CHEESE, AND OTHER DAIRY PRODUCTS.—*Charles E. Marvin* and *Edward A. Cammack*, Rochester, Minn. Application filed March 24, 1884.
"The word 'CRESCENT' and the figures or characters of a crescent and a star."

11,254.—CHERRY BRANDY.—*Edouard Fernod*, Couvet, Switzerland. Application filed December 12, 1883.
"The words 'EDOUARD PERNOD À COUVET,' a white cross on a sixteen-cornered red ground, an ornamental interlacing and border lines, and crown of rays or wave-lines radiating from the central ornamental interlacing lines."

11,255.—PACKAGE-DYES.—*Frank A. Ransom*, Dunellen, N. J. Application filed December 27, 1883.
"The arbitrarily-selected word or term 'RAINBOW.'"

LABELS.

4,139.—Title: "DR. ARNOLD'S MALARIA CURE."—*Calvin M. Arnold*, Harrisburg, Pa. Application filed May 17, 1884.

4,140.—Title: "CALENDULA LOTION."—*C. H. Dalrymple*, Morristown, N. J. Application filed May 19, 1884.

4,141.—Title: "MAY'S DYSPEPSIA CURE."—*J. Mortimer Daniels*, Scranton, Pa. Application filed April 9, 1884.

4,142.—Title: "FIG PASTE."—*Jas. M. Lore & Co.*, Kansas City, Mo. Application filed May 19, 1884.

4,143.—Title: "LYON'S SARSAPARILLA."—*George R. Lyon*, New London, Conn. Application filed April 29, 1884.

4,144.—Title: "LYON'S COUGH SYRUP."—*George R. Lyon*, New London, Conn. Application filed April 29, 1884.

4,145.—Title: "HOP OINTMENT."—*George R. Lyon*, New London, Conn. Application filed May 3, 1884.

4,146.—Title: "MAKER'S COMPOUND VEGETABLE COUGH SYRUP."—*Willis A. Maker*, Worcester, Mass. Application filed April 24, 1884.

4,147.—Title: "ALETRIS CORDIAL."—*Rio Chemical Company*, St. Louis, Mo. Application filed May 19, 1884.

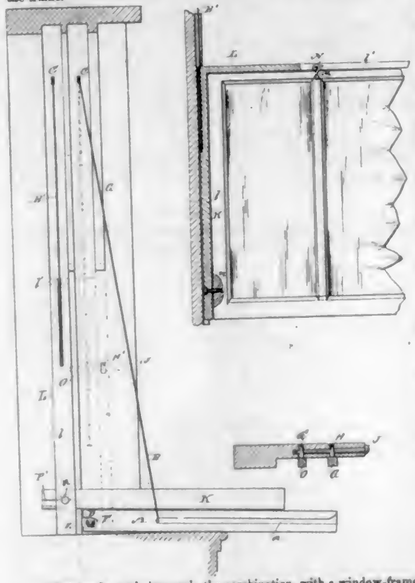
4,148.—Title: "TARRANT'S FIG PASTE."—*Thomas W. Tarrant*, Kansas City, Mo. Application filed May 15, 1884.

PATENTS

GRANTED JUNE 10, 1884.

299,944. WINDOW-SASH. LOUIS L. ARNOLD, Chicago, Ill. Filed July 17, 1883. (No model.)

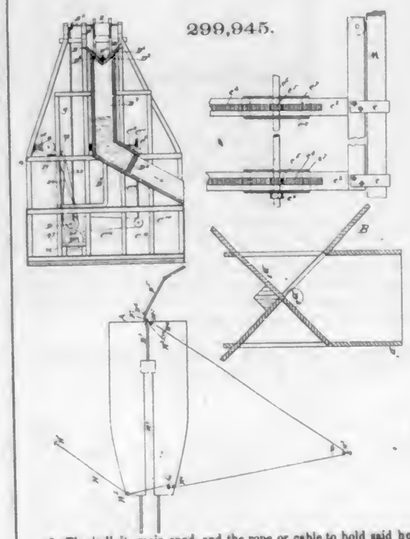
Brief.—A U-frame with sash-cords secured to its side pieces fits a window-frame with removable stop-beads, and carries a sash with a hook to engage the top piece of and recesses to engage pins on the side pieces of the U-frame, enabling the sash to be swung forward and taken out of the frame.



Claim.—In a window-sash, the combination, with a window-frame, sash-cords B', and the removable parting-stripe O, of the sliding frame I, composed of the side pieces, *l*, and top cross-piece, *l'*, and provided with the pintles *n*, and the sash K, having its side bars provided with the recesses P', to receive the pintles *n*, substantially as herein shown and described.

299,945. DREDGE. JOHN A. RALL, Oakland, Cal. Filed Aug. 31, 1883. (No model.)

299,945.



Brief.—A rope for swinging the vessel on a rear main spud runs from an anchor to one side of the vessel around a gipsy on the vessel, around a pulley on an anchor on the other side, around a pulley at the stern, to a capstan. An auxiliary spud is carried by crane-arms sliding in brackets turning on a vertical shaft, and having means to run such arms out or in. Rocks, &c., may be discharged into a well beneath the hopper by opening valves in its bottom instead of through the discharge-pipe; or by placing a cover over the well such matter may be delivered to the side.

Claim.—1. The hull, its main spud, and the rope or cable and anchors to hold it outside the hull, and distant from one end of the latter, said cable being connected with the said hull near its other end, combined with a gipsy to act upon the said rope or cable, and move the said hull from side to side, substantially as described.

2. The hull, its main spud, and the rope or cable to hold said hull, secured at each side of but distant from the hull, the said cable being made to wind freely with relation to one of the anchors by means of a pulley, as described, combined with a capstan mounted on the hull and adapted to hold taut the working end of said rope or cable, substantially as described.

3. The hull, its main spud, the rope or cable H, and anchors H' H², to hold it outside the hull, the pulley connected with the anchor H², and the capstan to receive the unanchored end of the rope or cable, combined with a gipsy to act upon the said rope or cable and swing the hull about the said spud as a center, substantially as described.

4. The hull, its main spud, the rope or cable H, the anchors, and pulley connected with anchor H², combined with the pulley H', located near the main spud, and with a capstan to receive about it the free end of the said rope or cable, combined with means, substantially as described, to act upon said rope or cable and swing the hull about the said spud, substantially as described.

5. The hull, its main spud, the rope or cable, the anchor to fix one end of the rope outside of the hull, the anchor provided with a pulley and located at the opposite side of the hull, the capstan to hold the other end of the said rope, and a gipsy and means to move it positively to act upon and swing the said hull about the said spud, combined with the bucket-chain and buckets thereon, and with means to operate the said chain and buckets, substantially as and for the purposes set forth.

6. The hull, the crane, and the auxiliary spud, and means to lift the said spud, combined with means to slide the crane, substantially as described.

7. The hull, the crane adapted to slide in pivoted guides, and the auxiliary spud, combined with means to slide the said crane, and with means to lift the spud, substantially as described.

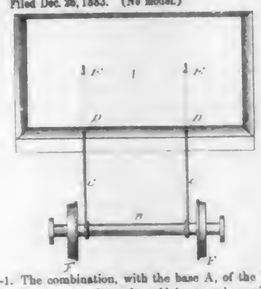
8. The hull and the main spud, combined with a pivoted sliding spud-carrying crane, and with means to operate the said crane, substantially as described.

9. The hull and the elevated hopper provided with a discharge-outlet, combined with valves or gates at the bottom of the hopper, substantially as described.

10. The hull and the elevated hopper provided with the discharge-outlet and the valves or gates at the bottom of the hopper, combined with the well into which the material discharged through the said valves or gates drops, substantially as described.

11. The hull, the elevated hopper provided with the discharge-outlet, and the valves or gates at the bottom of the hopper, combined with the roof-shaped cover against which the material dropped through the said valves or gates may strike, substantially as described.

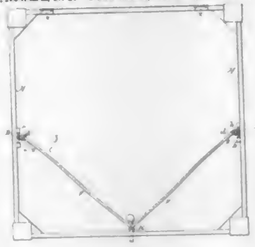
299,946. PAPER-WEIGHT. CHARLES JOHN RUSSELL BALLARD, Orland, Cal. Filed Dec. 26, 1883. (No model.)



Claim.—1. The combination, with the base A, of the spring-arms C C, secured at their inner ends to the said base, and provided at their outer ends with friction-rollers, substantially as specified.

2. In a paper-weight, the combination, with the base A, having the perforations D and E, of the spring-arms C, secured at their inner ends to the said base, and at their outer ends to an axle, B, carrying friction-rollers, substantially as specified.

299,947. SHOW-STAND FOR CLOAKS AND OTHER GOODS. JOB BARDSLEY, Newark, N. J. Filed Oct. 6, 1883. (No model.)





Claim.—1. In a stand for showing cloaks and other goods, the hinged top M, in combination with the frame A, toothed segmental racks D D, carried by opposite sides of the top, the pivotally-secured links *d d*, which encompass the racks and engage the teeth thereof, and lever N and rods F F, for simultaneously moving the links on their bearings, so as to disengage them from the racks when desired.

2. In a show-stand for cloaks and other goods, the hinged top, in combination with the segmental racks D, links *d*, actuating-rods F, and lever N, substantially as set forth.

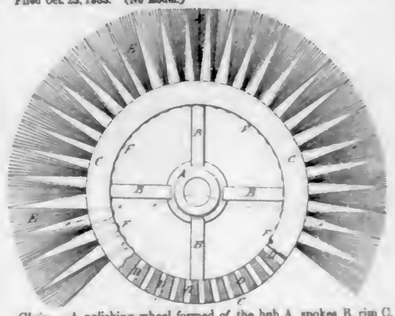
3. The lever N, mounted upon the plate *w*, and having a weighted inner and a hook-shaped outer end, in combination with the rods F, links *d*, segmental racks D, and the top M, substantially as set forth.

4. A show-stand consisting of the cloth-covered top, frame A, with its legs and casters, the racks D, links *d*, rods F, and lever N, substantially as set forth.

5. In a stand for exhibiting cloaks and other goods, the hinged top M, in combination with the frame A, toothed segmental racks D D, links *d d*, having arms *e e* and stops *z z*, the bearings *b b*, and means for simultaneously moving the links on their bearings to free them from the racks when desired.

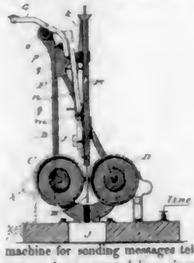
6. In a stand for showing cloaks and other goods, the hinged top M, in combination with the frame A, the toothed segmental racks D D, having projections *i i* on their lower end, the links *d d*, having arms *e e*, the bearings *b b*, and means for simultaneously moving the links on their bearings to free them from the racks when desired.

299,948. POLISHING-WHEEL. HENRY BINTZ, New York, N. Y. Filed Oct. 23, 1883. (No model.)



Claim.—A polishing-wheel formed of the hub A, spokes B, rim C, having radial holes D, and bristle bunches or "knots" E, arranged continuously about said rim, all of said parts being cast in one piece, as and for the purpose specified.

299,949. TELEGRAPHIC TRANSMITTER. NICHOLAS J. BISHOPRICK, Brooklyn, N. Y. Filed Oct. 4, 1883. (No model.)



Claim.—1. A machine for sending messages telegraphically, composed of rotary contact-surfaces arranged in a circuit, previously-prepared fixed telegraphic symbols or characters consisting of a conducting medium expressive of the symbols, or any of them, arranged in a non-conducting body, and means to bring such symbols or characters into operative connection with said rotary surfaces, substantially as and for the purpose described.

2. In a telegraphic transmitter, an insulated grounded rotary conductor and a rotary transmitting-conductor geared therewith, the two rotating in opposite directions, combined with a superposed hopper, and previously-prepared telegraphic symbols arranged therein, and means to bring said symbols to said conductors, one by one, as they are required, to form words, substantially as set forth.

3. The combination, substantially as shown and described, of the rotary contact-surfaces placed in an electric circuit, a hopper containing a series of compartments, non-conducting blocks or type containing electrically-conductive telegraphic symbols or characters arranged in said compartments systematically, a series of levers provided with holding and releasing devices for such blocks or type, and keys corresponding with the symbols in each of said compartments, arranged to operate the levers, as set forth.

4. The improved type for transmitting telegraphic symbols, consisting of a non-conducting body and a conducting medium expressive of such symbol or symbols arranged in the same and extending through on both sides, substantially as shown and described.

299,950. BALANCED SLIDE-VALVE. LOUIS JAMES MASKEY BOYD, Annapolis, Md. Filed Jan. 22, 1884. (No model.)



Claim.—1. The combination, with a slide-valve provided with adjustable bearings, of a piston connected with the valve, and having one side thereof in communication with the exhaust-cavity of the valve and the other side subjected to steam-pressure, and devices for transmitting the motion of the piston to the valve and thereby causing the latter to rest on its adjustable bearings, substantially as set forth.

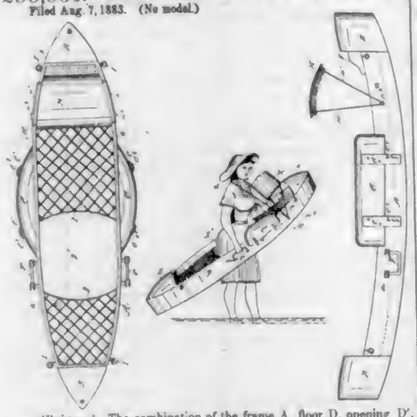
2. The combination, with a slide-valve provided with adjustable rollers, of a piston connected with the valve, one side of the piston being in communication with the exhaust-cavity of the valve and the opposite side exposed to steam-pressure, and devices connecting the piston and roller-frames, substantially as set forth.

3. The combination, with a slide-valve provided with adjustable rollers, of a piston connected with the valve and having one side thereof in communication with the exhaust-cavity of the valve and its opposite side exposed to steam-pressure, and levers connected at one end to the piston, and their opposite ends constructed and arranged to engage the roller-frames and brackets on the valve, substantially as set forth.

4. The combination, with a slide-valve provided with adjustable roller-bearings, of a piston connected with the valve, and levers arranged with their outer ends engaging the roller-frames, and their inner ends connected to a rocking yoke on the piston-stem, substantially as set forth.

5. The combination, with a slide-valve constructed with cavities, each provided with a passage leading to the exhaust-cavity of the valve, and piston fitted to said cavities, of adjustable roller-frames fitted in openings at the corners of the valve, and levers connecting said piston and roller-frames, substantially as set forth.

299,951. HAMMOCK-CANOE. EDWARD H. BROWN, New York, N. Y. Filed Aug. 7, 1883. (No model.)



Claim.—1. The combination of the frame A, floor D, opening D', air-chambers B, adjustable and detachable floats C, handles F, band G, and pillow K, all being constructed substantially as described, and for the purpose set forth.

2. In a combined hammock and canoe, the combination of the frame A, floor D, opening D', pillow K, air-chambers B, adjustable and detachable floats C, and rings I, substantially as and for the purpose set forth.

3. In a combined hammock and canoe, the combination of the frame A, floor D, opening D', pillow K, shade H, mounted on supports H', air-chambers B, adjustable and detachable floats C, rings I, handles F, and band G, all being constructed and adapted to operate substantially as shown and described.

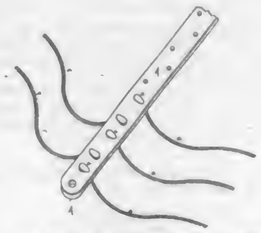
299,952. INSTRUMENT FOR CUTTING FLY-NET STRINGS. RALPH BROWNSON, St. Paul, Minn., assignor of one-half to Peter R. L. Hardenbergh, same place. Filed Nov. 13, 1883. (No model.)

Claim.—1. The base A, having spirally-arranged holes, pins *a*, adapted to be inserted into said holes, and a spiral knife, B, supported by said pins, substantially as described.

2. The combination of a base, A, having spirally-arranged holes, pins *a*, fixed stud *b*, and knife B, substantially as and for the purpose set forth.

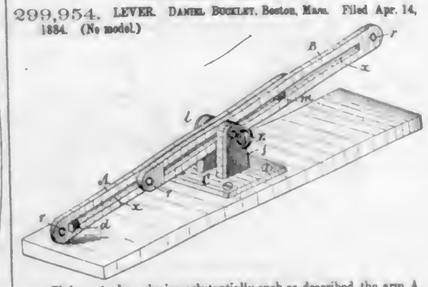
3. The combination of a base, A, having spirally-arranged holes, pins *a*, fixed center stud *b*, and fixed outer stud *d*, whereby one end of the string is formed with an enlarged end, *g*, substantially as and for the purpose specified.

299,953. FLY-NET. RALPH BROWNSON, St. Paul, Minn., assignor of one-half to Peter R. L. Hardenbergh, same place. Filed Nov. 13, 1883. (No model.)



Claim.—In a fly-net, the combination, with the supporting strap or straps, of strings *a a*, having enlarged ends *c c*, substantially as and for the purpose herein specified.

299,954. LEVER. DANIEL BUCKLEY, Boston, Mass. Filed Apr. 14, 1884. (No model.)



Claim.—1. In a device substantially such as described, the arm A, provided with the slot *x* and studs *m d*, and the arm B, provided with the slot *x* and studs *i*, in combination with a clamp for clamping said arms together and journaling or pivoting them, substantially as set forth.

2. In a device substantially such as described, the screw-bolt D, provided with the round elongated head *z* and flattened portion *t*, in combination with the nut E, having the round elongated body *v*, for journaling and clamping the arms A B, substantially as specified.

3. In a device substantially such as described, the standard C, provided with the bolt D and nut E, adapted to clamp and journal the arms A B, substantially as set forth.

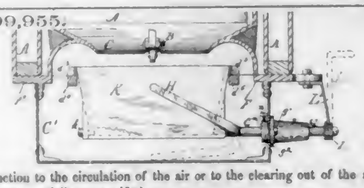
4. The improved extensible lever herein described, the same consisting of the arm A, provided with the slot *x*, studs *d m*, and holes *r*, the arm B, provided with the studs *i*, slot *x*, and holes *r*, the screw-bolt D, having the rounded head *z* and flattened portion *t*, the nut E, having the rounded body *v*, and the support C, provided with the standards *l f*, constructed, combined, and arranged to operate substantially as specified.

5. In a device substantially such as described, the arms A B, provided with the holes *r*, for attaching auxiliary arms to lengthen the lever, substantially as set forth.

299,955. LOCOMOTIVE ASH-PAN. JAMES G. BUTTERFIELD, Sioux City, Iowa. Filed Dec. 24, 1883. (No model.)

Claim.—1. The combination, in a locomotive-boiler, of the grates with the downwardly-curved deflecting-plates, the ash-pit, and the ash-pan inside the same, having flaring sides, and suspended from the frame under said deflecting-plates, the space between the bottom of the ash-pan and the bottom of the ash-pit being free and clear, so as to offer no ob-

299,955.



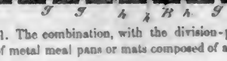
struction to the circulation of the air or to the clearing out of the ash-pit, substantially as specified.

2. The combination of the grates with the downwardly-deflecting plates, ash-pit, ash-pan inside the same, provided with offsets d d' at its corners, and ears d^2 d^3 and supporting-lugs d^4 d^5, projecting from the frame, said lugs d^4 being provided with offsets d^6, and being made long enough to permit the ash-pan to slide back on said offsets sufficiently to allow the front end of said ash-pan to drop off its supporting-lugs in order to remove the same, substantially as specified.

3. The combination of the grates with the deflecting-plates, the ash-pan having flaring sides and suspended beneath the same from the frame, and a crank-shaft projecting out through the side of the ash-pit, and having a bent or curved arm for opening and closing the door of the ash-pan, substantially as specified.

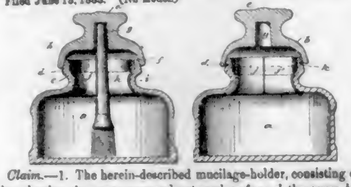
4. The combination of the ash-pan and its door with a crank-shaft provided with a bent or curved arm for opening and closing the door, and a spring-catch adapted to engage with the crank-arm for locking or holding the door closed, substantially as specified.

299,956. TUNING-FORK. SAMUEL BRIERLY BUTTERWORTH, Franklin Falls, N. H. Filed Oct. 24, 1883. (No model.)



Claim.—In combination with the tuning-fork, the scale-bar fastened thereto, and the movable yoke adapted to embrace and slide upon such fork and bar, and provided with means of clamping it to the bar, substantially as set forth.

299,957. MUCILAGE-HOLDER. EDWIN R. CAHOON, Newark, N. J. Filed June 13, 1883. (No model.)



Claim.—1. The herein-described mucilage-holder, consisting of the bottle a, having the cover-engaged external surface, d, the cover b, having the lip f, to engage the said surface to make an air-tight joint, and a wiper, j, in the mouth of the bottle, substantially as shown and specified.

2. In a mucilage-holder, the combination, substantially as shown and described, of the bottle a, having the external surface, d, prepared to make an air-tight joint with the cover, the cover b, having the lip f, to engage such prepared surface, the brush h, fitted inside the cover to enter and be inclosed within the bottle, and the wiper j, standing upright in the mouth of the bottle, as set forth.

3. In a mucilage-holder, the combination, substantially as shown and described, of the vitreous bottle a, having the surface d ground to make a tight joint with the cover, the vitreous cover b, having the ground lip f, to engage such surface d, the brush h, made tight in said cover, the split tube j, standing upright in the mouth of the bottle and extending to or beyond the level of the mouth of the bottle, and constituting a wiper for the brush, as and for the purpose set forth.

4. The herein-described mucilage-holder, adapted to prevent the evaporation of liquid mucilage and the accumulation of hardened gum within and around the mouth thereof, the same consisting of the bottle a, having a ground surface, d, to engage with the cover, and having a wiper, j, in the mouth of said bottle, and a cover, b, inclosing the wiper, and having a ground surface to engage and form an air-tight joint with the ground surface of the bottle, and a depending brush secured to said cover, arranged and operating substantially as set forth.

299,958. OIL-PRESS. WILLIAM P. CALLAHAN, Dayton, Ohio. Filed Mar. 29, 1884. (No model.)



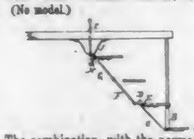
Claim.—1. The combination, with the division-plates or boxes of the oil-press, of metal meal pans or mats composed of a lower perforated plate, an upper perforated and corrugated plate, and interposed interstitial material, whereby an air-chamber is formed between the two plates.

2. The combination, with the division-plates or boxes of an oil-press, of metal meal pans or mats composed of a lower perforated plate, an upper perforated and corrugated plate, and interposed wire-cloth in one or more layers.

3. An oil-press mat or meal-pan composed of a bottom plate whose under side is guttered, whose upper surface is corrugated with perforations from the depressions of the corrugations and opening into the gutters, a superimposed perforated and correspondingly-corrugated sheet-metal plate, and interposed wire-cloth in one or more layers, substantially as described.

4. An oil-press mat or meal-pan composed of a bottom plate whose under side is concave transversely, and provided with gutters or channels whose upper surface is corrugated from side to side with perforations from the depressions of the corrugations and opening into the gutters, which perforations are countersunk or enlarged at their lower ends, a superimposed perforated and correspondingly-corrugated sheet-metal plate, and interposed wire-cloth in one or more layers, substantially as described.

299,959. CAR-STEP. J. HENRY CARVER, Philadelphia, Pa. Filed Mar. 3, 1884. (No model.)



Claim.—1. The combination, with the permanent car-steps, of the folding step A, supported at its sides by the swinging pendants B B and from the rear by a brace or fixture, C, said brace or fixture having its upper end arranged with a hook or catch to engage with a corresponding hook or catch, E, on the rear of the step from which the folding step is hung, substantially as and for the purposes set forth.

2. The combination of the brace C, furnished with a hook or catch, as described, rod F, crank G, crank H, rod I, folding step A, and permanent steps, all arranged substantially as described.

3. The herein-described device for raising and sustaining the rod I, consisting of the spring J, or its equivalent, substantially as set forth.

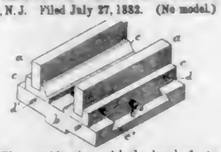
299,960. VENTILATOR FOR WINDOW-SASHES. EDWARD WELLS CRADWICK, Edgartown, Mass. Filed Jan. 21, 1884. (No model.)



Claim.—1. The improved ventilator, substantially as hereinbefore described, consisting of the two perforated plates provided with connection-screws, and with lugs screw-threaded to engage with them, and of the perforated slide-valve, and the screw-threaded knob and shank, arranged and adapted essentially as represented.

2. The ventilator consisting of the two perforated plates provided with connection-screws and with lugs, screw-threaded to engage with them, and of the perforated slide-valve, its spiral spring, and the screw-threaded knob and shank, all adapted and arranged substantially, and to operate as and for the purposes set forth.

299,961. BEARER FOR TRANSFER-PRESSES. HERBERT W. CHAPMAN, Newark, N. J. Filed July 27, 1883. (No model.)



Claim.—1. The combination, with the head of a transfer-press, and the bearers for the transferring-arbor, of a friction-clamp or holder constructed to hold the bearers removably and reversibly in their required position, substantially as herein shown and described.

2. In the head of a transfer-press, the combination, with a suitable base, of parallel holders adjustably secured thereto, and means for clamping or securing the bearers removably to the holders, substantially as set forth.

3. In the head of a transfer-press, the combination of a base, parallel holders movably fitted to a guide therein, ways or bearers secured in the holders, and an adjusting-screw for setting the holders to and from each other, substantially as herein set forth.

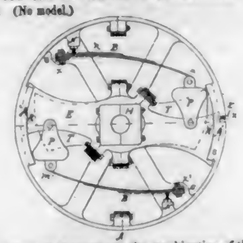
299,962. WRENCH. JOHN COMBS, Rushville, Ohio, assignor of one-half to Charles A. Thomas, same place. Filed Mar. 18, 1884. (No model.)



Claim.—1. A ratchet-wheel wrench consisting of a handle having one of its ends cut out half-round, a pawl set in the side of the handle, a circular block flanged and ratcheted upon its periphery, and provided with a central opening, and a spring-band arranged about the circular block and over the pawl and fixed to the handle, substantially as described, and for the purpose set forth.

2. A ratchet-wheel wrench consisting of a handle having one of its ends cut out half-round, and one of its sides at this end provided with a groove adapted to receive a pawl and hold it from lengthwise and lateral movement, in combination with a circular block flanged and ratcheted upon its periphery, and provided with a central rectangular partitioned opening having grooves upon its longer faces, a follower adapted to work in said opening and grooves, a screw, and screw-threaded sleeve or thumb-nut for operating said follower, and a spring-band whereby the circular block, handle, and pawl are secured and rendered operative, substantially as described.

299,963. CUT-OFF GOVERNOR. HUGO COOK, Lima, Ohio. Filed May 23, 1883. (No model.)



Claim.—1. In a cut-off governor, the combination of the following elements, to wit: a fixed pulley or carrying frame on the main shaft, a reciprocating arm carrying the valve-mover, and an oscillating cam controlled by springs and centrifugal weights and actuating the reciprocating arm, substantially as and for the purpose set forth.

2. In a revolving cut-off governor, the leaf-springs B B, each secured at one end to the wheel and at the other end pivoted to the weight, the oscillating plate or arm E, and the weights pivoted thereto, all combined and operating substantially as stated.

3. In a revolving cut-off governor, the combination of the oscillating arm or plate E with the weights P, pivoted thereto, the leaf-springs, each secured at one end to the wheel and at the other pivoted to the weights, and the set-screws s, placed, as described, so as to bear on the leaf-springs, as set forth.

4. The oscillating cam E, provided with studs r and friction-rollers R, in combination with the reciprocating carrier T, having inclined surfaces a a, arranged and operating substantially as and for the purpose described, in a revolving cut-off governor.

5. In a revolving cut-off governor, an oscillating cam-plate controlling the eccentricity of the valve-mover, provided with means, substantially as described, for arresting and locking the valve-mover in its concentric position upon the shaft, substantially as set forth.

6. In a revolving cut-off governor, a locking-pin, z, arranged in the periphery of the carrying-pulley, in combination with the oscillating cam E, provided with a recess, z', substantially as set forth.

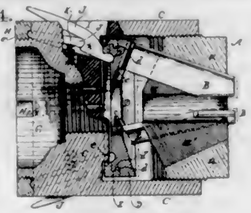
7. In a revolving cut-off governor, a reciprocating carrier controlling the eccentricity of the valve-mover, in combination with means, substantially as described, for adjusting and limiting the normal limit of its reciprocation, substantially as set forth.

299,964. CHUCK. CUSHMAN W. CRARY, Chicago, Ill. Filed Nov. 10, 1883. (No model.)

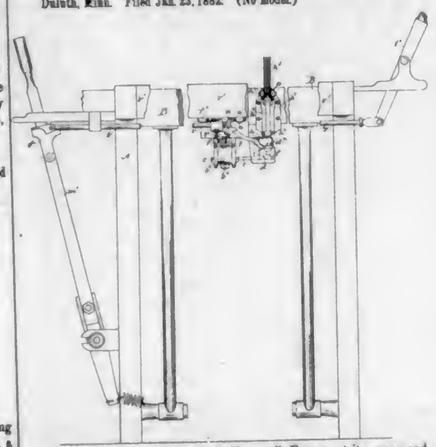
Claim.—1. A chuck in which are combined an internal sliding ring in connection with the jaws, a set of levers, J J, the shell, and an external sliding ring for depressing the said levers, substantially as and for the purposes specified.

2. The combination, in a chuck, of the threaded head A, the sliding rings D and E, constructed and arranged together, substantially as specified, and in connection with the jaws, the pins F F, the springs G G, the external sliding ring L, the shell C, internally threaded to correspond to the threaded head, and a set of levers for advancing the said ring L, substantially as and for the purposes specified.

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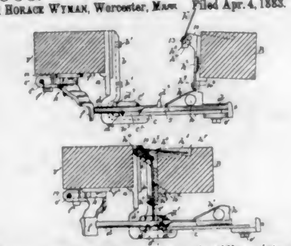


299,965. SMOKE-CONSUMING FURNACE. ALEXANDER CRAWFORD, Duluth, Minn. Filed Jan. 23, 1882. (No model.)



Claim.—A hollow tapering bridge-wall, E, open at its upper and lower ends, said bridge-wall being hollowed out or cut away to form a concave upper end, in order that all parts shall be equidistant from the boiler, and provided at its lower end with a ledge to support one end of the grate, in combination with pipes G' G², communicating with said bridge-wall near its lower end, resting on the grate and extending the entire length of the same, substantially as set forth.

299,966. WEFT STOP-MOTION FOR LOOMS. GEORGE CROMPTON and HORACE WYMAN, Worcester, Mass. Filed Apr. 4, 1883. (No model.)

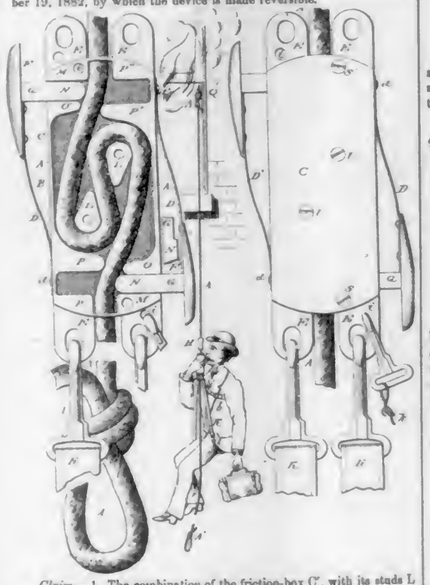


Claim.—1. The breast-beam, the rod-guiding plate provided with a curved or twisted surface, and means to support the said plate from the breast-beam, and the knocking-off rod d, provided with a suitable projection to co-operate with said surface and turn the knocking-off rod about its axis, combined with the lay, an attached plate, a weft-feeler supported by the said plate, and intermediate devices under the control of the weft-feeler to operate the rod d and move it forward when the weft fails, substantially as and for the purpose described.

2. The lay, the weft-feeler, a frame in which it is pivoted, and a drop-rod pivoted directly to the head of the weft-feeler, the knocking-off rod provided with projections d' d^3, and a plate provided with a suitable curved or twisted surface to support, guide, and effect the partial rotation of the said knocking-off rod, and suitable means to support the said plate, combined with the shipper-handle, and suitable intermediate mechanism between it and the knocking-off rod, to operate substantially as described.

299,967. FIRE-ESCAPE. OSCAR F. DAVIS, Topeka, Kans. Filed Aug. 14, 1883. (No model.)

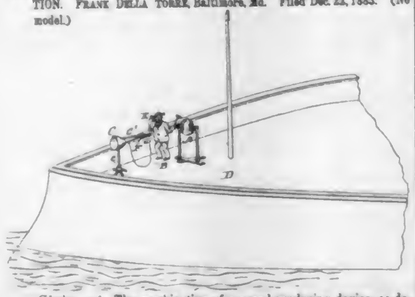
Brief.—An improvement on Patent No. 269,268, dated December 19, 1882, by which the device is made reversible.



Claim.—1. The combination of the friction-box C', with its studs L and its two brakes, N G and N' G', and levers D and D' at each end and upon the opposite edges of the friction-box, all constructed and operating as and for the purpose hereinbefore set forth.

2. The combination of the friction-box C', constructed as hereinbefore described, having a friction device upon both ends and sides, with a rope, A', having a loop and knot, A, at each end, operating as and for the purpose hereinbefore set forth.

299,968. MEANS FOR DISCLOSING OBSTACLES TO NAVIGATION. FRANK DELLA TORRE, Baltimore, Md. Filed Dec. 22, 1883. (No model.)



Claim.—1. The combination of a sound-producing device, as described, and a microphone sound-collecting device pivotally supported and provided with wires for transmitting sound to a suitable receiver, with a compass, substantially as and for the purpose described.

2. The combination of a sound-producing device, as described, a microphone sound-collecting device pivotally supported, a telephonic receiver, and an electric battery, a compass, and a time-piece, all located upon the same vessel and under control of one operator, substantially as and for the purpose described.

299,969. AXLE-NUT. WILLIAM FAHY, Berlin, Wis. Filed Aug. 30, 1883. (Model.)

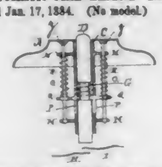
Claim.—1. A washer or plate rigidly affixed to the face of axle-nuts, substantially as and for the purpose specified.

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2. The combination, with the axle-nut A, of the washer or plate B and the rivets or bolts C C, with suitable corresponding holes, D D, for such rivets or bolts, through the nut and plate, substantially as and for the purpose specified.

299,970. AUTOMATIC FIRE-ALARM. HERBERT N. FELTNER, Providence, R. I. Filed Jan. 17, 1884. (No model.)



Claim.—The combination, with the spring-actuated arm D, free to be moved to make electrical contact when desired, of the cross-head Q, operating upon the arm D, the rods *a*, springs R, and soft solder *z*, substantially as set forth, whereby the melting of the solder will cause the contact to be made, substantially as described, and for the purpose specified.

299,971. BOOT-TREE. JOHN W. D. FIFIELD, North Brookfield, Mass. Filed Mar. 29, 1884. (No model.)

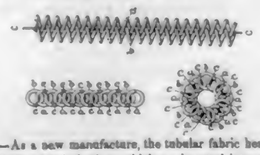


Claim.—1. In a tree, the combination, with the detachable foot-piece, of a detachable sole-piece to operate substantially as and for the purpose described.

2. The foot-piece and detachable sole-piece combined with a locking device to hold the same together after they have been inserted into the fore part of the boot or shoe being treed, substantially as described.

3. In a tree for boots and shoes, a foot-piece provided with a tongue combined with a detachable sole-piece provided with a groove, substantially as described.

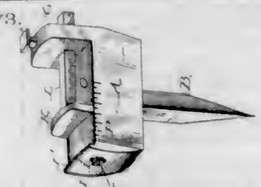
299,972. FABRIC FOR JEWELRY. FRANK FONTREAU, Attleborough, Mass. Filed Jan. 20, 1883. (No model.)



Claim.—As a new manufacture, the tubular fabric hereinbefore described, consisting of spiral wires, which are inserted into each other laterally and connected by tie-wires, the same being circular in transverse section, substantially as set forth.

299,973. HAND-TOOL FOR SHOE-MAKERS. WILLIAM D. FRANK, Elizabethville, Pa. Filed Dec. 14, 1883. (No model.)

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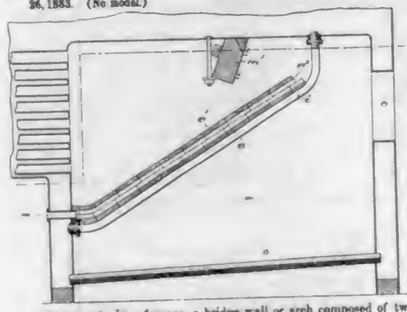


Claim.—1. A shoe-maker's hand-tool consisting of a bed, A, provided with a shank, B, for insertion in the handle, having a seat, D, at one end, with a recess, E, and threaded hole F at the opposite end, a perforated lug, G, cast integral with the bed, and a set-screw, H, in combination with the removably-secured gage K, or its equivalent, and the removably-secured plate I, with its bead I', oblong slot I^2, and lug I^3, substantially as and for the purpose specified.

2. In combination with a shoe-maker's hand-tool, as described, the detachable creasing or beading plate I, having lip and bead I' of the usual construction, and provided with an oblong adjusting-slot, I^2, and a tongue or lug, I^3, fitting the recess E of the bed A, and removably secured thereto by the set-screw J, substantially as and for the purpose set forth.

3. In a shoe-maker's hand-tool, as described, and as a shank and burnishing-iron, the combination of the bed A, gage M, plate I, divisions P, shank N, and screws H and J, as shown, and for the purpose set forth.

299,974. FURNACE. LYMAN P. FRENCH, Boston, Mass. Filed Oct. 26, 1883. (No model.)



Claim.—1. In a furnace, a bridge-wall or arch composed of two independent thin layers of unperforated fire-brick, each layer being of substantially uniform thickness throughout, and the layers being separated from between them, the said chamber communicating with the air outside of the furnace and opening at one end of the layers of brick into the furnace, substantially as described.

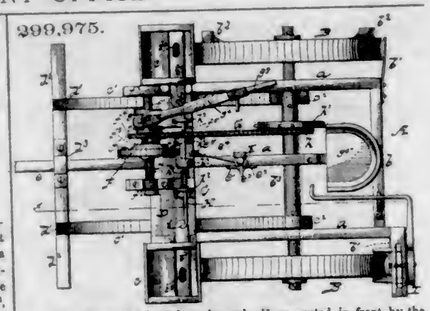
2. The bridge-wall inclined from the lower front wall of the fire-box rearwardly and upwardly, the said wall being composed of two independent layers of bricks, each layer being of substantially uniform thickness, and the two layers being separated by an air space, which opens into the furnace at the upper edge of the wall and communicates with the air external to the furnace at the lower portion of the said wall, substantially as described.

3. The bridge-wall inclined from the lower front wall of the fire-box rearwardly and upwardly, the said wall being composed of two layers of bricks separated by an air-space which opens into the furnace at the upper edge of the wall and communicates with the air at the outside of the furnace at the lower portion of the said wall, combined with the deflecting-wall depending from the crown-sheet in front of the upper edge of the said bridge-wall, the lower edge of the said deflecting-wall being below the level of the upper edge of the said bridge-wall, substantially as described.

4. The bridge-wall extending from the lower front portion of the fire-box below the flues rearwardly and upwardly toward the crown-sheet, the upper edge of the said wall being substantially parallel with the crown-sheet, combined with the deflecting-wall, depending from the crown-sheet in an inclined forward and downward direction, and having its lower edge parallel with and below the level of the upper edge of the bridge-wall, substantially as described.

299,975. CORN-PLANTER. EDWIN GAGER, Norwalk, Ohio. Filed Feb. 27, 1884. (No model.)

Claim.—1. In a corn-planter, the combination, with the frame A, axle b^2, and drive-wheels B B, having concaved peripheries and markers, of the frame C, pivoted to the axle b^2, connected in front by the transverse bar D, and the side bars, *c'* *c'*, extending forward and curved downwardly, and having the cross-bars d^2 d^3, connected to one another by the U-shaped bar d^4, straddling the tongue of the machine, and having the runners or furrow-openers secured to the outer ends of the cam-wheel, the sprocket-wheels having the clutch, the rods H H', provided with the block, the springs upon the rods, the slides, one arranged above the other in the hoppers, the standards h^2 h^3, semicircular rack-standard *e'*, secured to the frame A, lever E, pivoted to this standard, rod *e'*, connected to the lever, and broad transverse bar D, clutch-lever g^2, sprocket-wheels on the axle, and endless chain connecting the same to the sprocket-wheels on the shaft *f'*, the whole operating as herein shown, described, and for the purposes specified.



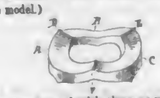
2. In a corn-planter, the combination of the parts herein shown and described, consisting of the main frame A, the axle b^2, carrying the sprocket-wheels, and the drive-wheels, concaved on their periphery, the markers, the standard *e'*, lever E, rod *e'*, the pivoted frame C, constructed as described, and having the transverse bar D, the cam-wheel, clutch, and sprocket-wheels on the shaft *f'*, journaled in the bearings f^2 f^3, rods H H', having the blocks and springs, the feed-slides arranged one above the other in the seed-boxes, standards h^2 h^3, clutch-lever g^2, and brake I, the whole operating as described, and for the purposes specified.

299,976. BOX FOR MATCHES. GEO. H. GALE, Bayonne City, N. J. Filed Mar. 14, 1884. (No model.)



Claim.—A match-box comprising a cover-case, A, a drawer or slide, B, made shorter than the cover-case, and a strip, C, made narrower than the drawer B, hinged at one end to the same, and constructed to rest on and extend beyond the opposite end of the drawer, substantially as and for the purposes set forth.

299,977. WASHER. OWEN F. GARVEY, Pawtucket, R. I. Filed Dec. 13, 1883. (No model.)



Claim.—A washer formed with three or more concaved sections on its bearing-surfaces, the said sections being united by sharp points, as D E F, substantially as set forth.

299,978. SPRING-MOTOR. GEORGE F. GODLEY, Philadelphia, Pa. Filed Feb. 28, 1884. (No model.)

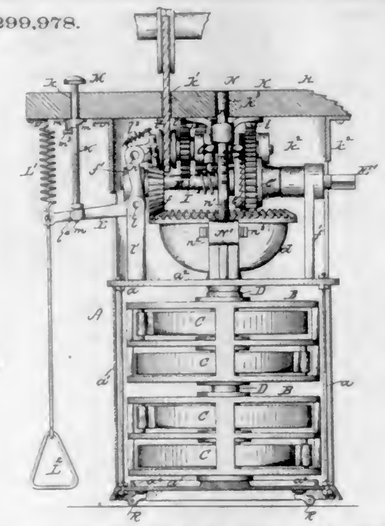
Claim.—1. In a spring-motor having horizontal shaft E with wheel *e'*, the bracket G, having a train of wheels, I, and horizontally located adjoining said shaft, substantially as and for the purpose set forth.

2. A spring-motor having a winding and driving shaft, E, and a bracket, G, having multiplying-wheels I, and arranged at right angles to and above said shaft, substantially as shown and described.

3. In a spring-motor, a top frame-plate, a^2, having bearings for shaft E, and supports *g* for bracket G, having wheels I, substantially as shown and described.

4. In a spring-motor, the bracket G, having train of multiplying-wheels I, the end shaft of which is provided with driving or transmitting mechanism, substantially as shown and described.

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5. In a spring-motor, the bracket G, having a train of wheels, I, the end wheel, i^2, of which is adapted to transmit the power of the motor and serve as a brake-wheel, substantially as shown and described.

6. A spring-motor having an end or last transmitting wheel or gear, which forms part of the brake for the motor, substantially as shown and described.

7. A spring-motor provided with a graduated-surface brake, substantially as and for the purpose set forth.

8. A spring-motor provided with a brake-shoe, and means for varying or graduating its surface-contact, substantially as and for the purpose set forth.

9. A spring-motor having a brake-shoe which is normally in engagement or braking-contact, and mechanism attached to said shoe to vary or graduate the extent of its braking-surface, substantially as shown and described.

10. A spring-motor having a brake-shoe, actuating-spring and lever therefor, and means for graduating the surface of frictional contact of said shoe, substantially as shown and described.

11. A spring-motor having a self-lubricating brake-shoe, substantially as set forth.

12. A spring-motor having a brake-shoe packed with plumbago or other lubricant, substantially as and for the purpose set forth.

13. In a spring-motor, the combination of wheel i^2 and brake-shoe H, having retracting-spring l^3, lever L, spring L', and mechanism for moving said lever, as and for the purpose set forth.

14. A spring-motor having a brake-shoe, with operating-lever and means for automatically locking said lever in its adjusted position, substantially as and for the purpose set forth.

15. A spring-motor having a brake which is adapted to be released by hand or foot pressure, substantially as shown and described.

16. A spring-motor having a brake-shoe and lever provided with a sliding or rotating push-rod, substantially as and for the purpose set forth.

17. In a spring-motor, the combination, with a brake-lever, of a push-rod having mechanism for locking it and said lever in varying positions, substantially as and for the purpose set forth.

18. In a spring-motor, the combination of brake-lever L, spring L', and push-rod M, having pin m^3 and inclined surface m^2, substantially as shown and described.

19. A spring-motor winding mechanism having a visual signal, substantially as shown and described.

20. A spring-motor having its winding mechanism in gear with a visual or audible signal, substantially as and for the purpose set forth.

21. In a spring-motor, the combination of wheel *d*, having lug *d'*, the wheel n^3, rod *n*, and bracket N', substantially as and for the purpose set forth.

22. In a spring-motor, the combination of wheel *d*, having lug *d'*, the wheel n^3, rod *n* with lugs n^4, bracket N', and alarm O, substantially as and for the purpose set forth.

23. A spring-motor having sectional mandrels with recessed ends and separable supporting-pins D^6, substantially as and for the purpose set forth.

24. A spring-motor having sectional mandrels with recesses D^5 in their ends, oil-ducts D^4, washers D^7, and rounded-end pins or supports D^6, substantially as shown and described.

25. A spring for motors having an S-shaped inner end, substantially as shown and described, for effecting a tangential engagement with the mandrel of the motor, as set forth.

26. In a spring-motor, the combination of mandrel D, having a tangentially-arranged S-shaped vertical slot, and springs C, having correspondingly-shaped inner ends, substantially as and for the purpose set forth.

27. In a spring-motor, a mandrel having tangentially-arranged irregular slots, and springs having inner ends shaped to conform to the mandrel-slots, substantially as shown and described.

28. A spring-motor provided with springs of different grade of temper, substantially as described.

29. In coiling motor-springs, the combination of the coiled metal spring with a handle of asbestus, as and for the purpose set forth.

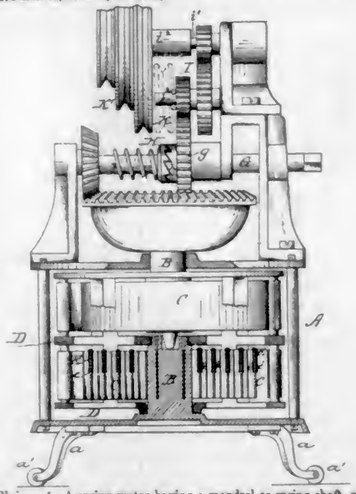
30. A spring-motor having a casing for its springs and a cap or cover for its winding and driving gear, substantially as shown and described.

31. In combination with a spring-motor, the detachable cap K, as and for the purpose set forth.

32. In a spring-motor, the combination of cylindrical frame *a*, having a top plate, a^2, with case or cover K, and bottom plate, a^3, having rollers or casters R, substantially as shown, and for the purpose set forth.

33. A spring-motor having gear-wheels the webs of which have perforations *s*, filled with a packing of rubber or elastic material, substantially as shown and described.

299,979. SPRING-MOTOR. GEORGE F. GODLEY, Philadelphia, Pa. Filed Mar. 24, 1884. (No model.)



Claim.—1. A spring-motor having a mandrel or spring-shaft, provided with axial slots for connection with the inner ends of nests of intercoiled volute or band springs, substantially as and for the purpose set forth.

2. A spring-motor having a mandrel, a cage, and two or more volute springs, forming a nest of intercoiled springs arranged in the same or substantially the same plane, and having inner and outer detachable end connections with said mandrel and cage, substantially as shown and described.

3. A spring-motor having two or more volute or band springs located in or substantially in the same plane, and provided with opposite detachable end connections, substantially as shown and described.

4. A spring-motor having a sectional mandrel, a revolving cage, and two or more volute or band springs, forming a nest of intercoiled springs, substantially as shown and described.

5. A spring-motor having a sectional shaft or mandrel, a revolving cage, and nests of band or volute springs, provided with independent and opposing end connections, substantially as shown and described.

6. In a spring-motor, the elastic blocks E, substantially as and for the purpose set forth.

7. A spring-motor having the coils of its springs provided with elastic blocks E, substantially as and for the purpose set forth.

8. The method herein described of increasing the capacity of the

springs of a motor and avoiding friction between the coils of the springs, which consists of interposing a compressible or a resilient body between the coils of the spring at suitable intervals throughout its length, substantially as set forth.

9. A spring-motor having on its winding or driving shaft a clutch the parts of which have noiselessly acting or working contact-faces, substantially as shown and described.

10. In a spring-motor, the combination, with shaft G, of the clutch H, having flexible teeth-facings h', substantially as and for the purpose set forth.

11. A spring-motor having a series of multiplying or power-transmitting shafts, and a changeable pulley, K', adapted to be applied to any of said shafts, substantially as and for the purpose set forth.

12. A spring-motor having multiplying-gearing I, with shafts extended at i^3, as and for the purpose set forth.

13. A spring-motor cage composed of oblong, radial, or diametrical plates having end fastening-bolts and central mandrel-openings, substantially as and for the purpose set forth.

14. A cage for spring-motors, and comprising oblong bars or plates *d d*, having end supports, *l*, and central mandrel-openings, substantially as shown and described.

15. The cage D, composed of curved plates *d*, having end supports, *l*, and mandrel-openings, substantially as shown and described.

16. The cage D, having two apartments and end supports, *l*, and two or more springs in each apartment, and having outer end connections with said supports, substantially as shown and described.

17. In a spring-motor, the cage D, having different apartments, in combination with two or more springs in each said apartment, and having end connections with the cage, substantially as shown, and for the purpose set forth.

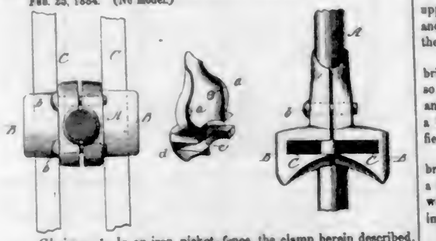
18. A spring-motor comprising a mandrel and a revolving cage, provided with nests of intercoiled band or volute springs, substantially as and for the purpose set forth.

19. In a spring-motor, the combination of revolving cage D, composed of plates *d* and supports *l*, and the nests of volute springs C, substantially as shown and described.

20. A spring-motor having a sectional mandrel, provided with nests of intercoiled volute springs, and located one above the other, substantially as shown and described.

21. In a spring-motor, a cage composed of plates *d* and supports *l*, for the reception of band-springs, substantially as and for the purpose set forth.

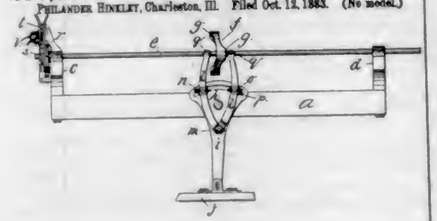
299,980. IRON FENCE. MARSELIUS HIGBORN, Chicago, Ill. Filed Feb. 25, 1884. (No model.)



Claim.—1. In an iron picket-fence, the clamp herein described, consisting of the duplicate parts B B, each having the slot *d* and holes *a a*, and having its face *c* made hollow to receive and embrace the picket, substantially as and for the purpose specified.

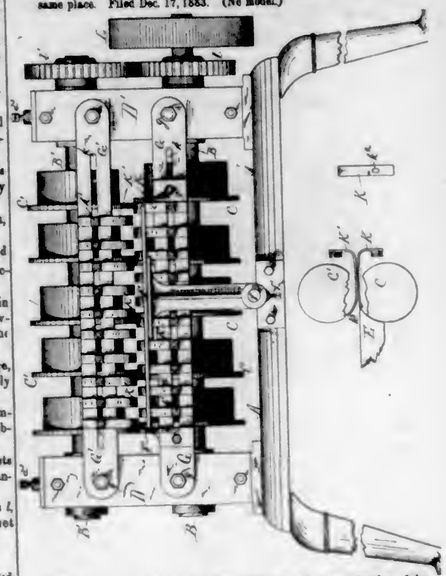
2. The combination, in an iron picket-fence, of the clamp, consisting of the duplicate parts B B, each having the slot *d*, the hollow face *c*, and holes *a a*, the pickets A A, and parallel side rails, C C, arranged opposite to each other, with an intervening space to receive said pickets, said rails being secured at either end to suitable posts, in manner substantially as and for the purposes specified.

299,981. CHECK-ROWING ATTACHMENT FOR SEED-PLANTERS. PHILANDER HINKLEY, Charleston, Ill. Filed Oct. 12, 1883. (No model.)



Claim.—In a check-rowing attachment for seeding-machines, the combination of cam-disk *f* and vibrating lever *i*, having arms *l l* pivoted thereto and adjustable thereon, thereby forming an adjustable forked extension of said lever, substantially as and for the purpose specified.

299,982. SHEET-METAL-CUTTING MACHINE. JOHN G. HODGSON, Chicago, Ill., assignor to Edwin Norton and Oliver W. Norton, both of same place. Filed Dec. 17, 1883. (No model.)



Claim.—1. In a sheet-metal-slitting machine, the combination of the upper and lower rotary cutters with bridges or guides extending under and between the cutters, so as to support the sheet at the point where the cutting is being done, substantially as specified.

2. The combination of the upper and lower rotary cutters with bridges extending through the machine under and between the cutters, so as to support the sheet at the point where the cutting is being done and strip the slitted blanks from the cutters as they issue therefrom, and a feed-table provided with a guide on one side, substantially as specified.

3. The combination of the upper and lower rotary cutters with bridges extending through the machine under and between the cutters, a feed-table provided with a guide on its side, and a receiving-table, whereby the sheets are held and supported in the same plane while passing through the machine, substantially as specified.

4. The combination of the upper and lower rotary cutters with spring-bridges extending through the machine under and between the cutters, substantially as specified.

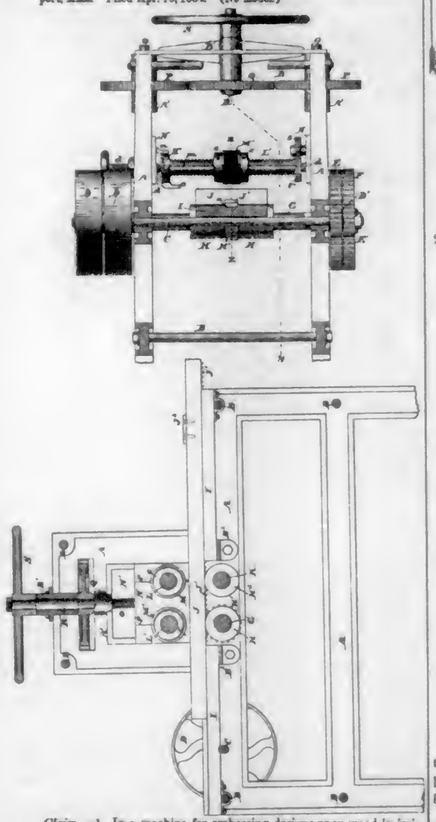
5. The combination, with the upper and lower rotary cutters, of the slotted bars G G' and bridges K K', secured to said slotted bars, and extending through the machine under and between the cutters, substantially as specified.

299,983. PAPER FOR BOILER-COVERING. DANIEL L. HUGHES, Milwaukee, Wis. Filed Aug. 24, 1883. (No specimens.)



Claim.—The method of making paper and cloth non-combustible for steam-pipes, consisting, first, in saturating the same with silicate; second, coating the same when dry with a compound formed of black oxide of magnesia, two parts; zinc-white, two parts; silicate soda, four parts; linseed-oil, one part; and, third, coating the covering when dry with silicate soda, all substantially as set forth.

299,984. WOOD ORNAMENTATION. JOHN P. JAMESON, Cambridgeport, Mass. Filed Apr. 16, 1884. (No model.)



Claim.—1. In a machine for embossing designs upon wood in imitation of carving, two die-rolls connected together by gears and arranged to revolve in unison and to act upon the surface to be ornamented in succession, and provided the one with cutting-knives to outline the design by cutting the fibers of the wood, and the other with projecting surfaces adapted to depress certain portions of the wood bounded by said outlines, substantially as described.

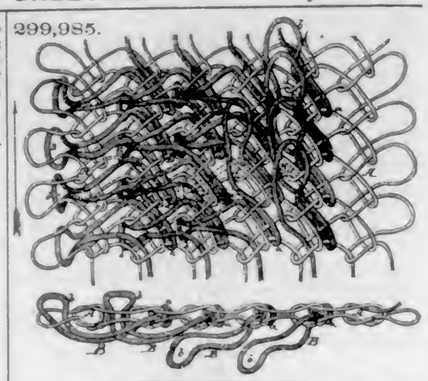
2. In combination with a moving table or bed carrying the stop to be ornamented, the die-roll M, provided with the cutting-knives *h*, adapted to cut the fibers of the wood to outline thereon the design, and the die-roll M', provided with the projecting surfaces *i* and *j*, all arranged and adapted to operate substantially as and for the purposes described.

3. The combination of the die-roll M or M', adjustable around the shaft L or L', provided with the groove *m*, the collar T, provided with the index-fingers *n* and *o* and the set-screw *l*, and the block N, provided with the line *p*, all arranged and adapted to operate substantially as described.

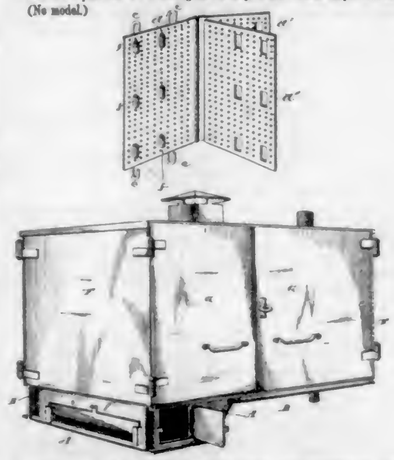
299,985. FABRIC FOR TRIMMINGS. WARREN P. JENNINGS, Brooklyn, N. Y. Filed July 23, 1883. (Model.)

Claim.—The fabric A, having the purling-loops B, fastened at the ends *a* to the ground fabric, while the ends *b* are tacked through the interstices of the ground fabric, but capable of being drawn out of said interstices, substantially as herein shown and described.

299,985.



299,986. FRUIT-EVAPORATOR. ABNER M. JERVIS, Jonesborough, assignor of two-thirds to Robert H. Dungan, Madison L. Peoples, and Landon C. Peoples, all of Washington County, Tenn. Filed Sept. 13, 1883. (No model.)



Claim.—1. In a fruit-tray for evaporators, the combination, with two hinged leaves, one of which is provided with hooks, and a leaf interposed between the hinged leaves, of devices for locking the leaves together, substantially as set forth.

2. In a fruit-tray for evaporators, the combination, with two perforated leaves hinged together, hooks secured to the opposite ends of one of the said leaves, and a perforated leaf interposed between the hinged leaves, of devices for locking the leaves together.

3. In a fruit-tray for evaporators, the combination, with the perforated leaves, one of which is provided with bolt or rod keepers, of bolts or rods adapted to be passed through the keepers, substantially as set forth.

4. The combination, with a suitable heater, of the removable standards and end walls, and doors secured to the end walls.

5. The combination, with a suitable heater, of standards, end walls secured to the standards, and doors secured to the end walls.

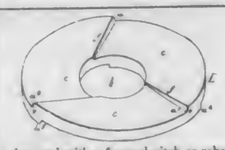
6. The combination, with a suitable heater, an oven, and the removable standards C, provided at their upper ends with perforations, of the transverse rods D, seated in the perforations of the standards, and the tray-supporting rods E, resting on the transverse rods, and provided with bent ends, substantially as set forth.

299,987. NUT-WASHER. WILLIAM A. JORDAN, New Orleans, La. Filed Feb. 18, 1884. (Model.)

Claim.—1. The nut-washer L, constructed with inclines c and catches a a' a^2 on one face side, and with reversely-set but like inclines c' and catches a^3 a^4 a^5 on the opposite face side, substantially as described.

2. The nut-washer L, provided with reversely-set but like-constructed catches on both of its face sides, made with a tapered and bev-

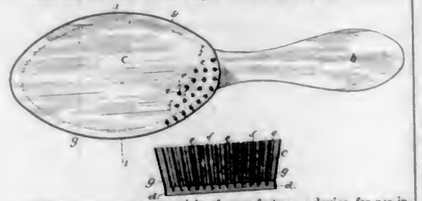
299,987.



eled or sloping edge, and with a forward pitch or rake, substantially as and for the purpose described.

3. The nut-washer L, provided with catches, as a a' a^2, and inclines c on one of its face sides, and with reversely-set but like-constructed catches, as a^3 a^4 a^5, and inclines c' on its opposite face side, in combination with the nut B and bolt B', substantially as and for the purpose described.

299,988. MANUFACTURE OF BRUSHES. FREDERICK J. KALDENBERG, New York, N. Y. Filed Sept. 24, 1883. (No model.)



Claim.—1. As a new article of manufacture, a device for use in drilling brush-blanks, consisting of a block adapted to be secured to said blank, and provided with a series of perforations corresponding to the holes required to be made in said blank, as and for the purpose set forth.

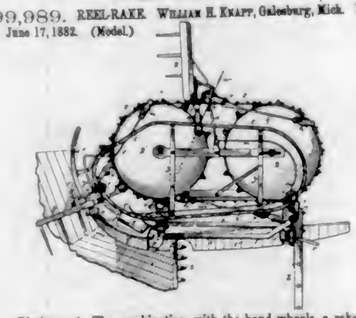
2. A guide-block for use in drilling brush-blanks, formed of metal, and provided with perforations for receiving the drill, the said block being recessed at the bottom to receive the brush-blank, as and for the purpose set forth.

3. A guide-block for use in drilling brushes, composed of soft metal, and having tubes of steel or equivalent hard metal embedded therein, as set forth.

4. The method herein described for constructing a guide-block for use in boring the holes in the backs of brushes, which consists in first inserting metal pins into the cavities, then inclosing the pins by metal tubes, and finally filling up the interstices between such tubes with molten lead, as set forth.

5. The perforated guide-block herein described, consisting of the outer band of metal, *g*, and tubes *f* of steel to receive the drill, the body of the block being formed up of soft metal in a molten state, as and for the purpose set forth.

299,989. REEL-RAKE. WILLIAM H. KNAPP, Galesburg, Mich. Filed June 17, 1882. (Model.)

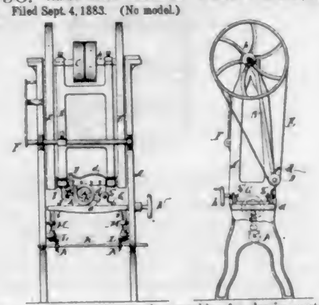


Claim.—1. The combination, with the band-wheels, a rake-band and rake, and a cam guide-rod, located and adapted as set forth, of a rake-support consisting of the friction-rollers and a bar composed of two parts swiveled together, one end of said swiveled bar being jointedly connected with the rake-head, and the other end supporting the friction-rollers, the latter adapted to play upon opposite and different sides of the guide-rod during the transit of the rake around the band-wheels, all substantially as specified and shown.

2. The device for both unlocking and turning the rake, consisting of the trip-plate in combination with the yielding gate connected therewith, both of said parts constructed and adapted to operate substantially as set forth.

3. In a reel-rake, the combination, with band-wheels located at an angle to a horizontal plane, and a cam guide-rod located substantially in the position to said band-wheels shown, of a rake-band, rakes, rake draw-bars, and rake-supports adapted to engage and play upon said guide-rod during the transit of the rakes, all substantially as specified.

299,990. CHAIR-SEAT MACHINE. WILLIAM F. LAMSON, Detroit, Mich. Filed Sept. 4, 1883. (No model.)



Claim.—1. The combination, in a machine for shaping seats, of a rocking table for holding the work, a frame carrying cutters, mechanism for moving the frame back and forth to cause the cutters to traverse the work, and devices connecting the moving frame with the table for rocking the latter as the frame moves back and forth.

2. In a machine for shaping wooden seats, the combination, with an oscillating frame provided with suitable cutters, of a tilting table, and mechanism for operating said cutters and for causing said cutters to traverse the work, substantially as described.

3. In a machine for shaping wooden seats, the combination, with an oscillating pendulum-frame provided with suitable cutters, of a tilting table, and mechanism for operating said cutters and for causing the cutters to traverse the work, said frame connected with said table by means of a carrier, I, the construction being such that the table will be tilted to correspond with the movement of the oscillating frame, substantially as described.

4. The combination, with a suitable fixed frame, of an oscillating pendulum-frame provided at its free end with a shaft having cutters attached thereto, an adjustable table, *a*, and tilting table G, located thereon, and adapted to be tilted to conform to the movement of the oscillating frame as the cutters traverse the work, and mechanism for driving said cutters and for causing the oscillating frame to traverse the work, substantially as described.

5. The combination, with a fixed frame, of a table, *a*, mechanism by which it may be adjusted, a tilting table secured to said table *a* by suitable pivotal bearings, an oscillating pendulum-frame provided with suitable bearings in said fixed frame, and connected with the tilting table by suitable carriers, said oscillating frame provided with rotary cutters and mechanism for operating the same, and means for causing the rotary cutters to traverse the work, the construction being such that the cut of the knives will be equalized and the table made to conform to the swing of the pendulum, substantially as described.

6. In a machine for shaping seats, the combination of a tilting table for holding the work, a frame carrying cutters, mechanism for moving the frame back and forth to cause the cutters to traverse the work, and means for continuously tilting the table by the movement of the frame carrying the cutters, substantially as described.

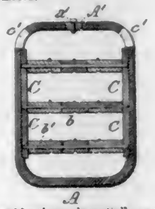
299,991. MINING-DRILL AND METHOD OF FORMING POWDER-CHAMBERS IN ROCK, &c. WILLIAM H. LYTLE, Montezuma, Colo. Filed July 20, 1883. (No model.)



Claim.—1. An expansible rock-drill consisting of a solid or tubular shank or stock and two or more flexible cutters provided with teeth or sharp edges across their bottoms, and adapted to be operated independently to make a bore in a rock, and also in combination with a wedge or cone shaped expander to enlarge the diameter of a bore, in the manner and for the purposes set forth.

2. The above-described method of forming a powder-chamber in a rock or a subterranean chamber in any solid strata in the earth, which mode or method consists in first sinking a bore of equal diameter, and then withdrawing the drill and placing a wedge or cone shaped drill-expander loosely upon the bottom of the bore, and operating a reciprocating drill having flexible or expansible points or cutters over and around the cone-shaped expander, substantially as shown and specified.

299,992. CONDUIT FOR TELEGRAPH-WIRES. WILLIAM MAGNER, Philadelphia, Pa., assignor of one-half to John M. Doyle, same place. Filed Apr. 27, 1883. (No model.)



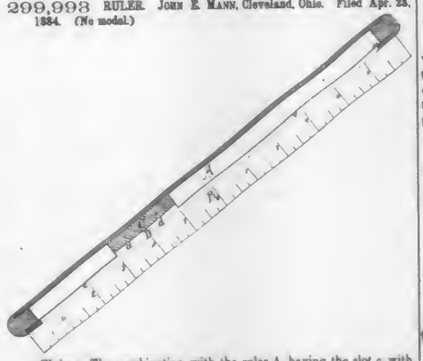
Claim.—1. The combination, substantially as set forth, of a conduit or casing and a series of wire or cable supports, each resting upon standards fitting in grooves in the sides of the conduit.

2. The combination, substantially as set forth, of a conduit or casing having vertical grooves or recesses on its sides, a series of sectional standards fitting in said grooves or recesses, and a series of shafts, each carrying a roller or rollers, said shafts being arranged vertically one above another, and each being retained in position by the standards which support the shaft next above it.

3. The combination, substantially as set forth, of a conduit or casing having vertical internal grooves or recesses, a series of standards fitting in said recesses and supporting a series of roller-shafts, a series of openings each giving access to one of said grooves, a series of caps or covers closing said openings, and a longitudinal opening or slot and cover for the introduction and removal of wires or cables.

4. The combination, substantially as set forth, of an elbow or quarter-turn conduit, a series of vertical guide-rollers arranged at or across the line of the turn, and a series of horizontal supporting-rollers arranged at either side of said line.

299,993. RULER. JOHN E. MANN, Cleveland, Ohio. Filed Apr. 23, 1884. (No model.)



Claim.—The combination, with the ruler A, having the slot c, with beveled edge *a*, of the blade B, having notches *b b'*, and the extension D, provided with spurs *d d*, substantially as described.

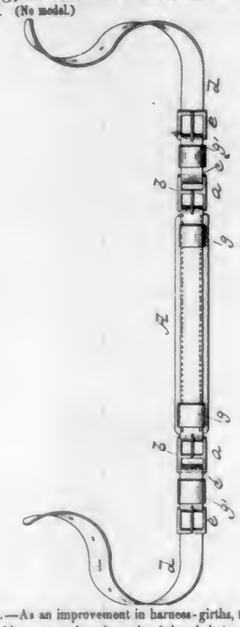
299,994. WOODEN-SOLED BOOT. SAMUEL MCCULLOUGH, Toronto, Ontario, Canada, assignor to Thomas Kennedy, Jr., Henry Charles Fortier, and William Henry Best, all of same place. Filed Jan. 2, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a shoe provided with a metal binding around the sole, covered with a double strip of leather, with the rounded edge of said double strip uppermost, to give a beaded appearance to the shoe, substantially as described.

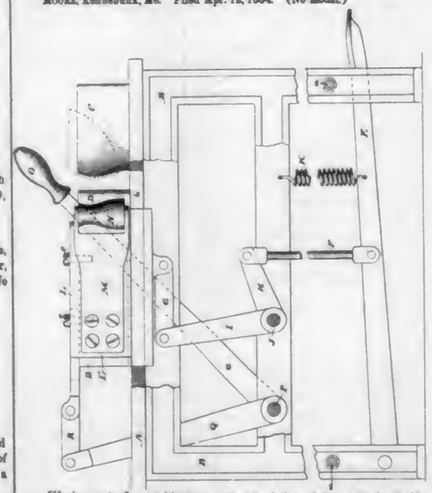
2. In a boot having a wooden sole lasted to the upper, the shank C, made of leather or other flexible material, and having a flange, *a*, formed on its front end, in combination with the band E, provided with the flange *e*, arranged to bind the shank C to the sole B, substantially as and for the purpose specified.

299,995. HARNESS-GIRTH. JAS. MCGUIRE, Benson, Vt. Filed Oct. 20, 1883. (No model.)



Claim.—As an improvement in harness-girths, the combination, with the buckle *a*, secured to the ends of the girth A and provided with the cross-bar *c*, of the thill-straps *d*, one end secured to said cross-bar *c*, and the buckle *e*, the free ends of the straps *d* adapted to pass around the thills, the whole constructed and arranged as shown, described, and for the purposes specified.

299,996. MACHINE FOR SHAPING HEEL-STIFFENERS. GEO. F. MOORE, Kennebunk, Me. Filed Apr. 12, 1884. (No model.)

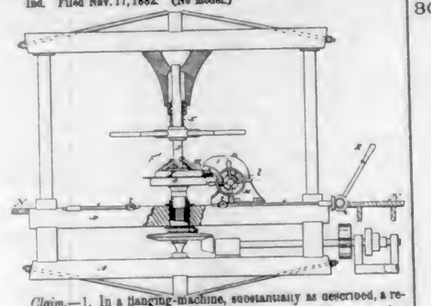


Claim.—1. In combination with a heel-shaped former and a mold adapted to fit and inclose the rear portion of said former and clamp the blank thereto, said former and mold being arranged to be reciprocated toward and from each other, a device adapted to turn a flange upon the stiffener and press it hard upon the former, and a pair of pressure-surfaces curved longitudinally to fit the vertical curves of the sides of the former and adapted to be moved toward and from each other and the former, and to press and hold the blank to the former at or near the point where the flange-turner acts upon the blank to turn the flange, substantially as described.

2. In a machine for shaping heel-stiffeners, the combination of a heel-shaped former, a reciprocating plunger provided with a mold or recess in its front end to fit and inclose the rear portion of the former, a reciprocating flange-turner, and a pair of yielding pressure-surfaces curved longitudinally to conform to the vertical curves of the sides of the former, arranged to be moved with said flange-turner and adapted to press and hold the blank to the former at or near the point where the flange-turner acts upon the blank to turn the flange, substantially as and for the purposes described.

3. In a machine for shaping heel-stiffeners, the combination of the former C, the reciprocating plunger D, provided in its front end with a mold or recess to fit or inclose the rear portion of said former, the reciprocating plate L, provided with the V-shaped notch L', the springs M M, and the rolls N N, all arranged and adapted to operate substantially as described.

299,997. FLANGING-MACHINE. MATTHEW R. MOORE, Indianapolis, Ind. Filed Nov. 17, 1882. (No model.)



Claim.—1. In a flanging-machine, substantially as described, a revolving former mounted on an arbor, as B, a clamping-follower having a universal joint to accommodate inequalities in the sheet to be acted upon, and a flanging-roller, *m*, with means, as the devices indicated by K I L, for changing it from a horizontal to a vertical position in proximity to the edge of the former, all combined and operating substantially as and for the purposes set forth.

2. In combination with the arbors B and D and with interchangeable formers C, the follower F, having a universal joint with D, to accommodate inequalities in the sheet to be acted upon, the hand-wheel E, toothed rocking piece K, carrying roller *m* and pinion *l*, and hand-wheel L, as and for the purposes set forth.

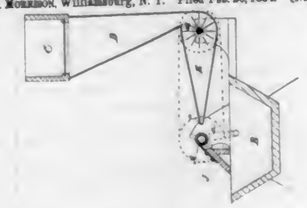
3. In combination with the arbor B, carrying a former, C, a centering device composed of adjustable arms, and suitable mechanical connections controlled by a lever for operating inward simultaneously to bring the said arms against the blank to be centered upon the former, as set forth.

4. The arms P, having anti-friction rollers, in combination with means, as the devices indicated by O Q R, for operating said arms simultaneously and equally, and with the arbor B, having power connections and interchangeable formers, as C, of different sizes, all arranged and operating as and for the purposes set forth.

5. In combination with the former C, post H, sliding piece I, and toothed rocking piece K, the flanging-roller *m*, hung upon a stud rigid with said piece K, and means, as pinions *l* and hand-wheel L, for moving said roller at will, as set forth.

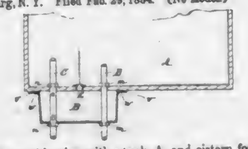
6. In combination with the follower F, as described, the pivoted hooks F', adapted by their gravity to lie back upon the follower, or to fall under the flange of the finished head to remove the same from the former, as specified.

299,998. MACHINE FOR MAKING CORES FOR CASTINGS. JOHN G. MORRISON, Williamsburg, N. Y. Filed Feb. 26, 1884. (No model.)



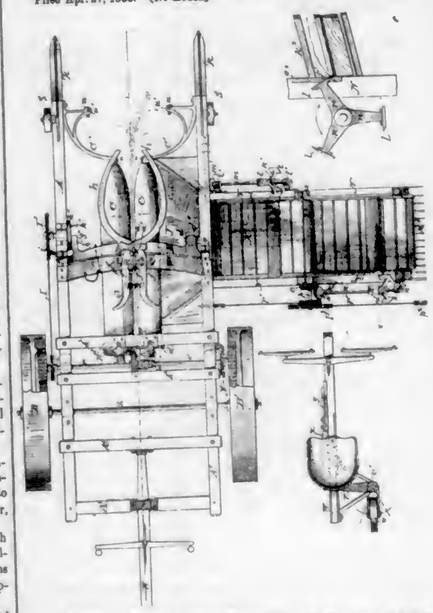
Claim.—The combination, with the revolving core-bar A and stationary cutter J, of the revolving wing-wheel G and funnel-shaped horizontal pipe E, with contracted mouth or opening *n*, substantially as and for the purpose described.

299,999. CISTERN FOR SERVICE-BOXES. JOHN G. MORRISON, Williamsburg, N. Y. Filed Feb. 29, 1884. (No model.)



Claim.—In combination with a tank, A, and cistern for service-box B, provided with the usual pipes, C and D, with nuts *n* and *m*, the rib or projection *v*, cast on the tank A, and surrounding the flange *w* of the cistern B, in the manner and for the purpose substantially as described.

300,000. CORN-HARVESTER. SOLOMON F. MOUCK, Empire, Colo. Filed Apr. 27, 1883. (No model.)



Claim.—1. The rocking arch H, provided with the arms *g''* and *d'* and journals *g g*.

2. The combination of the lifting-tongs *h h*, the latch *f'*, the catch *f''*, the hinged spring *f³*, the spring-bar *a'*, the bolt *a*, and the spring *i²*.

3. The combination, in a corn-harvester, of the rocking arch H, having arms *g''* and *d'*, and the lifting-tongs *h h*, secured thereto by means of the bolt *a*.

4. In a corn-harvester, the combination of the rocking arch H, having arm *g''*, the crank-wheel *h''*, the pin *h'*, the shaft I', the band I, and the band-pulleys *i i*.

5. The combination, in a corn-harvester, of the lifting-tongs *h h*, the rollers *f f*, and arch F, as specified.

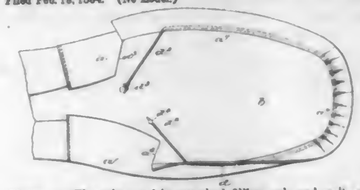
6. In a corn-harvester, the combination of the rollers C C, the bearings *c c*, the brackets C' C', the hangers D D, the cog-wheels *d d*, the bevel-gear wheels E E', and the shaft *e*, all operating as described.

7. In a corn-harvester, the combination of the side rail, A', frames N N', elevator K, roller *l²*, shaft *m''*, bevel-gearing *m'*, brackets *l' l'*, shafts *m*, arms *n'*, knives *l*, cross-board *k²*, and slide-board *n⁴*, as described.

8. In a corn-harvester, the combination of the frames N N', elevator K', drive-shaft *p*, bevel-gear O, hangers *n''*, shaft *n²*, arms *n'*, knives *n*, and board *k²*, as described.

9. In a corn-harvester, the combination, with the elevators for conveying the ears, of the knives for cutting off the ends of the ears.

300,001. BOOT OR SHOE. LAWRENCE F. NORMAN, Boston, Mass. Filed Feb. 18, 1884. (No model.)

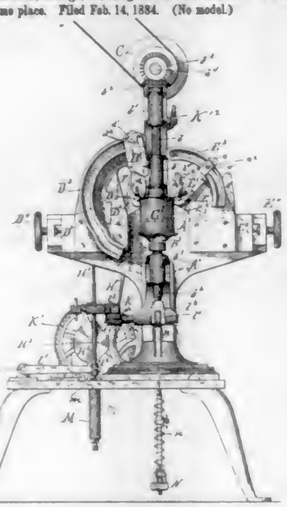


Claim.—1. The sole *s* and its attached filling-sole and welt, separated by a slit, *m'*, for the reception of the upper, substantially as described.

2. The upper having its edge at its fore part turned outward, and the inner sole, combined with the backing *d*, extended about the outturned upper between its edge and the edge of the inner sole, to hold the upper about the inner sole, substantially as described.

3. The herein-described method of confining the outturned upper in place upon the inner sole, which consists in applying a flexible backing to the said upper between its edge and the edge of the inner sole, substantially as described.

300,002. DOUBLE-SEAMING MACHINE. EDWIN NORTON and JOHN GEORGE HODGSON, Chicago, Ill., assignors to said Norton and Oliver W. Norton, same place. Filed Feb. 14, 1884. (No model.)



Claim.—1. In a can-seaming machine, the combination of a seaming-tool, F F', mounted on a rocking and radially-reciprocating arm, *d*, with tool G, mounted on a rocking and radially-reciprocating arm, *e*, substantially as specified.

2. The combination of a compound seaming-tool, F F', sliding tool-arm *d*, tool-holder D', rock-shaft D, adjustable sliding head D^2, and grooved cam D^3, for reciprocating said tool-arm as the tool-holder D' is rocked, substantially as specified.

3. The combination of compound seaming-tool F F', sliding tool-arm *d*, tool-holder D', rock-shaft D, adjustable sliding head D^2, grooved cam D^3, rock-shaft E, seaming-tool G, sliding arm *e*, tool-holder E', adjustable sliding head E^2, grooved cam E^3, and arm A^3, rod A^2, rock-shaft A^4, bar A^5, and arm A^6, for operating said rock-shaft E from the rock-shaft D, substantially as specified.

4. The combination of the revolving chuck for the can, with rock-shafts E and D, tool-holders secured to said rock-shafts, seaming-tools journaled on sliding arms mounted on said tool-holders, cams for actuating said sliding arms, a cam and mechanism connecting said cam with rock-shaft E, to operate the same, and mechanism for actuating the movable disk of the chuck, substantially as specified.

5. The combination of the rocking tool-holders E' and D' with mechanism for operating the same, substantially as specified.

6. The combination of the rocking tool-holders E' and D' with sliding tool-arms mounted on said holders, and cams for actuating said sliding arms, substantially as specified.

7. The combination, with the rock-shafts, tool-holders, and seaming-tools mounted thereon, of the pitman-rod H', cam-wheel H^2, shaft H^3, gear K', fitting loosely thereon, provided with a clutch-surface, clutch K^2, spring K^3, and collar K^4, secured to said shaft H^3, and pivoted arm K^5, provided with cam-surface K^6, and pin K^7, secured to said clutch K^2, substantially as specified.

8. The combination of can-chuck disk B' and shaft b^4, to which it is secured, with crank-shaft L, provided with arms *l* and *l'*, cam H^2, rod I^2, and crank-shaft I^3, provided with arms I^5 and I^6, substantially as specified.

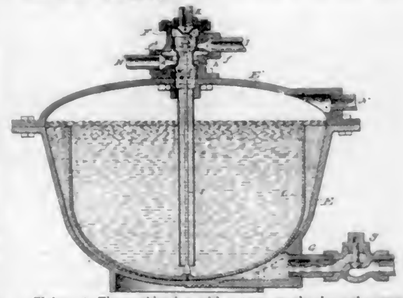
9. The combination, with the revolving chuck for the can, of the tool-holder secured to a rock-shaft, and provided with radial grooves or guides, a sliding tool-arm mounted in said grooves or guides, and a seaming-tool adapted to fold the horizontal flange of the can-head over the vertical wall of the can-body and mounted on said tool-arm, and a cam for operating said tool-arm as the tool-holder is rocked, substantially as specified.

10. The combination, with the revolving chuck for the can, the upper disk of said chuck fitting within the countersunk head of the can, so as to support the same, of the tool-holder secured to a rock-shaft and provided with radial grooves or guides, a sliding tool-arm mounted in said grooves or guides, and a seaming-tool adapted to fold the horizontal flange of the can-head over the vertical wall of the can-body and mounted on said tool-arm, and a cam for operating said tool-arm as the tool-holder is rocked, substantially as specified.

11. The combination of stationary revolving disk B, movable revolving disk B', shaft b^4, crank-shaft L, provided with arms *l l'*, cam H^2, rod I^2, crank-shaft I^3, provided with arms I^5 and I^6, and pivoted block I^7, provided with rubber cushion I^8 and plate I^9, substantially as specified.

12. The combination of the movable revolving disk B' and its shaft b^4, of the cam H^2 and suitable connecting mechanism for operating said shaft b^4 from the cam H^2, said connecting mechanism being provided with an elastic cushion to compensate for irregularities in the can-body, substantially as specified.

300,003. STEAM-TRAP. EUGENE F. OSBORNE, St. Paul, Minn. Filed Mar. 2, 1883. (No model.)



Claim.—1. The combination, with a steam-supply pipe and a source or means of water-supply, of a closed chamber constructed to receive water by gravity, and provided with an exit therefor, automatic means constructed to alternately admit steam from said supply-pipe to said chamber and cut it off therefrom, and automatic means constructed to close said water-exit simultaneously with the cutting off of the supply of steam to the chamber, whereby water is alternately allowed to flow into the said chamber and forced therefrom by steam-pressure, substantially as described.

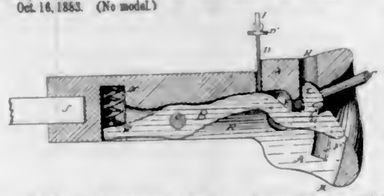
2. The combination, with a steam-supply pipe and a pipe communicating with a source or means of water-supply, of a closed chamber having a water-inlet provided with an inwardly-opening check-valve, a water-exit and a steam-exit, automatic means for alternately admitting steam from said supply-pipe to said chamber and cutting it off therefrom, and automatic means for closing said water-exit and opening said steam-exit during the time that communication between the steam-supply pipe and the chamber is interrupted, substantially as described.

3. The combination, with a steam-supply pipe and a pipe communicating with a source or means of water-supply, of a closed chamber having a water-inlet passage provided with an inwardly-opening check-valve, a water-exit and a steam-exit, valves for controlling the admission of steam from the supply-pipe to said chamber and for controlling the said water and steam exits, and a float connected with said valves and operating to alternately admit steam from said pipe to said chamber and to exclude it therefrom, and to close said water-exit and open said steam-exit during the time that the steam-inlet is closed, substantially as described.

4. The combination, with a tank containing water under steam-pressure and a steam-supply pipe which is independent of said tank, of a chamber constructed and arranged to receive water from the tank by gravity, and provided with a suitable automatic valve in the inlet-pipe for preventing the backward flow of water therein, and with a water-exit, automatic means for alternately admitting steam from said supply-pipe to said chamber and cutting it off therefrom, automatic means for closing the said water-exit, and automatic means for equalizing the pressure between the said tank and the said chamber during the time that the communication between said supply-pipe and said chamber is closed, substantially as described.

5. The combination, with the closed receptacle E, having a water-inlet provided with a check-valve, of the float L, the valve-casing F, communicating with the top of the receptacle, and provided with passages *k*, *f'*, *k'*, and *f*, the tube *e*, the valve M, and the rod *l*, secured to said float and provided with the valve *k'*, substantially as and for the purposer set forth.

300,004. CAR-COUPLING. WM. PARSONS, Cleveland, Ohio. Filed Oct. 16, 1883. (No model.)

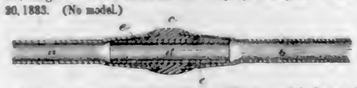


Claim.—1. In a car-coupler, the lugs L L, in combination with the annular recess E, the point P, and latch B, as and for the purposes set forth and described.

2. The combination of the head A, latch B, link T, pin D, and lever I, substantially as set forth, and for the purposes described.

3. In a car-coupler, the combination, with a link and draw-head, of a latch, B, having tapering lugs L L, operated substantially in the manner and for the purposes set forth and described.

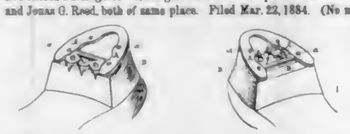
300,005. JOINT FOR LEAD PIPES. WM. R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Feb. 20, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with the sections of pipe, of a strengthening of lead, forming with the ends of the sections on each side the wipe-joint a double thickness of metal, the whole being firmly united by the solder which joins the two ends of the sections of pipe, substantially as and for the purpose specified.

2. The combination, with the wipe-joint of the lead pipe of a telegraph-cable, of the strengthening-piece *d*, extending beyond the solder on both sides the joint, said solder being united to said strengthening-piece and to the ends of the sections, substantially as and for the purpose specified.

300,006. COMBINED ICE-CREEPER AND HEEL-PLATE. EDWD. N. PORTER, Burlington, Vt., assignor of two-thirds to Lorenzo G. Burnham and Jonas G. Reed, both of same place. Filed Mar. 22, 1884. (No model.)



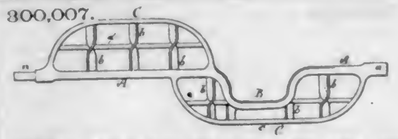
Claim.—1. In combination with the heel-plate A, the slotted cross-bar B, spring *e*, and creeper C, substantially as described, and for the purpose set forth.

2. The ice-creeper C, pivoted in recesses *g* in the heel-plate A, and firmly supported by the ends *b b* and spring *e* of the cross-bar B, and designed, when in use, to be folded back within the sides of the heel-plate and expose two or more projecting points, and when not used to be folded forward, so that its points shall rest tightly against the front edge of the heel, substantially as described.

300,007. AGITATOR FOR GENERATORS AND RECEIVERS FOR SODA OR OTHER AERATED WATERS. ALVIN D. PUFFER, Medford, Mass. Filed Oct. 10, 1883. (No model.)

Claim.—1. An agitator or dasher for aerated liquids, consisting of

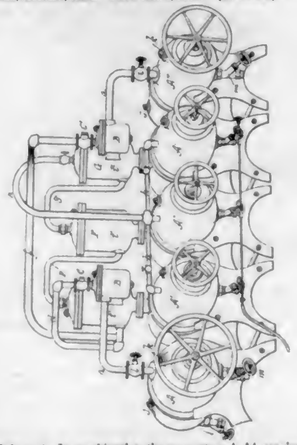
300,007.



a shaft, wings C, attached to said shaft on opposite sides, vanes *b*, which extend laterally from the shaft to the wings, as shown, and longitudinal bars *d*, which are connected to the middle parts of said vanes, and also to said wings, substantially as set forth.

2. A dasher containing, in combination with the shaft and wings, the offset in the shaft, the vanes with reverse slopes, and the bar longitudinally intersecting the vanes, all as explained.

300,008. CARBONIC-ACID-GAS GENERATOR. LUTHER WINTHROP PUFFER, Medford, Mass. Filed Jan. 4, 1884. (No model.)



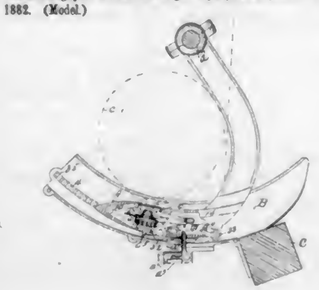
Claim.—1. In combination, the generators A A^4, receivers A' A^4 A', dry purifiers B B, with their sediment-traps *c c*, and purifiers D F G, with their connecting-pipes and the automatic valves C C', substantially as and for the purposes herein described.

2. The combination of the generators A A^4, pipes *a a*, with their valves, and the sediment-traps and dry purifiers, with the pipes *d* and *f*, connecting with the purifier D, as described, and the purifiers F G, with the receivers A' A^4 A', substantially as described.

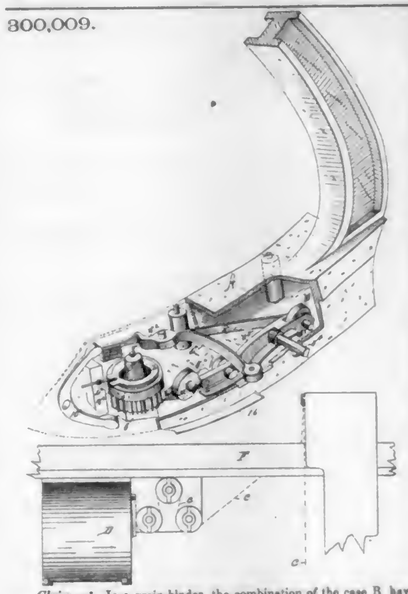
3. In a carbonic-acid-gas-generating apparatus, a generator provided both front and back with filling-bungs and discharging-valves *j k l m*, as and for purposes herein set forth.

4. A purifier having an air-inlet pipe in its side, an outlet-pipe in its top, and a diaphragm extending down from its top between said pipes, to compel the air entering by the former pipe to descend to the bottom of the purifier before ascending to the outlet.

300,009. KNOT-TYING MECHANISM FOR GRAIN-BINDERS. CHARLES M. RICHARDSON and JACOB S. GIBBS, Bridgeport, Conn., assignors to the Bridgeport Twine Binding Company, same place. Filed Mar. 11, 1882. (Model.)



300,009.



Claim.—1. In a grain-binder, the combination of the case B, having two twine-clamping jaws pivoted thereto, a spring to shut said jaws, and the elbow-lever a^4, with the head A, adapted to move through said case, and provided with means for opening said jaws, substantially as described.

2. The combination, with the case B, having the rack, of the head A, having the twine-slot 20, the conical-ended knotter-post *o*, fixed in said head, the looping-pinion *i*, having the collar *z* thereon, and the transverse groove v^2 across its periphery, and the tension-spring i^2, substantially as set forth.

3. In combination with the case B, having the rack 4 thereon, the head A, adapted to move through said case, and carrying the conical-ended knotter-post *o*, fixed in the head, a knotting-hook pivoted in the post *o*, having an arm to swing against and from the knotter-post, and mechanism within said head, substantially as described, for looping the twine around the conical end of the post *o*, and for oscillating the knotting-hook on its pivot within the knotter-post, substantially as set forth.

4. The combination, with the looping-pinion *i*, having the collar *z* thereon, of the tension-spring i^2, secured to the head A, and encircling that part of said pinion between the collar *z* and the main part of the pinion, substantially as and for the purpose set forth.

5. In combination with the head A, having the knotter-post *o*, the looping-pinion *i*, revolving thereon, the knotting-hook *o*, pivoted in said post, the rod o^3, connected to said hook, the levers o^3 o^4, connected with rod o^3, spring o^5, and the case B, having suitable cams thereon for contact with the arm o^4 on the lever o^3, substantially as set forth.

6. The pivoted clamp-jaws a a^3, having the bevel-edged points 40 on the lower end thereof, substantially as set forth.

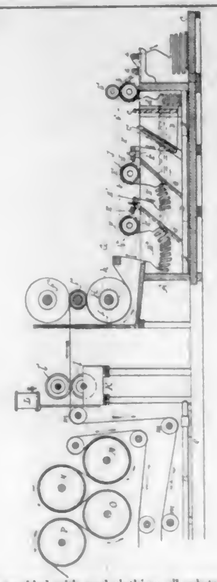
300,010. APPARATUS FOR SEPARATING VEGETABLE FIBER FROM WOOLEN FABRICS. JOSEPH HACKING RILEY, Bury, County of Lancaster, England. Filed Jan. 11, 1884. (No model.) Patented in England Apr. 16, 1881, No. 1,678.

Claim.—1. In a machine for destroying vegetable matter from woven fabrics, the combination of vats or tanks provided with fixed divisions *e e'* and sliding compartments *c c'*, and the grids or grates D D, with the tension-bars and feed-rolls, actuated by mechanism, as herein described, for feeding the cloth continuously through the various divisions of the main vat A, substantially as stated.

2. In a machine for destroying vegetable matter from woven fabrics, the combination, with the vat A and its operative parts, of the device herein shown for saving the selvages of the fabric undergoing treatment, consisting of the tank or tanks K, adapted to contain the neutralizing-liquor and the pairs of rollers *l l'*, &c., and reservoir L, substantially as described.

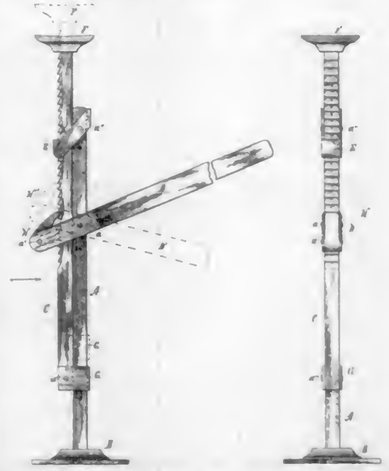
3. In a machine for destroying vegetable matter from woven fabrics, the general combination of the vat A with its operative parts, the device for preventing the destruction of the lists or selvages of the cloth in process of treatment, and the series of steam-pipes and drums with the pair

300,010.



or pairs of rolls provided with card clothing, all substantially as and for the purposes set forth.

300,011. LIFTING-JACK. JOHN RITCHIE and FRIEDRICH LUCKERMANN, Freeport, Ill. Filed Feb. 23, 1884. (No model.)



Claim.—1. In a wagon-jack, the combination of two bars—one plain, the other provided with ratchet-teeth—lying in contact and sliding longitudinally one upon the other, a loop attached rigidly to the lower end of the ratchet-bar and passing around the plain bar, a loop pivoted to the plain bar and passing around the ratchet-bar, and forming a gravity-pawl adapted to engage the teeth thereof, and means for raising said ratchet-bar, substantially as shown and described

2. The combination of the plain bar A, ratchet-bar C, loop G, attached to the bar C and inclosing the bar A, loop E, pivoted to the bar A, and inclosing the bar C and engaging the successive teeth of said bar, the lever D, pivoted to the bar A, and the pawl H, pivoted to the lever D, and engaging the ratchet-teeth of the bar C, substantially as shown and described, and for the purpose set forth.

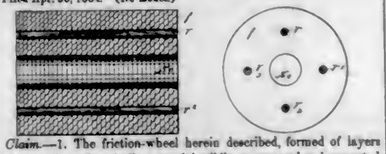
300,012. PAPER PULLEY. WILLIAM E. ROCKWOOD, Indianapolis, Ind., assignor of one-half to Horatio C. Newcomb, same place. Filed Apr. 30, 1884. (No model.)



Claim.—1. A pulley whose web is composed of successive layers of paper or other suitable material cemented and compressed solidly together, the web extended so as to form the central portion of the rim, the other portion formed by the addition of narrower rings or strips of a similar material laid on each side of the web parallel to the layers of the web, and cemented to each other and to the sides of the web, and the whole made solid by pressure, and further united by wooden pins passing through such rim layers and the web, substantially as shown and described.

2. The process of forming a pulley-wheel of paper or other similar material herein described, which consists of forming the web by the cementing together of successive layers of paper or other material and subjecting the same to pressure, and of forming the rim by cementing narrow rings or strips of similar material around and upon each side of the web at and extending below the edge, subjecting these also, with the web, to suitable pressure to unify them, and further securing the layers of the rim on each side of the web together and to the web by wooden pins passing through the several rim layers and through the web, substantially as and for the purpose described.

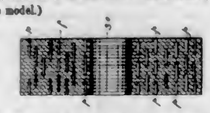
300,013. PAPER FRICTION-WHEEL. WILLIAM E. ROCKWOOD, Indianapolis, Ind., assignor of one-half to Horatio C. Newcomb, same place. Filed Apr. 30, 1884. (No model.)



Claim.—1. The friction-wheel herein described, formed of layers of paper-board or other similar material solidly compressed and cemented together, and provided with the wooden pins running through the wheel substantially parallel with its axis, as and for the purposes set forth.

2. The combination of the solid paper friction-wheel *f* and the wooden pins r r' r^2 r^3, substantially as described.

300,014. PAPER WHEEL. WILLIAM E. ROCKWOOD, Indianapolis, Ind., assignor of one-half to Horatio C. Newcomb, same place. Filed Apr. 30, 1884. (No model.)

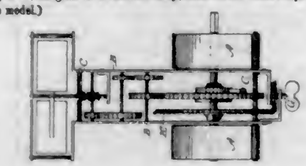


Claim.—1. The wheel *f*, composed of layers of paper or similar material compressed and cemented together to form a solid wheel, and the parts further secured by wooden pegs *p*, each peg passing transversely through only a portion of the layers of which the wheel is made up.

2. A wheel composed of layers of paper or similar material cemented and compressed together, and further secured by wooden pegs, each passing transversely through two or more layers of paper, and the outside layers further held together by means of screws, all combined substantially as described.

3. A wheel composed of layers of paper or similar material cemented and compressed together, the layers further secured by means of screws, each screw passing transversely through two or more layers of paper, substantially as described.

300,015. CLOCK-WORK MECHANISM. WILLIAM H. ROGERS, Brooklyn, N. Y., assignor to S. Elwood May, New York. Filed Apr. 10, 1884. (No model.)

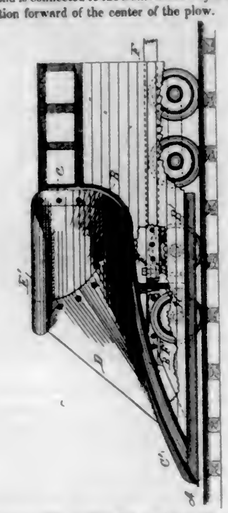


Claim.—1. One or more springs, A A, secured on the ends of the axle D, outside of the frames B B, containing the clock-work mechanism for propelling the same, for the purpose set forth.

2. The winding apparatus consisting of the key G, in combination with the bevel-pinion F and the bevel-wheel E, substantially as and for the purpose set forth.

300,016. SNOW-PLOW. JAMES HENRY RUSSELL, St. John, New Brunswick, Canada. Filed Mar. 27, 1884. (No model.)

Brief.—Curved sponsings are applied under and to support the projecting sheathing at the sides of the structure. The coupling-bar projects far forward, and is connected to the frame-timber by a semicircular socket-joint connection forward of the center of the plow.

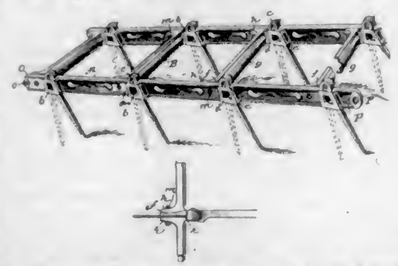


Claim.—1. The combination, with the sides of the plow, of the curved sponsings B, applied thereon, and the sheathing C, supported thereby at its margin, to cut wider than the plow itself, substantially as described.

2. In a snow-plow, the long coupling-bar F, projected far forward and connected to the frame-timber F' at a point forward of the center of the plow, substantially as described.

3. The combination of the coupling-bar F and the frame-timber F', united by the semicircular socket-joint connection G G', substantially as specified, for the purpose set forth.

300,017. HARROW. HANS H. SAYER, Dubuque, Iowa. Filed Feb. 6, 1884. (No model.)

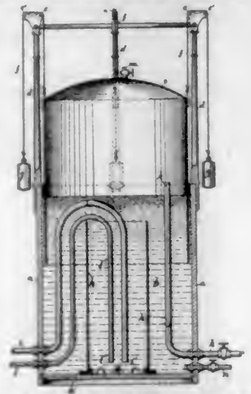


Claim.—1. In a harrow, pockets or closed sockets for the teeth, having a vertical and an inclined bearing-surface, said pockets being formed integral with the side bars, substantially as described.

2. In a harrow, pockets or closed sockets formed integral with the side bars, and having a vertical and an inclined bearing-surface, teeth pivoted in the upper part of such pockets, and adapted to operate substantially as described.

3. The combination of the double-flanged side bars having pockets and projections *f*, formed integral therewith, the cross-bars, and securing-bolts, substantially as described.

300,018. GASOMETER FOR WASHING CARBONIC-ACID GAS. ROGER F. SCANNELL, Boston, Mass. Filed Jan. 23, 1884. (No model.)



Claim.—1. A gasometer having the stationary tub *a* and vertically-adjustable bell *c*, in combination with the interior shell or cylinder, *h*, and gas-delivery pipe *i*, as and for the purpose set forth.

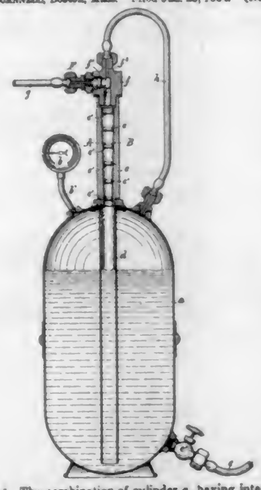
2. The combination of tub *a*, having shell *h*, and gas-inlet pipe *i*, terminating near the bottom of said shell, with bell *c* as and for the purpose set forth.

3. The combination of tub *a*, having shell *h*, and inlet-pipe *l*, terminating near the bottom of said shell, with bell *c*, as and for the purpose set forth.

4. The combination of tub *a*, having shell *h*, and inlet-pipes *i l*, terminating near the bottom of said shell, as and for the purpose set forth.

5. The combination of tub *a*, having shell *h*, and gas-inlet pipe *i*, terminating near the bottom of said shell, with bell *c* and gas-discharge pipe *k*, as and for the purpose set forth.

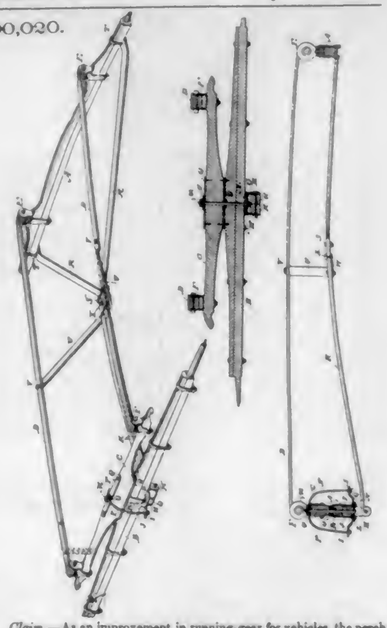
300,019. AGITATOR DEVICE FOR CARBONIZING LIQUIDS. ROGER F. SCANNELL, Boston, Mass. Filed Jan. 23, 1884. (No model.)



Claim.—1. The combination of cylinder *a*, having internal siphon-pipe, *d*, with pipe *e*, having a series of perforated disks, *d' d' d'*, and the gas and liquid inlet pipe *g*, as and for the purpose set forth.

2. The combination of cylinder *a*, having internal siphon-pipe, *d*, with pipe *e*, having a series of perforated disks, *d' d' d'*, the gas and liquid inlet pipe *g*, and return-pipe *h*, as and for the purpose set forth.

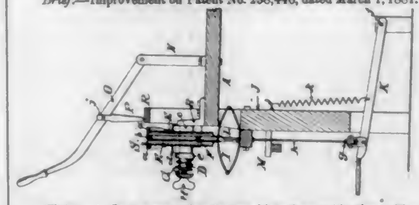
300,020. VEHICLE-SPRING. HENRY J. SCHILD, Stanton, Mich. Filed Nov. 6, 1883. (No model.)



Claim.—As an improvement in running-gear for vehicles, the perch or reach comprising two flat springs, R, secured side by side and extending rearwardly for about two-thirds of their length, an encircling-clip, S, securing them together at this point, then diverging immediately in rear of said clip to near the outer ends of the rear axle, to the under face of which they are secured, in combination with the axle and bolster, the side springs connecting the rear axle and bolster, the double-inclined brace U, secured at its center to the reach and at its ends to the side springs, and a plate, G, secured to the front axle, and having downwardly-extending arms H, between which the leaves of the perch or reach are secured, as set forth.

300,021. MACHINE FOR FORMING CRUPPERS. JOSEPH SHAFFER, Dayton, Ohio, assignor of one-half to Edward F. Cooper, same place. Filed Feb. 23, 1884. (No model.)

Brief.—Improvement on Patent No. 238,446, dated March 1, 1881.



Claim.—1. In a crupper-forming machine, the combination, with a swaging-block, of a three-part die, the outer portions of which can be spread apart, and the inner portion of which can be depressed, substantially as described.

2. In a crupper-forming machine, the combination, with the forming-die, of a pedal and automatic gripping-tongs united to said treadle by a cord or equivalent device, as and for the purpose set forth.

3. The combination, with the lever O, carrying the bed-plate supporting the three-part die E E F, washers *c d*, spindle D, follower *e*, spring G, and thumb-screw H, of the spring I, tongs L, cord A, and treadle K, substantially as and for the purpose described.

300,022. HEEL-STIFFENER. EDWARD SHAW and ROMEO A. OWINGS, Mattoon, Ill. Filed Feb. 28, 1884. (No model.)

Claim.—As an improved article of manufacture, a heel-stiffener or counter for boots and shoes, having a cast or molded rubber body provided around its bottom with an inwardly-projecting flange integral with the body, for receiving the nails or pegs by which the counter is attached

300,022.



to the inner sole or heel, and an interposed piece of cloth, canvas, or other fibrous material molded or cast into the body and projecting beyond the edges of the same, to receive the stitches by which the counter is attached to the upper, substantially as shown and described.

300,023. ANTI-FRICTION COMPOSITION. WILLIAM W. SMALLEY, Boundbrook, N. J., (Administrator of John Smalley, deceased,) assignor to the Graphite Lubricating Company, Jersey City, N. J. Filed Mar. 6, 1884. (No specimens.)

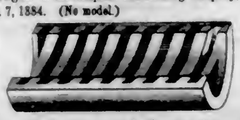


Claim.—1. A composition for anti-friction bearings, consisting of graphite, shellac, and gum-copal, combined substantially as herein set forth.

2. In the manufacture of lubricating compositions, subjecting gum-copal to the action of turpentine, and then dissolving in alcohol, combining with graphite, drying, and pulverizing, to form an anti-friction powder.

3. The improvement in making anti-friction compositions, consisting in combining graphite with a solution of shellac, and drying and powdering the mixture, and combining the powder with another made by mixing graphite with a solution of gum-copal, and drying and pulverizing the same, substantially as set forth.

300,024. MANUFACTURE OF ANTI-FRICTION BEARINGS. WILLIAM W. SMALLEY, Boundbrook, N. J., (Administrator of John Smalley, deceased,) assignor to the Graphite Lubricating Company, Jersey City, N. J. Filed Mar. 7, 1884. (No model.)



Claim.—1. The improvement in the manufacture of anti-friction bearings, consisting in subjecting the composition containing anti-friction material and gum to the action of heat, as and for the purpose set forth.

2. The improvement in making anti-friction bearings, consisting in making a composition containing anti-friction material and gum, forming the same under heat and pressure, and then subjecting the same to the action of heat, as and for the purpose set forth.

3. An anti-friction bearing consisting of anti-friction material combined with a gum and baked, substantially as described.

300,025. MANUFACTURE OF ANTI-FRICTION BEARINGS. WILLIAM W. SMALLEY, Boundbrook, N. J., (Administrator of John Smalley, deceased,) assignor to the Graphite Lubricating Company, Jersey City, N. J. Filed Mar. 7, 1884. (No model.)



Claim.—1. The improvement in the manufacture of anti-friction bearings, consisting in filling the receptacles in the bearing-blocks with anti-friction composition and packing the same therein under heat and pressure, substantially as described.

2. The mode described of making anti-friction bearings, the same consisting in heating the recessed or channeled bearing or bushing and introducing into the channels thereof an anti-friction composition, and in packing the same in the channels under pressure while thus heated, substantially as described.

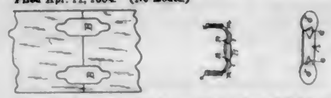
3. The combination, in a machine for packing anti-friction bearings, of a heated receptacle for the channeled or grooved bearings or bushings, and pressure appliances, whereby the composition is forced under pressure into the channels or grooves, substantially as described.

4. The combination of the steam-heated casing D, plungers I and N, and screw J, arranged opposite a chamber in the casing, substantially as described.

5. The combination of the steam-heated casing, screw J, and counter-screw L, substantially as and for the purpose set forth.

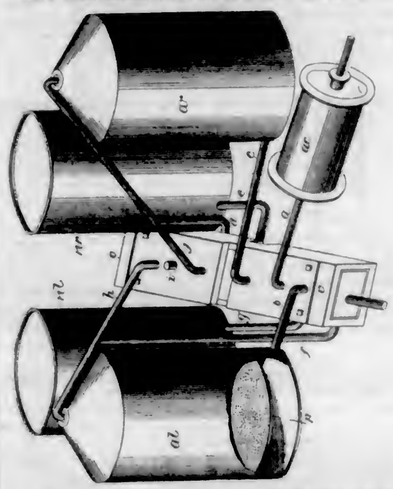
6. The combination of the heater containing a chamber, *y*, compressing devices, and holder B, adapted to said chamber and to receive the bearing, substantially as described.

300,026. BELT-FASTENER. WILLIAM SMITH, Eaton Rapids, Mich. Filed Apr. 11, 1884. (No model.)



Claim.—A metallic belt-fastener consisting of the clasp B, having the slanting or circular corners *m m*, the annular ribs *s s*, and the points *n n*, in combination with the covering A, provided with the brads *e e*, all substantially as described, and for the purposes set forth.

300,027. APPARATUS FOR PREPARING OXYGENATED AIR. ANTON STAHL, Leadville, Colo. Filed Apr. 18, 1883. (No model.)



Claim.—1. In an apparatus for preparing oxygenated air, the combination, with an air-compressor, of two strong closed tanks, (called "water-tanks,") which are filled with such liquids that absorb oxygen in comparatively larger proportion than nitrogen, preferably with water having a layer of oil or glycerine on top, the two tanks having each one or more horizontal perforated diaphragms, *p*, and being connected with the valve *v'*—one by the pipe *b* and the other by the pipe *c*—all substantially as described, and for the purpose specified.

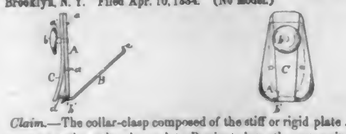
2. In an apparatus for preparing oxygenated air, the combination, with an air-compressor and two air-tight water-tanks, of two strong hermetically-closed air-tanks (called "nitrogen-tanks") for the temporary storing of the nitrogenated air, these two air-tanks being so connected with the water-tanks through the pipes *g* and *f* and *e* and *d* and by the valves v^2 and v^3 that while the first water-tank, *al*, is being filled with compressed atmospheric air the nitrogenated air can pass out at the top of the said water-tank into the first nitrogen-tank, *nl*, and while the second water-tank, *ar*, is being filled with compressed air the non-absorbed (nitrogenated) portion of air can escape by the top of this second water-tank into the second nitrogen-tank, *nr*, all substantially as described, and for the purpose specified.

3. In an apparatus for preparing oxygenated air, the combination, with an air-compressor, two water-tanks, and two nitrogen-tanks, of four valves, which may be of various shapes—such as slide-valves, piston-valves, rotary valves, &c.—and which may be either separate, so that each valve is in a chest by itself, or may be combined into one, two, or three compound valves having one, two, or three valve-chests and valve-rods, but which must be so constructed and connected that their movements are always simultaneous, and that in one of their principal positions of rest—as, for example, in their forward position—the communication is open between the pipes *a* and *b* through the port *m* or some other equivalent means, between the pipes *f* and *g* through the port *o*, between the pipes *j* and *i* through the port *n*, and between the pipe *e* and the exit-opening *k* through the port *r*, while at the same time the valve ends of the pipes *c*, *d*, and *h* are closed by the valves v', v^2, and v^4,

and the communication between the pipe *g* and the exit-opening *k* is closed by the valve v^3, and that when the valves are in their other backward position the communication is open between the pipes *a* and *c* through the port *m* or its equivalent, between the pipes *d* and *e* through the port *r*, between the pipes *h* and *i* through the port *n*, and between the pipe *g* and the exit-opening *k* through the port *o*, while at the same time the valve ends of the pipes *b*, *f*, and *j* are closed by the valves v', v^2, and v^4, and the communication between the pipe *e* and the exit-opening *k* is closed by the valve v^3, all substantially as described, and for the purpose specified.

4. In an apparatus for preparing oxygenated air, the combination, with the air-compressor, two water-tanks, two nitrogen-tanks, and four valves, of the pipe *a*, connecting the air-compressor with the valve v', the pipe *b*, connecting the valve v' with the water-tank *al*, the pipe *c*, connecting the valve v' with the water-tank *ar*, the pipe *f*, connecting the top of the tank *al* with the valve v^2, the pipe *g*, connecting the valve v^2 with the nitrogen-tank *nl*, the pipe *d*, connecting the top of the tank *ar* with the valve v^3, the pipe *e*, connecting the valve v^3 with the nitrogen-tank *nr*, the pipe *h*, connecting the top of the water-tank *al* with the valve v^4, the pipe *j*, connecting the top of the water-tank *ar* with the valve v^4, and, lastly, the exit-pipe *i*, leading to a place where the oxygenated air (resulting from the working of the apparatus) is either stored or used, all substantially as described in the foregoing specification, and for the purpose named.

300,028. NECKTIE AND COLLAR CLASP. CLINTON STEPHENS, Brooklyn, N. Y. Filed Apr. 10, 1884. (No model.)



Claim.—The collar-clasp composed of the stiff or rigid plate A, having spurs or studs *a*, the claw-plate B, pivoted to the extremity of the said plate A, and the button *b*, having a shank, *a'*, and a spring, C, the said button-shank and spring being attached to that side of the plate A opposite to that at which is placed the claw-plate B, the parts being arranged in relation with each other as described, and for the purpose specified.

300,029. OILING-PAD FOR JOURNAL-BOXES. JOHN STEPHENSON, New York, N. Y. Filed May 2, 1884. (No model.)



Claim.—1. An oiling-pad having in its contacting surface strips or pieces of lead or other material secured in the felt, with the surface in the same plane as that of the felt, substantially as and for the purpose described.

2. An oiling-pad having metallic facing-pieces and resting upon a spring-support, whereby it is maintained with its face in contact with that of the journal, substantially as set forth.

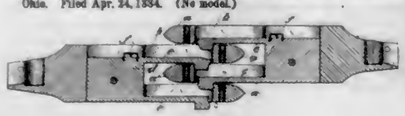
3. An oiling-pad consisting of felt and inserted pieces of soft metal, substantially as and for the purpose set forth.

4. An oiling-pad consisting of a soft porous pad carrying inserted pieces of soft metal, and a spring supporting the pad in contact with the journal, substantially as described.

5. The combination of the curved cradle supported by a spring and pad of porous material, and metallic pieces secured to the pad, substantially as described.

6. An oiling-pad having embedded in its surface strips of soft metal extending lengthwise of the pad, or approximately thereto, substantially as described.

300,030. CAR-COUPLING. HERBERT M. STURGIS, South Charleston, Ohio. Filed Apr. 24, 1884. (No model.)



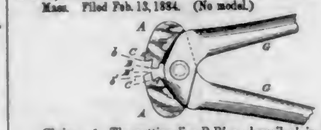
Claim.—1. In a car-coupling, the combination, with a draw-head having an opening to receive a portion of the opposite draw-head, of a coupling hook or latch pivoted therein, and consisting of a body portion having an arm or arms provided with a hook or hooks, substantially as set forth.

2. In a car-coupling, the combination, with a draw-head divided into an upper and lower portion, as shown, and having a longitudinal opening, as shown, of a coupling-hook pivoted in said opening, said coupling-hook consisting of a body portion having two forwardly-extending arms provided with hooks, substantially as set forth.

3. The combination, with a draw-head divided into an upper and lower portion, as shown, having their forward ends beveled on their upper and lower sides, and having a longitudinal opening, as shown, of a coupling-hook pivoted in said opening, said coupling-hook consisting of a body portion having two forwardly-extending arms provided with hooks, substantially as set forth.

4. The combination, with a draw-head divided into an upper and lower portion, as shown, having their forward ends beveled on their upper and lower sides, and having a longitudinal opening, of a coupling-hook pivoted in said opening, said coupling-hook consisting of a body portion having two forwardly-extending arms provided with hooks, and a double lever pivotally secured to said hook, substantially as set forth.

300,031. SHEAR-CUTTING NIPPERS. STEPHEN TAFT, Millbury, Mass. Filed Feb. 13, 1884. (No model.)

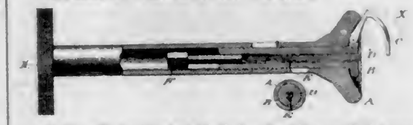


Claim.—1. The cutting-lips B B', as described, in combination with the supplemental or holding lips *c c'*, substantially as described.

2. The cutting-lips B B' and the holding-lips *c c'*, forming a solid bearing together, substantially as and for the purposes set forth.

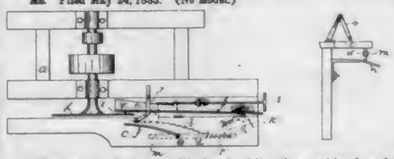
3. The cutting-lips B B', in combination with lips or shoulders connected to them by the curves or lines C C', forming free spaces for their edges when closed, substantially as described.

300,032. CHUCK FOR WATCH-MAKERS' LATHES. CAL THOMAS, Terre Haute, Ind. Filed Dec. 26, 1883. (No model.)



Claim.—The combination of the hollow draw-in screw H, the sleeve A, countersunk at its outer end, the hollow spindle B, having hinged to its outer end the clamping-jaws C, and threaded at its inner end, the pump-center D, the adjusting-screw F, and guide-pin E, substantially as described.

300,033. STAVE-JOINTING MACHINE. JOSHUA TREAT, Hampden, Me. Filed May 24, 1883. (No model.)



Claim.—1. In a stave-jointing machine, the combination of the hinged table *c*, pivoted arm *f*, adapted to be oscillated by the stave, the inclined plane *n*, secured to a fixed support, and the knob *m*, connected and oscillating with the arm *f*, and situated between said inclined plane and the hinged table, substantially as set forth.

2. In a stave-jointing machine, the combination of the hinged table *c*, pivoted arm *f*, adapted to be oscillated by the stave, the inclined plane *n*, adjustable toward and from the table on a fixed support, and the knob *m*, connected and oscillating with the arm *f*, and situated between said inclined plane and the hinged table, substantially as set forth.

3. In a stave-jointing machine, the combination of the hinged table *c*, pivoted arm *f*, adapted to be oscillated by the stave, the inclined plane *n*, attached to a fixed support, the lever *d*, connected and oscillating with the arm *f*, and adapted through the construction and connections shown to operate the spring-guide *k*, and the knob *m*, attached to said lever *d*, and situated between the hinged table and the inclined plane, substantially as set forth.

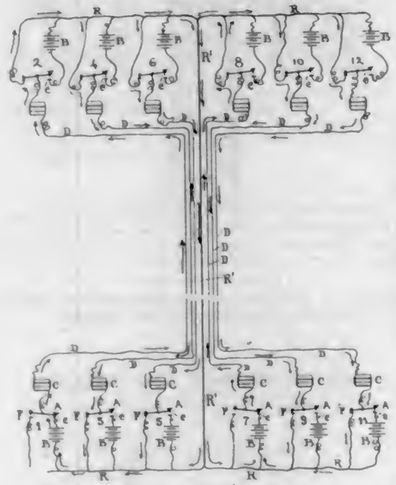
4. In a stave-jointing machine, the combination of the hinged table *c*, for supporting the work, means for automatically raising said table to change the inclination of the work to the saw, and a presser adapted to hold the work against the table, and to insure the return of the latter when released by the raising devices, substantially as set forth.

5. In a stave-jointing machine, the combination of the hinged table *c*, for supporting the work, means for automatically raising said table to change the inclination of the work to the saw, and the spring *o*, attached to a fixed support, and adapted to hold the work against the table, and to insure the return of the latter when released by the raising devices, substantially as set forth.

6. In a stave-jointing machine, the combination of the main frame having a surface inclined to the plane of the saw, the wedge *q*, bearing against said surface and held in sliding contact therewith, the guide *k*, attached to said wedge in a position substantially parallel to the plane of the saw, and means for longitudinally adjusting said wedge to change the distance between the guide and the saw, substantially as set forth.

7. In a stave-jointing machine, the combination of the main frame having a surface inclined to the plane of the saw, the wedge *q*, bearing against said surface and held in sliding contact therewith, the guide *k*, attached to said wedge in a position substantially parallel to the plane of the saw, and a rod, *s*, extending to the end of the frame next to the operator for longitudinally adjusting said wedge, substantially as set forth.

300,034. COMPOUND TELEGRAPH-CABLE. PETER H. VANDER WEYDE, Brooklyn, assignor to the Vander Weyde Electric Company, New York, N. Y. Filed Apr. 14, 1882. (No model.)

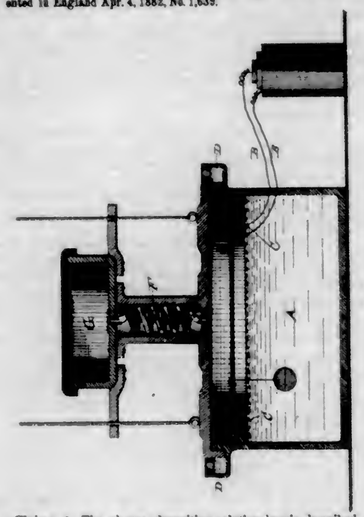


Claim.—1. The combination, in an electric telegraph or telephone system, with two or more main parallel conducting-wires severally adapted for transmitting direct electric currents, of an auxiliary parallel wire and suitable commutators and conductors adapted to establish from either main wire which may be transmitting a direct current a return-circuit through said auxiliary wire independent of any ground-connection, substantially in the manner and for the purpose herein set forth.

2. The combination, in an electric telegraph or telephone system, with two or more main parallel conducting-wires severally adapted for transmitting direct electric currents, of an auxiliary parallel wire and suitable commutators and conductors adapted to establish from either main wire which may be transmitting a direct current a return-circuit to battery conjointly through said auxiliary wire and the main wires not otherwise in use independently of any ground-connection, substantially in the manner and for the purpose herein set forth.

3. The combination, with an electric telegraph cable or system of parallel line-wires, and with the sounders and batteries for each line in said cable or system, of telegraph-keys, each having its anvil connected electrically with one pole of its appropriate battery and its bar connected in like manner directly with one end of its appropriate line-wire, and each of which is fitted with a back contact adapted to close, when the key is up and the connection with its battery thereby broken, an electrical connection between its bar and the opposite pole of each and every battery, and the back contact of each and every other key at its end of the cable or system, substantially in the manner and for the purpose herein set forth.

300,035. PROCESS OF AND APPARATUS FOR ELECTRO-DEPOSITING COPPER, BRASS, &c. WILLIAM HENRY WALENN, Islington, County of Middlesex, England. Filed Nov. 8, 1883. (No model.) Patented in England Apr. 4, 1882, No. 1,639.

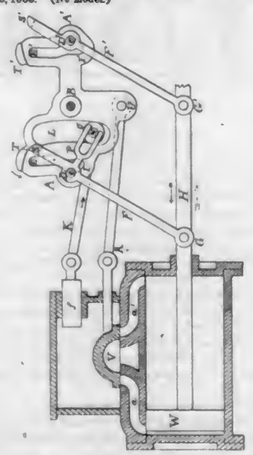


Claim.—1. The electro-depositing solution herein described, consisting of cyanide of potassium and neutral tartrate of ammonium in the proportion of thirty-two ounces of the former and one ounce of the latter, charged by electrolysis with the metal or alloy to be deposited, and perfected by the addition of cupric ammonide, substantially in the proportions and for the purpose described.

2. The herein-described process of electro-depositing metals and alloys by subjecting them to the action of an electro-depositing solution in a closed vessel under a pressure exceeding that of the atmosphere at a temperature of from 190° Fahrenheit up to the boiling-point of the solution, substantially as and for the purpose set forth.

3. The depositing-tank A, having cathode-supporting shelves provided with slabs of non-conducting material and dipping into a water-seal, a counterbalanced cover having an upwardly-extending tube, a condensing box or vessel at the upper end of said tube, and a condensing-worm forming a connection between said condensing-box and the tank A, substantially as and for the purpose set forth.

300,036. VALVE-GEAR. LEWIS WINDHURST, Springfield, Ohio. Filed Oct. 6, 1883. (No model.)



Claim.—1. The combination of the rocking lever A A′, the links F F′, slots or grooves E D E′ D′, the time-locking contrivance T S T′ S′, with an automatic device for operating the lever A A′, and means for applying the action of said device to either side of the rocking center B, substantially as described.

2. In a valve-gear, the combination of a double-armed rocking lever provided with a slot or groove at each arm, and the links F F′, provided with the pins *e e′*, with means for operating these links, the slots being so constructed and arranged that each link will actuate the rocking lever only when moved by the piston-rod in a certain direction, as shown and described.

3. In a valve-gear, the combination of a double-armed rocking lever with two links, F F′, one end of which links is operated by the piston-rod, the respective opposite end of said links being connected to an arm of the rocking lever in such a manner that only one link can actuate said lever during the outstroke of the piston, and the opposite link only during the instroke of the piston, all substantially and for the purpose as set forth.

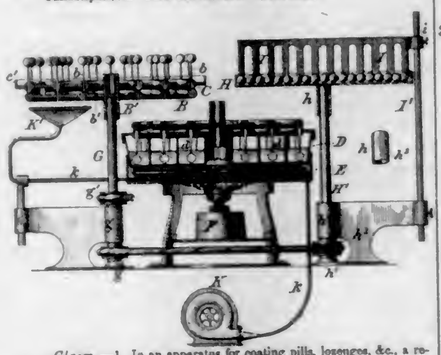
4. In a valve-gear having an extra moving power acting on a rocking lever, A A′, and of which the described steam-plunger is an example, the combination of mechanical means of transferring that power alternately to one side or the other of the rocking center B, (in conformity to the motion of the piston-rod H,) with a time-lock represented by the parts T S T′ S′, so contrived as to restrain and limit the action of said extra power to the dead-points of the slide-valve, substantially as set forth.

5. In a valve-gear, the combination of a steam-plunger with a rocking lever and means for transferring the lever-connections of the steam-plunger or the spring to either side of the rocking center of the lever, substantially as described.

6. In a valve-gear, the combination of links F F′, provided with projections S S′, with the lever A A′, provided with projections T T′, the piston-rod H, and means independent of the links for actuating the lever A A′, whereby the independent means for actuating the lever A A′ is restrained until the piston has arrived at the end of a stroke, substantially as described.

7. The combination of the rocking lever A A′, the links F F′, slits or grooves E D E′ D′, and the time-lock contrivance T S T′ S′, with the extra moving power applied at N, and with means of transferring the same to either side of the rock-center B, substantially and for the purpose as described.

300,037. COATING PILLS, LOZENGES, &c. WALTER T. BAKER, Philadelphia, Pa. Filed Dec. 29, 1883. (No model.)



Claim.—1. In an apparatus for coating pills, lozenges, &c., a receptacle having a central shaft adapted to center a lifting device, and a series of seats or recesses located around said shaft, each of said seats being adapted to receive and support a pill or analogous article in a plane perpendicular to the shaft, substantially as set forth.

2. In an apparatus for coating pills, lozenges, &c., a coating dish or bath divided into two or more separate sections, substantially as set forth.

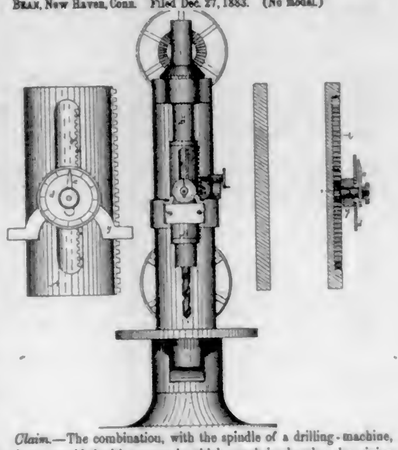
3. In an apparatus for coating pills, lozenges, &c., the combination of a lifter and holder having a series of rings or frames, each provided with projections adapted to engage a pill or analogous article, and a remover formed of a corresponding series of perforated rings or frames and connected to said lifter and holder, with the capacity of movement thereon when required to disengage the pills from the projections, substantially as set forth.

4. In an apparatus for coating pills, lozenges, &c., the combination of a recessed receptacle having a central shaft, a lifter and holder having central sockets on each side thereof, and a rotating drier-shaft, the socket on one side of the lifter and holder being adapted to fit on the shaft of the recess-receptacle and the opposite socket to fit on the drier-shaft, substantially as set forth.

5. In an apparatus for coating pills, lozenges, &c., the combination of a recessed receptacle, a lifter and holder, a remover, a coating-bath, a drier-shaft, a polishing-dish, and a polishing-shaft, substantially as set forth.

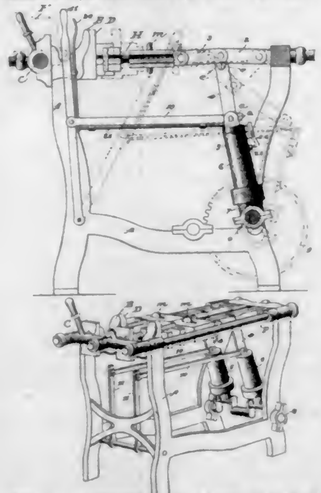
6. In an apparatus for coating pills, lozenges, &c., the combination of a lifter and holder, a drier-shaft, a fan or blower, a supply-pipe leading therefrom and discharging adjacent to the lifter and holder, and a heater connected with said supply-pipe between the blower and the discharge, substantially as set forth.

300,038. INDEX-GAGE FOR DRILLING-MACHINES. ALBERT B. BEAN, New Haven, Conn. Filed Dec. 27, 1883. (No model.)



Claim.—The combination, with the spindle of a drilling-machine, of a sleeve provided with a recess in which a rack is placed, and a pinion lying in said recess and meshing into said rack, said pinion being carried upon a shaft to which a pointer or other indicator is attached, as set forth.

300,039. BOOT AND SHOE SOLE SHAPING MACHINE. MAURICE V. BRENNAHAN, Lynn, Mass. Filed Apr. 5, 1884. (No model.)



Claim.—1. In combination with the mold D, the form B, said form being mounted on a movable support, C, and adapted to operate in connection with the mold, substantially as and for the purposes described.

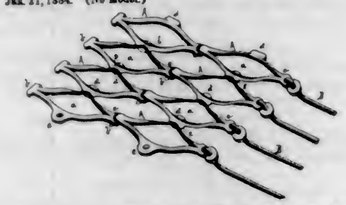
2. In combination with the mold D, the block B, and toggle-arms 2 3, and the parts 4 5 6, arranged substantially as described, and a suitable driving mechanism, substantially as set forth.

3. In a sole-shaping machine of substantially the construction described, the combination of lever 4, sleeve 5, plunger 6, and pin 23, said parts being combined and adapted to operate substantially as and for the purposes above set forth.

4. In a sole-shaping machine of substantially the construction described, the combination of lever 4, sleeve 5, plunger 6, arranged to operate as set forth, and a clamping or interlocking mechanism adapted to interlock the sleeve 5 and plunger 6, substantially as and for the purposes described.

5. The combination of the lever 11, rod 10, lever 4, sleeve 5, plunger 6, and pin 23, all adapted to operate substantially as set forth, and means, substantially as shown, to operate the pin 23, said means being extended upward along the lever 11, as and for the purposes set forth.

300,040. FLY-NET FOR HORSES. RALPH BROWNSON, St. Paul, Minn., assignor of one-half to Peter R. L. Hardenbergh, same place. Filed Jan. 21, 1884. (No model.)

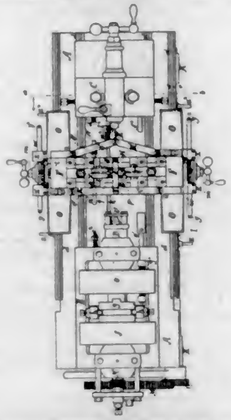


Claim.—1. As an improved article of manufacture, a web or net for horses, constructed of separate interlocked links of leather, of the form substantially as hereinbefore shown and described.

2. The link A, having the slit *a*, T-heads *b d*, and perforations *e e*, substantially as and for the purpose set forth.

3. A web or net constructed of separate links A, having T-heads *b d* and perforations *e e*, in combination with strings B, substantially as and for the purpose specified.

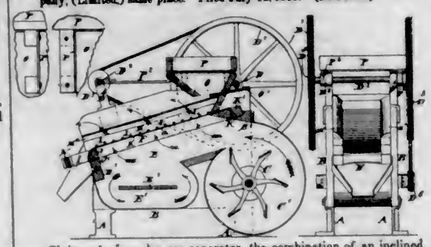
300,041. MACHINE FOR THREADING SCREW-TAPS. SIMON WHIPPLE CARD, Mansfield, Mass. Filed Dec. 18, 1883. (No model.)



Claim.—1. The combination, substantially as described, composed of the following elements, adapted and arranged essentially as set forth, viz: first, the lathe-bed A and the head and tail stocks B and C, with the arbor D and center E; second, the two cutter-carriages F, provided with cutter-holding devices or clamps *r*; third, the carriages G G, H, and O; fourth, the mechanism for reciprocating the carriage O, it consisting of the screw I, gears L, M, and N, pulleys *e* and *f*, clutch *g*, lever A, rod *k*, collars *l* and *l²*, springs *m* and *m²*, and the ears *n* and *n²*; fifth, the mechanism for advancing the cutter-carriages alternately to the blank, such consisting of two pairs of toggles, R and S, R′ and S′, the slide-rod *n′*, (having two collars, *o*,) the studs *c²* and *d′*, the slide-rods *e′* and *f″*, and the two springs *g′*; sixth, the mechanism for feeding forward the two cutter-carriages F in the required order, each of such mechanisms consisting of the carriage G, the screw *i*, ratchet-wheel *u* or *u′*, pawl *v*, slide *w* or *w′*, studs *y y²*, stops *z z²*, friction-disk *l′*, and spring *k′*, all as set forth.

2. The combination, substantially as described, for advancing each cutter-carriage to the blank, such combination consisting of the two pairs of toggles R and S, R′ and S′, slide-rod *n′*, shoulders *o′*, studs *c²* and *d′*, slide-rods *e′* and *f″*, and the two springs *g′*, arranged and adapted essentially as set forth.

300,042. DRY ORE SEPARATOR. WILLIAM L. CARD and JOSEPH C. DANE, La Crosse, Wis., assignors to the Card-Dane Dry Gold Sluice Company, (Limited,) same place. Filed July 12, 1883. (No model.)

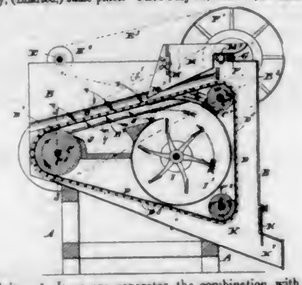


Claim.—1. In a dry ore separator, the combination of an inclined ore-bed composed of a suitable frame, fine-meshed wire-cloth, cotton, or other textile fabric superimposed on the wire-cloth, and transversely-arranged round riffles in close contact throughout their length with the upper surface of the cotton or textile fabric, an air-chamber, and a fan to deliver an even, steady, and continuous upward flow of air through the ore-bed and ore, substantially as herein shown and described.

2. In an ore-separator, the combination of an ore-bed, inclined downwardly from its receiving end toward its discharge end to enable the auriferous material to flow down it, an air-chamber beneath the bed, an extension beneath the air-chamber, having horizontal partition, and means to create a current of air through the air-chamber and around the partition and upward through the bed in a rearwardly direction, as set forth.

3. In an ore-separator, the bed consisting of side pieces, inner end pieces, outer and lower end pieces, wire-cloth, and superimposed textile cloth supported on the side and inner end pieces, and secured by the outer and lower end pieces, and suitable fastenings, the riffles, and upper side pieces and fastenings to secure the riffles in place, as set forth.

300,043. DRY ORE SEPARATOR. WILLIAM L. CARD and JOSEPH C. DANE, La Crosse, Wis., assignors to the Card-Dane Dry Gold Sluice Company, (Limited,) same place. Filed July 12, 1883. (No model.)



Claim.—1. In an ore-separator, the combination, with an endless traveling ore-bed, of a laterally-shaking hopper having blunt tapering teeth, between which the smaller particles first drop, and means to cause a current of air to pass upwardly through the ore-bed, as set forth.

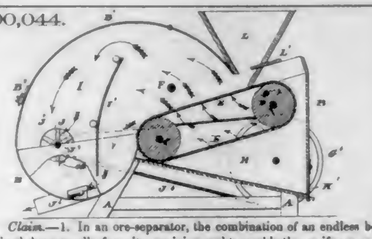
2. In an ore-separator, the combination, with an endless traveling ore-bed inclined from the receiving end downward toward the discharge end, and having riffles, of a laterally-shaking hopper having blunt tapering teeth to feed the finer material beneath the coarser, as set forth.

3. In an ore-separator, the combination of a casing, three rollers arranged in triangular form, a fan-chamber between the rollers, a fan, an air-chamber between the fan-chamber and the rear roller, and a chamber beneath the belt to receive the precious metal, as set forth.

4. In an ore-separator, a belt consisting of textile and wire cloths, the textile cloth superimposed on the wire-cloth, riffles, blocks between the ends of the riffles, strips for binding the edges of the belt, and rivets to secure the parts together, as set forth.

300,044. DRY ORE SEPARATOR. WILLIAM L. CARD and JOSEPH C. DANE, La Crosse, Wis., assignors to the Card-Dane Dry Gold Sluice Company, (Limited,) same place. Filed July 12, 1883. (No model.)

300,044.

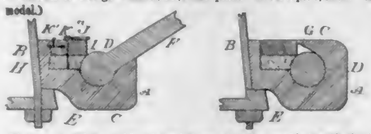


Claim.—1. In an ore-separator, the combination of an endless belt inclined downwardly from its receiving end to enable the auriferous material to flow down it, a suction device to draw air through the belt upwardly and rearwardly, and a partition to deflect the lighter coarse matter toward the discharge, as set forth.

2. In an ore-separator, the combination of an endless belt whose bed portion is inclined downwardly from the receiving end to permit the material to flow down it, a casing having at its rear an opening at each side, a partition transverse of the casing, a deflector to divide and direct the lighter coarse matter to the side openings, and a suction device to draw a current of air through the belt in an upward and rearward direction, as set forth.

3. In an ore-separator, the combination of an endless belt whose bed portion is inclined downwardly from the receiving end, and having riffles of sufficient height to arrest the heavier precious metal, a casing having at its rear an opening at each side, a partition transverse of the casing, a deflector to divide and direct the lighter coarse matter to the side openings, and a suction-fan and chamber at each side of the machine, having a discharge at bottom to receive the matter passing through the side openings and compel it to pass out, the fan-chambers being in communication with the main chamber of the casing at the rear of the partition, as set forth.

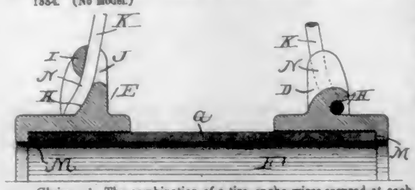
300,045. THILL-COUPLING. JOHN W. CARNS, Pierce, Ohio, assignor of one-half to George Walker, Jr., same place. Filed Apr. 8, 1884. (No model.)



Claim.—1. The combination of the socket A, provided with the inclined openings G, the shoulder E, the head D, the rubber block H, rigidly attached to the metallic cap I, the eye or handle J, and the clip B, all arranged substantially as shown, and for the purpose specified.

2. The metallic cap I, provided with the spring-catch K, in combination with the socket A, provided with the recess K′, substantially as and for the purpose specified.

300,046. WHEEL. ROBERT S. CARR, Hamilton, Ohio. Filed Feb. 4, 1884. (No model.)



Claim.—1. The combination of a tire, spoke-wires secured at each end to the tire, and each forming two spokes joined by a central bend, with its convexity toward the center of the wheel, and hub-spiders provided with a circumferential series of segmental lips arranged with their extremities contiguous, so as to form a space for the reception of two spokes, and having front bars closing the front of the segmental lips at their points of approach, substantially as and for the purpose set forth.

2. The combination of a tire, hub-spiders provided with a circumferential series of segmental lips, and with front bars at the contiguous extremities of the lips, and spoke-wires having a central bend to enable them to enter and leave the spider, and having also a side bend within the hub-spider, substantially as and for the purpose set forth.

3. The combination of a tire, a series of wire spokes, a hub-tube, and a pair of spoke-receiving spiders fitted upon the ends of the hub-tube and engaging against the ends of the tube, substantially as and for the purpose set forth.

300,047. CAPSULE FOR BOTTLES, &c. CHARLES CHESWRIGHT, London, England. Filed Mar. 3, 1884. (No model.) Patented in France Apr. 24, 1883, No. 155,090, and in England Apr. 27, 1883, No. 2,131.



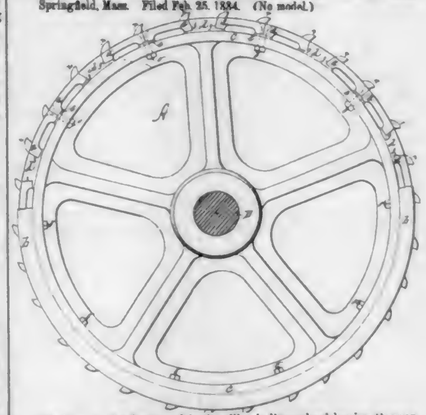
Claim.—1. A capsule for bottles and similar receptacles, made from thin metal and comprising a cap to rest on the cork, a body or sleeve, and narrow ties formed from the same piece as the cap, and strengthened by folds of the metal, substantially as herein set forth.

2. A capsule for bottles and similar receptacles, made from thin metal and comprising a cap to rest on the cork, and a sleeve made separate from and independent of the cap, to embrace the neck of the receptacle and the lower edge of the cap, substantially as set forth.

3. In a sheet-metal capsule for bottles and similar receptacles, the combination, with the cap and the sleeve, of the band *e*, arranged to cover the joint where the sleeve laps over the base of the cap, substantially as set forth.

4. In a sheet-metal capsule for bottles and similar receptacles, the combination of the cap, the ties *c*, strengthened by folds *c′*, of metal, as shown, the separate sleeve *b′*, and the band *e*, all constructed and arranged substantially as set forth.

300,048. GRINDING-WHEEL FOR BARK-MILLS. LLOYD R. CLARK, Springfield, Mass. Filed Feb. 25, 1884. (No model.)



Claim.—1. An improved bark-mill grinding-wheel having thereon a series of abutment-strips whose sides are grooved to receive the edges of the tooth-plates, and a series of bearing-strips located between the abutment-strips, tooth-plates having separated teeth, substantially as described, to fit between the latter and bear thereupon and on the bearing-strips, and bolts, substantially as described, for securing said plates to the wheel, substantially as set forth.

2. An improved tooth-plate for bark-mill grinding-wheels, consisting of the plate *a*, having separated teeth thereon integral therewith and hardened, and having bearing-surfaces beneath its opposite edges, substantially as set forth.

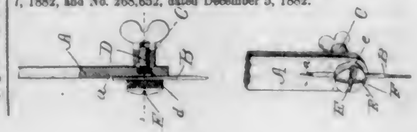
3. The wheel A, having the bands *b* applied thereto, and the strips *d* and *e* extending from end to end thereof, the tooth-plates *a*, and the bolts *o*, substantially as set forth.

300,049. PROCESS OF ENGRAVING MARBLE AND GRANITE. FREDERICK W. COONS, St. Louis, Mo. Filed Mar. 3, 1884. (No specimens.)

Claim.—The described process of engraving marble and granite by the use of varnish, lead-foil, and nitric acid, as set forth.

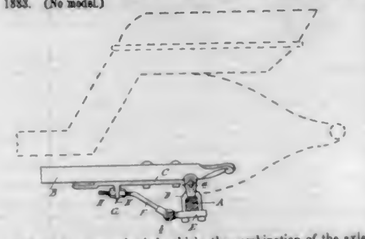
300,050. NEEDLE-CLAMP FOR SEWING-MACHINES. JASPER W. COREY, Chicago, Ill., assignor to the Sigwalt Sewing Machine Company, same place. Filed June 7, 1883. (No model.)

Brief.—Specific improvement on Patents No. 254,603, dated March 7, 1882, and No. 268,652, dated December 5, 1882.



Claim.—In a needle-clamp for sewing-machines, the combination of a needle-bar having groove *a* and hole *a′*, bolt D, having grooves E, *e*, and E′, and hole *d′*, formed in the head *d*, nut C, and an angular pin formed in one piece passing through holes *d′* and *a′* and extending into groove *e*, substantially as described.

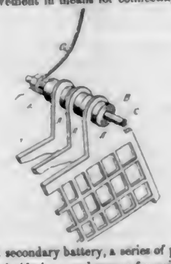
300,051. TWO-WHEELED VEHICLE. ALBERT DAVIS, Mason, Mich., assignor to the Mason Road Cart Company, same place. Filed Dec. 26, 1883. (No model.)



Claim.—In a two-wheeled vehicle, the combination of the axle A, shafts B, clip D, provided with the ears *a*, strap-iron C, having lug G and an eye to engage with the ears *a*, tie-bar E, provided with the eye *b*, rod F, pivoted at one end to the axle, and the other end adapted to pass through and be supported by said lug, and the nuts H, whereby the shaft B and its adjusting-rod are pivotally secured to the axle, substantially as and for the purposes described.

300,052. SECONDARY BATTERY. AUGUSTUS G. DAVIS, Baltimore, Md. Filed Jan. 14, 1884. (No model.)

Brief.—Improvement in means for connecting the plates of secondary batteries.



Claim.—1. In a secondary battery, a series of plates provided with upward extensions and side lugs, and means for uniting the series, substantially as described.

2. In a secondary battery, the combination, with a series of plates provided with upward projections and side lugs, of a central rod screw-threaded at its ends and provided with tightening-nuts, substantially as described.

3. In a secondary battery, the combination, with a series of plates provided with goose-neck projections having side lugs and extending beyond the sides of the cell, of means for uniting the series, substantially as described.

4. A secondary-battery plate provided with upward projections and side lugs, substantially as described.

5. A secondary-battery plate provided with goose-necked upward projections and side lugs, substantially as described.

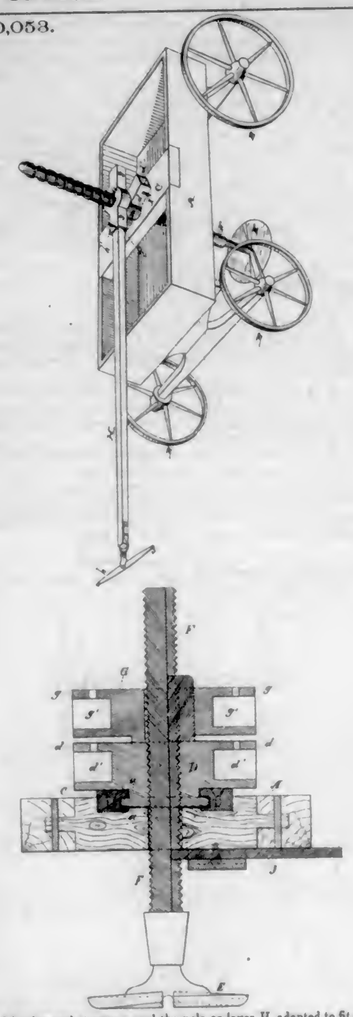
300,053. EARTH-BORING AUGER. CAMILLE DE MEZERVILLE, Santa Clara, Cal. Filed Sept. 17, 1883. (No model.)

Brief.—Through a bearing-plate on a vehicle passes the grooved screw-shaft of an auger, which is rotated to dig by a feathered washer, provided with socketed arms to receive a sweep-pole. The feed is by a nut similarly provided and held from rotation by a pin. The auger is raised by rotation of the nut, the shaft being then held from rotation by a slide-piece engaging the groove.

Claim.—1. The transverse bearing-plate C on the wheeled frame, and the auger E, having screw-shank F, in combination with the anchored rotating nut D, threaded on the screw-shank, the washer G, feathered on the screw-shank above the nut, and a means for alternately rotating said nut and washer to raise or depress the auger, respectively, substantially as herein described.

2. The wheeled frame A, having transverse plate C, with flanged socket *c*, and the auger E, having screw-shank F, in combination with the nut D on said screw-shank, and having socket-arms *d* and flanged neck *a*, fitting socket *c*, the washer G, feathered on said screw-shank

300,053.



and having socket-arms *g*, and the pole or lever H, adapted to fit its end into the socket-arms of the nut D or washer G, substantially as and for the purpose herein described.

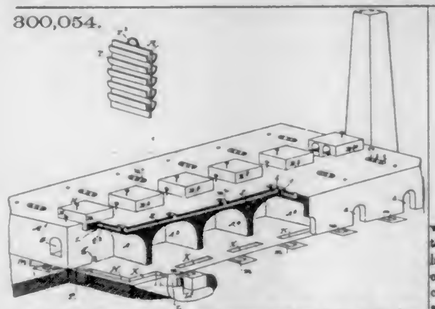
3. The transverse bearing-plate C on the wheeled frame, and the auger E, having grooved screw-shank F, in combination with the rotating horizontally-anchored nut D, having socket-arms *d*, the pin I, for preventing its revolution, the feathered washer G on the screw-shank, and having socket-arms *g*, the sliding pin J, adapted to fit the feather-groove of the screw-shank to prevent it from turning, and the removable pole or lever H, substantially as and for the purpose herein described.

300,054. BRICK-KILN. WM. H. DE VALIN, San Rafael, Cal. Filed Aug. 17, 1883. (No model.)

Claim.—1. In a burning-kiln, the chambers A A′, &c., each pair being connected with a separate furnace, a common chimney-flue, G, outlets *g*, for the chambers, and valves or dampers A, and connections beneath the chamber with means for controlling them, as set forth.

2. In a burning-kiln, the combination, with a series of burning-chambers, of a principal outlet flue or conduit, S, flues *t f* at each chamber, and a removable cap or cover, as V, provided with division-plates for separating or connecting said flues and conduit, as desired, substantially as set forth.

300,054.



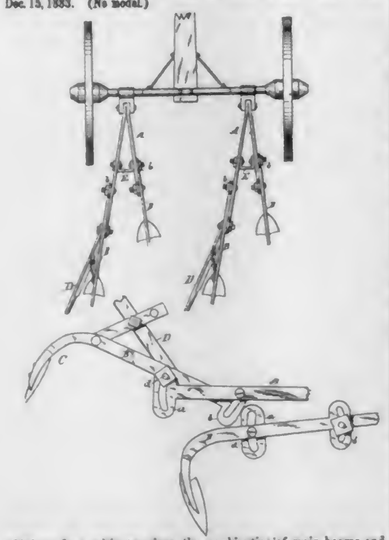
3. The combination, with the burning-chambers A A', of the flues K, damper-pits *m*, connecting-passages L L', and removable dampers R, provided with means for holding a coating of clay on each side, substantially as set forth.

4. In a kiln for burning brick and other material, a burning-chamber, as A, having flue *g*, leading to the chimney, and a furnace, as B, on top, and communicating with the interior of the chamber through a flue, as I, substantially as set forth.

5. The combination, with the conduit S and flues *t t'*, of cover V, provided with center plate, *v'*, and a division-plate, *z*, on one side and two division-plates, *w w*, on the other, substantially as set forth.

6. The combination of the flues for connecting the chambers at the bottoms of the damper or stopper R, provided with the curved wings *r r* on the sides, to hold a coating of clay, as set forth.

300,055. CULTIVATOR. JAMES C. DOANE, Western, Nebr. Filed Dec. 15, 1883. (No model.)

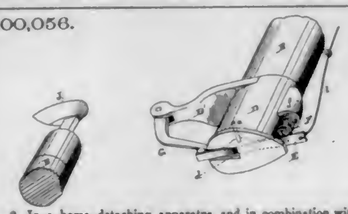


Claim.—In a cultivator-drag, the combination of main beams and extensions, each provided with slotted cross-heads and secured together, as described, whereby the adjustment and relief of the plows is secured, as specified.

300,056. HORSE-DETACHER. OCTAVE DUPAS, San Rafael, Cal., assignor of one-half to ISAAC SHAVER, same place. Filed Mar. 7, 1884. (No model.)

Claim.—1. In a horse-detaching apparatus, and in combination with the whiffletree of a vehicle, a pivoted trace-hook on one end of the whiffletree, and a latch and latch-tripping mechanism for engaging and releasing the trace-hook, whereby the trace may be held or pulled off, and a trace lug or hook on the other end of the whiffletree adapted, when the tree is turned at an angle by the release of the opposite trace, to free itself from the loop of its trace, substantially as herein described.

300,056.



2. In a horse-detaching apparatus, and in combination with the whiffletree B, the cap D on its end, having a slot, *d*, and forwardly-extending arm D', the curved trace-hook G, pivoted in the end of the arm, latch E, pivoted within the end of the cap, and adapted to engage the end of hook G, the spring F, for holding the latch to its engagement, and the cord I, for tripping the latch, all arranged and operating substantially as and for the purpose herein described.

3. In a horse-detaching apparatus, and in combination with the pivoted trace-hook G, and latching and tripping mechanism on one end of the whiffletree, as described, the trace lug or hook J on the other end of the whiffletree, said lug having a head with a curved face and beveled long front, and a curved and beveled short back, substantially as and for the purpose herein described.

300,057. THILL-COUPLING. ROBERT R. EARNEST, Mechanicsburg, Ohio, assignor of one-half to THOMAS M. BATES, same place. Filed Mar. 6, 1884. (No model.)



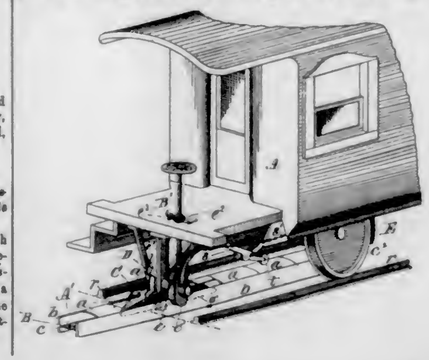
Claim.—1. The herein-described thill-coupling, consisting of clip A, thill-iron B, bolt C, having pointed latch *b* pivoted to its body *a*, and rubber washer D, encircling bolt C and interposed between latch *b* and the side of the thill-clip, substantially as shown.

2. In combination with a thill-clip and a shaft-iron, a connecting pin or bolt passing through said parts, and provided with a pivoted latch at one end, and a rubber washer encircling the pin between the latch and the clip, and provided with a metal facing to receive the wear of the latch, as described and shown.

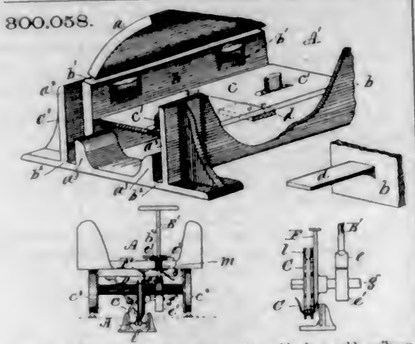
300,058. CABLE RAILWAY. AUSTIN C. EVANS, Springfield, Ohio. Filed Jan. 5, 1884. (No model.)

Brief.—The hinged covering-plates of the tube are raised by arms upon the device which carries the propelling-cable, said cable being engaged by a sprocket-wheel which is controlled by a brake mechanism upon the axle of said wheel. The tube is open at the bottom, except at turnouts, curves, and the approaches thereto, where a floor is provided, which is supported upon arms extending out from one side of the tube, part way across the same, and upon which floor are arranged guides for the cable.

Claim.—1. In a tube for cable railways, a series of covering-plates hinged or otherwise flexibly connected therewith on one side, in combination with a cable operated in said tube and a car having a carrier adapted to carry said cable, as described, and to elevate said covering-plates automatically as said car is drawn along the track of the railway.



300,058.



2. A cable way or tube for a running cable, in a cable railway, open throughout its length at the bottom, and having at the curves, turnouts, and approaches to the former floor-plates supported upon arms extending from the side plates about half the depth of the same, said floor-plates being for the purpose of supporting and guiding the cable at these points, as set forth.

3. In a cable railway, the combination, with the running cable, of a tube having side plates provided with lateral arms extending inward therefrom, and floor-plates resting upon said arms, whereby said cable is supported and guided, substantially as set forth.

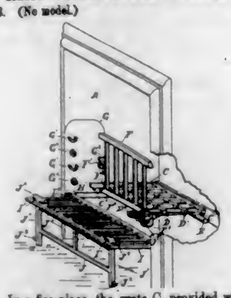
4. In a cable way or tube having an open bottom, the combination, with the sections forming the same, of the chairs extending across the line of the tube under the latter, having the standards and the abutments inside of the same, forming grooves between the two, adapted to support the side plates of said tube in a perpendicular position, as set forth.

5. In a cable way or tube for a single-track railway, the combination, with the floor-plates and the cable, of the vertical studs of double convex form in their cross-section, arranged upon said floor-plates to keep the two lines of said cable separate and to guide the latter toward the bearing-pulleys.

6. In a cable-railway car, a bracket and braces suspended therefrom, a shaft extending horizontally through the same rotating in bearings therein, a sprocket-wheel mounted upon said shaft on one side of said bracket, and a wheel upon the same shaft on the opposite side, said wheel being operated upon by a shoe pivotally attached to the screw-threaded shaft of the brake, whereby the connection and disconnection of the car with the cable is made by clamping said shoe upon said wheel, which stops the revolution of said shaft with the sprocket-wheel, and allows the links or balls on the cable to engage the teeth of the latter and propel the car along the track.

7. In a cable railway, a car provided with a bracket suspended from its platform, a carrier on the lower end of said bracket extending into the cable-tube, through which the cable runs, a brace on either side of said bracket, a horizontal shaft pivoted in bearings in the bracket and braces, having on one side of the former a sprocket-wheel, the teeth of which are engaged by the cable, and on the other side a wheel operated upon by a brake from the platform of the car to stop the rotation of the sprocket-wheel, whereby the latter becomes fixedly connected with said cable and the car is propelled, as set forth.

300,059. GRATE. CHARLES H. FISHER, Wheeling, W. Va. Filed Nov. 30, 1883. (No model.)



Claim.—1. In a fire-place, the grate C, provided with the lugs C' and lever D, said grate pivotally mounted on the rod E, in combination with the grate F, supporting the grate C, and having lugs F', and the side plates having the side lugs, G', substantially as specified.

2. In a fire-place, the grate C, provided with lugs C' and side lugs, C', and rod E, in combination with the grate F, supporting the grate C, and having the lugs F', and the side plates having the side lugs, G', substantially as specified.

3. In a fire-place, the grate C, provided with lugs C', lever D, having opening D', and the shaking-lever L, secured in said opening, in combination with the grate F, supporting the grate C, and pivotally mounted in the side of the fire-place, the grates C F having lateral play, whereby they may be shaken by the lever L, substantially as specified.

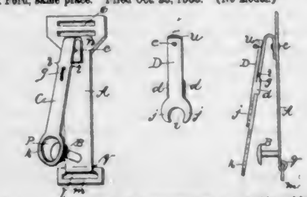
4. In a fire-place, the grate C, pivotally mounted on the rod E, and provided with lugs C' and lever D, the tilting-rod M, secured to the forward end of the lever D, in combination with the grate F, supporting the grate C, and pivotally mounted in the sides of the fire-place, substantially as specified.

5. In a fire-place, the grates F C, pivotally mounted, and having lateral movement, and provided with lever D, in combination with the shaking-rod L and tilting-rod M, substantially as specified.

6. In a fire-place, the supplementary grate I, having the supporting-frame J, movably secured thereto, said grate being provided with end lugs, I', the support being provided with end lugs, J', in combination with the side of the fire-place, provided with grooved lugs, whereby the lugs I' and J' may be secured and the grate caused to assume various positions, substantially as described and specified.

7. In a fire-place, the pivoted grates C and F, in combination with the grate I and lugs G', whereby one end of the grate I may rest on said lugs, and the rear end of said grate rest on the top of grate F, and the grate I elevated immediately over the fire, substantially as described, and for the purposes set forth.

300,060. CLASP. ISAAC V. FORD, Troy, N. Y., assignor to Catharine E. Ford, same place. Filed Oct. 23, 1883. (No model.)



Claim.—1. In a clasp, the combination of a rigid studded plate, A, and a perforated spring, C, attached to said plate, and provided with a forked slide, D, substantially as described, and for the purposes set forth.

2. In a clasp, the combination of plate A, stud B, rivet *c*, spring C, having ring *k* and depression *g*, and slide D, having projection *e*, guides *d d*, and forks *j j*, substantially as and for the purposes set forth.

3. A clasp-spring, C, provided with ring *k*, and stops *t t*, in combination with a slide, D, provided with forks *j j* and guides *d d*, and studded plate A, substantially as described, and for the purposes mentioned.

300,061. OYSTER-REFRIGERATOR. SPENCER LEE FRASER and WILLIAM A. BRIGHAM, Toledo, Ohio. Filed Oct. 12, 1883. (No model.)



Claim.—1. A refrigerator-box and a food-receptacle contained therein, in combination with a cover for said box provided with an opening adapted to encircle the top of said receptacle, whereby access may be had to the receptacle without exposing the contents of the box, substantially as set forth.

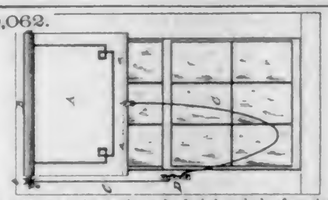
2. The refrigerator-box *a*, the perforated shelf *d*, and the receptacle B, in combination with the box-cover F, provided with a central opening, E, adapted to encircle the top of the receptacle B, and the cover G of said receptacle, substantially as set forth.

300,062. WINDOW-SHADE ATTACHMENT. CHARLES GEERTS, Brooklyn, N. Y. Filed Apr. 26, 1884. (No model.)

Claim.—1. The combination of the shade A, shade-roller B, having a pulley, *b*, shade-cord C, attached to the pulley and to the bottom strip, *a*, of the shade, and a perforated friction device, D, through the holes of which the shade-cord is passed, substantially as set forth.

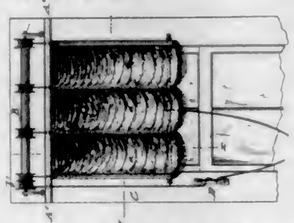
2. A friction device for the cords of window-shades, composed of a block of suitable shape, having diametrical perforations extending alternately in different directions through the block, substantially as set forth.

300,062.



3. A friction device for the cords of window-shades, formed of a cylindrical or spherical block, having diametrical openings arranged alternately at right angles to each other, and end openings for attaching it to the window-casing, substantially as set forth.

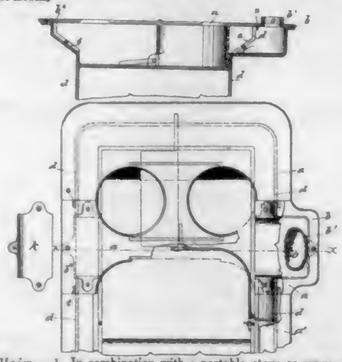
300,063. LAMBREQUIN-SHADE. CHARLES GEERTS, Brooklyn, N. Y. Filed Apr. 26, 1884. (No model.)



Claim.—1. The combination of a fixed top strip, a lambrequin-shade composed of longitudinal sections attached to said strip, suspension-cords that are passed through openings of the meeting edges of the shade-sections, alternately, from one side to the other of said edges, and a winding-up roller above the top strip, substantially as set forth.

2. The combination of a fixed top strip, a lambrequin-shade attached to said strip, a shade-roller above said strip, suspension-cords passing through guide-openings of the top strip and through openings of the meeting edges of the shade-sections, alternately, from one side to the other of said edges, and inclosing-hems running along the meeting edges of the shade-sections, substantially as set forth.

300,064. PORTABLE RANGE. CHARLES P. GEISSENHAINER, Pittsburg, Pa., assignor to Frank. S. Bissell, same place. Filed Nov. 17, 1883. (No model.)



Claim.—1. In combination with a portable stove or range, a removable and reversible pipe-connection, whereby the stove or range may be altered to a right or left hand one, substantially as described.

2. In combination with a portable stove or range, a combined removable and reversible top plate and pipe-collar, whereby the stove or range may be altered to a right or left hand one, substantially as set forth.

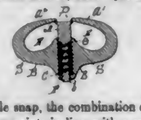
3. In a convertible right and left hand stove or portable range having recessed side plates, a flue-box attachable to and detachable from the recessed side plates, and reversible from one side to the other, in combination with a reversible top plate having a pipe-collar attached thereto, and a removable stopper-plate, substantially as set forth.

4. In a convertible right and left hand stove or portable range having recessed side plates, a flue-box attachable to and detachable from the side plates, and reversible from one side to the other, in combination with a reversible top plate having a pipe-collar attached thereto, and a removable stopper-plate for covering the recess not covered by the flue-box, substantially as set forth.

5. In a convertible right and left hand stove or portable range having recessed side plates, a flue-box attachable to and detachable from the side plates, and reversible from one side to the other, in combination with a reversible top plate having a pipe-collar attached thereto, and a reversible deflecting-plate, substantially as set forth.

6. In a convertible right and left hand stove or portable range having recessed side plates, the flue-box *f*, in combination with the top plate, *a*, having pipe-collar *b'*, the stopper-plate *k*, and the deflecting-plate *l*, substantially as set forth.

300,065. DOUBLE SNAP-HOOK FOR HARNESS. JOHN GIBBONS, West Troy, N. Y., assignor to the Union Hardware Manufacturing Company, same place. Filed Nov. 13, 1883. (No model.)



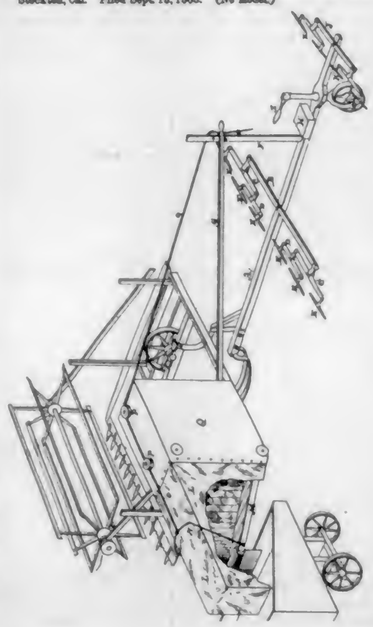
Claim.—In a double snap, the combination of two reversing-hooks having their approaching points in line, with a space between them, an intermediate body part to which the hooks attach, a chamber within the body part, and a bolt-latch within said chamber, and constructed with an encircling-spring adapted to force said bolt-latch to close the opening between the hook-prongs, substantially as herein shown and described.

300,066. RAILWAY-SPIKE. WILLIAM GOLDIE, West Bay City, assignor of one-half to David H. Jerome, Saginaw, Mich. Filed Dec. 31, 1883. (No model.)



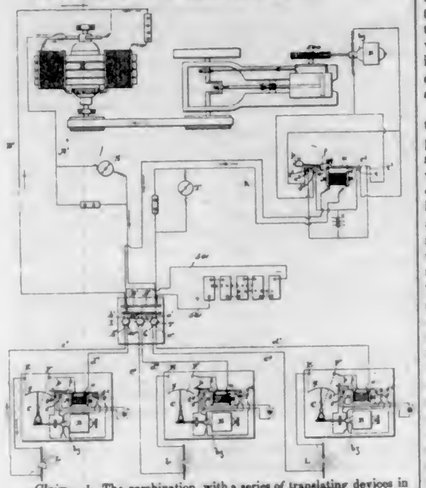
Claim.—In a railway-spike having a main portion, *a*, and compressing-inclines, a supplemental portion of reduced rectangular cross-section, and a point formed by beveling toward a common center the sides of the reduced portion, substantially as described.

300,067. HEADER AND THRASHER. CHRISTOPHER GRATTAN, Stockton, Cal. Filed Sept. 18, 1883. (No model.)



Claim.—In a combined header and thrasher having a straw-carrier and cleaning-shoe which discharge at one side, a supplemental carrying-belt and an inclosing hood or cover, with a downwardly-discharging spout, in combination with a suspending-bail, N, operating-rope O, pulleys P P, and a bar, F, secured to the pole A, substantially as herein described.

300,068. APPARATUS FOR DISTRIBUTING ELECTRICITY. ALPHONSE ISIDORE GRAVIER, Paris, France. Filed Feb. 9, 1882. (No model.) Patented in France June 3, 1880, No. 137,033; in Germany July 29, 1880, No. 15,525, and May 13, 1881, No. 16,682; in Belgium June 13, 1881, No. 54,896; in England June 22, 1881, No. 2,739; in Italy Dec. 19, 1881, No. 13,693; in Austria-Hungary May 20, 1882; in Norway July 18, 1882; in Sweden Oct. 9, 1883, and in Denmark Feb. 27, 1883.



Claim.—1. The combination, with a series of translating devices in branches of a common circuit, of self-adjusting rheostats operated electrically, included in the same branches with the translating devices, for increasing or decreasing automatically the resistance of said branches as the current through the translating devices rises or falls, substantially as described.

2. The combination, with translating devices in branches of a common circuit, of self-adjusting rheostats adjustable also by hand to vary the normal resistance thereof, said rheostats being placed in the same branches with the translating devices, so that when set they maintain the current through the translating devices at a given strength, and when desired may be adjusted by hand to vary the said current, substantially as described.

3. The combination, with translating devices in branches of a common circuit, a generator for supplying electricity to said circuit, and adjustable rheostats in the said branches, of an automatic electric governor for controlling the electro-motive force of said generator, substantially as described.

4. In a system of distributing electricity, the combination, with the main circuit and the derived or looped branches containing the translating devices, of switches for connecting and disconnecting simultaneously both wires of the loop branches, the connection of the wires of the main circuit being broken at each switch when the corresponding branch is cut out, substantially as described.

5. The combination, with translating devices in branches connected with the main circuit at common points or centers, and main conductors extending from said centers to the generating-station at a distance, of a governing branch returning from said centers to the generating-station, substantially as described.

6. The combination, with translating devices in branches connected with the main conductors at common points or centers, of secondary batteries included in a loop or branch, also connected with the main conductors at said centers, substantially as described.

7. The combination, with the translating devices in branches, and the generator for supplying electricity to the circuit, of the secondary battery in a loop or branch, and an electric governor for controlling the electro-motive force of the generator, also placed in a loop or branch, substantially as described.

8. The combination, with translating devices, a generator, and the conductor forming a circuit, of the secondary battery in a branch or loop, and self-adjusting rheostats in the same branches, which include the translating devices, substantially as described.

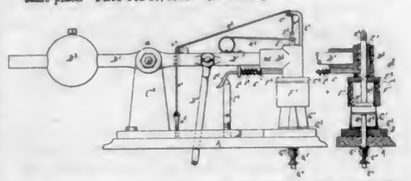
9. The combination, with translating devices, a generator, and conductors forming a circuit, of the secondary battery in a loop or branch, the self-adjusting rheostats for controlling the resistance of the branches, including the translating devices, and the electric governor for controlling automatically the electro-motive force of the generator, substantially as described.

10. The combination, with translating devices in branches of a common circuit, the conductors constituting said circuit, a generator, and a governing branch, of a galvanometer or similar instrument in the main circuit, and an additional one in the governing branch, whereby the attendant at the generating-station may ascertain when the translating devices are all out of action, substantially as described.

11. A system of electric lamps, generator, and conductors comprising a generator and main conductors of low resistance, a number of translating devices, each having a resistance as many times as great as that of a lamp using the entire current as the number of translating devices is greater than one, and being included in a separate branch having a resistance equal to that of the circuit supplying a single lamp increased in the same proportion, the common resistances of the generator and main conductors first being deducted, substantially as described.

12. A system of distributing electricity, comprising, in combination, main conductors extending to a distance, a generator having its poles connected with said conductors, a series of branches derived from said conductors at common points or centers, a switch-board through whose contacts the said branches are connected with the main conductors, translating devices and self-adjusting rheostats in the said branches, a loop permanently connected with the main conductors at the said centers, a secondary battery in the loop, a governing branch derived from the main conductors at the aforesaid centers, means for controlling the electro-motive force of the generator, an electric governor operating said means and placed in said governing branch, a galvanometer in one of the main conductors, and a second galvanometer in the governing branch, said self-adjusting rheostats being provided with devices to be set by hand for varying the normal resistance or resistance which each rheostat has when the normal difference in potential between the aforesaid centers is maintained, and said self-adjusting rheostats being also provided with or comprising a rheostat proper having a resistance-wire, a series of contacts, and a switch-lever, and an electric governor having a relay and an electric motor, the latter connected with the switch-lever and the aforesaid electric governor for controlling the electro-motive force of the generator, in like manner comprising a relay and a motor, and the said switch-board having independent prisms, with a duplicate set of contacts for making or breaking the connection of both conductors of the derived translating branches, and the resistance of the translating devices and of the derived translating branches being adapted to the construction of the generator, all substantially as described.

300,069. MACHINE FOR CUTTING CIGAR-WRAPPERS. HENRY GRUNHAGEN, St. Paul, Minn., assignor of one-third to William Pfaender, Jr., same place. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a cigar-wrapper-cutting machine, the combination of a fixed cutting-knife, a piston in the knife having a downward intermittent movement therein, and adapted to be held stationary after each downward movement, and a shell or block having an up and down reciprocating movement for pressing the successive wrappers upon the knife, substantially as and for the purpose herein specified.

2. The combination of a stationary cutting-knife, a reciprocating shell or block which presses the wrappers upon the knife, a spring-depressed piston within the said shell or block, means for raising the said piston in the shell or block, and means for locking and then releasing the piston in its raised position, substantially as and for the purpose herein specified.

3. The combination of the stationary knife G', reciprocating piston G^3 in the said knife, reciprocating shell or block F', reciprocating piston H' therein, means for retaining the piston G^3 after each intermittent downward movement, means for raising the piston H' in the shell or block, and means for locking and again releasing the same in its raised position, substantially as and for the purpose herein specified.

4. The combination of the lever D', shell or block F', attached to and operating with said lever, piston H', piston-rod H^3, spring H^3, cord C^3, rod L', pin L', and knife G', substantially as set forth.

5. The combination of the pivoted lever D', means for depressing one end thereof bearing the head D^3, counter-weight D^2 upon its other

end, shell or block F', carried by the said lever-head, and stationary knife G', substantially as and for the purpose herein specified.

6. The combination of the lever D', piston H', piston-rod H², spring H³, stationary pulley c^3, cord c^2, pulley c', carried by the said lever, and fixed pin c^4, substantially as and for the purpose herein specified.

300,070. ALBUM-CLASP. THEODORE M. HAHN, New York, N. Y. Filed Apr. 12, 1884. (No model.)



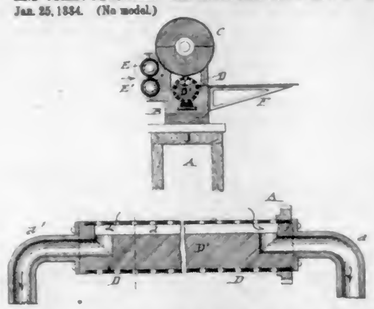
Claim.—1. The combination of a hinged main piece, A, an extension-shank, B, guided by said main piece, and fulcrumed and spring-actuated levers C C, engaging a recess of the extension-shank, substantially as set forth.

2. The combination of the hinged main piece A, an extension-shank, B, guided thereby, having a ball-shaped terminal, B', fulcrumed and spring-actuated levers C C, and retaining-studs a' a', substantially as set forth.

3. The combination of a hinged main piece, A, an extension-shank, B, guided in a socket of the main piece, fulcrumed levers C C, engaging a recess of the shank, a V-shaped spring, e, engaging the inner ends of the levers, the spring being retained in a recess of the main piece by a fixed pin, e', substantially as set forth.

4. The combination of a hinged main piece, A, provided with guide-recesses f f, for the lower handles, an extension-shank, B, guided in a socket of said main piece, and fulcrumed and spring-actuated levers C C, engaging a recess of said shank, substantially as set forth.

300,071. MACHINE FOR SCRAPING THE QUILLS OF OSTRICH AND OTHER FEATHERS. JOHN HAWLOWETZ, New York, N. Y. Filed Jan. 25, 1884. (No model.)



Claim.—1. The method herein described of scraping the quills of ostrich and other feathers, which consists in subjecting the quills to the abrading action of a rapidly-revolving scraping-roller and simultaneously removing the vanes out of the path of said roller by atmospheric suction, substantially as set forth.

2. The combination of a revolving abrading-roller, a perforated revolving shell below the same, and means for sucking in the air through the perforations of the shell, substantially as set forth.

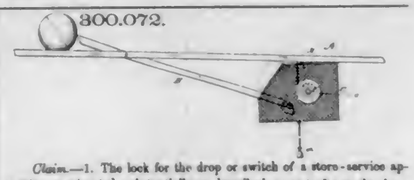
3. In a machine for scraping the quills of feathers, the combination of a revolving abrading-roller, a revolving perforated shell below the same, a fixed core inside of the shell, said core being provided with a longitudinal channel and pipes connecting the ends of the channel with a suction-fan, substantially as described.

4. The combination of an abrading-roller, a perforated revolving shell below the same, a fixed interior core provided with an air-channel at the upper part, suction-pipes connected to the ends of the air-channel, revolving feed-rollers at one side of the abrading-roller, and a delivery-table at the other side thereof, substantially as and for the purpose set forth.

300,072. STORE-SERVICE APPARATUS. HARRIS H. HAYDEN, New York, N. Y. Filed Feb. 23, 1884. (No model.)



300,072.



Claim.—1. The lock for the drop or switch of a store-service apparatus, constructed, substantially as described, so as to fasten the drop automatically when the basket or other receptacle is withdrawn, and to release the same when the basket is returned, substantially as specified.

2. The combination of a track, drop-switch, vertically-movable basket, and detent, constructed and arranged to lock the switch as the basket descends, and to unlock the switch as the basket approaches the track, substantially as set forth.

3. The combination, with the drop-switch of a store-service apparatus, of a detent provided with an arm extending beneath the switch, and with an arm arranged to make contact with the basket, for the purpose specified.

4. The combination of the switch B, detent provided with arms b d and fingers s i, and drop-basket C, substantially as described.

5. The combination, with the track and end drop-basket, of a detent arranged and constructed to limit the movement of the carriers after the basket has been drawn down, and to be moved to release the carriers as the basket approaches the track, substantially as specified.

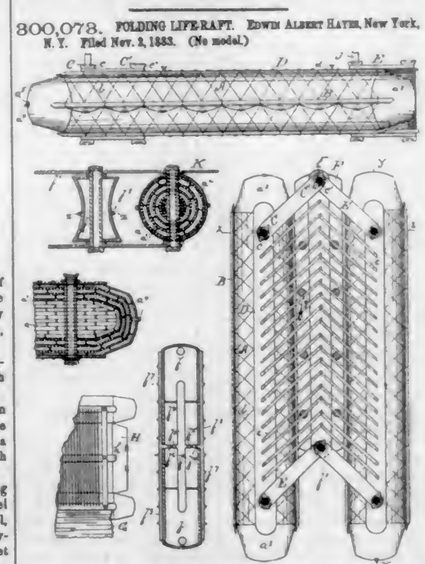
6. The combination, with the track and drop-basket, of a detent pivoted to the track and provided with a cross-bar, m, and pendent arms p, substantially as specified.

7. The combination, in a store-service apparatus, of a track, a basket, cords connected to the track, and a spring drum or drums upon the basket, around which said cords are wound, substantially as set forth.

8. In a store-service apparatus, a drop box or basket provided with one or more cord-winding devices for receiving the cords connected to the track by which the basket is suspended, substantially as set forth.

9. The combination of the flexible cords or suspensions connected at the upper ends to the track, a basket, and winding attachments on the basket to which the cords are attached, substantially as specified.

300,073. FOLDING LIFE-RAFT. EDWIN ALBERT HAYES, New York, N. Y. Filed Nov. 2, 1883. (No model.)



Claim.—1. In a life-raft, the buoys A, constructed of a core consisting of a series of longitudinal air-chambers, a, and surrounded by alternate layers of annular and longitudinal air-compartments, in combination with a filling of granular cork or equivalent placed in the interstices between the same, and with an exterior covering, a^2, for the whole, consisting of canvas or other water-tight material, substantially as described.

2. In a life-raft, the buoy A, consisting of a body constructed of a number of air-chambers, a, and an exterior covering, a^2, for the same, of canvas or like water-proof material, and provided with an air-cock, a^4,

for the purpose of inflating the float, in combination with removable metal guarding-shields a^3, placed at the extreme points of the buoy, substantially as and for the purpose set forth.

3. In a folding life-raft, the combination, with the buoys A and distensible cross-ties E, jointed at their longitudinal centers, and the top bracing-board f', of the secondary distensible cross-ties e, also jointed at their longitudinal centers, and adapted to be attached to the buoys A and to the top bracing-board f', substantially as described.

4. In a buoy or other vessel adapted to float upon water, the combination, with an oil-tank, f^3, and with perforated longitudinal pipes f^5, placed at the sides or other exterior surfaces of the buoy, of tubes f^4 or other conduits adapted to connect the same with the tank, substantially as described, whereby the oil in the tank f^3 may be gradually distributed by means of and through the perforations in the longitudinal pipes, as and for the purpose set forth.

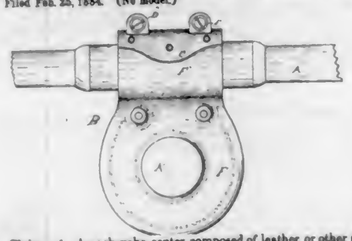
5. In a buoy or other vessel adapted to float upon water, the combination, with an oil-tank, f^3, and with perforated longitudinal pipes f^5, placed at the sides or other exterior surfaces of the buoy, of tubes f^4 or other conduits adapted to connect the same with the tank, substantially as described, and provided with cocks f^6, whereby the oil may be confined in the tank or gradually distributed through the perforated longitudinal pipes at will, as and for the purpose set forth.

6. In a buoy or other vessel adapted to float upon water, the combination, with an oil-tank, f^3, and with perforated longitudinal pipes f^5, placed at the sides or other exterior surfaces of the buoy, of tubes f^4 or other conduits adapted to connect the same with the tank, and provided with two sets of cocks, f^6 and f^7—one, f^6, adapted to supply the pipes f^5 with oil from the tank at pleasure, and the other, f^7, adapted to supply the pipes f^5 with air, water, &c., for cleansing purposes—substantially as described.

7. In a folding life-raft, the combination, with the exterior buoys, A, the distensible cross-ties E, jointed at their longitudinal centers, and the bracing-boards f', of the central float, F, provided with a water-tight chamber, f, and also provided with man-holes f^8, and adapted to contain water and provisions, substantially as specified.

8. In a folding life-raft, the combination, with the exterior floats A, of a central buoy, F, consisting of a water-tight chamber, f, adapted to contain water and provisions, and also provided with an oil-tank, f^3, and of the distensible cross-ties E, jointed at their longitudinal centers, or equivalent devices, for connecting the three floats together, substantially as described

300,074. NECK-YOKE CENTER. PHILIPP J. HEILMAN, Emporia, Kans. Filed Feb. 25, 1884. (No model.)



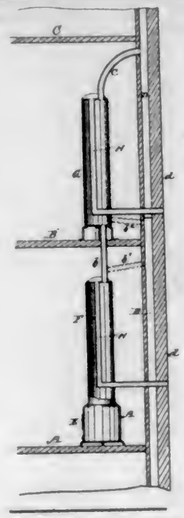
Claim.—1. A neck-yoke center composed of leather or other suitable flexible material, having its upper or band portion which encircles the yoke divided, substantially as shown and described, in combination with a clamp attached thereto, by which it may be adjustably connected with said yoke.

2. In a flexible neck-yoke center, a detachable device in combination therewith, by means of which the upper portion of the center is secured to the yoke-bar and its tension thereabout regulated as required, said device consisting of the plates C C, securely fastened to said center, and provided with the ears D D D' D', with the adjusting screw-bolts E E passing through said ears, for the purpose set forth.

300,075. HEATING AND VENTILATING DEVICE FOR BUILDINGS. AMANDA M. HICKS, Clinton, and ALONZO DISHMAN, Paducah, Ky. Filed July 16, 1883. (No model.)

Claim.—The combination of the stove E, with its drum F on the lower floor, A, of a building, one or more upper drums, G, on the floor or floors above, pipes or ducts connecting the upper portion of each under drum with the lower portion of the drum on the next floor above it, the escape-pipe e for the gaseous products of combustion, the chimney D of the building, and the independent air-supply pipes H, arranged one above the other within the drums and through the chimney to the external atmosphere, and open at their upper or inner ends to the rooms containing the drums, essentially as shown and described, and for the purposes set forth.

300,075.



300,076. MINING-MACHINE. JOHN R. HOWELLS, Plymouth, and GEORGE SHELLEY, Wilkes-Barre, Pa. Filed Sept. 25, 1883. (No model.)

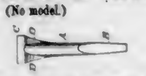


Claim.—1. In a mining-drill, the box F, supported on a suitable standard and formed in two parts, having screw-threads on the inside, the feed-screw H, shouldered at one end, having its bearing in the box F, and engaging with the screw-thread in the same, and the sleeve I, surrounding the feed-screw H, and having gearing on its periphery, in combination with the shaft L, shouldered at each end, having the worm-gear L^2 and pinion L' mounted on said shaft, and the shaft M, shouldered at each end, and having the gear-wheel M' mounted on the same and meshing with pinion L', all arranged and operating to the end that the drill may be run at a high or low rate of speed, as desired.

2. In a mining-drill, the box F, supported on a suitable standard, and formed in two parts hinged together, having screw-threads on the inside, the feed-screw H, shouldered at one end, having its bearing in the box F, and provided with the keys i i and grooves k, and the sleeve I, surrounding the feed-screw H, and having the lugs l^2, forming key-seats, and the gearing o on its periphery, in combination with the shaft L, shouldered at each end, having the worm-gear L^2 and pinion L' mounted on said shaft, and the shaft M, shouldered at each end, and having the gear-wheel M' mounted on the same and meshing with the pinion L', all arranged and operating substantially as and for the purpose shown and described.

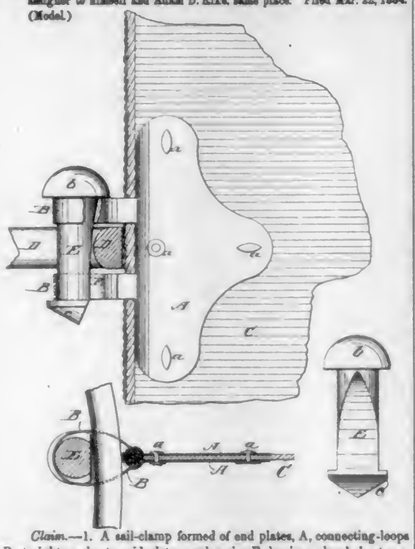
3. In a mining-drill, the standard D, pivoted in the stock A and secured to the adjustable plate E, the box F, supported by the standard D and formed in two parts, having screw-threads on the inside, the feed-screw H, shouldered at one end, having its bearing in the box F, and the sleeve I, surrounding the feed-screw H, and having gearing on its periphery, in combination with the shaft L, shouldered at each end, and having the worm-gear L^2 and pinion L' mounted on said shaft, and the shaft M, shouldered at each end, and having the gear-wheel M' mounted on the same and meshing with the pinion L', substantially as and for the purpose shown and described.

300,077. HEADED SLUG-NAIL. JOHN HYSLOP, Jr., Abington, Mass. Filed Jan. 9, 1884. (No model.)



Claim.—The headed slug-nail consisting of the body A, formed with a rectangular head, C, and tapered webs D, connecting the end parts of the head with the body, and a rectangular wedge-shaped point, B, substantially as set forth.

300,078. SAIL-CLAMP. GEORGE WILLIAM INDER, Thomasville, Ga., assignor to himself and Adam D. Rike, same place. Filed Mar. 22, 1884. (Model.)

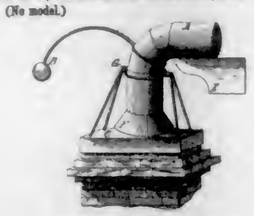


Claim.—1. A sail-clamp formed of end plates, A, connecting-loops B at right angles to said plates, and a pin, E, having a head, *b*, at one end and a conical head, *c*, projecting beyond the side of the bolt at the other end, whereby when the bolt is inserted in the loops the conical head will prevent its vertical displacement, as specified.

2. The combination of the sail C and mast-hoop D with a sail-clamp formed of end plates, A, and connecting-loops B, and a pin, E, having a conical head, *c*, and cut away on one side, as described.

3. As an improved article of manufacture, a sail-clamp composed of end plates, A, and loops B, and a pin, E, having a head, *b*, and a conical head, *c*, and cut away upon one side, as described.

300,079. CHIMNEY-COWL. J. WORTH JACKMAN, HERBERT B. NEIGHBOR, JOHN R. STEER, and SAMUEL F. HAMLITNER, Lafayette, Iowa. Filed Mar. 7, 1884. (No model.)



Claim.—1. In a chimney-cowl, the elbow stayed near the curvature therein by an encircling bearing, and provided with an annular flange at or near the bottom, resting upon anti-friction rollers pivoted in the base, substantially as shown and described.

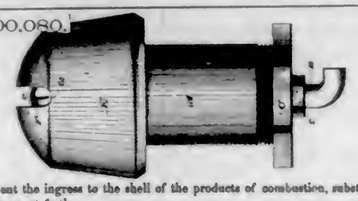
2. In a chimney-cowl, the combination of elbow A, counter-balance B, upper bearing, G, flange *b*, and rollers *a a*, all constructed, arranged, and operating substantially as and for the purpose set forth.

3. In a chimney-cowl, the combination of elbow A, counter-balance B, upper bearing, G, flange *b*, rollers *a a*, casing *c*, ring D, hood F, and vane E, all substantially as shown and described.

300,080. DEVICE FOR PROMOTING COMBUSTION. WALTER MARSH JACKSON, Providence, R. I., assignor to the American Combustion Company, same place. Filed Mar. 12, 1884. (No model.)

Claim.—1. The combination, with an air-heating tube provided at one end with a shell having an elongated air-discharge opening, of a steam-pipe provided with a discharge-nozzle located within said shell, said nozzle having an elongated opening formed therein, the opening in the steam-nozzle being located in close proximity to the air-discharge opening, the parts being constructed and arranged to inject into the fire-box a thin jet of steam enveloped by a thin stratum of heated air and

300,080.

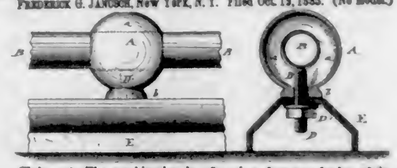


prevent the ingress to the shell of the products of combustion, substantially as set forth.

2. The combination, with an air-heating tube provided at one end with a shell forming an enlarged air-chamber, said shell having an elongated air-discharge opening, of a steam-pipe provided with a nozzle located within the shell, said nozzle being provided with an elongated opening located in close proximity to the similar shaped opening in the shell, substantially as set forth.

3. The combination, with the tube provided at or near its opposite ends with the centrally-perforated supports formed integral therewith, and the pipe passing through the tubes and supports, of the enlarged shell secured to the outer end of said tube, and the nozzle secured to said pipe and resting within the shell, all of the above parts combined as described.

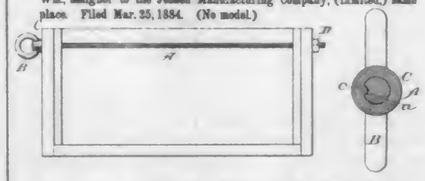
300,081. STUD FOR FIRE-PLACE FRAMES AND FENDER-BARS. FREDERICK G. JANUSCH, New York, N. Y. Filed Oct. 19, 1883. (No model.)



Claim.—1. The combination, in a fire-place frame or fender, of the base of the same, a stud having a hollow body and shank, said shank being cast integral with the body and provided with an interior screw-thread, a threaded bolt passing through the shank, a screw-nut for fastening the bolt, and a fender-bar passing through openings of the hollow stud and locked by the threaded bolt, substantially as set forth.

2. A stud for fender bars and frames, composed of a hollow body having openings for the fender-bar, a shank cast integral with the body and having an interior screw-thread, a threaded bolt screwing in said shank, and a screw-nut applied to the outer end of the screw-bolt, substantially as set forth.

300,082. END-GATE ROD FOR VEHICLES. JENS JENSEN, Racine, Wis., assignor to the Jensen Manufacturing Company, (Limited,) same place. Filed Mar. 25, 1884. (No model.)



Claim.—An end-gate rod for vehicles, consisting of the rod A, provided at one end with the groove *a*, and the ring B, having collar C, with projection *c*, corresponding to said groove, substantially as set forth.

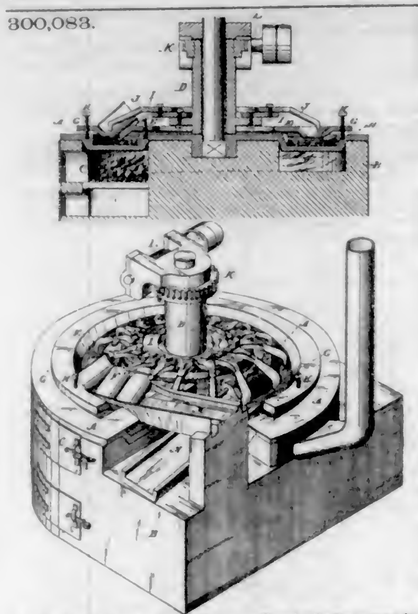
300,083. SOLDERING-MACHINE. MATHIAS JENSEN, Astoria, Oreg., assignor of two-thirds to John FOX and Alsey L. FOX, both of same place. Filed Mar. 22, 1884. (No model.)

Claim.—1. An apparatus for soldering cans or cylinders, consisting of a circular trough for containing solder, with a fire-place and flue beneath, and an angular support upon which the cans roll, with their angles dipping in the solder, in combination with a central disk with arms projecting outward, to roll the cans around, substantially as herein described.

2. In a soldering apparatus, a circular solder-trough with fire-place beneath, and arms driven by a central flange, by which the cans are rolled around the circle, in combination with exterior and interior rings having angular faces upon which the cans roll and by which the angle to be soldered is caused to dip into the solder, substantially as herein described.

3. In a soldering apparatus, the circular solder-trough, fire-place, and can-propelling arms, in combination with exterior and interior rings

300,083.



with inclined faces upon which the cans roll, and adjusting-screws by which the rings may be raised or lowered, substantially as herein described.

4. In a soldering apparatus, a circular solder trough or pan, fire-place, and can supporting and adjusting rings, in combination with removable central disks having arms projecting from the periphery to drive the cans, whereby different-sized cans may be soldered, substantially as herein described.

5. In a soldering apparatus, a circular solder trough or pan, fire-place, and can supporting and adjusting rings, in combination with a central disk with projecting arms, and a worm-gear, pulley, or other driving mechanism by which it is rotated, substantially as herein described.

6. In a soldering apparatus, a circular solder trough or pan, fire-place, and can-supporting rings, and a central rotating disk with arms projecting so as to drive the cans, in combination with an inclined chute to deliver the cans into the channel, said chute having its lower end inclined or canted, so as to deliver the cans at the proper angle, substantially as herein described.

7. In a soldering apparatus, a circular solder trough or pan with fire-place, can-supporting rings, and central rotating disk with arms projecting so as to move the cans around, and inclined chute by which the cans are delivered into the trough, in combination with a second inclined chute leading downward from the delivery-point of the apparatus, substantially as herein described.

8. In a soldering apparatus, a circular trough or pan for containing solder, and means for supporting the cans at the proper angle and rolling them around the circle, in combination with a fire-place beneath the pan having a circular flue extending around beneath the pan to the chimney, and tapering or decreasing in size from the fire-place to the chimney, substantially as herein described.

300,084. HAND AND FOOT POWER. OWEN E. JONES, Wymore, Nebr. Filed Nov. 2, 1883. (No model.)

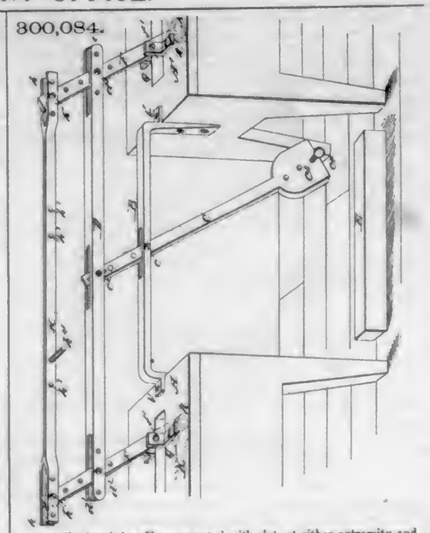
Claim.—1. The pendulous operating-lever C, constructed, substantially as described, with a weight and adjustable foot-rest at its lower extremity, and slot and adjustable-pivot apertures at the upper end, and adapted for connections with the bars B and D, as set forth.

2. The cross-bar B, constructed, as described, with a central slot and pivot to receive and support the pendulous lever C, as set forth.

3. The connecting-bar D, constructed with a central slot and pivot for connection with the upper end of the lever C, and slots and perforations for adjustable pivots at either end, and adapted for connections with the levers F F, substantially as set forth.

4. The oscillating levers F F, constructed with perforations for adjustable pivots, and adapted for connections with the bars D and H and with the machine to be operated, substantially as set forth.

300,084.

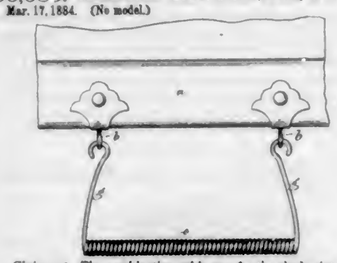


5. The hand-bar H, constructed with slots at either extremity and apertures for adjustable pivots, and adapted for connections with the levers F F, substantially as set forth.

6. The combination of the pendulous lever C, the cross-bar B, connecting-bar D, connecting-bar H, and levers F F, substantially as set forth.

7. The combination, with the lever C, cross-bar B, connecting-bar D, levers F F, and connecting-bar H, of the connecting-bar K and bell-crank lever L, substantially as set forth.

300,085. SHADE-PULL. HUBERT L. JUDD, Brooklyn, N. Y. Filed Mar. 17, 1884. (No model.)



Claim.—1. The combination, with eyes for the shade-slat, of a pull having the body *e* and end portions, *g*, with hooks at the upper ends of the end portions for engaging with the eyes, substantially as set forth.

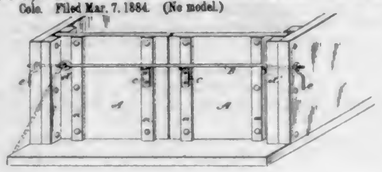
2. A shade-pull having a body, *e*, and end portions, *g*, terminating as hooks, the pull being elastic, so that the hooks can be sprung into or removed from the suspending-eyes.

3. The shade-pull having end pieces and a body formed of a wire helix, substantially as set forth.

4. The pull having a continuation of the wire helix formed into suspending end pieces, substantially as set forth.

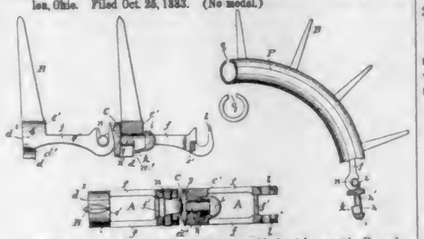
5. A pull having ornamental end pieces, *g*, and a body formed of a wire helix, *e*, substantially as set forth.

300,086. WAGON END-GATE. DAVID B. KRAGY, Idaho Springs, Colo. Filed Mar. 7, 1884. (No model.)



Claim.—The combination, with a wagon-box, of the hinged end-gate provided with brackets *c c*, rod B, linked permanently at one end to an eyebolt, *d*, passing through the box, and there provided with a hand-nut, *e*, and said rod formed at the other end with a hook, and an eyebolt passing through the side of the box, to engage said hook, and a hand-nut, *e*, for tightening the rod, substantially as set forth.

300,087. HARVESTER CHAIN RAKE. HENRY KETTERING, Massillon, Ohio. Filed Oct. 25, 1883. (No model.)

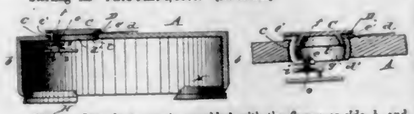


Claim.—1. A chain having a link provided with a tooth, B, and a coupling for the links having a round shank whereby the links may turn, as set forth.

2. A chain having a link provided with a tooth, B, and a coupling for the links having a round shank, and a stop device to limit the turn of the link on the shank, as set forth.

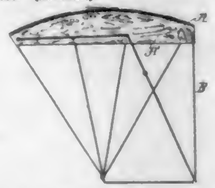
3. A chain having its links provided with a tooth, B, and a coupling for the links having a round shank, in combination with a slotted tube or equivalent guide in which the chain travels, as set forth.

300,088. DUST-PROOF CAP FOR WATCHES. CASPER ENTLER, Sterling Ill. Filed June 4, 1883. (No model.)



Claim.—The dust-cap A, provided with the flange or side *b*, and hole *c*, the latter having concave walls, in combination with the open ring D, provided with the indicator *d* and lug *e*, and having its exterior fitted to conform to the sides of the hole *c*, and its interior walls slightly concave, and the lid C, having its periphery slightly convex to fit in and be held by the interior walls of the ring D, and slightly enlarged vertically on a portion of its outer edge, to fill the interval in the open ring D, whereby the ring D is sprung into the hole *c* and held therein by its own elasticity, and the lid C clamped within such ring D, and such hole effectually closed, substantially as shown and for the purpose described.

300,089. VEHICLE-TOP. FRANK A. KOEHEK, Milwaukee, Wis. Filed Apr. 30, 1883. (No model.)



Claim.—1. An improved carriage-top made of scale-board having side pieces and independent top piece, whose side edges overlap the inner upper side edges of the side pieces and are secured thereto, substantially as set forth.

2. In an improved carriage-top, the side pieces, A' A', made of scale board, and curved in cross-section, and having vertical rear ends integral therewith, in combination with the top piece, A, formed of a single piece of scale-board bent into shape, and whose side edges overlap and rest upon the inner upper side edges of the side pieces, substantially as set forth.

3. In a carriage-top, a rolling curtain formed of a backing of cloth having transverse slats secured thereto, each slat being beveled in the same direction along both its upper and lower edge, substantially as set forth.

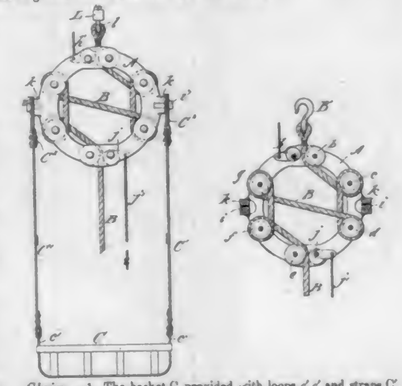
4. An improved carriage-top made of scale-board, and consisting of the side pieces, A' A', secured directly to the bows, and the top piece, A, resting upon and secured solely to the inner upper side edges of the side pieces, substantially as shown.

5. In an improved carriage-top, the rigid top piece, A, of scale-board, supported solely on the underlying inner upper side edges of the side pieces, A' A', substantially as shown.

6. In a carriage-top, the rigid side pieces, A' A', made of scale-board, curved in cross-section, and having vertical rear ends integral therewith, substantially as shown.

300,090. FIRE-ESCAPE. JOHN LARSON and AUGUST W. HAGSTROM, Stockholm, Wis. Filed Mar. 8, 1884. (No model.)

Brief.—A fire-escape consisting of two rings joined together by screw-tapped spacing-blocks, to which are secured apertured plates, to which the basket-straps are fastened. The escape-rope is rove between the rings over the friction-rolls therein journaled.



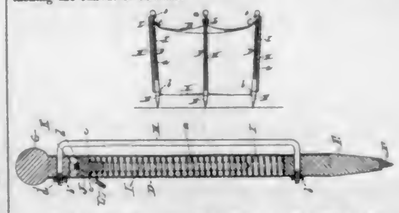
Claim.—1. The basket C, provided with loops *c' c'* and straps C', secured at their lower ends to said loops and at their upper ends to the apertured plates C², whereby the basket may be readily secured to the opposite sides of the pulley-plates of the fire-escape, as shown and described.

2. The rings A A, joined together and spaced by the blocks *k*, which are screw-tapped, substantially as and for the purposes set forth.

3. The combination, with the rings A A, having the pulleys *b*, *c*, *d*, *e*, *f*, and *g*, and the cam-levers *h j*, journaled between them, of the chair C, attached to the rings A, and the rope B, passing around the pulleys *c d* and *f g*, and between the pulleys *b e* and cam-levers *h j*, the said cam-levers being provided with operating ropes or cords, substantially as and for the purposes set forth.

300,091. FIRE-ESCAPE. WILLIAM LAWRENCE, Worcester, Mass. Filed May 9, 1883. (No model.)

Brief.—Hollow posts having suitable handles secured thereto, a spiral spring within them, and a clevis bolted to their upper ends for attaching the canvas or blanket.

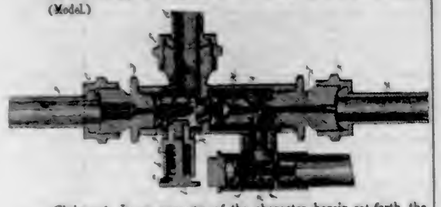


Claim.—1. The combination, with canvas B, of the hollow posts D, provided with handles H, and having spiral springs I within said posts, or upon the outside thereof, and clevises L, or other suitable devices, as a means of attaching to the upper ends of said springs I said canvas B, all constructed and arranged substantially as shown and described.

2. The hollow post D, provided with a suitable handle, in combination with a spiral spring, I, and clevis L at the upper end of said spring, for attaching a canvas to said spring, substantially as shown and described.

3. The post D, provided with longitudinal slots *a*, and handle H, in combination with spiral spring I, bolt K, and clevis L, arranged and operated substantially as shown and described.

300,092. INJECTOR. JOHN LOFTUS, Albany, N. Y., assignor of two-thirds to George W. Richardson, Boston, Mass. Filed Sept. 11, 1883. (Model.)



Claim.—1. In an apparatus of the character herein set forth, the suction-pipe having the conical mouth or inlet and the cylindrical stem, the latter being provided with a movable valve, substantially as shown and described.

2. The steam-inlet pipe having the cylindrical stem, the movable nozzle applied thereon, means, substantially as explained, for raising and lowering said nozzle from the exterior of the apparatus, and the suction-pipe provided with a gravitating-valve, these several parts being arranged and combined substantially as shown and described.

3. In an injector, the hollow plug tapped through the wall or jacket, the nozzle, the disk carrying the crank-pin and mounted upon a shaft projecting through said plug, and a spring for maintaining the disk in contact with the inner end of the plug, combined and arranged substantially as shown and described.

4. In combination with the shaft projecting through the hollow plug upon the side of the injector, provided with a sprig and carrying a disk and crank-pin for operating the regulating-nozzle, the indicator-pin projecting from said shaft, substantially as and for the purposes set forth.

5. In an injector, the loose check-valve mounted upon the lower end of the suction-tube, and arranged to automatically close the space between the lower mouth of the said tube and the upper mouth of the combining-cone, the parts being combined and arranged substantially as shown and described.

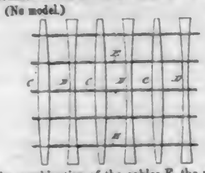
6. In an injector, the combining-cone having a check-valve resting upon its upper mouth and overflow-outlets near its base, the same being combined with the suction-tube, delivery-tube, and overflow-tube, substantially as and for the purposes explained.

7. In an injector, the suction-tube arranged to be adjusted automatically by back-pressure upon its under surface, the same being combined with a check-valve and the combining-cone, substantially as and for the purposes set forth.

8. In combination with the overflow-tube of an injector, an automatically-operating valve having the upper and lower seats, as explained, and adapted to operate, substantially as and for the purposes set forth.

9. The herein-described injector, having the regulating-nozzle, means for operating the same, a check-valve applied upon the suction-tube, the combining-cone, delivery-tube, and overflow-tube provided with an automatically-operating valve, the whole arranged and combined substantially as shown and described.

300,093. PICKET FENCE. ALPHEUS G. LYNE, Washington, D. C. Filed Sept. 20, 1883. (No model.)



Claim.—1. The combination of the cables E, the pickets C, having opposite convex longitudinal edges, and the pickets D, having opposite concave longitudinal edges, the pickets C and D being arranged in alternate order, substantially as shown and described.

2. The combination of a number of holding-cables and a number of differently-shaped pickets, each picket having two opposite sides or edges made approximately carved, and the several forms of pickets being arranged with a curved side of one parallel with or equidistant from the adjacent carved side of another, substantially as described and shown.

300,094. FENCE-MAKING MACHINE. ALPHEUS G. LYNE, Washington, D. C. Filed Dec. 18, 1883. (No model.)

Claim.—1. A wire-twister consisting of a smooth cylindrical body, on which it is adapted to rotate, having a longitudinal perforation near its periphery for holding one wire at a given distance from its center, and a longitudinal groove in its periphery opposite to the perforation for receiving and holding a removable wire at an equal distance from its center, substantially as shown and described.



2. A wire-twister consisting of a cylindrical body having a longitudinal perforation for holding one wire at a given distance from its center, and a longitudinal groove for receiving and holding a removable wire at an equal distance from its center, in combination with a bearing having an opening or slot with which the said groove may register, to receive the removable wire, substantially as shown and described.

3. A wire-twister consisting of a cylindrical body having a longitudinal perforation and groove therein, and means for holding a spool of wire on one end thereof, to allow the wire to be passed through said perforation, in combination with means for passing a removable wire in and out of engagement with said groove, substantially as shown and described.

4. The combination of a suitable supporting-frame, a number of twisters having cylindrical bodies, on which they may rotate, each provided with means for holding one wire and preventing it from being moved radially from the twister, and means for holding the other wire and permitting it to be moved radially from the twister, means for gearing the several twisters together, a movable carrier for passing the removable wires in and out of engagement with the twisters, and tensioning devices for the wires, substantially as shown and described.

5. The combination of a number of twisters, each having a cylindrical body provided with means for holding one wire and preventing it from being moved radially from the twister, and means for holding another wire and permitting it to be moved radially from the twister, a supporting-frame having a slot or opening leading to each twister, means for gearing the several twisters together and for rotating or oscillating the same, a rocking frame for passing the removable wires in and out of engagement with the twisters, and tensioning devices for the wires, substantially as shown and described.

6. The combination of a number of twisters, each having means for holding one wire and preventing it from being moved radially from the twister, and means for holding another wire and permitting it to be moved radially from the twister, a supporting-frame, substantially as described, a rocking frame for passing the removable wires in and out of engagement with the twisters, and means for connecting the twisters and rocking frame together, whereby they may be operated in turn, substantially as specified.

7. The combination of a number of twisters, each having means for holding one wire and preventing it from being moved radially from the twister, and means for holding another wire and permitting it to be moved radially from the twister, a supporting-frame, a rocking frame for passing the removable wires in and out of engagement with the twisters, the mutilated gear A' and means for gearing it with the twisters, the gear H', adapted to lock the gear A', the shaft M', and mutilated gear P', the shaft Q', carrying the eccentrics S' T' and bevel-pinion R', and means for connecting the eccentrics with the rocking frame, substantially as shown and described.

8. The combination of the rocking frame, a transverse shaft connected to the said frame, and a transverse slide connected to the said shaft, substantially as and for the purpose set forth.

9. The combination of the twisters having passages for two series of wires, a series of spools carried by the twisters, the wires of which spools are passed through the twisters, a series of spools supported above the machine, and a rocking frame adapted to place the wires of said latter

series of spools in and out of engagement with the twisters, and having tensioning devices for said wires, substantially as specified.

10. The rocking frame or lever for placing the removable wires in and out of engagement with the twisters, in combination with the slide for pressing the pickets back into position for being secured in the wires, and means for connecting the slide with the said rocking frame, and the web-spooling mechanism having a lever for rotating the same, and means for connecting said lever with the rocking frame, substantially as and for the purpose specified.

11. The combination, with the rocking frame or lever, of the slide for pressing the pickets back into position for being secured in the wires, and means for connecting the slide with the said rocking frame, and the web-spooling mechanism having a weighted lever, ratchet-wheel, and pawls, and means for connecting said weighted lever with the rocking frame, substantially as shown and described, whereby the two said functions of adjusting the pickets and winding the web may be performed by operating the said rocking frame or lever, as set forth.

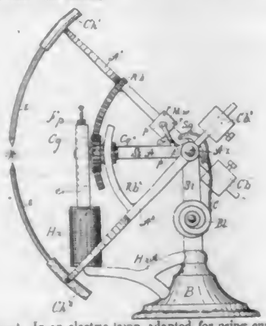
12. The combination, with the rocking frame or lever, of the web-spooling shaft having a ratchet-wheel thereon and a retaining-pawl for the same, the weighted lever having a pawl for rotating said shaft, and the connection Z', connecting the weighted lever to the said rocking frame or lever below the pivot of the latter, substantially as and for the purpose set forth.

13. The fence-spooling shaft having a picket-holding device provided with a removable or adjustable socketed piece for receiving one end of a picket, substantially as shown and described.

14. The fence-spooling shaft having a stationary collar provided with a socket for one end of a picket, and a removable collar having a socket for the opposite end of the picket, and means for preventing the latter collar from rotating on the shaft, substantially as shown and described.

15. The combination, with the rocking frame having a segmental rack, of the picket-feeding device consisting of the oscillatory shaft having curved arms for holding a picket and a pinion adapted to be operated by the rack, and the slide having bent fingers adapted to receive and hold the picket, substantially as shown and described.

300,095. ELECTRIC LAMP. MIRABEAU N. LYNN, Indianapolis, Ind., assignor to the Ohio Power and Light Company, Dayton, Ohio. Filed Aug. 23, 1883. (No model.)

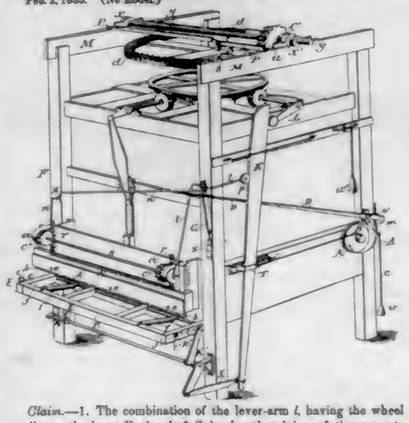


Claim.—1. In an electric lamp adapted for using curved carbons, a base supporting an axis, upon which are mounted a pair of arms carrying carbon-holders, the arms rotating in opposite directions, and actuated by suitable mechanism through differential gear-wheels mounted on a sleeve carrying a face-plate, whose movement is adapted to be reversed by a brake actuated by a current of electricity passing through a helix provided with a core connected with the brake mechanism, all combined substantially as described.

2. In an electric lamp, the base B, having vertical and horizontal arms, the helix Hx, with its core Hx c, axis Ax, arms A' A², provided with counter-balances Cb' Cb², movable weight Mw, rack-bars Rb' Rb², and carbon-holders Ch' Ch², the differential gears Cg' Cg², face-plate Fp, tension-spring cs', and the brake mechanism connected with the core and operating upon the face-plate Fp, all combined substantially as described.

3. In an electric lamp, a feeding mechanism operated by a mechanical force which exerts a constant and uniform strain at any point of their movement upon a pair of arms mounted on a common axis, adapted to rotate in opposite directions upon such axis, and carrying the carbons, the arms provided with suitable stationary weights, and the upper arm with a movable weight, so that a balance is preserved at all times while the lamp is burning, the mechanical force drawing the arms together, in combination with suitable mechanism actuated by an electric current for separating the arms and reversing the feeding mechanism at the proper point to focus the light at one point, substantially as described.

300,096. BRICK-MACHINE. HENRY MARTIN, Lancaster, Pa. Filed Feb. 2, 1883. (No model.)



Claim.—1. The combination of the lever-arm *l*, having the wheel or pulley *p*, the lever E, the shaft S, having the pinions c^2, the supports *a a*, the gate A', having the racks *r r*, and the lever *l'*, having the weight *w'*, constructed and operated substantially as set forth.

2. The combination of the lever D, the friction-wheel B, and the friction-band A, the end *m* of which has a screw-thread cut in it, and is thereby attached to the end of the lever D by the nut V, in the manner and for the purpose specified.

3. The combination of the lever D with the arm G, having the bracket *f*, the rods *n n' n²*, the cranks H H', and the plate *g*, hinged to the plate *g'*, substantially as set forth.

300,097. TOY. JAMES E. A. MCALLISTER, Albany, N. Y. Filed Feb. 13, 1884. (Model.)

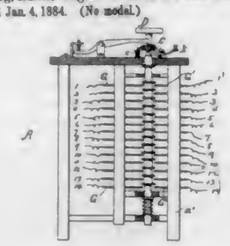
Claim.—1. The ball D, formed of two hollow semi-spherical sections hinged to each other, provided opposite the hinge with an opening, and pressed against each other by a spring or elastic band surrounding the ball, substantially as herein shown and described.

2. The combination, with the ball D, formed of two semi-spherical hollow sections hinged to each other and pressed together by a spring or elastic band, and having an opening opposite the hinge, of an elastic string secured to the ball at the joint or hinge, substantially as herein shown and described.

3. The combination, with the hollow semi-spherical sections D', each having a groove, F, and cut away to form an opening, E, of the spring or elastic band G in the grooves, and a hinge uniting the two sections, substantially as herein shown and described.

4. The combination, with a hollow ball formed of two hinged and spring-pressed sections, provided with an elastic cord at its hinge or joint, of the board A, provided with apertures B, and the pins C, provided with heads C', substantially as herein shown and described.

300,098. MULTIPLE-CIRCUIT CLOSER. WILLIAM F. C. M. MCCARTY, St. Petersburg, Russia, assignor to James F. Pierce, Trustee, New York, N. Y. Filed Jan. 4, 1884. (No model.)



Claim.—1. In an apparatus for the simultaneous transmission of given electrical impulses to different termini, the combination of a series of independent electrical circuits, each of which is connected with an independent service of current, and is provided with adjacent terminals arranged in predetermined order, a suitable casing, housing, or framing for containing the above-mentioned terminals of all the circuits, a traveling rod provided with a series of contact-bars arranged in predetermined order correspondent to that of the terminals aforesaid, and normally out of contact with said terminals, but adapted to make contact between them, means for actuating the traveling rod so as to bring its contact-bars into contact with said terminals, and means for returning said traveling rod and bars out of the above-mentioned contact, substantially as and for the purposes set forth.

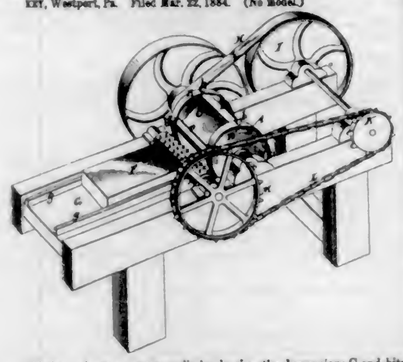
2. In an apparatus for the simultaneous transmission of given electrical impulses to different termini, the combination of a series of independent electrical circuits, each of which is provided with adjacent terminals arranged in predetermined order, a suitable casing, housing, or framing for containing the above-mentioned terminals of all the circuits, a traveling rod or series of traveling rods, each provided with a series of contact-bars corresponding in order and number to the aforesaid terminals, and an impulse-bar common to the traveling rods aforesaid, the arrangement being such that a movement of the impulse-bar occasions a movement of the traveling rods and the contact of the contact-bars with the terminals with which they are respectively adapted to operate, substantially as set forth.

3. In an apparatus for the simultaneous transmission of given electrical impulses to different termini, the combination of a series of independent electrical circuits, each of which is provided with adjacent terminals arranged in predetermined order, a suitable casing, housing, or framing for containing the above-mentioned terminals of all the circuits, traveling rods, each provided with a series of contact-bars arranged in predetermined order correspondent with that of the terminals aforesaid, means for returning said traveling rods to their normal position after enforced movement therefrom, and an impulse-bar common to the traveling rods aforesaid, substantially as and for the purposes set forth.

4. In an apparatus for the simultaneous transmission of given electrical impulses to different termini, the combination of a series of independent electrical circuits, each of which is provided with adjacent terminals, a suitable casing, framing, or housing for containing the above-mentioned terminals of all the circuits, a series of spring-controlled traveling rods, each provided with a series of contact-bars corresponding in number and order with the terminals aforesaid, an impulse-bar, and switch-keys adapted to be interposed between the traveling rods and the impulse-bar or to be removed from interposition, substantially as and for the purpose specified.

5. In an apparatus for the simultaneous transmission of given electrical impulses to different termini, the following instrumentalities in combination: a series of independent electrical circuits, each of which is provided with adjacent terminals, traveling rods provided with a series of contact-bars corresponding in number and position to said terminals and adapted to make contact between the same, but normally out of contact with said terminals, an impulse-bar common to all of the traveling rods, and adapted to act upon all of them in such manner as to cause their contact with the terminals aforesaid, means for actuating said impulse-bar, and a suitable casing, framing, or housing for containing the said assembled instrumentalities, substantially as and for the purpose specified.

300,099. WOOD-SPLITTING MACHINE. WILLIAM TIPTON MCCLOSKEY, Westport, Pa. Filed Mar. 22, 1884. (No model.)



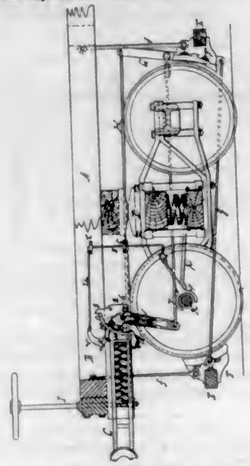
Claim.—A rotary cutter-cylinder having the depressions C and bits D, in combination with a spiked feed-roll, a table having guides for the block of wood which is to be cut up, and an operative mechanism, substantially as described, whereby the block of wood may be fed, cut up, and the pieces of kindling discharged, as set forth.

300,100. SUSPENDING DEVICE. GEORGE W. MCGILL, Riverdale, N.Y. Filed Dec. 19, 1883. (No model.)



Claim.—As an improved article of manufacture, the improved ring-staple for binding and suspending papers, &c., consisting of a broad-headed sheet-metal staple and a loop or ring hinged together, substantially as shown, to enable the loop or ring to be opened or folded, substantially as set forth.

300,101. LOCKING MECHANISM FOR CAR-BRAKES. SAMUEL WORTHINGTON MCMUNN, CHARLES JOHN SCHILLER, and EDWARD BAKER LEIGH, St. Louis, Mo., assignors to the American Brake Company, same place. Filed Sept. 14, 1883. (No model.)



Claim.—1. The combination, with automatic car-brake mechanism, of an automatic locking device consisting of a gravitating pawl pivoted to a fixed part of the car-frame, and adapted to engage and lock the brake-actuating mechanism when the brakes have been applied, substantially as and for the purposes specified.

2. The combination, with a movable draw-bar, of a lever for actuating the brakes, said lever provided with a ratchet, and an automatic pawl pivoted to a fixed part of the car-frame, and adapted to engage with the ratchet of the brake-lever, substantially as and for the purposes specified.

3. The combination, with automatic brake mechanism, of a movable draw-bar, an automatic pawl for locking the brake mechanism when the brakes are applied, and means for connecting the free end of the pawl directly to the draw-bar, substantially as and for the purpose specified.

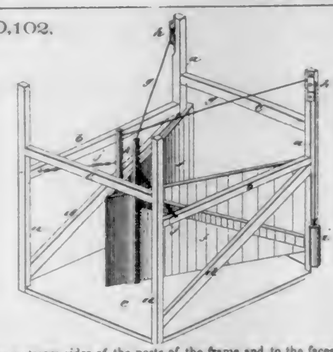
4. The combination, with brake mechanism for applying the brakes, of a ratchet-faced lever pivoted in rear of the draw-bar and actuated thereby, a gravitating dog or pawl arranged to engage with the ratchet-faced lever, a movable draw-bar, and a pawl-trip actuated by the draw-bar, substantially as and for the purposes specified.

300,102. FLOOD-GATE. JAMES MONROE METCALF, Enfield, Ill. Filed Jan. 23, 1884. (No model.)

Claim.—1. The combination, in a flood-gate, of the supporting-frame consisting of posts *a*, connecting-timbers *b c*, and braces *d*, gates *f*, weights and cords *i g*, and check cords or chains *j*, substantially as described.

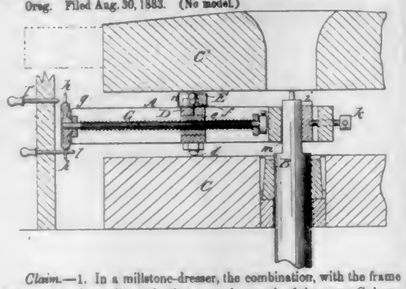
2. In combination with the rectangular frame-work, the gates *f*, having vertical cleats *l*, and the end hinges, *k*, said hinges being secured

300,102.



to the upstream sides of the posts of the frame and to the faces of the cleats next to the sides of the frame-work, as described.

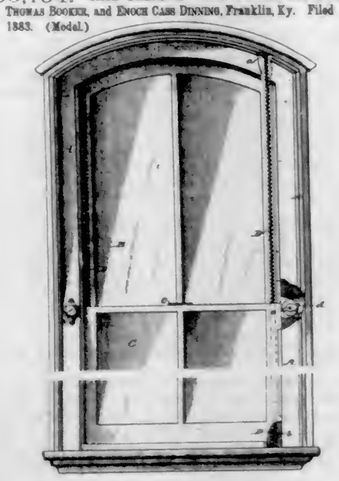
300,103. MILLSTONE-DRESSING MACHINE. JOHN MILLER, Milton, Oreg. Filed Aug. 30, 1883. (No model.)



Claim.—1. In a millstone-dresser, the combination, with the frame A, having the inwardly-projecting central ways, *b*, of the screw G, bearing in the frame A, and provided with a lever-wheel, *g*, the carriage D, having slots in its ends to receive the ways *b*, and the tools E, with cups *n*, secured by their nuts upon their upper ends, and the stops *l l'*, substantially as and for the purpose set forth.

2. In a millstone-dressing apparatus, the frame for holding the upper stone, consisting of a series of connected ring-sections, I I, forming an annular clamp, pins *r r*, for supporting the stone, and adjustable legs *s s*, for raising and lowering it, essentially as described.

300,104. SASH-BALANCE. JOHN BARTLETT MONTAGUE, JAMES THOMAS BOOKER, and ENOCH CASS DINNING, Franklin, Ky. Filed July 13, 1883. (Model.)



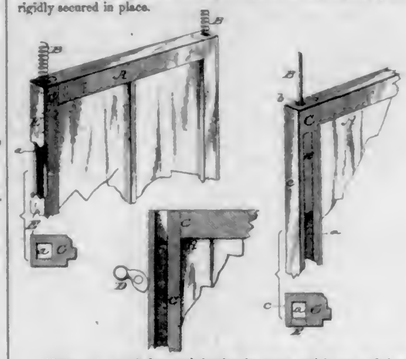
Claim.—1. A window-sash having its upper and lower ends bored vertically and the intermediate portion cut away, substantially as shown and described, to receive suspending-springs.

2. A window-sash provided with longitudinal grooves or recesses in its sides, and with covering-strips applied to said grooves and rigidly secured in place, their outer faces being made flush with the faces of the sash, as and for the purpose explained.

3. In combination with a sash having grooves or recesses *a* in its stiles and a broad bearing-face, *c*, at its ends, suspending-springs B, seated in the recesses *a*, and a frictional locking device bearing against face *c*, as and for the purpose set forth.

300,105. WINDOW. JOHN BARTLETT MONTAGUE, JAMES THOMAS BOOKER, and ENOCH CASS DINNING, Franklin, Ky. Filed Jan. 29, 1884. (No model.)

Brief.—Consisting of both ends of the side rails bored vertically, the rails having longitudinal recesses in their sides and covered by strips rigidly secured in place.

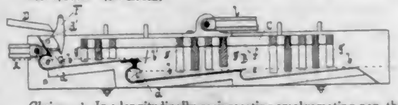


Claim.—1. A window-sash having its upper and lower ends bored vertically and the intermediate portion cut away, substantially as shown and described, to receive suspending-springs.

2. A window-sash provided with longitudinal grooves or recesses in its sides, and with covering-strips applied to said grooves and rigidly secured in place, their outer faces being made flush with the faces of the sash, as and for the purpose explained.

3. In combination with a sash having grooves or recesses *a* in its stiles and a broad bearing-face, *c*, at its ends, suspending-springs B, seated in the recesses *a*, and a frictional locking device bearing against face *c*, as and for the purpose set forth.

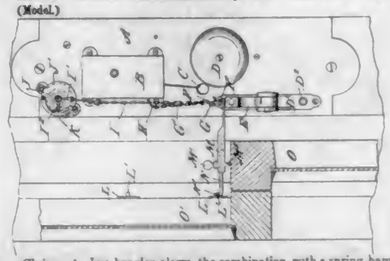
300,106. AMALGAMATOR. HENRY MOON, Thomasville, N. C. Filed Feb. 9, 1884. (No model.)



Claim.—1. In a longitudinally-reciprocating amalgamating-pan, the bottom thereof provided with two wave-plates, *c c'*, having the horizontal extensions *d*, and located at different heights within the pan, substantially as specified.

2. In combination with the longitudinally-reciprocating amalgamating-pan B, and the chute D, the vibratory funnel F, and the link G, which connects it to the said pan, substantially as and for the purpose specified.

300,107. COMBINED FIRING AND BELL-RINGING BURGLAR-ALARM. CHARLES L. MORRISON, Brooklyn, N. Y. Filed Nov. 24, 1883. (Model.)



Claim.—1. In a burglar-alarm, the combination, with a spring-hammer, a bell, a clock-work mechanism for operating the bell, and a hook, F, for holding the hammer cocked, of the chain G', secured to the clock-work mechanism, and adapted to connect the said clock-work mechanism with the hook F, the chain I, adapted to be secured to the hook F, and fastened to an arm, I', of a shaft, J, provided with an arm, I^3, a spring acting on the shaft J, and the pivoted lever K, provided with a notch for receiving the end of the arm I^3, substantially as herein shown and described.

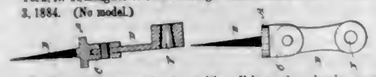
2. In a burglar-alarm, the combination, with a spring-hammer, a bell, and a clock-work mechanism for operating the bell, of a pivoted hook for holding the hammer cocked, a lever resting on the upper surface of the top rail of the bottom sash, and having one end held on the upper sash and the other end under the hook, for holding the spring-hammer cocked, substantially as herein shown and described.

3. In a burglar-alarm, the combination, with a spring-hammer, a bell, and a clock-work mechanism for operating the bell, of the hook F, for holding the spring-hammer cocked, the lever M, provided with the extension-rod N and with the spurs or lugs M^2 on the under side, and the ring l, provided with a cross-piece, L', which ring is fastened on the window, substantially as herein shown and described.

4. In a burglar-alarm, the combination, with the plate D', of the hammer E, pivoted between the jaws of the plate D', and provided at its free end with an aperture or recess, *a*, and the hook F, pivoted to the upper end of the plate D', and provided with an eye, F', substantially as herein shown and described.

5. In a burglar-alarm, the combination, with a casing, J', containing a spiral spring, of the spindle J, held in the casing J', and connected with the spring, the pointed arm I^3 on the spindle J, the arm I', the pivoted lever K, provided with a notch for receiving the end of the arm I^3, and of an alarm device connected with the arm I' of the spindle J, substantially as herein shown and described, whereby the alarm device can be released, by withdrawing the curved arm K, to release the arm I^3 of the spindle J, to permit the spring in the casing to act on the spindle and throw the same, thus causing the arm I' to pull on the chain and start or release the alarm.

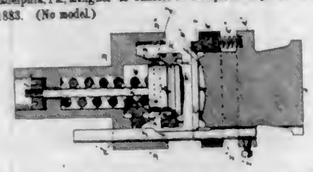
300,108. SHADE-ROLLER HANGER. WILLIAM J. MULLEN, New York, N. Y., assignor to Frank George Gallon, Hoboken, N. J. Filed Apr. 3, 1884. (No model.)



Claim.—1. The combination, with a disk or plate having a screw on its upper surface and lugs or jaws on the under surface, of a hanger for receiving the pins of a curtain-roller pivoted between the said jaws or lugs, substantially as herein shown and described.

2. The combination, with the plate or disk A, having a screw, B, on its upper surface and lugs C on its lower surface, of the hanger D, pivoted between the lugs, which hanger is provided with a socket at its free end, substantially as herein shown and described.

300,109. DIE FOR FORMING WATCH-CASES. THEODORE MUELLER, Philadelphia, Pa., assignor to Charles N. Thorpe, same place. Filed Apr. 26, 1883. (No model.)



Claim.—1. The combination of a female die, a male die, and an expanding or ring die, carried by said male die, with means to expand said ring-die and displace it from said male die, substantially as and for the purpose specified.

2. The combination of a female die, a male die, and an expanding ring-die, carried by said male die, with a crushing-die and means to expand said ring-die, substantially as and for the purpose specified.

3. The combination of a female die, a male die, and an expanding ring-die, carried by said male die, with a crushing-die, means to expand said ring-die, and means to control the relative time of action of the various dies, substantially as and for the purpose specified.

4. The combination of a female die, a male die, and an expanding ring-die, carried by said male die, with a crushing-die, means to expand said ring-die, and means to support and return said ring-die to the male die after being displaced therefrom, substantially as and for the purpose specified.

5. The combination of a female die, a male die, and an expanding ring-die, carried by said male die, with a crushing-die, means to expand said ring-die, means to control the relative time of action of the various dies, and means to support and return said ring-die to the male die after being displaced therefrom, substantially as and for the purpose specified.

6. The combination of dies A, E, K, and D' *d* and connecting mechanism, substantially as and for the purpose specified.

7. The combination of dies A, E, K, and D' *d*, ring C, and connecting mechanism, substantially as and for the purpose specified.

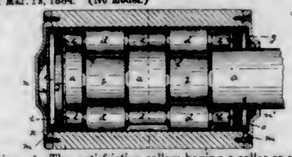
8. The combination of dies A, E, K, and D' *d*, body D, rod F, nut *f*, spring G, and locking mechanism to cause said die E to move with or be free of body D, substantially as and for the purpose specified.

9. The expanding ring-die K, composed of segments K', held together by springs, the inner and lower edges of said die being beveled, substantially as and for the purpose specified.

10. The expanding ring-die K, composed of segments K^1, held together by springs, the upper and lower inner edges of said die being beveled in opposite directions, substantially as and for the purpose specified.

11. The expanding ring-die K, composed of segments K', held together by springs, the upper and lower inner edges of said die being beveled in opposite directions, the point of juncture of said beveled edges being provided with fins *d*, substantially as and for the purpose specified.

300,110. ANTI-FRICTION ROLLER. CHARLES NAU, Allegheny, Pa. Filed Mar. 19, 1884. (No model.)

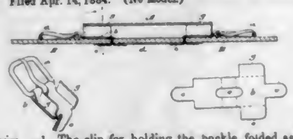


Claim.—1. The anti-friction rollers having a collar or collars and a recessed portion or portions, so as to form two separate bearing-surfaces of different diameters, in combination with a shaft or journal having similar collar or collars and recess or recesses, the edges or ends of which collars are beveled at different angles, so that they shall not come in contact with each other at their beveled edges, excepting on a line at the apex of the angle, substantially as and for the purpose specified.

2. The anti-friction rollers having beveled edges arranged around a shaft or journal in a journal-box, and securing collars or rings the edges of which are beveled, so that the rollers shall not come in contact therewith at the beveled edges, excepting on a line at the apex of the angles formed by the bevel of the collars and ring, substantially as and for the purpose specified.

3. Anti-friction rollers interposed between a journal and box, in combination with a spring or springs arranged between the ends of the rollers and the ends of the box, substantially as and for the purpose specified.

300,111. STRAP AND BUCKLE LOOP. FRED A. NEIDER, Augusta, Ky. Filed Apr. 14, 1884. (No model.)



Claim.—1. The clip for holding the buckle, folded as described, and provided with clinching-points and upright side flanges, *g*, substantially as and for the purposes set forth.

2. The combination, with a buckle-loop, A, and buckle *a*, of the attaching-clip *b*, provided with points *c* and flanges *g*, all substantially as set forth.

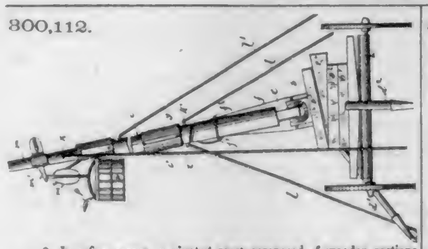
300,112. FIRE-ESCAPE. ROBT. E. NELSON, Sr., Cumberland County, Va. Filed Mar. 31, 1884. (No model.)

Brief.—The telescopic mast is pivoted at its base to a platform which is made in sections hinged together and adapted to be tilted. The joints of the sections of the mast are provided with iron sleeves, which are slipped over them when raised. Levers for tilting the sections of the platform, hinged braces, and a hoisting apparatus are provided.

Claim.—1. In a fire-escape, the combination, with the truck, of the sectional platform comprising three sections, the lower one of which is secured to the bolsters, the intermediate one hinged to this one at one edge, and a top section hinged to the opposite edge of the hinged intermediate section, and adapted to be tilted to incline the mast secured to the top section both toward the building and away from the building, substantially as specified.

2. In a fire-escape, a hinged sectional mast pivoted at its base to the platform, and provided with iron sleeves for slipping over the ends of the aligned jointed sections and holding the sections extended, substantially as specified.

300,112.



3. In a fire-escape, a pivoted mast composed of wooden sections made hollow except at their ends, and hinged together and adapted to be folded and extended by shifting the iron sleeves with which said sections are provided, substantially as specified.

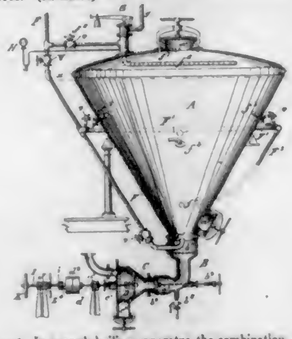
4. In a fire-escape, the combination, with the truck provided with a hinged sectional tilting platform, of the mast-stand upon the upper section of said hinged platform, and the pivoted sectional mast provided with guy-ropes, and an escape basket and tackle secured to the mast, for raising and lowering the basket, substantially as specified.

5. In a fire-escape, the combination of the truck, the tilting platform having the tapering mast-stand, and the pivoted sectional mast, the lower section of which is provided with a ring for connecting said section to the tapering mast-stand, substantially as specified.

6. In a fire-escape, a sectional mast composed of hollow wooden sections having solid ends, said ends being kerfed vertically, and connected by pivoted flat plates of metal held in their extended position by iron sleeves slipped over the joints and secured in place by pins, substantially as specified.

7. In a fire-escape, the combination, with the truck, of a sectional platform comprising three sections, the lower one of which is secured to the bolster, the intermediate one hinged to this one at one edge, and provided with a transverse recess having guards in its lower face, and a top section hinged at its opposite edge to the intermediate section, and having at its opposite edge a transverse recess in its under face, and guards for holding a tilting lever in the recess, and a sectional mast secured to the top section, and provided with ropes and tackle for steadying it and operating the escape-basket, substantially as specified.

300,113. MASH-BOILER. AXEL W. NIBELIUS, Brooklyn, N. Y. Filed Jan. 6, 1883. (No model.)



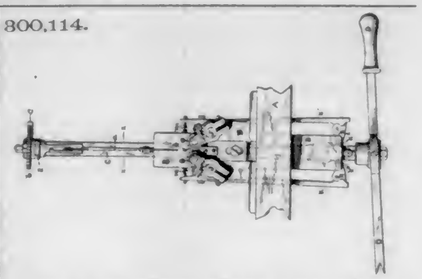
Claim.—1. In a mash-boiling apparatus, the combination, with the boiler A, of the steam-supply pipe F, stop-cocks *v*, the vertical jet bottom pipe, f', discharging a central jet, and perforated top pipe, f'', and one or more branch pipes, F'', and sub-branches F^2, provided with jet-pipes f^3 f^3 f^4 f^5, which enter the boiler at various elevations, and are bent to discharge the steam in the same circular direction, substantially as and for the purpose hereinbefore set forth.

2. The combination of a mash-boiler, provided with a grinding-mill, with a stone receptacle or trap, c^2, at the lowest point of said mill, and a discharge-pipe, *c*, at the upper part thereof, substantially as specified.

3. The elbow-pipe B, provided with the screen b' and bottom discharge-pipe, b^4, in combination with the inverted-cone boiler A and valve b^2 b^3, substantially as and for the purpose set forth.

300,114. MACHINE FOR FORMING THE TEETH UPON FILE-BLANKS. WILLIAM T. NICHOLSON, Providence, R. I. Filed May 28, 1883. (No model.)

300,114.

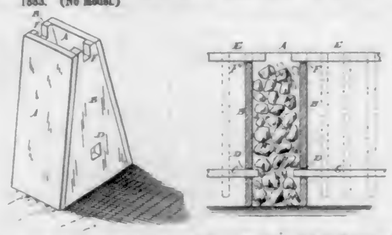


Claim.—1. The combination, substantially as before set forth, of a holder for a file-blank, a revolving tooth-generator, as described, means, substantially as specified, for causing the longitudinal sections of the surface of the blank to be traversed by the generator, a pattern-block conforming to the shape of the blank, and means, as described, for causing the generator to be governed in its path of revolution by the pattern-block, and to exert suitable pressure upon the surface of the blank to mold up teeth thereon.

2. The combination, substantially as before set forth, of a pair of generators so mounted that the axes upon which they revolve may be made to approach toward or recede from each other, and arranged to operate upon opposite sections of a file-blank inserted between them, a pattern-block corresponding with the shape of the file-blank which is to have teeth formed thereon, levers or equivalent means for causing the generators to approach toward or recede from each other, tripping foot-pieces attached to such levers, and means, as described, for causing the surface of the blank to be traversed by the generators, whereby pressure can be exerted upon the opposite sides of the blank by the generators while the blank is passing between them in one direction, and such pressure be relieved when the direction of the movement is reversed.

3. The combination, substantially as before set forth, of a file-holder adapted to clamp a file-blank by its tang, a pair of tooth-generating tools adapted to operate under pressure upon opposite longitudinal sections of the blank to be furnished with teeth, and arranged relatively to the blank, as described, and suitable means, as described, for causing the blank to be moved in a right line in the direction of its length between the faces of the generators, as specified.

300,115. FENCE-POST. ELY N. OBERT, Cuba, N. Y. Filed Dec. 8, 1883. (No model.)



Claim.—The combination, with the rails, of the hollow fence-post open at top and bottom, having its sides inclined inwardly toward the top, and provided with apertures in its ends, which receive the ends of the rails, said post and rails being anchored or held in place by stones placed in the post, as shown and described, for the purpose set forth.

300,116. STOOL OR SEAT STANDARD. HENRY OCORR, Milwaukee, Wis. Filed Jan. 23, 1884. (No model.)

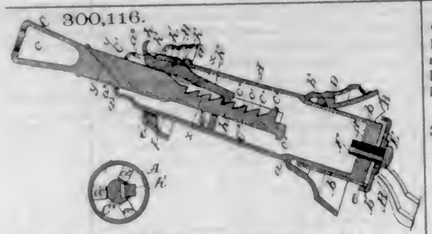
Claim.—1. The combination, in a standard for furniture, of the hollow body and its supporting-legs with a sliding stem having ratchet-teeth, as described, a pawl-block, H, and webbed ring I, as set forth.

2. In a standard for furniture, the combination of a tapering body and its support with a sliding stem having ratchet-teeth, as described, a pawl-block, H, and a securing-ring having webs *i*, as and for the purpose set forth.

3. The combination, with body A, having slot a^3, its support, and stem C, having groove and ratchet-teeth formed therein, of a pawl-block, H, substantially as described, and a ring for locking the block.

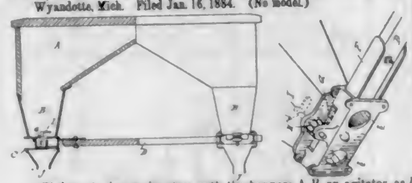
4. The combination of the hollow body A and a suitable support therefor, having slot a^3, stem C, provided with groove and ratchet-teeth formed therein, pawl-block H, with pawl A, and securing-ring I, having interior webs or flanges, *i*, substantially as set forth.

300,116.



5. In a standard for furniture, the combination, with the hollow body A and a suitable support therefor, having slot a^3, of the vertically-movable stem C, with solid vertical portion C' and lower portion, C^3, the latter having an exterior groove, *c'*, with straight walls, and ratchet-teeth c^2 formed therein, and a securing-ring and pawl-block suspended loosely against the stem.

300,117. ATTACHMENT FOR CORN-PLANTERS. GEO. S. PAINE, Wyandotte, Mich. Filed Jan. 16, 1884. (No model.)

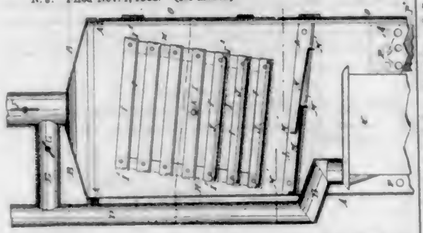


Claim.—1. In combination with the hoppers A B, an agitator, as A I, journaled to said hopper, and carrying a pinion, H, operated by the motion of the grain-slide through the medium of a rack attached thereto, and working through a slot in the casting supporting said slide, substantially as specified.

2. The combination, with the hopper A B, and hollow casting C, and the shaft A, journaled in said casting, and carrying agitator-arm I and pinion H, of the reciprocating bar D, carrying rack G, meshing with said pinion, substantially as and for the purpose specified.

3. In a corn-planter attachment, the combination of the hopper A B, hollow casting C, bar D, carrying slides F and rack G, and reciprocating in said hollow casting, pinion H, agitator I, and spouts J, substantially as described.

300,118. PORTABLE FRUIT-DRIER. JOSEPH N. PARKER, Vineland, N. J. Filed Nov. 1, 1883. (No model.)



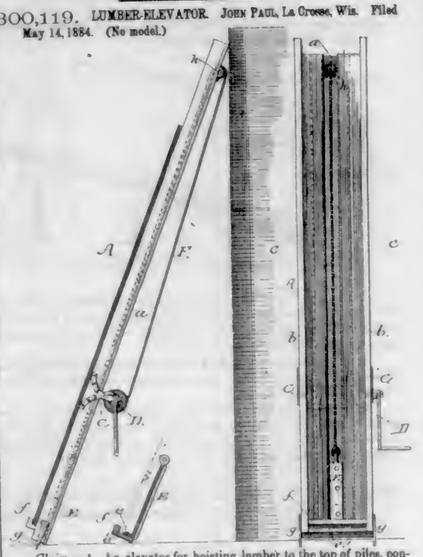
Claim.—1. In a drier, a series of horizontal tray-supporting bars on opposite sides of the drier, pivoted at their ends to vertical bars, one of said supporting-bars in each series being pivoted to the sides of the drier, whereby the said supporting-bars may be adjusted to different angles and inclined in opposite directions, substantially as set forth.

2. In a drier, the combination, with a series of horizontal tray-supporting bars on opposite sides of the drier, pivoted at their ends to two vertical bars, and the central bar of each series pivoted centrally to the side of the drier, of a series of trays resting at their ends on said supporting-bars, whereby the front and rear longitudinal edges of the upper and lower trays respectively may be adjusted to fit against opposite sides of the drier to direct the volume of heat through the trays from either side, as may be desired, substantially as set forth.

3. In a drier, the combination, with a series of horizontal tray-supporting bars on opposite sides of the drier, pivoted at their ends to two vertical bars, the central supporting-bar of each series being pivoted to the side of the drier, of the series of trays resting on said bars, and a damper constructed to shut off the volume of heat from the under side of the lower tray and direct it in front or in rear of the trays, according to the direction in which they are inclined, substantially as set forth.

4. The combination of the two series of tray-supporting bars, pivoted at their ends to the vertical bars, and the central supporting-bars, pivoted centrally to the sides of the drier, with the two independently-adjustable damper-plates below the drier, for shutting off the volume of heat or admitting it alternately to the opposite sides of the trays, according to the direction in which they are inclined, substantially as set forth.

300,119. LUMBER-ELEVATOR. JOHN PAUL, La Crosse, Wis. Filed May 14, 1884. (No model.)



Claim.—1. An elevator for hoisting lumber to the top of piles, consisting of an inclined frame with guide for the lumber, a sliding carriage, operated by a rope or chain, and a toe-piece secured to the carriage, substantially as herein set forth.

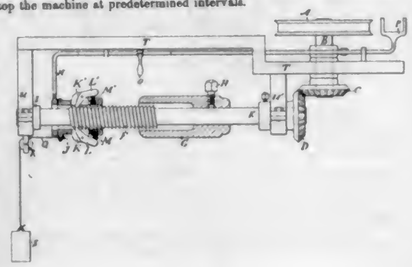
2. In an elevator for the purpose described, the frame A, provided with the side pieces, *b*, and intermediate strips, *c*, and a sheave, A, mounted on the top of the frame, in combination with a sliding carriage constructed substantially as herein set forth, and the mechanism, as described, for operating said carriage so as to elevate lumber beyond the top of the frame, substantially as and for the purpose set forth.

3. In an elevator for hoisting lumber to the top of piles, a carriage constructed substantially as shown, and adapted to slide in guides formed by the frame A, and the mechanism described for operating the carriage, substantially as and for the purpose set forth.

4. An elevator for hoisting lumber to the top of piles, consisting of an inclined frame, a sheave mounted in said frame, a sliding carriage constructed as shown and described, and operated by a rope or chain secured to a drum mounted on a shaft which is journaled in brackets secured to the frame, and a crank mechanism, substantially as and for the purpose set forth.

300,120. AUTOMATIC STOP-MOTION. ROBERT R. PEARE, Hartford, Conn. Filed Sept. 24, 1883. (No model.)

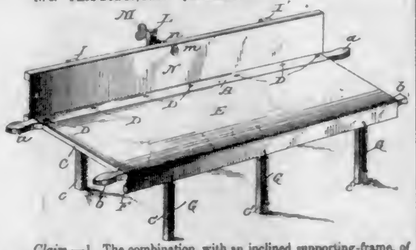
Brief.—The wire which passes into a machine for coiling the wire and interweaving the coils to make a fabric passes around the pulley of the belt-shifting device, and thus operates this device to shift the belt and stop the machine at predetermined intervals.



Claim.—1. The combination of the pulley A, the shaft E, having the screw-thread F, the thimble J, having the pawls L L′ and the springs M M′, and the angle-rod having the handle O and the shifting-fork P.

2. The combination of the pulley A, the shaft E, having the screw-thread F, the thimble J, having the pawls L L′ and the springs M M′, the adjustable stop G, the weight S, and the angle-rod N.

300,121. PORTABLE FRUIT-DRIER. RILEY F. PEPPER, Germanton, N. C. Filed Dec. 10, 1883. (No model.)

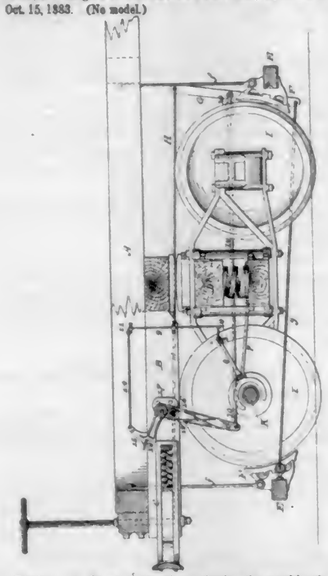


Claim.—1. The combination, with an inclined supporting-frame, of the screen E, secured to said frame at one side by means of the pegs D, and to the other by means of the elastic straps G, removably secured to the pegs H, as and for the purpose set forth.

2. In a fruit-drier, the inclined porous screen E, in combination with the supporting-rails A B, and elastic connections for keeping the screen taut across the rails, as set forth.

3. In a fruit-drier, the combination, with the supporting-frame provided with the inclined screen E and arm L, of the reflector N, having set-screw M, whereby said reflector may be adjusted with reference to said screen, substantially as and for the purpose set forth.

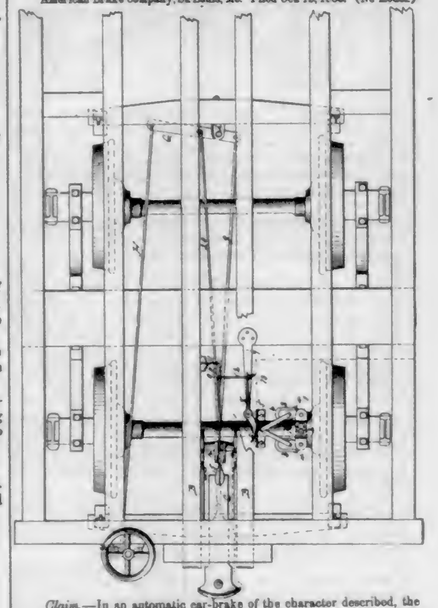
300,122. AUTOMATIC CAR-BRAKE. GEORGE HAMILTON POOR, St. Louis, Mo., assignor to the American Brake Company, same place. Filed Oct. 15, 1883. (No model.)



Claim.—1. In an automatic car-brake, the combination, with the movable draw-bar, of a straight lever fulcrumed near its upper end in rear of the draw-bar, and having its long arm connected with the brake mechanism, and a latch pivoted at one end to the short arm of the lever, and having its free end connected, through suitable intermediate devices, with an automatic regulator secured to the wheel-axle, substantially as and for the purpose specified.

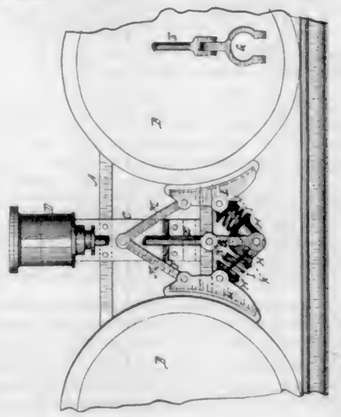
2. In an automatic car-brake, the combination of a movable draw-bar, an operating-lever pivoted in rear thereof and having its long arm connected directly to the brace, a latch pivoted on the short arm of the operating-lever, and connected with an automatic regulator adapted to actuate the latch and cause it to engage with the draw-bar, substantially as and for the purpose specified.

300,123. AUTOMATIC CAR-BRAKE. GEORGE HAMILTON POOR, Portland, Me., and CHARLES JOHN SCHILLER, St. Louis, Mo., assignors to the American Brake Company, St. Louis, Mo. Filed Oct. 15, 1883. (No model.)



Claim.—In an automatic car-brake of the character described, the combination, with the movable draw-bar and the brake mechanism, of an L-shaped operating-lever fulcrumed in rear of the draw-bar, with its short arm extending upward and toward the draw-bar and its long arm terminating forward of the wheel-axles, and a short latch pivoted at one end to the upper end of said short arm, and having its free end connected, through suitable intermediate devices, with an automatic regulator secured to the wheel-axle, substantially as and for the purpose specified.

300,124. LOCOMOTIVE-BRAKE. GEORGE H. POOR, St. Louis, Mo., assignor to the American Brake Company, same place. Filed Nov. 12, 1883. (No model.)



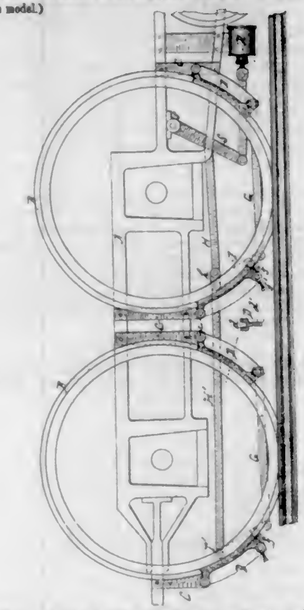
Claim.—1. In a locomotive power-brake wherein the shoes are arranged between the drive-wheels, and the power is applied by means of a piston-rod in connection with toggle or eccentric-faced levers, the combination, with the shoes and power-levers, of an auxiliary elastic medium interposed between the same, substantially as and for the purposes specified.

2. In a locomotive power-brake, the combination, with two drive-wheels and a piston-rod, of two brake-shoes arranged between the drivers, toggle or eccentric-faced levers for applying power to the brake-shoes, and an auxiliary elastic medium interposed between the toggle-levers and brake-shoes, substantially as and for the purposes specified.

3. In a locomotive power-brake, the combination, with two drive-wheels and a piston-rod, of two brake-shoes arranged between the drive-wheels, toggle-levers for applying power to the drive-wheels, elastic medium interposed between the toggle-levers and shoes, and a yoke or link interposed between the power and toggle-levers, substantially as and for the purposes specified.

4. In a locomotive-brake, the combination of two brake-shoes arranged between the drive-wheels, a piston-rod for applying power thereto, a yoke pivoted on the piston-rod, spring-cups pivoted on the yoke and on the brake-shoes, and spiral springs arranged between the spring-cups, to form yielding toggle-arms between the yoke and the brake-shoes, substantially as and for the purposes specified.

300,125. LOCOMOTIVE-BRAKE. GEORGE H. POOR, St. Louis, Mo., assignor to the American Brake Company, same place. Filed Dec. 19, 1883. (No model.)



Claim.—1. In a locomotive-brake, the combination, with the locomotive-frame, of a face-plate secured thereto and provided with a boss or projection for suspending the brake-shoe, and a brake-shoe pivoted directly on the boss or projection of the face-plate, substantially as and for the purposes specified.

2. In a locomotive or like brake, the combination, with the brake-beam, of a beam-lever coupled to the brake-beam by a yoke provided with a screw for adjusting the distance between the brake-beam and brake-lever, substantially as and for the purposes set forth.

3. The brake-shoe having the deep longitudinal groove in the face which bears on the tread of the wheel, and the longitudinal web upon its back corresponding with the groove of the bearing-surface, substantially as and for the purposes specified.

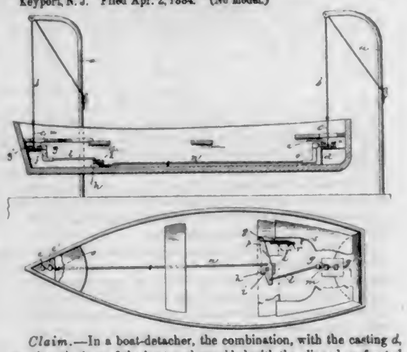
4. In a locomotive-brake, the combination, with the brake-shoe of opposite sides, of a transverse brake-beam having two beam-levers, one arranged near each end of the brake-beam and connected thereto by an adjustable yoke, and two pull-rods, one connected to each of said beam-levers, substantially as and for the purposes specified.

5. In a locomotive or like brake, the combination of two transverse brake-beams, two beam-levers connected to one of said brake-beams near its extremities, two pull-rods—one for each beam-lever—and two tie-rods which connect the two beam-levers with the opposite brake-beam, substantially as and for the purposes specified.

6. The twin cylinder provided with its two pistons, in combination with the two cross or floating levers pivotally secured to the cylinder, substantially as and for the purposes specified.

7. The twin cylinder provided with its two pistons, in combination with two cross or floating levers, each of said levers fulcrumed on the cylinder by means of an intermediate link pivoted on the cylinder, substantially as and for the purposes specified.

300,126. BOAT-DETACHING APPARATUS. ANDREW DECKER POST, Keyport, N. J. Filed Apr. 2, 1884. (No model.)



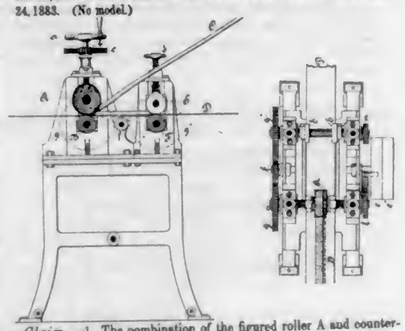
Claim.—In a boat-detacher, the combination, with the casting *d*, secured to the bow of the boat, and provided with the aligned perforated lugs *e e′*, and the casting *f*, secured in the stern of the boat, and provided with the perforated aligned lugs *g g′*, of the base-plate *h*, having stud *i*, secured in the bottom of the boat, the pivoted lever *k*, connected by rod *q* to the hand-lever *r*, the bolt-rod *l*, bent upwardly at its rear end, and provided with the shouldered bolt *m m′*, and the bolt-rod *n*, bent upward at its forward end, and provided with the shouldered bolt *m o*, substantially as specified.

300,127. SLIDING-JAW WRENCH. WILLIAM H. RATCLIFF, Middleborough, assignor of one-half to George S. Gates, Athol, Mass. Filed Jan. 24, 1884. (No model.)



Claim.—The combination, with the adjustable jaw D and its frame E, provided with a longitudinal opening, and spring H, of the sliding pivot L, swinging arms K, and friction-roll N, adapted for operation substantially as described, as and for the purposes set forth.

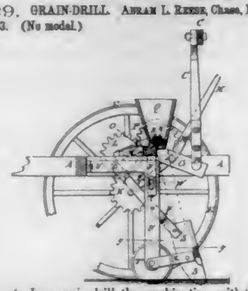
300,128. MACHINE FOR MAKING ORNAMENTS FOR GILT CORNICES, &c. JOSEF REDELIGH, Cologne-on-the-Rhine, Germany. Filed Sept. 24, 1883. (No model.)



Claim.—1. The combination of the figured roller A and counter-roller B with the traveling bed D and rollers E F, said bed passing below the rollers A E and above the rollers B F, and with the conduit C, which is placed to discharge the plastic matter upon the bed D, between the two sets of rollers A B and E F, substantially as herein shown and described.

2. The combination of the figured roller A, having cutting-edges o and grooves *p*, with the traveling bed D, substantially as described.

300,129. GRAIN-DRILL. ABRAM L. REESE, Chase, Kans. Filed Sept. 27, 1883. (No model.)

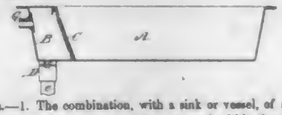


Claim.—1. In a grain-drill, the combination, with the drive-wheels E, the adjustable crank-axles F, and the feed-shafts N, of the gear-wheels K L P, the swinging bars M, pivoted to the shafts N and carrying the gear-wheels L, and the springs O, attached to the outside rails of frame A, and bearing against the bars M, substantially as herein shown and described, whereby the said gear-wheels will be kept in gear, however the drive-wheels may be adjusted, as set forth.

2. In a grain-drill, the combination, with the crank-axles F, journaled in the side bars, A, and in the short bars G, secured thereto and carrying the wheels E, of the rigid levers H, secured to said axle between the bars A G and provided with suitable locking devices, substantially as herein shown and described, whereby the axles can be readily turned to raise and lower the frame of the machine, as set forth.

3. In a grain-drill, the rectangular standards U, secured to the front bars of frame A at their forward extremities, and at their bends to vertical slotted arms V, which are in turn secured to the under sides of the rear bars of frame A, the circular colters pivoted at the lower ends of standards U, in combination with shoe S, connected to the lower ends of standards U by the bars X, and to their upper angular portion by the bars Y, substantially as specified.

300,130. SINK. CHARLES T. REGAN, Brooklyn, N. Y. Filed Dec. 3, 1883. (No model.)

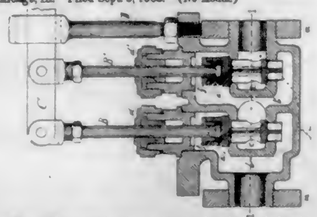


Claim.—1. The combination, with a sink or vessel, of a compartment for the reception of sewer-gas, arranged within the sink, and a pipe or passage for conducting away the gas which may arise within the chamber or compartment, substantially as shown and described.

2. The combination, in a sink or other like vessel, of a cap or cover, *a*, at one end, and a slide or door for separating the sink into an open and a closed compartment, the closed compartment being provided with exit-pipes for the discharge of water and gas, respectively, as specified.

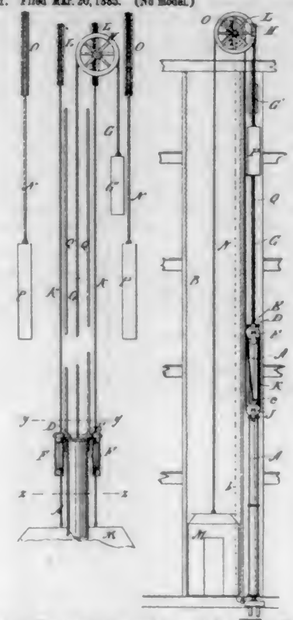
3. The combination, in a sink having outlet G, of a ledge or cover, *a*, and a slide, having serrations or perforations, as described, whereby a closed chamber or compartment for the reception of sewer-gas is produced, and the matter which passes from the open to the closed compartment is strained, as described.

300,131. DEVICE FOR OPERATING VALVES. JOSEPH REICHMANN, Chicago, Ill. Filed Sept. 5, 1883. (No model.)



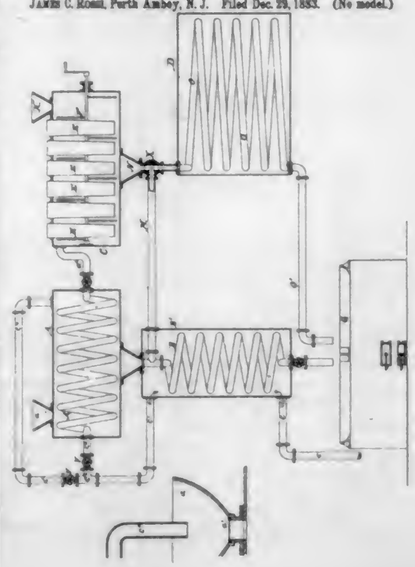
Claim.—The combination, with the double-headed valves *c c'*, and their rods B B', of the lever C, fulcrumed in the upper ends of said rods, whereby in opening one valve the fulcrum of said lever is transferred to the other valve, substantially as and for the purpose set forth.

300,132. HYDRAULIC ELEVATOR. OLIVER P. RICE, New York, N. Y. Filed Mar. 20, 1883. (No model.)



Claim.—The combination, with the well B and cage M, of the vertical cylinder A, open at top, valved at bottom, and carrying stationary side pulleys, J J, the piston-head O, and plate D, connected by rods *d*, the cross-bar E, guided by bars Q, attached to plate D and carrying pulleys F F, the end-weighted ropes G N N, and superposed pulleys H O, whereby the elevator-cage and piston-head may always move in the same direction, as described.

300,133. PROCESS OF AND APPARATUS FOR PRODUCING COLD. JAMES C. ROSSI, Perth Amboy, N. J. Filed Dec. 29, 1883. (No model.)



Claim.—1. The process of reducing temperature or producing cold which consists in applying to a liquid a chemical that will produce cold while going into solution therein, using the cold solution thus formed to cool a fresh body of liquid, then dissolving a cooling agent in and thus further reducing the temperature of the second body of liquid, substantially as and for the purposes set forth.

2. The process of reducing temperature or producing cold consisting of a series of two or more successive steps, each of which consists of applying to a liquid a chemical that will reduce the temperature of the liquid, and then using this cooled liquid to cool another liquid, substantially as and for the purposes set forth.

3. The process of producing cold which consists in using four or more vessels properly connected, so that by the solution of a chemical in a liquid in the first vessel a mass of pure liquid contained in the second vessel may be cooled, which liquid is subsequently further cooled by the use of a chemical therein, and then at the proper time using either or both of these masses of liquid in the third vessel for cooling pure water contained in the fourth vessel, which pure water subsequently has its temperature reduced by the solution of a chemical therein, substantially as described.

4. The continuous process of reducing temperature for manufacturing ice or for refrigeration which consists of providing a continuous supply of liquid, cooling it continuously by conduction from a second mass of liquid, also continuously supplied and continuously cooled chemically, then further reducing the temperature of the first mass of liquid by introducing into it a chemical, and continuously discharging both masses of liquid, after they are cooled chemically, at the same rate at which they are supplied, substantially as and for the purposes set forth.

5. The continuous process of reducing temperature for manufacturing ice or for refrigeration which consists of providing a continuous supply of liquid, cooling it continuously by conduction from a second mass of liquid, also continuously supplied and continuously cooled chemically, then further reducing the temperature of the first mass of liquid by introducing into it a chemical, and continuously discharging both masses of liquid, after they are cooled chemically, at the same rate at which they are supplied, then employing the discharged impure cold liquid to cool the supplied liquid, or for any other purpose, substantially as and for the purpose set forth.

6. The process of producing cold which consists in using four or more vessels properly connected, so that by the solution of a chemical in a liquid in the first vessel a mass of pure liquid contained in the second vessel may be cooled, which liquid is subsequently further cooled by the use of a chemical therein, and then at the proper times using either or both of these masses of liquid in the third vessel for cooling pure water contained in the fourth vessel, which pure water subsequently has its temperature reduced by the solution of a chemical therein, and then using at the proper time the cold impure liquids from the vessels 3 and 4 for cooling masses of water in other like or unlike vessels, or for any purpose for producing cold, substantially as described.

7. The process of producing cold which consists in dissolving in a liquid contained in a vessel a chemical which will produce cold while going into solution, and which cold solution serves to cool a fresh body of liquid contained in another vessel, the temperature of which is to be further reduced by dissolving therein a cooling agent, and then subsequently at the proper time using the cold impure liquids from either or both vessels for cooling other masses of water, or for any purpose where it may be desired to produce cold, substantially as described.

8. The continuous process of producing cold which consists in continuously passing water into a containing vessel around a contained vessel, which may be formed of a coil of pipes, and into which water or other liquid in said containing-vessel a cooling agent is thrown in a proper proportion continuously, for the purpose of cooling the water or other liquid, allowing the impure water to escape as rapidly as pure water is added, and simultaneously therewith passing pure water through the contained vessel, which may be a coil of pipes, cooling the same by conduction therein, then passing said cooled pure water into another vessel, where its temperature is again reduced by the addition of a chemical thereto, which is continuously thrown therein, and allowing this very cold impure water to escape as rapidly as pure cooled water is added, substantially as described.

9. The process of producing cold which consists in continuously passing water into a containing vessel around a contained vessel, which may be formed of a coil of pipes, and into which water or other liquid in said containing vessel is thrown, in a proper proportion continuously, a cooling agent for the purpose of cooling the water or other liquid, allowing the impure water to escape as rapidly as pure water is added, and using the same for cooling fresh masses of water or other substance, and simultaneously therewith passing pure water through the contained vessel, which may be a coil of pipes, cooling the same by conduction therein, then passing said cooled pure water into another vessel, where its temperature is again reduced by the addition of a chemical thereto, which is continuously thrown therein, and allowing this very cold impure water to escape as rapidly as pure cold water is added, and using this very cold impure water to cool fresh bodies of water or other substances or things which it is desired to cool, substantially as described.

10. The process of producing ice which consists in making one set of ice blocks rapidly with an extremely cold solution, and another set of ice blocks slowly with the comparatively warmer discharged solution, substantially as described.

11. A double vessel, as described, each compartment of which is properly arranged to carry out the process of cooling liquids therein by the absorption of the cooling agent, so that the cold liquid in one compartment may cool by conduction the liquid in the other compartments before the said liquid itself has absorbed the said cooling agent, combined with stirrers in one or both of the vessels, and suitable cocks, substantially as described.

12. A double vessel, as described, each compartment of which is properly arranged to carry out the process of cooling liquids therein by the absorption of a cooling agent, so that the cold liquid in one compartment may cool by conduction the liquid in the other compartments before the said liquid itself has absorbed the said cooling agent, combined with stirrers in one or both vessels and suitable cocks, and with boxes or vessels for containing liquid which is to be congealed by cold liquid surrounding the said boxes, substantially as described.

13. An apparatus for producing ice or cold liquids, which consists of two vessels, within one of which a liquid is cooled by absorbing the cooling agent, and which cold impure liquid by conduction cools the liquid in the surrounding or contained vessel, in combination with a pipe, conduit, or conveyer for the pure cold liquid, and a third vessel, within which the said cooled pure liquid is placed where it is to absorb in solution the cooling agent, so as to be still further cooled for the purpose of making ice or for any other desired object, substantially as described.

14. An apparatus for producing ice or cold liquids, which consists of two vessels, within one of which a liquid is cooled by absorbing the cooling agent, and which cold impure liquid by conduction cools the liquid in the surrounding or contained vessel, in combination with a pipe, conduit, or conveyer for the pure cold liquid, and a third vessel, within which the said cooled pure liquid is placed where it is to absorb in solution the cooling agent, so as to be still further cooled for the purpose of making ice, or for any other desired object, and stirrers and pipes provided with valves to conduct the impure liquids, when they have served their purpose, through coils or the like, substantially as described.

15. An apparatus for producing ice or cold liquids, which consists of two vessels, one within the other, within both of which a liquid may be placed, and pipes leading to two or more smaller vessels, substantially as and for the purposes set forth.

16. An apparatus for making ice or cold liquids, which consists of a contained and containing vessel, in both of which a liquid is placed, and in one of which is placed a chemical, the dissolving of which in the liquid results in the lowering of the temperature, thus cooling by conduction the liquid in the adjacent vessel, which is subsequently to have its temperature further reduced by the addition of a cooling agent, combined with pipes which conduct the liquid to the contained and containing vessels of another substantially like apparatus capable of substantially the same use, but in which the liquid in one of the vessels is cooled by conduction from the cold water drawn from one or both of the vessels of the first apparatus, substantially as described.

17. An apparatus for continuously producing ice, which consists of a contained and a containing vessel, into both of which a stream of liquid is continuously passed, and into one of which the cooling agent is continuously fed, combined with the coil of a tank for cooling by conduction pure water by the impure water drawn continuously from a vessel into which the cooling agent is supplied, in combination with another vessel into which cooled water, cooled by conduction in the containing or contained vessel, passes, and in which vessel the ice-boxes are placed, and to the cooled pure water surrounding which ice-boxes and within the vessel the cooling agent is continuously added, in combination with a pipe leading from said vessel and continuously carrying off the cold impure water, substantially as described.

18. An apparatus for continuously producing ice, which consists of a contained and a containing vessel, into both of which a stream of liquid is continuously passed, and into one of which the cooling agent is continuously fed, combined with the coil of a tank for cooling by conduction pure water by the impure water drawn continuously from a vessel into which the cooling agent is supplied, in combination with another vessel into which cooled water, cooled by conduction in the containing or contained vessel, passes, and in which vessel the ice-boxes are placed, and to the cooled pure water surrounding which ice-boxes and within the vessel the cooling agent is continuously added, in combination with a pipe leading from said vessel and continuously carrying off the cold impure water, and an evaporator and coils of pipe through which the stream of cold impure liquid surrounding the freezing-boxes may be directed when desired.

19. An apparatus for continuously producing ice, which consists of a contained and a containing vessel, into both of which a stream of liquid is continuously passed, and into one of which the cooling agent is continuously fed, combined with the coil of a tank for cooling by conduction pure water by the impure water drawn continuously from a vessel into which the cooling agent is supplied, in combination with another vessel into which cooled water, cooled by conduction in the containing or con-

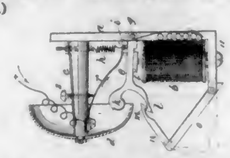
tained vessel, passes, and in which vessel the ice-boxes are placed, and to the cooled pure water surrounding which ice-boxes and within the vessel the cooling agent is continuously added, in combination with a pipe leading from said vessel and continuously carrying off the cold impure water, and stirrers either to one or both of the vessels into which the cooling agent is thrown.

20. The process of cooling rooms, refrigerators, cellars, and the like, which consists in continuously supplying liquid and the cooling agents to a vessel, then circulating the cold liquid through coils or the like, and before it reaches the evaporator or evaporators, cooling by conduction with this liquid the water which is subsequently to have its temperature further reduced by the addition in the vessel first mentioned of the cooling agent thereto, substantially as described.

21. The apparatus for cooling rooms, cellars, or the like, which consists of a vessel into which cooled water and the cooling agent are continuously added, coils of pipe through which this cold liquid is circulated, a tank containing pure water, the contents of which are cooled by conduction, and which tank or vessel receives the liquid which is subsequently to be combined with the cooling agent, and which liquid is cooled in said tank, and a pipe or conduit connecting said tank with the vessel when the cooled pure water and the cooling agent to be dissolved therein are brought together, substantially as described.

22. The process of cooling water or other material, which consists in first dissolving in a liquid a chemical which produces cold, and cooling by conduction another mass of liquid, which is subsequently to have its temperature further reduced by the dissolving therein of some chemical which produces cold, and subsequently using the first and second body of cold impure liquid, or either of them, for cooling by conduction other substances which it is desired to cool, substantially as described.

300,134. ELECTRIC BELL AND ANNUNCIATOR. DAVID ROUSSEAU, New York, N. Y. Filed June 23, 1881. Renewed Apr. 5, 1884. (No model.)



Claim.—1. In an electric bell and annunciator, the combination, with an electric magnet, a bell or sounder, and an annunciator drop or tag, of an armature bar or lever, *a*, formed with the hammer-knob *k* and pawl-hook *l* on the same extremity, substantially as and for the purpose shown and described.

2. In a combined electric bell and annunciator, the armature-bar *a* projecting across the edge of the bell with a hammer-knob, *k*, arranged on one side of the edge to sound the bell, and a catch-hook, *l*, arranged on the other side to engage or release the annunciator-drop, substantially as herein shown and described.

3. In a combined electric bell and annunciator, the combination, with a suitable base, of a bell or sounder arranged at one end of the base, an electric magnet arranged at the opposite end of the base, and an armature tag or drop pivoted at one side of the bell with an armature bar or lever, *a*, projecting between the magnet and bell, with its free extremity formed with a hammer-knob to sound the bell, and a pawl-hook to engage or disengage the drop, substantially as herein shown and described.

4. An electric bell constructed with the L-shaped base *a*, with the magnet fixed to the bend or foot of the L, with its axis parallel with the body of the L, and the armature and bell supported on the body of the L beyond the magnet, substantially as herein shown and described.

5. An electric bell constructed with the L-shaped iron base *a*, having a horseshoe-magnet fixed to the bend or foot of the L, with its cores in metallic contact therewith and projecting therefrom parallel with the body of the L, with the armature and bell supported on the body of the base beyond the magnet, substantially as herein shown and described.

6. In an electric bell, the L-shaped base *a*, in combination with an annunciator-tag pivoted on the end of the foot or bend of the L, a magnet arranged in the angle or corner of the L, and an armature and bell supported on the body of the L beyond the magnet, substantially as herein shown and described.

300,135. LOCKED FASTENING FOR WATCH-CHAINS. HENRY T. SALISBURY, Pawtucket, R. I. Filed Mar. 3, 1884. (No model.)



Claim.—1. In a fastening for watch-chains, the combination, with a hasp and a lock-spring provided with a sliding finger-piece, of a pair of notched rotating disks arranged to hold the spring in locked position, excepting when turned to assume a certain relative position, substantially as described.

2. The combination, with the spring C, provided with the projection *c'*, of the disks D E, provided, respectively, with the notches *d e*, and also with the projections *d' e'*, substantially as set forth.

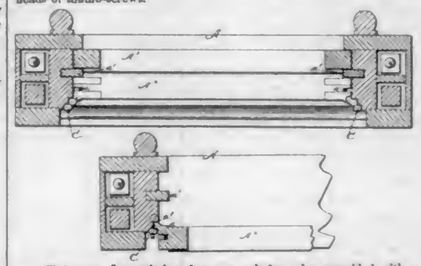
3. The spindle *b*, carrying the disk E, provided with the notch *e* and the stud *e'*, in combination with the disk D, having the spring d^3, notch *d*, and pin *d'*, and the casing inclosing said parts, substantially as specified.

4. The casing A, having the characters upon its front, in combination with the spindle *b*, carrying the face-plate B and handle *b'*, the said face-plate having characters upon its front, substantially as described.

5. The casing A, provided with the hasp *a*, the spring C, secured within the casing, and provided with the aperture, the projection *c'*, and push-pin *c*, in combination with the spindle *b*, having the handle *b'*, the face-plate B, and the disk E, secured to said spindle, the disk D, and the notches, studs, and apertures, all constructed and arranged substantially as set forth.

300,136. WINDOW. NILS F. SANDELIN, Chicago, Ill. Filed Feb. 12, 1884. (No model.)

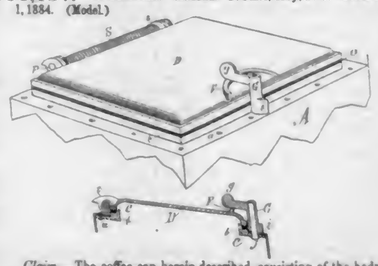
Brief.—A sash provided with flanges upon its inner edges, which run in notches in the frame, and are secured therein by the overlapping heads of thumb-screws.



Claim.—1. In a window-frame, a sash formed or provided with a flange upon its inner vertical sides, which overlaps the adjoining edges of the frame, in combination with a series of screws secured in the frame beside the flange, and having heads overlapping and confining the same, substantially as and for the purpose set forth.

2. The combination, with a window-frame, A, provided with the headed screws C C and notch *c'*, of a sash having side flanges, *c c*, running in said notches, and hung at or near its vertical center by cords *a a*, whereby it may be more readily cleaned, substantially as shown and described.

300,137. COFFEE-CAN. MATTHEW D. SAXE, Troy, N. Y. Filed Feb. 1, 1884. (Model.)

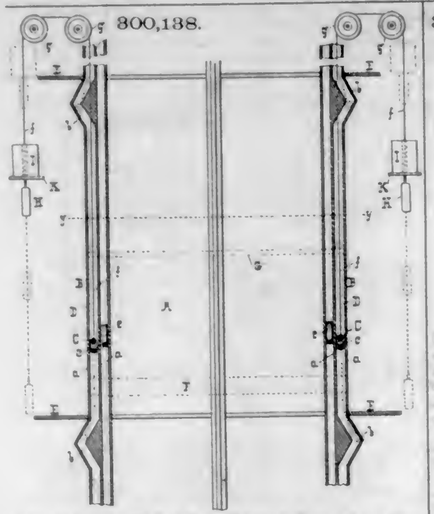


Claim.—The coffee-can herein described, consisting of the body A, having the rim *b* and cushion C, the hinged cover having the arm F, and the pivoted lock G, provided with an arm, *g*, and stop *i* to engage the arm F, to secure the cover and body together, as shown and described.

300,138. HATCHWAY-GUARD. JOHN SCHERER, Baltimore, Md. Filed Apr. 1, 1884. (No model.)

Claim.—1. In an elevator, the casing of the shaft, having vertical channels extending from one floor to another, with offsets therein formed of angular grooves reversed in position, substantially as described, guard-bars with their ends adapted to slide in the said channels and to the offsets from either end thereof, weighted cords which pass over sheaves and are attached to the said guard-bars, and the platform, which is constructed

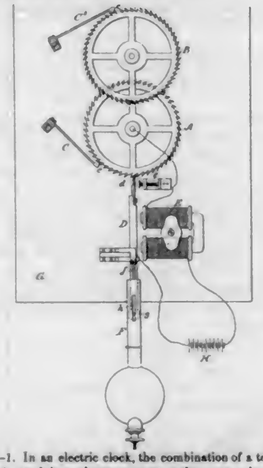
300,138.



to come in contact with the said guard-bars and elevate or depress them from the channels to the said offsets, all combined substantially as specified.

2. In combination with the guard-bars C and their supports *c*, the cord *f*, sheaves *g*, weights H and I, and shelf K, substantially as and for the purpose specified.

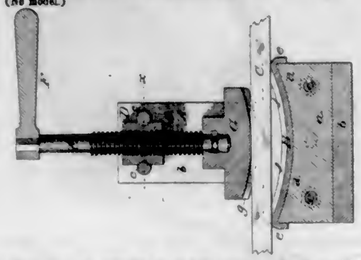
300,139. ELECTRIC CLOCK. SOLOMON SCHEINALL, St. Petersburg, Russia. Filed Nov. 8, 1883. (No model.) Patented in Belgium Oct. 19, 1883, No. 62,932; in France Oct. 22, 1883, No. 158,175; in Germany Oct. 24, 1883, No. 27,382; in England Oct. 30, 1883, No. 5,153; in Portugal Nov. 21, 1883, No. 875; in Italy Dec. 31, 1883, XXXII, 26; in India Jan. 7, 1884, No. 213, and in Spain Jan. 19, 1884, No. 5,135.



Claim.—1. In an electric clock, the combination of a toothed actuating-wheel, A, pendulum, electro-magnet, and armature-lever having a spring, *d*, closing the circuit through the said wheel and the clock-work, with a spring, C, acting on said wheel A to push it forward and break its contact with the spring *d*, substantially as set forth.

2. The combination of the actuating-wheel A of an electric clock, a pendulum, an electro-magnet, armature-lever D, having a spring, *d*, making contact with said wheel, with two electric batteries adapted to be put in circuit through the coils of said electro-magnet to operate the clock, and a commutator operated by said wheel to throw one or other of the batteries into circuit alternately, all substantially as described.

300,140. MACHINE FOR BENDING METALLIC HOOPS. MICHAEL SCHLIRM and PHILIPP ACKERMANN, Milwaukee, Wis. Filed Aug. 24, 1883. (No model.)



Claim.—1. In a machine for forming blanks for flared metal hoops, the combination of a frame, a die curved on the arc of a circle corresponding to the required flare of the hoop, perpendicular bearing-faces at each side of the die, a bunter having a curved face parallel with that of the die, and flanges perpendicular to the curved face, and means, substantially such as shown and described, for causing the approach of one of said parts (the die and bunter) toward the other.

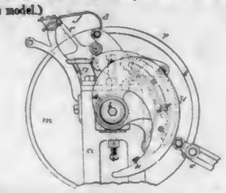
2. In combination with frame A, having faces *f f*, die B, bunter G, having flanges *g*, and screw E, swiveled in the bunter and passing through a nut in frame A, all substantially as shown.

3. The herein-described press, consisting of side plate *a*, provided with ledge *d*, side plate *b*, nut D, seated in recesses in the side plates, tie-bolts *c*, screw E, bunter G, and die B, said parts being combined and arranged to operate substantially as explained.

4. In a press substantially such as described, the combination of side plates, *a b*, die B, and bunter G, the bolts *c*, and set-screw *h*, as and for the purpose set forth.

5. In a machine for flaring metal hoop-blanks, the combination of a die or support, means, substantially as shown, for holding strips of band-iron on edge upon said die or support, and a curved bunter movable to and from said support, arranged to bear against the opposite edges of the strips, and to bend said strips in the direction of their width.

300,141. PRINTING-MACHINE. HENRY SCHOTT, Richmond, Va., assignor of one-half to William L. Royall, New York, N. Y. Filed Dec. 6, 1881. (No model.)



Claim.—1. The combination of the sectional adjustably-extensible cam, the feed-guides operated thereby, and the fly-cam, the end segment of the sectional-adjustable cam being secured to the fly-cam, substantially as and for the purpose set forth.

2. The combination of the feed-guides, adjustable mechanism, substantially such as described, for operating said guides, the fly-cam, and means, substantially such as described, whereby the fly-cam and said adjustable mechanism may be simultaneously adjusted according to the size of the sheet being printed.

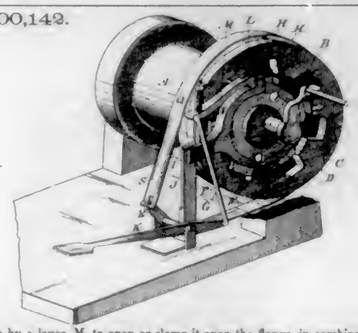
300,142. HOISTING-GEAR. IVES SCOVILLE and AVERY SCOVILLE, Oakland, Cal. Filed Apr. 19, 1884. (No model.)

Claim.—1. In a differential winding-gear, the drum A, having the recessed internally-toothed end, an interior spur-gear, D, of smaller diameter and one less tooth, with a concentric hub, C, having an eccentric revolving loosely within it and keyed to the shaft, as shown, in combination with a strap, G, fitting the projecting hub or flange of the gear D, and a mechanism, as described, by which the strap may be clamped upon or loosened from the flange, substantially as herein described.

2. In combination with a winding-drum and differential driving-gear, as shown, a strap, G, open at one side, and having the arm I supported so as to be free to follow the movements of the eccentric without rotating with it, a lever, M, connected with the lugs H H' of the open sides of the strap to open or close it upon the flange of the driving-gear, substantially as herein described.

3. In a differential driving-gear, the strap G, surrounding the flange of the spur-gear D, open at one side, and having lugs which are acted

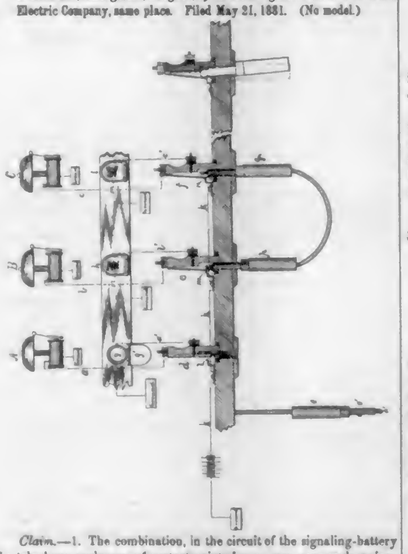
300,142.



upon by a lever, M, to open or clamp it upon the flange, in combination with a foot-lever, K, and spring Q, connected with the lever M, substantially as herein described.

4. In a differential gear, the strap O, surrounding the flange of the gear D, with its guiding-arm I and operating-lever M, in combination with the foot-lever K, lever R, and band-brake S, substantially as herein described.

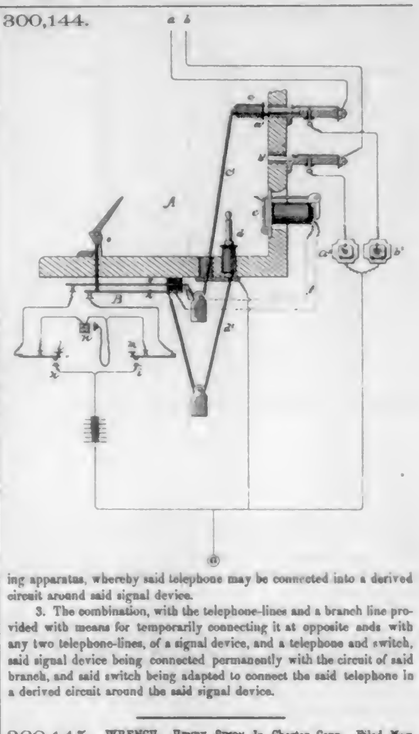
300,143. SPRING-JACK FOR TELEPHONE SYSTEMS. CHARLES E. SCRIBNER, Chicago, Ill., assignor, by mesne assignments, to the Western Electric Company, same place. Filed May 21, 1881. (No model.)



Claim.—1. The combination, in the circuit of the signaling-battery of a telephone-exchange, of contact-points *l* *m* *n*—one near each spring-jack—and plugs which, while inserted in the spring-jacks, are adapted to force the line-strips or contact-springs respectively into contact with said contact-points, as and for the purpose specified.

2. The combination of spring-jack *d* with contact-point *l* and plug *o*, said plug being smaller at *o'* than at *o''*, whereby the signaling-battery may be thrown to line *a*, as and for the purpose specified.

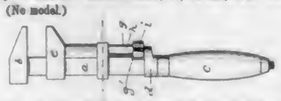
300,144.



ing apparatus, whereby said telephone may be connected into a derived circuit around said signal device.

3. The combination, with the telephone-lines and a branch line provided with means for temporarily connecting it at opposite ends with any two telephone-lines, of a signal device, and a telephone and switch, said signal device being connected permanently with the circuit of said branch, and said switch being adapted to connect the said telephone in a derived circuit around the said signal device.

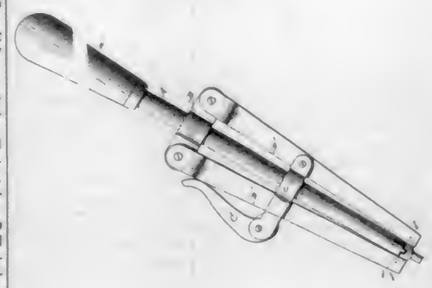
300,145. WRENCH. HENRY SIMON, Jr., Chester, Conn. Filed May 29, 1883. (No model.)



Claim.—1. In a wrench, in combination, the wrench-bar, the sliding head bearing the channeled screw-threaded socket, and the screw-rod *g*, flattened on opposite sides, and bearing integral with it the rosette by means of which the rod is turned, the said rod bearing directly against the step, all substantially as described.

2. In combination, the wrench-bar *a*, the sliding jaw *e*, having the threaded socket *f*, channeled on opposite sides, the screw-rod *g*, flattened on opposite sides, and bearing fast to it the rosette *i* at the end near the stop *d*, and the spring-bolt *m*, all substantially as described.

300,146. SCREW DRIVER AND HOLDER. JOHN SINNOTT, Chicago, Ill., assignor of two-thirds to John P. Barrett, same place. Filed Oct. 17, 1883. (No model.)



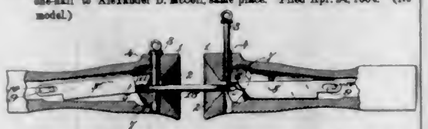
Claim.—The combination, with the shank A, having a square end and tongue *a'*, of the sliding collar B, arms B', having socketed jaws, links *c c*, and cam-lever C, all constructed and arranged to operate substantially as and for the purpose set forth.

300,147. COMBINED BOTTOM AND VALVE FOR WELL-BUCKETS. GEO. F. SKINNER, Superior, Nebr. Filed July 6, 1883. (No model.)



Claim.—The combination, in a well-bucket, of a bottom having a central perforation, a valve-disk above the bottom to close the opening, and a ⊔-shaped yoke secured thereto, and having vertical portions depending through said opening near the sides thereof, and bent horizontally at their lower ends, substantially as set forth.

300,148. CAR-COUPLING. JOHN SKINNER, Flint, Mich., assignor of one-half to Alexander D. McColl, same place. Filed Apr. 24, 1884. (No model.)



Claim.—1. The combination, with the draw-head, of the bar having a cross-head which overlies the end of the link, the bar having connection to the draw-head at its rear end, and a shoulder supporting the link beneath, the weight of the projecting end of the link being substantially counterbalanced by the weight of the bar and cross-head, substantially as described.

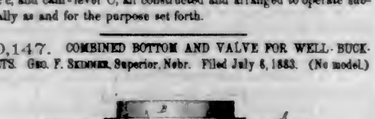
2. In a car-coupling, the combination, with the recessed draw-head, of a bar lying therein, and provided with a cross-head, the ends of which engage with and ride up and down upon the forwardly-inclined walls of a chamber located behind the coupling-pin, substantially as described.

3. In a car-coupling, the combination, with a recessed draw-head, of a bar lying therein, a cross-head upon the end of said bar, having its lower edge inwardly beveled, and a chamber or recess within the draw-head, having forwardly-inclined walls which engage with the said cross-head, substantially as described.

4. In a car-coupling, the combination, with the draw-head having the recess 6 and inclined walls 7, of the bar 8, having slot 9, and beveled cross-head 11, having the groove 13, substantially as described.

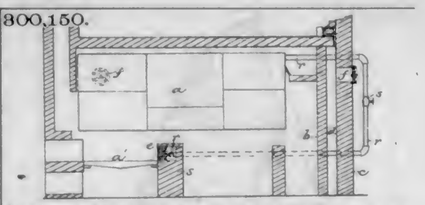
5. In a car-coupling, the combination, with the draw-head 1, having opening 2 and shoulder 16, of the bar 8 and cross-head 11, the latter having beveled edge 12, and groove 13, and the pin 3, and link 15, substantially as described.

300,149. VIOLIN TAIL-PIECE. JOHN J. SMITH, Kaufman, Tex. Filed July 23, 1883. (No model.)



Claim.—An apron or tail-piece for violins, recessed on the under side, and provided with a movable plate pivoted at one side, in combination with a slide and actuating-screw, the plate being provided near its forward edge with apertures, the front walls of which are recessed for the strings, substantially as and for the purposes specified.

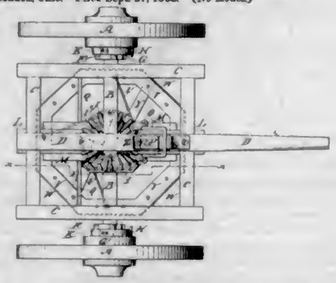
300,150. FEEDING AIR TO FURNACES. SIDNEY SMITH, Cambridge, Mass. Filed Nov. 6, 1883. (No model.)



Claim.—1. The combination, with a boiler, of inner and outer inclosing-walls separated by an air-space, and having registers for the admission of air, perforated distributing-plates arranged in the air-space, and the mixer or mixers having connection with said air-space, substantially as shown and set forth.

2. The combination of a boiler having inner and outer inclosing-walls separated by an air-space, and with a mixer or mixers having connection with said air-space registers for the admission of air, and perforated distributing-plates arranged within the air-space, with a steam-pipe extending from the steam-space of the boiler to the space behind the mixers, and having a perforated portion in close proximity to said mixers adapted to mingle superheated steam with the heated air supplied to said mixers from the air-space, substantially as set forth.

300,151. ROTARY SULKY-HARROW. WILLIAM HENRY SOUTHWARD, Mendon, Ohio. Filed Sept. 27, 1883. (No model.)



Claim.—1. In a rotary sulky-harrow, the combination, with the sulky A B C, the bent bar L, and the harrow frame or rim V, of the gear-wheels I J, the center wheel, R S T, and the hinged rods U, substantially as herein shown and described.

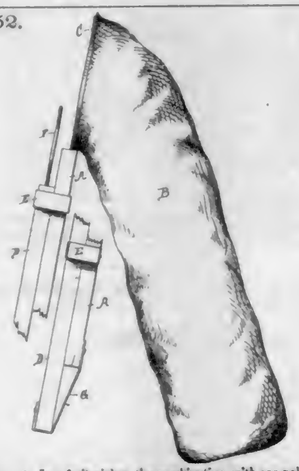
2. In a rotary sulky-harrow, the combination, with the bent bar L, the tongue D, and the gear-wheel J, of the link M, the bail O, and the saddle-block P, substantially as herein shown and described, whereby the gear-wheels can be readily thrown into and out of gear, as set forth.

3. In a rotary harrow, the combination of the plate T, hub R, hinged rods U, and toothed rim V, adapted to receive the halved and apertured bars Y, so as to hold the teeth out of contact with the ground, substantially as shown and described.

300,152. FRUIT-PICKER. JOHN S. SPRAKER, Kokomo, Ind. Filed Apr. 5, 1884. (No model.)



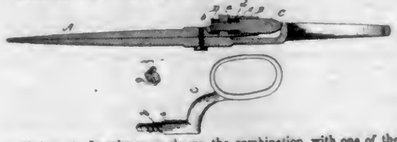
300,152.



Claim.—1. In a fruit-picker, the combination, with one pole or handle and a hoop and bag secured thereon, of another handle having a curved wire secured to one end, and secured to the first handle by loops, substantially as and for the purpose specified.

2. The combination, with a handle, a hoop and bag secured thereon, as described, another handle, a wire thereon, and loops connecting the two handles, of a stop attached to the two handles to limit their relative longitudinal motion, substantially as shown and described.

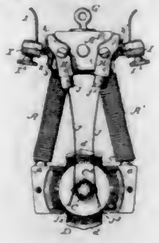
300,153. REVERSIBLE SHEARS. JOHN LITTLEBERRY STARKS, Sharon Grove, Ky. Filed Mar. 13, 1884. (No model.)



Claim.—1. In scissors or shears, the combination, with one of the blades, provided at its lower end with a tubular extension having slots formed upon the opposite sides of the same at their upper ends, of a detachable handle having a coiled spring mounted thereon near the upper end thereof, and a cap adapted to fit the end of the said handle upon the outer side of the tubular extension, substantially as set forth.

2. In scissors or shears, the combination, with one of the blades, provided at its lower end with a tubular extension having slots at its upper end, and a recess formed adjacent thereto upon the blade, said extension being also provided with a seat upon its inner side near the upper end of the same, of a detachable handle, the end of which is squared, said handle being also provided with a coil-spring bearing against a seat upon said handle at one end and against the seat of the tubular extension at the other end, and a cap provided with an outwardly-projecting lug, and adapted to be rigidly mounted on the squared end of the handle, substantially as set forth.

300,154. ELECTRIC MOTOR AND DYNAMO-ELECTRIC MACHINE. ELI T. STARR, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Dec. 4, 1883. (No model.)



Claim.—1. The improved armature having pole-pieces made up of thin plates or strips connected together and to the armature shaft or bar, substantially as described.

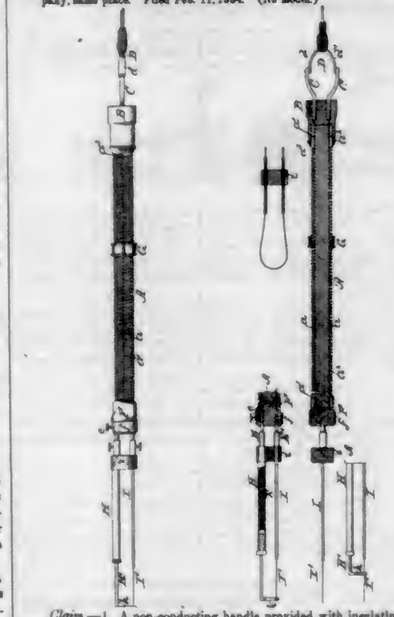
2. The combination of the motor-frame, the tubular armature, the flexible driving-shaft fitted in said armature and connected therewith so as to be driven thereby, and the sheath or cover for said shaft connected with an extension of the motor-frame, substantially as described.

3. A commutator-brush loosely jointed or swiveled to accommodate itself to the commutator-shaft, substantially as described.

4. A brush-arm jointed so as to be adjustable in its pressure upon the commutator, and provided with a loosely-jointed or swivel commutator-brush, substantially as described.

5. The combination of the brush-arm, the adjusting device thereof, and the loosely-jointed or swivel commutator-brush, consisting of a flat plate or strip, substantially as described.

300,155. ELECTRICAL CAUTERIZING APPARATUS. ELI T. STARR, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Feb. 11, 1884. (No model.)



Claim.—1. A non-conducting handle provided with insulating-ferrules at its ends, and with opposite longitudinal grooves, in combination with circuit-wires fitted in said grooves, and one of said wires being formed into a loop and wound spirally around the handle to constitute a resistance device, substantially as described.

2. A non-conducting handle provided with insulating-ferrules at its ends, and with opposite longitudinal grooves, in combination with circuit-wires fitted in said grooves, and one of said wires being formed into a loop and wound spirally around the handle to constitute a resistance device, and with a tool or device carried by the front end of the handle to be affected by the current flowing over said circuit-wires, substantially as described.

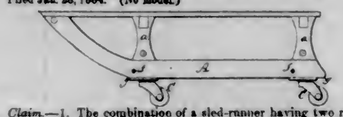
3. The combination of a handle carrying conducting-connections, with a single incandescing cauterizing-needle connected with said conducting-connections and rendered incandescent by the current passing therethrough, substantially as described.

4. The combination of a handle carrying conducting-connections, with a cauterizing-needle in circuit with said connections, and a plunger making contact therewith and movable endwise, so as to allow said needle to be protruded in front of said plunger, substantially as described.

5. The combination of a handle carrying conducting-connections, with a cauterizing-needle in circuit with said connections, and a spring-plunger making contact therewith, and movable endwise relatively to said needle, substantially as described.

6. A cauterizing-needle consisting of two members, one only of which is brought to incandescence in operation, and is of materially higher resistance than the non-incandescent member thereof, substantially as described.

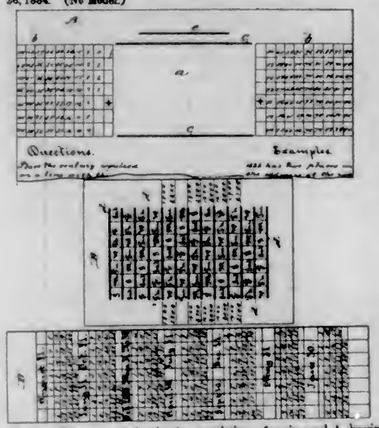
300,156. SLED-RUNNER. NATHANIEL W. STARR, Tarrytown, N. Y. Filed Jan. 28, 1884. (No model.)



Claim.—1. The combination of a sled-runner having two running-surfaces, *c c*, with a groove between them, and a detachable broad runner, B, adapted to fit in the groove and cover the said running-surfaces *c c*, substantially as and for the purpose herein specified.

2. The combination of a sled-runner provided with longitudinal groove *b* therein, and casters C C, provided with tongues or flanges fitting the grooves in the sled-runner, substantially as and for the purpose herein specified.

300,157. CALENDAR. HENRY S. STEVENS, Keene, N. H. Filed Apr. 26, 1884. (No model.)



Claim.—The perpetual calendar consisting of main card A, having slits *c e*, adjustable week-day card B, having slits *d*, and the adjustable month-card D, the cards having upon them the names and numbers, as specified, for use in the manner set forth.

300,158. MANUFACTURE OF MATERIAL TO IMITATE IVORY FROM PYROXYLINE COMPOUNDS. JOHN R. STEVENS, Newark, N. J., assignor to the Celluloid Manufacturing Company, New York, N. Y. Filed Apr. 5, 1884. (No specimens.)

Claim.—1. In the art of making pyroxyline material in imitation of ivory by cutting strips of material of varied color, welding them together to form a block, and reducing the block to sheets, the method of treating the strips to insure a perfect result, which consists in applying thereto a solvent to compensate for such evaporation of their moisture as may occur prior to their subjection to the action of the press.

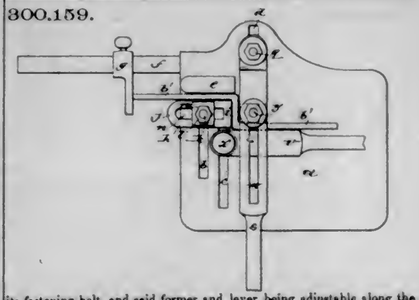
2. The method hereinbefore described of producing sheets in imitation of ivory from pyroxyline material, which consists in, first, cutting strips composed of one or more thin pieces of material of varied color; second, treating the strips with a solvent and compacting them on edge into a cake; third, welding them together to form a block by heat and pressure; and, fourth, reducing the block to sheets.

3. The within-described process of producing sheets in imitation of ivory from pyroxyline material, which consists in treating strips of varied colors with a solvent, placing them on edge in face-to-face contact and applying pressure to insure the cementing of the strips into a solid mass, and finally subjecting them to the action of the press, whereby they are solidified into a block, from which sheets may be cut.

4. The method hereinbefore described of producing sheets in imitation of ivory from pyroxyline material, which consists in cutting strips of material of varied colors, cementing them together without the aid of heat, then solidifying them in a press, and finally reducing the block thus formed to sheets.

300,159. BENDING-MACHINE. WILLIAM WATSON STOKES, Alma, Ill. Filed Jan. 28, 1884. (No model.)

Claim.—1. The combination of the anvil *e*, former A, and lever *s*, with a bed-plate, *a*, having slots *b c*, said former A having a slot, *n*, for its fastening-bolt, and said former and lever being adjustable along the slots of the bed-plate, and former A being adapted to be set obliquely to the anvil-block, substantially as described.



2. The combination of the anvil-block *e*, adjustable former A, and lever *s*, with bed-plate *a*, having slots *b* and *c*, and the lever *v*, said lever *v* being pivoted to and adjustable along lever *s*, substantially as described.

3. The combination of the anvil-block *e*, adjustable former A, lever *s*, former *u*, and lever *v*, with the bed-plate *a*, having slots *b c d*, said lever *v* and former *u* being adjustably connected to said lever *s*, and said lever *s* being removable to and connectable in slot *c*, substantially as described.

4. The combination of the bed-plate *a*, anvil-block *e*, adjustable former A, levers *s* and *v*, and the gage-bar *f* and adjustable stop-gage *g*, substantially as described.

300,160. EMBROIDERY. EDMUND STURZENEGGER, New York, N. Y. Filed Aug. 7, 1883. (No specimens.)

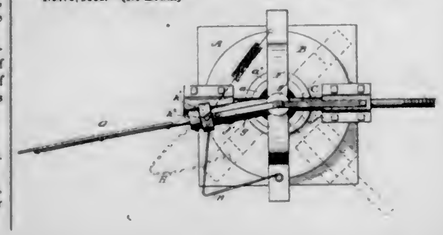


Claim.—1. An article of embroidery provided with undivided tufts composed of the embroidery-threads, the fibers of the tufts being fastened alternately on opposite sides of the center line of the tufts, substantially as described.

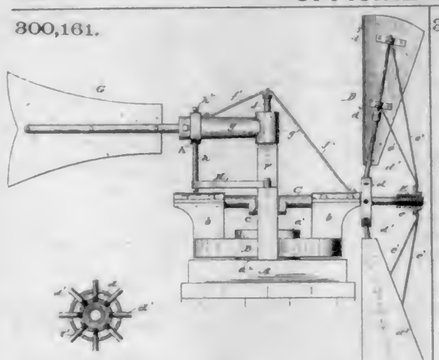
2. The process of making plush embroidery, which consists in forming a single or multiple series of parallel face-stitches on each of the adjacent faces of the design, extending from the edge or margin past the center line thereof, the series of the respective faces interlapping at the center, and then cutting the threads at the margin, substantially as described.

3. The process of forming plush embroidery, which consists in running a face-stitch from the margin of the design transversely across the latter past the center line thereof, then running a short back-stitch near the center line at an angle to the face-stitch, then running a face-stitch parallel with the first face-stitch, then running a short back-stitch at the margin at an angle to the face-stitch, and continuing until one half of the design is covered, then running similar parallel face-stitches across the other half of the design and past the center line thereof with connecting back-stitches, the respective series of face-stitches interlapping at the center, and then cutting the threads of the face-stitches at the margin, substantially as described.

300,161. WINDMILL. GEORGE M. TAYLOR, Chicago, Kans. Filed Nov. 9, 1883. (No model.)



300,161.



Claim.—1. The combination, with the turn-table, arch, crank-shaft, wind-wheel, and vane, of a spring-governor normally holding the vane a little out of line from the crank-shaft and yieldingly connecting said vane and wind-wheel through the arch, turn-table, and crank-shaft, whereby the wind-wheel may automatically adjust itself toward said vane according to the varying force of the wind, substantially as set forth.

2. The combination, with the turn-table B, arch F, crank-shaft C, wind-wheel D, and vane G, of the angular spring-governor H, normally holding the vane a little out of line from the crank-shaft and yieldingly connecting said wind-wheel and vane, substantially as set forth.

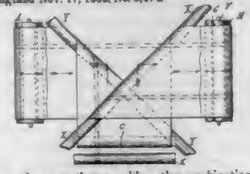
3. The combination, with the arch F and vane G, of the collar A', mounted on the stock of the vane, the rod A, fastened to said collar, and the angular spring-governor H, fastened to said rod and the arch F, substantially as described.

4. The combination, with the shaft C, having a threaded extension, and the wind-wheel D, mounted on the said shaft, of the internally-threaded sleeve E, adapted to said threaded extension, the hub or sleeve *e*, swiveled on the threaded sleeve E, and braces connected with the hub or sleeve *e* and the arms of the wind-wheel, substantially as described.

5. The combination, with the turn-table B and the arch F, having the post *f*, of the vane G, pivoted to said post, and the brace or stay rods *f' f²*, also having a loose or pivotal connection with said post, substantially as described.

6. The combination, with the flanged hub *d*, of the arms *d'*, passing freely through the outer flange and screwed into an inner flange, substantially as described.

300,162. PRINTING-MACHINE. WILLIAM WILBERFORCE TAYLOR, Ripon, County of York, England. Filed Aug. 6, 1883. (No model.) Patented in England Nov. 17, 1882, No. 5,474.



Claim.—1. In a printing-machine, the combination of bars and rollers for turning and guiding the paper, and the ordinary carrying-tapes, or equivalent, with a web or tapes to support the said ordinary tapes, substantially as set forth.

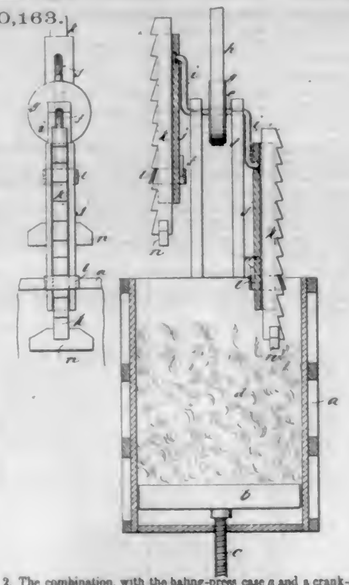
2. In a printing-machine, the combination of bars having inclined turning-surfaces at right angles to each other, and guiding-rollers and carrying-tapes, or equivalent, for the paper, with a carrying web or tapes to support the said ordinary tapes, substantially as set forth.

3. The combination of bars X Y, having inclined turning-surfaces at right angles to each other, with rollers A B C D E, tapes passing around said rollers, to carry the paper, and a carrying web or tapes to support the said ordinary tapes, and also passing around said rollers, substantially in the manner set forth.

300,163. TRAMPING ATTACHMENT FOR BALING-PRESSES. GIDEON PHILIP THOMPSON, Crowley's Station, Tex. Filed Apr. 11, 1884. (No model.)

Claim.—1. The combination, with a baling-press case, *a*, of a pair of tramping-legs suspended from a crank-shaft located over the case, substantially as described.

300,163.

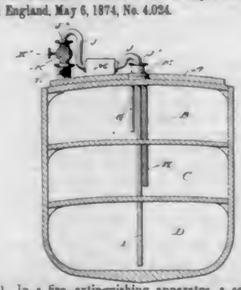


2. The combination, with the baling-press case *a* and a crank-shaft, *e*, located over the same, of extensible tramping-legs suspended from said crank-shaft and adapted for tramping the cotton or other material in the case to be baled, substantially as described.

3. The combination of extensible tramping-legs consisting of grooved section *j* and notched section *k*, fitted one within the other and secured by a band, *l*, and key *m*, with the crank-shaft *e* and the press-case *a*, said section *j* being suspended from the crank, and the section *k* having the tramping-foot *n*, substantially as described.

4. The combination, with a press having a follower, *b*, in the bottom, and being arranged to open at the top, of a pair of trampers suspended from a crank-shaft located over the top of the case, said trampers being adapted to be contracted as the case fills, substantially as described.

300,164. APPARATUS FOR EXTINGUISHING FIRES ON SHIPS. WILLIAM H. THOMPSON, New York, N. Y. Filed May 3, 1883. (No model.) Patented in England, May 6, 1874, No. 4,024.

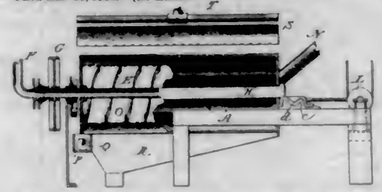


Claim.—1. In a fire-extinguishing apparatus, a series of vertical pipes of different lengths, terminating in separate compartments, the upper ends whereof are flush and arranged in the arc of a circle, in combination with a main supply-pipe having one end of a branch pipe swiveled thereto, the loose end of said branch pipe being adapted to engage any one of the vertical pipes, substantially as described, and for the purposes set forth.

2. In a fire-extinguishing apparatus, a series of vertical pipes of different lengths, the upper ends whereof are flush and secured in the openings of a quadrantal plate, the lower ends whereof terminate in separate compartments, in combination with a main supply-pipe having one end of a branch pipe swiveled thereto, and a cock, K', the loose end of said branch pipe being adapted to engage any one of the openings in the quadrantal plate, substantially as described, and for the purposes set forth.

3. In a fire-extinguishing apparatus, a series of vertical pipes of different lengths, terminating in separate lower compartments, the upper ends whereof are flush, in combination with a main supply-pipe having a swivel feed-pipe connected therewith, said feed-pipe being provided with a gas-generator, substantially as described, and for the purposes set forth.

300,165. STARCH-SEPARATOR. CHARLES W. TREMAIN, Chicago, Ill. Filed Mar. 15, 1884. (No model.)

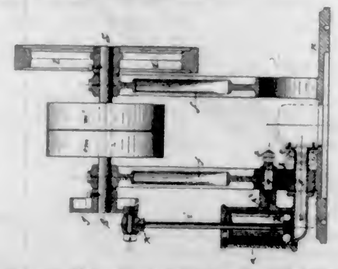


Claim.—1. In the machine described, a screen and screen-frame, in combination with suitable belt-connections for imparting a rotary motion thereto, a rod connected to said frame and mounted in V-shaped journals, and suitable belt-connections for imparting a reciprocating and trip motion to said frame and screen, as described.

2. In the machine described, the combination, with a screen, a screen-frame, and a conveyer situated therein, of suitable belt-connections for imparting a rotary motion thereto, a rod connected to said frame and mounted in V-shaped journals, and suitable belt-connections for imparting a reciprocating and trip motion to the parts, as described.

3. In the machine described, the combination, with a screen and screen-frame mounted on a perforated shaft, of a water-supply pipe connected to said shaft, suitable belt-connections for imparting a rotary motion thereto, a rod connected to said frame and mounted in V-shaped journals, and suitable belt-connections for imparting a reciprocating and trip motion to the parts, as described.

300,166. OSCILLATING STEAM-ENGINE. MAX ULRICH, Holyoke, Mass. Filed Feb. 15, 1884. (No model.)



Claim.—1. The combination, with a laterally-oscillating steam-cylinder, *a*, having a bottom steam-channel, *u*, and a pivot, *q*, above the same, of an arched supporting-block, *b*, having steam supply and exhaust pipes *s* and *e*, and a bearing, *p*, for the pivot of the cylinder above the pipes *s* and *e*, substantially as set forth.

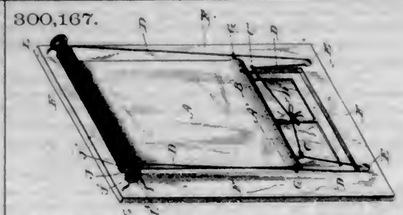
2. The combination of an arched supporting-block, *o*, having steam supply and exhaust pipes at the lower part and a bearing, *p*, at the top part, with a laterally-oscillating steam-cylinder, *a*, having a bottom steam-channel, *u*, and a pivot, *q*, above the same, said pivot being supported in the bearing *p*, and acted upon by a spiral spring, *r*, substantially as set forth.

3. The combination of an arched supporting-block, *b*, having steam admission and exhaust pipes *s* and *e* at the bottom part of the same and a bearing, *p*, at the top part, a laterally-oscillating steam-cylinder having a bottom steam-channel, *u*, and a spring-actuated pivot, *q*, the faces of the socket of the pivot and its bearings and the faces of the steam-channel *u* and the steam admission and exhaust pipes being arranged vertically in line with each other, substantially as and for the purpose set forth.

300,167. WINDOW-CURTAIN FIXTURE. CHRISTOPHER T. UNANGST, Swartswood, N. J. Filed Mar. 25, 1884. (No model.)

Claim.—1. A curtain-roller provided with an end gudgeon, and a drum revolubly secured to the end of said roller and around the gudgeon, in combination with a spring having one end fixed to the drum and the other end united to the gudgeon, substantially as described, and for the purposes set forth.

300,167.



2. A curtain-roller provided with an end gudgeon, and a flanged drum revolubly secured to the end of said roller and around the gudgeon, in combination with a spring having its respective ends united to the drum and gudgeon aforesaid, in the manner and for the purposes set forth.

3. A curtain-roller provided with an end gudgeon fixed thereto, and a flanged drum having a rim and recess for the reception of the end of the roller, in combination with a spring having its respective ends fixed to the gudgeon and drum, substantially as described and set forth.

4. A curtain-roller provided with an end gudgeon, a drum revolubly secured to the end of said roller and around the gudgeon, and a spring having one end fixed to the drum and the other secured to the gudgeon, the end of said gudgeon extending through and beyond the outer wall of the drum, in combination with a bracket adapted to receive and form a journal-bearing for the gudgeon projection, substantially as described, and for the purposes set forth.

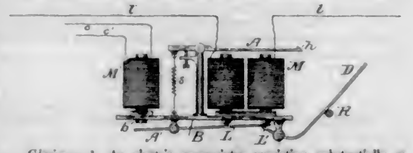
5. A curtain provided on its lower end with a slat having end eye-screws and a roller on its upper end, said roller being provided with a gudgeon, drum, and spring, as specified, and brackets fixed to the frame, said frame having studs fixed below the bottom of the curtain, in combination with cords having one end fixed to the drum and the other end secured to the lower part of the curtain, said cords passing through the screw-eyes and around the frame-studs aforesaid substantially as described, and for the purposes set forth.

6. A curtain provided with a roller, said roller having a gudgeon and spring, as specified, and brackets fixed to the frame, said frame having studs fixed below the bottom of the curtain, in combination with cords having one end fixed to the drum and the other end secured to the lower end of the curtain, said cords passing around the studs aforesaid, in the manner and for the purposes specified.

7. A curtain provided on its lower end with a slat having end eye-screws, said slat being provided with hooks on its under side, said curtain having a roller on its upper end, provided with a gudgeon, drum, and spring, as set forth, gudgeon-brackets fixed to the upper part of the frame and studs secured to the bottom of the frame, in combination with cords having one end fixed to the drum and the other end secured to the lower part of the curtain, said cords being engaged by the screw-eyes, studs, and hooks, in the manner and for the purposes specified.

8. The bracket herein shown, consisting of a wire bent so that its points lie substantially parallel, said points being sharp, the lower portion of the wire being inclined upward at about an angle of forty-five degrees, and then curved forward, said forward or upward curve having a downward bend or loop for the reception of the roller-gudgeon, as specified.

300,168. ELECTRIC ANNUNCIATOR AND CIRCUIT. THEODORE N. VAIL, Boston, Mass. Filed Jan. 30, 1884. (No model.)



Claim.—1. An electric annunciator consisting, substantially as hereinbefore described, of an electro-magnet for a signaling-circuit, an armature therefor, and a drop-signal with lever-extension controlled by said armature, the electro-magnet being adapted, when energized, to attract the armature and release the drop signal, with an auxiliary electro-magnet adapted for inclusion in an independent circuit, an armature and lever therefor, said lever bearing upon and controlling the lever-extension of the drop-signal, whereby the said drop-signal may be replaced by the attractive power of the auxiliary magnet exerted through its armature and lever.

2. In a telephone-exchange system, the combination of two or more main lines, a switch-board, connecting devices for connecting any two lines together on said switch-board, an annunciator for each line, a local normally-open battery-circuit, and an auxiliary electro-magnet therein adapted on the closing of its circuit to attract its armature, and thereby

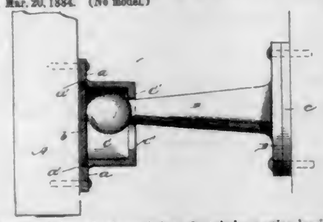
reset said annunciator, said battery-circuit being connected with said switch-board, substantially as described, whereby the act of connecting any two lines together by means of said connecting devices simultaneously closes said circuit, as set forth.

3. The combination of the main lines, annunciators, switch-board, connecting devices—such as switch-plugs—and resetting electro-magnet in a normally-open circuit connected with said switch-board, whereby the insertion of the switch-plug in its socket to make a connection between two lines momentarily closes said circuit long enough to energize said magnet and reset the annunciator, substantially as described.

4. In a telephone switch-board, the combination of plug-sockets and connecting-plugs adapted to be inserted in the said sockets, with a local circuit normally open at each plug-socket, and including a battery and electro-magnet, the said electro-magnet being attached to a line-annunciator and adapted to reset the same, whereby the act of inserting the plug in its socket automatically effects the closing of the local circuit, for the purposes described.

5. In a telephone-exchange system, the central-office apparatus herein set forth, comprising an annunciator for signaling, switching devices for connecting a line with any other line, resetting devices consisting of an electro-magnet, armature, and armature-lever, the said electro-magnet being in a normally-open local circuit, means for automatically closing the said local circuit by the act of switching one line to another, and means for manually closing the said local circuit, for the purposes described.

300,169. DOOR-CHECK. OTIS PALMER VANDEBURGH, Toledo, Ohio. Filed Mar. 20, 1884. (No model.)



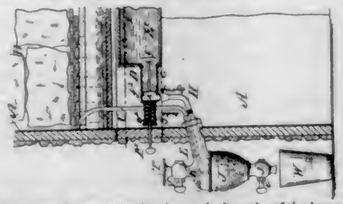
Claim.—1. A door-check consisting of a tubular portion having at its lower end an outwardly-projecting flange for its attachment, and at its upper end an inwardly-projecting flange, and a plate provided with a stem or post having a headed portion, and an elastic cushion located between said plate and the base-board, substantially as shown and described.

2. In a door-check, a stem or post having a headed portion and a plate for its attachment, an elastic cushion interposed between said plate and the base-board, and means carried by the door for receiving said headed portion of the stem, substantially as set forth.

3. In a door-check, a tubular portion provided with a flange for its attachment, an elastic cushion secured to the door within said tubular portion, an inwardly-projecting annular flange at the upper edge of said tubular portion, a stem adapted to be secured to the base-board and provided with a headed end, and an elastic cushion interposed between said stem and the base-board, substantially as set forth.

4. A door-check comprising a tubular portion having at its lower end a flange with means for its attachment, an elastic cushion clamped to the door by the lower edges of said tubular portion, which is also provided at its upper end with an inwardly-extending annular flange, a stem having a ball-head, and a suitable attaching-plate formed integral therewith, and an elastic cushion interposed between said plate and the base-board, substantially as set forth.

300,170. SODA-FOUNTAIN. ABRAM H. VAN RIPER, Orange, N. J., and FREDERICK E. KIP, New York, N. Y. Filed Sept. 20, 1883. (No model.)



Claim.—1. The combination, in a soda-fountain, of the box or case A, the drawer D, and the syrup-chambers arranged side by side in the drawer, whereby facility is afforded for withdrawing all of said chambers simultaneously through the front wall of the box or case, substantially as herein described.

2. The combination, with the syrup can or chamber E, having the necks or extensions $e e^2$, one forming a measuring-chamber, of the valves $f f'$, valve-rod F, common to both valves, and springs g, acting on the valve-rod with a tendency to close one valve and open the other, arranged and operating as shown and described, for the purpose specified.

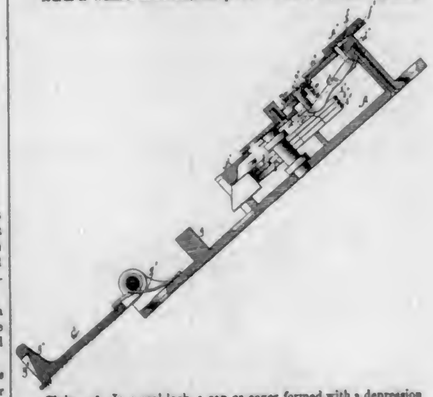
3. In a soda-water fountain, a receiving, mixing, and discharging apparatus, consisting of a bowl or receptacle, J, and a cap or cover, K, having a shank, L, provided with two conduits—one for soda-water and the other for syrup—substantially as herein described.

4. The combination, with the syrup-chambers and the receiving and discharging apparatus, of the pipes H, having their upper ends flaring or funnel-shaped and arranged under their respective chambers, and their lower ends concentrated and communicating with the syrup-conduit, substantially as herein described.

5. The combination, with the soda-water pipe and coil C and the receiving and discharging apparatus, of the conduit L, branches $m m^2$, valves m^3 m^{3a}, conduits p p^2, stirrers or beaters S, and vertical pipe l, substantially as and for the purpose herein described.

6. The combination, with the receiving and discharging apparatus, of the auxiliary syrup-receiver, consisting of the urn or chamber T, provided with the valve or cock V, and having an opening communicating with the syrup-conduit N, substantially as and for the purpose herein described.

300,171. SEAL-LOCK. ROWT. O. WALKER, Chicago, Ill., assignor of one-fourth to William M. Dobbin, same place. Filed Feb. 4, 1884. (Model.)



Claim.—1. In a seal-lock, a cap or cover formed with a depression or groove for receiving the seal, a sliding spring-actuated guard for protecting and holding the seal in position, and a lever carrying a seal-punch at one end and a pin for locking the guard at the other, in combination with a lock-bolt having an incline upon its rear end, adapted to engage and actuate the seal-punch, substantially as and for the purpose set forth.

2. In a seal-lock, a plate provided with a depression for receiving the seal, and a spring-actuated lever provided with a punch working in a hole in said depression, in combination with a sliding spring-actuated plate or guard for holding the seal, and a pin for locking this plate in position, having a slotted connection with the punching-lever, whereby the pin is not moved to release the guard till after the seal has been punctured, substantially as and for the purpose set forth.

3. The cap or cover A', seal-receptacle c, lever C, and punch d, in combination with the plate A^2, having arms a^2, projections or lugs a', acted upon by springs a^4, and the inclined groove f and depression f', and the latch-pin d^2, connected to said lever by a slotted connection, substantially as and for the purpose set forth.

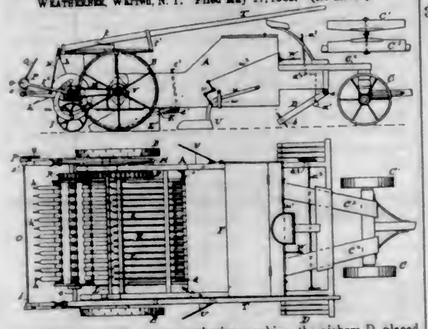
4. In a seal-lock, the bolt B, made in three parts and having the beveled or inclined rear end, in combination with the seal-punch d, lever C, slotted pin d^2, and seal-guard A^2, all constructed and arranged to operate substantially as and for the purpose set forth.

300,172. TICKET-HOLDER. CHARLES W. WALTERS, Oglethorpe, Ga. Filed Mar. 31, 1884. (No model.)



Claim.—The combination, with a casing, A, having an opening in its upper side, and a slot, E, in one of its ends, of a plate located in said casing, a flat spring interposed between said plate and the bottom of the casing, and a catch and pin secured to the back of said casing, substantially as set forth.

300,173. MACHINE FOR GATHERING STONES. BRAYTON A. WHITBECK, Watton, N. Y. Filed May 17, 1883. (No model.)



Claim.—1. In a stone-gathering machine, the pickers D, placed forward of the stone-propelling apparatus, for loosening the stones, and having independent hinge-connection at their forward ends with the frame, in combination with the revolving propeller arranged in rear thereof, substantially as set forth.

2. In a stone-gathering machine, a revolving propelling device having spring teeth or beaters attached to horizontal bars, each tooth being attached at its inner end to a bar and being passed around said bar, substantially as and for the purposes described.

3. A revolving stone-propelling device having heads G, and provided with removable bars holding spring-teeth adapted for striking and propelling the stones, substantially as shown and described.

4. The revolving stone-propelling device having the heads G, provided with seats f, removable bars g, with grooves i, and the teeth A, severally passing around said bars, being secured thereto, as shown, in combination with suitable operating mechanism, substantially as set forth.

5. In combination with a revolving device on a shaft, the arms H, having a pivotal connection with the machine-carriage, and provided with openings J, and adjustable journal-boxes p within said openings, having lateral arms p', entering sockets in arms H, substantially as and for the purposes set forth.

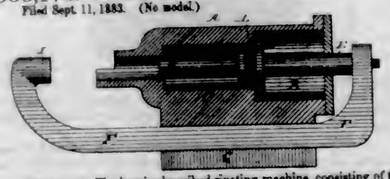
6. In combination with the arms H, carrying the shaft of a revolving propelling device, a transverse shaft, L, having arms M, attached thereto, and the rods N, with end slots, r, connecting said arms H and M, substantially as and for the purpose set forth.

7. In a stone-gathering machine, the combination, with the revolving propeller, of the inclined sectional drag-apron, each section being loosely coupled to the lower part of the machine and forward of the propelling device, substantially as and for the purpose set forth.

8. In a stone-gathering machine, in combination with a revolving propelling device and a receptacle for stones, the inclined drag-apron arranged in front of the propeller and formed of teeth, each being severally coupled at its forward end to the machine, and means for raising the apron, substantially as set forth.

9. In a stone-gathering machine, the guides E', suspended to the frame-work of the machine to swing endwise, and provided with fixed guards d^3, in combination with a stone-propelling device, substantially as set forth.

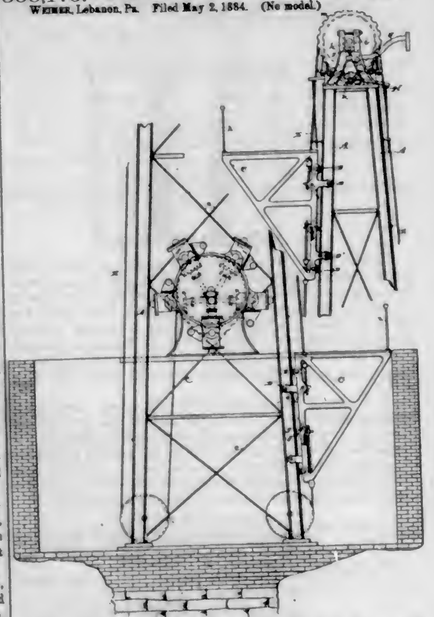
300,174. RIVETING-MACHINE. WILLIAM R. WEBSTER, Athens, Pa. Filed Sept. 11, 1883. (No model.)



Claim.—1. The herein-described riveting-machine, consisting of the cylinders B and C, having a common axis, and each furnished with a piston, the smaller piston acting as a hammer for forming the head of the rivet, and the larger one acting upon an arm, F, one end of which is fastened to the piston-rod E, and the other end of which is in front of the hammer end of the smaller piston H, and holds the rivet in place while being struck by piston H, substantially as set forth.

2. The combination, in a riveting-machine, of the cylinders B and C, piston-rod and piston-head H, piston-head D, piston-rod E, arm F, attached to piston-rod E and furnished with a head, I, and guide G, for guiding said arm F, all arranged and operating substantially as set forth.

300,175. HOISTING-TOWER FOR BLAST-FURNACES. PETER L. WEIMER, Lebanon, Pa. Filed May 2, 1884. (No model.)



Claim.—1. The combination, with a car or carriage, of a non-adjustable pulley, automatically-adjustable pulleys situated on opposite sides of the non-adjustable pulley, and ropes connected to the car or carriage and passing over the pulleys, substantially as set forth.

2. The combination, with a car or carriage and a counter-balance, of a non-adjustable pulley, automatically-adjustable pulleys situated on opposite sides of the non-adjustable pulley, ropes connecting the carriage and a counter-balance and passing over the pulleys, and tail-ropes connecting the carriage and counter-balance and connected to a drum, substantially as set forth.

3. The combination, with a carriage and counter-balance and two or more ropes connecting the carriage and counter-balance and passing over pulleys, of a tail-rope connecting the carriage and counter-balance and secured to a winding-drum, substantially as set forth.

4. The combination, with a carriage, a counter-balance, and a rope connecting the carriage and counter-balance and passing over a pulley, of a tail-rope and a safety tail-rope, both of which are connected to the carriage and counter-balance and to a driving-drum, substantially as set forth.

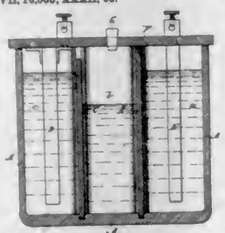
5. The combination, with a tower having tracks or guides formed on opposite sides thereof, of carriages moving on said guides or tracks, a rope connecting said carriages and passing over a pulley located at the top of the tower, a tail-rope connecting the carriages and passing under pulleys located at or near the base of the tower, and a drum around which the tail-rope winds.

6. The combination, with a tower and the carriages secured to the said tower, as described, of a rope connecting the carriages and passing over a pulley located at the top of the tower, and a tail-rope connecting the carriages and winding around a driving-drum, substantially as set forth.

7. The combination, with a tower, a non-adjustable pulley located on the top of the tower, and adjustable pulleys located on opposite sides of the non-adjustable pulley, of carriages moving in contact with the opposite sides of the tower, three ropes connecting the carriages and passing over their respective pulleys, and a tail-rope connecting the carriages and winding around a driving-drum, substantially as set forth.

8. The combination, with the tower, the pulleys located thereon, and the levers and weights for holding two of the pulleys elevated in a yielding manner, of the carriages, ropes connecting the carriages and passing over the pulleys, a tail-rope connecting the carriages, and a winding-drum to which the tail-rope is connected, substantially as set forth.

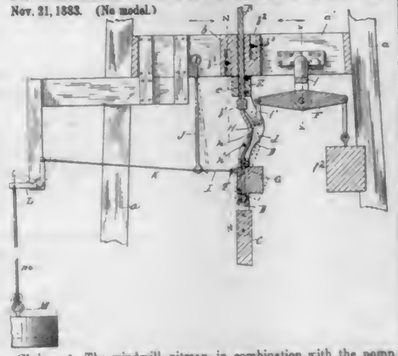
300,176. GALVANIC ELEMENT. WILHELM WENSEL, Vienna, Austria-Hungary. Filed Nov. 23, 1883. (No model.) Patented in France Nov. 5, 1883, No. 158,380; in Belgium Nov. 5, 1883, No. 63,104, and in Italy Dec. 31, 1883, XVII, 16,065, XXXII, 68.



Claim.—1. A galvanic element the negative electrode of which (of zinc) is contained in a dialyzing-cell and immersed in an alkaline solution or its specified equivalent, in combination with a positive electrode (of platinum or carbon) immersed in a strong acid (nitric acid of from 30° to 40° Baumé) and contained in a second porous cell, and a conducting-liquid (sulphuric acid of from 50° to 70° Baumé) to electrically connect the electrodes through the medium of the constant osmotic exchange between the sulphuric and the nitric acid, substantially as described.

2. A galvanic element composed of a non-porous vessel divided into three cells by means of porous partitions, suitable electrodes and exciting agents therefor, and an intermediate conducting-liquid, the porous partition separating the intermediate conducting-liquid from the exciting agents being constructed to permit an overflow of the conducting-liquid into the cell containing the positive electrode and its exciting agent, substantially as described, and for the purpose specified.

300,177. AUTOMATIC STARTING AND STOPPING MECHANISM FOR WINDMILL-PUMPS. JOHN M. WHITNEY, Mount Pulaski, Ill. Filed Nov. 21, 1883. (No model.)



Claim.—1. The windmill-pitman, in combination with the pump suction-rod, connected loosely to permit movement of the pitman on the rod, and swinging bolt arranged to stand in line with the pitman and suction-rod when in a vertical position, and to swing backward out of such line when released from strain, substantially as and for the purposes set forth.

2. The windmill-pitman, in combination with the block *b*, adjustable vertically, and the pump suction-rod, substantially as and for the purposes set forth.

3. The pump suction-rod, in combination with the block G, pivoted thereto at its lower front corner, the bolt H, attached to the block, the windmill-pitman, and a suitable device for holding the pump suction-rod up when released from the action of the pitman, substantially as and for the purposes set forth.

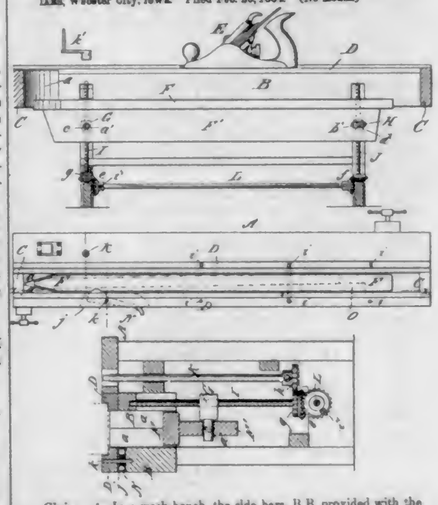
4. The pump suction-rod provided with plates D at its upper end the block E at the upper end of the plates, the swinging block G, arranged between the plates and pivoted thereto at its lower front corner, the bolt H, mounted on the pivoted block, the pitman B, the stop-block *b*, and the counterbalancing-weight connected to the suction-rod, substantially as and for the purposes set forth.

5. The pump suction-rod, in combination with the block G, pivoted thereto at its lower front corner, the bolt H, arranged to stand in line with the pitman and suction-rod when in a vertical position, the float M, and the bell-crank lever L, connected to both float and pivoted block, substantially as and for the purposes set forth.

6. The pump suction-rod, in combination with the block G, pivoted thereto at its lower front corner, the bolt H, mounted thereon, the windmill-pitman, the connecting rods or wires I and K, the support J, the bell-crank lever L, and the float M, substantially as and for the purposes set forth.

7. The pump suction-rod, in combination with the mill-pitman, the swinging bolt hinged to the suction-rod below its connection with the pitman, the bell-crank lever connected to the float, and a connecting device between the bell-crank lever and the swinging bolt arranged horizontally and broken and supported at a point shortly distant from its connection to the swinging bolt, substantially as and for the purposes set forth.

300,178. CARPENTER'S WORK-BENCH. CLARENCE ADELBERT WILLIAMS, Webster City, Iowa. Filed Feb. 26, 1884. (No model.)



Claim.—1. In a work-bench, the side bars, B B, provided with the inclines *a a*, that form a V-shaped rest for holding the board or piece of lumber, substantially as described.

2. A work-bench consisting, essentially, of the rabbeted side bars, B B, provided with apertures *i* on their upper edges, to receive suitable clamps or yokes, pivoted cam-lever N in a slot in the outer side bar, and a vertically-adjustable support, F, working between said side bars, substantially as set forth.

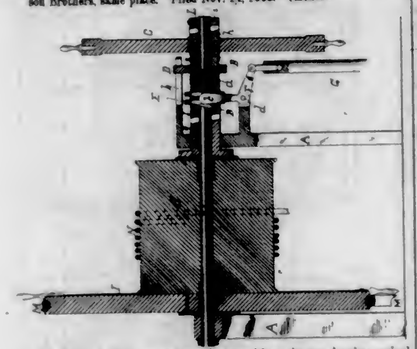
300,179. MANUFACTURE OF ELECTRIC CONDUCTORS. JOHN J. WILLIAMSON, Boston, Mass. Filed July 23, 1883. (No specimens.)



Claim.—1. A compound ingot having a core of malleable metal of high electric conductivity and comparatively low fusing temperature, completely inclosed on its sides and ends by a malleable tenacious metal of lower electric conductivity and comparatively high fusing-point, substantially as and for the purposes described.

2. In the preparation of compound ingots of malleable-cast-metal exterior and copper center for the manufacture of electric conductors, the improved method of preparing the interior of the steel envelope for the reception of the copper core, consisting of the removal of sand scale and the application of a carbonaceous wash, or of the equivalent of such manipulations, substantially as described.

300,180. STEAM STEERING MECHANISM. WILLIAM C. WILLIAMSON and HALVOR O. FLADVAD, Philadelphia, Pa., assignors to Williamson Brothers, same place. Filed Nov. 14, 1883. (Model.)



Claim.—1. In a steam steering-machine, sleeves having spiral, curved, screw, or inclined end faces moved by the steering-wheel and connections, and appliances for controlling the motion of the steering-engine and governing the rudder, substantially for the purpose set forth.

2. In a steam steering-machine, sleeves having spiral, curved, screw, or inclined end faces and connected with the engine, and appliances connected with the engine for controlling the action of the same and governing the rudder, substantially for the purpose set forth.

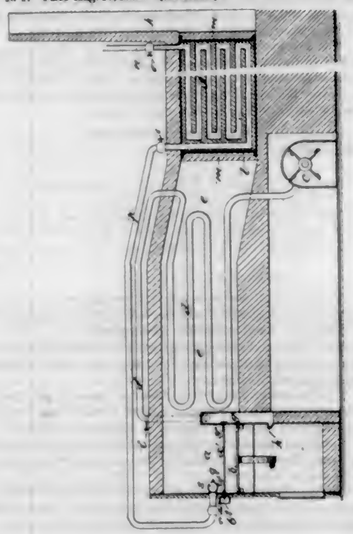
3. The combination, in a steam steering-machine, of a hand-wheel provided with cam-faces adapted to contact, as described, with collars having cam-faces and operated by the tiller-drum, and connections for starting, stopping, and reversing the engine, substantially as set forth.

4. In a steam steering-machine, the combination of a hollow shaft, B, having spiral, curved, screw, or inclined ends, with a drum-shaft, H, having like ends or collars, for starting, stopping, or reversing the engine.

5. In a steam steering-machine, the combination of a hollow shaft, B, having spiral, curved, screw, or inclined ends, a drum-shaft, H, having ends or collars, collar E, link F, and rod G, for starting, stopping, or reversing the driving-engine.

6. In a steam steering-machine, the combination of a hollow shaft having spiral, curved, screw, or inclined ends, a drum-shaft, H, having like ends or collars, a hand-wheel, I, drum Q, link F, and rod G, for starting, stopping, or reversing the driving-engine.

300,181. METALLURGIC FURNACE. THOMAS J. WILSON, Auburn, N. Y. Filed Aug. 17, 1883. (No model.)

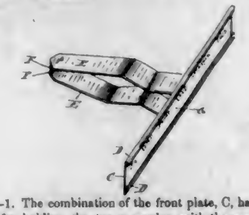


Claim.—1. A furnace for heating blanks, consisting of the fire-chamber *a*, provided with a suitable grate and a horizontal flue, in combination with a fan or blower beneath said flue, and a pipe connected to said fan or blower, said pipe passing through the flue in serpentine form to the outside of the flue, and there provided with a regulating-valve, *i*, and into the flue again, where it communicates with the furnace-chamber below the grate, substantially as set forth.

2. A furnace for heating blanks, consisting of the furnace-chamber, the grate, the hollow bridge-wall provided with openings *h* below the grate, and a horizontal flue in rear of said bridge-wall, in combination with the fan or blower beneath said flue, and a pipe passing from said fan or blower through the flue in serpentine form to the outside thereof, where it is provided with a regulating-valve, *i*, thence into the hollow bridge-wall, whereby the air, properly heated and regulated, may pass through the fuel to aid combustion, substantially as set forth.

3. The steam superheating or decomposing chamber formed of fire-clay or other analogous material *j*, consisting of a series of horizontal flues and surrounded by a metal case or box, said box being coated inside and out with fire-clay or other analogous material, whereby oxidizing is prevented, substantially as set forth.

300,182. TAG-HOLDER. BENJAMIN H. WINCHELL, Chicago, Ill. Filed Mar. 19, 1884. (No model.)

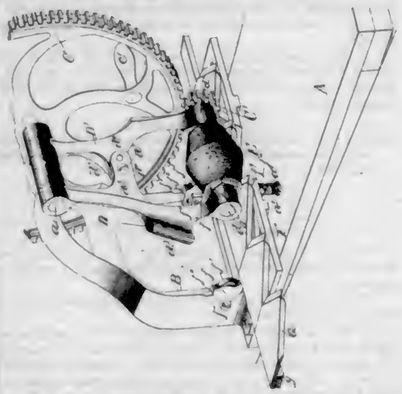


Claim.—1. The combination of the front plate, C, having its edges turned over, for holding the tag or marker, with the spring-plates for securing the whole to the roll of goods, substantially as and for the purposes set forth.

2. The combination, in a tag-holder, of the front plate, C, and the spring-plates E, bent to clasp the center-board at two or more points, substantially as specified and shown.

3. The combination of the front plate, C, spring-plates E, and points F, substantially as specified and shown.

300,183. MACHINE FOR GRINDING HARVESTER-KNIVES. JOHN J. WOOD, Sr., Berlin, Wis., and FRED CHRISTEN, Iowa Falls, Iowa. Filed Apr. 11, 1884. (No model.)



Claim.—1. In a grinding-machine for harvester-knives, in combination with the table F, having hinge *f*, and stand B, the adjustable hinging-plate f', having shoulder f^2, and vertical slot f^3, the screw-bolt f^4, and fastening-nut f^5, substantially as shown and described, and for the purpose set forth.

2. In a grinding-machine for harvester-knives, the combination, with the bed and knife-table, of the curved stand B, having overhanging bearing-studs *a*, the driving-wheel *c*, vibrating arms D D', and grinding-wheel, substantially as described.

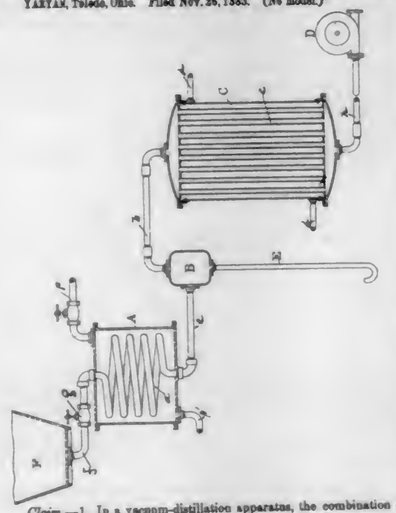
3. In a grinding-machine for harvester-knives, in combination with the stand B and the grinding-wheel E, the vibrating arms D D', each

having the respective extensions d^1 d^2 overlapping each other, the studs d^2 d^3 and respective perforations, and the binding-screw d^7, substantially as shown and described, and for the purpose set forth.

300,184. MANUFACTURE OF SHEET-IRON. W. DEWEES WOOD, Pittsburg, Pa. Filed Jan. 18, 1884. (No specimens.)

Claim.—As a mixture or wash for use in the manufacture of planished sheet-iron, the mixture of red oxide, carbon, water, and acidulating material, substantially as set forth.

300,185. APPARATUS FOR VACUUM DISTILLATION. HOMER T. YARYAN, Toledo, Ohio. Filed Nov. 26, 1883. (No model.)

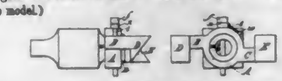


Claim.—1. In a vacuum-distillation apparatus, the combination of the coil *a*, surrounded by steam or other heating medium, separating-chamber B, vacuum-pump D, and pipe-connections, substantially as and for the purpose set forth.

2. The combination of the coil *a*, surrounded by steam or other heating medium, the separating-chamber B, tail-pipe E, vapor-pipe *b*, condenser C, and exhaust-pump D, substantially as and for the purpose set forth.

3. The combination of the coil *a*, surrounded by steam or other heating medium, the separating-chamber B, tail-pipe E, vapor-pipe *b*, regulating-valve *g*, and exhaust-pump D, substantially as and for the purpose set forth.

300,186. CAR-COUPLING. WILLIAM ZAHRINGER, New Orleans, La., assignor of one-half to CHAS. W. DOYLE, same place. Filed July 16, 1883. (No model.)



Claim.—1. An open, round-faced, and ball-shaped bumper and draw-bar, *a*, adapted to receive a collar, A, substantially as and for the purpose set forth.

2. A slotted, armed, and hooked collar, A, to be secured to the draw-bar *a*, substantially as described.

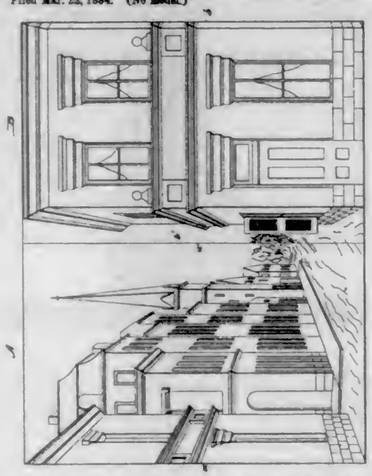
3. The combination of the open round-faced ball-shaped bumper and draw-bar *a* with the slotted, armed, and hooked collar A, secured to said bumper and draw-bar by means of a pin, *f*, and spring *s*, permitting the hooks of said collar, when coupled, to adjust themselves upon both sides of said bumper and draw-bar to the various angles formed in running around curves, thereby equalizing the draft upon hooks D E and their mates, substantially as described.

4. The combination of the draw-bar *a* and collar A with the pin *f*, collar *x*, spring *s*, and stud *w*, arranged substantially as and for the purpose set forth.

5. The combination of the draw-bar *a*, collar A, pin *f*, collar *x*, spring *s*, and stud *w* with a rod, R, chain J, and lever L, arranged substantially as and for the purpose set forth.

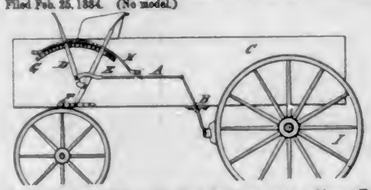
6. The combination of rod R, chain J, and lever L with a pawl, P, stud *v*, and cord (or chain) F, arranged substantially as and for the purpose set forth.

300,187. STAGE-SCENERY. MATHIAS ARMBRUSTER, Columbus, Ohio. Filed Mar. 22, 1884. (No model.)



Claim.—Stage-scenery with the design upon each piece so painted and arranged that either of the vertical edges of said piece will match either of the vertical edges of other pieces of scenery, so as to produce a complete design, substantially as described, and for the purpose set forth.

300,188. WAGON-BRAKE. BENJAMIN F. BALL, Cincinnati, Ohio. Filed Feb. 25, 1884. (No model.)



Claim.—1. The combination, with the brake-rod A, of levers E D, connected therewith, and adapted to be moved together as one lever to operate the brake, the lever D having also a motion independently of the lever E when the latter is locked, substantially as described.

2. In a wagon-brake, the combination, with the forked brake-rod A and the rack G, of the lever D, connected directly to the forked brake-rod and to the lever E, the lever E working loosely in the fork of the rod, whereby the lever D may be moved independently of the lever E when the latter is locked, substantially as described.

300,189.

Withdrawn.

300,190. FIRE-EXTINGUISHING COMPOUND. N. GRAY BARTLEY, Chicago, Ill. Filed Dec. 19, 1883. (No specimens.)

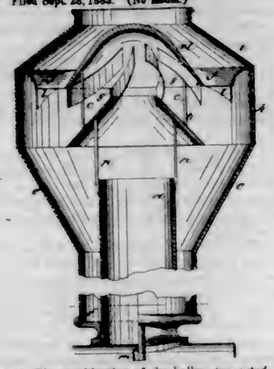
Claim.—1. A fire-extinguishing grenade hermetically sealed and containing free carbonic-acid gas and a salt of carbonic acid in solution therein, substantially as set forth.

2. A fire-extinguishing grenade hermetically sealed and containing a salt of carbonic acid in a solution adapted to remain liquid at a temperature about or below zero Fahrenheit, substantially as set forth.

3. A fire-extinguishing grenade hermetically sealed and containing the alkaline chlorides and an alkaline carbonate in solution therein, substantially as set forth..

4. A fire-extinguishing grenade hermetically sealed containing free carbonic-acid gas, together with the alkaline chlorides, and an alkaline carbonate in solution therein, substantially as described.

300,191. SPARK-ARRESTER. WILLIAM CONSTANTINE BEAL, Fernandina, Fla. Filed Sept. 28, 1883. (No model.)



Claim.—1. The combination of the hollow truncated cone *b* and hollow cone *d* with the smoke-pipe *a* and the smoke-stack *e h*, the base of the cone *b* being larger and the top smaller than the smoke-pipe, and said cones being arranged one above the other and over the top of the smoke-pipe, substantially as described.

2. The combination of the hollow truncated cone *b*, hollow cone *d*, and the curved flanges *g* in said cone *d*, with the smoke-pipe *a* and the smoke-stack *e h*, said cones being arranged over the smoke-pipe, substantially as described.

3. In a spark-arrester, the combination, with the part A, of the part *i*, flange *j*, and cone *d*, as shown and described.

4. The inwardly and downwardly projecting guard *j*, in combination with the cone *d*, curved chutes *g*, and the smoke-stack, substantially as described.

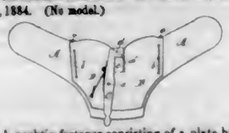
5. The inwardly and downwardly projecting guard *j* and curved chutes *l*, in combination with the smoke-stack, substantially as described.

6. The inwardly and downwardly projecting guard *j* and curved chutes *l*, in combination with cone *d*, chutes *g*, and the smoke-stack, substantially as described.

7. The inwardly and downwardly projecting guard *j* and curved chutes *l*, in combination with cone *d*, chutes *g*, cone *b*, and the smoke-stack, substantially as described.

8. The inwardly and downwardly projecting guard *j* and curved chutes *l*, in combination with the cone *d*, chutes *g*, cone *b*, smoke-pipe *a*, and the smoke-stack, substantially as described.

300,192. NECKTIE-FASTENER. WESEL BEALE, Shawneetown, Mo. Filed Feb. 21, 1884. (No model.)



Claim.—1. A necktie-fastener consisting of a plate having slot *c*, in combination with a hooked lever, C, and a spring, D, as and for the purpose described.

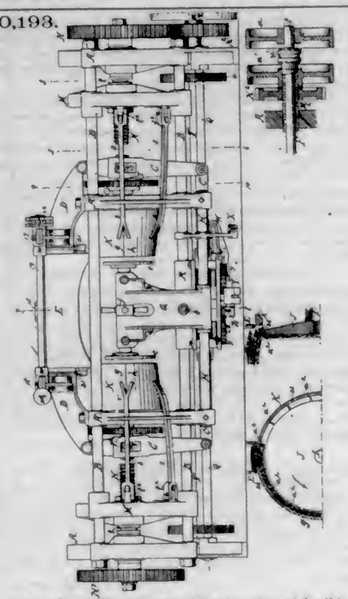
2. The combination of the plate B, having slot *c*, with inturned lip *d'*, the lever C, and spring D, as and for the purpose described.

3. The plate B, having collar-button, slot *c*, and bearings *d d' d²* for the fulcrum-pin, in combination with the lever C, having headed fulcrum-pin *e*, and the spring D, substantially as and for the purpose described.

300,193. BARREL-MAKING MACHINE. MARIA E. BEARLEY, Philadelphia, Pa., and EMIL M. HOHENTOHLER, New York, N. Y.; said Hohentohler assignor to said Bearley. Filed May 7, 1883. (No model.)

Brief.—The heads are received upon rotating disks, being carried thereto by holders upon a rocking frame longitudinally movable therein. The staves are placed in a movable hopper above the disks, the lowest stave resting upon the edges of the disks between pairs of fins. As the disks are intermittently rotated by suitable mechanism, the staves are carried around within projecting flanges on cones behind the disks. Over these cones hoops are driven by pivoted driving-arms on heads advanced by screws. When the barrel is finished, it is dropped by the retraction of the disks and the lower halves of the cones.

Claim.—1. The combination, in a barrel-forming machine, of a stave-feeding device, opposite disks constructed to receive and support upon their peripheries the ends of the staves, mechanism for rotating said



disks, and the flanges 26, surrounding but independent of the disks, and notched for the passage of the staves, said flanges projecting over the ends of the staves, whereby they serve to retain said staves in place on the peripheries of the disks as the latter are rotated, all substantially as set forth.

2. The combination, in a barrel-forming machine, of a stave-feeding device, opposite disks constructed to receive and support upon their peripheries the ends of the staves, mechanism for rotating the disks, the flanges 26, surrounding but independent of the disks and notched for the passage of the staves from the feeder, said flanges projecting over the ends of the staves, so as to retain the same upon the peripheries of the disks, the opposite hoop-holders and fingers for forcing the hoops from said holders and onto the barrel while the ends of the staves are within the flanges 26, as set forth.

3. The combination, in a barrel-forming machine, of the stave-feeding device, the opposite disks, J J', constructed to receive and support upon their peripheries the ends of the staves, and having on said peripheries projecting pins a^2, forming stave-sockets, mechanism for rotating said disks, and the retaining-flanges 26, surrounding but independent of the disks and notched for the passage of the staves, said flanges projecting over the ends of the staves and serving to retain them upon the peripheries of the disks as the latter are rotated, as set forth.

4. The combination, in a barrel-making machine, of a stave-feeding device, opposite disks constructed for the reception and support of the ends of the staves, and having their faces provided with means for retaining the heads of the barrel, mechanism for rotating said disks, the flanges 26, extending completely around the disks, and notched for the passage of the staves, and projecting over the ends of the same, so as to serve as a retainer, opposite hoop-holders, and the hoop-driving fingers, as set forth.

5. The combination of the disks J J' and means for rotating the same, the cones K, having notched flanges 26 upon the ends of the cones, and constructed to overlap the ends of the staves, a stave-holding box, E, located above the notched portions of the flanges, and means, substantially as described, whereby said box can be raised and lowered, as set forth.

6. The combination of the stave-feeder, the opposite disks J J', the flanges 26, projecting over the disks so as to retain staves carried thereby, each flange comprising a lower longitudinally-movable half and an upper fixed half notched for the passage of the staves, and mechanism, substantially as described, for rotating the disks and for retracting the same and the lower halves of the flanges, as set forth.

7. The combination of the opposite disks J J', situated within the cones K K, with the swinging frame G and disks *c c*, and with mechanism for advancing and retracting said disks, as set forth.

8. The combination, in a barrel-forming machine, of the disks J J', constructed to receive the staves, the shafts or sleeves I, carrying said disks, gearing connecting said shafts or sleeves, the ratchet-wheel *m* on

one of the shafts or sleeves, the rocking frame L, operated continuously, and having a pawl engaging with the ratchet-wheel, the ratchet-locking wheel n', and the locking-lever n^2, constructed as described, whereby it trips the pawl and throws the same out of gear on dropping into position to lock the wheel n', as set forth.

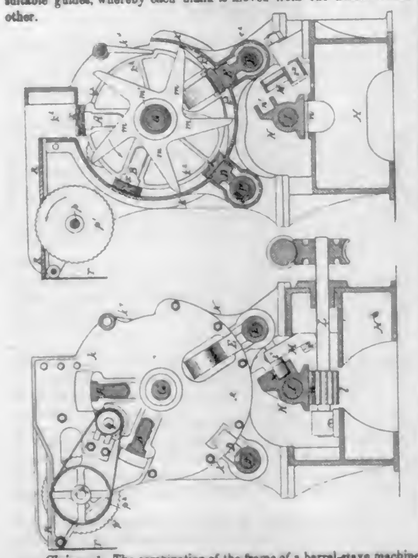
9. The combination of the disks J J' and their shafts I, the pivoted arms C, connected thereto, the longitudinally-movable screw-sleeves s' s', means for connecting one sleeve to one arm and the other to the opposite arm, devices for rotating the sleeves, wheels gearing into said sleeves, and mechanism for locking and releasing said wheels, as set forth.

10. The combination of the disks J J', the shafts I, the arms C, connected thereto, the longitudinally-movable screw-sleeves s' s', connected one to one arm and the other to the opposite arm, devices for rotating said sleeves, wheels v, gearing into the sleeves, ratchets v^2 on said wheels, pawl-levers z, adapted to the ratchets, and a wedge-block, w, adapted to act upon said levers, as set forth.

11. The combination of the disks J J', the shafts I, the arms C, connected thereto, the longitudinally-movable screw-sleeves s' s', connected one to one arm and the other to the opposite arm, devices for rotating said sleeves, the wheels v, gearing into the sleeves, the ratchets v^2 on said wheels, the pawls z, adapted to the ratchets, the wedge-block w, acting on the pawls, the balance-lever W, controlling said wedge-block, and having a movable weight, x, the operating-treadle X, constructed to tilt said lever, the weighted lever Y, adapted to reverse the same, the block U, adapted to fit between the sleeves s' s', and having a pin for acting on the lever Y, and the restoring-lever Z, constructed to depress the block U, as set forth.

300,194. BARREL-STAVE-SHAPING MACHINE. MARIA E. BEASLEY, Philadelphia, Pa., and EMIL M. HUGENTOBLER, New York, N. Y.; said Hugentobler assignor to said Beasley. Filed May 14, 1883. (No model.)

Brief.—A reciprocating carriage having work-holders arranged on radial arms is passed through an inclosing-case which supports the several cutters, and contains an intermittently-rotating feeding device and suitable guides, whereby each blank is moved from one holder to the other.



Claim.—1. The combination of the frame of a barrel-stave machine and cutters mounted in fixed bearings with an intermittently-reciprocating carriage having a series of holders for the stave-blanks, to be subjected to the action of said cutters successively for the dressing of the staves during the movement of the carriage, and automatic feed mechanism, substantially as described, for intermittently transferring the blanks from one holder to another at right angles to the movement of the carriage.

2. The combination of the frame of a barrel-stave machine, cutters, and a reciprocating carriage having holders for traversing the blanks longitudinally under said cutters, with chamfering and crozing cutters, and automatic feed mechanism, substantially as described, for intermittently transferring the blanks from one holder to another and subjecting them to the action of the chamfering and crozing cutters in the transfer.

3. The combination of the frame of a barrel-stave machine and a reciprocating carriage carrying a series of blank-holders, with intermittently-operated feeding-arms, for transferring the blanks from one holder to another at right angles to the movement of the carriage, and a series of cutters, beneath which the blanks are successively traversed as follows: a planer, chamfering and crozing cutters, concave and convex cutters, and edge-dressing cutters, all substantially as set forth.

4. In a barrel-stave machine, the combination of a holder constructed to hold the blank in a curved form, a holder for holding the blank straight, and cutters for dressing the blank, with feed mechanism for transferring the blank from the straight to the curved holder, and bending devices, substantially as described, for imparting the required curve to the blank in the transfer.

5. The combination of a fixed casing or box having guide-flanges for supporting the staves, and an intermittently-traversing carriage having holders for the staves, with a series of rotary cutters and intermittent feeding-arms for transferring the staves at right angles to the movement of the carriage from one holder to the next on the said flanges, substantially as described.

6. The combination of the frame of a barrel-machine and the casing K, having supply and discharge openings for the blanks and guide-flanges, with an intermittently-reciprocating carriage having holders for the blanks, and intermittently-rotated feed-wheels for transferring the blanks on said flanges from one holder to another at right angles to the direction of motion of the carriage and while the latter is at rest.

7. The combination of a casing, K, having cams k^2 thereon, and ribbed flanges k^3 over the said cams, with a holder, E, and feeding-wheels for moving the stave-blank between the ribs and flanges onto the holder, substantially as described.

8. The combination of the frame of a barrel-stave machine and a series of cutters on a fixed portion of the frame with a reciprocating carriage having holders for the blanks, a casing for receiving and guiding the blanks, and an intermittent-feed mechanism for transferring the blanks from one holder to the next within the casing, substantially as set forth.

9. The combination of a traversing carriage provided with a series of holders, and having a central rod, G, and the casing K, having bearings, with a series of cutters and a sleeve, w', mounted to turn in said bearings, and carrying feed-wheels w, for transferring the blanks from one holder to another, the said rod passing through said sleeve, substantially as set forth.

10. The combination of a carriage having a series of holders for the stave-blanks, and intermittent-feed mechanism for transferring the blanks from one holder to another, with a rack connected to said carriage to impart motion thereto, but having a limited motion independent thereof, and devices, substantially as described, connecting the said rack with the feed mechanism.

11. The combination of a fixed frame carrying cutters, and an intermittently-reciprocating carriage having holders for the stave-blanks, with an intermittent-feed mechanism for transferring the blanks from one holder to another, and devices, substantially as described, connecting the carriage with feed-operating mechanism, whereby the blanks are transferred while the carriage is at rest.

12. The combination of a traversing carriage having holders for the stave-blanks, and feed devices for transferring the blanks, with an operating-rack, N, connected to the carriage, but having a limited motion independently thereof, and provided with a cam-groove, n', and a lever controlled by said cam, and connected to said feeding devices, substantially as set forth.

13. The combination of a carriage having a series of holders for the stave-blanks, and having feed-wheels for transferring the blanks from one holder to another, with pawl-and-ratchet operating devices, a driving-pinion, L, and a sleeve, N, provided with a rack and cam-groove, and mounted to have a limited motion on said carriage, and a lever, M, connected to the pawl and controlled by said cam-groove, substantially as set forth.

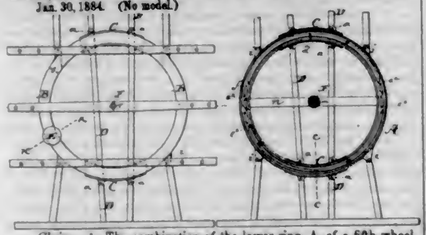
300,195. LAST-BLOCK FASTENER. GEORGE E. BELCHER, Stoughton, Mass. Filed Feb. 27, 1884. (No model.)



Claim.—1. The combination of the last having the diagonally-arranged fastener consisting of bolt a, socket a, and spring c, with the block having the diagonally-arranged orifice d, provided with the tube d', adapted to receive said bolt, and extending to the outer surface of the block.

2. The last formed without a shoulder at the lower or forward end of the surface on which the block rests, and having the diagonal or backwardly-inclined pin or dowel i, combined with the block having a diagonal hole to receive said pin at one side of the center thereof, whereby the last-hook is enabled to be inserted diagonally from the side of the last, as set forth.

300,196. FIFTH-WHEEL. HANS H. E. BERY, Brooklyn, N. Y. Filed Jan. 30, 1884. (No model.)



Claim.—1. The combination of the lower ring, A, of a fifth-wheel with the supporting-trough C, having lugs a, and with the fastening-screw d, substantially as and for the purpose described.

2. In the fifth-wheel, the bottom plate, A, having interior channel and inner broken wall, e, within said channel, combined with the upper ring, B, substantially as and for the purpose described.

3. The fifth-wheel ring A, made with oil-channel and provided with discharge opening or openings f, substantially as described.

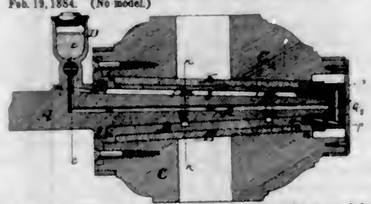
4. The combination of the lower fifth-wheel ring, A, having channel or channels, with the upper fifth-wheel ring, B, covering the said channels, and with the pins g, that extend downward from said upper ring into said channel, substantially as described.

5. The combination of the trough C with the lower ring, A, of the fifth-wheel, and with the upper ring, B, of said fifth-wheel, both said rings being contained within said trough, substantially as described.

6. The combination of the lower ring, A, of the fifth-wheel, with the projecting lugs i, and with the sustaining-troughs C C, substantially as described.

7. The king-bolt F, made with central enlargement, j, in combination with the tubes m and o, which embrace it, and with the rings A and B of the fifth-wheel, substantially as herein shown and described.

300,197. WAGON-AXLE. HANS H. E. BERY, Brooklyn, N. Y. Filed Feb. 19, 1884. (No model.)



Claim.—1. The axle A, having channels a b d and passage b, leading to channel b, substantially as and for the purpose herein shown and described.

2. The combination of the axle with the axle-box B, having channels e and g, and with the pins f, substantially as herein shown and described.

3. The combination of the axle A with the cap F, having passages p s r, and with the axle-box B, substantially as herein shown and described.

4. The combination of the axle A, having channels a b d, with the axle-box B, having channels e and g, and with the pins f, substantially as herein shown and described.

300,198. STORE-SERVICE APPARATUS. ISIDORE BRICK, Philadelphia, Pa. Filed Mar. 24, 1884. (No model.)

Claim.—1. In store-service apparatus, a cage consisting of a U-shaped frame pivoted to a rising and falling support and set sidewise, substantially as and for the purpose set forth.

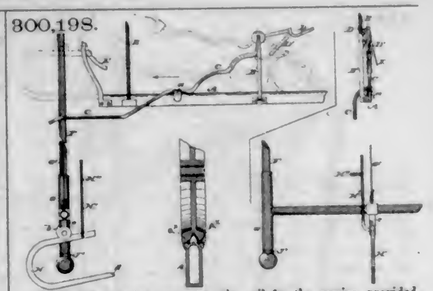
2. In store-service apparatus, a cage of U shape formed with a stop, b, and a rising and falling support therefor, formed with a lug, c, substantially as and for the purpose set forth.

3. A U-shape cage pivoted to a rising and falling support formed with a shoulder, d, in combination with a hollow rail, substantially as and for the purpose set forth.

4. In store-service apparatus, a cage formed with a guard, H''', at the side thereof, substantially as and for the purpose set forth.

5. In store-service apparatus, a cage formed with a flaring guide, H'''', substantially as and for the purpose set forth.

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6. In store-service apparatus, the rail for the carrier, provided with a pivoted stop-arm which extends diagonally and is of curved form, substantially as and for the purpose set forth.

7. In store-service apparatus, the stop-arm of the carrier, formed with a fork, a, substantially as and for the purpose set forth.

8. In store-service apparatus, the stop-arm of the carrier, provided with a stop-piece in advance of said arm, substantially as and for the purpose set forth.

9. In store-service apparatus, the rail and the carrier, in combination with guards of forked form, substantially as and for the purpose set forth.

10. In store-service apparatus, a rail-supporting standard formed with a vertical slot, in combination with a bracket with which the rail is connected, formed with arms which enter the slot of the standard and are tightened by nuts, substantially as and for the purpose set forth.

11. In store-service apparatus, a cage attached to a rising and falling support and the guide or frame for said support, having buffers J' at the bottom thereof, substantially as and for the purpose set forth.

12. In store-service apparatus, an automatically-operating switch consisting of a rail having a vertical pivot and a weighted heel, the contiguous faces of the switch and its bearing being inclined, the pivot also being inclined, substantially as and for the purpose set forth.

13. In store-service apparatus, a switch provided with a vertically-operating sliding latch or bolt which is raised from the switch-rail by a projection in the carrier, substantially as and for the purpose set forth.

14. The sliding latch or bolt N of the switch-rail, having a nose, N', in combination with the rail having a bar or abutment, P, for said nose, substantially as and for the purpose set forth.

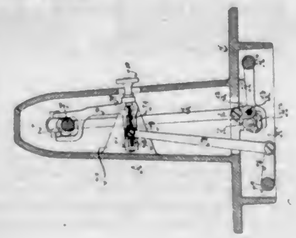
15. In store-service apparatus, a switch and a sliding bolt locking the same, in combination with the carrier formed with an inclined way adapted to raise said bolt, substantially as and for the purpose set forth.

16. In store-service apparatus, a switch-rail provided with a guard, T, and a bridge supporting the same, substantially as and for the purpose set forth.

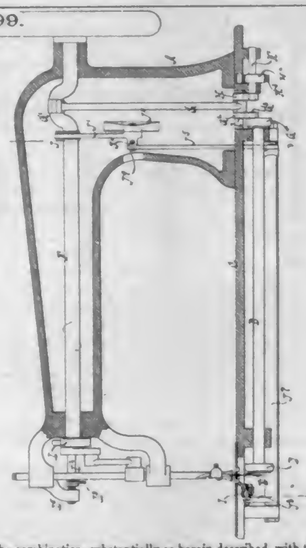
300,199. SEWING-MACHINE. ADAM BOECHER, New York, N. Y. Filed July 26, 1883. (Model.)

Brief.—A guide-arm is pivoted to the lower end of the main pitman. The guide-arm is fixed to a cam-shaft, the cam acting on the arm of a rock-shaft connected by an arm with the feed-dog and another rock-shaft. Mechanism for adjusting the feed is located between this latter rock-shaft and the main shaft.

Claim.—1. The combination, substantially as hereinbefore described, with the needle-bar-operating shaft and hook-shaft, of the crank G^4 on the hook-shaft, the cam-shaft H' of the feed mechanism, the guide-arm H, for the pitman fixed to the cam-shaft, the rock-shaft H^4, provided with the arm H^2, acted on by the cam on shaft H', the arm H^3 of the rock-shaft, the feed-dog I, the pitman having the upper end connected to the needle-bar-operating shaft and the lower end connected to its said guide-arm, and the link connecting the lower end of the pitman to the crank of the hook-shaft.

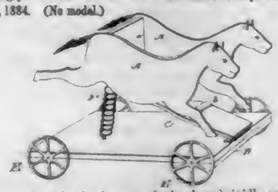


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2. The combination, substantially as herein described, with the needle-bar-operating shaft and hook-shaft, of the crank G^4 on the hook-shaft, the cam-shaft H', the guide-arm H, for the pitman fixed to the cam-shaft, the pitman having the upper end connected to the needle-bar-operating shaft and the lower end connected to its said guide-arm, the link connecting the lower end of the pitman to the crank of the hook-shaft, the rock-shafts H^3 J^3, the one connected to the needle-bar-operating shaft and the other to the cam-shaft, and the feed-dog I, connected to both rock-shafts.

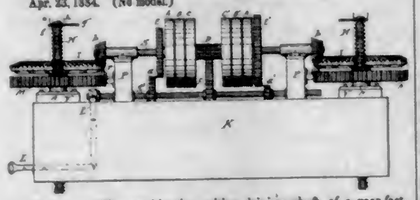
300,200. HOBBY-HORSE. MARTIN BOHLIG, Dubuque, Iowa. Filed Mar. 20, 1884. (No model.)



Claim.—1. In a hobby-horse, a sloping board rigidly secured at its rear elevated end to a seat and hinged at its lower front end to a supporting-base, substantially as described.

2. In a hobby-horse, a sloping board rigidly secured at its rear elevated end to a seat and hinged at its lower front end to a base supported upon wheels, with a spring interposed between the rear end of said board and the base, whereby the seat is adapted to a rocking as well as to an up-and-down movement, substantially as described.

300,201. POWER-PRESS. RUFUS E. BOSCHERT, Syracuse, N. Y. Filed Apr. 23, 1884. (No model.)



Claim.—1. The combination, with a driving-shaft, of a gear fastened on said shaft, and a pinion and pulley fastened to each other and mounted loose on the shaft, and a counter-shaft having fastened to it a gear engaging the loose pinion of the driving-shaft, and a gear adapted to be thrown in and out of engagement with the fast gear of the driving-shaft, substantially as set forth.

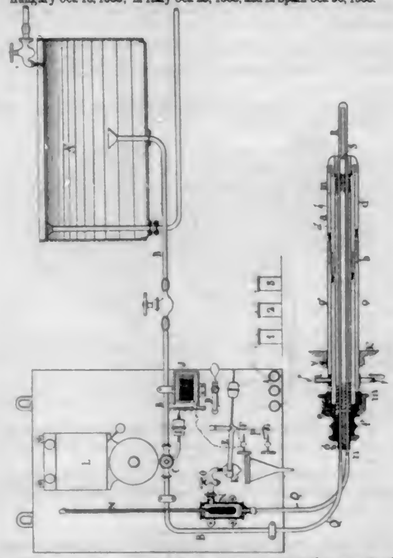
2. The combination, with a driving-shaft, of gears of different diameters fastened on said shaft, a pulley and pinion fastened to each other and mounted loose on the driving-shaft, and a counter-shaft having fastened to it a gear in constant engagement with the loose pinion of the driving-shaft, and gears adapted to be thrown in and out of engagement with the fast gears of the driving-shaft, substantially as set forth.

3. The combination, with a driving-shaft, of gears of different diameters fastened to said shaft, a driving-pulley and an axially-elongated gear fastened to each other and loose on the driving-shaft, a counter-shaft adapted to be shifted longitudinally, and having fastened to it a gear in constant engagement with the loose elongated gear of the driving-shaft, and two gears adapted to be carried in and out of engagement alternately with the two fast gears of the driving-shaft by the shifting of the counter-shaft, substantially as described and shown.

4. In combination with the two driving-belts *d* and *e*, running in opposite directions, the shaft S, having mounted thereon the loose elongated pinion D, pulleys C C', fixed to said pinion, loose pulleys B B', fast pulleys A A', and fast gears E E', the counter-shaft S', having the fast gear F in constant engagement with the pinion D, and fast gears *a a'*, adapted to be thrown in and out of engagement alternately with the two gears E and E', substantially as set forth and shown.

5. In combination with the power-screws H H and nuts N N, the spur-wheels M M, integral with said nuts, the intermediate pinion, *c*, bevel-gear I, the shaft S, provided with bevel-pinions *b*, elongated loose pinion D, pulleys C C', fixed to the loose pinion D, loose pulleys B B', fast pulleys A A', and fast differential gears E E', belts *d* and *e*, running in opposite directions, counter-shaft S, adapted to slide longitudinally, gears F, *a*, and *a'*, fixed to the counter-shaft, and the shifting-lever L, connected with the counter-shaft, all combined to operate substantially as specified and shown.

300,202. PYROMETER. ALFRED BOULIER, Paris, France. Filed Jan. 21, 1884. (No model.) Patented in France Mar. 3, 1883, No. 154,067; in Belgium Mar. 29, 1883, No. 60,911; in Germany Mar. 31, 1883, No. 25,230; in England Apr. 4, 1883, No. 1,698, and Oct. 5, 1883, No. 4,751; in Austria-Hungary Oct. 13, 1883; in Italy Oct. 23, 1883, and in Spain Oct. 30, 1883.



Claim.—1. In a pyrometer operating by means of a current of fluid exposed for a short time to the action of the heat to be measured, and in which the initial temperature of the said fluid is maintained constant, the combination, with the conveying-pipes and capsule, of a thermometer graduated to express the degree of said heat, the bulb of said thermometer being immersed in said fluid, substantially as described.

2. The combination, with the capsule and the inlet and outlet pipes leading to and from the same, of the jacket closely surrounding the said pipes and protecting them from the heat to which the capsule is exposed, substantially as described.

3. The combination, with the capsule and the inlet and outlet pipes, of the water-jacket surrounding said pipes, substantially as described.

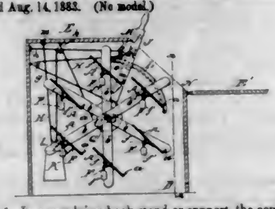
4. The combination, with the capsule, the inlet and outlet pipes leading to and from the same, and the protecting-jacket, of adjusting means for withdrawing the capsule more or less into said jacket, substantially as described.

5. The electric balance comprising a device to receive the impact of a stream of liquid and a counter-weight adjusted to balance the force exerted by said impact, in combination with contacts connected with said balance for closing an electric circuit, substantially as described, said balance remaining in equilibrium under a normal flow of the liquid, but turning to operate said contacts and change the circuit-connections when a change takes place in said flow, as set forth.

6. The combination, with a pyrometer wherein a flow of liquid is maintained, of an automatic alarm comprising a balance arranged to be acted upon by the flowing liquid, a signal or alarm, and devices connecting the alarm with said balance, so as to be operated thereby, for indicating a diminution in the flow, substantially as described.

7. The combination, with a pyrometer wherein a flow of liquid is maintained, of an automatic stop-cock comprising a cock or valve, a balance arranged to be acted upon by the flowing liquid, and devices connecting the cock or valve with said balance, so as to be operated thereby, for cutting off the flow upon the diminution of the same, substantially as described.

300,203. REVOLVING BOOK-STAND. DAVID D. BOWMAN, Eureka, Cal. Filed Aug. 14, 1883. (No model.)



Claim.—1. In a revolving book stand or support, the combination, with a series of revolving spiders and means for revolving them, of a series of shelves journaled between the arms of the spiders, and adjustable weights attached to the back of the shelves, substantially as and for the purpose set forth.

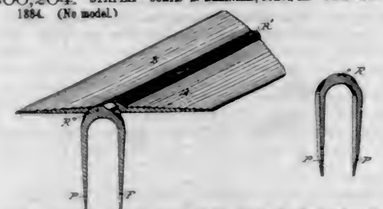
2. In a revolving book stand or support, the combination, with the revolving spiders B and shelves A, journaled between their arms, of the bracket *f*, provided with the serrated face *e*, having thumb-screw *i*, and the serrated and apertured face *e'*, having weight *f'* attached, substantially as herein shown and described.

3. In a revolving book-support, the shaft C, provided with the spiders B B, in combination with the pivoted and weighted shelves A, lever J, weight K, cord H, and suitable pulleys arranged for turning the shaft C, substantially as described.

4. In a revolving book stand or support, the combination, with the case E, the shaft C, journaled therein, and provided with the spiders B and the pivoted and weighted shelves A, of the pulleys G *g h k'*, the weight K, the cord H, the lever J, and means for locking said lever in position, substantially as herein shown and described.

5. In a revolving book stand or support, the combination, with the case E, having the hinged lid or shelf E', and a series of revolving shelves journaled in said case, of the operating-lever J, made in two parts, hinged together within the case, substantially as and for the purpose set forth.

300,204. STAPLE. CURTIS B. BRAINARD, Joliet, Ill. Filed Feb. 15, 1884. (No model.)



Claim.—The staple described, having its head re-enforced and strengthened by means of the integral additional metal R, formed of a portion of the rib R' of the strip S by means of shearing the staple from the diagonal end of said strip, and having its points beveled in opposite directions, as and for the purpose set forth.

300,205. MANUFACTURE OF BOOTS OR SHOES. AARON A. BROWN, Cincinnati, Ohio. Filed June 21, 1883. (No model.)

Claim.—1. In a boot or shoe, the combination of the upper cut away at the toe and heel, and the insole, with tip and molded heel pieces placed over the upper and sewed to the same along their edges and secured to the sole, substantially as described.

300,205.



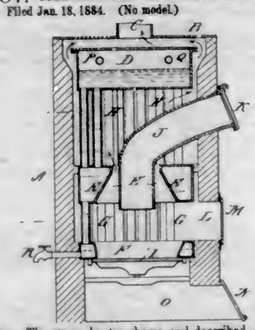
2. The herein-described process of manufacturing shoes, which consists in preparing the upper with toe and heel portions thereof cut away, and in lasting said vamp or upper to the inner sole in the usual manner, except at the toe and heel, and in then placing on the toe and heel suitable molded pliable pieces, which cover both the upper and the sole, and in afterward placing on and sewing or pegging the outer sole to the insole, and to the upper and heel and toe pieces, and in sewing the toe and heel pieces along their upper edges to the vamp or upper, substantially as described.

300,206. METHOD OF SEWING BUTTONS TO SHOES. AARON A. BROWN, Cincinnati, Ohio. Filed July 18, 1883. (No model.)



Claim.—The herein-described process of sewing buttons to shoes, which consists in first drawing up a loop of the thread through the shank and placing the button through the loop, so that said button lies on the shoe-flap in an opposite direction to that in which it was placed when the loop was passed through the shank, and in drawing said loop tightly around the shank; and, secondly, in drawing up the thread through the shank the second time, and in reversing the position of the button by passing it back through the second loop and drawing said loop tightly around the shank, substantially as herein set forth.

300,207. STEAM-HEATER. WILLIAM C. BRONSON, Saratoga Springs, N. Y. Filed Jan. 18, 1884. (No model.)

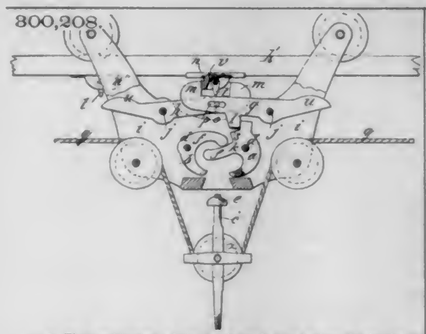


Claim.—The steam-heater shown and described, consisting of the masonry A, centrally-apertured cover B C, water-chamber D below the cover, having all of its outer surface exposed to the heat, as shown, intermediate water-chamber E, provided with a central downward and outward flaring opening, and the water-bosh F, surrounding grate I, in combination with the bent fuel-tube J, fitted in the side of the masonry and reaching through the flaring aperture of chamber E, the water-chambers and bosh being connected by the vertical pipes G H, whereby the heat from the grate in passing upward to the central aperture in the cover, through the central aperture in chamber E, will pass between the vertical pipes and under and around all sides of the chamber D, substantially as set forth.

300,208. HAY-CARRIER. ABNER J. BURRANK, Harvard, Ill. Filed Apr. 5, 1884. (No model.)

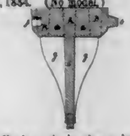
Claim.—1. In a hay-carrier having hooks *a b* to hold the shaft of the fork-sheave, and levers *g h* to lock and trip the hooks and the carrier, the hook *a*, having the locking-notch *k* and shoulder *s* located on its top, and the levers *g h* located above the hooks and connected together over the fork-shaft, with the locking-stud *l* of lever *g* about midway between the pivot *j* and the hook *m* of said lever, substantially as described.

300,208.



2. The combination of the catch-studs *n* and pivoted trip-dogs *l* with the carrier *i*, provided with the pivoted levers *g h*, connected at O, and having the hooks *m* on their adjacent ends, and their outer ends, *u*, adjusted to engage said trip-dogs, the said lever *g* being further provided with a stud, *l*, for holding in open or closed position the pivoted hooks *a b*, substantially as set forth.

300,209. GRATE-BAR FOR FURNACES. JAMES CAIRNS, Philadelphia, Pa. Filed Feb. 6, 1884. (No model.)



Claim.—1. The middle bar, A, having a longitudinal bottom bar, *b*, connected therewith by means of vertical ties *c* in the same vertical plane, substantially as described.

2. The side bars, B B, having side lugs, *e*, and elongated openings *f*, substantially as and for the purpose set forth.

300,210. UNDERGROUND CONDUIT FOR ELECTRIC CONDUCTORS. AUGUSTUS CAMPBELL, Metuchen, N. J. Filed Mar. 13, 1884. (No model.)



Claim.—1. In combination with the sections A, having internal ridges, A^3, the semi-cylindrical pieces D, adapted to support the electrical conductors *m* and leave a clear space below for the passage of water, as herein specified.

2. In combination with the sections A, having internal ridges, A^3, the pieces D, having longitudinal grooves *d*, adapted to support and insulate the electrical conductors *m*, as and for the purposes set forth.

3. In combination with the sections A, having internal ridges, A^3, the perforated pieces D, having longitudinal grooves *d*, adapted to support and insulate the conductors *m*, and to allow the passage of water, &c., to the space below, as herein specified.

4. The combination of the sections A, having internal ridges, A^3, with the pieces D, arranged to overlap the joints of the sections to strengthen the same, as set forth.

300,211. NUT-LOCK. ELI F. CAMPBELL, LEROY C. NOBLE, and MILTON G. HOWK, Houston, Tex. Filed Mar. 17, 1884. (No model.)



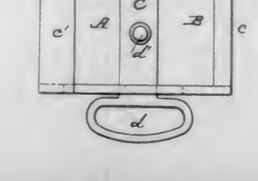
Claim.—1. An elongated spring-washer plate having bolt-openings *a* and lips or spurs A^3, projecting above the face of said plate in proximity to the bolt-openings, and adapted to engage with the under side of the nuts, substantially as described.

2. A torsional spring-washer consisting of a flat elongated metal plate slightly twisted in opposite directions from its center toward its ends, and provided with bolt-openings at the ends of said plate, substantially as described.

300,212. TAG OR TICKET FASTENER. SOLOMON C. CAMPBELL, Brooklyn, N. Y. Filed Apr. 16, 1884. (No model.)

Claim.—The combination of a tag or ticket with a metallic thread or wire having a hook for engaging with the tag at one end and the other end formed into a spiral, oblong in shape, whereby the tag may be secured to the goods by a simple inward and outward movement, as shown and described.

300,213. SOAP STAND AND SUPPORT. WILLIAM H. CARSLAKE, Philadelphia, Pa. Filed Sept. 21, 1883. (No model.)



Claim.—1. A wire stand or support formed of a frame, ledges, a pivoted leg, and locking-arm, said frame having a space to receive said arm when the stand is folded, substantially as and for the purpose set forth.

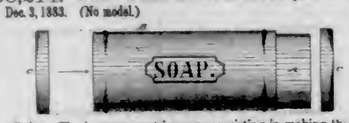
2. A wire frame having central vertical pieces with a space between them, in combination with ledges and braces attached to said central and side pieces of the frame, substantially as and for the purpose set forth.

3. A wire frame provided with a supporting-leg which is bifurcated and has its lower ends bent forward, substantially as and for the purpose set forth.

4. A wire frame having its side and bottom cross-pieces extended and twisted together, forming legs B, substantially as and for the purpose set forth.

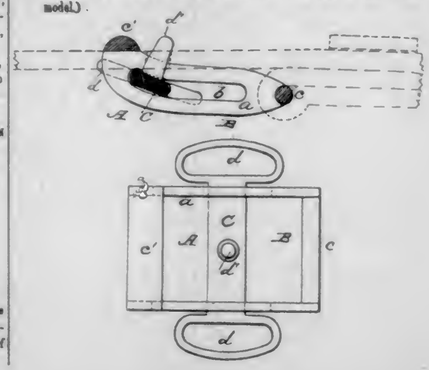
5. A wire frame provided with a card-rack, substantially as and for the purpose set forth.

300,214. SOAP. WILLIAM H. CARSLAKE, Philadelphia, Pa. Filed Dec. 3, 1883. (No model.)



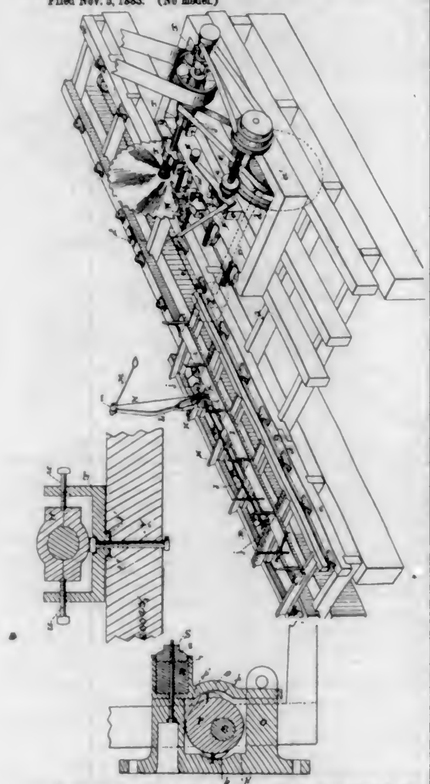
Claim.—The improvement in soap, consisting in making the same of cylindrical form and placing it in a box of similar form, having both of its ends open and provided with closing-caps, substantially as and for the purpose set forth.

300,215. TRACE-BUCKLE. MOSES C. CHASE, Camp Point, Ill., assignor of one-fourth to John H. Stickman, same place. Filed Apr. 16, 1884. (No model.)



Claim.—In a trace-buckle, the combination, with the frame portion B, consisting of the side bars, *a a*, provided with the curved slots *b b*, and the end bars, *c c'*, of the bar C, provided at each end with the oblong loops *d d* and the tongue *d'*, said loops being shorter in length than said slots, whereby the same may be passed through the latter in connecting the portions B and C to one another, as shown, described, and for the purpose specified.

300,216. SAW-MILL. PETER MCG. CRESHOLM, San Francisco, Cal. Filed Nov. 5, 1883. (No model.)



Claim.—1. In a saw-mill, the beam-setting ratchet-wheel K, having teeth *k* on one edge, reversed as described, in combination with the lever L, having the series of independent pawls engaging with the ratchet *l*, to turn it forward, and the gravitating reversed pawl *k'*, engaging with teeth *k*, to reverse said ratchet-wheel, the oscillating bearing *m* in the top of the lever, the lever-handle M, pivoted to move vertically in said bearing, the rod N, connected with the bearing, the crank *n*, connected with the rod, and the cross-rod *n'*, connected with the crank and passing under the series of pawls *l* and over the rear end of pawl *k'*, whereby when said pawls *l* are down in engagement the pawl *k'* is thrown out, and vice versa, substantially as herein described.

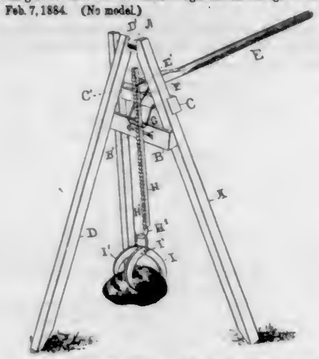
2. In a saw-mill, the shaft C, eccentric P loose thereon and having the convex lugs or projections *q*, and the lever F on the eccentric, in combination with the boxing consisting of the casing O and cap *o*, each having the concave or recessed surfaces *p* and straight surfaces *p'*, and a means for connecting the cap to the casing to allow it to yield when the eccentric is turned, and yet press upon said eccentric, substantially as and for the purpose herein described.

3. In a saw-mill, the shaft C, eccentric P loose thereon and having the convex lugs or projections *q*, and the lever F on the eccentric, in combination with the boxing consisting of the casing O and cap *o*, each having the concaved or recessed surfaces *p* and straight surfaces *p'*, said cap having a hinge or pivot connection to the casing at one end, the chamber *r* at the other, the rubber cushion R therein, the cup *s* on top of said cushion, and the bolt S, binding the cushion to the casing O, substantially as and for the purpose herein described.

4. In a saw-mill, the adjustable boxes for the saw-shaft, consisting of the outer casings, T, having bottom bearings adapted to turn in beams of the frame, the sleeves U, through which the saw-shaft passes, and the set-screws *u*, passing through the outer casing and impinging against the sleeves, substantially as herein described.

5. In a saw-mill, the adjustable boxes for the saw-shaft, consisting of the outer casings, T, mounted to turn in the beams of the frame, the sleeves U and set-screws *u*, and the bolts *v*, supporting the sleeves, substantially as herein described.

300,217. STONE-HOISTER. WM. H. H. CLOPPERT, Trotwood, Ohio, assignor of two-thirds to Moses Wogaman and George W. Gaines. Filed Feb. 7, 1884. (No model.)



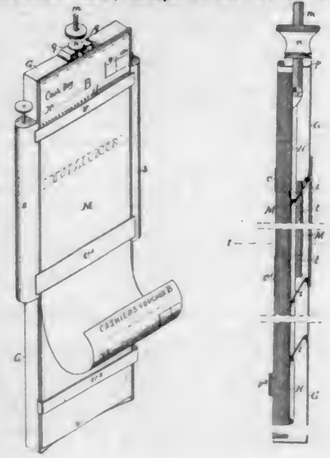
Claim.—1. The combination of the bar having a series of ratchet-teeth on one side, the frame provided with anti-friction rollers and a suitable pawl-bail, and the lever provided with an elevating-bail, substantially as and for the purposes set forth.

2. The combination, with the ratchet-bar and the framing provided with a pawl-bail and anti-friction rolls arranged to receive the bearing of said ratchet-bar, of the lever provided with a hoisting-bail, said lever having its end slotted or bifurcated and embracing and guiding the ratchet-bar, substantially as and for the purposes specified.

3. In a stone-hoister, a grapple, substantially as herein described, having arms I I' I', the points of arms I' being arranged on opposite sides of the point of arm I, as and for the purposes specified.

4. The combination of the main frame having a head-rod and upper and lower cross-bars provided with anti-friction rollers arranged to receive the bearing of the ratchet-bar, the pawl-bail suspended from the lower cross-bar, the lever pivoted on the upper cross-bar and provided with a hoisting-bail, the ratchet-bar, and the strut or brace having its upper edge slotted and engaging the head-rod of the main frame, substantially as and for the purposes set forth.

300,218. SALESMAN'S CHECK-BOOK CASE. CLARENCE CLOTHIER and DARWIN E. CROZET, Philadelphia, Pa. Filed Oct. 9, 1883. (No model.)



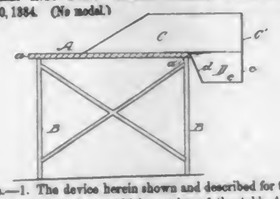
Claim.—1. The combination of a case, G, for receiving a salesman's check-book, with rollers *l* and an endless band of transfer-paper passing round the said rollers, substantially as specified.

2. The combination of the case G, the plate H, connected thereto by hinged strips *i*, the screw-rod *m*, connected to the end of the plate, and the nut *n*, all substantially as specified.

3. The combination of the case, its check-book, and rollers with the inking-band M, composed of transfer-paper with a backing of fabric, as set forth.

4. The combination of the case G, having the inking-band M and cross-bar *o'*, with the book having forms on opposite sides, so arranged as to permit the doubling of the leaf over the bar *o'*, as set forth.

300,219. PORTABLE TABLE FOR TRANSFERRING FLOUR FROM BARRELS INTO BAGS. WILLIAM COCHRANE, Brooklyn, N. Y. Filed Apr. 30, 1884. (No model.)



Claim.—1. The device herein shown and described for transferring flour from barrels into bags, which consists of the table A, supported upon legs B, side and end fenders, C C', and spout or hopper D, arranged substantially as and for the purposes set forth.

2. The side fenders, C C, provided with the downward extensions *c c*, in combination with the table A, plate *d*, and end fender, C', formed with the downward extension *c*, substantially as described.

300,220. SHIRT. JACOB COHEN, New York, N. Y. Filed July 12, 1883. (No model.)



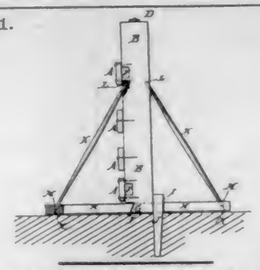
Claim.—1. The combination of the body of the shirt-front having a narrow opening of parallel sides formed in its longitudinal center, an under fly attached to one of the sides of said opening and having its longitudinal center in alignment with that of the front, and an outer fly having one edge attached to the opposite side of said opening and the other doubled over and stitched to the side of the front to which the fly is attached, substantially as shown and described, whereby the longitudinal centers of said flies may be easily made to correspond to each other, as specified.

2. The method of making open fronts for shirts, which consists in cutting out a narrow strip with parallel sides from the shirt-front, attaching an under fly to one of the sides of the opening thus formed, and attaching to the opposite side of said opening one of the edges of an outer fly, and then doubling the material of the said outer fly upon itself and stitching its other edge to the body of that side of the front to which it has been attached, substantially as hereinbefore specified.

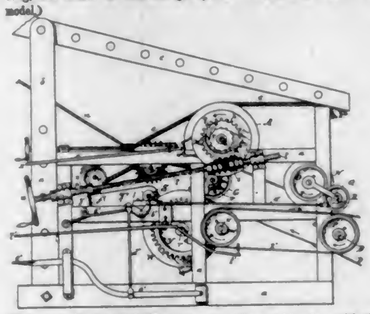
300,221. PORTABLE FENCE. WILLIAM COKAYNE, Geetingsville, Ind. Filed Oct. 15, 1883. (Model.)

Claim.—A portable fence having its panels each composed of an upright, C, a post, B, detachably secured to a sill, and provided with gains F in one edge, boards A, the upper and lower ones of which are provided with tenons E at one end, and braces K, the ends of the boards A opposite the tenons being secured to the post B over the gains F, forming, with the gains, mortises in the post for the reception of the tenons E of the adjacent panel, as set forth.

300,221.



300,222. WELL-DRILLING MACHINE. JOHN CONNER, Jr., Carrollsburg, and HENRY A. OTTO, Allegheny, Pa. Filed Feb. 19, 1884. (No model.)



Claim.—1. In a well-drilling apparatus, the combination, with the frame thereof, of a derrick, *c*, pivoted above its bottom, rope or ropes *n*, attached thereto and to a winding-shaft, *l*, on said frame *a*, gear-wheel *i* on said shaft, a worm, *k*, meshing therewith, and a hand wheel or crank, *m*, substantially as described.

2. In a well-drilling apparatus, a drum having the drilling-rope hitched thereto and unwinding by the gravitation of the drilling-tool, and provided with a gear-wheel, in combination with a hand-operated worm, normally locking said drum by engaging with the gear-wheel, but constructed and adapted to be ungeared and geared therewith at pleasure, substantially as described.

3. In a well-drilling apparatus, a winding-drum, A, for the drilling-rope, having a gear-wheel, o, attached thereto, in combination with the pulley E on the main shaft B, belt F, shaft I, having fast and loose pulleys G H, and pinion *v*, and a shifter, L, for said belt, substantially as described.

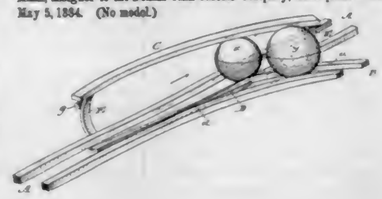
4. In a well-drilling apparatus, the combination of drum A, having ratchet-wheel *r* fixed thereto, loose gear-wheel *p*, having pawl *q*, and longitudinally-movable worm *s*, substantially as described.

5. In a well-drilling apparatus, a crank-pin, *s'*, rotating in one direction, in combination with a vibrating lever, T, controlling the drilling-rope at one end, and at the other straddling the said crank-pin *s*, substantially as described.

6. In a well-drilling apparatus, the pivoted lever T, having sheave *g'*, adapted to operate the drilling-rope, and fork *h'*, in combination with the crank-pin *s'* on shaft *r'*, and suitable means of rotating said shaft *r'*, substantially as described.

7. In a well-drilling apparatus, the pivoted lever T, having sheave *g'*, adapted to operate the drilling-rope, and fork *h'*, in combination with the shaft *r'*, having crank-pin *s'*, and gear-wheel V, pinion *p'*, shaft *n'*, fast and loose pulley thereon, a belt, *k'*, and driving-pulley P, substantially as described.

300,223. SWITCH FOR CASH-RAILWAYS. JOHN C. CORAN, Lowell, Mass., assignor to the Dennis Cash Carrier Company, same place. Filed May 5, 1884. (No model.)

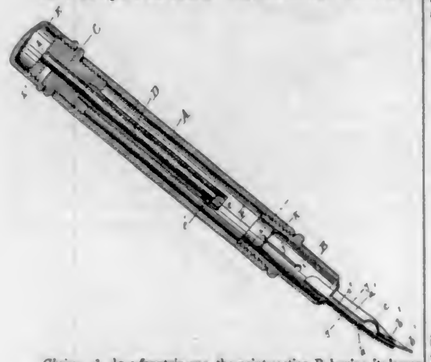


Claim.—1. The combination of the main track, the side or branch track, and the elevated guide-rail bridging the main track, substantially as and for the purposes hereinbefore set forth.

2. The combination of the main track, the side or branch track, and the elevated guide-rail bridging the main track, and adjustable to varying heights above the same, substantially as and for the purposes hereinbefore set forth.

3. The combination of the main track, the side or branch track, the elevated guide-rail bridging the main track, and the guide-frog, substantially as and for the purposes hereinbefore set forth.

300,224. FOUNTAIN-PEN. CHARLES H. COURT, Jersey City, N. J., and ALBERT J. KLETZKER, New York, N. Y.; said Court assignor of one-half of his right to said Kletzker. Filed Mar. 31, 1882. (No model.)



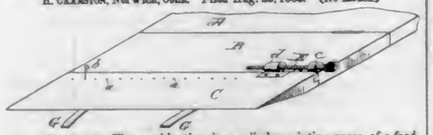
Claim.—1. In a fountain-pen, the point-section B, having its lower end pen-shaped, and provided with the cavity *c* on its under side, substantially as and for the purpose set forth.

2. In a fountain-pen, the combination, with the point-section B, constructed substantially as herein shown and described, of the agitator *i j*, arranged in said section, and having both lateral and longitudinal movement, substantially as and for the purpose set forth.

3. In a fountain-pen, the combination, with the point-section B, of the plate *k*, provided with the aperture *i'*, and held in said section by its elasticity, and the rod *j*, provided with the balls *i* at its ends, substantially as and for the purpose set forth.

4. The combination, with the upper support, *a*, of the lower pen-shaped support, *a'*, provided with a split, *b'*, substantially as shown and described.

300,225. REGISTERING DEVICE FOR PRINTING-PRESSES. JOHN H. CRANSTON, Norwich, Conn. Filed Aug. 23, 1883. (No model.)



Claim.—1. The combination, in a cylinder printing-press, of a feed-board, A, having a hinged leaf, B, an adjustable support, having a series of holes, *a a*, for the reception of a vertical guide-pin, *b*, and a screw, E, for adjusting the guide-support, substantially as described.

2. The combination, in a cylinder printing-press, of the feed-board A, hinged leaf B, sliding guide-piece C, provided with holes *a a* and pin *b*, and the adjusting-screw E, substantially as described.

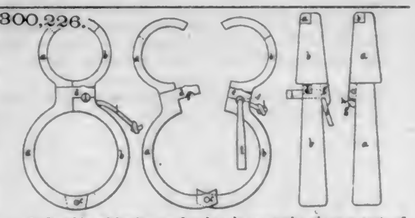
3. The combination, in a cylinder printing-press, of the leaf B, sliding guide-piece C, rod F, having bearings *e f*, and the adjustable tongues G G, having boxes *h*, substantially as described.

300,226. SAIL HANK AND HOOK. DAVID CROWELL, Jr., Yarmouth Port, assignor to Albert F. Edson, Barnstable, and Frederick C. Swift, Yarmouth, Mass., Trustees. Filed Apr. 26, 1883. (No model.)

Claim.—1. The combination, with two pivoted or hinged parts, of a thong operating to fasten the said parts together by entering and filling a hole, one portion of which hole is formed upon one of said parts and one portion upon the other part, all substantially as described.

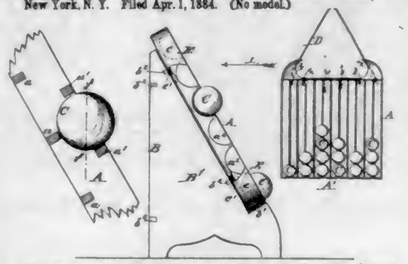
2. In combination with two pivoted or hinged parts, a thong made larger at one end than the other, the small end fitting a hole in one of the parts, and the large end a hole formed partly upon each of said parts, all substantially as described.

300,226.



3. In a hinged hank, a cord, *r*, loosely connecting the two parts of said hank after it has been placed upon the stay, substantially as described.

300,227. BALL-RACK FOR POOL-TABLES. STEPHEN DE GAETANO, New York, N. Y. Filed Apr. 1, 1884. (No model.)

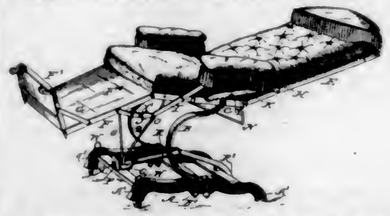


Claim.—1. A pool-rack, A, having in one side thereof end openings for each shelf, and at the ends of the said open side oppositely-placed converging guides E, for discharging the balls directly from the rack within the width of the triangle, substantially as hereinbefore set forth.

2. The combination, with a portable pool-rack, A, of a bracket, B, having shoulders *b'* and inclined front edges, *b*, for supporting the said rack, substantially as specified.

3. A pool-rack consisting of the ball-retaining side A', the ball releasing or discharging side A^2, having openings a^2 cut therein at the end of each shelf, the shelves formed of rails *a a'*, as specified, and the guides E, having guide-edges *e* and curved delivery edges *e'*, all substantially as and for the purpose set forth.

300,228. CONVERTIBLE CHAIR. HENRY HANNON DE PEW, Maquoketa, Iowa. Filed Aug. 22, 1883. (No model.)

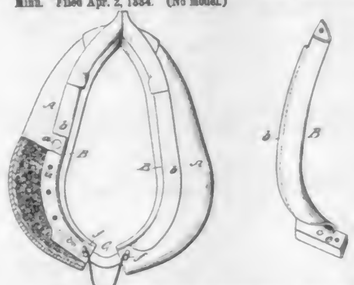


Claim.—1. The combination of the base A, springs B, having a semicircular curve, B'', with their upper ends having a slight reverse curve upward, and terminating in an eye, C', cross-bar C'', journaled therein, chair A'', consisting of the back E, side D, the frame of which is provided with studs M and foot-rest F, pivoted together, as described, arm-rest H, upright bar I, and hinged bar J, ratchet-bars K, having teeth L', adapted to engage with the studs M, and connected by a curved rod, N, supporting-bars O O, having a cross-head, P, adapted to engage with the slotted plate Q, slotted plate Q, and hinged lever R, supported in suitable bearings upon the rear cross-piece of the frame A, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

2. The combination of the base A, springs B, having a semicircular curve, B'', with their upper ends having a slight reverse curve upward and terminating in an eye, C', in which is journaled a cross-bar, C'', chair A'', consisting of the back E, seat D, and foot-rest F, pivoted together, as described, arm-rest H, upright bar I, and hinged bar J, ratchet-bars K, having teeth L', adapted to engage with studs M, and connected by a curved rod, N, pivoted legs S S, adapted to serve as an additional support when the chair is extended to form a surgeon's operating chair

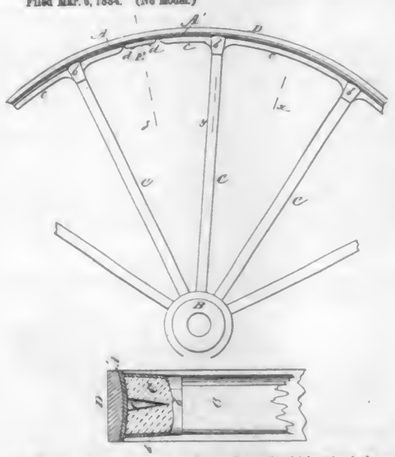
or table, supporting-bars O O, having cross-head P, adapted to engage with the slotted plate Q, and hinged lever R, supported in suitable bearings upon the rear cross-piece of the frame A, all constructed and arranged to operate as and for the purpose shown and described.

300,229. HORSE-COLLAR. HERMAN THEODORE DETERT, Faribault, Minn. Filed Apr. 2, 1884. (No model.)



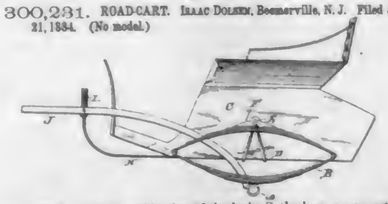
Claim.—As an improved article of manufacture, a horse-collar provided with the metallic attachments B, formed with the hame-flanges *b* and sleeves *c*, as shown, the section C, curved and perforated, and pins *f* for connecting and adjusting said section C, substantially as set forth.

300,230. VEHICLE-WHEEL. JACOB DIETERER, Brushland, N. Y. Filed Mar. 6, 1884. (No model.)



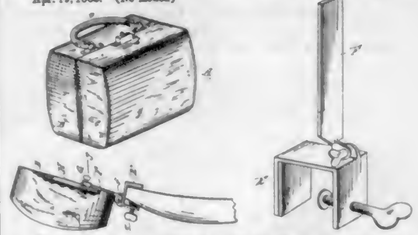
Claim.—In a combined wooden and metal vehicle-wheel, the combination of the externally-concave cast metal rim or felly sections A A', the spoke-sockets *b* on the interior thereof, the wooden spokes C, the wedges *c*, the internally-convex tire D, shrunk on and within the concave exteriors of the rim-sections, and the re-enforcing plates E, arranged on the inner surfaces of the end portions of the rim-sections and united with said sections and with the tire of the wheel, essentially as herein described.

300,231. ROAD-CART. ISAAC DOLSEN, Beemerville, N. J. Filed Jan. 21, 1884. (No model.)



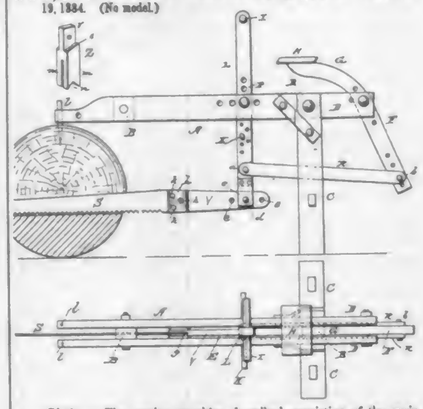
Claim.—The combination of the body C, the loop or supporting-bar D, which is applied to the under side of the body, and which has its end turned upward and then horizontally outward, with the springs B, which are supported upon the axle, the saddles F, which are secured upon the tops of the springs, and through which the bearings E of the supporting-arm pass, and the springs H, substantially as shown and described.

300,232. HEAD-REST. HENRY K. DOREN, Grand Rapids, Mich. Filed Apr. 19, 1883. (No model.)



Claim.—In a head-rest, the cushioned portions B C, hinged to each other, the inner side of one of the hinged portions being provided with clamps G, having set-screws *g*, and a wall, D, with cut-away portion H, in combination with the rods F and clamps E, the parts being organized substantially as and for the purpose set forth.

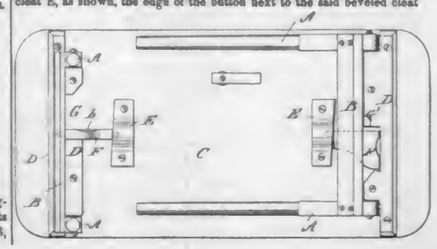
300,233. DRAG-SAW. JOHN T. H. DRAKE, Emporia, Mo. Filed Feb. 19, 1884. (No model.)



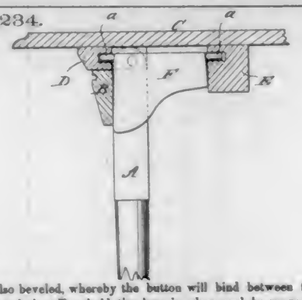
Claim.—The sawing-machine described, consisting of the main frame A, the curved adjustable seat-beam G, pivoted in the rear thereof, as shown, the adjustable operating-lever L, standards C C, the adjustable kerfed head saw-bar V, concave-convex clamping-plates A, the saw, and its securing-bolts, the forked guide Z, and bar R, connecting the saw and main operating-lever, with the seat-beam, substantially as specified.

300,234. FOLDING TABLE. WILLIAM E. ELDRED, Brooklyn, N. Y. Filed Oct. 31, 1883. (No model.)

Claim.—In a folding table, the combination, with the top C, transverse bar D, recessed at G to form a shoulder, G', legs A, pivoted to said bar, cross-piece B, connecting the legs, and a beveled transverse cleat, E, on the under side of the top, and parallel with cross-piece D, of the button F, pivoted to the cross-piece D near the shoulder G' and to the cleat E, as shown, the edge of the button next to the said beveled cleat



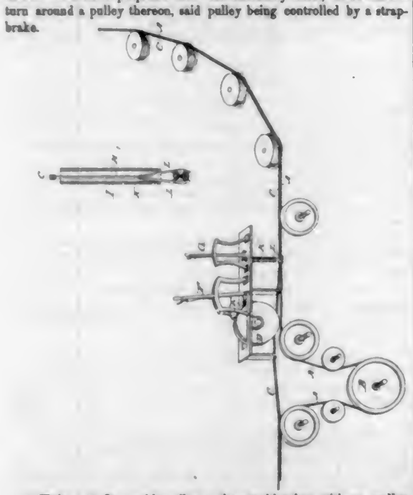
300,234.



being also beveled, whereby the button will bind between the cross-piece B and cleat E to hold the legs in place and be prevented from swinging too far back by the said shoulder, substantially as set forth.

300,235. CABLE RAILWAY. CHARLES B. FAIRCHILD, New York, N. Y. Filed Nov. 21, 1883. (No model.)

Brief.—A secondary cable independent of the main cable-propelling mechanism travels with said main driven cable through frictional contact therewith, and also through a grip-connection between the two cables. The car is propelled from the secondary cable, which takes a turn around a pulley thereon, said pulley being controlled by a strap-brake.



Claim.—1. In a cable railway, the combination, with an endless main driving rope or cable geared to the prime motor, of a second superimposed endless rope or cable moving continuously with the main cable independently of any connection with the prime motor, substantially in the manner and for the purpose herein set forth.

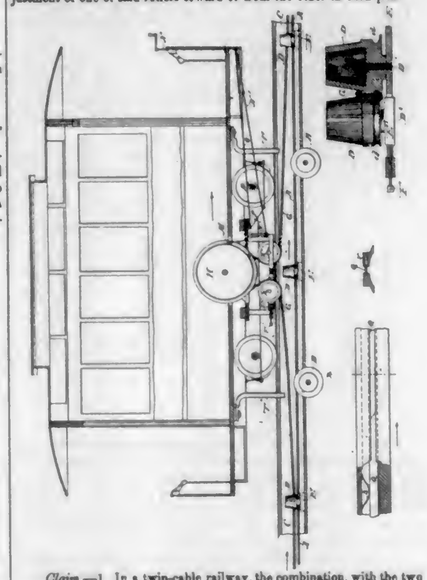
2. In a cable railway, the combination, with an endless main driving rope or cable geared to the prime motor, a second superimposed endless rope or cable moving continuously with the main cable independently of any connection with the prime motor, and a car running upon the railway, of a mechanical device mounted upon the car to engage the secondary rope or cable and couple the car thereto or release it therefrom, substantially in the manner and for the purpose herein set forth.

3. In a cable railway, the combination, with an endless main driving rope or cable geared to the prime motor, a second superimposed endless rope or cable moving continuously with the main cable independently of any connection with the prime motor, and a car running upon the railway, of a loose pulley mounted upon the car, and over which the secondary cable is led, and a brake-lever adapted to lock said pulley, substantially in the manner and for the purpose herein set forth.

4. The combination, in a cable railway, with a car running upon the railway, and with an endless main driving rope or cable geared to the prime motor, and a second superimposed endless rope or cable moving continuously with the main cable independently of any connection with the prime motor, of a grip or clamping device mounted upon the car, to be operated therefrom, to embrace the two cables, and which is adapted when open to allow them to pass freely through it, and when closed to clamp and bind them firmly together, substantially in the manner and for the purpose herein set forth

300,236. CABLE RAILWAY. CHARLES B. FAIRCHILD, New York, N. Y. Filed Jan. 9, 1884. (No model.)

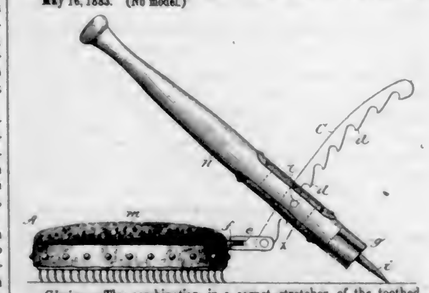
Brief.—A main driving-cable actuates a secondary cable which directly propels the car through pairs of conical rollers driven by the first-named cable, the secondary cable being supported and driven by the rollers in the groove formed by their conical shape. The secondary cable passes over a drum on the car, which is controlled by a brake to cause the car to move with the cable or let the cable run. The tension of this cable is regulated through adjustable guide-pulleys below the drum. The bite of the conical pulleys upon the driving-cable is regulated by the adjustment of one of said rollers toward or from the other in each pair.



Claim.—1. In a twin-cable railway, the combination, with the two superimposed cables, of a series of vertical conical rollers arranged in pairs, each pair being made to embrace the main cable between them with close frictional contact, so as to be rotated thereby, and to receive and engage the secondary cable between their inclined rotating surfaces, substantially in the manner and for the purpose herein set forth.

2. In a twin-cable railway, the combination, with its secondary cable superimposed and driven by the main cable and led over a drum fitted upon a car moving over the railway, of guide-pulleys fitted beneath the drum on either side of its axis and adapted to engage said cable, substantially in the manner and for the purpose herein set forth.

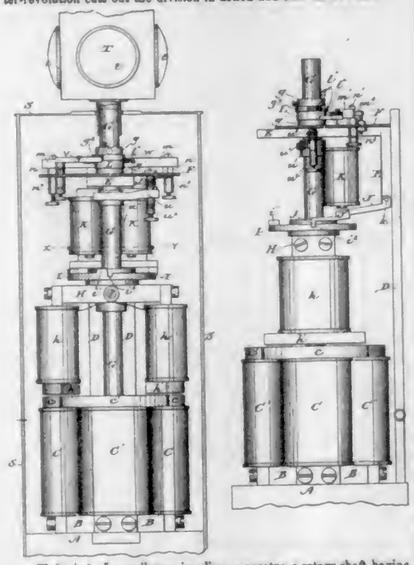
300,237. CARPET-STRETCHER. SAML. PILDES, La Porte, Ind. Filed May 16, 1883. (No model.)



Claim.—The combination, in a carpet-stretcher, of the toothed card or fillet *b b*, the block A, the looped wire or draw-bar, and the handle H, having pointed end and hook to engage draw-bar, as specified.

300,238. ELECTRIC RAILWAY-SIGNAL. LOUIS FINGER, Melrose Mass., assignor, by mesne assignments, to the Hanlon Electric Signal Company, Portland, Me. Filed Sept. 27, 1883. (No model.)

Brief.—An electric-signal motor the field-magnets of which are connected up in two divisions alternately excited through the agency of a commutator attached to the signal-shaft, which at the end of each quarter-revolution cuts out the division in action and cuts in the other.



Claim.—1. In a railway-signaling apparatus, a rotary shaft having a visual signal combined with an electric circuit having a battery and a circuit-closer, an electro-magnetic motor having independent divisions or sections, and switching devices, substantially as described, whereby the successive closures of the circuit are caused to energize the sections of the motor alternately, and thereby cause the shaft to alternately display a danger and a safety signal, as set forth.

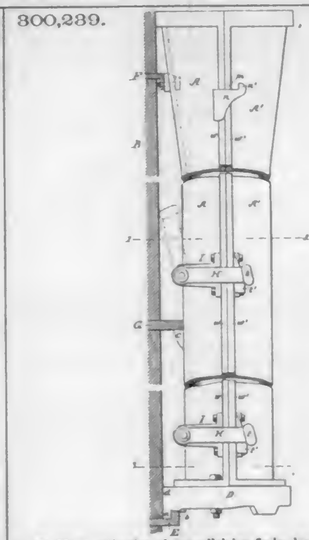
2. In a railway-signaling apparatus, a rotary shaft having a signal combined with an electric circuit having a battery and a circuit-closer, an electro-magnetic motor having independent divisions or sections, switching devices, substantially as described, whereby said divisions are alternately energized by the successive closures of the circuit, and said shaft is given a partial rotation at each closure of the circuit-looking devices, adapted to normally hold the shaft in different positions, and automatic means for unlocking the shaft when the circuit is closed, as set forth.

3. In a railway-signaling apparatus, a rotary shaft having a signal combined with an electric circuit having a battery and a circuit-closer, an electro-magnetic motor, and switching devices, substantially as described, whereby the shaft is given a partial rotation at each closure of the circuit, a signal-bell located in an electric circuit, and means whereby said circuit is broken when the shaft is in either of its positions of rest, and closed, so as to ring the bell when the shaft is in motion, as set forth.

4. In a railway-signal, a rotary shaft having a suitable visual signal, combined with an electro-magnetic motor composed of two independent sections or fixed magnets, and a rotary armature affixed to said shaft, an electric circuit including a battery and a circuit-closer, a switch operated by said shaft, whereby the circuit is closed first through the one of said fixed electro-magnets and then through the other, a locking device which normally locks said shaft in either of two positions, and an electro-magnet included in a branch of the said electric circuit, and adapted to unlock the shaft whenever the circuit is closed through either of said fixed electro-magnets, and thereby permit the partial rotation of said shaft, as set forth.

300,239. PIPE MOLD AND FLASK. HIRAM H. FISHER, Allentown, Pa. Filed Mar. 15, 1884. (No model.)

Claim.—1. The combination of the part A of a pipe-molding flask and the retaining-arms H, pivoted thereto, each arm having an inclined shoulder or shoulders, *i*, with the part A′ of the flask and its inclined or rounded ribs *i′*, all substantially as set forth.

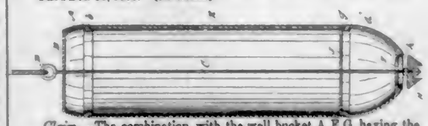


2. The combination of two adjoining flasks, brackets I, secured to the flanges of the parts A of the two flasks, and arms H, pivoted to the said brackets, and having inclined shoulders *i* and inclined or rounded ribs *i′*, secured to the flanges of the removable portions A′ of the two flasks, all substantially as set forth.

3. The combination of a two-part flask, one part, A, of which is attached to a wall, substantially as described, and has a lug, *c*, with a plate, G, built into the said wall and projecting over the lug, all substantially as specified.

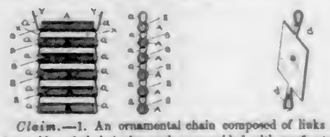
4. The combination of the part A of the flask, attached to the wall and having lugs *n*, with the part A′ of the flask, having shoulders *m m*, adapted to rest on the lugs, substantially as specified.

300,240. WELL-BUCKET. ROBERT H. FOAT, Weatherford, Tex. Filed Dec. 31, 1883. (No model.)



Claim.—The combination, with the well-bucket A E G, having the rabbeted opening F in its bottom, and provided with the apertured cross-bars B J, of the valve-rod C, passing through the apertures in said cross-bars and the opening in the bottom of the bucket, and the valve H, secured to the lower end of said rod, substantially as herein shown and described.

300,241. ORNAMENTAL CHAIN. FRANK FOUNTAIN, Attleborough, Mass. Filed Mar. 17, 1883. (No model.)

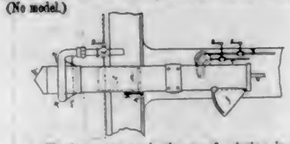


Claim.—1. An ornamental chain composed of links having the ends or sides of their body portions provided with perforated tangs *a*, which are hooked together to connect the links, substantially as set forth.

2. An ornamental chain composed of folded sheet-metal links having the ends or sides of their body portions provided with integral perforated tangs *a*, which tangs are hooked together to connect the links, substantially as set forth.

3. An ornamental chain composed of folded sheet-metal links having perforated tangs *a* upon the ends or sides of their body portions, and such body portions provided with studs or projections *a′*, which enter the perforations in said tangs and prevent the link-body from being opened, substantially as set forth.

300,242. ART OF AND MACHINERY FOR LITHOGRAPHIC PRINTING. WILLIAM H. FORBES, Boston, Mass., and JOHN W. OSBORNE, Washington, D. C.; said Osborne assignor to said Forbes. Filed Apr. 20 1881. (No model.)



Claim.—1. The improvement in the art of printing in the lithographic manner which consists in first projecting upon the printing-surface a delicate spray of atomized water, then inking the surface so treated, and finally printing from the same on paper or other flexible material, substantially as and for the purpose described.

2. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in producing a cloud of atomized water, and in conveying the same to the surface to be damped, substantially as and for the purpose described.

3. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in producing a cloud of atomized water, and in conveying the same to the surface to be damped by an independent current of air generated by extraneous means, substantially as and for the purpose described.

4. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in producing a cloud of atomized water and selectively conveying the lighter particles in said cloud to the surface to be damped, substantially as and for the purpose described.

5. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in producing a cloud of atomized water and selectively conveying the lighter particles in said cloud to the surface to be damped by means of a current of air, substantially as and for the purpose described.

6. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in producing a cloud of atomized water and selectively conveying the lighter particles in said cloud to the surface to be damped by an independent current of air generated by extraneous means, substantially as and for the purpose described.

7. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in projecting a spray of atomized water in a direction other than that of the surface to be damped, and then diverting the direction of said spray, or a portion of it, toward that surface and carrying it to the same, substantially as and for the purpose described.

8. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in projecting a spray of atomized water in a direction other than toward the surface to be damped, and then diverting the direction of said spray, or a portion of it, toward that surface, and carrying it to the same by means of a current of air, substantially as and for the purpose described.

9. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in projecting a spray of atomized water in any desired direction other than that of the surface to be damped, and then diverting the direction of said spray, or a portion of it, toward that surface, and carrying it to the same by means of an independent current of air generated by extraneous means, substantially as and for the purpose described.

10. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in conveying over such a surface a cloud of atomized water in excess, and then removing the unused excess or superfluity, substantially as and for the purpose described.

11. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in conveying over such a surface a cloud of atomized water in excess, and then removing the unused excess or superfluity by means of a current of air, substantially as and for the purpose described.

12. The improvement in the art of damping surfaces prepared for printing in the lithographic manner which consists in conveying to and depositing upon such a surface a quantity of water in an atomized condition, and then spreading or equalizing said deposit by means of a roller or rollers, substantially as and for the purpose described.

13. An atomizer, in combination with printing-surface of a lithographic press, substantially as and for the purpose described.

14. An atomizer surrounded by a tube or trunk opening over and in combination with a printing-surface adjusted for printing in a lithographic press, substantially as and for the purpose described.

15. The trunks *a* and *b*, containing an atomizer, and provided with the valve *f* for controlling the ingress of air, in combination with a printing-surface adjusted for printing in a lithographic press, substantially as and for the purpose described.

16. The trunks *a* and *b*, provided with a tube, *f″*, for the admission of an independent current of air, in combination with a printing-surface adjusted for printing in a lithographic press, substantially as and for the purpose described.

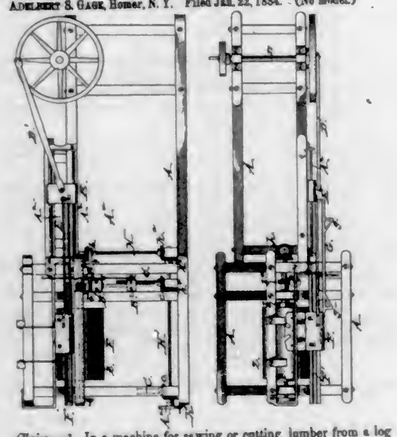
17. In combination with the printing bed or surface of a lithographic press, the trunk containing an atomizer, and a valve, *g*, located between the atomizer and bed, to regulate the quantity of atomized fluid delivered to the printing-surface.

18. In combination with the trunk *b*, the tubes *k k*, provided with slit openings and connected with an exhaust fan or pump, substantially as and for the purpose described.

19. The trunk *b*, provided with the channels *n n*, and the raised edge *i*, surrounding the discharge-opening over the surface to be damped, substantially as and for the purpose described.

20. The trunk *a*, containing an atomizer, and provided with an adjustable opening or connection for the ingress of a current of air, a valve, *g*, for controlling the quantity of atomized fluid discharged, joined to the trunk *b*, provided with an opening for the descent of the cloud of atomized particles, said opening having raised channels to catch drops, and the exhaust-tubes *k k*, to remove excess, in combination with a printing-surface adjusted for printing in the lithographic press, substantially as and for the purpose described.

300,243. VENEER-CUTTING MACHINE. CHARLES W. GAGE and ADELBERT S. GAGE, Homer, N. Y. Filed Jan. 22, 1884. (No model.)



Claim.—1. In a machine for sawing or cutting lumber from a log in convolute layers, mechanism, substantially as described, for simultaneously rotating and gradually elevating the log, said mechanism consisting of a screw or screws for elevating and a worm or analogous means for rotating said parts engaging with the log-support and operated through proper mechanical connections by the reciprocation of the saw-slide, as set forth.

2. In a machine for sawing veneers, the combination of the reciprocating rod G, having the inclines *g g*, feed-lever G′, dog *g′*, ratchet for it to work upon, and mechanical connections to log-support for rotating the log, substantially as set forth.

3. In a machine for sawing veneers, the combination of the reciprocating feed-rod G, having the inclines *g g* at both ends, pivoted feed-lever G′, and connections to the log-supports for rotating the same, with gear and shaft connections to the screws C C′, whereby the log is both rotated and elevated at the same time by the reciprocation of the rod G, substantially as set forth.

4. In a machine for sawing veneers from a log in convolute layers, wherein the log is fed by being elevated and rotated simultaneously, the combination of the reciprocating feed-rod G, having the inclines *g g*, and the feed-lever G′, secured to a part of the machine which is elevated and lowered with the log, so that the throw of the lever may be varied as the radius of the log is changed, and the said log caused to be fed with equal rapidity at all times.

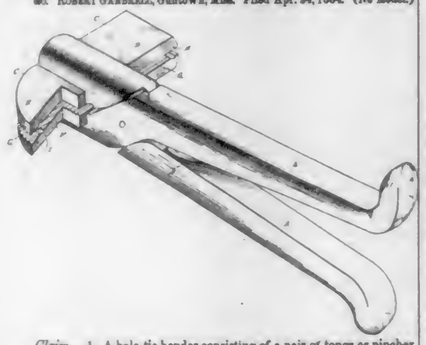
5. The combination of the feed-lever G′, feed-dog *g′*, attached thereto, and ratchet on which it operates, and means for operating said lever, of the regulator J, having the slot *j*, set-block *j″*, and screw *j³*, for arbitrarily regulating the throw of the lever, as set forth.

6. In a machine for sawing lumber from a log in convolute layers, the combination, with the saw or cutter and supporting-frame, the hooks *k k*, placed above the logs, for receiving the edge of the lumber as it leaves the log, substantially as set forth.

7. A saw-slide provided with the adjustable plate I, resting on a

plane surface on the top thereof, said plate having the slots *i' i'*, adapted to receive the pinching-screws *i' i'*, and the slide being provided with the set-screws I', passing through the rear wall thereof, behind the adjustable plate, and serving to set said plate.

300,244. COMBINED BALE-BAND BENDER, NAIL-EXTRACTOR, &c. ROBERT GANDRELL, Guntown, Miss. Filed Apr. 24, 1884. (No model.)



Claim.—1. A bale-tie bender consisting of a pair of tongs or pincher handles provided with a flat extended head adapted to grasp ties and to be manipulated to bend the same, as and for the purpose specified.

2. In combination with the tie-bender, the curved back extension constructed to form a bale-hook, as specified.

3. In combination with the bale-tie bender, the rear extension of the head, having a triangular recess adapted to operate as a bale-hook, as specified.

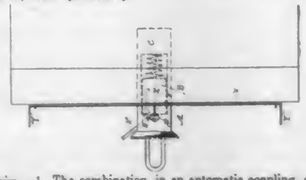
4. In combination with the bale-tie bender, the rear extension forming a bale-hook, and provided with transverse slots, adapting the device to be used in drawing nails, as specified.

5. The combination, with the bale-tie bender, of the transverse grooves, adapting it to be used as a hand-vise, as specified.

6. The combination, with the tie-bender, of the extended head and the serrations on the inner side of the parts of the said head, adapting the device to be used as a pinchers, as specified.

7. The combination-tool consisting of a bale-tie bender, a bale-hook, a nail-extractor, a hand-vise, and a pinchers, all arranged in the manner and operating as and for the purpose specified.

300,245. CAR-COUPLING. THOMAS GERITT, Kenosha, Wis. Filed Apr. 30, 1884. (No model.)



Claim.—1. The combination, in an automatic coupling, of the pin with a cam for locking the pin in a raised position, substantially as shown.

2. The combination of the draw-head, the spring-actuated block, the coupling-pin, the cam for locking the pin in a raised position, and the block or frame upon the top of the draw-head, substantially as set forth.

300,246. APPARATUS FOR ADMINISTERING MEDICATED BATHS. MAX GOLDBERG, Milwaukee, Wis. Filed Oct. 4, 1883. (No model.)



Claim.—In a mask-shield for vapor or medicated baths, the combination of spring *b*, having a loop, *b'*, with the endless elastic band *d* and notch *d'* on said shield, substantially as shown and described, and for the purpose set forth.

300,247. GRAIN-CONVEYER FOR HARVESTERS. JAMES F. GORDON, Rochester, N. Y. Filed Sept. 21, 1883. (No model.)



Claim.—1. In an endless conveyer-chain for harvesters, the combination of links provided with journals extending laterally beyond the edge of the chain, angular teeth pivoted upon said journals, and separate links provided with laterally-extending stop-fingers arranged to act beneath the point of the teeth.

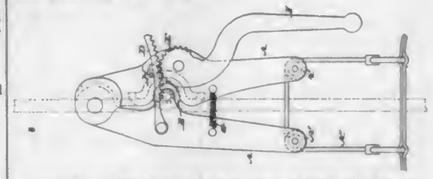
2. In an endless conveyer-chain, two adjacent links, one provided with a journal extending laterally beyond its edge, and the other provided with a stop-finger extending laterally beyond its edge, in combination with an angular rising and falling tooth mounted upon the journal and arranged to act at its point against the stop-finger, as described, whereby the chain is permitted to operate in a frame of limited vertical height.

3. A conveyer-chain having links provided with journals extending laterally beyond their edges, in combination with angular teeth mounted upon said journals, and having hubs located wholly on the side adjacent to the chain, and a stationary plate covering the chain and hub, substantially as described.

4. In combination with the endless chain having the laterally-projecting journals, and laterally-projecting stop-fingers on separate links, the angular teeth provided with the widened foot or base portion, a rail or track to support said chain or teeth, and a stationary plate to cover the chain and feet, substantially as described.

300,248. FIRE-ESCAPE. HENRY GREENE, Philadelphia, Pa. Filed Apr. 1, 1884. (No model.)

Brief.—The pivoted jaws are provided one with a thimble, the other with a roller, between which the rope passes. They are held together both by the weight on the body-strap and its connection with the lower ends of the jaws, and by a rack-bar pivoted on one jaw and a toothed segment upon a hand-lever, which engages with said rack-bar and is pivoted upon the other jaw.



Claim.—1. The pivoted jaws A, with a thimble and roller, between which the rope is passed, and rollers A' at the lower ends, in combination with the strap A'', connected with the waist-belt, extending continuously from said belt around said rollers A'. substantially as and for the purpose set forth.

2. Jaws with a thimble and roller, in combination with a controlling device for the rope, consisting of a rack-bar and a toothed segment, the latter having an operating-lever, substantially as and for the purpose set forth.

3. In a fire-escape, clamping-jaws, in combination with a rack-bar, a toothed segment, and a guard for said bar, substantially as and for the purpose set forth.

4. Jaws with a thimble and the opposite roller, the end rollers, the connection with the waist-belt, the closing-spring, the rack-bar, the toothed segment, and the operating-lever, combined and operating substantially as and for the purpose set forth.

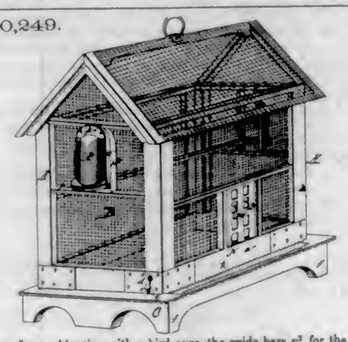
300,249. BIRD-CAGE. JAS. W. GREGORY, Ames, Iowa. Filed Apr. 26, 1883. (Model.)

Claim.—1. The combination, with the front lower edge of the cage, of a series of teeth or serrations adapted to perforate the floor-covering material, substantially as described.

2. The combination, with the door having a trough secured thereto, and suitable opening or openings formed therein for access to said trough, of the slides arranged to open and close said opening or openings, substantially as described.

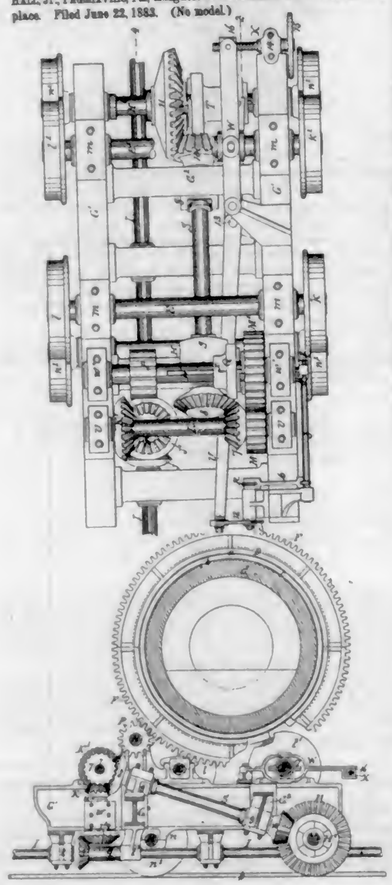
3. The combination, with the door and the slides secured thereto, of the spring having one end fixed to a permanent support and the other end secured to the slides, said spring being arranged to close the door and draw the slides, substantially as described.

300,249.

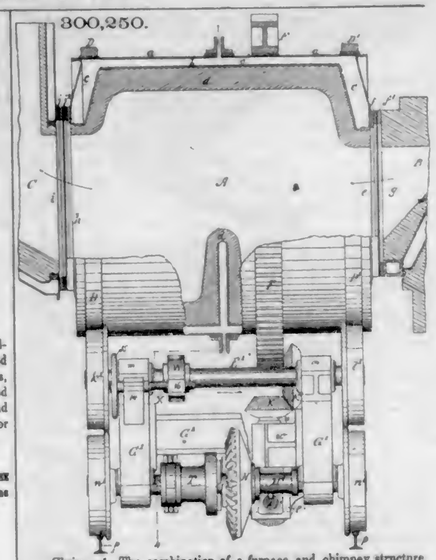


4. In combination with a bird-cage, the guide-bars p^3, for the feed-cup slide, secured to the wall of the cage, and having an opening formed between them in said wall, of a slide arranged to play between said bars, and a shelf projecting from the slide for the support of the feed-cup, and a recessed cleat, p^4, for engaging with the upper end of the feed-cup, and a spring attached to the cleat and shelf, substantially as shown, and for the purpose set forth.

300,250. ROTARY PUDDLING-FURNACE. JOHN GRIFFEN and JESSE HALL, Jr., Phœnixville, Pa., assignors to the Phœnix Iron Company, same place. Filed June 23, 1883. (No model.)



300,250.



Claim.—1. The combination of a furnace and chimney structure, a track between the two, and a truck adapted to carry a rotary puddler with a grooved shaft, I, driven by a fixed motor apart from the truck, and with mechanism through the medium of which the said shaft is caused to traverse the truck, all substantially as set forth.

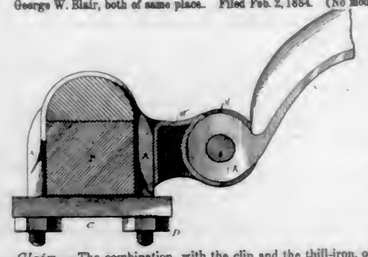
2. The combination of a furnace and chimney structure, a track between the two, a truck having wheels adapted to the rails of the track, and wheels for supporting a rotary puddler, with a grooved shaft, I, deriving its motion from a fixed motor, and with mechanism whereby the said shaft is caused to rotate the supporting-wheels of the puddler, substantially as specified.

3. The combination of the truck, its shafts E E', having wheels, and the rotary puddler supported by the said wheels, with mechanism for imparting an endwise motion to one of the shafts, substantially as described.

4. The combination of the shaft I, the shaft L on the truck, wheels whereby the two shafts are geared together, the axle H', a wheel, 11, on the shaft, gearing whereby the shaft L is caused to drive the said wheel 11, and clutching mechanism whereby the latter wheel may be thrown in or out of gear with its shaft, all substantially as set forth.

5. The combination of the grooved shaft I, the truck, the puddler A, supported by wheels on the truck, and having a toothed rim, F, the shaft N, having its bearings on the truck, and carrying a pinion, P, having teeth adapted to those of the rim, a cog-wheel, M', on the shaft N, gearing by which the said wheel is driven from the shaft I, and clutching mechanism by which the said wheel M' may be thrown in and out of gear with its shaft, substantially as specified.

300,251. ANTI-RATTLER FOR THILL-COUPLINGS. JAMES MILO HAAS, Wabash, Ind., assignor of two-thirds to Louis H. Fougures and George W. Elair, both of same place. Filed Feb. 2, 1884. (No model.)



Claim.—The combination, with the clip and the thill-iron, of the spring having a broad bearing setting against the inside of the clip, a curved top extending well over the eye of the thill-iron, and extending backward at a sharp angle and curved to form a bearing for the thill, substantially as specified.

300,252. WHIFFLETREE-HOOK. MILES E. HAMILTON, Auburn, N. Y. Filed Mar. 26, 1884. (No model.)

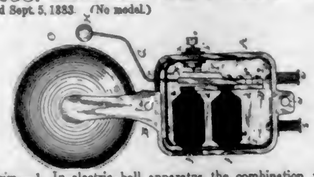


Claim.—1. The combination, in a whiffletree-hook, of a rigid hook provided at the outwardly-facing edges of its inner and outer ends with two upwardly-projecting lugs, with a hook curved in the opposite direction and turning inside the rigid hook, with its inner end formed into a collar, and provided with notches upon the outwardly-facing edges of its inner and outer ends, adapted to fit upon the lugs of the rigid hook, as and for the purpose shown and set forth.

2. The combination, in a whiffletree-hook, of a rigid hook having a notched hook-shaped inwardly-projecting lip upon its inner-end, with a turning collar having a hook curved in the opposite direction, and having a flange turning in the hook-shaped lip, and provided with a notch a short distance above the hook, as and for the purpose shown and set forth.

3. The combination of the rigid sleeve provided with the hook having the upwardly-projecting lugs upon the outwardly-facing edges of its inner and outer ends, and having the notched hook-shaped inwardly-projecting lip, with the collar turning upon the reduced inner end of the sleeve, provided with the hook turned in the opposite direction to the rigid hook, and having notches in the outwardly-facing edges of its inner and outer ends, and provided with the flange upon its outer end turning in the hook-shaped lip, and having a notch above the hook, as and for the purpose shown and set forth.

300,253. ELECTRIC BELL. EDGAR W. HAZAZER, New York, N. Y. Filed Sept. 5, 1883. (No model.)



Claim.—1. In electric-bell apparatus, the combination, with the works, of a case inclosing and carrying the same, and having an open back and closed face, substantially as set forth.

2. The metallic box cast in one piece, with open back and closed face for carrying and inclosing the works of an electric bell, substantially as set forth.

3. The combination of the iron inclosing-box and the magnet-cores attached directly thereto, said box alone forming the yoke or back piece of the magnet, substantially as set forth.

4. The combination, with the magnet-cores and the vibrating armature, of the non-magnetic bar supported by such cores, substantially as set forth.

5. The combination of the magnet-cores and the non-magnetic bar placed upon them, said cores not projecting entirely through said bar, substantially as set forth.

6. The combination, with the electro-magnet and the non-magnetic bar placed before it, of the vibrating armature carried by said bar, substantially as set forth.

7. The combination, with the electro-magnet and the non-magnetic bar placed before it, of the flat spring attached to said bar and carrying the vibrating armature, substantially as set forth.

8. The combination of the metallic inclosing-box, the magnet-cores, the non-magnetic bar placed upon said cores, and the vibrating armature attached to said bar, substantially as set forth.

9. The combination of the cores, the non-magnetic bar attached thereto, the vibrating armature carried by said bar, and the contact-spring attached to said armature, substantially as set forth.

10. The combination, with an adjustable contact-screw passing through the side of a box, of a split bushing surrounding said screw, and having an enlarged head outside of the box, and a clamping-nut upon said split bushing within the box, substantially as set forth.

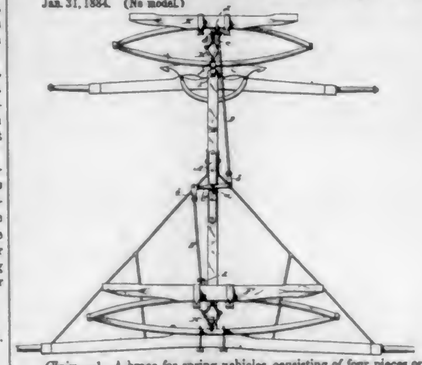
11. In electric-bell mechanism, the combination, with a contact-screw adjustable through the side of the inclosing-box, to and from a contact-spring carried by the vibrating armature, of a split bushing surrounding said screw, and having an enlarged head and a clamping-nut upon said split bushing, substantially as set forth.

12. The combination, with an adjustable contact-screw passing through the side of an iron inclosing-box, of a split bushing surrounding said screw, and having an enlarged head, a clamping-nut on the other end of said split bushing, and insulating material surrounding said bushing and clamped between the enlarged end and the clamping-nut, substantially as set forth.

13. In electric-bell mechanism, the combination of the iron inclosing-box and the magnet-cores attached directly thereto, both the box and cores forming parts of the circuit through the mechanism, substantially as set forth.

14. In electric-bell mechanism, the circuit including the magnet-coils, the fixed contact-point, the vibrating armature, the non-magnetic bar, to which said armature is attached, the magnet-cores, and the inclosing-box, substantially as set forth.

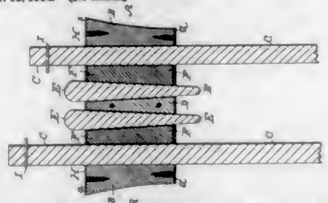
300,254. VEHICLE-SPRING ATTACHMENT. PETER HERBERT, Burr Oak, Kans., assignor of one-half to Jones F. Williamson, same place. Filed Jan. 31, 1884. (No model.)



Claim.—1. A brace for spring-vehicles, consisting of four pieces or leaves pivotally joined at their extremities, the two upper pieces or leaves being curved or on the arc of a circle, so that their upper ends will come together and limit their movement to hold the brace extended, substantially as and for the purpose set forth.

2. A brace for spring-vehicles, consisting of four pieces or leaves pivotally joined at their extremities, the two upper pieces or leaves being curved or on the arc of a circle, in combination with a suitable axle arranged transversely to the reach and pivoted thereto, and provided at its ends with clips, to which stay-rods are connected, substantially as and for the purpose specified.

300,255. DOUBLE GAGE. JOHN HELLRIEGEL, Marine, Ill. Filed Apr. 13, 1884. (No model.)



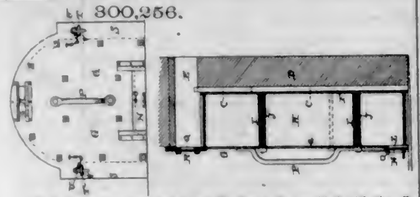
Claim.—1. The combination, with the mortised block B, the abutment D, fixed thereto, the bars C, and the wedges E, of the shoes F, fitted between the wedges and bars, the wedges and shoes filling the space between the bars and abutment, and means for holding the loose parts in the mortised block, substantially as shown and described.

2. The combination, with the mortised block B, the bars C, the wedges E, the abutment D, and the shoes F, of the binding G in a single piece, covering one face and two edges of the block, having holes fitted to receive the bars and wedges, and portions of its edges retaining the shoes and abutment, as and for the purpose specified.

300,256. DOOR FOR COKE-OVENS. JOHN HERRON and ROBERT T. WRAY, Dunbar, Pa. Filed Dec. 28, 1883. (Model.)

Claim.—1. The combination of the frame A and the brick-work D, built therein, with a double door, which is placed inside of the door-frame, and which is provided with means for regulating the passage of air up through the door, and a peep-hole, substantially as shown.

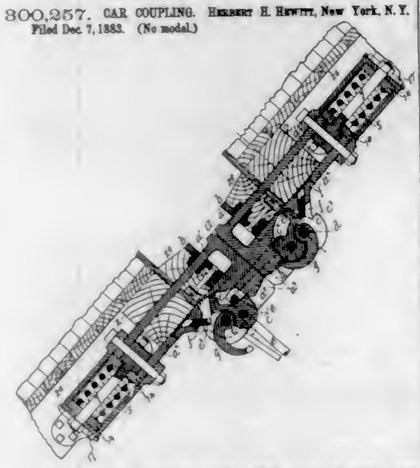
300,256.



2. The combination of the metallic frame A, provided with the rib C, the brick-work D, and a double door which is placed inside of the frame, and up through which the air is made to pass, substantially as described.

3. A door for coke-ovens, consisting of the inner and outer plates, F G, the side strips, H, and bolts J, the inner plate, F, being of a less height than the outer one, in combination with the brick-work D and passage E, substantially as set forth.

300,257. CAR COUPLING. HERBERT H. HEWITT, New York, N. Y. Filed Dec. 7, 1883. (No model.)



Claim.—1. The combination, with a buffer having an integral stem constructed to pass through the buffer-block and the end sill of a car, and an integral stem located under the buffer-block and end sill, of a buffer-head and draw-spring attachment located between the center timbers behind the end sill, and connected to the free ends of the two stems of the buffer, substantially as set forth.

2. An integral buffer and coupler consisting of a buffer-head, a downwardly-projecting hook located under the same, and two parallel stems, one adapted to pass through and the other under the buffer-block and end sill of a car, substantially as set forth.

3. In a car-coupler, a detachable piece or plate pivoted to the draw-bar, and a pendent link permanently attached to said pivoted piece or plate and actuated by means, substantially as described, whereby the link and pivoted piece are swung up, so that the free end of the link engages a downwardly-projecting hook on or enters the mouth of an ordinary coupler of an adjacent car, as set forth.

4. The combination, with the downwardly-projecting hook of a car-coupling, of a closing device, constructed and operated to automatically close the opening of the hook when the coupling-link of an adjacent coupler passes over the hook and by the upward movement of the link, substantially as set forth.

5. In a car-coupler, a downwardly-projecting hook, in combination with a pivoted notched piece, which, when in open position, allows the free end of a coupling-link to pass into the notch over the hook, and when turned on its axis into its closed position the side of the notch retains the link on the hook, substantially as set forth.

6. The combination, with a downwardly-projecting hook and a pivoted notched closing-piece, of a sliding bolt or catch constructed and operated to hold the pivoted closing-piece in its closed position, substantially as set forth.

7. In a coupling, a hook, and a pivoted piece provided with a notch, the upper side of which is in front of the hook when in its open position, in combination with the coupling-link of an adjacent car, which when thrown up over the hook strikes said upper side of the notch of the pivoted piece and forces it partly round on its center, so that the under side of the notch closes the opening to said hook, and a bolt or catch constructed and operated to hold the plate in its closed position, substantially as set forth.

8. In a coupling, a pivoted notched piece, a bolt or catch adapted to hold the plate in its closed position, and a lifter and cam device pivoted on the same axis as the plate, constructed and operated, when moved in one direction, to turn the pivoted notched piece into its closed position, and when moved in the opposite direction to raise the bolt or catch to free the notched piece, substantially as set forth.

9. In a coupler, a pivoted notched piece, a link permanently attached thereto and hanging loose, and a lifter pivoted on the same axis as the notched piece to raise said link into position to couple with an adjacent car, in combination substantially as set forth.

10. In a coupler, a pivoted notched piece, a link permanently attached thereto and hanging loose, and a lifter pivoted on the same axis as the notched piece, in combination with a downwardly-projecting hook of the coupler of an adjacent car, substantially as and for the purpose set forth.

11. In a coupler, a pivoted notched piece, a link permanently attached thereto and hanging loose, and a lifter pivoted on the same axis as the notched piece, in combination with the coupler on an adjacent car, composed of a hook, a pivoted notched piece adapted to close the opening to the same when the link passes over it, and a bolt or catch adapted to hold said plate in its closed position, substantially as set forth.

12. The integral buffer and coupler a a' a^2 a^3, in combination with the connecting-bolt a^3, the yoke a^5, and the draft and compression spring device 7, 5, 14, 13, and 17, substantially as set forth.

13. The link e, notched piece c, lifter g, and handles h^3, in combination, substantially as set forth.

14. In combination, the pivoted notched piece c, lifter g, located between the lugs a^4 of a car-coupling, the pin d, fitted to turn freely in the lugs a^4 a^4, and notched piece c, and secured to the lifter g, and the rods h', attached to the ends of the pin d by means of universal couplings, substantially as and for the purpose set forth.

15. The combination of the link e, pivoted piece c of a car-coupling, and downwardly-projecting hook a^2 of a car-coupling on an adjacent car, substantially as and for the purpose set forth.

16. The link e and lifter g of a car-coupling, in combination with the hook a^2, and pivoted notched piece c of the coupler of an adjacent car, substantially as set forth.

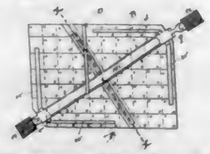
17. The combination of the link e, pivoted piece c, and lifter g, substantially as and for the purpose set forth.

18. The combination of the hook a^2, notched pivoted piece c, and sliding bolt f, substantially as and for the purpose set forth.

19. The combination, with the notched piece c, the hook a^2, and sliding bolt f, of the cam-shaped lifter g, substantially as and for the purpose set forth.

20. The combination of the link e, pivoted piece c, and pin d, by means of which the piece c is held between the lugs a^4 of the coupling, substantially as and for the purpose set forth.

300,258. ELEVATOR. MARTIN W. HOBEN, Cohoes, N. Y. Filed Mar. 27, 1884. (No model.)



Claim.—1. The combination of the safety-racks b, with the suitably-guided and sliding spring catch-bolts A, spiral springs l, surrounding said bolts, and the bell-cranks l, operated by the cross-bolt or stud g of the sliding rope stirrup, link, or coupling f, substantially as described.

2. An elevator-cage consisting of a suitable and suitably-guided rectangular frame, A, carrying a diagonally-placed platform, B, resting on the lower cross-piece, m, of the frame A, the outer corners of the platform B being rigidly supported from below by iron braces w, secured thereto and proceeding from near the lower extremities of the projecting uprights k, substantially as described.

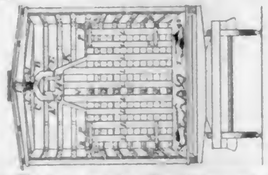
3. An elevator-cage consisting of a suitable and suitably-guided rectangular frame, A, carrying a diagonally-placed platform, B, resting on the lower cross-piece, m, of the frame A, the outer corners of the platform being rigidly supported from below by iron braces w, secured thereto and proceeding from near the lower extremities of the projecting uprights k, the platform B being further supported from below and stiffened by a truss formed of a transverse beam, x, let into the lower cross-piece, m, and of two braces, y, proceeding from near the lower edge of the lower cross-piece, m, and terminating near the ends of the transverse beam x, substantially as described.

4. An elevator-cage consisting of a suitable and suitably-guided rectangular frame, A, carrying a diagonally-placed platform, B, formed of two layers of planking crossing each other at or nearly at right angles, and well bolted together with two bolts to each crossing, substantially as specified, said platform resting on the lower cross-piece, *m*, of the frame A, its outer corners being rigidly supported from below by iron braces *w*, secured thereto and proceeding from near the lower extremities of the projecting uprights *k*, as described.

5. An elevator-cage consisting of a suitable and suitably-guided rectangular frame, A, carrying a diagonally-placed platform, B, so arranged within said rectangular frame that the projecting corners of the platform will be thrown upon opposite sides of a line crossing the lower bar, *m*, of the rectangular frame centrally of its length, and at right angles thereto, substantially as described.

6. An elevator-cage consisting of a suitable and suitably-guided rectangular frame, A, carrying a diagonally-placed platform, B, in which the guide-jaws *q* and *r* project unequally from the uprights *k*, in a manner substantially as described.

300,259. STOCK-CAR STALL. WILLIAM HOLDEN, Los Angeles, Cal., assignor of one-half to Thomas Wright, same place. Filed Jan. 26, 1884. (No model.)



Claim.—1. The improvement in cattle-stalls consisting of thin flexible partitions suspended from a horizontal longitudinally-slotted tube by means of a ball inclosed within the tube, and connected with the partition by means of a cross-head, to which the partition is hinged, and to which the ball is attached by means of a short cylindrical connection passing through the slot in the tube, all being constructed and combined substantially as described, and the partitions being connected to each other and to the floor and walls of the building, substantially as set forth.

2. In cattle-stalls, a depending partition hinged to a horizontal cross-head, such cross-head having a ball attached to the center of its upper side by a cylindrical connection, and being sustained by a horizontal slotted tube, in which the ball is held, substantially as and for the purpose set forth.

3. In cattle-stalls, the improved device for mounting the partitions, consisting, substantially as shown, of a horizontal tubular support, slotted upon its under side, and retaining within its cavity balls, from which the partitions are suspended, whereby the partitions are allowed to be rotated and shifted in position throughout the length of the tube.

4. In cattle-stalls in which the partitions are supported by globular mountings, substantially as described, a longitudinally-slotted tube for supporting such mountings, having flanges extending along the top of the tube, substantially as shown, and for the purpose set forth.

300,260. FOUNTAIN-PEN. JOHN HOLLAND, Cincinnati, Ohio. Filed Apr. 4, 1883. (No model.)



Claim.—The combination, substantially as specified, of the holder A, point-section B, plug C, tube D, cap E, and pen F with rod G, secured to the cap E, and having valve *g* and vents *h i*, for the purpose set forth.

300,261. BRAKE-LOCK FOR BICYCLES. GEO. S. HULL and CHAS. S. HULL, Chambersburg, Pa. Filed Mar. 31, 1884. (No model.)

Claim.—1. The combination, with the brake-handle of a bicycle, of a locking attachment, substantially as specified.

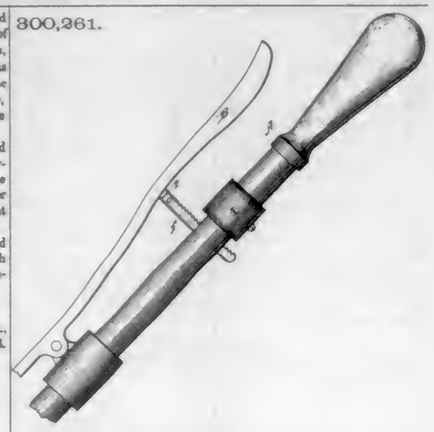
2. The combination, with the brake-handle and the main handle, of the toothed locking-bar and the lock having a passage in which said locking-bar works, substantially as specified.

3. The combination, with the toothed locking-bar, of the lock having a passage for said bar, a locking-bolt, and spring operating the same, spring-slide to engage said bolt, and a tumbler, substantially as specified.

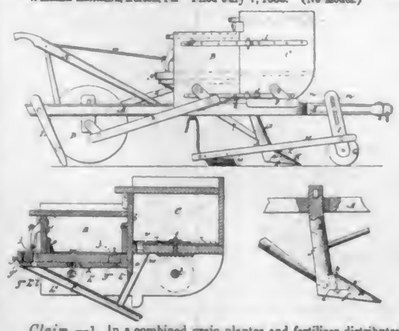
4. The combination, with the locking-bar, of the spring-bolt, its thumb-catch, and the angular holding-slot of the lock, substantially as specified.

5. The combination, with the main handle and the brake-handle, of the lock and the lock-bar, having its fastenings guarded by one of the handles when drawn up in juxtaposition thereto in the locked position, substantially as specified.

300,261.



300,262. COMBINED PLANTER AND FERTILIZER-DISTRIBUTER. WILLIAM IRONSIDE, Kelton, Pa. Filed July 7, 1883. (No model.)



Claim.—1. In a combined grain-planter and fertilizer-distributer, the grain-box B, furnished and fitted with the partition-back *b*, the uplifting-front *b'*, and the clamping-hasps *d*; also said box conjoined with the manure-hopper C, and both boxes mounted upon the platform *a* of the drill-frame A, substantially as and for the purposes herein specified.

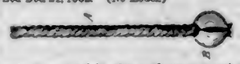
2. In the grain-hopper B of the combined grain-planter and fertilizer-distributer herein described, the combination, with the table-bed *g*, provided with the concentric shoulder *g'* and groove *g''*, the drop-hole *l*, the plate-cap *m*, and the spout *p*, with the box-front *b'*, having the brush *o* and the presser *q* thereto attached, and with the counter-shaft *i*, of the set of interchangeable turn-plates *h*, furnished each with the circle of differential vent-holes, *j*, the center pivot, *h'*, and the spur-cogs *h''*, all substantially as and for the purposes herein specified.

3. In the adjustable manure-hopper C of the combined grain-planter and fertilizer-distributer herein described, the combination, with the partition-front *b*, and its metal-covered floor furnished with the vent-hole *v*, the branch spout *c*, and the lever-regulated vent-stop *w*, and with the vertical spindle *s* and its bevel-geared counter-shaft *t*, of the cruciform and oatsweeping hopper-boy *r*, substantially as and for the purposes herein specified.

4. In a combined grain-planter and fertilizer-distributer, as herein described, the counter-shafts *i* and *t*, each reciprocally imparting motion through its respective and intermediate gearing, the former to the interchangeable turn-plates *h* in the box B, and the latter to the hopper-boy *r* in the box C, and having their bearings on the same level, their cranks of the same length, and their wrist-pins ready to couple and act in combination with the connecting-rods *x*, the independently-coupling parallel bars *y*, and the counter-cranks of the shaft of the driving-roller D, substantially as and for the purposes herein specified.

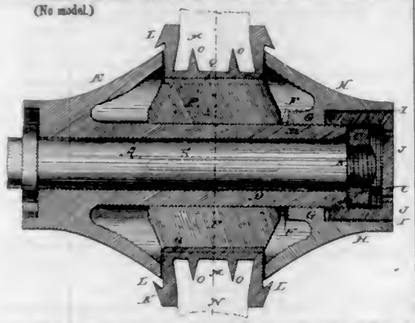
5. In a combined grain-planter and fertilizer-distributer, as herein described, the combination, with the plow-beam of the drill-frame A, of the rigidly-wedged colter-staff F, provided with the rear vertical groove, *f*, and a hollow arched foot, the last having a scarf-jointing edge, *s*, to which is adjusted and firmly bolted the correspondingly rear scarf-edged drill-colter, E, substantially as and for the purposes herein specified.

300,263. SASH-CORD FASTENER. HENRY F. JENES, Pawtucket, R. I. Filed Dec. 21, 1882. (No model.)



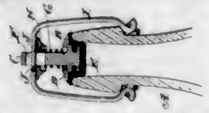
Claim.—As a new article of manufacture, a sash-cord grip consisting of a metallic ball having a rounded axial perforation of size and shape corresponding to that of the sash-cord, and a lateral slot or opening of less breadth internally than the diameter of the cord, and admitting said cord by a sidewise movement to the enlarged axial perforation, said ball being compressible by closing said slot, so that the walls of the axial perforation will grasp the cylindrical cord without flattening it, substantially as set forth.

300,264. VEHICLE-HUB. JOSIAH JONSON, Toledo, Ohio, assignor of one-half to Thomas Matthew O. Neill, same place. Filed Jan. 26, 1884. (No model.)



Claim.—The combination of a box fitting upon the axle-spindle and having an outwardly-projecting funnel-shaped flange upon its inner end and longitudinal flanges upon the outer side of the box, an elastic ring fitting upon the box and having longitudinal grooves upon its inner and outer sides, a socketed spoke-receiving ring fitting upon the elastic ring having longitudinal flanges upon its inner sides and provided with inwardly-pointing flanges upon the outer edges of its faces, and a sleeve having an inwardly-projecting funnel-shaped flange and fitting upon the outer end of the box, clamping the socketed ring between its flange and the flange upon the box, as and for the purpose shown and set forth.

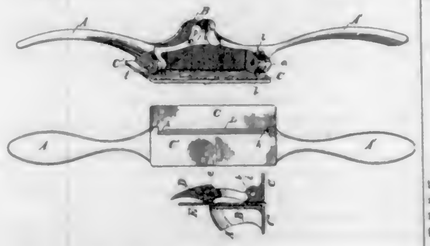
300,265. BOTTLE-STOPPER. JAMES E. KEENAN, Scranton, Pa. Filed Apr. 9, 1884. (No model.)



Claim.—1. In a bottle-stopper, the combination, with the plate B and its slotted stem, of the collar H, the spring, and the swinging bail, substantially as described.

2. The combination, with a bottle, of the stopper having the outwardly-extending slotted stem, the spring, the collar, and the bail pivotally supported on the neck of the bottle, and passing through the slot in the stem, substantially as described.

300,266. CABINET-SHAVE. JOHN A. KEHER, Cincinnati, Ohio, assignor to Samuel C. Tatum & Co., same place. Filed Feb. 23, 1884. (No model.)

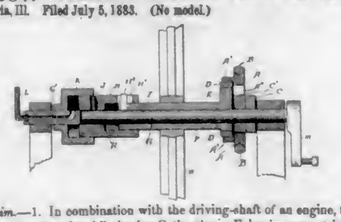


Claim.—1. A shave composed of the stock B and bit-face C', in combination with the bit-face C, swiveled by a pintle placed parallel with the axis of rotation of the bit-face, and a fastening device, D, suitably supported, and adapted to grip the bit at or near the top and force one of the bit-faces against the lower edge of the bit, whereby the bit will be held to its place by said fastening D and bit-face, independently of other fastenings, substantially as described.

2. The combination, with the stock B and stationary bit-face C', of the bit-face C, provided with lugs *h* to bear against the bit and with yoke *d*, and swiveled by a pintle parallel with its axis of rotation, and a fastening device, D, connected with the yoke *d* and adapted to bear against the upper part of the bit, the bit being held to its place by said fastening D and the face C, independently of other fastenings, substantially as described.

3. The combination of the stock B and stationary bit-face C', provided with ears *a*, the bit-face C, provided with ears *b* and yoke *d*, and swiveled to ears *a* by pintles *i*, and the cam-lever D, fulcramed on yoke *d*, for instantaneously fastening and releasing the bit, substantially as described.

300,267. COMBINED CUT-OFF AND GOVERNOR. JOHN KELLY, Peoria, Ill. Filed July 5, 1883. (No model.)

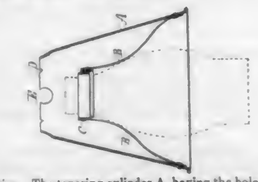


Claim.—1. In combination with the driving-shaft of an engine, the eccentric A, having slot A'', the dog C, the sleeve F, having eccentric E, fast thereon, the box D, movable between the bars A', fast on eccentric A, and means whereby the backward turning of said sleeve upon said shaft shall be elastically resisted by said shaft, substantially as and for the purpose specified.

2. The driving-pulley W, shaft G, having tubular end G', cylinder K, having slots J' and H', and the pins J H² therein, in combination with the sleeve F, drive-pulley W thereon, eccentric E, fast at one end of said sleeve, box D, eccentric A, having bars A' and slot A'', and the dog C.

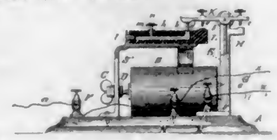
3. The eccentric A, having slot A'', dog or block C, movable in said slot and fast on the shaft G, and the parallel bars A' on said eccentric, in combination with the box D, movable between said bars, and the eccentric E, secured to the end of the sleeve F, whereby the rotation of said sleeve shall shift the eccentric A.

300,268. LAMP-STOVE. CHARLES P. KIMMERER, Grand Island, Nebr. Filed Dec. 26, 1883. (No model.)



Claim.—The tapering cylinder A, having the holes E E and notches D D, the springs B B, the spring-clasps C C, and the frame F, all constructed substantially in the manner and for the purposes herein set forth.

300,269. TELEGRAPHIC RELAY. JAMES S. LAMAR, Augusta, Ga. Filed Feb. 19, 1884. (No model.)



Claim.—1. In a telegraphic relay, the combination, with its electro-magnet, of a vibratory steel magnet operated by its own attraction alone toward the core of the electro-magnet to break circuit, and by means of the magnetic repulsion between said steel magnet and the electro-magnet to make circuit, substantially as specified.

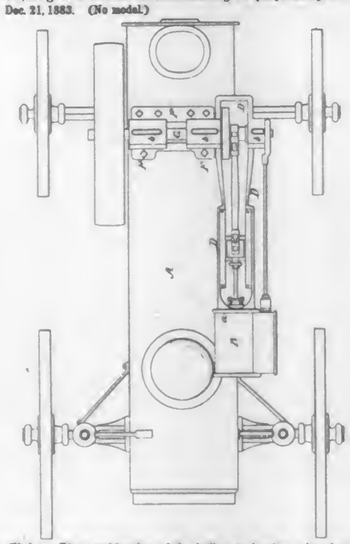
2. In a telegraphic receiving-instrument without retractile spring, a permanent magnet as the armature of an electro-magnet normally held thereto by its own magnetism alone, in combination with an arm rigidly attached to said armature to control the local circuit by its own weight when the magnetism induced in said electro-magnet by said armature is neutralized by the line-current, substantially as specified.

3. In a telegraphic receiving-instrument, the combination, with an electro-magnet, of a vibratory steel magnet having a metallic projection or arm rigidly connected at an angle with said steel magnet, and having a point of platinum or other metal adjusted to make and break electrical connections when operated by the successive repulsions and attractions between said steel magnet and the electro-magnet, substantially as specified.

4. In a telegraphic receiving-instrument, the combination of an electro-magnet, of an oscillating steel magnet, H, arm K, extension *d* and mercury-cup A, substantially as and for the purpose specified.

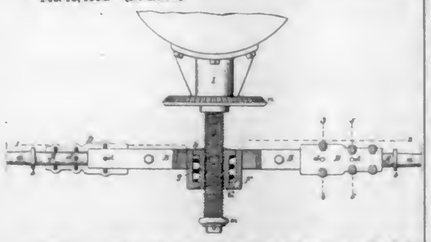
5. In a telegraphic receiving-instrument, the combination of an electro-magnet, an oscillating magnet, H, arm K, extension *d*, mercury-cup A, and governing-screw *l*, substantially as shown and described.

300,270. PORTABLE ENGINE. HENRY B. LANKLERR, Greencastle, Pa., assignor to the Crowell Manufacturing Company, same place. Filed Dec. 21, 1883. (No model.)



Claim.—The combination of the boiler A, having a bracket, *d*, the engine-frame D, secured to the boiler at the front end, and having at the rear end of the cylinder B a confining-bolt, *f*, and one or more rollers, *m*, interposed between the bracket *d* and the engine cylinder or frame, as set forth.

300,271. TRACTION-ENGINE. HENRY B. LANKLERR, Greencastle, Pa., assignor to the Crowell Manufacturing Company, same place. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination of the central bar or bars, B, of the axle with the short shafts A, abutting against the ends of said bar or bars B, and having journals *a*, and with opposite clamping-bars D, having in their inner faces recesses for the reception of the bars and shafts, as set forth.

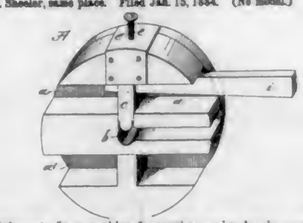
2. The combination of the axle, the boiler, the spindle J, carried by the boiler, and the box F, pivoted to the axle, and having a spindle supporting spring, *g*, as set forth.

3. The combination of the boiler and the spindle J, carried thereby, the pivoted box F, having a spindle supporting spring, and the axle, composed of two bars, B, united at the ends and bowed in the center for the reception of the box F, as set forth.

4. The combination of the boiler and the screw-spindle J, carried thereby, with the axle, its pivoted box F, and the spring-supported nut G, adapted to the screw-spindle J, as specified.

5. The combination of the axle, the boiler, the screw-spindle J, free to turn in bearings on the boiler, the nut G, adapted to the screw-spindle, the box F, pivoted to the axle and carrying a spring, *g*, for supporting the nut, and gearing, substantially as described, whereby said screw-spindle may be turned, as set forth.

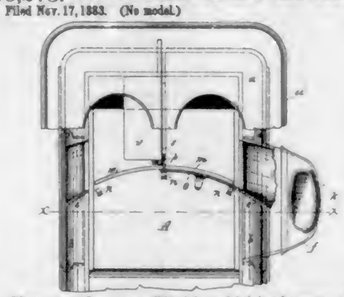
300,272. CHUCK. CHAR. LEWIS, Amsterdam, N. Y., assignor to Davis W. Sheeler, same place. Filed Jan. 15, 1884. (No model.)



Claim.—1. In a machine for turning spring-heads, a rotary chuck provided with grooves *a b*, recess *d*, sliding plug *c*, and key *i*, substantially as described.

2. The combination, with the chuck A, provided with a transverse groove, *a*, radial groove *b*, having a circular enlargement at the end coinciding with the center of the chuck, and the recess *d*, of the sliding plug *c*, having slot *h*, the rod *e*, spring *d'*, and key or wedge *i*, substantially as described.

300,273. PORTABLE RANGE. WILLIAM P. LEWIS, Pittsburg, Pa. Filed Nov. 17, 1883. (No model.)



Claim.—1. In a convertible right and left hand stove or portable range having recessed side plates, the combination of a combined flue-box and pipe-collar and a stopper-plate, the said parts being attachable to and detachable from the side plates and interchangeable, substantially as set forth.

2. In a convertible right and left hand stove or portable range having recessed side plates, the combination of a combined flue-box and pipe-collar, a stopper-plate, said parts being attachable to and detachable from the side plates and interchangeable, and an adjustable deflecting-plate, substantially as set forth.

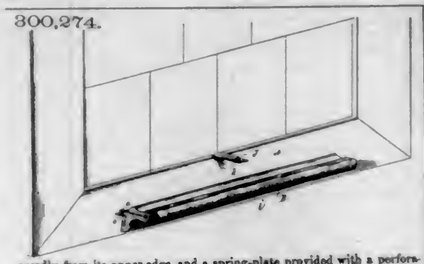
3. In a convertible right and left hand stove or portable range having recessed side plates, the combination of the flue-box and pipe-collar *f*, the stopper-plate *l*, and the deflecting-plate *o*, moving in guides formed on the oven-top and the under side of the top plate, substantially as set forth.

300,274. HILL AND POSTER HOLDER. WILLIAM HENRY LEBETT, Monticello, Ind. Filed Mar. 10, 1884. (No model.)

Claim.—1. The combination, with a suitable base-strip, of a spring-pressed clamping-plate provided with means of attachment, substantially as shown, and triangular in cross-section, one of the points of which forms the fulcrum upon which it works, substantially as set forth.

2. The combination, with a suitable base-strip, of a spring-pressed clamping-plate triangular in cross-section, having a pin projecting upwardly from its upper edge, and a spring-plate provided with a perforation secured to the base-strip, substantially as set forth.

300,274.

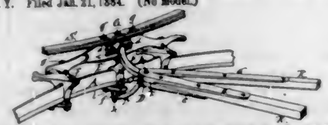


3. The combination, with a suitable base-strip, of a spring-pressed clamping-plate, triangular in cross-section, provided with a pin upon its upper edge adapted to engage a perforation in a spring-plate secured to the base-strip, pins projecting outwardly from the lower end of the base-strip to engage perforations or recesses formed upon the under side of the clamping-plate, substantially as set forth.

4. The combination, with a suitable base, of a clamping-strip having depending loops formed with eyes secured at its ends, wires secured to the opposite ends of the base-strip at one end and to the ends of the clamping-strip at their other ends, substantially as set forth.

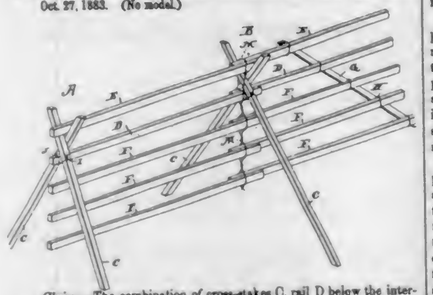
5. The combination, with a suitable base-strip, of a clamping-strip having depending loops formed with eyes secured at its ends, wires secured to the opposite ends of the base-strip at one end and to the opposite ends of the clamping-strip at their other ends, said clamping-plate being provided with a pin upon its upper edge adapted to engage a perforation in a spring-plate secured to the base-strip, substantially as set forth.

300,275. DROP-PERCH COUPLING. THOMAS D. LYNE, Syracuse, N. Y. Filed Jan. 21, 1884. (No model.)



Claim.—In combination with the convergent reaches R R, axle A, and head-block B, the bottom brace, D, composed of the divergent shanks *s s* and the neck *n*, formed integral therewith and terminating with the eye *f*, and the top brace, C, composed of the divergent shanks *a a*, the re-enforce *r* at the junction of said shanks, lying contiguous to the lower brace, and forming an abutment for the ends of the two reaches, and the neck *b*, formed integral with the shanks *a a*, and terminating with the T-head *c*, all constructed and combined substantially in the manner specified and shown.

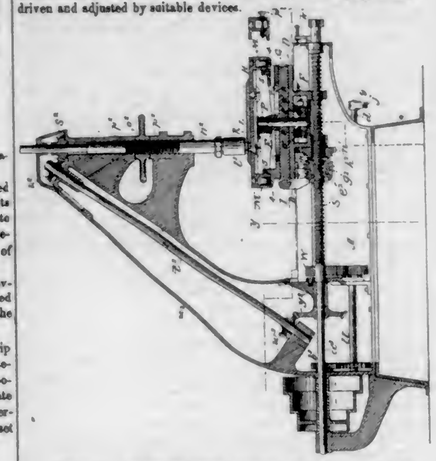
300,276. FENCE. HENRY F. MAGER, Symmes' Corner, Ohio. Filed Oct. 27, 1883. (No model.)



Claim.—The combination of cross-stakes C, rail D below the intersection of the stakes, wire I J K L, applied as described to the stakes and to the rail D, rails E, lying in the top crotch of the stakes, and wires M, engaging the rails E, passing the rails D, and suspending the rails F, as and for the purpose set forth.

300,277. STONE-DRESSING MACHINE. JAMES W. MALOY, Somerville, Mass. Filed Jan. 5, 1884. (No model.)

Brief.—A carriage is reciprocated by a screw-shaft. Upon this is pivoted a rotary support which is rotated by a worm gearing with wheels feathered to the screw-shaft. Upon this support is the work-supporting carriage proper, which is reciprocated by a pinion on a shaft concentric with the rotary support, which shaft is also driven from the gearing feathered to the screw-shaft. Each of the three carriages may be connected at will with the screw-shaft, and each is provided with a stop device to hold it when disconnected. The rotary overhanging cutter is driven and adjusted by suitable devices.



Claim.—1. In a stone-dressing machine, the combination, with a work-supporting carriage, of traveling supports for the carriage, a main driving-shaft, and mechanism, substantially as described, connecting the supports and the carriage with the shaft, the arrangement being such that the work-supporting carriage may be caused to travel in any substantially horizontal direction, as set forth.

2. In a stone-dressing machine, the combination, with a work-supporting carriage, of a rotary and a reciprocating support for the carriage, and mechanism, substantially as described, for connecting said supports and propelling the same from a single shaft, as set forth.

3. In a stone-dressing machine, the combination of a primary carriage traveling on fixed tracks, a support rotating on a pivot or center carried by said primary carriage, and a secondary work-supporting carriage traveling on said rotary support, and mechanism, substantially as described, for propelling said supports and carriage from a single shaft.

4. In a stone-dressing machine, the combination of the primary carriage adapted to travel on fixed tracks B, having rollers bearing on said tracks, and provided with lateral extensions or supports L L, the rotary support adapted to rotate on a pivot supported by the primary carriage and to bear upon the support L, and the secondary work-supporting carriage adapted to move endwise on tracks on the rotary support, and mechanism for propelling the same from a single source of power, as set forth.

5. In a stone-dressing machine, the combination of the fixed supporting frame or base having a propelling screw-shaft, mechanism for rotating said shaft in either direction, a primary carriage adapted to travel on said fixed support, a rotary support adapted to rotate on the primary carriage, a secondary carriage adapted to travel on the rotary support, and intermediate mechanism, substantially as described, connecting said primary carriage, rotary support, and secondary carriage to the shaft, whereby they may be independently connected with and disconnected from said screw-shaft, as set forth.

6. In a stone-dressing machine, the combination of the fixed supporting frame or base having a screw-shaft, mechanism for rotating said shaft in either direction, a primary carriage adapted to travel on said fixed support, a rotary support adapted to rotate on the primary carriage, a secondary carriage adapted to travel on the rotary support, intermediate mechanism, substantially as described, connecting said primary carriage, rotary support, and secondary carriage to the shaft, whereby they may be independently connected with and disconnected from the screw-shaft, and locking devices whereby said connecting and disconnecting devices are locked in either of the conditions in which they may be placed, and thus prevented from accidental movement, as set forth.

7. In a stone-dressing machine, the combination of the fixed supporting frame or base having a screw-shaft, mechanism for rotating said shaft in either direction, a primary carriage adapted to travel on said fixed support, a rotary support adapted to rotate on the primary carriage, a secondary carriage adapted to travel on the rotary support, mechanism, substantially as described, connecting said primary carriage, rotary support, and secondary carriage to the shaft, whereby they may be

independently connected with and disconnected from the screw-shaft, and locking devices whereby the primary and secondary carriages may be prevented from independent motion when disconnected from the screw-shaft, as set forth.

8. In a stone-dressing machine, the combination of the fixed supporting frame or base having flanges or tracks, a screw-shaft, operating mechanism for said shaft, the primary carriage adapted to travel on the tracks and having a movable half-nut adapted to engage with the screw-shaft, a locking device adapted to prevent the movement of the carriage on its tracks, and mechanism connected therewith whereby the half-nut may be disengaged from or engaged with the screw-shaft, and the locking device simultaneously made operative or inoperative, as set forth.

9. In a stone-dressing machine, the combination of the fixed supporting frame or base having a screw-shaft, operating mechanism for said shaft, the primary carriage adapted to travel on said base, and provided with mechanism, substantially as described, connected therewith, whereby it may be engaged with or disengaged from the screw-shaft, the rotary support journaled on an arbor or pivot supported by the primary carriage, and supported by said carriage, the worm 1, engaged with the worm-wheel 2, forming a part of the rotary support, and intermediate mechanism, substantially as described, connecting said parts, whereby said worm may be connected with and disconnected from the screw-shaft, as set forth.

10. In a stone-dressing machine, the combination of the fixed supporting frame or base having a screw-shaft, operating mechanism for said shaft, the primary carriage adapted to travel on said base, and provided with mechanism, substantially as described, whereby it may be engaged with or disengaged from the screw-shaft, the arbor E, journaled in the primary carriage and provided with the worm-wheel N and pinion P, mechanism, substantially as described, whereby said worm-wheel and arbor may be rotated by the screw-shaft, the rotary support journaled on the arbor, mechanism, substantially as described, whereby said support may be rotated in either direction by the screw-shaft, and the secondary carriage D, adapted to travel on and rotate with the rotary support, and provided with a rack, R, meshing with the pinion P on the arbor E, as set forth.

11. In a stone-dressing machine, the combination of the fixed base or support having the screw-shaft, operating mechanism for said shaft, the primary carriage adapted to travel on said base, and the secondary carriage supported by the primary carriage and adapted to move independently thereof, as described, and mechanism connecting the same whereby either carriage may be put in operative connection with the screw-shaft, the other being at the same time disconnected from the said shaft and made inoperative, as set forth.

12. The combination of the screw-shaft S, primary carriage D, nut T, engaging with the shaft, lever q, connected to the nut and engaging with rack s, and shaft v, carrying pinion u, also engaging with the rack, as set forth.

13. The combination of the screw-shaft S, primary carriage D, half-nut T, engaging with the shaft, lever q, connected with the nut and engaging rack s, shaft v, carrying pinion u, also engaging with the rack s, and cam i' on shaft v, operating clamp f'', as set forth.

14. The combination of the screw-shaft S, primary carriage D, sliding half-nut T, engaging with the shaft, lever q, connected with the nut and engaging rack s, shaft v, carrying pinion u, also engaging rack s, arbor E, having worm-wheel N and pinion P, attached thereto, swinging frame j'', connected with the half-nut by link l', the worm O, journaled in the frame j'', and engaging with a gear-wheel on the screw-shaft, and the secondary carriage having a rack engaging with the pinion on the arbor E, as set forth.

15. The combination, with a reciprocating carriage for carrying a stone to be dressed, of the arbor E, having the flanged worm-wheel N, the brake o', embracing the flange of the worm-wheel, the swinging frame j'', having the worm O, and the dog d', having an arm engaging with the frame j'', and adapted to compress the brake, as set forth.

16. In a stone-dressing machine, the combination, with a horizontally-adjustable rotary carrige, of an overhanging rotary cutter adapted to form a molded edge upon a slab of stone placed upon the rotating carriage, and connections, substantially as described, whereby both are driven from the same shaft, as set forth.

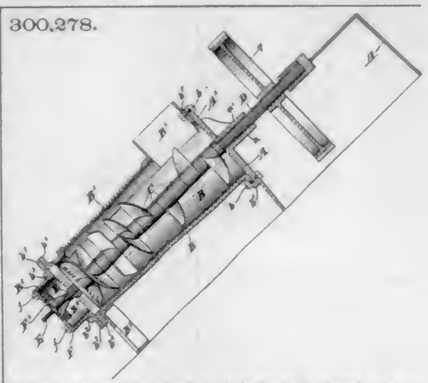
17. The combination of the cutter-spindle, the sleeve carrying said spindle having an arm, j^4, and the turret g^4, journaled on said arm and adapted to hold a series of cutters and present either of them to the spindle, as set forth.

18. The combination, with a work-supporting carriage having slots, of a clamp composed of a slotted plate having bolts for engagement with the slots in the carriage, a jaw connected with the clamp, and a stop adapted to bear against the edge of a slab on the carriage, as set forth.

300,278. TILE-MACHINE. MICHAEL NOLAN, Nashville, Ind. Filed Sept. 27, 1883. (No model.)

Claim.—1. In a tile-mill, a frame-work for supporting the shafting and driving-gear of the mill, on the front end of which is formed integrally therewith a disk or head to which the tub is adapted to be secured, substantially as set forth.

300,278.



2. The combination, in a tile-mill, of the frame-work A, having a disk or head, A', cast integrally therewith, said head being provided with a pillow, a, of the journal-bearing formed in piece therewith, and the cap a' to said journal-bearing, the flanges through which it is bolted to the pillow being shorter than the cap proper to allow said cap to extend through the head flush with its inner face, substantially as set forth.

3. In a tile-mill, the die-support E, the arms whereof are provided on their front edges with fingers e, one side of each of which is tapered from the rear to the point in the opposite direction from that in which each of those immediately next it is tapered, whereby the sides of the column of clay as it passes said arms in its regular course to the die is serrated, substantially as described, and for the purposes specified.

4. In a tile-machine, the combination of the frame A, the tub B, the screw C, with means for operating the same, the die-support E, and the dies F and F', said several parts being arranged and operated substantially as set forth.

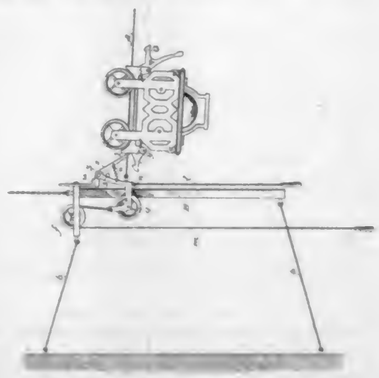
5. The combination, in a tile-mill, with the spindle E', of the conical centering device G, whereby the outer die, F, is adjusted to an equal distance from all sides from the inner die, substantially as set forth.

6. The combination, in a tile-mill, of the frame-work A, having a flange or head, A', cast in piece therewith, the tub B, adapted to be bolted to said flange or head, the auger C, mounted in suitable bearings in the frame-work, with means of operating the same, the die-support E, located in the mouth of the tub, and the dies F and F', substantially as shown and specified.

7. The combination of the frame A, provided with the disk A', and the tub B, secured by short bolts b to said disk, said disk also forming one head of said tub, substantially as set forth.

8. In a tile-mill, an auger, C, the forward wings whereof are serrated on their front edges, substantially as described, and for the purposes specified.

300,279. CASH AND PARCEL CARRIER. BYRON A. OSGOOD, Wakefield, Mass. Filed May 3, 1884. (No model.)

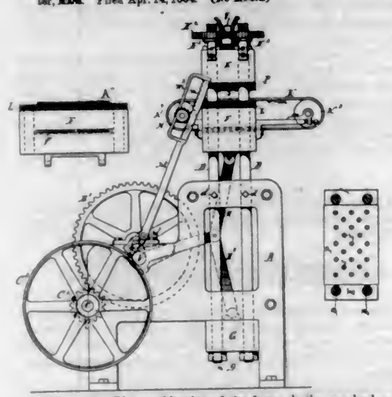


Claim.—1. In a cash and parcel system, a suspended bar, B, a wireway provided with a wheel and yoke at the salesman's station, said wheel bearing on the bar B, guys for holding the said bar, and means, substantially as described, for raising and lowering the end of the wire, all combined substantially as described.

2. In a cash and parcel system, a wireway, one end thereof being vertically movable by means substantially as described, a lever moving with the wire and adapted to strike against a stationary stud in its upward movement, and to give an impetus to the car automatically, substantially as described.

3. In combination with the end of a wireway vertically movable by means substantially as described, and with a stop, a lever, s, provided with a spring, and forked to straddle the wire, and adapted to the catch of the car, whereby the lever acts as a catch and to push the car, substantially as described.

300,280. MACHINE FOR COMPRESSING HEELS OF BOOTS OR SHOES. JAMES H. PARKER, Milford, assignor to John L. Parker, Worcester, Mass. Filed Apr. 14, 1884. (No model.)



Claim.—1. The combination of the frame A, the standard-rods D, supported therein, the head-block E, the foot-block G, the follower F, the knuckle-joint arms H H', the connection I, crank-shaft B, and operating-shaft C, with gears B' C², and pulleys C', said parts being arranged and operating in the manner set forth.

2. The combination, with the follower and press-head, of an endless traveling feed-belt passing through the follower, and having an automatic intermittent motion imparted thereto by mechanism substantially as described, for the purposes set forth.

3. In a machine for pressing or embossing articles of leather, the combination of a head-block supporting an impressing plate or die, a reciprocating pressing-follower carrying an intermittently-acting feed-apron, and a ratchet device and connecting-rod for automatically operating said feed-apron, alternating with the action of said pressing-follower, substantially as set forth.

4. The combination of the follower F, the endless apron K, the supporting-rolls K' K², mounted in bearings attached to said follower, the ratchet mechanism N, mounted on the roll'-shaft, the actuating-rod M, and crank M', substantially as set forth.

5. The combination, with the reciprocating follower F, endless traveling feed-belt K, and head-block E, of the removable impression-plate P, for the purpose set forth.

6. The combination, with the reciprocating follower F and head-block E, of an impressing-plate provided with a series of discharging-studs, substantially as and for the purpose set forth.

7. The combination, with the impressing-plate, of the studs S and springs s', confined in recesses formed in said plate, and adapted for action substantially as described.

8. The combination, with the follower F, feed-bed apron K, head-block E, and die or plate P, of the felt or yielding cushion L, substantially as and for the purpose set forth.

9. The combination of the stationary foot-block G, the rods D, the reciprocating follower carrying the feed-belt K, the operating-arms H H', and the adjustable head-block E with geared nuts E' and operating-gear E², substantially as set forth.

10. The combination, as described, with the feed-belt, operating-roll K², and crank-shaft B, of the ratchet N², pawl n, flanged gear N', rack m, guide m', connecting-rod M, and adjustable crank M', for the purposes set forth.

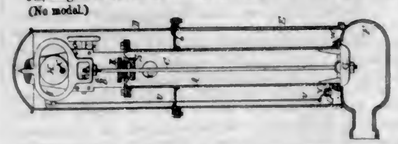
11. The combination, with the head-block E, the adjusting-gear E², and the impressing-plate P, of the bolt t and hand-nut V, said bolt and nut being adapted for securing said plate and clamping said gear, as hereinbefore described.

12. The follower-block provided with a central opening or slot, as f, in combination with the endless feed-apron and knuckle-joint-operating arm, as set forth.

300,281. EXPLOSIVE COMPOUND. WILLIAM R. QUINAN, San Francisco, Cal. Filed Apr. 27, 1883. (No specimens.)

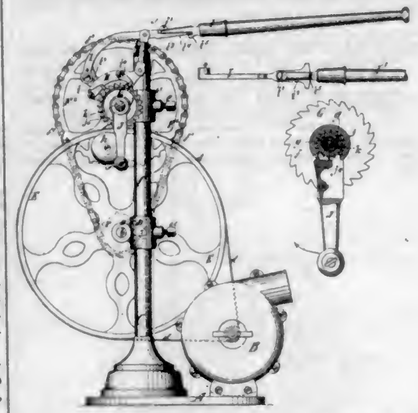
Claim.—A low-explosive powder composed of a small proportion of nitro-glycerine, carbonaceous material, either pulverized or in the form of non-porous small masses or grains, and an explosive salt in the form of non-porous nntriturated small masses, grains, or crystals, the unpulverized ingredients remaining as separate grains in the mixture, substantially as described.

300,282. HYDRANT AND PLUG. JOHN W. RAMSEY, Beaver Falls, Pa., assignor of one-half to John Corbus, same place. Filed Feb. 14, 1884. (No model.)



Claim.—In a fire-plug or hydrant, the valve G, the valve-rod C, the yoke I, attached to the valve-rod, the shaft K, carrying the cam H and the gear I_1, and the shaft N, carrying the hand-wheel O and the worm P, the latter meshing with the gear I_1, and the whole arranged to act in combination, for the purpose substantially herein specified.

300,283. DRIVING MECHANISM FOR FAN-BLOWERS. JOHN R. ROWLANDS, Brooklyn, N. Y., assignor, by direct and mesne assignments, to Henry F. Read, same place. Filed Mar. 10, 1884. (No model.)



Claim.—1. The combination, with a fan-blower and a driving pulley or wheel from which the fan is operated, of a standard or column, and a bearing for the shaft of said pulley or wheel, capable of vertical adjustment thereon, substantially as herein described.

2. The combination, with the blower B and the wheel or pulley E, of the standard or column C, the sleeve or collar D, adjustably secured to said standard or column, and provided with the bearing or socket D', and the shaft or pin b, supporting said wheel or pulley and supported in said bearing or socket D', substantially as herein described.

3. The combination, with a standard or column, of an upper shaft and means for rotating it, a lower shaft and a driving wheel or pulley thereon, wheels or pulleys, and a chain or belt for transmitting rotary motion from said upper shaft to the wheel or pulley on said lower shaft, and bearings for said upper and lower shafts, capable of vertical adjustment on said standard or column, substantially as herein described.

4. The combination of the standard or column C, the sleeves or collars D F thereon, comprising the cross bearings or sockets D' F', means for adjustably securing said sleeves or collars on said standard or column, the shaft b in said bearing D', the shaft f in said bearing F', means for rotating said shaft f, the wheel E on the shaft b, and the wheels F² e, and a chain or belt for transmitting motion from the shaft f to the wheel E, all substantially as herein described.

5. The combination, with a shaft, *f*, and ratchet-wheel G thereon, of a bearing, F', provided with a tabular extension, *f'*, a rocking frame, H, fulcrumed upon said tabular extension *f'*, and carrying a pawl or pawls engaging with said wheel G, and a hand-lever for rocking said frame, substantially as herein described.

6. The combination, with the shaft *f* and ratchet-wheel G, of the rocking frame H, fulcrumed about said shaft, devices for rocking said frame, and two pawls, i i^2, pivoted on said frame, and capable of acting on said wheel when the frame is moved in one direction only, said pawls being so arranged relatively to each other that one or other will always be engaged with said wheel by a movement of said frame in the proper direction equal to half a tooth of the wheel, substantially as herein described.

7. The combination, with a shaft, *f*, and ratchets G *g* fast thereon, of a rocking frame and a pawl or pawls for turning said shaft through the ratchet G, and a gravity-crank loosely surrounding the ratchet *g*, and carrying a pawl capable of being engaged therewith when desired, substantially as herein described.

8. The combination, with a shaft, *f*, and ratchets G *g* fast thereon, of a rocking frame and a pawl or pawls for turning said shaft through said ratchet G, and a gravity-crank, J, loosely fitting said ratchet *g*, and provided with a gravity-pawl, *j*", capable of engaging automatically when said crank is moved, substantially as herein described.

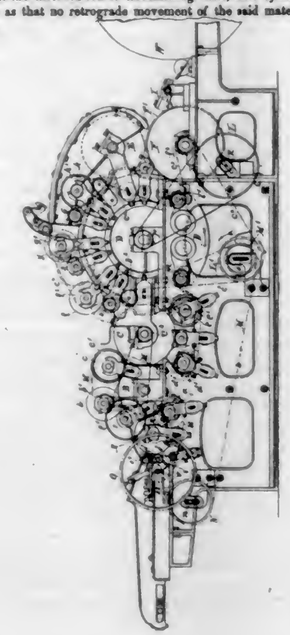
9. The combination, with a shaft and ratchet-wheel, *f* G, and a rocking frame, H, carrying a pawl or pawls for engaging with said wheel, of an operating-lever fulcrumed at one end, and a link connecting said lever with said rocking frame, substantially as herein described.

10. The combination of the shaft and wheel *f* G, the rocking frame H and its pawl or pawls, the arm i^2, the lever composed of the parts I I', pivoted together and fulcrumed to said arm i^2, and the link i^3, connecting the lever portion I with said frame H, all substantially as herein described.

11. The combination, with a shaft, *f*, and a ratchet-wheel, G, fast thereon, of a rocking frame and a pawl or pawls for engaging with said wheel G, a second ratchet-wheel concentric with the wheel G, and a gravity-crank supported concentrically to said shaft, and carrying a pawl capable of being engaged with said second ratchet-wheel when desired, substantially as herein described.

300,284. WOOL-CARDING ENGINE. CLEMENS RÖDNER, Forst, Prussia, Germany. Filed Aug. 16, 1882. (No model.) Patented in Germany Feb. 26, 1881, No. 15,717; in England July 22, 1882, No. 3,501; in Belgium July 22, 1882, No. 58,545; in France Aug. 1, 1882, No. 150,403, and in Austria-Hungary July 13, 1883, No. 25,453 and No. 29,832.

Brief.—The material is transferred from one cylinder to another without the intervention of transmitting-rolls, said cylinders being so driven as that no retrograde movement of the said material may take place.



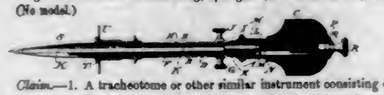
Claim.—1. The combination of two or more co-operating carding-engines, each composed of a carding-cylinder and suitable urchins, the cylinders of each engine operating to take the material directly from the preceding engine without the intervention of transferring-rolls, and card or comb the material and form the same into a fleece, and mechanism for operating said parts, as described.

2. The combination of two or more carding-engines, each composed of a carding-cylinder and suitable urchins, the workers of each engine or set of carding devices rotating at a successively-decreasing speed, and the cylinders thereof operating to take the material directly from the preceding engine without the intervention of transferring-rolls, and to card or comb the material and form the same into a fleece, and mechanism for imparting the described speed to said workers, as described.

3. The combination of two or more co-operating carding-engines, each composed of a carding-cylinder and suitable urchins, the workers of each engine or set of carding devices rotating at a successively-decreasing speed, and the cylinders of the several engines at a successively-increasing speed, the cylinders of one of said engines operating to take the material from the engine next preceding it without the intervention of transferring-rolls, and card or comb the said material into a fleece, and mechanism to impart the described speed to said workers and cylinders, as described.

4. The combination of two or more co-operating card-engines, each composed of a carding-cylinder and urchins, and adapted to card or comb the material and form the same into a fleece, as described, a feed-apron, feed-rolls, a licker-in, a fancy-roller, a knife or stripping-comb, a receiving-cylinder, and mechanism for imparting to the workers and carding-cylinders the described speed, all operated from the driving-shaft of one of the carding-cylinders, as described, for the purpose specified.

300,285. TRACHEOTOME. DEODS LINCOLN RUSSELL, Prairie City, assignor of one-half to J. La F. King, Springfield, Ill. Filed Mar. 8, 1884. (No model.)



Claim.—1. A tracheotome or other similar instrument consisting of an outer tube, a dilating detachable cone, and a stilette or lancet formed with salient angles and re-entering facets, whereby it is adapted to form a radiating incision, which can be readily dilated, expanded, substantially as specified.

2. A tracheotome or other similar instrument consisting of a main tube, a detachable dilating-cone, a lancet or stilette, and means for dilating said cone, whereby the incision made by the lancet or other puncturing instrument may be readily expanded, substantially as specified.

3. A tracheotome or other similar instrument consisting of a main tube, a detachable dilating-cone and stilette, and a longitudinal dilating-tube surrounding the stilette, and provided with a thumb-button extending through a slot at one side of the main tube, whereby it may be projected to partially dilate the cone and expand the incision made by the instrument, substantially as and for the purposes specified.

4. The combination, with the main tube of the instrument, the stilette, dilating-tube and dilating-cone, of the semi-tubular shouldered section adapted to project the cannula into the detachable cone and leave it there, substantially as specified.

5. The combination, in a tracheotome, of the main tube, the dilating-cone, the stilette having a rectangular guide, and left-hand screw near its rear end, the handle or head and screw-plug, and the milled head attached to the stilette, whereby the thrust of the same may be regulated, substantially as specified.

6. The combination, with the detachable cone, of the cannula adapted to be carried by the semi-tubular shouldered section and introduced into the incision in the trachea with said cone, so as to keep the same distended while in position, substantially as specified.

7. The combination, in a tracheotome, of the cannula adapted to be inserted in a distended incision in the trachea by the dilating-cone, the exhaust-tube whereby said cannula may be deposited in the incision, and the tape-clamp adapted to be secured to said tube, substantially as and for the purpose specified.

8. The combination, in a tracheotome, of the main tube, the dilating or sound tube, the stilette and the dilating-cone having lateral arms, and tape-loops, whereby said cone may be held in place in the incision in the trachea, substantially as specified.

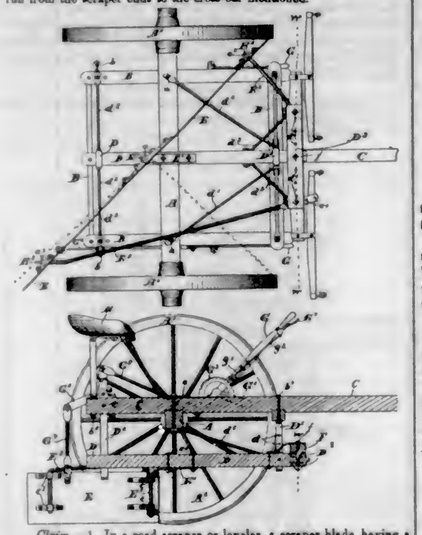
300,286. BRACELET. HENRY T. SALISBURY, Pawtucket, R. I. Filed Apr. 27, 1883. (No model.)



Claim.—In a winged bracelet, the combination, with the central box, B, and the wings A A, hinged near the ends of the box, of the plates *c c*, provided with the arms *d d*, constructed to close the ends of the box B, and the springs *e e*, secured in opposite ends of the box, and constructed to close the wings, as described.

300,287. ROAD SCRAPER AND LEVELER. THEODORE K. SAWYERS, Moorsville, Ind., assignor of one-half to Charles Cook, same place. Filed Aug. 25, 1883. (No model.)

Brief.—The scraper-beam is carried in the slots of two clevis-like hangers from the main frame, preventing lateral play, while perforations in the forward hanger permit vertical adjustment of the securing-bolt. The double-tree is laterally adjustable through a series of holes on a cross-bar secured transversely to the scraper-beam. A right-angle piece bolted to such beam projects down to form the pivot of a central hinge in the scraper. One hinge-piece is secured by bolts and slots to permit a play, enabling the alteration of the scraper to V shape. Brace-rods run from the scraper ends to the cross-bar mentioned.



Claim.—1. In a road scraper or leveler, a scraper-blade having a joint in the center, by means of which it may be changed from a straight blade to a V-shaped blade, substantially as set forth.

2. In a road scraper or leveler, a scraper-blade having a hinge in the center thereof, the hinge parts being bolted to the back side of said scraper, and provided with longitudinal slots, by means of which they are permitted to slide upon the bolts after the nuts are loosened, and thus form an open joint, and permit said scraper-blade to be swung back into a V-shaped blade, substantially as set forth.

3. The combination, in a road scraper and leveler, of the frame, the timber D, the clevis-like devices D' and D^2, whereby said timber is prevented from lateral motion, but is rendered vertically adjustable, and the scraper E, secured to said timber, substantially as set forth.

4. The combination, in a road scraper or leveler, of the timber D, to which the scraper-blade is secured, and the clevis-like device D^2, in which the rear end of said timber is mounted, whereby it is rigidly secured from any lateral movement, and at the same time rendered susceptible of easy vertical adjustment, substantially as set forth.

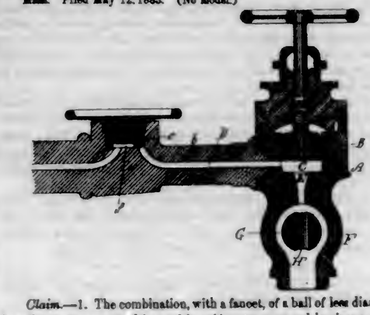
5. The combination, in a road scraper and leveler, of the frame, the timber D, the scraper attached to said timber by iron E', and the clevis-like device D', in which the front end of said timber is mounted, provided with a series of holes, *d*, by means of which the front end of said timber is secured at any desired elevation, substantially as set forth.

6. The combination, in a road scraper and leveler, of the frame-work, the vertically-adjustable timber D, the scraper-blade secured thereto, the cross-timber D^2, and the double-trees mounted thereon, said cross-timber being provided with a row of holes, d^4, by means of which said double-trees may be adjusted from side to side as the varying draft may require, substantially as set forth.

7. The combination, in a road scraper and leveler, of the timber D, the cross-timber D^2, provided with holes d^4, the clevis-like devices D' and D^2, for mounting said timber D, and the scraper-blade E, secured at its center to the under side of said timber, substantially as described, and for the purposes specified.

8. The combination, in a road scraper and leveler, of the scraper-blade E, composed of two parts hinged together, the hinge-pintle E' being formed in the shape of an angle-iron, and its longitudinal portion being securely bolted to the timber D, said timber, the cross-timber D^2, the stay-rods E^2 and E^3, by means of which the ends of the scraper are connected to the ends of said cross-timber, and the double-trees mounted thereon, substantially as described, and for the purposes specified.

300,288. APPARATUS FOR DISPENSING AERATED WATERS. JOSEPH HEWES SHEPHERD, Newton, assignor to Alvin D. Puffer, Medford, Mass. Filed May 12, 1883. (No model.)

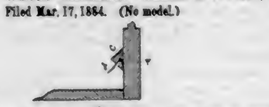


Claim.—1. The combination, with a faucet, of a ball of less diameter than the water-way, and located in said water-way and having passage through it, substantially as set forth.

2. The combination, with a faucet, of an intercepting device arranged permanently in the middle of the water-way thereof, said device being of less diameter than the interior of said faucet, and provided with means for turning it so as to allow the water to run freely or to interrupt the flow of water, as may be preferred.

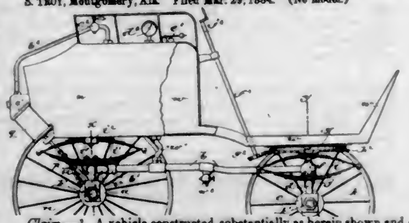
3. In combination, the chamber *c*, having a peripheral opening, *h*, and valve *e*, having pocket *f* and segmental opening *g*, the mouths of the interrupted channel D terminating in the valve-seat and governed by the valve.

300,289. CARPET-FASTENER. WILLIAM M. SHOFSELL, Auburn Springs, Mo. Filed Mar. 17, 1884. (No model.)



Claim.—The V-shaped strip C, having a cavity in its under side, and the headed and pointed nails projecting through and at right angles to one side of the strip, in combination with the floor and base-board of a room, substantially as and for the purpose set forth.

300,290. VEHICLE PROPELLED BY COMPRESSED AIR. DANIEL S. TROY, Montgomery, Ala. Filed Mar. 29, 1884. (No model.)



Claim.—1. A vehicle constructed, substantially as herein shown and described, with its axle or axles and reach made hollow and communicating to serve as a reservoir for compressed air to be utilized in driving the vehicle, substantially as herein specified.

2. A vehicle constructed with its axle or axles and reach and its body portion in whole or in part made hollow and communicating to serve as a reservoir for compressed air to be utilized in driving the vehicle, substantially as shown and described.

3. A vehicle constructed with its axle or axles and reach made hollow and communicating with each other to form a reservoir for compressed air, in combination with a compressed-air engine secured thereto and constructed to revolve one of said axles, substantially as set forth.

4. A vehicle constructed with its body, axle or axles, and reach made hollow and communicating to form a reservoir for compressed air,

in combination with a compressed-air engine secured to the body and constructed to revolve one of the axles, substantially as set forth.

5. The combination of the hollow reach *b* with the hollow axles *a c* and cross-tubes *d u*, connecting the hollow axles with the reach and connected to the axles by the chambers *a' c'*, whereby a continuous reservoir is formed, substantially as set forth.

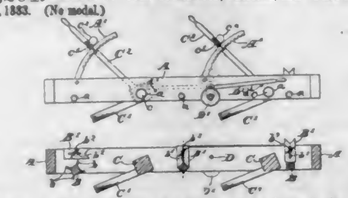
6. The combination of the hollow body *w* with the hollow reach *d* and hollow axles *c a*, with the flexible pipe *w'* connecting the hollow body with the hollow reach, whereby a continuous hollow space is formed within the body, reach, and axles, to serve as a reservoir, substantially as set forth.

7. The combination of the continuous hollow communicating body, axles, and reach, the rear axle being hollow, cranked, as at *o r o*, with an air-engine, *q*, communicating with the body *w*, the pitman-rods *p*, connected to the pistons of the engine and to the cranks *o o*, and the stem *t*, connected to the air-valves of the engine and to the eccentrics *s* on the middle tube, *r*, substantially as set forth.

8. The combination, with the hollow axle *a*, perforated, as shown, near its ends, with the hollow reach, connecting cross-pipe *u*, connected to and communicating with the axle by the chambers *a'*, fitting around the ends of the axle over the perforations, and held in place by the screw-collars *l*, and packing *m* between said collars and chambers, substantially as set forth.

9. The connection between the hollow front axle, cross-pipe *d*, and the hollow communicating reach, which consists in the hollow perforated tube *e* on the cross-pipe *d*, and bulb *f*, surrounding said perforated tube and connected to and communicating with the reach *b*.

300,291. HARROW. JOHN UNDERWOOD, Sheridan, Ind. Filed Dec. 21, 1883. (No model.)



Claim.—1. The combination, in a harrow, of the frame A, the revoluble pulverizing-bars B, journaled in said frame, the detent B', secured to the frame just above the end of the pulverizing-bar, and adapted to fit down onto said bar, with means for securing it in this position, and the beam C, bearing teeth C', substantially as described, and for the purposes specified.

2. The combination, in a harrow, of the frame A, the beams C, journaled in bearings in said frame, square pulverizing-bars B, interposed between said beams, said beams bearing shares or teeth C', which are set at an angle with the beam, and levers C^2, rigidly secured to the end of said beam as a means for operating the same, with means for securing the same in position, substantially as set forth.

3. The combination, in a harrow, of the frame A, square revoluble pulverizing-bars B, journaled therein, the detents B', secured to the frame and adapted to be fitted against said bars, with means for securing them in position, the beams C, bearing shares or teeth C', said shares or teeth being set at an angle with the beam, and levers C^2, secured to the ends of said beams as a means for regulating the depth to which the teeth shall enter the soil, all arranged and operating substantially as described, and for the purposes specified.

4. The combination, in a harrow, of the frame A, the beams C, bearing shares or teeth C', and the square revoluble pulverizing-bars B interposed between said beams C, said bars being provided with outwardly-projecting pins *b*, substantially as described, and for the purposes specified.

300,292. CAR-COUPLING. JOHN WARD, Condersport, Pa., assignor of one-half to Frederick Davenport. Filed Mar. 21, 1884. (No model.)

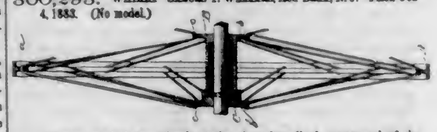


Claim.—1. In a car-coupling, the combination, with a draw-head, of a plate pivoted to the upper side thereof, said plate being provided near its rear end with a raised portion, and a coupling-pin seated in a perforation of said plate, substantially as set forth.

2. In a car-coupling, the combination, with a draw-head, of a plate provided at its rear end with a raised portion, a hinged support secured to the under side of the plate, and a coupling seated in an opening in the front end of the same, substantially as set forth.

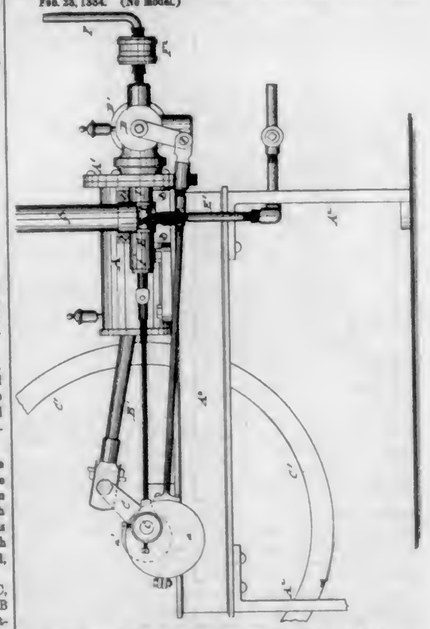
3. In a car-coupling, the combination, with a draw-head, of a shaft having bearing in the front end of the same, a spring secured to the end of said shaft at one end, its other end being secured to a post or trunnion projecting outwardly from the draw, a bail or loop secured to the shaft at one end, its other end bearing against the under side of the spring, and a plate secured to said shaft, substantially as set forth.

300,293. WHEEL. SAMUEL T. WILLIAMS, Red Bank, N. J. Filed Oct. 4, 1883. (No model.)



Claim.—A hub for wheels of the class described, composed of the main portion B, having the flange *b* on one end thereof, and rigid or immovable thereon, and radial teeth on the other end, and cap C, having the flange *b'* and teeth *d* thereon to engage the teeth on the end of the said portion B, all constructed and arranged substantially as set forth, whereby the spokes may be distended and held in their distended condition, as specified.

300,294. GAS-ENGINE. JOSEPH S. WOOD, Brooklyn, N. Y. Filed Feb. 28, 1884. (No model.)



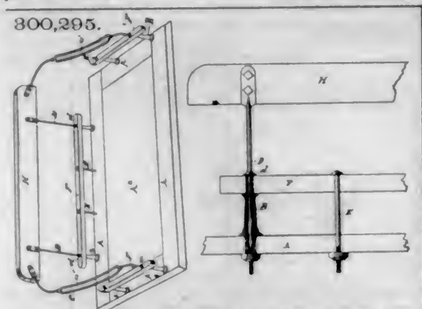
Claim.—1. In a gas-engine, the combination of a cylinder, a reciprocating piston, a crank-shaft, an igniter arranged at one side of the cylinder, means for reciprocating the igniter-valve, a gas-and-air-supply valve communicating with the cylinder, a valve-gear for oscillating the piston-valve, said valve communicating with the gas-supply pipe, air-pipe, and the cylinder, substantially as set forth.

2. In a gas-engine, the combination of a cylinder, A, having an inlet-port, *a*, a gas-and-air-supply valve, D, having gas and air channels *d d' d²*, a valve-gear for oscillating said valve, a valve-casing, D', having ports *s d' d²*, and a gas-supply pipe, F, having a check-valve, F', the oscillating gas-and-air valve serving also to exhaust the products of combustion, substantially as set forth.

3. In a gas-engine, the combination, with the cylinder, of an auxiliary supply-valve composed of a supply-tube having a perforated bottom, a vertically-adjustable spindle, and a weighted valve, substantially as set forth.

300,295. SHIFTING-RAIL FOR BUGGY-SEATS. RICHARD G. WOOD, Cincinnati, Ohio, assignor, by mesne assignments, of one-half to the Queen City Forging Company, same place. Filed Apr. 27, 1883. (No model.)

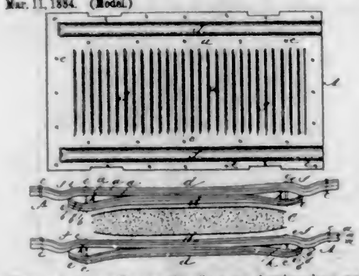
300,295.



Claim.—1. In a buggy-seat, the combination of the seat-frame, rails F, and pieces B with the arm-rests C and back-supports D, the said parts C and D having screw-threaded shanks passing through the rails F, pillars B, and the seat with nuts to hold the parts together, substantially as specified.

2. The combination, with the seat-frame, the hollow standards, and the rails F, of the shifting-rails removably secured to said rails F by bolts passing through the shifting-rails, rails F, hollow standards, and seat-frame, substantially as described.

300,296. OIL-PRESS PLATE. CLARK WOODMAN, Omaha, Nebr. Filed Mar. 11, 1884. (Model.)



Claim.—1. A metallic plate for oil-presses, forming also a mat on its opposite faces, constructed with reverse transversely-concave faces, protruding or bulging sides, and gutters on its upper surface, substantially as specified.

2. A metallic plate for oil-presses, forming also a mat on its opposite faces, constructed of a double series of metal sheets or layers secured together, with the upper series of greater width than the lower series, and both series constructed to present reverse transversely-concave faces having protruding or bulging sides and gutters on the upper face of the combined plate, essentially as described.

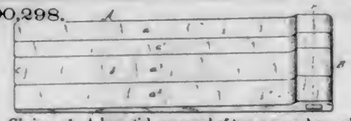
3. A combined metallic plate and mat for oil-presses, consisting of an upper series of metal sheets or layers, *a a*, and a lower series of like sheets or layers, *b b*, of lesser width than the upper series, all riveted together and constructed to present corrugated exterior faces bent to form reverse transverse concaves *d d* and protruding or bulging sides *s s*, with side gutters, *f*, on the upper face of the combined plate, substantially as and for the purposes herein set forth.

300,297. AUTOMATIC SPRING SHADE-ROLLER. JOSEPH J. ADGATE and FRANCIS HEKMAN, New York, N. Y., assignors to Stewart Hartshorn, Millburn, N. J. Filed Mar. 13, 1884. (No model.)



Claim.—The combination, with a shade-roller, of end plate, C, an end cap having a flange, D, the central spindle having ratchet *f*, and a pawl or pawls, *d*, held by its heel in a socket, and between plate C and flange D, and adapted to catch by its toe in the ratchet *f*, substantially as shown and described.

300,298. HARNESS-LOOP STICK. HENRY H. BAKER, Jr., Buffalo, N. Y., assignor of one-fourth to Pratt & Letchworth, same place. Filed Apr. 1, 1884. (No model.)

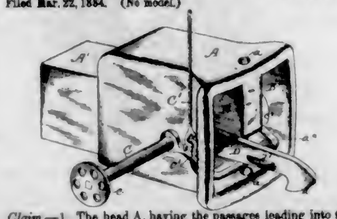


Claim.—1. A loop-stick composed of two or more bars, substantially as described, of unequal widths, and provided with a suitable connecting device, whereby said bars are secured together, substantially as set forth.

2. A loop-stick composed of two or more tapered or wedge-shaped bars having parallel edges, and provided with heads B and a connecting device, whereby said bars are secured together with their parallel edges in contact, substantially as set forth.

3. The combination, in a loop-stick, of two or more bars, one of said bars being provided with a laterally-projecting stud, *d*, and the other of said bars provided with a transverse slot, *e*, whereby said bars are secured together, substantially as set forth.

300,299. CAR-COUPLING. HENRY T. BEAN, Robinson, Ill., assignor of two-thirds to William C. Jones and Thomas Aten, both of same place. Filed Mar. 22, 1884. (No model.)



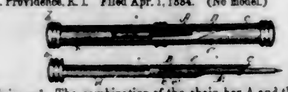
Claim.—1. The head A, having the passages leading into the compartments B B' beveled upward, and the shaft C, passing therethrough, supported by the floor of the beveled passages, and adapted for engagement with the coupling-hook, in combination with a hook, D, loosely mounted on the shaft C, and the arm or arms *c'*, rigidly mounted on said shaft and passing through the compartments, substantially as shown and described.

2. The combination of the shaft C, arms *c'*, and spring-finger or guides a^4, substantially as shown and described.

3. The combination of the shaft C, and having arms *c'*, with hooks D, having the ribs or flanges *d'*, substantially as shown and described.

4. The combination of the head A, having the compartments B B', the hook D, and shaft C, with the latch a^3 and spring a^3, substantially as shown and described.

300,300. COMBINED CHAIN-BAR, PENCIL, AND TOOTH-PICK. DANIEL F. BRIGGS, Attleborough Falls, Mass., assignor to William Smith & Co., Providence, R. I. Filed Apr. 1, 1884. (No model.)



Claim.—1. The combination of the chain-bar A and the removable tube D, having a point, *c*, adapted for a tooth-pick, and provided with a slot, *d*, with the pencil mechanism E, provided with a finger-pin adapted to enter the slot *d*, substantially as described.

2. The combination of the chain-bar A and the removable tube D, having a point, *c*, adapted for a tooth-pick and provided with a slot, *d*, with the pencil mechanism E, and the inclined pin *e*, adapted to enter the slot *d*, substantially as and for the purpose set forth.

300,301. PORTABLE BRIDGE FOR UNLOADING EARTH-SCRAPERS. BARTLEY L. BURRIS and CLARENCE S. WOODMAN, Wichita, Kans. Filed Nov. 1, 1883. (No model.)

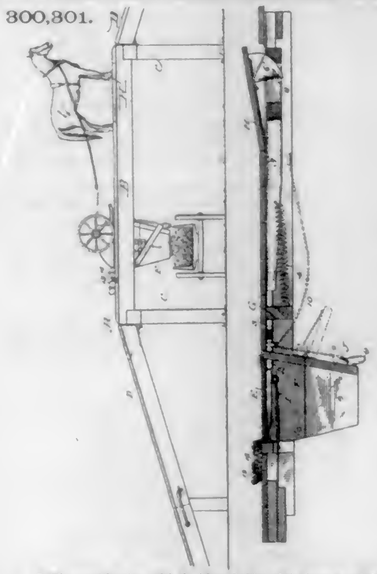
Claim.—1. A portable bridge for the purpose described, consisting of an elevated platform, inclined ways at the opposite ends, a trap-door in the platform, and means operated by the team to permit said trap-door to open, substantially as described.

2. The combination of the elevated platform, a trap-door, and spring-bolts for locking such trap-door, with the hinged section of the platform connected to the said bolts, for the purposes set forth.

3. The combination, with the elevated platform, of the hinged trap-door, the slotted spring-rod and locking-bolts, and the hinged section having the projecting cam, and the springs, substantially as described.

4. The combination, with the elevated platform, of the trap-door and its operating devices, the adjustable hopper having movable sides, and means, substantially as described, for operating the same, for the purpose set forth.

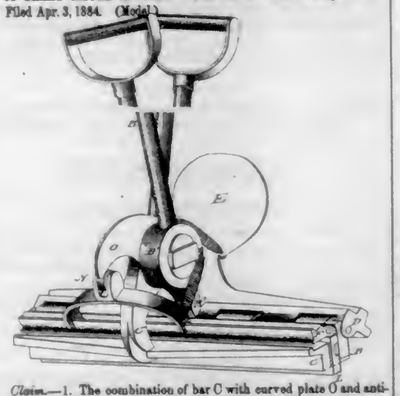
300,301.



5. The combination, with the hinged sides of the hopper, of the yoke J, connected to each of the sides and adapted to operate substantially as described.

6. In combination with the elevated platform having the trap-door, for the purpose set forth, the sliding projection on the floor of the platform adapted to trip the catch of the scraper.

300,302. MACHINE FOR SEAMING OR DOUBLE-SEAMING JOINTS OF SHEET-METAL ROOFING. ORRIN W. BURRITT, Woodsport, N. Y. Filed Apr. 3, 1884. (Model.)



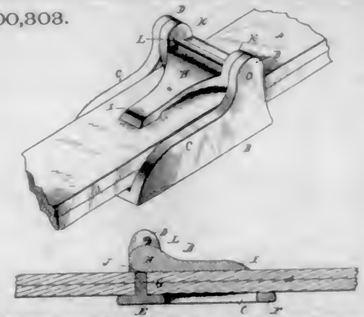
Claim.—1. The combination of bar C with curved plate O and anti-friction roller N, attached to standard on lip F, hinged to cored bar B, and means for operating, substantially as and for the purpose set forth.

2. The means for adjusting the height of the seamer, consisting of cored bar B, with slotted bottom, adjustable gage L, with loops or tongues, and stop-button M, attached to cored bar B, and stop-catch on gage L, the combination arranged to operate substantially as herein shown and described, for the purposes set forth.

300,303. BUCKLE. EDWARD FRANKLIN BUTLER, Whitewater, Wis. Filed Mar. 25, 1884. (No model.)

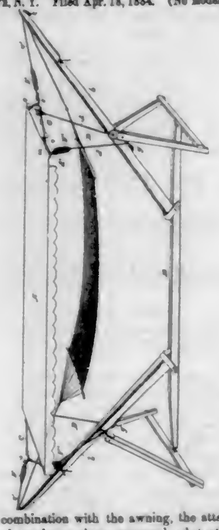
Claim.—1. The herein-described buckle, comprising the frame, a tongue or stud projecting from the same, and a lever journaled in the sides of the frame, one end of the lever being formed cam-shaped, to bear directly over the tongue, and the other end terminating in a handle, which bears against the leather, as set forth.

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2. The herein-described buckle, comprising the frame having a projecting tongue or stud at one end, a lever pivoted in the sides of the frame, and having a cam-shaped face at one end, to bear against the leather adjacent to the tongue or stud, and the other end of the lever terminating in a handle, the inner face of the lever and the end of the handle being formed flat, to bear against the leather, as set forth.

300,304. ATTACHING DEVICE FOR AWNINGS. HENRY BUTTERWORTH, Watertown, N. Y. Filed Apr. 18, 1884. (No model.)



Claim.—1. In combination with the awning, the attaching means comprising cords and tension-springs, arranged substantially as indicated, for taking up slack and holding the awning taut, substantially as described.

2. The herein-described attaching devices for awnings, comprising two sets of cords at each end of the awning, one or more springs adapted to yield when tension is applied to the cords, and to take up the slack when the tension is removed, being included in each set, substantially as and for the purpose set forth.

3. The combination of the awning, the suspending-cords, the springs, and fastening devices, all substantially as described, whereby the awning can be quickly fastened to a frame or support, and all the slack therein automatically taken up, as set forth.

4. In an awning attachment, the combination, with the cords having a knot or enlargement at the end, of the spiral springs made smaller at one end than at the other, so as to prevent the knot or enlargement passing through it, substantially as described.

5. The combination of the suspending-cords *c'*, adapted to be fastened to the frame, the device E, having an eye at one end, and the cord *c*, running in said eye and secured at each end to the awning, substantially as described.

6. The combination, with the awning, of the two sets of attaching devices C and D, the former comprising a spring, a hook connected therewith, and a cord running through an eye formed at the end of said hook, and attached at each end to the awning, the latter set comprising a cord

and springs, and likewise attached at each end to the awning, both sets being provided with means—such as hooks, eyes, or rings—for attachment to a frame or support, substantially as described.

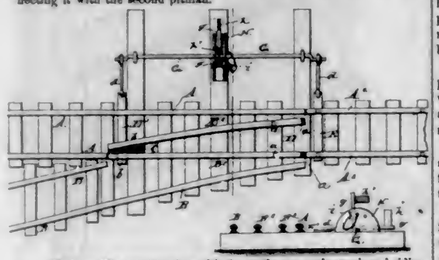
300,305. CUTTER-HEAD. ULDERIC D. BYRON, Chicago, Ill., assignor of one-half to Albert K. Dike, same place. Filed Oct. 9, 1883. (No model.)



Claim.—As an improvement in solid cutter-heads for molding leather or wood, the cutters formed with curves on their faces *c*, to cut the desired contour, with flat outsides *d*, for the purpose of sharpening them without changing their shape, and with enlarged recesses between the cutters for the escape of chips, as specified.

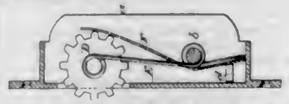
300,306. RAILROAD-TRACK. THOMAS CHRISTIE CARROLL, West Plains, Mo. Filed Jan. 4, 1884. (No model.)

Brief.—The device embraces a horizontal crank-shaft, two arms rigidly secured to the shaft ninety degrees apart, to serve both as signals to indicate the position of the switch and as levers for rocking the shaft, pitmen, spring switch-rails of the common track, a rod pivoted to said rails and connected to one of the pitmen, spring converging inner rails of main track, and siding fixed at ends abutting on said switch-rails and vibrating at their converging ends, a block placed between said vibrating ends, leaving space for wheel-flanges, and having the said converging rails loosely connected thereto, and a rod pivoted to the block and connecting it with the second pitman.



Claim.—The combination, with the stationary main-track and siding rails, of the springing switch-sections B^3 B^3, connected to a block, *c*, the rod E', pivoted or otherwise loosely connected to this block, the springing rail-sections A^3 A^3, the rod E, pivoted or otherwise loosely connected to these sections, the signal-arms connected to crank-shaft G, and the rods *d*, connecting the rods E E' to said shaft, all constructed and adapted to operate substantially in the manner and for the purposes described.

300,307. SASH-HOLDER. JOSEPH PETER CENTNER, Pittsburg, Pa. Filed Sept. 24, 1883. (Model.)



Claim.—1. A sash-holder consisting of a box or casing containing a pinion journaled in a spring secured to a cross-pin, and bearing against a cross-bar, *d*, substantially as shown, and for the purpose set forth.

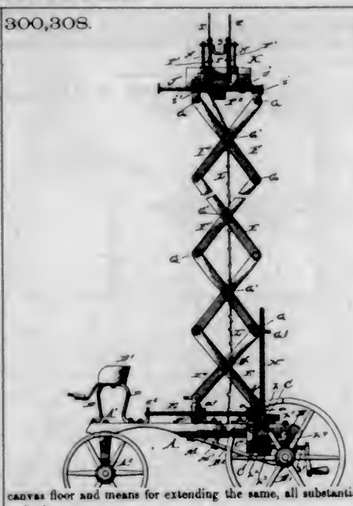
2. The combination of racks C, secured to a window sash or frame, with pinions D, journaled in a forked spring, E, secured to a pin, *b*, attached to a receptacle, *a*, and an auxiliary spring, F, all constructed and arranged substantially as and for the purpose herein set forth.

300,308. FIRE-ESCAPE. JUDEX A. CRANDALL, Brooklyn, N. Y., assignor to himself, John Wood, and WM. H. Flandrow, all of same place. Filed Feb. 7, 1884. (No model.)

Brief.—The top of the lazy-tongs structure is provided with a horizontally-extensible bridge having a flexible fire-proof canvas flooring and means for extending it. The flexible ladder inside the structure is arranged to bear against the fulcrum-bars of the lazy-tongs as a support.

Claim.—1. A vertically-extensible portable frame, in combination with a horizontally-extensible bridge provided with a flexible fire-proof

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canvas floor and means for extending the same, all substantially as described.

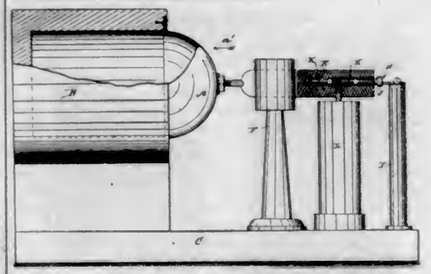
2. The combination, with the reaches of a carriage, of an extensible lazy-tongs frame, an extensible platform at the upper end thereof provided with a fire-proof fabric, applied as described, with a ladder arranged inside of said frame and adapted to bear on the internal fulcrum-bars of the levers thereof, substantially as described.

3. The combination of vertically-movable lazy-tongs or levers, the platform at the upper end thereof, the horizontally-extensible bridge provided with a flexible floor, the internal bracing-bars, G', a windlass and a lever, T, all constructed and adapted to operate substantially in the manner and for the purposes described.

4. The combination of a vertically-extensible lazy-tongs frame, with a cage or platform at the upper end thereof, a horizontally-extensible frame applied to the said platform, and flexible fire-proof canvas floor therefor, substantially as described.

5. In a fire-escape, the combination of a horizontally-extensible fire-proof bridge, a flexible fire-proof floor therefor, a vertically-extensible frame, a flexible ladder inside thereof, and a carriage on which the whole is mounted, substantially as described.

300,309. BURGLAR-ALARM FOR SAFES. WM. Y. CRUIKSHANK, Danville, Pa. Filed Nov. 16, 1883. (Model.)



Claim.—1. In a safe-blower alarm, the combination of clamps for holding matches and the fuse of an explosive with a movable friction-plate secured to a head adapted to be operated by the force of the explosive, and thereby ignite the matches and fuse and sound an alarm, substantially as set forth.

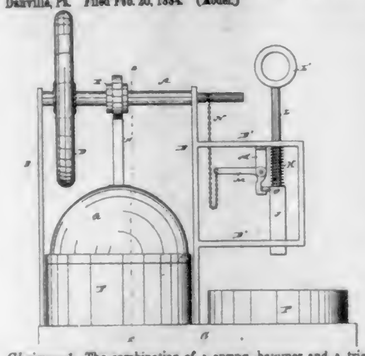
2. In a safe-blower alarm, the combination, with the cylinder B, of the elastic head A on the same, the roughened plate or strip E, secured to the head A, and the clamps H, substantially as herein shown and described.

3. In a safe-blower alarm, the combination, with the cylinder B, of the elastic head A on the same, the roughened plate or strip E, secured to the head A, the guide-standard F, and the clamps H, substantially as herein shown and described.

4. In a safe-blower alarm, the combination, with the cylinder B, of the elastic head A on the same, the roughened plate or strip E, secured

to the head, the standard I, the clamps H, pivoted to the top of the standard I, and the elastic band or spring J, substantially as herein shown and described.

300,310. BURGLAR-ALARM FOR SAFES. WM. Y. CRUIKSHANK, Danville, Pa. Filed Feb. 20, 1884. (Model.)



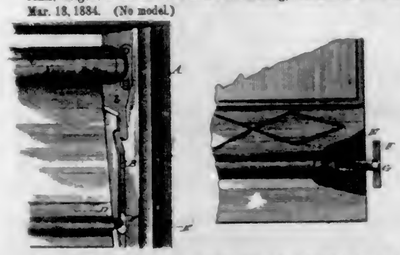
Claim.—1. The combination of a spring-hammer and a trigger therefor with a cylinder provided with a collapsible cover or cap, and suitable connections between the said cap and the trigger, whereby when an attempt is made to enter a safe provided with the above alarm, by the use of explosives, the air within the safe will be compressed, thereby causing the cover or cap to collapse and through its connection withdraw the trigger from contact with the hammer, substantially as set forth.

2. In a burglar-alarm for safes, the combination, with the spring-hammer J, of the trigger-lever M, the shaft connected by a chain with the trigger M, the chamber F, the rubber cap G on the same, and the band H, connecting the cap G with the shaft A, substantially as herein shown and described.

3. In a burglar-alarm for safes, the combination, with the shaft A, of the fly-wheel D, the pulley E, the chamber F, the rubber cap G, the band H, secured to the cap and to the pulley E, the spring-hammer J, the trigger M, and the chain N, connecting the trigger M with the shaft A, substantially as herein shown and described.

4. In a burglar-alarm for safes, the combination, with the shaft A, of the wheel D, the pulley E, the chamber F, the rubber cap G, the band H, secured to the pulley E and to the cap G, the hammer J, having projection O, the spring K, the ring L', the trigger M, and the chain N, connecting the shaft A with the trigger M, substantially as herein shown and described.

300,311. CURTAIN-SHADE FIXTURE. JAS. DENYER, New Haven, Conn., assignor of one-half to William H. Paulding, Peekskill, N. Y. Filed Mar. 18, 1884. (No model.)

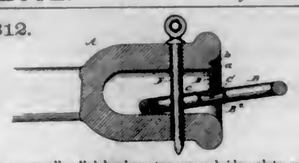


Claim.—The combination of the spring-roller, the curtain, the rod D, having female screw-recesses at opposite ends, adjustable screws E G, inserted into said recesses, disks or rollers F, and rabbeted grooves or ways B, substantially as and for the purpose herein shown and specified.

300,312. CAR-COUPLING. FRANK S. DINON, Fort Scott, Kans., assignor of one-half to George B. Phinney, Benjamin F. Bepler, and John D. Hill, all of same place. Filed Mar. 24, 1884. (No model.)

Claim.—1. A car-coupling link having a longitudinally-shiftable suspension link or ring adapted to assume vertical and horizontal positions in relation to said link, and a draw-head provided with suitable projection or hook for receiving said suspension-link, substantially as herein set forth.

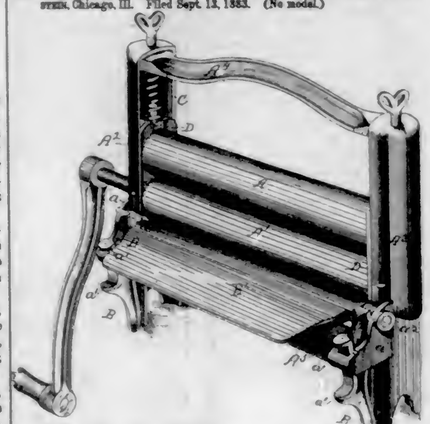
300,312.



2. A car-coupling link having a transverse bridge-plate and a longitudinal keeper or staple arranged on the top of said plate, in combination with a suspension ring or device fitted on said staple, and a draw-head provided with a suitable projection adapted to receive the suspension device of the coupling-link, substantially as herein set forth.

3. The car-coupling link having the longitudinal keeper or staple provided with depressions or notches, and the suspension-ring fitted on said keeper, in combination with a draw-head provided with a suitable projection for receiving the suspension-ring, substantially as herein set forth.

300,313. CLOTHES-WRINGER. EDWARD DUTHIL and FRITZ ROSENSTEIN, Chicago, Ill. Filed Sept. 12, 1883. (No model.)



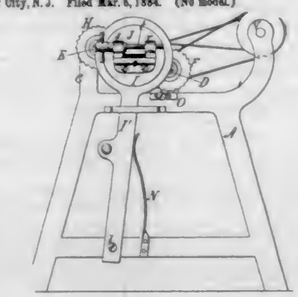
Claim.—1. In a wringing-machine, the combination of the fixed clamping-jaws having slotted lugs, and loose clamping-jaws having lips a' a', for the purpose set forth.

2. In a wringing-machine, the combination of the fixed clamping-jaws having slotted lugs, loose and clamping jaws having lips a' a', and means for forcing the lower ends of the jaws together, substantially as described.

3. In a wringing-machine, the combination of the fixed clamping-jaws having slotted lugs, loose clamping-jaws having lips a' a', and an apron having cam ends interposed between the clamping-jaws, substantially as described.

4. In a wringing-machine, the combination of the fixed clamping-jaws having slotted lugs, loose clamping-jaws having lips a' a', and an adjustable apron having shoulder-cams b, substantially as described.

300,314. BLIND-SLAT-TENONING MACHINE. SETH C. ELLIS, Jersey City, N. J. Filed Mar. 6, 1884. (No model.)



Claim.—1. The combination of the revolving disk I, having a central slat-opening and slat-clamp, the disk-carrier I', the tenoning-saws F F, and intermediate clearers, G, and the separating-saw H, the whole adapted to operate substantially as described.

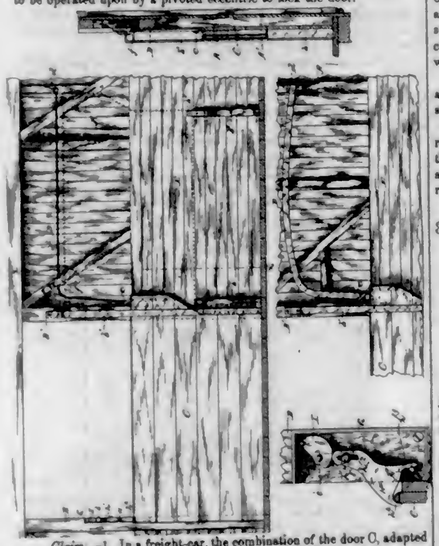
2. The combination of the revolving disk I, having a central slat-opening and slat-clamp, the slat end gage, K, the disk-carrier I', the tenoning-saws F F, and intermediate clearers, G, and the separating-saw H, the whole adapted to operate substantially as described.

3. The revolving disk I, having a central slat-opening and slat-clamp, the disk-carrier I', having a swinging motion, the spring N, for supporting the disk-carrier, and the stop O, for regulating the position of the carrier in relation to the tenoning-saws, in combination with the tenoning-saws and intermediate clearers, and the separating-saw, the whole adapted to operate substantially as described.

4. The revolving disk I, having a central slat-opening and a slat-clamp consisting of the ledge q, the adjustable stationary jaw r, the movable jaw s, and the screw t, acting on the movable jaw, in combination with the tenoning-saws and intermediate clearers and the separating-saw, the whole adapted to operate substantially as described.

300,315. RAILWAY FREIGHT-CAR DOOR. BEN EYSTER, Chicago, Ill., assignor of one-half to Anthony G. Van Schaick, same place. Filed Apr. 15, 1884. (No model.)

Brief.—A slotted loop is secured to one end of the door, and attached to and adapted to slide upwardly and horizontally upon a stationary guide-rail. A movable slotted dog provided with teeth is adapted to be operated upon by a pivoted eccentric to lock the door.



Claim.—1. In a freight-car, the combination of the door C, adapted to rest against the inside of the usual door-posts of such car, having a slotted iron or loop rigidly secured to one end, and attached to and adapted to slide upon a stationary guide-bar commencing at or near one of said door-posts, and extending thence upward about the height of the block b, and thence horizontally to a point near the end of said car, whereby said door may be guided upward and backward and retained in position upon the side and between the doorway and the end of said car, substantially in the manner and for the purposes set forth.

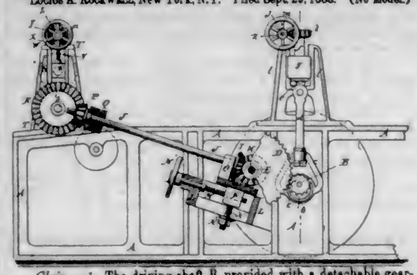
2. In a freight-car, the combination of the door C, adapted to rest, when closed, against the posts B B', guide-bar b', looped or slotted iron c, guide-rail D, and means for locking said door in position when closed, substantially as and for the purposes set forth.

3. In a freight-car, the combination of the door C, adapted to rest, when closed, against the posts B B', guide-bar b', looped or slotted iron c, guide-rail D, and dog H, substantially as and for the purposes specified.

4. The combination, with a freight-car, of the door C, adapted to rest, when closed, against the posts B B', guide-bar b', blocks b b^3, looped or slotted iron c, guide-rail D, and guard f, for the uses and purposes substantially as described.

5. In a freight-car, the combination of the dog H, having teeth h^3 h^3, pin h^4, and adapted to be raised and lowered upon a pin or bolt by means of a slot, h', an eccentric, i, or equivalent means for securing the same in position, and a sliding door, C, substantially as and for the purposes set forth.

300,316. CRACKER-MACHINE. CHARLES S. FOWLER, Brooklyn, and LUCIUS A. ROCKWELL, New York, N.Y. Filed Sept. 29, 1883. (No model.)



Claim.—1. The driving-shaft B, provided with a detachable gear-wheel, the shaft S, and its gear, in combination with the shaft J, pinion P, mounted thereon by a feathered connection, the said shaft J being provided with gearing at its other end, connecting it with the gear on the driving-shaft, and a bearing for the shaft J and the said gearing adjustable longitudinally of the said shaft J, substantially as set forth.

2. In a cracker-machine, the combination, with the gear-wheels P R, the feed-rolls, the gear-wheels D H I, and the driving gear-wheel C, of the sliding shaft J, the plate G, provided with bearings F F O, the adjusting-screw M, the clamping-screw N, and the supporting-frame L, substantially as herein shown and described, whereby the said gearing can be readily adjusted for use with a larger or a smaller driving gear-wheel, as set forth.

3. The combination of the cross-head g, flanged nuts f A, and mechanism for simultaneously operating said nuts, with the screws e, driving-shaft B, and their connecting devices, substantially as set forth.

4. In a cracker-machine, the combination, with the screws e, jointed rods d, and eccentrics b, the worm-wheels i, worms j, and shaft k, and the cross-head g, of the long nuts f, having end flanges, A, substantially as herein shown and described, whereby the said cross-head can be readily and accurately adjusted, as set forth.

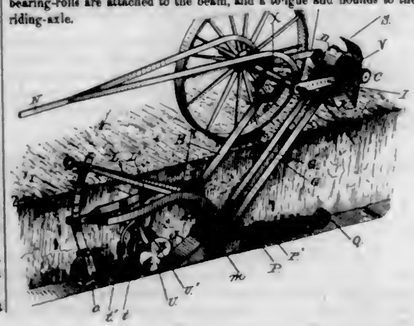
300,317. BIT FOR INSERTING SCREW-EYES. CHAS. E. GRIFFITH, Storm Lake, Iowa. Filed Mar. 21, 1884. (No model.)



Claim.—In combination with the brace A, the pivoted clamping-jaw C, having projections H, and the locking-ring E, the jaws B C being recessed to receive the eye F, and the whole adapted to serve as and for the purposes set forth.

300,318. DITCHING-MACHINE. DANIEL HERSEBERGER, Millville, assignor to Samuel Watson, Strangha's, and Jacob Spence and Adam Spence, both of Jackson, Ind. Filed Nov. 8, 1883. (No model.)

Brief.—A gear on one riding-wheel drives a pinion on the elevator-belt shaft, from which the belt-supporting bars run down to the plow, which has two parallel bars curving upward and forward, forming the beam. Through the forward end of the beam is adjusted a bar carrying a roller, and secured to draft-bars pivoted to the rear of the plow-beam, from which also runs a bar to the riding-axle. Rotary cutters and side bearing-rolls are attached to the beam, and a tongue and bounds to the riding-axle.



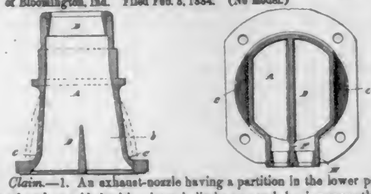
Claim.—1. In a ditching-machine, the plow-shaped excavator composed of the beam and standard K K', the mold-board J, the draw-bar L L', and arm M, with the wheel O, in combination with the rollers *t t'* and cutters U U', all constructed and operating in the manner and for the purpose herein described.

2. In a ditching-machine, the combination, with the tongue and bounds N, of the arms G G', the arm H, and the beam and standard K K', with the axle X, as herein described.

3. In a ditching-machine, the cog-wheel B, the pinion C, and drum D, the arms G G', shaft V, and endless-belt carrier F, in combination with the beam and standard K K', rollers *t t'*, cutters U U', standard M, and wheel O, substantially as herein set forth and described.

4. In a ditching-machine, the beam and standard K K', combined with the rollers *t t'*, cutters U U', and standard M, with wheel O, all in the manner and for the purpose herein set forth and described.

300,319. EXHAUST-NOZZLE. GEORGE D. HUNTER, Terre Haute, Ind., assignor of two-thirds to Morton C. Hunter and Thomas C. Van Nuys, both of Bloomington, Ind. Filed Feb. 8, 1884. (No model.)



Claim.—1. An exhaust-nozzle having a partition in the lower part thereof, and provided with a lateral discharge-neck having more than one passage through it.

2. An exhaust-nozzle having a lateral discharge-neck and a partition in the lower part thereof distended through said neck.

3. An exhaust-nozzle having its walls contracted at diametrical points and a partition located in the lower part thereof, and provided with a lateral discharge-neck.

4. An exhaust-nozzle having its walls contracted at diametrical points and a partition located in the lower part thereof, and provided with a lateral discharge-neck having one or more passages through it.

5. An exhaust-nozzle having its walls contracted, and a lateral discharge-neck, and provided with a partition in the lower part thereof distended through said neck.

6. An exhaust-nozzle having its walls contracted at diametrical points, and provided with a lateral discharge-neck having one or more passages through it.

7. An exhaust-nozzle having its walls contracted at diametrical points, and provided with a discharge-neck.

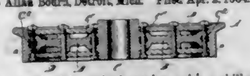
300,320. BOTTLE-STOPPER. MORRIS JOEL, Roanoke, Va., assignor of one-half to Millard F. Charles, same place. Filed Apr. 23, 1884. (No model.)



Claim.—1. The combination of a stopper, a bail carrying the same, a support for encircling the bottle-neck, a swinging lever attached at its extremities to the said support and pivotally connected with the ends of the bail, and a push-piece projecting horizontally, or approximately so, from one of the bail-arms, for swinging the lever, substantially as described.

2. The combination of the yoke-lever pivoted at its extremities to a support on the bottle, and having eyes intermediate its ends, with the stopper-carrying bail having one arm pivoted to one of the lever-eyes and the other arm passed through the other lever-eye, and extended horizontally, or approximately so, therefrom, to provide a push-piece, substantially as described.

300,321. CAR-WHEEL. GEORGE P. KING, St. Thomas, Ontario, Canada, assignor to Allan Bourn, Detroit, Mich. Filed Apr. 2, 1884. (No model.)

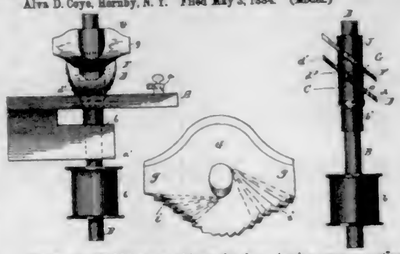


Claim.—1. A wheel formed of cast-iron with a chilled tread and a web connecting the tread and hub, in combination with wrought-metal plates having their inner faces bearing against the faces of the web, and securely fastened thereto at many points between the hub and the rim, substantially as and for the purposes described.

2. The combination, with a cast wheel provided with a chilled tread and a web joining the tread and hub, of wrought-metal plates having their inner faces resting against the web and securely riveted or bolted thereto at many points between the hub and the rim, substantially as described.

3. A car-wheel of cast-iron with a chilled tread provided with wrought-iron plates extending from the hub to the rim, and arched channel C^2 adjacent to the rim, substantially as described.

300,322. WABBLE-SAW. SAMUEL F. KEES, Monterey, assignor to Alva D. Ceye, Hornby, N. Y. Filed May 3, 1884. (Model.)



Claim.—1. Wabble-saws of irregular form, having upon a portion of their surfaces teeth of varying angles, arranged at different distances from the axis of motion, adapted to serve with a revolving spindle and beveled collars, as and for the purposes set forth.

2. The combination, with the spindle B *b'*, beveled collars C and F, and securing means, of the interchangeable wabble-saws, of various irregular contours, having teeth at different angles arranged at different distances from the axis of motion, the whole adapted to serve in cutting irregular forms, as set forth.

300,323. MATERIAL FOR PACKING BOTTLES. OLIVER LONG, Brooklyn, N. Y., assignor of one-half to Charles Schlatter and Charles Forster, both of New York, N. Y. Filed June 29, 1883. (No model.)



Claim.—As an article of manufacture, a material composed of two sheets of paper, each sheet having recesses or corrugations, secured together with the recesses in the sheets opposing each other, thus forming cavities, which are filled with hay, &c., substantially in the manner set forth, and for the purposes specified.

300,324. ALLOY FOR COATING METALS. CHARLES E. MANBY, McKeesport, assignor to Edmund C. Converse, Pittsburg, Pa. Filed Oct. 19, 1883. (Specimens.)

Claim.—The alloy composed of the following ingredients, in the following proportions: lead, from sixty to eighty per cent.; zinc, from ten to fifteen per cent.; tin, from fifteen to twenty per cent., and nickel from six one-hundredths of one per cent. to one per cent., substantially as set forth.

300,325. CAR-DOOR LOCK. SAMUEL CLARK NORTON, Hinckley, Minn., assignor to Maggie L. Norton, same place. Filed Sept. 24, 1883. (No model.)

Brief.—The lock is provided with an indicating mechanism to show how often the car has been unlocked.



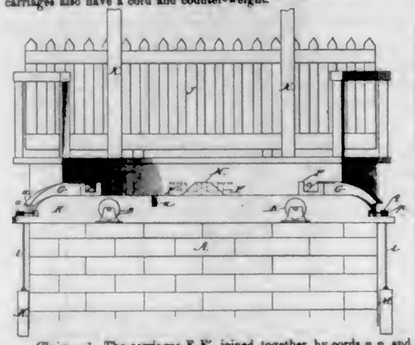
Claim.—1. The combination of a sliding car-door, a bolt, D, located in the body of the car and adapted to be thrown out and locked against the end of the door, a graduated drum, G, and mechanism connecting the bolt and drum, whereby the movement of the bolt for locking against the door moves the drum, substantially as and for the purpose herein specified.

2. The combination, with a sliding car-door, B, having hasp K, of the bolt D, having slot *r*, the said hasp and bolt having corresponding seal-openings, *t t*, and means for locking said bolt outward, substantially as described.

3. The combination of a car-door, B, a locking-bolt, D, located in the car-body and adapted to be thrown out and locked against the end of the door, bolt-locking lever E, graduated drum G, provided with ratchet-teeth H, pawl *i*, and key F, substantially as and for the purpose herein specified.

300,326. TURN-BRIDGE GATE. JOHN OSTERTAG, Jr., Chicago, Ill. Filed Feb. 19, 1884. (No model.)

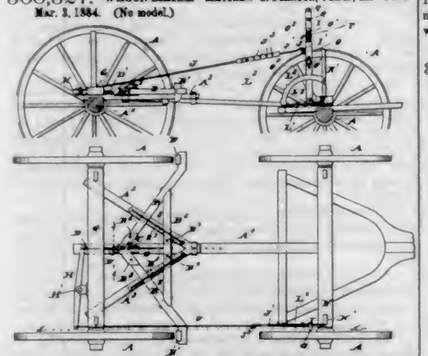
Brief.—An arm pivoted on the bridge engages and operates one of two carriages on the abutment, said carriages being connected by cords, and also connected to a vertically-moving counterweighted gate. The carriages also have a cord and counter-weight.



Claim.—1. The carriages F F', joined together by cords *n p*, and to gate J by cords *f*, in combination with said gate J, bridge C, and arm I, pivoted to said bridge, as and for the purpose set forth.

2. The carriages F F', provided with weights M, and joined together and to gate J by suitable cords, in combination with gate J, provided with weights L, bridge C, and arm I, pivoted to said bridge, as described.

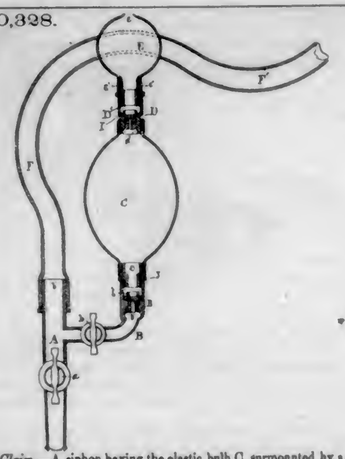
300,327. WAGON-BRAKE. MATTHEW T. PRESTON, Butler, Ill. Filed Mar. 3, 1884. (No model.)



Claim.—1. In a wagon-brake, the combination of the brake-beam provided with a brace-rod connected to the brace and passing back through the beam and rear bolster of the wagon, spiral spring surrounding the rod between the bolster and beam, lever to which the rod is connected, and a pull-rod connecting the said lever with a hand-lever at the front end of the wagon, substantially as set forth.

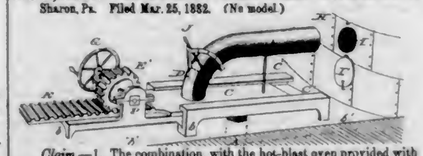
2. In a wagon-brake, the combination of beam B, brace B^2, bracket B^3, loops B^4, rod D, spring D', lever H, rod J J', bracket L, hand-lever I, with pins O', spring P, and pawl O, with slots O^2, all substantially as set forth.

300,328. SIPHON. FRANCIS D. RYAN, St. Louis, Mo., assignor of one-half to WM. H. STONE, same place. Filed Feb. 1, 1884. (No model.)



Claim.—A siphon having the elastic bulb C, surmounted by a glass globe, E, having a vent-hole and a stop-cock, *b*, between the bulb and the discharge-tube A, said discharge-tube having the stop-cock *a*, all combined substantially as and for the purpose described.

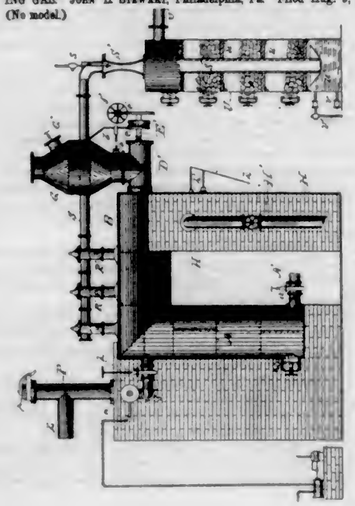
300,329. VALVE FOR HOT-BLAST OVENS. JOHN J. SPEARMAN, Sharon, Pa. Filed Mar. 25, 1882. (No model.)



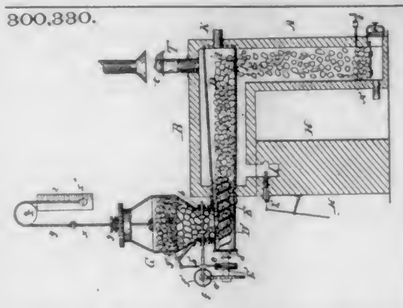
Claim.—1. The combination, with the hot-blast oven provided with opening I, the main A, and bed-plate provided with an opening connecting with said main, of the pipe D and slide-valve C, secured to said pipe, and means for actuating the same, as and for the purposes described.

2. The combination, with the hot-blast oven provided with opening I and door I', the pipe D and slide-valve C, secured to said pipe, and means for actuating the same, of the main A and the bed-plate provided with an opening connecting with said main, as described.

300,330. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed Aug. 9, 1883. (No model.)



300,330.



Claim.—1. The process of generating gas, which consists in producing water-gas by the decomposition of steam in contact with heated carbon, drawing such gas while hot directly into a vaporizing and mixing conduit by means of a jet of oil under pressure, and thereby forcing the gas into the vaporizer and carbureting it, and then combining and fixing the mixture in heated retorts.

2. The process of generating gas, which consists in raising a body of fuel to a state of incandescence by a blast of air, heating one or more coal-distilling retorts by the hot gaseous products, and also heating one or more sets of fixing-retorts by the combustion of such products by means of air, decomposing steam in the incandescent fuel, and distilling bituminous coal by the heat of the resulting gases, then conducting such gases and the carbureted hydrogen from the coal to the heated retorts, and therein carbureting them with hydrocarbons and converting the mixture into a fixed gas.

3. The process of generating gas, which consists in raising a body of fuel in one generator to incandescence by an air-blast, and heating one or more coal-distilling retorts by the waste gaseous products, and the partial combustion of the same, reducing the coal to coke, and at the same time decomposing steam in the other generator and distilling bituminous coal, conducting away the gases, carbureting and fixing them in heated retorts, and replenishing the fuel as it is consumed in the steam-decomposing chamber by discharging therein hot coke from the distilling-retorts.

4. The two decomposing and generating furnaces A, in combination with a chamber, C, containing retorts for combining and fixing gas, and a perforated flue extending through and across chamber C, the valved flue connecting generators A with chamber C, and an air-supply pipe extending into such flue, whereby air is heated for supporting combustion of the waste gaseous products from the generators around the retorts.

5. The generating-furnaces A, the connected retort-chambers B, in combination with the coal-retorts, a gas-eduction pipe conducting gas from both the furnace and retorts, the tight coal-feeding apparatus and supply-hoppers, and the operating mechanism therefor, as described.

6. The combination of a steam decomposing and generating furnace having air and steam supply pipes, a connected retort-chamber containing a coal-retort, with the fixing-retorts and connecting-pipes.

7. The process of generating gas, which consists in raising a body of fuel to a state of incandescence by a blast of air, heating one or more coal-distilling retorts by the initial heat of the resultant gases, and a partial combustion of them, and also heating one or more sets of retorts by the complete and final combustion of the same, decomposing steam meantime by the incandescent fuel, utilizing the heat of resultant gases to distill bituminous coal, then conducting such gases and the carbureted hydrogen from the bituminous coal to heated mixing-conduits, carbureting them with hydrocarbon, then converting the mixture into a fixed gas in one or more fixing-retorts, from whence they are conducted to scrubbers and holders.

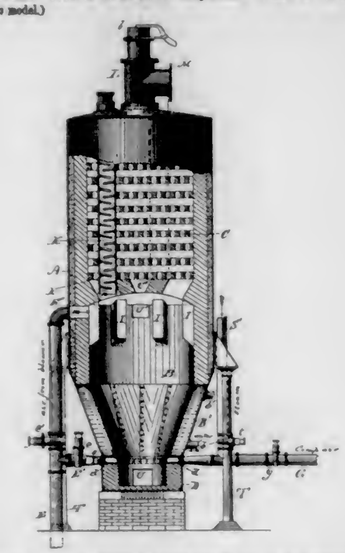
8. The combination of the coal-distilling retort, the feeding-screw therein, the tightly-closed coal-hopper opening into the retort, and having a toothed agitator in its mouth, and the connected mechanism for operating the screw and agitator, as described.

9. A gas-generator, in combination with the vaporizing and mixing conduit or retort, a connecting-pipe, an oil-forcing pump, and a pipe connecting it with the vaporizing-conduit near the entrance of the gas-pipe.

10. A gas-generator, in combination with a vaporizing and mixing conduit or retort, a connecting-pipe, an oil-spraying nozzle in the head of the vaporizing-conduit, an oil-forcing pump, and a pipe connecting it with the oil-nozzle, as and for the purpose described.

11. The combination of the vertical retorts, the eduction-pipe S, the direct connecting-pipes, an exhauster, and a dip-pipe leading therefrom into a hydraulic seal, whereby one sealed pipe serves for all the retorts.

300,331. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. JOHN L. STEWART, Philadelphia, Pa. Filed Oct. 9, 1883. (No model.)



Claim.—1. The process of manufacturing gas, which consists in raising a body of fuel to incandescence by combustion thereof with air and decomposing steam in contact with the incandescent fuel by intermittent operations, and periodically raising and breaking up the body of fuel by sudden puffs or blasts of a gaseous or seriform fluid under high pressure greater than the ordinary air-blast, for the purpose described.

2. The process of generating gas, which consists in distilling bituminous coal by direct contact with incandescent or highly-heated fuel in a furnace, decomposing steam by passage through the heated fuel, and periodically fracturing and disintegrating the caked masses of coal or coke by the admission of sudden puffs or blasts of highly-compressed gaseous or seriform fluid.

3. In the manufacture of gas with bituminous coal in furnaces, the method of fracturing and disintegrating the caked masses of coal or coke, which consists in admitting to the fuel periodically sudden puffs or blasts of highly-compressed gaseous or seriform fluid.

4. In the manufacture of gas by the distillation of bituminous or soft coal in a furnace, the method of fracturing and disintegrating the caked masses of coal or coke, which consists in periodically forcing the fuel by sudden puffs or blasts of gaseous or seriform fluid under high pressure against rigid projections in the furnace, whereby the air to promote combustion and steam for decomposing may be passed freely through the fuel and in contact with a much greater number of carbon surfaces.

5. In combination with a gas-generating furnace, the ordinary blast-pipe connecting with a blower, and a blast-pipe for gaseous or seriform fluid connecting the generator with a compression-chamber for such fluid.

6. A gas-generating furnace having a fuel-chamber which tapers from above downward toward the ash-pit, and having projecting brick or other rigid obstructions extending into the fuel-chamber, for the purpose described.

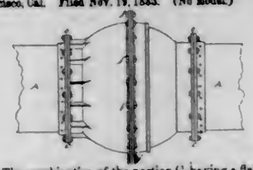
7. In combination with the fuel-chamber of a gas-generating cupola, the fixed projections extending into the fuel-chamber from the sides or top, and a connecting blast-pipe for admitting compressed gaseous or seriform fluid in sudden puffs, for the purpose described.

8. The fuel-chamber of a gas-generator, provided with rigid projections extending into it from the walls or top, in combination with a storage-chamber for compressed gaseous or seriform fluid, and a connecting blast or puffing pipe, for the purpose described.

9. The fuel-chamber of a gas-generating cupola, having a tapering form toward the ash-pit, and provided with rigid projections extending into it from the walls, in combination with a compression-chamber and a connecting blast-pipe, for the purpose described.

10. A gas-generating furnace having a water-jacket of tapering form downward and forming the inner wall, and also having fixed projections extending from the walls or top into the fuel-chamber, for the purpose described.

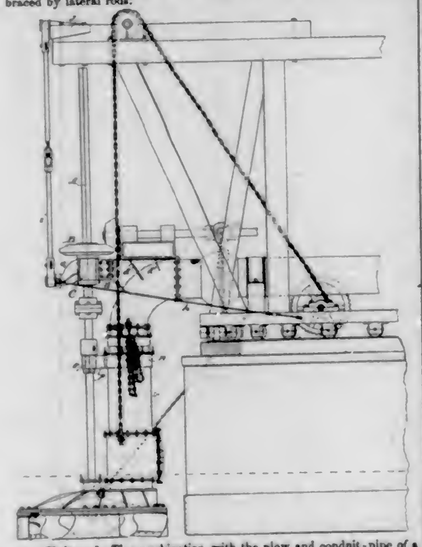
300,332. UNIVERSAL BALL-JOINT. ALEXEY W. VON SCHMIDT, San Francisco, Cal. Filed Nov. 19, 1883. (No model.)



Claim.—The combination of the portion C, having a flange to which the pipe is joined by a similar flange, and the strengthening-ribs, for the purpose set forth, the portion B, adapted to enter the portion C, and the securing-ring E, the portion C and the ring E each having openings *a*, for the reception of a packing-ring, substantially as described.

300,333. DREDGING-MACHINE. ALEXEY W. VON SCHMIDT, San Francisco, Cal. Filed Jan. 14, 1884. (No model.)

Brief.—An angular rotating plow or cutter-shaft is supported from a dredger suction-pipe by a bracket made in two parts and receiving the shank of a crown-wheel, through which such shaft passes. The forward end of this bracket is supported by a rod adjusted by a turn-buckle and braced by lateral rods.



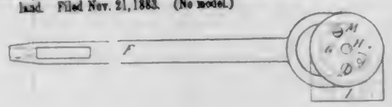
Claim.—1. The combination, with the plow and conduit-pipe of a dredger of the kind specified, of the shaft A, angular in cross-section, the crown-wheel B, having a central opening adapting it for the reception of a shaft, A, and the bracket C, made in two parts and adapted for the reception of the shank of the wheel B and secured to the pipe, substantially as described.

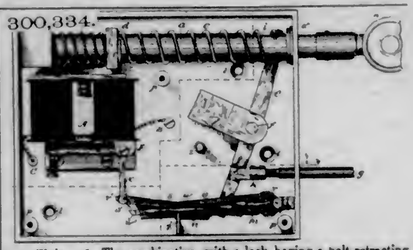
2. The combination, with the plow-shaft and conduit-pipe of a dredger of the kind specified, of the bracket-bearing made in two parts, and the gear-wheel B, having the shank *d* and central angular opening, substantially as described.

3. In combination with the conduit-tube and plow-shaft of a dredger of the kind specified, the bracket C, constructed as described, and the rod *i*, having turn-buckle, substantially as described.

4. The combination, with the plow-shaft and conduit-tube of a dredger of the kind specified, of the bracket C, having the projection *e* and the rods A, substantially as described.

300,334. ELECTRIC DOOR-LOCK. CONRAD WÜRST, Zurich, Switzerland. Filed Nov. 21, 1883. (No model.)





Claim.—1. The combination, with a lock having a bolt-retracting spring which is automatically contracted through the instrumentality of a lever by the opening or shutting of the door and held by a trigger, of a rod pivoted to the door-casing and attached to the lever of the bolt-retracting mechanism, whereby the latter is automatically set, when the door is swung open, by the movement of the rod with respect to the lock, substantially as and for the purpose described.

2. The combination, with a lock having an automatically-retracting bolt mechanism held by a trigger-lever, of a rod pivoted to the door-casing and attached to the bolt-retracting mechanism, and an electro-magnet, the armature of which engages and holds said trigger-lever, whereby the bolt-retracting mechanism is set in operation by an electric impulse, and the same is then automatically reset when the door is swung open, substantially as and for the purpose set forth.

3. The combination, with the sliding bolt *a* of a self-setting lock, of two coiled springs, *b* and *c*, of different strength encircling the bolt, the weaker of which operates to project the bolt and the stronger to retract it, together with the lever *e*, which operates to compress and hold the spring *c*, and a trigger mechanism holding said lever, substantially as and for the purpose set forth.

4. The combination, with the sliding bolt *a*, having the head *a'* and the slot *i* of an automatically-setting lock, said bolt passing through a lug, *d*, attached to the casing, of a weak projecting-spring, *b*, encircling the bolt between the lug and head, and a strong retracting-spring encircling the bolt between the lug and slot, together with the spring compressing and holding lever *e*, passing through the slot, substantially as and for the purpose set forth.

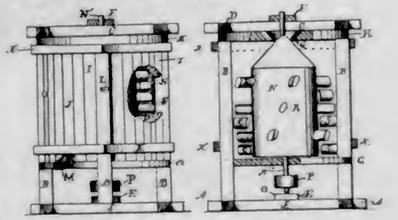
5. The combination, with a lock having an automatically-retracting bolt mechanism, of the spring compressing and holding lever *e*, the weighted hook *m*, pivoted at the lower end thereof, and the trigger-lever *o*, having a notch or shoulder with which the hook *m* can engage, substantially as and for the purpose set forth.

6. The combination, with a lock having an automatically-retracting bolt mechanism, of the spring compressing and holding lever, and a system of compound levers, each of which has a projection near its fulcrum with which the preceding lever can engage, and an articulated tip to engage with the succeeding lever, together with a trigger-lever engaging with the tip of the last of the system, the whole forming a trigger mechanism which holds the bolt-retracting spring with a slight pressure on the trigger, substantially as and for the purpose set forth.

7. In combination with a lock having an automatic bolt-retracting mechanism, the bracket L, adapted to be fastened to the casing of a door, and having the notched block L', together with the ring G, having cam H and rod *g*, connected with the lock, the block L' fitting within the ring and forming a surface for the same to bear against, substantially as and for the purpose set forth.

8. In combination with a lock having an automatic bolt-retracting mechanism, the bracket L, adapted to be fastened to the casing of a door, and having the notched block L' and friction-roller J, together with the ring G, having cam H and rod *g*, connected with the lock, the block L' and friction-roller J fitting within the ring and forming a surface for the cam to bear against, substantially as and for the purpose set forth.

300,335. RICE-HULLING MACHINE. ANDREW M. PATRICK, Brewton, Ala. Filed Oct. 26, 1883. (No model.)

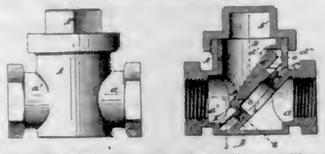


Claim.—1. In a hulling-machine, the combination of the following elements, viz: a supporting-frame constructed as described, the floor and top piece, G and H, the latter having the feed-opening Q, the conical-ended drum N, provided with slightly-flattened beaters R, arranged spirally on its periphery, the hulling-chamber composed of the stave-sections J, having slightly-flattened beaters S, the ribs or bands K, made in sections, suitable fastening devices for the latter, the shaft N', the pulley P, and the exit-spout M, all as shown and described.

2. In a rice-beating apparatus, the supporting-frame, the grain-chamber composed of the top and bottom pieces, G and H, the stave-sections J, having slightly-flattened beaters S, the sectional enveloping ribs K, having notched ends *k*, and suitable securing devices for said ribs, combined with the drum N, having spiral beaters R, substantially as described.

REISSUES.

10,487. CHECK-VALVE. JAMES H. BLESSING, Albany, N. Y. Filed Oct. 9, 1883. Original No. 281,439, dated July 17, 1883.



Claim.—1. In a straight-way valve, the combination, with a valve-casing, A, having a transverse partition or diaphragm, B, arranged in an inclined position, as herein shown and described, and removable seat C, fixed on said partition, of the removable sleeve D, having its lower end made to conform to the angle of the partition B, the said sleeve being adapted to secure the seat C in its place, as herein specified.

2. In a straight-way valve, the combination, with a valve-casing, A, provided with a transverse partition or diaphragm, B, fixed in an angular position therein, as herein described, of the removable sleeve D, provided with recesses d^3, and the clack-valve E, provided with trunnions *e*, adapted to engage in the recesses d^3, as and for the purpose herein specified.

3. In a straight-way valve, the combination, with a removable sleeve provided with recesses or pockets, which are adapted to form one part of the hinge-joint on which the valve vibrates, of a clack-valve provided with trunnions adapted to engage in the recesses or pockets in the removable sleeve, in the manner and for the purpose herein specified.

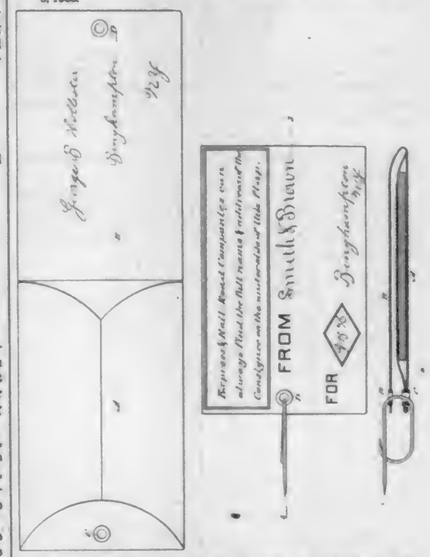
4. The combination, in a straight-way valve, of a valve-casing, an inclined removable valve-seat, an inclined valve, and a removable sleeve, the valve being pivoted in the sleeve, substantially as described.

5. In a straight-way valve having an inclined partition provided with an annular tongue or extension, combined with a valve-seat provided with an annular cavity, and adapted to inclose said extension, a packing between said valve-seat and partition, and a valve closing against the valve-seat, substantially as described.

6. The combination, in a straight-way valve, of a valve-casing, an inclined valve-seat, and a valve pivoted in a sleeve within the casing independent of the valve-casing itself, substantially as described.

7. The combination of the valve-casing A, the valve E, the detachable valve-seat C, and the bonnet A', the opening in the valve-casing closed by the bonnet being greater in diameter than the valve-seat C, or the valve E, thereby allowing of the removal of the valve and valve-seat through the opening closed by the bonnet, substantially as described.

10,488. COMBINED TAG AND ENVELOPE. JOSEPH T. DURHAM, Brooklyn, N. Y. Filed Mar. 13, 1884. Original No. 277,245, dated May 8, 1883.



Claim.—1. A combined tag and envelope, substantially as described, wherein the flap which closes the mouth of the envelope is fastened down by the cord or other device which secures the tag to the merchandise, as set forth.

2. A combined tag and envelope, substantially as described, the flap having an eyelet-hole which, when the said flap is folded down on the envelope, coincides with an eyelet-hole in the envelope, whereby the cord or hook for attaching the tag may be passed through both holes, substantially as set forth.

3. In a combined tag and envelope, the combination, with an envelope, A, having a flap, B, at one end, of the eyelet D in the free end of the flap, and the eyelet C in that end of the envelope opposite the one to which the flap is attached, substantially as herein shown and described, and for the purpose set forth.

PHOTO-LITH. NORRIS PETERS WASHINGTON, D.C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

TURNER & SEYMOUR MANUFACTURING COMPANY *v.* DOVER STAMPING COMPANY.

Decided April 14, 1884.

1. It is immaterial whether or not a certain construction might have been covered by the language of the specification, since the claims are to be dealt with and nothing else.
2. Reissue Letters Patent No. 6,542, granted July 13, 1875, to Timothy Earle, for an improvement in egg-beaters, eleven years after the grant of the original patent, and with a broader claim than the latter, held to be invalid.

APPEAL from the Circuit Court of the United States for the District of Connecticut.

Mr. Jno. S. Beach and *Mr. Jno. K. Beach* for the appellants.

Mr. Thos. Wm. Clarke and *Mr. Elias Merwin* for the appellee.

Mr. Justice MATTHEWS delivered the opinion of the Court.

This is a bill in equity filed by the appellees as assignees of Timothy Earle, for an injunction and an account against the appellants as infringers of Reissued Letters Patent No. 6,542, for an improvement in egg-beaters, dated July 13, 1875, for which the application was filed June 8, 1875, the original No. 39,134, dated July 7, 1863. The bill was filed July 14, 1877, an interlocutory decree declaring the infringement and granting a perpetual injunction was pronounced July 9, 1879, and a final decree in favor of the complainants, confirming the master's report of the amount of profits made by defendants, was entered April 26, 1881. From this decree the present appeal is prosecuted.

The following is a copy of the reissued letters patent, in which the parts in italics are not in the original and the parts inclosed in [ ] are in the original and excluded from the reissue.

To all whom it may concern:

Be it known that I, Timothy Earle, of Lincoln, *(formerly Smithfield,)* in the county of Providence and State of Rhode Island, have invented [a] *certain* new and useful Improvements in Egg-Beaters; and I do hereby declare that the following specification, taken in connection with the drawing making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is a view of the beater. Fig. 2 is another view of the same, with the rack which works it shown. Fig. 3 is a top view of the same.

Various devices have been employed for the purpose of beating eggs more expeditiously than by the familiar hand process. One of these devices consists of two wire frames, one within the other, and made to revolve in opposite directions; another consists of a propeller-blade inside of a wire frame, the frame and blades being made to revolve in opposite directions; and still another consists of a propeller-blade, which is made to rotate, while a pair of beaters have at the same time a reciprocating motion.

All these machines, and all others with which I am acquainted, possess the common fault that the beaters, whether of wire or of the form of propeller-blades, do not cut the yolk and white of the egg, but literally beat them.

Now, as the albumen of an egg consists of a peculiar thick glairy substance, it can be worked more effectually with a cutting instrument than with one which has a blunt edge. In fact, so well is this understood that housewives [universally] *commonly* make use of the blade of a knife for the purpose.

My invention is designed to obviate the difficulty referred to; and consists in the use of *a revolving* frame, A, *formed of thin strips of metal of the form shown, and* mounted upon a spindle, B, around which it can freely rotate; *and also of* an outer *fixed* frame, C, of the same general form as the inner one, but large enough to permit the inner frame to rotate within it. *The outer frame* is attached to the spindle B, and *with it* furnishes a support *or frame for the operative parts of the machine* [for it.] The inner frame is *further* provided with a series of cutters *or blades*, [a a a a] *a a*, &c., arranged in any manner suitable for cutting *through* the fluid in many different [planes] *places*. These cutters *or blades* are simply pieces of sheet-tin or other suitable metal of the width of the inner frame, and *are attached to the same by their ends, as is shown, and they are all* so placed that their edges shall cut the material to be agitated when the frame A is rotated. *The blades which form the outer fixed frame C are also placed in a similar position, and when the machine is in operation, cut through the current of material which is carried past them by the revolving frame, and thus aid in the operation in a similar manner.* Upon the top of the frame A is attached a toothed wheel, D, through which, by means of the rack E, Fig. 3, worked by the hand, a rotary motion is given *to the inner frame A* in alternate directions. *The frame C, at its upper end, is so formed and arranged in relation to the pinion D as to leave the proper space between them, upon either side, to receive the rack E, and serve as a guide or bearing to keep the rack in gear with the pinion; and H is a circular flange attached to the lower side of the pinion to prevent the rack from falling down.*

My invention also relates to the method of holding the machine in position while it is used. In the previous machines for this purpose the machine has been generally attached to or supported upon and in connection with the vessel which contained the materials to be operated upon, thus requiring a specific kind of vessel for the purpose, which, in effect, formed part of the machine; or the frame of the machine was fixed to some stationary object, with the revolving beater or beaters projecting downward below the machine into the vessel which contained the matters to be treated, the vessel being held below the machine, and entirely detached from it. But by my improvement the machine becomes a separate detached implement, which can be used in any vessel, and without any mechanical fastening of the machine to the vessel or to any other object. This part of my invention, therefore, consists in providing the bottom of the fixed frame C of the machine with a foot, F, or other suitable support, to rest upon the bottom of the vessel to support the lower part of the machine and raise the revolving beater-frame A above the fixed frame C sufficiently to permit it to revolve freely; and also providing the top of the machine with a handle, G, by which the machine can be held upright upon the bottom of the vessel by one hand, while the beater-frame is operated by the other, as is described.

When the machine is to be used it is placed with its foot F resting upon the bottom of the vessel containing the broken eggs. The left hand bears upon the handle G and holds the machine in position. The rack E, held by the handle in the right hand, is engaged with the pinion D, and the proper motion imparted to the frame A.

It is obvious that a continuous rotary motion may be easily imparted to the frame A by means of a crank and suitable gearing, and the beneficial effect of the *blades or* cutters [a a a] *A a, &c.*, would be obtained as well; but I prefer the method described of communicating motion to the frame A, for the reason that the machine is more easily cleaned and is more convenient for domestic use.

[What I claim as my invention, and desire to secure by Letters Patent, is—

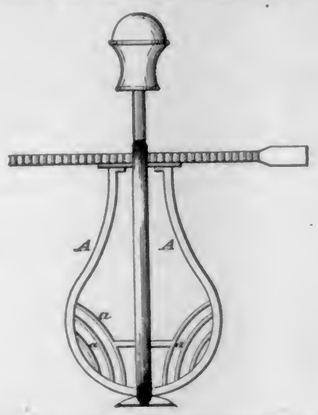
The use of a series of cutting-edges, *a a a a*, when attached to a frame, A, which is capable of being rotated substantially as described, for the purpose specified.]

What I claim is—

1. *The revolving beater-frame formed of thin plain blades or cutters, arranged to cut edgewise through the material by their rotation, substantially as described.*

2. *The combination of the fixed frame, which contains and supports the operative machinery, provided with a foot or support at the bottom, the handle at the top, and suitable mechanism for rotating the beater, substantially as described.*

The following is a copy of Figure 2, annexed to the specifications, and sufficiently illustrates them.



The cutting portion of the appellant's beater consists of an outer frame and inner frame, each of which is made to revolve around a central spindle by means of a cog-wheel and pinion. Each frame is composed of two curved pieces of tin joined together, or of one piece joined at its two ends, so as to make nearly a circle. These pieces are thin, plain, flat pieces of tin, and are so arranged as to cut edgewise through the material by their rotation. In neither the inner nor the outer frame are there any additional blades or cutters like the blades *a a a a*.

It is represented in the following drawing:



The controversy in the circuit court seemed to be mainly on the question of infringement; and that turned on the construction to be given to the first claim of the reissued patent, no point being made as to the second claim. It was insisted by the defendants below that their device was not an infringement of the claim as contained in the original patent, and that a fair construction of the first claim in the reissued patent would limit it substantially to the same thing. In deciding the point, the learned judge holding the circuit court said:

> The question of infringement of the first claim of the reissued patent depends upon the construction of the claim. If it should be properly limited so as to be confined to the frame with the cutters or blades, which are described in the specification and in the drawings—to wit, a frame with the cutters *a a a a*—then there is no infringement; but if the claim is to be constructed so as to include a beater-frame formed of thin plain blades, then the invention which is recited in the first claim is found in the defendant's egg-beater.

The devices which were in use prior to the invention of the plaintiffs' assignor were composed of round wire, which by their rotation broke rather than cut the material. The part of the invention which is the subject of the first claim consisted in such an introduction of the knife-blade of the housewife and the mechanism for operating the blade into an egg-beater that the egg could be rapidly cut and the egg-matter could be aerated and be beaten into froth. The original and also the reissued specification dwelt upon the particular form of the cutters of the inner frame, and the original claim limited the invention to the cutters *a a*, &c.; but the scope of the invention was larger, and the principle was embodied in any revolving frame composed of thin and plain, as distinguished from corrugated, cutting-surfaces, so arranged as when rotated to cut edgewise through the material, provided the frame was constructed and arranged substantially in the manner described in the specification. It is not claimed that the reissue is void upon the ground that it is for a different invention from that shown or indicated in the original specification, but such a construction is attempted to be given to the reissued claim as would limit it to the precise language of the surrendered patent. The patent was surrendered because the grant was not coextensive with the invention, and it would be an unnatural construction of the reissued patent which should cramp the claim within the limitations which had been discarded. In my opinion, the natural meaning of the words which were used is to be permitted, and, giving to the claim such a freedom of construction, the defendants' device is an infringement.

We are quite satisfied that the difference between the original claim and the first claim of the reissued patent is substantial and not verbal. The former is necessarily limited to the particular device described as a frame, with a series of cutting-edges attached in the mode designated and capable of rotation. The latter embraces every revolving beater-frame formed of thin plain blades or cutters, arranged to cut edgewise through the material by their rotation. It is immaterial whether or not the latter might have been covered by the language of the specification as included in the invention. We are dealing with the claims, and nothing else. And it cannot be successfully contended that the original claim implicitly contained all that is expressed in the claim of the reissued patent. The original claim has been made broader by the reissue, so as to embrace the device used by the appellants which was not previously an infringement. And that raises the question whether, under the circumstances disclosed by this record, the reissue is valid. To avoid this question it is, indeed, contended now by the appellees that the two claims under examination are identical; that their apparent differences are merely literal; that their meaning is the same; and this conclusion is thought to be reached, not by restraining the reissue to the language of the original, but by a process of construction, by the use of supposed implications, to expand the words of the original so as to cover everything embraced in the reissue, the only alternative, indeed, that could be adopted to escape the inconsistency of maintaining that claims which were diverse upon the question of infringement were identical upon the question of the validity of the patent. But, as already intimated, this position is not tenable. There is nothing in the language or recitals of the original patent, nor are there any just and reasonable inferences of which they are susceptible, which justify a construction of the claim that would embrace any device other than that described in the specifications and represented in the drawings, much less to include every mechanical arrangement which embodies a cutting-edge with a revolving frame to cut instead of break the egg material upon which it is meant to operate.

The question then recurs, what are the circumstances which affect the validity of the reissue, and how do they affect it? They are few, but decisive. The original patent was issued July 7, 1863. Eleven years after, in 1874, the competition of the appellants' device became apparent and was felt. In 1875 application was made for the reissue, the original patent was surrendered, and the reissued patent granted July 13, 1875. Here is a delay of nearly twelve years, without the offer of an explanation or excuse, without even the suggestion of inadvertence or mistake in the original application. The only inference that can be drawn is that the discovery and experience of successful competition in 1874 suggested first and led to the discovery that the original claim did not cover everything that might

have been embraced, and was not broad enough to maintain the monopoly desired but not secured. This brings the case directly within the principle of *Miller* v. *Brass Co.* (104 U. S., 350) and the numerous others which have followed it, including that of *Clements* v. *Odorless Apparatus Co.*, (109 U. S., 641,) all of which have been decided since the interlocutory decree in this case was pronounced.

For these reasons the decree of the circuit court is reversed, and the cause is remanded, with directions to dismiss the bill, and it is so ordered.

U. S. Circuit Court—Eastern District of Wisconsin.

SALADEE v. RACINE WAGON AND CARRIAGE COMPANY *et al.*

Decided April 28, 1884.

1. The scope of a patented invention may be so narrowed by the prior state of the art that infringement cannot be adjudged to exist unless there has been an appropriation in substantial form of construction of the identical elements which the inventor had a right to claim as new in his patent.
2. To constitute infringement, it must appear that all the elements of a patented combination, or their equivalents, have been appropriated.
3. The bill dismissed upon the ground of non-infringement, without deciding the validity of the reissue patent.

Messrs. Cotzhausen, Sylvester & Scheiber for the complainant.

Messrs. Fish & Dodge for the defendants.

DYER, *J.*:

This is a bill to restrain the alleged infringement by the defendants of Reissue Letters Patent No 9,729, granted to the complainant May 31, 1881, for certain improvements in running-gear for vehicles. The original patent (No. 148,497) was issued March 10, 1874. It is essential to determine first precisely what the complainant's invention is.

The specification and claims of the original patent are as follows:

> The first part of my invention consists in bending the front and rear bolsters and side perches in one piece, and splicing them together at or about the cross-center of the gearing, in such manner as to make, literally, an endless perch for carriage-gearing.
>
> The second part of my invention consists in supporting and operating two half-elliptic side springs between the two outside perches and upon two separate connecting-rods, the bearings of which latter are also secured to the perches.
>
> Carriage-gearing with two or more perches have a bolster resting upon both the front and rear axles, and in or upon which is secured the opposite ends of the two outside perches, each corner of the gearing presenting two ends, viz., the end of the perch and the end of the bolster, to be finished with a scroll, or otherwise, besides involving the cost of bolts and other necessary fastenings to make these connections secure. To obviate all this, I proceed to unite the bolsters and side perches as follows, viz: In the first place, I take two pieces of wood of the required thickness and depth for the bolsters at their heaviest point, and of a length equal to the length of one bolster and the half-length of each perch. These pieces are now bent into substantially the form shown from H to F of the drawing, and with the round corners S S S S. The opposite ends of these pieces A and A′ are then finished up as required, and are spliced together at F and F, after which the side perches, A and A, are plated with iron, in the usual way. It will now be seen that I have produced an endless perch by bending the bolsters A′ with the side perches, A, and splicing the latter at or about the cross-center of the gearing. By this means, I not only get rid of joining the perches A to the ends of the bolsters A′ at S, and the work of finishing the ends of each, as is required upon the old plan, but I produce a cleaner and smoother finish at these points, and save a great deal of work in the iron connections, otherwise necessary at these points. In all cases where elliptic springs are to be used over the front and rear axles, they are made to rest upon the ends of the perches or bolsters A′, between the dotted lines E, but in this case the front bolster A′ will be made considerably shorter than the hind one, so that the rear ends of the perches A will be farther apart than the front ends, and not parallel to each other, as seen in the drawing. If preferred to bend the perches in one piece, only one splice, F, will be necessary.

I am aware that two perches have been bent in one piece, as shown and described in the patent of John Curtice, of Cincinnati, Ohio, and in a former patent of my own. In the former case the perches are closed by the bend in front of the head-block over the front axle, with the rear ends of the perches left open and framed into the hind axle-bed or bolster, while in the latter case the perches are closed by the bend in the rear of the hind axle, and the front ends left open and framed into the head-block over the front axle. But my present invention, let it be well understood, differs materially from both of the forms above described, as well as from all other kinds of bent perches of which I have any knowledge, in this, that both ends of the perches are closed by the bend of the wood—making the bolsters and perches, when completed, in one continuous piece, or, in other terms, an endless perch.

The half-elliptic side springs B and B are linked to two separate connecting-rods, C and C, at D, between the two opposite perches A and A, and the body of the vehicle is then supported upon the center of the springs, in the usual way. The bearings in which the connecting-rods are hung and operate are also secured to the perches, and not to the bolsters, as is the general custom.

Two advantages are attained in this mode of suspending the springs upon and between the perches, viz., first, the springs being suspended and operating between the perches, instead of on the one side of them, as is usual, the body can never strike the perches by the over-depression of the springs; and, second, the perches being on the outside of the springs, I can attach the steps directly to the perches, and not to the springs, as is usual, by which I gain the advantage of relieving the springs of the strain imposed upon them in all cases where the steps are secured to either the body or springs, as is now the almost universal custom.

I claim as my invention—

1. An endless perch, A and A′, substantially as and for the purpose set forth.
2. Connecting-rods C and C, pivoted at or near the opposite ends of the perches A and A, and provided with links D and springs B and B, all combined to operate between the opposite perches A and A, substantially as and for the purpose set forth.

The specification and claims of the reissue patent are as follows:

> My invention relates to that class of road-wagons in which the front and rear bolsters or axles are connected by side bars or perches, and in which the body is hung upon semi-elliptic springs; and the object of my invention is to hang the body low down and close to the side bars, without being liable to strike the latter. This object is secured by arranging the side springs inside the side bars or perches instead of outside, as heretofore, and by connecting their adjacent ends to an equalizing device arranged to operate between said bars, as fully described hereinafter.
>
> The frame connecting the axles is made of one or more strips or pieces, as shown in the accompanying drawing, which is a plan of sufficient of a road-wagon to illustrate my invention. It consists of two pieces A, A′, each sufficient to form one bolster and the half of each perch, and bent to the U shape shown, the ends of the two bent pieces being then spliced at F F. The frame thus formed has no jointed corners, and constitutes an endless perch of great strength.
>
> Heretofore, in hanging the bodies between side bars or perches, it has been necessary, to prevent the body from tilting and striking said bars, to arrange the latter at such a distance from the body that they limit the movement of the wheels in turning, so that a "short turn" cannot be made. I obviate this by hanging the springs inside the perches, and by so equalizing the action of the springs that the body is prevented from tilting laterally, permitting the perches to be arranged much closer to the body than heretofore. To secure this action I unite the adjacent ends of the side springs, arranged between the perches, to ears D of an equalizing-bar, C, turning in suitable bearings, so that any excess of weight upon one spring turning the bar C also lowers the other spring to an equal extent, and preserves the body horizontal, so that it will not strike the side perches.
>
> The arrangement of equalizing-bars in combination with both ends of the springs, as shown, secures a like effect at each end of the spring-platform. Another result of this arrangement is the suspending of the body lower down than is possible when the springs are outside of the perches, which would be struck by the body if it were not raised well up above them.
>
> I am aware that equalizing-bars have been used in connection with bodies hung to springs outside the perches; but in such cases the result which I effect is not attained, which is the perfect support of the body, while allowing all desirable vertical movement without unduly spreading the springs apart.
>
> I claim—
>
> 1. In a road-wagon, the combination, as set forth, of a body, side perches, semi-elliptic springs arranged between the perches, and means for equalizing the action of such springs, as set forth.
> 2. The combination, with the semi-elliptic springs supporting a body between the side bars or perches of a vehicle, of an equalizing-bar arranged opposite and connected to the adjacent ends of said springs, substantially as set forth.

From the language of the specification in the original patent and of the claims also it is plain that the invention of the complainant consisted of (1) the endless perch and (2) the connecting rods pivoted at or near the opposite ends of the perches, and provided with links and springs, so as to operate between the opposite perches. In the reissue patent the same form of perch is described—that is, it is constructed so as to form by its conpection with the bolster an endless

perch without jointed corners. Neither of the claims in the reissue distinctly specify an endless perch as in the original, but the claims must be read with the specifications, and when so read there is no doubt the patentee intended to claim the same form of perch in the reissue as in the original patent. So, too, in the reissue, the parts described in the original patent as connecting-rods are made another essential element in the patentee's invention. In the reissue they are described as equalizing-bars, and their operating effect is more elaborately stated than in the original patent; but in both it is evident that it was the intention of the patentee to claim that the effect of the connecting-rods or equalizing-bars is to equalize the action of the springs. The conclusion, then, must be that the endless perch and the equalizing-bars, constructed as described, are alike claimed in the original and reissue patents. These devices are not, either separately or in combination with other parts of a vehicle, anticipated by any patent here exhibited.

In the Curtice patent, No. 147,613, dated February 17, 1874, two perches bent in one piece are shown; but the perches are closed by the bend in front of the head-block over the front axle, with the rear ends of the perches left open and framed into the rear axle-bed or bolster. In the Saladee patent of February 20, 1872, No. 123,937, the perches are closed by the bend in the rear of the rear axle, and the front ends left open and framed into the head-block over the front axle. In the Miller patent of September 6, 1870, No. 107,076, for an improvement in buckboard-wagons, the buckboard rests upon the springs, which are attached to a cross-bar at the forward end, which is fastened to the reaches; but the springs at the rear end are attached to two hangers fastened to the under side of the axle. In the Miller patent, No. 134,916, dated January 14, 1873, the endless perch is not shown nor the half-elliptic side spring. In the Topliff and Ely patent, No. 122,079, of December 19, 1871, the springs are outside the perches or reaches, and are arranged upon separate rock-rods secured directly to the front and rear axles. In the Curtis patent of March 26, 1867, No. 63,223, the perches are open at the rear end and mortised into the rear axle, with end springs attached to the axles. But these various inventions which preceded the complainant's show the state of the art when the complainant obtained his patents, and narrow the scope of his invention to such extent that the defendants cannot be adjudged infringers unless they have appropriated in substantial form of construction the identical elements which the complainant has the right to claim as new in his patent. Side springs placed between the perches are shown in the Curtis patent, No. 147,613. The complainant in the specification of his patent, No. 123,937, states that the idea of equalizing the action of springs by means of cross-bars or connecting-rods was at that date, February 20, 1872, old and well known, although the particular form of construction and attachment of such connecting-rods shown in the patents in suit was not exhibited before the issuance of those patents. Perches bent at one end were also old when the complainant obtained his patents. Assuming, therefore that the reissue patent sued on is valid, the question is, do the defendants make a running-gear for vehicles in which there are combined an endless perch and an equalizing-bar connected to the adjacent ends of semi-elliptic springs supporting the body of the vehicle between the perches. If they do not, then there is no infringement. In other words, to make the defendants liable as infringers, it must appear that they have appropriated all the elements of the complainant's combination, or their equivalents, and this they have not done.

First. The gearing made by the defendants does not exhibit the endless perch. It is true that in their gearing two perches are bent in one piece, but only the front end is closed, while the rear ends are open, each end being connected with the rear axle. In short, instead of making the Saladee perches, the defendants make the perches shown in the Curtis patent of 1874.

Secondly. The defendants connect the springs with an equalizing-rod at the rear of the gearing substantially as is shown in the complainant's patents; but the springs are connected at the front end of the gearing directly with the bent end of the perches, and there is no equalizing-rod at that end of the running-gear. That the complainant, when he obtained his patent, regarded two equalizing-bars, one at each end of the vehicle, as essential parts of his invention is apparent (1) from the drawings which he submitted to the Patent Office and (2) from the language of the specifications and second claim of the reissue. In the specification he says that, to secure an equalized action of the springs—

> I unite the adjacent ends of the side springs, arranged between the perches, to ears D of an equalizing-bar, C, turning in suitable bearings, so that any excess of weight upon one spring turning the bar C also lowers the other spring to an equal extent and preserves the body horizontal, so that it will not strike the side perches.
>
> The arrangement of equalizing-bars in combination with both ends of the springs, as shown, secures a like effect at each end of the spring-platform.

In the second claim there is claimed as part of the combination—

> An equalizing-bar arranged opposite and connected to the adjacent ends of said springs.

From all this it is apparent that the defendants omit from their running-gear one of the parts necessary to make the complainant's combination; and, as the court has already indicated, the field of invention with reference to running-gear for vehicles was so covered prior to the complainant's patents that upon settled principles of patent law his patents cannot have the broad construction to which a patent for a wholly new and original device might be entitled. The defendants make a vehicle with side springs between the perches, which are as fully shown in the Curtis patent of 1874 as in the complainant's reissue. They make the Curtis perch, and not an endless perch. They omit one of the equalizing-rods described and claimed in the complainant's patent.

Upon this state of facts, can the defendants be adjudged infringers? The court is clearly of the opinion that they cannot; and upon the ground of non-infringement, without deciding the points made by defendants' counsel involving the validity of the reissue patent, the bill will be dismissed.

FOREIGN PATENT LAWS.

Patent Law of New Zealand.

The following is from an official copy of the patent laws of New Zealand, furnished for publication by W. P. Thompson, C. E., Liverpool, England:

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AN ACT to consolidate the law relating to letters patent for inventions.

September 8, 1883.

Be it enacted by the General Assembly of New Zealand in Parliament assembled, and by the authority of the same, as follows:

1. The short title of this act is "The Patents Act, 1883."

It shall come into operation on the 1st day of January, one thousand eight hundred and eighty-four.

2. This act is divided into parts, as follows: Part I, mode of obtaining letters patent; Part II, disclaimers and alterations; Part III, extension of term and confirmation of invalid patent; Part IV, miscellaneous provisions.

3. In this act "Invention" means and includes any manner of new manufacture the subject of letters patent and grants of privilege within the meaning of the fourth section hereof. "Patent Office" means the patent office appointed under this act, but does not include any local patent office. "Patent Officer" means the person appointed to be patent officer under this act. "Regulations" mean regulations made under this act.

PART I.

MODE OF OBTAINING LETTERS PATENT.

(1.) *For what patent may issue.*

4. It shall be lawful to make and issue, in the manner hereinafter mentioned, letters patent and grants of privilege, for any term not exceeding fourteen years from the date thereof, of the sole working or making of any manner of new manufactures within New Zealand, to the true and first inventor of such manufactures, which others, at the time of making such letters patent and grants, shall not use, so as also they be not contrary to the law nor mischievous to the State by raising prices of commodities, or hurt of trade, or generally inconvenient; and all other monopolies, commissions, grants, licenses, charters, and letters patent hereafter to be made or granted to any person of or for the sole buying, selling, making, working, or using of anything within New Zealand, or of any other monopolies, or of power, liberty, or faculty to dispense with any others, and all matters and things whatsoever in anywise tending to the instituting, erecting, or countenancing of the same or any of them shall be utterly void and of none effect and in no wise to be put in execution.

(2.) *Regulations.*

5. The Governor in Council from time to time may make such regulations, not inconsistent with the provisions hereof, as may appear to be necessary and expedient for the purposes of this act; and all such regulations shall be gazetted. All regulations in force under any act hereby repealed shall remain in force as if made under this act until other regulations are made as hereinbefore provided.

6. The Governor may from time to time appoint such person as he thinks fit to be Patent Officer, and in like manner may appoint a place to be the "Patent Office." The person who, at the commencement of this act, holds the office of Patent Officer under the acts hereby repealed shall be the Patent Officer under this act, without any further appointment. The place at the commencement of this act used as the Patent Office shall be deemed to have been appointed under this act.

7. The Governor at any time may appoint a fit and proper person to be Deputy Patent Officer, to act in case of the death, illness,

or unavoidable absence of the Patent Officer, and such deputy shall, during the time he shall so act, have all the powers and privileges, and shall perform all the duties, and be subject to the responsibilities of the Patent Officer. Whenever the Patent Officer shall die, the Deputy Patent Officer shall act as such from the day of such death, and, in the case of illness or absence, shall act as such from such day as the Patent Officer shall certify under his hand to the Deputy Patent Officer that he is ill and unable to perform his duties, or that he is about to be absent; and such Deputy Patent Officer shall cease to act as such on the day on which he shall receive from the Patent Officer a certificate under his hand to the effect that he has resumed his duties.

(3.) *Procedure to obtain patent.*

8. The Governor may, for all such purposes as he may deem necessary for the public convenience, appoint local patent offices and Patent Office agents in the various centers of population throughout the colony, and from time to time alter or revoke the appointment of such offices and agents, respectively. The local patent offices and the Patent Office agents appointed under "The Patents Act Amendment Act, 1882" shall be deemed to have been appointed under this act without further appointment. Such agents shall not demand or receive from the applicant, or any one on his behalf, any fees or charges whatever other than such as are payable under this act.

9. Every application under this act for the grant of letters patent for an invention shall be made as follows, that is to say:

(1.) The applicant shall deposit at the Patent Office, or at any local patent office, a specification, written in a plain legible hand or printed in fair legible type, upon parchment or paper, and under his hand and seal, in the form or to the effect in the First Schedule hereto, particularly describing and ascertaining the nature and details of the said invention with precision, and in what manner the same is to be performed, and containing a distinct claim for the especial novelty thereof, and accompanied by drawings, if necessary, for the full description and understanding of the said invention, and also a copy of such specification and drawings.

(2.) The title of the invention must state distinctly and specifically the nature and object of the invention, and every specification must be limited to one invention.

(3.) If such deposit be made at any local office, the Patent Office agent shall give the applicant or his agent a receipt therefor in the form contained in the Second Schedule hereto, or to the like effect, and shall forthwith transmit the documents and a copy of his receipt to the Patent Officer.

10. (1.) The exact time of the deposit of every specification which, upon examination by the Patent Officer, is found to be in accordance with this act and the regulations shall be recorded at the Patent Office, and indorsed upon such specification, and a certificate thereof, under the hand of the Patent Officer and in the form contained in the Third Schedule hereto, shall be given or transmitted to such applicant or his agent.

(2.) And thereupon, subject and without prejudice to the provisions hereinafter contained, the said invention shall be protected under this act for the term of twelve months next after the said deposit, and the applicant shall have during such term the full powers, rights, and privileges as might have been conferred upon him by letters patent for such invention issued under this act and duly sealed as of the day of such deposit.

(3.) During the continuance of such powers, rights, and privileges under this provision, such invention may be used and published without prejudice to any letters patent to be granted for the same.

11. In case of the deposit of any such specification as aforesaid in fraud of the true and first inventor, any letters patent granted to the true and first inventor of such invention shall not be invalidated by reason of such deposit, or of any use or publication of the invention subsequent to such deposit and before the expiration of the said term of protection.

12. The Patent Officer shall make an appointment for the hearing of every application, in the form contained in the Fourth Schedule to this act or to the like effect; and shall publish a notification of the said appointment once in the *Gazette*, not less than sixty clear days prior to the day appointed. Any person having an interest in opposing the grant of letters patent shall be at liberty, not less than fourteen clear days before the day so appointed, to leave particulars in writing of his objections to the said application at the Patent Office.

13. At the place and time named in the said appointment the Patent Officer shall hear and consider the said application, and all objections to the same, if any, mentioned in the said particulars, and may call to his aid such scientific or other person as he may think fit. The applicant, the objectors, and their respective witnesses and evidence shall be respectively heard, examined, and considered separately and apart from and in the absence of the other, his witnesses, and evidence. The Patent Officer shall have full power to examine applicant, objectors, and witnesses upon oath and to administer an oath to any or all of them.

14. The Patent Officer may adjourn from time to time the hearing of any application for letters patent.

15. The Patent Officer may require that the applicant and the objector shall deposit such sums as the Patent Officer may think fit, to meet any costs of or incident to the hearing, and may, by writing under his hand, order to be paid to any person he may call to his aid as aforesaid some remuneration for his attendance, and may also, in like manner, order that the costs of any hearing upon any objections, or otherwise in relation to the grant of such letters patent, or the protection acquired by the applicant under this act, shall be paid; and, in and by such writing, shall fix the amount of such remuneration or costs and by or to whom the same respectively shall be paid. Every such order shall be in the form contained in the Fifth Schedule or to the like effect, and may be made a rule of the Supreme Court.

16. If there shall be no objection to the grant of letters patent, and he is satisfied that this act and the regulations have been complied with, the Patent Officer may, on the day appointed, or as soon as may be thereafter, and, when there are objections, after such hearing and consideration, issue a warrant under his hand for the granting of letters patent for the said invention; and by such warrant shall direct the insertion in such letters patent of all such restrictions, conditions, and provisos as he may deem usual and expedient in such grants or necessary in pursuance of this act. Such warrant shall be the authority for the making and sealing of letters patent under this act, according to the tenor of the said warrant. Every such warrant shall be in the form set forth in the Sixth Schedule or to the like effect.

17. In case the title of the invention or the specification be too large or insufficient, or clerical errors exist therein, the Patent Officer, on the hearing of the application for the grant of the letters patent, may allow or require such specification to be amended or another and sufficient specification to be deposited in lieu thereof, and every such amended or new specification shall have the same force, effect, and operation as if it had been originally deposited in its amended or new state. When an applicant desires to amend his specification or drawings or to substitute an amended specification, he must deposit particulars of such amendment or such amended specification at the Patent Office at least fifteen days before the day of hearing.

18. (1.) The Patent Officer, after the issue by him of the said warrant, and on application in writing by the applicant or his agent, with payment of the fee thereon, shall cause to be prepared letters patent for the invention according to the tenor of the said warrant, and the Governor may cause such letters patent to be sealed with the public seal of the colony.

(2.) Such letters patent shall be made applicable to the colony and its dependencies, and shall be valid and effectual as to the whole of the same respectively; but, except as hereinafter mentioned, no letters patent shall issue on any warrant granted as aforesaid, unless application be made to seal such letters patent during the continuance of the protection conferred under this act, by reason of such deposit as aforesaid.

19. (1.) When the application to seal such letters patent has been made during the continuance of such protection as aforesaid, and the sealing of such letters patent has been delayed from accident, and not from the willful default of the applicant, then such letters patent may be sealed at such time after the expiration of such protection as the Governor may direct.

(2.) Where the applicant for such letters patent dies during the continuance of such protection as aforesaid, such letters patent may be granted to the executors or administrators of such applicant during the continuance of such protection, or at any time within three months after the death of such applicant, notwithstanding the expiration of the term of such protection; and the letters patent so granted shall be of the like force and effect as if they had been granted to such applicant during the term of such protection.

20. In case any letters patent shall be lost or destroyed, duplicate letters patent of the like tenor and effect, and sealed and dated as of the same day as such lost or destroyed letters patent, may be issued upon evidence of such loss or destruction being produced to the satisfaction of the Patent Officer.

21. Notwithstanding any enactment to the contrary, all letters patent to be issued in pursuance of this act shall be sealed and bear date as of the day of the deposit of such specification as aforesaid, and shall be of the same force and validity as if they had been sealed on the day as of which they are expressed to be sealed and bear date. After any letters patent shall have been issued in pursuance of this act it shall not be necessary or material to inquire whether such appointment as aforesaid has or has not been delivered and published in the manner hereinbefore mentioned and directed.

(4.) *Form and conditions of patent.*

22. All letters patent for inventions granted under this act shall be in the form contained in the Seventh Schedule, or to the like effect, and shall be made subject to the provisions of this act, and to the conditions and restrictions that may be inserted in such patent by virtue thereof or that are imposed by this act—that is to say—

(1.) That the powers and privileges thereby granted shall cease and determine at the expiration of five years from the date thereof, unless there be paid within such five years the sum or sums of money required to be paid under this act, and the Patent Officer shall indorse a receipt for the same on the letters patent.

(2.) No letters patent shall extend to entitle the patentee to use or imitate any invention or work which, before the date of such patent, had been found out or invented by any other person and publicly used or exercised, or to whom like letters patent or privileges have been already granted for the sole use, exercise, and benefit thereof within the colony.

(3.) The patentee and all and every other person and persons to whom like letters patent or privileges have been granted shall distinctly use and practice their several inventions by them invented and found out according to the true intent and meaning of the same respective letters patent.

(4.) Nothing contained in any letters patent shall prevent the patentee from granting licenses in such manner and for such considerations as they may by law be granted.

23. All letters patent and all privileges and advantages whatsoever thereby granted shall utterly cease and become void—(1) if the specification does not particularly describe and ascertain the nature of the invention, and in what manner the same is to be performed; (2) if at any time during the term for which such letters are granted it appears that the grant is contrary to law, or prejudicial or inconvenient to the public good, or that the invention therein mentioned is not a new invention, or that the patentee is not the true and first inventor thereof within this colony; (3) if the patentee shall not supply or cause to be supplied for the government of the colony all such articles of the said invention as he is required to supply by the persons administering the department of the public service for the use of which the same are required in such manner, at such times, and at and upon such reasonable prices and terms as shall be settled for that purpose by the said persons requiring the same.

24. Every invention protected by letters patent issued under this act shall be brought into actual and public use within the colony within the space of two years from the date of such letters patent, or in default thereof such letters patent shall at the expiration of such period of two years cease and be of no effect.

(5.) *Repeal of patent.*

25. (1.) An action shall lie for the repeal of any letters patent granted under this act, and may be commenced in any district of the Supreme Court, in such form as may be authorized by its rules in substitution for the process by writ of *scire facias*; and in case the grantee does not reside in New Zealand it shall be sufficient to file the writ in the Supreme Court and to serve notice of such action in writing at the last-known place of residence or business of such grantee.

(2.) The Governor in Council, upon the issue of the writ in such action, may order such Patent Officer to withhold such warrant as aforesaid, or that any letters patent for the granting whereof he may have issued a warrant, as aforesaid, shall not issue; or may order the insertion in any such letters patent of any restrictions, conditions, or provisos in addition to or in substitution for any restrictions, conditions, or provisos which would otherwise be inserted therein under this act.

(3.) The Governor in Council may also order any specification in respect to the invention described, in which no letters patent may have been granted, to be canceled, and thereupon the protection obtained by the deposit of such specification shall cease.

26. No letters patent granted for any invention shall extend to prevent the use of any such invention in any foreign ship or vessel, or for the navigation of any foreign ship or vessel which may be in any port of New Zealand, or in any of the waters within the jurisdiction of any of her Majesty's courts in New Zealand, where such invention is not so used for the manufacture of any goods or commodities to be vended within or exported from the same. But this enactment shall not extend to the ships or vessels of any foreign State the laws of which authorize subjects of such foreign State having patents or like privileges for the exclusive use or exercise of inventions within its territories to prevent or interfere with the use of such inventions in British ships or vessels, or in or about the navigation of British ships or vessels, while in the ports of such foreign State, or in the waters within the jurisdiction of its courts, where such inventions are not so used for the manufacture of goods or commodities to be vended within or exported from such foreign State.

(6.) *Letters of registration.*

27. The Governor, in his discretion, on the application of any person being the holder or assignee of any letters patent or like protection issued in Great Britain or any other country or colony for an invention or discovery, and upon such proof as the Governor may by regulations require that such person is the *bona fide* holder or assignee thereof, and that the same are or is in full force, and upon payment of the sum of ten pounds may grant letters of registration to such applicant.

(2.) Such letters of registration shall be in the form contained in the Tenth Schedule or to the like effect, and shall have the same force and effect as letters patent granted under this act, and shall inure to the benefit of the grantee thereof, his executors, administrators, and assigns, during the continuance of the original letters patent or other protection in the country or colony where the same was or were granted, and no longer; and all the provisions of this act shall apply to such letters of registration in the same way, *mutatis mutandis*, and as fully as to letters patent granted under this act.

(3.) A copy of all such letters of registration shall be filed in the Patent Office.

PART II.

DISCLAIMERS AND ALTERATIONS.

28. (1.) Any person who shall obtain letters patent under this act, his executors or administrators, or, in case he or they shall part with the whole or any part of his or their interest by assignment, he or they, together with the assignee, if part only has been assigned, or the assignee alone if the whole has been assigned, may apply to the Patent Officer for leave to enter a disclaimer of any part of either the title to the invention, or the specification, or a memorandum of any alterations in the said title or specification, not being such disclaimer as shall extend the exclusive right granted by the said letters patent.

(2.) Thereupon the Patent Officer shall deliver to the person or persons applying, or to their agent, or to one of them, or the agent of one of them, an appointment in the form contained in the Eighth Schedule, or to the like effect, and the person or persons so applying shall cause such disclaimer, (stating the reason for the same,) or such memorandum of alteration, to be written at the foot of the said appointment, and shall cause the same, respectively, to be published forthwith in the *Gazette*.

(3.) Any person having an interest in opposing the said application shall be at liberty to leave particulars in writing of his objections to the same at the Patent Office within such time, not less than fourteen clear days prior to the day so appointed.

(4.) Where such application shall be for leave to enter a disclaimer of any part of the title of the said invention, or a memorandum of any alteration in such title, the Patent Officer may dispense with such appointment and publication, and in that case shall certify in the flat hereinafter mentioned that he has dispensed with the same.

29. At the time and place named in such appointment the Patent Officer shall hear and consider the said application, and all objections to the same mentioned in the said particulars, if any, and all such powers and authority shall and may be exercised upon that occasion by the Patent Officer as, by virtue of the provisions herein contained, can and may be exercised in relation to the hearing and considering an application for letters patent and objections to the same, and shall and may be enforced in like manner.

30. (1.) After such hearing and consideration, or without such hearing or consideration where the said appointment and publication shall have been dispensed with as aforesaid, the person or persons applying, or one of them, may by leave of the Patent Officer, to be certified by a flat under his hand, to be written at the foot of the same paper or parchment with the said disclaimer or memorandum, enter such disclaimer, (stating the reason for the same,) or such memorandum of alteration, and at the time of entering such disclaimer or memorandum of alteration, shall deposit a copy thereof in the office next hereinafter mentioned.

(2.) Such disclaimer or memorandum of alteration, being filed in the Patent Office, shall be deemed and taken to be part of such letters patent or such specification, and subject to the several incidents thereof, in all courts whatever, and shall be valid and effectual in favor of any person in whom the rights under the said letters patent may then be or thereafter become legally vested.

31. (1.) No action shall be brought upon any letters patent in respect of which or the specification of which any disclaimer or memorandum of alteration shall have been filed in respect of any infringement committed prior to the filing of such disclaimer or memorandum of alteration, (unless the Patent Officer shall certify in his said flat that any such action may be brought, notwithstanding the entry or filing of such disclaimer or memorandum of alteration,) and no such disclaimer or alteration shall be receivable as evidence in any action or suit (save any proceedings for the repeal of letters patent) pending at the time when such disclaimer or alteration was filed as aforesaid; but in every such action or suit the original title and specification alone shall be given in evidence, and be deemed and taken to be the title and specification of the invention for which the letters patent have been or shall have been granted.

(2.) When any such flat shall have been granted under this act it shall not be necessary or material to inquire or ascertain whether such appointment as last aforesaid has or has not been delivered and published or dispensed with in accordance with this act; and such filing of any disclaimer, or memorandum of alteration, in pursuance of the leave of the Patent Officer, certified as aforesaid, shall (except in cases of fraud) be conclusive as to the right of the party to enter such disclaimer or memorandum of alteration under this act.

PART III.

EXTENSION OF TERM.

32. (1.) Any person who has obtained letters patent under this act or any other act relating to letters patent heretofore in force in New Zealand, or the executors or administrators of such person, or (in case such person shall have parted with the whole or any part of his interest in such patent by assignment) he or they, together with the assignee when part only has been assigned, or the assignee alone when the whole has been assigned, may, six months before the expiration or other determination of such letters patent, present to the Governor a petition for the extension of the term in such letters patent mentioned.

(2.) Such petition shall set forth that the petitioner has been unable to obtain a due remuneration for his expense and labor bestowed in perfecting such invention, and that an exclusive right of using and vending the same for some further period, to be named in such petition, in addition to the said term, is necessary for his reimbursement and remuneration, and the Governor may refer the consideration of the said petition to one or more commissioners, to be appointed for that purpose in the manner hereinafter mentioned.

33. For the purpose of considering any such petition, the Governor, if he shall think fit, may issue and direct, in the name of Her Majesty, to one or more persons a commission reciting such petition, and requiring and authorizing such person, or some stated number of such persons, to meet at some time, not being less than two months from the publication of such commission in the *Gazette*, and at some place to be respectively fixed in the said commission, and then and there to consider the said petition, and to report to the Governor (in case such petioner shall have prayed for an extension of the term in the letters patent mentioned) whether any, and if any, what, further extension of the said term should be granted, according to the prayer of the said petition.

34. (1.) Two months at least before the time fixed in the said commission for the consideration of any such petition as aforesaid the petitioner shall cause to be published, in the same manner as is hereinbefore required with respect to the first-mentioned appointment, an advertisement of the contents of the said commission in the form contained in the Ninth Schedule, or to the like effect.

(2.) Any person having an interest in opposing the said petition shall be at liberty to enter a caveat against the same at the Patent Office at any time not less than one week before the time named in the said commission for the consideration thereof.

35. (1.) At the time and place fixed in the said Commission the Commissioners, or some of them not less than the said stated number, shall proceed to consider such petition, and the petitioner shall be heard by his counsel and witnesses to prove his case as stated in such petition, and the publication of the said last-mentioned advertisement, as required by this act, and the persons entering caveats shall likewise be heard by their counsel and witnesses; and all such witnesses shall be examined upon oath, which oath such Commissioners are hereby authorized to administer.

(2.) Thereupon, and on hearing and inquiry of the whole matter, (in case such petitioner shall have prayed for an extension as aforesaid,) the said Commissioners may report whether any, and if any, what, further extension of the said term should be granted; and the Governor is hereby authorized and empowered, if he shall

think fit, to grant to the petitioner new letters patent for the said invention not exceeding three years after the expiration of the first term, anything herein contained to the contrary notwithstanding. Such new letters patent shall be sealed and bear date as of the day after the expiration of the term of the first letters patent.

PART IV.

MISCELLANEOUS PROVISIONS.

(1.) *Records of office.*

36. Every specification deposited at the Patent Office, and the drawings and models accompanying the same, if any, and all other documents so deposited, shall be kept in the Patent Office, and shall be open to the inspection of the public at all reasonable times, as well before as after the grant of letters patent, and whether such letters patent be granted or not, but subject to regulations.

37. Indices to all specifications, disclaimers, and memoranda of alterations, heretofore or to be hereafter enrolled or deposited as aforesaid, shall be prepared, and shall be open to the inspection of the public at the Patent Office, subject to regulations.

38. There shall be kept at the Patent Office a book, to be called "The Register of Patents," wherein shall be entered and recorded in chronological order all letters patent and letters of registration granted under this act or "The Patents Act, 1870;" the deposit and filing of specifications, disclaimers, and memoranda of alterations filed in respect of such letters patent; all amendments in such letters patent and specifications; all confirmations and extensions of such letters patent; the expiry, determination, vacating, or canceling of such letters patent, with the dates thereof respectively, and all other matters and things affecting the validity of such letters patent as the Governor may direct. Such register or a copy thereof shall be open at all convenient times to the inspection of the public, subject to such regulations as the Governor may make in that behalf.

39. There shall be kept at the Patent Office a book, entitled "The Register of Proprietors," wherein shall be entered the assignment of any letters patent or letters of registration, or of any share or interest therein; any license under letters patent or letters of registration, and the district to which such license relates, with the name of any person having any share or interest in such letters patent or letters of registration or license; the date of his acquiring such letters patent or letters of registration, share, or interest, and any other matter or thing relating to or affecting the proprietorship in such letters patent or letters of registration or license.

(2.) *Assignments.*

40. Before any assignment or license shall be registered, the assignee or licensee shall furnish—

(1.) A statutory declaration by one of the attesting witnesses to the said assignment or license of the due execution of the said assignment or license: *Provided* that if it be proved to the satisfaction of the said Patent Officer that the attesting witness to any such assignment or license is dead or cannot be found, the execution of the said assignment or license may be proved by a statutory declaration of any other person capable of declaring to the same;

(2.) A certified copy or copies of the assignment or license, and other instruments or documents of title.

41. No assignment or license of two or more letters patent or letters of registration included in one deed or instrument shall be registered, and no certificate of assignment or license shall be granted, unless a fee for such registration or certificate be paid in respect of each such letters patent or letters of registration in respect of which such registration or certificate is desired.

42. (1.) A copy of any entry in such book, certified as hereinafter mentioned, shall be given to any person requiring the same, and shall be *prima facie* proof of the assignment of such letters patent or letters of registration, or share or interest therein, or of the license or proprietorship as therein expressed.

(2.) Until such entry shall have been made, the grantee of the letters patent or letters of registration shall be deemed to be the sole and exclusive proprietor thereof, and of all the licenses and privileges thereby given.

(3.) Such register, or a copy, shall be open to public inspection subject to regulations.

(3.) *Seal.*

43. (1.) The Governor may cause a seal to be made for the purposes hereinafter mentioned, and all courts, judges, and other persons whosoever shall take notice of such seal, and receive impressions thereof in evidence, in like manner as impressions of the seal of the Supreme Court are received in evidence.

(2.) All copies or extracts, certified by the Patent Officer and sealed with such seal, of letters patent, letters of registration, specifications, disclaimers, memoranda of alterations, and all other documents or books recorded, filed, and kept in pursuance of this act shall be received in evidence in all proceedings relating to letters patent for inventions and letters of registration in all courts and by all judges and other persons whomsoever.

(4.) *Offenses.*

44. If any person shall wilfully make or cause to be made any false entry in any such register, or shall wilfully make or forge, or cause to be made or forged, any writing falsely purporting to be a copy of any entry therein, or shall produce or tender, or cause or suffer to be produced or tendered, any such writing, knowing the same to be false, he shall be guilty of a misdemeanor, and shall be liable, on conviction, to be kept in penal servitude for any term not exceeding five years, or to be imprisoned and kept to hard labor for any term not exceeding two years.

45. If any person shall deem himself aggrieved by any entry made under color of this act in any such register, such person may apply by motion to the Supreme Court, or by summons to a judge of such court, for an order that such entry may be expunged, vacated, or varied; and upon any such application such court or judge may make such order for expunging, vacating, or varying such entry and as to the costs of such application as to such court or judge may seem fit; and the Patent Officer, on the production to him of any such order, shall expunge, vacate, or vary the said entry according to such order.

46. (1.) If any person shall write, paint, print, mold, cast, carve, engrave, stamp, or otherwise mark upon anything made, used, or sold by him, for the sole making or selling of which he has not or shall not have obtained letters patent, the name or any imitation of the name of any other person who has or shall have obtained letters patent for the sole making and vending of such thing, without leave in writing of such patentee or his assigns, or shall upon any such thing, not having been purchased from the patentee or some person who purchased it from or under such patentee, or not having had the license or consent in writing of such patentee or his assigns, write, paint, print, mold, cast, carve, engrave, stamp, or otherwise mark the word "patent," the words "letters patent," or the words "by the Queen's patent," or any words of the like kind, meaning, or import, with a view of imitating or counterfeiting the stamp, mark, or other device of the patentee, he shall for every such offense forfeit and pay the sum of one hundred pounds, one half to Her Majesty and the other half, with full costs of suit, to any person who shall sue for the said penalty.

(2.) If any person shall, upon any such thing for which no letters patent or like protection shall have been obtained, write, paint, print, mold, cast, carve, engrave, stamp, or otherwise mark the word "patent," the words "letters patent," or the words "by the Queen's patent," or any words of the like kind, meaning, or import, or by advertisement, or in any other way imply or give reasonable cause to believe that letters patent or like protection have been granted for such thing, he shall for every such offense be liable to a penalty not exceeding fifty pounds, one-half of which shall be paid to any person who shall sue for the said penalty.

(3.) But nothing herein contained shall be construed to extend to subject any person to any penalty in respect of stamping, or in any way marking the word "patent" upon anything for the sole making or vending of which letters patent before obtained shall have expired or otherwise determined.

(5.) *Procedure in actions for infringement.*

47. (1.) In any action for the infringement of letters patent the plaintiff shall deliver with his statement of claim particulars of the breaches complained of in the said action; and the defendant on pleading thereto shall deliver with his statement of defense, and the prosecutor in any proceedings by action to repeal letters patent shall deliver with his statement of claim, particulars of any objections on which he means to rely at the trial in support of the said action, or of the suggestions of the statement last mentioned, respectively. At the trial of any such action no evidence shall be allowed to be given in support of any alleged infringement, or of any objection impeaching the validity of such letters patent, which shall not be contained in the particulars delivered as aforesaid.

(2.) The place or places at or in which and in what manner the invention is alleged to have been used or published prior to the date of the letters patent shall be stated in such particulars; and any judge at chambers may allow such plaintiff or defendant or persecutor, respectively, to amend the particulars delivered as aforesaid upon such terms as to such judge shall seem fit.

(3.) At the trial of any proceeding to repeal letters patent the defendant shall be entitled to begin, and to give evidence in support of such letters patent; and in case evidence shall be adduced on the part of the prosecutor impeaching the validity of such letters patent the defendant shall be entitled to the reply.

48. (1.) In taxing the costs in any action for infringing letters patent regard shall be had to the particulars delivered in such action, and the plaintiff and defendant, respectively, shall not be allowed any costs in respect of any particular, unless certified by the judge before whom the trial was had to have been proved by such plaintiff or defendant, respectively, without regard to the general costs of the cause; and the judge before whom any such action shall be tried may certify on the record that the validity of letters patent in the statement mentioned came in question.

(2.) The record with such certificate being given in evidence in any action for infringing the said letters patent, or in any proceeding in an action to repeal the letters patent, shall entitle the plaintiff in any such action, or the defendant in such proceeding, on obtaining a decree, order, or final judgment, to his full costs, charges, and expenses, to be taxed as between solicitor and client, unless the judge making such decree or order, or the judge trying such action or proceeding, shall certify that the plaintiff or defendant, respectively, ought not to have such full costs.

(6.) *Fees.*

49. There shall be paid in respect of the several matters and things respectively mentioned in the Eleventh Schedule such fees as are therein enumerated, and all such fees shall be paid into the public account and form part of the consolidated fund. The Governor may reduce any of such fees respectively from time to time by notification in the *Gazette*.

(7.) *Repeals.*

50. (1.) The acts enumerated in the Twelfth Schedule are hereby repealed.

(2.) But such repeal shall not affect any proceedings or things lawfully taken or commenced, or any letters patent or letters of registration granted, or any protection or right conferred, under the said repealed acts before the commencement of this act, and all such proceedings and things shall be as valid, and all such letters patent, letters of registration, protections, and rights shall have the same force and efficacy as if this act had not passed.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 27—No. 12. TUESDAY, JUNE 17, 1884. PRICE—$5 per year.

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Order No. 145.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.
Washington, June 11, 1884.

The Examiner in charge of Division III is hereby authorized to form a new sub-division in Class 42, Gas, and entitle the same "Sub-class 22, Gas Distribution."

BENJ. BUTTERWORTH,
Commissioner.

Issue of June 17, 1884.

Patents	413—No. 300,336 to No.	300,748, inclusive.
Designs	25—No. 15,062 to No.	15,086, inclusive.
Trade-Marks	17—No. 11,256 to No.	11,272, inclusive.
Labels	6—No. 4,149 to No.	4,154, inclusive.
Reissues of patents	2—No. 10,489 to No.	10,490, inclusive.
Total issue	463	

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	2	
Austria-Hungary	1		Hawaiian Islands		
Barbadoes			Hayti		
Belgium			Japan		
Bermuda			Mexico		
Brazil			New Zealand		
Canada	9		Russia		
Central America			Scotland		
Colombia, U. S. of			Sweden		
Cuba			Switzerland		
Denmark					
Ecuador			Total to citizens of foreign countries	29	1
England	16	1			
France	1				

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska		
Arizona Territory			Nevada	1	
Arkansas			New Hampshire	1	
California	9	1	New Jersey	5	
Colorado	3		New Mexico Territ'y		
Connecticut	18	3	New York	100	5
Dakota Territory	1		North Carolina	1	
Delaware	5		Ohio	29	
District of Columbia	9		Oregon		
Florida			Pennsylvania	49	
Georgia	3		Rhode Island	8	1
Idaho Territory			South Carolina	2	
Illinois	31	3	Tennessee	1	
Indiana	16	1	Texas	2	1
Indian Territory			Utah Territory	1	
Iowa	6		Vermont	1	
Kansas	2		Virginia	1	1
Kentucky	4		Washington Territ'y		
Louisiana	1		West Virginia		
Maine	2		Wisconsin	7	1
Maryland		2	Wyoming Territory		
Massachusetts	49	2	United States Army		
Michigan	12		United States Navy		
Minnesota	9				
Mississippi	2		Total to citizens of the United States	409	22
Missouri	16	1			
Montana Territory					

DESIGNS.

15,062.—TOILET CABINET.—*Edward Bourne*, Allegheny, Pa. Application filed May 26, 1882. Term of patent 7 years.

15,063.—EARTHENWARE DISH.—*Elijah Cheteynd*, Hanley, county of Stafford, England, assignor to *Thomas H. Taylor*, New York, N. Y. Application filed April 16, 1884. Term of patent 7 years.

15,064.—GEM-SETTING.—*William R. Dutemple*, Providence, R. I. Application filed April 25, 1884. Term of patent 7 years.

15,065 to 15,067, inclusive.—WALL-PAPER.—*Paul Groeber*, New York, N. Y. Applications filed April 11, 1884. Term of patents 3½ years.

15,068.—WALL-PAPER.—*Paul Groeber*, New York, N. Y. Application filed April 15, 1884. Term of patent 3½ years.

15,069.—WALL-PAPER.—*Paul Groeber*, New York, N. Y. Application filed April 11, 1884. Term of patent 3½ years.

15,070.—WALL-PAPER.—*Paul Groeber*, New York, N. Y. Application filed April 15, 1884. Term of patent 3½ years.

15,071.—CLAMP OR LOOP FOR TRUNK-STRIPS.—*Samuel Hermann*, Cincinnati, Ohio. Application filed November 12, 1883. Term of patent 7 years.

15,072.—CHAIR-FRAME.—*Adolph G. Hofstatter*, New York, N. Y. Application filed April 3, 1884. Term of patent 7 years.

15,073.—SPRING-ROCKER BRACKET.—*Joseph W. Kenna*, Chicago, Ill. Application filed April 22, 1884. Term of patent 3½ years.

15,074.—ORNAMENTATION OF LEATHER.—*J. Wayland Kimball*, New York, N. Y. Application filed March 27, 1884. Term of patent 3½ years.

15,075.—WALL-PAPER.—*Augustin Le Prince*, New York, N. Y. Application filed April 11, 1884. Term of patent 3½ years.

15,076.—CARPET.—*David McNair*, Boston, Mass., assignor to *The Roxbury Carpet Company*, same place. Application filed April 28, 1884. Term of patent 3½ years.

15,077.—CARPET.—*David G. Melville*, Medford, assignor to *The Roxbury Carpet Company*, Boston, Mass. Application filed April 28, 1884. Term of patent 3½ years.

15,078 and 15,079.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward O. Sampson*, New York, N. Y. Applications filed April 26, 1884. Term of patents 3½ years.

15,080 to 15,084, inclusive.—PRINTING-TYPE.—*John K. Rogers*, Brookline, Mass. Applications filed January 6, 1883. Term of patents 7 years.

15,085.—TOY SAVINGS-BANK.—*Charles G. Shepard* and *Peter Adams, Jr.*, Buffalo, N. Y.; said *Adams* assignor to said *Shepard*. Application filed January 29, 1884. Term of patent 7 years.

15,086.—FRINGE.—*John Zebley*, Philadelphia, Pa. Application filed April 2, 1884. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

11,256.—CIGARS.—*C. H. Brenaman & Co.*, Baltimore, Md. Application filed January 28, 1884.
"The words 'LIVE INDIAN' and the monogram 'C H B & Co.'"

11,257.—EMBROIDERY CHENILLE.—*Hugo Maul & Co.*, New York, N. Y. Application filed May 14, 1884.
"The figure of a star."

11,258.—CRACKERS, BISCUITS, WAFERS, AND CAKES.—*F. A. Kennedy & Co.*, Cambridge, Mass. Application filed May 8, 1884.
"The emblematical figure of Justice, represented by a female blindfolded and holding in the left hand a sword and in the right hand a pair of scales having one pan filled with crackers."

11,259.—TABLE SAUCE.—*Kibbe & Robinson*, Hartford, Conn. Application filed December 31, 1883.
"A pictorial representation of a youth standing on an elevation and bearing in one hand a flag on which is the word 'EXCELSIOR.' This figure is inclosed by one or more lines of circular or irregular outline. Above the figure are the words 'EXCELSIOR TABLE SAUCE.'"

11,260.—WHISKY.—*Charles H. Myers & Bro.*, Baltimore, Md. Application filed May 19, 1884.
"The word-symbol 'PATAPSCO CLUB.'"

11,261.—HARNESS, SADDLERY, AND CARRIAGE HARDWARE.—*O. B. North & Co.*, New Haven, Conn. Application filed March 13, 1884.
"The representation of an arrow in the usual form, consisting of a shaft, spear-pointed at one end and feather at the opposite end."

11,262.—TWINES, THREADS, ROPES, LINES, AND CORDAGE.—*Travers Brothers*, New York, N. Y. Application filed May 15, 1884.
"The arbitrary word 'PEERLESS.'"

11,263.—BAKING-POWDER.—*Joseph H. Brown*, Fort Worth, Tex. Application filed May 10, 1884.
"The words SILVER LOAF.'"

11,264.—BAKING-POWDER.—*Charm Manufacturing Company*, St. Louis, Mo. Application filed April 26, 1884.
"The words 'GOLDEN RULE.'"

11,265.—HARNESS-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed May 15, 1884.
"The word 'EBONY.'"

11,266.—BRUSHES AND COMBS.—*William L. Vennard*, New York, N. Y. Application filed May 21, 1883.
"The representation of a mural coronet, an arm with a hand carrying a flag, and laurel-branches."

11,267.—NIGHT-LIGHTS, NIGHT-LAMPS, AND NURSERY-LAMPS OR FOOD-WARMERS.—*Samuel Clarke*, South Hampstead, London, England. Application filed April 26, 1884.
"The word 'PYRAMID.'"

11,268.—ARTIFICIAL HONEY.—*John G. Gorrell*, Oaslan, Ind. Application filed April 19, 1884.
"The representation of a clover-blossom with a bumble-bee thereon."

11,269.—CRUSHED OATS AND WHEAT.—*Francis H. Leggett & Co.*, New York, N. Y. Application filed April 2, 1884.
"The figures and words 'LEGGETT'S 15 MINUTE OAT FLAKES,' and 'LEGGETT'S 15 MINUTE WHEAT FLAKES,' arranged as follows: The words 'LEGGETT'S OAT FLAKES' and 'LEGGETT'S WHEAT FLAKES' are surrounded by sprays of grain, (wheat and oats.)"

11,270.—SLEEPING AND DRAWING-ROOM CAR.—*Mann's Boudoir Car Company*, New York, N. Y. Application filed April 4, 1884.
"The word 'BOUDOIR.'"

11,271.—TRUNK AND FURNITURE CASTERS, CATCHES, AND BRACES, AND SIMILAR HARDWARE.—*S. M. Michelson & Co.*, Milwaukee, Wis. Application filed April 23, 1884.
"The arbitrarily-selected word-symbol 'NONESUCH,' arranged as either one or in two words."

11,272.—COUNTRY HOMESPUN YARN FOR HAND-KNITTING.—*P. S. Peckham & Co.*, Washington, R. I. Application filed April 10, 1884.
"A woman standing at a spinning-wheel in the act of spinning. On her right is represented in part an old-fashioned fireplace with crane, hanging kettle, and andiron; on the mantelpiece a candle and candlestick, and in the background the upper part of an old-fashioned standing clock, the picture being inclosed in a circle, above which are the words 'COUNTRY KNITTING YARN' and below the word 'HOMESPUN.'"

LABELS.

4,149.—Title: "THE SUFFERER'S RELIEF."—*Joseph Bard*, Chicago, Ill. Application filed May 5, 1884.

4,150.—Title: "THE HAIR BEAUTIFIER."—*Joseph Bard*, Chicago, Ill. Application filed May 5, 1884.

4,151.—Title: "WHITE PINE BALSAM."—*Horne & Abel*, Los Angeles, Cal. Application filed April 14, 1884.

4,152.—Title: "AROMATIC SYRUP OF THE HYPOPHOSPHITES COMP." *B. F. Raymond*, Essex, Mass. Application filed May 1, 1884.

4,153.—Title: "PRATT'S SPECIFIC-DIRECTION LABEL."—*G. Wells Root*, Hartford, Conn. Application filed April 2, 1884.

4,154.—Title: "TYREE'S DIGESTIVE TABLETS."—*Josiah Samuel Tyree*, Staunton, Va. Application filed May 24, 1884.

DISCLAIMER.

280,295.—*William McLean*, Los Angeles, Cal. Patent dated November 27, 1883. IMPROVEMENT IN THE PROCESS OF LAYING PAVEMENTS. Disclaimer filed June 12, 1883, by the patentee.

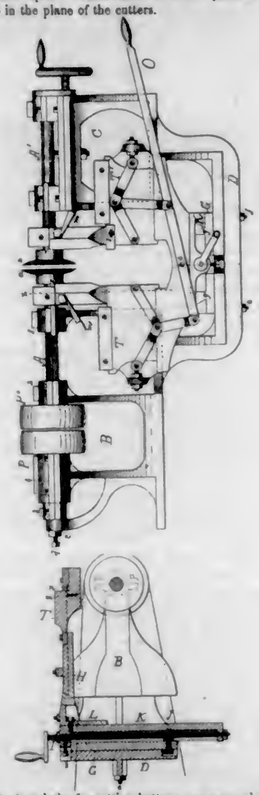
Enters his disclaimer to the following words in lines 50, 51, 52, 53, 54 of the first page of the specification: "and plaster, coat, or wash the edges of the pavement with common clay brought to the proper consistency, either with brush or other suitable tool, such as trowel, or the like." And to the following words in lines 61, 62, 63, 64, 65; "and that these non-cohesive partitions shall allow each section to shrink or change its level relative to contignous sections without breaking the tiles or concrete blocks forming the sections H." Also to the following words in lines 7, 8, 9 of page 2: "sixthly, in thinly coating the edge of the block first formed with non-cohesive material." He also disclaims "the forming or laying pavements by plastering, or coating, or washing the edges of the pavement with common clay or other substances brought to the proper consistency, in any manner, or by interposing any substances between adjoining blocks of concrete during the process of formation, or at any time."

PATENTS

GRANTED JUNE 17, 1884.

300,336. MACHINE FOR MAKING HEADS OF CASKS, &c. GEO. H. ALLEN, Neenah, Wis. Filed Oct. 24, 1882. (No model.)

Brief.—The sliding cutter-stocks on opposite sides of the barrel-head, held between rotary disks, are operated by adjustable knuckle-joints connected by links to a lever, as described. The support for said slides is adjustable upon a center which is in the plane of the barrel-head, and also in the plane of the cutters.



Claim.—1. In a lathe for cutting bottoms, covers, and beading for wooden ware and cooperage, the tool-stock holder H, having tool-stocks T T' sliding therein in the same vertical and horizontal plane, said tool-stocks containing the tools *n n'* for cutting off, and the tools *m m'* for chamfering, rabbeting, rounding, grooving, or molding, the tool-stock T being connected to the tool-stock holder H by the knuckle-joint levers *q q'* and the tool-stock T' by the knuckle-joint levers *q'' q'''*, and advanced toward and receded from each other simultaneously by the action of the lever O upon the knuckle-joint levers aforesaid, the lever O being fulcrumed upon the tool-stock holder H and connected to the pins of the knuckle-joints by the links *p p'*, and in combination therewith the stop *s*, whereby the forward movement of the tool-stocks T and T' are governed and the depth of cut of the cutters *m m'* upon the piece being formed gaged as desired, substantially as described.

2. In a lathe for cutting bottoms, covers, and heading for wooden ware and cooperage, the tool-stock holder H, having tool-stocks T T' sliding therein in the same vertical and horizontal plane, said tool-stocks having tools for cutting off, chamfering, rabbeting, rounding, grooving, or molding, and being connected to the tool-stock holder H by the knuckle-joint levers *q q'* and *q'' q'''*, one end of each pair being connected therewith by a pin or bolt, and the opposite end with the tool-stock holder H by means of the spade-handle bolts R and R' and the adjusting and retaining nuts *r r'* and *r'' r'''*, the tool-stocks being simultaneously moved toward and from each other by the action upon the knuckle-joint levers aforesaid of the lever O, the lever O being fulcrumed on the tool-stock holder and connected to the pin of the knuckle-joint by the links *p p'*, substantially as described and shown.

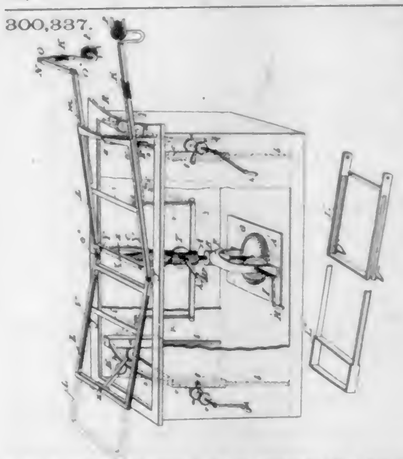
3. The combination, in a lathe for cutting bottoms, covers, and heading for wooden ware and cooperage, of a tool-stock holder having tool-stocks sliding therein in the same vertical and horizontal plane, and having mechanism for their simultaneous movement toward and from each other, consisting of the knuckle-joint levers *q q'*, connecting one and *q'' q'''* the other of said tool-stocks with the holder aforesaid, and the links *p* and *p'*, connecting the pins of the knuckle-joint in said levers, respectively, with the lever O, which is fulcrumed upon the aforesaid holder, the tool-stocks having tools for cutting off, chamfering, rounding, rabbeting, grooving, or molding, and the tool-stock holder means for its adjustment horizontally, both parallel with and in a transverse direction to the axial line of the flanges *a* and *b*, between which flanges is secured and with which is rotated the article to be cut, whereby the position of said tool-stock holder, its tool-stocks and their cutting-tools, can be adjusted in the position required relative to the aforesaid flanges for the production of articles differing from each other in their diameter, substantially as described.

4. In a lathe for cutting bottoms, covers, and heading of wooden ware and cooperage, the adjustable tool-stock holder H, having tool-stocks T T' sliding therein in the same vertical and horizontal plane, and having also mechanism for their simultaneous movement toward and from each other, the tool-stocks having cutting-tools therein, and in combination therewith the bed-piece G, suitably located and secured in a horizontal plane, its longitude being parallel with the plane of rotation of the flanges *a* and *b*, the screw I, nut J, and sliding table K, the screw I and nut J operating to adjust the sliding table K longitudinally upon the bed-piece G, said table having upon it the pivotal point L, upon which is pivoted the tool-stock holder H, and around which point it is adjustable within determined limits, and having also means for securing it therein, said pivotal point being located at the base of a vertical plane passing in a longitudinal direction through the cutting-off tools *n n'*, and in a transverse direction through the piece to be cut, and which is held between the flanges *a* and *b*, the base of the tool-stock holder being a plane at right angles with the aforesaid vertical planes, whereby its partial revolution around said point within established limits, while presenting the cutting-off tools *n n'* to the piece to be cut at an acute or obtuse angle, does not materially affect the diameter of said piece or the point of connection of the tools *n n'* in the plane in which said piece is revolving, and thereby producing articles having their external circumference forming a bevel with their plane of rotation, substantially as set forth.

300,337. GYNECOLOGICAL AND SURGEON'S OPERATING-TABLE. J. DALZELL ALEXANDER, Wooster, Ohio. Filed Aug. 31, 1883. (No model.)

Claim.—1. In combination with the table-frame J and supporting-structure with concave end R and mattress-frame L L', the rise post D, adjusting-screw B, standard F, gear G, and bed-plate I, the lateral tilt-

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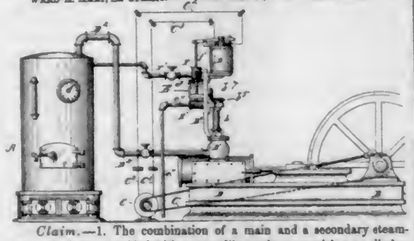


ing-bar C with adjusting-screw T, and the longitudinal bar Y, provided with adjustable arms *v*, substantially as and for the purpose specified.

2. In combination with table-frame J, supporting-structure, and mattress-frame L L', the tilting-bars E, attached to each of said mattress-frames, provided with track-pulleys *p*, the vertically-adjustable pulley-tracks *s*, together with racks *o*, pinions *a*, and the operating-shaft, provided with ratchet *e* and pawl *t*, and devices for giving an inclined position to the mattress-frame, substantially as and for the purpose specified.

3. In combination with the table proper, consisting of table-frame J, supporting-structure, and mattress-frame L L', as shown and described, the stirrups P and stirrup-shafts *m*, the said shafts being provided with double joints O O', and movable sheath K', substantially as and for the purpose specified.

300,338. ELECTRICAL GOVERNOR FOR STEAM-ENGINES. EDWARD H. AMET, La Grange, Ill. Filed Jan. 25, 1884. (No model.)



Claim.—1. The combination of a main and a secondary steam-motor, the latter provided with a controlling-valve comprising a cylinder, an upper and a lower opposite port, and a piston arranged to cover either or both of said ports, with an independent supply-pipe for each motor, and with a solenoid directly connected to said valve of the secondary motor, and electrically connected with a dynamo driven by the main motor, the secondary motor being adapted to control the steam supplied to the main motor, substantially as specified.

2. In an apparatus comprising a main motor, a dynamo operated thereby, a solenoid in circuit with said dynamo, and a secondary motor, the combination, with said solenoid and with said secondary motor, of a supply-valve comprising a chest or valve body having opposite ports in different planes, and a valve or piston head adapted to cover either or both of said ports, substantially as shown and described.

3. The combination of a main steam-motor, an independent rotary steam-motor provided with oppositely-located ports, and a valve having separate connections with each of said ports, with a solenoid connected with said valve and with the valve of the main motor, substantially as specified.

4. The combination of a governing-valve of a steam-motor, the stem of which is screw-threaded and provided with a nut, with an independently-supplied steam-motor, a suitably-connected solenoid, and mechanism for rotating said nut in opposite directions, as specified.

5. The combination of the valve B', stem *b*, gears b^2 b^3, and motor E, with the solenoid D, substantially as shown and described.

6. The combination of the valve B', stem *b*, guide *b'*, bracket b^4, nut b^5, gear b^3, and collar b^6, with an electrically-governed motor, substantially as shown and described.

7. The combination of the valve B', standard B^4, and motor E, and solenoid D, supported on the standard, substantially as shown and described.

8. The combination of the valve B', standard B^4, motor E, and solenoid D, substantially as shown and described.

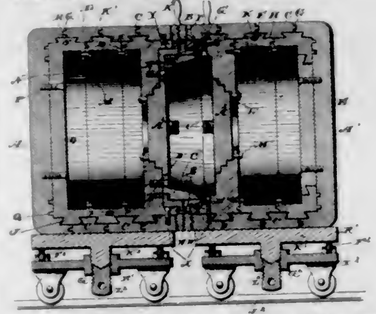
9. The combination of the motor E, pipes e^3 e^4 F', valve F, and solenoid D, substantially as shown and described.

10. The combination of the motor E, having ports e^3 e^4, valve F, having ports e^6 e^6, pipe F', piston *f*, and solenoid D, substantially as shown and described.

11. The combination of the valve F, piston *f*, elastic stem *f''*, lever G, and solenoid D, substantially as shown and described.

12. The combination of the valve F, stem *f''*, lever G, bracket *g*, core D', spring g^3, and a bolt provided with adjusting-nuts g' g^3, substantially as shown and described.

300,339. SAFE. THOS. M. BRINTNALL, Kansas City, Mo. Filed Jan. 25, 1883. Renewed Mar. 22, 1884. (No model.)



Claim.—1. The combination, with a safe consisting of two sections, of a ring associated with the open end of one section, and adapted to be rotated independently thereof, and provided with devices constructed to engage and interlock with like devices carried by the open end of the other section, substantially as set forth.

2. In a safe consisting of two sections, the combination, with one section and a movable ring associated with its open end, the exposed face of the ring being provided with screw-threaded segments, of the other section of the safe, having its open end provided with segmental screw-threaded projections arranged to interlock with the segments of the ring, substantially as set forth.

3. In a safe, the combination, with the rotary doors thereof, of studs having enlarged heads secured to the inner faces of said doors, and bearings or jambs formed to receive the doors, and provided with curved slots having enlarged ends to receive the stud-heads, whereby the studs are passed through the jamb and their heads brought to bear up against the inner side thereof, and the doors locked when partially rotated, substantially as set forth.

4. In a safe consisting of two sections, the combination, with removable doors fitting into said sections and having screw-threaded studs projecting from their outer faces, of detachable carriers for removing and replacing said doors, and consisting, essentially, of uprights mounted on rollers and pivoted to the standards of the respective safe-sections, and internally-threaded sleeves journaled in the upper ends of the uprights, and provided with handles, substantially as set forth.

5. A safe the shell of which is composed, essentially, of a series of outer and a series of inner peripherally-interlocked rings, the inner rings being arranged to break the joints of the outer, substantially as set forth.

6. A safe the shell of which is composed of a series of the outer rings having interlocked edges, and a series of inner rings having interlocked edges and bolted together, the contiguous faces of the inner and outer rings being mortised and dovetailed, as described, to interlock, substantially as set forth.

7. The combination, with a safe consisting of two sections, of adjustable rotating standards for said sections, the said standards being secured, respectively, to the sections, and being provided each with a center adapted to adjustably unite with a carriage, substantially as set forth.

8. A safe the shell of which is composed, essentially, of outer and inner contiguously or edge-locked rings, the inner series of rings being arranged to break the joints between the outer series, substantially as set forth.

9. The combination, with a safe consisting of two sections, of rotating standards rigidly secured to said sections, and carriages for the respective standards, the standards being constructed to rotate with the sections independently of the carriages, and the latter being arranged to run on the same trackway, and to be thereby held against rotation, substantially as set forth.

10. The combination, with a safe consisting of two sections and rotating standards secured thereto and provided with a center, of a carriage for each standard, having devices for adjusting the relative position of the standard thereto, substantially as set forth.

11. The combination, with a safe consisting of two sections, and the described adjustable hinge for uniting said sections, of a rotating standard and a carriage for each section, whereby they are separated after being unlocked, and then rotated to present their open ends to the front, substantially as set forth.

300,340. ANTI-FRICTION BEARING FOR MACHINERY. PATRICK BROWNLEE, St. John, New Brunswick, Canada. Filed Nov. 9, 1883. (No model.)



Claim.—1. An anti-friction bush, box, or bearing provided with a series of revolving rollers supported between plates or disks, said disks being adapted to revolve in independent bearings, substantially as shown and described.

2. An anti-friction box or bearing provided with a series of revolving rollers supported between plates provided with bearing-recesses so arranged that the rollers shall not touch each other, and connected loosely by rivets, rods, or bars in such manner that the said plates also revolve in independent bearings, substantially as shown and described.

3. In an anti-friction box or bushing, the combination, with the casing A, of revolving plates B C, the former adapted to work in a bearing-recess in the casing, and the latter against the end thereof, and a series of rollers, F, arranged in position to support a shaft or ship's blocks, carriage-wheels, or for other suitable purpose, substantially as described.

4. In an anti-friction bush, box, or bearing, the combination, with a fixed case or frame, of a pair of connected revolving disks or plates adapted to work in independent bearings, and a series of anti-friction rollers working in recesses in said plates, substantially as described.

5. An anti-friction bush, box, or bearing adapted to keep the rollers in position and equally apart by means of the recesses and projections on the end of plates B and C, and to work in suitable bearings, substantially as described.

6. A casing provided with a recess in one of its ends, and its other end having a non-recessed bearing, in combination with revolving disks secured to each other, and having anti-friction rollers interposed between said disks, substantially as described.

7. The combination of disks having raised projections from their faces, in which are formed recesses for journal-bearings for anti-friction rollers, the said disks having bearings, and being arranged face to face and suitably secured to each other by tie-rods, substantially as set forth.

8. The combination, in a device for lessening friction in journal-bearings, of the plates or disks provided with oil-jackets beyond the bearings of the anti-friction rollers which are between said disks, substantially as shown and described.

9. The combination, in an anti-friction journal-bearing box, of the bearing disks and rollers, the said disks having projecting bearings and recesses therein, the walls of said recesses being cut away so as to permit the ready removal of the rollers when the nest is detached from the box, substantially as set forth.

300,341. PRINTING-TELEGRAPH. CHARLES L. BUCKINGHAM, New York, and WILLIAM R. VANSIZE, Brooklyn, assignors to the Western Union Telegraph Company, New York, N. Y. Filed Mar. 8, 1884. (No model.)

Claim.—1. The combination, in a printing-telegraph, of two main lines, two independent press-magnets respectively placed therein, two type-wheels, and an electro-magnetic device therefor for controlling their rotation.

2. The combination, in a printing-telegraph, of two independent main lines, two independent press-magnets respectively placed therein, two type-wheels connected together, and an escapement device and electro-magnet for controlling their rotation.

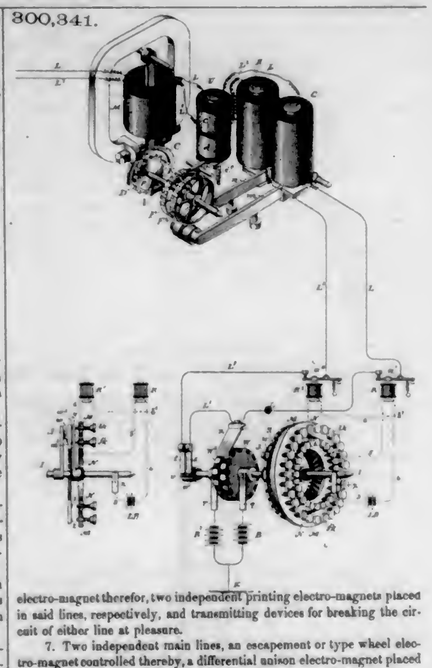
3. The combination, in a printing-telegraph, of two main lines including the multiple-arc coils of the escapement or type-wheel magnet, and two independent press-magnets whose coils respectively form parts of said main lines.

4. The combination of two independent main lines, an escapement electro-magnet controlled thereby, and two independent printing-magnets whose coils form parts, respectively, of said lines.

5. The combination of two independent main lines, a type-wheel escapement device controlled thereby, a differential unison-magnet, and two independent printing electro-magnets placed in said lines, respectively.

6. The combination of two main lines, an escapement or type wheel

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electro-magnet therefor, two independent printing electro-magnets placed in said lines, respectively, and transmitting devices for breaking the circuit of either line at pleasure.

7. Two independent main lines, an escapement or type wheel electro-magnet controlled thereby, a differential unison electro-magnet placed in said lines, two independent printing electro-magnets, and unison transmitting devices for breaking the main circuit through one of said lines to release the unison mechanism.

8. Two independent main lines, commutating devices for simultaneously transmitting thereon short electrical impulses, devices for lengthening an impulse upon one line and for breaking the other line, substantially as described, a multiple-arc type-wheel electro-magnet, and two independent printing electro-magnets in said lines.

9. The combination of the differential unison electro-magnet U, armature-lever *l*, unison-arm *p*, type-wheel lines L L', and a circuit-breaker for periodically breaking line L', substantially as described.

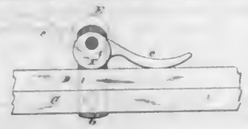
10. The combination, in a printing-telegraph instrument, of a rotating transmitter-arm, a series of transmitting-keys for arresting said arm, circuit-breaking connections for said keys, a sunflower arrangement, as described, two main lines, and relays R R', for breaking the main lines, substantially as specified.

11. The combination, in a printing-telegraph, of a rotating circuit wheel or wheels, a rotating transmitter-arm, and two series of keys for arresting said transmitter-arm, a sunflower arrangement, as described, two main lines, and transmitting devices for breaking either of the main lines by its associated series of transmitting-keys, substantially as described.

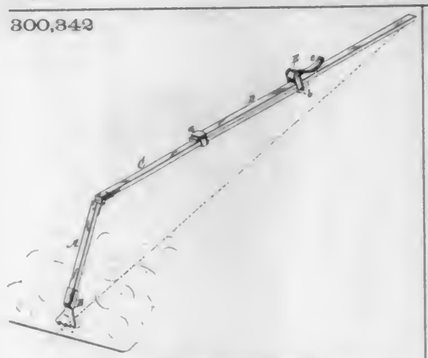
12. In a printing-telegraph, the combination of two independent main lines, each having an independent printing-magnet, two independent press-levers, two type-wheels rigidly connected together, and transmitting devices for prolonging an electrical impulse upon one line while the other line is broken, and vice versa.

300,342. CARPET-STRETCHER. FRED W. BURNS, Lemars, Iowa. Filed Apr. 24, 1884. (No model.)

Claim.—A carpet-stretcher consisting of two arms hinged together, one of which is provided with a suitable claw, an extensible arm, and a cam or eccentric locking device for holding the arm in an adjusted position, substantially as and for the purpose specified.

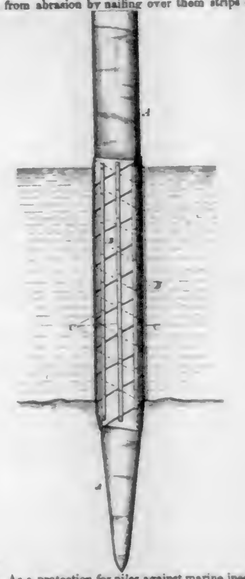


300,342



300,343. PROTECTING PILES. JACOB A. CAMP, Sandusky, Ohio. Filed Feb. 19, 1884. (No model.)

Brief.—Consists in covering a pile with strips of canvas or cloth spirally wound and saturated with asphalt or similar material, and protecting the same from abrasion by nailing over them strips of board.



Claim.—1. As a protection for piles against marine insects, a covering of cloth or other fibrous material secured around a pile, and wooden or other strips secured to the outer face of the flexible covering for the purpose of protecting the latter against abrasion.

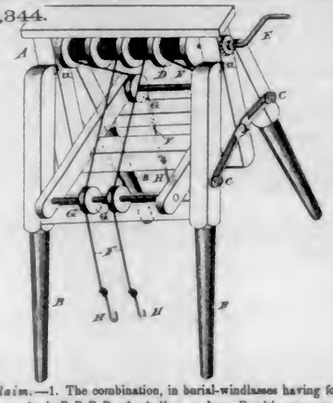
2. As a protection for piles against marine insects, a covering of cloth impregnated with asphalt or other similar material, and secured around the pile, and wooden or other strips secured to the covering for the purpose of protecting the latter against abrasion.

3. The combination, with a pile wholly or partly coated with asphalt or other similar material, of a flexible covering secured around the pile and impregnated with asphalt or other similar material, and wooden or other strips secured against the outer face of the flexible covering, substantially as set forth.

4. The combination of a pile wholly or partly covered with asphalt or other suitable material, a strip of canvas wound spirally around the pile and coated or impregnated with asphalt, and a second strip of fibrous material wound spirally in the opposite direction around the first strip, substantially as set forth.

300,344. BURIAL-WINDLASS. CHARLES M. CHAMBLIN and THOMAS WALTZ, Newton, Ill. Filed Apr. 17, 1884. (No model.)

300,344.

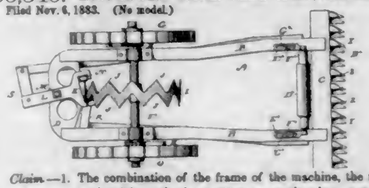


Claim.—1. The combination, in burial-windlasses having folding legs or standards B B B B, of windlass or drum D with ropes or cords F F F F, pulleys G G G G, and hooks H H H H, all substantially as set forth.

2. The combination, in burial-windlasses with grappling-hooks having bar *d*, of rings *e e e*, swinging rods *f f*, and brace-rods *g g*, substantially as set forth.

3. The grappling-hooks provided with bar *d*, rings *e e e*, swinging rods *f f*, and brace-rods *g g*, passing through center ring, *i*, substantially as described, and shown in Fig. 4, and for the purpose set forth.

300,345. LAWN-MOWER. CHARLES WARREN CHENEY, Athol, Mass. Filed Nov. 6, 1883. (No model.)



Claim.—1. The combination of the frame of the machine, the rotary axle carrying the drive-wheels, a cutter-supporting bar secured across the front of the frame, a cam-wheel secured about centrally on the axle, a horizontally-oscillating lever fulcrumed on the frame just in rear of the cam-wheel, longitudinal oscillating levers fulcrumed at the sides of the frame, pivoted links connecting these longitudinal levers with the main oscillating lever respectively in front and in rear of its fulcrum, and the transverse cutter-bars pivotally connected with the ends of the longitudinal levers, substantially as set forth.

2. The combination of the inclined frame of the machine, the cutter-supporting bar secured to the lower front end thereof, the supporting-roller journaled just back of said bar, the rotary axle having the cam-wheel, a lever fulcrumed on the frame in rear of the axle and oscillated by the cam, the longitudinal side levers pivoted on the frame at its sides, the links connecting said levers with different ends of the oscillating levers, and the oppositely-moving cutter-bars arranged one above the other, and pivotally connected to the lower ends of the longitudinal levers, substantially as set forth.

3. In a lawn-mower, the combination of the independent series of knives or cutters disposed one series directly above the other and reciprocating in opposite directions, the teeth being formed with one straight edge at about a right angle to the cutter-bar, substantially as and for the purpose set forth.

300,346. CASE FOR PENCILS AND SIMILAR INPLEMENTS. RICHARD M. COLLARD, New York, N. Y., assignor to Le Ray W. Fairchild, same place. Filed Apr. 19, 1884. (No model.)

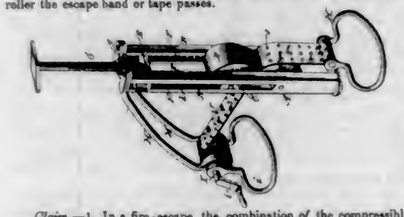


Claim.—1. The tube C, having the screw mechanism or tube *a* rigidly secured to it at one end, and provided with the internal shoulder or stop at its opposite end, in combination with the tube D, provided with the external shoulder or stop, all arranged to operate substantially as shown and described.

2. The telescopic case consisting of the external tube, C, having the screw mechanism or tube *a* rigidly secured to it at one end, and provided with the internal shoulder or stop, *b*, at its opposite end, and the tube D, provided with the external shoulder or stop, *d*, in combination with a holding sheath or case, A, all arranged to operate substantially as shown and described.

300,347. FIRE-ESCAPE. MATTHEW C. CORRIGAN, Hollyrood, Kans. Filed Apr. 7, 1884. (No model.)

Brief.—A fire-escape in which springs are interposed between the follower-plate and the compressible roller, between which and the fixed roller the escape band or tape passes.



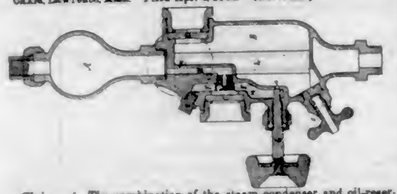
Claim.—1. In a fire-escape, the combination of the compressible roller journaled in fixed bearings, a similar roller journaled in movable bearings, springs arranged to bear against said bearings, whereby the rollers are pressed together, and a suitable tape, substantially as set forth.

2. The combination of the stationary roller, the movable roller, a follower-plate, springs arranged between the follower-plate and the bearings of the movable roller, and a set-screw turned through a threaded bearing and pressing against the follower-plate, whereby the tension of the device may be regulated and adjusted, substantially as set forth.

3. The combination, with the stationary roller and the movable roller, of springs arranged to press against the bearings of the movable roller and force same against the stationary one, and means whereby the tension of said springs may be varied, substantially as set forth.

4. The fire-escape, substantially as herein described and claimed, consisting of the main frame, the stationary roller journaled therein, the movable roller journaled in bearing-blocks held in guides in the main frame, the follower-plate, the springs arranged between the follower-plate and bearing-blocks, the adjusting-screw, the bracket-arms extended from the framing, the reel journaled therein, and the tape, substantially as and for the purposes specified.

300,348. LUBRICATING STEAM-ENGINES. WARREN HILLIARD CRANE, Lawrence, Mass. Filed Apr. 4, 1884. (No model.)



Claim.—1. The combination of the steam-condenser and oil-reservoir with a passage leading from the said condenser to and opening into the lower part of the said reservoir, and having to its educt leading into the said reservoir a screw-plug or valve, and containing, or having in common with it and said passage, an observation-chamber adapted to hold a suitable liquid, through which the water on its way from the condenser to the reservoir may pass visibly in drops, substantially as described, such suitable liquid being separate and distinct or differing from the oil used for lubricating.

2. The combination of the steam-condenser A and the oil-reservoir B, (the latter having a feeding-outlet, *g*, provided with a suitable valve or screw-plug,) with the chamber F, furnished with an observation-pane, C, and connecting with the said condenser and opening into the lower part of the oil-reservoir, and having to its educt leading into the said reservoir a screw-plug or valve, all being substantially as shown and described.

3. The combination of the steam-condenser A and oil-reservoir B, (the latter having a feeding-outlet, *g*,) with a chamber, F, provided with an observation-pane, C, and containing a charge of oil or liquid lighter than water and incapable alone of chemical combination therewith, the said chamber having a passage to it from the said condenser, and communicating with the oil-reservoir by another passage having a suitable screw-plug or valve, all being substantially as hereinbefore described, and as represented.

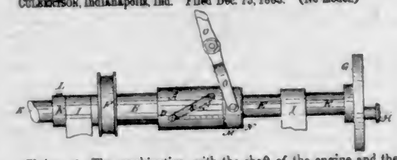
4. The combination of the condenser A, educt E, water-trap H, chamber F, observation-window C, and oil-reservoir B, such reservoir being connected with the said chamber and provided with a suitable outlet, and all being substantially as herein set forth.

5. The combination of the condenser A, educt E, water-trap H, chamber F, observation-window C, and the oil-reservoir B, (the latter having an outlet, *g*,) with means, substantially as described, viz: the screw-plug G, for opening and closing the communication between the said chamber and reservoir, regulating the passage of water from the chamber to the reservoir and of oil from the reservoir to the part to be lubricated, all being substantially as set forth.

6. The improved art or method of lubricating steam-engines, it consisting in causing water to first pass visibly in drops through a liquid lighter or having a specific gravity less than that of water and incapable alone of chemical combination therewith, and separate and distinct or differing from the oil used for lubricating, and afterward to pass into the reservoir at its lower part only, containing such oil, so as to force upward such oil to a position for discharge of it from the said reservoir, all being substantially as set forth.

7. The combination of the steam-condenser and oil-reservoir with a passage leading out of the former into the lower part of the latter without having any separate communication with the upper part of the said reservoir, but containing, or having in common with it, the said passage, an observation-chamber adapted to hold a suitable liquid, through which the water in its way from the condenser to the reservoir may pass visibly in drops, substantially as described.

300,349. VALVE-GEAR FOR REVERSING ENGINES. WILLIAM CULKERTON, Indianapolis, Ind. Filed Dec. 15, 1883. (No model.)



Claim.—1. The combination, with the shaft of the engine and the sleeves A and B, the latter and the eccentric made in one piece, of the pins D *d* and the slots *a* and C, all arranged as shown and described.

2. The combination, in a valve-gear, of the shaft and the sleeves A and B with the pins D *d* and the slots *a* C, said slots being inclined in opposite directions, whereby the eccentric is shifted by a slight movement of the outer sleeve, substantially as shown and described.

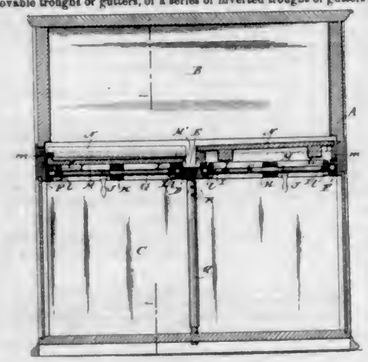
300,350. GRAINING COMPOUND. WILLIAM HENRY DOW, Burlington, Vt. Filed Dec. 29, 1883. (No specimens.)

Claim.—The herein-described graining composition, consisting of whiting, wheat-flour, and burnt umber, mixed with vinegar or beer, in about the proportions specified.

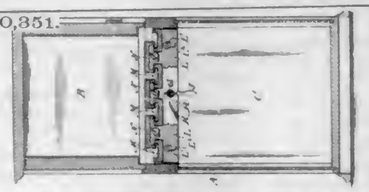
300,351. REFRIGERATOR. ISAAC T. DYER, Quincy, Ill., assignor of one-half to John T. Pieper and Henry C. Pfeiffer, both of same place. Filed Mar. 20, 1884. (No model.)

Claim.—1. A refrigerator provided with a rack formed of vertically-movable troughs or gutters, over which fixed troughs or gutters are held, the said lower gutters being arranged to close the spaces between the upper gutters, whereby communication between the two chambers may be shut off, substantially as herein shown and described.

2. In a refrigerator, the combination, with a series of vertically-movable troughs or gutters, of a series of inverted troughs or gutters held



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above the vertically-movable troughs or gutters, adapted to close the spaces between and receive the adjacent flanges of the upper gutters, and of means for moving the lower troughs or gutters vertically, substantially as herein shown and described.

3. In a refrigerator, the combination, with a series of vertically-movable troughs or gutters, of a series of inverted troughs or gutters held above the vertically-movable troughs or gutters, adapted to cover the spaces between the upper troughs, of means for moving the lower troughs or gutters vertically, and of means for locking the lower troughs or gutters in place when raised, substantially as herein shown and described.

4. In a refrigerator, the combination, with a series of gutters or troughs held on vertically-movable bars, of inverted fixed gutters held over the vertically-movable gutters, the said troughs being adapted by their interlocking flanges to act as valves between the two chambers, substantially as herein shown and described.

5. In a refrigerator, the combination, with a series of gutters, of vertically-movable bars supporting them, and a cam-shaft for moving the said bars vertically, substantially as herein shown and described.

6. In a refrigerator, the combination, with a series of gutters, of vertically-movable oars supporting them, cam-shafts for moving the supports vertically, handles for turning the cam-shafts, and means for locking the handles in place after turning the shafts, substantially as herein shown and described.

7. In a refrigerator, the combination, with a series of gutters or troughs, of vertically-movable bars for supporting them, cam-shafts for moving the supports vertically, pivoted handles on the cam-shafts, and of notched crossed bars adjoining the handles, substantially as herein shown and described.

8. In a refrigerator, the combination, with a transverse beam, D, having a gutter, E, of the cam-shafts G, the handles J, pivoted to the same, the cross-bars H, provided with notches K, for receiving the handles and holding them in place, and the gutters M, resting on the bars L, supported by the cam-shafts, substantially as herein shown and described.

9. In a refrigerator, the combination, with the transverse beam D, having a groove in its upper surface, of the cam-shafts G, the gutters M, and the inverted gutters N, held above and overlapping the sides of the gutters M, substantially as herein shown and described.

10. In a refrigerator, the combination, with the gutters or troughs M, resting on vertically-movable supports, of the fixed inverted gutters or troughs provided with the blocks O on their under surfaces, substantially as herein shown and described.

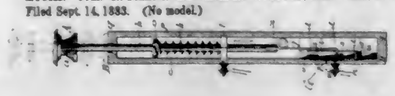
11. In a refrigerator, the combination, with a central cross-bar, D, provided with a groove in the upper surface, the end bars, F, the cam-shafts G, journaled in the cross-bars H and F, the strips L, held on the bars D and F by pintles passing through vertical slots, the gutters M, resting on the strips L, and the inverted gutters N, resting above and overlapping the sides of the gutters M, and provided on their under surfaces with blocks O, which pass in between the adjoining sides of the gutters M, substantially as herein shown and described.

12. In a refrigerator, the combination, with a cross-beam, D, having a gutter, E, of the cross-beams F, the gutters M, the inverted gutters N, and the outlet-pipe Q, having apertures R, extending from the trough or gutter E through the refrigerating-chamber to the bottom of the refrigerator-casing, substantially as herein shown and described.

300,352. TANNING PROCESS. SAMUEL S. EDDY, Rochester, N. Y. Filed Apr. 10, 1884. (Specimens.)

Claim.—The improved method of tanning pickled hides, or hides fresh from the pickle, which consists in first partially tanning by subjecting them in the pickled condition to an acidulating composition substantially of the character set forth, then washing and draining, and next completing the operation of tanning by the action of an alkaline tanning composition substantially of the character set forth, and then drying.

300,353. TELEGRAPHIC TRANSMITTER FOR UNSKILLED OPERATORS. JOHN N. FARRAR and CHARLES W. MORSE, New York, N. Y. Filed Sept. 14, 1883. (No model.)



Claim.—1. The guide-piece G, for governing the action of the stylus-pole *j*, in combination with the transmitting-track *g d*, having saw-like click-steps *s s*, with the return-track *s h s*, with the partition-ridge *i*, substantially as described, and for the purpose set forth.

2. The stylus-wire *j*, forming one pole of the battery, in combination with the tracks *s s* and *s h s* in the guide-body G, containing the opposite pole, substantially as described, and for the purpose set forth.

3. The metallic partition *l* in the key-groove to which is connected one of the battery-wires *m*, in combination with the key-rod *b*, extending through said partition, and the stylus-pole *j* and guide-body G, connected substantially as described, and for the purpose set forth.

300,354. LATCH-CLASP FOR DRIVING-REINS. JOHN H. FENTON, Chicago, Ill. Filed Oct. 30, 1882. (No model.)



Claim.—1. The combination, with a rein or strap doubled on itself to form a loop, of the frame provided with the pivoted latch depressed between its ends and applied so as to receive within the depressed portion the double portion of the rein to form a loop beyond the end of the frame, substantially as described.

2. The combination, with the frame provided with the pivoted depressed cross-latch, of the rein or strap doubled upon itself, and having the doubled portion lying upon the latch and extending beyond the end of the frame, so as to form a loop, substantially as described.

300,355. HOSE-REEL. HENRY L. GARDNER, Springfield, Mass., assignor to David S. Loomis, same place. Filed July 3, 1883. (No model.)

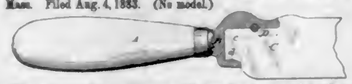


Claim.—1. A hose-reel consisting of two wheels connected by bent bars secured to the rims of the wheel, substantially as shown and described.

2. A skeleton hose-reel consisting of two rims without spokes or hubs, and rigidly connected together by bent bars, substantially as shown and described.

3. A hose carriage or reel having the hose-supporting parts *b* depending inwardly and secured to the side portion at or near their peripheries, substantially as described.

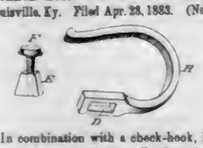
300,356. KNIFE AND FORK. JOS. W. GARDNER, Shelburne Falls, Mass. Filed Aug. 4, 1883. (No model.)



Claim.—1. In combination with handle A and bolster B, part C, having its end inserted in the bolster, and a locking-pin, D, passed transversely through the bolster and through part C, and serving to retain said part in place without the aid of other fastening.

2. In combination with a handle provided with bolster B, having slot *a*, and socket *b*, the latter formed with curved wall *d*, part C, curved to conform to wall *d*, whereby said part is adapted to move upon said wall as a center of motion, and thus to be swung into the socket *b*, and a transverse locking-pin, D, passing through the bolster and through part C, as shown, whereby part C is prevented from being withdrawn from the bolster without first withdrawing the pin.

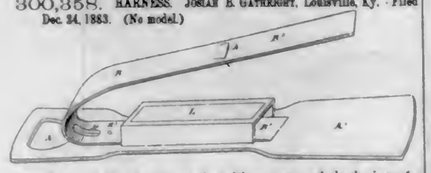
300,357. CHECK-HOOK FOR HARNESS-SADDLES. JOSIAH B. GATHRIGHT, Louisville, Ky. Filed Apr. 23, 1883. (No model.)



Claim.—1. In combination with a check-hook, H, provided with a suitable hole, D, a tapering or beaded nut, E, adapted to project into the hole from below until practically flush with the under surface of the shank of the hook, and up into the bolt-hole of the tree, and a screw, F, adapted to enter said bolt-hole and nut from above, substantially as set forth.

2. In a fastening for check-hooks, the combination of the screw F and the tapering or beaded nut E, said nut being adapted to penetrate through the check-hook and up into the bolt-hole of the tree, and tapped obliquely, as and for the purpose set forth.

300,358. HARNESS. JOSIAH B. GATHRIGHT, Louisville, Ky. Filed Dec. 24, 1883. (No model.)

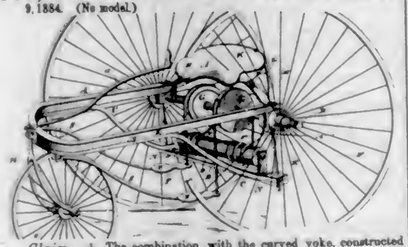


Claim.—1. In the construction of hame-tugs and check-pieces for harness, to adapt these parts for sale without trimmings, the combination of a folded or doubled buckle-strap and a box-loop secured to one layer only of the buckle-strap, as and for the purpose shown and described.

2. In the construction of hame-tugs and check-pieces for harness, adapted for sale without trimmings, the combination of a folded or doubled buckle-strap, a box-loop secured to one layer only of the buckle-strap, and a safe, all as shown and described.

3. In the construction of hame-tugs and check-pieces for harness, adapted for sale without trimmings, the combination of a folded or doubled buckle-strap, a box-loop secured to one layer only of the buckle-strap, and a supplementary strap covering the inside bottom of the loop, all as and for the purpose shown.

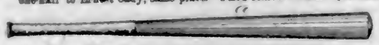
300,359. TRICYCLE. JOHN GOWDEY, Janesville, Wis. Filed Apr. 9, 1884. (No model.)



Claim.—1. The combination, with the curved yoke, constructed substantially as described, having bearings or boxes secured thereto at its free ends, an axle journaled in said boxes, wheels secured to the axle, and pulleys connected to said axle by friction-clutches, of a cross-bar suspended below the axle by the rods and bar, as described, a roller journaled in bearings in said cross-bar, ropes secured to said roller and passing up over the pulleys, and pedal-levers, the front ends of which are secured to the curved portion of the yoke, while their rear ends are secured to the free ends of the ropes.

2. A tricycle consisting, essentially, of the curved U-shaped yoke, the axle journaled thereto, wheels secured to the axle, the steering-wheel, the pulleys, the cross-bar suspended below the axle in the manner described, the roller journaled in bearings on said cross-bar, the pedals, and ropes connecting the roller and pedals, all of the above parts constructed and combined substantially as and for the purpose set forth.

300,360. BASE-BALL BAT. WM. GRAY, Hartford, Conn., assignor of one-half to Ernest Cady, same place. Filed Mar. 27 1884. (No model.)



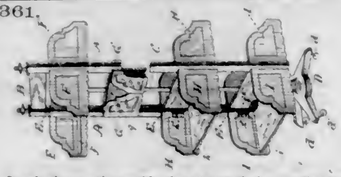
Claim.—1. As an improved article of manufacture, a base-ball or cricket bat or the like implement having its handle-section covered with sand or the like granulated material firmly cemented thereto, all substantially as described, and for the purpose set forth.

2. As an improved article of manufacture, a base-ball bat, *a*, having the surface of its handle-section *b* roughened by a covering-layer of granulated material firmly attached thereto by shellac or the like cementing material, all substantially as described.

300,361. BOOK-CASE. HENRY S. HALE, Philadelphia, Pa. Filed Aug. 6, 1883. (No model.)

Claim.—1. In a book-case, the combination of a vertical supporting-frame, end boards projecting from the frame at the ends of the shelves, and shelves hinged at their inner edges to the vertical frame at points intermediate between the end boards, substantially as set forth.

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2. In a book-case, the combination of a vertical supporting-frame, end boards hinged at their inner edges to the supporting-frame by vertical pivots, and shelves arranged between the end boards and supported upon horizontal pivots, substantially as set forth.

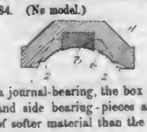
3. The combination of a vertical supporting-frame, end boards hinged at their inner edges to the supporting-frame by vertical pivots, shelves arranged between the end boards, and hooks and staples attached to the end boards and the horizontal shelves, and connecting them, and adapted to support the end boards against outward thrust, substantially as set forth.

4. In a book-case, the combination of a vertical supporting-frame, end boards projecting from the supporting-frame at the ends of the shelves, shelves arranged between the end boards and hinged to the main frame by horizontal pivots, and vertical partitions which constitute a part of the main frame between the inner hinged edges of two adjacent horizontal shelves, substantially as set forth.

5. In a book-case, the combination of a vertical supporting-frame, end boards hinged by their inner edges to the supporting-frame, swinging shelves hinged by their inner edges to the main frame intermediate between the end boards, and devices for connecting the ends of the shelves with the swinging end boards, substantially as set forth.

6. In a book-case, the combination of a base-piece adapted to rest upon the floor, a vertical shaft supported at its lower end in a base-piece, a vertical supporting-frame pivoted upon the vertical shaft, a series of horizontal shelves hinged at their inner edges upon opposite sides of the frame, and a series of vertical end boards hinged at their inner ends to opposite sides of the frame, substantially as set forth.

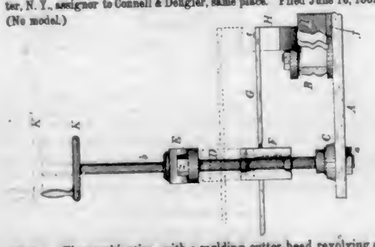
300,362. CAR-AXLE BOX. WILLIAM A. HARDY, Fitchburg, Mass. Filed Mar. 24, 1884. (No model.)



Claim.—1. In a journal-bearing, the box and casing having a central bearing-piece and side bearing-pieces all of lining material, the central piece being of softer material than the side pieces, substantially as described.

2. In a journal-bearing, the box or casing having a central bearing-piece and side pieces of lining material, the said central bearing-piece having its bearing-surface raised or projecting beyond that of the side pieces, and constituting the sole bearing when the box is first applied to the journal, substantially as described.

300,363. GUARD FOR CUTTER-HEADS. THOMAS HARPS, Rochester, N. Y., assignor to Connell & Deagler, same place. Filed June 16, 1882. (No model.)

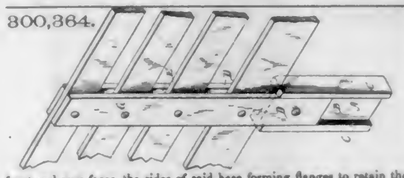


Claim.—The combination, with a molding cutter-head revolving on a vertical shaft above a suitable work-supporting table, of the yielding guard H, supported between the operator and the head by one or more springs, G, attached to the table in rear of the head, and having its lower edge constructed to bear on the work opposite the head, and operating to steady the work during the cutting operation, substantially as and for the purposes set forth.

300,364. FENCE-POST. ABRAHAM C. HARRISON, Providence, Ohio. Filed Nov. 13, 1883. (No model.)

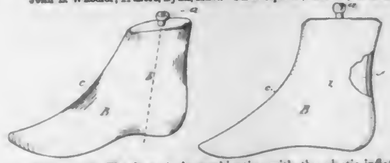
Claim.—In a post for fences and the like, the base constructed of earthenware or tiling and provided with vertical recesses formed in its

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front and rear faces, the sides of said base forming flanges to retain the standards in place, in combination with the standards adjustably secured within said recesses, as and for the purpose set forth.

300,365. DEVICE FOR EXPANDING ARTICLES OF FLEXIBLE MATERIAL. CHARLES L. HOGGINS, Montreal, Quebec, Canada, assignor to John E. Wheeler, Trustee, Lynn, Mass. Filed Apr. 14, 1884. (No model.)



Claim.—1. The form A, in combination with the elastic inflator B, arranged and adapted as described, and for the purposes specified.

2. In a device for giving shape to flexible hollow articles by elastic pressure, a narrow form held within the device, having the general outline of the article, substantially as and for the purposes set forth.

300,366. CARPET-FASTENER. ERNEST HORNECK and ELSIE HORNECK, St. Paul, Minn. Filed Feb. 21, 1884. (No model.)

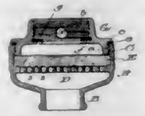


Claim.—1. A carpet-fastening consisting of a flexible strip of leather, cloth, or metal, provided with metal washers or plates on the upper and lower sides in which tacks or nails are rigidly set, substantially as set forth.

2. As a new article of manufacture, a carpet-fastening consisting of a flexible strip of leather, cloth, or metal, provided with tacks or nails rigidly secured thereto by washers or metal plates, and having rings or handles at one or both ends, substantially as set forth.

300,367. FILTER. BENJAMIN HOLLAND, Jr., Providence, R. I., assignor of one-half to Thomas S. Nowell, Boston, Mass. Filed July 16, 1883. (No model.)

Brief.—The part E is composed of felt.



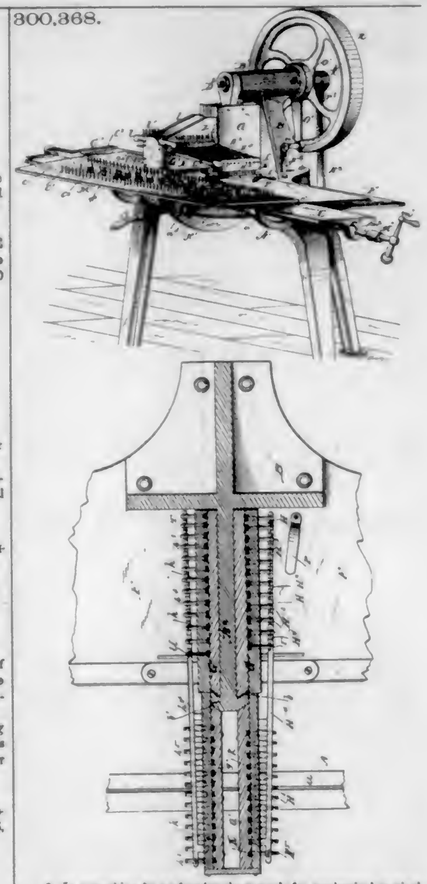
Claim.—The combination and arrangement, substantially as shown and described, in a filter, of the shell A, having the internal foraminous shelf, D, cast therewith, and forming chambers above and below the shelf, the attaching cap or cover G, screw-threaded to engage an internal screw-thread in the shell to connect the two, and the disk of felt or textile filtering substance E, supported by the said shelf, and held in place by the said cap or cover screwed down upon it, as set forth.

300,368. MACHINE FOR PUNCHING PERFORATED SHEET-MUSIC. HENRY B. HORTON, Ithaca, N. Y., assignor to the Automatic Music-Paper Company, Boston, Mass. Filed Sept. 30, 1881. (No model.)

Claim.—1. In a machine for perforating sheet-music for mechanical musical instruments, the combination, substantially as before set forth, of a reciprocating head, a series of independent punches movably mounted therein, and a corresponding series of bolts, also mounted in said head, and adapted to engage with and drive one or more of said punches.

2. In a machine for perforating sheet-music for mechanical musical instruments, the combination, substantially as before set forth, of two rows of independent punches and dies, the punches and dies in one row being arranged opposite to the spaces between the punches and dies in the other row.

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3. In a machine for perforating sheet-music for mechanical musical instruments, the combination, substantially as before set forth, of a reciprocating head carrying a row of independently-movable punches, and corresponding independently-movable feelers, and locking bolts and levers intermediate between the feelers and punches, and a step-wise fed pattern under that portion of the reciprocating head assigned to the feelers.

4. In a machine for perforating sheet-music for mechanical musical instruments, the combination, substantially as before set forth, of two rows of punches and corresponding dies, the step-wise fed pattern at one end and at right angles to said rows, and the feed-apron connected laterally with the pattern-carriage, and adapted to move through between the punches and dies for the attachment of the sheet or sheets to be punched.

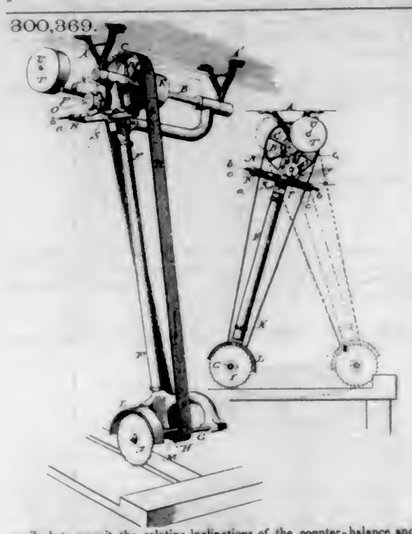
5. The combination, substantially as before set forth, of the reciprocated feelers of a machine for perforating sheet-music for mechanical musical instruments, and a changeable pattern composed of a plate provided with rows of holes, and changeable pins or pins and blocks.

300,369. CIRCULAR SAWING MACHINE. LEVI HOUSTON, Montgomery Station, Pa. Filed Apr. 9, 1884. (No model.)

Claim.—1. In combination with a swinging saw-frame, a counter-balance, and an arm or lever for said counter-balance connected with the swinging frame, substantially as described, the pivot of said arm or lever being located below the center of gravity and at a point intermediate between the limits of movement of said counter-balance, substantially as and for the purpose explained.

2. In combination with a swinging saw-frame, a counter-balance therefor, and an intermediate coupling connecting the frame and the counter-balance, said connection being adjustable, substantially as described, to permit the relative inclinations of the counter-balance and the swinging frame to be regulated or varied at will.

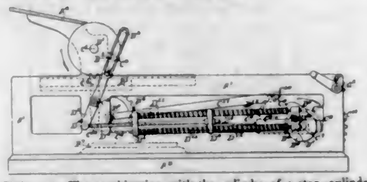
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3. In combination with hanger A, swinging saw-frame F, provided with yoke R, counter-balance Q, provided with hub P and weight T, and pivoted to hanger A, and band S, passing about the hub P, and having its ends attached, respectively, to opposite ends of the yoke, substantially as shown and described.

4. In combination with a hanger or support, a swinging saw-frame, F, provided with a yoke, R, an arm, Q, provided with counter-balance T, and hub P, journaled upon support independent of the swinging frame, a band, S, passing about the hub P, attached at its ends to opposite end of the yoke R, one or both ends of the band being provided with a threaded stem and nut, substantially as and for the purpose set forth.

300,370. STOP-CYLINDER PRINTING-MACHINE. BERTHOLD HUBER, Trenton, Mass. Filed July 6, 1883. (No model.)



Claim.—1. The combination, with the cylinder of a stop-cylinder printing-press, of a series of springs, or equivalent cushioning device, substantially as described, together with a crank, or an equivalent cam with one or more rollers, and also suitable and proper connecting mechanism, substantially as shown, and so arranged as to help to relieve the pressure on the cams which stop and start the cylinder, substantially as shown.

2. The combination, with the cylinder of a stop-cylinder printing-press, of a disk, D', on cylinder-shaft, roller D^4, slotted lever D^3, working therewith, connecting-rod D^4, together with a series of springs or equivalent cushioning device, substantially as described, the connecting-piece D^7, the crank-disk D^6, and pin D^{12}, or an equivalent cam with one or more rollers, substantially as described, and for the purpose set forth.

3. The combination, with the crank-disk D^6 and pin D^{12}, or an equivalent cam with one or more rollers, together with connecting-piece D^7, of a series of springs or an equivalent cushioning device, substantially as described, connecting-rod D^4, lever D^3, stude D^{10} and C^2, and having for its object the changing of the direction of the effective pressure of the springs or cushioning device, substantially as described.

300,371. FLOUR-DRESSING MACHINE. ANDREW HUNTER, Chicago, Ill. Filed Jan. 25, 1884. (No model.)

Claim.—1. The combination, in a flour-dressing machine, of the sliding valve P, vertical cam U, reciprocating bar O, pins *l*, and projections V, fastened to the bar O, for the cam U to work in, substantially as described.

2. The combination, in a flour-dressing machine, of the conveyers C C', sliding valve P, vertical cam U, reciprocating bar O, pins *l*, and projections V, fastened to the bar O, for the cam U to work in, substantially as described.

3. In a flour-dressing machine, the combination of hoppers B B', conveyers C C', air-discharge openings N N, center partition, S, beaters G G, and cylinder I, with discharge-openings H H at the end, substantially as described.

4. In a flour-dressing machine, the combination of a longitudinal feed device, stationary bolting-cylinder I, having a longitudinal feed-opening in the top and discharge-opening H, and rotary beaters G, having bent ends, substantially as described.

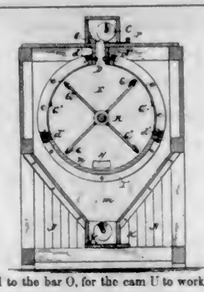
5. In a flour-dressing machine, the combination of rotary shaft R, radial arms G'' G'', and lifting convex beaters G G, substantially as described.

6. In a flour-dressing machine, the combination of rotary shaft R, radial arms G'' G'', and lifting convex beaters G G, with their rear sides flat, substantially as described.

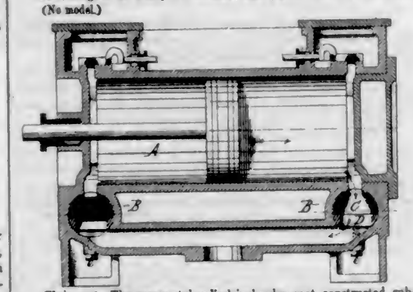
7. In a flour-dressing machine, frames *y y*, clothed with loose unstretched bolting-cloth *s*, in combination with rotary beaters G G, substantially as described.

8. In a flour-dressing machine, the combination of frames *y y*, clothed with loose unstretched cloth *e*, and ribs *d d*, with rotary beaters G G, substantially as described.

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300,372. SLIDE-VALVE SEAT. HENRY JAMES JOHNSON, Providence, R. I., assignor to Henry W. Gardner, same place. Filed Feb. 29, 1884. (No model.)



Claim.—1. The segmental cylindrical valve-seat, constructed, substantially as before set forth, with its bearing smaller than a semi-cylinder and perforated transversely for screw-bolts.

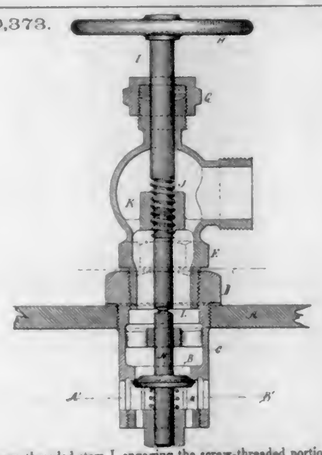
2. The combination, substantially as before set forth, of the shell of the valve, the segmental cylindrical valve-seat constructed with a bearing less than a semi-cylinder, and the transverse screw-bolts by which the first two are secured to each other.

300,373. VALVE FOR ENGINERY AND VESSELS. JOHN E. JERROLD and CHRISTIAN L. BURGERSTEIN, Allegheny, assignors of one-third to THOMAS M. REES and WILLIAM M. REES, both of Pittsburg, Pa. Filed Feb. 6, 1884. (No model.)

Claim.—The combination, with the three-part casing C D E, the former having the stem N, provided with the valve B and spring M, of



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the screw-threaded stem I, engaging the screw-threaded portion K, and passing through the parts D E, and resting on the top of the stem N, and the wheel H and packing-piece G, substantially as shown and described, and for the purposes set forth.

300,374. WALL-PAPER, PAPER-BOARD, &c. HENRY W. JOHNS, New York, N. Y. Filed Nov. 17, 1883. (No specimens.)

Claim.—Paper, paper-board, slabs, tiles, &c., having an embossed surface, when such paper, paper-board, slabs, tiles, &c., are produced wholly or in part from asbestus in any suitable form, substantially as hereinbefore fully explained.

300,375. PENCIL-SHARPENER. JOHN T. KNAGGE, Cincinnati, Ohio, assignor of one-half to George Herzog, same place. Filed Jan. 21, 1884. (No model.)



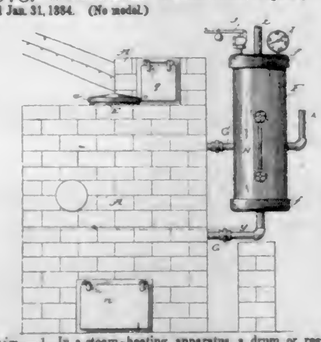


Claim.—1. A pencil-sharpener consisting of a tapering roughened plate bent along a central line, to bring the roughened faces at about right angles to each other, substantially as described.

2. The combination of the sharpening-plate provided with groove *b*, inclined at bottom and sides, and the block D and cover H', provided with opening *f* and flanges *e*, respectively engaging the sides and ends of the block D, substantially as and for the purpose specified.

3. The combination of the sharpening-plate provided with groove *b*, inclined at bottom and sides, and the block D and cover H', provided with opening *f* and flanges *e*, respectively engaging the sides and ends of the block D, and having indentations *h* in its flanges, said indentations entering the block, substantially as and for the purposes specified.

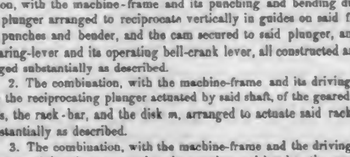
300,376. STEAM-HEATER. WILLIAM J. LANE, Poughkeepsie, N. Y. Filed Jan. 31, 1884. (No model.)



Claim.—1. In a steam-heating apparatus, a drum or reservoir, pipes G G', and a series of coils composed of straight sections and curved connections around the magazine, substantially as described.

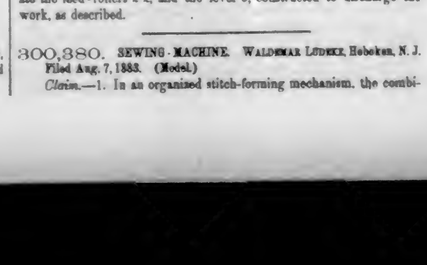
2. In a steam-heater, and in combination, a magazine, the pipes G G', and the coils or turns *g h*, said pipes being united above and below, as set forth.

300,377. TWO-WHEELED VEHICLE. JOHN D. LEBY, Lima, Ind. Filed Jan. 19, 1884. (No model.)



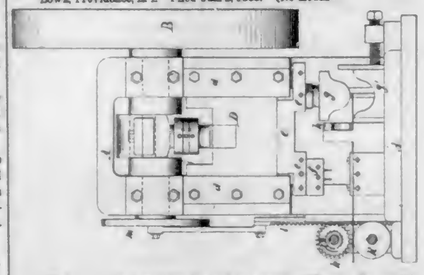
Claim.—In combination with the body A, the single elliptical supporting-spring B, the single clip D, the single auxiliary spring E, and double eyebolt F, the clip D uniting both the supporting-spring and auxiliary spring to the axle, as described.

300,378. TRUNK. PHILIP LOEWE, Chicago, Ill. Filed Apr. 2, 1884. (No model.)



Claim.—In combination with the body of a trunk, a lid formed in two parts by transverse division, with an overlapping portion on one part, said parts being hinged to the ends of the trunk, and provided with means, substantially as described, for securing them when closed.

300,379. MACHINE FOR MAKING SHANK-STIFFENERS. JOHN LOWE, Providence, R. I. Filed Jan. 2, 1883. (No model.)



Claim.—1. In a machine for making shank-stiffeners, the combination, with the machine-frame and its punching and bending dies, of the plunger arranged to reciprocate vertically in guides on said frame, the punches and bender, and the cam secured to said plunger, and the shearing-lever and its operating bell-crank lever, all constructed and arranged substantially as described.

2. The combination, with the machine-frame and its driving-shaft and the reciprocating plunger actuated by said shaft, of the geared feed-rolls, the rack-bar, and the disk *m*, arranged to actuate said rack-bar, substantially as described.

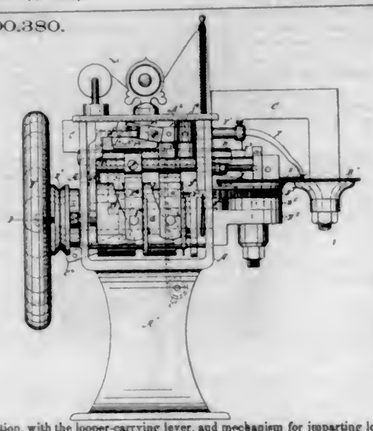
3. The combination, with the machine-frame and the driving-shaft thereon, of the plunger carrying the punches and bender, the punching and bending dies, and the cam *o'* and lever *o*, substantially as and for the purposes described.

4. The combination, with the frame of the machine, of the shaft C, the balance-wheel B, the plunger D, provided with the clamp *e*, the punches *f f*, and the die *g*, the disk *m*, rack-bar *l*, constructed to operate the feed-rollers *k k*, and the lever *o*, constructed to discharge the work, as described.

300,380. SEWING-MACHINE. WALDEMAR LUDEKE, Hoboken, N. J. Filed Aug. 7, 1883. (Model.)

Claim.—1. In an organized stitch-forming mechanism, the combination, with the looper-carrying lever, and mechanism for imparting longitudinal and vertical movements thereto, of a vertical lever impinging against said looper-carrying lever and serving to move the same laterally, means for operating said vertical lever, and a spring for moving the looper-carrying lever in opposition to the said vertical lever, substantially as set forth.

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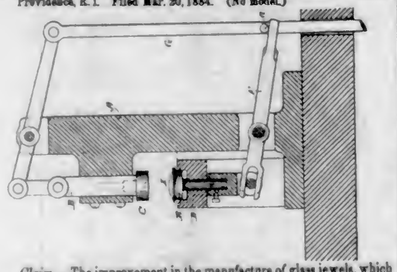


2. The combination, in an organized stitch-forming mechanism, with the looper-carrying lever F', having the extension F³, and mechanism for imparting longitudinal and vertical movements to said lever, of the vertical lever K³, having an arm, K⁴, the cam L, and the spring M, substantially as described.

3. The combination, in an organized stitch-forming mechanism, of the lever F', having the extensions F³ and F⁴, the latter formed with the cam-slot *f'*, the looper F, carried by the lever F', the fixed bracket I', having the stud I, the lever K³, the cam L, the spring M, and means for imparting longitudinal movement to the said lever F', substantially as set forth.

4. The combination, in an organized stitch-forming mechanism, of the feed-disks B and B', the toothed wheel B⁵, the ring B⁶, having arm B⁸, the pawl B⁹, the bent arm B³, the cam B⁴, and the spring B⁷, substantially as set forth.

300,381. MANUFACTURE OF GLASS JEWELS. HENRY C. LUTHER, Providence, R. I. Filed Mar. 20, 1884. (No model.)



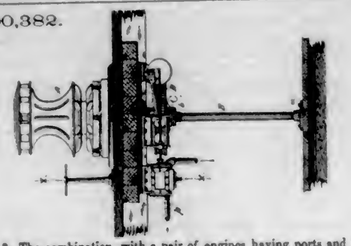
Claim.—The improvement in the manufacture of glass jewels, which consists in the combination of the upper die and the lower die, made in two parts, and means for operating the same, substantially as described, with the tongs provided with the grooved jaws adapted to remove the jewel in a plastic condition from the elevated inner portion of the lower die without danger of distortion, substantially as described.

300,382. POWER-CAPSTAN. JOSEPH P. MANTON, Providence, R. I. Filed Jan. 25, 1884. (No model.)

Claim.—1. The combination, with a capstan, of a worm-gear adjustably secured to the capstan-spindle, and a nut directly connected with said gear for throwing the worm-gear into and out of mesh with the worm, substantially as specified.

2. The combination of a worm-wheel having a recessed collar secured to it, and a nut which engages with said collar and with a screw-thread on the spindle, whereby said worm-wheel can be moved up and down, to throw it in and out of gear with the worm, substantially as set forth.

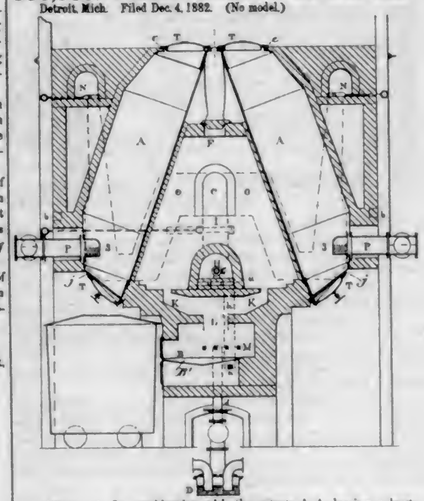
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3. The combination, with a pair of engines having ports and passages, as described, of a reversing-valve connected by pipes with said passages, and means for operating said valve from the deck, substantially as specified.

4. In a power-capstan having worm-wheel secured adjustably to a spindle, the combination of a pair of engines, a reversing-valve adapted to admit and exhaust steam to and from the engine-cylinders, and means for operating said valve from the deck above the engines, substantially as set forth.

300,383. APPARATUS FOR DISTILLING WOOD. JEAN A. MATHIEU, Detroit, Mich. Filed Dec. 4, 1882. (No model.)



Claim.—1. In combination with the retorts A A, having a heat-chamber between them, the flues O O, adapted to lead the products of combustion across the lower ends of said retorts before passing the same out of the furnace, substantially as and for the purposes set forth.

2. The combination of the retorts A A, arch C, passage I, and arch G, substantially as herein shown and described.

3. The combination of the retorts A A, inclosing a heat-chamber, combustion-chamber B, flues L K K, and man-hole F, having a removable cover, substantially as herein shown and described.

4. In combination with the retorts A A, a draft-flue opening from the outside air, running through the heated space between said retorts and opening into the combustion-chamber, from which said retorts are heated, either above or below the grate therein.

5. In combination with the retorts A A, the box *x*, connected with the exit-pipes of said retorts, having the swinging discharge-pipe *i*, and connected with a condensing-coil, *z*, substantially as herein shown and described.

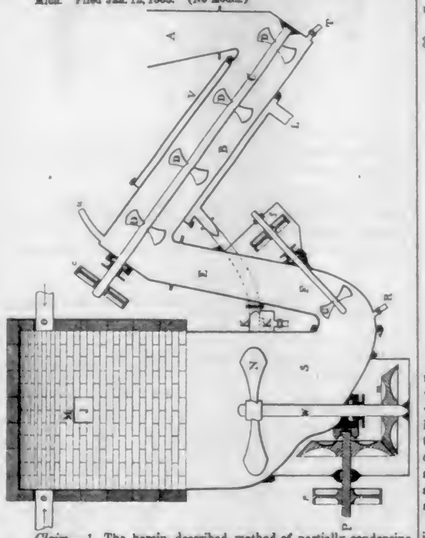
6. The combustion-chamber B, flue L, and flues K K, in combination with the retorts A A, substantially as herein shown and described.

7. The herein-described process of condensing a portion of the vapor arising from the distillation of wood, consisting in bringing said vapor in contact with a spray of cold pyroligneous acid, whereby condensation is effected by the chemical affinity of the acid and vapor, as well as by reducing the temperature of said vapor.

8. In combination with the retorts A, the pipes *f*, leading from the lower end of each retort, and having at their inner ends a grating, *a*, substantially as described.

9. The condenser herein described, having vessel E, with pipes *k d'*, and vessel E', having a faucet, and pipe *w*, said vessels being connected by pipes J, substantially as herein shown and described.

300,384. DISTILLATION OF WOOD. JEAN A. MATHIEU, Detroit, Mich. Filed Jan. 12, 1883. (No model.)



Claim.—1. The herein-described method of partially condensing the vapors resulting from carbonizing the upper portion of a mass of material contained in a retort, consisting in passing such vapors through the uncarbonized portion of the material in said retort.

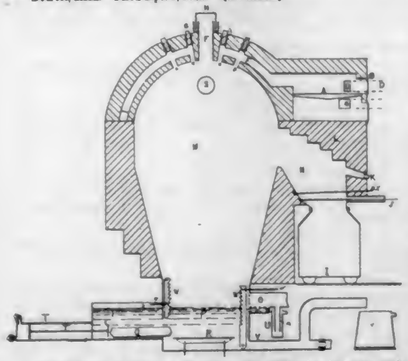
2. The combination of the screw N with the retort M, chute E, trunk B, and auxiliary screws D G, substantially as shown and described.

3. The combination of the jacket V and trunk B with the exit-pipe of the retort, whereby a preliminary distillation of the material is effected by the hot vapors issuing from the retort.

4. The combination of the jacketed trunk B, hopper A, chute E, and screw D, substantially as shown and described.

5. The combination of a retort having a pipe at or near its top for entry of hot vapor with mechanism for introducing the substance to be distilled at the bottom of the retort and forcing the same upward as fast as the distilled solid material is removed from the retort, whereby distillation is effected from above upon a mass of material raised up within the retort to the source of heat.

300,385. RETORT FOR CARBONIZING WOOD. JEAN A. MATHIEU, Detroit, Mich. Filed Apr. 2, 1883. (No model.)

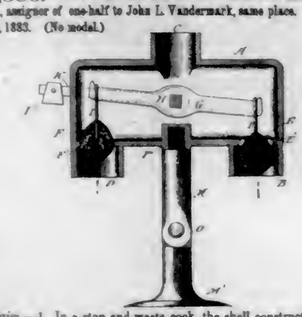


Claim.—1. A retort for carbonizing wood, having in its top a flue communicating through apertures with the interior of the retort, a combustion-chamber communicating with said flue, an air-pipe and a gas-pipe leading into said combustion-chamber, and a gas-pipe leading into said retort near its top, substantially as described.

2. In combination with retort M, the ratchet-toothed bars W W', provided with push-rods *w w'*, substantially as shown and described.

3. The combination, with retort M, of the box P P', cylinder T', having piston and rod T', and block R, having attached thereto suitable mechanism for raising the same, substantially as described.

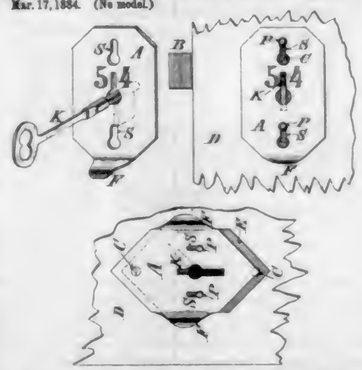
300,386. STOP AND WASTE COCK. OWEN J. MCGANN, Pullman, Ill., assignor of one-half to John L. Vandermark, same place. Filed Nov. 14, 1883. (No model.)



Claim.—1. In a stop and waste cock, the shell constructed to connect with the service and waste pipes, and having two of its ports and valve-seats thereat at one of its sides, in combination with a pair of valves respectively opening into the service and waste pipes, and having their stems respectively connected with opposite ends of an oscillatory lever, which said valves are arranged so that while susceptible of moving in unison to simultaneously open one and close the other of said ports they shall alternately open in one and the same direction away from their seats, and outwardly from the shell, substantially as described.

2. In a stop and waste cock, the shell constructed to constitute a joint in the service-pipe, and provided with a valve apparatus for opening and closing its ports, in combination with a jointed support for the shell, consisting of a leg composed of two members, one being connected with the shell, the other provided with a perforated base-plate, and both being pivoted together to form a hinge-joint in the leg, whereby the shell can be set at various angles, substantially as described

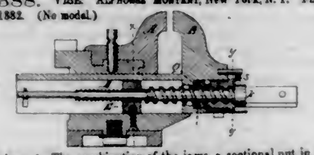
300,387. KEY-FASTENER. ROBT. T. MILLER, Covington, Ky. Filed Mar. 17, 1884. (No model.)



Claim.—1. In a key-fastener, the combination of a rigid escutcheon provided with headed pins and a secondary escutcheon or tag with key permanently affixed thereto, said tag being provided with a finger-piece, F, and slotted openings, to engage with the pins on the rigid escutcheon, and with a slot from the opening through which the shank of the key passes, and which, when operated substantially as shown and described, can be removed from the door or lock or bind the key, as set forth.

2. A secondary escutcheon and key inseparable from each other, the former provided with a slot extending from the opening through which the shank of the key passes, the said escutcheon being adapted to fasten the key in the lock or permit its release therefrom by means of slots S S engaging or disengaging with pins above and beneath the key-hole, substantially as shown and described.

300,388. VISE. ALPHONSE MONTANT, New York, N. Y. Filed May 11, 1882. (No model.)

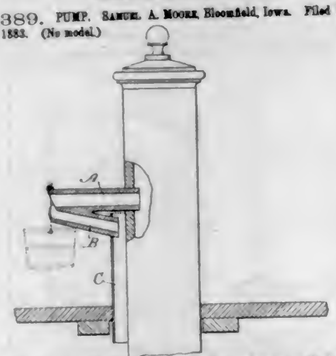


Claim.—1. The combination of the jaws, a sectional nut in the stationary jaw, a screw partly sectional and partly entire in the movable jaw, the sectional threads of the two being arranged in a direction other than that of the entire threads, and a turning-nut whereby the sectional screw and nut are locked without advancing the movable jaw, substantially as hereinbefore set forth.

2. The combination of the vise-jaws with a section-nut and a locking-screw which has its threads reversed in pitch with the turning-nut, substantially as before set forth.

3. The combination of the stationary jaw carrying the sectional nut, the sectional screw, the turning-nut, the movable jaw, and a spring located between said nut and jaw, substantially as hereinbefore set forth.

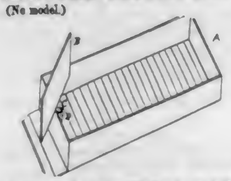
300,389. PUMP. SAMUEL A. MOORE, Bloomfield, Iowa. Filed Dec. 24, 1883. (No model.)



Claim.—1. As an improved article of manufacture, a discharge-spout for pumps having a cut-off and return spout formed integral therewith, for the purposes set forth.

2. The combination of a duplex pump-spout, A B, with a pump, and an auxiliary tube extending from the rear end of the part B downward, to convey drippings back into the well, substantially as and for the purposes set forth.

300,390. WAGON-DASHER. ELIJAH MYRICK, Harvard, Mass. Filed Apr. 2, 1884. (No model.)

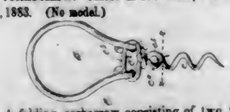


Claim.—1. A wagon-dasher pivoted to the wagon-body and adapted to be rotated upon a vertical axis, as described.

2. A wagon-dasher pivoted to the wagon-body and adapted to be removed from its supporting-socket, as set forth.

3. A wagon-dasher pivoted to the wagon-body, as set forth, combined with a spring operating to return the dasher to its normal position, substantially as described.

300,391. CORKSCREW. JAMES K. P. NOURSE, West Medway, Mass. Filed Nov. 17, 1883. (No model.)



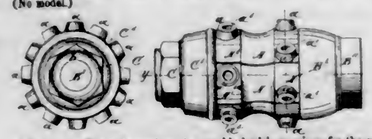
Claim.—1. A folding corkscrew consisting of two pieces of wire, one of which is formed into a screw having a shank formed with an elongated transverse loop, a portion of which forms the pivot around which the ends of the other piece of wire shaped to form the handle or guard are bent, for the purpose and substantially in the manner described.

2. In a folding corkscrew formed from two pieces of wire shaped and connected substantially as set forth, the inclined outer surfaces of the knuckles formed by the extremities of the holder or guard, in combination with the loop formed in the shank of the screw, substantially in the manner and for the purpose described.

3. In a folding corkscrew formed from two pieces of wire shaped and connected substantially as set forth, the recesses or depressions formed in the knuckles, which are shaped from the extremities of the holder or guard, in combination with the loop formed in the shank of the screw, for the purpose and substantially in the manner described.

4. A corkscrew constructed of a single piece, one extremity of which is formed into the screw, having a shank formed with a loop, and the other extremity of which is formed with a cutting-edge, for the purpose and substantially in the manner described.

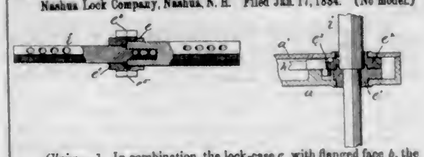
300,392. HUB. JOHN F. PACKER, Chicago, Ill. Filed Mar. 26, 1884. (No model.)



Claim.—1. The hub-sections A, provided with openings for the passage of the spokes, in combination with the pipe-box B, having the flange B', and screw-cap C, having the flange C', substantially as and for the purpose specified.

2. The hub-sections A, provided with openings for the passage of the spokes, substantially as specified.

300,393. LOCK. EMERY PARKER, New Britain, Conn., assignor to the Nashua Lock Company, Nashua, N. H. Filed Jan. 17, 1884. (No model.)



Claim.—1. In combination, the lock-case *c*, with flanged face *b*, the reversible latch-bolt *c*, the swivel-spindle with shoulder or stop, the reversible hub *e*, with parts fitting the respective swivel-sections, and the latch mechanism, all substantially as described.

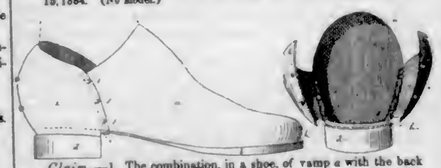
2. In combination, in a latch, a swivel-spindle having a shoulder and a partible hub also having a shoulder, which, by contact with that on the spindle, keeps the parts from moving toward or upon each other when they are in position in the latch-case, all substantially as described, and for the purpose set forth.

3. In combination, in a lock, the swivel-spindle composed of parts of different cross-section and the hub formed in parts, one of which bears the grooved lug adapted to be engaged by the bolt in either position of the hub, all substantially as described.

4. In a reversible lock, the spindle-hub *e*, composed of parts *e'* and *e²*, the part *e²* having the lug *e³*, with the groove that is engaged by the bolt A in either of the described positions of the hub, all substantially as described.

5. In a latch, the combination of the case *a*, the lever *d*, with the bearing-faces *d' d²*, and the reversible hub *e*, with lugs *e' e³* and the arm *e²*, all substantially as described.

300,394. SHOE. MARX F. PELLETIER, New York, N. Y. Filed Apr. 15, 1884. (No model.)



Claim.—1. The combination, in a shoe, of vamp *a* with the back quarters, *c c*, connected thereto, the quarters *c* being separated at the back and provided with catch *g*, substantially as specified.

2. The combination, in a shoe, of vamp *a* with sole *b*, grooved heel *d*, and gasket *h*, and with the movable back quarters, *c*, substantially as specified.

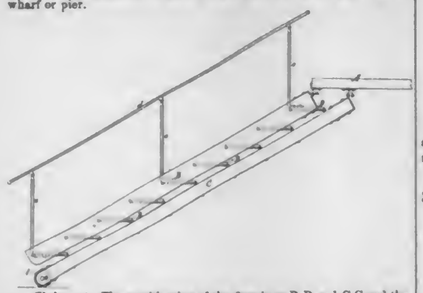
3. The combination, in a shoe, of vamp *a* with sole *b*, heel *d*, gas-

ket *h*, movable back quarters, *e*, pins *i*, and catch *g*, substantially as specified.

4. The combination, in a shoe, of the vamp with the back quarters attached to said vamp and adapted to be opened and closed, and with means, substantially as described, for rendering the back and bottom joints of said back quarters water-tight, substantially as specified.

300,395. FOLDING STAIRS. THEODORE PETERSON, Boston, Mass. Filed Mar. 3, 1884. (No model.)

Brief.—A series of steps pivoted to four bars, and posts which carry hand-rails extending upward from certain of said steps. The bars are hinged to projections upon the under side of a fixed part of the wharf or pier.

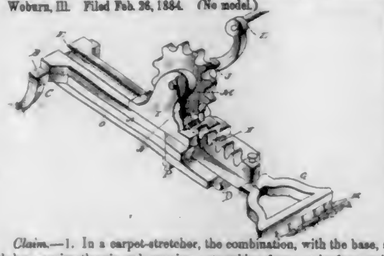


Claim.—1. The combination of the four bars B B and C C and the series of steps D, arranged with and pivoted to such bars as described, with the posts *c*, projecting upward from and permanently fastened to certain of the said steps, and with the hand-rails *d d*, pivoted to such posts at their upper ends, all being substantially and to operate as set forth.

2. The combination of the four bars B B and C C and the series of steps D, arranged with and pivoted to them as described, with the stair head or platform A, disposed at the upper ends of such bars, and connected therewith by means substantially as described.

3. The combination of the four bars B B and C C, the series of steps D, arranged with and pivoted to such bars as described, the stair-head A, adapted, as explained, to the upper ends of such bars, the posts *c*, extended up from and permanently fixed to certain of the steps, and the hand-rails *d d*, pivoted to the upper ends of the said posts, all being substantially and to operate as represented.

300,396. CARPET-STRETCHER. ERNEST PATTERSON POUNDSTONE, Woburn, Ill. Filed Feb. 26, 1884. (No model.)



Claim.—1. In a carpet-stretcher, the combination, with the base, a rack-bar moving therein and carrying a stretching-frame at its front end, and means for operating said rack-bar, of a supplemental beam hinged to the rear end of the base and provided with teeth on its end, said beam being adapted to be either extended to stretch the carpet at both ends of the device or folded up in position against the under side of the base, as set forth.

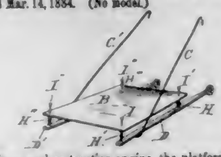
2. In a carpet-stretcher, the combination, with the base provided with a dovetail slot, of a rack-bar having its lower end dovetailed to fit in said slot, and provided with a stretching-frame at its front end, uprights mounted on said base and having a shaft journaled therein, a gear-wheel mounted on said shaft and engaging with the rack-bar, and a crank or handle for operating the shaft, as set forth.

3. In a carpet-stretcher, the combination, with the base provided with a dovetail slot, of a rack-bar having its lower end dovetailed to fit in said slot, and having a stretching-frame at its front end, uprights mounted on the base, a shaft journaled in the uprights, and carrying a gear-wheel which is disposed between the uprights, and a crank or handle at the end of the shaft, and a yoke or bail journaled in the uprights and engaging with the rack-bar to hold the same from backward movement, as set forth.

4. The carpet-stretcher having its base provided with legs C C at its rear end, and an extension projecting downwardly from the front end of the base, to raise the device from above the carpet, as set forth.

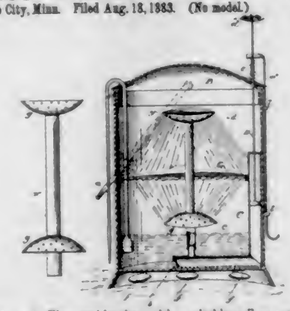
5. In a carpet-stretcher, the combination, with the base, of the supplemental beam hinged at its rear end to the same, and provided at its other end with a cross-piece having projecting teeth or spurs, and a stud projecting from the inner face of the beam at this end and fitting in a recess of the base when said beam is folded up, as set forth.

300,397. TRACTION-ENGINE. FRANCIS W. ROBINSON, Richmond, Ind. Filed Mar. 14, 1884. (No model.)



Claim.—In a road or traction engine, the platform B, resting upon springs H H' H'' H''', in combination with the frame D D', in the manner and for the purposes herein set forth.

300,398. APPARATUS FOR WASHING DISHES. CHAS. L. RUDD, Lake City, Minn. Filed Aug. 18, 1883. (No model.)



Claim.—1. The combination, with a suitable pail or tank provided with a sprinkling or washing device, and a force-pump having a piston adapted to be operated by hand, of a treadle attachment consisting of a rod passing through guides upon the exterior of the pail or tank, and connected at its upper end to the piston-rod, and a spring coiled around it and bearing against the top or cover of said tank or pail and against the bent or upper end of the treadle-rod, whereby the pump is adapted to be operated either by hand or foot power, substantially as specified.

2. A suitable pail or tank having arranged within the same a suitable pump adapted to be operated by hand or foot power, in combination with a shelf or rack and a centrally-arranged tube communicating with the lower extremity of the pump and extending upwardly through the shelf or rack, and provided with sprinklers, one above and the other below said shelf or rack, whereby the water will be forced upward through a single tube and be ejected in opposite directions and at an angle against the articles resting on the shelf, substantially as and for the purpose specified.

300,399. PLANE. SOLON R. RUST and ARTHUR E. RUST, Pine Meadow, Conn. Filed Mar. 26, 1884. (No model.)



Claim.—1. In combination, in a flexible face-plane, a plane-body, *a*, a flexible face, *b*, levers *c d*, pivotally connected to the plane-body, to each other by connecting-rod *g*, and to the flexible face-plate, with means for changing the position of said levers and of the flexible face, all substantially as described.

2. The combination of a plane-body, flexible face, pivoted levers connecting the said face and the body, a yoke, *h*, pivotally connected to the said levers, and an adjusting-screw, *i*, having bearings in the yoke and in the plane-body, all substantially as described, and for the purpose set forth.

3. The combination of a plane-body, *a*, a carriage, *k*, with the central bearings, *l l'*, fitted to suitable bearings in the plane-body, and with

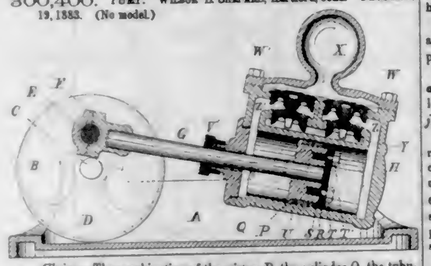
lugs *k' k²*, bearing upon opposite extremities of an adjusting-screw, *m*, attached to the body, all substantially as described.

4. In a plane, the combination of a plane-body, *a*, a carriage, *k*, with central bearings, *l l'*, projections lugs *k' k²*, and projections *w'*, an adjusting-screw, *m*, with its opposite ends bearing on the inner faces of the lugs, plane-iron *p*, and clamp-iron *o*, with clamp-screw *o'*, all substantially as described.

5. In a plane, the combination of a plane-body and a carriage having lugs bearing upon opposite extremities of an adjusting-screw, *m*, movable in a socket in a plane-body, all substantially as described, and for the purpose set forth.

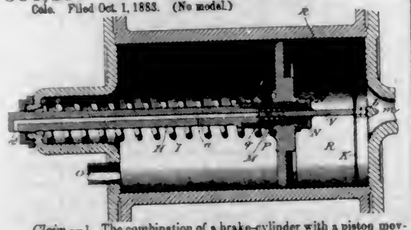
6. In combination, a plane-body, *a*, having bed *a'*, cross-bars a^2 a^3, and socket a^4, the forked levers *c d*, pivoted to the body, connecting-rods *g*, yoke *h*, pivoted to the levers, and adjusting-screw *i*, with plane-iron *p* and means for holding the same in the body, all substantially as described, and for the purpose set forth.

300,400. PUMP. WILBUR L. SHEPARD, Hartford, Conn. Filed Nov. 19, 1883. (No model.)



Claim.—The combination of the piston P, the cylinder Q, the tubular journals I and I', the water-ways Y and Y', the valves W and W', the water-ways Z and Z', and the air-chamber X, all constructed and combined substantially as described, and operating together in an oscillating pump, substantially as explained in this specification.

300,401. AUTOMATIC AIR-BRAKE. C. AXEL T. SJÖGREN, Denver, Colo. Filed Oct. 1, 1883. (No model.)



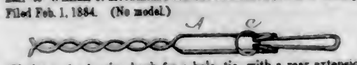
Claim.—1. The combination of a brake-cylinder with a piston movable on the piston-rod, the disk K, attached to the valve, and valve-stem V, the valve-seat P, the valve-seat *s*, the grooves *g*, *c*, and *r*, the spring *p*, and the holes *q*, *a*, and *a'*, for purpose set forth, and substantially as described.

2. The combination, in a brake-cylinder for automatic air-brakes, of a piston and piston-rod with a valve-stem, V, valve-seat *s*, spring *p*, spring-seat, and disk K, substantially as described.

3. In a brake-cylinder, the combination of a piston-rod with a piston movable on the same between the valve-seat P and the end nut, N, forming a valve which is open when the piston is up against the nut N by means of the grooves *g*, *r*, and *c*, and which is closed when the piston is up against the valve-seat P, substantially as described.

4. In a brake-cylinder, the combination of a disk, K, with the valve-stem V, valve-seat *s*, spring *p*, and spring-seat, all substantially as set forth.

300,402. BALE-TIE. BENJAMIN SMITH, Dayton, Ohio, assignor of one half to William J. McCausland and Robert Barnett, both of same place. Filed Feb. 1, 1884. (No model.)

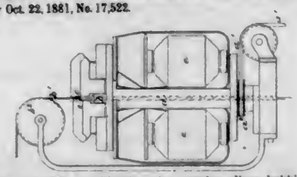


Claim.—1. A wire hook for a bale-tie, with a rear extension to stay the curved end of said hook, substantially as set forth.

2. A wire hook for a bale-tie, with a rear extension and an interlocked ring in said hook, substantially as set forth.

3. As a new article of manufacture, a bale-tie with eye to engage the hook of the same, having a rear extension to bear upon said eye, substantially as shown and described.

300,403. WIRE-COVERING MACHINE. HENRY SPLITDORF, New York, N. Y. Filed Feb. 14, 1881. (No model.) Patented in England Mar. 22, 1881, No. 1,272; in France May 27, 1881, No. 141,886, and in Germany Oct. 22, 1881, No. 17,522.



Claim.—1. The combination of a rotating sliver bobbin-carrier provided with feed-rollers constructed and operated to untwist the sliver as it leaves the feed-rollers, with a conveying device for carrying the untwisted sliver to the wire to be covered, substantially in the manner hereinbefore set forth.

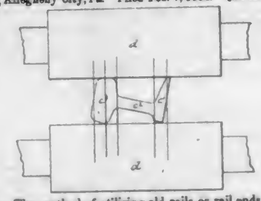
2. The combination, with the grooved roller *m* and the spring-acting knife-edge slide *l*, of the cams *m'*, substantially as and for the purpose set forth.

3. The combination, with the fixed hollow spindle *b* and the frame *a c i'*, adapted to be rotated thereon, of the feed-rollers *n* and *n'*, carried in the upper part, *i*, of the frame, and system of gear-wheels *g*, *h*, *d''*, *j*, j^2, j^3, and n^2, substantially as and for the purpose set forth.

4. A rotating sliver bobbin-carrier provided with a pair of feed-rollers and operated to untwist the sliver as it leaves the feed-rollers, a conveying device composed of a series of rollers adapted to carry the untwisted sliver toward the wire being covered, and a pair of feed rollers or guides located in close proximity to the wire, in combination with suitable connecting-gearing to cause the various devices to move with a positive and uniform motion as the machine revolves around the wire, substantially as and for the purpose hereinbefore set forth.

5. A rotating sliver bobbin-carrier provided with a pair of feed-rollers, a spreading device composed of a grooved roller and a reciprocating knife for spreading the untwisted sliver, and aprons and their supporting-rollers for conveying the spread sliver to the center of the machine, in combination with their actuating-gearing, constructed and operated substantially in the manner and for the purpose hereinbefore set forth.

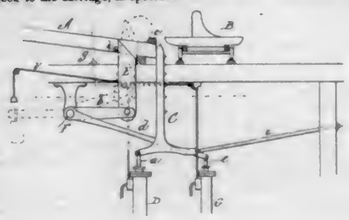
300,404. METHOD OF UTILIZING OLD RAILS. GOTTLIEB A. STIENER, Allegheny City, Pa. Filed Feb. 7, 1884. (No model.)



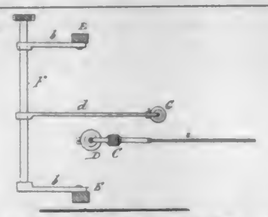
Claim.—The method of utilizing old rails or rail ends in the manufacture of sheet or plate metals, which consists in cutting off one side of the flange, and then forcing the remaining side of the flange into the same plane as that of the web, and drawing out the rail to a plate of the desired gage, substantially as and for the purposes described.

300,405. LOG LOADER AND TURNER. WARREN C. STETSON, Minneapolis, Minn. Filed Nov. 3, 1883. (No model.)

Claim.—In log rolling and canting apparatus, the combination and arrangement, substantially as described, with the canting-bar C and its operating mechanism, of the sliding bumper E and its operating steam-cylinder G, arranged for independent operation for carrying a log from the deck to the carriage, as specified.

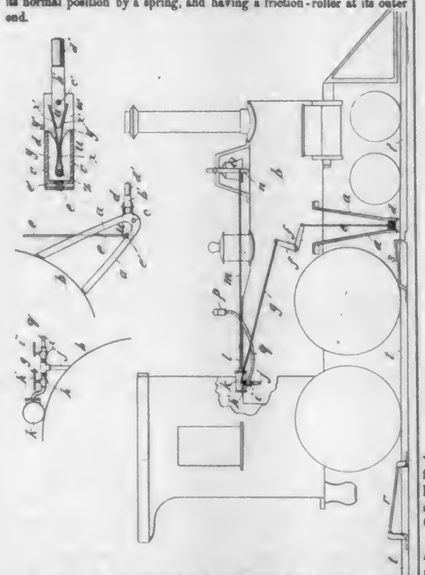


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300,406. RAILWAY-SIGNAL FOR LOCOMOTIVES. JOSEPH JOHN STORTZEL, La Salle, Ill., assignor to himself and Edward P. Furay, same place. Filed July 17, 1883. (No model.)

Brief.—A locomotive having attached thereto a pivoted arm adapted to be moved up and down by contact with a fixed inclined rail or way at the side of the track, and is connected by rods and an angle-lever to the valve of a small steam-cylinder for driving a piston therein, which is either connected to the bell, ringing the same twice for every stroke of the piston, or to the valve controlling the steam-whistle. The pivoted arm is provided with a pivoted head-bar arranged to swing in a horizontal plane, to clear obstructions along the track, and returned to its normal position by a spring, and having a friction-roller at its outer end.



Claim.—1. The combination of the signal-arm *d*, ways *r s*, angle-lever *f*, rods *e g*, valves *h i*, cylinder *k*, connections *l m n* to the bell *o*, whistle *p*, and pipe *q*, substantially as and for the purpose set forth.

2. The combination of signal-arm *d*, ways *r s*, angle-lever *f*, rods *e g*, valve *h*, cylinder *k*, and connections *l m n* to the bell *o*, substantially as shown and described.

3. The combination of signal-arm *d*, ways *r s*, angle-lever *f*, rods *e g*, valve *i*, pipe *q*, cylinder *k*, and whistle *p*, substantially as and for the purpose set forth.

4. The combination, with the ways *r s*, angle-lever *f*, and rods *e g*, connecting with the bell and whistle signals, substantially as specified, of the signal-arm *d*, adapted to be rocked in vertical plane on its pivot *c* by contact with ways *r s*, and also having a head-bar, *b'*, pivoted to swing in horizontal plane for clearing obstructions, substantially as shown and described.

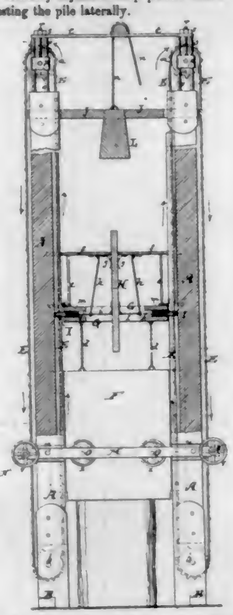
5. The signal-arm *d*, constructed with a casing, *u*, pivoted at *c* to swing vertically in supports on the locomotive, and with a head-bar, *b'*, pivoted to casing *u*, so as to swing in horizontal plane, substantially as shown and described.

6. The combination, with the pivoted vertically-swinging signal-arm casing *u*, of the pivoted horizontally-swinging head-bar *b'* and spring or springs *x*, substantially as shown and described.

7. The signal-arm *d*, constructed with a casing, *u*, having sides *v* shorter than its top and bottom plates *w*, the pivoted head-bar *b'*, carrying the anti-friction roller *d'*, the slotted block *y*, the bent spring *x*, and the pin *z*, substantially as shown and described.

300,407. PILE-DRIVER. THOMAS TANGNEY, New York, N. Y. Filed Jan. 25, 1883. (No model.)

Brief.—The hammer is lifted by means of endless continually-moving chains running in guides on the leaders, which chains are engaged by spring-actuated bolts or catches sliding in horizontal ways in a vertically-reciprocated frame from which the hammer is suspended, the engagement and disengagement of the bolts being effected by means of a bar jointed to the bolts, and arranged to slide vertically in the frame, and operated by concussion with the hammer when the blow is delivered, and by pressure against a vertically-adjustable stop placed above. Means are provided for adjusting the pile laterally.



Claim.—1. In a pile-driver, the combination of the leaders A A with the endless chains E E, and mechanism, substantially as described, for supporting and moving said chains, and with the traveling beam G, having laterally-projecting catches I I, that are adapted to engage with said chains, and with the hammer F, that is suspended from said beam G, substantially as described.

2. The traveling beam G, combined with the vertical slide H, links *h i*, pushers *j j*, catches I I, chains E *d*, and hammer F, for operation in a pile-driver, substantially as described.

3. The combination of the traveling beam G, links *h i*, pushers *j*, catches I, and springs *m*, with the chains *d*, and hammer F, and with the upper traveling cross-beam, *f*, chains E, and slide H, for operation substantially as specified.

4. The combination of the beam G, having movable catches I, that are adapted to be engaged by the chain E of a pile-driver, with the vertical slide H, upper cross-bar, J, chains E, and hammer F, and with means, substantially as described, for operating the catches I from slide H, all arranged so that the slide H will be moved at the terminus of each stroke to disengage and engage the hammer, as specified.

5. The hammer F, combined with the traveling beam G, vertical slide H, catches on said beam, lifting-chains, upper cross-bar, *t*, and vertically-adjustable disengaging-block L, substantially as specified.

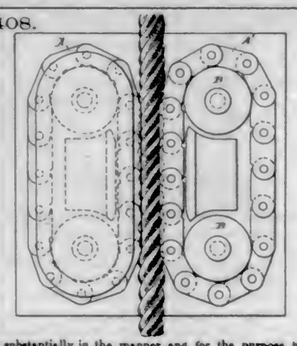
6. In a pile-driver, the combination of the leaders A A, bar M, screw-threaded braces N O, and pile-guides P R, substantially as and for the purpose specified.

300,408. CLAMP FOR WIRE ROPES. HENRY R. TAYLOR, San Francisco, Cal. Filed Jan. 25, 1884. (No model.)

Brief.—Endless traveling grip-chains which contact with the propelling-cable pass around pulleys at each end of their tread.

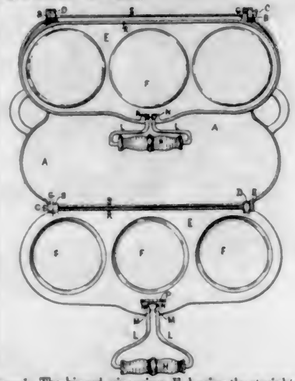
Claim.—In combination with traveling or moving clamps for wire ropes, the guiding-rollers or friction-pulleys, constructed, arranged, and

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operating substantially in the manner and for the purpose herein set forth and specified.

300,409. CAKE-GRIDDLE. JONATHAN V. TAYLOR, Boston, Mass. Filed Sept. 29, 1883. (No model.)



Claim.—1. The hinged wing-piece E, having the straight rib R arranged so as to fall inside of the rib of the main portion when folded together, substantially as shown and described, as and for the purposes set forth.

2. The handle H, having spring side portions, L, provided with eyes K, in combination with the wing-piece E, provided with the notches N and pivots M, substantially as described, as and for the purposes set forth.

3. The hinged wing-piece E, provided with notches N and short pivots M, adapted to engage with the eyes K of the handle, substantially as described, as and for the purposes set forth.

300,410. ELECTRIC CONDUCTOR. ANSON COLEMAN TREMOR, Alameda, Cal. Filed Sept. 15, 1883. (No model.)



Claim.—1. A flexible cable or conductor for electrical purposes, consisting of a carbon core and an outer inclosing and protecting cover, case, or envelope, substantially as described.

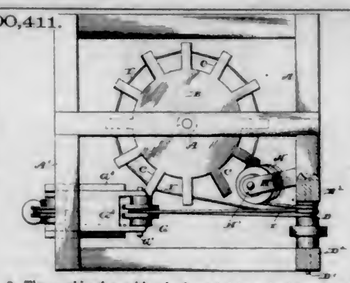
2. An electric cable or conductor composed of a center of carbon, a wrapping of textile or fibrous material, and a superposed coating of non-conducting material, substantially as set forth.

3. An electric cable or conductor for transmitting electric currents, composed of a flexible or pliable tube containing a body of pulverized carbon.

300,411. HORSE-POWER. ROBERT H. TINDALL, Sumter, S. C. Filed Dec. 6, 1883. (No model.)

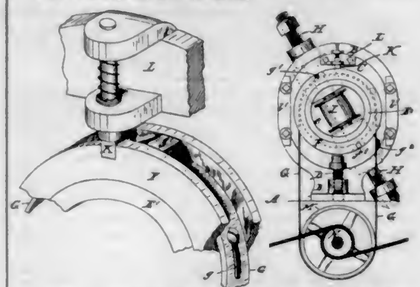
Claim.—1. The combination, with a drive-wheel, of a guide-pulley, tension-pulley, a double-grooved band-pulley, and an endless rope passing from said wheel around the guide-pulley, around the band-wheel, the tension-pulley, back around said band-pulley, and then back around said wheel, the above parts being arranged to operate substantially as set forth.

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2. The combination, with a horizontal drive-wheel provided on its rim with teeth or prongs, of a guide-pulley situated in close proximity thereto, a vertical-tension pulley, a double-grooved band-pulley, and an endless rope or its equivalent, all of the above parts being constructed and arranged to operate substantially as set forth.

300,412. WOOD-MOLDING MACHINE. MELVIN L. TOWLE, Concord, N. H. Filed Apr. 17, 1884. (No model.)



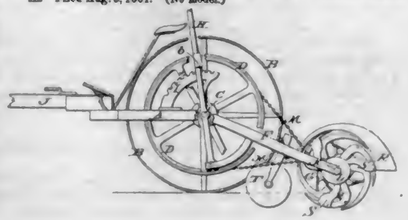
Claim.—1. In a wood-molding machine, a spindle having cutters upon both ends thereof driven by an ordinary belt-pulley, and hung in suitable bearings, which are swiveled, substantially as shown, to a suitable frame attached to the operating-table, for the purpose of reversing and using either end of said spindle, all constructed and operating as herein described and set forth.

2. In a wood-molding machine, a spindle having cutters upon both ends thereof driven by an ordinary belt-pulley, and hung in suitable bearings, which are swiveled, substantially as shown, to a vertically-adjustable frame carried upon a stationary frame attached to the operating-table, all constructed and operating substantially as described, for the purpose of reversing said spindle, as set forth.

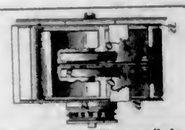
3. In a wood-molding machine, the combination, with the spindle H and the spindle-bearings E, having a cylindrical projection, E', by which they are swiveled to and supported in a suitable adjustable or stationary frame secured to the operating-table, of the flanged ring F, having slots *f f'*, and a suitable spring-latch, K, attached to said adjustable or stationary frame, for the purpose of maintaining said spindle in a vertical position, substantially as described and set forth.

4. In a wood-molding machine, the combination, with the spindle-bearings E, having cylindrical projection E', of the flanged ring F, having slots *f f'*, a suitable latch, K, and means, substantially as described, whereby said latch is released from said slots and said spindle is reversed, as and for the purpose specified.

300,413. HORSE SPADING-MACHINE. JOHN B. TURCHIN, Radom, Ill. Filed Aug. 8, 1881. (No model.)



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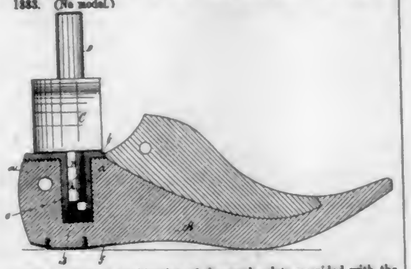
Claim.—1. In a spading-machine, a cylinder consisting of a hub or hubs carrying a series of curved arms, *d*, having curved wings N pivoted thereto transversely, with a fixed cam, O, and connecting rods or springs arranged to hold said wings in position for receiving the earth as it is cut, and then causing them to swing outward and deliver the earth into the furrow in rear of the cylinder, substantially as shown and described.

2. The combination of the stationary axle K, having the grooved cam O secured thereon, with the rotating spading cylinder or drum carrying the pivoted buckets or wings N, and the slotted rods P, provided with a pin, *p*, arranged to work in the groove of said cam, said rods having one end connected to the buckets or wings, and their slotted ends working loosely on the axle K, substantially as and for the purpose set forth

3. A rotating spading drum or cylinder provided with the pivoted wings or buckets N, arranged to operate as described, and mounted in the pivoted frame or bars F, in combination with the main frame A, mounted on wheels B B, with clutches *a*, and driving-wheels D L, connected by chains M, all constructed and arranged for joint operation, substantially as shown and described.

4. A cylinder or drum for spading-machines, consisting of a series of curved arms, *d*, having cutters *e* secured to their outer ends, with buckets or wings N, pivoted to said arms in rear of the cutters, and arranged to operate substantially as shown and described.

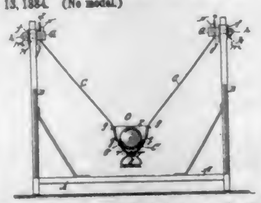
300,414. LAST. JAMES C. TURNER and LOUIS COTÉ, Boston, Mass., assignors of one-third to B. Curtis Young, same place. Filed Aug. 22, 1883. (No model.)



Claim.—1. The combination of the comb-plate provided with the shank or socket, the disk or cushion *d*, and the last, substantially as described.

2. A heeling-machine yoke, C, provided with a single spindle having three or more sides, in combination with a last provided with the disk or cushion *d*, and the comb-plate and shank, forming a socket conforming in shape with and adapted to receive said spindle, constructed as set forth, for the purposes and substantially as described.

300,415. BALL-TRAP. ABRAHAM VAN ALLEN, New York, N. Y. Filed Mar. 13, 1884. (No model.)

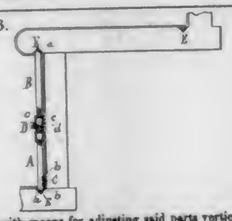


Claim.—In a toy ball-thrower, the bed-plate A, the standards B B having holders G attached thereto, the elastic ball-thrower C, fastened to the said holders G, and having a flexible cup-shaped ball-holder, P, and handle S fastened thereto, all arranged and combined substantially as and for the purpose set forth.

300,416. STAIR-CARPET FASTENER. ZENAS A. VAN DEVENTER, Wilmington, Del. Filed Feb. 13, 1884. (No model.)

Claim.—1. A vertical stair-carpet fastener composed of two parts, the upper part being formed with points to fit under the nosing, and the lower part being formed with points to fit into the tread of the stair, in

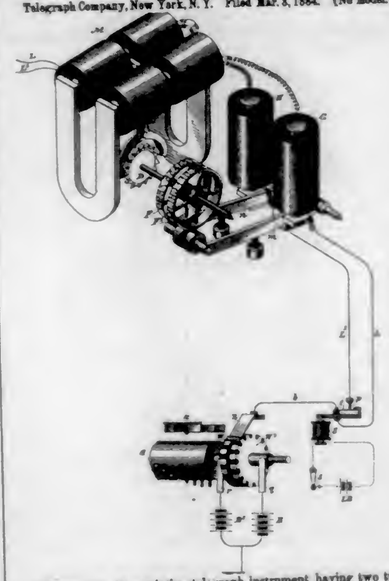
300,416.



combination with means for adjusting said parts vertically in relation to each other and to hold them securely together, substantially as set forth.

2. A stair-rod fastener composed of an upper and lower part, and means for adjusting and securing said parts, said lower part being provided with two rearwardly-projecting lugs, in combination with a stair-rod adapted to be held between said lugs, substantially as set forth.

300,417. PRINTING-TELEGRAPH. WILLIAM R. WARNER, Brooklyn, and CHARLES L. BUCKINGHAM, New York, assignors to the Western Union Telegraph Company, New York, N. Y. Filed Mar. 8, 1884. (No model.)



Claim.—1. In a printing-telegraph instrument having two type-wheels, the combination of a main line controlling a platen for taking an impression from one type-wheel, a second main line controlling a platen for taking an impression from the second type-wheel, an escapement mechanism under control of either line, a transmitter, and a switch for connecting either line thereto at pleasure.

2. In a printing-telegraph instrument having two type-wheels, the combination of a main line embracing the coils of an electro-magnetic impression device, a second main line embracing the coils of a second electro-magnetic impression device, and an electro-magnetic escapement common to both wires, a transmitter, and a switch for connecting either line thereto.

3. In a printing-telegraph, a letter-type wheel, an impression electro-magnet, and a main line containing the coils of said magnet, a figure-type wheel, a second impression electro-magnet, and a second main line containing the coils of said second magnet, in combination with an escapement electro-magnet having two coils located in said lines, respectively, a transmitter for directing to line reverse impulses, and a switch for connecting and disconnecting either line therewith at pleasure

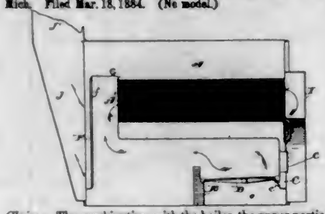
4. In a printing-telegraph having two type-wheels and two main lines, the combination of two independent press-magnets, one for each line, a transmitter, and a switch for connecting and disconnecting either line thereto.

5. In a printing-telegraph, the combination of the type-wheels F F', main lines L L', magnets H G, a transmitter, and an electro-magnetic switch, S, for connecting the transmitter with either main line.

6. In a printing-telegraph, the combination of the type-wheels F F',

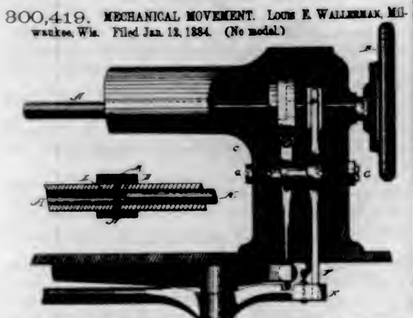
main lines L L', electro-magnets M, H, and G, a transmitter, and a switch, S, for connecting either line with said transmitter, substantially as described.

300,418. STEAM-GENERATOR. EBENEZER I. WALDEN, Ishpeming, Mich. Filed Mar. 18, 1884. (No model.)



Claim.—The combination, with the boiler, the upper portion thereof, at the rear end, projecting beyond the flue-sheet and communicating with the water-back, the water-front in open communication with the boiler, and tubes passing through the front of the boiler, of heaters B, having tubes which pass through the front and rear end of the boiler, and the smoke-boxes I and J, all of the parts combined substantially as set forth.

300,419. MECHANICAL MOVEMENT. LOUIS F. WALLERMAN, Milwaukee, Wis. Filed Jan. 12, 1884. (No model.)



Claim.—1. The mechanical movement herein described, consisting in the combination of a circular adjustable cam, D, having a uniform diameter, with the shaft A and arms H H of lever F, said cam being adapted by its adjustable attachment with said shaft to be adjusted more or less eccentric thereto within said arms, whereby the vibration of said lever F is increased or diminished, substantially as and for the purpose specified.

2. The combination, with the shaft A, of the adjustable cam D, provided with bearings M N, rod K, provided with eccentric pin L, and lever F, provided with arms H H, said cam D being adapted, by turning said rod K, to be adjusted eccentric to said shaft A, substantially as and for the purpose specified.

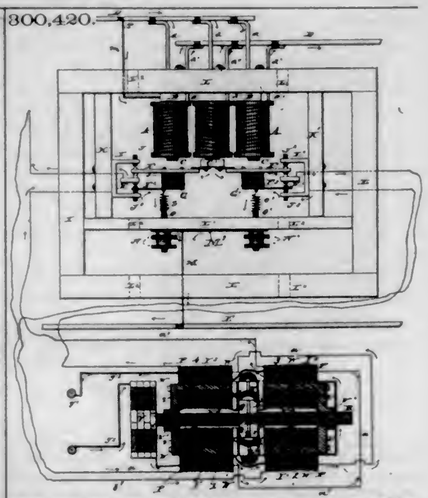
3. The combination of shaft A, adjustable cam D, of uniform diameter, and lever F, having rigid arms H H, said cam being adapted to vibrate said lever F in both directions unaided by spring, and to be adjusted eccentric to said shaft between said arms, all substantially as and for the purpose specified.

300,420. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. JOHN EDWARD WATSON, Louisville, Ky. Filed Sept. 24, 1883. (No model.)

Claim.—1. An automatic current-regulator for dynamo-electric machines, composed of any suitable form of current-breaking, vibrating, and current-reversing mechanism connected in a derived circuit or shunt from the main-line or lamp circuit, operated by one or more low-resistance electro-magnets connected in the main-line or lamp circuit, having the derived or shunt circuit through the current-breaking, vibrating, and current-reversing mechanism so connected as to pass through a set of fine-wire coils wound on the outside of the coarse wire forming the field-magnet coils of any form of dynamo-electric machine, the fine wire on the outside of the field-magnets being wound in the same direction as the coarse wire and connected together in diagonally-opposite pairs to produce magnets of unlike polarity, but of the same polarity as is produced by the coarse wire, for the purpose of automatically regulating the current induced in the armature of such dynamo-electric machine and supplied to the lamp-circuit, as specified and set forth.

2. The field-magnet coils of a dynamo-electric machine, made of a number of turns of coarse insulated copper wire connected in series, so as to make like and unlike poles opposite each other, and having the coarse wire a part of the main or lamp circuit, and having wound on

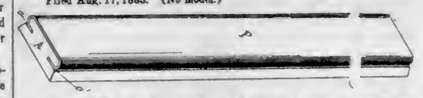
300,420.



their outside and in the same direction a greater number of turns of fine wire, connected together in diagonally-opposite pairs and supplied from a derived or shunt circuit from the main-line or lamp circuit through any suitable form of current-breaking, vibrating, and current-reversing mechanism operated by one or more low-resistance electro-magnets connected in the main-line or lamp circuit for the purpose of automatically regulating the current induced in the armature of the dynamo-electric machine, and supplied to the lamp-circuit, as specified and set forth.

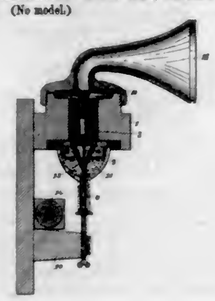
3. A dynamo-electric machine having its field-magnet coils formed of a number of turns of coarse insulated copper wire connected in series, and in the main-line or lamp circuit, so as to make the coarse wire a part of the main-line or lamp circuit, with a greater number of turns of fine wire wound in the same direction on the outside of the coarse wire, and so connected together as to make the iron cores of the field-magnets the same polarity as the coarse wire, but connected together in diagonally-opposite pairs, and supplied from a derived or shunt circuit from the main-line or lamp circuit, in combination with any suitable form of current-breaking, vibrating, and current-reversing mechanism, composed of one or more low-resistance electro-magnets connected in the main-line or lamp circuit operating such mechanism.

300,421. BLOTTING PAD AND RULER. JULIUS WEIS, Chicago, Ill. Filed Aug. 17, 1883. (No model.)

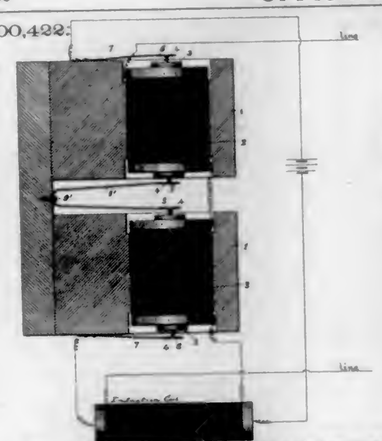


Claim.—The noiseless blotting and absorbing ruler A, doubly beveled and in one piece, provided with slots *a* and *a'*, to receive the turned ends of a blotting-pad, in combination with such pad or other absorbent material, to catch falling ink and for a blotter.

300,422. TELEPHONE. WM. A. WEST, Bellefontaine, Ohio. Filed July 25, 1883. (No model.)



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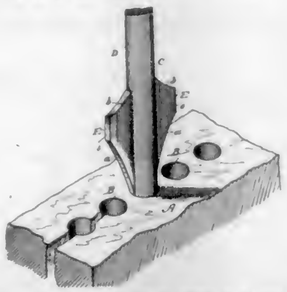
Claim.—1. The combination of a main and a local circuit, a number of electro-magnets in series in the main circuit, a number of sets of microphonic contacts in series in the local circuit, means for simultaneously actuating the contacts by the action of the electro-magnets, and an induction apparatus having the primary in said local and the secondary in said main circuit.

2. The combination of an electro-magnet having a perforated core and placed vertically, an armature at each end thereof, a diamagnetic needle passing through said core and rigidly connected to one armature while making a microphonic contact with the other armature, a mercury-float forming an elastic support for one armature, an induction-coil and a main and a local circuit, the former including the electro-magnet and the secondary of the induction-coil, the latter including the local battery, microphonic contact, and primary of the induction-coil.

3. The combination of an electro-magnet having a perforated core and placed vertically, a horizontal diaphragm therefor, two armatures for said magnet, a diamagnetic needle passing through said core and rigidly connected to one armature while making a microphonic contact with the other armature, and a float in mercury forming an elastic support for one armature.

4. The combination of an electro-magnet having a perforated core and placed vertically, an armature at each end thereof, a diamagnetic needle passing through said core and rigidly connected to one armature while making a microphonic contact with the other armature, and a float in mercury forming an elastic support for one armature.

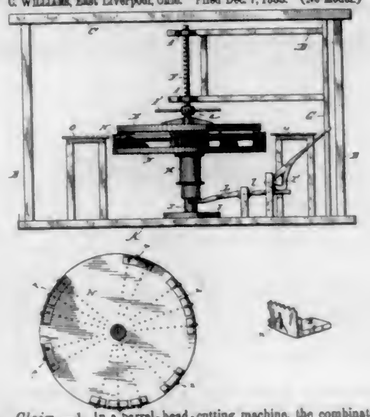
300,423. TOOL FOR SPLITTING STONE. WARREN W. WILD, Lee, Mass. Filed Jan. 16, 1884. (No model.)



Claim.—1. A stone-working tool for cutting or splitting the cores separating the holes drilled in marble or other stone, comprising a cylindrical body having one or more wedging fins or extensions formed thereon, said fins having an inclined edge, *a*, and a straight edge or portion, *s*, as and for the purpose set forth.

2. A stone-working tool for cutting or splitting the cores separating the holes drilled in marble or other stone, comprising a cylindrical body having its lower end rounded or beveled, and wedging fins or extensions formed on the body above the rounded end, said fins or extensions having inclined edges *a b* and a straight portion, *s*, as set forth.

300,424. MACHINE FOR CUTTING BARREL-HEADS. SYLVESTER C. WILLIAMS, East Liverpool, Ohio. Filed Dec. 7, 1883. (No model.)

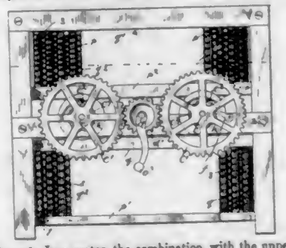


Claim.—1. In a barrel-head-cutting machine, the combination, with a rotary table provided with upright sawing and cutting devices and means for raising or lowering the table, of a circular bed-piece located above the latter, substantially as set forth.

2. In a barrel-head-cutting machine, the combination, with a rotary table provided with upright sawing and cutting devices and means for raising or lowering it, and a bed-piece located above the table, of a platen located above the bed-piece, and mechanism for vertically adjusting said platen, substantially as set forth.

3. In a barrel-head-cutting machine, the combination, with a rotary table and a bed-piece above the table, of a platen provided with a mechanism adapted to swing it on and off from said bed-piece, substantially as set forth.

300,425. MECHANICAL POWER. DAVID WIRE, Cottendale, Tex. Filed Apr. 10, 1884. (No model.)



Claim.—1. In a motor, the combination, with the upper and lower columns of coil-springs incased in fixed guides, and provided with pulleys at their movable ends, and their operating-cord, of a power-shaft provided with a winding-drum movable laterally thereon, and a loose cog-gear, with a spring-pawl engaging a fixed ratchet-wheel on said shaft, the latter being journaled in an adjustable box at one end on the bearing-rail of the frame, substantially as specified.

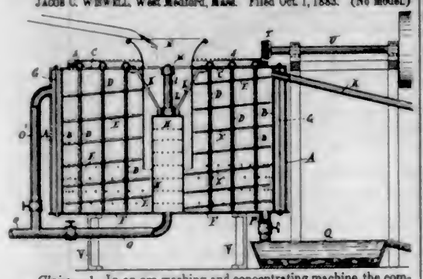
2. In a motor, the combination, with the shafts *c* and *e*, provided with the cog-gears *c'* and *d'*, the pawls and ratchets, and winding-drums, said shafts being mounted in adjustable boxes on one bearing-rail of the frame, of the intermediate shaft, *d*, having the pinion *d'*, and the brake at the opposite bearing-rail, and the columns of coil-springs, and the operating-cords connected to the drums, substantially as specified.

3. In a motor, the combination, with the bearing-rail having recesses in its upper face and guides at said recesses, of the spring-actuated boxes, the shifting-levers, and wedges for throwing the cog-gears on the shafts *c* and *e* out of gear with the pinion on the shaft *d*, substantially as specified.

4. In a motor, the combination, with one of the bearing-rails of the frame and the shaft *d*, journaled in a box thereon, of a lower fixed half-box and an upper adjustable half-box, secured thereto by a bolt and a lever-bolt, to be operated as a brake for the motor, substantially as specified.

5. In a motor, the shaft *d*, provided with a sprocket-wheel at one end and a crank at the other end, and mechanism, substantially as herein described, for applying power to said shaft *d*, substantially as specified.

300,426. MACHINE FOR WASHING AND CONCENTRATING ORES. JACOB C. WHEWELL, West Medford, Mass. Filed Oct. 1, 1883. (No model.)

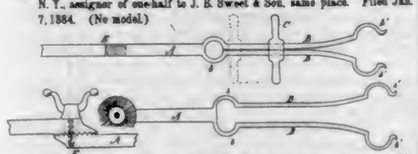


Claim.—1. In an ore washing and concentrating machine, the combination of the cylinders A B, having an intermediate water-space between them, the rotating top C, vertical rods D, and inclined bars E, substantially as described.

2. The combination of the cylinder A, the perforated cylinder B, and the perforated central pipe, H, provided with their several supply-pipes, as and for the purpose specified.

3. The combination, in an ore washing and concentrating machine, of the hopper or funnel N, the rotating top C, the boxes L and M, spindle I, and the central perforated pipe, H, as and for the purpose set forth.

300,427. CLAMP FOR CANOPY-TOPS. THEODOR ZANGER, Buffalo, N. Y., assignor of one-half to J. B. Sweet & Son, same place. Filed Jan. 7, 1884. (No model.)

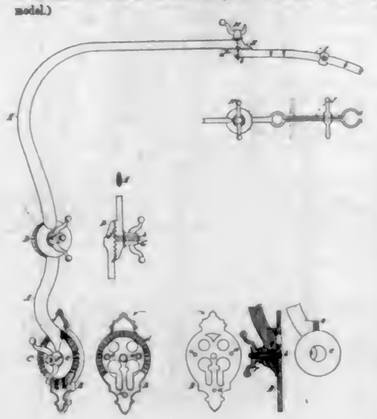


Claim.—1. As a new article of manufacture for sustaining parasols upon their supports, a spring-clamp controlled and confined by means of sleeve C, and having a main or body portion, A, bifurcations B B, having curves *b* and *b'*, and a circular joint-head, E, provided with cogs *d*, and a threaded perforation, all substantially as shown, and for the purposes set forth.

2. As an article of manufacture, a spring-clamp composed of malleable cast-iron, having spring-bifurcations, and means for readily connecting it to and detaching it from its support.

3. As an article of manufacture, a bifurcated spring-clamp adapted for use on children's carriages for supporting parasols, composed of malleable cast-iron, and having a sliding sleeve, C, for controlling the position of the bifurcations in relation to each other, and a joint-head formed for ready connection to the supporting-rod.

300,428. CANOPY-TOP. THEODOR ZANGER, Buffalo, N. Y., assignor of one-half to J. B. Sweet & Son, same place. Filed Jan. 7, 1884. (No model.)



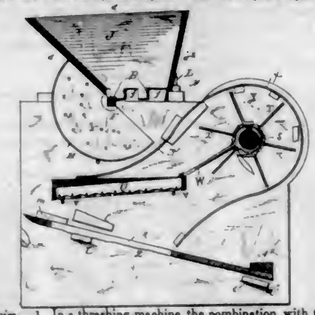
Claim.—1. In supports for parasols and canopy-tops upon children's carriages, the combination, with the base-piece B, having apertures *a a a*, central axial support, *b*, circumferential cogs *d*, and thumb-nut F, of a supporting-rod having circular foot *c*, with central aperture and a depression, *e*, a joint, D, provided with cogs *d*, center post, *b*, and thumb-nut G, joint E, having clamping means H, and spring-clamp I, all substantially as shown, and for the purposes set forth.

2. The combination, with a support, A, having circular foot *c*, with central aperture and a depression, *e*, as described, of a base-piece, B, having a central axial support, *b*, nut F, apertures *a*, and cogs *d*, constructed and operated substantially as described.

3. The combination, in supporting-rods such as described, of the joint E, set-screw H, the spring-arms, and clamp I, substantially as shown, and for the purpose set forth.

4. A support for parasols and canopy-tops having cog-joint C, rendering the rod adjustable right and left, cog-joint D, rendering it adjustable front or rear, and joint E, rendering the parasol adjustable in a horizontal plane, substantially as shown, and for the purposes set forth.

300,429. MACHINE FOR THRASHING PEAS, BEANS, &c. BENJAMIN FRANKLIN ARCHER, Marietta, Miss. Filed Feb. 19, 1884. (No model.)



Claim.—1. In a thrashing-machine, the combination, with the supporting-frame and the thrashing-disks, of the detachable hopper arranged above the same, one side, *e*, being vertical and fitting over one of the disks, and the remaining sides converging inward toward the inner face of the disks, a series of slots, *f*, cut in the hopper to allow the passage of the spikes of the disks, suitable stops secured to the frame for receiving the lower ends of the hopper, and hooks and eyes to secure the hopper in place, as set forth.

2. In a thrashing-machine, the combination, with the frame, operating-shaft, and hopper, of the revolving and stationary disks, the fan-cylinder Y, the fan-shaft, gearing connecting the fan-shaft with the operating-shaft, the inclined shaking screen, the stationary screen Z, arranged below the shaking screen, the top wall, X, of the fan-cylinder, sloping or curving downward, so that the material is deposited on the shaking screen, and the bottom wall of the cylinder, likewise sloping or curving downward, so as to prevent the material dropped from the shaking screen from escaping outward, as set forth.

300,430. BACK-BAND BUCKLE. BENJAMIN FRANKLIN ARCHER, Marietta, Miss. Filed Mar. 5, 1884. (No model.)



Claim.—1. The combination, with the back-band, of the buckle-frame provided with a hook at its end, and a wedging-frame journaled in the said buckle-frame and having a corresponding hook, arranged and adapted to operate for the purpose set forth.

2. The herein-described buckle-frame, comprising the base formed with an upwardly-projecting hook at one end and a wedging-frame pivoted at its other end, and having a hook to fit over the hook of the base, as set forth.

3. The herein-described buckle, comprising the base having a hook at one end, flanges at its other end, a cross-bar extending across the base and fitted in the flanges, and a wedging-frame pivoted in the flanges and provided with a hook to fit over the hook of the base, as set forth.

4. The herein-described buckle, comprising the base formed with a hook at one end of the wedging-frame, pivoted at the other end, and provided with a hook to fit over the hook of the base, and a projection

formed in the hook of the wedging-frame and adapted to facilitate the separation of the parts, as set forth.

5. The combination, with the back-band, of the buckle comprising the base, formed with a hook at one end and a transverse slot at or near the center, and a wedging-frame pivoted at the other end and formed with a book to fit over the hook of the base, and provided with a projection to facilitate the separation of the parts, as set forth.

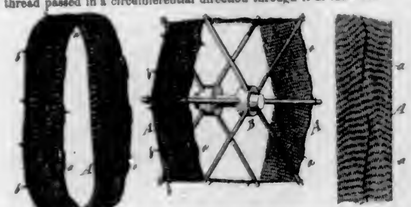
6. The herein-described buckle, comprising the base having a hook at one end, flanges projecting up from said base, the wedging-frame pivoted in said flanges and provided with a supplemental notched plate to engage with the material, a hook at the end of the wedging-frame to fit over the hook of the base, and a projection to separate the parts, as set forth.

7. The combination, with the back-band, of the buckle provided with a hook at one end, and a wedging-frame journaled at the other end of the buckle, and having a corresponding hook to fit over the hook of the base, said wedging-frame engaging with the back-band, and provided with a ring secured to its outer face, for the purpose set forth.

8. The combination, with the back-band, of the buckle comprising the base having a hook at one end, flanges at the other end, and a cross-bar connecting the flanges, the wedging-frame provided with a suppplemental notched plate to engage the band, and pivoted in the flanges, the end of said wedging-frame terminating in a book adapted to fit over the hook formed on the base, and a ring secured to the wedging-frame, for the purpose set forth.

300,431. SILK AND OTHER SKEINS. ORLO ATWOOD, New London, Conn. Filed Oct. 6, 1883. (No model.)

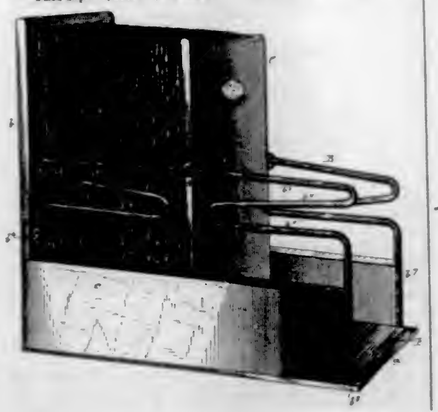
Brief.—Silk or other thread wound upon the reel in the form of a wide band, the thread being laid or crossed diagonally with a quick traverse and secured at the edges by lacing or tying, or having a lacing-thread passed in a circumferential direction through it at intervals.



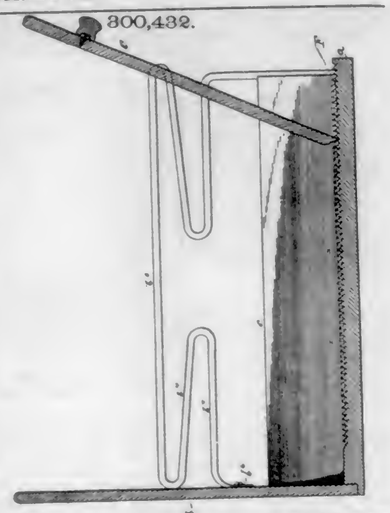
Claim.—1. A skein of silk or other fibrous material wound upon a reel diagonally from side to side with a quick traverse, and secured at the edges only by lacing or tying, leaving the skein free to be pulled apart or spread throughout its entire circumference, substantially as herein described.

2. A skein of silk or other fibrous material wound upon a reel diagonally from side to side with a quick traverse, and having a lacing cord or thread passing in a circumferential direction and through it at intervals, leaving the skein free to be pulled apart or spread throughout its entire circumference, substantially as described.

300,432. FILE-HOLDER. THOMAS E. BADEN, Washington, D. C. Filed Sept. 17, 1883. (No model.)



300,432.

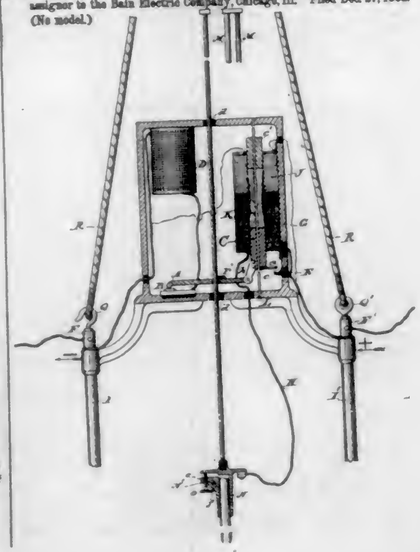


Claim.—1. In a file holder or box, the combination of smooth-surfaced spring-arms or elastic follower-guides, adapted to spring out of a straight line by the locking action of the follower-board, with stationary end and bottom boards, and a follower-board adapted to slide and rock on said spring-arms and engage with the inner surface of the stationary bottom board by the downward pressure of the spring-arms, substantially as herein set forth.

2. In a file-holder, the combination of the spring arms or guides, consisting of a straight guide or upper portion and reversely-bent spring members at its ends, with a movable follower having side loops or staples, and a stationary end and bottom board, substantially as herein set forth.

3. In a file-holder, the combination of the spring arms or guides, consisting of a straight longitudinal top portion, reversely-bent spring-arms, and vertical downward extensions of the latter, all made of one piece of metal, with the bottom board, the end board, and the movable follower, substantially as herein set forth.

300,433. ELECTRIC-ARC LAMP. FOREST BAIN, Minneapolis, Minn., assignor to the Bain Electric Company, Chicago, Ill. Filed Dec. 27, 1882. (No model.)



Claim.—1. In an electric lamp, the combination, substantially as herein set forth, with a normally-closed short circuit having a resistance substantially equal to that of the lamp, and including the clutch mechanism, of main and shunt magnet coils, the core of which is connected directly with the clutch mechanism.

2. In an electric lamp, the combination, substantially as herein set forth, of a short circuit including the clutch or carbon-lifting device, a magnet in the main and a magnet in the shunt circuit, and a core directly connected with the clutch device, the arrangement being such that normally there are three paths for the current, and that the short circuit is made or broken in accordance with the varying currents flowing through the main and shunt circuits.

3. The combination, in an electric lamp, of a carbon-carrier composed of two rods or pipes arranged parallel to each other and firmly attached together, with a clamp or clutch adapted to clamp or clutch either or both of the rods or tubes in the act of lifting the same, substantially as described.

4. The combination, in an electric lamp, of a carbon-carrier composed of two rods or tubes arranged parallel to each other and firmly attached together, and a clutch constructed substantially as described.

5. The combination, in an electric lamp, of a carbon-carrier composed of two rods or tubes arranged parallel to each other and firmly attached together, and a clutch composed of two parts, connected together as described, and adapted to bite at four geometrical points, substantially as set forth.

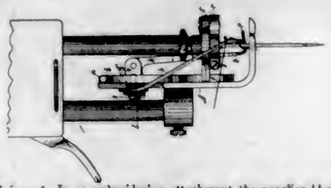
6. In an electric lamp, a clutch device consisting of a plate in the form of a cross, having another plate connected thereto above the cross-bar of the cross, substantially as described.

7. In an electric lamp, the binding or connecting posts provided with binding-screws having their upper ends formed into hooks or eyes, and adapted for connection with a non-conducting suspension-cord, substantially as described.

8. A carbon-clamp for securing the carbons in the carrier, composed of two parts connected together by a pivot working in an inclined slot, and an adjusting thumb-screw, substantially as described.

300,434. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. GEORGE W. BAKER, Cleveland, Ohio, assignor to the White Sewing Machine Company, same place. Filed May 19, 1883. (No model.)

Brief.—The loops are extended on one side of the row of stitching by means of the looper. When it is desired to form the embroidery alike on both sides of the row of stitching, the looper is removed by taking out the screw on which it vibrates, whereupon the thread-laying arm alone, acting with the needle, will operate to cause the embroidery-thread to lie without any extended loops closely interwoven with the needle-thread.



Claim.—1. In an embroidering attachment, the peculiar U-shaped groove *c c*, with converging boundary-ribs *f f*, the rocking wedge *b*, and thread-laying arm A, connected thereto, in combination with the operating-finger C, pivoted on the needle-bar of a sewing-machine, adapted to enter the groove *c c*, engage with the rocking wedge, and operate the thread-laying arm, substantially as herein set forth.

2. In combination with the body A, having the groove *c* therein, rocking wedge *b*, thread-laying arm A, connected thereto, and finger C, carried by the needle-bar, the detachable looper *k*, and means for connecting the same with the thread-laying arm, adapted to engage the embroidery-thread at each alternate vibration of the said arm, substantially as herein set forth.

3. In an embroidering attachment for sewing-machines, a body with the groove *c c* formed by converging ribs *f f* therein, a rocking wedge pivoted thereon, connected to a thread-laying arm, and provided with means for retaining it in position while the needle descends, in combination with the needle-bar provided with an operating-finger suitably pivoted thereto, reciprocating therewith, and adapted to swing laterally thereon, substantially as and for the purpose set forth.

300,435. SHOULDER-BRACE. WARD BATCHELOR, Washington, D. C. Filed Feb. 23, 1884. (No model.)

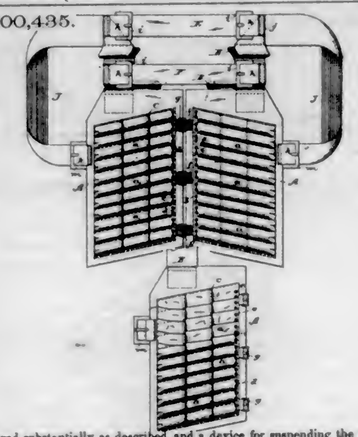
Claim.—1. In a device for the treatment of round shoulders, the combination of a weight or weights with a support for the same, arranged substantially as described, and a device for suspending the same from the neck and shoulders of the wearer, as set forth.

2. In a shoulder-bracing device, the combination of a series of diagonal weighted pockets with a proper support for the same, substantially as described, and a means of suspending the same from the body of a person, as described.

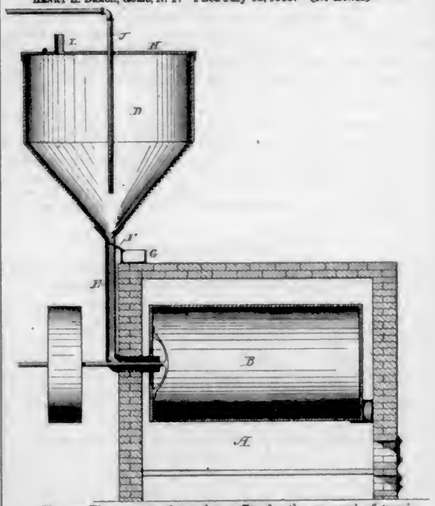
3. In a shoulder-bracing device, the combination of a series of weighted pockets provided with flexible joints *c c* with a proper support, substantially as described, and a means of suspending the same from the shoulders of a person, as shown.

4. In a shoulder-bracing device, the combination of a series of detachable weights with a support for the same, arranged substantially as described, and the means described of suspending the same from the body of a person.

300,435.



300,436. PROCESS OF REMOVING TANNIC ACID FROM COFFEE. HENRY H. BEACH, Rome, N. Y. Filed July 13, 1883. (No model.)

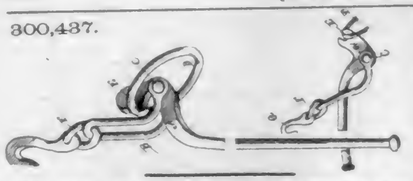


Claim.—The process of treating coffee for the removal of tannic acid and other deleterious substances therefrom, which consists in heating the green coffee by means of steam to about 212° Fahrenheit for about the time specified, and removing the matter extracted from the berry, substantially as hereinbefore set forth.

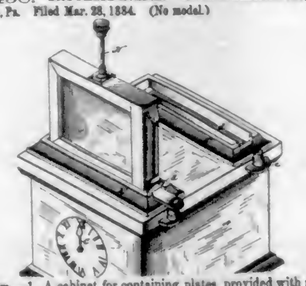
300,437. LOG-BINDER. JOHN H. BENJAMIN, Saginaw, Mich. Filed Dec. 8, 1883. (No model.)

Claim.—The combination, with the lever A, of the clevis B, fulcrum C, and ring D, in the manner and for the purpose specified.

300,437.



300,438. DRY-PLATE HOLDER. EDWIN L. BERGSTRESSER, Hublersburg, Pa. Filed Mar. 28, 1884. (No model.)



Claim.—1. A cabinet for containing plates, provided with mechanism which automatically registers each plate upon a dial as it is placed therein after exposure, substantially as set forth.

2. In a cabinet for holding plates, the combination, with mechanism for automatically registering each plate as it is inserted, of a pusher for moving the plates forward, substantially as set forth.

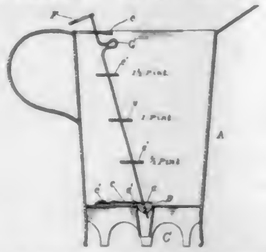
3. In a cabinet for holding plates, the combination, with a suitable dial having figures marked thereon, of a shaft carrying a ratchet-wheel, and an indicator, and a lever provided with means for operating said ratchet-wheel, as set forth.

4. In a cabinet for holding plates, the combination, with a suitable dial having figures marked thereon, of a shaft carrying an indicator, and ratchet-wheel, a spring-pressed pawl engaging said ratchet-wheel, and a lever provided at its forward end with an arm to engage said ratchet-wheel, substantially as set forth.

5. In a cabinet for holding plates, the combination, with a dial having figures marked thereon, of a shaft carrying a ratchet-wheel and indicator, and having bearing at its rear end in a bracket secured to a strip inclosing said ratchet-wheel, a spring-pressed pawl adapted to engage said ratchet-wheel, and a lever provided with an arm for actuating the same, substantially as set forth.

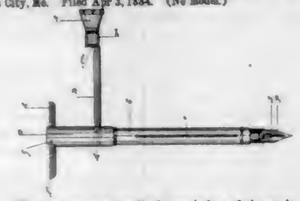
6. In a cabinet for holding plates, the combination, with a dial having figures marked thereon, of a shaft carrying a ratchet-wheel and indicator, a spring-pressed pawl adapted to engage said ratchet-wheel, a lever provided with an arm at its forward end for actuating said ratchet-wheel, a spring for retaining the same in position, said lever being provided at its forward end with an upwardly-projecting extension, and a coil-spring, located between the end of said lever and the floor, substantially as set forth.

300,439. COMBINED LIQUID-MEASURE AND FUNNEL. THOMAS T. ESHOP, Washington, D. C. Filed Apr. 12, 1884. (No model.)



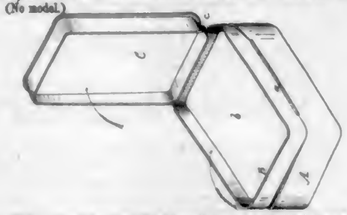
Claim.—As a new article of manufacture, the measure A, provided with guide *e* and bottom B, having funnel C, in combination with the rod E, having handle F and curved extension G made integral therewith, and having the washers *d'*, and the valve D secured to the bottom B by means of the double-hinged bar *c*, substantially as and for the purpose set forth.

300,440. COMBINATION WRITING-INSTRUMENT. SAML. BLITZ, Kansas City, Mo. Filed Apr. 3, 1884. (No model.)



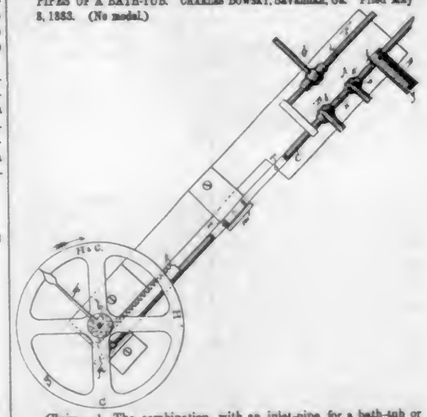
Claim.—The instrument described, consisting of the main shell or body carrying the inscribing device at one extremity, and being provided at the other with the pivoted rubber stamp and ink-pad shells, the steel-knife eraser fixed within the upper end of the aforesaid ink-pad shell and shielded by the rubber eraser, which is adapted to fit over the same, and by reason of its elasticity to retain its position within the upper end of the ink-pad shell, all constructed and combined in the manner and for the purposes set forth.

300,441. BOX. GEORGE BORST, Rochester, N. Y. Filed Apr. 16, 1884. (No model.)



Claim.—As a new article of manufacture, a portable box consisting of two open-topped compartments hinged together at the back to turn crosswise, one compartment forming a cover for the other, and a cover hinged to the upper compartment at one end to turn longitudinally and at right angles to the other hinge, as herein shown and described, and for the purposes specified.

300,442. DEVICE FOR CONTROLLING THE INLET AND OUTLET PIPES OF A BATH-TUB. CHARLES BOWSKY, Savannah, Ga. Filed May 8, 1883. (No model.)



Claim.—1. The combination, with an inlet-pipe for a bath-tub or similar tank, of a transversely-perforated rod sliding through said pipe transversely, whereby the flow of water is started or stopped by the movement of the rod, substantially as and for the purpose set forth.

2. The combination, with the hot and cold water pipes of a bath-tub, and their spigots, having stuffing-boxes arranged in line with each other, of a sliding rod passing through the boxes in both pipes, and provided with transverse perforations which register with the passages in spigots and pipes as the rod is shifted, and an operating hand or pointer registering on a marked dial the position of the perforations in the rod, substantially as shown and described.

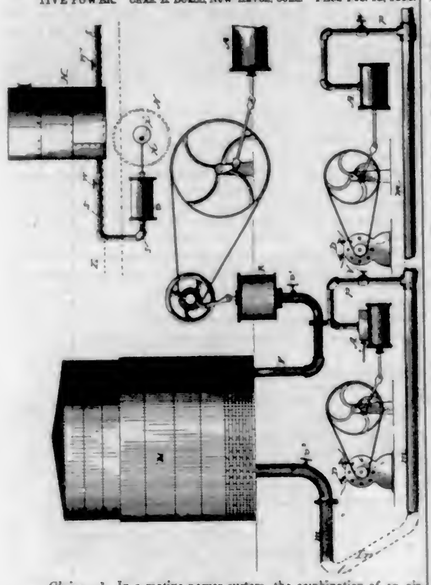
3. A bath-tub or similar tank having a frame or cylinder through which the escape-opening is made, and provided with a spring-actuated

ping or valve adapted to close this opening when forced down, in combination with a sliding rod formed with a beveled nose arranged across the outer end of the spring-plug, whereby the escape may be opened or closed without putting the hand into the water, substantially as shown and described.

4. In a sliding cut-off for water-pipes, the combination, with the water-pipe provided with suitable stuffing-boxes, and a transversely-perforated rod sliding therein, of an operating-handle and a graduated scale or dial marked to correspond with the perforations in the rod, substantially as and for the purpose set forth.

5. In a bathing apparatus, the inlet-pipes A B G, provided with stuffing-boxes, in combination with the perforated valve-rods C F, having stops *m m*, the toothed rack *k*, pinion *l*, hand or pointer M, and dial M', having indicating-marks, substantially as and for the purpose set forth.

300,443. MEANS FOR UTILIZING COMPRESSED AIR AS A MOTIVE POWER. CHAS. E. BUELL, New Haven, Conn. Filed Feb. 13, 1880.



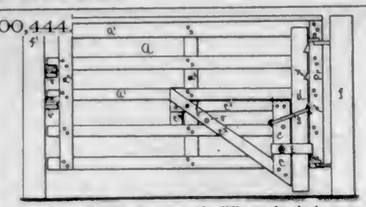
Claim.—1. In a motive-power system, the combination of an air-compressing apparatus and an expansible air-holder located between said apparatus and the compressed-air mains, and serving to maintain a uniform pressure of air in said mains, with outlying stations, each provided with a motor arranged to be propelled by the compressed air from the mains, and cut-offs in the branch pipes extending from the mains, whereby all the motors may be separately controlled and the supply of compressed air regulated at will, substantially as shown and described.

2. The combination, with an air-compressing apparatus, of an air-holder provided with induction and eduction pipes, and means for controlling the flow of air through said pipes, whereby air may be stored under pressure in the holder for use when the compressing apparatus is not in operation, or compressed air can be forced through the holder into the supply-mains, substantially as shown and described.

3. The combination, with a railway-car, of an air-compressing apparatus located thereupon and suitably operated, an air-holder arranged to be charged by the air-compressing apparatus, and a supply-main for conveying the compressed air to the point or points of consumption, substantially as set forth.

4. The combination, with a railway-car, of an air-compressing apparatus located thereon and suitably operated, an air-holder arranged to be charged by the air-compressing apparatus through a suitable induction-pipe, an eduction-pipe from said air-holder to convey the compressed air to the point or points of consumption, and means for controlling the flow of air through said pipes, whereby air may be stored under pressure in the air-holder for use when the car has ceased to move, or compressed air can be forced through the holder to the point or points of consumption when the car is in motion.

300,444. GATE. JAMES G. CALHOUN, Edinburg, Ohio, assignor of one-half to Samuel Calhoun, same place. Filed Nov. 26, 1883. (No model.)

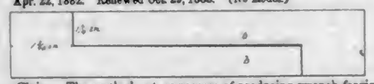


Claim.—1. A vertically-adjustable sliding and swinging gate, consisting of a main frame, *a*, and a supporting-frame, *b*, provided with a guide, *c*, and a link, *s*, hinged at one end to the upright part *c* of frame *b*, in combination with the hinged post *d*, formed with notches *n* on its side opposite from frame *b*, the link *s*, engaging with the notches and embracing the upright part *c* of frame *b*, and post *d*, substantially as described.

2. In a vertically-adjustable sliding and swinging gate, the main frame *a*, formed with the front ends of boards *a'*, projecting beyond the upright piece a^2, in combination with post *f'*, provided with one or more blocks, *v*, the hinged post *d*, formed with notches *n*, link *s*, and frame *b*, the blocks *v*, boards *a'*, and notches *n* being relatively arranged substantially as and for the purpose specified.

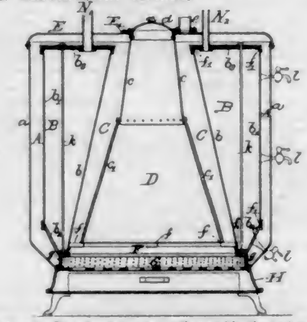
3. The sliding and swinging gate-frame *a*, formed with boards *a'*, with projecting front ends, in combination with post *f'*, formed with notched blocks *v*, and with the supporting-frame *b*, provided with pin *o*, slightly above board *a'*, link *s*, guide *c*, hinged and notched post *d*, and post *f*, substantially as described.

300,445. MANUFACTURE OF WRENCH-FORGINGS. LUKE CHAPMAN, Collinsville, Conn., assignor to the Collins Company, same place. Filed Apr. 22, 1882. Renewed Oct. 29, 1883. (No model.)



Claim.—The method, art, or process of producing wrench-forgings, consisting in cutting bar-sections *a* into the blanks *b b*, and then heading the blanks in dies, all substantially as herein described.

300,446. STEAM-GENERATOR. BENJAMIN S. COMSTOCK, New York, N. Y. Filed Feb. 17, 1882. (No model.)



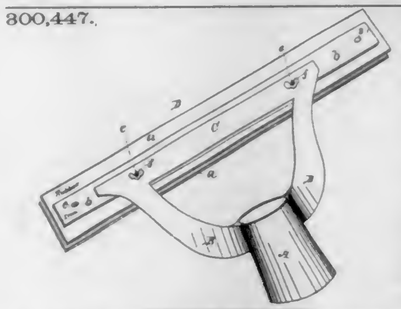
Claim.—1. In a steam-generator, the combination, substantially as hereinbefore set forth, of a combustion-chamber and an annular water-chamber, the inner wall of which converges toward its upper extremity, and a fuel-magazine having its wall approximately parallel with said inner wall of said water-chamber, and forming therewith an intervening flue in the form of a truncated cone.

2. In a steam-generator, the combination, substantially as hereinbefore set forth, of a combustion-chamber, having a grate with a circular shoulder and perforations therein, with the annular water-chamber, an enveloping cylinder forming a hot-air chamber, and a conical fuel-magazine depending from the top of said cylinder.

300,447. SCRUBBER. WILBER F. CORNELIUS, Muncie, Ind. Filed Oct. 17, 1883. (No model.)

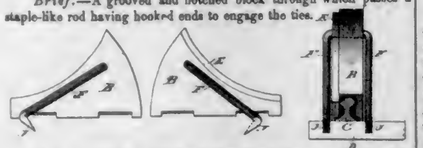
Claim.—The combination, with a holder formed with arms connected by a bar, as described, of a flexible scrubber-head, consisting of rubber strips having a wooden strip interposed between them, and metallic strips secured upon their outer faces, and bolts and thumb-nuts for removably securing said scrubber-head to the bar of the holder, substantially as set forth.

300,447.



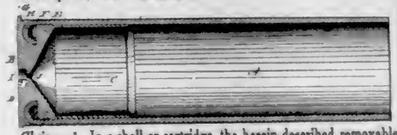
300,448. CAR-CHECK FOR PREVENTING CARS ON SIDE TRACKS FROM BEING BLOWN THEREFROM. JAS. M. DE WITT, Grand Junction, Colo. Filed Dec. 20, 1883. (No model.)

Brief.—A grooved and notched block through which passes a staple-like rod having hooked ends to engage the ties.



Claim.—In a check-block for railway-tracks, the grooved and recessed block combined with the staple-like rod passing through and embracing the sides thereof, and having the hook ends to engage with the ties or track structure, substantially as shown and described.

300,449. CARTRIDGE-SHELL. AARON F. DICKEY, Somerset, Pa. Filed Apr. 18, 1884. (No model.)



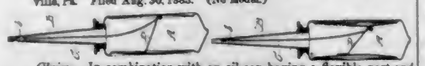
Claim.—1. In a shell or cartridge, the herein-described removable metallic breech, comprising the cylindrical body, the circular cap at the rear end, the circular series of teeth or crimpers, and the semicircular recess or depression at the rear thereof, for the purpose set forth.

2. The combination, with the shell or cartridge-case, of the herein-described detachable breech, formed with threads or crimpers on its exterior face at one end, and a recess or depression beyond the crimpers, for the purpose set forth.

3. The combination, with the shell or cartridge-case, of the herein-described detachable breech, formed with teeth, threads, or crimpers on the exterior face at one end, a recess or depression beyond the teeth or crimpers, and a wall or flange projecting over the recess, for the purpose set forth.

4. The herein-described metallic breech, comprising the cylindrical body and circular cap formed integral, threads, teeth, or crimpers on the exterior face of the body, a recess or depression between the teeth and the circular cap, and a wall or flange projecting inward from the cap over the recess, as set forth.

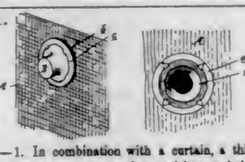
300,450. OIL-CAN. WILLARD D. DORMAN, Washington, D. C., assignor to himself and Samuel R. and John T. Stratton, both of Strattonville, Pa. Filed Aug. 30, 1883. (No model.)



Claim.—In combination with an oil-can having a flexible part and a nozzle with a tapering oil-passage, a spring attached to the can opposite said flexible part, and a plunger with a diameter corresponding to that of the oil-passage at the point of the nozzle, arranged in said nozzle and connected with said spring, whereby the plunger is longitudinally moved by the movement of the spring, the latter being actuated by the flexible part, and the whole operating to serve as and for the purposes set forth.

300,451. CARRIAGE-CURTAIN ATTACHMENT. WM. DOWNHAM, St. John's, Mich., assignor of one-half to Porter K. Perrin, same place. Filed Apr. 26, 1884. (No model.)

300,451.

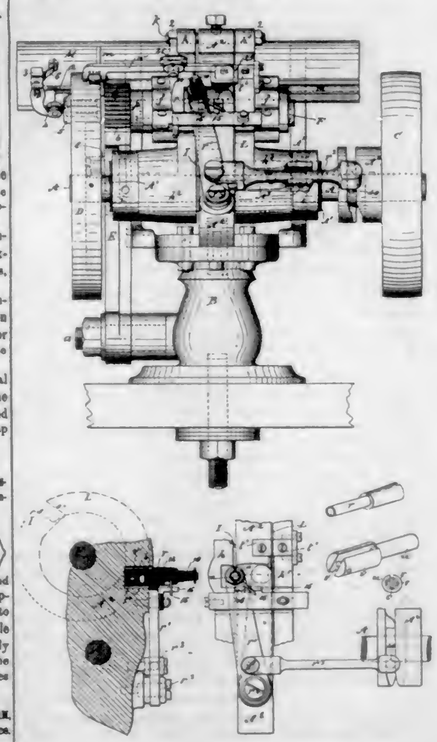


Claim.—1. In combination with a curtain, a thimble made of elastic material and secured over and around button-holes in said curtain, as a means of securing said curtain to a button-stud, substantially as described.

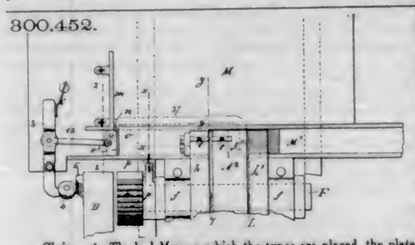
2. In combination with a stud-button, the thimble B, provided with annular flange *b*, the annular ring *c*, and the ring *d*, as a means of securing a curtain to a button, substantially as and for the purposes specified.

300,452. TYPE-RUBBING MACHINE. GEORGE S. EATON and JAMES W. LYON, Brooklyn, N. Y., assignors to said Eaton. Filed May 9, 1883. (No model.) Patented in England May 15, 1883, No. 2,439; in Belgium June 15, 1883, No. 61,487; in Austria-Hungary Aug. 17, 1883, No. 33 and No. 1,573; in France Sept. 13, 1883, No. 155,646, and in Germany Jan. 23, 1884, No. 25,584.

Brief.—The types to be operated upon are advanced from an inclined table onto the shoulder of a vibrating blade, which carries them one by one between two stationary cheeks of the rubbing device, to grind two of their opposite faces. At the end of the sweep of said blade each type is dropped into a notch in a carrier supported by a hub attached to a vibrating arm. As this hub vibrates, the carrier is by suitable mechanism turned a quarter-rotation, the type being thereafter ejected from the notch onto the shoulder of another blade vibrating in a direction opposite to the first. This blade, on its return-sweep, carries the types between two other stationary cheeks, to grind the remaining two sides, and deposits them into a galley provided for the purpose, the type being advanced in this galley by a reciprocating pusher. Instead of the vibrating carrier, a curved channel leading from between the first two cheeks to the second pair of cheeks may be employed.



300,452.



Claim.—1. The bed M upon which the types are placed, the plate *e*, and pusher *e'*, in combination with the type-carrier, means, substantially as specified, for giving to the same an oscillating motion, and the type dressing or rubbing devices, substantially as set forth.

2. In a type rubbing or dressing machine, the combination, with two type-carriers upon one shaft, and mechanism for giving to the same an oscillating movement, of means, substantially as specified, for feeding the types, and a transfer mechanism for receiving the types from one carrier and delivering the same to the other carrier, substantially as set forth.

3. The combination, with the oscillating shaft, type-carrier, and rubbing devices, of a bed upon which the types are received, a pusher to move along the line of types to the carrier, and a cutter for nicking the bases of the types, substantially as set forth.

4. The combination, with the oscillating type-carriers and the body A^2 and cheek-pieces k k', of the slotted transfer-block, and the mechanism, substantially as specified, for moving, partially rotating the same, and transferring the type from one carrier to the other, substantially as set forth.

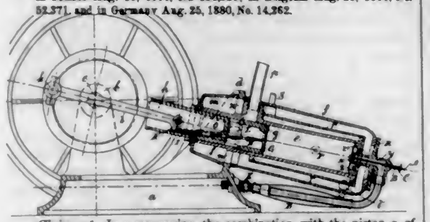
5. In combination with the type-carriers, a slotted transfer-block, a sliding plate in the same, and mechanism, substantially as specified, for moving the said plate and ejecting the type, substantially as set forth.

6. The combination, with the body A^2, the shaft, and type-carriers, of the cheek-pieces and cutters, the motor-shaft, revolving cam, the rack, and the pinion for giving to the shaft an oscillating motion, substantially as set forth.

7. The combination, with the oscillating shaft and the type-carriers, of the cheek-pieces, the body A^3, and cutters for dressing the types, and the rule or receptacle into which the types as rubbed are received, substantially as set forth.

8. The combination, with the oscillating type-carriers, the body A^2, and shaft, of cheek-pieces having tubular bearings, and means for supporting and adjusting such cheek-pieces, substantially as set forth.

300,453. GAS-ENGINE. EDMUND EDWARDS, 40 Southampton Buildings, County of Middlesex, England. Filed Oct. 11, 1883. (No model.) Patented in England Feb. 20, 1880, No. 760, and Apr. 23, 1881, No. 1,765 in France Aug. 19, 1880, No. 138,326; in Belgium Aug. 20, 1880, No. 52,371, and in Germany Aug. 25, 1880, No. 14,262.

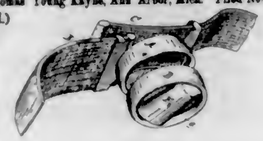


Claim.—1. In a gas-engine, the combination, with the piston *g*, of the exhaust-valve G, tail-piece K on the connecting-rod *i*, and the hollow trunk *h*, having holes L, substantially as set forth and shown.

2. In a gas-engine, the combination, with the engine-cylinder, of the outer casing, *f*, its cover R, air-casing *m*, and the plate *d*, having openings *n n*, substantially as set forth and shown.

3. In a gas-engine, the combination of the engine-cylinder, the outer casing, *f*, the cover R, and the openings *n n*, with the openings *o o* in the guide *l*, and the air-casing *m*, substantially as set forth and shown.

300,454. TRUSS. JAMES Y. EGAN, Toronto, Ontario, Canada, assignor to Thomas Young Kayde, Ann Arbor, Mich. Filed Nov. 21, 1883. (No model.)



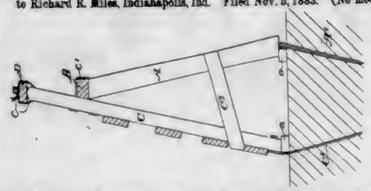
Claim.—1. In a truss, in combination with the strap-plate A, provided with flange *a*, internally grooved to receive the spring C, said spring C, and plate D, said plate provided with the projection *d*, peripherally grooved to receive the opposite end of the spring, substantially as described.

2. In a pad for trusses, the plate D, having the flange *e*, internally grooved to hold a central pad, substantially as described.

3. In a pad for trusses, in combination with the cup-shaped plate D, internally grooved, the oblong central piece, E, fitted into the said plate, as set forth, whereby it can be adjusted in the cup to suit the wearer, substantially as and for the purpose described.

4. In a pad for trusses, the plate D, having on one side the flange *e*, internally grooved to hold a central pad, and its other side provided with a groove, in combination with a spring constructed to be sprung into said groove, substantially as described.

300,455. FENCE. NELSON FAUGHT, Pittsborough, assignor of one-half to Richard R. Miles, Indianapolis, Ind. Filed Nov. 5, 1883. (No model.)

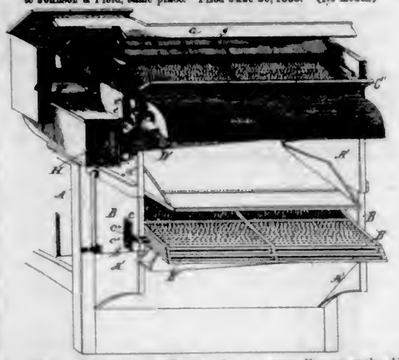


Claim.—1. The combination, in a fence, of the post A, provided with the bent iron rod A', the cap-piece B, and the post C, having at its lower end the bent iron rod C', said rods being inserted in the ground, as described, and means for securing the post C to the cap-piece B, substantially as set forth.

2. In a fence, the combination of the posts A, provided on their lower ends with bent iron rods A', cap-piece B, secured on top of said posts, posts C, provided at their lower ends with bent iron rods C', said iron rods A' and C' being inserted in the soil to within a short distance of the wooden posts, and means for securing the parts in position, substantially as set forth.

3. In a fence, the combination of the posts A, provided on their lower ends with iron rods A', posts C, having iron rods C' upon their lower ends, said iron rods A' and C' being inserted in the soil each at an opposite angle from the other, and bent so as to bring the tops of the posts together or in line with each other, and means consisting of the cap-piece B and tie *c'*, or its equivalent, for securing said tops together, substantially as set forth.

300,456. FANNING-MILL. MARTIN S. FIELD, Racine, Wis., assignor to Johnson & Field, same place. Filed June 26, 1883. (No model.)



Claim.—In a fanning-mill, a broad screen extending out at the side thereof, a plate extending nearly into contact with the same, so as to permit the passage of fine particles, but prevent the passage of grain, a hood over said screen, an exhaust-trough under the screen leading to a fan, and an exhaust-fan, all combined and relatively arranged as stated.

300,457. PLOW. DANIEL E. FISH, Worthington, Minn. Filed Mar. 22, 1884. (No model.)

Claim.—1. The combination of the landside, the landside-block having a central pivot or stud seated in a suitable opening in the landside, and provided with a series of serrations on its inner face, the standard pivoted at its upper end and having its foot provided with elongated

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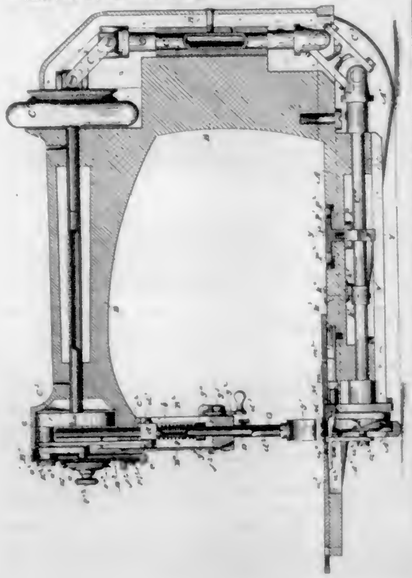


bolt-holes, and serrated on its inner face, and the retaining-bolts, substantially as set forth.

2. The combination, with the standard and the mold-board, of the serrated standard-block provided at one end with a flange embracing one edge of the standard, and the double-winged coupling-plate having one wing secured to the mold-board, and its other wing serrated and engaging the standard-block and the retaining-bolt, substantially as set forth.

3. The combination, substantially as set forth, of the mold-board, the landside, the tapered landside-block having a pivot-stud and serrated on its inner face, the standard having a foot provided with elongated bolt-holes and serrated on its inner face, the retaining-bolts, the standard-block secured to the upper end of the standard and serrated on its inner face, and the double-winged coupling-plate having one wing secured to the mold-board, and its other wing serrated and bolted to the standard-block, as and for the purposes specified.

300,458. SEWING-MACHINE. JOSEPH L. FOLLETT, New York, N. Y. Filed June 26, 1883. (No model.)



Claim.—1. The combination, with a swiveled crank-pin bearing, of a vibratory take-up lever pivoted to a stationary part of the machine, and extending through and adapted to slide in said swiveled crank-bearing during the rotary movement of the latter, substantially as hereinbefore set forth.

2. The combination, with a take-up lever consisting of a straight wire provided with a hook at one end and a block to which said wire is secured at its opposite end, of a stationary pivot-pin for said block, and a swiveled rotary crank-pin bearing adapted to slide on said take-up lever and impart positive variable movements thereto, substantially as hereinbefore set forth.

3. The combination, with the take-up lever pivoted to a stationary part of the machine, of the rotating crank-pin for operating the needle-bar, the rigid arm secured to said crank-pin, and a pin swiveled to said arm and arranged to furnish a sliding bearing for the take-up lever, substantially as and for the purposes hereinbefore set forth.

4. The combination, with a vibratory take-up lever adapted to engage the thread when moving in one direction only, of means, substantially as described, for lightly holding said thread when left by the take-up, yielding it only as it is required by the shuttle, as set forth.

5. The combination, with a vibratory take-up lever, of a curved check tension spring arranged near the path described by the thread-hook of said lever, substantially as set forth.

6. The combination, with a vibratory take-up lever adapted to engage the thread when moving in one direction only, of a check tension spring serving to gently hold the thread subject to the requirements of the shuttle when said take-up lever is moving in the opposite direction, substantially as set forth.

7. The combination, with the presser-bar and a screw on which the lifter for said bar is pivoted, of a lug secured to said bar, and having its vertical portion arranged to move in a guide-slot in said screw, whereby the presser-bar and screw are prevented from turning, substantially as set forth.

8. The combination, with a rotating shuttle and shuttle-carrier, of a yielding or spring-acting shuttle-brace arranged to work through an opening in the rear of the carrier, and normally impelled in the direction of the shuttle by spring-pressure, and means, substantially as described, for retracting the said carrier from the shuttle against the stress of its impelling-spring during a predetermined portion of the rotation of the latter, substantially as hereinbefore set forth.

9. The combination, with a rotary shuttle and a shaft by which said shuttle is operated, of a shuttle-brace arranged within a recess in said shaft, and means, substantially as set forth, for causing said shuttle-brace to intermittingly press said shuttle toward the needle, as described.

10. The combination, with a rotary shuttle and a shaft by which said shuttle is operated, said shaft being provided with a central recess, of a shuttle-brace arranged within said recess, a spring for pressing said shuttle-brace outward, also arranged within said recess, a stationary cam-surface, and an intermediate device connected with said shuttle-brace and engaging said cam-surface in its rotation, substantially as set forth.

11. The combination, with a bobbin-ejector placed in rear of the shuttle, of a shuttle provided with an aperture for the passage of said ejector, substantially as set forth.

12. The combination, with a bobbin-ejector and a shuttle pierced for the passage thereof, of a device for projecting the ejector into said shuttle, and a spring for retracting said ejector, substantially as set forth.

13. The combination, with a rotary shuttle pierced for the entrance of a bobbin-ejector, of a shaft for operating said shuttle, a bobbin-ejector arranged within said shaft, and means for projecting and retracting said ejector, substantially as set forth.

14. The combination, with a shuttle, its operating-shaft, and a bobbin-ejector, all arranged beneath the bed-plate of the machine, of a device for operating said ejector, said device passing through said bed-plate and having an actuating-handle on the upper side thereof, substantially as described.

15. The combination, with a shuttle-brace and a bobbin-ejector, of a spring adapted to assist in the operation of the former, and serving also to retract the latter after the bobbin has been forced from the shuttle, substantially as set forth.

16. The combination, with a rotary shuttle and a hollow operating-shaft for the same, of a shuttle-brace and a bobbin-ejector, both arranged within said shaft, substantially as set forth.

17. The combination, with a feed-adjusting bar provided with a yoke, of a disk arranged within said yoke, and means for adjusting said disk from the upper surface of the bed-plate, substantially as set forth.

18. The combination, with a pivoted feed-adjusting bar carrying a stop which serves as a fulcrum for the feed-lever, of means for changing the position of said bar, whereby said feed-lever is caused to come in contact with said stop sooner or later in the course of its movement, as set forth.

19. The combination, with a rotary shaft arranged beneath the bed-plate, of a feed-adjusting bar arranged below said shaft, and serving as a guard therefor, substantially as set forth.

20. The combination, with a feed-lever, of an eccentric for operating the same, an adjustable stop, a projection or finger on said lever for engaging said stop, an adjusting-bar by which said stop is carried, and means for changing the position of said adjusting-bar, whereby said feed-lever is caused to have contact with said stop sooner or later in the course of its movement, substantially as set forth.

21. The combination of the feed-lever, a stop which serves as a fulcrum for the same, an adjusting-bar to which said stop is secured, a yoke on said adjusting-bar, an adjusting-disk arranged within a recess in the bed-plate, and a secondary disk eccentrically secured to said adjusting-disk and arranged within the arms of said yoke, substantially as set forth.

22. The combination, with a movable feed-regulating disk provided with a graduated scale and a segmental slot, of a stationary index-finger arranged within said slot, substantially as set forth.

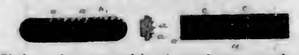
23. A bed-plate provided on its under side with strengthening-ribs, said ribs being made deeper as they run rearward until they reach a depth equal to that of the shuttle-race secured to the forward end of the said bed-plate, combined with said shuttle-race, so that it and the ribs form a supporting-base for the machine, substantially as set forth.

24. A bobbin-case having a notch in its edge and thread-slots in its face, converging to form a point around which the thread is drawn, in combination with a tension-spring secured to the periphery of said bobbin-case, with its free end between said notch and one of said thread-slots, substantially as set forth.

25. The combination, with a bobbin-ejector, of ejector-actuating mechanism arranged to be operated by hand from above the bed-plate of the machine, for the purpose of ejecting the bobbin, substantially as and for the purposes set forth.

26. The combination of the upper main or driving shaft for actuating the needle-bar, the lower counter-shaft for imparting movement to the feed and hook or shuttle, intermediate universal-joint connections, substantially as described, whereby the two shafts are caused to revolve in unison, and the driving pulley or wheel located on said upper shaft at a point intermediate between the needle-bar and the universal-joint connections, substantially as and for the purposes hereinbefore set forth.

300,459. SETTING FOR JEWELRY, &c. CHARLES A. FOWLER, New York, N. Y. Filed Mar. 6, 1884. (No model.)

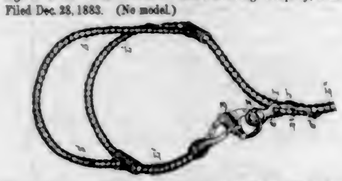


Claim.—As a new article of manufacture, a setting for jewelry, buttons, and similar goods, substantially as hereinbefore described, the same being composed of stone, glass, or other friable materials or compounds having a practically lusterless surface, and in whole or in part covered with practically parallel corrugations.

300,460. HOG-CHOLERA MEDICINE. MICHAEL FREY, JR., Chillicothe, Ohio. Filed Jan. 17, 1884. (No specimens.)

Claim.—The herein-described composition of matter to be used for preventing and treatment of hog cholera, consisting of slaked lime, copperas, salt, and pulverized tobacco, in the proportions specified.

300,461. HALTER-TRIMMING. JOHN GIBSON, West Troy, N. Y., assignor to the Union Hardware Manufacturing Company, same place. Filed Dec. 28, 1883. (No model.)



Claim.—As an improved article of manufacture for halter-trimmings, the within-described device, in combination, consisting of the parallel bars B' B², made with interior concave surfaces, the central semicircular strap, J, connecting with said bars, the spur D on the interior of said strap J, the end semicircular straps, C' C², connecting with said bars, and the eye E on the end strap C², constructed and arranged as herein shown.

300,462. SPINDLE-BOLSTER. JAMES R. GRAY, Ayer, assignor to Geo. Draper & Sons, Hopedale, Mass. Filed Aug. 13, 1883. (No model.)

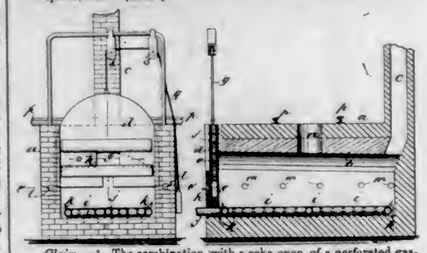
Brief.—The bolster is composed of two sleeves tapered or made conical in the direction of their length. The inner sleeve is bored to fit the spindle, and its tapering end or portion of smallest external diameter is placed in the bottom of the bolster-case. The bore of the outer sleeve is equal to the largest diameter of the inner sleeve. The tapering end or portion of smallest diameter of said outer sleeve is uppermost. Thus tapering or wedge-shaped spaces are formed, the larger alternately at top and bottom, which construction permits the spindle to move radially, to a limited extent, to find its true center of rotation.

300,462.



Claim.—The spindle bolster-case, pin or projection, combined with the compound bolster, composed of two or more tapering sleeves adapted to receive oil in the tapering oil-receiving space between them, substantially as set forth.

300,463. COKE-OVEN. JONATHAN GREEN, Leisenring, Pa. Filed Apr. 22, 1884. (Model.)



Claim.—1. The combination, with a coke-oven, of a perforated gas-pipe cradle adapted for the distribution of steam for quenching the fire, and having a handle for drawing out the cradle for discharging the coke, substantially as described.

2. In coke-oven, the cradle comprising the gas-pipe frame, having series of apertures and prongs upon its upper surface, said prongs being adapted to support and retain the coke upon the cradle while being drawn, substantially as set forth.

3. The coke-oven having the side wall air-passages *l*, connecting by inlets *m* with the oven-chamber, in combination with the cradle having a series of apertures and a pipe-connection, J, substantially as shown and described, and for the purpose set forth.

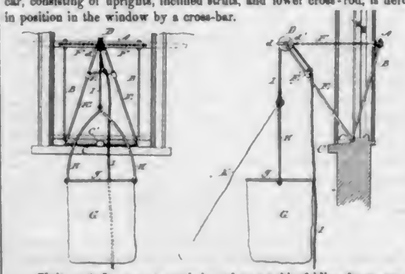
300,464. COMPOUND MATERIAL FOR THE MANUFACTURE OF SHEETS, BOARDS, BLOCKS, ARTIFICIAL WOOD, &c. LEVI HAAS, Chester, Pa. Filed Mar. 15, 1884. (No specimens.)

Claim.—1. A compound material composed of vegetable fiber, leather or shoddy waste, crude asbestus, litharge, and sulphur, pitch, and whiting blended with thinned asphaltum, to supersede the use of lumber, metal, and other materials for the production of various useful articles for use and ornament, substantially as herein described.

2. The process of producing a compound material from vegetable fiber, leather or shoddy waste, crude asbestus, litharge, and thinned asphaltum, blended with sulphur, pitch, and whiting, substantially as described, and for the purpose set forth.

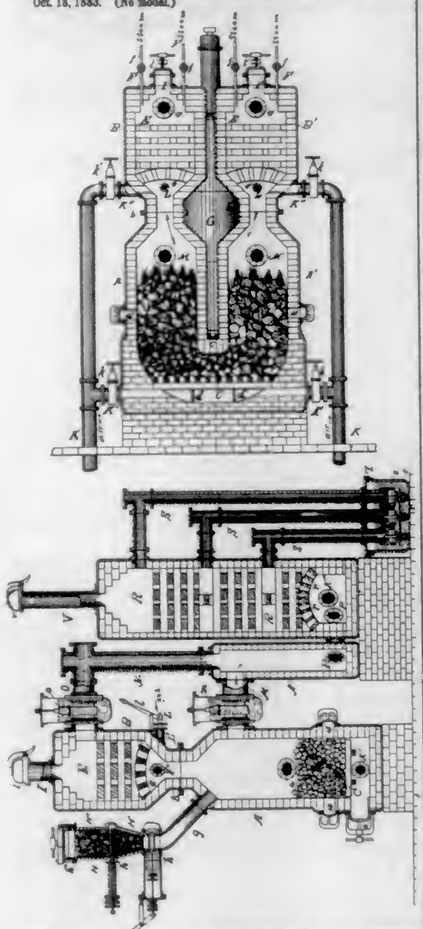
300,465. FIRE-ESCAPE. THOMAS HALE, Claydon, County of Suffolk, England. Filed Mar. 20, 1884. (No model.) Patented in England May 16, 1883, No. 2,459.

Brief.—A portable pulley-frame for holding the escape-rope and car, consisting of uprights, inclined struts, and lower cross-rod, is held in position in the window by a cross-bar.



Claim.—A fire-escape consisting of a portable folding frame composed of a cross-bar, A, adapted to be arranged across the inner side of a window-opening, uprights B, secured to the cross-bar A at their upper ends, and provided at their lower ends with the cross-bar C', inwardly-inclined struts E, pivoted to the bar C' at their lower ends, and carrying a pulley, D, between their upper ends, flexible connections F, bag B, having handle H, and rope I, secured to the latter and passing over the pulley D, substantially as shown and described.

300,466. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. JOHN HANLON, New York, N. Y., assignor, by direct and mesne assignments, to the United Coal and Oil Gas Company, of New York. Filed Oct. 18, 1883. (No model.)



Claim.—1. The process of manufacturing gas which consists in heating up the generating and fixing chambers by the combustion of fuel in the former and of products from such fuel in the latter, thereby heating a large body of refractory material in the fixing-chamber; then decomposing steam in the fuel, enriching the resulting gases with hydrocarbons; then combining and fixing the carbureted gas by passing it through a small portion of the heated refractory material and to the seal-box; then, as the first portion is cooled, passing the succeeding volume of gas through another heated portion of refractory material and out to the seal-box or main, and thus passing successive volumes of gas as produced through succeeding bodies of heated refractory material, whereby destructive decomposition of the hydrocarbons is prevented, and a uniform quality of gas as to candle-power is produced.

2. The closed generating-chambers having a single grate common to both and communicating with each other at their bases above the grate, in combination with a gas-discharge pipe connecting with the top of one of the chambers.

3. In combination with a gas-generator, the sleeve and the sliding oil-supply pipe fitting in such sleeve, so that the oil-pipe may be projected beyond the furnace-wall internally when oil is supplied and withdrawn when the supply of oil is shut off.

4. The two reciprocating generators having a connecting-base, in combination with the grate and one or more vertical partitions in the ash-pit for causing the gases to pass from one chamber into the other above the grate.

5. The two generating-chambers connected by a common base, in combination with steam-supply pipes connecting with their upper portions, the connecting air-blast pipes, and the gas-outlet pipes leading from the upper portion of each chamber.

6. The two generating-chambers connected at their bases, in combination with the steam-superheating chambers placed above them, the gas-outlet pipes leading from the generators below the steam-superheating chambers, and the air, steam, and oil supply pipes connected as described.

7. The two generating-chambers having a connecting-base, in combination with the steam-superheating chambers mounted above them, the gas-outlet pipes leading from the upper portions of the generators, the outlet-pipes for products of combustion leading from the superheating-chambers, and supply-pipes for air and steam, connected as and for the purposes described.

8. The two closed reciprocating gas-generating chambers having a connecting-base and an arch extending from front to rear above the bottom of the chamber, so as to form a passage from one chamber to the other and support the wall or walls separating the two generating-chambers, in combination with connecting air-blast pipes and gas-discharge pipes, as described.

9. The two gas-generating chambers connected at their bases, in combination with the steam-superheating chambers above them, the gas-outlet pipes from the upper portions of the generators, the outlet-pipes from the superheaters for products of combustion, a fixing-chamber, and pipes connecting the outlet-pipes from the generators and superheaters with the fixing-chamber.

10. A gas-generator, in combination with a fixing-chamber having gas-outlet pipes leading from it at different distances from the gas-inlet pipe, whereby a small portion of the fixing-chamber may be used at one period for fixing the gas and another portion used at a succeeding period, and destructive decomposition of hydrocarbons thereby prevented, and gas of a uniform candle-power produced.

11. A gas-fixing chamber containing a filling of refractory material, and having gas-outlet pipes provided with controlling valves or seals, and connecting therewith at different distances from the gas-inlet pipe, for the purpose described.

12. A gas-fixing chamber, in combination with a hydraulic-seal box, pipes connecting different sections or portions of the fixing-chamber with the seal-box, and the valves for closing the pipes arranged in the seal-box, for the purpose described.

13. The combination of a gas-eduction pipe of a gas apparatus with a hydraulic main or box, said pipe projecting into the box, a valve for closing the end of the pipe connected to one end of a pivoted lever in the box, and a rod connected to the other end of the lever and passing up through the top of the box, for operating the valve.

14. A gas-generator, in combination with a fixing-chamber containing refractory material separated into different sections or bodies by intervening spaces, gas-outlet pipes communicating with the spaces between the bodies of material, and a pipe connecting the generator with one end of the fixing-chamber, for the purpose described.

15. In combination with a gas-generator, a fuel-feeding hopper having a valve in its bottom, a charge-chamber holding a single charge of coal, a storage-chamber adapted to hold several charges of coal, a slide for separating its charge-chamber from the storage-chamber, and a tight-fitting lid or cover closing the top of the storage-chamber.

16. The charging-hopper having a water-cooled valve in its bottom, and a grated slide between the charge-chamber and the storage-chamber, in combination with a furnace.

17. The charging-hopper having a water-cooled valve at its bottom, a grated slide between its charge-chamber and its storage-chamber, and a tight-fitting lid closing its top, in combination with a gas-generator.

300,467. ANTI-FRICTION GLASS BEARING. JOHN J. HARDEN, Chicago, Ill., assignor to the Harden Crystal Bearing Company, same place. Filed Jan. 10, 1884. (No model.)



Claim.—1. As an improved article of manufacture, an anti-friction glass bearing having its bearing-surface grooved or corrugated, essentially as set forth.

2. A bearing or journal, A, formed of glass and provided with grooves *a* in its bearing-surface, essentially as set forth.

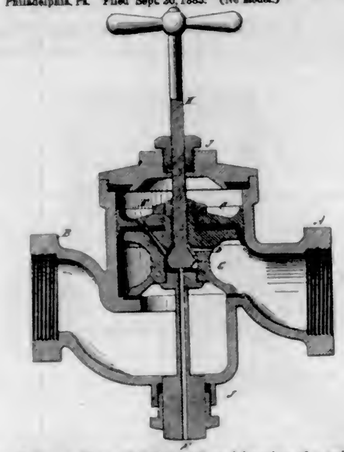
3. A bearing or journal, A, formed of glass and provided with spiral grooves *a* in its bearing-surface, essentially as set forth.

4. A bearing or journal, A, formed of glass and having its bearing-surface provided with spiral grooves *a*, arranged in reverse directions, so as to cross each other, essentially as set forth.

5. A bearing or journal, A, formed of glass and having a plain marginal rim around the edges of its grooved bearing-surface, essentially as set forth.

6. A bearing or journal, A, formed of glass and provided with a plain marginal rim, *a'*, and a spirally grooved or corrugated bearing-surface, such grooves being arranged in opposite directions, essentially as set forth.

300,468. VALVE. CHARLES S. HASKELL and WILLIAM B. FLEMING, Philadelphia, Pa. Filed Sept. 20, 1883. (No model.)

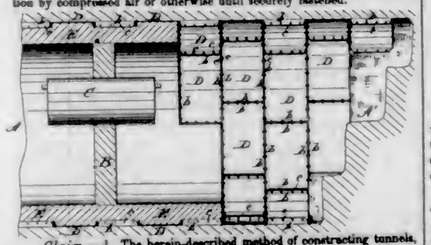


Claim.—1. The combination, with an inlet-pipe, of a main valve arranged directly in the pipe and an auxiliary valve in a valve-opening communicating with the inlet-pipe, the arrangement being such that the main valve is operated by the direct pressure of the water in the pipe, and is closed by the pressure of the water controlled by the auxiliary valve, as set forth.

2. The combination, with an inlet-pipe, of a main valve arranged directly in the pipe, and an auxiliary valve consisting of a three-way cock in a channel communicating with the inlet-pipe, the arrangement being such that the direct pressure of the water operates to open the main valve, and the pressure controlled by the three-way cock operates to close the same, as set forth.

300,469. ART OF CONSTRUCTING TUNNELS. DE WITT C. HASKIN, New York, N. Y. Filed Jan. 31, 1883. (No model.)

Brief.—In constructing an underground tunnel having an exterior shell made of plates of boiler-iron curved and flanged and bolted together, the excavation is made and the plates inserted in the manner set forth in the claims, the plates being held to the sides of the excavation by compressed air or otherwise until securely fastened.



Claim.—1. The herein-described method of constructing tunnels, which consists in excavating a small portion of the earth in the crown of the heading and inserting therein one or more iron plates and securing the same to the upper part of a completed section of the tunnel, thereby forming a partial hood projecting in front of said section, then excavating the heading in advance of said hood and inserting another plate or plates and attaching the same to the partial hood, afterward excavating the earth under the first-named partial hood sufficiently for the insertion of one or more plates at the sides thereof, and attaching said side plates to the completed section of tunnel and to said hood-plates, and continuing the operation till each circle of plates in succession is completed and the whole earth is excavated in a step-like manner from within them, as shown and set forth.

2. The herein-described method of constructing tunnels, consisting in forming in the excavation a tube or shell composed of plates having facial flanges, the said plates being supported in position while being bolted together by compressed air, as set forth.

300,470. CONDUIT FOR ELECTRIC WIRES. MARVIN P. HATHAWAY, Milwaukee, Wis. Filed Mar. 3, 1884. (No model.)

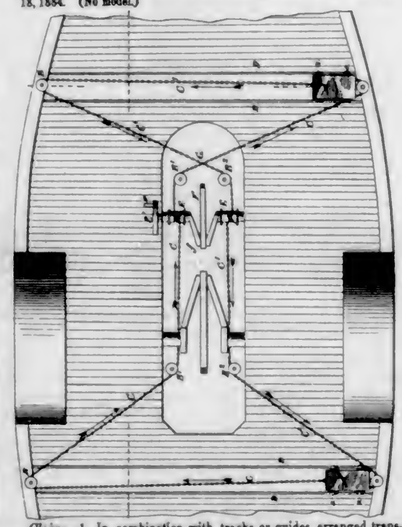


Claim.—1. In a conduit for electric wires, the bridges B, having side grooves, *b'*, and recesses *b²* above the tops of the grooves at intervals, whereby space is provided for the expansion and contraction of the cables when in said grooves.

2. In a conduit for electric wires, the boxes A A', having beveled ends and longitudinal gains *a a'*, in combination with the section-wires *c c'*, fitted within said gains, and bent down at each end to conform to the bevel.

3. In a conduit for electric wires, the combination of the bridge B with side grooves, the cables B', fitted within said grooves, and the cord E, wrapped around the whole, substantially as set forth.

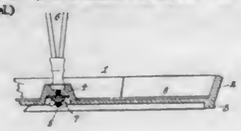
300,471. BALLAST FOR VESSELS. EDMUND P. HEXEY, Washington, D. C., assignor of one-half to Albert Edelen, Baltimore, Md. Filed Apr. 18, 1884. (No model.)



Claim.—1. In combination with tracks or guides arranged transverse to the plane of the ship, and ballast-cars adapted to travel on such tracks, two chains arranged to cross each other and with the cars constitute an endless chain, and a single shaft at E, adapted to operate such chain to force the cars in the same direction simultaneously, as set forth.

2. The combination, with the tracks D D and cars A A', as described, of the chains C and C', attached to the cars as shown, and crossing each other, as at G, and the shaft E, operating said chains to move the cars in the same direction simultaneously, and the rollers B B' B², all arranged and adapted to operate as and for the purpose set forth.

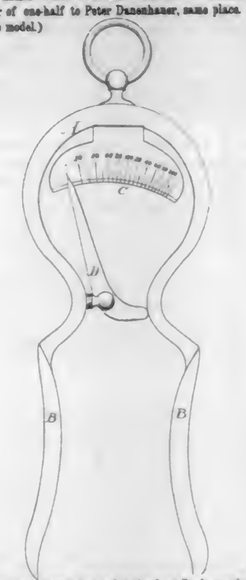
300,472. TRAY. JOHN B. HIGBEE, Pittsburg, Pa. Filed Apr. 30, 1884. (No model.)



Claim.—1. An uncovered or open-topped tray, in combination with a handle arranged and secured in the center of the tray, substantially as set forth.

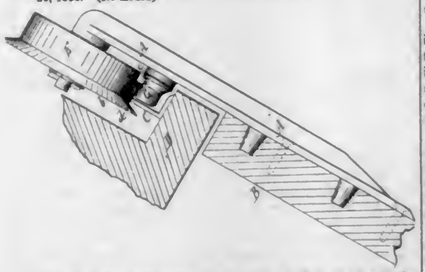
2. A tray provided with a series of seats or compartments in the upper surface, in combination with a handle arranged and secured in the center of the tray, substantially as set forth.

300,473. HAND-GRIP TESTER. MATHIAS J. HINDIN, Cleveland, Ohio, assignor of one-half to Peter Danenhauer, same place. Filed Feb. 7, 1884. (No model.)



Claim.—The hand-grip tester herein described, consisting of the arc A, having handles B B, the curved scale C, suspended in the arc A, and the pointer D, pivoted to one of said handles and operated upon by the opposite handle when pressed for recording the number of pounds pressure applied, as described.

300,474. DOOR-HANGER. WARREN IDE, Medina, N. Y. Filed Dec. 26, 1883. (No model.)



Claim.—In a door-hanger, the two wheels E G, attached to the hanger A, one above the other, and provided with beveled flanges on opposite sides, in combination with a track consisting of a flat horizontal thread, *d*, on opposite sides of which the wheels run, a vertical flange, *f*, and supporting-feet *g*, as shown and described, and for the purpose specified.

300,475. BOLT-NUT. ALONZO JOHNSON, Springfield, Mass., assignor to George Dwight, Jr., same place. Filed Jan. 30, 1884. (No model.)

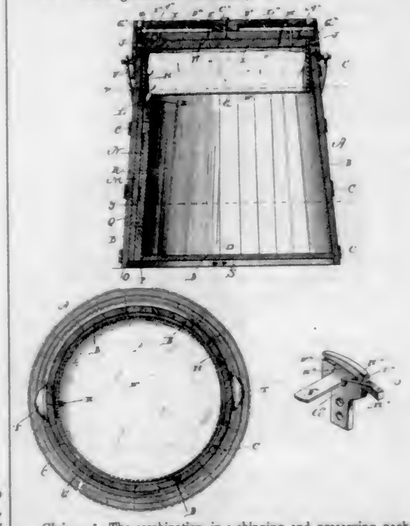


Claim.—1. A nut having two parallel straight edge bearing-surfaces on the same side and recessed between the bearings, substantially as set forth.

2. A nut having two parallel straight edge bearing-surfaces on the same side or face, between which surfaces is an arch-shaped concavity, the curve of which is in the direction in which the rolled grain of the iron runs of which the nut is made, substantially as set forth.

3. A nut having two opposite straight bearing-surfaces on both its sides, between which surfaces is an arch-shaped concavity extending from edge to edge of the nut, substantially as set forth.

300,476. REFRIGERATING PACKAGE FOR SHIPPING AND PRESERVING BUTTER, OYSTERS, &c. OLIVER P. JOHNSON, Washington, D. C. Filed Aug. 23, 1883. (No model.)



Claim.—1. The combination, in a shipping and preserving package, of a body, a block secured vertically against the side of the same on its interior, and provided with a longitudinal drip-channel, and an ice pan or vessel extending across the top portion of the body, and supported on said block, and provided with a drip-opening registering with the channel in the supporting-block, substantially as and for the purpose set forth.

2. The combination of the body of the package, a block secured inside the body against the sides thereof, and provided with a longitudinal perforation terminating at its top in a mouth or recess, and an ice-pan extending across the top portion of the body, and provided with a tubular extension or pipe in its bottom edge that enters said mouth, to convey the drip and retain the pan from lateral displacement, said pan being removable, substantially as set forth.

3. The combination, with the body of the package having an ice pan or vessel in its top portion, and provided with an angular opening in its bottom at its side, of a drip-block having a corresponding bottom and fitted in said opening, and provided with a longitudinal drip-channel, said block being secured vertically against the side of the body, substantially as set forth.

4. The combination of the body of the package having the open mouth, sides, and bottom formed with the opening at its side, the drip-block fitted in said opening and secured vertically against the interior sides of the body, and provided with a longitudinal perforation terminating in a mouth or recess at the top, and the ice pan or vessel supported in the mouth of the body by an annular lateral flange it its top edge, and provided with the tubular extension at its side edge, substantially as and for the purpose set forth.

5. As an improvement in shipping and preserving packages, a body having its sides extending down below its bottom to form an inclosed cold-air space, and provided with a closed interior ice-chamber, and with a drip-conducting channel extending down from the ice-chamber and opening into the said cold-air space, which is filled by the cold air descending from said channel, the contents being placed between the ice-chamber and the bottom forming the top of the air-space, substantially as set forth.

6. The combination, with the body of the package having a series of plates or castings projecting above the edge of its mouth, and provided with a simple inclined groove in their inner faces, of the cover having a centrally-pivoted plate formed with integral radial arms having flat outer ends, which enter the inclined grooves and are guided downwardly thereby to clamp the cover, substantially as set forth.

7. The combination, with castings or plates having a groove in their inner faces, and provided with a shoulder having a series of holes or recesses, of clamping plates or arms pivoted and adapted to enter said grooves, and provided at their end with a hook adapted to engage said holes, substantially as and for the purpose set forth.

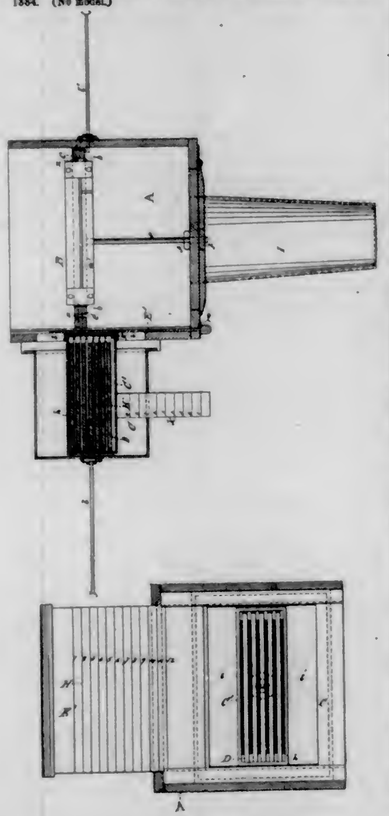
8. The combination of the castings or plates having a groove in their inner faces, the cover, a spider-plate pivoted thereto, and having radial arms to enter said grooves, and hooks secured at the end of said arms to engage the castings and retain the arms in position, substantially as set forth.

9. The combination of the body of the package, the castings or plates projecting above the top edge thereof, and formed with inclined grooves in their inner faces, and with a shoulder having holes or recesses, the cover-disk, the spider pivoted thereon, and having a series of radial arms adapted to enter the grooves, and hooks pivoted on the ends of the arms and engaging said holes, substantially as and for the purpose set forth.

10. The herein-described casting or plate having an inclined groove in its face and provided with a shoulder at the lowermost end of said groove, having holes or recesses, substantially as and for the purpose set forth.

11. The combination of the castings or plates projecting above the cover of the package, the spider-plate having radial arms engaging said castings, the spider being on a lower plane than the castings, and a transverse strip secured across the spider-plate to bring the same up to the plane of the top edge of the castings, substantially as and for the purpose set forth.

300,477. PHOTOGRAPHIC CAMERA. HENRY G. JONES, Philadelphia, Pa., assignor of one-half to Henry S. Keller, same place. Filed Apr. 1, 1884. (No model.)

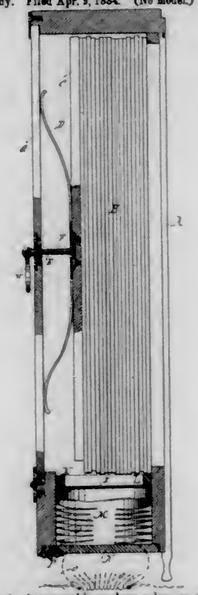


Claim.—1. The sliding plate E', having a scale, H, in combination with the camera-box A and sliding case C', provided with a handle, *k*, having a scale, H', for regulating the adjustment of the case C', substantially described.

2. The plate-rest B, having pivots *x*, and adjusting screw-rod *e*, provided with nuts *f f*, in combination with the camera-box A, for regulating the position of said rest, substantially as described.

3. The combination of the adjustable strips *a* and *a'*, provided with arms *b*, with the side strips, *c c*, of the plate-rest B by means of pivots *b'* and pins *d*, for expanding or contracting said strips to receive plates D of different sizes, substantially as described.

300,478. PHOTOGRAPHIC EXCHANGE-BOX. HEINRICH KAYSER, Berlin, Germany. Filed Apr. 9, 1884. (No model.)



Claim.—1. A photographic exchange box or case for securing the changing of the plates in full daylight, consisting of a box, A', having a hinged bottom or back, O, slide A, movable false bottom or partition C, spring or springs D, adapted to press said bottom or partition forward, and the door I and a sleeve, O, composed of a fabric impervious to light, substantially as and for the purpose set forth.

2. The movable false bottom C, provided with a rod, F, having a knuckle or other joint, F, at about the center of its length, and a ring, H, or its equivalent, at the outer end, spring or springs D, and the sleeve O, of impenetrable material or fabric, substantially as and for the purpose set forth.

3. The combination of the box or case A', having doors N and I, and the sleeve O, of light-excluding fabric, substantially as and for the purpose set forth.

300,479. ORE-CONCENTRATOR. WILLIAM B. KENNEDY and WATSON M. NESBIT, Silver Reef, Utah. Filed Dec. 13, 1883. (No model.)



Claim.—1. The combination, with a sluiceway, *a*, of independent detachable agitators *b* and vertically-adjustable governors *c*, arranged below each agitator, substantially as described.

2. The combination, with a sluiceway, *a*, of independent detachable agitators *b*, adjustable governors *c*, and independent removable wings *d*, arranged substantially as described.

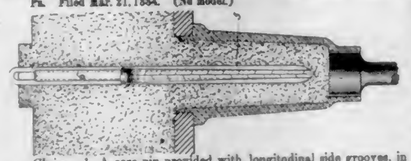
3. An ore-concentrating sluiceway, *a*, having agitators *b*, governors *c*, and wings *d*, which are independent and detachably connected to said sluiceway for removal, to enable the concentrates to be washed out through the tail end of the sluiceway and collected thereat, substantially as described.

4. In an ore-concentrator, the combination of the bottom of the sluice with the agitators *b*, made narrower than the said sluiceway, and removable therefrom independently of each other, substantially as and for the purpose set forth.

5. In an ore-concentrator, the combination, in a sluiceway, of independent detachable agitators *b* and governors *c*, the lower face of each agitator being nearer the upper face of each governor than the lower face of each governor is to the upper face of the next succeeding agitator, substantially as and for the purpose specified.

6. In an ore-concentrator, the combination, in a sluiceway with detachable agitators and governors vertically adjustable, as described, of the detachable wings *d*, said wings and agitators being provided with hasps *g*, engaging staples *h* on the sluice, as specified.

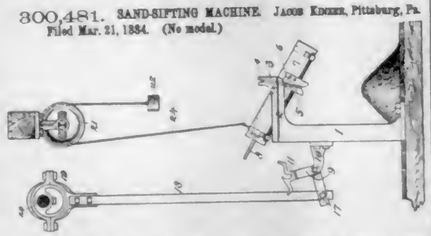
300,480. PIN FOR VENTING CORES. JACOB KINZER, Pittsburg, Pa. Filed Mar. 21, 1884. (No model.)



Claim.—1. A core-pin provided with longitudinal side grooves, in combination with a staple-shaped wire constructed to fit within said grooves, substantially as set forth.

2. A core-pin provided with longitudinal side grooves, in combination with the vent-former consisting of a staple-shaped wire and a body of metal uniting and filling the upper portion of said staple, substantially as set forth.

300,481. SAND-SIFTING MACHINE. JACOB KINZER, Pittsburg, Pa. Filed Mar. 21, 1884. (No model.)



Claim.—1. In a sand-sifting machine, the swinging stirrup 5 and standards for supporting said stirrup, in combination with the screen 7, having notched plates secured to its sides forward of its center, and adapted to fit over and on said stirrup, and mechanism for imparting a reciprocating longitudinal movement to the screen, substantially as set forth.

2. In a sand-sifting machine, the swinging stirrup and standards for supporting the stirrup, in combination with the screen 7, resting on the stirrup, the bell-crank lever 9, having one of its arms connected to the screen, and mechanism attached to its opposite end for imparting motion to the lever, substantially as set forth.

3. In a sand-sifting machine, the screen 7, swung in suitable bearings and provided with the loop 8, in combination with the bell-crank lever 9, having the curved notch 12, and mechanism for operating said lever, substantially as set forth.

4. In a sand-sifting machine, the screen 7, swung in suitable bearings and provided with the loop 8, in combination with the bell-crank lever 9, having at one of its ends the horizontal arms 13 and 14, located in different horizontal planes, and the curved notch 12, and mechanism for operating said lever, substantially as set forth.

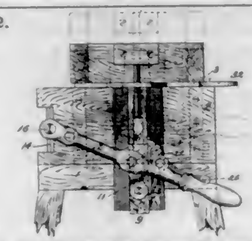
5. In a sand-sifting machine, the screen 7, pivotally swung in suitable bearings and provided with the loop 8, in combination with the oscillating bell-crank lever 9, having the curved notch 12, and mechanism for automatically disconnecting the loop and lever, substantially as set forth.

6. In a sand-sifting machine, the screen 7, pivotally swung in suitable bearings, in combination with the oscillating bell-crank lever, said lever and screen being detachably connected, and mechanism for automatically disconnecting the screen and lever, substantially as set forth.

7. In a sand-sifting machine, the screen 7, pivotally swung in suitable bearings and provided with the loop 8, in combination with the oscillating bell-crank lever 9, having the curved notch 12, the cord 20, pulley 21, and weight 22, substantially as set forth.

300,482. SAND-MOLDING MACHINE. JACOB KINZER, Pittsburg, Pa. Filed Mar. 21, 1884. (No model.)

300,482.



Claim.—1. In a molding-machine, the frame 2, in combination with the top plate having the core-boxes secured thereto, the core-lifters 20, and mechanism for raising and lowering said core-lifters, substantially as set forth.

2. In a molding-machine, the frame 2, in combination with the top plate having the core-boxes secured thereto, the core-lifters 20, flask-raising rods 21, and mechanism for raising and lowering the core lifters and rods, substantially as set forth.

3. In a molding-machine, the frame 2, in combination with the top plate having core-boxes secured thereto, the core-lifters 20, flask-raising rods 21, the cross-head 8, carrying the lifters and rods, and mechanism for raising and lowering the cross-head and holding the same in such raised and lowered positions, substantially as set forth.

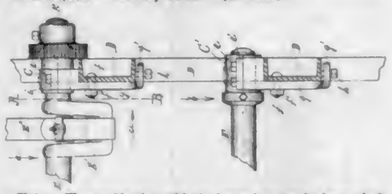
4. In a molding-machine, the frame 2, having slotted sides, in combination with the cross-head 8, having its end located in said slots, and the hand-levers 12, connected between its handle and pivoted point to said cross-head, and rigidly secured at one end to the pivotal rod 13, substantially as and for the purpose set forth.

5. In a molding-machine, the frame 2, having slotted sides, in combination with the cross-head 8, having its ends located in said slots, the cap-plates 9, secured to the ends of the cross-head, the links 11, and levers 12, rigidly secured to the pivotal rod 13, substantially as and for the purpose set forth.

6. In a molding-machine, the frame 2, having slotted sides, in combination with the cross-head 8, the levers 12, connected to the cross-head and rigidly secured to the rod 13, the stops 24 and 25, and the bell-crank levers 26, pivoted to the levers 12, substantially as and for the purpose set forth.

7. In a molding-machine, the frame 2, having slotted sides, in combination with the cross-head 8, levers 12, connected to the cross-head, the stop 24, adjustable stop 25, and the bell-crank levers 26, pivoted to the levers 12, substantially as and for the purpose set forth.

300,483. SHAFT-BEARING FOR LOOMS. LUCIUS J. KNOWLES, Worcester, Mass. Filed July 16, 1881. (No model.)



Claim.—The combination, with the loom-frame and a loom-shaft, of the bearing C, having a detachable cap *d'*, clamping-arms *g g'*, and set-screw A, substantially as shown and described, for the purpose stated.

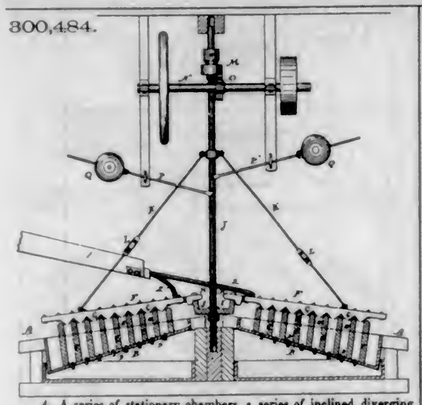
300,484. CONCENTRATOR. ERNEST KOCH, San Francisco, Cal. Filed Dec. 28, 1883. (No model.)

Claim.—1. An inclined sectional concentrating-table having transverse V-shaped troughs with discharge-openings at their bottoms, in combination with suitable stationary chambers and mechanism by which an upward knocking action is produced upon the bottoms of said troughs, substantially as herein set forth.

2. In a concentrator, an inclined sectional table having transverse V-shaped troughs with discharge-openings at their bottoms, in combination with a series of stationary chambers formed with iron bars, upon which the concave or highest parts of the troughs rest, and mechanism by which the sections of the table are raised and let fall upon the bars, substantially as herein described.

3. In a concentrator, a series of table-sections having slotted V-shaped troughs extending transversely thereof, and a series of inclined stationary chambers having holes in their bottoms and means for closing the same, in combination with mechanism by which the table-sections are raised and let fall upon the upper edges of the chambers, substantially as and for the purpose set forth.

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4. A series of stationary chambers, a series of inclined diverging table-sections, F, arranged around a center, and having transverse slotted V-shaped troughs and a projection at the apex of each, and the central ring, in combination with a vertical shaft having a collar beneath the ring, rods extending from the vertical shaft to the outer ends of the table-sections, a tappet upon said shaft and a horizontal shaft, and a cam by which the vertical shaft and table-sections are raised and let fall, substantially as herein described.

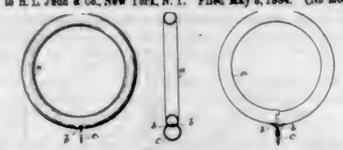
5. A series of stationary chambers, and the inclined diverging table-sections having slotted troughs, in combination with the central vertical shaft, tappet, horizontal shaft, cam, and the diverging supporting-rods K, having turn-buckles, by which the grade of the tables may be adjusted, substantially as herein described.

6. The stationary chambers, the diverging table-sections having slotted troughs, a vertical central shaft, a horizontal shaft, a cam, a tappet, and rods K, having turn-buckles, by which one side may be shortened to give a side shaking motion, all combined to operate substantially as herein described.

7. The stationary chambers, the diverging table-sections having slotted troughs, means whereby their center and outer ends are suspended, the shafts and tappet, and cam by which they may be raised and let fall, in combination with the counterbalance weights and levers, substantially as and for the purpose set forth.

8. A means for producing a jigging action upon material to be concentrated, consisting of the combination of a series of chambers into which water is admitted, a superposed table having troughs with openings in their bottoms, and mechanism by which the table is raised and let fall upon the edges of the chambers, to provide an abrupt shock while the lower portions of the troughs dip into the water, substantially as herein described.

300,485. CURTAIN-RING. FRANK L. LATHROP, Brooklyn, assignor to H. L. Judd & Co., New York, N. Y. Filed May 8, 1884. (No model.)



Claim.—1. The hollow metallic cornice-ring having two holes, in combination with the loop or ring of wire passing into such holes, substantially as set forth.

2. The hollow metallic cornice-ring having two holes, in combination with the wire loop, the ends of which are hooked into such holes and the wire twisted together, as shown.

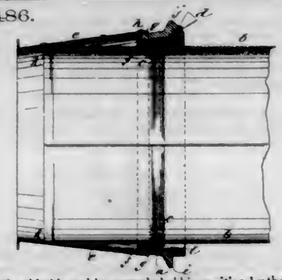
3. The sheet-metal tube bent into the form of a cornice-ring, with a saw-cut in the metal across one end, so that the ends are interlocked, substantially as set forth.

4. The tubular sheet-metal cornice-ring having the ends interlocked by passing into each other, in combination with the suspending-loop passing into the two holes in the tubular ring, substantially as set forth.

300,486. STOVE-PIPE THIMBLE. GODFRIED LAUBE, Huron, Dak. Filed Nov. 5, 1883. (No model.)

Claim.—1. A tapering stove-pipe thimble provided at its forward end with inclined set-screws passing into the interior of the said thimble, whereby the end of a stove-pipe may abut against the tapering inner

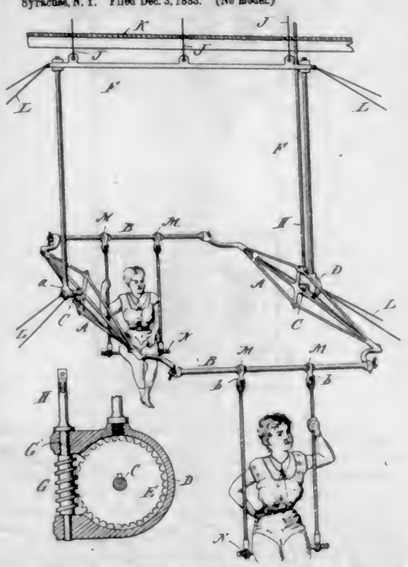
300,486.



portion of the thimble and be securely held in position by the set-screws bearing on its annular bead, substantially as set forth.

2. The combination of the flaring ring *a*, formed with an annular contraction or shoulder, *l*, on its inner surface, and the inclined screws *d*, passing through the ring to a position in front of said contraction or shoulder, with the section *e* secured to the inner edge of the ring *a* and contracting toward its rear end, whereby the end of a stove-pipe may obtain a bearing in said section, as at *k*, and its bead be clamped between the shoulder *l* and the set-screws, substantially as set forth.

300,487. REVOLVING DOUBLE TRAPEZE. EDWARD J. LEARY, Syracuse, N. Y. Filed Dec. 3, 1883. (No model.)



Claim.—1. The combination, with a frame adapted to revolve in the vertical plane, of trapezes suspended from the said frame, substantially as herein shown and described.

2. The combination, with a revolving frame, of trapezes suspended from the same, substantially as herein shown and described.

3. The combination, with a centrally-pivoted frame, of means for revolving the same, and of trapezes suspended from the said frame, substantially as herein shown and described.

4. The combination, with a revolving frame, of means for revolving the same, contained in one of the journal-boxes, and of trapezes suspended from the said frame, substantially as herein shown and described.

5. The combination, with a revolving frame, of a worm-wheel mounted on one of the pivots, a worm engaging with the worm-wheel, a rod for turning the worm, and a casing surrounding the worm-wheel and worm, in which casing the said pivot is journaled, substantially as herein shown and described.

6. The combination, with the side bars, A, provided at the middle with outwardly-projecting pivots C, of the cross-bars B, the worm-wheel E, mounted on one of the pivots C, the worm G, engaging with the worm-wheel, the casing D, and the frame F, substantially as herein shown and described.

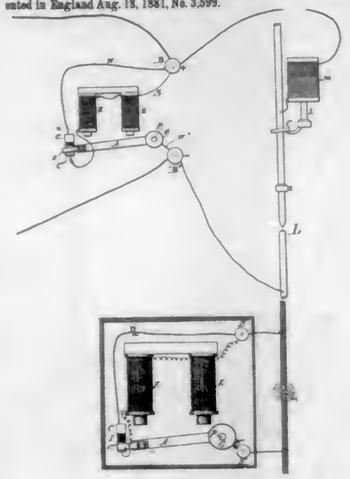
7. The combination, with the side frames, A, each having a central pivot, C, of the cross-bars B, the worm-wheel E, mounted on one of the pivots, the worm G, engaging with the worm-wheel, the frame F, and the rod H, extending upwardly from the worm G, parallel with and adjoining the corresponding shank of the frame F, substantially as herein shown and described.

300,488. SUSPENSION-HOOK FOR EAR-RINGS, &c. EMIL A. LEHMANN, New York, N. Y. Filed Mar. 12, 1884. (No model.)



Claim.—The combination of a spring suspension-hook, *a*, with a shorter part, *b*, hinged to the lower end of the spring-hook, and provided with a cup-shaped socket, *b'*, at the upper end, said socket having a recess, *c*, at that side facing the spring-hook, and a projection, *d*, integral with the socket, for releasing the closing part *b* from the spring-hook, as herein shown and described, substantially as set forth.

300,489. CUT-OUT FOR ELECTRIC LAMPS. CHARLES LEVER, Bowden, County of Chester, England. Filed Nov. 25, 1881. (No model.) Patented in England Aug. 18, 1881, No. 3,599.



Claim.—1. The combination, in an electric lamp, of a main circuit containing the carbons and an electro-magnet or solenoid for regulating the arc, a normally-closed shunt-circuit containing a magnet of high resistance and a switch, two insulated frictional contact-points, and a direct connection from one of them to one of the binding-posts, and from the other contact-point to the magnet of high resistance, whereby a portion of the current passes from the main magnet through the shunt-magnet and switch when the lamp is in operation, but the lamp is entirely cut out by the switch if the arc is unduly lengthened, substantially as specified.

2. In a combined regulating and cut-out device for electric-arc lamps, the combination of an electro-magnet in a shunt-circuit, the armature A, metal piece S, metal studs C C', pivot *p*, and screw-head G, substantially as and for the purposes specified.

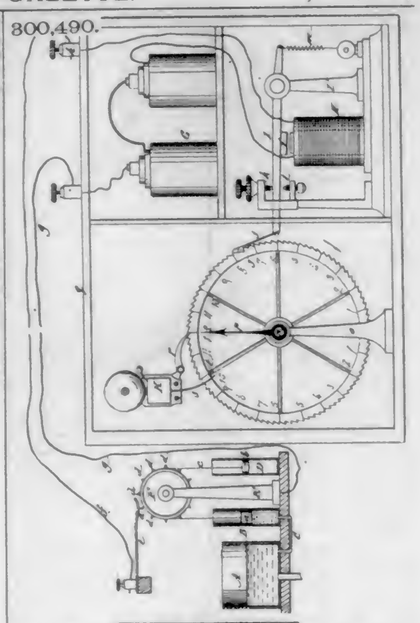
300,490. ELECTRIC REGISTER FOR FLUID-RESERVOIRS. CHAS. S. LOCKWOOD, Newburg, N. Y. Filed Feb. 4, 1884. (No model.)

Claim.—1. In an electric register for fluid-reservoirs, the combination, with the float *a*, opposing weight *b*, and cord *c*, of the circuit-operating wheel F and contact-spring *e*, the said wheel and spring being interposed in an electric circuit communicating with a distant point, as specified.

2. The combination of the circuit-operating wheel F, float *a*, weight *b*, cord *c*, contact-spring *e*, circuit-wires *f g*, and electro-mechanical registering mechanism, as described.

3. The combination of the electro-magnet H, armature-lever I, pawl *j*, ratchet-wheel J, and circuit-controlling mechanism operated by the float *a*, as described.

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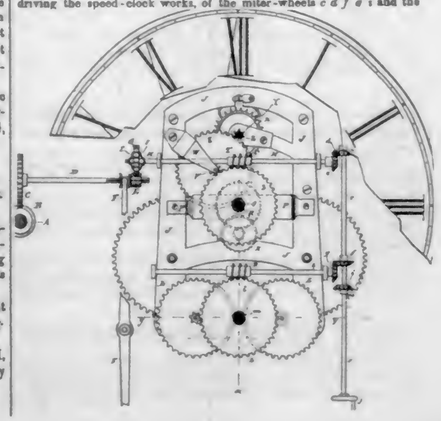
300,491. SPEED-CLOCK FOR MACHINERY. WILLIAM H. LORD, New York, N. Y. Filed Mar. 14, 1884. (No model.)

Claim.—1. In a speed-clock, the combination, with the frame J, the hollow post O, carrying the hour-hand M, and the hollow post R, carrying the speed-hand U, and the worm-wheel S, of the bridge P and the hollow journal Q, substantially as herein shown and described, whereby the speed mechanism will be kept from contact with the time mechanism, as set forth.

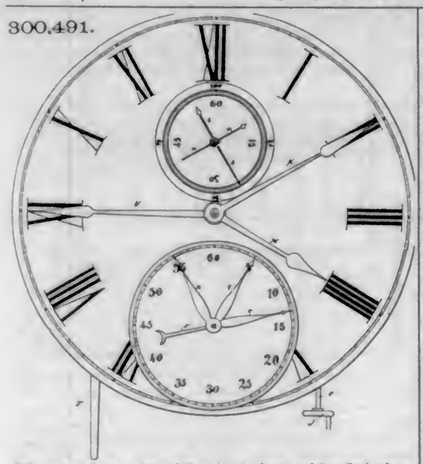
2. In a speed-clock, the combination, with the worm-wheel S, of the speed mechanism, and the post of the seconds-hand *a*, of the large gear-wheel X, the small pinions V Y, and the speed seconds-hand *b*, substantially as herein shown and described, whereby the gain or loss in speed will be accurately shown, as set forth.

3. In a speed-clock, the combination, with the speed-clock works L, provided with two hands, revolving, one, *q*, in sixty hours, and the other, *s*, in one hour, of the seconds-hand *o*, revolving once a minute, and its driving mechanism, substantially as herein shown and described, whereby the amount of speed lost in a given time can be accurately shown, as set forth.

4. In a speed-clock, the combination, with the worm-shaft H, driving the speed mechanism of the time-clock works, and the worm-shaft *h*, driving the speed-clock works, of the miter-wheels *c d f a i* and the



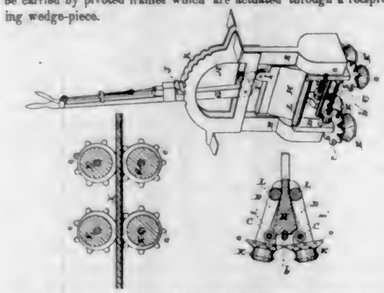
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sliding rotary shaft *e*, substantially as herein shown and described, whereby the speed-hands of the two clock-works K L can be adjusted together, or the hands of the latter independently of those of the former, as set forth.

300,492. CABLE-GRIP. RALPH W. MCGOVERN, San Francisco, Cal. Filed Dec. 14, 1883. (No model.)

Brief.—The grip-rollers are in pairs, and are eccentrically mounted or have cam-faces, and are geared together in pairs. The rollers may be carried by pivoted frames which are actuated through a reciprocating wedge-piece.



Claim.—1. In a cable-grip, oppositely-placed eccentric rollers or pulleys, between which the moving cable passes, in combination with suitable mechanism for forcing said eccentric pulleys or rollers against the cable, substantially as herein described.

2. In a cable-grip, oppositely-placed eccentric rollers or pulleys, between which the moving cable passes, said rollers or pulleys being geared together to cause their eccentricities to correspond in their revolution, in combination with suitable mechanism for forcing them against the cable, substantially as and for the purpose herein described.

3. In a cable-grip, the oppositely-located rollers or pulleys E, between which the moving cable passes, said rollers or pulleys having grooved cam-faces—that is to say, formed eccentrically with relation to the axis of revolution of said rollers or pulleys—in combination with mechanism for forcing the faces of said rollers or pulleys against the moving cable, substantially as herein described.

4. In a cable-grip, the oppositely-located rollers or pulleys E, between which the moving cable passes, said rollers or pulleys having grooved cam-faces, as described, and the cogged flanges *e* on said pulleys, whereby they engage in pairs to cause their timely revolution to make their cam-faces correspond, in combination with mechanism for forcing the faces of said rollers or pulleys against the moving cable, substantially as herein described.

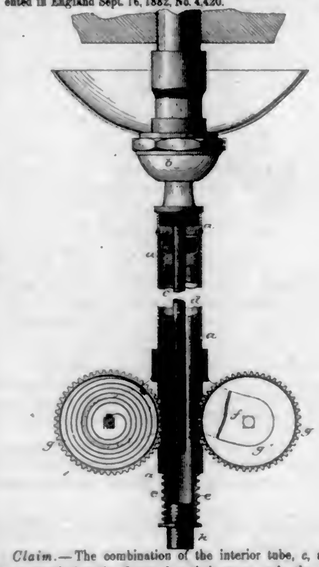
5. In a cable-grip, a suitable frame and swinging arms or frames pivoted thereto on each side, said arms or frames carrying the eccentric or cam rollers or pulleys E, oppositely located, and between the faces of which the moving cable passes, in combination with the wedge-block H, guided in the main frame, and lying between the swinging arms or frames and impinging thereon, and a means for reciprocating said wedge to force together or apart said arms or frames to cause their rollers or pulleys to bear against or relieve the moving cable, substantially as herein described.

6. In a cable-grip, the main body-plate A and the downwardly-extending arms B, the side arms, D, pivoted to arms B by shafts C, and having the friction-rolls L in their tops, and the oppositely-located eccentric or cam rollers or pulleys E, geared together and mounted on said arms D, in combination with the inverted wedge-block H, guided between arms B, and having its sides impinging against the friction-rolls L, the pivoted elbow-lever G, and the pivoted bar or link I, connecting said lever with the wedge H, substantially as and for the purpose herein described.

7. In a cable-grip, the main plate A, arms B, shafts C, set between said arms, the arms D, pivoted on said shafts and having the inwardly-projecting foot portion *m'*, and the friction-rolls L, and the eccentric or cam rollers or pulleys E, geared together and arranged as shown, in combination with the inverted wedge H, having the rounded corners *m*, adapted to impinge on the foot portion *m'*, and means for reciprocating said wedge, substantially as herein described.

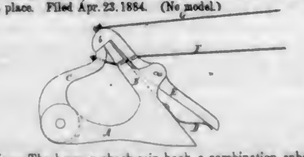
8. In a cable-grip, the plate A, arms B, having cross-bar *b*, shaft C, arms D, having inwardly-projecting portion *m'*, and friction-rolls L, and the eccentric or cam rollers or pulleys E, geared together and arranged as shown, in combination with the inverted wedge H, having rounded corners *m*, and means for reciprocating said wedge, all arranged and operating substantially as and for the purpose herein described.

300,493. EXTENSION-CHANDELIER. MOSES MERICHENSKI, Poplar, County of Middlesex, England. Filed Oct. 13, 1882. (No model.) Patented in England Sept. 16, 1882, No. 4,420.



Claim.—The combination of the interior tube, *c*, and exterior tube, *a*, attached to the fixture *b* at their upper ends, the intermediate sliding tube, *d*, having a packing at the upper end around the tube *c*, and rack-teeth at opposite sides, the two spring-barrels with gear-wheels at opposite sides of the tube *d*, and the brackets *f*, attached to the tube *a*, and supporting the central shafts of the spring-barrels, substantially as specified.

300,494. HARNESS CHECK-REIN HOOK. HUGH MURPHY, Lowell, Mass., assignor, by mesne assignments, to himself and Francis McClorey, same place. Filed Apr. 23, 1884. (No model.)



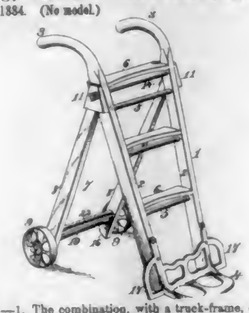
Claim.—The harness check-rein hook, a combination, substantially as set forth, consisting of the base A, horn B, pivoted arm C, catch-lever E, and spring D, arranged and applied essentially in manner to operate as and for the purpose as represented.

300,495. SUSPENDER-END. ADOLF NASCHER, New York, N. Y. Filed Jan. 17, 1884. (No model.)



Claim.—A suspender-end braided continuously from button-hole to button-hole and provided with a connecting ring or hook inserted at an intermediate point and braided therein, in combination with a loop or loops made integral with the suspender-end and provided with a fastening device at the ends to support the drawers, substantially as described.

300,496. HAND-TRUCK. JAMES S. NELSON, Springfield, Ohio. Filed Mar. 19, 1884. (No model.)



Claim.—1. The combination, with a truck-frame, of legs or supporting-bars pivoted to the truck-frame near the handles, and having the wheels journaled near their opposite ends, and a stop for limiting the spread of the supporting-bars, substantially as described.

2. The combination, with a truck-frame, of legs or supporting-bars pivoted to the truck-frame near the handles, wheels journaled near the ends of said bars, the truck-frame being provided with steps, and the supporting-bars connected by rounds, substantially as described.

3. The combination, with a truck, of a pivoted supporting-frame, in the free end of which the truck-wheels are journaled, whereby the device may be used either as a truck or as a step-ladder, substantially as described.

4. The combination, with the truck-frame, of a stop for limiting the movement of the pivoted supporting-frame, said stop being provided with a groove or recess to receive and support the end of the step, substantially as described.

5. The combination, with a truck-frame, of a pivoted supporting-frame carrying the truck-wheels and fenders extending over said wheels, substantially as described.

6. The combination, with a truck-frame, of a pivoted supporting-frame having its free ends rounded or curved at an angle, and truck-wheels journaled in said supporting-frame, the distance between their axis and the end of the support being greater than the radius of the wheel, whereby placing the end of the bar upon the floor will remove the wheels from contact, substantially as described.

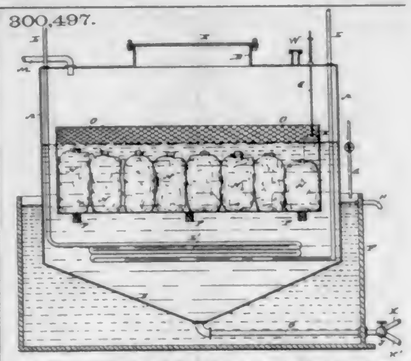
7. The combination, in a hand baggage-truck, of a supporting-frame and a wheeled frame, the two frames pivoted together at or near one end, and one of the frames provided with steps to produce a combined baggage-truck and step-ladder, substantially as described.

300,497. APPARATUS FOR TREATING LEATHER-STOCK WITH NAPHTHA TO EXTRACT OILS. FRANK F. NEWELL, Chelsea, Mass. Filed Mar. 25, 1884. (No model.)

Claim.—1. The combination, with a tank for treating leather with naphtha, of a water-receptacle surrounding the lower part of the said tank, substantially as herein shown and described.

2. The combination, with a tank for treating leather with naphtha, of a water-receptacle surrounding the lower part of the tank, and of a steam pipe and coil in the naphtha-tank, substantially as herein shown and described.

300,497.



3. The combination, with the tank A, for treating leather with naphtha, of the water-tank F, surrounding the lower part of the tank A, the water-inlet pipe G, the water-overflow pipe H, the pipe C, extending from the bottom of the tank A through the side of the water-tank, and of a steam coil and pipe in the naphtha-tank, substantially as herein shown and described.

300,498. FIRE-ESCAPE. HOWARD PADDOCK and HERMAN WALTER MILLER, Albany, N. Y. Filed Aug. 21, 1883. (No model.)

Brief.—A double-armed pivoted lever having bearing-surfaces at opposite sides is made to bear against the rope where it passes from one groove in the friction-block to another, through the perforations therein.



Claim.—1. In a portable fire-escape, the combination of the rope R R', the friction-block A A', provided with the sinuous passage *d d' d'' d'''*, the central pivot, *p*, and the double-armed lever B B', substantially as described.

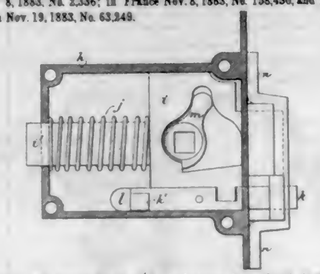
2. In a portable fire-escape, the combination of the rope R R', the friction-block A A', provided with the sinuous internal or double-ogee passage *d d' d'' d'''*, extending to the surface at opposite sides of the block, and the double-armed pivoted lever B B', having two branches encircling the block and reunited at their outer ends to bear upon the rope R R', substantially as described.

3. In a portable fire-escape, the combination of the rope R R', the tubular friction-block A A', provided with the sinuous groove *d d' d'' d'''*, and the double-armed pivoted lever, one arm, B', of which consists of two forked branches, *b b'*, reunited and bent inwardly at their outer ends, whereby the arm B' comes in frictional contact with the sides and top of the rope section occupying the space *d d'*, substantially as shown and described.

4. The combination, substantially as described, of a barrel, A A', a lever, B B', a detachable support or seat, and a rope, for the purposes specified.

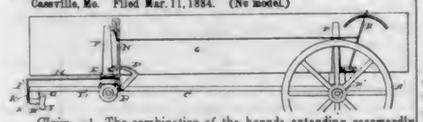
5. The combination, with the grooved friction-block, of the double-armed pivoted brake-lever having separate bearing-surfaces at opposite sides of the block, whereby a double frictional contact is secured between the brake and rope, substantially as described.

300,499. DOOR-LATCH. HENRY PARKIN, Albert Terrace Bow, and CHARLES JAMES REYNOLDS, Downs Park Road, Clapton, County of Middlesex, England. Filed Dec. 4, 1883. (No model.) Patented in England May 8, 1883, No. 2,336; in France Nov. 8, 1883, No. 158,430, and in Belgium Nov. 19, 1883, No. 63,249.



Claim.—The combination of the lock-case, the spring-bolt, the recessed striking-plate, the spring-actuated retaining-catch upon and reciprocating with the bolt, and means, substantially such as described, for engaging the catch with the lock-plate, these members being and operating substantially as hereinbefore set forth.

300,500. WAGON-BRAKE. WARREN PARKS and SAMUEL M. SMITH, Caseville, Mo. Filed Mar. 11, 1884. (No model.)

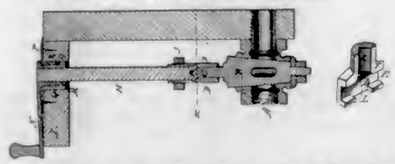


Claim.—1. The combination of the bounds extending rearwardly from the axle E, the cross-bar connecting the bounds near their rear ends, the brake-bars H H, pivoted to said connecting-bar, a double-cranked rock-bar mounted upon said connecting-bar, one arm of which is connected with the inner ends of the brake-bars, a brake-lever, and a link connecting the other arm of the rock-bar with the brake-lever, substantially as set forth.

2. In a wagon, the combination of the bounds extending rearwardly from the axle E, the cross-bar connecting the bounds near their rear ends, the brake-bars H H, pivoted below the cross-bar, and having their inner ends close together near the center of the cross-bar, the rocking bar K, mounted upon the rear face of the connecting-bar, having an arm, *k*, connected to the inner ends of brake-bars H, and an arm, *k'*, a brake-lever mounted upon the rear axle outside of the post F, a rod connecting the brake-lever with the arm *k'*, and mechanism adapted to lock the brake-lever in any position, substantially as set forth.

3. The combination of the bounds extending rearwardly from the axle, the cross-bar connecting the bounds near their ends, the brake-bars H H, pivoted to said connecting-bar, and mechanism, substantially such as described, for operating said brake-bars, as set forth.

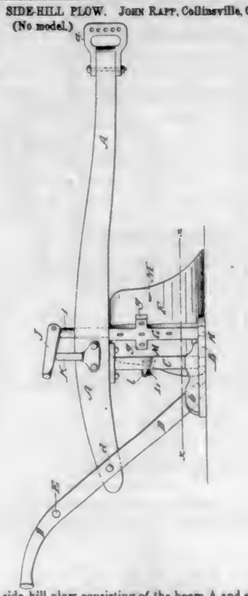
300,501. STOP-COCK CLAMP. WALTER S. PAYNE, Titusville, Pa. Filed Aug. 9, 1882. Reissued Dec. 30, 1883. (No model.)



Claim.—1. The combination, as described, of the T-headed plug, the square operating-rod having its lower end swaged to form a head, the clamping-jaws having recesses to receive the head of the plug, the head of the operating-rod, and the lower end of the latter, and provided with screw-threaded shanks, and a nut, as and for the purpose set forth.

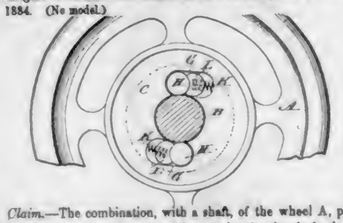
2. The combination of the operating-rod, mechanism, substantially as described, for connecting the same to the stop-cock plug, the sleeve M, having crank N and lug or flange O, and the semicircular plates P P, having semi-tubular bearings Q R, of unequal length, one of said bearings, Q, forming a stop for the lug or flange O, as set forth.

300,502. SIDE-HILL PLOW. JOHN RAFF, Collinsville, Conn. Filed Mar. 5, 1884. (No model.)



Claim.—A side-hill plow consisting of the beam A and shoe B, connected together by the standard C and handles D, braces *b*, connecting the handles and standard C, staple *l*, secured to standard C, and having the hooks L, pivoted standard G, lever J, fulcrum-bar K, and moldboard F, secured at the center of its rear face to the pivoted standard, and provided with eyes M on both sides of its center for engaging said hooks L, substantially as set forth.

300,503. FRICTION-CLUTCH. WILLIAM H. RASCOE, Plattsburg, N. Y., assignor to himself and Charles S. Rascoe, same place. Filed Apr. 19, 1884. (No model.)



Claim.—The combination, with a shaft, of the wheel A, provided with the recesses G in the sides of the opening for the shaft, the rollers H in the recesses, the plugs or blocks L, resting against the rollers, and the springs K, interposed between the blocks L and the ends of the recesses, substantially as herein shown and described.

300,504. UTILIZING THE EXHAUST OF ENGINES. DAVID RENSHAW, Braintree, Mass. Filed Aug. 7, 1883. (No model.)

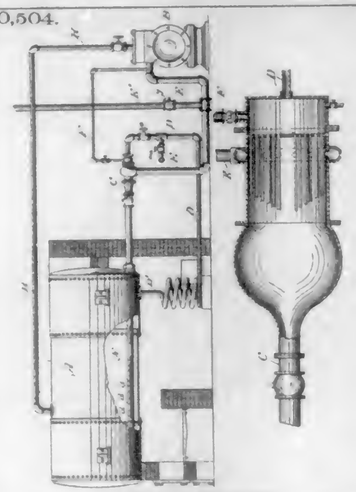
Claim.—1. The method herein described of utilizing the heat from the exhaust of steam-engines by causing said exhaust to be carried to an injector, where it meets a current of water from the boiler or generator at the temperature and pressure of the contents of the boiler, and the commingled steam and water are then forced back into the water-space of the boiler or generator, substantially as shown and described.

2. In an apparatus for utilizing the heat from the exhaust-steam of engines, the combination of the pipe E, injector C, and pipe D, all arranged to admit mingled exhaust-steam and water below the water-line of the boiler, substantially as described.

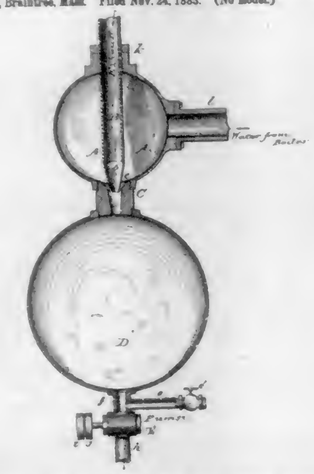
3. In an apparatus for utilizing the heat from the exhaust-steam of engines, the combination of the pipe E, injector C, pipe D, and delivery-pipe N, provided with the perforations *d d*, all substantially as shown and described.

4. The combination, in an apparatus substantially such as described, of the pipes E and D, injector C, and overflow-valve *m*, and valve *o*, all as and for the purpose shown and specified.

300,504.



300,505. UTILIZING THE EXHAUST OF ENGINES. DAVID RENSHAW, Braintree, Mass. Filed Nov. 24, 1883. (No model.)



Claim.—1. The method herein described of utilizing the exhaust of engines by returning it into the boiler from which it was taken by first uniting it in a reservoir with a body of water from the boiler under boiler-pressure, then pumping the combined mixture into the said boiler.

2. The method herein described of utilizing the exhaust of engines by uniting water from the boiler under boiler-pressure with the exhaust, and then pumping them from the suction end of the vessel, whereby increased velocity is imparted to them, and returning them into the boiler from which they were taken.

3. The combination, in an apparatus for returning the exhaust of the engine to the boiler from which it was taken, consisting of the receiving-vessel for boiler-water under boiler-pressure, the exhaust-pipe and the pump located at the suction end of said apparatus, substantially as described.

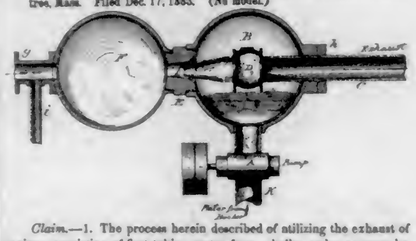
4. The combination, in an apparatus for utilizing the exhaust of engines, consisting of the vessel or reservoir A, adapted to be connected with the boiler and under boiler-pressure, the exhaust-pipe, the nozzle of which is located within the out-neck of said vessel, and the pump arranged at the suction end of the vessel, as described.

5. The combination, in a device for returning the exhaust of engines by returning it into a boiler under pressure equal to the source of supply, consisting of the vessels A and D, united by a neck, into which the exhaust-nozzle enters, a pump arranged at the outlet end of the device, all arranged for combined action, for the purpose set forth.

6. The combination, in an apparatus for utilizing the exhaust of engines, consisting of the vessel or reservoir A, exhaust pipe and nozzle B *b*, live-steam chamber D′, and the pump E, arranged at the outlet or suction end of said apparatus, for the purpose set forth.

7. The combination, in apparatus for returning the exhaust of engines into boilers under pressure, of the vessel A, exhaust pipe and nozzle B *b*, entering the outlet of said reservoir, and the live-steam chamber D′ and its nozzle, with the overflow-pipe, all arranged for joint operation in the manner and for the purpose set forth.

300,506. UTILIZING EXHAUST-STEAM. DAVID RENSHAW, Braintree, Mass. Filed Dec. 17, 1883. (No model.)



Claim.—1. The process herein described of utilizing the exhaust of engines, consisting of first taking water from a boiler under pressure by positive means, forcing it into a receiving-vessel larger than the supply-pipe, bringing the said water into contact with the exhaust-steam, and then forcing the mingled product into a boiler under equal pressure, or into the boiler from which they were taken, substantially as set forth.

2. The process herein described, consisting in taking water from a boiler under pressure, forcing the same into a receiving-vessel of larger area than the supply-pipe, then bringing the exhaust of the engine in contact with said water-jet at the point of its greatest velocity, thereby forcing it into a boiler under pressure, or into the boiler from which it was taken, as set forth.

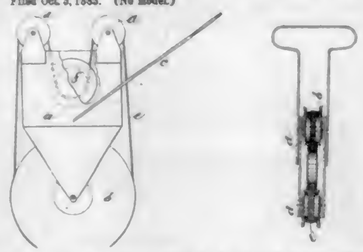
3. The combination, in an apparatus for utilizing the exhaust of engines, of a pump interposed between a receiving-vessel at its induction end and the boiler, with the said receiving-vessel and the exhaust-pipe, substantially as shown and described.

4. The combination, in an apparatus for utilizing the exhaust of engines, which consists of the receiving-vessel, the pump located as described, and the exhaust-pipe provided with the back-pressure or check valve, the latter being located within said vessel, for the purpose set forth.

5. The combination, in an apparatus for utilizing the exhaust of engines, consisting of a vessel such as described, the exhaust-pipe extending into said vessel, and provided with a check-valve and nozzle, as and for the purpose set forth.

6. The combination, in an apparatus for utilizing the exhaust of engines, of the receiving-vessel B, exhaust-pipe C, provided with a suitable check-valve, the vessel F, and overflow-pipe i, with suitable operating mechanism, as set forth.

300,507. LAWN-MARKER. ROBERT B. REYNOLDS, Stockport, N. Y. Filed Oct. 5, 1883. (No model.)



Claim.—The combination, with the liquid-tank *a*, mounted on the carrying-wheel *b*, and the belt *e*, arranged to run on the carrying-wheel, of the guide-rollers *d*, located on opposite sides of the top of the tank, and the tension and stirring roller *f*, arranged to be suspended and carried in the bight of the belt, and to cause the belt to run through the liquid in the tank, substantially as described.

300,508. GLOVE-FASTENING. WILLIAM S. RICHARDSON, Boston, Mass., assignor to the Ball and Socket Fastener Company, Nashua, N. H. Filed Apr. 20, 1883. (No model.)

300,508.



Claim.—1. A socket or cup-shaped member of a glove or other fastening, having spring sides, the flanges a^2, and an integral fastening or attaching device, all substantially as described.

2. A socket or cup member of a fastening device, having the yielding sides a', the recess a^3, the flange a^2, and the integral tubular eyelet or prong-fastening extension, all substantially as and for the purposes described.

3. A socket or cup member of a fastening device, having the thumb or finger piece d, all substantially as and for the purposes described.

4. The combination of the socket-member of a fastening device, having the yielding sides a' and the flange a^2, with the ball member of the fastening device, having the projection c', all substantially as and for the purposes described.

5. The ball member of the fastening, having the bent shank, all substantially as and for the purposes described.

300,509. FASTENING FOR GLOVES, &c. WILLIAM S. RICHARDSON, Boston, Mass., assignor to the Ball and Socket Fastener Company, Nashua, N. H. Filed Dec. 19, 1883. (No model.)



Claim.—1. In a fastening for gloves and other articles, the ball member thereof fastened to the article on which it is used, substantially as described, with a socket member also fastened to such article, and having, when so fastened, its mouth toward the surface of the article, whereby it is adapted to be shut over the ball and cover or partly cover it, as specified, substantially as and for the purposes set forth.

2. A ball member of a fastening device having the flat under surface, a', adapted to rest upon the surface of the material to which the ball is attached and steady the same thereon, all substantially as and for the purposes described.

3. In a fastening for gloves and other articles, a ball member having the stops or projections a^3, in combination with a socket member, all substantially as and for the purposes described.

4. In a fastening for gloves and other articles, the combination of the ball member having the fulcrum projection a^3 and a socket member adapted to shut upon and inclose the ball member of the fastening, all substantially as and for the purposes described.

5. In a fastening device for gloves and other articles, the socket member having the upper surface adapted to be ornamented, and downwardly-extending yielding sides adapted to inclose the other member of the fastening device upon its edge and upper surface, all substantially as and for the purposes described.

6. A socket member of a fastening device having the yielding sides b', the arm or shank b^3, curved in cross-section, as described, all substantially as and for the purposes set forth.

300,510. GLOVE-FASTENER. WILLIAM S. RICHARDSON, Boston, Mass., assignor to the Ball and Socket Fastener Company, Nashua, N. H. Filed Jan. 23, 1884. (No model.)



Claim.—1. A member of a fastening for gloves and other articles, consisting of a section having the flange a^3, yielding sides a^2, and an eyelet, b', having a flange, b^2, and end section, b, turned within the recess formed by the flange a^2, all substantially as and for the purposes described.

2. A member of a fastening device for gloves and other articles, having the yielding sides a^2, shaped substantially as specified, and the flange a^3, bent or drawn to form the recess a^4, for receiving and holding the end of a device for securing the member in place, all substantially as and for the purposes described.

3. The ball member of a fastening device, having the seat provided with the flange c^2 and the recess c^3, all substantially as and for the purposes described.

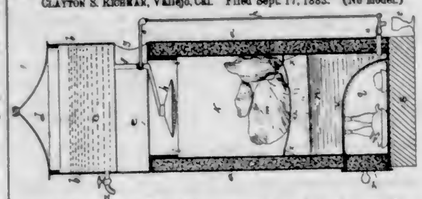
4. The ball member of a fastening device, its seat and flange c^2, forming the recess c^3, and conical projection c', all substantially as and for the purposes described.

5. The combination of the ball member of a fastening device, having the flange c^2, forming the recess c^3, with the eyelet c', having the flange c^2, all substantially as and for the purposes described.

6. A member of a fastening device for gloves and other fastenings, having the yielding sides a^2, the seat a^4, the turning surface a', and the flange a^3, bent or drawn to form the space or recess a^4, within which the end of the device for securing the member in place is turned to lap upon the upper surface of the flange a^3, all substantially as and for the purposes set forth.

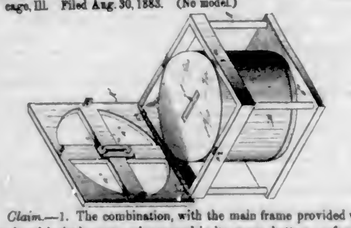
7. A ball-fastening having an arm integral therewith, but extending therefrom tangentially or out of a radial direction, all as described.

300,511. COMBINED WATER-COOLER AND REFRIGERATOR. CLAYTON S. RICHMAN, Vallejo, Cal. Filed Sept. 17, 1883. (No model.)



Claim.—In a water-cooler, the movable top *b b* and reservoir *c*, outlet-pipe *f*, spraying device *h*, and ice-vessel *a a*, in combination with the drawer *r*, cock or valve *g*, discharge-cock *o*, the ice-chamber, and rod *p*, connecting said cocks, whereby they may be operated simultaneously, substantially as shown and described.

300,512. BALLOT-BOX. ALVIN L. RINGO and AMOS PETTIBONE, Chicago, Ill. Filed Aug. 30, 1883. (No model.)

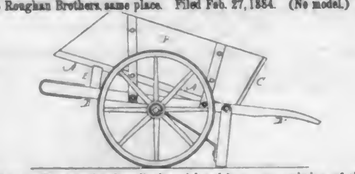


Claim.—1. The combination, with the main frame provided with a hinged and locked cover and grooved in its upper bottom surface, of a vessel having its top provided with a slot, and having its lower end open and resting in the groove, substantially as and for the purpose set forth.

2. A ballot-box consisting, essentially, of a frame inclosing a receptacle having an open bottom and a closed top formed with a slot, in combination with a cover secured, when closed, by two or more locks, each having a different key, substantially as and for the purpose set forth.

3. In a ballot-box, the frame A, formed with groove *a′* in its bottom, and having cover A′, secured by two or more different locks having different keys, and provided with slot a^2, having flanged plate *c c′*, in combination with the glass vessel B, having closed and slotted top and an open bottom, provided with a rubber gasket, substantially as shown and described.

300,513. COAL-BARROW. JAMES ROUGHAN, Boston, Mass., assignor to Roughan Brothers, same place. Filed Feb. 27, 1884. (No model.)

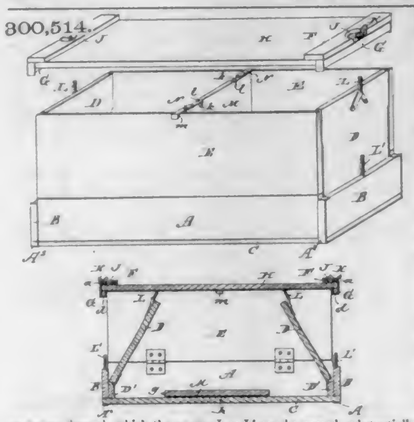


Claim.—The herein-described coal hand-barrow, consisting of the inclined bottom A, sides B, front C, and open rear end, combined with the frame D D′ and prop E.

300,514. FOLDING EGG-CASE. WILLIAM G. RUGE, Washington, Mo. Filed Mar. 22, 1884. (No model.)

Claim.—1. In a folding egg-case, the combination, with the bottom C, the sides A, and the ends B, of the hinged side pieces, E, the hinged end pieces, D, the screws I, I′, projecting from the upper edges of the end pieces, D, and the ends B, and of the cover H, provided with nuts K, and

300,514.



apertures through which the screws L or L' can be passed, substantially as herein shown and described.

2. In a folding egg-case, the combination, with a box having upwardly-projecting screws, of the cover H, having the nuts K, and means for holding the nuts on the cover so that they are capable of rotation, substantially as herein shown and described.

3. In a folding egg-case, the combination, with a box having upwardly-projecting screws, of the cover H, the nuts K, having annular grooves *a*, and of the wires *b*, secured on the cover and passed through the grooves in the nuts, substantially as herein shown and described.

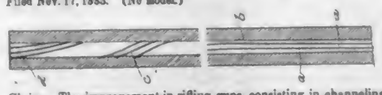
4. In a folding egg-case, the combination, with a box having upwardly-projecting screws, of the cover H, the cross-pieces F, provided with recesses J, the nuts K, having annular grooves *a*, and the wires *b*, secured to the cover and passed through the said grooves, substantially as herein shown and described.

5. The combination, with a box, of the removable partition M, having hook-clips N pivoted to the upper edge at the ends of the same, substantially as herein shown and described.

6. The combination, with a box, of the removable partition M, having recesses *k* and notches *l* in its upper edge at the ends, and of the hook-clips N, pivoted on the upper edge of the partition M, substantially as herein shown and described.

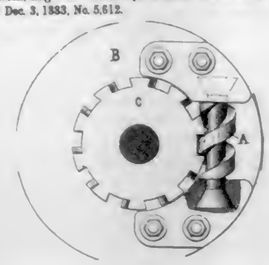
7. The combination, with a box having notches *m* in the upper edges of its sides, of the removable partitions M and the hook-clips N, pivoted on the upper surface of the same at the ends, substantially as herein shown and described.

300,515. RIFLING GUNS. ALOIS SCHNEIDER, San Francisco, Cal. Filed Nov. 17, 1883. (No model.)

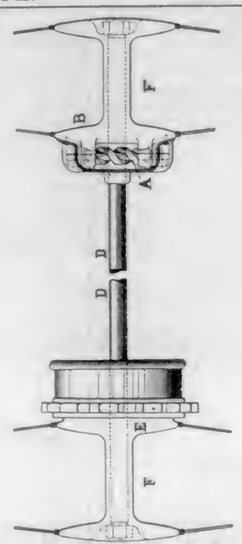


Claim.—The improvement in rifling guns, consisting in channeling the interior of the gun with grooves, the first portions of which nearest the breech are nearly or quite parallel with the axis of the bore, the second portions form a slight curve opposite to the final spiral, and the third portions form an increasing spiral to or near the muzzle of the gun, substantially as herein described.

300,516. VELOCIPEDE. EDWARD RICHARD SETTLE, Coventry, County of Warwick, England. Filed Apr. 9, 1884. (No model.) Patented in England Dec. 3, 1883, No. 5,612.

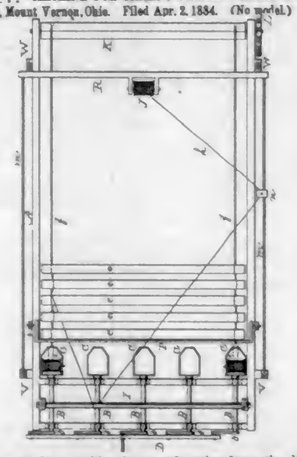


300,516.



Claim.—In tricycles or velocipedes, the combination of the driving-axle having a fixed and a loose main wheel, a worm-gear keyed to the axle, and a worm turning in bearings of the hub of the loose wheel, said worm-gear locking the loose wheel to the axle, so that both wheels run at the same speed when the velocipede is traveling straight, but allowing the loose wheel to run at a different speed to the fixed wheel when the velocipede is traveling in a curve or circle, substantially as set forth.

300,517. MACHINE FOR MAKING FENCES. GEORGE H. SHELLABERGER, Mount Vernon, Ohio. Filed Apr. 2, 1884. (No model.)



Claim.—1. In a machine for manufacturing fence, the depressing device to carry down the diagonal wire to interlace the same into the panel, consisting of a notched board suspended by pivotal arms from the frame, substantially as set forth.

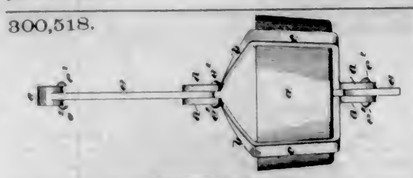
2. The combination of the roller I, rods *m*, guide *n*, and bar R, carrying a spool to give position to a diagonal wire, substantially as described.

300,518. COMBINED CHAIN AND ELEVATOR-BUCKET. MORRILL A. SHEPARD, Lebanon, Ill. Filed Dec. 1, 1883. (No model.)

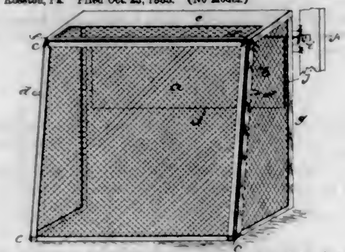
Claim.—1. An elevator-bucket secured between two sections of the elevator-chain, substantially as described and set forth.

2. The elevator-chain composed of sections, substantially as described.

300,518.



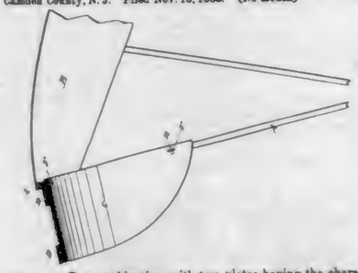
300,519. FOLDING FIRE-PLACE FENDER. ISAIAH W. SHOEMAKER, Roseton, Pa. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination, with the fender and brackets *h*, secured near the upper ends of the sides of the fender, and provided with set-screws or other analogous devices for attachment to the sides of the mantel, of the sheet-metal back plate, *j*, suspended from the same brackets that secure the fender to the mantel sides, as set forth.

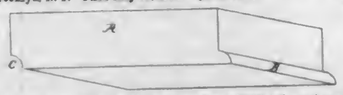
2. The combination, with the improved fire-place fender consisting of the front panel, *a*, and side panels, *b*, hinged together and arranged to incline from the bottom upward toward the fire-place front, and having the brackets or equivalent devices for connecting the sides to the fire-place front, of the sheet-metal back plate, *j*, arranged to be suspended from the brackets *h*, substantially as described.

300,520. HOOD FOR VEHICLE-TOPS. CHAS. T. SERVIS, Delaware, Camden County, N. J. Filed Nov. 13, 1883. (No model.)



Claim.—The combination, with two plates having the characteristics of flexibility and stiffness, as described, of hinges joining them, and means for securing them to a carriage-top, substantially as and for the purpose specified, whereby the said plates may be folded flat together when not in use, and may be sprung to fit the curves of a carriage-top, as described.

300,521. TILE OR BRICK FOR FLOORS, &c. THOMAS C. SMITH, Brooklyn, N. Y. Filed May 22, 1884. (No model.)

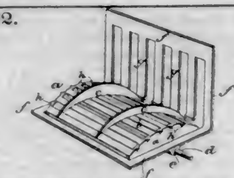


Claim.—A tile or brick the back surface of which is projected on one or two sides in the form of a lip, and the opposite sides of the back surface recessed to correspond with the size and form of the lip, substantially as shown and herein described.

300,522. GRATE. JOHN T. SNYDER, Luzerne, Pa. Filed June 25, 1883. (No model.)

Claim.—1. A rocking grate having the upper surface of its grate-bars provided with diagonal bars projecting above the same to form clinker-sweeps, substantially as herein described.

300,522.



2. A grate constructed with an arched top of ends *a* and bars *b*, and fitted diagonally with the clinker-sweeps *c*, substantially as shown and described.

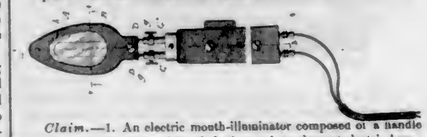
3. The combination, with the grate *a b*, of clinker-sweeps *c*, ranging diagonally across the grate, said sweeps being tapered toward the ends, substantially as shown and described.

4. The combination, with the arched top grate, *a b*, of clinker-sweeps *c*, varying successively in height at the crown toward the end or ends of the grate, substantially as shown and described.

5. The combination, with the arched top grate, *a b*, fitted with clinker-sweeps *c*, of the end spurs, *h*, substantially as shown and described.

6. A grate constructed with arched top of ends *a* and bars *b*, clinker-sweeps *c*, rock-shaft or axis *d*, and end spurs, *h*, substantially as shown and described.

300,523. ELECTRIC MOUTH-LAMP. ELI T. STARR, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Nov. 17, 1883. (No model.)



Claim.—1. An electric mouth-illuminator composed of a handle carrying a circuit make and break device, an incandescent electric lamp, and a non-conducting guard or casing partially surrounding the lamp-globe, substantially as described.

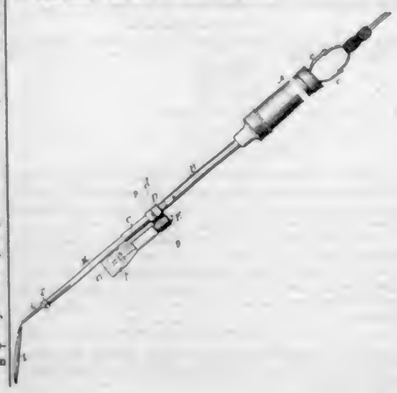
2. In an electric mouth-illuminator, a casing surrounding a lamp-globe, the front side of which is substantially flat, and the outer side convex or curved, so as to form a cheek-distender, substantially as described.

3. The combination, in an electric mouth-illuminator, of the lamp-globe, the incandescing filament thereof, and the sectional non-conducting casing of said globe.

4. The handle of the mouth-lamp, containing the divided or sectional conducting-connection, the normal condition of which is separated or broken, in combination with a sliding sleeve or thimble fitted to unite the section of said conducting-connection to complete the circuit, substantially as described.

5. The combination of a mouth-lamp with a handle arranged at an angle thereto, substantially as described, whereby the back of the lamp faces said handle.

300,524. ELECTRIC MOUTH-ILLUMINATOR. ELI T. STARR, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Jan. 25, 1884. (No model.)



Claim.—1. A handle for portable electric lamps, consisting of a main section through which the conducting-wires pass, and a front insulating-section fitted with an external lamp-holding and circuit making and breaking device, substantially as described.

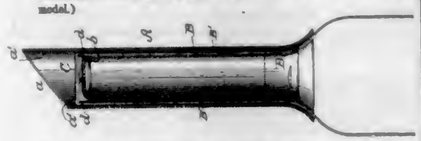
2. A handle for portable electric lamps, having a main section through which the conducting-connections pass, and a reduced front end, in combination with an external lamp-holding device mounted on said reduced end of the handle, and an electric lamp carried by said device, so as to lie close thereto, and a longitudinally-adjustable mirror fitted in a socket in the front end of said handle, substantially as described.

3. The combination of a handle, an external electric lamp carried thereby, and an adjustable shield or guard around said lamp to protect the eyes from the direct glare of the light.

4. The combination of the handle, the external electric lamp carried thereby, and an adjustable shield or guard surrounding said lamp, having an opening in the guard for the passage of the rays of light, the guard being adjustable, so as to direct the rays of the lamp upon any portion of the mouth or down the throat, if desired.

5. The combination of a handle carrying conducting-connections through it, an electric lamp carried by said handle, and projecting conducting-connections upon the side of the handle, between which the lamp is supported and held.

300,525. ELECTRIC-LIGHT SPECULUM. ELI T. STARR, Philadelphia, Pa., assignor, by direct and mesne assignments, to the S. S. White Dental Manufacturing Company, same place. Filed Feb. 11, 1884. (No model.)



Claim.—1. An insulating and heat non-conducting casing—such as a hard-rubber casing—containing and carrying an incandescent electric lamp, substantially as described.

2. An insulating and heat non-conducting casing—such as a hard-rubber casing—provided with a reflecting lining or interior surface, and containing and carrying an incandescent electric lamp, and said casing being also provided with an opening therein to permit the passage of the light of the lamp, substantially as described.

3. A tubular non-conducting casing surrounding an incandescent electric lamp, said casing being open at its front end to permit the passage of the light-rays of said lamp, substantially as described.

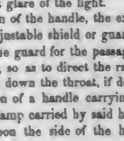
4. The semicircular incandescent electric lamp, consisting of the semicircular vacuum-casing and the inclosed filament or incandescent body sealed therein, substantially as described.

5. A tubular transparent speculum-casing—such as a glass casing—substantially as described, whereby the cavity in which the speculum is inserted may be inspected in different directions through the walls of the casing, substantially as described.

6. A tubular transparent speculum casing or guard—such as a glass casing or guard—carrying an incandescent vacuum or inclosed electric lamp, substantially as described.

7. An electric-light speculum, consisting of a tubular or open casing fitted near its front end with a shoulder or abutment projecting into the bore of the casing, and an incandescent electric lamp fitted in front of said abutment, so as to be out of the line of vision of the operator in looking through said casing, substantially as described.

300,526. SHOE. MARTIN L. STOWE, Worcester, Mass. Filed Apr. 29, 1884. (No model.)



Claim.—1. In a shoe-upper, the back or foxings formed in a single piece with the upward-extending portion B', side wings, B^2 B^2, and the central notch or cut-away section, F, at the lower edge thereof, substantially as and for the purpose set forth.

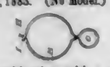
2. A shoe having an upper constructed substantially as hereinbefore described, with the central upward-extended back portion and side foxings formed in a single piece, with seaming edges shaped as at *a b d*, in combination with side or top pieces, A, shaped as shown, and having their edges *a' b' d'* fitted and stitched to said back and foxings, in the manner set forth.

300,527. CASK OR HOGSHEAD. JOSEPH STRÜBEL, New Haven, Conn., assignee of one-half to Henry Kenold, same place. Filed Nov. 26, 1883. (Model.)



Claim.—The cask-head having that portion of its periphery which is on the sides of the man-hole of substantially the thickness of the main part of the head, combined with a cask-body interiorly grooved to correspond to such shape of the cask-head and to form shoulders c^3, against which the sides of the man-hole abut, all substantially as described.

300,528. CURTAIN-RING. JOSHUA SUMNER, Colorado Springs, Colo., assignor of two-thirds to A. E. Mook and Edward W. Frost, both of same place. Filed Oct. 31, 1883. (No model.)

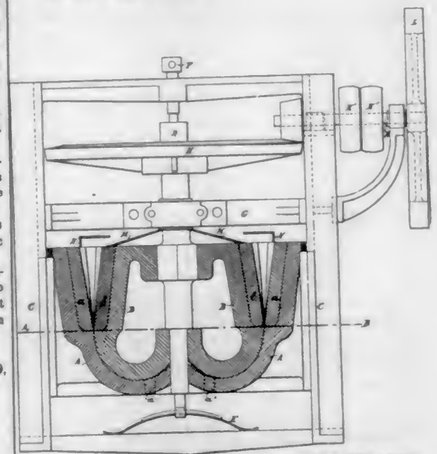


Claim.—1. The combination, with a curtain-ring, of a detachable ring or clasp having a loop or eye, substantially as and for the purpose set forth.

2. A detachable ring or clasp for curtain-rings, comprising a small loop or eye, curved arms extending from the same and adapted to encircle the body of the curtain-ring, and a suitable catch or fastening whereby the ends of said arms may be connected, substantially as set forth.

3. As an improvement in curtain-rings, the herein-described clasp, comprising the eye C, curved arms E G, forming the ring D, and the catch F and tooth or latch H at the ends of said arms, as and for the purpose set forth.

300,529. QUARTZ CRUSHER OR MILL. HORATIO SUTHERLAND, London, England. Filed Oct. 29, 1883. (No model.) Patented in England June 8, 1883, No. 2,867; in France Oct. 22, 1883, No. 158,163; in Belgium Oct. 22, 1883, No. 62,944; in Victoria Nov. 1, 1883, No. 3,585; in New South Wales Jan. 16, 1884, No. 308; in Queensland Jan. 17, 1884, No. 561, and in New Zealand Jan. 1884.

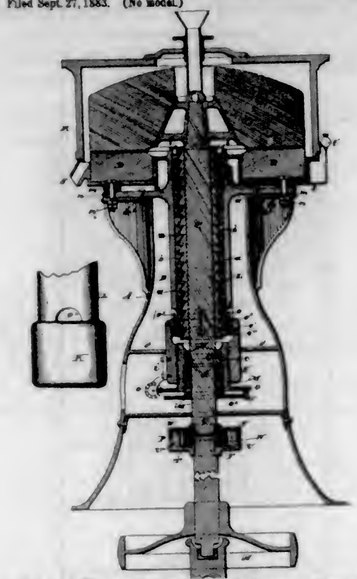


Claim.—1. The combination of the mortar provided with corrugations at its upper part, and uncorrugated at and near its lower part, and the concentrically-revolving pestle provided with corrugations opposite those of the mortar, and uncorrugated at its lower part, where it is adapted to fit closely within the mortar, substantially as and for the purpose hereinbefore set forth.

2. The combination of the mortar uncorrugated at its lower part, the corrugated ring within its upper part, the pestle uncorrugated at its lower part and adapted to fit within the corresponding part of the mortar, and the corrugated ring about the upper part of the pestle, substantially as and for the purpose hereinbefore set forth.

3. The combination of the mortar having the discharge-openings *a'* in its bottom, the driving-shaft, and the rotating pestle fitting within the mortar at its lower part, except about the driving-shaft, where a recess is provided which communicates with the discharge-openings, as and for the purpose described.

300,530. GRINDING-MILL. ABE L. TEETOR, Cambridge City, Ind. Filed Sept. 27, 1883. (No model.)



Claim.—1. The combination, with a suitable runner or upper stone and table, of a bushing suspended from the table, a spindle passing through the bushing, and devices whereby the spindle is vertically adjusted at or near the lower end of the bushing, substantially as and for the purpose set forth.

2. The combination, with a runner or upper stone and table, of a bushing secured at or near its upper end to the table, and a spindle supported at or near the lower end of the bushing, substantially as and for the purpose set forth.

3. The combination, with a runner or upper stone and table, of a bushing supported at or near its upper end by the table, and provided at its lower end with collars, and a spindle having a flange, which latter rests between the collars, whereby when the latter are vertically adjusted the spindle is also moved in the same direction, substantially as set forth.

4. The combination, with a runner or upper stone and table, of a depending bushing, the sleeve K, collars M M', the spindle provided with the flange *c'*, and devices for turning the collars simultaneously in the same direction, substantially as set forth.

5. The combination, with a runner or upper stone and table, of a depending bushing, the sleeve K, collars M M', provided, respectively, with worm-wheels O and O^2, the spindle provided with the flange *c'*, the rings *c* and *d*, the worm-shaft O', and devices for locking the worm-wheels together.

6. The combination, with an elongated bushing and a spindle, of the wedges provided with a series of small steps or wedges, the followers provided with steps adapted to register with the steps on the wedges, and devices for vertically adjusting the wedges, whereby the followers are moved toward and away from the spindle, substantially as set forth.

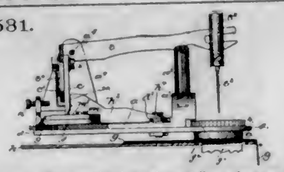
7. The combination, with an elongated bushing, the spindle, and sleeve K, of the wedges *a*, followers *b*, and screws *o*, whereby the wedges are vertically adjusted, substantially as set forth.

8. The combination, with a two-part spindle, the adjacent ends of each part being provided with a plate having two or more yielding cushions secured thereto, of an interposed spider for connecting the plates, substantially as set forth.

9. The combination, with a two-part spindle, of the plates F and F', provided with the cushioned lugs, and the interposed spider, substantially as set forth.

10. The combination, with a divided shaft, the two parts of which are yieldingly connected together, of the pulley H, the arms of which are curved, so that the power will be supplied to the shaft on a line with the step supporting the shaft, substantially as set forth.

300,531. SEWING-MACHINE ATTACHMENT. EDDY T. THOMAS and THOMAS S. HUNTINGTON, New York, N. Y., assignors to the New Home Sewing Machine Company, Orange, Mass. Filed Jan. 10, 1884. (No model.)

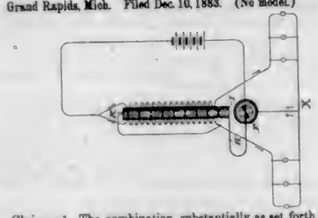


Claim.—1. The combination, substantially as shown and described, of the base *a*, having the socket *a'* and set-screw a^3, the lever *d*, pivoted to said base, the feed-annulus *e*, fitted to said lever, and provided with a ratchet, the spring-pawl h^3 in contact with such ratchet, the pawl-carrier, the lever *b*, and means to vibrate the lever *d*, as and for the purpose set forth.

2. The combination, substantially as shown and described, of the base *a*, having the socket *a'* and set-screw a^3, the lever *d*, pivoted to said base, the feed-annulus *e*, fitted to said lever, and provided with a ratchet, the spring-pawl h^3 in contact with such ratchet, the pawl-carrier, the lever *b*, having the wing b^4 and spring-finger *c*, and the switch comprising the pivoted member *f*, having the stud 6, and the shouldered plate *m'*, as set forth.

3. The frame or base, the pivoted lever *d*, provided with the annulus *e*, and the detachable grooved shoe n^2 thereon, combined with the actuating-lever *b* and the switch, substantially as shown and described.

300,532. AUTOMATIC ELECTRICAL CUT-OUT. WM. M. THOMAS, Grand Rapids, Mich. Filed Dec. 10, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of the main circuit, the double wound helix in which the electric current from the main line is normally divided, the loop-circuit, a series of lamps or other electrical appliances contained in the loop, conductors for conveying one branch or division of the current to a given number of the lamps or other appliances, conductors for conveying the other division of the current to the remaining appliances, and a shunt-circuit, substantially such as described, whereby the entire current is shunted and cut out from all the appliances whenever a disturbance or disarrangement occurs in one branch of the loop-circuit.

2. The combination, substantially as set forth, of the main circuit, the double wound helix in which the electric current from the main line is normally divided, the core of the helix, its armature, the loop-circuit, an electrical connection between the loop and the main line, an electrical conductor jointed to one branch of the circuit between the helix and the loop and to the core, and an electrical connection between the armature and the main line, whereby the entire current will normally pass into the loop, but will be shunted and cut out from the loop whenever a disturbance or disarrangement occurs therein.

300,533. GAGE FOR ADJUSTING PLANER-KNIVES. FRANCIS B. THOMPSON, Beaumont, Tex. Filed Oct. 13, 1883. (Model.)

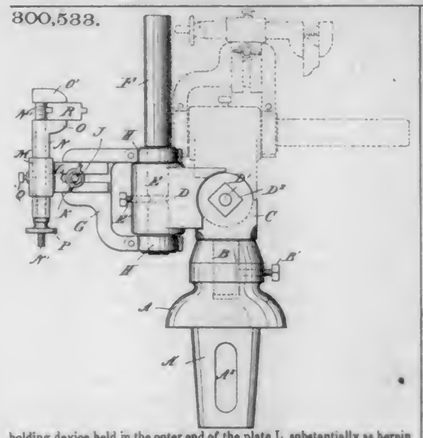
Claim.—1. The combination of a swinging sleeve and a mandrel mounted to turn therein, with a pattern-holding device, also secured to said sleeve in a plane parallel with the mandrel, whereby the side head of a planing-machine may be placed upon the said mandrel and its bits adjusted to correspond to the pattern-block, substantially as set forth.

2. The combination of a base-piece constructed to be secured to a bench or table, a sleeve held to swing and turn on the same, and a mandrel held to turn in said sleeve, with a device for holding a pattern-block, also secured to said sleeve, whereby the sleeve carrying the mandrel and pattern-holding device may be swung or turned to any desired position and still occupy the same position relatively to each other, substantially as set forth.

3. The combination of the base-piece A, provided with stem A' and slot A^2, block C, mounted to turn in a socket therein, block D, hinged vertically to said block C, and transverse sleeve E, formed in said block D, with the mandrel F, mounted to turn in said sleeve, and a pattern-holding device, also secured to said sleeved portion, and in a plane parallel with the said mandrel, substantially as set forth.

4. The combination, with a base-piece of a sleeve held to turn and swing on the same, of a mandrel held in the said sleeve, a frame, G, held on the sleeve, a forked plate, L, held on the frame G, and a pattern-block-

300,533.

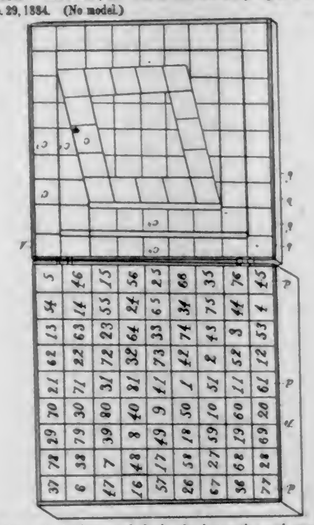


holding device held in the outer end of the plate L, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the base-piece A, of the sleeve E, held to turn and swing on the same, the frame G, held on the sleeve E, the forked plate L, held on the frame G, the hollow stem N, provided with the jaw O, the stem N', provided with the jaw O', and the nut P, mounted on the lower threaded end of the stem N', substantially as herein shown and described, and for the purpose set forth.

6. The combination, with the base-piece A, of the sleeve E, held to turn and swing on the same, the mandrel F, the frame G, held on the sleeve E, the forked plate L, held on the frame G by a screw-bolt, J, and nut K, the hollow stem N, provided with the jaw O, the stem N', provided with the jaw O', which stem is provided with scale-graduations, and the nut P, screwed on the threaded end of the stem N', substantially as herein shown and described, and for the purpose set forth.

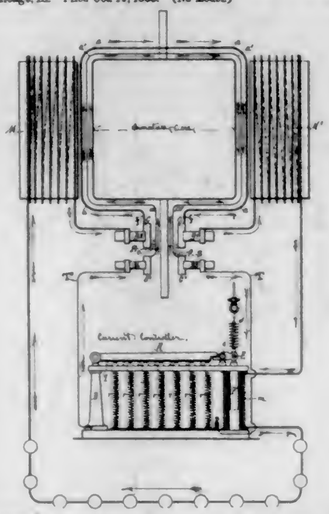
300,534. GAME-BOARD FOR PRODUCING MAGIC SQUARES, PLAYING CHECKERS, &c. JAS. D. VAN BEBBER, Springfield, Mo. Filed Feb. 29, 1884. (No model.)



Claim.—1. An improved device for instruction and amusement, composed of a box, D, having a cover, A, which is marked off in the square of an odd number of squares, combined with a frame, C, composed of hinged pieces c c^2, &c., and blocks numbered consecutively equal to the number of said squares, all substantially as shown and described.

2. The combination of a box, D, with a cover, A, marked off in squares, a frame, C, having parts c c^2, &c., which expose the square of an odd number of squares—as three, five, seven, or nine, &c., squared—and blocks numbered consecutively, substantially as and for the purpose set forth.

300,535. DYNAMO-ELECTRIC MACHINE. CHAR J. VAN DEPOELE, Chicago, Ill. Filed Oct. 19, 1883. (No model.)



Claim.—1. In a dynamo-electric machine, an armature provided with two sets of coils, one of said sets being arranged and connected so as to excite the field-magnets and feed the external circuit, the other set being arranged and connected so as to react directly upon and to intensify the magnetism of said armature-core, so as to strengthen the current produced in the coils connected to the working-circuit, substantially as described.

2. In a dynamo-electric machine, an armature provided with two sets of coils, one set—the main—being in circuit with the field-magnets of said dynamo and with the outside work, the other set—the auxiliary—being set apart and so connected as to impart to the armature-core a higher degree of magnetism than that due to the action of the field-magnets, thus strengthening the current produced in the main coils of said armature, substantially as set forth.

3. In a dynamo-electric machine, an armature provided with two sets of coils and connections, whereby one set is adapted to be used to keep up the magnetic field and do the work outside of the machine, while the other set is used to energize the armature-core with more or less strength independent from the field-magnets influencing said armature, in order to regulate the current produced in the main coils to the work demanded from the same, substantially as described.

4. In a dynamo-electric machine, an armature provided with two or more sets of coils or circuits, one or more of said sets of coils being connected and arranged to do work outside of the armature, the remaining set of coils being utilized to directly energize said core to modify the current produced in the armature-coils doing the outside work, substantially as described.

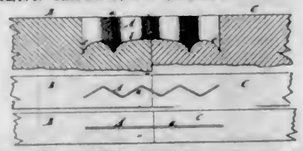
5. In a dynamo-electric machine, an armature-core carrying independent sets of coils arranged to be partly influenced by its field-magnets and partly by an auxiliary circuit including a portion of the coils wound thereon, in combination with a current-controller arranged in circuit with the coils acting directly on the armature, and adapted to regulate the flow of current in the said auxiliary circuit in order to regulate the production of current in the main coils of the armature, substantially as set forth.

6. In a dynamo-electric machine, an armature wound with two or more sets of coils, one or more of said sets being employed to feed the external circuit and magnetize the field-magnets of the machine, and the remainder being so disposed and connected that they will react directly upon the armature-core, in combination with means for controlling and regulating the amount of current circulating in the latter set of coils, in order to regulate the production of current in the machine, substantially as described.

7. In a dynamo-electric machine, the combination, with the main or working coils of its armature, of an auxiliary set of coils adapted to energize the core of said armature independent from the field-magnets of said machine, as set forth.

8. In a dynamo-electric machine, the combination, with field-magnets of such proportions compared with its armature that the former is incapable of bringing the latter up to its maximum efficiency, of the outside or working coils of its armature, and a set of coils disposed around said armature-core, the sole office of which is to surexcite the armature-core by re-enforcing the action of the field-magnets thereon to bring it up to its maximum, as set forth.

300,536. MEANS FOR UNITING WOOD. ALBERT H. WALKER, Brooklyn, assignor to the Sove & Fleming Manufacturing Company, New York, N. Y. Filed Jan. 26, 1884. (No model.)



Claim.—1. A strip of metal which is serrated at one edge, or which is corrugated or bent into sinuous form, and adapted to be driven in the direction of the length of its corrugations or bends into adjacent portions of two pieces of wood placed close together, so as to secure said pieces of wood together, substantially as specified.

2. The combination, with two pieces of wood placed close together, of a strip of metal which is serrated, or which is corrugated or bent longitudinally into sinuous form, and driven edgewise into adjacent portions of the two pieces of wood, substantially as specified.

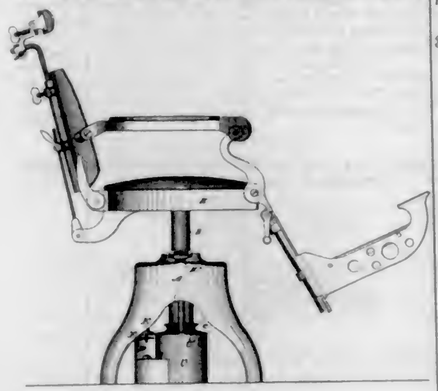
300,537. CARBON-BATTERY. JOHN H. WALLACE, Ansonia, Conn., assignor to the Electrical Supply Company, same place. Filed May 10 1882. (No model.) Patented in England May 27, 1882, No. 2,416.



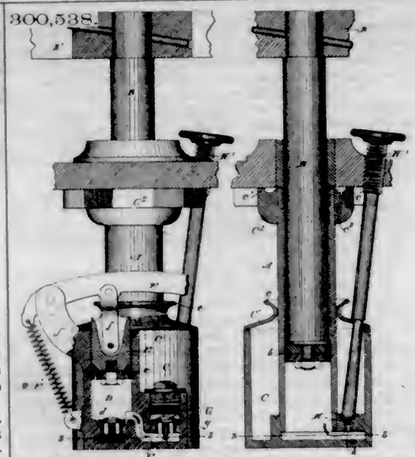
Claim.—The herein-described improvement in carbon-batteries, consisting of the glass or insulated material cover B, constructed with a central opening, a, and with a series of openings, e, in a circle around said central opening, and substantially concentric therewith, combined with the ring D, constructed with a series of openings, f, corresponding to the series of openings e in the cover, a clamping device at each of the openings in said ring, a series of carbons, E, in the openings of said ring, and secured therein, and a zinc, C, suspended through the central opening in the cover, substantially as described, and so that said series of carbons stand in a circle around the zinc, substantially as specified.

300,538. DENTIST'S CHAIR. JOHN B. WARING, New York, N. Y., assignor to J. Clarence White, Joshua H. Morris, William S. Hagany, and Samuel S. White, Jr., executors of Samuel S. White, deceased. Filed Jan. 2, 1878. Patented in England Jan. 8, 1878, No. 109.

Claim.—1. The combination, substantially as hereinbefore set forth, of the base, the plunger, the chair-body capable of varying adjustment mounted thereon, the fluid supporting-column, the elevating foot-lever, and the handle or lever H', independent of the elevating foot-lever or elevating mechanism, for operating the valve or mechanism that permits



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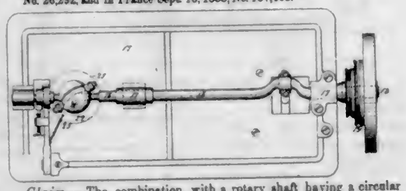


of the escape of the fluid from beneath the plunger to lower the chair, these members being constructed and operating in combination as specified.

2. A chair-body mounted upon a plunger sustained at any desired height by means of a fluid medium, the said chair-body being adapted to be variably inclined, and being provided with means for securing it at any desired angle, substantially as described.

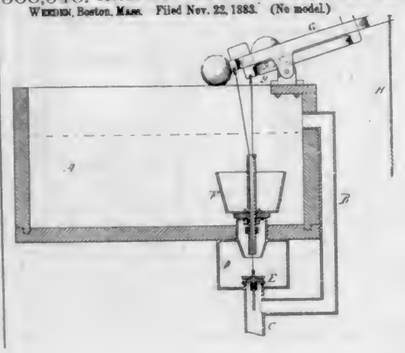
3. The combination, substantially as hereinbefore set forth, of a base or stand, a vertically-movable support, a fluid medium for sustaining said support, a chair-body carried by said support, adapted to be adjusted vertically, horizontally, and as to inclination relatively to the base, and mechanism for accomplishing these adjustments of the chair-body.

300,539. MECHANICAL MOVEMENT. JAMES WARWICK, Manchester, County of Lancaster, England. Filed Apr. 18, 1884. (No model.) Patented in England Feb. 24, 1883, No. 1,009; in Germany July 20, 1883, No. 26,292, and in France Sept. 10, 1883, No. 157,465.



Claim.—The combination, with a rotary shaft having a circular groove or projection inclined to its axis, of a shaft having secured to it an arm or arms furnished with a roller or slide, or rollers or slides, to work in or on the said inclined groove or projection, substantially as and for the purpose herein described.

300,540. SUPPLY-VALVE FOR WATER-CLOSETS, &c. HENRY CORY WEEDEN, Boston, Mass. Filed Nov. 22, 1883. (No model.)



Claim.—1. In a flushing apparatus for water-closets and kindred structures, the improved compound or double lever herein described, consisting of two counterbalanced lever parts, one of said parts being provided with a suitable stop adapted to check the fall of the other at a given point, substantially as and for the purposes herein described.

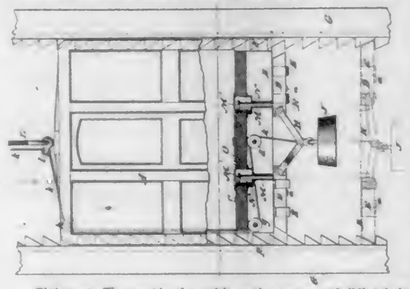
2. In a flushing apparatus for water-tanks, the combination of a two-part or double lever with a water-detaining pan, an independently-movable valve for regulating the outflow of water from the tank and chamber D, and means, substantially as described, for holding said valve away from its seats during a predetermined flushing period, all substantially as herein described and shown.

3. The combination, with a double or compound flushing-lever, of a water-detaining cup carrying a valve for opening and closing the flow of water from a chamber, D, the said cup being connected to both parts of the compound lever with connections of variable lengths, all substantially as herein described and shown.

4. The combination, with the main flushing-tank, of a chamber, D, a valve for opening and closing the inlet to and exit from said chamber, a water-retaining pan or cup, and means, substantially as described, whereby the said valve is automatically held, so as to keep open both the entrance to and exit from the chamber during the flowing out of a predetermined quantity of water from the main tank, and no longer.

5. The combination, with a valve for opening and closing the inlet and outlet of a chamber, D, of the character herein described, of a water-detaining pan or cup provided with a passage-way extending through said cup and above the height of its rim, and of suitable connections for raising and suspending the said cup and the said valve independently, all substantially as and for the purposes herein set forth.

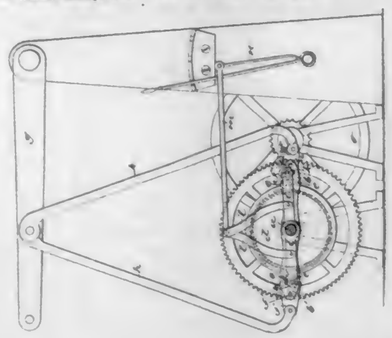
300,541. SAFETY-CATCH FOR ELEVATORS. FRANK ARTHUR WEEKS, Enniskillen, Ontario, Canada. Filed Feb. 9, 1884. (No model.)



Claim.—1. The combination, with an elevator-car, of sliding bolts held on the under side of the car, a toggle-joint uniting the inner ends of the sliding bolts, a weight suspended from the middle of the toggle-joint, locking-pins resting on the sliding bolts, and of a rope or chain for raising the weight and middle of the toggle-joint to force the sliding bolts outward, substantially as herein shown and described.

2. The combination, with an elevator-car, of the sliding bolts D, the toggle-joint H, uniting the inner ends of the same, the casings N, the locking-pins M in the same, the weight J, suspended from the toggle-joint, and the safety-rope *k*, substantially as herein shown and described.

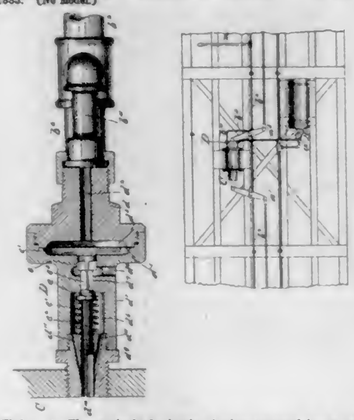
300,542. MECHANISM FOR CONVERTING MOTION. NORMAN D. WELLS, Hastings, Minn. Filed May 1, 1884. (No model.)



Claim.—1. The combination and arrangement, substantially as described, of the operating-rods *h*, pawls *f*, arms *b*, bands *c c*, pins or stops *k*, wheel *d*, and shaft *a*, for operation to give a continuous rotary motion to the shaft, as specified.

2. The combination of lever *n*, rod *m*, links *l*, arms *i*, and pins *k* with the pawl-arms *b*, pawls *f*, bands *c*, and wheel *d*, substantially as and for the purpose specified.

300,543. APPARATUS FOR RELIEVING PRESSURE IN BRAKE-CYLINDERS. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Nov. 30, 1883. (No model.)



Claim.—1. The method of releasing brakes operated by an artificially-created fluid-pressure, consisting in releasing the pressure in the brake-cylinder by increasing the fluid-pressure on a movable diaphragm, substantially as set forth.

2. The combination of a brake-cylinder, an exhaust-valve, an independent signal-pipe, the main reservoir, and a cock for admitting the full pressure of the main reservoir into the signal-pipe, substantially as set forth.

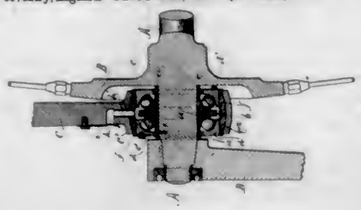
3. In a fluid-pressure brake mechanism having a brake-pipe for operating the brakes by the use of any desired pressure, and a signal-pipe normally charged with a less pressure, both connected with the brake-cylinder, and, in combination therewith, a pressure-relieving mechanism arranged in the line of communication from the signal-pipe to the brake-cylinder, and a cock arranged in the pipe which connects the main reservoir with the signaling-pipe, substantially as set forth.

4. A fluid-pressure brake and signaling apparatus having, in combination, a brake-pipe and an independent signaling-pipe, a connection from one to the other through a common reservoir, and means for keeping the signaling-pipe continuously charged with fluid-pressure, but at a less pressure than that normally contained in the brake-pipe, substantially as set forth.

5. In combination with a brake-cylinder, C, and a pipe, a^3, for the supply and discharge of fluid-pressure in the normal operation of the brakes, an independent exhaust-valve, a movable diaphragm for operating said valve, a spring to hold said valve to its seat as against normal pressure, and a fluid-pressure-supply pipe and cock for applying an excess of fluid-pressure to unseat said valve, substantially as set forth.

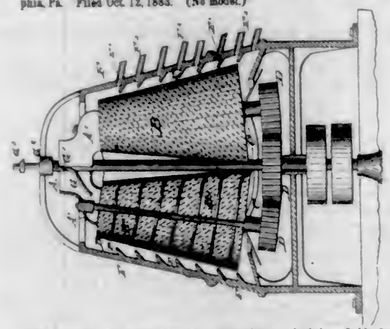
6. In an exhaust-valve, the combination of the parts *d* and *d'*, the part *d* having the passage d^3 and recess d^2, the part *d'* having the passages d^{10}, d^{11}, d^9, d^7, and d^8 and recess d^5, the diaphragm d^6, the presser-stem *e*, the valve *c*, provided with guides, and the spring *c'*, substantially as set forth.

300,544. BALL-BEARING FOR VELOCIPEDES. JOSEPH WHITE, Coventry, England. Filed Feb. 18, 1884. (No model.)



Claim.—In a ball-bearing for wheels, whether containing one or two sets of balls, a box composed of a split ring, *f*, and threaded internally to receive adjustable side ring-bearings, *c d*, having curved bearing-surfaces for the balls, such split ring being segment-shaped in cross-section and fitting a corresponding annular recess in yokes which are capable of being tightened up, all substantially as and for the purpose above described.

300,545. CENTRIFUGAL DRAINER. S. LLOYD WIEGAND, Philadelphia, Pa. Filed Oct. 12, 1883. (No model.)



Claim.—1. In a machine for separating or draining fluids from solids by centrifugal force, the combination of a series of rotating vessels having screws therein and rotating with them, adapted to progressively move the charge from the entrance to the exit, in combination with mechanism holding said charge from rotation with the screw by centrifugal effect, substantially as set forth.

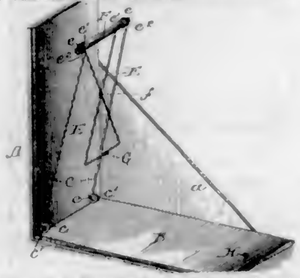
2. The combination of a series of perforated revolving vessels having screws formed within, and arranged to slowly rotate therewith, so placed in relation to a common axis of rotation at high velocity as to rotate the charge through arcs of increasing radius during its progress through the machine.

3. The combination of draining-vessels, each having screws rotating therewith slowly upon their own axes, with a gearing adapted to produce such slow rotation, in conjunction with a frame and driving-gearing adapted to rotate the series of vessels with a high velocity, substantially as set forth and shown.

4. In combination with a series of vessels having internal screws adapted to progressively move the charge of matter through such vessels into a case or curb, shelves adapted to collect and separate fluids expelled at different points in the progressive motion of the charge, substantially as and for the purposes set forth.

5. In combination with a series of draining-vessels arranged to rotate about a common center at high velocity, and to pass charges of matter slowly through them, the pipes G and G', for introducing washing or purging fluids, substantially as set forth.

300,546. FILE-HOLDER. ALEXANDER R. WILLIAMS, Washington, D.C. Filed June 21, 1883. (No model.)

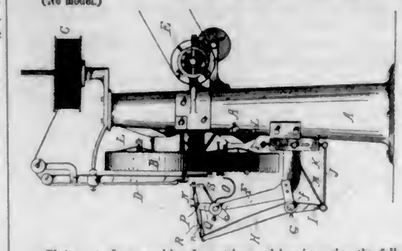


Claim.—1. In a file-holder, the base A, having the spring-frame C, composed of the parts *c*, *c'*, E, and G, constructed and arranged substantially as set forth.

2. In a file-holder, the base A and spring-frame E C, having handle G, in combination with the front B, provided with the hook H, substantially as and for the purpose set forth.

3. In a file-holder, the base A, having spring-hooks I, in combination with a holder-case having the cross-bar M, as and for the purpose set forth.

300,547. ATTACHMENT FOR RECEIVING AND COLLECTING LOOPED AND CUT WIRE. WILLIAM WILSON, Jr., Greenville, Del., assignor of one-half to Charles Green, same place. Filed Oct. 29, 1883. (No model.)



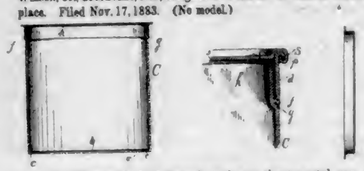
Claim.—1. In a machine for cutting and looping wire, the following instrumentalities in combination: first, a rotating head provided with devices which are suitably operated to automatically form loops upon wire and to automatically cut off a given section of looped wire; second, an automatically-operating wire-seizing device for grasping the severed sections of looped wire; third, devices for removing or stripping the sections from the grip of the wire-seizing device; fourth, means for operating the wire-seizing device; and, fifth, a receiver for receiving the severed sections.

2. The combination of the head-plate provided with devices which are suitably operated to automatically form loops upon wire and to cut the looped wire to predetermined lengths, jaws, strippers, receiving-frames, suitable mechanism for causing the advance and retreat of the jaws, and mechanism for causing the opening and closing of the jaws.

3. The combination of the jaws, the wedge-bar, and the jaw-springs, substantially as and for the purposes specified.

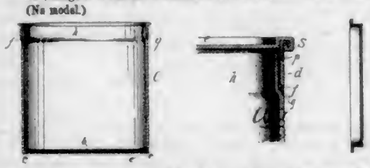
4. The combination of the head, provided with devices for forming loops upon wire and for cutting the looped wire to given lengths, and provided also with a series of camways, the pivoted lever, the link, rocker, rock-shaft, rock-shaft arms, and spring-jaws, the whole combined and operating substantially as set forth.

300,548. METHOD OF MAKING SHEET-METAL CANS. WILLIAM WILSON, Jr., Greenville, Del., assignor of one-half to Charles Green, same place. Filed Nov. 17, 1883. (No model.)



Claim.—The method of manufacturing a sheet-metal can, which consists, first, in forming a side body proper, then in striking from a blank of predetermined contour and proportions a saucer-shaped form, then in striking the bottom from said saucer-shaped form to form the bottom of the side body, then in connecting the flanged rim remaining after striking the bottom from the saucer-shaped form with the side body by means of a ripping-wire and solder, and then in double-seaming a top with the flanged rim, all substantially as hereinbefore set forth.

300,549. SHEET-METAL CAN. WILLIAM WILSON, Jr., Greenville, Del., assignor of one-half to Charles Green, same place. Filed Feb. 8, 1884. (No model.)



Claim.—1. As a new article of manufacture, an uncovered sheet-metal can the side body of which is provided with a flanged rim secured thereto by solder and a ripping-wire, substantially in the manner and for the purposes hereinbefore set forth.

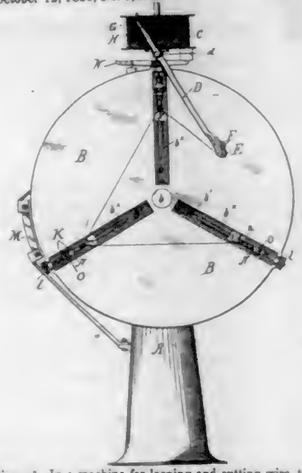
2. In combination with the side body of a sheet-metal can, and with a flanged rim secured to said side body by solder and a ripping-wire, a top adapted to be double-seamed with the flange of the solder-secured rim, substantially as described.

3. The combination, to form a hermetically-sealed slip-cover wire-rip can, of the side body, the flanged rim, the ripping-wire, the solder,

and the top double-seamed with the flanged rim, substantially as described.

300,550. MACHINE FOR MAKING LOOPED WIRE. WILLIAM WILSON, Jr., Greenville, Del., assignor of one-half to Charles Green, same place. Filed Feb. 8, 1884. (No model.)

Brief.—Improvement on Patent No. 214,977, dated April 29, 1879; reissued October 12, 1880, No. 9,404.



Claim.—1. In a machine for looping and cutting wire, the following instrumentalities in combination: first, a rotating head provided with devices which are suitably operated to automatically form loops upon wire and to automatically cut off a given section of looped wire; and, second, a feed-arm supported independently of the head, arranged to overhang the head, and provided at its extremity, which so overhangs, with a directing-wheel, by means of which wire passed around the wheel is in the rotation of the head fed to the devices for forming the loops upon the wire.

2. In a machine for looping and cutting wire, the following instrumentalities in combination: first, a rotating head; second, devices for forming loops upon the wire; third, devices for cutting off a given section of looped wire; fourth, devices for discharging the looped wire from the looping devices; fifth, a device for feeding the wire to the looping devices; and, sixth, suitable means for operating said several instrumentalities, substantially as set forth.

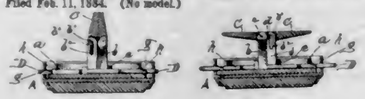
3. In a machine for looping and cutting wire, in combination with a rotating head, devices which are suitably operated to automatically form loops upon wire, devices which are suitably operated to automatically cut off a given section of looped wire, the loop-discharging arm S, and means for operating said loop-discharging arm, substantially as set forth.

4. The combination of the rotating head provided with devices which are suitably operated to automatically form loops upon wire, and to automatically cut off a given section of looped wire, of a feed-arm which overhangs the head, and is provided with directing wheels or pulleys, which serve to guide and direct the feed of the wire.

5. In combination with the rotating head provided with radial slots, devices for forming loops upon wire, devices for automatically cutting off a given section of looped wire, means for discharging the cut wires, and means for securing the support and radial adjustment of said several devices with respect to said rotating head.

6. In combination, the twisting-hooks, means for actuating said hooks to predetermined rotations, the chisels, means for effecting the predetermined lift and drop of said chisels, the loop-discharging arm, means for securing the operation of said arm to effect the discharge of the looped wires, a slide-bearing or kindred device for containing said assembled devices, a rotating head with respect to which said slide-bearing is radially adjustable, and means for securing the radial adjustment of said bearing and its connected devices.

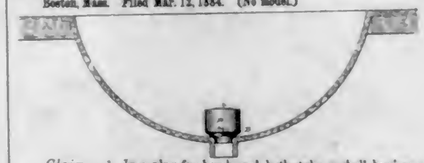
300,551. BUTTON OR STUD. GEORGE E. ADAMS, Providence, R. I. Filed Feb. 11, 1884. (No model.)



Claim.—1. In a button or stud having the posts or standards B B, the combination, with the shoe-lobes C C, pivoted in said standards and provided with bearings *d* and apertures *d'*, of the pushers D D, having vertical arms *b b*, provided with slots b^2 and locking-lugs b^3, substantially as described.

2. In a button or stud, the combination of the head A, having guides *e g*, the standards B B, the shoe-lobes C C, pivoted in the standards and provided with bearings *d* and apertures *d'*, the pushers D D, having vertical arms *b*, provided with slots b^2 and locking-lugs b^3, and the spring *a*, engaging said pushers, substantially as described.

300,552. PLUG FOR BOWLS AND BATH-TUBS. JAMES D. BACON, Boston, Mass. Filed Mar. 12, 1884. (No model.)



Claim.—1. In a plug for bowls and bath-tubs, a shell having a passage through it for water, and a seat, combined with an upwardly-closing valve to close the said passage against the action of sewer-gas inward through the hole closed by the plug, substantially as described.

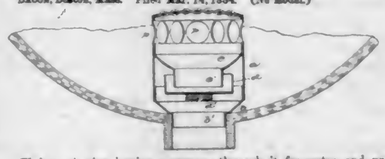
2. The plug-shell provided with a valve-seat, combined with an upwardly-closing valve, and with a spring to support the valve and force it normally upward against the weight of the water resting above the plug, substantially as described.

3. The hollow plug-shell, its bottom and top pieces, and valve, combined with a strainer, substantially as described.

4. The hollow sheet-metal plug-shell, its upper portion, C, valve, and bottom piece, combined with the weight or ring *g*, to aid in holding the plug down in the hole to be closed by it, substantially as described.

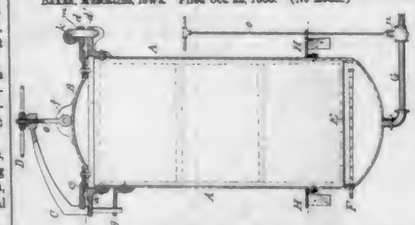
5. The plug-shell and valve, combined with a valve-locking device, to operate substantially as described.

300,553. TRAPPED PLUG FOR BOWLS AND TUBS. JAMES D. BACON, Boston, Mass. Filed Mar. 14, 1884. (No model.)



Claim.—A plug having a passage through it for water, and provided with means for water-sealing the same, substantially as described.

300,554. PROCESS-KETTLE FOR COOKING CANNED FRUIT. JOHN BAKER, Muscatine, Iowa. Filed Oct. 22, 1883. (No model.)



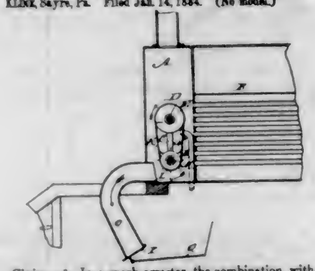
Claim.—1. The combination, with the upright kettle A, having the bracket *g* and rim *a*, of the removable cover B, provided with the rim *c*, having the recess *i*, the crane C, provided with the bearing-shoulder *k*, and extending through the rim *a* and bracket *g*, the threaded wheel D, and the screw-rod *e*, having pivotal connection with the cover B, substantially as and for the purposes described.

2. The combination, with the upright kettle A, provided with the rim *a*, lugs *d'*, and bracket *g*, of the removable cover B, provided with the rim *c* and lugs *d*, the crane C, and the threaded rod *e*, extended through the end of the crane and provided with the wheel D, and having pivotal connection with the cover, the eccentrics *k*, and links *m*, having pivotal connection with the lugs *d'*, substantially as and for the purposes described.

3. In an upright kettle, the perforated trays K, each provided with a bar, *p*, rest *s*, and bail *g*, pivoted to the bar and constructed to be turned down upon the rest within the tray in position to allow the trays

to be placed one above another in the kettle, and in position for the bails to be readily accessible in removing the trays from the kettle, substantially as and for the purposes described.

300,555. SPARK-ARRESTER. ELIAS B. BALDWIN and EPPINGER R. KLINE, Sayre, Pa. Filed Jan. 14, 1884. (No model.)



Claim.—1. In a spark-arrester, the combination, with the exhaust-pipes, of a winged wheel in front of the upper ends of the exhaust-pipes, and a fan-wheel for throwing the cinders into an outlet-pipe operated by the said winged wheel, substantially as herein shown and described.

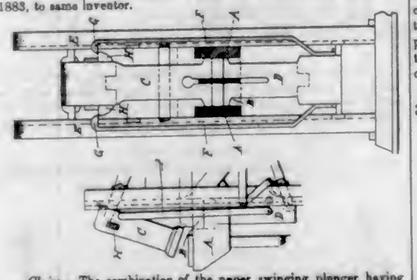
2. In a spark-arrester, the combination, with the smoke-box A, of the pipe O, extending downward and backward from the bottom part of the smoke-box, and of means, substantially as described, for conveying the cinders into the upper end of the pipe O, substantially as herein shown and described.

3. In a spark-arrester, the combination, with the smoke-box A, of the pipe O, extending downward and outward from the bottom part of the said box, means, substantially as described, for conveying the cinders into the upper end of the pipe O, and of the gate or valve P, for closing the lower end of the pipe O, substantially as herein shown and described.

4. In a spark-arrester, the combination, with the standards C C in the smoke-box, of the shaft D, journaled in the upper ends of the standards C, the winged wheel E, and the pulley J, mounted on the shaft D, the exhaust-pipes H, the shaft M, the fan-wheel N on the same, the pulley L, the belt K, and the outlet-pipe O, substantially as herein shown and described.

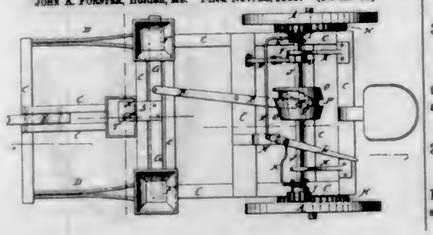
300,556. BRICK-MACHINE. HENRY C. BARKER, Sedalia, Mo. Filed July 14, 1883. (No model.)

Brief.—Improvement on Patent No. 274,700, dated March 27, 1883, to same inventor.



Claim.—The combination of the upper swinging plunger having the laterally-projecting lugs upon its sides, with the lower plunger having the upwardly-projecting catches engaging the lugs, as and for the purpose shown and set forth.

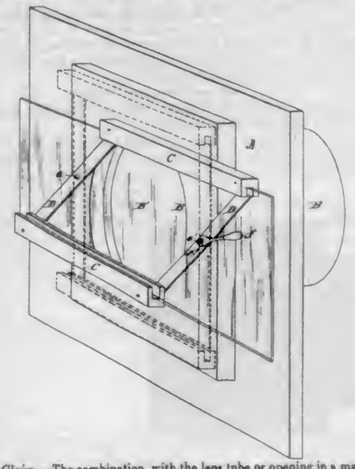
300,557. CHECK-ROW CORN-PLANTER. EDWARD P. BARRETT and JOHN A. FORSTER, Holden, Mo. Filed Nov. 22, 1883. (No model.)



Claim.—1. In a corn-planter, the combination, with the reciprocating seed-slide G, of the slotted lime-hopper T, provided with the aperture *n* in its bottom, and rigid arm *t'*, projecting inwardly over the aperture *n*, and the arm S, provided with holes *t t*, and rigidly secured to the seed-slide, and projecting into the lime-hopper, substantially as herein shown and described.

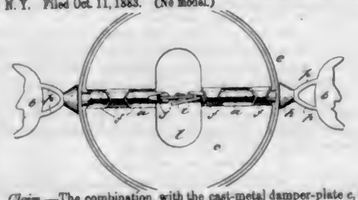
2. In a corn-planter, the combination, with the frame C, wheels A, provided with the gear-wheels H, shaft J, carrying the gear-wheels I, and wheel O, having the cam-groove P, lever R, seed-slide G, and hoppers F, of the arm S, secured to the middle of the seed-slide, and provided near its outer end with the holes *t t*, and the slotted hopper T, provided with a hole, *n*, in its bottom, and inwardly-projecting arm *t'*, substantially as shown and described.

300,558. SLIDE-HOLDER FOR MAGIC-LANTERNS. WILLIAM S. BARSTOW, Brooklyn, N. Y. Filed Jan. 9, 1884. (No model.)



Claim.—The combination, with the lens tube or opening in a magic-lantern, heliostat, or similar instrument, of an adjustable slide-holder consisting of two movable bars adapted to engage the edges of the slide, the opposite edges of which are kept always parallel by means of two parallel transverse strips, each pivoted at its ends to said bars, and in the middle to the plate or frame of the instrument on each side of said opening, substantially in the manner and for the purpose herein set forth.

300,559. STOVE-PIPE DAMPER. WILLIAM E. BELLMAN, Buffalo, N. Y. Filed Oct. 11, 1883. (No model.)



Claim.—The combination, with the cast-metal damper-plate *c*, having pivot-sockets *f*, and a central opening, *l*, of the sectional pivot-rod *a* and a wire-tie, *i k*, connecting said sections of the pivot-rod, substantially as described.

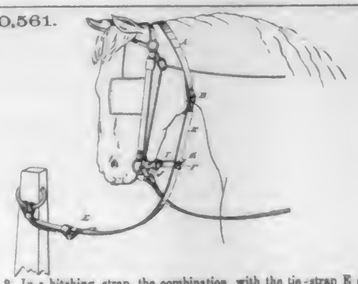
300,560. COMPOUND FOR THE MANUFACTURE OF ARTIFICIAL STONE. HERMANN BRÜNG, New York, N. Y., assignor to himself and Chester A. Weller, same place. Filed Oct. 12, 1883. (No specimens.)

Claim.—The herein-described compound for the manufacture of artificial stone, consisting of sand, cement, oxalic acid, chalk, muriatic acid, iron filings, and water, in the proportions specified.

300,561. HITCHING-STRAP. SAMUEL BIRDSALL, Susquehanna, Pa. Filed Apr. 24, 1884. (No model.)

Claim.—1. In a hitching-strap, the combination, with the tie-strap E and the brace-strap I, of a headed bolt and a nut for clamping the said brace-strap to the tie-strap, substantially as set forth.

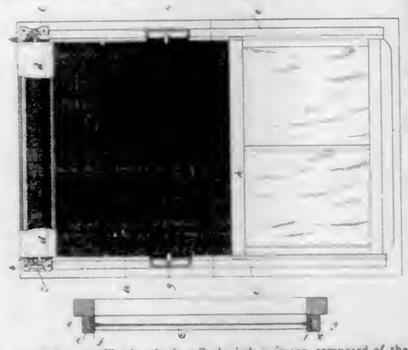
300,561.



2. In a hitching-strap, the combination, with the tie-strap E and the brace-strap I, of the bolt F, having shoulder F', and the nut and washer G H, substantially as herein shown and described, whereby the said brace-strap will be firmly connected with the tie-strap, and can be readily swung to either side, as set forth.

300,562. WINDOW-SCREEN. NICHOLAS J. BISHOPRICK, Brooklyn, N. Y. Filed Mar. 2, 1883. (No model.)

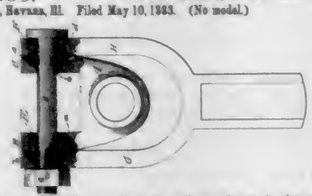
Brief.—The edges of a screen winding upon a roller move in slotted face-strips located on vertical grooved strips on the window-facing. Buttons on the screen edges move in said grooved strips.



Claim.—1. The herein-described window-screen, composed of the reticulated fabric *a*, the headed buttons *g*, secured to its longitudinal edges, a roller to which said fabric is connected, the grooved strips *e*, arranged longitudinally of the window, and provided with the face-pieces *f*, slotted lengthwise and receiving the buttons and edges of the fabric, and the transverse stiffening-bar *h*, engaging the slotted face-pieces, all and severally as and for the purpose specified.

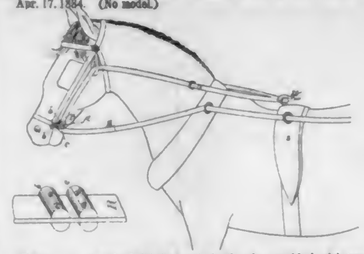
2. The combination and arrangement, substantially as shown and described, of the reticulated fabric *a*, the headed buttons *g*, secured to its longitudinal edges, a roller, and tapes or ribbons *i*, by which said fabric is connected to the roller, the grooved strips *e*, to receive the headed buttons, and the longitudinally-slotted face-pieces *f* of said strips, in which the edges of the fabric are arranged to form insect-tight joints, and a transverse stiffening-piece, *h*, also engaging said slotted face-pieces, to hold the fabric extended and guide it in its movements.

300,563. CULTIVATOR. HENRY BORSELT, Jr., and LUCIAN P. DORSELT, Havana, Ill. Filed May 10, 1883. (No model.)



Claim.—A clevis of a plow or cultivator beam, having suitable arms, one of said arms having upon its inner side a mortise, and the opposite arm a hole of equal diameter, in combination with a sleeve through which the axle passes, provided with arms having a hole and a mortise similar to those on the arms of the clevis, and thimbles fitting therein, and a bolt passing through the arms to hold them together, the mortises being arranged with relation to each other, and also the thimbles, as shown and described.

300,564. DRIVING-REIN. WILLIAM S. BOWIE, Gardiner, Me. Filed Apr. 17, 1884. (No model.)

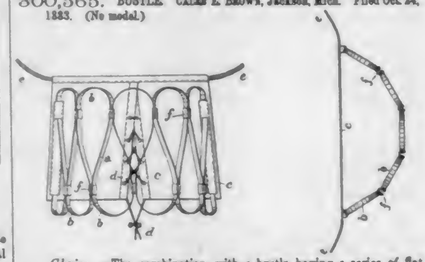


Claim.—1. A united driving and check rein provided with two sets of attached buttons, stops, or projections, to restrict the upward and downward movements of the bit and head of a horse, combined with a clasp or link to connect the rein between the attached buttons with the bit, to operate substantially as described.

2. A combined driving and check rein provided near the bit with a button, stop, or projection attached thereto by a screw, and adapted to prevent the head of the horse from being lowered, substantially as described.

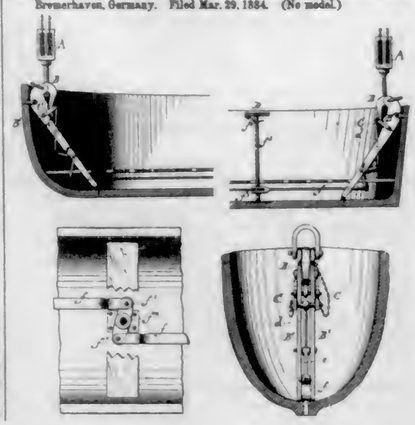
3. The united driving and check rein provided each side the horse's head with a button, stop, or projection, *b*, and the bit, combined with a clasp to connect the bit and rein and co-operate with the said button, substantially as described.

300,565. BUSTLE. CALEB E. BROWN, Jackson, Mich. Filed Oct. 24, 1883. (No model.)



Claim.—The combination, with a bustle having a series of flat metal-band spring-loops, *b*, and a cloth band, *c*, of V-shaped hasps, securing the loops together, forming a V-shaped connection between the loops to produce a curvature of the combined section, as shown and described.

300,566. DETACHING APPARATUS FOR BOATS. HINRICH REIMS, Bremerhaven, Germany. Filed Mar. 29, 1884. (No model.)



Claim.—1. The combination, with the mousing-hooks of the davit fall-blocks, of hooks pivoted to inclined brace-irons secured at their upper ends to the stem and stern posts of the boat and at their lower ends to the keel, locking-links pivoted below the hooks, and connecting-lever mechanisms operated and arranged substantially as described, whereby both hooks are simultaneously released from the fall-blocks, substantially as specified.

2. The combination of inclined brace-irons secured at their upper ends to the stem and stern posts of a boat and at their lower ends to the keel, hooks pivoted to the brace-irons, locking-links pivoted to the brace-irons below the hooks, lever mechanisms connecting the links with a crank-shaft at a point between the stem and stern posts, and a retaining device for locking the crank-shaft and detaching devices in normal position, substantially as set forth.

3. The combination of inclined brace-irons secured at the lower ends to the keel and at the upper ends to the stem and stern posts, respectively, hooks pivoted to the upper ends of the brace-irons, locking-links pivoted below said hooks, said links having transverse detachable bolts, a crank-shaft supported in bearings of the keel and seat of the boat, and intermediate lever mechanisms by which the crank-shaft is connected with the locking-links, substantially as set forth.

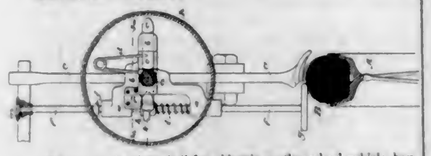
4. The combination of inclined brace-irons B' B', secured at the lower ends to the keel and at the upper ends to the stem and stern posts of the boat, pivoted hooks B B, engaging the mousing-hooks of the fall-blocks, locking-links C, pivoted to the brace-irons below the hooks, connecting-rods *d d*, bell-crank levers *e e*, longitudinal lever-rods *f f*, crank-shaft f^3, lever-handle f^4, and spring-catch f^5 of the seat, substantially as described.

300,567. PLOW-POINT. WILLIAM T. BURKE and LEONARD P. KLOTER, Montrose, Mo. Filed Feb. 28, 1884. (No model.)



Claim.—The combination, with a plowshare having a tapering landside-flange, and a bolt-hole, of a detachable point of the form shown and described, forming a socket adapted to fit upon the share-point, having a longitudinal groove in the inside of its under side to receive the flange of the plowshare, and a projecting shoulder to fit the recess under the share, and a fastening-bolt, as and for the purpose shown and set forth.

300,568. BICYCLE-BELL. JOSEPH BUTCHER, Boston, Mass. Filed Mar. 17, 1884. (No model.)



Claim.—1. An alarm-bell for a bicycle or other wheel-vehicle, having a striking-bolt arranged to slide longitudinally in a socket, as described, and said bolt provided with an operating-spring adapted to shoot the bolt and then slightly retract it, substantially as and for the purposes set forth.

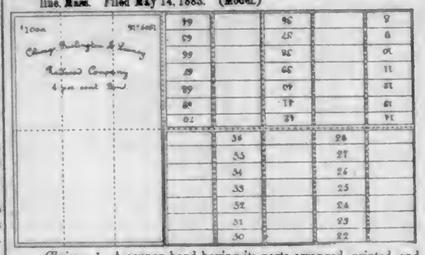
2. In an alarm-bell for bicycles or other wheel-vehicles, the combination, with the striking-bolt and its spring, constructed and arranged substantially as described, of means, substantially as described, for actuating said striking-bolt, said means comprising a claw on a rotatively-mounted shaft, adapted to catch and draw back the said bolt, and a disk fixed on the said shaft, adapted to be brought into contact with the tire of the vehicle-wheel at will to effect the rotation of the disk and shaft, as set forth.

3. The mechanism for causing the rotating wheel of the vehicle to actuate the striking-bolt, comprising the combination of the rotatively-mounted shaft *f*, the disk *g*, fixed thereon, the collar *h*, fixed on said shaft and provided with a claw, *k*, the spring *i*, for raising or retracting shaft *f*, the sliding bolt *c*, provided with a recess, *l*, adapted to be engaged by claw *k*, and the spring *d* for shooting the bolt, all arranged to operate substantially as set forth.

4. The shaft *f*, provided with a disk, *g*, fixed to its lower end, and the button *m*, mounted rotatively on its top, in combination with the collar *h* and its claw, fixed on shaft *f* in position for the claw to engage the striking-bolt when said shaft is depressed, the spring *i*, arranged to lift or retract shaft *f*, and the striking-bolt and its spring, all arranged to operate substantially as set forth.

5. The combination, with the shaft *f*, provided with the disk *g*, button *m*, claw *k*, and spring *i*, and with the recessed bolt *c*, of the shield *r*, mounted on the socket-piece *b*, substantially as and for the purposes set forth.

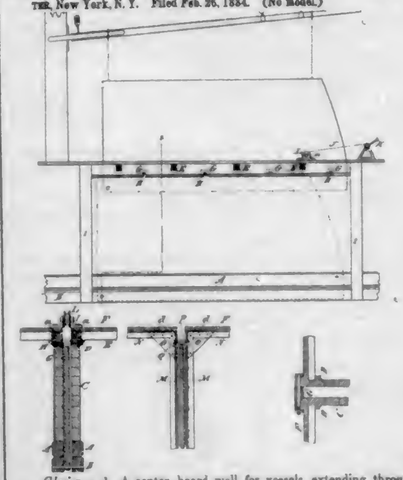
300,569. COUPON-BEARING BOND. JAMES LOWELL CARTER, Brookline, Mass. Filed May 14, 1883. (Model.)



Claim.—1. A coupon-bond having its parts arranged, printed, and folded substantially as described, so that the coupons will be arranged in series in the subdivisions formed by folding the bond, detachable in the order of their becoming due, and without the bond being unfolded, substantially as and for the purpose herein described.

2. A coupon-bond having its parts arranged substantially as described, and provided with a cut or opening between the bond and coupon-sheet, the bond and coupon-sheet being folded independent, whereby the coupons may be detached in the order they become due and without unfolding the bond, and the bond may be unfolded without disturbing the coupons, substantially as described.

300,570. CENTER-BOARD WELL FOR VESSELS. ROBERT CENTER, New York, N. Y. Filed Feb. 26, 1884. (No model.)



Claim.—1. A center-board well for vessels, extending through both keel and deck, and provided with forward and after head-ledges, and having heavy upper trunk-logs into which the beams are framed, and provided with stay-bolts and chocks or sleeves above and below the deck, as specified.

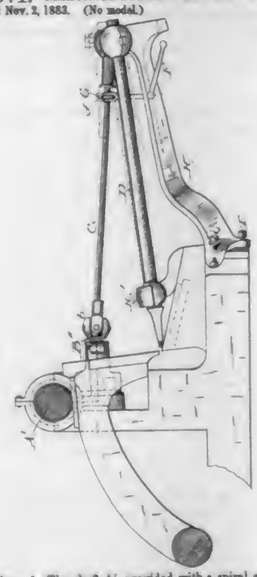
2. The combination, with a center-board well made as herein described, and extending through both keel and deck, of a hand-tight piece for closing the well, as specified.

3. The combination, with the center-board well having parrallel forward and after head-ledges, as herein described, of a windlass, K, and removable sheave L.

4. The combination, with a center-board well constructed as herein described, and extending through both keel and deck, of a slotted hatch-combing and hand-piece fitting thereto, as herein described.

5. The combination, with a center-board well formed of iron plates M, riveted to vertical stiffening-bars, as described, of the plate-knees O, secured to the vertical stiffening-bars of the well and to the iron deck-beams N, the deck-beams N, and lodger-plates *d*, as specified.

300,571. NAIL-PLATE FEEDER. HARVEY B. CHESS, Pittsburg, Pa. Filed Nov. 2, 1883. (No model.)



Claim.—1. The shaft A', provided with a spiral gear, A, the spiral gear B, provided with the hole *b'*, and box B', in combination with the shaft B'', passing through the box, and carrying on its rear end a crank, *a*, and wrist-pin *a'*, and on its front end a portion, *b*, of a universal joint, all constructed to operate substantially as and for the purpose herein specified.

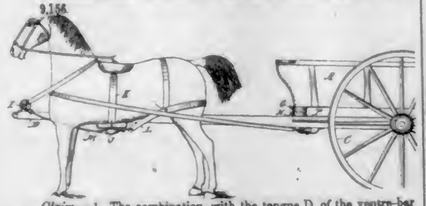
2. The shaft A', provided with spiral gear A, the spiral gear B, and shaft B'', in combination with the shaft C, provided with a ball-pinion, D', sleeve E, and spring *c*, all constructed to operate substantially as and for the purposes herein specified.

3. The shaft C, provided with a ball-pinion, D', supported in spherical bearings, in combination with a ball-gear, D'', rigidly mounted on the feeder-barrel, and the feeder-barrel D, all constructed to operate substantially as and for the purpose set forth.

4. The shaft C, provided with a collar, G, the sleeve E, and spring *c*, in combination with the shaft B'' and bell-crank lever F, substantially as and for the purpose set forth.

5. The driving-shaft A', the shaft B'', and the shaft C, in combination with gears A, B, D', and D'', whereby the feeder-barrel is adapted to be driven by power directly from the driving-shaft, substantially as herein shown and described.

300,572. DUMP-CART. ROBERT CLARK, Brockville, Ontario, Canada. Filed Jan. 3, 1884. (No model.) Patented in Canada Aug. 31, 1878, No. 9,156.



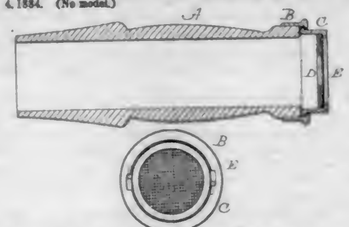
Claim.—1. The combination, with the tongue D, of the ventre-bar J, secured thereto at a point of its length adapted to bring it beneath the harness-saddles, as and for the purpose specified.

2. The combination, with the tongue D and the ventre-bar J, secured thereto, of the supporting-straps K for connecting the ventre-bar with the harness-saddle, as described.

3. The combination, with the tongue D, the ventre-bar J, and the supporting-straps K, of the strap L, connecting the ventre-bar with the breeching, as shown and described.

4. The combination, with the tongue D, the ventre-bar J, the supporting-strap K, and the breech-connecting strap L, of the strap M, connecting the yoke and ventre-bar, as shown and described.

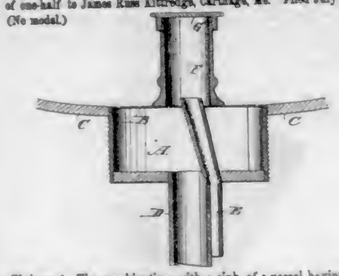
300,573. PUMP-SPOUT. HENRY CLAYTON, Dayton, Ohio. Filed Mar. 4, 1884. (No model.)



Claim.—1. The band B, with notched interior rim, strainer-thimble C, with lugs for engaging the same, in combination with a pump-spout, substantially as set forth.

2. In a strainer-thimble for a pump-spout, the combination of ring D, wire-gauze E, and thimble C, substantially as set forth.

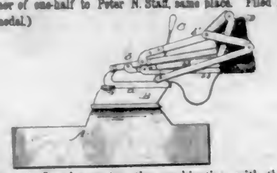
300,574. SINK-SPOUT. JOHN G. COBURN, South Carthage, assignor of one-half to James Russ Kittredge, Carthage, Mo. Filed July 7, 1883. (No model.)



Claim.—1. The combination, with a sink, of a vessel having a perforated top, a waste-pipe secured to the bottom of the said vessel, and an additional pipe extending from the perforated top of the said vessel along one side of the waste-pipe, substantially as herein shown and described.

2. The combination, with a sink, of a vessel having a perforated top, a waste-pipe secured to the bottom of the said vessel, an additional pipe extending from the perforated top of the vessel along one side of the waste-pipe, and a cup secured on the perforated top and over the upper end of the additional pipe, substantially as herein shown and described, and for the purpose set forth.

300,575. BUGGY-TOP. ALBERT MIFFLIN COCHRAN, Terre Haute, Ind., assignor of one-half to Peter N. Staff, same place. Filed Feb. 23, 1884. (No model.)

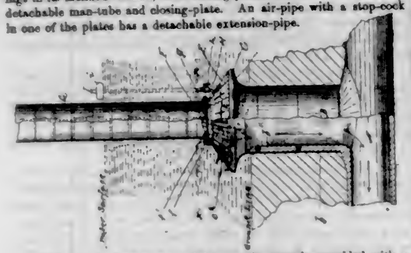


Claim.—1. In a buggy-top, the combination, with the bows b b^2, having offsets *d'*, and the rock-shaft, of the jointed side brace D, movably connected at its upper end to the bow b by pins turning in said offsets, and rigidly attached at its lower end to the rock-shaft, and the horizontal jointed side brace E, movably connected at its forward end to the bow b by the same pin, while its rear end is similarly connected to bow b^2, all substantially as described and shown.

2. In a buggy-top, the bows b b' b^2 b^3, pivoted at the forward end of the side rails, said bows b' and b^2 provided, respectively, with the offsets *d'* d^2, in combination with brace E, pivoted at its rear end in the offset d^2, and rigidly attached at its forward end to a pin loosely journaled in offset *d'*, and the brace D, similarly attached at its upper end to said pin, while its lower end is rigidly attached to the rock-shaft extending across the rear of the seat, substantially as and for the purpose described.

300,576. SUBMERGED TUNNEL-INLET. JOHN A. COLE, Hyde Park, Ill. Filed Mar. 24, 1884. (No model.)

Brief.—The inlet-pipe to an aqueduct-tunnel has a cap flared out a little above the ground-surface, with a truncated conical top having openings in its inclined surface, with closing-plates and an open top with a detachable man-tube and closing-plate. An air-pipe with a stop-cock in one of the plates has a detachable extension-pipe.



Claim.—1. A submerged inlet-cap for tunnels, provided with a flange or enlarged projection extending out beyond the main body of the inlet and arranged a little above the ground-line of the water-bed, substantially as and for the purposes set forth.

2. The submerged inlet-cap C, of cylindrical form, and provided with a flange, *c*, projecting out beyond the body of the cap and arranged a little above the ground-line, in combination with the main tunnel A and the inlet-cylinder B, composed of the sections *b*, substantially as and for the purposes set forth.

3. A submerged inlet-cap, C, provided with a flange, *c*, extending outward from the main body a little way above the ground-line and having a conical top provided with side openings, c^2, and a central opening, *c'*, substantially as and for the purposes set forth.

4. The submerged inlet-cap C, provided with a conical top having side openings, c^2, in combination with detachable covering-plates E, for closing the side openings, substantially as and for the purposes set forth.

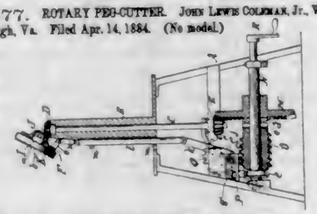
5. The submerged inlet-cap C, having a conical top provided with a central opening, *c'*, and side openings, c^2, in combination with the side closing-plates, E, and central closing-plate, F, substantially as and for the purposes set forth.

6. The submerged inlet-cap C, provided with a central opening, *c'*, and side openings, c^2, in combination with the closing-plates E and F and the removable pipe or cylinder G, substantially as and for the purposes set forth.

7. A submerged inlet for tunnels, in combination with a detachable air-tube, whereby communication may be made between the interior of the inlet and the atmosphere above the water-body when the inlet is closed, substantially as and for the purposes set forth.

8. The tunnel A, in combination with the inlet-cylinder B, inlet-cap C, air-pipe H, attached to one of the closing-plates and provided with a stop-cock, and the air-tube I, substantially as and for the purposes set forth.

300,577. ROTARY PEG-CUTTER. JOHN LEWIS COLEMAN, Jr., Wattsborough, Va. Filed Apr. 14, 1884. (No model.)



Claim.—1. In a peg-cutter, a rotary cutter provided with two sets of oppositely-arranged cutting-edges, alternating with each other, as described.

2. The combination, with the rotary cutter K, of the arbor I, plate F, and the mechanism for rotating and oscillating the said rotary cutter, as specified.

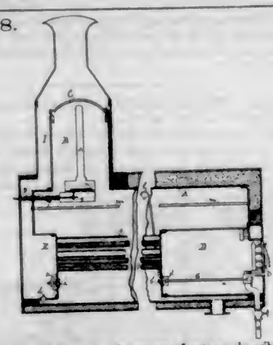
3. The combination, with the rotary cutter K, arbor I, and mechanism for rotating the same, of the worm O, worm-wheel Q, crank-pin *j*, pivoted plate F, and connective devices, as specified.

4. The combination, with the rotary cutter K, of the arbor I, universal bevel-wheels D J, shaft C, pinion E, beveled wheel M, worm O, worm-wheel Q, connecting-rod *k*, sliding rod *l*, and link *n*, as described.

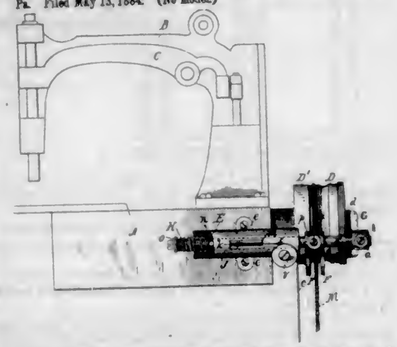
5. In a rotary peg-cutter, the combination, with the support of the rotary cutter, of the worm-wheel Q and connective devices, worm O, provided with clutch-teeth *c*, clutch-teeth *d*, formed on the wheel M, and the shifting-lever P, as herein described.

300,578. BOILER. JOHN DARNER, New Orleans, La. Filed Mar. 27, 1882. (No model.)

Claim.—The combination, in a steam-boiler, of the fire-box D and smoke-box E, the fire-box provided with a water-grate, G, which is adapted to be secured in position by means of nuts, as described, and the smoke-box provided with a covered opening, *i*, for the admission of a socket-wrench, whereby the said grate can be disconnected at will, substantially as and for the purpose set forth.

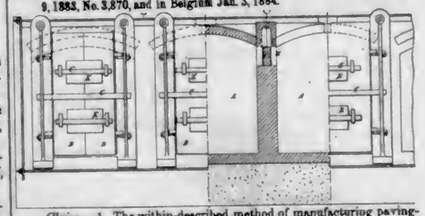


300,579. BELT-SHIFTING DEVICE. WILLIAM DIEHL, Philadelphia, Pa. Filed May 13, 1884. (No model.)



Claim.—The combination, with the bed-plate A, of the tube J, mounted directly thereon, and having an internal shoulder, *n*, and slot *m*, the spindle E, and spring H, arranged within said tube, and the collars *p* and *q*, respectively, carrying the shifting-fingers and brake, and suitable means for securing said collars upon said spindle, the whole arranged and operating substantially as set forth.

300,580. MANUFACTURE OF PAVING-BLOCKS FROM FURNACE-SLAG, &c. CHARLES JAMES DOBBS, Middlesbrough, County of York, England. Filed Jan. 23, 1884. (No model.) Patented in England Aug. 9, 1883, No. 3,870, and in Belgium Jan. 3, 1884.



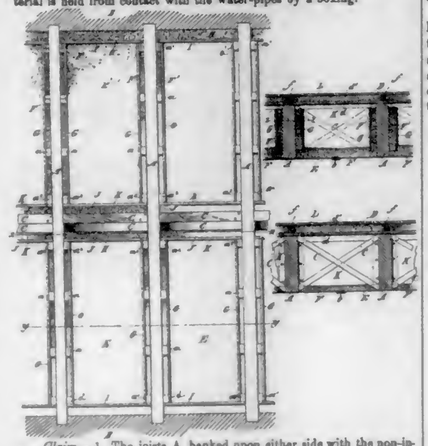
Claim.—1. The within-described method of manufacturing paving-blocks from furnace-slag, the same consisting in running the slag into metallic molds and letting it "set" therein, then, and while the slag blocks still retain their initial heat, transferring them into a kiln or chamber of proper dimensions and inclosing them therein, whereby the initial heat contained within the slag blocks without the aid of extraneously-applied heat will anneal the blocks, substantially as set forth.

2. In an annealing-kiln, the combination of a series of chambers located side by side and communicating with each other through suitable passages, whereby the heat evolved from the slag blocks in one chamber will pass into the communicating-chamber to heat the same, substantially as set forth.

3. A kiln for annealing slag blocks, composed of a series of chambers located side by side and communicating with each other through suitable passages and mounted upon wheels, substantially as and for the purpose set forth.

300,581. FIRE-PROOF BUILDING. WILLIAM H. DOLMAN, Brunswick, Me. Filed Feb. 15, 1884. (No model.)

Brief.—Non-inflammable material is laid over a metallic ceiling, and the joists and bridging are banked with said material held in place by boards raised slightly above the ceiling. The non-inflammable material is held from contact with the water-pipes by a boxing.



Claim.—1. The joists A, banked upon either side with the non-inflammable material F', held in place by the boards G, substantially as described.

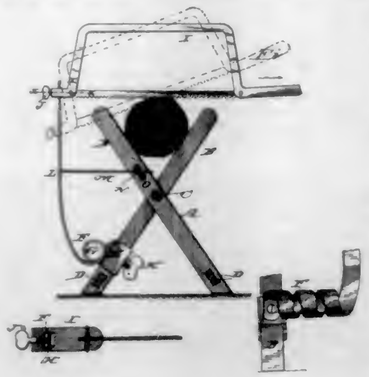
2. The joists A, banked at their ends by the non-inflammable material H, held against the walls B by the boards I, substantially as and for the purposes set forth.

3. The bridging or braces C of the joists banked with non-inflammable material J, held in place by the boards K, substantially as and for the purposes set forth.

4. The horizontal body of non-inflammable material placed upon the metallic ceiling E, in combination with vertical bodies of non-inflammable material banking the joists, bridging, &c., and held in place by boards held slightly above the ceiling E, whereby the vertical and horizontal bodies of non-inflammable material are made to join, substantially as described.

5. The water-pipe M, having the boxing N placed around it where it passes through the ceiling E and floor D to prevent water from coming in contact with the non-inflammable material, substantially as described.

300,582. DRAG-SAW. CUNNINGHAM DRAKE, Philadelphia, Pa. Filed May 15, 1884. (No model.)

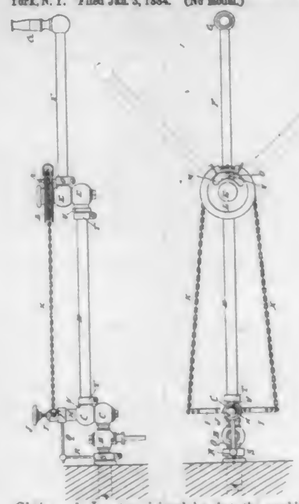


Claim.—1. In a drag-saw, the combination, with a saw-horse, comprising the pivoted frames B B, of a sleeve adjustable upon one of the legs of the said frames, and a spring attached to the said sleeve and adapted to be connected adjustably with the front end of the saw-frame, substantially as set forth.

2. The combination of a saw-horse, a sleeve connected adjustably to one of the pivoted frames of the same, a spring secured to the said sleeve and coiled in front of the same, and a saw having a slot adapted to receive the free upper end of the spring, and a thumb-screw, whereby the said spring may be securely connected with the saw substantially as set forth.

3. As an improvement in drag-saws, the combination of a saw-horse comprising a pair of pivoted frames, a sleeve connected adjustably to one of the legs of one of the frames, a spring secured to the said sleeve and extending upwardly through a slot in the front end of the saw-frame, and a supplemental spring connected pivotally to the main spring, and extending through an opening in a brace connecting the legs of one of the pivoted frames, substantially as herein set forth.

300,583. GAS AND LAMP BRACKET. HENRY PHILIP DREW, New York, N. Y. Filed Jan. 3, 1884. (No model.)



Claim.—1. In a two-jointed bracket, the combination, with the joints C E, the perforated cap P, secured upon the upper pivot of the joint C to prevent its rotating thereon, and the adjustable cross-bar, of the chain K and the wheel L, substantially as herein shown and described.

2. In a two-jointed bracket, the combination, with the adjustable bar I, means for preventing its bearing from turning, and the chain K, of the wheel L, connected with the outer joint, and having the curved slot M, and the outer pipe F, provided with the pin N, substantially as herein shown and described.

3. In a two-jointed bracket, the combination, with the cap P, the joint C, and the pipe A, of the rods Q R and the band or clip S, substantially as herein shown and described, whereby the said joint will be strengthened against the pull of the chain and the weight of the bracket, as set forth.

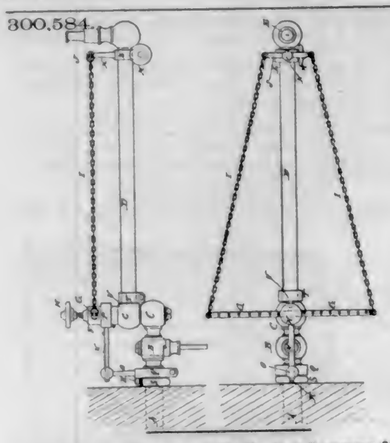
4. In a two-jointed bracket, the combination, with the pipe D and the joints C E, of the clips T, having toes U, substantially as herein shown and described, whereby the said pipe will be prevented from turning, as set forth.

300,584. GAS AND LAMP BRACKET. HENRY PHILIP DREW, New York, N. Y. Filed Jan. 3, 1884. (No model.)

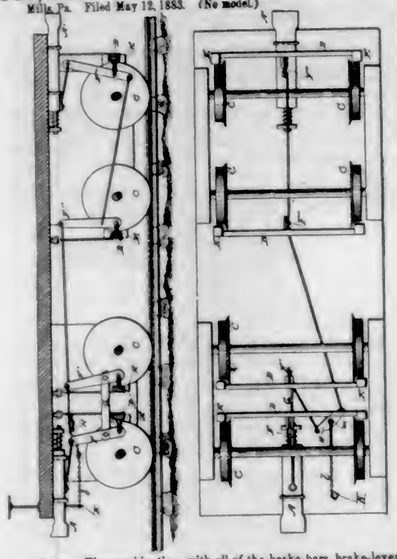
Claim.—1. In a gas or lamp bracket, the combination, with the joint C, pipe D, and perforated cap P, secured upon the upper pivot of said joint to prevent its rotating thereon, of the adjustable cross-bar G, the post K, adjustably secured on the pipe D, and the chains I, connected to the said cross-bar and post, substantially as herein shown and described.

2. In a one-jointed gas or lamp bracket, the combination, with the joint C, the post F, the cap P, the rod O, the toe R, and pipe D, of the adjustable cross-bar G, the two chains I, and the cross-bar J, post K, and clip L M, substantially as herein shown and described, whereby the pipe D can be held rigid or allowed to have any desired amount of swing in either direction, as set forth.

300,584.

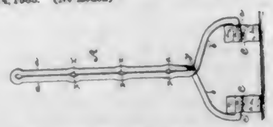


300,585. AUTOMATIC CAR-BRAKE. ENOCH FARNSWORTH, Smith's Mills, Pa. Filed May 12, 1883. (No model.)



Claim.—The combination, with all of the brake-bars, brake-levers, and both sliding bumpers of a car, and an operating-stem near one end of the car, of a governor-lever in connection with all of the brake-levers of the car, and a chain connecting said governor-lever through its fulcrum-point to the operating-stem, substantially as specified.

300,586. FENCE-POST. JOHN C. FIERO, Mills Centre, N. Y. Filed Nov. 14, 1883. (No model.)

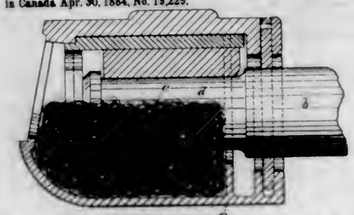


Claim.—1. The wrought-iron fence-post composed of a single rod doubled or bent upon itself to form its body portion, the two halves *a a* of which lie close together and are crimped at intervals to form openings *z*, for receiving and holding the fence-wires, substantially as shown and described.

2. The fence-post formed of an iron rod bent double and brought close together to form the body thereof, and having lateral legs or braces that stand in diagonal relation to the body, as shown and described.

3. The combination of the following elements: the fence-wires B, the post A, formed of the doubled rod, whose end portions, *b b*, have abutting shoulders *y*, and are thence bent outward and stand in diagonal relations to said wires and the faces of the post, and the pedestals C C, which are also placed in the diagonal position shown and described, for the purpose specified.

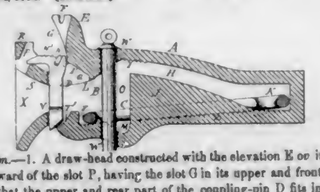
300,587. CAR-AXLE LUBRICATOR. SAMUEL A. FLOWER and PHILIP REES, Jersey City, N. J. Filed Apr. 17, 1884. (No specimens.) Patented in Canada Apr. 30, 1884, No. 19,229.



Claim.—1. A fibrous packing for car-axle boxes, consisting of cocoanut or other resilient fiber and jute or equivalent absorbent fiber in combination, substantially as described.

2. A fibrous packing for car-axle boxes, consisting of combined cocoanut or other resilient fiber and jute fiber or other equivalent absorbent woody fiber chemically treated with caustic alkali for the removal of the natural resinous and gummy matters of the fibers, substantially as described.

300,588. CAR-COUPLING. GEO. FORBES, New York, N. Y. Filed Apr. 14, 1884. (No model.)



Claim.—1. A draw-head constructed with the elevation E on its top part rearward of the slot P, having the slot G in its upper and front part made so that the upper and rear part of the coupling-pin D fits into it, and the slot F in the top part of the slot G for the ring N in the top part of the coupling-pin D to rest in, whereby the coupling-pin D is held up and out of the chamber X, substantially as shown and described.

2. The coupling-pin D, constructed with the depression N', by which the ring N becomes flush with the upper part of the coupling-pin D, substantially as described.

3. The combination, with a draw-head, of the elevation E, the slot G, the slot F, the coupling-pin D, the ring N, and the depression N', for the purpose described and set forth.

4. The depressions M and L in the bottom and the top of the chamber X, and similar depressions in the sides of the chamber X, to allow the lateral motion or play of the rear end of the stationary link C at K, as and for the purpose described and set forth.

5. The draw-head A, constructed with the two lateral slots W and W', which are widened laterally, whereby the stationary pin B is given a lateral but not a longitudinal play, as and for the purpose set forth.

6. The stationary link C, with the widened part K, as and for the purpose described and set forth.

7. The combination, in the chamber X, of the stay J and the stay I, with the stationary link C, whereby the stationary link C is held out of its draw-head, for the purpose described.

8. The combination, with the draw-head, of the link C, the pin B, the slots W and W', depressions in the sides of the chamber X similar to the depressions L and M in the top and bottom of the chamber X, for the purpose of giving sufficient play or room for the rear end of the link C at K to move laterally when in the space O, the stay J, the stays I, and the beveled or widened front part of the chamber X, as and for the purpose described and set forth.

9. The combination, with a draw-head, of the depressions L and M, the link C, the pin B, the stay J, the stays I, and the beveled or widened front part of the chamber X, as and for the purpose described and set forth.

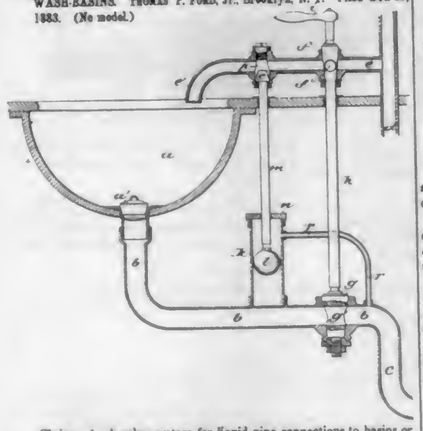
10. The combination, with a draw-head, of the depressions L and M in the top and bottom of the chamber X, depressions in the sides of the chamber X similar to the depressions L and M in the top and bot-

tom of the chamber X, for the purpose of giving sufficient play or room for the rear end of the link C at K to move laterally when in the space O, the pin B, working in the slots W and W' in the top and bottom of the draw-head, the stay J, the stays I, the slots W and W', the link C, and the chamber X, having its front part beveled or widened, as and for the purpose described and set forth.

11. The combination, with a draw-head, of the elevation J and that part of the depression L which forms the passage H, as and for the purpose described and set forth.

12. The combination, with a draw-head, of the groove T' and the lower end of the beveled edge of the coupling-pin D, for the purpose of taking the sudden strain from the upper end of the coupling-pin D, by that means throwing its upper end frontward and around the block S, when the pin is struck by an entering link from another draw-head, as and for the purpose described and set forth.

300,589. COMPOUND AND SELF-ACTING PLUG-VALVE FOR WASH-BASINS. THOMAS P. FORD, Jr., Brooklyn, N. Y. Filed Dec. 18, 1883. (No model.)



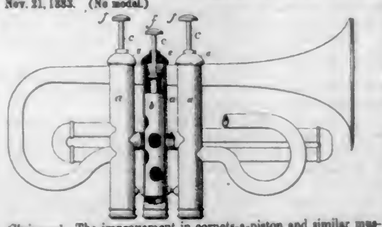
Claim.—1. A valve system for liquid pipe-connections to basins or other vessels, consisting of rigidly-connected valves *f g*, working in the supply and discharge pipes *a b*, respectively, and arranged to simultaneously close the inlet and open the discharge, or vice versa, and a self-acting float-valve, *o*, adapted to seat itself by liquid-pressure, and fitted in the pipe *a* between the valve *f* and the inlet discharge-nozzle, substantially as shown and described.

2. The combination, with the supply and discharge pipes *a b*, of the valves *f g*, apertured at *f' g'* at right angles with each other, the float-chamber *k*, and the float-valve *l m o*, said float-chamber and float *k l* and the valve *g* being located in front of the trap *c*, to be sealed thereby, substantially as shown and described.

3. The combination, with the pipe *b*, its float-chamber *k*, and float *l*, of the relief-pipe *r*, substantially as shown and described.

4. The combination, with the pipe *b* and the float-chamber *k* and float *l*, of the relief-pipe *r*, discharging into pipe *b* in front of the trap *c*, to be sealed by the trap, substantially as shown and described.

300,590. CORNET. FRANK F. FRANCESCHINI, Philadelphia, Pa. Filed Nov. 21, 1883. (No model.)



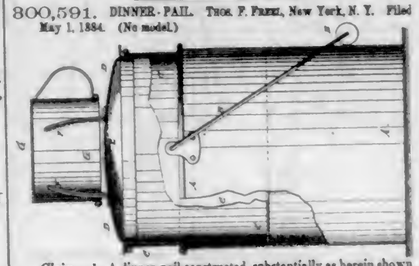
Claim.—1. The improvement in cornets-a-piston and similar musical instruments, consisting in the combination, with the valve, piston-rod, and case, of the lateral elastic band or bands, the upper end of which is secured to a fixed support and the lower end thereof to the piston-rod, all constructed and adapted to operate substantially as and for the purpose set forth.

2. The combination of the retracting-spring, the piston-rod and attached valve, the case, and the plate *d*, said rod and plate being respectively provided with means, substantially as shown, for securing said spring, all constructed and adapted to operate substantially as and for the purpose stated.

3. The combination of case *a*, valve *b*, rod *c*, provided with hooks *h*, plate *d*, provided with studs *s*, the cap *f*, and springs *x*, substantially as and for the purpose described.

4. The combination of the piston-rod having the hooks *h* or their equivalent, and the longitudinal slot *i*, the case *a*, and the plate *d*, provided with the lug *g*, fitting into slot *i*, and with the studs *s*, adapted to fit into the notches on the top of case *a*, all constructed and adapted to be used substantially as and for the purpose specified.

300,591. DINNER-PAIL. THOS. P. FREEL, New York, N. Y. Filed May 1, 1884. (No model.)



Claim.—1. A dinner-pail constructed, substantially as herein shown and described, with perforations in the middle part of its cover and with curved cup-supporting wires attached to the said cover, as set forth.

2. In a dinner-pail, the combination, with the lunch-receptacle C, of the cover D, having perforations E, substantially as herein shown and described, whereby air can pass into and out of the said receptacle to keep the food fresh, as set forth.

3. In a dinner-pail, the combination, with the lunch-receptacle cover D, having perforations E, of the curved wires F, substantially as herein shown and described, whereby the cup can be carried without obstructing the passage of air through the said perforations, as set forth.

300,592. PROJECTILE FOR CARRYING EXPLOSIVE SHELLS. JOSEPH GARRICK, Michigan City, Ind. Filed Feb. 26, 1884. (No model.)



Claim.—1. The combination, with the barrel A, suitably charged, of the secondary projectile having body tightly fitting the bore thereof down to and in contact with the charge, and constructed with the enlarged head having the chamber F for the reception of a shell, the explosive shell fitting therein having attached to its forward end a fulminating-cap, and an elastic cushion located in the chamber intermediate of the inner end of said shell, substantially as and for the purpose described.

2. The combination, with the secondary projectile constructed with the body B, having the enlarged front end, in which is formed a chamber, of the shell O, filled with nitro-glycerine or other explosive, and an elastic cushion located in said chamber intermediate of the shell, said cushion having its center slightly concave or hollowed out, substantially as and for the purpose described.

300,593. CONCRETE PAVEMENT. FREDRICK GEIS, Buffalo, N. Y. Filed Feb. 26, 1884. (No specimens.)

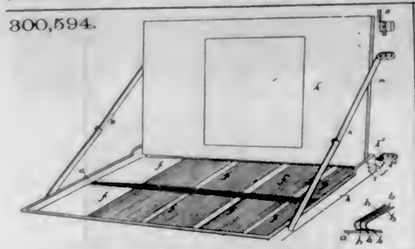
Claim.—The compound for paving-blocks herein described, consisting of common clay, fire-clay, mixed with pulverized glass, salt, stone, slate, and coal cinders and ashes, substantially in and about the proportions herein described, the whole made plastic with lime-water, pressed into blocks, dried, and burned, as set forth.

300,594. LETTER-FILE. WILLARD H. GILMAN, Boston, Mass., assignor to the Challenge Letter File Company, Concord, N. H. Filed Aug. 13, 1883. (No model.)

Claim.—1. A letter-file composed of a base extending across the pockets, and superposed leaves of substantially uniform width secured at their inner edges to said base at points successively farther from a given side thereof, so as to form a series of overlapping pockets, substantially as described.

2. A letter-file composed of a flat base and a series of single leaves or sheets of substantially uniform width, each having a portion, *b'*, pasted at its under side to the base, and bent over to form a pocket, as set forth.

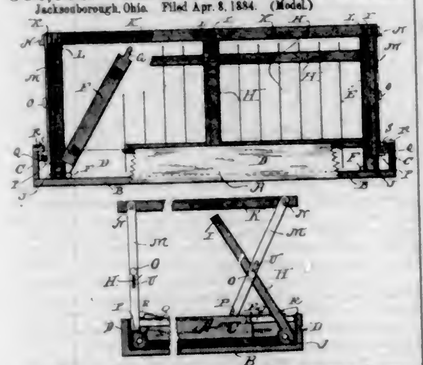
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3. The combination of a box or case, one or more files constructed substantially as described, inclosed in said box, a cover adapted to enter the box and bear on the files therein, means as specified for pivoting the inner edge of said cover at different heights from the bottom of the box, and means as specified for securing the swinging edge of the cover to the box at different heights from the bottom thereof, as set forth.

4. The combination of a box or case having vertical series of orifices *j* near its back, and a vertical notched plate, *p*, at its point, one or more files inclosed in said box, a cover adapted to enter the box, and provided with removable pivots *i*, adapted to enter the orifices *j*, and with a catch, *g*, adapted to engage with either of the notches of the plate *p*, as set forth.

300,595. FOLDING POULTRY-COOP. FREDERICK E. GOLDSMITH, Jacksonborough, Ohio. Filed Apr. 8, 1884. (Model.)



Claim.—1. The combination of tray A, hinged coop-ends E, hinged coop-sides H, mortised coop-top K, pivoted tie-bars M, and locking-springs Q, substantially as and for the purpose set forth.

2. The combination, with the elements of claim 1, of the hook-springs R, arranged to engage the locking-springs Q, substantially as and for the purpose set forth.

300,596. REFRIGERATOR-CAR. HENRY CARR GOODELL, Atchison, Kans. Filed Apr. 21, 1883. (No model.)

Claim.—1. The combination, in a refrigerator-car, of the outer wall, *a*, intermediate wall, *d*, forming an air-chamber, the inner walls of matched boards, suitable linings for said inner wall and wall *d*, and non-conducting filling between said walls, substantially as described.

2. The combination, with the retaining-walls of a car, of a filling of lamp-black mixed with mica, substantially as described.

3. In a refrigerator-car, an ice-box separated into longitudinal compartments by walls *n n*, with the intermediate air-passage, and with floors inclined downward from the center to the sides, as described.

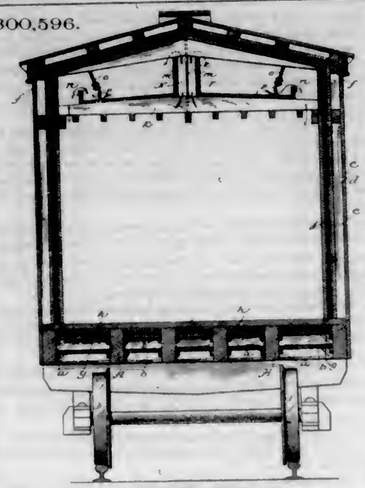
4. In a refrigerator-car, an ice-box having its bottom sloping downward from center to the sides, the central air-passage, and the outer walls, *n n*, and depending flanges *o o*.

5. In combination with the box having downwardly-sloping floors from the center to the sides, the walls *r*, and the depending flanges *o o*, and the prongs supporting the rods, substantially as described.

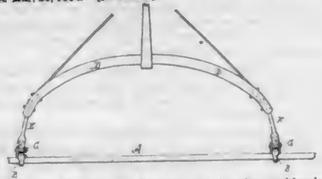
6. The combination, in a refrigerator-car, of double walls with suitable spaces between, a cloth or equivalent lining for said walls, and the filling of lamp-black, or mixture of lamp-black with other material, substantially as described.

7. In a refrigerator-car, an ice-box located in the top of the car, said ice-box being divided by two walls, *m m*, forming an air-passage which opens into the car below and the box above, said box having also openings in its outer sides for the downflow of the cooled air, substantially as described.

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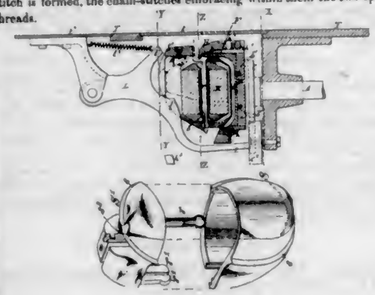
300,597. THILL-COUPLING. JOHN ADAMS GREEN, Waltham, Mass. Filed Mar. 20, 1884. (No model.)



Claim.—In adjustable couplings for vehicles, the combination, with the clip B, the adjustable piece E, and their bolts C *d*, of the reversible block G, substantially as described.

300,598. SEWING-MACHINE. HENRY GRELLIER, Brixton, County of Surrey, England. Filed Nov. 7, 1883. (No model.) Patented in England Aug. 28, 1883, No. 4,159.

Brief.—The machine is designed to make lock-stitches, employing an ordinary reel or spool for the under thread, or to make several kinds of compound lock and chain stitches, or to make chain-stitches without an under thread. In the latter case the spool and its thread in the stationary bobbin-case are dispensed with, and a stationary catch-hook is fixed to the under side of the slide in the bed-plate, and a projecting ridge provided on the rounded face of the rotating hook-shell serves to keep the thread up on the catch-hook until said ridge has passed and the needle descends. This catch-hook may be located on the upper part of the spool-case instead of being fixed to the slide. The provision of a back hook on the hook-shell assists in producing a twisted chain-stitch or cable-stitch. By using the catch-hook with the spool and its thread in the bobbin-case a combination of lock-stitch and chain-stitch is produced. By employing the catch-hook attached to the upper part of the spool-case and two spools within the spool-case a compound stitch is formed, the chain-stitches embracing within them the two spool-threads.



Claim.—1. In a sewing-machine, the combination of a revolving hook having an inwardly-turned outer edge, a stationary spool-case having an equatorial rim adapted to be engaged by the inwardly-turned edge of the hook and provided with recesses, a lever having horns adapted to enter said recesses, and means for operating said lever to bring said horns alternately into engagement with said spool-case, substantially as described.

2. The combination of the disk B, having a projecting flange, F, the annular hook-shell H, hinged to the said disk, and provided with a hook, K, a spool-case having an equatorial rim, *s*, and means adapted to permit of the passage of loops of needle-thread, for preventing the rotation of said spool-case with said hook-shell and hook, substantially as described.

3. The combination of a revolving hook having an inwardly-turned edge, a spool-case provided with an equatorial rim, *s*, adapted to engage said inwardly-turned edge, said rim having an undercut recess at one part to form a hook, s^2, and means for preventing the rotation of said spool-case with said hook, substantially as described.

4. The combination of the revolving hook, the stationary spool-case having recesses, the shaft A, the cam C, the lever C^2, having rollers *c* and c', and counter-weight c^3, the lever L, having horns *l* and *l'*, and the spring l^2, substantially as described.

5. The combination, with the disk B and the revolving hook-shell and hook operated thereby, of the stationary spool-case having an equatorial rim, *s*, and the shell *b*, carried by said disk and adjustable relatively to said rim, substantially as described.

6. The combination of the disk B, the hook-shell H, hinged thereto, and a spring-catch for holding said hook-shell in its operative position, substantially as described.

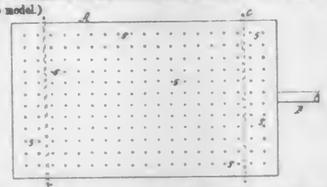
7. The combination, with a revolving hook and a stationary spool-case having a hook, s^2, for dividing the loops of needle-thread, of a stationary catch-hook adapted to co-operate with said revolving hook and spool-case to produce chain-stitches, substantially as described.

8. The combination, with the revolving hook and stationary spool-case, of the slide *t*, the catch-hook D, secured thereto, and provided with the horizontal lip D', substantially as described.

9. The combination, with the revolving hook-shell H, having the hook K and the projecting ridge K^3, of a stationary spool-case, and a catch-hook adapted to co-operate with the rotating hook to produce chain-stitches, substantially as described.

10. The combination, with the revolving hook-shell H, having the hooks K and K^2 and projecting ridge K^3, of a stationary spool-case, and a stationary catch-hook, substantially as described.

300,599. PROCESS OF AND APPARATUS FOR CRYSTALLIZING TIN. CHARLES R. H. M. HABENICHT, New York, N. Y. Filed Dec. 29, 1883. (No model.)



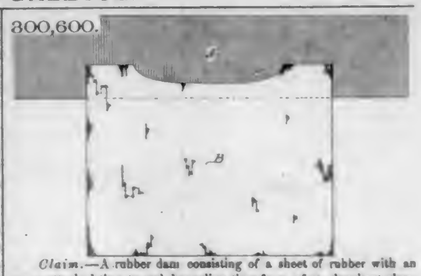
Claim.—1. The process of crystallizing tin plates, which consists in heating and cooling the plates, subjecting them to the action of an aqueous solution of caustic soda to remove the oxide coating, and finally developing the crystallization by subjecting the plates to the action of an acid, substantially as described.

2. The within-described process of crystallizing tin plates, which consists in first heating the plates to melt the tin, then cooling the plates with water to produce the crystallization, then treating the plates with an aqueous solution of caustic soda to remove the oxide coating, and finally treating the plates with nitro-muriatic acid to develop the crystallization.

3. An apparatus for heating tin plates in the process of crystallization, consisting of a gas-receiving chamber having a plane upper surface perforated throughout with holes, a portion of which, adjacent to the edges of the chamber, are larger than the other or remaining holes, substantially as shown and described, for the purpose set forth.

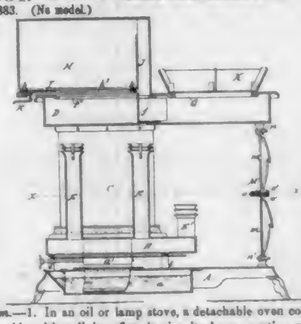
4. An apparatus for cooling tin plates in the process of crystallization, consisting of a water-distributing chamber and of a series of spouts projecting upwardly from the top of such chamber in a fixed relation to each other, and with their orifices in the same horizontal plane, said spouts serving as supports for plates to be crystallized, substantially as shown and described, for the purpose set forth.

300,600. DENTAL RUBBER DAM. LOUIS M. HALSEY, Brooklyn, N. Y. Filed Feb. 21, 1884. (No model.)



Claim.—A rubber dam consisting of a sheet of rubber with an apron attached thereto and depending therefrom, of an absorbent character to take up and absorb the fluids which may flow from parts in or about the parts being treated, all as and for the purposes set forth.

300,601. OIL-STOVE. CHARLES T. HAM, Rochester, N. Y. Filed Dec. 10, 1883. (No model.)



Claim.—1. In an oil or lamp stove, a detachable oven constructed at its rear side with a diving-flue, having its lower portion projecting downwardly and rearwardly beyond the oven, and adapted to close the passage in the oil-stove leading from the flame-chamber to the outlet for the products of combustion, and to engage under the top plate of the stove, thereby securing the oven on the stove, substantially as set forth.

2. In an oil or lamp stove, a detachable oven adapted to receive bottom plates having openings of different shapes, whereby the oven can be placed over the elongated opening in the front of the stove-top or over the circular opening in the rear of the same, and its bottom opening made to coincide with either, substantially as set forth.

3. In an oil or lamp stove, a detachable oven provided with a catch, K, adapted to engage under the top of the oven, substantially as set forth.

4. The combination, with the base of the stove and a flame-chamber provided with a top extending rearwardly over the base and resting loosely on the base, so as to be capable of being tilted backward to expose the wicks, of a toggle-joint supporting in its extended upright position the overhanging rear portion of the top on the base, and permitting the rear portion of the top to be lowered and the front portion of the flame-chamber to be raised upon being folded together, substantially as set forth.

5. The combination, with the base A and a flame-chamber resting loosely on the base, and provided with a rearwardly-overhanging top, D, of the toggle-links *m*, connecting the overhanging rear portion of the top with the base, and provided with square contact-faces *o'*, which close against each other and support the top in a horizontal position when the links *m* are arranged perpendicularly, substantially as set forth.

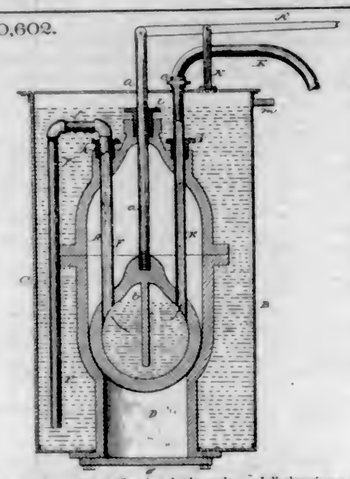
300,602. WATER-COOLED VALVE. JOHN HANLON, New York, N. Y. Filed Mar. 3, 1884. (No model.)

Claim.—1. In combination with a conduit, a hollow water-cooled slide-valve having a partition provided with an opening or passage, and the inlet and outlet pipes for the cooling-fluid, connected on each side of such partition, as described, for securing a better circulation of the cooling-fluid.

2. The hollow valve having a pendent partition, *b*, provided with a passage near or at its bottom, in combination with the inlet and outlet water-pipes connecting on each side of such partition, as set forth, and passing through stuffing-boxes in the casing, whereby they may be moved up and down with the valve.

3. The hollow valve having a partition provided with an opening, in combination with the inlet-pipe passing through a stuffing-box in the valve-casing and connecting with a flexible supply-pipe, and the outlet-

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pipe passing through a stuffing-box in the casing and discharging on the outside of such casing, said pipes connecting with the water-space of the valve, as set forth, whereby a complete and uniform circulation of water through the valve is secured.

4. The hollow sliding valve, in combination with its casing, an inlet water-pipe adapted to discharge water tangentially against the inner curved surface of the valve, and connecting with a flexible supply-pipe, and an outlet water-pipe passing through a stuffing-box in the casing, and discharging outside thereof, as and for the purpose described.

5. A hollow sliding valve and its casing, in combination with the inlet-pipe connected with a flexible supply-pipe, an outlet-pipe discharging outside of the casing, said pipes connecting with the water-space of the valve, as set forth, and a water-tank surrounding the valve-casing, all constructed and arranged as described.

6. In combination with a pipe and valve, a dust-chamber opening in proximity to the valve-seat, as set forth, for receiving deposits of soot and ashes, and thereby preventing clogging of the valve and its seat, as described.

7. The combination of a hollow sliding valve and its casing with an inlet-pipe, a flexible supply-pipe connected with its outer end, an outlet-pipe passing through the casing and extending down below the valve-seat and discharging into a water-tank, and the water-tank surrounding the valve-casing and pipe-section containing the valve, for the purpose described.

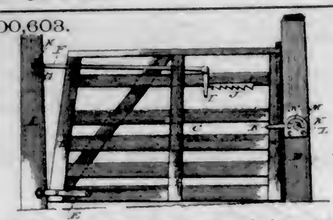
8. In combination with a pipe and valve, a dust-chamber leading from the valve-seat and extending outside of the pipe, as and for the purpose described, and having at its outer end a removable tight-fitting lid, for the purpose described.

9. A pipe-section for a valve having a closed valve-casing extending in one direction, and a dust-chamber opening at the valve-seat and extending in another direction, and lying outside of the conduit, as set forth, and having means for closing its outer end, for the purpose described.

10. The combination of the pipe or conduit, a valve-casing, a dust-chamber opening at the valve-seat, lying outside the conduit, a slide-valve, and a surrounding water tank or jacket, for the purpose described.

11. The combination, in a water-cooled valve, of the casing of a valve containing a circulation-chamber, a water-delivery pipe connecting therewith, through which water is directly forced tangentially against the inner curved surface of the valve, a discharge-pipe connecting with said chamber and delivering into the water-chamber surrounding the valve-casing, and an escape-pipe connected with said water-chamber, whereby a continued forced circulation is maintained through the valve and the cooling-chamber surrounding the casing, substantially as described.

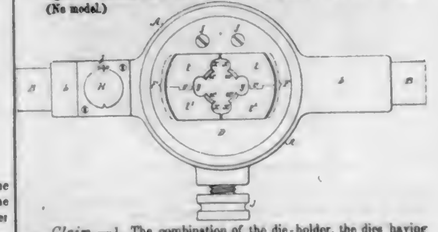
300,603. GATE. BENJAMIN F. HARRELL, New Marion, Ind. Filed Aug. 29, 1883. (No model.)



Claim.—1. The combination of the hinge-post A, having pintle H, gate C, having slanting or inclined heel D, hinge E, and rack-bar J, hinge-rod F G, and hinged yoke or stirrup I, substantially as and for the purpose shown and set forth.

2. The combination of the hinge-post A, having pintle H, gate C, having slanting or inclined heel D, hinge E, and rack-bar J, hinge-rod F G, having the hinged yoke or stirrup I, and latch-post B, having the drop-latch K, the whole constructed and combined to operate substantially as and for the purpose shown and set forth.

300,604. DIE-STOCK. WILLIAM C. HARTMANN, Philadelphia, Pa., assignor of one-half to John J. Mowrey, same place. Filed Oct. 11, 1883. (No model.)



Claim.—1. The combination of the die-holder, the dies having grooves *c*, the retaining-bar *d*, adapted to said grooves, and the taper screws *f*, for adjusting said bar, as set forth.

2. The combination of the outer ring or casing, A, the die-holder having teeth A, and the spring-pawls G G', adapted to act upon said teeth, and sliding in a projection of the ring, with means, substantially as described, for retaining either of said pawls in a retracted position, as set forth.

3. The combination of the ring or casing A, the die-holder having teeth A, the spring-pawls G G', having grooves *m*, and the knob H, having a pin, *k*, adapted to said grooves, as set forth.

4. The combination of the ring or casing A, the die-holder having teeth A, the spring-pawls G G', having grooves *m*, the knob H, having a pin, *k*, and means for retaining said knob in the positions to which it is adjusted, as set forth.

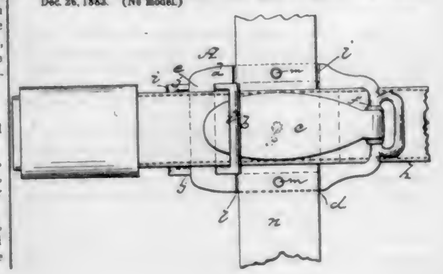
5. The combination of the ring or casing A, the die-holder having teeth A, and the spring-pawls G G', of semicircular cross-section, whereby they are adapted to a circular opening in the casing, as set forth.

6. The within-described cutting-die, made in halves bolted together, as described, and having cutting-bits *w*, opposite recesses *x*, and central recesses, *y*, the latter being bounded by true segments extending to the points of the teeth of the bits *w*, as set forth.

7. The within-described cutting-die, made in halves bolted together, and having a tongue-and-groove connection, said die having cutting-bits *w*, opposite recesses *x*, and central recesses, *y*, the latter being bounded by true segments which extend to the points of the teeth forming the bits *w*, as set forth.

8. The mode described of making dies for die-stocks, said mode consisting in first bolting together two blocks, W W', forming a central threaded opening therein, transversely severing the compound block on a line passing centrally through the opening, then separating the parts W W', and finally milling recesses *x* and *y* in each of the segments thus produced, so as to form thereon a cutting-bit, *w*, as set forth.

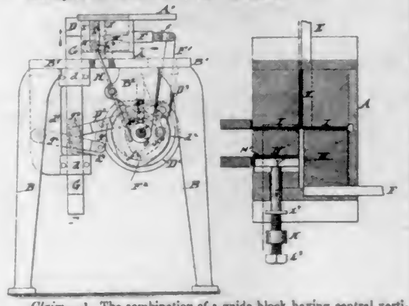
300,605. TRACE-BUCKLE. PHILIP HAYES, Waynetown, Ind. Filed Dec. 26, 1883. (No model.)



Claim.—1. In a trace-buckle, the buckle-frame *a*, having its side bars depressed as shown, and pointed tongues *m m*, for attaching the same to the back-band, as and for the purpose set forth.

2. The combination, in a trace-buckle, of the link *b*, hinge-plate *c*, having the tongue *g*, and the buckle-frame *a*, having tongues *m m* on the side bars *d d* in the center of the depressions *l l*, made therein, as shown and described.

300,606. PAPER-FOLDING MACHINE. FREDERICK C. HELLMUTH, Brooklyn, N. Y. Filed Oct. 27, 1883. (No model.)



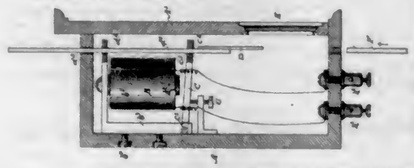
Claim.—1. The combination of a guide-block having central vertical transverse and longitudinal guide-slits, and a horizontal and a vertical guide-slit at one side of the central vertical transverse guide-slit, a vertically-reciprocating folder, a laterally-reciprocating folder, a horizontally-reciprocating folder, a second smaller reciprocating folder, a reciprocating plunger adapted to press the folded sheet together, and mechanism, substantially as described, operated from a driving-shaft, whereby the folders and plunger are successively actuated, so as to fold one sheet at each rotation of the driving-shaft, substantially as set forth.

2. The combination of a guide-block, A, having a vertical guide-slit extending through its entire height and one-half of its width, a vertical folder, IV, a vertically-guided arm, G, a pivoted lever, D^2, having an anti-friction roller, d^3, a rotating cam, D′, having a groove, d^2, and links $g' g^2 g^3$, whereby the lever D^2 is connected to the vertical arm G, substantially as set forth.

3. The combination of a guide-block, A, having a cheek, H′, a horizontally-movable and spring-actuated plunger, V, having a headed shank, *h*, a fulcrumed lever, H, having a set-screw, h^2, at its upper end, and a rotating cam, F^2, having a projection, h^4, engaging the lower end of the lever H, substantially as set forth.

4. The combination of a guide-block having vertical and longitudinal guide-slits provided with abutments at one end, vertically and horizontally reciprocating folders, a reciprocating plunger to press the folded sheet together, means, substantially as described, whereby said folders and plunger are actuated, and a supporting-table having a slit below the last vertically-reciprocating folder to admit the dropping of the folded sheet out of the guide-block, substantially as set forth.

300,607. ANNUNCIATOR. ROBERT JOSEPHUS HEWETT, St. Louis, Mo. Filed Mar. 5, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of an electro-magnet, its armature and armature-lever, an annunciator-drop, a supporting-rod for the same, and a clutch for said rod carried by said armature-lever, and consisting of an extension of the armature or its lever, having formed therein an aperture of greater diameter than said rod.

2. The combination, substantially as hereinbefore set forth, of an annunciator-drop, a rod for supporting the same in its normal position, an electro-magnet, and an armature applied to said electro-magnet, and having an aperture formed in one extremity, through which said rod extends, the sides of which aperture grasp said rod when said armature is remote from said electro-magnet.

3. The combination, substantially as hereinbefore set forth, of an electro-magnet, an annunciator-drop, a rod attached to the same, and an electro-magnetic clutch consisting of an opening formed in said armature, which clutch serves to grasp said rod when said electro-magnet is not vitalized, and to release the same when vitalized.

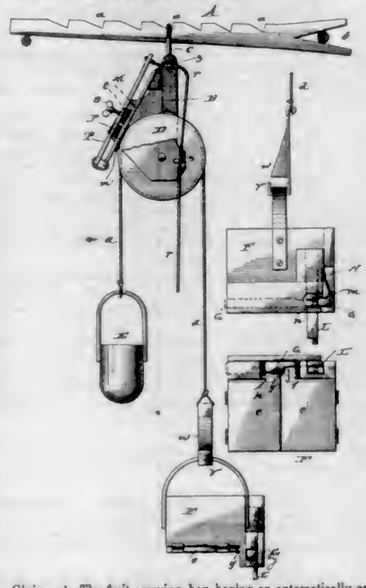
4. The combination, substantially as hereinbefore set forth, of an annunciator-drop, a rod attached thereto, an electro-magnet, and an armature applied thereto, which armature is pivoted at one extremity, and has an aperture formed in its remaining extremity for receiving and serving as a clutch for said rod, substantially as described.

5. The combination, substantially as hereinbefore set forth, of an electro-magnet, a clutch actuated by said electro-magnet, an annunciator-drop, and a rod carrying the same, which rod is of greater size at the point grasped by said clutch than through the other portions which are designed to pass through said clutch.

6. The combination, substantially as hereinbefore set forth, of an electro-magnet, an armature having an aperture formed therein, and a movable rod extending through said aperture and designed to be normally held in a given position thereby, which rod is of greater size at the point normally held by said apertare than through the other portions which are designed to pass therethrough.

7. The combination, substantially as hereinbefore set forth, of a movable rod of greater size at one point in its length than at other points, an electro-magnet, its armature, which armature serves as a clutch for engaging said rod, and a stop for limiting the movement of said armature, which stop is normally out of contact with said armature.

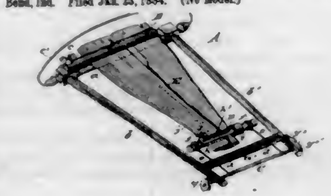
300,608. FRUIT-HARVESTING DEVICE. AMOS HIBBS, Sewellsville, Ohio. Filed Jan. 29, 1884. (No model.)



Claim.—1. The fruit-carrying box having an automatically-opening bottom and connected by a cord to a counterbalancing-weight, in combination with a hanger having a pulley and adjustable friction-brake, substantially as specified.

2. The hanger described, having a grooved pulley-spring friction-brake adapted to operate on the pulley-cord connecting the fruit-box and counterbalancing-weight, set-screw S, and releasing-lever, substantially as specified.

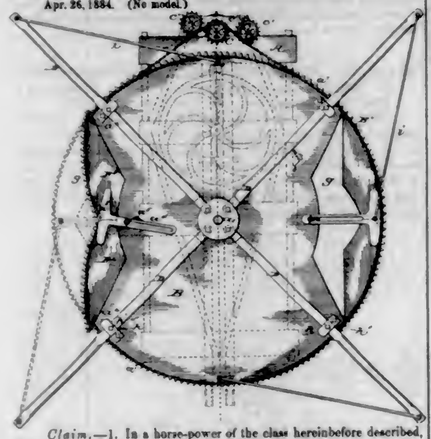
300,609. PANTALOON-STRETCHER. ZACHARIAH M. JOHNSON, South Bend, Ind. Filed Jan. 23, 1884. (No model.)



Claim.—1. The frame A, having the hinged clamp B and slotted piece *a′*, in combination with the roller C, the pawl and ratchet, and the clamp D, substantially as set forth.

2. The combination, with the frame A, having clamp B, of the roller C, clamp D, elastic rings *f*, and the cords *e*, substantially as and for the purpose set forth.

300,610. HORSE-POWER. DANIEL KAUFMAN, Bloomington, Ill. Filed Apr. 26, 1884. (No model.)



Claim.—1. In a horse-power of the class hereinbefore described, the master-wheel B, provided with contractile segments B^2 B^2, and means, substantially as shown and described, for securing them in both their contracted and expanded positions, substantially as and for the purpose specified.

2. In a horse-power of the class hereinbefore described, the master-wheel B, provided with contractile segments B^2 B^2, pivoted at their outer ends to the master-wheel and at their adjacent ends to the plate a^3, said plate being removably secured to the master-wheel, substantially as described.

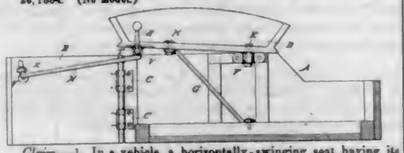
3. In a horse-power, the master-wheel B, provided with contractile segments B^2 B^2, and means, substantially as shown and described, for securing them in both their contracted and expanded positions, in combination with the draft-levers D D, pivoted to the hub of the master-wheel and detachably secured to the periphery of the master-wheel, substantially as and for the purpose specified.

4. In combination with the master-wheel having contractile and pivoted segments B^2 B^2, the driving-shaft and intermediate gearing, a brake-wheel mounted upon the driving-shaft, and brake-shoes adapted to embrace the periphery of said brake-wheel and retard or stop the machinery at the will of the operator, substantially as shown and described.

5. The combination, with the master-wheel, the driving-shaft, and intermediate gearing, of the fly-wheel geared with the driving-shaft, the brake-wheel mounted upon said driving-shaft, brake-shoes pivoted in close proximity to said brake-wheel, and means, substantially as shown and described, under the control of the operator, for applying said brake-shoes to the periphery of the brake-wheel to stop or retard the machinery, substantially as specified.

6. The combination, with the master-wheel, the driving-shaft, and intermediate gearing, of the fly-wheel geared with the driving-shaft, and means, substantially as described, for automatically disconnecting the fly-wheel from the driving-shaft upon the machinery being stopped, for the purpose specified.

300,611. WAGON-SEAT. PHAON J. KERN, Frankfort, Ind. Filed Mar. 26, 1884. (No model.)

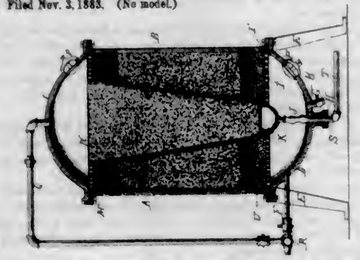


Claim.—1. In a vehicle, a horizontally-swinging seat having its pivot near one end, and an eccentric brace extending obliquely downward from its free end, and pivoted to the sill of the vehicle eccentrically with reference to the seat-pivot, substantially as specified.

2. In a vehicle, the combination, with a horizontal swinging seat and hinged gate, both pivoted on the same side of the vehicle, of the outer latch-handle having a bearing in the gate, the inner latch-handle having a bearing in the seat, and a connecting-rod pivoted to the gate-latch, and the inner handle connecting the seat and gate, substantially as specified.

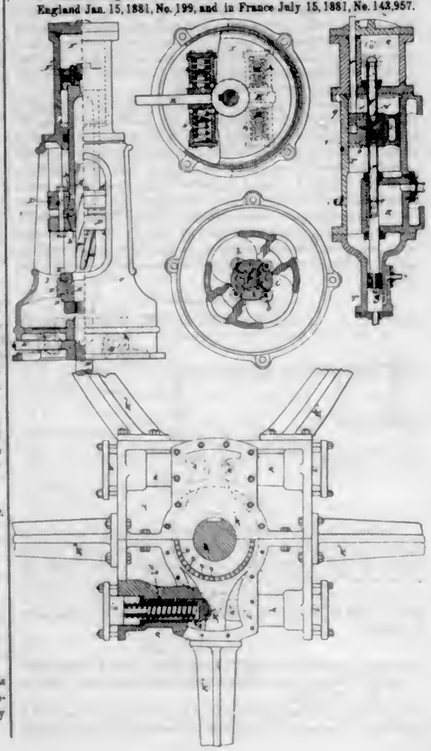
3. In a vehicle, the combination, with the swinging seat having an oblique eccentrically-pivoted brace and a hinged end-gate, of the inner latch-handle, the outer latch-handle, the latch, and the connecting-rod having angular pivot-lugs respectively connected to bearings on the latch and on the inner or seat handle, substantially as specified.

300,612. FILTER. ROBERT LIVINGSTON KEISTER, Philadelphia, Pa. Filed Nov. 3, 1883. (No model.)



Claim.—In a water-filter, the combination, with the outer casing having the convex top and concave bottom, the upper and lower plates, and the inlet-pipe, of the inner tapering pot having the perforated bottom plate and a connection at its lower end with the outlet-pipe and filtering material both within and around it, substantially as specified.

300,613. STEERING-GEAR FOR SHIPS. JOSEPH KNIGHT KILBOURN, Brixton, County of Surrey, and GEORGE FOSBRY, Stockton-on-Tees, County of Durham, England. Filed July 11, 1883. (No model.) Patented in England Jan. 15, 1881, No. 199, and in France July 15, 1881, No. 143,957.



Claim.—1. In a steering-gear in which the power is transmitted to the rudder by means of a screw or spiral bolt, the nut which turns the screw or spiral bolt, constructed in segments, substantially as and for the purpose hereinbefore described.

2. In a steering-gear in which the power is transmitted to the rudder by means of a screw or spiral bolt, the nut which turns the screw or spiral bolt, constructed in segments, with their external surfaces in the form of a double-truncated cone, combined with cross-heads fitted thereto, and clamping-bolts, substantially as and for the purposes hereinbefore described.

3. In a steering-gear in which the power is transmitted to the rudder by means of a rotating screw or spiral bolt, and in combination with said screw, anti-friction balls or their equivalents, arranged as herein set forth, for receiving the end-thrust in both directions, substantially as herein described.

4. In a steering-gear in which the power is transmitted to the rudder through a rotating screw or spiral bolt, one or more relief-springs interposed between said screw and the rudder, and anti-friction balls or their equivalents, upon which to suspend the tiller or its substitute, in order that it may be free to move and sensitive to the action of the said springs, substantially as hereinbefore described.

5. A steering gear operated by hydraulic or steam pressure applied to rotate a spiral bolt in line with the rudder-head, combined with relief-springs interposed between said rotating spiral bolt and said rudder-head, substantially as and for the purpose hereinbefore described.

6. In a hydraulic or steam steering-gear, the combination and arrangement, with the moving but non-rotating nut, the rotating spiral bolt actuated thereby, and the rudder, of the horizontal relief-springs interposed between the rotating bolt and the rudder-head, substantially as herein shown and described.

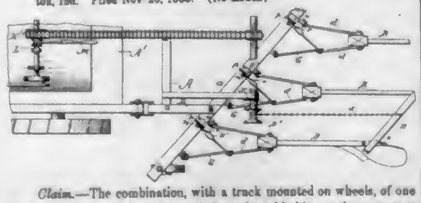
7. The steering-gear, rudder-head, and interposed springs H, combined with boxes A, to inclose said springs, attached to and moving with said rudder-head, whereby the springs always act against the tiller at the same or nearly the same angle, irrespective of the position of the rudder, substantially as and for the purpose hereinbefore described.

8. In a steering-gear, the rudder-head and actuating-piston F, a rack or racks and pinion, as herein set forth, shrouded to the pitch-line, and in combination therewith rollers or roller M, maintained in contact with the rack and shrouding.

9. In a steering-gear operated by steam or hydraulic pressure, in which the main valve is opened by hand and closed automatically, the combination, with the actuating-piston and cylinder, of the wheel-valve *m*, the rudder or main valve *l*, with its tubular spindles *p p'*, the pressure-chamber Q, the exhaust-chamber R, and a connection with said piston, substantially as hereinbefore described.

10. In a steering-gear operated by steam or hydraulic pressure, in which the main valve is opened by hand and closed automatically, the combination, with the wheel-valve, of the rudder or main valve, with its tubular spindles, the pressure and exhaust chambers, arranged as herein set forth, the piston S, connected to the rudder or main valve and working in the cylinder T, which is capable of being placed at one end in communication with the pressure and exhaust-passages, and at its other end in communication by a pipe containing liquid with the cylinder V, and the plunger W, connected to the main ram, the whole of the parts being constructed, arranged, and combined together so as to operate substantially as hereinbefore described, and illustrated in the accompanying drawings.

300,614. GANG-PLOW CANTING DEVICE. WILLIAM KIMMEL, Milton, Ind. Filed Nov. 26, 1883. (No model.)



Claim.—The combination, with a truck mounted on wheels, of one or more plows, each having two independent hitching-rods to connect it with said truck, a lever pivoted to said truck above one of said rods and connected therewith by a link, a toothed segment fixed concentric with said pivot, and a latch upon said lever, whereby said rod may be quickly raised or lowered, and then held to cant the plow, substantially as described.

300,615. DYNAMO-ELECTRIC MACHINE. JOHN A. LANNERT, Buffalo, N. Y., assignor to the Buffalo Electric Works, same place. Filed Jan. 9, 1884. (No model.)

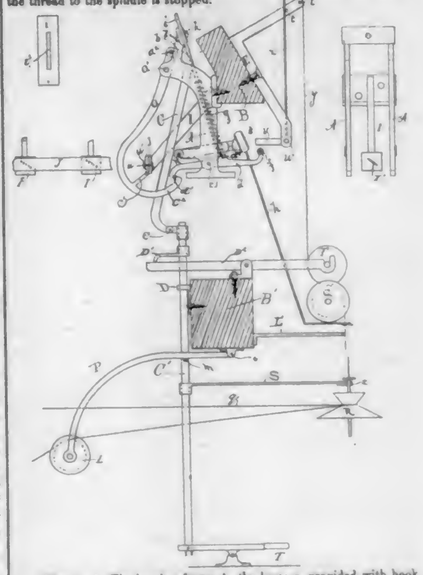
Claim.—The combination, with a drum or cylinder composed of radial arms C, connected at their inner ends and having their outer ends



provided with separate polar extensions C', of internal coils, *f*, wound lengthwise upon the arms C in the same direction and connected to form a closed circuit, and external coils, A, wound lengthwise around the drum and connected to form a closed circuit, substantially as set forth.

300,616. STOP-MOTION MECHANISM FOR SPINNING-MACHINES, &c. CHARLES H. LARNED, Willimantic, Conn., assignor of one-half to C. FRANK MORRISON, same place. Filed July 6, 1883. (No model.)

Brief.—Upon the breaking of a thread, either above or below the feed-rollers, the drop-rod is caused to descend or fall, loosening the tension on the driving-band, and a brake attached to the drop-rod engages the whirl of the spindle, thereby stopping the rotation of the spindle. At the same time the lever-arm carrying the upper feed-roller is acted upon to raise the said roller from the lower roller, whereby the feed of the thread to the spindle is stopped.



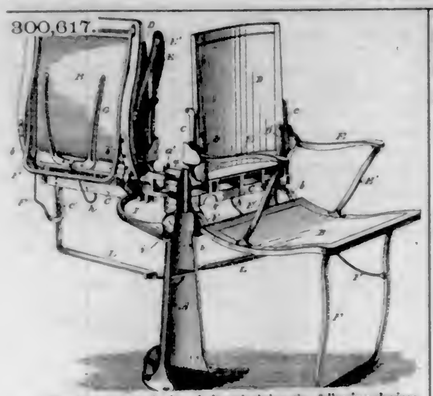
Claim.—1. The bracket-frame A, the lever *a*, provided with hook *c*², the connecting-rod C, provided with elbow or projection *b*, the tripping-latch *d*, having hook end *d'*, and wire *f*, in combination with the bracket E, having the rocking arm *v*, and wire *x*, provided with a guide-eye at its upper end, drop-rod C', and the belt-tightening device P L, substantially as shown and described, and for the purpose set forth.

2. The combination, with the bracket-frame A, having the extension *l*, the lever *a*, the connecting-rod C, provided with elbow or projection *b*, the tripping-latch *d*, the slotted plate *i*, attached to the extension *l*, and the screw *k*, of the spring *g*, attached to the tripping-latch and to the plate *i*, as shown and described, and for the purpose set forth.

3. The combination, with the bracket-frame A, the lever *a*, slotted plate *i*, and tripping-latch *d*, having wire *f*, and the spring *g*, connected to the plate and latch, of the connecting-rod C, pivoted to the lever *a*, drop-rod C', the lever D³, carrying the roll F, the arm D', for operating said lever, the bracket E, having rocking arm *v*, the wire *x*, and the belt-tightening device P L, substantially as shown and described.

4. The combination, with the bracket-frame A, the lever *a*, provided with the projection *c'*, and brackets I, provided with oblique slots I', of the rod J, provided with bolts *u*, adapted to move in the slots of the brackets, and arranged to slide diagonally to engage with the projection *c'* on the lever *a*, as and for the purpose specified.

300,617. FOLDING CHAIR. JAS. STEELE MACKAYE, New York, N. Y., assignor, by mesne assignments, to the Brent Manufacturing Company, Bridgeport, Conn. Filed Oct. 30, 1883. (No model.)



Claim.—1. A swinging chair embodying the following devices, namely: first, a columnar stand; second, a chair-bracket hinged vertically to said stand; third, a back attached to the chair-bracket; fourth, a folding seat hinged to the front of said chair-bracket; fifth, a folding leg pivoted to said seat.

2. A duplex swinging chair embodying the combination of the following devices, namely: first, a single columnar stand; second, two chair-brackets hinged vertically to said stand; third, two backs attached one to each chair-bracket; fourth, two folding seats hinged one to the front of each chair-bracket; fifth, two folding legs pivoted one to each seat.

3. The combination, substantially as before set forth, of the columnar stand, the swinging chair-bracket hinged vertically to said stand, the folding seat hinged to the front of said chair-bracket, the pivoted leg, and the back pivoted to said chair-bracket and independent of the seat, as described, so that such back may turn freely to accommodate itself to the position of the occupant.

4. The combination, substantially as before set forth, of the columnar stand, the swinging chair-bracket hinged vertically to said stand, the folding seat hinged to the front of said chair-bracket, the pivoted leg, and the back pivoted to said chair-bracket, as described, so that being independent of the seat it may turn freely to accommodate itself to the position of the occupant, and the folding arms.

5. The combination, substantially as before set forth, of the columnar stand, the swinging chair-bracket hinged vertically to said stand, the seat hinged to the front of said chair-bracket, the leg pivoted to said seat, and the link connecting the leg with the chair-bracket.

6. The combination, substantially as before set forth, of the columnar stand, the swinging chair-bracket hinged vertically to said stand, the seat hinged to the front of said chair-bracket, the frame-like leg pivoted to the seat and formed as described, so that it may fold close against the bottom of the seat between the side bars of the seat-frame, and the link connecting the leg with the chair-bracket.

7. The combination, substantially as before set forth, of the columnar stand, the swinging chair-bracket hinged vertically to said stand, the seat and back attached to said chair-bracket, substantially as described, and the rearwardly-projecting ring-like bracket on the said stand.

8. The combination, substantially as before set forth, of the columnar stand, the swinging chair-bracket hinged vertically to said stand, the seat hinged to the front of said chair-bracket, and provided on its under side with an anti-friction roller, and the rearwardly-projecting ring-like bracket provided with a socket adjacent to the stand for receiving the anti-friction roller when the seat is turned down, so that the chair is then prevented from swinging.

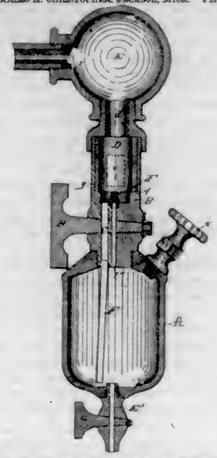
9. The combination, substantially as before set forth, of the columnar stand, the swinging chair-bracket hinged vertically to said stand, the seat and back attached to said chair-bracket, substantially as described, and the ring-like bracket provided with means, substantially as set forth, for checking the rearward swing of the chair at any desired point.

300,618. FAUCET. JOHN MOLONEY, Pittsburg, Pa. Filed Dec. 12, 1883. (No model.)



Claim.—A cock consisting of a barrel, A, having openings *a'* and *a*², with a strainer having screw-threaded opening *c'*, and attached to the end *a* of said barrel, a stem extending from end to end of the barrel, and having screw-threaded end inserted in screw-threaded opening *c'*, and the opposite end extending through opening *a*², and provided with means on its outer end for turning the stem, and a valve in said stem at a point within the strainer, and having a seat on the end of the barrel, substantially as described.

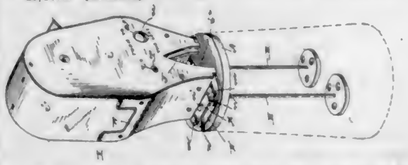
300,619. LUBRICATOR FOR STEAM-ENGINES. CHARLES B. MCALWAY and CHARLES H. CHRISTOPHER, Jackson, Mich. Filed Apr. 24, 1884. (No model.)



Claim.—1. In a lubricator, the combination of the chambered casting E, communicating with a steam-chamber, coupling *d*, casting B, provided with chamber D, having transparent material *e* and glass cylinder *g* to form a viewing-chamber, passage C', having nozzle F, and passage C, having tube F", connecting chamber D with reservoir A, substantially as shown, and for the purpose described.

2. The combination of the chambered casting E, coupling *d*, casting B, provided with chamber D, having transparent material *e*, glass cylinder *g*, apertured plug B', registering with small passage C' having nozzle F, and large passage C, having tube F', and reservoir A, substantially as shown, and for the purpose described.

300,620. CHURN-MOTOR. JOSEPH L. MCKAY, Neoga, Ill. Filed Apr. 25, 1884. (No model.)



Claim.—1. The combination, with a churn top or cover having dasher-actuating mechanism, of a removable casing secured upon the top or cover, and carrying motor mechanism, substantially as described, adapted to operate the devices thereon, substantially as set forth.

2. The combination, with a churn top or cover having a perpendicular standard, in which is journaled a rotary crank-shaft provided with a gear-wheel and adapted to operate the dashers, of motor mechanism, substantially as described, secured upon the churn top or cover, and embodying a gear-wheel meshing with the gear-wheel upon the rotary shaft, substantially as and for the purpose set forth.

3. The combination, with the top or cover of a churn having fastening devices on opposite sides, and provided with a perpendicular standard carrying dasher-actuating mechanism, of a removable casing fastened upon the top or cover and inclosing the standards, and carrying motor mechanism, substantially as described, meshing with the mechanism upon the standard, substantially as set forth.

4. The combination, with the top or cover of a churn having fastening-plates, of a removable motor-casing having projecting bottom flanges engaged by these plates to retain the casing in position, substantially as set forth.

5. The combination, with a churn top or cover having the lip-plate and the oppositely-disposed slotted plate sliding upon guide-pins, of a removable motor-casing having transverse bottom flanges projecting at its ends and engaged by the said fastening-plates, substantially as and for the purpose set forth.

6. The combination of a churn top or cover having dasher-perforations, two parallel perpendicular standards arranged between these perforations and embodying guide-slots, the sliding heads adapted to receive the dasher-staffs, the rotary crank-shaft, pitmen connecting the ends of the crank-shaft with the sliding heads, the gear-wheel secured upon the said shaft and working between the standards, and means, substantially as described, for operating this gear-wheel, substantially as set forth.

7. The combination, in an improved churn-motor, of the interior frame embodying the side pieces having having the inwardly-projecting flanges, the spring-motor mechanism contained within this frame and having its bearings thereon, and the outer casing embodying the side pieces secured to the sides of the inner frame, and having its top and ends secured to the inwardly-projecting flanges, substantially as set forth.

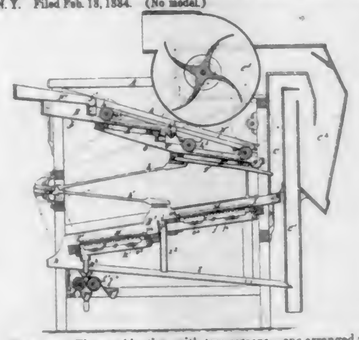
8. The herein-described improved motor-casing, comprising the inner frame consisting of side pieces having the inwardly-projecting flanges and the transverse flanges projecting at its bottom, the side boards or pieces of the outer frame, and the bent end and top piece secured to the inwardly-projecting flanges, substantially as set forth.

9. The combination, in an improved spring-motor, of the casing having the perforations on opposite sides, the set-screws projecting through these perforations to the outside of the casing, and the balance-wheel shaft having its bearing in the set-screws, substantially as set forth.

10. The combination, in an improved churn-motor, with the spring-motor mechanism comprising a train of gear-wheels, of a rod journaled transversely in relation thereto and adapted to be brought into engagement with the teeth of one of the gear-wheels to stop the operation of the motor, substantially as set forth.

11. The combination of the casing, the spring-motor mechanism contained therein, the transverse angular rod journaled in the casing and having its operating-head projecting through the same, and the spring-plate interposed between the crank of the rod and the inner face of the casing, substantially as and for the purpose set forth.

300,621. GRAIN-SEPARATOR. CHARLES E. MCNEAL, Silver Creek, N. Y. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination, with two screens—one arranged with its head below the tail of the other and both inclined in the same direction—of an endless belt or apron arranged to travel in close proximity to the upper surfaces of both screens, substantially as set forth.

2. The combination, with two screens—one arranged with its head below the tail of the other and both inclined in the same direction—of an endless belt or apron arranged to travel in close proximity to the upper surfaces of both screens, and guide-rollers whereby the lower side of said belt or apron is guided from the tail of the first screen to the head of the second screen, substantially as set forth.

3. The combination, with a shaking-shoe containing a screen or sieve, of a stationary rack or grate supported in said shaking-shoe underneath said sieve, substantially as set forth.

4. The combination, with a shaking-shoe containing a screen or sieve, of a rack or grate supported in said shoe underneath the screen or sieve, and held stationary with reference to the shaking motion of the shoe, while being capable of adjusting itself vertically with the shoe, substantially as set forth.

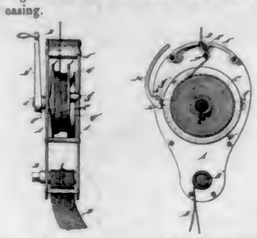
5. The combination, with the stationary frame A and a shaking-shoe containing a sieve, and provided with side openings, p, of a rack or grate, O, having cross-pieces o^2, projecting through the openings p, and bars p^3, whereby the rack or grate is attached to the stationary frame, substantially as set forth.

6. The combination, with the two screens inclined in the same direction, and one arranged with its head below the tail of the other, of a tight plate whereby the material passing through the first screen is collected and conducted to the head of the second screen, a trough arranged below the tail of the first screen to collect the material escaping from the tail of the first screen, and tubes extending downwardly from the said trough through said tight plate, for discharging the material from said trough, substantially as set forth.

7. The combination, with a shaking-shoe provided with an opening in its side, of a rack or grate supported in said shoe, and a screen or sieve adapted to be inserted and removed through said opening in the side of the shoe, and constructed with a thin rear piece, q, to clear said rack or grate, substantially as set forth.

300,622. FIRE-ESCAPE. GEORGE W. MERKLE, Amherstburg, Ontario, Canada. Filed Mar. 28, 1884. (No model.)

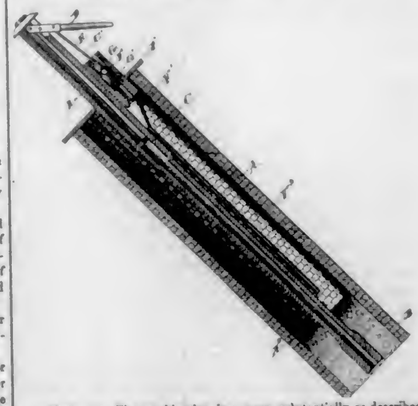
Brief.—A fire-escape in which a brake-shoe passes half-way around the reel within a groove on one side thereof, and is applied by a lever pivoted to the casing.



Claim.—1. A fire-escape consisting of the face-plates A, rigidly connected together, the reel C, the friction-posts E and F between the upper parts of the face-plates, the body-belt B, the wire or cable D, the brake-shoe G, pivoted at one end between the face-plates, and extending partially around the reel to act thereon, and the pivoted brake-lever H, having its pivoted end arranged between the face-plates, and resting against the free end of the brake-shoe, substantially as described.

2. A fire-escape consisting of the stationary connected face-plates A, the reel C, having the channel or groove G', the wire or cable D, the friction-posts E and F, the body-belt B, the brake-shoe G, pivoted at one end between the face-plates, and extending partially around the reel under the same to enter the channel or groove, and provided at its free end with a shoulder, g', and the pivoted brake-lever H, having its pivoted and arranged between the face-plates, and provided with a shoulder, h', to engage the shoulder on the brake-shoe, substantially as described.

300,623. PUMP. ELI A. MILLER, Conneaut, Ohio. Filed Dec. 30, 1883. (No model.)



Claim.—1. The combination, in a pump substantially as described and shown, of the stock, the sucker arranged therein, the sucker-rod, the handle, the air-cylinder arranged alongside the pump-stock, and provided with a tube extended into the well, a piston arranged in the air-cylinder, a rod connecting the piston and the pump-handle, and the escape-pipe, arranged substantially as described, with its lower end opening into the well and its upper end extended above the well-cover, as and for the purposes specified.

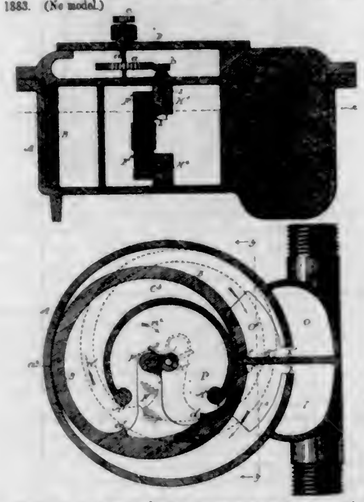
2. The combination, substantially as described, of a pump-stock, an air-cylinder having a discharge into the well, a piston arranged in said air-chamber, and means connecting the pump-operating devices and the said piston, as and for the purposes specified.

300,624. HOLLOW PUNCH. BENJAMIN F. MITCHELL, Middletown, Conn., assignor to Wilcox, Crittenden & Co., same place. Filed Nov. 30, 1883. (No model.)



Claim.—A hollow punch consisting of the handle A, having the transverse channel b, the smooth tubular projection a, and the lateral shoulder e at the base of the projection and below the transverse channel, and the hollow cutter B, having one end formed into a cutting-edge, and constructed with the lateral interior shoulder, d, and smooth socket c, said cutter being detachably applied to the tubular projection, and the bore of the latter equal to or greater than the bore of the cutter, substantially as and for the purposes described.

300,625. OSCILLATING METER. LEWIS HALLOCK NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Dec. 18, 1883. (No model.)



Claim.—1. The combination, in a water-meter, of an eccentrically-moving piston open from end to end, having a longitudinal slot, f, at its side, and an inclosing-case having a radial abutment extending from one head of the case to the other, having an enlarged end and forming a joint within the piston, with a crank and shaft having a bearing within the case, adapted to connect the said open piston with a train of speed-reducing gearing, substantially as described, for the purpose specified.

2. The combination of an eccentrically-moving piston having one or more central studs and a side longitudinal slot, with an inclosing-case having a dividing-abutment upon which the piston slides, adapted to form a joint within it, suitable inlet and outlet ports, and one or more fixed central studs adapted to co-operate with the central studs of the piston to control the eccentric movements of the same, substantially as described, for the purpose specified.

3. The combination, in a water-meter, of an eccentrically-moving piston having one or more central studs and a side longitudinal slot, with an inclosing-case having a dividing-abutment upon which the piston slides, adapted to form a joint within it, suitable inlet and outlet ports, and one or more fixed central studs adapted to co-operate with the central studs of the piston to control the movements of the same, and suitable means for registering the said movements of the piston operated by it, substantially as described.

4. The combination of an eccentrically-moving open-ring piston having a longitudinal slot, f, in its side, with an inclosing-case having an abutment extending from one head of the case to the other, adapted to divide the case and to make a joint upon the inner wall of the open piston, whereby the inclosing-case and the interior of the piston are divided into receiving and discharging spaces, communicating with suitable inlet and outlet ports of the case, substantially as described.

5. The combination of an inclosing case or cylinder having a radial abutment extending from head to head of the cylinder, and terminating at its inner end in an enlargement open at one side, and having suitable bearing-points, with an eccentrically-moving open-ring piston having a longitudinal slot in its side forming a guide upon said abutment, and suitable means connected with the case for controlling the motion of the piston, substantially as described.

6. The combination of an inclosing-case having interior wall bearing-points and a radial abutment extending around the center of said case from head to head, terminating in suitable bearing-points, with an eccentrically-moving open-ring piston having a longitudinal slot in its side and bearing-points upon its exterior and interior wall, adapted to form a joint to divide the said case and the interior of the open piston into receiving and discharging spaces, which communicate with suitable inlet and outlet ports in the case, substantially as described.

7. The combination, in a water-meter, of an inclosing case or cylinder having a radial abutment extending around the center of said case from head to head, and forming around said center an enlargement open at one side, having end or corner bearing-points, with an eccentrically-moving piston open from end to end, having bearing-points adapted to co-operate with those of the abutment, a longitudinal slot, f, on one side, forming a guide upon said abutment, and a radial arm, F, extending between the arms or bearing-points of said abutment, provided with central studs co-operating with fixed central studs of the case, substantially as described, for the purpose specified.

8. The combination, in a water-meter, of an inclosing-case having a radial abutment extending around the center of the case from head to head, and fixed central studs, H' H^3, with an eccentrically-moving open-ring piston having a longitudinal slot, f, in its side, central studs, F' F^3, the shaft 2, having a bearing in said case-stud H', and a crank-arm, 1, arranged to bear upon the piston-stud F', and suitable registering mechanism connected with said shaft, substantially as described.

9. The combination, with an inclosing-case having suitable inlet and outlet ports and a radial abutment terminating in an enlarged end centrally in said case, of an open-ring piston having a guide-bearing arm, and means for connecting said arm, with means for controlling the movements of the piston to continually make a joint-contact with the said abutment to divide the piston into receiving and discharging spaces, for the purpose specified.

10. The combination, in a water-meter, of an eccentrically-moving piston open from end to end, with means, substantially such as described, for dividing its interior into receiving and discharging spaces, and means for controlling its movements to effect such division, substantially as described, for the purpose specified.

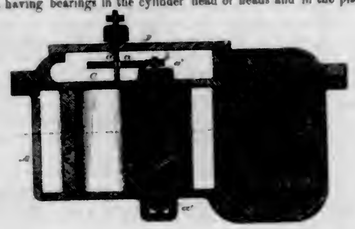
11. The combination, with an inclosing-case having suitable inlet and outlet ports and a radial abutment terminating in an enlarged hollow end in the central part of said case, of an open-ring piston provided with an arm extending into said hollow end, by means of which, co-operating with means carried by the case, the motion of the piston is controlled in said case, for the purpose specified.

12. The case A, having inlet and outlet head-ports divided by an abutment, as described, and the ports X X' in the vertical walls of said case on each side of said abutment, combined with a ring-piston having a side slot adapted to form a joint-bearing upon said abutment, controlled in its eccentric movements to divide said case, the said vertical wall-ports allowing a free inflow and outflow of the water into and from said case the full height of the piston.

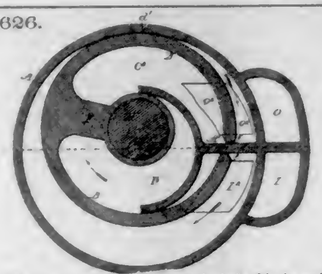
300,626. OSCILLATING METER. LEWIS HALLOCK NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Dec. 18, 1883. (No model.)

Claim.—1. The combination of a case or cylinder having a radial abutment extending within the piston from head to head of said case, and suitable inlet and outlet ports, with an eccentrically-moving piston open from end to end, having a longitudinal slot in its side, and an eccentric shaft having bearings in the cylinder head or heads and in the piston, whereby the action of the eccentric shaft adapts the piston to constantly maintain a dividing-joint with the case, and to intermittently maintain a dividing-joint with the interior of the piston, substantially as described.

2. The combination, in a water-meter, of a case or cylinder having a radial abutment extending within the piston from head to head of said case, and suitable inlet and outlet ports, with an eccentrically-moving piston open from end to end, having longitudinal side slot, an eccentric shaft having bearings in the cylinder head or heads and in the piston,



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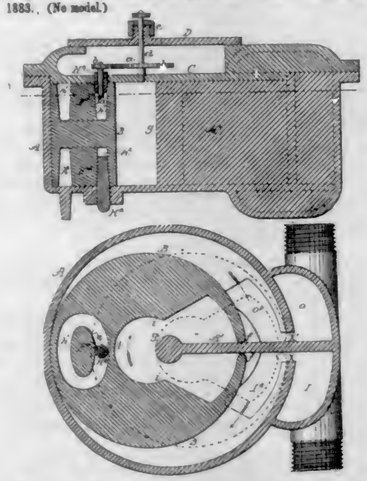


and suitable means connecting said eccentric shaft with the registering mechanism by intermediate speed-reducing gearing, substantially as described.

3. The combination of a case or cylinder having a radial abutment extending within the piston from head to head of said case, and suitable inlet and outlet ports, with an eccentrically-moving piston open from end to end, having a longitudinal side slot and an interior radial arm or web terminating in a central sleeve-bearing, and an eccentric shaft having a bearing within said sleeve and within the heads of the case, substantially as described, for the purpose specified.

4. The combination of a case or cylinder having a radial abutment extending within the piston from head to head of said case, and suitable inlet and outlet ports, with an eccentrically-moving piston open from end to end, having a longitudinal side slot, and means, substantially such as herein described, whereby the dividing-joint of the case is maintained in all positions of the piston, and maintained within the interior of the piston during a portion only of the period of its motion, substantially as herein described, for the purpose specified.

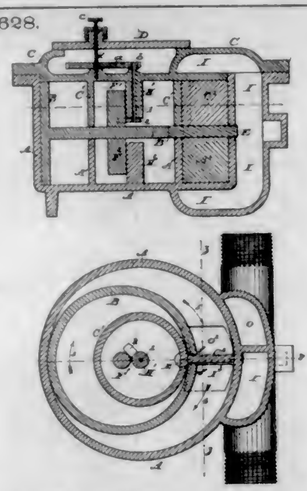
300,627. OSCILLATING METER. LEWIS HALLOCK NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Dec. 18, 1883. (No model.)



Claim.—1. The combination, in a water-meter, of an inclosing-case have suitable inlet and outlet ports, an abutment, and one or more pins eccentrically placed in said case-heads, with an eccentrically-moving piston having a side slot and a projection out of its center, of a form adapted, in connection with the fixed pin, to control the motion of the piston, and suitable registering mechanism, substantially as described.

2. The combination, in a water-meter, of a piston having an oval groove or projection out of center in one or both of its ends, and a longitudinal side slot, with an inclosing-case having one or more pins, H^3 H^3, placed out of center of said case, a shaft passing through one of said pins, having a crank-arm, a dividing-abutment, and suitable registering mechanism, substantially as described.

300,628. OSCILLATING METER. LEWIS HALLOCK NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Dec. 18, 1883. (No model.)



Claim.—1. The combination, in a water-meter, of an eccentrically-moving piston having a transverse dividing plate or web, B', and a longitudinal slot, *f f*, at its side, an inclosing-case having radial abutments C' A^2 and concentric ring projections C' A', and an interior movable abutment, E, with a shaft having a bearing within the case driven by the piston, and a train of speed-reducing gearing connected with said shaft, substantially as described, for the purpose specified.

2. The combination, in a water-meter, of an eccentrically-moving piston having a transverse dividing plate or web, B', a longitudinal side slot, and a centrally-projecting stud or studs, F' F^2, with an inclosing-case having dividing-abutments, center ring projections, and an interior projecting stud or studs, H' H^2, and means, substantially such as described, supported by the case-stud, whereby the motion of the piston is communicated to the registering mechanism.

3. The combination, in a water-meter, of the case A, having the interior concentric cylindrical ring projections, C' A', the central projecting studs, H' H^2, and the fixed abutments C^2 A^2, dividing the inflow from the outflow, with the movable joint-forming abutment E, arranged within the case, and an eccentrically-moving cylindrical piston having a transverse dividing plate or web, B', a longitudinal slot, *g*, in its outer surface, and having its joint-forming bearing maintained by the contact of the projecting studs of the piston and case, substantially as described.

4. The combination of the inclosing-case having a removable cap formed with a depending hollow stud, H', with an eccentrically-moving piston having a transverse web, B', formed with a central stud, F', the crank-shaft 1 2, having its bearing within the said case-stud, and the interior speed-reducing gearing, substantially as herein set forth.

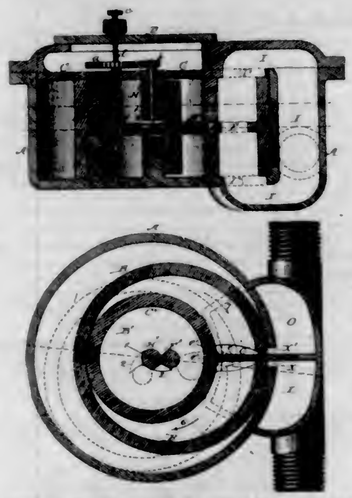
5. The rotary water-meter herein described, consisting of the case A, having inlet and outlet ports, interior concentric projections, A' C', interior central studs, H' H^2, and fixed abutments C^2 A^2, the interior movable joint-forming abutment, E, the eccentrically-moving piston having the transverse web B', the central studs, F' F^2, and the longitudinal slot *g* in its outer surface, and the crank-shaft 1 2, supported by said case-stud, and operated by the piston, all constructed and arranged for operation substantially as described.

6. The combination of an eccentrically-moving piston having a longitudinal side slot and a transverse dividing-web, with means for connecting the latter with fixed means for controlling the movements of the piston, and an inclosing-case having a fixed interior abutment extending from each head to said web, having a form adapted to make a joint with the interior walls and with the web of said piston, substantially as described.

7. A meter-case having fixed ring projections C' A', and a fixed radial abutment having a movable section, E, combined with an eccentrically-moving piston having a transverse dividing-web, a longitudinal side slot, and means, substantially such as described, carried by said piston-web, for controlling the movements of the piston.

8. The combination, in an oscillating water-meter, of a ring-piston having a transverse dividing-web, with an inclosing-case having ring projections, and a radial abutment with which the piston is adapted to co-operate, to divide its interior and to form a joint with both sides of its web, and means having a fixed relation to the case connecting with the piston-web for controlling the motion of the piston, substantially as described, for the purpose specified.

300,629. OSCILLATING WATER-METER. LEWIS HALLOCK NASH, Brooklyn, assignor to the National Meter Company, New York, N.Y. Filed Feb. 27, 1884. (Model.)



Claim.—1. The combination of an eccentrically-moving piston having a transverse dividing-web, B', and a longitudinal side slot opening into a slot in said web, with an inclosing-case having ring projections extending inward from each head, and means co-operating with means carried by the piston-web to control the movements of said piston, with a non-moving radial abutment co-operating with said piston-web, substantially as described, for the purpose specified.

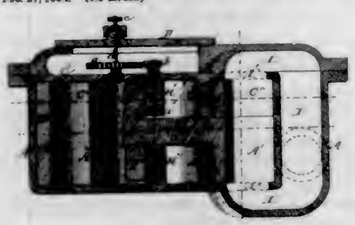
2. A meter-case having ring projections and a non-moving radial abutment, combined with an eccentrically-moving piston having a transverse dividing-web, a longitudinal side slot, and a web-slot, and means, substantially such as described, carried by said piston-web and the case, for controlling the movements of the piston.

3. The combination of an eccentrically-moving piston having a transverse dividing-web, B', and a longitudinal side slot opening into an oval slot in said web, with an inclosing-case having ring projections and a non-moving radial abutment adapted to form a joint with the piston-web, and a shaft having a bearing within the case driven by the piston to operate the registering mechanism, substantially as described.

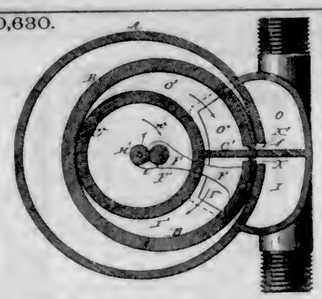
4. The combination of the inclosing-case having concentric ring projections, and a non-moving radial abutment having the projecting joint-forming end E', with an eccentrically-moving piston having a transverse dividing-web, B', and a longitudinal side slot, *g*, opening into an oval slot in said web the said oval slot having a form adapting the piston to move over the said non-moving abutment and to form a joint therewith in every position of the movement of the piston, substantially as herein set forth.

5. The inclosing-case provided with a fixed radial abutment terminating in a hollow enlarged end in the center of said case, and a piston having a transverse dividing-web provided with an oval slot, combined with a fixed joint-forming abutment, E', adapted to form a joint with the walls of said slot, for the purpose described.

300,630. OSCILLATING WATER-METER. LEWIS HALLOCK NASH, Brooklyn, assignor to the National Meter Company, New York, N.Y. Filed Feb. 27, 1884. (No model.)



300,630.



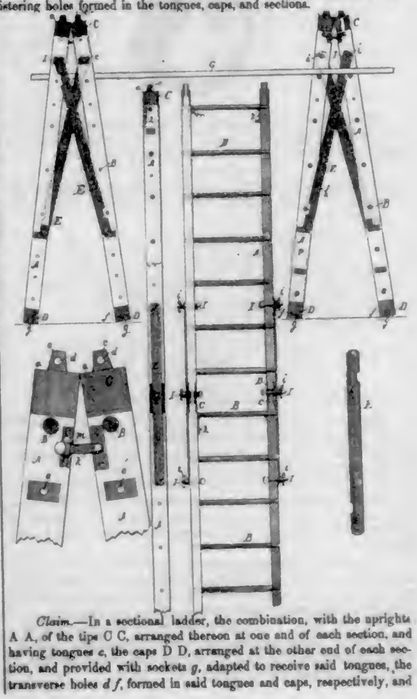
Claim.—1. The combination of an eccentrically-moving piston open from end to end, having a longitudinal slot at its side, and an inward-extending radial arm, F, with the radial abutment terminating in a cylinder within the piston, having a horizontal oblong slot in its side, adapted to receive and form a joint with the piston-arm, substantially as described, for the purpose specified.

2. The radial abutment having at its inner end a non-divided ring enlargement, provided with a horizontal oblong slot, A, having the joint contact end A^2, and the piston having the arm F, adapted to form a joint with three sides, of the oblong abutment slot in the movements of said piston, combined with an inclosing-case having suitable inlet and outlet ports and passages, and suitable means for transmitting the motion of the piston, substantially as described.

3. The combination, in a water-meter, of an open-ring piston having the radial arm F, with an inclosing-case having a radial abutment terminating in a central ring-abutment adapted to make a joint bearing with said radial arm, as herein set forth.

300,631. SECTIONAL LADDER. JOHN T. O'BRIEN, Philadelphia, Pa. Filed May 12, 1884. (No model.)

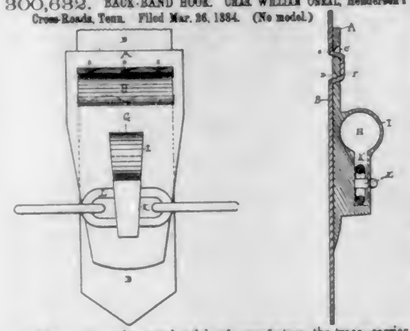
Brief.—The upper ends of the sections have tips having tongues, and the lower ends caps provided with receiving-sockets. Stay-bars are clamped to the meeting sections by bolts which pass through registering holes formed in the tongues, caps, and sections.



Claim.—In a sectional ladder, the combination, with the uprights A A, of the tips C C, arranged thereon at one end of each section, and having tongues *c*, the caps D D, arranged at the other end of each section, and provided with sockets *g*, adapted to receive said tongues, the transverse holes *d f*, formed in said tongues and caps, respectively, and

boles *e e*, formed in the uprights A A, and the stay-bars E, having bolts which pass through said holes, the whole arranged and operating substantially in the manner set forth.

300,632. BACK-BAND HOOK. CHAS. WILLIAM ONEAL, Henderson's Cross-Roads, Tenn. Filed Mar. 26, 1884. (No model.)



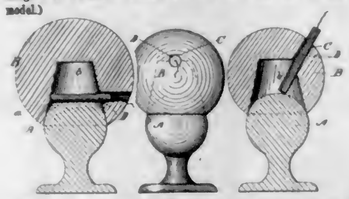
Claim.—As an improved article of manufacture, the trace-carrier described, consisting of the plate A, having the transverse parallel slots C and D near its upper end, provided with the teeth E and F on opposite sides, as shown, below the said slots a loop-lug, G, which tapers downwardly on its outer walls, having its upper portion provided with a transverse circular opening, and beneath the said opening a straight narrow vertical offset, K, substantially as shown and described.

300,633. COUNTER FOR MULES. DANIEL ORME and FRANCIS HEAMS ORME, Oldham, County of Lancaster, England. Filed Oct. 15, 1883. (No model.) Patented in England Dec. 13, 1881, No. 5,437.



Claim.—The combination of the shaft carrying a worm, *e*, with a lever, *c*, having a worm-wheel gearing into said worm, and a pinion, *f*, adapted to be acted on by said lever, substantially as set forth.

300,634. TOY MORTAR. ALFRED W. PARTRICK, Washington, D. C., assignor to William C. Eaton, Newark, N. J. Filed Feb. 14, 1884. (No model.)



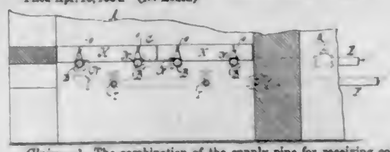
Claim.—1. The combination, with a base, of a projectile adapted to rest upon said base, bored on its under side to form a chamber, and provided with a second bore for the insertion of the charge and opening into the chamber, substantially as shown and described.

2. The combination, with a base adapted to support a fire-cracker, of a projectile adapted to rest upon said base, bored on its under side to form a chamber, and provided with a second bore for the insertion of the charge and opening into said chamber, substantially as shown and described.

3. The combination, with a base, of a projectile bored on its under side to form a chamber, and adapted to fit over and rest upon said base, and provided with a second bore for the insertion of the charge and opening into the chamber, substantially as shown and described.

4. A base having a recess in its top for the reception of a fire-cracker, in combination with a projectile having a chamber on its under side resting upon the base, and provided with a hole for the insertion of a fire-cracker, substantially as shown.

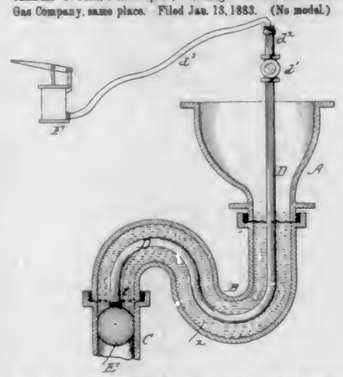
300,635. FURNACE. HORACE W. PEASLEE, Malden Bridge, N. Y. Filed Apr. 10, 1884. (No model.)



Claim.—1. The combination of the supply-pipe for receiving cold water independently of a steam-boiler, a series of water-pipes supporting the fire-grate and alternately connected with each other at one end, a discharge-pipe connected with one of the series of water-pipes, and a shower pipe or pipes for receiving the discharge-water, substantially as described.

2. In a furnace for steam-boilers or the like, a series of water-pipes arranged to support the fire-grate and constructed to communicate with each other alternately at the opposite ends, in combination with a supply-pipe connected to the water-pipe at one end of the series, a discharge-pipe connected to the water-pipe at the other end of the series, and a shower pipe or pipes arranged to extend from the discharge-pipe horizontally below the water-pipes, substantially as shown and described.

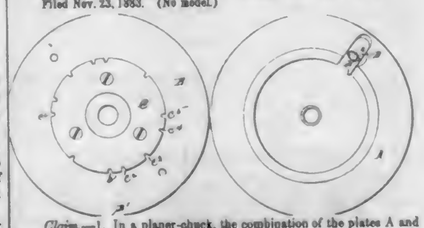
300,636. DISINFECTING AND CLEANSING WATER-CLOSETS. CHARLES F. PIKE, Philadelphia, Pa., assignor to the National Anti-Sewer Gas Company, same place. Filed Jan. 13, 1883. (No model.)



Claim.—1. In an apparatus for cleaning water-closet traps, soil-pipes, &c., a removable sealing device adapted to be placed through an inlet at any point within said fixtures without removing the parts, and means, substantially as described, for holding said sealing device at any desired point.

2. In an apparatus for cleansing water-closet traps, soil-pipes, &c., the combination of a pipe, D, having cock *d'*, and an air-tight collapsible ball or bag, E, with means, substantially as described, for inflating said ball or bag, and maintaining it in such condition, for the purpose set forth.

300,637. PLANER-CHUCK. WALLACE PORTER, New Haven, Conn. Filed Nov. 23, 1883. (No model.)



Claim.—1. In a planer-chuck, the combination of the plates A and B, one of which is provided with a disk or plate, C, having notches in its edge, as described, and the other being provided with a dog, and means, substantially as described, for throwing it into and out of engagement with the notched disk C, as set forth.

2. In a planer-chuck, the combination, with the plates A and B, of the division-plate C, having the notches *c' c²*, &c., the dog D, and bolt F, having eccentric-pin *e*, as set forth.

3. In a planer-chuck, the combination of the two plates A and B, having the scale A' and mark B', with the middle plate, C, provided with notches *c' c²*, &c., a dog, D, for engagement with said notches, and a bolt, F, provided with eccentric-pin *e*, for operating the dog, as set forth.

300,638. TOY MORTAR. SAMUEL B. PRATT, Boston, Mass., assignor to Eaton & Parker, Newark, N. J. Filed Feb. 25, 1884. (No model.)

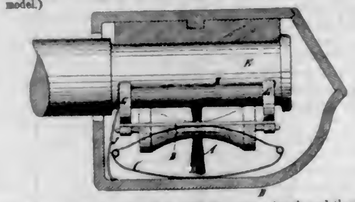


Claim.—1. A projectile having a chamber on its under side, in combination with a base adapted to enter said chamber, the base having a vertical perforation therethrough, serving as a charge-chamber, and provided with an opening at the bottom of sufficient size for the insertion of the charge, substantially as shown and described.

2. A base having a vertical perforation therethrough for the reception of the charge, and provided with openings at the top and bottom of sufficient size for the insertion of the charge, in combination with a projectile having a chamber on its under side and adapted to fit over the base, substantially as shown and described.

3. A projectile having a chamber therein, in combination with a base adapted to enter said chamber, and provided with a perforation therethrough for the reception of an explosive, and a packing arranged upon the portion of the base which enters the chamber, substantially as shown and described.

300,639. CAR-AXLE LUBRICATOR. HENRY R. RANDALL, Brooklyn, assignor to William Thorpe, New York, N. Y. Filed Apr. 28, 1883. (No model.)

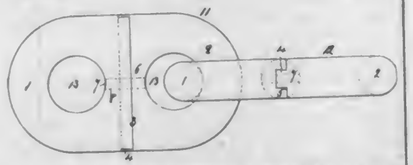


Claim.—1. The combination, with the rotary brush and the frame B, wherein it is journaled, of the elliptic springs C, supporting said frame and extending lengthwise of the brush, and the springs G, supported upon the frame and arranged transversely to the springs C, all substantially as herein described.

2. The combination, with the frame B and the brush journaled therein, of the elliptic springs C, supporting said frame, the springs G, arranged transversely to the springs C, the rods H, connecting corresponding ends of the springs G, and pieces I, of felt or like material, depending from said rods, substantially as herein described.

3. The combination of the frame B, the brush A, journaled therein, and the elliptic springs C, the upper leaves of which have an upward curvature at their ends, substantially as herein described.

300,640. MANUFACTURE OF CHAINS. CHARLES HOLLOWAY REED, Sunderland, County of Durham, England. Filed Oct. 3, 1883. (No model.) Patented in Belgium Oct. 4, 1883, No. 62,780; in France Oct. 5, 1883, No. 157,853; in Germany Oct. 5, 1883, No. 26,853, and in England Oct. 6, 1883, No. 4,752.

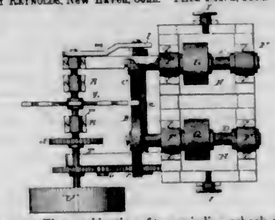


Claim.—1. A chain-cable consisting of a series of links, each made in two parts or halves united by a tranverse joint, substantially as described.

2. A chain-link made in two halves, united by a transverse dovetailed or undercut joint, and a pin to prevent lateral movement of one half on the other, substantially as set forth.

3. A chain-link made in two halves, 1 2, each having openings 13, and transverse pieces 6, and united by a dovetailed or undercut joint and a retaining-pin, substantially as described.

300,641. MACHINE FOR FINISHING BOLT-HEADS AND NUTS. HENRY REYNOLDS, New Haven, Conn. Filed Feb. 2, 1884. (No model.)

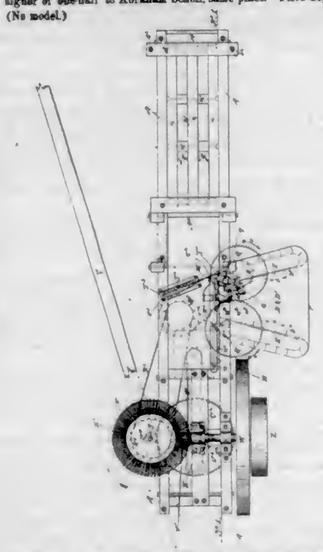


Claim.—1. The combination of two grinding-wheels arranged upon axes parallel to each other, so as to revolve in substantially the same plane, a carrying-wheel arranged to revolve in a plane between the faces of said grinding-wheels and upon an axis at right angles to the axes of said grinding-wheels, said carrying-wheel provided with seats to receive the bolts or nuts, so as to present opposite sides of said nuts or heads of the bolts between the said grinding-wheels, substantially as described.

2. The combination of two grinding-wheels arranged upon axes parallel to each other, so as to revolve in substantially the same plane, and a carrying-wheel arranged to revolve in a plane between the faces of said grinding-wheels and upon an axis at right angles to the axes of said grinding-wheels, said carrying-wheel provided with seats to receive the bolts or nuts, so as to present opposite sides of said nuts or heads of the bolts between the said grinding-wheels, with mechanism, substantially such as described, to impart to said carrying-wheel a transverse movement, substantially as specified.

3. The combination of the two grinding-wheels B C, arranged to revolve in the same plane, the carrying-wheel I, arranged to revolve in a plane between said grinding-wheels, said carrying-wheel provided with seats *f*, having a recess upon which the nut or head of the bolt may rest, and a spring, *i*, to bear upon the nut or bolt upon the side opposite the bearing upon the seat, substantially as described.

300,642. BALING-PRESS. ALBERT S. ROBINSON, Albany, N. Y., assignor of one-half to Abraham Schell, same place. Filed Sept. 19, 1883. (No model.)



Claim.—1. In a baling-press, a baling-chamber which has one of its horizontal sides provided with a stiff and rigid lining, made substantially continuous and on a line with the plane of the corresponding lining of the platen and press chambers, the combination, with the same, of the oppositely-located horizontal lining, L, having its end at the press-chamber substantially continuous with the corresponding lining of the press-chamber, with its body in its rearward portion free to be inclined toward the oppositely-located rigid lining of the baling-chamber, and mechanism for forcing the body of the lining L to any preferred degree of relative inclination, for the purpose set forth.

2. In a baling-press, a baling-chamber which has rigid horizontal lining *g* at one of its sides, and at the oppositely-located side lining, L, adapted to have its body adjusted to an incline in relation to lining *g*, in combination with depressing-bar *d*, draw-bolt *e*, provided with screw-nuts, and brackets *f*, substantially as and for the purpose set forth.

3. In a baling-press, the combination, with the baling-chamber having rigid lining *g* and the oppositely-located lining, L, which is adapted to have its body deflected rearwardly toward the rigid lining, of the stiff rack N, having bearing against the exterior surface of the lining L, with its rear end adapted to be raised and lowered in relation to its forward end, and mechanism for forcing the rear end of said rack toward the chamber-room of the baling-chamber to deflect lining L, substantially as and for the purpose set forth.

4. In a baling-press, the dogs Y Y, constructed substantially as shown and above described, in combination with the horizontal walls of the platen-chamber, when arranged and pivoted with said walls in such a manner that their rear ends will be adapted to be moved by gravity toward each other and into the said platen-chamber, substantially as and for the purpose set forth.

5. In a baling-press, the combination, with dogs Y Y, pivoted in the oppositely-located horizontal side walls of the platen-chamber, and adapted to be moved by gravity toward each other with the holding ends entering the platen-chamber, of the reciprocating moving platen, having recesses r^2 made in the face end of said platen, whereby the face of the platen will be adapted to be carried to a point rearward past the engaging end of said dogs and thrust the hay away from the same, and thereby permit them to have a free upward movement, substantially as and for the purpose set forth.

6. In a baling-press having duplex platen-chambers and platens moving therein, the combination, with said platens, of double-crank shaft U^3 and pitmen connecting said platens with said double-crank shaft, of gear mechanism actuating said crank-shaft from a vertical driving-shaft, S, actuated by a belt-wheel and gear mechanism or by a sweep-lever, all substantially as and for the purpose set forth.

7. In a baling-press, the combination, with a platen working within a platen-chamber for compressing the material to be baled, and a crank-shaft connected to said platen by a pitman and revolved by gear mechanism from a driving-shaft, S, revolved by a sweep-lever, of a fly-wheel, W, actuated from said driving-shaft by gear mechanism speeding said fly-wheel, whereby the movement of the crank-shaft will be equalized and a rebound of the sweep-lever be prevented.

8. In a baling-press, a baling-chamber which has at two of its oppositely-located vertical sides a single opening, and each of its oppositely-located horizontal sides closed by substantially close linings, which are respectively on a plane with the top and bottom margin-lines of the openings at said vertical sides of said chamber, substantially as set forth.

9. In a baling-press, the combination, with a baling-chamber having its oppositely-located horizontal sides substantially closed, and at each of its oppositely-located sides a single opening terminating at top and bottom on a line with the plane of the close linings, of horizontal ways *m m*, secured to the inner surface sides of the said horizontal linings on lines between the margin-edges thereof and parallel with the same, substantially as and for the purpose set forth.

10. In a baling-press, a baling-chamber which has each of its two oppositely-located horizontal sides provided with a longitudinally-arranged way, *m*, secured to its inner surface side in a line parallel with the line of movement of the platen of the press.

11. In a baling-press, the combination, with the pressing-chamber, of the baling-chamber arranged in relation to the pressing-chamber as shown and described, and provided with two oppositely-located horizontal closed sides and single opening at each of its oppositely-located vertical sides extending from the plane of the inner side surface of the upper horizontal closing sides to the plane of the inner surface of the lower horizontal closing side, and mechanism wholly within the baling-chamber and connected with the closed horizontal sides for guiding the movement of a bale from the press-chamber to its discharge from the baling-chamber.

12. In a baling-press, the combination, with the pressing-chamber, of a baling-chamber arranged in relation to the pressing-chamber as shown and described, and provided with two oppositely-located horizontal closed sides and two oppositely-located vertical side openings, which extend from the plane of the inner surface of one of said horizontal closed sides to the plane of the inner surface of the other, and horizontal ways *m m*, situated within the said chamber and secured to the inner side surfaces of the horizontal closed sides, and extending from the rear end of the baling-chamber forward to or near to the front end of the pressing-chamber in lines parallel with the lines of movement of the platen of the press.

13. In a baling-press, the combination and arrangement, with a baling-chamber provided with two oppositely-located vertical openings extending from the plane of the top to bottom surfaces of two oppositely-located horizontal closed sides which are provided with ways *m*, of the partition-board M, provided in each of its upper and lower edges with grooves *m'*, adapted to hold with ways *m*, secured to the said oppositely-located horizontal sides, whereby the said partition-board will be prevented in its passage through the baling-chamber from shifting laterally in either direction toward the said vertical side openings of the chamber.

14. In a baling-chamber, partition-board M, which is provided in its upper and lower edges with grooves *m'*, adapted to hold with ways *m*, secured to each of the oppositely-located horizontal sides of the baling-chamber, and also provided with spurs m^3, adapted to hold with the compressed material, substantially as set forth.

15. In a baling-chamber, a partition-board which is guided by mechanism in its passage through a baling-chamber which has oppositely-located open sides, and spurs m^3, as and for the purpose set forth.

16. In a baling-press, the combination, with the pressing-chamber and baling-chamber, which have each of their two oppositely-located horizontal sides provided with ways *m*, extending from the front end of the pressing-chamber continuously to the rear end of the baling-chamber, of partition-board M, provided with grooves *m'* and spurs m^3, for operation substantially as set forth.

17. In a baling-press, a feeding-chamber formed by rigidly-secured vertical and horizontal side walls arranged at a feed-opening made in a vertical side wall of the platen-chamber, the said vertical and horizontal walls being so arranged in relation to each other that they will produce a gradually-contracting chamber-wall, which will be adapted to gradually compress the charge of material introduced as it is progressively moved forward to a discharge into the platen-chamber.

18. In a baling-press, the combination, with a platen-chamber provided in one of its sides with a feed-opening, of a feeding-chamber which has its vertical side walls rigidly fixed from moving, and set to flare outwardly at like angles with their contracting ends at the feed-opening, and mechanism located and moving within the feed-chamber at the inner side surfaces of the walls thereof, for the purpose set forth.

19. In a baling-press, the combination, with a feed-chamber which communicates with the platen-chamber of the press, and is provided with oppositely-located vertical side walls which are set at substantially the same angle of inclination for gradually contracting the feed-chamber as it extends toward the platen-chamber, of mechanism moving at the gradually-contracting inner surfaces of the oppositely-located side walls of the feed-chamber, and adapted to engage with the opposite sides only of the charge of material for gradually-compacting the charge and moving it progressively forward and into the platen-chamber.

20. In a baling-press, the combination, with the platen-chamber thereof, and a feeding-chamber communicating with said platen-chamber, and provided with inwardly-inclined or tapering vertical side walls which are set at about equal angles to the side walls of the platen-chamber, of feed mechanism which is operated automatically and independent of the movement of the platen in the platen-chamber.

21. In a baling-press, a feeding-chamber having oppositely-located inclined sides, and a feed mechanism which is continuously moved in direction toward the contracted end of said chamber while the platen is being moved back to the forward end of the platen-chamber.

22. In a baling-press, a feeding-chamber having a feed mechanism which is moved continuously in direction toward the feed-opening in a side of the platen-chamber while the platen is being moved in either direction within the platen-chamber.

23. In a baling-press, an endless feeding mechanism which is continuously moving in direction toward the feed-opening to the platen-chamber while the platen is moving therein for automatically feeding material to be baled into the platen-chamber.

24. In a baling-press, the combination, with a feeding-chamber having two oppositely-located inclined sides, of an endless feed mechanism which is continually moving in direction toward the feed-opening to the platen-chamber while the platen is moving therein, whereby material will be automatically introduced in the platen-chamber in compacted sections to be compressed into a bale, substantially as set forth.

25. In a baling-press, the combination, with platen-chamber B, (or B',) provided with a feed-opening at one of its sides, of feed-chamber D, (or D',) provided with gradually-contracting side walls, as above described, and feeding mechanism E, (or E',) above described, substantially as and for the purpose set forth.

26. In a baling-press, a feeding device for introducing into the platen-chamber sections of compacted material, consisting of the combination, with feed-chamber D, (or D',) having two of its oppositely-located sides, b^3 and b^3, set flaring or inclined outwardly in relation to each other, of feeding mechanism E, (or E',) which is moved continuously in direction from the flaring open end toward the contracted end of said feeding-chamber and the feed-opening to the platen-chamber of the press, as set forth.

27. In a baling-press, the combination, with its platen-chamber having a feed-opening at a side thereof, of a feeding-chamber D, (or D',) having inclined sides b^3 b^3, each provided with a series of slotted ways, *p p*, of endless chains r^3 r^3, carrying spurs *q q* in said ways and revolved in opposite directions by sprocket-wheels from shafts *r r* by means of mechanism driven by revolving mechanism operating platen I (or I',) of the press, substantially as set forth.

28. In a feeding-chamber, D, (or D',) which has gradually-contracted sides b^3 b^3, terminating at a feed-opening of a platen-chamber of a baling-press, and feeding mechanism working in said sides and moving toward the contracted open end of said feed-chamber, the curved wall-surface portion *z*, made with side b^3 of feed-chamber D (or D') at the junction of the contracted end of the same with the platen-chamber, substantially as and for the purpose set forth.

29. In a baling-press, the combination, with a platen-chamber having a feed-opening in a side thereof, and a feed-chamber discharging into said platen-chamber, of a closing-gate which is pivoted at the front margin-edge of the feed-opening and at a point about at the point of termination of the forward transit of the platen, and adapted to be swung rearwardly to the front margin-edge of the same, and when closed be in position parallel with the line of the wall of the platen-chamber, whereby the greatest pressure-strain on said gate will be sustained by the hinged pivots of the same.

30. In a baling-press, the combination, with the platen-chamber and a feeding-chamber communicating with the platen-chamber and a feed-opening made in a side of the latter, of an automatically-operated closing-gate hinged at the intersection of the rear-edge termination, the feed-opening of the platen-chamber with the rearward wall of the feeding-chamber, whereby the gate will be adapted to swing forward to close the feed-opening and rearward to fold against the rear side walls of the feed-chamber without obstructing the movement of the charge of material through the said feeding-chamber to the platen-chamber.

31. In a baling-press having a feed-opening in a side of its platen-chamber, the combination, with said platen-chamber opening and gradually-contracting walls of a feeding-chamber which communicates with said opening, of a gate so hinged at the intersection of the rearward marginal vertical edge of said feed-opening with the rear side walls of the feed-chamber as to adapt the gate to be swung in one direction to close the said opening and in an opposite direction to fold against the rear vertical side walls of the feed-chamber, and mechanism for automatically moving the gate alternately in both directions, as set forth.

32. In a baling-press, the combination, with a platen-chamber having a feed-opening in a side thereof, and feed-chamber communicating with said platen-chamber, and having rigid vertical side walls which effect a gradual contraction of said feed-chamber, of gate F, (or F',) hinged at the intersection of the rear wall of the feed-chamber with the rear marginal side of the feed-opening, mechanism operated by the movement of the platen to close said gate to the opening to the platen-chamber, and mechanism operating independently of the platen for moving the gate outward from said opening, for the purpose set forth.

33. In a baling-press having a feed-opening in a side of its platen-chamber, and a gradually-contracting feed-chamber located exteriorly to the platen-chamber, with its contracted end communicating with the latter through said feed-opening, and in combination with the same, gate F, (or F',) and mechanism for automatically moving said gate alternately toward the platen to close the feed-opening in the platen-chamber, and from said platen to open said gate outward from said feed-opening to fold against a side of the feeding-chamber, for the purpose set forth.

34. In a baling-press, gate F, (or F',) having hollow sleeve c^2, for rigid attachment to a turn-shaft, T, at a side wall of the press, and arms c^3, made in connection with said sleeve and separated by slots c^4, whereby said gate will be adapted to be turned against a side of a feeding-chamber in which spurs of a feeding mechanism are moving, substantially as set forth.

35. In a baling-press, the combination, with a platen-chamber provided with a feed-opening, a feeding-chamber arranged exteriorly to the platen-chamber and communicating with the same through said feed-openings, and feeding mechanism moving in the sides of the feeding-chamber toward the platen-chamber, of a gate which is automatically operated toward the platen-chamber to close the feed-opening thereto, and back from said platen-chamber to a side of the said feeding-chamber, for the purposes set forth

36. In a baling-press, the combination, with the platen-chamber having a feed-opening in a side thereof, and a feeding mechanism which will compact the material while it is being moved forward to the platen-chamber, and feeding mechanism which has its spurs moving continuously in the sides of the feeding-chamber toward the platen-chamber, of a gate which is operated automatically to alternately open and close communication between the feeding and platen chamber.

37. In a baling-press, the combination, with a platen-chamber having a feed-opening in its side, and feed mechanism moving in the sides of a feeding-chamber toward the platen-chamber, of gate F, (or F',) pivoted from the body of the press, and mechanism operated by the forward movement of the platen to swing said gate from a side of the feeding-chamber to a closing position at the feed-opening in the platen-chamber while the platen is being moved forward thereon, and mechanism for effecting a release of the holding of the gate at the feed-opening before the platen has fully completed its forward movement.

38. In a baling-press, the combination, with the platen-chamber having a feed-opening in one of its sides, and a gate adapted to close and open from said feed-opening, and mounted on shaft T, of the quadrant-pinion also mounted on said shaft, and rack-bar H, pivoted to platen I, for operation substantially as set forth.

39. The combination, with gate F (or F') of quadrant-pinion G (or G') and a tripping projection, all secured with shaft T, so as to turn with the same, of rack-bar H, (or H',) pivoted to platen I, (or I',) and having cheek n^4, substantially as and for the purpose set forth.

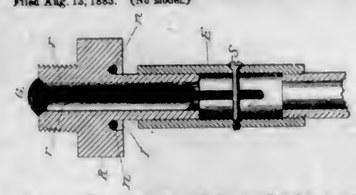
40. The combination, with gate F, (or F',) quadrant-pinion G, (or G',) shaft T, and catching-notch t', made with said pinion, and with a piece secured to said shaft, of elastic dog u^3, and mechanism for releasing said dog by the action of the forward movement of the platen carrying the rack-bar, substantially as and for the purpose set forth.

41. In a baling-press, the combination, with the platen-chamber provided with a feed-opening, and gate F, adapted to be moved in one direction to close said feed-opening, and in the opposite direction to open the same, of mechanism secured to a stationary point of the press and connecting with the gate-shaft, whereby the said gate will be moved from a closed position to an open one, when other mechanism, operated by the movement of the platen, releases its hold on the gate, substantially as set forth.

42. In a baling-press, the combination, with feeding-chamber D and feeding mechanism E, moving at the sides of said feeding-chamber toward a feed-opening made in a side of the platen-chamber of the press, of closing-gate F, adapted to be received in a side of the feeding-chamber at the same time the feeding mechanism is in motion, mechanism operated by the forward movement of the platen for swinging said gate from the side of the feeding-chamber to the opening to the platen-chamber and holding the same closed thereto, and mechanism for releasing said gate from such holding, and for swinging the same back in the side of the feeding-chamber, substantially as set forth.

43. In a baling-press, the combination of a platen-chamber provided with a feed-opening, compressing feeding-chamber, feeding mechanism contained within the feeding-chamber and moving continuously toward the platen-chamber, platen feed-opening-closing gate, and mechanism for operating said gate independently of the mechanism operating the feeding mechanism, all for the purpose set forth.

300,643. GAGE-COCK. CHARLES BUTTERS ROGERS, St. Peter, Minn. Filed Aug. 13, 1883. (No model.)



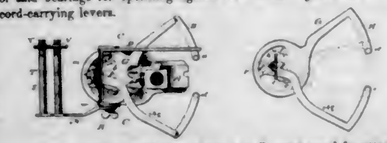
Claim.—1. The combination, with the pipe P, and means, substantially as described, for operating said pipe, of the sleeve E, secured to the upper end of the pipe, and valve G, secured to the sleeve E and working in the shank of a gage-cock, substantially as shown and described.

2. The combination, with a gage-cock and a shank, R, secured thereto, and having a recess, I, in its lower face, provided with a packing-ring, *n*, of the sleeve E and valve G, secured to the sleeve, substantially as shown and described.

3. The combination, with the angular gage-cock V and shank R, secured thereto, and having a recess, I, in its lower face, provided with a packing-ring, *n*, of the sleeve E, valve G, its stem being provided with grooves *r r*, and a hole near its lower end, screw or pin S, pipe P, secured to the lower end of the sleeve, collar O, bracket D, and lever L, having prongs *e l*, substantially as shown and described.

300,644. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. JOSEPH S. SACKETT and JOSEPH P. LAVIGNE, New Haven, assignors, by direct and mesne assignments, to the Sackett Manufacturing Company, Wallingford, Conn. Filed Jan. 28, 1884. (Model.)

Brief.—The device is attached to the presser-bar of a sewing-machine, and is operated by its needle-bar. The cord-carrying fingers vibrate across the needle-path in front of the needle. The dog carried by the short arm of the bell-crank operating-lever is, by its nose engaging a lug, alternately reciprocated in its bearings, thereby exposing the ends of said bearings for operating against the vertical lugs on one of the cord-carrying levers.



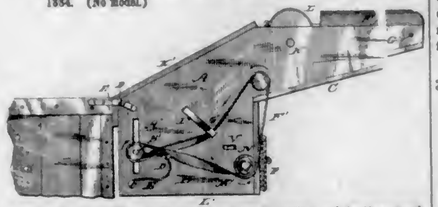
Claim.—1. The combination of the base B, constructed for attachment to or as a part of the presser-foot of a sewing-machine, the vertically-vibrating lever D, constructed for engagement with the needle-bar,

the lever G, pivoted on a vertical stud on the base in rear of the presser-foot, and so as to vibrate in a plane at right angles to the plane of vibration of the lever D, its forward or free end provided with the eye *d*, and the dog *h*, arranged upon the shorter arm of the lever D, and so as to slide from right to left, the lever G provided with the shoulders *e f* on opposite sides of the pivot upon which it turns, and in front of the dog and on the rear extension of the lever G with a stud, *n*, in rear of the dog, said dog provided with a nose, *o*, whereby in one descent of the lever D the dog is thrown to one side, and in the next descent of the lever D the dog is thrown to the opposite side, and so as to alternately engage with the shoulders *f e* on the lever G in the ascent of the lever D, substantially as described.

2. The combination of the base B, constructed for attachment to or made as a part of the presser-foot of a sewing-machine, the lever D, arranged on said base and constructed for engagement with the needle-bar of the sewing-machine, whereby said lever is caused to vibrate in a vertical plane, the lever G, pivoted on a vertical stud on the base in rear of the presser-foot, and so as to vibrate in a horizontal plane, the said lever G extending forward of the presser-foot and there provided with an eye, *d*, and the dog *h*, arranged on the shorter arm of said lever D, and in bearings parallel with the plane of the lever G, the said lever constructed with shoulders *e f* in front of the dog, and with a stud, *n*, in rear of the dog and on the rear extension of the lever G, and the dog provided with a nose, *o*, substantially as and for the purpose described.

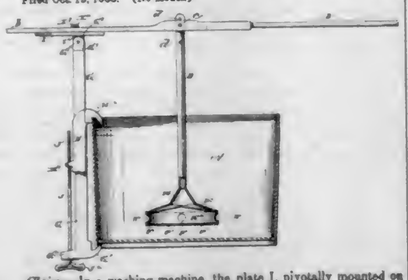
3. The combination of the base B, constructed for attachment to or as a part of the presser-foot of a sewing-machine, the lever D, the lever G, constructed with shoulders *e f*, and with a stud, *n*, the dog *h* on the shorter arm of the lever D, and so as to be moved to the right and left, and the lever M, hung to the base in rear of the pivot of the lever G, and constructed to engage the said lever G, each of the said levers G M extending forward of the presser-foot and there provided with an eye, *d*, substantially as described.

300,645. BAND-CUTTING AND FEEDING ATTACHMENT FOR THRASHING-MACHINES. CASS B. SCHERER, Cicero, Ind. Filed Feb. 13, 1884. (No model.)



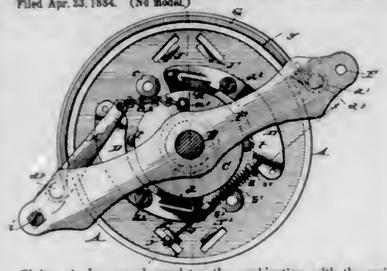
Claim.—The combination, in a band-cutting and feeding attachment for thrashing-machines, of a casing formed with a chute at its receiving end and a rectangular casing at the rear, a downwardly-inclined endless apron traveling in the chute, a roller journaled over the lower end of the inclined apron and provided with a number of curved knives, a feed-apron traveling in the bottom of the rectangular casing, a reciprocating spreader-bar sliding above the forward end of the apron, a fluted roller sliding with its ends in vertical slots in the rear end of the casing, and curved springs formed with bearings for the roller-shaft in their ends, and secured to the casing with their other ends, all constructed and combined as and for the purpose shown and set forth.

300,646. WASHING-MACHINE. MARTIN H. SCHUG, Easton, Pa. Filed Oct. 15, 1883. (No model.)



Claim.—In a washing-machine, the plate I, pivotally mounted on standard G, said plate being provided with a top stud, in combination with a lever having a longitudinal slot in its forward end, and a pounder secured to said lever, substantially as described, and for the purposes set forth.

300,647. SPEED-REGULATOR. JOHN H. SHARP, Doylestown, Pa. Filed Apr. 23, 1884. (No model.)



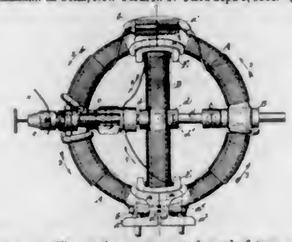
Claim.—1. In a speed-regulator, the combination, with the main flanged wheel on the shaft B, of the hub loosely applied thereon, and the spring-actuated clamping or gripping devices, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The combination of the main wheel on the shaft B, the hub loosely applied on the collar of said wheel, the spring-actuated clamping-levers, and the adjustable tension device, as described, for these levers, substantially as described.

3. The combination, in a speed-regulator, of a main flanged wheel, an internal hub, spring-actuated clamping devices regulated by the adjustable tension device, a stationary arm or stanchion, a pivoted arm flexibly connected to said hub, and the external clamp, G, all constructed and adapted to operate substantially in the manner and for the purposes described.

4. A speed-regulator consisting of a main flanged wheel keyed to the shaft B, a hub having a pulley on it loosely applied to said hub, clamping jaws or lever actuated by a spring provided with the tension device, a stationary stanchion on a pivoted arm, H, and a flexible connection between this arm and the hub, substantially in the manner and for the purposes described.

300,648. ELECTRIC MOTOR. HENRY B. SHERIDAN, Cleveland, Ohio, and HERMANN A. GORN, New York, N. Y. Filed Sept. 5, 1883. (No model.)



Claim.—1. The stationary magnet formed of two magnets, A, which are joined together at their poles by curved cross-heads *a*, and provided at one of the said poles with lugs and fastening devices a^2 a^3, in combination with an armature revolving in a plane at right angles to that of the said magnet.

2. In combination with the magnet A A, the armature consisting of the bar D, wound crosswise, and mounted with its longer axis of cross-section at right angles to its axis of rotation, and the shoes E, secured to the ends of the said bar, the said armature being arranged to revolve in a plane at right angles to that of the said magnet, substantially as and for the purpose set forth.

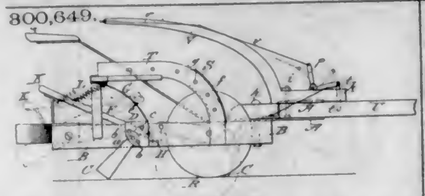
3. The curved shoes E, U-shaped in cross-section, substantially as shown, in combination with the magnet A A, composed of united magnets, and having at its poles curved and concave cross-heads *a a*, and with the armature-core D arranged to revolve in a plane at right angles to that of the said magnet, substantially as specified.

300,649. CULTIVATOR AND COTTON-CHOPPER. JOSIAH SHERMAN, Atlanta, Ga. Filed Oct. 4, 1883. (No model.)

Brief.—A laterally-vibrating tongue controlled by a lever having a spring-pin. Crooked beams to place the teeth on each in different lines of draft. Between the beams at the rear are boxes carrying various implements pivoted on their centers and rocking vertically. Each box has a handle or lever to rock it and a retracting-spring. The boxes may be secured level or at any angle of inclination by a segment and pin.

Claim.—1. In a cultivator, the combination of the front pieces, A A, the crooked beams B B, of varying length, each being bent to form

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two or more broken lines for the attachment of cultivating devices, the cuffs D, adjustable harrow-teeth C, and the pivoted boxes E, carrying cultivating mechanism, substantially as described.

2. In a cultivator, the combination, with the beams B B, of cultivating devices pivoted between the rear ends of the adjacent beams, and provided with levers K K and springs L L, whereby a vibratory or oscillating movement is imparted to said cultivating devices, substantially as described.

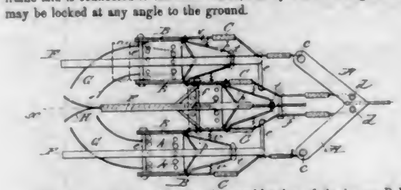
3. In a cultivator, the combination, with the beams B B, of the pivoted boxes E E, carrying cultivating devices, and provided with adjusting mechanism, substantially as described.

4. In a cultivator, the combination of the beams B B, pivoted boxes E E, carrying cultivating devices, and provided with levers K K, springs L L, and yokes F F, the perforated curved standards G G, and pins *e e*, substantially as described.

5. In a cultivator, the combination, with the frame A B and pole U, of the lever V, having foot *k*, the rods *m m*, bell-crank *p*, bolt *l*, and cord *v*, whereby the machine may be turned and held to any desired angle with the line of draft, substantially as described.

300,650. CULTIVATOR AND COTTON-CHOPPER. JOSIAH SHERMAN, Atlanta, Ga. Filed Oct. 4, 1883. (No model.)

Brief.—The cultivating rear teeth are placed upon rocking frames centrally pivoted, and having vertical vibration by means of a handle upon each frame. A yoke slides upon the front arm of each rocking frame and is connected to the main frame, and by it the rocking frames may be locked at any angle to the ground.

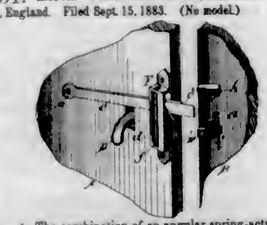


Claim.—1. In a cultivator, the combination of the beams B B, pivoted boxes E E, composed of plates *g h k*, and bolts *i*, said boxes being provided with perforated shanks *m*, and handles F, the bails *p p*, springs *o o*, and the laterally-adjustable cultivators attached to said boxes, substantially as described.

2. In a cultivator, the combination of the beams B B, boxes E E, having perforated shanks *m m*, the bails *p p*, and pins for adjustably connecting said bails and shanks, substantially as described.

3. In a cultivator, the combination of the frame A B, formed in detachable parts, the harrow-teeth D, the pivoted boxes E, having shanks *m*, and levers F, the bails *p*, and the laterally-adjustable cultivators G H, attached to said boxes, substantially as described.

300,651. LATCH. WILLIAM B. SHORLAND, Manchester, County of Lancaster, England. Filed Sept. 15, 1883. (No model.)



Claim.—1. The combination of an angular spring-actuated friction-plate with a latch-guard and a pivoted latch, substantially as described.

2. The combination of a friction-plate, F', with a latch-guard and latch, whereby the latch is held up by said plate when the door is open, and released by the shoulder *i* on the catch when the door is closed, substantially as described.

3. The combination of a latch, a latch-guard, and a friction-plate located in front of the free end of the latch, all relatively arranged and adapted to operate substantially as described.

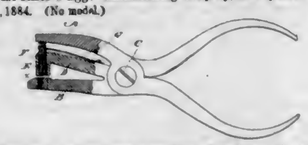
4. The catch-plate G, provided with a shoulder, *i*, adapted to press back a catching-plate, F', and release a latch, *c*, a latching-lip, *g*, for the latch, and a beveled nose, *h*, adapted to act on the upper beveled edge, c^3, of the latch in the act of closing the door, substantially as described.

5. The combination of a pivoted latch, a spring-actuated friction-plate to hold said latch in an elevated position, a catch-plate, and a releasing-shoulder, *i*, arranged to positively press back the friction-plate and release the latch when the door is closed, substantially as described.

6. The combination of a latch having a beveled edge, c^3, a latch-guard having a spring-actuated friction-plate for holding up the latch, a catch having a releasing-shoulder arranged to bear against the plate, and an under beveled nose above said catch and shoulder, substantially as described.

7. The combination of a guard for a gravitating latch, the angular friction-plate F', a spring adapted to act on said plate, a latch, means for raising the latter, a catch, a shoulder arranged to bear against the latch, and an under beveled nose, *h*, all arranged and adapted to operate substantially as described.

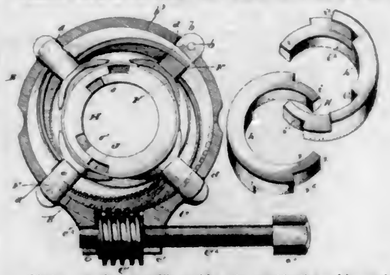
300,652. PUNCH. CARL J. A. SJOBERG, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed May 21, 1884. (No model.)



Claim.—1. A ticket-punch consisting of two levers pivoted together, one provided with arms B D, formed in one piece with the handle, and with a head, E, extending downward from the arm D, nearly in contact with the arm B, the other provided with an arm, A, extending over the arm B, a punch-pin in the head E, above an opening in the arm B, operated successively by the arm A and by a lifting-spring, G, substantially as set forth.

2. The combination, with the recessed lower arm of a punch-lever, of an overhanging arm terminating in a head extending downward to leave only a slit between it and the lower arm, a lever having an overhanging arm, intermediate spring, and a punch-pin operated successively by the overhanging arm and the spring, substantially as set forth.

300,653. METALLIC PACKING FOR PISTON AND VALVE RODS. CHARLES T. SLEEPER, Chicago, Ill. Filed Feb. 29, 1884. (No model.)



Claim.—1. In a metallic packing, the combination, with a casing or box and sectional metallic packing-rings located therein, of followers engaging the rings at different points on their peripheries, and means, substantially as described, for imparting simultaneous movement to all of said followers, substantially as set forth.

2. In a metallic packing, the combination, with a casing or box and sectional metallic packing-rings located therein, of followers and a cam-ring for contracting the packing-rings, substantially as set forth.

3. In a metallic packing, the combination, with a casing or box and metallic packing-rings located therein, of radially-adjustable followers, a cam-ring for actuating said followers, and worm-gearing for rotating the cam-ring, substantially as set forth.

4. In a metallic packing, the combination, with a casing or box and metallic packing-rings located therein, of radially-adjustable followers and means, substantially as described, for positively and simultaneously moving said followers either inwardly or outwardly, substantially as set forth.

5. In a metallic packing, the combination, with a box or casing

and metallic rings located therein, of radially-adjustable followers, bands interposed between the followers and packing-rings, and a cam-ring for actuating said followers, substantially as set forth.

6. In a metallic packing, the combination, with a box or casing and metallic packing-rings located therein, of radially-adjustable followers and a cam-ring, said followers and cam-ring being connected by lugs and grooves, substantially as set forth.

7. In a metallic packing, a box or casing made in two sections, in combination with a cam-ring seated in an annular groove formed on the interior of said sections, substantially as set forth.

8. In a metallic packing, the combination, with a box or casing and a cam-ring seated in an annular groove formed within the casing, said ring being provided with a segmental worm-gear, of a worm-shaft journaled in bearings formed in a projection formed on the box or casing, substantially as set forth.

9. In a metallic packing, the combination, with a box or casing and sectional packing-rings located therein, of followers engaging the packing-rings at different points for contracting the packing, and annular ring-bearings seated against the outer face of the packing-rings, substantially as set forth.

10. The combination, with a stuffing-box, a box or casing containing adjustable packing-rings, and followers engaging the rings at different points, of an annular ring-bearing seated against the gland of the stuffing-box, and a face-plate for retaining the casing in place, substantially as set forth.

11. A sectional metallic packing-ring for piston and valve rods, and adapted to be contracted in size to compensate for wear, the ends of the sections being formed with double overlapping joints on the sides and periphery of the ring, each section of the ring comprising more than a half-circle, substantially as set forth.

12. The combination, with a stuffing-box, of a casing provided with metallic packing, and a face-plate for retaining the casing between the stuffing-box and face-plate, substantially as set forth.

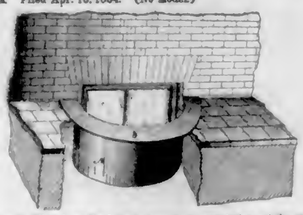
13. The combination, with a stuffing-box and a box or casing containing adjustable metallic packing-rings, the latter engaging the rod outside of the stuffing-box, of a face-plate and a nut for retaining the box or casing in place, substantially as set forth.

14. The combination, with a stuffing-box and a laterally-adjustable casing containing metallic packing-rings seated against the end of the gland of the stuffing-box, of a face-plate and a nut for retaining the packing-rings against displacement, substantially as set forth.

15. The combination, with a rod, of a detachable casing or box provided with adjustable metallic packing, and means, substantially as described, for allowing the packing a self-lateral adjustment, and for preventing it from moving in the direction of the movement of the rod, substantially as set forth.

16. The combination, with a box or casing provided with adjustable packing, of a device, substantially as described, for automatically compensating for wear of the bearings between the packing and the gland or cylinder, substantially as set forth.

300,654. AREA-WINDOW PROTECTOR. JOSEPH F. SMITH, Pittsburg, Pa. Filed Apr. 10, 1884. (No model.)



Claim.—1. The described area-protector, consisting of the metallic guard or body A, having horizontal flange *b*, adapted by its flange to rest upon the sidewalk and by its ends to rest against a house-wall, substantially as described.

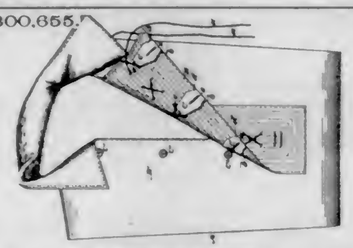
2. The area-protector consisting of the metallic guard or body A, having flange *b* and bottom *c*, substantially as described.

300,655. SHIRT. WALTER M. STEFFACHER, Philadelphia, Pa. Filed Dec. 7, 1883. (No model.)

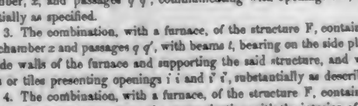
Claim.—1. A shirt having a closing-flap provided with a series of buttoning-tabs independent of each other, each of said tabs being secured to the flap along two of its sides, leaving the outer corner disconnected, substantially as and for the purpose set forth.

2. A shirt having a closing-flap provided with a series of buttoning-tabs independent of each other, each tab being secured to the flap in such manner that its outer corner is left disconnected from the flap, substantially as and for the purpose set forth.

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300,656. SKATE-SHARPENER. XAVIER ST. PIERRE, Osceola, Nev. Filed Feb. 9, 1884. (No model.)



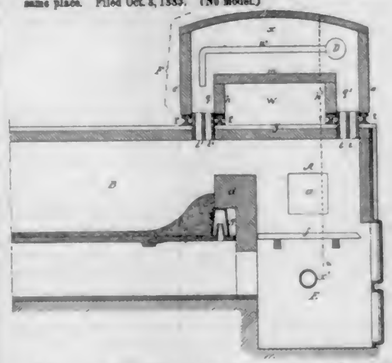
Claim.—1. The skate-sharpening file B, having a stud, *d'*, and flat or rounded sides or edges, in combination with the holder A, having end pieces, *b b'*, one being apertured, substantially as and for the purposes set forth.

2. The file B, formed with the stud *d'*, in combination with the holder A, having cheek-pieces *a* and lip *b*, and end piece, *b'*, having aperture *d*, substantially as and for the purposes set forth.

3. The holder A, having guiding or cheek pieces *a*, lip *b*, end plate, *b'*, and re-enforcing lapping lips *c c*, in combination with the file B, having flat or rounded edges or sides, and formed with the stud *d'* at one end, substantially as and for the purposes set forth.

4. In a skate-sharpening device, the holder A, struck up of sheet metal, with the cheek-pieces *a a*, the end pieces, *b b'*, one having an aperture, *d*, and with the end lapping lips, *c*, all in one piece, in combination with the file B, having the stud *d'*, substantially as and for the purpose set forth.

300,657. PUDDLING AND HEATING FURNACE. WILLIAM STUBLENDK, Bethlehem, Pa., assignor to the Stabblebine Patents Company, same place. Filed Oct. 3, 1883. (No model.)



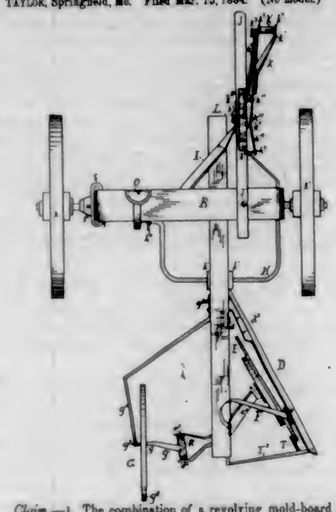
Claim.—1. The combination, with a furnace, of the following elements, namely: first, a gas-chamber, *x*; second, openings *i i*, forming communication between the said chamber and the fire-chamber of the furnace, near the front of the same; third, openings *i' i'*, terminating at or near the rear of the bridge-wall, and, fourth, a blast-pipe communicating with the gas-chamber, all substantially as set forth.

2. The combination, with a furnace, of a structure which is elevated above the roof *y*, so as to leave an opening, W, and which contains a gas-chamber, *x*, and passages *q q'*, communicating with openings *i i'*, substantially as specified.

3. The combination, with a furnace, of the structure F, containing the chamber *x* and passages *q q'*, with beams *t*, bearing on the side plates or side walls of the furnace and supporting the said structure, and with slabs or tiles presenting openings *i i* and *i' i'*, substantially as described.

4. The combination, with a furnace, of the structure F, containing the chamber *x* and passages *q q'*, communicating with the interior of the furnace, and the blast-pipe D, having branches *w*, directed at the ends into or toward the passage *q*, as set forth.

300,658. SULKY ROTARY MOLD-BOARD PLOW. SAMUEL H. TAYLOR, Springfield, Mo. Filed Mar. 15, 1884. (No model.)



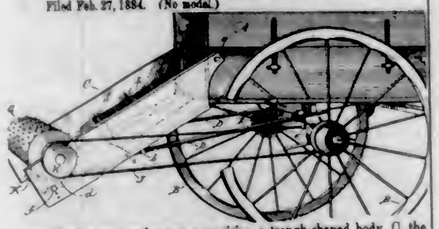
Claim.—1. The combination of a revolving mold-board in a plow with a sleeved support, T, an auxiliary wheel, G, and a continuous revolving axle having an angular joint, substantially as and for the purpose set forth.

2. In a plow, the combination of a beam with a share, a revolving mold-board having an axle which has bearings *d' d'* in a frame, *d*, and an auxiliary wheel, G, having its axle connected by an angular joint with the axle of the said mold-board, all substantially as shown and described.

3. An auxiliary wheel, G, combined with a revolving mold-board, E, the axles of which, *g e*, are forked, *g' g' e' e'*, and secured to a block, R, substantially as shown and described, for the purpose set forth.

4. A spring ratchet-lever, K, composed of a handle-piece, *k*, in which is attached a cranked bolt, k^1, having bearings k^2 k^2 k^2, a forked lever, *k'*, having a spring ratchet-rod, k^3, the lower end of which enters holes k^2, and an arm, k^{31}, substantially as shown and described.

300,659. SEED-SOWER. WILLIAM HENRY THOMAS, Fulton, Mo. Filed Feb. 27, 1884. (No model.)

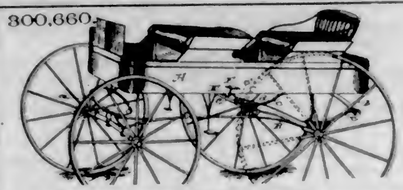


Claim.—A seed-sower comprising a trough-shaped body, O, the upper rear corners of whose sides, extending farther back than its floor, are provided with pins *a*, and a portion of its bottom K pivoted at *e*, in combination with a pin, *f*, and holes in the side boards, a toothed roller, G, journaled in the sides, pulleys H on the shaft of said roller, belts J, adapted to run on the said pulleys and on the hubs of a common wagon, and braces D, having pin-holes and pins *c*, substantially as shown and described, whereby the seeder may be hung at the points *a* to a common wagon, and be adjustably supported by the braces D, and be operated by the turning of the wagon-wheels in traveling.

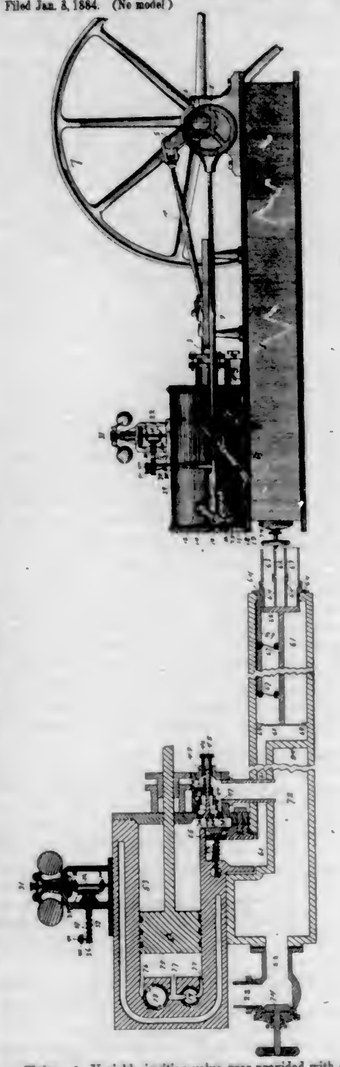
300,660. SPRING-COUPLING FOR VEHICLES. GEO. F. THOMPSON, Oshkosh, Wis., assignor to himself and Andrew Wilson, same place. Filed Feb. 15, 1884. (No model.)

Claim.—The combination of a transverse rod for connecting the ends and equalizing the action of the side springs of a vehicle, and a pair of brackets secured to the body and each cast with a step and with a socket for supporting said rod, substantially as described and shown.

300,660.



300,661. GAS-MOTOR ENGINE. NILES-HIBBARD THOMPSON and HENRY C. SWAN, Washington, D. C.; said SWAN assignor to said Thompson. Filed Jan. 3, 1884. (No model.)



Claim.—1. Variable ignition-valve gear provided with a movable sleeve having arms or projections thereon, in combination with a graduated cam, from which the said arms are released at varying points in the stroke, according to the position of the said sleeve.

2. In a gas-engine, the combination, with an ignition-valve, of the graduated cam 11 and the movable sleeve 24, having the arms 25 and 26, substantially as and for the purpose specified.

3. The combination of an inlet-valve, an ignition-valve, and variable valve-gear, operating to admit the charges at a fixed point in the stroke, to vary their volume by cutting off the supply at varying points in the stroke, and to cause their ignition at short and regular intervals after the supply is cut off.

4. The combination of an inlet-valve, an ignition-valve, and variable releasing valve-gear, operating to admit the charges at a fixed point in the stroke, to vary their volume by cutting off the supply at varying points in the stroke, and to cause their ignition at short and regular intervals after the supply is cut off.

5. In a gas-engine, the combination, with an inlet and an ignition valve, of the graduated cam 11 and the movable sleeve 24, having the arms 25 and 26, substantially as and for the purpose specified.

6. The combination of an inlet-valve, an ignition-valve, variable valve-gear, an outlet-valve, and an eccentric operating them.

7. The combination of an inlet-valve, an ignition-valve, variable releasing valve-gear, an outlet-valve, and an eccentric operating them.

8. In a gas-engine, the combination, with an inlet and an ignition valve, of the movable sleeve 24, having the arms 25 and 26, an outlet-valve having the crank 10 and cam 11, and an eccentric, substantially as and for the purpose specified.

9. The combination of an inlet-valve, an ignition-valve, variable valve-gear, a compression-reservoir, and a pressure-regulator, operating to admit the charges at a fixed point in the stroke, to vary their volume by cutting off the supply at varying points in the stroke, and to cause their ignition at short and regular intervals after the supply is cut off, without any material variation in the degree of their compression.

10. The combination of an inlet-valve, an ignition-valve, variable releasing valve-gear, a compression-reservoir, and a pressure-regulator, operating to admit the charges at a fixed point in the stroke, to vary their volume by cutting off the supply at varying points in the stroke, and to cause their ignition at short and regular intervals after the supply is cut off, without any material variation in the degree of their compression.

11. In a gas-engine, the combination, with an inlet and an ignition valve, of the graduated cam 11, the movable sleeve 24, having the arms 25 and 26, the compression-reservoir 72, the pressure-regulator valve 44, and the spring 47, substantially as and for the purpose specified.

12. The combination of an inlet-valve, an ignition-valve, variable valve-gear, a compression-reservoir, and an adjustable pressure-regulator, operating to admit the charges at a fixed point in the stroke, to vary their volume by cutting off the supply at varying points in the stroke, and to cause their ignition at short and regular intervals after the supply is cut off, without any material variation in the degree of their compression, and by means of which the degree of their compression at the time of their ignition may be changed when desired.

13. The combination of an inlet-valve, an ignition-valve, variable releasing valve-gear, a compression-reservoir, and an adjustable pressure-regulator, operating to admit the charges at a fixed point in the stroke, to vary their volume by cutting off the supply at varying points in the stroke, and to cause their ignition at short and regular intervals after the supply is cut off, without any material variation in the degree of their compression, and by means of which the degree of their compression at the time of their ignition may be changed when desired.

14. In a gas-engine, the combination, with an inlet and an ignition valve, of the graduated cam 11, the movable sleeve 24, having the arms 25 and 26, the compression-reservoir 72, the pressure-regulator valve 44, and the adjustable spring 47, substantially as and for the purpose specified.

15. The combination of an inlet-valve, variable valve-gear, a compression-reservoir, and an adjustable pressure-regulator, operating to admit the charges at a fixed point in the stroke, and to vary their volume by cutting off the supply at varying points in the stroke, without any material variation in the degree of their compression when cut off, and by means of which the degree of their compression may be changed when desired.

16. The combination of an inlet-valve, variable releasing valve-gear, a compression-reservoir, and an adjustable pressure-regulator, operating to admit the charges at a fixed point in the stroke, and to vary their volume by cutting off the supply at varying points in the stroke, without any material variation in the degree of their compression when cut off, and by means of which the degree of their compression may be changed when desired.

17. In a gas-engine, the combination, with an inlet-valve, of the graduated cam 11, the movable sleeve 24, having the arm 25, the compression-reservoir 72, the pressure-regulator valve 44, and the adjustable spring 47, substantially as and for the purpose specified.

18. The combination of an inlet-valve, variable valve-gear, a compression-reservoir, and a pressure-regulator, operating to admit the charges at a fixed point in the stroke, and to vary their volume by cutting off the supply at varying points in the stroke, without any material variation in the degree of their compression when cut off.

19. The combination of an inlet-valve, variable releasing valve-gear, a compression-reservoir, and a pressure-regulator, operating to admit the charges at a fixed point in the stroke, and to vary their volume by cutting off the supply at varying points in the stroke, without any material variation in the degree of their compression when cut off.

20. In a gas-engine, the combination, with an inlet-valve, of the graduated cam 11, the movable sleeve 24, having the arm 25, the compression-reservoir 72, the pressure-regulator valve 44, and the spring 47, substantially as and for the purpose specified.

21. The combination, with a compression-reservoir, of a pressure-regulator valve controlled by an adjustable spring pressing it against its seat, operating to permit gas and air to escape from the said reservoir into a receptacle provided for the purpose whenever the pressure in the said reservoir exceeds a predetermined maximum, and by means of which said maximum may be changed when desired.

22. The combination, with a compression-cylinder and a compression-reservoir, of an intermediate pressure-regulator valve controlled by an adjustable spring pressing it against its seat, operating to control the escape of gas and air from the said reservoir back into the said cylinder, and by means of which the maximum degree of compression in the said reservoir may be changed when desired.

23. In a gas-engine, the combination, with a compression-cylinder and a compression-reservoir, of the intermediate pressure-regulator valve, 44, and the adjustable spring 47, substantially as and for the purpose specified.

24. The combination of an inlet-valve, an ignition-valve, variable valve-gear, a speed-governor gearing with a shaft having a spiral thread, so as to rotate it either to the right or to the left, when the arms of the speed-governor either rise above or fall below their normal position, and a lever engaging with and disengaging from the said spiral thread and connecting with and controlling the said valve-gear, operating to control the speed of the engine by slight changes in the position of the arms of the speed-governor.

25. In a gas-engine, the combination, with an inlet and an ignition valve, variable valve-gear, and a speed-governor, of the friction-wheels 33, 34, and 35, the shaft 36, having the spiral thread 37, the levers 40 and 42, the spring 38, and the stop 38', substantially as and for the purpose specified.

26. A cylindrical or slightly-conical valve having two inlet or outlet ports of equal area placed opposite each other, in combination with a gas-engine power-cylinder having corresponding inlet or outlet ports, operating to equilibrate the pressure against the valve of the ignited charges.

27. In a gas-engine, the combination, with the power-cylinder 75, having the ports 77 and 78, of the inlet-valve 18, having the ports 20 and 21, substantially as and for the purpose specified.

28. In a gas-engine, the combination, with the power-cylinder 75, having the ports 76 and 77, of the outlet-valve 13, having the ports 15 and 16, substantially as and for the purpose specified.

29. Cylindrical or slightly-conical inlet and outlet valves, each having two ports of equal area placed opposite each other, in combination with a gas-engine power-cylinder having corresponding inlet and outlet ports, operating to equilibrate the pressure of the ignited charges against the said valves.

30. In a gas-engine, the combination, with the power-cylinder 75, having the ports 76, 77, and 78, of the inlet-valve 18, having the ports 20 and 21, and the outlet-valve 13, having the ports 15 and 16, substantially as and for the purpose specified.

31. An ignition-valve provided with a channel or small chamber which communicates with a gas-burner in the said valve at all times, and with a reservoir of compressed gas and air at all times except when the ignition-port of the said valve is open.

32. The combination, with an ignition-valve having therein a gas-burner and provided with a channel or small chamber which communicates with the said burner at all times, and with a reservoir of compressed gas and air at all times except when the ignition-port of the said valve is open, of a piece of platinum or other refractory material, which is rendered incandescent by the jet of the said gas-burner, for the purpose of relighting the jet when it is extinguished.

33. The combination, with a gas-burner in an ignition-valve, the lighted jet of which is exposed for a brief time to the charges, for the purpose of igniting them, and relieved of the products of combustion by the opening of a vent, of a piece of platinum or other refractory material, which is rendered incandescent by the burning jet, for the purpose of relighting the jet when it is extinguished, and a reservoir supplying the gas-burner with compressed gas and air, for the purpose of the more efficiently effecting and maintaining the incandescence of the platinum.

34. The combination, with a gas-burner in an ignition-valve, the lighted jet of which is exposed for a brief time to the charges for the purpose of igniting them, of a piece of platinum or other refractory material, which is rendered incandescent by the burning jet, for the purpose of relighting the jet when it is extinguished, and a reservoir supplying the gas-burner with compressed gas and air, for the purpose of the more efficiently effecting and maintaining the incandescence of the platinum.

35. An ignition-valve provided with the gas-burner 80, the platinum or other refractory material 81, the channel or small chamber 83, the port 89, and the apertures 85 and 86, substantially as and for the purpose specified.

36. The combination, with the compression-reservoir 72, of an ignition-valve provided with the channel or small chamber 83, the gas-burner 80, the platinum or other refractory material 81, and the port 89, substantially as and for the purpose specified.

37. The combination, with the compression-reservoir 72, of an ignition-valve provided with the gas-burner 80, the platinum or other refractory material 81, the port 89, and the apertures 85 and 86, substantially as and for the purpose specified.

38. The combination, with the compression-reservoir 72, of an ignition-valve provided with the gas-burner 80, the platinum or other refractory material 81, and the port 89, substantially as and for the purpose specified.

39. The combination, with the inlet-valve of the compression-cylinder, of a cam and suitable means for operating the same to open the said valve, for the purpose of preventing the engine from reversing when stopping.

40. In a gas-engine, the combination, with the valve 54, of the rocking shaft 58 and suitable means for operating the same, and the cam 57, substantially as and for the purpose specified.

41. The combination, with the valves of the power-cylinder, of a pivoted lever engaging with the eccentric-rod, and a rocking shaft connecting with the said lever and having a cam for opening the inlet-valve of the compression-cylinder, for the purpose of disengaging the said valves of the power-cylinder from the eccentric-rod, and for preventing the engine from reversing when stopping

42. In a gas-engine, the combination, with the valves of the power-cylinder, of the eccentric-rod 9, the pivoted lever 50, having the pin or projection 51, the rocking shaft 58, connected with the said lever and having the cam 57, and the valve 54, substantially as and for the purpose specified.

43. The combination, with a gas and air chamber, of a gas and air supply valve provided with springs attached transversely to its stem and to a suitable support, and serving as a guide and support to the said valve, for the purpose of controlling the supply of gas and air to the said chamber.

44. In a gas-engine, the combination, with the gas and air chamber 61, of the gas and air supply valve 66 and the springs 67, having a suitable support, substantially as and for the purpose specified.

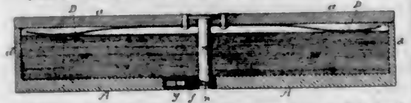
45. The combination, with a gas and air chamber, of a gas and air supply valve provided with a suitable support and guide, having a disk attached to its stem, and provided with a surrounding wall, for the purpose of controlling the supply of gas and air to the said chamber.

46. In a gas-engine, the combination, with the gas and air chamber 61, of the gas and air supply valve 66, provided with a suitable support and guide, the disk 68, and the wall or partition 69, substantially as and for the purpose specified.

47. The combination, with a gas and air chamber, of a gas and air supply valve having a disk provided with a surrounding wall, and springs provided with a suitable support and attached transversely to its stem, for the purpose of guiding, supporting, and controlling the said valve.

48. In a gas-engine, the combination, with the gas and air chamber 61, of the gas and air supply valve 66, the springs 67, having a suitable support, the disk 68, and the wall or partition 69, substantially as and for the purpose specified.

300,662. TEMPORARY BINDER. WILLIAM TRAUTWINE, Philadelphia, Pa. Filed Nov. 28, 1883. (No model.)



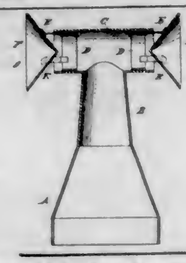
Claim.—1. The combination, in a temporary binder, of the back A, having projections *d*, the cover B, bearing upon said projections, the pin *m*, carried by one of said parts and adapted to openings *y* in the sheets to be bound, and a retainer carried by the other part of the binder and engaging with the pin *m*, as set forth.

2. The combination, in a temporary binder, of the back A, having projections *d*, and the cover B, bearing upon said projections *d*, and having a spring, D, with the pin *m* and the retainer *f*, as set forth.

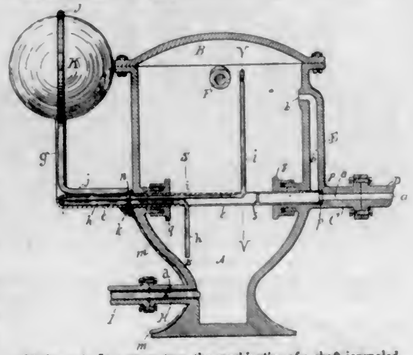
300,663. CHIMNEY-CAP. DAVID CLINTON TRENTER, Adamosa, Iowa. Filed Feb. 4, 1884. (No model.)

Claim.—A chimney-cap having an upwardly-reduced base, surmounted by a tapering neck carrying a transverse pipe open at each end, and connected to the ends of said pipe by band-rings and arms, the obtuse cone-deflectors of larger diameter than said pipe, having their concave surfaces turned from said pipe, substantially as specified.

300,663.



300,664. STEAM-TRAP. WILLIAM VANDERMAN, Willimantic, Conn. Filed Sept. 7, 1883. (No model.)



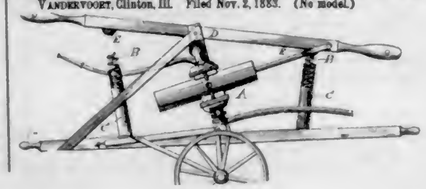
Claim.—1. In a steam-trap, the combination of a shaft journaled therein and arranged to serve as the valve of the steam-induction passage, a hollow globe mounted upon an arm extending from said shaft and properly counterweighted, an air-escape tube connected with the top of said globe and provided with an automatic valve arranged to close when the globe falls, and two tubes inserted in said shaft and communicating with the interior of the trap and terminating at their opposite ends, one at the top and the other at the bottom of said globe, substantially as specified.

2. In a steam-trap, the combination of body A, provided with the water inlet and outlet passages and their automatic stop-valves, a steam-inlet passage, and a rock-shaft arranged to serve as the valve thereof, a hollow globe and its counter-weight arranged upon arms projecting from said shaft, an automatically-closing air-escape pipe communicating with the top of said globe, and two pipes communicating with the interior of the trap and respectively at their opposite ends with the top and bottom of the chamber in said globe, substantially as specified.

3. In a steam-trap, the combination of a rock-shaft, a hollow globe, and counter-weight arranged upon arms projecting from said shaft, two tubes arranged at one end to communicate with the interior of the trap, and at their opposite ends to communicate, respectively, with the bottom and top of the chamber in said globe, an air-tube communicating with the top of said chamber and provided with an automatic valve, and a steam-controlling valve arranged to be actuated by said shaft when the same is rocked, substantially as specified.

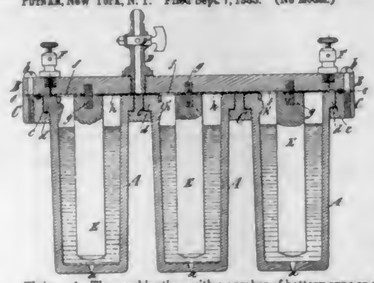
4. In a steam-trap, the combination of a rock-shaft journaled therein and arranged to serve as the steam-controlling valve, a hollow globe suitably counterweighted and arranged on an arm projecting from said shaft, and a system of tubes arranged to allow the water to rise in said globe coincidently with that in the trap and to recede in the same manner when both are being emptied, substantially as specified.

300,665. ATTACHMENT FOR FIRE-ENGINES. MANLY ROAND VANDERVOORT, Clinton, Ill. Filed Nov. 2, 1883. (No model.)



Claim.—In a hand fire-engine, the operating-lever D, provided with rubber bumpers E, combined with the springs B, and spring-holders C, substantially as and for the purpose shown and described.

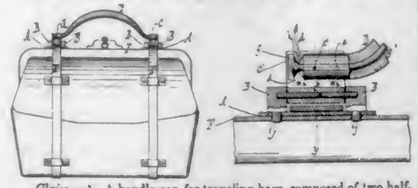
300,666. ELECTRIC BATTERY. JOSEPH C. VETTER and STEPHEN G. PUTNAM, New York, N. Y. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination, with a number of battery cups or cells, each having a valveless aperture in its lower portion, of a head wherein the cups or cells are secured and from which they depend, and which contains an air-tight chamber with which all the cups or cells are in communication, and a vent-tube leading from said air-tight chamber and provided with a cock or valve, substantially as and for the purpose described.

2. The combination of the plates B C, secured together in an air-tight manner, and having the air-tight chamber *f* between them, the vent-tube and valve D D′, and the cells or cups A, fixed in the plate C, and having each a valveless aperture, *a*, substantially as herein described.

300,667. HANDLE AND HANDLE-CAP FOR TRAVELING-BAGS. FRANZ WALDSCHMITT, New York, N. Y. Filed Apr. 17, 1884. (No model.)



Claim.—1. A handle-cap for traveling-bags, composed of two half-shells, between which the handle is fixedly clamped, and two lugs in which the handle-cap swivels, to permit the cap and the handle to swing together to either side of the bag-frame, substantially as shown and described.

2. The combination of the handle, the handle-cap embracing the end of the handle, and composed of two half-shells, C C′, the former one, C, having a hub, *b*, and the latter one, C′, connected with the former, the lugs B B, and a pin, *a*, mounted in the lugs and forming the axis of the hub on one of the half-shells, substantially as described.

3. The combination, substantially as hereinbefore described, of the two half-shells for clamping the handle, the semi-annular partition in each of the half-shells, and the lugs forming the bearings for gudgeons formed on one of the half-shells.

4. The combination, substantially as hereinbefore described, of the two half-shells for clamping the handle, the semi-annular partition in each of the half-shells, the spurs projecting from the inner surfaces of the half-shells, and the lugs forming the bearings for gudgeons formed on one of the half-shells.

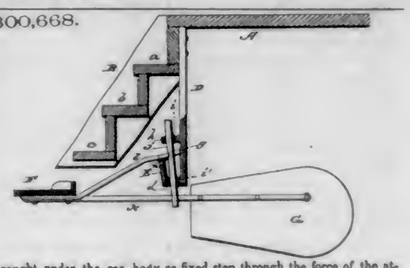
5. The combination, substantially as hereinbefore described, of the two half-shells for clamping the handle, the semi-annular partition in each of the half-shells, and the handle provided with a neck, *g*, and head A.

6. The combination, with the compartments *f*, formed in the handle-cap and with the handle, of a wire extending through the handle, and provided with heads which engage with the compartments *f*, substantially as and for the purpose shown and described.

7. The combination, with the handle D, of a wire, *g′*, extending entirely through the handle, and having heads A formed at its ends, substantially as and for the purpose described.

300,668. CAR-STEP. WILLIAM R. WILCOX, St. Joseph, Mich. Filed Mar. 31, 1884. (No model.)

Claim.—1. The combination, with a car, of a pivoted or hinged step having means, substantially as shown, by which the step may be

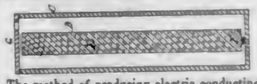


brought under the car-body or fixed step through the force of the atmosphere caused by the momentum of the car.

2. The combination, with the platform of a car, of a hinged step having a vane connected thereto, and provided with a stop, whereby the step may be automatically operated by atmospheric pressure created by the momentum of the car, substantially as specified.

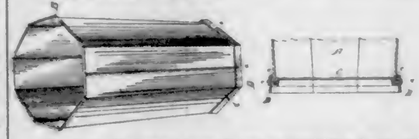
3. In combination, the movable step F, horizontal rod *k*, vane G, brace *l*, rod *j*, bar D, horizontal plate A, provided with the aperture *i*, cross-piece *d*, provided with the aperture *i′*, and bar E, provided with the notch *n*, and terminating in the forked inclined portion *g g′*, substantially as and for the purpose described.

300,669. ELECTRICAL CONDUCTOR. JOHN J. WILLIAMSON, Boston, Mass. Filed Jan. 23, 1884. (No model.)



Claim.—The method of producing electric conducting-wires composed of copper and copper alloys by casting or pouring molten fluid copper or copper alloys to and around a solid bar, or within a hollow ingot of copper or copper alloys, said solid bar or hollow ingot being, while the casting is effected, at such high degree of temperature that the pouring of the molten metal to it will produce metallic fusion between the sections, and afterward reducing such ingot to the diameter proper for electrical conductors by the usual suitable means.

300,670. ASH-BOX. JOHN THOMAS WILSON, Toronto, Ontario, Canada. Filed Feb. 14, 1884. (No model.)



Claim.—1. The tapered pieces A, bent substantially as shown, and suitably jointed together, in combination with the bottom C, provided with the inwardly-inclined flange *b* and hook *c*, the said bottom being arranged in the interior of the box to fit tightly against the sides, the hook *c* extending below and bent over the end edges of the box, substantially as and for the purpose specified.

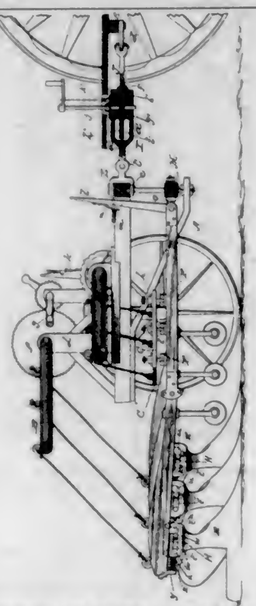
2. The tapered pieces A, bent substantially as shown, and having the notches *a* made at each point where the bend takes place, in combination with the bottom C, provided with inwardly-inclined flange *b*, having notches *f* cut in it to form the hook *c*, said bottom being arranged tightly in the interior of the box, the hook *c* protruding below and bent over the bottom edge of the sides of the box, substantially as and for the purposes specified.

3. An octagon or similarly-shaped box formed of the tapered pieces A, connected together as specified, and having a flanged bottom, C, arranged tightly within it, the hook *c* protruding below and bent over the lower edge of the sides of the body, in combination with a metal strap, D, secured to the outer circumference of the box at its smaller end, the bottom edge of the strap projecting below said small end of the box to form a ring, upon which the box shall rest, substantially as described.

300,671. GANG-PLOW. SELDEN L. WILSON, Waynesborough, Pa. Filed Mar. 5, 1884. (No model.)

Claim.—1. The combination, with the plow-frame, constructed substantially as described, having its forward transverse bar, *e*, provided with a rack-bar, of the vertically-adjustable transverse bar M, the hinged bars *m*, swiveled at their forward ends to the said adjustable bar, the spring-levers, and plows, all adapted to operate substantially as and for the purposes specified.

300,671.



2. The combination, with the frame A, of the vertically-adjustable transverse bar M, the hinge-bars *m*, swiveled at their forward ends to the said adjustable bar, the hinge-bars having the castings F, the diagonal bar C, having the vertically-perforated castings *h*, the T-bolt *i*, the plows, and spring-levers *l*, substantially as specified.

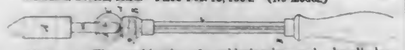
3. The combination, with the plow-beams provided with the castings G, having the keel-flanges *v* and laterally-extending studs *w w′*, of the plows having their standards bifurcated at their upper ends, and provided with the elongated open slots *t′*, the vertical stop-pin H, the downwardly-extending arm *y*, and the spring interposed between the said arm and the plow-standard, substantially as specified.

4. The means herein described for adjusting and connecting the plow-frame to a moving motive power consisting of the castings *a′ a′*, having the shoulders *b′ b′*, the bifurcated link J, having shoulders *c′ c′*, the segmental rack-bar *h′*, pinion *g′*, its shaft and crank-arm, the perforated collar *j*, secured to the said shaft by a set-screw or key, and the pin *k′*, for connecting the collar to the casting *a′*, whereby the coupling of the plow-frame with the engine is made rigid laterally, substantially as and for the purposes specified.

5. The combination, with the frame, of the hinge-beams M, having castings F, and the plow-beams, the rock-shaft D, the diagonal bar C, carrying castings *h*, cords for connecting the diagonal bar to the rock-shaft, with means, substantially as shown and described, for operating the same.

6. The combination, with a traction-engine, of a plow-frame and mechanism for moving the plow-frame laterally with relation to the engine, the said mechanism being connected to the plow-frame by a vertical hinge-joint, and to the engine by a lateral hinge-joint, substantially as specified.

300,672. SOLDERING IMPLEMENT. CHARLES ADOLPH GUNTHER WINTHER, Boston, Mass. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination of a soldering-iron and a handle having to their shanks a ball-and-socket connection or joint, and means of clamping the socket part thereof to the ball, all being for the purpose substantially as set forth.

2. The handle having to its stem the cup and female screw and the slotted and spherically-socketed head, its neck and screw in two parts, as described, in combination with the soldering-iron having its stem provided with a ball to enter the socket of the said head, all being substantially and for use as represented.

300,673. BUTTON. GILBERT T. WOOLSON, New York, N. Y., assignor to Woolson & Miller, same place. Filed Mar. 11, 1884. (No model.)



Claim.—A button having the shoe approximately concentric with the head, and having a flat post, B, one end of which is secured to the head at or near its periphery, and the other end of which is rigidly secured to the shoe at its center, and which has the edges *a a′* inclined upward and outward from the shoe, the width of the post at its junction with the shoe being such that said edges are isolated from or considerably inward of the periphery of the shoe, substantially as herein described.

300,674. FIFTH-WHEEL. WILLIAM M. APPLEMAN, Boston, Pa. Filed Mar. 11, 1884. (No model.)



Claim.—1. In an oscillating fifth-wheel, the king-bolt L, rotary king-bolt plate I, and circle *c*, secured to the bed-piece K, in combination with the king-bolt plate H, provided with rocker-bearings *f*, the circle *d*, provided with rocker-bearings *e*, and the bolt F, passing through the rocker-bearings *e* and *f* and secured to the platform A, substantially as and for the purpose shown and described.

2. The king-bolt L, rotary king-bolt plate I, having a circular hollow center, and the circle *c*, secured to the bed-piece K, in combination with the king-bolt plate H, having the raised circular center or bearing *g*, and provided with rocker-bearings *f*, the circle *d*, provided with rocker-bearings *e*, and the bolt F, passing through the bearings *e* and *f* and secured to the platform A, substantially as shown and described.

3. The bolt F, secured to the platform A, the oscillating fifth-wheel G, and king-bolt plate H, mounted upon the bolt F, in combination with the rotary king-bolt plate I, bed-piece K, and king-bolt L, substantially as shown and described.

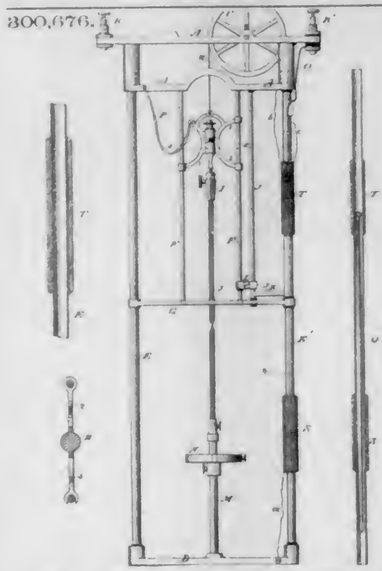
4. The platform A, having the center bar, C, provided with the brace D, the bolt F, secured to said center bar, C, the oscillating fifth-wheel G, and king-bolt plate H, mounted upon the bolt F, in combination with the rotary king-bolt plate I, bed-piece K, and king-bolt L, substantially as shown and described.

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Withdrawn

300,676. ELECTRIC-ARC LAMP. JOREK BAIN, Minneapolis, Minn., assignor to the Bain Electric Company, Chicago, Ill. Filed Nov. 11, 1882. (No model.)

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Claim.—1. In an electric-arc lamp having a constant feed, as described, the combination, with the core of a magnet located within the side frame, of the actuating-coil located outside of said frame, substantially as described.

2. In an electric-arc lamp having a constant feed, substantially as described, the combination, with the core of the magnet located within the side frame, of the actuating-coil located on the outside of the frame and adapted to vertical adjustment thereon, substantially as described.

3. In an electric-arc lamp such substantially as described, the combination, with a carbon-carrier, of a core of an electro-magnet connected thereto by a cord or chain, the core and carbon-carrier being attached to the opposite ends of the chain or cord, whereby they tend to counterbalance each other, substantially as described.

4. In the frame of an electric-arc lamp such substantially as described, the carbon and carbon-carrier arranged below the top or head of the frame, in combination with vertical guide rod or rods, an independent conductor-rod, J, connection between said rod and the side frame, and an adjustable clamp arranged upon said rod in the line of travel of the carbon-carrier, substantially as described.

5. In an electric-arc lamp, the combination, substantially as herein set forth, of a carbon-carrier and guide therefor, arranged below the head of the frame, side rods or tubes for supporting the lower carbon, a core arranged within one of said side tubes, coils connected with the circuit and adapted to control said core, arranged outside of the tube, and connections between the carbon-carrier and the core.

6. The combination, substantially as herein set forth, of a carbon-carrier and guide therefor, arranged below the head of the frame, electrical-circuit connections between the carbon-carrier and the frame, rods or tubes connected to the head of the frame, for supporting the lower carbon, one of the tubes being insulated from the frame, a core arranged inside of one of the tubes and connected to the carbon-carrier, and coils connected to the circuit and supported upon the tube, as set forth.

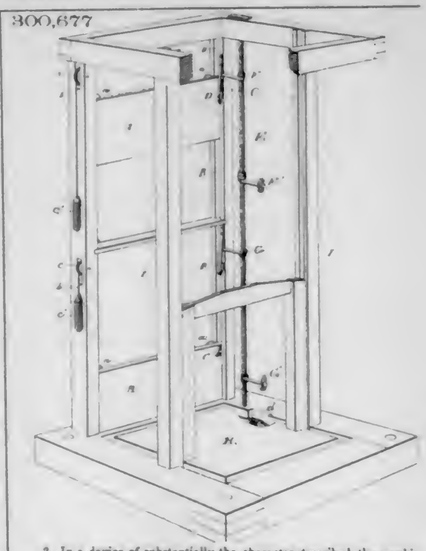
7. The combination, substantially as herein set forth, with a tube forming part of the frame of the lamp, of a core inside of said tube, and two coils connected to the main and shunt circuits of the lamp, respectively, and made adjustable upon the tube, whereby the movement of the core may be controlled.

300,677. ELEVATOR-GATE ATTACHMENT. ISAAC K. BEEKMAN, Dubuque, Iowa. Filed Mar. 20, 1884. (No model.)

Claim.—1. In a device for automatically closing the vertically-sliding gates of an elevator-shaft, the combination, with the catch C and spring-pawls D, of a series of levers engaging with the spring-pawls to release the gates or doors as the elevator leaves each landing in ascending and descending, substantially as described.

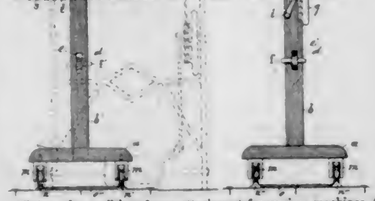
2. In a device for automatically closing the vertically-sliding gates or doors of an elevator-shaft, the combination, with a catch and pawl for holding the gates or doors open, of the vertical rod E, provided with the levers F F' and G G', substantially as and for the purpose set forth.

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3. In a device of substantially the character described, the combination, with the vertical rod E and its series of levers, of the elevator-platform provided with the friction-rollers *d*, substantially as and for the purpose set forth.

300,678. QUILTING ATTACHMENT FOR SEWING-MACHINES. MATHIAS R. BELL and ALBERT H. BELL, Springfield, Ohio. Filed Sept. 8, 1883. (No model.)



Claim.—In a quilting-frame attachment for sewing-machines, the combination of the uprights having vertically-elongated slots formed through them, the cross-beams to the uprights, the rolls supported by said beams, the cross-tie formed at both ends with tenons adapted to pass through and be adjusted vertically in the slots of the uprights, said tenons being perforated at a point that will bring the perforations at the outer faces of the uprights, and wedge-shaped pins entering said perforations and bearing against the outer faces of the uprights, substantially as described.

300,679. APPARATUS FOR PURIFYING MILLET-SEED, &c. ANTON BESSER, Vienna, Austria-Hungary. Filed Sept. 19, 1883. (No model.) Patented in Austria-Hungary Nov. 7, 1881, No. 30,935 and No. 39,348, and in Germany Mar. 6, 1882, No. 20,010.

Claim.—1. In a machine for cleaning and polishing peeled millet-seed, the system of wings D, mounted at suitable distances apart, in combination with the crown C, arms B, and shaft A, the wings being applied with their working-faces nearly tangential to the crown, and covered with suitable elastic material.

2. In a machine for cleaning and polishing millet-seed, the fixed pieces or brackets F, made triangular in cross-section, covered or faced with elastic material on their acting surfaces, and applied at intervals, in combination with the upper half of the mantle or casing, said fixed pieces or brackets having free spaces between them and arranged with their acting surfaces *f'* inclining downward, all substantially as shown and described.

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3. In combination, the revolving system of wings D, constructed and applied as set forth, the case having its upper half or mantle E provided with the triangular ribs F, constructed and applied as set forth, and the air-conduits L L', as and for the purposes shown and described.

4. The apparatus for cleaning and polishing millet-seed, consisting of the outer case having the described system of triangular ribs F in its upper part only, its under part being slotted or perforated, as set forth, the revolving system of wings D, these wings and the ribs F having their working-faces constructed and positioned as set forth, and the air-conduits L L', all substantially as shown and described.

300,680. ORNAMENTAL CHAIN-HOOK. CHARLES F. BETERLE, Providence, R. I. Filed Apr. 30, 1884. (No model.)



Claim.—In a chain-hook, the combination of the chain-connecting eye, the shank of the hook, the pivoted hook-arm, the fastening-stud, and the corresponding perforation in the opposite member of the hook, substantially as described.

300,681. ROLLER FOR STORE-SERVICE APPARATUS. ISIDORE BRAUN, Philadelphia, Pa. Filed May 16, 1884. (No model.)

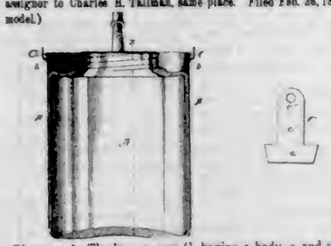


Claim.—1. A roller having a circumferential groove which is clad with elastic material sprung thereinto, substantially as and for the purpose set forth.

2. A roller having a circumferential groove the sides whereof are formed with ridges, and a band of elastic material embracing said ridges, substantially as and for the purpose set forth.

3. A roller having a groove the sides whereof are formed with ridges *a'* and recesses *b*, and a band of elastic material fitted to said groove, substantially as and for the purpose set forth.

300,682. INCASED OIL-CAN. JAMES A. BLANKLEY, Bellaire, Ohio, assignor to Charles H. Tallman, same place. Filed Feb. 26, 1884. (No model.)

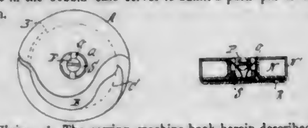


Claim.—1. The lugs or ears C, having a body, *c*, and neck *c'*, in combination with the jacket B, having a slit, *b*, the lugs or ears being arranged with the neck outside of the jacket, and the body inside of the same, substantially as and for the purposes described.

2. The combination, with an incased vessel and an incasing-jacket for the same having a slot, *b*, of the ears C, with the body *c* of the same upon the inside of the jacket, and between said jacket and the incased vessel, and the neck *c'* extending out through the slot *b*, substantially as and for the purposes described.

300,683. SEWING-MACHINE HOOK. ADAM BOECHER, New York, N. Y. Filed Nov. 13, 1883. (No model.)

Brief.—A curved slot extends entirely across the face of the oscillating hook and terminates in its rim. The bobbin-case containing the bobbin is placed in the hook through the opening in its back. An adjustable tension-spring is contained in the split hollow post of the bobbin-case, and a set-screw entering said hollow post may be operated by a screw-driver through the central hole in the hook to adjust the tension. A hole in the bobbin-case serves to admit a push-pin to remove the bobbin.



Claim.—1. The sewing-machine hook herein described, provided with the outer face, having a curved slot extending across the face of the hook from the rim thereof, and having an inlet-mouth in said rim, said hook having a hook-point arranged at one side of the inlet-mouth of the slot and projecting outside the plane of the outer face of the hook, for engaging the loop of needle-thread and causing it to enter the inlet-mouth of the slot, substantially as described.

2. The sewing-machine hook herein described, provided with a curved slot in its outer face, which extends inward from the rim of the hook and terminates at the other end in said rim, said hook having a hook-point arranged at one side of the inlet-mouth of the slot, for engaging the loop of needle-thread and causing it to enter the inlet-mouth of the slot, substantially as described.

3. The combination of the hook having an open back for the insertion of the bobbin, a closed face provided with a transverse slot, one end of which is closed and the other open through the rim of the hook, to form an inlet-mouth, and a hook-point arranged at the inlet-mouth of the slot, with the bobbin-holder opposite to the open back of the hook, and the shaft supporting both the hook and the bobbin-holder, said hook-point serving to catch the loop of needle-thread and carry one part thereof through the transverse slot and the other part into the inlet-mouth of the slot and cast it about the bobbin, substantially as described.

4. The combination of the hook having an open back for the insertion of the bobbin, a closed outer face provided with a curved slot, having an inlet-mouth opening into the hook-body, and a curved projecting hook arranged at one side of the inlet-mouth of the slot, with the bobbin-holding plate arranged opposite the open back of the hook, and the shaft carrying both the hook and the bobbin-holding plate, said hook-point serving to engage the loop of the needle-thread and carry it into the transverse curved slot and through the inlet-mouth of the slot for casting the loop about the bobbin, substantially as described

5. The combination of the hook having an open back, a slot across its closed face, and a projecting hook-point, with the bobbin-case having an axial post provided with longitudinal slots and arranged in the hook, the bobbin arranged upon the post, the axial tension-spring composed of arms the extremities of which project through the slots of the post against the bobbin, and the set-screw for adjusting the pressure of the arms of the spring against the bobbin, substantially as described.

6. The sewing-machine hook herein described, having an open back, in combination with the bobbin-holder opposite the open back of the hook, the spring or springs acting on the bobbin-holder to keep it in position against and over the open back of the hook, and the hook-shaft supporting the bobbin-holder and the spring or springs, together with the book, substantially as shown and described.

7. The combination of the bobbin-case having the axial hollow post provided with longitudinal slots, the bobbin fitted to the post, the axial tension-spring arranged in the post to project from its slots, thereby acting on the bobbin, and means for adjusting the pressure of the spring against the bobbin, substantially as shown and described.

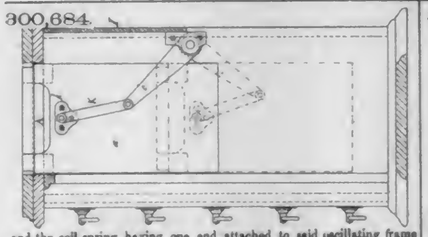
8. The combination of the bobbin-case having the axial hollow post provided with longitudinal slots, the bobbin fitted to the post, the axial V-shaped tension-spring arranged in the post to project from its slots, and the tapering set-screw arranged in the post to act on the tension-spring, substantially as shown and described.

300,684. SEWING-MACHINE TABLE. JAMES BOLTON, Chicago, Ill., and JAMES C. VAN DYKE, Elizabeth, N. J., assignors to the Singer Manufacturing Company of New Jersey. Filed Feb. 24, 1883. (No model.)

Claim.—1. The combination, with a sewing-machine cabinet having an opening in its top and guiding-ways below the said top, of a vertically-movable platform or table located within said ways, and doors hinged to the sides of the cabinet by vertical pivots, and thereby adapted to sustain said platform or table when raised and conceal it when lowered, substantially as and for the purpose set forth.

2. The combination, with the upright sides, perforated top, and vertically-movable platform, of the oscillating frame with projecting arms, the links pivoted to such arms and also to the said movable platform

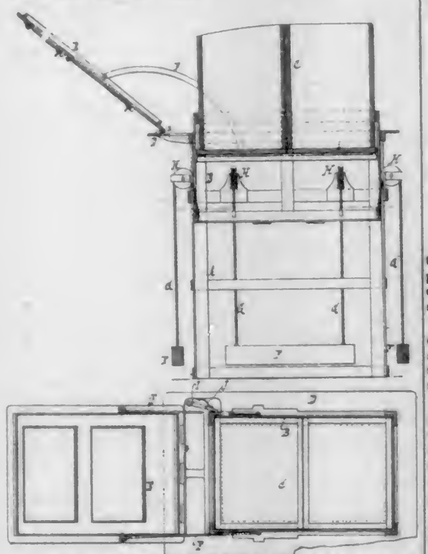
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and the coil-spring having one end attached to said oscillating frame and the other secured outside of said frame, substantially as and for the purposes described.

300,685. GARBAGE-RECEPTACLE. VALENTIN BORST, New York, N. Y. Filed Feb. 21, 1884. (No model.)

Brief.—A cover hinged to a projecting rim of a frame is connected to a frame sliding in the main frame by means of pivoted arms. The sliding frame is provided with double chains and lifting-weights, and is held in raised position by a catch.



Claim.—1. The combination, substantially as hereinbefore described, of the main frame, the sliding frame, the cover hinged to the main frame, and pivoted arms connecting the cover to opposite sides of the sliding frame.

2. The combination, substantially as hereinbefore described, of the main frame having its upper end provided with a projecting rim, the sliding frame, the cover hinged to said rim of the main frame at a distance from one side of the frame, and the pivoted arms connecting the cover to opposite sides of the sliding frame.

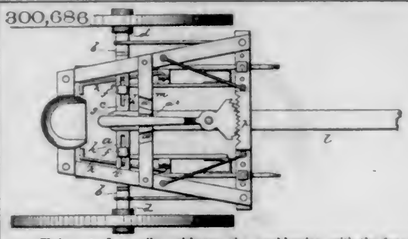
3. The combination, substantially as hereinbefore described, of the main frame, sliding frame, the cover hinged to the main frame, the pivoted arms connecting the cover to opposite sides of the sliding frame, and the lifting-weights of the sliding frame.

4. The combination, substantially as hereinbefore described, of the main frame, the sliding frame, the cover hinged to the main frame, the pivoted arms connecting the cover to opposite sides of the sliding frame, the lifting-weights, and the double chains connecting the weights to opposite sides of the sliding frame.

5. The combination, substantially as hereinbefore described, of the main frame, the sliding frame, the cover hinged to the main frame, the pivoted arms connecting the cover to opposite sides of the sliding frame, and the catch arranged on the main frame to engage the sliding frame in its upper position.

300,686. CULTIVATOR. THOMAS JEFFERSON BOWEN and JAMES FRANKLING BARNES, Pickens, S. C. Filed Mar. 5, 1884. (No model.)

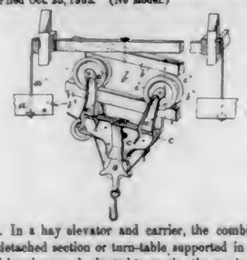
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Claim.—1. In a sulky-cultivator, the combination, with the frame provided on its forward transverse bar with a loop-rack, *p*, of a tongue pivoted at its rear end to the arched axle, the ratchet-lever pivoted on the pivoted tongue engaging the loop-ratchet, and the transverse notched bar *m*, for seating the lever in its adjustment, substantially as specified.

2. The combination, in an arched axle, of the angle-irons *c*, with spindles *d*, having fulcrum-brackets *i* and studs *i'*, with the axle-bar *c*, having slots *h*, and the bolts *f*, substantially as specified.

300,687. HAY ELEVATOR AND CARRIER. JOHN M. BOYD, Chester, Wis. Filed Oct. 25, 1882. (No model.)



Claim.—1. In a hay elevator and carrier, the combination, with the track, of a detached section or turn-table supported in a horizontal plane on pivotal bearings, and adapted to receive the carrier from either end, and to permit said carrier to be run entirely across it, substantially as described, and for the purposes specified.

2. In a hay elevator and carrier, the combination, substantially as described and shown, of the stop *h*, constructed with the upper lugs, h^4, and the lower inclined lugs, h^3, and the catch-block *g*, provided with the lugs g^3, and placed and sliding in a suitable recess in the body of the carrier, substantially as and for the purposes set forth.

3. The combination, in a hay-carrier, of the single track or way, having stop provided with lateral guides attached to the under side thereof, the catch supported on the carrier and provided with lateral lugs adapted to engage said guides, the grapple pivoted in the carrier, having a hook to engage the sheave-frame, and provided with an extension above its pivotal center, adapted to be engaged by the catch, and the sheave-frame and elevating-rope, substantially as set forth.

4. The combination, with the carrier and the elevating-rope, of the grapple or rope-clamp *i*, supported on the carrier, and hanging between the sheave-frame and the guide-pulley, and provided with means, substantially as described, whereby the draft-rope may be held or released, substantially as set forth.

5. In a hay elevator and carrier, the combination, with the carrier-frame, of the catch *i*, having the upper end of its bars hung upon axle of the pulley c^2, or otherwise fixed to the frame, the roller i^3, journaled in the lower ends of said bars, and the pawl i^2, pivoted to the bars *i'*, and arranged to grasp the rope passed between the trip *d'* and the guide-pulley c^2, and provided with the lever i^4, connected to the operating-cord i^5, substantially as set forth.

6. The combination, with the frame *c* and the trip d^3, of the grapple *f*, having the hook f', the arm f^3, and upper portion, f^2, and a catch-block sliding vertically and dropping in front of the portion f^2, and locking the grapple when the latter is engaged with the trip, substantially as and for the purposes set forth.

7. In a hay elevator and carrier provided with a catch, having laterally-projected lugs, the stop A, composed of the main piece h^2 and the inclined guide-lugs h^3 h^3, projected out from opposite sides of said piece h^2 at respectively the upper and lower sides thereof, and adapted to engage with the catch, substantially as and for the purposes specified.

8. In a hay-carrier, the combination, with a suitable grasping device for supporting the sheave-frame and a suitable way, of a stop attached to the way, said stop being formed with a downwardly-projecting center piece provided with lateral extensions or lugs on each side, adapted to raise the catch when the carrier approaches from either end of track, and an automatic catch adapted to engage with said stop and pass the same when desired, substantially as set forth.

9. In combination with the carrier-frame, mechanism for supporting the sheave-frame, and a stop secured on the track or way, and provided with means whereby to raise the catch, a sliding catch supported by the carrier-frame and resting upon and being supported by the mechanism for supporting the sheave-frame when in contact with the stop, and arranged in position to drop in engagement with and lock said sheave-frame supporting mechanism when released from the stop, substantially as set forth.

10. The combination, with a hay elevator and carrier and a suitable track or way, of a stop secured to the under side of track, and provided with a lower inclined lug, h^3, and an upper stop-lug, h^4, and an automatic catch supported on the carrier, and adapted to be raised by the lower inclined lug and held in contact with the upper stop-lug of the stop, substantially as and for the purposes specified.

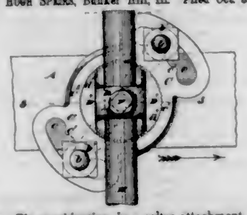
11. In a hay elevator and carrier adapted to run upon a single rail or way, the combination of the stop secured on the track or way, and provided with lower inclined lugs, h^3, and upper stop-lug, h^4, the grapple pivoted in the carrier and provided with an extension, f^2, above its pivot, and the automatic catch provided with lateral lugs arranged to engage the lugs of the stop, said catch being arranged and adapted to alternately engage with said lugs on stop or rest down in front of extension f^2 and lock the grapple, substantially as described, and for the purposes specified.

12. In a hay elevator and carrier adapted to run upon a single track or way, the combination, with the carrier, and suitable means therein for supporting the sheave-frame, of the stop secured on the under side of the track or way, and provided with lateral extensions or lugs, whereby to raise the catch, and suitably formed to permit said catch to pass it, as described, and an automatic catch adapted to alternately engage and lock the mechanism for supporting the sheave-frame as the carrier leaves the stop, and to be locked or held up against the stop by said mechanism when in contact with the stop, substantially as and for the purposes specified.

13. In a hay-carrier, the combination, with a stop secured on the track and provided with suitable lateral guides and suitable devices in the carrier for supporting the load, of the catch arranged in the carrier, and having its upper or outer end bifurcated, forming upwardly-projected arms on its opposite sides, and lugs projected or bent inward toward each other from the said arms, substantially as set forth.

14. The hay elevator and carrier substantially as described and shown, composed of the main frame provided with traveling wheels adapted to run upon a single track or way, and pulleys, the grapple arranged therein and formed with hook f', arm f^3, and upward extension f^2, and catch *g*, arranged above the grapple, and adapted to drop down in front of extension f^2 and lock said grapple, and provided with lateral lugs g^3, whereby it may be operated to engage and release the grapple, substantially as set forth.

300,688. COLTER ATTACHMENT. FERDINAND BROTHER, DAVID MORRIS, and HUGH SPENS, Bunker Hill, Ill. Filed Oct. 3, 1883. (No model.)



Claim.—1. The combination, in a colter attachment, of a clamp-plate formed with a central opening to form a socket, and openings in the ends to receive the clip-arms, and a disk having a socket and fitting the central opening in the clamp-plate.

2. The combination of a clamp-plate formed with a central opening to form a socket flaring inwardly, having recesses in the wall thereof to present projections, and a disk having a colter-socket and formed with recesses and projections to fit the socket in the clamp-plate, as set forth.

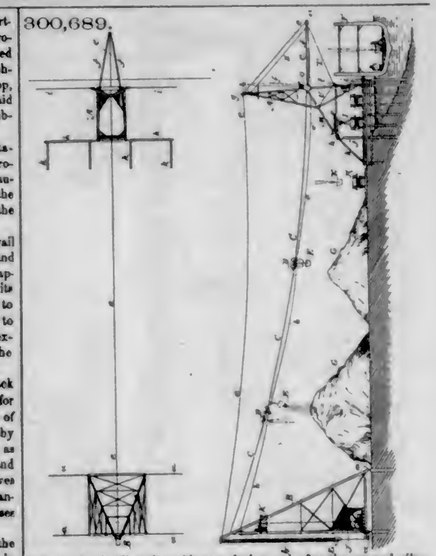
3. The combination, in a colter attachment, of a clamp-plate having a central opening, and a disk to occupy the opening, having a socket formed with teeth at the inner side, and a screw-bolt to press the shank of the colter against the teeth.

300,689. HOISTING AND CONVEYING MACHINE. ALEXANDER E. BROWN, Cleveland, Ohio. Filed Dec. 7, 1883. (No model.)

Claim.—1. In combination with the piers and cable of a cable tramway for hoisting and conveying apparatus, the hinged bridge or apron, constructed and arranged as specified, so that when raised or turned up the cable is correspondingly bent or turned up, and is thus retained in a taut and useful condition for that portion of its length which remains distended between the two piers, substantially as set forth.

2. In combination with the piers, the cable and the bridge or apron, a device for holding the cable taut during and after the upward vibratory movement of the bridge, and operating as specified, so that during the upward movement of the bridge the pull of the cable cannot operate to either impede or render more difficult the said movement of the said bridge.

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3. In combination with the outer pier, the cable and the bridge, the device O, (or its equivalent,) capable of being moved out of the way of the carriage D whenever the bridge may be down, all substantially as hereinbefore set forth.

4. In combination with the outer pier and the cable tramway, a hinged bridge or apron arranged and operating, as described, to receive the pulling-strain of the cable in a direction corresponding, substantially, with the direction of the length of the bridge, as set forth.

5. In combination with the piers, the bridge, the main cable C, and the counterbalance-cable *e*, the device for holding the counterbalance-cable whenever the bridge and main cable may be turned up, so that it will continue to work as well then as when the bridge may be down, all substantially as hereinbefore set forth.

6. The movable or adjustable counterbalance-cable-holder device h^5, constructed and operating as specified, so that it may be moved or adjusted out of the way when the counterbalance-cable extends in a substantially horizontal direction from the back pier to the outer end of the bridge, and can be set or adjusted to come over and in line with said counterbalance-cable for the purpose of holding the latter properly when the said cable and bridge shall be turned up, all as hereinbefore set forth.

7. In combination with the apron or bridge, weighted hold-down rods, chains, or guys provided with fasteners, and having arranged with them guide-sheaves, such as seen at *i*, the whole arranged and operating to render easy the securement of the outer end of the bridge to the holdfast-pins near the base of the pier and their releasement therefrom, as occasion may require.

8. In combination with the base of a pier and the track on which it rests, rollers mounted on vertical axes and adapted to facilitate the adjustment of the pier on its tracks, and at the same time prevent any displacement of the pier from the track sidewise of the latter, all as hereinbefore set forth.

9. In combination with a pier and the track on which it rests and on which it is designed to be adjusted, a device, substantially such as specified, for distributing the side strain on the track-beam, and at the same time creating a frictional contact, which tends to hold the pier in place (endwise) on the track, the same constructed and operating substantially as hereinbefore set forth.

10. The rail-clamping device shown and described for holding the pier down on the track-rail, consisting, essentially, of claw-like devices adapted to catch beneath the head of the rail, means for exerting a downward pressure on the rail, and means for easily adjusting the claw-like devices toward each other and for holding them in place, all substantially as hereinbefore set forth.

300,690. HOISTING AND CONVEYING MACHINE. ALEXANDER E. BROWN, Cleveland, Ohio. Filed Dec. 7, 1883. (No model.)

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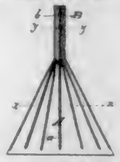
Claim.—1. In combination with the two piers, a bridge pivoted to the upper portions of both of said piers, all substantially as and for the purposes hereinbefore set forth.

2. The combination, with the two piers and a bridge pivoted at one end to one of them, of a universal-joint coupling connecting the other end of said bridge and the other pier, all substantially as and for the purposes set forth.

3. The combination, with the bridge, of one pier resting on a double track, another pier resting on one track only, (so that it can be tipped toward or from the pier resting on the double track,) and couplings or connections between the bridge and piers, which will permit one of the piers to tip, as explained, without in the least straining its couplings to the bridge.

4. In combination with the pier capable of tipping (on a single track) and the bridge pivotally connected to said pier, means for clamping together the pier and the bridge-supporting beam, the whole constructed and operating substantially as hereinbefore set forth.

300,691. RIBBED GLASS FUNNEL AND MOLD THEREFOR. JOS. K. BROWN, Canton, Ohio. Filed Feb. 14, 1884. (No model.)



Claim.—1. A glass mold, C, having the narrow tapering fluted or grooved part c and the larger flaring part c', in combination with a plunger, D, having a stem, d, and a larger cone-shaped portion, d'', said parts being adapted to form a glass funnel having an externally-ribbed neck or stem, substantially as set forth.

2. A glass mold, C, having the narrow tapering part c and the larger flaring part c', in combination with a plunger, D, having the stem d, and the larger cone-shaped part d'', having grooves d^3 in its face, these parts being adapted to form a glass funnel having a series of internal ribs upon its bell portion, substantially as set forth.

3. A glass mold, C, having the narrow tapering fluted or grooved part c and the larger flaring part c', in combination with a plunger, D, having the stem d, and the larger cone-shaped part d', provided with grooves d^3, these parts being adapted to produce a glass funnel having an externally-ribbed stem and an internally-ribbed bell portion, substantially as set forth.

4. A glass funnel having the neck or stem B provided with a series of external ribs or grooves, substantially as set forth.

5. A glass funnel having the stem B provided with a series of external grooves or ribs, and the bell portion A provided upon its inner face with ribs a, substantially as set forth.

300,692. MOP OR BRUSH HOLDER. WILLIAM BUSCH, St. Louis, Mo. Filed Dec. 26, 1883. (Model.)

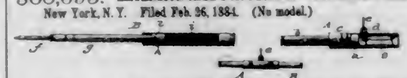
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Claim.—1. A mop or brush holder consisting of the socket A, corrugated plate C, and perforated base-plate B, substantially as described.

2. A mop or brush holder consisting of the socket A, corrugated plate C, and perforated base-plate B, in combination with a brush or other analogous article, substantially as and for the purposes set forth.

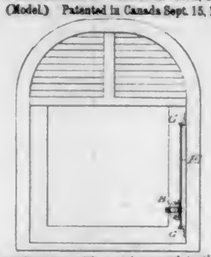
300,693. EXTENSION-CASE FOR PENCILS. RICHARD M. COLLARD, New York, N. Y. Filed Feb. 26, 1884. (No model.)



Claim.—1. An extension-case for pencils and similar implements, consisting of two tubes arranged to slide one within the other, with a spring arranged to operate upon the tubes, substantially as shown and described, whereby the case is automatically extended whenever it is withdrawn from its sheath.

2. In combination with an automatic extension-case, substantially such as described, a holding case or sheath provided with friction-springs or equivalent means for holding the extension-case therein, with its spring compressed, substantially as herein described.

300,694. SASH-FASTENER. OSBORN R. COOKE, Salem, Ohio. Filed Apr. 3, 1884. (Model.) Patented in Canada Sept. 15, 1883, No. 17,683.

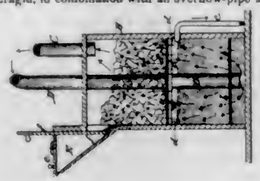


Claim.—In combination with a rod secured to the window-frame in front of the sash, a casing, B, having raised central portion, b', and flanges a' a', a pivot, b, and a central stop, as B', and a pair of jaws mounted on the pivot b and engaging the rod on the frame, by which the holder is adapted to be attached to the front of the sash without cutting or mortising, as shown and described.

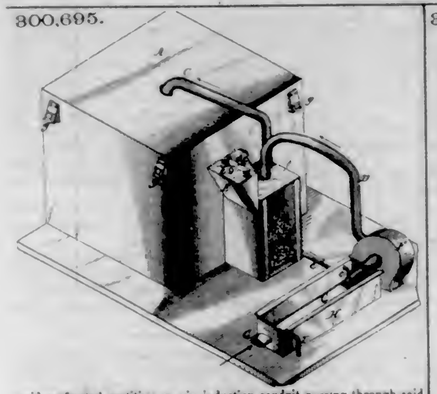
300,695. REFRIGERATING APPARATUS FOR CHAMBERS AND BUILDINGS. JOHN J. CRAVEN, Patchogue, N. Y. Filed Apr. 4, 1884. (No model.)

Claim.—1. For the purpose of refrigerating a preserving-chamber, the combination, with said chamber, of a closed cold-producing chamber containing a solid refrigerant above and separated from a liquid refrigerant, an overflow-pipe entering said chamber into an air-space separating the solid and the liquid refrigerants, a blower delivering the air into the contained liquid refrigerant, and a pipe for delivering the cold air from said cold-producing chamber, substantially as described.

2. In a refrigerating apparatus, a closed cold-producing chamber divided by a horizontal perforated partition, and having a lower perforated diaphragm, in combination with an overflow-pipe arranged below



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said perforated partition, an air-induction conduit passing through said partition, terminating below the perforated diaphragm, and an air-eduction pipe, substantially as described, for the purpose specified.

3. The combination, in a refrigerating apparatus, of the closed cold-producing chamber, divided by a horizontal perforated partition, with an air-induction pipe passing through and terminating below said perforated partition, an overflow-pipe, a supplemental cooling-tank into which it terminates, and a closed blower receiving air by a pipe passing through said supplemental cooling-tank, substantially as described, for the purpose specified.

4. The combination, in a refrigerating apparatus, with a closed cold-producing chamber having an induction and an eduction air-blast pipe, of a hopper having a sealing-cover and a charge-delivering sealing-slide, substantially as described, whereby to deliver the ice-charge into said chamber without interrupting the air-current through the same.

5. The combination, with a preserving-chamber, of a connected closed cold-producing chamber containing in separate bodies a solid refrigerant above a liquid refrigerant, an overflow-pipe entering said chamber between these contained refrigerating bodies, a supplemental cooling-tank, and a closed blower having its air-supplying pipe passing into and through said supplemental cooling-tank, substantially as herein set forth.

6. A closed cold-producing chamber divided by a perforated horizontal partition, whereby a solid refrigerant is separated from a liquid refrigerant, a sealing supply-hopper, and an overflow-pipe, in combination with an air-induction, an air-eduction pipe, and a preserving-chamber, substantially as herein set forth.

7. The combination of a preserving-chamber with a closed cold-producing chamber containing a solid and a liquid refrigerant separated by an air-space, an overflow-pipe connecting with said contained air-space between the cold-producing bodies, a closed blower, and suitable inlet and discharging air-pipes, the inlet-pipe being arranged to deliver the air into the liquid body, substantially as described, for the purpose specified.

8. The method herein described of refrigerating a preserving-chamber, which consists in forcing air through and in successive contact with separated liquid and solid refrigerating bodies contained within the same chamber, maintaining the separation of said refrigerating bodies by an intervening air-space, and a sealed overflow to preserve them in condition for the passage of the air to be cooled, and delivering the air so cooled by its successive passage through these separated bodies into the preserving-chamber, substantially as described.

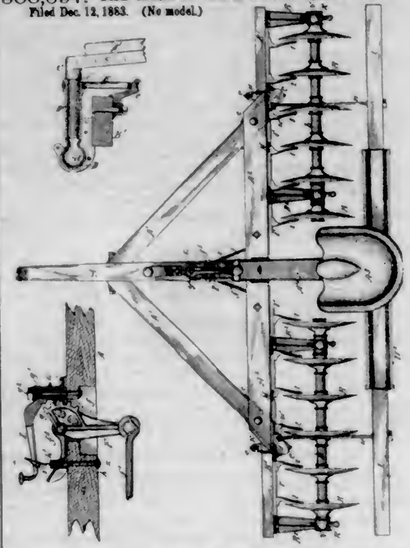
9. The cold-producing chamber B, constructed to hold brine and ice in two separated bodies, one above the other, and having a sealed top door, e, combined with the overflow-pipe c, the separating air-space d, the blower F, and the preserving-chamber, substantially as herein set forth.

300,696. SPECTACLES. ANDREW JAY CROSS, Chester, Pa. Filed Apr. 23, 1884. (No model.)



Claim.—The connection of the nose-piece of a pair of spectacles with the frames of the eye-pieces thereof, by means of flanges on said nose-piece and lips and openings on and in the studs of the frames, the ends of the nose-piece entering the openings of the studs, and the flanges entering the lips, said lips being bent over or on the flanges by any suitable tool or implement, thus clinching the lips on the flanges and firmly connecting the nose-piece and frames of the eye-pieces.

300,697. DISK-HARROW. GEORGE G. CROWLEY, Little Falls, N. Y. Filed Dec. 12, 1883. (No model.)



Claim.—1. The combination, with the main frame, of a gang plank or frame, a ball-and-socket joint, whereby the gang plank or frame is attached to the main frame, shaft-bearings secured to the gang plank or frame, and a disk-gang having its shaft journaled in said bearings, substantially as set forth.

2. The combination, with the disk-gang, of a spherical socket rigidly secured to the gang-plank, and a pin-socket movably attached to the gang-plank, and provided with a spherical knuckle seated in said spherical socket, substantially as set forth.

3. The combination, with the main frame and the disk-gang, of a pin secured to the main frame, a spherical socket secured to the disk-gang, and a pin-socket adapted to receive the pin of the main frame, and provided with a spherical knuckle seated in said spherical socket, substantially as set forth.

4. The combination, with the gank-plank, of the spherical socket D, pin-socket D', having a spherical knuckle, d, hooks e, and link E, substantially as set forth.

5. The combination, with the main frame, of disk-gangs, ball-and-socket joints, whereby the disk-gangs are attached to the main frame, and hooks k, whereby the inner ends of the disk-planks can be rigidly secured to the main frame, substantially as set forth.

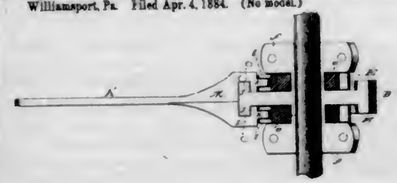
6. The combination, with the main frame and disk-gangs, of an arm, F, having a gear-segment, g, connecting-rods f'', and a worm-wheel, G, substantially as set forth.

7. The combination, with the main frame and disk-gangs, of an arm, F, having a gear-segment, g, connecting-rods f'', worm-wheel G, provided with arm I, and catch i, substantially as set forth.

8. The combination, with the main frame, of disk-gangs attached to the main frame by swiveling connections, whereby each gang is adapted to adjust itself independently to the inequalities of the ground, and a drag or leveler arranged in rear of the disk-gangs and attached loosely to the main frame, substantially as set forth.

9. The combination, with the disk-gang and disk-plank, of bearings B', oil-cups R, having bars s', cover S, rod s, and spring T, substantially as set forth.

300,698. CAR-STARTER. FRANK DAWSON and JOHN HOLLEYHEAD, Williamsport, Pa. Filed Apr. 4, 1884. (No model.)



Claim.—1. A lever-clutch, A' M, for a car-starter, having a rectangular jaw, *i*, rectangular hooks *j j*, and lugs *k k*, constructed and arranged substantially as described.

2. The combination, in a car-starter, of the lever-clutch A' M, having a jaw, *i*, hooks *j j*, and lugs *k k*, and a driving-wheel having lateral rim-flanges, arranged substantially as and for the purposes described.

3. The combination, in a car-starter, of a lever-clutch with a rectangular jaw-opening, rectangular and inwardly bent hooks, a driving-wheel having lateral rim-flanges, and a loose collar to which the hooks of the lever-clutch are pivoted, substantially as described.

4. In a car-starter, the combination of the loose collar and its yoke with the lever-clutch for the purpose of preventing backward rotation of the traction-wheels of the car, substantially as described.

300,699. PENDANT. BERNHARD DREYFUS, New York, N. Y. Filed Mar. 13, 1884. (No model.)



Claim.—1. The combination, with a flanged crescent-shaped metal holder, of one or more drops or pendants, made of fabric and having their upper ends held within the open ends of the crescent-shaped holder, substantially as herein shown and described.

2. The combination, with a flanged metal holder provided with flat metal tongues projecting from and made integral with the flanges of the holder, of one or more fabric loops or pendants held on the holder by the said tongues, which are bent over the ends of the loops on the inner side of the holder, substantially as herein shown and described.

3. A crescent-shaped piece of sheet metal having flanges along the concave and convex edges, from the edges of which flanges flat metal tongues made integral with the flanges project, the ends of the crescent-shaped holder being open, substantially as herein shown and described.

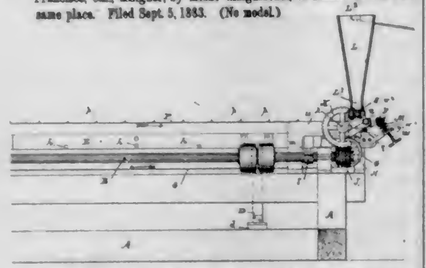
4. The combination, with a flanged holder, of pendants or drops suspended from the same, the loop K, the cord H, suspended from the crescent, the ball G, suspended from the cord, and the taft J on the cord, substantially as herein shown and described.

300,700. METHOD OF MANUFACTURING STARCH. HIRAM DUREA, New York, N. Y. Filed Feb. 21, 1884. (No specimens.)

Claim.—1. In the manufacture of starch, the application of a solution of alkali to a starch-water, and the subsequent stratification of the resultant liquor, substantially as specified.

2. The process of manufacturing starch, consisting in grinding grain with water, sieving the same, condensing the starch-water passed through the sieves, applying a solution of alkali to the condensed starch-water, effecting the stratification of the resultant liquor into a solution of starch and glutinous solutions, removing the glutinous solutions and the starch solution separately, and subsequently treating some or all of the glutinous solutions to obtain whatever starch may be contained therein, substantially as specified.

300,701. WET ORE CONCENTRATOR. WILLARD R. FARWELL, San Francisco, Cal., assignor, by mesne assignments, to Fannie M. Farwell, same place. Filed Sept. 5, 1883. (No model.)



Claim.—1. The combination, with the endless traveling concentrator-belt, of endless traveling scrapers and mechanism for imparting to the same a movement over the said concentrating-surface in a direction contrary to its general movement, as set forth.

2. The combination, with the endless concentrator-belt and means for imparting thereto a vibratory and longitudinal progressive motion, of the endless scraper-belts having scraping-edges, and mechanism for imparting to said belts a movement over said concentrating-surface from end to end in a direction contrary to its general movement, as set forth.

3. The combination of the endless concentrating-belt, means for imparting thereto a vibratory and progressive movement, the endless traveling scrapers moving over the concentrating-surface in a direction opposed to its general travel, the inclined apron, mechanism for adjusting its edge with respect to the surface of the concentrating-belt passing beneath it, and the feed-hopper, substantially as hereinbefore described.

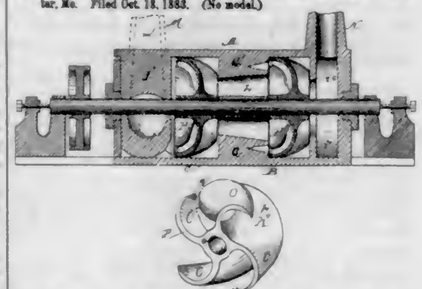
4. The combination of the feed-hopper, inclined apron, pocketed feed-roller, mechanism for operating said feed-roller, and the water-distributing pipe located near the top of the surface of the inclined apron.

5. The combination, with the endless traveling concentrating-belt, of the endless traveling scrapers and the tail-spout, substantially as hereinbefore described.

6. The combination, with the endless traveling concentrating-belt, of the apron V, formed of yielding material and set in an inclined position, and the tail-spout T, substantially as set forth.

7. In an ore-concentrating machine, the combination, with the endless traveling concentrating-belt having lateral vibration, of the endless traveling scraping-blades having continuous movement over the belt, the rollers, and the stationary bearings above the vibratory belt-carrying frame, substantially as described.

300,702. PUMP. JOHN R. FISHER and LEANDER T. FISHER, Knobnoster, Mo. Filed Oct. 18, 1883. (No model.)



Claim.—1. The combination, in a pump, of a casing provided with two compartments, each containing a propeller consisting of a hub mounted on a horizontal shaft, said hub being provided with a series of radial curved blades, the rear end of one blade being attached or connected to the succeeding blade, substantially in the manner and for the purpose described.

2. The combination, in a pump, of a casing consisting of upper and lower sections, A B, forming conjointly a central-chamber containing perforated partitions i' i², channeled blocks G G', and recessed and perforated blocks J J', together with the supply and exhaust passages, and a shaft passing longitudinally through the casing and carrying propeller-wheels, substantially as herein set forth.

300,703. FURNACE. MICHAEL A. FOSTER, St. Louis, Mo. Filed Sept. 29, 1883. (No model.)

Claim.—1. In a furnace, the combination, with a fire-chamber, grate, and ash-pit, of the slant walls G, projecting into the fire-chamber toward the grate, having vertical and inwardly-projecting air-passages extending from the ash-pit to the fire-chamber, and an arch, H, which springs from the slant walls contiguous to and over the exits of the air-passages, as shown and described.

2. The bridge-wall I, having descending openings I', and the air-pipe M, in communication with the outer air and with the passages I', substantially as set forth.

3. The combination, with the bridge-wall I, having passages I', and the perforate air-pipe N, located at the rear of the bridge-wall and supplying air alike to the products of combustion passing over and through the bridge-wall.

4. The two bridge-walls I and J, with pit K between them, and provided with passages I' and J', in combination with the perforate air-pipe N.

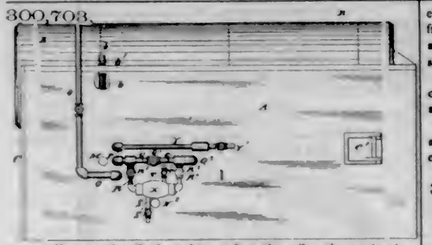
5. A furnace having a pit, K, at the rear of the bridge-wall I when the bridge-wall has passages leading to the lower part of the pit and the pit contains a superheating steam-coil in communication with the steam-space of the boiler.

6. The combination, in a furnace, of a pit, K, a steam-coil, P, within the pit, an injector receiving steam from the coil, and with a perforate pipe or pipes, Z, within the combustion-chamber of the furnace.

7. The combination of two superheating-coils, P and W, in pit K, and an injector interposed between them to produce circulation therein, and pipe Z, as set forth.

8. The combination of two superheating-coils, P and W, within the combustion-chamber of a furnace, an injector interposed between the coils, an air-supply pipe, S, in communication with the injector, and

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a pipe, Y, conveying the heated gases from the coil to the combustion-chamber of the furnace or other destination.

9. The combination of coils P and W, injector U V X, air-pipe S, conducting-pipe Y, and perforate pipe Z, discharging into the combustion-chamber of the furnace.

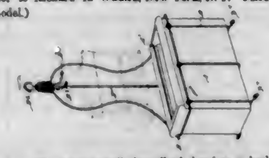
10. The combination, with a furnace, of the pipe *b*, perforated its whole length beneath the setting or top, open at top to the outer air, and extending down between the boiler and the side wall of the setting A to the neighborhood of the fire, adapted to carry smoke down with the air, substantially as and for the purpose set forth.

11. The combination, with the ordinary or any suitable boiler-setting, A, the boiler, and a bridge-wall, of a second bridge-wall, J, and a wall, *a*, built across the side flues between the boiler and setting, forming a part of the second bridge-wall, and extending part of the distance toward the bottom of the boiler, leaving an opening for the passage of the heated current, the boiler forming part of the top of the passage, substantially as shown and described.

12. The combination, in a boiler-furnace, of the air-supplying devices D', E', G', *b*, and N, the perforate arch H, bridge-walls I and J, with passages I' J' through them, the superheating-coils P and W between the bridge-walls, the injector U V X, and connecting-pipes and valves, substantially as set forth.

13. The combination, with the superheating-coils P W, supply-pipe O, and discharge-pipe Y, of the injector U V X, connecting-pipes Q R R', and valves Q', R², and R³, substantially as set forth.

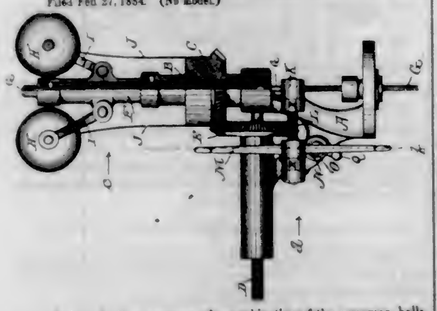
300,704. HANGING WATER-BOWL. EZRA W. FROST, Brooklyn, assignor to Richard R. Watson, New York, N. Y. Filed July 19, 1883. (No model.)



Claim.—1. The water-well described, having a body, A, with an internal wedge-shaped lip, A', at its upper edge, having its upper surface inclined inward, all adapted to serve substantially as herein specified.

2. A wire framing having means, as described, for supporting a water-tight vessel, and having spring-arms, as B², adapted to hold the brush conveniently over the vessel when not in use, as set forth.

300,705. GOVERNOR. ROBERT W. GARDNER and JOHN W. GARDNER, Quincy, Ill., assignors to the Gardner Governor Company, same place. Filed Feb 27, 1884. (No model.)



Claim.—1. In a governor, the combination of the governor-balls, the springs for urging the balls inward and determining their arc of travel, the links I, attached to the balls and having a length less than the radius corresponding to the arc of ball travel, and having their lower pivots free to rise and fall, and a reciprocating body connected to said pivots and adapted to transmit their rising and falling motion to a regulator, substantially as set forth.

2. In a governor, the combination of the governor-balls, the pivoted links, and the arc-controlling springs J, having a decrease of area at their upper ends, substantially as and for the purpose specified.

3. In a governor, the combination of the housing A, the governor-stem G, the levers K and M, the spiral spring I', and hand-screw Q, combined substantially as and for the purpose specified.

300,706. FASTENING FOR BOWS OF WATCH-CASES. DAVID GLICKMAN, San Francisco, Cal., assignor of one-half to Joseph Nordman, same place. Filed June 22, 1883. (No model.)



Claim.—1. A fastening for bows and pendants of watch-cases, consisting of heads *b b*, formed on the ends of the bow, adapted to enter holes in the pendant, and a locking-plate fitting within the pendant and engaging with the heads *b b* on the inside, to prevent them withdrawing from the pendant.

2. A bow or ring having groove or reduced portions *b'* and a locking device that is adapted to slip over and engage with said grooved ends after they are inserted through the side of a pendant.

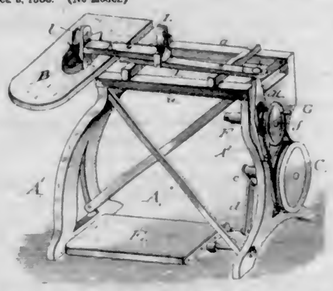
300,707. COMBINED CIGAR-CUTTER AND MATCH-BOX. FERNANDO M. GUINZBURG, New York, N. Y. Filed Feb. 16, 1884. (No model.)



Claim.—1. The combination, with the lid A', carrying the cutter C and catch *c*, of the box-body A, having a notch or opening, *d*, and a spring, B *b b'*, located in the box-body, as described, whereby two chambers, *g* and *f*, are formed in the box, the chamber *f* having an opening, *f'*, and connecting with the opening or notch *d*, as set forth.

2. The combination, with the lid A', carrying a cutter having two or more cutting-edges, and catch *c*, of the box-body A, having two or more notches or openings, *d*, and a spring, B *b b'*, located in the box-body, as described, whereby two chambers, *g* and *f*, are formed, the latter having an opening, *f'*, and connecting with the opening or openings *d*, as set forth.

300,708. IRONING-MACHINE. MARTIN HANKLINE, Joplin, Mo. Filed Oct. 6, 1883. (No model.)

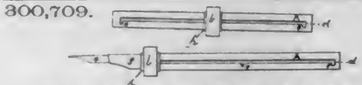


Claim.—1. In an ironing-machine, the table A, having an inwardly-bent support, A', and vertical support A², and board B, in combination with the pivoted lever I and arm K, constructed substantially as described, the iron, and means for vibrating said lever and arm, the parts being organized substantially as shown.

2. In an ironing-machine, the pivoted lever I, supported as shown, and provided with means for reciprocating the same, and bar K, carrying at its end a receptacle for an iron, the bail L pivoted to the lever I, the parts being organized substantially as shown, and for the purpose set forth.

300,709. PEN OR PENCIL CASE. HAZEN PRESCOTT HUNTOON, Boston, Mass. Filed Mar 14, 1884. (No model.)

300,709.



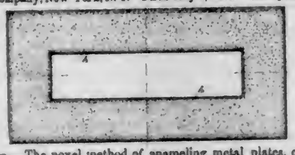
Claim.—1. In a tubular pencil-case provided with a slit and notches, as described, and in combination with the same, a slide provided with an elastic band, as and for the purpose shown.

2. In a tubular pencil-case, and in combination with the slide thereof, an elastic band, in the manner and for the purpose substantially as shown.

300,710. REMOVING THE SAND AND GLUE FROM WASTE SAND-PAPER. WILLIAM J. HUSSEY, Boston, Mass. Filed Mar. 17, 1884. (No specimens.)

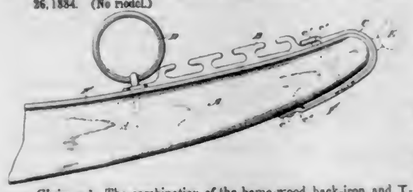
Claim.—The above-described process of removing sand and glue from waste sand-paper, consisting in immersing the same in a hot solution of potash, then removing the paper and immersing it in a warm solution of alum and borax, substantially as and for the purposes set forth.

300,711. METHOD OF ENAMELING METALLIC SURFACES. OLIVER R. INGERSOLL, Brooklyn, assignor to the National Enamel Letter and Number Company, New York, N. Y. Filed May 5, 1884. (No specimens.)



Claim.—The novel method of enameling metal plates, consisting, essentially, in striking the edge of the plate *a a* below the general plane of the body of the plate and then applying the enamel to the plate, substantially as set forth.

300,712. HAME. LLEWELLYN E. JONES, Syracuse, N. Y. Filed Apr. 26, 1884. (No model.)

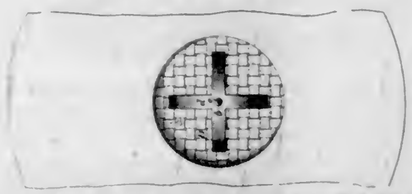


Claim.—1. The combination of the hame-wood, back-iron, and T-shaped loop with the extension or clip, either with or without a ball or other ornament, adapted to be fitted over the top of the hame, and secured by means of a transverse rivet or bolt at its upper end, and by the rein-ring stud at the lower end of the loop, as set forth.

2. In a hame, the combination-loop having a top clip or extension formed integral therewith, and secured to the hame by a transverse bolt or rivet at the top, and by the rein-ring stud at the lower end, substantially as set forth.

3. In a hame, the combination of the loop B, having eyes or holes *b*, with the clip C, having apertures *c'*, substantially as set forth.

300,713. MECHANICAL TELEPHONE. ADOLPHUS A. KNUDSON, Brooklyn, N. Y. Filed Oct. 30, 1883. (No model.)



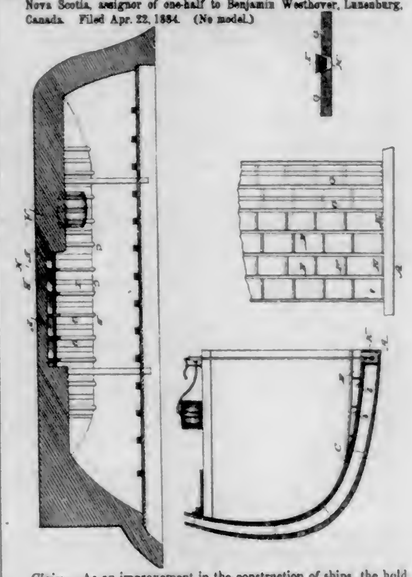
Claim.—1. In a mechanical telephone, the composite diaphragm made of thin strips of wood woven, folded, cemented, sewed, or otherwise fastened together, substantially as described.

2. In a mechanical telephone, the composite diaphragm made of thin strips of wood, substantially as described, two layers of which are joined together, with a filling of wood, cloth, paper, vellum, or any other suitable material, substantially as described.

3. In a mechanical telephone, the sound-collector *d*, consisting of a block of resonant material mounted upon the line-wire and resting against or secured to the diaphragm, substantially as described.

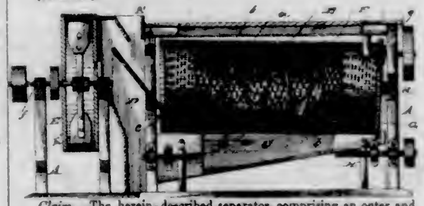
4. In a mechanical telephone, a composite diaphragm the outer surfaces of which are of wood, in combination with the sound-collector *d*, substantially as described.

300,714. CONSTRUCTION OF SHIPS. TITUS LANGILLE, Mahone Bay, Nova Scotia, assignor of one-half to Benjamin Westhover, Lunenburg, Canada. Filed Apr. 22, 1884. (No model.)



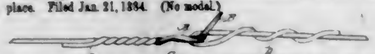
Claim.—As an improvement in the construction of ships, the hold constructed with a bottom formed by the parallel cross-timbers B, tapering toward the turn of the bilge on the side of the vessel, set on edge at right angles to the keelson, and having openings *b*, in combination with the holding-cleats E, cross-timbers F, flooring G, and removable stripe I, constructed and combined substantially as and for the purpose shown and set forth.

300,715. SEPARATOR FOR SHELLED CORN, &c. J. SILAS LEAS, Rock Island, and JOHN B. CORNWALL, South Moline, assignors to the Barnard & Leas Manufacturing Company, Moline, Ill. Filed Feb. 7, 1884. (No model.)



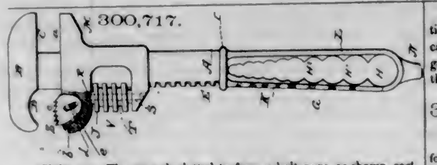
Claim.—The herein-described separator, comprising an outer and an inner rotary perforated cylinder, the latter having an open end, and a conveyer, a vibrating shoe, a fan, and a fan-case, and suitable gearing mechanism, all constructed and adapted to operate substantially as set forth.

300,716. BALE-TIE. EDWIN S. LENOX and JACOB HEMTH, Worcester, Mass., assignors to the Washburn & Moen Manufacturing Company, same place. Filed Jan. 21, 1884. (No model.)



Claim.—A wire bale-tie having but one manufactured end, the same being provided with two contiguous loops in the form of a figure 8, substantially as and for the purpose described.

300,717. WRENCH. FRANK WALDO MERRICK, Sandusky, Ohio, assignor of one-half to Thomas Hickling, same place. Filed Mar. 31, 1884. (No model.)



Claim.—1. The wrench slotted to form a bolt-gage, as shown, cast in one piece with the shank and head, and having the slot-collar shrunk on, substantially as specified.

2. As an improved article of manufacture, the wrench herein described, consisting of the rack-shank A, having at one end a slotted portion to form a bolt-gage and at its opposite end a fixed head, having a recess, D, the sliding jaw M, having a slot for the passage of the shank, the recess *b*, bit Z, seated in the said recess *b*, and provided with the elongated slot *d*, for the passage of the pivot-bolt *e*, and the movable jaw, having the bearings R and S, for the screw T, carrying the turning notched cam V, substantially as specified.

300,718. INTERFERING-PAD FOR HORSES. EDWIN G. MILES, Fenton, Mich. Filed June 11, 1883. (No model.)



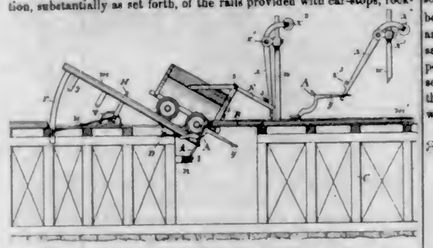
Claim.—An interfering-pad, A, made of rubber or other suitable material, having a concave inner face to fit the hoof B, and provided with perforations, as shown and described, whereby the pad is secured rigidly to the hoof direct by means of screws *a a*, all substantially as described.

300,719. CAR-DUMPING APPARATUS. JONAS L. MITCHELL, Logan, Ohio. Filed Jan. 31, 1884. (No model.)

Claim.—1. In an apparatus for dumping the contents of cars, the rails mounted on rockers, as set forth.

2. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the rails provided with car-stops, and rockers to support the rails.

3. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the rails provided with car-stops, rockers to support the rails, having holes in their curved face, and pins adapted to enter the said holes.



4. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the rails provided with pivoted car-stops, a treadle consisting of a horizontal bar mounted at each end on an upright pivoted arm, *g*, and means to connect said treadle with the car-stops.

5. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails and track-rails pivoted at one end, so that the end adjoining the said tilting rails may spread apart.

6. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails, track-rails pivoted at one end, so that the end adjoining the said tilting rails may spread apart, and two upright bars below the track, each having its lower end pivoted, and the upper end of each connected to the free end of one of the pivoted track-rails.

7. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails, a friction-bar attached to the rising end of the said rails and depending below, and means to grip the friction-bar.

8. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails provided with car-stops, a car having an end-gate, and means to lift the end-gate when the car tips forward.

9. In an apparatus for dumping the contents of cars, the combination, substantially as set forth, of the tilting rails provided with pivoted car-stops, a car having an end-gate, a swinging lifter to raise the end-gate when the car tips forward, and a projecting arm attached to one of the pivoted car-stops and adapted to move the said lifter sidewise.

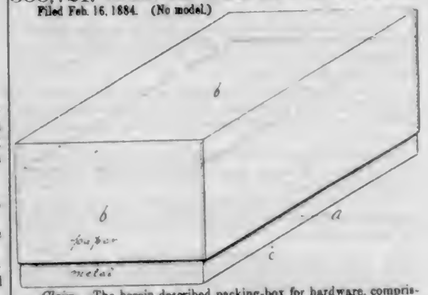
300,720. RECOVERING RUBBER FROM WASTE. N. CHAPMAN MITCHELL, Philadelphia, Pa. Filed May 5, 1881. (No specimens.)

Claim.—1. As an improvement in the art of treating rubber waste for the recovery of the rubber therefrom, boiling said waste in sulphuric or muriatic acid of a strength sufficient to eliminate and destroy the fibrous material with which the waste is combined, substantially as set forth.

2. The within-described process of eliminating woolen fiber from rubber waste containing the same, said mode consisting in boiling the waste in sulphuric, muriatic, or equivalent acid of sufficient strength to eliminate said woolen fibers, as set forth.

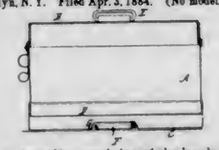
3. As an improvement in the art of treating rubber waste for the recovery of rubber therefrom, the process herein described, said process consisting in first boiling the waste in strong sulphuric or muriatic acid, and then washing the mass resulting from the acid treatment, all substantially as set forth.

300,721. PACKING-BOX. CHARLES H. MORGAN, Worcester, Mass. Filed Feb. 16, 1884. (No model.)



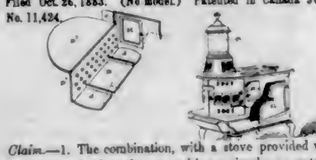
Claim.—The herein-described packing-box for hardware, comprising the sheet-metal body, with the ends, sides, and bottom firmly united, so as to resist the pressure of heavy articles placed therein, and the pasteboard cover with deep sides and ends, forming an envelope or jacket around the sides and ends of said sheet-metal body from top to bottom, said box having substantially the strength of a metal box, with the appearance and facility for receiving labels of a box of pasteboard, and possessing also less liability to inflict or receive injury than a metal box, the pasteboard cover acting the part of a buffer or protecting-jacket, as well as excluding the dust, as set forth.

300,722. FLOUR-SIFTER. HENRY MORGENROTH and MARKS S. LEVISON, Brooklyn, N. Y. Filed Apr. 3, 1884. (No model.)



Claim.—A flour-sifter consisting of the box-body A, having the sieve secured thereto, the hinged top B, provided with a bail, E, and the loose bottom C, centrally raised to form the cavity G, and provided with a bail, F, adapted to rest within the cavity, substantially as and for the purpose described.

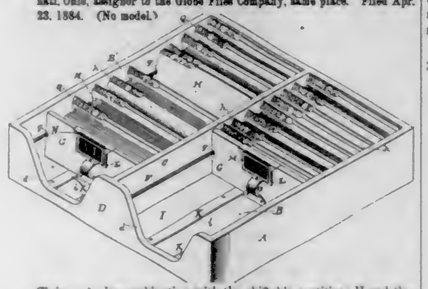
300,723. STOVE. FRANK MOSES and JOSEPH MOSES, Toronto, Ontario, Canada; said Joseph Moses assignor to George Clarke, same place. Filed Oct. 26, 1883. (No model.) Patented in Canada June 21, 1880, No. 11,424.



Claim.—1. The combination, with a stove provided with a semicircular front, and adapted to use either a circular or rectangular fire-pot, of a detachable rectangular fire-pot having the semicircular plate D^2, adapted to fit the front of the stove, as and for the purpose set forth.

2. The combination, with a stove provided with a semicircular front and side grooves, *e*, of a detachable fire-pot, consisting of the horizontal plate D^2, fitted to the stove-front, the vertical plate D', perforated to admit air and having flanges to engage the grooves *e*, and the base-plate D, provided with ribs *d*, to support the wood, substantially as described.

300,724. CHECK AND BILL FILE. GEORGE V. NAUERTH, Cincinnati, Ohio, assignor to the Globe Files Company, same place. Filed Apr. 23, 1884. (No model.)



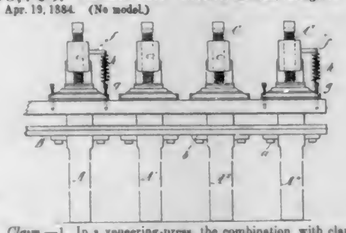
Claim.—1. In combination with the shiftable partitions H and the rods F, the follower G, having the combined pull and spring-foot L, said foot engaging under guide-flanges K on the tray-floor, substantially as and for the purposes set forth.

2. In combination with the shiftable partitions H and the rods F, the follower G, having the combined label-holder, pull, and spring-foot L, said foot engaging under guide-flanges K on the tray-floor, substantially as and for the purposes set forth.

3. The combination, with a series of shiftable partitions and follower, of the tray A, having one or more front openings, *d*, as and for the purpose designated.

4. The combination of tray A, having the two pairs of gudgeons R, with the case or cabinet T, having the L-formed grooves S, as and for the purposes explained.

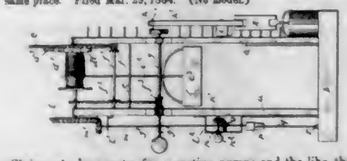
300,725. VENEER-PRESS. AUGUSTUS NEWELL, Chicago, Ill. Filed Apr. 19, 1884. (No model.)



Claim.—1. In a veneering-press, the combination, with clamping-plates provided with suitable supports, of a series of clamping-screws adapted to be operated independently of each other, as and for the purpose set forth.

2. The press or clamping device herein described, consisting of a series of stands, A A' A^2 A^3, connected by tables or plates B, and provided with overhanging screw-threaded bobs *c*, for clamping-screws C C', pivotally coupled with clamp-plates D, all constructed and arranged substantially as described and shown.

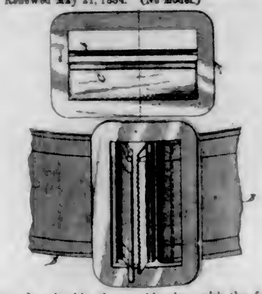
300,726. PUMP-MOTOR. BENJAMIN FRANKLIN OFF, Havana, Ill., assignor of one-half to Orlando H. Wright and Horace A. Wright, both of same place. Filed Mar. 29, 1884. (No model.)



Claim.—1. In a motor for operating pumps and the like, the combination, with the frame of the motor, having the main shaft mounted in bearings at its top, and provided with the drum, to one end of which is secured a ratchet-wheel, engaged by a spring-detent on the inner face of the main gear-wheel at one end of the shaft, and the rope and weight connected to the drum, of a second shaft below the main shaft, provided at one end with a small trundle-wheel and at the other with a large gear-wheel, engaging a trundle-wheel on a third shaft below, provided on one end with a fly-wheel and at the other with a crank-wheel to which the pitman is connected, substantially as specified.

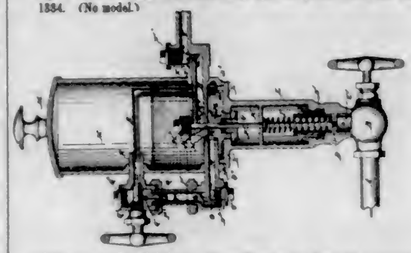
2. In a motor for pumps, the combination, with the bevel-gear wheel on the end of the main shaft, carrying the drum, ratchet spring-detent, main gear-wheel, and weighted rope, of the vertical shaft adjustably mounted in bearings on the end of the frame and provided with an upper and a lower miter-pinion, the latter being adapted to engage a miter-pinion on the horizontal crank-shaft, and the shifting-lever, hook-rod, and staple in the base of the frame, substantially as specified.

300,727. BUCKLE. RICHARD W. OWEN, Chicago, Ill. Filed May 11, 1883. Renewed May 21, 1884. (No model.)



Claim.—In a buckle, the combination, with the frame provided with a groove and lip, as described, of the tongue-plate, the tongue-bar, and strap-bar, the tongue-bar and strap-bar being arranged in a plane beneath the inner surface of the buckle-frame, substantially as set forth.

300,728. LUBRICATOR. CHARLES H. PARSHALL, Detroit, Mich., assignor to the Michigan Lubricator Company, same place. Filed Feb. 13, 1884. (No model.)



Claim.—1. In a lubricator, in combination with an oil-reservoir and overhead supply-pipe, a lift and force pump, which raises the oil out of the reservoir and forces it also by the action of the plunger, an auxiliary cylinder, C, and plunger-head D, taking pressure in one direction from the cylinder of the engine, and in the other from the spring I or its equivalent, substantially as set forth.

2. In combination with the oil-reservoir M of a lubricator, a pump-cylinder placed inside the reservoir, and having its valves O and T arranged, respectively, in the induction and eduction pipes outside of the reservoir, substantially as set forth.

3. In combination with the pump and chamber P, the valve O, seated in the chambered plug O', substantially as set forth.

4. In a lubricator, in combination with an oil-reservoir and pump, an intermediate transparent vacuum-chamber to which the oil is supplied from a lower level by atmospheric pressure, substantially as set forth.

5. In combination, an oil-reservoir and pump, and an intermediate transparent chamber, P, and nozzle and valve Q Q^2, for regulating the supply of oil to the chamber, from which it is withdrawn directly by the action of the pump as it is fed thereto, substantially as set forth.

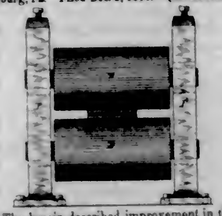
6. In combination with the oil-reservoir M and pump, the intermediate transparent vacuum-chamber, P, the feeding-valve Q, and pipe R R', bringing the oil from the bottom of the reservoir, and induction-pipe N, and valve O, for withdrawing the oil from the bottom of the chamber, substantially as set forth.

7. In a lubricator, in combination with the oil-reservoir and pump, an intermediate transparent chamber, a pipe leading from said reservoir projecting into the upper part of such chamber, and a pipe leading from the lower part of said chamber to the pump, whereby oil delivered into the interior of the chamber will fall through the same in visible quantities, and be thence drawn by the action of the pump, substantially as set forth.

300,729. FIRE AND WATER PROOF COMPOUND. OSCAR F. PARSONS, Eureka, Iowa. Filed Apr. 19, 1884. (No specimens.)

Claim.—The herein-described compound, consisting of coal-tar, air-slaked lime, Spanish brown, sulphur, litharge, fine salt, and American ocher, in substantially the proportions specified.

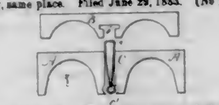
300,730. MANUFACTURE OF COMBINED METAL PLATES. JOHN PEDDER, Pittsburg, Pa. Filed Dec. 5, 1883. (No model.)



Claim.—1. The herein-described improvement in the art of manufacturing plates of combined iron and steel, or of steels of different carbons, with side edges that, without shearing, shall expose to view the edges of the several strata employed, consisting in preparing the ingot of combined iron and steel, or of steels of different carbons, in the process of casting, in a manner to even the side edges of the several strata employed, and afterward, in the reduction of the ingot by rolling, presenting the same to the rolls edgewise as well as flatwise, substantially as and for the purposes set forth.

2. As an improved manufacture, a rolled plate of combined iron and steel, or of steels of different carbons, the rolled but uncut side edges of which present to view the several strata of different metals employed, substantially as described.

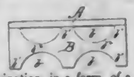
300,731. DEVICE FOR SECURING STEREOTYPE-PLATES IN THE FORM. EDWIN E. PRATT, Chicago, Ill., assignor to the A. N. Kellogg Newspaper Company, same place. Filed June 29, 1883. (No model.)



Claim.—1. The combination, with the plate and the divided supporting-block, of a fastening device having lateral enlargements at each end, both the plate and one or both of the abutting faces of the block having recesses adapted to receive and engage said enlarged portions of the fastening, substantially as specified.

2. The combination, with the recessed plate and the divided supporting bed-block, of a spring held to the block by the embrace of the parts of the latter exerted upon its lower portion, and adapted to be pressed into locking engagement in the recess of the plate by the embracing force of the block, substantially as specified.

300,732. STEREOTYPE-BLOCK. EDWIN E. PRATT, Chicago, Ill., assignor to the A. N. Kellogg Newspaper Company, same place. Filed Aug. 3, 1883. (No model.)



Claim.—The combination, in a form, of a removable stereotype-plate with a bed-block consisting of a central web and side and intermediate supporting-feet, substantially as specified.

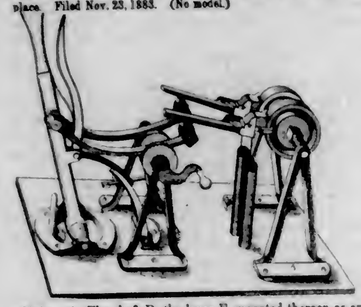
300,733. FRICTION-CLUTCH. GEORGE H. PRESTON, Shortsville, N. Y., assignor of one-half to the Empire Drill Company, same place. Filed Nov. 22, 1883. (No model.)



Claim.—1. The wheel A, provided with the laterally-projecting flange or rim *c*, and the lever B, provided with notch *d*, adapted to fit over and grip said edge, as set forth, combined with a supplemental lever, F, provided with the rest *g* for engagement with the lever B at its free end only, whereby the power applied to lever F is compounded upon the rim *c*.

2. The wheel A, provided with a laterally-projecting flange or rim, *c*, and the lever B, provided with the notch *d*, adapted to fit over and grip said edge, as set forth, combined with a supplemental lever, F, in engagement with said lever B at its free end, and a spring, *h*, interposed between the free end of lever B and said lever F, to afford a yielding support or temporary fulcrum for said lever B.

300,734. DEVICE FOR CHANGING SPEED. GEORGE H. PRESTON, Shortsville, N. Y., assignor of one-half to the Empire Drill Company, same place. Filed Nov. 23, 1883. (No model.)



Claim.—1. The shaft D, the lever E, mounted thereon as an axis, and the wheel F, provided with means whereby said lever will engage with said wheel when moved in one direction, and disengage the same when moved in the opposite direction, combined with a device whereby power may be applied to said lever at a variable distance from the axis of shaft D.

2. The shaft D, the wheel F, fixed thereon, and the vibrating lever E, pivoted on said shaft, and provided with means whereby said lever will engage or disengage said wheel, according to the direction of its motion, combined with the lever G, pivoted at one end to a movable fulcrum, and a cam, H, upon the motor-shaft A, whereby power may be applied to said lever E at variable determinate distances from the axis of shaft D.

3. The shaft D and laterally-flanged wheel F, fixed thereon, combined with the lever E, pivoted to said shaft, and the clamping-hook *h*, carried loosely upon said lever, and kept in engagement with said flange by spring *j*, for the purpose set forth.

4. The shaft D, wheel F, fixed thereon, and the vibrating lever E, provided with the clamping-hook *h*, to engage the rim of said wheel, combined with the lever G and pivoted lever L, to which said lever is jointed at *k*, and made movable toward or away from the shaft D, and the cam H on shaft A, as and for the purpose set forth.

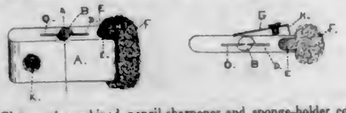
5. The shaft D, with the wheels F F', fixed thereon, the levers E E', pivoted on said shaft, and each provided with means for engaging and disengaging its wheel, as described, combined with the corresponding levers G G', pivoted to a movable fulcrum, *k*, and the cams H H', set upon the shaft A so as to alternate the motions of the levers, and thereby render the motion of the shaft D continuous.

6. The shaft D, with the wheels F F', fixed thereon, the levers E E', pivoted on said shaft, and provided with means for engaging and disengaging the wheels F F', as set forth, the corresponding levers G G', pivoted to the fulcrum *k*, combined with cams H H', the faces whereof are true spiral planes, and set upon the shaft A so as to alternate, whereby the speed of the shaft D will be rendered continuous and uniform.

7. The shaft D, wheel F, lever E, with its device for engaging and disengaging said wheel, and the lever G, pivoted at *k*, combined with the cam H and its disk-wheel P, both laterally movable upon the shaft A, whereby the lever G may be transferred to said disk-wheel and the motion of said lever arrested without stopping the driving-shaft A.

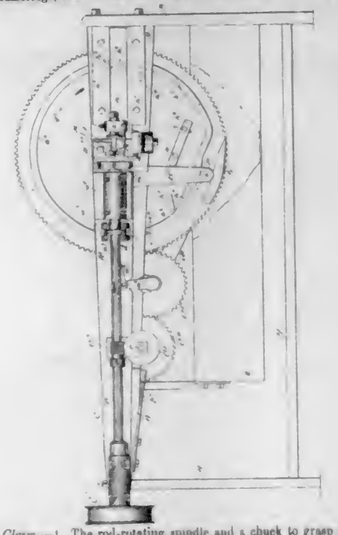
8. The lever G, pivoted at *k*, cam H, and disk-wheel P, laterally movable upon the shaft A, combined with the shifting-bar Q and its elastic fork-arms r, as and for the purpose set forth.

300,735. COMBINED SLATE-PENCIL SHARPENER AND SPONGE-HOLDER. GEORGE C. PECK, GEORGE W. F. COOK, and WALLACE C. PECK, San Francisco, Cal. Filed Sept. 1, 1883. (No model.)



Claim.—A combined pencil-sharpener and sponge-holder consisting of the holder A, having a space, B, the cutters D O, secured in place therein, the space E for the sponge F, and the described means for holding the sponge in place, all substantially as described.

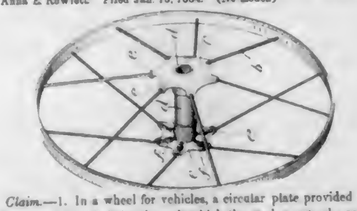
300,736. METAL-SCREW MACHINE. SYLVESTER H. ROPER, Boston, and CHARLES F. ROPER, Hopedale, assignors to Frederick P. Fish, Trustee, Cambridge, Mass. Filed Nov. 5, 1883. (No model.)



Claim.—1. The rod-rotating spindle and a chuck to grasp and rotate the rod, combined with the reciprocating die-jaws 6 7, the guide M, co-operating therewith, and the tappet, substantially as shown and described.

2. In a metal-screw-making machine, the rotating rod-receiving spindle C, provided with the detachable spring-jaws, and the surrounding sleeve provided with a head, combined with struts held between the said head and jaws, and with the means, substantially as described, to move the said sleeve and head longitudinally to operate the jaws, as set forth.

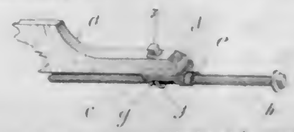
300,737. WHEEL. JACOB V. ROWLETT, Richmond, Ind., assignor to Anna E. Rowlett. Filed Jan. 18, 1884. (No model.)



Claim.—1. In a wheel for vehicles, a circular plate provided near its circumference with holes through which the spokes extend, grooves formed on the inner side of said plate, extending from said holes toward the axle to receive the spokes, and suitable clasps to hold the spokes in said grooves, substantially as described.

2. In a wheel for vehicles, in combination with the spokes, the plate provided on its circumference with the inwardly-curved projections through which the spokes are passed, the semicircular grooves formed on the inner side of the said plate to receive the spokes, and the clasps to hold the spokes in said grooves, substantially as described.

300,738. AXLE-FASTENING. JACOB V. ROWLETT, Richmond, Ind., assignor to Anna E. Rowlett. Filed Jan. 18, 1884. (No model.)

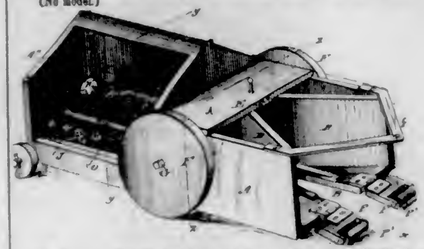


Claim.—1. In a vehicle, the combination of the upper axle, the central clip-plate, the lower axle, and the eyebolt by which the two axles are united and held in place, substantially as described.

2. In combination with the axle provided with notch or recess *m*, the clip-plate provided at one end with a lug to fit into said notch, and at its opposite end with a projection against which the wheel abuts, substantially as described.

3. The combination of the axle *b*, provided with the notch *m*, with the clip-plate provided with the downwardly-projecting lugs *g*, whereby the turning and endwise motion of the axle is prevented, substantially as described.

300,739. COTTON-HARVESTER. BENJAMIN O. SAVAGE, Scotland Neck, N. C., assignor to Lilian O. Savage, same place. Filed Sept. 4, 1883. (No model.)

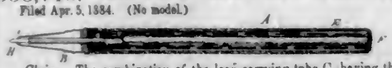


Claim.—1. In a machine for picking cotton of substantially the described construction, the combination of the frame A, constructed as described, and provided with the inwardly-projecting teeth O O, and brushes M, with the revolving brushes J J, and means for rotating the said brushes, as and for the purpose shown and set forth.

2. The combination, with a cotton-picking machine of the described construction, of the attachments P P, provided with rollers P' P'', and hinged to the front of the machine upon either side of the opening B, for the purpose set forth.

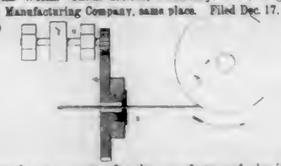
3. The combination, with a cotton-picking machine of the described construction, of the removable cotton-receptacles N N, provided with extensions N' N', adapted to serve as covers for the top of the picking-chamber A'', as set forth.

300,740. PENCIL-HOLDER. MORRIS S. SHIPLEY, Cincinnati, Ohio. Filed Apr. 5, 1884. (No model.)



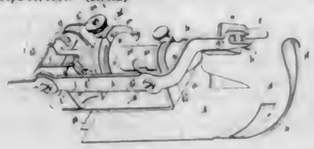
Claim.—The combination of the lead-carrying tube C, having the longitudinal slot *b*, closed at its ends, the plunger D, inclosed within the carrying-tube, and having a guide-pin, *d*, projecting through and moving in the slot in said tube, and a spring, *e*, on the plunger, inside of the carrying-tube, with the longitudinally-slotted tube F, the spirally-slotted tube E, and the barrel A, as shown and described.

300,741. APPARATUS FOR MANUFACTURING IMITATION TWISTED WIRE. JAMES SPENCE, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Dec. 17, 1883. (No model.)



Claim.—In an apparatus for the manufacture of wire in imitation of several round wires twisted together, the combination of a die constructed with an opening through it corresponding in shape to the transverse section of several round wires laid together, said die arranged to revolve upon an axis parallel with the axis of the wire, the mechanism, substantially such as described, to impart rotation to said die, and a wire-block onto which the wire is drawn through the die, substantially as described.

300,742. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. ALONZO E. TURNBULL, Springfield, Ohio, assignor of sixty-five one-hundredths to the St. John Sewing Machine Company, same place. Filed Sept. 15, 1883. (Model.)



Claim.—1. In a button-hole attachment for sewing-machines, the elevated frame, upon which is carried the operative mechanism supported from and above the base-plate by a standard extending upward from the plate, so that a clear space is left between the frame and plate for the fabric being operated upon, substantially as specified.

2. In a button-hole attachment for sewing-machines, the frame upon which the operative mechanism is carried, supported upon the base-plate of the attachment by a curved U-shaped standard or flange arising from the said base-plate, and forming thereby a construction adapted to allow free passage of the fabric being operated upon between such frame and plate, substantially as and for the purpose described.

3. In a button-hole attachment for sewing-machines, a cloth-clamp curved longitudinally upon a circular line, in combination with means for moving it lengthwise around the axis of its curvature, substantially as and for the purpose set forth.

4. In a button-hole attachment for sewing-machines, a cloth-clamp composed of two plates, which at one end are hinged or otherwise connected together, and at such end are curved outward and away from each other to furnish space for the reception of the fabric to be operated upon, and toward their free ends are curved inward toward each other, in combination with means for bringing their free ends together to clamp the fabric, substantially as and for the purpose shown.

5. The hereinbefore-described cloth-clamp, consisting of the plates H H', hinged or otherwise connected together, curved outward from each other at their connected ends, and then inward toward each other, and provided with slots *h'* near their free ends, in combination with the cam-lever I, adapted to bring their free ends together to clamp the cloth, substantially as and for the purpose described.

6. In combination with the cloth-clamp described, the axial bearing-tube D, the cylindrical piece E, the spider F, having the arms *f* and *f'*, and the lever G, provided with the pallets *g* and *g'*, substantially as and for the purpose set forth.

7. As a means for feeding the cloth-clamp longitudinally, the tube D, provided with the opening *d*, the grooved disk K, the strap L, having the radial arm *l* and lug *l'*, the tappet-piece M, the lever N, provided with the stud *n*, the plate O and spring *o*, the lever P, and the lever G, all combined to operate substantially as and for the purpose shown and described.

8. In combination with the grooved disk K, the strap L, having arm *l*, the tappet-piece M, pivotally attached to and adapted to rock on the arm, and to bear against the periphery of the disk as it is rocked, and the nut *m* on the arm above the tappet-piece, substantially as and for the purpose set forth.

9. In combination with the grooved disk K, the strap L, having arm *l*, the tappet-piece M, pivotally and movably attached to the arm by means of a pin passing through a slot, *l'*, in the arm, and provided with a rounded projection or rib, m^2, on its top, a washer on the arm *l* above the tappet-piece, and a nut on the arm above the washer, substantially as and for the purpose described.

10. As a means for varying the relative angles of the lever G and the supplemental part G', which is pivoted thereon, and is provided at its inner end with the elongated opening g^3, the eccentric g^4, journaled upon said lever G, and working within said opening g^3, substantially as and for the purpose shown.

11. The hereinbefore-described button-hole attachment for sewing-machines, in which the frame, the cloth-clamp, and the vibrating and feeding mechanism are constructed and combined to operate in the manner and for the purpose substantially as set forth.

300,743. LOCK FOR FIRE-ARMS. JOSEPH VICTOR, Duquoin, Ill. Filed Mar. 24, 1884. (No model.)



Claim.—1. The combination of the working body, the mainspring pivoted therein and provided with a projecting front end, said spring being pivoted in rear of this front end, and provided with a projection extending above the pivot and adapted to engage the body to limit the dropping of the barrels, and the pivoted fore part engaging the front end of the spring, substantially as set forth.

2. The combination of the working body, the hammer having the recess and notch, the mainspring engaging said recess and having the projecting front end, the spring being pivoted in rear of this end, and provided with the projection extending from its top, and serving as a barrel-check, the fore part engaging the said front end, the sear engaging said notch, and the trigger adapted to elevate the rear end of the sear, substantially as set forth.

3. As an improvement in safety-locks for fire-arms, the combination, with the hammer, of the vertically-sliding safety-block disposed at the side of the same and normally retained down by the nose of the hammer and under the said nose, and means for operating the block simultaneously with the movement of the hammer, substantially as set forth.

4. The combination, as an improvement in safety-locks for fire-arms, of the hammer, the sear, the vertically-sliding safety-block disposed at the side of the hammer and in rear of the fulcrum of the same, the block being normally under the nose of the hammer and retained down thereby, the lever engaging the safety-block and extending parallel with the sear, and the trigger for simultaneously elevating the rear ends of the lever and the sear, substantially as set forth.

5. The combination of the hammer, the vertically-sliding safety-block projecting normally up against the nose of the hammer and retained down thereby, the sear, the lever engaging said block and extending parallel with the sear and above the same, the trigger adapted to elevate the rear ends of the sear and lever, and a coiled spring interposed between the sear and the lever in front of the fulcrum of the latter and in rear of the fulcrum of the former, substantially as and for the purpose set forth.

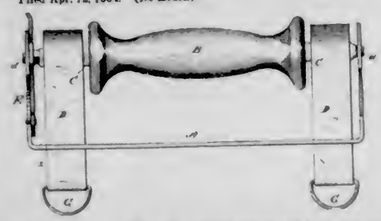
6. The combination, with the sliding head for operating the trigger-locking mechanism, of the barrel-locking lever having the tumbler, the sliding bolt having its rear end acting against said head, and provided with a spring front end adapted to engage the tumbler, and an actuating-spring upon said bolt, substantially as set forth.

7. The combination of the triggers, the sliding locking-plate, the sliding operating-head, the lever connecting the head and plate, the barrel-locking lever having its rear end acting against the head and provided with a front spring end adapted to engage the tumbler, and the actuating-spring upon the bolt, substantially as set forth.

8. The combination of the triggers, the guide-pin in rear of the same, the sliding locking-plate moving upon said guide-pin, the sliding operating-head, the lever connecting the head and plate, the barrel-locking lever having the tumbler, the sliding spring-bolt acting against the operating-head and adapted to engage the tumbler, the spring upon said bolt, and the spring in rear of the head, substantially as set forth.

9. The combination of the lever for locking the barrels, the hammers, mechanism for cocking the hammers by the dropping of the barrels, an automatic safety-block sliding in front of the hammers, the sear, the triggers for simultaneously operating the sear and safety-block, and automatic trigger-locking mechanism operated by the barrel-locking lever, substantially as and for the purpose set forth.

300,744. SHAWL-STRAP. ELBERT A. WHITELSEY, Brooklyn, N. Y. Filed Apr. 12, 1884. (No model.)

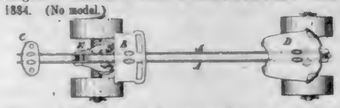


Claim.—1. In a shawl-strap, and in combination with the rotating spindle thereof having an angular locking portion, a movable plate provided with angular enlarged slots or openings, substantially as described.

2. In a shawl-strap, and in combination with the main frame, the clamping-straps and the rotating spindle, a pivoted locking-plate embracing the spindle, and provided with angular and enlarged or circular openings to prevent or permit the rotation of the spindle in either direction, substantially as described.

3. In a shawl-strap, the rotating spindle, supported in fixed bearings, in combination with the pivoted plate applied to one of said bearings, provided with a slot angular at one end and circular at the other, for co-operation with the angular portion of the spindle passing through it, substantially as described.

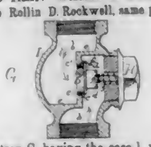
300,745. ROLLER-SKATE. HENRY A. WILSUR, West Somerville, assignor of one-half to Frank W. Lowe, Boston, Mass. Filed Apr. 23, 1884. (No model.)



Claim.—1. The frame A A, composed of two metal plates having a space between, in combination with a hanger capable of being adjusted lengthwise of the frame, as and for the purpose set forth.

2. The adjustable springs G G, arranged one on either side of the hangers E, in combination with the bearings F, substantially as and for the purpose specified.

300,746. VALVED TRAP. WILLIAM H. WILLSON, Westfield, N. Y., assignor of one-half to Rollin D. Rockwell, same place. Filed July 9, 1883. (No model.)



Claim.—The valved trap G, having the case l, with inner passage-projections, *e e*, and through-opening *b b'*, the valve-seat *c c'*, the flat top-hinged vertical valve *d*, and held in place by the frame *f*, and spring *g*, all substantially as specified.

300,747. PROCESS OF TREATING IRON. BROCK WOODRUFF, Albert Lea, Minn., assignor to Warren Buel and Seth B. Tannehill, both of same place. Filed Jan. 9, 1884. (No specimens.)

Claim.—1. The within-described process of treating iron in the course of its manufacture, or when heated for the purpose, by rolling, forcing, or pressing into it a preparation or mixture composed of sand, salt, and black oxide of manganese, and alternately heating the metal and repeating said treatment, and afterward cooling the metal as required for immediate or future use, substantially as specified.

2. In the process of treating iron in the course of its manufacture or while heated with a preparation or mixture of sand, common salt, and black oxide of manganese, first incorporating said mixture with the heated iron, then working or manipulating the iron, afterward reheating it to a higher temperature, and then again treating it with the mixture, essentially as described.

3. The hereinbefore-described process of treating iron, which consists in repeated heating at increasing temperatures, alternated with rolling or pressing into it sand, common salt, and black oxide of manganese, and, before or after fashioning the metal as required, heating it to about a welding-point, and hardening or tempering it, substantially as and for the purposes herein set forth

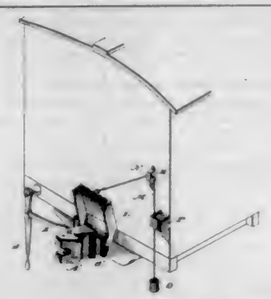
300,748. PACKING BOX OR CARTRIDGE FOR VARIOUS ARTICLES. VICTOR ACHILLE BILLETTE, Rennes, France. Filed Mar. 29, 1884. (No model.) Patented in France May 7, 1883, No. 155,258.



Claim.—A cartridge for containing a ration of coffee or other alimentary or aromatic substance, said cartridge comprising a tubular or cylindrical case of parchment-paper indented at one end, and closed at that end by a disk inserted below the indentations in the cylinder or tube, the triangular pieces or teeth between the indentations being folded down upon said disk, substantially as described.

REISSUES.

10,489. CAR-COUPLING. HENRY L. JOHNSTONE, Palmetto, Ga., assignor to Excelsior Life Saving Car Coupling Company, New York, N. Y. Filed Nov. 16, 1883. Original No. 286,307, dated Oct. 9, 1883.



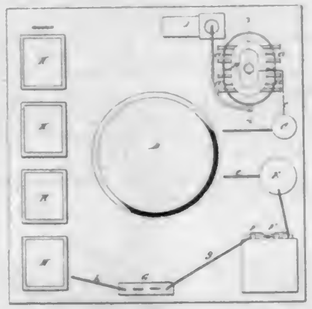
Claim.—1. A car-coupling composed of a head and body formed in one piece, a draw-rod fitted axially within the rear end of said body, and adapted to move longitudinally within the same, and to have its rear projecting end pivoted upon the frame of a car, and a buffer-spring placed around said draw-rod in rear of said draw-bar, substantially as and for the purpose specified.

2. A laterally-swinging car-coupling composed of a head and body formed in one piece, a draw-rod fitted axially into and adapted to move longitudinally within the rear portion of said body, with its rear projecting end pivoted upon the frame of a car, and means, substantially as shown, whereby said head and body are held with a yielding pressure in position to maintain engagement with another similar coupling, substantially as and for the purpose described.

3. In combination with the laterally-swinging heads of twin-jaw couplings, a locking-plate which is adapted to be placed over two engaging-heads and to embrace the outer sides of the same to prevent accidental disengagement, substantially as set forth.

4. The hereinbefore-described car-coupling consisting of the body A, provided with the head A', hook *a*, shoulder *a'*, and axial opening a^2, the rod B, pivoted to the frame C, and fitted to and adapted to slide within said opening a^2, the spiral spring b^2, placed around said rod, the laterally-operating spring E, casing F, and block G, the lever H, and rod I, all combined to operate in the manner and for the purpose shown.

10,490. MANUFACTURE OF ILLUMINATING-GAS. ALFRED P. SOUTHWICK, Buffalo, N. Y., assignor, by mesne assignments, to the United States Equitable Gas Company. Filed Mar. 22, 1884. Original No. 142,289, dated Aug. 26, 1873; Reissue No. 8,567, dated Feb. 4, 1879



Claim.—The combination of the steam-boiler A, decomposing-cupola B, governing-holder D, carbureting apparatus E F F, and the purifiers H H, all being arranged substantially as described, and for the purposes set forth.

PHOTO-LITH. NORRIS PETERS WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

EAGLETON MANUFACTURING COMPANY *v.* WEST, BRADLEY & CARY MANUFACTURING COMPANY *et al.*

Decided May 5, 1884.

Letters Patent No. 122,001, granted to the Eagleton Manufacturing Company, December 19, 1871, for an improvement in japanned furniture-springs, as the alleged invention of J. J. Eagleton, *held* to be invalid, and the following points ruled:

(1.) The patent is for steel furniture-springs protected by japan, and tempered by the heat used in baking on the japan;

(2.) Such springs, so protected and tempered, were known and used by various persons named in the answer, before the date of the patent;

(3.) The specification which accompanied the original application by Eagleton, July 6, 1868, did not set forth the discovery that moderate heat, such as may be applied in japanning, will impart temper to the springs, but set forth merely the protection of the springs by japan;

(4.) Not only does the evidence fail to show that Eagleton, who died in February, 1870, in fact made and used, prior to such other persons, the invention covered by the patent as issued, but it shows that he did not, and that, probably, it never came to his knowledge while he lived;

(5.) Japanning by itself was not patentable, and Eagleton, in the specification which he signed and swore to, did not describe any mode of japanning which would temper or strengthen the steel, and did not even mention that the japan was to be applied with heat, and it now appears that the temper and strength are produced by the heat altogether, and not at all by the japan;

(6.) The only invention to which the application and oath of Eagleton were referable was that of merely japanning steel furniture-springs; the authority given to his attorneys was only to amend that application, and ended at his death; the amendments made were not mere amplifications of what had been in the application before; the patent was granted upon them without any new oath by the administratrix, and this defense is not required by statute to be specifically set forth in the answer, and can be availed of under the issues raised by the pleadings, as showing that the plaintiff has no valid patent.

APPEAL from the Circuit Court of the United States for the Southern District of New York.

Mr. F. W. Betts for the appellant.
Mr. W. C. Witter for the appellee.

Mr. Justice BLATCHFORD delivered the opinon of the Court.

This suit was brought in the Circuit Court of the United States for the Southern District of New York on Letters Patent No. 122,001, granted to the plaintiff, the Eagleton Manufacturing Company, December 19, 1871, for an improvement in japanned furniture-springs. The patent contains these recitals:

Whereas J. J. Eagleton, of New York, New York, (Sarah N. Eagleton, administratrix,) has presented to the Commissioner of Patents a petition praying for the grant of letters patent for an alleged new and useful improvement in japanned furniture-springs, (she having assigned her right, title, and interest in said improvement, as administratrix, to Eagleton Manufacturing Company, of same place,) a description of which invention is contained in the specification of which a copy is hereto annexed and made a part hereof, and has complied with the various requirements of law in such cases made and provided; and whereas, upon due examination made, the said claimant is adjudged to be justly entitled to a patent under the law.

The specification of the patent is as follows:

Be it known that I, J. Joseph Eagleton, of New York, in the county of New York and State of New York, have invented a new and useful Improvement in Furniture-Springs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which the drawing represents a furniture-spring provided, according to my improvement, with a japan covering.

The helical springs heretofore employed for furniture-seats, mattresses, &c., have generally been made of iron wire, brass, or copper; but steel wire, although a far superior material for such springs, has not been commonly employed, owing to the lack of means for protecting such springs from corrosion and the lack of means for imparting to them the necessary stiffness or temper.

The object of this invention is to produce steel furniture-springs that shall not only be protected from corrosion, but shall also be suitably tempered and stiffened.

The drawing is a perspective view of one of my improved springs.

In carrying out my invention I provide a suitable quantity of



steel wire of the size of which the spring is to be made, and this I wind upon blocks in the usual manner, giving the wound spring the ordinary pressing or set. I then provide a suitable bath con-

taining the ordinary preparation of Japan varnish, in which I dip or place the springs so as to cover them with japan. They are then removed and strung on wires or put on pegs to drain, after which they are placed in a baking-oven of the ordinary kind suitable for the baking of japanned articles, in which oven the springs are subjected to a temperature sufficient to bake and harden the japan; after which the springs are removed from the oven and allowed to cool, when they are ready for use. The treatment of the springs in this manner imparts to them two important and valuable qualities: First, the springs, when they come from the oven and are cooled, have firmly attached to their exterior surface a water-proof covering or coating, which perfectly protects them from corrosion and fits them for service in all kinds of climates, hot or cold, dry or damp. Second, the springs thus prepared are strengthened or stiffened, the application of heat to the springs in the oven having the apparent effect to temper the steel of which they are composed, making the springs stronger and more elastic. As between a steel spring not japanned, as I have described, and a steel spring japanned, as described, both being of the same size and made from the same piece of wire, the japanned spring will be found to be much stronger than the spring not japanned. The spring not japanned is therefore not only lacking in strength, but it is also practically useless for want of a protecting covering. But the improved article produced substantially in the manner I have described forms a strong and durable spring, and no article like it has, so far as I am aware, ever been known or used.

While I do not claim, broadly, the making of furniture springs of steel wire, I wish it to be understood I do not limit or confine myself to the exact order or method of operation here described in producing my improved springs, as the order or method may be varied without departing from my invention.]

There are two claims, namely:

1. The method herein described of strengthening metal springs.
2. As an improved article of manufacture, a spring made substantially as herein described.

Eagleton, as inventor, filed in the Patent Office on the 6th of July, 1868, a petition for a patent for an improvement in furniture-springs, accompanied by an affidavit, a specification, a drawing, and a model, and the proper fee, and in the petition appointed Munn & Co. "to act as his attorneys in presenting the application and making all such alterations and amendments as may be required, and to sign his name to the drawings." The affidavit that Eagleton verily believed himself to be "the original and first inventor of the within-described improvement in furniture-springs" was sworn to by him June 26, 1868. The specification then filed was as follows:

Be it known that I, J. Joseph Eagleton, of New York, in the county of New York, and State of New York, have invented a new and useful improvement in furniture-springs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which the drawing represents a furniture-spring provided, according to my improvement, with a japan covering.

[The nature of this invention relates to improvements in helical furniture-springs, such as are used for mattresses, sofas, &c., the object of which is to provide steel springs which will not be so liable to injury from corrosion as those now in use.

It consists in providing steel springs, such as are commonly used, with a japan outer covering. Steel springs, as is well known, possess in a much higher degree the requisite qualities of strength, flexibility, and elasticity than iron, copper, or brass, and by reason of the susceptibility of steel to be tempered, and thereby regulated to any degree of elasticity, it is much more preferable to use; but, owing to its great liability to deterioration from corrosion, it is but little used for such springs. To obviate this difficulty I propose to provide steel springs coated with japan, which I find to be of great advantage in resisting the corrosive action of the atmosphere on the steel, and whereby steel springs are made very much more durable than any other. To some extent the same purpose may be accomplished by coating the spring with tin or zinc or other similar metal which will not suffer by corrosion; but the process of coating with such metals requires the use of acids for cleaning and preparing the steel, which, adhering to the steel and being to some extent inclosed within the said coating and maintained in contact with the steel, have an injurious effect thereon. I have therefore found that when the springs are protected by japanning they are much more durable and give more satisfactory results, the same being applied by the common japanning process.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

Japanned furniture-springs, as a new article of manufacture, substantially as and for the purpose described.]

The application was rejected on the 10th of July, 1868, the following reasons being assigned by the Examiner:

The application above referred to has been examined, and is rejected for want of patentable invention. The japanning of metal is an old process, and no invention is shown in applying it to a spring for a bed-bottom. It is a common right, possessed by every one, to galvanize, paint, or japan any metal that he may use.

The specification was returned to the applicant. Eagleton died in February, 1870. On December 29, 1870, the application for the patent was renewed on the same specification, it being returned to the Patent Office, and received there January 4, 1871, and a reconsideration requested, the letter being signed "J. J. Eagleton, per Munn & Co., attorneys." Nothing further appears to have been done until, on October 19, 1871, the specification filed was amended by erasing the part above put in brackets, and substituting what is in brackets in the specification of the patent as issued, and by substituting the following as the claim:

Having thus described my invention, I claim as new and desire secure by Letters Patent—

As an improved article of manufacture, a japanned steel furniture-spring, made substantially as set forth.

On the 20th of October, 1871, the application was rejected, the Examiner saying:

The above-named application has been examined on the amended specification, but no reason can be seen for changing the action of the Office in rejecting the same July 10, 1868. The applicant is referred to the Commissioner's decision in the case of Osborn and Drayton, November 5, 1870. The application is again rejected.

On the 31st of October, 1871, Munn & Co. wrote thus to the Office:

In the matter of the application of J. J. Eagleton for letters patent for furniture-springs, filed July 6, 1868, we respectfully request a specific reference on which the rejection of the case may be based, as provided in Rule 34 of Office Rules of Practice.

On November 3, 1871, this answer was returned:

The applicant's letter of the 31st of October has been duly considered. His application has been twice rejected for want of patentable invention, and not for want of novelty. Sufficient reasons, it was deemed, were given for its rejection, and that Rule 34 of Office Rules of Practice is not applicable in the case. The process of japanning is so old that it is not probable that any person ever before applied for a patent for it. Furniture-springs have been painted, galvanized, varnished, and, probably, japanned, as they are found coated with material that would require a chemical analysis to determine of what it was composed. The former action is affirmed.

On the 7th of November, 1871, by a letter to the Office, signed "J. J. Eagleton, per Munn & Co., attorneys," the specification was amended by erasing the claim last presented and inserting in lieu thereof the two claims which are in the patent as issued. The application was again examined, and on November 17, 1871, the patent was ordered to issue. The specification annexed to the patent purports to be signed "J. J. Eagleton," and also to be signed by the two witnesses who signed the specification originally filed.

The bill avers that Eagleton, having invented the improvement, died intestate, and Sarah N. Eagleton was appointed his administratrix, and the invention was assigned to the plaintiff, and afterward the administratrix applied for a patent, and complied with all the necessary conditions and requirements of the statute, and the patent was issued. The answer states that, as to whether or not the patent was applied for or issued in the manner and with the formalities set forth in the bill, the defendants leave the plaintiff to proof thereof. It denies that Eagleton was the first inventor of what is patented by the patent, and avers that before the time of any invention thereof by Eagleton it was known to and used by various persons named at various places mentioned; that the description in the patent is obscure and not sufficient to enable one acquainted with the art to use the alleged process therein attempted to be described, and for that reason the patent is void; that the description and specification of the patent are not in such full, clear,

concise, and exact terms as to enable any person skilled in the art to which it appertains to temper steel wire, but if the description and specification be followed out, there will not be produced a tempered steel furniture-spring; that if the desired effect be to temper or strengthen a steel furniture-spring, then, for the purpose of deceiving the public, the description and specification filed by Eagleton were made to contain less than the whole truth relative to his invention or discovery, and the patent is therefore null and void; that any representation contained in the patent or the specification that treating a spring as described therein tempers it is false; and that treating a steel furniture-spring as described in the patent does not temper it. Infringement also is denied. The circuit court dismissed the bill, assigning its reasons in an opinion which is found in 18 Blatchf. C. C. R., 218.

The court decided the following points:

(1.) The patent is for steel furniture-springs protected by japan, and tempered by the heat used in baking on the japan. (2.) Such springs, so protected and tempered, were known and used by various persons named in the answer before the date of the patent. (3.) The specification which accompanied the original application did not set forth the discovery that moderate heat, such as may be applied in japanning, will impart temper to the springs, but set forth merely the protection of the springs by japan. (4.) Not only does the evidence fail to show that Eagleton in fact made and used prior to such other persons the invention covered by the patent as issued, but it shows that he did not, and that, probably, it never came to his knowledge while he lived. (5.) Japanning by itself was not patentable, and Eagleton, in the specification which he signed and swore to, did not describe any mode of japanning which would temper or strengthen the steel, and did not even mention that the japan was to be applied with heat, and it now appears that the temper and strength are produced by the heat altogether, and not at all by the japan. (6.) The only invention to which the application and oath of Eagleton were referable was that of merely japanning steel furniture-springs; the authority given to his attorneys was only to amend that application and ended at his death; the amendments made were not mere amplifications of what had been in the application before; the patent was granted upon them without any new oath by the administratrix; and this defense is not required by statute to be specifically set forth in the answer, and can be availed of under the issue raised by the pleadings, as showing that the plaintiff has no valid patent.

We are satisfied with the conclusions arrived at by the circuit court, and with the reasons assigned by it therefor. The copy of the file-wrapper and its contents in the matter of the patent from the Patent Office, giving the history of the application, was put in evidence by the plaintiff. It shows, beyond doubt, that there was no suggestion in the specification signed and sworn to by Eagleton of the invention described in the amendment filed October 19, 1871. Prior to that time the process practiced by the defendants, which is the process described in Letters Patent No. 116,266, granted to Alanson Cary, June 27, 1871, for an improvement in modes of tempering springs, was invented and put in use; and there is no sufficient evidence that Eagleton had any knowledge prior to the invention by Cary of the Cary process of either that process or of the process described in the patent in suit. The plaintiff's patent shows on its face that it was granted on the petition of Eagleton, and the allegation of the bill that the patent was granted on the application of his administratrix is not established. In view of the entire change in the specification as to the invention described the patent to be valid should have been granted on an application made and sworn to by the administratrix. (Act of July 8, 1870, chap. 230, sec. 34, 16 Stat., 202.) The specification as issued bears the signature of Eagleton and not of the administratrix, and it is sufficiently shown that the patent was granted on the application and oath of Eagleton, and for an invention which he never made. The renewed application of December 29, 1870, was made in the name of Eagleton, though he was dead. The letter of Munn & Co. of October 31, 1871, treats the matter under consideration as the application of Eagleton, though the amendment of October 19, 1871, had been made. The amendment of November 7, 1871, was not only made in the name of Eagleton, but the letter of that date in his name to the Office states that what is amended is the specification in his application. Although at some time before the issuing of the patent evidence was produced to the Office of the appointment of the administratrix and of her assignment to the Eagleton Company, yet it is very clearly shown that there was no application or oath by the administratrix.

The decree of the circuit court is affirmed.

U. S. Circuit Court—Northern District of New York.

WORSWICK MANUFACTURING COMPANY *et al. v.* CITY OF BUFFALO *et al.*

Decided May 8, 1884.

1. Where an inventor is the first to enter a particular field of invention the claim of his patent should be construed, broadly, to cover any similar apparatus which effects the same result in substantially the same manner.
2. The defendants are held to infringe the patented invention, notwithstanding they have introduced some improvements, have employed a well-known mechanical equivalent, and made certain minor differences, the two mechanisms being in all essential particulars alike.
3. The burden of proof is upon the defendant to show that the complainant is not the first inventor, and a mere preponderance of the evidence in that direction is not enough. The proof must be of such a convincing character as to satisfy the court beyond a reasonable doubt.
4. Letters Patent No. 171,190, granted December 14, 1875, to Edward O. Sullivan, sustained.

Mr. M. D. Leggett and *Mr. John Crowell* for the complainants.

Mr. Giles E. Stilwell for the defendants.

COXE, *J.:*

The complainants are the owners of Letters Patent No. 171,190, granted December 14, 1875, to Edward O. Sullivan, for improvements in harness for fire-engines. The patent relates not only to the construction of the harness, but also to the manner of suspending it above the horse. The object of the invention is to enable the horses to be kept unharnessed until the moment of the alarm, and then to attach them to the engine with great expedition. One man is thus enabled to do the work of three under the old system. The harness is made in sections, is permanently fastened to the neap or thills, and suspended from the ceiling by means of straps and spring-catches, so that it may be dropped upon the horse and quickly secured.

Before the use of this apparatus horses were kept continually in harness night and day. The result was that they were irritated and galled, and the harness was injured and soon destroyed by the constant rubbing which this irritation occasioned.

There can be no doubt regarding the utility of the invention. Its advantages may be summarized as follows: relief to the horses, expedition in reaching the fire, durability and reliability of the harness, economy in the employment of firemen and harness-makers. And when it is remembered that promptness in arriving at

a fire has often prevented a great conflagration, the indirect benefits can hardly be estimated.

The claim in controversy is the third. It is in these words:

3. The combination, with a harness for a fire-engine or like apparatus, of a device for suspending said harness above the place occupied by the horse when attached to the apparatus, substantially as and for the purpose set forth.

The defenses interposed are, first, the claim is void for the reason that there is an attempt to patent a mere abstraction—the idea of suspending a harness from the ceiling in a particular place; second, the defendants do not infringe if the claim is confined to the particular mechanism described in the specification; third, the patentee was not the original inventor.

So far as the records of the Patent Office show Sullivan was the first to enter this field of invention. No other patent, American or foreign, is introduced to anticipate or limit the claim referred to. It should, therefore, be construed, broadly, to cover any similar apparatus which suspends a harness in substantially the same manner. The details of construction both in the harness and the suspending apparatus are non-essentials, inferior, and subordinate to the principle embodied in the patent, which is the paramount and superior consideration. The man who first conceived the idea of suspending the harness above the horse and put it into successful and practical operation is the one who conferred the benefit, and is entitled to the reward. It would be an exceedingly illiberal and narrow construction to hold that he should be deprived of the fruits of his ingenuity by one who simply changed the form of the harness or of the device by which it is suspended. No principle is better settled than that a mere abstract idea is not the subject of a patent, but that principle has little application here for the reason that the inventor has put his idea into tangible shape and given it form and substance. For years the problem was how to get the engine to the scene of the fire in the shortest possible time. By a combination of old devices Sullivan has reduced time to the minimum, and accomplished a confessedly beneficial result. It is not an abstraction he seeks to secure, but the apparatus by which the idea is carried out. With the claim thus construed, and in view of the state of the art, very little need be said upon the question of infringement.

The defendants have adopted an analogous combination. The harness and hoisting apparatus used by them are substantially the same as those described in the patent. They have quite likely introduced some improvements; they have employed the well-known mechanical equivalent of a pulley and weight for a coiled spring; they suspend the whole harness and attach no part of it to the pole, and there are minor points of difference between the two mechanisms; but in all essential particulars they are alike.

The main effort on the part of the defendants has been to show that Sullivan was not the original inventor. Here the burden is upon them to satisfy the court beyond a reasonable doubt. A mere preponderance of evidence is not enough. The proof must be of such a convincing character that the court can say without hesitancy that the allegations of the answer in that behalf are true. Has such proof been offered? It is thought not.

A fair conclusion to draw from the evidence is that the defendants have succeeded only in casting doubt upon the title of the patentee. Instead of capturing the citidel, they have simply made a breach. True it is that before the patent vague conceptions of the invention had entered other minds; true it is that others had approximated more or less closely to the successful realization. No one had quite reached the goal. The evidence shows that in one instance, while the horse was standing harnessed in the stall, the collar was, by means of a cord, pulley, and weight, raised on his neck to prevent chafing, heat, and irritation. In another case a single harness, without collar and hames, was attached to the thills of a light fire-wagon. The harness and thills were elevated to the ceiling by a rope, pulley, and weight. A similar method was at another time applied to the harness of hose-carts, excepting that the collar and hames were left on the horse. There was also evidence tending to show that in 1872, at Louisville, the harness of a hose-cart was suspended by a rope and pulley from the ceiling, and that the collar was hinged and was fastened by a snap or spring lock at the bottom. No witness was called who recollected seeing a harness for fire-engines suspended prior to the date of the patent. But, if not discredited, the evidence relating to the Louisville apparatus would certainly have the effect of restricting the claim within exceedingly narrow limits. The complainants have, however, succeeded in showing that there may well be a mistake both as to the time when and the manner in which the harness was suspended at Louisville. The chief and assistant chief of the fire department of that city during the year 1872 never saw or heard of the apparatus described by the defendants' witnesses. The chief next in succession, who previous to his elevation to that office had been in and about the engine-houses for twenty years, gave like evidence. A member of the Cleveland fire department, who came to Louisville in 1879 for the purpose of explaining and introducing the Sullivan apparatus, testified that he visited the different engine-houses, but saw nothing at all resembling a swinging harness. The Louisville firemen were surprised and pleased with the invention, and it was immediately adopted by them. It must, therefore, be said within the rule heretofore adverted to that the defendants have not succeeded in establishing their defense.

There should be a decree for an injunction and an account, with costs.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 27—No. 13. TUESDAY, JUNE 24, 1884. PRICE—$5 per year.

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Attorneys.

DEPARTMENT OF THE INTERIOR,
Washington, June 17, 1884.

SIR: I am directed by the Secretary to inform you that the order of the Department disbarring William H. Woodward, of Carbondale, Illinois, from practice before this Department and its bureaus has this day been rescinded.

Very respectfully,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., June 18, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that John Algoe, of Flint, Michigan, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., June 18, 1884.

SIR: I am directed by the Secretary to inform you that he has ordered that Edwin J. Smith, of Whitehall, Muskegan county, Michigan, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of June 24, 1884.

Patents	329	No. 300,749 to No. 301,077, inclusive.
Designs	21	No. 15,087 to No. 15,107, inclusive.
Trade-Marks	13	No. 11,273 to No. 11,285, inclusive.
Labels	4	No. 4,155 to No. 4,158, inclusive.
Reissues of patents	4	No. 10,491 to No. 10,494, inclusive.
Total issue	371	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	2	
Arizona Territory			Nevada		
Arkansas			New Hampshire		
California	11		New Jersey	24	2
Colorado	2		New Mexico Territ'y		
Connecticut	16		New York	68	2
Dakota Territory			North Carolina	2	
Delaware	1		Ohio	33	
District of Columbia	2		Oregon		
Florida			Pennsylvania	26	
Georgia			Rhode Island	5	
Idaho Territory			South Carolina	2	
Illinois	19		Tennessee	4	
Indiana	16		Texas	1	
Indian Territory			Utah Territory		
Iowa	10		Vermont	2	
Kansas	3		Virginia	1	
Kentucky	3		Washington Territ'y		
Lonisiana	1		West Virginia		
Maine	1		Wisconsin	8	
Maryland	5	6	Wyoming Territory	1	
Massachusetts	27	3	United States Army		
Michigan	10		United States Navy		
Minnesota	2				
Mississippi	2		Total to citizens of the United States	323	13
Missouri	13				
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			Germany	13	
Austria-Hungary			Holland		
Barbadoes			India	2	
Belgium			Ireland	1	
Bermuda			New Zealand		
British Guiana			Norway		
Canada	3		Russia		
Chili			Scotland	1	
Colombia, U. S. of			Switzerland	2	1
Cuba			West Indies		
Denmark					
Ecuador			Total to citizens of foreign countries	27	4
England		3			
France	5				

DESIGNS.

15,087.—ORNAMENTATION OF PAPER.—*Bowie Dash*, New York, N. Y. Application filed April 26, 1884. Term of patent 14 years.

15,088.—SATCHEL-BODY.—*Joseph O. Hacker*, New York, N. Y. Application filed April 24, 1884. Term of patent 3½ years.

15,089.—TABLE-WARE.—*Charles E. Haviland*, Limoges, France. Application filed January 31, 1884. Term of patent 14 years.

15,090.—MISS'S COSTUME.—*Mary Kavanagh*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed May 12, 1884. Term of patent 3½ years.

15,091.—LADY'S COSTUME.—*Mary Kavanagh*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed May 12, 1884. Term of patent 3½ years.

15,092.—FLORAL STAND.—*Adolphe Le Moult*, New York, N. Y. Application filed November 28, 1883. Term of patent 3½ years.

15,093.—WALL-PAPER.—*Augustin Le Prince*, New York, N. Y. Application filed April 11, 1884. Term of patent 3½ years.

15,094.—SEWING-MACHINE COVER.—*Alpheus W. Myers*, Newark, N. J. Application filed December 7, 1883. Term of patent 7 years.

15,095.—TAPESTRY BORDER.—*Earnest G. Nufer*, Philadelphia, Pa., assignor to *George Brooke & Son*, same place. Application filed May 5, 1884. Term of patent 3½ years.

15,096.—UPHOLSTERY FABRIC.—*Earnest G. Nufer*, Philadelphia, Pa., assignor to *George Brooke & Son*, same place. Application filed May 5, 1884. Term of patent 3½ years.

15,097.—TAPESTRY BORDER.—*Earnest G. Nufer*, Philadelphia, Pa., assignor to *George Brooke & Son*, same place. Application filed May 5, 1884. Term of patent 3½ years.

15,098.—UPHOLSTERY FABRIC.—*Earnest G. Nufer*, Philadelphia, Pa., assignor to *George Brooke & Son*, same place. Application filed May 5, 1884. Term of patent 3½ years.

15,099.—TABLE-WARE.—*Martial Redon*, Limoges, France, assignor to *A. Klingenberg*, New York, N. Y. Application filed April 2, 1884. Term of patent 7 years.

15,100.—LADY'S WALKING-SKIRT.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed May 12, 1884. Term of patent 3½ years.

15,101.—LADY'S COSTUME.—*Sarah Jane Shiels*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed May 12, 1884. Term of patent 3½ years.

15,102.—GIRL'S COSTUME.—*Louise Tully*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed May 12, 1884. Term of patent 3½ years.

15,103.—MISS'S WALKING-SKIRT.—*Mary Turner*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed May 12, 1884. Term of patent 3½ years.

15,104.—LADY'S COSTUME.—*Mary Turner*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed May 12, 1884. Term of patent 3½ years.

15,105.—FRINGE.—*William Wiberley*, Peekskill, assignor to *Isaac Hess*, New York, N. Y. Application filed April 14, 1884. Term of patent 3½ years.

15,106.—CHILD'S COSTUME.—*Frances Wright*, New York, N. Y., assignor to *The Butterick Publishing Company*, (*Limited*,) same place. Application filed May 12, 1884. Term of patent 3½ years.

15,107.—LAYER OF TOBACCO.—*Warwick W. Wood*, Winston, N. C. Application filed July 24, 1880. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upwards are registered under the act of March 3, 1881.]

11,273.—SOAP.—*James Armstrong & Co.*, Baltimore, Md. Application filed May 13, 1884.
"The words 'EMPIRE CITY.'"

11,274.—POLISH FOR LADIES' AND CHILDREN'S BOOTS, SHOES, SATCHELS, &c.—*Miles S. Cahill*, Boston, Mass. Application filed April 9, 1884.
"The word-symbol 'ALMA.'"

11,275.—POLISH FOR LADIES' AND CHILDREN'S BOOTS, SHOES, SATCHELS, &c.—*Miles S. Cahill*, Boston, Mass. Application filed April 9, 1884.
"A circular red figure, mark, or symbol on a black field."

11,276.—EXTRACTS AND PERFUMES FOR THE TOILET.—*John H. Winkelmann*, Baltimore, Md. Application filed May 14, 1884.
"The representations of a vase of flowers inclosed in a circle and a butterfly approaching said vase of flowers from the upper right-hand part of the circle."

11,277.—MEDICATED SOAP.—*Daniel Wilkins Fessey*, London, England. Application filed April 16, 1884.
"The representation of two human feet."

11,278.—CIGARS AND CIGARETTES.—*Herman Bros.*, Baltimore, Md. Application filed May 2, 1884.
"The word-symbol 'PROFESSOR.'"

11,279.—ALE AND STOUT.—*Ihlers & Bell*, Liverpool, England. Application filed May 2, 1884.
"The word 'BULL.'"

11,280.—ALE AND STOUT.—*Ihlers & Bell*, Liverpool, England. Application filed May 2, 1884.
"The representation of a bull."

11,281.—COFFEE ROASTED OR OTHERWISE PREPARED.—*Francis H. Leggett & Co.*, New York, N. Y. Application filed April 8, 1884.
"The representation of a stag's head and the word 'STAG.'"

11,282.—MEN'S, YOUTHS', BOYS', AND CHILDREN'S READY-MADE COATS, OVERCOATS, PANTS, AND VESTS.—*C. N. Oehm & Son*, Baltimore, Md. Application filed March 25, 1884.
"The word 'ACME.'"

11,283.—EXTRAIT D'ABSINTHE.—*Edouard Pernod*, Convet, Switzerland. Application filed December 12, 1883.
"A scroll with shield and hat, an oblong eight-sided figure inclosing the name and address 'D'Edouard Pernod,' and an old Swiss in national costume leaning upon the shield, and the paraph 'Ed. Pernod.'"

11,284.—FLOAT-LOGS.—*J. Spencer & Co.*, Baltimore, Md. Application filed April 10, 1884.
"Two bands, rings, or grooves encircling the log and joined by a straight line or groove."

11,285.—THERMOMETERS.—*Henry Weinhagen*, Hoboken, N. J. Application filed April 14, 1884.
"A triangular figure inclosing the letter 'W.'"

LABELS.

4,155.—Title: "HIGGINS AUTUMN LEAF" (FOR A DYSPEPSIA REMEDY.)—*Charles A. Higgins*, Flemington, N. J. Application filed July 13, 1883.

4,156.—Title: "THE BOSTON JAVA COFFEE."—*Swain, Earle & Co.*, Boston, Mass. Application filed June 3, 1884.

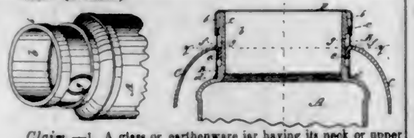
4,157.—Title: "BEEF, IRON, WINE WITH HYDROPEPSIN."—*Thomas & Thompson*, Baltimore, Md. Application filed June 3, 1884.

4,158.—Title: "WILBER'S CELEBRATED FAMILY LINIMENT."—*Rufus R. Wilber*, New York, N. Y. Application filed June 2, 1884.

PATENTS

GRANTED JUNE 24, 1884.

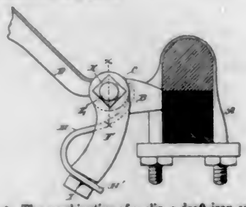
300,749. JAR. SAMUEL ADLAM, Jr., Boston, Mass. Filed Mar. 17, 1884. (No model.)



Claim.—1. A glass or earthenware jar having its neck or upper portion encircled by a metal band or collar firmly cemented thereto, and provided with a flange, *d*, in combination with a swinging bail or handle, substantially as and for the purpose set forth.

2. The combination, with a glass or earthenware jar having recesses *g* formed upon opposite sides of the outside of its neck or upper portion, of the metal band or collar B, encircling said neck, and provided at its top with a turned edge, *c*, and at its bottom with a flange, *d*, for the surplus plaster, and having apertures *f* opposite to the recesses *g*, and the swinging bail or handle C, having its ends *e* hooked into the apertures *f* in the band B, and adapted to project into and turn within the recesses *g* in the neck or upper portion of the pail, all constructed and arranged to operate substantially in the manner and for the purpose described.

300,750. THILL-COUPLING. EDWARD P. ALEXANDER, Clinton, N. Y. Filed Aug. 24, 1883. (No model.)



Claim.—1. The combination of a clip, a draft-iron secured therein, arm F, and spring H, secured to said arm, and having its free end bearing against the barrel of the draft-iron, substantially as shown and described.

2. The combination of the clip A, draft-iron D, coupling-bolt E, arm F, secured to said bolt at one end, spring H, and screw I, substantially as set forth.

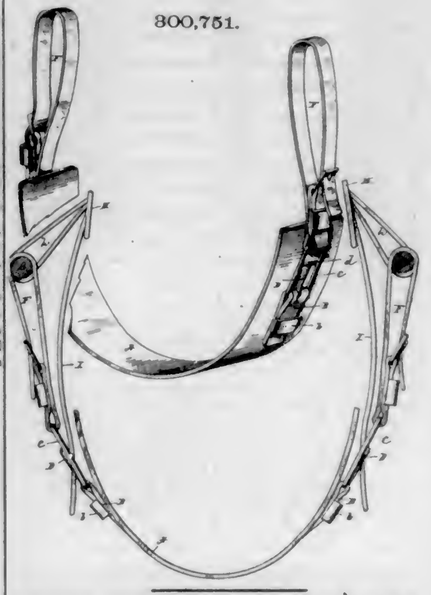
3. The combination of the clip A, draft-iron D, coupling-bolt E, arm F, secured to said bolt at one end and having its free end bent at right angles, spring H, having the lower straight end, H', and screw I, all combined and arranged to operate substantially as described.

300,751. HARNESS. CHARLES ALLEN and WILLIAM E. DUBBS, Peru, Ind. Filed Apr. 29, 1884. (No model.)

Claim.—1. The girth or belly-band provided near its ends with the buckles, having loops extended in advance of the points of the tongues, and having the thill-loops secured at one end in the extended loops of said buckles, substantially as and for the purposes specified.

2. The combination of the girth, the buckles secured near the opposite ends of same, and provided with loops extended in advance of the bearing-points of the tongues, the thill-loops secured at one end in said extended loops, the back-band or saddle, and the connecting-straps secured at one end to the back-band, having their opposite ends held by the buckles on the girth, substantially as set forth.

300,751.



300,752. APPARATUS FOR GENERATING GAS OR VAPOR FROM LIQUID HYDROCARBONS. AUGUSTIN I. AKELEY, Washington, D. C. Filed June 9, 1882. (No model.)

Claim.—1. In combination, the inclosing-cylinder A, the corrugated cylinder A', inclosed within the same so as to leave a steam-space between, and the pipe C', communicating with the corrugated cylinder by which it is inclosed near the bottom, substantially as shown.

2. The corrugated generating-chamber B', surrounded by the corrugated steam-chamber A', the inspirator-chambers I I, the feed-pipe I', the perforated oil-pipe I^2, the oil-supply pipe I^3, the overflow-pipe I^4, the vapor-pipes J and M, the cylinder-trap L, the condensation return-pipe M^3, the gas-pipe M', and the steam-pipe H and H', all combined and relatively arranged substantially as shown and described.

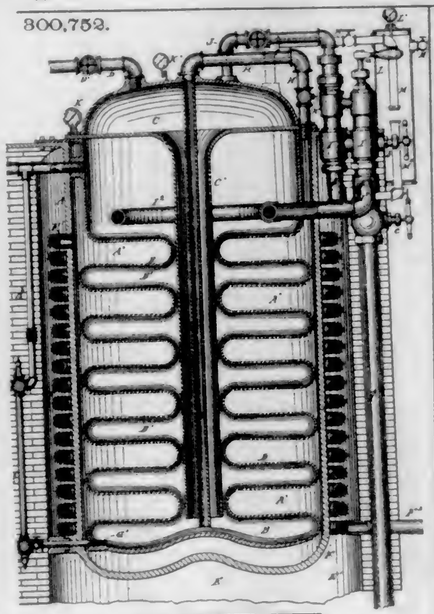
3. The combination of the cylinder A, the cylinder B, the dome C, the pipe C', and the pipe and valve D and D'.

4. The superheater F, pipes F' and F^2, the steam-chamber A', the pipe and valve H and H', the dome and pipe C and C', and the pipe and valve D and D', combined and relatively arranged substantially as stated.

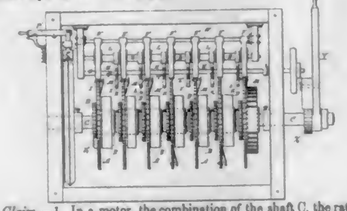
5. The combination of the oil-feed pipe, the inspirator, and the generator with gas-pipes M and M', the cylinder L, and pipes M^3, for returning any liquid of condensation to the generator by means of the feed-pipe of the inspirator, substantially as stated.

6. The combination of the outer steam-jacket, the inner jacket inclosing the generating-chamber, the pipes G and G' with pipe and glass tube G^3, the superheater F and connecting-pipes F' and F^2, pipe and valve H and H', pipe C', dome C, and pipe and valve D and D', and oil-supply pipe I', substantially as shown, and for the purpose set forth.

300,752.



300,753. SPRING-MOTOR. THOMAS K. AUSTIN, New York, N. Y. Filed Apr. 30, 1884. (No model.)

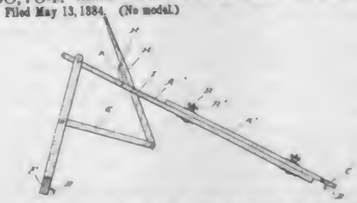


Claim.—1. In a motor, the combination of the shaft C, the ratchet-wheels A D, and pawls E F with the springs, the spring-actuated releasing-pins, and the lifters, substantially as shown.

2. In a spring-motor, the combination of the ratchet-wheels A D, spring-actuated pins I, which are released by the uncoiling of the driving-springs, and the tappet H, provided with a hook or catch upon its end for holding the ratchet-wheel A while the pawl F is out of contact with it, substantially as set forth.

3. The combination of the shaft C, the ratchet-wheels A D, and pawls E F with the springs, the releasing-pins, the tappets, the lifters, and the arms for lifting the tappets so as to release the pins, substantially as described.

300,754. CARPET-STRETCHER. JOSEPH L. BARRETT, Ansonia, Conn. Filed May 13, 1884. (No model.)

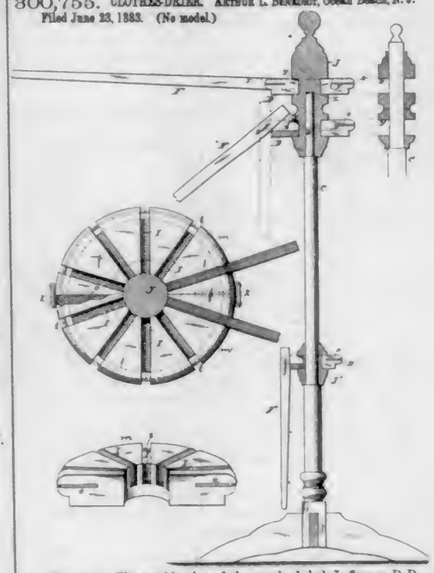


Claim.—1. The adjustable long arm and a short arm pivoted thereto, in combination with a lever pivoted to the short arm about midway of its length, and pivoted at its other end to a hand-lever, which in turn is pivoted to the long arm, substantially as described.

2. The long arm consisting of the slotted parts A A', adjustably secured together by bolts having thumb-nuts, and a hand-lever pivoted in said arm, and having teeth H', as shown, in combination with a short arm pivoted to said long arm, a lever connecting said short arm to the hand-lever, and a pawl engaging the hand-lever to hold the parts in any desired position.

3. The adjustable arm and the short arm, both having cross-pieces with hooks C at their lower ends, in combination with lever G, pivoted to the short arm, hand-lever H, pivoted to the adjustable arm, and to lever G, and a pawl engaging teeth upon the hand-lever, as described, and for the purpose set forth.

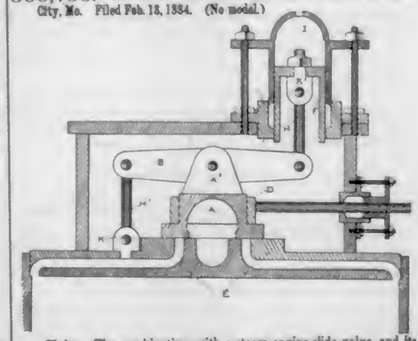
300,755. CLOTHES-DRIER. ARTHUR L. BENEDICT, Ocean Beach, N. J. Filed June 23, 1883. (No model.)



Claim.—1. The combination of the standard, hub J, flanges D D, occupying a fixed position in relation to each other upon the hub—one above the other, the upper projecting beyond the lower—provided with radial slots, and with adjustable arms F, arranged with the arms of one flange between those of the other, and each having a sliding pivotal connection, all as and for the purpose specified.

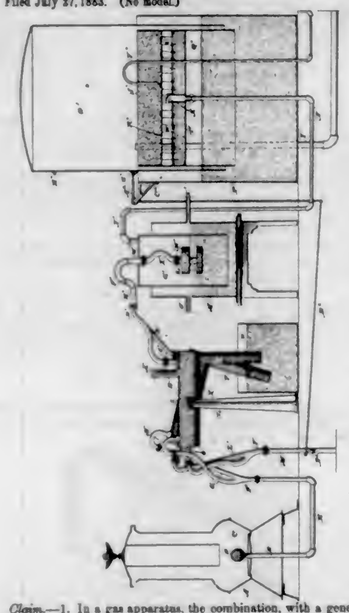
2. The combination, with the hub J, of flanges D D, arms F supported radially in said flanges, each flange being formed in sections detachable from each other, substantially as set forth.

300,756. BALANCED SLIDE-VALVE. JAMES BEWSHER, Kansas City, Mo. Filed Feb. 13, 1884. (No model.)



Claim.—The combination, with a steam-engine slide-valve, and its inclosing steam-chest provided with a vertical packing chamber and plunger near one end, an equalizing-bar pivoted midway of its length to the back of the valve, and having a vertically-vibrating link journaled, as shown, to one extremity for connection with the balancing-plunger, the opposite end being journaled to and connected by a similar link to the bottom of the chest, the described vibrating links each constructed of substantially identical dimensions, and attached to the parts described, as shown, so that the central pivot of the equalizing-bar may reciprocate in a line parallel to the valve-face, and the plunger be devoid of motion, substantially as described and shown.

300,757. GAS APPARATUS. JAMES M. BOE, East Aurora, N. Y. Filed July 27, 1883. (No model.)



Claim.—1. In a gas apparatus, the combination, with a generator, of pumping-cylinders connected with the generator and a water-supply, and devices whereby one cylinder is filled with water and emptied of its gas while the other is being filled with gas and emptied of water, substantially as set forth.

2. In a gas apparatus, the combination, with a generator, of a gas-pipe surmounted by a perforated ball located in the combustion-chamber of the generator, and pumping-cylinders connected with the gas-pipe of the generator, and with a water-supply, and arranged to operate alternately in withdrawing the gas from the generator.

3. In a gas apparatus, the combination, with a generator, of two pumping-cylinders poised upon a common fulcrum, and arranged to be depressed when filled with water, inlet and outlet water and gas connections for each cylinder, and a walking-beam uniting the two cylinders, substantially as set forth.

4. In a gas apparatus, the combination, with a generator, of two pumping-cylinders eccentrically hung upon a common fulcrum and poised, inlet and outlet water and gas connections for each cylinder, and a walking-beam uniting the cylinders, substantially as set forth.

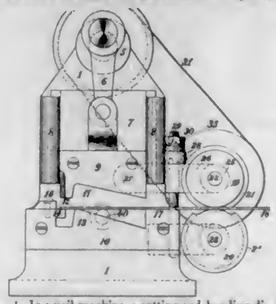
5. In a gas apparatus, the combination, with a generator, of two pumping-cylinders poised upon a stationary fulcrum, levers located within the cylinders and rigidly secured to the said stationary fulcrum, and inlet and outlet water-valves located in the cylinders and attached to the opposite ends of the levers, and operated by the oscillations of the cylinders upon their fulcrum, substantially as set forth.

6. In a gas apparatus, the combination, with a generator, of two pumping-cylinders poised upon a stationary fulcrum, inlet and outlet water connections for each cylinder, and means for discharging the water from the cylinders below the surface of another volume of water, substantially as set forth.

7. In a gas apparatus, a purifier consisting, essentially, of a vessel inverted in a tank containing a purifying-liquid, and provided with a flexible inlet-pipe, a short pipe secured to the end of the flexible pipe, perforated disk secured to the lower end of the short pipe, and a float secured to the short pipe above the perforated disk, substantially as set forth.

8. In a gas apparatus, the combination, with a generator, of two pumping-cylinders arranged to be actuated by water in withdrawing the gas from the generator and gasometer, and a system of levers arranged to employ the rise and fall of the gas-tank, to shut off and turn on the water-supply of the pumping-cylinders, substantially as set forth.

300,758. MACHINE FOR MAKING HOOK-HEADED NAILS. BENJAMIN BRAEELLE, St. Louis, Mo. Filed Dec. 26, 1883. (No model.)



Claim.—1. In a nail-machine, a cutting and bending die, 9, substantially as set forth—to wit, having an angular recess, 11, in its face corresponding in form with the desired outer longitudinal outline of the nail to be cut, with a cutting-edge located at one end of said recess, and a cutting and bending punch, 12, located at the other end thereof.

2. In a nail-machine, the combination, substantially as set forth, of a movable cutting and bending die, 9, having an angular recess, 11, and cutting-edge and punch 12, as described, and a counterpart fixed die, 10, having a corresponding former, 13, and tongue 14.

3. In a nail-machine, the combination, substantially as set forth, of a pair of cutting and bending dies, a pair of feed-rolls, each having a flange on one side, the flanged side of one roll being opposite the plain side of the other, and a spring on the shaft of one of said feed-rolls, the tension of which acts to return said feed-roll to normal position upon the relief of pressure, tending to move said feed-roll in a plane parallel to its axis.

4. In a nail-machine, the combination of a pair of cutting and bending dies, a fixed stop, a pair of feed-roll shafts, each having fixed thereon a feed-roll and a gear which meshes with a corresponding gear on the opposite shaft, a driving-pulley mounted loosely on one of the feed-roll shafts, and having an annular recess in one of its sides, a spring fitting in said recess, and a nut engaging a thread on the shaft of said pulley, and adapted to compress the spring within the recess, substantially as and for the purpose set forth.

5. In a nail-machine, the combination, substantially as set forth, of a pair of cutting and bending dies, a feed-roll mounted in bearings fixed to the frame of the machine, a feed-roll mounted in a bearing on an arm pivoted to the frame, a spring-bearing upon said pivoted arm, and an adjusting-screw and nut for varying the tension of the spring upon said arm.

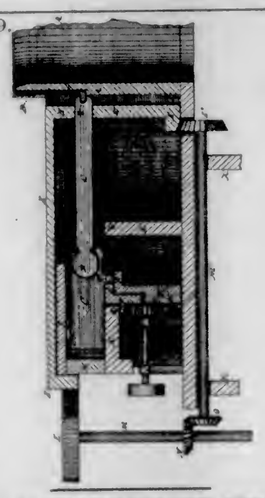
6. In a nail-machine, the combination of a driving-shaft, a driving-pulley fitting freely thereon and maintained in frictional contact therewith by a spring compressed by a nut engaging a thread thereon, a cutting and bending die having an angular recess and cutting-edge and punch, as described, a connecting-rod, coupling said die to a crank or eccentric on the driving-shaft, a counterpart fixed cutting and bending die having a former and tongue corresponding with the recess of the movable die, a fixed stop in line with one of the cutting-edges of the movable die, a pair of feed-rolls, each having a flange on one side, the flanged side of one roll being opposite the plain side of the other, said feed-rolls being rotated by a belt from the driving-shaft passing around a loose pulley, which is held in frictional contact with one of the feed-roll shafts by a spring compressed by a nut thereon, a discharge-rod adapted to reciprocate toward and from the dies, and a lever coupled to said discharge-rod and actuated by a cam upon the driving-shaft, these members being combined for joint operation, substantially as and for the purposes set forth.

300,759. KNITTING-MACHINE. JOHN R. BRIDGES, Philadelphia, Pa. Filed Aug. 18, 1881. (No model.)

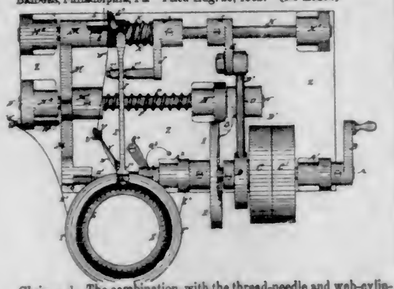
Brief.—The invention is especially designed to render the devices covered by Patent No. 270,928 applicable to machines having a vertical needle-bed.

Claim.—The combination of a series of needles, B, a series of vibratory jacks, C C', detachably connected directly with the feet of said needles, respectively, cam-faces E E', and mechanism to actuate them in unison, and one or more reciprocatory rings, F, constructed and adapted to move the jacks to and from their respective needles, substantially as shown and described.

300,759.



300,760. MACHINE FOR UNITING LOOPED FABRICS. JOHN R. BRIDGES, Philadelphia, Pa. Filed Aug. 29, 1883. (No model.)



Claim.—1. The combination, with the thread-needle and web-cylinder provided with impaling-points, of mechanism to conjointly impart to said needle a lateral and to said cylinder an intermittent rotary movement, as described, whereby said needle is caused to follow and its point thus held or preserved in a line with the loops upon the contiguous impaling-point of said cylinder, as said needle is being actuated to penetrate and passes through said loops, means for actuating the needle to so penetrate said loops, and means for coacting with said needle to form stitches, substantially as set forth.

2. The combination of the thread-needle, a rotating web-cylinder having vertically-set projecting impaling-points, mechanism to actuate said needle in the direction of its length, and means for coacting therewith to form stitches, said cylinder being detachable, substantially as shown, and for the purposes set forth.

3. The combination of the thread-needle, a web-cylinder provided with impaling-points, and a ring, T, having pins T', mechanism to actuate said web-cylinder, mechanism to actuate the needle in the direction of its length, and means for coacting with said needle to form stitches, all substantially as shown, and for the purposes set forth.

300,761. BASE FOR LOOKING-GLASS FRAMES. CHAS. BROTHERS, New York, N. Y. Filed Aug. 2, 1883. (No model.)



Claim.—1. The combination of the upper frame-supporting base portion, B, provided with the posts *b b'*, with the lower stationary base portion, C, provided with the guide-posts *c c'*, and means, substantially as described, arranged in the central posts, *b c*, for adjusting and maintaining extension, substantially as and for the purpose hereinbefore set forth.

2. The combination of the upper frame-supporting base portion, B, provided with the posts *b b'*, and having the swiveled screw E in the central post, with the lower stationary base portion, C, provided with the guide-posts *c c'*, and having the threaded socket D in the central portion, *c*, substantially as and for the purpose set forth.

300,762. DEVICE FOR FASTENING REMOVABLE PINS TO BROOCHES. GEORGE E. BUTIN, Fredonia, Kans. Filed Apr. 11, 1884. (No model.)



Claim.—1. A brooch having the catch *a*, and provided with the shoulder B, having the opening *b* formed with the countersink, the pin C, and the means, substantially as shown, for retaining said pin in the shoulder.

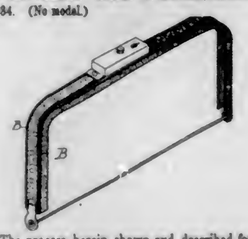
2. The combination, with a brooch having catch *a*, of the shoulder B, formed as described, the retaining-plate pivoted to said shoulder, and formed with the projection *d*, the pin C, and flange or rib *e*, all substantially as set forth and shown.

3. The combination, with the pin or brooch, of the removable pin, the lug B, and pivoted plate D, and the retaining device for said plate, substantially as described.

4. As an improvement in brooches, pins, and the like, the lug or projection having an aperture through it, one end of said lug being countersunk, whereby it is adapted to receive a removable-headed pin, and means for securing said pin in position, substantially as described.

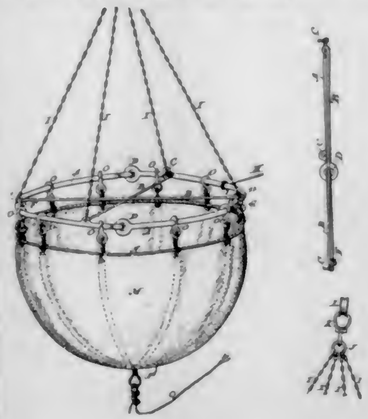
5. A brooch, safety-pin, or the like provided with a removable holding-pin, whereby one pin can be substituted for another.

300,763. PROCESS OF MANUFACTURING IMITATION-LEATHER-COVERED BAG-FRAMES. ROBERT W. CHAPMAN, Newark, N. J. Filed Mar. 13, 1884. (No model.)

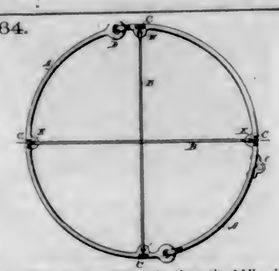


Claim.—The process herein shown and described for pebbling or graining metallic bag-frames in imitation of leather, consisting in first pebbling the sheet metal by pressure, then cutting, bending, and working the same into bag or satchel frames, and, finally, in japanning the pebbled surface of such frames, as and for the purpose set forth.

300,764. ADJUSTABLE MARINE DRAG. JOSEPH W. COLLINS, Gloucester, Mass. Filed Mar. 17, 1884. (No model.)



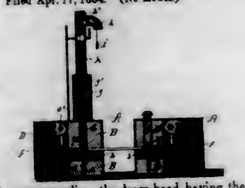
300,764.



Claim.—1. In an adjustable marine drag, the folding hoop A, provided with eyes D, formed as shown, the eyes C on its upper side for attaching the guys I, and eyes E, with which the cross-bars B are connected, in combination with a bag, M, attached to said hoop A, substantially as specified.

2. An adjustable marine drag consisting of a folding hoop, A, provided with eyes for attaching the cross-bars B, and guys I, connected to a swivel-hook, the bag M, supported by hooks O on said hoop, the becket at the bottom of said bag, the tripping-line, the buoy-line, and the fair-leader, all arranged substantially as set forth.

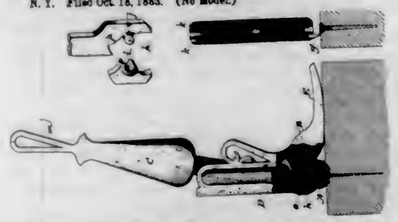
300,765. CAR-COUPLING. JASPER B. COMPTON and ENOCH J. LANE, Williams, Cal. Filed Apr. 17, 1884. (No model.)



Claim.—1. In a car-coupling, the draw-head having the box-casting, with its upper end provided with a box-shaped open-ended inclosure having a tubular vertical extension provided with horizontal tubular arms, and at its extreme upper end with a short tubular arm, in combination with the pin and its operating cords or chains, substantially as and for the purpose set forth.

2. In a car-coupling, the two-part draw-head casting, with the lower part provided with the link-passage, and in alignment with said passage with a narrow slot, the upper part of said casting having a slot in the same vertical plane with said slot, in combination with the right-angled follower sliding in recesses or grooves in the upper corner-edges of the link-passage and its coincident slot, and the lever or arm resting upon said follower, substantially as and for the purpose set forth.

300,766. NAIL-EXTRACTOR. MASCHIL D. CONVERSE, New York, N. Y. Filed Oct. 18, 1883. (No model.)

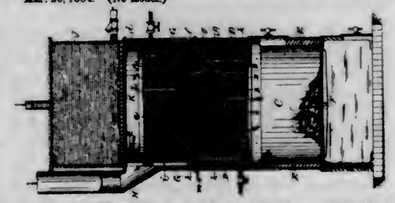


Claim.—1. In a nail-extractor, a leverless fulcrum and guide-piece provided with a sharp point for engaging the wood, in combination with an independent lever having fulcrumless jaws attached to its lower end, which interlock with said leverless fulcrum and guide-piece when said lever is inclined in the act of gripping and extracting a nail, but are each independent thereof during their vertical play, substantially as and for the purposes shown and described.

2. In a nail-extractor having pivoted vertical reciprocating jaws, the combination of a chisel-edged guide-piece, with a fulcrum rigidly attached thereto.

3. In a nail-extractor, the herein-described clamping device, consisting of a segmental-shaped recess formed in one clamping-jaw, at right angles to its inner edge, to embrace a correspondingly-shaped pin formed upon the other jaw at the same relative angle and place, operating together as set forth.

300,767. STEAM-BOILER. JAS. O. DRAPER, Pawtucket, R. I. Filed Mar. 26, 1884. (No model.)

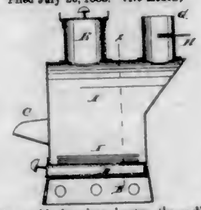


Claim.—1. The combination of the upright boiler provided with the flues B B with the removable perforated plate L, the perforations of the plate being made smaller in area than the internal diameter of the flues and coincident therewith, whereby the heat will be longer retained in the flues, substantially as described.

2. The combination of the upright boiler provided with the flues B B, band *f*, and shell *d*, extended beyond the upper end of the flues B B, and provided with an outlet-orifice, *e*, with the outer casing provided with the flange *g*, the partitions *i* and *j*, and flue H, substantially as and for the purpose specified

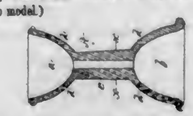
3. The combination of the upright boiler A, having an elongated cross-section, with the band *f*, and shell *d*, extended beyond the upper end of the flues B B, and provided with an outlet-orifice, *e*, with the outer casing provided with the flange *g*, for supporting the boiler, and the partitions *i* and *j*, for directing the products of combustion around the upper portions of the boiler, substantially as described.

300,768. HEATER FOR SOLDERING-IRONS. WILLIAM DUNLOP, Chicago, Ill. Filed July 26, 1883. (No model.)



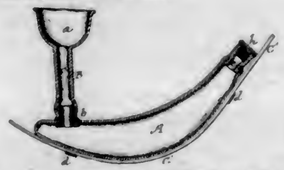
Claim.—In a soldering-iron heater, the cylinder A, having the semi-cylindrical grate formed integral therewith and provided with a feed-tube, E, and draft-tube G, having damper H, in combination with the base B, for holding the cylinder in a horizontal position, and provided with an ash-drawer, D, said cylinder having openings J J in its front end, and a rest, C, secured directly under the same, substantially as described.

300,769. PESSARY. HIRAM G. FARR, Boston, Mass. Filed Aug. 6, 1883. (No model.)



Claim.—As an improvement in pessaries, an elastic device, A, consisting of an upper cup-shape portion, *a*, for receiving the cervix, a lower inverted cup-shape portion, *b*, having its bearing on the pelvic floor without pressure on the urethra or rectum, and a connecting-stem, *c*, having no bearing on the vaginal walls, said device being provided with one or more passages, *d*, substantially as described.

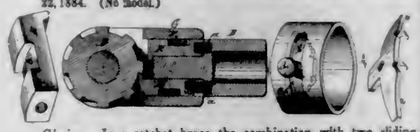
300,770. MENSTRUAL RECEPTACLE. HIRAM G. FARR, Boston, Mass. Filed Sept. 11, 1883. (No model.)



Claim.—An elastic receptacle, A, having an inlet-passage and an outlet-passage, and with the portion of the top between them closed, in

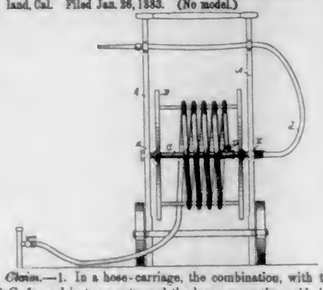
combination with a single elastic conductor, B, having a solid cup-shaped top, *a*, which supports and receives the discharge from the uterus without bearing on the vaginal walls, substantially as described.

300,771. BIT-STOCK. JOHN S. FRAY, Bridgeport, Conn. Filed Mar. 22, 1884. (No model.)



Claim.—In a ratchet-brace, the combination, with two sliding pawls arranged opposite each other, and having recesses upon their outer sides, of a cam-actuating device consisting of a plate having at each end an inclined plane adapted to engage with the recesses of the pawls, substantially as and for the purpose set forth.

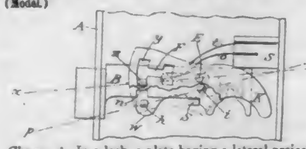
300,772. CARRIAGE FOR GARDEN-HOSE. GEORGE GEISEL, Oakland, Cal. Filed Jan. 26, 1883. (No model.)



Claim.—1. In a hose-carriage, the combination, with the hollow shaft C, formed in two parts, and the hose connecting said shaft to the water-supply, of a coupling, D, uniting the two lengths of shaft and the hose, substantially as set forth.

2. In a hose-carriage, the combination, with the two-part hollow shaft C and frame for supporting the same, of a coupling, D, having the connection at each end for the two parts of the shaft, and a third connection on the side adapted to receive the hose, as set forth.

300,773. LOCK. JAMES GWINN, Detroit, Mich. Filed Feb. 2, 1884. (Model.)



Claim.—1. In a lock, a plate having a lateral projecting pin near each end thereof, and pivotally secured, one of such pins forming a moving bearing for tumblers, and the other designed to engage with the bolt, the pin forming a bearing for the tumblers being on a line approximately vertical to the pivot of the plate, the said plate being so arranged with relation to the tumblers and the bolt that, upon a backward pressure being applied to said bolt, the plate will engage with and lock the bolt in position irrespective of the resistance offered by the tumblers, substantially as described.

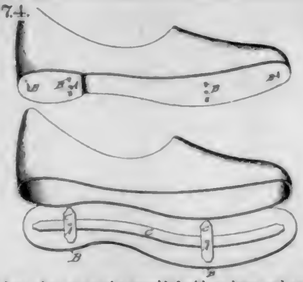
2. In a lock having a plate arranged and operating substantially as described, tumblers having a moving bearing upon one of the pins in said plate, and forming the means by which the backward pressure of the bolt actuates the plate, and thereby locks the bolt in position, substantially as specified.

3. In a lock, a plate having a lateral projecting pin near each end thereof, and pivotally secured, one of such pins forming a moving bearing for the tumblers, and the other designed to engage with the bolt, the pin forming the bearing for the tumblers being on a line approximately vertical to the pivot of the plate, whereby the tumblers are allowed to move freely under a backward pressure applied to said bolt, substantially as set forth.

300,774. OVERSHOE. DAVID HALL, Middletown, Conn. Filed Feb. 8, 1884. (No model.)

Claim.—1. In an improved boot, shoe, or overshoe, the lower or outer sole provided with a longitudinal metallic strip and cross-strips upon its inner side, the longitudinal strip and cross-strips having points projecting through the sole, as set forth.

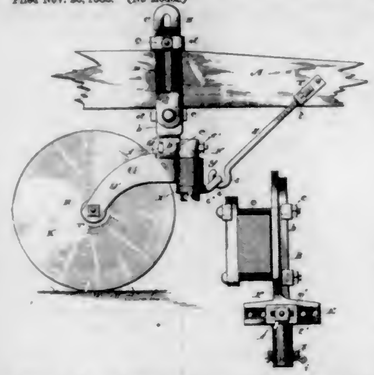
300,774.



2. A boot, shoe, or overshoe provided with an inner and outer sole, having a longitudinal metallic strip and cross-strips secured between the two soles, the longitudinal strip and cross-strips having teeth or points projecting through the outer sole, all substantially as set forth.

3. In a boot, shoe, or overshoe, the outer sole provided with metallic strips having triangular points struck up from the metallic strips, and projecting through the sole, all substantially as set forth.

300,775. ROLLING COLTER. CHARLES R. HARTMAN, Vincennes, Ind. Filed Nov. 20, 1883. (No model.)



Claim.—1. In a rolling colter, the combination, with the standard provided at its lower end with a horizontal arm, which latter is grooved, serrated, and perforated, as described, of a swivel-post constructed with a serrated-faced projection, which enters the groove in said horizontal arm, and a bolt for securing the swivel-post to the arm in any desired lateral adjustment, substantially as set forth.

2. In a rolling colter, the combination, with the standard provided with a transverse bearing-arm at its lower end, said arm being grooved, serrated, and perforated, of a swivel-post constructed with a serrated-faced projection, which enters the groove in said standard-arm, said projection provided with an elongated slot, and a bolt for securing the swivel-post in any desired lateral adjustment, substantially as set forth.

3. In a rolling colter, the combination, with the laterally-adjustable swivel-post, of the combined collar and inclined eye, connected to the lower end of the swivel-post, and an adjustable stay-rod, one end of which is provided with a hook which engages said eye, while the opposite end is screw-threaded for its adjustable attachment to a bracket secured to the beam, substantially as set forth.

4. In a rolling colter, the combination, with the plow-beam, a post, and a colter swiveled to the post, of the combined collar and inclined eye secured to the lower end of the post, and a stay-rod one end of which is secured to the eye, while the opposite end thereof is attached to the plow-beam, substantially as set forth.

300,776. WINDOW-SCREEN. GEORGE W. HENRY, West Jersey, Ill. Filed Aug. 17, 1883. (No model.)

Brief.—A window-screen consisting of a single frame covered with wire or suitable netting and provided with covered openings for operating the blind-slats.

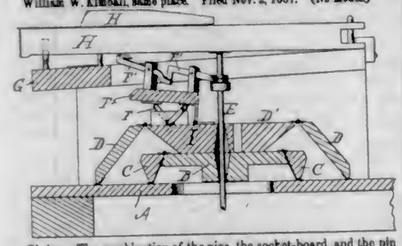
Claim.—1. In combination with the netting N, having small frame-protected openings therethrough and doors F F, the frame-strips A A A', the centrally upwardly curved bar B, and plate C, pivoted at one end thereto, substantially as and for the purpose specified.

300,776.



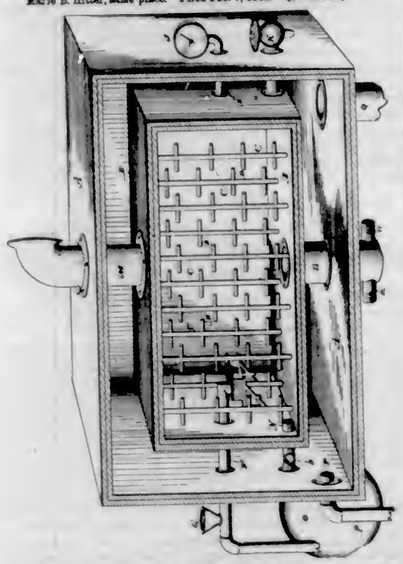
2. As a means whereby the upper slats of a blind may be adjusted without permitting the entrance of objectionable insects, a netting, N, having two small openings therethrough, in combination with the frames F' F', fastened to said netting about said openings, and having doors F F, substantially as and for the purpose set forth.

300,777. REED-ORGAN. JACOB HESSLER, Chicago, Ill., assignor to William W. Kimball, same place. Filed Nov. 2, 1881. (No model.)



Claim.—The combination of the pins, the socket-board, and the pin rail, said board and rail being provided with an independent close and reversely-tapered socket for each of the pins, substantially as specified.

300,778. PROCESS OF AND APPARATUS FOR TREATING FIBROUS PLANTS. J. ALFRED HITTER, St. Martinsville, La., assignor to Marie B. Hitter, same place. Filed Feb. 7, 1884. (No model.)



Claim.—1. An apparatus for treating fibrous material, consisting of a chamber provided with means for suspending the material therein, and of a reservoir for holding a chemical preparation, and having an induction steam-pipe terminating therein, the said chamber being also provided with an exhaust-pipe and an indicator.

2. In an apparatus for treating fibrous material, the combination, with a chamber provided with means for suspending the fiber therein, of a reservoir adapted to hold a chemical preparation, an induction steam-pipe terminating in said reservoir, an exhaust, an indicator, and a ventilator, substantially as set forth.

3. In an apparatus for treating fibrous material, the combination, with an external chamber, of a smaller chamber located therein, and provided with means for suspending the fibrous material, a reservoir situated within the said internal chamber, a steam-pipe terminating within the reservoir, an exhaust, and an indicator, substantially as set forth.

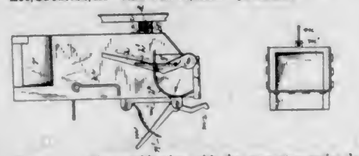
4. In an apparatus for treating fibrous material, the combination, with an outer chamber provided with induction and eduction steam-pipes, of an inner chamber provided with means for suspending the fibrous material, a reservoir, an induction steam-pipe terminating therein, an exhaust leading from the said inner chamber, an indicator, and a ventilator, substantially as set forth.

5. In an apparatus for treating fibrous material, the combination, with an outer chamber provided with induction and eduction steam-pipes, of an interior chamber provided with means for suspending the fibrous material, said interior chamber being provided with a reservoir adapted to contain a chemical preparation, an induction steam-pipe terminating in the reservoir, and provided with a faucet and funnel without the outer chamber, an exhaust leading from the inner chamber, an indicator, a steam-gage, a ventilator, and a pipe leading from a fan to the inner chamber and provided with an opening and valve between the walls of the two chambers, substantially as set forth.

6. A process of treating fibrous material, consisting in first subjecting the material to the action of rollers or breakers, then loosely suspending the same in a steam-tight chamber and subjecting it to the action of steam impregnated with chemical solutions, substantially as set forth.

7. A process of treating fibrous material, consisting in first subjecting the material to the action of rollers or breakers, then loosely suspending the same in a steam-tight chamber and subjecting it to the action of steam after the latter has passed through a solution of sulphate of iron, then to the action of steam after the latter has passed through soft soap, and then dried, substantially as set forth.

300,779. MEASURING APPARATUS FOR SEPARATORS. JACOB HOE, St. Jacob's, Ill. Filed Feb. 16, 1884. (No model.)

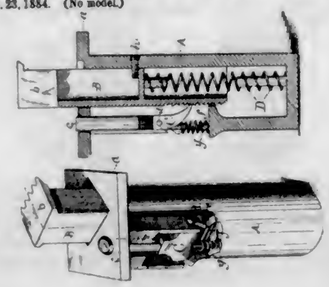


Claim.—1. The combination, with the separator-casing having right-hand and left-hand receiving attachments, of a detachable measuring-box having a cut-off slide and a pivoted bottom operated by a lever engaging a holding-rack, and hook attachments adapted to engage the receiving attachments on the separator-casing, substantially as specified.

2. The measuring-box having the pivoted bottom in its contracted end operated by a lever provided with a spring for holding it in engagement with a curved rack secured to the outside of the box, in combination with the cut-off slide working in ways secured to three sides of the interior of the box and through a slot in the front of the same, substantially as specified.

3. The combination, with the measuring-box having the pivoted bottom, of the rectangular toothed bar *l*, extending along the ends and across under the contracted portion of the box, and the angular distending-lever having a hook at its lower end, and the pivoted guard-rack *n'*, for holding the sack while being filled from the measuring-box, substantially as specified.

300,780. BENCH-DOG. CHAS. C. JOHNSON, Springfield, Vt., assignor to Charles E. Richardson and Adna Brown, both of same place. Filed Apr. 23, 1884. (No model.)



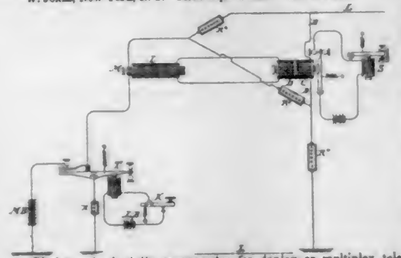
Claim.—1. The bench-dog herein described, consisting of the hollow socket A, provided with the cap-piece *a*, and the dog-head and shank *b* B, fitted to said socket and resting upon spring D, and adapted to be depressed by pressure upon the head *b*, irrespective of other mechanism, and provided with suitable means for automatically holding the dog-head and shank in the socket when depressed, all combined substantially as and for the purposes set forth.

2. The combination, in a bench-dog provided with a socket and cap-piece, of a pawl arranged to be depressed by means of a stem or bar extending through said cap-piece, the said pawl having projections upon each side adapted to move in slots formed in said socket, and a spring arranged to support said pawl in a backward and downward movement in said slots, substantially as and for the purposes set forth.

3. The combination of the socket A, provided with slots *e*, the dog B, provided with head *b*, and a shank having ratchet-teeth upon its side, the spring D, pawl C, provided with stem *c*, and projections *d*, and spring *y*, the said pawl being adapted to move downward and away from the ratchet guided by the projections *d* moving in slots *e*, and to be returned by means of the spring *y*, substantially as and for the purposes set forth.

4. In a bench-dog, the combination of the ratchet *f*, pawl C, and spring *y*, the point of said pawl being arranged to operate in connection with said ratchet, and to hold the dog-shank and its head at any stage of its depression in the socket automatically, and adapted to be disengaged by a downward pressure upon the stem *c*, and to allow the dog-shank and head to automatically, and by a single disconnection, assume their highest elevation in the socket, all substantially as and for the purposes set forth.

300,781. STATIC COMPENSATOR FOR TELEGRAPHS. FRANCIS W. JONES, New York, N. Y. Filed Sept. 7, 1883. (No model.)

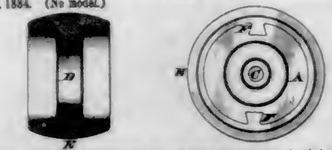


Claim.—1. A static compensator for duplex or multiplex telegraphs, consisting of an inductorium one coil of which is in the circuit, as described, with the signaling-battery and the line, so that the signaling-current sent by the transmitter will flow through said coil, while the other is in a local circuit, including means for counteracting the disturbing effects of the static charge and discharge current upon the receiver.

2. A static compensator for duplex or multiplex telegraphs, consisting of an inductorium one coil of which is connected directly into the signaling-circuit, so as to be charged and discharged by the alternate flow and removal of signaling-current transmitted to line at every complete movement of the transmitter, while its other coil includes a neutralizing-coil applied to the receiver, so as to counteract the effects of the static charge and discharge current flowing in the coils of said receiver.

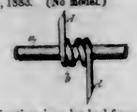
3. The combination, with the receiver, in a differential or bridge duplex or multiplex telegraph, of an auxiliary coil adapted to exert upon said receiver an effect counter to that of the static charge or discharge current, and an induction-coil whose secondary includes such auxiliary coil, while its primary is in the circuit of the signaling-battery and line, as and for the purpose described.

300,782. CASTER. WILLIAM KOCH, Lawrenceburg, Ind. Filed Mar. 3, 1884. (No model.)



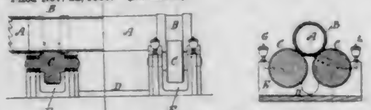
Claim.—The combination, in a furniture-caster, of wheel A, having a series of longitudinal slots, F, communicating with the circumferential groove B, and the rubber tire E, provided with a set of internal ribs, that enter said longitudinal slots, and an inwardly-projecting tongue, D, that engages with said circumferential groove B, whereby the elastic tire is securely anchored in place, and is prevented shifting either laterally or peripherally of said wheel, as herein described.

300,783. BARBED FENCE-WIRE. EDWIN S. LENOX, Worcester, Mass. Filed May 31, 1883. (No model.)



Claim.—The combination, in a barbed fence-wire, of a longitudinal wire having projections at intervals, and barb-wires twisted around the longitudinal wire with the convolutions at both sides of the projections, substantially as set forth.

300,784. TUBE-SAW. MILO FRANK LUCAS, West Newton, Mass. Filed Nov. 22, 1883. (No model.)



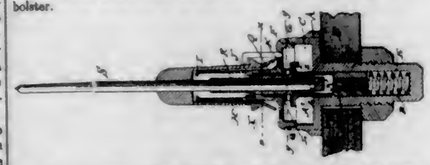
Claim.—1. A tubular saw provided with an annular groove near each end, in combination with supporting anti-friction rollers, which are arranged in pairs that take into said grooves, respectively, each roller being journaled independently of any other, substantially as set forth.

2. A tubular saw having annular grooves, in combination with anti-friction supporting-rollers and their supports, each roller being journaled independently of all the other rollers, substantially as set forth.

3. The base-plate D, having heads E, cast therewith, and provided with spaces F and oil-passages, as shown, in combination with oil-cups G, communicating with said passages, anti-friction rollers C, journaled independently in said heads, and having their journals oiled from said cups and passages, and the tubular saw A, having at or near its ends the grooves B, which, respectively, receive said rollers, substantially as set forth.

300,785. SPINDLE-BEARING FOR SPINNING-FRAMES. GEORGE B. MCCRACKEN and SAMUEL HAMER, Willimantic, Conn. Filed July 7, 1883. (No model.)

Brief.—The base or bolster-case is provided in its top section with an oil-reservoir, and in its lower section with a recess in which is placed a spiral spring upon which is placed a vertical support, which is also provided with a recess, and at its top with a lateral flange. The lower end of the bolster loosely fits the recess in the vertical support, and is supported thereon by a lateral flange corresponding to the flange on said support, said flange on its upper side having projections or teeth. The cap is provided with a central vertical extension having an internal flange at the top, and also having on its under side projections or teeth. Said cap is attached to the base by a screw-threaded connection. The bolster and support are restrained from rotation by the engagement of the teeth upon the under side of the cap with the teeth on the flange of the bolster.



Claim.—1. The combination of the spindle-bolster or bearing-piece having a circumferential lateral flange forming its bottom rest, the spring-actuated supporting-piece having a corresponding supporting-flange extending circumferentially and laterally at its top end, and engaging the flange on the bolster to force the latter upwardly, devices for holding or supporting the bolster or bearing-piece, a device for supporting or holding the supporting-piece and spring, and the spring, substantially as and for the purpose set forth.

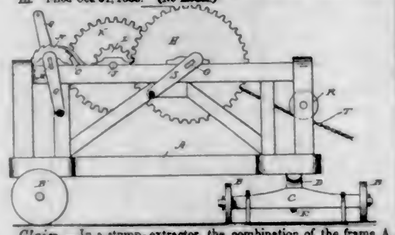
2. The combination of the cap-piece F, having the vertical extension H, formed with the interior shoulder, J, and the series of bottom projections, the spring-actuated supporting-piece M, forced upwardly and provided with the lateral top flange, P, the spindle-bolster or bearing-piece having the recess or bore R, the lateral flange T, corresponding to the flange P and engaged thereby, the enlargement V, engaging the shoulder J, the teeth U, projecting laterally and engaging the projections of the flange L, the spindle, means for holding the supporting-piece M and the spring E, and the said spring, substantially as and for the purpose set forth.

3. The combination of the base-piece having the depression or recess C in its top, and the bore D extending from the said recess, the supporting-piece projecting from the bore D and provided with the perforation Z, a spring for forcing said supporting-piece upward in the bore,

the spindle-bolster or bearing-piece Q, having the bearing-recess R, and the perforation A^2, opening into the same, means for supporting the bolster on the piece M, and the spindle journaled in the recess R, whereby the spindle will be automatically lubricated with oil from the reservoir-recess C, substantially as set forth.

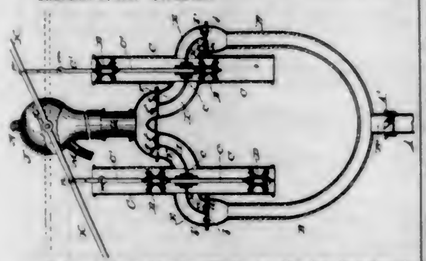
4. The combination of the base-piece having the depression C and recess D, the cap F, having the shoulder J, the supporting-piece arranged in the recess D and formed with the perforation Z, the recess N, and the top lateral flange, P, the spindle-bolster or bearing-piece formed with the perforation A^2 in the portion which enters the recess N, and having the enlargement V, formed with the channels W, and engaging shoulder J, the bearing-recess R, and the flange T, having the perforations B^2, and the spring E, whereby the automatic lubrication of the parts is effected, substantially as set forth.

300,786. STUMP-EXTRACTOR. ROBT. M. MCKEEN, Mount Vernon, Ill. Filed Oct. 31, 1883. (No model.)



Claim.—In a stump-extractor, the combination of the frame A, mounted upon wheels, the front axle being adapted to be swung at right angles to the frame, and the rear axle being rigid therewith, with the shafts G J M, mounted in said frame, spur-wheels H K, secured on shafts G J, respectively, pinion I, mounted upon shaft J and engaging with wheel H, and pinion L, mounted upon shaft M and engaging with spur-wheel K, a ratchet-wheel, N, secured to said shaft M, a pawl, O, engaging with said ratchet-wheel, a friction roller or wheel journaled in the frame, a chain, T, and cranks S Q, as set forth.

300,787. DOUBLE FORCE-PUMP. M. FRANK MCNELLY, Sterling, Ill. Filed Nov. 30, 1883. (No model.)



Claim.—1. In combination with the stem G and stock A, the tube B, channels E, F, H, and I, the cylinder C, provided with the partition *c*, the rod C′, and buckets D D, substantially as shown, and for the purpose mentioned.

2. The tubes B, provided with alternately-acting valves *a′* and *b′*, the channels E, F, H, and I, rod C′, cylinder C, and buckets D D, in combination, whereby a constant stream of water is drawn into the tube B and discharged from the cylinder C, substantially as shown, and for the purpose named.

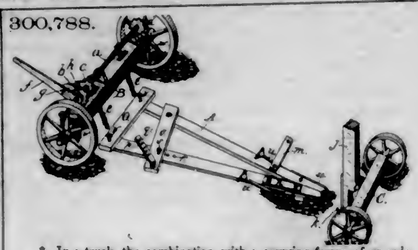
3. The combination of air-chamber J, provided with trunnions L L, integral therewith, lever K, rods *d′*, buckets D D, and cylinders C, substantially as shown, and for the purpose described.

300,788. TRUCK. HAMILTON MEYSHER, Noblesville, Ind. Filed Apr. 5, 1884. (No model.)

Claim.—1. In a truck, the combination, with two axles provided with carrying-wheels, a windlass on one of said axles, and a truck-frame provided with holes *r*, and separably connected to said axles, substantially as described, of link *ρ* and bar *o*, pivoted to said frame and adjustable thereon, substantially as and for the purpose specified.

2. In a truck, the combination, with a frame adapted to be separably connected with a pair of axles, substantially as shown and described, of an axle, a pair of carrying-wheels on said axle, a draft-pole secured to said axle, and provided with a hook, *k*, and a pair of supporting-legs hinged to said frame, all substantially as and for the purpose specified.

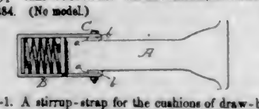
300,788.



3. In a truck, the combination, with a carrying-frame, of an axle, a pair of carrying-wheels on said axle, and a draft-pole provided with hook *k*, and clevis *l*, for the purposes specified.

4. In a truck frame, A, axle B, a pair of carrying-wheels on said axle, means, substantially as described, for locking said wheels to said axle, windlass *a*, having ratchet-wheels *b* and *c*, lever *f*, pawls *g* and *h*, chains *e e*, and clips *y*, all combined substantially as and for the purposes specified.

300,789. CAR-COUPLING. ROBERT MORRIS, La Crosse, Wis. Filed May 5, 1884. (No model.)



Claim.—1. A stirrup-strap for the cushions of draw-bars, consisting of a U-shaped strap having its ends doubled inward onto its length to form hooks, the extremities of which are intended to bear against the shoulders formed by stepping or increasing the vertical dimensions of the contiguous end of the draw-bar.

2. The combination, with a draw-bar having the vertical dimensions of its end increased to form shoulders, as shown, of a U-shaped stirrup-strap having the ends thereof doubled inward onto its length to form hooks, the extremities of which bear against said shoulders, and a bolt for securing said stirrup in position, said bolt passing through suitable holes suitably aligned in the hooks and the draw-bar, substantially as set forth.

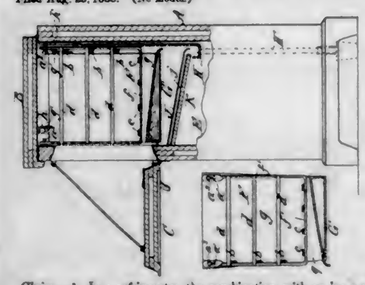
3. The combination, with a draw-bar, A, having shoulders *a a* inversely beveled, of a stirrup-strap, B, having its ends doubled back inwardly onto its length to form hooks *b b*, the extremities of which are beveled the reverse of the shoulders *a a*, and bolt C, substantially as set forth.

4. The combination, with a draw-bar having shoulders *a a*, and having an inverse transverse curvature, of a stirrup-strap having hooks *b*, the extremities of which are curved the obverse of shoulders *a a*, and a bolt passing through the two thicknesses made by said hooks, substantially as and for the purposes set forth.

300,790. HYDRAULIC CEMENT. JOHN MURPHY, Columbus, Ohio. Filed Apr. 2, 1884. (Specimens.)

Claim.—A hydraulic cement composed of fibrolite, margarite, iron slag, shell-marl, and clay, which are mixed, burned, and then reduced to powder, as described.

300,791. REFRIGERATOR. HARVEY W. NASH, Amsterdam, N. Y. Filed Aug. 23, 1883. (No model.)



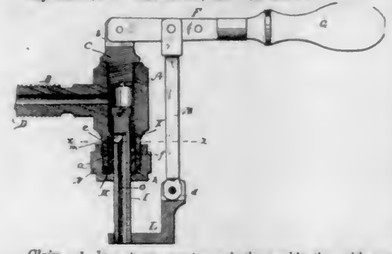
Claim.—1. In a refrigerator, the combination, with an ice-crate, of a water-filter placed on one side of said crate, and having a top inclined extension under it, as shown and described.

2. A refrigerator ice-crate open in front and formed of the U-shaped irons *f f′*, slotted at the top for suspension, the back cross-bars, *b b*, the bottom cross-bars, *c c*, and the side bars, *d d*, as shown and described.

3. In a refrigerator, the combination of a suspended ice-holder, filter, inclined drip-receivers, and a drip-trough, H, extending up in front of the drip-receivers, whereby the walls of the refrigerator may be kept dry without a zinc or other lining, as described.

4. The water cooler or filter G, formed with the extension G', and upwardly-projecting plate *g*, the cooler being adapted to be suspended in the refrigerator, substantially as and for the purposes set forth.

300,792. STEAM OR WATER COCK. JOHN ARMERAT NICHOLSON, Fayetteville, N. C. Filed Feb. 13, 1884. (No model.)



Claim.—1. In a steam or water cock, the combination, with a suitable body communicating with the boiler, of the valve, valve-stem operating in the body, an angle plate or casting attached to the end of the valve-stem, a connecting-rod attached to the angle-plate, and a handle secured to the end of the connecting-rod, as set forth.

2. In a steam or water cock, the combination, with a suitable body communicating with the boiler, of a plug at one end of the body, a valve seated at the other end, a stem for the valve, an angle-plate attached to the end of the stem, a connecting-rod attached to the angle-plate, and a handle pivoted in the plug and secured to the connecting-rod, as set forth.

3. In a steam or water cock, the combination, with a suitable body provided with a plug at one end, of a valve seated at the other end and formed with a stem, I, a longitudinal passage, O, through the stem, a cross-opening, *m*, at the end of the passage, a handle pivoted in the plug, and an angle-plate attached to the stem and connecting with the handle, as set forth.

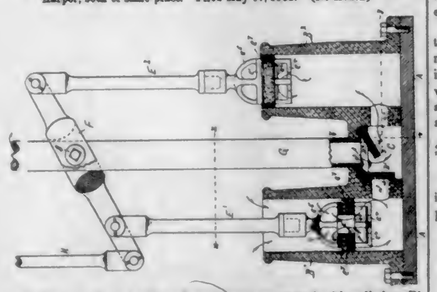
300,793. BELT-FASTENER. JOHN BROWN NORTON, Philadelphia, Pa. Filed Nov. 2, 1883. (No model.)



Claim.—1. In a belt-fastening device, the plate A, provided with projecting fastening-points and lacing-holes *e e*, from the edges of which project fenders *i i* to pass into the lacing-holes of the belt, substantially as and for the purpose set forth.

2. In a belt-fastening device, the plate A, provided with suitable fastening devices and the lip or lips *a*, as described.

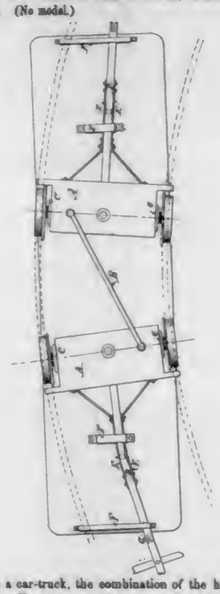
300,794. DOUBLE-ACTING PUMP. WILLIAM HARVEY ORMSBY, Minneapolis, Minn., assignor of one-half to Lorenzo D. Hill and George A. Harper, both of same place. Filed May 17, 1883. (No model.)



Claim.—1. A double-cylinder pump constructed with cylinders B' B², and water-chamber C, communicating therewith, all in one piece, open at the top and bottom, and having a flange around the lower edge, in combination with a flat base, A, bolted thereto, substantially as and for the purpose herein specified.

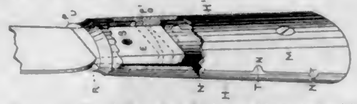
2. The valves D' D², provided with projecting journals *b' b²*, seated in cavities in the inside of the water-chamber C, in combination with clamps *c' c²*, secured in place in the said water-chamber, substantially as and for the purpose herein specified.

300,795. CAR-TRUCK. AMOS T. PIERCE, Fairhaven, Mass. Filed Apr. 1, 1884. (No model.)



Claim.—In a car-truck, the combination of the hinge-bar D, provided with springs E and supported by straps F, truck A, having inside bearings, as shown and described, and the diagonal connecting-bar B, all arranged for joint operation in the manner substantially as specified.

300,796. KNIFE. PIERCE J. POPE, Sanquoit, N. Y. Filed Aug. 6, 1883. (No model.)

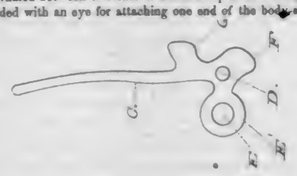


Claim.—1. In a hollow cast-metal separable or sectional knife-handle, composed of the two parts or sections H and H', the lower and upper interior ribs, P' and P, having in each an inwardly-facing recess, R, which form slots for embracing or retaining the shank of a knife-blade when the two parts are put together, and, when connected by a screw or screws, forms but one handle, neither part or section being operative without the other, substantially as set forth and described.

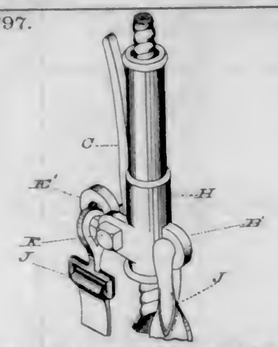
2. In a knife-blade, the flat-formed shank E, having a hole centrally located for the passage of a screw, in combination with a hollow metal separable handle composed of two parts or sections, H H', having interior upper and lower ribs, P P', in each of which is formed an inwardly-facing recess, R, which, when sections are put together, form slots for retaining and embracing the shank of the blade, substantially as set forth and described.

300,797. FIRE-ESCAPE. JAMES EDWARD POST, Poughkeepsie, N. Y. Filed June 11, 1883. (No model.)

Brief.—The lever is provided with two cam-bearing surfaces, and is journaled between two ears or brackets upon the friction-tube, and is provided with an eye for attaching one end of the body-strap.



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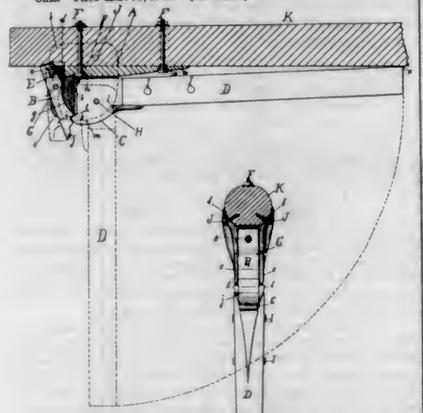


Claim.—1. The combination of the lever C with the cam F and the lateral cam G, substantially as described.

2. The combination of the bracket-lever E' with the lever C, and with the cam F, and with the ear or bracket B', substantially as above described, and for the purposes described.

3. The combination of the juxtaposed brackets D' with the shaft K, and with the lever C, and with the cam F, and with the ear or bracket B, and with the lateral cam G and the rope I and sling-seat J, as above described, and for the purposes set forth.

300,798. TONGUE-SUPPORT. SYLVESTER B. REID, Wiley's Station, Ohio. Filed Mar. 19, 1884. (No model.)

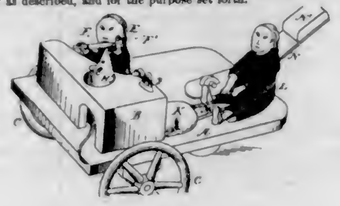


Claim.—A tongue-support constructed substantially as herein shown and described, consisting of the tongue-connection A, in combination with the spiral spring E, trip-latch B, staff-connection C, staff D, and fastening devices F F and J J, connected as set forth.

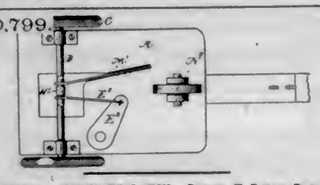
300,799. MECHANICAL TOY. REUBEN H. RICKER, Boston, Mass. Filed Dec. 6, 1883. (No model.)

Claim.—1. In a mechanical toy, the combination of the image E, pivot E', arm E², link E³, and crank D' with the image H, pitman H', and crank D', all operating together substantially as described, and for the purpose set forth.

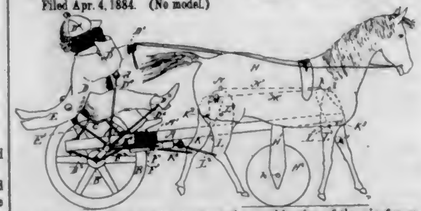
2. In a mechanical toy, the combination of the images L and K with the link M' M and the crank D', all operating together substantially as described, and for the purpose set forth.



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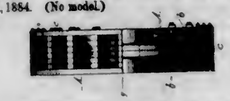
300,800. MECHANICAL TOY. REUBEN H. RICKER, Boston, Mass. Filed Apr. 4, 1884. (No model.)



Claim.—1. In a mechanical toy, the combination of the gig-frame A A', wheel B, crank-axle B B¹, links E D¹ D⁴, whereby the several parts—viz., coat-tails E, right arm, D⁴, and foot D⁴ of image D—are all operated substantially as described, and for the purpose set forth.

2. The combination of the crank-shaft B' B¹ and link F², whiffle-tree F, links K² L², and the links M' M', whereby the fore legs of the image representing the horse are made to operate substantially as described, and for the purpose set forth.

300,801. GEARING. JOHN JEROME RYHAL, Milwaukee, Wis. Filed Feb. 26, 1884. (No model.)



Claim.—1. In a gear-wheel, the combination, with metallic supporting and confining plates, of an intermediate body of leather or equivalent material having teeth formed therein and adapted to receive the entire wear and strain.

2. In a gear-wheel, the combination of an elastic toothed body portion, consisting of sheets of leather or equivalent material, external metallic plates with corresponding teeth of a size less than the others, and fastening devices connecting the plates and passing through the intermediate body.

3. In a gear-wheel, a laminated body of leather or equivalent material having peripheral teeth formed thereon, and external metallic plates provided with teeth of a size slightly less than the teeth of the body portion, whereby the metallic portions are relieved from wear but caused to support the elastic teeth.

4. In a gear-wheel, the combination, with external plates with peripheral teeth, of an intermediate laminated body of elastic material, also provided with teeth, and transverse bolts or fastening devices passing through the teeth of the body and of the external plates, as described and shown.

5. A gear-wheel consisting of toothed side plates provided with central openings to receive the shaft or arbor, and an intermediate toothed body of elastic material having a central opening of greater diameter than those of the plates.

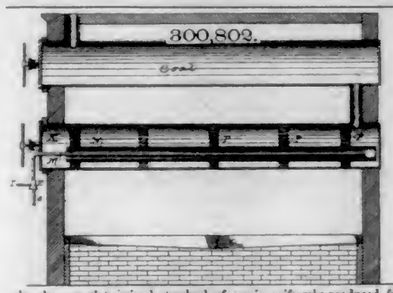
6. In a gear-wheel having a body portion composed of leather with spur-teeth formed thereon, metallic side plates, and transverse bolts or rivets passed through the said plates and through the teeth of the body portion.

300,802. PROCESS OF AND APPARATUS FOR MANUFACTURING ILLUMINATING-GAS. SILAS C. SALISBURY, New York, assignor to Levi P. Ross, Yonkers, N. Y. Filed Dec. 6, 1883. (No model.)

Claim.—1. The retort K, connected at one end, with the coal-retort above it, and provided with the pipes M N and the perforated tile partitions P, for preparing hydrogen gas and passing it into and through a charge of distilling-coal, as set forth.

2. The process of making illuminating-gas, which consists in delivering hydrogen gas or the liberated gases of decomposed steam in among the red-hot gas-coals within the retort during the early stages of its decomposition, thereby reducing the coal-gas to a standard quality and preventing its condensation into tar, and afterward introducing a light hydrocarbon vapor regulated in quality and gradually increasing the quantity of said hydrocarbon as the richness of the coal-gas diminishes,

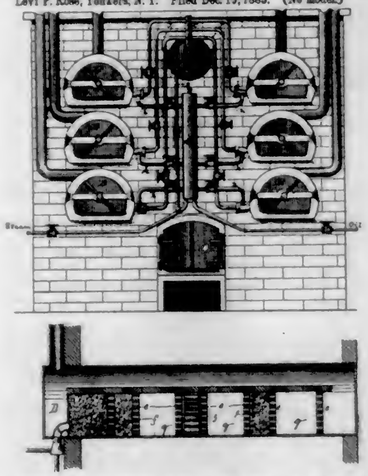
300,802.



whereby a predetermined standard of gas is uniformly produced from the beginning to the end of the charge.

3. The process of manufacturing illuminating-gas from coal, which consists in introducing under pressure, first, hydrogen gas or the liberated gases from decomposed steam, and, afterward, such hydrogen gas accompanied by hydrocarbon vapors, increasing in quantity of hydrocarbon as the richness of the coal diminishes, whereby said introduced gases are forced into and through the mass of coal in the retort, and the extraction and union of the gases are facilitated.

300,803. PROCESS OF AND APPARATUS FOR MANUFACTURING ILLUMINATING-GAS. SILAS C. SALISBURY, New York, assignor to Levi P. Rose, Yonkers, N. Y. Filed Dec. 19, 1883. (No model.)



Claim.—1. The process, as herein fully described and set forth, of making a rich fixed illuminating-gas from liquid hydrocarbons and the liberated gases of decomposed steam, which consists in first decomposing steam by passing it through a retort charged with pieces of hot iron, and afterward forcing the residual hydrogen with previously-heated hydrocarbon oil in regulated quantities through a mixing and fixing retort by means of an injector, whereby a carbureted fixed vapor gas is formed of uniform quality, as herein fully described and set forth.

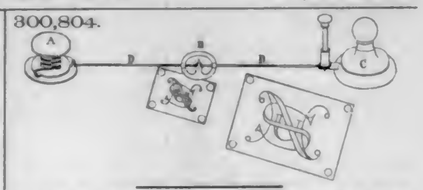
2. A steam-decomposing retort, a mixing-injector, and a fixing-retort, in combination with a heater, whereby the liquid hydrocarbon is heated prior to its delivery to the mixing-injector and fixing-retort, as set forth.

3. A gas-retort with a horizontal partition, and below the same transversely interior divisions of perforated tile or brick, and the several compartments thereby formed, alternately vacant for mixing-chambers, and filled with iron tubes, pieces of pig-iron, iron borings, &c., as and for the purposes set forth.

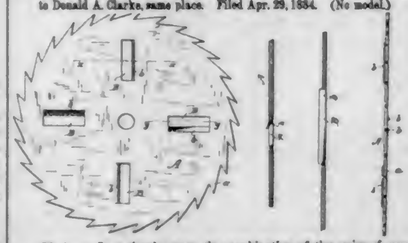
300,804. AMPLIFIER. GEORGE F. SCHILD, Vallejo, Cal. Filed Feb. 20, 1884. (Model.)

Claim.—The combination of the four principal parts composing the instrument—namely, the tack or pivot A, the pointer B, the pencil-holder C, and the elastic graduated string D—substantially as set forth.

300,804.

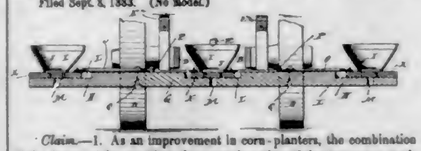


300,805. SAW. GEO. PIERE SCOTT, Sedalia, Mo., assignor of one-half to Donald A. Clarke, same place. Filed Apr. 29, 1884. (No model.)



Claim.—In a circular saw, the combination of the pairs of rectangular openings disposed in a radial series, and having one of the side edges of each opening beveled longitudinally from end to end and turned out from the face of the saw, whereby a radial series of straight integral planing-edges is formed, the openings comprised in each pair being on diametrically-opposite sides of the eye of the saw, and having their integral planing-edges formed on relatively opposite sides, substantially as and for the purpose set forth.

300,806. CORN-PLANTER. WILLIAM AUSTIN SHARPE, Tama, Iowa. Filed Sept. 8, 1883. (No model.)



Claim.—1. As an improvement in corn-planters, the combination of the frame of the machine, the central section of the transverse seeding mechanism bar hinged to said frame and vertically adjustable in relation thereto, the end sections of said bar hinged to the central section and carried thereby in its vertical adjustment, and means for independently adjusting the end sections, substantially as set forth.

2. As an improvement in corn-planters, the combination of the frame of the machine, the central section of the transverse seeding mechanism bar having the vertical standards at its ends, the end sections of this bar hinged to the central section, the seeding mechanism arranged directly on these sections and embodying a jointed slide-bar, the cords passing from the end sections up and engaging the standards, and the levers fulcrumed on the main frame and operating these cords, substantially as set forth.

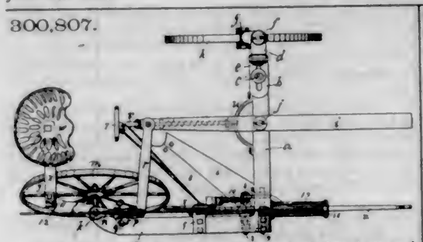
3. The improved corn-planter, comprising the combination of the frame of the machine, the transverse jointed bar carrying the seeding mechanism, a hinged plate or bars hinged to the frame and secured to the central section of the said transverse bar, standards on the end of the central section, the levers I^2, fulcrumed on the frame, and having the projecting plates or arms, chains, or cords secured to the end sections and passing through the standards and secured to said levers I^2, and the lever U, carrying the chains or cords that are connected with the central section, substantially as and for the purpose set forth.

4. As an improvement in corn-planters, the combination of the frame of the machine, the pole or tongue, the central section of the transverse seeding mechanism bar, plates T T, secured to said bar, and pivoted to the tongue, the levers U and Y, fulcrumed on the frame, the rod Z, connecting these levers and engaging the end of the tongue, cords connecting the said levers with the said central section, the end sections hinged to the central section, the levers I^2, fulcrumed on the frame, and the cords connecting these levers and the end sections, substantially as set forth.

300,807. SULKY-PLOW. JACOB SECKLER, Otterbein, and EDWARD E SECKLER, Indianapolis, Ind. Filed Oct. 5, 1883. (No model.)

Brief.—The tongue when unlocked will turn upon the frame, turning the rear wheel upon its swiveled standard, the forward caster-wheel being free and adjustable as to width and height.

300,807.

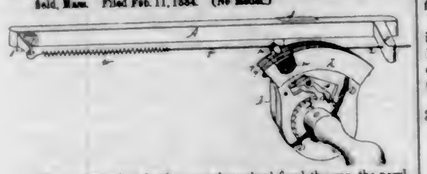


Claim.—1. The combination, with frame *a*, of pivoted tongue *i*, spring-latch *v t*, rack *u*, connecting-bar *r*, caster-wheel *m*, crank-standard *l n*, and connecting devices whereby the tongue is allowed to turn and give positive motion to the turning of the rear wheel, substantially as shown and described.

2. The combination, with the plow-frame *a*, of the front caster-wheel, *k*, and the rear caster-wheel, *m*, upon the swiveled standard *l*, adapted to be free or locked, and to carry the plow-frame without other support, substantially as shown and described.

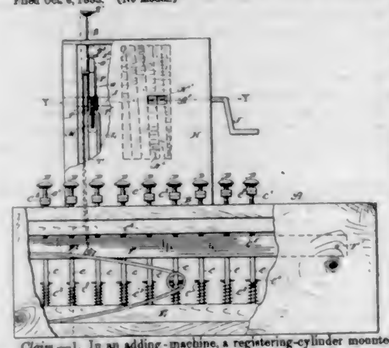
3. The combination of frame *a*, adjustable caster-wheel *k*, caster-wheel *m*, swiveled standard *l n*, carrying rack *q*, adjustable lever *o*, connecting-bar *r*, and tongue *i*, substantially as shown and described.

300,808. MECHANICAL MOVEMENT. ALLEN L. SKINNER, Springfield, Mass. Filed Feb. 11, 1884. (No model.)



Claim.—The shaft having a ratchet-wheel fixed thereon, the pawl-case having an oscillating movement on the shaft, the pawl hung in the case adjacent to the ratchet-wheel, the tripping-pin located in the case over the rear end of the pawl, having one end projecting beyond the border of the case, and means, substantially as described, for giving an oscillating movement to the case, and for forcing the tripping-pin into the latter, combined and operating substantially as set forth.

300,809. ADDING-MACHINE. WILLIAM C. SMALTZ, Springfield, Mo. Filed Oct. 6, 1883. (No model.)



Claim.—1. In an adding-machine, a registering-cylinder mounted on an endwise-moving shaft, and having the numbers spirally and consecutively arranged upon it, in combination with suitable mechanism for rotating and moving the shaft lengthwise, substantially as specified.

2. In an adding-machine, the combination of the cylinder N, having the numbers spirally and consecutively arranged thereon, the shaft I, having the spiral thread or groove I', and suitable actuating mechanism, substantially as set forth.

3. In an adding-machine, the combination of the cylinder N, having the numbers spirally and consecutively arranged thereon, the shaft I, having the spiral thread or groove I' and crank J, and suitable actuating mechanism, substantially as described.

4. In an adding-machine, the combination of the cylinder N, having the numbers spirally and consecutively arranged thereon, shaft I, having thread or groove I', bearings for said shaft, wheel M, feathered to said shaft, pawl O, and suitable actuating mechanism, substantially as shown and described.

5. In an adding-machine, the combination of the cylinder N, having the numbers spirally and consecutively arranged thereon, shaft I, having a thread or groove, I', bearings for said shaft, wheel M, feathered to said shaft, pawl O, suitable actuating mechanism, and detent R, substantially as set forth.

6. In an adding-machine, the combination of the cylinder N, having the numbers spirally and consecutively arrange thereon, shaft I, having a thread or groove, I', nut K, forming a bearing for said shaft, wheel M, feathered to said shaft, frame P, pivoted on said shaft, pawl O, pivoted in frame P, detent R, and suitable actuating mechanism, substantially as specified.

7. In an adding-machine, the combination of the cylinder N, shaft I, crank J, wheel M, frame P, pawl O, detent R, tripping-rod S, and suitable operating mechanism, substantially as shown and described.

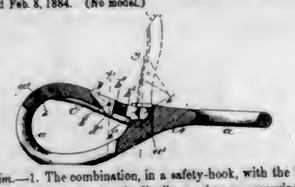
8. In an adding-machine, the combination of the registering-cylinder N, shaft I, crank J, wheel M, frame P, pawl O, detent R, tripping-rod S, connecting-rod T, operating-lever F, spring F^2, and operating-keys C, substantially as set forth.

9. In an adding-machine, the combination of the registering-cylinder N, shaft I, crank J, wheel M, frame P, pawl O, detent R, tripping-rod S, connecting-rod T, operating-lever F, spring F^2, and operating-keys C, having adjusting devices, substantially as specified.

10. In an adding-machine, the combination of the registering-cylinder N, shaft I, crank J, wheel M, frame P, pawl O, detent R, tripping-rod S, connecting-rod T, operating-lever F, spring F^2, and operating-keys C, having adjusting devices C^2 and springs C^3, substantially as set forth.

11. In an adding-machine, the combination of the registering-cylinder N, brake V, shaft I, crank J, wheel M, frame P, pawl O, detent R, tripping-rod S, connecting-rod T, operating-lever F, spring F^2, and operating-keys C, all combined and arranged to operate substantially in the manner described.

300,810. SAFETY-HOOK. EDWARD HENRY SMITH, Rutherford, Cal. Filed Feb. 8, 1884. (No model.)



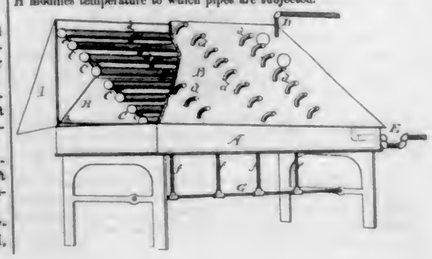
Claim.—1. The combination, in a safety-hook, with the loop forming the hook portion, of a longitudinally-moving arm carrying a spring-plate secured to the free front end of the said arm, and adapted to engage the loop portion with its rear end, substantially as set forth.

2. The combination, with a safety-hook comprising a loop formed of a hook portion and a longitudinally-moving arm, of a spring-plate secured to the inner edge of said arm, and a cam-lever fulcrumed to said arm and bearing upon the plate, substantially as and for the purpose set forth.

3. The combination of the shank of the hook provided with a longitudinally-disposed recess and with the loop extending therefrom, the longitudinally-moving arm having its head received by the recess in the shank, the spring-plate secured to the inner edge of the said arm at its free front end, and the cam-lever fulcrumed in the arm and bearing upon the rear end of the spring-plate, substantially as set forth.

300,811. APPARATUS FOR THE CONTINUOUS DISTILLATION OF OIL. HENRY C. SMITH, Cleveland, Ohio, assignor to Anthony S. De Vries, same place. Filed Sept. 10, 1883. (No model.)

Brief.—Fractional distillation of the oil which descends through a series of pipes arranged in an inclined plane in heated chamber. Apron H modifies temperature to which pipes are subjected.

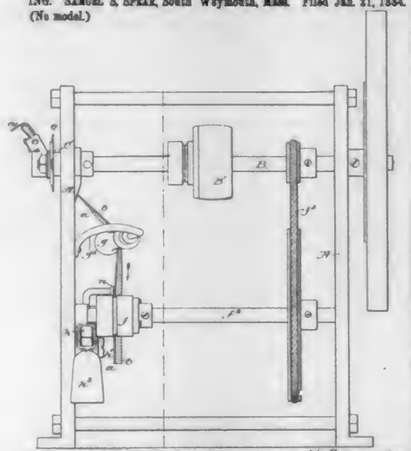


Claim.—1. In an apparatus for continuous distillation of oil, the pipes C C, arranged in a plane inclined to the horizon at about an angle of forty-five degrees—one above the other—and provided with vapor-outlets *d d*, and connected at alternate ends with the connections *c c*, and inclosed in a chamber, whereby said pipes operate for the distillation of the several gravities of oil products, as described.

2. The combination, in a chamber triangular in cross-section, of a series of pipes, C C, arranged in a diagonal line one above the other, and provided with the vapor-outlets *d d* and connections *c c*, and the vapor-burners F F, substantially as described.

3. The combination, in a triangular chamber having a series of pipes, C C, connected and provided with vapor-outlets, as described, and heated with vapor-burners, of the adjustable leaf H, for controlling or confining the heat about the said pipes, substantially as and for the purpose specified.

300,812. MACHINE FOR SNIPPING LEATHER PIPING OR BINDING. SAMUEL S. SPEAR, South Weymouth, Mass. Filed Jan. 21, 1884. (No model.)



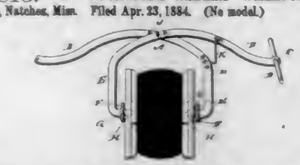
Claim.—1. In a machine for snipping piping or binding, a cutter and means to support the piping or binding while being acted upon by the cutter, substantially as described, whereby the piping or binding is presented to the cutter at an angle to the plane of its movement, to enable the cutter to pass diagonally through the edge of the piping or binding and form tongues having contiguous beveled edges, as set forth.

2. In a machine for snipping piping or binding, the block D, provided with the corner *d*, and roughened at d^3, combined with a cutter, to operate substantially as described.

3. A block to sustain the binding or piping opposite the cutter, and a cutter for snipping the said binding or piping, combined with feeding mechanism to move the said piping or binding, substantially as described.

4. The guide to receive the piping or binding, and the feeding mechanism to move the same, combined with the intermediate cutter, and the support for the piping or binding opposite that side of it acted upon by the cutter, the parts being located with relation to each other substantially as described, whereby the blade is made to cut through the edge of the piping or binding diagonally, substantially as set forth.

300,813. WIRE HOLDER AND CARRIER. WILLIAM PERCY STEWART, Natchez, Miss. Filed Apr. 23, 1884. (No model.)



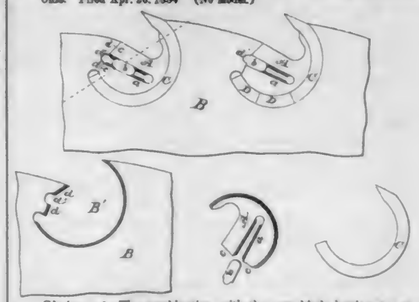
Claim.—1. In a device for carrying or holding wire, the combination, with a drum or reel, of arms pivoted to each other and formed with bent lower ends adapted to engage with said reel, substantially as set forth.

2. In a device for carrying or holding wire, the combination, with a drum or reel centrally provided on its sides with sockets, of bent arms pivoted together above the reel and formed with bent ends adapted to loosely fit in said sockets, said ends being provided with flanges or collars, substantially as set forth.

3. In a device for carrying or holding wire, the combination, with a drum or reel, of arms pivoted together and adapted to engage said reel, and a hook loosely secured to one of said arms, adapted to engage in perforations formed in the other of said arms, substantially as set forth.

4. In a device for carrying or holding wire, the combination, with a drum or reel centrally provided on its sides with recesses, of bent arms pivoted together above the reel, the lower ends of which are bent and provided with collars or flanges, and adapted to loosely engage in said sockets, and a hook loosely secured to one arm and adapted to engage in perforations on the other, substantially as set forth.

300,814. ADJUSTABLE SAW-TOOTH. GEO. W. STINZERING, Shreve, Ohio. Filed Apr. 26, 1884. (No model.)



Claim.—1. The combination, with the saw-blade having the recesses B′ and *d′*, of the tooth C, formed of the segment of a circle and adjustable in a circular path in the recess B′, the expansible fastener A, having a slot, *a*, and a key, *b*, adapted to move in the slot to expand the fastener and engage the recess *d′* in the blade, substantially as described.

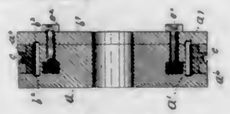
2. The combination, with the saw-blade having the recess B′ and projections *d*, of the segmental tooth C, adjustable in a circular path in the recess, and the expansible fastener A, having grooves *c* in its end, into which fit the projections on the blade, substantially as described.

3. The combination, with the saw-blade having the recesses B′ and *d′* and projections *d*, of the segmental saw-tooth C, adjustable in a circular path in the recess B′, the slotted expansion-fastener A, having the end grooves, *c*, into which latter fit the projections on the blade, and the key *b* in the slot for expanding the fastener, and adapted to enter the recess *d′* in the blade, substantially as described.

4. The combination, with the saw-blade B, having the recess B′, of the saw-tooth C, formed of the segment of a circle, and adjustable in a circular path in the recess, and the expansible fastener A, having a segmental edge bearing upon the segmental edge of the tooth, the expansion of the fastener serving to bind the tooth in place, substantially as described.

5. The combination, with the saw-blade B, having the recess B′, of the saw-tooth C, formed of the segment of a circle, and adjustable in a circular path in the recess, the slotted expansible fastener having a segmental edge bearing upon the segmental edge of the tooth and bearing against the saw-blade, and a key in the slot of the fastener for expanding the same to bind the tooth in place, substantially as described.

300,815. PISTON-PACKING. EDMUND SOCKOW, Buffalo, N. Y. Filed Feb. 16, 1884. (No model.)

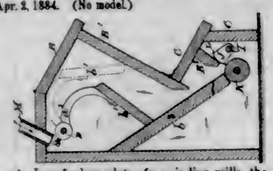


Claim.—1. In a piston-packing, the rings or sections of rings a^2, having projections b^4, in combination with one or more valves, b^2, set in grooves a^3, opposite the inlet-openings for admitting steam to the interior of the piston, and from thence through the perforations b^4 to the peripheral space *c*, so as to act as a lubricant to the cylinder and to preserve an equal pressure within the piston, substantially as described.

2. A piston-packing consisting of the rings a^2 a^4, in combination with a piston and follower and connecting-bolts, the rings a^2 being provided with the wave-line springs, substantially as specified, and the grooves b^4, for the purposes described.

3. A piston provided with packing-rings, openings b^2, springs a^5, a spring or springs for forcing the rings apart when required, and openings for admitting steam or water to the space *c*, for the purposes described.

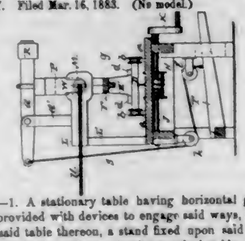
300,816. FEED-REGULATOR. WILLIAM G. THOMPSON, Wabash, Ind. Filed Apr. 2, 1884. (No model.)



Claim.—1. In a feed-regulator for grinding-mills, the combination of an angular box having inclined surfaces, a shaft horizontally journaled in the upper portion of said box, an inclined valve secured to said shaft, an arm secured to the outer end of said shaft, a secondary shaft carrying a curved feed-gate and horizontally journaled in the lower front part of said box, a feed-roller working against the inner edge of said feed-gate, an arm secured to the outer end of said lower shaft, and means for connecting the arms on said shafts, substantially as and for the purpose set forth.

2. In a feed-regulator, the receptacle A, having covers B and C and the inclined stop-boards B′ and B^2, the shaft D, journaled as described and provided with arm F, the angular slide *a*, having pivot-pin *a′* and set-screw *b*, the connecting-rod G, the arm H, shaft I, and curved gate L, in combination with the inclined valve *b′*, curved arms a^2, the inclined back b^2, and inlet-spout M, all arranged and operated substantially as shown and specified.

300,817. TAILOR'S PRESSING-MACHINE. EDWARD WALKER, New York, N. Y. Filed Mar. 16, 1883. (No model.)



Claim.—1. A stationary table having horizontal guideways, an ironing-table provided with devices to engage said ways, and means for reciprocating said table thereon, a stand fixed upon said stationary table provided with horizontal arms having vertical guides, a smoothing-iron located between said guides, and a post fixed to the reciprocating table at one end and a groove along a portion of the other end, in combination with a press-board loosely pivoted on the fixed post, provided with a rib on its under side, and a post adjustable in said groove having a slot in its top shaped to receive the rib of the press-board, as described.

2. The combination, with a stationary table, an ironing-table mounted to reciprocate thereon, and a post provided with vertical guideways fixed to said table, of a two-faced hollow smoothing-iron having trunnions engaging said guideways, means for reciprocating said iron in said ways, a vertical slot or aperture through one of said trunnions to the hollow interior of said smoothing-iron, and a fixed pipe entering saidl ron through said aperture, substantially as described, whereby the smoothing-iron may be heated by a gas-jet from the pipe in its interior, the pipe and its burner may be permanent fixtures, and yet the smoothing-iron may be vertically reciprocated without disturbing or moving said pipe, as and for the purpose specified.

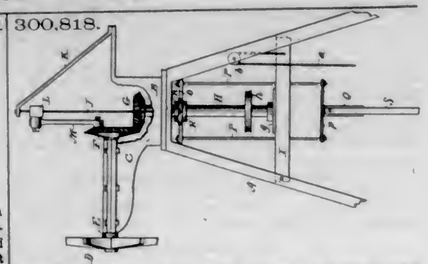
3. The combination, with the table D, the ironing-board F, and means for supporting and reciprocating the same, of the vertical post L′, fixed to the frame of the machine, the horizontal frame L, supported thereon, and having vertical recesses in its arms, the vertical post Q′, secured to frame L, the lever Q, pivoted in post Q′, and means, substantially as specified, for operating the same, the hanger-frame P, attached to lever Q, the smoothing-irons O, the bars N, connecting them, and the trunnions M on said bars journaled in the frame P and resting against the sides of said vertical recesses in frame L, as shown and described.

300,818. WINDMILL. JOHN WARWICK and WALTER C. WESTAWAY, Delavan, Wis. Filed July 25, 1883. (No model.)

Claim.—1. In a windmill, the combination, with the wheel-shaft E and gear F and the turn-table on which said parts are supported, of stationary rods erected on said turn-table, a cross-head sliding loosely at each end on said rods and connecting with the gear F, and rods N, carried by the cross-head and attached at their lower ends to rods P, which connect with the pump-pole S, substantially as set forth.

2. In a windmill, the combination, with the wheel-shaft E, gear F, and the turn-table on which said parts are supported, of stationary rods J, extending up from the pivot and provided with brace-rods K, a cross-head, L, sliding loosely on the rods J, and connecting with the gear F by means of a pitman, M, rods N, carried by the cross-head and connected at their lower ends by cross-bar *n*, and a cross-bar, O, attached

300,818.

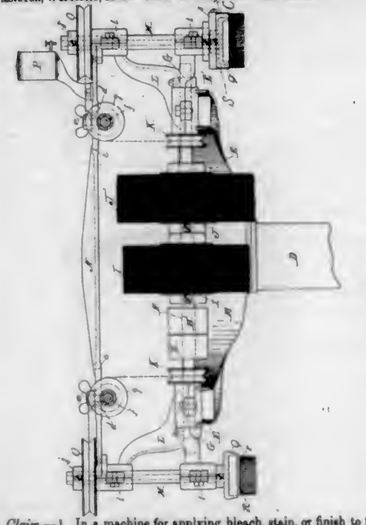


to the bar *n*, and provided with rods P, the latter being suitably connected to the pump-pole S, as set forth.

3. In a windmill, the combination, with the wheel-shaft E, gear F, turn-table C, shaft H, and gear-wheel G, of stationary rods J, extending up from the pivot and provided with brace-rods K, a cross-head, L, sliding loosely on the rods J, and connecting with the gear F by means of a pitman, M, rods N, carried by the cross-head and connected at their lower ends by a cross-bar, *n*, and a cross-bar, O, attached to the bar *n*, and provided with rods P, the latter connected at their lower ends by a cross-bar, *p*, provided with a downward extension, Q, to which the pump-pole is attached, the pumping mechanism operating outside of the shaft H, whereby said shaft can be used to transmit power to other mechanism, as herein set forth.

4. In a windmill, the combination, with the wheel-shaft E, gear F, and the turn-table on which said parts are supported, of stationary rods J, erected on said pivot, a cross-head working on said rods and connecting with the gear F, a shaft, H, working in its lower end in an adjustable cross-bar, I, and carrying a gear-wheel, G, meshing with the wheel F, and devices for connecting the cross-head with the pump-pole S, for the purpose set forth.

300,819. BLEACH AND STAIN BRUSHING MACHINE FOR THE BOTTOMS OF BOOTS AND SHOES. JUSTIN P. WHITE and DAVID HARRINGTON, Worcester, Mass. Filed Nov. 15, 1883. (No model.)



Claim.—1. In a machine for applying bleach, stain, or finish to the bottoms of boots or shoes, an adjustable stationary bonnet or protector having bristles or their equivalents on the lower edge thereof, in combination with the rotary bleach or stain brush and means for operating the same, substantially as shown, and for the purposes stated.

2. The combination, with a rotary brush having a perforated head for applying bleach or stain automatically, and means for operating the same, of an adjustable stationary bonnet or protector, substantially as shown, and for the purposes stated.

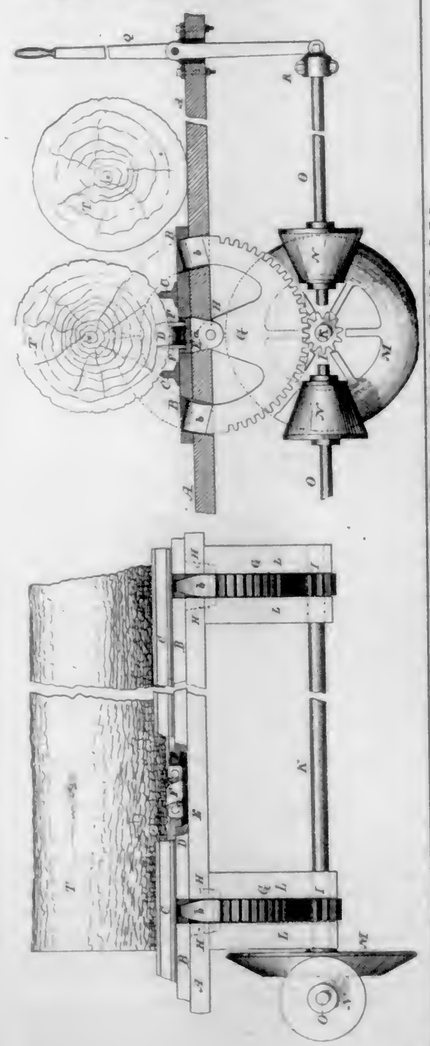
3. The combination, with the horizontal shaft provided with suitable wiping-brushes, and means for holding and operating said shaft, of the vertical hollow shafts provided with bleach or stain rotary brushes, and means for holding and operating said shafts, substantially as shown and described.

4. The combination, with the vertical hollow shaft M, of the rotary brush R, the head thereof being provided with two or more holes, *k*, and its holder Q, said rotary brush and holder being so arranged in relation to each other as to leave a narrow space or chamber, *x*, for the liquid or stain to run into previously to running through the holes *k* in the head of said brush, substantially as shown and described.

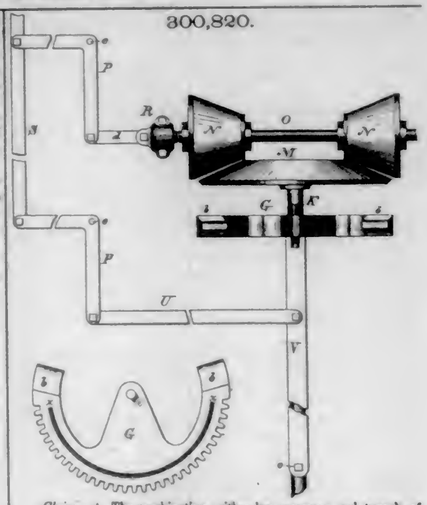
5. The combination, with a rotary brush for applying bleach or stain, having a perforated head with two or more holes, *k*, through it, of means, substantially as described, for holding and operating the same, substantially as shown and described.

6. In a machine for applying bleach, stain, or finish to the bottoms of boots and shoes, a rotary bleach or stain brush having two or more holes through the head thereof, in combination with means, substantially as described, for operating the same.

300,820. MACHINE FOR ROLLING LOGS. GERSHON WIBORN, Manistee, Mich. Filed Sept. 4, 1883. (No model.)



300,820.



Claim.—1. The combination, with a log conveyer and trough, of a rocker, G, pivoted at its center underneath and transversely to said trough, and provided with free terminal arm or arms *b*, substantially as and for the purposes set forth.

2. The combination, with a log conveyer and trough, of the rockers G G, pivoted at their centers transversely underneath said trough, and provided with arms *b b*, and mechanism for rotating said rockers, whereby said arms are turned up on either side of said conveyer against the log, substantially as and for the purposes set forth.

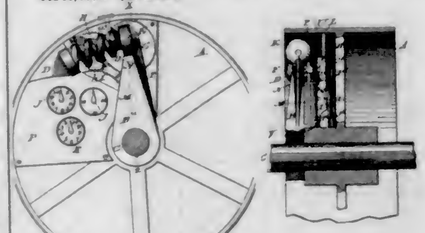
3. The combination, with a log-conveyer, of the cog-toothed rockers G G, provided with the free arms *b b*, and pivoted in hangers H H underneath said trough, shaft K, and pinions I I, fixed upon said shaft K, and meshing with said segmental gears, together with mechanism for rotating said pinions, substantially as and for the purposes set forth.

4. The combination, with a log conveyer and trough, of the cog-toothed rockers G G, centrally pivoted underneath said trough, and provided with the terminal arms *b b*, adapted to be rotated about and over said trough, shaft K, pinions I I, keyed thereon, friction-wheel M, also keyed on said shaft K, small friction-wheels N N, mounted upon the transverse shaft O, and the actuating-lever Q, substantially as and for the purposes set forth.

5. The combination, with a log conveyer and trough, of a rocker, G, having terminal arms *b b*, and provided with the segmental groove *z z*, together with lever V, together with their connections, so arranged as to stop the rocker at certain points when turned in either direction, substantially as and for the purposes set forth.

6. The combination, with a log-conveyer, of the rocker G, having terminal arms *b b*, and provided with the segmental slot or groove *z z*, the lever V, elbows P P, friction-wheels N N and M, and their connections, all arranged to operate substantially as and for the purposes set forth.

300,821. DYNAMOMETER. ANDREW WILSON, New York, N. Y. Filed Oct. 15, 1883. (No model.)



Claim.—1. In a dynamometer, the rod M and arm R, adjusted so that oscillations of the arm R shall be controlled by the rod M, substantially as and for the purposes set forth.

2. In a dynamometer, a plate having a slot or slots adapted to regulate the position of the slide N relative to the rod M and arm R, substantially as and for the purposes set forth.

3. In a dynamometer, a plate having slots therein to regulate the position of the slide N relative to the rod M and arm R, and having a slot by which the slide N can be moved from one of said regulating-slots to another, substantially as set forth.

4. In a dynamometer, the combination of the rod M, slide N, and a plate having a slot or slots to regulate the position of the slide N, substantially as and for the purposes set forth.

5. In a dynamometer, the combination of the arm R, rod M, slide N, and a plate having a slot or slots adapted to regulate the position of the slide N, substantially as and for the purposes set forth.

6. In a dynamometer, the combination of the ratchet-wheel G, ratchet Q, arm R, slide N, a plate having a slot or slots, and rod M, substantially as and for the purposes set forth.

7. In a dynamometer, the combination of the rod M, adapted to stop the arm R in its oscillations, with the arm R, ratchet Q, and ratchet-wheel G, substantially as and for the purposes set forth.

8. In a dynamometer, the combination of the rod M, adapted to stop the arm R in its oscillations, with the arm R, ratchet Q and ratchet-wheel G, and intermediate gear-wheels adapted to transmit and indices adapted to record revolutions of said wheel G, substantially as and for the purposes set forth.

9. The combination of the button L, rod w, arm S, arm R, ratchet Q and ratchet-wheel G, spring O, slide N, regulated by the slot or its equivalent, rod M, arm B, and spring F, substantially as and for the purposes set forth.

10. The combination of the button L, rod w, arm S, arm R, ratchet Q, ratchet-wheel G, with gear-wheels and indices to record the revolutions of the wheel G, spring O, slide N, regulated by a slot or its equivalent, rod M, arm B, and spring F, combined and operating substantially as and for the purposes set forth.

11. The combination of a swinging arm, means for oscillating the same to mark revolutions of the dynamometer, ratchet-wheel G, with indices to record the length and number of the oscillations of such arm in a common unit, and mechanism adapted to lengthen or shorten the swing of such oscillating bar in the same ratio as the power transmitted by the dynamometer is increased or diminished, substantially as set forth.

12. The combination of mechanism indicating revolutions or speed of a rotary dynamometer, with mechanism indicating resistance or power, by which such speed and power are reduced to a common unit of measurement, such mechanism being carried by the shaft from which the power to be measured is taken, and requiring no connection or contact with anything but such shaft and the belt or its equivalent taking power therefrom.

13. A swinging or pivoted arm, in combination with means for oscillating the same to mark revolutions of the dynamometer, and mechanism adapted to lengthen or shorten the swing of such arm in the same ratio as the power transmitted by the dynamometer is increased or diminished, substantially as set forth.

14. The rod M, adapted to indicate with uniformity varying degrees of resistance in the pulley A by its divergence from a radius of such pulley, in combination with mechanism for measuring and recording the extent of such divergence in a common unit with the revolutions of such dynamometer, for the purposes set forth.

300,822. FIRE-ESCAPE. JAMES B. WILTSHIRE, Cincinnati, Ohio. Filed Mar. 8, 1883. (No model.)

Brief.—The hanger to which the ladder is swiveled is formed with two flat bearing portions or hooks, which move upon the rails.



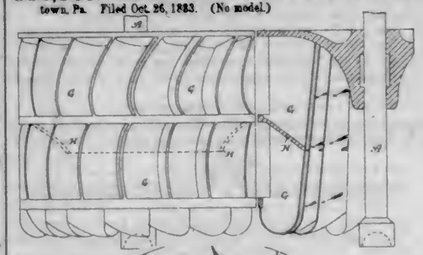
Claim.—1. The combination of the bar or ligaments B, supporting-brackets, hanger D, swivel or eye, and the ladder, rope, or pole suspended therefrom, substantially as and for the purposes specified.

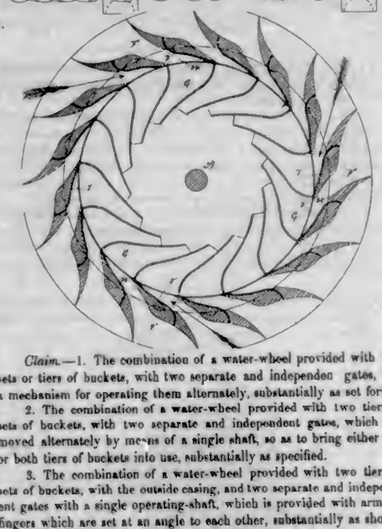
2. The combination of the bars or ligaments B, a hanger consisting of portions E E, having hooks *b*, and a suspended ladder, substantially as and for the purpose set forth.

3. In combination with the bars or ligaments B, a hanger consisting of portions E E, having hooks *b*, and provided with an eye or swivel, and a suspended ladder, rope, or pole connected at or near its upper end to said eye or swivel, substantially as and for the purposes specified.

4. In combination with the suspensory bar or bars or ligament or ligaments, the braces M, having curved part *d*, rod *e*, and rod *f'* or *f*, and a hanger, and suitable means for connecting the upper portion of a ladder, rope, or pole to said bar or bars, ligament or ligaments, and suspending the same therefrom, and for enabling the same, in connection with said bar or bars, ligament or ligaments, to be moved laterally, substantially as and for the purposes specified.

300,823. TURBINE WATER-WHEEL. ABRAHAM N. WOLF, Allentown, Pa. Filed Oct. 26, 1883. (No model.)





Claim.—1. The combination of a water-wheel provided with two sets or tiers of buckets, with two separate and independent gates, and a mechanism for operating them alternately, substantially as set forth.

2. The combination of a water-wheel provided with two tiers or sets of buckets, with two separate and independent gates, which are moved alternately by means of a single shaft, so as to bring either one or both tiers of buckets into use, substantially as specified.

3. The combination of a water-wheel provided with two tiers or sets of buckets, with the outside casing, and two separate and independent gates with a single operating-shaft, which is provided with arms or fingers which are set at an angle to each other, substantially as shown.

4. The combination of the outside casing provided with chambers or recesses S, a single shaft, P, provided with the fingers or arms Q, set at an angle to each other, the two gates I, provided with suitable recesses to receive the arms or fingers, and the water-wheel, substantially as set forth.

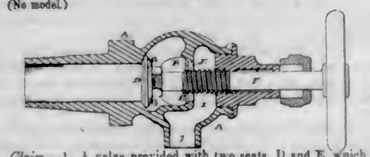
5. The combination of the outside casing with the shaft P, provided with the fingers Q and the cams U, with the two gates I, provided with suitable recesses, and the water-wheel, substantially as specified.

6. The combination of the upper gate suspended by means of the arms or braces J, with the lid C, the flange O, the outside casing, and the water-wheel, substantially as shown.

7. The combination of the outside casing with two independent gates, I, and the water-wheel, one of the gates being supported from below and the other from above, substantially as described.

8. The combination of a wheel having two sets or tiers of buckets with two gates and two outside casings, D, which are provided with separate and distinct sets or tiers of guides and chutes, the water-wheel being provided with two sets or tiers of buckets, which buckets are so arranged as to come just opposite each set of guides and chutes, whereby the gates, which are independent of each other, can be moved so as to admit the water to one or both tiers or sets of buckets upon the wheel, substantially as set forth.

300,824. RELIEF-VALVE FOR THE FEED-PIPES OF STEAM-BOILERS. WILLIAM C. WOLFE, Hagerstown, Md. Filed Sept. 4, 1883. (No model.)



Claim.—1. A valve provided with two seats, D and E, which are in a line with each other, an overflow passage, I, which has its inner

end arranged over the seat E, in combination with a valve which will fit either one of the seats D E, and thus close either the entrance into the boiler or the overflow-passage, substantially as shown.

2. A valve having a passage-way connecting with a boiler, and a passage-way for connection with an injector, and a passage-way for connection with a feed-pump, an overflow-passage, an endwise-moving valve-stem, and a valve connected thereto by means of a pin, substantially as specified.

300,825. BELT-FASTENER. WILLIAM C. WOLFF and JOHN C. MANNDEG, Buffalo, N. Y. Filed Apr. 5, 1884. (No model.)



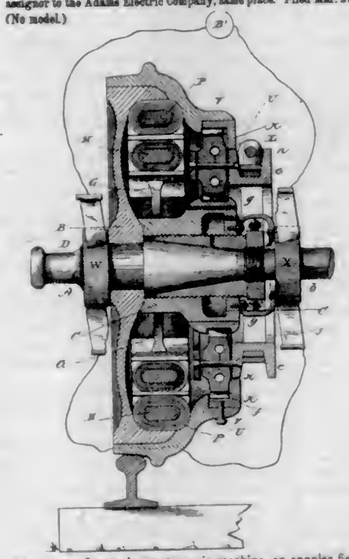
Claim.—As an improved article of manufacture, a belt-fastening device consisting of the U-shaped plate A, having inclined pointed pins B in the body thereof above the ends of the plate, adapted to receive the belting D D' by means of perforations C in the ends of said belting, as shown and described.

300,826. PROCESS OF PRODUCING STEEL FROM WROUGHT-IRON WITH PLUMBAGO. W. A. OTTO WUTH, Pittsburg, Pa. Filed July 14, 1883. (No specimens.)

Claim.—1. In making steel by the open-hearth process, charging the furnace with pieces of wrought-iron having a low percentage of phosphorus in layers, with a thin stratum of plumbago, preferably pulverized, interposed between the layers of iron, melting the charge of iron and plumbago in the open hearth, and finally adding to the melted metal spiegeleisen or ferro-manganese, substantially as described.

2. The production of steel by melting together in an open-hearth furnace pieces of substantially decarberized, desiliconized, and dephosphorized iron with plumbago in such proportions as to furnish the desired percentage of carbon to the resulting metal, substantially as described.

300,827. ELECTRIC MOTOR. WELLINGTON ADAMS, St. Louis, Mo., assignor to the Adams Electric Company, same place. Filed Mar. 27, 1883. (No model.)



Claim.—1. In an electro-dynamic machine, an annular field-magnet and inclosing-casing therefor, adapted to constitute the tire-supporting portion of a car-wheel, as set forth.

2. The combination, with a car-wheel, of an electro-dynamic machine whose field-magnet and armature are incased by said wheel, substantially as and for the purposes hereinbefore set forth.

3. The combination, with a car-wheel, of an annular field-magnet carried by said wheel, an armature adapted to be rotated within said field-magnet, and a shaft supporting the armature and constituting an axle for the wheel, substantially as and for the purposes hereinbefore set forth.

4. The combination, with the rotating armature and the wheel to be driven thereby, of intermediate motion transmitting and controlling mechanism arranged and operating, substantially as hereinbefore set forth, to automatically throw the armature into gear with the wheel to be driven when its speed of rotation has reached a predetermined point, as and for the purposes specified.

5. In an electro-dynamic machine, an annular field-magnet rigidly attached to the supporting or main axle, and provided with a tire-supporting casing, in combination with an armature moving within the field-magnet, and having a hub mounted upon said axle, gearing connecting the periphery of said hub to the interior of the tire-supporting casing, automatic clutching devices supported by the connecting-pinions, and means, substantially as described, for varying the tension of the clutch-operating mechanism and the speed at which the same becomes operative, as set forth.

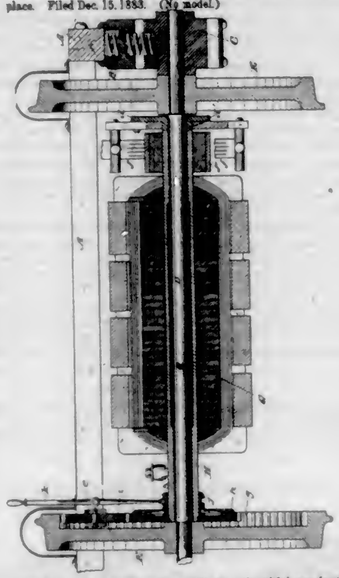
6. In combination with an annular field-magnet and an armature contained and rotating therein, the hub C, pinions K, ring J, provided with sections N, springs O, and adjusting-screws, the stationary adjustable band M, and shaft L, substantially as shown and described.

7. In an electro-dynamic machine, the combination of armature H, and hub C, having oil-chamber c, with adjustable bushing D, and suitable jam-nut, and the main axle A, substantially as set forth.

8. The centrifugal adjustable clutch and its controlling-shaft, in combination with the armature, the wheel, and the pinions carried by the clutch and engaging gearing carried by the armature and wheel, respectively, under the arrangement and for operation substantially as hereinbefore set forth.

9. The combination, with the axle or shaft to be driven, of an electric motor whose armature is mounted to revolve on said shaft, and intermediate transmitting-gearing for imparting movement from the armature to said shaft or axle, substantially as and for the purposes hereinbefore set forth.

300,828. ELECTRIC MOTOR FOR RAILWAY-CARS. A. WELLINGTON ADAMS, St. Louis, Mo., assignor to the Adams Electric Company, same place. Filed Dec. 15, 1883. (No model.)

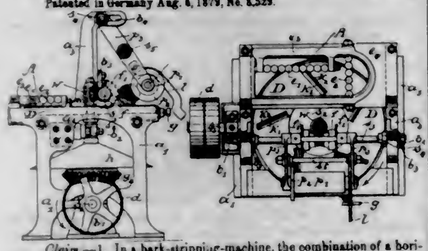


Claim.—1. The combination, with the axle which carries the driven wheels, the axle boxes or bearings, and a frame secured to or formed in one with said boxes or bearings, of an electric motor whose armature is mounted to revolve on said axle, and whose field is attached to and carried by said frame, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the driven wheels, their axle and axle boxes or bearings, and a field-supporting frame secured to or formed in one with said boxes or bearings, of an electric motor whose armature and field are carried by said axle and frame, respectively, and intermediate motion-transmitting gearing, also carried by said frame, and meshing on the one hand with a gear on the driven wheels and on the other with a gear on the armature-hub.

3. The driven wheels, their axle and axle boxes or bearings, and the supporting-frame secured to or formed in one with said boxes or bearings, in combination with the armature mounted to revolve on said axle, and the field-magnets, commutator-brushes, and intermediate motion-transmitting gearing mounted in and carried by said supporting-frame, under the arrangement and for operation as hereinbefore set forth.

300,829. BARK-STRIPPING MACHINE. F. FERDINAND ANSERMAIR, Ravensburg, Würtemberg, Germany. Filed July 18, 1883. (No model.) Patented in Germany Aug. 6, 1879, No. 8,529.



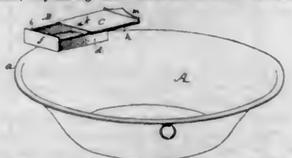
Claim.—1. In a bark-stripping-machine, the combination of a horizontal rotary disk provided with obliquely-set knives or blades, the disk mounted on a vertical shaft having a worm rigidly fixed thereto, said worm engaging above said disk with a roller provided with ratchet-shaped wheels, a pair of hinged levers provided with handle and flanged smooth roller journaled between the levers, to operate as shown, and for the purpose set forth and described.

2. In a bark-stripping machine, the combination of the horizontal rotary disk D, provided with the obliquely-set knives k_1, disk D, mounted on the vertical shaft s_1, having the worm W rigidly fixed thereto, worm W, engaging above disk D with the roller f, provided with the ratchet-shaped wheels f, f_1, the hinged levers p_1 p_2, provided with the handle l, and the flanged smooth roller p_3, flange p_4, shaft s_1, substantially as shown, and for the purpose set forth and described.

3. In bark-stripping machines, the combination of a rotary disk provided with vertical shaft, an attachment provided on top and across the disk, the attachment rigidly fixed to the main frame of the machine, consisting of a frame with two rows of journaled balls, the rows set at right angles to each other, to operate as shown, and for the purpose set forth and described.

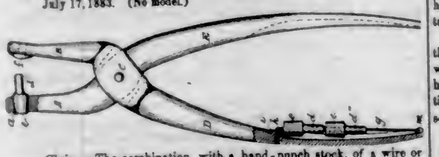
4. In a bark-stripping machine, the combination of the rotary disk D, provided with the knives k_1, and rigidly secured to the vertical shaft s_1, said shaft journaled in the bearings b_1 b_2, which are rigidly fast to the main frame a_1, the attachment A, bolted to the frame a_1, and placed closely over and across disk D, said attachment consisting of frame e_1, plate e_2, and supporting a set of journaled balls arranged in the two rows e_3 e_4, set at right angles to each other, to operate as set forth, and substantially as shown and described.

300,830. COMBINED WASH-BASIN AND SOAP-BOX. FRANKLIN E. ARNOLD, Waynesburg, Ohio. Filed Nov. 30, 1883. (No model.)



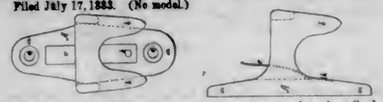
Claim.—In a combined wash-basin and soap-box, the basin or bowl, in combination with the soap-box provided on its under side with an inwardly-extending curved flange formed of spring metal, to fit or spring around the bottom edges of the rim of the basin, the bottom of the box resting on the top edges of the rim, arranged and operating for the purpose set forth.

300,831. HAND-PUNCH. JOHN E. ATWOOD, Stonington, Conn. Filed July 17, 1883. (No model.)



Claim.—The combination, with a hand-punch stock, of a wire or rod, g, pivoted at one end to one of its handles, and at the other end springing into a notch or between projections in or on said handle for the purpose of stringing punches not in use, substantially as herein described.

300,832. BROOM-HOLDER. CHARLES PERRY BALL, Orange, Mass. Filed July 17, 1883. (No model.)

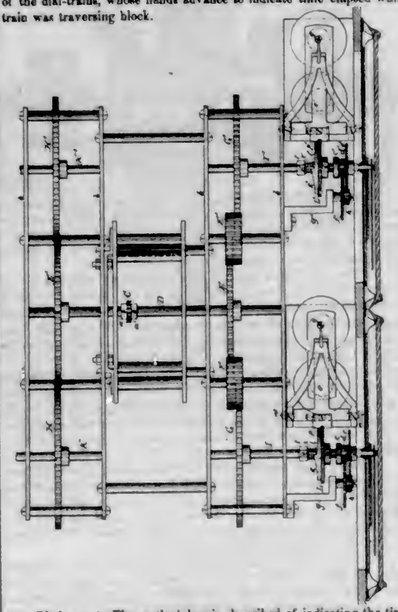


Claim.—1. The furcated broom-holder, constructed as described—viz., of the bracket having in it the single circular opening d, and also having the two ears a a and spring c arranged therewith—substantially as set forth.

2. In the described broom-holder, the bracket having the broom-handle circular receiving opening and the two prongs arranged therewith, as set forth.

300,833. AUTOMATIC TIME-INDICATOR AND BLOCK-SIGNAL. EDMUND F. BARD, Greenwich, Conn., and GUSTAVUS G. WAGNER, Mount Vernon, N. Y. Filed Oct. 17, 1883. (No model.)

Brief.—Train entering block closes circuit and releases dial-trains, which fly forward until stopped by pins on shafts rotated by the clock. When train leaves block, it closes a return-signal circuit, including one of the dial-trains, whose hands advance to indicate time elapsed while train was traversing block.



Claim.—1. The method herein described of indicating the time when a train enters and leaves a block, which consists in automatically moving the hands on two clock-dials by the passage of a train, so that one of said dials shall indicate the time when the train entered the block, and the other shall indicate the time when the train left the block, substantially as described.

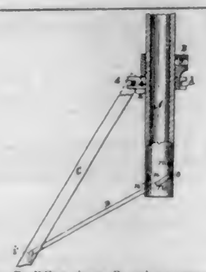
2. The herein-described method of signaling, which consists of causing a passing train to automatically set the hands on two clock-dials so that both shall indicate the time of passing the point where the signal is located, and in further causing such train to automatically set the hands on one of the dials so that they shall indicate the time when the train passed the next succeeding signal-station, substantially as described.

3. The combination, with the hands of two clock-dials located at the commencement of a block, of mechanisms and electrical connections whereby the continued travel of a train will automatically set the said hands so that one set shall indicate the time of entry and the other the time of the departure of the train from said block, substantially as described.

300,834. MUSIC-STAND. ROBERT C. BARRIE, Philadelphia, Pa. Filed July 28, 1883. (No model.)

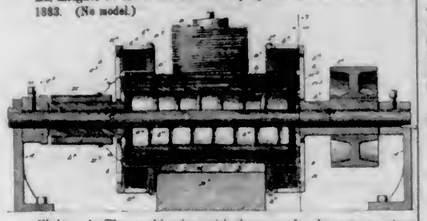
Claim.—In a folding music-stand, the braces D, passing transversely through the vertical rod at points equidistant apart and above and below each other, and being bent upon said rod, as shown, in combination with

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the rod A, the legs C, sliding sleeve B, and a common thumb-screw at *a*, substantially as shown and described.

300,835. DYNAMO-ELECTRIC MACHINE. JOHN B. BLAIR, Chicago, Ill., assignor to the Blair Electric Company, same place. Filed June 30, 1883. (No model.)



Claim.—1. The combination, with the core of a dynamo-armature and induction-wires arranged in a hollow cylindrical body around the core, of annular supports exterior to the cylindric body of wires, constructed to sustain the wires around central open spaces at the ends of said cylindrical body of wires, substantially as described.

2. The combination, with the core of a dynamo-armature and induction-wires arranged in a hollow cylindrical body around the core, of an exterior cylinder surrounding said cylindrical body of wires, and means upon the ends of the cylinder constructed to support the wires exterior to central open spaces at the ends of the said cylindrical body of wires, substantially as described.

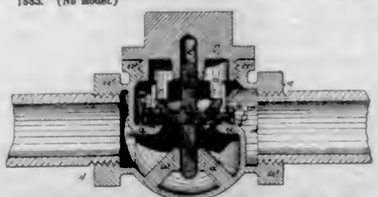
3. In a dynamo-armature, the combination of the cylinder B', flanges B^2, projections *b*, induction-wires trained within the cylinder and exterior to the projections *b*, as shown, an armature-core, and means (as B^2) for supporting the cylinder and wires clear of the axis, and constructed to afford a free passage for air through the armature, substantially as described.

4. In a dynamo-armature, the combination of the cylinder B', having flanges B^2, projections *b*, fixed to said flanges, induction-wires trained within the cylinder outside said projections, a core constructed to afford a longitudinal passage through the armature, and open heads B^2, provided with wires b^2, for supporting the cylindric armature from its axis, substantially as described.

5. The combination, with the induction-coil wires of a rotating armature arranged in a hollow cylindrical body, and means exterior to the inner surface of the body of wires constructed to support said wires around central open spaces at the end of the cylinder, of a spirally-constructed core within the cylindric body of wires, substantially as and for the purpose set forth.

6. In the armature described, the combination, with the exterior cylinder, B', provided with flanges B^2, of the several coils B^3, having their wires separated at the ends of the cylinder and trained in opposite directions on the vertical flanges B^2, substantially as described.

300,836. VALVE. JAMES H. BLESSING, Albany, N. Y. Filed Nov. 10, 1883. (No model.)



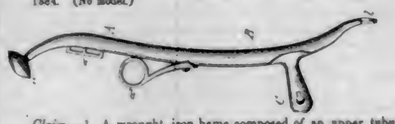
Claim.—The combination, with a valve-casing, A, having a partition, *a*, provided with an annular tongue, a^2, and removable valve-seat B, having an annular groove that fits over the annular tongue a^2, as herein described, of the bonnet C, having a cage, *c*, which forms an integral part of said bonnet, and is provided with openings *c'*, as herein set forth, the said cage being adapted to bear upon the upper face of the removable valve-seat B, so as to secure the latter rigidly in place, as herein specified.

300,837. COMBINED CHECK AND STOP VALVE. JAMES H. BLESSING, Albany, N. Y. Filed Dec. 7, 1883. (No model.)



Claim.—A combined check and stop valve of the character described, when composed of a valve-casing, A, provided with the valve-chambers *a* and *a'*, a vertically-operating check-valve, D, and an inclined screw stop-valve, G, the valve-chamber *a* being provided with a horizontal partition, B, and the valve-chamber *a'* being arranged in an inclined position and provided with a partition or seat, F, which is fixed at right angles to the central line of said valve-chamber, as herein specified.

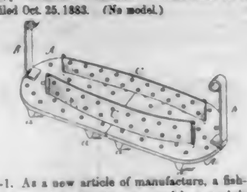
300,838. HAME. ADOLF BOENING, New York, N. Y. Filed Apr. 29, 1884. (No model.)



Claim.—1. A wrought-iron hame composed of an upper tubular part and a lower solid part welded to the upper part, substantially as set forth.

2. A wrought-iron hame composed of an upper tubular part and a lower solid part welded to the upper part, and provided with a draft-eye welded to the lower part, substantially as described.

300,839. COOKING UTENSIL. CHRISTOPHER M. BONNEAU, Boston, Mass. Filed Oct. 25, 1883. (No model.)



Claim.—1. As a new article of manufacture, a fish-tray formed in detachable sections, adapted to be separated in a straight line, substantially as and for the purposes set forth.

2. A fish-tray formed in detachable sections, adapted to be separated in a straight line, and having suitable devices for holding the sections together to sustain the weight of the article to be cooked, but permitting their separation when it is desired to deposit it on the dish.

3. The combination, with a fish-tray composed of sections adapted to be separated in a straight line, of retaining devices for keeping the article to be cooked in the desired position.

4. The combination, with a perforated fish-tray, of retaining devices provided with projections adapted to be inserted in the perforations of the tray, and thereby hold the retaining devices in position, substantially as set forth.

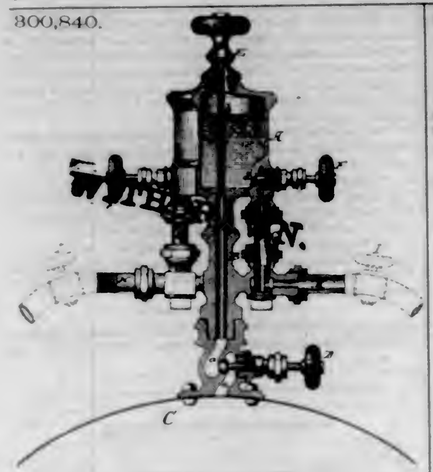
5. The combination, with the separable and detachable two-part fish-tray A A, of the retaining devices C and suitable locking devices, D, substantially as set forth.

6. The divided fish-tray A A, composed of detachable bottom sections, and provided with the knockdown-handles B B, hinged thereto, so as to permit their being firmly packed upon the tray in packing, substantially as described.

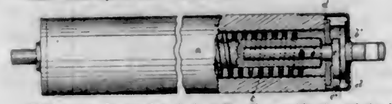
300,840. LUBRICATOR. WILLIAM A. BOYDEN, Jersey City, N. J., assignor to the McNab & Harlin Manufacturing Company, New York, N. Y. Filed Mar. 13, 1884. (No model.)

Claim.—The oil-cup A, combined with the central hollow supporting-stem, B, internal upright steam-pipe, *b*, lower oil-discharge opening, *d*, valve F, downwardly-extending drip-pipe *f*, sight-tube G, and outwardly-extending separate oil-discharge pipe H, having independent valve I, substantially as herein shown and described.

300,840.



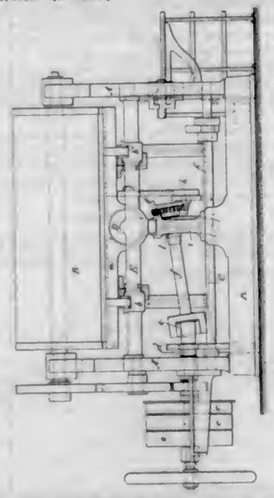
300,841. SPRING SHADE-ROLLER. GEO. T. BRIGGS, Cambridgeport, Mass. Filed Apr. 30, 1884. (No model.)



Claim.—1. In a spring shade-roller, the combination of the inverted-V-shaped spindle *b b'*, the collar-pawl *e e'*, and the ratchet *d*, all arranged and operating substantially as shown and described.

2. The collar *e*, formed with the V-shaped aperture and pawl *e'*, combined as shown and described, for the purpose set forth.

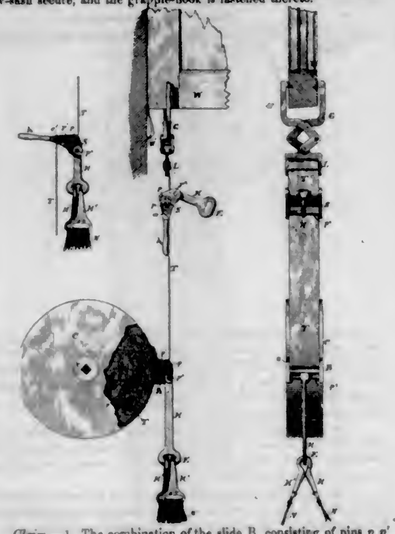
300,842. PRINTING-MACHINE. JOHN BROOKS, Plainfield, N. J. Filed Aug. 23, 1883. (No model.)



Claim.—The combination, with the impression-cylinder, type-bed, rack, driving-shaft, pinion, and pinion-shaft, of side supports below the type-bed, a longitudinal girder beneath the type-bed and supporting the same, the side frames, the cross-girt, and end frames to which the girder is fastened, said girder having a vertical slot through which the pinion-shaft passes, and in which the bearing-box of the same slides, substantially as set forth.

300,843. FIRE-ESCAPE. JAMES H. BURER, Los Angeles, Cal., assignor to Welcome A. Botkin, Eldridge W. Brannan, John J. O'Brien, Frank B. Hough, Salathiel C. Fancher, and William S. Brown, all of Kansas City, Mo. Filed Jan. 23, 1884. (No model.)

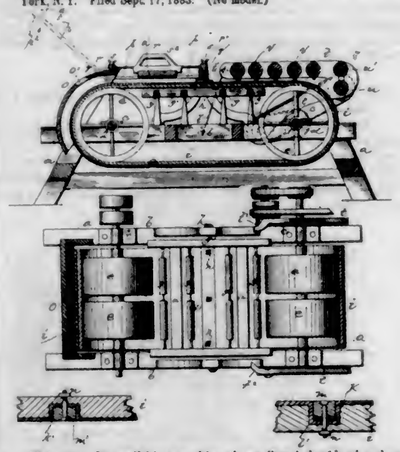
Brief.—An improvement on Patent No. 288,304, dated November 13, 1883. The rope is passed over friction-pins within the case, and so arranged that the weight of the case and reel acts as a counter-balance to the weight on the hanger and seat-strap. A wedge holds the window-sash secure, and the grapple-hook is fastened thereto.



Claim.—1. The combination of the slide B, consisting of pins *p p' p'*, and the hanger H, with the case C, so arranged that the weight of the case acts as a counter-balance to the weight suspended from the hanger and makes the friction of the tape against itself proportionate to the weight so suspended.

2. The combination of the grapple G and the wedge W' with a window-sash, for the purpose set forth.

300,844. WOOD-POLISHING MACHINE. JEREMIAH CASEY, New York, N. Y. Filed Sept. 17, 1883. (No model.)

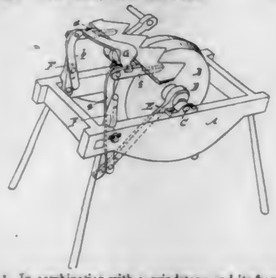


Claim.—1. In a polishing-machine, the endless belt of leather, having channels cut transversely in its outer face, in combination with a single sheet of sand-paper covering the outer surface of the leather belt, and the transverse metal bars perforated near the ends and the middle, and the nut-bolts for securing them in place, and the four pulleys *e e e e* on the shafts *d d*, for driving the belt, substantially as specified.

2. In a polishing-machine, the combination, with the grooved cap-piece and the supporting-bracket extending above the abrasive belt, of the hinged metal frame having its connecting cross-bar grooved longitudinally in its upper face, and the guide-holder having adjustable V-point castings at its ends, and elastic portions and an under friction-face between its ends, substantially as specified.

3. In a polishing-machine, the hinged frame carrying the feed-rollers and the adjustable pressure-rollers, in combination with the endless abrasive belt, substantially as specified.

300,845. ATTACHMENT FOR GRINDSTONES. WILLIAM CHALMERS, Detroit, Mich. Filed Nov. 3, 1883. (No model.)



Claim.—1. In combination with a grindstone and its frame, a tool-holder constructed to present the tool to the stone, an eccentric on the main shaft, and means, substantially as described, for connecting the tool-holder with said eccentric, whereby a combined rocking and reciprocating movement in the direction of the movement of the surface of the stone is given to the tool, as described.

2. In combination with a grindstone-frame the shaft of which is provided with an eccentric, a rod connecting such eccentric directly with a tool-holding frame pivotally secured to the main frame, substantially as and for the purposes specified.

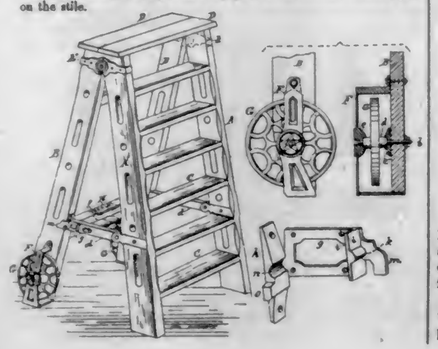
3. In combination with a grindstone-frame the stone-supporting shaft of which is provided with an eccentric and rod connecting said shaft with an oscillating tool-carrying frame, adjustable brackets by means of which the tool-holder-carrying frame is pivotally secured to the main frame, substantially as set forth.

4. In combination with a grindstone-frame the stone-supporting shaft of which is provided with an eccentric and rod connecting said shaft with an oscillating tool-holder-carrying frame, and brackets to which said tool-carrying frame is pivotally secured, a tool-holder pivotally secured thereto, substantially as described.

5. A grinding apparatus composed of a stone, shaft, and frame of any usual construction, an eccentric on said shaft, a rod connecting with said eccentric, an oscillating tool-holder-carrying frame, and a tool-holder pivotally secured to said tool-holder-carrying frame, the parts being constructed, combined, and operating substantially as and for the purposes specified.

300,846. STEP-LADDER. ORRIN CRATFIELD, Jr., Lockport, N. Y. Filed Aug. 23, 1883. (No model.)

Brief.—The stiles of a step-ladder are provided near their lower ends with wheels whose peripheries project beyond the sides but not beyond the ends of said stiles. In connection with a hinge having shouldered stops employs a pivoted brace having at one end a plate provided with a projection and lug which engage a shouldered and recessed plate on the stile.



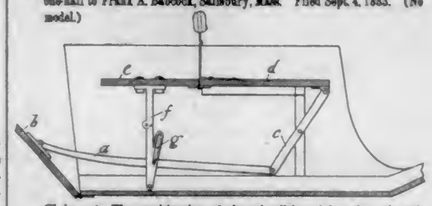
Claim.—1. A step-ladder provided with wheels mounted in the stiles thereof at a short distance from the lower ends, the periphery of said wheels extending beyond the edges of said stiles, but not beyond their ends, so that said wheels are not in contact with the ground when the ladder is adjusted in an upright position, but may be brought to bear on the ground by turning the ladder toward a horizontal position, substantially as and for the purpose described.

2. A step-ladder having wheels within housings secured to the standards of the ladder, the hub of each wheel extending into fixed sockets *c* and *c'*, and rotating therein, substantially as shown and described.

3. In a step-ladder having front and rear standards, a locking device for said standards, having catch-fastenings, each of which consists of a plate, *g*, having recessed projection *m* and bulge *k*, and a plate, *h*, having a recess, *n*, and projection *o*, substantially as set forth.

4. In a step-ladder having front and rear standards, the hinged locking device having plates *g* and *h*, in combination with a hinged coupling, E, provided with stops *c*, the parts being constructed substantially as shown, for the purposes set forth.

300,847. JUMP-SEAT. JOSEPH T. CLARKSON, Amesbury, assignor of one-half to Frank A. Babcock, Salisbury, Mass. Filed Sept. 4, 1883. (No model.)



Claim.—1. The combination of pivotal tail-board *b*, rod *a*, pivotal lever *c*, and sliding seat *d*, substantially as specified.

2. The combination of hinged tail-board *b*, rod *a*, pivotal lever *c*, sliding front seat, *d*, hinged seat *e*, and jointed standard *f*, all arranged to operate substantially as specified.

3. The combination of a sliding front seat and a rear turn-down seat, thereto hinged, with automatic devices arranged to simultaneously actuate said seats, substantially as specified.

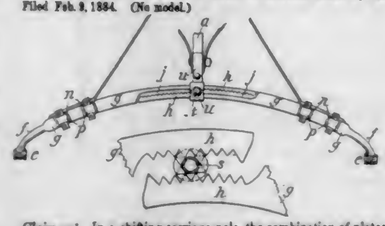
4. The combination of sliding front seat, *d*, rear seat, *e*, hinged thereto, jointed standard *f*, arranged to actuate and support seat *e*, and rod *a*, connected with tail-board *b* and said standard, and arranged to thereby actuate said rear seat as the tail-board is opened and closed, substantially as specified.

5. The combination of a hinged tail-board, a sliding front seat, a rear turn-down seat hinged to such front seat, with devices connecting said tail-board and seats, whereby the opening and closing of said tail-board will actuate said seats in the manner described.

6. The combination of a sliding front seat and a rear seat hinged thereto and arranged to be vibrated upward and downward upon its hinges as the front seat is slid backward and forward, substantially as specified.

7. The combination of a sliding front seat, a rear seat thereto hinged, a jointed standard arranged to actuate and support said rear seat, a pivoted vibrating lever arranged to actuate and lock said front seat, and a rod connected with both said standard and lever, and arranged to thereby actuate both said seats, substantially as specified.

300,848. SHIFTING POLE FOR VEHICLES. JOSEPH T. CLARKSON, Amesbury, assignor of one-half to Frank A. Babcock, Salisbury, Mass. Filed Feb. 9, 1884. (No model.)



Claim.—1. In a shifting carriage-pole, the combination of plates *g*, having their outer ends formed to be secured to the carriage-shackles, and at their inner ends with racks *h*, and a toothed stud, *s*, arranged to engage said racks and lineally actuate said plates, substantially as specified.

2. In a shifting carriage-pole, the combination of plates *g*, formed with racks *h*, toothed stud *s*, arranged to engage said racks, confining-plate *u*, and securing screw *t*, substantially as specified.

3. In a shifting carriage-pole, the combination of re-enforce plate *j*, secured to bar *b*, adjustable plates *g*, strap-bolts *k k'*, bars *m*, elastic blocks *n*, and yokes *p*, arranged to confine the same, and by means of the securing-nuts compress said blocks to the required degree, substantially as specified.

4. In a shifting carriage-pole, the shackle engaging plates *h*, formed at their inner ends with rack-like teeth, and a toothed stud or pinion arranged between said racks, to be rotated, and to thereby simultaneously move said racks inward or outward, as required, substantially as specified.

5. In a shifting carriage-pole, the shackle engaging plates *h*, adjustably secured upon bar *b*, and arranged and provided with means whereby they may be simultaneously moved to adjust their ends *e* at the required distance apart, substantially as specified.

6. In an adjustable carriage-pole, the combination, with bar *b* and its re-enforce plate *j*, of lineally-adjustable plates *g*, with devices to hold them in contact with plate *j* by an elastic pressure, substantially as specified.

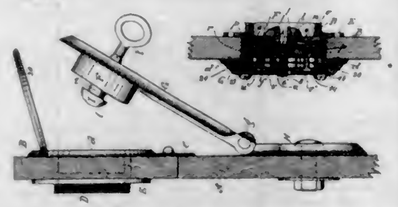
300,849. WEATHER-STRIP. JACQUES COCTURIER, Lyons, France. Filed Aug. 20, 1883. (No model.) Patented in France Feb. 16, 1883, No. 153,854.

Brief.—A weather-strip consisting of a spring-pressed plate having attached an elastic strip, the plate being confined in a case which can be applied to the edges of a door as well as to the bottom of the same.



Claim.—The case A, having sides and back and a front with an opening in it, in combination with the plate B, that is retained within the case by the front plate of the case, an elastic strip, C, upon the outer face of the plate B and projecting through the opening in the front of the case, and a spring or springs, D, between the plate B and case, substantially as set forth.

300,850. TRUNK-LOCK. GEORGE CROUCH, New York, N. Y., and HERMANN AHREND, Newark, N. J., assignors to said Crouch. Filed Feb. 23, 1884. (Model.)



Claim.—1. The combination, with a hinged hasp and the lock-cup, of a lock-case upon the hasp and self-acting hooked spring-bolts to connect with the lock-cup when the hasp is pressed to place, substantially as set forth.

2. The combination, with a hinged hasp, of a lock-cup having a flange and a septum with a circular opening, a lock-case upon the hasp, self-acting spring-bolts with heads to pass into and hold the lock in the lock-cup, substantially as set forth.

3. In combination with the hinged hasp, a lock-case having an opening at the back, spring-bolts with heads passing through that opening, a cam within the case to retract the spring-bolts, and tumblers within the lock-case to hold the cams, substantially as set forth.

4. The circular lock-case, in combination with the two-part spring-bolts projecting through an opening at the back, and a disk within the lock-case, having upon it the key-stud, and cams to actuate the bolts, and a stud on the disk and tumblers, substantially as set forth.

5. The combination, with the circular lock-case and hinged hasp carrying the same, of spring-bolts projecting at the back of the case, cams within the case actuated by the key for drawing the spring-bolts together, and tumblers to control the movement of the cams, substantially as set forth.

6. The combination, with the hinged hasp, circular lock, and lock-cup, of a ring introduced between the hasp and the flange of the cup, the parts being recessed for the reception of the ring, substantially as set forth.

7. The combination, with the circular lock-case, of spring-bolts, cams for acting on the same, segmental tumblers, a pivot for the same, and bow-springs confined between the tumblers and the notched inner surface of the case, substantially as set forth.

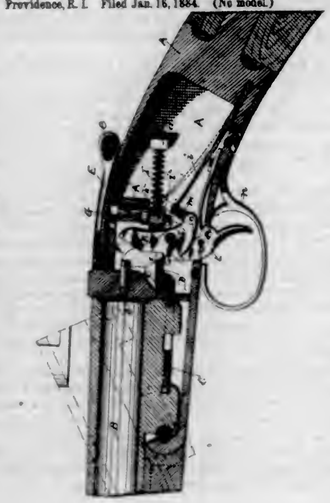
300,851. BREECH-LOADING FIRE-ARM. WILLIAM H. DAVENPORT, Providence, R. I. Filed Jan. 16, 1884. (No model.)



Claim.—1. In a breech-loading double fire-arm, the hammer-cocking device for each barrel herein described, consisting of the rod C, provided with the head C', rod C², and spring *d*, the latter engaging with said head C', in combination with the cam C⁴ at the rear of the forward strap, the whole being located in the frame beneath the barrel and connected, whereby the operation of opening the barrel cocks the hammer, substantially as shown and set forth.

2. In a breech-loading double fire-arm provided with hammer H, and fore-wood strap H', having a cam-shaped opening, C⁴, therein, the combination therewith of the herein-described cocking device, consisting of the rod C, coupling C' C², and spring *d*, the whole arranged and operated substantially as shown and specified.

300,852. BREECH-LOADING FIRE-ARM. WILLIAM H. DAVENPORT, Providence, R. I. Filed Jan. 16, 1884. (No model.)



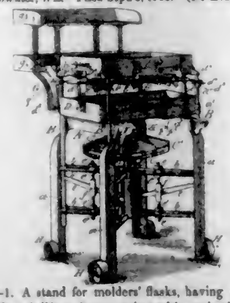
Claim.—1. That improvement in breech-loading fire-arms which consists of a vertical crank-shaft mounted in the gun-frame back of the hammer, the upper end of said shaft provided with a toothed lever, which latter engages a lever secured to the top snap-lever, the lower or crank portion of the shaft connected by means of a link to the main locking-bolt, all combined and arranged substantially as shown, and for the purpose set forth.

2. In a breech-loading fire-arm, the combination, with the vertical crank-shaft and main locking-bolt, of two segment gears or levers having unequal radii, adapted to connect said shaft with the top snap-lever, whereby the angular motion of the latter in withdrawing the bolt is less than the angular movement of said shaft, substantially as shown and set forth.

3. In a top snap-lever breech-loading fire-arm, the crank-shaft H, connected by means of the crank-pin *h'* and link D with the main spring locking-bolt C, in combination with the toothed lever G, secured to the shaft, and lever F, secured to the top snap-lever, E, substantially as shown, and for the purpose set forth.

4. In a breech-loading fire-arm, the hammer K, link D, adapted to engage said hammer, and the main locking-bolt C, in combination with the crank-shaft H, toothed levers F G, and top snap-lever, E, arranged and adapted for use substantially as shown, and for the purpose set forth.

300,853. MOLDING APPARATUS FOR CASTINGS. JOHN R. DAVIES, Whitewater, Wis. Filed Sept. 3, 1883. (No model.)



Claim.—1. A stand for molders' flasks, having supports for the drag of the flask and lifters for engaging with projections on the cope of the flask, said lifters being operated by levers and a screw, as set forth.

2. The lower half or drag of flask having guide-pins, in combination with the match-plate having guiding-slot, with or without adjusting-latch, the upper half or cope of flask having guide-plates with adjusting-latch, each slotted to receive a guiding-pin, as set forth.

3. The guiding-pins having latches which are pivoted at one end and slotted near the other, in combination with a binding-screw for securing it in adjustment, whereby all horizontal play of the halves of flask and match-plate is avoided, as set forth.

4. The central lifting-screw, levers radiating from its housing, and a nut traveling on said screw, in combination with the lifting-pins, as set forth.

5. The perforated bottom plate having a bead and cleats, in combination with the flask and rails of frame, as set forth.

6. A molding apparatus for castings, consisting of frame A, having legs *a a a*, arms *b b b*, hub *c*, and rails *d d*, cast in one piece, and brackets G for shelves; of the lifting-screw C, having slotted nut d^2, tilting-levers *e e e e*, and adjustable fulcrum standards *f f f*; of the lifters B B B' B', with extensions *a'*, a^2, and a^4; of drag D of flask, having guide-pins *d' d'*, and of cope D' of flask, having guide-plate D^2, and of match-plate with opening for guide-pins *d' d'*, and adjustable brackets d^3, and perforated bottom plates F of flask, with head *f'* and cleats f^3, substantially as shown and described, and for the purpose set forth.

7. In a molding apparatus for castings, the combination of flasks, having guide-pins *d' d'* in its drag D, with match-plate E, having openings for said pins, and cope D', having female guide-plate D^2 and brackets d^3, substantially as shown and described, and for the purpose set forth.

8. In a molding apparatus for castings, the combination of drag D and cope D' of flask and match-plate E with lifters B B and B' B' and extensions *a'*, a^2, and a^4, substantially as shown and described, and for the purpose set forth.

9. In a molding apparatus for castings, the combination of the lifters B B and B' B', having slots *b' b'*, with the tilting-levers *e e e* and adjustable fulcrum-standards *f f*, substantially as shown and described, and for the purpose set forth.

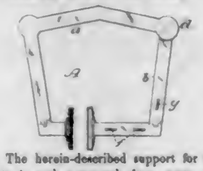
10. In a molding apparatus for castings, the combination of the tilting-levers *e e e* and adjustable fulcrum-standards *f f f f*, with slotted screw-nut d^3, lifting-screw C, and screw-wheel C', substantially as shown and described, and for the purpose set forth.

300,854. SOLE OR HEEL PLATE FOR BOOTS AND SHOES. JOHN M. DEXTER, Elmira, N. Y. Filed July 5, 1883. (No model.)



Claim.—As an article of manufacture, a thin metal plate having its lower surface covered with rubber or its equivalent, conforming to the sole or heel of a boot or shoe, and provided with suitable means whereby it may be cemented thereto to form an over-sole having an outer elastic facing, as set forth.

300,855. MOSQUITO-NET SUPPORT. ALFRED L. EDWARDS, New York, N. Y. Filed May 22, 1883. (No model.)

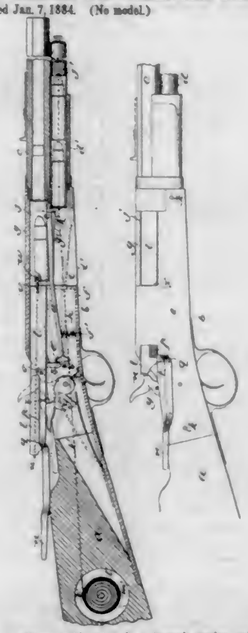


Claim.—1. The herein-described support for mosquito-nets, consisting of brackets A, each composed of two parts, *a* and *b*, jointed together and provided with a clamp at the joint, and the band C, attached to and supported by said brackets, substantially in the manner shown.

2. In combination with supporting-brackets, substantially as described and shown, a flexible band composed of separable sections alternately provided at their ends with slots or eyes and turn-buttons, substantially as and for the purpose set forth.

3. The herein-described bracket for mosquito canopies, consisting of the parts *a b*, united by a friction-joint and provided with turn-buttons *f* and *g*, as and for the purpose explained.

300,856. MAGAZINE-GUN. FRANKLIN JAMES EVANS, Iowa Falls, Iowa. Filed Jan. 7, 1884. (No model.)

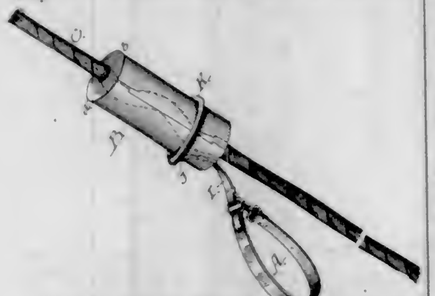


Claim.—1. The combination, in a breech-loader, with a reciprocating breech-block, *l*, of the lever *n*, pivoted to said block, and the stop-bar *s*, arranged in the breech-cavity *h* in line with the arm *q* of the lever *n*, said lever *n* and the side plate, *e*, of the breech having notch *t*, substantially as described.

2. In a breech-loader, the combination, with the lifting-lever *a'*, pivoted at *b'* under the stop *s*, and provided with the stud *e'* and the stop-spring *g' h'*, of the spring *f'*, breech-block lever *n*, and magazine *d''*, substantially as shown and described.

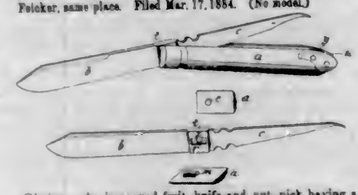
300,857. FIRE-ESCAPE. LEWIS J. EVANS, New York, N. Y. Filed May 16, 1883. (No model.)

Brief.—A fire-escape in which a split ring surrounding the closed clamp holds the trace which is passed through the slot in the grooved clamp.



Claim.—In a fire-escape, the clamp-sections *a b*, having grooves *f g*, respectively, and necks A, arranged as shown and described, in combination with the rope C, belt A, trace I, and split ring K, the clamp being provided with a slot, J, to receive the trace, substantially as specified.

300,858. COMBINED FRUIT-KNIFE AND NUT-PICK. FREDERICK C. FECKER, Jr., Northampton, Mass., assignor of one-half to Edward P. Fecker, same place. Filed Mar. 17, 1884. (No model.)



Claim.—An improved fruit-knife and nut-pick having a handle with separated sides, excepting at one end, where they are rigidly secured against a block interposed between them, one of said sides having thereon near its free end an inwardly-projecting pivot, and the second side having thereon opposite said pivot a cam projection running in the direction of the length of the handle, and a combined blade and nut-pick provided with a pivot-hole to receive the aforesaid pivot and a socket to receive said cam projection, adapted to swing between the free ends of the handle to bring either implement into convenient position for use, combined and operating substantially as set forth.

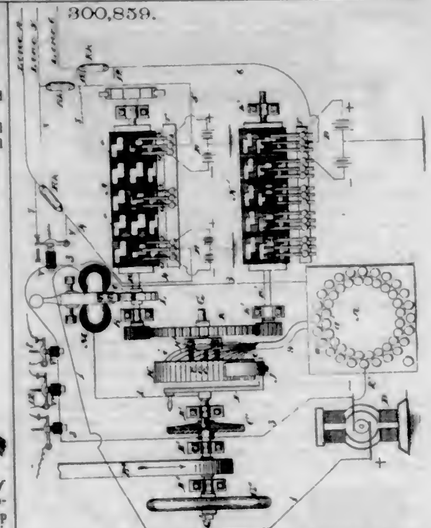
300,859. TRANSMITTER FOR PRINTING-TELEGRAPHS. STEPHEN D. FIELD, New York, N. Y., assignor to the Commercial Telegram Company, same place. Filed Aug. 6, 1883. (No model.)

Brief.—Controls a multiple of main lines.

Claim.—1. The combination, in a transmitter, of one or more cylinders, each provided with conducting spaces, fingers, or springs taking thereon, and circuit-connections for controlling one or more main lines, a prime motor therefor, a magnetically-operated stop controlling the motion of the cylinder or cylinders, and a key-board having circuit-connections, as set forth, and controlling the magnetic stop, substantially as set forth.

2. The combination, in a transmitter, of one or more cylinders revolved by a prime motor, and each controlling the pulsations on one or more main lines, and a key-board and local circuits, one for each character on the key-board, and controlling the movement of the cylinders, substantially as set forth.

3. The combination, in a printing-telegraph transmitter, of a cylinder or cylinders provided with contact spaces, fingers, or springs, contacting therewith and controlling the pulsations on the main-line escapement-circuit, a magnetic detent controlling the rotation of the cylinders, a local circuit controlling the magnetic detent and having two breaks therein, a key closing one break, and a traveling circuit-closer and segmental disk closing the other break, substantially as set forth.



4. In a printing-telegraph transmitter, the combination of a cylinder or cylinders having conducting-spaces upon the periphery thereof, and sets of fingers or springs adapted to contact therewith and control the pulsations upon the main-line escapement-circuit, a local circuit, a magnetic detent, a disk formed of segments insulated from each other, and a circuit-closer traveling over such segments, whereby the rotation of the cylinder and the pulsations upon the escapement-circuit are controlled, substantially as set forth.

5. In a transmitter for printing-telegraphs, the combination, with the cylinder or cylinders having conducting-spaces upon the periphery thereof, and fingers or springs contacting therewith to control the pulsations upon the escapement-circuit, of a ratcheted wheel upon the shaft of one or more of the cylinders, and a key or spring operated thereby to automatically control the printing-circuit, substantially as set forth.

6. In a printing-telegraph transmitter, the combination of an insulated cylinder provided with the zigzag conducting-spaces, as set forth, a series of springs or fingers contacting therewith, each set of springs or fingers having one finger or spring connected to the line, while two others are respectively connected to opposite poles of the battery, a main-line and battery connections, each set of the series of fingers or springs controlling one main escapement-line, substantially as set forth.

7. The combination, in a transmitter, of a key-board having two concentric or parallel ranges of keys and a series of springs or fingers equal in number to the keys in either range and fixed upon an insulating-base, each spring being acted upon by two keys, one from each range, a disk composed of segments equal in number to the springs and circuit-connections, one for each spring to its corresponding segment, substantially as set forth.

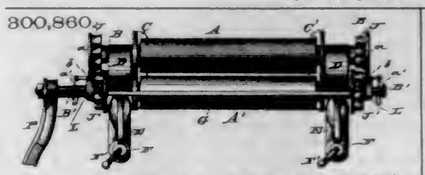
8. In a transmitter, the combination of a key-board having two ranges or sets of keys, two local circuits, one for each range of keys, a magnetic stop for the transmitter, controlled by both circuits, and a relay placed in one circuit and controlling a shunt to a resistance in the main circuit, substantially as set forth.

9. A printing-telegraph transmitter consisting of the combination of a cylinder or cylinders provided with conducting-spaces, a series of fingers or springs adapted to contact therewith, each set of the series of fingers or springs, in conjunction with a series of spaces, controlling a main escapement-circuit, a prime motor for the cylinder or cylinders, a clutch connecting them, a magnetic detent controlling the operation of the clutch thereon, local circuits, as set forth, a key-board, disk of insulated segments, and traveling circuit-closer controlling jointly the magnetic detent, substantially as set forth.

10. A transmitter embodying the following elements: a cylinder or cylinders and a series of fingers, as described, controlling the main circuit, a prime motor therefor, and a clutch connecting the motor and cylinder or cylinders, a magnetic stop controlling the movement of the cylinder or cylinders, local circuits controlling the stop, and a key-board controlling the local circuits, substantially as set forth.

300,860. CLOTHES-WRINGER. WASHINGTON I. FITCH, Bluffton, Ind., assignor to himself and William W. Weisell, same place. Filed May 13, 1883. (No model.)

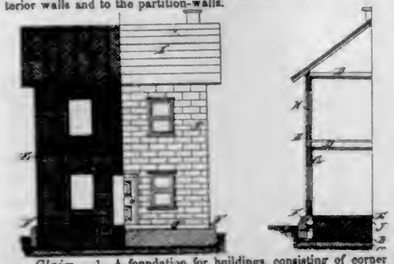
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Claim.—The combination, in a clothes-wringer, of the wringing-rollers A A', mounted on the shafts B B', the guide-plates C C', which limit the movement of the rollers, the springs D, having bearings at their ends in which the roller-shafts are journaled, the flanged spur-wheels on the journals of said rollers, and the flanged collars L L, having beveled surfaces and teeth *b b*, the said collars being fitted on the shaft of the lower roller and connected with said shaft, as described, whereby they will operate to separate the two rollers, substantially as and for the purposes specified.

300,861. CONSTRUCTION OF BUILDINGS. EDWIN GILBERT, Georgetown, Conn., assignor of two-thirds to Henry L Hoyt, Norwalk, Conn., and Solomon J. Gordon, Springfield, Mass. Filed Dec. 26, 1883. (No model.)

Brief.—The foundation consists of corner and supporting posts, and wire-cloth, and concrete composed of cement and sand. The surface-finish is applied to wire-cloth as a base secured to the exterior of the frame of the building, mortar serving with the wire-cloth as a ground-work. Wire-cloth and mortar are also applied to the interior of the exterior walls and to the partition-walls.



Claim.—1. A foundation for buildings, consisting of corner and supporting posts, and wire-cloth and concrete, composed of cement and sand, substantially as set forth.

2. The combination, with the frame of a building, of metallic woven wire-cloth applied to the exterior thereof and serving as a ground or base for the surface-finishing material, as set forth.

3. The combination, with the frame of a building, of woven metallic wire-cloth applied upon the outside thereof, mortar adapted to serve as the ground or body work and the surface-finish, substantially as described.

4. In combination with the woven wire-cloth, exterior wall of wire-cloth and mortar applied to the interior of the exterior walls and to the partition-walls.

300,862. PORTABLE FOLDING PARLOR BOWLING-ALLEY. WM. E. GOODNOUGH, Newark, N. J. Filed Mar. 3, 1884. (No model.)

Claim.—1. A bowling-alley constructed of a series of sections hinged or otherwise attached to each other at the ends, substantially as herein shown and described.

2. A bowling-alley constructed with a series of sections hinged or otherwise attached to each other at the ends, and provided with removable side gutters, substantially as herein shown and described.

3. A bowling-alley provided at one end with a hinged or otherwise attached folding box for receiving the balls that have been thrown at the pins, substantially as herein shown and described.

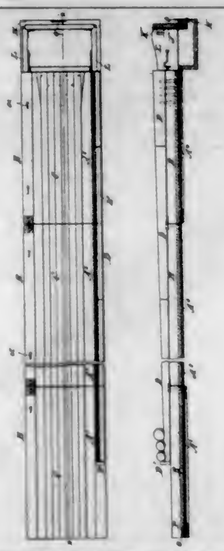
4. A bowling-alley formed of four sections hinged or otherwise attached to each other in such a manner that the rear sides of the middle sections are folded against each other and the end sections are folded over the middle sections, substantially as herein shown and described.

5. The combination, with a bowling-alley, of a hinged or otherwise attached end box for receiving the balls which have been thrown or rolled at the pins, and of a hinged board, J, provided with wings L in the said box, substantially as herein shown and described.

6. The combination, with a bowling-alley, of the hinged or otherwise attached box H, the hinged or otherwise attached board J, the wings L, hinged to the board J, the hooks L', and the eyes or staples M on the end of the alley, substantially as herein shown and described.

7. The combination, with a folding bowling-alley formed of hinged or otherwise attached sections, of a box, H, hinged or otherwise attached at one end, the hook Q, and the pin P, held in the slot O in front edge of the first section, substantially as herein shown and described.

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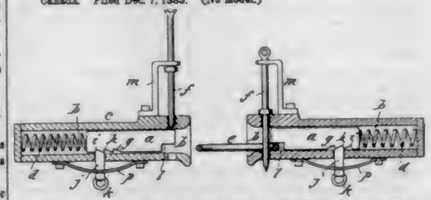


8. The combination, with a bowling-alley formed of a series of hinged or otherwise attached sections, of a box hinged or otherwise attached to one end, and a detachable plate adapted to cover the opposite ends of the sections when folded, substantially as herein shown and described.

9. In a bowling-alley, the combination, with sections having side strips, B, provided with end pins, S, of the board R, provided with notched plates R', substantially as herein shown and described.

10. In a bowling-alley, the combination, with a series of sections hinged or otherwise attached to each other, of strips secured at the sides of the sections, and provided in their upper surfaces with undercut grooves, and of grooved strips provided on their under sides with pins adapted to be passed into the undercut grooves in the upper surfaces of the strips at the sides of the sections, substantially as herein shown and described.

300,863. CAR-COUPLING. HUGH GRAHAM, Dartmouth, Nova Scotia, Canada. Filed Dec. 7, 1883. (No model.)



Claim.—1. In a car-coupling having the sliding block *a* and spring *d* for setting the link and pin, said block having a series of three notches, *g h i*, in combination with a stop-latch, *j*, and spring *p*, substantially as described.

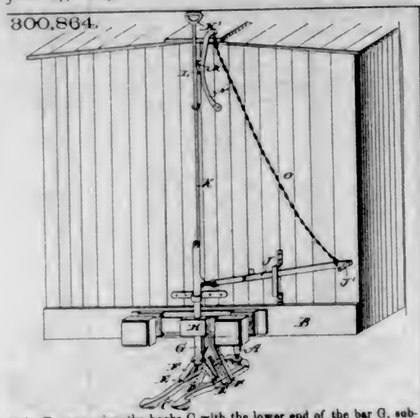
2. The combination of cords *n* and guide-pulleys *o* with the coupling-pin *f*, having a block, *a*, for holding it up for self-coupling, and also having a stay, *m*, to hold it upright, said pulleys *o* being located above the coupling-pin, and the cords being extended to the lower corners of the car-body, substantially as described.

300,864. CAR-COUPLING. FRED'K E. GROTHAUS, Boerne, Tex. Filed Jan. 17, 1884. (No model.)

Claim.—1. In a car-coupling, the combination, with two levers pivoted on the bottom of the car, of a guide provided with an inverted-V-shaped slot, through which the hooks pass, and of means for swinging the hooks upward, whereby their outer ends will be moved toward each other, substantially as herein shown and described.

2. In a car-coupling, the combination, with two hooks pivoted to the bottom of the car, of a guide provided with an inverted-V-shaped slot, through which the hooks pass, a vertically-movable bar, G, and the

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links F, connecting the hooks C with the lower end of the bar G, substantially as herein shown and described.

3. In a car-coupling, the combination, with the coupling-hooks C, pivoted to the bottom of the car, of the plate D, provided with an inverted-V-shaped guide-slot, through which the hooks pass, the vertically-movable bar G, connected by links F with the hooks C, and of the lever J for moving the bar G upward, substantially as herein shown and described.

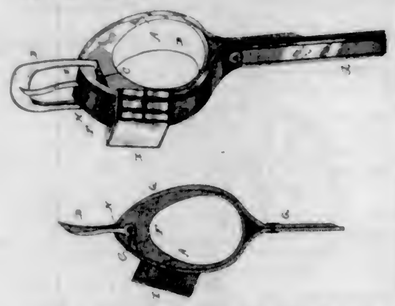
4. In a car-coupling, the combination, with the hooks C, pivoted to the bottom of the car, of the plate D, provided with an inverted-V-shaped guide-slot, the vertically-movable bar G, connected with the hooks C, and of means for locking the bar G in place, substantially as herein shown and described.

5. In a car-coupling, the combination, with the coupling-hooks C, of the plate D, provided with an inverted-V-shaped guide-slot, D', the bar G, the links F, the rod K, provided with a tooth, L, and the spring N, provided with a tooth, M, substantially as herein shown and described.

6. In a car-coupling, the combination, with the coupling-hooks C, of the plate D, provided with an inverted-V-shaped guide-slot, D', the bar G, the links F, the rod K, provided with a tooth, L, the spring N, provided with a tooth, M, the pivoted lever J, connected with the bar G, and the chain O, connecting the lever J with the spring N, substantially as herein shown and described.

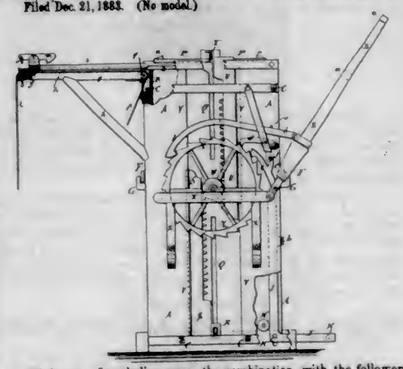
7. In a car-coupling, the coupling-box P, provided at its front with two uprights, P', beveled inward and toward each other, and provided with prongs or teeth Q, substantially as herein shown and described.

300,865. SHAFT-TUG. CHARLES W. HASS, Allentown, Pa. Filed Apr. 2, 1884. (No model.)



Claim.—A shaft having an inner metallic portion, B, having in its upper portion a central slot or hole to receive the buckle, and a transverse slot extending from said central hole outward, a buckle, D, and a plug or stop of a size corresponding with the size of the transverse slot and snugly fitting within the same for holding the buckle within the central hole and serving as a partial bearing for said buckle, and an attaching-strap forming at one end a cover for the metallic portion B, and having a slot at its apex through which the buckle-tongue passes, and being secured substantially as set forth.

300,866. BALING-PRESS. SIMON P. HARBAUGH, Cumberland, Md. Filed Dec. 21, 1883. (No model.)



Claim.—1. In a baling-press, the combination, with the followers O P, rack-bars S U, gear-wheels W, ratchet-wheels Y, and levers Z, of the long pawls *b*, the short pawls *c*, and the holding-pawls *d*, substantially as herein shown and described, whereby the followers can be moved with greater speed and less power when the material is loose, and with less speed and greater power when the material becomes more compact, as set forth.

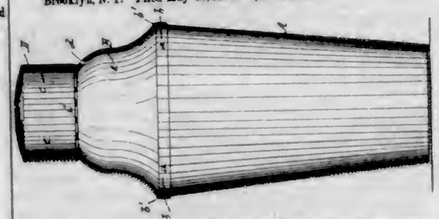
2. In a baling-press, the combination, with the short pawls *c*, having projecting arms *e*, of the pins *f*, substantially as herein shown and described, whereby the said short pawls will be raised from the ratchet-wheels by their own forward movement, and will also raise the holding-pawls, releasing the ratchet-wheels, as set forth.

3. In a baling-press, the combination, with the double-walled ends A of the press and the doors E, of the pins H, the right-angled bars I, having pins K and indexes L, and the springs J, substantially as herein shown and described, whereby the bale can be weighed as it comes from the press, as set forth.

4. In a baling-press, the combination, with the side B of the press and the follower P, having catch *n*, of the hinged frame *g* and its detachable braces *h*, the sliding frame *i*, the lever-hook *m*, having trip-hook *o*, and the cords *p r*, substantially as herein shown and described, whereby the said follower can be readily withdrawn and replaced, as set forth.

5. In a baling-press, the combination, with the rack-bars U and the follower P, of the keepers T, open upon one side, substantially as herein shown and described, whereby the said bars and follower can be disconnected and connected automatically, as set forth.

300,867. SHAKER FOR MIXING DRINKS. EDWARD J. HAUCK, Brooklyn, N. Y. Filed May 15, 1884. (No model.)



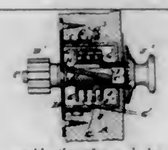
Claim.—1. The herein-described shaker for mixing drinks, consisting of the vessel A, the cup B, constructed to fit closely upon the vessel, the strainer C, secured in the upper portion of the cup, the cap D, fitting closely over the strainer, and the vent for the escape for the air from the interior of the shaker.

2. The combination, substantially as hereinbefore described, of the vessel A, with its cylindrical portion *a*, the cup B, with its cylindrical rim *b*, shoulder *b'*, and cylindrical flange *c*, the strainer C, the cap D, and the vent *d*.

3. The combination, substantially as hereinbefore described, of the vessel A, the cup B, constructed to fit closely upon the vessel, the strainer C, secured in the upper portion of the cup, the cap D, fitting closely over the strainer, the vent *d*, for the escape of the air from the interior of the shaker, and the bent pipe *e*.

300,868. PERMUTATION-LOCK. WILLIAM S. HILL, Cutler, Ill. Filed Jan. 28, 1884. (No model.)

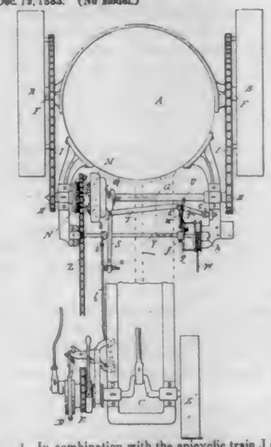
300,868.



Claim.—1. The combination of a rack-bar, a spindle having a pinion to advance and retract the rack-bar, interlocking disks on said spindle, a sleeve having a flange provided with a pin to engage the adjacent disk, and a spring-plate to lock the disks to the spindle when the combination is set, as set forth.

2. The combination of the spindle having a longitudinal recess, a flat spring to occupy the recess, and a pinion to engage a rack-bar, interlocking disks, each having a notch to receive the flat spring when the latter is free, a sleeve to lock with the adjacent disk, and to slide inward with the disks and press the flat spring out of engagement with the disks, and a spring to force both the disks and sleeve outward when the latter are released.

300,869. TRACTION-ENGINE. HARRY H. HUDSON, Flint, Mich. Filed Dec. 19, 1883. (No model.)



Claim.—1. In combination with the epicyclic train J and the counter-shaft G, the friction-clutch M Q, the disk M of which forms a member of the epicyclic train and is loose upon the shaft, while the disk Q slides on a fast feather on the shaft, and admits of being forced in and out of contact with the former by suitable connections operated by a lever, substantially as and for the purposes described.

2. The combination, with the epicyclic train J, of the traction-gear and the friction-clutch M Q, the V-shaped annular contact R, toggle-levers T T', link w, and hand-lever U, all combined and operating substantially as described.

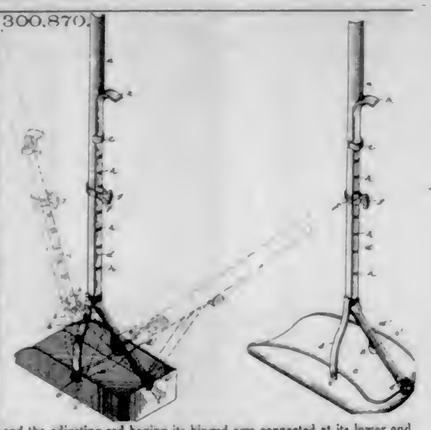
3. In a traction-engine, the traction-gear herein described, consisting of the combination of the counter-shaft G, bevel-gear K, secured upon said shaft, bevel-gear L, friction-disk M, sleeved loosely upon the shaft and forming an integral part with the bevel-gear L, sprocket-wheel N, sleeved loosely upon the shaft between the bevel-gears K and L, bevel-pinions O P, radially journaled upon the sprocket-wheel N, and friction-disk Q, slipped upon a spline on the shaft G, and actuated by a suitable lever for bringing it in and out of contact with the disk M, all combined, arranged, and operating substantially as and for the purposes described.

4. In a traction-engine, and as a means for controlling its movements, the combination of the traction-gear, consisting of the epicyclic train J and a friction-clutch, M Q, arranged upon the same counter-shaft, with a reversing-gear placed upon the crank-shaft of the engine, and the two levers U W, for controlling the traction-gear and the reversing-gear, all arranged and operating substantially as and for the purposes described.

300,870. DRAIN-CLEANER. GEORGE WASHINGTON IMMEL, Logansport, Ind. Filed Mar. 14, 1884. (No model.)

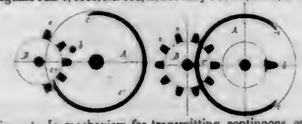
Claim.—In a drain-cleaner, the combination, with the handle having diverging metal straps at its lower end with eyes in their lower ends, the clip-guide, and the spring-clasp with the set-screw, of the dirt-pan having vertical sides and rear end hinged to the metal straps at its sides,

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and the adjusting-rod having its hinged arm connected at its lower end to the rear end of the pan by a pivot-connection, substantially as specified.

300,871. DEVICE FOR CONVERTING MOTION. ALEXANDER KAISER, Freiburg, Switzerland. Filed Nov. 8, 1883. (No model.) Patented in England Jan. 9, 1883, No. 131, and in Italy Feb. 15, 1883, No. 15,076–85.

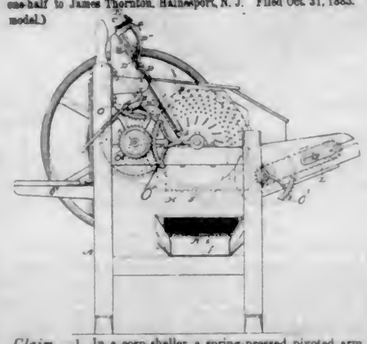


Claim.—1. In mechanism for transmitting continuous or reciprocating rotary motion into intermittent rotary motion, the combination of a rotating driving-wheel having a segmental flange extending around a part of its circumference with a toothed driven wheel, said flange interlocking intermittently with the teeth of the driven wheel, substantially as set forth.

2. In mechanism for changing continuous rotary motion into intermittent rotary motion, the combination of a rotating driving-wheel, A, having a raised tooth, *b*, and a segmental flange, *c c' c²*, with a toothed driven wheel, B, said flange interlocking intermittently with the teeth of the driven wheel, substantially as shown and described.

3. In mechanism for changing continuous rotary motion into intermittent rotary motion, the combination of a rotating driving-wheel, A, having one or more raised teeth, *b*, and one or more segmental flanges, *c c' c²*, said flange or flanges having beveled ends with a driven wheel, B, having raised teeth *a a*, which latter interlock with the flange or flanges during the intervals of motion imparted to the driven wheel by the tooth or teeth of the driving-wheel, substantially as specified.

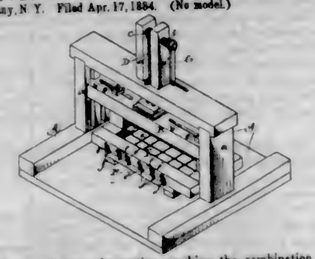
300,872. CORN-SHELLER. ALFRED KIBER, Dorstown, assignor of one-half to James Thornton, Hainesport, N. J. Filed Oct. 31, 1883. (No model.)



Claim.—1. In a corn-sheller, a spring-pressed pivoted arm constructed of a piece of wood, metal-clad on its inner face, as at D'', and a casting, D', having extension D''', in combination with the shelling-disks and operating mechanism, substantially as set forth.

2. In a corn-sheller, a pivoted pressure-arm constructed of a piece of wood, metal-clad on its inner face, as at D'', and a casting, D', having extension D''', in combination with means for its adjustment, consisting of a spring, bolt, and nut, substantially as and for the purpose set forth.

300,873. MACHINE FOR CUTTING CANDIES. JACOB KRESCHER, Albany, N. Y. Filed Apr. 17, 1884. (No model.)



Claim.—1. In a candy-cutting machine, the combination, with a reciprocating head, B, having a cutter-frame, E, attached thereto, the latter being provided with cutters *e'*, made of fine wires held in a tense condition, as herein described, of a bed-piece, F, provided with grooves *f*, which coincide with the cutters *e'*, as herein set forth, all being constructed and arranged to operate substantially as and for the purpose herein specified.

2. The bed-piece F for a candy-cutting machine, provided with grooves *f*, having in their lower parts the enlargements *f'*, as and for the purpose herein specified.

300,874. PRODUCTION OF COLORING-MATTER FROM DINITRO-PHENOL. FRITZ KRÖGER and GEORG TOBIAS, Fürstenberg-on-the-Oder, and EDUARD KEGEL, Leipsic, assignors to the Leipziger Anilin Fabrik, Beyer & Kegel, Lindenau, Germany. Filed July 30, 1883. (Specimens.)

Claim.—The herein-described process in the production of dinitro-phenol-sulpho-acid and its salts, by means of nitrating phenol-sulpho-acid or mononitro-phenol-sulpho-acid or their salts, substantially as set forth.

300,875. TOY SCALE. J. FRANKLIN LAWRENCE, Philadelphia, Pa., assignor to John Lawrence, same place. Filed Oct. 6, 1883. (No model.)



Claim.—A toy scale consisting of a beam, weight-plate, scoop-support, and pivot cast together, a base cast in one piece, and a scoop, substantially as and for the purpose set forth.

300,876. AIR-EJECTOR FOR VACUUM-BRAKES. LOUIS P. LAWRENCE, Passaic, N. J., assignor of one-fourth to Louis C. Raegener, Brooklyn, N. Y. Filed Feb. 27, 1884. (No model.)

Claim.—1. In an air-ejector for vacuum-brakes, the body A, having an upwardly-slanting steam-induction channel, B^2, an interior steam-expansion chamber, B^4, drip-channels a' a^3, and an enlarged air-chamber, D, all made integral in one casting, substantially as set forth.

2. In an air-ejector for vacuum-brakes, an ejector-body, A, having a slanting steam-induction channel, B^2, a steam-expansion chamber, B^4, drip-channels a' a^3, an air-chamber, D, and valve-seats *a*, *e*, and *f*, all cast integral in one piece, substantially as described.

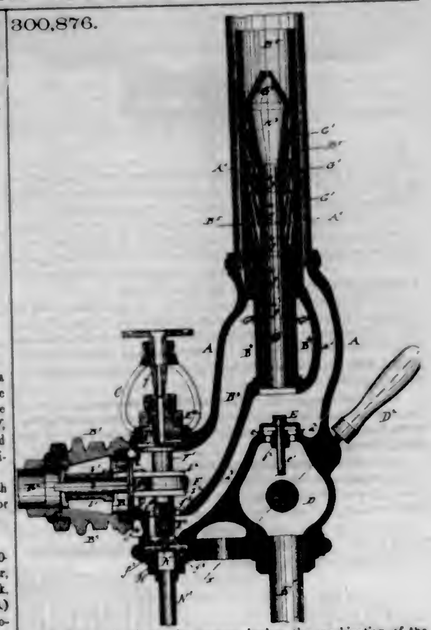
3. In an air-ejector for vacuum-brakes, the combination of an ejector-body, A, having a slanting steam-induction channel, B^2, and a steam-expansion chamber, B^4, with an air-exhaust pipe, G, and a steam-pipe, B^5, secured to the expansion-chamber, and a steam-supply valve arranged at one end of the ejector-body and at some distance below the air-exhaust pipe, substantially as set forth.

4. In an air-ejector for vacuum-brakes, the combination of the ejector-body A, having an exhaust-pipe, A', and interior drip-channels, a' a^3, and a gutter, a^2, around the raised seat of the air-valve, with a drip-valve, N, and discharge-pipe N' at the lower part of the ejector-body, substantially as set forth.

5. In an air-ejector for vacuum-brakes, the combination of the ejector-body A, having a seat, *a*, a steam-supply valve, B, having a forked extension, b^2, and an anti-friction roller, b^3, and an eccentric, F, having an exterior lever, F^2, for opening or closing the steam-supply valve, substantially as described.

6. In an air-ejector for vacuum-brakes, the combination of an ejector-body, A, having a valve-seat, *a*, a steam-supply valve, B, having a forked extension, b^2, and an anti-friction roller, b^3, an eccentric, F, having a shank, F', guide-cylinder F^3, and lever F^2, yoke C, and set-screw I, substantially as set forth.

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7. In an air-ejector for vacuum-brakes, the combination of the ejector-body A, having a steam-induction channel, B^2, steam-supply valve B, an eccentric, F, for actuating said valve, and a recessed valve-disk, f', secured to the shank of said eccentric and fitted to a recessed seat at the lower part of the induction-channel B^2, substantially as described.

8. In an air-ejector for vacuum-brakes, the combination of the ejector-body A, having a drip-channel, a^3, and a valve-seat, *f*, at the lower end of the same, a drip-valve, N, having a stem, f', guided in the lower end of the shank F', and discharge-pipe N', provided with a gland, H, having rests f^3, substantially as specified.

9. The combination of an ejector-body, A, having a steam-supply valve, B, a steam-induction channel, B^2, and a drip-channel, a^3, an eccentric, F, actuating the steam-valve B, a recessed drip-valve, f', secured to the shank of the eccentric, a drip-valve, N, guided by said shank, and a discharge-pipe, N', at the lower part of the ejector-body, substantially as specified.

10. In an air-ejector for vacuum-brakes, the combination of an ejector-body, A, having an enlarged air-chamber, D, with an equilibrium valve, D', having a lever, D^2, and a spring-actuating locking-lever, D^3, fulcrumed on the lever D^2, and pressing upon the center of the valve, substantially as set forth.

11. In an air-ejector for vacuum-brakes, the combination of an ejector-body, A, having a slanting steam-induction channel, B^2, and an annular steam-expansion chamber, B^4, a steam-supply valve, B, at the lower end of the induction-channel B^2, a steam-pipe, B^5, at the upper end of the expansion-chamber, an exhaust-pipe, A', at the upper end of the ejector-body, an air-exhaust pipe secured to the lower end of the expansion-chamber and passing through the same, and the steam-pipe, and an air-chamber, D, having an exhaust-valve, E, and an equilibrium-valve, D', substantially as set forth.

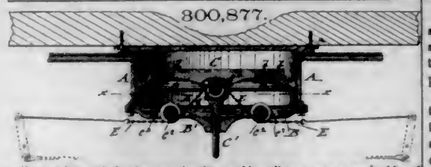
12. The combination of the ejector-body A, having a steam-induction channel, B^2, and an expansion-chamber, B^4, a steam-pipe, B^5, an air-exhaust pipe, G, having openings *g g*, a series of suction-cones, G', attached to the air-exhaust pipe, and a pipe, G^2, surrounding the lower part of the air-exhaust pipe, substantially as specified.

13. The combination of an ejector-body, A, having a steam-induction channel, B^2, and an expansion-chamber, B^4, a steam-pipe, B^5, and an air-exhaust pipe, G, the latter having openings *g g*, suction-cone G', and a conically enlarged and contracted end portion, G^2 G^3, substantially as described.

300,877. VACUUM-CYLINDER FOR RAILWAY-CAR BRAKES. LOUIS P. LAWRENCE, Passaic, N. J., assignor of one-fourth to Louis C. Raegener, Brooklyn, N. Y. Filed Feb. 27, 1884. (No model.)

Claim.—1. The combination of a vacuum-cylinder applied to the car-bottom, a vertically-guided piston having a recessed hub and a guide-

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roller, and a cylinder-bottom having guide-rollers—one at each side of the guide-roller of the piston—for the passage of the chain connecting the brake-levers, substantially as and for the purpose set forth.

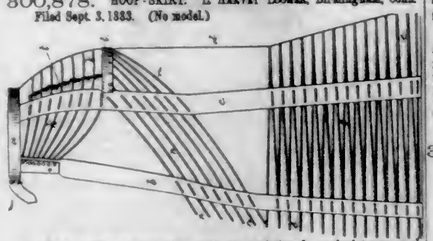
2. The combination of the vacuum-cylinder A, a vertically-guided piston, C, having a guide-stem, C', a packing-ring, D, applied to the recessed under side of the piston, and guide-rollers *e* and e^2 e^2, arranged in the hub of the piston and the bottom of the cylinder, and a brake-chain, E, passing over said rollers, substantially as set forth.

3. The combination of a vacuum-cylinder, A, a cylinder-bottom, B, having slots c^2 and guide-rollers e^2 e^2, a vertically-guided piston, C, having a recessed hub, a guide-roller, *e*, the slots of the cylinder-bottom being in line with the recess of the piston-hub, and a brake-chain, E, passing over the guide-rollers *e* and e^2 e^2, substantially as and for the purpose set forth.

4. The combination of a vacuum-cylinder, a piston having a flaring circumference and a circular recess or seat, and an elastic packing-ring having flanges at the inner edge, that are sprung into the recess of the piston, substantially as set forth.

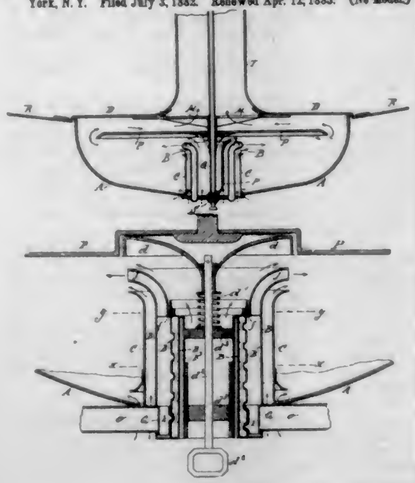
5. A piston for vacuum-cylinders of railway-car brakes, having a circular recess or seat, and being provided with an elastic packing-ring having flanges at the inner edge that are sprung into the recess of the piston, substantially as described

300,878. HOOP-SKIRT. L. HARVEY LOOMER, Birmingham, Conn. Filed Sept. 3, 1883. (No model.)



Claim.—The combination, with the waistband, vertical tapes, and lower ranges of hoops, *o o*, of the bustle-hoops *k*, the lap or binder *l*, and the diagonal hoops *n*, the upper ends of which are secured in the binder *l* at the base of the bustle, for the purposes and substantially as set forth.

300,879. BURNER FOR GAS OR OIL. CHARLES M. LUNGREN, New York, N. Y. Filed July 3, 1882. Renewed Apr. 12, 1883. (No model.)



Claim.—1. The combination, with a burner, of a flame-plate, P, above the flame, of a diameter corresponding, or nearly so, to the flame, and having a reflecting-surface, air-supply passages for admitting air between the flame-plate and the flame, and means for admitting atmospheric air to the under side of the flame, substantially as specified.

2. The combination, with a burner, of air-supply passages through the burner, a flame-plate, P, of a diameter corresponding, or nearly so, to the flame, and having a reflecting-surface, a central air-supply passage, an exterior glass, and an ascending flue for the escape products of combustion, substantially as set forth.

3. The combination of an inverted gas-burner, an air-supply passage conveying air downwardly to the burner, a reflecting plate or surface of refractory material, over which the flame from the burner sweeps, and a passage through which the products of combustion escape upwardly.

4. The combination of an inverted burner, a concentric exterior flame plate or surface of refractory material, an air-passage delivering air through the burner to the outside of the flame, and a deflecting button or surface beneath the burner, as described.

5. The combination of an annular inverted burner, air-supply passages through the burner, a concentric reflecting flame-plate, an inclosing transparent globe beneath the burner and plate, and an ascending flue for the escape of the products of combustion passing upwardly around the edge of the flame-plate.

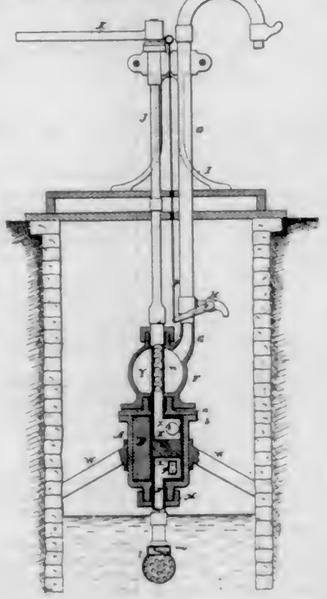
6. The combination of a downwardly-directed burner, a refractory reflecting flame-plate surrounding the burner-tips, and suitable air-passages for the escape of the products of combustion.

7. The combination of an inverted gas-burner, reflecting flame plate or surface, over which the flames are directed, a suitable passage for conveying the products of combustion upward, an air-supply passage conveying air downward to the burner, and an inclosing transparent globe beneath the burner.

8. The combination of an inverted burner, passages which deliver a current of air downward to the flame, and a reflecting button or surface beneath the flame for deflecting air to the under surface thereof.

9. In a gas-burner, the combination of a downwardly-directed Argand burner, suitable air-passages delivering air both sides of the flame, a flame-director surrounding the lower end of the burner, and a button or disk beneath the burner, by which the air and flame are directed outward and beneath the under surface of the flame-director, and suitable passages for the escape of the products of combustion.

300,880. PUMP. FRANK D. MALTBY, New York, N. Y., assignor to himself, De Borden Wilmot, and Wellesley W. Gage, same place. Filed May 9, 1883. (No model.) Patented in Belgium Sept. 18, 1883, No. 62,822, and in England Sept. 20, 1883, No. 4,498.



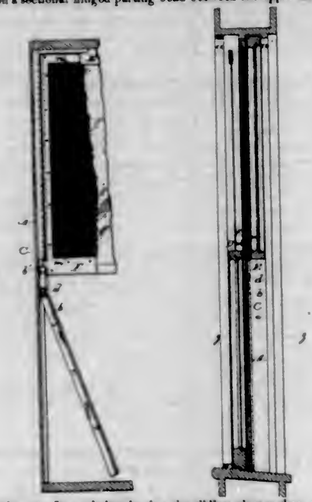
Claim.—1. The combination of the pump-cylinder A, and vibrating radial piston E, and an abutment, B, extending into and secured adjustably within the cylinder, substantially as set forth.

2. The abutment and piston having edge and end grooves, in combination with a strip of packing bent and fitted to said grooves, as set forth.

3. The combination of the cylinder A, adapted to be secured vertically in or above the body of water to be raised, the casing F, and outlet-pipe G, and the hollow perforated piston-rod carrying the chambered and valved piston E, extending through said chamber, and the rod J, connected to the piston-rod, and provided at the upper end with a lateral lever, substantially as set forth.

300,881. WINDOW-SCREEN. ROBERT E. MASTERS, Sacramento, Cal. Filed Dec. 26, 1883. (No model.)

Brief.—A window-screen consisting of a screen-frame adapted to slide upon a sectional hinged parting-bead between the upper and lower sashes.



Claim.—1. In a window having the sliding glass sashes, a screen-sash fitted to the window-frame between the glass sashes and adapted to slide up and down, substantially as herein described.

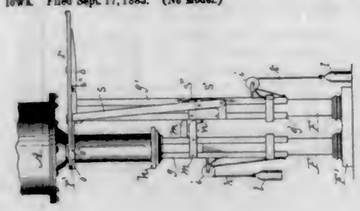
2. In a window, the glass sashes D E, in combination with the screen-sash F, fitted between the glass sashes on the parting-strip C, and adapted to slide up and down on said strip throughout the length of the window, substantially as herein described.

3. In a window, the casing A, having severed parting-strip C, the lower portions, *b*, of which are removable and jointed or hinged, as shown, in combination with a screen-sash, F, adapted to fit and slide on said parting-strips, substantially as herein described.

4. In a window, the casing A, having severed parting-strips C, the lower portions, *b*, of which are removable and jointed or hinged, as shown, and the glass sashes D E, fitted in the casing and adapted to slide up and down on each side of the parting-strip, in combination with the screen-sash F, fitted between the glass sashes and adapted to slide up and down on the parting-strip C, substantially as herein described.

5. In a window having glass sashes divided by parting-strips having tongues *c*, the grooved screen-sash F, formed of thin frames *m m'*, between which the screen material is clamped, said screen-sash being fitted between the glass sashes upon the parting strips, on which it is adapted to slide, substantially as herein described.

300,882. DRAIN-TILE MACHINE. CALVIN J. MERRILL, Des Moines, Iowa. Filed Sept. 17, 1883. (No model.)



Claim.—1. In a drain-tile machine, the combination of a detachable mold, B B', a detachable annular and tapering shield, C, and the end of a straight cylinder, to operate in the manner set forth, for the purposes specified.

2. The combination of a mold, B B', a shield, C, that extends inward from the mold to engage the wall of the cylinder, a rotating shaft, and a detachable former, D, and a detachable auger, D^2, to operate in the manner set forth, for the purposes specified.

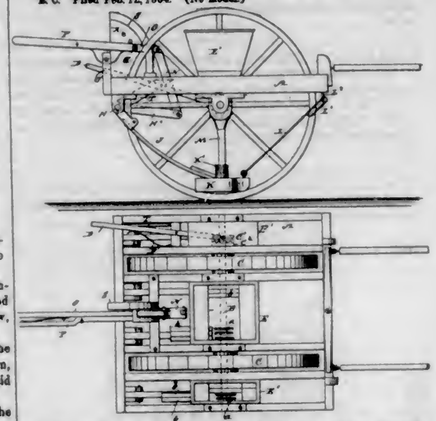
3. A cut-off and delivering device for drain-tile machines, composed of two sliding frames on parallel posts, a platform at the top of one of the sliding frames, adapted to receive and carry a tile in a vertical position, a horizontal frame at the top of the other sliding frame, adapted to support a horizontally-sliding frame having a wire stretched across its end, weights, cords, and pulleys to counterbalance the vertically-sliding frames, and levers and latches for connecting and co-operating the two vertically-sliding frames and the horizontal frame and cut-off, in the manner set forth, for the purposes specified.

4. The combination of a vertically-sliding frame, *g*, having projecting bars *m* at its opposite sides, and a platform, *h*, at its top, and the parallel sliding frame *g'*, having latches *n* and levers *s* on its opposite sides, with a horizontal frame and sliding cut-off at the top of the frame *g'*, for the purposes set forth.

5. In combination with a drain-tile machine, a vertically-moving device for measuring and delivering a tile, and a horizontally-sliding cut-off, substantially as shown and described, for the purposes specified.

6. The cut-off and delivering device for drain-tile machines, composed of the following elements, to wit: two fixed parallel posts, a sliding frame, and platform *g h*, having fixed bars *m*, a sliding frame, *g'*, having a frame, *o o*, at its top and latches *n* at its sides, the sliding frame and cut-off *r r'*, the levers S, and suspended weights *l*, substantially as shown and described.

300,883. RICE-DRILL. ARTHUR DE LANCEY MIDDLETON, Charleston, S. C. Filed Feb. 12, 1884. (No model.)

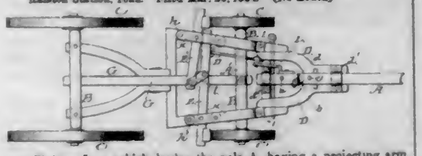


Claim.—1. The combination, with the frame A and seed-boxes E E', of the rock-shaft H, carrying spring-arms J, shoes K, secured to the lower ends of the spring-arms J, and provided with the metallic tubes K', flexible tubes M, connecting the shoes with the seed-boxes, and rods L, secured to the front ends of the shoes and adapted to slide in keepers secured to the front cross-bar of the frame, substantially as shown and described.

2. The combination, with the frame A, seed-boxes E E', and the seed-dropping disks G, of the rock-shaft H, spring-arms J, shoes K, connected by flexible tubes M to the seed-boxes, and provided with metallic tubes K', rods L, secured to the front ends of the shoes and sliding in keepers secured to the front cross-bar of the frame, wedge-shaped arm T on the shaft H, the spring-pressed lever D, the clutch-collar C' on the inner end of said lever, and a clutch, C^2, on the hub of one of the wheels, substantially as described.

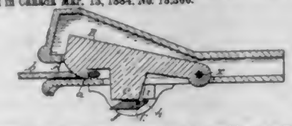
3. In a seed-drill, the combination, with the frame A, of the seed-boxes E E', the shaft B, carrying the toothed disks G, the clutch-collar C', mounted to slide on and turn with the shaft, the clutch-collar C^2, formed on the hub of one of the wheels, the lever D, in the free end of which the clutch-collar is held, the spring D', the shaft H, having the rigid arm T, a lever for turning the shaft H, the spring-arms J, secured on the shaft H, the shoes K on the lower ends of the arms J, and flexible tubes connecting the seed-boxes with the shoes, substantially as here in shown and described.

300,884. VEHICLE-BRAKE. JAS. R. MILES and JAS. K. BALDRIDGE, Ralston Station, Tenn. Filed Mar. 26, 1884. (No model.)



Claim.—In a vehicle-brake, the pole A, having a projecting arm, L, provided with a swiveled threaded nut secured to its side, adapted to engage the threaded end of a rod, D', in combination with the brake-levers E E', substantially as and for the purpose set forth.

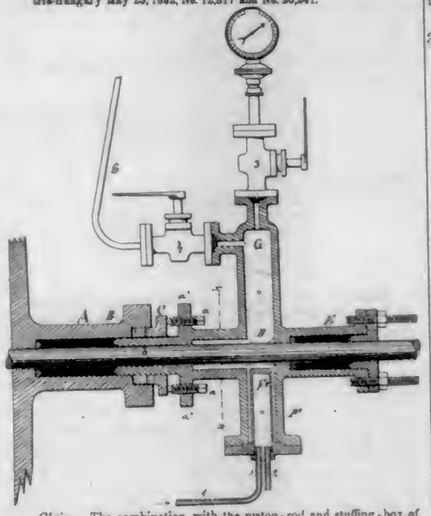
300,885. CAR-COUPLING. JAMES MURRAY, Newcastle, New Brunswick, Canada, assignor of one-half to Allan Ritchie and John Robert Nicholson, both of same place. Filed Apr. 26, 1884. (No model.) Patented in Canada Mar. 13, 1884, No. 18,866.



Claim.—1. In a railway-car coupler, the rocking trip C, supported on its journals *d d* in the lugs *e e*, and provided with the lifting-arm *f*, the lifting-lever D, rod, rope, or chain *g*, and projecting toes *h h*, substantially as described.

2. In a railway-car coupler, the combination of the draw-head A, having the lugs *e e* and the stops *i i* fixed or formed thereon, with the rocking trip C, substantially as shown and described, and for the purpose set forth.

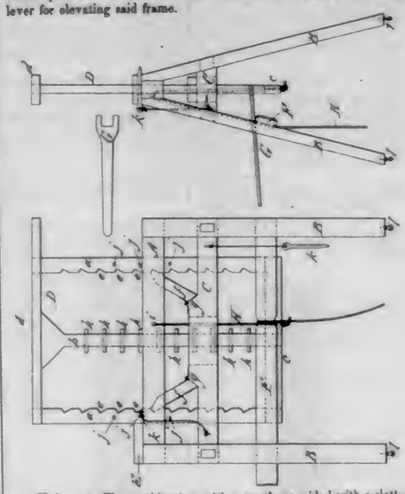
300,886. STUFFING-BOX FOR AMMONIA COMPRESSION-PUMPS. JOHANNES AUGUST OSENBRÜCK, Hemelingen, near Bremen, Germany. Filed June 29, 1883. (No model.) Patented in Germany Jan. 6, 1882, No. 17,373, Oct. 31, 1882, No. 21,378, and Jan. 5, 1883, No. 21,971; in England Feb. 27, 1882, No. 982; in France May 13, 1882, No. 147,683, and in Austria-Hungary May 25, 1882, No. 12,817 and No. 20,241.



Claim.—The combination, with the piston-rod and stuffing-box of an ammonia compression-pump, of an oil-chamber arranged around the piston-rod, a heating device at the lower part of the oil-chamber for keeping the oil warm, a valved pipe connecting the upper part of the oil-chamber with the suction-pipe of the pump, and a second stuffing-box by which the escape of oil from the oil-chamber is prevented, substantially as set forth.

300,887. ADJUSTABLE TRESTLE. EDWARD OWEN, Jackson, Tenn. Filed Apr. 7, 1884. (No model.)

Brief.—A trestle supports an adjustable frame having notched side bars which are engaged by pawls hinged to a cross-beam, and a vertical bar provided with transverse pins adapted to be engaged by a forked lever for elevating said frame.

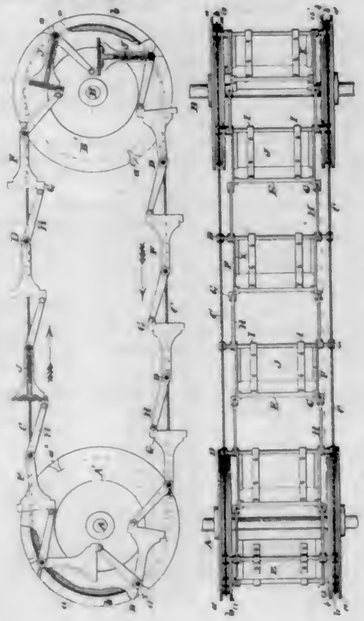


Claim.—1. The combination, with a trestle provided with a slotted top bar, A, and mortised beam C, formed with shoulders *g*, of a frame, D, having notched side bars, *a a*, and the pawls *f*, hinged to the beam C, and capable of engaging the notches of the bars *a a* at their free ends and bearing against the shoulders *g* at their hinged ends, as described.

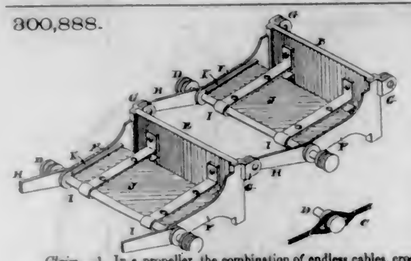
2. The combination, with the frame D, having notched side bars, *a a*, of the bar *b*, provided with transverse pins *h*, adapted to receive a lever for elevating the frame D, as described.

3. The frame D, provided with a bar, *b*, having transverse pins *h*, a trestle adapted to support the frame D, and provided with a bar, F, and the forked lever G, in combination, as described.

300,888. PROPELLER FOR VESSELS. THOMAS PENNEYFEATHER, St. Louis, Mo. Filed Aug. 7, 1883. (No model.)



300,888.



Claim.—1. In a propeller, the combination of endless cables, cross-bars secured to the cables, and buckets each having arms hinged to one cross-bar, and links hinged to the bucket and to the next cross-bar, the buckets being supported independently of the cables by the cross-bars, as set forth.

2. In a propeller, the combination of endless cables, cross-bars secured to the cables, buckets independent of the cables, each having arms hinged to one cross-bar, and links hinged to the bucket and to the next cross-bar, and wheels to support the cables and cross-bars, the bending of the cables in passing over the wheels forcing the buckets inward by shortening the distance between the cross-bars, as set forth.

3. In a propeller, the combination of paired wheels at front and rear, each pair of wheels mounted on a single shaft to turn together, each wheel having two flanges forming a groove, the inner flange having openings, cables in the grooves, cross-bars received by the openings, and buckets between and hinged to the cross-bars, the buckets arranged to feather between the wheels in passing around the shafts, as set forth.

4. In a propeller, the combination, with a bucket, E, of the guide-bucket J, secured at right angles thereto, as set forth.

5. The combination of cross-bars D, bucket E, arms F, having ears G at their inner corners and hinged to one cross-bar, and links H, hinged to the ears and to the next cross-bar, as set forth.

6. The combination of cross-bars D, buckets E, secured to one cross-bar by arms F, having ears G at their inner corners and cleats K on their inner sides, links H, hinged to the ears and to the next cross-bar, and guide-buckets J, secured between the cleats on the arms, as set forth.

7. The combination of cross-bars D, bucket E, arms F, securing the bucket to one cross-bar having ears G, links H, hinged to the ears and to the next cross-bar, guide-bucket J, and strap-plates I, bracing the buckets and guide-buckets to a cross-bar, as set forth.

300,889. TRUSS. DANIEL S. PETERS, Chicago, Ill. Filed July 11, 1883. (No model.)



Claim.—The combination, in a truss-pad, of the shell *a*, the bulb *a'*, the spring C, the screw D, the piece or block F, and the stud or pin B, the said spring and block being located within the shell, substantially as shown and described, and for the purposes set forth.

300,890. LIQUID CEMENT FOR GIVING A CHEAP AND DURABLE METAL COATING TO PAPIER-MACHÉ, PLASTER-OF-PARIS, CLAY, &c. FERDINAND PHILIPP, Romanshorn, assignor to Jacques De Planta, Tsenikon, near Aadorf, Switzerland. Filed Mar. 12, 1884. (No specimens.)

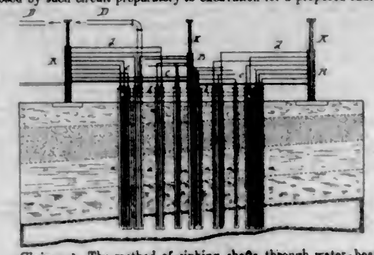
Claim.—1. The herein-described compound for treating materials to render them firm and water-proof, consisting of colophony, alcohol, (spirit of wine or pyroxylic spirit,) turpentine, petroleum spirit, and silicate of soda, in the proportions substantially as set forth.

2. The herein-described compound for protecting the metallic color of bodies surfaced with metallic dust, consisting of bichromate of potash, distilled water, and Russian glue, in the proportions substantially as set forth.

3. The described method of metallizing the surface of bodies, consisting in first coating with the composition designated above as No. 1; then spreading metal dust upon it before the liquid is quite dry; and, lastly, laying upon such metal-dusted surface a light coating or varnish composed of the materials designated above as No. 2.

300,891. METHOD OF AND APPARATUS FOR SINKING SHAFTS THROUGH QUICKSAND. F. HERMANN POETSCH, Aschersleben, Prussia, Germany. Filed Feb. 15, 1884. (No model.)

Brief.—A circuit of vertical pipes closed below is sunk through water-bearing strata, and a freezing-mixture conducted from manifolds to pipes open below, set within the above pipes, and returned through the outer pipes effects by its circulation the congelation of the area inclosed by such circuit preparatory to excavation for a proposed shaft.



Claim.—1. The method of sinking shafts through water-bearing strata, which consists in freezing a portion of said shafts by artificial means and then proceeding with the mining operations through said frozen portion in the usual manner, substantially as set forth.

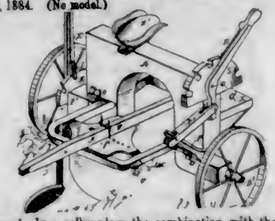
2. An apparatus for freezing water-bearing strata, consisting of a series of exterior pipes closed at the bottom and sunk through said strata, a series of interior pipes open at the bottom, means for supplying a freezing medium to the interior pipes, and means for returning it from the exterior pipes to the source of supply, substantially as and for the purpose specified.

3. The combination of a circuit of vertical refrigerating-pipes adapted to be sunk through water-bearing strata and arranged to surround the sides of a prospective shaft to be sunk therethrough, and means for circulating a freezing medium through said pipes, substantially as described.

4. The combination of a circuit of vertical exterior pipes closed at their lower ends, and adapted to be sunk through water-bearing strata, and arranged to surround the sides of a prospective shaft to be sunk therethrough, a series of vertical pipes open at their lower ends within said exterior pipes, means for supplying a freezing medium to the interior pipes, and means for returning said medium from the exterior pipes, substantially as described.

5. The combination of a circuit of vertical exterior pipes closed at their lower ends, and adapted to be sunk through water-bearing strata, and arranged to surround the sides of a prospective shaft to be sunk therethrough, a series of vertical pipes open at their lower ends within said exterior pipes, manifolds connected to said interior pipes, means for supplying a refrigerating medium to said manifolds, and means for returning said medium from said exterior pipes, substantially as described.

300,892. SULKY-PLOW. ROBERT A. RADFORD, Centralia, Mo. Filed Apr. 12, 1884. (No model.)



Claim.—1. In a sulky-plow, the combination, with the arched axle provided with the spindle D and the arc-rack K, of the crank-journal B, the lever E, connected thereto by the angle-arms G H, and fulcrumed on the spindle D between the sleeve C and the shoulder L, and the spring-pawl I, substantially as specified.

2. The combination, with the bail M and its operating-levers, of the pivoted perforated clevis-plate, the clevis, and plow-beam, substantially as specified.

300,893. WHIFFLETREE-HOOK. JOHN RANCKVAN, Cincinnati, Ohio, assignor to Elisha Robinson, New York, N. Y. Filed Jan. 23, 1884. (No model.)



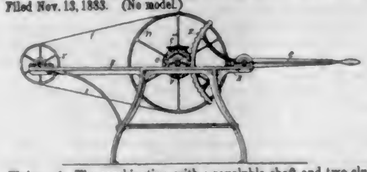
Claim.—1. In a trace-fastening, a locking-piece pivoted to a stem having a lug, and provided with a lip and a wing arranged at an angle, substantially as described, so that the lip may be brought to coincide with the lug to permit the trace to be put upon the stem with the wing in the eye, and so that as the trace is drawn to a horizontal position the lip will be carried from the lug across and outside of the eye of the trace, substantially as described.

2. A trace-fastening provided with a stem to receive the trace and a lateral lug in line with the eye of the horizontal trace, and a locking-piece pivoted at the end of the stem, having a lip which may be brought to coincide with the lug on the stem to permit the trace to be put on the latter, and a wing to fit the eye of the trace, arranged at about right angles to the lug on the locking-piece, substantially as described.

3. A trace-fastening consisting of a stem, *a*, having a lug, *d*, and a locking-piece, D, pivoted at the end of the stem *a*, and having a lip, A, and wing E, with stops to prevent the locking-piece from turning back after the lugs and lip are brought to coincide, substantially as described.

4. The stem *a*, terminating in a pin, *e*, having a conical bearing, and the locking-piece having a conical socket fitted to said bearing and provided with a leg, H, substantially as and for the purpose described.

300,894. MOTOR. FRANUS W. RANDALL, Tekonsha, Mich., assignor to William S. Lawrence and Lebeus C. Chapin, both of Kalamazoo, Mich. Filed Nov. 13, 1883. (No model.)



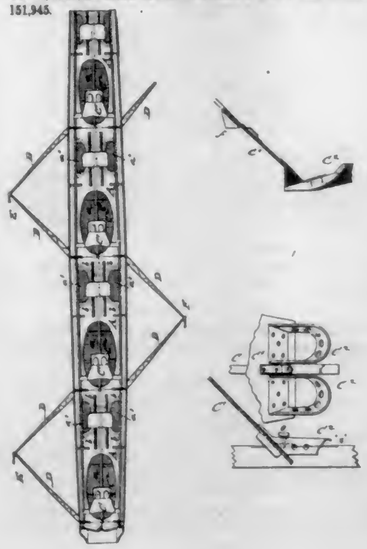
Claim.—1. The combination, with a revoluble shaft and two clutch devices, both having a bevel-gear connected by a fly-gear, and one having an operating-gear, of the operating-lever having a segmental gear adapted to engage the operating-gear, all substantially as set forth.

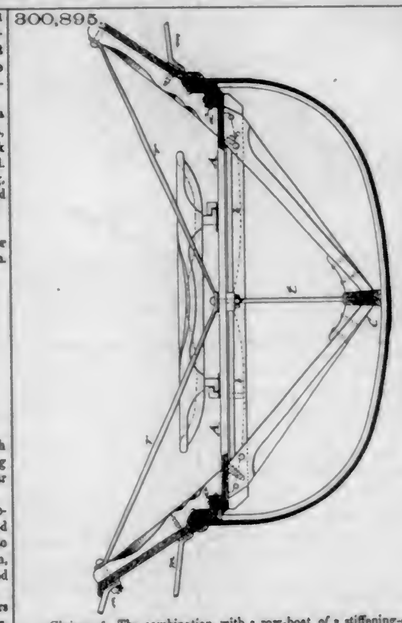
2. The combination, with a revoluble shaft provided with the eccentrics, clutch-disks provided with an operating-gear and connected bevel-gears, and the friction-roller, of the adjusting-collars adapted to rotate and move laterally at the same time, means for operating them, and means connecting said collars and rollers, substantially as specified and shown.

3. The combination, with the clutch devices, of the adjusting-collars adapted to operate as set forth, and the means for operating said collars, consisting of the swiveled connecting-bar, the pivoted lever provided with the spring, and the bars having the recess with central notch and widening end, substantially as described.

4. A clutch consisting of a recessed disk having a periphery wall, an eccentric, a friction-roller between said eccentric and wall, a revoluble disk forming one inclosure of the recessed disk, and an operating-shaft connecting with the friction-roller and located through a hole in the revoluble disk, substantially as described and shown.

300,895. ROW-BOAT. WILHELM AUGUST RETTIG, Berlin, Germany. Filed June 29, 1883. (No model.) Patented in England Nov. 4, 1882, No. 5,370; in Belgium Nov. 30, 1882, No. 59,627; in Austria-Hungary Jan. 12, 1883, No. 39,235 and No. 1,120, and in France Feb. 12, 1883, No. 151,945.





Claim.—1. The combination, with a row-boat, of a stiffening-deck secured to the gunwale, provided with a seat or seats on its upper side, with a longitudinal strip on its under side, and with transverse braces beneath the seat, and metallic uprights extending between the keel and said center strip, substantially as described.

2. The combination, with a row-boat, of a deck that extends transversely across the boat, and that is provided with central longitudinal openings for the legs of the oarsmen, and with openings at both sides of the seat for reducing the weight, substantially as set forth.

3. The combination of a row-boat, a deck extending transversely across the boat and having openings for the legs of the oarsmen, inclined foot-boards, and recessed heel-rests at the lower ends of the foot-boards, substantially as set forth.

300,896. SLEIGH-BELL. DENISON A. REIN, East Hampton, Conn., assignor to the STARR BRO. BELL COMPANY, same place. Filed MAR. 22, 1884. (No model.)



Claim.—The combination of the strap *d*, carrying bells *e*, and fitted for attachment upon the under side of the sleigh-shaft, the two parts of the clasp A and B constructed to extend one up each side the shaft, each turned inward below the shaft, and so as to bear upon the strap, each part terminating in a downwardly-projecting lug, *a*, and a screw, *b*, passing freely through a hole in one lug and into a correspondingly screw-threaded hole in the other lug, and whereby the two parts are clamped upon the shaft and upon the bell-strap, substantially as described.

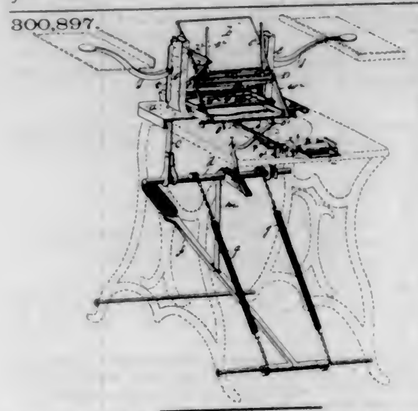
300,897. OSCILLATING PRINTING-PRESS. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the Gilman Vertical Press Company, of New Hampshire. Filed May 2, 1882. (No model.)

Claim.—1. The rock-shaft *d*, the oscillator w^2, hung on bed *a*, and the rod A, connecting said shaft and oscillator, the yoke *z*, pivoted to said oscillator and to one of posts *c* by rod z^2, and the inking-roller frame *w*, all combined and operating substantially as set forth.

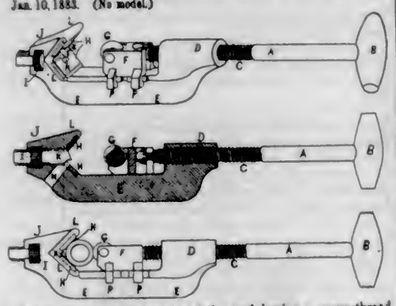
2. The combination, with the yoke *z* and with the inking-roller frame *w*, of the spring-rod *x'*, substantially as set forth.

3. The yoke *z*, the tongue *j*, hung on said yoke, the tympan-finger bar D, hung on the platen *b*, and provided with the hook-arm *q*, the spring-rod *k*, and the platen *b*, all combined and operating substantially as set forth.

300,897.

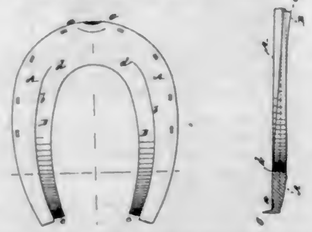


300,898. PIPE-CUTTER. EDWIN A. ROBBINS, Boston, Mass. Filed Jan. 10, 1883. (No model.)



Claim.—The straight-bar chamfering-tool having a screw-thread, and provided with an adjusting-nut held within the hook end of the cutter against longitudinal movement thereof, substantially as described, as and for the purposes set forth.

300,899. SPRING-HORSESHOE. DAVID ROSENGR, Jr., New York, N.Y. Filed Aug. 30, 1883. (No model.)



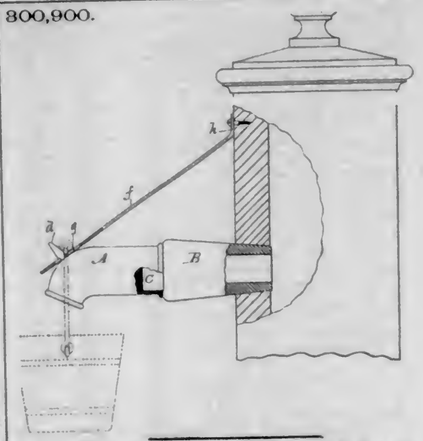
Claim.—In a spring-horseshoe having a spring formed within its interior circumference, and partly below the plane of the lower face of the shoe, a spring, B, made tapering by a curved line from its point of junction *d* with the body A toward its rear end or heel, *c*, as and for the purpose set forth.

300,900. PUMP-SPOUT. STEPHEN A. SAUR, Kellogg, Iowa. Filed Mar. 13, 1884. (No model.)

Claim.—1. An improved pump-spout composed of a metal section having a curved front end or discharge-nozzle, and a straight wooden section having a tapering rear end, to operate in the manner set forth, for the purposes specified.

2. The metal spout-section A, having a stud, *d*, the wooden spout-section B, and the brace *d f g*, arranged and combined with a wooden pump-stock, substantially as shown and described, for the purposes specified.

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300,901. DIE-STOCK AND DIE. NELSON SAWYER, Hartford, Conn., assignor to Wallace A. Downs, Sing Sing, N. Y. Filed July 14, 1883. (No model.)



Claim.—1. The die-stock, the radially-adjustable jaws applied upon one side thereof, the annular cam-plate provided with spiral grooves for moving the jaws, the central extension upon the stock around which the cam-plate moves, and the holding-ring applied upon said extension and secured thereon, the several parts being combined and arranged for operation substantially as shown and described.

2. In combination with a die-stock, the herein-described removable collet or ring for holding the removable sectional dies, said collet being provided at one end with a narrow flange projecting over the dies, and made reversible in the socket provided for it in the stock, substantially as and for the purpose set forth.

3. In combination with the die-stock, the reversible collet or ring having a narrow flange at one end, and the sectional reversible dies located in the said ring, and provided with the conical recesses, and adjustably held in the ring by pointed screws bearing at their inner ends in the said conical recesses, the collet being reversible in the socket provided for it in the die-stock, substantially as shown and described.

4. In combination with the die-stock, the collet or ring reversible in the socket provided for it in the die-stock, and having the narrow flange at one end, and the adjustable sectional dies mounted in said collet and having their cutting-threads formed upon curved surfaces, said dies being arranged to be reversed within the ring and extending flush with one end of said ring, substantially as shown, and for the purposes set forth.

5. The combination of the die-stock, an adjustable steadying device applied thereon, a reversible collet carrying the dies, and a threaded handle for clamping the collet, the dies extending flush with one end of the collet, substantially as and for the purposes described.

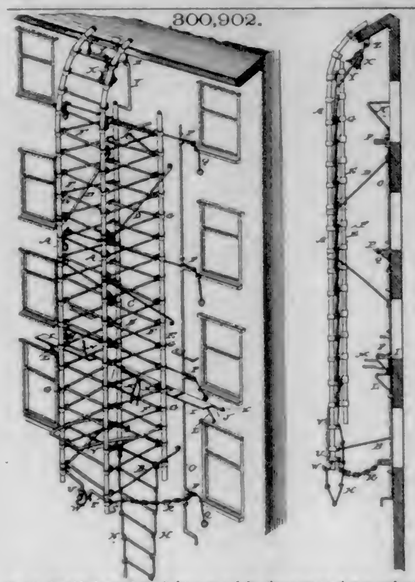
300,902. FIRE-ESCAPE. JOHN G. SCHILLER, Youngstown, Ohio. Filed Apr. 3, 1884. (No model.)

Brief.—A rigid ladder is secured at some distance from the wall of the building, and a swinging ladder is hinged to the rigid ladder by rectangular round frames which form ladder-rungs on the four sides of the structure. A folding platform is pushed down by the swinging ladder as it falls, and an alarm is rung by the same means. The swinging ladder is closed by pulling down a bail secured to it, which is turned down and held by a fastening-hook, and is released by a turning-bar near the window.

Claim.—1. The combination, in a fire-escape, of the rigid ladder-bars having clips or bearings upon their inner sides, the swinging ladder-bars having clips or bearings upon their outwardly-facing sides, and the rectangular round frames hinged in the said clips upon the ladder-bars, as and for the purpose shown and set forth.

2. In a fire-escape, the combination of the rigid ladder supported from the wall of a building by brackets, with the central brackets extending upwardly and downwardly inclined from the wall of the build-

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ing to the side bars of the ladder, as and for the purpose shown and set forth.

3. In a fire-escape, the combination of the rigid ladder, the swinging ladder, hinged by means of the rectangular round frames to the inner side of the rigid ladder, the slightly-curved bail, hinged with its inner ends to one of the lower rounds of the swinging ladder, and the rocking rod turning in bearings at the lower end of the rigid ladder, forming a curved hook at its middle adapted to engage the outer doubled end of the bail, and having means for tilting it, as and for purpose shown and set forth.

4. In a fire-escape, the combination of the rigid ladder, the swinging ladder, hinged to swing inward from the rigid ladder, the slightly-curved bail, hinged with its ends near the lower end of the swinging ladder, the rocking rod, turning in bearings at the lower end of the rigid ladder, forming a hooked bail at its middle adapted to engage the outer doubled end of the curved bail, and having a projecting arm at one end, the vertical rod turning in bearings upon the wall, having projecting arms provided with chains for tilting it to either side, and the chain attached to an arm at the lower end of the vertical rod and to the arm upon the rocking rod, as and for the purpose shown and set forth.

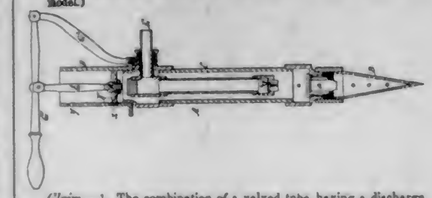
5. In a fire-escape, the combination of a balcony or platform pivoted in horizontal bearings upon the wall of the building, having supporting-brackets, and having its inner edge rounded and eccentric to the pivots of the same, a flat spring secured at its upper end in the wall, and bearing with its lower outwardly-springing end against the edge of the platform, and means for tilting the platform outward, as and for the purpose shown and set forth.

6. In a fire-escape, the combination of a platform pivoted upon the wall of the building, adapted to swing outward, and having two curved and slightly-diverging arms projecting outward when the platform is folded up, means for forcing the platform up against the wall, and a ladder swinging toward the wall, and adapted to engage with one of its rounds between the arms upon the platform, forcing the latter down, as and for the purpose shown and set forth.

7. In a fire-escape, the combination of a rigid ladder secured at a distance from the wall of the building, a ladder hinged to the rigid ladder to swing in toward the wall of the building, and a bell suspended at the upper end of the ladders, and having an arm extending with its bent end between the ladders connected to the rocking-shaft of the bell, holding the bell still when the ladders are folded together, and releasing the bell and swinging it when the ladders are released, as and for the purpose shown and set forth.

8. In a fire-escape, the combination of a rigid ladder secured at a distance from the wall of the building a distance from the ground, a ladder hinged to the rigid ladder to swing in toward the wall of the building, a slightly-curved bail hinged at its ends to one of the lower rounds of the swinging ladder and bearing and sliding upon one of the lower rounds of the rigid ladder, a rod rocking in bearings at the lower end of the rigid ladder having means for tilting it, and forming a hooked bail at its middle adapted to engage the outer doubled end of the bail, a curved bail attached loosely to the hooked bail upon the rocking rod, and a flexible link-ladder attached to the lower end of the swinging ladder, and adapted to be suspended upon the curved loose bail, being released when said hooked bail and its rod are tilted, as and for the purpose shown and set forth.

300,903. PUMP. CHARLES W SCHREIBER, Dubuque, Iowa, assignor of one-half to Joseph S. Morgan, same place. Filed July 23, 1883. (No model.)



Claim.—1. The combination of a valved tube having a discharge, a piston for compressing the air on the water therein, and an escape for the compressed air brought automatically into operation at the end of the compressing-stroke of the piston.

2. The combination of a valved tube having a discharge, a piston for compressing air on the water therein, and a channel for the escape of the compressed air opened by the piston at the end of its compressing stroke.

3. The combination, with a piston for compressing air, of a valved tube provided with a communication, substantially as described, to permit the escape of the compressed air from one side of the piston to the other.

4. The combination of the valved tube, the internal discharge-pipe, the piston for compressing air, as described, and means for automatically discharging the compressed air at the end of the piston-stroke.

5. The combination of a valved tube having a discharge, a piston for compressing air on the water therein, and a channel opened by the piston at the end of its compressing-stroke, to permit the escape of the compressed air from one side of the pistoe to the other.

300,904. GRATE FOR STOVES AND FURNACES. HENRY SCHREINER, Sharon, Mass. Filed Feb. 11, 1884. (No model.)



Claim.—1. The combination, with a stove or furnace, of a grate pivoted at one end to the inner side of said stove or furnace, and springs located beneath said grate for retaining the same in position, substantially as set forth.

2. The combination, with a stove or furnace, of a pivoted grate and springs for retaining the same in position, said springs being mounted upon a bar secured in the sides of the stove at one end, and the other or free ends being adapted to engage or bear against the under side of the grate, substantially as set forth.

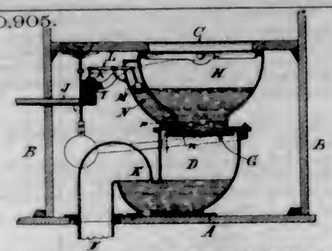
3. The combination, with a stove or furnace, of a pivoted grate, a bar secured in the sides of the stove or furnace directly below the said grate, and coil-springs secured upon said bar at one end and having their free ends bent upwardly to engage the grate-bars, substantially as set forth.

4. The combination, with a stove or furnace, of a pivoted grate having a finger-piece or extension at its forward end, a hook or catch pivoted to the side of the said stove or furnace to engage the same, a bar secured in the sides of the stove or furnace, and coil-springs secured upon said bar, the free ends of which are adapted to engage the under side of the grate, substantially as set forth.

300,905. WATER-CLOSET. JAMES SEMPLE, Cincinnati, Ohio. Filed June 18, 1883. (No model.)

Claim.—1. The combination of a bowl, H, float-chamber N, and auxiliary trap P P', the bowl communicating at or near its bottom with the lower end of the float-chamber, the lower end of the float-chamber communicating with the auxiliary trap, and the auxiliary trap being closed at top and constructed to discharge into the hopper, as set forth.

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2. The combination of a bowl, a float-chamber having a groove, *n'*, and an auxiliary trap, the float-chamber communicating at its lower end with the bowl and auxiliary trap, and its groove located in a position to indicate the height of the overflow of the auxiliary trap, as set forth.

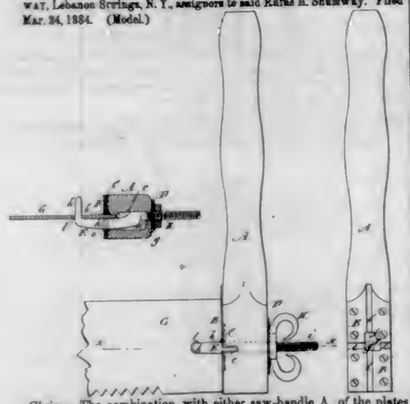
300,906. COVER FOR JARS. WM. D. SHERWOOD, New Brighton, Pa., assignor to Sherwood Brothers, same place. Filed Jan. 16, 1884. (No model.)



Claim.—1. The combination of the lid *d*, having an inclined rib or ribs, *e*, a jar, *a*, having a rim, *b*, and slots *i*, and a wire or bar, *k*, adapted to engage with the slots *i* and rib *e*, substantially as and for the purpose specified.

2. An earthenware jar having a rim, *b*, in which are formed slots *i*, in combination with a lid, *d*, having an inclined rib or ribs, *e*, and an elastic wire or bar, *k*, adapted to engage with the slots *i* and rib *e*, substantially as and for the purpose specified.

300,907. SAW-HANDLE. RUFUS H. SHUMWAY and WILLIAM D. SHUMWAY, Lebanon Springs, N. Y., assignors to said Rufus H. Shumway. Filed Mar. 24, 1884. (Model.)



Claim.—The combination, with either saw-handle A, of the plates B C, constructed to form longitudinal grooves *b*, cross-grooves *c*, and locking-cavities *e f*, the saw-blade-holding hook E, constructed to engage with the walls of either of said cavities, and the nut H, essentially as shown and described.

300,908. MACHINE FOR THREADING THE TAPERING POINTS OF SCREWS. FREDERICK A. SMITH and ARNOLD DOLL, Jr., Cleveland Ohio, assignors to the Hotchkiss & Upson Company, same place. Filed May 8, 1883. (No model.)



Claim.—1 In a machine for threading the gimlet-points of screws, the combination, with a rotary and longitudinally-movable driving-shaft arranged to hold the threaded screw-blank, of a vertically-movable tool-holder carrying a thread-cutting tool, a tool-post, a thimble formed of two separable sections, one of which is plain and the other screw-threaded on its inner side, said thimble being designed to receive and feed the screw-blank during the operation of the cutting-tool, substantially as and for the purpose set forth.

2. The combination, with a rotary and longitudinally movable driving-shaft arranged to hold the threaded screw-blank, of a vertically-movable tool-holder carrying a thread-cutting tool, a tool-post, a plain half-thimble, and a slide mounted in said tool-post, carrying a threaded half-thimble, arranged to coact with the plain half-thimble for holding and feeding the screw-blank, substantially as and for the purposes described.

3. The combination, with the tool-holder provided with a channel, and carrying a thread-cutting tool, and a tool-post carrying a separable partially screw-threaded thimble, of the rotary and longitudinally movable driving-shaft arranged to carry the threaded blank, and the extension-bar carrying the inclines, and so connected with the driving-shaft as to partake of its longitudinal movements, substantially as herein described.

4. The tool-holder carrying a thread-cutting tool, and a tool-post carrying a separable partially-threaded thimble, and provided with a channel, in combination with the rotary and longitudinally movable shaft arranged to carry the threaded screw-blank, the extension-bar provided with the inclines, and so connected to the driving-shaft as to partake of its longitudinal movements, and the hand-connections, with the extension-bar and driving-shaft for controlling the longitudinal movements of said shaft and bar, substantially as and for the purposes set forth.

5. The rotary and longitudinally moving driving-shaft arranged to hold the threaded screw-blank, and a spring for throwing said shaft in a forward direction, in combination with the tool-holder, tool-post, and the separable partially-threaded thimble, and thread-cutting tool mounted in said post, substantially as described.

6. The standard A and trough A', in combination with the shaft B, having rotary and longitudinal movements, and arranged to carry a threaded screw-blank, the tool-post F, provided with the guide-block F', and the bar E, connected to the shaft B in such manner as to partake of its longitudinal movements, substantially as described.

7. The combination, with the standard A and trough A', of the shaft B, the bar E, and the tool-post F, carrying the guide-block F', and provided with the clamp F^2, substantially as set forth.

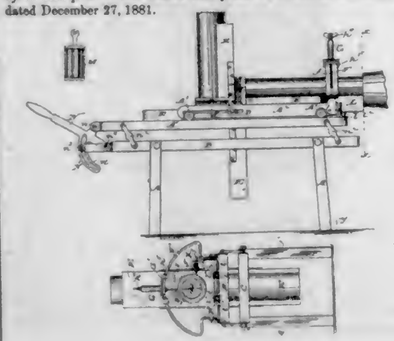
8. The combination, with the standard A, having arms *a* and stade *d*, the cross-head D, the stop D', the follower *d'*, and the spring d^2, for the shaft B, carrying the pulley B', and arranged to receive and hold in its forward end a threaded screw-blank, substantially as and for the purposes set forth.

9. The combination, with the rotary and longitudinally movable shaft B, and the tool-post F, provided with the guide-block F', of the bar E, the forked lever *b'*, connected with the shaft B, so as to partake of its longitudinal movements, the rock-arm b^2, and the hand-lever C, substantially as and for the purposes specified.

10. The combination, with the driving-shaft B, the tool-post F, guide-block F', and bar E, carrying an incline, of the tool-holder *f*, provided with a slot or channel, the slide *h*, pivoted lever H, and link H', substantially as set forth.

300,909. REVOLVING TABLE FOR TILE-MILLS. JOHN S. SMITH, Jackson, Mich., assignor to Michael Nolan, Rushville, Ind. Filed May 29, 1882. (No model.)

Brief.—Letters Patent No. 267,760, dated November 21, 1882, to the same inventor, is for subject-matter amended out of this application by division prior to interference with patent to M. Nolan, No. 251,376, dated December 27, 1881.



Claim.—1. The combination of a tile-mill, a frame, a revolving table mounted in said frame, and catches secured to said frame, and adapted to engage with and hold the wings of said table.

2. In a tile-mill, the combination of the revolving table consisting, essentially, of wings mounted on an axis, and a spring-catch, said wings being arranged to be consecutively caught and retained by said catch.

3. The combination, with the revolving table consisting of wings E, provided with wearing-plates *k*, of a catch for holding the table, said plates being arranged to come in contact with said catch as the table revolves.

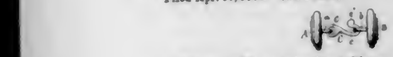
4. The combination, with a revolving table, of a catch consisting of a bracket, K, and spring-pins mounted therein, substantially as set forth.

5. The combination, with the wings of a revolving table for tile-mills, of a catch consisting, essentially, of two spring-mounted pins, J and J′, substantially as described, and for the purposes specified.

6. The combination, with a revolving table for tile-mills, consisting, essentially, of wings to receive the tile, coming together at a common center and mounted on a shaft, of means for catching and holding said wings consecutively, substantially as set forth.

7. In combination with a tile-mill, a revolving table, the surface of one side of the wings thereof being concave and the other flat.

300,910. LINK-BUTTON. THOMAS W. F. SMITTEN, Brooklyn, N. Y. Filed Apr. 17, 1884. (No model.)

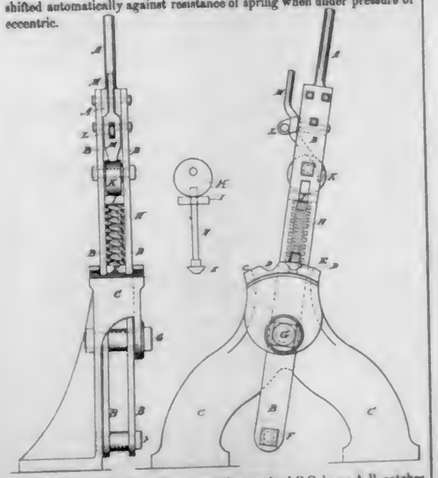


Claim.—1. The combination, with one of the heads of a link-button, of a loop or eye on the back of the said head, and a hooked link having a swelled or enlarged portion at or near the extremity of its hook, whereby it cannot be disconnected from the eye or loop only when brought into proper relative position with the same, substantially as and for the purpose herein described.

2. The combination, with one of the heads of a link-button, of an elongated eye or loop and a hooked link having at or near its extremity a swelling or enlargement the width of which is greater than the width of said elongated eye or loop, but not greater than the length thereof, and the thickness of which is less than the width of said eye or loop, substantially as herein described.

300,911. SWITCH-STAND. FRED. W. SNOW, Ramapo, N. Y. Filed Oct. 5, 1883. (No model.)

Brief.—The device embraces fixed and movable parts of a switch-stand, as the frame and vibrating lever, a beveled bolt or cam carried by one part engaging notches or catches on the other part, a spring tending to hold the bolt in engagement with a notch, but yielding automatically under pressure of the train to suffer the bolt and catch to be disengaged, and an eccentric for applying pressure to the spring to prevent hand operation, or removing such pressure to permit it. The stem of the bolt is projected into the path of the eccentric when the switch is not fully thrown, thus blocking it and notifying the operator of the position of the switch, a hole in the eccentric receiving the stem when the switch is shifted automatically against resistance of spring when under pressure of eccentric.



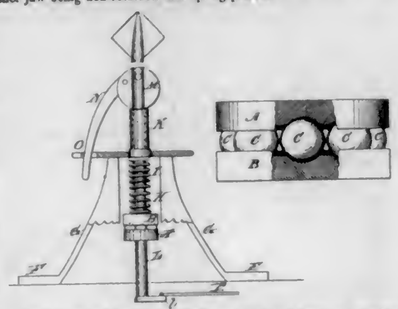
Claim.—1. The combination of the standard C C, lever A B, catches D, bolt E, spring H, and suitable device to release the bolt from spring-pressure, substantially as described.

2. The combination of the standard C C, lever A B, catches D, bolt E, spring H, plate I, and eccentric K, substantially as described.

3. In a switch of any description, the combination of the fixed and moving parts with a yielding bolt and catch, a spring or its equivalent, and a device for relieving the bolt from the pressure of the spring, substantially as described.

300,912. SWITCH-STAND. FRED. W. SNOW, Ramapo, N. Y. Filed Nov. 21, 1883. (No model.)

Brief.—Balls or other rolling pieces are placed between the opposing hollowed and rigid faces of the locking-clutch of a switch, one jaw of the clutch being rotatable with the crank-shaft of the stand and the other jaw being non-rotatable and spring-pressed.



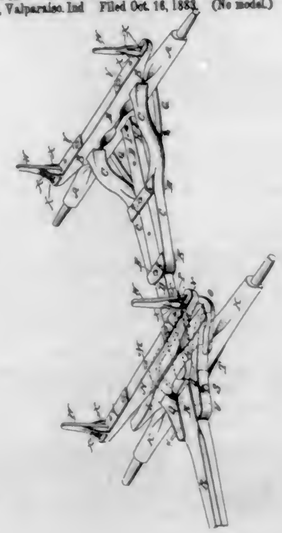
Claim.—A yielding switch-lock consisting of a part, A, attached to or connected with the moving parts of the switch, and a part, B, connected with the standard or fixed part of the switch, the two parts being forced together by a spring or other yielding power, and separated by movable pieces C, substantially as and for the purpose described.

300,913. SELF-LUBRICATING WHEEL. WILLIAM T. SNYDER, Catasauqua, Pa., assignor of one-half to James W. Fuller, same place. Filed May 16, 1884. (No model.)



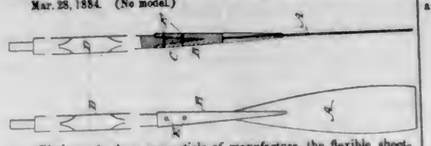
Claim.—In a wheel with a cast hub, A, for working loose on its axle or shaft, the combination of an oil or grease chamber, B, of irregular shape, with the diagonal opening D and break-walls G G, as shown, described, and for the purpose specified.

300,914. WAGON RUNNING-GEAR. JOHN HALL SPRY and THOMAS BARRY, Valparaiso, Ind. Filed Oct. 16, 1883. (No model.)



Claim.—In running-gears for vehicles, the combination, with the reach D, the rear axle, A, and the bolster B, said reach passing through said axle, of the rear hounds, C, clipped at their forward ends to the reach, and curved or extended at their rear ends upwardly and rearwardly above the plane of the upper surface of the reach, and secured between said bolster and axle, substantially as and for the purpose set forth.

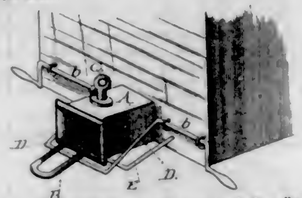
300,915. OAR. GEORGE BARNEY STANTON, Long Lake, N. Y. Filed Mar. 28, 1884. (No model.)



Claim.—1. As a new article of manufacture, the flexible sheet-metal blade A, formed with a socket, B, and made narrowest at its junction with the said socket, substantially as set forth.

2. An oar constructed as described, and consisting of the flexible sheet-metal blade A, provided with a socket, B, and made narrowest at its junction with the said socket, and stock D, secured within said socket by the rivets E, substantially as shown and described.

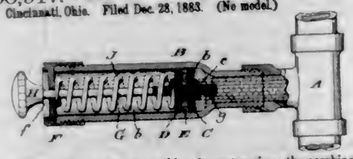
300,916. CAR-COUPLING. ARCHABLE E. STEARMAN, Vichy, Mo., assignor of one-half to Martin Glenn, Maries County, Mo. Filed May 2, 1884. (No model.)



Claim.—1. In combination with the draw-head of a railway-car, the herein-described link-adjusting device, consisting preferably of heavy wire provided with the bends *a*, *b*, and *c*, and the means described for supporting the said device, all arranged to operate substantially as herein set forth.

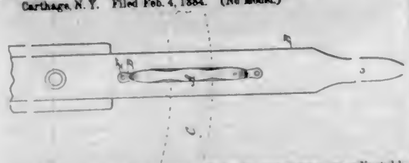
2. In combination with the draw-head of a railway-car, the herein-described adjusting device, composed of a single piece of heavy wire and the L-shaped stop E, all constructed of a single piece of heavy wire, all arranged to operate substantially as and for the purpose specified.

300,917. HYDRAULIC CUSHION FOR WATER-PIPES. JOHN STORY, Cincinnati, Ohio. Filed Dec. 28, 1883. (No model.)



Claim.—In a hydraulic cushion for water-pipes, the combination of the cylindrical chamber B F, containing the helical spring J, and a piston-valve composed of the follower D, the wad E, and of a nut, C, that has screw-threaded attachment to a handle, G H, accessible to the attendant, in the manner and for the objects designated.

300,918. TRACE-BEARER FOR PAD-SKIRTS. SIMMONS D. TAYLOR, Carthage, N. Y. Filed Feb. 4, 1884. (No model.)

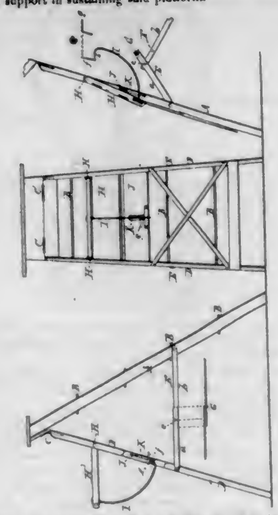


Claim.—1. As an improved article of manufacture, an adjustable trace-bearer consisting of the metallic loop A, formed with screw-threaded apertures in its ends, as described, whereby the screws may be introduced from the back of the pad-skirt, for securing said loop in any desired position.

2. The combination, with the pad-skirt, of the loop A, formed with screw-threaded apertures in its ends, and provided with screws F, for securing the loop in any desired position thereon, substantially as set forth.

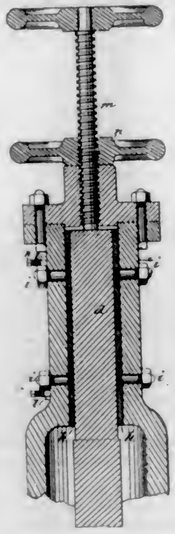
300,919. STEP-LADDER. CHRISTOPHER WAGNER, Cleveland, Ohio. Filed Nov. 22, 1883. (No model.)

Brief.—Consists of a pivoted platform having a spring-brace constructed with a shoulder and support, and a slotted girt which serves as a guide and support in sustaining said platform.



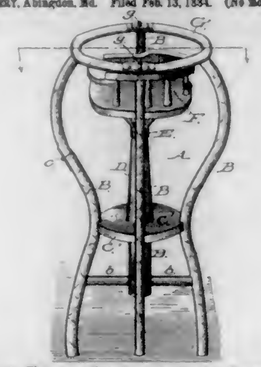
Claim.—In combination with step-ladders, the pivoted platform having a spring-brace, I, formed with a shoulder, *e*, and support *f*, and girt J, provided with a slot, K, to act as a guide and support for said brace in sustaining the said platform, substantially as and for the purpose set forth.

300,920. BEARING FOR THE SPINDLES OF AMALGAMATING-PANS. ANDREW WALLACE, Leadville, Colo. Filed Dec. 20, 1883. (No model.)



Claim.—The jacket *c*, having a plane-sided socket and the slots *j*, the stud-bolts *i*, the wedges *h*, and the adjusting-screws *k*, in combination with the driving-spindle *d*, having plane sides, substantially as described.

300,921. NURSERY-CHAIR. JOSEPH E. WALTER and WILLIAM B. MONTGOMERY, Abingdon, Md. Filed Feb. 13, 1884. (No model.)

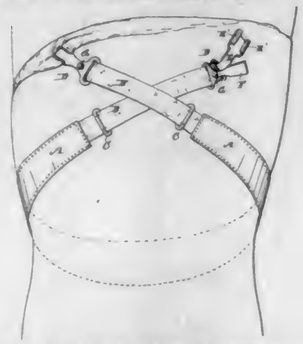


Claim.—1. The supporting-frame having legs B, provided with hoop G, in combination with standard D, and a seat pivoted thereon, substantially as and for the purpose set forth.

2. The supporting-frame having legs B, provided with hoop G, in combination with standard D having hub *d*, and seat F, provided with a sleeve, E, substantially as herein set forth.

3. The supporting-frame having legs B, one of which is provided with a pivoted portion, in combination with hoop G, divided and hinged together as shown, a seat supported within the upper part of legs B, and devices for locking the pivoted part of the leg and hinged part of the hoop together, substantially as and for the purpose set forth.

300,922. GARTER. CHARLES F. WALTERS and WILLIAM J. WALTERS, Gang Mills, N. Y. Filed Oct. 31, 1883. (No model.)



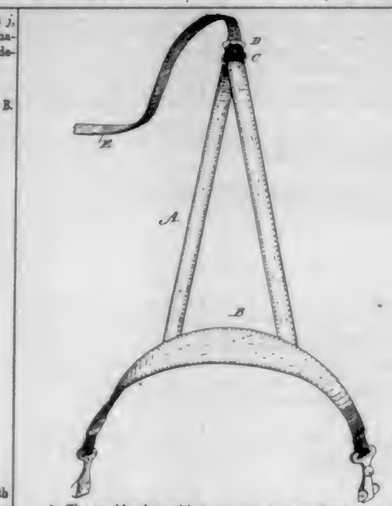
Claim.—1. A garter made substantially as herein shown and described, and consisting of a band having a concave and a convex edge, the elastic bands secured to the ends of the aforesaid band and to the clasps, as set forth.

2. In a garter, the combination, with a band, A, of elastic bands B, secured to the ends, and of clasps secured to the outer ends of the elastic bands, substantially as herein shown and described.

3. In a garter, the clasps each formed of a plate, E, having a slot and flanges, E', and of the plate F, having an enlarged or wedge-like end, a projection, G, and a bend or bevel, *f*, at or near the said projection, in combination with the band A, having the elastic extensions or bands B, conducted to said clasps, substantially as herein shown and described.

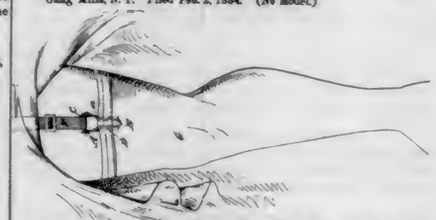
300,923. STOCKING-SUPPORTER AND GARTER. CHARLES F. WALTERS and WILLIAM J. WALTERS, Gang Mills, N. Y. Filed Jan. 17, 1884. (No model.)

Claim.—1. The combination, with a garter, of a strand of webbing or other suitable material secured thereto, and an elastic strap or band attached to the upper looped portion of said webbing, all substantially as set forth.



2. The combination, with a garter, of a piece of webbing, A, or a band having its ends secured to the garter, the buckle D, through which the band or piece of webbing A is passed, and the band E, on the lower end of which the buckle D is held, substantially as herein shown and described.

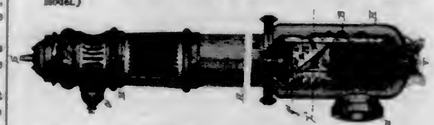
300,924. CLASP. CHARLES F. WALTERS and WILLIAM J. WALTERS, Gang Mills, N. Y. Filed Feb. 2, 1884. (No model.)



Claim.—1. In a clasp, the combination of the U-shaped frame, formed with upward-projecting arms on its sides, with the V-shaped frame pivoted to the upper ends of the U-shaped frame, and constructed to pass between the projections on the U-shaped frame, substantially as and for the purpose set forth.

2. A clasp formed of a U-shaped frame, A, having bends *a* and *b* at the middle and outer ends of the shanks, respectively, and of a V-shaped frame hinged to the inner free ends of the U-shaped frame, which V-shaped frame D is adapted to be pressed between the raised outer parts, A', of the shanks of the frame A, which raised parts are formed between the bends *a* and *b*, substantially as herein shown and described.

300,925. HYDRANT. JOHN WARD, Lansingburg, N. Y., assignor to the Ludlow Valve Manufacturing Company. Filed Dec. 17, 1883. (No model.)



Claim.—1. In a hydrant, the combination of a stem-rod constructed to descend to open the entry-port gate, and to rise in closing it, a vent-opening arranged in the hydrant bottom or base, connecting directly with the interior of said hydrant, and a pivoted plug on the end of said stem-rod, with said parts constructed and arranged to operate substantially in the manner as and for the purposes set forth.

2. In a hydrant, the combination of the stem-rod S, the gate G, made with the transverse wedge-form recess R, and the vertically coincident stem-rod passages *a* above and below said recess, the threaded wedge-form nut N, adapted to loosely enter said recess and be therein

threaded to the stem-rod, and the stops D, with the said parts constructed and arranged to operate substantially in the manner as and for the purposes set forth.

3. In a hydrant, the combination of the stem-rod S, the gate G, made with the wedge-form recess R in its back and the openings *a* at the top and bottom of said recess, the wedge-form nut N, constructed to loosely enter said recess and be therein threaded to the stem-rod, and the guide J, with said parts constructed and arranged to operate in the manner as and for the purposes set forth.

4. In a hydrant, the combination of the stem-rod S, the gate G, constructed with the wedge-form recess R on its inner face and the stem-rod passages *a* above and below said recess, the wedge-form nut N, adapted to loosely enter said recess and be therein threaded to the stem-rod, the guides I I, and the stops D D, with said parts arranged to operate substantially in the manner as and for the purposes set forth.

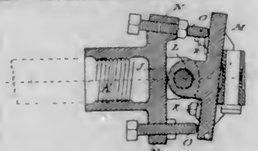
5. In combination with a hydrant, the entry-port gate G, made with the recesses *m* on its outer face inside of its closing rim-seat, as and for the purposes set forth.

300,926. DEVICE FOR SECURING BOX-COVERS. FILLMORE M. WATROUS, Ansonia, Conn., assignor of one-half to James Stuart, same place. Filed Jan. 21, 1884. (No model.)



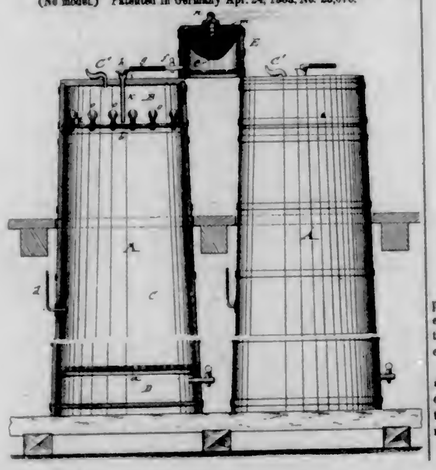
Claim.—The herein-described fastening for box-covers, consisting of the nail *a*, having its upper or head end screw-threaded, combined with the turn-button *b*, having its head end pierced and threaded corresponding to the screw-thread of the nail, the body of the turn-button projecting from one side of said head, the box-cover constructed with notches *c*, and the nail driven into the box at points corresponding to said notches, all substantially as described.

300,927. CHUCK FOR HOLDING GATE-VALVES. ADOLPH WEBER, Detroit, Mich. Filed Dec. 12, 1883. (No model.)



Claim.—A chuck for the purpose described, consisting of a body provided with the means, substantially as described, for securing said body to a lathe-head, an adjustable face-plate pivotally secured to said body, screws for adjusting the inclination of said face-plate, holding-points projecting through said face-plate, and the means, substantially as described, for radially adjusting said points, substantially as specified.

300,928. APPARATUS FOR THE MANUFACTURE OF VINEGAR. ADOLF WEBER, Heilbronn, Würtemberg, Germany. Filed Jan. 22, 1884. (No model.) Patented in Germany Apr. 24, 1883, No. 25,670.

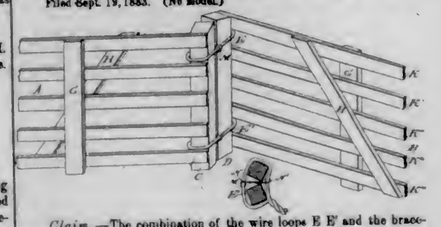


Claim.—1. In an apparatus for making vinegar, the combination of a graduator with an elevated reservoir, provided with a filtering-net, and means for conducting the wash from the reservoir to the graduator, substantially as and for the purpose specified.

2. In an apparatus for making vinegar, the combination of an elevated reservoir having a filtering-net, a graduator, and a glass tube connected with the reservoir and provided with a downwardly-bent conical end extending into the conducting-funnel of the graduator, substantially as and for the purpose specified.

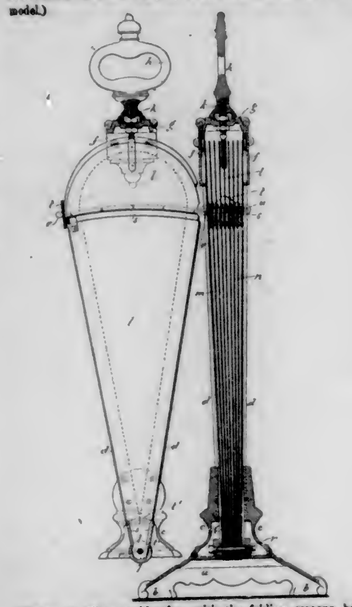
3. In an apparatus for making vinegar, a graduator having an upper perforated shelf, conducting-tubes having lateral openings, and bushings of elastic material inserted into the perforations of said shelf, for tightly retaining said tubes, substantially as and for the purpose specified.

300,929. PORTABLE FENCE. FRANKLIN P. WEBSTER, Cadiz, Ind. Filed Sept. 19, 1883. (No model.)



Claim.—The combination of the wire loops E E' and the brace-hooks M, having loops N N', with the panels of a portable fence, substantially as and for the purposes set forth.

300,930. FIRE-SCREEN. JAS. H. WHITE, New York, N. Y., assignor to the Manhattan Brass Company, same place. Filed May 16, 1883. (No model.)



Claim.—1. The combination, with the folding screens, base, and pedestals, of the separate frames of wrought metal received at their lower ends into recesses in the pedestals and secured thereto by screws, and the clip-piece attached to the tops of the frames and connecting them to each other, substantially as set forth.

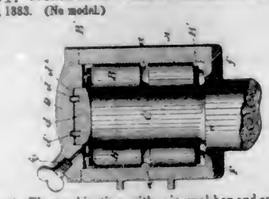
2. The combination, with the plates *l m n*, of the wrought-metal side frames, the base *a*, pedestals *c*, recessed to receive the lower ends of the side frames, the pendants *f*, and base *g*, uniting such side frames, the handle *h*, the split stud supporting the plate *l*, and the bolt that connects the lower ends of the plates to the base, substantially as set forth.

3. In combination with the folding screens, base, and pedestals, the

side frames formed of bent tubes secured to the pedestals at the lower ends, and the clip-piece uniting the side frames at the top, substantially as specified.

4. The combination, with the plates *l m n*, base, and bolt *r*, of the clip-plates *t'*, folded over at their edges to grasp the lower parts of such plates, and to thicken the circular portions of the clip-plates around the bolt, substantially as set forth.

300,931. JOURNAL-BOX. ELIJEN K. WILCOX, Cleveland, Ohio. Filed Nov. 30, 1883. (No model.)

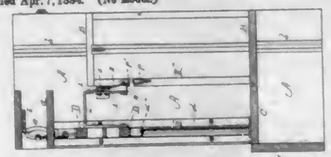


Claim.—1. The combination, with a journal-box and an axle, of the anti-friction rollers B, the rods or studs *b*, each being provided at opposite ends with a shoulder, *b'*, the binding-rings B', and nuts for securing the parts together.

2. The combination, with a journal-box provided with an annular rib and an axle, of the anti-friction rollers B, each provided with a peripheral groove, the rods or studs *b*, provided with the shoulders *b'*, the binding-rings B', and nuts for securing the parts together, substantially as set forth.

3. The combination, with an axle-box provided at one end with a recess and with holes for dowel-pins, and an axle, of the block *d*, situated within the recess, and provided with a convex face against which the end of the axle bears, and with dowel-pins to prevent it from turning, substantially as set forth.

300,932. ELEVATOR-GUARD. HENRY C. WILCOX, Boston, Mass. Filed Apr. 7, 1884. (No model.)



Claim.—1. The combination of the gate D, cord E, and pulleys *e* and vertical bar G, the weight F, provided with the spring H H', the projection I I', secured to the elevator, and the projection K, secured to one of the walls of the well, all constructed and arranged substantially as and for the purpose set forth.

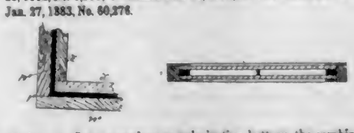
2. The combination of the bar G, the weight F, provided with a spring, H H', the projection K, secured to one of the walls of the elevator-well, and the rod J, provided with the head J' and spring J'', substantially as and for the purpose described.

3. The combination of the gate D, provided with the arm L L' and spring N N', the seat or projection P P', secured to the elevator, and the projection O, extending from one of the walls of the well, substantially as and for the purpose set forth.

4. The combination of the gate D, provided with the arm L L' and spring N N', the seat or projection P P', secured to the elevator, the projection O, secured to one of the walls of the well, and spring S, secured to the frame *a*, substantially as and for the purpose described.

5. The combination of the gate D, hung from one side of its center, and the rod *d*, over which said gate fits, said rod being placed at the side or end of the gate nearest the point at which it is hung, substantially as and for the purpose set forth.

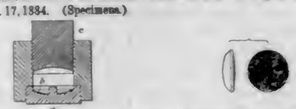
300,933. SECONDARY BATTERY. GEORGE L. WINCH, Madras, East Indies. Filed July 18, 1883. (No model.) Patented in England July 25, 1882, No. 3,532; in France Jan. 25, 1883, No. 153,313, and in Belgium Jan. 27, 1883, No. 60,276.



Claim.—1. In a secondary or polarization battery, the combination of metallic plates forming the electrodes, and sheets of cork or pith covering the faces of said plates, substantially as shown, and for the purpose set forth.

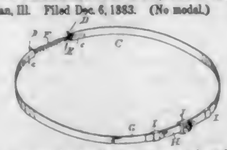
2. In a secondary or polarization battery, the combination of electrodes consisting of metallic plates immersed in an electrolytic fluid consisting of an aqueous solution of salts of aluminum with sulphate of copper, substantially for the purpose shown and described.

300,934. MANUFACTURE OF BUTTONS AND OTHER ARTICLES FROM PLASTIC MATERIALS. WILBUR C ABBOTT, Babylon, N. Y. Filed Mar. 17, 1884. (Specimens.)



Claim.—The improved method of making molded articles from plastic materials with a face ornamented in relief or intaglio, which consists in placing in the die, together with the plastic material, and against the face of the die, a thin plate or disk having on its surface, in contact with said plastic material, a design in relief or intaglio, then subjecting the die to pressure, and finally separating the molded article from the die and from said plate, substantially as set forth, whereby the face of the article is impressed with the reverse of the design on said plate.

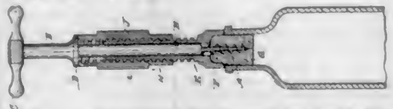
300,935. COVER-HOLDER FOR JARS, MILK-CANS, &c. MATHEW ALSTON, Adrian, Ill. Filed Dec. 6, 1883. (No model.)



Claim.—1. A cover-holder for jars, composed of the hoop C, the ends D of which are bent and perforated at E and at *c*, combined with a coiled spring, F, which is passed through said openings, and secured at pleasure in either opening *c*, whereby the tension of the hoop can be increased or diminished, as described.

2. The combination, in a cover-holder, of one hoop, C, made in two pieces, the ends of each having the angles D, and provided with openings E and *c*, and the coiled spring F, uniting the said ends, the other ends of said pieces overlapping each other and having keepers I, with set screw K, all as set out and explained.

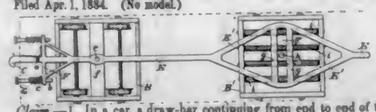
300,936. CORKSCREW. WILLIAM E. ALVORD, Appleton, Wis. Filed Dec. 1, 1883. (No model.)



Claim.—1. In a corkscrew, the combination, with a rod, B, having a corkscrew formed on its lower end, and provided with an annular ridge, forming a shoulder, of the externally-threaded tube E, having a socket, F, formed on its lower end, and of the internally-threaded tube H, surrounding the tube E, substantially as herein shown and described.

2. In a corkscrew, the combination, with a rod, B, having a corkscrew formed on its lower end, and provided with an annular ridge, forming a shoulder, of the externally-threaded tube E, having a socket, F, on its lower end, and the internally-threaded tube H, surrounding the tube E, and provided with ribs *a*, substantially as herein shown and described.

300,937. RAILWAY-CAR. JOSEPH F. RATCHELOR, Baltimore, Md. Filed Apr. 1, 1884. (No model.)



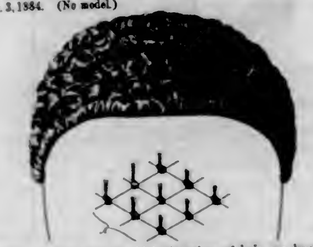
Claim.—1. In a car, a draw-bar continuing from end to end of the car, and having at the center two branches which spread apart, and provided with two cross-bars which connect the branches, as set forth.

2. The combination of a middle truck having an upward-projecting stud or bolt, A, and a draw-bar continuing from end to end of the car, and having cross-bars with a space, *g'*, between to allow lateral movement of the said stud or bolt, as set forth.

3. The combination of a car-body, a draw-bar continuing from end to end of the car, and two end trucks, and a truck between the end trucks provided on top with rollers adapted to allow it to move laterally, as set forth.

4. The combination of a middle truck having an upward-projecting stud or bolt, A, and provided on top with rollers, and a draw-bar continuing from end to end of the car, and having parallel cross-bars with a space between for said stud, as set forth.

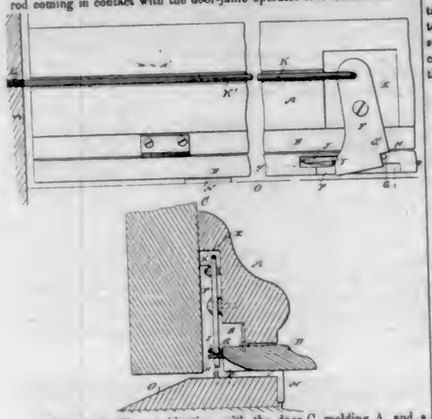
300,938. HAIR-FRONT. SOPHUS C. BECK, Philadelphia, Pa. Filed Mar. 3, 1884. (No model.)



Claim.—A hair-front in which the wisps of hair are knotted to a foundation consisting of a netted fabric of large mesh and of the same color as the hair, as set forth.

300,939. WEATHER-STRIP. WILLIAM D. BENNETT, Bedford, Iowa. Filed Feb. 26, 1884. (No model.)

Brief.—Consisting of a pivoted spring-pressed latch-lever within the molding secured to the outer face of the door, operating to hold up as well as to press down the weather-strip upon the sill. An arm or rod coming in contact with the door-jamb operates said latch-lever.



Claim.—1. The combination, with the door C, molding A, and a pivoted spring-pressed latch-lever within said molding, of the strip D, pivoted to the molding, and having a projection on its inner face in the path of the pivoted lever, whereby when the door is opened the strip will be raised and its projection engaged by the said latch-lever, substantially as set forth.

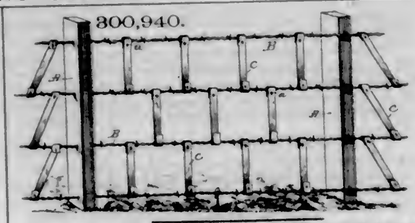
2. The combination, with the door C and the molding A, of the strip D, hinged to the molding A, of the stud H, projecting from the inner edge of the strip, the latch-lever F, pivoted to the back of the molding, and provided with the notch G, and of a spring secured in the strip and pressing the latch F toward the stud H, substantially as herein shown and described.

3. The combination, with the door C and the molding A, of the strip D, hinged to the molding A, the stud H on the inner edge of the strip, the latch-lever F, pivoted on the back of the molding, and provided with a notch, G, the spring J, held in the strip and pressing the latch F toward the stud H, the rod K, extending from the upper end of the latch F to the inner side edge of the door, and of the screw L in the casing, substantially as herein shown and described.

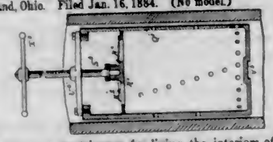
300,940. WIRE FENCE. CHAS. S. BENTLEY, Dubuque, Iowa. Filed Oct. 10, 1882. (No model.)

Claim.—A wire fence composed of posts A A and wire runners B B, slotted strips C, connecting adjacent runners, the ends of each strip being provided with a tongue, *a*, which enters the slot, and thereby locks the strip in place on the runners, and a spiral anchor secured directly to one of the runners of the fence and embedded in the ground, whereby the tension of all the runners of the fence may be regulated, all substantially as described.

300,940.



300,941. APPARATUS FOR LINING MOLDS. GEO. W. BILLINGS, Cleveland, Ohio. Filed Jan. 16, 1884. (No model.)



Claim.—1. A contrivance for lining the interiors of molds with plastic material, composed of the receptacle for holding the soft coating material, provided with perforations through which the soft material to be spread upon the inner wall of the mold may pass, and so sized and shaped exteriorly as to give to the interior of the lined or coated mold the desired size and shape, all substantially as set forth.

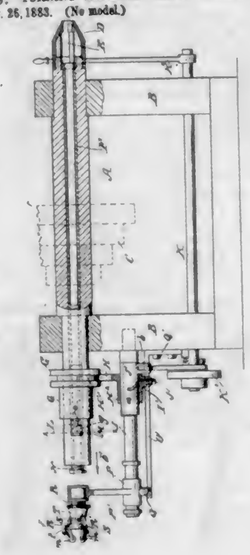
2. The combination, with a perforated receptacle adapted to contain the material to be applied to the interior of the mold, and designed to be moved back and forth within the mold to plaster over its interior surface, of a screw-follower or equivalent means for compressing the contents of said receptacle, and thus forcing the said contents out through the perforations, as set forth.

300,942. TUB AND BOX FASTENER. WILLIAM H. BLAKE, 2d, Swanton, Vt. Filed Apr. 10, 1882. Renewed Nov. 15, 1883. (No model.) Patented in Canada July 11, 1883, No. 17,206.



Claim.—The tub or box fastener herein shown and described, having its doubled ends *a a* soldered down upon the body A of the strip over the heads of the tacks B B, as an improved article of manufacture.

300,943. TURNING-MACHINE. ALBERT T. BOOTH, Meriden, Conn. Filed Nov. 26, 1883. (No model.)



Claim.—1. In a turning-machine, the combination, with a revolving tube, of a sliding tube held in the same, a chuck on the outer end of the tube, bevel projections on the inner end of the tube, a rotatable plug provided with projections adapted to act on the bevel projections on the inner end of the sliding tube, and of means for turning the rotatable plug to raise its projections to act on the bevel projections on the inner end of the sliding tube, substantially as herein shown and described.

2. In a turning-machine, the combination, with a revolving tube, of a sliding tube held in the same, and provided at its outer end with a spring-chuck, beveled projections on the inner end of the sliding tube, a rotatable plug provided with projections adapted to act on the bevel projections on the inner end of the sliding tube, a sliding sleeve mounted on the revolving outer tube, and of sliding beveled strips held in slots of the sliding tube, and connected with the sleeve on the outer revolving tube, substantially as herein shown and described.

3. In a turning-machine, the combination, with the revolving tube A, provided with a nipple, D, of the sliding tube F, held in the tube A, and provided with a spring-chuck, E, the bevel projections L on the inner end of the tube F, the tubular plug M, having projections *g*, the adjusting-screw N, and means for turning the plug M, substantially as shown and described.

4. In a turning-machine, the combination, with the revolving tube A, having a nipple, D, on its end, of the sliding tube F, provided with a chuck, the sliding sleeve G, the bevel projections L on the inner end of the tube F, the tubular plug M, having projections *g*, and the sliding strips O, held in grooves in the tube F, and having beveled ends, which strips are secured to the sleeve G, substantially as herein shown and described.

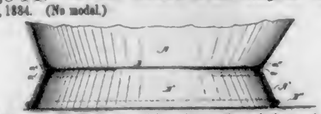
5. In a turning-machine, the combination, with the tubes A and F, of the sleeve G, adapted to slide on the tube A, and adapted to operate means for moving the sliding tube F in the direction of its length, the sleeve H^3, provided with a pin, J, and mounted to slide on a sleeve, J', mounted to turn on an arm, I, and provided with a helical slot for receiving the end of the pin J, and of means for turning the sleeve J', substantially as herein shown and described.

6. In a turning machine, the combination, with the tubes A and F, of the sleeve G, mechanism for moving the tube F longitudinally from the sleeve G, the sleeve H^3, having a forked arm, H, acting on the sleeve G, and provided with a pin, J, the sleeve J', having a helical groove, *a*, the connecting-rod *d*, the shaft K, and the lever K^3, substantially as shown and described.

7. In a turning-machine, the combination, with the tube-section R, of the levers S, pivoted to the same, the rollers *m*, pivoted in the outer ends of the levers, and the beveled ring T, held adjustably on the tube R, substantially as herein shown and described.

8. In a turning-machine, the combination, with the tube R, of the levers S, pivoted to the tube, the rollers *m*, pivoted on the outer ends of the levers S, the springs *t*, secured to the levers S, and acting on the rollers *m*, and of the adjustable beveled ring T, mounted on the tube R, substantially as herein shown and described.

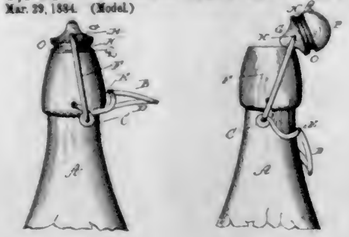
300,944. COAL-HOD. GEORGE A. BOWERS, Chicago, Ill. Filed Mar. 22, 1884. (No model.)

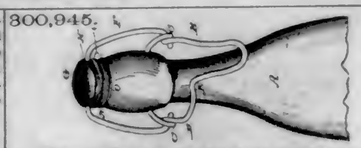


Claim.—1. The body A and base-hoop A', made integral and tapering toward each other, in combination with the bottom B, having flange B', applied on the interior of the base-hoop, and bent out at the top over the interior projection at *a a*, substantially as specified.

2. The body A and base-hoop A', made integral and tapering toward each other, in combination with the bottom B and flange B', applied within the base-hoop, and having the top bent out over the inner projection at *a a*, and the bottom edge bent out over the lower edge and back against the exterior of the base-hoop, substantially as specified.

300,945. BOTTLE-STOPPER. FRANK BURNS, Westfield, N. Y. Filed Mar. 29, 1884. (Model.)





Claim.—1. The herein-described elastic stopper, having a central recess for the plug, and having a crease around its laterally-projecting shoulder forming two annular flanges, as and for the purpose shown and set forth.

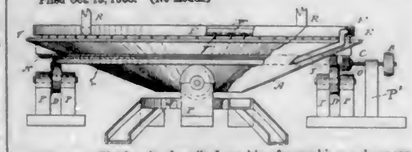
2. In a bottle-stopper, the herein-described thumb-bail pivoted with its ends upon the side of the bottle, having eyes near its ends, and bent at its outer portion to form a shoulder, and an outwardly and laterally projecting lever-bail, as and for the purpose shown and set forth.

3. The combination, in a bottle-stopper, of the thumb-bail pivoted with its inner ends upon the sides of the neck of the bottle, and having its outer portion bent to form a shoulder at one side and a laterally-projecting lever-bail at the other side, the stopper-bail hinged with its ends in eyes upon the thumb-bail, the plug hinged upon the upper end of the stopper-bail, the said bail passing through a transverse perforation in the top of the same, and an elastic stopper having two annular flanges at its upper portion, as and for the purpose shown and set forth.

300,946. PULP-BOARD FOR ROOFING PURPOSES. PHILIP CAREY, Cincinnati, Ohio. Filed Feb. 4, 1884. (Specimens.)

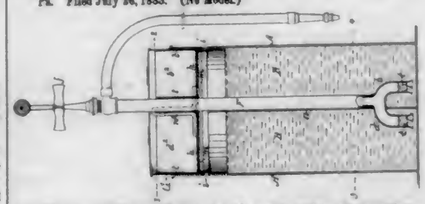
Claim.—As a new article of manufacture, a pulp-board composed of wood pulp, asbestus, or any other mineral fiber, and any suitable clay, mixed together while in a pulp state, then pressed or rolled into a sheet or board and dried, and afterward coated or saturated with asbestus, asphaltum, or any other fire or water proof paint, substantially as described.

300,947. SLIME-TABLE. THOMAS CARKEEK, Silver Plume, Colo. Filed Oct. 13, 1883. (No model.)



Claim.—The herein-described machine for washing and concentrating ores, comprising the conical frame A, having the rail I and the toothed rim N, the rollers D, the shaft C, having cog-wheel O and pulley B, the suspended trough E, the pipe F, provided with jets V, and pipes H, H', and H^2, the feeding-trough S, the perforated frame T, and the receptacle J, having compartments M K, the whole constructed and arranged to operate as shown and described.

300,948. FIRE-EXTINGUISHER. CHARLES W. CARYL, Philadelphia, Pa. Filed July 26, 1883. (No model.)



Claim.—1. The combination, in a fire-extinguisher, of a tank having two chambers, chemical charges for said chambers, and a single-barreled pump having suction branches communicating with both chambers, as set forth.

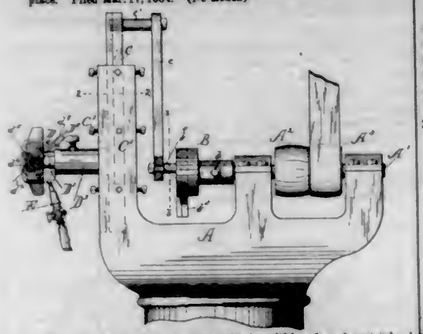
2. A fire-extinguisher tank having two chambers, B D, and charging-compartments located above said chambers and having glass bottoms, as set forth.

3. A fire-extinguisher tank having two chambers, B D, and charging-compartments located above said chambers and having glass bottoms, in combination with the break-bars, as set forth.

4. The combination of the tank having a vertical transverse partition, *a*, with a charging-vessel having two partitions at right angles to each other, so as to divide it into four compartments—two above each chamber of the tank—as set forth.

5. The combination of the tank with a charging-vessel having its compartments lined with lead or its equivalent, as described, to prevent caking of the charges therein, as set forth.

300,949. HEEL-BURNISHING MACHINE FOR BOOTS AND SHOES. GEORGE F. CASS, Chicago, Ill., assignor to himself and Hugh White, same place. Filed Mar. 17, 1884. (No model.)



Claim.—1. The tool D, provided with burnishing-face *d*, seat-wheel d', and top-lift-beading groove d^2 and guide-lip d^3, in combination with the reciprocating tool-holder C, guide-standard C', shaft A', wheel B, adjustable wrist-pin slide b^3, wrist-pin b^4, link *e*, and pin *c'*, substantially as specified.

2. The combination of the tool D, having a burnishing-face, a seat-wheel, and a guide-lip located between said burnishing-face and seat-wheel, with a reciprocating tool-holder slide, C, upon which said tool is mounted, and a spring for giving the tool an elastic pressure against the heel operated upon, substantially as specified.

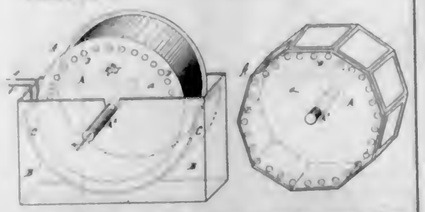
3. The combination, with the reciprocating tool-holder provided with a hollow sleeve, of the tool D, having a shank fitting in said hollow sleeve, a spring, and a guide-pin for holding the tool in a vertical position, substantially as specified.

4. The combination of the reciprocating tool-holder slide, the tool mounted therein, provided with a burnishing-face and a heel-seat wheel, the shaft A', and wrist-pin wheel provided with an adjustable wrist-pin for varying the length of stroke, and a link and pin connecting said wrist with said tool-holder slide, substantially as specified.

5. The vertically-reciprocating tool D, provided with the burnishing-face *d*, guide-lip d^3, and heel-seat wheel d', mounted on a pin rigidly secured to an adjustable plate, d^4, so that the heel-seat wheel may be set in or out, as may be desired, substantially as specified.

6. The combination of the reciprocating tool D, provided with a burnishing-face, heel-seat wheel, and guide-lip, with reciprocating slide C, on which said tool is mounted, and the guide-standard C', provided with adjustable box-plates, in which said tool-holder slide reciprocates, substantially as specified.

300,950. PROCESS OF AND APPARATUS FOR THE SEPARATION OF METALS FROM ORES AND ALLOYS. HENRY RENNIE CASSEL, New York, N. Y. Filed Jan. 2, 1884. (No model.) Patented in England Aug. 9, 1883, No. 3,573.



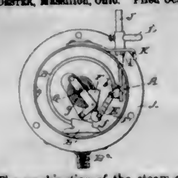
Claim.—1. The process of separating metals from ores or alloys, especially those of an auriferous character, which consists in charging the ore or alloy in a powdered condition into an anode-compartment, which is separated from the cathode-compartment by porous material, said anode-compartment containing a solution yielding nascent chlorine under the action of an electric current, and agitating said powdered material within said solution during the passage of the electric current, substantially as described.

2. The combination, in an apparatus for treating ores and metals by electrolysis, of a cathode-compartment, a negative pole therein, a rotary drum constituting the anode-compartment, provided with porous material separating it from the cathode-compartment, and with a series of carbon rods or plates arranged within the same, and suitable electric connections, substantially as described.

300,951. PROCESS OF CHLORIDIZING ORES BY ELECTROLYSIS. HENRY RENNIE CASSEL, New York, N. Y. Filed Jan. 2, 1884. (No specimens.) Patented in England Oct. 13, 1883, No. 4,879.

Claim.—In the process of extracting gold from rebellious or refractory gold ores, the steps which consist in subjecting the ore to the action of a solution yielding nascent chlorine under electrolytic decomposition, and adding lime or its equivalent, whereby acids formed by secondary action during said decomposition are neutralized, substantially as and for the purpose set forth.

300,952. DEVICE FOR REGULATING HEAT IN VULCANIZERS. FRANK H. CHIDESTER, Massillon, Ohio. Filed Oct. 26, 1883. (No model.)

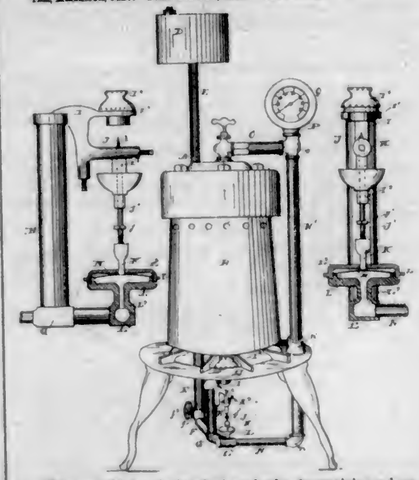


Claim.—1. The combination of the steam-gage, the valve-rod N, which passes through the side of the gage, the elbow or connecting-tube, the support K, secured to the gage and clamped to the said elbow or connecting-tube, the gas-tubes J and I_5, secured to the connecting-tube, and the valve within the connecting-tube, operated by the valve-rod N, substantially as set forth.

2. The combination of the gas-tube J, the gas-tube I_5, the elbow or connecting-tube, the support K, the vale within the connecting-tube, the valve-rod N, the slotted plate O, the threaded tube O', secured to said plate, and the devices within the steam-gage secured to said slotted plate O, substantially as set forth.

3. The combination of the gas-tube J, the gas-tube I_5, the elbow or connecting-tube, the support K, for said connecting-tube, the valve-rod N, having its outer end adapted to receive a key or adjusting device, the devices within the gage for moving the valve-rod, and the connecting-plate O, adjustably secured to the valve-rod, substantially as set forth.

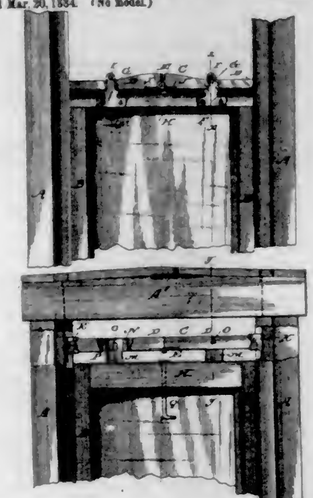
300,953. VULCANIZING-HEAT REGULATOR. FRANK H. CHIDESTER, Massillon, Ohio. Filed Mar. 11, 1884. (No model.)



Claim.—1. The herein-described mechanism for supplying and regulating the flow of gasoline or other hydrocarbon to a vulcanizer, it consisting in the combination of a reservoir, a vapor-burner below the vulcanizer, a duct between the reservoir and burner, a cut-off or valve, *f*, a supplemental valve, J, at the needle-orifice, a steam-chamber having a flexible wall, with which the needle-valve is adjustably connected, a steam-duct communicating both with said chamber and the interior of the vulcanizer, and a gage for indicating the pressure of the steam, substantially as set forth.

2. The combination, with the vulcanizer, of the vapor-burner having a jet-orifice, a needle-valve for closing said orifice, the parts $L' L^2$, secured together by screw-thread, the diaphragm M, adjustably connected with the needle-valve and secured to the aforesaid part L', the steam-duct, and the gage, substantially as set forth.

300,954. SASH-HOLDER. EDWIN B. CLEMENT, Marshalltown, Iowa. Filed Mar. 20, 1884. (No model.)



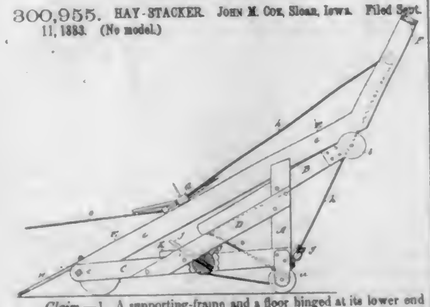
Claim.—1. The combination of a window-frame, a sash having a rabbeted top rail, hangers consisting of plates secured to the front side of the top rail, and having rearwardly-extending pins, and a fastener seated in the rabbet under the pins of the hangers, and consisting of a pair of bars connected by a hinge on their under side, substantially as set forth.

2. The combination of a sash having a rabbeted top rail, the hangers having rearward-extending pins, the fastener consisting of a pair of bars hinged together on their under side, and provided at their free ends with roughened or corrugated friction-shoes, and legs or handles extending forwardly from the leaves of the hinge, as and for the purpose set forth.

3. The combination, with a sash, of a fastener consisting of a pair of bars connected by a hinge on their under side, the same being loosely connected to the top rail of the sash, and an operating-rod sliding vertically through an opening in the said top rail, directly under the hinge, as and for the purpose set forth.

4. The combination, with a sash provided with a fastening device consisting of a pair of hinged bars suitably connected to the top rail of the said sash, of the window-frame provided with a recess in the lintel adapted to receive and accommodate the fastening device of the upper sash, as and for the purpose set forth.

300,955. HAY-STACKER. JOHN M. COX, Sloan, Iowa. Filed Sept. 11, 1883. (No model.)



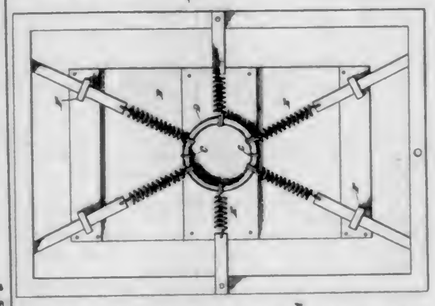
Claim.—1. A supporting-frame and a floor hinged at its lower end thereto, in combination with levers also pivoted thereto beneath said floor, and supporting the upper end of the floor on one end of each of said levers, ropes attached to their other ends, and a windlass journaled in the frame to wind said ropes, as described.

2. The combination, with a frame, of a floor hinged at its lower end thereto, supporting side beams therefor, the side beams of said floor extending beyond its upper end and rising above its plane, pulleys pivoted on the extended beams, and means for raising and lowering said floor and its side beams, substantially as specified.

3. The combination, with the hinged floor, supporting-levers, and windlass described, of a beam crossing the frame practically parallel with said windlass, and one or more handspikes loosely fitting holes in the windlass-roller, and adapted to engage said beam when extended through the roller, as specified.

4. A supporting-frame and a floor or slideway hinged at its lower end thereto to swing vertically thereon, in combination with a leaf or gang-plank hinged at one edge thereto, and free at its other edge to swing vertically, substantially as described, whereby said gang-plank may remain resting one edge on the ground while the slideway is elevated without being broken off thereby, and whereby said plank may be folded over upon said slideway for transportation, as described.

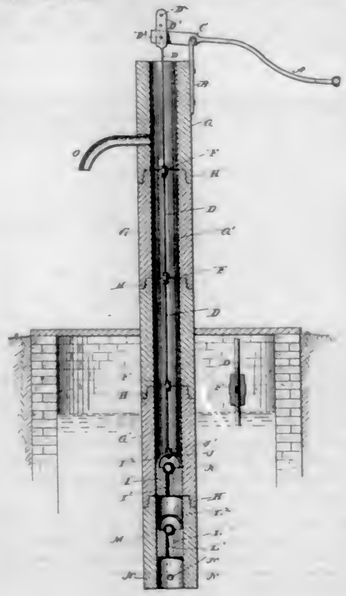
300,956. VEHICLE-SPRING. ROBERT H. CORNETT, Emporia, Kans. Filed Jan. 31, 1884. (No model.)



Claim.—1. The combination, in a buggy or other vehicle, with the frame and body thereof, of the ring secured to the bottom of the body, the springs secured thereto, and the straps connecting the springs with the frame, substantially as specified.

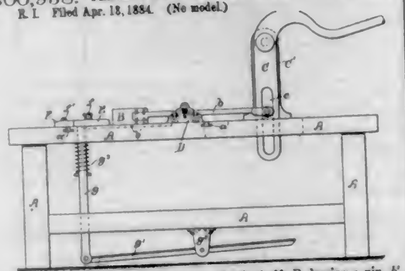
2. The combination, in a buggy or other vehicle, of the supporting-frame, the bottom and centrally-secured ring, the spiral springs and straps connecting the body to the frame, and the loops through which the straps pass, all arranged substantially as described, for the purposes specified.

300,957. PUMP. THOMAS COURTNEY, Walthall, Miss. Filed Oct. 15, 1883. (No model.)



Claim.—The combination of the pump-stock made of the lap-jointed sections, fitted one over the other, with the adjustable rod D, having the threaded sections F jointed at each lap-joint of the pump-stock sections, substantially as described.

300,958. FENCE-PICKET MACHINE. THOMAS COYLE, Apponang, R. I. Filed Apr. 18, 1884. (No model.)



Claim.—1. The combination, with the knife B, having a pin, *b'*, and the gage E, of the table having the groove *a*, placed in the line of movement with the knife, and arranged to receive the pin *b'*, and the grooves *a'*, arranged in the line of movement of the gage, substantially as described.

2. The combination, with the lever C, the knife connected to said lever, and the gage E, of the table having the groove *a*, arranged to guide the knife, and the grooves *a' a'*, arranged to guide the gage, substantially as described.

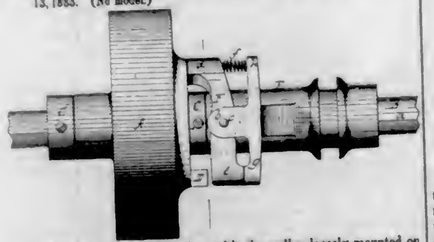
3. The combination, with the knife and the gage, of the groove *a*, arranged to guide the knife, and the grooves *a'*, arranged to guide the gage, the stop F to hold the end of the picket, and the stop J to limit the adjustment of the gage, substantially as described.

4. The combination, with the knife B and the gage E, of the table having the groove *a* to guide the knife, and the grooves *a'* to guide the gage, the stop F, the block G, and the foot-lever, with its connections to the block G, substantially as described.

5. The combination, with the knife B, having the pin *b'*, and the gage E, of the table having the groove *a* to guide the knife, and the grooves *a'* to guide the gage, the stop F, the block G, with its operating connections, and the removable block provided with a groove to guide the knife.

6. A machine for pointing pickets, consisting of a longitudinally-reciprocating knife, an adjustable gage to hold the picket, a pivoted stop and a movable block to hold the end of the picket, a removable grooved block to guide the knife, a lever for actuating the movable block, and a table having a groove to guide the knife and grooves to guide the gage, substantially as set forth.

300,959. CLUTCH. CHRISTIAN DANCKL, New York, N. Y. Filed Nov. 13, 1883. (No model.)



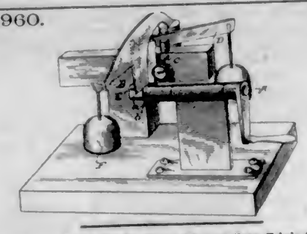
Claim.—1. The combination, with the pulley loosely mounted on the shaft and having on its face a series of projections, of the clutch-sleeve feathered on the shaft, and a lever pivoted between its ends to the sleeve to form two arms, which project in reverse directions from the pivot, substantially as described.

2. The combination, with the shaft and the loose pulley thereon having its face provided with lateral projections, of the clutch-sleeve feathered on the shaft to revolve therewith and move longitudinally thereon, a lever pivoted to and moving with the clutch-sleeve, and a spring acting on the lever to throw it into engagement with one of the projections on the pulley when the clutch-sleeve is moved on the shaft toward the pulley, substantially as described.

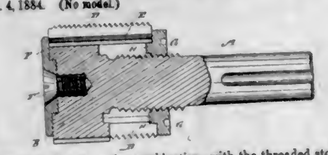
300,960. MACHINE FOR COILING WIRE. CHARLES W. H. DAY, Attleborough, Mass. Filed Oct. 25, 1883. (No model.)

Claim.—The combination of the arbor *a* and means for revolving the same, the clearer E, and a tension device, all substantially as shown.

300,960.



300,961. SCREW-TAP. HENRY WILLCOX EDDY, Toledo, Ohio. Filed Jan. 4, 1884. (No model.)

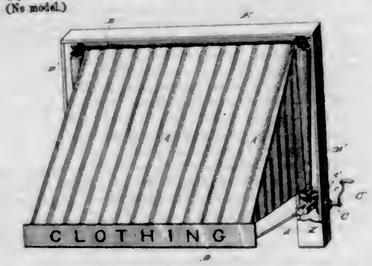


Claim.—1. In a tap, the combination, with the threaded stock A, having a head, B, longitudinally grooved in its periphery, of the cutters D, held to slide longitudinally in said grooves, but not vertically, the disk F, removably secured to the outer end of the head, and the nut G, for forcing the cutters outward when the disk F has been removed, substantially as set forth.

2. In a tap, the combination, with the threaded stock A, having a head, B, provided with longitudinal slots in its periphery, of the longitudinally-sliding cutters D, held in said slots, a removable plate on the outer end of the head for the cutters to rest against, and a nut, G, on the screw-threaded portion, for clamping the cutters in place and forcing them outward when the said plate is removed, an annular ring, H, being formed on the inner surface of the nut for the inner ends of the cutters to rest in, substantially as set forth.

3. In a tap, the combination, with the threaded stock A, having a head, B, provided with longitudinal grooves in the rim, of the cutters D, held in the said grooves, the locking wires or pins E, the disk F, held on the end of the head, and the nut G, provided with an annular ridge, H, on which the inner ends of the cutters D rest, substantially as herein shown and described.

300,962. AWNING. LOUIS FOX, Cleveland, Ohio. Filed Oct. 26, 1883. (No model.)



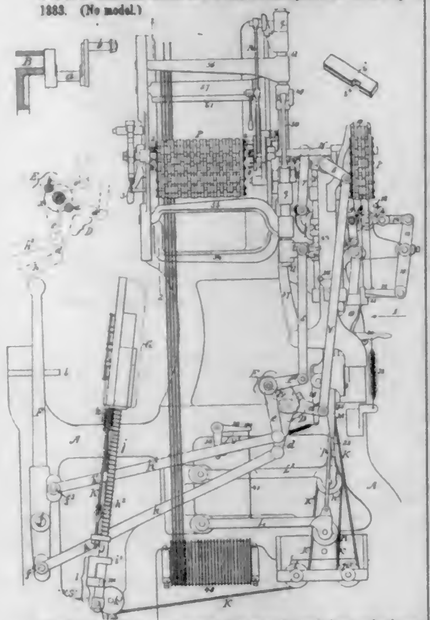
Claim.—1. The combination, with a horizontal roller and two vertical conical rollers situated under the opposite ends of the horizontal roller, of the awning A, adapted to roll on the horizontal roller, the side pieces adapted to roll on the conical rollers, and an end board, D, connecting the outer ends of the main and side awnings, substantially as set forth.

2. The combination, with a horizontal roller provided at opposite ends with bevel-pinions and two vertical conical rollers provided at their upper ends with bevel-pinions meshing with the pinions on the horizontal shaft, one of said conical rollers being provided at its lower end with a driving-pinion, of the awning A, side awnings, A', board or equivalent D, and side rods, *d*.

3. The combination, with the horizontal roller, two conical rollers, and the bearings or blocks *d'*, of the awning A, side awnings, A', board or equivalent D, and rods pivotally secured at their inner ends to the blocks *d'*, and at their outer ends to the board D, substantially as set forth.

4. The combination, with the horizontal roller and the inverted conical side rollers, the said rollers being geared so as to revolve simultaneously, of the main awning A, side awnings, A', board D, and rods *d*, all of the above parts being combined as described.

300,963. LOOM. MERRILL A. FURBUSH, Philadelphia, Pa., and CHARLES H. KNOWLTON and BENJAMIN F. MEYER, Camden, N. J., assignors to said Furbush and Charles A. Furbush, Philadelphia, Pa. Filed July 7, 1883. (No model.)



Claim.—1. The combination of the crank-shaft, its crank-pins *a* and *b*, levers D and E, rods A A', and hand-lever F, with the chain-shaft N, heddle-jacks, and drop-box jacks, and mechanism whereby the said shaft and jacks are operated from the said levers D and E, substantially as described.

2. The combination of the chain-shaft and its disk provided with pins, the rocking frame R and its pawls, and mechanism for operating the said frame, with a lever, T, having rollers *x' x'*, adapted to the frame, and with mechanism for adjusting and retaining the said lever T, all substantially as specified.

3. The combination of the drop-box jacks M M', the pattern-chain P', the pivoted dog 8, the cross-head X', and mechanism for operating the said chain, dog, and cross-head, with the arms 19, fingers 11, mechanism for operating the same, and devices whereby the chain is made to control the fingers, all substantially as specified.

4. The combination of the arms 19, having notches at their lower ends, and mechanism for operating the said arms, with a retainer, 29, adapted to the said notches, and with mechanism for actuating the retainer, substantially as set forth.

5. The combination of the block 17, mechanism for reciprocating the same, and the arms 19, with the lever V', link 14, lever J', and fingers 11, substantially as set forth.

6. The combination of the block 17, and mechanism for operating the same, with the lever J' and its fingers 11, the link 14, and lever V' and its set-screw 18, substantially as specified.

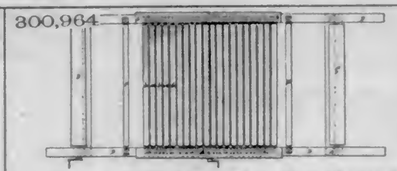
7. The combination of the heddle-jacks, the drop-box jacks, the pattern-chains therefor, slide-rods Q Q^2 and means whereby they are caused to operate the heddle-jacks, slide-rods Y Y' and means whereby they are caused to operate the drop-box jacks, devices for operating the pattern-chains, and mechanism whereby the two sets of slide-rods are operated independently of each other, as set forth.

8. The combination of the shaft B, having two crank-pins, *a b*, the levers D and E, hung to the said pins, the rods A A', and hand-lever F, with the rod V, arm 6, and drop-box mechanism, rod 8, bar Q, and heddle mechanism, all substantially as set forth.

9. The combination of the jacks, the drop-box, and drop-box rod, mechanism for operating said jacks, the arm L, and the cord K and rollers therefor, with the brake-levers 26, lever U', springs 27, and rod 41, as set forth.

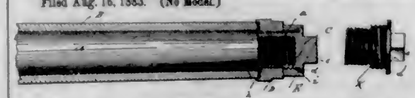
300,964. MACHINE FOR SOFTENING FABRICS. CLAUDE GARNIER, Lyons, France. Filed Mar. 5, 1883. (No model.) Patented in France Feb. 18, 1881, No. 141,209.

300,964



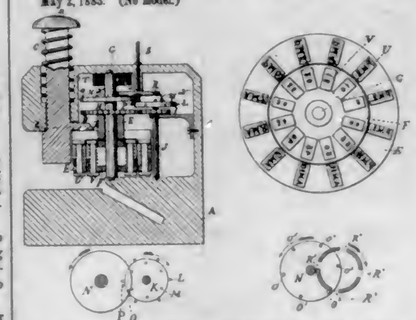
Claim.—In a machine for softening fabrics, the combination of one series of rollers arranged to revolve in a fixed plane, a second series of rollers arranged in a plane parallel to the first series and parallel to each other, but the position of each roll of the second series intermediate between the rollers of the first series, and mechanism, substantially such as described, whereby the second series is made movable toward and from the plane of the first series, and the rollers C D, substantially as and for the purpose described.

300,965. VEHICLE-AXLE NUT. HARMON B. GIBSON, Tiffin, Ohio. Filed Aug. 16, 1883. (No model.)



Claim.—In a hub-attaching device, the combination, with an axle-spindle having a screw-threaded end, *a*, of the cap *c*, formed with a squared head, *e*, an internal screw-threaded recess adapted to fit over the end *a*, and with external right and left screw-threaded portions, and the nuts D and E, having annular grooves at their ends and adapted to fit upon the respective right and left screw-threaded portions of the cap C, and the washers A *d*, all constructed and arranged to operate substantially in the manner specified.

300,966. TIME-STAMP. WM. H. GILLETTE, Hartford, Conn. Filed May 2, 1883. (No model.)



Claim.—1. An escapement consisting of the wheel N, provided with the series of studs O, and the wheel R, provided with its discontinuous flange, the two wheels operating together substantially as described.

2. An intermittent lock-motion consisting of the wheel N, provided with the stud P and the recess Q, and the wheel K, provided with the series of studs L and provided with the series of studs M.

3. The combination of the cylinder F, the wheel N, the wheel R, and the spring T, so arranged as that a continuous revolution of the wheel R will so control the action of the spring T as that the wheel N and the cylinder F will receive a quick intermittent motion at regular intervals of time.

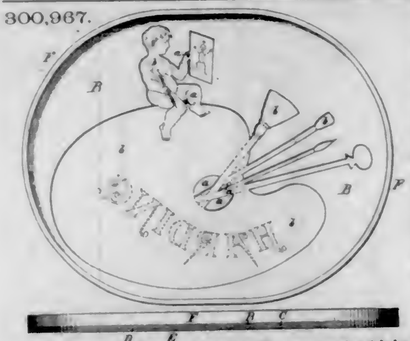
4. The combination of the cylinder F, the cylinder E, the wheels N, R, and K, the gears I and H, and the spring T, so arranged that the wheel R will so control the action of the spring T that the wheel N and the cylinder F will receive a quick intermittent motion at regular intervals of time, and that the wheel K and the cylinder E will receive a quick intermittent motion at other intervals of time.

300,967. MOLD FOR CASTING ORNAMENTAL PLAQUES, &c. JOHN H. HARDING, Milwaukee, Wis. Filed Dec. 6, 1883. (No model.)

Claim.—1. A mold composed of one or more stencils cemented together, and provided with a back, E, secured thereto, substantially as and for the purposes set forth.

2. A mold composed of one or more stencils stuck together, and provided with a back, E, to which is applied an etched, engraved, or embossed pattern, substantially as and for the purposes set forth.

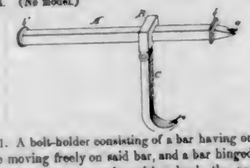
300,967.



3. The method herein described of casting ornamental and industrial designs by the use of molds composed of one or more stencils and a back, E, all cemented together, substantially as and for the purposes set forth.

4. A mold for casting designs in plaster or any like plastic material, composed of stencils cemented together, and provided with back E and wall F, substantially as and for the purposes set forth.

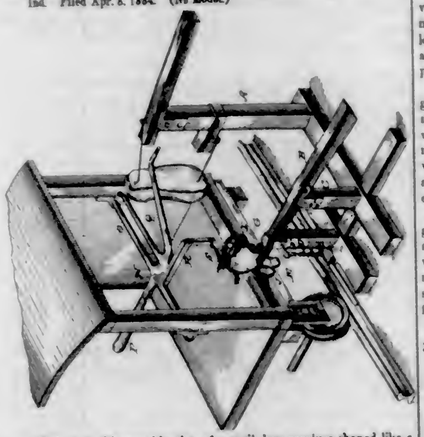
300,968. BOLT-HOLDER. MAHLON HATFIELD, Marshall, Mo. Filed Feb. 2, 1884. (No model.)



Claim.—1. A bolt-holder consisting of a bar having one end chisel-pointed, a slide moving freely on said bar, and a bar hinged to said slide and provided at its outer extremity with a hook, the parts being arranged to co-operate in the manner and for the purpose set forth.

2. In a bolt-holder, the combination of the bar A, having a bifurcated and chisel-shaped end, *a*, and stops *b* and *b'*, with a freely-moving slide, B, and bar C, provided with bifurcated hook *c*, all the parts being arranged and operating as specified

300,969. MAIL-BAG CATCHER. AUGUSTUS P. HAUSS, Sellersburg, Ind. Filed Apr. 8, 1884. (No model.)



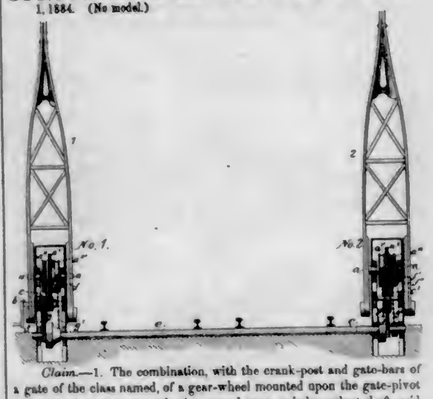
Claim.—1. The combination of a mail-bag receiver shaped like a chair-seat, having a curved rear guard-rail and downwardly-inclined arms at its outer edge, and pivoted upon the end of a lever, with means for securing it upon the lever facing in opposite directions, as and for the purpose shown and set forth.

2. The combination of a lever pivoted to swing in a vertical plane, and having means for securing it resting in a horizontal position, a mail-bag receiver having a curved guard-rail and downwardly-inclined curved arms upon its forward edge, and pivoted to turn in a horizontal plane upon the end of the lever, and a pin fitting in either of two perforations in the outer rail of the bottom of the receiver and in a corresponding perforation in the lever, as and for the purpose shown and set forth.

3. The combination of a mail-bag catcher consisting of a rocking shaft, a handle, and two forwardly-pointing catcher-arms, with an outwardly-projecting and downwardly-bent arm having a double-jawed rearwardly-projecting clamp upon its lower end, secured upon the rocking shaft, as and for the purpose shown and set forth.

4. The combination of a mail-bag catcher consisting of a rocking shaft, an inwardly-projecting handle, and forwardly-projecting catcher-arms, with a deliverer-arm consisting of a sleeve having a set-screw and fitting upon the rock-shaft, and having an outwardly-projecting and downwardly-bent arm, provided at its lower end with a rearwardly-projecting double-jawed clamp, as and for the purpose shown and set forth.

300,970. RAILWAY-GATE. JOHN HEKET, Chicago, Ill. Filed Feb. 1, 1884. (No model.)



Claim.—1. The combination, with the crank-post and gate-bars of a gate of the class named, of a gear-wheel mounted upon the gate-pivot at the crank-post, a gear-wheel mounted upon an independent shaft, said wheel standing in different vertical planes, and a broad-faced pinion mounted upon a longitudinally-moving crank-shaft, said pinion being adapted to engage both of said gears or either, substantially as and for the purpose specified.

2. In a gate of the class named, the crank-post and gate-bars, a gear-wheel mounted upon the gate-pivot at the crank-post, a gear-wheel mounted upon an independent shaft, said wheels standing in different vertical planes, and a broad-faced pinion mounted upon a longitudinally-moving crank-shaft, combined with an independent shifter for giving longitudinal movement to the crank-shaft, the pinion on said shaft being adapted to engage both gears or either, substantially as and for the purposes specified.

3. In a gate of the class named, the crank-post and gate-bars, a gear-wheel mounted upon the gate-pivot at the crank-post, a gear-wheel mounted upon an independent shaft, said wheels standing in different vertical planes, and a broad-faced pinion mounted upon a longitudinally-moving crank-shaft and adapted to engage both or either of said gear-wheels, combined with pulley, chain, and rod connections, uniting and admitting of the joint operation of the four bars, or either pair independently of the other pair, substantially as set forth.

4. In a gate of the class named, the crank-post and gate-bars, a gear-wheel mounted upon the gate-pivot at the crank-post, a gear-wheel mounted upon an independent shaft, said wheels standing in different vertical planes, and a broad-faced pinion mounted upon a longitudinally-moving crank-shaft, combined with an independent shifter for moving said crank-shaft and a lock for engaging the shifter, substantially as and for the purposes specified.

300,971. CARRIAGE-TOP. HENRY HIGGIN, Newport, Ky. Filed Apr. 3, 1884. (No model.)

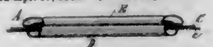


Claim.—1. A metallic valance or molding formed from a metal blank, and having the arch *d*, teats and grooves *e i*, and corrugated flanges *e*, substantially as and for the purpose specified.

2. In combination with a buggy-top, the valance C, secured upon the seam of the covering-strips I A, substantially as specified.

3. A valance or molding-strip having the arched groove *d*, corrugated flanges *e*, and a series of imitation stitches, *i*, formed of a piece of metal, substantially as specified.

300,972. LIGHT-FRAME FOR CARRIAGES. HENRY HIGGIN, Newport, Ky. Filed Apr. 19, 1884. (No model.)



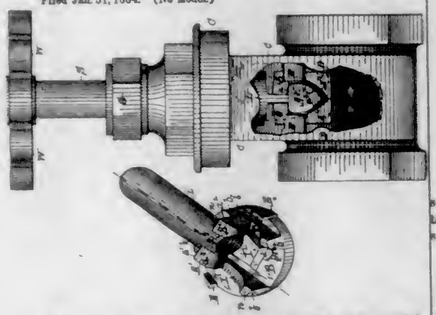
Claim.—1. A carriage window-frame composed, substantially, of a glass-frame, A, and two moldings, one being provided with hooks to secure the frame to the curtain and the other employed as a finish to cover the binding-hooks, substantially as specified.

2. The combination of the glass-frame A, the molding-frame E, having hooks *e*, engaging the glass-frame, and the molding-frame D, having tangs *d*, also engaging the glass-frame, substantially as described.

3. The glass-frame A of a carriage-window, provided with upturned edges *i*, adapted to receive the hooks *e* of the molding-frame E, substantially as specified.

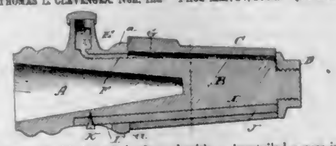
4. A glass-frame for a carriage-window, formed of metal and provided with the shoulders or gains *a*, adapted to receive the glass, leather C, and lining *c*, which are secured in position by means of the molding-frame D, having the tangs *d* bent over upon the frame A, substantially as specified.

300,973. STRAIGHT-WAY VALVE. TIMOTHY HOLLAND, Troy, N. Y. Filed Jan. 31, 1884. (No model.)



Claim.—In a straight-way valve, the combination of the parallel rib-form projections *b b* on the backs of the gates, the inclines I', made in the said projections, and said inclines constructed with the abrupt terminations *i* at the upper ends, the inclines I^2 between said rib-form projections, the cylindrical form spreader and lifter L, threaded to the stem, the arms A' A^2, projected oppositely and laterally from the lower end of said spreader and lifter, said arms having flat tops and wedge-form sides, the ears E on the gate-backs, and the stops P on the interior of the valve-case, with the said parts constructed and arranged to operate as shown and described.

300,974. SPINDLE FOR VEHICLE-WHEELS. WILLIAM HOLLOWAY and THOMAS L. CLEVENGER, Neff, Ind. Filed Mar. 26, 1884. (No model.)



Claim.—A thimble-skein formed with a dovetailed recess in its under side, and having a suitable lubricating attachment, and an annular flange, through which the said recess extends, in combination with a detachable steel wear-strip seated in the said recess and extending through the opening in the said flange, and retained in position by the latter and by a suitably-arranged fastening-screw, substantially as herein described, for the purpose shown and specified.

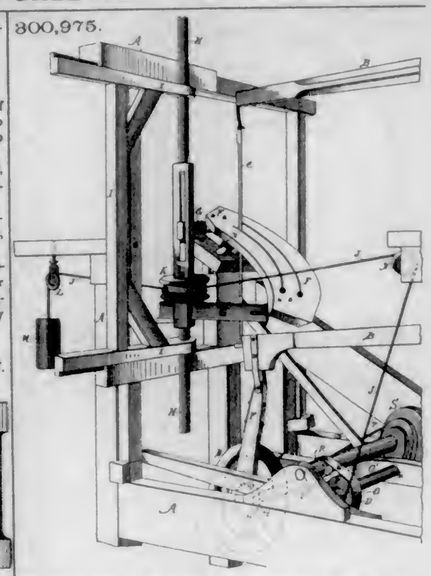
300,975. SAW-TABLE GAGE. HENRY I. HOPKINS, Cass, Mich., assignor of three-fourths to William J. Mallory, John Kelly, and Melzar M. Mallory, all of same place. Filed Apr. 25, 1884. (No model.)

Claim.—1. The combination, with a scroll-sawing machine, of a parallel-wayed frame, a pair of ways therefor, to be secured to the sawing-machine in a vertical plane nearly at right angles to the plane of the saw, and a saw-table pivoted in said parallel frame, substantially as and for the purpose specified.

2. The combination, with a parallel-wayed frame and a pair of ways therefor, of a shaft journaled in said frame and a saw-table secured to said shaft, as and for the purpose specified.

3. The combination, with a parallel-wayed frame, a pair of ways therefor, and a shaft journaled therein, of a pair of arms secured in the

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said shaft at right angles to each other and one above the other, and a table secured upon the said arms, substantially as and for the purpose specified.

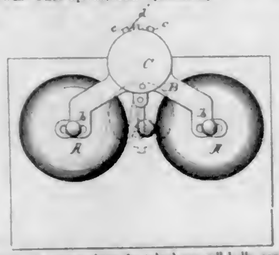
4. The combination, with a parallel-wayed frame, a pair of ways therefor, and a shaft journaled therein, of a pair of arms placed transversely in the said shaft, means for adjusting and fixing the said arms in the shaft, and a saw-table secured to the said arms, as shown and described.

5. The combination, with a parallel-wayed frame, a pair of ways therefor, and a shaft journaled therein, of a pair of arms placed transversely in the said shaft, means for adjusting one of said arms longitudinally to the shaft, and a table secured to the arms, substantially as and for the purpose specified.

6. The combination, with a parallel-wayed frame, a pair of ways therefor, a shaft journaled therein, and a pair of arms adjustably fixed at right angles to each other, and one above the other, in the said shaft, of a table fixed inclined on the said arms, and a roller for the said table to ride upon, as and for the purpose specified.

7. The combination, with a transversely-adjustable frame, a shaft journaled therein, arms adjustable in said shaft, a saw-table fixed to said arms, a roller for the said table to ride on, and a sawing-machine, of a spool on the said shaft, a cord fixed thereto, a weight attached on the said cord, guiding-pulleys therefor, and means for winding the said cord on the sawing-machine, substantially as shown and described.

300,976. TELEPHONE-CALL ANNUNCIATOR. CHAS. W HOWARD, Neenah, Wis. Filed Apr. 25, 1884. (No model.)



Claim.—1. An annunciator for telephone-call bells, consisting of a frame having arms by which it is adjusted on the bells, in combination with a disk pivoted to it, and a lever, one end of which engages with the disk and the other with the clapper of the bell, as set forth.

2. In annunciators for telephone-bells, the frame B, having slotted arms and lugs, in combination with a pivoted disk, C, and lever D, as set forth.

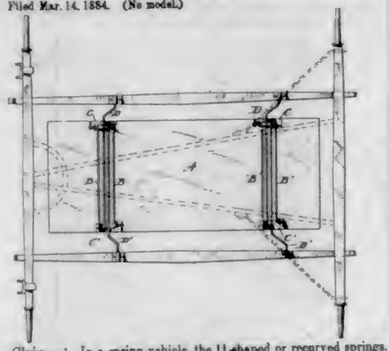
300,977. WELL-BUCKET FIXTURE. FRANK LINCOLN HOWELL, Neligh, Nebr. Filed Sept. 7, 1883. (No model.)



Claim.—1. The improved bottom for a well-bucket, consisting of the disk *h*, of larger diameter than the body, and having flange *i* and valve pivot-studs *k*, and being constructed with a central opening, *j*, and riveted in the body of the bucket, substantially as described.

2. The valve having pivots *l* formed on and at a right angle to the arms *n*, and one of said pivots having an elbow, *o*, in combination with the slotted stud-posts *k*, substantially as described.

300,978. SPRING-VEHICLE. MOSES G. HUBBARD, Norristown, Pa. Filed Mar. 14, 1884. (No model.)



Claim.—1. In a spring-vehicle, the U-shaped or recurved springs, in combination with short crank-arms on said springs, adapted to swing to their dead-centers, and thereby to cushion the movements of the load and limit the strain on the springs, substantially as described.

2. In a spring-vehicle, the recurved springs, having their fixed ends rigidly secured to the boxes in which their crank ends are journaled, substantially as specified.

3. In a spring-vehicle, the U-shaped or recurved springs, arranged in pairs and extending back and forth across the body of the vehicle, with all of the loop ends of each pair of springs journaled in a pair of journal-boxes, to which their rigid ends are secured, thereby forming a connected pair of springs, substantially as described and shown.

4. In a spring-vehicle, the U-shaped or recurved springs provided with crank-arms inclined backward from their center of motion, for the purpose and substantially as set forth.

300,979. PACKAGE AND BOOK HOLDER. CHAS. HUFF, St. Louis, Mo. Filed Apr. 7, 1884. (No model.)

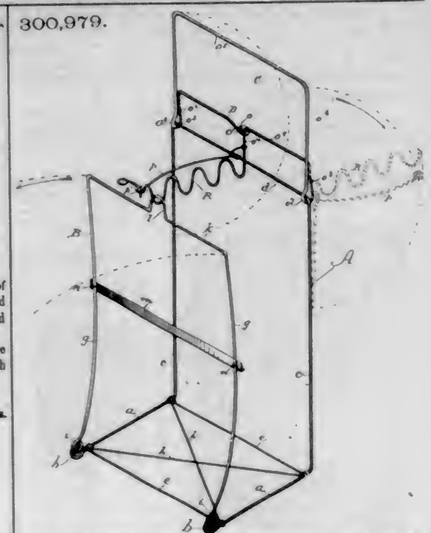
Claim.—1. The combination of the right-angular frame A, spring-frame B, pivoted thereto, handle C, hinged to the upper cross-piece of the frame A, and provided with the rack R, and means adapted to hold the rack in engagement with the frame B, substantially as shown and described.

2. The combination, with the right-angular frame A, made of a single piece of wire, of the spring-frame B, made of a single piece of wire, hinged at its lower end to the frame A, and provided at its upper end with the loop *l*, handle C, and rack R, both made of one piece of wire and pivoted to the upper end of the main frame A, and spring *p*, provided at its outer end with the loop *p'*, substantially as shown and described.

3. In a package and book holder, the combination, with the right-angular frame A, made of a single piece of wire, of the handle C and rack R, both made of a single piece of wire and pivoted to the upper end of the right-angular frame A, substantially as shown and described.

4. The combination, with the right-angular frame A, made of a single piece of wire, and provided with loops *b*, of the pivoted spring-frame B, made of a single piece of wire, and having hooks *i i* at its lower ends, which engage with loops *b*, and its longitudinal sides *g* curved in-

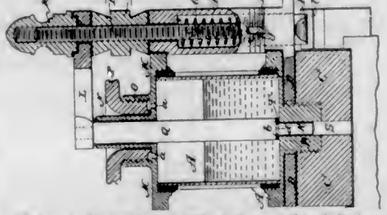
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wardly, and beveled cross-piece *m*, adjustably secured to the longitudinal wires *g g*, substantially as shown and described.

5. In a package and book holder, the handle C and rack R, both made of a single piece of wire, constructed substantially as shown and described.

300,980. OIL-CUP. JOHN J. IRVINE, Chattanooga, Tenn., assignor to himself and Lindsy L. Irvine, same place. Filed Mar. 14, 1884. (No model.)



Claim.—1. The combination, with an oil-cup, of the spindle Q, closing the outlet of the cup, the tubular standard E, formed on the separate plate D, the spindle F in the same, the spring G, acting on the spindle F, and the arm L, connecting the spindles Q and F, substantially as herein shown and described.

2. The combination, with an oil-cup, of the spindle Q in the same, the tubular standard E, formed on the plate D and extending up to the top of the oil-cup, the screw-spindle F in the standard, the spring G, the arm L, connecting the spindles F and Q, and the nut L^2 on the spindle F, between the top of the standard E and arm L, substantially as herein shown and described.

3. The combination, with an oil-cup, of the spindle Q in the same, the plate D, provided with the large central opening and small opening *f*, and formed with the tubular standard E, the spindle F, held in the standard and provided at its lower end with a beveled projection, F', extending below the bottom of the tubular standard E, and the arm L, connecting the spindles Q and F, substantially as herein shown and described.

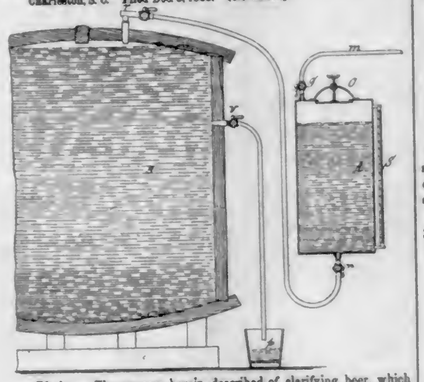
4. The combination, with an oil-cup, of the spindle Q, the tubular standard E, having slots J, the screw-threaded spindle F, the cross-pin H in the same, the arm L, the nuts L^2 and M', and the spring G, substantially as herein shown and described.

5. The combination, with an oil-cup, of the spindle Q, the spindle F, adapted to be moved vertically by the moving parts of machinery, the arm L, secured on the upper end of the spindle Q, and provided at its opposite end with a socket, and a slit, L', for receiving the spindle F, and of the nut M', the lower end of which fits into said socket for holding the arm L in place on the spindle F, substantially as herein shown and described.

6. The combination, with an oil-cup, of the vertically-movable spindle Q, having a pin, R, of less diameter than said spindle, to form a shoulder, *b*, on its lower end, and an annular groove, *d*, at the upper end of the pin R, adjacent to shoulder *b*, and of a washer, T, resting against said shoulder, and having its inner edge in the groove *d*, substantially as herein shown and described

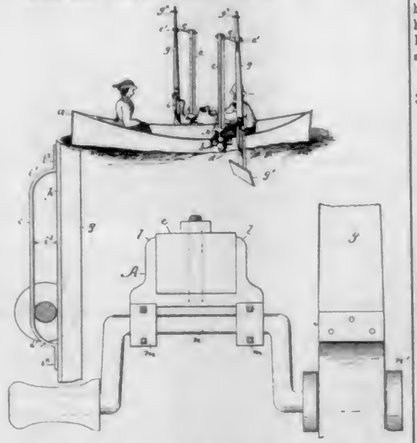
7. The combination with an oil-cup, of the cover M, the necks N and O, apertures in said cover between said necks, and the funnel P, held between the necks, substantially as herein shown and described.

300,981. PROCESS FOR CLARIFYING BEER. EMIL KEUSTEN, Charleston, S. C. Filed Dec. 5, 1883. (No model.)



Claim.—The process herein described of clarifying beer, which consists in transferring the beer directly from the fermenting-casks into the shavings-casks, closing the shavings-casks to retain within the same the carbonic-acid gas produced by the second fermentation, and forcibly injecting into the beer thus under pressure a clarifying material, while at the same time a certain amount of the beer is drawn off, substantially as set forth.

300,982. PROPELLER FOR SMALL BOATS. JOHN B. KIBLER, Minneapolis, Minn. Filed Mar. 27, 1884. (No model.)



Claim.—1. The combination, with a bottomless socket secured to the side of a boat, of an upright post adjustably secured in said socket, and provided with a guide for the paddle-bar at its upper end, and a crank-shaft for operating the paddle-bar journaled in the upright post, substantially as shown and described.

2. The combination, with bottomless socket *b*, secured to the side of a boat, and a removable post, *c*, adapted to be vertically adjusted in said socket, and provided with an arm, *e*, having a loop, *e'*, at its outer end, of the slotted paddle-bar *g*, block A, and crank-shaft *n*, substantially as shown and described.

3. The combination, with the paddle-bar *g*, provided with a plate, *h*, of the removable plate *i*, provided with shoulders *i'*, having flanges *i²*, substantially as shown and described.

4. The combination, with the paddle-bar *g*, provided with the plate *h*, of the removable plate *i*, provided with shoulders *i'*, having flanges *i²*, and crank-shaft *n*, having projection *n'*, substantially as shown and described.

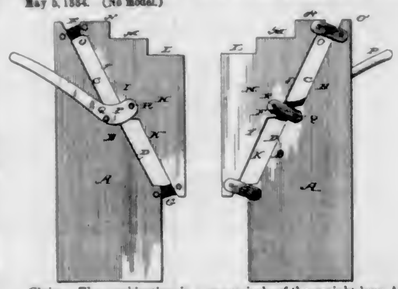
5. The combination, with the adjustable and removable post *c*, of the block A, provided with flanges *l l*, embracing the post, bearings *m m*, and crank-shaft *n*, substantially as shown and described.

300,983. SINK. JAMES KILBOURNE, Columbus, Ohio. Filed July 5, 1883. (No model.)



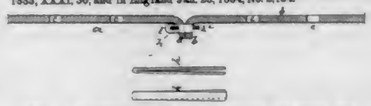
Claim.—The herein-described sink having its body and neck of substantially the shape shown, formed in one piece from a single sheet of wrought steel or iron, without joint or seam, as and for the purposes set forth.

300,984. WAGON-JACK. DAVID B. KENN, Rochester, N. Y. Filed May 5, 1884. (No model.)



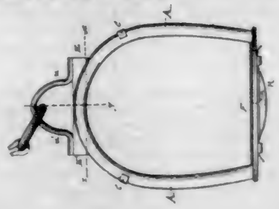
Claim.—The combination, in a wagon-jack, of the upright base A, having incline B, and steps or offsets C, D, and O', movable part H, having steps or offsets J, K, L, M, and N, hinge-links E, F, and G, lever P, and bolts Q and R, the whole constructed and combined to operate substantially in the manner and for the purpose shown and set forth.

300,985. BELT-FASTENER. ALEXANDRE DAMIENS LAGRELLE, Paris, France. Filed Feb. 28, 1884. (No model.) Patented in France Jan. 12, 1882, No. 146,814; in Belgium May 23, 1882, No. 58,002; in Italy June 5, 1883, XXXI, 30, and in England Jan. 25, 1884, No. 2,134.



Claim.—The combination of the belt having perforated ends with the bar *h*, provided with loops *l* and spring-fastener *h'*, which is adapted to be passed through said loops, substantially as herein shown and described.

300,986. STIRRUP. FRITZ LEHMANN, Tangerhütte, near Magdeburg, Prussia, Germany. Filed Nov. 6, 1883. (No model.) Patented in Belgium Sept. 30, 1882, No. 58,985; in France Nov. 27, 1882, No. 150,937, and in Germany Feb. 21, 1883, No. 21,106.



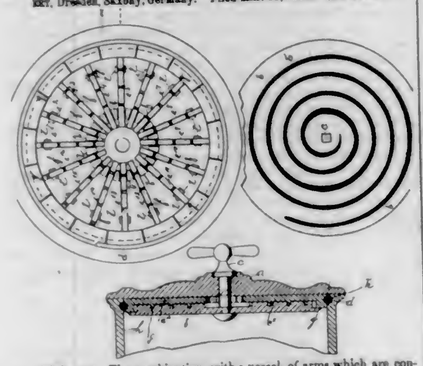
Claim.—1. The combination of a stirrup, a spring-cushioned face-frame connected thereto, means, substantially as described, by which the stirrup is detachably connected to its strap, and means whereby the strap is released by the action of the face-frame and the stirrup dropped, substantially as set forth.

2. The combination of a stirrup having horizontal side stops, a spring-cushioned face-frame connected thereto, means whereby the stirrup is detachably connected to its strap, and means, substantially as described, secured to the face-frame, whereby the stirrup is disconnected from the strap when the face-frame is pushed toward the stirrup, substantially as specified.

3. The combination of the stirrup-sections D D', hinged together at their base and overlapping at the top, a strap-eye formed of overlapping parts *n n'* at the spring-cushioned top of the stirrup, a spring-cushioned face-frame, A, connected to the base-plate of the stirrup and retained by side stops, *c c*, of the stirrup, a locking-pin, *d'*, passing through the overlapping top parts of the stirrup-sections, and a releasing-pin, *e*, at the upper end of the face-frame A, substantially as and for the purpose set forth.

4. The combination of the hinged and spring-actuated stirrup-sections D D', having fixed side stops, *c c*, and overlapping top parts, E E', having overlapping parts *n n'*, forming the strap-eye, a spring-cushioned face-frame, A, having a releasing-pin, *e*, at its upper part, a locking-pin, *d'*, applied to a transverse spring, *i*, of the overlapping part E', said locking-pin being in line with the releasing-pin of the face-frame, so as to unlock the overlapping parts E E' whenever the face-frame A is pressed back, substantially as described.

300,987. APPARATUS FOR CLOSING VESSELS, &c. EMIL LENNERT, Dresden, Saxony, Germany. Filed Mar. 11, 1884. (No model.)



Claim.—1. The combination, with a vessel, of arms which are constructed with heads on their outer ends, and radially movable between guides *l*, the upper plate, *a*, the lower plate, *b*, constructed with a convolute thread engaging with teeth on said radial arms, the bolt *c*, fixed to the lower plate, *b*, and a packing, all constructed and adapted to operate substantially as described.

2. The combination, with the cover of a vessel, of radially-movable arms, guided as described, and having grooved heads, a packing fitted into the outer ends of these heads and into a groove formed inside of the vessel, a bottom plate provided with a convolute thread on its upper side engaging with teeth on said arms, and a turning-bolt, *c*, rigidly connected to said plate, substantially as described.

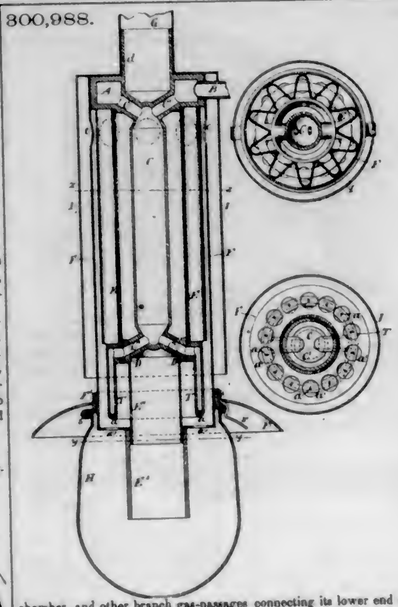
3. The combination of radially-movable headed and toothed arms interposed between the cover *a* of a vessel, and a circularly-movable bottom plate having a convolute thread engaging with the teeth of said arms, a packing between the outer ends of the arms and the vessel, and means for connecting the cover and bottom plate and turning the latter, substantially as described.

300,988. GAS-BURNER. ANDREW B. LIPSKY, West Hoboken, N. J., assignor to William Bell, New York, N. Y. Filed June 6, 1883. (No model.)

Claim.—1. In a gas-burner, the combination of a downwardly-extending burner tip or tips, a flue or passage for conducting air thereto, and a flue or passage for conveying away the waste products of combustion, the exterior wall of the waste flue or passage and the inner wall of the air flue or passage being formed by a corrugated shell, substantially as specified.

2. In a gas-burner, the combination of a downwardly-extending burner tip or tips, an annular gas-chamber, a gas-passage, branch gas-passages connecting the upper end of said passage with said annular

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chamber, and other branch gas-passages connecting its lower end with said burner tip or tips, and a flue or passage for conveying away the waste products of combustion, surrounding the main gas-passage from its upper to its lower end, substantially as specified.

3. In a gas-burner, the combination of a burner tip or tips, an air flue or passage surrounding the same, so that both air and gas will be caused to flow in the same direction, and a diaphragm extending across the air flue or passage beyond the burner tip or tips, and having perforations opposite the holes or apertures whence the gas issues from the burner tip or tips, substantially as specified.

300,989. APPARATUS FOR EMBALMING. ARTHUR S. LOVETT, Erie, assignor of one-half to Porter S. Ensworth, Waterford, Pa. Filed Oct. 23, 1883. (No model.)



Claim.—1. The combination, in a case for inclosing and embalming dead bodies, of a gas-tight bottom, B, with a flexible gas-tight cover, A, provided with a frame, B', secured to the lower edge thereof, adapted to be clamped to the bottom B or removed therefrom, the packing A' and clamps *b b'*, &c., all operating together, substantially as and for the purpose set forth.

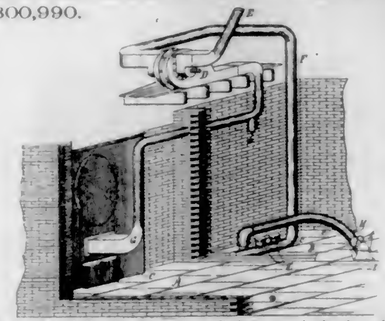
2. The combination, in a case for treating dead bodies, of the following elements: a bottom, B, mounted upon folding legs D D, a flexible gas-tight cover, A, arranged to be clamped to the bottom B, and means for supplying gas to and expelling the same from said case, all arranged and operating substantially as and for the purpose set forth.

3. The combination, with a gas-tight case for treating dead bodies, of the flexible cover A, the gas-tight bottom B, the packing A', the bellows J, the escape-cock *g'*, and escape-pipe G', all constructed and operating substantially as and for the purpose set forth.

300,990. APPARATUS FOR FEEDING SHAVINGS TO FURNACES. JAMES B. MAHAFFEY, Baltimore, Md. Filed Nov. 21, 1883. (No model.)

Claim.—1. An apparatus for feeding shavings to boiler-furnaces, which consists of a suction and forcing fan, a delivery-pipe leading from

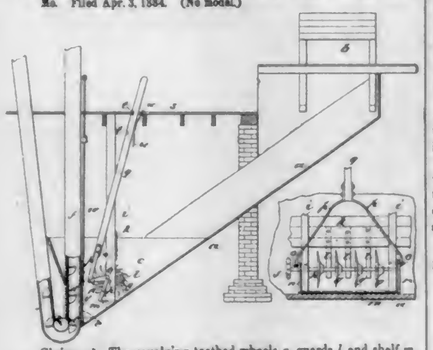
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the fan to the boiler-furnace, having a discharge-nozzle therein, and a main and supplemental supply-pipe for the fan, the said supplemental pipe having a scoop or shovel, substantially as and for the purpose specified.

2. In a fuel-feeding device, the flexible supply-pipe H, having its central portion formed of metallic conical sections, placed one within the other and connected by an exterior sleeve of canvas, substantially as specified.

300,991. EAR-CORN FEED-REGULATOR. SAML. E. MARSH, Tarkio, Mo. Filed Apr. 3, 1884. (No model.)

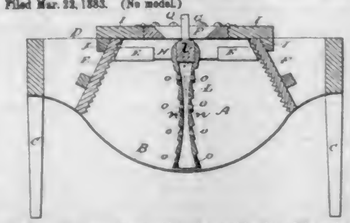


Claim.—1. The revolving toothed wheels *g*, guards *l*, and shelf *m*, in combination with the chute *a* and the elevator *d f*, substantially as described.

2. The revolving toothed wheels *g*, guards *l*, bulk-head *k*, and the shelf *m*, in combination with the chute *a* and elevator *d f*, substantially as described.

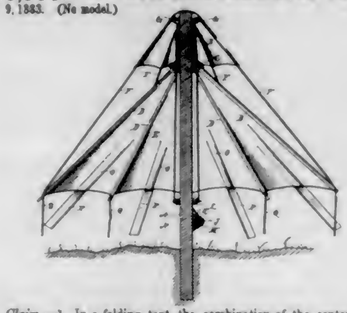
3. The shelf *m*, combined with the chute *a*, wheels *g*, and elevator *d f*, connected to the adjusting-bar *q*, with bell-cranks *n*, substantially as described.

300,992. WASHING-MACHINE. CHRISTIAN MARTIN, Goshen, Ind. Filed Mar. 22, 1883. (No model.)



Claim.—In a washing-machine, the combination of the suds-box A, provided with lugs E, the corrugated boards F, pivoted near the ends of the same, whereby they may rest against said lugs, the cover G, having cleats H, resting upon the lugs, the oscillating beater pivoted between the cleats H, the lids I, hinged to the ends of the cover, and having cleats J, adapted to confine and hold the pivoted board against the lugs, cleats K at the sides of the lids, and hooks R, as set forth.

300,993. TENT. STEPHEN MARVIN, Burnettsville, Ind. Filed Nov. 9, 1883. (No model.)



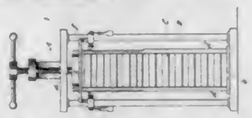
Claim.—1. In a folding tent, the combination of the center-pole, a ferrule at the upper end of the same, provided with an annular flange, ribs hinged to said flange, a cover secured to the said ribs, a sleeve or collar sliding vertically upon the center-pole, and ropes or cords attached to said sleeve or collar, passing through guide-openings in the flange of the ferrule and over pulleys at the upper end of the center-pole, and having their ends attached to the lower or outer ends of the ribs, substantially as set forth.

2. The combination of the center-pole, the hinged ribs, the cover secured to the said ribs, a sleeve or collar sliding vertically upon the center-pole, ropes connecting said collar with the lower outer ends of the ribs, said ropes passing over pulleys at the top of the center-pole, a shaft or reel journaled transversely on the center-pole below the sliding collar, and equipped with a crank or handle, ropes connecting said shaft with the said collar, and means for retaining the said shaft at any position to which it may be turned, substantially as set forth.

3. The combination of the center-pole, the hinged ribs provided with elevating mechanism, substantially as described, the cover secured to the said ribs, and provided with radial pockets, and brace-rods seated in the said pockets, substantially as and for the purpose set forth.

4. The combination of the center-pole, the hinged ribs provided with elevating mechanism, substantially as described, the cover secured to the said ribs, and a flexible cap or deflector secured to the top of the center-pole, and covering the joint between the latter and the cover, substantially as and for the purpose set forth.

300,994. CIGAR-PRESS. GEORGE MASSER, New York, N. Y. Filed May 6, 1884. (No model.)



Claim.—1. The mold-frame B, having ratchet-teeth formed on the outer edges of its upright bars *d d*, and provided with a follower, *f*, having downwardly-extending projections A, formed at its ends, which carry catches *i*, adapted, as described, to engage with said ratchet-teeth, as set forth.

2. In combination with the press A and mold-frame B, the follower *f*, perforated, as described, to receive the upper ends of the ratchet-toothed bars *d d*, and provided at each of its ends with a downwardly-extending ear, A, carrying a spring-actuated catch, *i*, having a handle, *l*, pivoted to the rear end thereof, the whole constructed as described, to operate in the manner set forth.

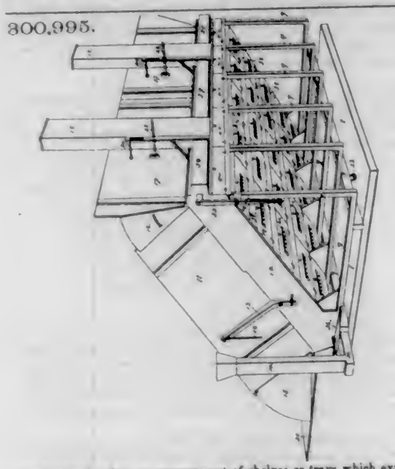
300,995. FRUIT-DRIER. WILLIAM A. MEEKER, San Francisco, Cal. Filed Jan. 9, 1883. (No model.)

Claim.—1. In a sun-drying apparatus, an inclined drying-chamber having a glass front, a reflector or system of reflectors arranged around it, and a series of trays inclosed within it, and drip-openings in the bottom of said drying-chamber, with regulating slides or gates for controlling them, substantially as described.

2. In a sun-drying apparatus, an inclined drying-chamber having a glass front, a reflector or system of reflectors arranged around it, and a series of trays inclosed within it, arranged so that each succeeding tier is higher and farther back than its predecessor, inlet and outlet flues and valves for regulating the circulation of air in said chamber, and drip-openings and slides or gates for controlling them, substantially as described.

3. A sun-drying apparatus having combined in it a glass-covered chamber, a system of reflectors for concentrating the heat of the sun in

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the drying-chamber, an arrangement of shelves or trays which exposes all of the fruit to the rays of the sun, and a system of devices for creating and regulating a draft through the drying-chamber, all combined and operating substantially as described.

4. In a sun-drying apparatus, the combination of an inclosed glass-covered drying-chamber, the system of reflectors, and the flues provided with perforated slides for regulating the inlet and outlet of air, substantially as described.

5. In a sun-drying apparatus, the combination of an inclosed glass-covered drying-chamber, a system of reflectors, a system of devices for controlling and regulating a draft through the drying-chamber, and the arrangement of trays by which each succeeding tier of trays is placed farther back than its predecessor, whereby the material supported by all the trays is subjected to uniform heat, substantially as described.

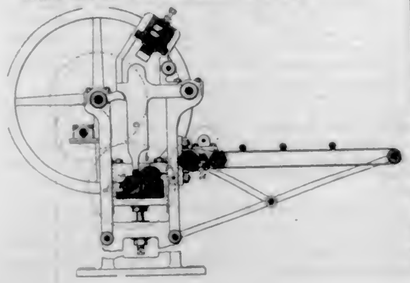
6. The combination, in a sun-drying apparatus, of a system of reflectors, a system of devices for creating and regulating a draft through the drying-chamber, and an inclosed glass-covered drying-chamber colored black on the bottom and sides, all constructed, combined, and operating substantially as described.

7. In a sun-drying apparatus, the combination of an inclosed glass-covered drying-chamber with a system of reflectors, a system of devices for creating and regulating a draft through the drying-chamber, and adjustable drip-openings in the lower part of the chamber, all combined and operating together, substantially as herein described and set forth.

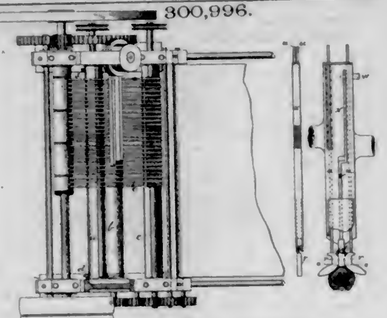
8. In a sun-drying apparatus, the combination of an inclosed glass-covered drying-chamber with a system of reflectors, a system of devices for creating and regulating a draft through the drying-chamber, adjustable drip-openings in the lower part of the drying-chamber, and the auxiliary heating-chamber 30, all combined and operating substantially as herein described.

9. In a sun-drying apparatus, the combination of a glass-covered drying-chamber with a system of reflectors, a system of devices for creating and regulating a draft through the drying-chamber, adjustable drip-openings in the lower part of the drying-chamber, and a stove and heating-pipe, all combined and operating substantially as herein described.

300,996. BARK-PEELING MACHINE. FRANZ MERDIGER, Trier, Prussia, Germany. Filed Nov. 3, 1882. (No model.)

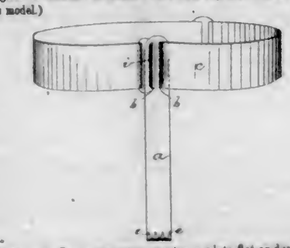


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Claim.—In a bark-peeling machine, the combination of the rollers *a b c*, supported in suitable frame-work, and driven by suitable power, mechanism, substantially as described, for delivering the logs to the roller *c*, the projection on said roller adapted to throw the log to the rollers *a* and *b*, mechanism for operating on the bark of the log while being rotated by the revolution of the rollers *a b*, and the projection on the roller *a*, for removing the log when peeled, substantially as described.

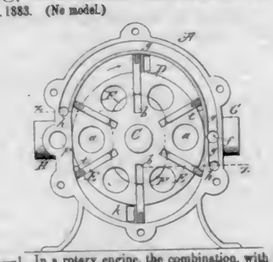
300,997. GARMENT-SUPPORTER. ESENS METHOT, Boston, Mass., assignor of one-half to Homer Methot, same place. Filed Apr. 12, 1884. (No model.)



Claim.—1. In a garment-supporter, a plate flat or devoid of projections on its back side, and provided at one end with teeth or points which are bent upwardly and extend substantially parallel with the front of the plate, whereby the plate is adapted to be placed between the stocking and the limb of the wearer with the teeth engaged with the stocking, and provided with means for attaching a strap, substantially as described.

2. A garment-supporter composed of the elongated plate *a*, having longitudinal slots *b b* at one end, adapted to receive a garter, and teeth *c c* at its other end, bent upwardly and standing substantially parallel with the body of the plate, as set forth.

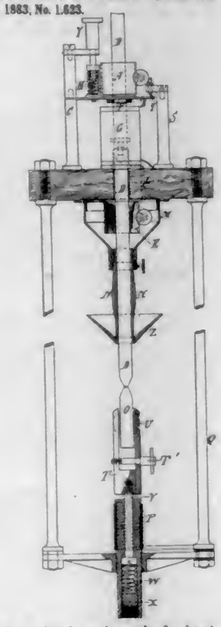
300,998. ROTARY ENGINE. JOHN MOFFET, New York, N. Y. Filed Sept. 27, 1883. (No model.)



Claim.—1. In a rotary engine, the combination, with a vertically-elongated shell or casing having steam inlet and exhaust passages formed in the ends and sides, of stationary cams secured to the inner sides of the casing-heads, a shaft passed through the center of said cams and journaled in the casing-heads, a slotted cylinder secured to said shaft, and sliding piston-blades supported in said cylinder with their ends bearing against the cams, substantially as described.

2. In a rotary engine, the combination of the shell A, having steam-inlet passages G *f g h i* and exhaust-passages *k k m m t t p* H, the stationary cams F F, shaft C, cylinder D, and sliding piston-blades E E, substantially as described.

300,999. ARC LAMP. FRANCIS MURRAY NEWTON, Belfast, County of Antrim, Ireland. Filed Nov. 28, 1883. (No model.) Patented in England Mar. 31, 1883, No. 1,623.



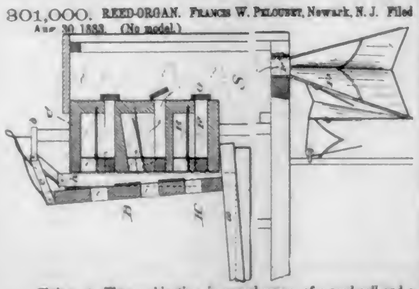
Claim.—1. In an electric-arc lamp, the fixed carbon-holder E, provided with fingers, feelers, or wires set in a foundation of metal, leather, or india-rubber, or other suitable material, and a suitable adjusting device, such as shown, whereby the hold upon the carbon is increased or diminished, substantially as described.

2. In an electric-arc lamp, the combination of an electro-magnet or solenoid whose circuit is closed or short-circuited whenever the device makes its stroke, with the vibrating or reciprocating device A, formed of elastic fingers, as described, and the fixed braking carbon-holder of the same kind, substantially as described.

3. In an electric-arc lamp, the combination of the spring H, provided with an adjusting-screw, Y, carbon-holder A, pivoted arm B, contact-piece I, column S, electro-magnet G, fixed carbon-holder E, casing M, contact-springs N N, and dust-cap Z, substantially as described.

4. In an electric-arc lamp, the spring H, pivoted arm B, vibrating carbon-holder A, electro-magnet G, and stationary carbon-holder E, substantially as described.

301,000. REED-ORGAN. FRANCIS W. PELOUBET, Newark, N. J. Filed Aug. 20, 1883. (No model.)



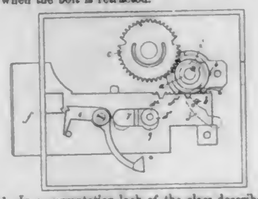
Claim.—1. The combination, in a reed-organ, of a reed-cell and a palette actuated by the key, and provided with an opening, through which the reed may be drawn, all substantially as herein set forth and shown.

2. The combination, in an organ, of a series of reed-cells arranged in a line with a palette connected to the key or pieces A' at one end, and to a stationary piece or part at the other, said palette having an oblique movement, all substantially as and for the purposes set forth and shown.

3. The combination, with a series of cells and reeds, of a palette having an oblique movement to and from said series of reeds, and having a series of openings, through which the reeds may be drawn when the palette is open, substantially as herein set forth and shown.

301,001. PERMUTATION-LOCK. OLIVER E. PILLARD, Cambridge, Mass. Filed Sept. 2, 1882. (Model.)

Brief.—The spindle is locked, so that the key cannot be removed from the lock when the bolt is retracted.



Claim.—1. In a permutation-lock of the class described, the combination, with the key, key-spindle, and bolt, of a pivoted locking-dog to engage the said key-spindle, and means, substantially as described, on the bolt, whereby, when the bolt is moved, the said locking-dog is operated to be engaged with or disengaged from the key-spindle, as set forth.

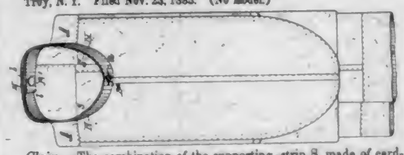
2. In a permutation-lock, the gears operated by the key-spindle, and bolt-controlling gears meshing therewith, combined with the disengaging device for the said gears, consisting of the notched disk engaging the spindle of the said gears, and adapted to be rotated by a wrench or key, substantially as described.

3. The key-spindle and locking-dog *j* therefor, combined with the lock-bolt provided with a stud, whereby the said locking-dog is disengaged from the key-spindle in the forward movement of the said bolt, substantially as described.

4. The key-spindle, gears actuated thereby, and bolt, combined with the locking-dog *j*, for the said spindle, operated by the movement of the bolt, and a disengaging-disk for the said gears independent of the bolt, substantially as described.

5. The combination, in a lock of the class described, of the gears operated by the spindle and the bolt-controlling gears, with the disengaging-disk *m*, notched to receive the spindle of the said bolt-controlling gears, and the holding device for the said disk, whereby the said gears are retained in either the connected or disconnected position until positively moved therefrom, substantially as described.

301,002. SUPPORT FOR SHIRT-NECKBANDS. GEORGE W. PINE, Troy, N. Y. Filed Nov. 23, 1883. (No model.)



Claim.—The combination of the supporting-strip S, made of cardboard or bonnet-board, and bent to have the lapping ends *l l*, when inserted within the neck-opening of the shirt, the openings O^2 O^3, made through said lapping ends, the opening O', made in the front of the bent strip, and the stud-buttons B' and B^3, adapted to connect said strip with the neckband at the front and back, in the manner and for the purposes herein set forth.

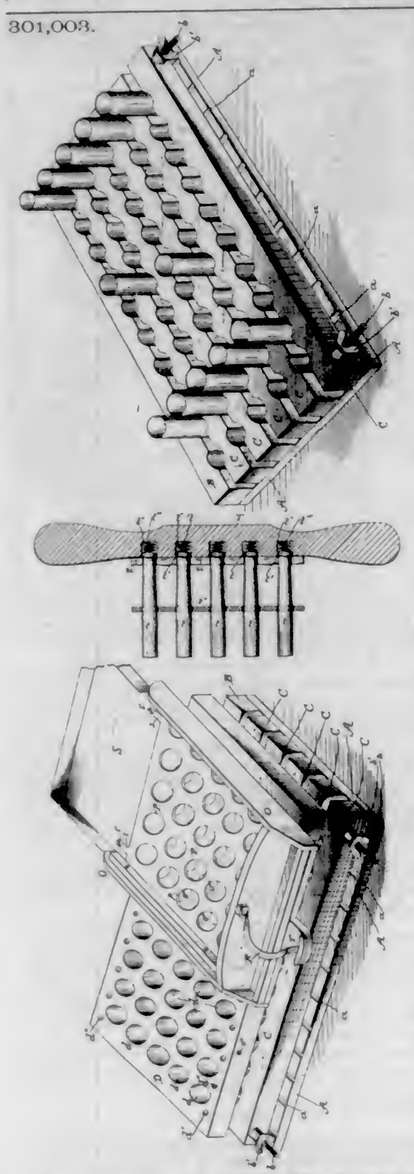
301,003. CARTRIDGE-LOADING MACHINE. ROBERT POOLE, New Providence, Tenn. Filed Jan. 7, 1884. (No model.)

Claim.—1. In cartridge-loaders, the combination of the base-board A, having straight parallel grooves *a* in its upper surface, the slat B, fixed to the top and edge of said base-board, and having screw-bolts *b* projecting therefrom, and thumb-nuts *b'* at the ends of such bolts, and the movable slats C, threaded and sliding upon the aforesaid screw-bolts, all substantially as and for the purposes described.

2. The wad-starting plate herein described, having the orifices *d* flared at the under side to fit readily upon the edges *c'* the cartridge-shells, and flared toward the upper side of the plate, as shown, the said wad-starting plate having also the annular seat *d'* near the middle circumference of each orifice, for the better reception and guidance of the charges of powder and shot, all as herein set forth, for the purposes described.

3. The wad-rammer herein described, having ramming-posts *l*, provided with caps *l'*, which fit loosely into sockets *l''*, and bear against spiral springs *l'''* in the heads of said sockets, said posts being held in the sockets by the yokes *u*, and made rigid by the collar *v*, all substantially as herein described.

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4. In cartridge-loaders, the combination of the wad-tray O, having the strip *o*, orifices *o''''*, and the lip *r*, the cut-off P, having flared orifices *p*, co-operating with the orifices *o''''*, the bow-spring R, bearing against the lip of the wad-tray and the lug *r'* of the cut-off, and the trough S at the lower end of the wad-tray, provided with notches *s*, to fit upon the buttons *s'* to hold the trough in place upon the tray, all substantially as and for the purposes described.

5. In cartridge-loaders, the combination of the hopper herein described, divided by the partition-wall *e*, supported by flanges *e'*, and discharging its contents through orifices *e''*; the cut-offs G beneath the hopper, provided with orifices *g* to discharge the powder and shot from the hopper, flanges *g'* to aid in the longitudinal movement of said cut-offs, and eyes *l* for the entrance of the thumb-screws hereinafter mentioned, and carrying brackets *h'* to form bearings for the cut-off springs of the hopper; the corrugated rubber plate I between the hopper and the cut-offs, having orifices *i*; the slats K beneath the cut-offs, to increase the charges, provided with orifices *k* to discharge the loads into the shells, and eyes *k'* for the reception of the herein-mentioned thumb-screws; the thumb-screws L, working through the flanges of the cut-offs, to unite the cut-offs and perforated slats when deeper charges are required; the thumb-screws M, working upward through the platform-floor hereinafter mentioned, to hold in place the slats not united to the cut-offs; the platform F, bearing the walls *f*, which support the hopper and inclose the cut-offs, the partition *y*, which keeps the two cut-offs a proper distance longitudinally apart, and the clamps *h*, which receive and support the cut-off springs, said platform having orifices *f''* to discharge the loads passing from the hopper to the shells, and eyes *m* for the reception of the thumb-screw M, hereinbefore mentioned, and being further provided with guide-strips *f'''* on the under side; the orificed step N upon the said platform, to compensate for the greater depth of the cut-off used for measuring powder as compared with that used for measuring shot; and the spiral springs H, to restore the orifices of the cut-offs to a correspondence with those of the hopper as soon as a charge has been cut off and passed on to the cartridge-shells, all substantially as and for the purposes described.

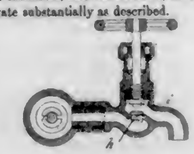
6. The combination, in a cartridge-loading machine, of the base-board A, having surface grooves *a*, and bearing the fixed slat B, provided with screw-bolts *b*, upon which are movable slats C, held in adjustment by the thumb-nuts *b'*; the wad-plate D, having orifices *d* flared at the upper and under sides of the plate, and provided with an annular seat, *b'*, near the middle circumference of each orifice; the hopper E, divided lengthwise by the partition *e*, supported by flanges *e'*, and having flared discharge-holes *e''*; the cut-offs G, co-operating with the hopper to measure and discharge the loads, having discharge-holes *g*, flanges *g'* to assist in moving the cut-offs and to connect them to adjustable false bottoms designed to increase their capacity; eyes *l* for the reception of the bolts securing the false bottoms, and brackets *h'* for the springs which restore correspondence between the discharge-holes of hopper and cut-offs; the corrugated rubber plate I, interposed between the contact-surfaces of hopper and cut-offs to lessen friction of the powder and avoid jamming the shot during the cut off of a charge, and having orifices *i* corresponding to those of hopper and cut-offs; the slats or false bottoms K, to increase the depth of the cut-offs, provided with discharge-holes *k* and eyes *k'* for the reception of the screw-bolts attaching said slats to the cut-offs; the thumb-screws L and M, to attach and detach the false bottoms to and from the cut-offs; the platform F, bearing the hopper-walls *f*, the guide wall or partition *y* between the cut-offs, and the clamps *h*, which hold the cut-off springs, and having eyes *m* for the reception of the screw-bolts which hold the false bottoms to the platform when not attached to the cut-offs, discharge-holes *f''* and guide-strips *f'''* on the under side; the step F, erected upon the platform, and having orifices corresponding to those of platform and cut-offs; and the spiral springs H, which restore the cut-offs to their place beneath the hopper when a charge has been measured and discharged, all substantially as and for the purposes described.

301,004. INJECTOR. JOSEPH REICHMANN, Chicago, Ill. Filed Mar. 1, 1884. (Model.)

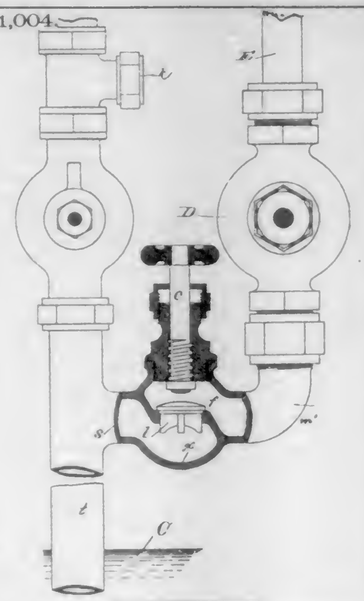
Claim.—1. The combination, with an injector, of an ejector communicating directly with the overflow and water-supply passages of the said injector, whereby the air is drawn from the overflow-chamber through the combining-tube, and also from the water-supply pipe, substantially as described, and for the purpose set forth.

2. The combination, with an ejector, of an injector, with the overflow and water-supply passages of which the said ejector has direct communication, to draw the air from the overflow-chamber through the combining-tube, and also from the water-supply pipe, said injector being constructed to effect the sealing of the communication between the overflow-chamber of the said injector and the said ejector by the passage of a jet of steam from the receiving tube or nozzle of the said injector through the combining-tube of the same, substantially as described.

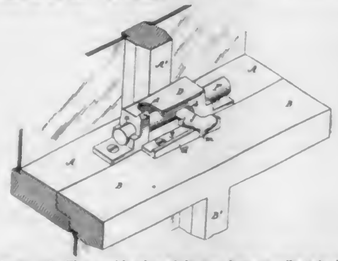
3. The combination, with an injector, of an ejector communicating with the overflow and water-supply passages of the said injector, and comprising, in combination, the following elements, viz: a casing having a steam-chamber, *p*, and vacuum-chamber *g*, steam-pipe E, connecting the ejector with the boiler, nozzle *o*, pipe *i*, to afford communication between the injector and feed-water supply, T-branch *s*, for connecting the ejector to the injector, chambers *x* and *f* within the T-branch *s*, valve *l*, between the said chambers, and valve-stem *c*, all being constructed and arranged to operate substantially as described.



301,004.



301,005. SASH-FASTENER. JACOB D. REIFF, Skippackville, Pa. Filed Feb. 20, 1884. (No model.)



Claim.—1. The combination of the two bars or rails to be locked, with a casing, D, secured to one rail, and having recesses *b* and *d*, and with the bolt F, guided in the casing parallel with the edge of the rail, and having a projection, *f*, adapted to overlap and lock the other rail, as set forth.

2. The combination of a casing, D, having recesses *b* and *d*, with a longitudinally-inclined flange, G, and the bolt F, guided in the casing, and having a projection, *f*, overlapping the rail B, and having a lug, *m*, for engagement with the flange G, as set forth.

3. The combination of the rail A, having a casing, D, with recesses *b* and *d*, the rail B, having a flange, G, with inclined upper edge, and the bolt F, guided in the casing D, and having a projection, *f*, overlapping the rail B and its flange, as set forth.

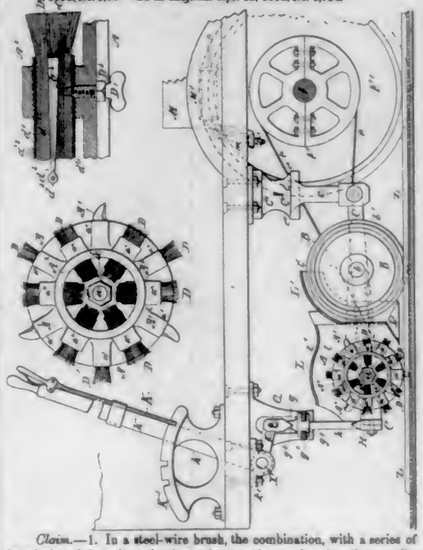
4. The combination of the rails A B, the casing D, secured to the rail A, and having recesses *b* and *d* and lug *n*, and the bolt F, guided in the casing, and having a projection, *f*, with a lug, *i*, adapted to engage with the lug *n*, as set forth.

301,006. ART OF MANUFACTURING FERMENTING MATERIALS. FRIEDRICH ADOLF RIEHLEN, Stuttgart, Würtemberg, Germany. Filed Oct. 24, 1883. (Specimens.)

Claim.—1. As a new article of manufacture, a ferment composed of a foundation of a vegetable fiber and of a deposit of fungoid growths formed on said foundation.

2. The within-described process for producing fermentation fibers by covering a vegetable foundation with a portion of the liquid for which the fermentation fiber is to be used, and then exposing such covered fiber to the atmosphere, substantially as set forth.

301,007. MACHINE FOR CLEANING TRAM-RAILS. JOHN REMFRY, Calcutta, India. Filed Dec. 4, 1882. (No model.) Patented in India Dec. 1, 1881, No. 1,008, and in England Apr. 12, 1882, No. 1,734.



Claim.—1. In a steel-wire brush, the combination, with a series of bunched and bound steel wires, of a tapering wedge forced centrally through said bunch of bound wires, and having its upper end bent over the bound end of the brush.

2. In a steel-wire brush, the combination, with a series of bunched and bound wires, of the wedge made tapering longitudinally, and of triangular form in cross-section, adapted to be forced centrally through the tied part of the wires and its projecting end bent over, as and for the purpose specified.

3. In a steel-wire brush, the combination, with a series of bunched and bound wires, of a wedge made tapering longitudinally, and terminating at its taper end in a loop or eye, as and for the purpose specified.

4. The wheel A, having an annular flange or boss, A^3, provided with a series of peripheral openings, and the brushes D, in combination with the pointed set-screws D′, substantially as and for the purpose specified.

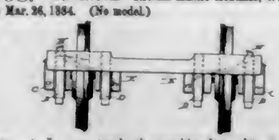
5. The wheel A, having an annular flange, A^3, provided with a series of peripheral openings, and the brushes D, in combination with the pointed set-screws D′ and the check-nuts D^2, arranged for co-operation substantially as and for the purpose specified.

6. The wheel having a series of peripheral openings, and an annular flange, A^3, provided with like openings, the scrapers or cutters A′, and the brushes D, of the set-screws D′, and the check-nuts D^2, all arranged for co-operation on a grooved track or tramway, as described.

7. The combination, with the scraper and brush-wheel and the trailing or guide wheel, of a casing, L L′, constructed substantially as described, and adapted for vertical and lateral movement with the said wheel, as and for the purpose specified.

8. The combination, with the scraper and brush-wheel, of a casing composed of a semi-cylindrical portion, L, a deflector, and covering-plate L′, having foot-piece L^2 and slanting sides, substantially as and for the purpose specified.

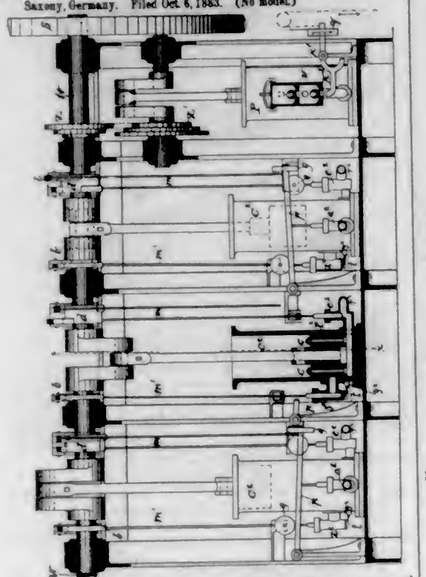
301,008. CAR-TRUCK. THOMAS HENRY ROBERTS, Wilmington, Del. Filed Mar. 26, 1884. (No model.)



Claim.—1. In a car-truck, the combination, with the truck-frame provided with the longitudinal beams B, having the pedestals C, equalizing-bars F, coil-springs G, and extra boxes E, of the divided axles having journals A, and the inner boxes, E, having the oil-receptacle H on the outside of the truck-frame, connected to the inner box by a feed-tube, substantially as specified.

2. In a car-truck, the combination, with the inner extra boxes, E, of the oil-receptacle H on the outside of the truck-frame, connected to said inner box by a feed-tube, substantially as specified.

301,009. GAS-ENGINE. FRIEDRICH WILHELM RACHEOLS, Dresden, Saxony, Germany. Filed Oct. 6, 1883. (No model.)



Claim.—1. In gas-motors, the combination, with an air-pump and one or more engines, constructed substantially as described, of the hot-water tank G, the reservoirs G′ G^2, the gas-holder pipes forming communications between the same, the pipes communicating with the engine, their automatic valves, and a gas-pipe communicating with the reservoir G^2, and terminating in a burner near the inlet-valve r^2 to the piston-cylinder C^2, substantially as described.

2. In combination, gas-generators and a gas-holder, and a hot-water tank, G, therefor, the pipes O *r y*, provided with valves, one or more engines, and an air-pump, all constructed and adapted to operate substantially as and for the purposes described.

3. The combination, with the air-pump valve *v*, of the forked lever K′, the counterbalancing-weight *q* on one arm of this lever, the chain and pulleys, the weight Q, and the vertically-movable hood of the gas-holder, all constructed and adapted to operate substantially in the manner and for the purposes described.

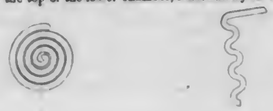
4. The combination of one or more engines, pipes r r^2 u^2 *u*, communicating with these engines, and an explosive-gas-making apparatus in a warm-water tank, automatic-working valves applied to these pipes, and a gas-jet pipe communicating with the reservoir G^2, substantially as described.

5. The combination, with the gas-motors, the gas-generators, and the communicating pipes, of the air-engine, the crank-shaft thereof, the crank-shaft W, and the stepped-cone pulleys Z Z′, all constructed and arranged substantially as described.

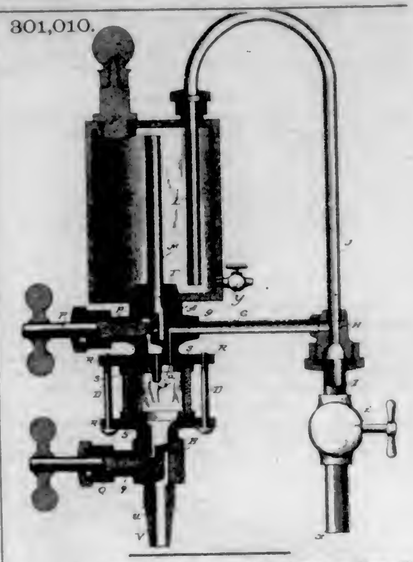
301,010. LUBRICATOR. PHILIP L. SCHMITT, Quincy, Ill. Filed Apr. 12, 1884. (No model.)

Claim.—1. The oil cup or reservoir having an induction-pipe for the steam and the escape-pipe for the overflow of oil, in combination with the lower chamber, having the glass-wall passages, as described, leading thereto with proper valves, and leading also to the steam-pipes, and the live-steam pipe G, all substantially as described.

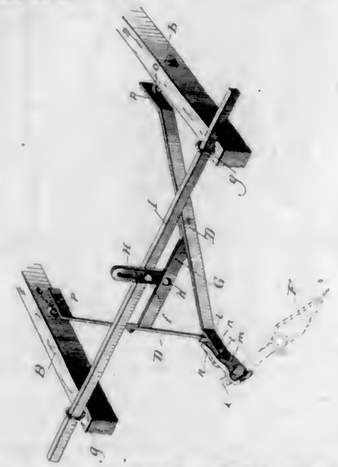
2. The upper fitting, A, having an extension, T, for connection with the reservoir, an extension, *p*, for the valve, and one for the pipe G, and a lower part formed with grooves S, and the ears R, whereby it is adapted to form the top of the lower chamber, substantially as described.



301,010.



301,011. CULTIVATOR. CHRISTOPHER L. SCHOENSTEDT, Monee, Ill. Filed Feb. 14, 1884. (No model.)



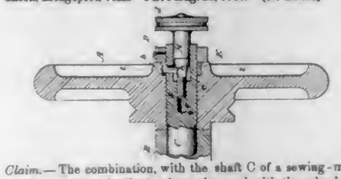
Claim.—1. A central share for attachment to a cultivator, to extend behind the side shares, in combination with mechanism, substantially as described, for connecting the said share flexibly to the said cultivator, whereby the central and side shares may be raised and lowered together by the simultaneous operation of both levers of the side beams, but whereby the independent vertical movements of the share-carrying side beams shall not be prevented, as set forth.

2. The combination, with the share-carrying side beams of a cultivator, of a central share extending behind the side shares, and mechanism for connecting the said central share flexibly to the said side beams, whereby the central and side shares may be raised and lowered together by the simultaneous operation of both levers of the side beams, but whereby the independent vertical movements of the said side beams shall not be prevented, substantially as described.

3. A central share, F, for attachment to the share-carrying side beams of a cultivator, and to extend behind the side shares, in combination with the frame D, bolder *m*, secured to the said frame, and provided with an opening to receive the central share, F, brace G, slotted upright bar H, secured to the said brace, transverse bar I, adjustably secured to

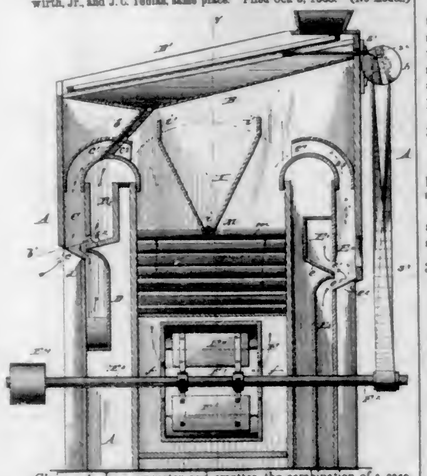
the slotted upright bar H, mechanism upon each side beam, B, of the cultivator, to receive the bar I and permit a longitudinal sliding movement of the same, and mechanism for flexibly securing the frame D to the side beams, B, all being constructed and arranged to operate substantially as described.

301,012. CLUTCH FOR SEWING-MACHINE WHEELS. JEROME B. SIGOR, Bridgeport, Conn. Filed Aug. 22, 1883. (No model.)



Claim.—The combination, with the shaft C of a sewing-machine, having a threaded longitudinal end opening, and with the wheel A, confined to turn on the shaft without sliding, of a split ring, E, arranged between the shaft and wheel, a wedge-ended pin, *i*, extending through a radial opening in the shaft and between the ends of the ring, and a screw-pin, H, having a tapering portion, *h*, all substantially as set forth.

301,013. SEPARATOR AND SMUTTER. WILLIAM N. SHARPNACK and MICHAEL MCMAHON, Bucyrus, Ohio, assignors of one-half to G. Donnenwirth, Jr., and J. C. Tobias, same place. Filed Oct. 3, 1883. (No model.)



Claim.—1. In a separator and smutter, the combination of a case, A, having separating-chambers opening into the case, an equalizing-valve pivoted in said case between the openings of the separating-chambers, and a suction device, substantially as described.

2. In a separator and smutter, the combination of a case, A, having separating-chambers opening into the case, shelves or plates placed below the openings of the separating-chambers, a fan, and a fan-case immediately below or under said shelves or plates, having openings at each end, substantially as described.

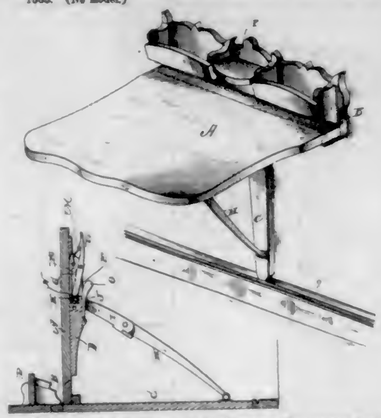
3. In a separator and smutter, the combination of a case, A, having separating-chambers opening into the case, shelves or plates below the openings, a fan, and a fan-case extending longitudinally below and parallel with the shelves, and open at each end, substantially as described.

4. In a separator and smutter, the combination of a case, A, having separating-chambers opening into the case, a wedge-shaped equalizing valve pivoted between the separating-chambers, and a suction device, substantially as described.

5. In a separator and smutter, the combination of a case, A, having separating-chambers opening into the case, a wedge-shaped equalizing-valve having its ends bent, substantially as shown, and a suction device, substantially as described.

6. In a separator and smutter, the combination of a case, A, having separating-chambers opening into the case, shelves or plates placed below the openings of the separating-chambers, a fan and a fan-case immediately below or under said shelves or plates, and having suitable openings for sucking and expelling the air, substantially as and for the purpose described.

301,014. DESK. DAVID SHULER, New Dover, Ohio. Filed Oct. 23, 1883. (No model.)



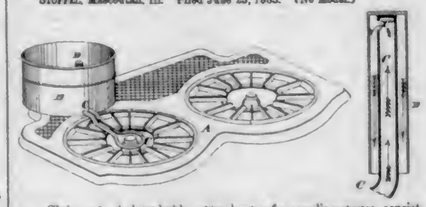
Claim.—As an improvement in leaf-supports, the combination, with the wall-bracket, of the hinged drop-leaf, a support for the same constructed of two hinged sections, a rail, D, under the drop-leaf, provided with a recess, E, a pin extending laterally from the upper supporting-section, I, into the recess, a spring-latch, L, engaging with the said pin, and a hinged latch, O, engaging the upper supporting-section, so as to prevent the support from folding, as set forth.

301,015. FILTERING COMPOSITION. RICHARD M. SOMMERS, Philadelphia, Pa. Filed Aug. 27, 1883. (No specimens.)

Claim.—1. A filtering composition in which are combined phosphate of lime and animal charcoal, substantially as and for the purposes specified.

2. A filtering composition consisting of gravel, white bar-sand, animal charcoal, and phosphate of lime, in or about the proportions specified.

301,016. WATER-HEATER FOR GASOLINE-STOVES. JULIUS W. STOFFEL, Mascoutah, Ill. Filed June 23, 1883. (No model.)



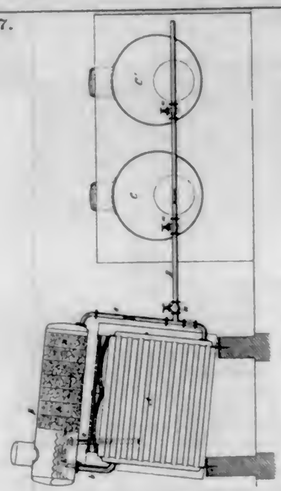
Claim.—1. A detachable water-heater for gasoline-stoves, consisting of a vessel to rest on or off the stove, a pipe extending from the side of the vessel, down beneath the surface of the stove, to, around, and from the burner, and back, upward, and then through the side of the vessel, and finally upward to form a straight vertical portion closed at top, having a perforation in its side, the whole constructed and arranged substantially as shown and described, as and for the purpose set forth.

2. A water-heater for gasoline-stoves, consisting of a vessel to rest on or off the stove, a pipe extending from the side of the vessel to, around, and from the burner, having upturned discharge end, and a tube having closed upper end, and placed over the discharge end to conduct the discharge to the lower part of the vessel, as set forth.

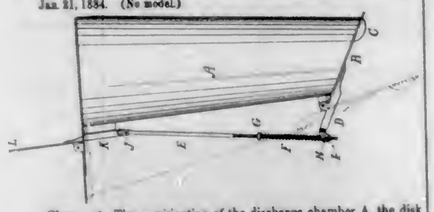
301,017. HEATING AND FEEDING WATER TO STEAM-BOILERS. HEINRICH STOLLWERCK, Cologne-on-the-Rhine, Prussia, Germany, assignor to Gebr. Stollwerck, same place. Filed Feb. 13, 1884. (No model.)

Claim.—The combination, substantially as herein described, of the high-pressure boiler A, and the low-pressure boiler or boilers connected with the lower part of the former, with the filtering-chamber B, for receiving the feed-water, a connection, *c*, between one end of the filtering-chamber and the lower part of the high-pressure boiler, and a connection, *b*, between the upper part of the latter and other end of the filtering-chamber, for the passage of steam and hot water into the filtering-chamber to force the feed-water through the latter to the high-pressure boiler, the combination being to feed the low-pressure boiler or boilers from the high-pressure boiler with feed-water free from incrustation, substantially as described.

301,017.



301,018. DRY CLOSET. FREDERICK F. STREET, Hartford, Conn. Filed Jan. 21, 1884. (No model.)



Claim.—1. The combination of the discharge-chamber A, the disk B, the lever D, the rest H, the spring F, the rod E, furnished with the nuts G and I, and the seat-lid L, furnished with the arm K, all combined and operating together substantially as described.

2. The combination of the rod E, the nuts G and I, the spring F, the rest H, and the lever D, and means for operating the same, substantially as described.

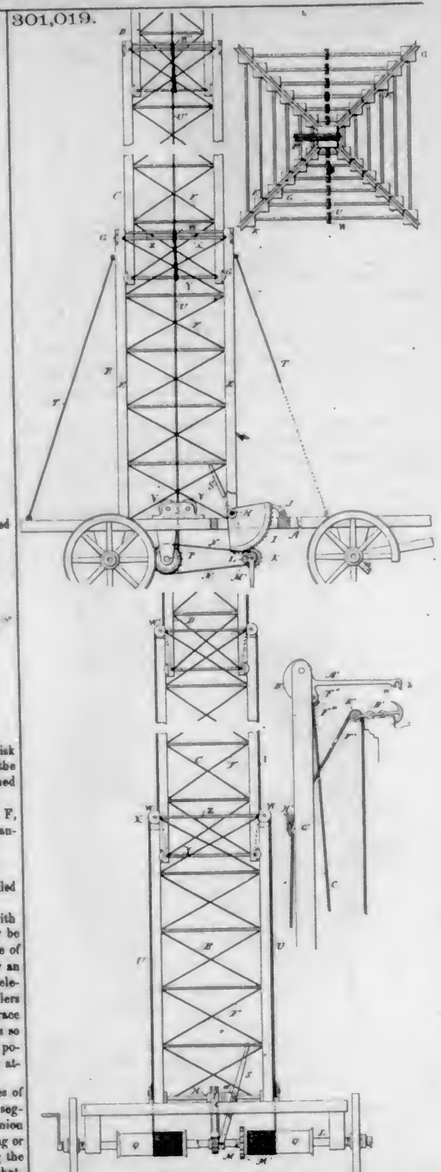
301,019. FIRE-ESCAPE. B. FRANK TEAL, Philadelphia, Pa. Filed Apr. 3, 1883. (No model.)

Brief.—A segmental gear secured to the lower section gears with a pinion on one shaft provided with a clutch mechanism that may be either connected to the said pinion and segment, to adjust the angle of inclination of the structure, or with a sprocket-wheel connected by an endless chain to another sprocket-wheel on the shaft carrying the elevating-rope drums, by which the sections are extended. Guide-rollers are so set into the ends of the posts of the sections as to directly embrace the edges of the posts of the next inner section. A swinging lever is so pivoted to the top of the structure as to be swung from its hanging position on one side over to the other side, carrying and securing an attaching-hook and rope-pulley.

Claim.—1. The combination of the supporting-truck, the series of telescopic sections, the lowest section being hinged to the truck, the segmental gear connected with the lowest section, the shaft carrying a pinion to mesh with the gear, and a sprocket-wheel, the ropes for elevating or projecting the sections, the shaft provided with a drum for carrying the ropes, and with a sprocket-wheel, a chain connecting the two sprocket-wheels, and the clutch for connecting with the pinion and sprocket-wheel on the same shaft, substantially as and for the purposes set forth.

2. The combination of the series of sliding sections, means for elevating the sections, a swinging lever pivoted to the top section, and adapted to hang perpendicularly on one side, and to be swung to the other side of the section, and means for swinging the lever, substantially as and for the purpose set forth.

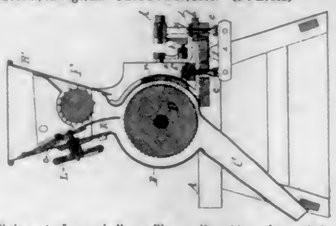
3. The combination of the series of sliding sections, means for elevating or projecting the sections, a lever hinged to the top section, having a curved arm at one end and a hook at the other end of the form described, having the barb *b*, and means for swinging the lever, substantially as and for the purpose set forth.



4. The combination of the series of telescopic sections, means for elevating or projecting the sections, a lever hinged to the top section, having a curved arm at one end and hook of the form described at the other end, a grappling-hook and its rope suspended from the hook end of the lever and from a hook on the top section, and means for swinging the lever, substantially as and for the purpose set forth.

5. The combination of the series of telescopic sections, means for elevating or projecting the sections, and the grooved guide-rollers set into the ends of the posts composing one section, so as to embrace the edges of the posts composing another section, substantially as and for the purpose set forth.

301,020. PORTABLE GRINDING-MILL. REINHOLD WAAK and CARL JAEGER, Chicago, Ill. Filed Nov. 27, 1883. (No model.)

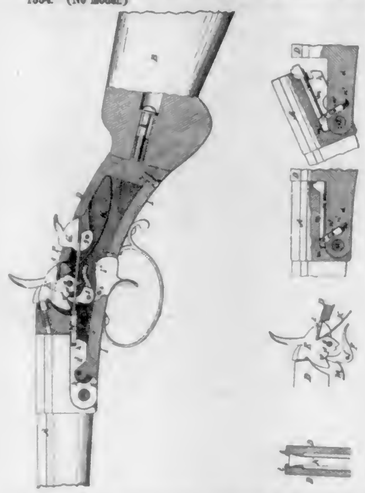


Claim.—1. In a grinding-mill, an adjustable casing and feed-hopper, the former provided on its inner surface with a toothed section, in combination with feed and grinding rolls, and means for revolving said rolls for regulating the feed and for adjusting the casing with respect to the grinding-roll, as and for the purpose described.

2. The casing B, provided with toothed section *n*, and hopper B', provided with plate K, in combination with rolls D F, means for adjusting casing B with respect to roll D, means for adjusting plate K with respect to roll F, and means for revolving said rolls, as described and shown.

3. The casing B, provided with toothed section *n*, in combination with bracket *g*, hand-wheel *i*, shaft *h*, rod *k*, cranks *l j*, screws *m*, and suitable bearings on the casing and roller boxes, as and for the purpose set forth.

301,021. BREECH-LOADING FIRE-ARM. THOMAS M. WALLER, Philadelphia, Pa., assignor to William Wurflein, same place. Filed Mar. 17, 1884. (No model.)



Claim.—1. The combination of the frame D, the barrel A, pivoted thereto, and having a notched block, *h*, the sliding bolt H, the pivoted lever G, and the connecting-link P, adapted to a slot in the lever, as set forth.

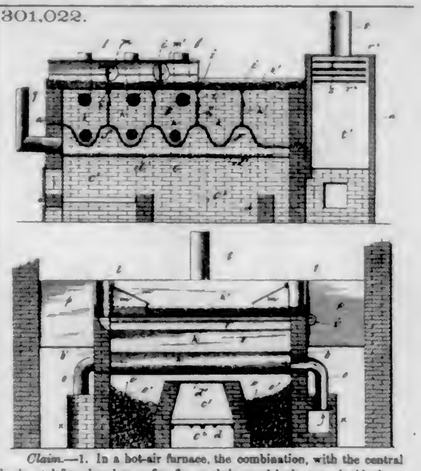
2. The combination of the sliding locking-bolt H and trigger-lever F with the spring M, common to both, as specified.

3. The combination of the pivoted barrel A, having a sliding ejector-rod, *m*, with the fixed frame D, having a yielding push-pin, *n*, located as described in respect to the ejector-rod and the pivot of the barrel, whereby as said barrel is opened the ejector will first be thrust outward by, and will then pass from under the control of, the push-pin, as set forth.

4. The combination of the hammer and hammer-spring acting directly thereon, with the frame D, having shoulders *t*, which by contact with the upper end of the spring arrest the same before the hammer reaches the limit of its downward movement, as specified.

301,022. WARM-AIR FURNACE. JOHN WALSH, Newton, Iowa. Filed Oct. 20, 1883. (No model.)

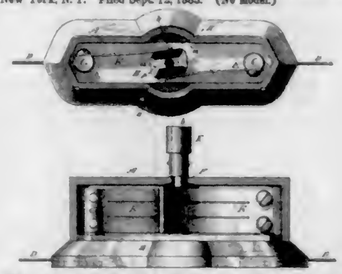
301,022.



Claim.—1. In a hot-air furnace, the combination, with the central horizontal fire-chamber or fire-flue, and the sand-beds on each side, having return-flues above them, of the heating-chamber having a corrugated floor, and smoke-pipes leading to the chimney, substantially as specified.

2. In a hot-air furnace, substantially as described, the combination, with the central horizontal fire-chamber, of the cold-air compartments *z*, pipes *o*, hot-air chamber *k*, having a corrugated floor, partition-strips *k'*, and valves *i*, all adapted to operate substantially as specified.

301,023. ELECTRICAL-CIRCUIT BREAKER. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Sept. 12, 1883. (No model.)



Claim.—1. In an electrical-circuit breaker, the combination, with a rounded or oval block having flattened insulating and conducting faces, and means for rotating the same, of one or more contact-springs impinging upon said block, and arranged for operation in substantially the manner herein shown.

2. The combination, with the rounded or oval block composed of a metal plate, and insulating-pieces attached thereto, and arranged to present the flattened conducting and insulating faces *a a b b*, of the contact-springs impinging on said faces, as described.

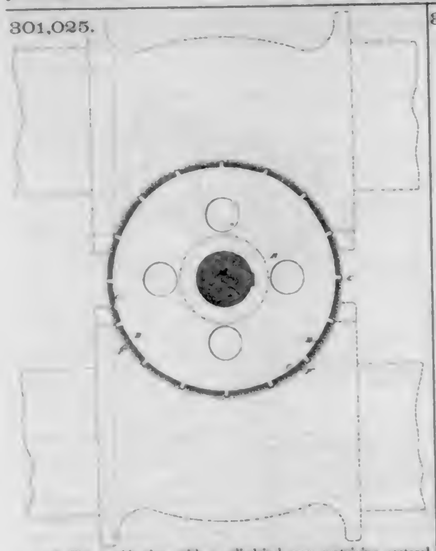
301,024. MANUFACTURE OF CARBON CONDUCTORS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Nov. 23, 1883. (No specimens.)

Claim.—The improvement in the manufacture of carbon conductors from amorphous or non-fibrous cellulose, which consists in mixing with collodion or homogeneous pyroxyline an oil or equivaleet subetance, rolling or forming the compound into the desired shape, then removing the oil or other substance by solvents, then converting the compound into cellulose by reducing agents, and forming the carbons from the same, all as set forth.

301,025. DYNAMO-ELECTRIC MACHINE. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 29, 1883. (No model.)

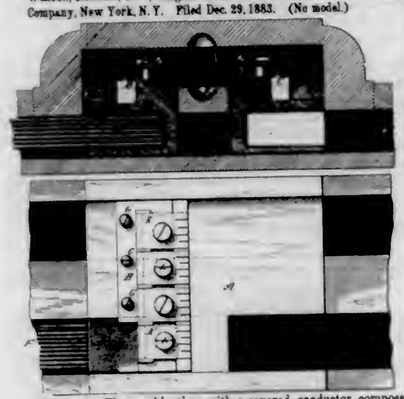
Claim.—1. The combination, with an armature-core of the kind described, of coils wound thereon, the layers of which are composed of conductors of a diameter proportional to their distance from the center of the core, as set forth.

301,025.



2. The combination, with a cylindrical core containing sectoral grooves or recesses, of coils wound in the grooves, the layers of which are composed of conductors of a diameter proportional to their distance from the center of the core, as set forth.

301,026. CONNECTOR FOR ELECTRIC CONDUCTORS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 29, 1883. (No model.)



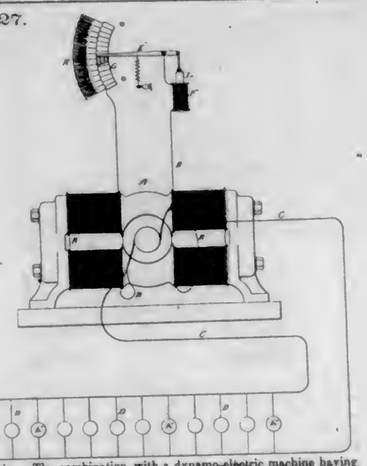
Claim.—1. The combination, with a severed conductor composed of an assemblage of uninsulated wires or strands, of metallic plates or blocks, means for connecting the same, and sockets or receptacles attached to or forming a part of the plates or blocks, and secured by solder to the ends of the conductors inserted into them, as set forth.

2. The combination, with a severed conductor composed of an assemblage of wires or strands, of plates or blocks, safety-strips connecting the plates, and sockets or receptacles attached to or forming part of the same, and secured by solder to the ends of the conductors inserted into them, as set forth.

3. The combination, with a grooved slat or holder and conductors composed of an assemblage of wires or strands contained therein, of a block, A, plates B C, safety-strips H, sockets D E, containing the ends of the conductors, and masses of solder filling the spaces between the wires in the sockets, as and for the purpose specified.

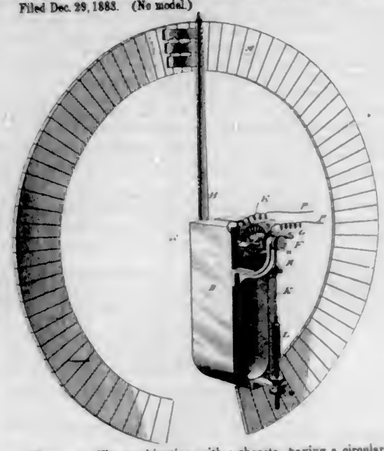
301,027. DYNAMO-ELECTRIC MACHINE. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 29, 1883. (No model.)

301,027.



Claim.—The combination, with a dynamo-electric machine having a field-circuit derived from the main or armature circuit, of a variable resistance and electro-magnet for operating the same, both included in the field-circuit, as and for the purpose specified.

301,028. ELECTRIC REGULATOR. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Dec. 29, 1883. (No model.)



Claim.—1. The combination, with a rheostat having a circular series of contact-plates, of a magnet, a rotary armature, a spring for opposing its movement, and a contact-arm connected with and operated by the armature, as set forth.

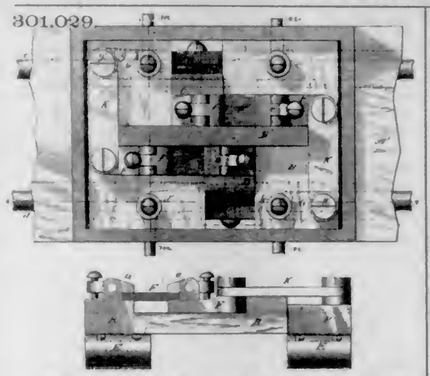
2. The combination, with a rheostat having a series of contact-plates, of a magnet or magnets, a cylindrical armature mounted between the poles of the same, a spring opposing the movement of the armature, and a contact-arm connected with and operated by the said armature, as set forth.

3. The combination, with a rheostat having a circular series of contact-plates, a permanent magnet or magnets, a rotary armature wound with coils, as described, and mounted between the poles of the magnet, a spring for opposing its movement, and a contact-arm connected with and operated by the armature, as set forth.

301,029. JUNCTION DEVICE FOR ELECTRIC CIRCUITS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Jan. 12, 1884. (No model.)

Claim.—1. The combination, with a grooved slat or holder and conductors contained therein, of junction or connection devices consisting of plates, blocks, or castings provided with clamps or means for entering the grooves and connecting with the conductors therein, and constructed for connection with other conductors, as and for the purpose set forth.

301,029.



2. The combination, with a grooved slat and conductors contained therein, of metal plates, blocks, or castings adapted to be applied or attached to the slat, clamps or similar means projecting from the plates into the grooves of the slats and making contact with the conductors therein, and means for connecting the plates with each other, or with other conductors, as set forth.

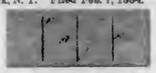
3. The combination, with a grooved slat or molding and conductors contained therein, of metal plates, blocks, or castings adapted to be applied or attached to the slat, clamps or similar means projecting from the plates into the grooves and making contact with the conductors therein, and safety-strips connecting the plates together or with other conductors, as set forth.

4. The combination, with a grooved slat or molding and conductors contained therein, of metal plates, blocks, or castings adapted to be applied or attached to the face of the slat or molding, clamps or similar means projecting from the plates into the grooves, and making contact with the conductors therein, safety-strips, and switch-keys connecting the plates together or with other conductors, as set forth.

5. The combination, with a grooved slat or molding and conductors contained therein, of an insulating block or plate, metal castings having clamps projecting therefrom and attached to the insulating-block, a metal plate or plates secured to the insulating-block, safety-strips, and switch-keys for connecting the plates with each other and to the other conductors, as set forth.

6. The combination, with the grooved slat or molding and conductors contained therein, of the insulating plate or block B, the castings C D, and clamps E, projecting into the grooves and connected to the conductors therein, and devices for connecting the castings, as described.

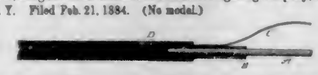
301,030. SAFETY-STRIP FOR ELECTRIC CIRCUITS. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Feb. 1, 1884. (No model.)



Claim.—1. A safety strip or plate of fusible metal, containing slots or insulating divisions, as herein set forth.

2. The safety strip or plate A, composed of a fusible metal or alloy, and containing the parallel slots E, as herein set forth.

301,031. ELECTRICAL CONDUCTOR. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed Feb. 21, 1884. (No model.)



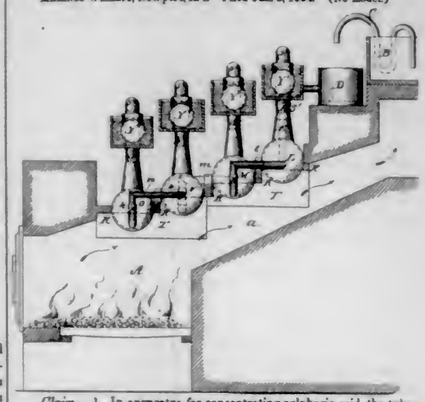
Claim.—1. The combination, with an electrical conductor and insulating jackets or coverings for the same, of one or more finer wires laid substantially parallel to the main wire and between the insulating-jackets, as and for the purpose specified.

2. The combination, with the central wire, A, and jackets or coatings B D, of the fine wire C between the jackets B and D, substantially parallel to the central wire, as set forth.

301,032. WELDING COMPOUND. JOHN S. WILKINS, Cincinnati, Ohio. Filed Aug. 24, 1883. (No specimens.)

Claim.—The herein-described composition for welding iron or steel, consisting of borax, white-marble dust, steel filings, charcoal, saltpeter, and pulverized prussiate of potash, in the proportions specified.

301,033. APPARATUS FOR CONCENTRATING SULPHURIC ACID. MARINUS WILLETT, Newport, R. I. Filed Jan. 2, 1884. (No model.)



Claim.—1. In apparatus for concentrating sulphuric acid, the tube-retort L, in combination with the gas-escape pipe S', the supply-pipe E', and discharge-pipe *l*, substantially as described.

2. In apparatus for concentrating sulphuric acid, the descending series of two or more platinum boilers connected together by platinum pipes, each having the slip-joint A, substantially as described.

3. In an apparatus for concentrating sulphuric acid, a group of boilers arranged over a furnace in a descending series, in combination with a series of plates, as R, between the boilers, having the lower portion of one plate in contact with the lowest boiler of a pair of the series at the level of the liquid, and its highest part in contact with the highest boiler of the two at the level of the liquid, substantially as described.

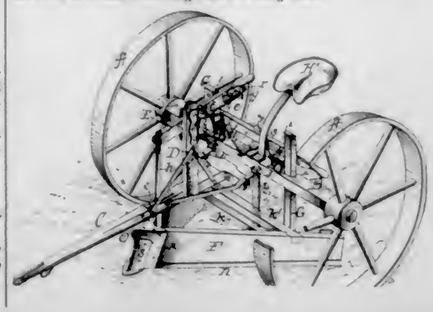
4. In apparatus for concentrating sulphuric acid, the connected series of two or more platinum tubes, L M N O, supported and protected at the top of the furnace A by the plates T and R, substantially as described.

5. In apparatus for concentrating sulphuric acid, the descending series of two or more tubular boilers, L M N O, having the acid-level higher in each lower boiler of the series than in the one preceding by means of the relative position of the connecting-pipes and discharge-pipe F, substantially as described.

6. In an apparatus for concentrating sulphuric acid, in combination with a descending series of horizontal tubular boilers, as L M N O, connected substantially as described, whereby a fixed fluid-level is maintained in each, a plate, as R, arranged between each pair of boilers in the series, the lower end of said plate being joined to the lower boiler at its fluid-level, while its upper end is joined to the upper boiler at its fluid-level, substantially as and for the purposes specified.

301,034. DITCHING-MACHINE. THEODORE WILLSEA, Brockport, N. Y. Filed Oct. 31, 1883. (No model.)

Brief.—A plow with double mold-boards inclined in at the top and joined at the point by a shield, over which fits a point with a V-stem, and its lower edges turned up and out flat, is supported by standards (faced with perforated plates) on rear connecting-bars passing through slots in the carriage-axle and locked by spring-bolts controlled by a lever, and by a rod connected to the draft-bolt and passing up through a slot in the pivoted tongue to a lever pivoted to an arc-carrying standard on such tongue. For raising the plow at the rear a rod passes up from the above-mentioned connecting-rods to a lifting-lever.



Claim.—1. In combination with the carriage-axle formed with slots, and the tongue pivotally secured thereto and formed with a slot, and having an upright standard carrying an adjustable lever and suspension-rod, the ditching-plow, the point whereof is secured to the suspension-rod, and the rear portion having fixed upright standards passed through the slots in the axle and adjustably secured therein, substantially as described.

2. The ditching-plow herein described, formed with mold-boards or wings outwardly inclined from top to bottom, and joined at the point by a shield adapted to have fixed to it the plow-point, and at the rear secured by cross-bars, one of which is provided with two fixed standards formed with a plurality of holes, and the front end provided with a draft-bolt adapted to be connected to a suspension means, substantially as described.

3. The ditching-plow point herein described, consisting of the stem formed with diverging side plates set at an angle from the point to fit the angle-point of a double-mold-board plow, and the point and lower side edges thereof turned forward and out flat at about right angles to the direction of the stem, substantially as and for the purpose set forth.

4. In combination with a double-mold-board ditching-plow, a plow-point the stem of which is formed with diverging side plates set at an angle from the point to fit the angle-point of the double mold-board, and the point and lower side edges thereof turned out flat at about right angles to the stem, substantially as described.

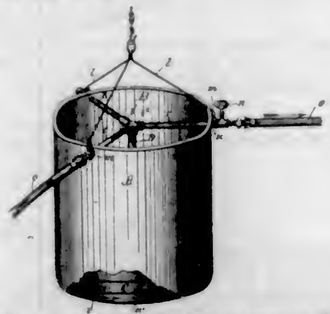
5. The tongue pivotally secured to the axle of a carriage of a ditching-plow, and having fixed thereto a standard carrying a segment-gear, a lever pivoted to the standard and having a stop-bar engaging the segmental gear, and provided with a suspension-bar depending through a slot in the tongue and adapted to be connected to the forward end of the plow, substantially as described.

6. The plow adjustably suspended at the point, and provided with fixed upright standards, and carriage-axle provided with slots to receive the standards of the plow, in combination with the lifting-lever running parallel with the axle and fulcrumed thereto, with central sustaining-rod connected to the cross-bar of the plow, substantially as described.

7. The plow adjustably suspended at the point, and provided with fixed upright standards having secured to their inner edges perforated plates, and the carriage-axle slotted to receive the standards of the plow, in combination with the spring-bolts 6, operatively fixed to the axle, and the lifting-lever 3, substantially as described, and for the purpose set forth.

8. The organized ditching-plow herein described, consisting, essentially, of the wheels A, axle B, having slots *a*, tongue C, pivotally secured to the axle, and having the standard D, with the segmental gear *d*, the lever E, with the stop-bar *e* and suspension-rod A, the plow F, with standards G, lifting-lever 3, spring-bolts 6, shield *x*, and cutting-point S, the whole arranged and combined substantially as and for the purpose set forth.

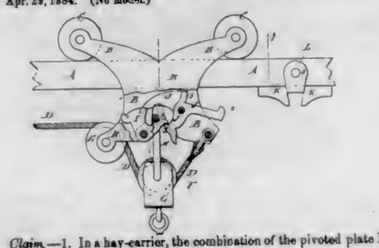
301,035. LIQUID-COOLER. FREDERICK W. WOLF, Chicago, Ill. Filed Apr. 30, 1883. (No model.)



Claim.—1. A liquid-cooler comprising two concentric hollow cylinders joined together at the top and bottom to produce a single hollow cylinder, and to provide an inclosed annular space between them, and having a helical partition within the said annular space to form a helical passage, C, leading to a discharge-opening, *u*, formed in the side of the outer cylinder, a vertical pipe, D, secured in position within the inner of the said concentric cylinders and having an opening in its side toward the upper end connected with a lateral opening through the said concentric shells to admit water into the said pipe, and an opening in its side toward the lower end leading into the said helical passage to conduct the water into the said passage, whence it passes around the helical passage C to the opening *u*, where it discharges, for the purpose set forth.

2. A liquid-cooler comprising in combination the following elements, viz: hollow cylinders A and B, joined together at the top and bottom to produce a single hollow cylinder, and to provide an inclosed annular space between them, a helical partition within the said annular space to form a helical passage, C, leading to a discharge-opening, *u*, formed in the side of the cylinder A, a vertical pipe, D, secured in position within the cylinder B, and having an opening in its side toward the upper end, connected with a lateral opening through both shells A and B, to admit water into the pipe D, and an opening in its side toward the lower end leading into the said helical passage, and means, substantially as described, for supporting the device and lowering it into the liquid to be cooled and raising it therefrom.

301,036. HAY-CARRIER. EDWIN WOODWARD, Stryker, Ohio. Filed Apr. 29, 1884. (No model.)

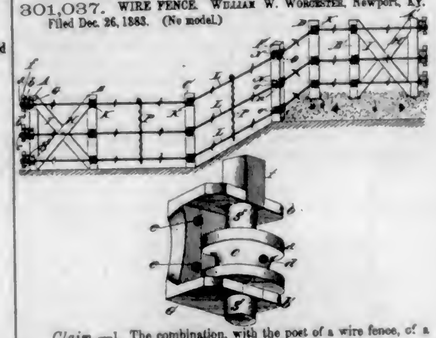


Claim.—1. In a hay-carrier, the combination of the pivoted plate I, formed with the hooks 1 2 at its opposite ends, with the pivoted plate J, formed with a curved trip-arm having shoulder 5 and hook-arm 4 on its upper end, and with the depending arm having a hook, 3, for engaging the hooks 1 2 of plate I, all arranged substantially as and for the purpose set forth.

2. The combination, with the frames-plates B, slotted on their lower edges, as shown, and the block and bail H, of the pivoted plate I, having hooks 1 2, and the plate J, pivoted above and on the opposite side of the slot from the plate I, and formed with a trip-arm projecting across the slots in the path of the bail H, shoulder 5, hook-arm 4, projecting out of the frame-plates, as shown, and the depending hook-arm 3, all constructed and arranged substantially as set forth.

3. The catch K, formed with a dovetailed recess in the center of its lower side, and with the lower sides of its end parts concaved, as shown, and the upward-projecting perforated lugs 6 on its opposite sides to overlap the sides of the track, substantially as set forth.

301,037. WIRE FENCE. WILLIAM W. WORCESTER, Newport, Ky. Filed Dec. 26, 1883. (No model.)



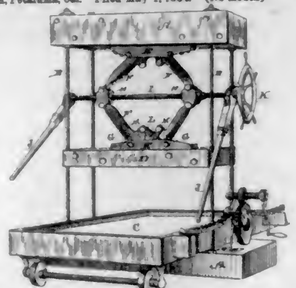
Claim.—1. The combination, with the post of a wire fence, of a pillow-block, G, attached to the post, and having an angular mortise, the vertical angular post *f*, having the cylindrical gudgeons *g* and the attached drum, which rotates with the post, said gudgeons permitting the post and attached drum to rotate together in the pillow-block when the post is moved vertically in one direction, and the angular mortise and angular part of the post locking the post and drum against rotation when the former is moved vertically in the opposite direction, substantially as described.

2. The combination, with the post of a wire fence, of the pillow-block G, having top and bottom flanges, *b b'*, provided with angular mortises, and the vertically-movable angular post *f*, provided with the drum *a*, and gudgeons *g g*, for permitting the post and drum to revolve, and also locking it against rotation, substantially as described.

3. The combination, with the post of a wire fence, of the saddle N, having integrally formed therewith the arch-shaped groove and flanges *n n*, substantially as described.

4. The combination, with the post of a wire fence, of the saddle N, having integrally formed therewith the rounded groove and side flanges, *n n*, and of the staple O, passing transversely across the flanges, for securing the saddle to the post, and loosely confining the wire strand between the flanges, substantially as described.

301,038. SCREW AND TOGGLE-LEVER PRESS. WILLIAM HENRY WORTH, Petaluma, Cal. Filed May 1, 1884. (No model.)

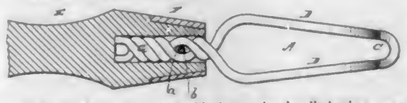


Claim.—1. In a screw and toggle-lever press, means for producing an equal and parallel movement of the parts, consisting of lugs projecting inwardly from the outer ends of the levers and united by links, which cross each other so as to connect the upper lug of one lever with the lower lug of the other, substantially as herein described.

2. The toggle levers F, having the lugs M and N, with the crossed links L, uniting the links of one with those of the other, substantially as herein described.

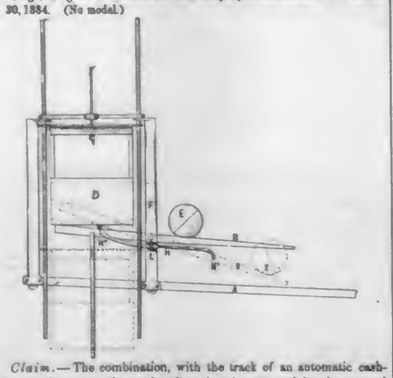
3. The toggle-levers F, pivoted at G, having their outer ends united to the nuts by which they are caused to approach or recede upon the horizontal screw, and lugs N, perforated at points inside of the line forming the axis of the levers, the lugs M at right angles with them, and the connecting-links L, substantially as herein described.

301,039. COMBINATION-TOOL. GEORGE H. ZIPH, St. Joseph, Mo. Filed Aug. 16, 1883. (No model.)



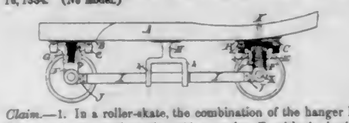
Claim.—The combination, with the wooden handle having a central longitudinal recess in its forward end, of the wire having its free ends spirally twisted with the opening *a* for the passage of the pin *b*, whereby the said shank is secured in the handle, the outer portion of the wire looped, as shown, and bent upwardly and forwardly at its outer end, substantially as specified.

301,040. AUTOMATIC CASH-CARRIER. FRANK A. ALLEN, Cambridge, assignor to the Oriental Tea Company, Boston, Mass. Filed Apr. 30, 1884. (No model.)



Claim.—The combination, with the track of an automatic cash-carrier, of the automatic catch, adapted to be actuated by the upward movement of the elevator, so as to retain the same at the track and released by the movement of the cash-ball, as and for the purposes set forth.

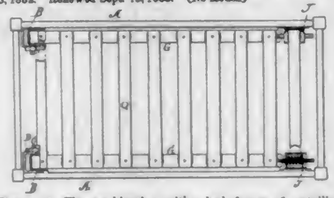
301,041. ROLLER-SKATE. FRED A. BAILEY, Oakland, Ma. Filed Apr. 16, 1884. (No model.)



Claim.—1. In a roller-skate, the combination of the hanger D and hub F, having between them the rubber washer E, with the horizontal overlapping springs I I and the bifurcated standard H, substantially as shown and described.

2. In a roller-skate, the combination of the standard H, springs I, hub F, and hanger D, with the regulating-screws K K, substantially as shown and described.

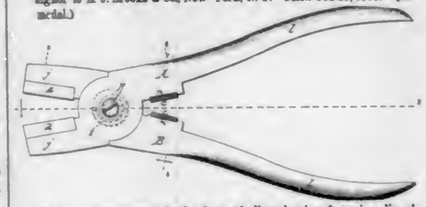
301,042. BED-BOTTOM. DANIEL BENNETT, Logan, Ohio. Filed Nov. 13, 1882. Renewed Sept. 15, 1883. (No model.)



Claim.—1. The combination, with a bed-frame, of metallic longitudinal strips or chords G, provided with slats, brackets having each a roller provided with ratchet and pawl attached to one end of the frame, and brackets each provided with a spring connected to the said chords or strips at the other end of the frame, substantially as described.

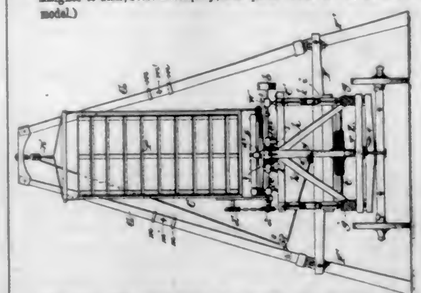
2. The combination, with a bedstead-frame, of the brackets B, the arbors C, the ratchet-wheels D, the pawls E, the brackets J, the housings K, the springs N, the strips or chords G, and the rods H, provided with a head, I, substantially as described.

301,043. SEAL-PRESS. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Oct. 25, 1883. (No model.)



Claim.—A seal-press in the form of pliers, having fastening-dies *d*, shackle-cutters *c*, releasing-notches *n*, and holding-surfaces *h*, substantially as herein specified, the two main parts in rough being adapted to be made of one and the same pattern, for the purposes set forth.

301,044. STRAW-STACKER. HOWARD CAMPBELL, Richmond, Ind., assignor to Gaar, Scott & Company, same place. Filed Mar. 6, 1884. (No model.)



Claim.—1. The combination, in a stacker, of a wheeled frame, a vertical standard, a circular support adjustable around on the standard, a cross-beam on the support, a sustaining-axis for the support and cross-beam, a brake for holding the support in its adjusted position, and a swinging straw-elevator, substantially as described.

2. The combination, in a stacker, of a wheeled frame, a vertical beam detachably held on the frame, and provided at its upper end with a loop-bracket, a circular support held by and adjustable around within the bracket, pivot-bearings at the ends of the circular support, and a swinging elevator detachably pivoted on the pivot-bearings, substantially as described.

3. The combination, in a straw-stacker, of a wheeled frame, a vertical beam detachably supported by the frame and provided at its upper end with a loop-bracket, a circular support held by and adjustable around within the bracket, a spring-brake acting on the circular support, a set-screw for adjusting the tension of the brake, pivot-bearings at the ends of the circular support, and an elevator having brackets at its lower end detachably pivoted on the pivot-bearings, substantially as described.

4. The combination, with a wheeled frame, of the vertical beam *g*, having the threaded extension at its lower end, the braces n^4, the cross-beam Z, the lever *o*, the circular support W, adjustable around on the vertical beam, and provided at it its ends with pivot-bearings, and the elevator detachably pivoted on the pivot-bearings, substantially as described.

5. The combination, with a wheeled frame, of the vertical beam *y*, having a threaded extension at its lower end, the braces n^4, the cross-beam Z, the lever *o*, the loop-bracket *w* on the upper end of the vertical beam, the circular support adjustable around in the loop-bracket, the pivots *p* on the said support, the elevator detachably pivoted on the pivots, the set-screw w', and the spring w^3, substantially as described.

6. The combination, with a wheeled frame and a straw-elevator having brackets K, provided with open bearings k^2, of the frame C', hinged to the wheeled frame, cross-beam L, horizontal shafts s s^2, journaled on the hinged frame and the cross-beam, respectively, and pivot-pin *b'*, substantially as described.

7. The combination, with a wheeled frame and a pivoted straw-elevator, of a swinging frame, C', on the wheeled frame, a cross-beam, L, geared shafts carried by the hinged frame and the cross-beam, respectively, for transmitting motion to the apron of the elevator, braces *k*, bearing against the swinging and the wheeled frames, and rods *i i*, adjustable lengthwise for sustaining the swinging frame in its upright position, substantially as described.

8. The combination, in a straw-stacker, of a wheeled frame, a cross-bar, F, thereon, a folding derrick-frame, G, pivoted to the cross-bar, and the supports H, hinged to the wheeled frame at its rear end, substantially as described.

9. The combination, in a straw-stacker, of a wheeled frame, a cross-bar, F, thereon at the front end, a sectional folding derrick-frame, G, supported by the wheeled frame, and supports H, pivoted to the rear of the wheeled frame, and provided with forked ends *h'*, substantially as described.

10. The combination, in a straw-stacker, of a wheeled frame, a cross-bar, F, thereon, a derrick-frame pivoted to the cross-bar, detachable legs F', connected with the cross-bar, and the carrier B, substantially as described.

11. The combination of a truck-frame, an elevator, a frame hinged to the truck-frame, a circular support, a standard detachably connected with the truck-frame for sustaining the circular support, and pivot-bearings for the elevator, substantially as described.

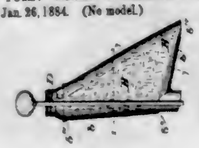
12. The combination of a truck-frame, a frame hinged thereto, a standard detachably connected with the frame, a circular support connected with the upper ends of the hinged frame and standard, and a pivoted straw-elevator, substantially as described.

13. The combination of a truck-frame, a frame hinged thereto, a vertical shaft on the hinged frame, a circular support, a standard sustaining the latter, a cross-beam, a supporting-connection between the beam and the shaft, and horizontal shafts geared to the vertical shaft on the hinged frame, substantially as described.

14. The combination of a truck-frame, a frame hinged thereto, a vertical shaft on the hinged frame, a standard sustained by the truck-frame, a support at the upper end of the standard, a cross-beam on the support, a connection between the cross-beam and the vertical shaft, and a pivoted straw-elevator, substantially as described.

15. The combination of a truck-frame, a frame hinged thereto, a vertical shaft on the hinged frame, a standard sustained by the truck-frame, a circular support adjustable in a circular path on the standard, a cross-beam on the circular support, a supporting-connection between the beam and the vertical shaft, a swinging straw-elevator, and pivot-bearings therefor, substantially as described.

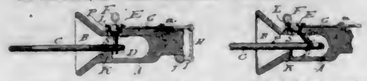
301,045. PUMP. WILLIAM H. CLARK and WILLIAM J. CLARK, Salem, Ohio. Filed Jan. 26, 1884. (No model.)



Claim.—1. A blank for forming a pump-head, having edges *b b b' b'*, and recesses between the edges to form orifices *b'' b''' b''*, as set forth.

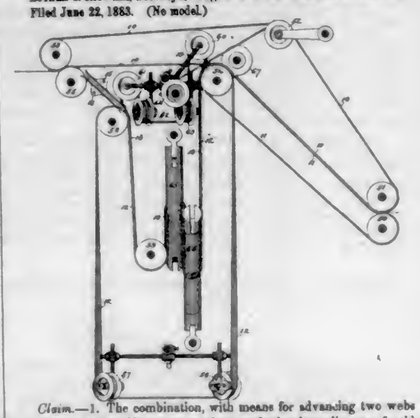
2. A sheet-metal pump-head of triangular profile, having barrel-orifice *b''*, cap-orifice *b'''*, and spout-orifice *b''*, as set forth.

301,046. CAR-COUPLING. ROSCOE COON and DAVID DEANE HARN, San Francisco, Cal. Filed Oct. 18, 1883. (No model.)



Claim.—In car-couplings, the pin D, with ball E, in combination with the lever G, connecting-rods H, lever I, crank M, and rod J, constructed and operated substantially as and for the purposes set forth.

301,047. DELIVERY MECHANISM FOR WEB-PRINTING PRESSES. LUTHER C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed June 22, 1883. (No model.)

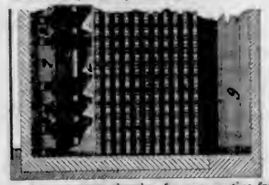


Claim.—1. The combination, with means for advancing two webs or sections side by side, of means for transferring laterally one of said webs or sections to associate it with the other, and means for automatically conducting the leading end of said transferred web through the transferring mechanism, all substantially as described.

2. The combination, with means for advancing two webs or sections side by side, of turning-bars arranged to transfer laterally one of said webs or sections to associate it with the other, and tapes, or a tape and cord, as 12 13, arranged to conduct the leading end of said transferred web or section around said bars, all substantially as described.

3. The combination, with means for advancing two webs or sections side by side, of turning-bars arranged to transfer laterally one of said webs or sections to associate it with the other, said bars being provided with grooves, as 8 9, and tapes, or a tape and cord, as 12 13, for conducting the leading end of said transferred web or section around said bars, all substantially as described.

301,048. REGENERATIVE FURNACE. ANDREW CUTHBERT, Pittsburg, Pa. Filed Feb. 11, 1884. (No model.)

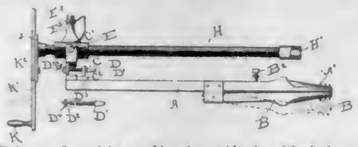


Claim.—1. A regenerator-chamber for regenerative furnaces, having top arches formed of bricks or tiles, which are inwardly beveled or inclined on their ends, substantially as and for the purpose set forth.

2. A regenerator-chamber for regenerative furnaces, having in its top a series of gas-passages of increasing transverse sectional area from their upper to their lower sides, substantially as and for the purpose set forth.

3. The combination of a regenerator-chamber having upper gas-passages of increasing transverse sectional area from their upper to their lower sides, and a regenerator composed of bricks, which are inwardly curved or inclined on their sides from their middle portions to their upper and lower surfaces, substantially as set forth.

301,049. HAND ROCK AND COAL BORING MACHINE. BENJAMIN B. DAVIS, Williamstown, Pa., assignor of one-half to Thomas D. Davis, same place. Filed Mar. 27, 1884. (No model.)

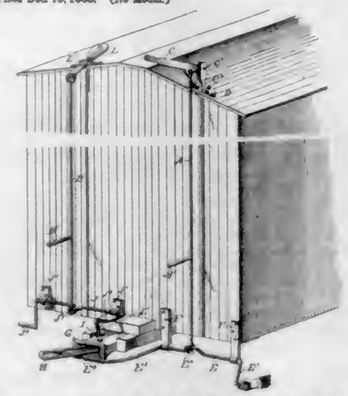


Claim.—1. In a mining-machine, the combination of the feed-screw, the threaded barrel or boxing pivotally supported in suitable bearings, and provided with a depending lug or bracket, and a set-bolt turning through a threaded support, and adapted to engage said lug or bracket and adjust the boxing on the journals or bearings thereof and secure the said boxing in any desired position, substantially as set forth.

2. The combination, in a mining-machine, of the base-plate provided with bearing-jaws C, and bracket D, the feed-screw, the threaded barrel composed of section E', having lug F', provided with slot F^3, and section E^2, having lug F^2, pivoted to lug F', the said sections having upwardly-projected bars E^2, the collar E^3, adapted to embrace bars E^2, and the set-bolt D', turned through bracket D, and having a contracted portion, D^2, on its rear end inserted through slot F^3, and the nut D^4, all constructed and adapted to operate substantially as set forth.

3. The mining-machine, substantially as herein described and shown, composed of a supporting-beam, the bearing-jaws connected by base-plate C^2, journaled on the supporting-beam and provided with the bracket D, the sectional boxing provided with depending lug F', having slot F^3, the set-bolt D', the feed-screw turning through the boxing and provided at its rear end with bar J, having loops or keepers J', the crank-bar K', passed through said loops or keepers, and the clamping-screw K^2, all as and for the purposes specified.

301,050. CAR-COUPLING. JONATHAN H. DUSTMAN, Clarks, Nebr. Filed Dec. 15, 1883. (No model.)



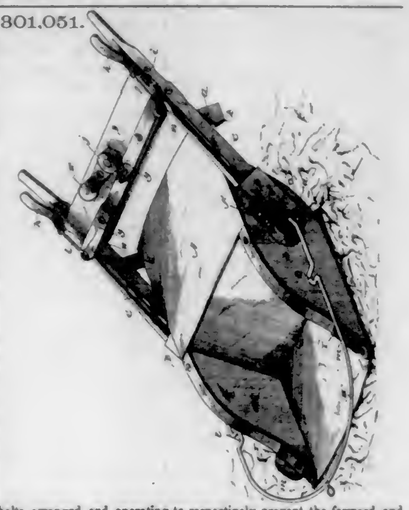
Claim.—1. The hangers F, rod E, right-angled projection E'; crank projection E^3, projection E^2, and link-lifter E^4, in combination with the rod A, provided with a handle, A', and the lever C, pivoted to the standard C^2, substantially as described and set forth.

2. The rod J, secured to the end of the car by straps J', said rod being provided with handle J^2, crank projection J^3, and arm J^4, the link I', jointed to the top of the pin, and the outer end of the arm J^4, in combination with the rod B, having the handle B', and the foot-lever L, substantially as described, and for the purposes set forth.

301,051. ROAD-SCRAPER. WILLIAM ELLIS, Jr., North Lawrence, Kans. Filed Feb. 14, 1884. (No model.)

Brief.—A reversible scraper having projecting cutting-plates secured on its edges has side disks, each having peripheral cam-shoulders in parallel planes, respectively engaging an automatic spring-bolt, and a bolt operated by pivoted handles and having devices to lock it out of engagement. The scraper is pivoted in side bars, forming a frame, and having end casings inclosing the bolts, with extensions through which pass the scoop-pivots. The bail has extensions inward to limit the forward play of the frame.

Claim.—1. The combination, in a road-scraper, of a scraper proper pivoted in a suitable frame by journals, and provided with a disk having reverse shoulders located in parallel peripheral planes, as described, and



bolts arranged and operating to respectively prevent the forward and rearward rotation of said disk, substantially as set forth.

2. The combination, in a road-scraper, of a scraper proper pivoted in a suitable frame by journals, and provided with a disk having reverse shoulders, and two bolts arranged on the frame supporting the scraper proper, one operated by hand-lever connections secured on the frame and the other automatically yielding, substantially as described.

3. The combination, in a road-scraper, of a scraper proper having journals located at its sides, a notched disk secured to said scraper, a case secured on one side at the forward part of the supporting-frame, and provided with an extension perforated to receive one of the journals, a bolt playing through said case, and devices for operating the same, substantially as described.

4. The combination, in a road-scraper pivoted in a suitable frame by journals, and provided with a disk having reverse shoulders located in parallel peripheral planes, as described, of bolts arranged to respectively prevent the forward and rearward rotation of said disk, and handles pivoted at each side of the upper end of the frame and connected with said bolt devices, substantially as set forth.

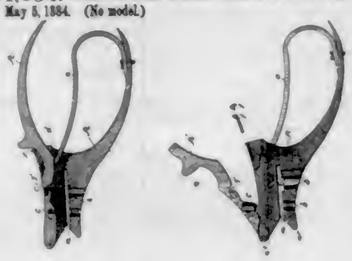
5. The combination, in a road-scraper, of a scraper proper pivoted in a frame, bolt devices for locking it in its pivoted position, mechanism for disengaging said bolt devices, and means for locking said devices in their disengaged position, substantially as set forth.

6. The combination, in a road-scraper pivoted in a suitable frame by journals, and provided with cutter-brackets bolted to the sides of the same, of a disk having reverse shoulders located in parallel peripheral planes, as described, and bolts arranged to respectively prevent the forward and rearward rotation of said disk, substantially as set forth.

7. The combination, in a road-scraper, of a suitable frame provided with depending plates G, bent and arranged for the purpose set forth, a scraper proper pivoted in said frame, and provided with a disk having reverse shoulders located in parallel peripheral planes, as described, and bolts arranged to respectively prevent the forward and rearward rotation of said disk, substantially as set forth.

8. The combination, with a road-scraper constructed and operating substantially as herein described, of a draft-bail provided with extensions *l*, for the purpose specified.

301,052. TICKET-PUNCH. WILLIAM COWAN FIRK, Toledo, Ohio. Filed May 5, 1884. (No model.)

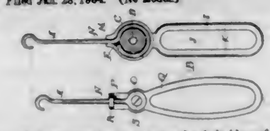


Claim.—1. In a fare-ticket punch, the punch having the exchangeable dies, substantially as set forth.

2. In a punch, the designating and numbering dies, each slotted, and having a projection projecting into an approximately right-angled slot in the pivoted jaw or lever, substantially as and for the purpose set forth.

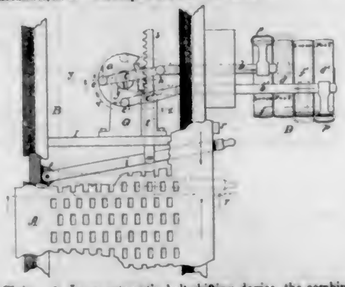
3. In a punch, the combination, with the vertically-slotted fixed jaw, of the pivoted jaw or lever and the slide or stop fitted into the slot of the fixed jaw to retain the lever in its normal position, substantially as and for the purpose set forth.

301,053. BUTTON-HOOK HOLDER. JOHN FYE, THEODORE H. FYE, and CHARLES A. FYE, Zanesville, Ohio, assignors to John Fye & Sons, same place. Filed Jan. 28, 1884. (No model.)



Claim.—The combination, in a button-hook holder, of a handle, one end slotted through the center, the sides somewhat flattened and arranged for placing advertising matter thereon, the other end provided with a circular groove and cap having a corresponding groove, and secured in position by means of a screw, with a button-hook, one end formed with a curved part and arranged to fit in the circular groove of the handle, substantially as herein set forth.

301,054. BELT-SHIFTER FOR IRON-PLANERS. WM. GLEASON, Rochester, N. Y. Filed Apr. 28, 1884. (No model.)

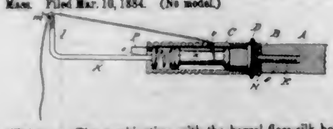


Claim.—1. In an automatic belt-shifting device, the combination, with the fast and loose pulleys *d* and *f*, of the shifters *b b'* and automatic intermittent reciprocating disk *a*, to operate the shifters simultaneously, with connecting-rods *c c'*, for the respective shifters and disk, said connecting-rods respectively being attached to the disk at the points *e e'*, ninety degrees apart, where, when the disk commences to turn, the motions given the respective shifters will be in opposite directions, substantially as and for the purpose set forth

2. The combination of the shifters *b b'* of a belt-shifting device, the driving-disk *a*, provided with pins *e e'*, connections *c c'* for the respective shifters *b b'*, and stud *g* for the disk, a pinion, *h*, secured to the disk, and rack *k*, to engage the pinion, with means, substantially as described, to give the rack intermittent reciprocating longitudinal motion, substantially as and for the purpose set forth.

3. In combination with the fast and loose pulleys of a belt-shifting device, the shifters *b b'* and reciprocating driver *n* for the shifters, with connections *c c'* for the driver and shifters, said shifters being connected to the driver, so that when the latter commences to turn one shifter will start to move at a high rate and retard as it progresses, and the other shifter start to move at a low rate and accelerate as it progresses, substantially as set forth.

301,055. DENTAL-FLOSS HOLDER. GEORGE E. GREENE, Gardner, Mass. Filed Mar. 10, 1884. (No model.)

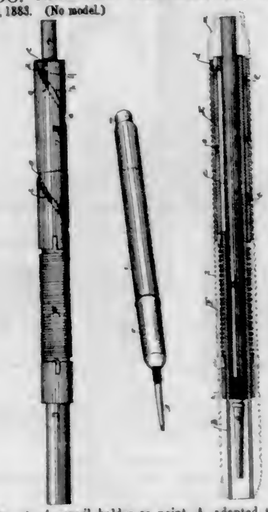


Claim.—1. The combination, with the barrel floss-silk holder having a screw-stem, of the threaded cap and a tooth-brush having one end of its handle provided with a threaded aperture to receive the stem of the holder, substantially as specified.

2. The floss-silk-holding attachment for tooth-brushes, consisting of the perforated barrel and cap, the screw-stem and washer, the outwardly-turned bow-arm having a cleft end, and the spool, substantially as specified.

3. The floss-silk-holding attachment for tooth-brushes, consisting of the barrel, its cap and inclosed spool, the bow-arm, and cutter turned toward the bow-arm, substantially as specified.

301,056. PENCIL-CASE. JOHN C. HARDING, Jersey City, N. J. Filed July 3, 1883. (No model.)



Claim.—1. A pencil holder or point, A, adapted to move in its case longitudinally for the purpose of protruding or retracting it, a stud, *d*, attached to said pencil holder or point, a sleeve, E, provided with a spiral groove wherein said stud *d* may travel, combined with a spiral spring, F, which acts in a direction transverse to the axis of said pencil, whereby said sleeve may be rotated in one direction by the fingers, and in the opposite direction automatically by said spring and a detent-surface, *i*, substantially as shown, and for the purpose set forth.

2. A pencil-case tube, B, and a pencil-holder, A *a*, fitted to slide therein to protrude or retreat, as set forth, combined with a part having a spiral groove, *c*, a stud, *d*, projecting from said pencil-holder and traveling in said groove, a spiral spring, F, coiled around said pencil-case, and adapted to rotate said case in relation to the part containing the spiral groove *c*, whereby said stud may be caused to traverse said groove, and a detent to hold said pencil-carrier when drawn into the case, adapted to be released by an endwise posh of the upper end of the pencil-holder in the direction of the axis of the pencil.

3. The pencil-holder A, fitted to slide within the case B, which is provided with a longitudinal slot, *c*, the sleeve E, provided with the spiral slot *e*, the pin *d*, projecting from said pencil-holder into and through the slots *c e*, the spiral spring coiled about the case A and adapted to rotate the sleeve E by its recoil, substantially as set forth, the detent *i*, and the inclosing ornamental shell in three parts, *k l m*, substantially as set forth.

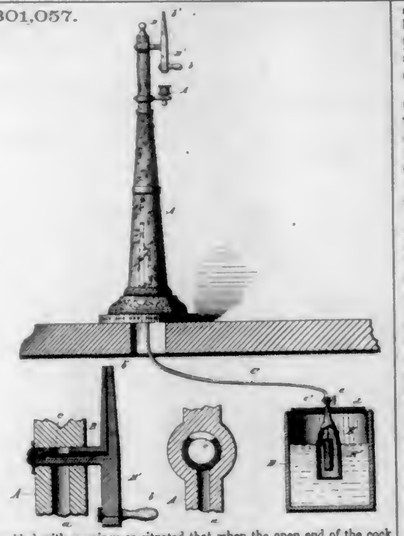
301,057. HYDROGEN-LIGHTER. MATHIAS J. HINDEN, Cleveland Ohio, assignor to the Hydrogen Lighter Company, same place. Filed Nov 7, 1883. (No model.)

Claim.—1. The combination, with a gas-generator and a standard, of a combined handle and cock journaled to the standard, and a cup for holding platinum secured to the standard below the cock, the handle end of the said cock being heavier than the opposite end thereof, for the purpose of automatically cutting off the flow of gas, substantially as set forth.

2. In a hydrogen-lighter, the combination of the combined cock and handle, a standard supporting the same and made cylindrical at its upper end, and a cup supported from this part of the standard and adjustable vertically to bring it in proper relation to the gas when discharged downwardly from the cock, substantially as set forth.

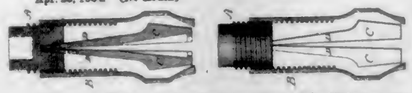
3. In a hydrogen-lighter, the combination of the combined cock and handle, a standard supporting the same and made cylindrical at its upper end, and a cup supported from the part of the standard and adjustable vertically to bring it in proper relation to the gas when discharged downwardly from the cock, the said cock and standard being

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provided with openings so situated that when the open end of the cock points toward the cup the cock will be open and remain open until it has been turned around one-quarter of a circle and remain closed in all other positions, substantially as set forth.

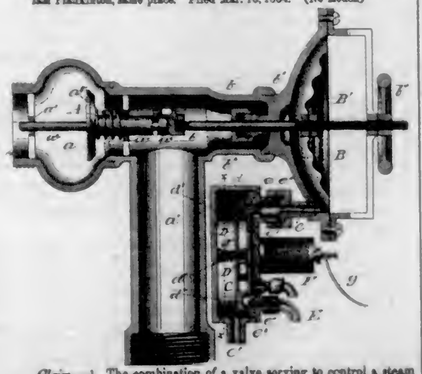
301,058. BIT-BRACE. WILLIAM A. IVES, New Haven, Conn. Filed Apr. 23, 1884. (No model.)



Claim.—1. The herein-described improvement in bit-braces, consisting of the solid cylindrical body A, screw-threaded upon its cylindrical surface, and the jaws C C, with their elastic tails D D united to said body in the process of manufacture, whereby said jaws become substantially an integral part of the body, combined with a surrounding sleeve, B, internally screw-threaded, corresponding to the screw-thread on the body, substantially as described.

2. The jaws C, forged with their tails D D, and with the body A cast thereon, so as to unite with the tail ends of the jaws, substantially as described.

301,059. ELECTRIC VALVE FOR REGULATING TEMPERATURE, &c. WARREN S. JOHNSON, Milwaukee, Wis., assignor of one-half to William Plankinton, same place. Filed Mar. 10, 1884. (No model.)



Claim.—1. The combination of a valve serving to control a steam or other passage, an expansible chamber whose movable wall operates said valve when steam, gas, or water is admitted to said expansible chamber, and an electric valve adapted to admit steam, gas, or water, under pressure, into the expansible chamber, whereby the main valve is operated whenever the electric circuit is closed or opened, substantially as set forth.

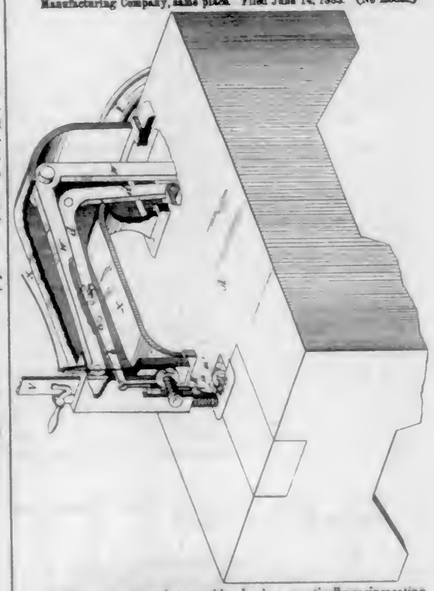
2. The combination of a steam-generator, an electric valve used to control a passage in said generator, a suitable electric generator, and two circuit-closing devices in circuit with said electric generator and electric valve, one of said circuit-closing devices being a thermostat situated in the apartment which the steam-generator warms, and the other circuit-closing device consisting of an expansible chamber adapted when expanded to complete the circuit, and when contracted to keep the circuit broken, substantially as set forth.

3. The combination of an expansible chamber and a main valve connected thereto, the former having an inlet and outlet port controlled by an electric valve, with the armature of an electro-magnet, and the bar or lever of an electric valve, whereby when the electro-magnet operates the bar or lever of said valve the inlet-port is adapted to be opened at the same time that the outlet-port is closed, substantially as set forth.

4. The combination of a valve serving to control a steam or other passage, and adapted to close against and open with the pressure, an expansible chamber whose movable wall operates said valve when steam, gas, or water is admitted to said expansible chamber, and an electric valve adapted to admit steam, gas, or water under pressure into the expansible chamber, whereby the main valve is operated whenever the electric circuit is closed or opened, substantially as set forth.

5. The combination of a valve serving to control a steam or other passage, an expansible chamber whose movable wall operates said valve when steam, gas, or water is admitted to said chamber, and an electric valve consisting of an electro-magnet, its armature, and valves operated by the movement of said armature, whereby a movement of the armature in one direction admits the steam, gas, or water to said expansible chamber and prevents its exit therefrom, and operates the main valve in one direction, while a movement of said armature in the opposite direction prevents the admission of steam, gas, or water to said expansible chamber, but permits its escape therefrom, whereby the main valve is operated in the opposite direction, substantially as set forth.

301,060. SEWING-MACHINE. EDWARD KOEHLER, San Francisco, Cal., assignor, by direct and mesne assignments, to the Kohler Sewing Machine Manufacturing Company, same place. Filed June 14, 1883. (No model.)

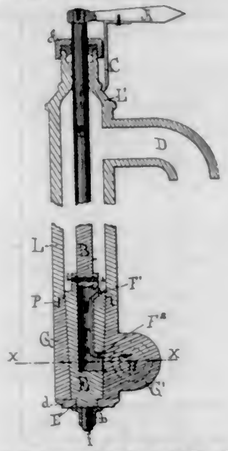


Claim.—1. A sewing-machine having a vertically-reciprocating needle carrying a single thread, a two-part threadless hook mounted upon a horizontal rock-shaft below the table, and a reciprocating rack-bar, O, engaging a pinion upon the rock-shaft, and having an incline or cam, T, at its outer end, in combination with a bar, Q, with an arm, R, which engages one part of the hook, and a pin or roller, S, upon which the cam T acts to separate the hook, substantially as herein described.

2. The two-part threadless hook mounted upon a rock-shaft beneath the table, the reciprocating rack-bar O, engaging a pinion upon the rock-shaft, and having an incline or cam, T, at its outer end, in combination with the bar Q, with the pin or roller S, which is engaged by the cam T, the arm R, engaging one part of the hook to retract it, and the returning-spring U, substantially as herein described.

3. In a sewing-machine, the combination of a reciprocating needle, a double threadless hook oscillated by shaft G and its connections, an oscillating shaft, J, carrying a guide, I, for the purpose specified, and a plate, L, having a curved slot which engages with a pin on the shaft J, and means for moving the same, substantially as described.

301,061. HOT AND COLD WATER FAUCET. JAMES C. LOUCKS, Grand Rapids, Mich., assignor of one-half to Edwin S. Pierce, same place. Filed June 18, 1883. (No model.)



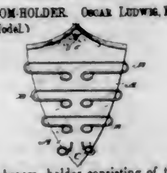
Claim.—1. The casing L, having spout D, and the casing G, in combination with the plug E, having openings F' F² and chamber F, the rod B, and the pipe G', having diaphragm H and port-openings *e e*, substantially as described, and for the purpose set forth.

2. The casing L, having spout D, and the casing G, in combination with the plug E, having openings F' F² and chamber F, pipe G', having diaphragm H and openings *e e*, and the rod B, having handle A and indicator C, substantially as described, and for the purposes set forth.

3. The casings L and G, the casing L having a spout, the casing G tapering from the top downward, in combination with the tapering plug E, having chamber F and openings F' F², the rod B, handle A, and pipe G', having diaphragm H and ports *e e*, substantially as described and set forth.

4. The casing L, having spout D, the chamber G, having tapering chambers therein, and pipe G', having diaphragm H and openings *e e*, in combination with the tapering plug E, having openings F' F² and chamber F, the rod B, handle A, and indicator C, substantially as described, and for the purposes set forth.

301,062. BROOM-HOLDER. OSCAR LUDWIG, Evanston, Wyo. Filed Feb. 26, 1884. (Model.)

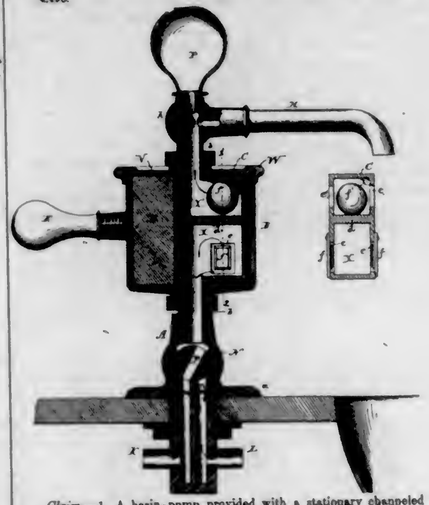


Claim.—1. The broom-holder consisting of the back A, provided with the two series of independent spring-arms B B, adapted to receive and partially inclose the brush portion of a broom, and the arms C C, adapted to support the broom end at or near the point of its attachment to the handle, substantially as and for the purpose described.

2. The broom-holder consisting of the back A, provided with the two series of independent arms for holding the brush portion of a broom, adapted to be turned down toward or against the face of the back A, substantially as and for the purpose described.

3. The broom-holder consisting of the back A, provided with the two series of independent spring-arms B B, adapted to receive the brush portion of a broom, attached to the back by the insertion of a portion of each arm in a groove therein, and the arms C C, adapted to receive and support the smaller and upper end of the brush portion at or near the point at which it joins the handle, substantially as and for the purpose described.

301,063. PUMP. FRANK D. MALTBY, Washington, D. C., and DE BOSDEN WILSOT, New York, N. Y., assignors to themselves and Wellesley W. Gage, New York, N. Y. Filed May 10, 1883. (No model.) Patented in Belgium Sept. 18, 1883, No. 62,622, and in England Sept. 20, 1883, No. 4,498.



Claim.—1. A basin-pump provided with a stationary channeled portion, a pipe having a chambered projection at one side and inlet and outlet valves, and with an outlet-pipe and discharge-spout affixed to the pipe, and a movable cylinder rocking upon said pipe, inclosing the said projection, and provided with a radial piston, substantially as set forth.

2. The combination, in a basin-pump, of the central channeled supporting portion, a pipe extending from the same and having a chambered projection, the cylinder rocking on the pipe and provided with a piston, a spout connected to the pipe, and a valve for controlling the flow of water through the spout, substantially as set forth.

3. The combination, in a pump, of the central channeled supporting portion, a pipe connected therewith carrying a chambered projection having a port, *i*, the cylinder rocking thereon and provided with a piston, and the spout fitted to the end of the pipe and turning thereon, substantially as set forth.

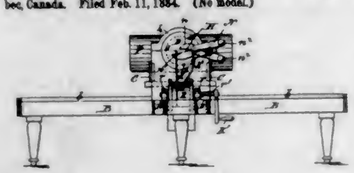
4. The combination, in a basin-pump, of a stationary portion having two independent supply-channels, a valve whereby the flow of fluids through both channels is controlled, a faucet, and a pump arranged between the valve and the faucet, substantially as described.

5. The combination, in a basin-pump, of the fixed channeled portion A, provided with the delivery-spout, the movable portion B, provided with a radial piston, channels in the fixed portion leading to different supply-pipes, and a cock controlling the communication between the pump and the said channels, substantially as set forth.

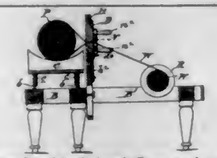
6. The combination of pump-case B and piston D, and pipe *b*, provided with the projection C, side valves, *f f'*, and springs *g g*, each attached to one of the valves *f'* and bearing on one of the valves *f*, substantially as set forth.

7. The combination, in a pump, of the fixed portion, the pipe *b*, having a chambered and valved projection, C, and the cylinder B and piston D, loose cap V, and ring W, substantially as set forth.

301,064. BUNDLING-MACHINE. HENRY MEREWEATHER, Hull, Quebec, Canada. Filed Feb. 11, 1884. (No model.)

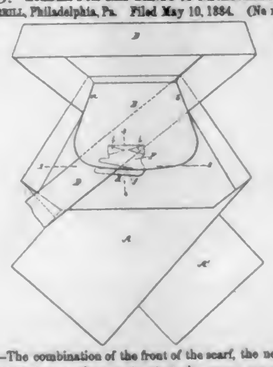


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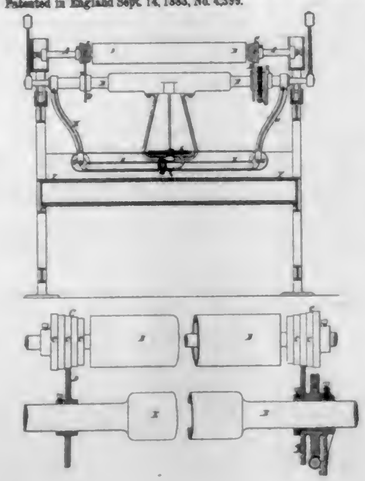
Claim.—The combination of a bench, B, supporting a stool or cradle, C, holding a package to be tied, a laterally-extending portion, B', having journaled upon it a wire-reel, R, provided with crank, and a head-stock, H, having a disk or chuck bodily journaled therein, said chuck having two perforations—one at each side of the center—for the wire to pass through, and having eccentrically pivoted upon its face the nippers N, provided with nipping-jaw and cutting-edge sweeping said perforations, and serving as a crank to turn the said chuck in one direction for twisting the wire and to cut off the same when turned in the opposite direction, the chuck being held stationary by a catch, k^2, engaging a suitable notch, all substantially as shown and described, and for the purpose set forth.

301,065. HOLDER FOR THE BANDS OF NECKSCARFS. WILLIAM E. T. MERRILL, Philadelphia, Pa. Filed May 10, 1884. (No model.)



Claim.—The combination of the front of the scarf, the neckband D, and the shield B, having the opening *b* at the upper corner, with the holder F applied to the lower portion of the shield, and having a bent wing forming a tapering opening, *f*, into which the edge of the neck-band is drawn after the end of the band has been tucked through the opening *b*, as set forth.

301,066. PANTOGRAPH ENGRAVING-MACHINE. JOHN MOWAT, Barrhead, County of Renfrew, Scotland. Filed Jan. 10, 1884. (No model.) Patented in England Sept. 14, 1883, No. 4,399.



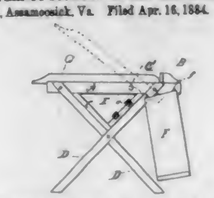
Claim.—1. The combination of the mandrel A of a pantograph engraving-machine with stepped or beveled disks C thereon, and actuating devices whereby varying degrees of diminution in the designs may be obtained, substantially as set forth.

2. The combination of the mandrel A of a pantograph engraving-machine with stepped or beveled disks C, secured adjustably on said mandrel, as and for the purpose described.

3. In pantograph engraving-machines of the cradle class, the combination of a stepped or beveled disk, C, on each end of the roller-shaft or mandrel, with the ordinary actuating-disks on the rocking shaft of the machine, as and for the purpose set forth.

4. In pantograph engraving-machines of the cradle class, the combination, with the roller-shaft or mandrel, of movable and interchangeable disks fitted thereon, and actuated by the usual disks on the rocking shaft of the machine, as and for the purpose set forth.

301,067. PEANUT SEPARATING AND ASSORTING TABLE. CHAS. W. NICHOLSON, Assamoosick, Va. Filed Apr. 16, 1884. (No model.)

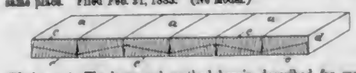


Claim.—1. The combination of a suitable top frame, a back board, and a riddle pivoted in the top frame, and having its rear end abutted against and movable to and from the under side of the said back board, the latter being projected above the plane of the riddle when said riddle is in its normal position, substantially as set forth.

2. The combination of the top frame, the supporting-legs, the back board mounted on the top frame near the rear edge of same, the trough arranged below the top frame and in advance of the back board, and the riddle pivoted in the top frame and adapted to be tilted and deliver the screened articles between the back board and the trough, substantially as set forth.

3. The herein-described assorting-table, composed of the top frame, the back board mounted on the rear end of same, the trough supported below the top frame, and having one of its ends removable, as described, and the riddle pivoted in the top frame, and adapted to be tilted and deliver the screened articles between the trough and the back board, substantially as set forth.

301,068. PIANO SOUNDING-BOARD. HENRY S. PARMELEE, New Haven, Conn., assignor to the Mathushek Piano Manufacturing Company, same place. Filed Feb. 21, 1883. (No model.)



Claim.—1. The improved method herein described for making sounding-boards, consisting in first cutting the stock from the log in lines parallel with the diameter of said log, then uniting the pieces of stock thus cut side by side with glue, and then cutting said stock transversely to the lines of union, whereby a sounding-board is produced the sections of which are of uniform density, and in which the annular wood-grain extends approximately through the thickness of the sections, while the radial wood-grain extends approximately through the width of said sections, for the purposes described.

2. An improved sounding-board for musical instruments, formed of a number of sections cut, as described, so as to be each of uniform density, and united by glue, the said sections having the annular wood-grain extending approximately through the thickness of the sections, and the radial grain extending approximately through the width of said sections, substantially as set forth.

3. An improved sounding-board composed of a number of sections cut, as described, so as to be each of uniform density, and united by glue, and having the radial and annular wood-grains extending, respectively, approximately through their widths and thicknesses, the part of each section which was near the heart of the log being placed contiguous to the part of the next section which was near the bark, as and for the purpose described.

301,069. TREATMENT OF VEGETABLE FIBROUS MATERIAL. AUGUST PEINS, Meissen, Saxony, assignor to Emil Quellmalz, Dresden, Germany. Filed Apr. 5, 1884. (No specimens.) Patented in Luxemburg Apr. 2, 1884, No. 377, and in Italy Apr. 18, 1884, XXXIII, 135, XVIII, 166-72.

Claim.—1. The herein-described process of treating vegetable fibers or products therefrom (spun or woven) by maceration in an attenuated cold solution of chloride of lime.

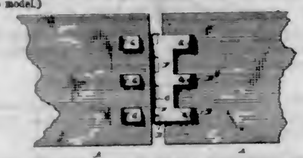
2. The herein-described process of treating vegetable fibers or products therefrom (spun or woven) by maceration in an attenuated cold solution of chloride of lime, and by subsequent treatment with alkali lyes.

3. The herein-described process of treating vegetable fibers or products therefrom (spun or woven) by maceration in an attenuated cold solution of chloride of lime, and by subsequent boiling under pressure in an alkaline solution.

4. The herein-described process of treating vegetable fibers or products therefrom (spun or woven) by treatment in an alkaline lye with which is combined a hydrocarbon or sulphuret of carbon.

5. The herein-described process of treating vegetable fibers of products therefrom (spun or woven) by maceration in an attenuated solution of chloride of lime, and by subsequent boiling under pressure in an alkaline lye, combined with a hydrocarbon or a sulphuret of carbon.

301,070. BELT-FASTENER. JOHN W. PUGH, Grand Rapids, Mich., assignor of one-half to Allen P. Collar, same place. Filed Apr. 11, 1884. (No model.)

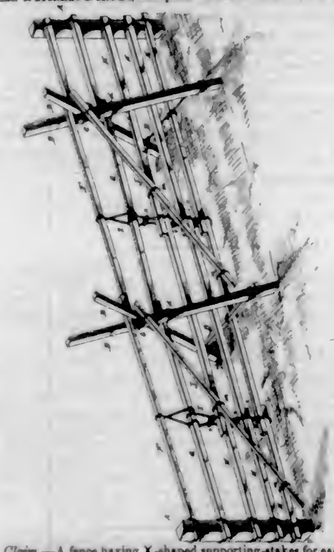


Claim.—1. A belt-fastener consisting of two pieces of metal, each slotted, so as to form on one side of it a series of tongues adapted to be bent into U-loops, the two parts being hinged together so that the free ends of the loops will project in opposite directions from the sides of the fastener, substantially as and for the purpose specified.

2. A hinged belt-fastener consisting of two series of U-loops formed integral with and connected by cross-pieces, the series of loops on one of the two pieces forming the fastener being bent in a direction opposite to that on the other, substantially as and for the purpose specified.

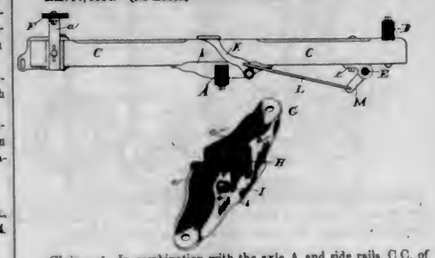
3. A belt-fastener consisting of two parts, each part being a piece of metal having on it tongues projecting in opposite directions, one series adapted to be bent into loops for the reception of a hinge-bolt, and the other into U-loops adapted to pass through and embrace the ends of the belt, substantially as and in the manner specified.

301,071. FENCE. JOHN R. PUTT, Middlebury, Ind., assignor of one-half to Schlarks S. Martin, same place. Filed Nov. 12, 1883. (No model.)



Claim.—A fence having X-shaped supporting-stakes for each panel, a rider supported in the crotches of the same, a series of rails extending from one stake to another and overlapping at each stake, one or more series of rails extending through the stakes and overlapping at the centers of the panels, and a diagonal rail extending through the length of each panel, the several parts being combined and bound together by wire, substantially as described.

301,072. CORN-PLANTER. ANDREW RUNSTETLER, Dayton, Ohio, assignor to the Farmers Friend Manufacturing Company, same place. Filed Mar. 17, 1884. (No model.)

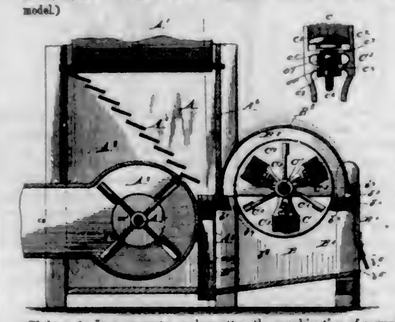


Claim.—1. In combination with the axle A and side rails, C C, of the main frame of a corn-planter, the coupling-braces G, shaped to fit the rails C, and recessed to receive and hold the axle A, substantially as specified.

2. In combination with the rails C of a corn-planter frame, and the axle A, the coupling-braces G, secured to the rails C by bolts *d*, with a through-bolt, N, securing the axle to the frame, and coupling-braces, substantially as specified.

3. In combination with one of the coupling-braces G, the boss I, and through-bolt J, and foot-lever K, journaled thereon, substantially as specified.

301,073. SEPARATOR AND SMUTTER. WILLIAM N. SHARPNACK and MICHAEL MCMAHON, Bucyrus, Ohio, assignors of one-half to G. Donnenwirth, Jr., and J. C. Tobias, both of same place. Filed Feb. 27, 1884. (No model.)



Claim.—1. In a separator and smutter, the combination of a smutting-case having cross-piece b^2, and openings above and below said cross-piece, a smutting-cylinder within said case, and forming with said case the passages B^3 b^3 and b^1, and resting close to the cross-piece b^2, and an exhaust-fan located behind the cylinder, substantially as described.

2. In a separator and smutter, the combination of a smutting-case having a cover provided with means for regulating the size of the opening between the top of the case and cover, a suction device, and a smutting device interposed between the suction device and front of the case, substantially as described.

3. In a separator and smutter, the combination of a smutting-case, a smutting-cylinder in said case, a cover over said case and cylinder, forming passage B^3 and opening b^3, and provided with adjusting set-screws for regulating the height of opening b^3, and a suction device, substantially as described.

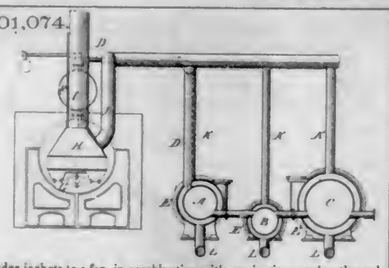
4. In a smutter, the combination of a brush having screw-threaded stem c^4 and nuts c^5 and c^6, and a spider-arm having arms c^3 and bridges c^7 c^7, provided with openings c^8, substantially as described.

301,074. SUPERHEATER FOR ENGINES. JOHN OR HENRY STUT, San Francisco, Cal. Filed Sept. 7, 1883. (No model.)

Claim.—1. A steam cylinder or cylinders having a supply-pipe connecting them with the steam dome or boiler, jackets E surrounding the cylinders, a secondary pipe or jacket, J, opening into the uptake or flue, surrounding the steam-pipe and connected with the cylinder-jackets by branches, as shown, in combination with pipes leading from the cylinder-jackets and connected with a fan, substantially as and for the purpose herein described.

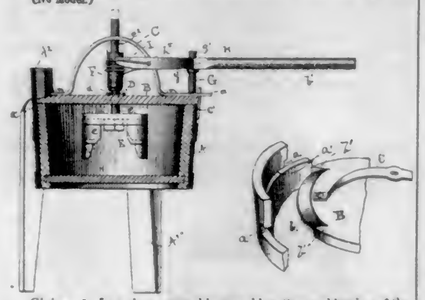
2. A steam cylinder or cylinders having a supply-pipe connecting them with the steam dome or boiler, jackets surrounding the cylinders and steam-pipe and connected by branches, and pipes leading from the

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cylinder-jackets to a fan, in combination with an air-pipe passing through the furnace, breeching, or smoke-stack, and connected with the jacket of the steam-pipe near the boiler, substantially as herein described.

301,075. WASHING-MACHINE. JOHN TOMBOW, Massillon, Ohio, assignor of one-half to Victor Kern, same place. Filed June 30, 1883. (No model.)



Claim.—1. In a churn or washing-machine, the combination of the body or reservoir A, having a vertical projecting arm, A^2, extended above the rim thereof and provided with a groove or chine, *a'*, cut on its inner face in line with the said rim, and transverse notches *a*, cut from the ends of the chine *a'* outward across the ends of the arm A^2, to the outer side thereof, the lid B, having its rim or periphery extended over the upper edge and flush with the outer side of the body A, and having a portion of one side cut away, whereby the edge or bead *b* and shoulders *b'* are formed, and adapted to fit snugly into the chine *a'* and transverse notches *a*, and a retaining hook or clasp arranged on the side of the lid or box opposite to the arm A, substantially as and for the purposes set forth.

2. The combination, in a washing-machine, of the tub A, having upward extension A^2, formed with inner groove, *a'*, and notches or slots *a*, the lid B, having a central bearing for the agitator-shaft, and cut away on one side, providing the bead *b*, fitted to groove *a'*, and notches *a*, the hook *c'*, pivoted at one end to the tub on the side opposite the extension A^2, bar C, secured on the lid in a diametrical line drawn through center of bead *b*, and having its end *c* opposite said bead projected in position to be engaged by hook *c'*, the agitator-shaft journaled in bearings formed in the lid and the bar C, and means for operating the said shaft, substantially as specified.

3. The combination of the box or body, the agitator-shaft, the pivoted operating-lever having its arms h^1 h^2 made of spring material, and provided on their outer sides near their ends with grooves h^4, and the cord I, wrapped around the agitator-shaft and having its ends secured to the arms h^2 h^3 at a point back from the ends thereof, and sprang into the grooves h^4, substantially as set forth.

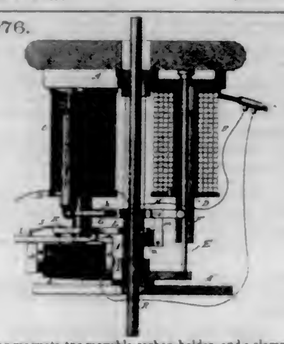
301,076. ELECTRIC-ARC LAMP. EDWARD WESTON, Newark, N. J., assignor to the United States Electric Lighting Company, New York, N. Y. Filed July 16, 1883. (No model.)

Claim.—1. In an electric lamp, the combination, with the movable carbon-holder and a clamp or clutch, of means for raising and lowering the clamp, and thereby adjusting the carbons, a stop or detent, and means for imparting a vibratory movement to the same when in contact with the clamp, as set forth.

2. In an electric lamp, the combination, with the movable carbon-holder, a clamp or clutch, and electro-magnets for controlling the position of the same, of a magnet in a normally-open shunt or derived circuit from the main circuit, and an armature connected with the circuit of the said magnet, and arranged to be thrown into vibration on the contact therewith of the clamp, as and for the purpose specified.

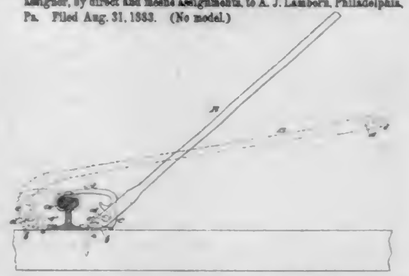
3. In an electric lamp, the combination, with the feed controlling

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and adjusting magnets, the movable carbon-holder, and a clamp or clutch, of an independent electro-magnet and armature for imparting a vibratory movement to the clutch, for the purpose specified.

301,077. SPIKE-EXTRACTOR. WILLIAM A. WRIGHT, Centreton, N. J., assignor, by direct and mesne assignments, to A. J. Lambert, Philadelphia, Pa. Filed Aug. 31, 1883. (No model.)



Claim.—1. In a spike-extractor, a yoke provided with teeth, in combination with a lever formed with a claw, *c*, a finger, *c'*, and a fulcrum-bar, *d*, said claw and finger having between them a space to receive the head of the spike, the claw being longer than the finger and located below the same, substantially as and for the purpose set forth.

2. A spike-extractor consisting of a yoke having a rack the teeth of which are located perpendicularly one above the other, and a lever formed with a fulcrum-bar, a claw, and a finger, a space existing between the claw and finger, the finger being above, whereby when the lever is shifted to the higher tooth of the rack its finger forms a bearing on the head of the spike, and when the fulcrum-bar of the lever rests in said tooth the claw is approximately the same distance from the under side of the head of the spike as when said bar rested in the lower tooth, substantially as stated.

REISSUES.

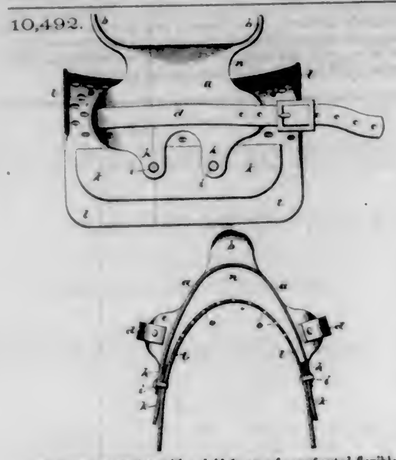
10,491. METHOD OF PRESERVING MILK. EDUARD SCHERPF, Wendisch Buchholz, Prussia, Germany. Filed May 17, 1884. Original No. 277,352, dated May 8, 1883. Patented in Germany Feb. 20, 1880, No. 15,341; in France Apr. 7, 1881, No. 142,133, and in England Feb. 14, 1882, No. 717.

Claim.—The process of preserving milk which consists in subjecting such milk in a tightly-corked receptacle to a steam and air bath of about 100° centigrade, then lowering the temperature in the boiler by admitting cold water into the serpentine tube or coil, thus forcing the milk through the pores of the cork, where butter is deposited and albumen precipitated by means of the tannin in the cork, removing the milk-bottles from the apparatus to cool, whereby a vacuum is produced in the bottle and air permitted to enter, such air being filtered by passing through the cork disk and the cork which closes the bottle, removing the cork disk containing the germs or sporules, and then coating the cork with paraffine, substantially as and for the purpose set forth.

10,492. HORSE-COLLAR PAD. FREDERICK FRANK KANNE, Waterville, Minn. Filed Nov. 7, 1883. Original No. 251,600, dated Dec. 27, 1881.

Claim.—1. The combination, with an arched metallic frame, of a perforated pad secured to the inner face of the frame, with an intermediate space, and adapted to hold said frame above and out of contact with the animal's neck, substantially as set forth.

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2. The combination, with a rigid frame, of a perforated flexible pad secured to the lower edges of the inner face of said frame and forming an extended rest therefor, the said pad and frame being separated to permit of a free passage of air, substantially as set forth.

3. The combination, with an arched metallic frame, of a perforated flexible pad secured to opposite sides of said frame and forming an air-space between them, substantially as set forth.

4. The combination, with a horse-collar, of the metallic frame provided with the curved projections and straps, substantially as set forth.

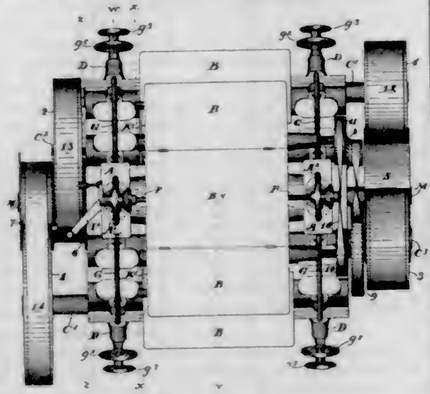
5. The combination, with the arched metallic frame having the curved projections and lugs, of the perforated pad, and pieces of leather *i*, both secured to the lugs of the frame, with an air-space between the frame and pad, substantially as set forth.

10,493. ROLLER-MILL. DANIEL W. MARMON and JESSE WARRINGTON, Indianapolis, Ind., assignors to Nordyke & Marmon Company, same place. Filed Jan. 26, 1883. Original No. 265,927, dated Oct. 10, 1882.

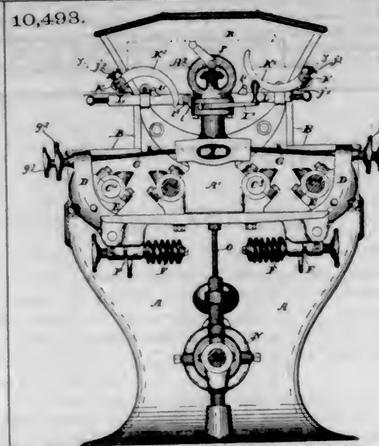
Claim.—1. The combination of the arm-operating mechanism, the feed-gate-operating mechanism, and the device I, having a cam, *i*, to operate one mechanism, and a handle, I', having a projecting end, to operate the other, whereby both mechanisms can be operated simultaneously, and the rolls thus thrown apart from each other and the feed-gates closed at one operation, substantially as set forth.

2. The combination of the feed-gate-operating mechanism, the bar L, provided with pivoted catches *l l*, and the handle I, said bar being adapted by means of said pivoted catches to be operated by the inwardly-projecting end of said handle, or to be operated without moving said handle, substantially as set forth.

3. The combination of the feed-gates, their operating-shafts, the arms K' K' on said shafts, the bar L, having lugs *l' l'*, which operate said arms, and the pivoted catches *l l*, and the handle I', whereby said

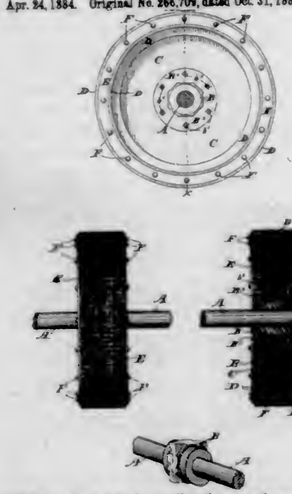


10,493.



bar can be operated by the inwardly-projecting end of said handle I' or is permitted to be operated independently of said handle, substantially as set forth.

10,494. PULLEY. ELIJAH B. MARTINDALE, Indianapolis, Ind. Filed Apr. 24, 1884. Original No. 266,709, dated Oct. 31, 1882.



Claim.—1. A wheel or pulley the operating surface or face of which is composed of the edges of the sheets or rings of paper pasted, pressed, and secured together, which form its body or rim, substantially as described.

2. A wheel or pulley composed of sheets of paper or pasteboard pasted, pressed, and secured together, extending to the surface, said surface being thus composed of the edges of said sheets, substantially as described.

3. A wheel or pulley the rim whereof is composed of sheets of paper or pasteboard pasted, pressed, and secured into one solid mass, said sheets being cut into rings and built up so that the edges thereof form the surface or face of the rim, substantially as described.

4. A wheel or pulley having a disk or web composed of sheets of paper or pasteboard pasted, pressed, and secured together into one solid mass and extending from the hub to the periphery of the wheel, the edges of the sheets thus forming the face or a part of the face or periphery of the wheel, substantially as described.

5. The combination, in a wheel or pulley, of a hub, a web or body, and a rim composed of sheets of paper or pasteboard pasted, pressed, and secured together diametrically of the wheel, the edges whereof form the operative surface or face thereof, substantially as described.

6. The combination of the hub B, web C, and rim D, said rim and said web being composed of layers of paper or pasteboard arranged as specified, metal rings E, and bolts or rivets F, all substantially as set forth.

7. The combination, in a pulley, of the hub B, the central portion of which is shouldered, and of a form to hold the pulley from turning thereon, and flanges B' B', which come against the shoulders on said hub, and are secured to said wheel by bolts b', thus also holding said pulley fixedly on said hub, substantially as shown and specified.



DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of Illinois.

CURRAN *et al. v.* BURDSALL.

Decided July 16, 1883.

1. Where a patentee after selling all his rights under the patent and subsequently purchases an older patent to defeat his assignee's rights, *Held* that such proceeding is manifestly unjust and inequitable, even if the older patent clearly anticipates the patent for the device sold.

2. Where a patentee has sold all his right, title, and interest in, to, and under his patents and subsequently purchases an older patent, *Held* that by such subsequent purchase an assignee cannot be dispossessed of the full benefit of what has been acquired from the patentee.

3. Where others are associated with the patentee in the purchase of a prior patent subsequent to a sale by the patentee of all his right, title, and interest in, to, and under his own patents, *Held* that the prior sale operates as a license as against all of the purchasers.

4. If others join with the seller in the purchase of the prior patent, such owners must look to the original seller for their compensation.

Mr. G. L. Chapin and *Mr. E. Hanecy* for the complainants.

Messrs. West & Bond for the defendant.

BLODGETT, *J.*:

This is a bill to restrain the alleged infringement by defendant of Letters Patent No. 76,661, dated July 7, 1868, issued to Richard P. Johnson and Eli J. Sumner, for an improvement in lumber-driers, which it is claimed has been assigned to complainants. The bill also charges the infringement of three other patents, claimed to be owned by complainants, but as no proof in regard to them has been put into the record no further notice will be taken of them. No question is made as to complainant's title to the Johnson and Sumner patent.

The main matter of defense relied upon by defendant is that two patents, one numbered 161,490, dated March 30, 1875, which is reissued as No. 8,846, and the other numbered 189,432, dated April 10, 1877, which is reissued as No. 8,840, were duly issued to complainant John J. Curran for improvements in lumber-driers, and that the right, title, and interest in and to said patents in and for the State of Wisconsin has been duly assigned and transferred to and vested in defendant, and that all the lumber-driers built by defendant in the State of Wisconsin have been constructed in accordance with said two letters patent so as aforesaid issued to complainant Curran.

Defendant further insists that all of complainants' interest in the patents set out in the bill of complaint has been acquired since the issue of said two patents to Curran, and since Curran assigned his interest in his said two patents in and for the State of Wisconsin, and that defendant acquired and holds his title to said two patents under assignments from complainant Curran and one Wilcox, who was interested with Curran as owner thereof.

One element of the Johnson and Sumner patent, No. 79,661, was a series of curtains suspended from the stanchions of the car on which the lumber was held in the drying-room, the function of these curtains being to arrest and turn down the flow of the hot-air current, so as to compel the passage of the hot air upon and about the lumber on the cars, while it passes through from the rear to the front of the kiln; and the second claim is:

2. The providing the cars with curtains or like device, in the manner and for the purposes set forth.

The Curran patent, No. 189,432, being Reissue No. 8,840, the right of which for Wisconsin is held by defendant, contains as one of its elements or features provision for curtains to be suspended from the ceiling of the drying-room, the description of which in the specification is as follows:

I also place curtains *h h*, of canvas or equivalent material, at intervals along the ceiling of the drying-chamber, to hang loosely down about eighteen inches, to rest upon the top of the cars of lumber, thus preventing the hot air from rushing along the ceiling, and forcing it downward to pass through the lumber and under the same.

The curtain or sliding door N, at the front end of the kiln, and extending down, as described, to form the lower draft, causes the air in its passage through the kiln to move along the floor and through the lower courses of the lumber. To further facilitate this movement, the smaller curtains *h* are also hung from the ceiling at intervals of about twelve feet, extending about eighteen inches down to and resting upon the cars of lumber, thus preventing the hot air from rushing along the ceiling and out the chimney, and forcing it by a lower draft to pass through and underneath the lumber.

Nearly over the inner edge of the opening *e*, by which the hot air is admitted to the kiln, the longer curtain *h'* is suspended, hanging free from but near the adjacent lumber-pile, as shown in the drawings. This curtain receives the hot air and directs it horizontally against the lower portion of the nearest lumber-pile. Once given a horizontal direction, and finding egress only beneath the lowered curtain or door *N*, with the strong draft that usually prevails through the kiln, the air has much less tendency to rise to the ceiling in its passage to the chimney. Such tendency being, however, still sufficient for the purpose of the distribution of the air and its action upon the lumber, is essentially uniform throughout the height and breadth of the drying-chamber.

And this feature is covered by claim No. 7, which is in these words:

7. The combination, with the drying-chamber A, curtain N, forming a downward extension of the chimney, and the opening *e*, for the admission of the hot air from below, of the curtain *h'*, depending from the ceiling at a point nearly over the inner edge of the opening *e*, and reaching from side to side of the kiln, substantially as and for the purpose set forth.

The only lumber-driers built by defendant were so built in the State of Wisconsin, and are provided, as the proof shows, with curtains suspended from the roof in the manner called for by the Curran patent.

The proof shows that the Johnson and Sumner patent was acquired by complainants after the issues of

the Curran patents and after Curran had assigned his interest therein for the State of Wisconsin.

Complainant Curran, having set forth in his patent, No. 189,432, the curtains suspended from the ceiling, is now estopped from defeating the right of defendant to construct lumber-driers in accordance with the terms of the patent by the purchase of the older patent of Johnson and Sumner. Curran has held himself out to the world as the inventor of this peculiar curtain device, and it would be grossly unjust and inequitable to allow him to defeat his assignees' rights to the full enjoyment of this patent by acquiring the ownership of this older patent, even if the older patent clearly anticipated the Curran device. By becoming the owner of this Curran patent defendant is clothed with the right as against Curran to make driers as directed in that patent, although the patent may be void for want of novelty, against the rest of the world. It is true two other persons are associated with Curran in the ownership of the Johnson and Sumner patent, but it seems to me the estoppel upon Curran must operate as a license from Curran to defendant to use the Johnson and Sumner patent in the State of Wisconsin, and Curran's co-owners must look to him for an accounting as to this territory. It would hardly seem necessary to cite authorities in support of this palpable equity of defendant against Curran and his co-complainants, but reference to a few cases where questions analogous to this have arisen may not be out of place. In *Faulks et al.* v. *Kamp et al.* (3 Fed. Rep., 898) the court said:

It is argued for the defendants that as the conveyances were of the right, title, and interest of the grantors, the warranty would only extend to whatever right they might have, which did pass, and that the warranty was kept, but the conveyances were made to carry out the sale in the manner required by law for passing the title, and the warranty grew out of the sale and not out of the form of the conveyance. And the patent subsequently purchased by the defendants may be better than this for covering this invention, but if it is it cannot help the defendants as against the orators. It is a familiar law, and has been for a long time, that a warranty of title or right to it draws to it any after acquired right or title of the warrantor, and carries it to the benefit of the person to whom the warranty runs. So, whatever right, if any, the defendants acquired to the invention covered by this patent inured to the benefit of the orators. It is also urged that the purchasers knew of the defects, and were not deceived, and that therefore the defendants are not estopped. But the rights of the orators do not rest on estoppel merely; they rest upon the purchase, which must operate so that the orators may have what they brought, and so that the defendants shall not both sell and keep the same thing.

In *Gottfried* v. *Miller* (104 U. S., 521) the court says:

It remains to consider whether the sale by Stromberg to the defendant Miller of one of the pitching-machines containing the improvement described in the patent protects him from liability for its use in this suit. By the contract of sale Stromberg warranted not only the title to the machine itself, but of the right to use it. If at the time of the sale he had been the owner of the patent, the sale would have constituted a license to Miller to use the machine as long as it lasted; but Stromberg did not acquire any interest in the patent until long after the date of his sale to Miller. If he had subsequently become the sole owner of the patent, his previous sale to Miller of a machine embodying his patented invention would have estopped him from prosecuting Miller for an infringement of the patent by the use of the machine.

The rule deducible from these authorities is, that a patentee cannot sell his rights to another and then buy or obtain control of an older patent and through such older patent dispossess his assign of the full benefit of what he purchased. Therefore, without discussing the question whether by the suspension of the curtains from the ceiling of the drying-room defendant infringes the second claim of the Johnson and Sumner patent, which specifically provides for suspending the curtains from the stanchions of the car, I am of opinion that complainants cannot enforce the Johnson and Sumner patent against defendant, because defendant as owner of the Curran patent has the right to use the Curran curtains in the State of Wisconsin.

The bill is therefore dismissed for want of equity.

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U. S. Circuit Court—Northern District of Illinois.

BURDSALL v. CURRAN *et al.*

Decided July 16, 1883.

1. The answer admitting the validity of the patents sued on, and one of the defendants being the original patentee, their validity cannot be disputed on a suit for infringement brought by an assignee of the patents.
2. The entire title for the State of Wisconsin being in complainant for Reissue Patents Nos. 8,840 and 8,846, defendants are estopped from denying their validity.
3. *Held*, that defendants infringed the first, second, third, fifth, sixth, and seventh claims of Reissue No. 8,840, and the first, second, fifth, sixth, and seventh claims of Reissue No. 8,846, in the construction of lumber-driers built by them in the State of Wisconsin.
4. Slight mechanical deviations from the specific directions given in both of these patents, Reissues Nos. 8,840 and 8,846, when the main features are incorporated, will not avoid the charge of infringement.

Messrs. West & Bond for the complainant.

Mr. G. L. Chapin and *Mr. E. Hanecy* for the defendants.

BLODGETT, *J.*:

This suit is brought for infringement of Letters Patent No. 161,490, dated March 30, 1875, issued to John J. Curran and Carlos Wilcox, which was reissued August 12, 1879, to John J. Curran and Carlos Wilcox, being Reissue No. 8,846, and of Letters Patent No. 189,432, dated April 10, 1877, issued to John J. Curran and Carlos Wilcox, assignor, and reissued August 12, 1879, to the same parties, Reissue No. 8,840. Both of these patents are for devices applicable to lumber-driers. Complainant claims ownership of all the rights, title, and interst in and to these patents, by mesne assignments from Curran and Wilcox to himself, for the State of Wisconsin and other States; but the infringement claimed in this suit is only for the State of Wisconsin. The validity of the patents and of the reissue is admitted by the defendants' answer, although it would probably not lie in the mouth of Curran, the defendant, who was the original patentee, to whom the original patents and reissues were issued, to deny their validity. The only issues in the case, therefore, are as to the complainant's title and the question of infringement. The complainant's title, as shown by the proof, comes through a series of mesne assignments, and seems to me clearly to clothe the complainant with the entire title for the State of Wisconsin. I have not deemed it necessary for the purposes of this suit to examine the chain of title as to the other States claimed by complainant.

Complainant claims an infringement of the first, second, fifth, sixth, and seventh claims of Reissue No. 8,846, and of the first, second, third, fifth, sixth, and seventh claims of Reissue No. 8,840. The proof upon the question of infringement consists in the production of a model, which the proof shows correctly represents three lumber-driers built by defendants—two at Oshkosh and one at Neenah, Wisconsin.

The first claim of Reissue No. 8,846 is—

1. In a kiln for drying lumber, the inclined floor B, extending beyond the ends of the kiln to form the loading and unloading platform, and provided with openings *e*, and sheet-metal part *f*, substantially as and for the purpose herein set forth.

An inspection of the model certainly exhibits the inclined floor B, as described in the original and reissued Curran patent, with the extensions beyond the end of the kiln, so as to form a loading and unloading platform, with the opening *e* and sheet-metal part *f*.

As to the second and third claims, which refer to the flexible self-adjusting car for lumber-driers, particularly described in the specifications, the infringement of these claims is not specifically alleged in the bill, nor does the model produced show the form of car used by the defendant; but I find in the proofs, as I read them, evidence showing that the defendants have used substantially the same car which is described in the complainant's patent.

The fifth claim of the patent is as follows:

5. In a hot-air lumber-drier, the combination, with the inclined car-track, and heating-pipes located beneath the track, of a partition, *a'*, placed below the track-bed, and proximate to the heating-pipes, for the purpose of confining the passing air close to the pipes, substantially as set forth.

The model in evidence certainly shows this partition *a'* almost in precisely the locality and performing necessarily the function that is provided for in the fifth claim.

The sixth claim is as follows:

6. In a hot-air lumber-drier, the combination, with the drying-chamber, located above the floor B, and the heating-chambers, located below said floor, of the dead-air chamber I, substantially as shown and described.

This dead-air chamber is the space between the track-floor and the partition *a'*, and is found in the model in evidence before me, there performing the function of the dead-air chamber in the patent.

The seventh claim is—

7. In a hot-air lumber-drier, the combination, with inclined bottom B and steam-pipes E E, of the horizontal partition *a'*, and the vertical partitions *w*, arranged alternately above and below the pipes, substantially as and for the purpose herein set forth.

The pipes shown in the drawings of the complainant's patent are arranged longitudinally, while the defendants, in the construction of their driers, as shown by their model in evidence, set their pipes transversely across the heating-chamber, so that they form gates or obstructions to the passage of the air, thereby compelling the air to pass around and between each bank of pipes, so that in its passage from its point of entrance to the exit from the heating-chamber the air comes in contact with all the pipes, and therefore becomes thoroughly heated. In the arrangement shown in the patent, the pipes running lengthwise of the heating-chamber, it was deemed necessary to force the air into contact with the pipes by means of these partitions. I do not construe this patent as requiring the heating-pipes to run lengthwise of the heating-chamber; but they may be arranged in the heating-chamber in any way so as to secure the largest amount of radiation upon the air, which it is designed to heat, in its passage through the chamber from its point of introduction to its exit, and, undoubtedly, the defendant, by the transverse coils of pipes, has avoided the necessity for the partitions *w*. They have used all the other parts of the combination described in this seventh claim; but there being no necessity for the specific use of the partitions *w*, they have used in place thereof the transverse coils of pipes, which perform the same function in the organization, and therefore, in my opinion, do infringe this claim, so that they practically use the entire combination.

The claims in Reissue No. 8,840 which it is insisted that the defendants infringe are as follows:

1. In a kiln for drying lumber, the steam-pipes C, arranged upon the inclined ground-floor B, and underneath the inclined floor O of the drying-chamber on which the cars run, as and for the purpose herein set forth.
2. The steam-pipes C, set up in gate form across the kiln, with free expansion-joints and headers running across and lengthwise of the kiln, substantially as and for the purpose herein set forth.
3. The broad chimney M, extending entirely across the kiln, and provided with the two chimneys M' M', separated by inclined deflecting-boards, as set forth.
5. In combination with a drying-chamber and a chimney which opens therefrom at the top and at one end of said chamber, the curtain or sliding door N, located as shown, and extending across the chamber to form a downward extension of the chimney of the full width of the drying-chamber, substantially as and for the purpose set forth.
6. In combination with the broad chimney M, kiln A, and heating-chamber underneath, the sliding door or curtain N, arranged in the mouth of the chimney, and leaving an opening at the bottom, whereby the hot air is compelled to descend to the floor of the kiln before passing out through the chimney, as set forth.
7. The combination, with the drying-chamber A, curtain N, forming a downward extension of the chimney, and the opening *e*, for the admission of the hot air from below, of the curtain *h'*, depending from the ceiling at a point nearly over the inner edge of the opening *e*, and reaching from side to side of the kiln, substantially as and for the purpose set forth.

The model shows certainly the steam-pipes C, arranged upon the inclined ground-floor B, and underneath the inclined floor O of the drying chamber, in every essential particular, as called for by the first claim. It also shows the steam-pipe C, set up in gate form, and with expansion joints and headers, substantially as provided in the second claim, although specific technical expansion-joints may not be used, the return bends of the pipes answering, perhaps, as a substitute for the technical expansion-joint; but all the practical purposes in the heating device shown and described in the second claim are necessarily involved, it seems to me, in the form of construction shown in the model in the proof. So, too, the model shows the broad chimney M, with the two small chimneys, separated by inclined deflecting-boards, substantially as described in the third claim of the letters patent. There is proof in the record tending to show that defendants have not in all cases used the broad chimney with the double flues and two small chimneys, but have used only one large chimney with a single flue; but I deem this a mere colorable evasion. One broad chimney with a single flue may do all or substantially all that the double-flued chimney does, and I think Mr. Curran cannot be permitted to violate his own patent by so slight a variation in the structure.

I also find in this model the curtain or sliding door N, described in the fifth claim, and which is claimed in combination with the other parts of the machine. It is true there is no special sliding door, but in place of it there is a suspended curtain; but it seems to me to perform just the function which the claim provides shall be performed by the sliding door N—that is, it forms a downward extension of the chimney of the full width of the drying-chamber, and is evidently for the purpose of forcing the air down to the bottom of the chamber before it escapes through the chimney, thereby compelling it to pass along and among the lumber to be dried.

What I have said in regard to the fifth claim applies with equal force to the sixth claim, which covers substantially the same curtain or sliding door N, arranged in the mouth of the chimney. The seventh claim covers the curtain depending from the top of the drying-chamber, and whose function is to deflect the air from the top of the drying-chamber onto the lumber in the drying-room, and it only needs an inspection of the model to see that this feature of the device is most palpably infringed.

There may be and probably are some slight mechanical deviations from the specific directions given in both of these patents for the construction of the lumber-driers therein described; but it is evident that the main

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features of both these devices are involved in the construction of the defendants' drier. They have copied substantially all that is covered by the patents, and have made a drier which is, in principle, the same as the patents were intended to describe and protect.

The finding of the court therefore is that the defendants infringe the first, second, fifth, sixth, and seventh claims of the Reissue Patent No. 8,846, and the first, second, third, fifth, sixth, and seventh claims of the Reissue No. 8,840. There will be a decree enjoining defendants from the further use of these patents, and a reference to ascertain and report damages.

U. S. Circuit Court—Southern District of New York.

THE ATLANTIC MILLING COMPANY v. ROBINSON.

Decided May 6, 1884.

1. The right to the exclusive use of a word or symbol as a trade-mark is inseparable from the right to make and sell the commodity to which it has been appropriated to designate the article as the production or article of the proprietor, and would seem to be an incident to the business of the place or establishment to which it owes its origin, and without which it can have no independent existence. It should be deemed to pass with a transfer of the business, because such an implication is consistent with the character of the transaction and the presumable intention of the parties.
2. The complainant's damages are measured by the extent to which the unlawful use of the word "Champion" has interfered with the sale of its flour.
3. The right to an injunction is not affected because the appropriation of their trade-mark has been a limited one.
4. It is not incumbent upon the complainants to show that their trade-mark has been copied in every particular. It is sufficient if it has been imitated to an extent calculated to mislead purchasers and cause the article to which it has been applied to pass as their article.

Messrs. Briesen & Steele for the plaintiff.

Mr. L. H. Arnold, Jr., for the defendant.

WALLACE, J.:

The proofs show that in 1861 the firm of Alex. H. Smith & Co., then the proprietors of the Atlantic Mills, at St. Louis, Missouri, adopted the word "Champion," and employed it to distinguish a particular quality of flour made and sold by them. From that time until the present it has been used as a trade-mark either by that firm or the several firms and corporations that became the proprietors of the property and business of the Atlantic Mills. The flour to which it was applied was particularly adapted for the southern export trade, and became generally known and recognized as the production of the Atlantic Mills by the word which was thus used to designate it. The complainant has not made proof of any formal transfer by Alex. H. Smith & Co. to any of the succeeding proprietors of the Atlantic Mills of the right to use the trade-mark, and if complainant has acquired that right it is because it passed upon the purchase of the mill property and business as an accessory thereof to each purchaser who became the proprietor of the premises, including the complainant, without any agreement respecting the trade-mark.

The right to the exclusive use of a word or symbol as a trade-mark is inseparable from the right to make and sell the commodity which it has been appropriated to designate as the production or article of the proprietor. It may be abandoned if the business of the proprietor is abandoned. It may become identified with the place or establishment where the article is manufactured or sold to which it has been applied, so as to designate and characterize the article as the production of that place or establishment rather than of the proprietor. A trade-mark of this description is of no value to the original proprietor, because he could not use it without deception, and therefore would not be protected in its exclusive enjoyment. Such a trade-mark would seem to be an incident to the business of the place or establishment to which it owes its origin, and without which it can have no independent existence. It should be deemed to pass with a transfer of the business, because such an implication is consistent with the character of the transaction and the presumable intention of the parties. (*Dixon Crucible Co.* v. *Guggenheim*, 3 Am. Law Times, 228; *Hudson* v. *Osborne*, 39 L. J. N. S. Ch., 79; *Skipwright* v. *Clements*, 19 W. R., 599.)

The defendant controverts the right of the complainant to the exclusive use of the word "Champion" as a trade-mark by the testimony of two witnesses to the effect that they use it or saw it used as a brand upon flour before it was adopted by Alex. H. Smith & Co. The testimony of the witness Potter fails to show the use of the word in the instances to which he refers prior to 1867, and is therefore valueless. The witness Reamey testifies that he used it for branding the flour of nine different firms as long ago as 1857. None of the persons for whom it was so used have been produced, although many of them were accessible. If Reamey's statement is correct, it could have been readily corroborated. The failure to do so is significant. His statement is not supported by any extrinsic evidence, and is not deemed sufficiently reliable to defeat the complainant's right. Upon the accounting to ascertain damages the fact is not to be overlooked that in the instances in which the trade-mark has been used by the defendant in connection with the names of other manufacturers than the complainant's, the complainant's damages are measured by the extent to which the unlawful use of the word "Champion" has interfered with the sale of their flour. Their right to an injunction is not affected because the appropriation of their trade-mark has been a limited one, and it is not incumbent on them to show that it has been copied in every particular. It is sufficient if his trade-mark has been copied to an extent calculated to mislead purchasers and cause the article to which it has been applied to pass as their article. The cases *Gillott* v. *Esterbrook*, (48 N. Y., 374;) *Newman* v. *Alvord*, (51 N. Y., 189;) *Hier* v. *Abrahams*, (82 N. Y., 519,) and *Walton* v. *Crowley*, (3 Blatchf., 440,) are instructive upon this point.

A decree is ordered for the complainant.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—April—June, 1884.

DIGEST OF DECISIONS.

[Decisions of U. S. court cases are designated by an asterisk, (*,) of the Secretary of the Interior by a dagger, (†,) and of State courts by a double dagger, (‡.)]

ABANDONMENT.

(See Invention Described but not Claimed, 3.)

ADMINISTRATOR.

(See Assignments, 1.)

ANALOGOUS DEVICES.

(See Infringement, 1, 2, 3, 7, 9, 10.)

APPEALS.

(See Jurisdiction.)

APPEALS FROM THE COMMISSIONER OF PATENTS.

1. When the Commissioner of Patents stands in this court upon the ground that his decision in favor of an applicant's right to a patent is permanent, a legal duty to proceed to the next step consequent upon such permanent decision must arise, and a failure or refusal to so proceed presents the very evil which the writ of mandamus is designed to cure.
[*U. S., *ex rel.* R. Hoe & Co. and George C. Gill v. Benjamin Butterworth, Commissioner of Patents, 519.

2. When it appears by the Commissioner's return that he refused to prepare a patent out of deference to the action of the Secretary of the Interior in entertaining an appeal from and reversing his decision, that act of deference does not constitute an exercise by him of discretion as to his own executive functions in such a sense as would cause the writ of mandamus to be an interference with executive discretion.
[*Id.

3. In this proceeding for mandamus the inquiry is, whether the title of the petitioner has been so adjudicated already that he is entitled to the fruit of that adjudication by the performance of a merely ministerial duty. The remedy provided by Section 4915 R. S. is not an adequate remedy in such case.
[*Id.

4. The provisions of the statute giving the Secretary power of directing is general, and the provisions relating to the duties and powers of the Commissioner are specific. It is the latter which must control. When the sections of the statutes are considered together, it must be held that the Commissioner must perform his duties under the direction of the Secretary, except when he is already directed by the superior directory power of the legislature.
[*Id.

5. Applying the above rule of construction to the Commissioner's decisions in cases of interference, *Held* that they are not subject to the directory power of the Secretary, either by contemporaneous dictation or by appeal and reversal described as direction.
[*Id.

6. It appearing that what was intended to be a complete system of remedies by appeal from the decisions of the Commissioner has been provided by the same statute which provides for the directory power of the Secretary, *Held* that in the absence of any express provision for appeal to the Secretary an inferential right of appeal is excluded.
[*Id.

7. Upon the above considerations it is furthermore *held* that the appellate proceedings and reversal by the Secretary in the case at hand were unauthorized, and therefore a nullity; and that consequently the Commissioner of Patents, having finally adjudicated that the relators are entitled to a patent, improperly refuses to issue the same, and *ordered* that the writ of peremptory mandamus shall issue.
[*Id.

APPEAL FROM THE PRIMARY EXAMINER.

The question whether an appeal from the decision of the Primary Examiner, requiring a division of an application, should be heard by the Examiners-in-Chief or by the Commissioner, is a matter of administrative discrimination, and is not within the control or supervision of the Court, but belongs to the administrative part of the Government.
[*Gorton v. Butterworth, Commissioner of Patents, 717.

APPEALS TO THE SECRETARY OF THE INTERIOR.

(See Appeals from the Commissioner of Patents.)

APPEALS TO THE SUPREME COURT OF THE DISTRICT OF COLUMBIA.

(See Appeals from the Commissioner of Patents.)

ASSIGNMENTS.

(See Trade-Marks, 12.)

1. An assignment of a patent by an administrator is valid under the act of July 8, 1870. The decision in the case of *The Shaw Relief Valve Company* v. *The City of New Bedford* approved on this point.
[*Bradley *et al.* v. Dull *et al.*, 625.

2. Where a patentee after selling all his rights under the patent subsequently purchases an older patent to defeat his assignee's rights, *Held* that such proceeding is manifestly unjust and inequitable, even if the older patent clearly anticipates the patent for the device sold.
[*Curran *et al.* v. Burdsall, 1319.

3. Where a patentee has sold all his right, title, and interest in, to, and under his patents and subsequently purchases an older patent, *Held* that by such subsequent purchase an assignee cannot be dispossessed of the full benefit of what has been acquired from the patentee.
[*Id.

4. Where others are associated with the patentee in the purchase of a prior patent subsequent to a sale by the patentee of all his right, title, and interest in, to, and under his own patents, *Held* that the prior sale operates as a license as against all of the purchasers.
[*Id.

5. If others join with the seller in the purchase of the prior patent, such owners must look to the original seller for their compensation.
[*Id.

6. The answer admitting the validity of the patents sued on, and one of the defendants being the original patentee, their validity cannot be disputed on a suit for infringement brought by an assignee of the patents.
[*Burdsall v. Curran *et al.*, 1320.

7. The entire title for the State of Wisconsin being in complainant for Reissue Patents Nos. 8,840 and 8,846, defendants are estopped from denying their validity.
[*Id.

BAR TO A PATENT.

(See Invention Described but not Claimed, 1.)

BURDEN OF PROOF.

(See Infringement, 8.)

CHANGE OF PROCESS.

(See Construction of Specifications and Patents, 1.)

CHANGE OF STRUCTURE.

(See Infringement, 1, 7, 9, 10; Invention.)

CLAIMS.

(See Construction of Specifications and Patents, 2; Interference, 1, 2.)

COMBINATIONS.

(See Infringement, 1, 5; Invention; Invention Described but not Claimed, 4; Reissues, 5; Subsequent Patents, 3.)

COMMISSIONER OF PATENTS.

(See Appeals from the Commissioner of Patents; Appeal from Primary Examiner; Jurisdiction; Reissues, 1.)

COMPOSITION OF MATTER.

(See Patentability.)

CONSTRUCTION OF CLAIMS.

(See Construction of Specifications and Patents, 3; Reissues, 5.)

CONSTRUCTION OF THE CONSTITUTION.

(See Copyright, 2, 3, 4.)

CONSTRUCTION OF RULES.

(See Interference, 1, 2.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Infringement, 1, 2, 3, 4, 5; Invention; Invention Described but not Claimed, 4; Inoperative Patents; Patentability; Particular Patents; Public Use; Reissues, 1.)

1. NEW USE—OLD PROCESS.
The application of an old process or machine to a similar or analogous subject, with no change in the manner of applying it, and no result substantially distinct in its nature, will not sustain a patent, even if the new form of result has not before been contemplated.
[*Pennsylvania Railroad Company v. Locomotive Engine Safety Truck Company, 207.

2. It is immaterial whether or not a certain construction might have been covered by the language of the specification, since the claims are to be dealt with and nothing else.
[*Turner & Seymour Manufacturing Company v. Dover Stamping Company, 1131.

3. Where an inventor is the first to enter a particular field of invention the claim of his patent should be construed, broadly, to cover any similar apparatus which effects the same result in substantially the same manner.
[*Worswick Manufacturing Company *et al.* v. City of Buffalo *et al.*, 1239.

CONSTRUCTION OF STATUTES.

(See Appeals from the Commissioner of Patents, 3, 4, 6; Assignments, 1; Copyright; Invention Described but not Claimed, 1; Jurisdiction, 1, 2, 3; Subsequent Patents, 1, 2.)

COPYRIGHT.

1. The object of section 4962 R. S. is to give notice of the copyright to the public by placing upon each copy in some visible shape the name of the author, the existence of the claim of exclusive right, and the date at which this right was obtained. This notice is sufficiently given by the words "Copyright, 1882, by N. Sarony," found on each copy of the photograph under consideration.
[*The Burrow-Giles Lithographic Company v. Sarony, 413.

2. The construction placed upon the Constitution by the first act of 1790 and the act of 1802 by the men who were contemporary with its formation, many of whom were members of the convention which framed it, is of itself entitled to very great weight; and when it is remembered that the rights thus established have not been disputed during a period of nearly a century, it is almost conclusive.
[*Id.

3. An author in the sense in which the term is used in the Constitution is "he to whom anything owes its origin; originator; maker; one who completes a work of science or literature." So, also, by "writings" in this clause of the Constitution is meant the "literary productions" of those authors, and Congress has very properly declared these to include all forms of writing, printing, engraving, etching, &c., by which the ideas in the mind of the author are given visible expression.
[*Id.

4. No doubt entertained that the Constitution is broad enough to cover an act authorizing copyright of photographs so far as they are representatives of original intellectual conceptions of the author, and the facts being that the photograph in question was made entirely from the plaintiff's original mental conception, to which he gave visible form by posing the subject in front of the camera, selecting and arranging the costume, draperies, &c., arranging and disposing the light and shade, suggesting and evoking the desired expression, *Held* that the photograph in question is an original work of art, of which the plaintiff is the author, and of a class of inventions for which the Constitution intended that Congress should secure to him the exclusive right to use, publish, and sell, as it has done by section 4952 R. S.
[*Id.

COURTS OF EQUITY.

(See Trade-Marks, 7.)

DAMAGES AND PROFITS.

(See Trade-Marks, 4, 7, 9, 11, 13.)

1. It does not always follow that, because a party may have made an improvement and obtained a patent for it, another using the improvement will be mulcted in more than nominal damages for the infringement. If other methods in common use produce the same result with equal facility and cost, the use of the patented invention cannot add to the gains of the infringer or impair the just rewards of the inventor. The inventor may, indeed, prohibit the use or exact a license-fee for it, and if such license-fee has been generally paid its amount may be taken as the criterion of damages to him when his rights are infringed. In the absence of such criterion the damages must necessarily be nominal.
[*Black *et al.* v. Thorne *et al.*, 415.

2. When a patent is for an improvement, and not for an entirely new machine, the patentee, in order to entitle him to more than nominal damages, must give evidence tending to separate or apportion the defendant's profits and the patentee's between the patented feature and the unpatented features, and such evidence must be reliable or tangible, and not conjectural or speculative; or he must show by equally reliable and satisfactory evidence that the profits and damages are to be calculated on the whole machine, for the reason that the entire value of the whole machine as a marketable article is properly and legally attributable to the patented feature.
[*Garretson v. Clark *et al.*, 524.

3. In an account before a master, evidence of payments for past infringement, for the purpose of ascertaining the amount which should be paid by the defendant, is incompetent. To admit it is contrary to the maxim "*Inter alios acta*," &c.
[*Westcott *et al.* v. Rude *et al.*, 719.

4. When the sale of licenses by the patentee has been sufficient to establish a price for such licenses, that price should be the measure of his damages against an infringer; but a royalty or license-fee, to be binding on a stranger to the licenses which established it, must be uniform.
[*Id.

5. Proof of a single license is not sufficient to establish a market-price.
[*Id.

6. In respect to two or more claims in a patent, each of value, and distinct from the other, one cannot equal all in value any more than in mathematics a part can equal the whole. A licensee may, if he choose, bind himself to pay the same price whether he use the entire invention or a part only, but at the same time he acquires the right to use all, and so his agreement may not be unreasonable; but if as against an infringer such a license can have any force, reasonably it must be in the way only of establishing a royalty for the entire invention.
[*Id.

DECISION OF COMMISSIONER CONCLUSIVE.

(See Appeals from the Commissioner of Patents, 7; Reissues, 1.)

DECREE.

(See Practice in the Courts, 2.)

DEDICATION TO THE PUBLIC.

(See Invention Described but not Claimed, 2, 3.)

DEFENSES.

(See Infringement, 8.)

DISCLAIMERS.

(See Reissues, 6.)

DIVISION OF APPLICATION.

(See Appeal from the Primary Examiner; Subsequent Patents, 2.)

It is doubtful whether claims to the process and to the instrumentalities of the process constitute two subjects of patents. It would seem that the process is not patentable at all.
[*United States, *ex rel.* James S. Gorton, v. Benjamin Butterworth, Commissioner of Patents, 717.

DRAWINGS.

(See Reissues, 4.)

ENLARGEMENT OF CLAIMS.

(See Particular Patents, 8; Reissues, 3, 5, 7.)

EQUIVALENTS.

(See Infringement, 1, 7.)

ESTOPPEL.

(See Assignments, 6, 7.)

EVIDENCE.

(See Damages and Profits, 3; Infringement, 8.)

EXAMINERS-IN-CHIEF.

(See Appeal from the Primary Examiner.)

FIRST AND ORIGINAL INVENTOR.

(See Construction of Specifications and Patents, 3.)

FOREIGN USE.

(See Public Use.)

FORMER DECISIONS AFFIRMED.

(See Assignments, 1.)

FORMER DECISIONS CONSTRUED.

(See Invention Described but not Claimed, 1.)

FRAUD.

(See Reissues, 1; Trade-Marks, 10.)

GENERIC CLAIMS.

(See Construction of Specifications and Patents, 3; Interference, 2.)

IMMATERIAL VARIATIONS.

(See Infringement, 9, 10.)

INFRINGEMENT.

(See Assignments, 6, 7; Damages and Profits, 3, 6; Particular Patents, 7; Trade-Marks, 4, 7, 10, 11.)

1. When a patent is for a combination, one element of which is a gear-wheel with a cone supported in a peculiar manner, and the defendant uses the gear-wheel with the cone, but the latter is supported differently, though the elements employed by the defendant are the equivalents of those of the complainant in the patented combination, *Held* that the defendant takes the complainant's combination and infringes his patent.
[*Mundy v. Lidgerwood Manufacturing Company, 718.

2. The claim in Reissue Letters Patent No. 4,321, granted to Charles Graebe and Charles Liebermann, April 4, 1871, is: "Artificial alizarine produced from anthracene or its derivatives by either of the methods herein described, or by any other method which will produce a like result." Unless it is shown that the method described in this patent was followed to produce the defendant's article, or unless it is shown that that article could not be produced by any other process, the defendant's article does not infringe the patent.
[*Cochrane *et al.* v. Badische Anilin and Soda Fabrik, 814.

3. Every patent for a product or composition of matter must identify it so that it can be recognized aside from the description of the process for making it, or else nothing can be held to infringe the patent which is not made by that process.
[*Id.

4. The scope of a patented invention may be so narrowed by the prior state of the art that infringement cannot be adjudged to exist unless there has been an appropriation in substantial form of construction of the identical elements which the inventor had a right to claim as new in his patent.
[*Saladee v. Racine Wagon and Carriage Company *et al.*, 1133.

5. To constitute infringement, it must appear that all the elements of a patented combination, or their equivalents, have been appropriated.
[*Id.

6. The bill dismissed upon the ground of non-infringement, without deciding the validity of the reissue patent.
[*Id.

7. The defendants are held to infringe the patented invention, notwithstanding they have introduced some improvements, have employed a well-known mechanical equivalent, and made certain minor differences, the two mechanisms being in all essential particulars alike.
[*Worwick Manufacturing Company *et al.* v. City of Buffalo *et al.*, 1239.

8. The burden of proof is upon the defendant to show that the complainant is not the first inventor, and a mere preponderance of the evidence in that direction is not enough. The proof must be of such a convincing character as to satisfy the court beyond a reasonable doubt.
[*Id.

9. *Held*, that defendants infringed the first, second, third, fifth, sixth, and seventh claims of Reissue No. 8,840, and the first, second, fifth, sixth, and seventh claims of Reissue No. 8,846, in the construction of lumber-driers built by them in the State of Wisconsin.
[*Burdsall v. Curran *et al.*, 1320.

10. Slight mechanical deviations from the specific directions given in both of these patents, Reissues Nos. 8,840 and 8,846, when the main features are incorporated, will not avoid the charge of infringement.
[*Id.

INJUNCTION.

(See Trade-Marks, 4, 11, 14.)

INJUNCTION—NOT TO ISSUE WHEN IT WOULD WORK INJUSTICE.
An injunction should not issue when it would work great harm to one party without corresponding benefit to the other,

at least where adequate protection can be afforded by other means.

[*Swift *v.* Jenks *et al.*, 621.

INOPERATIVE PATENTS.

If a patent is inoperative so far as not to cover all that the party is entitled to claim, it is inoperative within the meaning of the provisions of the statute relating to reissues.

[*Giant Powder Company *v.* Safety Nitro Powder Company, *et al.*, 99.

INTERFERENCE.

(See Appeals from the Commissioner of Patents.)

1. Paragraph 1 of Rule 93 and the Beginning of Rule 94 Construed—Conflict in Claims Defined.

The spirit of the rule of interference is not that claims must conflict in terms in order to constitute an interference, but that the subject-matter claimed must conflict.

It is not essential that the claims should be so alike that the claim in any one case will apply just to the matter or device of the other or others.

If the claim of one party will include that of another, there is an interference in fact.

It should be settled in the Patent Office who is entitled to the broad claim, and this should appear as the result of an interference proceeding.

[*Ex parte* Upton, 99.

2. Subsequent Patents with Broader Claims.

Neither the spirit of the law nor public policy sanctions the granting of patents with specific claims while applications with generic claims are still pending, the objection being that, whether the application with the generic claim belongs to the same party who has a specific claim under the genus, or is an application of a different party, a patent covering by a generic claim, if a subsequent patent, improperly extends the monopoly.

[Id.

3. No interference can lie except as between claimants of the same invention. If an applicant claims that which is shown in a previous patent, the patentee should be notified of it and an opportunity first offered to him to lay claim to the invention.

[*Marvin *v.* Lillie, 299.

INVENTION.

(See Construction of Specifications and Patents, 1; Interference, 3; Non-Invention.)

When an inventor merely brings an old element into his machine, he makes no invention; but where he does more—dispenses with certain parts, duplicates others, rearranges, and simplifies the machine—he must be held to have made an invention.

[*Mundy *v.* Lidgerwood Manufacturing Company, 718.

INVENTION DESCRIBED BUT NOT CLAIMED.

1. The case of *Campbell* v. *James* must be construed to forbid the patenting of an invention by a party who has already patented the same invention, and not merely described it in a patent. The statute does not make prior description in a patent a bar, but being patented. (Sections 4886, 4887, and 4920.)

[*Vermont Farm Machine Company *et al. v.* Marble, Commissioner of Patents, 621.

2. Where four claims of an applicant have been rejected solely on the ground of their subject-matter being described in a patent granted to the same party before the date of filing of the application, *Held* that the rejection is erroneous, and the applicant is entitled to a patent embracing such claims.

[*Id.

3. Non-Claim of Apparent Device—Abandonment.

The omission by an inventor to claim a combination or device apparent upon the face of his patent amounts to a dedication of the neglected contrivance to the uses of the public.

[*Swift *v.* Jenks *et al.*, 621.

4. A part which under certain conditions may be a serviceable addition to the machine, but is not indispensable, and is not mentioned in the claim, held not to be an element of the patented combination.

[*Bradley *et al.* v. Dull *et al.*, 625.

INVENTION SHOWN BUT NOT CLAIMED.

(See Subsequent Patents, 1, 2, 3.)

JOINDER OF INVENTION.

(See Division of Application.)

JUDGMENT BY DEFAULT.

(See Practice in the Courts, 2.)

JURISDICTION.

(See Appeal from the Primary Examiner; Reissues, 1.)

1. Where a bill in equity is brought to obtain a patent (under section 4915 R. S.) in the district of Vermont, and the Commissioner of Patents accepts service, *Held* that by such acceptance the Commissioner consented to be found in said district, and his act in this respect is binding upon his successor.

[*Vermont Farm Machine Company *et al. v.* Marble, Commissioner of Patents, 622.

2. When the sections of the statute are construed together, it is held that when there are two interfering patents the circuit court of the district whereof the defendant is an inhabitant or where he may be found is the court "having cognizance," and where an original application for a patent has been refused and a remedy is sought in equity, and the process is to be served on the Commissioner of Patents, then the Circuit Court of the District of Columbia is the proper tribunal to entertain the suit.

[*Prentiss *v.* Ellsworth, the Late Commissioner of Patents, 623.

3. An objection to the jurisdiction of the circuit court in Pennsylvania is that it has no mode of enforcing obedience to its decree, since the circuit courts outside of the District of Columbia have no authority to issue a writ of mandamus to an officer of the United States commanding him to do a ministerial act.

[*Id.

LICENSES.

(See Assignments, 4, 5; Damages and Profits, 1, 4, 5, 6.)

During the existence of a partnership between two persons one of them invented a machine upon which a patent was granted to him. The firm paid the fees and costs of procuring the patent and the expenses of an experimental trial of the invention, and also paid the expenses of some litigation which ensued. It appeared, however, that all the outlay by the firm was more than repaid by the benefits arising from the use of the invention in the partnership business. *Held*, that upon these facts no implied license arises to the member of the firm not the inventor to make, vend, and use the patented machine after the dissolution of the partnership.

[*Keller *et al. v.* Stolzenbach *et al.*, 209.

MANDAMUS.

(See Appeals from the Commissioner of Patents, 1, 2, 3, 7.)

MEASURE OF DAMAGES.

(See Damages and Profits, 3, 4, 5; Trade-Marks, 13.)

MECHANICAL CHANGE.

(See Infringement, 7, 9, 10; Non-Invention.)

MECHANICAL SUBSTITUTE.

(See Invention.)

NEW PROCESS.

(See Patentability.)

NEW RESULT.

(See Construction of Specifications and Patents, 1.)

NEW USE.

(See Construction of Specifications and Patents, 1; Non-Invention.)

NOMINAL DAMAGES.

(See Damages and Profits, 1, 2.)

NON-INVENTION.

Non-Invention.

In trucks already in use on railroad-cars the king-bolt which held the car to each truck passed through a bolster supporting the weight of the car, and through an elongated opening in the plate below, so as to allow the swiveling of the truck upon the bolt and lateral motion in the truck, and the bolster was suspended by divergent pendent links from brackets on the frame, whereby the weight of the car tended to counteract any tendency to depart from the line of the track: *Held*, that a patent for employing such a truck as the forward truck of a locomotive-engine with fixed driving-wheels was void for want of novelty.

[*Pennsylvania Railroad Company *v.* Locomotive Engine Safety Truck Company, 207.

NON-PATENTABILITY.

(See Division of Application; Invention Described but not Claimed, 3.)

NOVELTY.

(See Non-Invention.)

OLD ELEMENTS.

(See Construction of Specifications and Patents, 1.)

OLD PROCESS.

(See Construction of Specifications and Patents, 1.)

PARTIAL USE.

(See Infringement, 5.)

PARTICULAR PATENTS.

1. Barker—Soldering Devices.

The Reissue Patent No. 6,781, granted July 1, 1879, to Edward M. Lang, for an improvement in soldering devices, as assignee of Abel Barker, construed and held to be invalid as to the first three claims and not to be infringed as to the remaining claims.

[*McMurray *et al. v.* Mallory *et al.*, 915.

2. Bauman—Apparatus for Drying Sand and Gravel.

Patent No. 121,746, granted December 12, 1871, to Allen H. Bauman, for an apparatus for drying sand and gravel, construed, sustained, and held to be infringed.

[*Bradley *et al. v.* Dull *et al.*, 625.

3. Bostwick—Soldering-Irons.

Reissue Letters Patent No. 6,466, granted October 29, 1878, to E. M. Lang & Co., as assignee of Jabez A. Bostwick, for an improvement in soldering devices, held to be invalid as to the first claim and not to be infringed as to the other claim.

[*McMurray *et al. v.* Mallory *et al.*, 915.

4. Doyle—Molds for Making Combined Ingots of Steel and Iron.

(See Illingworth.)

5. Eagleton—Japanned Furniture-Springs.

Letters Patent No. 122,001, granted to the Eagleton Manufacturing Company, December 19, 1871, for an improvement in japanned furniture-springs, as the alleged invention of J. J. Eagleton, *held* to be invalid, and the following points ruled:

(*a.*) The patent is for steel furniture-springs protected by japan, and tempered by the heat used in baking on the japan;

(*b.*) Such springs, so protected and tempered, were known and used by various persons named in the answer, before the date of the patent;

(*c.*) The specification which accompanied the original application by Eagleton, July 6, 1868, did not set forth the discovery that moderate heat, such as may be applied in japanning, will impart temper to the springs, but set forth merely the protection of the springs by japan;

(*d.*) Not only does the evidence fail to show that Eagleton, who died in February, 1870, in fact made and used, prior to such other persons, the invention covered by the patent as issued, but it shows that he did not, and that, probably, it never came to his knowledge while he lived;

(*e.*) Japanning by itself was not patentable, and Eagleton, in the specification which he signed and swore to, did not describe any mode of japanning which would temper or strengthen the steel, and did not even mention that the japan was to be applied with heat, and it now appears that the temper and strength are produced by the heat altogether, and not at all by the japan;

(*f.*) The only invention to which the application and oath of Eagleton were referable was that of merely japanning steel furniture-springs; the authority given to his attorneys was only to amend that application, and ended at his death; the amendments made were not mere amplifications of what had been in the application before; the patent was granted upon them without any new oath by the administratrix, and this defense is not required by statute to be specifically set forth in the answer, and can be availed of under the issues raised by the pleadings, as showing that the plaintiff has no valid patent.

[*Eagleton Manufacturing Company *v.* West, Bradley & Cary Manufacturing Company *et al.*, 1237.

6. Earle—Egg-Beaters.

Reissue Letters Patent No. 6,542, granted July 13, 1875, to Timothy Earle, for an improvement in egg-beaters, eleven years after the grant of the original patent, and with a broader claim than the latter, held to be invalid.

[*Turner & Seymour Manufacturing Company *v.* Dover Stamping Company, 1131.

7. Illingworth—Molds for Ingots.

Letters Patent No. 166,700, granted August 17, 1875, to John Illingworth, and No. 99,299, granted February 1, 1870, to Patrick Doyle, for molds for ingots, construed, sustained, and held to be infringed by machines used under Letters Patent No. 240,727, granted April 26, 1881, to Spaulding *et al.*, as assignees of Alfred E. Jones.

[*Doyle *v.* Spaulding *et al.*, 300.

8. Lloyd—Puddling-Furnaces.

Letters Patent No. 135,650, granted February 11, 1873, to E. Lloyd, for an improvement in puddling-furnaces, construed and sustained, but held not to be infringed by the defendants.

[*Lloyd *v.* Miller *et al.*, 101.

9. Mundy—Friction-Drum.

Reissue Letters Patent No. 9,289, granted July 13, 1880, to Joseph S. Mundy, for an improvement in friction-drums, construed and held to cover a novel and patentable invention.

[*Mundy *v.* Lidgerwood Manufacturing Company, 718.

10. Nobel—Explosive Compound.

Reissued Letters Patent No. 10,267, issued January 9, 1883, upon the application of Alfred Nobel, to the Giant Powder Company as assignee, for an improvement in explosive compounds, examined and sustained.

[*The Giant Powder Company *v.* The Safety Nitro Powder Company *et al.*, 99.

11. Smith—Trucks for Locomotives.

Letters Patent No. 34,377, granted to Alba F. Smith, February 11, 1862, for an improvement in trucks for locomotives, declared void.

[*The Pennsylvania Railroad Company, Appellant, *v.* The Locomotive Engine Safety Truck Company, 207.

12. Sullivan—Harness for Fire-Engines, &c.

Letters Patent No. 171,190, granted December 14, 1875, to Edward O. Sullivan, for an improvement in harnesses for fire-engines, sustained.

[*Worswick Manufacturing Company *et al. v.* City of Buffalo *et al.*, 1239.

PARTNERSHIP.

(See Licenses.)

PATENTABILITY.

(See Construction of Specifications and Patents, 1; Invention; Invention Described but not Claimed, 2; Non-Invention.)

While a new process for producing the old article (alizarine) was patentable, the product itself could not be patented, even though it was a product made artificially for the first time, in contradistinction to being eliminated from the madder-root. Calling it "artificial alizarine" did not make it a new composition of matter, and patentable as such by reason of its having been prepared artificially for the first time from anthracene, if it was set forth as alizarine—a well-known substance.

[*Cochrane *et al. v.* Badische Anilin and Soda Fabrik, 614.

PLEA.

(See Practice in the Courts, 1.)

PRACTICE IN THE COURTS.

(See Appeals from the Commissioner of Patents, 1, 2, 3; Assignments, 6, 7; Damages and Profits, 2, 3; Infringement, 8; Injunction; Reissues, 1; Trade-Marks, 7, 10.)

1. The object of a plea, where there is some certain single issue requiring but little evidence that will dispose of the whole case, if sustained, is to try that issue without putting the parties to the expense of the trial of the case at large, and pleas are lim-

ited to a single defense or issue, unless by permission of the court the defendants are allowed to plead double. *Held* that the plea in this case does not conform to this rule, and besides comes too late.

[*Giant Powder Company v. Safety Nitro Powder Company *et al.*, 99.

2. A decree rendered against a plaintiff because of his failure to reply to a plea or set it down for argument is not conclusive, since all the authorities agree that in order to constitute the former judgment or decree a bar it must appear that the point in issue was judicially determined after a hearing and upon consideration of the merits.

[*Keller *et al.* v. Stolzenbach *et al.*, 209.

PRACTICE WITH PATENT OFFICE.

(See Appeal from the Primary Examiner; Interference.)

PRIOR DESCRIPTION.

(See Invention Described but not Claimed, 1, 2.)

PRIORITY OF INVENTION.

(See Construction of Specifications and Patents, 3; Infringement, 8; Public Use.)

PROCESS AND PRODUCT.

(See Division of Application; Infringement, 2, 3; Patentability; Reissues, 3.)

PROPERTY RIGHTS.

(See Trade-Marks, 7.)

PUBLIC USE.

(See Subsequent Patents, 3.)

The use or knowledge of the use of an invention in a foreign country by persons residing in this country will not defeat a patent which has here been granted to a *bona fide* patentee, who at the time was ignorant of the invention or its use abroad.

[*Doyle v. Spaulding;
[*Illingworth v. Spaulding, 300.

REISSUE OF A REISSUE.

(See Reissues, 6.)

REISSUES.

(See Inoperative Patents; Particular Patents, 1, 3, 6, 9, 10.)

1. The question whether there is a fraud in the surrender and application for a reissue is for the officers of the Patent Office alone to decide, and their determination is conclusive in a collateral proceeding. The court can only examine and pass upon what appears upon the face of the patent, and see whether there is anything to indicate its invalidity or render it void upon its face. All questions of fact behind the patent are to be examined, heard, and conclusively determined by the Commissioner of Patents.

[*Giant Powder Company v. Safety Nitro Powder Company *et al.*, 99.

2. Where an original patent is valid, but the reissue based thereon is invalid, there is no good reason why a second reissue embracing the valid claim alone of the original patent would not be valid.

[*Id.

3. The reissue patent certainly is for a different invention from that described in the original patent, unless the product claimed in the reissue is precisely that product, and no other, which the process described in the original patent produces.

[*Cochrane *et al.* v. Badische Anilin and Soda Fabrik, 813.

4. The specification and drawings of the reissue upon which the suit is brought being substantially the same as those of the original patent, it follows that the reissue was not for the purpose of making the original specification more full, accurate, or intelligible, or for the purpose of eliminating from it what the inventor had not the right to claim as new.

[*McMurry *et al.* v. Mallory *et al.*, 915.

5. A claim to a combination of parts which specifies that such parts are constructed in a particular way for a special purpose cannot be expanded by reissue so as to include combinations of those parts, expressed so as to cover them broadly and without limitation as to their construction or advantages.

[*Id.

6. It is not competent for the patentee or his assignees by merely disclaiming all the changes made in a reissue patent to revive and restore the original patent. This could be done only, if it could be done at all, by surrender of the reissued patent and the grant of another reissue.

[*Id.

7. An expansion of claims by reissue nearly five years after the issuance of the original patent is not warranted according to the recent decisions upon this subject.

[*Simon v. Neumann *et al.*, 918.

RESULTS.

(See Construction of Specifications and Patents, 1; Reissues, 3.)

RIGHT TO USE.

(See Assignments, 4, 5; Licenses.)

ROYALTY.

(See Damages and Profits, 4, 5, 6.)

RULES OF PRACTICE.

(See Interference, 1, 2.)

SECOND REISSUES.

(See Reissues, 2.)

SECRETARY OF THE INTERIOR.

(See Appeals from the Commissioner of Patents.)

SEPARATE PATENTS.

(See Division of Application; Subsequent Patents.)

SERVICE OF PROCESS.

(See Jurisdiction.)

SPECIFICATIONS.

(See Construction of Specifications and Patents, 2; Reissues, 4.)

SPECIFIC CLAIMS.

(See Interference, 2.)

STATE OF THE ART.

(See Infringement, 4.)

SUBSEQUENT PATENTS.

(See Invention Described but not Claimed, 1, 2, 3.)

1. It is against the spirit and letter of the law to grant an independent patent to an applicant for an invention shown and described, though not claimed, in a prior patent issued to the same person.

[*Marvin v. Lillie, 299.

2. The pretext that no claim was made to the invention in the original patent will not avail, since the law provides for the amending of patents by enlargement or restriction, or even by division of the subject-matter.

[*Id.

3. Combination of Separate Devices—Sub-Combination. The fact that a device comprising several patentable elements has been patented as a whole will not prevent the patentee from afterward securing a patent for a combination of any number of the elements less than the whole, provided he applies for it before the lesser combination has been two years in public use.

[*Cahn v. Wong Town On.

SUBSEQUENT PATENTS WITH BROADER CLAIMS.

(See Interference, 2.)

SUPREME COURT DISTRICT OF COLUMBIA.

(See Jurisdiction, 2, 3.)

TITLE TO PATENT.

(See Assignments, 2, 3, 4, 5, 6, 7; Licenses.)

TRADE-MARKS.

1. A trade-mark is a sign or symbol primarily confined, exclusively, to the indication of the origin or ownership of the goods to which it is attached, and it may be composed of any name, device, line, figure, mark, word, letter, numeral, or combination or arrangement of any or all of these, which will serve the sole purpose of a trade-mark, and which no other person can adopt or use with equal truth.

[‡Avery & Sons v. Meikle & Co., 1027.

2. Terms which designate merely the name, quality, kind, size, number, or elements of an article, or have become its proper appellation, or that merely describe it or direct the mode of its use, or purely generic or geographical terms, and the necessary and common uses in which the English language and Arabic numerals are employed by the people to express the truth, their ideas and feelings, are common property which all may use, but which none can appropriate exclusively to himself as a trade-mark.

[‡Id.

3. A trade-mark becomes the exclusive property of one only when he has, prior to any one else, appropriated and used it to indicate the origin, ownership, and quality of an article to which it is attached. Its value rests on reputation and on its implied guaranty that the article is of a certain quality. Its object is to prevent one person from selling his goods as those of another of established reputation to the injury of that other.

[‡Id.

4. When plaintiff shows that he has adopted a legal trade-mark, that it has been infringed, and that actual, probable, or possible damages have or may result from its infringement, he is entitled to relief usually in the form of an injunction and an account of profits.

[‡Id.

5. Where no patent is held by the owner of plows, any one may make plows in exact similitude, may brand the name of the manufacturer and the place of the manufacture on such part of the plow as he pleases, taking care so to use the brand as not to deceive the public into the belief that the plow is the manufacture of another.

[‡Id.

6. Although certain letters and numerals may have come to indicate to the public the origin or ownership of appellant's plows, as they did not appropriate them by adoption, use, or claim as a part of their trade-mark, they cannot be treated as a part of it simply because they appear capable of serving the same purpose.

[‡Id.

7. Courts of equity afford a remedy against the infringement of a trade-mark or of the trade reputation of its owners, on the principle of protecting property, of promoting fair dealing, and of protecting the public. Where a trade-mark itself has been infringed, neither fraud nor the inferior quality of defendant's article need be proved. But where a property right not amounting to a trade-mark has been infringed, it is essential to show fraudulent intent. But courts of law require proof of deceit, fraudulent intent, or special damage (unless damage is presumed) in both cases.

[‡Id.

8. Where the action is brought to restrain the fraudulent usurpation of plaintiff's trade reputation, plaintiff need not make out a legal title to an exclusive trade-mark, by the usurpation of which defendant has done the wrong. It is enough that defendant sells his goods as those of plaintiff, either by the use of plaintiff's trade-mark or any other means, that such fraudulent sales result or are likely to result in damage to plaintiff. It is the purpose or design of the act that constitutes the wrong, and though a man may use any letters and figures (which are common property) to indicate the size, quality, and description of his goods, yet he cannot do this in such way as to mislead others into the belief that goods made by himself were made by another.

[‡Id.

9. If one, with a bad motive, exercises his rights in a lawful and proper way, and injury results, there is damage without legal injury; but if with a bad motive he exercises his rights in an unlawful manner, there is both damage and legal injury.

[‡Id.

10. As to what facts constitute infringement of a trade-mark or trade reputation, no rule can be formulated that will embrace every act of infringement, and the original and alleged imitation are of primary importance. The resemblances need not be such as would mislead an expert or could not be easily detected, if each case must depend mainly on itself. But resemblances and differences between the original and the spurious were seen together. It is enough if such resemblances exist as would lead an ordinary purchaser to suppose he was buying the genuine article, and not an imitation. If the differences are only colorable, and there is no reason for the resemblances, except the purpose of deceiving the purchaser of one article into the belief of its being the manufacture of another, the court will presume a fraud was intended.

[‡Id.

11. Though the particular combinations of letters and figures used by appellees were not entitled to protection as part of appellants' trade-mark, yet it appearing that appellees copied those combinations, not for the purpose of indicating the size and quality of their plows, but for the purpose of misleading the public into the belief that appellees' plows were of a kind made by appellants, having an established reputation and large sale, *Held*, appellees are liable to appellants for damages resulting from loss of trade in consequence of such copying and to an injunction restraining the further sale of such plows.

[‡Id.

12. The right to the exclusive use of a word or symbol as a trade-mark is inseparable from the right to make and sell the commodity to which it has been appropriated to designate the article as the production or article of the proprietor, and would seem to be an incident to the business of the place or establishment to which it owes its origin, and without which it can have no independent existence. It should be deemed to pass with a transfer of the business, because such an implication is consistent with the character of the transaction and the presumable intention of the parties.

[*The Atlantic Milling Company v. Robinson, 1322.

13. The complainant's damages are measured by the extent to which the unlawful use of the word "Champion" has interfered with the sale of its flour.

[*Id.

14. The right to an injunction is not affected because the appropriation of their trade-mark has been a limited one.

[*Id.

15. It is not incumbent upon the complainants to show that their trade-mark has been copied in every particular. It is sufficient if it has been imitated to an extent calculated to mislead purchasers and cause the article to which it has been applied to pass as their article.

[*Id.

TRIAL OF ISSUE.

(See Practice in the Courts, 1.)

U. S. CIRCUIT COURTS.

(See Jurisdiction.)

USE OF PART OF AN INVENTION.

(See Damages and Profits, 6.)

VALIDITY OF PATENTS.

(See Public Use, Reissues, 2; Subsequent Patents, 1, 2.)

VALID PATENTS.

(See Particular Patents, 1, 2, 3, 4, 5, 7, 8, 9, 10, 12.)

VOID PATENTS.

(See Construction of Specifications and Patents, 1; Non-Invention; Particular Patents, 10, 11; Reissues, 7.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING JUNE 30, 1884.

[Claims and drawings of Designs do not appear in the Monthly Volumes or the Gazette. Separate indexes for Designs, Trade-Marks, Labels, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
Abbott, Alfred T., New York, N. Y. Door-plate	299,189	May 27	1543	442	27	843
Abbott, Daniel W., Leetonia, Ohio. Polishing-wheel	299,311	May 27	1691	485	27	871
Abbott, John D., assignor of one-third to A. M. R. Fitzsimmons and J. W. Chapman, Reading, Mich. Saw	295,967	Apr. 1	87	26	27	19
Abbott, Levi, Cambridgeport, assignor to E. T. Snow and H. P. Stevens, Chelsea, Mass. Ellipsograph	296,100	Apr. 1	246	72	27	50
Abbott, Phillips, Brooklyn, N. Y. Case for tickets	297,217	Apr. 22	1676	456	27	332
Abbott, Phillips, Brooklyn, N. Y. Paper-box machine	297,484	Apr. 22	2004	548	27	395
Abbott, Wilbur C., Babylon, N. Y. Manufacture of buttons and other articles from plastic materials	300,934	June 24	1843	505	27	1284
Abernethy, Thomas R., Chicago, Ill. Binding-post	297,655	Apr. 29	2246	611	27	446
Ackerman, Charles M. (See Judson and Ackerman.)						
Ackermann, George, Cincinnati, Ohio, and J. Wagner, Dayton, Ky., assignor of one-third to C. F. Loudon, Cincinnati, Ohio. Machine for filling cans	297,549	Apr. 29	2103	575	27	419
Ackermann, Philipp (See Schlumm and Ackermann.)						
Adams, A. Wellington, assignor to Adams Electric Company, St. Louis, Mo. Electric motor for railway-cars	300,228	June 24	1719	469	27	1260
Adams, Abe L., Fly Creek, N. Y. Chest of drawers	296,905	Apr. 15	1275	355	27	255
Adams, Archibald D., assignor of three-fourths to J. J. Greene, J. E. Loomis, and H. F. Kellam, Prophetstown, Ill. Corn-planter	296,906	Apr. 15	1277	355	27	256
Adams, Charles B., Quincy, Ill. Press	298,931	May 20	1218	343 344 345	27	772
Adams, Dewey F., Providence, R. I. Gem-setting	299,500	June 3	1	1	27	921
Adams Electric Company. (See Adams, A. Wellington, assignor.)						
Adams Electric Company. (See Adams, Wellington, assignor.)						
Adams, Franklin F., Erie, Pa. Ironing-table	299,312	May 27	1692	485	27	872
Adams, Frederick U. (See Adams, John S. and F. U.)						
Adams, George E., Providence, R. I. Button or stud	300,551	June 17	1354	373	27	1190
Adams, Hawley, New York, N. Y. Flask of molds	298,811	May 20	1073	301	27	743
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Skeleton tower	297,331	Apr. 22	1811	492	27	358
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Electric-light tower	297,332	Apr. 22	1813	492 493	27	358
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Skeleton iron tower and erecting the same	297,333	Apr. 22	1815	493 494	27	358
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Skeleton tower	297,334	Apr. 22	1818	494	27	359
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Skeleton tower	297,335	Apr. 22	1820	495	27	360
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Skeleton iron tower	297,336	Apr. 22	1823	495	27	360
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Skeleton tower	297,337	Apr. 22	1823	495 496	27	360
Adams, John S., Elgin, Ill., assignor to Detroit Iron Tower Company, Detroit, Mich. Skeleton tower	297,338	Apr. 22	1825	496	27	361
Adams, John S. and F. U., Elgin, Ill. Tower	296,375	Apr. 8	608	168 169	27	121
Adams, Robert, Southwark, county of Surrey, England. Wheel	299,711	June 3	286	71	27	974
Adams, Robert, Southwark, county of Surrey, England. Sash-fastener	299,712	June 3	287	71	27	974
Adams, Wellington, assignor to Adams Electric Company, St. Louis, Mo. Electric motor	300,227	June 24	1717	469	27	1260
Adams, William T., Baltimore, Md. Ash-sifter	297,737	Apr. 29	2356	641	27	466
Adgate, Joseph J., and F. Hickman, New York, N. Y., assignors to S. Hartshorn, Millburn, N. J. Automatic spring shade-roller	300,297	June 10	1050	278	27	1121
Adkins, Homer, Concordia, Kans. Horse-power	298,632	May 20	1222	346	27	772
Adlam, Samuel, Jr., Boston, Mass. Jar	300,749	June 24	1621	445	27	1243
Agnew, John, Cummings, assignor to Agnew Shafting Company, Chicago, Ill. Machine for straightening metal rods	297,550	Apr. 29	2107	575 576	27	420
Agnew, John, Cummings, assignor to Agnew Shafting Company, Chicago, Ill. Die for drawing metal rods	297,551	Apr. 29	2110	576	27	420

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Agnew Shafting Company. (See Agnew, John, assignor.)						
Ahrend, Hermann. (See Crouch and Ahrend.)						
Aiken, Benjamin F., Jr., Millbury, C. W. Newhall, Jr., and G. W. B. Ellis, Worcester, Mass. Wire-coating preparatory to drawing	298,051	May 6	112	.....	27	548
Airey, Joseph J., Pittsburg, Pa. Hot-blast stove	296,101	Apr. 1	248	72	27	50
Alexander, Charles F. (See Playford and Swaine, assignors.)						
Allbee, George H., Neenah, Wis. Machine for making heads of casks, &c	300,336	June 17	1081	295	27	1141
Allbee, Henry L., Boston, Mass. Sofa-bed	299,501	June 3	2	1	27	921
Allbien, Allexander, St. Paul, Minn. Punching and shearing machine	299,502	June 3	3	1	27	921
Albrecht, Hermann, assignor to American Machine Company, Philadelphia, Pa. Ice-chipping tool	296,501	Apr. 8	768	211	27	152
Albers, Bernhard, Conception, Mo. Lime-kiln	299,313	May 27	1693	485	27	872
Alderman, Elbert E., Portville, N. Y. Marking and shading pen	299,046	May 20	1365	389	27	799
Aldrich, Aaron, Taunton, Mass. Spindle-bolster for spinning-frames	297,959	May 6	1	1	27	527
Aldrich, Cyrel R. (See Hayden and Sleeper, assignors.)						
Alexander, Alexander W., Piqua, Ohio. Grain-door for freight-cars	296,907	Apr. 15	1278	356	27	256
Alexander, Edward P., Clinton, N. Y. Thill-coupling	300,756	June 24	1622	445	27	1243
Alexander, J. Dalzelle, Wooster, Ohio. Gynecological and surgeon's operating-table	300,337	June 17	1084	295	27	1141
Alexander, Joseph W., Frazerville, Quebec, and M. Wheelhouse, Campbellton, New Brunswick, Canada. Railway-switch signal	298,151	May 6	237	61	27	571
Alexis-Godillot, Georges, Paris, France. Fire-grate	297,548	Apr. 22	2096	{572 / 573}	27	412
Alfeld, Emil I. (See Ringler and Alfeld.)						
Allen, C. C., *et al.* (See Schaffer, Charles M., assignor.)						
Allen, Charles, and W. E. Dubbs, Peru, Ind. Harness	300,751	June 24	1623	445	27	1243
Allen, Charles R., *et al.* (See Bishop, Ephraim B., assignor.)						
Allen, Edwin, assignor to Allen Spool and Printing Company, Norwich, Conn. Spool-feeder	299,047	May 20	1366	389	27	799
Allen, Frank A., Cambridge, assignor to Oriental Tea Company, Boston, Mass. Automatic cash-carrier	301,040	June 24	1972	544	27	1308
Allen, G. W., *et al.* (See Schaffer, Charles M., assignor.)						
Allen, Horace, Indianapolis, Ind. Can-top	297,738	Apr. 29	2357	641	27	467
Allen, James W., St. Louis, Mo. Permutation-lock	298,651	May 13	859	241	27	696
Allen, John F., Brooklyn, N. Y. Steam rock-drill	297,592	Apr. 29	2111	576	27	420
Allen, John F., Brooklyn, N. Y. Air-compressor	299,314	May 27	1693	486	27	872
Allen, Levi O., Gardiner, Me. Hay-knife	296,304	Apr. 8	523	147	27	105
Allen, Reuben L., Providence, R. I. Watch-charm	298,540	May 13	725	205	27	673
Allen, Robert W., Nelly's Ford, Va. Hilling and fertilizing machine	296,102	Apr. 1	249	73	27	50
Allen Spool and Printing Company. (See Allen, Edwin, assignor.)						
Allen, Walter, *et al.* (See Hinklin, Orren E., assignor.)						
Allen, William Z., Monrovia, Ind. Nest-box for fowls	299,315	May 27	1694	486	27	872
Alles, Henry. (See Bach, John C., assignor.)						
Allison, Henry R. (See Hudgens and Allison.)						
Allison, Oscar W., Rochester, N. Y., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	298,719	May 20	955	267	27	723
Allison, Oscar W., Rochester, N. Y., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	299,097	May 27	1429	409	27	821
Alston, Mathew, Adrian, Ill. Cover-holder for jars, milk-cans, &c	300,935	June 24	1844	506	27	1284
Alvord, Clark, Syracuse, N. Y. Coffee substitute and preparing the same	295,968	Apr. 1	88	.....	27	20
Alvord, William E., Appleton, Wis. Corkscrew	300,936	June 24	1845	506	27	1284
Ambler, Augustin L., Washington, D. C. Apparatus for generating gas or vapor from liquid hydrocarbons	300,752	June 24	1623	{445 / 446}	27	1243
Amboe, Herman F., assignor to Columbus Machine Company, Columbus, Ohio. Valve-gear	297,650	Apr. 29	2247	{611 / 612}	27	440
Ambruster, Charles S., assignor of one-half to J. S. Watson, Yorktown, N. J. Hay and other elevators	295,893	Apr. 1	1	1	27	3
Ament, Cyrus W., Anthony, Kans. Thill-coupling	296,163	Apr. 1	250	73	27	51
American Bell Telephone Company. (See Husbands, José D., assignor.)						
American Bell Telephone Company. (See Scribner, Charles E., assignor.)						
American Box Machine Company. (See Munro, Gordon, assignor.)						
American Brake Company. (See McMunn, Schiller, and Leigh, assignors.)						
American Brake Company. (See Poor, George H., assignor.)						
American Brake Company. (See Poor and Schiller, assignors.)						
American Buttonhole, Overseaming and Sewing Machine Company. (See Goodwin and Warren, assignors.)						
American Buttonhole, Overseaming and Sewing Machine Company. (See Palmer, John H., assignor.)						
American Buttonhole, Overseaming and Sewing Machine Company. (See Rominger, George S., assignor.)						
American Combustion Company. (See Jackson, Walter M., assignor.)						
American Machine Company. (See Albrecht, Hermann, assignor.)						
American Machinery Company. (See Bush, Lewis, Jr., assignor.)						
American Matrix Machine Company. (See Kimberly, Robert L., assignor.)						
American Press Association. (See Nelson, Robert W., assignor.)						
American Saw Company. (See Risdon, William B., assignor.)						
Amet, Edward H., La Grange, Ill. Brake for sewing-machines	298,541	May 13	726	205	27	673
Amet, Edward H., La Grange, Ill. Electrical governor for steam-engines	300,338	June 17	1085	296	27	1142
Amia, Nannette, Brooklyn, N. Y. Catamenial sack	296,104	Apr. 1	251	73	27	51
Amidon, Charles H., Buffalo, N. Y. Bit-brace	298,542	May 13	727	206	27	673
Amiro, Ambrose, assignor to himself and B. Hines, Pubnico, Nova Scotia, Canada. Ship-windlass	299,048	May 20	1368	389	27	800
Andem, Clinton S., Providence, R. I. Music-book holder	297,553	Apr. 29	2114	576	27	421
Anderson, Albert T., Chelsea, assignor to W. H. Forbes, Boston, Mass. Gripper mechanism for bronzing machines, &c	297,739	Apr. 29	2358	641	27	467
Anderson, Anton G., Chicago, Ill. Bag	298,265	May 6	396	104	27	601
Anderson, Charles, assignor to South Bend Iron Works, South Bend, Ind. Plow	297,906	Apr. 29	2343	697	27	504
Anderson, Charles B., Maysville, Ky. Fire-escape	296,502	Apr. 8	769	211	27	152
Anderson, Charles B., Maysville, Ky. Fire-escape	298,266	May 6	397	104	27	601
Anderson, Clarence L., San Francisco, Cal. Topographical representation or model	298,812	May 20	1074	301	27	743
Anderson, James. (See White and Anderson.)						
Anderson, John P., assignor of one-half to Spivalo & Forman, San Francisco, Cal. Air and dust separator	295,969	Apr. 1	89	27	27	20
Anderson, Lawrence A., Hamilton, Ohio. Capsule	298,720	May 20	959	268	27	723
Anderson, Robert J. (See Ogden and Anderson.)						
Anderson, Rufus, Peekskill, N. Y. Automatic telegraph	296,376	Apr. 8	612	170	27	122

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Anderton, Frederick C., assignor of one-half to S. Dinsmore, San Francisco, Cal. Fan-blower	299,098	May 27	1432	410	27	823
Andrée, Franz W., Chicago, Ill. Flour-sifting machine	296,716	Apr. 15	1039	293	27	213
Andrews, Louis, Arkansas City, Ark. Division-plate for oil-presses	296,105	Apr. 1	252	74	27	51
Andrews, Reuben H., Washington, D. C. Wood-working machine	299,190	May 27	1544	443	27	843
Andrus, William, Keoknk, Iowa. Brick-machine	297,051	Apr. 15	1450	{401 / 402}	27	287
Andrus, William, Keoknk, Iowa. Brick-machine	297,218	Apr. 22	1677	457	27	333
Andrus, William M. (See Gulbert and Andrus.)						
Angell, Benjamin J., Attleborough, Mass. Detachable button	299,099	May 27	1433	410	27	823
Angell, Horace B., San Francisco, Cal. Dredger	296,503	Apr. 8	770	212	27	152
Angermair, F. Ferdinand, Ravensburg, Würtemburg, Germany. Bark-stripping machine	300,829	June 24	1721	470	27	1261
Anglo American Roofing Company. (See Mott, John, assignor.)						
Angus, Joseph, South Lambeth, county of Surrey, England. Tool-oscillating device for slotting-machines	298,267	May 6	398	104	27	601
Angus, Joseph, South Lambeth, county of Surrey, England. Tool-oscillating device for shaping-machines	298,268	May 6	400	105	27	602
Angus, Joseph, South Lambeth, county of Surrey, England. Tool-oscillating device for planing-machines	298,269	May 6	401	{105 / 106}	27	602
Anisz, Herman. (See Marcus and Anisz.)						
Annable, Edward R., Paw Paw, Mich. Whiffletree	297,900	May 6	2	1	27	527
Annett, George A., Sutherland's Corners, Ontario, Canada. Sewing-machine	296,106	Apr. 1	254	74	27	51
Anson, William, and J. Deeley, Birmingham, county of Warwick, England. Breech-loading fire-arm	297,907	Apr. 29	2545	{697 / 698}	27	504
Anthony, Adam L., Placerville, Cal. Lap-board	297,219	Apr. 22	1680	457	27	333
Anthony & Co., E. & H. T. (See Roche, Thomas C., assignor.)						
Anthony, Thomas J. (See Blank and Anthony.)						
Appleby, John F., Minneapolis, Minn., assignor to Minneapolis Harvester Works, of Minnesota, and J. F. Gordon, Rochester, N. Y. Grain-binder	295,970	Apr. 1	89	27, 28	27	20
Applegate, James L. (See Root, Corydon A., assignor.)						
Appleman, William M., Benton, Pa. Fifth-wheel	300,674	June 17	1522	419	27	1221
Applequist, Frederick. (See Hanson, Charles, assignor.)						
Archer, Benjamin F., Marietta, Miss. Fertilizer-distributer	298,270	May 6	404	107	27	602
Archer, Benjamin F., Marietta, Miss. Machine for thrashing peas, beans, &c	300,429	June 17	1202	329	27	1161
Archer, Benjamin F., Marietta, Miss. Back-band buckle	300,430	June 17	1204	329	27	1161
Archer, Benjamin F., Marietta, Miss. Back-band buckle	297,657	Apr. 29	2249	612	27	447
Archer, Daniel, Madison, Cal. Cultivator						
Archer, Henry N., *et al.* (See Howell, Jacob, assignor.)						
Archer & Pancoast Manufacturing Company. (See Deavs, Charles, assignor.)						
Argerbright, Daniel, Troy, Ohio. Road-cart	298,652	May 13	660	241	27	696
Arkell, James, assignor to Arkell & Smiths, Canajoharie, N. Y. Soft-tie paper bag	298,152	May 6	239	62	27	572
Arkell, James, assignor to Arkell & Smiths, Canajoharie, N. Y. Making soft-tie paper bags	298,153	May 6	240	62	27	572
Arkell & Smiths. (See Arkell, James, assignor.)						
Arkell, William J. (See Blowers, George O., assignor.)						
Armbruster, Mathias, Columbus, Ohio. Stage-scenery	300,187	June 10	880	{236 / 237}	27	1094
Armistead, Robert L., *et al.* (See Bell, John E., assignor.)						
Armstrong, Frank. (See Vandegrift, Nathaniel W., assignor.)						
Armstrong, John B., assignor to Guelph Carriage Goods Company, (limited,) Guelph, Ontario, Canada. Spring-vehicle	299,191	May 27	1545	443	27	843
Arnd, Friedrich H., Weimar, Germany. Sheet-metal can	299,316	May 27	1695	486	27	872
Arnold, Bishop, Auburn, N. Y. Steam-engine valve-gear	298,438	May 13	609	172	27	650
Arnold, Franklin E., Waynesburg, Ohio. Combined wash-basin and soap-box	300,830	June 24	1723	470	27	1261
Arnold, Louis L., Chicago, Ill. Window-sash	299,944	June 10	557	149	27	1037
Arnold, Vindex. (See Marsh and Arnold.)						
Arrington, Andrew J., Epes Station, Ala. Combined riding-cart, cotton and corn planter, and manure-distributer	298,653	May 13	802	{241 / 242}	27	696
Arthur, James, Jersey City, N. J. Gate-valve	299,899	June 3	489	129	27	1013
Arthurs, Nicholas, New Orleans, La. Process of and apparatus for the treatment of ramie and jute	297,554	Apr. 29	2115	577	27	421
Ashcroft, Edward H., Lynn, Mass. Automatic relief device for steam-distributing pipes	299,192	May 27	1547	{443 / 444}	27	844
Ashe, Robert. (See Woodward, Ashe, and Grandy.)						
Ashton, Henry G., Somerville, Mass. Muffler for safety-valves	299,503	June 3	4	1	27	921
Ashurst, John L., Havana, Ill. Grain-drill	297,961	May 6	2	1	27	527
Aspinwall, John A., Bay Ridge, N. Y. Sail-wagon	299,317	May 27	1696	487	27	872
Aten, Thomas, *et al.* (See Beam, Henry T., assignor.)						
Atherton, Abel T., Lowell, Mass. Elevator for cash and parcel carriers	298,654	May 13	863	242	27	696
Atherton, Fisher C., Buffalo, N. Y. Tricycle	295,894	Apr. 1	2	1	27	3
Atkins, Alfred, Wanganui, New Zealand. Measuring device for surveying and other purposes	296,504	Apr. 8	771	213	27	153
Atkinson, James W., and B. Phelps, assignors to Deere & Mansur Company, Moline, Ill. Cornstalk-cutter	298,655	May 13	864	{242 / 243}	27	696
Atlantic and Pacific Telephone Company. (See Gillett, Webster, assignor.)						
Atlantic Refining Company. (See Warden, Henry, assignor.)						
Atterbury, Thomas B., Pittsburg, Pa. Manufacture of glass bottles and vessels for containing fire-extinguishing compounds	299,318	May 27	1697	487	27	873
Attwell, Ewell B., Leesburg, Va., assignor to Attwell Manufacturing Company, Covington, Ky. Sash-fastener. (Reissue)	10,483	June 3	545	146	27	1025
Attwell Manufacturing Company. (See Attwell, Ewell B., assignor. (Reissue.)						
Atwood, Eugene. (See Atwood, John E. and E.)						
Atwood, James F., Boston, Mass. Button	297,740	Apr. 29	2359	642	27	467
Atwood, James F., Boston, Mass. Button	298,154	May 6	241	62	27	572
Atwood, James F., Boston, Mass. Instrument for setting buttons	298,155	May 6	242	62	27	572
Atwood, James F., Boston, Mass. Instrument for setting buttons	298,333	May 13	495	135	27	629
Atwood, John E., Stonington, Conn. Machine for reeling silk, &c	296,378	Apr. 8	616	171	27	123
Atwood, John E., Stonington, Conn. Hand-punch	300,831	June 24	1724	470	27	1261
Atwood, John E. and E., Stonington, Conn. Spinning-frame and method of uniting the ends of bands thereof	296,377	Apr. 8	614	170	27	122
Atwood, Lewis J., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Fastening for shoe-soles	296,908	Apr. 15	1279	356	27	256
Atwood, Orlo, New London, Conn. Silk and other skeins	300,434	June 17	1205	329	27	1162
Atwood, Walter S., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Shaft-tip for carriages	296,107	Apr. 1	250	75	27	52
Aubert, Adrien, Sentier, Switzerland. Stop-watch	296,663	Apr. 8	973	272	27	194

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Austin, Alvah C., San Francisco, Cal. Cut-off gas-burner	298,052	May 6	113	29	27	548
Austin, Harrie, and I. Scoville, Oakland, Cal. Portable derrick	299,504	June 3	5	2	27	921
Austin, Josiah, and R. Chamberlain, East Liberty, Ohio. Gate	299,451	May 27	1802	535	27	903
Anstin, Thomas K., New York, N. Y. Spring-motor	300,753	June 24	1625	446	27	1244
Automatic Music Paper Company. (See Horton, Henry H., assignor.)						
Automatic Spring Motor Car and Carriage Company. (See Pfautz, Daniel M., assignor.)						
Averell, John D., New York, assignor to W. Curry, Brooklyn, N. Y. Mercury gas-governor	296,664	Apr. 8	974	273	27	194
Avery & Sons, B. F. (See Langhlin, John L., assignor.)						
Aycock, Joseph A., Whitesburg, Ga. Lumber-rack	297,485	Apr. 22	2006	548	27	395
Aylsworth, Judson D. (See Clark, Albert J., assignor.)						
Aylsworth, Thomas D., Oswego, Kans. Hay-press	296,267	Apr. 1	467	131	27	88
Babbit, Joseph W., and G. W. Morris, Aroma, Ind. Portable furnace	299,713	June 3	288	71	27	974
Babbitt, George A., Providence, R. I. Ornamental chain	296,505	Apr. 8	773	213	27	153
Babcock, Frank A. (See Clarkson, Joseph T., assignor.)						
Babcock, George H., Plainfield, N. J. Luminous sign	297,741	Apr. 29	2360	642	27	467
Babcock, Holland C., assignor of one-half to P. Jewell & Sons, Hartford, Conn. Harness-pad	297,486	Apr. 22	2003	548	27	396
Bach, John C., assignor to himself and H. Alles, Hillsdale, Mich. Two-wheeled vehicle	299,319	May 27	1698	487	27	873
Bacher, Ernest, assignor of one-half to V. H. Coons, Findlay, Ohio. Internal bottle-stopper	299,714	June 3	289	72	27	975
Bachrach & Bro. (See Schering, Ernst, assignor.)						
Bacon, Bellamy A., and J. W. Boardman, Hartford, Conn. Stopper-pulling pliers	297,658	Apr. 29	2250	612	27	447
Bacon, Charles H., Springfield, Ohio. Warning device for barbed fences	297,487	Apr. 22	2003	548	27	396
Bacon, James D., Boston, Mass. Ping for bowls and bath-tubs	300,529	June 17	1356	373	27	1190
Bacon, James D., Boston, Mass. Trapped ping for bowls and tubs	300,553	June 17	1357	374	27	1190
Bacon, Thomas, Jr., Laurel, Del. Cell-case for carrying eggs, &c	299,715	June 3	290	72	27	975
Baden, Thomas E., Washington, D. C. File-holder	300,432	June 17	1206	330	27	1162
Badger, George A., and W. F. Lakin, Quincy, assignors to J. H. Lakin, Boston, Mass. Cash-carrier system	296,909	Apr. 15	1279	356	27	256
Badische Anilin and Soda Fabrik. (See Kern, Alfred, assignor.)						
Badlam, Edgar B., San Francisco, Cal. Steam-boiler	299,505	June 3	6	2	27	922
Bagnall, Robert. (See Holgate and Bagnall.)						
Bailey, Alva S., Rossville, Ill. Neck-yoke	299,193	May 27	1548	444	27	844
Bailey, Charles J., *et al.* (See Rich, Perez C., assignor.)						
Bailey, Charles J., Newton, Mass. Blotting-pad	299,716	June 3	291	72	27	975
Bailey, Clem, assignor of one-half to Oettinger Brothers, Kinston, N. C. Child's carriage	296,379	Apr. 8	621	{171 172	27	123
Bailey, Fred A., Oakland, Me. Roller-skate	301,041	June 24	1977	545	27	1308
Bailey, Gilbert L., Portland, Me. Roller-skate	298,721	May 20	960	268	27	723
Bailey, John S., Buckingham, Pa. Mail-bag	296,916	Apr. 15	1282	357	27	256
Bailey, Luther B., London, Ontario, Canada. Lubricator	298,813	May 20	1076	301	27	744
Baillie, John, Salem, Ohio. Brick-machine	296,305	Apr. 8	524	147	27	105
Bain Electric Company. (See Bain, Forée, assignor.)						
Bain, Forée, Minneapolis, Minn., assignor to Bain Electric Company, Chicago, Ill. Electric helix and winding the same	296,380	Apr. 8	623	172	27	124
Bain, Forée, Minneapolis, Minn., assignor to Bain Electric Company, Chicago, Ill. Electric-arc lamp	300,431	June 17	1208	330	27	1162
Bain, Forée, Minneapolis, Minn., assignor to Bain Electric Company, Chicago, Ill. Electric-arc lamp	300,676	June 17	1595	419	27	1221
Baird, George, *et al.* (See Campbell, Robert, assignor.)						
Baird, Thomas H., Washington, Ark. Cotton and corn cultivator	298,334	May 13	406	135	27	629
Baker, Bernard N. (See Price, George W., assignor.)						
Baker, Elijah E., Olneyville, R. I. Self-oiling axle	296,717	Apr. 15	1040	293	27	213
Baker, George W., assignor to White Sewing Machine Company, Cleveland, Ohio. Embroidering attachment for sewing-machines. (Reissue)	10,463	Apr. 1	530	145	27	98
Baker, George W., assignor to White Sewing Machine Company, Cleveland, Ohio. Embroidering attachment for sewing-machines	297,100	Apr. 22	1517	419	27	305
Baker, George W., assignor to White Sewing Machine Company, Cleveland, Ohio. Embroidering attachment for sewing machines	300,434	June 17	1210	330	27	1163
Baker, Gustave S. (See Eddy, Charles H., assignor.						
Baker, Harriet E., Springfield, Mass. Scrubbing-brush	297,555	Apr. 29	2117	578	27	421
Baker, Henry H., Jr., assignor of one-fourth to Pratt & Letchworth, Buffalo, N. Y. Harness-loop stick	300,298	June 10	1031	278	27	1121
Baker, James H., Westville, Ohio. Forge-hammer	297,630	Apr. 29	2251	613	27	447
Baker, John, Muscatine, Iowa. Process-kettle for cooking canned fruit	300,584	June 17	1357	374	27	1190
Baker, Leslie A., assignor of one-half to E. A. Gould, Olean, N. Y. Refining petroleum	299,611	June 3	142	.....	27	946
Baker, Oswald E., Jamison, Iowa. Hame-fastener	298,814	May 20	1077	302	27	744
Baker, Samuel, Buffalo, N. Y. Whip	297,902	May 6	3	1	27	527
Baker, Walter T., Philadelphia, Pa. Coating pills, lozenges, &c	300,037	June 10	675	184	27	1058
Baker, William S. G., Baltimore, Md. Car-axle box	299,320	May 27	1699	488	27	873
Baker, William S. G., Baltimore, Md. Car-axle-lubricating device	299,321	May 27	1700	488	27	874
Baker, William T., and J. H. Shull, Findlay, Ohio. Pulley	299,322	May 27	1701	488	27	874
Bakewell, William H., Allegheny City, Pa. Camp-chair and cot	295,971	Apr. 1	93	28	27	20
Baldridge, James K. (See Miles and Baldridge.)						
Baldt, Frederick, Chester, Pa. Car coupling	297,052	Apr. 15	1452	402	27	287
Baldwin, Benjamin L., *et al.* (See Crandall, Charles M., assignor.)						
Baldwin, Benson D., Chicago, Ill. Advertising-card	296,718	Apr. 15	1041	293	27	213
Baldwin, Elias B., and E. R. Kline, Sayre, Pa. Spark-arrester	300,555	June 17	1358	374	27	1191
Baldwin, George E. D., assignor to L. W. Counselman and A. L. Scott, Baltimore, Md.) Machine for husking, silking, and cutting corn	297,742	Apr. 29	2360	{642 643	27	467
Baldwin, John N., and T. O. Stiles, Bloomfield, N. J. Split pulley	297,339	Apr. 22	1898	497	27	361
Baldwin, Joseph J., Baltimore, Md. Machine for turning insulator-pins	298,543	May 13	728	206	27	673
Baldwin, Luther C., Manchester, N. H. Apparatus for painting bobbins, &c	296,506	Apr. 8	773	213	27	153
Baldwin, Luther C., and J. C. Thurston, Manchester, N. H. Insulator for telegraph-wires	297,101	Apr. 22	1518	419	27	305
Baldwin, Marvin R., Sandy Creek, N. Y. Lifting-jack	298,335	May 13	497	145	27	629
Ball, Albert, assignor to Sullivan Machine Company, Claremont, N. H. Machine for pressing artificial blocks or bricks, &c	296,507	Apr. 8	775	{213 214	27	153
Ball and Socket Fastener Company. (See Richardson, William S., assignor.)						
Ball, Benjamin F., Cincinnati, Ohio. Wagon-brake	300,188	June 10	881	237	27	1094
Ball, Charles A., Delphos, Ohio. Envelope for currency, checks, &c	299,323	May 27	1702	489	27	874
Ball, Charles P., Orange, Mass. Broom-holder	300,852	June 24	1724	470	27	1261
Ball, James A. (See Moore and Ball.)						
Ball, John A., Oakland, Cal. Dredge	299,945	June 10	558	149	27	1037
Ball, Silas W., Canton, Ohio. Plow	296,108	Apr. 1	260	75	27	52
Ball, Thomas H., assignor to himself, S. Florsheim, and H. Prenzlaner, Chicago, Ill. Clasp-fastening for elastic stays in corsets	298,544	May 13	730	206	27	673

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Ballard, Charles J. R., Oxland, Cal. Paper-weight	299,946	June 10	561	150	27	1038
Ballin, Frederick, Detroit, Mich. Lock	297,660	Apr. 29	2252	613	27	447
Bally, Edward, Schönenwerd, and J. Hartmann, Suhr, Switzerland. Velvet and plush embroidery	298,053	May 6	114	29	27	549
Bang, Ivar A., Paris, and C. A. Sanguinetti, Marseilles, France. Extraction of oils and fats from oleaginous and fatty bodies	297,743	Apr. 29	2363	644	27	468
Bangs, Elijah, Provincetown, Mass. Boom and gaff for vessels	298,545	May 13	731	207	27	674
Banigan, Joseph, Providence, R. I. Rubber boot	298,546	May 13	732	207	27	674
Banker, Horace B., Minneapolis, Minn. Load-binder	299,506	June 3	6	2	27	922
Bannister, Lemuel, Philadelphia, Pa. Grate	297,340	Apr. 22	1830	{497 498	27	362
Barber, George F., De Kalb, Ill. Nail-holding attachment for hammers	299,717	June 3	291	72	27	975
Barber, Lyman L., Boston, Mass., assignor to Barber Trimmer Company, Portland, Me. Sewing-machine trimmer	296,508	Apr. 8	777	214	27	154
Barber Trimmer Company. (See Barber, Lyman L., assignor.)						
Barbier, Jean L. F., Havre, France. Propelling-rudder	299,612	June 3	143	35	27	946
Barbier, Léon, Besançon, France. Manufacture of glucose	299,900	June 3	490	129	27	1015
Barcus, Sylvester, Etna, Ohio. Skid-elevator	298,933	May 20	1023	346	27	773
Bard, Edmund F., Greenwich, Conn., and G. G. Wagner, Mount Vernon, N. Y.; said Wagner assignor to said Bard. Automatic time-indicator and block-signal	300,833	June 24	1725	471	27	1261
Bardsley, Joseph, Newark, N. J. Show-stand for cloaks and other goods	299,947	June 10	562	150	27	1038
Bardwell, Carlos. (See Nolan, Patrick W., assignor.)						
Barger, Nathaniel S., assignor of one-half to T. B. Taylor and W. D. Evans, Hampton, Iowa. Sulky plow	299,452	May 27	1863	{535 536	27	903
Barkany, Louis, Baltimore, Md. Clothes-hanger	297,341	Apr. 22	1822	498	27	362
Barker, Henry C., Sedalia, Mo. Brick-machine	300,556	June 17	1359	374	27	1191
Barlow, Heman G. and J. B., Grand Rapids, Mich. Device for manifold copying	297,356	Apr. 29	2117	578	27	421
Barlow, John B. (See Barlow, Heman G. and J. B.)						
Barnard, Edward, Rome, N. Y. Halter	297,963	May 6	4	2	27	528
Barnard, James T. (See Rogers and Barnard.)						
Barnard & Leas Manufacturing Company. (See Leas and Cornwall, assignors.)						
Barnes, Amos H., Reno, Nev. Combined truck and step-ladder	298,336	May 13	498	135	27	629
Barnes, Charles O., assignor of one-half to L. Barnes, Sr., Baldwinsville, N. Y. Car-coupling	297,053	Apr. 15	1453	402	27	288
Barnes, Elleur. (See Barnes, George S., assignor.)						
Barnes, Elmore A., Pittsburg, Pa. Forming shovels	296,719	Apr. 15	1042	294	27	213
Barnes, Emory, Mount Pleasant, Mich. Pump	299,718	June 3	292	73	27	975
Barnes, George S., assignor of one-half to E. Barnes, Boston, Mass. Sash-fastener	299,719	June 3	293	73	27	975
Barnes, James F. (See Bowen and Barnes.)						
Barnes, Joshua, Brooklyn, N. Y. Corkscrew	299,160	May 27	1434	410	27	823
Barnes, Lucien, Sr. (See Barnes, Charles O., assignor.)						
Barnett, James, Louisville, Ky. Skid	299,507	June 3	7	3	27	922
Barnett, Robert, *et al.* (See Smith, Benjamin, assignor.)						
Barnhard, Elias, and A. F. Thomas, Troy, Ohio. Grain-harvesting machine	298,054	May 6	115	29	27	549
Barnhard, S. P., *et al.* (See Slater, Warren G., assignor.)						
Barnhart, Henry M. (See Huber and Barnhart.)						
Barnhart, Henry M., and E. Huber, Marion, Ohio. Traveling crane. (Reissue)	10,470	Apr. 22	2098	{573 574	27	412
Barr, James F., assignor of one-half to A. Brubaker, Ashland, Ohio. Paper, twine, and sack case for grocers, &c	298,656	May 13	866	243	27	697
Barr, Pinckney F., Denver, Colo. Rail-brace	297,661	Apr. 29	2253	613	27	447
Barr, Samuel, Providence, R. I. Connection for gas-tubes	299,720	June 3	294	73	27	975
Barr, Samuel S., Waukon, Iowa. Self-feeding and band-cutting attachment for thrashing-machines	296,109	Apr. 1	260	75	27	52
Barr, Samuel W., Mansfield, Ohio. Sulky-plow	298,337	May 13	498	136	27	629
Barrett, Edward P., and J. A. Forster, Holden, Mo. Clip for neck-yokes, &c	299,901	June 3	492	129	27	1015
Barrett, Edward P., and J. A. Forster, Holden, Mo. Check-row corn-planter	300,557	June 17	1360	375	27	1191
Barrett, John P. (See Sinnott, John, assignor.)						
Barrett, Joseph L., Ansonia, Conn. Carpet-stretcher	300,754	June 24	1627	446	27	1244
Barrie, Robert C., Philadelphia, Pa. Music-stand	300,834	June 24	1727	472	27	1261
Barry, Michael C. Salem, Mass. Quoin	297,102	Apr. 22	1519	419	27	305
Barry, Thomas. (See Spry and Barry.)						
Barry, William, assignor to Wales Manufacturing Company, Syracuse, N. Y. Rake	298,156	May 6	243	63	27	572
Barstow, William S., Brooklyn, N. Y. Slide-holder for magic-lanterns	300,558	June 17	1361	375	27	1191
Bartholomew, Sidney W., Castalia, N. C. Elevator for seed-cotton and other materials	296,509	Apr. 8	779	215	27	154
Bartlett, John W., assignor to Moline Plow Company, Moline, Ill. Wheel-plow	296,720	Apr. 15	1043	294	27	213
Bartlett, Mary, Detroit, Mich. Clothes-line pole	295,895	Apr. 1	3	1	27	3
Bartlett, N. Gray, Chicago, Ill. Fire-extinguishing compound	300,190	June 10	883	.....	27	1094
Barton Bell Company. (See Brainard, Ellison L., assignor.)						
Barton, Henry L. (See Flord and Barton.)						
Barve, Taylor C., *et al.* (See Park, John S., assignor.)						
Bascom, George P., deceased; J. F. Bascom administratrix, Halifax, Vt. Plow	298,157	May 6	244	63	27	572
Bascom, Josephine F., administratrix. (See Bascom, George P.)						
Basinger, James M., assignor of one-fourth to Pratt & Letchworth, Buffalo, N. Y. Trace-trimming	296,110	Apr. 1	261	75	27	52
Basve, Taylor C., *et al.* (See Park, John S., assignor.)						
Batcheller, Alfred H. (See Fifield, John W. D., assignor.)						
Batchelor, Job, assignor of one-half to A. G. Wood, Camden, N. Y. Pencil-clasp	299,902	June 3	492	130	27	1015
Batchelor, Joseph F., Baltimore, Md. Railway-car	300,937	June 24	1846	506	27	1284
Batchelor, Ward, Washington, D. C. Shoulder-brace	300,435	June 17	1212	331	27	1163
Bateman, Enoch, Rockford, Ill. Guard for barbers' shears	297,964	May 6	5	2	27	528
Bateman, Rowland, Birmingham, England. Apparatus for billiard-marking	298,815	May 20	1078	302	27	744
Bates, Edwin M., assignor of one-half to J. F. Roll, Springfield, Ill. Car-coupling	298,272	May 6	405	107	27	603
Bates, Henry C., Miles, assignor of one-half to Z. De Groat, Preston, Iowa. Tire-tightener	296,306	Apr. 8	526	147	27	105
Bates, Theodore C., North Brookfield, Mass. Corset-steel fastening	299,326	May 27	1705	489	27	875
Bates, Thomas M. (See Barnes, Robert E., assignor.)						
Bateson, Elizabeth, Detroit, Mich. Ash-sifter	297,054	Apr. 15	1454	402	27	288
Battson, Arthur L., Morrisburg, Ontario, Canada. Press for sacking bran, sawdust, &c	299,721	June 3	295	73	27	976
Bander, Charles C., Burnside, Ill., assignor to himself and G. E. Bander, Valley City, Dak. Ter. Trace-buckle	298,934	May 20	1024	{346 347	27	773
Bander, George E. (See Bander, Charles C., assignor.)						
Baner, Jacob C., Philadelphia, Pa. Flap-retainer for paper boxes	296,510	Apr. 8	780	215	27	155
Banghman, George T. (See Clark, Franks, and Banghman.)						
Baughn, Robert F., Lexington, Miss. Gate	297,055	Apr. 15	1455	403	27	288

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Baumotte, Hermann, Vossnaiken, near Knpferdreh, Prussia, Germany, assignor to himself and R. Noggerath, St. Johann on Saar. Hydraulic motor	296,381	Apr. 8	624	172 173	27	124
Bausman, David H., Lancaster, Pa. Wind-engine	299,325	May 27	1703	469	27	874
Bawo & Dotter. (See Mattoni, Henry W., assignor.)						
Baynes, Richard, and J. Fearenside, Jr., Liverpool, county of Lancaster, England. Purifying or refining petroleum and other distillable oils	299,324	May 27	1703	.....	27	874
Beach, Allen J., Linden, Mich. Axle-truss	296,382	Apr. 8	626	173	27	124
Beach, Henry H., Rome, N. Y. Removing tannic acid from coffee	300,436	June 17	1213	331	27	1163
Beach, Morgan W. (See Shepard, Wilbur L., assignor.)						
Beach, Ralph H., Flint, Mich. Forging-machine	298,055	May 6	116	30	27	549
Beal, Mart A., assignor of one-half to J. A. Griffin, Chicago, Ill. Separating oil from the earth used in refining oils or fats	298,816	May 20	1079	.....	27	745
Beal, Samuel, assignor of one-half to W. L. Fay, Elyria, Ohio. Machine-brace	296,268	Apr. 1	468	131	27	88
Beal, William C., Fernandina, Fla. Spark-arrester	300,104	June 10	885	257	27	1095
Beale, Weisel, Shawneetown, Mo. Necktie-fastener	300,192	June 10	886	257	27	1095
Beals, Isaiah A., Brockton, Mass. Shoe	297,103	Apr. 22	1589	419	27	305
Beals, James H., Jr. (See Smith, Fredrick J., assignor.)						
Beam, Henry T., assignor of one-half to W. C. Jones and T. Aten, Robinson, Ill. Car-coupling	298,817	May 20	1080	302	27	745
Beam, Henry T., assignor of two-thirds to W. C. Jones and T. Aten, Robinson, Ill. Car-coupling	300,299	June 10	1092	279	27	1121
Beam, John A., Baden, Ontario, Canada. Thrashing-machine	296,111	Apr. 1	202	76	27	53
Beaman, Charles F., Chicago, Ill., assignor to Wellsville Plate and Sheet Iron Company, Wellsville, Ohio. Machine for bending wire	296,269	Apr. 1	469	132	27	88
Bean, Albert B., New Haven, Conn. Index-gage for drilling-machines	300,038	June 10	678	184	27	1058
Bean, Augustus, Concord, N. H. Universal joiner	298,056	May 6	118	30	27	549
Bean, Edward D., Chelsea, Mass. Police chain-nippers	298,158	May 6	245	63	27	573
Bean, Frank L., *et al.* (See Doty, John C., assignor.)						
Bean, James M., Watertown, Mass. Can and case	298,338	May 13	499	136	27	630
Beard, Cornelius. (See Turner and Mann, assignors.)						
Beard, George M., Auburn, Ind. Windmill	299,327	May 27	1705	489 490	27	875
Beardslee, William F., Boston, Mass. Trimming attachment for sewing-machines	295,896	Apr. 1	4	2	27	4
Beardslee, William F., Boston, Mass. Trimming attachment for sewing-machines	295,897	Apr. 1	6	2	27	4
Beasley, Maria E., Philadelphia, Pa., and E. M. Hugentobler, New York, N. Y.; said Hugentobler assignor to said Beasley. Barrel-making machine	300,193	June 10	887	238 239	27	1095
Beasley Maria E., Philadelphia, Pa., and E. M. Hugentobler, New York, N. Y.; said Hugentobler assignor to said Beasley. Barrel-stave-shaping machine	300,194	June 10	891	239 240	27	1096
Beatley, William H., Humansville, Mo. Adding-machine	297,342	Apr. 22	1853	498 499	27	302
Beaudrean, Frank. (See Travias, Henry H., assignor.)						
Beaulieu, Joseph, assignor of one-half to L. Beaulieu, Worcester, Mass. Lasting-jack	297,557	Apr. 29	2118	578	27	421
Beaulieu, Levi. (See Beaulieu, Joseph, assignor.)						
Beck, Mahlon, and A. McKorey, Excelsior Springs, Mo. Drag-saw frame	297,558	Apr. 29	2119	578	27	422
Beck, Robert M., Chambersburg, Pa. Circular-saw mill	299,194	May 27	1549	444 445	27	844
Beck, Sophus C., Philadelphia, Pa. Hair-front	300,938	June 24	1847	506	27	1285
Becker, August J., and J. B. Young, Mount Carmel, Pa. Safety-catch for elevators	296,311	Apr. 8	781	215	27	155
Becker, Francis L., New York, N. Y., assignor of one-fourth to G. Becker. Repetition-action for pianos	297,908	Apr. 29	2546	698	27	504
Becker, Gustav. (See Becker, Francis L., assignor.)						
Becker, Henry H., Chicago, Ill. Polishing compound	296,112	Apr. 1	203	.....	27	53
Becker, Theodore, assignor to Hocking Valley Manufacturing Company, Lancaster, Ohio. Grain-drill	297,488	Apr. 22	2010	549	27	396
Beckwith Auto-Pneumatic Railway Signal Company. (See Beckwith, Walter C., assignor.)						
Beckwith, Walter C., Allegheny, assignor to Beckwith Auto-Pneumatic Railway Signal Company, Pittsburg, Pa. Railway-signal	299,101	May 27	1435	410	27	823
Beckwith, Walter C., Allegheny City, assignor to Beckwith Auto-Pneumatic Railway Signal Company, Pittsburg, Pa. Railway-signal	299,102	May 27	1438	411	27	824
Beebe, Lyman C., Villisca, assignor of one-half to R. Truman, Afton, Iowa. Gas-generator	298,057	May 6	120	30	27	550
Beebe, Lyman C., Villisca, assignor of one-half to R. Truman, Afton, Iowa. Carburetor	298,058	May 6	121	31	27	550
Beehler, William H., Newport, R. I. Electric automatic recording apparatus for weighing machines	299,328	May 27	1707	490 491	27	875
Beekman, Isaac K., Dubuque, Iowa. Elevator-gate attachment	300,677	June 17	1528	420	27	1222
Beers, John H., *et al.* (See Ridge, Joseph, assignor.)						
Beerwkes, Henry, Jr., Paterson, N. J. Self-adjusting match-box holder	299,508	June 3	8	3	27	922
Behlen, Charles A., Cincinnati, Ohio. Vehicle-spring	296,113	Apr. 1	264	76	27	53
Behn, Henry A., Union, N. J. Machine for cutting button-holes	299,329	May 27	1715	492	27	876
Behnsen, Henry F., Victoria, British Columbia, Canada. Cigar-bundling machine	297,220	Apr. 22	1680	458	27	333
Beidler, Jacob H., Mount Pa'aski, Ill. Car-coupling	296,114	Apr. 1	266	76	27	53
Beiermeister, Fredrick, Jr., Troy, N. Y. Collar	298,722	May 20	961	268	27	724
Beiersdorf, Jacob. (See Bunker, William L., assignor.)						
Bellman, William E., Buffalo, N. Y. Stove-pipe damper	300,559	June 17	1362	375	27	1191
Belcher, George E., Stoughton, Mass. Last-block fastener	300,195	June 10	894	240	27	1096
Belcher, John B., Charlotte, Mich. Overshoe or arctic	296,115	Apr. 1	266	76	27	53
Belding, Charles E., Malvern, Ohio. Nut-lock	296,383	Apr. 8	627	173	27	124
Belknop Manufacturing Company. (See Ellis, David T., assignor.)						
Bell, Albert H. (See Bell, Mathias R. and A. H.)						
Bell, Alexander H., and A. Fuller, New York, N. Y. Marine-engine governor	297,343	Apr. 22	1845	499	27	303
Bell, John E., assignor to J. W. Cole and E. L. Armistead, Nashville, Tenn. Vehicle-wheel	296,307	Apr. 8	527	148	27	105
Bell, Mathias R. and A. H., Springfield, Ohio. Quilting attachment for sewing-machines	300,678	June 17	1529	420	27	1222
Bell, Vernon. (See Nixon, Jane, assignor.)						
Bell, William. (See Linsey, Andrew B., assignor.)						
Bell, William G., and W. P. Gay, Boston, Mass., assignors to said Bell. Clutch mechanism	297,489	Apr. 22	2011	549	27	396
Bellows, Stephen H., Athol, Mass. Calipers	299,722	June 3	297	74	27	976
Bellows, Stephen H., assignor to Standard Tool Company, Athol, Mass. Caliper-rule	297,056	Apr. 15	1456	403	27	288
Beltz, Albert, Wausau, Wis. Boot	299,509	June 3	8	3	27	922
Beltz, Samuel, Wilmington, Del. Fire-escape	298,723	May 20	962	268	27	724
Bemis, Sumner A., Springfield, Mass. Car-truck	299,510	June 3	9	3, 4	27	922
Bender, Edwin, Philadelphia, Pa. Frying-utensil	298,339	May 13	500	136	27	630
Bendit, William. (See Hutchinson, Charles, assignor.)						
Benedict, Arthur L., Ocean Beach, N. J. Clothes drier	300,755	June 24	1028	446	27	1244
Benedict, John G. (See Bradford and Benedict.)						
Bening, Hermann, assignor to himself and C. A. Weller, New York, N. Y. Compound for the manufacture of artificial stone	300,560	June 17	1362	.....	27	1191

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'gs.	Official Gazette. Vol.	Official Gazette. Page.
Benjamin, John H., Saginaw, Mich. Log-binder	300,437	June 17	1214	331	27	1163
Benjamin, Myron E., Cleveland, Ohio. Tray-machine	297,602	Apr. 29	2254	613 614	27	447
Bennett, Benjamin F., Lockport, N. Y. Self-adjusting fulcrum-lever wrench	296,721	Apr. 15	1045	294	27	214
Bennett, Charles H., Cheltenham, assignor of one-fourth to J. B. Rohrer, Lancaster, Pa. Attachment for bottle-stoppers	298,273	May 6	406	108	27	603
Bennett, Daniel, Logan, Ohio. Bed-bottom	301,042	June 24	1974	545	27	1308
Bennett, Dexter F. (See Learned, James M., assignor.)						
Bennett, George W., and T. S. Fitch, San Francisco, Cal. Pilot or wheel-guard	299,330	May 27	1716	492	27	876
Bennett, John B., *et al.* (See Gilliland, James F., assignor.)						
Bennett, John F., Pittsburg, Pa. Blast-furnace apparatus	297,693	Apr. 29	2258	614 615	27	448
Bennett, John F., Pittsburg, Pa. Curved pipe	298,050	May 6	123	31	27	550
Bennett, John F., Pittsburg, Pa. Straight water-pipe	298,657	May 13	867	249	27	697
Bennett, John F., Pittsburg, Pa. Manufacture of pig-iron	299,049	May 20	1368	389	27	800
Bennett, John F., Pittsburg, Pa. Manufacture of pig-iron	299,103	May 27	1440	411	27	824
Bennett, Theodore G. (See Smith, John S., assignor.)						
Bennett, William D., Bedford, Iowa. Weather-strip	300,939	June 24	1847	507	27	1285
Benson, Alfred W., San Bernardino, Cal. Well-pipe cutter	299,331	May 27	1717	492	27	876
Benson, William H., Elston, Mo. Stove-jacket	296,011	Apr. 15	1283	357	27	277
Bentley, Charles S., Dubuque, Iowa. Wire fence	300,940	June 24	1848	507	27	1285
Bentley, Edward M., Brooklyn, N. Y. Telephone-station apparatus	297,909	Apr. 29	2549	699	27	505
Benton, Nichols & Co. (See Gooding, John F., assignor.)						
Benta, George C. (See Farwell, Fay O., assignor.)						
Berbecker, Julius, New York, N. Y. Curtain-pole ring	295,972	Apr. 1	94	29	27	20
Bergen, Louis, New York, N. Y. Apparatus for dispensing and drawing liquids	297,221	Apr. 22	1681	458	27	334
Berger, John J. (See Peer, John A., assignor.)						
Bergfels, Julius, assignor to W. H. Bergfels, Newark, N. J. Spoon	298,159	May 6	246	63	27	573
Bergfels, William H. (See Bergfels, Julius, assignor.)						
Berghofer, William F., Slater, Mo. Lunch-box	298,340	May 13	501	136	27	630
Bergman, Frank A. (See Mason and Bergman.)						
Bergmann & Co. (See Klein, Philip H., Jr., assignor.)						
Bergmann, Sigmund, New York, N. Y. Socket for incandescent electric lamps	298,658	May 13	867	249	27	697
Bergstresser, Edwin L., Hublersburg, Pa. Dry-plate holder	300,438	June 17	1214	331	27	1164
Berner Theodore, Philadelphia, Pa. Shaft-hanger	296,384	Apr. 8	628	173	27	124
Bernhard, Charles, New York, N. Y. Device for converting motion	298,160	May 6	246	64	27	573
Berry, George W. (See Humbert, James H., assignor.)						
Berry, James, assignor of one-half to W. I. Williams, Buffalo, N. Y. Conductor for ashes, garbage, &c	299,905	June 3	493	130	27	1215
Bertelli, Achille, San Francisco, Cal. Soda-water apparatus	298,161	May 6	247	64	27	573
Berthoud, Edward L., Golden, Colo. Sight for fire-arms	298,659	May 13	869	244	27	697
Bertrand, Leon, assignor to E. Cornely, Paris, France. Process of and cutting apparatus for sewing and embroidering	297,057	Apr. 15	1457	403	27	288
Berwick Agricultural Company. (See Cracraft, Richard, assignor.)						
Bery, Hans H. E., Brooklyn, N. Y. Fifth-wheel	300,196	June 10	895	240	27	1097
Bery, Hans H. E., Brooklyn, N. Y. Wagon-axle	300,197	June 10	897	241	27	1097
Besser, Anton, Vienna, Austria-Hungary. Apparatus for purifying millet-seed, &c	300,679	June 17	1530	420	27	1222
Bessler, Vetal, New York, N. Y., assignor of one-half to H. A. Robbins, Washington, D. C. Portable ladder	298,660	May 13	870	244	27	698
Best, Martin L., assignor of two-thirds to J. and L. L. Miller, Canton, Ohio. Apparatus for filling vessels	297,058	Apr. 15	1458	403	27	288
Best, William H., *et al.* (See McCullough, Samuel, assignor.)						
Betancourt, Gaspar A., New York, N. Y. Potato-parer	296,547	May 13	733	207	27	674
Bettman, John M., North Plainfield, N. J. Pedal attachment for pianos	296,308	Apr. 8	528	148	27	106
Betts, Lewis F., assignor to J. H. Irwin, Morton, Pa., and R. E. Dietz, New York, N. Y. Heating-stove	299,104	May 27	1442	411 412	27	825
Bevington, James H., Cleveland, Ohio. Railway-torpedo	298,935	May 20	1225	347	27	773
Bewsher, James, Kansas City, Mo. Balanced slide-valve	300,756	June 24	1029	447	27	1244
Beyerle, Charles P., Providence, R. I. Ornamental chain-hook	300,680	June 17	1531	421	27	1223
Beyermann, Robert. (See Kürth and Beyermann.)						
Bickford, James B. (See Pollmiller, Ferdinand, assignor.)						
Bickford, John C., Berlin, assignor to himself and E. M. Bliss, Worcester, Mass. Buck-slioper	295,973	Apr. 1	95	29	27	20
Bicknell, Fred J., Rockland, Me. Coffee-pot	297,059	Apr. 15	1459	404	27	289
Biddlecome, Benjamin, St. Louis, Mo. Shoulder-brace	298,818	May 20	1082	303	27	745
Biery, Fred., Mantorville, Minn. Vehicle-brake	297,460	Apr. 22	2012	549	27	396
Bigelow, William P., Natick, Mass. Cash and parcel carrier	299,332	May 27	1718	492 493	27	877
Bigole, Josiah W., *et al.* (See Mark, Charlie E., assignor.)						
Bikle, Charles A., Hagerstown, Md. Clover thrasher and huller	297,104	Apr. 22	1521	420	27	306
Billette, Victor A., Rennes, France. Packing box or cartridge for various articles	300,748	June 17	1616	443	27	1236
Billings, Charles C., Boston, Mass. Machine for cold-drawing rods, &c	295,898	Apr. 1	7	2	27	4
Billings, George D., *et al.* (See Morrison, Robert T., Jr., assignor.)						
Billings, George W., Cleveland, Ohio. Compression apparatus for casting steel ingots	298,661	May 13	872	244 245	27	698
Billings, George W., Cleveland, Ohio. Pouring and compressing steel ingots	298,662	May 13	875	245	27	698
Billings, George W., Cleveland, Ohio. Apparatus for lining molds	300,941	June 24	1849	507	27	1285
Bilz, John A., Pleasanton, Cal. Plow	299,195	May 27	1550	445	27	845
Binns, Leedham, assignor of one-half to W. T. Ryle, Paterson, N. J. Flier for spinning-machines	295,974	Apr. 1	95	29	27	20
Bintz, Henry, New York, N. Y. Polishing-wheel	299,948	June 10	564	150	27	1038
Bird, John, Union City, Conn. Button	297,344	Apr. 22	1836	499	27	303
Birdsall, Samuel, Susquehanna, Pa. Hitching strap	300,561	June 17	1363	375	27	1191
Birgé, Isidore, Philadelphia, Pa. Store-service apparatus	300,198	June 10	898	241	27	1097
Birgé, Isidore, Philadelphia, Pa. Roller for store-service apparatus	300,681	June 17	1532	421	27	1223
Birkenhead, John, Mansfield, Mass. Spinning-frame spindle and bolster	295,899	Apr. 1	8	2	27	4
Birkenhead, John, Mansfield, Mass. Machinery for grinding chisels or tools of various kinds	295,900	Apr. 1	9	3	27	5
Birkett, James W., Brooklyn, N. Y. Water-closet attachment	299,333	May 27	1720	493	27	877
Birmingham, David W., Clifton, N. Y. Roasting and disintegrating gold, silver, and copper ores	296,116	Apr. 1	267	.....	27	53
Bishop, Abner B., *et al.* (See Morrison, Robert T., Jr., assignor.)						
Bishop, Ephraim B., assignor of one-half to E. H. Gadsby, San Francisco, and C. R. Allen, Oakland, Cal. Track-clearer	297,910	Apr. 29	2551	699	27	505

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bishop, Henry, Baltimore, Md. Advertising bird-cage	296,912	Apr. 15	1284	357	27	257
Bishop, Hermon D., West Hampton, N. Y. Cuff-holder	297,744	Apr. 29	2365	644	27	468
Bishop, Joshua F., *et al.* (See Groves, Leroy S., assignor.)						
Bishop, Richard T., *et al.* (See Watson, James T., assignor.)						
Bishop, Thomas T., Washington, D. C. Combined liquid-measure and funnel	300,439	June 17	1216	332	27	1164
Bishoprick, Nicholas J., Brooklyn, N. Y. Telegraphic transmitter	299,949	June 10	564	151	27	1038
Bishoprick, Nicholas J., Brooklyn, N. Y. Window-screen	300,592	June 17	1363	376	27	1192
Bissell, Frank S. (See Geissenhainer, Charles P., assignor.)						
Bissell, Henri E., assignor to Bissell Railway Station Indicator Company, Hartford, Conn. Station-indicator	298,102	May 6	251	64, 65	27	573
Bissell Railway Station Indicator Company. (See Bissell, Henri E., assignor.)						
Bissex, James R. (See Watson, Charles S., assignor.)						
Bisson, Auguste, Paris, France. Coloring photographs	296,913	Apr. 15	1285	.....	27	257
Blair, Andrew J., Knoxville, Tenn. Device for forming bails for buckets	296,811	Apr. 15	1150	324	27	233
Blair Electric Company. (See Blair, John B., assignor.)						
Blair, George W., *et al.* (See Haas, James M., assignor.)						
Blair, John B., assignor to Blair Electric Company, Chicago, Ill. Dynamo-electric machine	300,835	June 24	1792	472	27	1202
Blair, John C., Louisville, Miss. Rattling-machine	298,060	May 6	124	31	27	550
Blake, Amos S., Waterbury, Conn. Hinge	298,794	May 20	963	269	27	794
Blake, Andrew M., Columbus, Ohio. Spring-chair	298,936	May 20	1226	347	27	773
Blake, Selwyn N., Elmira, N. Y. Electric door-bell pull	296,812	Apr. 15	1151	324	27	234
Blake, Theodore A., New Haven, Conn. Stone-crusher	296,914	Apr. 15	1286	357	27	257
Blake, William H., 2d, Swanton, Vt. Tub and box fastener	300,942	June 24	1850	507	27	1285
Blakesley, Gilbert H., Bristol, Conn. Hair-crimper	297,911	Apr. 29	2352	699	27	505
Blakey, John, Leeds, county of York, England. Combination metallic last	299,613	June 3	145	35	27	947
Blanchard, Virgil W., New York, N. Y. Fire-escape and water-conductor	298,163	May 6	254	65, 66	27	574
Blandin, Thomas, Boston, Mass. Car-coupling	299,725	June 3	299	74	27	976
Blank, Valentine, and T. J. Anthony, Springfield, Ohio. Device for operating window-shades	295,901	Apr. 1	11	3	27	5
Blankinton, William. (See Johnson, Warren S., assignor.)						
Blankley, James A., assignor to C. H. Tallman, Bellaire, Ohio. Incased oil-can	300,682	June 17	1532	421	27	1223
Blessing, James H., Albany, N. Y. Combined check and stop valve	298,061	May 6	125	31, 32	27	551
Blessing, James H., Albany, N. Y. Stock-cock	298,062	May 6	126	32	27	551
Blessing, James H., Albany, N. Y. Check-valve. (Reissue)	10,487	June 10	1078	294	27	1130
Blessing, James H., Albany, N. Y. Valve	300,836	June 24	1730	472	27	1202
Blessing, James H., Albany, N. Y. Combined check and stop valve	300,837	June 24	1731	473	27	1202
Blessing, Louis, Jackson, Mich. Fire-escape	299,511	June 3	10	4	27	923
Blickensderfer, George C., and H. Smith, Erie, Pa. Conveyer apparatus	298,274	May 6	407	{108 109}	27	603
Blickensderfer, George C., and H. Smith, Erie, Pa. Conveyer apparatus	298,275	May 6	408	{109 110}	27	603
Blickensderfer, George C., and H. Smith, Erie, Pa. Conveyer apparatus	298,276	May 6	411	110	27	604
Bliss, Abel H., Chicago, Ill. Process of and apparatus for separating metals from their ores	297,105	Apr. 22	1524	421	27	306
Bliss Company, E. A. (See Carpenter, Charles B., assignor.)						
Bliss, Edward M. (See Bickford, John C., assignor.)						
Bliss, George H. (See Bliss, John and G. H.)						
Bliss, John and G. H., Brooklyn, N. Y. Rotator for ships' logs	296,385	Apr. 8	929	174	27	125
Blitz, Samuel, Kansas City, Mo. Combination writing-instrument	300,440	June 17	1216	332	27	1164
Blocher, John, Franklin Grove, assignor of one-half to B. F. Shaw, Dixon, Ill. Feed-guide for printing-presses	298,164	May 6	255	66	27	574
Blocher, John C., Lima, Ohio. Two-wheeled vehicle	298,105	May 27	1443	412	27	825
Blodgett, Aaron D., Boston, Mass. Electric work-indicator for mills	298,341	May 13	502	137	27	630
Blodgett, John W., Chicago, Ill. Friction-clutch	299,453	May 27	1867	536	27	903
Bloomfield, Edward, Chicago, Ill. Bath-tray	299,454	May 27	1867	536	27	903
Blount, John G., assignor of one-half to L. C. Norton, Boston, Mass. Chuck	299,334	May 27	1721	493	27	877
Blowers, George O., assignor to W. J. Arkell, Canajoharie, N. Y. Paper bag	296,117	Apr. 1	269	77	27	53
Blue, Lockrum, Washington, D. C. Hand corn-shelling device	298,937	May 20	1226	347	27	773
Blum, Joseph, Winnetka, Ill. Brick-kiln front or furnace	296,813	Apr. 15	1152	325	27	234
Blum, Joseph, Winnetka, Ill. Brick-drier	296,814	Apr. 15	1153	325	27	234
Blume, Charles A., Union City, Ind. Stump-puller	296,915	Apr. 15	1287	358	27	257
Blumenthal, Isaac, Chicago, Ill. Pitcher-cover	295,902	Apr. 1	13	3	27	5
Blyholder, John B., and P. Hughes, St. Louis, Mo. Bridle-bit	296,815	Apr. 15	1154	325	27	234
Blythe, George, Chillicothe, Mo. Car-coupling	296,665	Apr. 8	975	273	27	194
Boals, James A., assignor to W. P. Vance and A. McClintock, Burgettstown, Pa. Churn-power	296,512	Apr. 8	782	215	27	155
Boardman, James W. (See Bacon and Boardman.)						
Boaz, Edward A. (See Davis, Samuel E., assignor.)						
Boca, Paul, Paris, France. Cartridge-shell	297,345	Apr. 22	1537	499	27	363
Bodectel, William C., San Francisco, Cal. Jug or pitcher cover	299,512	June 3	11	4	27	923
Boecher, Adam, New York, N. Y. Sewing-machine	300,199	June 10	901	242	27	1097
Boecher, Adam, New York, N. Y. Sewing-machine hook	300,683	June 17	1533	421	27	1223
Boeckh, Charles, Toronto, Ontario, Canada. Boot-brush	299,196	May 27	1551	445	27	845
Boeing, Adolf, New York, N. Y. Hame	300,838	June 24	1732	473	27	1202
Boericke, Francis E., and G. Goll, Philadelphia, Pa. Triturating-machine	296,816	Apr. 15	1155	326	27	234
Bogert, John L., Flushing, N. Y. Balanced rotary valve	299,663	May 6	127	32	27	551
Bohlig, Martin, Dubuque, Iowa. Hobby-horse	300,200	June 10	903	243	27	1098
Bohrer, Jean C., *et al.* (See Watson, James T., assignor.)						
Bohrer, William, assignor to W. R. Elmenhorst, Montreal, Quebec, Canada. Transposition key-board for musical instruments	297,222	Apr. 22	1682	458	27	334
Boice, Reed V., Toledo, Ohio. Harvester	299,106	May 27	1444	412	27	825
Bois, James M., East Aurora, N. Y. Gas apparatus	300,757	June 24	1620	447	27	1245
Bolgiano, Gilbert C., Baltimore, Md. Sash-holder	299,335	May 27	1722	493	27	877
Bollee, Charles M., and M. E. Byron, East Pepperell, Mass. Machine for stamping boots and shoes	296,513	Apr. 8	783	216	27	155
Bolton, James, Chicago, Ill. Cabinet for sewing-machines	298,277	May 6	413	111	27	601
Bolton, James, Chicago, Ill., and J. C. Van Dyke, Elizabeth, N. J., assignors to Singer Manufacturing Company of New Jersey. Sewing-machine table	300,684	June 17	1535	422	27	1223
Bolton, Joseph W., Lewiston, Me. Liquor-funnel	299,513	June 3	12	5	27	923
Bolton, Thomas, Rochester, N. Y. Insole for boots or shoes	298,278	May 6	415	111	27	605
Boman, Claes W., assignor to J. Reckendorfer, New York, N. Y. Lead and crayon holder	297,060	Apr. 15	1460	404	27	289
Boman, Claes W., assignor to J. Reckendorfer, deceased, New York, N. Y.; B. Reckendorfer, executrix, G. A. Goldsmith and W. Strauss, executors. Device for holding pencils and other objects	297,106	Apr. 22	1527	421	27	306

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bond, John, and G. Smethurst, Maynard, Mass. Cop-building mechanism	297,107	Apr. 22	1528	{421 482}	27	307
Bone, D. M. (See Robinson, Frank J., assignor.)						
Bonface, Henry C., assignor to Rice & Brother, New York, N. Y. Manufacture of jewelry	296,118	Apr. 1	270	77	27	53
Bonnard, William S., and W. H. Grupe, Terre Haute, Ind. Feeder for mills, purifiers, &c.	298,938	May 20	1227	348	27	774
Bonneau, Christopher M., Boston, Mass. Cooking-utensil	300,839	June 24	1732	473	27	1202
Bonnett, Charles P., Elizabeth, N. J. Process of and apparatus for extracting gold and silver from their ores	298,603	May 13	877	{245 248}	27	699
Bonsteel, Alexander O., assignor of one-half to O. S. McChesney, Wilson, N. Y. Thill-coupling	298,439	May 13	611	172	27	650
Booker, James T. (See Montagne, Booker, and Dinning.)						
Boomer, George B., Mount Pleasant, N. Y. Apparatus for extracting cane-juice	298,165	May 6	257	66	27	575
Boone, Clara E. (See Boone, Thomas R., assignor.)						
Boone, John L., San Francisco, Cal. System of propelling cars by means of cables	296,916	Apr. 15	1289	358	27	258
Boone, Thomas R., assignor, by mesne assignments, to C. E. Boone, Rochester, N. Y. Cuff	297,912	Apr. 29	2353	699	27	506
Booth, Albert T., Meriden, Conn. Turning-machine	300,943	June 24	1851	508	27	1285
Booth, Walter, Tarrytown, N. Y. Constructing and fastening tiles	297,491	Apr. 22	2014	550	27	397
Borchardt, Hugo, Bridgeport, Conn. Switch-thread	299,614	June 3	146	36	27	947
Borchardt, Hugo, Bridgeport, Conn. Wire-straightener	299,615	June 3	148	36	27	947
Borchers, John A. W., West Medford, Mass., assignor, by mesne assignments, to Wool Scouring Process Company, Portland, Me. Separating and purifying certain compounds of the scourings of wool	299,904	June 3	494	130	27	1016
Borgelt, Henry, Jr., and L. P. Dorrell, Havana, Ill. Cultivator	300,563	June 17	1364	376	27	1192
Borrett, Joseph, London, England. Boot or shoe sole protecting plate	299,455	May 27	1868	537	27	904
Borst, George, Rochester, N. Y. Billiard and pool bridge	298,342	May 13	505	137	27	631
Borst, George, Rochester, N. Y. Box	300,441	June 17	1217	332	27	1164
Borst, Valentin, New York, N. Y. Garbage-receptacle	300,685	June 17	1536	423	27	1224
Boschert, Rufus E., Syracuse, N. Y. Power-press	300,201	June 10	903	243	27	1098
Bossard, Joseph H. (See Lyon and Bossard.)						
Bostock, Edward, New York, N. Y. Tuck-creaser for sewing-machines	298,975	Apr. 1	96	30	27	21
Boston Fancy Cabinet Company. (See Martin, George T., assignor.)						
Botkin, Welcome A., *et al.* (See Burks, Jesse H., assignor.)						
Botsford, William E. (See Wilcox and Botsford.)						
Bottomley, Joseph A., Greenville, Conn. Fruit-picker	296,514	Apr. 8	785	216	27	156
Boucher, David. (See Comegys, Holmes, and Boucher.)						
Boul, Chrisostomus, West Belleville, Ill. Potato-digger	299,107	May 27	1445	413	27	825
Boulier, Alfred, Paris, France. Pyrometer	300,202	June 10	905	243	27	1098
Boulter, Russell S., Saco, Me. Breeching-supporter	297,013	Apr. 29	2353	700	27	506
Bourn, Allan. (See King, George P., assignor.)						
Bourn, Augustus O., Bristol, R. I. Rubber boot	296,119	Apr. 1	270	77	27	53
Bousley, Nathaniel C. (See Stiff and Bousley.)						
Bovee, David W., Richland Centre, Wis. Harvester	296,120	Apr. 1	271	77, 78	27	54
Bovensiep, Charley, Detroit, Mich. Calipers	297,492	Apr. 22	2015	550	27	397
Bovey, George C., Columbus, Ohio. Combined milk bucket and stool	296,386	Apr. 8	631	174	27	125
Bowyer, William L., San Francisco, Cal. Miter-box	297,664	Apr. 29	2250	615	27	448
Bowden, Frank, assignor of one-half to A. P. Brown, Lowell, Mass. Grapple	296,666	Apr. 8	976	273	27	194
Bowditch, John F., Revere, Mass. Paint-brush	298,166	May 6	258	66	27	575
Bowen, Newton M., Knightstown, Ind. Fanning-mill and seed-cleaner	296,309	Apr. 8	568	148	27	106
Bowen, Thomas J., and J. F. Barnes, Pickens, S. C. Cultivator	300,686	June 17	1537	423	27	1224
Bower, Christopher F., 43 College Street, Liverpool Road, county of Middlesex, England. Potato-steamer	297,346	Apr. 22	1838	500	27	363
Bower, Jacob, Lafayette, Ind. Wagon-tongue support	297,745	Apr. 29	2366	644	27	468
Bowers, George A., Chicago, Ill. Coal-hod	300,944	June 24	1853	508	27	1286
Bowers, John W., Franklin, assignor to Douglas Axe Manufacturing Company, Boston, Mass. Machine for making ax-polls and similar tools	296,817	Apr. 15	1156	326	27	235
Bowers, John W., Franklin, assignor to Douglas Axe Manufacturing Company, Boston, Mass. Machine for punching the eyes of axes and similar tools	296,818	Apr. 15	1160	{326 327}	27	235
Bowers, Marcus M., Baltimore, Md. Bell	296,515	Apr. 8	786	217	27	156
Bowers, Sylvester J., Canandaigua, N. Y. Horse-collar coupling	298,343	May 13	506	138	27	631
Bowie, William S., Gardiner, Me. Driving-rein	300,564	June 17	1365	376	27	1192
Bowley, Joseph H., Marengo, Ill. Fire-escape	298,725	May 20	964	269	27	724
Bowman, David D., Eureka, Cal. Revolving book-stand	300,203	June 10	907	243	27	1099
Bowman, Francis B., Waltham, Mass. Adjustable tool-holder	296,316	Apr. 8	570	148	27	106
Bowsky, Charles, Savannah, Ga. Device for controlling the inlet and outlet pipes of a bath-tub	300,442	June 17	1218	332	27	1164
Boxley, George, assignor of one-half to G. P. I. Bruce & Co., Troy, N. Y. Combined hat-top-lap and staying-piece for garments	297,746	Apr. 29	2367	{644 645}	27	468
Boyakin, Dewitt S., St. Louis, Mo. Water-elevator	298,344	May 13	508	138	27	631
Boyce, Thomas W., and C. Frische, Brooklyn, N. Y. Dumping-wagon	296,917	Apr. 15	1290	358	27	258
Boyd, John M., Chester, Wis. Hay elevator and carrier	300,687	June 17	1538	423	27	1224
Boyd, Louis J. M., Annapolis, Md. Balanced slide-valve	299,950	June 10	566	151	27	1038
Boyer, Zaccur P., Philadelphia, Pa. Conduit for traction-rope or endless cable railways	298,819	May 20	1083	303	27	745
Boyer, Zaccur P., Philadelphia, Pa. Grip device for the propulsion of cars by cable	299,197	May 27	1552	{445 446}	27	844
Boyer, Zaccur P., Philadelphia, Pa., assignor to United States Cable Motor Construction Company, of New Jersey. Conduit for traction-rope railways	296,667	Apr. 8	977	{273 274}	27	195
Boylan, Lawrence A., *et al.* (See Mannel, David, assignor.)						
Boynton, Jeremiah W. (See Carver, James M., assignor.)						
Boys, Henry R. A., Barrie, Ontario, Canada. Lubricator	297,347	Apr. 22	1838	500	27	363
Bozard, Barnard S., Brooklyn, N. Y. Saw-jointer	298,820	May 20	1083	303	27	745
Braam, Jacob W., Grapo, Mich. Leaf-holder	297,665	Apr. 29	2260	615	27	448
Bracher, George S., New York, N. Y. Hat-sweat	296,918	Apr. 15	1291	358	27	258
Bracher, George S., New York, N. Y. Reed for hat-sweats	296,919	Apr. 15	1293	.....	27	258
Brackett, Seward W., Eau Claire, Wis. Mail-sack tag	298,345	May 13	509	138	27	631
Bradford, Charles K., Lynnfield, and J. G. Benedict, Boston, Mass. Percolator	299,198	May 27	1553	446	27	846
Bradford, Elisha H. (See McAleer, Philip, assignor.)						
Bradford, Wilmer. (See Scollay, William A., assignor.)						
Bradley, Byron C., assignor to Furst & Bradley Manufacturing Company, Chicago, Ill. Drag-bar for cultivator-beams	297,914	Apr. 29	2354	700	27	506
Bradley, Byron C., assignor to Furst & Bradley Manufacturing Company, Chicago, Ill. Vineyard plow	299,050	May 20	1370	399	27	800
Bradley, James M., Tyner City, Ind. Vehicle running-gear	297,747	Apr. 29	2368	645	27	469
Bradley, Leonidas H., Springfield, Ill. Jug-packing box	296,819	Apr. 15	1164	327	27	235
Bradford, John B., Red Oak, Ohio. Gate hanging and operating apparatus	296,516	Apr. 8	787	217	27	156

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brainard, Curtis B., Joliet, Ill. Barbed wire	298,440	May 13	611	173	27	650
Brainard, Curtis B., Joliet, Ill. Staple	300,204	June 10	908	244	27	1099
Brainard, Ellison L., assignor to Barton Bell Company, East Hampton, Conn. Bell	299,724	June 3	300	74	27	976
Bramer, Frank, deceased, Little Falls, N. Y.; W. W. Whitman and L. H. Crandell, executors. Disk-harrow	297,666	Apr. 29	2261	615	27	448
Branch, Daniel W., Troy, Ala. Cultivator	296,121	Apr. 1	274	78	27	54
Brandstaetter, John S., Liverpool, county of Lancaster, England. Dust-arresting machine	297,223	Apr. 22	1684	458 / 459	27	334
Brandstettner, John. (See Wagner, Emil, assignor.)						
Brannan, Eldridge W., *et al.* (See Burks, Jesse H., assignor.)						
Brannan, William, Fredericksburg, Va. Fire-escape ladder	296,920	Apr. 15	1293	350	27	958
Bratton, Francis M., Hamden Junction, Ohio. Boot-crimp	298,167	May 6	250	67	27	575
Braun, J. Gottfried, New York, N. Y. Drip-cup for journal-bearings	296,920	Apr. 15	1164	327	27	235
Bray, Morris P., assignor of one-half to Elm City Suspender Co., New Haven, Conn. Garment-clasp	299,725	June 3	301	74	27	977
Bray, Morris P., assignor of one-half to Elm City Suspender Co., New Haven, Conn. Garment-clasp	299,726	June 3	302	75	27	977
Brayton, Lodowick, assignor of one-half to D. F. Longstreet, Providence, R. I. Track for street-railways	296,668	Apr. 8	978	274	27	195
Brazel, Peter B., Cheboygan, Mich. Snow-plow	298,441	May 13	612	173	27	650
Brazelle, Benjamin, St. Louis, Mo. Machine for making hook-headed nails	300,758	June 24	1631	447 / 448	27	1245
Brecht, Theodore C., Washington, D. C. Method of and apparatus for compressing plastic, pulverized, and other materials	299,514	June 3	12	5	27	923
Breed, Richard E., Pittsburg, Pa. Machine for making hoes	295,903	Apr. 1	13	4	27	5
Breen, Thomas, Knowlton, Pa. Railway-rail	297,065	May 6	6	2	27	528
Brekke, Lewis O., Decorah, Iowa. Lamp	297,403	Apr. 22	2015	550	27	397
Bremerman, Fredrick, Indianapolis, Ind., assignor to Emerson, Fisher Company, Cincinnati, Ohio. Turning-gear for vehicles	299,108	May 27	1446	413	27	925
Brennan, James J., Whippany, N. J. Combined holy-water font and poor-box	297,966	May 6	6	3	27	528
Brennan, Jeremiah H., Boston, Mass. Device for tapping beer	296,311	Apr. 8	531	149	27	106
Brent Manufacturing Company. (See MacKaye, James S., assignor.)						
Brereton, Richard. (See Crump and Brereton.)						
Breslauer, Edward, Berlin, Germany. Furnace-grate	299,616	June 3	140	36	27	947
Bresnahan, Maurice V., Lynn, Mass. Boot and shoe sole shaping machine	300,039	June 10	879	184	27	1058
Brettell, Edward W., Newark, N. J. Trunk or box fastener	298,279	May 6	415	111	27	605
Brettner, Rudolf, New York, N. Y. Finger-ring	299,051	May 20	1371	390	27	800
Brewer, Charles W., Racine, Wis. Agraffe for piano sounding-boards	298,664	May 13	886	246	27	701
Brewer, Russell, Newark, N. J. Car-axle box	296,517	Apr. 8	788	217	27	156
Breyfogle, William L. (See Van Dusen, Charles, assignor.)						
Brian, Taylor W., *et al.* (See Dean, Orange A., assignor.)						
Bridgeport Twine Binding Company. (See Richardson and Gibbs, assignors.)						
Bridges, Benjamin F., Big Rapids, Mich. Saw-swaging machine	297,559	Apr. 29	2120	579	27	422
Bridges, John R., Philadelphia, Pa. Knitting-machine	300,759	June 24	1634	448	27	1245
Bridges, John R., Philadelphia, Pa. Machine for uniting looped fabrics	300,760	June 24	1636	449	27	1246
Brigg, William W. (See Webb, Samuel D., assignor.)						
Briggs, Benjamin C., Paris, Me. Fertilizer	298,939	May 20	1322	.....	27	774
Briggs, Daniel F., Attleborough, Mass. Swivel-hook for ornamental chains	299,336	May 27	1723	494	27	877
Briggs, Daniel F., Attleborough Falls, Mass., assignor to W. Smith & Co., Providence, R. I. Combined chain-bar, pencil, and toothpick	300,309	June 10	1033	279	27	1121
Briggs, George T., Cambridgeport, Mass. Spring shade-roller	300,841	June 24	1734	474	27	1253
Briggs, Orlando P., assignor to Thorn Wire Hedge Company, Chicago, Ill. Twister and spooler for the manufacture of wire fencing, &c	298,280	May 6	416	112	27	605
Brigham, Charles F., Worcester, Mass. Journal-bearing	299,109	May 27	1447	413	27	926
Brigham, Charles F., Worcester, Mass., assignor of three-fourths to D. A. Brown, trustee. Asbestus compound and articles made therefrom	298,281	May 6	418	112	27	605
Brigham, Charles F., Worcester, Mass., assignor of three-fourths to D. A. Brown, trustee. Fire and water proof material for roofing, &c	298,282	May 6	419	112	27	606
Brigham, Charles F., Worcester, Mass., assignor of three-fourths to D. A. Brown, trustee. Brake-shoe	298,283	May 6	419	112	27	606
Brigham, William A. (See Fraser and Brigham.)						
Brightman, Latham, Youngstown, Ohio. Machine for straightening round bars of metal	299,727	June 3	303	75	27	977
Brightman, Latham, Youngstown, Ohio. Machine for straightening round bars of metal	299,728	June 3	305	76	27	977
Brightman, Latham, Youngstown, Ohio. Shaft-support	296,387	Apr. 8	632	174	27	125
Brill, Andrew J., Cincinnati, Ohio. Shaft-support	296,122	Apr. 1	275	78	27	54
Brinkerhoff, Warren M., Auburn, N. Y. Receipt, check, draft, and similar books	300,379	June 17	1087	296	27	1142
Brintnall, Thomas M., Kansas City, Mo. Safe	296,518	Apr. 8	789	217	27	157
Bristor, William A., Indianapolis, Ind. Shoe	297,224	Apr. 22	1668	459	27	334
Broadbent, William J., Belleville, N. J. Safety-pin	296,123	Apr. 1	276	78	27	54
Broadbent, Squire and Squire, Jr., Tong, near Bradford, county of York, England. Rotary engine	297,748	Apr. 29	2269	645	27	469
Brock, William E., Dunellen, N. J. Apple parer and slicer	298,442	May 13	613	173	27	650
Brock, William H., Corona, N. Y. Chain-wrench	298,891	May 20	1084	303 / 304	27	745
Brolaski, Joseph B., St. Louis, Mo. Knockdown furniture	300,207	June 10	911	245	27	1099
Bronson, William C., Saratoga Springs, N. Y. Steam-heater	297,925	Apr. 22	1689	459	27	335
Brook, James W., Amherst County, Va. Ventilation of barrels and boxes	298,940	May 20	1329	348	27	774
Brooke, Isaac, Pottstown, Pa. Nut-fastener	299,729	June 3	306	76	27	978
Brooke, Isaac, Pottstown, Pa. Slate-pencil sharpener	299,730	June 3	307	77	27	978
Brooke, Isaac, Pottstown, Pa. Inf stand						
Brooke, Keim K. (See Pitner, Henry B., assignor.)						
Brooke, William M., assignor of one-third to J. F. Sias and L. M. Swasey, Brooklyn, N. Y. Permutation-lock	297,749	Apr. 29	2270	645	27	469
Brooks, Alfred A., Boston, Mass. Outer sole for boots and shoes	296,519	Apr. 8	790	218	27	157
Brooks & Co., E. J. (See Brooks, Edward J., assignor.)						
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Fastening tin-strip seals	296,124	Apr. 1	277	79	27	54
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal	298,108	May 6	269	67	27	575
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal-press	298,284	May 6	420	113	27	606
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Lead and wire seal	298,665	May 13	886	246	27	702
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal-press	301,643	June 24	1975	545	27	1308

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brooks, Henry, West Medford, and W. E. Reed, Boston, Mass. Wood-exhibiting card	299,052	May 20	1372	391	27	800
Brooks, James W., *et al.*, trustees. (See Crosby, Joseph B., assignor.) (Reissue.)	300,842	June 24	1735	474	27	1263
Brooks, John, Plainfield, N. J. Printing-machine	295,904	Apr. 1	15	4	27	6
Brooks, Merritt S., Chester, Conn. Tap-wrench						
Brooks, Renben, assignor to Russia Cement Company, Gloucester, Mass. Treating the waste of salt fish	299,515	June 3	14	5	27	924
Brooks, Theodore L., Port Byron, N. Y. Convertible seeding-machine	299,905	June 3	495	130 / 131	27	1016
Broomell, Albert P., assignor to A. B. Farquhar, York, Pa. Steering-gear for traction-engines	298,169	May 6	262	67	27	575
Brossel, Hubert, Indianapolis, Ind. Button-fastener	299,110	May 27	1448	413	27	926
Brother, Ferdinand, D. Morris, and H. Speirs, Bunker Hill, Ill. Colter attachment	300,688	June 17	1541	423	27	1225
Brotherhood, Fred, Charleston, S. C. Apparatus for dredging, crushing, and washing phosphate-rock	298,443	May 13	614	173 / 174	27	651
Brotherhood, Fred, Charleston, S. C. Loading vessels with phosphate-rock, &c	298,444	May 13	615	174 / 175	27	651
Brotherhood, Fred, Charleston, S. C. Apparatus for washing phosphate rock, ores, &c	299,337	May 27	1723	494	27	878
Brotherhood, Peter, Lambeth, county of Surrey, England. Multiple-cylinder engine	299,731	June 3	308	77, 78	27	978
Brothers, Charles, New York, N. Y. Base for looking-glass frames	300,761	June 24	1640	449	27	1246
Brotherton, Hugh, New York, N. Y. Window-blind	298,170	May 6	263	68	27	576
Brott, George F., Washington, D. C. Telegraph or other pole	295,905	Apr. 1	16	4	27	6
Broughton, Frederick. (See Harmer, Henry, assignor. (Reissue.)						
Broughton, John, deceased, Brooklyn, N. Y.; M. Broughton administratrix and assignor to D. H. Fitzgerald, Reading, Pa. Extension-key	299,456	May 27	1869	537	27	904
Broughton, Mary, administratrix. (See Broughton, John.)						
Brower, David, and J. Dunlap, Bowerston, Ohio. Car-coupling	297,226	Apr. 22	1690	459	27	335
Brown, Aaron A., Cincinnati, Ohio. Manufacture of boots or shoes	300,205	June 10	909	244	27	1099
Brown, Aaron A., Cincinnati, Ohio. Sewing buttons to shoes	300,206	June 10	910	244	27	1099
Brown, Adna, *et al.* (See Johnson, Charles C., assignor.)						
Brown, Ainsworth, Colorado Springs, Colo. Window-screen	297,667	Apr. 29	2262	616	27	449
Brown, Alexander E., Cleveland, Ohio. Hoisting and conveying machine	300,689	June 17	1542	424	27	1225
Brown, Alexander E., Cleveland, Ohio. Hoisting and conveying machine	300,690	June 17	1547	425	27	1225
Brown, Arthur P. (See Bowden, Frank, assignor.)						
Brown, Azariah R., assignor to O. T. Cottle, D. T. Jeffries, and M. N. Sevier, Gainesville, Tex. Stalk-cutter	299,053	May 20	1372	391	27	800
Brown, Caleb E., Jackson, Mich. Bustle	300,565	June 17	1366	377	27	1192
Brown, D. Austin, trustee. (See Brigham, Charles F., assignor.)	296,722	Apr. 15	1046	.....	27	214
Brown, D. Austin, Boston, Mass. Fire-proof paper	299,516	June 3	16	.....	27	924
Brown, David F., Omaha, Nebr. Ornamentation of glass in imitation of frosting	299,951	June 10	567	152	27	1039
Brown, Edward H., New York, N. Y. Hammock-canoe						
Brown, Edwin H. (See Chapin, Henry A., assignor.)						
Brown, Emanuel F. (See Miller and Brown.)	297,560	Apr. 29	2121	579	27	422
Brown, George R., Palmyra, N. Y. Combined bag and twine holder and show-rack	298,922	May 20	1086	305	27	746
Brown, George W., Galesburg, Ill. Tappet-wire for corn-planter check-rowers	298,923	May 20	1087	305	27	746
Brown, George W., Galesburg, Ill. Cultivator	298,924	Apr. 15	1165	327	27	236
Brown, John C., Davenport Centre, N. Y. Butter-package	298,941	May 20	1329	.....	27	774
Brown, Louis, New York, assignor of three-fourths to L. N. White, Rye, N. Y. Paint	300,691	June 17	1549	425	27	1226
Brown, Joseph K., Canton, Ohio. Ribbed glass funnel and mold therefor	297,927	Apr. 22	1691	460	27	335
Brown, Oliver H. P., Clarksville, Ark. Leveling and plumbing instrument	299,199	May 27	1535	446	27	846
Brown, Roswell N., Hoosick Falls, N. Y. Sash-cord fastener	297,061	Apr. 15	1461	404	27	289
Brown, Samuel, San Francisco, Cal. Safety-car truck	299,457	May 27	1870	537	27	904
Brown, Samuel, Philadelphia, Pa. Paper-cutting machine	296,723	Apr. 15	1047	294	27	214
Brown, Seth A., Buffalo, N. Y. Sash-holder						
Brown & Sharpe Manufacturing Company. (See Noble, George H., assignor.)						
Brown, Simon H., assignor of one-half to W. W. Snow, Ramapo, N. Y. Lathe-rest	297,967	May 6	7	3	27	528
Brown, Stephen D., Farmington, Mich. Potato-digger	298,664	May 6	129	33	27	551
Brown, Thomas C., Norborne, Mo. Index	299,338	May 27	1726	495	27	878
Brown, Thomas H., Chicago, Ill. Skeleton speed-vehicle	297,348	Apr. 22	1841	500	27	364
Brown, William C. (See Taylor, Cox, Brown, and Sutherland.)						
Brown, William P., Zanesville, Ohio. Axle-skein	297,750	Apr. 29	2371	646	27	469
Brown, William S., *et al.* (See Burks, Jesse H., assignor.)						
Browne, Arthur W. Pleasant Plains, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Adjustable chair	299,458	May 27	1872	538	27	904
Brownley, Patrick, St. John, New Brunswick, Canada. Anti-friction bearing for machinery	300,340	June 17	1090	297	27	1143
Brownson, Ralph, assignor of one-half to P. R. L. Hardenbergh, St. Paul, Minn. Instrument for cutting fly-net strings	299,952	June 10	568	152	27	1039
Brownson, Ralph, assignor of one-half to P. R. L. Hardenbergh, St. Paul, Minn. Fly-net	299,953	June 10	569	152	27	1039
Brownson, Ralph, assignor of one-half to P. R. L. Hardenbergh, St. Paul, Minn. Fly-net for horses	300,040	June 10	680	184	27	1059
Brownstein, George, San Francisco, Cal. Tobacco-sweater	297,668	Apr. 29	2262	616	27	449
Brubaker, Andrew. (See Barr, James F., assignor.)						
Bruce & Co., George P. I. (See Boxley, George, assignor.)						
Bruff, John W., and W. E. T. Merrill, Philadelphia, Pa.; said Merrill assignor to said Bruff. Permutation-padlock	296,580	Apr. 8	791	218	27	157
Brunn, Hinrich, Bremerhaven, Germany. Detaching apparatus for boats	300,566	June 17	1367	377	27	1192
Brunt, William H., Baldwin, assignor to Voigt, Ward & Co., Pittsburg, Pa. Glass-mold and the product thereof	297,062	Apr. 15	1462	404	27	289
Brush, Charles F., Cleveland, Ohio. Apparatus for electroplating	297,669	Apr. 29	2264	616	27	449
Bruso, Joseph H., St. Clair, Mich. Carpet-stretcher	296,669	Apr. 8	979	274	27	195
Bryan, William C., Nashville, Tenn. Dumping-wagon	296,670	Apr. 8	980	274	27	195
Bryant, Edwin R., assignor to Rochester Machine Tool Works, (limited,) Rochester, N. Y. Attachment for metal planers	296,370	Apr. 1	471	132	27	89
Bryant, Fred L. (See Frost and Bryant.)	296,671	Apr. 8	981	275	27	196
Bryant, Fred L., and A. H. Frost, Chicago, Ill. Coiling wire	299,824	May 20	1088	305	27	746
Bryant, Hezekiah H., Boston, Mass. Curtain-roller	299,548	May 13	734	207	27	674
Bubach, John G., Princeton, Ill. Pruning-shears	298,346	May 13	510	139	27	631
Buch, George C., Eureka, Mo. Boot or shoe	10,402	Apr. 1	520	145	27	98
Buchanan, Alexander F., Montrose, N. Y. Manufacture of oil cloth. (Reissue)	299,732	June 3	309	78	27	978
Buchanan, Alexander F., Montrose, N. Y. Machine for decorating oil-cloth	297,561	Apr. 29	2122	579	27	423
Buchanan, James, Indianapolis, Ind. Straw-stacking machine	297,562	Apr. 29	2123	579	27	423
Buchanan, James, Indianapolis, Ind. Thrashing-machine	297,968	May 6	8	3	27	529
Buchholz, Herman, and W. Morris, Janesville, Wis. Carriage-top	299,339	May 27	1726	495	27	878
Buchnan, William M., Columbia, Tenn. Two-wheeled vehicle						

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Buck, George N., Mattoon, Ill. Tag-fastener	298,549	May 13	735	208	27	674
Buckeye Iron and Brass Works. (See Krutzsch, William, assignor.)						
Buckeye Iron and Brass Works. (See Pease, Charles E., assignor.)						
Buckingham, Charles L. (See Vansize and Buckingham.)						
Buckingham, Charles L., and H. C. Townsend, New York, N. Y. Automatic cut-out for electric lamps	296,125	Apr. 1	278	79	27	55
Buckingham, Charles L., New York, and W. B. Vansize, Brooklyn, assignors to Western Union Telegraph Company, New York, N. Y. Printing-telegraph	300,341	June 17	1091	297	27	1143
Buckman, Thomas E., Jacksonville, Fla. Car-coupling	298,445	May 13	617	175	27	651
Buckley, Daniel, Boston, Mass. Lever	299,954	June 10	570	152	27	1039
Buel, Warren, *et al.* (See Woodruff, Brock, assignor.)						
Buell, Charles E., New Haven, Conn. Utilizing compressed air as a motive power	300,443	June 17	1219	333	27	1165
Buffalo Electric Works. (See Lannert, John A., assignor.)						
Buffham, William S., *et al.* (See Richards, Hezekiah H., assignor.)						
Buhle, Nicolas A., New York, N. Y. Enameling metal for jewelry and other fancy articles	299,054	May 20	1373	391	27	801
Bullock, Charles K. (See Hendrickson, Justus J., assignor.)						
Bullock, Thomas H., Cleveland, Ohio. Portable forge	297,494	Apr. 22	2016	551	27	397
Bulova, Joseph, New York, N. Y. Finger-ring	296,312	Apr. 8	539	149	27	106
Bulova, Joseph, New York, N. Y. Cuff-button	299,517	June 3	17	6	27	924
Bundy, Charles H., Middletown, Ohio. Seal	296,921	Apr. 15	1295	350	27	259
Bunker, William I., assignor of one-half to J. Beiersdorf, Chicago, Ill. Spring attachment for platform rocking-chairs	297,108	Apr. 22	1529	422	27	307
Bunnell, Jesse H., Brooklyn, N. Y. Electric door-opener	297,731	Apr. 29	2272	640	27	469
Burbank, Abner J., Harvard, Ill. Hay-carrier	300,202	June 10	912	245	27	1099
Burck, John H., North Hoosick, assignor of one-half to H. J. Grose, Albany, N. Y. Churn	297,109	Apr. 22	1530	422	27	307
Burd, John W., Jr., St. Louis, Mo. Seal-lock	295,976	Apr. 1	98	30	27	21
Burdick, Theodore, Kalamazoo, Mich. Mattress-support	295,977	Apr. 1	99	30	27	21
Burgermeister, Christian L. (See Jerrold and Burgermeister.)						
Burgess, Anna. (See Burgess, David F., assignor.)						
Burgess, David F., assignor to A. Burgess, Lockport, N. Y. Ice-hook	296,126	Apr. 1	281	80	27	55
Burgess, William H., Rich Square, N. C. Cotton-press	297,915	Apr 29	2555	700 / 701	27	506
Burke, Charles G., Richmond Hill, N. Y. Regulator for electric motors	298,550	May 13	736	208	27	674
Burks, Jesse H., Los Angeles, Cal. Crank	296,272	Apr. 1	474	132	27	89
Burks, Jesse H., Los Angeles, Cal., assignor to W. A. Botkin, E. W. Brennan, J. J. O'Brien, F. B. Hough, S. C. Fancher, and W. S. Brown, Kansas City, Mo. Fire-escape	300,843	June 24	1736	474	27	1263
Burks, William T., and L. P. Klutts, Montrose, Mo. Plow-point	300,567	June 17	1368	377	27	1193
Burl, John, Springfield, Mo. Churn	299,459	May 27	1574	539	27	904
Burleigh, Harry W., Franklin, N. H. Valve-grinder	297,063	Apr. 15	1464	405	27	290
Burlingame, Miles E., Willett, N. Y. Fetter for animals	298,551	May 13	738	208	27	675
Burlinghausen, Bernerd G., Cleveland, Ohio. One-wheeled velocipede	299,617	June 3	149	37	27	947
Burlington Plow Company. (See Neff, Joseph B., assignor.)						
Burner, Charles C., Traveller's Repose, W. Va. Grinding-mill	299,340	May 27	1527	495	27	878
Burnett, Benjamin F., Brooklyn, assignor to H. L. Judd & Co., New York, N. Y. Curtain-loop	296,127	Apr. 1	282	80	27	55
Burnett, William, New York, assignor of one-half to J. Reilly, Brooklyn, N. Y. Pressure-regulator	295,978	Apr. 1	99	30	27	21
Burnham, Arthur M., Gardiner, Me. Machine for making wedges	297,563	Apr. 29	2124	580 / 581	27	423
Burnham, Lorenzo G., *et al.* (See Porter, Edward N., assignor.)						
Burns, Frank, Westfield, N. Y. Bottle-stopper	300,945	June 24	1853	508	27	1226
Burns, Fred W., Le Mars, Iowa. Carpet-stretcher	300,342	June 17	1094	297	27	1143
Burns, Robert, Chicago, Ill. Process of and apparatus for forming mineral fiber or wool from furnace-slag	299,111	May 27	1448	414	27	826
Burns, Robert, assignor of one-half to J. S. Williams, Chicago, Ill. Cyclometer	299,733	June 3	310	78	27	979
Burough, Elizabeth E. (See Craig, James A., assignor.)						
Burr, Sanford S., Winnetka, Ill. Spring bed-bottom	296,672	Apr. 8	983	275	27	106
Burrell, Charles F. (See Webb, John W., assignor.)						
Burridge, Lee S., and N. R. Marshman, New York, N. Y. Toy and advertising medium	296,724	Apr. 15	1047	295	27	214
Burris, Bartley L., and C. S. Woodman, Wichita, Kans. Portable bridge for unloading earth-scrapers	300,301	June 10	1034	279	27	1121
Burritt, Orrin W., Weedsport, N. Y. Machine for seaming or double-seaming joints of sheet-metal roofing	300,302	June 10	1035	280	27	1122
Burrows, Daniel, Brooklyn, assignor to J. L. Mott Iron Works, New York, N. Y. Attachment for operating cistern-valves for water-closets	299,341	May 27	1792	495	27	879
Burrows, William T., East Dubuque, Ill. Device for handling spooled barb-wire	296,271	Apr. 1	476	143	27	90
Burt, George, Fort Madison, Iowa. Music-holder	298,726	May 20	965	269	27	725
Burt, George E., Harvard, Mass. Silo	297,564	Apr. 29	2126	581	27	424
Bartenshaw, William H. (See Reynolds, Charles W., assignor.)						
Barton, Aaron B., assignor to Driven Screw Post and Pile Company, New York, N. Y. Bracing the piles of piers	296,313	Apr. 8	533	149	27	106
Barton, George D., New Ipswich, N. H. Stock-car	298,666	May 13	888	247	27	702
Barton, George W., Bordentown, N. J. Saw-vise	296,128	Apr. 1	283	80	27	56
Barton, Le Grand S., *et al.* (See Le Roy, Charles J., assignor.)						
Barton & Parker, *et al.* (See Le Roy, Charles J., assignor.)						
Busch, William, St. Louis, Mo. Mop or brush holder	300,692	June 17	1550	426	27	1226
Busell, James H. (See Orcutt, William D., assignor.)						
Bush, James J., Tacoma, Wash. Ter. Vehicle-wheel	299,906	June 3	497	131	27	1016
Bush, Lewis, Jr., assignor to American Machinery Company, Chicago, Ill. Machine for grinding cutter-knives	297,565	Apr. 29	2128	581 / 582	27	424
Bush, Lewis, Jr., assignor to American Machinery Company, Chicago, Ill. Saw-sharpening machine	297,566	Apr. 29	2132	582 / 583	27	424
Bush, Lewis, Jr., assignor to American Machinery Company, Chicago, Ill. Folding chair	298,065	May 6	130	33	27	551
Buss, Edward, St. Gallen and R. Kühn, Rorschach, Switzerland. Locomotive	296,129	Apr. 1	283	80, 81	27	56
Butcher, Joseph, Boston, Mass. Bicycle-bell	300,568	June 17	1369	377 / 378	27	1193
Butin, George E., Fredonia, Kans. Device for fastening removable pins to brooches	300,702	June 24	1641	440	27	1246
Butler, Edward F., Whitewater, Wis. Buckle	300,303	June 10	1036	280	27	1122
Butler, Jay F. (See McClinchie and Butler.)						
Butler, Paul, Lowell, Mass. Mechanism for packing cartridges	299,200	May 27	1355	447 / 448	27	846
Butler, Thomas H., *et al.* (See Conly, Mahlon S., assignor.)						
Butler, Thomas P. (See Hebert and Butler.)						
Butterfield, James G., Sioux City, Iowa. Locomotive ash-pan	299,955	June 10	570	153	27	1039

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Butterworth, Charles F., Troy, N. Y. Sleeve for coats	296,130	Apr. 1	285	81	27	56
Butterworth, Henry, Watertown, N. Y. Attaching device for awnings	300,304	June 10	1037	280	27	1122
Butterworth, Samuel B., Franklin Falls, N. H. Tuning-fork	299,956	June 10	572	153	27	1040
Butterworth, Samuel B., Franklin Falls, N. H. Tuning-fork	299,460	May 27	1475	539	27	905
Buzby, Edwin S., Bordentown, N. J. Thill-coupling						
Byron, Michell E. (See Bolles and Byron.)						
Byron, Ulderic D., assignor of one-half to A. E. Dike, Chicago, Ill. Cutter-head	300,305	June 10	1039	281	27	1123
Cabell, Milton S., Quincy, Ill. Lubricator	297,567	Apr. 29	2136	583	27	425
Cable Railway Company. (See Evans, Richard K., assignor.)						
Cabot, Samuel, Jr., Boston, Mass. Composition for staining and preserving wood	297,568	Apr. 29	2137	.....	27	425
Cade, James R. (See Griffin, Shoup, and Cade.)						
Cady, Ernest. (See Gray, William, assignor.)						
Cady, Frank E., Auburn, N. Y. Combined water filter and cooler	296,673	Apr. 8	984	276	27	106
Cady, Ira D. (See O'Neill, Edward F., assignor.)						
Cahoon, William, Jr., assignor to W. M. Keenan, Chicago, Ill. Compound water-cock and sewer-gas cut-off	298,347	May 13	540	139	27	631
Cahoone, Edwin R., Newark, N. J. Mucilage-holder	299,957	June 10	572	154	27	1040
Calu, John, assignor to Gillespie Tool Company, Pittsburg, Pa. Die for making vise-jaws	298,285	May 6	422	113	27	606
Cairns, James, Philadelphia, Pa. Grate-bar for furnaces	300,209	June 10	913	245	27	1100
Calais, Frank W., Joliet, Ill. Check-row attachment for seed-planters	297,110	Apr. 22	1530	422 / 423	27	307
Caldwell, Waller J., Rives, Tenn. Car-starter	299,342	May 27	1792	496	27	879
Calhoun, James G., assignor of one-half to S. Calhoun, Edinburg, Ohio. Gate	300,444	June 17	1221	334	27	1165
Calhoun, John R., St. Louis, Mo. Wagon-bolster spring	299,518	June 3	17	6	27	924
Calhoun, Samuel. (See Calhoun, James G., assignor.)						
Calkins, Thomas L., Newark, N. J. Speed-governor	299,618	June 3	312	78, 79	27	979
Callahan, Cornelius, Chelsea, Mass. Cut-off for valves	299,734	June 3	312	78, 79	27	979
Callahan, William P., Dayton, Ohio. Oil-press	299,958	June 10	573	154	27	1040
Cambria Iron Company. (See Williams, Lewis, assignor.)						
Cammack, William. (See Welch, Rosh W., assignor.)						
Camp, Jacob A., Sandusky, Ohio. Protecting piles	300,343	June 17	1095	297	27	1144
Campany, Milton E., Muskegon, Mich. Thill-coupling	298,042	May 20	1230	348	27	774
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Printing-machine	297,111	Apr. 22	1532	423 / 424	27	307
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Former for printing	297,112	Apr. 22	1538	425	27	308
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Mechanism for raising the rollers of printing-presses	297,752	Apr. 29	2373	646	27	469
Campbell, Andrew C., Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company. Mechanical movement	298,943	May 20	1230	348 / 349	27	774
Campbell, Augustine, Metuchen, N. J. Underground conduit for electric conductors	300,210	June 10	913	246	27	1100
Campbell, Duncan H., assignor to H. B. Metcalf, Pawtucket, R. I., and W. McCleery, Boston, Mass. Machine for making buttons	297,495	Apr. 22	2017	551 / 552	27	398
Campbell, Duncan H., assignor to H. B. Metcalf, Pawtucket, R. I., and W. McCleery, Boston, Mass. Button-machine	297,496	Apr. 22	2023	553 / 554	27	398
Campbell, Duncan H., assignor to H. B. Metcalf, Pawtucket, R. I., and W. McCleery, Boston, Mass. Cloth-cutting machine	297,497	Apr. 22	2030	554 / 555	27	399
Campbell, Eli F., L. C. Noble, and M. G. Howe, Houston, Tex. Nut-lock	300,211	June 10	914	246	27	1100
Campbell, Howard, assignor to Gaar, Scott & Company, Richmond, Ind. Reclearing attachment for thrashers or separators	296,922	Apr. 15	1296	360	27	259
Campbell, Howard, assignor to Gaar, Scott & Company, Richmond, Ind. Straw-stacker	301,044	June 24	1970	545 / 546	27	1308
Campbell, James D. (See Hipolito, Espiridion, assignor.)						
Campbell, James H. (See Wilson, James N., assignor.)						
Campbell, Robert, assignor to himself, G. Baird, Wheeling, and J. Porter, New Cumberland, W. Va. Paving-block	296,131	Apr. 1	286	81	27	56
Campbell, Solomon C., Brooklyn, N. Y. Tag or ticket fastener	300,212	June 10	915	246	27	1100
Campbell, Thomas W., Valley Falls, Kans. Mining apparatus	297,664	Apr. 15	1465	405	27	290
Campbell, William, Detroit, Mich. Tire-tightener	295,979	Apr. 1	101	31	27	21
Campi, Lucas M., Havana, Cuba. Vacuum-pan	299,112	May 27	1450	414	27	826
Campi, Lucas M., Havana, Cuba. Calcimeter	299,461	May 27	1475	539	27	905
Candee, Charles E., New York, N. Y. Car-truck	299,735	June 3	312	79, 80	27	979
Cantril, James E., *et al.* (See Welling, John E., assignor.)						
Card-Dane Dry Gold Sluice Company. (See Card and Dane, assignors.)						
Card, Simon W., Mansfield, Mass. Machine for threading screw-taps	300,041	June 10	681	185	27	1059
Card, William L., and J. C. Dane, assignors to Card-Dane Dry Gold Sluice Company, (limited,) La Crosse, Wis. Dry ore separator	300,042	June 10	683	185	27	1059
Card, William L., and J. C. Dane, assignors to Card-Dane Dry Gold Sluice Company, (limited,) La Crosse, Wis. Dry ore separator	300,043	June 10	685	185	27	1059
Card, William L., and J. C. Dane, assignors to Card-Dane Dry Gold Sluice Company, (limited,) La Crosse, Wis. Dry ore separator	300,044	June 10	686	186	27	1059
Carey, James, *et al.* (See Desmond, John, assignor.)						
Carey, Milton R., Manch Chunk, Pa. Car-axle box	298,552	May 13	739	209	27	675
Carey, Philip, Cincinnati, Ohio. Pulp-board for roofing purposes	300,946	June 24	1855	.....	27	1286
Carkeek, Thomas, Silver Plume, Colo. Slime-table	300,947	June 24	1855	509	27	1286
Carlin, Nathaniel T. B., assignor to H. Nelson, Kirkwood, Mo. Cartridge-holder	299,736	June 3	314	80	27	979
Carlin, William L. (See Plater, Henry, assignor.)						
Carlsen, Andreas M., St. Paul, Minn. Boot and shoe cleaning implement	296,674	Apr. 8	985	276	27	190
Carlton, Cortland, Kalamazoo, Mich. Paper-perforating device	298,667	May 13	889	248	27	702
Carns, John W., assignor of one-half to G. Walker, Jr., Pierce, Ohio. Thill-coupling	300,045	June 10	687	186	27	1060
Carpenter, Charles B., assignor to E. A. Bliss Company, North Attleborough, Mass. Watch-chain hook	297,498	Apr. 22	2034	555	27	399
Carpenter, Francis W., Harrison, N. Y. Toy	298,446	May 13	618	176	27	651
Carpenter, Francis W., Harrison, N. Y. Dust-pan	298,447	May 13	619	176	27	652
Carpenter, Henry, Flushing, N. Y. Engraver's bangle-clamp	296,521	Apr. 8	793	216	27	157
Carpenter, James W. (See Maxon, Thomas, assignor.)						
Carr, James W., Richmond, Va. Car-axle box	298,171	May 6	264	68	27	576
Carr, Robert S., Hamilton, Ohio. Wheel	300,046	June 10	688	186 / 187	27	1060
Carrara, Antonio, assignor to himself and A. Girardot, Newark, N. J. Umbrella and parasol frame	298,944	May 20	1232	349	27	774
Carroll, Thomas C., West Plains, Mo. Railway-track	300,306	June 10	1039	281	27	1123
Carslake, William H., Philadelphia, Pa. Soap stand and support	300,213	June 10	916	246	27	1100
Carslake, William H., Philadelphia, Pa. Soap	300,214	June 10	917	247	27	1100
Carson, William, St. Paul, Minn. Shingle-jointing machine	299,619	June 3	152	38	27	948
Carter, Charles H., Brooklyn, N. Y. Signal-box for district and fire-alarm telegraphs	298,945	May 20	1233	349	27	775

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Carter, Egbert P., Arcade, N. Y. Vehicle-spring	298,553	May 13	740	209	27	675
Carter, George W. (See Wheaton, Frank, assignor.)						
Carter, James L., Brookline, Mass. Coupon-bearing bond	300,569	June 17	1371	378	27	1193
Carter, Sloan & Co. (See Thiery, Edouard A., assignor.)						
Carter, Wallace H., Hallowell, Me. Hay-knife	297,753	Apr. 29	2375	647	27	470
Carter, William, Highlandville, Mass. Foot-covering	296,314	Apr. 8	534	149	27	107
Carter, William T., Newark, N. J. Railway-tie	296,725	Apr. 15	1048	295	27	214
Carty, John J. (See Lytle and Carty.)						
Carver, J. Henry, Philadelphia, Pa. Car-step	299,959	June 10	575	154	27	1040
Carver, James M., assignor of one-half to J. W. Boynton, Grand Rapids, Mich. Condenser for steam and smoke	297,969	May 6	9	4	27	529
Caryl, Charles W., Philadelphia, Pa. Fire-extinguisher	300,948	June 24	1856	509	27	1286
Casaday, William L., assignor of one-half to South Bend Iron Works, South Bend, Ind. Sulky-plow	299,343	May 27	1730	496, 497, 498	27	879
Case, Francis M., Denver, Colo. Sash-fastener	297,228	Apr. 22	1692	460	27	335
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Feed-box for roller-mills	297,754	Apr. 29	2376	647	27	470
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Casing for roller-mills	297,755	Apr. 29	2377	647	27	470
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Grinding-mill	297,756	Apr. 29	2378	648	27	471
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Apparatus for manufacturing flour	297,757	Apr. 29	2380	648	27	471
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Atmospheric elevator for flour-bolts	297,758	Apr. 29	2382	649	27	471
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Gradual-reduction machine for milling	297,759	Apr. 29	2383	649, 650	27	472
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Gradual-reduction machine for manufacturing flour	297,760	Apr. 29	2385	650	27	472
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Grain reduction and separating machine	297,761	Apr. 29	2386	651	27	472
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Reducing grain to middlings and flour	297,762	Apr. 29	2388	651	27	472
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Disintegrating and separating machine	297,763	Apr. 29	2389	651, 652	27	473
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Feed-box for roller-mills	297,764	Apr. 29	2390	652	27	473
Case, John M., assignor to Case Manufacturing Company, Columbus, Ohio. Adjusting and leveling device for roller-mills	297,916	Apr. 29	2357	701	27	506
Case Manufacturing Company. (See Case, John M., assignor.)						
Case, Wesley, assignor to Coal Economizing Company, Topeka, Kans. Compound to prevent the fusion of cinder	298,727	May 20	966	.....	27	725
Case, William C., Limerick, N. Y. Bob-sleigh	299,402	May 27	1876	539, 540	27	905
Case, Willard E., Auburn, N. Y. Element for storage-batteries	298,348	May 13	512	.....	27	632
Casey, Jeremiah, New York, N. Y. Wood-polishing machine	300,844	June 24	1737	474	27	1263
Casey, William, Algiers, La. Gage-cock	297,569	Apr. 29	2138	583	27	425
Cashin, Joseph, Washington, D. C. Miter-box	297,970	May 6	10	4	27	529
Casperson, William P., Chicago, Ill. Lamp	296,522	Apr. 8	704	218, 219	27	157
Cass, George F., assignor to himself and H. White, Chicago, Ill. Heel-burnishing machine for boots and shoes	300,949	June 24	1857	509	27	1287
Cassel, Henry R., New York, N. Y. Process of and apparatus for the separation of metals from ores and alloys	300,950	June 24	1859	510	27	1287
Cassel, Henry R., New York, N. Y. Chloridizing ores by electrolysis	300,951	June 24	1860	.....	27	1287
Cassidy, Peter B., assignor to himself, T. Delaney, and G. F. Kierson, Pittsburg, Pa. Winding device for clocks	296,675	Apr. 8	986	276	27	197
Castell, James, Blue Rapids, Kans. Refrigerator	296,923	Apr. 15	1298	360, 361	27	279
Causey, Manual L., *et al.* (See Harkins, George C., assignor.)						
Cavanagh, George H., Boston, Mass. Pile-driver	299,344	May 27	1736	498	27	880
Cave, George G., Fenny Stratford, county of Bucks, England. False bottom for mash-tuns	298,172	May 6	266	68	27	576
Cavett, Samuel T., Evansville, Ind. Vehicle-axle	296,523	Apr. 8	795	219	27	158
Celluloid Manufacturing Company. (See Hyatt, John W., assignor.)						
Celluloid Manufacturing Company. (See Hyatt, John W., Jr., and I. S., assignors.) (Reissue.)						
Celluloid Manufacturing Company. (See Hyatt, Pool, Everding, Stevens, and Wood, assignors.)						
Celluloid Manufacturing Company. (See Hyatt, Stevens, and Wood, assignors.)						
Celluloid Manufacturing Company. (See Hyatt, Stevens, Wood, and Everding, assignors.)						
Celluloid Manufacturing Company. (See Hyatt, Wood, and Stevens, assignors.)						
Celluloid Manufacturing Company. (See Stevens, John H., assignor.)						
Celluloid Manufacturing Company. (See Wood and Stevens, assignors.)						
Center, Robert, New York, N. Y. Center-board well for vessels	300,570	June 17	1372	379	27	1193
Centner, Joseph P., Pittsburg, Pa. Car-brake	296,274	Apr. 1	478	133	27	90
Centner, Joseph P., Pittsburg, Pa. Sash-holder	300,307	June 10	1040	281	27	1121
Chadwick, Edward W., Edgartown, Mass. Ventilator for window-sashes	299,960	June 10	576	154	27	1040
Chadwick, Sager, assignor of one-half to E. V. Machette, Philadelphia, Pa. Telephone-transmitter	296,676	Apr. 8	987	277	27	197
Chafey, Winfield S., New Egypt, N. J. Bale-tie	296,524	Apr. 8	796	219	27	158
Chalfant, George A. (See Evans, John, assignor.)						
Challenge Letter File Company. (See Gilman, Willard H., assignor.)						
Challoner, John and J. W., Omro, Wis. Shingle-sawing machine	296,525	Apr. 8	797	219, 220	27	158
Challoner, John W. (See Challoner, John and J. W.)						
Chalmers, William, Detroit, Mich. Attachment for grindstones	300,845	June 24	1738	475	27	1264
Chamberlain, Harvey W., and F. G. Harris, Lockport, assignors of one-half to M. S. Greenebaum and M. A. Losem, Chicago, Ill. Vehicle running-gear	298,946	May 20	1235	350	27	775
Chamberlain, Rosseo. (See Austin and Chamberlain.)						
Chamberlain, Simeon E., Kansas City, Mo. End-gate for vehicles	299,907	June 3	499	132	27	1017
Chamberlin, Franklin L., Cleveland, Ohio. Cartridge-loading machine	295,980	Apr. 1	102	31, 32, 33	27	92
Chambers, Bering Quinlan Company. (See Rush, William B., assignor.)						
Chambers, Cyrus, Jr., Philadelphia, Pa. Engine-register	297,670	Apr. 29	2266	617	27	449

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Chambers, Cyrus, Jr., Philadelphia, Pa. Brick-machine	297,671	Apr. 29	2267	617	27	450
Chambers, Cyrus, Jr., Philadelphia, Pa. Apparatus for making clay railway-ballast	297,672	Apr. 29	2272	617	27	451
Chambers, Cyrus, Jr., Philadelphia, Pa. Machine for folding towels, napkins, &c.	297,673	Apr. 29	2273	618	27	451
Chambers, Cyrus, Jr., Philadelphia, Pa. Machine for folding towels, napkins, &c.	297,674	Apr. 29	2275	618	27	452
Chambers, Cyrus, Jr., Philadelphia, Pa. Cut-off regulating device for brick-machines	297,675	Apr. 29	2276	619	27	452
Chambers, Cyrus, Jr., Philadelphia, Pa. Clay tempering and expressing device for brick-machines	297,917	Apr. 29	2358	701, 702, 703	27	507
Chambers, David, assignor to W. C. Howard, New York, N. Y. Gas-regulator	299,620	June 3	153	38	27	948
Chambers, William J., Merchantville, N. J. Umbrella-tie	296,132	Apr. 1	286	81	27	56
Chamblin, Charles M., and T. Waltz, Newton, Ill. Burial-windlass	300,344	June 17	1096	298	27	1144
Chandler, Henry, Buffalo, N. Y. Elevator	296,315	Apr. 8	535	150	27	107
Chanler, Gabriel, Le Donjon, France. Brake-shoe	299,621	June 3	155	38	27	949
Chapel, A. Judson, Arkansas City, Kans. Car-coupling	297,765	Apr. 29	2291	632	27	473
Chapin, Henry A., New York, assignor to E. H. Brown, Brooklyn, N. Y. Pocket-book	299,908	June 3	500	132	27	1017
Chapin, Lebeus C., *et al.* (See Randall, Francis W., assignor.)						
Chapin, William G., Brooklyn, N. Y. Fluid-meter	299,737	June 3	314	80	27	980
Chapman, Herbert W., Newark, N. J. Bearer for transfer-presses	299,961	June 10	577	155	27	1040
Chapman, J. Wellington, *et al.* (See Abbott, John D., assignor.)						
Chapman, Luke, assignor to Collins Company, Collinsville, Conn. Manufacture of wrench-forgings	300,445	June 17	1222	334	27	1165
Chapman, Robert W., Newark, N. J. Manufacturing imitation-leather-covered bag-frames	300,763	June 24	1642	450	27	1246
Chappell, George H., Huron, Dak. Ter. Robe-holder for vehicles	298,173	May 6	267	67	27	576
Charles, Millard F. (See Joo, Morris, assignor.)						
Chase, Charles H., New Orleans, La. Folding staircase	296,526	Apr. 8	801	221	27	159
Chase, Herbert G., New York, N. Y. Eyeglass-holder	296,527	Apr. 8	802	221	27	159
Chase, Milo J., Richmond, Ind. Music-desk for pianos	296,726	Apr. 15	1018	295	27	214
Chase, Moses C., assignor of one-fourth to J. H. Stickman, Camp Point, Ill. Trace-buckle	300,215	June 10	917	247	27	1100
Chase, Warren A., Boston, Mass. Refrigerating apparatus	299,622	June 3	156	39	27	949
Chase, William L., Portland, Me. Apparatus for forming or molding articles from pulp	298,728	May 20	966	269, 270	27	725
Chase, William L., Portland, Me. Apparatus for molding articles from pulp	298,729	May 20	972	271	27	725
Chase, William L., Portland, Me. Machinery for forming or molding articles from pulp	298,730	May 20	975	271	27	726
Chase, William L., Portland, Me. Machinery for molding articles from pulp	298,731	May 20	977	272	27	726
Chase, William L., Portland, Me. Machinery for molding articles from pulp	296,677	Apr. 8	988	277	27	197
Chasley, George A., Washington, D. C. Billiard and pool table	299,345	May 27	1737	498	27	880
Chater, Joseph, Sectarampore, Burdwan, Bengal, India. Railway sleeper and chair combined	300,846	June 24	1739	475	27	1264
Chatfield, Orrin, Jr., Lockport, N. Y. Step-ladder	297,349	Apr. 22	1842	500, 501	27	364
Chatterton, William E., Troy, N. Y. Ticket-case	297,766	Apr. 29	2292	.....	27	473
Chemin, Jean C. O., Paris, France. Preparing ozocerite and other solid hydrocarbons	300,345	June 17	1097	278	27	1144
Cheney, Charles W., Athol, Mass. Lawn-mower	298,947	May 20	1237	350	27	775
Cheney, Foster H., Beaver City, Nebr. Draft-clevis	297,570	Apr. 29	2139	583	27	426
Chenieseau, Jean M. C., Bourg St. Andéol, France. Pattern for undergarments	296,924	Apr. 15	1299	361	27	280
Cherry, Robert N., Jersey City, N. J. Self-feeding ratchet-drill	299,346	May 27	1737	499, 500	27	880
Chess, Harvey B., Pittsburg, Pa. Tack-machine	300,571	June 17	1373	379	27	1194
Chess, Harvey B., Pittsburg, Pa. Nail-plate feeder	300,047	June 10	689	187	27	1060
Chewright, Charles, London, England. Capsule for bottles, &c	298,174	May 6	268	69	27	576
Chevalier, Louis, and L. Graillot, Paris, France. Holder for use in carving meat						
Chicago Attachment Company. (See Griest, John M., assignor.)						
Chidester, Frank H., Massillon, Ohio. Device for regulating heat in vulcanizers	300,952	June 24	1861	510	27	1287
Chidester, Frank H., Massillon, Ohio. Vulcanizing-heat regulator	300,953	June 24	1862	510	27	1287
Chidlaw, Edward D. (See Shaw and Chidlaw.)						
Chilcote, James M. (See Jones and Chilcote.)						
Chilcott, Amon W., Mattoon, Ill. Gate opening and closing apparatus	296,528	Apr. 8	803	221	27	159
Chintock, Charles, assignor to J. L. Hyde, New York, N. Y. Corkscrew	299,738	June 3	316	80	27	980
Chinnock, George H., Brooklyn, N. Y. Mechanical musical instrument	298,066	May 6	131	33, 34	27	552
Chisholm, Peter M., San Francisco, Cal. Saw-mill	300,216	June 10	918	247	27	1101
Chisholm, William R., assignor of one-half to A. L. McLane, Laredo, Tex. Irrigating apparatus	299,347	May 27	1740	500	27	881
Choate, Rufus, W. H. Rehrer, and A. H. Ragan, Washington, D. C. Eye-protector	296,388	Apr. 8	635	175	27	125
Christen, Fred. (See Wood and Christen.)						
Christopher, Charles H. (See McAlvay and Christopher.)						
Church, Charles E., Cleveland, Ohio. Drill-chuck	299,909	June 3	502	132	27	1017
Church, Duane H., Waltham, Mass. Making rotary cutters	299,348	May 27	1740	500	27	881
Church, Henry A., Providence, R. I. Bracelet	296,133	Apr. 1	287	82	27	56
Church, Henry A., Providence, R. I. Roller-chain	296,925	Apr. 15	1300	361	27	280
Church, Lonis J., assignor of one-half to W. H. Wylie, Washington, D. C. Sash-fastener	297,499	Apr. 22	2035	555	27	399
Church, Lonis J., assignor of one-half to W. H. Wylie, Washington, D. C. Sash-fastener	297,500	Apr. 22	2036	556	27	399
Cincinnati Target Ball and Trap Manufacturing Company. (See Woeber, Amos, assignor.)						
Clamond, Charles, Paris, France. Illuminating-burner	297,767	Apr. 29	2293	633	27	473
Clapp, George N., Seven Mile, assignor of one-half to P. R. Shepherd, Hamilton, Ohio. Apron-gearing	295,906	Apr. 1	17	5	27	6
Clapp, George W., Allemance, N. C. Bobbin-winder	298,554	May 13	742	209	27	675
Clapp, Julius M., *et al.* (See Rich, Perez C., assignor.)						
Clapp, William J., Nantyglo, and T. Griffiths, Blaenavon, county of Monmouth, England.	10,481	May 20	1426	406, 407	27	811
Clark, Albert J., Carbondale, assignor of one-half to J. D. Aylesworth, Scranton, Pa. Coffee-mill motor	297,065	Apr. 15	1466	405	27	290
Clark, Charles E., *et al.* (See Dalby, William H., assignor.)						
Clark, Edward B. (See Clark, William S. and E. B.)						
Clark, Edwin S., The Plains, Va. Car-coupling	299,201	May 27	1559	448	27	847
Clark, Francis. (See Gurney, Nathan G., assignor.)						
Clark, George B., Bozrahville, Conn. Wagon-jack	298,350	May 13	514	139	27	632
Clark, George W., Brooklyn, N. Y. Window-guard	299,519	June 3	18	6	27	924
Clark, George W., Brooklyn, assignor to H. Downes, New York, N. Y. Vent-faucet for bottles	298,948	May 20	1238	350	27	775
Clark, Harding, East Canton, Pa. Whiffletree	296,275	Apr. 1	479	133	27	90
Clark, Levi S., O. G. Franks, and G. T. Baughman, Doylestown, assignors to themselves and J. H. Warren, Lodi, Ohio. Two-wheeled vehicle	296,316	Apr. 8	536	150	27	107
Clark, Lloyd B., Springfield, Mass. Grinding-wheel for bark-mills	300,048	June 10	690	187, 188	27	1060

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Clark, Melville, Chicago, Ill. Reed-organ case	296,134	Apr. 1	288	82	27	56
Clark, Perry B., Minneapolis, Minn. Hot-air furnace	296,926	Apr. 15	1301	361	27	960
Clark, Robert, Brockville, Ontario, Canada. Dump-cart	300,572	June 17	1375	379, 380	27	1194
Clark, Rollin C., and M. H. Warren, Corry, Pa. Petroleum-still	298,825	May 20	1091	305	27	746
Clark, Walter C., Auburndale, Mass., assignor to Shaw Door Check and Spring Company, Portland, Me. Pneumatic door-check	296,727	Apr. 15	1049	295, 296	27	215
Clark, William H., Chicago, Ill. Cushioning device for shafts	299,113	May 27	1453	415	27	827
Clark, William H. and W. J., Salem, Ohio. Pump	301,045	June 24	1978	546	27	1309
Clark, William J. (See Clark, William H. and W. J.)						
Clark, William J., Birmingham, Conn. Thread-spool	299,739	June 3	317	91	27	980
Clark, William S. and E. B., Philadelphia, Pa. Automatic hot-water regulator	299,740	June 3	318	81	27	980
Clarke, Alfred. (See Perham and Clarke.)						
Clarke, Alfred, Lowell, Mass. Wood-rim pulley	298,792	May 20	981	272	27	727
Clarke, Charles L., Manchester, county of Lancaster, England, assignor to Domestic Electrical Manufacturing Company, Boston, Mass. Galvanic battery	298,175	May 6	908	69	27	577
Clarke, Donald A. (See Scott, George P., assignor.)						
Clarke, Erwin B., Grand Rapids, Mich. Carpet-sweeper	298,349	May 13	513	139	27	632
Clarke, Fisher M. (See St. John, John C., assignor.)						
Clarke, George. (See Moses, Frank, and J., assignors.)						
Clarke, Mortimer, Washington, D. C. Combined breast and skirt supporter and shoulder-brace	298,067	May 6	135	34	27	552
Clarke, Samuel, Childs Hill Works, county of Middlesex, England. Night-light	298,448	May 13	620	176	27	652
Clarke, Willard A., assignor to North Western Manufacturing and Car Company, Stillwater, Minn. Reversing-gear for engines	298,226	May 20	1092	306	27	747
Clarkson, Joseph T., Amesbury, assignor of one-half to F. A. Babcock, Salisbury, Mass. Jump-seat	300,847	June 24	1740	475	27	1264
Clarkson, Joseph T., Amesbury, assignor of one-half to F. A. Babcock, Salisbury, Mass. Shifting-pole for vehicles	300,848	June 24	1742	475	27	1264
Clay Commercial Telephone Company. (See Clay, Henry, assignor.)						
Clay, Henry, assignor to Clay Commercial Telephone Company, Philadelphia, Pa. Telephonic transmitter	298,286	May 6	423	113, 114	27	606
Claybourne, Colin W., Quincy, Ill. Sickle-grinder	298,176	May 6	909	69, 70	27	577
Clayton, George A. F., Masonville, Va. Saw-set	299,349	May 27	1741	501	27	881
Clayton, Henry, Dayton, Ohio. Pump-spout	300,573	June 17	1376	380	27	1194
Cleary, James K., Washington, D. C. Bank check and draft	298,177	May 6	271	70	27	577
Clemenger, Mathew B. (See Groves and Minich, assignors.)						
Clement, Edwin B., Marshalltown, Iowa. Sash-holder	300,954	June 24	1863	511	27	1298
Clements, Jesse W., *et al.* (See Hardin, Charles B., assignor.)						
Clements, John W., *et al.* (See Hardin, Charles B., assignor.)						
Cleveland Electric Motor Company. (See Stockwell, Levi W., assignor.)						
Cleveland, George H. (See Miller and Cleveland.)						
Clevenger, Thomas L. (See Holloway and Clevenger.)						
Clever, Peter J., Brunswick, Mo. Sewing-machine	296,529	Apr. 8	804	222	27	160
Clifton, Joseph E., Geneseo, Ill. Coal-chute	297,350	Apr. 22	1843	501	27	364
Cloppert, William H. H., Trotwood, Ohio, assignor of two-thirds to M. Wogaman and G. W. Gaines. Stone-hoister	300,217	June 10	920	248	27	1101
Clother, Jane A., Cumberland, Wis. Plaiter and puff-fluter	296,389	Apr. 8	635	175	27	126
Clothier, Clarkson and D. E. Crosby, Philadelphia, Pa. Salesman's check-book case	300,218	June 10	921	248	27	1101
Clough, Ira L., Williamsport, Pa. Rotary engine	299,350	May 27	1742	501	27	881
Cloughly, Alfred, executor. (See Cook, Truman A.)						
Clow, Henry A., Des Moines, Iowa. Cabinet for holding and adjusting bill-heads, &c	299,463	May 27	1877	540	27	905
Clow, William M., East Wheatland, Ill. Coupling for fence-wires	298,827	May 20	1094	306	27	747
Cluff, Anthony S., Cincinnati, Ohio. Compound for cleaning paint	299,351	May 27	1744	.....	27	882
Coal Economizing Company. (See Case, Wesley, assignor.)						
Coale, Joseph M., Baltimore, Md. Safety-valve and muffler	297,666	Apr. 15	1467	406	27	291
Coburn, John G., South Carthage, assignor of one-half to J. R. Kittredge, Carthage, Me. Device for thawing out sink-spouts	299,352	May 27	1744	502	27	882
Coburn, John G., South Carthage, assignor of one-half to J. R. Kittredge, Carthage, Me. Sink spout	300,574	June 17	1376	380	27	1194
Cochran, Albert M., assignor of one-half to P. N. Staff, Terre Haute, Ind. Buggy-top	300,575	June 17	1377	380	27	1194
Cochran, James, New Lots, and J. C. Milligan, Brooklyn, assignors to Lalance & Grosjean Manufacturing Company, New York, N. Y. Enameled iron wash-basin	298,287	May 6	425	114	27	607
Cochrane, William, Brooklyn, N. Y. Portable table for transferring flour from barrels into bags	300,219	June 10	922	248	27	1102
Cody, George W., Hartford, Conn. Cutting-board	297,351	Apr. 22	1846	501	27	364
Coe, Frederick W. (See Hoffnagle, Charles A., assignor.)						
Coe, James E. (See Holden and Coe.)						
Coe, John M., Sloan, Iowa. Hay-stacker	300,955	June 24	1864	511	27	1298
Coffin, Charles A., *et al.* (See Hawkins and Woodward, assignors.)						
Cogan, Phil F. (See Winfree, William A., assignor.)						
Coggeshall, Carol H. (See Morgan, Isaac, assignor.)						
Coggswell, Elliot, Monroeville, N. J. Fruit-can	295,907	Apr. 1	18	5	27	6
Cohen, Jacob, *et al.* (See Day, John R., assignor.)						
Cohen, Jacob, New York, N. Y. Shirt	300,220	June 10	923	249	27	1102
Cohn, Oscar J., New York, N. Y. Pin-tag	298,555	May 13	743	209	27	675
Cokayne, William, Geetingsville, Ind. Portable fence	300,221	June 10	924	249	27	1102
Colburn, Lyman S., Oberlin, Ohio. Car-brake	299,741	June 3	319	81	27	980
Colby Wringer Company. (See Jones, Jabez R., assignor.)						
Cole, Aaron W., *et al.* (See Pinckney, Chauncey M., assignor.)						
Cole, Cary O. (See Shiek and Cole.)						
Cole, E. Merritt. (See Smith and Cole.)						
Cole, Edward D., Macon, Ill. Hame-clip	296,530	Apr. 8	805	222	27	160
Cole, Edward L. (See Cole, John H. and E. L.)						
Cole, James W., *et al.* (See Bell, John E., assignor.)						
Cole, John. (See Slater, Warren G., assignor.)						
Cole, John A., Hyde Park, Ill. Submerged tunnel-inlet	300,576	June 17	1378	381	27	1194
Cole, John H. and E. L., Muscatine, Iowa. Gang wire-stretcher	297,501	Apr. 22	2037	556	27	400
Cole, Mary A., *et al.* (See Pinckney, Chauncey M., assignor.)						
Cole, Percy, Pipestone, Minn. Bag-holder	296,135	Apr. 1	288	82	27	57
Cole, Sherman M., Anamosa, Iowa. Measuring-pump	296,531	Apr. 8	805	222	27	160
Coleman, John L., Jr., Wattaborough, Va. Rotary peg-cutter	300,577	June 17	1380	381	27	1195
Coleman, Michael S., New York, N. Y. Dumping-boat	298,668	May 13	890	248	27	702
Coles, David H., New York, N. Y. Sewing-machine table	299,353	May 27	1745	502	27	882

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Collar, Allen P. (See Pugh, John W., assignor.)						
Collard, Richard M., New York, N. Y. Extension-case for pencils	300,693	June 17	1551	426	27	1226
Collard, Richard M., assignor to L. W. Fairchild, New York, N. Y. Case for pencils and similar implements	300,346	June 17	1098	298	27	1144
Callender, Hugh W., New York, N. Y. Pool-rack	296,136	Apr. 1	289	83	27	57
Callender, Hugh W., New York, N. Y. Pool-rack	296,137	Apr. 1	291	83	27	57
Callender, Hugh W., New York, N. Y. Pool-rack	296,532	Apr. 8	806	223	27	161
Collie, John W. (See Foster and Collie.)						
Collings Edward Z., Camden, N. J., and C. F. Pike, Philadelphia, Pa. Disinfecting sewers	297,229	Apr. 22	1693	460	27	335
Collins Company. (See Chapman, Luke, assignor.)						
Collins, Joseph W., Gloucester, Mass. Adjustable marine drag	300,764	June 24	1643	450	27	1246
Collins, Thomas W., assignor of one half to A. H. Smith & Co., New York, N. Y. Fastening diamonds in tools	299,055	May 20	1374	391	27	801
Collins, William, Perham, Minn. Bundle-carrier for grain-binders	298,449	May 13	623	176, 177	27	652
Colton, Arthur L., Milwaukee, Wis. Letter-file and cabinet	298,450	May 13	623	177, 178	27	652
Colton, Henry C., Montpelier, Vt. Harness-buckle	298,351	May 13	514	140	27	632
Columbus Machine Company. (See Ambos, Herman F., assignor.)						
Combs, John, assignor of one-half to C. A. Thomas, Rushville, Ohio. Wrench	299,962	June 10	578	155	27	1041
Comegys, Henry C., A. B. Holmes, and D. Boncher, Scranton, Pa. Car-coupling	299,023	June 3	157	39	27	949
Commercial Telegram Company. (See Field, Stephen D., assignor.)						
Company of Vulcan. (See Graham, Daniel M., assignor.)						
Compton, Jasper B., and E. J. Lane, Williams, Cal. Car-coupling	300,765	June 24	1644	450	27	1247
Comstock, Benjamin S., New York, N. Y. Steam-generator	300,446	June 17	1223	334	27	1165
Comstock, Francis M., assignor to F. T. Hughes, W. M. Irwin, C. S. Whitney, and F. M. Stafford Keokuk, Iowa. Brick-machine	296,276	Apr. 1	479	134	27	90
Conant, George, Marshfield, Mass. Device for preserving eggs	297,676	Apr. 29	2277	619	27	452
Conant, George P., Geneva Lake, Wis., assignor of one-half to A. E. Lytle and R. B. Smith, Chicago, Ill. Electric call-bell	296,729	Apr. 15	1053	297	27	215
Condo, Cornelius S. and E. A., Batavia, Ill. Horse-cleaning machine	298,352	May 13	515	140	27	632
Condo, Edwin A. (See Condo, Cornelius S. and E. A.)						
Condé, Swits, Oswego, N. Y. Shirt	298,178	May 6	272	70	27	577
Congdon, Isaac H., Omaha, Nebr. Oil-cup	296,399	Apr. 8	636	175	27	126
Conly, Mahlon S., assignor of two-thirds to T. H. Butler and O. R. Weaver, Indianapolis, Ind. Absorber for ammonia ice-making apparatus	297,502	Apr. 22	2038	556	27	400
Conly, Mahlon S., assignor of two-thirds to T. H. Butler and O. R. Weaver, Indianapolis, Ind. Retort for ammonia ice-making apparatus	298,669	May 13	892	248	27	703
Conn, Charles G., Elkhart, Ind. Cornet	295,981	Apr. 1	109	33	27	23
Connell & Dougler. (See Harps, Thomas, assignor.)						
Connelly, John S., Pittsburg, Pa. Gas-governor	297,113	Apr. 22	1539	425	27	308
Conner, Charles, Ashtabula, Ohio. Wire wrapping or covering machine	298,179	May 6	273	70	27	577
Conner, Edward P., Santa Rosa, Cal. Door-securer, &c	299,742	June 3	320	81	27	981
Conner, John, Jr., Cannonsburg, and H. A. Otto, Alleghony, Pa. Well-drilling machine	300,222	June 10	925	249	27	1102
Conner, W. K., *et al.* (See Hall, Theodore F., assignor.)						
Connett, Matthew F., Springfield, Ill. Check-row attachment for corn-planters	296,533	Apr. 8	808	223	27	161
Connolly, John. (See Dowling and Connolly.)						
Connolly, John F., *et al.* (See Jordan, Michael, assignor.)						
Connolly, Patrick, Brooklyn, N. Y. Water-closet	296,822	Apr. 15	1166	328	27	236
Connolly, William, South Norwalk, Conn. Drip-pan for sewing-machines	299,743	June 3	321	82	27	981
Connor, Joseph, Philadelphia, Pa. Pipe-coupling	296,678	Apr. 8	989	277	27	197
Consolidated Safety Valve Company. (See Richardson, George W., assignor.)						
Consolidated Telephone Company. (See Shaver, George F., assignor.)						
Continental Cash Car Company of Baltimore. (See Elliott, Gilbert R., assignor.)						
Converse, Edmund C. (See Manby, Charles E., assignor.)						
Converse, Marshll D., New York, N. Y. Nail-extractor	300,766	June 24	1645	450	27	1247
Conway, Frederick, Buffalo, N. Y. Trace-buckle	299,624	June 3	159	39	27	949
Conway, George M., Milwaukee, Wis. Valve-gear	298,828	May 20	1095	306	27	747
Conwell, James S., Evanston, Ill. Band lamp and torch support	295,982	Apr. 1	110	33	27	23
Cook, Abner S., Burlington, Iowa. Letter-box	298,733	May 20	982	273	27	727
Cook, Charles. (See Sawyers, Theodore K., assignor.)						
Cook, Christian, Baltimore, Md. Coal-bucket	298,180	May 6	274	21	27	578
Cook, Frank B., and F. F. Graves, Toledo, Ohio. Telephone	295,983	Apr. 1	111	33	27	23
Cook, George W. F. (See Price, Cook, and Price.)						
Cook, Hugo, Lima, Ohio. Cut-off governor	299,963	June 10	579	155	27	1041
Cook, John A., Buffalo, N. Y. Combined pencil-sharpener, eraser, &c	296,730	Apr. 15	1054	297	27	215
Cook, Josiah D., Toledo, Ohio. Cleaning reservoirs	299,744	June 3	322	82	27	981
Cook, Marcus E., Wallingford, Conn. Road-scraper	296,138	Apr. 1	293	84	27	57
Cook, Simeon S., Woonsocket, R. I. Machine for cutting meat and vegetables	299,910	June 3	503	133	27	1017
Cook, Truman A., deceased; A. Cloughly, Long Branch, N. J., executor. Submerged feathering paddle-wheel	296,728	Apr. 15	1051	296	27	215
Cooke, Allen, Danville Ill. Steam bell-ringer	296,139	Apr. 1	294	84, 85	27	57
Cooke & Eddy. (See Hagerty, John, assignor.)						
Cooke, Francis C., Whitehall, N. Y. Apparatus for measuring the lineal feet of work done by a wood-working machine	299,745	June 3	323	82	27	981
Cooke, James C., Orange, N. J. Guttar	295,984	Apr. 1	111	34	27	23
Cooke, Osborn R., Salem, Ohio. Sash-fastener	300,694	June 17	1552	426	27	1226
Coon, James H. (See Terrell, Pleasant A., assignor.)						
Coon, Roscoe, and D. D. Hahn, San Francisco, Cal. Car-coupling	301,046	June 24	1979	547	27	1309
Coons, Frederick W., St. Louis, Mo. Engraving marble and granite	300,049	June 10	691	.....	27	1060
Coons, Vincent H. (See Bacher, Ernest, assignor.)						
Cooper, Edward A., Buffalo, N. Y. Harness-pad tree	296,140	Apr. 1	295	85	27	58
Cooper, Edward A., assignor of one-fourth to F. Sibley, Buffalo, N. Y. Fastening device for wire fences	299,911	June 3	504	133	27	1018
Cooper, Edward F. (See Shaffer, Joseph, assignor.)						
Cooper, William H., assignor to M. Seward & Son, New Haven, Conn. Carriage-perch iron	296,534	Apr. 8	810	223	27	161
Cope, Ezra, Hamilton, Ohio. Printing by sunlight or other light, and apparatus therefor	296,391	Apr. 8	637	175	27	126
Copley, Edward, J. F. Seldomridge, and G. De La Vergne, Colorado Springs, Colo. Journal-bearing	296,823	Apr. 15	1168	328	27	236
Copp, Monroe M., Batavia, N. Y. Gynecological chair	299,920	June 3	20	6	27	924
Coppes, Frank. (See Coppes, John D., assignor.)						
Coppes, John D., assignor of one-half to F. Coppes, Nappanee, Ind. Skid-holder	299,746	June 3	324	82	27	981
Corain, John C., assignor to Dennis Cash Carrier Company, Lowell, Mass. Switch for cash-railways	300,223	June 10	927	250	27	1102

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Corbin Cabinet Lock Company. (See Gory, Emanuel G., assignor.)						
Corbin Cabinet Lock Company. (See Mix, Frank W., assignor.)						
Corbin, George W., Jamestown, Ind. Ironing-table	299,056	May 20	1375	392	27	801
Corbus, John. (See Ramsey, John W., assignor.)						
Cortleman & Egan Company. (See Thomas, John R., assignor.)						
Cordrey, Charles K., Bellefontaine, Ohio. Locomotive draw-bar lifter	299,114	May 27	1455	416	27	827
Core, Charles B. (See Thomas and Core.)						
Corey, Jasper W., assignor to Sigwalt Sewing Machine Company, Chicago, Ill. Needle-clamp for sewing-machines	300,050	June 10	692	188	27	1060
Corliss, George H., Providence, R. I. Cross-head	298,068	May 6	136	34	27	592
Cormack, George H., Rockford, Ill. Oatmeal-machine	297,503	Apr. 22	2009	557	27	400
Cornelius, Wilber F., Muncie, Ind. Mop and brush holder	297,067	Apr. 15	1468	406	27	291
Cornelius, Wilber F., Muncie, Ind. Scrubber	300,447	June 17	1224	334	27	1165
Cornely, Emile. (See Bertrand, Leon, assignor.)						
Cornett, Robert H., Emporia, Kans. Vehicle-spring	300,956	June 24	1865	511	27	1288
Corning, Frederick G., Brooklyn, N. Y. Endless-cable-traction railway	297,068	Apr. 15	1469	406	27	291
Cornish, Oscar S. (See Curtis, David W., assignor.)						
Cornwall, John B. (See Leas and Cornwall.)						
Corrigan, Matthew C., Hollyrood, Kans. Fire-escape	300,347	June 17	1099	299	27	1145
Corrugated Wire Fastening Company. (See Weeks, Horace, assignor.)						
Côté, Louis. (See Turner and Côté.)						
Cotiart, Jean P., Havana, Cuba. Furnace	297,768	Apr. 29	2395	{633 / 654}	{27}	474
Cottle, O. T., *et al.* (See Brown, Azariah R., assignor.)						
Cotton, Houston K., Mount Vernon, Ohio. Window-screen	297,230	Apr. 22	1694	460	27	336
Cottrell, Calvert B., Stonington, Conn. Electrotype and stereotype casting pan	296,277	Apr. 1	483	134	27	91
Cottrell, Calvert B., Stonington, Conn. Electrotype and stereotype casting-mold	296,278	Apr. 1	484	135	27	91
Cottrell, Herbert, Newark, N. J. Device for attaching telegraph-wires to posts and insulating them therefrom	297,677	Apr. 29	2279	619	27	452
Cottrell, Jesse D., Central Falls, R. I. Variable escapement	296,927	Apr. 15	1302	362	27	260
Coudrey, Anna M. (See Getchell, Ellen S., assignor.)						
Counselman, Lawrence W., *et al.* (See Baldwin, George E. D., assignor.)						
Court, Charles H. (See Haring and Court.)						
Court, Charles H. (See Kletzker and Court.)						
Court, Charles H., Jersey City, N. J., and A. J. Kletzker, New York, N. Y.; said Court assignor of one-half to said Kletzker. Fountain-pen	300,224	June 10	928	250	27	1103
Courtney, Thomas, Walthall, Miss. Pump	300,057	June 24	1866	511	27	1288
Couturier, Jacques, Lyons, France. Weather-strip	300,349	June 24	1743	476	27	1205
Covel, Milo, Chicago, Ill. Cotton ginning and cleaning apparatus	296,824	Apr. 15	1169	{328 / 329}	{27}	236
Covell, Harry N., Glenbrook, Conn. Device for laying out tennis-grounds	299,025	June 3	150	39, 40	27	949
Covell, William W., assignor to F. I. Marcy, Providence, R. I. Button	299,464	May 27	1878	540	27	905
Coventry, Arthur. (See Smith and Coventry.)						
Covert, James C., West Troy, N. Y. Snap-hook	297,352	Apr. 22	1846	502	27	365
Covert, James C., West Troy, N. Y. Harness-fitting	299,354	May 27	1746	503	27	882
Cowan, Lee F. (See Holden, William G., assignor.)						
Cowell, Edward R. E., Detroit, Mich., assignor of three-fourths to W. De Waggataff, Russia. Speed-indicator	296,679	Apr. 8	990	278	27	197
Cowen, Dale O., Batavia, Ohio. Cover for water-closet seats	296,141	Apr. 1	296	85	27	58
Cowley, William W., Cleveland, Ohio. Steam-boiler injector	296,731	Apr. 15	1055	{297 / 298}	{27}	216
Cox, Abner R. (See Taylor, Cox, Brown, and Sutherland.)						
Cox, Arthur, Toronto, Ontario, Canada. Combined envelope and letter-sheet	299,202	May 27	1560	448	27	847
Cox, Arthur W., Newark, N. J. Table-knife	298,829	May 20	1097	307	27	748
Cox, Joseph M., Richmond, Va. Drawers	298,181	May 6	275	71	27	578
Cox, Lewis S., Philadelphia, Pa. Seaming plush-back fabrics	298,288	May 6	426	114	27	607
Cox, William S. (See Topliff, Cross, Cox, and McCollum.)						
Coy, Frederick W., Boston, Mass. Abrading-machine	296,535	Apr. 8	811	224	27	161
Coy, Frederick W., Boston, Mass. Abrasive belt	299,747	June 3	325	83	27	981
Coye, Alva D. (See Kress, Samuel F., assignor.)						
Coyle, Thomas, Apponaug, R. I. Fence-picket machine	300,958	June 24	1866	512	27	1289
Craeraft, Richard, assignor to Berwick Agricultural Company, Berwick, Ill. Cultivator	299,626	June 3	160	40	27	950
Craft, Thomas J., Ellisville Depot, Miss. Cultivator	297,069	Apr. 15	1471	407	27	291
Cragin, Chauncey B., Ada, Minn. Nut-lock	297,678	Apr. 29	2280	620	27	453
Craig, James A. (See Jelinek, Anton, assignor.)						
Craig, James A., Philadelphia, Pa., assignor to himself and E. E. Burough, Merchantville, N. J. Pump-handle	299,748	June 3	326	83	27	982
Craig, Samuel, Holmesburg, Pa. Thill-coupling	299,912	June 3	505	{133 / 134}	{27}	1018
Craig, Warren H., Lawrence, Mass. Lubricating steam-engines	300,348	June 17	1100	299	27	1145
Craig, William R., Columbia, Tenn. Cultivating-harrow and scraper	296,732	Apr. 15	1057	298	27	216
Crampton, Charles B. (See Millard, Orson, assignor.)						
Crandall, Charles M., Montrose, Pa., assignor of two-thirds to F. W. Crandall and B. L. Baldwin. Toy savings-bank	298,830	May 20	1098	307	27	748
Crandall, Frederick W., *et al.* (See Crandall, Charles M., assignor.)						
Crandall, Jesse A., Brooklyn, N. Y. Alphabetical toy	298,290	May 6	428	115	27	607
Crandall, Jesse A., assignor to E. I. Horsman, Brooklyn, N. Y. Toy	296,536	Apr. 8	813	224	27	162
Crandall, Jesse A., assignor to himself and J. W. Seaman, Brooklyn, N. Y. Toy	298,289	May 6	427	114	27	607
Crandall, Jesse A., assignor to himself, J. Wood, and W. H. Flandrow, Brooklyn, N. Y. Fire-escape	300,308	June 10	1041	{281 / 282}	{27}	1123
Crandell, Lewis H., *et al.*, executors. (See Bramer, Frank.)						
Crandell, William C., Jr., Philadelphia, Pa. Shaft-coupling	298,009	May 6	137	35	27	553
Crane Brothers Manufacturing Company. (See Wayman, William O., assignor.)						
Crane, James A., assignor of one-half to R. B. Crane, Westfield, Mass. Paper back for book-covers	299,013	June 3	506	134	27	1018
Crane, James A., assignor of one-half to R. B. Crane, Westfield, Mass. Book-cover	299,014	June 3	507	134	27	1018
Crane, Richard T., Chicago, Ill. Ceiling-plate	299,303	May 27	1561	448	27	847
Crane, Robert B. (See Crane, James A., assignor.)						
Crane, Zenas M., Dalton, Mass. Manufacture of paper	296,928	Apr. 15	1303	.....	27	260
Cranston, John H., Norwich, Conn. Registering device for printing-presses	300,225	June 10	929	{250 / 251}	{27}	1103
Crary, Cushman W., Chicago, Ill. Chuck	299,964	June 10	580	{155 / 156}	{27}	1041
Craven, John J., Patchogue, N. Y. Refrigerating apparatus for chambers and buildings	300,695	June 17	1553	426	27	1226

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Crawford, Alexander, Duluth, Minn. Smoke-consuming furnace	299,965	June 10	582	156	27	1041
Crawford, James G. (See Poland, Edward F., assignor.)						
Crawshaw, Frank A., Willshire, Ohio. Drag-saw	297,231	Apr. 22	1695	461	27	336
Crocker, Samuel and S., Columbus Junction, Iowa. Car-coupling	295,985	Apr. 1	113	34	27	24
Crocker, Stephen. (See Crocker, Samuel and S.)						
Cronin, John H., Camden, N. J., assignor to M. A. and C. A. Furbush, Philadelphia, Pa. Belt-gearing for machinery	298,291	May 6	428	115	27	607
Crompton, George, and H. Wyman, Worcester, Mass. Weft-stop motion for looms	299,966	June 10	583	156	27	1041
Crooke, Henry S. and L., New York, N. Y. Manufacture of ornamental metallic foil	295,986	Apr. 1	115	34	27	24
Crooke, Lewis. (See Crooke, Henry S. and L.)						
Crosby, Almon E. (See Crosby, Lysander and A. E.)						
Crosby, Darwin E. (See Clothier and Crosby.)						
Crosby, Eunice L., Plymouth, Wis. Cloth measuring and cutting machine	298,670	May 13	893	249	27	703
Crosby, George H., Somerville, Mass. Trap for steam-pressure gages	297,504	Apr. 22	2041	557	27	400
Crosby, Joseph R., Boston, assignor, by mesne assignments, to G. McKay and J. W. Brooks, trustees, Cambridge, Mass. Nailing or pegging machine. (Reissue)	10,482	May 27	1919	553	27	914
Crosby, Lysander and A. E., Albia, Iowa. Artificial leg	299,405	May 27	1879	540	27	905
Crosgrove, James, Pittsburg, Pa. Straightening, bending, and punching machine	296,279	Apr. 1	485	{135 / 136}	{27}	91
Cross, Alonzo T. (See Wales, Walter H., assignor.)						
Cross, Alonzo T., Providence, R. I. Crayon-holder	296,537	Apr. 8	814	225	27	162
Cross, Alonzo T., Providence, R. I. Crayon-holder	296,538	Apr. 8	815	225	27	162
Cross, Alonzo T., Providence, R. I. Crayon-holder	296,539	Apr. 8	817	225	27	163
Cross, Andrew J., Chester, Pa. Spectacles	300,696	June 17	1555	427	27	1227
Cross, Edward S. (See Topliff, Cross, Cox, and McCollum.)						
Cross, Frank W., Lynn, Mass. Button-hole sewing-machine. (Reissue)	10,465	Apr. 8	1031	{289 / 290}	{27}	206
Cross, Frank W., Lynn, Mass. Button-hole sewing-machine. (Reissue)	10,466	Apr. 8	1034	{290 / 291}	{27}	206
Cross, James W. (See Hart and Cross.)						
Crouch, George, New York, N. Y. Hasp-lock	295,987	Apr. 1	116	34	27	24
Crouch, George, New York, N. Y., and H. Ahrend, Newark, N. J., assignors to said Crouch. Trunk-lock	300,850	June 24	1744	476	27	1205
Crowell, Chauncy L., Peoria, Ill. Holdback-hook	298,070	May 6	139	35	27	553
Crowell, David, Jr., Yarmouth Port, assignor to A. F. Edson, Barnstable, and F. C. Swift, Yarmouth, Mass., trustees. Sail hank and hook	300,226	June 10	930	251	27	1103
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Web-printing machine	298,192	May 6	275	71, 72	27	578
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Sheet-delivery apparatus	299,115	May 27	1456	416	27	827
Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Delivery mechanism for web-printing presses	301,047	June 24	1980	{547 / 548}	{27}	1309
Crowell Manufacturing Company. (See Larzelere, Henry B., assignor.)						
Crowley, Daniel, Boston, Mass. Velocipede	296,680	Apr. 8	991	278	27	197
Crowley, George G., Little Falls, N. Y. Disk-harrow	299,057	May 20	1375	392	27	801
Crowley, George G., Little Falls, N. Y. Disk-harrow	300,697	June 17	1556	427	27	1227
Croxton, Ambrose S., deceased, Cedar Springs, Mich.; O. A. Croxton, administratrix. Stump extractor	296,929	Apr. 15	1304	362	27	260
Croxton, Olive A., administratrix. (See Croxton, Ambrose S.)						
Crozier, William, Goodwin, Dak. Ter. Draft-equalizer	296,930	Apr. 15	1306	362	27	260
Cruikshank, William Y., Danville, Pa. Burglar-alarm for safes	300,309	June 10	1043	282	27	1123
Cruikshank, William Y., Danville, Pa. Burglar-alarm for safes	300,310	June 10	1044	282	27	1124
Crump, John, and R. Brereton, Philadelphia, Pa. Rotary quarrier and stone-shaper	298,333	May 13	517	140	27	632
Cruzan, Isaac, Willow Springs, Kans. Wagon end-gate	298,831	May 20	1099	307	27	748
Culbertson, William, Indianapolis, Ind. Valve-gear for reversing engines	300,349	June 17	1102	299	27	1145
Culien, Bentley S., Mankato, Minn. Machine for drying grain	299,204	May 27	1562	449	27	848
Culp, Samuel T., Toronto, and T. Ticknor, Arkono, Ontario, Canada; said Ticknor assignor to said Culp. Revolving show-stand	299,466	May 27	1880	541	27	906
Culver, Frank E., Mecklenburg, N. Y. Hand corn and seed planter	296,733	Apr. 15	1058	298	27	216
Cumings, De Witt C., Carthage, N. Y. Counter-shaft	299,915	June 3	508	135	27	1018
Cumming, John F., Boston, Mass. Rowlock	299,521	June 3	21	7	27	924
Cunningham, John H., Etna, assignor to himself and W. M. Flahaven, Allegheny, Pa. Shoe-calk sharpener	296,392	Apr. 8	638	176	27	126
Cunningham, William, Watsontown, Pa. Boiler-feeder	297,572	Apr. 29	2140	584	27	426
Copp, Peter B., Van Wert, Ohio. Combined platform-rocker and reclining-chair	296,931	Apr. 15	1307	362	27	261
Curd, John J., Rockfield, Ky. Churn	297,918	Apr 29	2263	703	27	507
Curley, Terence F., Brooklyn, N. Y. Show-case	298,183	May 6	278	72	27	572
Curley, Thomas, Troy, N. Y. Corkscrew	297,232	Apr. 22	1696	461	27	336
Curry, Burwell J., Huntsville, Ala. Cultivator	299,027	June 3	162	41	27	950
Curry, William. (See Averell, John D., assignor.)						
Curtice, Jesse M. and W. H., Louisville, Ky. Churn	296,932	Apr. 15	1307	363	27	261
Curtice, William H. (See Curtice, Jesse M. and W. H.)						
Curtis, Charles R. S., Quincy, Ill. Fire-escape	298,292	May 6	429	{115 / 116}	{27}	608
Curtis, David W., assignor of one-half to O. S. Cornish, Fort Atkinson, Wis. Churn	297,233	Apr. 22	1697	461	27	336
Curtis, John D., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Barb-fence machine	297,679	Apr. 29	2281	{620 / 621}	{27}	453
Curtis, Norman E., Manston, Wis. Bench-plane	296,933	Apr. 15	1309	363	27	261
Cushing, Alvin M. (See Wells, Charles S., assignor.)						
Cushman, Charles H. (See Lothrop, Alson A., assignor.)						
Cussons, John, Glen Allen, Va. Calendar	296,934	Apr. 15	1310	{363 / 364}	{27}	261
Cuthbert, Andrew, Pittsburg, Pa. Regenerative furnace	301,048	June 24	1981	548	27	1309
Dabney, John H. (See Jeter, Edmond W., assignor.)						
Dahl, Carl F., Dantzic, Prussia, Germany. Manufacturing cellulose from wood, &c.	296,935	Apr. 15	1311	.....	27	261
Dahmer, John, New Orleans, La. Boiler	300,578	June 17	1381	391	27	1195
Dalby, William H., assignor of three-fourths to A. Medsker and C. E. Clark, Indianapolis, Ind. Saw-guard	298,293	May 6	431	116	27	608
Dalzell, James, Pittsburg, Pa. Glass-furnace	297,114	Apr. 22	1541	425	27	308
Dame, Charles S. (See Horning, Robert A., assignor.)						
Dancel, Christian, New York, N. Y. Clutch	300,959	June 24	1868	512	27	1289
Dancer, John B., Orange, N. J. Horse-tooth cutter	298,556	May 13	743	210	27	676
Dane, Joseph C. (See Card and Dane.)						
Danenhauer, Peter. (See Hinden, Mathias J., assignor.)						
Daniels, Fred H., Worcester, Mass. Construction of continuous rolling-mills	297,680	Apr. 29	2284	{621 / 622}	{27}	453

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Daniels, Henry A., Yonkers, N. Y. Manufacture of artificial stone and marble	297,971	May 6	11	....	27	929
Dannhauser, Louis, New York, N. Y. Under-garment	298,832	May 20	1100	307	27	748
Dantzler, Daniel D., Chester, S. C. Horse-detacher	296,142	Apr. 1	297	85	27	58
Dark, Thomas, Buffalo N. Y. Plumber's trap	295,908	Apr. 1	19	5	27	6
Darr, Isaac N., *et al.* (See Dean, Orange A., assignor.)	298,833	May 20	1100	308	27	748
Darrah, William J., Fayetteville, Mo. Frame for stacking						
Dauber, William. (See Ritz, John, assignor.)	298,834	May 20	1101	308	27	748
Davenport, Frank W., Providence, R. I. Draftman's adjustable curve-ruler						
Davenport, Frederick. (See Ward, John, assignor.)	300,851	June 24	1745	476	27	1265
Davenport, William H., Providence, R. I. Breech-loading fire-arm	300,852	June 24	1746	476	27	1265
Davidson, Arnold, Brooklyn, N. Y. Interest-calculator	297,573	Apr. 29	2142	{584 585	27	426
Davies, John R., Whitewater, Wis. Molding apparatus for castings	300,853	June 24	1747	477	27	1266
Davies, Thomas A., New York, N. Y. Hand-power vehicle	296,936	Apr. 15	1312	364	27	991
Davies, Thomas A., New York, N. Y. Hand-power vehicle	296,937	Apr. 15	1314	364	27	992
Davies, Thomas J., assignor of one-half to D. Thomas, Newark, Ohio. Wagon-brake lever	296,143	Apr. 1	298	86	27	58
Davis, Albert, assignor to Mason Road Cart Company, Mason, Mich. Two-wheeled vehicle	300,051	June 10	692	188	27	1061
Davis, Augustus G., Baltimore, Md. Secondary battery	300,052	June 10	693	188	27	1061
Davis, Benjamin B., assignor of one-half to T. B Davis, Williamstown, Pa. Hand rock and coal boring machine	301,049	June 24	1980	548	27	1340
Davis, David J., Newark, Ohio. Bran packer	299,749	June 3	327	83	27	982
Davis, Edward P., *et al.* (See Heckmann, Louis, assignor.)						
Davis & Furbur Machine Company. (See Turnbull, William F., assignor.)						
Davis, George W., assignor of one-half to E. H. Noble, New Bedford, Mass. Lathe-chuck	297,070	Apr. 15	1472	407	27	992
Davis, Horace B., Lexington, Mass. Horse-blind	296,144	Apr. 1	299	86	27	58
Davis, Joseph, *et al.* (See Hawkins and Woodward, assignors.)						
Davis, Leonard L., Springfield, Mass. Spirit-level	297,574	Apr. 29	2145	585	27	427
Davis, Lewis H., West Chester, Pa., assignor to Wilmington Malleable Iron Company, Wilmington, Del. Nut-lock	297,681	Apr. 29	2287	{622 623	27	434
Davis, Oscar F., Topeka, Kans. Fire-escape	299,967	June 10	584	157	27	1042
Davis, Rees O., Milan, Mo. Hay-ricking device	297,234	Apr. 22	1699	461	27	336
Davis, Samuel E., assignor of one-half to E. A. Boaz, Joliet, Ill. Fire-escape ladder	296,145	Apr. 1	300	86	27	58
Davis, Spencer L., assignor of one-half to H. Tucker, Minneapolis, Minn. Card holder and exhibitor	298,354	May 13	518	141	27	633
Davis, Thomas B. (See Davis, Benjamin B., assignor.)						
Davis, Wilbur G., Syracuse, N. Y. Pneumatic tube	297,505	Apr. 22	2042	557	27	400
Davis, William H., Springfield, Ill. Insulator for electric conductors	296,146	Apr. 1	301	87	27	59
Davis, Zebulon, Canton, Ohio. Vapor-burner	296,147	Apr. 1	302	87	27	59
Dawe, Godfrey, Eau Claire, Wis. Keying wheels, pulleys &c., to shafting	296,317	Apr. 8	538	150	27	108
Dawson, Frank, and J. Holleyhead, Williamsport, Pa. Car-starter	300,698	June 17	1358	424	27	1237
Dawson, George A., Cardington, Ohio. Grain-scourer	297,353	Apr. 22	1847	502	27	365
Dawson, James W., Rushville, Ind. Clinch	299,205	May 27	1563	449	27	848
Day, Charles T., assignor of one-half to T. J. Gray, Newark, N. J. Derrick	298,184	May 6	279	72	27	578
Day, Charles W. H., Attleborough, Mass. Machine for coiling wire	300,960	June 24	1869	512	27	1289
Day, Henry L., Minneapolis, Minn. Ventilating-flue cap	297,072	May 6	12	4	27	529
Day, John, Brooklyn, N. Y. Curtain-pin. (Reissue)	10,464	Apr. 1	522	145	27	98
Day, John Q., Red Cliff, Colo. Snow-plow	299,750	June 3	328	83	27	982
Day, John R., assignor of three-fourths to J. Cohen and F. W. Hofele, New York, N. Y. Tower-pine attachment for trucks	297,919	Apr. 29	2564	703	27	508
Daykin, Albert G., Cleveland, Ohio. Hydrant and street-washer	298,375	May 13	519	141	27	633
Dayton, Frank, Portland, Oreg. Game-counter	298,635	May 20	1102	308	27	749
De Armon, Thomas, Dayton, Ohio. Press for oil-cakes	299,522	June 3	22	7	27	925
De Blanc, Gustave S., New Orleans, La. Street-car fare-box	299,207	May 27	1565	450	27	848
De Chasseloup-Laubat, Henri, Périgneux, France. Composition for destroying the grape oidium	297,354	Apr. 22	1848	....	27	365
De Foy, Frank R., assignor to himself and C. H. Stackpole, Dannemora, N. Y. Game-table	296,280	Apr. 1	486	136	27	92
De Gaetano, Stephen, New York, N. Y. Ball-rack for pool-tables	300,927	June 10	931	251	27	1161
De Golyer & Bro. (See Rowell, John, assignor.)						
De Graff, Isaac, Detroit, Mich. Engine	297,506	Apr. 22	2043	558	27	401
De Graff, Isaac, Detroit, Mich. Slide-valve	297,682	Apr. 29	2288	623	27	434
De Groat, Zachariah. (See Bates, Henry C., assignor.)						
De Julio, Angelo, New York, N. Y. Combined perambulator for teaching children to walk and automatic seat therefor	299,058	May 20	1377	392	27	891
De La Vergne, George. (See Copley, Seldomridge, and De La Vergne.)						
De Mézerville, Camille, Santa Clara, Cal. Earth-boring auger	300,053	June 10	694	189	27	1061
De Pew, Henry H., Maquoketa, Iowa. Convertible chair	300,238	June 10	932	{231 232	27	1103
De Planque, Louis A., Jersey City, N. J. Plaque and panel	299,751	June 3	329	84	27	982
De Planta, Jacques. (See Philipp, Ferdinand, assignor.)						
De Silva, Dwight M., Corning, N. Y. Wrench	296,540	Apr. 8	818	226	27	161
De Valin, William H., San Rafael, Cal. Brick-kiln	300,054	June 10	695	189	27	1061
De Vries, Anthony S. (See Smith, Henry C., assignor.)						
De Waggstaff, William. (See Cowell, Edward R. E., assignor.)						
De Witt, James M., Grand Junction, Colo. Car-check for preventing cars on side tracks from being blown therefrom	300,448	June 17	1225	335	27	1196
Dean, Orange A., assignor of two-thirds to I. N. Darr and T. W. Brian, Parkville, Ill. Machine for making reins	299,116	May 27	1458	417	27	828
Dearborn, Charles A. (See Muther and Dearborn.)						
Dearing, Anson C., Detroit, Mich. Lubricator	298,836	May 20	1103	309	27	749
Deava, Charles, assignor to Archer & Pancoast Manufacturing Company, New York, N. Y. Insulating pipe-union	299,206	May 27	1564	449	27	848
Decher, Adolf, Munich, Germany. Rotary engine	297,575	Apr. 29	2146	585	27	427
Deckebach, Henry E., Cincinnati, Ohio. Apparatus for cooling beer	298,074	May 6	139	35	27	553
Decker, Alexander C., Bushnell, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass. Barb-fence	299,916	June 3	509	135	27	1012
Decker, George W., Canandaigua, N. Y. Clothes-drier	299,523	June 3	23	7	27	925
Decker, William P. B., Franklin Grove, Ill. Tile-drain ditching-machine	295,909	Apr. 1	19	5	27	7
Deeley, John. (See Anson and Deeley.)						
Deere & Company. (See Moore, Gilpin, assignor.)						
Deere & Manaur Company. (See Atkinson and Phelps, assignors.)						
Deering, Leander L. (See Older and Deering.)						
Deering, William. (See Maske, Robert W., assignor.)						
Dees, Lemuel C., Lake Charles, La. Dumping-wagon	296,938	Apr. 15	1315	365	27	262

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Delmel, Gustave, Hancock, Mich. Lock for mail-pouches	298,451	May 13	625	178	27	653
Dels, Charles, Buffalo, N. Y. Egg and sugar beater	297,115	Apr. 22	1542	426	27	309
Dels, Philip H., Canal Dover, Ohio. Spittoon	299,355	May 27	1747	503	27	882
Delaney, Matthew, New York, N. Y. Billiard-cushion	295,910	Apr. 1	20	6	27	7
Delaney, Thomas, *et al.* (See Cassidy, Peter B., assignor.)						
Delmage, William A., Lowell, Mass. Apparatus for collecting and removing waste from spinning-machines	296,142	Apr. 1	304	87	27	59
Demarest, John, assignor to J. L. Mott Iron Works, New York, N. Y. Cistern for water-closets	298,452	May 13	626	178	27	653
Demarest, Philip, New York, N. Y. Tor	297,355	Apr. 22	1849	502	27	365
Dènme, Marie, Mühlhausen, Germany. Thimble						
Demogeot, Jules, Dunkirk, assignor to Société L. Demonvilliers et Fils, Paris, France. Machine for making or preparing molds for casting metals	299,949	May 20	1240	351	27	776
Demuth, Vincent, Brooklyn, N. Y. Perfumery-stand	2 7,235	Apr. 22	1699	462	27	337
Denérhand, Jeanty, Sr., San Francisco, Cal. Laying and securing rails in road-beds of railways	299,208	May 27	1565	450	27	849
Dengg, Carl. (See Gwinner, Kautsky, Dengg, and Roth.)						
Dennis Cash Carrier Company. (See Coram, John C., assignor.)						
Dennis, Frank, *et al.* (See Rowlett, Joseph F., assignor.)						
Dennis, Frank C., assignor of one-half to S. M. Merrill, New York, N. Y. Parasol	296,318	Apr. 8	539	151	27	108
Dennis, Thomas J. (See Grabert and Dennis.)						
Denton, Ansel R., St. Louis, Mo. Filter	296,939	Apr. 15	1316	365	27	262
Denton, James, Amsterdam, N. Y. Carpet-fastener	299,356	May 27	1748	503	27	883
Denyer, James, New Haven, Conn., assignor of one-half to W. H. Paulding, Peekskill, N. Y. Curtain-shade fixture	300,311	June 10	1045	283	27	1124
Depue, Michael H., Homer, Ill. Feathering paddle-wheel	299,752	June 3	330	84	27	983
Derby, George M., Astoria, N. Y. Rock-drill	296,681	Apr. 8	994	278	27	198
Dernell, Herman F., Athens, N. Y. Ice-plow	297,236	Apr. 22	1700	462	27	337
Desmond, John, assignor to J. Carey and C. Rutson, Jackson, Mich. Steam-emptying ash-pan	297,507	Apr. 22	2044	558	27	401
Dessauer, David, Martinsville, Ind. Billiard-cue tip	297,508	Apr. 22	2045	558	27	401
Detert, Herman T., Faribault, Minn. Horse-collar	300,229	June 10	934	252	27	1104
Detroit Iron Tower Company. (See Adams, John S., assignor.)						
Devine, James L., assignor of one-half to T. Lynch, Plymouth Meeting, Pa. Axle for vehicles	297,973	May 6	13	4	27	530
Dexter, John M., Elmira, N. Y. Sole or heel plate for boots and shoes	300,854	June 24	1749	477	27	1266
Dial, Wilbur F. (See Dimond and Dial.)						
Diamond Match Company. (See Flewwelling and Harris, assignors.) (Reissue.)						
Dick, Robert, Buffalo, N. Y. Mailing-machine	297,116	Apr. 22	1543	426	27	309
Dickerman, George H., Somerville, Mass. Machine for cutting straw-board for paper boxes	297,576	Apr. 29	2147	{585 586 587	27	427
Dickert, Ferdinand, Salt Lake City, Utah Ter. Apparatus for reducing sulphur	298,734	May 20	993	273	27	727
Dickey, Aaron F., Somerset, Pa. Cartridge-shell	300,449	June 17	1225	335	27	1166
Dickey, Adam, Cincinnati, Ohio. Mixing-machine for drugs and chemicals	299,209	May 27	1567	450	27	849
Dickie, James. (See Spreuckler, Christian G., assignor.)						
Dickie, William, Gillespie, Ill. Tag-holder	299,733	June 3	331	84	27	983
Dickinson, Henry S., Jersey City, N. J. Chimney-cap	299,628	June 3	163	41	27	950
Dickinson, Thomas, *et al.* (See Richards, Hezekiah H., assignor.)						
Didont, Hippolyte, Fils, Paris, France. Frame for pocket-books, &c.	296,940	Apr. 15	1317	365	27	262
Diebel, William, Philadelphia, Pa. Belt-shifting device	300,579	June 17	1382	381	27	1195
Diehl, Philip. (See Miller and Diehl.)						
Diehl, Philip, Elizabeth, N. J. Construction of electric machines	299,117	May 27	1459	417	27	828
Dieuer, Charles, New York, N. Y. Tor	296,041	Apr. 15	1318	365	27	262
Dietrich, Jacob, Brushland, N. Y. Vehicle-wheel	300,230	June 10	935	252	27	1104
Dietrich, Jerome C., Galt, Ontario, Canada. Thill-coupling	297,356	Apr. 22	1849	502	27	365
Dietz, Robert E., *et al.* (See Betts, Lewis F., assignor.)						
Dike, Albert E. (See Byron, Ulderic D., assignor.)						
Dillon, John A. (See Folsome, Charles F., assignor.)						
Dillon, Millard F., Gillespie, Ill. Nut-lock	298,950	May 20	1242	351	27	776
Dimon, Frank S., assignor of one-half to G. H. Phinney, B. F. Hepler, and J. D. Hill, Fort Scott, Kans. Car-coupling	300,312	June 10	1046	283	27	1124
Dimond, Charles H. (See House and Dimond.)						
Dimond, George H., and W. F. Dial, assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Tension mechanism for sewing-machines	298,185	May 6	281	72, 73	27	579
Dingman, Wallace, Battle Creek, Mich. Harvester	297,357	Apr. 22	1850	503	27	365
Dinkel, George. (See Niese and Dinkel.)						
Dinkle, Charles P., Carlisle, Pa. Fertilizer pulverizer and distributer	298,186	May 6	282	73	27	579
Dinning, Enoch C. (See Montegue, Booker, and Dinning.)						
Dinse, William F., New Haven, Conn. Whip-socket	298,356	May 13	520	141	27	633
Dinsmore, Samuel. (See Anderton, Frederick C., assignor.)						
Diolot, Saintenne, New York, N. Y. Clock	298,557	May 13	744	210	27	676
Dion, Peter. (See Mignault and Dion.)						
Dishman, Alonzo. (See Hicks and Dishman.)						
Disston, Hamilton, *et al.* (See Smith, John, assignor.)						
Disston, Horace C., *et al.* (See Smith, John, assignor.)						
Disston, Jacob S., *et al.* (See Smith, John, assignor.)						
Disston, William, *et al.* (See Smith, John, assignor.)	299,357	May 27	1749	503	27	883
Dittenhoefer, Myer, New York, N. Y. Tobacco-pipe	295,911	Apr. 1	21	6	27	7
Ditzler, George C., Union, Ind. Nut-lock						
Dixon, Brandt V. B., assignor one-half to A. F. Hoffer and J. H. Lawrence, St. Louis, Mo. Child's carriage	296,140	Apr. 1	305	88	27	59
Dixon, Henry M., New York, N. Y. Bobbin-winder for sewing-machines	298,558	May 13	745	210	27	676
Dixon, Theron S. E., Chicago, Ill. Hasp-lock	295,912	Apr. 1	21	6	27	7
Doane, James C., Western, Nebr. Cultivator	300,035	June 10	697	189	27	1062
Dobbin, William M. (See Walker, Robert O., assignor.)						
Dobbs, Charles J., Middlesbrough, county of York, England. Manufacture of paving-blocks from furnace-slag, &c	300,580	June 17	1383	382	27	1195
Dobson, William J. M., New York, N. Y. Elevator	298,187	May 6	283	73	27	579
Dodd, James F., Delaware, Ohio, assignor to O. F. Presbrey and F. M. Green, Washington, D. C. Envelope	299,358	May 27	1750	504	27	883
Dodge, Isaac F. (See Peasley and Dodge.)						
Dodge, J. Wesley. (See Gordon, William, assignor.)						
Dodge, J. Wesley. (See Gordon and Dodge.)						
Dodge, J. Wesley, Malden, assignor of one-half to W. Gordon, Boston, Mass. Mechanical movement	298,671	May 13	896	240	27	703

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dodge, James M., Indianapolis, Ind. Screw-cutting die	296,393	Apr. 8	639	176	27	126
Dodge, James N., assignor of one-half to S. J. Gordon, Springfield, Mass. Inhaler	297,709	Apr. 29	2396	654	27	474
Dodge, Thomas H., Worcester, Mass. Lightning-conductor	298,357	May 13	521	141	27	633
Dodge, Thomas H., Worcester, Mass. Wire-barbing machine	299,524	June 3	24	7, 8	27	925
Dodge, Wallace H., Mishawaka, Ind. Coruice	296,734	Apr. 15	1058	298	27	216
Dodge, Wallace H., Mishawaka, Ind. Button-fastener	296,735	Apr. 15	1060	299	27	217
Dodge, Willis, assignor of one-half to G. M. Luce, Presque Isle, Me. Potato-digger	296,541	Apr. 8	819	226	27	163
Dodson, Darien W., Town Line, Pa. Type-writing machine	299,754	June 3	331	85	27	983
Dodson, Roy, Central, Mo. Nut-lock	299,755	June 3	335	85	27	984
Doerr, John H., assignor of one-fifth to W. H. Wigmore, Philadelphia, Pa. Sleeping-car	298,961	May 20	1243	352	27	776
Dohen, John E., Charleston, S. C. Window-sash holder	299,525	June 3	28	8	27	926
Dohis, Prosper A., Paris, France. Apparatus for transmitting power	298,672	May 13	896	249	27	704
Dolan, John C., Houtzdale, Pa. Device for coupling cars with cables	298,673	May 13	897	250	27	704
Doll, Arnold, Jr. (See Smith and Doll.)						
Dollinger, John S., Covington, Ohio. Ice-tongs	297,237	Apr. 22	1701	462	27	337
Dolman, William H., Brunswick, Mo. Fire-proof building	300,581	June 17	1384	382	27	1196
Dolsen, Isaac, Beemerville, N. J. Road-cart	300,231	June 10	936	253	27	1104
Domestic Electrical Manufacturing Company. (See Clarke, Charles L., assignor.)						
Donaldson, David H., Buffalo, N. Y. Hasp-lock	297,117	Apr. 22	1544	426	27	309
Donkin, Edwin B., Bermondsey, England. Rotary pump	298,952	May 20	1245	{352 / 353}	27	777
Donley, Levi, assignor of one-half to H. B. Sortor, Kalamazoo, Mich. Two-wheeled vehicle	297,358	Apr. 22	1852	503	27	365
Donnell, Edward P., Chicago, Ill. Ink-reservoir for paper-ruling machines	298,735	May 20	984	273	27	727
Donnelly, James L., New York, N. Y., assignor of one-third to J. L. Townsley, Vincennes, Ind. Coin holder and deliverer	298,674	May 13	898	250	27	704
Donnenwirth, G., Jr., *et al.* (See Sharpnack and McMahon, assignors.)						
Donovan, William R. (See Michaels, Joseph P., assignor.)						
Doolittle, D. Edward. (See Doolittle, William E. and D. E.)						
Doolittle, Thomas B., Bridgeport, Conn. Telephone-line	297,683	Apr. 29	2289	621	27	454
Doolittle, Thomas B., Bridgeport, Conn. Telephone-exchange apparatus	298,559	May 13	746	{210 / 211}	27	676
Doolittle, William E. and D. E., New Britain, Conn. Shutter-fastener	297,118	Apr. 22	1543	426	27	309
Dopp, Frederick J. W., and G. Wolff, St. Louis, Mo. Velocipede attachment	297,239	Apr. 22	1701	462	27	337
Doremus, Willard D., assignor to F. Hodges, Washington, D. C. Mail-bag fastener	297,071	Apr. 15	1473	407	27	292
Doremus, Willard D., assignor to F. Hodges and A. L. Pitney, Washington, D. C. Mail-bag fastener and tag-holder	297,509	Apr. 22	2045	558	27	401
Doremus, Willard D., assignor to E. W. Woodruff, Washington, D. C. Paper-file	297,577	Apr. 29	2150	587	27	427
Doremus, Willard D., Washington, D. C., assignor to himself, S. R. and J. T. Stratton, Strattonville, Pa. Oil-can	300,450	June 17	1226	335	27	1166
Doren, Henry E., Grand Rapids, Mich. Head-rest	300,232	June 10	936	253	27	1104
Dorrell, Lucian P. (See Borgelt and Dorrell.)						
Dorsett, Daniel H., Chicago, Ill. Insulating material	298,072	May 6	140	.....	27	533
Dorsey, John D., Greenville, Ill. Vehicle-spring	297,974	May 6	14	5	27	530
Doty, John C., assignor to F. L. Bean, W. L. Vance, and T. Seymour, Mount Vernon, Ohio. Curtain-fixture	299,359	May 27	1750	504	27	883
Doty, Riley, Leopardsburg, Ohio. Bench-dog	298,560	May 13	751	211	27	677
Doty, William M., assignor of one-half to A. M. Ward, Chicago, Ill. Guard-gate for swing-bridges	297,930	Apr. 29	2567	704	27	508
Dougherty, James H., Whistler, Ala. Lock for sliding doors	297,239	Apr. 22	1702	463	27	337
Dougherty, Tiberias, Philadelphia, Pa. Chalk-holder for billiard and other game tables	297,684	Apr. 29	2290	623	27	454
Douglas, Charles, Detroit, Mich. Broom	299,059	May 20	1378	392	27	802
Dougine, James T., Chicago, Ill. Fifth-wheel for wagons	297,685	Apr. 29	2291	624	27	454
Douglas Axe Manufacturing Company. (See Bowers, John W., assignor.)						
Dow, Alonzo, and L. H. Gorgas, Wooster, Ohio. Cupboard	297,240	Apr. 22	1703	463	27	337
Dow, William H., Burlington, Vt. Graining compound	300,350	June 17	1103	.....	27	1145
Dowler, Joseph W. (See Knpferle and Dowler.)						
Dowling, James, and J. Connolly, London, England. Button-hole sewing-machine	299,118	May 27	1459	{417 / 418 / 419}	27	898
Dowling, Thomas W., Detroit, Mich. Window-screen	298,675	May 13	900	250	27	704
Downes, Henry. (See Clark, George W., assignor.)						
Downham, William, assignor of one half to P. K. Perrin, St. John's, Mich. Carriage-curtain attachment	300,451	June 17	1227	335	27	1166
Downs, Wallace A. (See Sawyer, Nelson, assignor.)						
Downward, Henry C. (See Shew, Jacob, assignor.)						
Doyle, Charles W. (See Zaehringer, William, assignor.)	298,294	May 6	433	116	27	608
Doyle, James, assignor to himself and P. McNamara, New York, N. Y. Pipe-wrench						
Doyle, John, Hoboken, N. J., assignor to himself and C. C. Dusenbury, White Plains, N. Y. Rheostat	298,073	May 6	141	35	27	553
Doyle, John M. (See Magner, William, assignor.)						
Drake, Cuningham, Philadelphia, Pa. Oyster-clamp	299,756	June 3	335	85	27	984
Drake, Cuningham, Philadelphia, Pa. Drag-saw	300,582	June 17	1385	382	27	1196
Drake, David E., Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric-circuit connection	299,467	May 27	1881	541	27	906
Drake, John T. H., Emporia, Mo. Drag-saw	300,233	June 10	937	253	27	1104
Drakeley, Julia E., Madison, Wis. Bed-pan	297,119	Apr. 22	1546	427	27	309
Draper, James O., Pawtucket, R. I. Steam-boiler	300,767	June 24	1647	451	27	1247
Draper, Oscar M., North Attleborough, Mass. Watch-chain tip	296,542	Apr. 8	820	226	27	164
Draper & Sons, George. (See Getchell, Seth S., assignor.)						
Draper & Sons, George. (See Gray, James R., assignor.)						
Drawbaugh, Daniel, Eberly's Mill, Pa., assignor to People's Telephone Company, of New York. Telephone-transmitter	297,578	Apr. 29	2151	587	27	428
Drawbaugh, Daniel, Eberly's Mill, Pa., assignor to People's Telephone Company, of New York. Telephone-transmitter	297,579	Apr. 29	2154	588	27	428
Drawbaugh, Daniel, Eberly's Mill, Pa., assignor to People's Telephone Company, of New York. Telephone-transmitter	298,676	May 13	901	251	27	704
Drawbaugh, George W., Eberly's Mill, Pa., assignor to People's Telephone Company, of New York. Telephone-transmitter	298,677	May 13	903	251	27	705
Dresser, Lauriston J., assignor of one-half to C. S. Weston, Uxbridge, Mass. Thill-coupling	299,917	June 3	510	135	27	1019
Drew, Henry P., New York, N. Y. Gas and lamp bracket	300,583	June 17	1386	383	27	1196
Drew, Henry P., New York, N. Y. Gas and lamp bracket	300,584	June 17	1387	383	27	1196
Dreyfus, Bernhard, New York, N. Y. Pendant	300,699	June 17	1560	428	27	1228
Driscoll, Daniel P., Pittsburg, Pa. Coupling device	296,394	Apr. 8	640	176	27	126

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Driver, John M. (See Kanthack, Alexander, assignor.)						
Driven Screw Post and Pile Company. (See Burton, Aaron B., assignor.)						
Dronet, Peter E., New Orleans, La. Grain header and harvester	297,510	Apr. 22	2046	559	27	401
Drummond, James T. (See Parker and Drummond.)						
Drummond, Thomas, assignor to J. C. Wintermeyer, Chicago, Ill. Box for carrying bottles	299,060	May 20	1379	393	27	802
Du Brul, Napoleon, Cincinnati, Ohio. Weighing-scale	299,757	June 3	336	85	27	984
Du Brul, Napoleon, Cincinnati, Ohio. Weighing-scale	299,758	June 3	337	86	27	984
Du Brul, Napoleon, Cincinnati, Ohio. Weighing-scale	299,759	June 3	338	86	27	984
Du Brul, Napoleon, Cincinnati, Ohio. Weighing-scale	299,760	June 3	339	86	27	984
Du Brul, Napoleon, Cincinnati, Ohio. Weighing-scale	299,761	June 3	340	86	27	985
Du Brul, Napoleon, Cincinnati, Ohio. Platform-scale	299,762	June 3	341	87	27	985
Du Brul, Napoleon, Cincinnati, Ohio. Weighing-scale	296,825	Apr. 15	1171	329	27	236
Du Puy, Charles M., Philadelphia, Pa. Molding plastic material	296,942	Apr. 15	1319	366	27	263
Du Shane, James, South Bend, Ind. Wrench						
Dubbs, William E. (See Allen and Dubbs.)						
Dubreuil, George A. (See Gornall, Richard, assignor.)						
Duchscher, Andre and P., and M. G. Spoo, Luxemburg, Luxemburg, Germany. Differential-lever press	298,188	May 6	285	73, 74	27	580
Duchscher, Pierre. (See Duchscher and Spoo.)						
Dudgeon, Richard. (See Dudgeon, Richard H., assignor.)						
Dudgeon, Richard H., assignor to R. Dudgeon, New York, N. Y. Hydraulic jack	297,975	May 6	15	5	27	530
Dudley Electric Manufacturing Company. (See Dudley, Walter J., assignor.)						
Dudley, George D. (See Sherwood and Dudley.)						
Dudley, Walter J., Everett, Mass., assignor to Dudley Electric Manufacturing Company, Concord, N. H. Telephone signaling apparatus	295,913	Apr. 1	22	7	27	7
Dueber, John C., Newport, Ky. Watch-case center	297,076	May 6	16	5	27	530
Dueber, John C., Newport, Ky. Manufacture of watch-case centers	299,119	May 27	1462	419	27	828
Duffy, Thomas W., assignor to D. C. Hall, Medford, Mass. Car-brake	299,526	June 3	29	8	27	926
Dugnid, John B., Toledo, Ohio. Trunk	298,453	May 13	627	179	27	653
Dumke, August C. and A. F., Manitowoc, Wis. Valve and gear for steam-engines	296,543	Apr. 8	821	226	27	164
Dumke, August F. (See Dumke, August C. and A. F.)						
Dunbar, Warren, Minneapolis, Minn. Track-clearer	298,295	May 6	434	117	27	609
Dunbar, Warren, Minneapolis, Minn., and J. R. Kinley, Chicago, Ill. Hand-car	298,736	May 20	984	{273 / 274}	27	727
Duncklebarg, Isaac M., assignor to C. K. Judson, Rochester, N. Y. Punch	299,210	May 27	1568	451	27	849
Dundon, Patrick F., San Francisco, Cal. Steam-boiler	298,561	May 13	751	212	27	677
Dungan, Andrew M., and M. Lacrone, said Dungan assignor to A. K. Hahn, Springfield, Ohio. Mechanism for driving harvester-cutters	296,150	Apr. 1	306	88	27	59
Dungan, Robert H., *et al.* (See Jervis, Abner M., assignor.)						
Dunham, Joseph M., Holyoke, Mass. Card-stripper	299,018	June 3	511	136	27	1049
Dunham, Joseph T., Brooklyn, N. Y. Combined tag and envelope. (Reissue)	10,488	June 10	1079	294	27	1130
Dunlap, James. (See Brower and Dunlap.)						
Dunlop, William, Chicago, Ill. Heater for soldering-irons	300,768	June 24	1648	451	27	1247
Dunn, Temple H. (See Dunn, William R. and T. H.)						
Dunn, Thaddeus C. (See Mackay and Dunn.)						
Dunn, William R., Alton, and T. H. Dunn, Crawfordsville, Ind. Belt-fastener	296,682	Apr. 8	995	278	27	198
Dunnell, Frederick W., Tompkinsville, N. Y. End-cap for paper rolls	298,562	May 13	753	212	27	677
Dunnell, James A. and A. Smith, Boston, Mass. Carpet-stretcher	299,074	May 6	142	36	27	553
Dupas, Octave, assignor of one-half to J. Shaver, San Rafael, Cal. Horse-detacher	300,056	June 10	698	190	27	1062
Dupan, Henri. (See Lego and Dupan.)						
Dupee, John C., and C. P. Dunsmun, Decatur, assignors to L. E. Waterman, Mason City, Ill. Keel for check-row corn-planters	298,678	May 13	904	251	27	705
Dupree, George W., Portland, Oreg. Apparatus for distributing electrical currents	297,072	Apr. 15	1474	408	27	292
Durell, Frank H. (See Durell, Henry and F. H.)						
Durell, Henry, West Morrisania, N. Y., and F. H. Durell, Bay City, Mich.; said Henry Durell assignor to said F. H. Durell. Breech-loading ordnance	296,281	Apr. 1	487	136	27	92
Durfee, William F., Bridgeport, Conn., and T. Egleston, New York, N. Y. Metallurgical gas-furnace	295,988	Apr. 1	117	35	27	24
Duryea, Hiram, New York, N. Y. Manufacturing starch	300,700	June 17	1560	.....	27	1228
Dusenbury, C. Coles. (See Doyle, John, assignor.)						
Dustman, Jonathan H., Clarks, Nebr. Car-coupling	301,050	June 24	1984	548	27	1310
Duthil, Edward, and F. Rosenstein, Chicago, Ill. Clothes-wringer	300,313	June 10	1047	{283 / 284}	27	1124
Duvall, W. C. (See Kirkbride, Frederick L., assignor.)						
Duwelius, Augustus L., Cincinnati, Ohio. Electro-magnetic-brake system	296,319	Apr. 8	540	151	27	108
Dwight, George, Jr. (See Johnson, Alonzo, assignor.)						
Dwight, William M. (See Roberts, James A., assignor.)						
Dyblie, Julius A., Cummings, Ill. Barrow	299,527	June 3	30	9	27	926
Dyer, Derrick O. (See Hoyt and Twiggs, assignors.)						
Dyer, Isaac T., assignor of one-half to J. T. Pieper and H. C. Pfeiffer, Quincy, Ill. Refrigerator	300,351	June 17	1104	{299 / 300}	27	1145
Eady, Thomas J. (See Newman, John L., assignor.)						
Eagle Lock Company. (See Herold, Frank L., assignor.)						
Eagle Lock Company. (See Judson, Charles W., assignor.)						
Earhart, Herbert, Santa Maria, assignor of two-thirds to H. D. Livingston and J. Kaiser, San Francisco, Cal. Dry separator and amalgamator	299,211	May 27	1569	451	27	849
Earl, Abel E., St. Louis, Mo. Trunk	296,395	Apr. 8	641	176	27	127
Earl, Gordon, Pierson, Mich. Shingle-sawing machine	298,737	May 20	986	274	27	728
Earley, Edward S., Philadelphia, Pa. Burial-casket	298,953	May 20	1247	353	27	777
Earnest, Robert R., assignor of one-half to T. M. Bates, Mechanicsburg, Ohio. Thill-coupling	300,057	June 10	699	190	27	1062
Eastman, Henry W., Baltimore, Md. Ventilating-door	295,989	Apr. 1	118	35	27	24
Eaton, George S., and J. W. Lyon, Brooklyn, N. Y., assignors to said Eaton. Type-rubbing machine	300,452	June 17	1228	336	27	1166
Eaton & Parker. (See Pratt, Samuel B., assignor.)						
Eaton, William C. (See Partrick, Alfred W., assignor.)						
Eau Claire Chilled Plow Company. (See McIntyre, James P., assignor.)						
Ebel, Julius, Jamestown, N. Y. Piano	298,837	May 20	1104	309	27	749
Eberhart, Lloyd, and I. D. Stevens, Joliet, Ill. Check-row attachment for seed-planters	296,151	Apr. 1	306	88	27	60
Ebert, John, Frederick, Md. Mail-bag	297,359	Apr. 22	1853	504	27	366
Eckert, John G. (See Saltzer, Isaac J., assignor.)						
Eddy, Charles H., assignor to himself and G. S. Baker, Auburn, N. Y. Vise attachment	297,360	Apr. 22	1854	504	27	366
Eddy, Henry W., Toledo, Ohio. Screw-tap	300,961	June 24	1869	513	27	1289
Eddy, Samuel S., Rochester, N. Y. Tanning process	300,352	June 17	1106	.....	27	1146

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Edelen, Albert. (See Hickey, Edmund P., assignor.)						
Edenborn, William, St. Louis, Mo. Barb for wire fences	299,763	June 3	342	87	27	985
Edge, William C., Newark, N. J. Producing ornaments from metals, &c	298,358	May 13	923	142	27	633
Edgerly, Samuel H., Jackson, Mich. Ash-pan for locomotives	299,360	May 27	1751	504	27	883
Edison Electric Light Company. (See Edison, Thomas A., assignor.)						
Edison, Thomas A., Menlo Park, N. J. Type-writer	295,990	Apr. 1	118	35	27	25
Edison, Thomas A., Menlo Park, N. J. Dynamo-electric machine	297,582	Apr. 29	2158	589	27	429
Edison, Thomas A., Menlo Park, N. J. Dynamo-electric machine	297,583	Apr. 29	2158	589	27	429
Edison, Thomas A., Menlo Park, N. J. Dynamo-electric machine	297,584	Apr. 29	2160	589	27	430
Edison, Thomas A., Menlo Park, N. J. Incandescing conductor for electric lamps	297,585	Apr. 29	2161	590	27	470
Edison, Thomas A., Menlo Park, N. J. Electrical conductor	297,586	Apr. 29	2162	590	27	470
Edison, Thomas A., Menlo Park, N. J. Dynamo-electric machine	297,587	Apr. 29	2162	590	27	470
Edison, Thomas A., Menlo Park, N. J. Dynamo-electric machine	298,954	May 20	1248	353	27	777
Edison, Thomas A., Menlo Park, N. J. Dynamo-electric machine	298,955	May 20	1249	354	27	777
Edison, Thomas A., Menlo Park, N. J. Operating dynamo-electric machines	298,956	May 20	1250	354	27	777
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Electric-arc light	297,580	Apr. 29	2156	588	27	429
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Incandescent electric lamp	297,581	Apr. 29	2157	588	27	429
Edison, Thomas A., Menlo Park, N. J., assignor to Edison Electric Light Company, New York, N. Y. Treating carbons for electric lights	298,679	May 13	905	251	27	705
Edmonds, George, Brooklyn, assignor to himself and W. J. McGinn, New York, N. Y. Adjustable nut-bearing	298,563	May 13	753	212	27	677
Edson, Albert F., *et al.*, trustees. (See Crowell, David, Jr., assignor.)						
Edson, Jarvis B. (See Kipper and Edson.)						
Edson, Jarvis B., Adams, Mass. Finishing and glossing the surfaces of fabrics having a coating of some pyroxyline compound	297,770	Apr. 29	2297	.....	27	474
Edwards, Alfred L., New York, N. Y. Musquito-net support	300,855	June 24	1750	477	27	1266
Edwards, Charles R., Buffalo, N. Y. Tension device for sewing-machines	299,629	June 3	164	41	27	950
Edwards, Edmund, 40 Southampton Buildings, county of Middlesex, England. Gas-engine	300,453	June 17	1240	337	27	1167
Edwards, James D., and L. F. Haubtman, New Orleans, La. Sugar-dumping wagon	296,544	Apr. 8	823	227	27	164
Edwin, Lewis P., Springdale, Wis. Buckle	299,212	May 27	1570	451	27	849
Egan, Edward D., *et al.* (See Harkins, George C., assignor.)						
Egan, James Y., Toronto, Ontario, Canada assignor to T. Y. Kayne, Ann Arbor, Mich. Truss	300,454	June 17	1239	337	27	1167
Egge, Frederick, assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Clamp for ropes, cords, &c	297,241	Apr. 22	1705	461	27	338
Egge, Frederick, assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Button-hole sewing-machine	298,957	May 20	1251	354 / 355 / 356	27	778
Egge, Frederick, assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Button-sewing machine	298,958	May 20	1257	356	27	779
Egge, Frederick, assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Machine for sewing on buttons	298,959	May 20	1258	356 / 357 / 358	27	779
Eggers, Henry J., *et al.* (See Mohany, Henry W., assignor.)						
Egleston, Thomas. (See Durfee and Egleston.)						
Eichling, Henry, New York, N. Y. Canopy-holder for vehicles	299,630	June 3	165	42	27	950
Eichling, Henry, New York, N. Y. Canopy-holder for childrens' carriages	299,631	June 3	166	42	27	950
Eickemeyer, Rudolf, Yonkers, N. Y. Hat-binding ring	296,282	Apr. 1	488	136	27	92
Elker, Thaddeus B., Baltimore, Md. Head-rest	299,361	May 27	1752	504 / 505	27	883
Elafoldt, William. (See Seiler, Philipp, assignor.)						
Ehlin, Erich, San Francisco, Cal. Machine for manufacturing mouth-pieces for cigars	296,683	Apr. 8	996	279	27	102
Eldred, Samuel D., Minonk, Ill. Check-list for registering railway-passengers	297,588	Apr. 29	2161	590	27	470
Eldred, William E., Brooklyn, N. Y. Folding table	300,234	June 10	938	253	27	1104
Eldredge, Alonzo W., Big Rapids, Mich. Shingle-planing machine	298,451	May 13	628	179	27	654
Eldredge, John W. (See Masterson, Bartholomew, assignor.)						
Electric Appliance Company. (See White, Le Roy S., assignor.)						
Electric Patrol Indicator Company. (See Spengler, Christian G., assignor.)						
Electric Tube Company. (See Kruesi, John, assignor.)						
Electrical Accumulator Company. (See Shaw, William A., assignor.)						
Electrical Supply Company. (See Wallace, John B., assignor.)						
Elkins, Orion N. (See Reiter, Austin N., assignor.)						
Ellington, Edward B., Chester, county of Chester, England. Hydraulic elevator	298,680	May 13	907	252	27	705
Ellinwood, Augustus E., assignor of two-thirds to L. Miller and H. Young, Akron, Ohio. Chuck	299,362	May 27	1753	505	27	884
Elliott, George E., Calais, Me. Steam-actuated valve	298,681	May 13	908	252	27	706
Elliott, George W., Liverpool, county of Lancaster, England. Pick	296,736	Apr. 15	1060	299	27	217
Elliott, Gilbert R., Boston, Mass., assignor to Continental Cash Car Company of Baltimore, Baltimore, Md. Cash and parcel carrier	297,686	Apr. 29	2293	624	27	455
Elliott, James, Philadelphia, Pa. Paint-brush	298,359	May 13	523	142	27	634
Ellis, A. D. (Walter, James F., assignor.)						
Ellis, David T., assignor one-half to Belknap Manufacturing Company, Bridgeport, Conn. Valve mechanism	298,738	May 20	986	274	27	728
Ellis, George A., assignor to H. and G. Heywood, A. M. Greenwood, and A. Morrill, Gardner, Mass. Carriage-body	296,943	Apr. 15	1319	366	27	263
Ellis, George B. (See Ellis, John, assignor.)						
Ellis, George W. B. (See Aiken, Newhall, and Ellis.)						
Ellis, Hiram. (See Hoffman, Ellis, and Schwenk.)						
Ellis, James H., M. Wilson, and F. Tanner, Walkerville, Ontario, Canada. Fire-escape	299,764	June 3	343	87	27	985
Ellis, James W., Cameron, Tex. Mechanical power	298,739	May 20	987	274	27	728
Ellis, Joel A. H., Beaver Falls, Pa. Knockdown crate	296,737	Apr. 15	1061	299	27	217
Ellis, John, assignor to G. B. Ellis, Pottstown, Pa. Horse-power	299,061	May 20	1380	393 / 394	27	802
Ellis, John D. (See Garrett and Ellis.)						
Ellis, Robert H. P., Baltimore, Md. Thill-coupling	299,062	May 20	1381	394	27	802
Ellis, Seth C., Jersey City, N. J. Blind-slat-tenoning machine	300,314	June 10	1048	284	27	1124
Ellis, William, Jr., North Lawrence, Kans. Road-scraper	301,051	June 24	1985	549	27	1310
Ellsworth, Lyndes E., Wilton, N. Y. Reversible binding attachment for sewing-machines	296,396	Apr. 8	642	177	27	127
Ellwood & Co., I. L. (See Stover, Daniel C., assignor.)						
Ellwood, Isaac L., *et al.* (See Hill, Peter P., assignor.)						
Ellwood Manufacturing Company, R. (See Ellwood and Staugaard, assignors.)						
Ellwood, Reuben, and H. H. Stangaard, assignors to R. Ellwood Manufacturing Company, Sycamore, Ill. Wheel	299,120	May 27	1463	419	27	829

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Elm City Suspender Co. (See Bray, Morris P., assignor.)						
Elmenhorst, Walter R. (See Bohrer, William, assignor.)						
Elsey, George, Springfield, Mass. Eraser	296,397	Apr. 8	643	177	27	127
Emack, John D., Baldwin, N. Y. Muffler for slates and slate-frames	298,740	May 20	988	275	27	728
Emerson, Fisher Company. (See Bremerman, Fredrick, assignor.)						
Emerson, James E., Beaver Falls, Pa. Tab-plate for saws	297,242	Apr. 22	1706	461	27	338
Emerson, James E., Beaver Falls, Pa. Saw-tab	297,243	Apr. 22	1707	464	27	338
Emery, Charles E., Brooklyn, and A. H. Geutner, New York, N. Y., assignors to said Emery. Method of and apparatus for corrugating tubes	297,244	Apr. 22	1708	464	27	338
Emery, Cyrus. (See Smith, Walton D., assignor.)						
Emery, George H. (See Pelissier, Charles, assignor.)						
Emery, John G., Jr. (See Sage, Aldis E., assignor.)						
Emery, Philip A., Chicago, Ill. Sofa-bed	299,528	June 3	31	9	27	926
Empire Drill Company. (See Preston, George H., assignor.)						
Engren, William L., Franklin, Mass. Fastener for gloves, shoes, &c	295,914	Apr. 1	25	7	27	7
Engel, William, *et al.* (See Grant, Willis C., assignor.)						
Enghofer, Gottlieb, Attleborough, Mass. Locomotive driving-gear	297,921	Apr. 29	2562	704	27	508
England, Henry J., Falls Church, Va. Lifting-jack	300,529	June 3	32	9	27	927
Englehart, George, and C. Weidner, Attica, Ohio. Shifting buggy-top	297,771	Apr. 29	2299	654	27	474
English, Analdo M. (See Lord and English.)						
English, Peter, London, Ontario, Canada. Gas-generator	299,919	June 3	513	136	27	1019
Enhlish, Robert, Austin, Tex. Oil-can	297,977	May 6	17	5	27	530
Enke, Carl, Nuremberg, Bavaria, assignor to V. H. Von Swaine, Wiesbaden, Germany. Rotary engine	297,589	Apr. 29	2164	591	27	431
Enoch, Benjamin F., Philadelphia, Pa. Gas-burner for heating and lighting rooms	296,320	Apr. 8	543	152	27	108
Ensminger, John F., Toledo, Ohio. Combined seam-strengthener, gusset, and fly	298,360	May 13	524	142	27	634
Ensworth, Porter S. (See Lovett, Arthur S., assignor.)						
Erche, L. Reinhold. (See Liersch and Erche.)						
Ericsson, John, New York, N. Y. Submarine projectile	298,455	May 13	629	179	27	654
Erling, Peter K., Chicago, Ill. Animal-trap	298,361	May 13	525	142	27	634
Esplin, Charles, Minneapolis, Minn. Circular-saw mill	295,991	Apr. 1	119	36	27	25
Essig, Oda A., Canton, Ohio. Mold-board	298,189	May 6	986	74	27	580
Estes, Job, Sterling, Mich. Potato-digger	297,361	Apr. 22	1855	504	27	366
Estes, John W., Keytesville, Mo. Ditching and grading attachment for plows	298,741	May 20	989	275 / 276	27	728
Etheridge, Carroll L. (See Whitlock and Etheridge.)						
Etheridge, Martin V. B., Boston, assignor of one-half to H. E. Waite, Newton, Mass. Mail-bag fastening	297,245	Apr. 22	1710	464	27	339
Etheridge, Martin V. B., assignor, by mesne assignments, to J. E. Wheeler, trustee, Lynn, Mass. Machine for manufacturing bottle-wires	298,362	May 13	526	143 / 144	27	634
Eureka Fire Hose Company. (See Schenck and Stowe, assignors.)						
Evans, Austin C., Springfield, Ohio. Cable railway	300,058	June 10	700	190 / 191	27	1062
Evans, Franklin J., Iowa Falls, Iowa. Magazine-gun	300,856	June 24	1751	478	27	1266
Evans, John, assignor of one-half to G. A. Chalfant, Etna, Pa. Brick nozzle for gas-furnace pipes	296,398	Apr. 8	644	177	27	127
Evans, John, assignor of one-half to G. A. Chalfant, Etna, Pa. Heating-furnace	296,399	Apr. 8	644	158	27	127
Evans, Lemuel E., East Orange, N. J., assignor to C. G. Patterson, New York, N. Y. Wire bale-tie	299,063	May 20	1382	394	27	802
Evans, Lemuel E., East Orange, N. J., assignor to C. G. Patterson, New York, N. Y. Wire bale-tie	299,064	May 20	1383	394	27	803
Evans, Lewis J., New York, N. Y. Fire-escape	300,857	June 24	1752	478	27	1267
Evans, Richard K., Washington, D. C. Bait-fish can	299,765	June 3	344	87	27	986
Evans, Richard K., Washington, D. C., assignor to Cable Railway Company, San Francisco, Cal. Gripping device for cable-ways	295,915	Apr. 1	25	8	27	8
Evans, Thomas R., Philadelphia, Pa. Shoe	298,363	May 13	599	144 / 145	27	634
Evans, W. D., *et al.* (See Barger, Nathaniel S., assignor.)						
Evenden, James W., Rome, N. Y. Ice-hook	296,321	Apr. 8	544	152	27	109
Everding. John. (See Hyatt, Pool, Everding, Stevens, and Wood.)						
Everding, John. (See Hyatt, Stevens, Wood, and Everding.)						
Everett, Willard S., Hyde Park, Mass. Vehicle-spring	299,363	May 27	1755	505	27	884
Everhart, Logan W., Parsons, Kans. Automatic fan	299,364	May 27	1756	505	27	884
Ewart Manufacturing Company. (See Ewart, William D., assignor.)						
Ewart, William D., assignor to Ewart Manufacturing Company, Chicago, Ill. Drive-chain	297,302	Apr. 22	1856	505	27	366
Ewer, Ella L. (See Ewer, Roland G., assignor.)						
Ewer, Roland G., assignor to E. L. Ewer, Brooklyn, N. Y. Feed-water heater	297,246	Apr. 22	1711	465	27	339
Ewing, William T., Chicago, Ill. Injector	297,511	Apr. 22	2048	559	27	401
Excelsior Life Saving Car Coupling Company. (See Johnstone, Henry L., assignor.) (Reissue.)						
Excelsior Self-Leveling Berth and Automatic Ladder Company. (See Milligan and Killion assignors.)	299,940	June 3	514	136	27	1019
Eyre, Thomas T., Decatur, Colo. Ore-sampling machine	300,315	June 10	1049	284	27	1125
Eyster, Ben, assignor of one-half to A. G. Van Schaick, Chicago, Ill. Railway freight-car door	299,969	June 10	586	157	27	1042
Faber du Faur, Adolf. (See Jaeger and Faber du Faur.)						
Fahy, William, Berlin, Wis. Axle-nut	296,152	Apr. 1	368	98	27	60
Fahys Watch Case Company. (See Lamont, James, assignor.)						
Fair, Armor J., *et al.* (See Mefford, David M., assignor.)	300,235	June 10	939	254	27	1105
Fair, Perry W., De Kalb, Ind. Drum and cymbal clamp	300,236	June 10	940	254	27	1105
Fairchild, Charles B., New York, N. Y. Cable railway						
Fairchild, Charles B., New York, N. Y. Cable railway						
Fairchild, Le Roy W. (See Collard, Richard M., assignor.)						
Fairchild, Le Roy W., New York, N. Y. Case for pencils	298,364	May 13	529	145	27	635
Fairfield, Hadley P. (See Shead and Fairfield.)						
Fairfield, Hadley P., West Medford, Mass., and L. A. Shead, Alameda, Cal., assignors to G. McKay, trustee. Ore-separator	295,992	Apr. 1	121	36	27	25
Fairfield, Hadley P., West Medford, Mass., and L. A. Shead, Alameda, Cal., assignors to G. McKay, trustee. Ore-separator	295,993	Apr. 1	124	37	27	26
Fairfield, Joseph F., Alma, Nebr. Car-coupling	298,260	May 20	1302	359	27	780
Fales, Amos, Denver, Colo. Variable bench-plane	295,916	Apr. 1	26	8, 9	27	8
Fallesen, Christian, Brooklyn, N. Y. Wagon-spring	298,456	May 13	630	180	27	654
Fancher, Sabathiel C., *et al.* (See Burks, Jesse H., assignor.)						
Fanning, William H., Lapeer, Mich. Wagon running-gear	298,564	May 13	754	212	27	677

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Farmer, George P. (See Jenkins, Joel, assignor.)						
Farmer, James, Salford, county of Lancaster, England. Apparatus for drying and pulverizing blood, &c., for fertilizers	299,766	June 3	345	88	27	986
Farmers Friend Manufacturing Company. (See Runstetler, Andrew, assignor.)						
Farnsworth, Enoch, Smith's Mills, Pa. Automatic car-brake	300,585	June 17	1398	383	27	1197
Farquhar, Arthur B. (See Broomell, Albert P., assignor.)						
Farquhar, John F. C., and W. Oldham, London, England; said Oldham assignor to said Farquhar. Filtering apparatus	297,363	Apr. 22	1857	505	27	367
Farquhar, John F. C., and W. Oldham, London, England. Apparatus for filtering liquids.	297,364	Apr. 22	1860	506	27	367
Farr, Eugene M., North Muskegon, Mich. Horse-cleaner	297,365	Apr. 22	1863	506	27	367
Farr, Hiram G., Boston, Mass. Pessary	300,769	June 24	1648	451	27	1247
Farr, Hiram G., Boston, Mass. Menstrual receptacle	300,770	June 24	1649	451	27	1247
Farrar, John N., and C. W. Morse, New York, N. Y. Telegraphic transmitter for unskilled operators	300,333	June 17	1107	300	27	1146
Farrel, John, New York, N. Y. Safe-deposit box	296,153	Apr. 1	309	89	27	60
Farrel, John, New York, N. Y. Metallic alloy for safes	298,365	May 13	531	.....	27	635
Farwell, Fannie M. (See Farwell, Willard B., assignor.)						
Farwell, Fay O., assignor of one-half to G. C. Benta, Cresco, Iowa. Vapor-stove	297,120	Apr. 22	1546	427	27	309
Farwell, Willard B., assignor, by mesne assignments, to F. M. Farwell, San Francisco, Cal.) Wet ore concentrator	300,701	June 17	1502	428 / 429	27	1228
Fastenrath, Friedrich, New York, N. Y. Floor-mat	298,565	May 13	755	213	27	678
Fanck, Albert, Kleczany, Galicia, Austria-Hungary. Boring-tool or detent-terrier for oil-wells, &c	299,632	June 3	167	42	27	951
Fangère, Jean, Montignac de Lauzun, France. Machine for setting and sharpening scythes	299,767	June 3	346	88	27	986
Faught, Nelson, Pittsborough, assignor of one-half to R. R. Miles, Indianapolis, Ind. Fence	300,435	June 17	1233	337	27	1167
Fawkes, Joseph W., Oak Park, Ill. Spring-motor	296,738	Apr. 15	1063	299 / 300	27	217
Fay, W. Lamartine. (See Beal, Samuel, assignor.)						
Fearenside, John, Jr. (See Baynes and Fearenside.)						
Feicker, Edward P. (See Feicker, Fredrick C., Jr., assignor.)						
Feicker, Fredrick C., Jr., assignor of one-half to E. P. Feicker, Northampton, Mass. Combined fruit-knife and nut-pick	300,858	June 24	1753	478	27	1267
Felbel, Jacob, New York, N. Y. Pool-rack	299,365	May 27	1756	506	27	884
Fell, Thomas M., Brooklyn, N. Y. Stove and heater	297,772	Apr. 29	2399	655	27	474
Felthousen, Barrent W., assignor to Wadhams, Magie & Co., Milwaukee, Wis. Automatic lubricating-cup	299,762	June 3	347	88	27	986
Fenerty, Edward L., Halifax, Nova Scotia, Canada. Shovel	299,530	June 3	33	9	27	927
Fenner, Charles A., Mystic River, Conn. Handsaw	297,366	Apr. 22	1864	507	27	367
Fenner, Herbert N. (See Harrington, Frank S., assignor.)						
Fenner, Herbert N., Providence, R. I. Automatic fire-alarm	299,970	June 10	587	157	27	1042
Fenton, John H., Chicago, Ill. Latch-clasp for driving-reins	300,354	June 17	1109	300	27	1146
Ferny, Edward P. (See Stoetzel, Joseph J., assignor.)						
Ferguson, William J., assignor of two-thirds to J. O. and I. T. Norris, Baltimore, Md. Gas-pump	297,773	Apr. 29	2402	655	27	475
Ferrall, Thomas R., Boston, Mass. Snatch-block	299,531	June 3	33	10	27	927
Ferrell, Frank J., New York, N. Y. Clothes-drier	299,760	June 3	348	89	27	986
Ferrill, Cicero C., Shubuta, Miss. Device for attaching and detaching horses	297,367	Apr. 22	1865	507	27	368
Ferris, Benjamin L., Kansas City, Mo. Safety-bridge for railway-cars	298,075	May 6	143	36	27	553
Ferry, Thomas, Wilmington, Del. Rag and scrap duster	299,366	May 27	1758	506	27	884
Fesca, Albert, Berlin, Germany. Method of and apparatus for mashing sugar and sugar masses	297,978	May 6	12	6	27	531
Fichtenberg, Werner, New York, N. Y., assignor to W. H. Hart, Jr., Philadelphia, Pa. Neck-wear tip	298,190	May 6	287	74	27	580
Field, Benjamin, Dailey, Mich. Balanced steam-engine	296,944	Apr. 15	1320	366	27	263
Field, Henry, Jr., New Bedford, Mass. Foot-power	298,566	May 13	757	213	27	678
Field, Martin S., assignor to Johnson & Field, Racine, Wis. Fanning-mill	300,456	June 17	1234	338	27	1167
Field, Stephen D., assignor to Commercial Telegram Company, New York, N. Y. Transmitter for printing-telegraphs	300,859	June 24	1754	478 / 479	27	1267
Fiero, John C., Milo Centre, N. Y. Fence-post	300,586	June 17	1399	384	27	1197
Fifield, Charles S. (See Woodman, Charles, assignor.)						
Fifield, John W. D., North Brookfield, Mass. Boot-tree	299,971	June 10	587	158	27	1043
Fifield, John W. D., North Brookfield, assignor to A. H. Batcheller, Boston, Mass. Last or holder for lasting boots or shoes	296,154	Apr. 1	309	89	27	60
Fildes, Samuel, La Porte, Ind. Carpet-stretcher	300,237	June 10	942	254	27	1105
Filler, George E., and A. H. Neff, assignors of one-third to H. C. Lone, Sheldon, Iowa. Door	297,774	Apr. 29	2402	655	27	475
Finch, Dwight H., Aurelia, Iowa. Weather-board gage	298,692	May 13	909	252	27	706
Finger, Louis, Melrose, Mass., assignor, by mesne assignments, to Hanlon Electric Signal Company, Portland, Me. Electric railway-signal	300,238	June 10	943	254 / 255	27	1106
Fink, Nickolas, Edmore, Mich. Combined king-bolt and circle for vehicles	299,367	May 27	1759	506	27	885
Firoy, Samuel M., Clear Spring, Md. Double-tree	297,512	Apr. 22	2048	559	27	402
Firm, Joseph L., Jersey City, N. J. Reel and rod for winding paper and protecting the same in the roll	297,775	Apr. 29	2402	656	27	475
Firman, Henry S., New York, N. Y., assignor to Universal Concentrating Company, Camden, N. J. Incinerating-furnace	296,322	Apr. 8	545	152	27	109
Fischbeck, Detmer, Milwaukee, Wis. Fly-net for horses	297,121	Apr. 22	1548	427	27	310
Fischer, Emil, Calliope, Iowa. Fence	299,770	June 3	349	89	27	987
Fischer, Louis, Pittsburg, Pa. Glass-press	297,500	Apr. 29	2405	591	27	431
Fish, Daniel E., Worthington, Minn. Plow	300,457	June 17	1235	338	27	1167
Fish, Frederick P., trustee. (See Roper, Sylvester H. and C. F., assignors.)						
Fish, George M. (See Hill, Christian C., assignor.)						
Fish, George W., Pecatonica, Ill. Button-fastening	296,155	Apr. 1	310	89	27	61
Fish, John R., Grand Rapids, Mich. Car-truck	296,545	Apr. 8	824	227	27	164
Fisher, Alfred A., and A. Hart, assignors to Pacific Tucking and Manufacturing Company, San Francisco, Cal. Sewing-machine	299,368	May 27	1760	507	27	885
Fisher, Charles H., Wheeling, W. Va. Grate	300,050	June 10	702	191	27	1063
Fisher, Clark, Trenton, N. J. Anvil	298,567	May 13	758	213	27	678
Fisher, Clark, Trenton, N. J. Lifting-jack	298,568	May 13	759	214	27	678
Fisher, Daniel H. (See Hicks, James N., assignor.)						
Fisher, Hiram H., Allentown, Pa. Pipe mold and flask	300,279	June 10	946	255 / 256	27	1106
Fisher, John, Riley, Ind. Tongue-rest	297,368	Apr. 22	1865	507	27	368
Fisher, John R., and L. T., Knobnoster, Mo. Pump	300,702	June 17	1504	429	27	1228
Fisher, Leander T. (See Fisher, John R. and L. T.)						
Fisher, Lewis H., Walpole, Mass. Self-oiling axle for vehicles	296,323	Apr. 8	546	153	27	109

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Fisher, Marion O., Allen's Hill, N. Y. Fire and water proof paint	296,324	Apr. 8	548	.....	27	110
Fisk, William C., Toledo, Ohio. Ticket-punch	301,052	June 24	1986	549	27	1310
Fiske, Asa B., Lyndonville, assignor of one-half to J. D. Warren, Medina, N. Y. Car-coupling	298,191	May 6	288	74	27	580
Fitch, Eugene L., Des Moines, Iowa. Siphon-starter	299,532	June 3	35	10	27	927
Fitch, Ezra C., Newton, assignor to Robbins & Appleton, Boston, Mass. Watch-case bezel	299,369	May 27	1761	507	27	885
Fitch, James E. (See Taylor, Thomas, assignor.)						
Fitch, Thaddeus S. (See Bennett and Fitch.)						
Fitch, Washington L., assignor to himself and W. W. Weisell, Bluffton, Ind. Clothes-wringer	300,860	June 24	1758	479	27	1267
Fitch, William L., Chicago, Ill. Smoke-consumer	297,122	Apr. 22	1549	427	27	310
Fitch, Benaiah, assignor to Union Water Meter Company, Worcester, Mass. Water-meter	299,213	May 27	1570	451	27	849
Fitts, Jacob, Hanover, Pa. Slide-rest	296,156	Apr. 1	311	89	27	61
Fitz Gerald, Walter H., and G. C. Smith, Chicago, Ill. Watch-case spring	297,123	Apr. 22	1550	428	27	310
Fitzgerald, Daniel H. (See Broughton, John, assignor.)						
Fitzsimmons, Andrew M. R., *et al.* (See Abbott, John D., assignor.)						
Flack, Albert L. (See Yingling, Flack, and Heller.)						
Flad, Henry, St. Louis, Mo. Electro-magnetic air-brake	296,546	Apr. 8	824	227 / 228 / 229	27	165
Flad, Henry, St. Louis, Mo. Electrical connector in pipe-couplings for air-brakes	296,547	Apr. 8	829	229 / 230	27	165
Flad, Henry, St. Louis, Mo. Air-filter	296,548	Apr. 8	831	230	27	166
Flad, Henry, St. Louis, Mo. Electro-magnetic valve and connection	296,549	Apr. 8	832	230 / 231	27	166
Flad, Henry, and F. Höppner, St. Louis, Mo. Car-brake	299,121	May 27	1464	419 / 420	27	829
Flad, Henry, and F. Höppner, assignors to Mallinckrodt Brake Company, St. Louis, Mo. Car-brake	299,122	May 27	1466	420	27	829
Fladvad, Halvor O. (See Williamson and Fladvad.)						
Flagg, Charles E., Boston, Mass. Roller-skate	298,838	May 20	1175	309	27	749
Flagg, George H. P., Boston, and J. W. Maloy, Somerville, Mass., assignors to G. H. P. Flagg, trustee. Belt-support for machines for buffing boot and shoe soles	299,123	May 27	1467	421	27	830
Flahaven, William M. (See Cunningham, John H., assignor.)						
Flandrow, William H., *et al.* (See Crandall, Jesse A., assignor.)						
Flater, Henry, assignor of one-half to W. L. Carlin, Findlay, Ohio. Combined saw jointer and gage	297,513	Apr. 22	2049	559	27	402
Fleming, William B. (See Haskell and Fleming.)						
Fletcher, Stephen K., and R. Thomas, assignors to Fletcher & Thomas, Indianapolis, Ind. Pug-mill	299,370	May 27	1762	508	27	886
Fletcher & Thomas. (See Fletcher and Thomas, assignors.)						
Flewwelling, Gilford, and G. J. Harris, Hampton, New Brunswick, Canada, assignors to Diamond Match Company, of Connecticut. Machine for sawing match-cards. (Reissue.)	10,468	Apr. 15	1511	416 / 417	27	298
Flinn, William H., Nashua, N. H. Door-knob attachment	299,633	June 3	168	42	27	951
Florsheim, Simon, *et al.* (See Ball, Thomas H., assignor.)						
Flower, Samuel A., and P. Ross, Jersey City, N. J. Car-axle lubricator	300,587	June 17	1390	384	27	1197
Floyd, Theodore B., and H. L. Barton, Pine Hill, N. Y. Checking device for harness	297,369	Apr. 22	1866	507	27	368
Flynn, Francis W., Woodstock, Conn. Axle-bevel	299,771	June 3	350	89	27	987
Flynn, Thomas. (See Hirsch, Peter B., assignor.)						
Foltz, Robert H., Weatherford, Tex. Well-bucket	300,240	June 10	947	256	27	1106
Foot, Robert H., Weatherford, Tex. Insertible diamond saw-tooth	297,776	Apr. 29	2403	656	27	475
Foerster, Emanuel, New York, N. Y. Insertible diamond saw-tooth	299,634	June 3	170	43	27	951
Foglesong, Washington, Dayton, Ohio. Collar-stuffing machine	297,979	May 6	20	6	27	531
Folger, Rowland, Milford, Mass. Dividers	300,458	June 17	1236	339	27	1168
Follett, Joseph L., New York, N. Y. Sewing-machine	297,370	Apr. 22	1867	508	27	368
Folsome, Charles F., assignor of one-half to J. A. Dillon, Atoka, Indian Ter. Wagon-body	299,065	May 20	1384	395	27	803
Fonteine, Herman A., assignor to S. Fonteine, Auburn, N. Y. Harness-buckle						
Fonteine, Sarah. (See Fonteine, Herman A., assignor.)						
Fontneau, Frank, Attleborough, Mass. Fabric for jewelry	299,972	June 10	590	158	27	1042
Fontneau, Frank, Attleborough, Mass. Ornamental chain	300,241	June 10	948	256	27	1106
Foutneau, Frank, Attleborough, Mass. Ornamental chain	298,192	May 6	289	75	27	580
Foote, Robert H. B., Cincinnati, Ohio. Game						
Forbes, Francis. (See Wilson, James G., assignor.)						
Forbes, George, New York, N. Y. Car-coupling	297,247	Apr. 22	1712	465	27	339
Forbes, George, New York, N. Y. Car-coupling	300,588	June 17	1391	384	27	1197
Forbes, Robert S., assignor to Water Repellant Finishing Company, New York, N. Y. Rendering goods and fabrics water-proof	298,366	May 13	531	.....	27	635
Forbes, William H. (See Anderson, Albert T., assignor.)						
Forbes, William H. (See Osborne, John W., assignor.)						
Forbes, William H., Boston, Mass., and J. W. Osborne, Washington, D. C.; said Osborne assignor to said Forbes. Machinery for lithographic printing	300,242	June 10	949	256 / 257	27	1107
Ford, Benjamin F., Hollis, Tex. Fence	298,961	May 20	1263	359	27	780
Ford, Catherine E. (See Ford, Isaac V., assignor.)						
Ford, Ellsworth, Westville, Conn. Metallic barrel-hoop	298,962	May 20	1264	359	27	780
Ford, Isaac V., assignor to C. E. Ford, Troy, N. Y. Clasp	300,060	June 10	704	191	27	1063
Ford, Thomas P., Jr., Brooklyn, N. Y. Compound and self-acting plug-valve for wash-basins	300,589	June 17	1503	384	27	1198
Ford, William H. (See Mosher and Ford.)						
Ford, William N. (See German, Jacob G., assignor.)						
Forman, Jonathan C., Cleveland, Ohio. Paper-ruling machine	295,994	Apr. 1	126	37	27	26
Forrest, George S., Concord, N. H. Double-headed gage	297,371	Apr. 22	1868	508	27	369
Forrest, George S., Concord, N. H. Carpenter's gage	299,635	June 3	171	43	27	951
Forrester, Peter C., Leavenworth, Kans. Fountain attachment for marking-brushes	296,945	Apr. 15	1321	366	27	263
Forrester, Samuel, Allegheny City, Pa. Warning-plate for wire fences	298,193	May 6	291	75	27	581
Forster, Charles, *et al.* (See Long, Oliver, assignor.)						
Forster, John, St. Helen's, county of Lancaster, England. Snow-clearer	295,995	Apr. 1	128	37, 38	27	26
Forster, John A. (See Barrett and Forster.)						
Fortier, Henry C., *et al.* (See McCullough, Samuel, assignor.)						
Fosa, Charles S., Boston, Mass. Device for registering fares	299,214	May 27	1571	452	27	849
Fossick, George. (See Kilbourn and Fossick.)						
Foster, Benjamin C., Baltimore, Md. Folding cash-box	298,569	May 13	762	214	27	679
Foster, Dan P., Waltham, Mass. Treadle-motion	299,924	June 3	515	137	27	1019
Foster, Gay. W., New York, N. Y. Automatic time-register	297,248	Apr. 22	1714	465	27	340
Foster, James H., assignor of one-half to C. G. Wallace, Parsons, Kans. Windmill	298,570	May 13	763	214	27	679
Foster, John O., Waterman, Ill. Device for preventing horses from cribbing	297,777	Apr. 29	2404	656	27	476

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Foster, John T., Arlington, N. J. Dish-cloth holder	296,350	Apr. 8	835	232	27	166
Foster, Mark W., Minneapolis, Minn. Gate	298,070	May 6	143	36	27	554
Foster, Michael A., St. Louis, Mo. Furnace	300,703	June 17	1506	429 / 430	27	1228
Foster, Robert J. and J. W. Collie, Viola, Ark. Water elevator and carrier	297,249	Apr. 22	1716	466	27	340
Foster, William A., Fitchburg, Mass. Oil-cup	298,063	May 20	1264	359	27	780
Foster, William F., New York, N. Y. Glove-fastening	297,980	May 6	21	6	27	531
Fougeres, Louis H., *et al.* (See Haas, James M., assignor.)						
Fowler, Charles A., New York, N. Y. Setting for jewelry, &c	300,459	June 17	1242	340	27	1169
Fowler, Charles S., Brooklyn, and L. A. Rockwell, New York, N. Y. Cracker-machine	300,316	June 10	1051	285	27	1125
Fowler, George, Philmont, N. Y. Latch	298,639	May 20	1106	310	27	750
Fowler, George H., Pawtucket, R. I. Machine for trimming nuts	298,742	May 20	990	276	27	728
Fowler, Hervey W., Chicago, Ill. Nail-extractor	298,623	May 13	910	252	27	706
Fowler, Moses F., Boston, Mass. Preserving the aroma of coffee	298,684	May 13	911	.....	27	706
Fowler, Philip H., Gloucester City, N. J. Cloth folding and measuring machine	299,371	May 27	1763	508 / 509	27	886
Fox, Alsey L., *et al.* (See Jensen, Mathias, assignor.)						
Fox, David S., *et al.* (See Mark, Charlie E., assignor.)						
Fox, Ivan, Philadelphia, Pa. Eyeglasses	296,220	Apr. 15	1174	330	27	237
Fox, John, *et al.* (See Jensen, Mathias, assignor.)						
Fox, Joseph H. (See Otto and Fox.)						
Fox, Louis, Cleveland, Ohio. Awning	300,902	June 24	1870	513	27	1289
Fox, Samson, Harrogate, county of York, England. Apparatus for corrugating tubes	297,372	Apr. 22	1869	508	27	369
Fraser, Alphonse, assignor of one-half to Société Michel et Cie., Paris, France. Water-meter	297,922	Apr. 29	2568	704 / 705	27	508
Fraizer, Perry, Mount Summit, Ind. Saw-handle	297,125	Apr. 22	1553	428	27	310
France, Isaiah S. (See Pitt, Joseph A., assignor.)						
Franceschini, Frank F., Philadelphia, Pa. Reed-organ	298,840	May 20	1107	310	27	750
Franceschini, Frank F., Philadelphia, Pa. Cornet	300,590	June 17	1394	385	27	1198
Francis, Allan E., Cleveland, Ohio. Ring and watch-case attachment for engraving machines	297,981	May 6	22	6	27	531
Francis, Allan E., Cleveland, Ohio. Counter-seat	297,982	May 6	23	7	27	531
Frank, Carl C. (See Tesch and Frank.)						
Frank, Henry C., New York, N. Y. Clasp	296,827	Apr. 15	1175	330	27	237
Frank, William D., Elizabethville, Pa. Hand-tool for shoe-makers	299,973	June 10	980	158	27	1042
Franke, Charles, and A. Peters, Hoboken, N. J. Door-securer	298,964	May 20	1265	360	27	780
Franks, Orrin G. (See Clark, Franks, and Banghman.)						
Fransecky, Julius, East New York, N. Y. Composition of matter for giving a metallic surface to paper	299,372	May 27	1766	.....	27	886
Fraser, Alexander M., Bathurst, New Brunswick, Canada. Car-coupling	297,778	Apr. 29	2405	656	27	476
Fraser, Spencer L., and W. A. Brigham, Toledo, Ohio. Oyster-refrigerator	300,061	June 10	705	191	27	1063
Fray, John S., Bridgeport, Conn. Bit-stock	300,771	June 24	1650	452	27	1248
Frazee, Alvah W., Newark, N. J. Harness-saddle	297,220	Apr. 22	1719	466	27	340
Frazier, Lucius O., Pittsburg, Pa. Machine for separating coal from ashes, &c	297,501	Apr. 29	2166	592	27	431
Frazier, Walter S., Aurora, Ill. Two-wheeled vehicle	299,124	May 27	1468	421 / 422	27	830
Fréchingle, Pierre D., Paris, France. Shoe	297,502	Apr. 29	2168	592	27	431
Freel, Thomas F., New York, N. Y. Dinner-pail	300,591	June 17	1396	385	27	1198
Freeman, Baltus, Factoryville, Pa. Potato-digger	299,468	May 27	1882	541	27	906
Freeman, Francis L., Warren, Ohio. Portable fire-escape	297,126	Apr. 22	1554	428	27	311
Freer, Charles H. and M. M., Blue Earth, Minn. Double buckle	299,533	June 3	36	10	27	927
Freer, Maynard M. (See Freer, Charles H. and M. M.)						
Freese, Francis J., Manchester, N. H. Pressure-regulator	297,373	Apr. 22	1870	508	27	369
Freitag, Robert, Jersey City, N. J. Embroidering machine	295,917	Apr. 1	28	9	27	8
French, Crosby M., Garrettsville, Ohio. Producing ornamental relief borders or fore-grounds for photographs	297,779	Apr. 29	2406	.....	27	476
French, Lyman P., Boston, Mass. Furnace	299,974	June 10	980	158	27	1043
French, Robert L., Wellington, Ohio. Tally-card holder	298,367	May 13	532	145	27	635
Frescht, Alfred, Detroit, Mich. Application of fabrics to a background	296,285	Apr. 1	489	137	27	92
Fretwell, James E., Atlanta, Ga. Roofing compound	297,374	Apr. 22	1871	.....	27	369
Freund, George, Durango, Colo. Pocket-knife	297,375	Apr. 22	1871	509	27	369
Frey, Michael, Jr., Chillicothe, Ohio. Hog cholera medicine	300,460	June 17	1243	.....	27	1169
Frick, Abraham O., Waynesborough, Pa. Variable eccentric	299,215	May 27	1573	432	27	850
Frick, Henry H., Fricks, Pa. Carriage cover	297,780	Apr. 29	2406	657	27	476
Friedman, John. (See Weber and Friedman.)						
Friedrich, Henry, East Port Chester, Conn. Trap for sinks &c	298,841	May 20	1108	310	27	750
Frisbie, Hamlin E., Cincinnati, Ohio. Puppet-valve	298,194	May 6	202	75	27	581
Frische, Christian. (See Boyce and Frische.)						
Frizell, Charles, Boston, Mass. Ladder	297,251	Apr. 22	1720	466	27	341
Frost, Abel H. (See Bryant and Frost.)						
Frost, Abel H., and F. L. Bryant, Chicago, Ill. Wire-coiling machine	296,551	Apr. 8	837	232	27	166
Frost, Edward W., *et al.* (See Sumner, Joshua, assignor.)						
Frost, Ezra W., Brooklyn, assignor to R. R. Watson, New York, N. Y. Hanging water-bowl	300,704	June 17	1508	430	27	1229
Frost, George E., *et al.* (See Sutton, Thomas, assignor.)						
Fry, William, Akron, Ohio. Hasp-lock	298,965	May 20	1265	360	27	780
Frye, William E. (See McGivern and Frye.)						
Fuchs, John M., *et al.* (See Jacck, Emile, assignor.)						
Fuller, Alonzo W., Boston, Mass. Pneumatic lock	299,066	May 20	1385	395	27	803
Fuller, Asplnwall. (See Bell and Fuller.)						
Fuller, James W. (See Snyder, William T., assignor.)						
Fuller, Solomon, Danvers, Mass. Wheel-hoe	298,296	May 6	435	117	27	609
Fullerton, George A., Boston, Mass. Heel-stiffener for boots or shoes	299,125	May 27	1470	422	27	830
Fullerton, George A., Boston, Mass. Fabric or substitute for leather for insoles	299,126	May 27	1471	422	27	830
Fulton, Harmon H., Indianapolis, Ind., assignor to Indianapolis Machine and Bolt Works, of Indiana. Wheel or pulley	297,514	Apr. 22	2050	590	27	402
Fulton, Louis B., Pittsburg, Pa. Gage-cock	297,925	Apr. 29	2570	705	27	509
Fulton, William. (See Pressly, Harvey M., assignor.)						
Fultz, John M., Quincy, Ill. Upright wire-fence-making machine	298,368	May 13	533	145 / 146	27	635
Furbish, Isaiah M., Augusta, Me. Hand-drill	298,457	May 13	631	180	27	654
Furbush, Charles A. (See Furbush, Knowlton, and Meyer, assignors.)						
Furbush, Charles A., *et al.* (See Cromie, John H., assignor.)						
Furbush, Merrill A., *et al.* (See Cromie, John H., assignor.)						
Furbush, Merrill A., Philadelphia, Pa. Shaft-bearing	296,684	Apr. 8	998	279	27	198

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Furbush, Merrill A., Philadelphia, Pa., C. H. Knowlton and B. F. Meyer, Camden, N. J., assignors to said Furbush and C. A. Furbush, Philadelphia, Pa. Loom	300,963	June 24	1871	513 / 514 / 515	27	1290
Furbush, Merrill A., Philadelphia, Pa. Loom	298,369	May 13	534	146	27	635
Furguson, John, Phillipsburg, Pa. Line-stopper						
Furst & Bradley Manufacturing Company. (See Bradley, Byron C., assignor.)						
Fye, Charles A. (See Fye, John. T. H., and C. A.)						
Fye, John, T. H., and C. A., assignors to J. Fye & Sons, Zanesville, Ohio. Button-hook holder	301,053	June 24	1888	549	27	1311
Fye & Sons, John. (See Fye, John, T. H., and C. A., assignors.)						
Fye, Theodore H. (See Fye, John, T. H., and C. A.)						
Gaar, Scott & Company. (See Campbell, Howard, assignor.)						
Gabriel, William A., Bridgeport, Conn. Try-square	296,157	Apr. 1	312	90	27	61
Gadsby, Elijah H., *et al.* (See Bishop, Ephraim B., assignor.)						
Gage, Adelbert S. (See Gage, Charles W. and A. S.)						
Gage, Charles W. and A. S., Homer, N. Y. Veneer-cutting machine	300,243	June 10	953	257	27	1107
Gage, James E., Concord, N. H. Breech-loading fire-arm	296,325	Apr. 8	548	153	27	110
Gage, Wellesley W. (See Maltby and Wilmot, assignors.)						
Gage, Wellesley W., *et al.* (See Maltby, Frank D., assignor.)						
Gager, Edwin, Norwalk, Ohio. Corn planter	299,975	June 10	592	159	27	1043
Gagnon, John B., Oakland, Cal. Rotary ore-pulverizer	299,772	June 3	351	89, 90	27	987
Gaines, George W., *et al.* (See Cloppert, William H. H., assignor.)						
Gaines, Samuel L., Stockton, Cal. Combined header and thrasher	297,127	Apr. 22	1556	429	27	311
Gale, Dudley E., Salisbury, Mass. Jump-seat carriage	296,400	Apr. 8	645	178	27	127
Gale, George H., Bayonne City, N. J. Box for matches	299,976	June 10	594	159	27	1043
Gale, Horatio, Albion, Mich. Horse hay-rake	299,773	June 3	352	90	27	987
Gally, Merritt, New York, N. Y. Mechanical musical instrument	296,685	Apr. 8	999	279	27	199
Galt, Thomas A., *et al.* (See Johnson, William F., assignor.)						
Galt, Thomas A., *et al.* (See Packer, Harvey, assignor.)						
Galvin, John W., assignor of one-half to L. D. York, Portsmouth, Ohio. Regenerative furnace	298,297	May 6	436	118	27	609
Gambrell, Robert, Guntown, Miss. Combined bale-band bender, nail-extractor, &c	300,244	June 10	955	258	27	1108
Gandolfo, Joseph, New York, N. Y. Depurated composite sugar, &c	296,326	Apr. 8	550	.....	27	110
Gans, Levi J. (See Mayenbacher, John, assignor.)						
Gardanier, George W., Saratoga Springs, N. Y. Quadruplex telegraph	298,571	May 13	764	215	27	679
Gardiner, Charles T., Napanee, Ontario, Canada. Baby-jumper	296,946	Apr. 15	1321	367	27	263
Gardner, Edwin T., assignor of one-half to J. H. Odom, Rocky Mount, N. C. Saw-mill feed mechanism	298,195	May 6	293	76	27	581
Gardner, Frederick, A., Buffalo, N. Y. Stove-pipe shelf	298,685	May 13	912	253	27	707
Gardner Governor Company. (See Gardner, Robert W. and J. W., assignors.)						
Gardner, Henry L., assignor to D. S. Loomis, Springfield, Mass. Hose-reel	300,355	June 17	1110	301	27	1146
Gardner, Henry W. (See Johnson, Henry J., assignor.)						
Gardner, John J., North Madison, Ind. Pump	299,373	May 27	1763	509	27	886
Gardner, John W. (See Gardner, Robert W. and J. W.)						
Gardner, Joseph W., Shelburne Falls, Mass. Knife and fork	300,356	June 17	1111	301	27	1146
Gardner, Peter, San Rafael, Cal. Faucet for drawing beer and other liquors	298,686	May 13	913	253	27	707
Gardner, Robert W. and J. W., assignors to Gardner Governor Company, Quincy, Ill. Governor	300,705	June 17	1569	430	27	1229
Gardner, Stephen C., Eagleville, Conn. Machine for truing weavers' shuttles, picker-sticks, &c	296,552	Apr. 8	939	253	27	167
Gardner, William, New York, N. Y. Ale-vamp and ice-box	298,572	May 13	767	215	27	680
Gardner, William T., Tarborough, N. C. Cotton-planter	296,947	Apr. 15	1322	367	27	264
Garnett, Louis A. (See Massey, Gideon B., assignor.)						
Garnier, Claude, Lyons, France. Machine for softening fabrics	300,904	June 24	1876	515	27	1290
Garrett, Daniel M., Boston, assignor to Whitman & Barnes Manufacturing Company, Akron, Ohio. Pulley-block	297,128	Apr. 22	1558	429	27	311
Garrett, Frank. (See Garrett and Ellis.)						
Garrett, Richard and F., Leiston Works, county of Suffolk, and J. D. Ellis, Sheffield, county of York, England. Beater for thrashing-machines	297,781	Apr. 29	2407	657	27	476
Garrett, William, Beaver Falls, Pa. Manufacture of split blanks	297,593	Apr. 29	2168	592	27	432
Garrick, Joseph, Michigan City, Ind. Projectile for carrying explosive shells	300,592	June 17	1396	385	27	1198
Garrigues, Samuel S., Ann Arbor, Mich. Washing and purifying salt	299,774	June 3	353	.....	27	987
Garrigus, Culberson S., assignor of one-half to J. H. Pittenger, Tiffin, Ohio. Wind-power	299,127	May 27	1472	422	27	830
Garrigus, Culberson S., assignor of one-half to J. H. Pittenger, Tiffin, Ohio. Stop-motion device for spooling-machines	297,252	Apr. 22	1721	467	27	341
Garsed, John, Philadelphia, Pa. Pneumatic bell-ringing apparatus	296,828	Apr. 15	1176	330	27	237
Garsed, Robert P., Norristown, Pa. Pneumatic bell-ringing apparatus	297,376	Apr. 22	1872	509	27	369
Garsed, Robert P., Norristown, Pa. Pump	299,636	June 3	172	43	27	952
Garsed, Robert P., Norristown, Pa. Pneumatic bell-ringing apparatus	299,128	May 27	1473	423	27	831
Gartner, John, Rochester, N. Y. Sea-going vessel						
Garverick, John M., assignor of two-thirds to C. Wollerton, Harrisburg, and P. Rhoads, Philadelphia, Pa. Suspension jack for removing journal-boxes of cars	298,298	May 6	437	118	27	610
Garvey, Owen F., Pawtucket, R. I. Drawer-pull	299,374	May 27	1767	509	27	886
Garvey, Owen F., Pawtucket, R. I. Washer	299,977	June 10	594	159	27	1043
Garvey, Owen F., Pawtucket, R. I. Washer	297,377	Apr. 22	1874	509	27	370
Gatehouse, Tom E., Camberwell, county of Surrey, England. Incandescent electric lamp	298,196	May 6	295	76	27	581
Gates, Alfred L., Surrey, Wis. Clover-hulling attachment for thrashing-machines						
Gates, George S. (See Ratcliff, William H., assignor.)	297,782	Apr. 29	2408	658	27	476
Gathmann, Louis, Chicago, Ill. Machine for brushing and scouring grain	299,375	May 27	1767	.....	27	886
Gathmann, Louis, Chicago, Ill. Reducing lobated grain	298,743	May 20	992	276 / 277	27	729
Gathright, Albert P., assignor of one-half to W. C. Potts, Harmony Grove, Ga. Gin-saw filing machine	300,357	June 17	1112	301	27	1146
Gathright, Joslah B., Louisville, Ky. Check-hook for harness-saddles	300,358	June 17	1113	302	27	1147
Gathright, Josiah B., Louisville, Ky. Harness						
Gaulard, Lucien, and J. D. Gibbs, 12 Warwick Street, Regent Street, county of Middlesex, England. Apparatus for the production and utilization of secondary electric currents	297,924	Apr. 29	2571	705	27	509
Gavitt, James A., Walla Walla, Wash. Ter. Harness-buckle	299,775	June 3	353	90	27	988
Gay, William P. (See Bell and Gay.)						
Gaylord, Frederick L. (See Peck and Gaylord.)						
Gazaille, Henry, Manchester, N. H. Cash-transmitter	298,077	May 6	144	36	27	554
Gedney, James W., New York, N. Y. Feed-bag	296,553	Apr. 8	941	253	27	167
Geertz, Charles, Brooklyn, N. Y. Window-shade attachment	300,062	June 10	705	192	27	1063
Geertz, Charles, Brooklyn, N. Y. Lambrequin-shade	300,063	June 10	709	192	27	1064
Gelb, Fredrich, Buffalo, N. Y. Concrete pavement	300,593	June 17	1378	.....	27	1198
Geissenhainer, Charles F., assignor to F. S. Bissell, Pittsburg, Pa. Portable range	300,064	June 10	707	192	27	1064
Gendron Iron Wheel Company. (See Gendron, Peter, assignor.)						
Gendron, Peter, assignor to Gendron Iron Wheel Company, Toledo, Ohio. Wagon running-gear	298,078	May 6	146	37	27	554

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gendron, Peter, assignor to Gendron Iron Wheel Company, Toledo, Ohio. Velocipede-treadle	298,079	May 6	147	37	27	554
Genesté, Eugene P., Paris, France. Portable bake-oven	296,284	Apr. 1	490	137	27	92
Gentner, A. Henry. (See Emery and Gentner.)						
George, Nathan M., Danbury, Conn. Car-axle box	299,129	May 27	1475	424	27	831
Geritt, Thomas, Kenosha, Wis. Car-coupling	300,245	June 10	956	258	27	1108
German, Jacob G., assignor to W. N. Ford, St. Mary's, Ontario, Canada. Wrought-iron fence-post	299,922	June 3	516	137	27	1019
Gerow, Joseph U., Brooklyn, N. Y. Chain-bar	297,783	Apr. 29	2409	658	27	477
Gessner, Maximillion J., San Francisco, Cal. Straw-carrier for thrashing-machines	297,594	Apr. 29	2170	592	27	430
Getchell, Ellen S., assignor to A. M. Condroy, Boston, Mass. Book-cover	295,996	Apr. 1	131	38	27	27
Getchell, Seth S., Woonsocket, R. I., assignor to G. Draper & Sons. Oil-can	299,469	May 27	1883	541	27	906
Getman, Henry W., Ilion, N. Y. Horse-rake	298,966	May 20	1266	{300 / 361}	27	781
Ghezzi, Romeo E., New York, N. Y. Stencil-plate	296,327	Apr. 8	592	153	27	110
Gibbon, Harmon B., Tiffin, Ohio. Vehicle-axle nut	300,905	June 24	1877	516	27	1290
Gibbons, David, assignor of two-thirds to A. Hagee and E. Thompson, Joppa, Ind. Weather-strip	296,158	Apr. 1	313	90	27	61
Gibbons, John, assignor to Union Hardware Manufacturing Company, West Troy, N. Y. Rope-halter buckle	296,328	Apr. 8	553	{153 / 154}	27	110
Gibbons, John, assignor to Union Hardware Manufacturing Company, West Troy, N. Y. Rope-halter buckle	296,329	Apr. 8	554	154	27	110
Gibbons, John, assignor to Union Hardware Manufacturing Company, West Troy, N. Y. Halter-strap fastening	297,983	May 6	24	7	27	532
Gibbons, John, assignor to Union Hardware Manufacturing Company, West Troy, N. Y. Double snap-hook for harness	300,065	June 10	709	193	27	1064
Gibbons, John, assignor to Union Hardware Manufacturing Company, West Troy, N. Y. Halter-trimming	300,461	June 17	1244	340	27	1169
Gibbs, Jacob S. (See Richardson and Gibbs.)						
Gibbs, Jacob S., Bridgeport, Conn., assignor to United States Box Machine Company, New York, N. Y. Box-making machine	297,925	Apr. 29	2574	706	27	509
Gibbs, John D. (See Gaulard and Gibbs.)						
Gibson, Abram, Hughesville, Mont. Ter. Smelting-furnace	299,534	June 3	37	10	27	927
Gifford, Franklin, assignor to J. G. Jacobs and C. Hanika, Springfield, Ohio. Hitching-block	296,779	Apr. 15	1064	300	27	247
Gifford, John H., Springfield, Mass. Ink-well	297,378	Apr. 22	1874	509	27	370
Gifford, Walter C., Brooks, Mich. Leather and cloth varnish	297,515	Apr. 22	2050	.....	27	402
Gilbert, Adelbert L., Milwaukee, Wis. Combined necktie and collar-button	298,458	May 13	632	180	27	654
Gilbert, Edwin, Georgetown, assignor of two-thirds to H. I. Hoyt, Norwalk, Conn., and S. J. Gordon, Springfield, Mass. Construction of buildings	300,861	June 24	1759	479	27	1268
Gilbert, James W., Hoboken, Ala. Motor for light machinery	295,997	Apr. 1	131	38	27	27
Gilchrist, Daniel J., Pittsburg, Pa. Dredger	298,573	May 13	768	215	27	640
Gilchrist, Harry E., Oneonta, N. Y. Barrel truck and elevator	298,459	May 13	633	180	27	654
Gilchrist, John D., Ishpeming, Mich. Electric bell and annunciator	298,080	May 6	147	37	27	554
Giles, Edwin L., Lowell, assignor to Lamson Cash Railway Company, Boston, Mass. Store-service switch	299,130	May 27	1476	424	27	831
Gilgour, John, Columbus, Ind. Nut-lock	296,948	Apr. 15	1323	367	27	264
Gill, John E., Franklin, Pa. Lubricating-oil	296,150	Apr. 1	314	90	27	61
Gillespie, James E., Warwick, N. Y. Supporting and operating chemical fire-extinguishers	297,687	Apr. 29	2294	624	27	455
Gillespie Tool Company. (See Cain, John, assignor.)						
Gillett, Webster, Flushing, N. Y., assignor to Atlantic and Pacific Telephone Company, Saco, Me. Telephone	296,929	Apr. 15	1177	330	27	237
Gillette, William H., Hartford, Conn. Time-stamp	300,966	June 24	1878	516	27	1290
Gilliland, James F., assignor to J. B. Bennett and A. B. Meyer, Indianapolis, Ind. Insulator for line-wires of mechanical telephones	296,330	Apr. 8	555	154	27	111
Gillon, Louis, Les Lilas, near Paris, France. Machine for carding buttons by electricity	296,401	Apr. 8	646	{178 / 179}	27	198
Gilman, Ambrose, Shelburne, Mass. Toy pistol	297,379	Apr. 22	1876	510	27	370
Gilman, Charles W., and R. Welker, Medfield, Mass. Hat-roll-pressing machine	297,984	May 6	25	7	27	532
Gilman Vertical Press Company. (See Richards, Francis H., assignor.)						
Gilman, Willard H., Boston, Mass., assignor to Challenge Letter File Company, Concord, N. H. Letter-file	300,594	June 17	1398	385	27	1108
Gilmer, William C., Oakdale, Cal. Sash-cord guide	296,230	Apr. 15	1179	331	27	237
Giovannini, Philip, San Francisco, Cal. Gate or valve	295,998	Apr. 1	133	39	27	27
Girardot, Alfred. (See Carrara, Antonio, assignor.)						
Girard, Jean, Candebec-les-Elbeuf, France. Clamp	299,776	June 3	354	90	27	988
Gissinger, Samuel, assignor to J. H. Noble, Pittsburg, Pa. Lock-nut	298,842	May 20	1109	310	27	750
Gissinger, Samuel, Pittsburg, assignor to J. H. Noble, Hulton, Pa. Nut	298,843	May 20	1110	311	27	750
Given, Joshua L., Philadelphia, Pa. Skidway	299,376	May 27	1768	509	27	887
Gladney, Robert D., McCondy, Miss. Separator for peas, &c.	298,299	May 6	439	118	27	610
Glanville, Conrad F., assignor of one-half to W. H. Yeo, San Francisco, Cal. Bottom for boots or shoes	298,844	May 20	1110	311	27	750
Gleason, William, Rochester, N. Y. Belt-shifter for iron-planers	301,054	June 24	1988	550	27	1311
Glen Cove Manufacturing Company. (See Grimm, Paul H., assignor.)						
Glenn, Martin. (See Stearman, Archable E., assignor.)						
Glickman, David, assignor of one-half to J. Nordman, San Francisco, Cal. Fastening for bows of watch-cases	300,706	June 17	1570	431	27	1229
Globe Capsule Company *et al.* (See Krehbiel, John, assignor.)						
Globe Files Company. (See Nanerth, George V., assignor.)						
Globe Tobacco Company. (See Kaufmann, Barnard A., assignor.)						
Glover, Charles, Hartford, Conn. Screw-cutting machine	298,845	May 20	1111	{311 / 312}	27	751
Glover, James H., Detroit, Mich. Capsule-machine	297,380	Apr. 22	1877	510	27	370
Gochnaer, Joseph S., Abbottstown, Pa. Horse hay-fork	298,574	May 13	769	210	27	680
Goddu, Louis, Winchester, Mass. Metal post for wire fences	295,918	Apr. 1	99	9	27	8
Godfrey, Cornelius, East Williston, N. Y. Apparatus for utilizing waste heat of kilns in generating steam	297,381	Apr. 22	1878	510	27	370
Godfrey, Nicholas W., Northport, N. Y. Water-proof journal-bearing	296,554	Apr. 8	842	234	27	167
Godley, George F., Philadelphia, Pa. Spring-motor	299,978	June 10	595	160	27	1043
Godley, George F., Philadelphia, Pa. Spring-motor	299,979	June 10	600	161	27	1044
Godsal, Philip T., Eton, county of Buckingham, England. Breech-loading fire-arm	297,784	Apr. 29	2410	{658 / 659}	27	477
Goebel, Christian H., Philadelphia, Pa., assignor to Goebel Sectional Electric Underground and Pneumatic Delivery Company, of New Jersey. Underground conduit for electric wires	297,926	Apr. 29	2576	707	27	510

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Goebel, Christian H., Philadelphia, Pa., assignor to Goebel Sectional Electric Underground and Pneumatic Delivery Company, of New Jersey. Conduit for electric wires	297,927	Apr. 29	2578	707	27	510
Goebel, Christian H., Philadelphia, Pa., assignor to Goebel Sectional Electric Underground and Pneumatic Delivery Company, of New Jersey. Electric cut-off	297,928	Apr. 29	2579	707	27	510
Goebel, Christian H., Philadelphia, Pa., assignor to Goebel Sectional Electric Underground and Pneumatic Delivery Company, of New Jersey. Underground conduit for electric wires and pneumatic tube combined	297,929	Apr. 29	2579	707	27	510
Goebel Sectional Electric Underground and Pneumatic Delivery Company. (See Goebel, Christian H., assignor.)						
Goforth, William, Windsor, Mo. Sash-fastener	296,402	Apr. 8	647	179	27	128
Goldbacher, Ernest, New York, N. Y. Eyeglasses	298,744	May 20	993	277	27	729
Goldberg, Max, Milwaukee, Wis. Apparatus for administering medicated baths	300,240	June 10	956	258	27	1108
Goldberg, John P. (See Golden, Theodore E. and J. P.)	297,985	May 6	26	8	27	532
Golden, Theodore E. and J. P., Columbus, Ga. Shaft-coupling						
Goldie, William, West Bay City, assignor of one-half to D. H. Jerome, Saginaw, Mich. Railway-spike	300,066	June 10	710	193	27	1064
Golding, John F., Chicago, Ill. Slashed metallic screening	297,382	Apr. 22	1880	511	27	371
Goldung, William, New Orleans, La. Steam-engine	298,081	May 6	148	37, 38	27	555
Goldsmith, Frederick E., Jacksonborough, Ohio. Folding poultry-coop	300,595	June 17	1400	386	27	1199
Goldsmith, G. A., *et al.*, executors. (See Boman, Claes W., assignor.)						
Goldsmith, J. Mortimer, Boston, Mass. Valve	297,986	May 6	27	8	27	532
Goll, George. (See Boericke and Goll.)						
Gollon, Frank G. (See Mullen, William J., assignor.)						
Gooch, Daniel W. (See Howell, Silas J., assignor.)	296,160	Apr. 1	317	90	27	62
Goodbody, Albert G., Louisville, Ky. Binding-post for electric conductors	300,596	June 17	1401	386	27	1199
Goodell, Henry C., Atchison, Kans. Refrigerator-car	300,862	June 24	1760	480	27	1268
Goodenough, William E., Newark, N. J. Portable folding parlor bowling-alley	297,987	May 6	29	8, 9	27	533
Goodfellow, John H., Troy, N. Y. Automatic store-service apparatus						
Goodfellow, John H., Troy, N. Y., assignor to Benton Button Fastener Company, Providence, R. I. Button-fastener	297,785	Apr. 29	2414	659	27	477
Goodfellow, William, assignor of one-half to H. Hoffman, Jr., South Norwalk, Conn. Toy revolving bell	298,575	May 13	770	216	27	680
Gooding, John F., New Haven, Conn. Pressure-regulator	298,687	May 13	914	253	27	707
Gooding, John F., assignor to Benton, Nichols & Co., New Haven, Conn. Paper box	299,777	June 3	355	91	27	988
Gooding, John F., assignor to Benton, Nichols & Co., New Haven, Conn. Milking-stool	297,786	Apr. 29	2413	659	27	477
Goodman, Czar D., and F. J. Smith, Granby, Conn. Milking-stool						
Goodman, Henry, *et al.* (See Martinez, Rafael, assignor.)						
Goodman, William T., Fulton, Cal. Two-wheeled vehicle	296,940	Apr. 15	1324	367	27	264
Goodrich, Harry C., Chicago, Ill. Ruffling attachment for sewing-machines	296,740	Apr. 15	1065	300	27	218
Goodwin, Julius C., and C. W. Warren, assignors to American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Tuck-marker for sewing-machines	296,555	Apr. 8	842	234	27	167
Goodwin, Julius C., and C. W. Warren, assignors to American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Tuck-marker for sewing-machines	296,556	Apr. 8	844	234	27	168
Goodwin, Richard J. P., Manchester, N. H. Flexible carrier for pneumatic tubes	299,216	May 27	1574	452	27	850
Goodwin, William F., Stelton, N. J. Cut-off mechanism	296,403	Apr. 8	648	{179 / 180}	27	128
Goodwin, William F., Stelton, N. J. Cut-off mechanism						
Goodyear's Metallic Rubber Shoe Company. (See Lewis, George A., assignor.)						
Goodyear's Metallic Rubber Shoe Company. (See Saunders, Emmett A., assignor.)						
Goold, Herbert J., Boscobel, Wis. Table-leaf support	298,967	May 20	1267	361	27	781
Gordon, Edward F., assignor of one-half to H. Hobbs, Concord, N. H. Self-lubricating loose pulley	295,999	Apr. 1	134	39	27	28
Gordon, Edward F., and H. Hobbs, Concord, N. H. Suspended drilling-machine	297,383	Apr. 22	1880	511	27	371
Gordon, Fred. W., Pittsburg, Pa. Bell and hopper mechanism for blast-furnaces	298,370	May 13	535	{146 / 147}	27	635
Gordon, James F. (See Stevenson, John W. I., assignor.)						
Gordon, James F., *et al.* (See Appleby, John F., assignor.)						
Gordon, James F., Rochester, N. Y. Grain-conveyer for harvesters	300,247	June 10	957	258	27	1108
Gordon & Maxwell Company. (See Maxwell, James R., assignor.)						
Gordon, Solomon J. (See Dodge, James N., assignor.)						
Gordon, Solomon J., *et al.* (See Gilbert, Edwin, assignor.)						
Gordon, William. (See Dodge, J. Wesley, assignor.)						
Gordon, William, Boston, and J. W. Dodge, Malden, Mass. Trace-trimming machine	297,787	Apr. 29	2414	659	27	477
Gordon, William, Boston, assignor of one-half to J. W. Dodge, Malden, Mass. Sole-edge-burnishing machine	297,930	Apr. 29	2580	708	27	510
Gorgas, Lewis H. (See Daw and Gorgas.)	299,217	May 27	1575	{452 / 453}	27	850
Gorham, George E., Albany, N. Y. Sash-holder						
Gorn, Hermann A. (See Sheridan and Gorn.)						
Gornall, Richard, assignor of one-half to G. A. Dubreuil, Baltimore, Md. Cash-carrier	298,688	May 13	910	{253 / 254}	27	707
Gory, Emanuel G., Cincinnati, Ohio, assignor to Corbin Cabinet Lock Company, New Britain, Conn. Lock for drawers	298,460	May 13	634	181	27	655
Gould, Edward A. (See Baker, Leslie A., assignor.)	296,741	Apr. 15	1066	300	27	218
Gould, Forrest B., Boston, Mass. Locket	300,359	June 17	1114	302	27	1147
Gowdey, John, Janesville, Wis. Tricycle	297,384	Apr. 22	1882	{541 / 542}	27	371
Gowing, George, Boston, Mass. Carpet-sewing machine						
Goyette, Casimir. (See Miller and Goyette.)	297,253	Apr. 22	1722	467	27	341
Grabert, George M., and T. J. Dennis, Mount Vernon, Ind. Stump-puller	296,950	Apr. 15	1325	368	27	264
Grabill, John S., Havesville, Ohio, assignor of two-thirds to F. E. and P. A. Myers. Elevator-power for hay-carriers	299,377	May 27	1769	510	27	887
Graf, Francis A., and L. C. Himple, New Albany, Ind. Dumping wagon						
Graham, Daniel M., Chicago, Ill., assignor to Company of Vulcan, New York, N. Y. Apparatus for heating	297,129	Apr. 22	1559	430	27	312
Graham, George H., and J. D. Lloyd, Oriskany, N. Y. Canopy-standard	298,846	May 20	1113	313	27	751
Graham, Hugh, Dartmouth, Nova Scotia, Canada. Car-coupling	300,663	June 24	1762	480	27	1268
Graham, John W., *et al.* (See Park, John S., assignor.)						
Graillot, Leon. (See Chevalier and Graillot.)						
Grandy, Edward F. (See Woodward, Ashe, and Grandy.)						
Granger, Arthur O., assignor to A. O. Granger & Co., Philadelphia, Pa. Apparatus for manufacturing illuminating-gas	297,988	May 6	36	9	27	534
Granger & Co., A. O. (See Granger, Arthur O., assignor.)						
Granger, William W. (See Hall, Emil J., assignor.)						
Grant, Belville A., Lockport, Ill. Apparatus for galvanizing and coating wire	296,742	Apr. 15	1067	301	27	218
Grant, Charles, Jr., and D. Lawrence, Boston, Mass.; said Lawrence assignor to said Grant. Cash and parcel receptacle for cash-carrier systems	296,831	Apr. 15	1180	331	27	238

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Grant, Charles, Jr., and D. Lawrence, Boston, Mass.; said Lawrence assignor to said Grant. Cash-carrier	296,832	Apr. 15	1181	331	27	238
Grant, James, Goshen, Ind. Tile-mold	298,847	May 20	1114	313	27	751
Grant, Willis C., Norwalk, assignor to himself, R. V. Murray, and W. Engel, Cleveland, Ohio. Autograph-album	296,404	Apr. 8	650	180	27	128
Graphite Lubricating Company. (See Smalley, John, assignor.)						
Grater, Francis A., Providence, R. I. Windlass	296,161	Apr. 1	318	91	27	62
Grattan, Christopher, Stockton, Cal. Header and thrasher	300,667	June 10	710	193	27	1064
Graver, Jay R., Lincoln, Nebr. Jug	298,371	May 13	536	147	27	636
Graves, Frank P. (See Cook and Graves.)						
Graves, George W. (See Zeigler and Graves.)						
Graves, John, New York, N. Y. Box for cans of oils, paints, &c	299,778	June 3	356	91	27	988
Gravier, Alphonse I., Paris, France. Apparatus for distributing electricity	300,668	June 10	711	193, 194	27	1065
Gray, George A., Jr., Covington, Ky. Metal-planing machine	296,951	Apr. 15	1326	368	27	265
Gray, James R., Ayer, assignor to G. Draper & Sons, Hopedale, Mass. Spindle-bolster	300,402	June 17	1244	340	27	1169
Gray, Thomas J. (See Day, Charles T., assignor.)						
Gray, William, assignor of one-half to E. Cady, Hartford, Conn. Base-ball bat	300,360	June 17	1115	302	27	1147
Gray, William S., May, Tex. Mechanical power	297,595	Apr. 29	2170	593	27	432
Greely, David S., Foster's Crossing, Ohio. Millstone-dressing machine	298,461	May 13	636	181, 182	27	655
Green, Alonzo H., Clear Lake, Iowa. Grapple for hose	297,788	Apr. 29	2416	660	27	478
Green, Charles. (See Wilson, William, Jr., assignor.)						
Green, Frank M., *et al.* (See Dodd, James F., assignor.)						
Green, George M. Streator, Ill. Coupling for ropes or cables	297,671	Apr. 15	1475	408	27	292
Green, John A., Waltham, Mass. Thill-coupling	300,597	June 17	1403	386	27	1199
Green, Jonathan, Leisenring, Pa. Coke oven	300,463	June 17	1245	340	27	1169
Green, Joshua J., Jackson, Miss. Removing fiber from cotton-seed	299,378	May 27	1770	...	27	887
Green, William R. (See Holleman and Green.)						
Greene, Elias M., New York, N. Y. Protector for telegraph and telephone instruments	297,385	Apr. 22	1883	512	27	371
Greene, George E., Gardiner, Mass. Dental-floss holder	301,035	June 24	1970	550	27	1311
Greene, Henry, Philadelphia, Pa. Fire-escape	300,248	June 10	959	250	27	1108
Greene, John J., *et al.* (See Adams, Archibald D., assignor.)						
Greene Knitting Company. (See Terwilleger, John, assignor.)						
Greene, Will B., Washington, D. C. Automatic fan	297,386	Apr. 22	1885	512	27	372
Greenebaum, Moses S., *et al.* (See Chamberlain and Harris, assignors.)						
Greenlee, R. S. & R. L. (See Hermance, Joseph H., assignor.) (Reissue.)						
Greenwood, Alvin M., *et al.* (See Ellis, George A., assignor.)						
Greenwood, Jeremiah, Fitchburg, Mass. Can-opener	299,379	May 27	1771	510	27	887
Greenwood, John H., Columbus, Ohio. Marble-projector	296,405	Apr. 8	651	180	27	128
Gregg, William L., Philadelphia, Pa. Brick-machine	299,067	May 20	1386	395, 396	27	804
Gregory, James W., Ames, Iowa. Bird-cage	300,249	June 10	959	250	27	1108
Grellier, Henry, Brixton, county of Surrey, England. Sewing-machine	300,598	June 17	1404	386, 387	27	1199
Gresham, Job A., Waynesborough, Ga. Bale-tie	296,686	Apr. 8	1000	280	27	199
Grier, William W., Hulton, Pa. Vehicle running-gear	296,409	Apr. 8	652	181	27	129
Griest, John M., assignor to Chicago Attachment Company, Chicago, Ill. Holder for sewing-machine attachments	297,596	Apr. 29	2171	593	27	432
Griest, John M., assignor to Chicago Attachment Company, Chicago, Ill. Binding attachment for sewing-machines	297,597	Apr. 29	2173	593	27	432
Griffen, John, and J. Hall, Jr., assignors to Phœnix Iron Company, Phœnixville, Pa. Rotary puddling-furnace	300,250	June 10	961	280, 281	27	1109
Griffin, George L., W. A. Shoup, and J. R. Cade, Harrisburg, Tex. Rotary engine	297,254	Apr. 22	1723	467	27	341
Griffin, James K., Brooklyn, N. Y. Process of and furnace for smelting and reducing ores	299,637	June 3	174	44	27	952
Griffin, John, Philadelphia, Pa. Lightning-arrester for telegraph and telephone lines	296,407	Apr. 8	654	181	27	129
Griffin, Joseph A. (See Beal, Mart A., assignor.)						
Griffith, Charles E., Storm Lake, Iowa. Bit for inserting screw-eyes	300,317	June 10	1052	285	27	1125
Griffith, Evan T., Brooklyn, N. Y. Marine propeller	299,921	June 3	516	137	27	1019
Griffiths, Thomas. (See Clapp and Griffiths.) (Reissue.)						
Grimm, Gustave H., Hudson, Ohio. Sugar-evaporator	296,743	Apr. 15	1009	301	27	218
Grimm, Paul H., assignor to Glen Cove Manufacturing Company, Glen Cove, N. Y. Apparatus for separating solid and liquid portions of starch refuse, &c	296,600	Apr. 1	135	39	27	88
Grimmell, Julius C., Brooklyn, N. Y. Watch-protector attachment	297,516	Apr. 22	2051	560	27	402
Grinnell, Frederick (See Grinnell, Richard W. and F.)						
Grinnell, Richard W. and F., Providence, R. I. Automatic fire-extinguisher	299,360	May 27	1772	510	27	887
Griscom, Frederic, Dolington, Pa. Mail-bag	297,789	Apr. 29	2416	660	27	478
Griscom, William M., Reading, Pa. Apple parer, corer, and slicer	298,745	May 20	1394	397	27	799
Grisel, George, Oakland, Cal. Carpet-sewing machine	296,744	Apr. 15	1071	302	27	218
Grisel, George, Oakland, Cal. Carriage for garden-hose	300,772	June 24	1651	452	27	1248
Griswold, Horace P., Providence, R. I. Fire-escape ladder	297,790	Apr. 29	2417	660	27	478
Griswold, John A., San Francisco, Cal. Oil can	299,068	May 20	1389	396	27	804
Griswold, Lewis F. (See Parker and Griswold.)						
Groebl, H. William, assignor of one-half to J. A. Plummer, Vincennes, Ind. Table-leg fastening	297,931	Apr. 29	2582	708	27	544
Gröndahl, Wilhelm A., Portland, Oreg. Self-adjusting pulley	299,470	May 27	1884	542	27	907
Grose, Henry J. (See Burck, John H., assignor.)						
Gross, Alfred S. (See Spicer, Andrew J., assignor.)						
Grossiord, Samuel, Les Moussières, France. Producing artificial precious stones	297,508	Apr. 29	2173	...	27	432
Grothaus, Frederick E., Boerne, Tex. Car-coupling	300,664	June 24	1703	400	27	1268
Grove, J. Ross, York, Pa. Safe	299,321	May 27	1773	510	27	888
Groves, John W., and V. Minich, assignors of one-half to M. B. Clemenger, South Oil City, Pa. Cultivating fruits and vegetables	297,932	Apr. 29	2582	708	27	544
Groves, Leroy S., assignor to J. F. Bishop, Afton, and J. H. Patt, Creston, Iowa. Apparatus for generating and carbureting hydrogen-gas	298,462	May 13	640	182	27	655
Groves, William F., Marietta, Ga. Cotton-gin house	296,687	Apr. 8	1001	280	27	199
Grunbagen, Henry, assignor of one-third to W. Pfaender, Jr., St. Paul, Minn. Machine for cutting cigar-wrappers	300,669	June 10	717	194	27	1065
Grupe, William H. (See Bonnard and Grupe.)						
Grunson, Hermann, Buckau, near Magdeburg, Prussia, Germany. Mortar and globular shield for the same	299,218	May 27	1576	453	27	850
Gue, Albert F., Denver, Colo. Folding bed	296,102	Apr. 1	319	91	27	62
Guedle, Alfred, Canal Dover, Ohio. Roofing-bracket	298,463	May 13	642	182	27	656

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Guelph Carriage Goods Company. (See Armstrong, John B., assignor.)						
Guilbert, John C. N., and W. M. Andrus, New York, N. Y. Adjustable shelf for holding fire-hose	298,372	May 13	537	147	27	636
Guild, Walter B., Boston, Mass. Card-grinding roller	299,131	May 27	1477	424	27	892
Guilleaume, Franz C., Cologne, Prussia, Germany. Telephone-cable	297,688	Apr. 29	2290	624	27	456
Guinzburg, Fernando M., New York, N. Y. Combined cigar-cutter and match-box	300,707	June 17	1571	431	27	1229
Guirey, Mary E., San Francisco, Cal. Figure, map, and chart for educational purposes	298,746	May 20	995	278	27	730
Gumpel, Charles G., Leicester Square, county of Middlesex, England. Portable electric battery and lamp	296,331	Apr. 8	556	155	27	111
Gurney, Nathan G., assignor of one-half to F. Clark, Baltimore, Md. Process apparatus	296,285	Apr. 1	492	137	27	92
Gutenkunst, Charles A., Milwaukee, Wis. Hay-carrier	296,745	Apr. 15	1074	303	27	219
Gutenkunst, William, Milwaukee, Wis. Adjustable stop for hay-carriers	296,746	Apr. 15	1075	303	27	219
Gutmann, Emil, *et al.* (See Martinez, Rafael, assignor.)						
Gwinner, Robert, J. Kantsky, C. Deugg, and F. Roth, Vienna, Austria-Hungary. Hydraulic theater appliance	296,286	Apr 1	494	138, 139	27	93
Gwynn, James, Detroit, Mich. Lock	300,773	June 24	1652	452	27	1248
Haas, Charles W., Allentown, Pa. Shaft-tug	300,805	June 24	1764	481	27	1260
Haas, James M., assignor of two-thirds to L. H. Fongeres and G. W. Blair, Wabash, Ind. Anti-rattler for thill-couplings	300,251	June 10	964	261	27	1109
Haas, Levi, Chester, Pa. Concrete compound for paving streets, walks, &c	297,791	Apr. 29	2418	.....	27	478
Haas, Levi, Chester, Pa. Compound material for the manufacture of sheets, boards, blocks, artificial wood, &c	300,464	June 17	1246	.....	27	1169
Haas, Levi, and D. Howarth, Chester, Pa. Felt roofing	296,163	Apr. 1	320	91	27	62
Habenicht, Charles R. H. M., New York, N. Y. Process of and apparatus for crystallizing tin	300,590	June 17	1407	387	27	1200
Haberman, Fredrick, New York, N. Y. Sheet-metal vessel	299,779	June 3	358	91	27	988
Habltizel, Samuel F. (See Jackman, Neighbor, Stick, and Habltizel.)						
Haege, Jacob, Garfield, Kans. Fire-escape	299,132	May 27	1478	424	27	892
Haegen, Johanna, New York, N. Y. Hat or bonnet	296,557	Apr. 8	845	235	27	168
Haff, Edward P., New York, N. Y. Key-ring	298,747	May 20	996	278	27	730
Hagany, William S., *et al.*, executors. (See Waring, John B., assignor.)						
Hagee, Albert, *et al.* (See Gibbons, David, assignor.)						
Hagerty, John, assignor to Cooke & Eddy, Providence, R. I. Machine for attaching the backs and fronts of articles of jewelry	299,069	May 20	1390	396	27	804
Hagey, John E. (See Qvarnstrom, Erick J., assignor.)						
Hagstrom, August W. (See Larson and Hagstrom.)						
Hague, Edmund H., assignor of one-third to W. Johnson, Jackson, Mich. Paint	297,074	Apr. 15	1476	.....	27	292
Hagne, Walter E. (See Miller, John F., assignor.)						
Hahn, Albert K. (See Dungan and Lacrone, assignors.)						
Hahn, David D. (See Coon and Hahn.)						
Haid, Alfred, Rahway, assignor to Haid's Electrical Storage Company, Newark, N. J. Secondary battery	296,164	Apr. 1	321	91	27	62
Haid's Electrical Storage Company. (See Haid, Alfred, assignor.)						
Haigh, George, *et al.* (See Manuel, David, assignor.)						
Haight, James R., Adrian, Mich. Fountain-pen	299,519	May 27	1578	454	27	851
Haines, David S., New York, and S. D. Lake, Brooklyn, N. Y. Bracket for insulating supports for electrical conductors	296,558	Apr. 8	846	235	27	168
Haines, David S., New York, and S. D. Lake, Brooklyn, N. Y. Insulating-support for electric conductors	296,688	Apr. 8	1001	280	27	199
Hainsworth, William, Pittsburg, Pa. Manufacturing eye-bars	298,748	May 20	997	278	27	730
Halbert, John B., Maitland, assignor of one-half to E. R. Trofford, Sanford, Fla. Lifting-jack	297,255	Apr 22	1724	468	27	341
Haldane, Robert, Glasgow, county of Lanark, Scotland. Apparatus for the distillation of wood	297,517	Apr. 22	2053	560, 561	27	403
Hale, Elam B., *et al.* (See Kealen, Wyley M., assignor.)						
Hale, Henry S., Philadelphia, Pa. Folding berth	297,256	Apr. 22	1725	468, 469	27	342
Hale, Henry S., Philadelphia, Pa. Fabric for walls of apartments	299,382	May 27	1774	511	27	888
Hale, Henry S., Philadelphia, Pa. Book-case	300,361	June 17	1115	303	27	1147
Hale, Napoleon B., San Bernardino, Cal. Button	298,082	May 6	150	38	27	595
Hale, Thomas, Claydon, county of Suffolk, England. Fire-escape	300,465	June 17	1246	341	27	1169
Halkyard, William, Providence, R. I. Button-fastener	298,464	May 13	643	182	27	656
Halkyard, William, Providence, R. I. Attaching buttons to shoes, &c	299,133	May 27	1478	425	27	892
Hall, Albert B., Indianapolis, Ind. Capsule-machine	297,792	Apr. 29	2419	661	27	478
Hall, David, Middletown, Conn. Overshoe	300,774	June 24	1653	452	27	1248
Hall, Dudley C. (See Duffy, Thomas W., assignor.)						
Hall, Emil J., Alexandria, Va., assignor of one-half to W. W. Granger, Washington, D. C. Type-writing machine	298,576	May 13	771	216	27	680
Hall, Frank E., Boston, Mass., assignor to Hall Rubber Mills, Portland, Me. Manufacturing gossamer water-proof cloth	299,638	June 3	176	44	27	953
Hall, George W., assignor of one-half to E. J. Morgan, Bridgeport, Conn. Check-rein hook	297,387	Apr. 22	1886	512	27	372
Hall, James B. (See Hall, Tomas P. and J. B.)						
Hall, Jesse, Jr. (See Griffen and Hall.)						
Hall, John, Boston, Mass. Signal-torch	296,952	Apr. 15	1328	368	27	265
Hall, Nicoll & Granberry. (See Shepard, George E., assignor.)						
Hall, Osborn B. (See Walworth and Hall.)						
Hall, Osborn B., Malden, Mass. Cash-carrier	298,373	May 13	536	147	27	636
Hall Rubber Mills. (See Hall, Frank E., assignor.)						
Hall, Theodore F., assignor part to A. J. Richards, W. E. Conner, and G. W. Lovell, Marietta, Ohio. Drive-chain	297,793	Apr. 29	2420	661	27	479
Hall, Tomas P., Toronto, and J. B. Hall, Georgetown, Ontario, Canada. Roller-skate	297,388	Apr. 22	1887	513	27	372
Hall, Truman. (See Tansey, Vurlin G., assignor.)						
Hall, Willard L., Fremont, Nebr. Lifting-jack	298,374	May 13	540	148	27	637
Hall, William B., Duquoin, Ill. Joint-lever	298,749	May 20	998	279	27	730
Hall, William F., Providence, R. I. Comb for flax, wool, &c	297,794	Apr. 29	2421	661	27	479
Hall, William H., Tiffin, Ohio. Corn-sheller	299,134	May 27	1479	425	27	892
Halliwell, Jane, *et al.* (See Lavigne, Joseph P., assignor.)						
Hallowell, Albert, Lowell, Mass. Hydraulic cock or filtering-faucet	298,550	May 20	999	279	27	730
Halsey, Louis M., Brooklyn, N. Y. Dental rubber dam	300,600	June 17	1408	387	27	1200
Ham, Benjamin A., Boston, Mass. Spring bed-bottom	296,953	Apr. 15	1328	368	27	265
Ham, Charles T., Rochester, N. Y. Oil-stove	300,601	June 17	1409	388	27	1200
Ham, Daniel, Iowa City, Iowa. Flooring	298,300	May 6	440	118, 119	27	610

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hamer, Samuel. (See McCracken and Hamer.)						
Hamilton, Charles S., Milwaukee, Wis. Oil-press mat	298,848	May 20	1116	{313 314}	27	751
Hamilton, Edward, Boston, Mass. Refrigerating car and chamber	298,063	May 6	151	39	27	555
Hamilton, John, St. John, New Brunswick, Canada. Machine for dressing ships' sides	299,639	June 3	177	45	27	953
Hamilton, John F., Medfield, Mass. Mechanism for simultaneously sewing to a hat its band and lining	299,780	June 3	358	91, 92	27	989
Hamilton, Miles E., Auburn, N. Y. Whiffletree-hook	300,252	June 10	964	261	27	1110
Hamlin, Mahlon, Catawissa, Pa. Car-wheel	296,964	Apr. 15	1329	369	27	265
Hammarlund, Oscar. (See Larson and Hammarlund.)						
Hammond, Andrew H., Worcester, Mass. Mechanical musical instrument	296,165	Apr. 1	322	92	27	63
Hammond, John F., Omaha, Nebr. Nail-plate feeder	296,747	Apr. 15	1076	{303 304}	27	219
Hammond, Orlin W., Belmont, N. Y. Pump	296,001	Apr. 1	137	40	27	28
Hance, William A. (See Weaver, Francis M., assignor.)						
Hancock Inspirator Company. (See Park, William R., assignor.)						
Hand, John S., San Francisco, Cal. Tailor's measuring device	299,383	May 27	1776	{311 312}	27	888
Haneline, Martin, Joplin, Mo. Ironing-machine	300,708	June 17	1572	431	27	1229
Hanika, Christian, *et al.* (See Gifford, Franklin, assignor.)						
Hanlon Electric Signal Company. (See Finger, Louis, assignor.)						
Hanlon, John, New York, N. Y. Water-cooled valve	300,602	June 17	1411	{388 389}	27	1200
Hanlon, John, New York, N. Y., assignor to United Coal and Oil Gas Company, of New York. Process of and apparatus for manufacturing gas	300,466	June 17	1247	{341 342}	27	1170
Hanlon, Michael F., Brooklyn, N. Y. Roller-skate	296,833	Apr. 15	1183	332	27	238
Hanmore, Hiram M., White Plains, N. Y. Non-heat-conducting vessel	296,935	Apr. 15	1330	369	27	265
Hannan, William H., Palermo, N. Y. Bottle-opener	297,389	Apr. 22	1888	513	27	372
Haunon, Arthur T. (See Worswick, James E., assignor.)						
Hanson, Charles, assignor of one-half to F. Applequist, Rock Island, Ill. Street-car coupling	299,781	June 3	350	92	27	989
Hapgood Plow Company. (See Lane, John, assignor.)						
Hapgood Plow Company. (See Pates, Thomas, assignor.)						
Hapgood Plow Company. (See Pates, William S., assignor.)						
Harbaugh, Simon P., Cumberland, Md. Baling-press	300,866	June 24	1765	481	27	1269
Harden Crystal Bearing Company. (See Harden, John J., assignor.)						
Harden, John J., Chicago, Ill. Hand-grenade fire-extinguisher	297,075	Apr. 15	1477	408	27	293
Harden, John J., assignor to Harden Crystal Bearing Company, Chicago, Ill. Anti-friction glass bearing	300,467	June 17	1252	342	27	1170
Hardenbergh, Peter R. L. (See Brownson, Ralph, assignor.)						
Hardie, Robert, Hoboken, N. J., assignor of one-half to J. A. Walsh, New York, N. Y. Pump	297,076	Apr. 15	1478	408	27	293
Hardin, Charles B., assignor of two-thirds to J. W. and J. W. Clements, Independence, Mo. Surgical aspirator	297,989	May 6	38	9	27	534
Hardin, William A., Leavenworth, Kans. Tongs for lifting spools of fence-wire	296,559	Apr. 8	847	235	27	168
Harding, Edwin A., Harbor Springs, Mich. Bob-sleigh	298,849	May 20	1118	314	27	752
Harding, John H., Milwaukee, Wis. Mold for casting ornamental plaques, &c.	300,967	June 24	1881	{516 517}	27	1290
Hardy, Hippolyte, Paris, France. Advertising musical instrument	296,956	Apr. 15	1331	369	27	266
Hardy, William A., Fitchburg, Mass. Car-axle box	300,302	June 17	1117	303	27	1147
Hargrave, James, Burley Leeds, county of York, England. Machine for cleaning and blacking boots or shoes	297,390	Apr. 22	1889	513	27	373
Haring, John C., Jersey City, N. J. Pencil-case	301,056	June 24	1991	550	27	1311
Haring, John C., and C. H. Court, Jersey City, N. J. Stylographic fountain-pen	298,084	May 6	192	39, 40	27	555
Harkins, George C., Salt Lake City, Utah Ter., assignor of three-fourths to M. L. Causey, E. D. Egan, and L. Kalgh. Skating-rink floor	299,924	June 3	519	138	27	1020
Harley, Elizabeth G., Philadelphia, Pa. Safety attachment	296,002	Apr. 1	137	40	27	28
Harlow, Cushing C., Brockton, Mass. Lubricator	295,919	Apr. 1	30	9	27	8
Harlow, Ivory W., Plymouth, Mass. Tea-kettle	298,465	May 13	644	183	27	656
Harlow, Joseph W., Portsmouth, N. H. Box-fastener	298,689	May 13	919	{254 255}	27	708
Harman, C. Wesley, and H. G. Skidmore, Cincinnati, Ohio. Watch-case	298,197	May 6	296	76	27	582
Harman, Stephen S., assignor to himself and M. T. Lynch, New York, N. Y. Mucilage cup or holder	297,391	Apr. 22	1891	513	27	373
Harmer, Henry, Southampton, assignor to F. Broughton, Hamilton, Ontario, Canada. Safety-switch guard. (Reissue)	10,478	May 13	951	264	27	715
Harper, Charles S., Sharon, Mass. Two-wheeled vehicle	297,599	Apr. 29	2174	594	27	432
Harper, George A., *et al.* (See Ormsby, William H., assignor.)						
Harpham, Julius C., Peoria, Ill. Harness-pad	296,748	Apr. 15	1078	304	27	220
Harps, Thomas, assignor to Connell & Dengler, Rochester, N. Y. Guard for cutter-heads	300,363	June 17	1118	303	27	1147
Harral, Edward W., Fairfield, Conn. Material for covering carriages	297,257	Apr. 22	1798	469	27	342
Harrell, Benjamin F., New Marion, Ind. Gate	300,603	June 17	1413	389	27	1201
Harrington, David. (See White and Harrington.)						
Harrington, Frank S., assignor to himself and H. N. Fenner, Providence, R. I. Covering for electrical conductors	298,751	May 20	1000	279	27	730
Harrington, John C. (See Lindol, Harry C., assignor.)						
Harrington, Josiah, Berkswell Lodge, 66 Water Lane, Brixton, county of Surrey, England. Button	296,408	Apr. 8	654	181	27	129
Harris, Eonah G., Boston, Mass. Button-hole	298,198	May 6	297	77	27	582
Harris, Francis M., M. G., M. J., and M. L., assignors of one-fifth to J. N. Spining, Covington, Ind. Tile-machine	298,850	May 20	1119	314	27	752
Harris, Fredrick G. (See Chamberlain and Harris.)						
Harris, Gilbert J. (See Flewwelling and Harris.) (Reissue.)						
Harris, Henry, Suisun, Cal. Metallic fastening	296,166	Apr. 1	325	92	27	63
Harris, Jonathan, Grand Ledge, Mich. Curtain-roller fixture	296,003	Apr. 1	138	40	27	28
Harris, Marcus L. (See Harris, Francis M., M. G., M. J., and M. L.)						
Harris, Maxwell G. (See Harris, Francis M., M. G., M. J., and M. L.)						
Harris, Milo J. (See Harris, Francis M., M. G., M. J., and M. L.)						
Harris, Ralph E., Macomb, Ill. Rotary blower	297,392	Apr. 22	1891	514	27	373
Harris, Silas, San Francisco, Cal. Apparatus for making rings, coupling-links, &c.	297,258	Apr. 22	1798	469	27	349
Harris, William, Rochester, N. Y. Can	297,990	May 6	39	10	27	535
Harrison, Abraham C., Providence, Ohio. Fence-post	300,364	June 17	1119	303	27	1147
Harrison, Thomas B., Clinton, and J. W. Martin, Kirksville, Mo. Machine for making wire and picket fencing	299,471	May 27	1885	{542 543}	27	907

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Harrold, Mahlon, Fort Worth, Tex. Car-coupling	299,535	June 3	38	11	27	928
Harry, Simon J. (See Sellwood and Harry.)						
Hart, Albert. (See Fisher and Hart.)						
Hart, Eli S., Clinton, Iowa. Ash-pan for locomotives	296,749	Apr. 15	1079	304	27	220
Hart, Hamilton M., *et al.* (See Reams, George W., assignor.)						
Hart, Henry C., and J. W. Cross, assignors to H. C. Hart Manufacturing Company, Detroit, Mich. Toy bank	296,689	Apr. 8	1003	280	27	199
Hart Manufacturing Company, Henry C. (See Hart and Cross, assignors.)						
Hart, William H., Jr. (See Fichtenberg, Werner, assignor.)						
Hartman, Charles R., Vincennes, Ind. Rolling colter	300,775	June 24	1654	453	27	1248
Hartman, John M., Philadelphia, Pa. Tuyere and attachment therefor	299,536	June 3	39	11	27	928
Hartmann, August, *et al.* (See Panins, Jacob, assignor.)						
Hartmann, Ernest L., Hartford, Conn. Tool-holder	296,332	Apr. 8	557	155	27	111
Hartmann, Johann. (See Bally and Hartmann.)						
Hartmann, William C., assignor of one-half to J. J. Mossup, Philadelphia, Pa. Die-stock	300,604	June 17	1414	{389 390}	27	1201
Hartshorn, Stewart. (See Adgate and Hickman, assignors.)						
Hartshorn, Stewart, Millburn, N. J. Spring-shade fixture	299,782	June 3	360	92	27	989
Hartt, William A., Rochester, N. Y. Ore-elevator	296,560	Apr. 8	848	235	27	168
Hartzell, William H., Pikeville, Ohio. Clod-crusher	296,750	Apr. 15	1081	304	27	220
Harvey, Patrick, Chicago, Ill. Auxiliary overflow for lavatories	299,925	June 3	520	138	27	1020
Harwood, George F., Worcester, Mass. Step for bicycles	297,991	May 6	40	10	27	535
Hasbrouck, Eli P., Syracuse, N. Y. Combined pocket-case and cigar-clipper	299,135	May 27	1481	425	27	892
Haskell, Charles S., and W. B. Fleming, Philadelphia, Pa. Valve	300,468	June 17	1252	{342 343}	27	1171
Haskin, De Witt C., New York, N. Y. Constructing tunnels	300,469	June 17	1253	343	27	1171
Haskins, Benjamin H., assignor of one-half to J. Young, Mechanicsville, N. Y. Spittoon-holder	296,409	Apr. 8	655	181	27	129
Haskins, Charles H., Milwaukee, Wis., assignor to Western Electric Company, Chicago, Ill. Telephone system	299,926	June 3	521	138	27	1020
Haskins, Josiah P., Saratoga Springs, N. Y. Vessel for containing aerated liquids	297,992	May 6	41	10	27	535
Hass, Theodore M., New York, N. Y. Album-clasp	300,070	June 10	719	195	27	1066
Hasselman, Lewis W., Indianapolis, Ind. Straw-carrier	299,537	June 3	41	11	27	928
Hatch, Hiram E., Dexter, Mo. Floor-clamp	299,920	May 27	1579	454	27	851
Hatch, William D., Olean, N. Y. Holdback for pole-irons of wagons	299,384	May 27	1778	512	27	888
Hatfield, Mahlon, Marshall, Mo. Ice-tongs	297,393	Apr. 22	1892	514	27	373
Hatfield, Mahlon, Marshall, Mo. Bolt-holder	300,968	June 24	1882	517	27	1291
Hathaway, Charles L., Austin, Tex. Car-coupling	296,957	Apr. 15	1331	{369 370}	27	266
Hathaway, Marvin P., Milwaukee, Wis. Conduit for electric wires	300,470	June 17	1254	343	27	1171
Haubtman, Leon F. (See Edwards and Haubtman.)						
Hauck, Edward J., Brooklyn, N. Y. Shaker for mixing drinks	300,867	June 24	1768	481	27	1269
Hang, Hermann, Dortmund, Prussia, Germany. Process of and apparatus for producing heating-gas	299,385	May 27	1779	512	27	888
Hauger, Anton. (See Von Ainbach and Hauger.)						
Haunhorst, Gustav. (See Prenasse, Ernst, assignor.)						
Haupt, Emil H. A., Dolgeville, N. Y. Car-coupling	298,577	May 13	772	{216 217}	27	681
Hansheer, Bernhard, and J. Meyenberg, Cham, Switzerland, assignors to D. S. Page, New York, N. Y. Reeling-machine	297,690	Apr. 29	2175	594	27	433
Hansheer, Bernhard, and J. Meyenberg, Cham, Switzerland, assignors to D. S. Page, New York, N. Y. Soldering-machine	297,993	May 6	42	10, 11	27	535
Hanss, Augustus P., Sellersburg, Ind. Mail-bag catcher	300,969	June 24	1883	517	27	1291
Hawk, John W., Huntsville, Ala. Nut-lock	299,640	June 3	179	45	27	953
Hawkey, John V., Irwin's Station, Pa. Car-wheel hub	296,004	Apr. 1	139	40	27	29
Hawkins, Irving L., Windsor, N. Y. Device for overcoming dead-centers and for converting motion	298,199	May 6	298	77	27	582
Hawkins, Lorenzo D., Stoneham, and E. Woodward, Somerville, assignors to J. Davis, B. F. Spinney, and C. A. Coffin, Lynn, Mass. Button-setting machine	298,200	May 6	299	{77 78 79}	27	582
Hawkins, Lorenzo D., Stoneham, and E. Woodward, Somerville, assignors to J. Davis, B. F. Spinney, and C. A. Coffin, Lynn, Mass. Button-feeding apparatus	298,201	May 6	305	79	27	583
Hawkins, Moses C., Edinborough, Pa. Time-lock	296,561	Apr. 8	850	236	27	168
Hawkins, William. (See Reynolds, Perry E., assignor.)						
Hawley, Columbus D., Bridgeport, Conn. Tool-holder	296,167	Apr. 1	325	92	27	63
Hawley, Elias S., Buffalo, N. Y. Screw-propeller for vessels	299,538	June 3	42	11, 12	27	929
Hawley, James M., Odin, Ill. Corn-sheller	299,136	May 27	1483	425	27	833
Hawlowetz, John, New York, N. Y. Machine for scraping the quills of ostrich and other feathers	300,071	June 10	720	195	27	1066
Hay, John F., Erie, Pa. Pattern and means for molding garden and other rakes. (Reissue)	10,472	Apr. 29	2614	716	27	517
Hayden Brass Company, Joel. (See Richards, Francis H., assignor.)						
Hayden, Harris H., New York, N. Y. Store-service apparatus	300,072	June 10	721	195	27	1066
Hayden, J. O. (See Williamson, George, assignor.)						
Hayden, Joseph H., and J. R. Sleeper, Bristol, N. H., assignors of one-third to C. R. Aldrich, Boston, Mass. Machine for converting wood into fiber	298,851	May 20	1120	315	27	752
Hayes, Daniel, Cambridgeport, Mass. Car-coupling link	298,690	May 13	920	255	27	708
Hayes, Edwin A., New York, N. Y. Folding life-raft	300,073	June 10	722	195	27	1066
Hayes, Eli B., Big Rapids, Mich. Planing-machine	296,562	Apr. 8	851	236	27	169
Hayes, George, New York, N. Y. Glazed metallic roof and skylight	299,386	May 27	1781	513	27	889
Hayes, George, New York, N. Y. Skylight	299,387	May 27	1783	513	27	889
Hayes, James. (See Powers, Needham, and Hayes.)						
Hayes, Michael C., Boston, Mass. Halter-fastener	297,259	Apr. 22	1730	469	27	343
Hayes, Philip, Waynetown, Ind. Trace-buckle	300,605	June 17	1416	390	27	1201
Hayes, Timothy, Anderson's Ferry, Ohio. Apparatus for cooling mash, &c	298,202	May 6	306	80	27	583
Hayford, James W., assignor of one-half to G. S. Yingling, Tiffin, Ohio. Dental mold	298,690	Apr. 8	1004	281	27	200
Haynes, Cornelius E., assignor of one-half to D. C. Knowlton, Boston, Mass. Apparatus for preserving beer and other alcoholic liquors	298,578	May 13	773	217	27	681
Hays, John M. (See Johnson, Giles T., assignor.)						
Hazard, Henry T., Los Angeles, Cal. Cartridge implement	297,706	Apr. 29	2423	602	27	479
Hazard, Henry T., Los Angeles, Cal. Charger for powder-flasks	298,085	May 6	153	40	27	555
Hazard, Henry T., assignor of one-half to J. F. Ponder, Los Angeles, Cal. Machine for deprining and reprining cartridge-shells	296,563	Apr. 8	852	237	27	169
Hazazer, Edgar W., New York, N. Y. Electric bell	300,253	June 10	965	262	27	1110
Hazelton, Norman N., Lamoni, Iowa. Rein-fastener	297,795	Apr. 29	2422	602	27	479

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hazen, Sedgwick R., West Jersey, Ill. Window-screen	299,137	May 27	1484	426	27	833
Heard, Henry, Greensborough, Ga. Cotton-seed huller	298,466	May 13	645	183	27	656
Hearn, Edwin R. (See Hieatt and Hearn.)						
Hearson, Charles E., 115 Southwark Street, county of Surrey, England. Apparatus for hatching eggs by artificial heat	298,579	May 13	775	217	27	681
Heaton Button Fastener Company. (See Goodfellow, John H., assignor.)						
Heaton Button Fastener Company. (See Sanford, Richard, assignor.)						
Hebbard, Albert H., Knoxville, Tenn. Flying target	299,783	June 3	361	92	27	989
Hebert, Arthur, Montebello, and T. P. Butler, Montreal, Quebec, Canada. Nut-lock	299,472	May 27	1888	544	27	907
Hebert, Peter, assignor of one-half to J. F. Williamson, Burr Oak, Kans. Vehicle-spring attachment	300,254	June 10	967	269	27	1110
Hebler, William, Zurich, Switzerland. Barrel for fire-arms	296,958	Apr. 15	1332	370	27	266
Heckenlively, Jacob, Eureka, Kans. Motor	297,394	Apr. 22	1893	514	27	373
Heckmann, Louis, assignor of two-thirds to E. P. Davis and W. H. Wade, Wrentham, Mass. Ornamental chain	299,138	May 27	1485	426	27	833
Hedgcock, James H., Bradford, Tenn. Wagon-brake	297,689	Apr. 29	2297	625	27	456
Hedrick, Hiram H., Kansas City, Mo. Crupper	297,601	Apr. 29	2176	594	27	433
Hedin, Cyrus D., Roanoke, Tex. Cotton-press	299,139	May 27	1486	426	27	833
Hegbom, Marselius, Chicago, Ill. Iron fence	299,980	June 10	602	161	27	1045
Hegeman, John. (See Van Derveer and Hegeman.)						
Heidelberger, David, Chicago, Ill. Satchel	298,852	May 20	1121	315	27	752
Heilman, Philipp J., Emporia, Kans. Neck-yoke center	300,074	June 10	725	196	27	1067
Helm, Anton, New York, N. Y. Machine for wringing raw hides and leather	297,260	Apr. 22	1731	470	27	343
Heine, August. (See Wheatley, John B., assignor.)						
Heine, August, Silver Creek, N. Y. Centrifugal flour-bolt	299,784	June 3	362	93	27	989
Heineman, David. (See Lorsch, Salomon, assignor.)						
Helsa, Charles E., assignor of one-half to J. N. Raymond, Chicago, Ill. Sash-weight	296,410	Apr. 8	656	182	27	129
Helsa, Charles E., assignor of one-half to J. N. Raymond, Chicago, Ill. Making plumbers' tacks	297,797	Apr. 29	2425	662	27	480
Helsa, Charles E., assignor of one-half to J. N. Raymond, Chicago, Ill. Machine for casting plumbers' traps	298,580	May 13	776	218	27	681
Heller, Henry T. (See Yingling, Flack, and Heller.)						
Hellmuth, Frederick C., Brooklyn, N. Y. Paper-folding machine	300,606	June 17	1416	390	27	1202
Hellriegel, John, Marine, Ill. Double gage	300,255	June 10	968	262	27	1110
Hemje, Charles, Washington, D. C. Metallic bushing	296,504	Apr. 8	855	237	27	170
Henderson, George A. (See Stafford and Henderson.)						
Henderson, Roger S. (See Sanders and Henderson.)						
Henderson, William B., Pottstown, Pa. Combined egg beater and dish	298,375	May 13	541	148	27	637
Hendrickson, Justus J., Norristown, assignor of one-half to C. K. Bullock, Philadelphia, Pa. Centrifugal separator	297,994	May 6	43	11	27	536
Henry, Edwin S., Cleveland, Ohio. Detachable compartment for cars	298,686	May 6	155	40	27	556
Henry, George W., West Jersey, Ill. Window-screen	300,776	June 24	1656	453	27	1248
Henry, Peter. (See Novy and Henry.)						
Henry, Samuel, Braintree, Mass. Car-starter	299,539	June 3	44	12	27	929
Hensley, George S., Middletown, assignor of one-half to Z. Thompson, Clinton, Ark. Mechanical movement	298,376	May 13	541	148	27	637
Hentz, Jacob. (See Lenox and Hentz.)						
Hepburn, Lewis L., Ilion, N. Y. Magazine-gun	298,377	May 13	542	148 / 149	27	637
Hepler, Benjamin F., *et al.* (See Dimon, Frank S., assignor.)						
Hepworth, Samuel S. (See Müller, Teile H., assignor.)						
Herbrand, Jacob, deceased, Fremont, Ohio: E. Londensleger, administrator. Vehicle-spring	299,641	June 3	180	45	27	953
Herckner, Emil, assignor to J. Mickle, Millville, N. J., J. Whitall, R. P. Smith, C. Roberts, W. H. Nicholson, Philadelphia, Pa., C. A. Tatum and F. M. Underhill, New York, N. Y. Glass-mold	297,077	Apr. 15	1479	409	27	293
Herckner, Emil, assignor to J. Mickle, Millville, N. J., J. Whitall, R. P. Smith, C. Roberts, W. H. Nicholson, Philadelphia, Pa., C. A. Tatum and F. M. Underhill, New York, N. Y. Glass-mold	297,078	Apr. 15	1480	409	27	293
Herkimer, Jacob, assignor of one-half to R. V. Stanley, Chicago, Ill. Clamping-slide for straps	299,540	June 3	46	12	27	929
Hermance, Joseph H., Toledo, Ohio, assignor to R. S. & R. L. Greenlee, Chicago, Ill. Feed mechanism for circular-sawing machines. (Reissue)	10,467	Apr. 8	1036	291	27	206
Hermann, Isaac, New York, N. Y. Machine for dressing the faces of wheels for grinding diamonds and other articles	299,642	June 3	181	45	27	954
Herold, Frank L., assignor to Eagle Lock Company, Terryville, Conn. Label-holder for mail-bags	296,950	Apr. 15	1334	370	27	266
Herrington, George H., and D. G. Millison, Wichita, Kans. Type-writing machine	299,785	June 3	364	93	27	990
Herron, John, and R. T. Wray, Dunbar, Pa. Coke-oven door and frame therefor. (Reissue)	10,484	June 3	547	146	27	1025
Herron, John, and R. T. Wray, Dunbar, Pa. Door for coke-ovens	300,256	June 10	969	262	27	1110
Hershberger, Daniel, Millville, assignor to S. Watson, Straughn's, J. and A. Spence, Jackson, Ind. Ditching-machine	300,318	June 10	1053	285 / 286	27	1125
Herzog, P. Benedict, New York, N. Y. Telephone-exchange system	299,070	May 20	1392	397	27	804
Herzog, George. (See Knaggs, John T., assignor.)						
Hess, Henry, Canfield, Ohio. Stock-car	298,908	May 20	1268	361	27	781
Hessler, Jacob, assignor to W. W. Kimball, Chicago, Ill. Reed-organ	300,777	June 24	1656	454	27	1249
Heston, William. (See Porter and Heston.)						
Hetzler, Thomas, Middletown, Ohio. Hermetic jar	298,378	May 13	545	149	27	638
Hetzner, Frank J., Rochester, Ind. Car-coupling	296,005	Apr. 1	140	41	27	29
Hewett, Robert J., St. Louis, Mo. Annunciator	300,607	June 17	1419	391	27	1202
Hewitt, Charles B., Racine, Wis., assignor to Racine Cement and Pipe Company, of Wisconsin. Mold for drain-tiles	297,905	May 6	46	12	27	536
Hewitt, Herbert H., New York, N. Y. Journal-bearing	299,221	May 27	1579	454	27	851
Hewitt, Herbert H., New York, N. Y. Car-coupling	300,257	June 10	970	263	27	1111
Heyde, Edward, East Saginaw, Mich. Lumber-trimming machine	297,395	Apr. 22	1894	514 / 515	27	373
Heyer, William D., Elizabeth, N. J. School-slate	297,996	May 6	47	12	27	536
Heysinger, Isaac W., Philadelphia, Pa. Combined paper-weight and pen-rack	298,379	May 13	546	149	27	638
Heywood, George, *et al.* (See Ellis, George A., assignor.)						
Heywood, Henry, *et al.* (See Ellis, George A., assignor.)						
Hiatt, Nicholas, Independence, Kans. Neck-yoke	296,960	Apr. 15	1334	370	27	266
Hibbs, Amos, Sewellsville, Ohio. Fruit-harvesting device	300,608	June 17	1421	391	27	1202
Hibner, William F., Baltimore, Md., assignor to Scott Manufacturing Company of Baltimore City. Cherry-seeder	296,961	Apr. 15	1335	371	27	267

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hickey, Edmund P., Washington, D. C., assignor of one-half to A. Edelen, Baltimore, Md. Ballast for vessels	300,471	June 17	1255	343 / 344	27	1171
Hickey, John, Chicago, Ill. Railway-gate	300,970	June 24	1884	518	27	1291
Hickisson, James, and W. Lee, London, county of Middlesex, England; said Lee assignor to said Hickisson. Combined apparatus for attachment to pencils	297,396	Apr. 22	1895	515	27	374
Hickling, Thomas. (See Merrick, Frank W., assignor.)						
Hickman, Edwin W., Bay View, Wis. Cooling-shield for puddling-furnaces	298,203	May 6	307	80	27	584
Hickman, Francis. (See Adgate and Hickman.)						
Hicks, Amanda M., Clinton, and A. Dishman, Paducah, Ky. Heating and ventilating device for buildings	300,075	June 10	726	196	27	1067
Hicks, James N., assignor of one-half to D. H. Fisher, Marysville, Pa. Car-truck	299,786	June 3	365	93	27	990
Hieatt, Napoleon B., and E. R. Hearn, assignors to P. Lorillard & Co., Jersey City, N. J. Machine for attaching tags and labels to plug-tobacco	299,541	June 3	48	12	27	929
Higbee, John B., Pittsburg, Pa. Tray	300,472	June 17	1257	344	27	1171
Higgin, Henry, Newport, Ky. Strap-fastening loop for carriage-curtains	298,969	May 20	1268	361	27	781
Higgin, Henry, Newport, Ky. Carriage-top	300,971	June 24	1885	518	27	1291
Higgin, Henry, Newport, Ky. Light-frame for carriages	300,972	June 24	1886	519	27	1292
Higgins, Charles L., Montreal, Quebec, Canada, assignor to J. E. Wheeler, trustee, Lynn, Mass. Device for expanding articles of flexible material	300,365	June 17	1120	304	27	1148
Higgins, Charles S. (See Valentine, Benjamin E., assignor.)						
Higgins, Peter H., Merced, Cal. Necktie-fastener	298,752	May 20	1000	279	27	731
Higley, Asa L., assignor of one-half to J. Mathews, Troy, N. Y. Potato-digging machine	296,168	Apr. 1	227	93	27	63
Hildebrand, Emil O., Chicago, Ill. Conduit for underground telegraph-wires	297,397	Apr. 22	1896	515	27	374
Hildrup, William T., Jr., Harrisburg, Pa. Boiler-setting	298,380	May 13	548	150	27	638
Hill, Charles H., Lombardville, Ill., and J. T. Ryan, Manning, Iowa. Adjustable seat-lift cultivator	297,933	Apr. 29	2584	709	27	511
Hill, Christian C., Chicago, assignor to G. M. Fish, Oak Park, Ill. Barbed-wire twisting and spooling machine	299,542	June 3	49	13	27	929
Hill, Edwin F., assignor of one-half to J. G. Jacobs, Springfield, Ohio. Locking device for coffins	299,140	May 27	1487	427	27	833
Hill, Harry W., Montgomery, Ala. Friction-clutch pulley	299,787	June 3	360	94	27	990
Hill, John C., New Guatemala, Guatemala, Central America. Stencil or perforating-pen	298,853	May 20	1122	316	27	753
Hill, John D., *et al.* (See Dimon, Frank S., assignor.)						
Hill, Lorenzo D., *et al.* (See Ormsby, William H., assignor.)						
Hill, Peter P., Lee, Ill., assignor to Washburn & Moen Manufacturing Company, Worcester, Mass., and I. L. Ellwood, De Kalb, Ill. Wire-barbing machine	298,204	May 6	308	80 / 81 / 82	27	584
Hill, Samuel C., and S. D. Webb, Washington, D. C. Mail-bag fastener	296,169	Apr. 1	328	93	27	64
Hill, Thomas, *et al.* (See Little, James R., assignor.)						
Hill, William S., Cutler, Ill. Permutation-lock	300,868	June 24	1768	482	27	1269
Hilles, Samuel E., Cincinnati, Ohio. Plane	299,927	June 3	522	139	27	1020
Hillis, Levi H., Kokomo, Ind. Breast-collar for harness	299,141	May 27	1488	427	27	834
Hilton, James, Newark, N. J. Segment-saw	299,142	May 27	1489	427	27	834
Hilton, Rowland. (See McNiece, Andrew, assignor.)						
Himmer, Ida C. (See Himmer, Vitalis, assignor.)						
Himmer, Ida C., and W. F. Weisgerber, New York, N. Y., assignors to said I. C. Himmer. Secondary electric clock	298,205	May 6	314	82	27	585
Himmer, Vitalis, assignor to I. C. Himmer, New York, N. Y. Circuit-closer for electric clocks	298,301	May 6	441	119	27	610
Hinden, Mathias J., assignor of one-half to P. Dannhauer, Cleveland, Ohio. Hand-grip tester	300,473	June 17	1257	344	27	1172
Hinden, Mathias J., assignor to Hydrogen Lighter Company, Cleveland, Ohio. Hydrogen-lighter	301,057	June 24	1993	550	27	1311
Hine, Charles M., St. Louis, Mo., assignor to Wilcox & Gibbs Sewing Machine Company, New York, N. Y. Machine for sewing bags and other articles	296,565	Apr. 8	856	237 / 238	27	170
Hiner, Martin M., Harrisburg, Pa. Car-brake	298,467	May 13	646	183	27	656
Hines, Byron. (See Amiro, Ambrose, assignor.)						
Hiney, Charles F., Pottsville, Pa. Adjustable curtain-fixture	299,143	May 27	1490	427	27	834
Hinkle, George W. (See Knauss and Hinkle.)						
Hinkley, Philander, Charleston, Ill. Check-rowing attachment for seed-planters	299,981	June 10	603	162	27	1045
Hinklin, Orren E., assignor of two-thirds to A. B. Roots, Milford Centre, Ohio, and W. Allen, Washington, D. C. Watch-winding mechanism	296,170	Apr. 1	329	93	27	64
Hinsdale, Charles C., Cleveland, Ohio. Insulated telegraph tie-wire	298,753	May 20	1001	280	27	731
Hipolito, Espiridion, San José, assignor of one-half to J. D. Campbell, Los Angeles, Cal. Miter-gage	295,920	Apr. 1	34	10	27	9
Hipple, Louis C. (See Graff and Hipple.)						
Hirsch, Adolph, New York, N. Y. Dress trimming	298,691	May 13	921	255	27	708
Hirsch, Peter B., assignor of one-half to T. Flynn, Denver, Colo. Saddle-seat	297,398	Apr. 22	1897	515	27	374
Hitter, J. Alfred, assignor to M. B. Hitter, St. Martinsville, La. Process of and apparatus for treating fibrous plants	300,778	June 24	1657	454	27	1249
Hitter, Marie B. (See Hitter, J. Alfred, assignor.)						
Hixson, Leland, assignor of two-thirds to R. A. Tucker and H. L. Strang, Washington, D. C. Hatchway-gate for elevators	299,473	May 27	1889	544	27	907
Hoag, George M., Evansville, Ind. Skeleton arch for the support of electric wires	298,692	May 13	922	255	27	708
Hoagland, John, assignor to Pearce & Hoagland, Providence, R. I. Watch-chain bar	299,071	May 20	1395	397	27	805
Hoare, John, Corning, N. Y. Manufacture of glass baskets	296,691	Apr. 8	1005	281	27	200
Hobbs, Horatio. (See Gordon, Edward F., assignor.)						
Hobbs, Horatio. (See Gordon and Hobbs.)						
Hoben, Martin W., Cohoes, N. Y. Elevator	300,258	June 10	973	263	27	1111
Hochstetler, Charles E., Kansas City, Mo. Envelope-opener and paper-cutter	298,581	May 13	778	218	27	682
Hocking, James, and C. R. Jones, Denton, Nebr. Wagon-brake	296,171	Apr. 1	330	94	27	64
Hocking Valley Manufacturing Company. (See Becker, Theodore, assignor.)						
Hodel, Joseph A., Cumberland, Md. Car-replacer	296,566	Apr. 8	858	238	27	170
Hodge, George E. (See Weber, August, assignor.)						
Hodges, Frank, *et al.* (See Doremus, Willard D., assignor.)						
Hodges, John, Westfield, N. J. Automatic safety appliance for elevators	299,222	May 27	1580	454 / 455	27	851
Hodges, Pliny F., Chicago, Ill. Platform self-binder	299,643	June 3	182	46	27	954
Hodgson, John G. (See Norton and Hodgson.)						
Hodgson, John G., assignor to E. and O. W. Norton, Chicago, Ill. Sheet-metal-cutting machine	299,982	June 10	604	162	27	1045

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hoe & Co., R. (See Crowell, Luther C., assignor.)						
Hoe, Robert, Jr., *et al.* (See Pearce and Hughes, assignors.)						
Hoefler, John, Ilion, N. Y. Sewing-machine shuttle	296,006	Apr. 1	141	41	27	29
Hoepfner, Henry J., Athens, Ohio. Eaves-trough hanger	298,970	May 20	1270	362	27	781
Hofele, Ferdinand W., *et al.* (See Day, John R., assignor.)						
Hoff, Ives P., Bainbridge, N. Y. Horse-collar fastening	298,754	May 20	1002	280	27	731
Hoffer, Amos F., *et al.* (See Dixon, Brandt V. B., assignor.)						
Hoffman, Henry, Jr. (See Goodfellow, William, assignor.)						
Hoffman, James, Philadelphia, Pa. Tooth-pick device	298,087	May 6	156	40	27	556
Hoffman, Nathan, H. Ellis, and S. Z. Schwenk, Pottstown, Pa. Horse-power tread	298,971	May 20	1270	362	27	781
Hoffmann, Adam, Allegheny, Pa. Car-brake	299,474	May 27	1891	544	27	908
Hoffnagle, Charles A., assignor of one-half to F. W. Coe, Vergennes, Vt. Automatic safety-brake for elevators	299,543	June 3	51	13	27	930
Hoffnagle, Charles A., assignor of one-half to F. W. Coe, Vergennes, Vt. Safeguard for elevators	299,544	June 3	52	13, 14	27	930
Hogue, Lovren E., Sandy Lake, Pa. Injector	297,798	Apr. 29	2426	663	27	480
Hohmann, Henry, Austin, Ill. Spring-motor	297,399	Apr. 22	1898	516	27	374
Hohneck, Elise. (See Hohneck, Ernest and E.)						
Hohneck, Ernest and E., St. Paul, Minn. Carpet-fastener	300,366	June 17	1121	304	27	1148
Holcomb, Eli M., Bay Springs, and F. E. Miller, Eveline, Mich.; said Holcomb assignor to said Miller. Car-brake attachment	297,130	Apr. 22	1560	430	27	312
Holcombe Brothers and Stone Manufacturing Corporation. (See Holcombe, William H. and C. A., assignors.)						
Holcombe, Clifford A. (See Holcombe, William H. and C. A.)						
Holcombe, William H. and C. A., assignors to Holcombe Brothers and Stone Manufacturing Corporation, (limited,) Beloit, Wis. Double-acting pump	297,400	Apr. 22	1899	516	27	375
Holden, Aaron C., Pittston, Pa. Carriage-apron	298,381	May 13	549	151	27	638
Holden, Hiram, Jr., Spencer, Mass. Tension device for sewing-machines	297,799	Apr. 29	2427	663	27	480
Holden, John G., and J. E. Coe, Danville, Ill. Car-track cleaner	298,068	May 6	157	41	27	556
Holden, William, assignor of one-half to T. Wright, Los Angeles, Cal. Stock-car stall	300,250	June 10	975	264	27	1112
Holden, William G., assignor of one-half to L. F. Cowan, Corpus Christi, Tex. Spring-bottom camp-bed	296,007	Apr. 1	142	41	27	29
Holdsworth, Thomas, West Winsted, Conn. Pencil sharpener and holder	296,751	Apr. 15	1092	305	27	221
Holgate, Henry, Toronto, and R. Bagnall, Hamilton, Ontario, Canada. Rail-stringer	296,567	Apr. 8	859	238	27	171
Holland, Benjamin, Jr., Providence, R. I., assignor of one-half to T. S. Nowell, Boston, Mass. Filter	300,367	June 17	1122	304	27	1148
Holland, John, Cincinnati, Ohio. Fountain-pen	298,582	May 13	778	219	27	682
Holland, John, Cincinnati, Ohio. Pencil case and lead	298,583	May 13	779	219	27	682
Holland, John, Cincinnati, Ohio. Fountain-pen	300,260	June 10	977	264	27	1112
Holland, Timothy, Troy, N. Y. Straight-way valve	300,973	June 24	1887	519	27	1292
Holley, William H., assignor of one-fourth to M. T. Whipple, Kansas City, Mo. Car-coupling	299,545	June 3	52	14	27	930
Holleyhead, John. (See Dawson and Holleyhead.)						
Hollingsworth & Coughlin. (See Hollingsworth, James, assignor.)						
Hollingsworth, James, assignor to Hollingsworth & Coughlin, Chicago, Ill. Apparatus for moving houses	295,921	Apr. 1	35	10	27	6
Holloman, Harvey A., and W. R. Green, Kingston, Tex. Picture-case for tombstones	298,089	May 6	157	41	27	557
Holloway, Charles T., Baltimore, Md. Cut-off nozzle	296,172	Apr. 1	331	94	27	64
Holloway, William, and T. L. Clevenger, Neff, Ind. Spindle for vehicle-wheels	300,974	June 24	1888	519	27	1292
Holman, Stephen A., Spencerville, Cal. Pen-holder	298,090	May 6	158	41	27	557
Holmes, Andrew B. (See Comegys, Holmes, and Boucher.)						
Holmes, Britain. (See Holmes, Edward and B.)						
Holmes, Edward and B., Buffalo, N. Y. Stave-bending machine	297,401	Apr. 22	1900	516	27	375
Holmes, George W., Council Bluffs, Iowa. Double-piston pump	299,788	June 3	367	94	27	990
Holmes & Ide. (See Whited, Alvinus, assignor.)						
Holmes, Joseph A., Greenland, N. H. Elevator-bucket	296,008	Apr. 1	143	42	27	29
Holsburg, Daniel B., Granville, Ill. Harness-saddle	298,972	May 20	1271	362	27	782
Holt, George C., Hartford, Conn., assignor of one-third to S. L. Holt, Mittineague, Mass. Fountain-pen	298,382	May 13	550	151	27	639
Holt, Horatio N. (See O'Hara, Adam, assignor.)						
Holt, Noah W., Buffalo, N. Y. Roller-mill	298,206	May 6	316	92	27	586
Holt, Noah W., Buffalo, N. Y. Roller-mill	299,789	June 3	368	94	27	991
Holt, Noah W., Buffalo, N. Y. Flour-bolt	299,790	June 3	369	95	27	991
Holt, Robert A., Lebanon, Mo. Attachment for coffee-pots	298,973	May 20	1272	362	27	782
Holt, Samuel L. (See Holt, George C., assignor.)						
Holton, Edward E., *et al.* (See Warfield, Oliver D., assignor.)						
Holtzman, John W. (See Lawrie, John, assignor.)						
Holway, Alvah W., Boston, Mass. Manufacture of medicated lozenges or tablets	297,800	Apr. 29	2429	.....	27	480
Holzer, Oscar. (See Weisse, Ludwig, assignor.)						
Homan, Franklin L. (See Homan, J. Frank and F. L.)						
Homan, J. Frank and F. L., New Haven, assignors to Lancraft Bros., Fair Haven, Conn. Apparatus for catching star-fish	297,079	Apr. 15	1481	409	27	293
Homan, James. (See Hope and Homan.)						
Hombach, George H., St. Ignace, Mich. Hub-attaching device	298,584	May 13	780	219	27	682
Hood, Joseph R., Philadelphia, Pa. Handle-attaching device for tools	295,922	Apr. 1	37	11	27	10
Hooker, Thomas, Syracuse, N. Y. Micrometer	297,602	Apr. 29	2177	595	27	433
Hope, William, and J. Homan, Springfield, Ohio. Lubricator	298,468	May 13	648	183	27	657
Hopke, Matthias. (See Osmer, Friedrich, assignor.)						
Hopkins, Addison S., Pascoag, R. I. Spindle-bolster for spinning-machines	296,962	Apr. 15	1336	371	27	267
Hopkins, Henry L., assignor of three-fourths to W. J. Mallory, J. Kelly, and M. M. Mallory, Caro, Mich. Saw-table gage	300,975	June 24	1889	520	27	1292
Hopkins, Samuel S., Norwich, Conn. Revolver	297,801	Apr. 29	2429	663	27	481
Höppner, Fritz. (See Flad and Höppner.)						
Hornig, Julius L., Jersey City, N. J. Steam-damper regulator	296,568	Apr. 8	860	239	27	171
Hornig, Julius L., Jersey City, N. J. Fluid-inspector	298,469	May 13	649	184	27	657
Horning, Robert A., assignor to himself and C. S. Dame, Lanark, Ill. Folding bathing-cabinet	298,585	May 13	782	219, 220	27	682
Horr, Asa. (See Mears, Hiram B., assignor.)						
Horrocks, James. (See Horrocks, John and J.)						
Horrocks, John and J., Manchester, county of Lancaster, England. Machine for doubling and winding yarn or thread upon bobbins	297,690	Apr. 29	2297	625, 626	27	456
Horsman, E. I. (See Crandall, Jesse A., assignor.)						
Horsman, Edward I. (See Stranders, Walter, assignor.)						
Horton, Charles H., Wellington, Ohio. Combined grain-thrasher and clover-seed huller. (Reissue)	10,485	June 3	548	146	27	1025

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Horton, Henry B., Ithaca, N. Y., assignor to Automatic Music Paper Company, Boston, Mass. Machine for punching perforated sheet-music	300,368	June 17	1122	304, 305, 306, 307	27	1148
Hotchkiss & Upson Company. (See Smith and Doll, assignors.)						
Hottegan, Edward. (See Thompson and Hottegan.)						
Hottes, Fredrick. (See Moll and Hottes.)						
Houck, George O., and C. Smith, assignors of one-half to R. H. Houck, Springfield, Ohio. Quilting attachment for sewing-machines	298,693	May 13	922	256	27	708
Houck, Richard H. (See Houck and Smith, assignors.)						
Hough, Frank B., *et al.* (See Burks, Jesse H., assignor.)						
Houghton, Darius, Skowhegan, Me. Wire-cutting machine	298,974	May 20	1272	363	27	782
Houghton, Darius, Skowhegan, Me. Wire-cutting machine	299,791	June 3	371	95	27	991
Houghton, Rufus A., Defiance, Ohio. Railway	296,411	Apr. 8	657	182	27	129
Houpt, John, Springtown, Pa. Combined feed-pump and condensing apparatus for engines	296,009	Apr. 1	144	42	27	30
House, James A., and C. H. Dimond, Bridgeport, Conn. Device for clamping patterns on goods	298,470	May 13	651	184	27	657
Houston, Edwin J., and E. Thomson, Philadelphia, Pa., assignors to Thomson-Houston Electric Company. Dynamo-electric machine	296,569	Apr. 8	862	239	27	171
Houston, Levi, Montgomery, Pa. Planing-machine	298,755	May 20	1003	280	27	731
Houston, Levi, Montgomery Station, Pa. Circular sawing machine	300,369	June 17	1126	307	27	1148
Housum, Charles P. (See Dupee and Housum.)						
Hovenden, Edwin R. (See Hovenden, George E. and E. R.)						
Hovenden, George E. and E. R., Grand Rapids, Mich. Electric fire-alarm	299,546	June 3	53	14	27	930
Hovey, Ansel N., *et al.* (See Howell, Jacob, assignor.)						
Howard, Charles W., Neenah, Wis. Telephone-call annunciator	300,976	June 24	1890	520	27	1292
Howard, Edward. (See Shaw, Loring D., assignor.)						
Howard, James, Boston, Mass. Sole-edge-burnishing machine	296,570	Apr. 8	863	239	27	171
Howard, Oliver F., Burlington, Iowa. Valve-gear for steam-engines	297,997	May 6	47	12	27	536
Howard, Patrick, assignor of one-half to D. Young, Piqua, Ohio. Baking-pan	299,475	May 27	1892	544	27	908
Howard, William C. (See Chambers, David, assignor.)						
Howarth, Dennis. (See Haas and Howarth.)						
Howe, Charles N. (See Kenerson and Howe.)						
Howe, Henry A., Albion, N. Y. Mower	296,412	Apr. 8	658	182	27	130
Howe, Henry A., Albion, N. Y. Harvester	298,854	May 20	1123	316	27	753
Howe, Milton G. (See Campbell, Noble, and Howe.)						
Howe Scale Company. (See Reynolds, William W., assignor.)						
Howell, Frank L., Neligh, Nebr. Well-bucket fixture	300,977	June 24	1891	520	27	1293
Howell, Henry W., Jr., Elizabeth, N. J. Automatic switch	298,756	May 20	1005	281	27	731
Howell, Jacob, assignor of one-half to H. N. Archer and A. N. Hovey, Jackson, Mich. Vehicle-spring	296,834	Apr. 15	1184	332	27	238
Howell, John C. (See Williams and Howell.)						
Howell, Silas J., Boston, assignor of one-half to D. W. Gooch, Melrose, Mass. Bearing for shafts, spindles, &c.	298,207	May 6	317	83	27	586
Howell, William G., assignor of one-half to B. C. Lauth, Philadelphia, Pa. Fence-rod	299,072	May 20	1396	397	27	805
Howells, John R., Plymouth, and G. Shelley, Wilkes-Barré, Pa. Mining-machine	300,076	June 10	727	196	27	1067
Howes, Albert P., Worcester, Mass. Individual electric call apparatus	298,383	May 13	550	151, 152	27	639
Howland, George L., Topsham, Me. Latch knob attachment	297,402	Apr. 22	1902	517	27	375
Hoxie, Elias, Red Creek, N. Y. Harness-buckle	297,802	Apr. 29	2430	664	27	481
Hoyle, Alonzo F., Worcester, Mass. Coating compound for wire-drawing	297,131	Apr. 22	1561	.....	27	312
Hoyt, Henry L., *et al.* (See Gilbert, Edwin, assignor.)						
Hoyt, James P., Newtown, Conn. Fountain-pen	296,963	Apr. 15	1337	371	27	267
Hoyt, Jonathan J., assignor to E. F. Richardson, Chelmsford, Mass. Case for preserving food	296,692	Apr. 8	1006	281	27	200
Hoyt, Joseph W., and J. W. Twiggs, assignors of one-third to D. O. Dyer, Jackson, Mich. Locomotive ash-pan	296,964	Apr. 15	1340	371	27	267
Hoyt, Lucius H., Danbury, Conn. Apparatus for shaping hat-brims	299,644	June 3	187	47	27	954
Hubbard, Frederick H., Brooklyn, N. Y. Deodorizing and antiseptic water-closet cover	298,091	May 6	160	41	27	557
Hubbard, Frederick H., assignor to himself and H. M. Pierson, Brooklyn, N. Y. Suppository for catarrh	298,855	May 20	1124	.....	27	753
Hubbard, Frederick J., Chicago, Ill. Carpet-stretcher	298,856	May 20	1125	316	27	753
Hubbard, Henry N., New York, N. Y. Upper plate of copying-presses	299,223	May 27	1582	455	27	851
Hubbard, Moses G., Norristown, Pa. Spring-vehicle	300,978	June 24	1891	520	27	1293
Hubbell, Sanders, Jr., Mount Vernon, Ohio. Thill-coupling	297,261	Apr. 22	1732	470	27	343
Huber, Berthold, Taunton, Mass. Stop-cylinder printing-machine	300,370	June 17	1128	307, 308	27	1149
Huber, Edward. (See Barnhart and Huber.) (Reissue.)						
Huber, Edward, and H. M. Barnhart, Marion, Ohio. Traveling crane	296,965	Apr. 15	1341	372	27	268
Huber, Edward, and F. Strobel, Marion, Ohio. Grain-separator	299,302	May 6	443	113	27	611
Huber, Edward, and F. Strobel, Marion, Ohio. Grain-separator	299,224	May 27	1582	455	27	852
Humbert, James H., Onan, assignor of one-half to G. W. Berry, Lodebar, Va. Lifting-jack	296,571	Apr. 8	864	240	27	172
Huckins, Charles, and G. N. Parker, Boston, Mass. Roller-skate	296,966	Apr. 15	1342	372	27	268
Hudgens, Robert H., and H. R. Allison, Laurens Court-House, S. C. Shovel-plow	297,132	Apr. 22	1562	430	27	312
Hudson, Frederick W., Leominster, Mass. Shovel	300,869	June 24	1769	482	27	1270
Hudson, Harry H., Flint, Mich. Traction-engine	297,403	Apr. 22	1903	517	27	375
Hudson, John W., Wellington, Ill. Molding-machine	300,979	June 24	1893	521	27	1293
Huff, Charles, St. Louis, Mo. Package and book holder	300,779	June 24	1659	454	27	1249
Hug, Jacob, St. Jacobs, Ill. Measuring apparatus for separators						
Hugentobler, Emil M. (See Beasley and Hugentobler.)						
Hughes, Daniel L., Milwaukee, Wis. Paper for boiler-covering	299,983	June 10	606	162	27	1045
Hughes, Edward. (See Pearce and Hughes.)						
Hughes, Felix T., *et al.* (See Comstock, Francis M., assignor.)						
Hughes, Phillip. (See Blyholder and Hughes.)						
Hulbert, Arthur G., St. Louis, Mo. Wire fence	296,835	Apr. 15	1184	332	27	238
Hull, Charles S. (See Hull, George S. and C. S.)						
Hull, George S. and C. S., Chambersburg, Pa. Brake-lock for bicycles	300,261	June 10	978	264	27	1112
Hull, Gurdon W., and C. B. Yale, assignors to Simpson, Hall, Miller & Co., Wallingford, Conn. Table-caster or other article of table-service	296,287	Apr. 1	495	139	27	93
Hull, Wayne J., Alexandria, Dak. Ter., and W. E. Varney, Daytonville, Iowa. Scroll-sawing machine	296,693	Apr. 8	1008	282	27	200
Hume, George H. (See Miller and Hume.)						
Humphreville, Frank, Lancaster, Pa. Incubator	296,413	Apr. 8	660	182, 183	27	130
Humphreys, Thomas, Salford, county of Lancaster, England. Box-fastener	297,262	Apr. 22	1732	470	27	343

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Hunt, Charles W., New York, N. Y. Elevator-bucket	297,934	Apr. 29	2585	709	27	511
Hunt, John B., Delaware, Ohio. Syringe	297,263	Apr. 22	1734	471	27	343
Hunt, Theodore, St. Louis, Mo. Pipe-coupling	297,264	Apr. 22	1734	471	27	343
Huntbach, Thomas, Geneva, Iowa. Fountain-brush	299,144	May 27	1491	498	27	834
Hunter, Andrew, Chicago, Ill. Middlings-purifier	296,752	Apr. 15	1092	305	27	921
Hunter, Andrew, Chicago, Ill. Flour-dressing machine	300,371	June 17	1131	308	27	1149
Hunter, George D., Terre Haute, assignor of two-thirds to M. C. Hunter and T. C. Van Nuys, Bloomington, Ind. Exhaust-nozzle	300,319	June 10	1054	286	27	1126
Hunter, James, Ruff's Dale, Pa. Telegraph-pole	298,975	May 20	1273	363	27	782
Hunter, Morton C., *et al.* (See Hunter, George D., assignor.)						
Huntington, Joseph D., Chicago, Ill. Device for suspending machinery	297,133	Apr. 22	1563	430	27	312
Huntington, Thomas S. (See Thomas and Huntington.)						
Huntington, Thomas S., New York, N. Y., assignor to New Home Sewing Machine Company, Orange, Mass. Button-hole attachment for sewing-machines	299,928	June 3	523	139	27	1021
Huntoon, Hazen P., Boston, Mass. Pen or pencil case	300,709	June 17	1573	431	27	1229
Hurd, George W., Meadville, Mo. End-gate for wagons	298,957	May 20	1126	316	27	753
Hurd, James C., assignor of one-half to J. E. Stannard, Springfield, Mass. Paper box	298,384	May 13	555	152	27	639
Husbands, José D., London, England, assignor to American Bell Telephone Company, Boston, Mass. Telephonic transmitter	299,073	May 20	1396	398	27	805
Husbands, José D., London, England, assignor to American Bell Telephone Company, Boston, Mass. Telephonic receiving instrument	299,074	May 20	1398	398	27	805
Hussey, Francis F., Newton, Mass. Dough-mixer	297,518	Apr. 22	2055	561	27	403
Hussey, William J., Boston, Mass. Removing the sand and glue from waste sand-paper	300,710	June 17	1574	.....	27	1230
Huston, John B., Cleveland, Ohio. Apparatus for improving the fire-test of petroleum and for bleaching other oils	297,603	Apr. 29	2178	595	27	433
Huston, Thomas, Kokomo, Ind. Wire-stretcher	298,385	May 13	555	152	27	639
Hutchinson, Byron, *et al.* (See Witty, John B., assignor.)						
Hutchinson, Charles, assignor of one-half to W. Bendt, San Francisco, Cal. Nautical parallel ruler	298,471	May 13	652	184	27	658
Hutchinson, Daniel, Poland, Me. Breeching for vehicles	296,694	Apr. 8	1009	282	27	201
Hutchinson, Merrill N., New York, N. Y. Passenger or other elevator	299,547	June 3	55	14	27	931
Hutchinson, Merrill N., New York, N. Y. Passenger or other elevator	299,548	June 3	57	15	27	931
Hutchinson, Merrill N., New York, N. Y. Elevator	299,645	June 3	190	47	27	955
Hutchinson, Merrill N., New York, N. Y. Elevator	299,646	June 3	191	48	27	955
Hyatt, Isaiah S. (See Hyatt, John W., Jr., and I. S.) (Reissue.)						
Hyatt, John W., assignor to Celluloid Manufacturing Company, Newark, N. J. Desiccating pyroxyline in comminuted form	297,935	Apr. 29	2586	709	27	512
Hyatt, John W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Manufacturing celluloid and other compounds of pyroxyline	296,967	Apr. 15	1343	372	27	268
Hyatt, John W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Manufacture of combs from celluloid and other plastic material	299,389	May 27	1787	514	27	889
Hyatt, John W., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Manufacture of combs from celluloid and other plastic material	299,390	May 27	1790	515	27	890
Hyatt, John W., F. V. Pool, J. Everding, J. H. Stevens, and W. H. Wood, Newark, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Apparatus for the manufacture of nitro-cellulose	299,388	May 27	1784	{513 514	{27	889
Hyatt, John W., J. H. Stevens, and W. H. Wood, Newark, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Manufacture of celluloid and other compounds of pyroxyline	296,970	Apr. 15	1348	.....	27	269
Hyatt, John W., J. H. Stevens, W. H. Wood, and J. Everding, Newark, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Manufacture of pyroxyline material	296,969	Apr. 15	1346	373	27	269
Hyatt, John W., W. H. Wood, and J. H. Stevens, Newark, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Process of and apparatus for effecting the desiccation of pyroxyline pulp	296,968	Apr. 15	1344	373	27	268
Hyatt, John W., Jr., Newark, and I. S. Hyatt, Morristown, N. J., assignors, by mesne assignments, to Celluloid Manufacturing Company, of New York. Treating and molding pyroxyline. (Reissue)	10,469	Apr. 15	1514	.....	27	298
Hyde, Francis, Toronto, Ontario, Canada. Self-closing tap	297,691	Apr. 29	2300	626	27	456
Hyde, Gustavus A., Sr., Cleveland, Ohio, and Gustavus A. Hyde, Jr., Saginaw, Mich. Gas-pressure regulator	297,692	Apr. 29	2301	626	27	456
Hyde, James C., assignor to West Haven Buckle Company, West Haven, Conn. Garment-clasp	297,803	Apr. 29	2431	664	27	481
Hyde, James C., assignor to West Haven Buckle Company, West Haven, Conn. Garment-clasp	297,804	Apr. 29	2432	664	27	481
Hyde, James P., New York, N. Y. Water-closet and preserving the seals of the traps thereof	299,792	June 3	371	95	27	991
Hyde, Jonathan L. (See Chinnock, Charles, assignor.)						
Hydrogen Lighter Company. (See Hinden, Mathias J., assignor.)						
Hyslop John, Jr., Abington, Mass. Headed slug-nail	300,077	June 10	729	197	27	1067
Ibelle, William H., assignor of one-half to R. J. Vance, New Britain, Conn. Barrel lifter and carrier	296,010	Apr. 1	146	42	27	30
Ide, Samuel, Medina, N. Y. Stay-roller for sliding doors	297,805	Apr. 29	2432	664	27	481
Ide, Warren, Medina, N. Y. Door-hanger	300,474	June 17	1258	344	27	1172
Idoer, George W., assignor to himself and A. D. Rike, Thomasville, Ga. Sad-clamp	300,078	June 10	729	197	27	1068
Immel, George W., Logansport, Ind. Drain-cleaner	300,876	June 24	1771	482	27	1270
Immendorf, George H., assignor to H. G. Morris, Philadelphia, Pa. Drier	296,572	Apr. 8	865	240	27	172
Indianapolis Machine and Bolt Works. (See Felton, Harmon H., assignor.)						
Indianapolis Machine and Bolt Works. (See Olsen, Olaf R., assignor.)						
Ingersoll, Oliver R., Brooklyn, assignor to National Enamel Letter and Number Company, New York, N. Y. Enameling metallic surfaces	300,711	June 17	1575	432	27	1230
Ingram, George A., Plymouth, Pa. Miner's squib	296,011	Apr. 1	147	43	27	30
Ingrish, Ferdinand J., Libertyville, Ill. Harness-crupper	299,793	June 3	373	95	27	992
Inman, Horace, Amsterdam, N. Y. Paper slitting and winding machine	297,936	Apr. 29	2587	{709 710	{27	512
Inman, Horace, Amsterdam, N. Y. Machine for labeling or covering the tops of boxes	299,225	May 27	1584	{455 456	{27	852
Internationaler Vacuum-Eismaschinen-Verein. (See Richter, Wilhelm, assignor.)						
Ireland, David M., assignor of one-half to H. A. Matthews, Waterbury, Conn. Plaque-holder	298,976	May 20	1274	363	27	782
Ireland, David M., assignor of one-half to H. A. Matthews, Waterbury, Conn. Easel	299,391	May 27	1790	515	27	890
Ironside, William, Kelton, Pa. Combined planter and fertilizer-distributer	300,202	June 10	979	264	27	1112
Irvin, Christopher C. (See Warren, Christopher C., assignor.)						
Irvin, Edward S. (See Kuhlmann, Robinson, and Irvin.)						
Irvin, Samuel, Sedalia, Mo. Freight-car-door guard	299,794	June 3	374	96	27	992

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Irvine, John J., assignor to himself and L. L. Irvine, Chattanooga, Tenn. Oil-cup	300,980	June 24	1894	521	27	1293
Irvine, Lindsay, L. (See Irvine, John J., assignor.)						
Irving, John G., Markdale, Ontario, Canada. Pump	298,208	May 6	318	83	27	586
Irwin, Alexander T., assignor to Jones & Laughlins, (limited,) Pittsburg, Pa. Belt-pulley	296,173	Apr. 1	331	94	27	65
Irwin, John H., *et al.* (See Betts, Lewis F., assignor.)						
Irwin, Joseph L. (See Sweeney and Irwin.)						
Irwin, Wells M., *et al.* (See Comstock, Francis M., assignor.)						
Isaacs, John D., Oakland, Cal. Constructing tubes and road-beds for cable railways	298,472	May 13	653	185	27	658
Isaacson, Adolph, New York, N. Y. Ejector for insect-powders	297,693	Apr. 29	2303	626	27	457
Iverson, John C. (See Williams, Charles J., assignor.)						
Ives, William A., New Haven, Conn. Bit-brace	301,058	June 24	1994	551	27	1312
Ivett, Ephraim, assignor to himself and F. Sheeran, North Ferrara, Ohio. Die for pressing clay fence-posts	297,604	Apr. 29	2179	595	27	434
Jackman, J. Worth, H. B. Neighbor, J. R. Stick, and S. F. Habiltzel, Lafayette, Iowa. Chimney-cowl	300,079	June 10	730	197	27	1068
Jackson, Abbie A., New York, N. Y. Game-board, dice-box, &c	296,012	Apr. 1	149	43	27	31
Jackson, Caleb H., Allegheny, Pa. Railway signaling apparatus	298,209	May 6	319	83	27	586
Jackson, James, New York, N. Y. Refrigerator	296,573	Apr. 8	867	240	27	172
Jackson, Thomas W., San Francisco, Cal. Dry-closet	299,226	May 27	1585	456	27	852
Jackson, Walter M., assignor to American Combustion Company, Providence, R. I. Device for promoting combustion	300,080	June 10	731	197	27	1068
Jackson, William B., High Shoals, Ga. Seed planter and guano-distributer	299,549	June 3	58	15	27	931
Jackson, William H., Jr., Trenton, N. J. Machinery for rolling wire	298,977	May 20	1274	363	27	782
Jacobs, Andrew. (See Plummer, George W., assignor.)						
Jacobs, Benjamin F., San Francisco, Cal. Hub for vehicle-wheels	296,414	Apr. 8	661	183	27	130
Jacobs, Henry L., Columbus, Ohio. Smk or analogous article	297,404	Apr. 22	1905	518	27	376
Jacobs, J. Eugene. (See Nash, Caleb P., assignor.)						
Jacobs, Jacob, New York, N. Y. Illuminating-tile	297,806	Apr. 29	2433	665	27	481
Jacobs, Joseph G., *et al.* (See Gifford Franklin, assignor.)						
Jacobs, Joseph G. (See Hill, Edwin F., assignor.)						
Jacobson, Niels, Chicago, Ill. Chair	297,405	Apr. 22	1906	518	27	376
Jacoby, Daniel W., Abilene, Kans. Check-rower and corn-planter	298,978	May 20	1275	364	27	783
Jaeck, Emile, Brooklyn, N. Y., assignor to J. M. Fuchs and J. C. F. Lang. Lithographic printing-machine	298,092	May 6	161	42	27	557
Jaeger, Gustav L., New York, N. Y., and A. Faber du Faur, Newark, N. J., assignors to said Jaeger. Manufacture of cell-cases	296,988	Apr. 1	496	{139 140	{27	93
Jager, Frank. (See McGuire, William, assignor.)						
Jagusch, Carl. (See Wesak and Jagusch.)						
James, Henry, Memphis, Tenn. Die for making bolster-plates	298,586	May 13	783	220	27	682
Jamieson, William, New York, N. Y. Conductor for telephone and telegraph purposes	297,406	Apr. 22	1906	518	27	376
Jamison, John P., Cambridgeport, Mass. Wood ornamentation	299,984	June 10	606	163	27	1046
Janssen, Georg C. F. P., Hamburg, Germany. Flour-bolting machine	299,647	June 3	194	48	27	955
January & Wood. (See Jaquith, Gilman, assignor.)						
Janusch, Frederick G., New York, N. Y. Stud for fire-place frames and fender-bars	300,081	June 10	732	198	27	1068
Jaquith, Gilman, assignor to himself and January & Wood, Maysville, Ky. Thread-separator for ring-spinning frames	296,574	Apr. 8	868	240	27	172
Jarecki, Albert H., Erie, Pa. Pipe-vise	296,333	Apr. 8	558	155	27	111
Jay & Co. (See Jay, Pierre E., assignor.)						
Jay, Pierre E., New York, N. Y. Protector for water-pipes against freezing	299,392	May 27	1791	515	27	890
Jay, Pierre E., assignor to Jay & Co., New York, N. Y. Process of and apparatus for aging whisky	296,836	Apr. 15	1185	332	27	238
Jebb, William T., Buffalo, N. Y. Overflow-trap for wash-basins, bath-tubs, &c	299,476	May 27	1892	545	27	908
Jeffrey, Joseph A. (See Legg, Benjamin A., assignor.)						
Jeffries, D. T., *et al.* (See Brown, Azariah R., assignor.)						
Jelinek, Anton, assignor of one-half to J. A. Craig, Chicago, Ill. Hinge for mirrors	298,386	May 13	556	153	27	640
Jenecke, John H., Waterbury, Conn. Cutting-pliers	298,587	May 13	785	220	27	682
Jenecke, John H., Waterbury, Conn. Cutting-pliers	298,588	May 13	786	221	27	683
Jenkin, Fleeming, Edinburgh, Scotland. Driving-gear	297,407	Apr. 22	1907	{518 519 520 521 522	{27	377
Jenkins, Aaron, Wabash, Ind. Truss-brace for vehicle-axles	297,807	Apr. 29	2434	665	27	481
Jenkins, Joel, assignor of one-half to G. P. Farmer, Montclair, N. J. Safety-pin	299,075	May 20	1400	309	27	805
Jenkins, Samuel H., New York, N. Y. Cable-tramway	299,393	May 27	1792	{515 516	{27	890
Jenkins, Samuel H., New York, N. Y. Cable-tramway	299,394	May 27	1795	516	27	891
Jenkins, William M., Defiance, Iowa. Railway-joint and nut-lock	298,473	May 13	655	185	27	658
Jenks, Henry F., Pawtucket, R. I. Sash-cord fastener	300,263	June 10	981	265	27	1113
Jennings, Ralph S., Boston, Mass. Smoothing and polishing material	298,474	May 13	656	185	27	658
Jennings, Warren P., Brooklyn, N. Y. Fabric for trimmings	299,985	June 10	608	{163 164	{27	1046
Jensen, Jens, assignor to Jensen Manufacturing Company, (limited,) Racine, Wis. End-gate rod for vehicles	300,082	June 10	733	198	27	1068
Jensen Manufacturing Company. (See Jensen, Jens, assignor.)						
Jensen, Mathias, assignor of two-thirds to J. and A. L. Fox, Astoria, Oreg. Soldering-machine	300,083	June 10	733	198	27	1068
Jerome, David H. (See Goldie, William, assignor.)						
Jerrold, John E., and C. L. Burgermeister, Allegheny, assignors of one-third to T. M. and W. M. Reea, Pittsburg, Pa. Valve for engineery and vessels	300,373	June 17	1134	309	27	1149
Jervis, Abner M., Jonesborough, assignor of two-thirds to R. H. Dungan, M. L. and L. C. Peoples, Washington County, Tenn. Fruit-evaporator	299,986	June 10	609	{164 165	{27	1046
Jeter, Edmond W., assignor of one-half to J. H. Dabney, Conyers, Ga. Churn	299,550	June 3	59	15	27	931
Jewell, Omar H., and W. M. Mathisen, Chicago, Ill. Furnace-grate	298,093	May 6	163	42	27	558
Jewell & Sons, P. (See Babcock, Holland C., assignor.)						
Jewell, William M., Denver, Colo. Automatic shelf-feeder for middlings-purifiers and roller-mills	298,387	May 13	557	153	27	640
Jewett, Edgar B., Buffalo, N. Y. Water-cooler	298,694	May 13	923	256	27	709
Jillson, Frank A., Racine, Wis. Indicator-lock	299,395	May 27	1796	{516 517	{27	891
Johnson, Giles T., assignor of one-half to J. M. Hays, Augusta, Ga. Car-coupling	296,575	Apr. 8	869	241	27	173
Johnson, Henry F., London, England. Magneto-electric machine	299,551	June 3	60	15	27	932
Joel, Henry F., London, England. Magneto-electric machine	298,757	May 20	1006	281	27	731
Johns, Henry W., New York, N. Y. Fire-proof fabric	300,374	June 17	1134	.....	27	1150
Johns, Henry W., New York, N. Y. Wall-paper, paper-board, &c						

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Johnson, Alonzo, assignor to G. Dwight, Jr., Springfield, Mass. Bolt-nut	300,475	June 17	1258	345	27	1172
Johnson, Andrew, Greensborough, Ala. Baling-press	296,014	Apr. 1	151	44	27	31
Johnson, Andrew F., Stillwater, Minn. Reversing and cut-off gear for engines	296,013	Apr. 1	150	43	27	31
Johnson, Charles C., assignor to C. E. Richardson and A. Brown, Springfield, Vt. Bench-dog	300,780	June 24	1660	455	27	1240
Johnson & Field. (See Field, Martin S., assignor.)						
Johnson, George H., Salisbury Furnace, Va. Harrow and cultivator	298,858	May 20	1126	317	27	753
Johnson, Henry J., assignor to H. W. Gardner, Providence, R. I. Slide-valve seat	300,372	June 17	1133	309	27	1149
Johnson, James, East Hampstead, N. H. Plow-colter	299,396	May 27	1798	517	27	891
Johnson, James M., Cleveland, Ohio. Collapsible screw-tap	297,519	Apr. 22	2057	592	27	403
Johnson, James P., assignor of one-half to A. W. Tancil, Washington, D. C. Tool-handle	298,695	May 13	994	257	27	709
Johnson, Luman F., Cleveland, Ohio. Furnace-door	297,508	Apr. 29	2434	665	27	482
Johnson, Madison L., Galena, Ill. Preventing locomotive driving-wheels from spinning	296,576	Apr. 8	870	241	27	173
Johnson, Moses C., assignor to Pratt & Whitney Company, Hartford, Conn. Friction-clutch	298,979	May 20	1277	364	27	783
Johnson, Oliver P., Washington, D. C. Refrigerating package for shipping and preserving butter, oysters, &c	300,476	June 17	1259	345	27	1172
Johnson, Peter, Dassel, Minn. Manure pulverizer and distributer	299,648	June 3	195	49	27	956
Johnson, Samuel H., Stratford, county of Essex, England. Filter-press	298,758	May 20	1007	281	27	732
Johnson, Walter. (See Hague, Edmund H., assignor.)						
Johnson, Warren S., Whitewater, assignor of one-half to W. Plankinton, Milwaukee, Wis. Heat-regulator	297,937	Apr. 29	2588	710	27	512
Johnson, Warren S., Whitewater, assignor of one-half to W. Blankinton, Milwaukee, Wis. Electro-magnetic indicator	299,552	June 3	62	16	27	932
Johnson, Warren S., assignor of one-half to W. Plankinton, Milwaukee, Wis. Electric valve for regulating temperature, &c	301,059	June 24	1995	551	27	1312
Johnson, William F., assignor to G. S. Tracy and T. A. Galt, Sterling, Ill. Check-row wire	297,365	Apr. 22	1735	471	27	343
Johnson, Zachariah M., South Bend, Ind. Pantaloon-stretcher	300,699	June 17	1421	391	27	1202
Johnston, Allen, Ottumwa, Iowa. Screw-machine	299,477	May 27	1894	545	27	908
Johnstone, Henry L., Palmetto, Ga. Car-coupling	296,577	Apr. 8	870	241	27	173
Johnstone, Henry L., Palmetto, Ga., assignor to Excelsior Life Saving Car Coupling Company, New York, N. Y. Car-coupling. (Reissue)	10,489	June 17	1617	443	27	1236
Jones, Albert E. (See Jones, Edward and A. E.)						
Jones, Clement R. (See Hocking and Jones.)						
Jones, Edward and A. E., Church Terrace, Queen's Road, Battersea, county of Surrey, England. Electric-arc lamp	299,397	May 27	1798	518	27	892
Jones, Francis W., New York, N. Y. Static compensator for telegraphs	300,781	June 24	1661	455	27	1250
Jones, Franklin D., *et al.* (See Reams, George W., assignor.)						
Jones, Frederick W., Exeter, county of Devon, England. Velocipede	296,837	Apr. 15	1186	333	27	239
Jones, Garrison H., Larwill, Ind., and J. M. Chilcote, Edgerton, Ohio. Belt-stretcher	299,795	June 3	374	96	27	992
Jones, Gomer, Washington, D. C., assignor to Standard Vapor Fuel Iron and Steel Company of New York. Regenerator-furnace	296,174	Apr. 1	332	94, 95	27	65
Jones, Gomer, Washington, D. C., assignor to Standard Vapor Fuel Iron and Steel Company of New York. Superheater	296,175	Apr. 1	334	95	27	65
Jones, Gomer, Washington, D. C., assignor to Standard Vapor Fuel Iron and Steel Company of New York. Superheating-furnace	296,176	Apr. 1	336	95	27	65
Jones, Gomer, Washington, D. C., assignor to Standard Vapor Fuel Iron and Steel Company of New York. Generating gas	296,289	Apr. 1	499	140	27	94
Jones, Gomer, Washington, D. C., assignor to Standard Vapor Fuel Iron and Steel Company of New York. Gas-generator	296,290	Apr. 1	502	140	27	94
Jones, Henry G., assignor of one-half to H. S. Keller, Philadelphia, Pa. Photographic camera	300,477	June 17	1262	345 / 346	27	1173
Jones, Jacob, Baltimore, Md. Letter-opener	299,398	May 27	1892	510	27	892
Jones, Jabez R., Reading, Mich., assignor to Colby Wringer Company. Folding rocker	297,809	Apr. 29	2435	665	27	482
Jones, Jesse A., Raleigh, N. C. Grain crusher and disintegrator	296,338	Apr. 15	1187	333	27	239
Jones, Joel H., Lynchburg, Va. Circular sawing machine	296,314	Apr. 8	856	156	27	111
Jones, John C., and C. T. Reid, Decatur, Ill. Steam-alarm and damper-regulator	296,839	Apr. 15	1188	333	27	239
Jones, John M. C., London, Ohio. Thrashing-machine	296,045	Apr. 1	153	44	27	31
Jones, Kinzy W., Lemoore, Cal. Land-roller	298,475	May 13	657	185	27	658
Jones & Laughlins. (See Irwin, Alexander T., assignor.)						
Jones, Llewellyn E., Syracuse, N. Y. Hame	300,712	June 17	1576	432	27	1220
Jones, Matthew M., Kokomo, Ind. Wire-crimper	296,177	Apr. 1	337	95	27	65
Jones, Obed H., Kortright, N. Y. Apparatus for boiling sap or cane-juice	297,810	Apr. 29	2436	666	27	482
Jones, Owen E., Wymore, Nebr. Hand and foot power	300,084	June 10	735	190	27	1069
Jones, Richard W., Syracuse, N. Y. Harness-rosette	296,178	Apr. 1	337	96	27	66
Jones, Robert H., M. B. Smith, and L. J. A. Roswall, Clarence, Mo. Apparatus for cleaning photographs	296,578	Apr. 8	871	241 / 242	27	173
Jones, Valorian K., Lynn, Mass. Last	296,016	Apr. 1	154	44	27	31
Jones, William C., *et al.* (See Beam, Henry T., assignor.)						
Jonson, Josiah, assignor of one-half to T. M. O. Neill, Toledo, Ohio. Vehicle-hub	300,264	June 10	982	265	27	1113
Joo, Morris, assignor of one-half to M. F. Charles, Roanoke, Va. Bottle-stopper	300,320	June 10	1055	286	27	1126
Joralemon, Lansing, and N. R. Mabey, Gloversville, N. Y. Car-coupling	296,579	Apr. 8	872	242	27	173
Jordan, Michael, assignor of one-fourth to O. Schreifer and J. F. Connolly, Scranton, Pa. Car wheel and axle	296,017	Apr. 1	155	45	27	32
Jordan, William A., New Orleans, La. Nut-washer	299,987	June 10	611	165	27	1046
Jorgensen, Axel, Keystone, Minn. Pump	299,478	May 27	1897	546	27	909
Joslyn, Matthew H., assignor to M. L. Joslyn, Rochester, N. Y. Band cutter and feeder	296,695	Apr. 8	1010	283	27	201
Joslyn, Myron L. (See Joslyn, Matthew H., assignor.)						
Journeay, Abram L. (See Washburn and Journeay.)						
Jowett, Thomas L., Boston, Mass. Block for building purposes	296,971	Apr. 15	1349	373	27	260
Joy, Adin P., New Market Junction, N. H. Lifting-jack	298,980	May 20	1278	365	27	783
Joyce, Joseph L., New Haven, Conn. Toy gun	299,796	June 3	375	96	27	992
Judd & Co., H. L. (See Burnett, Benjamin F., assignor.)						
Judd & Co., H. L. (See Lathrop, Frank L., assignor.)						
Judd, Edward A., New Britain, Conn. Trunk-lock	297,938	Apr. 29	2590	710	27	512
Judd, Hubert L., Brooklyn, N. Y. Window-shade bar	296,291	Apr. 1	505	140	27	95
Judd, Hubert L., Brooklyn, N. Y. Shade-pull	300,085	June 10	736	190	27	1069
Judd, Oliver S., New Britain, Conn. Sash-fastener	297,605	Apr. 29	2180	595	27	434
Judd, Walter L. (See May, Catharine, assignor.)						
Judson, Charles H., Greenville, S. C. Fire-alarm	298,981	May 20	1279	365	27	783
Judson, Charles K. (See Dunckleburg, Isaac M., assignor.)						
Judson, Charles W., assignor to Eagle Lock Company, Terryville, Conn. Padlock	298,476	May 13	657	186	27	658
Judson, Roswell S., and C. M. Ackerman, Matteawan, N. Y. Machine for felting and sizing hats and other fabrics	296,415	Apr. 8	662	183	27	130

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Julian, William H., *et al.* (See Manuel, David, assignor.)						
Juli, Orange, assignor to E. Leslie, Orangeville, Ontario, Canada. Snow-plow	297,408	Apr. 22	1912	523	27	377
Juney, Frank G., Victor, N. Y. Potato-coverer	297,266	Apr. 22	1736	471	27	343
Jungbluth, Joseph, Erie, Pa. Combined street and lawn sprinkler	299,076	May 20	1401	399	27	806
Jungerman, Edward, Gettysburg, Pa. Automatic winding-signal for spring-clocks	297,520	Apr. 22	2057	592	27	404
Jungerman, Edward, Fort Supply, Indian Ter. Automatic winding-reminder for clocks	297,694	Apr. 29	2304	627	27	457
Kahler, Conrad, Chicago, Ill. Journal-box	298,859	May 20	1129	317	27	754
Kaighn, Leila, *et al.* (See Harkins, George C., assignor.)	300,871	June 24	1771	482 / 483	27	1270
Kaiser, Alexander, Freiburg, Switzerland. Device for converting motion	299,988	June 10	612	165	27	1047
Kaiser, Joseph, *et al.* (See Earhart, Herbert, assignor.)						
Kaldenberg, Frederick J., New York, N. Y. Manufacture of brushes	297,080	Apr. 15	1482	410	27	293
Kalish, Phillip, Chicago, Ill. Garter-clasp	297,410	Apr. 22	1914	523 / 524	27	377
Kanmacher, George H., Columbus, Ohio. Excavating-elevator	10,492	June 24	2018	557	27	1316
Kanne, Friderick F., Waterville, Minn. Horse-collar pad. (Reissue)						
Kanthack, Alexander, assignor of one-half to J. M. Driver, Philadelphia, Pa. Spring-motor	298,388	May 13	559	154	27	640
Karras, Albert, Hudson, Wis. Hip-strap loop for harness	298,589	May 13	787	221	27	683
Karst, Emile, St. Louis, Mo. Water-filter	296,972	Apr. 15	1351	373	27	269
Kattell, Charles W., New York, N. Y. Potato-digger	299,399	May 27	1892	519	27	892
Kaufholz, John N., Cleveland, Ohio. Car-wheel	296,840	Apr. 15	1189	333	27	239
Kaufman, Daniel, Bloomington, Ill. Horse-power	300,610	June 17	1422	392	27	1203
Kaufman, William, New York, N. Y. Combined knife-sharpener and fork	297,521	Apr. 22	2058	592	27	404
Kaufmann, Barnard A., assignor to Globe Tobacco Company, Detroit, Mich. Cigarette	297,409	Apr. 22	1913	523	27	377
Kaul, Charles. (See Kaul, Pius and C.)						
Kaul, Pius and C., Lancaster, Pa. Breech-loading fire-arm	298,982	May 20	1280	365	27	783
Kantsky, Johann. (See Gwinner, Kautsky, Dengg, and Roth.)						
Kayne, Thomas Y. (See Egan, James Y., assignor.)						
Kayser, Heinrich, Berlin, Germany. Photographic exchange-box	300,478	June 17	1263	346	27	1173
Kayser, William J., Milwaukee, Wis. Chimney cap and ventilator	299,227	May 27	1587	456	27	853
Keagy, David B., Idaho Springs, Colo. Wagon end-gate	300,086	June 10	737	199	27	1069
Kealen, Wyley M., Payson, assignor to E. B. Hale and J. B. Markee, Birmingham, Ill. Band-tucker	298,389	May 13	559	154	27	640
Keedy, John H., West Alexandria, Ohio. Force-feed for grain-drills	298,390	May 13	560	154	27	640
Keeler, Henry C., Ogden, Utah Ter. Pendulum-scale	297,267	Apr. 22	1737	472	27	344
Keeler, Horatio, Chicago, Ill. Purifying molten iron and steel	298,983	May 20	1281	.....	27	784
Keenan, James E., Scranton, Pa. Bottle-stopper	300,965	June 10	983	265	27	1113
Keenan, Walter M. (See Cahoon, William, Jr., assignor.)						
Keep, Walter H. (See Keep, William F. and W. H.)						
Keep, William F. and W. H., 11 Hazellville Road, Hornsey Lane, county of Middlesex, England. Electric alarm applied to cots, &c	299,649	June 3	196	49, 50	27	956
Keeran, William H., Auburn, Ind. Blind-slat operator	298,860	May 20	1130	318	27	754
Kegel, Edward. (See Krüger, Tobias, and Kegel.)						
Keiser, John A., assignor to S. C. Tatum & Co., Cincinnati, Ohio. Cabinet-shave	300,966	June 10	983	265	27	1113
Keith, Thomas, New York, N. Y. Elevating apparatus	297,696	Apr. 29	2306	627	27	457
Kellam, Harry F., *et al.* (See Adams, Archibald D., assignor.)						
Kellams, James, Ellsworth, Ind. Water-wheel	298,477	May 13	658	186	27	659
Kellar, Warner L., Lovington, Ill. Check-row corn-planter	297,697	Apr. 29	2309	628	27	458
Keller, Henry H. (See Ross, Robert N., assignor.)						
Keller, Henry S. (See Jones, Henry G., assignor.)						
Keller, John, and J. F. Perlbach, New York, N. Y. Device for recording time	297,939	Apr. 29	2592	711	27	512
Keller, Louis, New York, N. Y. Combined calendar and paper-weight	296,179	Apr. 1	338	96	27	66
Keller, Louis, New York, N. Y. Toy	297,134	Apr. 22	1564	431	27	313
Kellogg, Chauncey S., New Orleans, La. Shirt-bosom protector	298,391	May 13	560	154	27	640
Kellogg, Marmaduke B., San Francisco, Cal. Duplicating-engine	299,553	June 3	63	16	27	932
Kellogg Newspaper Company, A. N. (See Pratt, Edwin E., assignor.)						
Kellogg, William P., Troy, N. Y. Whip-rack	299,797	June 3	377	96	27	993
Kells, Edward, Cleveland, Ohio. Apparatus for distilling petroleum	298,210	May 6	392	84	27	586
Kelly, John, *et al.* (See Hopkins, Henry L., assignor.)						
Kelly, John, Peoria, Ill. Combined cut-off and governor	300,267	June 10	984	266	27	1113
Kelly, John E., Fryeburg, Me. Barbed fence	296,753	Apr. 15	1085	305	27	221
Kelly, John J. (See Myers and Kelly.)						
Kelly, William H., Lexington, Va. Fanning-mill	297,411	Apr. 22	1915	524	27	378
Kelsey, Benjamin. (See Kelsey, George S., assignor.)						
Kelsey, Edmund B., Beverly, Mass. Machine for setting or molding the edges of boot or shoe soles	299,145	May 27	1492	428 / 429	27	834
Kelsey, George S., assignor to B. Kelsey, Birmingham, county of Warwick, England. Bicycle-handle	296,973	Apr. 15	1351	374	27	269
Kelsey, Joseph J., Detroit, Mich. Pillow-sham holder	299,400	May 27	1893	519	27	892
Kelton, John C., San Francisco, Cal. Pistol-handle	297,412	Apr. 22	1917	524	27	378
Kemmerer, Charles P., Grand Island, Nebr. Lamp-stove	300,268	June 10	985	266	27	1113
Kempshall, Eleazer, New Britain, Conn. Button-setting instrument	298,984	May 20	1282	365	27	784
Kenaga, Samuel C., Kankakee, Ill. Corn-harvester	299,401	May 27	1894	519 / 520	27	893
Kendall, Franklin B., Tumwater, Wash. Ter. Odorless privy seat or chair	296,580	Apr. 8	873	242	27	174
Kendall, Franklin B., Tumwater, Wash. Ter. Combined wheelbarrow and sled	299,798	June 3	378	97	27	993
Kendall, John A., Hamilton, Mo. Creaming-can	296,416	Apr. 8	663	183	27	130
Kendrick, Andrew W., Brooklyn, and C. A. Van Duzee, Gouverneur, N. Y. Fanning-mill	299,077	May 20	1402	399 / 400	27	806
Kenerson, Virgil D., and C. N. Howe, Worcester, Mass. Preparatory coating for wire-drawing	297,606	Apr. 29	2181	.....	27	434
Kennard, Amos, Clearfield, Pa. Cant-hook or dog	298,750	May 20	1008	281	27	732
Kennedy, Albert H., Rockport, Ind. Educational appliance	296,018	Apr. 1	156	45	27	32
Kennedy, Thomas, Jr., *et al.* (See McCullough, Samuel, assignor.)						
Kennedy, William B., and W. M. Nesbit, Silver Reef, Utah. Ore-concentrator	300,479	June 17	1264	347	27	1173
Kenney, Thomas M., assignor to F. E. Mason, Cambridge, Mass. Pencil	295,923	Apr. 1	38	11	27	10
Kenney, Thomas M., assignor of one-half to F. E. Mason, Cambridge, Mass. Cash system	297,522	Apr. 22	2059	592	27	404
Kenney, Thomas M., assignor of one-half to F. E. Mason, Cambridge, Mass. Cash system	297,268	Apr. 22	1738	472	27	344
Kepley, Ada H., Effingham, Ill. Traveler's treasure-belt	299,402	May 27	1899	520	27	894
Keppel, Henry, New York, N. Y. Sash-fastener						
Kern, Alfred, Basle, Switzerland, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Manufacture of ethyl-blue coloring-matter	297,413	Apr. 22	1918	.....	27	378
Kern, Alfred, Basle, Switzerland, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Methyl-blue coloring-matter	297,414	Apr. 22	1919	.....	27	378

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Kern, Alfred, Basle, Switzerland, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Methyl-blue coloring-matter	297,415	Apr. 22	1920	.....	27	378
Kern, Alfred, Basle, Switzerland, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Ethyl-blue coloring-matter	297,416	Apr. 22	1920	.....	27	378
Kern, Phaon J., Frankfort, Ind. Wagon-seat	300,611	June 17	1424	392	27	1203
Kern, Victor. (See Tombow, John, assignor.)						
Kerr, James, London, England. Wood pavement	296,581	Apr. 8	874	242	27	174
Kerr, Thomas B. (See Sergeant, Raphael, assignor.)						
Kersten, Emil, Charleston, S. C. Clarifying beer	300,981	June 24	1896	521	27	1294
Kersten, Marsell, Garfield, Iowa. Metallic tag	296,180	Apr. 1	340	96	27	66
Kester, Robert L., Philadelphia, Pa. Filter	300,612	June 17	1425	393	27	1203
Ketcham, Alonzo R., Buffalo, N. Y. Stop-cock box for water or gas pipes	296,181	Apr. 1	340	96	27	66
Kettering, Henry, Massillon, Ohio. Harvester chain rake	300,087	June 10	737	199	27	1070
Kenffel, William, Hoboken, N. J. Tape-measure	297,417	Apr. 22	1921	525	27	379
Kewley, Philip A., San Francisco, Cal. Building and setting molding-caissons	299,554	June 3	65	16	27	932
Key, John N., Princeton, Ind. Drag-rod	297,811	Apr. 29	2437	666	27	482
Keys, William A., and J. Lockwood, New York, N. Y. Buckle	296,182	Apr. 1	341	97	27	66
Kibbe, William A., assignor to M. A. Norton, Leavenworth, Kans. Marking implement	297,812	Apr. 29	2438	666	27	482
Kibler, John B., Minneapolis, Minn. Propeller for small boats	300,982	June 24	1897	521	27	1294
Kienardt, John. (See Smith and Kienardt.)						
Kierson, G. Frank, *et al.* (See Cassidy, Peter B., assignor.)						
Kiger, Alfred, Darstown, assignor of one-half to J. Thornton, Hainesport, N. J. Corn-sheller	300,872	June 24	1772	483	27	1270
Kilbourn, Edward, Jamestown, Wis. Tread-power	298,094	May 6	164	42	27	558
Kilbourn, Joseph K., Brixton, county of Surrey, and G. Fossick, Stockton-on-Tees, county of Durham, England. Steering-gear for ships	300,613	June 17	1426	393 394	27	1203
Kilbourne, James, Columbus, Ohio. Sink	300,983	June 24	1897	522	27	1294
Kilburn, John, Lowell, Mass. Spindle-bearing	296,754	Apr. 15	1086	306	27	221
Kilburn, John, Lowell, Mass. Spindle-bearing	296,755	Apr. 15	1087	306	27	221
Kilian, Wilhelm, Berlin, assignor to Gebr. Stollwerck, Cologne-on-the-Rhine, Germany. Machine for shaping plastic materials	296,183	Apr. 1	342	97	27	66
Killion, Michael J. (See Milligan and Killion.)						
Kimball, George E., Franklin, Mass. Bib	298,985	May 20	1284	366	27	784
Kimball, William W. (See Hessler, Jacob, assignor.)						
Kimberly, Robert L., Philadelphia, Pa., assignor to American Matrix Machine Company, New York, N. Y. Machine for making matrices	296,974	Apr. 15	1352	374 375	27	260
Kimmel, William, Milton, Ind. Gang-plow canting device	300,614	June 17	1430	394	27	1204
Kimpfel, Frank. (See Quinan, Kimpfel, and Olsen.)						
Kindblade, Bennett, Batavia, Ill. Roller-skate	299,799	June 3	379	97	27	993
King, Alfred E. (See King, Armon H. and A. E.)						
King, Armon H., and A. E., Clayville, N. Y. Hay elevator and carrier	299,800	June 3	380	97	27	993
King, Blanch C. (See Page, Joel H., assignor.)						
King, Charles A., Meriden, Conn. Machine for turning gun-barrels and other articles of irregular form	297,418	Apr. 22	1922	525	27	379
King, Chester S., Smethport, Pa. Gas-regulator	299,801	June 3	381	97	27	994
King, George P., St. Thomas, Ontario, Canada, assignor to A. Bourn, Detroit, Mich. Carwheel	300,321	June 10	1056	286	27	1126
King, J. L. (See Russell, Dennis L., assignor.)						
King, Julius, Cleveland, Ohio. Trial lens	296,841	Apr. 15	1190	334	27	239
King, William H. (See Seeley, David W. and W. W., assignors.)						
Kingsley, Albert E., Saccarappa, Me. Belt-cleaner	299,403	May 27	1810	520	27	894
Kingston, Edward S., Utica, N. Y. Making patterns for metal lasts	299,650	June 3	197	50	27	956
Kinley, Joseph R. (See Dunbar and Kinley.)						
Kinne, David B., Rochester, N. Y. Wagon-jack	300,984	June 24	1898	522	27	1294
Kinney, Simon, San Francisco, Cal. Saw-swage	297,608	Apr. 29	2310	628	27	458
Kinsley, Owen, Clinton, Iowa. Lumber-wagon	296,019	Apr. 1	156	45	27	32
Kinsley, William B., Stoughton, Mass. Gage for goring shoe-uppers	297,998	May 6	49	12	27	537
Kinzel, George J., Knoxville, Tenn. Railway-track clearer	297,607	Apr. 29	2182	596	27	434
Kinzer, Jacob, Pittsburg, Pa. Pin for venting cores	300,480	June 17	1365	347	27	1174
Kinzer, Jacob, Pittsburg, Pa. Sand-sifting machine	300,481	June 17	1366	347	27	1174
Kinzer, Jacob, Pittsburg, Pa. Sand-molding machine	300,482	June 17	1367	347 348	27	1174
Kip, Frederick E. (See Van Riper and Kip.)						
Kiper, Charles, Atchison, Kans. Harness	296,560	May 13	787	221	27	683
Kipper, Emil, Adams, Mass. Process of and apparatus for making solid rings of plastic compounds	299,802	June 3	382	98	27	994
Kipper, Emil, Adams, Mass. Cutting sheets of xylonite and other plastic compounds from a cylindrical block	299,803	June 3	384	98	27	994
Kipper, Emil, and J. B. Edson, Adams, Mass. Manufacture of brush-bodies, &c., from pyroxyline compounds	299,804	June 3	386	.....	27	994
Kiralfy, Imre, New York, N. Y. Adjustable proscenium	297,813	Apr. 29	2439	667	27	482
Kirk & Starr *et al.* (See Schubiger, Benjamin A., assignor.)						
Kirkbride, Frederick L., Wyandotte, Kans., assignor of one-half to W. C. Duvall, Kansas City, Mo. Vehicle-wheel	298,501	May 13	788	221	27	683
Kirkpatrick, Gilbert A., Canton, Mo. Car-coupling	296,756	Apr. 15	1088	306	27	222
Kirkwood, Thomas, Chicago, Ill. Furnace-grate	299,146	May 27	1494	429	27	835
Kirkwood, Thomas, Chicago, Ill. Grate	299,147	May 27	1494	429	27	835
Kirsten, Julius, New York, N. Y. Confectioner's ornamenting-tube	299,928	May 27	1588	457	27	853
Kirtland, Charles E., Milwaukee, Wis. Device for ascertaining the variation of compasses	297,419	Apr. 22	1924	526	27	379
Kistler, Casper, Sterling, Ill. Dust-proof cap for watches	300,088	June 10	739	200	27	1070
Kittredge, James R. (See Coburn, John G., assignor.)						
Klaeser, William, and F. Sell, Milwaukee, Wis. Cattle-car	296,842	Apr. 15	1191	334	27	239
Klar, Jacob, Rodney, Miss. Desk	297,940	Apr. 29	2393	711	27	513
Klein, John M., San Francisco, Cal. Pin for electric insulators	297,609	Apr. 29	2312	629	27	459
Klein, Philip H., Jr., assignor to Bergmann & Co., New York, N. Y. Electric-light fixture	297,269	Apr. 22	1709	472	27	344
Kleinert, Isaac B., New York, N. Y. Joining rubber fabrics	298,095	May 6	164	42	27	558
Kletzker, Albert J. (See Court and Kletzker.)						
Kletzker, Albert J., New York, N. Y., and C. H. Court, Jersey City, N. J.; said Court assignor of one-half to said Kletzker. Fountain-pen	297,420	Apr. 22	1926	526	27	379
Kline, Effenger R. (See Baldwin and Kline.)						
Kloss, Robert, Shabonier, Ill. Colter	296,335	Apr. 8	560	156	27	112
Klotts, Leonard P. (See Burks and Klotts.)						
Knagge, John T., assignor of one-half to G. Herzog, Cincinnati, Ohio. Pencil-sharpener	300,375	June 17	1135	309	27	1150
Knapp, George W., Baltimore, Md. Machine for forming taper tubes	299,404	May 27	1811	521	27	894
Knapp, John J., Richland, W. Va. Lock	299,805	June 3	387	98	27	995

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Knapp, William H., Galesburg, Mich. Reel-rake	299,989	June 10	614	165 166	27	1047
Knauss, Levi J., and G. W. Hinkle, Mendon, Mich. Harness-bridle	299,806	June 3	388	99	27	995
Knight, Charles L., Cincinnati, Ohio. Cutter-knife for excelsior-machines	298,211	May 6	323	84	27	587
Knight, George H. (See Parkhurst, Darius, assignor.)						
Knight, Thomas L., New York, N. Y. Gangway for ships	298,212	May 6	324	84, 85	27	587
Knoop, Josiah, Casstown, Ohio. Grain-harvesting machine	296,843	Apr. 15	1192	334 335	27	240
Knorr, Jacob F., Orange, N. J. Hame	295,924	Apr. 1	40	11	27	10
Knowles, Jacob H., Lawrence, Mass. Ice-plow	298,213	May 6	326	85	27	587
Knowles, Lucius J., Worcester, Mass. Shaft-bearing for looms	300,483	June 17	1269	348 349	27	1174
Knowlton, Charles H. (See Furbush, Knowlton, and Meyer.)						
Knowlton, Daniel C. (See Haynes, Cornelius E., assignor.)						
Knox, Frank A., Woodland, Cal. Key-tag	297,270	Apr. 22	1740	473	27	344
Knudson, Adolphus A., Brooklyn, N. Y. Mechanical telephone	300,713	June 17	1576	432	27	1230
Koch, Ernest, San Francisco, Cal. Concentrator	300,484	June 17	1270	348	27	1174
Koch, William, Lawrenceburg, Ind. Caster	300,782	June 24	1663	455	27	1250
Koehig, Julius, *et al.* (See Rogers, Augustus J., assignor.)						
Kohler, Edward, assignor to Kohler Sewing Machine Manufacturing Company, San Francisco, Cal. Sewing-machine	301,060	June 24	1997	551 552	27	1312
Kohler Sewing Machine Manufacturing Company. (See Kohler, Edward, assignor.)						
Kohn, Jacob & Josef. (See Kohn, Sigmund, assignor.)						
Kohn, Jacob W., Newark, N. J. Lock-strike	298,861	May 20	1131	318	27	754
Kohn, Sigmund, assignor to J. & J. Kohn, Vienna, Austria-Hungary. Chair-leg fastener	296,336	Apr. 8	561	156	27	112
Kokeh, Charles E., St. Louis, Mo. Gilding glass signs and labels	299,148	May 27	1495	430	27	835
Konetzny, Albert, New York, N. Y. Reflector-support for candles	298,478	May 13	659	186	27	659
Konold, Henry. (See Strüboi, Joseph, assignor.)						
Koons, Gerow, St. Louis, Mo. Bathing apparatus	297,081	Apr. 15	1483	410	27	294
Korizek, Frank A., Milwaukee, Wis. Vehicle-top	300,089	June 10	740	200	27	1070
Kosiol, Oswald J., Louisville, Ky. Screw-cutting die	297,941	Apr. 29	2394	711	27	513
Kraus, Herman T. C., Brooklyn, N. Y., assignor to G. E. Sanborn, Chicago, Ill. Paper-cutting machine	296,184	Apr. 1	343	97, 98	27	66
Krause, Earnest, El Paso, Tex. Lift or elevator	296,582	Apr. 8	875	243	27	174
Krause, Ernst J., Carlisle, Pa. Cooking-stove	298,986	May 20	1284	366	27	784
Kranshaar, Samuel, Buffalo, N. Y. Vegetable-slicer	296,757	Apr. 15	1089	306	27	222
Krehbiel, John, assignor to Globe Capsule Company and H. J. Milburn, Detroit, Mich. Capsule-machine	296,844	Apr. 15	1195	335	27	240
Krehbiel, John, assignor to Globe Capsule Company and H. J. Milburn, Detroit, Mich. Capsule-machine	296,845	Apr. 15	1196	335	27	240
Krehbiel, John, assignor to Globe Capsule Company and H. J. Milburn, Detroit, Mich. Capsule-drying rack	296,846	Apr. 15	1197	335	27	241
Krehbiel, John, assignor to Globe Capsule Company and H. J. Milburn, Detroit, Mich. Capsule-machine	296,847	Apr. 15	1198	336	27	241
Krehbiel, John, assignor to Globe Capsule Company and H. J. Milburn, Detroit, Mich. Capsule-machine	296,848	Apr. 15	1199	336	27	241
Krein, Franz. (See Toerper and Krein.)						
Kreischer, Jacob, Albany, N. Y. Machine for cutting candles	300,873	June 24	1773	483	27	1271
Krementz, George, Newark, N. J. Collar-button	298,303	May 6	444	119	27	611
Krementz, George, Newark, N. J. Ear-ornament fastener	298,087	May 20	1285	366	27	784
Krementz, George, Newark, N. J. Oatmeal-cutter	297,523	Apr. 22	2061	563	27	404
Kremer, Franklin W., Wadsworth, Ohio. Injector	299,229	May 27	1589	457	27	853
Kremer, Franklin W., Wadsworth, Ohio. Injector	299,230	May 27	1591	457	27	853
Kremer, Franklin W., Wadsworth, Ohio. Injector	300,322	June 10	1058	287	27	1126
Kress, Samuel F., Monterey, assignor to A. D. Coye, Hornby, N. Y. Wabble-saw	298,862	May 20	1132	318	27	755
Kriekl, Gould & Co. (See Lang, William, assignor.)						
Kriebel, Hosea K., assignor of one-half to F. Light, Jr., West Point, Pa. Steam-boiler	298,304	May 6	445	120	27	611
Krippendorff, Emile, and H. C. Marsh, Wood Haven, assignors to Lalance & Grosjean Manufacturing Company, New York, N. Y. Handle attachment for sheet-metal vessels	298,096	May 6	165	43	27	558
Krob, Louis, Zanesville, Ohio. Eraser-case	298,792	May 13	789	222	27	683
Kroder, John, New York, N. Y. Curtain-pole tip	299,479	May 27	1898	546	27	909
Kroeger, Henry, New York, N. Y. Piano-forte frame	296,020	Apr. 1	158	45	27	32
Krog, Henry, Sr., Washington, Mo. Folding box						
Kruesi, John, Brooklyn, assignor to Electric Tube Company, New York, N. Y. Electrical conductor and connecting device therefor	296,185	Apr. 1	345	98	27	67
Krüger, Fritz, G. Tobias, Fürstenberg-on-the-Oder, and E. Kegel, Leipsic, assignors to Leipziger Anilin Fabrik, Beyer & Kegel, Lindenau, Germany. Production of coloring-matter from dinitrophenol	300,874	June 24	1774	.....	27	1271
Krutzsch, William, assignor to Buckeye Iron and Brass Works, Dayton, Ohio. Apparatus for pressing oil-cakes	296,186	Apr. 1	347	98, 99	27	67
Krutzsch, William, assignor to Buckeye Iron and Brass Works, Dayton, Ohio. Apparatus for extracting oil from oleaginous substances	296,187	Apr. 1	349	99 100	27	67
Kubec, Frederick, Riverside, Iowa. Necktie-fastener	299,078	May 20	1405	400	27	807
Kuhlman, Charles A., Richmond, Ind. Wardrobe-hook	296,696	Apr. 8	1012	283	27	202
Kuhlmann, Henry F., M. F. Robinson, and E. S. Irvin, Indianapolis, assignors to National Saw Guard Company, Marion County, Ind. Saw-guard	299,480	May 27	1699	546	27	909
Kühn, Rudolf. (See Buss and Kühn.)						
Kulp, Charles F., Brussels, Ill. Grain-drill	299,405	May 27	1812	521	27	894
Kuntz, John. (See Pritchard, Charles L., assignor.)						
Kupferle, John C., St. Louis, and J. W. Dewler, Normandy, Mo. Boot-cleaner	297,135	Apr. 22	1565	431	27	313
Kürth, August, Leipsic, and R. Beyermann, Gross Breitenbach, Germany. Producing colored pictures on pottery and porcelain	297,608	Apr. 29	2183	.....	27	434
Kurtz, A. Brinton, assignor of one-half to F. C. Ludlow, Cincinnati, Ohio. Mechanical telephone	298,479	May 13	659	186 187	27	659
Kurtz, William W. (See McCausland, William J., assignor.)						
Kuster, John, Jr., Stamford, Conn. Attaching locks	296,292	Apr. 1	505	141	27	95
Kutsche, Oswald, Grand Rapids, Mich. Dust-arrester	296,758	Apr. 15	1090	307	27	222
Kynoch, George, Witton, near Birmingham, county of Stafford, England. Cartridge-shell	298,696	May 13	925	257	27	709
La Dow, Charles, Albany, N. Y. Extension snapensory rod	297,136	Apr. 22	1566	431	27	313
La Dow, Charles, Albany, N. Y. Wheel cultivator or harrow	297,524	Apr. 22	2063	563 564	27	405
Lacasse, Henry, Auburn, N. Y. Lawn-mower	296,759	Apr. 15	1091	307	27	222
Lachlan, William, London, England, assignor to Light and Force Company, New York, N. Y. Device for connecting the elements of secondary batteries	296,849	Apr. 15	1200	336	27	241

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Lacrone, Milton. (See Dungan and Lacrone.)						
Ladd, Daniel E., and E. J. B. Whitaker, Baltimore, Md. Show-case	297,271	Apr. 22	1741	473	27	344
Ladd, Edward O., Everett, Mass. Sash-fastener	296,188	Apr. 1	350	100	27	68
Ladd, Joseph B., North Topeka, Kans. Weeding-machine	298,563	May 20	1133	318	27	755
Ladd, Marvin A., Springville, Mich. Attachment for anvils	296,250	Apr. 15	1201	336	27	942
Ladisch, Gustav, Stettin, Prussia, Germany. Leveling attachment for tables, &c	299,651	June 3	198	50	27	956
Lafferty, Erastus S., assignor of one-half to G. Marshall, Indiana, Pa. Horse-collar lock	299,421	May 27	1900	547	27	910
Ladin, John M., New York, N. Y. Exercising apparatus	298,392	May 13	561	155	27	641
Lagrelle, Alexandre D., Paris, France. Belt-fastener	300,985	June 24	1899	522	27	1294
Lair, Alpheus D., Mexico, Ind. Cider-mill	298,864	May 20	1134	319	27	755
Laird, Wesley E., East Calais, Vt. Device for transmitting motion	299,231	May 27	1593	458	27	854
Lake, Ezra B., Ocean City, N. J. Pocket match-box	299,507	June 3	388	99	27	995
Lake, Ezra B., Ocean City, N. J. Life-saving vehicle	299,508	June 3	389	99	27	995
Lake, John C., Big Prairie, Ohio. Sign	299,652	June 3	199	50	27	956
Lake, Stephen D. (See Haines and Lake.)						
Lakin, James A., Westfield, Mass. Time-piece for operating mechanical devices	298,988	May 20	1286	366	27	784
Lakin, John H. (See Badger and Lakin, assignors.)						
Lakin, Wilber F. (See Badger and Lakin.)						
Lalance & Grosjean Manufacturing Company. (See Cochran and Milligan, assignors.)						
Lalance & Grosjean Manufacturing Company. (See Krippendorff and Marsh, assignors.)						
Lalance & Grosjean Manufacturing Company. (See Milligan and Mouhot, assignors.)						
Lalance & Grosjean Manufacturing Company. (See Mouhot and Milligan, assignors.)						
Lallement, Louis J. (See Robinson and Lallement.)						
Lally, James, assignor of one-half to T. G. Orwig, Des Moines, Iowa. Trace-buckle	296,583	Apr. 8	876	243	27	174
Lamar, James S., Augusta, Ga. Telegraphic relay	300,289	June 10	986	266	27	1113
Lamb, John J., Waterloo, Iowa. Dook-check	298,989	May 20	1287	367	27	785
Lamborn, A. J. (See Wright, William A., assignor.)						
Lamborn, Lewis, Hamorton, assignor to Lamborn Road Machine Company, (limited,) Media, Pa. Road-scraper	298,097	May 6	166	43	27	558
Lamborn Road Machine Company. (See Lamborn, Lewis, assignor.)						
Lamont, James, assignor to Fahys Watch Case Company, Sag Harbor, N. Y. Watch-case	297,421	Apr. 22	1927	526	27	380
Lampton, William R., Terre Haute, Ind. Safety-brace for car-seats	296,975	Apr. 15	1359	375	27	270
Lamson Cash Railway Company. (See Giles, Edwin L., assignor.)						
Lamson, William F., Detroit, Mich. Chair-seat machine	299,900	June 10	615	166	27	1047
Lancaster, Henry, Manchester, county of Lancaster, England. Steam-trap	299,509	June 3	390	100	27	995
Lancaster, John P., Goshen, Ind. Car-coupling	298,214	May 6	327	85	27	588
Lancraft Bros. (See Homan, J. Frank and F. L., assignors.)						
Lande, Bernard, assignor of one-half to S. B. Wellington, New York, N. Y. Manufacture of artificial stone	299,810	June 3	391	.....	27	995
Landesmann, Jacob, Cleveland, Ohio. Cloak	296,021	Apr. 1	159	46	27	32
Landfrit, Peter, Cincinnati, Ohio. Harness-loop machine	299,406	May 27	1813	521	27	894
Landreth, Burnet, Philadelphia, Pa. Clod-crusher	299,422	May 27	1902	547	27	910
Lane & Bodley Company. (See Lane and Stanwood, assignors.)						
Lane, Enoch J. (See Compton and Lane.)						
Lane, George H. (See Stevens, Lucius O., assignor.)						
Lane, George M., Asbury Park, N. J. Spring-hinge	298,480	May 13	602	187	27	659
Lane, John C. (See Swayze and Lane.)						
Lane, John, Hyde Park, assignor to Hapgood Plow Company, Alton, Ill. Planting-plow	296,851	Apr. 15	1202	337	27	242
Lane, Philander P., and J. B. Stanwood, assignors to Lane & Bodley Company, Cincinnati, Ohio. Presser-roll for gang-edgers	299,653	June 3	200	51	27	957
Lane, Philander P., and J. B. Stanwood, assignors to Lane & Bodley Company, Cincinnati, Ohio. Locking device for ratchets	299,654	June 3	201	51	27	957
Lane, William J., Poughkeepsie, N. Y. Door-hanger	296,584	Apr. 8	877	243	27	174
Lane, William J., Poughkeepsie, N. Y. Door-hanger	299,149	May 27	1496	430	27	835
Lane, William J., Poughkeepsie, N. Y. Steam-heater	300,376	June 17	1136	{309 / 310}	27	1150
Lane, Zenas M. (See Smith, Henry D., assignor.)						
Lang, Frederick C., and J. F. Tietjen, Rondout, N. Y. Adjustable keel-block	298,098	May 6	168	44	27	559
Lang, Julius C. F., *et al.* (See Jaeck, Emile, assignor.)						
Lang, John C., Boston, Mass. Device for filing papers	297,999	May 6	50	13	27	537
Lang, William, Brooklyn, assignor to himself and Krickl, Gould & Co., New York, N. Y. Window-shade pull	299,483	May 27	1903	547	27	910
Lange, Jurgen P., Butler, N. J. Pipe-stem	296,417	Apr. 8	664	184	27	131
Langerfeld, Ewald, New York, N. Y. Guard chain and hook	296,622	Apr. 1	160	46	27	32
Langille, Titus, Mahone Bay, Nova Scotia, assignor of one-half to B. Westhover, Lunenburg, Canada. Construction of ships	300,714	June 17	1577	432	27	1230
Langstaff-Haviland, Robert I. (See Mayrhofer, Charles A., assignor.)						
Lannert, John A., assignor to Buffalo Electric Works, Buffalo, N. Y. Dynamo-electric machine	300,615	June 17	1431	394	27	1204
Lanz, Charles, Pittsburg, Pa. Machine for making eye-rods and hook-and-eye hinges	296,852	Apr. 15	1203	337	27	242
Lapham, Edward V., Union Grove, Ill. Device for testing cheese-curd	296,189	Apr. 1	351	100	27	68
Large, William J., Brooklyn, N. Y. Trunk	296,976	Apr. 15	1360	376	27	271
Large, William J., Brooklyn, N. Y. Trunk	297,814	Apr. 29	2440	667	27	483
Large, William J., Brooklyn, N. Y. Clasp for traveling-bags	298,481	May 13	663	187	27	660
Larned, Charles H., assignor of one-half to C. F. Morrison, Willimantic, Conn. Stop-motion mechanism for spinning-machines, &c	300,616	June 17	1432	394	27	1204
Laroche, Theophilus, Williamstown, N. Y. Buck-saw frame	296,418	Apr. 8	665	184	27	131
Larsen, Charles F., and B. A. S. Nielsen, Chicago, Ill. Cuspidor	299,555	June 3	66	16	27	933
Larson, Emil, and O. Hammarland, assignors of one-third to N. F. Olson, Chicago, Ill. Feeding device for ruling-machines	297,525	Apr. 22	2068	564	27	405
Larson, John, and A. W. Hagstrom, Stockholm, Wis. Fire-escape	300,090	June 10	740	200	27	1070
Larzelere, Henry B., assignor to Crowell Manufactnring Company, Greencastle, Pa. Portable engine	299,484	May 27	1904	548	27	910
Larzelere, Henry B., assignor to Crowell Manufacturing Company, Greencastle, Pa. Portable engine	300,270	June 10	988	{266 / 267}	27	1114
Larzelere, Henry B., assignor to Crowell Manufacturing Company, Greencastle, Pa. Traction-engine	300,271	June 10	989	267	27	1114
Lasar, Godfrey H., St. Louis, Mo. Barbed-wire machine	296,190	Apr. 1	352	{100 / 101}	27	68
Lash, John S., Philadelphia, Pa. Device for loosening sugar, &c	298,099	May 6	169	44	27	559
Lathrop, Frank L., Brooklyn, assignor to H. L. Judd & Co., New York, N. Y. Curtain-ring	300,485	June 17	1272	340	27	1175
Lattemoor, Charles P., Somerville, Mass. Self-dumping tub	297,609	Apr. 29	2184	566	27	434
Laube, Godfried, Huron, Dak. Ter. Stove-pipe connection	297,272	Apr. 22	1742	473	27	345

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Laube, Godfried, Huron, Dak. Ter. Stove-pipe thimble	300,486	June 17	1273	350	27	1175
Lauder, George, Pittsburg, Pa. Base-plate for the teeth of ore-washer shafts	299,232	May 27	1594	458	27	854
Laughlin, John L., assignor to B. F. Avery & Sons, Louisville, Ky. Double plow	297,815	Apr. 29	2441	667	27	483
Laughlin, Samuel J., Guelph, Ontario, Canada. Self-acting elevator-gate	298,482	May 13	664	187	27	660
Laughton, Joseph B., Brooklyn, assignor to Valentine & Company, New York, N. Y. Felt rubber	296,585	Apr. 8	878	243	27	174
Laurence, Henry, Chicago, Ill. Dental hand-piece	298,483	May 13	665	188	27	660
Laurent, L. C., *et al.* (See Smith, Fannie S., assignor.) (Reissue.)						
Lauth, Bernard C. (See Howell, William G., assignor.)						
Lavery, Richard, South Boston, Mass. Differential gearing	298,697	May 13	926	257	27	709
Lavigne, Joseph P. (See Sackett and Lavigne.)						
Lavigne, Joseph P., assignor to J. S. Sackett and J. Halliwell, New Haven, Conn. Mechanical movement	296,977	Apr. 15	1360	376	27	271
Lawlor, John H., Baltimore, Md. Paper-cutter and die-press	296,191	Apr. 1	356	{101 / 102}	27	69
Lawrence, David. (See Grant and Lawrence.)						
Lawrence, Henry C., Chicago, Ill. Preparing medical compounds	298,000	May 6	51	.....	27	537
Lawrence, J. Franklin, assignor to J. Lawrence, Philadelphia, Pa. Toy scale	300,875	June 24	1775	483	27	1271
Lawrence, John. (See Lawrence, J. Franklin, assignor.)						
Lawrence, John H., *et al.* (See Dixon, Brandt V. B., assignor.)						
Lawrence, John H., Sterling, Ill. Track for barn-door hangers	299,811	June 3	392	100	27	995
Lawrence, Louis P., Passaic, N. J., assignor of one-fourth to L. C. Raegener, Brooklyn, N. Y. Air-rejector for vacuum-brakes	300,876	June 24	1776	484	27	1271
Lawrence, Louis P., Passaic, N. J., assignor of one-fourth to L. C. Raegener, Brooklyn, N. Y. Vacuum-cylinder for railway-car brakes	300,877	June 24	1779	484	27	1271
Lawrence, William, Worcester, Mass. Coasting-guard for boots or shoes	297,422	Apr. 22	1928	526	27	380
Lawrence, William, Worcester, Mass. Fire-escape	300,091	June 10	742	200	27	1070
Lawrence, William S., *et al.* (See Randall, Francis W., assignor.)						
Lawrie, John, assignor of one-half to J. W. Holtzman, Brookston, Ind. Plow attachment	295,925	Apr. 1	40	12	27	10
Lawson, John W., Harrison, N. J. Field-magnet for dynamo-electric machines	297,273	Apr. 22	1743	473	27	345
Layman, Hiram D., Benton, Ark. Corn-planter	296,697	Apr. 8	1012	283	27	202
Layman, Hiram D., Benton, Ark. Cotton-planter	296,698	Apr. 8	1013	284	27	202
Layman, Hiram D., Benton, Ark. Seed-sower	296,699	Apr. 8	1014	284	27	202
Layman, Hiram D., Benton, Ark. Cotton-chopper	296,700	Apr. 8	1015	284	27	202
Lazarus, Louis, Allegheny, Pa. Album-satchel	299,812	June 3	392	100	27	996
Le Roy, Charles J., Chicago, Ill., assignor of two-thirds to G. W. Whitson and H. Wagner, St. Louis, Mo. Churn	298,760	May 20	1009	282	27	752
Le Roy, Charles J., assignor to L. S. Burton and Burton & Parker, Chicago, Ill. Device for the absorption of the gaseous products of combustion	299,813	June 3	393	{100 / 101}	27	996
Leamy, Edward J., Syracuse, N. Y. Revolving double trapeze	300,487	June 17	1273	350	27	1175
Learned, James M., Boston, assignor to D. F. Bennett, Somerville, Mass. Filter	295,926	Apr. 1	41	12	27	11
Leas, J. Silas, Rock Island, and J. B. Cornwall, South Moline, assignors to Barnard & Leas Manufacturing Company, Moline, Ill. Separator for shelled corn, &c	300,715	June 17	1578	433	27	1230
Leavitt, Charles, Cleveland, Ohio. Check-holder and bag-fastener	297,137	Apr. 22	1568	431	27	313
Leavitt, Charles P., Memphis, Tenn. Road locomotive	299,150	May 27	1497	430	27	835
Lechner Manufacturing Company. (See Legg, Benjamin A., assignor.)						
Lecompte, Samuel D., Leavenworth, Kans. Thill-coupling	299,556	June 3	67	17	27	933
Ledig, August, Philadelphia, Pa. Aquarium	296,853	Apr. 15	1206	338	27	243
Ledward, Joseph, Westerly, R. I. Saw	297,816	Apr. 29	2443	668	27	483
Lee, Edwin F., New York, N. Y. Jewelry-ring	298,100	May 6	170	44	27	559
Lee, Mile B., Plymouth, Ohio. Eaves-trough hanger	299,407	May 27	1815	522	27	895
Lee, William. (See Hickisson and Lee.)						
Leeds, Albert R., Hoboken, N. J. Apparatus for the purification of water	296,337	Apr. 8	562	157	27	112
Leeds, Albert R., Hoboken, N. J. Purification of water	298,101	May 6	171	45	27	559
Leedy, John K., Tom's Brook, Va. Compressed-air water-elevator	298,990	May 20	1288	367	27	785
Leeming, Henry, Manchester, county of Lancaster, England. Treadle mechanism	296,854	Apr. 15	1207	338	27	243
Leet, C. S. (See Northall, William H., assignor.)						
Leete, John W., South Meriden, Conn. Vehicle fifth-wheel	296,855	Apr. 15	1209	339	27	243
Legay, Isidore, New York, N. Y. Heel-burnishing machine	298,484	May 13	666	188	27	660
Legg, Benjamin A., assignor to J. A. Jeffrey, Columbus, Ohio. Sprocket-wheel	296,192	Apr. 1	359	103	27	69
Legg, Benjamin A., assignor to Lechner Manufacturing Company, Columbus, Ohio. Mining-machine	299,655	June 3	202	51, 52	27	957
Lego, Albert, and H. Dupan, Grasse, (Alpes-Maritimes,) France. Counter for facilitating the transfer of coin	297,138	Apr. 22	1568	432	27	313
Lehmann, Emil A., New York, N. Y. Suspension-hook for car-rings, &c	300,488	June 17	1274	350	27	1176
Lehmann, Fritz, Tangerhütte, near Magdeburg, Prussia, Germany. Stirrup	300,986	June 24	1899	{522 / 523}	27	1294
Lehmann, Monte. (See Rall, Louis, G., and E., assignors.)						
Leigh, Edward B. (See McMunn, Schiller, and Leigh.)						
Leinert, Emil, Dresden, Saxony, Germany. Apparatus for closing vessels, &c	300,987	June 24	1900	523	27	1295
Leipziger Anilin Fabrik, Beyer & Kegel. (See Krüger, Tobias, and Kegel, assignors.)						
Leiss, Frederick, New York, N. Y. Braiding attachment for sewing-machines	297,817	Apr. 29	2444	668	27	483
Lemassena, Lillian. (See Lemassena and Stanley, assignors.)						
Lemassena, Lillian. (See Stanley, James, assignor.)						
Lemassena, Theodore F. (See Stanley and Lemassena.)						
Lemassena, Theodore F., and J. Stanley; said Lemassena assignor to L. Lemassena, Newark, N. J. Mold for horse-collars	297,700	Apr. 29	2313	629	27	459
Leng, John S., West New Brighton, N. Y. Valve	298,865	May 20	1136	319	27	756
Lenhard, George, Detroit, Mich. Rotary pump	298,866	May 20	1138	319	27	756
Lenox, Edwin S., Worcester, Mass. Barbed fence-wire	300,783	June 24	1664	455	27	1250
Lenox, Edwin S., and J. Hentz, assignors to Washburn & Moen Manufacturing Company, Worcester, Mass. Bale-tie	300,716	June 17	1579	433	27	1230
Lerchen, William, Lake City, Colo. Trace-buckle	297,818	Apr. 29	2444	668	27	484
Lesem, Marx A., *et al.* (See Chamberlain and Harris, assignors.)						
Leslie, Edward. (See Jull, Orange, assignor.)						
Lesonrd, John A., and J. Lotan, Portland, Oreg. Elevator for coal and other substances	299,656	June 3	204	52, 53	27	958
Lester, Daniel M., Norwich, Conn. Envelope-machine	299,814	June 3	395	101	27	996
Lester, James S., Atlanta, Ga. Brick-kiln	297,423	Apr. 22	1929	527	27	380
Letchworth, Ogden P., Buffalo, N. Y. Hame attachment	296,193	Apr. 1	359	103	27	69
Lettelier, John G., and E. E. Pratt, Chicago, Ill. Register and alarm	296,194	Apr. 1	360	103	27	69
Lenchsenring, Robert, assignor of one-half to F. B. Nesbett, New Bedford, Mass. Hydraulic motor	298,102	May 6	172	45	27	559
Lever, Charles, Bowdon, county of Chester, England. Cut-out for electric lamps	300,489	June 17	1275	{350 / 351}	27	1176
Levett, David H., Philadelphia, Pa. Mixing-machine	296,338	Apr. 8	563	157	27	112

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Levette, Gilbert M., Indianapolis, Ind. Attachment for smelting-furnaces	296,586	Apr. 8	879	244	27	174
Levey, Edgar J., New York, N. Y. Playing-card	298,991	May 20	1288	367	27	785
Levi, Thomas, New Westminster, British Columbia, Canada. Device for keeping fish, meat, fruit, and other preserving-cans clean while being filled	296,023	Apr. 1	160	46	27	33
Levis, Henry. (See McCarty, William F. M., assignor.)						
Levison, Marks S. (See Morgenroth and Levison.)						
Levy, Charles H., New York, N. Y. Catamenial sack	297,274	Apr. 22	1744	474	27	345
Levy, Solomon, Ware, Mass. Baby-walker	299,657	June 3	206	53	27	958
Lewis, Andrew, Naperville, Ill. Spring and weight motor	298,001	May 6	52	13	27	537
Lewis, Charles, assignor to D. W. Sheeler, Amsterdam, N. Y. Chuck	300,272	June 10	990	267	27	1114
Lewis, Charles W., assignor to Western Electric Company, Chicago, Ill. Telegraph-key	297,819	Apr. 29	2445	669	27	484
Lewis, George A., assignor to Goodyear's Metallic Rubber Shoe Company, Naugatuck, Conn. Overshoe	296,978	Apr. 15	1302	376	27	271
Lewis, George T., Philadelphia, Pa. Liquid paint	297,139	Apr. 22	1570	.....	27	313
Lewis, Joseph M., Trenton, N. J. Game-board	298,992	May 20	1289	367	27	785
Lewis, Joseph S., Birkenhead, county of Chester, assignor of one-half to W. P. Thompson, Liverpool, England. Insulator	298,593	May 13	790	222	27	683
Lewis, Joseph S., Birkenhead, county of Chester, assignor of one-half to W. P. Thompson, Liverpool, England. Terminal insulator	298,594	May 13	791	222	27	684
Lewis, Orlando E. (See Robinson, Stillman W., assignor.)						
Lewis, Warner, Stone Bluffs, Ind. Tile-machine	298,002	May 6	53	14	27	537
Lewis, William, St. John, New Brunswick, Canada. Anchor	298,867	May 20	1139	320	27	756
Lewis, William P., Pittsburg, Pa. Portable range	300,273	June 10	991	267	27	1114
Liantier, Hippolyte, Scranton, Pa. Flier for twisting silk	297,140	Apr. 22	1571	432	27	313
Libey, John D., Lima, Ind. Two-wheeled vehicle	300,377	June 17	1138	310	27	1150
Liddell, Walter J. F., Charlotte, N. C. Circular saw mill. (Reissue)	10,474	May 6	490	172	27	619
Liddell, Walter J. F., Charlotte, N. C. Circular-saw mill	299,233	May 27	1595	458	27	854
Lieb, Charles A., New York, N. Y. Compressible gage	295,927	Apr. 1	42	12	27	11
Liebel, Hugo, North Attleborough, Mass. Bracelet	299,658	June 3	207	53	27	959
Liersch, Karl G. E., and L. R. Erche, Berlin, Germany. Support for pictures	299,659	June 3	208	54	27	959
Light and Force Company. (See Lachlan, William, assignor.)						
Light, Frederick, Jr. (See Kriebel, Hosea K., assignor.)						
Lighty, William H., Monticello, Ind. Bill and poster holder	300,274	June 10	992	268	27	1114
Lille, Dominique, Troncens, France. Fruit-press	299,815	June 3	397	{101 102	27	996
Lincoln, Ellis L., *et al.* (See Maxim, Samuel, assignor.)						
Lincoln, Norris K., *et al.* (See Maxim, Samuel, assignor.)						
Lind, Emile, Hiawatha, Kans. Seeding device	298,761	May 20	1010	282	27	732
Lindeman, Simon. (See Oppenheimer, Louis K., assignor.)						
Lindenberger, Solomon, Toledo, Ohio. Oar	298,485	May 13	668	188	27	661
Linder, William L., Burlington, Iowa. Necktie-fastener	297,375	Apr. 22	1744	474	27	345
Lindgren, August, assignor to Moline Plow Company, Moline, Ill. Wheel-cultivator	296,760	Apr. 15	1091	307	27	222
Lindgren, August, assignor to Moline Plow Company, Moline, Ill. Bracelet-clasp	299,816	June 3	398	102	27	997
Lindol, Harry C., assignor to J. C. Harrington, Providence, R. I. Bracelet-clasp	296,980	Apr. 15	1364	377	27	271
Lindsay, Thomas J., Lafayette, Ind. Check-row corn-planter	296,979	Apr. 15	1363	377	27	271
Lindsley, Charles B. (See Rivers, Thomas L., assignor.)						
Lindsay, Joseph F., Marion, Ohio. Wagon-jack	297,701	Apr. 29	3314	629	27	450
Linegar, David T., Cairo, Ill. Car-coupling	300,275	June 10	993	268	27	1115
Lines, Thomas D., Syracuse, N. Y. Drop-perch coupling	296,195	Apr. 1	363	104	27	70
Lintz, William H., Constantine, Mich. Hay and grain rack	299,408	May 27	1816	522	27	995
Lippincott, Jesse H. (See Schulze-Berge, Hermann, assignor.)						
Lippy, David, Mansfield, Ohio. Thrashing-machine	296,587	Apr. 8	880	244	27	175
Lipsey, Andrew B., West Hoboken, N. J., assignor to W. Bell, New York, N. Y. Burner	298,215	May 6	328	86	27	588
Lipsey, Andrew B., West Hoboken, N. J., assignor to W. Bell, New York, N. Y. Gas-burner	298,868	May 20	1139	320	27	756
Lipsey, Andrew B., West Hoboken, N. J., assignor to W. Bell, New York, N. Y. Gas-burner	299,660	June 3	208	54	27	959
Lipsey, Andrew B., West Hoboken, N. J., assignor to W. Bell, New York, N. Y. Gas-burner	300,988	June 24	1901	523	27	1235
Littell, Norris. (See Moss and Littell.)						
Little, James R., assignor of three-fourths to C. Smith, T. Hill, and P. B. Williams, Quincy, Ill. Iron wheel	299,151	May 27	1498	430	27	835
Little, John, Philadelphia, Pa. Operating railway-gates	296,761	Apr. 15	1093	{307 308	27	229
Livermore, Charles F., trustee. (See Waite, Henry E., assignor.)						
Livingston, H. D., *et al.* (See Earhart, Herbert, assignor.)						
Livingston, John G., Bowne, assignor of one-half to F. Robbins, Campbell, Mich. Hay and grain elevator	296,856	Apr. 15	1210	339	27	243
Lloyd, George E., Chicago, Ill. Black-leading machine	298,595	May 13	792	222	27	684
Lloyd, Julius D. (See Graham and Lloyd.)						
Loar, George C., assignor of one-half to J. L. Morgan, Quincy, Ill. Car-coupling	297,942	Apr. 29	2595	711	27	513
Locke, Charles S., Joliet, Ill. Check-row wire	296,981	Apr. 15	1367	377	27	272
Locke, Charles S., Joliet, Ill. Check-rower for corn-planters	298,003	May 6	54	14	27	538
Locke, Charles S., Joliet, Ill. Check-rower for corn-planters	299,557	June 3	67	17	27	933
Lockhart, Jesse, Niantic, Ill. Clamp for railway-rails	300,490	June 17	1278	351	27	1176
Lockwood, Charles S., Newburg, N. Y. Electric register for fluid-reservoirs						
Lockwood, Jared. (See Keys and Lockwood.)						
Lockwood, Samuel T., assignor to D. J. Whiting, Chicago, Ill. Machine for turning bags	297,141	Apr. 22	1572	{432 433	27	314
Lockwood, Thomas D., Malden, Mass. Individual signaling apparatus	296,588	Apr. 8	881	244	27	175
Lockwood, William H., North Kingsville, Ohio. Mail-bag catcher	298,216	May 6	330	86	27	588
Lockwood, William N., Campville, Conn. Line-reel	299,189	Apr. 1	364	104	27	70
Loder, Johan H., Brussels, Belgium. Gas-electric lamp	297,820	Apr. 29	2446	{669 670	27	484
Loewe, Philip, Chicago, Ill. Trunk	300,378	June 17	1138	310	27	1150
Loftis, Frank P. H., San Francisco, Cal. Safety-guard for cars	299,234	May 27	1507	458	27	855
Loftus, John, Albany, N. Y., assignor of two-thirds to G. W. Richardson, Boston, Mass. Injector	300,092	June 10	743	201	27	1071
Logan, John, Waltham, Mass. Method of and apparatus for hardening steel ribbon	297,610	Apr. 29	2185	596	27	435
Lomax, George H., Somerville, Mass. Glass lamp-fountain	297,276	Apr. 22	1745	474	27	345
Lombard, Oliver D., and S. Pollard, Lowell, Mass. Picker-staff check for looms	297,821	Apr. 29	2448	670	27	484
Lone, H. C. (See Filer and Neff, assignors.)						
Long, Alfred A., *et al.* (See Raby, Richard, Jr., assignor.)						
Long, David W., Springfield, Ohio. Horse hay-rake	295,968	Apr. 1	43	13	27	11
Long, Ellis O., Hayesville, Ohio. Combined plow and harrow	298,486	May 13	669	188	27	661

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Long, George S., Petrolia, Pa. Stamp-mill	298,869	May 20	1141	320	27	757
Long, Oliver, Brooklyn, assignor of one-half to C. Schlüter and C. Forster, New York, N. Y. Material for packing bottles	300,323	June 10	1059	287	27	1126
Longstreet, Daniel F. (See Brayton, Lodowick, assignor.)						
Longsworth, Miron V., Delphos, Ohio. Neck-yoke	296,589	Apr. 8	885	245	27	176
Loomer, L. Harvey, Birmingham, Conn. Hoop-skirt	300,878	June 24	1760	485	27	1272
Loomis, David S. (See Gardner, Henry L., assignor.)						
Loomis, Joel E., *et al.* (See Adams, Archibald D., assignor.)						
Loomis, John L., Leadville, Colo. Ore-concentrator	299,235	May 27	1509	459	27	855
Lord, Charles W., Pawtucket, R. I., and A. M. English, Boston, Mass. Bracelet	299,558	June 3	68	17	27	933
Lord, William H., New York, N. Y. Speed-clock for machinery	298,487	May 13	670	189	27	661
Lord, William H., New York, N. Y. Speed-clock for machinery	300,491	June 17	1279	351	27	1176
Lorenz, William A., Hartford, Conn. Velocipede	298,217	May 6	331	87	27	589
Loretz, Arthur J. L., Brooklyn, N. Y. Purifying canals and basins connecting with tidal waters	299,559	June 3	69	17, 18	27	933
Lorillard & Co., P. (See Hieatt and Hearn, assignors.)						
Lorsch, Salomon, New York, N. Y., assignor of one-half to D. Heineman, Gloucester, Mass. Garment-sleeve	297,526	Apr. 22	2060	565	27	406
Lotan, James. (See Leonard and Lotan.)						
Lothrop, Alson A., assignor to C. H. Cushman, Boston, Mass. Catch for shade-rollers	298,004	May 6	55	14	27	538
Loucks, James C., assignor of one-half to E. S. Pierce, Grand Rapids, Mich. Hot and cold water faucet	301,061	June 24	1998	552	27	1313
Louden, William, Fairfield, Iowa. Hay-stacker	298,218	May 6	333	87	27	589
Londensleger, E., administrator. (See Herbrand, Jacob.)						
Louder, Joel H., Chicago, Ill. Bill-file	296,762	Apr. 15	1094	308	27	223
Loudon, Charles F. (See Ackermann and Wagner, assignors.)						
Lovell, George W., *et al.* (See Hall, Theodore F., assignor.)						
Loveren, Charles L., Brooklyn, N. Y. Machine for making gem-settings	297,611	Apr. 29	2186	596	27	435
Lovett, Arthur S., Erie, assignor of one-half to P. S. Ensworth, Waterford, Pa. Apparatus for embalming	300,989	June 24	1903	524	27	1295
Low, Jesse B., assignor of three-fourths to G. H. and N. Seeley and J. H. Taylor, New York, N. Y. Wood-screw	296,982	Apr. 15	1367	378	27	272
Lowe, Frank W. (See Wilbur, Henry A., assignor.)						
Lowe, John, Providence, R. I. Machine for making shank-stiffeners	300,379	June 17	1139	{310 311	27	1150
Lowell, Charles H., Boston, Mass. Combined button and cuff-holder	298,993	May 20	1290	368	27	786
Lowerre, Thomas R., New York, N. Y. Bottle-corking machine	297,943	Apr. 29	2596	712	27	513
Lowrey, William L., Boston, Mass. Liquid for and process of generating a compound vapor as a motor-power	296,197	Apr. 1	365	.....	27	70
Lowry, Joseph L., Pittsburg, Pa. Steam pumping-engine	298,596	May 13	793	223	27	684
Lubke, Adolph E. G., New York, N. Y. Dynamo-electric machine	296,857	Apr. 15	1210	339	27	243
Lucas, John, Hastings, Minn. Feed-regulator	296,024	Apr. 1	161	46	27	33
Lucas, Joseph D., Toronto, Ontario, Canada. Butter-dish	296,293	Apr. 1	506	141	27	95
Lucas, Milo F., West Newton, Mass. Tube-saw	300,784	June 24	1665	456	27	1250
Lucas, William C., Meriden, Conn. Key-ring	296,763	Apr. 15	1095	308	27	223
Luce, George M. (See Dodge, Willis, assignor.)						
Luckermann, Friedrich. (See Ritchie and Luckermann.)						
Lüdeke, Waldemar, Hoboken, N. J. Sewing-machine	300,380	June 17	1140	{311 312	27	1150
Ludlow, Francis M., St. Louis, Mo. Operating valves	299,079	May 20	1406	401	27	807
Ludlow, Freeman C. (See Kurtz, A. Brinton, assignor.)						
Ludlow Valve Manufacturing Company. (See Ward, John, assignor.)						
Ludwig, Eugen, Hoboken, N. J. Polishing-liquid	296,303	Apr. 1	519	.....	27	98
Ludwig, Oscar, Evanston, Wyo. Ter. Broom-holder	301,062	June 24	1999	552	27	1313
Lukens, Serino S., Rock Falls, Ill. Shaft-coupling	299,152	May 27	1409	431	27	836
Langren, Charles M., New York, N. Y. Burner for gas or oil	300,579	June 24	1780	485	27	1272
Lunkenheimer, Edmund, Cincinnati, Ohio. Oil-cup	299,929	June 3	526	139	27	1021
Luquer, C. Fred., Montgomery, N. Y. Eight-day-clock alarm	297,612	Apr. 29	2188	597	27	435
Luse, David N., Ross, Iowa. Cultivator	296,983	Apr. 15	1369	378	27	272
Luther, Henry C., Providence, R. I. Manufacture of glass jewels	300,381	June 17	1142	312	27	1151
Lutts, Frank W. (See Lutts, Henry and F. W.)						
Lutts, Henry and F. W., Malden, Mass. Machine for filing saw-teeth	299,560	June 3	70	18	27	933
Lutz, Ferdinand F., Louisville, Ky. Car-coupling	298,005	May 6	56	15	27	538
Lybrand, Franklin P. (See Rodgers, William C., assignor.)						
Lyke, William B. (See Zeigler and Graves, assignors.)						
Lyman, Wilfred C., Chicago, Ill. Condenser-head for exhaust-pipes of steam-engines	298,698	May 13	928	257	27	710
Lyman, William, Middlefield, Conn. Sight for fire-arms	298,305	May 6	446	120	27	611
Lynch, Morris T. (See Harman, Stephen S., assignor.)						
Lynch, Thomas. (See Devine, James J., assignor.)						
Lyne, Alphens G., Washington, D. C. Picket fence	300,093	June 10	745	{291 292	27	1071
Lyne, Alphens G., Washington, D. C. Fence-making machine	300,094	June 10	746			
Lynn, Mirabean N., Indianapolis, Ind., assignor to Ohio Power and Light Company, Dayton, Ohio. Electric lamp	300,095	June 10	751	202	27	1072
Lyon, James W. (See Eaton and Lyon.)						
Lyon, Philip, and J. H. Bossard, East Stroudsburg, Pa. Fruit-jar-cover fastening	296,701	Apr. 8	1015	284	27	209
Lyon, Philip, and J. H. Bossard, East Stroudsburg, Pa. Fruit-jar	297,082	Apr. 15	1463	410	27	294
Lyons, Michael J., Saginaw, Mich. Grate for burning sawdust	299,485	May 27	1904	548	27	911
Lyons, Sidney, Brookston, Tex. Car-coupling	296,590	Apr. 8	886	245	27	176
Lytle, Albert R., *et al.* (See Conant, George P., assignor.)						
Lytle, Henry B., and J. J. Carty, Boston, Mass. Method of and apparatus for individualizing telephone time-signals	299,561	June 3	71	18	27	934
Lytle, Henry B., and J. J. Carty, Boston, Mass. Telephone time-signal apparatus	299,562	June 3	75	19	27	934
Lytle, William H., Montezuma, Colo. Mining-drill and forming powder-chambers in rock, &c.	299,991	June 10	016	166	27	1047
Mabey, Nelson R. (See Joralemon and Mabey.)						
MacDonald, Thomas A., Boston, Mass. Heat-resisting casing	297,613	Apr. 29	2189	597	27	435
MacLaine, Alexander, Belfast, county of Antrim, Ireland. Piston-packing	298,871	May 20	1143	321	27	757
MacKaye, James S., New York, N. Y., assignor, by mesne assignments, to Brent Manufacturing Company, Bridgeport, Conn. Folding chair	300,617	June 17	1434	395	27	1204
Macdonough, Thomas, Benton, Mich. Fire-escape	295,929	Apr. 1	44	13	27	11
Macfarlane, Thomas, assignor of one-half to A. Ramsay, Montreal, Quebec, Canada. Making zinc sulphide anhydrous	296,858	Apr. 15	1212	.....	27	244
Machette, E. V. (See Chadwick, Sager, assignor.)						
Mack, Adelbert D., Franklin, Ohio. Gate	298,103	May 6	174	45	27	560

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Mack, William, Indianapolis, Ind. Paper-bag rack	298,870	May 20	1142	321	27	757
Mackay, Kenneth, and T. C. Dunn, Boston, Mass. Swiveling-loop iron for harness	298,104	May 6	175	46	27	560
Mackinney, Herbert G., Providence, R. I. Ear-ring	298,702	May 20	1011	292	27	732
Macpherson, David J., assignor of one-half to J. B. Young, Sioux Falls, Dak. Ter. Automatic car-brake. (Reissue)	10,473	Apr. 29	2015	716	27	517
Macy, Jason W. and V. W., Scarsborough, Iowa. Hay-loader	296,591	Apr. 8	887	245, 246	27	176
Macy, Volney W. (See Macy, Jason W. and V. W.)						
Mader, Theodore H., Zanesville, Ohio. Vehicle dash-board	299,236	May 27	1600	459	27	855
Madison, Joel, Farmington, Minn. Hay-binder for wagon-racks	299,217	June 3	399	102	27	997
Maggs, Thomas C., Detroit, Mich. Neck-yoke attachment	296,592	Apr. 8	888	246	27	176
Magie, Henry F., Symmes' Corner, Ohio. Fence	300,276	June 10	994	268	27	1114
Magner, William, assignor of one-half to J. M. Doyle, Philadelphia, Pa. Conduit for telegraph-wires	299,992	June 10	617	166	27	1048
Maguna, Eugene B., South Norwalk, Conn. Fireman's tower	296,419	Apr. 8	666	184	27	131
Magoon, Charles H., Muskegon, Mich. Feed-water heater	298,006	May 6	57	15	27	538
Mahaffey, James B., Baltimore, Md. Apparatus for feeding shavings to furnaces	300,990	June 24	1905	524	27	1295
Mahoney, Daniel H., Olney, Ill. Railway-frog	297,142	Apr. 22	1575	433	27	314
Mallinckrodt Brake Company. (See Flad and Höppner, assignors.)						
Mallory, Melzar M., *et al.* (See Hopkins, Henry L., assignor.)						
Mallory, William J., *et al.* (See Hopkins, Henry L., assignor.)						
Maloney, James A., Washington, D. C. Receiving-telephone	296,420	Apr. 8	667	184	27	131
Maloney, James A., Washington, D. C. Telephone-transmitter	296,421	Apr. 8	668	185	27	132
Maloney, James A., Washington, D. C. Electric telephone-transmitter	296,593	Apr. 8	889	246	27	176
Maloy, James W. (See Flagg and Maloy.)						
Maloy, James W., Somerville, Mass. Stone-dressing machine	300,277	June 10	995	268, 269, 270	27	1115
Maltby, Frank D., assignor to himself, D. Wilmot, and W. W. Gage, New York, N. Y. Pump	300,880	June 24	1782	486	27	1272
Maltby, Frank D., Washington, D. C., and D. Wilmot, assignors to themselves and W. W. Gage, New York, N. Y. Pump	301,063	June 24	2000	553	27	1313
Malter, George H., San Francisco, Cal. Amalgamating-pan	299,409	May 27	1817	522	27	895
Manahan, John F., Lowell, Mass. Ladder-hook	297,822	Apr. 29	2449	670	27	484
Manahan, John F., Lowell, Mass. Ladder-hook	298,597	May 13	797	223	27	685
Manby, Charles E., McKeesport, assignor to E. C. Converse, Pittsburg, Pa. Alloy for coating metals	300,324	June 10	1059	.....	27	1126
Manhattan Brass Company. (See White, James H., assignor.)						
Mann, Charles W., Hayward, Cal. Farm-gate	299,237	May 27	1601	459	27	856
Mann, Henry, *et al.* (See Rogers, Augustus J., assignor.)						
Mann, John E., Cleveland, Ohio. Ruler	299,993	June 10	619	167	27	1048
Mann, John H., Crafton, assignor of one-half to N. J. Myers, Decatur, Tex. Locomotive-wheel	298,007	May 6	58	15	27	538
Mann, John J. (See Turner and Mann.)						
Mann, Jonathan, Milton, Mass. Stone-dressing machine	298,508	May 13	798	224	27	685
Mann, William I., Braddock, Pa. Cigar-machine	299,818	June 3	400	102, 103	27	997
Manning, John C. (See Wolff and Manning.)						
Mansell Heel Machine Company. (See Parks, Edward H., assignor.)						
Mansfield, Albert K., Boston, Mass. Sash-adjuster for railway-cars	296,594	Apr. 8	891	247	27	177
Mansfield, Edwin L., Boston, Mass. Lathe-chuck	298,498	May 13	671	189	27	661
Manton, Joseph P., Providence, R. I. Power-capstan	300,382	June 17	1143	312	27	1151
Mannel, David, assignor of seven-eighths to B. E. Phillips, L. A. Boylan, G. Haigh, W. H. Julian, J. H. Monahan, and H. C. Somes, Hyde Park, Mass. Rotary harrow	298,008	May 6	59	15	27	539
Mapes, Timothy J., Philadelphia, Pa. Dissolving-cock	299,984	Apr. 15	1371	378	27	272
Marberry, Andrew J., Cabot, Ark. Cultivator	296,025	Apr. 1	162	47	27	33
Marcus, Morris, and H. Anisz, Chicago, Ill. Suspender-end	298,009	May 6	60	16	27	539
Marcy, Frederick I. (See Covell, William W., assignor.)						
Marcy, Frederick I., *et al.* (See Parkinson, Edward, assignor.)						
Mark, Charlie E., Flint, Mich. Car-coupling	296,026	Apr. 1	163	47	27	33
Mark, Charlie E., Flint, Mich. Car-coupling	296,859	Apr. 15	1212	340	27	244
Mark, Charlie E., assignor of one-half to J. W. Bigole, D. S. Fox, and G. L. Walker, Flint, Mich. Coupling	296,027	Apr. 1	164	47	27	33
Markee, John B., *et al.* (See Kealey, Wyley M., assignor.)						
Marks, Walter F., Chapinville, N. Y. Variable speed device	297,143	Apr. 22	1576	433	27	314
Marlin, John M., New Haven, Conn. Magazine fire-arm	297,424	Apr. 22	1930	527	27	380
Marmon, Daniel W., and J. Warrington, assignors to Nordyke & Marmon Company, Indianapolis, Ind. Roller-mill. (Reissue)	10,493	June 24	2018	557, 558	27	1317
Marquardt, Charles, Dayton, Ohio. Detachable hitching device	296,764	Apr. 15	1096	308	27	223
Marr, Llewellyn M., Boston, Mass. Vegetable-steamer	295,930	Apr. 1	45	13	27	11
Marsh, Charles F., *et al.* (See Spencer, Charles F., assignor.)						
Marsh, George, and V. Arnold, Marshall, Mich. Automatic grain-meter	297,614	Apr. 29	2190	597	27	435
Marsh, Howard C. (See Krippendorff and Marsh.)						
Marsh, Samuel E., Tarkio, Mo. Ear-corn feed-regulator	300,991	June 24	1906	524	27	1296
Marshall, George E., Turner's Falls, Mass. Machinery for making paper	297,702	Apr. 29	2314	629	27	459
Marshall, Godfrey. (See Lafferty, Erastus S., assignor.)						
Marshall, Howard T., Brockton, Mass. Boot or shoe	298,599	May 13	799	224	27	685
Marshall, Thomas, Defiance, Ohio. Feed-water heater	298,105	May 6	176	46	27	560
Marshman, Newman R. (See Burridge and Marshman.)						
Martin, Albertis, Plainville, Kans. Windmill	299,563	June 3	78	19	27	935
Martin, Christian, Goshen, Ind. Washing-machine	300,992	June 24	1907	525	27	1296
Martin, Daniel O., Marshall, Ill. Flower-pot	296,028	Apr. 1	165	47	27	34
Martin, George T., Somerville, assignor to Boston Fancy Cabinet Company, Boston, Mass. Blacking-case	296,198	Apr. 1	366	104	27	70
Martin, Henry, Lancaster, Pa. Brick-machine	300,096	June 10	752	302, 303	27	1072
Martin, Jerome W. (See Harrison and Martin.)						
Martin, John C., Richmond, county of Surrey, England. Manufacture of white lead	296,765	Apr. 15	1096	309	27	223
Martin, Sobiaska S. (See Putt, John R., assignor.)						
Martin, William, Tidionte, Pa. Pipe-coupling	299,661	June 3	210	54	27	950
Martin, William, Tidionte, Pa. Pipe-coupling	299,662	June 3	212	55	27	950
Martin, William P., Chico, Cal. Wagon-tongue support	299,228	May 27	1601	459	27	856
Martindale, Elijah B., Indianapolis, Ind. Pulley. (Reissue)	10,494	June 24	2020	558	27	1317
Martinez, Rafael, assignor to E. Gutmann and H. Goodman, New York, N. Y. Mat	298,763	May 20	1011	283	27	733

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Marty, John M., Clarksville, Ark. Ejector	297,615	Apr. 29	2191	598	27	436
Marvin, Stephen, Burnettsville, Ind. Upper	297,823	Apr. 29	2450	670	27	485
Marvin, Stephen, Burnettsville, Ind. Tent	300,993	June 24	1907	525	27	1296
Maschinenbauanstalt Golzern. (See Stenger, John V., assignor.)						
Maske, Robert W., assignor to W. Deering, Chicago, Ill. Cord-holder for grain-binders	297,144	Apr. 22	1577	433, 434	27	315
Mason, Edward T., and F. A. Bergman, Chicago, Ill. Package for mixed paints	298,393	May 13	563	155	27	641
Mason, Francis E. (See Kenney, Thomas M., assignor.)						
Mason, Frank E. (See Kenney, Thomas M., assignor.)						
Mason, George, Catlettsburg, Ky. Letter-file	299,819	June 3	402	103	27	998
Mason Road Cart Company. (See Davis, Albert, assignor.)						
Massenheimer, Charles W., Allentown, Pa. Hame-clip	297,277	Apr. 22	1746	474	27	345
Massey, Gideon B., Mount Vernon, N. Y., assignor of one-third to L. A. Garnett, San Francisco, Cal. Spring shade-roller	299,239	May 27	1602	460	27	856
Massey, Thomas, Pawtucket, R. I. Blind-stop	297,145	Apr. 22	1578	434	27	315
Massie, George, New York, N. Y. Cigar-press	300,994	June 24	1908	525	27	1296
Masters, Egbert E., Sacramento, Cal. Window-screen	300,881	June 24	1783	486, 487	27	1273
Masterson, Bartholomew, assignor to himself and J. W. Eldredge, Milford, Mass. Washer for vehicle-wheels	296,029	Apr. 1	165	48	27	34
Mathewa, Daniel A. (See Smith, Thomas L., assignor.)						
Mathewa, John. (See Higley, Asa L., assignor.)						
Mathieu, Jean A., Detroit, Mich. Apparatus for distilling wood	300,383	June 17	1144	313, 314	27	1151
Mathieu, Jean A., Detroit, Mich. Distillation of wood	300,384	June 17	1147	314	27	1152
Mathieu, Jean A., Detroit, Mich. Retort for carbonizing wood	300,385	June 17	1148	315	27	1152
Mathisen, William M. (See Jewell and Mathisen.)						
Mathushek Piano Manufacturing Company. (See Parmelee, Henry S., assignor.)						
Matlock, James B., Huntsville, Mo. Hay-stacker	296,422	Apr. 8	669	185	27	132
Mattelin, Jonas G., Chicago, Ill. Lock	299,486	May 27	1905	548	27	911
Matteson, Adelbert, Chicago, Ill. Barbed-wire machine	296,339	Apr. 8	564	157, 158	27	113
Matteson, Arthur E., Chicago, Ill. Apparatus for constructing artificial tooth-crowns	297,703	Apr. 29	2316	630	27	459
Matteson, Arthur E., Chicago, Ill. Artificial tooth-crown	297,704	Apr. 29	2317	630	27	459
Matthews, Henry A. (See Ireland, David M., assignor.)						
Matthiessen & Wiechers Sugar Refining Company, F. O. (See Niese and Dinkel, assignors.)						
Mattice, Christopher, Delhi, N. Y. Gage for cutting car-braces	298,600	May 13	800	224	27	685
Mattison, James D., New York, N. Y. Stopper-lock	297,425	Apr. 22	1932	527	27	380
Mattoni, Henry W., assignor to Bawo & Dotter, New York, N. Y. Sample trunk or case	296,030	Apr. 1	166	48	27	34
Mattullath, Hugo, assignor to Security Package Company, San Francisco, Cal. Fancet	296,031	Apr. 1	167	48	27	34
Matuska, Anton, Chicago, Ill. Window	298,699	May 13	930	258	27	710
Matzenbacher, John, assignor of one-half to L. J. Gans, New York, N. Y. Umbrella tip-cup	298,219	May 6	335	87	27	589
Maurer, Henry, New York, N. Y. Fire-proof ceiling	299,220	June 3	402	103	27	998
Maus, Daniel, Utica, N. Y. Trimmer for sewing-machines	296,423	Apr. 8	670	185	27	139
Maxim, Hiram S., Brooklyn, N. Y. Gas-engine	296,340	Apr. 8	568	158, 159	27	113
Maxim, Hiram S., Brooklyn, N. Y. Electrical igniting device for gas-engines	296,341	Apr. 8	571	159	27	114
Maxim, Hiram S., Brooklyn, N. Y. Mechanism for operating gun-locks by recoil	297,278	Apr. 22	1747	475	27	346
Maxim, Sammel, assignor to N. K. and E. L. Lincoln, Wayne, Me. Bosom-board	296,424	Apr. 8	671	185	27	132
Maxim, Samuel, Wayne Me., assignor to E. M. Smith, Pittsfield, Mass. Driving mechanism for sewing and other machines	296,425	Apr. 8	671	186	27	132
Maxon, Thomas, assignor of one-half to J. W. Carpenter, Dayton, Ohio. Lifting-jack	298,306	May 6	447	120	27	611
Maxon, Thomas, assignor of one-half to J. W. Carpenter, Dayton, Ohio. Lifting-jack	298,307	May 6	448	121	27	612
Maxson, Stephen W., Dassel, Minn. Table	298,601	May 13	800	224	27	685
Maxwell, Dwight M. (See Otis and Maxwell.)						
Maxwell, James A. (See Silliman and Maxwell.)						
Maxwell, James R., Cincinnati, assignor to Gordon & Maxwell Company, Hamilton, Ohio. Pump	299,487	May 27	1906	549	27	911
Maxwell, Samuel F., Clifton, W. Va. Machine for crozing staves	296,199	Apr. 1	367	104, 105	27	70
May, Catharine, Cleveland, Ohio, assignor to W. L. Judd, Brooklyn, N. Y. Bottle-capper	298,872	May 20	1144	321	27	757
May, S. Elwood. (See Rodgers, William H., assignor.)						
Maycock, Mark M., Buffalo, N. Y. Churn-cover fastener	296,985	Apr. 15	1372	379	27	272
Mayer, John B., Philadelphia, Pa. Truss	296,342	Apr. 8	573	159	27	114
Mayes, Thomas A., Phillipsburg, Pa. Apparatus for agitating the liquor in tan-vats	296,986	Apr. 15	1373	379	27	272
Mayfield, Mary L. (See Mayfield, Samuel B., assignor.)						
Mayfield, Samuel B., assignor to M. L. Mayfield, Palestine, Tex. Car-coupling	298,010	May 6	62	16	27	539
Maynz, Edward, Boston, Mass. Belt-fastener	297,146	Apr. 22	1579	434	27	315
Mayrhofer, Charles A., assignor to R. I. Langstaff-Haviland, Vienna, Austria-Hungary, Mechanism for automatically casting and recording ballots actuated by the pressure or expansion of fluid	299,663	June 3	213	55, 56	27	960
McAdam, Alexander J. and N. L., San Francisco, Cal. Collar	298,489	May 13	672	189	27	661
McAdam, Neil L. (See McAdam, Alexander J. and N. L.)						
McAdams, James. (See McMillen and McAdams.)						
McAfee, Jacob C., Dallas, W. Va. Nut-lock	297,824	Apr. 29	2451	671	27	485
McAleer, Philip, assignor of one-half to E. H. Bradford, Washington, D. C. Door-spring	299,080	May 20	1408	401	27	807
McAllister, James E. A., Albany, N. Y. Toy	300,097	June 10	754	203	27	1072
McAlvay, Charles B., and C. H. Christopher, Jackson, Mich. Lubricator for steam-engines	300,619	June 17	1437	396	27	1205
McArdle, William, *et al.* (See Sutton, Thomas, assignor.)						
McCabe, Frank, Providence, R. I. Faucet	299,564	June 3	79	19	27	935
McCabe, Robert, Meadville, Pa. Sash-fastener	298,106	May 6	177	46	27	560
McCain, Patrick. (See Sanford, George W., assignor.)						
McCann, Marion W., Posey, Ind. Cultivator	296,860	Apr. 15	1214	340	27	244
McCarley, Pink W. (See Tucker, Robert D., assignor.)						
McCarney, John T., Columbus Junction, Iowa. Horse-power	297,825	Apr. 29	2451	671	27	485
McCartin, William J., St. Louis, Mo. Coat-pattern	296,426	Apr. 8	673	186	27	133
McCarty, William F. M., St. Petersburg, Russia, assignor of one-half to H. Levis, Philadelphia, Pa. Manufacturing hydrocarbon gas	296,200	Apr. 1	370	105, 106	27	71
McCarty, William F. M., St. Petersburg, Russia, assignor of one-half to H. Levis, Philadelphia, Pa. Apparatus for the manufacture hydrocarbon gas	296,201	Apr. 1	372	106	27	71
McCarty, William F. M., St. Petersburg, Russia, assignor to J. F. Pierce, trustee, New York, N. Y. Multiple-circuit closer	300,098	June 10	754	203	27	1072

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
McCauley, Patrick H., Des Moines, Iowa. Apparatus for hoisting and conveying ground, minerals, &c	296,343	Apr. 8	574	160	27	114
McCausland, William J., assignor to W. W. Kurtz, Philadelphia, Pa. Printing-telegraph	299,664	June 3	228	56, 57	27	963
McCausland, William J., *et al.* (See Smith, Benjamin, assignor.)						
McCay, Spencer, Topeka, Kans. Tire-tightener	296,987	Apr. 15	1374	379	27	273
McChesney, Oscar S. (See Bonsteel, Alexander O., assignor.)						
McClaskey, John S., Grsham, Mo. Sliding gate	296,595	Apr. 8	892	247	27	177
McCleery, William, *et al.* (See Campbell, Duncan H., assignor.)						
McClen, John J., Bushnell, Ill. Tongueless cultivator	299,081	May 20	1408	401	27	907
McClinchie, Uriah, New York, and J. F. Butler, Williamsburg, N. Y. Top for children's carriages	299,240	May 27	1603	466	27	856
McClintock, Alexander, *et al.* (See Boals, James A., assignor.)						
McClorey, Francis. (See Murphy, Hugh, assignor.)						
McCloskey, William T., Westport, Pa. Wood-splitting machine	300,099	June 10	757	204	27	1073
McClure, James H., and G. F. Murdock, Wellsville, Ohio. Car-truck	296,988	Apr. 15	1375	379	27	273
McClure, William H., assignor to J. L. Plimpton, New York, N. Y. Wardrobe-bed	298,873	May 20	1145	322	27	757
McColl, Alexander D. (See Skinner, John, assignor.)						
McCollum, John A. (See Topliff, Cross, Cox, and McCollum.)						
McCollum, Orlando J., and C. O. Stran, Aurora, Ill. Road-cart	296,032	Apr. 1	167	48, 49	27	34
McComas, William G., Colerain, Ohio. Hay-stacker	296,596	Apr. 8	893	247	27	177
McCord, Hercules, St. Louis, Mo. Banjo	299,153	May 27	1500	431	27	836
McCourt, Peter, assignor of one-half to J. H. Simpson, Appleton, Wis. Planer-knife	298,394	May 13	563	155	27	641
McCracken, George B., Willimantic, Conn. Cock and faucet						
McCracken, George B., and S. Hamer, Willimantic, Conn. Spindle-bearing for spinning-frames	300,785	June 24	1666	456	27	1250
McCullough, Samuel, assignor to T. Kennedy, Jr., H. C. Fortier, and W. H. Best, Toronto, Ontario, Canada. Wooden-soled boot	299,994	June 10	619	167	27	1048
McCurry, Henry, assignor of one-half to J. Stuart, Fulton, Ill. Carriage-top	297,147	Apr. 22	1560	434	27	315
McCutcheon, Robert H. (See Otto, Gustav, assignor.)						
McDonald, Angus, Ausable, Mich. Canal-boat	297,279	Apr. 22	1748	475	27	346
McDonald, I. Heylin, *et al.* (See Smith, John W. and J. D., assignors.)						
McDougall, Isaac S., Manchester, county of Lancaster, England. Boiler or vessel employed in the treatment of fibrous materials for the manufacture of paper-pulp and for other purposes	298,602	May 13	801	225	27	686
McElroy, David W., Keokuk, Iowa. Apparatus for rendering lard, &c	299,821	June 3	403	103	27	998
McElroy, William, Brooklyn, N. Y. Lifting feed-water injector	297,826	Apr. 29	2452	671, 673	27	485
McEwen, John, Wellsville, N. Y. Mechanical movement	299,089	May 20	1410	402	27	808
McFall, Edwin H., Memphis, Tenn. Telephone call and switch box	297,148	Apr. 22	1580	435	27	315
McFeeley, George, Steubenville, Ohio, assignor to W. J. Sherriff, Pittsburg, Pa. Steam-pump. (Reissue)	10,475	May 6	491	133	27	619
McGaffey, Henry H., *et al.* (See Witty, John B., assignor.)						
McGann, Owen J., assignor of one-half to J. L. Vandermark, Pullman, Ill. Stop and waste cock	300,386	June 17	1140	315	27	1152
McGill, George W., New York, N. Y. Tag and tag-fastener	296,766	Apr. 15	1097	309	27	223
McGill, George W., New York, N. Y. Tag-fastener	299,154	May 27	1500	431	27	836
McGill, George W., New York, N. Y. Ring-suspending device for papers	299,155	May 27	1501	431	27	836
McGill, George W., New York, N. Y. Suspending device	300,100	June 10	758	204	27	1073
McGill, George W., Riverdale, N. Y. Suspending device	298,220	May 6	396	87, 88	27	589
McGilvray, Luther, Greenville, Pa. Machine for making chain-link blanks	297,496	Apr. 22	1934	527	27	381
McGinley, James, Chicago, Ill. Faucet						
McGinn, William J. (See Edmonds, George, assignor.)						
McGivern, Patrick, and W. E. Frye, Crestline, Ohio. Feed-water heater	296,427	Apr. 8	674	186	27	133
McGovern, Ralph W., San Francisco, Cal. Cable-grip	300,492	June 17	1281	352	27	1177
McGowan. Theodore J., Cincinnati, Ohio. Machine for hulling cotton-seed	299,931	June 3	327	140	27	1022
McGown, George Q., Golden City, Mo. Hydraulic elevator	299,930	June 3	327	140	27	1021
McGrath, John, New York, N. Y. Folding table	299,241	May 27	1605	466	27	856
McGrath, John, New York, N. Y. Corpse head-rest	299,665	June 3	230	57	27	964
McGregor, Bradford, Covington, Ky. Air medicator and injector	297,427	Apr. 22	1935	528	27	381
McGregor, Thomas W., Rushford, Minn. Barrel-trussing machine	296,344	Apr. 8	576	160, 161	27	115
McGuire, James, Benson, Vt. Harness-girth	299,995	June 10	620	167	27	1048
McGuire, William, assignor to himself and F. Jager, Chicago, Ill. Grain-car door	299,222	June 3	404	104	27	998
McGwin, James, Fulton, Mo. Double-acting pump	299,666	June 3	231	57	27	964
McIlhone, John, St. Louis, Mo. Spring bed-bottom	297,827	Apr. 29	2456	672	27	486
McIntire, Oliver K., Springfield, Ohio. Lifting-jack	298,700	May 13	930	258	27	710
McIntosh, Peter E., Rochester, N. Y. Book-case	296,767	Apr. 15	1098	309	27	223
McIntyre, James P., assignor to Eau Claire Chilled Plow Company, Eau Claire, Wis. Plow-standard	296,861	Apr. 15	1215	340	27	244
McKay, Gordon, *et al.*, trustees. (See Crosby, Joseph B., assignor.) (Reissue.)						
McKay, Gordon, trustee. (See Fairfield and Shead, assignors.)						
McKay, Gordon, trustee. (See Shead and Fairfield, assignors.)						
McKay, Joseph L., Neoga, Ill. Churn-motor	300,620	June 17	1438	396, 397	27	1205
McKeen, Thomas L., Easton, Pa. Car-coupling	296,597	Apr. 8	895	247, 248	27	177
McKeen, Thomas L., Easton, Pa. Car-coupling	297,428	Apr. 22	1936	528	27	381
McKenna, Charles F. (See Rosenzi, Enrico, assignor.)						
McKernan, Dennis D., Chicago, Ill. Drive-chain	297,149	Apr. 22	1582	435	27	316
McKinney, Mac N., Jackson, Miss. Churn	296,202	Apr. 1	374	106, 107	27	72
McKinnon, Cameron, Midway, Ala. Pen-rest	298,603	May 13	802	225	27	686
McKnight, John W., Washington, D. C. Billiard-table top	299,565	June 3	86	19	27	935
McKnight, John W., Washington, D. C. Composition and mold for the manufacture of articles from artificial slate	299,566	June 3	86	20	27	935
McLane, Albert L. (See Chisholm, William R., assignor.)						
McLane, Edwin P., Mount Carmel, Conn. Attachment for pen-holders	299,242	May 27	1605	460	27	857
McLean, William. (See Ryan, Thomas, assignor.)						
McLeod, John S., Boston, Mass. Railway-rail and rail-joint	297,708	Apr. 29	2321	631	27	460
McLoughlin, Edmund, *et al.* (See Campbell, Andrew, assignor.)						
McLoughlin, John, *et al.* (See Campbell, Andrew, assignor.)						
McMahan, Matthias F., Trappe, assignor of one-half to M. Merrick, Kirkham, Md. Tricycle	298,994	May 20	1291	368	27	786
McMahon, Michael. (See Sharpnack and McMahon.)						
McMeen, Robert M., Mount Vernon, Ill. Stump-extractor	300,786	June 24	1667	456	27	1251

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
McMichael, James G., Louisville, Ky. Conductor's passenger check	299,823	June 3	406	104	27	998
McMillan, Charles, Chicago, Ill. Steam-boiler and furnace lining	296,768	Apr. 15	1099	310	27	224
McMillan, Duncan, *et al.* (See Simmons, Thomas A., assignor.)						
McMillen, John, and J. McAdams, New York, N. Y. Flocking paper and other fabrics, and machine therefor	296,428	Apr. 8	675	187	27	133
McMullen, Albert R., What Cheer, Iowa. Corn-planter	299,410	May 27	1818	522, 523	27	895
McMullin, Michael, Denver, Colo. Lubricator	297,616	Apr. 29	2192	598	27	436
McMunn, Samuel W., C. J. Schiller, and E. B. Leigh, assignors to American Brake Company, St. Louis, Mo. Locking mechanism for car-brakes	300,101	June 10	758	204	27	1073
McMurray, Henry R., Burgettstown, Pa. Traction-engine	296,862	Apr. 15	1217	341	27	244
McMurray, Louis, Baltimore, Md. Machine for packing ensilage, &c	296,863	Apr. 15	1220	341, 342	27	245
McNair, William L., Golden, Colo. Reverberatory gas-furnace	296,033	Apr. 1	169	49, 50	27	35
McNamara, Monroe, Mexico, Mo. Manufacture of artificial stone	295,931	Apr. 1	46	.....	27	11
McNamara, Patrick. (See Doyle, James, assignor.)						
McNeal, Charles E., Silver Creek, N. Y. Grain-separator	300,021	June 17	1440	397	27	1206
McNeil, George, Chicago, Ill. Lubricator	298,011	May 6	63	16	27	539
McNeil, James and T., Pittsburg, Pa. Hoisting-machine	296,864	Apr. 15	1222	342	27	245
McNeil, Thomas. (See McNeil, James and T.)						
McNelly, M. Frank, Sterling, Ill. Double force-pump	300,787	June 24	1668	456, 457	27	1251
McNiece, Andrew, assignor of one-half to R. Hilton, Newark, N. J. Clamp for frame-saws	298,995	May 20	1293	369	27	786
McPherson, James A., Brunswick, N. Y. Torch	299,411	May 27	1819	523	27	895
McRorey, Austin. (See Beck and McRorey.)						
McVay, James H., South Chicago, Ill. Rotary steam-engine	299,824	June 3	407	104	27	999
McWilliams, Patrick H., Detroit, Mich. Shifting-truck	296,865	Apr. 15	1224	342	27	245
Mead, John T., assignor to himself and J. Thomson, Cleveland, Ohio. Feed-water purifier	296,303	Apr. 1	375	107	27	72
Mealey, John, Prescott, Ontario, Canada. Car-coupling	299,243	May 27	1600	461	27	857
Mears, Hiram B., assignor of one-half to A. Horr, Dubuque, Iowa. Watch-movement	296,204	Apr. 1	375	107	27	72
Mechling, Benjamin F., Philadelphia, Pa. Utilizing tin cans	298,221	May 6	338	88	27	590
Meddick, Sanford C., Orvil, N. Y. Fertilizer-distributing attachment for rollers	297,828	Apr. 29	2457	673	27	486
Medsker, Alpha, *et al.* (See Dalby, William H., assignor.)						
Meeker, William A., San Francisco, Cal. Fruit-drier	300,995	June 24	1669	525, 526	27	1296
Mefford, David M., Toledo, Ohio, assignor to A. J. Fair, Detroit, Mich., and H. D. Winsor, New York, N. Y. Projectile	298,996	May 20	1294	369	27	786
Mehew, Stephen D., Peabody, Kans. Heel-plate for boots or shoes	297,150	Apr. 22	1583	435	27	316
Meissner, Moritz P. (See Römer and Meissner.)						
Mendenhall, Clarkson, Wilmington, Del. Road-scraper	298,604	May 13	803	225, 226	27	686
Menslage, Henry, South Boston, Mass. Refrigerating corned-beef tank	299,567	June 3	82	20	27	935
Mercer, Alfonso, assignor of one-half to W. and T. M. Sanderlin, Norfolk, Va. Tool-holder	296,989	Apr. 15	1376	380	27	273
Merewether, Henery, Hull, Quebec, Canada. Bundling machine	301,064	June 24	2092	553	27	1313
Merichenski, Monska, Poplar, county of Middlesex, England. Extension-chandelier	300,493	June 17	1283	352	27	1177
Meriden Malleable Iron Company. (See Rich, John T., assignor.)						
Merino Shoe Company. (See Messer, Daniel F., assignor.)						
Merrell, Jay C., Genesco, N. Y. Oil-can	298,874	May 20	1147	322	27	758
Merriam, Charles R., Philadelphia, Pa. Can-heading machine	299,825	June 3	408	104, 105	27	999
Merrick, Frank W., assignor of one-half to T. Hickling, Sandusky, Ohio. Wrench	300,717	June 17	1580	433	27	1230
Merrick, Isaac J., Conotton, Ohio. Car-coupling	297,829	Apr. 29	2458	673	27	486
Merrick, Matthias. (See McMahan, Matthias F., assignor.)						
Merrill, Calvin J., Des Moines, Iowa. Drain-tile machine	300,882	June 24	1785	487	27	1273
Merrill, Charles A., Grand Rapids, Mich. School desk and seat	299,826	June 3	409	105	27	999
Merrill, S. M. (See Dennis, Frank C., assignor.)						
Merrill, William E. T. (See Bruff and Merrill.)						
Merrill, William E. T., Philadelphia, Pa. Holder for the bands of neckscarfs	301,065	June 24	2003	553	27	1314
Merriman, Lemuel H., Auburn, assignor of one-half to T. G. Prickett, Springfield, Ill. Axle-skein	296,702	Apr. 8	1016	285	27	203
Merritt, Charles H., Danbury, Conn., assignor to J. T. Waring, New York, N. Y. Felting-machine	299,412	May 27	1821	523	27	896
Merryman, Franklin W., Baltimore, Md. Lamp	297,429	Apr. 22	1937	528	27	381
Mertens, Frederick E., Erie, Pa. Pipe and hose coupling	299,827	June 3	411	105	27	999
Merziger, Franz, Trier, Prussia, Germany. Bark-peeling machine	300,996	June 24	1913	526	27	1297
Mescrole, Isaac, Springville, Pa. Butter-pail	296,034	Apr. 1	171	50	27	35
Messemer, John G., Lebanon, Ohio. Device for expanding finger-rings, ferrules, &c	299,413	May 27	1822	523	27	896
Messer, Daniel F., Baltimore, Md., assignor to Merino Shoe Company, Kennebunk, Me. Forming felt boots, shoes, &c	297,280	Apr. 22	1749	475	27	346
Messer, Lovercit, Haverhill, Mass. Ice-guard for pitchers	299,414	May 27	1823	524	27	896
Metcalf, Henry B., *et al.* (See Campbell, Duncan H., assignor.)						
Metcalf, James M., Enfield, Ill. Flood-gate	300,102	June 10	760	205	27	1073
Methot, Ebens, assignor of one-half to H. Methot, Boston, Mass. Garment-supporter	300,997	June 24	1914	527	27	1297
Methot, Homer. (See Methot, Ebens, assignor.)						
Metsker, Hamilton, Noblesville, Ind. Truck	300,788	June 24	1670	457	27	1251
Meyenberg, Johan. (See Hausherr and Meyenberg.)						
Meyer, Asher T., New York, N. Y. Umbrella and parasol rib	297,281	Apr. 22	1750	475	27	346
Meyer, August B., *et al.* (See Gilliland, James F., assignor.)						
Meyer, Benjamin F. (See Furbush, Knowlton, and Meyer.)						
Michael, Frederick, and R. Williams, Jr., Eaton, Ohio. Mail-bag	296,429	Apr. 8	677	187	27	134
Michaels, Joseph P., Paris, France, assignor of one-half to W. R. Donovan, Boston, Mass. Eyeglasses	298,490	May 13	673	189	27	602
Michigan Lubricator Company. (See Parshall, Charles H., assignor.)						
Mickle, George W., Amherstburg, Ontario, Canada. Fire-escape	300,022	June 17	1442	397	27	1206
Mickle, John, *et al.* (See Horeckner, Emil, assignor.)						
Middleton, Arthur D., Charleston, S. C. Rice-drill	300,883	June 24	1787	488	27	1273
Miggett, William, Philadelphia, Pa. Stove, range, furnace, &c	298,605	May 13	805	226	27	686
Mignault, Pierre E., Acton Vale, Quebec, Canada, and P. Dion, Salem, assignors to Union Car Coupler Company, Boston, Mass. Car-coupling	296,205	Apr. 1	376	107	27	72
Mikesell, Martin L., assignor, by mesne assignments, to M. E. Mikesell, Muscatine, Iowa. Lock	296,430	Apr. 8	678	187	27	134
Mikesell, Mary E. (See Mikesell, Martin L., assignor.)						
Milan, William H. (See Thompson, Joseph W., assignor.)						
Milburn, Henry J., *et al.* (See Krehbiel, John, assignor.)						
Miles, Alfred S., Brooklyn, N. Y. Brush-bridle	297,617	Apr. 29	2193	598	27	436

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Miles, Edwin G., Fenton, Mich. Interfering-pad for horses	300,718	June 17	1581	434	27	1231
Miles, James R., and J. K. Baldridge, Ralston Station, Tenn. Vehicle-brake	300,884	June 24	1788	488	27	1274
Miles, Richard R. (See Faught, Nelson, assignor.)						
Millard, Charles W. (See Parrish and Munn, assignors.)	298,875	May 20	1149	322	27	758
Millard, Edward F., Marinette, Wis. Pressure-feeder for pulp-grinders	298,997	May 20	1295	369	27	787
Millard, Orson, assignor of one-half to C. B. Crampton, Flint, Mich. Electric battery	299,067	June 3	232	57, 58	27	964
Miller, Aaron, Brockport, N. Y. Gavel-deliverer for harvesters	296,769	Apr. 15	1101	310	27	224
Miller, Benedick, and G. H. Hume, Paola, Kans. Fire-escape sling	299,022	June 3	529	140	27	1022
Miller, Charles K., and G. H. Cleveland, Camden, Me. Shirt	300,623	June 17	1443	398	27	1206
Miller, Eli A., Conneant, Ohio. Pump						
Miller, Frederick B. (See Holcomb and Miller.)						
Miller, George H., and C. Goyette, Pawtucket, R. I. Hoisting-bucket	298,606	May 13	806	226	27	686
Miller, Henry L., Morris, Ill. Scraper-cultivator	299,415	May 27	1823	524	27	896
Miller, Herman W. (See Paddock and Miller.)						
Miller, J. Franklin, Oakland, Cal. Combined pen-holder and blotter	299,668	June 3	235	58	27	964
Miller, Jacob, *et al.* (See Best, Martin L., assignor.)						
Miller, James T., Urbana, Ohio. Caster	299,828	June 3	411	106	27	999
Miller, John, Milton, Oreg. Millstone-dressing machine	300,163	June 10	761	205	27	1074
Miller, John C., Ickesburg, Pa. Parallel ruler	296,598	Apr. 8	896	248	27	178
Miller, John F., Martin's Ferry, Ohio. Mold for the manufacture of glass lamps and lamp-founts	297,430	Apr. 22	1937	528	27	382
Miller, John F., assignor of one-half to W. E. Hague, Pittsburg, Pa. Carpenter's vise	297,282	Apr. 22	1751	476	27	347
Miller, Lebbens B., and P. Diehl, Elizabeth, N. J. Pitman	298,701	May 13	931	258	27	710
Miller, Levi L., *et al.* (See Best, Martin L., assignor.)						
Miller, Lewis, *et al.* (See Ellinwood, Augustus E., assignor.)						
Miller, Lewis, Akron, Ohio. Harvester	299,244	May 27	1607	461, 462	27	857
Miller, Robert T., Covington, Ky. Key-fastener	300,387	June 17	1151	315	27	1152
Miller, Samuel A., Philadelphia, Pa. Earth-remover	296,990	Apr. 15	1376	380	27	273
Miller, Samuel M., and E. F. Brown, Nebraska, Ohio. Straw-stacker	299,933	June 3	530	141	27	1022
Miller, Solomon K., Mount Union, Pa. Tombstone	296,431	Apr. 8	679	187	27	134
Miller, William N., Oakland, Cal. Door and panel work	296,035	Apr. 1	172	50	27	35
Milligan, Charles A., Somerville, and M. J. Killion, Boston, Mass., assignors to Excelsior Self-Leveling Berth and Automatic Ladder Company, Portland, Me. Ship's berth	298,012	May 6	65	17	27	540
Milligan, Charles A., Somerville, and M. J. Killion, Boston, Mass., assignors to Excelsior Self-Leveling Berth and Automatic Ladder Company, Portland, Me. Ladder	298,013	May 6	66	17	27	540
Milligan, Henry C., South Orange, N. J. Enameling iron-ware	296,206	Apr. 1	378	.....	27	72
Milligan, John C. (See Cochran and Milligan.)						
Milligan, John C. (See Mouhot and Milligan.)						
Milligan, John C., Brooklyn, and E. Mouhot, Wood Haven, assignors to Lalance & Grosjean Manufacturing Company, New York, N. Y. Attachment of lips and spouts to vessels	298,222	May 6	339	88	27	590
Millison, David G. (See Herrington and Millison.)						
Mills, Daniel, Philadelphia, Pa., assignor to United States Automatic Buttonhole Sewing Machine Company, of New Jersey. Button-hole sewing-machine	298,607	May 13	807	226	27	687
Mills, James. (See Mills, John and J.)						
Mills, John and J., Wilmington, Del. Cart	297,830	Apr. 29	2459	673	27	486
Millspaugh, William, Middletown, N. Y. Hay-shears	296,036	Apr. 1	173	50	27	36
Milner, Moses, Leesburg, Ohio. Ditching-machine	298,223	May 6	340	89	27	590
Milwaukee Chair Company. (See Parry, Henry, assignor.)						
Milwaukee Dust Collector Manufacturing Company. (See Richardson, William, assignor.)						
Minear, Solomon C., Chillicothe, Ohio. Sheaf gathering and shocking machine	298,107	May 6	177	47	27	560
Miner, Theodore, Brooklyn, N. Y. Insulated conductor	296,294	Apr. 1	507	141	27	95
Minich, Valentine. (See Groves and Minich.)						
Minneapolis Harvester Works *et al.* (See Appleby, John F., assignor.)						
Mitchell, Alexander, Fredericton, New Brunswick, Canada. Screw	296,991	Apr. 15	1378	380	27	274
Mitchell, Benjamin F., assignor to Wilcox, Crittendon & Co., Middletown, Conn. Hollow punch	300,624	June 17	1444	398	27	1207
Mitchell, Jonas L., Logan, Ohio. Car-dumping apparatus	300,719	June 17	1581	434	27	1231
Mitchell & Lewis Company. (See Wallis, Henry M., assignor.)						
Mitchell, N. Chapman, Philadelphia, Pa. Recovering rubber from waste	300,720	June 17	1584	.....	27	1231
Mitchell, Obed H., Springfield, Mo. Combined cant-hook and lifting-jack	298,765	May 20	1014	283	27	733
Mitchell, Oliver M., Providence, R. I. Bicycle-bearing	296,703	Apr. 8	1017	285	27	203
Mitchell, Samuel, assignor to Shipping Package Company, Hornellsville, N. Y. Clamp	299,829	June 3	412	106	27	1000
Mitchell, William G., Brooklyn, N. Y. Car-axle lubricator	297,527	Apr. 22	2071	565	27	406
Mix, Frank W., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Trunk-lock	296,345	Apr. 8	577	161	27	115
Mix, Frank W., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Lock	297,151	Apr. 22	1584	436	27	316
Model Machine Company. (See Osborn, Adelbert E., assignor.)						
Moebius, Bernhard, Chihuahua, Mexico. Refrigerator for cooling contents of bottles, cans, &c	296,432	Apr. 8	680	188	27	134
Moffet, John, New York, N. Y. Rotary engine	300,908	June 24	1945	527	27	1297
Moffitt, Robert H., Harrisburg, Pa. Dental-rubber-dam holder	296,992	Apr. 15	1379	381	27	274
Moffly, Robert, Philadelphia, Pa. Folding satchel	296,993	Apr. 15	1380	381	27	274
Mohany, Henry W., assignor of two-thirds to H. Nelson and H. J. Eggers, Mount Horeb, Wis. Lifting-jack	297,705	Apr. 29	2318	630	27	459
Mohr, B. Frank, Millinburg, Pa. Clutch mechanism	298,608	May 13	808	227	27	687
Moline Plow Company. (See Bartlett, John W., assignor.)						
Moline Plow Company. (See Lindgren, August, assignor.)						
Moll, George, and F. Hottes, Mascontah, Ill. Fence-post	296,037	Apr. 1	173	51	27	36
Molno, Charles. (See Munz and Molno.)						
Moloney, John, Pittsburg, Pa. Faucet	300,618	June 17	1436	396	27	1205
Monahan, John H., *et al.* (See Manuel, David, assignor.)						
Mönch, Jacob, assignor to E. Posen & Co., Offenbach-on-the-Main, Germany. Extensible clasp for books	297,431	Apr. 22	1938	529	27	382
Mond, Ludwig, Northwich, county of Chester, England. Obtaining hydrochloric acid from the residues of ammonia-soda manufacture	299,830	June 3	414	.....	27	1000
Monk, John, Lynn, Mass. Vehicle-hub	298,014	May 6	68	17	27	540
Monnet, Prosper, assignor to Société P. Monnet et Cie., St. Fons, Rhône, France. Obtaining brown dyes from the aromatic diamines	298,998	May 20	1296	.....	27	787
Montague, John B., J. T. Booker, and E. C. Dinning, Franklin, Ky. Sash-balance	300,104	June 10	762	205	27	1074
Montague, John B., J. T. Booker, and E. C. Dinning, Franklin, Ky. Window	300,105	June 10	764	205	27	1074
Montant, Alphonse, New York, N. Y. Vise	300,388	June 17	1153	316	27	1153
Montgomery, Harry C., assignor to A. Romeau, Cleveland, Ohio. Automatic ball safety-faucet	299,669	June 3	235	58	27	964

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Montgomery, James H., Denver, Colo. Hoisting apparatus	296,433	Apr. 8	681	188	27	135
Montgomery, William A., Cleveland, Ohio. Lathe-chuck	298,015	May 6	69	18	27	540
Montgomery, William B. (See Walter and Montgomery.)						
Moody, James S., Summit City, Pa. Bailer for cleaning oil-wells	298,876	May 20	1150	323	27	758
Mook, A. E., *et al.* (See Sumner, Joshua, assignor.)						
Moon, Henry, Thomasville, N. C. Amalgamator	300,106	June 10	765	206	27	1070
Moore, Albert C., Bellows Falls, Vt. Paper-holder	297,618	Apr. 29	2194	598	27	436
Moore, Arthur H., Chicago, Ill. Fan attachment	296,346	Apr. 8	578	161	27	115
Moore, Edward Y., Chicago, Ill. Door-hanger	299,156	May 27	1502	402	27	836
Moore, George F., Kennebunk, Me. Machine for shaping heel-stiffeners	299,996	June 10	620	167, 168	27	1048
Moore, Gilpin, assignor to Deere & Company, Rock Island, Ill. Cultivator	298,609	May 13	809	227	27	687
Moore, Hollis W., Olean, N. Y. Side-bar vehicle	298,016	May 6	70	18	27	541
Moore, John, Syracuse, N. Y. Curtain-pole	299,831	June 3	414	106	27	1000
Moore, John M. (See Wilson, Allen F., assignor.)						
Moore, Jonathan J., and J. A. Ball, Thorntown, Ind. Belt-guide	295,932	Apr. 1	47	13	27	11
Moore, Matthew R., Indianapolis, Ind. Flanging-machine	299,997	June 10	622	168, 169	27	1049
Moore, Samuel A., Bloomfield, Iowa. Pump	300,389	June 17	1153	316	27	1153
Moore, William B., *et al.* (See Smith, John W. and J. D., assignors.)						
Moore, William H., Gardiner, Me. Machine for making bed-slats	299,832	June 3	415	107	27	1001
Moorhouse, Robert O. and W., Philadelphia, Pa. Paper-stock sorting and cleaning machine	298,108	May 6	179	48	27	561
Moorhouse, Walter. (See Moorhouse, Robert O. and W.)						
Moran, John, Brooklyn, assignor to J. L. Plimpton, New York, N. Y. Wardrobe-bedstead	298,877	May 20	1150	323	27	758
Moran, Lewis P., Handley, W. Va. Coal-drilling machine	298,766	May 20	1015	284	27	733
Moran, Patrick, New York, N. Y. Head for barrels, casks, &c	296,038	Apr. 1	174	51	27	36
Morehouse, Charles L., Brooklyn, N. Y. Combined firing and bell-ringing burglar-alarm	300,107	June 10	766	206	27	1074
Morgan, Charles H., Worcester, Mass. Packing-box	300,721	June 17	1585	434	27	1231
Morgan, Edward J. (See Hall, George W., assignor.)						
Morgan, Isaac, assignor of one-fourth to C. H. Coggeshall, St. Louis, Mo. Flour-refiner	299,245	May 27	1609	462	27	857
Morgan, Joseph L. (See Loar, George C., assignor.)						
Morgan, Joseph S. (See Schreiber, Charles W., assignor.)						
Morgan Rail Joint Company. (See Morgan, Richard P., Jr., assignor.)						
Morgan, Richard P., Jr., assignor to Morgan Rail-Joint Company, Dwight, Ill. Railway-rail joint	297,283	Apr. 22	1752	476	27	347
Morgan, Thomas R., Sr., Alliance, Ohio. Flanging-machine	298,224	May 6	343	89, 90, 91	27	591
Morgenroth, Henry, and M. S. Levison, Brooklyn, N. Y. Flour-sifter	300,722	June 17	1586	435	27	1231
Morrell, James A., New York, N. Y. Combination-tool	299,488	May 27	1906	549	27	911
Morrill, Amos, *et al.* (See Ellis, George A., assignor.)						
Morris, Benjamin, Newark, N. J. Coffin lid or cover and making the same	297,538	Apr. 22	2071	565	27	406
Morris, David. (See Brother, Morris, and Speirs.)						
Morris, George W. (See Babbit and Morris.)						
Morris, George W., Pittsburg, Pa. Vehicle-spring	296,994	Apr. 15	1381	381	27	274
Morris, Henry G. (See Immendorf, George H., assignor.)						
Morris, Joshua H., *et al.*, executors. (See Waring, John B., assignor.)						
Morris, Robert, La Crosse, Wis. Car-coupling	300,789	June 24	1671	457	27	1251
Morris, Thomas, Dunkirk, N. Y. Locomotive-frame forging-die	298,109	May 6	180	48	27	561
Morris, William. (See Buchholz and Morris.)						
Morrison, Andrew B., Litchfield, Ill. Hoisting-derrick	297,831	Apr. 29	2459	674	27	486
Morrison, C. Frank. (See Larned, Charles H., assignor.)						
Morrison, Columbus J., Hawthorn, Fla. Combined cotton scraper and chopper	298,491	May 13	674	190	27	662
Morrison, J. Frank. (See O'Sullivan, Michael J., assignor.)						
Morrison, James, Jr., New York, N. Y. Plastering	297,832	Apr. 29	2460	674	27	487
Morrison, John G., Williamsburg, N. Y. Machine for making cores for castings	299,998	June 10	624	169	27	1049
Morrison, John G., Williamsburg, N. Y. Cistern for service-boxes	299,999	June 10	625	169	27	1049
Morrison, Robert, Canton, Mass. Machinery for measuring silk thread during the process of spooling	297,706	Apr. 29	2319	630, 631	27	460
Morrison, Robert T., Jr., assignor of one-half to G. D. Billings and A. B. Bishop, Medina, Ohio. Car-coupling	297,152	Apr. 22	1584	436	27	316
Morrison, William, Jr., New York, N. Y. Strap or band for boxes	298,999	May 20	1297	369	27	787
Morrow, George W., Toronto, Ohio. Crushing-mill	297,093	Apr. 15	1484	411	27	294
Morse, Charles F., Somerville, Mass. Roller-skate	298,110	May 6	181	48	27	561
Morse, Charles W. (See Farrar and Morse.)						
Morse, Edmund A. (See Pond, Goldsbury H., assignor.)						
Morse, Robert B., Naugatuck, Conn. Steam-trap	298,878	May 20	1152	327	27	759
Morse, William G., Plainfield, N. J. Combined billiard-cue and walking-cane	298,111	May 6	182	48	27	561
Morton, James, New York, N. Y. Fountain pen-holder	298,767	May 20	1015	284	27	733
Moses, Frank and J.; said J. Moses assignor to G. Clarke, Toronto, Ontario, Canada. Stove	300,723	June 17	1586	435	27	1231
Moses, Joseph. (See Moses, Frank and J.)						
Moses, Simpson P., *et al.* (See Smith, John W. and J. D., assignors.)						
Mosher, George D., and W. H. Ford, Birmingham, Conn. Joiner's plane	296,207	Apr. 1	379	108	27	73
Moss, John L., and N. Littell, Rome, Ga. Machine for forming oil-cakes	297,619	Apr. 29	2195	599	27	437
Mossup, John J. (See Hartmann, William C., assignor.)						
Mott, Aaron J., Fulton, Kans. Boot or shoe sole	298,610	May 13	811	228	27	687
Mott Iron Works, J. L. (See Burrows, Daniel, assignor.)						
Mott Iron Works, J. L. (See Demarest, John, assignor.)						
Mott, John, New York, N. Y. Metallic shingle	297,530	Apr. 22	2073	565	27	407
Mott, John, assignor to Anglo American Roofing Company, New York, N. Y. Metallic roofing-shingle	297,529	Apr. 22	2072	566	27	407
Mott, Jordan L., Jr., New York, N. Y. Fire-escape	299,833	June 3	417	108	27	1001
Mottram, William K., and J. A. Mundy, Ottawa, Kans. Lifting-jack	296,208	Apr. 1	380	108	27	73
Mouck, Solomon F., Empire, Colo. Corn-harvester	300,060	June 10	625	170	27	1049
Mouhot, Emile. (See Milligan and Mouhot.)						
Mouhot, Emile, Wood Haven, and J. C. Milligan, New York, assignors to Lalance & Grosjean Manufacturing Company, New York, N. Y. Attachment of lips and spouts to vessels	298,308	May 6	449	121	27	612
Mowat, John, Barrhead, county of Renfrew, Scotland. Pentagraph engraving-machine	301,066	June 24	2003	554	27	1314
Mowrer, Martin L., Newark, N. J. Hominy-mill	299,834	June 3	418	108	27	1001
Moyer, Frank J., Lockport, N. Y. Flying target	299,835	June 3	420	108	27	1002
Mudgett, Isaiah S., Princeton, Minn. Paper-holder	297,284	Apr. 22	1752	476	27	347
Mueller, Theodore, assignor to C. N. Thorpe, Philadelphia, Pa. Die for forming watch-cases	300,109	June 10	768	207	27	1075

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Muir, Alfred, Manchester, county of Lancaster, England. Coupling shafting	297,153	Apr. 22	1585	436	27	316
Mulholland, Richard, Dunkirk, N. Y. Vehicle-spring	296,347	Apr. 8	579	161	27	115
Mullen, William J., New York, N. Y., assignor to F. G. Gollon, Hoboken, N. J. Shade-roller hanger	300,108	June 10	768	207	27	1075
Müller, Conrad, Hamburg, Germany. Ventilator	297,707	Apr. 29	2320	631	27	460
Muller, George, New York, N. Y. Extension-table	296,434	Apr. 8	682	188	27	135
Müller, Johanna, Philadelphia, Pa. Shoe	299,934	June 3	533	141	27	1023
Müller, Teile H., New York, assignor to S. S. Hepworth, Yonkers, N. Y. Centrifugal machine	298,395	May 13	564	156	27	641
Mundy, James A. (See Mottram and Mundy.)						
Munger, Joseph, assignor to Scovill Manufacturing Company, Waterbury, Conn. Gudgeon for window-shade rollers	298,611	May 13	812	228	27	687
Munger, Joseph, assignor to Scovill Manufacturing Company, Waterbury, Conn. Sheet-metal box	299,489	May 27	1007	549	27	911
Munn, Schuyler J. (See Parrish and Munn.)						
Munro, Gordon, Troy, N. Y., assignor, by mesne assignments, to American Box Machine Company, of New York. Box covering and trimming machine	298,879	May 20	1153	324	27	759
Munz, Jacob F., and C. Molno, Springfield, Ohio. Harrow	297,084	Apr. 15	1486	411	27	294
Murdock, Elvin O., New York, N. Y. Decanting-pump	296,435	Apr. 8	683	188	27	135
Murdock, George F. (See McClure and Murdock.)						
Murphey, Charles M., *et al.* (See Murphey, George W. and F. P., assignors.)						
Murphey, Frank P. (See Murphey, George W. and F. P.)						
Murphey, George W. and F. P., Kenney, assignors of two-fifths to P. B. and C. M. Murphey, Harristown, Ill. Automatic fire-escape	297,620	Apr. 29	2196	599	27	437
Murphey, Park B., *et al.* (See Murphey, George W. and F. P., assignors.)						
Murphy, Hugh, assignor, by mesne assignments, to himself and F. McClorey, Lowell, Mass. Harness check-rein hook	300,494	June 17	1284	353	27	1177
Murphy, John, Brooklyn, N. Y. Hose	296,436	Apr. 8	684	189	27	135
Murphy, John, Springfield, Mass. Bridle-bit	297,044	Apr. 29	2598	712	27	514
Murphy, John, Columbus, Ohio. Hydraulic cement	300,790	June 24	1672	.....	27	1251
Murphy, Robert T., Westminster, S. C. Sash-fastener	299,246	May 27	1610	462	27	857
Murray, Daniel. (See Murray, George T. and D.)						
Murray, George T. and D., Wasaca, Minn. Harvester-reel	299,247	May 27	1611	463	27	857
Murray, James, assignor of one-half to A. Ritchie and J. R. Nicholson, Newcastle, New Brunswick, Canada. Car-coupling	300,895	June 24	1789	488	27	1274
Murray, James B., New York, N. Y. Mail-bag	296,704	Apr. 8	1017	285	27	203
Murray, James C., South Charleston, Ohio. Coupling-pin	299,083	May 20	1410	402	27	808
Murray, Robert V., *et al.* (See Grant, Willis C., assignor.)						
Murray, William F., San Francisco, Cal. Hoisting apparatus	297,621	Apr. 29	2197	599	27	437
Musgrave, Jabez S., Bloomfield, N. J. Bird-cage						
Muther, Lorenz, Chicago, Ill., and C. A. Dearborn, New York, N. Y., assignors to Union Bag Machine Company, Chicago, Ill. Sewing-machine	299,568	June 3	83	21	27	935
Muther, Lorenz, and R. G. Woodward, assignors to Union Bag Machine Company, Chicago, Ill. Sewing-machine	299,569	June 3	84	21, 22	27	936
Mutimer, Frederick, assignor of one-half to S. B. Wilkins, Rockford, Ill. Circle-iron support	299,490	May 27	1608	549	27	912
Myers, Edward, Webb City, Mo. Faucet	297,945	Apr. 29	2598	712	27	514
Myers, Francis E., *et al.* (See Grabill, John S., assignor.)						
Myers, Frederick, New York, N. Y. Packing-box-trimming machine	295,933	Apr. 1	47	14	27	12
Myers, Frederick, New York, N. Y. Box-nailing machine	299,570	June 3	86	22	27	936
Myers, Newton J. (See Mann, John H., assignor.)						
Myers, Philip A., *et al.* (See Grabill, John S., assignor.)						
Myers, Samuel A., and J. J. Kelly, Memphis, Tenn. Combined cotton chopper and scraper	299,248	May 27	1612	463	27	858
Myers, Theodore A., Wheeling, W. Va. Piston-rod packing	296,295	Apr. 1	508	141	27	95
Myers, Theodore A., Wheeling, W. Va. Shutter-worker	298,702	May 13	932	258	27	710
Myrick, Elijah, Harvard, Mass. Wagon-dasher	300,390	June 17	1154	316	27	1153
Myrick, Israel E., Cleveland, Ohio. Sewing-machine table	296,039	Apr. 1	175	51	27	36
Nadelhoffer, John W., Joliet, Ill. Barbed-wire spool	299,936	June 3	421	109	27	1002
Naegeley, John, Jr., Pittsburg, Pa. Constructing eye-bars	299,491	May 27	1909	550	27	912
Nafzlger, Andrew. (See Nafzlger, Joseph and A.)						
Nafzlger, Joseph and A., Hopedale, Ill. Grain-measuring machine	298,612	May 13	813	{293 229}	27	688
Nagley, Charles, Memphis, N. Y. Shears for cutting tobacco-plants	298,768	May 20	1017	284	27	733
Nascher, Adolf, New York, N. Y. Suspender-end	300,495	June 17	1284	353	27	1178
Nash, Caleb P., assignor of one-half to J. E. Jacobs, Brattleborough, Vt. Combined cot-bed, litter, and chair	299,670	June 3	236	58, 59	27	965
Nash, Eugene, New York, N. Y. Wardrobe-bedstead	298,112	May 6	184	49	27	502
Nash, Harvey W., Amsterdam, N. Y. Refrigerator	300,791	June 24	1672	457	27	1251
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating meter	300,625	June 17	1445	{398 399}	27	1207
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating meter	300,626	June 17	1448	399	27	1207
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating meter	300,627	June 17	1450	400	27	1208
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating meter	300,628	June 17	1452	{400 401}	27	1208
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating water-meter	300,629	June 17	1454	401	27	1209
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Oscillating water-meter	300,630	June 17	1456	402	27	1209
Nashua Lock Company. (See Parker, Emery, assignor.)						
Nathan Manufacturing Company. (See Wotapek, Joseph, assignor.)						
National Anti Sewer Gas Company. (See Pike, Charles F., assignor.)						
National Enamel Letter and Number Company. (See Ingersoll, Oliver R., assignor.)						
National Meter Company. (See Nash, Lewis H., assignor.)						
National Saw Guard Company. (See Kuhlmann, Robinson, and Irvin, assignors.)						
National Sewing Machine Company. (See Snediker, James F., assignor.)						
Natter, Ernst W. F., Everett, Mass. Bottle-stopper	296,995	Apr. 15	1381	381	27	274
Nau, Charles, Allegheny, Pa. Anti-friction roller	300,110	June 10	771	207	27	1075
Nauerth, George V., assignor to Globe Files Company, Cincinnati, Ohio. Newspaper-file	299,249	May 27	1613	463	27	858
Nauerth, George V., assignor to Globe Files Company, Cincinnati, Ohio. Check and bill file	300,724	June 17	1587	435	27	1222
Needham, George E. (See Powers, Needham, and Hayes.)						
Neer, Henry C., Park Ridge, N. J. Lock-bolt	299,671	June 3	238	59	27	965

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Neff, Albert H. (See Filer and Neff.)						
Neff, John, Jr., Pultney, N. Y. Hillside-plow	299,250	May 27	1614	464	27	858
Neff, Joseph B., assignor to Burlington Plow Company, Burlington, Iowa. Foot-lift for riding-cultivators	299,157	May 27	1506	432	27	836
Neible, Augustus P., assignor of one-half to C. W. Neible, Edinburg, Ind. Locking-washer for jam-nuts	297,154	Apr. 22	1587	437	27	316
Neible, Charles W. (See Neible, Augustus P., assignor.)	300,111	June 10	772	207	27	1075
Neider, Fred A., Augusta, Ky. Strap and buckle-loop						
Neighbor, Herbert H. (See Jackman, Neighbor, Stick, and Habilitzel.)						
Neil, Michael. (See Norris and Neil.)						
Neill, Thomas M. O. (See Jonson, Josiah, assignor.)	297,622	Apr. 29	2198	600	27	437
Nel, Thomas, Paris, France. Lubricator	298,769	May 20	1017	{284 285}	27	734
Nellis, Aaron J., Pittsburg, Pa. Horse hay-fork	299,837	June 3	422	109	27	1002
Nelson, Charles, East New York, N. Y. Water-proof wafer for torpedoes						
Nelson, Halvar, *et al.* (See Mohany, Henry W., assignor.)						
Nelson, Hans. (See Carlin, Nathaniel T. B., assignor.)						
Nelson, Hans, Waupaca, Wis. Potato-digger	297,285	Apr. 22	1753	476	27	347
Nelson, James S., Springfield, Ohio. Wash-bench and step-ladder	296,209	Apr. 1	381	108	27	73
Nelson, James S., Springfield, Ohio. Hand-truck	300,496	June 17	1285	353	27	1178
Nelson, Robert E., Sr., Cumberland County, Va. Fire-escape	300,112	June 10	773	208	27	1075
Nelson, Robert W., assignor to American Press Association, Chicago, Ill. Mounting stereotype or electrotype plates	298,703	May 13	933	259	27	711
Neracher, William, Cleveland, Ohio. Automatic fire-extinguisher	297,432	Apr. 22	1939	529	27	382
Nesbett, Frederick B. (See Leuchsenring, Robert, assignor.)						
Nesbit, Watson M. (See Kennedy and Nesbit.)	299,000	May 20	1298	370	27	787
Neubert, Frank, Springfield, Mass. Badge						
Neumüller, Franz, J. P. Whedon, New York, and E. M. Perhács, Brooklyn, N. Y. Dinner-tray	296,043	Apr. 1	180	52	27	37
Neutascher, Allise, Mendota, Ill. Nut-lock	299,838	June 3	423	109	27	1002
Nevenx, Charles G. E., New York, N. Y. Vacuum-pump	297,433	Apr. 22	1940	529	27	382
New Home Sewing Machine Company. (See Huntington, Thomas S., assignor.)						
New Home Sewing Machine Company. (See Thomas and Huntington, assignors.)						
Newbury, Henry F., Brooklyn, N. Y. Electric locking mechanism for safes and vaults	296,866	Apr. 15	1925	342	27	246
Newbury, Henry F., Brooklyn, N. Y. Supporting the bolt-work of safes and vaults	296,867	Apr. 15	1927	343	27	246
Newbury, Henry F., Brooklyn, N. Y. Time-lock	297,623	Apr. 29	2200	600	27	437
Newcomb, Evander B., Corydon, Iowa. Window and door button	296,437	Apr. 8	686	189	27	136
Newcomb, Horatio C. (See Rockwood, William E., assignor.)						
Newcomb, Horatio C., assignor of one-half to W. E. Rockwood, Indianapolis, Ind. Pulley	297,531	Apr. 22	2075	566	27	407
Newell, Augustus, Chicago, Ill. Veneer-press	300,725	June 17	1588	436	27	1232
Newell, Frank F., Chelsea, Mass. Apparatus for treating leather-stock with naphtha to extract oils	300,497	June 17	1286	353	27	1178
Newell, Lewis T., Albany, N. Y. Automatic oven-shelf	299,672	June 3	239	59	27	965
Newhall, Charles W., Jr. (See Aiken, Newhall, and Ellis.)						
Newman, Jesse, Atlanta, Ill. Washing-machine	298,613	May 13	815	229	27	688
Newman, John L., assignor of one-half to T. J. Eady, West Point, Ga. Rotary blower	298,492	May 13	675	190	27	602
Newton, Charles, Council Bluffs, Iowa. Manufacture of enameled brick	299,571	June 3	86	22	27	936
Newton, Daniel A. (See White, William A., assignor.)						
Newton, Edwin D., New York, N. Y. Portable apparatus for heating mineral water in bottles or flasks	299,251	May 27	1615	464	27	858
Newton, Edwin D., New York, N. Y. Thermo-reservoir	299,252	May 27	1616	464	27	858
Newton, Edwin D., New York, N. Y. Multichambered bottle	299,253	May 27	1617	464	27	858
Newton, Francis M., Belfast, county of Antrim, Ireland. Arc lamp	300,999	June 24	1916	{527 528}	27	1298
Newton, John F., Jr., Boston, Mass. Hat-tip	296,438	Apr. 8	686	189	27	136
Newton, John R., Carthage, Ill. Seed-planter	298,880	May 20	1156	324	27	759
Newton, Marvin, Knapp's Creek, N. Y. Tool for raising sucker-rods from wells	299,254	May 27	1618	465	27	859
Nibecins, Axel W., Brooklyn, N. Y. Mash-boiler	300,113	June 10	774	208	27	1076
Nichols, John G., Holton, Kans. Flexible shaft	297,085	Apr. 15	1487	411	27	294
Nichols, Joseph H., Peoria, Ill. Spectacle-frame	295,934	Apr. 1	49	14	27	12
Nichols Manufacturing Company. (See Sharpneck, William S., assignor.)						
Nicholson, Charles W., Assamoosick, Va. Peanut separating and assorting table	301,067	June 24	2005	554	27	1314
Nicholson, John A., Fayetteville, N. C. Steam or water cock	300,792	June 24	1673	458	27	1252
Nicholson, John R., *et al.* (See Murray, James, assignor.)						
Nicholson, William H., *et al.* (See Herckner, Emil, assignor.)						
Nicholson, William H., Mount Washington, assignor of one-half to R. A. Shannon, Cedar Point, Ohio. Churn	298,770	May 20	1019	285	27	734
Nicholson, William T., Providence, R. I. Machine for forming teeth upon file-blanks	296,439	Apr. 8	687	189	27	136
Nicholson, William T., Providence, R. I. Machine for forming the teeth upon file-blanks	300,114	June 10	776	208	27	1076
Nickel, David, and C. Zattan, Morris, Ill. Spring-hinge	297,946	Apr. 29	2599	712	27	514
Nielsen, Bernt A. S. (See Larsen and Nielsen.)						
Niese, Henry E., and G. Dinkel, assignors to F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Apparatus for cooling sugar	296,040	Apr. 1	176	51	27	36
Niese, Henry E., and G. Dinkel, assignors to F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Apparatus for cooling sugar	296,041	Apr. 1	177	52	27	37
Niese, Henry E., and G. Dinkel, assignors to F. O. Matthiessen & Wiechers Sugar Refining Company, Jersey City, N. J. Cooling and drying sugar	296,042	Apr. 1	179	52	27	37
Nine, William F., Salley, Iowa. Car-coupling	299,416	May 27	1824	524	27	896
Nix, John D., Milwaukee, Wis. Grain-conveyer for harvesters and binders	298,614	May 13	816	229	27	688
Nixon, Ezra A. (See Steed and Nixon.)						
Nixon, Francis M., assignor of one-half to E. W. Shoesmith, Lena, Ill. Mechanical movement	299,085	May 20	1413	403	27	808
Nixon, Jane, assignor of one-half to V. Bell, New York, N. Y. Thread-moistening attachment for sewing-machines	296,770	Apr. 15	1101	310	27	224
Noble, Ezeklel H. (See Davis, George W., assignor.)						
Noble, George H., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Hair-clipper	299,839	June 3	424	109	27	1002
Noble, John H. (See Gissinger, Samuel, assignor.)						
Noble, Leroy C. (See Campbell, Noble, and Howe.)						
Noble, Oscar L. (See Stirckler, John D., assignor.)	296,599	Apr. 8	897	248	27	178
Nogar, Russell H., Dundee, Mich. Ditching-machine						
Noggerath, Rudolph. (See Bannatte, Hermann, assignor.)						
Nolan, Michael. (See Smith, John S., assignor.)	300,278	June 10	1002	271	27	1116
Nolan, Michael, Rushville, Ind. Tile-machine	297,435	Apr. 22	1944	530	27	383
Nolan, Patrick, Hunnicutt, Tenn. Railway-track gage						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Nolan, Patrick W., New York, N. Y., assignor to himself and C. Bardwell, Lakewood, N. J. Heating and ventilating apparatus	297,434	Apr. 22	1043	530	27	383
Nordenfelt, Thorsten, Westminster, England. Machine-gun	298,493	May 13	676	191, 192	27	662
Nordenfelt, Thorsten, Westminster, England. Cartridge-magazine	298,494	May 13	679	192, 193	27	663
Nordman, Joseph. (See Glickman, David, assignor.)						
Nordyke & Marmon Company. (See Marmon and Warrington, assignors.) (Reissue)						
Norman, Lawrence F., Boston, Mass. Boot or shoe	299,840	June 3	424	110	27	1002
Norman, Lawrence F., Boston, Mass. Boot or shoe	300,001	June 10	627	170, 171	27	1050
Norment, Richard B., East Lake, Fla. Cultivator	299,935	June 3	534	142	27	1023
Norris & Brother. (See Riter, John L., assignor.)						
Norris, Daniel W., Elgin, Ill. Vessel for containing and transporting liquids	297,592	Apr. 22	2075	566	27	407
Norris, Daniel W., Elgin, Ill., and M. Neil, Dayton, Ohio; said Norris assignor to said Neil. Screw-jack	298,704	May 13	933	259	27	711
Norris, George E., Troy, assignor of one-half to J. K. P. Pine, Lansingburg, N. Y. Staying-piece for garments	295,935	Apr. 1	50	15	27	12
Norris, Henry D., *et al.* (See Wilson, Silas H., assignor.)						
Norris, Isaac T., *et al.* (See Ferguson, William J., assignor.)						
Norris, J. Olney, *et al.* (See Ferguson, William J., assignor.)						
North Western Manufacturing and Car Company. (See Clarke, Willard A., assignor.)						
Northall, William H., assignor to C. S. Leet, Bridgeport, Conn. Bench-vise	298,925	May 6	345	91	27	591
Northrop, Albert, Pittsburg, Pa. Metallic ceiling	299,255	May 27	1618	465	27	850
Norton, Edwin, *et al.* (See Hodgson, John G., assignor.)						
Norton, Edwin, assignor to himself and O. W. Norton, Chicago, Ill. Combined coffee canister and mill	298,017	May 6	71	18	27	541
Norton, Edwin, assignor to himself and O. W. Norton, Chicago, Ill. Paint-can	298,018	May 6	72	18	27	541
Norton, Edwin, and J. G. Hodgson, assignors to said Norton and O. W. Norton, Chicago, Ill. Double-seaming machine	300,002	June 10	629	171, 172	27	1050
Norton, John B., Philadelphia, Pa. Belt-fastener	300,793	June 24	1675	458	27	1252
Norton, Lewis C. (See Blount, John G., assignor.)						
Norton, Maggie L. (See Norton, Samuel C., assignor.)						
Norton, Martin A. (See Kibbe, William A., assignor.)						
Norton, Oliver W. (See Norton, Edwin, assignor.)						
Norton, Oliver W. (See Norton and Hodgson, assignors.)						
Norton, Oliver W., *et al.* (See Hodgson, John G., assignor.)						
Norton, Samuel C., assignor to M. L. Norton, Hinckley, Minn. Car-door lock	300,325	June 10	1060	287	27	1196
Norwood, George, Bridgeport, Conn. Manufacturing and storing ice	296,600	Apr. 8	899	248, 249	27	178
Nonrse, James K. P., West Medway, Mass. Corkscrew	300,391	June 17	1154	316	27	1153
Novelty Manufacturing Company. (See Peck, Henry S., assignor.)						
Novy, Joseph M., and P. Henry, St. Louis, Mo. Bottle-wrapper	296,705	Apr. 8	1019	285	27	203
Nowell, Thomas S. (See Holland, Benjamin, Jr., assignor.)						
Noyes, Walter B., Saginaw, Mich. Curtain-fixture	297,709	Apr. 29	2322	632	27	461
Noyes, Walter B., Detroit, assignor to Saginaw Manufactnring Company, Saginaw, Mich. Spring curtain-roller	299,256	May 27	1610	465	27	850
Nunan, Edward, San Francisco, Cal. Copy-holder	296,868	Apr. 15	1228	343	27	246
Nungesser, Philip P., Cleveland, Ohio. Electric-arc lamp	297,833	Apr. 29	2461	674	27	487
Nutt, Joseph. (See Sherman and Nutt.)						
Nyce, James, Deckertown, N. J. Tire-upsetter	297,947	Apr. 29	2600	713	27	514
O'Brien, John J., *et al.* (See Burks, Jesse H., assignor.)						
O'Brien, John T., Philadelphia, Pa. Sectional ladder	300,631	June 17	1458	402	27	1209
O'Connor, Edward L., Cincinnati, Ohio. Artificial foot and shoe	299,158	May 27	1506	432, 433	27	836
O'Connor, John F., and S. M. Williams, Davenport, Iowa. Earth-scraper	296,044	Apr. 1	181	52	27	38
O'Connor, Matthew C., New Haven, Conn. Fire-escape	297,710	Apr. 29	2323	632	27	461
O'Connor, Michael, New Brunswick, N. J. Sheet-metal screw-nozzle	299,841	June 3	425	110	27	1002
O'Daniel, Josiah D., Flatonia, Tex. Cotton-press	298,226	May 6	347	91, 92	27	592
O'Friel, James, Brooklyn, N. Y. Fire-proof floor and ceiling for buildings	298,227	May 6	348	92	27	592
O'Hara, Adam, assignor of one-half to H. N. Holt, New York, N. Y. Metallic vessel	299,673	June 3	240	60	27	965
O'Hara, Daniel, Waltham, assignor to Robbins & Appleton, Boston, Mass. Watch-case	297,533	Apr. 22	2078	566	27	408
O'Hara, Daniel, Waltham, Mass. Watch-case pendant	298,396	May 13	567	156	27	642
O'Hara, Daniel, Waltham, Mass. Watch-case	298,615	May 13	817	229	27	689
O'Hara, Daniel, Waltham, Mass. Pendant for watch-cases	298,616	May 13	821	230	27	689
O'Mara, Michael, Charleston, S. C. Pattern for car-axle boxes	296,706	Apr. 8	1019	286	27	203
O'Neil, Michael S., Rock Island, Ill. Cutter-head	297,534	Apr. 22	2079	567	27	408
O'Neill, Bernard M., St. Louis, Mo. Roofing-slate fastening	299,842	June 3	426	110	27	1003
O'Neill, Edward F., assignor to himself and I. D. Cady, Storm Lake, Iowa. Key-board attachment for musical instruments	299,492	May 27	1910	550	27	912
O'Shaughnessy, James F., assignor to United States Cotton Seed Company, New York, N. Y. Treating cotton-seed	298,617	May 13	822	.....	27	689
O'Shaughnessy, James F., assignor to United States Cotton Seed Company, New York, N. Y. Treating cotton-seed	298,618	May 13	823	.....	27	689
O'Sullivan, Michael J., assignor of three-fourths to J. F. Morrison, Baltimore, Md. Call-box for district-telegraphs	299,417	May 27	1925	594	27	897
Oakland Glass Works. (See Wollard, Isaac B., assignor.)						
Ober, William Y., Lynn, Mass. Machine for concaving boot and shoe heel blanks	298,113	May 6	186	49	27	562
Ober, William Y., Lynn, and F. M. Stevens, Boston, Mass. Seam-finishing machine	296,809	Apr. 15	1229	343, 344	27	246
Obert, Ely N., Cuba, N. Y. Fence-post	300,115	June 10	778	209	27	1076
Ocorr, Henry, Milwaukee, Wis. Stool or seat standard	300,116	June 10	779	209	27	1076
Odell, James R., *et al.* (See Slater, Warren G., assignor.)						
Odell, Sam, *et al.* (See Slater, Warren G., assignor.)						
Odom, James H. (See Gardner, Edwin T., assignor.)						
Oettinger Brothers. (See Bailey, Clem, assignor.)						
Ogden, Robert, Manchester, and R. J. Anderson, Liverpool, county of Lancaster, England. Lamp-extinguisher	296,771	Apr. 15	1102	310, 311	27	224
Ohio Power and Light Company. (See Lynn, Mirabeau N., assignor.)						
Ohlson, Magnus, Chicago, Ill. Machine to protect cable-road slots	296,870	Apr. 15	1230	344	27	246
Older, Charles S., and L. L. Deering, Independence, Iowa. Wire-stretcher	298,881	May 20	1157	324	27	760
Oldfield, Edwin, *et al.* (See Raughtigan, Michael, assignor.)						
Oldham, Walter. (See Farquhar and Oldham.)						
Oliver Brothers & Phillips. (See Rosenstecl, William, assignor.)						
Oliver, Doctor F., Huntsville, Mo. Shutter-worker	299,001	May 20	1299	370	27	787

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Oliver, Henry W., Jr., *et al.* (See Clapp and Griffiths, assignors.) (Reissue.)						
Oliver, Henry W., Jr., Pittsburg, Pa. Device for operating tuyere-stoppers	299,572	June 3	88	22	27	936
Oliver, James B. (See Stubbe, John, assignor.)						
Oliver, James B., Sewickley, Pa. Wire-oiling device	296,440	Apr. 8	689	190	27	136
Oliver, James C., Louisville, Ky. Buggy-top	296,045	Apr. 1	182	53	27	38
Olrick, Harry. (See Schönheyder, William A. G., assignor.)						
Olsen, Jacob. (See Quinan, Kimpfel, and Olsen.)						
Olsen, Olaf R., assignor to Indianapolis Machine and Bolt Works, Indianapolis, Ind. Pulley	297,624	Apr. 29	2204	601	27	438
Olson, Christian, Granite Falls, Minn. Draft-equalizer	297,286	Apr. 22	1755	477	27	348
Olson, Holcom, Mariadahl, Kans. Horseshoe	296,996	Apr. 15	1382	382	27	274
Olson, Nils F. (See Larson and Hammarlund, assignors.)						
Onderdonk, John P., Philadelphia, Pa. Paper bag	296,871	Apr. 15	1231	344	27	247
Onderdonk, Lansing, Pamrapo, N. J. Ruffling and gathering attachment for sewing-machines	298,309	May 6	451	121	27	612
Oneal, Charles W., Henderson's Cross-Roads, Tenn. Back-band hook	300,632	June 17	1458	402	27	1210
Opp, Benjamin F., assignor of one-half to O. H. and H. A. Wright, Havana, Ill. Pump-motor	300,726	June 17	1589	436	27	1232
Oppenheimer, Louis K., assignor to S. Lindeman, Cincinnati, Ohio. Electric eye-shade	298,307	May 13	567	156	27	642
Oram, Zachariah, Philadelphia, Pa. Ship's hull and propeller	298,019	May 6	73	19	27	541
Orcutt, William D., assignor of one-half to J. H. Busell, Boston, Mass. Rotary sole-edge cutter	295,936	Apr. 1	51	15	27	13
Ord, Edward O. C., U. S. Army. Cartridge-box	299,573	June 3	89	23	27	937
Ordway, Arilla D., Reed City, Mich. Sash-fastener	296,997	Apr. 15	1383	382	27	274
Oriental Tea Company. (See Allen, Frank A., assignor.)						
Orme, Daniel and F. H., Oldham, county of Lancaster, England. Counter for mules	300,633	June 17	1459	403	27	1210
Orme, Francis H. (See Orme, Daniel and F. H.)						
Ormsby, William H., assignor of one-half to L. D. Hill, and G. A. Harper, Minneapolis, Minn. Double-acting pump	300,794	June 24	1675	458	27	1252
Orpen, Henry, St. Louis, Mo. Type-writing machine	297,086	Apr. 15	1468	412	27	294
Ortman, Barnim F., and H. R. Taylor, Buffalo, N. Y. Dust-collector	297,436	Apr. 22	1945	530	27	383
Orton, Otho H., Madison, Wis. Hand-painting portraits, figures, and landscapes	296,348	Apr. 8	580	.....	27	116
Orwig, Thomas G. (See Lally, James, assignor.)						
Osborn, Adelbert E., assignor to Model Machine Company, Waco, Tex. Oil-press mat	296,601	Apr. 8	900	249	27	178
Osborn, Charles B., Canandaigua, N. Y. Gage	299,843	June 3	427	110	27	1003
Osborn, John H., Evansville, Ind. Shaft-coupling	298,398	May 13	568	157	27	642
Osborne, Andrew J., Erie, Ill. Ditching-machine	296,872	Apr. 15	1229	344	27	247
Osborne, Eugene F., St. Paul, Minn. Pump-regulator	298,771	May 20	1020	285	27	734
Osborne, Eugene F., St. Paul, Minn. Steam-trap	300,003	June 10	632	172, 173	27	1050
Osborne, John H. (See Osborne, William, assignor.)						
Osborne, John W. (See Forbes and Osborne.)						
Osborne, John W., Washington, D. C., assignor to W. H. Forbes, Boston, Mass. Method of and apparatus for dam plug lithographic surfaces	299,092	May 20	1299	370	27	787
Osborne, William, assignor of one-half to J. H. Osborne, Philadelphia, Pa. Knitting-machine	296,210	Apr. 1	382	108	27	73
Osenbrück, Johannes A., Hemelingen, near Bremen, Germany. Stuffing-box for ammonia compression-pumps	300,886	June 24	1790	488, 489	27	1274
Osgood, Baron A., Wakefield, Mass. Cash and parcel carrier	300,279	June 10	1003	271	27	1116
Osgood Dredge Company. (See Osgood, Ralph R., assignor.)						
Osgood, Enoch, Washington, D. C. Post-office box	296,772	Apr. 15	1103	311	27	225
Osgood, Enoch, Washington, D. C. Mail-bag fastening	297,155	Apr. 22	1588	437	27	317
Osgood, Irving, Ellsworth, Me. Station-indicator	297,625	Apr. 29	2204	601	27	438
Osgood, Ralph R., assignor, by mesne assignments, to Osgood Dredge Company, Albany, N. Y. Excavator and dredger	297,287	Apr. 22	1755	477	27	348
Osmer, Friedrich, assignor of one-third to M. Hopke, Brooklyn, N. Y. Apparatus for taking off ammonia from bone-black retorts	297,948	Apr. 29	2601	713	27	514
Ostertag, John, Jr., Chicago, Ill. Turn-bridge gate	300,326	June 10	1002	287, 288	27	1127
Ostrum, Henry P., New Haven, Conn. Nail-feeder for nailing-machines	298,682	May 20	1158	325	27	760
Otis, Anson M., York, Nebr. Churn	297,535	Apr. 22	2050	567	27	408
Otis, John D., and D. M. Maxwell, Peoria, Ill. Siding-hook	297,711	Apr. 29	2324	632	27	461
Ottawa Glass Company. (See Zellers, Theodor A., assignor.)						
Otto, Gustav, Jersey City, N. J., assignor to R. H. McCotcheon, New York, N. Y. Cap-sule-machine	299,936	June 3	537	142, 143	27	1024
Otto, Henry A. (See Conner and Otto.)						
Otto, William T., and J. H. Fox, Wheeling, W. Va. Glass-pot	298,772	May 20	1022	286	27	734
Over, Ewald. (See Schuch, Samuel, assignor.)						
Over, Ewald, Indianapolis, Ind. Post-driver	299,086	May 20	1413	403	27	809
Overton, Jeremy H., Norris, Mich. Stave-packing machine	299,493	May 27	1911	550	27	912
Oviatt, Solomon E., Lansing, Mich. Vehicle-spring	297,834	Apr. 29	2462	674	27	487
Owen, Edward, Jackson, Tenn. Adjustable trestle	300,887	June 24	1791	489	27	1274
Owen, Edward T., Madison, Wis. Locking device for closets, boxes, &c.	293,114	May 6	188	50	27	592
Owen, Richard W., Chicago, Ill. Buckle	300,727	June 17	1590	436	27	1232
Owings, Romeo A. (See Shaw and Owings.)						
Pace, James F., Arcadia, La. Shaft-support	298,495	May 13	680	193	27	663
Pacific Tucking and Manufacturing Company. (See Fisher and Hart, assignors.)						
Pack, George E. (See Pack, William H., assignor.)						
Pack, William H., Philadelphia, Pa., assignor to G. E. Pack, Camden, N. J. Feed-bag for horses	299,674	June 3	242	60	27	966
Packard, Fred, Brockton, Mass. Boot or shoe	297,156	Apr. 22	1589	437	27	317
Packer, Harvey, Rock Falls, Ill. Portable horse-power	297,289	Apr. 22	1750	478	27	348
Packer, Harvey, Rock Falls, assignor to T. A. Galt and G. S. Tracy, Sterling, Ill. Corn-sheller	297,288	Apr. 22	1758	478	27	348
Packer, John F., Chicago, Ill. Hub	300,392	June 17	1156	317	27	1153
Paddock, Howard, and H. W. Miller, Albany, N. Y. Fire-escape	300,498	June 17	1287	354	27	1178
Page, David S. (See Hansheer and McVenberg, assignors.)						
Page, George F., Baltimore, Md. Road-engine	296,998	Apr. 15	1384	382	27	275
Page, Joel H., assignor of one-half to B. C. King, Philadelphia, Pa. Indestructible compound for coating wires for electrical purposes	297,626	Apr. 29	2205	.....	27	438
Page, Joel H., assignor of one-half to B. C. King, Philadelphia, Pa. Laying underground electric wires	298,020	May 6	76	20	27	542
Page, Louis, and L. Weber, Brooklyn, N. Y. Curtain-fixture	297,627	Apr. 29	2206	601	27	438
Page, Nathan C., Monkton, Vt. Pump	299,574	June 3	90	23	27	937

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Page, Peter B., Lorain, Ohio. Straight-way valve	296,046	Apr. 1	183	53	27	38
Paine, George S., Wyandotte, Mich. Attachment for corn-planters	300,117	June 10	781	209	27	1077
Paine, Lyman S., St. Louis, Mo. Poultry-coop	299,844	June 3	428	111	27	1003
Paine, William H., Brooklyn, N. Y. Cable-railway appliance	296,602	Apr. 8	901	249, 250	27	178
Paine, William H., Brooklyn, N. Y. Auxiliary switching apparatus for cable railways	296,603	Apr. 8	902	250, 251	27	179
Paine, William H., Brooklyn, N. Y. Gripping and brake mechanism for cable railways	296,604	Apr. 8	904	251, 252	27	179
Paine, William H., Brooklyn, N. Y. Roller-grip for cable railways	296,605	Apr. 8	905	252, 253	27	180
Paine, William H., Brooklyn, N. Y. Automatic connector and disconnector for grips of cable railways	296,606	Apr. 8	907	253	27	180
Palmer, Corydon B. (See Wilder, Aretus A., assignor.)						
Palmer, James M., Cambridge, Mass. Ventilating railway-cars	297,835	Apr. 29	2463	675	27	487
Palmer, John H., assignor to American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Button-hole sewing-machine	298,228	May 6	349	92, 93	27	592
Palmer, Lucius C., Ballston Spa, N. Y. Machine for forming scythes	299,675	June 3	243	60	27	966
Palmer, William W., Montague, Tex. Well-bucket windlass	298,883	May 20	1160	325	27	760
Palmerton, Allen H., Indianapolis, Ind. Wrecking-frog	298,619	May 13	924	230	27	689
Park, Harvey S., Henderson, Ky. Electro-magnetic car-brake	296,211	Apr. 1	384	109	27	73
Park, Harvey S., Henderson, Ky. Electro-magnetic car-brake	296,212	Apr. 1	385	109	27	74
Park, Harvey S., Henderson, Ky. Electro-magnetic car-brake	296,349	Apr. 8	581	162	27	116
Park, James A., Lansing, Mich. Snap-hook	296,607	Apr. 8	909	253	27	181
Park, John S., assignor of three-fourths to T. C. Basye and F. Weil, Rockport, Ind. Oiler	296,047	Apr. 1	184	53	27	38
Park, John S., assignor of three-fourths to F. Weil, J. W. Graham and T. C. Barye, Rockport, Ind. Spark-arrester	298,229	May 6	352	94	27	593
Park, William, and J. S. Parker, Fredonia, N. Y. Washing-machine	299,159	May 27	1508	403	27	837
Park, William R., Taunton, Mass., assignor to Hancock Inspirator Company, of Massachusetts. Injector	297,836	Apr. 29	2464	675	27	487
Park, William R., Taunton, assignor to Hancock Inspirator Company, Boston, Mass. Injector	298,884	May 20	1161	326	27	761
Parker, Abijah S., Cincinnati, Ohio. Securing carriage window-frames to curtains	298,021	May 6	79	21	27	542
Parker Company, Charles. (See Parker and Griswold, assignors.)						
Parker, Dexter W., and L. F. Griswold; said Griswold assignor to C. Parker Company, Meriden, Conn. Extension-lamp	297,157	Apr. 22	1590	437, 438	27	317
Parker, Emery, New Britain, Conn., assignor to Nashua Lock Company, Nashua, N. H. Lock	300,393	June 17	1157	317	27	1153
Parker, George N. (See Huckins and Parker.)						
Parker, Hiram, and J. T. Drummond, Mount Pleasant, Iowa. Addressing-machine	296,773	Apr. 15	1105	312	27	225
Parker, James H., Milford, assignor to J. L. Parker, Worcester, Mass. Machine for compressing heels of boots or shoes	300,280	June 10	1004	271, 272	27	1117
Parker, John L. (See Parker, James H., assignor.)						
Parker, John S. (See Park and Parker.)						
Parker, Joseph N., Vineland, N. J. Portable fruit-drier	300,118	June 10	781	209, 210	27	1077
Parkhurst, Albert W. (See Parkhurst, Charles J. and A. W.)						
Parkhurst, Charles J. and A. W., North Adams, Mass.; said A. W. Parkhurst assignor to said Charles J. Parkhurst. Pendulum-level, plumb, and inclinometer	296,608	Apr. 8	909	254	27	181
Parkhurst, Darius, assignor of one-half to G. H. Knight, St. Louis, Mo. Head-block for saw-mills	296,999	Apr. 15	1384	383	27	275
Parkin, Henry, Albert Terrace Row, and C. J. Reynolds, Downs Park Road, Clapton, county of Middlesex, England. Door-latch	300,499	June 17	1290	354	27	1179
Parkinson, Edward, assignor of two-thirds to J. E. Walcott and F. I. Marcy, Providence, R. I. Bobbin-winder	299,845	June 3	429	111	27	1003
Parkinson, George W., Newburg, N. Y. Hat-binding attachment for sewing-machines	298,369	May 13	569	157	27	642
Parkinson, Thomas J., Pittsburg, Pa. Curtain-fixture	296,048	Apr. 1	185	54	27	38
Parkinson, William C., London, England. Revolving drum for gas-meters and low-pressure water-meters	299,418	May 27	1926	525	27	897
Parks, Edward H., Providence, R. I., assignor to Mansell Heel Machine Company. Heel-machine	297,437	Apr. 22	1946	531, 532	27	384
Parks, Warren, and S. M. Smith, Cassville, Mo. Wagon-brake	300,500	June 17	1290	354	27	1179
Parmelee, Francis D., Hillsdale, Mich. Fire-escape	297,837	Apr. 29	2466	675	27	488
Parmelee, Henry S., assignor to Mathushek Piano Manufacturing Company, New Haven, Conn. Piano sounding-board	301,068	June 24	2006	554	27	1314
Parrish, Henry, Horace, Ga. Cultivator-plow	299,160	May 27	1510	433	27	837
Parrish, Marcus F., and S. J. Munn, assignors of one-third to C. W. Millard, Niles, Mich. Train-signal	297,438	Apr. 22	1950	532, 533	27	384
Parrish, S. Eugene, Lowell, Mich. Window-screen	299,257	May 27	1620	465	27	859
Parrish, William H., Salem, Oreg. Thrashing and cleaning machine	296,441	Apr. 8	690	190	27	136
Parry, David M., Rushville, Ind. Auger-handle	296,873	Apr. 15	1233	345	27	247
Parry, Henry, assignor to Milwaukee Chair Company, Milwaukee, Wis. Tilting-chair	299,846	June 3	431	112	27	1004
Parshall, Charles H., assignor to Michigan Lubricator Company, Detroit, Mich. Lubricator	296,213	Apr. 1	387	110	27	74
Parshall, Charles H., assignor to Michigan Lubricator Company, Detroit, Mich. Crank-pin oiler	296,214	Apr. 1	388	110	27	75
Parshall, Charles H., assignor to Michigan Lubricator Company, Detroit, Mich. Lubricator	300,728	June 17	1591	436	27	1232
Parsons, Foster E., Milwaukee, Wis. Combined household implement	297,834	Apr. 29	2467	676	27	488
Parsons, Oscar F., Eureka, Iowa. Fire and water proof compound	300,729	June 17	1593	.....	27	1233
Parsons, Robert R., Jackson, Miss. Saw-mill set-works	296,442	Apr. 8	693	190	27	137
Parsons, William, Cleveland, Ohio. Car-coupling	300,004	June 10	635	173	27	1051
Partrick, Alfred W., Washington, D. C., assignor to W. C. Eaton, Newark, N. J. Toy mortar	300,634	June 17	1460	403	27	1210
Parvin, Robert C., Mount Holly, N. J. Vehicle running-gear	297,490	Apr. 22	1951	533	27	385
Patch, Fred R., assignor of one-half to R. Proctor, Sutherland Falls, Vt. Machine for reciprocating tools	297,839	Apr. 29	2468	676	27	488
Patee, Theodorus H., Greencastle, Ind. Coupling for lightning-rods	297,290	Apr. 22	1761	478	27	348
Patee, Theodorus H., Greencastle, Ind. Portable lightning-rod machine	297,291	Apr. 22	1762	478, 479	27	349
Pates, Thomas, assignor to Hapgood Plow Company, Alton, Ill. Draft-equalizer	298,773	May 20	1023	286	27	734
Pates, William S., assignor to Hapgood Plow Company, Alton, Ill. Cultivator	295,997	Apr. 1	53	15	27	13
Patrick, Andrew M., Brewton, Ala. Rice-hulling machine	300,335	June 10	1077	294	27	1129

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Patt, J. H., *et al.* (See Groves, Leroy S., assignor.)						
Pattee, Lydia E., Smith Centre, Kans. Milk-catcher for nursing-women	296,609	Apr. 8	911	254	27	181
Pattee, Salon. (See Smith, Alphonso B., assignor.)						
Patten, George, Washington, D. C. Metallic roofing-plate	296,610	Apr. 8	912	254	27	181
Patterson, Charles G. (See Evans, Lemuel E., assignor.)						
Patterson, Edward B., Detroit, Mich. Pill-making device	299,258	May 27	1621	466	27	859
Patterson, John H., U. S. Army. Intrenching-tool	297,840	Apr. 29	2469	676	27	489
Patterson, William R., assignor, by mesne assignments, to Western Electric Company, Chicago, Ill. Telegraphic cable	296,774	Apr. 15	1107	312	27	225
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Joint for lead pipes	300,005	June 10	636	173	27	1051
Patton, George, St. Charles, Iowa. Agricultural boiler	299,003	May 20	1302	371	27	788
Paul, Frank A., South Wales, N. Y. Potato-digger	298,022	May 6	79	21	27	542
Paul, John, La Crosse, Wis. Lumber-elevator	300,119	June 10	783	210	27	1077
Paulding, William H. (See Denver, James, assignor.)						
Paulus, Jacob, assignor to himself, A. Hartmann, New York, and L. Remshardt, Brooklyn, N. Y. Faucet attachment to barrels	297,000	Apr. 15	1385	383	27	275
Payne, John R. Freedom, Ind. Drag-saw	297,841	Apr. 29	2470	677	27	489
Payne, Newton W., East Boston, Mass. Apparatus for plugging and tapping barrels	297,440	Apr. 22	1954	534	27	385
Payne, Walter S., Titusville, Pa. Stop-cock clamp	300,501	June 17	1292	354	27	1179
Peace Company, Harvey W. (See Peace, Harvey W., assignor.)						
Peace, Harvey W., assignor to H. W. Peace Company, Brooklyn, N. Y. Saw	298,115	May 6	189	50	27	592
Peacock, Thomas, Auburn, and T. Wallis, Scipio, N. Y. Car-coupling	298,885	May 20	1160	326	27	761
Peak, Walter, Peakville, N. Y. Saw	289,886	May 20	1166	326	27	761
Pearce, Frank T., assignor to Pearce & Hoagland, Providence, R. I. Watch-chain charm	298,705	May 13	935	259	27	711
Pearce, George, Riversdale Road, Highbury New Park, Islington, county of Middlesex, and E. Hughes, Anstey Road, Camberwell, county of Surrey, England, assignors to S. D. Tucker and R. Hoe, Jr., New York, N. Y. Method of and apparatus for drying matrices for stereotype-plates	296,049	Apr. 1	186	54	27	39
Pearce & Hoagland. (See Hoagland, John, assignor.)						
Pearce & Hoagland. (See Pearce, Frank T., assignor.)						
Pearson, Edward T., Washington, D. C. File-holder and case	296,611	Apr. 8	913	254, 255	27	181
Pearson, William A., Scranton, Pa. Balanced slide-valve	299,004	May 20	1303	371, 372	27	788
Pearsons, Galen W., Kansas City, Mo. Pressure-regulating valve	297,441	Apr. 22	1955	534	27	385
Peary, Robert E., Cape Elizabeth, Me. Sinking piles	299,419	May 27	1827	525	27	897
Pease, Charles E., assignor to Buckeye Iron and Brass Works, Dayton, Ohio. Lubricator	296,215	Apr. 1	389	110	27	75
Pease, Robert R., Hartford, Conn. Automatic stop-motion	300,120	June 10	784	210	27	1077
Peasley, Charles R., Louisville, Ky. Combined bottling and shipping can	298,023	May 6	80	21, 22	27	542
Peaslee, Horace W., Malden Bridge, N. Y. Furnace	300,635	June 17	1461	403	27	1210
Peasley, Charles A., and I. F. Dodge, Gowen, Mich. Hay-rack	297,842	Apr. 29	2471	677	27	489
Péchard, Jules E., Paris, France. Sewing-machine needle-clamp	299,847	June 3	432	112	27	1004
Peck, Don C., and F. L. Gaylord, Ansonia, Conn. Mirror-pivot	299,005	May 20	1305	372	27	788
Peck, Henry S., Westfield, N. Y., assignor to Novelty Manufacturing Company, (limited,) Miles Grove, Pa. Suspended adjustable chair and seat	296,775	Apr. 15	1108	312	27	225
Peck, Palmer D., Colesburg, Iowa. Thill-coupling	297,442	Apr. 22	1956	534	27	385
Peckinpugh, Sebastian S., and G. J. White, Big Rapids, Mich., assignors to said White. Photographic-plate holder and case	296,443	Apr. 8	694	191	27	137
Pedder, John, Pittsburg, Pa. Manufacture of combined metal plates	300,730	June 17	1593	437	27	1233
Peddycord, William F. (See Volkmann and Peddycord.)						
Peebles, Francis A., Hinckley, Ohio. Farm-gate	298,020	May 13	924	230	27	690
Peek, George W., New York, N. Y. Lid-raising attachment for pianos	296,612	Apr. 8	914	255	27	182
Peel, Lawson G., Hazlehurst, Miss. Wagon-brake	297,443	Apr. 22	1957	535	27	386
Peer, John A., Grass Valley, Cal., assignor of one-half to J. J. Berger, Brooklyn, N. Y. Rotary meter	298,230	May 6	353	94	27	593
Peirce, Amos T., Fairhaven, Mass. Car-truck	300,795	June 24	1676	458	27	1292
Peirsol, George W., Parkersburg, W. Va. Combined corn-planter, potato-planter, potato-digger, and cultivator	297,628	Apr. 29	2209	602	27	439
Pelissier, Charles, assignor of one-half to G. H. Emery, Concord, N. H. Machine for forming and stamping loops	296,050	Apr. 1	188	54	27	39
Pelletier, Marx F., New York, N. Y. Shoe	300,394	June 17	1159	317	27	1153
Peloubet, Francis W., Newark, N. J. Reed-organ	301,000	June 24	1918	528	27	1298
Pendry, William A., Detroit, Mich. Puppet-valve	299,006	May 20	1306	372	27	789
Pennefeather, Thomas, St. Louis, Mo. Propeller for vessels	300,888	June 24	1792	489	27	1274
Penteecost, William A., Worcester, Mass. Apparatus for generating steam	298,024	May 6	82	22	27	543
Peoples, Landon C., *et al.* (See Jervis, Abner M., assignor.)						
Peoples, Madison L., *et al.* (See Jervis, Abner M., assignor.)						
People's Telephone Company. (See Drawbaugh, Daniel, assignor.)						
People's Telephone Company. (See Drawbaugh, George W., assignor.)						
Peppard, Gerritt S., Kansas City, Mo. Steam-engine or water-motor	299,161	May 27	1511	434	27	837
Percy, James, Chicago, Ill. Vehicle-spring	299,575	June 3	92	23	27	937
Perháes, Emil M. (See Neumüller, Whedon, and Perháes.)						
Perham, Haven C., and A. Clarke, Lowell, Mass. Machine for opening, cleaning, and condensing textile fibers	295,938	Apr. 1	54	15	27	13
Perkins, George H., Philadelphia, Pa. Soldering-machine	297,629	Apr. 29	2210	602, 603	27	439
Perkins, Hazen H., Kewanee, Ill. Wagon end-gate	298,400	May 13	571	151	27	642
Perkins, Pardon T., Oswego, N. Y. Corner-stay for trunks, boxes, &c	296,444	Apr. 8	695	191	27	138
Perlbach, John F. (See Keller and Perlbach.)						
Pero, George W., West New Brighton, N. Y. Sash-cord guide	298,496	May 13	681	193	27	663
Perrin, Porter K. (See Downham, William, assignor.)						
Persons, Elias F., Westfield, N. Y. Carpet-stretcher	299,576	June 3	92	24	27	937
Pesenecker, Albert, New York, N. Y. Velocipede	296,776	Apr. 15	1109	312	27	226
Peter, John S., Angelica, N. Y. Lubricator and measure	298,497	May 13	682	193	27	663
Peters, August. (See Franke and Peters.)						
Peters, Daniel S., Chicago, Ill. Truss	300,889	June 24	1793	490	27	1275
Peters, G. Moore, Xenia, Ohio. Manufacture of cartridge-shells from paper-pulp	297,712	Apr. 29	2325	632	27	461
Peters, G. Moore, Xenia, Ohio. Cartridge	299,162	May 27	1512	434	27	837
Peters, George T., Jersey City, N. J. Dipper	296,051	Apr. 1	190	54	27	39
Petersen, Nicolai, Charleston, S. C. Buoyant propeller for vessels	296,613	Apr. 8	915	255, 256	27	182
Peterson, Theodore, Boston, Mass. Folding stairs	300,395	June 17	1159	318	27	1154

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Petree, Riley F., Germanton, N. C. Portable fruit-drier	300,121	June 10	785	210	27	1078
Pettibone, Amos. (See Ringo and Pettibone.)						
Pettis, Charles A., Brooklyn, N. Y. Horse-collar	298,231	May 6	355	94	27	593
Peyton, William E., assignor of part to J. M. Thompson, San Francisco, Cal., and C. Shenfield, Albuquerque, N. Mex. Ter. Rock-drill	296,052	Apr. 1	191	55	27	39
Pfaender, William, Jr. (See Grunhagen, Henry, assignor.)						
Pfaff, Rudolf H., Ashtabula, Ohio. Carriage-top	298,774	May 20	1024	286	27	735
Pfanne, Charles. (See Schneider and Pfanne.)						
Pfantz, Daniel M., Philadelphia, Pa., assignor to Automatic Spring Motor Car and Carriage Company, Camden, N. J. Spring-motor	296,707	Apr. 8	1020	287	27	204
Pfeiffer, Henry C., *et al.* (See Dyer, Isaac T., assignor.)						
Phelps, Byron. (See Atkinson and Phelps.)						
Philipp, Ferdinand, Romanshorn, assignor to J. De Planta, Taenikon, near Aadorf, Switzerland. Liquid cement for giving a cheap and durable metal coating to papier-maché, plaster-of-paris, clay, &c.	300,890	June 24	1794	.....	27	1275
Phillips, Benjamin E., *et al.* (See Manuel, David, assignor.)						
Phillips & Co., George H. (See Phillips, George H., assignor.)						
Phillips, George, Tilford, Ill. Screen-frame	298,116	May 6	190	50	27	502
Phillips, George H., assignor to G. H. Phillips & Co., Troy, N. Y. Stove-casting	299,007	May 20	1307	372	27	789
Phillips, Isaac, Silver City, Idaho Ter. Combined knife and pen-holder	296,054	Apr. 1	193	56	27	40
Phillips, Marshall P., Lakeland, La. Machine for pulverizing clay	296,445	Apr. 8	696	191	27	138
Phillips, Zachariah C., Allegheny, Pa. Boring-machine	296,053	Apr. 1	193	56	27	40
Phinney, George B., *et al.* (See Dimon, Frank S., assignor.)						
Phœnix Iron Company. (See Griffen and Hall, assignors.)						
Picket, Henry E., Bradford, Pa. Hydraulic concentrator and amalgamator	299,577	June 3	93	24	27	937
Pickhardt, Gustav, Hagen, Westphalia, Germany. Fork	298,292	May 6	356	94	27	594
Pickle, William C., Nechesville, Tex. Combined seed-planter and fertilizer-distributer	295,939	Apr. 1	56	16	27	13
Pickles, Charles K., assignor to R. C. Pope, St. Louis, Mo. Street-roller	296,446	Apr. 8	697	191	27	138
Piel, William, St. Louis, Mo. Type-case	296,350	Apr. 8	581	162	27	116
Pieper, John T., *et al.* (See Dyer, Isaac T., assignor.)						
Pierce, Charles, Lisle, N. Y. Wagon-skein	298,498	May 13	683	194	27	664
Pierce, Edwin S. (See Loncks, James C., assignor.)						
Pierce, Homer E., Brooklyn, N. Y. Stereoscope	296,055	Apr. 1	196	56	27	40
Pierce, Horatio L., Providence, R. I. Saddle for the top rolls of spinning-machines	298,621	May 13	925	230	27	690
Pierce, James F., trustee. (See McCarty, William F. M., assignor.)						
Pierson, Henry M. (See Hubbard, Frederick H., assignor.)						
Pierson, Henry M., Brooklyn, N. Y. Apparatus for the manufacture of gas	297,444	Apr. 22	1957	535	27	386
Piffard, Henry G., New York, N. Y. Salt for cattle	296,614	Apr. 8	916	.....	27	182
Pigueron, Henry C., Spring Lake, N. J. Ash-sifter	296,447	Apr. 8	698	192	27	138
Pike, Charles F. (See Collings and Pike.)						
Pike, Charles F., Philadelphia, Pa., assignor, by mesne assignments, to National Anti-Sewer Gas Company, of New Jersey. Water-closet	298,310	May 6	452	{121 / 122}	27	612
Pike, Charles F., assignor to National Anti-Sewer Gas Company, Philadelphia, Pa. Disinfecting and cleansing water-closets	300,636	June 17	1462	403	27	1210
Pike, Edward, Salt Lake City, Utah Ter. Amalgamator	299,259	May 27	1022	466	27	859
Pillard, Oliver E., Cambridge, Mass. Permutation-lock	301,001	June 24	1919	{528 / 529}	27	1298
Pinckney, Chauncey M., assignor of one-half to A. W. and M. A. Cole, Aledo, Ill. Cultivator	296,615	Apr. 8	917	256	27	182
Pine, George W. (See Turner, Isaac P., assignor.)						
Pine, George W., Troy, N. Y. Staying-piece for garments	298,401	May 13	572	{157 / 158}	27	643
Pine, George W., Troy, N. Y. Support for shirt-neckbands	301,002	June 24	1921	529	27	1298
Pine, James K. P. (See Norris, George E., assignor.)						
Pine, James K. P. (See Turner, Isaac P., assignor.)						
Pitner, Henry B., assignor to himself and K. K. Brooke, Plymouth, Ind. Combined whip and line holder	299,163	May 27	1513	434	27	838
Pitney, Albert L., *et al.* (See Doremus, Willard D., assignor.)						
Pitney, Albert L., Washington, D. C. Rope or line clasp	297,158	Apr. 22	1593	438	27	317
Pittenger, J. H. (See Garrigus, Culberson S., assignor.)						
Pittman, Charles I., Halifax, Nova Scotia, Canada. Fire-escape	297,843	Apr. 29	2472	677	27	489
Plankinton, William. (See Johnson, Warren S., assignor.)						
Platt, Irving G., Waterbury, Conn. Button	296,216	Apr. 1	390	110	27	75
Playford, George, and G. R. Swaine; said Swaine assignor to C. F. Alaxander, Cleveland, Ohio. Smoke-preventing furnace	297,630	Apr. 29	2219	603	27	440
Pleukharp, James, Columbus, Ohio. Machine for planing polygonal bodies	296,448	Apr. 8	698	192	27	138
Plews, David, Toronto, Ontario, Canada. Wooden pump	297,001	Apr. 15	1387	383	27	275
Plimpton, James L. (See McClure, William H., assignor.)						
Plimpton, James L. (See Moran, John, assignor.)						
Plimsoll, Henry D., New York, N. Y. Weaving metallic bars	297,631	Apr. 29	2221	604	27	441
Plumb, Charles M., Madison, Wis. Seal-lock	297,445	Apr. 22	1959	535	27	386
Plumb, Fawcett, Streator, Ill. Ditching-machine	298,887	May 20	1167	326	27	761
Plume & Atwood Manufacturing Company. (See Atwood, Lewis J., assignor.)						
Plume & Atwood Manufacturing Company. (See Atwood, Walter S., assignor.)						
Plummer, Frank H., Henniker, assignor of one-half to G. W. & M. L. Stearns, Lebanon, N. H. Reclining or hammock chair	296,777	Apr. 15	1110	313	27	226
Plummer, Frank H., Henniker, assignor of one-half to G. W. & M. L. Stearns, Lebanon, N. H. Foot-rest	296,778	Apr. 15	1112	313	27	226
Plummer, Frank H., Henniker, assignor of one-half to G. W. & M. L. Stearns, Lebanon, N. H. Head-rest	296,779	Apr. 15	1113	313	27	226
Plummer, George W., Brooklyn, N. Y., assignor to A. Jacobs. Letter and bill file	295,940	Apr. 1	57	17	27	14
Plummer, James A. (See Groebl, H. William, assignor.)						
Plympton, Nathaniel, Boston, Mass. Tea-pot	299,848	June 3	433	112	27	1004
Pootsch, F. Hermann, Ascherslcben, Prussia, Germany. Method of and apparatus for sinking shafts through quick-sand	300,891	June 24	1795	490	27	1275
Poindexter, Emmet P., Woburn, Ill. Carpet-stretcher	300,306	June 17	1160	318	27	1154
Poirrier, Alcide F., and D. A. Rosenstiehl, Paris, France, assignors to Société Anonyme des Matieres Colorantes et Produits Chimiques de St. Denis. Sulpho-conjugated violets of Paris	297,844	Apr. 29	2473	.....	27	490
Poland, Edward F., assignor of one-fourth to J. G. Crawford, Boston, Mass. Fruit-jar stopper	299,676	June 3	246	61	27	966
Polhemus, John, New York, N. Y. Printer's quoin	296,056	Apr. 1	197	57	27	40
Pollard, Sylvester. (See Lombard and Pollard.)						
Pollmiller, Ferdinand, assignor of one-half to J. B. Bickford, Eddyville, Iowa. Washing-machine	297,949	Apr. 29	2603	713	27	514

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pond, Erasmus A., Rutland, Vt. Apparatus for mixing solids and liquids and for other purposes	297,002	Apr. 15	1388	383	27	275
Pond, Goldsbury H., New York, N. Y., assignor to E. A. Morse, Rutland, Vt. Process of and apparatus for manufacturing paper-pulp from wood	296,780	Apr. 15	1114	314	27	226
Pond, Orlando M., Independence, Iowa. Slate-frame	298,499	May 13	684	194	27	664
Ponder, J. F. (See Hazard, Henry T., assignor.)						
Pool, Frank V. (See Hyatt, Pool, Everding, Stevens, and Wood.)						
Pool, George W., Lamar, Mo. Horse-collar	297,159	Apr. 22	1594	438	27	318
Pool, John, Elizabeth City, N. C. Shutter-worker	297,713	Apr. 29	2326	633	27	461
Poole, George, Baltimore, Md. Machine for driving endless ropes for the propulsion of street-cars	296,057	Apr. 1	197	57	27	40
Poole, Robert, New Providence, Tenn. Cartridge-loading machine	301,003	June 24	1922	{529 / 530}	27	1298
Poor, George H., assignor to American Brake Company, St. Louis, Mo. Automatic car-brake	300,122	June 10	786	211	27	1078
Poor, George H., assignor to American Brake Company, St. Louis, Mo. Locomotive-brake	300,124	June 10	789	212	27	1078
Poor, George H., assignor to American Brake Company, St. Louis, Mo. Locomotive-brake	300,125	June 10	791	{212 / 213}	27	1079
Poor, George H., Portland, Me., and C. J. Schiller, assignors to American Brake Company, St. Louis, Mo. Automatic car-brake	300,123	June 10	787	211	27	1078
Pope, Edwin B., Chicago, Ill. Time-register for billiard-tables	298,402	May 13	573	158	27	643
Pope Manufacturing Company. (See Wallace, Albert E., assignor.)						
Pope, Richard C. (See Pickles, Charles K., assignor.)						
Pope, Tjerck J., Sanquoit, N. Y. Knife	300,790	June 24	1677	459	27	1252
Porter, Edward N., assignor of two-thirds to L. G. Burnham and J. G. Reed, Burlington, Vt. Combined ice-creeper and heel-plate	300,006	June 10	637	173	27	1051
Porter, Henry K., Boston, Mass. Axle-yoke	297,160	Apr. 22	1594	438	27	318
Porter, James M., Collier, Pa. Harness	297,003	Apr. 15	1389	384	27	276
Porter, John, *et al.* (See Campbell, Robert, assignor.)						
Porter, Major D., Boston, Mass. Thermostat	296,058	Apr. 1	199	58	27	41
Porter, Major D., Boston, Mass. Electric fire-alarm apparatus	296,674	Apr. 15	1234	345	27	247
Porter, Major D., Boston, Mass., and E. R. Wilder, Portland, Me., assignors, by mesne assignments, to said Porter. Electrical alarm apparatus	296,675	Apr. 15	1236	{345 / 346}	27	247
Porter, Wallace, New Haven, Conn. Planer-chuck	300,637	June 17	1463	404	27	1210
Porter, William A., Alliance, and W. Heston, Mount Union, Ohio. Smoke-burning attachment for furnaces	297,845	Apr. 29	2474	677	27	490
Posen & Co., Edward. (See Mönch, Jacob, assignor.)						
Post, Andrew D., Keyport, N. J. Boat-detaching apparatus	296,059	Apr. 1	199	58	27	41
Post, Charles C., Burlington, Vt. Sap-spout	300,797	June 24	1678	459	27	1252
Post, James E., Poughkeepsie, N. Y. Fire-escape	299,578	June 3	97	25	27	938
Post, William S., Boston, and H. D. Sawyer, Revere, Mass. Steam-boiler and furnace	298,706	May 13	936	.....	27	711
Potter, Sophia, Clementsvale, Nova Scotia, Canada. Liniment	298,775	May 20	1025	286	27	735
Potteiff, Matthew R., Gilman, Ill. Washing machine	296,060	Apr. 1	201	58	27	41
Potts, Albert, Philadelphia, Pa. Barbed metallic fencing	297,004	Apr. 15	1392	384	27	276
Potts, Stacy, Washington, D. C. Screw						
Potts, William C. (See Gathright, Albert P., assignor.)						
Powell Cotton Harvester Company. (See Powell, William J., assignor.)						
Powell, James L., Summerville, Mo. Riding-saddle	297,161	Apr. 22	1595	439	27	318
Powell, John B., Philadelphia, Pa. Spring-motor	299,849	June 3	434	112	27	1004
Powell, William J., Marshfield, Mass., assignor to Powell Cotton Harvester Company, Concord, N. H. Cotton-harvester	296,449	Apr. 8	701	{192 / 193}	27	139
Powers, Benjamin F., G. E. Needham, and J. Hayes, Cleveland, Ohio; said Hayes assignor to said Powers and Needham. Roofing-tile	296,616	Apr. 8	918	257	27	183
Powers, Francis G., Champaign, Ill. Washing-machine	296,617	Apr. 8	919	257	27	183
Powers, Lyman A., Bloomington, Wis. Vehicle-wheel	298,500	May 13	685	194	27	664
Prahl, Charles, Cranford, N. J., assignor to Sterne Brothers & Co., New York, N. Y. Finger-ring	297,446	Apr. 22	1960	536	27	386
Pratt, Edwin E. (See Letteller and Pratt.)						
Pratt, Edwin E., assignor to A. N. Kellogg Newspaper Company, Chicago, Ill. Device for locking removable stereotypes	296,061	Apr. 1	201	58	27	41
Pratt, Edwin E., assignor to A. N. Kellogg Newspaper Company, Chicago, Ill. Device for securing stereotype-plates in the form	300,731	June 17	1505	437	27	1232
Pratt, Edwin E., assignor to A. N. Kellogg Newspaper Company, Chicago, Ill. Stereotype-block	300,732	June 17	1506	437	27	1233
Pratt, Henry, and J. J. Ryan, Chicago, Ill. Generating gas	297,162	Apr. 22	1596	439	27	318
Pratt, Herbert L., Kalamazoo, Mich. Temporary binder	299,579	June 3	98	25	27	938
Pratt & Letchworth. (See Baker, Henry H., Jr., assignor.)						
Pratt & Letchworth. (See Basinger, James M., assignor.)						
Pratt, Robert J., Greenbush Heights, N. Y. Speed-indicator	299,677	June 3	248	61	27	966
Pratt, Samuel B., Boston, Mass., assignor to Eaton & Parker, Newark, N. J. Toy mortar	300,638	June 17	1464	404	27	1211
Pratt & Whitney Company. (See Johnson, Moses C., assignor.)						
Preddey, John T., Carson, Nev. Border-light for theaters	298,888	May 20	1168	327	27	762
Prentice, George W., Providence, R. I. Glove-fastener	297,950	Apr. 29	2604	714	27	515
Prentice, George W., Providence, R. I. Button	298,403	May 13	575	159	27	643
Prenzlauer, Herman, *et al.* (See Ball, Thomas H., assignor.)						
Presbrey, Otis F., *et al.* (See Dodd, James F., assignor.)						
Prescott, De Witt C., Marinette, Wis. Gang-saw mill	296,618	Apr. 8	920	257	27	183
Presko, Frederick A., New York, N. Y. Refrigerating-faucet	299,420	May 27	1898	525	27	897
Pressly, Harvey M., assignor of one-half to W. Fulton, Oakdale, Ill. Carpet-stretcher	299,087	May 20	1414	403	27	809
Preston, George H., assignor of one-half to Empire Drill Company, Shortsville, N. Y. Friction-clutch	300,733	June 17	1597	438	27	1233
Preston, George H., assignor of one-half to Empire Drill Company, Shortsville, N. Y. Device for changing speed	300,734	June 17	1598	438	27	1233
Preston, Matthew T., Cutler, Ill. Wagon-brake	300,327	June 10	1063	288	27	1127
Prensse, Ernst, Plagwitz-Leipsic, Saxony, assignor to G. Haunhorst, Leipsic, Germany. Machine for stitching books with wire staples	298,117	May 6	191	50, 51	27	563
Price, Anna J., Frostburg, Md. Caster for stoves	299,494	May 27	1912	550	27	912
Price, George C., G. W. F. Cook, and W. C. Price, San Francisco, Cal. Combined slate-pencil sharpener and sponge-holder	300,735	June 17	1600	438	27	1233
Price, George W., assignor to B. N. Baker, Baltimore, Md. Rotary steam-engine	299,260	May 27	1022	466	27	860
Price, Jacob, San Leandro, Cal. Vehicle	297,714	Apr. 29	2326	633	27	462
Price, Wallace C. (See Price, Cook, and Price.)						
Prickett, Thomas G. (See Merriman, Lemuel H., assignor.)						
Priest, George A., St. Louis, Mo. Tobacco-cutter	298,404	May 13	576	{159 / 160}	27	643

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Priest, Joseph K., Nashua, N. H. Hair-clipper	299,580	June 3	99	25	27	938
Prins, August, Meissen, Saxony, assignor to E. Quellmalz, Dresden, Germany. Treatment of vegetable fibrous material	301,069	June 24	2007	.....	27	1314
Pritchard, Charles L., assignor of one-half to J. Kuntz, Dubuque, Iowa. Carriage-top	299,937	June 3	540	143, 144	27	1024
Pritchard, John G., Poultney, Vt. Churn-cover	298,889	May 20	1169	327	27	762
Proctor, Josiah K., Philadelphia, Pa. Window-screen	298,311	May 6	454	122	27	612
Proctor, Redfield. (See Patch, Fred R., assignor.)						
Proeschel, Julius N., Milwaukee, Wis. Necktie or cravat fastener	296,619	Apr. 8	922	257	27	183
Protheroe, William M., New York, N. Y. Adjustable ventilator for hats	297,715	Apr. 29	2327	633	27	402
Prunty, John E., Baltimore, Md. Automatic relief-valve for steam fire-engines	297,087	Apr. 15	1490	412	27	295
Prunty, John E., Baltimore, Md. Hose-pipe nozzle	297,447	Apr. 22	1961	536	27	387
Puffer, Alvin D. (See Shepherd, Joseph H., assignor.)						
Puffer, Alvin D., Medford, Mass. Agitator for generators and receivers for soda or other aerated waters	300,007	June 10	638	174	27	1051
Puffer, Edwin R., Riverside, Ill. Scale	298,118	May 6	193	51, 52	27	563
Puffer, Luther W., Medford, Mass. Carbonic-acid-gas generator	300,008	June 10	639	174	27	1051
Pugh, John W., assignor of one-half to A. P. Collar, Grand Rapids, Mich. Belt-fastener	301,070	June 24	2008	554	27	1315
Pulaski, Morris H., Philadelphia, Pa. Embroidery	297,448	Apr. 22	1961	536	27	387
Pulaski, Morris H., Philadelphia, Pa. Embroidery	298,025	May 6	84	22	27	543
Pullinger, William, Philadelphia, Pa. Hot-air and steam generating furnace	299,008	May 20	1308	373, 374	27	789
Punshon, Robert, and R. R. Vizer, London, England. Blasting-cartridge	297,951	Apr. 29	2605	714	27	515
Purefoy, Addison F., Wake Forest, N. C. Gate	299,581	June 3	100	25, 26	27	938
Purnell, Richard H., Rosedale, Miss. Hoisting device for vessels	297,536	Apr. 22	2081	567	27	409
Pursell, Harry D., Washington Court-House, Ohio. Pigeon-hole	299,261	May 27	1624	467	27	866
Putnam, Stephen G. (See Vetter and Putnam.)						
Putt, Franklin L., and J. B. Stratton, Middlebury, Ind. Composition of matter to be used as a fire and water protective paint	299,098	May 20	1415	.....	27	809
Putt, John R., assignor of one-half to S. S. Martin, Middlebury, Ind. Fence	301,071	June 24	2009	555	27	1315
Putt, Joseph A., assignor of one-half to I. S. France, Marlborough, Ohio. Brake for hay-wagons	296,620	Apr. 8	922	256	27	183
Pyle, Samuel C., Centreville, Iowa. Churn	299,296	Apr. 1	569	142	27	96
Quackenbush, Henry M., Herkimer, N. Y. Manufacture of nut-picks	296,450	Apr. 8	702	193	27	139
Queen City Forging Company. (See Wood, Richard G., assignor.)						
Quellmalz, Emil. (See Prinz, August, assignor.)						
Quigley, Charles F. (See Quigley, Thomas L., assignor.)						
Quigley, Thomas L., assignor to himself and C. F. Quigley, Boston, Mass. Curtain-fixture	297,163	Apr. 22	1597	439	27	318
Quinan, William R., San Francisco, Cal. Explosive compound	300,281	June 10	1006	.....	27	1117
Quinan, William R., F. Kimpfel, San Francisco, and J. Olsen, Marin County, Cal. Cartridge-loading apparatus	299,009	May 20	1310	374, 375	27	789
Quinette, Jermain P., St. Louis, Mo. Hame	297,846	Apr. 29	2475	678	27	490
Quinn, James, Jr., Grand Rapids, Mich. Compound for calcimining and frescoing walls, &c.	299,302	May 27	1626	.....	27	860
Qvarnstrom, Erick J., Norway, assignor to himself and J. E. Hagey, Vulcan, Mich. Lifting-jack	297,392	Apr. 22	1764	479	27	349
Raby, Richard, Jr., assignor of two-thirds to A. A. Long, York, and S. A. Shroff, Columbia, Pa. Railway-rail joint	298,776	May 20	1027	287	27	735
Rachholz, Friedrich W., Dresden, Saxony, Germany. Gas-engine	301,009	June 24	1935	534, 535	27	1301
Racine Cement and Pipe Company. (See Hewitt, Charles B., assignor.)						
Rader, Gustavus W., New York, N. Y. Fire-proof building	297,449	Apr. 22	1963	536	27	387
Radford, Robert A., Centralia, Mo. Sulky-plow	300,892	June 24	1796	490	27	1275
Radley, Daniel A., Lawrenceburg, Mo. Copy-book, copy-case, and movable copy-plate	295,941	Apr. 1	58	17	27	14
Radley, Richard, Buffalo, N. Y. Machine for packing salt, flour, &c.	298,501	May 13	686	194	27	664
Raegener, Louis C. (See Lawrence, Louis P., assignor.)						
Ragan, Andrew H. (See Choate, Rohrer, and Ragan.)						
Rall, Edward. (See Rall, Louis, G., and E.)						
Rall, Gustav. (See Rall, Louis, G., and E.)						
Rall, Louis, G., and E., assignors of one-fourth to M. Lehmann, Glasgow, Mo. Door-check	297,005	Apr. 15	1392	384	27	276
Ramsay, A. (See Macfarlane, Thomas, assignor.)						
Ramsey, John W., assignor of one-half to J. Corbus, Beaver Falls, Pa. Hydrant and plug	300,292	June 10	1008	272	27	1117
Ramsden, Robert, Philadelphia, Pa. Gripping and crossing cables	298,312	May 6	455	123	27	613
Ramus, Charles E., Chicago, Ill. Die for cutting leather strings	296,781	Apr. 15	1116	314	27	227
Rancevan, John, Cincinnati, Ohio, assignor to E. Robinson, New York, N. Y. Whiffletree-hook	300,893	June 24	1797	491	27	1275
Rand, Alonzo C., Minneapolis, Minn. Whip	297,006	Apr. 15	1393	384	27	276
Randall, Bellville L., Boston, Mass. Horse-railway switch	296,002	Apr. 1	202	59	27	41
Randall & Co., L. D. (See Scherling, John, assignor.)						
Randall, Francis W., Tekonsha, assignor to W. S. Lawrence and L. C. Chapin, Kalamazoo, Mich. Motor	300,894	June 24	1799	491	27	1276
Randall, Henry R., Brooklyn, assignor to W. Thorpe, New York, N. Y. Car-axle lubricator	300,639	June 17	1465	404	27	1211
Randall, Joseph F., assignor of one-half to S. D. Randall, Warren, Ohio. Speeder for the manufacture of rovings, coarse yarns, &c.	296,217	Apr. 1	391	111	27	75
Randall, Le Roy D. (See Wilcox, Stephen C., assignor.)						
Randall, S. D. (See Randall, Joseph F., assignor.)						
Randle, Michael B., and B. E. Turner, Statesborough, Ga. Manufacturing artificial stone	298,026	May 6	86	.....	27	543
Randolph, Theodore F., Cincinnati, Ohio. Surveyor's level	297,164	Apr. 22	1598	440	27	318
Rankin, James, South Easton, Mass. Incubator	298,890	May 20	1172	327	27	762
Rankin, Thomas L., New York, N. Y. Refrigerator-car	296,218	Apr. 1	393	111, 112	27	76
Rapp, Abram, Durango, Colo. Boot and shoe exhibitor	299,678	June 3	249	61	27	967
Rapp, John, Collinsville, Conn. Side-hill plow	300,502	June 17	1292	355	27	1179
Rappleyea, Nicholas, assignor to Stein Manufacturing Company, Rochester, N. Y. Coffin	296,782	Apr. 15	1116	314	27	227
Rascoe, Charles S. (See Rascoe, William H., assignor.)						
Rascoe, William H., assignor to himself and C. S. Rascoe, Plattsburg, N. Y. Friction-clutch	300,503	June 17	1293	355	27	1179
Rateliff, William H., Middleborough, assignor of one-half to G. S. Gates, Athol, Mass. Sliding-jaw wrench	300,127	June 10	793	213	27	1079
Rath, Joseph, Columbus, Ohio. Washer-cutter	296,219	Apr. 1	394	112	27	76
Raughtigan, Emma J., *et al.* (See Raughtigan, Michael, assignor.)						
Raughtigan, Michael, assignor to E. Oldfield, E. A. Tracy, and E. J. Raughtigan, Norwich, Conn. Toy	296,351	Apr. 8	582	162	27	116
Rausch, August V. W. (See Wirz and Rausch.)						
Ravenscroft, Walter S., Parkersburg, W. Va. Caster-wheel and die for making the same.	295,942	Apr. 1	59	17	27	14

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rawson, Charles B., Worcester, Mass. Making match-splints	298,502	May 13	688	195	27	664
Ray, Samuel, Oregon, Ill. Draft-equalizer	298,622	May 13	826	231	27	690
Raymond, James N. (See Heisa, Charles E., assignor.)						
Raynolds, George F., *et al.* (See Sutton, Thomas, assignor.)						
Raynsford, Edward L., Susquehanna, assignor to himself and J. R. Raynsford, Montrose, Pa. Car-coupling	297,293	Apr. 22	1765	479	27	349
Raynsford, John R. (See Raynsford, Edward L., assignor.)						
Read, Daniel, New Salem, Kans. Tongue-support	296,621	Apr. 8	923	258	27	184
Read, Henry F. (See Rowlands, John R., assignor.)						
Reams, George W., assignor to F. D. Jones, Burlington, Kans., and H. M. Hart, Perry, Iowa. Mechanical motor	299,164	May 27	1514	435	27	838
Reckendorfer, Babette, executrix, *et al.* (See Boman, Claes W., assignor.)						
Reckendorfer, Joseph. (See Boman, Claes W., assignor.)						
Record, George J., Conneaut, Ohio. Shipping-can	299,010	May 20	1312	375	27	790
Redding, Harvey. (See Redding, Jerome, assignor.)						
Redding, Jerome, Malden, assignor to himself and H. Redding, Everett, Mass. Watchman's electric recorder	299,011	May 20	1313	375	27	790
Reiellgx, Josef, Cologne-on-the-Rhine, Germany. Machine for making ornaments for gilt cornices, &c	300,128	June 10	794	213	27	1079
Reed, Charles H., Sunderland, county of Durham, England. Manufacture of chains	300,640	June 17	1467	405	27	1211
Reed, Jonas G., *et al.* (See Porter, Edward N., assignor.)						
Reed, William E. (See Brooks and Reed.)						
Reed, William S., Leominster, Mass. Toy building	296,783	Apr. 15	1117	314, 315	27	227
Reed, William S., Leominster, Mass. Toy building	296,784	Apr. 15	1119	315	27	227
Rees, Thomas M., *et al.* (See Jerrold and Burgermeister, assignors.)						
Rees, William M., *et al.* (See Jerrold and Burgermeister, assignors.)						
Reese, Abram L., Chase, Kans. Grain-drill	300,129	June 10	795	214	27	1080
Regan, Charles T., Brooklyn, N. Y. Sink	300,130	June 10	797	214	27	1080
Reichert, Mathias, New York, N. Y. Vegetable-slicer	298,621	May 13	827	231	27	690
Reichmann, Joseph, Chicago, Ill. Device for operating valves	300,131	June 10	798	214	27	1080
Reichmann, Joseph, Chicago, Ill. Injector	301,004	June 24	1925	531	27	1299
Reid, Alexander, Brooklyn, N. Y. Wiping and polishing apparatus for plate-printing machines	297,294	Apr. 22	1767	480	27	349
Reid, Charles T. (See Jones and Reid.)						
Reid, John, Allegheny City, Pa. Machine for trussing barrels. (Reissue)	10,479	May 13	952	264	27	715
Reid, Sylvester R., Wiler's Station, Ohio. Tongue-support	300,798	June 24	1679	459	27	1253
Reiff, Jacob D., Skippackville, Pa. Sash-fastener	301,005	June 24	1927	531	27	1300
Reiff, William H., Philadelphia, Pa. Burglar-alarm	297,632	Apr. 29	2221	604	27	441
Reihlen, Friedrich A., Stuttgart, Würtemberg, Germany. Manufacturing fermenting materials	301,006	June 24	1928	.....	27	1300
Reilly, James. (See Burnett, William, assignor.)						
Reilly, Henry, Rixford, Pa. Stay for corsets	296,063	Apr. 1	203	59	27	41
Reitz, Adam, St. Louis, Mo. Derrick	298,405	May 13	576	160, 161	27	644
Remfry, John, Calcutta, India. Machine for cleaning train-rails	301,007	June 24	1930	532, 533	27	1300
Remshardt, Louis, *et al.* (See Paulus, Jacob, assignor.)						
Reno, Thomas, Detroit, Mich. Hand-screw	296,622	Apr. 8	924	258	27	184
Rensch, Henry, Quincy, Ill. Fire escape	299,850	June 3	435	113	27	1004
Renshaw, David, Braintree, Mass. Utilizing the exhaust of engines	298,119	May 6	195	52	27	564
Renshaw, David, Braintree, Mass. Utilizing the exhaust of engines	300,504	June 17	1294	355	27	1179
Renshaw, David, Braintree, Mass. Utilizing the exhaust of engines	300,505	June 17	1295	355, 356	27	1180
Renshaw, David, Braintree, Mass. Utilizing exhaust-steam	300,506	June 17	1296	356	27	1180
Renshaw, David, Braintree, Mass. Utilizing exhaust-steam	297,847	Apr. 29	2475	678	27	490
Repta, Elias B., Jersey City, N. J. Lamp	298,027	May 6	87	22	27	543
Restorff, Fritz, Chicago, Ill. Joiner's clamp	300,895	June 24	1800	491, 492	27	1276
Rettig, Wilhelm A., Berlin, Germany. Row-boat	296,352	Apr. 8	583	162	27	116
Reutlinger, Adolph. (See Stitzel, Frederick, assignor.)						
Rex, Alfred C., Philadelphia, Pa. Game	297,716	Apr. 29	2329	633	27	402
Rex, Alfred C., Philadelphia, Pa. Hatchet	298,503	May 13	689	195	27	665
Rex, Alfred C., Philadelphia, Pa. Egg and cake beater						
Reynolds, Charles J. (See Parkin and Reynolds.)						
Reynolds, Charles W., assignor of one-half to W. H. Burtenshaw, Detroit, Mich. Manufacturing shoes	299,421	May 27	1829	526	27	897
Reynolds, Charles W., assignor of one-half to W. H. Burtenshaw, Detroit, Mich. Making shoes	299,422	May 27	1830	526	27	897
Reynolds, George A., Utica, N. Y. Last	297,633	Apr. 29	2222	604	27	441
Reynolds, Henry, New Haven, Conn. Machine for finishing bolt-heads and nuts	300,641	June 17	1468	405	27	1211
Reynolds, James N. (See Wooster and Reynolds.)						
Reynolds, Perry E., King City, assignor of one-half to W. Hawkins, Albany, Mo. Weather-strip	299,089	May 20	1415	403, 404	27	809
Reynolds, Robert B., Stockport, N. Y. Lawn-marker	300,507	June 17	1298	356	27	1180
Reynolds, Terrence, Atalla, Ala. Dumping-car	299,263	May 27	1626	467	27	860
Reynolds, William W., assignor to Howe Scale Company, Rutland, Vt. Platform-scale	296,451	Apr. 8	703	193, 194	27	139
Rhoades, James W., Churubusco, Ind. Washing-machine	295,943	Apr. 1	60	17, 18	27	14
Rhoads, Annie E., Baraboo, Wis. Washing compound	296,452	Apr. 8	705	.....	27	139
Rhoads, John, *et al.* (See Garverick, John M., assignor.)						
Rhodes, Richard. (See Spencer and Rhodes.)						
Rhodes, Richard, Hartford, Conn., assignor to Spencer Arms Company, New York, N. Y. Magazine fire-arm	299,264	May 27	1627	467, 468	27	860
Rice, Bernard, Brooklyn, N. Y. Beer-chip	295,944	Apr. 1	62	18	27	14
Rice & Brother. (See Boniface, Henry C., assignor.)						
Rice, Henry C., Lonisiana, Mo. Coffee-pot	299,582	June 3	104	26	27	939
Rice, Oliver P., New York, N. Y. Hydraulic elevator	300,132	June 10	799	215	27	1080
Rich, Denison A., assignor to Starr Bros. Bell Company, East Hampton, Conn. Sleigh-bell	300,896	June 24	1801	492	27	1276
Rich, Henry M. (See Taft and Rich.)						
Rich, John T., assignor to Meriden Malleable Iron Company, Meriden, Conn. Hanging lamp	299,851	June 3	436	113	27	1005
Rich, Perez C., Boston, assignor to C. J. Bailey and J. M. Clapp, Newton, Mass. Ruler	297,717	Apr. 29	2330	634	27	402
Richards, Alfred J., *et al.* (See Hall, Theodore F., assignor.)						
Richards, Ernest R., Sheboygan, Wis. Bottle-holder	298,233	May 6	357	95	27	594

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Richards, Francis H., Cleveland, Ohio. Envelope-folding mechanism	296,353	Apr. 8	583	163	27	116
Richards, Francis H., Springfield, Mass. Mechanism for converting motion	297,165	Apr. 22	1600	440	27	319
Richards, Francis H., Cleveland, assignor to J. Hayden Brass Company, Lorain, Ohio. Valve-body-milling machine	299,090	May 20	1416	404	27	860
Richards Francis H., Springfield, Mass., assignor to Gilman Vertical Press Company, of New Hampshire. Oscillating printing-press	300,897	June 24	1802	492 493	27	1276
Richards, Hezekiah H., assignor of one-half to W. S. Buffham and T. Dickinson, Racine, Wis. Iron for sleigh-shafts	299,495	May 27	1912	551	27	912
Richards, John, San Francisco, Cal. Metal boring and slotting machine	299,496	May 27	1913	551	27	913
Richardson, Charles A., Alpena, Mich. Rudder holder and support	299,265	May 27	1630	468	27	861
Richardson, Charles E., *et al.* (See Johnson, Charles C., assignor.)						
Richardson, Charles M., and J. S. Gibbs, assignors to Bridgeport Twine Binding Company, Bridgeport, Conn. Knot-tying mechanism for grain-binders	300,009	June 10	642	174 175 176	27	1051
Richardson, Edward F. (See Hoyt, Jonathan J., assignor.)						
Richardson, Frederick, Providence, R. I. Rubber shoe	296,453	Apr. 8	705	195	27	140
Richardson, Frederick, Providence, R. I. Die for making rubber heels	296,454	Apr. 8	706	195	27	140
Richardson, Frederick, Providence, R. I. Heel-plate for rubber shoes	296,455	Apr. 8	707	195	27	140
Richardson, Frederick, Providence, R. I. Die for securing heel-plates to rubber shoes	296,623	Apr. 8	925	258	27	184
Richardson, Frederick, Providence, R. I. Machine for securing heel-plates to rubber shoes	296,624	Apr. 8	926	259	27	184
Richardson, George W. (See Loftus, John, assignor.)						
Richardson, George W., Boston, Mass., assignor to Consolidated Safety Valve Company, Hartford, Conn. Marine safety-valve	297,007	Apr. 15	1394	385	27	277
Richardson, Henry M., Boston, Mass. Parasol-frame	296,354	Apr. 8	585	163	27	117
Richardson, John S., Lowell, Mass. Basin or bowl	299,266	May 27	1631	468	27	861
Richardson, William, assignor to Milwaukee Dust Collector Manufacturing Company, Milwaukee, Wis. Dust-collector	299,852	June 3	437	113	27	1005
Richardson, William S., Boston, Mass., assignor to Ball and Socket Fastener Company, Nashua, N. H. Glove-fastening	300,508	June 17	1298	356	27	1180
Richardson, William S., Boston, Mass., assignor to Ball and Socket Fastener Company, Nashua, N. H. Fastening for gloves, &c	300,509	June 17	1300	357	27	1181
Richardson, William S., Boston, Mass., assignor to Ball and Socket Fastener Company, Nashua, N. H. Glove-fastener	300,510	June 17	1301	357	27	1181
Richman, Charles W. (See Ware and Richman.)						
Richman, Clayton S., Vallejo, Cal. Combined water-cooler and refrigerator	300,511	June 17	1302	357	27	1181
Richter, Wilhelm, assignor to Internationaler Vacuum-Elmaschinen-Verein, Berlin, Germany. Compound vacuum-pump	299,267	May 27	1632	468	27	861
Richwine, George W., Muncie, Ind. Show-window ventilator	297,008	Apr. 15	1397	385	27	277
Ricker, Reuben H., Boston, Mass. Mechanical toy	300,799	June 24	1680	459	27	1253
Ricker, Reuben H., Boston, Mass. Mechanical toy	300,800	June 24	1681	460	27	1253
Ricketts, John T., Camargo, Ky. Hand corn-planter	299,679	June 3	250	62	27	907
Ridenour, John, Mount Vernon, Ind. Car-coupling	298,406	May 13	577	161	27	644
Ridge, Joseph, assignor to A. Warner and J. H. Beers, Chicago, Ill. Noiseless slate	298,891	May 20	1179	327	27	763
Riggs, Calvin, Worcester, Mass. Vise	298,777	May 20	1027	287	27	735
Riggs, William A., Sr., New Orleans, La. Process of and apparatus for defecating cane-juice	297,848	Apr. 29	2477	678	27	499
Rightmyer, William T., Meriden, Conn. Pen	296,450	Apr. 8	708	195	27	140
Riko, Adam D. (See Ilner, George W., assignor.)						
Riley, Joseph H., Bury, county of Lancaster, England. Apparatus for separating vegetable fiber from woolen fabrics	300,010	June 10	645	176	27	1052
Ringen, John, assignor of one-half to L. Stockstrom, St. Louis, Mo. Gasoline-stove attachment	299,853	June 3	439	113	27	1005
Ringler, Frederick A., and E. I. Alfeld, New York, N. Y. Mortised wooden block for electrotype or stereotype plates	299,012	May 20	1315	376	27	790
Ringo, Alvin L., and A. Pettibone, Chicago, Ill. Ballot-box	300,512	June 17	1303	357	27	1181
Rios, Alonso C de los, New Orleans, La. Propelling apparatus for vessels	298,234	May 6	358	95	27	594
Ripley, Daniel C., Pittsburg, Pa. Fruit-bowl	296,457	Apr. 8	768	196	27	140
Ripsom, Joseph B., Oshkosh, Wis. Plane	296,785	Apr. 15	1120	315	27	228
Risdon, William B., assignor to American Saw Company, Trenton, N. J. Insertible saw-tooth	298,892	May 20	1173	328	27	763
Ritcheig, James T., *et al.* (See Schaffer, Charles M., assignor.)						
Ritchie, Allan, *et al.* (See Murray, James, assignor.)						
Ritchie, George W., Arrowsmith, Ill. Safety attachment for horned animals	296,625	Apr. 8	928	259	27	184
Ritchie, John, Brookline, Mass. Swinging bracket for electric lamps	296,355	Apr. 8	587	163	27	117
Ritchie, John, and F. Luckermann, Freeport, Ill. Lifting-jack	300,011	June 10	647	176	27	1052
Riter, John L., Brownsville, assignor to Norris & Brother, Rushville, Ind. Seeding-machine	295,945	Apr. 1	62	18	27	15
Rites, Lewis A., Chester, N. Y. Cheese press or mold	296,064	Apr. 1	204	59	27	42
Ritter, Joseph H., Philadelphia, Pa. Ironing-table	299,680	June 3	251	62	27	907
Ritter, William H. (See Shaw, Thomas, assignor.)						
Ritz, John, assignor of one-half to W. Danber, Gowanda, N. Y. Plow	297,450	Apr. 22	1964	537	27	387
Rivers, Thomas L., assignor to C. B. Lindsey, Mount Vernon, Ill. Hame-tug	297,634	Apr. 29	2223	604	27	441
Roach, David A., Crawfordsville, assignor of one-half to L. N. Roach, Eugene, Ind. Metallic fence	298,235	May 6	359	95	27	594
Roach, Lewis N. (See Roach, David A., assignor.)						
Roach, Michael J., Lockport, N. Y. Steam-pipe joint for rotary paper-drying cylinders, &c	298,624	May 13	928	231	27	690
Robb, Eliakim T., Chester, and A. W. Schleicher, Philadelphia, Pa. Driving-gear	299,013	May 20	1316	376	27	791
Robbins & Appleton. (See Fitch, Ezra C., assignor.)						
Robbins & Appleton. (See O'Hara, Daniel, assignor.)						
Robbins, Edwin A., Boston, Mass. Pipe-cutter	300,898	June 24	1803	493	27	1277
Robbins, Frank G., Lynn, Mass. Curtain-fixture	298,407	May 13	578	161	27	644
Robbins, Frederick. (See Livingston, John G., assignor.)						
Robbins, Henry A. (See Bessler, Vetal, assignor.)						
Robbins, John A. (See Weathers, James, assignor.)						
Roberge, David, Jr., New York, N. Y. Spring horseshoe	300,899	June 24	1805	494	27	1277
Roberge, David and David, Jr., New York, N. Y. Apparatus for preventing accidents on railways	296,065	Apr. 1	205	59	27	42
Roberts, Charles, *et al.* (See Herckner, Emil, assignor.)						
Roberts, George W., Walla Walla, Wash. Ter. Green-corn-cutting machine	296,066	Apr. 1	207	60	27	42
Roberts, Jacob, Brooklyn, N. Y. Steam-boiler	297,009	Apr. 15	1397	385 386	27	277
Roberts, James A., assignor of one-half to W. M. Dwight, Detroit, Mich. Belt-fastener	301,008	June 24	1934	534	27	1300
Roberts, Thomas H., Wilmington, Del. Car-truck	297,849	Apr. 29	2478	679	27	491
Robertson, Hugh, Breckenridge, Minn. Claw-bar						

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Robertson, James D., Salisbury, Mass. Two-wheeled vehicle	297,451	Apr. 22	1965	537	27	387
Robin, Simon, Cambridgeport, Mass. Revolving book-rest	296,356	Apr. 8	588	163	27	117
Robinius, Francis, Indianapolis, Ind. Combined sawing and chair	295,946	Apr. 1	63	18	27	15
Robinson, Albert S., assignor of one-half to A. Schell, Albany, N. Y. Baling press	300,642	June 17	1469	405 406 407	27	1211
Robinson, Cyrus R., Concord, N. H. Halter	297,850	Apr. 29	2479	679	27	491
Robinson, Elisha. (See Rancevan, John, assignor.)						
Robinson, Francis W., Richmond, Ind. Traction-engine	300,397	June 17	1102	318	27	1154
Robinson, Frank J., assignor of one-half to D. M. Bone, Petersburg, Ill. Bed-bottom	296,708	Apr. 8	1022	287	27	904
Robinson, Harold C., and L. J. Lallement, St. Louis, Mo. Separable button	298,236	May 6	359	95	27	594
Robinson, Joseph M., Brooklyn, N. Y. Barrel-shaping machine	297,010	Apr. 15	1399	386	27	278
Robinson, Mallen F., Litchfield Corners, Me. Liquid-measuring vessel	298,504	May 13	689	195	27	665
Robinson, Merritt F. (See Kuhlmann, Robinson, and Irvin.)						
Robinson, Squire, Southington, Conn. Wrench	299,165	May 27	1515	435	27	838
Robinson, Stillman W., assignor of one-half to O. E. Lewis, Columbus, Ohio. Machine for uniting the uppers and soles of boots or shoes	297,718	Apr. 29	2330	634	27	402
Robinson, William M., New Franklin Mo. Car-coupling	299,268	May 27	1633	469	27	861
Roche, Thomas C., Brooklyn, assignor to E. & H. T. Anthony & Co., New York, N. Y. Enlarging-camera	297,851	Apr. 29	2479	679	27	491
Rochester Machine Tool Works. (See Bryant, Edwin R., assignor.)						
Rock, Daniel B., Fairfield, Pa. Elbow for spouting	296,786	Apr. 15	1121	315 316	27	228
Rockey, Richard M., Nora, Ill. Combined milk-cooler and refrigerator	299,166	May 27	1516	435	27	838
Rockwell, Lucius A. (See Fowler and Rockwell.)						
Rockwell, Rollin D. (See Willson, William H., assignor.)						
Rockwood, William E. (See Newcomb, Horatio C., assignor.)						
Rockwood, William E., assignor of one-half to H. C. Newcomb, Indianapolis, Ind. Paper pulley	300,012	June 10	648	177	27	1053
Rockwood, William E., assignor of one-half to H. C. Newcomb, Indianapolis, Ind. Paper friction-wheel	300,013	June 10	649	177	27	1053
Rockwood, William E., assignor of one-half to H. C. Newcomb, Indianapolis, Ind. Paper wheel	300,014	June 10	649	177	27	1053
Rodgers, William C., assignor of one-half to F. P. Lybrand, Owlet Green, Tex. Portable saw-mill	296,220	Apr. 1	395	112	27	76
Rodgers, William H., Brooklyn, assignor to S. E. May, New York, N. Y. Clock-work mechanism	300,015	June 10	650	177	27	1053
Roeper, Hermann, Philadelphia, Pa. Motor	297,537	Apr. 22	2081	567	27	409
Rogers, Augustus J., assignor of two-thirds to H. Mann and J. Koebig, Milwaukee, Wis. Process of and apparatus for reducing metals by electrolysis	296,357	Apr. 8	589	164	27	117
Rogers, Charles B., St. Peter, Minn. Gage-cock	300,643	June 17	1480	407	27	1213
Rogers, Charles W., Baltimore, Md. Harness-pad	297,011	Apr. 15	1400	386	27	278
Rogers, Ebenezer H., Jr., New York, N. Y. Combined liquid measure and register for bottles	298,778	May 20	1029	287	27	735
Rogers Fence Company. (See Rogers, Timothy, assignor.)						
Rogers, James H., New York, N. Y. Telephone	297,166	Apr. 22	1601	440	27	319
Rogers, James H., New York, N. Y. Telephone	297,167	Apr. 22	1602	440	27	319
Rogers, James H., New York, N. Y. Telephone	297,168	Apr. 22	1603	441	27	319
Rogers, Samuel C., and J. T. Barnard, Hamilton, Ontario, Canada. Machine for gumming and sharpening saws	299,583	June 3	105	26	27	939
Rogers, Timothy, assignor to Rogers Fence Company, Springfield, Ohio. Adjustable cresting for buildings	296,458	Apr. 8	709	196	27	140
Rogers, Timothy, assignor to Rogers Fence Company, Springfield, Ohio. Iron fence	297,295	Apr. 22	1769	480	27	350
Rohrer, Jacob B. (See Bennett, Charles H., assignor.)						
Rohrer, William H. (See Choate, Rohrer, and Ragan.)						
Roll, John E. (See Bates, Edwin M., assignor.)						
Roller Coaster Company of America. (See Stevens, Philo M., assignor.)						
Rollins, Walter A., Wyattville, county of Surrey, England. Transmitting motion	298,893	May 20	1174	328	27	763
Romans, John B., Nashville, Tenn. Turning-lathe	297,635	Apr. 29	2224	605	27	441
Romean, Auguste. (See Montgomery, Harry C., assignor.)						
Römer, Paul H. E., and M. P. Meissner, assignors to C. H. Weisbach, Chemnitz, Saxony, Germany. Machine for folding fabrics and inserting pressing-boards between the folds thereof	296,067	Apr. 1	208	60	27	42
Romig, John, Mifflinburg, Pa. Door-latch	296,221	Apr. 1	396	112	27	76
Ronninger, George S., assignor to American Buttonhole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Button-hole sewing-machine	296,626	Apr. 8	929	259 260	27	185
Rood, Albert O., assignor to V. P. Travers, New York, N. Y. Selvage for hammocks	296,459	Apr. 8	710	196	27	140
Rood, Albert O., assignor to V. P. Travers, New York, N. Y. Making hammocks	296,460	Apr. 8	710	196 197	27	141
Rood, Albert O., assignor to V. P. Travers, New York, N. Y. Making hammocks	296,027	Apr. 8	930	260	27	185
Root, Albert, Hamden, Conn. Combined level and boring-guide	297,719	Apr. 29	2334	634 635	27	463
Root, Corydon A., assignor of one-half to J. L. Applegate, Andover, Ohio. Ladder	297,088	Apr. 15	1491	413	27	295
Root, Henry, and F. A. Tucker, San Francisco, Cal. Pawl for cable-grip levers	297,452	Apr. 22	1965	537	27	387
Roots, Albert B., *et al.* (See Hinklin, Orren E., assignor.)						
Roper, Charles F. (See Roper, Sylvester H. and C. F.)						
Roper, Sylvester H., Boston, and C. F. Roper, Hopedale, assignors to F. P. Fish, trustee, Cambridge, Mass. Metal-screw machine	300,736	June 17	1600	439	27	1234
Ropp, Jerome W., Elyria, Ohio. Strap-fastener	298,408	May 13	579	162	27	644
Rorick, William J., Winfield, Kans. Water-elevator	299,014	May 20	1317	376	27	791
Rose, Carl L. F., New York, N. Y. Tobacco-soap	299,584	June 3	107	.....	27	940
Rose, Levi P. (See Salisbury, Silas C., assignor.)						
Rose, William H., Baltimore, Md. Eyelet	298,707	May 13	936	259	27	711
Rosensteel, William, assignor to Oliver Brothers & Phillips, Pittsburg, Pa. Coal-tipple	299,585	June 3	108	27	27	940
Rosenstein, Fritz. (See Duthil and Rosenstein.)						
Rosenstiehl, Daniel A. (See Poirrier and Rosenstiehl.)						
Rosenstiehl, Daniel A. (See Ronssin and Rosenstiehl.)						
Rosenthal, Louis, Frankfort-on-the-Main, Germany. Making artificial blocks, stones, &c	298,505	May 13	690	.....	27	665
Rosenzi, Enrico, assignor of one-fourth to C. F. McKenna, Pittsburg, Pa. Preserve-jar fastening	296,876	Apr. 15	1238	346	27	248
Ross, Barney, Sterling, Ohio. Wrench	296,877	Apr. 15	1238	346	27	248
Ross, Charles T., New York, N. Y. Automatic electric-circuit-closing device	298,121	May 6	197	52	27	564
Ross, Elmore W., Fulton, N. Y. Straw-cutter	295,947	Apr. 1	64	19	27	15

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ross, Philip. (See Flower and Ross.)						
Ross, Robert N., Jeffersonville, Ind., assignor of one-fourth to H. H. Keller, Louisville, Ky. Friction-clutch	298,708	May 13	937	260	27	711
Rossi, James C., Perth Amboy, N. J. Process of and apparatus for producing cold	300,133	June 10	800	215 / 216 / 217 / 218	27	1080
Rossman, George W., and J. E. Strever, Aneram, N. Y. Thill-coupling	296,787	Apr. 15	1122	316	27	228
Roswall, Lars J. A. (See Jones, Smith, and Roswall.)						
Roth, Franz. (See Gwinner, Kantsky, Dengg, and Roth.)						
Rothrock, Oscar, Beech Creek, Pa. Safety device for locomotive-pilots	297,012	Apr. 15	1401	387	27	278
Rothschild, Maier, Shamokin, Pa. Tool for boring square holes	297,013	Apr. 15	1402	387	27	278
Roughan Brothers. (See Roughan, James, assignor.)						
Roughan, James, assignor to Roughan Brothers, Boston, Mass. Coal-barrow	300,513	June 17	1304	358	27	1181
Rouleau, Felix V., Isle Verte, Quebec, Canada. Magnetic ore-separator	296,068	Apr. 1	210	61	27	43
Rousseau, David, New York, N. Y. Electric bell and annunciator	300,134	June 10	808	218	27	1082
Roussin, Zacharie, and D. A. Rosenstiehl, Paris, France, assignors to Société Anonyme des Matieres Colorantes et Produits Chimiques de St. Denis. Manufacture of yellow and orange coloring-matter	297,852	Apr. 29	2481	.....	27	491
Rowan, Arthur H., 6 Westminster Chambers, county of Middlesex, England. Tramway	299,681	June 3	252	62	27	968
Rowan, Thomas, London, England. Apparatus for ventilating water-closets, urinals, drains, sewers, &c.	297,296	Apr. 22	1770	480	27	350
Rowlands, John R., assignor to H. F. Read, Brooklyn, N. Y. Driving mechanism for fan-blowers	300,283	June 10	1009	272	27	1117
Rowlett, Anna E. (See Rowlett, Jacob V., assignor.)						
Rowlett, Carrie N., *et al.* (See Rowlett, Joseph F., assignor.)						
Rowlett, Jacob V., Richmond, Ind. Roller-skate	296,358	Apr. 8	591	164	27	118
Rowlett, Jacob V., Richmond, Ind. Coffin	298,409	May 13	579	102	27	644
Rowlett, Jacob V., Richmond, Ind. Coffin	300,737	June 17	1603	439	27	1234
Rowlett, Jacob V., Richmond, Ind., assignor to A. E. Rowlett. Wheel	300,738	June 17	1604	439	27	1234
Rowlett, Jacob V., Richmond, Ind., assignor to A. E. Rowlett. Axle-fastening	297,636	Apr. 29	2225	605	27	442
Rowlett, Joseph F., assignor to F. Dennis and C. N. Rowlett, Richmond, Ind. Weather-strip	299,167	May 27	1517	.....	27	838
Rowsell, John, assignor of one-half to De Golyer & Bro., Chicago, Ill. Bleaching, deodorizing, and sweetening benzine	296,461	Apr. 8	712	197 / 198	27	141
Roy, Joseph, Philadelphia, Pa. Horseshoe-nail machine	296,297	Apr. 1	509	142	27	96
Royall, William L. (See Schott, Henry, assignor.)						
Royle, John, Jr. (See Royle, Vernon and J., Jr.)						
Royle, Vernon and J., Jr., Paterson, N. J. Shedding mechanism for looms	298,894	May 20	1175	328	27	763
Royston, Herbert R., Chicago, Ill. Bag-holder	297,853	Apr. 29	2482	679	27	491
Rubert, Charles B., Owego, N. Y. Watch-maker's hand-vise and ring-bender	297,902	Apr. 29	2666	714	27	515
Rubin, Max, Philadelphia, Pa. Bottle-stopper	299,269	May 27	1614	469	27	862
Rubin, Max, Philadelphia, Pa. Bottle-stopper	300,308	June 17	1102	308	27	1154
Rudd, Charles L., Lake City, Minn. Apparatus for washing dishes	300,284	June 10	1012	273	27	1118
Rüdiger, Clemens, Forst, Prussia, Germany. Wool-carding engine						
Rudiger, Eugene A. (See Wegner, Gustav, assignor.)						
Ruff, Charles F., Phœnixville, Pa. Packing, lubricating, and cooling the pistons of air-compressors	296,402	Apr. 8	716	198	27	142
Ruge, William G., Washington, Mo. Folding egg-case	298,237	May 6	360	96	27	594
Ruge, William G., Washington, Mo. Folding egg-case	300,514	June 17	1304	358	27	1181
Runely, Meinrad, La Porte, Ind. Portable and traction engine	297,169	Apr. 22	1604	441	27	320
Runely, Meinrad, La Porte, Ind. Combined straw and coal or wood burning engine	297,170	Apr. 22	1605	441	27	320
Rumsey, George, Grand Rapids, Mich. Machine for making barbed staples	296,028	Apr. 8	931	260	27	195
Rumsy, Albert R., Cleveland, Ohio. Striking-bag for exercising	297,691	May 20	1418	405	27	810
Rundell, Eli, Santa Barbara, Cal. Convertible chair and bedstead	297,014	Apr. 15	1403	387	27	279
Rundell, Lorenzo D., and P. Van Valkenburgh, South Westerlo, N. Y. Thill-coupling	297,297	Apr. 22	1771	481	27	350
Runstetler, Andrew, assignor to Farmers Friend Manufactoring Company, Dayton, Ohio. Corn-planter	301,072	June 24	2010	535	27	1315
Rupp, George, Monroe City, Mo. Hame-tug and trace	297,538	Apr. 22	2083	563	27	499
Rupp, William, New York, N. Y. Manufacture of paper	296,463	Apr. 8	716	.....	27	142
Rush, William B., assignor to Chambers, Bering Quinlan Company, Decatur, Ill. Corn-planter check-rower	298,895	May 20	1170	308	27	763
Russell, Abner E., Benton, Miss. Bale-tie	298,410	May 13	580	102	27	644
Russell, Dennis L., Prairie City, assignor of one-half to J. L. King, Springfield, Ill. Tracheotomes	300,285	June 10	1015	274	27	1118
Russell, Edward H., Park City, Utah Ter. Separating precious metals from ores, &c.	296,709	Apr. 8	1023	.....	27	201
Russell, Edward H., Park City, Utah Ter. Separating metals from ores and metallurgical products and from each other	296,710	Apr. 8	1024	.....	27	204
Russell & Erwin Manufacturing Company. (See Steele, Ransom, assignor.)						
Russell, James H., St. John, New Brunswick, Canada. Snow-plow	300,016	June 10	650	178	27	1053
Russell, Philip G., Washington, D. C. Stop mechanism for clocks and watches	298,313	May 6	450	124	27	613
Russell, S. Howland, New York, N. Y. Sash-balance	297,720	Apr. 29	2336	635	27	463
Russell, S. Howland, New York, N. Y. Sash-cord fastener	298,122	May 6	198	53	27	564
Russell, Sterne, assignor to Scovill Manufactoring Company, Waterbury, Conn. Lamp-burner	297,015	Apr. 15	1404	387 / 388	27	279
Russia Cement Company. (See Brooks, Reuben, assignor.)						
Rust, Arthur E. (See Rust, Solon R. and A. E.)						
Rust, Ephraim H., Boston, Mass. Journal-box	297,016	Apr. 15	1407	388	27	279
Rust, Halbert, Jeffersonville, Ind. Bale-tie	297,721	Apr. 29	2337	635	27	463
Rust, Solon R. and A. E., Pine Meadow, Conn. Plane	300,399	June 17	1163	319	27	1154
Rutherford, Reuben C., assignor of one-third to J. Woodruff, Quincy, Ill. Fire-escape	297,089	Apr. 15	1402	413	27	295
Rutschman, Francis S., Philadelphia, Pa. Machine for plotting soap, &c.	296,878	Apr. 15	1239	346	27	246
Rutson, Charles, *et al.* (See Desmond, John, assignor.)						
Rutz, Edward, Chicago, Ill. Fence-post	296,069	Apr. 1	211	61	27	43
Rutz, Edward, Chicago, Ill. Fence-post	296,070	Apr. 1	212	61	27	43
Ruwart, Henry, Jefferson City, Mo. Side-saddle	296,711	Apr. 8	1025	287	27	204
Ryan, Francis D., assignor of one-half to W. H. Stone, St. Louis, Mo. Siphon	300,328	June 10	1064	288	27	1127
Ryan, James T. (See Hill and Ryan.)						
Ryan, John J. (See Pratt and Ryan.)						
Ryan, Thomas, assignor of one-half to W. McLean, Lockport, N. Y. Friction-clutch	299,939	June 3	541	144	27	1024
Ryder, Charles M., Chester, Pa. Open-hearth steel-melting furnace	298,028	May 6	88	23	27	544

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ryder, Martin H., assignor of one-half to E. A. White, Stamford, Conn. Sewing-machine for brace-wiring hats	298,314	May 6	460	124	27	614
Ryder, Martin H., assignor of three-fourths to E. A. White, Stamford, Conn., and Willcox & Gibbs Sewing Machine Company, New York, N. Y. Sewing-machine tension	298,315	May 6	462	124	27	614
Ryerson, Lucius L., Boston, Mass. Roller-skate	299,682	June 3	254	63	27	968
Ryle, William T. (See Binns, Leedham, assignor.)						
Rymal, John J., Milwaukee, Wis. Gearing	300,801	June 24	1681	460	27	1253
Sachs, J. Julius, Manchester, county of Lancaster, England. Producing roller-surfaces for printing, stamping, or embossing	297,017	Apr. 15	1407	.....	27	279
Sachs, Joseph J., London, England. Sand-blast apparatus	299,270	May 27	1635	469	27	862
Sackett, Joseph S., *et al.* (See Lavigne, Joseph P., assignor.)						
Sackett, Joseph S., and J. P. Lavigne, New Haven, assignors to Sackett Manufacturing Company, Wallingford, Conn. Embroidery attachment for sewing-machines	300,644	June 17	1480	407	27	1213
Sackett Manufacturing Company. (See Sackett and Lavigne, assignors.)						
Sacks, Millard F., Pittston, Pa. Frame for displaying goods	299,586	June 3	109	27	27	940
Sage, Aldis E., assignor of one-half to J. G. Emery, Jr., Minneapolis, Minn. Pen-holder	298,411	May 13	581	102	27	644
Saginaw Manufacturing Company. (See Noyes, Walter B., assignor.)						
Saladee, Cyrus W., Torrington, Conn. Vehicle-spring	296,350	Apr. 8	592	164	27	118
Saladee, Cyrus W., Torrington, Conn. Side-bar vehicle	298,123	May 6	198	53	27	565
Saladee, Cyrus W., Torrington, Conn. Two-wheeled vehicle	298,412	May 13	581	163	27	644
Saladee, Cyrus W., Torrington, Conn. Two-wheeled vehicle	298,413	May 13	583	163 / 164	27	645
Saladee, Cyrus W., Torrington, Conn. Two-wheeled vehicle	298,414	May 13	584	164	27	645
Saladee, Cyrus W., Torrington, Conn. Two-wheeled vehicle	298,415	May 13	586	165	27	646
Saladee, Cyrus W., Torrington, Conn. Road-cart	298,416	May 13	586	165	27	646
Saladee, Cyrus W., Torrington, Conn. Two-wheeled vehicle	299,015	May 20	1318	376	27	791
Sales, William B., Oshkosh, Wis. Toy	296,788	Apr. 15	1123	316	27	228
Salie, William T., Bowdenham, Me. Vessel for containing liquids	300,135	June 10	810	218	27	1082
Salisbury, Henry T., Pawtucket, R. I. Locked fastening for watch-chains	300,286	June 10	1017	274	27	1118
Salisbury, Henry T., Pawtucket, R. I. Bracelet						
Salisbury, Silas C., New York, assignor to L. P. Rose, Yonkers, N. Y. Process of and apparatus for manufacturing illuminating-gas	300,802	June 24	1683	460	27	1253
Salisbury, Silas C., New York, assignor to L. P. Rose, Yonkers, N. Y. Process of and apparatus for manufacturing illuminating-gas	300,803	June 24	1685	461	27	1254
Saltzer, Isaac J., assignor of one-half to J. G. Eckert, Prescott, Pa. Sash-fastener	297,953	Apr. 29	2607	714	27	515
Sample, Henry C., Philadelphia, Pa. Adjustable lid for vessels	297,854	Apr. 29	2483	680	27	492
Sampson, General W., Springfield, Iowa. Locking-nut. (Reissue)	10,476	May 6	492	133	27	620
Sampson, Edwin H. (See Shepley, Granville T., assignor.)						
Sampson, Edwin H. (See Thompson, Asa H., assignor.)						
Sanborn, George E. (See Kraus, Herman T. C., assignor.)						
Sandelin, Nils F., Chicago, Ill. Window	300,136	June 10	812	219	27	1082
Sanderlin, Thomas M., *et al.* (See Mercer, Alfonso, assignor.)						
Sanderlin, William, *et al.* (See Mercer, Alfonso, assignor.)						
Sanders, Amos, and R. S. Henderson, Philadelphia, Pa. Guiding and supporting device for doors	296,629	Apr. 8	933	261	27	195
Sanderson, David, Ottawa, Ill. Air-cooling refrigerator	296,071	Apr. 1	213	61	27	43
Sanford, George W., assignor of one-third to P. McCain, Thomaston, Conn. Wick-raiser	298,779	May 20	1030	288	27	736
Sanford, Richard, Providence, R. I. Button-fastener	298,316	May 6	463	125	27	614
Sanford, Richard, assignor to Heaton Button Fastener Company, Providence, R. I. Button-fastener	298,506	May 13	691	195	27	665
Sanguinetti, Charles A. (See Bang and Sanguinetti.)						
Sankey, Richard J., London, England. Stoppering bottles for aerated or gaseous liquids	297,298	Apr. 22	1772	481	27	350
Santley, William R., Wellington, Ohio. Machine-belt holder	298,238	May 6	361	96	27	594
Sargent, Allan C. (See Sargent, Frederick G. and A. C.)						
Sargent, Elbanan W., Lowell, Mass. Scavenger mechanism for spinning, drawing, and twisting machinery	299,855	June 3	441	114	27	1006
Sargent, Frederick G. and A. C., Granileville, Mass. Machine for burring and cleaning wool	299,016	May 20	1319	377	27	791
Sater, Hans H., Dubuque, Iowa. Cultivator	297,637	Apr. 29	2226	605	27	442
Sater, Hans H., Dubuque, Iowa. Harrow	300,017	June 10	651	178	27	1053
Saum, Stephen A., Kellogg, Iowa. Pump-spout	300,900	June 24	1805	494	27	1277
Saunders, Emmett A., assignor to Goodyear's Metallic Rubber Shoe Company, Naugatuck, Conn. Overshoe	298,239	May 6	362	96	27	595
Saunders, William L., Jersey City, N. J. Carriage for rock-drills	298,625	May 13	829	231	27	691
Saunders, William L., Jersey City, N. J. Stone-channeling machine	299,092	May 20	1419	405	27	810
Saunders, William L., Jersey City, N. J. Stone-cutting machine	299,093	May 20	1420	405	27	810
Saunders, William M., Alfred Centre, N. Y. Trip mechanism for horse hay-rakes	299,423	May 27	1840	526	27	897
Saunders, William M., Alfred Centre, N. Y. Trip mechanism for horse hay-rakes	300,739	June 17	1604	440	27	1234
Savage, Benjamin O., assignor to L. O. Savage, Scotland Neck, N. C. Cotton-harvester						
Savage, Lelian O. (See Savage, Benjamin O., assignor.)						
Savage, Winslow H., Bingham, Me. Wire-cutting machine	298,240	May 6	364	96	27	595
Sawin, Edward H., Gardner, Mass. Machine for drying grain, &c.	299,683	June 3	255	63	27	968
Sawyer, Howard D. (See Post and Sawyer.)						
Sawyer, Nelson, Hartford, Conn., assignor to W. A. Downes, Sing Sing, N. Y. Tap-wrench	298,029	May 6	89	23	27	544
Sawyer, Nelson, Hartford, Conn., assignor to W. A. Downs, Sing Sing, N. Y. Die-stock and die	300,901	June 24	1806	494	27	1277
Sawyer, William A., Danversport, Mass. Leather drying and pressing machine	295,948	Apr. 1	65	19	27	15
Sawyer, William H., Providence, R. I. Electric cable	297,855	Apr. 29	2484	680	27	492
Sawyer, William H., Providence, R. I. Apparatus for applying paint to wire	298,806	May 20	1177	329	27	764
Sawyers, Theodore K., assignor of one-half to C. Cook, Mooresville, Ind. Road scraper and leveler	300,287	June 10	1017	274 / 275	27	1119
Saxe, Charles A., Philadelphia, Pa. Electro-magnetic motor	298,507	May 13	692	196	27	665
Saxe, Matthew D., Troy, N. Y. Coffee-can	300,137	June 10	812	219	27	1082
Sayre, James B., Sacramento, Cal. Combined buckle and ring	299,271	May 27	1636	470	27	862
Scannell, Roger F., Boston, Mass. Gasometer for washing carbonic-acid gas	300,018	June 10	652	178	27	1054
Scannell, Roger F., Boston, Mass. Agitator device for carbonizing liquids	300,019	June 10	654	178	27	1054
Scantlin, J. M. (See Scantlin, Thomas and J. M.)						
Scantlin, Thomas and J. M., Evansville, Ind. Evaporator-furnace	296,072	Apr. 1	213	62	27	43
Scattergood, Charles F. (See Scattergood, Henry V. and C. F.)						
Scattergood, Henry V. and C. F., Albany, N. Y. Baling-press	297,299	Apr. 22	1773	481	27	350
Scoots, George N., Evansville, Ind. Brake-shoe	298,897	May 20	1172	329	27	764
Schaefer, Adam, Sharpsburg, Pa. Using natural gas as a fuel	297,638	Apr. 29	2227	605 / 606	27	442
Schafer, Theodore, Marsa, Ill. Chalk-sharpener	299,856	June 3	442	114	27	1006
Schaffer, Charles M., assignor to himself, J. T. Ritchelg, C. C. and G. W. Allen, Louisville, Ky. Velocipede	297,300	Apr. 22	1775	482	27	351

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Scharban, Louis J. F. W., Hamburg, Germany. Machine for bolting flour or other pulverized substances	299,684	June 3	256	63	27	968
Schell, Abraham. (See Robinson, Albert S., assignor.)						
Schemmel, Rudolph J., Wapakoneta, Ohio. Tool-holder	299,424	May 27	1892	526	27	898
Schenck, Junius, and B. L. Stowe, Brooklyn, assignors to Eureka Fire Hose Company, New York, N. Y. Seamless multiply-fabric hose	299,017	May 20	1320	377	27	792
Schenck, Junius, and B. L. Stowe, Brooklyn, assignors to Eureka Fire Hose Company, New York, N. Y. Seamless multiply-fabric hose	299,018	May 20	1321	378	27	792
Scherer, Cass B., Cicero, Ind. Band-cutting and feeding attachment for thrashing-machines	300,645	June 17	1482	{407 / 408}	27	1214
Scherer, John, Baltimore, Md. Hatchway-guard	300,138	June 10	813	{219 / 220}	27	1082
Scherff, Edward, Wendisch-Buchholz, Prussia, Germany. Preserving milk. (Reissue)	10,491	June 24	2017	.....	27	1316
Schering, Ernst, Charlottenburg, Prussia, Germany, assignor to Bachrach & Bro., Baltimore, Md. Preparation of collodion	299,857	June 3	443	.....	27	1066
Scherling, John, assignor of one-half to L. D. Randall & Co., Dubuque, Iowa. Pad-fastening for horse-collars	298,626	May 13	830	232	27	691
Schild, George F., Vallejo, Cal. Amplifier	300,094	June 24	1687	461	27	1254
Schild, Henry J., Stanton, Mich. Vehicle-spring	300,020	June 10	655	179	27	1054
Schiller, Charles J. (See McMunn, Schiller, and Leigh.)						
Schiller, Charles J. (See Poor and Schiller.)						
Schiller, John G., Youngstown, Ohio. Fire-escape	300,902	June 24	1808	{494 / 495}	27	1277
Schillinger, John J., New York, N. Y. Waterproofing cellars, &c	299,425	May 27	1892	527	27	898
Schimmel, Rudolf, Annaberg, Germany. Manufacturing chair-seats of vegetable fiber and chromic acid	297,639	Apr. 29	2228	606	27	442
Schlagall, Solomon, St. Petersburg, Russia. Electric clock	300,139	June 10	814	220	27	1083
Schlechter, Gustavus A., Reading, Pa. Pencil-clasp	297,722	Apr. 29	2238	635	27	463
Schleicher, Adolph W. (See Rohb and Schleicher.)						
Schlumm, Michael, and P. Ackermann, Milwaukee, Wis. Machine for bending metallic hoops	300,140	June 10	816	{220 / 221}	27	1083
Schlüter, Charles, et al. (See Long, Oliver, assignor.)						
Schmemann, Friedrich, Philadelphia, Pa. Wrench	297,640	Apr. 29	2229	606	27	442
Schmickl, Matthäus, New York, N. Y. Traveling-bag	299,272	May 27	1637	470	27	882
Schmid, Albert, Zurich, Switzerland. Automatic electric copying and engraving machine	298,030	May 6	90	24	27	544
Schmidt, Friedrich E., Brooklyn, N. Y. Button-hole sewing-machine	299,168	May 27	1518	{435 / 436}	27	839
Schmidt, Robert G. (See Volgt, Max, assignor.)						
Schmitt, Phillip L., Quincy, Ill. Lubricator	301,010	June 24	1937	535	27	1301
Schmitz, Ernst, assignor to himself, J. F. Tenney, and R. Schmitz, Chicago, Ill. Self-inking hand stamp and dater combined	297,836	Apr. 29	2485	{680 / 681}	27	492
Schmitz, Richard, et al. (See Schmitz, Ernst, assignor.)						
Schneider, Alois, San Francisco, Cal. Rifling guns	300,515	June 17	1306	358	27	1182
Schneider, Charles, and C. Pfanne, Washington, D. C. Pulley bracket and block	298,241	May 6	365	97	27	595
Schneider, Hugo, Cleveland, Ohio. Fire-plug and hydrant	299,858	June 3	444	{114 / 115}	27	1067
Schueller, George O., Ansonia, Conn. Eyeleting-machine	299,019	May 20	1322	378	27	792
Schueller, George O., Ansonia, Conn. Punch and die for eyeleting-machines	299,273	May 27	1638	470	27	882
Schoby, Howard, Plain City, Ohio. Whip-holder	298,027	May 13	830	232	27	691
Schoenstedt, Christopher L., Monee, Ill. Cultivator	301,011	June 24	1938	535	27	1301
Schoggen, James B., Mountain Home, Ark. Churn	296,630	Apr. 8	934	261	27	186
Schönhevder, William A. G., Shepherd's Bush, county of Middlesex, assignor of one-half H. Olrick, London, England. Sight-feed lubricator	298,898	May 20	1179	{329 / 330}	27	764
Schott, Henry, Richmond, Va., assignor of one-half to W. L. Royall, New York, N. Y. Printing-machine	300,141	June 10	818	221	27	1083
Schreiber, Charles W., assignor of one-half to J. S. Morgan, Dubuque, Iowa. Pump	300,903	June 24	1810	495	27	1278
Schreifer, Otto, et al. (See Jordan, Michael, assignor.)						
Schreiner, Henry, Sharon, Mass. Grate for stoves and furnaces	300,904	June 24	1811	495	27	1278
Schroeder, August, Stettin, Germany. Voltaic pile	296,464	Apr. 8	717	198	27	142
Schubiger, Benjamin A., assignor to himself, W. Starr, and Kirk & Starr, Montoursville, Pa. Automatic felt-guide for paper-machines	296,222	Apr. 1	397	113	27	76
Schuch, Samuel, assignor to E. Over, Indianapolis, Ind. Shaft-bearing in wheels	296,465	Apr. 8	717	198	27	142
Schneddig, Ferdinand, St. Louis, Mo. Sandstone-crandall	298,417	May 13	588	166	27	646
Schuetz, Charles, Newark, N. J. Watch-case	296,631	Apr. 8	935	261	27	186
Schug, Martin H., Easton, Pa. Washing-machine	300,646	June 17	1484	402	27	1214
Schulze-Berge, Hermann, Rochester, Pa. Blast-furnace	296,225	Apr. 1	404	114	27	77
Schulze-Berge, Hermann, Rochester, Pa. Glass-melting furnace	296,227	Apr. 1	407	114	27	78
Schulze-Berge, Hermann, Rochester, assignor to himself and J. H. Lippincott, Pittsburg, Pa. Applying fusible metallic colors to china and glass ware	296,226	Apr. 1	406	.....	26	77
Schulze-Berge, Hermann, Rochester, assignor to himself and J. H. Lippincott, Pittsburg, Pa. Apparatus for applying powdered substances to surfaces of glass	296,228	Apr. 1	410	115	27	78
Schulze-Berge, Hermann, assignor to himself and J. H. Lippincott, Pittsburg, Pa. Apparatus for decorating china and glass ware	296,223	Apr. 1	398	113	27	77
Schulze-Berge, Hermann, assignor to himself and J. H. Lippincott, Pittsburg, Pa. Machinery for decorating glassware	296,224	Apr. 1	400	113	27	77
Schumacher, Caspar, Kalk, Germany. Ratchet-drill	297,171	Apr. 22	1606	442	27	320
Schumacher, Fr. (See Stickel, Conrad, assignor.)						
Schureman, Howard B., Newark, N. J. Horseshoe	298,899	May 20	1181	331	27	765
Schutz, Joseph M., Minneapolis, Minn. Machine for grading and purifying middlings	298,900	May 20	1181	{331 / 332}	27	765
Schwartz, Charles O., Milwaukee, Wis. Oil-stove	299,426	May 27	1893	527	27	898
Schwarzschild, Samuel, New York, N. Y. Jacketed oleomargarine-churn	299,085	June 3	257	63	27	968
Schwebs, Herman A., Chicago, Ill. Carpet-fastener	297,453	Apr. 22	1966	537	27	388
Schweer, Charles, Eldon, Iowa. Sulky-plow	299,020	May 20	1325	{378 / 379}	27	792
Schweitzer, Herman, Brooklyn, N. Y. Clutch	298,780	May 20	1030	288	27	736
Schwenk, Samuel Z. (See Hoffman, Ellis, and Schwenk.)						
Schwerin, Morris, New York, N. Y. Combined bag-catch and strap-loop	299,274	May 27	1640	470	27	882
Schwitter, Anton, Brooklyn, N. Y. Rose-engine	297,454	Apr. 22	1967	538	27	388
Schweb, John A., Moundsville, W. Va. Heel-ring for scythes	299,859	June 3	446	115	27	1067
Scofield, William C., Cleveland, Ohio. Paraffine-freezer	299,860	June 3	446	115	27	1067
Scollay, William A., assignor of one-fourth to W. Bradford, San Francisco, Cal. Balance-tip for brooms	296,879	Apr. 15	1246	347	27	248

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Scott, Albert L., et al. (See Baldwin, George E. D., assignor.)						
Scott, Charles B., Las Vegas, N. Mex. Ter. Machine-gun	299,686	June 3	258	64	27	968
Scott, George P., assignor of one-half to D. A. Clarke, Sedalia, Mo. Saw	300,805	June 24	1688	461	27	1254
Scott, Legrand, Nashville, Tenn. Fence-post	296,632	Apr. 8	937	261	27	186
Scott Manufacturing Company of Baltimore City. (See Hilmer, William F., assignor.)						
Scott, Oliver P., Quincy, Ill. Printing and vignetting frame	298,901	May 20	1183	332	27	765
Scott, Walter, Plainfield, N. J. Printing-machine	298,781	May 20	1032	{288 / 289}	27	736
Scott, William, Malden, Mass. Valve for water-closets, &c	297,455	Apr. 22	1969	538	27	388
Scovil, Lyman A., Williamsport, Ohio. Corn-planter	298,782	May 20	1034	{289 / 290}	27	736
Scovill Manufacturing Company. (See Munger, Joseph, assignor.)						
Scovill Manufacturing Company. (See Russell, Sterne, assignor.)						
Scovill Manufacturing Company. (See Spruce, James, assignor.)						
Scoville, Avery. (See Scoville, Ives and A.)						
Scoville, Ives. (See Austin and Scoville.)	300,142	June 10	819	221	27	1083
Scoville, Ives and A., Oakland, Cal. Hoisting-gear						
Scribner, Charles E., Chicago, Ill., assignor, by mesne assignments, to American Bell Telephone Company, Boston, Mass. Receiving-telephone	298,783	May 20	1037	290	27	737
Scribner, Charles E., assignor, by mesne assignments, to Western Electric Company, Chicago, Ill. Spring-jack for telephone systems	300,143	June 10	821	222	27	1084
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Derived circuit for clearing-out annunciators	300,144	June 10	821	222	27	1084
Scribner, Edwin A., Ridgefield Park, N. J. Blotting-pad	298,124	May 6	200	53	27	595
Scriven, John H., Grafton, N. Y. Shirt	297,018	Apr. 15	1408	388	27	279
Scull, James, assignor of one-half to S. Vance, Jersey City, N. J. Machine for making green-sand cores	297,172	Apr. 22	1607	442	27	320
Scull, James, assignor of one-half to S. Vance, Jersey City, N. J. Manufacture of green-sand cores	296,880	Apr. 15	1241	347	27	248
Scull, James, assignor to himself and S. Vance, Jersey City, N. J. Machine for making green-sand cores	298,902	May 20	1184	332	27	765
Seabury, Frederick W., Providence, R. I. Dental vulcanizer	299,861	June 3	447	115	27	1007
Seaman, Allen E., Astoria, N. Y. Stuffing-box jack	298,903	May 20	1184	333	27	765
Seaman, John W. (See Crandall, Jesse A., assignor.)						
Sears, Frank M., East Saginaw, Mich. Door-check	296,229	Apr. 1	412	115	27	78
Seaton, Charles S., Cleveland, Ohio. Belt-heading machine	296,073	Apr. 1	215	62	27	44
Secor, Jerome B., Bridgeport, Conn. Clutch for sewing-machine wheels	301,012	June 24	1939	536	27	1302
Security Package Company. (See Mattullath, Hugo, assignor.)						
Seeley, David W. and W. W., Albany, N. Y. Lever-power	297,954	Apr. 29	2608	715	27	515
Seeley, David W. and W. W., assignors of one-fourth to W. H. King, Albany, N. Y. Lever-power	296,406	Apr. 8	718	199	27	142
Seeley, George H., et al. (See Low, Jesse B., assignor.)						
Seeley, Nathan, et al. (See Low, Jesse B., assignor.)						
Seeley, William W. (See Seeley, David W. and W. W.)						
Seely, Horace C., Philadelphia, Pa. Child's carriage	298,784	May 20	1038	291	27	737
Seely, Horace C., Philadelphia, Pa. Child's carriage	298,785	May 20	1041	291	27	737
Seely, Horace C., Philadelphia, Pa. Child's carriage	296,881	Apr. 15	1242	347	27	248
Seely, John A., New York, N. Y. Insulator	296,882	Apr. 15	1243	347	27	249
Seibel, Henry J., Jr., and S. M., Philadelphia, Pa. Leggin						
Seibel, Sallie M. (See Seibel, Henry J., Jr., and S. M.)						
Seibert, Nicholas, Maplewood, assignor of three-eighths to O. E. Simmons, Boston, and E. W. Simmons, Jamaica Plain, Mass. Water-meter	297,301	Apr. 22	1776	482	27	351
Seiffert, Rudolf, Chicago, Ill. Safety attachment for elevators	296,883	Apr. 15	1244	348	27	249
Seiler, Paul, San Francisco, Cal. Electric annunciator	298,242	May 6	366	97	27	595
Seiler, Philipp, assignor of one-half to W. Eisfeldt, Chicago, Ill. Snuff and match box	299,687	June 3	260	64	27	969
Seldomridge, Justus F. (See Copley, Seldomridge, and De La Vergne.)						
Seliger, Frank, New York, N. Y. Hat and coat hook	297,173	Apr. 22	1608	442	27	321
Seligman, Emma. (See Seligman, Henry and E.)						
Seligman, Henry and E., Irvington, N. Y. Mechanical telephone	296,230	Apr. 1	413	115	27	78
Seligman, Henry and E., Irvington, N. Y. Mechanical telephone	296,633	Apr. 8	937	262	27	186
Sell, Fred. (See Klaeser and Sell.)						
Sells, Hugh, Toronto, Ontario, Canada. Friction-clamp	298,038	May 13	831	232	27	691
Sellers, Jacob C., Marshfield, Mo. Mechanical power						
Sellon, Robert P., Surbiton, county of Surrey, England. Apparatus for charging secondary batteries	299,021	May 20	1327	379	27	793
Sellwood, Joseph, and S. J. Harry, Ishpeming, Mich. Ventilating apparatus	296,634	Apr. 8	938	262	27	187
Selve, Gustav, Altena, Westphalia, Prussia, Germany. Manufacturing metal alloys	296,884	Apr. 15	1244	348	27	249
Semple, James, Cincinnati, Ohio. Water-closet	300,905	June 24	1812	495	27	1278
Sencenbaugh, Samuel S., Aurora, Ill. Tag-fastener	298,629	May 13	832	232	27	691
Sergeant, Henry C., Denver, Colo. Chuck for rock-drills	297,456	Apr. 22	1971	538	27	389
Sergeant, Raphael, Pittsburg, assignor to T. B. Kerr, Allegheny City, Pa. Warning device for wire fences	299,169	May 27	1521	436	27	839
Settle, Edward R., Coventry, county of Warwick, England. Velocipede	300,516	June 17	1307	258	27	1182
Severance, James R., Fremont, Ohio. Harvester	296,231	Apr. 1	414	116	27	79
Severance, James R., Fremont, Ohio. Mowing-machine	296,232	Apr. 1	416	{116 / 117}	27	79
Severance, James R., Fremont, Ohio. Grain-delivering apparatus for harvesters	297,721	Apr. 29	2339	636	27	464
Sevier, M. N., et al. (See Brown, Azariah R., assignor.)						
Seward & Son, M. (See Cooper, William H., assignor.)						
Sewell, Alfred L., Evanston, Ill. Paper wallet	295,949	Apr. 1	66	20	27	15
Seymour, H. A. (See Turner, Thomas G., assignor.)						
Seymour, Theodore, et al. (See Doty, John C., assignor.)						
Seymour, Theodore L., Albany, N. Y. Bottle	297,174	Apr. 22	1609	442	27	321
Seymour, Theodore L., Albany, N. Y. Bottle	299,170	May 27	1521	436	27	839
Shafer, Casper B., Washington, D. C. Funnel	299,022	May 20	1330	{379 / 380}	27	793
Shaffer, Abraham, Cassopolis, Mich. Gang-plow						
Shaffer, Joseph, assignor of one-half to E. F. Cooper, Dayton, Ohio. Machine for forming cruppers	300,021	June 10	656	179	27	1054
Shakespeare, Benjamin F., Chester, Pa. Car starter and brake	299,023	May 20	1332	380	27	793
Shaler, Henry L., Deep River, Conn. Auger	298,786	May 20	1041	291	27	738
Shannon, Robert A. (See Nicholson, William H., assignor.)						
Sharp, John H., Doylestown, Pa. Speed-regulator	300,647	June 17	1485	{408 / 409}	27	1214
Sharp, Richard B. (See Taylor and Sharp.)						
Sharpe, William A., Tama, Iowa. Corn-planter	300,906	June 24	1689	{401 / 402}	27	1254

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sharpnack, William N., and M. McMahon, assignors of one-half to G. Donnenwirth, Jr., and J. C. Tobias, Bucyrus, Ohio. Separator and smutter	301,013	June 24	1940	536, 537	27	1302
Sharpnack, William N., and M. McMahon, assignors of one-half to G. Donnenwirth, Jr., and J. C. Tobias, Bucyrus, Ohio. Separator and smutter	301,073	June 24	2011	555, 556	27	1315
Sharpneck, William S., assignor to Nichols Manufacturing Company, Denver, Colo. Steam-power stamp	296,789	Apr. 15	1123	316	27	228
Shaver, George F., Erie, Pa., assignor to Consolidated Telephone Company, of New Jersey. Mechanical telephone exchange	298,243	May 6	367	97	27	595
Shaver, Isaac. (See Dupas, Octave, assignor.)						
Shaw, Benjamin F. (See Hoocher, John, assignor.)						
Shaw Door Check and Spring Company. (See Clark, Walter C., assignor.)						
Shaw, Edward, and R. A. Owings, Mattoon, Ill. Heel-stiffener	300,022	June 10	657	179	27	1054
Shaw, Francis H., Newark, N. J. Manufacture of bricks made of glass	298,418	May 13	589	166	27	646
Shaw, Genio M., Pittsburg, Pa. Ratchet apparatus for chain-pumps	299,171	May 27	1702	436	27	859
Shaw, Henry A., and E. D. Chidley, Toronto, Ontario, Canada. Securing box-covers	299,276	May 27	1641	471	27	863
Shaw, Joseph W., St. Louis Mo. Damper	299,172	May 27	1524	437	27	839
Shaw, Loring D., Melrose, assignor of one-eighth to E. Howard, Boston, Mass. Automatic brake mechanism for hand-power elevators	299,173	May 27	1525	437	27	839
Shaw, Robert, Philadelphia, Pa. Sheet-metal jug	298,244	May 6	370	98	27	596
Shaw, Thomas, Newark, N. J., assignor to W. H. Ritter, New York, N. Y. Manufacture of electrical conductors	296,074	Apr. 1	216	63	27	44
Shaw, William A., Pittsburg, Pa., assignor to Electrical Accumulator Company, New York, N. Y. Secondary battery	297,457	Apr. 22	1972	508	27	389
Shawk, George W., and A. S. Wetmore, Cleveland, Ohio. Hydrant-filter	299,275	May 27	1640	471	27	863
Shay, Daniel J., New York, N. Y. Device for controlling runaway horses	299,174	May 27	1526	437	27	840
Shead, Louis A. (See Fairfield and Shead.)						
Shead, Louis A., Alameda, Cal., and H. P. Fairfield, West Medford, Mass., assignors to G. McKay, trustee. Ore-separator	296,075	Apr. 1	217	63	27	44
Sheeler, Davis W. (See Lewis, Charles, assignor.)						
Sheeran, Frank. (See Ivett, Ephraim, assignor.)						
Sheets, John M., Nora Springs, Iowa. Chimney-top and ventilator	299,175	May 27	1527	438	27	840
Shelbourne, Sidney F., New York, N. Y. Insulated electric conductor or cable	297,175	Apr. 22	1609	443	27	321
Shelbourne, Sidney F., New York, N. Y. Anti-induction electric conductor	297,176	Apr. 22	1611	443	27	321
Shelbourne, Sidney F., New York, N. Y. Electric cable	297,177	Apr. 22	1613	443, 444	27	321
Shelbourne, Sidney F., New York, N. Y. Controlling and limiting induction	297,178	Apr. 22	1614	444	27	321
Shelbourne, Sidney F., New York, N. Y. Laying subterranean cables	297,179	Apr. 22	1616	444	27	322
Shelbourne, Sidney F., New York, N. Y. Submarine-telegraph cable	297,180	Apr. 22	1617	444	27	322
Shelbourne, Sidney F., New York, N. Y. Method of and apparatus for insulating electric cables	297,181	Apr. 22	1618	445	27	322
Shelbourne, Sidney F., New York, N. Y. Combined electric-light and telegraph post	297,182	Apr. 22	1620	445	27	322
Shelbourne, Sidney F., New York, N. Y. Conduit and attachment for electric conductors	297,183	Apr. 22	1622	445	27	323
Shelbourne, Sidney F., New York, N. Y. Protecting electric conductors from induction	297,184	Apr. 22	1623	445	27	323
Shelby, Christopher C., New York, N. Y. Suspender-end	296,076	Apr. 1	218	63	27	44
Shelby, Christopher C., New York, N. Y. Clasp for garments	298,031	May 6	91	24	27	544
Shelby, Christopher C., New York, N. Y. Clasp	298,508	May 13	693	196	27	665
Shelby, Christopher C., New York, N. Y. Clasp	299,587	June 3	110	27	27	940
Shelby, Christopher C., New York, N. Y. Suspender-buckle	296,233	Apr. 1	419	117	27	79
Sheldon, Nathaniel B., Rochester, N. Y. Car-coupling	298,032	May 6	92	24	27	544
Shellaberger, George H., Mount Vernon, Ohio. Machine for manufacturing fences	300,517	June 17	1368	359	27	1182
Shellaberger, George H., Mount Vernon, Ohio. Machine for making fences	297,641	Apr. 29	2229	606, 607	27	443
Shelley, George. (See Howells and Shelley.)						
Shenfield, Conrad, *et al.* (See Peyton, William E., assignor.)						
Shepard, Frederick M., East Orange, N. J. Rubber shoe	298,419	May 13	589	166	27	646
Shepard, George E., Jersey City, N. J., assignor to Hall, Nicoll & Granberry, New York, N. Y. Case for lawn-tennis implements	298,125	May 6	201	53	27	595
Shepard, Morrill A., Lebanon, Ill. Combined chain and elevator-bucket	300,518	June 17	1369	359	27	1182
Shepard, Wilbur L., Hartford, Conn. Pump	300,409	June 17	1164	319	27	1155
Shepard, Wilbur L., Hartford, assignor to M. W. Beach, Bristol, Conn. Compound steam-engine	298,630	May 13	833	233	27	691
Shepherd, Joseph H., Newton, assignor to A. D. Puffer, Medford, Mass. Apparatus for dispensing aerated waters	300,288	June 10	1019	275	27	1119
Shepherd, Pleasant R. (See Clapp, George N., assignor.)						
Shepherd, William L., Danville, Iowa. Traction-engine	299,427	May 27	1834	527	27	898
Shepler, Pius L., Toledo, Ohio. Furniture	299,588	June 3	111	27, 28	27	940
Shepley, Granville T., West Groton, assignor to E. H. Sampson, Boston, Mass. Machine for forming counter-stiffeners	298,420	May 13	590	166	27	647
Shepley, De Lana, Boston, Mass. Bonnet	299,024	May 20	1334	380	27	794
Sheppard, John L., Charleston, S. C. Machine for mixing grain	298,904	May 20	1185	333, 334	27	766
Sheridan, Henry B., Cleveland, Ohio. Laryngoscope	299,277	May 27	1642	471	27	863
Sheridan, Henry B., Cleveland, Ohio, and H. A. Gorn, New York, N. Y. Electric motor	300,643	June 17	1486	409	27	1214
Sherman, Edwin F., Springfield, Mass. Fire-escape	296,298	Apr. 1	512	134	27	96
Sherman, George B., and J. Nutt, Danbury, Conn.; said Nutt assignor to said Sherman. Machine for bending hat-wires	299,278	May 27	1643	471, 472, 473	27	863
Sherman, George B., and J. Nutt, Danbury, Conn.; said Nutt assignor to said Sherman. Wire frame for hat-brims	299,279	May 27	1648	473	27	864
Sherman, John A., Boston, Mass. Pneumatic door-check	298,787	May 20	1042	292	27	738
Sherman, John A., Boston, Mass. Pneumatic door-check	298,788	May 20	1044	292	27	738
Sherman, John A., Boston, Mass., assignor of one-half to W. P. Ward, New York, N. Y. Device for transmitting power	298,317	May 6	404	125	27	614
Sherman, John A., Boston, Mass., assignor of one-half to W. P. Ward, New York, N. Y. Tool	298,421	May 13	591	167	27	647
Sherman, John W., New York, N. Y. Theatrical appliance	296,467	Apr. 8	720	199	27	143
Sherman, Josiah, Atlanta, Ga. Cultivator and cotton-chopper	300,649	June 17	1487	409, 410	27	1214
Sherman, Josiah, Atlanta, Ga. Cultivator and cotton-chopper	300,650	June 17	1489	410	27	1215
Sherriff, William J. (See McFeeley, George, assignor.)						
Sherwood Brothers. (See Sherwood, William D., assignor.)						
Sherwood, Daniel, and G. D. Dudley, assignors to Woods, Sherwood & Co., Lowell, Mass. Wire table-caster	299,688	June 3	261	64, 65	27	969

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sherwood, Daniel, and G. D. Dudley, assignors to Woods, Sherwood & Co., Lowell, Mass. Table-caster	299,689	June 3	262	65	27	969
Sherwood, Henry L., North Hoosick, N. Y. Spring-board wagon	298,245	May 6	370	98	27	596
Sherwood, Hugh M., Linton, Ind. Harrow	295,950	Apr. 1	66	20	27	16
Sherwood, William D., assignor to Sherwood Brothers, New Brighton, Pa. Cover for jars	300,966	June 24	1813	406	27	1279
Sherwood, Willis H., St. Joseph, Mo. Fishing-bait kettle	299,690	June 3	263	65	27	969
Shew, Jacob, assignor of one-half to H. C. Downward, Wilmington, Del. Let-off mechanism for looms	297,619	Apr. 15	1409	388	27	279
Shick, Daniel W., and C. O. Cole, Grand View, Iowa. Mechanical automatic cigar-seller	296,408	Apr. 8	722	199, 200	27	143
Shimer, Samuel J., Milton, Pa. Knife for wood-working machines	296,077	Apr. 1	218	63	27	45
Shinn, John, Philadelphia, Pa. Carding-machine	299,280	May 27	1649	473	27	864
Shipley, Morris S., Cincinnati, Ohio. Pencil-holder	300,740	June 17	1606	440	27	1234
Shipman, Edward L. (See Williams and Shipman.)						
Shipman, James D. (See Williams and Shipman, assignors.)						
Shipping Package Company. (See Mitchell, Samuel, assignor.)						
Shirts, Oliver H., New Castle, Pa. Gas-purifier and method of revivifying iron sponge	299,589	June 3	113	28	27	940
Shirley, Charles, Luzerne, Iowa. Thrashing-machine	299,802	June 3	448	116, 117	27	1007
Shirley, Charles, Luzerne, Iowa. Bag holder and weigher	299,803	June 3	451	118	27	1008
Shoemaker & Co. (See Shoemaker, John H., assignor.)						
Shoemaker, Isaiah W., Rosston, Pa. Folding fire-place fender	300,349	June 17	1309	359	27	1183
Shoemaker, John H., assignor to Shoemaker & Co., Newark, N. J. Gem-setting	296,234	Apr. 1	420	117	27	80
Shoemaker, William S., Baltimore, Md. Dumping coal-cart	297,539	Apr. 22	2084	568	27	409
Shoesmith, Edward W. (See Nixon, Francis M., assignor.)						
Shopbell, William M., Aurora Springs, Mo. Carpet-fastener	300,289	June 10	1021	275	27	1119
Shorland, William B., Manchester, county of Lancaster, England. Latch	300,651	June 17	1490	410	27	1215
Short, Sidney H., Denver, Colo. Electric-arc lamp	299,025	May 20	1295	381	27	794
Shoudy, Israel, Paw Paw Grove, Ill. Railway-track lifter	296,635	Apr. 8	930	202	27	187
Shoup, William A. (See Griffin, Shoup, and Cade.)						
Shreve, Charles T., Delaware, N. J. Hood for vehicle-tops	300,520	June 17	1310	359	27	1183
Shroff, Samuel A., *et al.* (See Raby, Richard, Jr., assignor.)						
Shuler, David, New Dover, Ohio. Desk	301,014	June 24	1942	537	27	1302
Shull, John H. (See Baker and Shull.)						
Shumway, Rufus H. and W. D., Lebanon Springs, N. Y., assignors to said Rufus H. Shumway. Saw-handle	300,907	June 24	1814	496	27	1279
Shumway, William D. (See Shumway, Rufus H. and W. D.)						
Sias, John F., *et al.* (See Brooke, William M., assignor.)						
Sibley, Frank. (See Cooper, Edward A., assignor.)						
Sickler, Edward E. (See Sickler, Jacob and E. E.)	297,642	Apr. 29	2231	607	27	443
Sickler, Jacob, Otterbein, Ind. Sand-auger	300,807	June 24	1690	462	27	1254
Sickler, Jacob, Otterbein, and E. E. Sickler, Indianapolis, Ind. Sulky-plow	296,078	Apr. 1	219	64	27	45
Siddall, John H., Canton, Ohio. Dental-drill hand-piece	297,302	Apr. 22	1777	482	27	351
Siebler, George E., Dayton, Ohio. Cigar-cutter	298,789	May 20	1045	292	27	738
Sigsbee, Charles D., Annapolis, Md. Trunk-stay						
Sigwalt Sewing Machine Company. (See Corey, Jasper W., assignor.)						
Silberberg, Nathan, Yassy, Roumania. Automatic clock-winding device	297,020	Apr. 15	1411	389	27	280
Sill, Alfred N., Philadelphia, Pa. Blotter	296,235	Apr. 1	420	118	27	80
Silliman, James P., and J. A. Maxwell, Allegheny, Pa. Car-wheel lubricator	297,021	Apr. 15	1413	389	27	280
Simmons, Edward W., *et al.* (See Seibert, Nicholas, assignor.)						
Simmons Hardware Company. (See Sublett, Edwin H., assignor.)						
Simmons, James W., East Monroe, Ohio. Safety-clutch for elevators	297,459	Apr. 22	1953	539	27	389
Simmons, Joseph S. and R. M., Belton, S. C. Portable building	298,790	May 20	1046	292, 293	27	738
Simmons, Oliver E., *et al.* (See Seibert, Nicholas, assignor.)						
Simmons, Robert F., Attleborough Falls, Mass. Ornamental chain	299,281	May 27	1650	474	27	864
Simmons, Robert M. (See Simmons, Joseph S. and R. M.)						
Simmons, Thomas A., assignor of two-thirds to W. A. Underwood and D. McMillan, Woosster, Ohio. Harness-pad	298,246	May 6	372	98	27	596
Simon, Henry, Jr., Chester, Conn. Wrench	300,145	June 10	999	222	27	1084
Simonds, George W., Boston, Mass. Car-truck	299,026	May 20	1336	381	27	794
Simpson, Alexander G., Arcadia, Mo. Fastener for doors, windows, gates, &c	296,460	Apr. 8	724	200	27	143
Simpson, Hall, Miller & Co. (See Hull and Yale, assignors.)						
Simpson, James H. (See McConrt, Peter, assignor.)						
Sinfield, George, Portland, Oreg. Fire-escape	297,857	Apr. 29	2486	681	27	492
Singer Manufacturing Company of New Jersey. (See Bolton and Van Dyke, assignors.)						
Sinnott, John, assignor of two-thirds to J. P. Barrett, Chicago, Ill. Screw driver and holder	300,146	June 10	823	223	27	1084
Sirret, Emile, Buffalo, N. Y. Weighing-scale	296,470	Apr. 8	725	200, 201	27	144
Sisk, Frank M., Newnan, Ga. Gin-saw-filing machine	296,471	Apr. 8	727	201	27	144
Sjoberg, Carl J. A., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Cord-clamp	297,303	Apr. 22	1778	482	27	351
Sjoberg, Carl J. A., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Button-hole sewing-machine	299,027	May 20	1337	381, 382	27	794
Sjoberg, Carl J. A., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Punch	300,052	June 17	1491	411	27	1215
Sjögren, C. Axel T., Denver, Colo. Automatic air-brake	300,401	June 17	1165	319	27	1155
Skaggs, Newton J., Montgomery, Ala. Car-coupling	298,033	May 6	93	24	27	545
Skidmore, Horace G. (See Harman and Skidmore.)						
Skidmore, Horace G., Cincinnati, Ohio. Watch-case	298,569	May 13	694	196	27	666
Skinner, Allen L., Springfield, Mass. Mechanical movement	300,808	June 24	1691	462	27	1255
Skinner, George F., Superior, Nebr. Combined bottom and valve for well-buckets	300,147	June 10	824	223	27	1085
Skinner, John, assignor of one-half to A. D. McColl, Flint, Mich. Car-coupling	300,148	June 10	824	389, 390	27	1085
Skinner, Joseph J., Newtonville, Mass. Electric-arc lamp	297,022	Apr. 15	1413	389	27	280
Slater, Warren G., assignor to J. Cole, Fremont, Mich. Hame-tug and buckle	296,472	Apr. 8	729	201	27	144
Slater, Warren G., assignor of three-fourths to J. R. and S. Odell and S. P. Barnhard, Fremont, Mich. Shoe-upper	297,185	Apr. 22	1625	446	27	323
Sleeper, Charles T., Chicago, Ill. Metallic packing for piston and valve rods	300,653	June 17	1492	411	27	1215
Sleeper, Jonathan R. (See Hayden and Sleeper.)	296,473	Apr. 8	730	202	27	145
Slingland, Nicholas, Falls Village, Conn. Window-shade fixture	298,247	May 6	373	98, 99	27	596
Sloper, Byron, New York, N. Y. Locomotive-furnace	297,304	Apr. 22	1778	483	27	351
Small, Perry, Guaymas, Mexico. Oil-cup						

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Small, Robert A., Jeffersonville, Ind. Tool stock or handle	299,128	May 27	1835	527	27	898
Smalley, John, deceased; W. W. Smalley, Boundbrook, administrator, and assignor to Graphite Lubricating Company, Jersey City, N. J. Anti-friction composition	300,023	June 10	658	179	27	1055
Smalley, John, deceased; W. W. Smalley, Boundbrook, administrator, and assignor to Graphite Lubricating Company, Jersey City, N. J. Manufacture of anti-friction bearings	300,024	June 10	659	180	27	1055
Smalley, John, deceased; W. W. Smalley, Boundbrook, administrator, and assignor to Graphite Lubricating Company, Jersey City, N. J. Manufacture of anti-friction bearings	300,025	June 10	659	180	27	1055
Smalley, John W., Pittsfield, Me. Ironing-board	298,422	May 13	591	167	27	647
Smalley, William W., administrator. (See Smalley, John.)						
Smalstig, William C., Springfield, Mo. Adding-machine	300,809	June 24	1692	402 463	27	1255
Smart, Albert J., Greenfield, Mass., assignor to Wiley & Russell Manufacturing Company, of Massachusetts. Combined drill and countersink	298,248	May 6	374	99	27	597
Smart, Albert J., Greenfield, Mass., assignor to Wiley & Russell Manufacturing Company, of Massachusetts. Combined drill and countersink	299,429	May 27	1836	528	27	898
Smethurst, George. (See Bond and Smethurst.)						
Smillie, George W., Newark, N. J. Car-coupling	297,305	Apr. 22	1779	483	27	352
Smith, Aaron. (See Dunnell and Smith.)						
Smith, Alphonso B, San Francisco, Cal. Carpet-sewing machine	298,318	May 6	465	125	27	614
Smith, Alphonso B., assignor to S. Pattee, San Francisco, Cal. Carpet-sewing machine	296,474	Apr. 8	731	202	27	145
Smith, Andrew L., and E. M. Cole, Geneva, N. Y. Trial-frame for oculists and opticians	297,858	Apr 29	2487	681	27	493
Smith, Benjamin, assignor of one-half to W. J. McCausland and R. Barnett, Dayton, Ohio. Bale-tie	300,402	June 17	1167	319	27	1155
Smith, Charles. (See Honck and Smith.)						
Smith, Charles L., Jamestown, N. Y. Variable-speed movement	299,500	June 3	114	28	27	941
Smith, Charles R., Okolona, Miss. Bale-tie buckle	297,859	Apr. 29	2489	681	27	493
Smith, Clarence C., Camptown, Pa. Baggage-check	297,860	Apr. 29	2489	682	27	493
Smith, Clarence C., Camptown, Pa. Baggage-check	298,034	May 6	94	25	27	545
Smith & Co., Alfred H. (See Collins, Thomas W., assignor.)						
Smith & Co., William. (See Briggs, Daniel F., assignor.)						
Smith, Cylon, *et al.* (See Little, James R., assignor.)						
Smith, Daniel E., Hartford, Conn. Telephone-repeater	297,724	Apr. 29	2342	636 637	27	464
Smith, Dwight L., assignor to Waterbury Buckle Company, Waterbury, Conn. Buckle	299,028	May 20	1340	382	27	795
Smith, Earle H., New York, N. Y. Sewing-machine shuttle	296,790	Apr. 15	1125	317	27	229
Smith, Edward H., Rutherford, Cal. Safety-hook	300,810	June 24	1694	463	27	1255
Smith, Edward M. (See Maxim, Samuel, assignor.)						
Smith & Eggo Manufacturing Company. (See Eggo, Frederick, assignor.)						
Smith & Eggo Manufacturing Company. (See Sjoberg, Carl J. A., assignor.)						
Smith, Elmer H., Quinton, N. J. Ditching-machine	297,861	Apr. 29	2490	682	27	493
Smith, Ephraim, Pittsburg, Pa. Mowing-machine	298,249	May 6	375	99	27	597
Smith, Fannie S, assignor to H. and W. F. Thomas, Topeka, and L. C. Laurent, Shawnee County, Kans. Fence-post. (Reissue)	10,471	Apr. 22	2100	574	27	412
Smith, Franklin A., Jr., Providence, R. I. Button-fastener	295,951	Apr. 1	67	20	27	16
Smith, Franklin A., Jr., Providence, R. I. Metallic fastening	296,079	Apr. 1	220	64	27	45
Smith, Franklin A., Jr., Providence, R. I. Tack or fastener	296,475	Apr. 8	735	203	27	145
Smith, Franklin A., Jr., Providence, R. I. Button-fastener	298,423	May 13	592	167	27	647
Smith, Franklin A., Jr., Providence, R. I. Hook	298,510	May 13	695	196	27	666
Smith, Frederick A., and A. Doll, Jr., assignors to Hotchkiss & Upson Company, Cleveland, Ohio. Machine for threading the tapering points of screws	300,908	June 24	1815	496 497	27	1279
Smith, Frederick H., Winchmore Hill, county of Middlesex, England. Ventilation of lamps	297,460	Apr. 22	1974	539	27	389
Smith, Frederick J. (See Goodman and Smith.)						
Smith, Fredrick J., Brooklyn, assignor of one-half to J. H. Beals, Jr., New York, N. Y. Apparatus for stereotyping	297,023	Apr. 15	1418	390	27	981
Smith, George C. (See Fitz Gerald and Smith.)						
Smith, George H., and J. Kienardt, Dayton, Ohio. Horse hay-rake	299,430	May 27	1837	528	27	899
Smith, George K., Freeport, assignor to H. C. Staver & Co., Chicago, Ill. Grinding-mill	297,024	Apr. 15	1419	390 391	27	981
Smith, George W., Athol, Mass. Car-coupling	299,029	May 20	1341	382	27	795
Smith, Gerrit, Astoria, N. Y. Quadruplex telegraph	297,186	Apr. 22	1926	446	27	323
Smith, Gerrit, Astoria, N. Y. Diplex or quadruplex telegraph	297,540	Apr. 22	2085	568	27	409
Smith, Henry C., assignor to A. S. De Vries, Cleveland, Ohio. Apparatus for the continuous distillation of oil	300,811	June 24	1695	463	27	1255
Smith, Henry D., assignor of one-half to Z. M. Lane, Rockland, Mass. Toe-tip-indicating apparatus for boots and shoes	296,885	Apr. 15	1246	348	27	249
Smith, Hervey. (See Blickensderfer and Smith.)						
Smith, Homer, Kirksville, Mo. Machine for making wire fences	297,461	Apr. 22	1976	539 540	27	389
Smith, James, Boston, Mass. Die for forming axles	299,431	May 27	1837	528	27	899
Smith, James D. (See Smith, John W. and J. D.)						
Smith, James S., Marshall, Ark. Propelling apparatus for vessels	296,476	Apr. 8	736	203	27	145
Smith, John, Kansas City, Mo. Fastening for corrugated metal sheets	297,862	Apr. 29	2491	682	27	493
Smith, John, assignor to H., H. C., W., and J. S. Disston, Philadelphia, Pa. Saw	298,709	May 13	938	260	27	712
Smith, John J., Kaufman, Tex. Violin tail-piece	300,149	June 10	825	221	27	1065
Smith, John S., Jackson, Mich. Feeder for tile and sewer-pipe machines	296,236	Apr. 1	421	118	27	80
Smith, John S., assignor of one-half to T. G. Bennett, Jackson, Mich. Tile-machine	296,477	Apr. 8	737	203	27	146
Smith, John S., Jackson, Mich., assignor to M. Nolan, Rushville, Ind. Revolving table for tile-mills	300,909	June 24	1817	497	27	1279
Smith, John W. and J. D., assignors of fourteen twenty-fourths to S. P. Moses, W. B. Moore, and I. H. McDonald, Washington, D. C. Smoke-consuming device	296,791	Apr. 15	1126	317	27	229
Smith, Joseph A., Deep River, Conn. Corkscrew	299,864	June 3	453	118	27	1002
Smith, Joseph F., Pittsburg, Pa. Area-window protector	300,654	June 17	1494	412	27	1216
Smith, Joseph W., Newton, Mass. Buckle	298,511	May 13	696	197	27	666
Smith, Kenada, West Manchester, Ohio. Car-coupling	298,631	May 13	834	233	27	691
Smith, Marcus B. (See Jones, Smith, and Roswall.)						
Smith, Martin V., Tyrone, Pa. Regenerative skelp-heating furnace	299,030	May 20	1342	383	27	795
Smith, Melvin L., Lockport, assignor of one-third to J. Terry, Batavia, N. Y. Vehicle-wheel	298,632	May 13	835	233	27	692
Smith, Michael H., Halifax, county of York, England. Apparatus to be used in electric rail or tram way systems	297,306	Apr. 22	1780	483	27	352
Smith, Otis H., Cambridge, Mass. Portable house	297,863	Apr. 29	2492	682 683	27	493
Smith, Rachel P., Chicago, Ill. Razor-strop	299,865	June 3	453	118	27	1002

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Smith, Robert B., *et al.* (See Conant, George P., assignor.)						
Smith, Robert P., *et al.* (See Herckner, Emil, assignor.)						
Smith, Roderick H., Chicago, Ill. Paint-mixer	296,792	Apr. 15	1127	317	27	229
Smith, Samuel M. (See Parks and Smith.)						
Smith, Sidney, Cambridge, Mass. Feeding air to furnaces	300,156	June 10	826	224	27	1085
Smith, Sterry, Salem, Mass. Grate-bar	298,424	May 13	593	167	27	647
Smith, Thomas C., Brooklyn, N. Y. Tile or brick for floors, &c	300,521	June 17	1311	360	27	1123
Smith, Thomas H., Bloomington, Ill. Mail-bag	297,025	Apr. 15	1421	391	27	981
Smith, Thomas L., assignor of one-half to D. A. Mathews, New York, N. Y. Underground wire-conduit	297,462	Apr. 22	1979	541	27	390
Smith, Thomas L., assignor of one-half to D. A. Mathews, New York, N. Y. Conduit for underground lines	297,463	Apr. 22	1981	541	27	390
Smith, True J., Topeka, Kans. Fence-post	296,237	Apr. 1	422	118	27	80
Smith, W. Ford, and A. Coventry, Salford, Manchester, county of Lancaster, England. Machinery for grinding or sharpening drills	299,433	May 27	1840	529 530	27	899
Smith, Walton D., assignor of one-half to C. Emery, Prophetstown, Ill. Ornament for personal wear	296,636	Apr. 8	940	262 263	27	187
Smith, William, Tomah, Wis. Stump-extractor	297,026	Apr. 15	1422	391	27	981
Smith, William, Eaton Rapids, Mich. Belt-fastener	300,026	June 10	661	180	27	1055
Smith, William B., Orlando, Fla. Feed-guide for printing-presses	297,464	Apr. 22	1983	541	27	391
Smith, William D., Chester, Pa. Window	299,432	May 27	1839	529	27	899
Smith, William D., Chester, Pa. Window	296,512	May 13	697	197	27	666
Smith, William G., New York, N. Y. Balanced slide-valve	299,091	June 3	963	65	27	970
Smith, William K., La Harpe, Ill. Carpet-stretcher	297,187	Apr. 22	1932	446	27	324
Smith, William O., Norwalk, Ohio. Sash-holder	298,905	May 20	1186	334	27	766
Smith, William S., Dayton, Ohio. Brick-machine	297,864	Apr. 29	2493	683	27	494
Smither, William M., Keene, Ky. Trace carrier	300,910	June 24	1819	497	27	1280
Smitten, Thomas W. F., Brooklyn, N. Y. Link-button	298,513	May 13	697	197	27	666
Smoot, John D., Taylor, Tex. Car-coupling	299,031	May 20	1343	383 384	27	795
Smoot, Walker W., and Q. D. Wilcoxson, Boston Station, Ky. Automatic brake	297,027	Apr. 15	1424	391	27	982
Smyser, Henry E., Philadelphia, Pa., assignor to Weikel & Smith Spice Company, of Pennsylvania. Weighing and supplying apparatus	296,637	Apr. 8	941	263	27	187
Snediker, James F., assignor to National Sewing Machine Company, (limited,) Philadelphia, Pa. Sewing-machine	296,638	Apr. 8	942	263	27	187
Snediker, James F., assignor to National Sewing Machine Company, (limited,) Philadelphia, Pa. Sewing-machine	297,865	Apr. 29	2494	683	27	494
Snee, William, West Elizabeth, Pa., assignor of one-half to M. A. Walton, Cameron, W. Va. Machine for making insulator-pins	299,092	June 3	964	66	27	970
Sneider, Robert, Brooklyn, N. Y. Producing pictures	297,188	Apr. 22	1029	446	27	324
Snider, John, Fountaintown, Ind. Flood-fence	298,633	May 13	836	234	27	692
Snow, E. T., *et al.* (See Abbott, Levi, assignor.)						
Snow, Ezra H., Orange, N. J. Toy building-block	299,170	May 27	1528	498	27	840
Snow, Fred. W., Ramapo, N. Y. Switch-stand	300,911	June 24	1820	498	27	1280
Snow, Fred. W., Ramapo, N. Y. Switch-stand	300,912	June 24	1822	498	27	1280
Snow, Fred. W., Ramapo, N. Y. Switch-stand						
Snow, William W. (See Brown, Simon H., assignor.)						
Snyder, John T., Luzerne, Pa. Grate	300,522	June 17	1311	360	27	1163
Snyder, William T., assignor of one-half to J. W. Fuller, Catasauqua, Pa. Self-lubricating wheel	300,913	June 24	1824	498	27	1280
Société Anonyme des Matieres Colorantes et Produits Chimiques de St. Denis. (See Poirrier and Rosenstiehl, assignors.)						
Société Anonyme des Matieres Colorantes et Produits Chimiques de St. Denis. (See Rousin and Rosenstiehl, assignors.)						
Société L. Denonvilliers et fils. (See Demogeot, Jules, assignor.)						
Société Michel et Cie. (See Frager, Alphonse, assignor.)						
Société P. Monnet et Cie. (See Monnet, Prosper, assignor.)						
Solinger, Moses, New York, N. Y. Machine for calendering paper	296,080	Apr. 1	221	64, 65	27	45
Somerville, William, St. Louis, Mo. Thermometer and barometer mold, &c	296,793	Apr. 15	1127	317	27	229
Somes, Herbert C., *et al.* (See Mannel, David, assignor.)						
Sommers, Richard M., Philadelphia, Pa. Filtering composition	301,015	June 24	1943	.....	27	1302
Sone & Fleming Manufacturing Company. (See Walker, Albert H., assignor.)						
Sontag, John. (See Sundquist, Henning, assignor.)						
Sorter, Robert B. (See Donley, Levi, assignor.)						
South Bend Iron Works. (See Anderson, Charles, assignor.)						
South Bend Iron Works. (See Cassday, William L., assignor.)						
Southard, Thomas W., Rose's Valley, Pa. Wagon-brake	299,866	June 3	454	118	27	1002
Southward, William H., Mendon, Ohio. Rotary sulky-harrow	300,151	June 10	827	224	27	1085
Southwick, Alfred P., Buffalo, N. Y., assignor, by mesne assignments, to United States Equitable Gas Company. Manufacture of illuminating-gas. (Reissue)	10,466	June 17	1619	444	27	1236
Sowles, George W., Chittenango, N. Y. Car-coupling	298,340	May 6	467	126	27	615
Spaethe, Otto, Gera, Germany. Mechanical musical instrument	296,238	Apr. 1	423	118 119	27	80
Spangler, Jacob W., York, Pa. Fertilizer-distributer	296,239	Apr. 1	424	119	27	81
Spaulding, Abner C., Richmond, Me. Lifting-jack	299,867	June 3	454	119	27	1009
Spaulding, Jennings & Co. (See Steel, Walter, assignor.)						
Spear, Samuel S., South Weymouth, Mass. Machine for snipping leather piping or binding	300,812	June 24	1696	463 464	27	1256
Spearman, John J., Sharon, Pa. Valve for hot-blast ovens	300,329	June 10	1064	248	27	1127
Speirs, Hugh. (See Brather, Morris, and Speirs.)						
Spence, Adam, *et al.* (See Hershberger, Daniel, assignor.)						
Spence, Jacob, *et al.* (See Hershberger, Daniel, assignor.)						
Spence, William, Surbiton, and R. C. Thompson, Brixton Rise, county of Surrey, England. Tricycle	296,639	Apr. 8	943	264 265	27	188
Spencer Arms Company. (See Rhodes, Richard, assignor.)						
Spencer, Charles F., assignor to C. F. Marsh and F. M. Thrasher, Rochester, N. Y. Eyeglasses	296,896	Apr. 15	1247	348	27	250
Spencer, Charles W., Richmond, Mo. Car-coupling	296,640	Apr. 8	941	265	27	188
Spencer, Christopher M., and R. Rhodes, Windsor, Conn. Magazine-gun	299,282	May 27	1650	474	27	864
Spengler, Christian G., Hoboken, N. J., assignor to Electric Patrol Indicator Company, of New York. Watchmen's electric time-detector	299,283	May 27	1654	475	27	864
Sperry, Elmer A., Chicago, Ill. Electric regulator	298,906	May 20	1189	335	27	766
Sperry, Elmer A., Chicago, Ill. Commutator and brush for electric motors and generators	297,866	Apr. 29	2495	684	27	494
Spicer, Andrew J., assignor to himself and A. S. Gross, Portland, Oreg. Oiler	297,867	Apr. 29	2497	684	27	494
	298,514	May 13	698	197	27	666

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spining, John N. (See Harris, Francis M., M. G., M. J., and M. L., assignors.)						
Spinney, Benjamin F., *et al.* (See Hawkins and Woodward, assignors.)						
Spivalo & Forman. (See Anderson, John P., assignor.)						
Splitdorf, Henry, New York, N. Y. Wire-covering machine	300,403	June 17	1167	320	27	1155
Spoo, Mathias G. (See Duchscher and Spoo.)						
Spooner, Daniel W., Minneapolis, Minn. Builder's scaffolding	298,791	May 20	1048	293	27	739
Sprague, Dudley D., California, and P. J. Sprague, Higbee, Mo. Straw-stacker for thrashing-machines	298,250	May 6	376	100	27	597
Sprague, Pearley J. (See Sprague, Dudley D. and P. J.)						
Spraker, John S., Kokomo, Ind. Fruit-picker	300,152	June 10	928	224	27	1085
Springer, Lorin C., Hyde Park, assignor of eleven-twentieths to C. G. Wright, Chicago, Ill. Morse register and perforator	296,641	Apr. 8	945	265 / 266	27	188
Sprinkle, George E., South Whitley, Ind. Horseshoe	298,907	May 20	1191	335	27	767
Sproul, Andrew, Hannibal, Mo., assignor to himself and F. C. Stevens, Attica, N. Y. Lock for wagon end-gates	299,284	May 27	1655	475	27	865
Spruce, James, assignor to Scovill Manufacturing Company, Waterbury, Conn. Flush-pull	299,032	May 20	1344	384	27	796
Spruce, James, assignor to Scovill Manufacturing Company, Waterbury, Conn. Imitation twisted wire	299,285	May 27	1655	475	27	865
Spruce, James, assignor to Scovill Manufacturing Company, Waterbury, Conn. Apparatus for manufacturing imitation twisted wire	300,741	June 17	1607	440	27	1234
Spry, John B., and T. Barry, Valparaiso, Ind. Wagon running-gear	300,914	June 24	1824	499	27	1280
Stackpole, C. H. (See De Foy, Frank R., assignor.)						
Stadler, John G., Rothenbach, Bavaria, Germany. Brick and tile machine	299,591	June 3	116	29	27	941
Staff, Peter N. (See Cochran, Albert M., assignor.)						
Stafford, Frank W., and G. A. Henderson, Decatur, Ill., Cuff-holder	298,035	May 6	93	25	27	545
Stafford, Frederick M., *et al.* (See Comstock, Francis M., assignor.)						
Stafford, Mahlon J., Wheatland, Ind. Attachment for plows	299,868	June 3	435	119	27	1009
Stafford, Marshall B., New York, N. Y. Ventilation	297,189	Apr. 22	1629	447	27	324
Stafford, Marshall B., New York, N. Y. Ventilation	297,190	Apr. 22	1630	447	27	324
Stagge, Benjamin F., Hendersonville, N. C. Coffee-pot	297,628	Apr. 15	1425	392	27	282
Stainfield, Harry M., Bucyrus, Ohio. Spark-arrester	297,868	Apr. 29	2499	684	27	495
Stambaugh, David F., Effingham, Ill. Spring bed-bottom				180	27	
Stamm, Anton, Leadville, Colo. Apparatus for preparing oxygenated air	300,027	June 10	661	181	27	1055
Standard Tool Co. (See Bellows, Stephen H., assignor.)						
Standard Vapor Fuel Iron and Steel Company of New York. (See Jones, Gomer, assignor.)						
Stanger, Gustav A., Chester, Conn. Bung-borer	298,908	May 20	1192	335	27	767
Stanley Horse Collar Company. (See Stanley and Lemassena, assignors.)						
Stanley, James. (See Lemassena and Stanley.)						
Stanley, James, Newark, N. J., assignor to L. Lemassena. Carriage-top-prop block	296,240	Apr. 1	426	120	27	81
Stanley, James, and T. F. Lemassena, assignors to Stanley Horse Collar Company, Newark, N. J. Horse-collar	299,286	May 27	1656	475	27	865
Stanley, Robert V. (See Herkimer, Jacob, assignor.)						
Stanley, William, Jr., Englewood, N. J. Secondary battery	299,177	May 27	1530	438	27	840
Stanley, William, Jr., Englewood, N. J. Secondary battery	299,178	May 27	1531	438	27	841
Stannard, John E. (See Hurd, James C. assignor.)						
Stannard, John E., Springfield, Mass. Machine for creasing paper	298,425	May 13	594	168	27	647
Stansbury, Alfred D., Collier's, W. Va. Spring-motor	297,725	Apr 29	2341	637	27	464
Stansbury, William K., Middletown, N. Y. Pruning-saw	296,241	Apr. 1	427	120	27	81
Stanton, George B., Long Lake, N. Y. Oar	300,915	June 24	1825	499	27	1281
Stanwood, James B. (See Lane and Stanwood.)						
Stanwood, James D., Boston, Mass. Switch-operating mechanism	298,036	May 6	96	25	27	545
Staring, Alonzo H., German Flats, N. Y. Gate	298,037	May 6	98	25	27	545
Stark, Thomas L., Chicago, Ill. Sewer	297,643	Apr. 29	2232	607	27	443
Starke, Arabella G., executrix. (See Starke, Patrick H.) (Reissue.)						
Starke, Edwin D., Richmond, Va. Plow	295,952	Apr. 1	68	20, 21	27	16
Starke, Patrick H., deceased; A. G. Starke, Richmond, Va., executrix. Plow. (Reissue)	10,477	May 6	493	133	27	920
Stevenson, Samuel J., Philadelphia, Pa. Car wheel and axle	300,153	June 10	899	225	27	1086
Starks, John L., Sharon Grove, Ky. Reversible shears						
Starr Bros. Bell Company. (See Rich, Denison A., assignor.)						
Starr Electric Storage Company. (See Starr, Ell T., assignor.)						
Starr, Ell T., Philadelphia, Pa., assignor to Starr Electric Storage Company, of New Jersey. Secondary electric battery	299,434	May 27	1842	530	27	900
Starr, Ell T., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Electric motor and dynamo-electric machine	300,154	June 10	830	225	27	1086
Starr, Ell T., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Electrical canterizing apparatus	300,155	June 10	832	225	27	1086
Starr, Ell T., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Electric mouth-lamp	300,523	June 17	1312	360	27	1183
Starr, Ell T., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Electric mouth-illuminator	300,524	June 17	1313	360 / 361	27	1183
Starr, Ell T., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Electric-light specnlum	300,525	June 17	1316	361	27	1184
Starr, Nathaniel W., Tarrytown, N. Y. Sled-runner	300,156	June 10	835	225 / 226	27	1087
Starr, William, *et al.* (See Schubiger, Benjamin A., assignor.)						
Starrett, William, North Manchester, Ind. Door-securer	297,465	Apr. 22	1084	541	27	391
Stanfenbell, Charles, San Luis Obispo, Cal. Horse-collar	298,126	May 6	302	54	27	505
Staugaard, Hans H. (See Ellwood and Staugaard.)						
Staver & Co., H. C. (See Smith, George K., assignor.)						
Stayner, James O., Angola, Ind. Windmill	299,809	June 3	456	119	27	1009
St. Clair, James O. (See Van Riper and St. Clair.)						
Stearman, Archable E., Vichy, assignor of one-half to M. Glenn, Maries County, Mo. Car-coupling	300,916	June 24	1826	499	27	1281
Stearns, Frank M., Berea, Ohio. Knockdown frame for grindstones	297,466	Apr. 22	1084	542	27	391
Stearns, Frank M., Berea, Ohio. Grindstone-hangings	299,870	June 3	457	119	27	1009
Stearns, G. W. & M. L. (See Plummer, Frank H., assignor.)						
Stearns, John A., Johnstown, Pa. Furnace for the manufacture of metals direct from the ore	298,426	May 13	596	168	27	648
Stebbins, Charles A., Chelsea, Mass. Letter-box	296,642	Apr. 8	947	266	27	188
Stebbins, George P. (See Stebbins, Lorenzo and G. P.)						
Stebbins, Lorenzo, Hinsdale, N. H., and G. P. Stebbins, Vernon, Vt. Car-coupling	298,127	May 6	303	54	27	566
Stechhan, Otto, Indianapolis, Ind. Reclining-chair	296,478	Apr. 8	738	204	27	146
Steed, Oran F., and E. A. Nixon, Little River, Kans. Churn	297,191	Apr. 22	1631	447	27	324
Steel, Walter, assignor to Spaulding, Jennings & Co., West Bergen, N. J. Bearing for rolling-mills	296,681	Apr. 1	224	65	27	45

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Steele, Abner J., Allegheny, Pa. Wagon-brake	299,693	June 3	265	66	27	970
Steele, Elijah F., Wallingford, Conn. Water-velocipede	298,792	May 20	1049	293	27	739
Steele, George W., Paterson, N. J. Shade-fixture	298,198	May 6	204	54	27	566
Steele, Ransom, assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Combined carpenter's square and bevel	296,435	May 27	1845	531	27	900
Steers, William, Brattleborough, Vt. Extension-bit	296,242	Apr. 1	428	120	27	82
Stein Manufacturing Company. (See Rappleyea, Nicholas, assignor.)						
Steiner, Gottlieb A., Allegheny City, Pa. Utilizing old rails	300,404	June 17	1170	324	27	1155
Steinke, Alexander, New York, N. Y. Process of and apparatus for the treatment of hops in the manufacture of malt liquors	297,467	Apr. 22	1085	542	27	391
Steltzmann, Henry; Leech Lake, Minn. Traveling brick-machine	296,082	Apr. 1	225	65, 66	27	46
Stenger, John V., Frohnleiten, Styria, Austria-Hungary, assignor to Maschinenbauanstalt Golzern, (vormals Gottschald & Nötzli,) Golzern, Germany. Paper-making machine	296,083	Apr. 1	227	66	27	46
Stephens, Clinton, Brooklyn, N. Y. Necktie and collar clasp	300,028	June 10	664	181	27	1056
Stephenson, John, New York, N. Y. Car-axle box	296,479	Apr. 8	739	204	27	146
Stephenson, John, New York, N. Y. Car-axle box	296,480	Apr. 8	741	204 / 205	27	146
Stephenson, John, New York, N. Y. Car-axle box	300,029	June 10	665	181	27	1056
Stephenson, John, New York, N. Y. Oiling-pad for journal-boxes	298,909	May 20	1193	335 / 336	27	767
Stephenson, John J., Canton, Mo. Hay-stacker	300,655	June 17	1495	412	27	1216
Steppacher, Walter M., Philadelphia, Pa. Shirt	298,251	May 6	377	100	27	597
Sterling, Charles A., New York, N. Y. Pipe-casing for submarine rock-drills	298,252	May 6	379	100	27	598
Sternberg, William, Cicero, N. Y. Tobacco-transporting rack	299,871	June 3	458	120	27	1009
Sternberger, Herman S., Piqua, Ohio. Crate for mattresses and bedding						
Sterne Brothers & Co. (See Prahl, Charles, assignor.)						
Sternheimer, Friedman, New York, N. Y. Fan	297,869	Apr. 29	2500	685	27	495
Stetson, Warren C., Minneapolis, Minn. Apparatus for sorting lumber	299,694	June 3	266	66	27	970
Stetson, Warren C., Minneapolis, Minn. Log loader and turner	300,405	June 17	1471	321	27	1155
Stevens, Amos, Philadelphia, Pa. Ribbon-holder	296,887	Apr. 15	1248	349	27	250
Stevens, Charles A., New Haven, Conn. Combined elastic corset busk and clasp	296,888	Apr. 15	1249	349	27	250
Stevens, Daniel L., Lyons, Iowa. Saw-shifting mechanism for gang-edgers	296,360	Apr. 8	593	164	27	118
Stevens, Elisha, Middletown, Conn. Wire-cutter	299,033	May 20	1345	384	27	796
Stevens, Elisha, Middletown, Conn. Cutting-pliers	299,872	June 3	459	120	27	1010
Stevens, Francis B., Hoboken, N. J. Railway-rail	299,287	May 27	1658	476	27	865
Stevens, Frank M. (See Ober and Stevens.)						
Stevens, Fred C. (See Sproul, Andrew, assignor.)						
Stevens, Frederick M., Waterbury, Conn. Thill-coupling	296,794	Apr. 15	1129	318	27	230
Stevens, Frederick W., (See Abbott, Levi, assignor.)						
Stevens, H. P., *et al.* (See Abbott, Levi, assignor.)						
Stevens, Harry R., Los Angeles, Cal. Tank for windmills	297,468	Apr. 22	1086	542	27	391
Stevens, Harry R., Los Angeles, Cal. Tank for windmills	298,793	May 20	1050	294	27	739
Stevens, Harry R., Los Angeles, Cal. Tank for windmills	300,157	June 10	835	226	27	1087
Stevens, Henry S., Keene, N. H. Calendar						
Stevens, Irving D. (See Eberhart and Stevens.)						
Stevens, John H. (See Hyatt, Pool, Everding, Stevens, and Wood.)						
Stevens, John H. (See Hyatt, Stevens, and Wood.)						
Stevens, John H. (See Hyatt, Stevens, Wood, and Everding.)						
Stevens, John H. (See Hyatt, Wood, and Stevens.)						
Stevens, John H. (See Wood and Stevens.)						
Stevens, John H., Newark, N. J., assignor to Celluloid Manufacturing Company, New York, N. Y. Manufacture of material to imitate ivory from pyroxylline compounds	300,158	June 10	836	.....	27	1087
Stevens, Lucina O., assignor of one-half to G. H. Lane, Burlington, Iowa. Link for chain-conveyers	299,592	June 3	120	29	27	941
Stevens, Philo M., assignor, by mesne assignments, to Roller Coaster Company of America, Chicago, Ill. Roller coasting device	298,710	May 13	938	260 / 261	27	712
Stevens, Willis A., Wallingford, Conn. Polishing-brush	299,873	June 3	460	120	27	1010
Stevenson, John W. L., assignor to himself and J. F. Gordon, Rochester, N.Y. Belt-stretcher	298,916	May 20	1194	336	27	767
Stevenson, Robert, Muskegon, Mich. Fire-escape	296,243	Apr. 1	429	120	27	82
Stevenson, Samuel J., Philadelphia, Pa. Car wheel and axle	296,244	Apr. 1	429	121	27	82
Stewart, David P., Buffalo, N. Y. Feed-water heater	297,644	Apr. 29	2233	607 / 608	27	443
Stewart, George W., assignor to himself and J. F. Wenman, New York, N. Y. Car-axle box	298,920	May 6	408	126	27	615
Stewart, John L., Philadelphia, Pa. Process of and apparatus for manufacturing gas	300,330	June 10	1065	289 / 290 / 291	27	1127
Stewart, John L., Philadelphia, Pa. Process of and apparatus for manufacturing gas	300,331	June 10	1069	291	27	1128
Stewart, John L., Philadelphia, Pa. Process of and apparatus for manufacturing gas	299,288	May 27	1660	476	27	865
Stewart, John N., Cleveland, Ohio. Holder for telephone-receivers	298,634	May 13	837	234	27	692
Stewart, Thomas, Philadelphia, Pa. Paper-machine	300,813	June 24	1697	464	27	1276
Stewart, William P., Natchez, Miss. Wire holder and carrier						
Stick, John R. (See Jackman, Neighbor, Stick, and Habltzel.)						
Stickel, Conrad, Ditzingen, Würtemberg, assignor to F. Schumacher, Aachen, Germany. Hand apparatus for forming stitches	296,084	Apr. 1	229	66	27	46
Stiekman, John H. (See Chase, Moses C., assignor.)						
Stickney, John H., Boston, Mass. Shoe	297,469	Apr. 22	1087	542	27	392
Stiff, Charles W., Foxborough, and N. C. Bousley, Salem, Mass. Photographic camera	299,289	May 27	1661	476	27	866
Stiles, Luther R., Chicago, Ill. Stock-car	296,245	Apr. 1	430	121	27	82
Stiles, Norman C., Middletown, Conn. Punching machine	297,090	Apr. 15	1493	413	27	295
Stiles, Norman C., Middletown, Conn. Press for holding and cutting sheet metal	299,290	May 27	1664	477	27	866
Stiles, Norman C., Middletown, Conn. Press for holding and cutting sheet metal						
Stiles, Thomas O. (See Baldwin and Stiles.)						
Stillman, John M. (See Stillman, Oscar B. and J. M.)						
Stillman, Oscar B., Natick, and J. M. Stillman, Watertown, Mass. Method of and apparatus for bleaching sugar	297,029	Apr. 15	1426	392	27	282
Stilwell, Stephen W., Dayton, Ohio. Table-leaf support	299,874	June 3	461	120	27	1010
Stimson, David S., Concord, N. H. Car-axle box	298,253	May 6	380	100 / 101	27	598
Stinebring, George W., Shreve, Ohio. Adjustable saw-tooth	299,291	May 27	1667	477	27	867
Stinebring, George W., Shreve, Ohio. Adjustable saw-tooth	300,814	June 24	1698	464	27	1256
Stinebring, George W., Shreve, Ohio. Adjustable saw-tooth	296,481	Apr. 8	743	205	27	147
Stinebring, John D., assignor to O. L. Noble, Boston, Mass. Cutter-head						
Stirckler, John D., assignor to O. L. Noble, Boston, Mass. Cutter-head						
Stitzel, Frederick, assignor of one half to A. Rentlinger, Louisville, Ky. Rotary steam-engine	297,091	Apr. 15	1497	414	27	296
Stitzel, Frederick, assignor of one-half to A. Rentlinger, Louisville, Ky. Rotary water-meter	297,092	Apr. 15	1499	414	27	296
St. John, Garland B., Cedar Rapids, Iowa. Plow	296,246	Apr. 1	432	122	27	83
St. John, John C., assignor of one-half to F. M. Clarke, New York, N. Y. Tag	298,711	May 13	939	261	27	712
St. John Sewing Machine Company. (See Turnbull, Alonzo E., assignor.)						
Stock, Charles F., Peoria, Ill. Ball-trap	296,247	Apr. 1	434	122	27	83

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Stock, Charles F., Peoria, Ill. Flying target	297,307	Apr. 22	1782	484	27	352
Stock, Charles F., Peoria, Ill. Flying target	299,292	May 27	1668	478	27	867
Stocking, Henry F., Macon, Mo. Adjustable shelving	298,129	May 6	205	54	27	566
Stockman, Lawrance, Philadelphia, Pa. Toy gun	299,436	May. 27	1846	531	27	900
Stockstrom, Louis. (See Ringen, John, assignor.)						
Stockwell, Emory, assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Safe-door	296,643	Apr. 8	948	266	27	189
Stockwell, Emory, assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Permutation-lock	299,695	Jnne 3	267	67	27	970
Stockwell, Levi W., assignor to Cleveland Electric Motor Company, Cleveland, Ohio. Electric motor	298,130	May 6	206	55	27	566
	298,911	May 20	1194	{336 337	27	768
Stoddard, E. Fowler, Dayton, Ohio. Wheel-barrow						
Stoddard, Oscar, Detroit, Mich. Knob attachment	296,492	Apr. 8	743	205	27	147
Stoddard, William, Valparaiso, Ind. Seed-planter	299,593	Jnne 3	121	30	27	941
Stoetzel, Joseph J., assignor to himself and E. P. Feray, La Salle, Ill. Railway-signal for locomotives	300,406	June 17	1172	321	27	1156
Stoffel, Julius W., Mascontah, Ill. Water-heater for gasoline-stoves	301,016	June 24	1943	537	27	1302
Stokes, William W., Anna, Ill. Bending-machine	300,159	June 10	838	226	27	1057
Stollwerck, Gebr. (See Killan, Wilhelm, assignor.)						
Stollwerck, Gebr. (See Stollwerck, Heinrich, assignor.)						
Stollwerck, Heinrich, assignor to Gebr. Stollwerck, Cologne-on-the-Rhine, Prussia, Germany. Heating and feeding water to steam-boilers	301,017	June 24	1944	537	27	1302
Stone, Edward E., Washington, D. C. Animal-shears	299,034	May 20	1346	384	27	796
Stone, Frank P., Chicago, Ill. Sliding door for carriages	298,794	May 20	1051	294	27	739
Stone, Henry A., Brooklyn, N. Y. Screw	298,427	May 13	508	169	27	648
Stone, Hialmer H., Rockford, Ill. Fruit-picker	296,644	Apr. 8	949	267	27	189
Stone, Hiram, Cleveland, Ohio. Nut-lock	296,361	Apr. 8	594	165	27	118
Stone, Irving L., Battle Creek, Mich. Folding seat for school-furniture	299,875	June 3	461	121	27	1010
Stone, Roy, New York, N. Y. Hydraulic apparatus for removing sand-bars, &c	296,493	Apr. 8	745	206	27	147
Stone, Roy, New York, N. Y. Dumping-car	298,912	May 20	1198	337	27	768
Stone, William H. (See Ryan, Francis D., assignor.)						
Stonemetz, John H., Erie, Pa. Paper-folding machine	299,094	May 20	1422	406	27	811
Story, John, Cincinnati, Ohio. Hydraulic cushion for water-pipes	300,917	Jnne 24	1927	499	27	1281
Stover, Daniel C., Freeport, Ill. Wire-barbing machine	298,131	May 6	207	55	27	566
Stover, Daniel C., Freeport, assignor to I. L. Ellwood & Co., De Kalb, Ill. Machine for twisting and spooling barbed-wire fencing	297,796	Apr. 29	2345	637	27	474
Stover, Henry E., St. Louis, Mich. Shade-fixture	297,630	Apr. 15	1427	392	27	283
Stowe, Benjamin L. (See Schenck and Stowe.)						
Stowe, Martin L., Worcester, Mass. Shoe	300,326	June 17	1317	361	27	1184
St. Pierre, Xavier, Osceola, Nev. Skate-sharpener	300,656	June 17	1495	412	27	1216
Straight, Clarence H., Bryan, Ohio. Road-cart	298,254	May 6	381	101	27	598
Strain, Ebenezer W., Allegheny, Pa. Apparatus for redneing, refining, and separating hydrocarbon oils	298,712	May 13	940	{291 292	27	712
Stran, Carll O. (See McCollum and Stran.)						
Stranders, Walter, New York, assignor to E. I. Horsman, Brooklyn, N. Y. Building-block	297,308	Apr. 22	1782	484	27	352
Strang, Henry L., *et al.* (See Hixson, Leland, assignor.)						
Strangways, Henry B. T., London, England. Telephone	297,470	Apr. 22	1988	543	27	393
Stratton, Charles H., Salem, Ohio. Wagon jump-seat	299,437	May 27	1847	531	27	900
Stratton, J. B. (See Pratt and Stratton.)						
Stratton, John T., *et al.* (See Doremus, Willard D., assignor.)						
Stratton, Samuel R., *et al.* (See Doremus, Willard D., assignor.)						
Strauss, William, *et al.*, executors. (See Boman, Claes W., assignor.)						
Strant, Hooper B., Culbertson, Nebr. Calf-weaner	297,370	Apr. 29	2501	685	27	495
Street, Frederick E., Hartford, Conn. Dry closet	301,018	Jnne 24	1945	538	27	1303
Streever, John L., Grayville, Ill. Device for lowering or raising coffins, &c	296,562	Apr. 8	595	165	27	118
Strohl, Joseph H., Cincinnati, Ohio. Gate-valve	299,594	Jnne 3	122	30	27	942
Strover, James E. (See Rossman and Strever.)						
Strickle, George R. (See Strickle, Jacob W. and G. R.)						
Strickle, Jacob W. and G. R., Louisville, Ky. Car starter and brake	297,309	Apr. 22	1783	484	27	352
Striker, Edmund H., Toronto, Ontario, Canada. Sheet-metal tobacco-caddy	298,255	May 6	392	101	27	599
Strobel, Frederick. (See Huber and Strobel.)						
Strocker, John, Jr., Mobile, Ala. Car-brake	297,192	Apr. 22	1632	{447 448	27	325
Stromberg, William, St. Louis, Mo. Compasses	298,038	May 6	99	26	27	546
Strong, Levi C., Albany, N. Y. Leveling-instrument	297,093	Apr. 15	1501	415	27	296
Strong, Louise W. (See Vallquet, Louis P., assignor.)						
Strübel, Joseph, assignor of one-half to H. Konold, New Haven, Conn. Cask or hogshead	300,527	Jnne 17	1318	361	27	1184
Struck, Charles E., Newark, N. J. Thill-coupling	299,696	Jnne 3	269	67	27	970
Stuart, James. (See Watrous, Fillmore M., assignor.)						
Stuart, John. (See McCurry, Henry, assignor.)						
Stubbe, John, assignor to J. B. Oliver, Pittsburg, Pa. Wire-oiling device	296,645	Apr. 8	950	267	27	189
Stubblebine Patents Company. (See Stubblebine, William, assignor.)						
Stubblebine, William, assignor to Stubblebine Patents Company, Bethlehem, Pa. Puddling and heating furnace	300,657	June 17	1496	412	27	1216
Stuck, George A., Selma, Ala. Fire-hose	298,321	May 6	470	127	27	615
Studley, James E., Oshkosh, Wis. Fan-blower	297,310	Apr. 22	1785	{484 485	27	353
Sturdevant, Alfred T., Croton Falls, N. Y. Hat-body-rounding machine	298,795	May 20	1052	{294 295	27	739
Sturgis, Herbert M., South Charleston, Ohio. Car-coupling	300,030	Jnne 10	666	181	27	1056
Sturtevant Mill Company. (See Sturtevant, Thomas L., assignor.)						
Sturtevant, Thomas L., Framingham, assignor to Sturtevant Mill Company, Boston, Mass. Screen for attrition-mills, &c	298,428	May 13	599	169	27	648
Sturzenegger, Edmund, New York, N. Y. Embroidery	300,160	June 10	839	227	27	1087
Stut, John C. H., San Francisco, Cal. Superheater for engines	301,074	June 24	2012	556	27	1315
Sublett, Edwin H., assignor to Simmons Hardware Company, St. Louis, Mo. Combined brush-hook and ax	299,876	June 3	462	121	27	1010
Submarine Monitor Company. (See Tuck, Josiah H. L., assignor.)						
Suckow, Edmund, Buffalo, N. Y. Piston-packing	300,815	June 24	1699	464	27	1256
Sullings, Hervey, Kalamazoo, Mich. Foot-guard for railways	296,363	Apr. 8	596	165	27	119
Sullivan, John J., Green Point, assignor of one-half to J. H. Swift, Brooklyn, N. Y. Machine-table	299,697	June 3	270	67	27	971

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Sullivan Machine Company. (See Ball, Albert, assignor.)						
Sumner, Joshua, assignor of two-thirds to A. E. Mock, and E. W. Frost, Colorado Springs, Colo. Curtain-ring	300,528	June 17	1319	362	27	1184
Sundquist, Henning, assignor of one-half to J. Sontag, Chicago, Ill. Stone-crusher	296,795	Apr. 15	1129	318	27	230
Surguy, George W., assignor to T. N. Surguy, Columbus, Ohio. Mold for casting slugs and leads for printers' use	299,438	May 27	1849	531	27	901
Surguy, Thomas N. (See Surguy, George W., assignor.)						
Sutch, John B., Pittsburg, Pa. Machine for bending nut-locks	299,293	May 27	1669	478	27	867
Sutherland, Horatio, London, England. Quartz crusher or mill	300,529	June 17	1320	{362 363	27	1184
Sutherland, John N. (See Taylor, Cox, Brown, and Sutherland.)						
Sutphen, George E., Aurora, Ill. Hammock-support	298,515	May 13	699	198	27	666
Sutton, Eugene S., Wildwood, Wis. Bill-of-fare indicator	297,094	Apr. 15	1503	415	27	297
Sutton, Thomas, assignor of one-half to G. F. Raynolds, G. E. Frost, and W. McArdle, Cheboygan, Mich. Shafting and bearing	299,940	June 3	542	{144 145	27	1024
Swain, Edgar D., Chicago, Ill. Dictionary-stand	297,541	Apr. 22	2088	569	27	410
Swaine, George R. (See Playford and Swaine.)						
Swan, George E., Beaver Dam, Wis. Curtain-fixture	296,299	Apr. 1	514	143	27	97
Swan, Henry C. (See Thompson and Swan.)						
Swarts, Hiram B., Wooster, Ohio. Animal-trap	296,085	Apr. 1	230	67	27	47
Swartz, Joel, Gettysburg, Pa. Book-rack	298,039	May 6	99	26	27	546
Swasey, Lewis M., *et al.* (See Brooke, William M., assignor.)	298,132	May 6	209	55, 56	27	567
Swayze, Nelson J., Cotton Wood Falls, Kans. Stone-dressing machine	298,913	May 20	1199	338	27	768
Swayze, Stephen J., and J. C. Lane, Sag Harbor, N. Y. Electric block-signal for railways	296,706	Apr. 15	1130	318	27	230
Sweeney, Zachary T., and J. L. Irwin, Columbus, Ind. Fence-post						
Sweet & Clark Manufacturing Company. (See Sweet, Miles, assignor.)						
Sweet, Miles, assignor to Sweet & Clark Manufacturing Company, Troy, N. Y. Halter or tie for animals	299,179	May 27	1532	439	27	841
Sweet & Son, J. B. (See Zanger, Theodor, assignor.)						
Sweetland, Alvah, Syracuse, N. Y. Curtain-fixture	296,742	Apr. 8	1025	288	27	204
Sweetland, Jerome B., Pontiac, Mich. Fruit-drier	298,713	May 13	942	262	27	713
Sweetland, Jerome B., Pontiac, Mich. Fruit-drier	299,294	May 27	1670	478	27	867
Sweetson, Salathiel C., Island Falls, Me. Dust-pan	297,040	May 6	101	26	27	546
Swenson, John, New York, N. Y. Device for cutting damper-felt for pianos	299,497	May 27	1915	551	27	913
Swett, Edward E., Biddeford, Me. Whistle	297,727	Apr. 29	2346	638	27	465
Swick, Phineas B., Tecumseh, Mich. Shaft-tug						
Swift, Frederick C., *et al.*, trustees. (See Crowell, David, Jr., assignor.)						
Swift, Joseph H. (See Sullivan, John J., assignor.)						
Swinscoe, Charles, Cambridge, Mass. Labeled wire-cloth	298,133	May 6	211	56	27	567
Taber, Henry E., Watkins, N. Y. Burglar-alarm	297,311	Apr. 22	1787	485	27	353
Tabony, Joseph H., New Orleans, La. Meat-clamp	299,439	May 27	1850	532	27	901
Tabor, Harris, Allegheny, assignor to Westinghouse Machine Company, Pittsburg, Pa. Shaft-bearing	297,312	Apr. 22	1788	485	27	353
Tabor, Harris, Allegheny, assignor to Westinghouse Machine Company, Pittsburg, Pa. Crank-disk	297,313	Apr. 22	1789	485	27	354
Taft, Edward L., Gardner, and H. M. Rich, Athol, Mass. Machine for knitting rattan chair-backs	299,295	May 27	1670	{479 480	27	867
Taft, Stephen, Millbury, Mass. Shear-cutting nippers	300,031	June 10	667	182	27	1056
Tallman, Charles H. (See Blankley, James A., assignor.)						
Tallman, Charles H., Bellaire, Ohio. Incased oil-can	296,948	Apr. 1	435	122	27	83
Tallman, George W., New York, N. Y. Burglar-alarm	296,646	Apr. 8	951	267	27	189
Tancil, Arthur W. (See Johnson, James P., assignor.)						
Tangney, Thomas, New York, N. Y. Pile-driver	300,407	June 17	1174	{321 322	27	1156
Tannatt, Joshua F., Springfield, Mass. Calendar	297,871	Apr. 29	2501	685	27	495
Tannehill, Seth B., *et al.* (See Woodruff, Brock, assignor.)						
Tanner, Francis. (See Ellis, Wilson, and Tanner.)						
Tansey, Varlin G., assignor to himself and T. Hall, Louisville, Nebr. Holder for ornamental and fly paper	298,134	May 6	212	56	27	567
Tarbell, George W., Shefield, Vt. Corn-planter	295,933	Apr. 1	70	21	27	16
Tarbox, Paschal A., Louisville, Ky. Spring-motor	296,589	Apr. 15	1250	349	27	250
Tate, George C., Malden, Mass. Show-box and reel-holder	296,484	Apr. 8	746	206	27	148
Tattersall, Frederick W., Philadelphia, Pa. Engine-register	297,872	Apr. 29	2502	685	27	495
Tatum, Charles A., *et al.* (See Herckner, Emil, assignor.)						
Tatum & Co., Samuel C. (See Kelser, John A., assignor.)						
Tay, Hans Arcola, Ill. Trace-carrier	299,035	May 20	1347	385	27	790
Taylor, George M., Chicago, Ill. Windmill	300,161	June 10	840	227	27	1087
Taylor, George R., Louisville, Ky. Propelling canal-boats	298,135	May 6	213	57	27	568
Taylor, George W., A. R. Cox, W. C. Brown, and J. N. Sutherland, Belton, S. C. Fire-extinguisher	299,036	May 20	1348	385	27	790
Taylor, Henry, and R. B. Sharp, Cleveland, Ohio. Waste-cock	296,797	Apr. 15	1131	319	27	230
Taylor, Henry R., San Francisco, Cal. Clamp for wire ropes	300,408	June 17	1176	322	27	1156
Taylor, Horatio R. (See Ortman and Taylor.)						
Taylor, Jackson, Newberry, S. C. Side-bar vehicle	298,516	May 13	700	198	27	667
Taylor, James, New York, N. Y. Fire-escape	299,595	June 3	123	30	27	942
Taylor, James H., *et al.* (See Low, Jesse B., assignor.)						
Taylor, James S., Danbury, Conn. Method of and machine for scalding and felting hat-bodies	297,471	Apr. 22	1989	543	27	392
Taylor, Job, Orchard Park, N. Y. Corn-sifter	298,429	May 13	600	169	27	648
Taylor, Jonathan V., Boston, Mass. Cake-griddle	300,409	June 17	1177	322	27	1157
Taylor, Lemuel and M., Jordan, Wis. Farm-gate	299,180	May 27	1531	439	27	841
Taylor, Miner. (See Taylor, Lemuel and M.)						
Taylor, Samuel H., Springfield, Mo. Sulky rotary mold-board plow	300,658	June 17	1497	413	27	1217
Taylor, Simmons D., Carthage, N. Y. Trace-bearer for pad-skirts	300,918	June 24	1927	500	27	1281
Taylor, T. B., *et al.* (See Barger, Nathaniel S., assignor.)						
Taylor, Thomas, assignor of one-third to J. E. Fitch, Washington, D. C. Treating cotton-seed	297,193	Apr. 22	1633	448	27	325
Taylor, Thomas P., Bridgeport, Conn. Base-ball	298,041	May 6	102	26	27	546
Taylor, William W., Ripon, county of York, England. Printing-machine	300,162	June 10	842	227	27	1088
Tea, William A., Clyde, Ohio. Automatic incline pool-ball rack and spotter	297,031	Apr. 15	1492	{392 393	27	283
Teal, B. Frank, Philadelphia, Pa. Fire-escape	301,019	June 24	1946	538	27	1303
Teal, Charles A., assignor to M. R. P. Teal, Philadelphia, Pa. Chain-hoist	296,364	Apr. 8	597	{165 166	27	119
Teal, Martha R. P. (See Teal, Charles A., assignor.)						
Teetor, Abe L., Cambridge City, Ind. Diamond-holder for stone-dressing tools	297,728	Apr. 29	2347	638	27	465

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Teetor, Abe L., Cambridge City, Ind. Grinding-mill	300,530	June 17	1321	363	27	1185
Temple, John J., Kalamazoo, Mich. Ice-creeper	298,517	May 13	701	198	27	667
Temple, John J., Kalamazoo, Mich. Ice-creeper	298,518	May 13	702	199	27	667
Tenney, J. Frank, *et al* (See Schmitz, Ernst, assignor.)						
Terrell, Pleasant A., Grinnell, assignor of one-half to J. H. Coon, Des Moines, Iowa. Wire-barbing machine	297,472	Apr. 22	1000	{543 544	27	302
Terry, Jonas. (See Smith, Melvin L., assignor.)						
Terry, Le Grand, Horseheads, N. Y. Stay-roller for sliding doors	298,914	May 20	1290	338	27	769
Terry, Solon M., Pittsfield, Mass. Pendulum-regulator for clocks	296,249	Apr. 1	436	122	27	83
Terwilleger, John, Amsterdam, N. Y., assignor of one-half to Greene Knitting Company, of New York. Knitting-machine	299,498	May 27	1915	552	27	943
Tesch, Carl R., and C. C. Frank, Leipsic, Saxony, Germany. Horse-collar	296,250	Apr. 1	437	123	27	84
Tew, Thomas S., Big Rapids, Mich. Locomotive	296,086	Apr. 1	292	67	27	47
Thame, Henry, Winders Road, High Street, Battersea, county of Surrey, England. Galvanic battery	296,365	Apr. 8	508	.....	27	119
Thayer, Charles F., Norwich, Conn. Water-wheel regulator	297,873	Apr. 29	2503	686	27	496
Thayer, Frank W., Milwaukee, Wis. Journal-box	297,945	Apr. 29	2234	608	27	444
Thayer, James F., Providence, R. I. Implement for attaching buttons	295,954	Apr. 1	71	21	27	16
Thayer, James F., Providence, R. I. Button-setting instrument	296,366	Apr. 8	509	166	27	119
Thayer, James F., Providence, R. I. Button-fastener	296,798	Apr. 15	1131	319	27	230
Thayer, James F., Providence, R. I. Button-attaching instrument	296,890	Apr. 15	1252	350	27	251
Thayer, James F., Providence, R. I. Button-fastener	297,314	Apr. 22	1790	486	27	354
Thayer, James F., Providence, R. I. Button-setting implement	297,315	Apr. 22	1791	486	27	354
Thayer, James F., Providence, R. I. Button-fastener	298,796	May 20	1053	295	27	740
Thayer, Orlando A., Paris, Me. Brace for sleigh-knees	297,316	Apr. 22	1792	486	27	354
Thayer, Orlando A., Paris, Me. Folding Table	296,430	May 13	601	170	27	648
Thayer, William C., Chicago, Ill. Producing complete combustion	299,877	June 3	463	{121 122	27	1010
Thielscher, Frederick C., Boston, Mass. Apparatus for feeding sheets of paper	295,955	Apr. 1	73	22	27	17
Thiery, Edouard A., assignor to Carter, Sloan & Co., Newark, N. J. Button	296,891	Apr. 15	1253	350	27	251
Thiéry, Edouard A., assignor to Carter, Sloan & Co., Newark, N. J. Bracelet and ornamenting wire therefor	297,874	Apr. 29	2505	686	27	496
Thomas, Aaron F. (See Barnhard and Thomas.)						
Thomas, Cal, Torre Haute, Ind. Chuck for watch-makers' lathes	300,032	June 10	667	182	27	1056
Thomas, Charles A. (See Combs, John, assignor.)						
Thomas, Daniel. (See Davies, Thomas J., assignor.)						
Thomas, Eddy T., and T. S. Huntington, New York, N. Y., assignors to New Home Sewing Machine Company, Orange, Mass. Sewing-machine attachment	300,531	June 17	1324	363	27	1185
Thomas, Eleazer, Pawtucket, R. I. Molder's flask	297,646	Apr. 29	2235	608	27	444
Thomas, H., *et al.* (See Smith, Fannie S., assignor.) (Reissue.)						
Thomas, John R., assignor to Cordesman & Egan Company, Cincinnati, Ohio. Measuring and registering device for planing-machines	299,878	June 3	467	122	27	1011
Thomas, Robert. (See Fletcher and Thomas.)						
Thomas, W. F., *et al.* (See Smith, Fannie S., assignor.) (Reissue.)						
Thomas, Warren H., and C. B. Coro, Peoria, Ill. Billiard-cue tip	296,087	Apr. 1	233	67	27	47
Thomas, William H., Santa Ana, Cal. Oil-cup	298,915	May 20	1291	338	27	769
Thomas, William H., Fulton, Mo. Seed-sower	300,650	June 17	1499	413	27	1217
Thomas, William M., Grand Rapids, Mich. Automatic electrical cut-out	300,532	June 17	1326	364	27	1185
Thompson, Asa H., assignor to E. H. Sampson, Boston, Mass. Heel-stiffener machine	298,797	May 20	1054	295	27	740
Thompson, Edmund, *et al.* (See Gibbons, David, assignor.)						
Thompson, Francis B., Beaumont, Tex. Gage for adjusting planer-knives	300,533	June 17	1327	364	27	1185
Thompson, Frank, New York, N. Y. Damper-regulator	298,635	May 13	839	234	27	692
Thompson, Gedeon P., Crowley's Station, Tex. Tramping attachment for baling-presses	300,163	June 10	843	227	27	1088
Thompson, George F., assignor to himself and A. Wilson, Oshkosh, Wis. Spring-coupling for vehicles	300,660	June 17	1499	414	27	1217
Thompson, George H., and E. Hottegan, New Haven, Conn. Handle for pocket-knives	299,037	May 20	1349	385	27	796
Thompson, James M., *et al.* (See Peyton, William E., assignor.)						
Thompson, John S., Brooklyn, N. Y. Coffee separator and assorter	297,729	Apr. 29	2348	638	27	465
Thompson, Joseph W., Pittsborough, Ind., assignor of one-half to W. H. Milan. Carpet-stretcher	298,519	May 13	703	199	27	667
Thompson, Niles H., and H. C. Swan, Washington, D. C., said Swan assignor to said Thompson. Gas-motor engine	300,661	June 17	1500	{414 415	27	1217
Thompson, Richard C. (See Spence and Thompson.)						
Thompson, Robert H., *et al.* (See Wilson, Silas H., assignor.)						
Thompson, William G., Wabash, Ind. Feed-regulator	300,816	June 24	1700	465	27	1257
Thompson, William H., New York, N. Y. Apparatus for extinguishing fires on ships	300,164	June 10	844	228	27	1088
Thompson, William P. (See Lewis, Joseph S., assignor.)						
Thompson, Zachariah. (See Heusley, George S., assignor.)						
Thomson, Elihu. (See Houston and Thomson.)						
Thomson, Elihu, New Britain, Conn., assignor to Thomson-Houston Electric Company, of Connecticut. Dynamo-electric machine	296,799	Apr. 15	1132	319	27	230
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-arc lamp	297,194	Apr. 22	1635	448	27	325
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-arc lamp	297,195	Apr. 22	1638	449	27	326
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-arc lamp	297,196	Apr. 22	1641	449	27	326
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-arc lamp	297,197	Apr. 22	1645	450	27	327
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-arc lamp	297,198	Apr. 22	1648	450	27	327
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-arc lamp	297,199	Apr. 22	1650	450	27	328
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-arc lamp	297,200	Apr. 22	1653	{450 451	27	328
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-arc lamp	297,201	Apr. 22	1656	451	27	329
Thomson-Houston Electric Company. (See Houston and Thomson, assignors.)						
Thomson-Houston Electric Company. (See Thomson, Elihu, assignor.)						
Thomson, John. (See Mead, John T., assignor.)						
Thomson, John, Brooklyn, N. Y. Clutch	296,892	Apr. 15	1254	350	27	251
Thomson, William, Glasgow, county of Lanark, Scotland. Navigational sounding apparatus	298,798	May 20	1055	{295 296	27	740

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Thorn Wire Hedge Company. (See Briggs, Orlando P., assignor.)						
Thornton, James. (See Kiger, Alfred, assignor.)						
Thorp, George P. and M. E., Paola, Kans. Ladder	297,875	Apr. 29	2506	686	27	496
Thorp, Milton E. (See Thorp, George P. and M. E.)						
Thorpe, Charles N. (See Mueller, Theodore, assignor.)						
Thorpe, William. (See Randall, Henry R., assignor.)						
Thrasher, Fletcher M., *et al.* (See Spencer, Charles F., assignor.)						
Thurber, Alfred, Concord, Cal. Lamp-bracket	297,317	Apr. 22	1793	{486 487	27	354
Thurston, John C. (See Baldwin and Thurston.)						
Tiebenor, Anson C., Alameda, Cal. Electric conductor	300,410	June 17	1178	323	27	1157
Tickner, Thomas. (See Culp and Tickner.)						
Tietjen, John F. (See Lang and Tietjen.)						
Tiffany & Co., Louis C. (See Tiffany, Louis C., assignor.)						
Tiffany, John H., Dimock, Pa. Truck	297,876	Apr. 29	2507	686	27	496
Tiffany, Louis C., assignor to L. C. Tiffany & Co., New York, N. Y. Panel for walls, ceilings, &c	299,181	May 27	1535	440	27	841
Tilson, S. Miner, Rockland, Ind. Churn-dasher	298,042	May 6	103	27	27	546
Tilton, Leonard, Brooklyn, N. Y. Shutter-worker	297,032	Apr. 15	1429	393	27	283
Timby, Theodore R., Nyack, N. Y. Apparatus for treating ores and for other purposes	296,251	Apr. 1	438	{123 124	27	84
Tipton, Hiram S., Chicago, Ill. Car-roof	299,596	June 3	124	30	27	942
Tipton, Hiram S., Chicago, Ill. Car-roof	299,597	June 3	125	31	27	942
Tisdale, Robert H., Sumter, S. C. Horse-power	300,411	June 17	1179	323	27	1157
Tisdale, Stephen A., Leominster, Mass. Head-comb	299,879	June 3	469	122	27	1011
Toay, John R. (See Toay, Simon and J. R.)						
Toay, Simon and J. R., Mineral Point, Wis. Combined packing and show box	296,367	Apr. 8	600	166	27	119
Tobey, Elisha H., Denver, Colo. Railway safety-signal	296,893	Apr. 15	1256	{350 351	27	251
Tobey, George A., Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Reversing-pulley	297,473	Apr. 22	1992	{544 545	27	393
Tobey, Henry A., Dayton, Ohio. Rotary motor	296,894	Apr. 15	1260	351	27	252
Tobias, Georg. (See Krüger, Tobias, and Kegel.)						
Tobias, J. C., *et al.* (See Sharpnack and McMahon, assignors.)						
Toerper, John, and F. Krein, St. Louis, Mo., said Toerper assignor to said Krein. Hame-staple	299,880	June 3	469	123	27	1011
Toglio, Peter, Charleston, S. C. Imitation-brick weather-boarding for frame-houses	296,647	Apr. 8	952	{267 268	27	189
Toglio, Peter, Charleston, S. C. Fire-resisting weather-boarding	297,730	Apr. 29	2350	639	27	465
Tombow, John, assignor of one-half to V. Kern, Massillon, Ohio. Washing-machine	301,075	June 24	2013	556	27	1316
Tompkins, Frank, New York, N. Y. Car brake and starter	299,296	May 27	1674	480	27	868
Toomer, Edward T., Mobile, Ala. Rain-water trap	298,520	May 13	703	199	27	668
Tope, Ezra E., Leesville, Ohio. Gate	296,648	Apr. 8	953	268	27	190
Topliff, John A., E. S. Cross, W. S. Cox, and J. A. McCollum, Elyria, Ohio. Furnace	299,881	June 3	470	123	27	1011
Torre, Frank D., Baltimore, Md. Disclosing obstacles to navigation	299,968	June 10	585	157	27	1042
Totman, Edsell, Hinsdale, Ill. Constructing frame houses	299,598	June 3	126	31	27	942
Tower, Fred E., assignor of one-half to S. H. Wilhelm, Milford, Mich. Seed-drill	299,038	May 20	1350	386	27	797
Towle, Melvin L., Concord, N. H. Wood-molding machine	300,412	June 17	1179	321	27	1157
Townsend, Harry F. and L. A., Avon, Ill. Turret for harness	297,033	Apr. 15	1430	393	27	283
Townsend, Henry C. (See Buckingham and Townsend.)						
Townsend, Joseph, Glasgow, county of Lanark, Scotland. Obtaining soda	298,256	May 6	384	.....	27	599
Townsend, Leon A. (See Townsend, Harry F. and L. A.)						
Townsley, J. L. (See Donnelly, James L., assignor.)						
Trabue, Isaac H., Louisville, Ky. Car-coupling	295,956	Apr. 1	75	22	27	17
Trabue, Isaac H., Louisville, Ky. Car-coupling	299,599	June 3	128	32	27	943
Tracey, James C., Baltimore, Md. Drawers	298,322	May 6	471	127	27	615
Tracy, Edwin A., *et al.* (See Raughtigan, Michael, assignor.)						
Tracy, George S., *et al.* (See Johnson, William F., assignor.)						
Tracy, George S., *et al.* (See Packer, Harvey, assignor.)						
Trautwine, William, Philadelphia, Pa. Temporary binder	300,602	June 17	1508	415	27	1219
Travers, Vincent P. (See Rood, Albert O., assignor.)						
Travis, Francis M., New London, Va. Drier for fruit, &c	298,916	May 20	1292	339	27	769
Travis, John J., Carson City, Mich. Carriage-top fastener	297,034	Apr. 15	1431	{393 394	27	283
Travis, Martin A., Hamburg, Iowa. Cultivator	297,035	Apr. 15	1432	394	27	283
Traviss, Henry H., assignor of one-half to F. Beaudreau, Mosinee, Wis. Pitman	299,698	June 3	271	68	27	971
Treat, Joshua, Hampden, Me. Stave-jointing machine	300,033	June 10	668	182	27	1056
Tremain, Charles W., Chicago, Ill. Starch-separator	300,165	June 10	845	228	27	1089
Trenholm, Alexander M. (See Trenholm, Ezra W. and A. M.)						
Trenholm, Ezra W. and A. M., Rockford, Ill. Pillow-sham holder	299,095	May 20	1423	406	27	811
Trenholm, Ezra W. and A. M., Rockford, Ill. Pillow-sham holder	300,663	June 17	1508	415	27	1219
Trester, David C., Anamosa, Iowa. Chimney-cap	296,252	Apr. 1	439	124	27	84
Trier, Frank, London, England. Cutter for dressing stone	297,036	Apr. 15	1432	{394 395	27	284
Trier, Frank, London, England. Machine for dressing stone						
Tringham, John W., Windsor, Ontario, Canada. Supporting and insulating electrical wires	296,485	Apr. 8	747	206	27	148
Tripp, Ira B., Aurora, Ill. Window-curtain bar	296,649	Apr. 8	955	268	27	190
Tripp, Seth D., Lynn, Mass. Machine for leveling boot and shoe soles	296,486	Apr. 8	747	{206 207	27	148
Trofford, Edward R. (See Halbert, John B., assignor.)						
Trow, Charles W., Wakefield, Mass. Infant's carriage	298,799	May 20	1059	296	27	741
Trowbridge, Newton, Council Grove, Kans. Cultivator	296,800	Apr. 15	1133	319	27	231
Troy, Daniel S., Montgomery, Ala. Vehicle propelled by compressed air	300 299	June 10	1021	276	27	1119
Trueadell, Eugene E. P., Belvidere, Ill. Two-wheeled vehicle	297,955	Apr. 29	2509	715	27	516
Truman, Robert. (See Beebe, Lyman C., assignor.)						
Trump, Fuller, Springfield, Ohio. Tedder-crank	296,368	Apr. 8	601	166	27	120
Truslow, Russell F., Huntingdon, Tenn. Carpet-stretcher	298,521	May 13	704	199	27	668
Tubbs, Ira H., Chicago, Ill. Hame-tug	297,474	Apr. 22	1993	545	27	393
Tuck, Josiah H. L., San Francisco, Cal., assignor to Submarine Monitor Company, New York, N. Y. Submarine vessel	297,647	Apr. 29	2236	{608 609	27	444
Tuck, Josiah H. L., San Francisco, Cal., assignor to Submarine Monitor Company, New York, N. Y. Marine torpedo	297,648	Apr. 29	2238	609	27	445
Tucker, Frederick A. (See Root and Tucker.)						
Tucker, Frederick O., Hartford, Conn. Weft-stop motion for looms	298,917	May 20	1293	339	27	769

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Tucker, Henry. (See Davis, Spencer L., assignor.)						
Tucker, John H., Philadelphia, Pa. Washing raw sugar and apparatus therefor	297,095	Apr. 15	1504	415	27	297
Tucker, Robert A., *et al.* (See Hixson, Leland, assignor.)						
Tucker, Robert D., assignor of one-half to P. W. McCarley, Booneville, Miss. Back-band buckle	299,941	June 3	543	145	27	1025
Tucker, Stephen D., *et al.* (See Pearce and Hughes, assignors.)						
Tucker, William A., New York, N. Y. Capsule-stripping machine	296,895	Apr. 15	1265	352	27	253
Tucker, William A., New York, N. Y. Machine for molding gelatine capsules	297,318	Apr. 22	1703	467	27	354
Tucker, William A., New York, N. Y. Capsule-cutter	299,182	May 27	1536	440	27	841
Tucker, William A., New York, N. Y. Mechanical movement	299,183	May 27	1536	440	27	841
Tucker, William L., Syracuse, N. Y. Hernial truss	296,360	Apr. 1	515	143	27	97
Turchin, John B., Radom, Ill. Horse spading-machine	300,413	June 17	1181	324	27	1157
Turnbull, Alonzo E., assignor of sixty-five one-hundredths to St. John Sewing Machine Company, Springfield, Ohio. Button-hole attachment for sewing-machines	300,742	June 17	1608	441	27	1234
Turnbull, Andrew, New Britain, Conn. Fire-escape	296,650	Apr. 8	955	268, 269	27	190
Turnbull, William P., assignor to Davis & Furbur Machine Company, North Andover, Mass. Self-operating jack or mule	295,957	Apr. 1	76	22	27	17
Turner, Benjamin E. (See Randle and Turner.)						
Turner, Isaac P., Troy, assignor to J. K. P. Pine, Lansingburg, N. Y. Cuff-box	295,958	Apr. 1	77	23	27	18
Turner, Isaac P., assignor to G. W. Pine, Troy, N. Y. Staying-piece for garment slit-openings	295,959	Apr. 1	78	23, 24	27	18
Turner, James C., and L. Côté, assignors of one-third to B. C. Young, Boston, Mass. Last	300,414	June 17	1183	324	27	1158
Turner, John H., assignor to Wallace & Sons, Ansonia, Conn. Hanging lamp	298,800	May 20	1060	297	27	741
Turner, Luther G., assignor to Turner & Seymour Manufacturing Company, Torrington, Conn. Shade-pull	296,713	Apr. 8	1027	288	27	205
Turner & Seymour Manufacturing Company. (See Turner, Luther G., assignor.)						
Turner, Thomas G., New York, N. Y., assignor, by mesne assignments, to H. A. Seymour, Washington, D. C. Electric-arc lamp	299,600	June 3	129	32	27	943
Turner, William B., New York, N. Y., and J. J. Mann, Jersey City, N. J., assignors of one-third to C. Beard, New York, N. Y. Drawbar and buffer	296,801	Apr. 15	1137	320	27	231
Tuttle, John J., Springfield, Ohio. Check-rower	297,202	Apr. 22	1658	451	27	329
Twiggs, John W. (See Hoyt and Twiggs.)						
Tyler Bale Tie Company. (See White, Joseph, assignor.)						
Tyler, George, Waltham, Mass. Seed and fertilizer distributer	299,184	May 27	1537	440, 441	27	842
Tynan, Joseph E., Paterson, N. J. Machinery for stretching and smoothing sewing-thread	297,542	Apr. 22	2088	509	27	410
Uebinger, Charles, St. James, Ind. Car-coupling	298,918	May 20	1204	339	27	769
Ulrich, Max, Holyoke, Mass. Oscillating steam-engine	300,166	June 10	846	228, 229	27	1089
Ulsomer, George, Hanbstadt, Ind. Car-coupling	297,877	Apr. 29	2508	687	27	497
Umpherston, William, Leith, Scotland. Machine for preparing pulp for paper-machines	297,037	Apr. 15	1436	395	27	284
Unangst, Christopher T., Swartswood, N. J. Window-curtain fixture	300,167	June 10	848	229	27	1089
Underhill, Francis M., *et al.* (See Herckner, Emil, assignor.)						
Underwood, Flavius J., North Springfield, Mo. Car-brake	296,896	Apr. 15	1266	352	27	253
Underwood, Henry M., Waukegan, Ill. Barbed fence	297,203	Apr. 22	1660	452	27	330
Underwood, John, Sheridan, Ind. Harrow	300,291	June 10	1023	276	27	1120
Underwood, Wells A., *et al.* (See Simmons, Thomas A., assignor.)						
Unger, Charles, Pittsburg, Pa. Apparatus for preparing vegetable substances for fermentation	296,651	Apr. 8	957	269	27	191
Ungerer, Jacob, Newark, N. J. Cigar-piercing device	297,956	Apr. 29	2611	715	27	516
Union Bag Machine Company. (See Mather and Dearborn, assignors.)						
Union Bag Machine Company. (See Mather and Woodward, assignors.)						
Union Car Coupler Company. (See Mignault and Dion, assignor.)						
Union Hardware Manufacturing Company. (See Gibbons, John, assignor.)						
Union Paper Bag Machine Company. (See Allison, Oscar W., assignor.)						
Union Water Meter Company. (See Fitts, Benaiah, assignor.)						
United Coal and Oil Gas Company. (See Hanlon, John, assignor.)						
United States Automatic Buttonhole Sewing Machine Company. (See Mills, Daniel, assignor.)						
United States Box Machine Company. (See Gibbs, Jacob S., assignor.)						
United States Cable Motor Construction Company. (See Boyer, Zaccur P., assignor.)						
United States Cotton Seed Company. (See O'Shaughnessy, James F., assignor.)						
United States Electric Lighting Company. (See Drake, David E., assignor.)						
United States Electric Lighting Company. (See Tobey, George A., assignor.)						
United States Electric Lighting Company. (See Weston, Edward, assignor.)						
United States Electric Lighting Company. (See Wright, Alexander P., assignor.)						
United States Equitable Gas Company. (See Southwick, Alfred P., assignor.) (Reissue.)						
Universal Concentrating Company. (See Firman, Henry S., assignor.)						
Upham, James B., Boston, Mass. Magic lantern and wonder camera combined	298,636	May 13	840	235	27	693
Upton, King, Peabody, Mass. Tackle	296,487	Apr. 8	750	207	27	148
Uren, Andrew, Seattle, Wash. Ter. Handle for crosscut-saws	299,699	June 3	272	68	27	971
Urso, Vincent D., Evansville, Ind. Pop-corn package	296,897	Apr. 15	1267	352	27	254
Utter, John H., Westerly, R. I. Printing-press	296,898	Apr. 15	1268	353	27	254
Vail, Theodore N., Boston, Mass. Electric switch-board	296,253	Apr. 1	440	124	27	84
Vail, Theodore N., Boston, Mass. Electric multiple-switch-board system	299,039	May 20	1354	386, 387	27	797
Vail, Theodore N., Boston, Mass. Electric annunciator and circuit	300,168	June 10	849	229, 230	27	1089
Vail, Thomas C., Topeka, Kans. Easel	298,257	May 6	385	101	27	509
Vaile, Charles A., Baltimore, Md. Skylight	297,038	Apr. 15	1436	396	27	284
Vaile, John H., Dayton, Ohio. Steam-actuated valve	298,919	May 20	1205	339, 340	27	770
Vaile, John H., Dayton, Ohio. Oil-press mat	298,920	May 20	1206	340	27	770
Valentine, Benjamin E., assignor to C. S. Higgins, Brooklyn, N. Y. Cold and fire proof storage-building	298,592	May 13	704	200	27	668
Valentine & Company. (See Laughton, Joseph B., assignor.)						
Valiant, George, Toronto, Ontario, Canada. Seam for boots and shoes	298,637	May 13	841	235	27	693
Valiant, George, Toronto, Ontario, Canada. Boot	298,638	May 13	842	235	27	693
Valliquet, Louis P., Bridgeport, Conn., assignor of one-half to L. W. Strong, New York, N. Y. Game-board	297,475	Apr. 22	1994	545	27	393
Van Allen, Abraham, New York, N. Y. Ball-trap	300,415	June 17	1184	324	27	1158

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Van Bibber, James D., Springfield, Mo. Game-board for producing magic squares, playing checkers, &c	300,534	June 17	1328	364	27	1186
Van Campen, Savillion, Jersey City, N. J. Decorative tile	298,921	May 20	1207	341	27	770
Van Depoele, Charles J., Chicago, Ill. Dynamo-electric machine	297,878	Apr. 29	2509	687	27	497
Van Depoele, Charles J., Chicago, Ill. Inductorium	298,431	May 13	602	170	27	648
Van Depoele, Charles J., Chicago, Ill. Dynamo-electric machine	300,535	June 17	1329	365	27	1186
Van Derveer, Milton T., and J. Hegeman, Amsterdam, N. Y. Amalgamating apparatus	299,700	June 3	272	68	27	971
Van Deventer, Zenas A., Wilmington, Del. Stair-carpet fastener	300,416	June 17	1184	325	27	1158
Van Dusen, Charles, New Albany, Ind., assignor of one-half to W. L. Breyfogle, Louisville, Ky. Nut and bolt lock	295,960	Apr. 1	79	24	27	18
Van Duzee, Charles A. (See Kendrick and Van Duzee.)						
Van Dyke, James C. (See Bolton and Van Dyke.)						
Van Gaasbeek, Beekman, Mount Vernon, N. Y. Street-cleaning machine	296,488	Apr. 8	751	207	27	148
Van Haagen, Claus, Philadelphia, Pa. Manufacture of drills	296,254	Apr. 1	444	125, 126	27	84
Van Hoevenbergh, Henry, Elizabeth, N. J. Combined electric-lamp lighting and extinguishing device	297,879	Apr. 29	2513	688	27	497
Van Houten, John B., Newark, N. J. Sleeve-button	297,731	Apr. 29	2351	639	27	466
Van Kersen, Izaak, Kalamazoo, Mich. Blind-slat lock and operator	297,204	Apr. 22	1661	452	27	330
Van Nuys, Thomas C., *et al.* (See Hunter, George D., assignor.)						
Van Patten, John, East Tawas, Mich. Circular sawing machine	296,652	Apr. 8	958	269	27	191
Van Riper, Abram H., Orange, N. J., and F. E. Kip, New York, N. Y. Soda-fountain	300,170	June 10	853	230	27	1090
Van Riper, Garritt M., and J. O. St. Clair, Republic, Mich. Hose-coupling	297,880	Apr. 29	2515	688	27	498
Van Schaick, Anthony G. (See Eyster, Ben, assignor.)						
Van Valkenburgh, Perry. (See Rundell and Van Valkenburgh.)						
Van Winkle, John E., Paterson, N. J. Opener and cleaner for fibrous materials	299,297	May 27	1676	480, 481	27	868
Van Wormer, Matthew, Melrose, Mass. Dumping-car	296,088	Apr. 1	233	68, 69	27	47
Vance, Robert J. (See Ibelle, William H., assignor.)						
Vance, Samuel. (See Scull, James, assignor.)						
Vance, W. P., *et al.* (See Boals, James A., assignor.)						
Vance, Walter L., *et al.* (See Doty, John C., assignor.)						
Vandeburgh, Otis P., Toledo, Ohio. Door-check	300,169	June 10	852	230	27	1090
Vandegrift, Nathaniel W., assignor to F. Armstrong, Bridgeport, Conn. Wrench	298,043	May 6	104	27	27	547
Vander Weyde Electric Company. (See Vander Weyde, Peter H., assignor.)						
Vander Weyde, Peter H., Brooklyn, assignor to Vander Weyde Electric Company, New York, N. Y. Compound telegraph-cable	300,034	June 10	669	182, 183	27	1057
Vandercook, Willis, Mason, Mich. Two-wheeled vehicle	297,543	Apr. 22	2090	509	27	410
Vanderman, William, Willimantic, Conn. Steam-trap	300,664	June 17	1509	415, 416	27	1219
Vandermark, John L. (See McGann, Owen J., assignor.)						
Vanderveort, Manly R., Clinton, Ill. Attachment for fire-engines	300,665	June 17	1511	416	27	1219
Vanduzen, Ezra W. (See Woods, Granville T., assignor.)						
Vanlohe, John C., Baltimore, Md. Bleaching raw cotton	297,319	Apr. 22	1704	.....	27	354
Vanneman, William C., Richmond, Ind. Roller-skate	298,323	May 6	472	127	27	615
Vansize, William B. (See Buckingham and Vansize.)						
Vansize, William B., Brooklyn, and C. L. Buckingham, assignors to Western Union Telegraph Company, New York, N. Y. Printing-telegraph	300,417	June 17	1186	325	27	1158
Varney, William E. (See Hull and Varney.)						
Vassar, Robert G., New York, N. Y. Alarm-lock	298,136	May 6	215	57	27	508
Vassar, Robert G., New York, N. Y. Burglar-alarm	298,137	May 6	217	57	27	508
Vaughn, Joseph W., Peabody, Mass., assignor to Vaughn Morocco Machine Company, Portland, Me. Putting-out machine	299,701	June 3	274	68	27	971
Vaughn Morocco Machine Company. (See Vaughn, Joseph W., assignor.)						
Velte, William, Pittsburg, Pa. Well-boring machine	299,298	May 27	1678	481	27	869
Venner, William G., Hamburg, N. Y. Overalls	299,702	June 3	277	69	27	972
Ver Genius, Christian A. R. L., assignor of one-half to G. A. Ver Genius, Galesburg, Ill. Printer's quoin	298,639	May 13	842	235	27	693
Ver Genius, Gustave A. (See Ver Genius, Christian A. R. L., assignor.)						
Vest, Americus D., San José, Cal. Lamp-collar	296,253	Apr. 1	446	126	27	85
Vester, Adolph, Providence, R. I. Flat chain	298,432	May 13	604	171	27	649
Vetter, Josefine, Mount Vernon, N. Y. Crocheting-fork	297,881	Apr. 29	2516	688	27	498
Vetter, Joseph C., and S. G. Putnam, New York, N. Y. Armature for electric motors and dynamo-electric machines	298,922	May 20	1208	341	27	770
Vetter, Joseph C., and S. G. Putnam, New York, N. Y. Electric battery	300,666	June 17	1511	416	27	1220
Viaduct Manufacturing Company of Baltimore City. (See Welsh, Alexander, assignor.)						
Vicars, John, Sr. (See Vicars, Thomas, Sr., J., Sr., T., Jr., and J., Jr.)						
Vicars, Thomas, Sr., J., Sr., T., Jr., and J., Jr., Liverpool, county of Lancaster, England. Apparatus for feeding fuel to and in furnaces	296,301	Apr. 1	516	143, 144	27	97
Victor, Joseph, Duquoin, Ill. Lock for fire-arms	300,743	June 17	1611	442	27	1235
Vinton, John J., Youngstown, Ohio. Mold for repairing broken rolls, shafts, &c	296,369	Apr. 8	602	167	27	120
Vizer, Robert R. (See Pinnshon and Vizer.)						
Vogel, Charles, Fort Lee, N. J. File-cutting machine	298,714	May 13	944	262, 263	27	713
Vogler, Joseph A., Cincinnati, Ohio. Car-coupling	298,523	May 13	706	200	27	668
Voigt, Max, assignor of one-half to R. G. Schmidt, New York, N. Y. Lock	295,961	Apr. 1	81	25	27	18
Voigt, Ward & Co. (See Brunt, William H., assignor.)						
Volke, Charles A., Kobé, Japan. Toy	299,703	June 3	278	69	27	972
Volkmann, Conrad D., and W. F. Peddycord, Nappanee, Ind. Pipe-wrench	299,440	May 27	1850	532	27	901
Von Ainbach, Franz F., Hautzenbuchl, and A. Hauger, Judenburg, Styria, Austria-Hungary. Car-coupling	297,957	Apr. 29	2611	715	27	516
Von Buonaccorsi di Pistoja, Adolf, Vienna, Austria-Hungary. Screw-propeller	296,271	Apr. 1	473	132	27	89
Von Schade, Adolph, Newport, R. I. Bottle-washer	299,185	May 27	1538	441	27	842
Von Schmidt, Aliexey W., San Francisco, Cal. Water-jacket for rotary pumps	299,186	May 27	1541	442	27	842
Von Schmidt, Aliexey W., San Francisco, Cal. Device for connecting and supporting the sections of dredger discharge-pipes	299,882	June 3	470	123	27	1011
Von Schmidt, Aliexey W., San Francisco, Cal. Universal ball-joint	300,332	June 10	1073	292	27	1129
Von Schmidt, Aliexey W., San Francisco, Cal. Dredging-machine	300,333	June 10	1074	292, 293	27	1129
Von Swaine, Victor H. (See Enke, Carl, assignor.)						
Wank, Reinhold, and C. Jagusch, Chicago, Ill. Portable grinding-mill	301,020	June 24	1948	538	27	1304
Wade, William H., *et al.* (See Heckmann, Louis, assignor.)						
Wadhams, Magie & Co. (See Felthousen, Barrent W., assignor.)						
Waggonner, John, New Hampton, Mo. Pitman-coupling for harvesters	297,882	Apr. 29	2516	688	27	498

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Wagner, Christopher, Cleveland, Ohio. Step-ladder	300,919	June 24	1928	500	27	1281
Wagner, Emil, assignor of one-half to J. Brandstettner, Cincinnati, Ohio. Sled	299,601	June 3	131	32	27	944
Wagner, Gustavus G. (See Bard and Wagner.)						
Wagner, Gustavus G., Mount Vernon, N. Y. Clock-synchronizing apparatus	296,256	Apr. 1	447	127	27	85
Wagner, Howard, *et al.* (See Le Roy, Charles J., assignor.)						
Wagner, John. (See Ackermann and Wagner.)						
Wagner, Julius, Silver City, N. Mex. Ter. Adjustable shade-hanger	298,524	May 13	706	200	27	669
Waite, Henry E. (See Ethridge, Martin V. B., assignor.)						
Waite, Henry E., assignor to C. F. Livermore, trustee, New York, N. Y. Telephone-transmitter	298,923	May 20	1209	341	27	770
Waite, Henry E., assignor to C. F. Livermore, trustee, New York, N. Y. Telephone-receiver	298,924	May 20	1211	341	27	771
Waite, Henry E., assignor to C. F. Livermore, trustee, New York, N. Y. Telephone-transmitter	298,925	May 20	1212	342	27	771
Walborn, Israel, Fremont, Ohio. Hoop-splitting machine	298,044	May 6	105	27	27	547
Walcott, Jabez E., *et al.* (See Parkinson, Edward, assignor.)						
Walden, Engebright I., Ishpeming, Mich. Steam-generator	300,418	June 17	1187	325	27	1159
Waldo, Frank, Washington, D. C., assignor of one-half to L. Waldo, New Haven, Conn. Apparatus for distributing time-signals over lines employed for other purposes	296,653	Apr. 8	960	270	27	191
Waldo, Leonard. (See Waldo, Frank, assignor.)						
Waldschnitt, Franz, New York, N. Y. Handle and handle-cap for traveling-bags	300,667	June 17	1512	417	27	1220
Walenn, William H., Islington, county of Middlesex, England. Process of and apparatus for electro-depositing copper, brass, &c.	300,035	June 10	671	183	27	1057
Wales Manufacturing Company. (See Barry, William, assignor.)						
Wales, Walter H., assignor to A. T. Cross, Providence, R. I. Lead and crayon holder	296,654	Apr. 8	961	270	27	192
Walker, Albert H., Brooklyn, assignor to Sone & Fleming Manufacturing Company, New York, N. Y. Uniting wood	300,536	June 17	1332	365	27	1187
	300,817	June 24	1701	465	27	1257
Walker, Edward, New York, N. Y. Tailor's pressing-machine	296,802	Apr. 15	1138	{320 321	27	231
Walker, Eugene R., Chicago, Ill. Illuminating lubricating-can						
Walker, George, Jr. (See Carns, John W., assignor.)						
Walker, George L., *et al.* (See Mark, Charlie E., assignor.)						
Walker, James T., Baltimore, Md. Bottle-stopper	296,655	Apr. 8	903	270	27	192
Walker, Martin V., Wenasoga, Miss. Station-indicator	297,320	Apr. 22	1795	487	27	355
Walker, Robert O., assignor of one-fourth to W. M. Dobbin, Chicago, Ill. Seal-lock	300,171	June 10	655	231	27	1090
Walker, William F., Worcester, Mass. Device for threading bolts	299,299	May 27	1679	481	27	869
Walker, William J., Franklin, Mass. Implement for smoothing or polishing metallic surfaces	296,370	Apr. 8	603	167	27	120
Walkup, Liberty, Rockford, Ill. Paint-distributer	298,138	May 6	218	57, 58	27	568
Wallace, Albert E., assignor to Pope Manufacturing Company, Hartford, Conn. Velocipede	299,893	June 3	471	124	27	1012
Wallace, Andrew, Leadville, Colo. Bearing for the spindles of amalgamating-pans	300,920	June 24	1928	500	27	1281
Wallace, Charles G. (See Foster, James B., assignor.)						
Wallace, John B., assignor to Electrical Supply Company, Ansonia, Conn. Carbon-battery	300,537	June 17	1333	366	27	1187
Wallace & Sons. (See Turner, John H., assignor.)						
Wallace, William V., Boston, Mass. Air-cooling machine	297,039	Apr. 15	1437	{366 367	27	285
Wallace, William V., Boston, Mass. Air-cooling device	297,476	Apr. 22	1995	545	27	393
Wallace, William V., Boston, Mass. Mechanical movement	300,419	June 17	1188	325	27	1159
Wallerman, Louis E., Milwaukee, Wis.	299,441	May 27	1851	532	27	901
Wallis, Henry M., assignor to Mitchell & Lewis Company, (limited,) Racine, Wis. Road-cart						
Wallis, Theodore. (See Peacock and Wallis.)						
Wallis, Thomas M., assignor to W. Wurfflein, Philadelphia, Pa. Breech-loading fire-arm	301,021	June 24	1949	539	27	1304
Wallwork, Thomas, Litchfield, Ill. Coal-dumper	296,089	Apr. 1	236	69	27	48
Walsh, Francis A., Chicago, Ill. Sheet-metal can	298,861	May 20	1061	297	27	741
Walsh, Francis A., Chicago, Ill. Constructing seams of sheet-metal vessels	299,942	June 3	544	145	27	1025
Walsh, John, Newton, Iowa. Warm-air furnace	301,022	June 24	1951	539	27	1304
Walsh, John A. (See Hardie, Robert, assignor.)						
Walter, Alois J., Philadelphia, Pa. Corkscrew	295,982	Apr. 1	89	25	27	18
Walter, James F., assignor to A. D. Ellis, Waterloo, Iowa. Mop-wringer	297,040	Apr. 15	1439	397	27	285
Walter, Joseph E., and W. B. Montgomery, Abingdon, Md. Nursery-chair	300,921	June 24	1929	500	27	1282
Walter, Willie C., Richmond, Va. Lamp-extinguisher	296,480	Apr. 8	753	207	27	149
Walters, Charles F. and W. J., Gang Mills, N. Y. Garter	300,922	June 24	1930	501	27	1282
Walters, Charles F. and W. J., Gang Mills, N. Y. Stocking-supporter and garter	300,923	June 24	1931	501	27	1282
Walters, Charles F. and W. J., Gang Mills, N. Y. Clasp	300,924	June 24	1931	501	27	1282
Walters, Charles W., Oglethorpe, Ga. Ticket-holder	300,172	June 10	856	231	27	1090
Walters, William J. (See Walters, Charles F. and W. J.)						
Walton, Milton A. (See Snee, William, assignor.)						
Waltz, Thomas. (See Chamblin and Waltz.)						
Walworth, Caleb C., Boston, and O. B. Hall, Malden, Mass. Automatic fire-extinguishing apparatus	296,490	Apr. 8	754	208	27	149
Ward, A. Montgomery. (See Doty, William M., assignor.)						
Ward, Caleb T., New York, N. Y. Book-case	299,602	June 3	132	32	27	944
Ward, Charles, Charleston, W. Va. Water-tube steam-generator	297,649	Apr. 29	2239	{609 610	27	445
Ward, George C., Girard, Kans. Pencil	297,041	Apr. 15	1440	397	27	285
Ward, John, Condersport, Pa., assignor of one-half to F. Davenport. Car-coupling	300,292	June 10	1025	276	27	1120
Ward, John, Lansingburg, N. Y., assignor to Ludlow Valve Manufacturing Company. Hydrant	300,925	June 24	1932	{501 502	27	1282
Ward, William P. (See Sherman, John A., assignor.)						
Warden, Henry, assignor to Atlantic Refining Company, Philadelphia, Pa. Filter-press	297,042	Apr. 15	1441	397	27	285
Warden, Henry, assignor to Atlantic Refining Company, Philadelphia, Pa. Separating liquid from solid matter and mechanism therefor	298,640	May 13	843	236	27	693
	297,883	Apr. 29	2517	689	27	498
Ware, David, and C. W. Richman, Philadelphia, Pa. Fire-escape	296,656	Apr. 8	964	270	27	192
Ware, Edmund R., Worcester, Mass. Grinding and polishing machine	297,732	Apr. 29	2352	639	27	466
Ware, Francis, Boston, Mass. Telephone mouth and ear piece						
Warfield, Oliver D., Chicopee Falls, Mass., assignor to C. H. Wood, Providence, R. I., and E. B. Holton, Chicopee, Mass. Lathe-dog	297,884	Apr. 29	2517	689	27	498
	296,371	Apr. 8	604	167	27	120
Waring, Arthur B., Boston Mass. Head-covering and making the same	300,538	June 17	1334	{366 367	27	1187
Waring, John B., New York, N. Y., assignor to J. C. White, J. H. Morris, W. S. Hagany, and S. S. White, Jr., executors of S. S. White, deceased. Dentist's chair						
Waring, John T. (See Merritt, Charles H., assignor.)						
Warner, Augustus, *et al.* (See Ridge, Joseph, assignor.)						
Warner, Carlos S., Brooklyn, N. Y., assignor to L. C. Warner, Crown Point, Ind. Elevator-chain	297,650	Apr. 29	2241	610	27	445

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Warner, David E. (See Warner, Oliver S., assignor.)						
Warner, Ernest P. (See Warner, James C. and E. P.)						
Warner, James C. and E. P., assignors to Western Electric Company, Chicago, Ill. Metallic circuit for telephone-exchanges	299,603	June 3	133	33	27	944
Warner, Jasper P., Dowagiac, Mich. Wheel-hub	298,525	May 13	707	200	27	669
Warner, Lucina C. (See Warner, Carlos S., assignor.)						
Warner, Oliver S., Akron, Ohio, assignor of one-half to D. E. Warner, Jamesport, N. Y. Pen-holder	297,651	Apr. 29	2241	610	27	445
Warren, Charles, Wellesley, assignor to J. C. Warren, Boston, Mass. Inhaler	298,802	May 20	1062	297	27	741
Warren, Charles W. (See Goodwin and Warren.)						
Warren, Christopher C., assignor of one-half to C. C. Irvin, Lodi, Miss. Cotton-gin gearing	298,324	May 6	473	127	27	616
Warren, Edward, Ligonier, Ind. Vehicle-top	296,090	Apr. 1	237	69	27	48
Warren, John C. (See Warren, Charles, assignor.)						
Warren, John D. (See Fiske, Asa B., assignor.)						
Warren, John H. (See Clark, Franks, and Banghman, assignors.)						
Warren, John H., Burlington Junction, Mo. Cleat for end-gates	297,477	Apr. 22	1997	546	27	394
Warren, Lewis, McGrawville, N. Y. Spring-seat for vehicles	295,963	Apr. 1	82	25	27	19
Warren, Murray H. (See Clark and Warren.)						
Warrick, Samuel, Battle Creek, Mich. Interlocking-machine for signals and switches on railways	297,885	Apr. 29	2519	689	27	499
Warrington, Jesse. (See Marmon and Warrington.) (Reissue.)	297,478	Apr. 22	1998	546	27	394
Warth, Albin, Stapleton, N. Y. Rotary pump	297,886	Apr. 29	2520	{689 690	27	499
Warth, Albin, Stapleton, N. Y. Rein-controller	299,300	May 27	1680	482	27	869
Warth, Nathaniel G., Canton, Ohio. Telephone-support	300,539	June 17	1336	{367 368	27	1187
Warwick, James, Manchester, county of Lancaster, England. Mechanical movement	300,818	June 24	1703	465	27	1257
Warwick, John, and W. C. Westaway, Delavan, Wis. Windmill	298,526	May 13	709	201	27	669
Washburn, Andrew L., New Orleans, La., and A. L. Journeay, Houston, Tex. Car-coupling	296,091	Apr. 1	237	69	27	48
Washburn, Caleb B., Minneapolis, Minn. Manufacture of barrels						
Washburn & Moen Manufacturing Company. (See Curtis, John D., assignor.)						
Washburn & Moen Manufacturing Company. (See Decker, Alexander C., assignor.)						
Washburn & Moen Manufacturing Company *et al.* (See Hill, Peter P., assignor.)						
Washburn & Moen Manufacturing Company. (See Lenox and Hentz, assignors.)						
Water Repellant Finishing Company. (See Forbes, Robert S., assignor.)						
Waterbury Buckle Company. (See Smith, Dwight L., assignor.)						
Waterman, Lewis E. (See Dupee and Honsum, assignors.)						
Waters, Chester C., Moline, Ill. Drive-chain	299,187	May 27	1542	442	27	843
Watkins, Benjamin F., Alliance, Ohio. Oven for drying cores or molds	298,803	May 20	1063	{297 298	27	741
Watkins, Thomas, Portsmouth, N. H. Sewer-trap	298,045	May 6	106	27	27	547
Watrous, Fillmore M., assignor of one-half to J. Stuart, Ansonia, Conn. Device for securing box-covers	300,926	June 24	1934	502	27	1283
Watson, Abraham, Georgetown, Demerara, British Guiana. Combined cream-freezer and refrigerator	297,887	Apr. 29	2522	690	27	499
	299,442	May 27	1652	532	27	901
Watson, Charles S., assignor to J. R. Bisset, Philadelphia, Pa. Envelope-opener						
Watson, James T., assignor of three-fourths to R. T. Bishop, St. Louis, Mo., and J. C. Bohrer, St. Paul, Minn. Automatic shaft-tug	296,899	Apr. 15	1269	353	27	254
Watson, Jeremiah M., Sharon, Mass. Shaft-coupling	297,652	Apr. 29	2243	610	27	445
Watson, Jeremiah S. (See Ambruster, Charles S., assignor.)						
Watson, John E., Louisville, Ky. Regulator for dynamo-electric machines	300,420	June 17	1190	326	27	1159
Watson, Richard R. (See Frost, Ezra W., assignor.)						
Watson, Samuel, *et al.* (See Hershberger, Daniel, assignor.)						
Watson, Samuel, Marion, S. C. Hoe	298,926	May 20	1213	342	27	771
Wattles, John S., Canton, Mass. Dressing compound for threads, yarns, &c	299,704	June 3	279	.....	27	973
Wax, Newman S., Boston, Mass. Lamp-burner	299,301	May 27	1681	482	27	869
Wayman, William O., assignor to Crane Brothers Manufacturing Company, Chicago, Ill. Lubricator	296,657	Apr. 8	966	271	27	193
Waymire, Norris O., Garfield, Kans. Shell-extractor for fire-arms	299,302	May 27	1682	482	27	870
Weatherbee, Brayton A., Warren, N. Y. Machine for gathering stones	300,173	June 10	857	{231 232	27	1091
Weathers, James, assignor of one-half to J. A. Robbins, Indianapolis, Ind. Combined anvil, vise, and drill	296,658	Apr. 8	968	271	27	193
Weaver, Arthur F., Cleveland, Ohio. Grindstone-shaft	298,046	May 6	107	28	27	547
Weaver, Francis M., assignor of one-half to W. A. Hance, Springfield, Ohio. Treadle and stand for sewing-machines	298,258	May 6	386	102	27	599
Weaver, James N., Sayre, Pa. Feeding air to locomotive-furnaces	299,705	June 3	280	69	27	973
Weaver, Orange R., *et al.* (See Conly, Mahlon S., assignor.)						
Weaver, Solomon F., near Portis, Kans. Corn-harvester	299,303	May 27	1683	483	27	870
Webb, Jesse G., Boston, Mass. Cocoanut-sheller	298,047	May 6	108	28	27	548
Webb, Jesse G., Boston, Mass. Toy	299 664	June 3	133	33	27	944
Webb, John W., assignor of one-half to C. F. Burrell, Denver, Colo. Furnace for smelting ores	297,888	Apr. 29	2523	{690 691	27	500
Webb, Justice. (See Welling, John E., assignor.)						
Webb, Justice, *et al.* (See Welling, John E., assignor.)						
Webb, Samuel D. (See Hill and Webb.)						
Webb, Samuel D., assignor to W. W. Brigg, Washington, D. C. Cotton-gin	296,659	Apr. 8	969	271	27	193
Weber, Adolph, Detroit, Mich. Chuck for holding gate-valves	300,927	June 24	1935	502	27	1283
Weber, August, assignor of one-half to G. E. Hodge, New York, N. Y. Angle attachment for dental engines	299,040	May 20	1300	387	27	798
Weber, Frank F., Atlanta, Ill. Mirror	299,504	May 27	1686	483	27	870
Weber, Louis. (See Page and Weber.)						
Weber, Valentine, and J. Friedman, Princeville, Ill. Check-row corn-planter	298,139	May 6	221	58	27	569
Webster, Humphrey P., Boston, Mass. Coffee-pot	299,706	June 3	281	69	27	973
Webster, William R., Athens, Pa. Riveting-machine	300,174	June 10	860	232	27	1091
Wecker, Adolf, Heilbronn, Würtemberg, Germany. Apparatus for the manufacture of vinegar	300,928	June 24	1936	502	27	1283
	297,889	Apr. 29	2524	691	27	500
Wedekind, Johann C., Nordhausen, Prussia, Germany. Millstone	296,092	Apr. 1	239	70	27	48
Weed, Howard L., Grass Valley, Cal. Slate-washer	299,305	May 27	1687	483	27	870
Weed, John W., Flushing, N. Y. Needle	297,321	Apr. 22	1796	487	27	355
Weeden, Henry C., Boston, Mass. Water-closet connection	298,804	May 20	1064	{298 299	27	742
Weeden, Henry C., Boston, Mass. Adjustable support for water-closet basins						

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Weeden, Henry C., Boston, Mass. Flushing apparatus for closets and urinals	298,805	May 20	1065	299	27	742
Weeden, Henry C., Boston, Mass. Water-closet connection	299,605	June 3	134	33	27	944
Weeden, Henry C., Boston, Mass. Flushing apparatus for water-closets, &c.	299,606	June 3	135	33	27	945
Weeden, Henry C., Boston, Mass. Supply-valve for water-closets, &c.	300,540	June 17	1338	368 / 369	27	1187
Weeden, William N., New Bedford, Mass. Match-box holder	298,641	May 13	845	236	27	693
Weeks, Frank A., Enniskillen, Ontario, Canada. Safety-catch for elevators	300,541	June 17	1340	369	27	1188
Weeks, Horace, assignor to Corrugated Wire Fastening Company, Boston, Mass. Reel for nailing and other machines	299,041	May 20	1361	387	27	799
Wegman, Henry, Ithaca, N. Y. Reed-organ	299,707	June 3	282	70	27	973
Wegner, Gustav, Berlin, Germany, assignor of one-half to E. A. Rudiger, Brooklyn, N. Y. Suspension-bridge	297,479	Apr. 22	1999	546	27	394
Weichhart, John, San Francisco, Cal. Feed-cutting machine	298,527	May 13	710	201	27	669
Weidner, Charles. (See Englehart and Weidner.)						
Welkel & Smith Spice Company. (See Smyser, Henry E., assignor.)						
Welker, Raymond. (See Gilman and Welker.)						
Well, Ferdinand, *et al.* (See Park, John S., assignor.)						
Weimer, Peter L., Lebanon, Pa. Hoisting-tower for blast-furnaces	300,175	June 10	861	222 / 223	27	1091
Wels, Julius, Chicago, Ill. Blotting-pad and ruler	300,421	June 17	1193	326	27	1159
Weisbach, C. H. (See Römer and Meissner, assignors.)						
Weisgerber, William F. (See Himmer and Weisgerber.)						
Weisell, William W. (See Fitch, Washington I., assignor.)						
Weisse, Ludwig, assignor to himself and O. Holzer, New York, N. Y. Lathe for turning polygonal forms	298,528	May 13	712	202	27	670
Weisse, Ludwig, assignor of one-half to O. Holzer, New York, N. Y. Wood-turning lathe	298,529	May 13	713	202	27	670
Welch, Ashbel, Lambertville, N. J. Balanced slide-valve	297,322	Apr. 22	1797	488	27	355
Welch, Rosia W., Baltimore, Md., assignor of one-half to W. Cammack, Washington, D. C. Roller-mill	297,890	Apr. 29	2326	601	27	500
Weller, Chester A. (See Bening, Hermann, assignor.)						
Welling, John E., assignor to himself and J. Webb, Georgetown, Ky. Water-cooler	298,140	May 6	224	59	27	569
Welling, John E., assignor of two-thirds to J. Webb and J. E. Cantril, Georgetown, Ky. Egg-beater	299,884	June 3	473	124	27	1012
Wellington, Samuel B. (See Lande, Bernard, assignor.)						
Wellington, William, Rockford, Ill. Bag and twine holder	298,606	May 20	1066	299	27	742
Wellman, Samuel T., Cleveland, Ohio. Manufacturing wrought-steel	298,642	May 13	846	236	27	694
Wells, Charles S., assignor of one-half to A. M. Cushing, Boston, Mass. Suspender-buckle	296,803	Apr. 15	1139	321	27	229
Wells, Norman D., Hastings, Minn. Mechanism for converting motion	300,542	June 17	1341	369	27	1188
Wells, Schuyler C., Le Roy, N. Y. Apparatus for the manufacture of salt	297,323	Apr. 22	1798	488	27	355
Wells, Thomas E., Sandy Hill, N. Y. Hose-coupling	296,093	Apr. 1	239	70	27	48
Wells, Willet C., Ogden, Iowa. Rock-drill and well-boring machine	296,804	Apr. 15	1140	321	27	232
Wellsville Plate and Sheet Iron Company. (See Beaman, Charles F., assignor.)						
Welsh, Alexander, St. Denis, Md., assignor to Viaduct Manufacturing Company of Baltimore City. Electric lamp	299,708	June 3	283	70	27	973
Welsh, Alexander, St. Denis, Md., assignor to Viaduct Manufacturing Company of Baltimore City. Electric lamp	299,885	June 3	473	124	27	1012
Weltner, Lebbeus C., Uniontown, Pa. Well-drilling machine	299,366	May 27	1687	484	27	870
Wendt, Arthur F., New York, N. Y. Separating metals from franklinite ores	297,480	Apr. 22	2000	.....	27	394
Wenman, James F. (See Stewart, George W., assignor.)						
Wenstrom, John, Brooklyn, N. Y. Hat-rounding machine	298,643	May 13	847	236 / 237	27	694
Wenzel, Wilhelm, Vienna, Austria-Hungary. Galvanic element	300,176	June 10	863	223	27	1092
Weson, Isaac A., Wingo, Ky. Horse-detacher	297,205	Apr. 22	1602	452	27	350
West, Charles F., Philadelphia, Pa. Ice-creeper	297,733	Apr. 29	2353	640	27	466
West Haven Buckle Company. (See Hyde, James C., assignor.)						
West, John J., Chicago, Ill. Preparing or treating composition or material to be used in making plaques	297,206	Apr. 22	1662	.....	27	350
West, Jonathan B., Rochester, N. Y. Differential gear	296,491	Apr. 8	756	208	27	149
West, Jonathan B., Rochester, N. Y. Embroidery-holder	299,943	June 3	545	145	27	1025
West, William A., Bellefontaine, Ohio. Telephone	300,422	June 17	1194	326 / 327	27	1159
Westaway, Walter C. (See Warwick and Westaway.)						
Westbrook, Charles S., Sprague ville, N. Y. Drill-chuck	299,886	June 3	474	124	27	1012
Westcott, Charlie M., El Paso, Ill. Thill-coupling	299,443	May 27	1852	533	27	901
Western Electric Company. (See Haskins, Charles H., assignor.)						
Western Electric Company. (See Lewis, Charles W., assignor.)						
Western Electric Company. (See Patterson, William R., assignor.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Western Electric Company. (See Warner, James C. and E. P., assignors.)						
Western Union Telegraph Company. (See Buckingham and Vansize, assignors.)						
Western Union Telegraph Company. (See Vansize and Buckingham, assignors.)						
Westhover, Benjamin. (See Langille, Titus, assignor.)						
Westinghouse, George, Jr., Pittsburg, Pa. Apparatus for relieving pressure in brake-cylinders	300,543	June 17	1342	370	27	1188
Westinghouse, John, Schenectady, N. Y. Spark-arrester	298,807	May 20	1067	299 / 300	27	742
Westinghouse Machine Company. (See Tabor, Harris, assignor.)						
Weston, Charles S. (See Dresser, Lauriston J., assignor.)						
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Rheostat	297,324	Apr. 22	1800	489	27	335
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Testing carbon conductors for incandescent lamps	298,141	May 6	225	59	27	569
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Holder for incandescent lamps	298,142	May 6	226	59	27	570
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Socket for incandescent lamps	298,143	May 6	228	59	27	570
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electrical circuit-breaker	298,144	May 6	229	60	27	570
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Incandescent lamp	298,325	May 6	474	128	27	616
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric-circuit connector	298,326	May 6	475	128	27	616
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Incandescent-lamp fixture	298,327	May 6	476	128	27	616

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electrical-circuit breaker	301,023	June 24	1952	540	27	1304
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Manufacture of carbon conductors	301,024	June 24	1953	.....	27	1304
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Dynamo-electric machine	301,025	June 24	1954	540	27	1304
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Connector for electric conductors	301,026	June 24	1955	540	27	1305
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Dynamo-electric machine	301,027	June 24	1956	540	27	1305
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric regulator	301,028	June 24	1957	541	27	1305
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Junction device for electric circuits	301,029	June 24	1958	541	27	1305
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Safety-strip for electric circuits	301,030	June 24	1960	541	27	1306
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electrical conductor	301,031	June 24	1960	542	27	1306
Weston, Edward, Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Electric-arc lamp	301,076	June 24	2014	557	27	1316
Weston, Lon, Brockton, Mass. Paper-box-covering machine	296,257	Apr. 1	449	127 / 128	27	85
Wetmore, Albert S. (See Shawk and Wetmore.)						
Wetmore, Andrew E., Turner's Falls, Mass. Machine for washing table-cutlery and other articles	298,530	May 13	714	202	27	670
Wetmore, William H., Raleigh, N. C. Boot or shoe	297,207	Apr. 22	1663	452	27	330
Weyer, August, Long Island City, N. Y. Ornamenting glass articles	298,145	May 6	230	60	27	570
Wheat, Corydon, Geneva, N. Y. Steam-radiator	297,325	Apr. 22	1802	489	27	356
Wheatley, John R., Detroit, Mich., assignor of one-half to A. Heine, Silver Creek, N. Y. Manufacturing flour	298,259	May 6	387	102	27	500
Wheaton, Frank, assignor to G. W. Carter, New York, N. Y. Mail-bag	297,326	Apr. 22	1803	490	27	356
Whedon, James P. (See Neumiller, Whedon, and Perhacs.)						
Wheeler, Benjamin S., Orange, N. J. Game	296,900	Apr. 15	1270	353	27	254
Wheeler, Brayton, Saginaw, Mich. Clamp for holding well-poles	299,887	June 3	475	125	27	1012
Wheeler, Elijah H., Corpus Christi, Tex. Lock-stitch ripper	296,492	Apr. 8	757	208	27	149
Wheeler, Frederick G., New York, N. Y. Steam-generator for street-car or other locomotive engines	299,607	June 3	137	34	27	945
Wheeler, Henry M., Grand Forks, Dak. Ter. Thill-coupling	296,805	Apr. 15	1142	322	27	232
Wheeler, John E., trustee. (See Eldridge, Martin Y. B., assignor.)						
Wheeler, John E., trustee. (See Higgins, Charles L., assignor.)						
Wheeler, Seth, Albany, N. Y. Toilet and wrapping paper holder	297,043	Apr. 15	1442	398	27	286
Wheeler, Seth, Albany, N. Y. Toilet-paper fixture	297,044	Apr. 15	1443	398	27	286
Wheeler, Seth, Albany, N. Y. Wrapping or toilet paper fixture	297,045	Apr. 15	1443	398	27	286
Wheeler & Wilson Manufacturing Company. (See Campbell, Andrew C., assignor.)						
Wheeler & Wilson Manufacturing Company. (See Dimond and Dial, assignors.)						
Wheelhouse, Marshall. (See Alexander and Wheelhouse.)						
Wheelock, Jerome, Worcester, Mass. Metallic ring packing	297,891	Apr. 29	2527	602	27	500
Whelpley, James A., Greenwich, New Brunswick, Canada. Skate	296,714	Apr. 8	1028	288	27	205
Whipple, Mathew T. (See Holley, William H., assignor.)						
Whistler, Franklin P., Cadiz, Ind. Portable fence	300,929	June 24	1837	503	27	1283
Whitacre, John B., Canton, Ohio. Lubricator	296,493	Apr. 8	757	208	27	149
Whitaker, Edwin V., Gloversville, N. Y. Window-shade	297,892	Apr. 29	2528	602	27	501
Whitaker, Elijah J. B. (See Ladd and Whitaker.)						
Whitaker, Elijah J. B., New York, N. Y., assignor to G. W. and W. T. Whitaker, Baltimore, Md. Trundling toy horse. (Reissue)	10,480	May 13	953	265	27	715
Whitaker, George W., *et al.* (See Whitaker, Elijah J. B., assignor.) (Reissue.)						
Whitaker, William T., *et al.* (See Whitaker, Elijah J. B., assignor.) (Reissue.)						
Whitall, James, *et al.* (See Herckner, Emil, assignor.)						
Whitcomb, Daniel F., *et al.* (See Witty, John B., assignor.)						
Whitcomb, James, San José, Cal. Whiffletree	297,734	Apr. 29	2353	640	27	466
White, Addison, Lynnville, Iowa. Lifting-jack	297,892	Apr. 29	2529	602	27	501
White, Charles, Jr., and J. Anderson, Versailles, Ind. Condition-powder	298,433	May 13	605	.....	27	649
White Dental Manufacturing Company, S. S. (See Browne, Arthur W., assignor.)						
White Dental Manufacturing Company, S. S. (See Starr, Eli T., assignor.)						
White, Eliza A. (See Ryder, Martin H., assignor.)						
White, George J. (See Peckinpugh and White.)	298,644	May 13	849	237	27	694
White, George W., Belle Mina, Ala. Combined seeder and fertilizer-distributer						
White, Hugh. (See Cass, George F., assignor.)						
White, J. Clarence, *et al.*, executors. (See Waring, John B., assignor.)						
White, James H., assignor to Manhattan Brass Company, New York, N. Y. Fire-screen	300,930	June 24	1838	503	27	1283
White, John S., Portland, Me. Window-brush	299,188	May 27	1542	442	27	843
White, Joseph, Coventry, England. Ball-bearing for velocipedes	300,544	June 17	1343	370	27	1188
White, Joseph, assignor to Tyler Bale Tie Company, Cleveland, Ohio. Bale-tie	297,208	Apr. 22	1664	453	27	390
White, Joseph, assignor to Tyler Bale Tie Company, Cleveland, Ohio. Bale-tie	298,645	May 13	851	238	27	694
White, Justin P., and D. Harrington, Worcester, Mass. Bleach and stain brushing machine for the bottoms of boots and shoes	300,819	June 24	1704	465 / 466	27	1257
White, Le Roy S., assignor to Electric Appliance Company, Waterbury, Conn. Apparatus for lighting gas by electricity	298,531	May 13	715	202 / 203	27	671
White, Lucy N. (See Brown, Louis, assignor.)						
White, Merritt, North Adams, Mass. Nautical signal-light	297,046	Apr. 15	1444	399	27	286
White, Nelson S., Canton, Mass. Rubber-surfaced fabric and composition therefor	296,256	Apr. 1	454	.....	27	86
White, Peter, St. Louis, Mo. Water-closet valve	299,888	June 3	476	125	27	1013
White, Samuel S., Jr., *et al.*, executors. (See Waring, John B., assignor.)						
White Sewing Machine Company. (See Baker, George W., assignor.)						
White Sewing Machine Company. (See Baker, George W., assignor.) (Reissue.)						
White, Thomas F., Salem, Kans. Wrench	297,209	Apr. 22	1665	453	27	390
White, William A., assignor of one-half to D. A. Newton, Athol, Mass. Calipers	296,259	Apr. 1	456	128	27	86
Whited, Alvinzo, assignor to Holmes & Ide, Troy, N. Y. Collar	297,653	Apr. 20	2244	611	27	446
Whiteley, Fassler & Kelley. (See Whiteley, William N., assignor.)						
Whiteley, William N., Springfield, Ohio. Grain-wheel for harvesters	297,544	Apr. 22	2090	569	27	411
Whiteley, William N., assignor to Whiteley, Fassler & Kelley, Springfield, Ohio. Harvester	297,545	Apr. 22	2091	570	27	411
Whitely, William, Housatonic, Mass. Rag-engine for paper-making	299,307	May 27	1688	484	27	871
Whiting, Davis J. (See Lockwood, Samuel T., assignor.)						
Whiting, William M., Elizabeth, N. J. Vise	299,889	June 3	477	125	27	1013

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Whitlock, Thomas H., and C. L. Etheridge, Paris, Tenn. Plow	299,444	May 27	1853	533	27	901
Whitman & Barnes Manufacturing Company. (See Garrett, Daniel M., assignor.)						
Whitman, Walter W., *et al.*, executors. (See Bramer, Frank.)						
Whitney, Alfred. (See Winter, Thomas Y., assignor.)						
Whitney, Charles S., *et al.* (See Comstock, Francis M., assignor.)						
Whitney, John M., Mount Pulaski, Ill. Automatic starting and stopping mechanism for windmill-pumps	300,177	June 10	865	233, 234	27	1092
Whitney, Moses W., Bristol, R. I. Rubber boot	299,890	June 3	478	125	27	1013
Whitney, Orison C., Cleveland, Ohio. Reed-organ stop-action	297,211	Apr. 22	1667	453, 454	27	331
Whitney, Orison C., Cleveland, Ohio. Cabinet-organ case	297,212	Apr. 22	1669	454	27	331
Whitney, Pardon A., Cleveland, Ohio. Ratchet-drill	297,210	Apr. 22	1666	453	27	331
Whitson, George W., *et al.* (See Le Roy, Charles J., assignor.)						
Whittaker, Thomas, Accrington, county of Lancaster, England. Press for making bricks, tiles, &c	298,646	May 13	892	238, 239	27	694
Whittelsey, Elbert A., Brooklyn, N. Y. Shawl-strap	300,744	June 17	1613	442	27	1235
Whittier, Reuben S., Boston, Mass. Apparatus for operating window-shades	296,494	Apr. 8	758	209	27	150
Wiborn, Gershom, Manistee, Mich. Machine for rolling logs	300,820	June 24	1707	466	27	1258
Wick, John P., Cleveland, Ohio. Candy-machine	296,901	Apr. 15	1272	353, 354	27	255
Wickenden, William F., San Luis Obispo, Cal. Animal-shears	297,327	Apr. 22	1603	490	27	356
Wiegand, S. Lloyd, Philadelphia, Pa. Car-coupling	297,328	Apr. 22	1604	490	27	356
Wiegand, S. Lloyd, Philadelphia, Pa. Gas-engine	297,329	Apr. 22	1606	491	27	356
Wiegand, S. Lloyd, Philadelphia, Pa. Centrifugal drainer	300,545	June 17	1345	370	27	1189
Wigg, Charles, Liverpool, county of Lancaster, England. Apparatus for the manufacture of bicarbonate of soda	296,260	Apr. 1	457	129	27	86
Wigmore, William H. (See Doerr, John H., assignor.)						
Wilbur, Henry A., West Somerville, assignor of one-half to F. W. Lowe, Boston, Mass. Roller-skate	300,745	June 17	1614	442	27	1236
Wilcox, Crittenden & Co. (See Mitchell, Benjamin F., assignor.)						
Wilcox, Edward M., Whitewater, Wis., and W. E. Botsford, Omaha, Nebr. Shelling and grinding machine	298,260	May 6	389	102	27	600
Wilcox, Eljen K., Cleveland, Ohio. Journal-box	300,931	June 24	1839	503, 504	27	1284
Wilcox, Henry C., Boston, Mass. Elevator-guard	300,932	June 24	1840	504	27	1284
Wilcox, Stephen, Brooklyn, N. Y. Hot-air engine. (Reissue)	10,486	June 3	580	146, 147	27	1026
Wilcox, Stephen C., assignor to L. D. Randall, Dubuque, Iowa. Salt-cellar	299,445	May 27	1855	533	27	902
Wilcox, William R., St. Joseph, Mich. Car-step	300,608	June 17	1513	417	27	1220
Wilcoxson, Quinn D. (See Smoot and Wilcoxson.)						
Wild, Warren W., Lee, Mass. Tool for splitting stone	300,423	June 17	1195	327	27	1160
Wild, William E., Loveland, Colo. Machine for separating, sorting, and grading grain	299,446	May 27	1856	533, 534	27	902
Wilder, Aretus A., assignor of one-half to C. B. Palmer, Detroit, Mich. Nut-lock	297,894	Apr. 29	2530	693	27	501
Wilder, Edmund R. (See Porter and Wilder.)						
Wildermuth, La Fayette, Columbus, Ohio. Wire-coiling machine	296,806	Apr. 15	1143	322	27	232
Wildermuth, La Fayette, Columbus, Ohio. Spring bed-bottom	298,927	May 20	1213	342	27	771
Wildt, William, Richmond, Va. Engraver's tool	297,213	Apr. 22	1670	454	27	331
Wiley & Rossell Manufacturing Company. (See Smart, Albert J., assignor.)						
Wilhelm, Artemas, Wilmington, Del. Toy	299,608	June 3	139	34	27	946
Wilhelm, Solon H. (See Tower, Fred E., assignor.)						
Wilkes, Peter, Trenton, N. J. Blunger for mixing clay for potters' use	297,047	Apr. 15	1445	399	27	286
Wilkins, Alexander G., assignor to Wilkins Shoe-Button Fastener Company, Meadville, Pa. Apparatus for securing buttons to fabrics	297,895	Apr. 29	2531	693	27	501
Wilkins, John S., Cincinnati, Ohio. Welding compound	301,039	June 24	1961	.....	27	1306
Wilkins Shoe-Button Fastener Company. (See Wilkins, Alexander G., assignor.)						
Wilkins, Sylvester B. (See Mutimer, Frederick, assignor.)						
Wilks, John W., Carmel, S. C. Rotary engine	298,434	May 13	695	171	27	649
Willard, John P., West Depere, Wis. Bow-facing rowing mechanism	299,042	May 20	1304	388	27	799
Willcox & Gibbs Sewing Machine Company. (See Hine, Charles M., assignor.)						
Willcox & Gibbs Sewing Machine Company *et al.* (See Ryder, Martin H., assignor.)						
Willcutt, Andrew J., Boston, Mass. Car-platform gate	299,709	June 3	984	70	27	974
Willett, Marinus, Newport, R. I. Apparatus for concentrating sulphuric acid	301,033	June 24	1961	542	27	1306
Willey, Danford, Concord, N. H. Saw-sharpening machine	298,928	May 20	1215	343	27	771
Williams, Alexander R., Washington, D. C. File-holder	300,546	June 17	1346	371	27	1189
Williams, Benjamin R., Lawrenceville, Pa. Locking nuts to bolts	299,447	May 27	1858	534	27	902
Williams, Charles A., Lawsonham, Pa. Nut-lock	299,308	May 27	1689	484	27	871
Williams, Charles J., assignor of one-half to J. C. Iverson, Milwaukee, Wis. Machine for double-seaming elevator-buckets	297,048	Apr. 15	1446	400	27	286
Williams, Charles L., South Whitley, Ind. Vegetable-cutter	296,261	Apr. 1	459	129	27	87
Williams, Clarence A., Webster City, Iowa. Carpenter's work-bench	300,178	June 10	867	234	27	1092
Williams, Daniel R., Dallas, Tex. Reflector-holder for lamps	297,481	Apr. 22	2001	547	27	394
Williams, Francis S., Boston, Mass. Shirt-bosom	297,596	Apr. 29	2532	693	27	502
Williams, Frank T., and J. C. Howell, Llanelly, county of Carmarthen, England. Manufacture of spongy lead	296,262	Apr. 1	460	130	27	87
Williams, Henry S., and E. L. Shipman, assignors to themselves and J. D. Shipman, New York, N. Y. Portfolio	298,532	May 13	718	203	27	671
Williams, Isaac F., Bristol, R. I. Waterproofed textile fabrics	296,263	Apr. 1	461	130	27	87
Williams, Isaac F., Bristol, R. I. Rubber boot	296,264	Apr. 1	463	130	27	87
Williams, Isaac S., Philadelphia, Pa. Combined commode and bidet	299,891	June 3	479	126	27	1013
Williams, James B., Glastonbury, Conn. Whiffletree-hook	296,265	Apr. 1	464	130	27	87
Williams, James N., Mobile, Ala. Draw-bridge signal	298,647	May 13	854	230	27	695
Williams, James T. (See Williams, Julius M., assignor.)						
Williams, John N., St. Paul, Minn. Check-punching machine	298,648	May 13	855	239, 240	27	695
Williams, John R., Newark, N. J. Cigar-wrapper-cutting machine	297,597	Apr. 29	2533	694	27	502
Williams, John R., Newark, N. J. Cigar-wrapper cutter	297,598	Apr. 29	2535	694	27	502
Williams, John R., Newark, N. J. Combined pneumatic holder and cutter	298,715	May 13	947	263	27	714
Williams, John S. (See Burns, Robert, assignor.)						
Williams, John S., Chicago, Ill. Bellows	298,261	May 6	389	103	27	600
Williams, Julius M., assignor of one-half to J. T. Williams, Dutch Mills, Ark. Water-elevator and carrier	298,043	May 20	1303	388	27	799
Williams, Lewis, Johnstown, Pa., assignor to Cambria Iron Company, of Pennsylvania. Apparatus for coating wire with metal	296,094	Apr. 1	240	70	27	49

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Williams, Pliny B., *et al.* (See Little, James R., assignor.)						
Williams, Richard S., New York, N. Y. Wrinkling gold dental foil	298,716	May 13	948	263	27	714
Williams, Richard S., New York, N. Y. Dental-foil condenser	298,717	May 13	950	264	27	714
Williams, Robert, Jr. (See Michael and Williams.)						
Williams, Samuel T., Red Bank, N. J. Wheel	300,293	June 10	1026	276	27	1120
Williams, Sterling M. (See O'Connor and Williams.)						
Williams, Sylvester C., East Liverpool, Ohio. Machine for cutting barrel-heads	300,424	June 17	1196	327	27	1160
Williams, Warren, Lumberton, N. C. Saw-guide	295,964	Apr. 1	83	25	27	19
Williams, William I. (See Berry, James, assignor.)						
Williamson Brothers. (See Williamson and Fladvad, assignors.)						
Williamson, George, Cambridge, assignor to J. O. Hayden, Somerville, Mass. Apparatus for sawing printers' blocks	296,372	Apr. 8	605	167	27	120
Williamson, John J., Boston, Mass. Combining of steels	295,965	Apr. 1	83	26	27	19
Williamson, John J., Boston, Mass. Manufacture of compound electric wire	295,966	Apr. 1	86	26	27	19
Williamson, John J., Boston, Mass. Rubber boot	296,495	Apr. 8	759	209	27	150
Williamson, John J., Boston, Mass. Manufacture of electric conductors	300,179	June 10	860	234	27	1092
Williamson, John J., Boston, Mass. Electrical conductor	300,669	June 17	1514	417	27	1220
Williamson, James F. (See Hebert, Peter, assignor.)						
Williamson, William C., and H. O. Fladvad, assignors to Williamson Brothers, Philadelphia, Pa. Steam steering mechanism	300,180	June 10	871	234, 235	27	1093
Willsea, Theodore, Brockport, N. Y. Ditching-machine	301,034	June 24	1964	543	27	1306
Wilson, Henry, Chicago, Ill. Card or ticket holder	298,048	May 6	109	28	27	548
Wilson, Theodore B., Whitewater, Wis. Cuff fastener and adjuster	298,533	May 13	719	203	27	671
Wilson, William H., assignor of one-half to R. D. Rockwell, Westfield, N. Y. Valved trap	300,746	June 17	1615	443	27	1236
Wilmington Malleable Iron Company. (See Davis, Levis H., assignor.)						
Wilmot, De Borden, *et al.* (See Maltby, Frank D., assignor.)						
Wilmot, De Borden. (See Maltby and Wilmot.)	299,044	May 20	1364	388	27	799
Wilson, Allen F., assignor to J. M. Moore, Clayton, N. J. Fruit-jar cover						
Wilson, Andrew. (See Thompson, George F., assignor.)	300,821	June 24	1708	467	27	1258
Wilson, Andrew, New York, N. Y. Dynamometer	299,045	May 20	1364	388	27	799
Wilson, Charles B., Bridgeport, Conn. Metallic heel-plate	299,892	June 3	479	126	27	1013
Wilson, Charles C., Mansfield, Pa. Vehicle platform-gear	299,309	May 27	1690	484	27	871
Wilson, David R., Fenton, Mich. Pillow-sham and holder	298,146	May 6	231	69	27	570
Wilson, Erdwin, Brooklyn, N. Y. Trunk						
Wilson, Elizabeth, *et al.* (See Wilson, Silas H., assignor.)	296,496	Apr. 8	760	209, 210	27	150
Wilson, Fitzland L., West Bay City, Mich. Hoop pointing and lapping machine	298,147	May 6	232	60	27	571
Wilson, George A., Liverpool, county of Lancaster, England. Inking mechanism for printing-machines	296,371	Apr. 8	606	168	27	121
Wilson, James G., assignor to F. Forbes, New York, N. Y. Corrugated metal rolling-shutter	298,929	May 20	1216	343	27	772
Wilson, James N., assignor to himself and J. H. Campbell, Higginsville, Mo. Pulley-belter	297,899	Apr. 29	2536	694	27	502
Wilson, John, Chicago, Ill. Car-starter	300,670	June 17	1517	417	27	1220
Wilson, John T., Toronto Ontario, Canada. Ash-box	297,462	Apr. 22	2002	547	27	395
Wilson, Jonathan B., Zanesville, Ohio. Churn						
Wilson, Myers. (See Ellis, Wilson, and Tanner.)						
Wilson, Needham M. (See Wright, Wilber S., assignor.)						
Wilson, Odell, Cleveland, Ohio. Furnace	298,534	May 13	719	203, 204	27	671
Wilson, Selden L., Waynesborough, Pa. Gang-plow	300,671	June 17	1518	418	27	1220
Wilson, Silas H., assignor to R. H. Thompson, E. Wilson, Brooklyn, and H. D. Norris, New York, N. Y. Machine for rolling axles	297,546	Apr. 22	2092	570, 571	27	411
Wilson, Sullivan S., Litchfield, Mich. Hay-fork	297,900	Apr. 29	2537	694	27	502
Wilson, Thomas J., Auburn, N. Y. Metallurgic furnace	300,181	June 10	873	235	27	1093
Wilson, William, Jr., assignor of one-half to C. Green, Greenville, Del. Attachment for receiving and collecting looped and cut wire	300,547	June 17	1347	371, 372	27	1189
Wilson, William, Jr., assignor of one-half to C. Green, Greenville, Del. Making sheet-metal cans	300,548	June 17	1349	372	27	1189
Wilson, William, Jr., assignor of one-half to C. Green, Greenville, Del. Sheet-metal can	300,549	June 17	1350	372	27	1189
Wilson, William, Jr., assignor of one-half to C. Green, Greenville, Del. Machine for making looped wire	300,550	June 17	1352	373	27	1190
Wilson, William N., Shippensville, Pa. Back-strap check-hook for harness	298,535	May 13	720	204	27	671
Wiltshire, James B., Cincinnati, Ohio. Fire-escape	300,822	June 24	1711	467	27	1259
Winch, George L., Madras, East Indies. Secondary battery	300,933	June 24	1841	505	27	1284
Winchell, Benjamin H., Chicago, Ill. Tag-holder	300,182	June 10	874	235	27	1093
Winchell, James F., Springfield, Ohio. Detachable lever for forges	296,966	Apr. 1	466	131	27	88
Winchell, James F., Springfield, Ohio. Grinding-mill	297,049	Apr. 15	1447	400	27	287
Winchell, James F., Springfield, Ohio. Hood for forges	297,901	Apr. 29	2538	695	27	502
Winchell, James F., Springfield, Ohio. Forge	298,718	May 13	950	264	27	714
Winchell, James F., Springfield, Ohio. Forge	299,448	May 27	1859	534	27	902
Windhurst, Lewis, Springfield, Ohio. Valve gear	300,036	June 10	673	183	27	1057
Windle, John E., Worcester, Mass. Cloth-folding machine	296,374	Apr. 8	607	168	27	121
Winfree, William A., Elizabethton, Tenn., assignor of one-half to P. F. Cogan, Jersey City, N. J. Heating-stove	297,902	Apr. 29	2539	695	27	503
Winne, William H., Meridian, N. Y. Sleigh	298,536	May 13	721	204	27	672
Winsor, Harrey D., *et al.* (See Mefford, David M., assignor.)						
Winstead, Emerson E., Dresden, Tenn. Hame	296,497	Apr. 8	764	210	27	151
Winter, Thomas Y., Philadelphia, Pa., assignor of one-half to A. Whitney, Camden, N. J. Device for oiling shaft-bearings	299,096	May 20	1424	406	27	811
Winterbotham, Joseph, Joliet, Ill. Barrel-trussing machine	296,498	Apr. 8	765	210	27	151
Wintermeyer, Julius C. (See Drummond, Thomas, assignor.)						
Winther, Charles A. G., Boston, Mass. Soldering implement	300,672	June 17	1520	418	27	1221
Wirz, August H., Philadelphia, Pa. Collapsing cup	296,902	Apr. 15	1273	354	27	255
Wirz, August H., Philadelphia, Pa. Machine for forming pills	298,148	May 6	233	61	27	571
Wirz, August H., and A. V. W. Ranach, Philadelphia, Pa.; said Ranach assignor to said Wirz. Machine for making pills, tablets, &c	298,328	May 6	477	128, 129	27	617
Wise, David, Cottondale, Tex. Mechanical power	300,425	June 17	1197	327, 328	27	1160
Wise, Joseph, assignor to J. Wise & Son, Watertown, N. Y. Drawer-lock	296,807	Apr. 15	1144	322	27	232
Wise & Son, J. (See Wise, Joseph, assignor.)						
Wiskocil, Ferdenand, Prairie du Sac, Wis. Corn-planter	297,903	Apr. 29	2539	695, 696	27	503
Wisloh, Charles F., New York, N. Y. Water-cooler	296,095	Apr. 1	241	71	27	49
Wisniewski, Anton, New York, N. Y. Protective head-covering or hood	296,499	Apr. 8	766	210	27	152
Wiswell, Jacob C., Medford, Mass. Ore-crusher	296,096	Apr. 1	241	71	27	49

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wiswell, Jacob C., West Medford, Mass. Machine for washing and concentrating ores	300,426	June 17	1199	328	27	1161
Witherow, James P., *et al.* (See Clapp and Griffiths, assignors.) (Reissue.)						
Witherspoon, Frank, Paris, Tex. Windmill	297,904	Apr. 29	2541	696	27	503
Witte, Karl, Hartford, Conn. Shears	299,310	May 27	1691	484	27	871
Wittich, Frederick A., Ashtabula, Ohio. Carriage-bow	298,808	May 20	1069	300	27	742
Witty, John B., Indianapolis, Ind. Connection of railway-switch rods	296,808	Apr. 15	1145	323	27	233
Witty, John B., assignor to H. H. McGaffey, D. F. Whitcomb, and B. Hutchinson, Indianapolis, Ind. Switch-stand	298,537	May 13	722	204	27	672
Woeber, Amos, assignor to Cincinnati Target Ball and Trap Manufacturing Company, Cincinnati, Ohio. Potter's mold	296,097	Apr. 1	243	71	27	49
Woehrle, Albert C., New York, N. Y. Electric door-keeper	297,096	Apr. 15	1505	415	27	297
Wogaman, Moses, *et al.* (See Cloppert, William H. H., assignor.)						
Woglom, Gilbert T., assignor to Woglom & Miller, New York, N. Y. Button	300,673	June 17	1521	419	27	1221
Woglom & Miller. (See Woglom, Gilbert T., assignor.)						
Wolcott, Horace J. (See Wolcott, Hyman D., assignor.)						
Wolcott, Hyman D., Wright's, assignor of one-half to H. J. Wolcott, Port Allegany, Pa. Saw-jointer	298,538	May 13	723	205	27	672
Wolf, Abraham N., Allentown, Pa. Turbine water-wheel	300,823	June 24	1712	467 / 468	27	1259
Wolf, Frederick W., Chicago, Ill. Liquid-cooler.	301,035	June 24	1966	543	27	1307
Wolfe, William C., Hagerstown, Md. Steam-pump for portable steam-engines	298,435	May 13	606	171	27	649
Wolfe, William C., Hagerstown, Md. Relief-valve for the feed-pipes of steam-boilers	300,824	June 24	1714	468	27	1259
Wolfe, William N. (See Woods, Marshall C., assignor.)						
Wolff, George. (See Dopp and Wolff.)						
Wolf, Julius, New York, N. Y. Sardine-can	299,710	June 3	285	70	27	974
Wolff, William C., and J. C. Manning, Buffalo, N. Y. Belt-fastener	300,825	June 24	1715	468	27	1260
Wollard, Isaac B., San Francisco, assignor to Oakland Glass Works, Oakland, Cal. Demijohn or bottle safe	296,903	Apr. 15	1274	354	27	255
Wollerton, Charles, *et al.* (See Garverick, John M., assignor.)						
Womack, Alexander, Falk's Store, Idaho Ter. Wagon running-gear	298,436	May 13	607	171	27	649
Wood, Augustus G. (See Batchelor, Job, assignor.)						
Wood, Charles H., *et al.* (See Warfield, Oliver D., assignor.)						
Wood, De Volson, Boonton, N. J. Rock-drill	296,600	Apr. 8	971	272	27	193
Wood, Edwin A., Utica, N. Y. Spring for steam and other pressure gages	297,735	Apr. 29	2354	640	27	466
Wood, Henry, Wellington, Ohio. Wooden box	297,654	Apr. 29	2245	611	27	446
Wood, John, *et al.* (See Crandall, Jesse A., assignor.)						
Wood, John B., Camden, N. J. Saddle-bags for bicycles	299,600	June 3	139	35	27	946
Wood, John J., Sr., Berlin, Wis., and F. Christen, Iowa Falls, Iowa. Machine for grinding harvester-knives	300,183	June 10	875	235	27	1093
Wood, Joseph S., Brooklyn, N. Y. Gas-engine	300,294	June 10	1026	277	27	1120
Wood, Richard G., assignor, by mesne assignments, of one-half to Queen City Forging Company, Cincinnati, Ohio. Shifting-rail for buggy-seats	300,295	June 10	1028	278	27	1120
Wood, Theodore F., Vernon, N. J. Metallic lamp-mat	297,214	Apr. 22	1672	455	27	392
Wood, W. Dewees, Pittsburg, Pa. Manufacture of sheet-iron	297,097	Apr. 15	1506	.....	27	297
Wood, W. Dewees, Pittsburg, Pa. Manufacture of sheet-iron	300,184	June 10	876	.....	27	1094
Wood, William C., New York, N. Y. Kite	297,215	Apr. 22	1673	455 / 456	27	392
Wood, William E., Houston, Tex. Tongs	297,736	Apr. 29	2355	640	27	466
Wood, William H. (See Hyatt, Pool, Everding, Stevens, and Wood.)						
Wood, William H. (See Hyatt, Stevens, and Wood.)						
Wood, William H. (See Hyatt, Stevens, Wood, and Everding.)						
Wood, William H. (See Hyatt, Wood, and Stevens.)						
Wood, William H., Woburn, Mass. Leather-glassing machine	299,893	June 3	480	126 / 127	27	1013
Wood, William H., and J. H. Stevens, Newark, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Application of celluloid for enameling textile fabrics, &c.	297,098	Apr. 15	1508	.....	27	297
Woodman, Charles, Chelsea, assignor of one-half to C. S. Fifield, Boston, Mass. Seam-finishing machine	297,216	Apr. 22	1674	456	27	392
Woodman, Clarence S. (See Burris and Woodman.)						
Woodman, Clark, Omaha, Nebr. Oil-press plate	300,296	June 10	1029	278	27	1121
Woodman, Wilber B., Newark, N. J. Combined corkscrew and key-ring	296,661	Apr. 8	972	272	27	194
Woodman, Wilber B., Newark, N. J. Buckle	296,662	Apr. 8	972	272	27	194
Woodruff, Brock, assignor to W. Buel and S. B. Tannehill, Albert Lea, Minn. Treating iron	300,747	June 17	1615	.....	27	1236
Woodruff, Edmund W. (See Doremus, Willard D., assignor.)						
Woodruff, Edmund W., Washington, D. C. Paper-file	297,905	Apr. 29	2542	696	27	503
Woodruff, James. (See Rutherford, Reuben C., assignor.)						
Woods, Granville T., assignor to E. W. Vanduzen, Cincinnati, Ohio. Steam-boiler furnace	299,894	June 3	482	127	27	1014
Woods, Marshall C., assignor of one-half to W. N. Wolfe, Indianapolis, Ind. Track-rail attachment for replacing derailed cars	298,437	May 13	608	172	27	649
Woods, Sherwood & Co. (See Sherwood and Dudley, assignors.)						
Woodward, Alfred H., Birmingham, county of Warwick, England. Pencil, pen, or tooth-pick case	296,392	Apr. 1	518	144	27	97
Woodward, Edwin, Stryker, Ohio. Hay-carrier	301,036	June 24	1968	543	27	1307
Woodward, Erastus. (See Hawkins and Woodward.)						
Woodward, Erastus, R. Ashe, Somerville, and E. F. Grandy, Boston, Mass. Tacking-machine for lasting boots or shoes	296,715	Apr. 8	1029	280	27	205
Woodward, James S., Philadelphia, Pa. Combined curbstone and telegraph-wire conduit	299,449	May 27	1660	535	27	902
Woodward, Russell G. (See Mather and Woodward.)						
Wool Scourings Process Company. (See Borchers, John A. W., assignor.)						
Woolley, George W., Washington, D. C. Detachable reservoir for pens	299,499	May 27	1918	553	27	914
Wooster, William I., and J. N. Reynolds, Harvard, Ill. Hay-carrier	298,809	May 20	1070	300	27	743
Worcester, William W., Newport, Ky. Wire fence	301,037	June 24	1969	544	27	1307
Worswick, James E., assignor of one-half to A. T. Hannon, Montgomery, Ala. Oil-cup feeder	297,483	Apr. 22	2003	547	27	395
Worth, William H., Petaluma, Cal. Screw and toggle-lever press	301,038	June 24	1970	544	27	1308
Wotapek, Joseph, assignor to Nathan Manufacturing Company, New York, N. Y. Injector and ejector	298,329	May 6	479	129 / 130	27	617
Wray, Robert T. (See Herron and Wray.)						
Wray, Robert T. (See Herron and Wray.) (Reissue.)						
Wright, Alexander P., Newark, N. J., assignor to United States Electric Lighting Company, New York, N. Y. Junction-box for electric circuits	297,547	Apr. 22	2094	571	27	411

Alphabetical list of patentees, April to June, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wright, Arthur S., Moline, Ill. Chain-pump fixture	298,330	May 6	481	130	27	617
Wright, Chancy G. (See Springer, Lorin C., assignor.)						
Wright, Charles R. A., 3 Castillain Road, Maida Vale, county of Middlesex, England. Dissolving metals in ammoniacal solutions	298,140	May 6	234	.....	27	571
Wright, Edward, assignor to Wright Machine Company, Worcester, Mass. Rotating joint mechanism for steam apparatus	298,049	May 6	110	28	27	548
Wright, Frederick K., Homer, N. Y. Positive shuttle-motion for looms	299,610	June 3	141	35	27	946
Wright, George F., Worcester, Mass. Shuttle for weaving wire-cloth	299,895	June 3	483	127	27	1014
Wright, Horace A., *et al.* (See Opp, Benjamin F., assignor.)						
Wright, Jacob D., assignor to Wright Machine Company, Worcester, Mass. Mechanism for checking or stopping the action of machinery	297,330	Apr. 22	1810	491 / 492	27	357
Wright, John R., Wheeling, Mo. Hay-stacker	297,099	Apr. 15	1509	416	27	298
Wright Machine Company. (See Wright, Edward, assignor.)						
Wright Machine Company. (See Wright, Jacob D., assignor.)						
Wright, Orlando H., *et al.* (See Opp, Benjamin F., assignor.)						
Wright, Palmer C., New Haven, Conn. Device to prevent retrograde movement	298,930	May 20	1217	343	27	772
Wright, Samuel, Egremont, county of Chester, England. Barrel-making machine	299,896	June 3	484	127 / 128	27	1014
Wright, Sidney B., Wyandotte, Mich. Securing railway-rails to metallic ties	298,539	May 13	724	205	27	672
Wright, Thomas. (See Holden, William, assignor.)						
Wright, Wilber S., assignor to N. M. Wilson, Philadelphia, Pa. Wheel for bicycles	299,897	June 3	487	128	27	1015
Wright, William, New York, N. Y. Apparatus for drying fertilizers	299,898	June 3	488	128	27	1015
Wright, William A., Centreton, N. J., assignor to A. J. Lamborn, Philadelphia, Pa. Spike-extractor	301,077	June 24	2016	557	27	1316
Wright, William H., Tarrytown, N. Y. Car-axle packing	296,098	Apr. 1	244	71	27	49
Wright, William H., Tarrytown, N. Y. Thill-coupling	298,810	May 20	1072	301	27	743
Wüest, Conrad, Zurich, Switzerland. Electric door-lock	300,334	June 10	1075	293	27	1129
Wurfflein, William. (See Wallis, Thomas M., assignor.)						
Wuth, W. A. Otto, Pittsburg, Pa. Producing steel from wrought-iron with plumbago	300,826	June 24	1716	.....	27	1260
Wycough, Mark A. R., Batesville, Ark.. Adjustable hame for harness	297,958	Apr. 29	2613	716	27	517
Wylie, William H. (See Church, Louis J., assignor.)						
Wyman, Horace. (See Crompton and Wyman.)						
Wyman, Richard H., Chicago, Ill. Railway-car cover	296,809	Apr. 15	1146	323	27	233
Wyman, Richard H., Evanston, Ill. Railway-car	296,810	Apr. 15	1148	323 / 324	27	233
Yale, Charles B. (See Hull and Yale.)						
Yale & Towne Manufacturing Company. (See Stockwell, Emory, assignor.)						
Yaryan, Homer T., Toledo, Ohio. Apparatus for vacuum distillation	300,185	June 10	877	236	27	1094
Yates, Thomas P., Factoryville, N. Y. Spring-wagon	296,500	Apr. 8	767	211	27	152
Yeagley, Jacob B., Indianapolis, Ind. Hydraulic ram	298,262	May 6	390	103	27	600
Yeagley, Jacob B., Indianapolis, Ind. Hydraulic ram	298,263	May 6	392	103	27	601
Yeo, William H. (See Glanville, Conrad F., assignor.)						
Yingling, George S. (See Hayford, James W., assignor.)						
Yingling, George S., A. L. Flack, and H. T. Heller, Tiffin, Ohio. Tack-hammer	298,649	May 13	858	240	27	695
Yingling, George S., A. L. Flack, and H. T. Heller, Tiffin, Ohio. Tack-hammer	298,650	May 13	858	241	27	696
York, Levi D. (See Galvin, John W., assignor.)						
Young, B. Curtis. (See Turner and Côté, assignors.)						
Young, David. (See Howard, Patrick, assignor.)						
Young, Henry, *et al.* (See Ellinwood, Augustus E., assignor.)						
Young, J. B. (See Macpherson, David J., assignor.) (Reissue.)						
Young, John. (See Haskins, Benjamin H., assignor.)						
Young, Joseph B. (See Becker and Young.)						
Young, Wilbur S., Gilleapie, Ill. Lubricating-cup	299,450	May 27	1861	535	27	902
Youngman, Charles A., Louisville, Ky. Elevator	298,331	May 6	482	130	27	618
Zachariasen, Lars S., Christiania, Norway. Railway-truck	296,904	Apr. 15	1275	354 / 355	27	255
Zachringer, William, assignor of one-half to C. W. Doyle, New Orleans, La. Car-coupling	300,186	June 10	879	236	27	1094
Zanger, Theodor, assignor of one-half to J. B. Sweet & Son, Buffalo, N. Y. Clamp for canopy-tops	300,427	June 17	1200	328	27	1161
Zanger, Theodor, assignor of one-half to J. B. Sweet & Son, Buffalo, N. Y. Canopy-top	300,428	June 17	1201	328	27	1161
Zastrow, August, La Harpe, Ill. Horse-power	296,099	Apr. 1	245	72	27	50
Zattan, Charles. (See Nickel and Zattan.)						
Zeigler, George W., and G. W. Graves, assignors to said Graves and W. B. Lyke, Norwalk, Ohio. Windlass	297,050	Apr. 15	1449	401	27	287
Zellers, Theodor A., assignor to Ottawa Glass Company, Ottawa, Ill. Flatting and anneal-ing oven for glass	298,332	May 6	483	131 / 132	27	618
Zimmerman, Samuel B., Hudson, Mich. Car-coupling	298,264	May 6	395	103	27	601
Zinkand, Charles A., San Francisco, Cal. Traveling-bag	298,050	May 6	111	29	27	548
Ziph, George H., St. Joseph, Mo. Combination-tool	301,039	June 24	1971	544	27	1308
Zoller, Albert, New York, N. Y. Hose-coupling	298,150	May 6	237	61	27	571

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Adams, Peter, Jr. (See Shepard and Adams.)				
Ansonia Clock Company. (See Schweizer, Joseph, assignor.)				
Barnhart, Alson E., *et al.* (See Heyer, Charles E., assignor.)				
Barnhart, Arthur M., *et al.* (See Heyer, Charles E., assignor.)				
Banmer, Francis, Syracuse, N. Y. Ornamentation of candles	14,995	May 13	27	627
Binkert, Adolph, assignor to Caterson, Brotz & Co., Philadelphia, Pa. Ace of spades for playing-cards	14,957	Apr. 15	27	211
Bioren, Frederick F. and J. C., Newark, N. J. Sleeve-button	15,003	May 20	27	722
Bioren, James C. (See Bioren, Frederick F. and J. C.)				
Bourne, Edward, Allegheny, Pa. Toilet-cabinet	15,062	June 17	27	1139
Brehmer, Henry, assignor to D. W. Bruce, New York, N. Y. Printing-type	15,004	May 20	27	722
Brooks & Son, George. (See Nuffer, Earnest G., assignor.)				
Bruce, David W. (See Brehmer, Henry, assignor.)				
Bruce, David W. (See Ihlenburg, Herman, assignor.)				
Bruce, David W., New York, N. Y. Type	15,034	June 3	27	920
Bruschke, Charles J., Lake View, Ill. Chair	14,975	Apr. 29	27	417
Burroughs, Joseph. (See Montford and May, assignors.)				
Burroughs, Joseph, *et al.* (See May, Charles A., assignor.)				
Butterick Publishing Company. (See Kavanagh, Mary, assignor.)				
Butterick Publishing Company. (See Reed, John Q., assignor.)				
Butterick Publishing Company. (See Shiels, Catherine, assignor.)				
Butterick Publishing Company. (See Shiels, Sarah J., assignor.)				
Butterick Publishing Company. (See Tully, Louise, assignor.)				
Butterick Publishing Company. (See Turner, Mary, assignor.)				
Butterick Publishing Company. (See Wright, Frances, assignor.)				
Caterson, Brotz & Co. (See Binkert, Adolph, assignor.)				
Chetwynd, Elijah, Hanley, county of Stafford, England, assignor to T. H. Taylor, New York, N. Y. Earthenware dish	15,063	June 17	27	1139
Condé, Swits, Oswego, N. Y. Knit shirt	14,996	May 13	27	627
Corbin, P. & F. (See Langerfeld, Arthur, assignor.)	14,925	Apr. 1	27	1
Cummings, John K., St. Louis, Mo. Bottle or flask	14,926 14,927	Apr. 1	27	1
Danby, Arthur, assignor to Schofield, Mason & Co., Philadelphia, Pa. Carpet	15,067	June 24	27	1242
Dash, Bowie, New York, N. Y. Ornamentation of paper	15,046	June 10	27	1035
Dickman, Theodore, and J. W. Elliott, Wapakoneta, Ohio. Churn-frame				
Dikeman, Charles S., assignor to Towle Manufacturing Company, Newburyport, Mass. Handle for spoons or forks	15,047	June 10	27	1035
Dominick, Alexander, New York, N. Y. Spoon-handle	15,048	June 10	27	1035
Drown, William A., Philadelphia, Pa. Ornamentation of an umbrella or parasol	14,944	Apr. 8	27	104
Dueber, John C., Newport, Ky. Watch-case	14,976 14,977	Apr. 29	27	417
Dueber, John C., Newport, Ky. Watch-case	14,997	May 13	27	627
Dutemple, William R., Providence, R. I. Gem-setting	15,064	June 17	27	1139
Elliott, John W. (See Dickman and Elliott.)				
Fairchild, Le Roy W., New York, N. Y. Pencil-case	14,965	Apr. 22	27	303
Foster, Theodore W., Providence, R. I. Jewelry-pin	15,049 15,050	June 10	27	1035
Freeman, William C., Louisiana, Mo. Dipper	15,051	June 10	27	1035
Fuller & Warren Company. (See Warren, Wolfe, and Scorer, assignors.)				
Garthshore, William M., London, Ontario, Canada. Cooking-stove	14,945	Apr. 8	27	104
Giles, Charles K., Chicago, Ill. Watch-chain	14,978	Apr. 29	27	417
Graham, James. (See Sweeney, John, assignor.)				
Groeber, Paul, New York, N. Y. Wall-paper	15,065 to 15,070	June 17	27	1139
Gunther, Anton, Toronto, Ontario, Canada. Piano-case	15,052	June 10	27	1035
Hacker, Joseph C., New York, N. Y. Satchel-body	15,088	June 24	27	1242
Haehnel, William, assignor to Palm & Fechteler, New York, N. Y. Ornamentation of sewing-machines	14,958	Apr. 15	27	211
Haehnel, William, assignor to Palm & Fechteler, New York, N. Y. Ornamentation of sewing-machines	15,005	May 20	27	722
Hale, Henry S., Philadelphia, Pa. End frame for car-seats	15,053	June 10	27	1035
Ham, Robert, assignor to Standard Oil Stove Company, Troy, N. Y. Oil-stove	14,966	Apr. 22	27	303
Hankinson, John H. (See Jackson and Hankinson.)				
Hard, Bradley A., *et al.* (See Pike, William A., assignor.)				
Hardcastle, Thomas, Bradshaw Works, near Bolton, county of Lancaster, England. Ornamentation of cotton, silk, or other fabrics	14,979	Apr. 29	27	417
Hart, Hubert C., Unionville, Conn. Fork	14,946 14,947	Apr. 8	27	104
Hartford Carpet Company. (See Jacobs, Winthrop L., assignor.)				
Hartman, Josephus, Philadelphia, Pa. Biscuit-cracker	15,006	May 20	27	722
Hatcher, Isaiah G., Cleveland, Ohio. Burial-casket	14,987	May 6	27	525
Hatcher, Isaiah G., Cleveland, Ohio. Molding	14,988	May 6	27	525
Haviland, Charles E., Limoges, France. Table-ware	15,089	June 24	27	1242
Haviland, Edwin, Plainfield, N. J. Earthenware dish	14,948	Apr. 8	27	104
Hayden, Hiram W., Waterbury, Conn., assignor to Holmes, Booth & Haydens, Connecticut. Spoon or fork	15,035 15,036	June 3	27	920
Hermann, Samuel, Cincinnati, Ohio. Clamp or loop for trunk-strips	15,071	June 17	27	1139
Hess, Isaac. (See Wiberley, William, assignor.)				
Heyer, Charles E., Chicago, Ill., assignor to A. M. and A. E. Barnhart. Font of printing-type	14,949	Apr. 8	27	104
Heyer, Charles E., assignor to A. M. and A. E. Barnhart, Chicago, Ill. Font of printing-type	14,959	Apr. 15	27	211

Alphabetical list of patentees of designs, April to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Hill, Thomas, Chicago, Ill. Organ-case	15,007	May 20	27	722
Hill, Thomas, Chicago, Ill. Organ-case	15,037	June 3	27	920
Hofstatter, Adolph G., New York, N. Y. Chair-frame	15,072	June 17	27	1139
Holmes, Booth & Haydens. (See Hayden, Hiram W., assignor.)				
Horner Brothers. (See Smith, Stephen, assignor.)				
Hnoatis, Harvey, Providence, R. I. Finger-ring	14,967	Apr. 22	27	303
Hutchinson, William H., Rochester, N. Y. Burial-casket knob	15,014	May 27	27	821
Ihlenburg, Herman, Philadelphia, Pa., assignor to D. W. Bruce, New York, N. Y. Type	15,038	June 3	27	920
Jackson, William H., and J. H. Hankinson, New York, N. Y. Fire-place heater	15,008	May 20	27	722
Jackson, William W., assignor to MacKellar, Smiths & Jordan, Philadelphia, Pa. Font of printing-type	14,950	Apr. 8	27	104
Jacobs, Winthrop L., East Orange, N. J., assignor to Hartford Carpet Company, Hartford, Conn. Carpet	14,951	Apr. 8	27	104
Kain, Leopold, New York, N. Y. Pen-wiper	14,968	Apr. 22	27	303
Kavanagh, Mary, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's costume	15,090	June 24	27	1242
Kavanagh, Mary, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	15 091	June 24	27	1242
Keil, Francis, New York, N. Y. Ornamentation of builder's hardware	14,928	Apr. 1	27	1
Kelser, Henry M. (See Swenarten and Kelser.)				
Keller, Samuel. (See Reed and Keller.)				
Kellogg, William P., Troy, N. Y. Curry-comb back	14,980	Apr. 29	27	417
Kempshall Manufacturing Company. (See Sparks, William E., assignor.)				
Kenna, Joseph W., Chicago, Ill. Spring-rocker bracket	15,073	June 17	27	1139
Kimball, J. Wayland, New York, N. Y. Ornamentation of leather	15,074	June 17	27	1139
Klingenberg, A. (See Redon, Martial, assignor.)				
Korn, George W., New York, N. Y. Knife-handle	14,929 14,930	Apr. 1	27	1
Langerfeld, Arthur, assignor to P. & F. Corbin, New Britain, Conn. Ornamentation of hardware	14,969	Apr. 22	27	303
Le Monlt, Adolphe, New York, N. Y. Floral stand	15,092	June 24	27	1242
Le Prince, Augustin, New York, N. Y. Wall-paper	15,075	June 17	27	1139
Le Prince, Augustin, New York, N. Y. Wall-paper	15,093	June 24	27	1242
Leiter, Isaac H., New York, N. Y. Gimp	14,952	Apr. 8	27	104
Lockwood, David C., assignor to Rubber and Celluloid Harness Trimming Company, Newark, N. J. Harness ornament	14,998	May 13	27	627
Loeb, Joseph, Philadelphia, Pa. Chenille pendant	15,039	June 3	27	920
Loewenstein, Sall, New York, N. Y. Lady's collar	15,015	May 27	27	821
Lowell Manufacturing Company. (See Poole, Edward, assignor.)				
Lowell Manufacturing Company. (See Sauer, Emil G., assignor.)				
MacKellar, Smiths & Jordan. (See Jackson, William W., assignor.)				
May, Charles A. (See Mountford and May.)				
May, Charles A., assignor to J. Burroughs and E. Mountford, Trenton, N. J. Ornamentation of table-ware	14,960	Apr. 15	27	211
McCarthy, Oliver, assignor to Meriden Britannia Company, Meriden, Conn. Coffin-tablet	14,989	May 6	27	525
McMenomay, John E. (See Read and McMenomay.)				
McNair, David, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	15,076	June 17	27	1140
Meers, Stephen, Brooklyn, N. Y. Photographic-album leaf	14,961	Apr. 15	27	211
Melville, David G., Medford, assignor to Roxbury Carpet Company, Boston, Mass. Carpet	15,077	June 17	27	1140
Meriden Britannia Company. (See McCarthy, Oliver, assignor.)				
Meriden Britannia Company. (See Smith, William M., assignor.)				
Meriden Bronze Company. (See Miller, John C., assignor.)				
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	15,016 to 15,021	May 27	27	821
Meyer, Charles T., and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	15,054 to 15,057	June 10	27	1035
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	15,078 15,079	June 17	27	1140
Meyer, Victor E. (See Meyer, Charles T. and V. E.)				
Myers, Alphens W., Newark, N. J. Sewing-machine cover	15,094	June 24	27	1242
Miller, John C., assignor to Meriden Bronze Company, Meriden, Conn. Sconce-frame	14,981	Apr. 29	27	417
Mitchell, Herbert, assignor to Schofield, Mason & Co., Philadelphia, Pa. Carpet	14,931	Apr. 1	27	1
Monntford, Elijah, *et al.* (See May, Charles A., assignor.)				
Monntford, Elijah, and C. A. May, assignors to said Mountford and J. Burroughs, Trenton, N. J. Ornamentation of table-ware	14,962	Apr. 15	27	211
Nashua Lock Company. (See Sparks, William E., assignor.)				
Nellis, Aaron J., Pittsburg, Pa. Monument	15,022	May 27	27	821
Newman, Charles W., Chicago, Ill. Organ-case	15,040	June 3	27	920
Nuffer, Earnest G., assignor to G. Brooks & Son, Philadelphia, Pa. Tapestry border	15,095	June 24	27	1242
Nuffer, Earnest G., assignor to G. Brooks & Son, Philadelphia, Pa. Upholstery fabric	15,096	June 24	27	1242
Nuffer, Earnest G., assignor to G. Brooks & Son, Philadelphia, Pa. Tapestry border	15,097	June 24	27	1242
Nuffer, Earnest G., assignor to G. Brooks & Son, Philadelphia, Pa. Upholstery fabric	15,098	June 24	27	1242
Nye, George E., assignor of one-half to E. Tredick, Bristol, Pa. Hosiery	14,982 14,983	Apr. 29	27	417
Oliver, Robert S., Albany, N. Y. Coal-oil stove	15 009	May 20	27	722
Otto, Gustav, Hoboken, N. J. Wine-glass	15,058	June 10	27	1035
Packard, Inrank A., Delphos, Kans. Cultivator-knife	14,990	May 6	27	525
Palm & Fechteler. (See Haehnel, William, assignor.)				
Parsons, Samuel, *et al.* (See Pike, William A., assignors.)				
Phelps, Andrew S., Chicago, Ill. Heating-stove	15,059	June 10	27	1035
Pike, William A., Bridgeport, Conn., assignor to B. A. Hard and S. Parsons, New York, N. Y. Note-paper	15,010	May 20	27	722
Poole, Edward, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,932 14,933	Apr. 1	27	1
Poole, Edward, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,970	Apr. 22	27	303
Porter, Henry K., Boston, Mass. Axle-yoke	14,971	Apr. 22	27	303
Pray, J. Parker, New York, N. Y. Nail-trimmer	15,041	June 3	27	920
Read, Joseph A., and J. E. McMenomay, Philadelphia, Pa. Fire-place front	15,042	June 3	27	920
Redon, Martial, Limoges, France, assignor to A. Klingenberg, New York, N. Y. Table-ware	15,099	June 24	27	1242
Reed, Henry F., and S Keller, New York, N. Y. Foundation-frame for a floral piece	14,984	Apr. 29	27	417
Reed, John Q., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	15,023	May 27	27	821
Reed, William S., Leominster, Mass. Toy money-box	14,953	Apr. 8	27	104

Alphabetical list of patentees of designs, April to June, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Rice, Henry C., Louisiana, Mo. Coffee-pot	14,934	Apr. 1	27	1
Rixford, Oscar S., East Highgate, Vt. Ax box or case	14,935	Apr. 1	27	1
Rogers, John K., Brookline, Mass. Font of printing-type	14,963	Apr. 15	27	211
Rogers, John K., Brookline, Mass. Font of type	14,964	Apr. 15	27	211
Rogers, John K., Brookline, Mass. Printing-type	15,080 to 15,084	June 17	27	1140
Roxbury Carpet Company. (See McNair, David, assignor.)				
Roxbury Carpet Company. (See Melville, David G., assignor.)				
Rubber and Celluloid Harness Trimming Company. (See Lockwood, David C., assignor.)				
Sampson, Edward C. (See Meyer, Charles T. and V. E., assignors.)				
Sauer, Emil G., Brooklyn, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	14,936 14,937	Apr. 1	27	1
Schaffer, Charles, New York, N. Y. Capital letters	15,011	May 20	27	722
Schmidt, Christian A., Hoboken, N. J. Chenille	14,954	Apr. 8	27	104
Schofield, Mason & Co. (See Danby, Arthur, assignor.)				
Schofield, Mason & Co. (See Mitchell, Herbert, assignor.)				
Schofield, Mason & Co. (See Swann, Frederick C., assignor.)				
Schweizer, Joseph, New York, N. Y., assignor to Ansonia Clock Company, Ansonia, Conn. Clock-frame	14,955	Apr. 8	27	104
Scorer, Robert. (See Warren, Wolfe, and Scorer.)				
Shepard, Charles G., and P. Adams, Jr., Buffalo, N. Y.; said Adams assignor to said Shepard. Toy savings-bank	15,085	June 17	27	1140
Shiels, Catherine, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Girl's costume	14,999	May 13	27	627
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costnme	15,024 to 15,026	May 27	27	821
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's costnme	15,027 15,028	May 27	27	821
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's walking-skirt	15,100	June 24	27	1242
Shiels, Sarah J., assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	15,101	June 24	27	1242
Sieckenberger, Giovanni, New York, N. Y. Lamp-fixture	15,061	June 10	27	1035
Simpson, George F., *et al.* (See Textor, Henry, assignor.)				
Simpson, James S., *et al.* (See Textor, Henry, assignor.)				
Smith, L. Lum, Philadelphia, Pa. Back of a game-card	14,991	May 6	27	525
Smith, Stephen, assignor to Horner Brothers, Philadelphia, Pa. Carpet	14,938	Apr. 1	27	1
Smith, William M., assignor to Meriden Britannia Company, Meriden, Conn. Coffin-screw escutcheon	15,043	June 3	27	920
Smith, William M., assignor to Meriden Britannia Company, Meriden, Conn. Coffin-screw	15,044	June 3	27	920
Sneider, Robert, Brooklyn, N. Y. Christmas-card	14,992	May 6	27	525
Sneider, Robert, Brooklyn, N. Y. Envelope	14,993	May 6	27	525
Sparks, William E., assignor to Kempshall Manufacturing Company, New Britain, Conn. Sash-fastener frame	14,972	Apr. 22	27	303
Sparks, William E., New Britain, Conn., assignor to Nashua Lock Company, Nashua, N. H. Hinge	15,012	May 20	27	722
Standard Oil Stove Company. (See Ham, Robert, assignor.)				
Swann, Frederick C., assignor to Schofield, Mason & Co., Philadelphia, Pa. Carpet	14,939 to 14,942	Apr. 1	27	1
Sweeney, John, assignor of one-half to J. Graham, New Haven, Conn. Curtain	15,000	May 13	27	627
Swenarton, Seman A., Montclair, N. J., and H. M. Kelser, Brooklyn, N. Y. Ornamentation of undershirts	14,985	Apr. 29	27	417
Swett, George W., Lansingburg, assignor to Swett, Quimby & Co., Troy, N. Y. Oil-stove	14,956	Apr. 8	27	104
Swett, Quimby & Co. (See Swett, George W., assignor.)				
Tannatt, Joshua F., Springfield, Mass. Stationery-case	14,994	May 6	27	525
Taylor, Thomas H. (See Chetwynd, Elijah, assignor.)				
Textor, Henry, Brooklyn, N. Y. Newel-post	14,943	Apr. 1	27	1
Textor, Henry, assignor to J. S. and G. F. Simpson, Brooklyn, N. Y. Newel-post	14,986	Apr. 29	27	417
Thompson, Langdon S., Lafayette, Ind. Drawing-square	14,973	Apr. 22	27	303
Todd, Edward, New York, N. Y. Pencil-case or similar article	15,060	June 10	27	1035
Towle Manufacturing Company. (See Dikeman, Charles S., assignor.)				
Tredick, Edward. (See Nye, George E., assignor.)				
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's walking-skirt	15,001	May 13	27	627
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	15,029 15,030	May 27	27	822
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's basque	15,031	May 27	27	822
Tully, Louise, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Girl's costume	15,102	June 24	27	1242
Turner, Mary, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Miss's walking-skirt	15,103	June 24	27	1242
Turner, Mary, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Lady's costume	15,104	June 24	27	1242
Vogt, Albrecht, Rochester, N. Y. Molding	15,032	May 27	27	822
Vogt, Albrecht, Rochester, N. Y. Burial-casket handle	15,033	May 27	27	822
Vogt, Gustav, Limoges, France. Dish-handle	15,045	June 3	27	920
Waldron, Charles F., Boston, Mass. Actor's shield	15,013	May 20	27	722
Warren, Walter P., G. G. Wolfe, and R. Scorer, assignors to Fuller & Warren Company, Troy, N. Y. Parlor-stove	15,002	May 13	27	627
Wiberley, William, Peekskill, assignor to I. Hess, New York, N. Y. Fringe	15,105	June 24	27	1242
Wilson, Samuel W., New York, N. Y. Paper	14,974	Apr. 22	27	303
Wolfe, Gurdon G. (See Warren, Wolfe, and Scorer.)				
Wood, Warwick W., Winston, N. C. Layer of tobacco	15,107	June 24	27	1242
Wright, Frances, assignor to Butterick Publishing Company, (limited,) New York, N. Y. Child's costume	15,106	June 24	27	1242
Zebley, John, Philadelphia, Pa. Fringe	15,086	June 17	27	1140

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Actiongesellschaft Union Vereinigte Zündholz-und Wichse-Fabriken, Augsburg, Germany. Matches	11,188	May 20	27	722
Aktiebolaget Jönköpings Östra Fabriker, Jönköping, Sweden. Matches	11,223	June 3	27	920
Armstrong & Co., James, Baltimore, Md. Soap	11,066	Apr. 15	27	211
Armstrong & Co., James, Baltimore, Md. Soap	11,273	June 24	27	1242
Avery Lactate Company, Boston, Mass. Bicalcium acid lactate	11,099	Apr. 15	27	212
Ascano y Meana, Sebastian, Havana, Cuba. Cigars	11,135	Apr. 22	27	304
Barnard & Co., George D., St. Louis, Mo. Metallic pens	11,067	Apr. 15	27	211
Bates, Theodore C. Worcester, Mass. Corsets	11,227	June 10	27	1036
Belknap & Dumesnil Stone Company, Louisville, Ky. Building-stone	11,242	June 10	27	1036
Boecking & Co., E., Mülheim-on-the Rhine, Germany. Wire rods, flat steel strips, hoop iron and steel, and similar half products of iron and steel	11,181	May 13	27	628
Breitwieser & Bros., H., Buffalo, N. Y. Cigars, cigarettes, smoking and chewing tobacco, and snuff	11,211	June 3	27	920
Brenaman & Co., C. H., Baltimore, Md. Cigars	11,256	June 17	27	1140
Brizard et Roger, M. B. Glotin, Achard & Glotin, Les Héritiers de Marie, Bordeaux, France. Cordials and liquors	11,105	Apr. 15	27	212
Brizard et Roger, M. B. Glotin, Achard & Glotin, Les Héritiers de Marie, Bordeaux, France. Liquors and cordials	11,106	Apr. 15	27	212
Brizard et Roger, M. B. Glotin, Achard & Glotin, Les Héritiers de Marie, Bordeaux, France. Cordials and liquors	11,107	Apr. 15	27	212
Brizard & Roger, M. B. Glotin, Achard & Glotin, Les Héritiers de Marie, Bordeaux, France. Cordials and liquors	11,232	June 10	27	1036
Brown, Andrew, Buffalo, N. Y. Lumber, boards, logs, and staves	11,152	Apr. 29	27	418
Brown, Joseph H., Fort Worth, Tex. Baking-powder	11,263	June 17	27	1140
Bruce, Charles E., Brooklyn, N. Y. Velvets, velveteens, velvetas, and similar pile fabrics	11,088	Apr. 15	27	212
Butler & Co., James G., St. Louis, Mo. Smoking-tobacco	11,153	May 6	27	525
Cahill, Miles S., Boston, Mass. Polish for ladies' and children's boots, shoes, satchels, &c	11,274	June 24	27	1242
Cahill, Miles S., Boston, Mass. Polish for ladies' and children's boots, shoes, satchels, &c	11,275	June 24	27	1242
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,057	Apr. 1	27	2
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,058	Apr. 1	27	2
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,059	Apr. 1	27	2
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco and cigarettes	11,060	Apr. 1	27	2
Cameron & Co., Alexander, Richmond, Va. Plug, twist, and smoking tobacco, cigars, and cigarettes	11,061	Apr. 1	27	2
Cammack, Edward A. (See Marvin and Cammack.)	11,175	May 13	27	628
Can Makers' Mutual Protective Association, Baltimore, Md. Hand-made tin cans	11,114	Apr. 22	27	303
Cannon, Bernard and W., Lincoln, county of Lincoln, England, E. Cannon, Sr., and E. Cannon, Jr., Dublin, Ireland. Powdered glue	11,115	Apr. 22	27	303
Cannon, Bernard and W., Lincoln, county of Lincoln, England, E. Cannon, Sr., and E. Cannon, Jr., Dublin, Ireland. Powdered gelatine	11,116	Apr. 22	27	304
Cannon, Bernard and W., Lincoln, county of Lincoln, England, E. Cannon, Sr., and E. Cannon, Jr., Dublin, Ireland. Concentrated preparation of size	11,119	Apr. 22	27	304
Cannon, Edward, Sr. (See Cannon, Bernard, W., E., Sr., and E., Jr.)	11,089	Apr. 15	27	212
Cannon, William. (See Cannon, Bernard, W., E., Sr., and E., Jr.)	11,212	June 3	27	920
Carrington, James H., New York, N. Y. Cement for cementing iron surfaces together	11,224	June 3	27	920
Carter, John F., Beverly, Mass. Water-proof clothing	11,264	June 17	27	1140
Carter, John F., Beverly, Mass. Oil or water proof clothing	11,100	Apr. 15	27	212
Carter, Sloan & Co., New York, N. Y. Chains, bracelets, buttons, and other articles generally described by the term jewelry	11,101	Apr. 15	27	212
Charm Manufacturing Company, St. Louis, Mo. Baking-powder	11,140	Apr. 29	27	418
Clark Thread Company, Newark, N. J. Spool-cotton	11,141	Apr. 29	27	418
Clark Thread Company, Newark, N. J. Spool-cotton	11,142	Apr. 29	27	418
Clark Thread Company, Newark, N. J. Spool-cotton	11,143	Apr. 29	27	418
Clark Thread Company, Newark, N. J. Spool-cotton	11,144	Apr. 29	27	418
Clark Thread Company, Newark, N. J. Spool-cotton	11,164	May 6	27	526
Clark Thread Company, Newark, N. J. Spool-cotton	11,165	May 6	27	526
Clark Thread Company, Newark, N. J. Spool-cotton	11,166	May 6	27	526
Clark Thread Company, Newark, N. J. Spool-cotton	11,176	May 13	27	628
Clark Thread Company, Newark, N. J. Spool-cotton	11,177	May 13	27	628
Clarke, Samuel, South Hampstead, London, England. Night-lights, night-lamps, and nursery-lamps or food-warmers	11,267	June 17	27	1140
Cochran & Co., George W., Washington, D. C. Cigars and smoking and chewing tobacco	11,228	June 10	27	1036
Cooley, Martin L., North Plainfield, N. J. Woven fabrics, carpets, rugs, oil-cloths, and mattings	11,070	Apr. 8	27	104
Cushman, Charles H., Boston, Mass. Spring-balance shade-rollers	11,090	Apr. 15	27	212
Darby & Co., Baltimore, Md. French and other fine candy	11,091	Apr. 15	27	212
Darby & Co., Baltimore, Md. Stick candy, cakes, drops, balls, and dice	11,260	May 27	27	822
Detroit Steel and Spring Works, Detroit, Mich. Steel bars and plates	11,154	May 6	27	525
Dolge, Alfred, New York, N. Y. Felt used for hammers and action parts in pianos and organs	11,168	May 6	27	526
Favre-Jacot, Georges, Locle, Switzerland. Watches	11,225	June 3	27	920
Feigner & Son, F. W., Baltimore, Md. Smoking and chewing tobacco, cigars, cigarettes, cheroots, and snuff	11,131	Apr. 22	27	304
Feigner & Son, F. W., Baltimore, Md. Cigars, cigarettes, cheroots, chewing-tobacco, and snuff	11,132	Apr. 22	27	304
Feigner & Son, F. W., Baltimore, Md. Chewing and smoking tobacco, snuff, and cigars, cigarettes, or cheroots	11,133	Apr. 22	27	304

Alphabetical list of registrants of trade-marks, April to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Felgner & Son, F. W., Baltimore, Md. All kinds of manufactured tobacco	11,167	May 6	27	526
Fessey, Daniel W., London, England. Medicated soap	11,277	June 24	27	1242
Fish, Charles F., Saratoga, N. Y. Curative plasters	11,219	June 3	27	920
Fisk Manufacturing Company, Springfield, Mass. Soap-powder or powdered soap	11,189	May 20	27	722
Fitch, John B., New Haven, Conn. Alloy having the appearance of nickel	11,201	May 27	27	822
Fitch, John B., New Haven, Conn. Alloy having the appearance of nickel	11,202	May 27	27	822
Flint, Wyman, Bellows Falls, Vt. Pegs for boots and shoes	11,048	Apr. 1	27	2
Fuchs, Gustav, Chicago, Ill. Cigars, cigarettes, and manufactured tobacco	11,213	June 3	27	920
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,084	Apr. 8	27	104
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,102	Apr. 15	27	212
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,134	Apr. 22	27	304
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,155	May 6	27	526
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,156	May 6	27	526
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,194	May 27	27	822
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,214	June 3	27	920
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,229	June 10	27	1036
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,230	June 10	27	1036
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,231	June 10	27	1036
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,232	June 10	27	1036
Gail & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	11,233	June 10	27	1036
Germania Packing Co., New York, N. Y. Canned soups, meats, and fish	11,071	Apr. 8	27	104
Glahn, Frederick, Green Bay, Wis. Cigars	11,103	Apr. 15	27	212
Globe Pickle Company, St. Louis, Mo., and Chicago, Ill. Certain pickles, table-sauces, and condiments	11,072	Apr. 8	27	104
Goodhue, Charles W., New York, N. Y. Medical compound for the cure of agues and fevers	11,120	Apr. 22	27	304
Goodyear Rubber Company, New York, N. Y. Soft and elastic rubber goods, such as articles of wearing-apparel and the like	11,226	June 3	27	920
Gorrell, John G., Oaglan, Ind. Artificial honey	11,268	June 17	27	1140
Grande Société Francaise de Distilleries, Malteries, et Brasseries, Paris, France. Beer and other malt and alcoholic liquors	11,104	Apr. 15	27	212
Gross & Co., Charles, Philadelphia, Pa. Cigars	11,203	May 27	27	822
Hall, Eliza N., New York, N. Y. Caustic potash and lye	11,145	Apr. 29	27	418
Hardgrove & Co., Richmond, Va. Plug and twist tobacco	11,215	June 3	27	920
Harvey, George H., and O. S. Parker, Denver, Colo. Cigars	11,064	Apr. 1	27	2
Hatfield Brothers, Philadelphia, Pa. Perfumery	11,073	Apr. 8	27	104
Henley, Micajah C., Richmond, Ind. Roller-skates	11,074	Apr. 8	27	104
Herman Bros., Baltimore, Md. Cigars and cigarettes	11,278	June 24	27	1242
Higbee, Edwin W., Northampton, Mass. Proprietary medicines	11,062	Apr. 1	27	2
Higgins, Greene & Hyde, Rutland, Vt. Remedy for coughs and diseases of like nature	11,204	May 27	27	822
Hoffmann, Adolph, Milwaukee, Wis. Balsams, lotions, and liniments	11,216	June 3	27	920
Holland, J. W. & C. G., Danville, Va. Plug and twist chewing-tobacco	11,205	May 27	27	822
Howard & Son, Providence, R. I. Sleeve-buttons, collar-buttons, and studs	11,092	Apr. 15	27	212
Ihlers & Bell, Liverpool, England. Ale and stout	11,279	June 24	27	1242
Ihlers & Bell, Liverpool, England. Ale and stout	11,280	June 24	27	1242
Inge & Mahone, Petersburg, Va. Twist and plug tobacco	11,085	Apr. 8	27	104
Jacoby, Samuel, New York, N. Y. Flour	11,217	June 3	27	920
Jennings, Stephen, Boston, Mass. Condition-powders	11,093	Apr. 15	27	212
Kearsarge Peg Company, Bartlett, N. H. Pegs for boots and shoes	11,146	Apr. 29	27	418
Kearsing, John G., Newark, N. J. Certain plastic composition and articles made thereof	11,122	Apr. 22	27	304
Kennedy & Co., F. A., Cambridge, Mass. Crackers, biscuits, wafers, and cakes	11,258	June 17	27	1140
Kent, James, Gloversville, N. Y. Shoe and glove leather	11,218	June 3	27	920
Kibbe & Robinson, Hartford, Conn. Table-sauce	11,259	June 17	27	1140
Kimball & Co., William S., Rochester, N. Y. Cigarettes	11,234	June 10	27	1036
Kinney Tobacco Company, New York, N. Y. Cigarettes	11,076	Apr. 8	27	104
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,178	May 13	27	628
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,185	May 13	27	628
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,186	May 13	27	628
Kirk & Co., James S., Chicago, Ill. Toilet-soap	11,235	June 10	27	1036
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,236	June 10	27	1036
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,237	June 10	27	1036
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,238	June 10	27	1036
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,243	June 10	27	1036
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,244	June 10	27	1036
Kirk & Co., James S., Chicago, Ill. Laundry-soap	11,265	June 17	27	1140
Kirk & Co., James S., Chicago, Ill. Harness-soap	11,147	Apr. 29	27	418
Land, Philip, and G. Swaggard, Brownsville, Mo. Flour	11,269	June 17	27	1140
Leggett & Co., Francis B., New York, N. Y. Crushed oats and wheat	11,281	June 24	27	1242
Leggett & Co., Francis H., New York, N. Y. Coffee roasted or otherwise prepared	11,077	Apr. 8	27	104
Leidersdorf & Co., B., Milwaukee, Wis. Smoking-tobacco				
Levi, Israel D. (See Rice and Levi.)				
Lewis, Walter H., New York, N. Y. Black ribbons	11,245	June 10	27	1036
Liebman & Butler, Brooklyn and New York, N. Y. Olive-oil soap	11,094	Apr. 15	27	212
Liebman & Butler, New York, N. Y. Olive-oil soap	11,148	Apr. 29	27	418
Lottier, Lawrence, Richmond, Va. Plug-tobacco	11,078	Apr. 8	27	104
Lumber Drivers Calk Company, Bingham, Me. Lumber-drivers' calks	11,063	Apr. 1	27	2
Mann's Boudoir Car Company, New York, N. Y. Sleeping and drawing-room car	11,270	June 17	27	1140
Marckwald, Freeman D., New York, N. Y. Stiffening ribs or bones for corsets	11,179	May 13	27	628
Marvin, Charles E., and E. A. Cammack, Rochester, Minn. Butter, cheese, and other dairy products	11,253	June 10	27	1036
Massey-Mainwaring, W. F. B., 99 Shoe Lane, county of Middlesex, England. Apparatus for producing fac-simile copies of writings, drawings, and other delineations	11,157	May 6	27	526
Mattocks, Charles P., Portland, Me. Canned corn	11,195	May 27	27	822
Mattocks, Charles P., Portland, Me. Canned roast turkey	11,206	May 27	27	822
Mattocks, Charles P., Portland, Me. Canned corn	11,207	May 27	27	822
Mattocks, Charles P., Portland, Me. Canned roast mutton	11,208	May 27	27	822
Maul & Co., Hugo, New York, N. Y. Embroidery-chenille	11,257	June 17	27	1140
Mayo & Bro., P. H., Richmond, Va. Smoking and chewing tobacco	11,169	May 6	27	526
Mayo & Bro., P. H., Richmond, Va. Smoking and chewing tobacco	11,170	May 6	27	526
Mayo & Bro., P. H., Richmond, Va. Smoking and chewing tobacco	11,171	May 6	27	526
Mayo & Bro., P. H., Richmond, Va. Smoking and chewing tobacco	11,172	May 6	27	526
Mayo & Bro., P. H., Richmond, Va. Smoking and chewing tobacco	11,173	May 6	27	526
Mayo & Bro., P. H., Richmond, Va. Smoking and chewing tobacco	11,174	May 6	27	526
Mayo & Bro., P. H., Richmond, Va. Smoking and chewing tobacco	11,182	May 13	27	628
Meade, James, Penn Yan, N. Y. Cigars	11,149	Apr. 29	27	418

Alphabetical list of registrants of trade-marks, April to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Meyer, Adolph C., Baltimore, Md. Cough-candy drops	11,123	Apr. 22	27	304
Meyer, Adolph C., Baltimore, Md. Solid and fluid medicinal preparations	11,124	Apr. 22	27	304
Meyer, Adolph C., Baltimore, Md. Certain proprietary medicines	11,158	May 6	27	526
Michelson & Co., S. M., Milwaukee, Wis. Trunk and furniture casters, catches, and braces, and similar hardware	11,271	June 17	27	1140
Mitchell, Alfred, Whitestone, N. Y. Sheep-dip	11,049	Apr. 1	27	2
Morley Bros., Austin, Tex. Dentifrice	11,220	June 3	27	920
Myers & Bro., Charles H., Baltimore, Md. Whisky	11,260	June 17	27	1140
Newichawanick Company, South Berwick, Me. Horse-blankets	11,180	May 13	27	628
Nicholson, David, St. Louis, Mo. Sirup, sugar, and molasses	11,239	June 10	27	1036
North & Co., O. B., New Haven, Conn. Harness, saddlery, and carriage hardware	11,261	June 17	27	1140
Oehm & Son, C. N., Baltimore, Md. Men's, youth's, boys', and children's ready-made coats, overcoats, pants, and vests	11,282	June 24	27	1242
Palacio & Co., Celestino, New York, N. Y. Cigars	11,187	May 13	27	628
Parker, Osmyn S. (See Harvey and Parker.)				
Pearsall & Co., James, London, county of Middlesex, England. Embroidery-silk	11,183	May 13	27	628
Peckham & Co., P. S., Washington, R. I. Country homespun yarn for hand-knitting	11,272	June 17	27	1140
Pernod, Edouard, Couvet, Switzerland. Cherry brandy	11,254	June 10	27	1036
Pernod, Edouard, Couvet, Switzerland. Extrait d'Absinthe	11,283	June 24	27	1242
Philo, Nathan F., Jersey City, N. J. Cough-sirup	11,125	Apr. 22	27	304
Powell, Joseph, New York, N. Y. Cigars	11,065	Apr. 1	27	2
Powell, William S., Baltimore, Md. Drugs and chemicals	11,117	Apr. 22	27	304
Prescott, William, Cambridgeport, Mass. Baking-powder	11,108	Apr. 15	27	212
Ransom, Frank H., Dunellen, N. J. Package-dyes	11,255	June 10	27	1036
Reach & Co., A. J., Philadelphia, Pa. Base-ball bats, Indian clubs, &c	11,159	May 6	27	526
Readshaw, Edmund H., Dansville, N. Y. Family flour	11,246	June 10	27	1036
Reid, Murdoch & Fischer, Chicago, Ill. Cigars	11,066	Apr. 1	27	2
Reid, Murdoch & Fischer, Chicago, Ill. Cigars	11,196	May 27	27	822
Rendules, Rosendo, Havana, Cuba. Cigars	11,240	June 10	27	1036
Renouard & Co., Henry, Paris, France. Melissa-water	11,126	Apr. 22	27	304
Renter & Mallory, Baltimore, Md. Pipes, fittings, and plumbers' supplies	11,184	May 13	27	628
Reynolds, Harden H., Winston, N. C. Manufactured chewing-tobacco	11,118	Apr. 22	27	304
Reynolds, Richard J., Winston, N. C. Plug and twist tobacco	11,136	Apr. 22	27	304
Reynolds, Richard J., Winston, N. C. Plug and twist tobacco	11,137	Apr. 22	27	304
Reynolds, Richard J., Winston, N. C. Plug and twist tobacco	11,138	Apr. 22	27	304
Rice, Joseph, and I. D. Levi, Philadelphia, Pa. Shirts, drawers, and overalls	11,109	Apr. 15	27	212
Richardson, Tallulah A., Reidsville, N. C. Smoking-tobacco	11,197	May 27	27	822
Richardson & Co., Galveston, Tex. Roasted coffee	11,095	Apr. 15	27	212
Ricker & Co., Galveston, Tex. Roasted coffee	11,050	Apr. 1	27	2
Ripke, Theodor, Hamburg, Germany. Bitters	11,190	May 20	27	722
Rosenberg & Sons, D., New York, N. Y. Varnishes and liquid driers	11,127	Apr. 22	27	304
Savre, William H., Newark, N. J. Preparation for promoting the growth of the hair				
Schandein, Harry. (See Weaver and Schandein.)				
Schindler-Bacher, C., Zurich, Switzerland. Belting-cloth for milling purposes	11,247	June 10	27	1036
Segnitz & Co., Herman, Milwaukee, Wis. Cigars and cigarettes	11,067	Apr. 1	27	2
Segnitz & Co., Herman, Milwaukee, Wis. Cigars and cigarettes	11,068	Apr. 1	27	2
Segnitz & Co., Herman, Milwaukee, Wis. Cigars and cigarettes	11,069	Apr. 1	27	2
Segnitz & Co., Herman, Milwaukee, Wis. Cigars and cigarettes	11,110	Apr. 15	27	212
Segnitz & Co., Herman, Milwaukee, Wis. Plug, fine-cut, and smoking tobacco, cigars, and cigarettes	11,139	Apr. 22	27	304
Segnitz & Co., Herman, Milwaukee, Wis. Cigars and cigarettes	11,241	June 10	27	1036
Shaen & Fithian, New York, N. Y. Black and colored silks	11,128	Apr. 22	27	304
Shroff & Co., Leesburg, Va. Phosphate fertilizers	11,111	Apr. 15	27	212
Simmons & Co., C. F., St. Louis, Mo. Medicine for the cure of female diseases	11,096	Apr. 15	27	212
Snevily, Mansfield B., Brooklyn, N. Y. Suppositories	11,221	June 3	27	920
Spalding & Bros., A. G., Chicago, Ill. Base-ball bats, Indian clubs, &c	11,160	May 6	27	526
Spencer & Co., J., Baltimore, Md. Float-logs	11,284	June 24	27	1242
Spiegel & Co., Chicago, Ill. Wardrobe-bedsteads	11,192	May 20	27	722
Spindel Water Company, Mount Clemens, Mich. Mineral water	11,209	May 27	27	822
Sullivan, John C., Detroit, Mich. Cigars and cigarettes	11,056	Apr. 1	27	2
Swaggard, George. (See Land and Swaggard.)				
Taylor, Walter A., Atlanta, Ga. Internal remedies	11,222	June 3	27	920
Timberlake, Woodson & Co., Lynchburg, Va. Smoking-tobacco	11,198	May 27	27	822
Timberlake, Woodson & Co., Lynchburg, Va. Smoking-tobacco	11,199	May 27	27	822
Tolman, James P., West Newton, Mass. Cords, lines, twines, and ropes	11,210	May 27	27	822
Townley, William M., Newark, N. J. Dyes	11,161	May 6	27	526
Travers Brothers, New York, N. Y. Twines, threads, ropes, lines, and cordage	11,262	June 17	27	1140
Trummer & Co., London, England. Safety-matches	11,079	Apr. 8	27	104
Trummer & Co., London, England. Matches	11,080	Apr. 8	27	104
Trummer & Co., London, England. Matches	11,081	Apr. 8	27	104
Trummer & Co., London, England. Safety-matches	11,097	Apr. 15	27	212
Union Metallic Cartridge Company, Bridgeport, Conn. Metallic and paper shells for breech-loading fire-arms	11,248	June 10	27	1036
Union Metallic Cartridge Company, Bridgeport, Conn. Shells composed of paper with a metallic base	11,249	June 10	27	1036
Vacheron & Constantin, Geneva, Switzerland. Watches	11,150	Apr. 29	27	418
Van Alstine, Charles W., Chelsea, Mass. Plug, twist, and smoking and chewing tobacco, snuff, cigars, cigarettes, and cheroots	11,162	May 6	27	526
Venable & Co., S. W., Petersburg, Va. Plug and smoking tobacco and cigars	11,193	May 20	27	722
Vennard, William L., New York, N. Y. Brushes and combs	11,266	June 17	27	1140
Von Oven, Ferdinand and T., Charleston, S. C. Tea and coffee	11,129	Apr. 22	27	304
Von Oven, Theodore. (See Von Oven, Ferdinand and T.)				
Warsaw Salt Company, Warsaw, N. Y. Fine dairy and table salt	11,051	Apr. 1	27	2
Waterbury Watch Company, Waterbury, Conn. Watches	11,163	May 6	27	526
Weaver, James B., and H. Schandein, Philadelphia, Pa. Perfumery and cologne mixture	11,052	Apr. 1	27	2
Weinhagen, Henry, Hoboken, N. J. Thermometers	11,225	June 24	27	1249
Weissenborn, Rudolph, Jersey City, N. J. Lead-pencils, pencil-holders, pen-holders, &c	11,191	May 20	27	722
Wellman & Dwire Tobacco Company, Quincy, Ill. Smoking-tobacco	11,053	Apr. 1	27	2
Wellman & Dwire Tobacco Company, Quincy, Ill. Smoking-tobacco	11,054	Apr. 1	27	2
Wellman & Dwire Tobacco Company, Quincy, Ill. Smoking-tobacco	11,055	Apr. 1	27	2
Wellman & Dwire Tobacco Company, Quincy, Ill. Smoking-tobacco	11,112	Apr. 15	27	212
Werner, August, New York, N. Y. Unfermented grape-juice	11,113	Apr. 15	27	212
White, Hentz & Co., Philadelphia, Pa. Rye and other whisky	11,075	Apr. 8	27	104
White, Samuel A., Boston, Mass. Material for plumping and softening the uppers of boots and shoes	11,250	June 10	27	1036

Alphabetical list of registrants of trade-marks, April to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
White Sewing Machine Company, Cleveland, Ohio. White sewing-machines	11,098	Apr. 15	27	212
Whitney Organ Company, Detroit, Mich. Reed-organs	11,082	Apr. 8	27	104
Wiggin's Sons, H. B., New York, N. Y. Hollands	11,083	Apr. 8	27	104
Wilcox Company, W. J., New York, N. Y. Refined lard	11,130	Apr. 22	27	304
Winchester Repeating Arms Company, New Haven, Conn. Cartridges for breech-loading fire-arms	11,251	June 10	27	1036
Winkelmann, John H., Baltimore, Md. Extracts and perfumes for the toilet	11,276	June 24	27	1242
Woodruff, Edmund W., Washington, D. C. Bill or paper file holders and cases of shelving for the same	11,151	Apr. 29	27	418
Zanesville Woolen Manufacturing Company, Zanesville, Ohio. Woolen textiles, including yarns, cassimeres, flannels, jeans, and linseys	11,121	Apr. 22	27	304

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Pages.
Abbott & Co., C. W., Baltimore, Md. "Angostura Aromatic Bitters"	4,039	Apr. 8	27	104
Alden, Dana K., Boston, Mass. "Draper Oiler Co." (for Oil Cans)	4,082	Apr. 22	27	304
Alling, C. P., Buffalo, N. Y. "Dr. Alling's Triumph Inhaler and Inhalant"	4,040	Apr. 8	27	104
American Tack Company, Fairhaven, Mass. "Carpet-Tacks"	4,112	May 6	27	526
American Tack Company, Fairhaven, Mass. "Tinned Carpet-Tacks"	4,113	May 6	27	526
Anderson, William J., Boston, Mass. "Anderson's Electric Salve"	4,114	May 6	27	526
Antifermentine Company, (limited,) New York, N. Y. "Antifermentine" (for a Chemical Powder)	4,051	Apr. 15	27	212
Arnault & Co., Denver, Colo. "French Enamel or Perfect Beautifier"	4,079	Apr. 29	27	418
Arnold, Calvin M., Harrisburg, Pa. "Dr. Arnold's Malaria Cure"	4,139	June 10	27	1036
Bannen, P. L., Verona, Pa. "The Great Skin Cure Suracura"	4,019	Apr. 1	27	2
Bannen, P. L., Verona, Pa. "St. Patrick's Oil"	4,020	Apr. 1	27	2
Bannen, P. L., Verona, Pa. "Jumbo" (for Tonic Bitters)	4,021	Apr. 1	27	2
Bard, Joseph, Chicago, Ill. "The Health Restorer" (for a Medicine)	4,127	May 27	27	822
Bard, Joseph, Chicago, Ill. "The Pain Destroyer." (for a Medicine)	4,128	May 27	27	822
Bard, Joseph, Chicago, Ill. "The Sufferer's Relief"	4,140	June 17	27	1140
Bard, Joseph, Chicago, Ill. "The Hair Beautifier"	4,150	June 17	27	1140
Bassett, Liston B., Norwich, N. Y. "Dr. Empet's Oil" (for a Medical Compound)	4,041	Apr. 8	27	104
Beggs, F. M., Elk Point, Dak. Ter., and C. E. DeWitt, Sioux City, Iowa. "Beggs' Cherry Cough Syrup"	4,116	May 13	27	628
Bernhard, Conrad. (See Kraft and Bernhard.)				
Bischoff, Henry W., Chappaqua, N. Y. "Chappaqua" (for Shoes)	4,119	May 20	27	722
Block & Co., M., Chattanooga, Tenn. "Bee-Hive Cough Syrup"	4,022	Apr. 1	27	2
Bowers, Isaac, Barnsborough, N. J. "Bower's Infallible Cough Remedy"	4,120	May 20	27	722
Bradney, William, Chicago, Ill. "Leon Gambetta" (for Manufactured Tobacco or Cigars)	4,083	Apr. 22	27	304
Breitenbach, M. J., New York, N. Y. "91,895 Ninety-one, eight ninety-five. Cough Mixture"	4,052	Apr. 15	27	212
Brilles, D., New York, N. Y. "True and Original Triple Leaf Brand Bay Rum"	4,053	Apr. 15	27	212
Bryan, Charles C., Washington, D. C. "Casino" (for Whisky)	4,023	Apr. 1	27	2
Buntin, George C., and J. A. Draper, Terre Haute, Ind. "Petroleum Soap"	4,054	Apr. 15	27	212
Campbell, John A. and W. C., Nashville, Tenn. "Ethiopian Pile Ointment"	4,084	Apr. 22	27	304
Campbell, William C. (See Campbell, John A. and W. C.)				
Candy Bros., St. Louis, Mo. "Dr. C. F. Bull's Cough Drops"	4,085	Apr. 22	27	304
Chattin, William C., Key East, N. J. "Tal-a-quit-sah Cordial" (for a Medicine)	4,024	Apr. 1	27	2
Chattin, William C., Key East, N. J. "Oregon Indian Ague Cure and Malarial Specific"	4,025	Apr. 1	27	2
Chemical Ozone Manufacturing Company, Boston, Mass. "Dietetic Ozone Water"	4,100	Apr. 29	27	418
Chemical Ozone Manufacturing Company, Boston, Mass. "The Double Concentrated Ozone Water"	4,101	Apr. 29	27	418
Chemical Ozone Manufacturing Company, Boston, Mass. "Ozone Powder"	4,102	Apr. 29	27	418
Chemical Ozone Manufacturing Company, Boston, Mass. "Simple Ozone Water"	4,103	Apr. 29	27	418
Chemical Ozone Manufacturing Company, Boston, Mass. "Concentrated Ozone Water"	4,104	Apr. 29	27	418
Cramer, Max. (See Russell and Cramer.)				
Dalrymple, C. H., Morristown, N. J. "Calendula Lotion"	4,140	June 10	27	1036
Daniels, J. Mortimer, Scranton, Pa. "May's Dyspepsia Cure"	4,141	June 10	27	1036
Davenport, T. C., Philadelphia, Pa. "Silver Lake" (for Canned Tomatoes)	4,121	May 20	27	722
DeWitt, C. E. (See Beggs and DeWitt.)				
Douglas, Robert, Baltimore, Md. "Dr. Douglas' Herb Tea"	4,086	Apr. 22	27	304
Drake, Reason, La Grange, Ind. "Imperial Vegetable Blood and Liver Pills"	4,055	Apr. 15	27	212
Draper, James A. (See Buntin and Draper.)				
Essex, Albert H., Fall River, Mass. "Syringe"	4,056	Apr. 15	27	212
Finlay & Co., G. R., New Orleans, La. "Botanic Sarsaparilla"	4,057	Apr. 15	27	212
Fisher, Phillip L., New York, N. Y. "Sweet Lullaby Bouquet"	4,042	Apr. 8	27	104
Fleming, Sarah A., Hot Springs, Ark. "Mrs. Fleming's Hot Springs Bleacher" (for the Complexion)	4,043	Apr. 8	27	104
Fornwalt, Martin L., Newark, N. J. "Cama Cora" (for a Liniment)	4,026	Apr. 1	27	2
French, F. D., Flint, Mich. "A Vegetable Cure for Cancer, Tumor and Ulcer"	4,122	May 20	27	722
Fuller, L., New York, N. Y. "Artist's Eye Lotion"	4,058	Apr. 15	27	212
Fuller, L., New York, N. Y. "Elphin Hair Restorer"	4,059	Apr. 15	27	212
Gardiner, Hubert, Philadelphia, Pa. "The Original Perfect Fitting Wankenphast." (for Boots and Shoes)	4,060	Apr. 15	27	212
Gilbert, Charles E. (See Miller, Gilbert, McGehee, and Picard.)	4,061	Apr. 15	27	212
Gurney, Silas, Boston, Mass. "Seal Rock Spring Water"				
Halsted, William D. (See Lloyd and Halsted.)	4,105	Apr. 29	27	418
Hamburger Tea Co., Chicago, Ill. "Pyramidon" (for Cigars)	4,062	Apr. 15	27	212
Hannan, Francis C., Brooklyn, N. Y. "Hannan" (for Tin Linings for Hats)				

Alphabetical list of registrants of trade-marks, April to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
White Sewing Machine Company, Cleveland, Ohio. White sewing-machines	11,098	Apr. 15	27	212
Whitney Organ Company, Detroit, Mich. Reed-organs	11,082	Apr. 8	27	104
Wiggin's Sons, H. B., New York, N. Y. Hollands	11,083	Apr. 8	27	104
Wilcox Company, W. J., New York, N. Y. Refined lard	11,130	Apr. 22	27	304
Winchester Repeating Arms Company, New Haven, Conn. Cartridges for breech-loading fire-arms	11,251	June 10	27	1036
Winkelmann, John H., Baltimore, Md. Extracts and perfumes for the toilet	11,276	June 24	27	1242
Woodruff, Edmund W., Washington, D. C. Bill or paper file holders and cases of shelving for the same	11,151	Apr. 29	27	418
Zanesville Woolen Manufacturing Company, Zanesville, Ohio. Woolen textiles, including yarns, cassimeres, flannels, jeans, and linseys	11,121	Apr. 22	27	304

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Abbott & Co., C. W., Baltimore, Md. "Angostura Aromatic Bitters"	4,039	Apr. 8	27	104
Alden, Dana K., Boston, Mass. "Draper Oiler Co." (for Oil Cans)	4,082	Apr. 22	27	304
Alling, C. P., Buffalo, N. Y. "Dr. Alling's Triumph Inhaler and Inhalant"	4,040	Apr. 8	27	104
American Tack Company, Fairhaven, Mass. "Carpet-Tacks"	4,112	May 6	27	526
American Tack Company, Fairhaven, Mass. "Tinned Carpet-Tacks"	4,113	May 6	27	526
Anderson, William J., Boston, Mass. "Anderson's Electric Salve"	4,114	May 6	27	526
Antifermentine Company, (limited,) New York, N. Y. "Antifermentine" (for a Chemical Powder)	4,051	Apr. 15	27	212
Arnault & Co., Denver, Colo. "French Enamel or Perfect Beautifier"	4,089	Apr. 29	27	418
Arnold, Calvin M., Harrisburg, Pa. "Dr. Arnold's Malaria Cure"	4,139	June 10	27	1036
Bannen, P. L., Verona, Pa. "The Great Skin Cure Suracura"	4,019	Apr. 1	27	2
Bannen, P. L., Verona, Pa. "St Patrick's Oil"	4,020	Apr. 1	27	2
Bannen, P. L., Verona, Pa. "Jumbo" (for Tonic Bitters)	4,021	Apr. 1	27	2
Bard, Joseph, Chicago, Ill. "The Health Restorer" (for a Medicine)	4,127	May 27	27	822
Bard, Joseph, Chicago, Ill. "The Pain Destroyer." (for a Medicine)	4,128	May 27	27	822
Bard, Joseph, Chicago, Ill. "The Sufferer's Relief"	4,149	June 17	27	1140
Bard, Joseph, Chicago, Ill. "The Hair Beautifier"	4,150	June 17	27	1140
Bassett, Liston B., Norwich, N. Y. "Dr. Empet's Oil" (for a Medical Compound)	4,041	Apr. 8	27	104
Beggs, F. M., Elk Point, Dak. Ter., and C. E. DeWitt, Sioux City, Iowa. "Beggs' Cherry Cough Syrup"	4,116	May 13	27	628
Bernhard, Conrad. (See Kraft and Bernhard.)				
Bischoff, Henry W., Chappaqua, N. Y. "Chappaqua" (for Shoes)	4,119	May 20	27	722
Block & Co., M., Chattanooga, Tenn. "Bee-Hive Cough Syrup"	4,022	Apr. 1	27	2
Bowers, Isaac, Barnsborough, N. J. "Bower's Infallible Cough Remedy"	4,120	May 20	27	722
Bradney, William, Chicago, Ill. "Leon Gambetta" (for Manufactured Tobacco or Cigars)	4,083	Apr. 22	27	304
Breitenbach, M. J., New York, N. Y. "91,695 Ninety-one, eight ninety-five. Cough Mixture"	4,092	Apr. 15	27	212
Brilles, D., New York, N. Y. "True and Original Triple Leaf Brand Bay Rum"	4,053	Apr. 15	27	212
Bryan, Charles C., Washington, D. C. "Casino" (for Whisky)	4,023	Apr. 1	27	2
Buntin, George C., and J. A. Draper, Terre Haute, Ind. "Petroleum Soap"	4,054	Apr. 15	27	212
Campbell, John A. and W. C., Nashville, Tenn. "Ethiopian Pile Ointment"	4,084	Apr. 22	27	304
Campbell, William C. (See Campbell, John A. and W. C.)				
Candy Bros., St. Louis, Mo. "Dr. C. F. Bull's Cough Drops"	4,085	Apr. 22	27	304
Chaffin, William C., Key East, N. J. "Tal-a-quit-sah Cordial" (for a Medicine)	4,024	Apr. 1	27	2
Chaffin, William C., Key East, N. J. "Oregon Indian Ague Cure and Malarial Specific"	4,025	Apr. 1	27	2
Chemical Ozone Manufacturing Company, Boston, Mass. "Dietetic Ozone Water"	4,100	Apr. 29	27	418
Chemical Ozone Manufacturing Company, Boston, Mass. "The Double Concentrated Ozone Water"	4,101	Apr. 29	27	418
Chemical Ozone Manufacturing Company, Boston, Mass. "Ozone Powder"	4,102	Apr. 29	27	418
Chemical Ozone Manufacturing Company, Boston, Mass. "Simple Ozone Water"	4,103	Apr. 29	27	418
Chemical Ozone Manufacturing Company, Boston, Mass. "Concentrated Ozone Water"	4,104	Apr. 29	27	418
Cramer, Max. (See Rassell and Cramer.)				
Dalrymple, C. H., Morristown, N. J. "Calendula Lotion"	4,140	June 10	27	1036
Daniels, J. Mortimer, Scranton, Pa. "May's Dyspepsia Cure"	4,141	June 10	27	1036
Davenport, T. C., Philadelphia, Pa. "Silver Lake" (for Canned Tomatoes)	4,121	May 20	27	722
DeWitt, C. E. (See Beggs and DeWitt.)				
Douglas, Robert, Baltimore, Md. "Dr. Douglas' Herb Tea"	4,086	Apr. 22	27	304
Drake, Reason, La Grange, Ind. "Imperial Vegetable Blood and Liver Pills"	4,055	Apr. 15	27	212
Draper, James A. (See Buntin and Draper.)				
Essex, Albert H., Fall River, Mass. "Syringe"	4,056	Apr. 15	27	212
Finlay & Co., G. R., New Orleans, La. "Botanic Sarsaparilla"	4,057	Apr. 15	27	212
Fisher, Philip L., New York, N. Y. "Sweet Lullaby Bonnet"	4,042	Apr. 8	27	104
Fleming, Sarah A., Hot Springs, Ark. "Mrs. Fleming's Hot Springs Bleacher" (for the Complexion)	4,043	Apr. 8	27	104
Fornwalt, Martin L., Newark, N. J. "Cama Cura" (for a Liniment)	4,026	Apr. 1	27	2
French, F. D., Flint, Mich. "A Vegetable Cure for Cancer, Tumor and Ulcer"	4,122	May 20	27	722
Fuller, L., New York, N. Y. "Artist's Eye Lotion"	4,058	Apr. 15	27	212
Fuller, L., New York, N. Y. "Elphin Hair Restorer"	4,059	Apr. 15	27	212
Gardiner, Hubert, Philadelphia, Pa. "The Original Perfect Fitting Waukenphast." (for Boots and Shoes)	4,060	Apr. 15	27	212
Gilbert, Charles E. (See Miller, Gilbert, McGehee, and Picard.)				
Gurney, Silas, Boston, Mass. "Seal Rock Spring Water"	4,061	Apr. 15	27	212
Halsted, William D. (See Isted and Halsted.)				
Hamburger Bros. Co., Chicago, Ill. "Fumadora," (for Cigars)	4,105	Apr. 29	27	418
Hanson, Francis G., Brooklyn, N. Y. "Liberty" (for Tip-Linings for Hats)	4,062	Apr. 15	27	212
Harris & Co., T. R., Cohocton, N. Y. "Forbidden Fruit" (for Cigars)	4,087	Apr. 22	27	304
Heathman & Co., G. W., Dayton, Ohio. "Star Butter" (for Crackers)	4,063	Apr. 15	27	212
Higgins, Charles A., Flemington, N. J. "Higgins Autumn Leaf" (for a Dyspepsia Remedy)	4,155	June 24	27	1342
Hooper & Co., F. L., Baltimore, Md. "Drew's Manilla Plain Paper Bags"	4,044	Apr. 8	27	104
Horne & Abel, Los Angeles, Cal. "White Pine Balsam"	4,151	June 17	27	1140
Hort & Co., F., Philadelphia, Pa. "Dime" (for Cologne)	4,129	May 27	27	822
Hull, Hubert H., New York, N. Y. "South American Lightning Eradicator"	4,027	Apr. 1	27	2
Ince, Richard, Detroit, Mich. "Dermatine" (for a Preparation for the Skin)	4,123	May 20	27	722
Isted, Ichabod B. S., and W. D. Halsted, Milwaukee, Wis. "Red Cross Tallow Compound"	4,028	Apr. 1	27	2
Jackson, J. Elmer, Mullica Hill, N. J. "Dr. L. Burdick's Never-Failing Kidney Cure"	4,029	Apr. 1	27	2
Johnson, Thomas, Utica, N. Y. "Johnson's Speckbiene, for the Hair"	4,088	Apr. 22	27	304
Kalbfleisch's Sons, Martin, New York, N. Y. "Wheat baking powder"	4,124	May 20	27	722
Keeshan, John, Cincinnati, Ohio. "Pleasant Wine of Iron"	4,089	Apr. 22	27	304
Kern, John B. A., Milwaukee, Wis. "Success," (for Flour)	4,045	Apr. 8	27	104
Kirby, T. Edward, Baltimore, Md. "Dr. Moore's Juniper Balsam"	4,130	May 27	27	822
Kirkpatrick, Bertha, Philadelphia, Pa. "Wrinkle Eradicator"	4,090	Apr. 22	27	304
Knittel, Louis, Hoboken, N. J. "L. Knittel's Indian Hair Tonic"	4,106	Apr. 29	27	418
Kraft, Conrad J., and C. Bernhard, Baltimore, Md. "Union Made Loaf Bread"	4,131	May 27	27	822

Alphabetical list of registrants of labels, April to June, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Kuhn, Louis, Baltimore, Md. "Congress Hall." (for Cigars)	4,064	Apr. 15	27	212
Lake, Herbert W., Waterbury, Conn. "Diamond." (for Bitters)	4,065	Apr. 15	27	212
Lake, Herbert W., Waterbury, Conn. "Lake's Expectorant Cough Balsam"	4,091	Apr. 22	27	304
Lance, George A., Watertown, N. Y. "Watertown Woolen Yarn"	4,133	June 3	27	930
Langfeld, Lichten & Co., Philadelphia, Pa. "Fabrice Paris" (for Gloves)	4,066	Apr. 15	27	212
Lappe, Martin, Baltimore, Md. "Gluco Pepsine." (for a Medicine)	4,030	Apr. 1	27	2
Lovo & Co., James M., Kansas City, Mo. "Fig Paste"	4,142	June 10	27	1036
Lyon, George R., New London, Conn. "Lyon's Sarsaparilla"	4,143	June 10	27	1036
Lyon, George R., New London, Conn. "Lyon's Cough Syrup"	4,144	June 10	27	1036
Lyon, George R., New London, Conn. "Hop Ointment"	4,145	June 10	27	1036
MacLea, Austin & Wellington, New York, N. Y. "Crinoline Lining"	4,031	Apr. 1	27	2
Madden & Co., Thomas B., Coffeyville, Kans. "Golden Gate Bitters"	4,092	Apr. 22	27	304
Maker, Willis A., Worcester, Mass. "Maker's Compound Vegetable Cough Syrup"	4,146	June 10	27	1036
McCall, Arthur S., Jamestown, N. Y. "Chautauqua Baking Powder"	4,067	Apr. 15	27	212
McGehee, Edward J. (See Miller, Gilbert, McGehee, and Picard.)				
Mead, Peter W., Brooklyn, N. Y. "Improved Imperial Linseed Oil"	4,093	Apr. 22	27	304
Mensing & Stecher, Rochester, N. Y. "Spear Head" (for Cigars)	4,046	Apr. 8	27	104
Mensing & Stecher, Rochester, N. Y. "Twenty-four O'clock" (for Cigars)	4,047	Apr. 8	27	104
Metzenaur, E., Little Rock, Ark. "Fresh Home Roasted Coffee"	4,139	May 27	27	822
Meyer & Bulte, St. Louis, Mo. "Charming Belle" (for Flour)	4,068	Apr. 15	27	212
Miller, Aaron G., Philadelphia, Pa. "Dr. Smith's Ague Powders"	4,094	Apr. 22	27	304
Miller, George T., C. E. Gilbert, E. J. McGehee, and L. Picard, Perry, Ga. "Goyne's Great Blood Remedy"	4,069	Apr. 15	27	212
Napheys, William D., and J. D. Pratt, Jr., Philadelphia, Pa. "Napheys, Pratt & Co., Choice Family Lard"	4,032	Apr. 1	27	2
Neuer, Stanley W., New York, N. Y. "Ominico," (for a Medical and Toilet Preparation)	4,048	Apr. 8	27	104
New England Axe Co., Lock Haven, Pa. "The Forester" (for Axes)	4,095	Apr. 22	27	304
Oberly & Newell, New York, N. Y. "Foxhall Worsteds," (for Mixed Cotton and Woolen Fabrics)	4,033	Apr. 1	27	2
Paige, John S., Providence, R. I. "Telephone Soap"	4,096	Apr. 22	27	304
Picard, Louis. (See Miller, Gilbert, McGehee, and Picard.)				
Platt, Henry B., New York, N. Y. "Platt's Chlorides"	4,107	Apr. 29	27	418
Potter, John E., Providence, R. I. "Ten Cent or Dime Corn Cure"	4,125	May 20	27	722
Potter, N. Prentiss, Bridgeton, Me. "Potter's Catarrh Cure, Prepared by N. Prentiss Potter, M. D. Bridgton, Me"	4,115	May 6	27	506
Price, James H., Newark, N. J. "Price's Oil Preparation" (for Renovating the Outside of Houses)	4,034	Apr. 1	27	2
Ragendorf, Samuel, Cincinnati, Ohio. "Tobacco Curer"	4,126	May 20	27	722
Raymond, B. F., Essex, Mass. "Aromatic Syrup of the Hypophosphites Comp."	4,152	June 17	27	1140
Redfield, Paul S., Providence, R. I. "Iodic Comp." (for a Medicine)	4,108	Apr. 29	27	418
Richardson & Son, M., Elmira, N. Y. "May Blossom," (for Cigars)	4,070	Apr. 15	27	212
Rio Chemical Company, St. Louis, Mo. "Aletris Cordial"	4,147	June 10	27	1036
Rogers & Co., James H., New York, N. Y. "Rogers' Grapoline." (for a Medical Preparation)	4,109	Apr. 29	27	418
Root, G. Wells, Hartford, Conn. "Pratt's Specific-Direction Label"	4,153	June 17	27	1140
Russell, Edward, Newton, and M. Cramer, Boston, Mass. "Cramer's German Iron Beer"	4,035	Apr. 1	27	2
Schandein, Harry. (See Weaver and Schandein.)				
Scharlins, Simon, New York, N. Y. "Rapé de Gambetta," (for Snuff)	4,036	Apr. 1	27	2
Schroder, John A., Dayton, Ohio. "Schroder's Medicated Pad"	4,071	Apr. 15	27	212
Schroeder & Co., C. C. F., Berrett, Md. "Iron Tonic & Blood Purifier"	4,049	Apr. 8	27	104
Scott, Charles W., Kansas City, Mo. "Scott's Coca Beef and Iron with Phosphorus"	4,072	Apr. 15	27	212
Shoemaker & Co., Robert, Philadelphia, Pa. "Robert Shoemaker & Co., Pure Ground Spices and Drugs, Philadelphia"	4,134	June 3	27	930
Simonds, Alonzo B., New York, N. Y. "Cleozene" (for Soap or Saponaceous Matter)	4,073	Apr. 15	27	212
Sleisinger, Louis, Baltimore, Md. "Tender Feet." (for Boots and Shoes)	4,110	Apr. 29	27	418
Smith, Thomas K., Girard, Pa. "Sure Heave Cure"	4,135	June 3	27	930
Snyder, Henry, Jr., Brooklyn, N. Y. "Brandrye" (for Brandy and Whisky)	4,111	Apr. 29	27	418
Solomons, J. Nelson, East Orange, N. J. "Nelson's Food Digester"	4,136	June 3	27	930
Southern Medicine Company, Caldwell, Tex. "Southern Cathartic Pills"	4,117	May 13	27	628
Southern Medicine Company, Caldwell, Tex. "Southern Chill Tonic"	4,118	May 13	27	628
Sperry, S. W., San Francisco, Cal. "Sperry's Germea for Breakfast," (for Flour)	4,074	Apr. 15	27	212
Stewart, J. A. and M. R., Conyers, Ga. "Stewart's A. Q. C." (for a Medical Compound)	4,075	Apr. 15	27	212
Stewart, M. R. (See Stewart, J. A. and M. R.)				
Swain, Earle & Co., Boston, Mass. "The Boston Java Coffee"	4,156	June 24	27	1242
Tarrant, Thomas W., Kansas City, Mo. "Tarrant's Fig Paste"	4,148	June 10	27	1036
Taylor, John H., Three Rivers, Mich. "J. H. Taylor's Great Kidney and Liver Cure"	4,137	June 3	27	930
Thomas & Thompson, Baltimore, Md. "Beef, Iron, Wine with Hydropepsin"	4,157	June 24	27	1242
Trull, Benjamin R., Hominy Creek, N. C. "Trull's Scotch Soap Powder"	4,037	Apr. 1	27	2
Tyree, Josiah S., Stannton, Va. "Tyree's Digestive Tablet"	4,154	June 17	27	1140
Vail & Co., William D., Greenbush, N. Y. "Doctor Williams' Humalico." (for a Medical Compound)	4,076	Apr. 15	27	212
Walter, Eyer, Nortonville, Kans. "Dr. Walter's Headache Cure"	4,097	Apr. 22	27	304
Weaver, James B., and H. Schandein, Philadelphia, Pa. "Garwood's Standard Perfumes"	4,038	Apr. 1	27	2
Weeks, James E., Jersey City, N. J. "Weeks' Worm Powders"	4,077	Apr. 15	27	212
White, James T., Philadelphia, Pa. "Silver Dust Polishing Powder"	4,078	Apr. 15	27	212
Wieczorek, Anthony, New York, N. Y. "Wieczorek's Dialysed Ferrated or Iodo-Ferrated Cod-Liver Oil, 1:1000"	4,098	Apr. 22	27	304
Wilber, Rufus R., New York, N. Y. "Wilber's Celebrated Family Liniment"	4,158	June 24	27	1242
Winkelmann, John H., Baltimore, Md. "Procter's Insect Powder"	4,079	Apr. 15	27	212
Winkelmann, John H., Baltimore, Md. "Procter's Liquid Glue"	4,080	Apr. 15	27	212
Winkelmann, John H., Baltimore, Md. "Fleming's Tea Berry Tooth Powder"	4,081	Apr. 15	27	212
Wood, Hiram, Rochester, N. Y. "Rochester's Excelsior," (for Cigars)	4,050	Apr. 8	27	104
Woodman, Milton S., Lebanon, N. H. "Blood's Improved Gout and Rheumatic Pills"	4,138	June 3	27	930

DISCLAIMERS.

Name, residence, and invention.	No.	Filed.	Official Gazette. Vol.	Page.
Barker, Abel, assignor to Edward M. Lang, Wyoming, Pa.: disclaimer filed by present assignees, McMurray, Lang & Burnham. Soldering devices. (Reissue)	8,781	May 14, 1884	27	722
Jennings, Warren P., assignor of one-half to Abraham G. Jennings, Brooklyn, N. Y.; disclaimer filed by present owners, Abraham G., Warren P., and Oliver T. Jennings. Mitt-shaping machine	234,286	May 21, 1884	27	822
McLean, William, Los Angeles, Cal.; disclaimer filed by patentee. Laying pavements	289,295	June 12, 1883	27	1140

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abrading-machine	F. W. Coy	296,535	Apr. 8	811	224	27	161
Abrasive belt	F. W. Coy	299,747	June 3	325	83	27	981
Acid. Apparatus for concentrating sulphuric	M. Willett	301,033	June 24	1961	542	27	1306
Acid from the residues of ammonia-soda manufacture. Obtaining hydrochloric	L. Mond	299,830	June 3	414	.....	27	1000
Adding-machine	W. H. Beatley	297,342	Apr. 22	1833	408, 409	27	362
Adding-machine	W. C. Smalstig	300,809	June 24	1692	462, 463	27	1255
Addressing-machine	H. Parker and J. T. Drummond	296,773	Apr. 15	1105	312	27	225
Adjustable chair	A. W. Browne	299,458	May 27	1872	538	27	904
Advertising bird-cage	H. Bishop	296,912	Apr. 15	1284	357	27	257
Advertising-card	B. D. Baldwin	296,718	Apr. 15	1041	293	27	213
Advertising musical instrument	H. Hardy	296,956	Apr. 15	1331	369	27	266
Aerated waters. Apparatus for dispensing	J. H. Shepherd	300,288	June 10	1019	275	27	1119
Aging whisky. Process of and apparatus for	P. E. Jay	296,836	Apr. 15	1185	332	27	238
Agricultural boiler	G. Patton	299,003	May 20	1302	371	27	788
Air and dust separator	J. P. Anderson	295,960	Apr. 1	89	27	27	20
Air. Apparatus for preparing oxygenated	A. Stamm	300,027	June 10	661	180, 181	27	1055
Air as a motive power. Utilizing compressed	C. E. Buell	300,443	June 17	1219	333	27	1165
Air-brake. Automatic	C. A. T. Sjögren	300,401	June 17	1165	319	27	1155
Air-brake. Electro-magnetic	H. Flad	296,546	Apr. 8	824	227, 228, 229	27	165
Air-brakes. Electrical connector in pipe-couplings for	H. Flad	296,547	Apr. 8	829	229, 230	27	165
Air-compressor	J. F. Allen	299,314	May 27	1693	486	27	872
Air-cooling device	W. V. Wallace	297,476	Apr. 22	1995	545	27	393
Air-cooling machine	W. V. Wallace	297,039	Apr. 15	1437	396, 397	27	285
Air-filter	H. Flad	296,548	Apr. 8	831	230	27	160
Air medicator and injector	B. McGregor	297,427	Apr. 22	1935	528	27	381
Alarm: *See* Burglar-alarm. Fire-alarm. Clock-alarm. Steam-alarm. Electric alarm.							
Alarm apparatus. Electrical	M. D. Porter and E. R. Wilder	296,875	Apr. 15	1236	345, 346	27	247
Alarm-lock	R. G. Vassar	298,136	May 6	215	57	27	568
Album. Autograph	W. C. Grant	296,404	Apr. 8	650	180	27	128
Album-clasp	T. M. Haas	300,070	June 10	719	195	27	1066
Alloy for coating metals	C. E. Manby	300,324	June 10	1059	.....	27	1126
Alloy for safes. Metallic	J. Farrel	298,365	May 13	531	.....	27	635
Alloys. Manufacturing metal	G. Selve	296,884	Apr. 15	1244	348	27	249
Amalgamating apparatus	M. T. Van Derveer and J. Hegeman	299,700	June 3	272	68	27	971
Amalgamating-pan	G. H. Malter	299,409	May 27	1817	522	27	895
Amalgamating-pans. Bearing for the spindles of	A. Wallace	300,920	June 24	1-98	500	27	1281
Amalgamator	H. Moon	300,106	June 10	765	206	27	1074
Amalgamator	E. Pike	299,259	May 27	1692	466	27	859
Ammonia from bone-black retorts. Apparatus for taking off	F. Osmer	297,948	Apr. 29	2001	713	27	514
Amplifier	G. F. Schild	300,804	June 24	1687	461	27	1254
Anchor	W. Lewis	298,867	May 20	1139	320	27	756
Animal-shears	E. E. Stone	299,034	May 20	1346	384	27	796
Animal-shears	W. F. Winckenden	297,327	Apr. 22	1803	490	27	356
Animal-trap	P. R. Erling	298,361	May 13	525	142	27	634
Animal-trap	H. B. Swartz	296,085	Apr. 1	230	67	27	47
Animals. Safety attachment for horned	G. W. Ritchie	296,625	Apr. 8	928	250	27	184
Annunciator	R. J. Hewitt	300,607	June 17	1419	391	27	1202
Annunciator and circuit. Electric	T. N. Vail	300,168	June 10	849	229, 230	27	1089
Annunciator. Electric	P. Seiler	298,242	May 6	366	97	27	595
Annunciator. Telephone-call	C. W. Howard	300,976	June 24	1800	520	27	1292
Annunciators. Derived circuit for clearing-out	C. E. Scribner	300,144	June 10	821	222	27	1084
Anti-friction composition	J. Smalley	300,023	June 10	658	170	27	1035
Anti-friction roller	C. Nau	300,110	June 10	771	207	27	1075
Anvil	C. Fisher	298,567	May 13	758	213	27	678
Anvil attachment	M. A. Ladd	296,870	Apr. 15	1201	336	27	242
Anvil, vise, and drill. Combined	J. Weathers	296,658	Apr. 8	968	271	27	193
Aquarium	A. Ledig	298,253	Apr. 15	1206	338	27	243
Asbestus compound and articles made therefrom	C. F. Brigham	298,281	May 6	418	112	27	605
Ash-box	J. T. Wilson	300,670	June 17	1517	417	27	1220
Ash-pan. Steam-emptying	J. Desmond	297,507	Apr. 22	2044	558	27	401
Ashes, garbage, &c. Conductor for	J. Berry	299,903	June 3	493	130	27	1015
Aspirator. Surgical	C. B. Hardin	297,989	May 6	38	9	27	534
Auger	H. L. Shaler	298,786	May 20	1041	291	27	738
Auger. Earth-boring	C. De Mézerville	300,053	June 10	694	189	27	1061

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Auger-handle	D. M. Parry	296,873	Apr. 15	1233	345	27	247
Auger. Sand-	J. Sickler	297,642	Apr. 29	2231	607	27	443
Automatic brake	W. W. Smoot and Q. D. Wilcoxson	299,031	May 20	1343	383, 384	27	795
Automatic switch	H. W. Howell, Jr	298,756	May 20	1005	281	27	731
Awning	L. Fox	300,902	June 24	1870	513	27	1289
Awning-attaching device	H. Butterworth	300,304	June 10	1037	280	27	1122
Ax-polls, &c. Machine for making	J. W. Bowers	296,817	Apr. 15	1156	326	27	235
Axle-bevel	F. W. Flynn	299,771	June 3	350	89	27	987
Axle box. Car-	W. S. G. Baker	299,320	May 27	1699	488	27	873
Axle box. Car-	R. Brewer	296,517	Apr. 8	788	217	27	156
Axle box. Car-	M. R. Carey	298,552	May 13	739	209	27	675
Axle box. Car-	J. W. Carr	298,171	May 6	961	68	27	576
Axle box. Car-	N. M. George	299,129	May 27	1475	424	27	831
Axle box. Car-	W. A. Hardy	300,362	June 17	1117	303	27	1147
Axle box. Car-	J. Stephenson	296,479	Apr. 8	739	204	27	146
Axle box. Car-	J. Stephenson	296,480	Apr. 8	741	204, 205	27	146
Axle box. Car-	G. W. Stewart	298,320	May 6	468	126	27	615
Axle box. Car-	D. S. Stimson	298,253	May 6	380	100, 101	27	598
Axle boxes. Pattern for car-	M. O'Mara	296,706	Apr. 8	1019	286	27	203
Axle cutter. Vehicle-	A. N. Ruiter	299,854	June 3	440	114	27	1006
Axle-fastening	J. V. Rowlett	300,738	June 17	1604	439	27	1234
Axle for vehicles. Self-oiling	L. H. Fisher	296,323	Apr. 8	546	153	27	109
Axle lubricator. Car-	S. A. Flower and P. Ross	300,587	June 17	1390	384	27	1197
Axle lubricator. Car-	W. G. Mitchell	297,327	Apr. 22	2071	565	27	406
Axle lubricator. Car-	H. R. Randall	300,639	June 17	1465	404	27	1211
Axle-nut	W. Fahy	299,969	June 10	586	157	27	1042
Axle nut. Vehicle-	H. B. Gibbon	300,965	June 24	1877	516	27	1290
Axle. Self-oiling	E. E. Baker	296,717	Apr. 15	1040	293	27	213
Axle-skein	W. P. Brown	297,750	Apr. 29	2371	646	27	469
Axle-skein	L. H. Merriman	296,702	Apr. 8	1016	285	27	203
Axle-truss	A. J. Beach	296,382	Apr. 8	626	173	27	124
Axle. Vehicle-	S. T. Cavett	296,523	Apr. 8	795	219	27	158
Axle. Vehicle-	J. J. Devine	297,973	May 6	13	4	27	530
Axle. Wagon-	H. H. E. Bery	300,197	June 10	897	241	27	1097
Axle-yoke	H. K. Porter	297,160	Apr. 22	1594	438	27	318
Axles. Die for forming	J. Smith	299,431	May 27	1837	528	27	899
Axles. Truss-brace for vehicle-	A. Jenkins	297,807	Apr. 29	2434	665	27	481
Baby-jumper	C. T. Gardner	296,946	Apr. 15	1321	367	27	263
Baby-walker	S. Levy	299,657	June 3	206	53	27	958
Back-band hook	C. W. Oneal	300,632	June 17	1458	402	27	1210
Badge	F. Neubert	299,000	May 20	1298	370	27	787
Bag:							
See Feed-bag. Mail-bag. Paper bag. Traveling-bag.							
Bag and twine holder	W. Wellington	298,806	May 20	1066	299	27	742
Bag and twine holder and show-rack. Combined	G. R. Brown	297,560	Apr. 29	2121	579	27	422
Bag-catch and strap-loop. Combined	M. Schwerin	299,274	May 27	1640	470	27	862
Bag-frames. Manufacturing imitation-leather-covered	R. W. Chapman	300,763	June 24	1642	450	27	1246
Bag-holder	P. Cole	296,135	Apr. 1	288	82	27	57
Bag-holder	H. R. Royston	298,894	May 20	1175	328	27	763
Bag holder and weigher	C. Shirley	299,863	June 3	451	118	27	1008
Bag-turning machine	S. T. Lockwood	297,141	Apr. 22	1572	432, 433	27	314
Bails for buckets. Device for forming	A. J. Blair	296,811	Apr. 15	1150	324	27	233
Baking-pan	P. Howard	299,475	May 27	1892	544	27	908
Bale-band bender, nail-extractor, &c. Combined	R. Gambrell	300,244	June 10	955	258	27	1108
Bale-tie	W. S. Chafey	296,524	Apr. 8	796	219	27	158
Bale-tie	J. A. Gresham	296,686	Apr. 8	1000	280	27	199
Bale-tie	E. S. Lenox and J. Hentz	300,716	June 17	1579	433	27	1230
Bale-tie	A. E. Russell	298,410	May 13	580	162	27	644
Bale-tie	H. Rust	297,721	Apr. 29	2337	635	27	463
Bale-tie	B. Smith	300,402	June 17	1167	319	27	1155
Bale-tie	J. White	297,206	Apr. 22	1664	453	27	330
Bale-tie	J. White	298,545	May 13	851	238	27	694
Bale-tie buckle	C. R. Smith	297,859	Apr. 29	2489	681	27	493
Bale-tie. Wire	L. E. Evans	299,063	May 20	1392	394	27	802
Bale-tie. Wire	L. E. Evans	299,064	May 20	1393	394	27	803
Baling-press	S. P. Harbaugh	300,866	June 24	1765	481	27	1269
Baling-press	A. Johnson	296,014	Apr. 1	151	44	27	31
Baling-press	A. S. Robinson	300,642	June 17	1469	405, 406, 407	27	1211
Baling-press	H. V. and C. F. Scattergood	297,299	Apr. 22	1773	491	27	350
Baling-press tramping attachment	G. P. Thompson	300,163	June 10	843	227	27	1088
Ball:							
See Base-ball.							
Ball-joint. Universal	A. W. Von Schmidt	300,332	June 10	1073	292	27	1129
Ball-trap	C. F. Stock	296,247	Apr. 1	434	122	27	83
Ball-trap	A. Van Allen	300,415	June 17	1184	324	27	1158
Ballot-box	A. L. Ringo and A. Pettibone	300,512	June 17	1303	357	27	1181
Ballots actuated by the pressure or expansion of fluid. Mechanism for automatically casting and recording	C. A. Mayrhofer	299,663	June 3	213	55, 56	27	960
Band cutter and feeder	M. H. Joslyn	296,695	Apr. 8	1010	283	27	201
Band-tucker	W. M. Keelen	298,389	May 13	559	154	27	640
Banjo	H. McCord	296,506	Apr. 8	893	247	27	177
Barbers' shears. Guard for	E. Bateman	297,964	May 6	5	2	27	528
Bark-mill grinding-wheel	L. B. Clark	300,048	June 10	690	187, 188	27	1060
Bark-peeling machine	F. Merziger	300,906	June 24	1913	526	27	1297
Bark-stripping machine	F. F. Angermair	300,829	June 24	1721	470	27	1261

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Barrel-heads. Machine for cutting	S. C. Williams	300,424	June 17	1196	327	27	1160
Barrel-hoop. Metallic	E. Ford	298,962	May 20	1264	359	27	780
Barrel lifter and carrier	W. H. Ibelle	296,010	Apr. 1	146	42	27	30
Barrel-making machine	M. E. Beasley and E. M. Hugentobler.	300,193	June 10	887	238, 239	27	1095
Barrel-making machine	S. Wright	299,896	June 3	484	127, 128	27	1014
Barrel-shaping machine	J. M. Robinson	297,010	Apr. 15	1399	386	27	278
Barrel-trussing machine	T. W. McGregor	296,344	Apr. 8	576	160, 161	27	115
Barrel-trussing machine	J. Reid. (Reissue)	10,479	May 13	952	264	27	715
Barrel-trussing machine	J. Winterbotham	296,498	Apr. 8	765	210	27	151
Barrels. Apparatus for plugging and tapping	N. W. Payne	297,440	Apr. 22	1954	534	27	385
Barrels, casks, &c. Head for	P. Moran	296,038	Apr. 1	174	51	27	36
Barrels. Manufacture of	C. B. Washburn	296,991	Apr. 1	237	60	27	48
Barrow	J. A. Dyblie	299,927	June 3	30	9	27	926
Barrow. Coal-	J. Rongban	300,513	June 17	1304	358	27	1181
Base-ball	T. P. Taylor	298,041	May 6	102	26	27	546
Basin and soap-box. Combined wash-	F. E. Arnold	300,830	June 24	1723	470	27	1261
Basin. Enameled iron wash-	J. S. Richardson	298,287	May 6	425	114	27	607
Basin or bowl	W. Gray	299,266	May 27	1631	468	27	861
Bat. Base-ball	E. Bloomfield	299,454	May 27	1867	536	27	903
Bath-tray	C. Bowsky	300,442	June 17	1218	332	27	1164
Bath-tubs. Device for controlling the inlet and outlet pipes of	M. Goldberg	300,246	June 10	956	258	27	1108
Baths. Apparatus for administering medicated	G. Koons	297,081	Apr. 15	1483	410	27	294
Bathing apparatus	R. A. Horning	298,585	May 13	782	219, 220	27	682
Battery:							
See Carbon-battery. Galvanic battery. Electric battery. Secondary battery.							
Bearing. Anti-friction glass	J. J. Harden	300,467	June 17	1232	342	27	1170
Bearing for machinery. Anti-friction	P. Brownley	300,340	June 17	1090	297	27	1143
Bearing for shafts, spindles, &c	S. J. Howell	298,207	May 6	317	83	27	586
Bearings. Manufacture of anti-friction	J. Smalley	300,024	June 10	639	180	27	1055
Bearings. Manufacture of anti-friction	J. Smalley	300,025	June 10	639	180	27	1055
Bed-bottom	D. Bennett	301,042	June 24	1974	545	27	1308
Bed-bottom	F. J. Robinson	296,708	Apr. 8	1022	287	27	204
Bed-bottom. Spring	S. S. Burr	296,672	Apr. 8	981	275	27	196
Bed-bottom. Spring	B. A. Ham	296,953	Apr. 15	1328	368	27	265
Bed-bottom. Spring	J. McIlhone	297,827	Apr. 29	2456	672	27	486
Bed-bottom. Spring	D. F. Stambaugh	297,868	Apr. 29	2499	684	27	495
Bed-bottom. Spring	L. Wildermuth	298,927	May 20	1213	342	27	771
Bed-bottom. Spring	A. F. Gue	296,162	Apr. 1	310	91	27	62
Bed. Folding	C. P. Nash	299,670	June 3	236	58, 59	27	965
Bed, litter, and chair. Combined cot	J. E. Drakeley	297,119	Apr. 22	1546	427	27	309
Bed-pan	W. H. Moore	299,832	June 3	415	107	27	1001
Bed-slats. Machine for making	H. L. Albee	299,501	June 3	2	1	27	921
Bed. Sofa-	P. A. Emery	299,528	June 3	31	9	27	926
Bed. Sofa-	W. G. Holden	296,007	Apr. 1	142	41	27	29
Bed. Spring-bottom camp-	W. H. McClure	298,873	May 20	1145	322	27	757
Bed. Wardrobe-	J. Moran	298,877	May 20	1150	323	27	758
Bedstead. Wardrobe-	E. Nash	298,112	May 6	184	49	27	562
Bedstead. Wardrobe-	C. E. Haynes	298,578	May 13	773	217	27	681
Beer and other alcoholic liquors. Apparatus for preserving	B. Rice	295,944	Apr. 1	62	18	27	14
Beer-chip	E. Kersten	300,981	June 24	1896	521	27	1294
Beer. Clarifying	H. E. Deckebach	298,071	May 6	139	35	27	553
Beer-cooling apparatus	M. M. Bowers	296,515	Apr. 8	786	217	27	156
Bell	E. L. Brainard	299,724	June 3	300	74	27	976
Bell	J. D. Gilchrist	298,060	May 6	147	37	27	554
Bell and annunciator. Electric	D. Rousseau	300,134	June 10	808	218	27	1092
Bell and annunciator. Electric	J. Butcher	300,568	June 17	1369	377, 378	27	1193
Bell. Bicycle-	E. W. Hazazer	300,253	June 10	965	262	27	1110
Bell. Electric	G. P. Conant	296,729	Apr. 15	1053	297	27	215
Bell. Electric call-	S. N. Blake	296,612	Apr. 15	1151	324	27	234
Bell pull. Electric door-	A. Cooke	296,139	Apr. 1	294	84, 85	27	57
Bell-ringer. Steam-	R. P. Garsed	296,928	Apr. 15	1176	330	27	237
Bell-ringing apparatus. Pneumatic	R. P. Garsed	299,636	June 3	172	43	27	952
Bell-ringing apparatus. Pneumatic	D. A. Rich	300,896	June 24	1801	492	27	1276
Bell. Sleigh-	J. S. Williams	298,261	May 6	389	103	27	600
Bellows	A. E. Kingsley	299,403	May 27	1810	520	27	894
Belt-cleaner	W. R. and T. H. Dunn	296,682	Apr. 8	995	278	27	198
Belt-fastener	A. D. Lagrelle	300,925	June 24	1899	522	27	1294
Belt-fastener	E. Mayns	297,146	Apr. 22	1579	434	27	315
Belt-fastener	J. B. Norton	300,793	June 24	1675	458	27	1252
Belt-fastener	J. W. Pugh	301,070	June 24	2008	554	27	1315
Belt-fastener	J. A. Roberts	298,120	May 6	196	52	27	564
Belt-fastener	W. Smith	300,026	June 10	661	180	27	1055
Belt-fastener	W. C. Wolff and J. C. Manning	300,825	June 24	1715	468	27	1260
Belt-gearing for machinery	J. H. Cromie	298,291	May 6	428	115	27	607
Belt-guide	J. J. Moore and J. A. Ball	295,972	Apr. 1	47	13	27	11
Belt holder. Machine-	W. R. Santley	298,238	May 6	361	96	27	594
Belt-shifter for iron-planers	W. Gleason	301,054	June 24	1994	550	27	1311
Belt-shifting device	W. Diebel	300,579	June 17	1362	381	27	1195
Belt-stretcher	G. H. Jones and J. M. Chilcote	299,795	June 3	374	96	27	992
Belt-stretcher	J. W. I. Stevenson	298,910	May 20	1194	336	27	767
Belt. Traveler's treasure-	A. H. Kepley	297,268	Apr. 22	1738	472	27	344
Belter. Pulley-	J. N. Wilson	298,929	May 20	1216	343	27	772
Bench:							
See Wash-bench. Work-bench.							
Bench-dog	R. Doty	298,560	May 13	751	211	27	677
Bench-dog	C. C. Johnson	300,780	June 24	1660	455	27	1249

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bending-machine	W. W. Stokes	300,159	June 10	838	226	27	1087
Benzine. Bleaching, deodorizing, and sweetening	J. Rowsell	299,167	May 27	1517	.....	27	838
Berth. Folding	H. S. Hale	297,256	Apr. 22	1725	468 / 469	27	342
Berth. Ship's	C. A. Milligan and M. J. Killion	298,012	May 6	65	17	27	540
Bib	G. E. Kimball	298,065	May 20	1284	366	27	784
Bicycle-bearing	O. M. Mitchell	296,703	Apr. 8	1017	283	27	903
Bicycle-brake lock	G. S. and C. S. Hull	300,261	June 10	978	264	27	1112
Bicycle-handle	G. S. Kelsey	296,973	Apr. 15	1351	274	27	960
Bicycle saddle-bags	J. B. Wood	299,609	June 3	139	35	27	946
Bicycle-step	G. F. Harwood	297,991	May 6	40	10	27	535
Bicycle-wheel	W. S. Wright	299,897	June 3	487	128	27	1015
Bill and poster holder	W. H. Lighty	300,274	June 10	992	268	27	1114
Bill-of-fare indicator	E. S. Sutton	297,094	Apr. 15	1503	415	27	297
Billiard and other game-tables. Chalk-holder for	T. Dougherty	297,684	Apr. 29	2290	623	27	454
Billiard and pool bridge	G. Borst	298,342	May 13	505	137	27	631
Billiard and pool table	G. A. Chasley	296,677	Apr. 8	969	277	27	197
Billiard-cue and walking-cane. Combined	W. G. Morse	298,111	May 6	192	48	27	561
Billiard-cue tip	D. Dessauer	297,508	Apr. 22	2045	558	27	401
Billiard-cue tip	W. H. Thomas and C. B. Core	296,087	Apr. 1	233	67	27	47
Billiard-cushion	M. Delaney	295,910	Apr. 1	20	6	27	7
Billiard-marking. Apparatus for	R. Bateman	298,815	May 20	1078	302	27	744
Billiard-table time-register	E. B. Pope	298,402	May 13	573	158	27	643
Billiard-table top	J. W. McKnight	299,565	June 3	80	19	27	935
Binder. Platform self-	P. F. Hodges	299,643	June 3	182	46	27	954
Binder. Temporary	H. L. Pratt	299,579	June 3	98	25	27	938
Binder. Temporary	W. Trantwine	300,662	June 17	1508	415	27	1219
Binding-post	T. R. Abernethy	297,655	Apr. 29	2246	611	27	446
Bird-cage	J. W. Gregory	300,249	June 10	959	259	27	1108
Bird-cage	J. S. Musgrave	297,621	Apr. 29	2197	599	27	437
Bit: *See* Bridle-bit. Extension-bit.							
Bit-brace	C. H. Amidon	298,542	May 13	727	206	27	673
Bit-brace	W. A. Ives	301,058	June 24	1994	551	27	1312
Bit for inserting screw-eyes	C. E. Griffith	300,317	June 10	1052	285	27	1125
Bit-stock	J. S. Fray	300,771	June 24	1670	452	27	1246
Black-leading machine	G. E. Lloyd	298,595	May 13	792	222	27	684
Blacking-case	G. T. Martin	296,198	Apr. 1	366	104	27	70
Blanks. Manufacture of split	W. Garrett	297,593	Apr. 29	2468	502	27	432
Blast-furnace	H. Schulze-Berge	296,225	Apr. 1	404	114	27	77
Blast-furnace apparatus	J. F. Bennett	297,663	Apr. 29	2258	614 / 615	27	448
Blast-furnace bell and hopper mechanism	F. W. Gordon	298,370	May 13	535	146 / 147	27	635
Blast-furnaces. Hoisting-tower for	P. L. Weimer	300,175	June 10	861	229 / 233	27	1091
Bleaching raw cotton	J. C. Vanlohe	297,319	Apr. 22	1794	.....	27	354
Blind. House-	H. B. Davis	296,144	Apr. 1	299	86	27	58
Blind-slat lock and operator	I. Van Kersen	297,204	Apr. 22	1661	452	27	330
Blind-slat operator	W. H. Keeran	298,860	May 20	1130	318	27	754
Blind-slat-tenoning machine	S. C. Ellis	300,314	June 10	1048	284	27	1124
Blind-stop	T. Massey	297,145	Apr. 22	1578	434	27	315
Blind. Window-	H. Brotherton	298,170	May 6	263	68	27	576
Block: *See* Building-block. Snatch-block. Hitching-block. Stereotype-block. Paving-block. Toy building-block. Saw-mill head-block.							
Blocks, stones, &c. Making artificial	L. Rosenthal	298,505	May 13	690	.....	27	665
Blotter	A. N. Sill	296,235	Apr. 1	420	118	27	80
Blotting-pad	C. J. Bailey	299,716	June 3	291	72	27	975
Blotting-pad	E. A. Scribner	298,124	May 6	200	53	27	565
Blotting-pad and ruler	J. Weis	300,421	June 17	1193	326	27	1159
Blower. Fan-	F. C. Anderton	299,098	May 27	1432	410	27	823
Blower. Fan-	J. E. Studley	297,310	Apr. 22	1785	484 / 485	27	353
Blower. Rotary	R. E. Harris	297,392	Apr. 22	1891	514	27	373
Blower. Rotary	J. L. Newman	298,492	May 13	675	190	27	602
Blowers. Driving mechanism for fan-	J. R. Rowlands	300,283	June 10	1009	272	27	1117
Board: *See* Bosom-board. Ironing-board. Cutting-board. Lap-board. Game-board. Vehicle dash-board.							
Boat: *See* Canal-boat. Row-boat. Dumping-boat.							
Boat-detaching apparatus	H. Bruns	300,566	June 17	1367	377	27	1192
Boat-detaching apparatus	A. D. Post	300,126	June 10	792	213	27	1079
Bobbin-winder	G. W. Clapp	298,554	May 13	742	209	27	675
Bobbin-winder	E. Parkinson	299,845	June 3	429	111	27	1003
Boiler: *See* Agricultural boiler. Steam-boiler. Mash-boiler.							
Boiler	J. Dahmer	300,578	June 17	1381	381	27	1195
Boiler furnace. Steam-	G. T. Woods	299,894	June 3	482	127	27	1014
Boiler or vessel employed in the treatment of fibrous materials for the manufacture of paper-pulp and for other purposes.	I. S. McDougall	298,602	May 13	601	225	27	686
Boiler-setting	W. T. Hildrup, Jr.	298,380	May 13	548	150	27	638
Boiling sap or cane-juice. Apparatus for	O. H. Jones	297,810	Apr. 29	2436	666	27	422
Bolster-plates. Die for making	H. James	298,586	May 13	783	209	27	682
Bolt: *See* Flour-bolt. Lock-bolt. King-bolt.							
Bolt-heading machine	C. S. Seaton	296,073	Apr. 1	215	62	27	44

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bolt-heads and nuts. Machine for finishing	H. Reynolds	300,641	June 17	1468	405	27	1211
Bolt-holder	M. Hatfield	300,968	June 24	1892	517	27	1291
Bolt-holder	W. F. Walker	299,299	May 27	1679	481	27	869
Bolt-threading device	J. L. Carter	300,569	June 17	1371	378	27	1193
Bond. Car-coupon-bearing	D. Sheplie	299,024	May 20	1334	380	27	794
Bonnet	H. S. Hale	300,361	June 17	1115	303	27	1147
Book-case	P. E. McIntosh	296,767	Apr. 15	1098	309	27	223
Book-fold	C. T. Ward	299,602	June 3	132	32	27	944
Book-rack	J. Mönch	297,431	Apr. 22	1938	529	27	382
Book-rasp. Extensible	J. A. Crane	299,914	June 3	507	134	27	1018
Book-sewer	E. S. Getchell	295,996	Apr. 1	131	38	27	27
Book-sewer	J. A. Crane	299,913	June 3	506	134	27	1018
Book-covers. Paper back for	J. Swartz	298,039	May 6	99	26	27	546
Book-rack	S. Robin	296,356	Apr. 8	588	163	27	117
Book-rest. Revolving	D. D. Bowman	300,203	June 10	907	243	27	1099
Book-stand. Revolving	W. M. Brinkerhoff	296,122	Apr. 1	275	78	27	54
Books. Receipt, check, draft, and similar	E. Prensse	298,117	May 6	191	50, 51	27	563
Books with wire staples. Machine for stitching	E. Banga	298,545	May 13	731	207	27	674
Boom and gaff for vessels	A. Beltz	299,509	June 3	8	3	27	929
Boot	G. Vallant	298,638	May 13	842	235	27	693
Boot and shoe bottoms. Bleach and stain brushing machine for	J. P. White and D. Harrington	300,819	June 24	1704	465 / 466	27	1257
Boot and shoe cleaning implement	A. M. Carlson	296,674	Apr. 8	985	276	27	196
Boot and shoe exhibitor	A. Rapp	299,678	June 3	249	61	27	967
Boot and shoe heel blanks. Machine for concaving	W. Y. Ober	298,113	May 6	186	49	27	562
Boot and shoe heel burnishing machine	G. F. Cass	300,949	June 24	1857	509	27	1287
Boot and shoe heel burnishing machine	G. Vallant	298,637	May 13	841	235	27	693
Boot and shoe seam	J. M. Dexter	300,954	June 24	1749	477	27	1266
Boot and shoe sole or heel plate	M. V. Breanahan	300,039	June 10	679	184	27	1058
Boot and shoe sole shaping machine	G. H. P. Flagg and J. W. Maloy	299,123	May 27	1467	421	27	830
Boot and shoe soles. Belt-support for machines for buffing	S. D. Tripp	296,486	Apr. 8	747	206 / 207	27	148
Boot and shoe soles. Machine for leveling	C. M. Bolles and M. E. Byron	296,513	Apr. 8	783	216	27	155
Boot and shoe stamping-machine	J. C. Kupferle and J. W. Dowler	297,135	Apr. 22	1565	431	27	313
Boot-cleaner	F. M. Bratton	298,167	May 6	259	67	27	575
Boot-crimp	G. C. Buch	298,346	May 13	510	139	27	631
Boot or shoe	H. T. Marshall	298,569	May 13	799	224	27	685
Boot or shoe	L. F. Norman	299,840	June 3	424	110	27	1002
Boot or shoe	L. F. Norman	300,001	June 10	627	170 / 171	27	1050
Boot or shoe	F. Packard	297,156	Apr. 22	1589	437	27	317
Boot or shoe	W. H. Wetmore	297,207	Apr. 22	1663	452	27	330
Boot or shoe bottom	C. F. Glanville	298,844	May 20	1110	311	27	750
Boot or shoe coasting-guard	W. Lawrence	297,422	Apr. 22	1928	526	27	380
Boot or shoe heel plate	S. D. Mehew	297,150	Apr. 22	1583	435	27	316
Boot or shoe heel stiffener	G. A. Fullerton	299,125	May 27	1470	422	27	830
Boot or shoe heels. Machine for compressing	J. H. Parker	300,280	June 10	1004	271 / 272	27	1117
Boot or shoe insole	T. Bolton	298,278	May 6	415	111	27	605
Boot or shoe sole	A. J. Mott	298,610	May 13	811	228	27	687
Boot or shoe sole protecting plate	J. Borrett	299,455	May 27	1868	537	27	904
Boot or shoe soles. Machine for setting or molding the edges of	E. B. Kelsey	299,145	May 27	1492	428 / 429	27	834
Boot. Rubber	J. Banigan	298,546	May 13	732	207	27	674
Boot. Rubber	A. O. Bourn	296,119	Apr. 1	270	77	27	53
Boot. Rubber	M. W. Whitney	299,890	June 3	478	125	27	1013
Boot. Rubber	I. F. Williams	296,264	Apr. 1	463	130	27	67
Boot. Rubber	J. J. Williamson	296,495	Apr. 8	759	209	27	150
Boot. Rubber	J. W. D. Fifield	299,971	June 10	587	158	27	1042
Boot-tree	S. McCullough	299,994	June 10	619	167	27	1048
Boot. Wooden-soled	A. A. Brooks	296,519	Apr. 8	790	218	27	157
Boots and shoes. Outer sole for	H. D. Smith	296,685	Apr. 15	1246	348	27	249
Boots and shoes. Toe-tip-indicating apparatus for	J. W. D. Fifield	296,154	Apr. 1	309	89	27	60
Boots or shoes. Last or holder for lasting	J. Hargrave	297,300	Apr. 22	1889	513	27	373
Boots or shoes. Machine for cleaning and blacking	S. W. Robinson	297,718	Apr. 29	2330	634	27	402
Boots or shoes. Machine for uniting the uppers and soles of	A. A. Brown	300,205	June 10	909	244	27	1099
Boots or shoes. Manufacture of	E. Woodward, R. Ashe, and E. F. Grandy	296,715	Apr. 8	1029	289	27	205
Boots or shoes. Tacking-machine for lasting	D. F. Messer	297,280	Apr. 22	1749	475	27	346
Boots, shoes, &c. Forming felt	J. Richards	299,406	May 27	1913	551	27	913
Boring and slotting machine. Metal	Z. C. Phillips	296,053	Apr. 1	193	56	27	40
Boring-machine	M. Rothschild	297,013	Apr. 15	1402	397	27	278
Boring square holes. Tool for	A. Fauck	299,632	June 3	167	42	27	951
Boring-tool or detent-terrier for oil-wells, &c	S. Maxim	296,424	Apr. 8	671	185	27	132
Bosom-board	T. L. Seymour	297,174	Apr. 22	1609	442	27	321
Bottle	C. May	298,872	May 20	1144	321	27	757
Bottle-capper	T. Drummond	299,660	May 20	1379	393	27	802
Bottle-carrying box	T. R. Lowerre	297,943	Apr. 29	2506	712	27	513
Bottle-corking machine	E. R. Richards	298,233	May 6	357	95	27	594
Bottle-holder	E. D. Newton	299,253	May 27	1617	461	27	858
Bottle. Multichambered	W. H. Hannan	297,389	Apr. 22	1898	513	27	372
Bottle-opener	F. Burns	300,945	June 24	1853	508	27	1286
Bottle-stopper	M. Joo	300,320	June 10	1055	286	27	1126
Bottle-stopper	J. E. Keenan	300,265	June 10	983	265	27	1113
Bottle-stopper	E. W. P. Natter	296,995	Apr. 15	1381	381	27	274
Bottle-stopper	M. Rubin	297,952	Apr. 29	2606	714	27	515
Bottle-stopper	M. Rubin	299,269	May 27	1634	469	27	862
Bottle-stopper	J. T. Walker	296,655	Apr. 8	963	270	27	192
Bottle-stopper	C. H. Bennett	298,273	May 6	406	108	27	603
Bottle-stopper attachment	E. Bacher	299,714	June 3	289	72	27	975
Bottle-stopper. Internal	A. Von Schade	299,185	May 27	1538	441	27	842
Bottle-washer	J. M. Novy and P. Henry	296,705	Apr. 8	1019	285	27	203
Bottle-wrapper							

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bottles. Material for packing	O. Long	300,323	June 10	1059	267	27	1126
Bottles for aerated or gaseous liquids. Stoppering	R. J. Sankey	297,298	Apr. 22	1772	481	27	350
Bottling and shipping can. Combined	C. R. Peaslee	298,023	May 6	80	21, 22	27	542
Bottling-machine	J. C. Blair	298,060	May 6	124	31	27	550
Bowl. Fruit-	D. C. Ripley	296,457	Apr. 8	708	196	27	140
Bowl. Hanging water-	E. W. Frost	300,704	June 17	1568	430	27	1229
Bowling-alley. Portable folding parlor	W. E. Goodenough	300,862	June 24	1760	480	27	1268
Box: *See* Axle-box. Ballot-box. Bottle-carrying box. Cash-box. Cuff-box. Folding box. Jug-packing box. Letter-box. Match-box. Miter-box. Packing-box. Packing and show box. Paper box. Post-office box. Safe-deposit box. Sheet-metal box. Show-box. Snuff and match box. Wooden box.							
Box	G. Borst	300,441	June 17	1217	332	27	1164
Box covering and trimming machine	G. Munro	298,879	May 20	1153	324	27	759
Box-covers. Device for securing	F. M. Watrous	300,926	June 24	1834	502	27	1287
Box-covers. Securing	H. A. Shaw and E. D. Chidley	299,276	May 27	1641	471	27	963
Box-fastener	J. W. Harlow	298,689	May 13	919	{254, 255}	27	708
Box-fastener	T. Humphreys	297,262	Apr. 22	1732	470	27	343
Box for cans of oils, paints, &c.	J. Graves	299,778	June 3	356	91	27	988
Box-making machine	J. S. Gibbs	297,925	Apr. 29	2574	706	27	509
Box-nailing machine	F. Myers	299,570	June 3	86	22	27	936
Box strap or band	W. Morrison, Jr	298,999	May 20	1297	369	27	787
Box-trimming machine. Packing-	F. Myers	295,933	Apr. 1	47	14	27	12
Boxes. Machine for labeling or covering the tops of	H. Inman	299,225	May 27	1584	455	27	852
Brace: *See* Bit-brace. Machine-brace. Rail-brace. Shoulder-brace.							
Bracelet	H. A. Church	296,133	Apr. 1	287	82	27	56
Bracelet	H. Liebel	299,658	June 3	307	53	27	959
Bracelet	C. W. Lord and A. M. English	299,558	June 3	68	17	27	933
Bracelet	H. T. Salisbury	300,286	June 10	1017	274	27	1118
Bracelet and ornamenting wire therefor	E. A. Thiéry	297,874	Apr. 29	2505	686	27	496
Bracelet-clasp	H. C. Lindol	299,816	June 3	398	102	27	997
Bracket: *See* Gas and lamp bracket. Lamp-bracket. Pulley-bracket. Roofing-bracket.							
Brake: *See* Air-brake. Automatic brake. Car-brake. Locomotive-brake. Vehicle-brake. Wagon-brake.							
Brake-cylinders. Apparatus for relieving pressure in	G. Westinghouse, Jr	300,543	June 17	1342	370	27	1188
Brake-shoe	C. F. Brigham	298,283	May 6	419	112	27	606
Brake-shoe	G. Chanler	299,621	June 3	155	38	27	949
Brake-shoe	G. N. Sceets	298,297	May 20	1178	329	27	764
Bran-packer	D. J. Davis	299,749	June 3	327	83	27	982
Breast and skirt supporter and shoulder-brace. Combined	M. Clarke	298,067	May 6	135	34	27	552
Breeching-supporter	R. S. Boulter	297,013	Apr. 29	2353	700	27	506
Brick and tile machine	J. G. Stadler	299,591	June 3	116	29	27	941
Brick-drier	J. Blum	296,814	Apr. 15	1153	325	27	234
Brick-kiln	W. H. De Valin	300,054	June 10	695	189	27	1061
Brick-kiln	J. S. Lester	297,423	Apr. 22	1920	527	27	380
Brick-kiln front or furnace	J. Blum	296,813	Apr. 15	1152	325	27	234
Brick-machine	W. Andrus	297,051	Apr. 15	1450	{401, 402}	27	287
Brick-machine	W. Andrus	297,218	Apr. 22	1677	457	27	333
Brick-machine	J. Baillie	296,305	Apr. 8	594	147	27	165
Brick-machine	H. C. Barker	300,556	June 17	1359	374	27	1191
Brick-machine	C. Chambers, Jr	297,671	Apr. 29	2267	617	27	450
Brick-machine	C. Chambers, Jr	297,917	Apr. 29	2358	{701, 702, 703}	27	507
Brick-machine	F. M. Comstock	296,276	Apr. 1	479	134	27	90
Brick-machine	W. L. Gregg	299,067	May 20	1386	{395, 396}	27	804
Brick-machine	H. Martin	300,096	June 10	752	{209, 303}	27	1072
Brick-machine	F. W. Shelley	297,641	Apr. 29	2229	{606, 607}	27	443
Brick-machine	W. S. Smith	298,905	May 20	1186	334	27	766
Brick-machine. Traveling	H. Stelzmann	296,082	Apr. 1	225	65, 66	27	46
Brick-machines. Clay tempering and expressing device for	C. Chambers, Jr	297,675	Apr. 29	2276	619	27	452
Brick-machines. Cut-off-regulating device for	C. Chambers, Jr	297,674	Apr. 29	2275	618	27	452
Brick. Manufacture of enameled	C. Newton	299,571	June 3	86	22	27	936
Brick weather-boarding for frame houses. Imitation-	P. Toglio	296,647	Apr. 8	952	{267, 268}	27	189
Bricks, tiles, &c. Press for making	T. Whittaker	298,646	May 13	852	{238, 239}	27	694
Bridge gate. Turn-	J. Ostertag, Jr	300,326	June 10	1062	{287, 288}	27	1127
Bridge signal. Draw-	J. N. Williams	298,647	May 13	854	239	27	695
Bridge. Suspension-	G. Wegner	297,479	Apr. 22	1999	546	27	394
Bridges. Guard-gate for swing-	W. M. Doty	297,920	Apr. 29	2567	704	27	508
Bridle-bit	J. B. Blyholder and P. Hughes	296,815	Apr. 15	1154	325	27	234

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bridle-bit	J. Murphy	297,944	Apr. 29	2598	712	27	514
Bridle. Harness-	L. J. Knauss and G. W. Hinkle	300,806	June 3	388	99	27	995
Brooches. Device for fastening removable pins to	G. E. Butin	300,769	June 24	1641	499	27	1240
Broom	C. Douglas	299,059	May 20	1378	392	27	802
Broom balance-tip	W. A. Scollay	296,879	Apr. 15	1240	347	27	248
Broom-holder	C. P. Ball	300,632	June 24	1724	470	27	1261
Broom-holder	O. Ludwig	301,062	June 24	1999	552	27	1313
Brush-bodies, &c., from pyroxyline compounds. Manufacture of	E. Kipper and J. B. Edson	299,804	June 3	386	.....	27	994
Brush. Boot-	C. Boeckh	299,196	May 27	1551	445	27	845
Brush-bridle	A. S. Miles	297,617	Apr. 29	2193	598	27	436
Brush. Fountain-	T. Hunthatch	299,144	May 27	1491	428	27	834
Brush-hook and ax. Combined	E. H. Sublett	299,576	June 3	462	121	27	1010
Brush. Paint-	J. F. Bowditch	298,166	May 6	258	66	27	575
Brush. Paint-	J. Elliott	298,339	May 13	523	142	27	634
Brush. Polishing-	W. A. Stevens	299,873	June 3	460	120	27	1010
Brush. Scrubbing-	J. S. White	297,555	Apr. 29	2117	578	27	421
Brush. Window-	H. F. Baker	299,188	May 27	1542	442	27	843
Brushes. Fountain attachment for marking-	P. C. Forrester	296,945	Apr. 15	1321	366	27	263
Brushes. Manufacture of	F. J. Kaldenberg	299,988	June 10	612	165	27	1047
Bucket and stool. Combined milk	G. C. Bovey	296,386	Apr. 8	631	174	27	125
Bucket fixture. Well-	F. L. Howell	300,977	June 24	1891	520	27	1293
Bucket. Well-	R. H. Foat	300,240	June 10	947	256	27	1106
Buckets. Combined bottom and valve for well-	G. F. Skinner	300,147	June 10	834	223	27	1085
Buckle	E. F. Butler	300,303	June 10	1036	280	27	1122
Buckle	L. P. Edwin	299,212	May 27	1570	451	27	849
Buckle	W. A. Keys and J. Lockwood	296,182	Apr. 1	341	97	27	66
Buckle	R. W. Owen	300,727	June 17	1590	436	27	1232
Buckle	D. L. Smith	299,028	May 20	1340	382	27	795
Buckle	J. W. Smith	298,511	May 13	696	197	27	666
Buckle	W. B. Woodman	296,662	Apr. 8	972	272	27	194
Buckle	J. B. Sayre	299,271	May 27	1636	470	27	862
Buckle and ring. Combined	B. F. Archer	300,430	June 17	1204	329	27	1161
Buckle. Back-band	R. D. Tucker	299,941	June 3	543	145	27	1025
Buckle. Back-band	C. H. and M. M. Freer	299,533	June 3	36	10	27	927
Buckle. Double	H. C. Colton	298,351	May 13	514	140	27	632
Buckle. Harness-	H. A. Fonteine	299,065	May 20	1384	395	27	803
Buckle. Harness-	J. A. Gavitt	299,775	June 3	353	90	27	988
Buckle. Harness-	E. Hoxie	297,892	Apr. 29	2430	664	27	481
Buckle. Rope-halter	J. Gibbons	296,328	Apr. 8	553	{153, 154}	27	110
Buckle. Rope-halter	J. Gibbons	296,329	Apr. 8	554	154	27	110
Buckle. Suspender-	C. C. Shelby	299,587	June 3	110	27	27	940
Buckle. Suspender-	C. S. Wells	296,803	Apr. 15	1139	321	27	232
Buckle. Trace-	C. C. Bauder	298,934	May 20	1224	{346, 347}	27	773
Buckle. Trace-	M. C. Chase	300,215	June 10	917	247	27	1100
Buckle. Trace-	F. Conway	299,624	June 3	159	39	27	949
Buckle. Trace-	P. Hayes	300,605	June 17	1416	390	27	1201
Buckle. Trace-	J. Lally	296,583	Apr. 8	876	243	27	174
Buckle. Trace-	W. Lerchen	297,818	Apr. 29	2444	668	27	484
Buckle. Trace-	R. G. Wood	300,295	June 10	1028	278	27	1120
Buggy-seat shifting-rail	A. M. Cochran	300,575	June 17	1377	380	27	1194
Buggy-top	J. C. Oliver	296,045	Apr. 1	182	53	27	38
Buggy-top	G. Engelhart and C. Weidner	297,771	Apr. 29	2399	654	27	474
Buggy-top. Shifting	T. L. Jowett	296,971	Apr. 15	1349	373	27	269
Building-block	W. Stranders	297,308	Apr. 22	1782	484	27	352
Building-block	B. E. Valentine	298,522	May 13	704	200	27	668
Building. Cold and fire proof storage	W. H. Dolman	300,581	June 17	1384	382	27	1196
Building. Fire-proof	G. W. Rader	297,449	Apr. 22	1963	536	27	387
Building. Fire-proof	J. S. and R. M. Simmons	298,790	May 20	1046	{292, 293}	27	738
Building. Portable	T. Rogers	296,458	Apr. 8	709	196	27	140
Buildings. Adjustable creating for	E. Gilbert	300,861	June 24	1750	479	27	1½ 8
Buildings. Construction of	H. Merweather	301,064	June 24	2002	553	27	1313
Bundling-machine	A. G. Anderson	298,395	May 6	396	104	27	601
Bung	G. A. Stanger	298,908	May 20	1192	335	27	767
Bung-borer	W. H. Reiff	297,632	Apr. 29	2221	604	27	441
Burglar-alarm	H. R. Taber	297,311	Apr. 22	1787	485	27	353
Burglar-alarm	G. W. Tallman	296,646	Apr. 8	951	267	27	189
Burglar-alarm	R. G. Vassar	298,137	May 6	217	57	27	568
Burglar-alarm. Combined firing and bell-ringing	C. L. Morehouse	300,107	June 10	766	206	27	1074
Burglar-alarm for safes	W. Y. Cruikshank	300,309	June 10	1043	282	27	1123
Burglar-alarm for safes	W. Y. Cruikshank	300,310	June 10	1044	282	27	1124
Burial-casket	E. S. Earley	298,953	May 20	1247	353	27	777
Burial-windlass	C. M. Chamblin and T. Waltz	300,344	June 17	1096	298	27	1144
Burner: *See* Gas-burner. Gas or oil burner. Illuminating-burner. Vapor-burner.							
Burner	A. B. Lipsey	296,587	Apr. 8	880	244	27	175
Bushing. Metallic	C. Hemje	296,564	Apr. 8	855	237	27	170
Bustle	C. E. Brown	300,565	June 17	1366	377	27	1192
Butter-package	J. C. Brown	296,821	Apr. 15	1165	327	27	236
Butter-pail	J. Meserole	296,034	Apr. 1	171	50	27	35
Button	J. F. Atwood	297,740	Apr. 29	2359	642	27	467
Button	J. F. Atwood	296,154	May 6	241	62	27	572
Button	J. Bird	297,344	Apr. 22	1836	499	27	363
Button	W. W. Covell	299,464	May 27	1878	540	27	905
Button	N. B. Hale	298,082	May 6	150	38	27	555
Button	J. Harrington	296,408	Apr. 8	654	181	27	129
Button	I. G. Platt	296,216	Apr. 1	390	110	27	75
Button	G. W. Prentice	298,403	May 13	575	159	27	643
Button	E. A. Thiery	296,891	Apr. 15	1253	350	27	251
Button	G. T. Woglom	300,673	June 17	1521	419	27	1221

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Button and cuff-holder. Combined	C. H. Lowell	298,993	May 20	1290	368	27	786
Button-attaching implement	J. F. Thayer	295,954	Apr. 1	71	21	27	16
Button-attaching instrument	J. F. Thayer	296,890	Apr. 15	1252	350	27	251
Button. Collar-	G. Krements	298,303	May 6	444	119	27	611
Button. Cuff-	J. Bulova	299,517	June 3	17	6	27	924
Button. Detachable	B. J. Angell	299,009	May 27	1433	410	27	823
Button-fastener	H. Brossel	299,110	May 27	1448	413	27	896
Button-fastener	W. H. Dodge	296,735	Apr. 15	1060	299	27	217
Button-fastener	J. H. Goodfellow	297,795	Apr. 29	2412	650	27	477
Button-fastener	W. Halkyard	298,464	May 13	643	192	27	656
Button-fastener	R. Sanford	298,316	May 6	463	125	27	614
Button-fastener	R. Sanford	298,506	May 13	691	195	27	665
Button-fastener	F. A. Smith, Jr	295,951	Apr. 1	67	20	27	16
Button-fastener	F. A. Smith, Jr.	298,423	May 13	592	167	27	647
Button-fastener	J. F. Thayer	296,798	Apr. 15	1131	319	27	230
Button-fastener	J. F. Thayer	297,314	Apr. 22	1790	486	27	354
Button-fastener	J. F. Thayer	298,796	May 20	1053	295	27	740
Button-fastening	G. W. Fish	296,155	Apr. 1	310	89	27	61
Button-feeding apparatus	L. D. Hawkins and E. Woodward	298,201	May 6	305	79	27	583
Button-hole	E. G. Harris	298,198	May 6	297	77	27	582
Button-hole-cutting machine	H. A. Behn	299,329	May 27	1705	492	27	876
Button-hook holder	J., T. H., and C. A. Fye	301,053	June 24	1968	549	27	1311
Button-lap and staying-piece for garments. Combined	G. Boxley	297,746	Apr. 29	2367	644 / 645	27	468
Button. Link-	T. W. F. Smitten	300,910	June 24	1819	497	27	1280
Button-machine	D. H. Campbell	297,496	Apr. 22	2023	552 / 553	27	398
Button or stud	G. E. Adams	300,551	June 17	1354	373	27	1190
Button. Separable	H. C. Robinson and L. J. Lallement	298,236	May 6	359	95	27	595
Button-setting implement	J. F. Thayer	297,315	Apr. 22	1791	486	27	354
Button-setting instrument	J. F. Atwood	298,185	May 6	242	62	27	578
Button-setting instrument	J. F. Atwood	298,332	May 13	495	135	27	629
Button-setting instrument	E. Kempshall	298,984	May 20	1282	365	27	784
Button-setting instrument	J. F. Thayer	296,366	Apr. 8	599	166	27	119
Button-setting machine	L. D. Hawkins and E. Woodward	298,200	May 6	299	77 / 78 / 79	27	582
Button. Sleeve-	J. B. Van Houten	297,731	Apr. 29	2351	639	27	466
Buttons by electricity. Machine for carding	L. Gillon	296,401	Apr. 8	646	178 / 179	27	128
Buttons, &c., from plastic materials. Manufacture of	W. C. Abbott	300,934	June 24	1843	505	27	1284
Buttons. Machine for making	D. H. Campbell	297,495	Apr. 22	2017	551 / 552	27	398
Buttons to fabrics. Apparatus for securing	A. G. Wilkins	297,895	Apr. 29	2331	693	27	501
Buttons to shoes, &c. Attaching	W. Halkyard	299,133	May 27	1478	425	27	832
Cabinet for holding and adjusting bill-heads, &c	H. A. Clow	299,403	May 27	1577	540	27	905
Cable-grip	R. W. McGovern	300,492	June 17	1281	359	27	1177
Cable-grip levers. Pawl for	H. Root and F. A. Tucker	297,452	Apr. 22	1965	537	27	387
Cable-road slots. Machine to protect	M. Ohlson	296,870	Apr. 15	1230	344	27	246
Cable tramway	S. H. Jenkins	299,393	May 27	1792	515 / 516	27	890
Cable tramway	S. H. Jenkins	299,394	May 27	1795	516	27	891
Cable-way gripping device	R. K. Evans	295,915	Apr. 1	25	8	27	8
Cables. Gripping and crossing	R. Ramsden	298,312	May 6	455	123	27	613
Cables. Laying anbterranean	S. F. Shelbourne	297,179	Apr. 22	1616	444	27	322
Cables. System of propelling cars by means of	J. L. Boone	296,916	Apr. 15	1289	358	27	258
Caissons. Building and setting molding-	P. A. Kewley	299,554	June 3	65	16	27	932
Calcimeter	L. M. Campi	299,461	May 27	1875	539	27	905
Calcimining and frescoing walls, &c. Compound for	J. Quinn, Jr	299,262	May 27	1626	.....	27	860
Calculator. Interest-	A. Davidson	297,573	Apr. 29	2142	584 / 585	27	426
Calendar	J. Cussons	296,934	Apr. 15	1310	363 / 364	27	261
Calendar	H. S. Stevens	300,157	June 10	835	226	27	1087
Calendar	J. F. Tannatt	297,871	Apr. 29	2501	685	27	495
Calender and paper-weight. Combined	L. Keller	296,179	Apr. 1	338	96	27	66
Calipers	S. H. Bellows	299,722	June 3	297	74	27	976
Calipers	C. Bovensiep	297,402	Apr. 22	2015	550	27	397
Calipers	W. A. White	296,250	Apr. 1	456	128	27	86
Calk sharpener. Shoe-	J. H. Cunningham	296,392	Apr. 8	638	176	27	126
Camera: *See* Enlarging-camera. Photographic camera.							
Camp-chair and cot	W. H. Bakewell	295,971	Apr. 1	93	28	27	20
Can: *See* Coffee-can. Paint-can. Creaming-can. Sardine-can. Fruit can. Sheet-metal can. Oil-can. Shipping-can.							
Can	W. Harris	297,990	May 6	39	10	27	535
Can and case	J. M. Bean	298,338	May 13	499	136	27	630
Can-filling machine	G. Ackermann and J. Wagner	297,549	Apr. 29	2103	575	27	419
Can-heading machine	C. R. Merriam	299,895	June 3	408	104 / 105	27	999
Can-opener	J. Greenwood	299,379	May 27	1771	510	27	887
Can-top	H. R. Allen	297,738	Apr. 29	2357	641	27	467
Cans clean while being filled. Device for keeping fish, meat, fruit, and other preserving	T. Levi	296,923	Apr. 1	160	46	27	33
Canal boat	A. McDonald	297,279	Apr. 22	1748	475	27	346
Candy-cutting machine	J. Kreischer	300,873	June 24	1773	483	27	1271
Candy-machine	J. P. Wick	299,901	Apr. 15	1272	353 / 354	27	255
Cane-juice. Apparatus for extracting	G. B. Boomer	298,165	May 6	257	66	27	575
Cane-juice. Process of and apparatus for defecating	W. A. Riggs, Sr	297,848	Apr. 29	2477	678	27	490
Canister and mill. Combined coffee	E. Norton	298,017	May 6	71	18	27	541

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Canoe. Hammock	E. H. Brown	299,951	June 10	567	152	27	1039
Canopy-standard	G. H. Graham and J. D. Lloyd	298,846	May 20	1113	313	27	751
Canopy-top	T. Zanger	300,428	June 17	1201	322	27	1161
Canopy-top clamp	T. Zanger	300,427	June 17	1200	328	27	1161
Cant-hook and lifting jack. Combined	O. H. Mitchell	298,765	May 20	1014	283	27	733
Cant-hook or dog	A. Kennard	298,759	May 20	1008	281	27	732
Capstan. Power-	J. P. Manton	300,382	June 17	1143	312	27	1151
Capsule	L. A. Anderson	298,720	May 20	959	268	27	723
Capsule-cutter	W. A. Tucker	299,182	May 27	1536	440	27	841
Capsule-drying rack	J. Krebbiel	296,846	Apr. 15	1197	335	27	241
Capsule for bottles, &c	C. Chesewright	300,047	June 10	689	187	27	1060
Capsule-machine	J. H. Glover	297,380	Apr. 22	1877	510	27	370
Capsule-machine	A. B. Hall	297,792	Apr. 29	2419	661	27	478
Capsule-machine	J. Krebbiel	296,844	Apr. 15	1195	335	27	240
Capsule-machine	J. Krebbiel	296,845	Apr. 15	1196	335	27	240
Capsule-machine	J. Krebbiel	296,847	Apr. 15	1198	336	27	241
Capsule-machine	J. Krebbiel	296,848	Apr. 15	1199	336	27	241
Capsule-machine	G. Otto	299,936	June 3	537	142 / 143	27	1024
Capsule-stripping machine	W. A. Tucker	296,895	Apr. 15	1265	352	27	253
Capsules. Machine for molding gelatine	W. A. Tucker	297,318	Apr. 22	1793	487	27	354
Car-braces. Gage for cutting	C. Mattice	298,600	May 17	800	224	27	685
Car-brake	J. P. Centner	296,274	Apr. 1	478	133	27	90
Car-brake	L. S. Colburn	299,741	June 3	319	81	27	960
Car-brake	T. W. Duffy	299,526	June 3	29	8	27	926
Car-brake	H. Flad and F. Höppner	299,121	May 27	1464	419 / 420	27	829
Car-brake	H. Flad and F. Höppner	299,122	May 27	1466	420	27	829
Car-brake	M. M. Hiner	298,467	May 13	646	183	27	656
Car-brake	A. Hoffmann	299,474	May 27	1491	544	27	907
Car brake	J. Stroecker, Jr	297,192	Apr. 22	1632	447 / 448	27	325
Car-brake	F. J. Underwood	296,896	Apr. 15	1266	352	27	253
Car brake	F. Tomnkins	299,296	May 27	1674	480	27	868
Car brake and starter	E. M. Holcomb and F. E. Miller	297,130	Apr. 22	1580	430	27	312
Car-brake attachment	E. Farnsworth	300,585	June 17	1388	383	27	1197
Car-brake. Automatic	D. J. Macpherson. (Reissue)	10,473	Apr. 29	2615	716	27	517
Car-brake. Automatic	G. H. Poor	300,122	June 10	786	211	27	1078
Car-brake. Automatic	G. H. Poor and C. J. Schiller	300,123	June 10	787	211	27	1078
Car-brake. Electro-magnetic	H. S. Park	296,211	Apr. 1	384	109	27	73
Car-brake. Electro-magnetic	H. S. Park	296,212	Apr. 1	385	109	27	74
Car-brake. Electro-magnetic	H. S. Park	296,349	Apr. 8	581	162	27	116
Car-brake-locking mechanism	S. W. McMann, C. J. Schiller, and E. B. Leigh.	300,101	June 10	758	204	27	1073
Car brakes. Vacuum-cylinder for railway	L. P. Lawrence	300,877	June 24	1779	484	27	1271
Car. Cattle-	W. Klaeser and F. Sell	296,842	Apr. 15	1191	334	27	239
Car-check for preventing cars on side tracks from being blown therefrom.	J. M. De Witt	300,448	June 17	1225	335	27	1166
Car-coupling	F. Baldt	297,072	Apr. 15	1452	402	27	287
Car-coupling	C. O. Barnes	297,053	Apr. 15	1453	402	27	288
Car-coupling	E. M. Bates	298,272	May 6	405	107	27	603
Car-coupling	H. T. Beam	298,817	May 20	1080	302	27	745
Car-coupling	H. T. Beam	300,299	June 10	1032	279	27	1121
Car-coupling	J. H. Beidler	296,114	Apr. 1	206	76	27	53
Car-coupling	T. Blandin	299,723	June 3	299	74	27	976
Car-coupling	G. Blythe	296,665	Apr. 8	975	273	27	194
Car-coupling	D. Brewer and J. Dunlap	297,226	Apr. 22	1690	459	27	335
Car-coupling	T. E. Buckman	298,445	May 13	617	175	27	651
Car-coupling	A. J. Chapel	297,765	Apr. 29	2391	652	27	473
Car-coupling	E. S. Clark	299,201	May 27	1539	448	27	847
Car-coupling	H. C. Comegys, A. B. Holmes, and D. Boucher.	299,623	June 3	157	39	27	949
Car-coupling	J. B. Compton and E. J. Lane	300,765	June 24	1644	450	27	1247
Car-coupling	R. Coon and D. D. Hahn	301,046	June 24	1979	547	27	1309
Car-coupling	S. and S. Crocker	295,985	Apr. 1	113	34	27	24
Car-coupling	F. S. Dimon	300,312	June 10	1046	283	27	1124
Car-coupling	J. H. Dunman	301,050	June 24	1984	548	27	1310
Car-coupling	J. F. Fairfield	298,960	May 20	1262	359	27	780
Car-coupling	A. B. Fiske	298,191	May 6	288	74	27	580
Car-coupling	G. Forbes	297,247	Apr. 22	1712	465	27	339
Car-coupling	G. Forbes	300,588	June 17	1391	384	27	1197
Car-coupling	A. M. Fraser	297,778	Apr. 29	2405	656	27	476
Car-coupling	T. Geritt	300,245	June 10	656	258	27	1108
Car-coupling	H. Graham	300,863	June 24	1762	480	27	1268
Car-coupling	F. E. Grothaus	300,864	June 24	1763	480	27	1268
Car-coupling	M. Harrold	299,535	June 3	38	11	27	928
Car-coupling	C. L. Hathaway	296,957	Apr. 15	1331	369 / 370 / 216 / 217	27	266
Car-coupling	E. H. A. Haupt	298,577	May 13	772		27	681
Car-coupling	F. J. Hetzner	296,605	Apr. 1	140	41	27	29
Car-coupling	H. H. Hewitt	300,257	June 10	970	263	27	1111
Car-coupling	W. H. Holley	299,545	June 3	52	14	27	930
Car-coupling	G. T. Jolson	296,575	Apr. 8	869	241	27	173
Car-coupling	H. L. Johnstone	296,577	Apr. 8	870	241	27	173
Car-coupling	H. L. Johnstone. (Reissue)	10,480	June 17	1617	443	27	1236
Car-coupling	L. Joralemon and N. R. Mabey	296,579	Apr. 8	872	242	27	173
Car-coupling	G. A. Kirkpatrick	296,756	Apr. 15	1088	300	27	222
Car-coupling	J. P. Lancaster	298,214	May 6	327	85	27	588
Car-coupling	D. T. Linegar	297,701	Apr. 29	2314	629	27	459
Car-coupling	G. C. Loar	297,942	Apr. 29	2505	711	27	513
Car-coupling	F. F. Lutz	298,005	May 6	56	15	27	538
Car-coupling	S. Lyons	296,590	Apr. 8	886	245	27	176
Car-coupling	C. E. Mark	296,026	Apr. 1	163	47	27	33

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	C. E. Mark	296,859	Apr. 15	1212	340	27	244
Car-coupling	S. B. Mayfield	298,010	May 6	62	16	27	539
Car-coupling	T. L. McKeen	296,597	Apr. 8	895	{247 / 248}	27	177
Car-coupling	T. L. McKeen	297,428	Apr. 22	1936	528	27	381
Car-coupling	J. Mealey	299,243	May 27	1606	461	27	857
Car-coupling	I. J. Merrick	297,229	Apr. 29	2458	673	27	486
Car-coupling	P. E. Mignault and P. Dion	296,265	Apr. 1	376	107	27	72
Car-coupling	R. Morris	300,789	June 24	1671	457	27	1251
Car-coupling	R. T. Morrison, Jr.	297,152	Apr. 22	1584	436	27	316
Car-coupling	J. Murray	300,885	June 24	1789	488	27	1274
Car-coupling	W. F. Nino	299,416	May 27	1824	524	27	896
Car-coupling	W. Parsons	300,004	June 10	635	173	27	1051
Car-coupling	T. Peacock and T. Wallis	298,865	May 20	1164	326	27	761
Car-coupling	E. L. Raynsford	297,293	Apr. 22	1765	479	27	349
Car-coupling	J. Ridenour	298,406	May 13	577	161	27	644
Car-coupling	W. M. Robinson	299,268	May 27	1633	469	27	861
Car-coupling	N. B. Sheldon	296,233	Apr. 1	419	117	27	79
Car-coupling	N. J. Skaggs	298,033	May 6	93	24	27	545
Car-coupling	J. Skinner	300,148	June 10	824	223	27	1065
Car-coupling	G. W. Smillie	297,305	Apr. 22	1779	483	27	332
Car-coupling	G. W. Smith	299,029	May 20	1341	382	27	795
Car-coupling	K. Smith	298,631	May 13	834	233	27	651
Car-coupling	J. D. Smoot	298,511	May 13	697	197	27	666
Car-coupling	G. W. Sowles	298,319	May 6	467	126	27	615
Car-coupling	C. W. Spencer	296,640	Apr. 8	944	265	27	188
Car-coupling	A. E. Stearman	300,916	June 24	1426	499	27	1221
Car-coupling	L. and G. P. Stebbins	298,127	May 6	203	54	27	566
Car-coupling	H. M. Sturgis	300,030	June 10	666	181	27	1056
Car-coupling	I. H. Trabue	295,956	Apr. 1	75	22	27	17
Car-coupling	I. H. Trabue	299,509	June 3	128	32	27	943
Car-coupling	C. Uehlinger	298,918	May 20	1204	330	27	769
Car-coupling	G. Ulsomer	297,877	Apr. 29	2598	697	27	497
Car-coupling	J. A. Vogler	298,523	May 13	706	200	27	668
Car-coupling	F. F. Von Ahbach and A. Hauger	297,957	Apr. 29	2611	715	27	516
Car-coupling	J. Ward	300,292	June 10	1025	276	27	1120
Car-coupling	A. L. Washburn and A. L. Journeay	298,526	May 13	709	201	27	669
Car-coupling	S. L. Wiegand	297,328	Apr. 22	1804	490	27	356
Car-coupling	W. Zachringer	300,186	June 10	879	236	27	1094
Car-coupling	S. B. Zimmerman	298,264	May 6	395	103	27	601
Car-coupling link	D. Hayes	298,690	May 13	920	255	27	708
Car coupling. Street-	C. Hanson	299,781	June 3	359	92	27	989
Car cover. Railway-	R. H. Wyman	296,909	Apr. 15	1146	323	27	243
Car door. Grain-	W. McGuire	299,822	June 3	404	104	27	998
Car-door guard. Freight-	S. Irvin	299,794	June 3	374	96	27	992
Car-door lock	S. C. Norton	300,325	June 10	1060	287	27	1126
Car door. Railway freight-	B. Eyster	300,315	June 10	1049	284	27	1125
Car. Dumping-	T. Reynolds	299,263	May 27	1026	467	27	860
Car. Dumping-	R. Stone	298,912	May 20	1198	337	27	768
Car. Dumping-	M. Van Wormer	296,088	Apr. 1	233	68, 69	27	47
Car-dumping apparatus	J. L. Mitchell	300,719	June 17	1581	434	27	1231
Car. Hand-	W. Dunbar and J. R. Kinley	298,736	May 20	984	{273 / 274}	27	727
Car. Railway-	R. H. Wyman	296,810	Apr. 15	1148	{323 / 324}	27	233
Car-replacer	J. A. Hodel	296,566	Apr. 8	858	238	27	170
Car-platform gate	A. J. Willcutt	299,709	June 3	284	70	27	974
Car. Railway-	J. F. Batchelor	300,937	June 24	1846	506	27	1244
Car-roof	H. S. Tipton	299,596	June 3	124	30	27	942
Car-roof	H. S. Tipton	299,597	June 3	125	31	27	942
Car safety-guard	F. P. H. Loftus	299,234	May 27	1597	458	27	855
Car-seat. Safety-brace	W. R. Lampton	296,975	Apr. 15	1359	375	27	270
Car. Sleeping-	J. H. Doerr	298,951	May 20	1243	359	27	776
Car stall. Stock-	W. Holden	300,259	June 10	975	264	27	1112
Car-starter	W. J. Caldwell	299,342	May 27	1729	496	27	879
Car-starter	F. Dawson and J. Holleyhead	300,698	June 17	1558	428	27	1227
Car-starter	S. Henry	299,539	June 3	44	12	27	929
Car-starter	J. Wilson	297,899	Apr. 29	2536	694	27	502
Car starter and brake	B. F. Shakespeare	299,023	May 20	1332	380	27	793
Car starter and brake	J. W. and G. R. Strickle	297,309	Apr. 22	1783	484	27	352
Car-step	J. H. Carver	299,959	June 10	575	154	27	1040
Car-step	W. R. Wilcox	300,668	June 17	1513	417	27	1220
Car. Stock-	G. D. Burton	298,666	May 13	688	247	27	702
Car. Stock-	H. Hess	298,968	May 20	1268	361	27	781
Car. Stock-	L. R. Stiles	296,245	Apr. 1	430	121	27	82
Car-wheel	M. Hamlin	296,954	Apr. 15	1329	369	27	265
Car-wheel	J. N. Kaufholz	296,840	Apr. 15	1189	333	27	239
Car-wheel	G. P. King	300,321	June 10	1056	286	27	1126
Car wheel and axle	M. Jordan	296,017	Apr. 1	155	45	27	31
Car wheel and axle	S. J. Stevenson	296,244	Apr. 1	429	121	27	82
Car-wheel hub	J. V. Hawkey	296,004	Apr. 1	139	40	27	29
Car-wheel lubricator	J. P. Silliman and J. A. Maxwell	297,021	Apr. 15	1413	389	27	280
Cars by cable. Grip device for the propulsion of	Z. P. Boyer	299,197	May 27	1592	{445 / 446}	27	845
Cars. Detachable compartment for	E. S. Henry	298,086	May 6	155	40	27	556
Cars. Electric motor for railway-	A. W. Adams	300,828	June 24	1719	469	27	1260
Cars. Grain-door for freight-	A. W. Alexander	296,907	Apr. 15	1278	356	27	256
Cars. Machine for driving endless ropes for the propulsion of street-	G. Poole	296,057	Apr. 1	197	57	27	40
Cars. Safety-bridge for railway-	B. L. Ferris	298,075	May 6	143	36	27	553
Cars. Sash adjuster for railway-	A. K. Mansfield	296,594	Apr. 8	891	247	27	177
Cars. Track-rail attachment for replacing derailed	M. C. Woods	298,437	May 13	608	172	27	649
Cars. Ventilating railway-	J. M. Palmer	297,835	Apr. 29	2463	675	27	487
Cars with cables. Device for coupling	J. C. Dolan	298,073	May 13	897	250	27	704

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Carbon-battery	J. B. Wallace	300,537	June 17	1333	366	27	1187
Carbon conductors. Manufacture of	E. Weston	301,024	June 24	1953	.....	27	1304
Carbonizing liquids. Agitator device for	R. F. Scannell	300,019	June 10	654	178	27	1054
Carburetor	L. C. Beebe	298,058	May 6	121	31	27	550
Card-grinding roller	W. B. Guild	299,131	May 27	1477	424	27	832
Card holder and exhibitor	S. L. Davis	298,354	May 13	518	141	27	633
Card or ticket holder	H. Willson	298,048	May 6	109	28	27	548
Card. Playing-	E. J. Levey	298,994	May 20	1288	367	27	785
Card-stripper	J. M. Dunham	299,918	June 3	511	136	27	1019
Card. Wood-exhibiting	H. Brooks and W. E. Reed	299,052	May 20	1372	391	27	890
Carding engine. Wool-	C. Rüdiger	300,284	June 10	1012	273	27	1118
Carding-machine	J. Shinn	299,240	May 27	1649	473	27	864
Carpenter's gage	G. S. Forrest	299,635	June 3	171	43	27	951
Carpet-fastener	J. Denton	299,376	May 27	1748	503	27	883
Carpet-fastener	E. and E. Hohneck	300,366	June 17	1121	304	27	1148
Carpet-fastener	H. A. Schreibe	297,453	Apr. 22	1966	537	27	388
Carpet-fastener	W. M. Shopbell	300,289	June 10	1021	275	27	1119
Carpet-fastener	Z. A. Van Deventer	300,416	June 17	1184	325	27	1158
Carpet fastener. Stair-	J. L. Barrett	300,754	June 24	1627	446	27	1244
Carpet-stretcher	J. H. Bruso	296,669	Apr. 8	979	274	27	195
Carpet-stretcher	F. W. Burns	300,342	June 17	1004	297	27	1143
Carpet-stretcher	J. A. Dunnell and A. Smith	298,074	May 6	142	36	27	553
Carpet-stretcher	S. Fildes	300,237	June 10	942	254	27	1105
Carpet-stretcher	F. J. Hubbard	298,850	May 20	1125	316	27	753
Carpet-stretcher	E. P. Poindexter	299,576	June 3	92	24	27	937
Carpet-stretcher	H. M. Pressly	300,396	June 17	1160	318	27	1154
Carpet-stretcher	W. K. Smith	299,087	May 20	1414	403	27	809
Carpet-stretcher	J. W. Thompson	299,691	June 3	263	65	27	970
Carpet-stretcher	R. F. Truslow	298,519	May 13	703	199	27	667
Carpet-stretcher	E. B. Clarke	298,521	May 13	704	199	27	668
Carpet-sweeper	A. C. Holden	298,349	May 13	513	139	27	632
Carriage-apron	G. A. Ellis	298,381	May 13	549	154	27	638
Carriage-body	F. A. Wittich	296,943	Apr. 15	1319	366	27	263
Carriage-bow	C. Bailey	298,808	May 20	1069	300	27	742
Carriage. Child's-	B. V. B. Dixon	296,379	Apr. 8	621	{171 / 172}	27	123
Carriage. Child's-	H. C. Seely	296,149	Apr. 1	305	88	27	59
Carriage. Child's-	H. C. Seely	298,784	May 20	1038	291	27	737
Carriage. Child's-	H. H. Frick	298,785	May 20	1041	291	27	737
Carriage-cover	W. Downham	297,780	Apr. 29	2406	657	27	476
Carriage-curtain attachment	H. Higgin	300,451	June 17	1227	335	27	1166
Carriage-curtain strap-fastening loop	F. P. Stone	298,969	May 20	1268	361	27	781
Carriage-door. Sliding	C. W. Trow	298,794	May 20	1051	294	27	739
Carriage. Infant's-	D. E. Gale	298,799	May 20	1059	296	27	741
Carriage. Jump-seat	W. H. Cooper	296,400	Apr. 8	645	178	27	127
Carriage-perch iron	H. Buchholz and W. Morris	296,534	Apr. 8	810	223	27	161
Carriage-top	H. Higgin	297,968	May 6	8	3	27	529
Carriage-top	H. McCurry	300,971	June 24	1885	518	27	1291
Carriage-top	R. H. Pfaff	297,147	Apr. 22	1580	434	27	315
Carriage-top	C. L. Pritchard	298,774	May 20	1024	286	27	735
Carriage-top	U. McClinchie and J. F. Butler	299,937	June 3	540	{143 / 144}	27	1024
Carriage top. Child's-	J. J. Travis	299,240	May 27	1603	460	27	856
Carriage-top fastener	J. Stanley	297,044	Apr. 15	1431	{393 / 394}	27	283
Carriage-top-prop block	A. S. Parker	296,240	Apr. 1	426	120	27	81
Carriage window-frames to curtains. Securing	H. Eichling	298,021	May 6	79	21	27	542
Carriages. Canopy-holder for children's	H. Higgin	299,631	June 3	166	42	27	950
Carriages. Light-frame for	E. W. Harral	300,972	June 24	1886	519	27	1292
Carriages. Material for covering	J. and J. Mills	297,257	Apr. 22	1728	469	27	342
Carrier: *See* Cash-carrier. Hay-carrier. Cash and parcel carrier. Straw-carrier. Trace-carrier.	R. Clark	297,830	Apr. 29	2459	673	27	486
Cart	W. S. Shoemaker	298,653	May 13	862	{241 / 242}	27	696
Cart, cotton and corn planter, and manure-distributer. Combined riding-	D. Argerbright	300,572	June 17	1375	{379 / 380}	27	1194
Cart. Dump-	I. Dolsen	297,539	Apr. 22	2084	568	27	409
Cart. Dumping coal-	O. J. McCollum and C. O. Stran	298,652	May 13	860	241	27	696
Cart. Road-	C. W. Saladee	300,231	June 10	936	253	27	1104
Cart. Road-	C. H. Straight	296,764	May 20	1013	283	27	733
Cart. Road-	H. M. Wallis	298,415	May 13	586	165	27	646
Cart. Road-	G. M. Peters	298,254	May 6	381	101	27	598
Cart. Road-	R. Punshon and R. R. Vizer	299,441	May 27	1851	532	27	901
Cartridge	E. O. C. Ord	299,102	May 27	1512	434	27	837
Cartridge. Blasting-	N. T. B. Carlin	297,951	Apr. 29	2605	714	27	515
Cartridge-box	H. T. Hazard	299,573	June 3	89	23	27	937
Cartridge-holder	W. R. Quinan, F. Kimpfel, and J. Olsen.	299,736	June 3	314	80	27	979
Cartridge implement	F. L. Chamberlin	297,796	Apr. 29	2423	662	27	479
Cartridge-loading apparatus	R. Poole	299,009	May 20	1310	{374 / 375}	27	780
Cartridge-loading machine	T. Nordenfelt	295,980	Apr. 1	102	{31 / 32 / 33}	27	22
Cartridge-loading machine	P. Boca	301,003	June 24	1922	{529 / 530}	27	1298
Cartridge-magazine	A. F. Dickey	298,494	May 13	679	{192 / 193}	27	663
Cartridge-shell	G. Kynoch	300,449	June 17	1225	335	27	1166
Cartridge-shell	G. M. Peters	298,696	May 13	925	257	27	709
Cartridge-shells from paper-pulp. Manufacture of		297,712	Apr. 29	2325	632	27	461

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cartridge-shells. Machine for deprimingand reprimingand reprimingand re

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cigar-wrapper-cutting machine	J. R. Williams	297,897	Apr. 29	2333	694	27	502
Cigar-wrappers. Machine for cutting	H. Grunhagen	300,069	June 10	717	194	27	1065
Cigarette	B. A. Kaufmann	297,409	Apr. 22	1913	523	27	377
Cinder. Compound to prevent the fusion of	W. Case	298,727	May 20	966	.....	27	725
Circle-iron support	F. Mutimer	299,490	May 27	1908	549	27	912
Circuit closer. Multiple-	W. F. M. McCarty	300,098	June 10	754	203	27	1072
Clamp:							
See Canopy-top clamp. Oyster-clamp. Cock clamp. Railway-rail clamp. Cord-clamp. Rope, cord, &c., clamp. Drum and cymbal clamp. Soil-clamp. Engraver's bangle-clamp. Saw-clamp. Sewing-machine-needle clamp. Friction-clamp. Wire-rope clamp. Meat-clamp.							
Clamp	J. Girard	299,776	June 3	354	90	27	988
Clamp	S. Mitchell	299,829	June 3	412	106	27	1000
Clamping-slide for straps	J. Herkimer	299,540	June 3	46	12	27	929
Clasp:							
See Album-clasp. Garter-clasp. Book-clasp. Necktie and collar clasp. Bracelet-clasp. Pencil-clasp. Garment-clasp. Traveling-bag clasp.							
Clasp	I. V. Ford	300,060	June 10	704	191	27	1063
Clasp	H. C. Frank	296,927	Apr. 15	1175	330	27	237
Clasp	C. C. Shelby	298,508	May 13	693	196	27	665
Clasp	C. F. and W. J. Walters	300,924	June 24	1831	501	27	1282
Claw-bar	H. Robertson	297,849	Apr. 29	2478	679	27	491
Clay fence-posts. Die for pressing	E. Ivett	297,604	Apr. 29	2179	595	27	434
Clay for potters' use. Plunger for mixing	P. Wilkes	297,047	Apr. 15	1445	399	27	286
Clay-pulverizing machine	M. P. Phillips	296,445	Apr. 8	696	191	27	138
Clay railway-ballast. Apparatus for making	C. Chambers, Jr	297,672	Apr. 29	2279	617	27	451
Cleaner:							
See Belt-cleaner. Drain-cleaner. Boot-cleaner.							
Cleat for end-gates	J. H. Warren	297,477	Apr. 22	1997	546	27	394
Clevis. Draft-	F. H. Cheney	298,947	May 20	1237	350	27	775
Clip:							
See Hame-clip.							
Clip for neck-yokes, &c	E. P. Barrett and J. A. Forster	299,901	June 3	492	129	27	1015
Clipper. Hair-	G. H. Noble	299,839	June 3	424	109	27	1002
Clipper. Hair-	J. K. Priest	299,520	June 3	99	25	27	938
Cloak	J. Landesmann	296,021	Apr. 1	159	46	27	32
Clock	S. Diolot	298,577	May 13	744	210	27	676
Clock alarm. Eight-day-	C. F. Luquer	297,612	Apr. 29	2188	597	27	435
Clock and watch stop mechanism	P. G. Russell	298,313	May 6	459	124	27	613
Clock. Electric	S. Schlegall	300,139	June 10	814	220	27	1083
Clock for machinery. Speed-	W. H. Lord	298,467	May 13	670	189	27	661
Clock for machinery. Speed-	W. H. Lord	300,491	June 17	1279	351	27	1176
Clock pendulum-regulator	S. M. Terry	296,949	Apr. 1	436	122	27	81
Clock. Secondary electric	I. C. Hinmer and W. F. Weisgerber	298,205	May 6	314	82	27	585
Clock-synchronizing apparatus	G. G. Wagner	296,256	Apr. 1	447	127	27	85
Clock-winding device	P. B. Cassidy	296,675	Apr. 8	986	276	27	197
Clock-winding device. Automatic	N. Silberberg	297,020	Apr. 15	1411	389	27	260
Clock-work mechanism	W. H. Rodgers	300,015	June 10	650	177	27	1053
Clocks. Automatic winding-reminder for	E. Jungerman	297,694	Apr. 29	2304	627	27	457
Clocks. Automatic winding-signal for spring-	E. Jungerman	297,720	Apr. 29	2057	562	27	404
Clocks. Circuit-closer for electric	V. Himmer	298,301	May 6	441	119	27	610
Clod-crusher	W. H. Hartzell	296,770	Apr. 15	1081	304	27	220
Clod-crusher	B. Landreth	299,482	May 27	1902	547	27	910
Closet:							
See Dry closet.							
Cloth-cutting machine	D. H. Campbell	297,497	Apr. 22	2030	{534 535	27	399
Cloth folding and measuring machine	P. H. Fowler	299,371	May 27	1763	{508 509	27	886
Cloth-folding machine	J. E. Windle	296,374	Apr. 8	607	168	27	121
Clothes-drier	A. L. Benedict	300,755	June 24	1928	446	27	1244
Clothes-drier	G. W. Decker	299,523	June 3	23	7	27	925
Clothes-drier	F. J. Ferrell	299,769	June 3	348	89	27	986
Clothes-hanger	L. Barkany	297,341	Apr. 22	1892	498	27	362
Clothes-wringer	E. Duthil and F. Rosenstein	300,313	June 10	1047	{283 284	27	1124
Clothes-wringer	W. I. Fitch	300,860	June 24	1758	479	27	1267
Clutch	C. Dancel	300,939	June 24	1868	512	27	1289
Clutch	J. W. Dawson	299,205	May 27	1763	449	27	848
Clutch	H. Schweitzer	298,770	May 20	1030	288	27	736
Clutch	J. Thomson	296,692	Apr 15	1274	350	27	251
Clutch. Friction-	J. W. Blodgett	299,453	May 27	1867	536	27	901
Clutch. Friction-	M. C. Johnson	298,979	May 20	1277	364	27	783
Clutch. Friction-	G. H. Preston	300,773	June 17	1597	438	27	1233
Clutch. Friction-	W. H. Rascoe	300,503	June 17	1293	355	27	1179
Clutch. Friction-	R. N. Ross	298,708	May 13	997	260	27	711
Clutch. Friction-	T. Ryan	299,938	June 3	541	144	27	1024
Clutch mechanism	W. G. Bell and W. P. Gay	297,489	Apr. 22	2011	549	27	396
Clutch mechanism	B. F. Mohr	298,608	May 13	808	227	27	687
Coal-bucket	C. Cook	298,180	May 6	274	71	27	572
Coal-dumper	T. Wallwork	296,089	Apr. 1	236	69	27	48
Coal from ashes, &c. Machine for separating	L. O. Frazier	297,591	Apr. 29	2166	592	27	431
Coal-hod	G. A. Bowers	300,944	June 24	1853	508	27	1286
Coal-tipple	W. Rosensteel	299,585	June 3	108	27	27	940
Coasting device. Roller	P. M. Stevens	298,710	May 13	938	{260 261	27	712

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Coat-pattern	W. J. McCartin	296,426	Apr. 8	673	186	27	133
Coat-sleeve	C. F. Butterworth	296,130	Apr. 1	285	81	27	56
Cock and faucet	G. B. McCracken	298,394	May 13	563	155	27	641
Cock and sewer-gas cut-off. Compound water-	W. Cahoon, Jr.	298,347	May 13	510	139	27	631
Cock box for water or gas pipes. Stop-	A. R. Ketcham	296,181	Apr. 1	340	96	27	66
Cock clamp. Stop-	W. S. Payne	300,501	June 17	1292	354	27	1179
Cock. Dissolving-	T. J. Mapes	296,924	Apr. 15	1371	378	27	272
Cock. Gage-	W. Casey	297,569	Apr. 29	2138	583	27	425
Cock. Gage-	L. B. Fulton	297,925	Apr. 29	2570	795	27	509
Cock. Gage-	C. B. Rogers	300,643	June 17	1460	407	27	1213
Cock. Gage-	A. Hallowell	298,750	May 20	989	279	27	730
Cock or filtering-faucet. Hydraulic	J. A. Nicholson	300,792	June 24	1673	458	27	1252
Cock. Steam or water	J. H. Blessing	298,062	May 6	126	32	27	551
Cock. Stop-	O. J. McGann	300,386	June 17	1149	315	27	1152
Cock. Stop and waste	H. Taylor and R. B. Sharp	296,797	Apr. 15	1131	319	27	230
Cock. Waste-	J. G. Webb	298,047	May 6	108	28	27	548
Cocoanut-sheller	M. D. Saxe	300,137	June 10	812	219	27	1062
Coffee-can	A. J. Clark	297,065	Apr. 15	1466	403	27	290
Coffee-mill motor	F. J. Bicknell	297,050	Apr. 15	1459	404	27	289
Coffee-pot	H. C. Rice	299,582	June 3	104	26	27	939
Coffee-pot	B. F. Stagga	297,190	Apr. 22	1630	447	27	324
Coffee-pot	H. P. Webster	299,706	June 3	281	69	27	973
Coffee-pot	R. A. Holt	298,973	May 20	1272	362	27	782
Coffee-pot attachment	M. F. Fowler	298,684	May 13	911	.....	27	706
Coffee. Preserving the aroma of	H. H. Beach	300,436	June 17	1213	331	27	1163
Coffee. Removing tannic acid from	J. S. Thompson	297,729	Apr. 29	2348	638	27	465
Coffee separator and assorter	C. Alvord	295,968	Apr. 1	88	.....	27	20
Coffee substitute and preparing the same	N. Rappleyea	296,752	Apr. 15	1116	314	27	227
Coffin	J. V. Rowlett	298,409	May 13	579	162	27	644
Coffin	R. Morris	297,528	Apr. 22	2071	565	27	406
Coffin lid or cover and making the same	E. E. Hill	299,140	May 27	1487	427	27	833
Coffin locking device	J. L. Streever	296,302	Apr. 8	595	165	27	118
Coffins, &c. Device for lowering or raising	A. Lego and H. Dupas	297,138	Apr. 22	1568	432	27	313
Coin. Counter for facilitating the transfer of	J. L. Donnelly	298,674	May 13	898	250	27	704
Coin holder and deliverer	J. Green	300,463	June 17	1245	340	27	1169
Coke-oven	J. Herron and R. T. Wray	300,256	June 10	989	262	27	1110
Coke-oven door	J. Herron and R. T. Wray. (Reissue.)	10,484	June 3	547	146	27	1025
Coke-oven door and frame therefor	C. C. Billings	295,898	Apr. 1	7	2	27	4
Cold-drawing rods, &c. Machine for	J. C. Rossi	300,133	June 10	800	{215 216 217 218	27	1060
Cold. Process of and apparatus for producing	A. H. Wirz	296,902	Apr. 15	1273	354	27	255
Collapsing cup	F. Beiermeister, Jr	298,522	May 20	961	268	27	724
Collar	A. J. and N. L. McAdam	298,489	May 13	672	189	27	661
Collar	A. Whited	297,653	Apr. 29	2244	611	27	446
Collar	S. J. Bowers	298,343	May 13	506	138	27	631
Collar coupling. Horse-	I. P. Hoff	298,754	May 20	1002	280	27	731
Collar fastening. Horse-	H. T. Detert	300,229	June 10	934	252	27	1104
Collar. Horse-	C. A. Pettie	298,231	May 6	355	94	27	593
Collar. Horse-	G. W. Pool	297,159	Apr. 22	1594	438	27	318
Collar. Horse-	J. Stanley and T. F. Lemassena	299,286	May 27	1656	475	27	895
Collar. Horse-	C. Stanfenbell	298,126	May 6	202	54	27	565
Collar. Horse-	C. R. Tesch and C. C. Frank	296,250	Apr. 1	437	123	27	84
Collar. Horse-	E. S. Lafferty	299,481	May 27	1900	547	27	910
Collar lock. Horse-	T. F. Lemassena and J. Stanley	297,700	Apr. 29	2313	620	27	479
Collar mold. Horse-	J. Scherling	298,626	May 13	830	232	27	691
Collar pad-fastening. Horse-	F. P. Kaune. (Reissue)	10,492	June 24	2018	557	27	1316
Collar pad. Horse-	W. Eeglesong	299,634	June 3	170	43	27	951
Collar-stuffing machine	E. Schering	299,857	June 3	443	.....	27	1006
Collodion. Preparation of	A. Kern	297,416	Apr. 22	1920	.....	27	378
Coloring-matter. Ethyl-blue	F. Krüger, G. Tobias, and E. Kegel	300,874	June 24	1574	.....	27	1271
Coloring-matter from dinitrophenol. Production of	A. Kern	297,413	Apr. 22	1918	.....	27	378
Coloring-matter. Manufacture of ethyl-blue	A. Kern	297,414	Apr. 22	1919	.....	27	378
Coloring-matter. Methyl-blue	A. Kern	297,415	Apr. 22	1920	.....	27	378
Coloring-matter. Methyl-blue	A. Kern	297,852	Apr. 29	2481	.....	27	491
Coloring-matters. Manufacture of yellow and orange	Z. Ronsain and D. A. Rosenstiehl	296,335	Apr. 8	560	156	27	112
Colter	R. Kloss	300,688	June 17	1541	423	27	1225
Colter attachment	F. Brother, D. Morris, and H. Speirs	299,396	May 27	1798	517	27	891
Colter. Plow-	J. Johnson	300,775	June 24	1654	453	27	1248
Colter. Rolling	C. R. Hartman						
Comb:							
See Head-comb.							
Comb for flax, wool, &c	W. F. Hall	297,704	Apr. 29	2421	661	27	479
Combs from celluloid, &c. Manufacture of	J. W. Hyatt	299,389	May 27	1787	514	27	889
Combs from celluloid, &c. Manufacture of	J. W. Hyatt	299,390	May 27	1790	515	27	890
Combustion. Device for promoting	W. M. Jackson	300,060	June 10	731	187	27	1068
Combustion. Device for the absorption of the gaseous products of	C. J. Le Roy	299,813	June 3	393	{100 101	27	996
Combustion. Producing complete	W. C. Thayer	299,877	June 3	463	{121 122	27	1010
Commode and bidet. Combined	I. S. Williams	299,891	June 3	479	126	27	1013
Compasses	W. Stromberg	298,038	May 6	99	26	27	546
Compasses. Device for ascertaining the variation of	C. E. Kirtland	297,419	Apr. 22	1924	526	27	379
Compressible gage	C. A. Lieb	295,927	Apr. 1	42	12	27	11
Compressing plastic, pulverized, and other materials. Method of and apparatus for	T. C. Brecht	299,514	June 3	12	5	27	923
Concentrator	E. Koch	300,484	June 17	1270	349	27	1174
Concentrator and amalgamator. Hydraulic	H. E. Picket	299,577	June 3	93	24	27	937
Condenser for steam and smoke	J. M. Carver	297,969	May 6	9	4	27	529
Condenser-head for exhaust-pipes of steam-engines	W. C. Lyman	298,698	May 13	905	.....	27	710
Condition-powder	C. White, Jr., and J. Anderson	298,433	May 13	605	.....	27	649
Confectioner's ornamenting-tube	J. Kirsten	299,228	May 27	1588	457	27	853
Convertible chair	H. H. De Pew	300,228	June 10	932	{241 242	27	1103

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Convertible chair and bedstead	E. Rundell	297,014	Apr. 15	1403	387	27	279
Conveyer apparatus	G. C. Blickensderfer and H. Smith	298,274	May 6	407	108 109	27	603
Conveyer apparatus	G. C. Blickensderfer and H. Smith	298,275	May 6	408	109 110	27	603
Conveyer apparatus	G. C. Blickensderfer and H. Smith	298,276	May 6	411	110	27	604
Cooking-utensil	C. M. Bonnean	300,839	June 24	1732	473	27	1202
Cooler: *See* Liquid-cooler. Water-cooler. Milk-cooler.							
Coop. Folding poultry	F. E. Goldsmith	300,595	June 17	1400	386	27	1199
Coop. Poultry	L. S. Paine	299,844	June 3	428	111	27	1003
Cop-building mechanism	J. Bond and G. Smethurst	297,107	Apr. 22	1528	421 429	27	307
Copper, brass, &c. Process of and apparatus for electro-depositing.	W. H. Walenn	300,035	June 10	671	183	27	1057
Copy-book, copy-case, and removable copy-plate	D. A. Radley	295,941	Apr. 1	58	17	27	14
Copy-holder	E. Nunan	296,868	Apr. 15	1228	343	27	246
Copying and engraving machine. Automatic electric	A. Schmid	298,030	May 6	90	24	27	544
Copying. Device for manifold	H. G. and J. B. Barlow	297,556	Apr. 29	2115	578	27	421
Copying-presses. Upper plate of	H. N. Hubbard	299,223	May 27	1582	475	27	851
Cord-clamp	C. J. A. Sjoberg	297,103	Apr. 22	1778	492	27	351
Cores. Machine for making green-sand	J. Scull	297,172	Apr. 22	1607	442	27	320
Cores. Machine for making green-sand	J. Scull	298,002	May 20	1184	332	27	765
Cores. Manufacture of green-sand	J. Scull	296,880	Apr. 15	1241	347	27	248
Cores. Pin for venting	J. Kinzer	300,480	June 17	1265	347	27	1174
Corkscrew	W. E. Alvord	300,036	June 24	1845	506	27	1284
Corkscrew	J. Barnes	299,100	May 27	1434	410	27	823
Corkscrew	C. Chinnock	299,758	June 3	316	80	27	980
Corkscrew	T. Curley	297,232	Apr. 22	1696	461	27	336
Corkscrew	J. K. P. Nourse	300,391	June 17	1154	316	27	1153
Corkscrew	J. A. Smith	299,664	June 3	453	118	27	1008
Corkscrew	A. J. Walter	295,962	Apr. 1	92	25	27	18
Corkscrew and key-ring. Combined	W. B. Woodman	296,661	Apr. 8	972	272	27	194
Corn-cutting machine. Green	G. W. Roberts	296,666	Apr. 1	207	60	27	42
Corn feed-regulator. Ear	S. E. Marsh	300,991	June 24	1906	524	27	1296
Corn husking, silking, and cutting machine	G. E. D. Baldwin	297,742	Apr. 29	2360	642 643	27	467
Corn package. Pop	V. D. Urso	296,897	Apr. 15	1267	372	27	254
Corn-sheller	W. H. Hall	299,174	May 27	1479	425	27	832
Corn-sheller	J. M. Hawley	299,196	May 27	1453	421	27	833
Corn-sheller	A. Kiger	300,872	June 24	1772	473	27	1270
Corn-sheller	H. Packer	297,288	Apr. 22	1758	478	27	348
Corn-shelling machine. Hand	L. Blue	298,937	May 20	1226	347	27	773
Cornstalk-cutter	J. W. Atkinson and B. Phelps	298,655	May 13	864	242 243	27	696
Cornet	C. G. Conn	295,981	Apr. 1	109	33	27	23
Cornet	F. F. Franceschini	300,590	June 17	1394	385	27	1198
Cornice	W. H. Dodge	296,734	Apr. 15	1058	293	27	216
Cornices, &c. Machine for making ornaments for gilt	J. Redeligx	300,128	June 10	704	213	27	1078
Corpse head-rest	J. McGrath	299,665	June 3	230	57	27	964
Corset busk and clasp. Combined elastic	C. A. Stevens	296,878	Apr. 15	1249	349	27	250
Corset-stay	H. Reily	296,063	Apr. 1	203	59	27	41
Corset-steel fastening	T. C. Bates	299,326	May 27	1705	489	27	875
Corsets. Clasp-fastening for elastic stays in	T. H. Ball	298,544	May 13	770	206	27	673
Cotton-chopper	H. D. Layman	296,700	Apr. 8	1015	284	27	202
Cotton chopper and scraper	S. A. Myers and J. J. Kelly	299,242	May 27	1612	461	27	858
Cotton-gin	S. D. Webb	296,659	Apr. 8	969	271	27	193
Cotton-gin gearing	C. C. Warren	298,734	May 6	473	127	27	616
Cotton-gin house	W. F. Groves	296,687	Apr. 8	1001	280	27	199
Cotton ginning and cleaning apparatus	M. Covel	296,924	Apr. 15	1169	328 329	27	236
Cotton-press	W. H. Burgess	297,915	Apr. 29	2555	700 701	27	506
Cotton-press	C. D. Heflin	299,139	May 27	1486	426	27	833
Cotton-press	J. D. O'Daniel	298,220	May 6	347	91, 92	27	592
Cotton scraper and chopper. Combined	C. J. Morrison	298,491	May 13	674	190	27	662
Counter-seat	A. E. Francis	297,062	May 6	23	7	27	531
Counter-shaft	D. C. Cumings	299,915	June 3	508	135	27	1018
Counter-stiffeners. Machine for forming	G. T. Shepley	298,420	May 13	590	166	27	647
Coupling: *See* Car-coupling. Pipe-coupling. Fence-wire coupling. Rope or cable coupling. Hose-coupling. Shaft-coupling. Lightning-rod coupling. Spring-coupling. Thill-coupling. Perch-coupling.							
Coupling	C. E. Mark	296,927	Apr. 1	164	47	27	33
Coupling device	D. P. Driscoll	296,394	Apr. 8	640	176	27	126
Coupling-pin	J. C. Murray	299,663	May 20	1410	402	27	808
Cover-holder for jars, milk-cans, &c.	M. Alston	300,935	June 24	1844	506	27	1284
Cracker-machine	C. S. Fowler and L. A. Rockwell	300,316	June 10	1051	295	27	1125
Crane. Traveling	H. M. Barnhart and E. Huber. (Reissue.)	10,470	Apr. 22	2098	573 574	27	412
Crane. Traveling	E. Huber and H. M. Barnhart	296,965	Apr. 15	1341	372	27	268
Crank	J. H. Burks	296,979	Apr. 1	474	132	27	89
Crank-disk	H. Tabor	297,343	Apr. 22	1789	485	27	354
Crank, Tedder	F. Trump	296,368	Apr. 8	601	166	27	120
Crate for mattresses and bedding	H. S. Sternberger	299,871	June 3	458	120	27	1009
Crate, Knockdown	J. A. H. Ellis	296,737	Apr. 15	1061	299	27	217
Crayon-holder	A. T. Cross	296,537	Apr. 8	814	225	27	102
Crayon-holder	A. T. Cross	296,538	Apr. 8	815	225	27	102
Crayon-holder	A. T. Cross	296,539	Apr. 8	817	225	27	163

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Creaming-can	J. A. Kendall	296,416	Apr. 8	663	183	27	170
Crocheting-fork	J. Vetter	297,881	Apr. 29	2516	688	27	498
Cross-head	G. H. Corliss	298,068	May 6	136	34	27	552
Crupper	H. H. Hedrick	297,601	Apr. 29	2176	594	27	433
Cruppers. Machine for forming	J. Shaffer	300,021	June 10	656	179	27	1054
Crusher: *See* Clod-crusher. Quartz-crusher. Ore-crusher. Stone-crusher.							
Crushing-mill	G. W. Morrow	297,083	Apr. 15	1484	411	27	294
Cuff	T. R. Boone	297,312	Apr. 29	2353	699	27	506
Cuff-box	I. P. Turner	295,958	Apr. 1	77	23	27	18
Cuff-fastener and adjuster	T. B. Willson	298,503	May 13	719	203	27	671
Cuff-holder	H. D. Bishop	297,744	Apr. 29	2265	644	27	468
Cuff-holder	F. W. Stafford and G. A. Henderson	298,035	May 6	93	25	27	545
Cultivating fruits and vegetables	J. W. Groves and V. Mutch	297,932	Apr. 29	2542	702	27	511
Cultivator	D. Archer	297,657	Apr. 29	2240	612	27	447
Cultivator	H. Borgelt, Jr., and L. P. Borrell	300,503	June 17	1364	376	27	1192
Cultivator	T. J. Bowen and J. F. Barnes	300,686	June 17	1337	423	27	1224
Cultivator	D. W. Branch	296,121	Apr. 1	274	28	27	54
Cultivator	G. W. Brown	298,123	May 20	1057	305	27	746
Cultivator	E. Cracraft	299,626	June 3	420	40	27	950
Cultivator	T. J. Craft	297,069	Apr. 15	1471	407	27	291
Cultivator	B. J. Curry	299,627	June 3	402	41	27	950
Cultivator	J. C. Doane	300,075	June 10	697	189	27	1062
Cultivator	D. N. Luse	297,983	Apr. 15	1369	378	27	272
Cultivator	A. J. Marberry	296,025	Apr. 1	102	47	27	33
Cultivator	M. W. McCann	296,860	Apr. 15	1214	340	27	244
Cultivator	G. Moore	298,409	May 13	800	227	27	687
Cultivator	R. B. Norment	299,025	June 3	534	142	27	1023
Cultivator	W. S. Pates	295,977	Apr. 1	53	15	27	13
Cultivator	C. M. Pinckney	296,615	Apr. 8	917	256	27	182
Cultivator	H. H. Sater	297,647	Apr. 29	2226	605	27	442
Cultivator	C. L. Schoenstedt	301,041	June 24	1938	535	27	1301
Cultivator	M. A. Travis	297,035	Apr. 15	1432	394	27	283
Cultivator	N. Trowbridge	296,800	Apr. 15	1143	319	27	211
Cultivator	C. H. Hill and J. T. Ryan	297,933	Apr. 29	2564	708	27	511
Cultivator. Adjustable seat-lift	J. Sherman	300,649	June 17	1487	409 410	27	1214
Cultivator and cotton-chopper	J. Sherman	300,650	June 17	1489	410	27	1215
Cultivator and cotton-chopper	B. C. Bradley	297,914	Apr. 29	2354	700	27	506
Cultivator-beams. Drag-bar for	T. H. Baird	298,334	May 13	496	135	27	629
Cultivator. Cotton and corn	C. La Dow	297,524	Apr. 22	2063	563 564	27	405
Cultivator or harrow. Wheel	H. L. Miller	299,415	May 27	1823	524	27	896
Cultivator. Scraper	J. J. McClen	299,681	May 20	1408	401	27	807
Cultivator. Tongueless	A. Lindgren	296,760	Apr. 15	1091	307	27	224
Cultivator. Wheel	J. B. Neff	299,157	May 27	1506	432	27	836
Cultivators. Foot-lift for riding	A. Dow and L. H. Gorgas	297,240	Apr. 22	1703	464	27	337
Cup: *See* Collapsing cup.							
Cupboard	W. J. Clapp and T. Griffiths. (Reissue.)	10,481	May 20	1426	400 407	27	811
Cupola-furnace	J. S. Woodward	299,449	May 27	1860	535	27	902
Curbstone and telegraph-wire conduit. Combined	I. B. Tripp	296,649	Apr. 8	955	268	27	190
Curtain bar. Window	J. C. Doty	299,370	May 27	1750	504	27	883
Curtain-fixture	W. B. Noyes	297,709	Apr. 29	2322	632	27	461
Curtain-fixture	L. Page and L. Weber	297,127	Apr. 29	2236	601	27	448
Curtain-fixture	T. J. Parkinson	296,048	Apr. 1	185	54	27	38
Curtain-fixture	T. L. Quigley	297,163	Apr. 22	1767	479	27	318
Curtain-fixture	F. G. Robbins	298,407	May 13	578	161	27	644
Curtain-fixture	G. E. Swan	300,293	Apr. 1	514	143	27	97
Curtain-fixture	A. Sweetland	296,712	Apr. 8	1025	288	27	204
Curtain-fixture	C. F. Viney	299,143	May 27	1490	427	27	834
Curtain-fixture. Adjustable	C. T. Unangst	300,107	June 10	848	220	27	1089
Curtain fixtures. Window	B. F. Burnett	296,127	Apr. 1	292	80	27	55
Curtain-loop	J. Day. (Reissue)	10,464	Apr. 1	522	145	27	98
Curtain-pin	J. Moore	299,231	June 3	414	106	27	1000
Curtain-pole	J. Berbecker	295,972	Apr. 1	94	29	27	20
Curtain-pole ring	J. Kroder	300,495	May 13	809	232	27	683
Curtain-pole tip	F. L. Lathrop	300,528	June 17	1272	349	27	1175
Curtain-ring	J. Sumner	298,824	May 20	1068	305	27	746
Curtain-ring	H. H. Bryant	296,003	Apr. 1	138	40	27	28
Curtain-roller	J. Harris	299,256	May 27	1649	465	27	850
Curtain-roller fixture	W. B. Noyes	300,311	June 10	1045	293	27	1124
Curtain-roller. Spring	J. Denver	299,573	June 3	66	16	27	933
Curtain-shade fixtnre	C. F. Larsen and B. A. S. Nielsen	300,267	June 10	994	266	27	1113
Cuspidor	J. Kelly	299,734	June 3	342	78 79	27	979
Cut-off and governor. Combined	C. Callahan	299,063	June 10	579	155	27	1041
Cut-off for valves	H. Cook	296,403	Apr. 8	648	179 180	27	128
Cut-off governor	W. F. Goodman	296,172	Apr. 1	331	94	27	64
Cut-off mechanism	C. T. Holloway						
Cut-off nozzle							
Cutter: *See* Capsule-cutter. Sole-edge cutter. Cigar-cutter. Stalk-cutter. Cornstalk-cutter. Straw-cutter. Oatmeal-cutter. Tobacco-cutter. Paper-cutter. Vegetable-cutter. Peg-cutter. Washer-cutter. Pipe-cutter. Wire-cutter.							
Cutter-head	U. D. Byron	300,305	June 10	1039	281	27	1123
Cutter-head	M. S. O'Neil	297,534	Apr. 22	2079	567	27	408
Cutter-head	J. D. Stricklor	296,481	Apr. 8	743	205	27	147

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cutter-head guard	T. Harps	300,363	June 17	1118	303	27	1147
Cutting-board	G. W. Cody	297,351	Apr. 22	1846	301	27	364
Cyclometer	R. Burns	299,733	June 3	310	78	27	979
Cylinder engine. Multiple	P. Brotherhood	299,731	June 3	308	77, 78	27	978
Damper	J. W. Shaw	299,179	May 27	1594	437	27	839
Damper-regulator	F. Thompson	299,635	May 13	830	234	27	692
Damper regulator. Steam-	J. L. Hornig	296,568	Apr. 8	860	239	27	171
Damper. Stove-pipe	W. E. Beilman	300,559	June 17	1362	375	27	1191
Dead-centers and for converting motion. Device for overcoming	I. L. Hawkins	298,199	May 6	298	77	27	582
Demijohn or bottle safe	I. B. Wollard	296,903	Apr. 15	1274	354	27	255
Dental-drill hand-piece	J. H. Siddall	296,078	Apr. 1	219	64	27	45
Dental-engine angle attachment	A. Weber	299,040	May 20	1366	387	27	798
Dental-floss holder	G. E. Greene	301,055	June 24	1990	550	27	1311
Dental-foil condenser	R. S. Williams	298,717	May 13	950	264	27	714
Dental foil. Wrinkling gold	R. S. Williams	298,716	May 13	948	263	27	714
Dental hand-piece	H. Laurence	298,483	May 13	665	188	27	660
Dental mold	J. W. Hayford	296,690	Apr. 8	1004	281	27	200
Dental rubber dam	L. M. Hulsey	300,690	June 17	1408	387	27	1200
Dental-rubber-dam holder	R. H. Moffitt	296,992	Apr. 15	1379	381	27	274
Dental vulcanizer	F. W. Seabury	299,861	June 3	447	115	27	1007
Dentist's chair	J. B. Waring	300,538	June 17	1334	{366 / 367}	27	1187
Deodorizing and antiseptic water-closet cover	F. H. Hubbard	298,091	May 6	160	41	27	557
Derrick	C. T. Day	298,184	May 6	279	72	27	572
Derrick	A. Reitz	298,405	May 13	576	{160 / 161}	27	644
Derrick. Hoisting-	A. B. Morrison	297,831	Apr. 29	2459	674	27	486
Derrick. Portable	H. Austin and I. Scoville	299,504	June 3	5	2	27	921
Desk	J. Klar	297,940	Apr. 29	2593	711	27	513
Desk	D. Shuler	301,014	June 24	1942	537	27	1302
Desk and seat. School	C. A. Merrill	299,826	June 3	409	105	27	999
Detector: *See* Time-detector.							
Diamonds in tools. Fastening	T. W. Collins	299,055	May 20	1374	391	27	801
Dictionary-stand	E. D. Swain	297,541	Apr. 22	2088	569	27	410
Die-stock	W. C. Hartmann	300,604	June 17	1414	{389 / 390}	27	1201
Die-stock and die	N. Sawyer	300,901	June 24	1806	494	27	1277
Digger: *See* Potato-digger.							
Dipper	G. T. Peters	296,051	Apr. 1	190	54	27	39
Dish. Butter-	J. D Lucas	296,293	Apr. 1	506	141	27	93
Dishcloth-holder	J. T. Foster	296,550	Apr. 8	835	232	27	166
Dish-washing apparatus	C. L. Rudd	300,398	June 17	1162	318	27	1154
Disinfecting and cleansing water-closets	C. F. Pike	300,636	June 17	1462	403	27	1210
Disinfecting sewers	E. Z. Collings and C. F. Pike	297,229	Apr. 22	1693	460	27	335
Disintegrating and separating machine	J. M. Case	297,763	Apr. 29	2389	{651 / 652}	27	473
Distillation. Apparatus for vacuum	H. T. Yarvan	300,185	June 10	877	236	27	1094
Distillation of oil. Apparatus for the continuous	H. C. Smith	300,811	June 24	1695	463	27	1255
Distillation of wood	J. A. Mathieu	300,384	June 17	1147	314	27	1152
Distillation of wood. Apparatus for the	R. Haldane	297,517	Apr. 22	2053	{560 / 561}	27	403
Distilling petroleum. Apparatus for	E. Kells	298,210	May 6	322	84	27	586
Distilling wood. Apparatus for	J. A. Mathieu	300,383	June 17	1144	{313 / 314}	27	1151
Ditching-machine	D. Hershberger	300,318	June 10	1053	{285 / 286}	27	1125
Ditching-machine	M. Milner	298,223	May 6	340	89	27	560
Ditching-machine	R. H. Nogar	296,599	Apr. 8	897	248	27	178
Ditching-machine	A. J. Osborne	296,872	Apr. 15	1232	344	27	247
Ditching-machine	F. Plumb	298,887	May 20	1167	326	27	761
Ditching-machine	E. H. Smith	297,861	Apr. 29	2490	682	27	493
Ditching-machine	T. Willsea	301,034	June 24	1964	543	27	1306
Ditching-machine. Tile-drain	W. P. B. Decker	295,909	Apr. 1	19	5	27	7
Dividers	R. Folger	297,979	May 6	30	6	27	531
Door	G. E. Filer and A. H. Neff	297,774	Apr. 29	2402	655	27	475
Door and panel work	W. N. Miller	296,035	Apr. 1	172	50	27	35
Door-check	J. J. Lamb	298,989	May 20	1257	367	27	785
Door-check	L., G., and E. Rall	297,005	Apr. 15	1392	384	27	276
Door-check	F. M. Sears	296,229	Apr. 1	412	115	27	78
Door-check	O. P. Vandeburgh	300,169	June 10	852	230	27	1090
Door-check. Pneumatic	W. C. Clark	296,727	Apr. 15	1049	{295 / 296}	27	215
Door-check. Pneumatic	J. A. Sherman	298,787	May 20	1042	292	27	738
Door-check. Pneumatic	J. A. Sherman	298,788	May 20	1044	292	27	738
Door-hanger	W. Ide	300,474	June 17	1258	344	27	1172
Door-hanger	W. J. Lane	296,584	Apr. 8	877	243	27	175
Door-hanger	W. J. Lane	299,149	May 27	1496	430	27	835
Door-hanger	E. Y. Moore	299,156	May 27	1502	432	27	836
Door hangers. Track for barn-	J. H. Lawrence	299,811	June 3	389	100	27	995
Door-keeper. Electric	A. C. Woehrle	297,096	Apr. 15	1505	415	27	297
Door-lock. Electric	C. Wiest	300,304	June 10	1075	293	27	1129
Door lock. Sliding	J. H. Dougherty	297,239	Apr. 22	1702	463	27	337
Door-opener. Electric	J. H. Bunnell	297,751	Apr. 29	2372	646	27	469
Door-plate	A. T. Abbott	296,109	May 27	1543	442	27	843
Door-securer, &c	E. P. Conner	299,742	June 3	320	81	27	981
Door-securer	C. Franke and A. Peters	298,964	May 20	1265	360	27	789
Door-securer	W. Starrett	297,465	Apr. 22	1984	541	27	391
Door-spring	P. McAleer	299,048	May 20	1408	401	27	807
Door. Ventilating-	H. W. Eastman	293,989	Apr. 1	118	35	27	24
Doors. Guiding and supporting device for	A. Sanders and R. S. Henderson	296,629	Apr. 8	933	261	27	185

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Doors. Stay-roller for sliding	S. Ide	297,805	Apr. 29	2432	664	27	481
Doors. Stay-roller for sliding	L. Terry	298,914	May 20	1200	338	27	769
Doors, windows, gates, &c. Fastener for	A. G. Simpson	296,468	Apr. 8	724	200	27	143
Double gage	J. Hellriegel	300,255	June 10	968	262	27	1110
Double-headed gage	G. S. Forrest	297,371	Apr. 22	1868	508	27	360
Double-tree	S. M. Firey	297,512	Apr. 22	2048	559	27	402
Doubling and winding yarn or thread upon bobbins. Machine for	J. and J. Horrocks	297,690	Apr. 29	2397	{625 / 626}	27	456
Dough-mixer	F. F. Hussey	297,518	Apr. 22	2055	561	27	403
Draft-equalizer	W. Crozier	296,930	Apr. 15	1366	362	27	260
Draft-equalizer	C. Olson	297,286	Apr. 22	1735	477	27	348
Draft-equalizer	T. Pates	298,773	May 20	1023	286	27	734
Draft-equalizer	S. Ray	298,622	May 13	826	231	27	690
Draft-equalizer	J. W. Collins	300,764	June 24	1643	450	27	1246
Drag. Adjustable marine	J. N. Key	297,811	Apr. 29	2437	666	27	482
Drag-rod	G. W. Immel	300,870	June 24	1771	482	27	1270
Drain-cleaner	S. L. Wiegand	300,545	June 17	1345	370	27	1189
Drainer. Centrifugal	W. B. Turner and J. J. Mann	296,801	Apr. 15	1137	320	27	231
Draw-bar and buffer	E. G. Gery	298,460	May 13	634	181	27	655
Drawer-lock	J. Wise	296,807	Apr. 15	1144	322	27	232
Drawer-lock	O. F. Garvey	299,374	May 27	1767	509	27	886
Drawer-pull	J. M. Cox	298,181	May 6	275	71	27	576
Drawers	J. C. Tracey	298,322	May 6	471	127	27	615
Drawers	J. A. Ball	299,945	June 10	558	149	27	1037
Dredge	H. B. Angell	296,503	Apr. 8	770	212	27	152
Dredger	D. J. Gilchrist	298,573	May 13	768	215	27	680
Dredger	A. W. Von Schmidt	299,882	June 3	470	123	27	1011
Dredger-discharge pipes. Device for connecting and supporting the sections of	F. Brotherhood	298,443	May 13	614	{173 / 174}	27	651
Dredging, crushing, and washing phosphate-rock. Apparatus for	A. W. Von Schmidt	300,333	June 10	1074	{292 / 293}	27	1129
Dredging-machine							
Drier: *See* Brick-drier. Fruit-drier. Clothes-drier.							
Drier	G. H. Immendorf	296,572	Apr. 8	865	240	27	172
Drier for fruit, &c	F. M. Travis	298,916	May 20	1202	339	27	769
Drill: *See* Grain-drill. Rice-drill. Hand-drill. Rock-drill. Mining-drill. Seed-drill. Ratchet-drill.							
Drill and countersink. Combined	A. J. Smart	298,248	May 6	374	99	27	597
Drill and countersink. Combined	A. J. Smart	299,429	May 27	1836	528	27	898
Drills. Machinery for grinding or sharpening	W. F. Smith and A. Coventry	299,433	May 27	1840	{529 / 530}	27	899
Drills. Manufacture of	C. Van Haagen	296,254	Apr. 1	444	{125 / 126}	27	84
Drilling machine. Coal-	L. P. Moran	298,766	May 20	1015	284	27	733
Drilling-machine. Suspended	E. F. Gordon and H. Hobbs	297,383	Apr. 22	1880	511	27	371
Drilling-machines. Index-gage for	A. B. Bean	300,638	June 10	678	184	27	1058
Drum and cymbal clamp	P. W. Fair	296,192	Apr. 1	308	88	27	60
Dry-closet	T. W. Jackson	299,226	May 27	1585	456	27	852
Dry closet	F. F. Street	301,018	June 24	1945	538	27	1303
Dry-plate holder	E. L. Bergstresser	300,438	June 17	1214	331	27	1164
Dry separator and amalgamator	H. Earhart	299,211	May 27	1569	451	27	849
Drying-machine for grain, &c	E. H. Sawin	299,683	June 3	275	63	27	968
Dumping-boat	M. S. Coleman	299,664	May 13	890	248	27	702
Duplicating-engine	M. B. Kellogg	299,553	June 3	63	16	27	932
Dust-arrester	O. Kntsche	296,758	Apr. 15	1090	307	27	292
Dust-arresting machine	J. S. Brandstaetter	297,223	Apr. 22	1684	{458 / 459}	27	334
Dust-collector	B. F. Ortman and H. R. Taylor	297,436	Apr. 22	1945	530	27	383
Dust-collector	W. Richardson	299,852	June 3	447	113	27	1005
Dust-pan	F. W. Carpenter	298,447	May 13	619	176	27	652
Dust-pan	S. C. Sweetson	299,294	May 27	1670	478	27	867
Dyes from the aromatic diamines. Obtaining brown	P. Monnet	299,994	May 20	1296	.....	27	787
Dynamometer	A. Wilson	300,821	June 24	1768	467	27	1258
Ear-ornament fastener	G. Krementz	298,987	May 20	1265	366	27	784
Ear-ring	H. G. Mackinney	299,762	May 20	1011	282	27	732
Ear-rings, &c. Suspension-hook for	E. A. Lehmann	300,468	June 17	1274	370	27	1176
Earth-remover	S. A. Miller	296,990	Apr 15	1376	380	27	273
Easel	D. M. Ireland	299,391	May 27	1790	545	27	890
Easel	T. C. Vail	298,257	May 6	295	101	27	599
Eaves-trough hanger	H. J. Hoepfner	298,970	May 20	1270	362	27	781
Eaves-trough hanger	M. B. Lee	299,407	May 27	1815	522	27	895
Eccentric. Variable	A. O. Frick	299,215	May 27	1574	472	27	850
Edgers. Presser-roll for gang-	P. P. Lane and J. B. Stanwood	299,653	June 3	260	51	27	957
Educational appliance	A. H. Kennedy	296,048	Apr. 1	156	45	27	32
Educational purposes. Figure, map, and chart for	M. E. Guirey	298,746	May 20	995	278	27	730
Egg and cake beater	A. C. Rex	298,503	May 13	699	195	27	665
Egg and sugar beater	C. Deis	297,115	Apr. 22	1542	426	27	309
Egg-beater	J. E. Welling	299,884	June 3	471	124	27	1012
Egg beater and dish. Combined	W. B. Henderson	298,375	May 13	511	148	27	677
Egg-case. Folding	W. G. Ruge	298,237	May 6	360	96	27	594
Egg-case. Folding	W. G. Ruge	300,514	June 17	1304	358	27	1183
Egg-preserving device	G. Conant	297,676	Apr. 29	2277	640	27	459
Ejector	J. M. Marty	297,615	Apr. 29	2491	698	27	436
Electric alarm applied to cots, &c	W. F. and W. H. Keep	299,640	June 3	196	49, 50	27	956
Electric-arc light	T. A. Edison	297,580	Apr. 29	2456	688	27	429
Electric battery	O. Millard	298,997	May 20	1293	369	27	787
Electric battery	J. C. Vetter and S. G. Putnam	300,666	June 17	1511	416	27	1220
Electric battery and lamp. Portable	C. G. Gumpel	296,331	Apr. 8	556	155	27	111

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electric battery. Secondary	E. T. Starr	299,434	May 27	1842	530	27	900
Electric cable	W. H. Sawyer	297,855	Apr. 29	2484	680	27	492
Electric cable	S. F. Shelbourne	297,177	Apr. 22	1613	443, 444	27	321
Electric call apparatus. Individual	A. P. Howes	298,393	May 13	550	151, 152	27	639
Electric-circuit-closing device. Automatic	C. T. Ross	298,121	May 6	197	52	27	564
Electric-circuit connection	D. E. Drake	299,467	May 27	1881	541	27	906
Electric-circuit connector	E. Weston	298,326	May 6	475	128	27	616
Electric circuits. Junction-box for	A. P. Wright	297,547	Apr. 22	2094	571	27	411
Electric circuits. Junction device for	E. Weston	301,029	June 24	1958	541	27	1305
Electric circuits. Safety-strip for	E. Weston	301,030	June 24	1960	541	27	1306
Electric conductor	A. C. Tichenor	300,410	June 17	1178	323	27	1157
Electric conductor. Anti-induction	S. F. Shelbourne	297,176	Apr. 22	1611	443	27	321
Electric conductors. Binding-post for	A. G. Goodbody	296,160	Apr. 1	317	90	27	92
Electric conductors. Conduit and attachment for	S. F. Shelbourne	297,183	Apr. 22	1622	445	27	323
Electric conductors. Connector for	E. Weston	301,026	June 24	1955	540	27	1305
Electric conductors from induction. Protecting	S. F. Shelbourne	297,184	Apr. 22	1623	445	27	323
Electric conductors. Manufacture of	J. J. Williamson	300,179	June 10	660	234	27	1092
Electric conductors. Underground conduit for	A. Campbell	300,210	June 10	913	246	27	1160
Electric currents. Apparatus for the production and utilization of secondary	L. Ganlard and J. D. Gibbs	297,924	Apr. 29	2571	705	27	509
Electric cut-off	C. H. Goebel	297,928	Apr. 29	2579	707	27	510
Electric helix and winding the same	F. Bain	296,380	Apr. 8	623	172	27	124
Electric-light and telegraph post. Combined	S. F. Shelbourne	297,182	Apr. 22	1620	445	27	322
Electric-light fixture	P. H. Klein, Jr	297,269	Apr. 22	1739	472	27	344
Electric-light tower	J. S. Adams	297,332	Apr 22	1813	492, 493	27	358
Electric lights. Treating carbons for	T. A. Edison	298,679	May 13	905	231	27	705
Electric machine. Dynamo-	J. B. Blair	300,835	June 24	1728	472	27	1262
Electric machine. Dynamo-	T. A. Edison	297,582	Apr. 29	2158	589	27	429
Electric machine. Dynamo-	T. A. Edison	297,583	Apr. 29	2158	589	27	429
Electric machine. Dynamo-	T. A. Edison	297,584	Apr. 29	2160	589	27	430
Electric machine. Dynamo-	T. A. Edison	297,587	Apr. 29	2162	590	27	430
Electric machine. Dynamo-	T. A. Edison	298,954	May 20	1248	353	27	777
Electric machine. Dynamo-	T. A. Edison	298,955	May 20	1249	354	27	777
Electric machine. Dynamo-	E. J. Houston and E. Thomson	296,509	Apr. 8	562	239	27	171
Electric machine. Dynamo-	J. A. Lannert	300,615	June 17	1431	304	27	1204
Electric machine. Dynamo-	A. E. G. Lubke	296,857	Apr. 15	1216	330	27	243
Electric machine. Dynamo-	E. Thomson	296,709	Apr. 15	1132	310	27	230
Electric machine. Dynamo-	C. J. Van Depoele	297,878	Apr. 29	2749	687	27	497
Electric machine. Dynamo-	C. J. Van Depoele	300,535	June 17	1329	305	27	1186
Electric machine. Dynamo-	E. Weston	301,025	June 24	1954	540	27	1304
Electric machine. Dynamo-	E. Weston	301,027	June 24	1956	540	27	1305
Electric machine. Dynamo-	J. E. Watson	300,420	June 17	1190	326	27	1159
Electric machine regulator. Dynamo-	F. Diehl	299,117	May 27	1459	417	27	898
Electric machines. Construction of	T. A. Edison	298,956	May 20	1250	354	27	777
Electric machines. Operating dynamo-	W. Adams	300,827	June 24	1717	469	27	1260
Electric motor	H. B. Sheridan and H. A. Gorn	300,648	June 17	1486	409	27	1214
Electric motor	L. W. Stockwell	298,130	May 6	206	55	27	566
Electric motor	E. T. Starr	300,154	June 10	830	225	27	1086
Electric-motor regulator	C. G. Burke	298,550	May 13	736	208	27	674
Electric motors and dynamo-electric machines. Armature for	J. C. Vetter and S. G. Putnam	298,922	May 20	1208	341	27	770
Electric motors and generstors. Commutator and brush for	E. A. Sperry	297,867	Apr. 29	2497	684	27	494
Electric multiple-switch-board system	T. N. Vail	299,039	May 20	1354	386, 387	27	797
Electric regulator	E. A. Sperry	297,866	Apr. 29	2495	684	27	494
Electric regulator	E. Weston	301,028	June 24	1957	541	27	1305
Electric switch-board	T. N. Vail	296,253	Apr. 1	440	124	27	84
Electric-wire conduit	C. H. Goebel	297,927	Apr. 29	2578	707	27	510
Electric-wire conduit	M. P. Halhaway	300,470	June 17	1254	343	27	1171
Electric wire. Manufacture of compound	J. J. Williamson	295,966	Apr. 1	86	26	27	19
Electric wires and pneumatic tube combined. Underground conduit for	C. H. Goebel	297,920	Apr. 29	2579	707	27	510
Electric wires. Laying underground	J. H. Page	298,020	May 6	76	20	27	542
Electric wires. Skeleton arch for the support of	G. M. Hoag	299,692	May 13	922	255	27	708
Electric wires. Underground conduit for	C. H. Goebel	297,926	Apr. 29	2576	707	27	510
Electrical circuit-breaker	E. Weston	298,144	May 6	229	60	27	570
Electrical circuit-breaker	E. Weston	301,021	June 24	1952	540	27	1304
Electrical conductor	T. A. Edison	297,586	Apr. 29	2162	590	27	430
Electrical conductor	E. Weston	301,031	June 24	1960	542	27	1306
Electrical conductor	J. J. Williamson	300,669	June 17	1514	417	27	1220
Electrical conductor and connecting device therefor	J. Kruesi	296,185	Apr 1	345	98	27	67
Electrical-conductor covering	F. S. Harrington	298,751	May 20	1000	279	27	730
Electrical conductors. Manufacture of	T. Shaw	296,674	Apr. 1	216	63	27	44
Electrical currents. Apparatus for distributing	G. W. Durbrow	297,672	Apr. 15	1474	408	27	292
Electrical cut-out. Automatic	W. M. Thomas	300,532	June 17	1326	304	27	1185
Electrical purposes. Indestructible compound for coating wires for	J. H. Page	297,626	Apr. 29	2595	.....	27	438
Electrical wires. Supporting and insulating	J. W. Tringham	296,485	Apr. 8	747	206	27	148
Electricity. Apparatus for distributing	A. I. Gravier	300,068	June 10	711	193, 194	27	1065
Electro-magnetic-brake system	A. L. Drwelius	296,319	Apr. 8	540	151	27	108
Electro-magnetic indicator	W. S. Johnson	299,592	June 3	62	16	27	930
Electro-magnetic motor	C. A. Saxe	298,507	May 13	692	196	27	665
Electro-magnetic valve and connection	H. Flad	296,549	Apr. 8	832	230, 231	27	166
Electroplating apparatus	C. F. Brush	297,669	Apr. 29	2364	616	27	449
Electrotype or stereotype plates. Mortised wooden block for	F. A. Ringler and E. I. Alfeld	299,042	May 20	1315	376	27	790
Elevating apparatus	T. Keith	297,606	Apr. 29	2306	627	27	457

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Elevator: *See* Excavating-elevator. Lumber-elevator. Ore-elevator. Hay-elevator. Passenger or other elevator. Hay and grain elevator. Skid-elevator. Hydraulic elevator. Water-elevator.							
Elevator	H. Chandler	296,315	Apr. 8	535	150	27	107
Elevator	W. J. M. Dobson	298,187	May 6	283	73	27	579
Elevator	M. W. Hoben	300,258	June 10	973	263	27	1111
Elevator	M. N. Hutchinson	299,645	June 3	190	47	27	935
Elevator	M. N. Hutchinson	299,646	June 3	191	48	27	935
Elevator	C. A. Youngman	298,331	May 6	482	130	27	618
Elevator	J. A. Holmes	296,008	Apr. 1	143	42	27	29
Elevator-bucket	J. A. Holmes	297,924	Apr. 29	2585	709	27	511
Elevator-bucket	J. A. Lesmid and J. Lotan	299,656	June 3	204	52, 53	27	958
Elevator for coal, &c	S. W. Bartholomew	296,509	Apr. 8	779	215	27	154
Elevator for seed-cotton and other materials	I. K. Beekman	300,677	June 17	1528	420	27	1222
Elevator-gate attachment	S. J. Laughlin	298,492	May 13	664	187	27	660
Elevator-gate, Self-acting	H. C. Wilcox	300,932	June 24	1840	501	27	1284
Elevator-guard	C. A. Hoffnagle	299,544	June 3	52	13, 14	27	930
Elevator safeguard	R. Seiffert	296,681	Apr. 15	1241	348	27	240
Elevator safety attachment	A. J. Becker and J. B. Young	296,511	Apr. 8	781	215	27	155
Elevator safety-catch	F. A. Weeks	300,541	June 17	1240	369	27	1188
Elevator safety-catch	J. W. Simmons	297,459	Apr. 22	1973	530	27	389
Elevator safety-clutch	L. D. Shaw	299,173	May 27	1525	437	27	899
Elevators. Automatic-brake mechanism for hand-power	J. Hodges	299,222	May 27	1580	454, 455	27	851
Elevators. Automatic safety appliance for	C. A. Hoffnagle	299,543	June 3	51	13	27	930
Elevators. Automatic safety-brake for	A. Abbott	296,100	Apr. 1	246	72	27	50
Ellipsograph	A. S. Lovett	300,969	June 24	1903	524	27	1295
Embalming apparatus	R. Freitag	295,917	Apr. 1	28	9	27	8
Embroidering-machine	M. H. Pulaski	297,448	Apr. 22	1961	536	27	387
Embroidery	M. H. Pulaski	298,025	May 6	84	22	27	543
Embroidery	E. Sturzenegger	300,160	June 10	839	227	27	1087
Embroidery	J. B. West	299,943	June 3	545	145	27	1025
Embroidery-holder	E. Bally and J. Hartmann	298,053	May 6	114	29	27	549
Embroidery, Velvet and plush	H. C. Milligan	296,206	Apr. 1	378	..	27	72
Enameling iron ware	N. A. Buble	299,054	May 20	1373	391	27	801
Enameling metal for jewelry, &c	O. R. Ingersoll	300,711	June 17	1575	442	27	1230
Enameling metallic surfaces	A. Sproul	299,284	May 27	1655	475	27	865
End-gate lock. Wagon	J. Jensen	300,062	June 10	731	198	27	1068
End-gate rod for vehicles	I. Cruzan	299,907	June 3	493	132	27	1017
End-gate. Vehicle	S. E. Chamberlain	298,831	May 20	1099	307	27	748
End gate. Wagon	G. W. Hurd	298,857	May 20	1126	316	27	753
End-gate. Wagon	D. B. Keagy	300,086	June 10	737	199	27	1069
End-gate. Wagon	H. H. Perkins	298,400	May 13	571	157	27	642
Engine: *See* Carding-engine. Pumping-engine. Cylinder-engine. Reel-engine. Duplicating-engine. Rose-engine. Gas-engine. Rotary engine. Hot air engine. Rotary steam-engine. Portable engine. Steam-engine. Portable and traction engine. Traction-engine. Wind engine.							
Engine	I. De Graff	297,500	Apr. 22	2043	558	27	401
Engine. Combined straw and coal or wood burning	M. Rumely	297,170	Apr. 22	1605	441	27	320
Engine-register	C. Chambers, Jr	297,670	Apr. 29	2360	617	27	449
Engine-register	F. W. Tattersall	297,872	Apr 29	2502	685	27	495
Engine-reversing and cut-off gear	A. F. Johnson	296,013	Apr. 1	150	43	27	31
Engine reversing-gear	W. A. Clarke	298,826	May 20	1092	306	27	747
Engines. Utilizing the exhaust of	D. Renshaw	298,119	May 6	195	52	27	564
Engines. Utilizing the exhaust of	D. Renshaw	300,504	June 17	1294	355	27	1179
Engines. Utilizing the exhaust of	D. Renshaw	300,505	June 17	1295	355, 356	27	1180
Engraver's bangle-clamp	H. Carpenter	296,521	Apr. 8	793	218	27	157
Engraver's tool	W. Wildt	297,213	Apr. 22	1670	454	27	341
Engraving-machine. Pentagraph	J. Mowat	301,066	June 24	2003	554	27	1314
Engraving-machines. Ring and watch-case attachment for	A. E. Francis	297,981	May 6	22	6	27	531
Enlarging-camera	T. C. Roche	297,851	Apr. 29	2479	679	27	491
Envelope, &c. Machine for packing	L. McMurray	296,861	Apr. 15	1229	341, 342	27	245
Envelope	J. F. Dodd	299,358	May 27	1759	501	27	833
Envelope and letter sheet. Combined	A. Cox	299,212	May 27	1750	448	27	847
Envelope-folding mechanism	F. H. Richards	296,353	Apr. 8	583	161	27	116
Envelope for currency, checks, &c	C. A. Ball	299,323	May 27	1702	489	27	871
Envelope-machine	D. M. Lester	299,814	June 3	395	101	27	996
Envelope opener	C. S. Watson	299,442	May 27	1652	532	27	901
Envelope opener	C. E. Hochstetler	298,581	May 13	778	214	27	692
Envelope-opener and paper-cutter	G. Elsey	296,397	Apr. 8	641	177	27	127
Eraser	L. Krob	296,096	May 6	105	43	27	558
Eraser-case	J. D. Cottrell	296,927	Apr. 15	1302	362	27	260
Escapement, Variable							
Evaporator: *See* Fruit-evaporator.							
Evaporator-furnace	T. and J. M. Scantlin	296,072	Apr. 1	213	62	27	43
Excavating-elevator	G. H. Kanmacher	297,410	Apr 22	1914	523, 524	27	377
Excavator and dredge	R. R. Osgood	297,287	Apr. 22	1755	477	27	348
Excelsior-machine cutter-knife	C. L. Knight	298,211	May 6	323	84	27	587
Exercising apparatus	J. M. Latlin	298,392	May 13	561	155	27	641
Exercising. Striking-bag for	A. R. Rumsey	299,091	May 20	1418	405	27	810

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Expanding articles of flexible material. Device for	C. L. Higgins	300,365	June 17	1120	304	27	1148
Explosive compound	W. R. Quinan	300,281	June 10	1006	.....	27	1117
Extension-bit	W. Steers	296,242	Apr. 1	428	120	27	82
Extension-key	J. Broughton	299,456	May 27	1872	537	27	904
Extension suspensory-rod	C. La Dow	297,136	Apr. 22	1566	431	27	313
Extension-table	G. Muller	296,434	Apr. 8	682	188	27	135
Extractor: *See* Nail-extractor. Stump-extractor. Spike-extractor.							
Eye-bars. Constructing	J. Nuegeley, Jr.	299,401	May 27	1909	550	27	912
Eye-bars. Manufacturing	W. Halnsworth	298,748	May 20	997	278	27	730
Eye-protector	R. Choate, W. H. Rohrer, and A. H. Ragan.	296,388	Apr. 8	635	175	27	125
Eye-rods and hook-and-eye hinges. Machine for making	C. Lanz	296,852	Apr. 15	1203	337	27	242
Eye-shade. Electric	L. K. Oppenheimer	298,397	May 13	567	156	27	642
Eyeglass-holder	H. G. Chase	296,527	Apr. 8	892	221	27	159
Eyeglasses	I. Fox	296,226	Apr. 15	1174	330	27	247
Eyeglasses	E. Goldbacher	298,744	May 20	993	277	27	729
Eyeglasses	J. P. Michaels	298,490	May 13	673	189	27	662
Eyeglasses	C. F. Spencer	296,886	Apr 15	1247	348	27	250
Eyeglasses	W. H. Rose	298,707	May 13	936	259	27	711
Eyelet	G. O. Schneller	299,019	May 20	1322	372	27	792
Eyeleting-machine	G. O. Schneller	299,273	May 27	1638	470	27	862
Eyeleting-machine punch and die	H. S. Hale	299,382	May 27	1774	511	27	889
Fabric for wall of apartments	C. Garnier	300,964	June 24	1870	515	27	1290
Fabrics. Machine for softening	A. Freschi	296,223	Apr. 1	489	137	27	92
Fabrics to a background. Application of	F. Sternheimer	297,869	Apr. 29	2500	685	27	495
Fan	A. H. Moore	296,340	Apr. 8	578	161	27	115
Fan attachment	L. W. Everhart	299,364	May 27	1756	505	27	884
Fan. Automatic	W. B. Greene	297,386	Apr. 22	1885	512	27	372
Fan. Automatic	M. S. Field	300,456	June 17	1234	338	27	1167
Fanning-mill	W. H. Kelly	297,411	Apr. 22	1915	524	27	378
Fanning-mill	A. W. Kendrick and C. A. Van Duzee	299,077	May 20	1402	399 / 400	27	806
Fanning-mill and seed-cleaner. Combined	N. M. Bowen	296,309	Apr. 8	598	148	27	106
Fare-box. Street-car	G. S. De Blanc	299,207	May 27	1565	450	27	848
Fare-registering device	G. S. Foss	299,214	May 27	1571	452	27	849
Farm-gate	C. W. Mann	299,237	May 27	1601	459	27	856
Farm-gate	F. A. Peebles	298,620	May 13	824	230	27	690
Farm-gate	L. and M. Taylor	299,180	May 27	1533	439	27	841
Fastening. Metallic	H. Harris	296,166	Apr 1	325	92	27	63
Fastening. Metallic	F. A. Smith, Jr.	296,079	Apr. 1	220	64	27	45
Fancet	H. Mattullath	296,031	Apr. 1	167	48	27	34
Fancet	F. McCabe	292,564	June 3	79	19	27	935
Fancet	J. McGinley	297,426	Apr. 22	1934	527	27	381
Fancet	J. Moloney	296,434	Apr. 17	1436	396	27	1295
Fancet	J. Moloney	297,945	Apr 29	2508	712	27	514
Fancet	E. Myers	297,000	Apr. 15	1365	383	27	275
Fancet	J. Paulus	299,669	June 3	235	58	27	904
Fancet. Automatic ball safety	H. C. Montgomery	298,948	May 20	1238	350	27	775
Fancet for bottles. Vent-	G. W. Clark	298,686	May 13	913	253	27	707
Fancet for drawing beer and other liquors	P. Gardner	301,061	June 24	1998	552	27	1313
Fancet. Hot and cold water	J. C. Loucka	300,071	June 10	720	195	27	1066
Feathers. Machine for scraping the quills of ostrich and other	J. Hawlowetz						
Feed-bag	J. W. Gedney	296,553	Apr. 8	841	233	27	167
Feed-bag for horses	W. H. Pack	299,674	June 3	242	60	27	966
Feed-cutting machine	J. Welchhart	298,527	May 13	710	201	27	669
Feed-regulator	J. Lucas	296,024	Apr. 1	161	46	27	31
Feed-regulator	W. G. Thompson	300,816	June 24	1700	465	27	1257
Feed-water heater	R. G. Ewer	297,246	Apr. 22	1711	465	27	339
Feed-water heater	C. H. Magoon	298,006	May 6	57	15	27	538
Feed-water heater	T. Marshall	298,105	May 6	176	46	27	560
Feed-water heater	P. McGivern and W. E. Frye	296,427	Apr. 8	674	186	27	133
Feed-water heater	D. P. Stewart	297,644	Apr. 29	2273	607 / 608	27	443
Feed-water purifier	J. T. Mead	296,303	Apr. 1	375	107	27	72
Feeder. Boiler	W. Cunningham	297,572	Apr. 29	2140	584	27	426
Felting machine	C. H. Merritt	299,412	May 27	1821	523	27	896
Fence	N. Fanght	300,455	June 17	1233	337	27	1167
Fence	E. Fischer	299,770	June 3	349	89	27	987
Fence	B. F. Ford	298,961	May 20	1263	359	27	760
Fence	H. F. Magio	300,276	June 10	994	268	27	1115
Fence	J. R. Pitt	301,071	June 24	2009	555	27	1315
Fence	A. C. Decker	299,916	June 3	509	135	27	1018
Fence. Barb-	W. Edenborn	299,763	June 3	342	87	27	985
Fence barb. Wire-	J. E. Kelly	296,753	Apr 15	1085	305	27	221
Fence. Barbed	H. M. Underwood	297,203	Apr. 22	1660	452	27	330
Fence. Barbed	E. A. Cooper	299,911	June 3	504	133	27	1018
Fence fastening device. Wire-	J. Snider	297,188	Apr 22	1629	446	27	324
Fence. Flood-	M. Hegbom	299,940	June 10	602	161	27	1045
Fence. Iron	T. Rogers	297,295	Apr. 22	1769	480	27	350
Fence. Iron							
Fence machine. Barb-	J. D. Curtis	297,679	Apr. 29	2281	620 / 621	27	453
Fence-making machine	A. G. Lyne	300,994	June 10	746	202	27	1071
Fence-making machine	G. H. Shellaberger	300,517	June 17	1308	359	27	1192
Fence-making machine. Upright wire-	J. M. Fultz	298,368	May 13	533	145 / 146	27	635
Fence. Metallic	D. A. Roach	298,235	May 6	359	95	27	594
Fence. Picket-	A. G. Lyne	300,093	June 10	745	201	27	1071
Fence-picket machine	T. Coyle	300,958	June 24	1896	512	27	1289
Fence. Portable	W. Cokayne	300,221	June 10	924	249	27	1102
Fence. Portable	F. P. Whistler	300,929	June 24	1837	503	27	1283
Fence-post	J. C. Fiero	300,586	June 17	1360	384	27	1197

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fence-post	A. C. Harrison	300,364	June 17	1119	303	27	1147
Fence-post	G. Moll and F. Hottes	296,037	Apr. 1	173	51	27	36
Fence-post	E. N. Obert	300,115	June 10	778	209	27	1076
Fence-post	E. Rutz	296,069	Apr. 1	211	61	27	43
Fence-post	E. Rutz	296,070	Apr. 1	212	61	27	43
Fence-post	L. Scott	296,632	Apr. 8	937	261	27	186
Fence-post	F. S. Smith. (Reissue)	10,471	Apr. 22	2100	574	27	412
Fence-post	T. J. Smith	296,237	Apr. 1	422	118	27	80
Fence-post	Z. T. Sweeney and J. I. Irwin	296,796	Apr. 15	1130	318	27	240
Fence-post	J. G. German	299,922	June 3	516	137	27	1019
Fence-post. Wrought-iron	W. G. Howell	299,072	May 20	1396	397	27	805
Fence-rod	C. S. Bentley	300,940	June 24	1848	507	27	1285
Fence. Wire	A. G. Hulbert	296,835	Apr. 15	1184	332	27	238
Fence. Wire	W. W. Worcester	301,037	June 24	1969	544	27	1307
Fence. Wire	E. S. Lenox	300,783	June 24	1664	455	27	1250
Fence-wire. Barbed	W. M. Clow	298,827	May 20	1094	306	27	747
Fence-wire coupling	H. Smith	297,461	Apr. 22	1976	539 / 540	27	389
Fences. Machine for making wire	G. H. Shellaberger	298,032	May 6	92	24	27	544
Fences. Machine for manufacturing	L. Goddu	295,918	Apr. 1	29	9	27	8
Fences. Metal post for wire	C. H. Bacon	297,487	Apr. 22	2008	548	27	396
Fences. Warning device for barbed	R. Sergeant	299,169	May 27	1721	436	27	839
Fences. Warning device for wire	S. Forrester	298,193	May 6	291	75	27	581
Fences. Warning-plate for wire	O. P. Briggs	298,280	May 6	416	112	27	605
Fencing, &c. Twister and spooler for the manufacture of wire	A. Potts	296,060	Apr. 1	201	58	27	41
Fencing. Barbed metallic	T. B. Harrison and J. W. Martin	299,471	May 27	1685	542 / 543	27	907
Fencing. Machine for making wire and picket	D. C. Stover	297,726	Apr. 29	2345	637	27	464
Fencing. Machine for twisting and spooling barbed-wire							
Fender: *See* Fire-place fender.							
Fermentation. Apparatus for preparing vegetable substances for	C. Unger	296,651	Apr. 8	957	269	27	191
Fermenting materials. Manufacturing	F. A. Rethlen	301,006	June 24	1998	.....	27	1300
Fertilizer	B. C. Briggs	298,939	May 20	1298	.....	27	774
Fertilizer-distributer	B. F. Archer	298,270	May 6	404	107	27	602
Fertilizer-distributer	J. W. Spangler	296,239	Apr. 1	424	119	27	81
Fertilizer-distributer	S. C. Meddick	297,828	Apr. 29	2457	673	27	486
Fertilizer-distributing attachment for rollers	C. F. Dinkle	298,186	May 6	282	73	27	579
Fertilizer pulverizer and distributer	W. Wright	299,898	June 3	488	128	27	1015
Fertilizers. Apparatus for drying	J. Farmer	299,766	June 3	345	88	27	986
Fertilizers. Apparatus for drying and pulverizing blood, &c., for	M. E. Burlingame	298,551	May 13	738	208	27	675
Fetter for animals	J. H. Riley	300,010	June 10	645	176	27	1052
Fiber from woolen fabrics. Apparatus for separating vegetable	J. H. Hayden and J. R. Sleeper	298,851	May 20	1120	315	27	752
Fiber. Machine for converting wood into	H. C. Perham and A. Clarke	295,938	Apr. 1	54	15	27	13
Fibers. Machine for opening, cleaning, and condensing textile	A. Prinz	301,069	June 24	2007	.....	27	1314
Fibrous material. Treatment of vegetable	J. E. Van Winkle	299,297	May 27	1676	480 / 481	27	868
Fibrous materials. Opener and cleaner for	J. A. Hitter	300,778	June 24	1657	451	27	1249
Fibrous plants. Process of and apparatus for treating	W. M. Appleman	300,674	June 17	1522	419	27	1221
Fifth-wheel	H. H. E. Bery	300,196	June 10	895	240	27	1097
Fifth-wheel	J. W. Leete	296,255	Apr. 15	1209	339	27	243
Fifth-wheel. Vehicle	J. T. Dongine	297,685	Apr. 29	2291	624	27	454
Fifth-wheel. Wagon	A. L. Colton	298,450	May 13	623	177 / 178	27	652
File and cabinet. Letter-	J. H. Louder	296,702	Apr. 15	1094	308	27	223
File. Bill-	W. T. Nicholson	296,439	Apr. 8	687	189	27	136
File-blanks. Machine for forming teeth upon	W. T. Nicholson	300,114	June 10	776	208	27	1076
File-blanks. Machine for forming the teeth upon	G. V. Nauerth	300,724	June 17	1587	435	27	1293
File. Check and bill	C. Vogel	298,714	May 13	944	262 / 263	27	713
File-cutting machine	T. E. Baden	300,432	June 17	1206	330	27	1162
File-holder	A. R. Williams	300,546	June 17	1346	371	27	1189
File-holder and case	E. T. Pearson	296,611	Apr. 8	913	254 / 255	27	181
File. Letter-	W. H. Gilman	300,594	June 17	1398	385	27	1198
File. Letter-	G. Mason	299,819	June 3	402	103	27	998
File. Letter and bill	G. W. Plummer	295,940	Apr. 1	57	17	27	14
File. Newspaper-	G. V. Nauerth	299,249	May 27	1613	463	27	858
File. Paper-	W. D. Doremus	297,577	Apr. 29	2450	587	27	427
File. Paper-	E. W. Woodruff	297,905	Apr. 29	2342	696	27	503
Filing papers. Device for	J. C. Lang	297,999	May 6	50	13	27	537
Filter	A. B. Denton	296,939	Apr. 15	1316	365	27	262
Filter	B. Holland, Jr.	300,367	June 17	1122	304	27	1148
Filter	R. L. Kester	300,612	June 17	1425	393	27	1203
Filter	J. M. Learned	295,926	Apr. 1	41	12	27	11
Filter	F. E. Cady	296,673	Apr. 8	984	276	27	196
Filter and cooler. Combined water	G. W. Shawk and A. S. Wetmore	299,275	May 27	1649	471	27	863
Filter. Hydrant-	S. H. Johnson	298,758	May 20	1007	281	27	732
Filter-press	H. Warden	297,042	Apr. 15	1441	397	27	295
Filter-press	E. Karst	296,972	Apr. 15	1351	373	27	269
Filter. Water-	J. F. C. Farquhar and W. Oldham	297,363	Apr. 22	1857	505	27	367
Filtering apparatus	J. F. C. Farquhar and W. Oldham	297,364	Apr. 22	1860	506	27	367
Filtering apparatus. Liquid-	R. M. Sommers	301,015	June 24	1943	.....	27	1302
Filtering composition	R. Brettner	299,051	May 20	1371	390	27	800
Finger-ring	J. Bulova	296,342	Apr. 8	532	149	27	106
Finger-ring	C. Prahl	297,446	Apr. 22	1960	536	27	386
Finger-ring	J. G. Measemer	299,413	May 27	1822	523	27	896
Finger-rings, ferrules, &c. Device for expanding	C. H. Judson	298,981	May 20	1279	365	27	783
Fire-alarm							

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fire-alarm apparatus. Electric	M. D. Porter	296,874	Apr. 15	1234	345	27	247
Fire-alarm. Automatic	H. N. Fenner	299,970	June 10	587	157	27	1042
Fire-alarm. Electric	G. E. and E. R. Hovenden	299,546	June 3	53	14	27	920
Fire and water proof compound	O. F. Parsons	300,729	June 17	1593	.....	27	1233
Fire and water proof material for roofing, &c	C. F. Brigham	298,282	May 6	419	112	27	106
Fire-arm barrel	W. Hebler	296,958	Apr. 15	1332	370	27	266
Fire-arm. Breech-loading	W. Anson and J. Deeley	297,907	Apr. 29	2545	{697 698	27	504
Fire-arm. Breech-loading	W. H. Davenport	300,851	June 24	1745	476	27	1265
Fire-arm. Breech-loading	W. H. Davenport	300,852	June 24	1746	476	27	1265
Fire-arm. Breech-loading	J. E. Gage	296,325	Apr. 8	548	153	27	110
Fire-arm. Breech-loading	P. T. Godsal	297,784	Apr. 29	2410	{658 659	27	477
Fire-arm. Breech-loading	P. and C. Kaul	298,982	May 20	1250	365	27	783
Fire-arm. Breech-loading	T. M. Wallis	301,021	June 24	1949	539	27	1304
Fire-arm lock	J. Victor	300,743	June 17	1611	442	27	1235
Fire-arm. Magazine	J. M. Marlin	297,494	Apr. 22	1930	527	27	380
Fire-arm. Magazine	R. Rhodes	299,264	May 27	1627	{467 468	27	800
Fire-arm sight	E. L. Berthoud	298,650	May 13	869	244	27	697
Fire-arm sight	W. Lyman	298,305	May 6	446	120	27	611
Fire-arms. Shell-extractor for	N. O. Waymire	299,302	May 27	1602	442	27	870
Fire-engine attachment	M. R. Vandervoort	300,695	June 17	1511	416	27	1219
Fire-engines. Automatic relief-valve for steam	J. E. Prunty	297,087	Apr. 15	1490	412	27	295
Fire-escape	C. B. Anderson	296,502	Apr. 8	769	211	27	152
Fire-escape	C. B. Anderson	298,266	May 6	397	104	27	601
Fire-escape	S. Beltz	298,723	May 20	962	268	27	724
Fire-escape	L. Blessing	299,511	June 3	10	4	27	923
Fire-escape	J. H. Bowley	298,725	May 20	964	269	27	724
Fire-escape	J. H. Burks	300,843	June 24	1736	474	27	1263
Fire-escape	M. C. Corrigan	300,347	June 17	1099	299	27	1145
Fire-escape	J. A. Crandall	300,368	June 10	1041	{291 292	27	1123
Fire-escape	C. R. S. Curtis	298,292	May 6	429	{115 116	27	608
Fire-escape	O. F. Davis	299,967	June 10	584	157	27	1042
Fire-escape	J. H. Ellis, M. Wilson, and F. Tanner.	299,764	June 3	343	87	27	985
Fire-escape	L. J. Evans	300,857	June 24	1752	478	27	1267
Fire-escape	H. Greene	300,248	June 10	959	259	27	1108
Fire-escape	J. Haege	299,132	May 27	1478	424	27	832
Fire-escape	T. Hale	300,465	June 17	1246	341	27	1169
Fire-escape	J. Larson and A. W. Hagstrom	300,090	June 10	740	200	27	1070
Fire-escape	W. Lawrence	300,091	June 10	742	200	27	1070
Fire-escape	T. Macdonough	295,929	Apr. 1	44	13	27	11
Fire-escape	G. W. Mickle	300,622	June 17	1442	397	27	1206
Fire-escape	J. L. Mott, Jr	299,853	June 3	417	106	27	1001
Fire-escape	R. E. Nelson, Sr	300,112	June 10	773	208	27	1075
Fire-escape	M. C. O'Connor	297,710	Apr. 29	2323	632	27	461
Fire-escape	H. Paddock and H. W. Miller	300,498	June 17	1287	354	27	1178
Fire-escape	F. D. Parmelee	297,837	Apr. 29	2466	675	27	488
Fire-escape	C. I. Pittman	297,843	Apr. 29	2472	677	27	489
Fire-escape	J. E. Post	300,797	June 24	1678	459	27	1252
Fire-escape	H. Rensch	299,850	June 3	435	113	27	1004
Fire-escape	R. C. Rutherford	297,089	Apr. 15	1492	413	27	295
Fire-escape	J. G. Schiller	300,902	June 24	1808	{494 495	27	1277
Fire-escape	E. F. Sherman	298,208	Apr. 1	512	143	27	96
Fire-escape	G. Sinfield	297,857	Apr. 29	2486	681	27	492
Fire-escape	R. Stevenson	296,243	Apr. 1	429	120	27	82
Fire-escape	J. Taylor	299,595	June 3	121	30	27	942
Fire-escape	B. F. Teal	301,019	June 24	1916	528	27	1303
Fire-escape	A. Turnbull	296,650	Apr. 8	955	{268 269	27	150
Fire-escape	D. Ware and C. W. Richman	297,883	Apr. 29	2517	688	27	498
Fire-escape	J. B. Wiltshire	300,922	June 24	1711	467	27	1250
Fire-escape and water-conductor	V. W. Blanchard	298,183	Mar. 6	274	65, 66	27	574
Fire-escape. Automatic	G. W. and F. P. Murphey	297,620	Apr. 29	2106	599	27	437
Fire-escape ladder	W. Brannan	296,020	Apr. 15	1293	359	27	258
Fire-escape ladder	S. E. Davis	296,145	Apr. 1	300	86	27	58
Fire-escape ladder	H. P. Griswold	297,790	Apr. 29	2417	660	27	478
Fire-escape. Portable	F. I. Freeman	297,126	Apr. 22	1574	428	27	311
Fire-escape sling	B. Miller and G. H. Hume	296,709	Apr. 15	1101	310	27	224
Fire-extinguisher	C. W. Caryl	300,948	June 24	1656	509	27	1296
Fire-extinguisher	G. W. Taylor, A. R. Cox, W. C. Brown, and J. N. Sutherland.	299,036	May 20	1348	385	27	796
Fire-extinguisher. Automatic	R. W. and F. Grinnell	299,380	May 27	1772	510	27	887
Fire-extinguisher. Automatic	W. Nercher	297,432	Apr. 22	1939	529	27	382
Fire-extinguisher. Hand-grenade	J. J. Harden	297,075	Apr. 15	1477	408	27	293
Fire-extinguishers. Supporting and operating chemical	J. E. Gillespie	297,687	Apr. 29	2294	624	27	455
Fire-extinguishing apparatus. Automatic	C. C. Walworth and O. B. Hall	296,490	Apr. 8	754	208	27	140
Fire-extinguishing compound	N. G. Bartlett	300,190	June 10	863	.....	27	1094
Fire-place fender. Folding	I. W. Shoemaker	300,519	June 17	1309	359	27	1193
Fire-place frames and fender-bars. Sind for	F. G. Janusch	300,081	June 10	732	198	27	1068
Fire-plug and hydrant	H. Schneider	299,858	June 3	444	{114 115	27	1007
Fire-proof fabric	H. W. Johns	298,757	May 20	1006	281	27	731
Fire-screen	J. H. White	300,930	June 24	1838	503	27	1283
Fires on ships. Apparatus for extinguishing	W. H. Thompson	300,164	June 10	844	228	27	1088
Fireman's tower	E. B. Magnus	296,419	Apr. 8	666	184	27	131
Fish. Apparatus for catching star	J. F. and F. L. Homan	297,079	Apr. 15	1481	409	27	293
Fish can. Bait	R. K. Evans	299,765	June 3	344	87	27	986
Fish. Treating the waste of salt	R. Brooks	299,515	June 3	14	5	27	934

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fishing-bait kettle	W. H. Sherwood	299,690	June 3	263	65	27	969
Flanging-machine	M. R. Moore	299,997	June 10	622	{168 169	27	1049
Flanging-machine	T. R. Morgan, Sr	298,224	May 6	343	{89 90 91	27	591
Flask: *See* Mold-flask. Molder's flask.	H. Liautier	297,140	Apr. 22	1571	432	27	313
Flier for twisting silk	J. McMillen and J. McAdams	296,428	Apr. 8	675	187	27	133
Flocking paper and other fabrics, and machine therefor	J. M. Metcalf	300,102	June 10	760	205	27	1073
Flood-gate	J. O'Friel	298,227	May 6	348	92	27	592
Floor and ceiling for buildings. Fire-proof	H. E. Hatch	299,220	May 27	1579	454	27	851
Floor-clamp	F. Fastenrath	298,565	May 13	755	213	27	678
Floor-mat	D. Ham	298,300	May 6	440	{118 119	27	610
Flooring	J. M. Case	297,757	Apr. 29	2380	648	27	471
Flour. Apparatus for manufacturing	N. W. Holt	299,790	June 3	369	95	27	991
Flour-bolt	A. Heine	299,784	June 3	362	93	27	989
Flour-bolt. Centrifugal	J. M. Case	297,758	Apr. 29	2382	649	27	471
Flour-bolts. Atmospheric elevator for	G. C. F. P. Janssen	299,647	June 3	194	48	27	935
Flour-bolting machine	A. Hunter	300,371	June 17	1131	308	27	1149
Flour-dressing machine	W. Cochrane	300,219	June 10	922	248	27	1102
Flour from barrels into bags. Portable table for transferring	J. M. Case	297,760	Apr. 29	2385	650	27	472
Flour. Gradual-reduction machine for manufacturing	L. J. F. W. Scharbau	299,684	June 3	256	63	27	968
Flour, &c. Machine for bolting	J. B. Wheatley	298,259	May 6	387	102	27	599
Flour. Manufacturing	I. Morgan	299,245	May 27	1609	462	27	857
Flour-refiner	D. O. Martin	296,028	Apr. 1	165	47	27	34
Flower-pot	H. L. Day	297,972	May 6	12	4	27	529
Flue cap. Ventilating	W. G. Chapin	299,737	June 3	314	80	27	980
Fluid-meter	H. C. Weeden	298,805	May 20	1065	299	27	742
Flushing apparatus for closets and urinals	H. S. and L. Crooke	297,986	Apr. 1	115	34	27	24
Foil. Manufacture of ornamental metallic	H. Krog, Sr	296,020	Apr. 1	158	45	27	32
Folding box	L. Bush, Jr	298,065	May 6	130	33	27	551
Folding chair	J. S. MacKaye	300,617	June 17	1434	395	27	1204
Folding chair	P. H. E. Römer and M. P. Meissner	296,067	Apr. 1	208	60	27	42
Folding fabrics and inserting pressing-boards between the folds thereof. Machine for	I. L. Stone	299,875	June 3	461	121	27	1010
Folding seat for school-furniture	W. E. Eldred	300,234	June 10	938	253	27	1104
Folding table	J. McGrath	299,241	May 27	1605	460	27	856
Folding table	O. A. Thayer	296,430	May 13	601	170	27	648
Folding table	J. J. Brennan	297,966	May 6	6	3	27	528
Font and poor-box. Combined holy-water	E. L. O'Connor	299,158	May 27	1506	{432 433	27	836
Foot and shoe. Artificial	W. Carter	296,314	Apr. 8	534	149	27	107
Foot-covering	H. Field, Jr	298,566	May 13	757	213	27	678
Foot-power	F. H. Plummer	296,778	Apr. 15	1112	313	27	226
Foot-rest	J. F. Winchell	296,718	May 13	950	264	27	714
Forge	J. F. Winchell	299,448	May 27	1859	534	27	902
Forge	J. F. Winchell	297,901	Apr. 29	2538	695	27	502
Forge-hood	J. F. Winchell	296,366	Apr. 1	466	131	27	88
Forge-lever. Detachable	T. H. Bullock	297,494	Apr. 22	2016	551	27	397
Forge. Portable	R. H. Beach	298,055	May 6	116	30	27	549
Forging-machine	L. Chapman	300,445	June 17	1222	334	27	1165
Forgings. Manufacture of wrench	G. Pickhardt	298,232	May 6	356	94	27	594
Fork: *See* Hay-fork.							
Frame: *See* Net-frame. Screen-frame. Parasol-frame. Spectacle-frame. Printing and vignetting frame. Stacking-frame. Saw-frame. Umbrella and parasol frame.	M. F. Sacks	299,586	June 3	109	27	27	940
Frame for displaying goods	C. Brothers	300,761	June 24	1640	449	27	1246
Frames. Base for looking-glass	A. Watson	297,887	Apr. 29	2502	690	27	499
Freezer and refrigerator. Combined cream	H. Sells	296,633	Apr. 8	937	262	27	186
Friction-clamp	A. H. Palmerton	298,619	May 13	824	230	27	689
Frog. Wrecking	E. Cogswell	295,907	Apr. 1	18	5	27	6
Fruit-can	W. A. Meeker	300,995	June 24	1900	{525 526	27	1296
Fruit-drier	J. B. Sweetland	298,713	May 13	942	262	27	713
Fruit-drier	J. N. Parker	300,118	June 10	781	{209 210	27	1077
Fruit-drier. Portable	R. F. Petree	300,121	June 10	785	210	27	1078
Fruit-drier. Portable	A. M. Jervis	299,986	June 10	609	{164 165	27	1046
Fruit-evaporator	A. Hibbe	300,608	June 17	1421	391	27	1202
Fruit-harvesting device	P. Lyon and J. H. Bossard	297,082	Apr. 15	1483	410	27	294
Fruit-jar	A. F. Wilson	299,044	May 20	1364	388	27	799
Fruit-jar cover	P. Lyon and J. H. Bossard	296,701	Apr. 8	1015	284	27	202
Fruit-jar-cover fastening	E. F. Poland	299,676	June 3	246	61	27	966
Fruit-jar stopper	F. C. Felcker, Jr	300,858	June 24	1753	478	27	1267
Fruit-knife and nut-pick. Combined	J. A. Bottomley	296,514	Apr. 8	785	216	27	156
Fruit-picker	J. S. Spraker	300,152	June 10	898	224	27	1085
Fruit-picker	H. H. Stone	298,644	Apr. 8	949	267	27	189
Fruit-picker	D. Lille	299,615	June 3	397	{101 102	27	996
Fruit-press	E. Bender	298,339	May 13	500	136	27	630
Frying-utensil	C. B. Shafer	299,170	May 27	1521	436	27	839
Funnel	J. W. Bolton	299,513	June 3	12	5	27	923
Funnel. Liquor							

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Furnace: *See* Blast-furnace. Metallurgical gas-furnace. Boiler-furnace. Portable furnace. Cupola-furnace. Puddling-furnace. Evaporator-furnace. Puddling and heating furnace. Glass-furnace. Regenerative furnace. Glass-melting furnace. Regenerator-furnace. Heating-furnace. Skelp-heating furnace. Hot-air furnace. Smelting-furnace. Hot-air and steam generating furnace. Smoke-preventing furnace. Incinerating-furnace. Steel-melting furnace. Locomotive-furnace. Superheating-furnace. Metallurgic furnace. Warm-air furnace.							
Furnace	J. P. Cotiart	297,708	Apr. 29	2395	653 654	27	474
Furnace	M. A. Foster	300,703	June 17	1566	429 430	27	1228
Furnace	L. P. French	299,974	June 10	590	158	27	1042
Furnace	H. W. Peaslee	300,635	June 17	1461	403	27	1210
Furnace	J. A. Topliff, E. S. Cross, W. S. Cox, and J. A. McCollum.	299,881	June 3	470	123	27	1011
Furnace	O. Wilson	298,534	May 13	719	203 204	27	671
Furnace-door	L. F. Johnson	297,808	Apr. 29	2434	665	27	482
Furnace for the manufacture of metals direct from the ore.	J. A. Stearns	298,426	May 13	596	168	27	648
Furnace-grate	E. Breslauer	299,616	June 3	149	36	27	947
Furnace-grate	O. H. Jewell and W. M. Mathisen	298,093	May 6	163	42	27	558
Furnace-grate	T. Kirkwood	299,146	May 27	1494	429	27	835
Furnace-grate bar	J. Cairns	300,209	June 10	913	245	27	1100
Furnaces. Apparatus for feeding fuel to and in	T., Sr., J., Sr., T., Jr., and J. Vicars, Jr.	296,301	Apr. 1	516	143 144	27	97
Furnaces. Apparatus for feeding shavings to	J. B. Mahaffey	300,990	June 24	1905	524	27	1295
Furnaces. Feeding air to	S. Smith	300,150	June 10	826	224	27	1065
Furnaces. Feeding air to locomotive	J. N. Weaver	299,705	June 3	280	69	27	973
Furnaces. Smoke-burning attachment for	W. A. Porter and W. Heston	297,845	Apr. 29	2474	677	27	490
Furniture	P. L. Shepler	299,588	June 3	111	27, 28	27	940
Furniture. Knockdown	J. B. Brolaski	298,821	May 20	1084	303 304	27	745
Gage: *See* Carpenter's gage. Railway-track gage. Compressible gage. Saw-table gage. Double-headed gage. Weather-board gage. Miter-gage.							
Gage	C. B. Osborn	299,843	June 3	427	110	27	1003
Galvanic battery	C. L. Clarke	298,175	May 6	268	69	27	577
Galvanic battery	H. Thame	296,365	Apr. 8	598	.....	27	119
Galvanic element	W. Wenzel	300,176	June 10	863	233	27	1092
Game	R. B. B. Foote	298,192	May 6	299	75	27	580
Game	A. C. Rex	296,352	Apr. 8	583	162	27	116
Game	B. S. Wheeler	296,900	Apr. 15	1270	353	27	254
Game-board	J. M. Lewis	298,992	May 20	1259	367	27	785
Game-board	L. P. Vallignet	297,475	Apr. 22	1994	545	27	393
Game-board, dice-box, &c	A. A. Jackson	296,012	Apr. 1	149	43	27	31
Game-board for producing magic squares, playing checkers, &c.	J. D. Van Bibber	300,534	June 17	1398	364	27	1186
Game-counter	F. Dayton	298,835	May 20	1102	308	27	749
Game-table	F. R. De Foy	296,280	Apr. 1	486	136	27	92
Gangway for ships	T. I. Knight	298,212	May 6	324	84, 85	27	587
Garbage-receptacle	V. Borst	300,685	June 17	1536	423	27	1224
Garment-clasp	M. P. Bray	299,725	June 3	301	74	27	977
Garment-clasp	M. P. Bray	299,726	June 3	302	75	27	977
Garment-clasp	J. C. Hyde	297,803	Apr. 29	2431	664	27	481
Garment-clasp	J. C. Hyde	297,804	Apr. 29	2432	664	27	481
Garment-clasp	C. C. Shelby	298,031	May 6	91	24	27	544
Garment-supporter	E. Methot	300,997	June 24	1914	527	27	1227
Garter	C. F. and W. J. Walters	300,922	June 24	1830	501	27	1282
Garter-clasp	P. Kalish	297,080	Apr. 15	1482	410	27	203
Gas and lamp bracket	H. P. Drew	300,583	June 17	1386	382 383	27	1196
Gas and lamp bracket	H. P. Drew	300,584	June 17	1387	383	27	1196
Gas apparatus	J. M. Bois	300,757	June 24	1629	447	27	1245
Gas. Apparatus for generating and carbureting hydrogen	L. S. Groves	298,462	May 13	640	182	27	655
Gas. Apparatus for manufacturing illuminating	A. O. Granger	297,968	May 6	30	9	27	588
Gas. Apparatus for the manufacture of	H. M. Pierson	297,444	Apr. 22	1957	535	27	386
Gas. Apparatus for the manufacture of hydrocarbon	W. F. M. McCarty	296,201	Apr. 1	372	106	27	71
Gas as a fuel. Method of using natural	A. Schaefer	297,638	Apr. 29	2227	605 606	27	442
Gas-burner	A. B. Lipsey	298,215	May 6	328	86	27	588
Gas-burner	A. B. Lipsey	298,868	May 20	1139	320	27	756
Gas-burner	A. B. Lipsey	299,660	June 3	208	54	27	959
Gas-burner	A. B. Lipsey	300,988	June 24	1901	523	27	1295
Gas-burner. Cut-off	A. C. Austin	298,032	May 6	113	29	27	548
Gas-burner for heating and lighting rooms	B. F. Enoch	296,320	Apr. 8	543	152	27	108
Gas by electricity. Apparatus for lighting	L. S. White	298,531	May 13	715	202 203	27	671
Gas-engine	E. Edwards	300,453	June 17	1230	337	27	1167
Gas-engine	H. S. Maxim	296,340	Apr. 8	568	158 159	27	113

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gas-engine	F. W. Rachbols	301,009	June 24	1935	534 535	27	1301
Gas-engine	S. L. Wiegand	297,399	Apr. 22	1806	491	27	356
Gas-engine	J. S. Wood	300,294	June 10	1026	277	27	1120
Gas-engine	H. S. Maxim	296,341	Apr. 8	571	159	27	114
Gas-engines. Electrical igniting device for	J. Evans	296,398	Apr. 8	644	177	27	127
Gas-furnace pipes. Brick nozzle for	G. Jones	296,289	Apr. 1	499	140	27	94
Gas. Generating	H. Pratt and J. J. Ryan	297,162	Apr. 22	1598	439	27	318
Gas. Generating	L. C. Beebe	298,057	May 6	120	30	27	550
Gas-generator	P. English	299,919	June 3	513	136	27	1019
Gas-generator	G. Jones	296,290	Apr. 1	502	140	27	94
Gas-generator	L. W. Puffer	300,008	June 10	639	174	27	1051
Gas generator. Carbonic-acid	J. S. Connelly	297,113	Apr. 22	1539	425	27	308
Gas-governor	J. D. Averell	296,664	Apr. 8	974	273	27	194
Gas-governor. Mercury	A. P. Southwick. (Reissue)	10,490	June 17	1619	444	27	1236
Gas. Manufacture of illuminating	W. F. M. McCarty	296,200	Apr. 1	370	105 106	27	71
Gas. Manufacturing hydrocarbon	W. C. Parkinson	299,418	May 27	1826	525	27	897
Gas-meters and low-pressure water-meters. Revolving drum for	N. H. Thompson and H. C. Swan	300,661	June 17	1500	414 415	27	1217
Gas-motor engine	C. M. Lungren	300,879	June 24	1780	485	27	1272
Gas or oil burner	A. I. Ambler	300,734	June 24	1622	455 456	27	1243
Gas or vapor from liquid hydrocarbons. Apparatus for generating	G. A., Sr., and G. A. Hyde, Jr	297,692	Apr. 29	2301	626	27	456
Gas-pressure regulator	J. Hanlon	300,466	June 17	1247	341 342	27	1170
Gas. Process of and apparatus for manufacturing	J. L. Stewart	300,330	June 10	1065	289 290 291	27	1127
Gas. Process of and apparatus for manufacturing	J. L. Stewart	300,331	June 10	1069	291	27	1128
Gas. Process of and apparatus for manufacturing illuminating	S. C. Salisbury	300,802	June 24	1683	460	27	1253
Gas. Process of and apparatus for manufacturing illuminating	S. C. Salisbury	300,803	June 24	1685	461	27	1254
Gas. Process of and apparatus for producing heating	H. Haug	299,385	May 27	1779	512	27	888
Gas-purifier and method of revivifying iron sponge	O. H. Shiras	299,589	June 3	113	28	27	940
Gas-regulator	D. Chambers	299,620	June 3	153	38	27	948
Gas-regulator	C. S. King	299,801	June 3	381	97	27	994
Gas-tube connection	S. Barr	299,720	June 3	294	73	27	975
Gasometer for washing carbonic-acid gas	R. F. Scannell	300,018	June 10	652	178	27	1054
Gate: *See* Bridge-gate. Flood-gate. Elevator-gate. Railway-gate. End-gate. Sliding gate. Farm-gate.							
Gate	J. Austin and R. Chamberlain	299,451	May 27	1862	535	27	903
Gate	R. F. Baughn	297,055	Apr. 15	1455	403	27	288
Gate	J. G. Calhoun	300,444	June 17	1221	334	27	1165
Gate	M. W. Foster	298,676	May 6	143	36	27	554
Gate	B. F. Harrell	300,603	June 17	1413	389	27	1201
Gate	A. D. Mack	298,103	May 6	174	45	27	560
Gate	A. F. Purefoy	299,581	June 3	100	25, 26	27	938
Gate	A. H. Staring	298,037	May 6	98	25	27	545
Gate	E. E. Tope	296,648	Apr. 8	953	268	27	190
Gate	J. H. Brafford	296,516	Apr. 8	787	217	27	156
Gate hanging and operating apparatus	A. W. Chilcott	296,528	Apr. 8	803	221	27	159
Gate opening and closing apparatus	P. Giovannini	295,998	Apr. 1	173	39	27	27
Gate or valve	J. B. West	296,491	Apr. 8	756	208	27	149
Gear. Differential	F. Jenkin	297,407	Apr. 22	1907	518 519 520 521 522	27	377
Gear. Driving	E. T. Robb and A. W. Schleicher	299,013	May 20	1316	376	27	791
Gearing	J. J. Rymal	300,801	June 24	1681	460	27	1253
Gearing. Arron	G. N. Clapp	295,906	Apr. 1	17	5	27	6
Gearing. Differential	R. Lavery	298,697	May 13	926	257	27	709
Gem-setting	D. F. Adams	299,500	June 3	1	1	27	921
Gem-setting	J. H. Shoemaker	296,234	Apr. 1	420	117	27	80
Gem-settings. Machine for making	C. I. Loveren	297,611	Apr. 29	2186	596	27	435
Generator: *See* Gas-generator. Steam-generator.							
Girth. Harness	J. McGuire	299,995	June 10	620	167	27	1048
Glass. Apparatus for applying powdered substances to surfaces of	H. Schulze-Berge	296,228	Apr. 1	410	113	27	78
Glass articles. Ornamenting	A. Weyer	298,145	May 6	230	60	27	570
Glass baskets. Manufacture of	J. Hoare	296,601	Apr. 8	1005	281	27	200
Glass bottles and vessels for containing fire-extinguishing compounds. Manufacture of	T. B. Atterbury	299,318	May 27	1697	487	27	873
Glass bricks. Manufacture of	F. H. Shaw	298,418	May 13	589	166	27	646
Glass. Flatting and annealing oven for	T. A. Zellers	298,332	May 6	483	131 132	27	618
Glass funnel and mold therefor. Ribbed	J. K. Brown	300,691	June 17	1549	425	27	1226
Glass-furnace	J. Dalzell	297,114	Apr. 22	1541	425	27	308
Glass in imitation of frosting. Ornamentation of	D. F. Brown	299,516	June 3	10	.....	27	924
Glass jewels. Manufacture of	H. C. Luther	300,381	June 17	1142	312	27	1151
Glass lamps and lamp-founts. Mold for the manufacture of	J. F. Miller	297,430	Apr. 22	1937	528	27	382
Glass-melting furnace	H. Schulze-Berge	296,227	Apr. 1	407	114	27	78
Glass-mold	E. Herckner	297,077	Apr. 15	1479	409	27	293
Glass-mold	E. Herckner	297,078	Apr. 15	1480	409	27	293
Glass-mold and the product thereof	W. H. Brunt	297,062	Apr. 15	1462	404	27	289
Glass-pot	W. T. Otto and J. H. Fox	296,772	May 20	1022	286	27	734

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Glass-press	L. Fischer	297,500	Apr. 29	2165	501	27	431
Glass signs and labels. Gilding	C. E. Koken	299,148	May 27	1495	430	27	835
Glassware. Machinery for decorating	H. Schulze-Berge	296,224	Apr. 1	400	113	27	77
Glove-fastener	G. W. Prentice	297,950	Apr. 29	2604	714	27	515
Glove-fastener	W. S. Richardson	300,510	June 17	1301	357	27	1181
Glove-fastening	W. F. Foster	297,980	May 6	21	6	27	531
Glove-fastening	W. S. Richardson	300,508	June 17	1298	356	27	1180
Gloves, &c. Fastening for	W. S. Richardson	300,509	June 17	1300	357	27	1181
Gloves, shoes, &c. Fastener for	W. L. Enegren	295,914	Apr. 1	25	7	27	7
Glucose. Manufacture of	L. Barbier	299,900	June 3	490	129	27	1015
Gold and silver from their ores. Process of and apparatus for extracting	C. P. Bonnett	298,663	May 13	877	245, 246	27	699
Gold, silver, and copper ores. Roasting and disintegrating	D. W. Birmingham	296,116	Apr. 1	267	.....	27	53
Governor	R. W. and J. W. Gardner	300,705	June 17	1569	430	27	1229
Governor for steam-engines. Electrical	E. H. Amet	300,338	June 17	1085	296	27	1142
Governor. Marine-engine	A. H. Bell and A. Fuller	297,343	Apr. 22	1835	499	27	363
Grain-binder	J. F. Appleby	295,970	Apr. 1	89	27, 28	27	20
Grain-binder cord-holder	R. W. Masko	297,144	Apr. 22	1577	433, 434	27	315
Grain-binder knot-tying mechanism	C. M. Richardson and J. S. Gibbs	300,009	June 10	642	174, 175, 176	27	1051
Grain-binders. Bundle-carrier for	W. Collins	298,449	May 13	621	176, 177	27	652
Grain brushing and scouring machine	L. Gathmann	297,782	Apr. 29	2408	658	27	476
Grain crusher and disintegrator	J. A. Jones	296,838	Apr. 15	1187	333	27	239
Grain-drill	J. L. Ashurst	297,961	May 6	2	1	27	527
Grain-drill	T. Becker	297,498	Apr. 22	2010	549	27	396
Grain-drill	C. F. Kulp	299,405	May 27	1812	521	27	994
Grain-drill	A. L. Reese	300,129	June 10	795	214	27	1060
Grain-drill force-feed	J. H. Keedy	298,390	May 13	560	154	27	640
Grain-drying machine	B. S. Cullen	299,204	May 27	1502	449	27	848
Grain header and harvester	P. E. Dronet	297,510	Apr. 22	2046	559	27	401
Grain-meter. Automatic	G. Marsh and V. Arnold	297,614	Apr. 29	2190	597	27	435
Grain-mixing machine	J. L. Sheppard	298,904	May 20	1185	333, 334	27	766
Grain. Reducing lobated	L. Gathmann	299,375	May 27	1767	.....	27	886
Grain reduction and separating machine	J. M. Case	297,761	Apr. 29	2396	651	27	472
Grain-scourer	G. A. Dawson	297,353	Apr. 22	1847	502	27	365
Grain separating, sorting, and grading machine	W. E. Wild	299,446	May 27	1856	533, 534	27	902
Grain-separator	E. Huber and F. Strobel	298,302	May 6	443	119	27	611
Grain-separator	C. E. McNeal	300,021	June 17	1440	397	27	1206
Graining compound	W. H. Dow	300,350	June 17	1103	.....	27	1145
Grapple	F. Bowden	296,666	Apr. 8	976	273	27	194
Grate	L. Bannister	297,340	Apr. 22	1830	497, 498	27	362
Grate	C. H. Fisher	300,059	June 10	702	191	27	1003
Grate	T. Kirkwood	299,147	May 27	1404	429	27	835
Grate	J. T. Snyder	300,522	June 17	1311	360	27	1183
Grate-bar	S. Smith	298,494	May 13	593	167	27	647
Grate. Fire	G. Alexis-Godillot	297,548	Apr. 22	2096	572, 573	27	412
Grate for burning sawdust	M. J. Lyons	299,485	May 27	1904	548	27	911
Griddle. Cake	J. V. Taylor	300,409	June 17	1477	422	27	1157
Grinding and polishing machine	E. R. Ware	296,656	Apr. 8	964	270	27	192
Grinding chisels or tools of various kinds. Machinery for	J. Birkenhead	295,900	Apr. 1	9	3	27	5
Grinding cutter-knives. Machine for	L. Bush, Jr	297,565	Apr. 29	2128	581, 582	27	424
Grinding diamonds, &c. Machine for dressing the faces of wheels for	I. Hermann	299,642	June 3	181	45	27	954
Grinding-mill	C. C. Barner	299,340	May 27	1727	495	27	878
Grinding-mill	J. M. Case	297,756	Apr. 29	2378	648	27	471
Grinding-mill	G. K. Smith	297,024	Apr. 15	1419	390, 391	27	281
Grinding-mill	A. L. Teetor	300,530	June 17	1321	363	27	1185
Grinding-mill	J. F. Winchell	297,049	Apr. 15	1447	400	27	287
Grinding-mill. Portable	R. Waak and C. Jagusch	301,020	June 24	1948	538	27	1301
Grindstone attachment	W. Chalmers	300,845	June 24	1738	475	27	1264
Grindstone-hangings	F. M. Stearns	299,870	June 3	457	119	27	1009
Grindstone-shaft	A. F. Weaver	298,046	May 6	107	28	27	547
Grindstones. Knockdown frame for	F. M. Stearns	297,466	Apr. 22	1984	542	27	391
Gripper mechanism for bronzing-machines, &c.	A. T. Anderson	297,739	Apr. 29	2358	641	27	467
Guard: *See* Car-door guard. Railway foot-guard. Cutter-head guard. Saw-guard. Elevator-guard. Switch-guard. Hatchway-guard. Window-guard.							
Guitar	J. C. Cooke	295,984	Apr. 1	111	34	27	23
Gun-locks by recoil. Mechanism for operating	H. S. Maxim	297,278	Apr. 22	1747	475	27	346
Gun. Machine	T. Nordenfelt	298,493	May 13	676	191, 192	27	602
Gun. Machine	C. R. Scott	299,696	June 3	258	64	27	968
Gun. Magazine	F. J. Evans	300,856	June 24	1751	478	27	1266
Gun. Magazine	L. L. Hepburn	298,377	May 13	542	148, 149	27	637
Gun. Magazine	C. M. Spencer and R. Rhodes	299,282	May 27	1650	474	27	864
Guns. Rifling	A. Schneider	300,515	June 17	1306	358	27	1182
Gynecological and surgeon's operating-table	J. D. Alexander	300,337	June 17	1084	295	27	1141
Gynecological chair	M. M. Copp	299,520	June 3	20	6	27	924
Hair-crimper	G. H. Blakesley	297,911	Apr. 29	2552	609	27	505
Hair-front	S. C. Beck	300,938	June 24	1847	506	27	1285

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Halter	E. Barnard	297,963	May 6	4	2	27	528
Halter	C. R. Robinson	297,850	Apr. 29	2479	679	27	491
Halter-fastener	M. C. Hayes	297,259	Apr. 22	1730	469	27	343
Halter or tie for animals	M. Sweet	299,179	May 27	1532	439	27	841
Halter-strap fastening	J. Gibbons	297,983	May 6	24	7	27	532
Halter-trimming	J. Gibbons	300,461	June 17	1244	340	27	1169
Hame	A. Boening	300,838	June 24	1732	473	27	1262
Hame	L. E. Jones	300,712	June 17	1576	432	27	1230
Hame	J. F. Knorr	295,924	Apr. 1	40	11	27	10
Hame	J. P. Quinette	297,846	Apr. 29	2475	678	27	490
Hame	E. E. Winstead	296,497	Apr. 8	764	210	27	151
Hame	O. P. Letchworth	296,193	Apr. 1	359	103	27	69
Hame attachment	E. D. Cole	296,530	Apr. 8	805	222	27	160
Hame-clip	C. W. Massenheimer	297,277	Apr. 22	1746	474	27	345
Hame-clip	O. E. Baker	298,814	May 20	1077	302	27	744
Hame-fastener	M. A. R. Wycough	297,958	Apr. 29	2613	716	27	517
Hame for harness. Adjustable	J. Toerper and F. Krein	299,880	June 3	469	123	27	1011
Hame-staple	J. H. Baker	297,659	Apr. 29	2251	613	27	447
Hammer. Forge	G. S. Yingling, A. L. Flack, and H. T. Heller.	298,649	May 13	858	240	27	695
Hammer. Tack	G. S. Yingling, A. L. Flack, and H. T. Heller.	298,650	May 13	858	241	27	696
Hammers. Nail-heading attachment for	G. F. Barber	299,717	June 3	291	72	27	975
Hammock selvage	A. O. Rood	296,459	Apr. 8	710	196	27	140
Hammock-support	G. E. Sutphen	298,515	May 13	699	198	27	666
Hammocks. Making	A. O. Rood	296,460	Apr. 8	710	196, 197	27	141
Hammocks. Making	A. O. Rood	296,627	Apr. 8	930	260	27	185
Hand and foot power	O. E. Jones	300,084	June 10	735	199	27	1069
Hand-drill	I. M. Furbish	298,457	May 13	631	180	27	654
Hand-grip tester	M. J. Hinden	300,473	June 17	1257	344	27	1172
Handle: *See* Anger-handle. Saw-handle. Bicycle-handle. Tool-handle. Pocket-knife handle. Traveling-bag handle. Pump-handle.							
Handle-attaching device for tools	J. R. Hood	295,922	Apr. 1	37	11	27	10
Hanger: *See* Clothes-hanger. Shade-hanger. Door-hanger. Shade-roller hanger. Eaves-trough hanger. Shaft-hanger.							
Harness	C. Allen and W. E. Dubbs	300,751	June 24	1623	445	27	1243
Harness	J. B. Gathright	300,358	June 17	1113	302	27	1147
Harness	C. Kifer	298,500	May 13	787	221	27	683
Harness	J. M. Porter	297,003	Apr. 15	1389	384	27	276
Harness. Breast-collar for	L. H. Hillis	299,141	May 27	1488	427	27	834
Harness checking device	T. B. Floyd and H. L. Barton	297,369	Apr. 22	1866	507	27	368
Harness-crupper	F. J. Ingrish	299,793	June 3	373	95	27	909
Harness-fitting	J. C. Covert	299,354	May 27	1746	503	27	882
Harness. Hip-strap loop for	A. Karras	298,589	May 13	787	221	27	683
Harness-loop machine	P. Landfrit	299,406	May 27	1813	521	27	894
Harness-loop stick	H. H. Baker, Jr	300,298	June 10	2031	278	27	1121
Harness-pad	H. C. Babcock	297,486	Apr. 22	2008	548	27	396
Harness-pad	J. C. Harpham	296,748	Apr. 15	1078	304	27	220
Harness-pad	C. W. Rogers	297,011	Apr. 15	1400	396	27	278
Harness-pad	T. A. Simmons	298,246	May 6	372	98	27	506
Harness-pad	E. A. Cooper	296,140	Apr. 1	295	85	27	58
Harness-pad tree	R. W. Jones	296,178	Apr. 1	337	96	27	66
Harness-rosette	K. Mackay and T. C. Dunn	298,104	May 6	175	46	27	560
Harness. Swiveling loop-iron for	J. F. Muns and C. Molno	297,084	Apr. 15	1486	411	27	294
Harrow	H. H. Sater	300,017	June 10	651	178	27	1053
Harrow	H. M. Sherwood	295,950	Apr. 1	66	20	27	16
Harrow	J. Underwood	300,291	June 10	1023	276	27	1120
Harrow and cultivator	G. H. Johnson	298,858	May 20	1126	317	27	753
Harrow and scraper. Cultivating	W. R. Craig	296,732	Apr. 15	1057	298	27	216
Harrow. Disk	F. Bramer	297,666	Apr. 29	2361	615	27	448
Harrow. Disk	G. G. Crowley	299,057	May 20	1375	392	27	801
Harrow. Disk	G. G. Crowley	300,697	June 17	1556	427	27	1227
Harrow. Rotary	D. Manuel	298,008	May 6	59	15	27	539
Harrow. Rotary sulky	W. H. Southward	300,151	June 10	827	224	27	1085
Harrow. Wheel	E. F. Stoddard	298,911	May 20	1194	336, 337	27	768
Harvester	R. V. Boice	299,106	May 27	1444	412	27	825
Harvester	D. W. Bovee	296,120	Apr. 1	271	77, 78	27	54
Harvester	W. Dingman	297,357	Apr. 22	1850	503	27	365
Harvester	H. A. Howe	298,854	May 20	1123	316	27	753
Harvester	L. Miller	299,244	May 27	1607	461, 462	27	857
Harvester	J. R. Severance	296,231	Apr. 1	414	116	27	79
Harvester	W. N. Whiteley	297,545	Apr. 22	2091	570	27	411
Harvester chain rake	H. Kettering	300,067	June 10	737	199	27	1070
Harvester. Corn	S. C. Kenaga	299,401	May 27	1804	519, 520	27	893
Harvester. Corn	S. F. Mouck	300,000	June 10	625	170	27	1049
Harvester. Corn	S. F. Weaver	299,303	May 27	1683	483	27	870
Harvester. Cotton	W. J. Powell	296,449	Apr. 8	701	192, 193	27	139
Harvester. Cotton	B. O. Savage	300,739	June 17	1604	440	27	1234
Harvester-cutters. Mechanism for driving	A. M. Dungan and M. Lacrone	296,150	Apr. 1	306	88	27	59
Harvester gavel-deliverer	A. Miller	299,667	June 3	232	57, 58	27	964
Harvester grain-conveyer	J. F. Gordon	300,247	June 10	957	258	27	1108
Harvester grain-wheel	W. N. Whiteley	297,544	Apr. 22	2090	569	27	411
Harvester-knives. Machine for grinding	J. J. Wood, Sr., and F. Christen	300,183	June 10	875	235	27	1093
Harvester pitman-coupling	J. Waggonner	297,882	Apr. 29	2516	688	27	498

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Harvester-reel	G. T. and D. Murray	299,247	May 27	1611	463	27	857
Harvesters and binders. Grain-conveyer for	J. D. Nix	298,614	May 13	816	229	27	668
Harvesters. Grain-delivering apparatus for	J. R. Severance	297,723	Apr. 29	2330	636	27	464
Harvesting machine. Grain-	E. Barnhard and A. F. Thomas	298,054	May 6	115	29	27	549
Harvesting machine. Grain-	J. Knoop	296,843	Apr. 15	1199	334 and 335	27	240
Hasp-lock	G. Crouch	295,967	Apr. 1	116	34	27	24
Hasp-lock	T. S. E. Dixon	295,912	Apr. 1	21	6	27	7
Hasp-lock	D. H. Donaldson	297,117	Apr. 22	1544	426	27	309
Hasp-lock	W. Fry	298,965	May 20	1265	300	27	780
Hat and coat hook	F. Seliger	297,173	Apr. 22	1608	442	27	321
Hat-binding ring	R. Eickemeyer	296,282	Apr. 1	488	136	27	92
Hat-bodies. Method of and machine for scalding and felting	J. S. Taylor	297,471	Apr. 22	1989	543	27	302
Hat-body-rounding machine	A. T. Sturdevant	296,795	May 20	1052	294 and 295	27	739
Hat-brim-shaping apparatus	L. H. Hoyt	299,644	June 3	187	47	27	954
Hat-brims. Wire frame for	G. B. Sherman and J. Nutt	299,279	May 27	1648	473	27	864
Hat or bonnet	J. Haegen	296,357	Apr. 8	845	225	27	168
Hat-roll-pressing machine	C. W. Gilman and R. Welker	297,984	May 6	25	7	27	532
Hat-rounding machine	J. Wenstrom	298,643	May 13	847	236 and 237	27	694
Hat-sweat	G. S. Bracher	296,918	Apr. 15	1291	358	27	258
Hat-sweat reed	G. S. Bracher	296,919	Apr. 15	1293	.....	27	258
Hat-tip	J. F. Newton, Jr	296,438	Apr. 8	686	189	27	136
Hat-ventilator. Adjustable	W. M. Protheroe	297,715	Apr. 29	2327	633	27	462
Hat-wires. Machine for bending	G. B. Sherman and J. Nutt	299,278	May 27	1643	471, 472, and 473	27	863
Hats and other fabrics. Machine for felting and sizing	R. S. Judson and C. M. Ackerman	296,415	Apr. 8	662	183	27	130
Hatchet	A. C. Rex	297,716	Apr. 29	2329	633	27	462
Hatching eggs by artificial heat. Apparatus for	C. E. Hearson	298,579	May 13	775	217	27	681
Hatchway-gate for elevators	L. Hixson	299,473	May 27	1889	544	27	907
Hatchway-guard	J. Scherer	300,138	June 10	813	219 and 220	27	1062
Hay and grain elevator	J. G. Livingston	296,856	Apr. 15	1210	339	27	243
Hay and grain rack	W. H. Lintz	298,195	Apr. 1	363	104	27	70
Hay and other elevators	C. S. Ambruster	295,893	Apr. 1	1	1	27	3
Hay-binder for wagon-racks	J. Madison	299,817	June 3	399	102	27	997
Hay-carrier	A. J. Burbank	300,208	June 10	912	245	27	1099
Hay-carrier	C. A. Gutenkunst	296,745	Apr. 15	1074	303	27	219
Hay-carrier	E. Woodward	301,036	June 24	1068	543	27	1307
Hay-carrier	W. I. Wooster and J. N. Reynolds	298,809	May 20	1070	300	27	743
Hay-carriers. Adjustable stop for	W. Gntenkunst	296,746	Apr. 15	1075	303	27	219
Hay-carriers. Elevator-power for	J. S. Grabill	296,950	Apr. 15	1325	368	27	264
Hay elevator and carrier	J. M. Boyd	300,667	June 17	1538	423	27	1294
Hay elevator and carrier	A. H. and A. E. King	299,800	June 3	380	97	27	993
Hay-fork	S. S. Wilson	297,900	Apr. 29	2537	694	27	502
Hay-fork. Horse	J. S. Gochnauer	298,574	May 13	769	216	27	680
Hay-fork. Horse	A. J. Nellis	296,769	May 20	1017	284 and 285	27	734
Hay-knife	L. O. Allen	296,304	Apr. 8	523	147	27	105
Hay-knife	W. H. Carter	297,753	Apr. 29	2375	647	27	470
Hay-loader	J. W. and V. W. Macy	296,591	Apr. 8	887	245 and 246	27	176
Hay-presa	T. D. Aylsworth	296,267	Apr. 1	467	131	27	88
Hay-rack	C. A. Peasley and I. F. Dodge	297,842	Apr. 29	2471	677	27	489
Hay-rake. Horse	H. Gale	299,773	June 3	352	90	27	987
Hay-rake. Horse	D. W. Long	295,928	Apr. 1	43	13	27	11
Hay-rake. Horse	G. H. Smith and J. Kienardt	299,430	May 27	1837	528	27	899
Hay-rakes. Trip mechanism for horse	W. M. Saunders	299,423	May 27	1830	536	27	897
Hay-ricking device	R. O. Davis	297,234	Apr. 22	1699	461	27	336
Hay-shears	W. Millspaugh	296,036	Apr. 1	173	50	27	36
Hay-stacker	J. M. Coe	300,955	June 24	1864	511	27	1288
Hay-stacker	W. Louden	298,218	May 6	333	87	27	589
Hay-stacker	J. B. Matlock	296,429	Apr. 8	669	185	27	132
Hay-stacker	W. G. McComas	296,032	Apr. 1	167	48, 49	27	34
Hay-stacker	J. J. Stephenson	298,909	May 20	1193	335 and 336	27	767
Hay-stacker	J. R. Wright	297,099	Apr. 15	1509	416	27	298
Head-comb	S. A. Tisdale	299,879	June 3	469	122	27	1011
Head-covering and making the same	A. B. Waring	296,371	Apr. 8	604	167	27	120
Head-covering or hood. Protective	A. Wienlewski	296,499	Apr. 8	766	210	27	152
Head-rest	H. E. Doren	300,233	June 10	936	253	27	1104
Head-rest	T. B. Elker	299,361	May 27	1752	504 and 505	27	883
Head-rest	F. H. Plummer	296,779	Apr. 15	1113	313	27	226
Header and thrasher	C. Grattan	300,067	June 10	710	193	27	1064
Header and thrasher. Combined	S. L. Gaines	297,127	Apr. 22	1556	429	27	311
Heat-regulator	W. S. Johnson	297,937	Apr. 29	2588	710	27	512
Heat-resisting casing	T. A. MacDonald	297,613	Apr. 29	2189	597	27	435
Heater: *See* Feed-water heater. Steam-heater. Soldering-iron heater.							
Heating and ventilating apparatus	P. W. Nolan	297,434	Apr. 22	1943	530	27	383
Heating and ventilating device for buildings	A. M. Hicks and A. Dishman	300,075	June 10	726	196	27	1067
Heating apparatus	D. M. Graham	297,129	Apr. 22	1559	430	27	312
Heating-furnace	J. Evans	296,399	Apr. 8	644	178	27	127
Heel-burnishing machine	I. Legay	298,484	May 13	666	188	27	666
Heel-machine	E. H. Parks	297,437	Apr. 22	1946	531 and 532	27	384
Heel-plate. Metallic	C. B. Wilson	299,645	May 20	1364	388	27	799
Heel-stiffener	E. Shaw and R. A. Owings	300,022	June 10	657	179	27	1054

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Heel-stiffener machine	A. H. Thompson	298,797	May 20	1054	295	27	740
Heel-stiffeners. Machine for shaping	G. F. Moore	299,996	June 10	620	167 and 168	27	1048
Heels. Die for making rubber	F. Richardson	296,454	Apr. 8	706	195	27	140
Hermetic jar	T. Hetzler	298,378	May 13	545	149	27	638
Hides and leather. Machine for wringing raw	A. Heim	297,260	Apr. 22	1731	470	27	343
Hilling and fertilizing machine	R. W. Allen	296,102	Apr. 1	249	73	27	50
Hinge	A. S. Blake	298,724	May 20	963	269	27	724
Hinge for mirrors	A. Jelinek	298,386	May 13	556	153	27	640
Hinge. Spring-	G. M. Lane	298,480	May 13	662	187	27	659
Hinge. Spring-	D. Nickel and C. Zattan	297,946	Apr. 29	2399	712	27	514
Hitching-block	F Gifford	296,739	Apr. 15	1064	300	27	217
Hitching device. Detachable	C. Marquardt	296,764	Apr. 15	1096	308	27	223
Hitching-strap	S. Birdsall	300,561	June 17	1363	375	27	1191
Hobby-horse	M. Bohlig	300,200	June 10	903	243	27	1098
Hoe	S. Watson	298,926	May 20	1213	342	27	771
Hoe. Wheel-	S. Fuller	298,296	May 6	435	117	27	609
Hoes. Machine for making	R. E. Breed	295,903	Apr. 1	13	4	27	5
Hoist. Chain-	C. A. Teal	296,364	Apr. 8	597	165 and 166	27	119
Hoister. Stone-	W. H. H. Cloppert	300,217	June 10	920	246	27	1101
Hoisting and conveying ground, minerals, &c. Apparatus for	P. H. McCauley	296,343	Apr. 8	574	160	27	114
Hoisting and conveying machine	A. E. Brown	300,689	June 17	1542	424	27	1225
Hoisting and conveying machine	A. E. Brown	300,690	June 17	1547	425	27	1225
Hoisting apparatus	J. H. Montgomery	296,433	Apr. 8	681	188	27	135
Hoisting apparatus	W. F. Murray	299,084	May 20	1411	402	27	808
Hoisting-bucket	G. H. Miller and C. Goyette	298,606	May 13	806	226	27	686
Hoisting device for vessels	R. H. Parnell	297,536	Apr. 22	2081	567	27	409
Hoisting-gear	I. and A. Scoville	300,142	June 10	819	221	27	1063
Hoisting-machine	J. and T. McNell	296,664	Apr. 15	1222	342	27	245
Holdback for pole-irons of wagons	W. D. Hatch	299,324	May 27	1778	512	27	888
Holdback-hook	C. L. Crowell	298,670	May 6	138	35	27	553
Holder: *See* Bag-holder. Bag and twine holder. Bill and poster holder. Bolt-holder. Bottle-holder. Broom-holder. Brush-holder. Button-hook holder. Card-holder. Cartridge-holder. Coin-holder. Copy-holder. Cover-holder. Crayon-holder. Cuff-holder. Dental-floss holder. Dry-plate holder. Eyeglass-holder. File-holder. Grain-binder cord-holder. Lamp-holder. Lead and crayon holder. Leaf-holder. Match-box holder. Mop and brush holder. Mucilage-holder. Paper-holder. Pen-holder. Pillow-sham holder. Plaque-holder. Pneumatic holder. Robe-holder. Sash-holder. Skid-holder. Spittoon-holder. Tag-holder. Tally-card holder. Ticket-holder. Tool-holder. Whip-holder. Wire-holder.							
Hominy-mill	M. L. Mowrer	299,834	June 3	418	108	27	1001
Hook: *See* Back-band hook. Brush-hook. Chain-hook. Check-hook. Chock-rein hook. Hat and coat hook. Holdback-hook. Ice-hook. Ladder-hook. Safety-hook. Sewing-machine hook. Siding-hook. Soap-hook. Swivel-hook. Whiffletree-hook.							
Hook	F. A. Smith, Jr.	298,510	May 13	695	196	27	666
Hoop: *See* Barrel-hoop.							
Hoop-bending machine. Metallic	M. Schlumm and P. Ackermann	300,140	June 10	816	220 and 221	27	1083
Hoop pointing and lapping machine	F. L. Wilson	296,496	Apr. 8	760	209 and 210	27	150
Hoop-skirt	L. H. Loomer	300,678	June 24	1780	485	27	1272
Hoop-splitting machine	I. Walborn	298,044	May 6	105	27	27	547
Horse attaching and detaching device	C. C. Ferrill	297,367	Apr. 22	1865	507	27	368
Horse-cleaner	E. M. Farr	297,365	Apr. 22	1863	506	27	367
Horse-cleaning machine	C. S. and E. A. Conde	298,352	May 13	515	140	27	632
Horse-detacher	D. D. Dantzler	296,142	Apr. 1	207	85	27	58
Horse-detacher	O. Dupas	300,056	June 10	698	190	27	1062
Horse-detacher	I. A. Wesson	297,205	Apr. 22	1602	452	27	330
Horse-detacher	H. Adkins	298,932	May 20	1222	346	27	772
Horse-power	J. Ellis	299,061	May 20	1380	393 and 394	27	802
Horse-power	D. Kaufman	300,610	June 17	1422	392	27	1203
Horse-power	J. T. McCarney	297,925	Apr. 29	2451	671	27	485
Horse-power	R. H. Tisdale	300,411	June 17	1179	323	27	1157
Horse-power	A. Zastrow	296,099	Apr. 1	245	72	27	50
Horse-power. Portable	H. Packer	297,289	Apr. 22	1759	478	27	348
Horse-power tread	N. Hoffman, H. Ellis, and S. Z. Schwenk	296,971	May 20	1270	362	27	781
Horse-rake	H. W. Getman	298,966	May 20	1266	360 and 361	27	781
Horse-tooth cutter	J. H. Dancer	298,556	May 13	743	210	27	676
Horses. Device for controlling runaway	D. J. Shay	299,174	May 27	1526	437	27	840

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Horses from cribbing. Device for preventing	J. O. Foster	297,777	Apr. 29	2404	656	27	476
Horses. Interfering-pad for	E. G. Miles	300,718	June 17	1561	434	27	1231
Horseshoe	H. Olson	296,996	Apr. 15	1362	362	27	274
Horseshoe	H. B. Schureman	298,299	May 20	1161	331	27	765
Horseshoe	G. E. Sprinkle	298,907	May 20	1191	335	27	767
Horseshoe-nail machine	J. Roy	296,461	Apr. 8	712	{197 198	27	141
Horseshoe. Spring-	D. Roberge, Jr.	300,899	June 24	1805	494	27	1277
Hose	J. Murphy	296,436	Apr. 8	684	189	27	135
Hose. Adjustable shelf for holding fire-	J. C. N. Gulbert and W. M. Andrus	296,372	May 13	537	147	27	636
Hose carriage. Garden-	G. Grisel	300,772	June 24	1651	452	27	1248
Hose-coupling	G. M. Van Riper and J. O. St. Clair	297,880	Apr. 29	2515	688	27	496
Hose-coupling	T. E. Wells	296,093	Apr. 1	299	70	27	48
Hose-coupling	A. Zoller	298,150	May 6	237	61	27	571
Hose. Fire-	G. A. Stuck	298,321	May 6	470	127	27	615
Hose-grapple	A. H. Green	297,788	Apr. 29	2416	660	27	478
Hose-pipe nozzle	J. E. Prunty	297,447	Apr. 22	1961	536	27	387
Hose-reel	H. L. Gardner	300,355	June 17	1110	301	27	1146
Hose. Seamless multiply-fabric	J. Schenck and B. L. Stowe	298,017	May 20	1320	377	27	792
Hose. Seamless multiply-fabric	J. Schenck and B. L. Stowe	299,018	May 20	1321	378	27	792
Hot-air and steam generating furnace	W. Pullinger	299,008	May 20	1308	{373 374	27	789
Hot-air engine	S. Wilcox. (Reissue)	10,486	June 3	550	{146 147	27	1026
Hot-air furnace	P. B. Clark	296,926	Apr. 15	1301	361	27	260
Hot-blast-oven valve	J. J. Spearman	300,329	June 10	1064	288	27	1127
Hot-water regulator. Automatic	W. S. and E. B. Clark	299,740	June 3	318	81	27	980
House. Portable	O. H. Smith	297,863	Apr. 29	2492	{682 683	27	493
Houses. Apparatus for moving	J. Hollingsworth	295,921	Apr. 1	35	10	27	9
Houses. Constructing frame	E. Totman	299,598	June 3	126	31	27	942
Household implement. Combined	F. E. Parsons	297,836	Apr. 29	2467	676	27	488
Hub	J. F. Packer	300,392	June 17	1156	317	27	1153
Hub-attaching device	G. H. Hombach	298,584	May 13	780	219	27	692
Hub. Vehicle-	J. Jonson	300,264	June 10	982	265	27	1113
Hub. Vehicle-	J. Monk	298,014	May 6	68	17	27	540
Hub. Vehicle-wheel	B. F. Jacobs	296,414	Apr. 8	661	183	27	130
Hub. Wheel-	J. P. Warner	298,525	May 13	707	200	27	669
Hydrant	J. Ward	300,925	June 24	1832	{501 502	27	1282
Hydrant and plug	J. W. Ramsey	300,282	June 10	1008	272	27	1117
Hydrant and street-washer	A. G. Daykin	298,355	May 13	519	141	27	633
Hydraulic elevator	E. B. Ellington	296,889	May 13	907	252	27	705
Hydraulic elevator	G. Q. McGown	299,930	June 3	527	140	27	1021
Hydraulic elevator	O. P. Rice	300,132	June 10	799	215	27	1080
Hydraulic jack	R. H. Dudgeon	297,975	May 6	15	5	27	530
Hydraulic motor	H. Baumotte	296,381	Apr. 8	624	{172 173	27	124
Hydraulic motor	R. Lenchaenring	298,102	May 6	172	45	27	550
Hydrogen-lighter	M. J. Hinden	301,057	June 24	1993	550	27	1311
Ice-chipping tool	H. Albrecht	296,501	Apr. 8	766	211	27	152
Ice-creeper	J. J. Temple	298,517	May 13	701	198	27	667
Ice-creeper	J. J. Temple	298,518	May 13	702	199	27	667
Ice-creeper	C. F. Woat	297,733	Apr. 29	2353	640	27	466
Ice-creeper and heel-plate combined	E. N. Porter	300,006	June 10	637	173	27	1051
Ice-hook	D. F. Burgess	296,126	Apr. 1	281	80	27	55
Ice-hook	J. W. Evenden	296,321	Apr. 8	544	152	27	109
Ice-making apparatus. Absorber for ammonia	M. S. Conly	297,502	Apr. 22	2038	556	27	400
Ice-making apparatus. Retort for ammonia	M. S. Conly	298,660	May 13	892	248	27	703
Ice. Manufacturing and storing	G. Norwood	296,600	Apr. 8	899	{348 349	27	178
Ice-plow	H. F. Dernell	297,236	Apr. 22	1700	462	27	337
Ice-plow	J. H. Knowles	298,213	May 6	326	85	27	587
Ice-tongs	J. S. Dollinger	297,237	Apr. 22	1701	462	27	337
Ice-tongs	M. Hatfield	297,393	Apr. 22	1892	514	27	373
Illuminating-burner	C. Clamond	297,767	Apr. 29	2393	653	27	473
Illuminator. Electric mouth-	E. T. Starr	300,524	June 17	1313	{360 361	27	1183
Incinerating-furnace	H. S. Firman	296,322	Apr. 8	545	152	27	109
Incubator	F. Humphreville	296,413	Apr. 8	660	{182 183	27	130
Incubator	J. Rankin	298,890	May 20	1172	327	27	762
Index	T. C. Brown	299,338	May 27	1726	495	27	878
Indicator: *See* Bill-of-fare indicator. Station-indicator. Speed-indicator. Time-indicator.							
Indicator-lock	F. A. Jillson	299,395	May 27	1796	{516 517	27	891
Induction. Controlling and limiting	S. F. Shelbourne	297,178	Apr. 22	1614	444	27	321
Inductorium	C. J. Van Depoele	298,431	May 13	602	170	27	648
Inhaler	J. N. Dodge	297,769	Apr. 29	2396	654	27	474
Inhaler	C. Warren	298,802	May 20	1069	297	27	741
Injector	W. T. Ewing	297,511	Apr. 22	2048	559	27	401
Injector	L. E. Hogue	297,798	Apr. 29	2426	663	27	480
Injector	F. W. Kremer	299,229	May 27	1589	457	27	853
Injector	F. W. Kremer	299,230	May 27	1591	457	27	853
Injector	J. Loftus	300,092	June 10	743	201	27	1071
Injector	W. R. Park	297,836	Apr. 29	2464	675	27	487
Injector	W. R. Park	298,884	May 20	1161	326	27	761
Injector	J. Reichmann	301,004	June 24	1925	531	27	1290
Injector and ejector	J. Wotapek	298,329	May 6	479	{129 130	27	617
Injector. Lifting feed-water	W. McElroy	297,826	Apr. 29	2452	{671 672	27	485

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Drg.	Vol.	Page.
Injector. Steam-boiler	W. W. Cowley	296,731	Apr. 15	1055	{297 298	27	216
Ink-well	J. H. Gifford	297,378	Apr. 22	1874	509	27	370
Inkstand	I. Brooke	299,730	June 3	307	77	27	978
Insect-powders. Ejector for	A. Isaacsen	297,693	Apr. 29	2303	626	27	457
Inspector. Fluid-	J. L. Hornig	298,409	May 13	649	184	27	657
Insulated conductor	T. Miner	296,294	Apr. 1	507	141	27	95
Insulated electric conductor or cable	S. F. Shelbourne	297,175	Apr. 22	1609	443	27	321
Insulated telegraph tie-wire	C. C. Hinsdale	298,753	May 20	1001	280	27	731
Insulating electric cables. Method of and apparatus for	S. F. Shelbourne	297,181	Apr. 22	1618	445	27	322
Insulating material	D. H. Dorsett	298,072	May 6	140	.....	27	553
Insulating pipe-union	C. Deavs	299,206	May 27	1564	440	27	848
Insulating-support for electric conductors	D. S. Haines and S. D. Lake	296,668	Apr. 8	1001	280	27	199
Insulating-supports for electrical conductors. Bracket for	D. S. Haines and S. D. Lake	296,558	Apr. 8	846	235	27	168
Insulator	J. S. Lewis	298,593	May 13	790	222	27	683
Insulator	J. A. Seely	296,881	Apr. 15	1242	347	27	248
Insulator for electric conductors	W. H. Davis	296,146	Apr. 1	301	87	27	50
Insulator for line-wires of mechanical telephones	J. F. Gilliland	296,330	Apr. 8	555	154	27	111
Insulator for telegraph-wires	L. C. Baldwin and J. C. Thurston.	297,101	Apr. 22	1518	419	27	305
Insulator pin. Electric-	J. M. Klein	297,699	Apr. 29	2312	629	27	459
Insulator-pins. Machine for making	W. Snee	297,865	Apr. 29	2494	683	27	494
Insulator-pins. Machine for turning	J. J. Baldwin	298,543	May 13	728	206	27	673
Insulator. Terminal	J. S. Lewis	298,594	May 13	791	222	27	684
Intrenching-tool	J. H. Patterson	297,840	Apr. 29	2469	676	27	489
Iron and steel. Purifying molten	H. Keeler	298,983	May 20	1281	.....	27	784
Iron. Manufacture of pig-	J. F. Bennett	299,040	May 20	1308	389	27	800
Iron. Manufacture of pig-	J. F. Bennett	299,103	May 27	1440	411	27	894
Iron. Manufacture of sheet-	W. D. Wood	297,097	Apr. 15	1506	.....	27	307
Iron. Manufacture of sheet-	W. D. Wood	300,184	June 10	876	.....	27	1094
Iron. Treating	B. Woodruff	300,747	June 17	1615	.....	27	1236
Iron wheel	J. R. Little	299,151	May 27	1498	430	27	835
Ironing-board	J. W. Smalley	298,422	May 13	591	167	27	647
Ironing-machine	M. Haneline	300,708	June 17	1572	431	27	1229
Ironing-table	F. F. Adams	299,312	May 27	1699	485	27	872
Ironing-table	G. W. Corbin	299,056	May 20	1375	392	27	801
Ironing-table	J. H. Ritter	299,680	June 3	251	62	27	967
Irrigating apparatus	W. R. Chisholm	299,347	May 27	1740	500	27	881
Ivory from pyroxyline compounds. Manufacture of material to imitate	J. H. Stevens	300,158	June 10	836	.....	27	1067
Jack: *See* Hydraulic jack. Stuffing-box jack. Leating-jack. Suspension-jack. Lifting-jack. Wagon-jack. Screw-jack.							
Jack or mule. Self-operating	W. F. Turnbull	295,957	Apr. 1	76	22	27	17
Jar: *See* Fruit-jar. Hermetic jar.							
Jar	S. Adlam, Jr	300,749	June 24	1621	445	27	1243
Jar-cover	W. D. Sherwood	300,906	June 24	1813	496	27	1279
Jar fastening. Preserve-	E. Rosenzl	296,876	Apr. 15	1238	346	27	248
Jaw wrench. Sliding-	W. H. Ratcliff	300,127	June 10	793	213	27	1079
Jewelry. Fabric for	F. Fontneau	299,972	June 10	589	158	27	1049
Jewelry. Machine for attaching the backs and fronts of articles of	J. Hagerty	299,069	May 20	1300	396	27	804
Jewelry. Manufacture of	H. C. Boniface	296,118	Apr. 1	270	77	27	53
Jewelry-ring	E. F. Lee	298,100	May 6	170	44	27	559
Jewelry, &c. Setting for	C. A. Fowler	300,459	June 17	1242	340	27	1169
Joiner. Universal	A. Bean	298,056	May 6	118	30	27	549
Joiner's clamp	F. Restorff	298,027	May 6	87	22	27	543
Joint: *See* Ball-joint. Steam-pipe joint. Lead-pipe joint.							
Journal-bearing	C. F. Brigham	299,109	May 27	1447	413	27	826
Journal-bearing	E. Copley, J. F. Seldomridge, and G. De La Vergne.	296,823	Apr. 15	1168	328	27	236
Journal-bearing	H. H. Hewitt	299,221	May 27	1579	454	27	851
Journal-bearing. Water-proof	N. W. Godfrey	296,554	Apr. 8	842	234	27	167
Journal-bearings. Drip-cup for	J. G. Brann	296,820	Apr. 15	1164	327	27	235
Journal-box	C. Kahler	298,859	May 20	1129	317	27	754
Journal-box	E. H. Rust	297,016	Apr. 15	1407	388	27	279
Journal-box	F. W. Thayer	297,645	Apr. 29	2234	608	27	444
Journal-box	E. K. Wilcox	300,931	June 24	1830	{503 504	27	1284
Jug	J. R. Graver	298,371	May 13	536	147	27	636
Jug or pitcher cover	W. C. Bodectel	299,512	June 3	11	4	27	923
Jug-packing box	L. H. Bradley	296,819	Apr. 15	1164	327	27	235
Jug. Sheet-metal	R. Shaw	298,244	May 6	370	98	27	596
Jump-seat	J. T. Clarkson	300,847	June 24	1740	475	27	1264
Keel-block. Adjustable	F. C. Lang and J. F. Tietjen	298,098	May 6	168	44	27	559
Kettle for cooking canned fruit. Process	J. Baker	300,554	June 17	1357	374	27	1190
Key: *See* Extension-key.							
Key-fastener	R. T. Miller	300,387	June 17	1151	315	27	1159
Key-ring	E. P. Haff	298,747	May 20	996	278	27	730
Key-ring	W. C. Lucas	296,763	Apr. 15	1095	308	27	223
Kiln: *See* Brick-kiln. Limekiln.							
King-bolt and circle for vehicles. Combined	N. Fink	299,367	May 27	1750	506	27	885
Kite	W. C. Wood	297,215	Apr. 22	1673	{455 456	27	332

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Knife: *See* Fruit-knife. Table-knife. Hay-knife. Wood-working-machine knife. Planer-knife. Pocket-knife.							
Knife	T. J. Pope	300,796	June 24	1677	459	27	1252
Knife and fork	J. W. Gardner	300,356	June 17	1111	301	27	1140
Knife and pen-holder. Combined	I. Phillips	296,054	Apr. 1	195	56	27	40
Knife-sharpener and fork combined	W. Kaufman	297,521	Apr. 22	2058	562	27	404
Knitting-machine	J. R. Bridges	300,739	June 24	1634	448	27	1245
Knitting-machine	W. Osborne	296,240	Apr. 1	382	108	27	73
Knitting-machine	J. Terwilleger	299,498	May 27	1915	592	27	913
Knob attachment	O. Stoddard	296,422	Apr. 8	743	205	27	147
Knob attachment. Door	W. H. Flinn	299,633	June 3	168	42	27	951
Knob attachment. Latch	G. L. Howland	297,402	Apr. 22	1902	517	27	375
Ladder	C. Frizell	297,251	Apr. 22	1720	466	27	341
Ladder	C. A. Milligan and M. J. Killion	298,013	May 6	66	17	27	540
Ladder	C. A. Root	297,088	Apr. 15	1491	413	27	295
Ladder	G. P. and M. E. Thorp	297,875	Apr. 29	2506	696	27	496
Ladder	J. F. Manahan	297,822	Apr. 29	2449	670	27	484
Ladder-hook	J. F. Manahan	298,507	May 13	797	223	27	685
Ladder. Portable	V. Bässler	298,660	May 13	870	244	27	698
Ladder. Sectional	J. T. O'Brien	300,631	June 17	1458	402	27	1209
Ladder. Step	O. Chatfield, Jr	300,846	June 24	1739	475	27	1264
Ladder. Step	C. Wagner	300,919	June 24	1828	500	27	1221
Lambrequin-shade	C. Geertz	300,063	June 10	706	192	27	1064
Lamp	L. O. Brekke	297,493	Apr. 22	2015	550	27	397
Lamp	W. P. Casperson	296,522	Apr. 8	794	{218 219	27	157
Lamp	F. W. Merryman	297,429	Apr. 22	1937	528	27	381
Lamp	E. B. Requa	297,847	Apr. 29	2475	678	27	490
Lamp and torch support. Band	J. S. Conwell	295,982	Apr. 1	110	33	27	23
Lamp. Arc	F. M. Newton	300,999	June 24	1916	{527 528	27	1298
Lamp-bracket	A. Thurber	297,317	Apr. 22	1793	{486 487	27	354
Lamp-burner	S. Russell	297,015	Apr. 15	1404	{387 388	27	279
Lamp-burner	N. S. Wax	299,301	May 27	1681	492	27	869
Lamp-collar	A. D. Vest	296,255	Apr. 1	446	126	27	85
Lamp cut-out. Electric	C. Lever	300,489	June 17	1275	{350 351	27	1176
Lamp. Electric	M. N. Lynn	300,095	June 10	751	202	27	1072
Lamp. Electric	A. Welsh	299,708	June 3	983	70	27	973
Lamp. Electric	A. Welsh	299,895	June 3	473	124	27	1012
Lamp. Electric-arc	F. Bain	300,433	June 17	1208	330	27	1162
Lamp. Electric-arc	F. Bain	300,676	June 17	1525	419	27	1221
Lamp. Electric-arc	E. and A. E. Jones	299,397	May 27	1798	518	27	892
Lamp. Electric-arc	P. P. Nungesser	297,833	Apr. 29	2461	674	27	487
Lamp. Electric-arc	S. H. Short	299,025	May 20	1335	381	27	794
Lamp. Electric-arc	J. J. Skinner	297,022	Apr. 15	1413	{389 390	27	280
Lamp. Electric-arc	E. Thomson	297,194	Apr. 22	1635	448	27	325
Lamp. Electric-arc	E. Thomson	297,195	Apr. 22	1638	449	27	326
Lamp. Electric-arc	E. Thomson	297,196	Apr. 22	1641	449	27	326
Lamp. Electric-arc	E. Thomson	297,197	Apr. 22	1645	450	27	327
Lamp. Electric-arc	E. Thomson	297,198	Apr. 22	1648	450	27	327
Lamp. Electric-arc	E. Thomson	297,199	Apr. 22	1650	450	27	328
Lamp. Electric-arc	E. Thomson	297,200	Apr. 22	1653	{450 451	27	328
Lamp. Electric-arc	E. Thomson	297,201	Apr. 22	1656	451	27	329
Lamp. Electric-arc	T. C. Turner	299,600	June 3	129	32	27	943
Lamp. Electric-arc	E. Weston	301,076	June 24	2014	557	27	1316
Lamp. Electric mouth	E. T. Starr	300,523	June 17	1312	360	27	1183
Lamp. Extension	D. W. Parker and L. F. Griswold	297,157	Apr. 22	1590	{437 438	27	317
Lamp-extinguisher	R. Ogden and R. J. Anderson	296,771	Apr. 15	1102	{310 311	27	224
Lamp-extinguisher	W. C. Walter	296,489	Apr. 8	733	207	27	149
Lamp fixture. Incandescent	E. Weston	298,327	May 6	476	128	27	616
Lamp-fountain. Glass	G. H. Lomax	297,276	Apr. 22	1745	474	27	345
Lamp. Gaso-electric	J. H. Loder	297,820	Apr. 29	2446	{669 670	27	484
Lamp. Hanging	J. T. Rich	299,851	June 3	436	113	27	1005
Lamp. Hanging	J. H. Turner	298,800	May 20	1060	277	27	741
Lamp holder. Incandescent	E. Weston	298,142	May 6	226	59	27	570
Lamp. Incandescent	E. Weston	298,325	May 6	474	128	27	616
Lamp. Incandescent electric	T. A. Edison	297,581	Apr. 29	2151	568	27	429
Lamp. Incandescent electric	T. E. Gatehouse	297,377	Apr. 22	1874	500	27	370
Lamp lighting and extinguishing device. Combined electric	H. Van Hoevenbergh	297,879	Apr. 29	2313	608	27	497
Lamp-mat. Metallic	T. F. Wood	297,214	Apr. 22	1672	455	27	332
Lamp socket. Incandescent	E. Weston	298,143	May 6	228	59	27	570
Lamp socket. Incandescent electric	S. Bergmann	298,658	May 13	867	243	27	697
Lamp ventilation	F. H. Smith	297,460	Apr. 22	1974	539	27	389
Lamps. Automatic cut-out for electric	C. L. Buckingham and H. C. Townsend.	296,125	Apr. 1	278	79	27	55
Lamps. Incandescing conductor for electric	T. A. Edison	297,585	Apr. 29	2161	590	27	430
Lamps. Reflector-holder for	D. R. Williams	297,481	Apr. 22	2001	547	27	394
Lamps. Swinging bracket for electric	J. Ritchie	296,355	Apr. 8	587	163	27	117
Lamps. Testing carbon conductors for incandescent	E. Weston	298,141	May 6	225	59	27	569
Land-roller	K. W. Jones	298,475	May 13	657	185	27	658
Lantern and wonder-camera combined. Magic	J. B. Upham	298,636	May 13	840	235	27	693

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lanterns. Slide-holder for magic	W. S. Barstow	300,558	June 17	1361	375	27	1191
Lap-board	A. L. Anthony	297,219	Apr. 22	1686	457	27	333
Laryngoscope	H. B. Sheridan	299,277	May 27	1642	471	27	863
Last	V. K. Jones	296,016	Apr. 1	154	44	27	31
Last	G. A. Reynolds	297,633	Apr. 29	2222	604	27	441
Last	J. C. Turner and L. Côté	300,414	June 17	1183	324	27	1158
Last-block fastener	G. E. Belcher	300,195	June 10	894	240	27	1090
Last. Combination metallic	J. Blakey	299,613	June 3	145	35	27	947
Last patterns. Making metal	E. S. Kingston	299,650	June 3	197	50	27	956
Lasting-jack	J. Beaulieu	297,557	Apr. 29	2118	578	27	421
Latch	O. Fowler	298,639	May 20	1106	310	27	750
Latch	W. B. Sherland	300,651	June 17	1490	410	27	1215
Latch. Door	H. Perkin and C. J. Reynolds	300,409	June 17	1290	354	27	1179
Latch. Door	J. Romig	296,221	Apr. 1	396	112	27	76
Latch-dog	O. D. Warfield	297,884	Apr. 29	2517	689	27	498
Lathe for turning polygonal forms	L. Weisse	298,528	May 13	712	202	27	670
Lathe-rest	S. H. Brown	297,907	May 6	7	3	27	528
Lathe. Turning	J. B. Romans	297,635	Apr. 29	2224	605	27	441
Lathe. Wood-turning	L. Weisse	298,529	May 13	713	202	27	670
Lavatories. Auxiliary overflow for	P. Harvey	299,925	June 3	520	138	27	1020
Lawn-tennis implements. Case for	G. E. Shepard	298,125	May 6	201	53	27	565
Lead and crayon holder	C. W. Roman	297,067	Apr. 15	1460	404	27	289
Lead and crayon holder	W. H. Wiles	296,654	Apr. 8	961	270	27	192
Lead. Manufacture of spongy	F. T. Williams and J. C. Howell	296,262	Apr. 1	460	130	27	87
Lead. Manufacture of white	J. C. Martin	296,765	Apr. 15	1096	309	27	223
Lead pipe joint	W. R. Patterson	300,005	June 10	636	173	27	1051
Leaf-holder	J. W. Braam	297,665	Apr. 29	2260	615	27	448
Leather drying and pressing machine	W. A. Sawyer	295,948	Apr. 1	65	19	27	15
Leather for insoles. Fabric or substitute for	G. A. Fullerton	299,126	May 27	1471	422	27	830
Leather-glassing machine	W. H. Wood	299,893	June 3	480	{126 127	27	1013
Leather piping or binding. Machine for snipping	S. S. Spear	300,812	June 24	1696	{463 464	27	1256
Leather-stock with naphtha to extract oils. Apparatus for treating	F. F. Nowell	300,497	June 17	1286	353	27	1178
Leather strings. Die for cutting	C. E. Ramm	296,781	Apr. 15	1116	314	27	227
Leg. Artificial	L. and A. E. Crosby	299,465	May 27	1879	540	27	905
Leggin	H. J., Jr., and S. M. Seibel	296,882	Apr. 15	1243	347	27	249
Lens. Trial	J. King	296,841	Apr. 15	1190	334	27	239
Letter-box	A. S. Cook	298,733	May 20	982	273	27	727
Letter-box	C. A. Stebbins	296,642	Apr. 8	947	266	27	188
Letter-opener	J. Jones	299,398	May 27	1802	519	27	892
Level and boring-guide. Combined	A. Root	297,719	Apr. 29	2334	{634 635	27	463
Level, plumb, and inclinometer. Pendulum	C. J. and A. W. Parkhurst	296,608	Apr. 8	909	254	27	181
Level. Spirit	L. L. Davis	297,574	Apr. 29	2145	585	27	427
Level. Surveyor's	T. F. Randolph	297,164	Apr. 22	1598	440	27	318
Leveling and plumbing instrument	O. H. P. Brown	297,227	Apr. 22	1691	460	27	335
Leveling attachment for tables, &c	G. Ladisch	299,651	June 3	198	50	27	956
Leveling-instrument	L. C. Strong	297,093	Apr. 15	1501	415	27	296
Lever	D. Buckley	299,954	June 10	570	152	27	1039
Lever. Joint	W. B. Hall	298,749	May 20	998	279	27	730
Lever-power	D. W. and W. W. Seeley	296,466	Apr. 8	718	199	27	142
Lever-power	D. W. and W. W. Seeley	297,954	Apr. 29	2508	715	27	515
Lever press. Differential	A. and P. Duchscher and M. G. Spoo.	298,188	May 6	285	73, 74	27	580
Lever press. Screw and toggle	W. H. Worth	301,038	June 24	1970	544	27	1308
Lever wrench. Self-adjusting fulcrum	B. F. Bennett	296,721	Apr. 15	1045	294	27	214
Lid for vessels. Adjustable	H. C. Sample	297,854	Apr. 29	2483	680	27	492
Life-raft. Folding	E. A. Hayes	300,073	June 10	722	195	27	1066
Life-saving vehicle	E. B. Lake	299,808	June 3	389	99	27	995
Lift or elevator	E. Krause	296,582	Apr. 8	875	243	27	174
Lifter: *See* Barrel-lifter.							
Lifting-jack	M. R. Baldwin	298,335	May 13	497	135	27	629
Lifting-jack	H. J. England	299,529	June 3	32	9	27	927
Lifting-jack	C. Fisher	298,568	May 13	759	214	27	678
Lifting-jack	J. B. Halbert	297,255	Apr. 22	1724	468	27	341
Lifting-jack	W. L. Hall	298,374	May 13	540	148	27	637
Lifting-jack	J. H. Humbert	299,224	May 27	1562	455	27	852
Lifting-jack	A. P. Joy	298,980	May 20	1278	365	27	783
Lifting-jack	T. Maxon	298,306	May 6	447	120	27	611
Lifting-jack	T. Maxon	298,307	May 6	448	121	27	612
Lifting-jack	O. K. McIntire	298,700	May 13	930	258	27	710
Lifting-jack	H. W. Mohany	297,705	Apr. 29	2318	630	27	459
Lifting-jack	W. K. Mottram and J. A. Mundy	296,208	Apr. 1	380	108	27	73
Lifting-jack	E. J. Qvarnstrom	297,292	Apr. 22	1764	479	27	349
Lifting-jack	J. Ritchie and F. Luckermann	300,011	June 10	647	176	27	1052
Lifting-jack	A. C. Spaulding	299,807	June 3	454	119	27	1009
Lifting-jack	A. White	297,893	Apr. 29	2529	692	27	501
Light: *See* Signal-light.							
Lightning-arrester for telegraph and telephone lines	J. Griffin	296,407	Apr. 8	653	181	27	129
Lightning-conductor	T. H. Dodge	298,357	May 13	521	141	27	633
Lightning-rod coupling	T. H. Patee	297,290	Apr. 22	1761	478	27	348
Lightning-rod machine. Portable	T. H. Patee	297,291	Apr. 22	1762	{478 479	27	349
Limekiln	B. Albers	299,313	May 27	1693	485	27	872
Line-reel	W. N. Lockwood	296,196	Apr. 1	364	104	27	70
Line-stopper	J. Furguson	298,360	May 13	534	146	27	635
Liniment	S. Potter	298,706	May 13	936	.....	27	711
Liquid-cooler	F. W. Wolf	301,035	June 24	1966	543	27	1307
Liquids. Apparatus for dispensing and drawing	L. Bergen	297,221	Apr. 22	1681	458	27	334

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lithographic surfaces. Method of and apparatus for damping	J. W. Osborne	299,002	May 20	1299	370	27	787
Load-binder	H. B. Banker	299,506	June 3	6	2	27	922
Lock: *See* Alarm-lock. Bicycle-brake lock. Car-door lock. Door-lock. Drawer-lock. End-gate lock. Hasp-lock. Mail-pouch lock. Nut-lock. Nut and bolt lock. Padlock. Permutation-lock. Rowlock. Seal-lock. Time-lock. Trunk-lock.							
Lock	F. Ballin	297,660	Apr. 29	2252	613	27	447
Lock	J. Gwynn	300,773	June 24	1652	452	27	1248
Lock	J. J. Knapp	299,805	June 3	387	98	27	995
Lock	J. G. Mattelin	299,486	May 27	1905	548	27	911
Lock	M. L. Mikesell	296,430	Apr. 8	678	187	27	134
Lock	F. W. Mix	297,151	Apr. 22	1584	436	27	316
Lock	E. Parker	300,393	June 17	1157	317	27	1153
Lock	M. Voigt	295,961	Apr. 1	81	25	27	18
Lock	H. C. Neer	299,671	June 3	238	59	27	965
Lock-bolt	J. W. Kohn	298,861	May 20	1131	318	27	754
Lock-strike	J. Kuster, Jr	296,292	Apr. 1	505	141	27	95
Locks. Attaching	F. B. Gould	296,741	Apr. 15	1066	300	27	218
Locket	E. T. Owen	298,114	May 6	188	50	27	562
Locking device for closets, boxes, &c	G. W. Sampson. (Reissue)	10,476	May 6	492	133	27	690
Locking-nut	E. Buss and R. Kühn	296,129	Apr. 1	283	80, 81	27	56
Locomotive	T. S. Tew	296,696	Apr. 1	229	67	27	47
Locomotive	J. G. Butterfield	299,955	June 10	570	153	27	1039
Locomotive ash-pan	S. H. Edgerly	299,360	May 27	1751	504	27	883
Locomotive ash-pan	E. S. Hart	296,749	Apr. 15	1079	304	27	220
Locomotive ash-pan	J. W. Hoyt and J. W. Twiggs	296,964	Apr. 15	1340	371	27	267
Locomotive-brake	G. H. Poor	300,124	June 10	789	212	27	1078
Locomotive-brake	G. H. Poor	300,125	June 10	791	212, 213	27	1079
Locomotive draw-bar lifter	C. K. Cordrey	299,114	May 27	1455	416	27	827
Locomotive driving-gear	G. Enghofer	297,921	Apr. 29	2568	704	27	506
Locomotive driving-wheels from spinning. Preventing	M. L. Johnson	296,576	Apr. 8	870	241	27	173
Locomotive-frame-forging die	T. Morris	298,109	May 6	180	48	27	561
Locomotive-furnace	B. Sloper	298,247	May 6	373	98, 99	27	586
Locomotive-pilots. Safety device for	O. Rothrock	297,012	Apr. 15	1401	387	27	278
Locomotive. Road-	C. P. Leavitt	299,150	May 27	1497	430	27	835
Locomotive-wheel	J. H. Mann	298,007	May 6	58	15	27	538
Log-binder	J. H. Benjamin	300,437	June 17	1214	331	27	1163
Log loader and turner	W. C. Stetson	300,405	June 17	1171	321	27	1155
Log-rolling machine	G. Wiborn	300,820	June 24	1707	466	27	1256
Loom	M. A. Furbush, C. H. Knowlton, and B. F. Meyer.	300,963	June 24	1871	513, 514, 515	27	1290
Loom let-off mechanism	J. Shew	297,019	Apr. 15	1409	388	27	279
Loom picker-staff check	O. D. Lombard and S. Pollard	297,821	Apr. 29	2448	670	27	484
Loom shaft-bearing	L. J. Knowles	300,483	June 17	1260	348, 349	27	1174
Loom shedding mechanism	V. and J. Royle, Jr	296,397	Apr. 1	509	142	27	96
Loom weft stop-motion	G. Crompton and H. Wyman	299,906	June 10	593	156	27	1041
Loom weft stop-motion	F. O. Tucker	298,917	May 20	[illegible]	339	27	760
Looms. Positive shuttle-motion for	F. K. Wright	299,610	June 3	171	35	27	946
Loop forming and stamping machine	C. Pellsier	296,050	Apr. 1	1[illegible]	54	27	39
Looped fabrics. Machine for uniting	J. R. Bridges	300,760	June 24	[illegible]	449	27	1246
Lozenges or tablets. Manufacture of medicated	A. W. Holway	297,800	Apr. 29	2[illegible]	[illegible]	27	480
Lubricating-can. Illuminating	E. R. Walker	296,802	Apr. 15	1138	320, 321	27	231
Lubricating-cup	W. S. Young	299,450	May 27	1861	535	27	902
Lubricating-cup. Automatic	B. W. Felthousen	299,768	June 3	347	88	27	986
Lubricating device. Car-axle	W. S. G. Baker	299,321	May 27	1700	488	27	874
Lubricating steam-engines	W. H. Craig	300,348	June 17	1100	299	27	1145
Lubricator: *See* Axle-lubricator. Steam-engine lubricator. Car-wheel lubricator.							
Lubricator	L. B. Bailey	298,813	May 20	1076	301	27	744
Lubricator	H. R. A. Boys	297,347	Apr. 22	1838	500	27	363
Lubricator	M. S. Cabell	297,567	Apr. 29	2136	583	27	425
Lubricator	A. C. Dearing	298,836	May 20	1103	309	27	749
Lubricator	C. C. Harlow	295,919	Apr. 1	30	9	27	8
Lubricator	W. Hope and J. Homan	298,468	May 13	648	183	27	657
Lubricator	M. McMullin	297,616	Apr. 29	2192	598	27	436
Lubricator	G. McNeil	298,011	May 6	63	16	27	539
Lubricator	T. Nel	297,622	Apr. 29	2198	600	27	437
Lubricator	C. H. Parshall	296,213	Apr. 1	387	110	27	74
Lubricator	C. H. Parshall	300,728	June 17	1591	436	27	1232
Lubricator	C. E. Peace	296,215	Apr. 1	389	110	27	75
Lubricator	P. L. Schmitt	301,010	June 24	1937	535	27	1301
Lubricator	W. O. Wayman	296,657	Apr. 8	966	271	27	193
Lubricator	J. B. Whitacre	296,493	Apr. 8	757	208	27	149
Lubricator	J. S. Peter	298,497	May 13	682	193	27	663
Lubricator and measure	J. Paul	300,119	June 10	763	210	27	1077
Lumber-elevator	J. A. Aycock	297,485	Apr. 22	2066	548	27	395
Lumber-rack	W. C. Stetson	299,694	June 3	266	66	27	970
Lumber-sorting apparatus	E. Heyde	297,395	Apr. 22	1894	514, 515	27	373
Lumber-trimming machine	W. F. Berghofer	298,340	May 13	501	136	27	630
Lunch-box	S. Beal	296,268	Apr. 1	468	131	27	88
Machine-brace							

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Machine-table	J. J. Sullivan	299,697	June 3	270	67	27	971
Machinery. Device for suspending	J. D. Huntington	297,133	Apr. 22	1563	430	27	312
Machinery. Mechanism for checking or stopping the action of	J. D. Wright	297,330	Apr. 22	1810	491, 492	27	357
Magnet for dynamo-electric machines. Field-	J. W. Lawson	297,273	Apr. 22	1743	473	27	345
Magneto-electric machine	H. F. Joel	299,551	June 3	60	15	27	932
Mail-bag	J. S. Bailey	296,910	Apr. 15	1292	357	27	256
Mail-bag	J. Ebert	297,359	Apr. 22	1853	504	27	366
Mail-bag	F. Griscom	297,789	Apr. 29	2416	660	27	478
Mail-bag	F. Michael and R. Williams, Jr	296,429	Apr. 8	677	187	27	134
Mail-bag	J. B. Murray	296,704	Apr. 8	1017	285	27	203
Mail-bag	T. H. Smith	297,025	Apr. 15	1421	391	27	281
Mail-bag	F. Wheaton	297,326	Apr. 22	1803	490	27	356
Mail-bag catcher	A. P. Hause	300,969	June 24	1883	517	27	1291
Mail-bag catcher	W. H. Lockwood	298,216	May 6	330	80	27	588
Mail-bag fastener	W. D. Doremus	297,071	Apr. 15	1473	407	27	292
Mail-bag fastener	S. C. Hill and S. D. Webb	296,109	Apr. 1	328	93	27	64
Mail-bag fastener and tag-holder	W. D. Doremus	297,509	Apr. 22	2045	558	27	401
Mail-bag fastening	M. V. B. Ethridge	297,245	Apr. 22	1710	464	27	339
Mail-bag fastening	E. Osgood	297,155	Apr. 22	1588	437	27	317
Mail-bag label-holder	F. L. Herold	296,959	Apr. 15	1334	370	27	266
Mail-pouch lock	G. Deimel	298,451	May 13	625	178	27	653
Mail-sack tag	S. W. Brackett	298,345	May 13	509	138	27	631
Mailing-machine	R. Dick	297,116	Apr. 22	1543	426	27	309
Malt liquors. Process of and apparatus for the treatment of hops in the manufacture of	A. Steinke	297,467	Apr. 22	1985	542	27	391
Manure pulverizer and distributer	P. Johnson	299,648	June 3	195	49	27	956
Marble and granite. Engraving	F. W. Coons	300,049	June 10	691	[illegible]	27	1060
Marble-projector	J. H. Greenwood	296,405	Apr. 8	651	180	27	128
Marker. Lawn-	R. B. Reynolds	300,507	June 17	1298	356	27	1180
Marking implement	W. A. Kibbe	297,812	Apr. 29	2438	666	27	482
Mash, &c. Apparatus for cooling	T. Hayes	298,202	May 6	306	80	27	583
Mash-boiler	A. W. Niboelius	300,113	June 10	774	208	27	1076
Mash-tuns. False bottom for	G. G. Cave	298,172	May 6	266	68	27	576
Mat: *See* Floor-mat. Oil-press mat. Lamp-mat.							
Mat	R. Martinez	298,703	May 20	1011	283	27	733
Match-box	G. H. Gale	299,976	June 10	594	159	27	1043
Match-box holder	W. N. Weeden	298,641	May 13	845	236	27	693
Match-box holder. Self-adjusting	H. Beenwkes, Jr	299,508	June 3	8	3	27	922
Match-box. Pocket	E. B. Lake	299,807	June 3	388	99	27	995
Match-cards. Machine for sawing	G. Flewwelling and G. J. Harris. (Reissue.)	10,468	Apr. 15	1511	416, 417	27	298
Match-splints. Making	C. B. Rawson	298,502	May 13	688	195	27	664
Matrices. Machine for making	R. L. Kimberly	296,974	Apr. 15	1352	374, 375	27	969
Mattress-support	T. Burdick	295,977	Apr. 1	99	30	27	21
Measure and funnel. Combined liquid	T. T. Bishop	300,439	June 17	1216	332	27	1164
Measure and register for bottles. Combined liquid	E. H. Rogers, Jr	298,778	May 20	1029	287	27	735
Measure. Tape-	W. Kenffel	297,417	Apr. 22	1921	525	27	379
Measuring and cutting machine. Cloth	E. L. Crosby	298,670	May 13	803	249	27	703
Measuring and registering device for planing-machines.	J. R. Thomas	299,878	June 3	467	122	27	1011
Measuring apparatus for separators	J. Hug	300,779	June 24	1659	454	27	1249
Measuring device for surveying and other purposes	A. Atkins	296,504	Apr. 8	771	213	27	153
Measuring device. Tailor's	J. S. Hand	299,383	May 27	1776	511, 512	27	888
Measuring machine. Grain-	J. and A. Nafziger	298,612	May 13	813	228, 229	27	688
Measuring silk thread during the process of spooling. Machinery for	R. Morrison	297,706	Apr. 29	2319	630, 631	27	460
Measuring the lineal feet of work done by a wood-working machine. Apparatus for	F. C. Cooke	299,745	June 3	323	82	27	981
Measuring vessel. Liquid-	M. F. Robinson	298,504	May 13	689	195	27	665
Meat and vegetables. Machine for cutting	S. S. Cook	299,910	June 3	503	133	27	1017
Meat-clamp	J. H. Tabony	299,430	May 27	1850	532	27	901
Mechanical motor	G. W. Reams	299,164	May 27	1514	435	27	838
Mechanical movement	A. C. Campbell	298,943	May 20	1230	348, 349	27	774
Mechanical movement	J. W. Dodge	298,671	May 13	896	249	27	703
Mechanical movement	G. S. Hensley	298,376	May 13	541	148	27	637
Mechanical movement	J. P. Lavigne	296,977	Apr. 15	1360	376	27	271
Mechanical movement	J. McEwen	299,092	May 20	1410	402	27	808
Mechanical movement	F. M. Nixon	299,095	May 20	1413	403	27	808
Mechanical movement	A. L. Skinner	300,808	June 24	1691	462	27	1253
Mechanical movement	W. A. Tucker	299,183	May 27	1536	440	27	841
Mechanical movement	L. E. Wallerman	300,419	June 17	1188	325	27	1159
Mechanical movement	J. Warwick	300,539	June 17	1336	367, 368	27	1187
Mechanical power	J. W. Ellis	298,739	May 20	987	274	27	728
Mechanical power	W. S. Gray	297,595	Apr. 29	2170	593	27	432
Mechanical power	J. C. Sellers	298,028	May 13	831	232	27	691
Mechanical power	D. Wise	300,425	June 17	1197	327, 328	27	1160
Medical compounds. Preparing	H. C. Lawrence	298,000	May 6	51	[illegible]	27	535
Medicine. Hog-cholera	M. Frey, Jr	300,460	June 17	1243	[illegible]	27	1160
Menstrual receptacle	H. G. Farr	300,770	June 24	1649	451	27	1247
Metal bars. Machine for straightening round	L. Brightman	299,727	June 3	303	75	27	977
Metal bars. Machine for straightening round	L. Brightman	299,728	June 3	305	76	27	977
Metal plates. Manufacture of combined	J. Pedder	300,730	June 17	1593	437	27	1233
Metal rods. Die for drawing	J. Agnew	297,551	Apr. 29	2110	576	27	420
Metal rods. Machine for straightening	J. Agnew	297,550	Apr. 29	2107	575, 576	27	420

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Metal sheets. Fastening for corrugated	J. Smith	297,802	Apr. 29	2491	622	27	493
Metals by electrolysis. Process of and apparatus for reducing	A. J. Rogers	296,357	Apr. 8	589	164	27	117
Metals from franklinite ores. Separating	A. F. Wendt	297,480	Apr. 22	2000	.....	27	394
Metals from ores and alloys. Process of and apparatus for the separation of	H. R. Cassel	300,950	June 24	1859	510	27	1287
Metals from ores and metallurgical products and from each other. Separating	E. H. Russell	296,710	Apr. 8	1024	.....	27	204
Metals from their ores. Process of and apparatus for separating	A. H. Bliss	297,105	Apr. 22	1524	421	27	306
Metals in ammoniacal solutions. Dissolving	C. R. A. Wright	298,149	May 6	234	.....	27	571
Metallic bars. Weaving	H. D. Plimsoll	297,631	Apr. 29	2221	604	27	441
Metallic surfaces. Implement for smoothing or polishing	W. J. Walker	296,370	Apr. 8	603	167	27	120
Metallurgic furnace	T. J. Wilson	300,181	June 10	873	235	27	1093
Metallurgical gas-furnace	W. F. Durfee and T. Egleston	295,968	Apr. 1	117	35	27	24
Meter: *See* Fluid-meter. Rotary meter. Grain-meter. Water-meter. Oscillating meter.							
Micrometer	T. Hooker	297,602	Apr. 29	2177	595	27	433
Middlings and flour. Reducing grain to	J. M. Case	297,762	Apr. 29	2388	651	27	472
Middlings grading and purifying machine	J. M. Schutz	298,900	May 20	1181	331, 332	27	765
Middlings-purifier	A. Hunter	296,752	Apr. 15	1082	305	27	221
Middlings-purifiers and roller-mills. Automatic shelf-feeder for	W. M. Jewell	298,387	May 13	557	153	27	640
Milk-catcher for nursing-women	L. E. Pattee	296,609	Apr. 8	911	254	27	181
Milk-cooler and refrigerator. Combined	R. M. Rockey	299,166	May 27	1516	435	27	838
Milk. Preserving	E. Scherff. (Reissue)	10,491	June 24	2017	.....	27	1316
Mill: *See* Cider-mill. Pug-mill. Crushing-mill. Roller-mill. Fanning-mill. Saw-mill. Grinding-mill. Stamp-mill. Hominy-mill. Windmill.							
Mills. Electric work-indicator for	A. D. Blodgett	298,341	May 13	502	137	27	630
Mills, purifiers, &c. Feeder for	W. S. Bonnard and W. H. Grupe	298,938	May 20	1227	348	27	774
Milling. Gradual-reduction machine for	J. M. Case	297,759	Apr. 29	2383	649, 650	27	472
Millstone	J. C. Wedekind	297,889	Apr. 29	2524	691	27	500
Millstone-dressing machine	D. S. Greely	298,461	May 13	636	181, 182	27	635
Millstone-dressing machine	J. Miller	300,103	June 10	761	205	27	1074
Mineral fiber or wool from furnace-slag. Process of and apparatus for forming	R. Burns	299,111	May 27	1448	414	27	826
Mineral water in bottles or flasks. Portable apparatus for heating	E. D. Newton	299,251	May 27	1615	464	27	858
Mining apparatus	T. W. Campbell	297,064	Apr. 15	1465	405	27	290
Mining-drill and forming powder-chambers in rock, &c.	W. H. Lytle	299,991	June 10	616	166	27	1047
Mining-machine	J. R. Howells and G. Shelley	300,076	June 10	727	196	27	1067
Mining-machine	B. A. Legg	299,655	June 3	202	51, 52	27	957
Mirror	F. F. Weber	298,304	May 27	1686	483	27	870
Miter-box	W. L. Boyer	297,664	Apr. 29	2259	615	27	448
Miter-box	J. Cashin	297,970	May 6	10	4	27	529
Miter-gage	E. Hipolito	295,920	Apr. 1	34	10	27	9
Mixer: *See* Dough-mixer.							
Mixing-machine	D. H. Levett	296,338	Apr. 8	563	157	27	112
Mixing-machine for drugs and chemicals	A. Dickey	299,209	May 27	1567	450	27	849
Mixing solids and liquids and for other purposes. Apparatus for	E. A. Pond	297,002	Apr. 15	1388	383	27	275
Mold: *See* Collar-mold. Potter's mold. Dental mold. Thermometer and barometer mold. Glass-mold. Tile-mold. Pipe-mold.							
Mold-board	O. A. Essig	298,189	May 6	286	74	27	560
Mold-flask	H. Adams	298,811	May 20	1073	301	27	743
Mold for repairing broken rolls, shafts, &c.	J. J. Vinton	296,369	Apr. 8	602	167	27	120
Molds. Apparatus for lining	G. W. Billings	300,941	June 24	1849	507	27	1285
Molder's flask	E. Thomas	297,646	Apr. 29	2235	608	27	444
Molding-machine	J. W. Hudson	297,403	Apr. 22	1903	517	27	375
Molding machine. Sand-	J. Kinzer	300,422	June 17	1267	347, 348	27	1174
Molding machine. Wood-	M. L. Towle	300,412	June 17	1179	323	27	1157
Molding plastic material	C. M. Du Puy	296,825	Apr. 15	1171	329	27	226
Mop and brush holder	W. F. Cornelius	297,067	Apr. 15	1468	406	27	291
Mop or brush holder	W. Busch	300,692	June 17	1350	426	27	1226
Mop-wringer	J. F. Walter	297,040	Apr. 15	1439	397	27	285
Morse register and perforator	L. C. Springer	296,641	Apr. 8	945	265, 266	27	188
Mortar and globular shield for the same	H. Gruson	299,218	May 27	1576	453	27	850
Motion. Device for converting	C. Bernhard	298,160	May 6	246	64	27	573
Motion. Device for converting	A. Kaiser	300,871	June 24	1771	482, 483	27	1270
Motion. Device for transmitting	W. E. Laird	299,231	May 27	1583	458	27	854
Motion. Mechanism for converting	F. H. Richards	297,165	Apr. 22	1600	440	27	319
Motion. Mechanism for converting	N. D. Wells	300,542	June 17	1341	369	27	1168
Motion. Transmitting	W. A. Rollins	298,893	May 20	1174	328	27	763

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Motor: *See* Churn-motor. Mechanical motor. Coffee-mill motor. Pump-motor. Electric motor. Rotary motor. Electro-magnetic motor. Spring-motor. Hydraulic motor. Spring and weight motor.							
Motor	J. Heckenlively	297,394	Apr. 22	1893	514	27	373
Motor	F. W. Randall	300,894	June 24	1799	491	27	1276
Motor	H. Roeper	297,537	Apr. 22	2081	567	27	409
Motor for light machinery	J. W. Gilbert	295,997	Apr. 1	131	38	27	27
Movement. Device to prevent retrograde	P. C. Wright	298,930	May 20	1217	343	27	772
Mower	H. A. Howe	296,412	Apr. 8	658	182	27	130
Mower. Lawn-	C. W. Cheney	300,345	June 17	1097	296	27	1144
Mower. Lawn-	H. Lacasse	296,750	Apr. 15	1091	307	27	222
Mowing-machine	J. R. Severance	296,232	Apr. 1	416	116, 117	27	79
Mowing-machine	E. Smith	298,249	May 6	375	99	27	597
Mucilage cup or holder	S. S. Harman	297,391	Apr. 22	1891	513	27	373
Mucilage-holder	E. R. Cahoone	299,957	June 10	572	154	27	1040
Music-book holder	C. S. Anders	297,553	Apr. 29	2114	576	27	421
Mules. Counter for	D. and F. H. Orme	300,633	June 17	1459	403	27	1210
Music-holder	G. Burt	298,726	May 20	965	260	27	725
Music. Machine for punching perforated sheet	H. B. Horton	300,368	June 17	1122	304, 305, 306, 307	27	1148
Music-stand	R. C. Barrie	300,834	June 24	1727	472	27	1261
Musical instrument. Mechanical	G. H. Chinnock	298,066	May 6	131	33, 34	27	552
Musical instrument. Mechanical	M. Gally	296,685	Apr. 8	999	279	27	199
Musical instrument. Mechanical	A. H. Hammond	296,165	Apr. 1	322	92	27	63
Musical instrument. Mechanical	O. Spaethe	296,238	Apr. 1	423	118, 119	27	80
Musical instruments. Key-board attachment for	E. F. O'Neill	299,492	May 27	1910	550	27	912
Musical instruments. Transposition key-board for	W. Bohrer	297,222	Apr. 22	1682	458	27	334
Nail: *See* Slug-nail.							
Nail-extractor	M. D. Converse	300,766	June 24	1645	450	27	1247
Nail extractor	H. W. Fowler	298,683	May 13	910	252	27	706
Nail-plate feeder	H. B. Chess	300,571	June 17	1373	379	27	1194
Nail-plate feeder	J. F. Hammond	296,747	Apr. 15	1076	303, 304	27	219
Nails. Machine for making book-headed	B. Brazelle	300,758	June 24	1631	447, 448	27	1245
Nailing-machine nail-feeder	H. F. Ostrum	298,882	May 20	1158	325	27	760
Nailing or pegging machine	J. B. Crosby. (Reissue)	10,492	May 27	1919	553	27	914
Navigation. Disclosing obstacles to	F. D. Torre	299,968	June 10	585	157	27	1042
Neck-wear tip	W. Fichtenberg	298,190	May 6	287	74	27	580
Necktie and collar-button. Combined	A. L. Gilbert	298,458	May 13	632	180	27	654
Necktie and collar clasp	C. Stephens	300,028	June 10	664	181	27	1056
Necktie-fastener	W. Beale	300,192	June 10	886	237	27	1095
Necktie-fastener	P. H. Higgins	298,752	May 20	1000	279	27	731
Necktie-fastener	F. Kubec	298,078	May 20	1405	400	27	807
Necktie-fastener	W. L. Linder	297,275	Apr. 22	1744	474	27	347
Necktie or cravat fastener	J. N. Proeschel	296,619	Apr. 8	922	257	27	183
Needle	J. W. Weed	299,305	May 27	1687	483	27	870
Nest-box for fowls	W. Z. Allen	299,315	May 27	1694	486	27	872
Net, Fly-	R. Brownson	299,953	June 10	569	152	27	1039
Net for horses. Fly-	R. Brownson	300,040	June 10	680	184	27	1059
Net for horses. Fly-	D. Fischbeck	297,121	Apr. 22	1548	427	27	310
Net support. Mosquito-	A. L. Edwards	300,855	June 24	1750	477	27	1266
Net strings. Instrument for cutting fly-	R. Brownson	299,952	June 10	568	152	27	1039
Night-light	S. Clarke	299,448	May 13	620	176	27	692
Nippers. Police chain	E. D. Beam	298,158	May 6	245	63	27	573
Nippers. Shear-cutting	S. Taft	300,031	June 10	667	182	27	1056
Nitro-cellulose. Apparatus for the manufacture of	J. W. Hyatt, F. V. Pool, J. Everding, J. H. Stevens, and W. H. Wood.	299,388	May 27	1784	513, 514	27	880
Nozzle. Exhaust-	G. D. Hunter	300,319	June 10	1054	286	27	1126
Nozzle. Sheet-metal screw-	M. O'Connor	299,841	June 3	425	110	27	1002
Nursery-chair	J. E. Walter and W. B. Montgomery	300,921	June 24	1829	500	27	1282
Nut	S. Gisslnger	298,843	May 20	1110	311	27	750
Nut and bolt lock	G. Van Dusen	295,900	Apr. 1	79	24	27	18
Nut-bearing. Adjustable	G. Edmonds	298,563	May 13	753	212	27	677
Nut. Bolt-	A. Johnson	300,475	June 17	1258	345	27	1172
Nut-fastener	I. Brooke	298,940	May 20	1229	348	27	774
Nut. Lock-	S. Gisslnger	298,842	May 20	1109	310	27	750
Nut-lock	C. E. Belding	296,383	Apr. 8	627	173	27	124
Nut-lock	E. F. Campbell, L. C. Noble, and M. G. Howe.	300,211	June 10	914	246	27	1100
Nut-lock	C. B. Cragin	297,678	Apr. 29	2280	620	27	453
Nut-lock	L. H. Davis	297,681	Apr. 29	2287	622, 623	27	454
Nut-lock	M. F. Dillon	298,950	May 20	1242	351	27	776
Nut-lock	G. C. Ditzler	295,911	Apr. 1	21	6	27	7
Nut-lock	R. Dodson	299,755	June 3	335	85	27	954
Nut-lock	J. Gilgour	296,948	Apr. 15	1323	367	27	264
Nut-lock	J. W. Hawk	299,640	June 3	179	45	27	953
Nut-lock	A. Hebert and T. P. Butler	299,472	May 27	1888	544	27	907
Nut-lock	J. C. McAfee	297,824	Apr. 29	2451	671	27	485
Nut-lock	A. Neutzscher	299,838	June 3	423	109	27	1002
Nut-lock	H. Stone	296,361	Apr. 8	594	165	27	118
Nut-lock	A. A. Wilder	297,894	Apr. 29	2530	693	27	501
Nut-lock	C. A. Williams	299,308	May 27	1689	484	27	871

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nut-lock-bending machine	J. B. Sutch	299,293	May 27	1669	478	27	867
Nut-picks. Manufacture of	H. M. Quackenbush	296,450	Apr. 8	702	193	27	139
Nut-trimming machine	G. H. Fowler	298,742	May 20	990	276	27	723
Nut-washer	W. A. Jordan	299,967	June 10	611	165	27	1046
Nuts. Locking-washer for jam-	A. P. Neible	297,154	Apr. 22	1587	437	27	316
Nuts to bolts. Locking	B. H. Williams	299,447	May 27	1858	534	27	902
Oar	S. Lindenberger	298,495	May 13	668	188	27	661
Oar	G. B. Stanton	300,915	June 24	1825	499	27	1281
Oatmeal-cutter	F. W. Kremer	297,523	Apr. 22	2061	563	27	404
Oatmeal-machine	G. H. Cormack	297,503	Apr. 22	2039	557	27	400
Oculists and opticians. Trial-frame for	A. L. Smith and E. M. Cole	297,858	Apr. 29	2487	681	27	493
Oidium. Composition for destroying the grape	H. De Chaseloup-Laubat	297,354	Apr. 22	1848	.....	27	365
Oil-cake press	T. De Armon	299,322	June 3	22	7	27	925
Oil-cake-pressing apparatus	W. Krutzsch	296,186	Apr. 1	347	98, 99	27	67
Oil-cerkes. Machine for forming	J. L. Moss and N. Littell	297,610	Apr. 29	2105	599	27	437
Oil-can	W. D. Doremus	300,450	June 17	1926	335	27	1166
Oil-can	R. English	297,977	May 6	17	5	27	530
Oil-can	S. S. Getchell	299,469	May 27	1883	541	27	906
Oil-can	J. A. Griswold	299,068	May 20	1389	396	27	804
Oil-can	J. C. Merrell	298,874	May 20	1147	322	27	758
Oil-can. Incased	J. A. Blankley	300,692	June 17	1532	421	27	1223
Oil-can. Incased	C. H. Tallman	296,248	Apr. 1	435	122	27	82
Oil-cloth. Machine for decorating	A. F. Buchanan	299,732	June 3	309	78	27	978
Oil-cloth. Manufacture of	A. F. Buchanan. (Reissue)	10,462	Apr. 1	520	145	27	98
Oil-cup	I. H. Congdon	296,390	Apr. 8	636	175	27	126
Oil-cup	W. A. Foster	298,861	May 20	1264	359	27	780
Oil-cup	J. J. Irvine	300,960	June 24	1894	521	27	1293
Oil-cup	E. Lunkenheimer	299,929	June 3	596	139	27	1021
Oil-cup	P. Small	297,304	Apr. 22	1778	483	27	351
Oil-cup	W. H. Thomas	298,915	May 20	1201	348	27	760
Oil-cup feeder	J. E. Worswick	297,483	Apr. 22	2003	547	27	395
Oil from oleaginous substances. Apparatus for extracting	W. Krutzsch	296,187	Apr. 1	349	99, 100	27	67
Oil from the earth used in refining oils or fats. Separating	M. A. Beal	298,816	May 20	1079	.....	27	745
Oil. Lubricating	J. E. Gill	296,159	Apr. 1	314	90	27	61
Oil-press	W. P. Callahah	299,958	June 10	573	154	27	1040
Oil-press mat	C. S. Hamilton	298,848	May 20	1116	313, 314	27	751
Oil-press mat	A. E. Osborn	296,601	Apr. 8	900	249	27	178
Oil-press mat	J. H. Vallo	298,920	May 20	1206	340	27	770
Oil-press mat	C. Woodman	300,296	June 10	1029	272	27	1121
Oil-press plate	L. Andrews	296,105	Apr. 1	272	74	27	51
Oil-presses. Division-plate for	I. A. Bang and C. A. Sanguinetti	297,743	Apr. 29	2363	644	27	468
Oils and fats from oleaginous and fatty bodies. Extraction of	E. W. Strain	298,712	May 13	940	261, 262	27	712
Oils. Apparatus for redneing, refining, and separating hydrocarbon	R. Baynes and J. Fearenside, Jr.	299,324	May 27	1703	.....	27	874
Oils. Purifying or refining petroleum and other distillable	J. S. Park	296,047	Apr. 1	184	53	27	36
Oiler	A. J. Spicer	298,514	May 13	698	197	27	666
Oiler	C. H. Parshall	296,214	Apr. 1	368	110	27	75
Oiler. Crank-pin	J. B. Oliver	296,440	Apr. 8	669	190	27	136
Oiling device. Wire-	J. Stubbe	296,645	Apr. 8	950	267	27	189
Oiling device. Wire-	J. Stephenson	300,029	June 10	605	181	27	1056
Oiling-pad for journal-boxes	T. Y. Winter	299,606	May 20	1424	406	27	811
Oiling shaft-bearings. Device for	H. and F. H. Durell	296,281	Apr. 1	487	136	27	92
Ordnance. Breech-loading	W. B. Kennedy and W. M. Nesbit	300,475	June 17	1264	347	27	1173
Ore-concentrator	J. L. Loomis	299,235	May 27	1599	459	27	855
Ore-concentrator. Wet	W. B. Farwell	300,701	June 17	1562	428, 429	27	1228
Ore-crusher	J. C. Wiswell	296,096	Apr. 1	241	71	27	49
Ore-elevator	W. A. Hartt	296,560	Apr. 8	848	235	27	168
Ore-pulverizer. Rotary	J. B. Gagnon	299,772	June 3	351	89, 90	27	987
Ore-sampling machine	T. T. Eyre	299,950	June 3	514	136	27	1019
Ore-separator	H. P. Fairfield and L. A. Shead	295,992	Apr. 1	121	36	27	25
Ore-separator	H. P. Fairfield and L. A. Shead	295,993	Apr. 1	194	37	27	26
Ore-separator	L. A. Shead and H. P. Fairfield	296,075	Apr. 1	217	63	27	44
Ore separator. Dry	W. L. Card and J. C. Dane	300,042	June 10	683	185	27	1039
Ore separator. Dry	W. L. Card and J. C. Dane	300,043	June 10	685	185	27	1039
Ore separator. Dry	W. L. Card and J. C. Dane	300,044	June 10	686	186	27	1039
Ore-separator. Magnetic	F. V. Rouleau	296,068	Apr. 1	210	61	27	43
Ore-washer shafts. Base-plate for the teeth of	G. Lauder	299,393	May 27	1594	458	27	854
Ores and for other purposes. Apparatus for treating	T. R. Timby	296,251	Apr. 1	438	123, 124	27	84
Ores by electrolysis. Chloridizing	H. R. Cassel	300,951	June 24	1860	.....	27	1287
Ores. Machines for washing and concentrating	J. C. Wiswell	300,426	June 17	1199	328	27	1161
Ores. Process of and furnace for smelting and reducing	J. K. Griffin	299,637	June 3	174	44	27	952
Organ case. Cabinet	O. C. Whitney	297,212	Apr. 22	1669	454	27	331
Organ case. Reed	M. Clark	296,134	Apr. 1	288	82	27	56
Organ. Reed	F. F. Franceschini	298,840	May 20	1107	310	27	750
Organ. Reed	J. Hessler	300,777	June 24	1856	454	27	1249
Organ. Reed	F. W. Poloubet	301,000	June 24	1918	378	27	1298
Organ. Reed	H. Wegman	299,707	June 3	292	70	27	973
Organ stop-action. Reed	O. C. Whitney	297,211	Apr. 22	1667	453, 464	27	331
Ornament for personal wear	W. D. Smith	296,636	Apr. 8	940	262, 263	27	187
Ornaments from metals, &c. Producing	W. C. Edge	298,358	May 13	523	142	27	633
Oscillating meter	L. H. Nash	300,625	June 17	1445	398, 399	27	1207
Oscillating meter	L. H. Nash	300,626	June 17	1448	399	27	1207
Oscillating meter	L. H. Nash	300,627	June 17	1450	400	27	1208

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Oscillating meter	L. H. Nash	300,628	June 17	1452	400, 401	27	1208
Oven for drying cores or molds	B. F. Watkins	298,803	May 20	1063	297, 298	27	741
Oven. Portable bake-	E. P. Geneste	296,284	Apr. 1	490	137	27	92
Oven-shelf. Automatic	L. T. Newell	299,672	June 3	239	59	27	965
Overalls	W. G. Venner	299,702	June 3	277	69	27	971
Overflow-trap for wash-basins, bath-tubs, &c	W. T. Jobb	299,476	May 27	1892	545	27	908
Overshoe	D. Hall	300,774	June 24	1653	452	27	1248
Overshoe	G. A. Lewis	296,978	Apr. 15	1362	376	27	271
Overshoe	E. A. Saunders	298,239	May 6	302	96	27	595
Overshoe or arctic	J. B. Belcher	296,115	Apr. 1	266	76	27	53
Oyster-clamp	C. Drake	299,756	June 3	335	85	27	984
Ozocerite and other solid hydrocarbons. Preparing	J. C. O. Chemin	297,766	Apr. 29	2392	.....	27	473
Package and book holder	C. Huff	300,979	June 24	1893	521	27	1293
Packing and show box. Combined	S. and J. R. Toay	296,367	Apr. 8	600	166	27	119
Packing-box	C. H. Morgan	300,721	June 17	1585	414	27	1231
Packing box or cartridge for various articles	V. A. Billetto	300,748	June 17	1616	443	27	1236
Packing. Car-axle	W. H. Wright	296,098	Apr. 1	244	71	27	49
Packing for piston and valve rods. Metallic	C. T. Sleeper	300,653	June 17	1492	411	27	1215
Packing, lubricating, and cooling the pistons of air-compressors	C. F. Ruff	296,462	Apr. 8	716	198	27	142
Packing. Metallic ring	J. Wheelock	297,891	Apr. 29	2527	692	27	500
Packing. Piston-	A. MacLaine	298,871	May 20	1143	321	27	757
Packing. Piston-	E. Suckow	300,815	June 24	1699	464	27	1256
Packing. Piston-rod	T. A. Myers	296,295	Apr. 1	508	141	27	95
Packing salt, flour, &c. Machine for	R. Radley	298,501	May 13	686	194	27	664
Pad: *See* Blotting-pad. Collar-pad. Harness-pad. Oiling-pad.							
Paddle-wheel. Feathering	M. H. Depue	299,752	June 3	330	84	27	983
Paddle-wheel. Submerged feathering	T. A. Cook	296,728	Apr. 15	1051	296	27	215
Padlock	C. W. Judson	298,476	May 13	657	186	27	658
Padlock. Permutation	J. W. Bruff and W. E. T. Merrill	296,520	Apr. 8	791	218	27	157
Pail. Dinner	T. F. Freel	300,591	June 17	1396	385	27	1198
Paint	L. Brown	298,941	May 20	1229	.....	27	774
Paint	E. H. Hague	297,074	Apr. 15	1476	.....	27	293
Paint-can	E. Norton	298,018	May 6	72	18	27	541
Paint-cleaning compound	A. S. Cluff	299,351	May 27	1744	.....	27	882
Paint. Composition of matter to be used as a fire and water protective	F. L. Putt and J. B. Stratton	299,088	May 20	1415	.....	27	809
Paint-distributer	L. Walknp	298,138	May 6	218	57, 58	27	568
Paint. Fire and water proof	M. O. Fisher	296,324	Apr. 8	548	.....	27	110
Paint. Liquid	G. T. Lewis	297,139	Apr. 22	1570	.....	27	313
Paint-mixer	R. H. Smith	296,792	Apr. 15	1127	317	27	229
Paint to wire. Apparatus for applying	W. H. Sawyer	298,896	May 20	1177	329	27	764
Paints. Package for mixed	E. T. Mason and F. A. Bergman	298,393	May 13	563	155	27	641
Painting bobbins, &c. Apparatus for	L. C. Baldwin	296,506	Apr. 8	773	213	27	153
Painting portraits, figures, and landscapes. Hand-	O. H. Orton	296,348	Apr. 8	580	.....	27	116
Pan: *See* Amalgamating-pan. Baking-pan. Locomotive ash-pan. Vacuum-pan.							
Panel for walls, ceilings, &c	L. C. Tiffany	299,181	May 27	1535	440	27	841
Pantaloon-stretcher	Z. M. Johnson	300,609	June 17	1421	391	27	1207
Paper and protecting the same in the roll. Reel and rod for winding	J. L. Firm	297,775	Apr. 29	2402	656	27	475
Paper. Apparatus for feeding sheets of	F. C. Thielscher	295,955	Apr. 1	73	22	27	17
Paper bag	G. O. Blowers	296,117	Apr. 1	269	77	27	53
Paper bag	J. P. Onderdonk	296,871	Apr. 15	1231	344	27	247
Paper-bag machine	O. W. Allison	298,719	May 20	955	267	27	723
Paper-bag machine	O. W. Allison	299,097	May 27	1429	409	27	823
Paper-bag rack	W. Mack	298,870	May 20	1142	321	27	757
Paper bag. Soft-tie	J. Arkell	298,152	May 6	239	62	27	572
Paper bags. Making soft-tie	J. Arkell	298,153	May 6	240	62	27	572
Paper box	J. F. Gooding	299,777	June 3	355	91	27	988
Paper box	J. C. Hurd	298,384	May 13	555	152	27	639
Paper-box-covering machine	L. Weston	296,257	Apr. 1	449	127, 128	27	85
Paper-box machine	P. Abbott	297,484	Apr. 22	2004	548	27	395
Paper boxes. Flap-retainer for	J. C. Baner	296,510	Apr. 8	780	215	27	155
Paper boxes. Machine for cutting straw-board for	G. H. Dickerman	297,576	Apr. 29	2147	585, 586, 587	27	427
Paper-calendering machine	M. Solinger	296,080	Apr. 1	221	64, 65	27	45
Paper. Composition of matter for giving a metallic surface to	J. Franaecky	299,372	May 27	1766	.....	27	886
Paper-creasing machine	J. E. Stannard	298,425	May 13	594	168	27	647
Paper-cutter and die-press	J. H. Lawlor	296,191	Apr. 1	356	101, 102	27	69
Paper-cutting machine	S. Brown	299,457	May 27	1870	537	27	904
Paper-cutting machine	H. T. C. Kraus	296,184	Apr. 1	343	97, 98	27	66
Paper. Fire-proof	D. A. Brown	296,722	Apr. 15	1046	.....	27	214
Paper fixture. Toilet	S. Wheeler	297,044	Apr. 15	1443	398	27	286
Paper fixture. Wrapping or toilet	S. Wheeler	297,045	Apr. 15	1443	398	27	286
Paper-folding machine	F. C. Hellmuth	300,606	June 17	1416	390	27	1202
Paper-folding machine	J. H. Stonemetz	299,094	May 20	1422	406	27	811
Paper for boiler-covering	D. L. Hughes	299,983	June 10	606	162	27	1045
Paper friction-wheel	W. E. Rockwood	300,013	June 10	649	177	27	1053
Paper-holder	A. C. Moore	297,618	Apr. 29	2194	598	27	436
Paper-holder	I. S. Mudgett	297,234	Apr. 22	1752	476	27	347
Paper holder. Ornamental and fly	V. G. Tansey	298,134	May 6	212	56	27	567
Paper holder. Toilet and wrapping	S. Wheeler	297,043	Apr. 15	1442	398	27	286
Paper-machine	T. Stewart	298,634	May 13	637	234	27	692
Paper-machines. Automatic felt-guide for	B. A. Schubiger	296,222	Apr. 1	397	113	27	76

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Paper-machines. Machine for preparing pulp for	W. Umpherston	297,037	Apr. 15	1436	395	27	284
Paper-making machine	J. V. Stenger	296,683	Apr. 1	227	66	27	46
Paper-making machinery	G. E. Marshall	297,702	Apr. 29	2314	629	27	459
Paper-making. Rag-engine for	W. Whitely	299,307	May 27	1688	484	27	871
Paper. Manufacture of	Z. M. Crane	296,928	Apr. 15	1303	.....	27	260
Paper. Manufacture of	W. Rupp	296,463	Apr. 8	716	.....	27	142
Paper-perforating device	C. Carlton	298,667	May 13	889	248	27	702
Paper pulley	W. E. Rockwood	300,012	June 10	648	177	27	1053
Paper-pulp from wood. Process of and apparatus for manufacturing	G. H. Pond	298,780	Apr 15	1114	314	27	226
Paper rolls. End-cap for	F. W. Dunnell	298,502	May 13	753	212	27	677
Paper slitting and winding machine	H. Inman	297,936	Apr 29	2587	{709 710}	27	512
Paper-stock sorting and cleaning machine	R. O. and W. Moorhouse	298,108	May 6	179	48	27	561
Paper, twine, and sack case for grocers, &c	J. F. Barr	298,656	May 13	866	243	27	697
Paper wallet	A. L. Sewell	295,949	Apr. 1	66	20	27	15
Paper-weight	C. J. R. Ballard	299,946	June 10	561	150	27	1038
Paper-weight and pen-rack. Combined	I. W. Heysinger	298,379	May 13	546	149	27	638
Paper wheel	W. E. Rockwood	300,014	June 10	649	177	27	1053
Papers. Ring-suspending device for	G. W. McGill	299,155	May 21	1501	431	27	836
Paraffine-freezer	W. C. Scofield	299,660	June 3	446	115	27	1007
Parasol	F. C. Dennis	296,318	Apr. 8	539	151	27	108
Parasol-frame	H. M. Richardson	296,354	Apr. 8	585	163	27	117
Parer and slicer. Apple	W. E. Brock	297,749	Apr. 29	2369	645	27	469
Parer, corer, and slicer. Apple	W. M. Griscom	298,745	May 20	994	277	27	729
Parer. Potato	G. A. Betancourt	298,547	May 13	733	207	27	674
Passenger or other elevator	M. N. Hutchinson	299,547	June 3	55	14	27	931
Passenger or other elevator	M. N. Hutchinson	299,548	June 3	57	15	27	931
Pattern: *See* Coat-pattern. Undergarment-pattern.							
Patterns on goods. Device for clamping	J. A. House and C. H. Dimond	298,470	May 13	651	184	27	657
Pavement. Concrete	F. Gelb	300,583	June 17	1398	.....	27	1198
Pavement. Wood	J. Kerr	296,561	Apr. 8	874	242	27	174
Paving-block	R. Campbell	296,131	Apr. 1	296	81	27	56
Paving-blocks from furnace-slag, &c. Manufacture of	C. J. Dobbs	300,580	June 17	1383	392	27	1195
Paving streets, walks, &c. Concrete compound for	L. Haas	297,791	Apr. 29	2412	.....	27	479
Peanut separating and assorting table	C. W. Nicholson	301,067	June 24	2005	554	27	1314
Peg-cutter. Rotary	J. L. Coleman, Jr	300,577	June 17	1380	381	27	1195
Pen	W. T. Rightmyer	296,456	Apr. 8	708	195	27	140
Pen	C. G. Spengler	299,283	May 27	1654	475	27	864
Pen. Fountain	C. H. Court and A. J. Kletzker	300,224	June 10	928	250	27	1103
Pen. Fountain	J. R. Haight	299,219	May 27	1578	454	27	851
Pen. Fountain	J. Holland	298,582	May 13	778	219	27	682
Pen. Fountain	J. Holland	300,260	June 10	977	264	27	1112
Pen. Fountain	G. C. Holt	298,382	May 13	550	151	27	639
Pen. Fountain	A. J. Kletzker and C. H. Court	297,420	Apr. 22	1936	526	27	379
Pen-holder	S. A. Holman	298,090	May 6	158	41	27	553
Pen-holder	A. E. Sage	298,411	May 13	581	162	27	644
Pen-holder	O. S. Warner	297,651	Apr. 29	2241	610	27	445
Pen-holder attachment	E. P. McLane	299,242	May 27	1605	460	27	857
Pen-holder and blotter. Combined	J. F. Miller	299,608	June 3	235	58	27	964
Pen holder. Fountain	J. Morton	298,767	May 20	1015	284	27	730
Pen. Marking and shading	E. E. Alderman	299,046	May 20	1365	380	27	799
Pen or pencil case	H. P. Huntoon	300,709	June 17	1573	431	27	1229
Pen-rest	C. McKinnon	298,603	May 13	802	225	27	686
Pen. Stylographic fountain	J. C. Haring and C. H. Court	298,064	May 6	152	39, 40	27	555
Pens. Detachable reservoir for	G. W. Woolley	299,499	May 27	1918	553	27	914
Pencil	T. M. Kenney	295,923	Apr. 1	38	11	27	10
Pencil	G. C. Ward	297,041	Apr. 15	1440	397	27	285
Pencil-case	L. W. Fairchild	298,364	May 13	529	145	27	635
Pencil-case	J. C. Haring	301,056	June 24	1991	550	27	1311
Pencil-case and lead	J. Holland	298,583	May 13	779	219	27	682
Pencil-clasp	J. Batchelor	299,902	June 3	492	130	27	1015
Pencil-clasp	G. A. Schlochter	297,729	Apr. 29	2338	635	27	463
Pencil-holder	M. S. Shipley	300,740	June 17	1606	440	27	1234
Pencil, pen, or toothpick case	A. H. Woodward	296,302	Apr. 1	518	144	27	97
Pencil-sharpener	J. T. Knagge	300,375	June 17	1135	309	27	1150
Pencil sharpener and holder	T. Holdsworth	296,751	Apr. 15	1082	305	27	221
Pencil sharpener and sponge-holder. Combined slate.	G. C. Price, G. W. F. Cook, and W. C. Price.	300,735	June 17	1600	438	27	1233
Pencil-sharpener, eraser, &c. Combined	J. A. Cook	296,730	Apr. 15	1054	297	27	215
Pencil sharpener. Slate	I. Brooke	299,729	June 3	306	76	27	978
Pencils, &c. Case for	R. M. Collard	300,346	June 17	1098	298	27	1144
Pencils. Combined apparatus for attachment to	J. Hicklsson and W. Lee	297,396	Apr. 22	1895	515	27	374
Pencils, &c. Device for holding	C. W. Boman	297,106	Apr. 22	1527	421	27	306
Pencils. Extension-case for	R. M. Collard	300,693	June 17	1551	426	27	1226
Pendant	B. Dreyfus	300,699	June 17	1560	428	27	1228
Perambulator for teaching children to walk and automatic seat therefor. Combined	A. De Julio	299,058	May 20	1377	392	27	801
Perch coupling. Drop	T. D. Lines	300,275	June 10	903	268	27	1115
Percolator	C. K. Bradford and J. G. Benedict	299,198	May 27	1553	446	27	846
Perfumery-stand	V. Demuth	297,235	Apr. 22	1699	462	27	337
Permutation-lock	J. W. Allen	298,651	May 13	859	241	27	696
Permutation-lock	W. M. Brooke	297,749	Apr. 29	2379	645	27	469
Permutation-lock	W. S. Hill	300,868	June 24	1768	482	27	1269
Permutation-lock	O. E Pillard	301,001	June 24	1919	{528 529}	27	1298
Permutation-lock	E. Stockwell	299,695	June 3	267	66, 67	27	970
Pessary	H. G. Farr	300,709	June 24	1648	451	27	1247
Petroleum and for bleaching other oils. Apparatus for improving the fire-test of	J. B. Huston	297,603	Apr. 29	2178	595	27	433
Petroleum. Refining	L. A. Baker	299,611	June 3	142	.....	27	946

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Phosphate rock, ores, &c. Apparatus for washing	F. Brotherhood	299,337	May 27	1723	494	27	878
Photographic camera	H. G. Jones	300,477	June 17	1202	{345 346}	27	1173
Photographic camera	C. W. Stiff and N. C. Bousley	299,289	May 27	1661	476	27	866
Photographic exchange-box	H. Kayser	300,478	June 17	1263	346	27	1173
Photographic plate holder and case	S. S. Peckinpugh and G. J. White	296,443	Apr. 8	694	191	27	137
Photographs. Apparatus for cleaning	R. H. Jones, M. B. Smith, and L. J. A. Roswall.	296,578	Apr. 8	871	{241 242}	27	173
Photographs. Coloring	A. Bisson	296,913	Apr. 15	1285	.....	27	257
Photographs. Producing ornamental relief borders or foregrounds for	C. M. French	297,779	Apr. 29	2406	.....	27	476
Piano	J. Ebel	298,837	May 20	1104	309	27	749
Piano-forte frame	H. Kroeger	299,479	May 27	1698	546	27	909
Piano music-desk	M. J. Chase	296,726	Apr. 15	1048	295	27	214
Piano pedal attachment	J. M. Bettman	296,398	Apr. 8	528	148	27	106
Piano sounding-board	H. S. Parmelee	301,068	June 24	2006	554	27	1314
Piano sounding-boards. A grafle for	C. W. Brewer	298,664	May 13	886	246	27	701
Pianos. Device for cutting damper-felt for	J. Swenson	298,040	May 6	101	26	27	546
Pianos. Lid-raising attachment for	G. W. Peek	296,612	Apr. 8	914	255	27	182
Pianos. Repetition-action for	F. L. Becker	297,908	Apr. 29	2546	698	27	504
Pick	G. W. Elliott	296,736	Apr. 15	1060	299	27	217
Picker: *See* Fruit-picker.							
Picture-support	K. G. E. Liersch and L. R. Erche	299,650	June 3	208	54	27	959
Pictures. Producing	R. Sneider	299,692	June 3	264	66	27	970
Pigeon-hole	H. D. Pursell	299,261	May 27	1624	467	27	860
Pile-driver	G. H. Cavanagh	299,344	May 27	1736	498	27	880
Pile-driver	T. Tangney	300,407	June 17	1174	{321 322}	27	1156
Piles of piers. Bracing	A. B. Burton	296,313	Apr. 8	533	149	27	106
Piles. Protecting	J. A. Camp	300,343	June 17	1095	297	27	1144
Piles. Sinking	R. E. Peary	299,419	May 27	1827	525	27	897
Pill-forming machine	A. H. Wirz	298,148	May 6	233	61	27	571
Pill making device	E. B. Patterson	299,258	May 27	1621	466	27	858
Pills, lozenges, &c. Coating	W. T. Baker	300,037	June 10	675	184	27	1058
Pills, tablets, &c. Machine for making	A. H. Wirz and A. V. W. Rausch	298,328	May 6	477	{128 129}	27	617
Pillow-sham and holder	D. R. Wilson	299,309	May 27	1690	484	27	871
Pillow-sham holder	J. J. Kelsey	299,400	May 27	1803	519	27	892
Pillow-sham holder	E. W. and A. M. Trenholm	299,095	May 20	1423	406	27	811
Pilot or wheel guard	G. W. Bennett and T. S. Fitch	299,330	May 27	1716	492	27	876
Pin: *See* Coupling-pin. Insulator-pin. Curtain-pin. Safety-pin.							
Pipe: *See* Water-pipe.							
Pipe and hose coupling	F. E. Mertens	299,927	June 3	411	105	27	999
Pipe-coupling	J. Connor	296,678	Apr. 8	989	277	27	197
Pipe-coupling	T. Hunt	297,264	Apr. 22	1734	471	27	343
Pipe-coupling	W. Martin	299,661	June 3	210	54	27	959
Pipe-coupling	W. Martin	299,662	June 3	212	55	27	959
Pipe-cutter	E. A. Robbins	300,898	June 24	1803	491	27	1277
Pipe cutter. Well	A. W. Benson	299,331	May 27	1717	492	27	876
Pipe. Curved	J. F. Bennett	298,059	May 6	123	31	27	550
Pipe mold and flask	H. H. Fisher	300,239	June 10	946	{255 256}	27	1106
Pipe-stem	J. P. Lange	296,417	Apr. 8	664	184	27	131
Pipe-wrench	J. Doyle	298,294	May 6	433	116	27	608
Pipe-wrench	C. D. Volkmann and W. F. Peddycord.	299,440	May 27	1850	532	27	901
Pistol-handle	J. C. Kelton	297,412	Apr. 22	1917	524	27	378
Pitcher-cover	I. Binmenthal	295,902	Apr. 1	13	3	27	5
Pitchers. Ice-guard for	L. Messer	299,414	May 27	1893	524	27	896
Pitman	L. B. Miller and P. Diehl	298,701	May 13	931	258	27	710
Pitman	H. H. Travlos	299,698	June 3	271	68	27	971
Pivot. Mirror	D. C. Peck and F. L. Gaylord	299,005	May 20	1305	372	27	788
Plaiter and puff-finter	J. A. Clother	296,389	Apr. 8	635	175	27	126
Plane	S. E. Hilles	299,927	June 3	522	130	27	1020
Plane	J. B. Ripsom	296,785	Apr. 15	1120	315	27	228
Plane	S. R. and A. E. Rust	300,399	June 17	1163	319	27	1154
Plane	N. E. Curtis	296,933	Apr. 15	1309	363	27	261
Plane. Bench	G. D. Mosher and W. H. Ford	296,207	Apr. 1	379	108	27	73
Plane. Joiner's	A. Fales	295,916	Apr. 1	90	8, 9	27	8
Plane. Variable bench	E. R. Bryant	296,270	Apr. 1	471	132	27	89
Planer attachment. Metal	P. McCourt	299,153	May 27	1500	431	27	836
Planer-knife	F. B. Thompson	300,533	June 17	1327	364	27	1185
Planer-knives. Gage for adjusting	E. B. Hayes	296,502	Apr. 8	851	236	27	169
Planing-machine	L. Houston	298,755	May 20	1003	280	27	731
Planing-machine	G. A. Gray, Jr	296,951	Apr. 15	1326	368	27	265
Planing-machine. Metal	J. Angus	298,209	May 6	401	{105 106}	27	602
Planing machines. Tool-oscillating device for	J. Pleukharp	296,448	Apr. 8	698	192	27	138
Planing polygonal bodies. Machine for	W. Ironside	300,262	June 10	979	264	27	1112
Planter and fertilizer-distributer. Combined	W. C. Pickle	295,939	Apr. 1	56	16	27	13
Planter and fertilizer-distributer. Combined seed-	W. B. Jackson	299,549	June 3	58	15	27	931
Planter and guano-distributer. Seed-	G. S. Paine	300,117	June 10	781	209	27	1077
Planter attachment. Corn-	M. F. Connett	296,533	Apr. 8	808	223	27	161
Planter check-row attachment. Corn-	F. W. Calais	297,110	Apr. 22	1530	{422 423}	27	307
Planter check-row attachment. Seed-	L. Eberhart and I. D. Stevens	296,151	Apr. 1	306	88	27	60
Planter. Check-row corn-	E. P. Barrett and J. A. Forster	300,557	June 17	1360	375	27	1191
Planter. Check-row corn-	W. L. Keller	297,697	Apr. 29	2369	628	27	458
Planter. Check-row corn-	T. J. Lindsay	296,980	Apr. 15	1364	377	27	271
Planter. Check-row corn-	V. Weber and J. Friedman	298,139	May 6	221	58	27	560

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planter check-rower. Corn	C. S. Locke	298,003	May 6	54	14	27	538
Planter check-rower. Corn	W. B. Rush	298,895	May 20	1176	328	27	763
Planter check-rowers. Tappet-wire for corn	G. W. Brown	298,892	May 20	1086	305	27	746
Planter. Corn	A. D. Adams	296,906	Apr. 15	1277	355	27	256
Planter. Corn	E. Gager	299,975	June 10	502	150	27	1043
Planter. Corn	H. D. Layman	296,697	Apr. 8	1012	283	27	202
Planter. Corn	A. R. McMullen	299,410	May 27	1818	{522 523}	27	895
Planter. Corn	A. Runstetler	301,072	June 24	2010	535	27	1315
Planter. Corn	L. A. Scovil	298,782	May 20	4034	{289 290}	27	736
Planter. Corn	W. A. Sharpe	300,806	June 24	1689	{461 462}	27	1254
Planter. Corn	G. W. Tarbell	295,953	Apr. 1	70	21	27	16
Planter. Corn	F. Wiskocil	297,903	Apr. 29	2539	{695 696}	27	503
Planter. Cotton	W. T. Gardner	296,947	Apr. 15	1392	367	27	264
Planter. Cotton	H. D. Layman	296,698	Apr. 8	1013	284	27	202
Planter. Hand corn	J. T. Ricketts	299,679	June 3	250	62	27	967
Planter. Hand corn and seed	F. E. Culver	296,733	Apr. 15	1038	298	27	216
Planter, potato-digger, and cultivator. Combined corn and potato	G. W. Peirsol	297,698	Apr. 29	2399	602	27	430
Planter. Seed	J. R. Newton	298,880	May 20	1156	324	27	759
Planter. Seed	W. Stoddard	299,593	June 3	121	30	27	941
Planters. Check-rowing attachment for seed	P. Hinkley	299,981	June 10	603	162	27	1045
Planters. Reel for check-row corn	J. C. Dupee and C. P. Housum	298,678	May 13	904	251	27	705
Plaque and panel	L. A. De Planque	299,751	June 3	329	84	27	989
Plaque-holder	D. M. Ireland	298,976	May 20	1274	363	27	782
Plaques. Preparing or treating composition or material to be used in making	J. J. West	297,206	Apr. 22	1662	.....	27	330
Plastering	J. Morrison, Jr	297,822	Apr. 29	2460	674	27	487
Plastic materials. Machine for shaping	W. Kilian	296,183	Apr. 1	342	97	27	65
Pliers. Cutting	J. H. Jencks	298,587	May 13	785	220	27	682
Pliers. Cutting	J. H. Jencks	298,588	May 13	786	221	27	683
Pliers. Cutting	E. Stevens	299,672	June 3	459	120	27	1010
Pliers. Stopper-pulling	B. A. Bacon and J. W. Boardman	297,658	Apr. 29	2250	612	27	447
Plow	C. Anderson	297,906	Apr. 29	2543	697	27	504
Plow	S. W. Ball	296,108	Apr. 1	260	75	27	52
Plow	G. P. Bascom	298,157	May 6	244	63	27	572
Plow	J. A. Bilz	299,195	May 27	1550	445	27	845
Plow	D. E. Fish	300,457	June 17	1235	338	27	1167
Plow	J. Ritz	297,450	Apr. 22	1964	537	27	387
Plow	G. B. St. John	296,946	Apr. 1	432	122	27	83
Plow	E. D. Starke	295,952	Apr. 1	68	20, 21	27	16
Plow	P. H. Starke. (Reissue)	10,477	May 6	493	133	27	620
Plow	T. H. Whitlock and C. L. Etheridge	299,444	May 27	1853	533	27	901
Plow and harrow. Combined	E. O. Long	298,486	May 13	669	188	27	661
Plow attachment	J. Lawrie	295,925	Apr. 1	40	12	27	10
Plow attachment	M. J. Stafford	299,868	June 3	455	119	27	1009
Plow canting device. Gang	W. Kimmel	300,614	June 17	1430	394	27	1204
Plow. Cultivator	H. Parrish	299,160	May 27	1510	433	27	837
Plow ditching and grading attachment	J. W. Estes	298,741	May 20	989	{275 276}	27	728
Plow. Double	J. L. Laughlin	297,815	Apr. 29	2441	667	27	483
Plow. Gang	A. Shaffer	299,022	May 20	1330	{379 380}	27	793
Plow. Gang	S. L. Wilson	300,671	June 17	1512	418	27	1220
Plow. Hillside	J. Neff, Jr	299,250	May 27	1614	464	27	858
Plow-point	W. T. Burks and L. P. Klutts	300,567	June 17	1368	377	27	1193
Plow. Planting	J. Lane	296,851	Apr. 15	1202	337	27	242
Plow. Shovel	R. H. Hudgens and H. R. Allison	296,966	Apr. 15	1342	372	27	268
Plow. Side-hill	J. Rapp	300,592	June 17	1292	355	27	1179
Plow-standard	J. P. McIntyre	296,861	Apr. 15	1215	340	27	244
Plow. Sulky	N. S. Barger	299,459	May 27	1863	{535 536}	27	903
Plow. Sulky	S. W. Barr	298,337	May 13	498	136	27	629
Plow. Sulky	W. L. Casaday	298,343	May 27	1730	{496 497 498}	27	879
Plow. Sulky	R. A. Radford	300,692	June 24	1796	490	27	1275
Plow. Sulky	C. Schweer	299,020	May 20	1325	{378 379}	27	792
Plow. Sulky	J. and E. E. Sickler	300,807	June 24	1690	462	27	1254
Plow. Sulky rotary mold-board	S. H. Taylor	300,658	June 17	1497	413	27	1217
Plow. Vineyard	B. G. Bradley	299,050	May 20	1370	390	27	800
Plow. Wheel	J. W. Bartlett	296,720	Apr. 15	1043	294	27	213
Plug for bowls and bath-tubs	J. D. Bacon	300,552	June 17	1356	373	27	1190
Plug for bowls and tubs. Trapped	J. D. Bacon	300,553	June 17	1357	374	27	1190
Plug-valve for wash-basins. Compound and self-acting	T. P. Ford, Jr	300,589	June 17	1393	384	27	1198
Plumber's trap	T. Dark	295,908	Apr. 1	19	5	27	6
Pneumatic holder and cutter. Combined	J. R. Williams	298,715	May 13	947	263	27	714
Pneumatic lock	A. W. Fuller	299,066	May 20	1365	395	27	803
Pneumatic tube	W. G. Davis	297,505	Apr. 22	2042	557	27	400
Pneumatic tubes. Flexible carrier for	R. J. P. Goodwin	299,216	May 27	1574	452	27	820
Pocket-book	H. A. Chapin	299,908	June 3	500	132	27	1017
Pocket-books, &c. Frame for	H. Didout, Fils	296,940	Apr. 15	1317	365	27	262
Pocket-case and cigar-clipper. Combined	E. P. Hasbrouck	299,135	May 27	1481	425	27	832
Pocket-knife	G. Frenud	297,375	Apr. 22	1871	509	27	367
Pocket-knife handle	G. H. Thompson and E. Hottegan	299,037	May 20	1349	385	27	796
Pole. Clothes-line	M. Bartlett	295,895	Apr. 1	3	1	27	3
Pole for vehicles. Shifting	J. T. Clarkson	300,848	June 24	1742	475	27	1264
Polishing compound	H. H. Becker	296,112	Apr. 1	263	.....	27	53
Polishing liquid	E. Ludwig	296,303	Apr. 1	519	.....	27	98
Polishing-wheel	D. W. Abbott	299,311	May 27	1691	485	27	871

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Polishing-wheel	H. Bintz	299,948	June 10	564	150	27	1038
Pool-ball rack and spotter. Automatic incline	W. A. Tea	297,031	Apr. 15	1428	{392 393}	27	283
Pool-rack	H. W. Collender	296,136	Apr. 1	289	83	27	57
Pool-rack	H. W. Collender	296,137	Apr. 1	291	83	27	57
Pool-rack	H. W. Collender	296,532	Apr. 8	806	223	27	161
Pool-rack	J. Felbel	299,365	May 27	1756	506	27	884
Pool-rack	S. De Gaetano	300,227	June 10	931	251	27	1103
Pool-table ball-rack	M. Rumely	297,169	Apr. 22	1604	441	27	320
Portable and traction engine	H. B. Larzelere	299,484	May 27	1904	548	27	910
Portable engine	H. B. Larzelere	300,270	June 10	988	{266 267}	27	1114
Portable furnace	J. W. Babbit and G. W. Morris	299,713	June 3	288	71	27	974
Portfolio	H. S. Williams and E. L. Shipman	298,532	May 13	718	203	27	671
Post: *See* Binding-post. Fence-post.							
Post-driver	E. Over	299,086	May 20	1413	403	27	809
Post-office box	E. Osgood	296,772	Apr. 15	1103	311	27	225
Pot: *See* Flower-pot.							
Potato-coverer	F. G. Juney	297,966	Apr. 22	1736	471	27	343
Potato-digger	C. Boul	299,107	May 27	1445	413	27	825
Potato-digger	S. D. Brown	296,584	May 6	129	33	27	551
Potato-digger	W. Dodge	296,541	Apr. 8	819	226	27	163
Potato-digger	J. Estes	297,361	Apr. 22	1855	504	27	366
Potato-digger	B. Freeman	299,468	May 27	1882	541	27	906
Potato-digger	C. W. Kattell	299,309	May 27	1802	519	27	892
Potato-digger	H. Nelson	297,285	Apr. 22	1753	476	27	347
Potato-digger	F. A. Paul	298,022	May 6	79	21	27	542
Potato-digger	A. L. Higley	296,168	Apr. 1	327	93	27	63
Potato-digging machine	A. Woeber	296,697	Apr. 1	243	71	27	49
Potter's mold	A. Kürth and R. Beyermann	297,606	Apr. 29	2183	.....	27	434
Pottery and porcelain. Producing colored pictures on	H. T. Hazard	298,085	May 6	153	40	27	555
Powder-flask charger							
Power: *See* Churn-power. Lever-power. Foot-power. Mechanical power. Hand and foot power. Tread-power. Horse-power. Wind-power.							
Power. Apparatus for transmitting	P. A. Dohla	298,672	May 13	896	249	27	704
Power. Device for transmitting	J. A. Sherman	298,317	May 6	464	125	27	614
Power-press	R. E. Boschert	300,201	June 10	903	243	27	1008
Precious metals from ores, &c. Separating	E. H. Russell	296,709	Apr. 8	1023	.....	27	204
Precious stones. Prodneing artificial	S. Grossiord	297,598	Apr. 29	2173	.....	27	432
Preserving food. Case for	J. J. Hoyt	296,692	Apr. 8	1006	281	27	200
Press: *See* Baling-press. Oil-press. Cheese-press. Oil-cake press. Cigar-press. Power-press. Cotton-press. Printing-press. Filter-press. Seal-press. Glass-press. Veneer-press. Lever-press.							
Press	C. B. Adams	298,931	May 20	1218	{343 344 345}	27	772
Press for sacking bran, sawdust, &c	A. L. Battson	299,721	June 3	295	73	27	976
Presses. Rearer for transfer	H. W. Chapman	299,961	June 10	577	155	27	1040
Pressing artificial blocks or bricks, &c. Machine for	A. Ball	296,507	Apr. 8	775	{213 214}	27	153
Pressing-machine. Tailor's	E. Walker	300,817	June 24	1701	465	27	1257
Pressure-regulator	W. Burnett	295,978	Apr. 1	99	30	27	21
Pressure-regulator	F. J. Freese	297,373	Apr. 22	1870	508	27	369
Pressure-regulator	J. F. Gooding	298,687	May 13	914	253	27	707
Printers' blocks. Apparatus for sawing	G. Williamson	296,772	Apr. 8	605	167	27	120
Printer's quoin	J. Polhemus	296,056	Apr. 1	197	57	27	40
Printer's quoin	C. A. R. L. Ver Genius	298,639	May 13	842	235	27	693
Printing and vignetting frame	O. P. Scott	298,901	May 20	1183	332	27	765
Printing. Art of and machinery for lithographic	W. H. Forbes and J. W. Osborne	300,242	June 10	949	{256 257}	27	1107
Printing by sunlight or other light, and apparatus therefor	E. Cope	296,391	Apr. 8	637	175	27	126
Printing. Form-roller for	A. Campbell	297,112	Apr. 22	1536	425	27	308
Printing-machine	J. Brooks	300,842	June 24	1735	474	27	1263
Printing-machine	A. Campbell	297,111	Apr. 22	1532	{423 424}	27	307
Printing-machine	H. Schott	300,141	June 10	818	221	27	1063
Printing-machine	W. Scott	298,781	May 20	1032	{288 289}	27	736
Printing-machine	W. W. Taylor	300,162	June 10	842	227	27	1068
Printing machine inking mechanism	G. A. Wilson	298,147	May 6	232	60	27	571
Printing machine. Lithographic	E. Jaeck	298,092	May 6	161	42	27	557
Printing-machine. Stop-cylinder	B. Huber	300,370	June 17	1128	{307 308}	27	1149
Printing machine. Web	L. C. Crowell	298,182	May 6	275	71, 72	27	578
Printing machines. Wiping and polishing apparatus for plate	A. Reid	297,294	Apr. 22	1767	460	27	349
Printing-press	J. H. Utter	296,898	Apr. 15	1268	353	27	254
Printing press delivery mechanism. Web	L. C. Crowell	301,047	June 24	1980	{547 548}	27	1309
Printing-press feed-guide	J. Blocher	298,164	May 6	255	66	27	574
Printing-press feed-guide	W. B. Smith	297,464	Apr. 22	1983	541	27	391
Printing-press. Oscillating	F. H. Richards	300,897	June 24	1802	{492 493}	27	1276

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Printing-press registering device	J. H. Cranston	300,225	June 10	929	250 / 251	27	1103
Printing-press rollers. Mechanism for raising	A. Campbell	297,752	Apr. 29	2373	646	27	469
Printing, stamping, or embossing. Producing roller-surfaces for	J. J. Sachs	297,017	Apr. 15	1407	.....	27	279
Privy seat or chair. Odorless	F. B. Kendall	296,580	Apr. 8	873	242	27	174
Proscenium. Adjustable	I. Kiralfy	297,813	Apr. 29	2430	667	27	482
Process apparatus	N. G. Gurney	296,285	Apr. 1	492	137	27	92
Projectile	D. M. Mefford	298,906	May 20	1994	369	27	796
Projectile for carrying explosive shells	J. Garrick	300,502	June 17	1396	385	27	1198
Projectile. Submarine	J. Ericsson	298,455	May 13	629	179	27	654
Propeller for small boats	J. B. Kibler	300,982	June 24	1927	521	27	1294
Propeller for vessels	T. Pennefeather	300,888	June 24	1792	489	27	1274
Propeller for vessels. Buoyant	N. Petersen	296,613	Apr. 8	915	255 / 256	27	122
Propeller for vessels. Screw	E. S. Hawley	299,538	June 3	42	11, 12	27	920
Propeller. Marine	E. T. Griffith	299,923	June 3	516	137	27	1019
Propeller. Screw	A. Von Buonaccorsi di Pistoja	296,271	Apr. 1	473	132	27	89
Propelling apparatus for vessels	A. C. de los Rios	298,214	May 6	358	95	27	594
Propelling apparatus for vessels	J. S. Smith	296,476	Apr. 8	736	203	27	145
Propelling canal-boats	G. R. Taylor	298,135	May 6	213	57	27	568
Pruning shears	J. G. Bubach	298,549	May 13	734	207	27	674
Puddling and heating furnace	W. Stubblebine	300,657	June 17	1496	412	27	1216
Puddling-furnace. Rotary	J. Griffen and J. Hall, Jr	300,250	June 10	961	260 / 261	27	1100
Puddling-furnaces. Cooling-shield for	E. W. Hickman	298,203	May 6	307	80	27	584
Pug-mill	S. K. Fletcher and R. Thomas	299,370	May 27	1702	508	27	886
Pull. Flush	J. Spruce	299,032	May 20	1344	384	27	796
Puller: *See* Stump-puller.							
Pulley	W. T. Baker and J. H. Shull	299,322	May 27	1701	488	27	874
Pulley	E. B. Martindale. (Reissue)	10,494	June 24	2020	558	27	1317
Pulley	H. C. Newcomb	297,531	Apr. 22	2075	566	27	407
Pulley	O. R. Olsen	297,624	Apr. 29	2204	601	27	438
Pulley. Belt	A. T. Irwin	296,173	Apr. 1	331	94	27	65
Pulley-block	D. M. Garrett	297,168	Apr. 22	1558	429	27	311
Pulley bracket and block	C. Schneider and C. Pfanne	298,241	May 6	365	97	27	595
Pulley. Friction-clutch	H. W. Hill	299,787	June 3	366	94	27	900
Pulley. Reversing	G. A. Tobey	297,473	Apr. 22	1992	544 / 545	27	393
Pulley. Self-adjusting	W. A. Gröndahl	299,470	May 27	1884	542	27	907
Pulley. Self-lubricating loose	E. F. Gordon	295,999	Apr. 1	134	39	27	28
Pulley. Split	J. N. Baldwin and T. O. Stiles	297,310	Apr. 22	1828	497	27	361
Pulley. Wood-rim	A. Clarke	298,732	May 20	981	272	27	727
Pulp. Apparatus for forming or molding articles from	W. L. Chase	298,728	May 20	966	269 / 270	27	725
Pulp. Apparatus for molding articles from	W. L. Chase	298,729	May 20	972	271	27	725
Pulp-board for roofing purposes	P. Carey	300,946	June 24	1855	.....	27	1286
Pulp-grinder pressure-feeder	E. F. Millard	298,875	May 20	1149	322	27	758
Pulp. Machinery for forming or molding articles from	W. L. Chase	298,730	May 20	975	271	27	726
Pulp. Machinery for molding articles from	W. L. Chase	298,731	May 20	977	272	27	726
Pump	E. Barnes	299,718	June 3	292	73	27	975
Pump	W. H. and W. J. Clark	301,045	June 24	1978	546	27	1309
Pump	T. Courtney	300,957	June 24	1866	511	27	1288
Pump	J. R. and L. T. Fisher	300,702	June 17	1564	429	27	1228
Pump	J. J. Gardner	299,373	May 27	1766	509	27	886
Pump	R. P. Garsed	297,376	Apr. 22	1872	509	27	369
Pump	O. W. Hammond	296,001	Apr. 1	137	40	27	28
Pump	R. Hardie	297,076	Apr. 15	1478	408	27	293
Pump	J. G. Irving	298,208	May 6	318	83	27	586
Pump	A. Jorgensen	299,478	May 27	1897	546	27	909
Pump	F. D. Maltby	300,849	June 24	1782	486	27	1279
Pump	F. D. Maltby and D. Wilmot	301,063	June 24	2000	553	27	1313
Pump	J. R. Maxwell	299,487	May 27	1906	549	27	911
Pump	E. A. Miller	300,623	June 17	1443	398	27	1206
Pump	S. A. Moore	300,389	June 17	1153	316	27	1153
Pump	N. C. Page	299,574	June 3	90	21	27	937
Pump	C. W. Schreiber	300,903	June 24	1810	495	27	1278
Pump	W. L. Shepard	300,400	June 17	1164	319	27	1155
Pump and condensing apparatus for engines. Combined feed-	J. Houpt	296,009	Apr. 1	144	42	27	30
Pump and ice-box. Ale	W. Gardner	298,572	May 13	787	215	27	680
Pump. Compound vacuum	W. Richter	299,367	May 27	1632	468	27	861
Pump. Decanting	E. O. Murdock	296,435	Apr. 8	683	188	27	135
Pump. Double-acting	W. H. and C. A. Holcombe	297,400	Apr. 22	1899	516	27	375
Pump. Double-acting	J. McGwin	299,606	June 3	231	57	27	964
Pump. Double-acting	W. H. Ormsby	300,794	June 24	1675	458	27	1252
Pump. Double force	M. F. McNelly	300,787	June 24	1668	456 / 457	27	1251
Pump. Double-piston	G. W. Holmes	299,788	June 3	367	94	27	990
Pump-fixture. Chain	A. S. Wright	298,330	May 6	491	130	27	617
Pump for portable steam-engines. Steam	W. C. Wolfe	298,435	May 13	606	171	27	649
Pump. Gas	W. J. Ferguson	297,773	Apr. 29	2401	655	27	475
Pump-handle	J. A. Craig	299,748	June 3	326	83	27	982
Pump. Measuring	S. M. Cole	296,531	Apr. 8	805	222	27	160
Pump-motor	B. F. Opp	300,726	June 17	1589	436	27	1232
Pump-regulator	E. F. Osborne	298,771	May 20	1020	285	27	734
Pump. Rotary	E. B. Donkin	298,952	May 20	1245	352 / 353	27	777
Pump. Rotary	G. Lenhard	298,866	May 20	1138	319	27	756
Pump. Rotary	A. Warth	297,478	Apr. 22	1998	546	27	384
Pump-spout	H. Clayton	300,573	June 17	1376	380	27	1194
Pump-spout	S. A. Saum	300,900	June 24	1805	494	27	1277

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pump. Steam	G. McFeely. (Reissue)	10,475	May 6	491	133	27	619
Pump. Vacuum	C. G. E. Neveux	297,433	Apr. 22	1940	529	27	382
Pump. Wooden	D. Plewa	297,001	Apr. 15	1387	363	27	275
Pumps. Automatic starting and stopping mechanism for windmill	J. M. Whitney	300,177	June 10	865	233 / 234	27	1092
Pumps. Ratchet apparatus for chain	G. M. Shaw	299,171	May 27	1592	446	27	839
Pumps. Stuffing-box for ammonia compression	J. A. Osenbrück	300,886	June 24	1790	488 / 489	27	1274
Pumps. Water-jacket for rotary	A. W. Von Schmidt	299,186	May 27	1541	442	27	842
Pumping-engine. Steam	J. L. Lowry	298,590	May 13	793	223	27	684
Punch	I. M. Dunckleburg	299,210	May 27	1568	451	27	849
Punch	C. J. A. Sjoberg	300,652	June 17	1491	411	27	1215
Punch. Hand	J. E. Atwood	300,831	June 24	1724	470	27	1261
Punch. Hollow	B. F. Mitchell	300,624	June 17	1444	398	27	1207
Punch. Ticket	W. C. Fick	301,052	June 24	1986	549	27	1310
Punching and shearing machine	A. Albien	299,502	June 3	3	1	27	921
Punching-machine	N. C. Stiles	297,090	Apr. 15	1493	413	27	295
Punching machine. Check	J. N. Williams	298,648	May 13	855	239 / 240	27	695
Punching the eyes of axes and similar tools. Machine for	J. W. Bowers	296,618	Apr. 15	1160	326 / 327	27	235
Putting-out machine	J. W. Vaughn	299,701	June 3	274	68	27	972
Pyrometer	A. Boulier	300,202	June 10	905	243	27	1098
Pyroxyline compound. Finishing and glossing the surfaces of fabrics having a coating of some	J. B. Edson	297,770	Apr. 29	2397	.....	27	474
Pyroxyline in comminuted form. Desiccating	J. W. Hyatt	297,935	Apr. 29	2786	709	27	512
Pyroxyline material. Manufacture of	J. W. Hyatt, J. H. Stevens, W. H. Wood, and J. Everding.	296,969	Apr. 15	1346	373	27	969
Pyroxyline pulp. Process of and apparatus for effecting the desiccation of	J. W. Hyatt, W. H. Wood, and J. H. Stevens.	296,968	Apr. 15	1344	373	27	968
Pyroxyline. Treating and molding	J. W., Jr., and I. S. Hyatt. (Reissue.)	10,469	Apr. 15	1514	.....	27	998
Quarrier and stone-shaper. Rotary	J. Crump and R. Brereton	298,353	May 13	517	140	27	632
Quartz crusher or mill	H. Sutherland	300,529	June 17	1320	362 / 363	27	1184
Quicksand. Method of and apparatus for sinking shafts through	F. H. Poetsch	300,891	June 24	1795	490	27	1275
Quoin	M. C. Barry	297,102	Apr. 22	1519	419	27	305
Rack: *See* Book-rack. Paper-bag rack. Hay-rack. Pool-rack. Lumber-rack. Pool-table ball-rack.							
Radiator. Steam	C. Wheat	297,325	Apr. 22	1892	489	27	356
Rag and scrap duster	T. Ferry	299,366	May 27	1758	506	27	884
Rail-brace	P. F. Barr	297,661	Apr. 29	2253	613	27	447
Rail or tram way systems. Apparatus to be used in electric	M. H. Smith	297,306	Apr. 22	1780	483	27	352
Rail-stringer	H. Holgate and R. Bagnall	296,567	Apr. 8	859	238	27	171
Rails. Machine for cleaning tram	J. Remfry	301,007	June 24	1930	532 / 533	27	1300
Rails. Utilizing old	G. A. Steiner	300,404	June 17	1170	321	27	1155
Railway	R. A. Houghton	296,411	Apr. 8	657	182	27	129
Railway appliance. Cable	W. H. Paine	296,602	Apr. 8	901	249 / 250	27	178
Railway. Cable	A. C. Evans	300,058	June 10	700	190 / 191	27	1062
Railway. Cable	C. B. Fairchild	300,235	June 10	939	254	27	1105
Railway. Cable	C. B. Fairchild	300,236	June 10	940	254	27	1105
Railway. Endless cable-traction	F. G. Corning	297,069	Apr. 15	1469	406	27	291
Railway foot-guard	H. Sullings	296,363	Apr. 8	596	165	27	119
Railway-frog	D. H. Mahoney	297,142	Apr. 22	1575	433	27	314
Railway-gate	J. Hickey	300,970	June 24	1884	518	27	1291
Railway-gates. Operating	J. Little	296,761	Apr. 15	1093	308	27	222
Railway-joint and nut-lock	W. M. Jenkins	298,473	May 13	655	185	27	658
Railway rail	T. Breen	297,965	May 6	6	2	27	598
Railway-rail	F. B. Stevens	299,287	May 27	1658	476	27	865
Railway-rail and rail-joint	J. S. McLeod	297,708	Apr. 29	2321	631	27	460
Railway-rail clamp	J. Lockhart	299,557	June 3	67	17	27	933
Railway rail joint	R. P. Morgan, Jr	297,283	Apr. 22	1752	476	27	347
Railway rail joint	R. Raby, Jr	298,776	May 20	1027	287	27	735
Railway-rails to metallic ties. Securing	S. B. Wright	298,539	May 13	724	205	27	672
Railway safety-signal	E. H. Tobey	296,893	Apr. 15	1256	350 / 351	27	251
Railway-signal	W. C. Beckwith	299,101	May 27	1435	410	27	823
Railway-signal	W. C. Beckwith	299,102	May 27	1438	411	27	824
Railway-signal. Electric	L. Finger	300,238	June 10	943	234 / 235	27	1106
Railway signal for locomotives	J. J. Stoetzel	300,406	June 17	1172	321	27	1156
Railway signaling apparatus	C. H. Jackson	298,209	May 6	319	83	27	586
Railway sleeper and chair combined	J. Chater	299,345	May 27	1737	498	27	880
Railway-spike	W. Goldie	300,066	June 10	710	193	27	1064
Railway switch. Horse	B. L. Randall	296,002	Apr. 1	202	59	27	41
Railway-switch rods. Connection of	J. B. Witty	296,808	Apr. 15	1145	323	27	233
Railway-switch signal	J. W. Alexander and M. Wheelhouse	298,151	May 6	237	61	27	571
Railway-tie	W. T. Carter	296,725	Apr. 15	1048	295	27	214
Railway track	T. C. Carroll	300,306	June 10	1039	291	27	1123
Railway track clearer	G. J. Kinzel	297,607	Apr. 29	2159	596	27	434
Railway-track gage	P. Nolan	297,435	Apr. 22	1944	530	27	383
Railway track lifter	I. Shoudy	296,635	Apr. 8	949	262	27	187
Railway track. Street	L. Brayton	296,668	Apr. 8	978	274	27	195
Railways. Apparatus for preventing accidents on	D. and D. Roberge, Jr	296,065	Apr. 1	205	59	27	42
Railways. Automatic connector and disconnector for grips of cable	W. H. Paine	296,606	Apr. 8	907	253	27	180
Railways. Auxiliary switching apparatus for cable	W. H. Paine	296,603	Apr. 8	902	250 / 251	27	179

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Railways. Conduit for traction-rope	Z. P. Boyer	296,667	Apr. 8	977	273, 274	27	195
Railways. Conduit for traction-rope or endless cable	Z. P. Boyer	298,819	May 20	1383	303	27	745
Railways. Constructing tubes and road-beds for cable	J. D. Isaacs	298,472	May 13	653	185	27	658
Railways. Electric block-signal for	S. J. Swayze and J. C. Lane	298,913	May 20	1199	338	27	768
Railways. Gripping and brake mechanism for cable	W. H. Paine	296,604	Apr. 8	904	251, 252	27	179
Railways. Interlocking-machine for signals and switches on	S. Warrick	297,885	Apr. 29	2519	689	27	499
Railways. Laying and securing rails in road-beds of	J. Dénéchaud, Sr	299,208	May 27	1565	450	27	849
Railways. Roller-grip for cable	W. H. Paine	296,605	Apr. 8	905	252, 253	27	180
Rain-water trap	E. T. Toomer	298,520	May 13	703	199	27	668
Rake: *See* Harvester chain rake. Horse-rake. Reel-rake. Hay-rake.							
Rake	W. Barry	298,156	May 6	243	63	27	572
Rakes. Pattern and means for molding garden and other	J. F. Hay. (Reissue)	10,472	Apr. 29	2614	716	27	517
Ram. Hydraulic	J. B. Yeagley	298,262	May 6	390	103	27	600
Ram. Hydraulic	J. B. Yeagley	298,263	May 6	392	103	27	601
Ramie and jute. Process of and apparatus for the treatment of	N. Arthurs	297,554	Apr. 29	2115	577	27	421
Range. Portable	C. P. Geissenhainer	300,064	June 10	707	192	27	1064
Range. Portable	W. P. Lewis	300,273	June 10	991	267	27	1114
Ratchet-drill	C. Schnmacher	297,171	Apr. 22	1606	442	27	320
Ratchet-drill	P. A. Whitney	297,210	Apr. 22	1666	453	27	331
Ratchet-drill. Self-feeding	R. N. Cherry	296,924	Apr. 15	1299	361	27	259
Ratchet-locking device	P. P. Lane and J. B. Stanwood	299,654	June 3	201	51	27	957
Razor-strop	R. P. Smith	299,865	June 3	453	118	27	1008
Reciprocating machine. Tool	F. R. Patch	297,839	Apr. 29	2468	676	27	488
Reclining-chair	O. Stechhan	296,478	Apr. 8	738	204	27	146
Reclining or hammock chair	F. H. Plummer	296,777	Apr. 15	1110	313	27	226
Reel: *See* Harvester-reel. Line-reel. Hose-reel.							
Reel for nailing and other machines	H. Weeks	299,041	May 20	1361	387	27	799
Reel-rake	W. H. Knapp	299,989	June 10	614	165, 166	27	1047
Reeling silk, &c. Machine for	J. E. Atwood	296,378	Apr. 8	616	171	27	123
Reflector-support for candles	A. Konefzny	298,478	May 13	659	186	27	659
Refrigerating apparatus	W. A. Chase	299,022	June 3	156	39	27	949
Refrigerating apparatus for chambers and buildings	J. J. Craven	300,695	June 17	1553	426	27	1226
Refrigerating car and chamber	E. Hamilton	298,083	May 6	151	39	27	555
Refrigerating corned-beef tank	H. Menslage	299,567	June 3	82	20	27	935
Refrigerating faucet	F. A. Presko	299,420	May 27	1808	525	27	897
Refrigerating package for shipping and preserving butter, oysters, &c.	O. P. Johnson	300,476	June 17	1259	345	27	1172
Refrigerator	J. Castell	296,923	Apr. 15	1298	360, 361	27	259
Refrigerator	I. T. Dyer	300,351	June 17	1104	299, 300	27	1145
Refrigerator	J. Jackson	296,573	Apr. 8	867	240	27	172
Refrigerator	H. W. Nash	300,791	June 24	1672	457	27	1251
Refrigerator. Air-cooling	D. Sanderson	296,071	Apr. 1	213	61	27	43
Refrigerator-car	H. C. Goodell	300,596	June 17	1401	386	27	1199
Refrigerator-car	T. L. Rankin	296,218	Apr. 1	393	111, 112	27	76
Refrigerator for cooling contents of bottles, cans, &c.	B. Mochina	296,432	Apr. 8	680	188	27	134
Refrigerator. Oyster	S. L. Fraser and W. A. Brigham	300,061	June 10	705	191	27	1063
Regenerative furnace	A. Cuthbert	301,048	June 24	1981	548	27	1309
Regenerative furnace	J. W. Galvin	298,297	May 6	436	118	27	609
Regenerator-furnace	G. Jones	296,174	Apr. 1	332	94, 95	27	65
Register: *See* Billiard-table time-register. Morse register. Time-register. Engine-register.							
Register and alarm	J. G. Lettelier and E. E. Pratt	296,194	Apr. 1	360	103	27	69
Registering railway-passengers. Check-list for	S. D. Eldred	297,588	Apr. 29	2163	590	27	431
Regulator: *See* Damper-regulator. Heat-regulator. Electric regulator. Hot-water regulator. Electric-machine regulator. Pressure-regulator. Pump-regulator. Feed-regulator. Speed-regulator. Gas-regulator. Water-wheel regulator.							
Rein-controller	A. Warth	297,886	Apr. 29	2520	689, 690	27	499
Rein. Driving	W. S. Bowie	300,564	June 17	1365	376	27	1192
Rein-fastener	N. N. Hazelton	297,795	Apr. 29	2422	662	27	479
Rein hook. Check	G. W. Hall	297,387	Apr. 22	1886	512	27	372
Reins. Latch-clasp for driving	J. H. Fenton	300,354	June 17	1109	300	27	1146
Reins. Machine for making	O. A. Dean	299,116	May 27	1458	417	27	828
Rendering lard, &c. Apparatus for	D. W. McElroy	299,821	June 3	403	103	27	998
Reservoirs. Cleaning	J. D. Cook	299,744	June 3	322	82	27	981
Reservoirs. Electric register for fluid	C. S. Lockwood	300,490	June 17	1278	351	27	1176
Resawing-machine	B. Hausheer and J. Meyenberg	297,600	Apr. 29	2175	594	27	433
Retort for carbonizing wood	J. A. Mathieu	300,385	June 17	1148	315	27	1152
Reverberatory gas-furnace	W. L. McNair	296,633	Apr. 1	169	49, 50	27	95
Reversible shears	J. L. Starks	300,153	June 10	929	225	27	1086
Revolver	S. S. Hopkins	297,801	Apr. 29	2429	663	27	481
Rheostat	J. Doyle	298,073	May 6	141	35	27	553

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rheostat	E. Weston	297,324	Apr. 22	1800	480	27	335
Ribbon-holder	A. Stevens	296,887	Apr. 15	1248	349	27	250
Rice-drill	A. D. Middleton	300,883	June 24	1787	488	27	1273
Rice-hulling machine	A. M. Patrick	300,335	June 10	1077	294	27	1129
Ring: *See* Curtain-ring. Jewelry-ring. Curtain-pole ring. Key-ring. Finger-ring.							
Rings, coupling-links, &c. Apparatus for making	S. Harris	297,258	Apr. 22	1729	469	27	342
Rings of plastic compounds. Process of and apparatus for making solid	E. Kipper	299,802	June 3	382	98	27	994
Riveting-machine	W. R. Webster	300,174	June 10	860	232	27	1091
Road-engine	G. F. Page	296,998	Apr. 15	1384	382	27	275
Robe-holder for vehicles	G. H. Chappell	298,173	May 6	267	68	27	570
Rock and coal boring machine. Hand	B. B. Davis	301,049	June 24	1983	548	27	1310
Rock-drill	G. M. Derby	296,681	Apr. 8	994	278	27	198
Rock-drill	W. E. Peyton	296,052	Apr. 1	191	55	27	39
Rock-drill	D. Wood	296,660	Apr. 8	971	272	27	193
Rock-drill and well-boring machine	W. C. Wells	296,804	Apr. 15	1140	321	27	232
Rock-drill carriage	W. L. Saunders	298,625	May 13	829	231	27	691
Rock-drill. Steam	J. F. Allen	297,552	Apr. 29	2111	576	27	420
Rock-drills. Pipe-casing for submarine	C. A. Sterling	298,251	May 6	377	100	27	597
Rocker and reclining-chair. Combined platform	P. B. Cupp	296,931	Apr. 15	1307	362	27	261
Rocker. Folding	J. R. Jones	297,809	Apr. 29	2435	665	27	482
Rocking-chairs. Spring attachment for platform	W. I. Bunker	297,168	Apr. 22	1529	422	27	307
Rod: *See* Drag-rod. Extension suspensory rod.							
Roller: *See* Anti-friction roller. Shade-roller. Card-grinding roller. Street-roller. Land-roller.							
Roller-mill	N. W. Holt	298,206	May 6	316	82	27	586
Roller-mill	N. W. Holt	299,789	June 3	968	94	27	991
Roller-mill	D. W. Marmon and J. Warrington. (Reissue.)	10,493	June 24	2018	537, 558	27	1317
Roller-mill	R. W. Welch	297,890	Apr. 29	2526	691	27	500
Roller-mill casing	J. M. Case	297,757	Apr. 29	2477	647	27	470
Roller-mill feed-box	J. M. Case	297,754	Apr. 29	2476	647	27	470
Roller-mill feed-box	J. M. Case	297,764	Apr. 29	2480	652	27	473
Roller-mills. Adjusting and leveling device for	J. M. Case	297,916	Apr. 29	2557	701	27	506
Rolling axles. Machine for	S. H. Wilson	297,546	Apr. 22	2092	570, 571	27	411
Rolling-mill bearing	W. Steel	296,081	Apr. 1	223	65	27	45
Rolling-mills. Construction of continuous	F. H. Daniels	297,680	Apr. 29	2284	621, 622	27	453
Roof and skylight. Glazed metallic	G. Hayes	299,386	May 27	1781	513	27	889
Roofing-bracket	A. Gnedle	298,463	May 13	642	182	27	656
Roofing compound	J. T. Fretwell	297,374	Apr. 22	1871	.....	27	360
Roofing. Felt	L. Haas and D. Howarth	296,103	Apr. 1	320	91	27	62
Roofing-plate. Metallic	G. Patten	296,610	Apr. 8	912	254	27	181
Roofing-slate fastening	B. M. O'Neill	299,842	June 3	426	110	27	1003
Rope, cord, &c., clamp	F. Eggo	297,241	Apr. 22	1705	463	27	338
Rope or cable coupling	G. M. Green	297,073	Apr. 15	1475	408	27	292
Rope or line clasp	A. L. Pitney	297,158	Apr. 22	1593	438	27	317
Rose-engine	A. Schwitter	297,454	Apr. 22	1967	538	27	388
Rotary cutters. Making	D. H. Church	299,348	May 27	1740	500	27	881
Rotary engine	S. and S. Broadbent, Jr.	296,123	Apr. 1	276	78	27	54
Rotary engine	I. L. Clough	299,370	May 27	1742	501	27	881
Rotary engine	A. Decher	297,553	Apr. 29	2146	585	27	427
Rotary engine	C. Enke	297,589	Apr. 29	2164	591	27	431
Rotary engine	G. L. Griffin, W. A. Shoup, and J. R. Cade.	297,254	Apr. 22	1723	467	27	341
Rotary engine	J. Moffet	300,998	June 24	1915	527	27	1297
Rotary engine	J. W. Wilks	298,434	May 13	605	171	27	649
Rotary meter	J. A. Peer	298,230	May 6	353	94	27	593
Rotary motor	H. A. Tobey	296,894	Apr. 15	1260	351	27	252
Rotary steam-engine	J. H. McVay	299,824	June 3	467	104	27	999
Rotary steam-engine	G. W. Price	299,260	May 27	1622	466	27	860
Rotary steam-engine	F. Stitzel	297,091	Apr. 15	1407	414	27	296
Row-boat	W. A. Rettig	300,895	June 24	1800	491, 492	27	1276
Rowing mechanism. Bow-facing	J. P. Willard	299,042	May 20	1362	388	27	769
Rowlock	J. F. Cumming	299,521	June 3	21	7	27	924
Rubber fabrics. Joining	I. B Kleinert	298,095	May 6	164	42	27	558
Rubber. Felt	J. B. Laughton	296,585	Apr. 8	878	243	27	174
Rubber from waste. Recovering	N. C. Mitchell	300,720	June 17	1564	.....	27	1231
Rubber-surfaced fabric and composition therefor	N. S. White	296,258	Apr. 1	474	.....	27	86
Rudder holder and support	C. A. Richardson	299,205	May 27	1620	478	27	861
Rudder. Propelling	J. L. F. Barbier	299,612	June 3	143	35	27	946
Rule. Caliper	S. H. Bellows	299,993	June 10	619	167	27	1048
Ruler	J. E. Mann	297,717	Apr. 29	2320	634	27	402
Ruler	P. C. Rich	298,834	May 20	1401	308	27	748
Ruler. Draftsman's adjustable curve	F. W. Davenport	298,471	May 13	652	184	27	658
Ruler. Nautical parallel	C. Hutchinson	296,598	Apr. 8	826	248	27	178
Ruler. Parallel	J. C. Miller	297,525	Apr. 22	2008	564	27	405
Ruling-machine feeding device	E. Larson and O. Hammarlund	295,994	Apr. 1	126	37	27	30
Ruling machine. Paper	J. C. Forman	297,735	May 20	944	273	27	727
Ruling machines. Ink-reservoir for paper	E. P. Donnell	297,250	Apr. 22	1719	466	27	340
Saddle. Harness	A. W. Frazee	298,972	May 20	1271	362	27	782
Saddle. Harness	D. B. Holsburg	297,161	Apr. 22	1595	439	27	318
Saddle. Riding	J. L. Powell	297,398	Apr. 22	1897	515	27	374
Saddle-seat	P. B. Hirsch	296,711	Apr. 8	1025	287	27	204
Saddle. Side	H. Ruwart	300,339	June 17	1067	296	27	1142
Safe	T. M. Brintnall						

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Safe	J. R. Grove	299,381	May 27	1773	510	27	888
Safe-deposit box	J. Farrel	296,153	Apr. 1	309	89	27	60
Safe-door	E. Stockwell	296,643	Apr. 8	949	266	27	189
Safes and vaults. Electric locking mechanism for	H. F. Newbury	296,866	Apr. 15	1225	342	27	246
Safes and vaults. Supporting the bolt-work of	H. F. Newbury	296,867	Apr. 15	1227	343	27	246
Safety attachment	E. G. Harley	296,002	Apr. 1	137	40	27	98
Safety-hook	E. H. Smith	300,810	June 24	1694	463	27	1255
Safety-pin	W. J. Broadbent	297,294	Apr. 22	1688	459	27	334
Safety-pin	J. Jenkins	299,075	May 20	1400	399	27	806
Sail-clamp	G. W. Ilner	300,078	June 10	799	197	27	1068
Sail hank and hook	D. Crowell, Jr	300,226	June 10	930	254	27	1103
Salt. Apparatus for the manufacture of	S. C. Wells	297,323	Apr. 22	1798	488	27	355
Salt-cellar	S. C. Wilcox	299,445	May 27	1855	533	27	902
Salt for cattle	H. G. Piffard	296,614	Apr. 8	916	.....	27	192
Salt. Washing and purifying	S. S. Garrigues	299,774	June 3	353	.....	27	987
Sand-bars, &c. Hydraulic apparatus for removing	R. Stone	296,483	Apr. 8	745	206	27	147
Sand-blast apparatus	J. J. Sachs	299,270	May 27	1035	460	27	802
Sand-paper. Removing the sand and glue from waste	W. J. Hussey	300,710	June 17	1574	.....	27	1230
Sand-sifting machine	J. Kinzer	300,481	June 17	1266	347	27	1174
Sardine-can	J. Wolff	299,710	June 3	285	70	27	974
Sash-balance	J. B. Montague, J. T. Booker, and E. C. Dinning.	300,104	June 10	762	205	27	1074
Sash-balance	S. H. Russell	297,790	Apr. 29	2736	635	27	465
Sash-cord fastener	R. N. Brown	299,199	May 27	1555	446	27	840
Sash-cord fastener	H. F. Jenks	300,263	June 10	981	265	27	1113
Sash-cord fastener	S. H. Russell	298,122	May 6	198	53	27	564
Sash-cord guide	W. C. Gilmer	296,830	Apr. 15	1179	331	27	237
Sash-cord guide	G. W. Pero	298,496	May 13	681	193	27	663
Sash-fastener	R. Adams	299,712	June 3	287	71	27	974
Sash-fastener	E. B. Attwell. (Reissue)	10,483	June 3	545	146	27	1023
Sash-fastener	G. S. Barnes	299,719	June 3	293	74	27	975
Sash-fastener	F. M. Case	297,298	Apr. 22	1692	460	27	335
Sash-fastener	L. J. Church	297,499	Apr. 22	2035	555	27	399
Sash-fastener	L. J. Church	297,500	Apr. 22	2036	556	27	399
Sash-fastener	O. R. Cooke	300,694	June 17	1592	426	27	1226
Sash-fastener	W. Goforth	296,402	Apr. 8	647	179	27	128
Sash-fastener	O. S. Judd	297,605	Apr. 29	2180	595	27	434
Sash-fastener	H. Keppel	299,402	May 27	1809	520	27	884
Sash-fastener	E. O. Ladd	296,188	Apr. 1	350	100	27	68
Sash-fastener	R. McCabe	298,106	May 6	177	46	27	560
Sash-fastener	R. T. Murphy	299,246	May 27	1610	462	27	857
Sash-fastener	A. D. Ordway	296,997	Apr. 15	1381	382	27	274
Sash-fastener	J. D. Reiff	301,005	June 24	1927	531	27	1309
Sash-fastener	I. J. Saltzer	297,953	Apr. 29	2607	714	27	515
Sash-holder	G. C. Bolgiano	299,335	May 27	1722	493	27	877
Sash-holder	S. A. Brown	296,723	Apr. 15	1047	294	27	214
Sash-holder	J. P. Centner	300,307	June 10	1040	281	27	1123
Sash-holder	E. B. Clement	300,954	June 24	1863	511	27	1288
Sash-holder	G. E. Gorham	299,217	May 27	1575	452 / 453	27	850
Sash-holder	W. O. Smith	297,187	Apr. 22	1628	446	27	324
Sash holder. Window	J. E. Dohen	299,525	June 3	28	8	27	936
Sash ventilator. Window	E. W. Chadwick	299,960	June 10	576	154	27	1040
Sash-weight	C. E. Heiss	296,410	Apr. 8	656	182	27	129
Sash. Window	L. L. Arnold	299,944	June 10	557	149	27	1037
Satchel	D. Heidelberger	298,852	May 20	1121	315	27	752
Satchel. Album	L. Lazarus	299,812	June 3	302	100	27	996
Satchel. Folding	R. Moffly	296,993	Apr. 15	1380	381	27	274
Saw	J. D. Abbott	295,967	Apr. 1	87	26	27	19
Saw	J. Ledward	297,816	Apr. 29	2443	668	27	483
Saw	H. W. Peace	298,115	May 6	189	50	27	562
Saw	W. Peak	298,886	May 20	1166	326	27	761
Saw	G. P. Scott	300,805	June 24	1688	461	27	1254
Saw	J. Smith	298,709	May 13	938	260	27	712
Saw clamp. Frame	A. McNiece	298,995	May 20	1203	349	27	786
Saw. Drag	F. A. Crawshaw	297,231	Apr. 22	1695	461	27	336
Saw. Drag	C. Drake	300,582	June 17	1385	382	27	1196
Saw. Drag	J. T. H. Drake	300,233	June 10	937	253	27	1104
Saw. Drag	J. R. Payne	297,841	Apr. 29	2470	676 / 677	27	489
Saw-filing machine	H. and F. W. Lutts	299,560	June 3	70	18	27	933
Saw-filing machine. Gin	A. P. Gathright	298,743	May 20	992	276 / 277	27	722
Saw-filing machine. Gin	F. M. Sisk	296,471	Apr. 8	727	201	27	144
Saw frame. Buck	T. Laronche	296,418	Apr. 8	665	184	27	131
Saw frame. Drag	M. Beck and A. McRorey	297,558	Apr. 29	2119	578	27	422
Saw-guard	W. H. Dalby	298,293	May 6	431	116	27	608
Saw-guard	H. F. Kuhlmann, M. F. Robinson, and E. S. Irvin.	299,489	May 27	1899	546	27	909
Saw-guide	W. Williams	295,964	Apr. 1	83	25	27	19
Saw gumming and sharpening machine	S. C. Rogers and J. T. Barnard	299,583	June 3	105	26	27	939
Saw. Hand	C. A. Fenner	297,366	Apr. 22	1464	507	27	367
Saw-handle	P. Fraizer	297,125	Apr. 22	1553	428	27	310
Saw-handle	R. H. and W. D. Shumway	300,967	June 24	1744	496	27	1279
Saw handle. Crosscut	A. Uren	299,699	June 3	272	68	27	971
Saw-jointer	B. S. Bozard	298,820	May 20	1063	303	27	745
Saw-jointer	H. D. Wolcott	298,538	May 13	723	205	27	672
Saw jointer and gage. Combined	H. Flater	297,513	Apr. 22	2049	559	27	402
Saw-mill	P. M. Chisholm	300,216	June 10	918	247	27	1101
Saw mill. Circular	R. M. Beck	299,194	May 27	1549	444 / 445	27	844
Saw mill. Circular	C. Esplin	295,991	Apr. 1	119	36	27	25
Saw mill. Circular	W. J. F. Liddell. (Reissue)	10,474	May 6	490	132	27	619
Saw mill. Circular	W. J. F. Liddell	299,233	May 27	1595	458	27	854

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Saw-mill feed mechanism	E. T. Gardner	298,195	May 6	293	76	27	581
Saw mill. Gang	D. C. Prescott	296,618	Apr. 8	920	257	27	183
Saw-mill head-block	D. Parkhurst	296,959	Apr. 15	1784	383	27	275
Saw-mill. Portable	W. C. Rodgers	296,220	Apr. 1	395	112	27	76
Saw-mill set-works	R. R. Parsons	296,442	Apr. 8	693	190	27	137
Saw. Pruning	W. K. Stansbury	296,241	Apr. 1	427	120	27	81
Saw. Segment	J. Hilton	299,142	May 27	1489	427	27	834
Saw-set	G. A. F. Clayton	299,349	May 27	1741	501	27	881
Saw-sharpening machine	L. Bush, Jr	297,566	Apr. 29	2132	582 / 583	27	424
Saw-sharpening machine	D. Willey	298,928	May 20	1215	343	27	771
Saw-shifting mechanism for gang-edgers	D. L. Stevens	296,360	Apr. 8	593	164	27	118
Saw-swage	S. Kinney	297,698	Apr. 29	2310	628	27	458
Saw-swaging device	B. F. Bridges	297,559	Apr. 29	2120	579	27	422
Saw-tab	J. E. Emerson	297,343	Apr. 22	1707	464	27	338
Saw-tab plate	J. E. Emerson	297,342	Apr. 22	1706	463	27	338
Saw-table gage	H. L. Hopkins	300,975	June 24	1889	520	27	1292
Saw-tooth. Adjustable	G. W. Sitnebring	299,291	May 27	1667	477	27	807
Saw-tooth. Adjustable	G. W. Sitnebring	300,814	June 24	1698	464	27	1256
Saw-tooth. Insertible	W. B. Risdon	298,892	May 20	1173	328	27	763
Saw-tooth. Insertible diamond	E. Foerster	297,776	Apr. 29	2403	656	27	475
Saw. Tube	M. F. Lucas	300,734	June 24	1665	476	27	1250
Saw-vise	G. W. Burton	296,128	Apr. 1	283	80	27	56
Saw. Wabble	S. F. Kress	300,392	June 10	1058	287	27	1126
Sawing machine. Circular	L. Houston	300,369	June 17	1126	307	27	1148
Sawing machine. Circular	J. H. Jones	296,334	Apr. 8	558	156	27	111
Sawing machine. Circular	J. Van Patten	296,652	Apr. 8	958	269	27	191
Sawing machine. Scroll	W. J. Hull and W. E. Varney	296,693	Apr. 8	1008	282	27	200
Sawing machines. Feed mechanism for circular	J. H. Hermance. (Reissue)	10,467	Apr. 8	1036	291	27	206
Scaffolding. Builder's	D. W. Spooner	299,791	May 20	1048	293	27	739
Scale	E. R. Puffer	298,118	May 6	193	51	27	563
Scale. Pendulum	H. C. Keeler	297,267	Apr. 22	1737	472	27	344
Scale. Platform	N. Du Brul	299,762	June 3	341	87	27	985
Scale. Platform	W. W. Reynolds	296,451	Apr. 8	703	193 / 194	27	139
Scale. Weighing	N. Du Brul	299,757	June 3	336	85	27	984
Scale. Weighing	N. Du Brul	299,758	June 3	337	86	27	984
Scale. Weighing	N. Du Brul	299,759	June 3	338	86	27	984
Scale. Weighing	N. Du Brul	299,760	June 3	339	86	27	984
Scale. Weighing	N. Du Brul	299,761	June 3	340	86	27	985
Scale. Weighing	E. Sirret	296,470	Apr. 8	725	200 / 201	27	144
Scarfs. Holder for the bands of neck	W. E. T. Merrill	301,065	June 24	2003	533	27	1314
Scenery. Stage	M. Armbruster	300,187	June 10	880	226 / 227	27	1094
Scraper and leveler. Road	T. K. Sawyers	300,287	June 10	1017	274 / 275	27	1119
Scraper. Earth	J. F. O'Connor and S. M. Williams	296,044	Apr. 1	181	52	27	38
Scraper. Road	M. E. Cook	296,158	Apr. 1	203	64	27	57
Scraper. Road	W. Ellis, Jr	301,054	June 24	1985	549	27	1310
Scraper. Road	L. Lamborn	298,097	May 6	166	43	27	558
Scraper. Road	C. Mendenhall	298,604	May 13	803	225 / 226	27	686
Scrapers. Portable bridge for unloading earth	B. L. Burris and C. S. Woodman	300,301	June 10	1034	279	27	1121
Screen: *See* Fire-screen. Window-screen.							
Screen for attrition-mills, &c	T. L. Sturtevant	298,428	May 13	509	169	27	648
Screen-frame	G. Phillips	298,116	May 6	189	50	27	562
Screening. Slashed metallic	J. F. Golding	297,382	Apr. 22	1880	511	27	371
Screw	A. Mitchell	296,991	Apr. 15	1378	380	27	274
Screw	S. Potts	297,004	Apr. 15	1392	384	27	276
Screw	H. A. Stone	298,427	May 13	508	169	27	648
Screw-cutting die	J. M. Dodge	296,393	Apr. 8	639	170	27	126
Screw-cutting die	A. J. Kosiol	297,941	Apr. 29	2504	711	27	513
Screw-cutting machine	C. Glover	298,845	May 20	1111	311 / 312	27	751
Screw driver and holder	J. Sinnott	300,146	June 10	823	223	27	1084
Screw. Hand	T. Reno	296,622	Apr. 8	924	278	27	184
Screw-jack	D. W. Norris and M. Neil	298,504	May 13	930	259	27	711
Screw-machine	A. Johnston	299,477	May 27	1894	545	27	908
Screw machine. Metal	S. H. and C. F. Roper	300,736	June 17	1000	439	27	1234
Screw-tap	H. W. Eddy	300,961	June 24	1869	513	27	1289
Screw-tap. Collapsible	J. M. Johnson	297,519	Apr. 22	2057	562	27	403
Screw-taps. Machine for threading	S. W. Card	300,041	June 10	681	185	27	1059
Screw. Wood	J. B. Low	296,982	Apr. 15	1367	378	27	272
Screws. Machine for threading the tapering points of	F. A. Smith and A. Doll, Jr	300,908	June 24	1815	496 / 497	27	1279
Scrubber	W. F. Cornelius	300,447	June 17	1224	334	27	1165
Scythe heel-ring	J. A. Schwob	299,859	June 3	446	115	27	1007
Scythe setting and sharpening machine	J. Faugère	299,767	June 3	346	88	27	986
Scythes. Machine for forming	L. C. Palmer	299,675	June 3	243	60	27	966
Seal	E. J. Brooks	298,168	May 6	260	67	27	575
Seal	C. H. Bundy	296,921	Apr. 15	1295	359	27	259
Seal. Lead and wire	E. J. Brooks	298,065	May 13	895	246	27	702
Seal-lock	J. W. Burd, Jr	295,976	Apr. 1	98	30	27	21
Seal-lock	C. M. Plumb	297,445	Apr. 22	1959	535	27	386
Seal-lock	R. O. Walker	300,171	June 10	855	271	27	1090
Seal-press	E. J. Brooks	298,284	May 6	420	113	27	606
Seal-press	E. J. Brooks	301,043	June 24	1975	545	27	1308
Seals. Fastening tin-strip	E. J. Brooks	296,124	Apr. 1	277	79	27	54
Seam-finishing machine	W. Y. Ober and F. M. Stevens	296,669	Apr. 15	1229	343 / 344	27	246
Seam-finishing machine	C. Woodman	297,216	Apr. 22	1674	456	27	332
Seam-strengthener, gusset, and fly. Combined	J. F. Ensminger	298,360	May 13	524	142	27	634

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Seams of sheet-metal vessels. Constructing	F. A. Walsh	299,942	June 3	544	145	27	1025
Seaming elevator-buckets. Machine for double-	C. J. Williams	297,048	Apr. 15	1446	400	27	286
Seaming machine. Double-	E. Norton and J. G. Hodgson	300,002	June 10	629	171, 172	27	1050
Seaming or double-seaming joints of sheet-metal roofing. Machine for	O. W. Burritt	300,302	June 10	1035	280	27	1122
Seaming plush-back fabrics	L. S. Cox	298,288	May 6	426	114	27	607
Seat: *See* Folding seat. Jump-seat. Wagon-seat.							
Secondary batteries. Device for connecting the elements of	W. Lachlan	296,849	Apr. 15	1200	336	27	241
Secondary battery	A. G. Davis	300,052	June 10	693	188	27	1061
Secondary battery	A. Haid	296,164	Apr. 1	321	91	27	62
Secondary battery	W. A. Shaw	297,457	Apr. 22	1872	534	27	389
Secondary battery	W. Stanley, Jr.	299,177	May 27	1530	438	27	840
Secondary battery	W. Stanley, Jr.	299,178	May 27	1531	438	27	841
Secondary battery	G. L. Winch	300,933	June 24	1841	505	27	1284
Secondary-battery-charging apparatus	R. P. Sellon	299,021	May 20	1327	379	27	793
Seed and fertilizer distributer	G. Tyler	299,184	May 27	1537	440, 441	27	842
Seed, &c. Apparatus for purifying millet-	A. Besser	300,679	June 17	1530	420	27	1222
Seed-drill	F. E. Tower	299,038	May 20	1350	386	27	797
Seed huller. Cotton-	H. Heard	298,466	May 13	645	183	27	656
Seed hulling machine. Cotton-	T. J. McGowan	299,931	June 3	527	140	27	1022
Seed. Removing fiber from cotton-	J. J. Green	299,378	May 27	1776	.....	27	887
Seed. Treating cotton-	J. F. O'Shaughnessay	298,617	May 13	822	.....	27	689
Seed. Treating cotton-	J. F. O'Shaughnessay	298,618	May 13	823	.....	27	689
Seed. Treating cotton-	T. Taylor	297,193	Apr. 22	1633	448	27	325
Seeder and fertilizer-distributer. Combined	G. W. White	298,644	May 13	849	237	27	694
Seeding device	E. Lind	298,761	May 20	1010	282	27	732
Seeding-machine	J. L. Riter	295,945	Apr. 1	62	18	27	15
Seeding-machine. Convertible	T. L. Brooks	299,905	June 3	495	150, 151	27	1016
Self-lubricating wheel	W. T. Snyder	300,913	June 24	1824	498	27	1280
Separating liquid from solid matter, and mechanism therefor.	H. Warden	298,640	May 13	843	236	27	693
Separator: *See* Air and dust separator. Centrifugal separator. Coffee-separator. Dry separator. Grain-separator. Ore-separator. Starch-separator.							
Separator and smutter	W. N. Sharpnack and M. McMahon	301,013	June 24	1940	536, 537	27	1302
Separator and smutter	W. N. Sharpnack and M. McMahon	301,073	June 24	2011	555, 556	27	1315
Separator for peas, &c	R. D. Gladney	298,299	May 6	439	118	27	610
Separator for shelled corn, &c	J. S. Lea and J. B. Cornwall	300,715	June 17	1578	433	27	1230
Service-box cistern	J. G. Morrison	299,999	June 10	925	169	27	1040
Sewer	T. L. Stark	297,643	Apr. 29	2232	607	27	443
Sewer-trap	T. Watkins	298,045	May 6	106	27	27	547
Sewing and embroidering. Process of and cutting apparatus for	L. Bertrand	297,057	Apr. 15	1457	403	27	288
Sewing and other machines. Driving mechanism for	S. Maxim	296,425	Apr. 8	671	186	27	132
Sewing bags, &c. Machine for	C. M. Hine	296,565	Apr. 8	856	237, 238	27	170
Sewing buttons to shoes	A. A. Brown	300,206	June 10	910	244	27	1099
Sewing-machine	G. A. Annett	296,106	Apr. 1	254	74	27	51
Sewing-machine	A. Boecher	300,159	June 10	901	242	27	1097
Sewing-machine	P. J. Clever	296,529	Apr. 8	804	222	27	160
Sewing-machine	A. A. Fisher and A. Hart	299,368	May 27	1560	507	27	885
Sewing-machine	J. L. Follett	300,458	June 17	1236	339	27	1168
Sewing-machine	H. Grellier	300,598	June 17	1404	386, 387	27	1199
Sewing-machine	E. Kohler	301,060	June 24	1997	551, 552	27	1312
Sewing-machine	W. Lüdeke	300,380	June 17	1140	311, 312	27	1150
Sewing-machine	L. Mnther and C. A. Dearborn	299,568	June 3	83	21	27	935
Sewing-machine	L. Mnther and R. G. Woodward	299,569	June 3	84	21, 22	27	936
Sewing-machine	J. F. Sneliker	296,637	Apr. 8	941	263	27	187
Sewing-machine	J. F. Sneliker	296,638	Apr. 8	942	263	27	187
Sewing-machine attachment	E. T. Thomas and T. S. Huntington	300,531	June 17	1324	363	27	1185
Sewing-machine-attachment holder	J. M. Griest	297,596	Apr. 29	2171	593	27	432
Sewing-machine binding attachment	J. M. Griest	297,597	Apr. 29	2173	593	27	432
Sewing-machine bobbin-winder	H. M. Dixon	298,358	May 13	745	210	27	676
Sewing-machine braiding attachment	F. Leias	297,817	Apr. 29	2444	668	27	493
Sewing-machine brake	E. H. Amet	298,541	May 13	796	205	27	673
Sewing machine. Button-	F. Eggo	298,958	May 20	1257	356	27	779
Sewing machine. Button-	F. Eggo	298,959	May 20	1258	356, 357, 358	27	779
Sewing-machine. Button-hole	F. W. Cross. (Reissue)	10,465	Apr. 8	1031	289, 290	27	206
Sewing-machine. Button-hole	F. W. Cross. (Reissue)	10,466	Apr. 8	1034	290, 291	27	206
Sewing-machine. Button-hole	J. Dowling and J. Connolly	299,118	May 27	1459	417, 418, 419	27	808
Sewing-machine. Button-hole	F. Eggo	298,957	May 20	1251	354, 355, 356	27	778
Sewing-machine. Button-hole	D. Mills	298,607	May 13	807	226	27	687

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machine. Button-hole	J. H. Palmer	298,228	May 6	349	92, 93	27	592
Sewing-machine. Button-hole	G. S Rominger	296,626	Apr. 8	929	259, 260	27	185
Sewing-machine. Button-hole	F. E. Schmidt	299,168	May 27	1518	435, 436	27	839
Sewing-machine. Button-hole	C. J. A. Sjoberg	299,027	May 20	1337	381, 382	27	794
Sewing-machine button-hole attachment	T. S. Huntington	299,928	June 3	523	139	27	1021
Sewing-machine button-hole attachment	A. E. Turnbull	300,742	June 17	1608	441	27	1234
Sewing-machine cabinet	J. Bolton	298,277	May 6	413	111	27	604
Sewing machine. Carpet-	G. Gowing	297,384	Apr. 22	1882	511, 512	27	371
Sewing machine. Carpet-	G. Grisel	296,744	Apr. 15	1071	302	27	218
Sewing machine. Carpet-	A. B. Smith	296,474	Apr. 8	731	202	27	145
Sewing machine. Carpet-	A. B. Smith	298,318	May 6	465	125	27	614
Sewing-machine drip-pan	W. Connolly	299,743	June 3	521	82	27	981
Sewing-machine embroidering attachment	G. W. Baker. (Reissue)	10,463	Apr. 1	520	145	27	98
Sewing-machine embroidering attachment	G. W. Baker	297,100	Apr. 22	1517	419	27	305
Sewing-machine embroidering attachment	G. W. Baker	300,434	June 17	1210	330	27	1163
Sewing-machine embroidering attachment	J. S. Sackett and J. P. Lavigne	300,644	June 17	1480	407	27	1213
Sewing-machine for brace-wiring hats	M. H. Ryder	298,314	May 6	460	124	27	614
Sewing-machine hat-binding attachment	G. W. Parkinson	298,399	May 13	569	157	27	642
Sewing-machine hook	A. Boecher	300,683	June 17	1533	421	27	1223
Sewing-machine needle-clamp	J. W. Corey	300,050	June 10	692	188	27	1060
Sewing-machine needle-clamp	J. E. Péchard	299,847	June 3	432	112	27	1004
Sewing-machine quilting attachment	M. R. and A. H. Bell	300,678	June 17	1529	420	27	1222
Sewing-machine quilting attachment	G. O. Houck and C. Smith	298,693	May 13	922	256	27	708
Sewing-machine reversible binding attachment	L. E. Ellsworth	296,396	Apr. 8	642	177	27	127
Sewing-machine ruffling and gathering attachment	L. Onderdonk	298,309	May 6	451	121	27	612
Sewing-machine ruffling attachment	H. C. Goodrich	296,740	Apr. 15	1065	300	27	218
Sewing-machine shuttle	J. Hoefler	296,006	Apr. 1	141	41	27	29
Sewing-machine shuttle	E. H. Smith	296,790	Apr. 15	1125	317	27	229
Sewing-machine table	J. Bolton and J. C. Van Dyke	300,684	June 17	1535	422	27	1223
Sewing-machine table	D. H. Coles	299,353	May 27	1745	502	27	882
Sewing-machine table	I. E. Myrick	296,039	Apr. 1	175	51	27	36
Sewing-machine tension	M. H. Ryder	298,315	May 6	462	124	27	614
Sewing-machine tension device	C. R. Edwards	299,629	June 3	164	41	27	950
Sewing-machine tension device	H. Holden, Jr	297,709	Apr. 29	2427	663	27	480
Sewing-machine tension mechanism	G. H. Dimond and W. F. Dial	298,185	May 6	281	72, 73	27	579
Sewing-machine thread-moistening attachment	J. Nixon	296,770	Apr. 15	1101	310	27	224
Sewing-machine treadle and stand	F. M. Weaver	298,258	May 6	380	102	27	599
Sewing-machine trimmer	L. L. Barber	296,508	Apr. 8	777	214	27	154
Sewing-machine trimmer	D. Mans	296,423	Apr. 8	670	185	27	132
Sewing-machine trimming attachment	W. F. Beardslee	295,896	Apr. 1	4	2	27	4
Sewing-machine trimming attachment	W. F. Beardslee	295,897	Apr. 1	6	2	27	4
Sewing-machine tuck-creaser	E. Bostock	295,975	Apr. 1	90	30	27	21
Sewing-machine tuck-marker	J. C. Goodwin and C. W. Warren	296,555	Apr. 8	842	234	27	167
Sewing-machine tuck-marker	J. C. Goodwin and C. W. Warren	296,556	Apr. 8	844	234	27	168
Sewing-machine wheel clutch	J. B. Secor	301,012	June 24	1939	536	27	1302
Sewing to a hat its band and lining. Mechanism for simultaneously	J. F. Hamilton	299,780	June 3	358	91, 92	27	989
Shade-fixture	G. W. Steele	298,128	May 6	204	54	27	566
Shade-fixture	H. E. Stover	297,030	Apr. 15	1427	392	27	283
Shade-fixture. Spring-	S. Hartshorn	299,782	June 3	360	92	27	989
Shade-hanger. Adjustable	J. Wagner	298,524	May 13	706	200	27	669
Shade-pull	H. L. Judd	300,085	June 10	746	199	27	1069
Shade-pull	L. G. Turner	296,713	Apr. 8	1027	288	27	205
Shade-roller. Automatic spring	J. J. Adgate and F. Hickman	300,207	June 10	1030	278	27	1121
Shade-roller catch	A. A. Lothrop	298,004	May 6	55	14	27	538
Shade-roller hanger	W. J. Mullen	300,108	June 10	768	207	27	1075
Shade-roller. Spring	G. T. Briggs	300,841	June 24	1734	474	27	1263
Shade-roller. Spring	G. B. Massey	299,239	May 27	1602	460	27	856
Shaft-bearing	M. A. Furbush	296,684	Apr. 8	998	279	27	198
Shaft-bearing	H. Tabor	297,312	Apr. 22	1788	485	27	353
Shaft-bearing in wheels	S. Schuch	296,465	Apr. 8	717	198	27	142
Shaft-coupling	W. C. Crandell, Jr	298,049	May 6	137	35	27	553
Shaft-coupling	T. E. and J. P. Golden	297,985	May 6	26	8	27	532
Shaft-coupling	S. S. Lukens	299,152	May 27	1499	431	27	836
Shaft-coupling	J. H. Osborn	298,398	May 13	568	157	27	642
Shaft-coupling	J. M. Watson	297,652	Apr. 29	2243	610	27	445
Shaft-coupling	W. H. Clark	299,113	May 27	1453	415	27	827
Shaft-cushioning device	J. G. Nichols	297,085	Apr. 15	1487	411	27	294
Shaft. Flexible	T. Bergner	296,384	Apr. 8	628	173	27	124
Shaft-hanger	H. H. Richards	299,405	May 27	1912	551	27	912
Shaft iron. Sleigh-	A. J. Brill	296,387	Apr. 8	632	174	27	125
Shaft-support	J. F. Pace	298,495	May 13	680	193	27	663
Shaft-support	W. S. Atwood	296,107	Apr. 1	259	75	27	52
Shaft-tip. Carriage	T. Sutton	299,940	June 3	542	144, 145	27	1024
Shafting and bearing	A. Muir	297,153	Apr. 22	1585	436	27	316
Shafting. Coupling	G. Dawo	296,317	Apr. 8	538	150	27	108
Shafting. Keying wheels, pulleys, &c., to	E. J. Hauck	300,867	June 24	1768	481	27	1269
Shaker for mixing drinks	J. Lowe	300,379	June 17	1139	310, 311	27	1150
Shank-stiffeners. Machine for making	J. Angus	298,268	May 6	400	105	27	602
Shaping-machines. Tool-oscillating device for	J. A. Keiser	300,266	June 10	980	265	27	1113
Shave. Cabinet-	E. A. Whittelsey	300,744	June 17	1613	442	27	1235
Shawl-strap	S. C. Minear	298,107	May 6	177	47	27	560
Sheaf gathering and shocking machine	K. Witte	299,310	May 27	1691	485	27	871
Shears: *See* Animal-shears. Hay-shears. Pruning-shears. Reversible shears.							
Shears	L. C. Crowell	299,115	May 27	1456	416	27	827
Sheet-delivery apparatus	J. Munger	299,489	May 27	1907	549	27	911
Sheet-metal box							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sheet-metal can	F. H. Arnd	299,316	May 27	1695	486	27	872
Sheet-metal can	F. A. Walsh	298,801	May 20	1061	297	27	741
Sheet-metal can	W. Wilson, Jr.	300,549	June 17	1350	372	27	1189
Sheet-metal cans. Making	W. Wilson, Jr.	300,548	June 17	1349	372	27	1189
Sheet-metal-cutting machine	J. G. Hodgson	299,982	June 10	664	162	27	1045
Sheet-metal. Press for holding and cutting	T. C. Stiles	299,290	May 27	1664	477	27	860
Sheet-metal vessel	F. Haberman	299,779	June 3	358	91	27	988
Sheet-metal vessels. Handle attachment for	E. Krippendorff and H. C. Marsh	298,304	May 6	445	120	27	611
Sheets, boards, blocks, artificial wood, &c. Compound material for the manufacture of	L. Haas	300,464	June 17	1246	.....	27	1169
Sheller: *See* Cocoanut-sheller. Corn-sheller.							
Shelling and grinding machine	E. M. Wilcox and W. E. Botsford	298,260	May 6	389	102	27	600
Shelving. Adjustable	H. F. Stocking	298,129	May 6	205	54	27	566
Shingle-jointing machine	W. Carson	299,619	June 3	152	38	27	948
Shingle. Metallic	J. Mott	297,530	Apr. 22	2073	566	27	407
Shingle. Metallic roofing	J. Mott	297,529	Apr. 22	2072	565	27	407
Shingle-planing machine	A. W. Eldredge	298,454	May 13	628	179	27	654
Shingle-sawing machine	J. and J. W. Challoner	296,525	Apr. 8	797	{219 / 220}	27	158
Shingle-sawing machine	G. Earl	298,737	May 20	986	274	27	728
Shipping-can	G. J. Record	299,010	May 20	1312	375	27	790
Ships. Construction of	T. Langille	300,714	June 17	1577	432	27	1230
Ship's hull and propeller	Z. Oram	298,019	May 6	73	19	27	541
Ships' logs. Rotator for	J. and G. H. Bliss	296,387	Apr. 8	639	174	27	125
Ships' sides. Machine for dressing	J. Hamilton	299,639	June 3	177	45	27	953
Shirt	J. Cohen	300,220	June 10	923	249	27	1102
Shirt	S. Condé	298,178	May 6	272	70	27	577
Shirt	C. K. Miller and G. H. Cleveland	299,032	June 3	569	140	27	1022
Shirt	J. H. Scriven	297,018	Apr. 15	1408	388	27	279
Shirt	W. M. Steppacher	300,655	June 17	1495	412	27	1216
Shirt-bosom	F. S. Williams	297,896	Apr. 29	2532	693	27	502
Shirt-bosom protector	C. S. Kellogg	298,391	May 13	560	154	27	640
Shirt-neckbands. Support for	G. W. Pine	301,002	June 24	1921	529	27	1208
Shoe	I. A. Beals	297,103	Apr. 22	1520	419	27	305
Shoe	W. A. Bristor	296,518	Apr. 8	789	217	27	157
Shoe	T. R. Evans	298,363	May 13	529	{144 / 145}	27	634
Shoe	P. D. Fréchingle	297,592	Apr. 29	2168	592	27	431
Shoe	J. Müller	299,934	June 3	533	141	27	1021
Shoe	M. F. Pelletier	300,394	June 17	1159	317	27	1153
Shoe	J. H. Stickney	297,469	Apr. 22	1987	542	27	392
Shoe	M. L. Stowe	300,526	June 17	1317	361	27	1194
Shoe. Rubber	F. Richardson	296,433	Apr. 8	705	195	27	140
Shoe. Rubber	F. M. Shepard	298,419	May 13	589	166	27	646
Shoe-sole fastening	L. J. Atwood	296,908	Apr. 15	1279	356	27	256
Shoe-upper	W. G. Slater	297,195	Apr. 22	1625	446	27	323
Shoe-uppers. Gage for goring	W. B. Kinsley	297,898	May 6	49	12	27	577
Shoes. Die for securing heel-plates to rubber	F. Richardson	296,623	Apr. 8	925	258	27	184
Shoes. Heel-plate for rubber	F. Richardson	296,455	Apr. 8	707	195	27	140
Shoes. Machine for securing heel-plates to rubber	F. Richardson	296,624	Apr. 8	936	259	27	184
Shoes. Making	C. W. Reynolds	299,422	May 27	1830	526	27	897
Shoes. Manufacturing	C. W. Reynolds	299,421	May 27	1829	526	27	897
Shoemaker's hand-tool	W. D. Frank	299,973	June 10	590	158	27	1042
Shoulder-brace	W. Batchelor	300,435	June 17	1212	331	27	1163
Shoulder-brace	B. Biddlecome	298,848	May 20	1082	303	27	745
Shovel	E. L. Fegerty	299,530	June 3	33	9	27	927
Shovel	F. W. Hudson	297,132	Apr. 22	1562	430	27	312
Shovels. Forming	E. A. Barnes	296,719	Apr. 15	1042	294	27	213
Show-box and reel-holder	G. C. Tate	296,484	Apr. 8	746	206	27	148
Show-case	T. F. Curley	298,183	May 6	278	72	27	578
Show-case	D. E. Ladd and E. J. B. Whitaker	297,271	Apr. 22	1741	473	27	344
Show-stand for cloaks and other goods	J. Bardsley	299,947	June 10	562	150	27	1038
Show-stand. Revolving	S. T. Culp and T. Ticknor	299,466	May 27	1880	541	27	906
Shutter. Corrugated metal rolling	W. Carson	296,373	Apr. 8	606	168	27	121
Shutter-fastener	W. E. and D. E. Doolittle	297,118	Apr. 22	1545	426	27	309
Shutter-worker	T. A. Myers	298,706	May 13	982	258	27	710
Shutter-worker	D. F. Oliver	299,001	May 20	1299	370	27	787
Shutter-worker	J. Pool	297,713	Apr. 29	2396	633	27	461
Shutter-worker	L. Tilton	297,032	Apr. 15	1429	393	27	283
Sickle-grinder	C. W. Claybourne	298,176	May 6	269	69, 70	27	577
Siding-hook	J. D. Otis and D. M. Maxwell	297,711	Apr. 29	2314	632	27	461
Sifter. Ash-	W. T. Adams	297,737	Apr. 29	2356	641	27	466
Sifter. Ash-	E. Bateson	297,654	Apr. 15	1454	402	27	288
Sifter. Ash-	H. C. Pigueron	296,447	Apr. 8	698	192	27	138
Sifter. Corn-	J. Taylor	298,429	May 13	600	169	27	648
Sifter. Flour-	H. Morgenroth and M. S. Levison	300,722	June 17	1586	435	27	1231
Sifting machine. Flour-	F. W. Andrée	296,716	Apr. 15	1039	293	27	213
Sight-feed lubricator	W. A. G. Schönheyder	298,898	May 20	1179	{329 / 330}	27	764
Sign	J. C. Lake	299,652	June 3	199	50	27	956
Sign. Luminous	G. H. Babcock	297,741	Apr. 29	2360	642	27	467
Signal: *See* Bridge-signal. Railway-signal. Railway safety-signal. Railway-switch signal. Train-signal.							
Signal-light. Nautical	M. White	297,046	Apr. 15	1444	399	27	286
Signaling apparatus. Individual	T. D. Lockwood	296,588	Apr. 8	881	244	27	175
Silo	G. E. Burt	297,564	Apr. 29	2486	681	27	424
Sink	J. Kilbourne	300,983	June 24	1897	522	27	1294
Sink	C. T. Regan	300,130	June 10	797	214	27	1080
Sink or analogous article	H. L. Jacobs	297,404	Apr. 22	1905	518	27	376
Sink-spout	J. G. Coburn	300,574	June 17	1376	380	27	1194
Sink-spouts. Device for thawing out	J. G. Coburn	299,352	May 27	1744	502	27	882

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Siphon	F. D. Ryan	300,328	June 10	1064	288	27	1127
Siphon-starter	E. L. Fitch	299,532	June 3	35	10	27	927
Skate	J. A. Whelpley	296,714	Apr. 8	1028	288	27	205
Skate. Roller-	F. A. Bailey	301,041	June 24	1973	545	27	1308
Skate. Roller-	G. L. Bailey	298,721	May 20	960	268	27	723
Skate. Roller-	C. E. Flagg	298,236	May 20	1105	309	27	749
Skate. Roller-	T. P. and J. B. Hall	297,348	Apr. 22	1687	513	27	372
Skate. Roller-	M. F. Henlon	296,631	Apr. 15	1163	342	27	258
Skate. Roller-	C. Huckins and G. N. Parker	296,571	Apr. 8	864	240	27	172
Skate. Roller-	B. Knudblade	299,799	June 3	379	97	27	993
Skate. Roller-	C. F. Morse	298,110	May 6	181	48	27	561
Skate. Roller-	J. V. Rowlett	296,358	Apr. 8	591	164	27	118
Skate. Roller-	L. L. Ryerson	299,682	June 3	254	63	27	968
Skate. Roller-	W. C. Vanneman	298,303	May 6	472	127	27	615
Skate. Roller-	H. A. Wilbur	300,745	June 17	1614	442	27	1236
Skate-sharpener	X. St. Pierre	300,676	June 17	1495	412	27	1216
Skating-rink floor	G. C. Harkins	299,924	June 3	510	138	27	1020
Skeins. Silk and other	O. Atwood	300,431	June 17	1205	329	27	1162
Skelp-heating furnace. Regenerative	M. V. Smith	299,030	May 20	1342	363	27	795
Skid	J. Barnett	299,507	June 3	7	3	27	922
Skid-elevator	S. Barcus	298,934	May 20	1221	346	27	773
Skid-holder	J. D. Coppes	299,546	June 3	324	82	27	981
Skidway	J. L. Given	299,576	May 27	1768	509	27	887
Skylight	G. Hayes	299,387	May 27	1783	513	27	889
Skylight	C. A. Valle	297,038	Apr. 15	1436	326	27	284
Slate and slate-frame muffler	J. D. Emack	298,140	May 20	988	275	27	728
Slate. Composition and mold for the manufacture of articles from artificial	J. W. McKnight	299,566	June 3	80	20	27	935
Slate-frame	O. M. Pond	298,499	May 13	684	194	27	664
Slate. Noiseless	J. Ridge	298,691	May 20	1172	327	27	763
Slate. School	W. D. Heyer	297,996	May 6	47	12	27	536
Slate-washer	H. L. Weed	296,692	Apr. 1	239	70	27	48
Sled	E. Wagner	299,601	June 3	131	32	27	944
Sled-runner	N. W. Starr	300,156	June 10	835	{225 / 226}	27	1087
Sleeve. Garment-	S. Lorsch	297,926	Apr. 22	2080	565	27	406
Sleigh	W. H. Winne	298,538	May 13	721	204	27	672
Sleigh. Bob-	W. C. Case	299,462	May 27	1876	{539 / 540}	27	905
Sleigh. Bob-	E. A. Harding	298,849	May 20	1118	314	27	752
Sleigh-knee brace	O. A. Thayer	297,316	Apr. 22	1792	486	27	354
Slide-rest	J. Fitz	296,156	Apr. 1	311	89	27	61
Sliding gate	J. S. McClaskey	296,505	Apr. 8	892	247	27	177
Slime-table	T. Carkeek	300,947	June 24	1855	509	27	1286
Slipper. Buck	J. C. Bickford	295,973	Apr. 1	95	29	27	20
Slotting-machines. Tool-oscillating device for	J. Angus	298,227	May 6	393	104	27	601
Slug-nail. Headed	J. Hyslop, Jr.	300,677	June 10	729	197	27	1067
Smelting-furnace	A. Gibson	299,534	June 3	37	10	27	927
Smelting-furnace attachment	G. M. Levette	296,560	Apr. 8	879	244	27	174
Smelting furnace. Ore-	J. W. Webb	297,888	Apr. 29	2523	{690 / 691}	27	500
Smoke-consumer	W. L. Fitch	297,122	Apr. 22	1540	427	27	310
Smoke-consuming device	J. W. and J. D. Smith	296,791	Apr. 15	1126	317	27	229
Smoke-consuming furnace	A. Crawford	299,905	June 10	582	156	27	1041
Smoke-preventing furnace	G. Playford and G. R. Swaine	297,670	Apr. 29	2219	603	27	440
Smoothing and polishing material	R. S. Jennings	298,474	May 13	656	185	27	658
Snap-hook	J. C. Covert	297,352	Apr. 22	1846	502	27	365
Snap-hook	J. A. Park	296,607	Apr. 8	909	253	27	181
Snap-hook for harness. Double	J. Gibbons	300,065	June 10	709	190	27	1064
Snatch-block	T. R. Ferrall	299,531	June 3	33	10	27	927
Snow-clearer	J. Forster	295,995	Apr. 1	128	37, 38	27	26
Snow-plow	P. B. Brazel	298,441	May 13	642	173	27	650
Snow-plow	J. Q. Day	299,750	June 3	328	83	27	982
Snow-plow	O. Jull	297,408	Apr. 22	1942	523	27	377
Snow-plow	J. H. Russell	300,016	June 10	670	178	27	1053
Snuff and match box	P. Seller	299,647	June 3	260	64	27	969
Soap	W. H. Carslake	300,214	June 10	917	247	27	1100
Soap, &c. Machine for plotting	F. S. Butschman	296,858	Apr. 15	1239	346	27	248
Soap-stand and support	W. H. Carslake	300,213	June 10	916	246	27	1100
Soap. Tobacco-	C. L. F. Rose	299,584	June 3	107	.....	27	940
Soda. Apparatus for the manufacture of bicarbonate of	C. Wigg	296,960	Apr. 1	457	129	27	86
Soda-fountain	A. H. Van Riper and F. E. Kip	300,170	June 10	853	230	27	1090
Soda. Obtaining	J. Townsend	298,256	May 6	324	.....	27	599
Soda or other aerated waters. Agitator for generators and receivers for	A. D. Puffer	300,007,	June 10	638	174	27	1051
Soda-water apparatus	A. Bertelli	298,161	May 6	247	64	27	573
Soldering implement	C. A. G. Winther	300,672	June 17	1520	418	27	1223
Soldering-iron heater	W. Dunlop	300,768	June 24	1648	451	27	1247
Soldering-machine	B. Hausheer and J. Meyenberg	297,993	May 6	42	10, 11	27	535
Soldering-machine	M. Jensen	300,083	June 10	733	198	27	1068
Soldering-machine	G. H. Perkins	297,629	Apr. 29	2210	{602 / 601}	27	439
Sole-edge-burnishing machine	W. Gordon	297,030	Apr. 29	2589	708	27	510
Sole-edge-burnishing machine	J. Howard	296,570	Apr. 8	863	239	27	171
Sole-edge cutter. Rotary	W. D. Orcutt	295,936	Apr. 1	51	15	27	13
Sounding apparatus. Navigational	W. Thomson	298,798	May 20	1055	{295 / 296}	27	740
Sower. Seed-	H. D. Layman	296,699	Apr. 8	1014	284	27	202
Sower. Seed-	W. H. Thomas	300,659	June 17	1499	413	27	1217
Spading-machine. Horse	J. B. Turchin	300,413	June 17	1181	324	27	1157
Spark-arrester	E. B. Baldwin and E. R. Kline	300,555	June 17	1358	374	27	1191
Spark-arrester	W. C. Beal	300,191	June 10	885	237	27	1095
Spark-arrester	J. S. Park	298,229	May 6	352	94	27	593

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spark-arrester	H. M. Stainfield	297,028	Apr. 15	1425	392	27	282
Spark-arrester	J. Westinghouse	298,807	May 20	1067	299, 300	27	742
Spectacle-frame	J. H. Nichols	295,934	Apr. 1	49	14	27	12
Spectacles	A. J. Gross	300,696	June 17	1535	427	27	1227
Speculum. Electric-light	E. T. Starr	300,525	June 17	1316	361	27	1184
Speed. Device for changing	G. H. Preston	300,734	June 17	1508	438	27	1231
Speed device. Variable	W. F. Marks	297,143	Apr. 22	1576	469	27	314
Speed-governor	T. L. Calkins	299,618	June 3	150	37	27	948
Speed-indicator	E. R. E. Cowell	296,670	Apr. 8	990	278	27	197
Speed-indicator	R. J. Pratt	299,677	June 3	248	61	27	966
Speed movement. Variable	C. L. Smith	299,500	June 3	114	28	27	941
Speed-regulator	J. H. Sharp	300,647	June 17	1485	408, 409	27	1214
Speeder for the manufacture of rovings, coarse yarns, &c.	J. F. Randall	296,217	Apr. 1	391	111	27	75
Spike-extractor	W. A. Wright	301,077	June 24	2016	537	27	1316
Spindle: *See* Vehicle-wheel spindle.							
Spindle-bearing	J. Kilburn	296,754	Apr. 15	1086	306	27	221
Spindle-bearing	J. Kilburn	296,755	Apr. 15	1087	306	27	221
Spindle-bolster	J. R. Gray	300,402	June 17	1244	340	27	1169
Spinning, drawing, and twisting machinery. Scavenger mechanism for	E. W. Sargent	299,855	June 3	441	114	27	1006
Spinning-frame and uniting the ends of bands thereof	J. E. and E. Atwood	296,377	Apr. 8	614	170	27	122
Spinning-frame spindle and bolster	J. Birkenhead	295,899	Apr. 1	8	2	27	4
Spinning-frame spindle-bearing	G. B. McCracken and S. Hamer	300,785	June 24	1666	456	27	1250
Spinning-frame spindle-bolster	A. Aldrich	297,959	May 6	1	1	27	527
Spinning frames. Thread-separator for ring-	G. Jaquith	296,574	Apr. 8	868	240	27	172
Spinning-machine flier	L. Binns	295,974	Apr. 1	95	29	27	20
Spinning-machine spindle-bolster	A. S. Hopkins	296,902	Apr. 15	1336	371	27	267
Spinning-machines. Apparatus for collecting and removing waste from	W. A. Delmage	296,148	Apr. 1	304	87	27	59
Spinning-machines. Saddle for the top-rolls of	H. L. Pierce	298,621	May 13	825	230	27	690
Spinning-machines, &c. Stop-motion mechanism for	C. H. Larned	300,616	June 17	1432	3[illegible]4	27	1204
Spittoon	P. H. Deis	299,355	May 27	1747	503	27	882
Spittoon-holder	B. H. Haskins	296,409	Apr. 8	655	181	27	129
Spool-feeder	E. Allen	299,047	May 20	1366	389	27	799
Spool. Thread	W. J. Clark	299,739	June 3	317	81	27	980
Spooling-machine stop-motion device	J. Garsed	297,242	Apr. 22	1721	467	27	341
Spoon	J. Bergfels	298,159	May 6	246	63	27	573
Spout. Sap	C. C. Post	296,059	Apr. 1	199	58	27	41
Spouting-elbow	D. B. Rock	296,786	Apr. 15	1121	315, 316	27	228
Spring: *See* Door-spring. Vehicle-spring. Wagon-spring. Wagon-bolster spring. Watch-case spring.							
Spring and weight motor	A. Lewis	298,001	May 6	52	13	27	537
Spring-chair	A. M. Blake	298,036	May 20	1226	347	27	773
Spring-coupling for vehicles	G. F. Thompson	300,660	June 17	1499	414	27	1217
Spring for steam and other pressure gages	F. A. Wood	297,735	Apr. 29	2354	640	27	466
Spring-motor	T. K. Austin	300,753	June 24	1625	446	27	1244
Spring-motor	J. W. Fawkes	2[illegible]6,738	Apr. 15	1063	299, 300	27	217
Spring-motor	G. F. Godley	299,978	June 10	595	160	27	1043
Spring-motor	G. F. Godley	299,979	June 10	600	161	27	1044
Spring-motor	H. Hohmann	297,399	Apr. 22	1[illegible]98	516	27	374
Spring-motor	A. Kanthack	298,388	May 13	559	154	27	640
Spring-motor	D. M. Pfantz	296,707	Apr. 8	1020	287	27	204
Spring-motor	J. B. Powell	299,240	June 3	434	112	27	1004
Spring-motor	A. D. Stansbury	297,725	Apr. 29	2341	637	27	464
Spring-motor	P. A. Tarbox	296,889	Apr. 15	1250	349	27	250
Sprinkler: *See* Street and lawn sprinkler.							
Sprocket-wheel	B. A. Legg	296,192	Apr. 1	359	103	27	69
Square and bevel. Combined carpenter's	R. Steele	299,435	May 27	1845	531	27	900
Square. Try-	W. A. Gabriel	296,157	Apr. 1	312	90	27	61
Squib. Miner's	G. A. Ingram	296,011	Apr. 1	147	43	27	30
Stacking-frame	W. J. Darrah	298,833	May 20	1100	308	27	748
Staircase. Folding	C. H. Chase	296,526	Apr. 8	801	221	27	159
Stairs. Folding	T. Peterson	300,395	June 17	1459	318	27	1154
Stalk-cutter	A. R. Brown	299,053	May 20	1372	391	27	800
Stamp and dater combined. Self-inking hand	E. Schmitz	297,856	Apr. 29	2485	680, 681	27	492
Stamp-mill	G. S. Long	298,869	May 20	1141	320	27	757
Stamp. Steam-power	W. S. Sharpneck	296,789	Apr. 15	1123	316	27	228
Stamp. Time-	W. H. Gillette	300,966	June 24	1678	516	27	1290
Stand: *See* Music-stand. Perfumery-stand. Show-stand. Soap-stand.							
Staple	C. B. Brainard	300,204	June 10	908	244	27	1099
Staples. Machine for making barbed	G. Rumsey	296,628	Apr. 8	931	260	27	195
Starch. Manufacturing	H. Duryea	300,700	June 17	1560	.....	27	1228
Starch refuse, &c. Apparatus for separating solid and liquid portions of	P. H. Grimm	296,000	Apr. 1	135	39	27	28
Starch-separator	C. W. Tremain	300,165	June 10	845	228	27	1089
Station-indicator	H. E. Bissell	298,102	May 6	251	64, 65	27	573
Station-indicator	I. Osgood	297,625	Apr. 29	2304	601	27	438
Station-indicator	M. V. Walker	297,320	Apr. 22	1795	487	27	335
Stave-bending machine	E. and B. Holmes	297,401	Apr. 22	1900	516	27	375

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stave-crozing machine	S. F. Maxwell	296,190	Apr. 1	367	104, 105	27	70
Stave-jointing machine	J. Treat	300,033	June 10	668	182	27	1056
Stave-packing machine	J. H. Overton	299,493	May 27	1911	550	27	912
Stave-shaping machine. Barrel-	M. E. Beasley and E. M. Hugenfobler.	300,194	June 10	891	239, 240	27	1096
Staying-piece for garment slit-openings	I. P. Turner	295,959	Apr. 1	78	23, 24	27	18
Staying-piece for garments	G. E. Norris	295,935	Apr. 1	50	15	27	12
Staying-piece for garments	G. W. Pine	298,401	May 13	572	157, 158	27	643
Steam-alarm and damper-regulator	J. C. Jones and C. T. Reid	296,839	Apr. 15	1188	333	27	239
Steam. Apparatus for utilizing waste heat of kilns in generating	C. Godfrey	297,381	Apr. 22	1878	510	27	370
Steam apparatus. Rotating joint mechanism for	E. Wright	298,049	May 6	110	28	27	548
Steam-boiler	E. B. Badlam	299,505	June 3	6	2	27	922
Steam-boiler	J. O. Draper	300,767	June 24	1647	451	27	1247
Steam-boiler	P. F. Dundon	298,561	May 13	771	212	27	677
Steam-boiler	H. K. Kriebel	298,862	May 20	1132	318	27	755
Steam-boiler	J. Roberts	297,009	Apr. 15	1397	385, 386	27	277
Steam-boiler and furnace	W. S. Post and H. D. Sawyer	299,578	June 3	97	25	27	938
Steam-boiler and furnace lining	C. McMillan	296,768	Apr. 15	1099	310	27	224
Steam-boilers. Heating and feeding water to	H. Stollwerck	301,017	June 24	1944	537	27	1302
Steam-distributing pipes. Automatic relief device for	E. H. Ashcroft	299,192	May 27	1547	443, 444	27	844
Steam-engine	W. Golding	298,081	May 6	148	37, 38	27	555
Steam-engine. Balanced	B. Field	296,944	Apr. 15	1320	366	27	203
Steam-engine. Compound	W. L. Shepard	298,630	May 13	833	233	27	691
Steam-engine lubricator	C. B. McAlvay and C. H. Christopher.	300,619	June 17	1437	396	27	1205
Steam-engine or water-motor	G. S. Peppard	299,161	May 27	1511	434	27	837
Steam-engine. Oscillating	M. Ulrich	300,166	June 10	846	228, 229	27	1089
Steam-generating apparatus	W. A. Pentecost	298,094	May 6	82	22	27	543
Steam-generator	B. S. Comstock	300,446	June 17	1223	334	27	1165
Steam-generator	E. I. Walden	300,418	June 17	1187	325	27	1159
Steam-generator for street-car or other locomotive engines.	F. G. Wheeler	299,607	June 3	137	34	27	945
Steam-generator. Water-tube	C. Ward	297,649	Apr. 29	2230	609, 610	27	445
Steam-heater	W. C. Bronson	300,207	June 10	911	345	27	1099
Steam-heater	W. J. Lane	300,376	June 17	1136	309, 310	27	1150
Steam-pipe joint for rotary paper-drying cylinders, &c.	M. J. Roach	298,624	May 13	828	231	27	690
Steam-pressure-gage trap	G. H. Crosby	297,504	Apr. 22	2041	557	27	400
Steam-trap	H. Lancaster	299,809	June 3	390	100	27	995
Steam-trap	R. B. Morse	298,878	May 20	1152	323	27	759
Steam-trap	E. F. Osborne	300,003	June 10	632	172, 173	27	1050
Steam-trap	W. Vanderman	300,664	June 17	1509	415, 416	27	1219
Steam. Utilizing exhaust	D. Renshaw	300,506	June 17	1296	356	27	1180
Steamer. Potato-	C. F. Bower	297,346	Apr. 22	1838	500	27	363
Steamer. Vegetable-	L. M. Marr	295,930	Apr. 1	45	13	27	11
Steel from wrought-iron with plumbago. Producing	W. A. O. Wrth	300,826	June 24	1716	.....	27	1260
Steel ingots. Pouring and compressing	G. W. Billings	298,662	May 13	875	245	27	698
Steel. Manufacturing wrought-	S. T. Wellman	298,642	May 13	846	236	27	694
Steel-melting furnace. Open-hearth	C. M. Ryder	298,028	May 6	88	23	27	544
Steel ribbon. Method of and apparatus for hardening	J. Logan	297,610	Apr. 29	2185	596	27	435
Steels. Combining	J. J. Williamson	295,965	Apr. 1	83	26	27	19
Steering-gear for ships	J. K. Kilbourn and G. Fossick	300,613	June 17	1426	393, 394	27	1203
Steering mechanism. Steam	W. C. Williamson and H. O. Fladvad	300,180	June 10	871	234, 235	27	1093
Stencil or perforating-pen	J. C. Hill	298,853	May 20	1122	316	27	753
Stencil-plate	R. E. Ghezzi	296,327	Apr. 8	552	153	27	110
Stereoscope	H. E. Pierce	296,055	Apr. 1	196	56	27	40
Stereotype-block	E. E. Pratt	300,732	June 17	1596	437	27	1233
Stereotype or electrotype plates. Mounting	R. W. Nelson	298,703	May 13	933	250	27	711
Stereotype-plates in the form. Device for securing	E. E. Pratt	300,731	June 17	1595	437	27	1233
Stereotype-plates. Method of and apparatus for drying matrices for	G. Pearce and E. Hughes	296,049	Apr. 1	186	54	27	39
Stereotypes. Device for locking removable	E. E. Pratt	296,061	Apr. 1	201	58	27	41
Stereotyping apparatus	F. J. Smith	297,023	Apr. 15	1418	390	27	281
Still. Petroleum-	R. C. Clark and M. H. Warren	298,825	May 20	1091	305	27	746
Stirrup	F. Lehmann	300,986	June 24	1809	522	27	1294
Stitch ripper. Lock-	E. H. Wheeler	296,402	Apr. 8	757	208	27	149
Stitches. Hand apparatus for forming	C. Stickel	296,084	Apr. 1	229	66	27	46
Stocking-supporter and garter	C. F. and W. J. Walters	300,923	June 24	1831	501	27	1289
Stone and marble. Manufacture of artificial	H. A. Daniels	297,971	May 6	11	.....	27	529
Stone-channeling machine	W. L. Saunders	299,092	May 20	1419	405	27	810
Stone. Compound for the manufacture of artificial	H. Beuing	300,560	June 17	1202	.....	27	1191
Stone-crandall. Sand-	F. Schneddig	298,417	May 13	588	166	27	646
Stone-crusher	T. A. Blake	296,914	Apr. 15	1286	357	27	257
Stone-crusher	H. Sundquist	296,795	Apr. 15	1129	318	27	230
Stone. Cutter for dressing	F. Trier	296,252	Apr. 1	439	124	27	84
Stone-cutting machine	W. L. Saunders	299,093	May 20	1420	405	27	810
Stone-dressing machine	J. W. Maloy	300,277	June 10	995	268, 269, 270	27	1115
Stone-dressing machine	J. Mann	298,598	May 13	798	224	27	685
Stone-dressing machine	N. J. Swayze	298,132	May 6	209	55, 56	27	567
Stone-dressing machine	F. Trier	297,036	Apr. 15	1432	394, 395	27	284

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stone dressing tools. Diamond-holder for	A. L. Teetor	297,728	Apr. 29	2347	638	27	465
Stone. Manufacture of artificial	B. Lande	299,810	June 3	391	.....	27	995
Stone. Manufacture of artificial	M. McNamara	295 931	Apr. 1	46	.....	27	11
Stone. Manufacturing artificial	M. B. Randle and B. E. Turner	298,026	May 6	96	.....	27	543
Stone-splitting tool	W. W. Wild	300,423	June 17	1195	327	27	1160
Stones. Machine for gathering	B. A. Weatherbee	300,173	June 10	857	{231 / 232}	27	1091
Stool. Milking	C. D. Goodman and F. J. Smith	297,786	Apr. 29	2413	659	27	477
Stool or seat standard	H. Ocorr	300,116	June 10	779	209	27	1076
Stop-motion. Automatic	R. R. Pease	300,120	June 10	784	210	27	1077
Stopper: *See* Bottle-stopper. Fruit-jar stopper.							
Stopper-lock	J. D. Mattison	297,425	Apr. 22	1932	527	27	360
Storage-battery element	W. E. Case	298,348	May 13	512	.....	27	630
Store-service apparatus	I. Birgé	300,198	June 10	898	241	27	1097
Store-service apparatus	H. H. Hayden	300,072	June 10	721	195	27	1066
Store-service apparatus. Automatic	J. H. Goodfellow	297,967	May 6	29	8 9	27	533
Store-service apparatus. Roller for	I. Birgé	300,021	June 17	1532	421	27	1223
Store-service switch	E. L. Gilles	299,130	May 27	1476	424	27	831
Stove	F. and J. Moses	300,723	June 17	1586	435	27	1231
Stove and furnace grate	H. Schreiner	300,904	June 24	1811	495	27	1278
Stove and heater	T. M. Fell	297,772	Apr. 29	2399	655	27	474
Stove attachment. Gasoline	J. Ringen	299,853	June 3	439	113	27	1005
Stove-casting	G. H. Phillips	299,007	May 20	1307	372	27	789
Stove. Cooking	E. J. Krause	298,986	May 20	1284	366	27	784
Stove. Heating	L. F. Betts	299,104	May 27	1442	{411 / 412}	27	925
Stove. Heating	W. A. Winfree	297,902	Apr. 29	2538	695	27	503
Stove. Hot-blast	J. J. Airey	296,101	Apr. 1	248	72	27	50
Stove-jacket	W. H. Benson	296,911	Apr. 15	1283	357	27	257
Stove. Lamp	C. P. Kemmerer	300,268	June 10	985	266	27	1113
Stove. Oil	C. T. Ham	300,601	June 17	1409	388	27	1200
Stove. Oil	C. O. Schwarta	299,426	May 27	1833	527	27	898
Stove-pipe connection	G. Laube	297,272	Apr. 22	1742	473	27	345
Stove-pipe shelf	F. A. Gardner	298,085	May 13	912	253	27	707
Stove-pipe thimble	G. Laube	300,486	June 17	1273	350	27	1175
Stove, range, furnace, &c	W. Miggett	298,605	May 13	805	226	27	686
Stove. Vapor	F. O. Farwell	297,120	Apr. 22	1546	427	27	309
Stoves. Water-heater for gasoline	J. W. Stoffel	301,016	June 24	1943	537	27	1302
Straightening, bending, and punching machine	J. Crosgrove	296,279	Apr. 1	485	{135 / 136}	27	91
Strap: *See* Box-strap. Shawl-strap. Hitching-strap.							
Strap and buckle loop	F. A. Neider	300,111	June 10	779	207	27	1075
Strap-fastener	J. W. Ropp	298,408	May 13	579	162	27	644
Straw-carrier	L. W. Hasselman	299,537	June 3	41	11	27	928
Straw-cutter	E. W. Ross	295,947	Apr. 1	64	19	27	15
Straw-stacker	H. Campbell	301,044	June 24	1976	{545 / 546}	27	1308
Straw-stacker	S. M. Miller and E. F. Brown	299,933	June 3	530	141	27	1022
Straw-stacking machine	J. Buchanan	297,561	Apr. 29	2122	579	27	423
Street and lawn sprinkler. Combined	J. Jungbluth	299,076	May 20	1401	399	27	806
Street-cleaning machine	B. Van Gaasbeek	296,486	Apr. 8	751	207	27	148
Street-roller	C. K. Pickles	296,446	Apr. 8	697	191	27	138
Stuffing-box jack	A. R. Seaman	298,903	May 20	1184	333	27	765
Stump-extractor	A. S. Croxton	296,929	Apr. 15	1304	362	27	260
Stump-extractor	R. M. McMeen	300,786	June 24	1667	456	27	1251
Stump-extractor	W. Smith	297,026	Apr. 15	1422	391	27	281
Stump-puller	C. A. Blume	296,915	Apr. 15	1227	358	27	257
Stump-puller	G. M. Grabert and T. J. Dennis	297,253	Apr. 22	1722	467	27	341
Sugar and apparatus therefor. Washing raw	J. H. Tucker	297,095	Apr. 15	1504	415	27	297
Sugar and sugar masses. Method of and apparatus for mashing	A. Fesca	297,978	May 6	18	6	27	531
Sugar. Cooling and drying	H. E. Niese and G. Dinkel	296,042	Apr. 1	179	52	27	37
Sugar-cooling apparatus	H. E. Niese and G. Dinkel	296,040	Apr. 1	176	51	27	36
Sugar-cooling apparatus	H. E. Niese and G. Dinkel	296,041	Apr. 1	177	52	27	37
Sugar, &c. Depurated composite	J. Gandolfo	296,326	Apr. 8	550	.....	27	110
Sugar, &c. Device for loosening	J. S. Lash	298,099	May 6	169	44	27	559
Sugar-evaporator	G. H. Grimm	296,743	Apr. 15	1069	301	27	218
Sugar. Method of and apparatus for bleaching	O. B. and J. M. Stillman	297,029	Apr. 15	1426	392	27	282
Sulphur. Apparatus for reducing	F. Dickert	298,734	May 20	963	273	27	727
Superheater	G. Jones	296,175	Apr. 1	334	95	27	65
Superheater for engines	J. C. H. Stut	301,074	June 24	2042	556	27	1315
Superheating-furnace	G. Jones	296,176	Apr. 1	336	95	27	65
Suppository for catarrh	F. H. Hubbard	298,855	May 20	1124	.....	27	753
Suspended adjustable chair and seat	H. S. Peck	296,775	Apr. 15	1108	312	27	225
Suspender-end	M. Marcus and H. Aniss	298,009	May 6	60	16	27	539
Suspender-end	A. Nascher	300,495	June 17	1284	353	27	1178
Suspender-end	C. C. Shelby	296,076	Apr. 1	218	63	27	44
Suspending device	G. W. McGill	300,100	June 10	758	204	27	1073
Suspension-jack for removing journal-boxes of cars	J. M. Garverick	298,298	May 6	437	118	27	610
Swing and chair. Combined	F. Robinius	295,946	Apr. 1	63	18	27	15
Switch: *See* Automatic switch. Cash-railway switch.							
Switch guard. Safety	H. Harmer. (Reissue)	10,478	May 13	951	264	27	715
Switch-operating mechanism	J. D. Stanwood	298,036	May 6	96	25	27	545
Switch-stand	F. W. Snow	299,176	May 27	1528	438	27	840
Switch-stand	F. W. Snow	300,911	June 24	1890	498	27	1280
Switch-stand	F. W. Snow	300,912	June 24	1892	498	27	1280
Switch-stand	J. B. Witty	298,537	May 13	722	204	27	672
Switch-thread	H. Borchardt	299,614	June 3	146	36	27	947
Swivel-hook for ornamental chains	D. F. Briggs	299,336	May 27	1723	494	27	877
Syringe	J. B. Hunt	297,263	Apr. 22	1734	471	27	343

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Table: *See* Billiard and pool table. Extension-table. Folding table. Game-table. Gynecological and surgeon's operating-table. Ironing-table. Machine-table. Peanut separating and assorting table. Sewing-machine table. Slime-table.							
Table	S. W. Maxson	298,601	May 13	800	224	27	685
Table-knife	A. W. Cox	298,829	May 20	1097	307	27	748
Table-leaf support	H. J. Goold	298,967	May 20	1267	361	27	721
Table-leaf support	S. W. Stilwell	299,874	June 3	461	120	27	1010
Table-leg fastening	H. W. Groebl	297,931	Apr. 29	2582	708	27	511
Tack-machine	H. B. Chess	299,346	May 27	1737	{499 / 500}	27	880
Tack or fastener	F. A. Smith, Jr.	296,475	Apr. 8	735	203	27	145
Tacks. Making plumbers'	C. E. Heiss	297,797	Apr. 29	2425	662	27	480
Tackle	K. Upton	296,487	Apr. 8	750	207	27	148
Tackle	J. C. St. John	298,711	May 13	939	261	27	712
Tag	J. T. Dunham. (Reissue)	10,488	June 10	1079	294	27	1130
Tag and envelope. Combined	G. W. McGill	296,766	Apr. 15	1097	309	27	223
Tag and tag-fastener	G. N. Buck	298,549	May 13	735	208	27	674
Tag-fastener	G. W. McGill	299,154	May 27	1500	431	27	836
Tag-fastener	S. S. Sencenbaugh	298,629	May 13	632	232	27	691
Tag-fastener	W. Dickie	299,753	June 3	331	84	27	983
Tag-holder	B. H. Winchell	300,182	June 10	874	235	27	1093
Tag-holder	F. A. Knox	297,270	Apr. 22	1740	473	27	344
Tag. Key	M. Kersten	296 180	Apr. 1	340	96	27	66
Tag. Metallic	S. C. Campbell	300,212	June 10	915	246	27	1100
Tag or ticket fastener	O J. Cohn	298,535	May 13	743	209	27	675
Tag. Pin	R L. French	298,367	May 13	592	145	27	635
Tally-card holder	T. A. Mayes	296,966	Apr. 15	1373	370	27	272
Tan-vats. Apparatus for agitating the liquor in	S. S. Eddy	300,392	June 17	1106	.....	27	1146
Tanning-process							
Tank: *See* Refrigerating corned-beef tank. Windmill-tank.							
Tap. Self-closing	F. Hyde	297,691	Apr. 29	2309	626	27	458
Tap-wrench	M. S. Brooks	295,904	Apr. 1	15	4	27	6
Tap-wrench	N. Sawyer	298,029	May 6	89	23	27	544
Tapping beer. Device for	J. H. Brennan	296,311	Apr. 8	531	149	27	106
Target. Flying	A. H. Hebbard	299,783	June 3	361	92	27	989
Target. Flying	F. J. Meyer	299,835	June 3	420	108	27	1002
Target. Flying	C. F. Stock	297,307	Apr. 22	1782	484	27	352
Target. Flying	C. F. Stock	299,292	May 27	1608	478	27	867
Target. Flying	I. W. Harlow	298,465	May 13	644	183	27	656
Tea-kettle	N. Plympton	299,848	June 3	433	112	27	1004
Tea-pot	E. M. Greene	297,385	Apr. 22	1883	512	27	371
Telegraph and telephone instruments. Protector for	R. Anderson	296,376	Apr. 8	612	170	27	122
Telegraph. Automatic	P. H. Vander Weyde	300,034	June 10	669	{182 / 183}	27	1057
Telegraph-cable. Compound	S. F. Shelbourne	297,180	Apr. 22	1617	444	27	322
Telegraph cable. Submarine	M. J. O'Sullivan	299,417	May 27	1825	524	27	897
Telegraph call-box. District	G. Smith	297,540	Apr. 22	2085	568	27	409
Telegraph. Diplex or quadruplex	C. W. Lewis	297,819	Apr. 29	2445	669	27	484
Telegraph-key	G. F. Brott	295,905	Apr. 1	16	4	27	6
Telegraph or other pole	J. Hunter	298,975	May 20	1273	363	27	782
Telegraph-pole	C. L. Buckingham and W. B. Vansize.	300,341	June 17	1091	297	27	1143
Telegraph. Printing	W. J. McCausland	299,664	June 3	228	56, 57	27	963
Telegraph. Printing	W. B. Vansize and C. L. Buckingham.	300,417	June 17	1186	325	27	1158
Telegraph. Quadruplex	G. W. Gardanier	298,571	May 13	764	215	27	679
Telegraph. Quadruplex	G. Smith	297,186	Apr. 22	1626	446	27	323
Telegraph transmitter. Printing	S. D. Field	300,859	June 24	1754	{478 / 479}	27	1267
Telegraph-wire conduit	W. Magner	299,992	June 10	647	166	27	1048
Telegraph-wires. Conduit for underground	E. O. Hildebrand	297,397	Apr. 22	1896	515	27	374
Telegraph-wires to posts and insulating them therefrom. Device for attaching	H. Cottrell	297,677	Apr. 29	2279	619	27	452
Telegraphs. Signal-box for district and fire-alarm	C. H. Carter	298,945	May 20	1233	340	27	775
Telegraphs. Static compensator for	F. W. Jones	300,781	June 24	1661	455	27	1250
Telegraphic cable	W. R. Patterson	296,774	Apr. 15	1107	312	27	225
Telegraphic relay	J. S. Lamar	300,269	June 10	986	266	27	1113
Telegraphic transmitter	N. J. Bishoprick	299,949	June 10	564	151	27	1038
Telegraphic transmitter for unskilled operators	J. N. Farrar and C. W. Morse	300,353	June 17	1107	300	27	1146
Telephone	F. B. Cook and F. F. Graves	295,963	Apr. 1	111	33	27	23
Telephone	W. Gillett	296,929	Apr. 15	1177	330	27	237
Telephone	J. H. Rogers	297,166	Apr. 22	1601	440	27	319
Telephone	J. H. Rogers	297,167	Apr. 22	1602	440	27	319
Telephone	J. H. Rogers	297,168	Apr. 22	1603	441	27	319
Telephone	H. B. T. Strangways	297,470	Apr. 22	1988	543	27	392
Telephone	W. A. West	300,422	June 17	1194	{326 / 327}	27	1159
Telephone and telegraph purposes. Conductor for	W. Jamieson	297,406	Apr. 22	1906	518	27	376
Telephone-cable	F. C. Guilleaume	297,688	Apr. 29	2296	624	27	456
Telephone call and switch box	E. H. McFall	297,148	Apr. 22	1580	435	27	315
Telephone-exchange apparatus	T. B. Doolittle	298,550	May 13	740	{210 / 211}	27	676
Telephone exchange. Mechanical	G. F. Shaver	298,243	May 6	367	97	27	595
Telephone-exchange system	F. B. Herzog	299,070	May 20	1302	397	27	804
Telephone-exchanges. Metallic circuit for	J. C. and E. P. Warner	299,603	June 3	133	33	27	944
Telephone-line	T. D. Doolittle	297,683	Apr. 29	2289	623	27	454
Telephone. Mechanical	A. A. Knudson	300,713	June 17	1576	432	27	1230

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Telephone. Mechanical	A. B. Kurtz	298,479	May 13	659	186	27	659
					187		
Telephone. Mechanical	H. and E. Seligman	296,230	Apr. 1	413	115	27	78
Telephone mouth and ear piece	F. Ware	297,732	Apr. 29	2352	639	27	466
Telephone-receiver	H. E. Waite	298,924	May 20	1211	341	27	771
Telephone-receiver holder	J. N. Stewart	299,288	May 27	1640	476	27	865
Telephone. Receiving-	J. A. Maloney	296,420	Apr. 8	667	184	27	131
Telephone. Receiving-	C. E. Scribner	298,783	May 20	1037	290	27	737
Telephone-repeater	D. E. Smith	297,724	Apr. 29	2342	636	27	464
					637		
Telephone signaling apparatus	W. J. Dudley	295,913	Apr. 1	22	7	27	7
Telephone-station apparatus	E. M. Bentley	297,909	Apr. 29	2549	699	27	505
Telephone-support	N. G. Warth	299,300	May 27	1680	482	27	869
Telephone system	C. H. Haskins	299,926	June 3	521	138	27	1020
Telephone-systems. Spring-jack for	C. E. Scribner	300,143	June 10	821	222	27	1084
Telephone time-signal apparatus	H. B. Lytle and J. J. Carty	299,562	June 3	75	19	27	934
Telephone time-signals. Method of and apparatus for individualizing	H. B. Lytle and J. J. Carty	299,561	June 3	71	18	27	934
Telephone-transmitter	S. Chadwick	296,676	Apr. 8	987	277	27	197
Telephone-transmitter	D. Drawbaugh	297,578	Apr. 29	2151	587	27	428
Telephone-transmitter	D. Drawbaugh	297,579	Apr. 29	2154	588	27	428
Telephone-transmitter	D. Drawbaugh	298,676	May 13	901	251	27	704
Telephone-transmitter	G. W. Drawbaugh	298,677	May 13	903	251	27	705
Telephone-transmitter	J. A. Maloney	296,421	Apr. 8	668	185	27	132
Telephone-transmitter	H. E. Waite	298,923	May 20	1209	341	27	770
Telephone-transmitter	H. E. Waite	298,925	May 20	1212	342	27	771
Telephone-transmitter. Electric	J. A. Maloney	296,593	Apr. 8	889	246	27	176
Telephonic receiving-instrument	J. D. Husbands	299,074	May 20	1398	398	27	805
Telephonic transmitter	H. Clay	298,286	May 6	423	113	27	606
					114		
Telephonic transmitter	J. D. Husbands	299,073	May 20	1396	398	27	805
Temperature, &c. Electric valve for regulating	W. S. Johnson	301,059	June 24	1995	551	27	1312
Tennis-grounds. Device for laying out	H. N. Covell	299,625	June 3	159	30, 40	27	949
Tent	S. Marvin	300,993	June 24	1907	525	27	1296
Terret. Harness-	H. F. and L. A. Townsend	297,033	Apr. 15	1430	393	27	283
Theater appliance. Hydraulic	R. Gwinner, J. Kantaky, C. Dengg, and F. Roth.	296,286	Apr. 1	494	138	27	93
					139		
Theaters. Border-light for	J. T. Preddey	298,888	May 20	1168	327	27	762
Theatrical appliance	J. W. Sherman	296,467	Apr. 8	720	199	27	143
Thermo-reservoir	E. D. Newton	299,252	May 27	1616	464	27	858
Thermometer and barometer mold, &c	W. Somerville	296,703	Apr. 15	1127	317	27	229
Thermostat	M. D. Porter	296,058	Apr. 1	199	58	27	41
Thill-coupling	E. P. Alexander	300,750	June 24	1622	445	27	1243
Thill-coupling	C. W. Ament	296,103	Apr. 1	250	73	27	51
Thill-coupling	A. O. Bonsteel	298,439	May 13	611	172	27	650
Thill-coupling	E. S. Buzby	299,460	May 27	1675	539	27	905
Thill-coupling	M. E. Campany	298,942	May 20	1230	348	27	774
Thill-coupling	J. W. Carns	300,045	June 10	687	186	27	1060
Thill-coupling	S. Craig	299,912	June 3	505	133	27	1018
					134		
Thill-coupling	J. C. Dietrich	297,356	Apr. 22	1849	502	27	365
Thill-coupling	L. J. Dresser	299,917	June 3	510	135	27	1019
Thill-coupling	R. R. Earnest	300,057	June 10	699	190	27	1062
Thill-coupling	R. H. P. Ellis	299,902	May 20	1381	384	27	802
Thill-coupling	J. A. Green	300,597	June 17	1403	386	27	1199
Thill-coupling	S. Hubbell, Jr	297,961	Apr. 29	1772	470	27	343
Thill-coupling	S. D. Lecompte	299,556	June 3	67	17	27	933
Thill-coupling	P. D. Peck	297,442	Apr. 22	1956	534	27	385
Thill-coupling	G. W. Rossman and J. E. Strever	296,787	Apr. 15	1122	316	27	228
Thill-coupling	L. D. Rundell and P. Van Valkenburgh.	297,297	Apr. 22	1771	481	27	350
Thill-coupling	F. M. Stevens	296,794	Apr. 15	1129	318	27	230
Thill-coupling	C. E. Struck	299,696	June 3	269	67	27	970
Thill-coupling	C. M. Westcott	299,443	May 27	1852	533	27	901
Thill-coupling	H. M. Wheeler	296,805	Apr. 15	1142	322	27	239
Thill-coupling	W. H. Wright	298,810	May 20	1072	301	27	743
Thill-couplings. Anti-rattler for	J. M. Haas	300,251	June 10	964	261	27	1109
Thimble	M. Démme	297,355	Apr. 22	1849	502	27	365
Thrasher and clover-seed huller. Combined grain-	C. H. Horton. (Reissue)	10,485	June 3	548	146	27	1025
Thrasher and huller. Clover	C. A. Bikle	297,104	Apr. 22	1521	420	27	306
Thrashers or separators. Recleaning attachment for	H. Campbell	296,922	Apr. 15	1296	360	27	259
Thrashing and cleaning machine	W. H. Parrish	296,441	Apr. 8	690	190	27	136
Thrashing-machine	J. A. Beam	296,111	Apr. 1	262	76	27	53
Thrashing-machine	J. Buchanan	297,562	Apr. 29	2123	579	27	423
Thrashing-machine	J. M. C. Jones	296,015	Apr. 1	153	44	27	31
Thrashing-machine	D. Lippy	299,406	May 27	1816	522	27	895
Thrashing-machine	C. Shirley	299,802	June 3	448	116	27	1007
					117		
Thrashing-machine band-cutting and feeding attachment	C. B. Scherer	300,645	June 17	1482	407	27	1214
					408		
Thrashing-machine beater	R. and F. Garrett and J. D. Ellis	297,781	Apr. 29	2407	657	27	476
Thrashing-machine straw-carrier	M. J. Gessner	297,594	Apr. 29	2170	592	27	432
Thrashing-machine straw-stacker	D. D. and P. J. Sprague	298,250	May 6	376	100	27	567
Thrashing-machines. Clover-hulling attachment for	A. L. Gates	298,196	May 6	295	76	27	581
Thrashing-machines. Self-feeding and band-cutting attachment for	S. S. Barr	296,109	Apr. 1	260	75	27	52
Thread. Machinery for stretching and smoothing sewing	J. E. Tynan	297,542	Apr. 22	2088	569	27	410
Thrashing peas, beans, &c. Machine for	B. F. Archer	300,429	June 17	1202	329	27	1161
Threads, yarns, &c. Dressing compound for	J. S. Wattles	299,704	June 3	279	.....	27	973
Ticket-case	P. Abbott	297,217	Apr. 22	1676	456	27	339
Ticket-case	W. E. Chatterton	297,349	Apr. 22	1842	500	27	364
					501		
Ticket-holder	C. W. Walters	300,172	June 10	856	231	27	1000

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Tile and sewer pipe machines. Feeder for	J. S. Smith	296,236	Apr. 1	421	118	27	80
Tile. Decorative	S. Van Campen	298,921	May 20	1207	341	27	770
Tile. Illuminating-	J. Jacobs	297,806	Apr. 29	2433	665	27	461
Tile-machine	F. M., M. G., M. J., and M. L. Harris.	298,850	May 20	1119	314	27	752
Tile-machine	W. Lewis	298,002	May 6	53	14	27	537
Tile-machine	M. Nolan	300,278	June 10	1002	271	27	1116
Tile-machine	J. S. Smith	296,477	Apr. 8	737	203	27	146
Tile machine. Drain-	C. J. Merrill	300,852	June 24	1785	487	27	1273
Tile-mills. Revolving table for	J. S. Smith	300,909	June 24	1817	497	27	1279
Tile-mold	J. Grant	298,847	May 20	1114	313	27	751
Tile mold. Drain-	C. B. Hewitt	297,995	May 6	46	12	27	536
Tile or brick for floors, &c	T. C. Smith	300,521	June 17	1311	360	27	1183
Tile. Roofing-	B. F. Powers, G. E. Needham, and J. Hayes.	296,616	Apr. 8	918	257	27	183
Tiles. Constructing and fastening	W. Booth	297,491	Apr. 22	2014	550	27	397
Tilting-chair	H. Parry	299,846	June 3	431	112	27	1004
Time-detector. Watchman's electric	C. G. Spengler	298,906	May 20	1189	335	27	766
Time-indicator and block-signal. Automatic	E. F. Bard and G. G. Wagner	300,833	June 24	1795	471	27	1261
Time-lock	M. C. Hawkins	296,561	Apr. 8	850	236	27	168
Time-lock	H. F. Newbury	297,623	Apr. 29	2200	600	27	437
Time-piece for operating mechanical devices	J. A. Lakin	296,988	May 20	1256	366	27	784
Time-recording device	J. Keller and J. F. Peribach	297,939	Apr. 29	2592	711	27	512
Time-register. Automatic	G. W. Foster	297,248	Apr. 22	1714	465	27	340
Time-signals over lines employed for other purposes. Apparatus for distributing	F. Waldo	296,653	Apr. 8	960	270	27	191
Tin cans. Utilizing	B. F. Mechling	298,221	May 6	338	88	27	590
Tin. Process of and apparatus for crystallizing	C. R. H. M. Habenicht	300,599	June 17	1407	387	27	1200
Tire-tightener	H. C. Batea	296,306	Apr. 8	596	147	27	105
Tire-tightener	W. Campbell	295,979	Apr. 1	101	31	27	21
Tire-tightener	S. McCay	296,987	Apr. 15	1374	379	27	273
Tire-upsetter	J. Nyce	297,947	Apr. 29	2600	713	27	514
Tobacco-caddy. Sheet-metal	E. H. Striker	298,255	May 6	382	101	27	509
Tobacco-cutter	G. A. Priest	298,404	May 13	576	159	27	643
					160		
Tobacco. Machine for attaching tags and labels to plug-	N. B. Hieatt and E. R. Hearn	299,541	June 3	48	12	27	929
Tobacco-pipe	M. Dittenhoefer	299,357	May 27	1749	503	27	883
Tobacco-planta. Shears for cutting	C. Nagley	298,768	May 20	1017	284	27	733
Tobacco-sweater	G. Brownstein	297,668	Apr. 29	2262	616	27	440
Tobacco-transporting rack	W. Sternberg	298,252	May 6	379	100	27	598
Tombstone	S. R. Miller	296,431	Apr. 8	679	187	27	134
Tombstone picture-case	H. A. Holloman and W. R. Green	298,060	May 6	157	41	27	557
Tongs	W. E. Wood	297,736	Apr. 29	2355	640	27	466
Tongs for lifting spools of fence-wire	W. A. Hardin	296,559	Apr. 8	847	235	27	168
Tongue-rest	J. Fisher	297,368	Apr. 22	1805	507	27	368
Tongue-support	D. Read	296,621	Apr. 8	923	258	27	184
Tongue-support	S. B. Reid	300,706	June 24	1679	459	27	1253
Tongue support. Wagon-	J. Bower	297,745	Apr. 29	2366	644	27	468
Tongue support. Wagon-	W. P. Martin	299,238	May 27	1601	459	27	856
Tool	J. A. Sherman	298,421	May 13	591	167	27	647
Tool. Combination-	J. A. Morrell	299,488	May 27	1906	549	27	911
Tool. Combination-	G. H. Zlph	301,039	June 24	1971	544	27	1308
Tool-handle	J. P. Johnson	298,695	May 13	994	257	27	709
Tool-holder	E. L. Hartmann	296,332	Apr. 8	557	155	27	111
Tool-holder	C. D. Hawley	296,167	Apr. 1	325	92	27	63
Tool-holder	A. Mercer	296,980	Apr. 15	1376	380	27	273
Tool-holder	R. J. Schemmel	299,494	May 27	1832	596	27	898
Tool-holder. Adjustable	F. B. Bowman	296,310	Apr. 8	530	148	27	106
Tool stock or handle	R. A. Small	299,428	May 27	1835	527	27	898
Tooth-crown. Artificial	A. E. Matteson	297,704	Apr. 29	2317	630	27	459
Tooth-crowns. Apparatus for constructing artificial	A. E. Matteson	297,703	Apr. 29	2316	630	27	459
Tooth-pick device	J. Hoffman	298,087	May 6	156	40	27	556
Topographical representation or model	C. L. Anderson	298,512	May 20	1074	301	27	743
Torch	J. A. McPherson	299,411	May 27	1819	523	27	895
Torch. Signal-	J. Hall	296,976	Apr. 15	1328	368	27	265
Torpedo. Marine	J. H. L. Tuck	297,648	Apr. 29	2238	609	27	445
Torpedo. Railway	J. H. Bevington	298,935	May 20	1225	347	27	773
Torpedoes. Water-proof wafer for	C. Nelson	299,837	June 3	422	109	27	1002
Towels, napkins, &c. Machine for folding	C. Chambers, Jr	297,673	Apr. 29	2273	618	27	451
Tower	J. S. and F. U. Adams	296,375	Apr. 8	608	168	27	121
					169		
Tower and mode of erecting the same. Skeleton iron	J. S. Adams	297,333	Apr. 22	1815	493	27	358
					494		
Tower. Skeleton	J. S. Adams	297,331	Apr. 22	1811	492	27	358
Tower. Skeleton	J. S. Adams	297,334	Apr. 22	1818	494	27	359
Tower. Skeleton	J. S. Adams	297,335	Apr. 22	1820	495	27	360
Tower. Skeleton	J. S. Adams	297,337	Apr. 22	1823	495	27	360
					496		
Tower. Skeleton	J. S. Adams	297,338	Apr. 22	1825	496	27	361
Tower. Skeleton iron	J. S. Adams	297,336	Apr. 22	1821	495	27	360
Toy	F. W. Carpenter	298,440	May 13	618	176	27	651
Toy	J. A. Crandall	296,536	Apr. 8	813	224	27	162
Toy	J. A. Crandall	298,289	May 6	427	114	27	607
Toy	C. Diener	296,941	Apr. 15	1318	365	27	262
Toy	L. Keller	297,134	Apr. 22	1564	431	27	313
Toy	J. E. A. McAllister	300,097	June 10	754	203	27	1072
Toy	M. Raughtigan	296,351	Apr. 8	582	162	27	116
Toy	W. B. Sales	299,015	May 20	1318	376	27	791
Toy	C. A. Volke	299,703	June 3	278	69	27	972
Toy	J. G. Webb	299,604	June 3	133	33	27	944
Toy	A. Wilhelm	299,608	June 3	139	34	27	946

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Toy. Alphabetical	J. A. Crandall	298,299	May 6	428	115	27	607
Toy and advertising medium	L. S. Burridge and N. R. Marshman	296,794	Apr. 15	1047	295	27	914
Toy bank	H. C. Hart and J. W. Cross	296,689	Apr. 8	1003	280	27	199
Toy building	W. S. Reed	296,783	Apr. 15	1117	314 / 315	27	227
Toy building	W. S. Reed	296,784	Apr. 15	1119	315	27	227
Toy building-block	E. H. Snow	298,833	May 13	896	234	27	992
Toy gun	J. L. Joyce	299,796	June 3	375	96	27	992
Toy gun	L. Stockman	299,436	May 27	1846	531	27	900
Toy horse. Trundling	E. J. B. Whitaker. (Reissue)	10,480	May 13	953	265	27	715
Toy. Mechanical	R. H. Ricker	300,799	June 24	1680	459	27	1253
Toy. Mechanical	R. H. Ricker	300,800	June 24	1681	460	27	1253
Toy mortar	A. W. Partrick	300,634	June 17	1460	403	27	1210
Toy mortar	S. B. Pratt	300,638	June 17	1464	404	27	1211
Toy pistol	A. Gilman	297,379	Apr. 22	1876	510	27	370
Toy revolving bell	W. Goodfellow	298,575	May 13	770	216	27	690
Toy savings-bank	C. M. Crandall	298,830	May 20	1098	307	27	748
Toy scale	J. F. Lawrence	300,675	June 24	1775	483	27	1271
Trace-bearer for pad-skirts	S. D. Taylor	300,916	June 24	1827	500	27	1281
Trace-carrier	W. M. Smither	297,864	Apr. 29	2403	683	27	494
Trace-carrier	H. Tay	299,035	May 20	1347	385	27	796
Trace-trimming	J. M. Basinger	296,110	Apr. 1	261	75	27	52
Trace-trimming machine	W. Gordon and J. W. Dodge	297,787	Apr. 29	2414	659	27	477
Tracheotome	D. L. Russell	300,285	June 10	1015	274	27	1118
Track cleaner. Car-	J. G. Holden and J. E. Coe	298,068	May 6	157	41	27	556
Track-clearer	E. B. Bishop	297,910	Apr. 29	2551	699	27	505
Track-clearer	W. Dunbar	298,295	May 6	434	117	27	609
Traction-engine	H. H. Hudson	300,869	June 24	1769	4-2	27	1270
Traction-engine	H. B. Larzelere	300,271	June 10	969	267	27	1114
Traction-engine	H. B. McMurray	296,802	Apr. 15	1217	341	27	244
Train-signal	M. F. Parish and S. J. Munn	297,438	Apr. 22	1950	532 / 533	27	384
Traction-engine	F. W. Robinson	300,397	June 17	1162	318	27	1154
Traction-engine	W. L. Shepherd	299,427	May 27	1834	527	27	898
Traction-engines. Steering-gear for	A. P. Broomell	298,169	May 6	262	67	27	575
Tramway	A. H. Rowan	299,681	June 3	252	62	27	968
Trap: *See* Animal-trap. Ball-trap. Overflow-trap. Plumber's trap. Rain-water trap. Sewer-trap. Steam-trap. Steam-pressure-gage trap. Valved trap.							
Trap for sinks, &c	H. Friedrich	298,841	May 20	1108	310	27	750
Trapeze. Revolving double	E. J. Leamy	300,487	June 17	1273	350	27	1175
Traveling-bag	M. Schmickl	299,272	May 27	1637	470	27	862
Traveling-bag	C. A. Zinkand	298,050	May 6	111	29	27	548
Traveling-bag clasp	W. J. Large	298,481	May 13	663	187	27	660
Traveling-bag handle and handle-cap	F. Waldschmitt	300,667	June 17	1512	417	27	1220
Tray	J. B. Higbee	300,472	June 17	1257	344	27	1171
Tray. Dinner-	F. Nemmüller, J. P. Whedon, and E. M. Perhács.	296,043	Apr. 1	180	52	27	37
Tray-machine	M. E. Benjamin	297,662	Apr. 29	2254	613 / 614	27	447
Tread-power	E. Kilbourn	298,094	May 6	164	42	27	558
Treadle mechanism	H. Leeming	296,854	Apr. 15	1207	338	27	243
Treadle-motion	D. P. Foster	299,921	June 3	515	137	27	1019
Trestle. Adjustable	E. Owen	300,667	June 24	1791	489	27	1274
Tricycle	F. C. Atherton	295,894	Apr. 1	2	1	27	3
Tricycle	J. Gowdey	300,350	June 17	1114	302	27	1147
Tricycle	M. F. McMahan	298,994	May 20	1291	368	27	786
Tricycle	W. Spence and R. C. Thompson	296,639	Apr. 8	943	264 / 265	27	188
Trimmer: *See* Sewing-machine trimmer.							
Trimming. Dress-	A. Hirsch	298,691	May 13	921	255	27	708
Trimming fabric	W. P. Jennings	299,985	June 10	608	163 / 164	27	1046
Triturating-machine	F. E. Boericke and G. Goll	296,816	Apr. 15	1155	326	27	234
Truck	H. Metsker	300,788	June 24	1670	457	27	1251
Truck	J. H. Tiffany	297,876	Apr. 29	2507	686	27	496
Truck and elevator. Barrel	H. E. Gilchrist	298,459	May 13	633	180	27	654
Truck and step-ladder. Combined	A. H. Barnes	298,336	May 13	498	135	27	629
Truck. Car-	S. A. Bemis	299,510	June 3	9	3, 4	27	922
Truck. Car-	C. E. Candee	299,735	June 3	312	79, 80	27	979
Truck. Car-	J. R. Fish	296,545	Apr. 8	824	227	27	164
Truck. Car-	J. N. Hicks	299,786	June 3	365	93	27	990
Truck. Car-	J. H. McClure and G. F. Murdock	296,988	Apr. 15	1375	379	27	273
Truck. Car-	A. T. Peirce	300,795	June 24	1676	458	27	1252
Truck. Car-	T. H. Roberts	301,008	June 24	1934	534	27	1300
Truck. Car-	G. W. Simonds	299,026	May 20	1336	381	27	794
Truck. Hand-	J. S. Nelson	300,496	June 17	1285	353	27	1178
Truck. Railway-	L. S. Zachariasen	296,904	Apr. 15	1275	354 / 355	27	255
Truck. Safety car-	S. Brown	297,061	Apr. 15	1461	404	27	289
Truck. Shifting-	P. H. McWilliams	296,865	Apr. 15	1224	342	27	245
Trucks. Tower-pipe attachment for	J. R. Day	297,919	Apr. 29	2564	703	27	508
Trunk	J. B. Duguid	298,453	May 13	627	178	27	653
Trunk	A. R. Earl	296,395	Apr. 8	641	176	27	127
Trunk	W. J. Large	296,976	Apr. 15	1360	376	27	271
Trunk	W. J. Large	297,814	Apr. 29	2440	667	27	483
Trunk	P. Loewe	300,378	June 17	1138	310	27	1150
Trunk	E. Wilson	298,146	May 6	231	60	27	576

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Trunk-lock	G. Crouch and H. Ahrend	300,850	June 24	1744	476	27	1265
Trunk-lock	E. A. Judd	297,938	Apr. 29	2590	710	27	512
Trunk-lock	F. W. Mix	296,345	Apr. 8	577	161	27	115
Trunk-lock	E. W. Brettell	299,279	May 6	415	111	27	605
Trunk or box fastener	H. W. Mattoni	296,030	Apr. 1	166	48	27	34
Trunk or case. Sample	C. D. Sigsbee	298,789	May 20	1045	292	27	738
Trunk-stay	P. T. Perkins	296,444	Apr. 8	695	191	27	138
Trunks, boxes, &c. Corner-stay for	J. Y. Egan	300,454	June 17	1222	337	27	1167
Truss	J. B. Mayer	296,342	Apr. 8	573	159	27	114
Truss	D. S. Peters	300,689	June 24	1703	490	27	1275
Truss	W. L. Tucker	296,300	Apr. 1	515	143	27	97
Truss. Hernial	W. H. Blake, 2d	300,942	June 24	1850	507	27	1285
Tub and box fastener	C. P. Lattemoor	297,609	Apr. 29	2184	596	27	434
Tub. Self-dumping							
Tube: *See* Pneumatic tube.							
Tube-corrugating apparatus	S. Fox	297,372	Apr. 22	1869	508	27	369
Tubes. Machine for forming taper	G. W. Knapp	299,404	May 27	1811	521	27	894
Tubes. Method of and apparatus for corrugating	C. E. Emery and A. H. Gentner	297,244	Apr. 22	1708	494	27	338
Tug and buckle. Hame-	W. G. Slater	296,472	Apr. 8	729	201	27	144
Tug and trace. Hame-	G. Rupp	297,538	Apr. 22	2053	568	27	409
Tug. Antomatic shaft-	J. T. Watson	296,899	Apr. 15	1360	353	27	254
Tug. Hame-	T. L. Rivers	297,534	Apr. 29	2223	604	27	441
Tug. Hame-	I. H. Tubbs	297,474	Apr. 22	1993	545	27	393
Tug. Shaft-	C. W. Haas	300,865	June 24	1764	481	27	1269
Tug. Shaft-	P. B. Swick	297,727	Apr. 29	2346	638	27	465
Tuning-fork	S. B. Butterworth	299,956	June 10	572	153	27	1040
Tunnel-inlet. Submerged	J. A. Cole	300,576	June 17	1378	381	27	1194
Tunnels. Constructing	D. C. Haskin	300,469	June 17	1253	343	27	1171
Turning gun-barrels and other articles of irregular form. Machine for	C. A. King	297,418	Apr. 22	1922	525	27	379
Turning-machine	A. T. Booth	300,943	June 24	1851	508	27	1285
Tuyere and attachment therefor	J. M. Hartman	299,536	June 3	39	11	27	928
Tuyere-stoppers. Device for operating	H. W. Oliver, Jr.	299,572	June 3	88	22	27	936
Type-case	W. Piel	296,350	Apr. 8	581	162	27	116
Type-rubbing machine	G. S. Eaton and J. W. Lyon	300,452	June 17	1228	336	27	1166
Type-writer	T. A. Edison	295,990	Apr. 1	118	35	27	25
Type-writing machine	D. W. Dodson	299,754	June 3	331	85	27	983
Type-writing machine	E. J. Hall	298,576	May 13	771	216	27	680
Type-writing machine	G. H. Herrington and D. G. Millison	299,785	June 3	364	93	27	990
Type-writing machine	H. Orpen	297,086	Apr. 15	1488	412	27	294
Type-writing machine	A. Carrara	298,944	May 20	1232	349	27	774
Umbrella and parasol frame	A. T. Meyer	297,281	Apr. 22	1750	475	27	346
Umbrella and parasol rib	W. J. Chambers	296,132	Apr. 1	286	61	27	56
Umbrella-tie	J. Matzenbacher	298,219	May 6	335	87	27	589
Umbrella tip-cup	L. Damhauser	298,832	May 20	1100	307	27	748
Under-garment	J. M. C. Chenivesse	297,570	Apr. 29	2139	583	27	426
Undergarment-pattern	T. L. Smith	297,463	Apr. 22	1981	541	27	390
Underground-line conduit	T. L. Smith	297,462	Apr. 22	1979	541	27	390
Underground wire-conduit	S. Marvin	297,823	Apr. 29	2450	670	27	485
Upper	L. P. Lawrence	300,876	June 24	1776	484	27	1271
Vacuum-brakes. Air-ejector for	L. M. Campi	299,112	May 27	1450	414	27	895
Vacuum-pan	J. H. Blessing	300,836	June 24	1730	472	27	1262
Valve	J. M. Goldsmith	297,980	May 6	27	8	27	532
Valve	C. S. Haskell and W. B. Fleming	300,468	June 17	1252	342 / 343	27	1171
Valve	J. S. Leng	298,865	May 20	1136	319	27	756
Valve and gear for steam-engines	A. C. and A. F. Dumke	296,543	Apr. 8	821	226	27	164
Valve and muffler. Safety-	J. M. Coale	297,066	Apr. 15	1467	406	27	291
Valve. Balanced rotary	J. L. Bogert	298,063	May 6	127	32	27	551
Valve. Balanced slide-	J. Bewaher	300,756	June 24	1629	447	27	1244
Valve. Balanced slide-	L. J. M. Boyd	299,950	June 10	566	151	27	1038
Valve. Balanced slide-	W. A. Pearson	299,004	May 20	1303	371 / 372	27	788
Valve. Balanced slide-	W. G. Smith	298,512	May 13	697	197	27	666
Valve. Balanced slide-	A. Welch	297,392	Apr. 22	1797	488	27	355
Valve. Balanced slide-	F. H. Richards	299,090	May 20	1416	404	27	809
Valve-body-milling machine	J. H. Blessing. (Reissue)	10,487	June 10	1078	294	27	1130
Valve. Check-	J. H. Blessing	298,061	May 6	125	31, 32	27	551
Valve. Combined check and stop	J. H. Blessing	300,837	June 24	1731	473	27	1262
Valve. Combined check and stop	J. E. Jerrold and C. L. Burgermeister.	300,373	June 17	1134	309	27	1149
Valve for engiuery and vessels	W. C. Wolfe	300,824	June 24	1714	468	27	1259
Valve for the feed-pipes of steam-boilers. Relief-	J. Arthur	299,899	June 3	489	129	27	1015
Valve. Gate-	J. H. Strehll	299,594	June 3	122	30	27	942
Valve. Gate-	H. F. Ambos	297,656	Apr. 29	2247	611 / 612	27	446
Valve-gear	G. M. Conway	298,893	May 20	1095	306	27	747
Valve-gear	L. Windhurst	300,036	June 10	673	183	27	1057
Valve-gear	W. Culbertson	300,349	June 17	1102	299	27	1145
Valve-gear for reversing engines	B. Arnold	298,438	May 13	609	172	27	650
Valve-gear. Steam-engine	O. F. Howard	297,997	May 6	47	12	27	536
Valve-gear. Steam-engine	H. W. Burleigh	297,063	Apr. 15	1464	405	27	290
Valve-grinder	G. W. Richardson	297,007	Apr. 15	1394	385	27	277
Valve. Marine safety-	D. T. Ellis	296,738	May 20	986	274	27	728
Valve mechanism	H. G. Ashton	299,503	June 3	4	1	27	921
Valve muffler. Safety-	G. W. Pearsons	297,441	Apr. 22	1955	534	27	385
Valve. Pressure-regulating	H. F. Frisbie	298,194	May 6	292	75	27	581
Valve. Puppet-	W. A. Pendry	299,006	May 20	1306	372	27	789
Valve. Puppet-	H. J. Johnson	300,372	June 17	1133	309	27	1149
Valve seat. Slide-	I. De Graff	297,682	Apr. 29	2288	623	27	454
Valve. Slide-	G. E. Elliott	298,681	May 13	908	252	27	706
Valve. Steam-actuated	J. H. Valle	298,919	May 20	1205	339 / 340	27	770
Valve. Steam-actuated							
Valve. Straight-way	T. Holland	300,973	June 24	1887	519	27	1292

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Valve. Straight-way	P. B. Page	296,046	Apr. 1	183	53	27	38
Valve. Water-cooled	J. Hanlon	300,602	June 17	1411	388 / 389	27	1200
Valves. Chuck for holding gate-	A. Weber	300,927	June 24	1835	502	27	1283
Valves. Device for operating	J. Reichmann	300,131	June 10	798	214	27	1040
Valves. Operating	F. M. Lndlow	299,079	May 20	1406	401	27	807
Valved trap	W. H. Willson	300,746	June 17	1615	443	27	1236
Vapor as a motor power. Liquid for and process of generating a compound	W. L. Lowrey	296,197	Apr. 1	365	.....	27	70
Vapor-burner	Z. Davis	296,147	Apr. 1	302	87	27	59
Varnish. Leather and cloth	W. C. Gifford	297,515	Apr. 22	2050	.....	27	402
Vegetable-cutter	C. L. Williams	296,261	Apr. 1	459	129	27	87
Vegetable-slicer	S. Kranshaar	296,757	Apr. 15	1089	306	27	222
Vegetable-slicer	M. Reichert	298,023	May 13	827	231	27	600
Vehicle	J. Price	297,714	Apr. 29	2296	633	27	462
Vehicle-brake	F. Biery	297,490	Apr. 22	2012	549	27	396
Vehicle-brake	J. R. Miles and J. K. Baldridge	300,884	June 24	1788	488	27	1274
Vehicle canopy-holder	H. Etchling	299,630	June 3	165	42	27	950
Vehicle dash-board	T. H. Mader	299,236	May 27	1600	450	27	855
Vehicle. Hand-power	T. A. Davies	296,936	Apr. 15	1312	364	27	261
Vehicle. Hand-power	T. A. Davies	296,937	Apr. 15	1314	364	27	262
Vehicle-platform gear	C. C. Wilson	299,892	June 3	479	126	27	1013
Vehicle propelled by compressed air	D. S. Troy	300,290	June 10	1021	276	27	1119
Vehicle running-gear	J. M. Bradley	297,747	Apr 29	2368	645	27	469
Vehicle running-gear	H. W. Chamberlain and F. G. Harris	298,946	May 20	1235	350	27	775
Vehicle running-gear	W. W. Grier	296,406	Apr. 8	652	181	27	129
Vehicle running-gear	R. C. Parvin	297,439	Apr. 22	1951	533	27	385
Vehicle. Side-bar	H. W. Moore	298,016	May 6	76	18	27	541
Vehicle. Side-bar	C. W. Saladee	298,123	May 6	198	53	27	565
Vehicle. Side-bar	J. Taylor	298,516	May 13	700	198	27	667
Vehicle. Skeleton speed-	T. H. Brown	297,348	Apr. 22	1841	500	27	364
Vehicle. Spring-	J. B. Armstrong	299,191	May 27	1545	443	27	843
Vehicle. Spring-	M. G. Hubbard	300,978	June 24	1891	520	27	1293
Vehicle-spring	C. A. Behlen	298,113	Apr. 1	264	76	27	53
Vehicle-spring	E. P. Carter	298,533	May 13	740	209	27	675
Vehicle-spring	R. H. Cornett	300,956	June 24	1865	511	27	1282
Vehicle-spring	J. D. Dorsey	297,974	May 6	14	5	27	530
Vehicle-spring	W. S. Everett	299,363	May 27	1755	505	27	884
Vehicle-spring	J. Herbrand	299,641	June 3	180	45	27	953
Vehicle-spring	J. Howell	296,834	Apr. 15	1184	332	27	238
Vehicle-spring	G. W. Morris	296,994	Apr. 15	1381	381	27	274
Vehicle-spring	R. Mulholland	296,347	Apr. 8	579	161	27	115
Vehicle-spring	S. E. Oviatt	297,834	Apr. 29	2462	674	27	487
Vehicle-spring	J. Percy	299,575	June 3	92	23	27	937
Vehicle-spring	C. W. Saladee	296,359	Apr. 8	592	164	27	118
Vehicle-spring	H. J. Schild	300,020	June 10	655	179	27	1054
Vehicle-spring attachment	P. Hebert	300,254	June 10	967	262	27	1110
Vehicle spring-seat	L. Warren	295,963	Apr. 1	82	25	27	19
Vehicle-top	F. A. Korizek	300,069	June 10	740	200	27	1070
Vehicle-top	E. Warren	296,090	Apr. 1	237	69	27	48
Vehicle-tops. Hood for	C. T. Shreve	300,590	June 17	1310	359	27	1183
Vehicle turning-gear	F. Bremerman	299,108	May 27	1446	413	27	825
Vehicle. Two-wheeled	J. C. Bach	299,319	May 27	1698	487	27	873
Vehicle. Two-wheeled	J. C. Blocher	299,105	May 27	1443	412	27	825
Vehicle. Two-wheeled	W. M. Buchnan	299,330	May 27	1726	493	27	878
Vehicle. Two-wheeled	L. S. Clark, O. G. Franks, and G. T. Baughman	296,316	Apr. 8	536	150	27	107
Vehicle. Two-wheeled	A. Davis	300,051	June 10	692	188	27	1061
Vehicle. Two-wheeled	L. Donley	297,358	Apr. 22	1852	503	27	365
Vehicle. Two-wheeled	W. S. Frazier	299,124	May 27	1468	421 / 422	27	830
Vehicle. Two-wheeled	W. T. Goodman	296,949	Apr. 15	1324	367	27	264
Vehicle. Two-wheeled	C. S. Harper	297,590	Apr. 29	2174	594	27	432
Vehicle. Two-wheeled	J. D. Libey	300,377	June 17	1138	310	27	1150
Vehicle. Two-wheeled	L. D. Robertson	297,451	Apr. 22	1965	537	27	387
Vehicle. Two-wheeled	C. W. Saladee	296,412	May 13	581	163	27	644
Vehicle. Two-wheeled	C. W. Saladee	298,413	May 13	583	163 / 164	27	645
Vehicle. Two-wheeled	C. W. Saladee	298,414	May 13	584	164	27	645
Vehicle. Two-wheeled	C. W. Saladee	298,416	May 13	586	165	27	646
Vehicle. Two-wheeled	E. E. P. Truesdell	297,955	Apr. 29	2609	715	27	516
Vehicle. Two-wheeled	W. Vandercook	297,543	Apr. 22	2090	569	27	410
Vehicle-wheel	J. E. Bell	296,307	Apr. 8	527	148	27	105
Vehicle-wheel	J. J. Bush	299,906	June 3	497	131	27	1016
Vehicle-wheel	J. Dietrich	300,230	June 10	935	252	27	1104
Vehicle-wheel	F. L. Kirkbride	298,501	May 13	788	221	27	683
Vehicle-wheel	L. A. Powers	298,500	May 13	685	194	27	664
Vehicle-wheel	M. L. Smith	298,502	May 13	835	233	27	692
Vehicle-wheel spindle	W. Holloway and T. L. Clevenger	300,974	June 24	1888	519	27	1292
Vehicles. Breeching for	D. Hutchinson	296,694	Apr. 8	1009	282	27	201
Velocipede	D. Crowley	296,680	Apr. 8	991	278	27	197
Velocipede	F. W. Jones	296,837	Apr. 15	1186	333	27	239
Velocipede	W. A. Lorens	298,217	May 6	331	87	27	589
Velocipede	A. Pesenecker	296,776	Apr. 15	1109	312	27	226
Velocipede	C. M. Schaffer	297,300	Apr. 22	1775	482	27	351
Velocipede	E. R. Settle	300,516	June 17	1307	358	27	1182
Velocipede	A. E. Wallace	299,683	June 3	471	124	27	1012
Velocipede attachment	F. J. W. Dopp and G. Wolff	297,338	Apr. 22	1701	462	27	337
Velocipede. One-wheeled	B. G. Berlinghausen	299,617	June 3	149	37	27	947
Velocipede-treadle	P. Gendron	298,079	May 6	147	37	27	554
Velocipede. Water-	E. F. Steele	298,792	May 20	1049	263	27	739
Velocipedes. Ball-bearing for	J. White	300,544	June 17	1343	370	27	1188
Veneer-cutting machine	C. W. and A. S. Gage	300,243	June 10	953	257	27	1107
Veneer-press	A. Newell	300,725	June 17	1588	436	27	1232

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ventilating apparatus	J. Sellwood and S. J. Harry	296,634	Apr. 8	938	262	27	187
Ventilating water-closets, urinals, drains, &c. Apparatus for	T. Rowan	297,296	Apr. 22	1770	480	27	350
Ventilation	M. B. Stafford	297,189	Apr. 22	1629	447	27	324
Ventilation of barrels and boxes	J. W. Brook	297,225	Apr. 22	1689	459	27	335
Ventilator: *See* Hat-ventilator.							
Ventilator	C. Müller	297,707	Apr. 29	2320	631	27	460
Vessel-ballast	E. P. Hickey	300,471	June 17	1255	343 / 344	27	1171
Vessel for containing aerated liquids	J. P. Haskins	297,992	May 6	41	10	27	535
Vessel for containing and transporting liquids	D. W. Norris	297,532	Apr. 22	2075	566	27	407
Vessel for containing liquids	W. T. Sallé	296,768	Apr. 15	1123	316	27	238
Vessel. Metallic	A. O'Hara	299,673	June 3	240	60	27	965
Vessel. Non-heat-conducting	H. M. Hanmore	296,955	Apr. 15	1330	369	27	265
Vessel. Sea-going	J. Gartner	299,128	May 27	1473	423	27	831
Vessel. Submarine	J. H. L. Tuck	297,647	Apr. 29	2236	608 / 609	27	444
Vessels, &c. Apparatus for closing	E. Leinert	300,987	June 24	1900	523	27	1295
Vessels. Apparatus for filling	M. L. Beat	297,058	Apr. 15	1458	403	27	288
Vessels. Attachment of lips and spouts to	J. C. Milligan and E. Monhot	298,222	May 6	339	88	27	590
Vessels. Attachment of lips and spouts to	E. Monhot and J. C. Milligan	298,308	May 6	449	121	27	612
Vessels with phosphate-rock, &c. Loading	F. Brotherhood	298,444	May 13	615	174 / 175	27	451
Vinegar. Apparatus for the manufacture of	A. Wecker	300,928	June 24	1836	502	27	1283
Violets of Paris. Sulpho-conjugated	A. F. Poirrier and D. A. Rosenstiehl	297,844	Apr. 29	2473	.....	27	490
Violin tail-piece	J. J. Smith	300,149	June 10	825	223	27	1085
Vise	A. Montant	300,388	June 17	1153	316	27	1153
Vise	C. Riggs	299,777	May 20	1027	287	27	735
Vise	W. M. Whiting	299,899	June 3	477	125	27	1013
Vise and ring-bender. Watch-maker's hand	C. B. Rubert	297,853	Apr. 29	2482	679	27	491
Vise attachment	C. H. Eddy	297,360	Apr. 22	1854	504	27	366
Vise. Bench	W. H. Northall	298,225	May 6	345	91	27	591
Vise. Carpenter's	J. F. Miller	297,282	Apr. 22	1751	476	27	347
Vise-jaws. Die for making	J. Cain	298,285	May 6	422	113	27	606
Vise. Pipe-	A. H. Jarecki	296,333	Apr. 8	558	155	27	111
Voltaic pile	A. Schroeder	296,464	Apr. 8	717	198	27	142
Vulcanizers. Device for regulating heat in	F. H. Chidester	300,952	June 24	1861	510	27	1287
Vulcanizing-heat regulator	F. H. Chidester	300,953	June 24	1862	510	27	1287
Wagon-body	C. F. Folsome	297,370	Apr. 22	1867	508	27	368
Wagon-bolster spring	J. R. Calhoun	299,518	June 3	17	6	27	924
Wagon-brake	B. F. Ball	300,188	June 10	881	237	27	1094
Wagon-brake	J. K. Hedgcock	297,680	Apr. 29	2287	625	27	456
Wagon-brake	J. Hocking and C. R. Jones	296,171	Apr. 1	330	94	27	64
Wagon-brake	W. Parks and S. M. Smith	300,500	June 17	1290	354	27	1179
Wagon-brake	L. G. Peel	297,443	Apr. 22	1957	535	27	386
Wagon-brake	M. T. Preston	300,327	June 10	1063	288	27	1127
Wagon-brake	T. W. Sonthard	299,866	June 3	554	118	27	1009
Wagon-brake	A. J. Steele	299,693	June 3	265	66	27	970
Wagon brake. Hay-	J. A. Putt	296,620	Apr. 8	922	258	27	183
Wagon-brake lever	T. J. Davies	296,143	Apr. 1	298	86	27	58
Wagon-dasher	E. Myrick	300,390	June 17	1154	316	27	1153
Wagon. Dumping-	T. W. Boyce and C. Frische	296,917	Apr. 15	1290	358	27	258
Wagon. Dumping-	W. C. Bryan	296,670	Apr. 8	980	274	27	195
Wagon. Dumping-	L. C. Dees	296,938	Apr. 15	1315	365	27	262
Wagon. Dumping-	F. A. Graff and L. C. Hippie	299,377	May 27	1769	510	27	887
Wagon-jack	G. B. Clark	298,350	May 13	514	139	27	632
Wagon-jack	D. B. Kinne	300,984	June 24	1898	522	27	1294
Wagon-jack	J. F. Lindsey	296,979	Apr. 15	1303	377	27	271
Wagon jump-seat	C. H. Stratton	299,437	May 27	1847	531	27	900
Wagon. Lumber-	O. Kinsley	296,010	Apr. 1	156	45	27	32
Wagon running-gear	W. H. Fanning	298,564	May 13	754	212	27	677
Wagon running-gear	P. Gendron	298,078	May 6	146	37	27	554
Wagon running-gear	J. B. Spry and T. Barry	300,914	June 24	1824	499	27	1280
Wagon running-gear	A. Womack	298,430	May 13	607	171	27	649
Wagon. Sail-	J. A. Aspinwall	299,317	May 27	1696	487	27	872
Wagon-seat	P. J. Kern	300,611	June 17	1424	392	27	1203
Wagon-skein	C. Pierce	298,498	May 13	683	194	27	664
Wagon-spring	C. Fallesen	298,456	May 13	630	180	27	654
Wagon. Spring-	T. P. Yates	296,500	Apr. 8	767	211	27	152
Wagon. Spring-board	H. L. Sherwood	298,245	May 6	370	98	27	596
Wagon. Sugar-dumping	J. D. Edwards and L. F. Haubtman	296,544	Apr. 8	823	227	27	164
Wall-paper, paper board, &c	H. W. Johns	300,374	June 17	1134	.....	27	1150
Wardrobe-hook	C. A. Kuhlman	296,696	Apr. 8	1012	283	27	202
Warm air furnace	J. Walsh	301,022	June 24	1951	530	27	1304
Wash-bench and step-ladder	J. S. Nelson	299,209	Apr. 1	381	108	27	73
Washer: *See* Bottle-washer. Nut-washer. Slate-washer. Wheel-washer.							
Washer	O. F. Garvey	299,977	June 10	594	159	27	1043
Washer-cutter	J. Rath	296,219	Apr. 1	394	112	27	76
Washing compound	A. E. Rhoads	296,452	Apr. 8	705	.....	27	139
Washing-machine	C. Martin	300,992	June 24	1907	525	27	1296
Washing-machine	J. Newman	298,613	May 13	815	220	27	688
Washing-machine	W. Park and J. S. Parker	299,159	May 27	1508	433	27	837
Washing-machine	F. Pollmiller	297,049	Apr. 29	2603	713	27	514
Washing-machine	M. R. Pottorff	298,775	May 20	1025	286	27	735
Washing-machine	F. G. Powers	296,617	Apr. 8	910	257	27	183
Washing-machine	J. W. Rhoades	305,943	Apr. 1	60	17, 18	27	14
Washing-machine	M. H. Schug	300,646	June 17	1464	408	27	1214
Washing-machine	J. Tombow	301,075	June 24	2013	556	27	1316
Washing table-cutlery, &c. Machine for	A. E. Wetmore	298,530	May 13	714	202	27	670
Watch-case	C. W. Harman and H. G. Skidmore	298,197	May 6	296	76	27	582
Watch-case	J. Lamont	297,421	Apr. 22	1927	526	27	380

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Watch-case	D. O'Hara	297,533	Apr. 22	2073	566	27	408
Watch-case	D. O'Hara	298,615	May 13	817	229	27	689
Watch-case	C. Schnetz	296,631	Apr. 8	935	261	27	186
Watch-case	H. G. Skidmore	298,509	May 13	694	196	27	666
Watch-case bezel	E. C. Fitch	299,369	May 27	1761	507	27	885
Watch-case bows. Fastening for	D. Glickman	300,706	June 17	1570	431	27	1229
Watch-case center	J. C. Dueber	297,976	May 6	16	5	27	530
Watch-case centers. Manufacture of	J. C. Dueber	299,119	May 27	1462	419	27	898
Watch-case pendant	D. O'Hara	298,396	May 13	567	156	27	642
Watch-case pendant	D. O'Hara	298,616	May 13	821	230	27	689
Watch-case spring	W. H. Fitz Gerald and G. C. Smith	297,123	Apr. 22	1550	428	27	310
Watch-cases. Die for forming	T. Mueller	300,109	June 10	768	207	27	1075
Watch-movement	H. B. Mears	296,204	Apr. 1	375	107	27	79
Watch-protector attachment	J. C. Grimmell	297,516	Apr. 22	2051	560	27	402
Watch-winding mechanism	O. E. Hinklin	296,170	Apr. 1	329	93	27	64
Watch. Stop	A. Aubert	296,663	Apr. 8	973	272	27	194
Watches. Dust-proof cap for	C. Kistler	300,088	June 10	739	200	27	1070
Watchman's electric recorder	J. Redding	299,011	May 20	1313	375	27	790
Water. Apparatus for the purification of	A. R. Leeds	296,337	Apr. 8	502	157	27	112
Water-closet	P. Connolly	296,222	Apr. 15	1166	328	27	236
Water-closet	C. F. Pike	298,310	May 6	452	{121 / 122}	27	612
Water-closet	J. Semple	300,905	June 24	1812	495	27	1278
Water-closet and preserving the seals of the traps therefor	J. P. Hyde	299,792	June 3	371	95	27	991
Water-closet attachment	J. W. Birkett	299,333	May 27	1720	493	27	877
Water-closet basins. Adjustable support for	H. C. Weeden	298,804	May 20	1064	{298 / 299}	27	742
Water-closet cistern	J. Demarest	298,452	May 13	626	178	27	653
Water-closet connection	H. C. Weeden	297,321	Apr. 22	1796	487	27	335
Water-closet connection	H. C. Weeden	299,605	June 3	134	33	27	944
Water-closet seat cover	D. O. Cowen	296,141	Apr. 1	296	85	27	58
Water-closet valve	P. White	299,888	June 3	476	125	27	1013
Water-closets. Attachment for operating cistern-valves for	D. Burrows	299,341	May 27	1728	495	27	879
Water-closets, &c. Flushing apparatus for	H. C. Weeden	299,606	June 3	135	33	27	945
Water-closets, &c. Supply-valve for	H. C. Weeden	300,540	June 17	1338	{368 / 769}	27	1187
Water-closets, &c. Valve for	W. Scott	297,455	Apr. 22	1960	538	27	388
Water-cooler	E. B. Jewett	298,694	May 13	923	256	27	709
Water-cooler	J. E. Welling	298,140	May 6	224	50	27	569
Water-cooler	C. F. Wisloh	296,095	Apr. 1	241	71	27	49
Water-cooler and refrigerator	C. S. Richman	300,511	June 17	1302	357	27	1181
Water-elevator	D. S. Boyakin	298,344	May 13	508	138	27	631
Water-elevator	W. I. Rorick	298,014	May 20	1317	376	27	791
Water elevator and carrier	R. J. Foster and J. W. Collie	297,240	Apr. 22	1716	466	27	340
Water elevator and carrier	J. M. Williams	299,043	May 20	1363	388	27	799
Water-elevator. Compressed-air	J. K. Leedy	298,990	May 20	1288	367	27	785
Water-meter	B. Fitts	299,213	May 27	1570	451	27	849
Water-meter	A. Frager	297,922	Apr. 29	2568	{704 / 705}	27	508
Water-meter	N. Seibert	297,301	Apr. 22	1776	482	27	351
Water-meter. Oscillating	L. H. Nash	300,629	June 17	1454	401	27	1209
Water-meter. Oscillating	L. H. Nash	300,630	June 17	1456	402	27	1209
Water-meter. Rotary	F. Stitzel	297,092	Apr. 15	1499	414	27	306
Water-pipe. Straight	J. F. Bennett	298,657	May 13	867	243	27	697
Water-pipes against freezing. Protector for	P. E. Jay	299,392	May 27	1791	515	27	890
Water-pipes. Hydraulic cushion for	J. Story	300,017	June 24	1827	499	27	1281
Water-proof cloth. Manufacturing gossamer	F. E. Hall	299,638	June 3	176	44	27	993
Water-proof. Rendering goods and fabrics	R. S. Forbes	298,306	May 13	531	.....	27	635
Waterproofed textile fabric	I. F. Williams	296,263	Apr. 1	461	130	27	87
Waterproofing cellars, &c.	J. J. Schillinger	299,425	May 27	1832	527	27	898
Water. Purification of	A. R. Leeds	298,101	May 6	171	45	27	559
Water-wheel	J. Kellams	298,477	May 13	658	186	27	659
Water-wheel regulator	C. F. Thayer	297,873	Apr. 29	2503	686	27	496
Water-wheel. Turbine	A. N. Wolf	300,823	June 24	1712	{467 / 468}	27	1259
Waters. Purifying canals and basins connecting with tidal	A. J. L. Loretz	299,559	June 3	60	17, 18	27	933
Weaner. Calf	H. B. Strant	297,870	Apr. 29	2501	685	27	495
Weather-board gage	D. H. Finch	298,682	May 13	909	252	27	706
Weather-boarding. Fire-resisting	P. Toglio	297,730	Apr. 29	2350	639	27	465
Weather strip	W. D. Bennett	300,939	June 24	1847	507	27	1285
Weather-strip	J. Conturier	300,849	June 24	1743	476	27	1265
Weather-strip	D. Gibbons	296,158	Apr. 1	313	90	27	61
Weather-strip	P. E. Reynolds	299,089	May 20	1415	{403 / 404}	27	809
Weather-strip	J. F. Rowlett	297,636	Apr. 29	2225	605	27	442
Weavers' shuttles, picker-sticks, &c. Machine for truing	S. C. Gardner	296,552	Apr. 8	839	233	27	167
Wedges. Machine for making	A. M. Burnham	297,563	Apr. 29	2124	{560 / 561}	27	423
Weeding-machine	J. B. Ladd	298,863	May 20	1133	318	27	755
Weighing and supplying apparatus	H. E. Smyser	297,027	Apr. 15	1424	391	27	282
Weighing-machines. Electric automatic recording apparatus for	W. H. Beehler	299,328	May 27	1707	{490 / 491}	27	875
Welding compound	J. S. Wilkins	301,032	June 24	1961	.....	27	1306
Well-boring machine	W. Velte	299,298	May 27	1678	481	27	869
Well-drilling machine	J. Conner, Jr., and H. A. Otto	300,222	June 10	925	{249 / 250}	27	1102
Well-drilling machine	L. C. Weltner	299,306	May 27	1667	484	27	870
Well-poles. Clamp for holding	B. Wheeler	299,887	June 3	475	125	27	1012
Wells. Bailer for cleaning oil-	J. S. Moody	298,876	May 20	1150	323	27	758
Wells. Tool for raising sucker-rods from	M. Newton	299,254	May 27	1618	465	27	859

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Wheel: *See* Bicycle-wheel. Car-wheel. Fifth-wheel. Harvester grain-wheel. Iron wheel. Locomotive-wheel. Paddle-wheel. Paper wheel. Paper friction-wheel. Polishing-wheel. Self-lubricating wheel. Vehicle-wheel. Water-wheel.							
Wheel	R. Adams	299,711	June 3	286	71	27	974
Wheel	R. S. Carr	300,046	June 10	688	{186 / 187}	27	1060
Wheel	R. Ellwood and H. H. Staugaard	299,120	May 27	1463	419	27	899
Wheel	J. V. Rowlett	300,737	June 17	1603	439	27	1234
Wheel	S. T. Williams	300,293	June 10	1026	276	27	1120
Wheel	H. H. Fulton	297,514	Apr. 22	2050	560	27	402
Wheel or pulley	B. Masterson	296,029	Apr. 1	165	48	27	34
Wheel washer. Vehicle	F. B. Kendall	299,798	June 3	378	97	27	993
Wheelbarrow and sled. Combined	E. R. Annable	297,960	May 6	2	1	27	527
Whiffletree	H. Clark	296,275	Apr. 1	479	133	27	90
Whiffletree	J. Whitcomb	297,734	Apr. 29	2353	640	27	466
Whiffletree-hook	M. E. Hamilton	300,292	June 10	964	261	27	1110
Whiffletree-hook	J. Rancevan	300,893	June 24	1797	491	27	1275
Whiffletree-hook	J. B. Williams	296,365	Apr. 1	464	130	27	87
Whiffletree-hook	S. Baker	297,962	May 6	3	1	27	527
Whip	A. C. Rand	297,006	Apr. 15	1393	384	27	270
Whip	H. B. Pitner	299,163	May 27	1513	434	27	838
Whip and line holder. Combined	H. Schoby	298,627	May 13	830	232	27	691
Whip-holder	W. P. Kellogg	299,797	June 3	377	96	27	993
Whip-rack	W. F. Dinse	298,356	May 13	520	141	27	633
Whip-socket	E. E. Swett	299,497	May 27	1915	551	27	913
Whistle	G. W. Sanford	298,779	May 20	1030	288	27	736
Wick-raiser	D. H. Bansman	299,325	May 27	1703	489	27	874
Wind-engine	C. S. Garrigus	299,127	May 27	1472	422	27	830
Wind-power	F. A. Grater	296,161	Apr. 1	318	91	27	62
Windlass	G. W. Zeigler and G. W. Graves	297,050	Apr. 15	1449	401	27	287
Windlass	A. Amiro	299,048	May 20	1368	389	27	800
Windlass. Ship	W. W. Palmer	298,883	May 20	1160	325	27	760
Windlass. Well-bucket	G. M. Beard	299,327	May 27	1705	{489 / 490}	27	875
Windmill	J. B. Foster	298,570	May 13	763	214	27	679
Windmill	A. Martin	299,563	June 3	78	19	27	935
Windmill	J. O. Stayner	299,869	June 3	456	119	27	1009
Windmill	G. M. Taylor	300,161	June 10	840	227	27	1087
Windmill	J. Warwick and W. C. Westaway	300,818	June 24	1703	465	27	1257
Windmill	F. Witherspoon	297,904	Apr. 29	2541	696	27	503
Windmill	H. R. Stevens	297,468	Apr. 22	1986	542	27	391
Windmill-tank	H. R. Stevens	298,793	May 20	1050	294	27	739
Windmill-tank	A. Matuska	298,699	May 13	930	258	27	710
Window	J. B. Montague, J. T. Booker, and E. C. Dinning	300,105	June 10	764	206	27	1074
Window	N. F. Sandelin	300,136	June 10	812	219	27	1082
Window	W. D. Smith	299,432	May 27	1836	502	27	899
Window and door button	E. B. Newcomb	296,437	Apr. 8	686	189	27	136
Window-guard	G. W. Clark	299,519	June 3	18	6	27	924
Window protector. Area	J. F. Smith	300,654	June 17	1494	412	27	1216
Window-screen	N. J. Bishoprick	300,562	June 17	1363	376	27	1192
Window-screen	A. Brown	297,667	Apr. 29	2262	616	27	449
Window-screen	H. K. Cotton	297,230	Apr. 22	1694	460	27	336
Window-screen	T. W. Dowling	298,675	May 13	900	250	27	704
Window-screen	S. R. Hazen	299,137	May 27	1484	426	27	833
Window-screen	G. W. Henry	300,776	June 24	1656	453	27	1248
Window-screen	E. E. Masters	300,881	June 24	1783	{486 / 487}	27	1273
Window-screen	S. E. Parrish	299,257	May 27	1620	465	27	859
Window-screen	J. K. Proctor	298,311	May 6	454	122	27	612
Window-screen	E. V. Whitaker	297,892	Apr. 29	2528	692	27	501
Window-shade	C. Geertz	300,662	June 10	705	192	27	1063
Window-shade attachment	H. L. Judd	296,291	Apr. 1	505	140	27	93
Window-shade bar	N. Slingland	296,473	Apr. 8	730	202	27	145
Window-shade fixture	W. Lang	299,483	May 27	1903	547	27	910
Window-shade pull	J. Munger	298,611	May 13	812	228	27	687
Window-shade rollers. Gudgeon for	R. S. Whittier	296,494	Apr. 8	758	209	27	150
Window-shades. Apparatus for operating	V. Blank and T. J. Anthony	295,901	Apr. 1	11	3	27	5
Window-shades. Device for operating	G. W. Richwine	297,008	Apr. 15	1397	385	27	277
Window ventilator. Show	B. A. Grant	296,742	Apr. 15	1067	301	27	218
Wire. Apparatus for galvanizing and coating	J. Spruce	300,741	June 17	1607	440	27	1234
Wire. Apparatus for manufacturing imitation twisted							
Wire. Attachment for receiving and collecting looped end and cut	W. Wilson, Jr.	300,547	June 17	1347	{371 / 372}	27	1189
Wire. Barbed	C. B. Brainard	298,440	May 13	611	173	27	650
Wire-barbing machine	T. H. Dodge	299,524	June 3	24	7, 8	27	925
Wire-barbing machine	P. P. Hill	298,204	May 6	308	{80 / 81 / 82}	27	584
Wire-barbing machine	D. C. Stover	298,121	May 6	207	55	27	566
Wire-barbing machine	P. A. Terrell	297,472	Apr. 22	1990	{543 / 544}	27	392
Wire-bending machine	C. F. Beaman	296,269	Apr. 1	409	122	27	68
Wire-cloth. Labeled	C. Swinscoe	298,133	May 6	211	56	27	567
Wire-cloth. Shuttle for weaving	G. F. Wright	299,895	June 3	483	127	27	1014
Wire-coating preparatory to drawing	B. F. Aiken, Jr., C. W. Newhall, Jr., and G. W. B. Ellis	298,051	May 6	112	.....	27	548
Wire. Coiling	F. L. Bryant and A. H. Frost	296,671	Apr. 8	981	275	27	196
Wire-coiling machine	C. W. H. Day	300,960	June 24	1869	512	27	1289

Alphabetical list of inventions, April to June, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wire-coiling machine	A. H. Frost and F. L. Bryant	296,551	Apr. 8	837	232	27	166
Wire-coiling machine	L. Wildermuth	296,806	Apr. 15	1143	322	27	232
Wire-covering machine	H. Splitdorf	300,403	June 17	1167	320	27	1155
Wire-crimper	M. M. Jones	296,177	Apr. 1	337	95	27	65
Wire-cutter	E. Stevens	299,033	May 20	1345	364	27	756
Wire-cutting machine	D. Houghton	298,974	May 20	1272	363	27	782
Wire-cutting machine	D. Houghton	299,791	June 3	371	95	27	991
Wire-cutting machine	W. H. Savage	298,240	May 6	364	96	27	595
Wire. Device for handling spooled barb	W. T. Burrows	296,273	Apr. 1	476	133	27	90
Wire-drawing. Coating compound for	A. F. Hoyle	297,131	Apr. 22	1561	.....	27	312
Wire-drawing. Preparatory coating for	V. D. Kenerson and C. N. Howe	297,606	Apr. 29	2181	.....	27	434
Wire holder and carrier	W. P. Stewart	300,813	June 24	1697	464	27	1256
Wire. Imitation twisted	J. Spruce	299,285	May 27	1655	475	27	865
Wire machine. Barbed	G. H. Lasar	296,190	Apr. 1	352	100, 101, 157, 158	27	68
Wire machine. Barbed	A. Matteson	296,339	Apr. 8	564	373	27	113
Wire. Machine for making looped	W. Wilson, Jr.	300,550	June 17	1359	373	27	1190
Wire-rolling machinery	W. H. Jackson, Jr.	298,977	May 20	1274	363	27	782
Wire-rope clamp	H. R. Taylor	300,406	June 17	1176	322	27	1156
Wire spool. Barbed	J. W. Nadelhoffer	299,836	June 3	421	109	27	1002
Wire-straightener	H. Borchardt	299,615	June 3	148	36	27	947
Wire-stretcher	T. Hugon	298,385	May 13	555	152	27	639
Wire-stretcher	C. S. Older and L. L. Doering	298,881	May 20	1157	324	27	760
Wire stretcher. Gang	J. H. and E. L. Cole	297,501	Apr. 22	2237	556	27	400
Wire twisting and spooling machine. Barbed	C. C. Hill	299,542	June 3	49	13	27	929
Wire with metal. Apparatus for coating	L. Williams	296,094	Apr. 1	240	70	27	49
Wire wrapping or covering machine	C. Conner	298,179	May 6	373	70	27	577
Wires. Machine for manufacturing bottle	M. V. B. Ethridge	298,362	May 13	526	143, 144	27	634
Wood. Composition for staining and preserving	S. Cabot, Jr.	297,568	Apr. 29	2137	.....	27	425
Wood ornamentation	J. P. Jamison	299,984	June 10	606	163	27	1046
Wood-polishing machine	J. Casey	300,844	June 24	1737	474	27	1263
Wood-splitting machine	W. T. McCloskey	300,099	June 10	757	204	27	1073
Wood. Uniting	A. H. Walker	300,536	June 17	1332	365	27	1187
Wood-working machine	R. H. Andrews	299,190	May 27	1544	443	27	843
Wood-working-machine knife	S. J. Shimer	296,077	Apr. 1	218	63	27	45
Wooden box	H. Wood	297,654	Apr. 29	2245	611	27	448
Wool burring and cleaning machine	F. G. and A. C. Sargent	299,016	May 20	1319	377	27	791
Wool. Separating and purifying certain compounds of the scourings of	J. A. W. Borchers	299,904	June 3	494	130	27	1016
Work-bench. Carpenter's	C. A. Williams	300,178	June 10	867	234	27	1092
Wrench: *See* Chain-wrench. Lever-wrench. Pipe-wrench. Tap-wrench.							
Wrench	J. Combs	299,902	June 10	578	155	27	1041
Wrench	D. M. De Silva	296,540	Apr. 8	818	226	27	163
Wrench	J. Du Shane	296,949	Apr. 15	1319	366	27	263
Wrench	F. W. Merrick	300,717	June 17	1580	433	27	1230
Wrench	S. Robinson	299,165	May 27	1515	435	27	838
Wrench	B. Ross	296,877	Apr. 15	1298	346	27	348
Wrench	F. Schmemann	297,640	Apr. 29	2229	606	27	442
Wrench	H. Simon, Jr.	300,145	June 10	822	222	27	1084
Wrench	N. W. Vandegrift	298,043	May 6	104	27	27	547
Wrench	T. F. White	297,209	Apr. 22	1665	453	27	330
Wringer: *See* Clothes-wringer. Mop-wringer.							
Writing-instrument. Combination	S. Blitz	300,440	June 17	1216	332	27	1164
Yoke attachment. Neck	T. C. Maggs	296,592	Apr. 8	838	246	27	178
Yoke center. Neck	P. J. Hellman	300,074	June 10	723	196	27	1067
Yoke. Neck	A. S. Bailey	299,193	May 27	1548	444	27	844
Yoke. Neck	N. Hiatt	296,960	Apr. 15	1334	370	27	266
Yoke. Neck	M. V. Longsworth	296,589	Apr. 8	885	245	27	176
Zinc sulphide anhydrous. Making	T. Macfarlane	296,858	Apr. 15	1212	.....	27	244
Zylonite and other plastic compounds from a cylindrical block. Cutting sheets of	E. Kipper	299,803	June 3	384	98	27	994

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Actor's shield	C. F. Waldron	15,013	May 20	27	722
Album leaf. Photographic	S. Meers	14,961	Apr. 15	27	211
Ax box or case	O. S. Rixford	14,935	Apr. 1	27	1
Axle-yoke	H. K. Porter	14,971	Apr. 22	27	303
Basque. Lady's	L. Tully	15,031	May 27	27	822
Biscuit-cracker	J. Hartman	15,006	May 20	27	722
Bottle or flask	J. K. Cummings	14,925	Apr. 1	27	1
Burial-casket	I. G. Hatcher	14,987	May 6	27	525
Burial-casket handle	A. Vogt	15,033	May 27	27	822
Burial-casket knob	W. H. Hutchinson	15,014	May 27	27	821
Button. Sleeve	F. F. and J. C. Bioren	15,003	May 20	27	722
Cabinet. Toilet	E. Bourne	15,062	June 17	27	1139
Candles. Ornamentation of	F. Baumer	14,995	May 13	27	627
Car-seats. End frame for	H. S. Hale	15,053	June 10	27	1035
Card. Back of a game	L. L. Smith	14,991	May 6	27	525
Card. Christmas	R. Sneider	14,992	May 6	27	525
Cards. Ace of spades for playing	A. Binkert	14,957	Apr. 15	27	211
Carpet	A. Danby	14,926, 14,927	Apr. 1	27	1
Carpet	W. L. Jacobs	14,951	Apr. 8	27	104
Carpet	D. McNair	15,076	June 17	27	1140
Carpet	D. G. Melville	15,077	June 17	27	1140
Carpet	H. Mitchell	14,931	Apr. 1	27	1
Carpet	E. Poole	14,932, 14,933	Apr. 1	27	1
Carpet	E. Poole	14,970	Apr. 22	27	303
Carpet	E. G. Saner	14,936, 14,937	Apr. 1	27	1
Carpet	S. Smith	14,938	Apr. 1	27	1
Carpet	F. C. Swann	14,939 to 14,942	Apr. 1	27	1
Chain. Watch	C. K. Giles	14,978	Apr. 29	27	417
Chair	C. J. Bruschke	14,975	Apr. 29	27	417
Chair-frame	A. G. Hofstatter	15,072	June 17	27	1139
Chenille	C. A. Schmidt	14,954	Apr. 8	27	104
Chenille pendant	J. Loeb	15,039	June 3	27	920
Churn-frame	T. Dickman and J. W. Elliott	15,046	June 10	27	1035
Clock-frame	J. Schweizer	14,955	Apr. 8	27	104
Coffee-pot	H. C. Rice	14,934	Apr. 1	27	1
Coffin-screw	W. M. Smith	15,044	June 3	27	920
Coffin-screw escutcheon	W. M. Smith	15,043	June 3	27	920
Coffin-tablet	O. McCarthy	14,989	May 6	27	525
Collar. Lady's	S. Loewenstein	15,015	May 27	27	821
Costume. Child's	F. Wright	15,100	June 24	27	1242
Costume. Girl's	C. Shiels	14,999	May 13	27	627
Costume. Girl's	L. Tully	15,102	June 24	27	1242
Costume. Lady's	M. Kavanagh	15,091	June 24	27	1242
Costume. Lady's	J. Q. Reed	15,023	May 27	27	821
Costume. Lady's	S. J. Shiels	15,024 to 15,026	May 27	27	821
Costume. Lady's	S. J. Shiels	15,101	June 24	27	1242
Costume. Lady's	L. Tully	15,029, 15,030	May 27	27	822
Costume. Lady's	M. Turner	15,104	June 24	27	1242
Costume. Miss's	M. Kavanagh	15,090	June 24	27	1242
Costume. Miss's	S. J. Shiels	15,027, 15,028	May 27	27	821
Cultivator-knife	I. A. Packard	14,990	May 6	27	525
Curry-comb back	W. P. Kellogg	14,980	Apr. 29	27	417
Curtain	J. Sweeney	15,060	May 13	27	627
Dipper	W. C. Freeman	15,051	June 10	27	1035
Dish. Earthenware	E. Chetwynd	15,063	June 17	27	1139
Dish. Earthenware	E. Havilland	14,948	Apr. 8	27	104
Dish-handle	G. Vogt	15,045	June 3	27	920
Envelope	R. Sneider	14,993	May 6	27	525
Finger-ring	H. Huestis	14,967	Apr. 22	27	303
Fire-place front	J. A. Read and J. E. McMenomay	15,042	June 3	27	920
Fire-place heater	W. H. Jackson and J. H. Hankinson	15,008	May 20	27	722
Floral piece. Foundation-frame for a	H. F. Reed and S. Keller	14,984	Apr. 29	27	417
Floral stand	A. Le Moult	15,092	June 24	27	1242
Fork	H. C. Hart	14,946, 14,947	Apr. 8	27	104
Fringe	W. Wiberley	15,105	June 24	27	1242
Fringe	J. Zebley	15,086	June 17	27	1140
Gem-setting	W. R. Dutemple	15,064	June 17	27	1139
Gimp	I. H. Leiter	14,952	Apr. 8	27	104
Hardware. Ornamentation of	A. Langerfeld	14,969	Apr. 22	27	303
Hardware. Ornamentation of builder's	F. Kell	14,928	Apr. 1	27	1
Harness ornament	D. C. Lockwood	14,998	May 13	27	627

Alphabetical list of designs, April to June, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Hinge	W. E. Sparks	15,012	May 20	27	722
Hosiery	G. E. Nye	14,982	Apr. 29	27	417
		14,983			
Jewelry-pin	T. W. Foster	15,049	June 10	27	1035
		15,050			
Knife-handle	G. W. Korn	14,929	Apr. 1	27	1
		14,930			
Knit shirt	S. Condé	14,996	May 13	27	627
Lamp-fixture	G. Sieckenberger	15,061	June 10	27	1035
Leather. Ornamention of	J. W. Kimball	15,074	June 17	27	1139
Letters. Capital	C. Schaffer	15,011	May 20	27	722
Molding	I. G. Hatcher	14,988	May 6	27	525
Molding	A. Vogt	15,032	May 27	27	822
Monument	A. J. Nellis	15,022	May 27	27	821
Nail-trimmer	J. P. Pray	15,041	June 3	27	920
Newel-post	H. Textor	14,943	Apr. 1	27	1
Newel-post	H. Textor	14,926	Apr. 29	27	417
Oil-cloth	C. T. and V. E. Meyer	15,016 to 15,021	May 27	27	821
Oil-cloth	C. T. and V. E. Meyer	15,054 to 15,057	June 10	27	1035
Oil-cloth	C. T. and V. E. Meyer	15,078	June 17	27	1140
		15,079			
Organ-case	T. Hill	15,007	May 20	27	722
Organ-case	T. Hill	15,037	June 3	27	920
Organ-case	C. W. Newman	15,040	June 3	27	920
Ornamentation of cotton, silk, or other fabrics	T. Hardcastle	14,979	Apr. 29	27	417
Paper	S. W. Wilson	14,974	Apr. 22	27	303
Paper. Note	W. A. Pike	15,010	May 20	27	722
Paper. Ornamentation of	B. Dash	15,087	June 24	27	1242
Pen-wiper	L. Kahn	14,968	Apr. 22	27	303
Pencil-case	L. W. Fairchild	14,965	Apr. 22	27	303
Pencil-case or similar article	E. Todd	15,060	June 10	27	1035
Piano-case	A. Gunther	15,052	June 10	27	1035
Rocker bracket. Spring	J. W. Kenna	15,073	June 17	27	1139
Sash-fastener frame	W. E. Sparks	14,972	Apr. 22	27	303
Satchel-body	J. C. Hacker	15,088	June 24	27	1242
Sconce-frame	J. C. Miller	14,981	Apr. 29	27	417
Sewing-machine cover	A. W. Myers	15,094	June 24	27	1242
Sewing-machines. Ornamentation of	W. Haebnel	14,958	Apr. 15	27	211
Sewing-machines. Ornamentation of	W. Haebnel	15,005	May 20	27	722
Skirt. Lady's walking	S. J. Shiels	15,100	June 24	27	1242
Skirt. Lady's walking	L. Tully	15,001	May 13	27	627
Skirt. Miss's walking	M. Turner	15,103	June 24	27	1242
Spoon-handle	A. Dominick	15,048	June 10	27	1035
Spoon or fork	H. W. Hayden	15,035	June 3	27	920
		15,036			
Spoon or fork handle	C. S. Dikeman	15,047	June 10	27	1035
Square. Drawing	L. S. Thompson	14,973	Apr. 22	27	303
Stationery-case	J. F. Taunatt	14,994	May 6	27	525
Stove. Coal-oil	R. S. Oliver	15,009	May 20	27	722
Stove. Cooking	W. M. Gartshore	14,945	Apr. 8	27	104
Stove. Heating	A. S. Phelps	15,059	June 10	27	1035
Stove. Oil	R. Ham	14,966	Apr. 22	27	303
Stove. Oil	G. W. Swett	14,956	Apr. 8	27	104
Stove. Parlor	W. P. Warren, G. G. Wolfe, and R. Scorer.	15,002	May 13	27	627
Table-ware	C. E. Haviland	15,089	June 24	27	1242
Table-ware	M. Redon	15,099	June 24	27	1242
Table-ware. Ornamentation of	C. A. May	14,960	Apr. 15	27	211
Table-ware. Ornamentation of	E. Mountford and C. A. May	14,962	Apr. 15	27	211
Tapestry border	E. G. Nuffer	15,095	June 24	27	1242
Tapestry border	E. G. Nuffer	15,097	June 24	27	1242
Tobacco. Layer of	W. W. Wood	15,107	June 24	27	1242
Toy money-box	W. S. Reed	14,953	Apr. 8	27	104
Toy savings-bank	C. G. Shepard and P. Adams, Jr.	15,085	June 17	27	1140
Trunk-strips. Clamp or loop for	S. Hermann	15,071	June 17	27	1139
Type	D. W. Bruce	15,034	June 3	27	920
Type	H. Ihlenburg	15,038	June 3	27	920
Type. Font of	J. K. Rogers	14,964	Apr. 15	27	211
Type. Font of printing	C. E. Heyer	14,949	Apr. 8	27	104
Type. Font of printing	C. E. Heyer	14,959	Apr. 15	27	211
Type. Font of printing	W. W. Jackson	14,950	Apr. 8	27	104
Type. Font of printing	J. K. Rogers	14,963	Apr. 15	27	211
Type. Printing	H. Brehmer	15,004	May 20	27	722
Type. Printing	J. K. Rogers	15,080 to 15,084	June 17	27	1140
Umbrella or parasol. Ornamentation of an	W. A. Drown	14,944	Apr. 8	27	104
Undershirts. Ornamentation of	S. A. Swenarton and H. M. Kelser	14,985	Apr. 29	27	417
Upholstery fabric	E. G. Nuffer	15,096	June 24	27	1242
Upholstery fabric	E. G. Nuffer	15,098	June 24	27	1242
Wall-paper	P. Groeber	15,065 to 15,070	June 17	27	1139
Wall-paper	A. Le Prince	15,075	June 17	27	1139
Wall-paper	A. Le Prince	15,093	June 24	27	1242
Watch-case	J. C. Dueber	14,976	Apr. 29	27	417
		14,977			
Watch-case	J. C. Dueber	14,997	May 13	27	627
Wine-glass	G. Otto	15,058	June 10	27	1035

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Ale and stout	Ihlers & Bell	11,279	June 24	27	1242
Ale and stout	Ihlers & Bell	11,280	June 24	27	1242
Alloy having the appearance of nickel	J. B. Fitch	11,201	May 27	27	822
Alloy having the appearance of nickel	J. B. Fitch	11,202	May 27	27	822
Baking-powder	J. H. Brown	11,263	June 17	27	1140
Baking-powder	Charm Manufacturing Company	11,264	June 17	27	1140
Baking-powder	W. Prescott	11,108	Apr. 15	27	212
Balsams, lotions, and liniments	A. Hoffmann	11,216	June 3	27	920
Bats, Indian clubs, &c. Base-ball	A. J. Reach & Co	11,159	May 6	27	526
Bats, Indian clubs, &c. Base-ball	A. G. Spalding & Bros	11,160	May 6	27	526
Bedsteads. Wardrobe	Spiegel & Co	11,192	May 20	27	722
Beer and other malt and alcoholic liquors	Grande Société Française de Distilleries, Malteries, et Brasseries.	11,104	Apr. 15	27	212
Bicalcium acid lactate	Avery Lactate Company	11,099	Apr. 15	27	212
Bitters	T. Ripke	11,050	Apr. 1	27	2
Bolting-cloth for milling purposes	C. Schindler-Escher	11,247	June 10	27	1036
Boot and shoe pegs	W. Flint	11,048	Apr. 1	27	2
Boot and shoe pegs	Kearsarge Peg Company	11,146	Apr. 29	27	418
Boot and shoe uppers. Material for plumping and softening	S. A. White	11,250	June 10	27	1036
Brandy. Cherry	E. Pernod	11,254	June 10	27	1036
Brushes and combs	W. L. Vennard	11,266	June 17	27	1140
Butter, cheese, and other dairy products	C. E. Marvin and E. A. Cammack	11,253	June 10	27	1036
Buttons and studs. Sleeve and collar	Howard & Son	11,092	Apr. 15	27	212
Candy, cakes, drops, balls, and dice. Stick	Darby & Co	11,200	May 27	27	822
Candy drops. Cough	A. C. Meyer	11,123	Apr. 22	27	304
Candy. French and other fine	Darby & Co	11,091	Apr. 15	27	212
Canned corn	C. P. Mattocks	11,195	May 27	27	822
Canned corn	C. P. Mattocks	11,207	May 27	27	822
Canned roast mutton	C. P. Mattocks	11,208	May 27	27	822
Canned roast turkey	C. P. Mattocks	11,206	May 27	27	822
Canned soups, meats, and fish	Germania Packing Co	11,071	Apr. 8	27	104
Car. Sleeping and drawing-room	Manu's Boudoir Car Company	11,270	June 17	27	1140
Cartridges for breech-loading fire-arms	Winchester Repeating Arms Company.	11,251	June 10	27	1036
Casters, catches, and braces, and similar hardware. Trunk and furniture	S. M. Michelson & Co	11,271	June 17	27	1140
Cement for cementing iron surfaces together	J. H. Carrington	11,119	Apr. 22	27	304
Chains, bracelets, buttons, and other articles generally described by the term jewelry.	Carter, Sloan & Co	11,224	June 3	27	920
Chenille. Embroidery	H. Maul & Co	11,257	June 17	27	1140
Cigarettes	W. S. Kimball & Co	11,234	June 10	27	1036
Cigarettes	Kinney Tobacco Company	11,076	Apr. 8	27	104
Cigars	S. Azcano y Meana	11,135	Apr. 22	27	304
Cigars	C. H. Brenaman & Co	11,256	June 17	27	1140
Cigars	F. Glahn	11,103	Apr. 15	27	212
Cigars	C. Gross & Co	11,203	May 27	27	822
Cigars	G. H. Harvey and O. S. Parker	11,064	Apr. 1	27	2
Cigars	J. Meade	11,149	Apr. 29	27	418
Cigars	C. Palacio & Co	11,187	May 13	27	628
Cigars	J. Powell	11,065	Apr. 1	27	2
Cigars	Reid, Murdoch & Fischer	11,066	Apr. 1	27	2
Cigars	Reid, Murdoch & Fischer	11,196	May 27	27	822
Cigars	R. Rendules	11,240	June 10	27	1036
Cigars and cigarettes	Herman Bros	11,278	June 24	27	1242
Cigars and cigarettes	H. Segnitz & Co	11,067	Apr. 1	27	2
Cigars and cigarettes	H. Segnitz & Co	11,068	Apr. 1	27	2
Cigars and cigarettes	H. Segnitz & Co	11,069	Apr. 1	27	2
Cigars and cigarettes	H. Segnitz & Co	11,110	Apr. 15	27	212
Cigars and cigarettes	H. Segnitz & Co	11,241	June 10	27	1036
Cigars and cigarettes	J. C. Sullivan	11,056	Apr. 1	27	2
Cigars and smoking and chewing tobacco	G. W. Cochran & Co	11,228	June 10	27	1036
Cigars, cigarettes, and manufactured tobacco	G. Fuchs	11,213	June 3	27	920
Cigars, cigarettes, cheroots, chewing-tobacco, and snuff	F. W. Felgner & Son	11,132	Apr. 22	27	304
Cigars, cigarettes, smoking and chewing tobacco, and snuff	H. Breitwieser & Bros	11,211	June 3	27	920
Coats, overcoats, pants, and vests. Men's, youths', boys', and children's ready-made	C. N. Oehm & Son	11,282	June 24	27	1242
Coffee. Roasted	Ricker & Lee	11,095	Apr. 15	27	212
Coffee roasted or otherwise prepared	F. H. Leggett & Co	11,281	June 24	27	1242
Condition-powders	S. Jennings	11,093	Apr. 15	27	212
Copies of writings, drawings, and other delineations. Apparatus for producing fac-simile	W. F. B. Massey-Mainwaring	11,157	May 6	27	526
Cordials and liquors	Les Héritiers de Marie Brizard et Roger, M. B. Glotin, Achard & Glotin.	11,105	Apr. 15	27	212
Cordials and liquors	Les Héritiers de Marie Brizard et Roger, M. B. Glotin, Achard & Glotin.	11,106	Apr. 15	27	212
Cordials and liquors	Les Héritiers de Marie Brizard et Roger, M. B. Glotin, Achard & Glotin.	11,107	Apr. 15	27	212

Alphabetical list of trade-marks, April to June, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cordials and liquors	Les Héritiers de Marie Brizard & Roger, M. B. Glotin, Achard & Glotin.	11,252	June 10	27	1036
Cords, lines, twines, and ropes	J. P. Tolman	11,210	May 27	27	822
Corsets	T. C. Bates	11,227	June 10	27	1036
Corsets. Stiffening ribs or bones for	F. D. Marckwald	11,179	May 13	27	628
Cough-sirup	N. F. Philo	11,125	Apr. 22	27	304
Crackers, biscuits, wafers, and cakes	F. A. Kennedy & Co	11,258	June 17	27	1140
Dentifrice	Morley Bros	11,220	June 3	27	920
Drugs and chemicals	W. S. Powell	11,117	Apr. 22	27	304
Dyes	W. M. Townley	11,161	May 6	27	526
Dyes. Package	F. A. Ransom	11,255	June 10	27	1036
Embroidery-silk	J. Pearsall & Co	11,183	May 13	27	628
Extrait d'Absinthe	E. Pernod	11,283	June 24	27	1242
Extracts and perfumes for the toilet	J. H. Winkelmann	11,276	June 24	27	1242
Felt used for hammers and action parts in pianos and organs	A. Dolge	11,168	May 6	27	526
Fertilizers. Phosphate	Shroff & Co	11,111	Apr. 15	27	212
File holders and cases of shelving for the same. Bill or paper.	E. W. Woodruff	11,151	Apr. 29	27	418
Float-logs	J. Spencer & Co	11,284	June 24	27	1242
Flour	S. Jacoby	11,217	June 3	27	920
Flour	P. Land and G. Swaggard	11,147	Apr. 29	27	418
Flour. Family	E. H. Readshaw	11,246	June 10	27	1036
Gelatine. Powdered	B., W., E., Sr., and E. Cannon, Jr	11,115	Apr. 22	27	303
Glue. Powdered	B., W., E., Sr., and E. Cannon, Jr	11,114	Apr. 22	27	303
Grape-juice. Unfermented	A. Werner	11,113	Apr. 15	27	212
Hair. Preparation for promoting the growth of the	W. H. Sayre	11,127	Apr. 22	27	304
Hardware. Harness, saddlery, and carriage	O. B. North & Co	11,261	June 17	27	1140
Hollands	H. B. Wiggin's Sons	11,083	Apr. 8	27	104
Honey. Artificial	J. G. Gorrell	11,268	June 17	27	1140
Horse-blankets	Newichawanick Company	11,160	May 13	27	628
Lard. Refined	W. J. Wilcox Company	11,130	Apr. 22	27	304
Leather. Shoe and glove	J. Kent	11,218	June 3	27	920
Lumber, boards, logs, and staves	A. Brown	11,152	Apr. 29	27	418
Lumber drivers' calks	Lumber Drivers Calk Company	11,063	Apr. 1	27	2
Matches	Actiengesellschaft Union Vereinigte Zündholz-und Wichse-Fabriken.	11,188	May 20	27	722
Matches	Aktiebolaget Jönköpings Östra-Fabriker.	11,223	June 3	27	920
Matches	Trummer & Co	11,080	Apr. 8	27	104
Matches	Trummer & Co	11,081	Apr. 8	27	104
Matches. Safety	Trummer & Co	11,079	Apr. 8	27	104
Matches. Safety	Trummer & Co	11,097	Apr. 15	27	212
Medical compound for the cure of agues and fevers	C. W. Goodhue	11,120	Apr. 22	27	304
Medicinal preparations. Solid and fluid	A. C. Meyer	11,124	Apr. 22	27	304
Medicine. Certain proprietary	A. C. Meyer	11,158	May 6	27	526
Medicine for the cure of female diseases	C. F. Simmons & Co	11,006	Apr. 15	27	212
Medicine. Proprietary	E. W. Higbee	11,062	Apr. 1	27	2
Melissa-water	H. Renonard & Co	11,126	Apr. 22	27	304
Mineral water	Sprudel Water Company	11,209	May 27	27	822
Night-lights, night-lamps, and nursery-lamps or food-warmers	S. Clarke	11,267	June 17	27	1140
Oats and wheat. Crushed	F. H. Leggett & Co	11,269	June 17	27	1140
Oil or water-proof clothing	J. F. Carter	11,212	June 3	27	920
Organs. Reed	Whitney Organ Company	11,082	Apr. 8	27	104
Pencils, pencil-holders, pen-holders, and other like articles. Lead-	R. Weissenborn	11,191	May 20	27	722
Pens. Metallic	G. D. Barnard & Co	11,087	Apr. 15	27	211
Perfumery	Hatfield Brothers	11,073	Apr. 8	27	104
Perfumery and cologne mixture	J. B. Weaver and H. Schandein	11,052	Apr. 1	27	2
Pickles, table-sauces, and condimenta. Certain	Globe Pickle Company	11,072	Apr. 8	27	104
Pipes, fittings, and plumbers' supplies	Reuter & Mallory	11,184	May 13	27	628
Plasters. Curative	C. F. Fish	11,219	June 3	27	920
Plastic compositions and articles made thereof. Certain	J. G. Kearsing	11,122	Apr. 22	27	304
Polish for ladies' and children's boots, shoes, satchels, &c	M. S. Cahill	11,274	June 24	27	1242
Polish for ladies' and children's boots, shoes, satchels, &c	M. S. Cahill	11,275	June 24	27	1242
Potash and lye. Caustic	E. N. Hall	11,145	Apr. 29	27	418
Remedies. Internal	W. A. Taylor	11,222	June 3	27	920
Remedy for coughs and diseases of like nature	Higgins, Greene & Hyde	11,204	May 27	27	822
Ribbons. Black	W. H. Lewis	11,245	June 10	27	1036
Rubber goods, such as articles of wearing-apparel and the like. Soft and elastic	Goodyear Rubber Company	11,226	June 3	27	920
Salt. Fine dairy and table	Warsaw Salt Company	11,051	Apr. 1	27	2
Sewing-machines. White	White Sewing Machine Company	11,098	Apr. 15	27	212
Shade-rollers. Spring-balance	C. H. Cushman	11,090	Apr. 15	27	212
Sheep-dip	A. Mitchell	11,049	Apr. 1	27	2
Shells composed of paper with a metallic base	Union Metallic Cartridge Company	11,249	June 10	27	1036
Shells for breech-loading fire-arms. Metallic and paper	Union Metallic Cartridge Company	11,248	June 10	27	1036
Shirts, drawers, and overalls	J. Rico and I. D. Levi	11,109	Apr. 15	27	212
Silks. Black and colored	Shaen & Fithian	11,128	Apr. 22	27	304
Sirup, sugar, and molasses	D. Nicholson	11,239	June 10	27	1036
Size. Concentrated preparation of	B., W., E., Sr., and E. Cannon, Jr	11,116	Apr. 22	27	304
Skates. Roller	M. C. Henley	11,074	Apr. 8	27	104
Soap	J. Armstrong & Co	11,086	Apr. 15	27	211
Soap	J. Armstrong & Co	11,273	June 24	27	1242
Soap. Harness	J. S. Kirk & Co	11,265	June 17	27	1140
Soap. Laundry	J. S. Kirk & Co	11,178	May 13	27	628
Soap. Laundry	J. S. Kirk & Co	11,185	May 13	27	628
Soap. Laundry	J. S. Kirk & Co	11,186	May 13	27	628
Soap. Laundry	J. S. Kirk & Co	11,236	June 10	27	1036
Soap. Laundry	J. S. Kirk & Co	11,237	June 10	27	1036
Soap. Laundry	J. S. Kirk & Co	11,238	June 10	27	1036
Soap. Laundry	J. S. Kirk & Co	11,243	June 10	27	1036
Soap. Laundry	J. S. Kirk & Co	11,244	June 10	27	1036
Soap. Medicated	D. W. Fessey	11,277	June 24	27	1242

Alphabetical list of trade-marks, April to June, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Soap. Olive-oil	Liebman & Butler	11,004	Apr. 15	27	212
Soap. Olive-oil	Liebman & Butler	11,148	Apr. 29	27	418
Soap-powder or powdered soap	Fisk Manufacturing Company	11,189	May 20	27	722
Soap. Toilet	J. S. Kirk & Co	11,235	June 10	27	1036
Spool-cotton	Clark Thread Company	11,100	Apr. 15	27	212
Spool-cotton	Clark Thread Company	11,101	Apr. 15	27	212
Spool-cotton	Clark Thread Company	11,140	Apr. 29	27	418
Spool-cotton	Clark Thread Company	11,141	Apr. 29	27	418
Spool-cotton	Clark Thread Company	11,142	Apr. 29	27	418
Spool-cotton	Clark Thread Company	11,143	Apr. 29	27	418
Spool-cotton	Clark Thread Company	11,144	Apr. 29	27	418
Spool-cotton	Clark Thread Company	11,164	May 6	27	526
Spool-cotton	Clark Thread Company	11,165	May 6	27	526
Spool-cotton	Clark Thread Company	11,166	May 6	27	526
Spool-cotton	Clark Thread Company	11,176	May 13	27	628
Spool-cotton	Clark Thread Company	11,177	May 13	27	628
Spool-cotton	Clark Thread Company	11,154	May 6	27	525
Steel bars and plates	Detroit Steel and Spring Works	11,242	June 10	27	1036
Stone. Building	Belknap & Dumesnil Stone Company	11,221	June 3	27	920
Suppositories	M. B. Snevily	11,250	June 17	27	1140
Table-sauce	Kibbe & Robinson	11,129	Apr. 22	27	304
Tea and coffee	F. and T. Von Oven	11,283	June 24	27	1242
Thermometers	H. Weinhagen	11,175	May 13	27	628
Tin cans. Hand-made	Can Makers' Mutual Protective Association.	11,167	May 6	27	526
Tobacco. All kinds of manufactured	F. W. Felgner & Son	11,060	Apr. 1	27	2
Tobacco and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,193	May 20	27	722
Tobacco and cigars. Plug and smoking	S. W. Venable & Co	11,139	Apr. 22	27	304
Tobacco, cigars, and cigarettes. Plug, fine-cut, and smoking	H. Segnitz & Co	11,057	Apr. 1	27	2
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,058	Apr. 1	27	2
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,059	Apr. 1	27	2
Tobacco, cigars, and cigarettes. Plug, twist, and smoking	A. Cameron & Co	11,061	Apr. 1	27	2
Tobacco, cigars, cigarettes, cheroots, and snuff. Smoking and chewing	F. W. Felgner & Son	11,131	Apr. 22	27	304
Tobacco. Manufactured chewing	H. H. Reynolds	11,118	Apr. 22	27	304
Tobacco. Plug	L. Lottier	11,078	Apr. 8	27	104
Tobacco. Plug and twist	Hardgrove & Co	11,215	June 3	27	920
Tobacco. Plug and twist	R. J. Reynolds	11,136	Apr. 22	27	304
Tobacco. Plug and twist	R. J. Reynolds	11,137	Apr. 22	27	304
Tobacco. Plug and twist	R. J. Reynolds	11,138	Apr. 22	27	304
Tobacco. Plug and twist	J. W. & C. G. Holland	11,203	May 27	27	822
Tobacco. Plug and twist chewing	J. G. Butler & Co	11,153	May 6	27	525
Tobacco. Smoking	B. Leiderdorf & Co	11,077	Apr. 8	27	104
Tobacco. Smoking	T. A. Richardson	11,197	May 27	27	822
Tobacco. Smoking	Timberlake, Woodson & Co	11,198	May 27	27	822
Tobacco. Smoking	Timberlake, Woodson & Co	11,199	May 27	27	822
Tobacco. Smoking	Wellman & Dwire Tobacco Company.	11,053	Apr. 1	27	2
Tobacco. Smoking	Wellman & Dwire Tobacco Company.	11,054	Apr. 1	27	2
Tobacco. Smoking	Wellman & Dwire Tobacco Company.	11,055	Apr. 1	27	2
Tobacco. Smoking	Wellman & Dwire Tobacco Company.	11,112	Apr. 15	27	212
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,084	Apr. 8	27	104
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,102	Apr. 15	27	212
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,134	Apr. 22	27	304
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,155	May 6	27	526
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,156	May 6	27	526
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,194	May 27	27	822
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,214	June 3	27	920
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,229	June 10	27	1036
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,230	June 10	27	1036
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,231	June 10	27	1036
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,232	June 10	27	1036
Tobacco. Smoking and chewing	G. W. Gail & Ax	11,233	June 10	27	1036
Tobacco. Smoking and chewing	P. H. Mayo & Bro	11,169	May 6	27	526
Tobacco. Smoking and chewing	P. H. Mayo & Bro	11,170	May 6	27	526
Tobacco. Smoking and chewing	P. H. Mayo & Bro	11,171	May 6	27	526
Tobacco. Smoking and chewing	P. H. Mayo & Bro	11,172	May 6	27	526
Tobacco. Smoking and chewing	P. H. Mayo & Bro	11,173	May 6	27	526
Tobacco. Smoking and chewing	P. H. Mayo & Bro	11,174	May 6	27	526
Tobacco. Smoking and chewing	P. H. Mayo & Bro	11,182	May 13	27	628
Tobacco. Smoking and chewing	F. W. Felgner & Son	11,133	Apr. 22	27	304
Tobacco, snuff, and cigars, cigarettes, or cheroots. Chewing and smoking	C. W. Van Alstine	11,102	May 6	27	526
Tobacco, snuff, cigars, cigarettes, and cheroots. Plug, twist, and smoking and chewing	Inge & Mahone	11,085	Apr. 8	27	104
Tobacco. Twist and plug	Travers Brothers	11,202	June 17	27	1140
Twines, threads, ropes, lines, and cordage	D. Rosenberg & Sons	11,190	May 20	27	722
Varnishes and liquid driers	C. E. Bruce	11,088	Apr. 15	27	212
Velvets, velveteens, velvetas, and similar pile fabrics	G. Favre-Jacot	11,225	June 3	27	920
Watches	Vacheron & Constantin	11,150	Apr. 29	27	418
Watches	Waterbury Watch Company	11,163	May 6	27	526
Watches	J. F. Carter	11,069	Apr. 15	27	212
Water-proof clothing	C. H. Myers & Bro	11,260	June 17	27	1140
Whisky	White, Hentz & Co	11,075	Apr. 8	27	104
Whisky. Rye and other	E. Boecking & Co	11,181	May 13	27	628
Wire rods, flat steel strips, hoop iron and steel, and similar half products of iron and steel	Zanesville Woolen Manufacturing Company.	11,121	Apr. 22	27	304
Woolen textiles, including yarns, cassimeres, flannels, jeans, and linseys	M. I. Cooley	11,070	Apr. 8	27	104
Woven fabrics, carpets, rugs, oil-cloths, and mattings	P. S. Peckham & Co	11,272	June 17	27	1140
Yarn for hand-knitting. Country homespun					

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A Vegetable Cure for Cancer, Tumor and Ulcer"	F. D. French	4,122	May 20	27	722
"Aletris Cordial"	Rio Chemical Company	4,147	June 10	27	1036
"Anderson's Electric Salve"	W. J. Anderson	4,114	May 6	27	526
"Angostura Aromatic Bitters"	C. W. Abbott & Co	4,039	Apr. 8	27	104
"Antifermentine" (for a Chemical Powder)	Antifermentine Company	4,051	Apr. 15	27	212
"Aromatic Syrup of the Hypophosphites Comp."	B. F. Raymond	4,152	June 17	27	1140
"Artist's Eye Lotion"	L. Fuller	4,058	Apr. 15	27	212
"Bee-Hive Cough Syrup"	M. Block & Co	4,022	Apr. 1	27	2
"Beef, Iron, Wine with Hydropepsin"	Thomas & Thompson	4,157	June 24	27	1242
"Beggs' Cherry Cough Syrup"	F. M. Beggs and C. E. DeWitt	4,116	May 13	27	628
"Blood's Improved Gout and Rheumatic Pills"	M. S. Woodman	4,138	June 3	27	920
"Botanic Sarsaparilla"	G. R. Finlay & Co	4,057	Apr. 15	27	212
"Bowers' Infallible Cough Remedy"	I. Bowers	4,120	May 20	27	722
"Brandrye" (for Brandy and Whisky)	H. Snyder, Jr	4,111	Apr. 29	27	418
"Calendula Lotion"	C. H. Dalrymple	4,140	June 10	27	1036
"Cama Cura" (for a Liniment)	M. L. Fornwalt	4,026	Apr. 1	27	2
"Carpet-Tacks"	American Tack Company	4,112	May 6	27	526
"Casino" (for Whisky)	C. C. Bryan	4,023	Apr. 1	27	2
"Chappaqua" (for Shoes)	H. W. Bischoff	4,119	May 20	27	722
"Charming Belle" (for Flour)	Meyer & Bulte	4,068	Apr. 15	27	212
"Chautauqua Baking Powder"	A. S. McCall	4,067	Apr. 15	27	212
"Clenzene" (for Soap or Saponaceous Matter)	A. B. Simonds	4,073	Apr. 15	27	212
"Concentrated Ozone Water"	Chemical Ozone Manufacturing Company.	4,104	Apr. 29	27	418
"Congress Hall" (for Cigars)	L. Kuhn	4,064	Apr. 15	27	212
"Cramer's German Iron Beer"	E. Russell and M. Cramer	4,035	Apr. 1	27	2
"Crinoline Lining"	MacLea, Austin & Wellington	4,031	Apr. 1	27	2
"Dermatine" (for a Preparation for the Skin)	R. Ince	4,123	May 20	27	722
"Diamond," (for Bitters)	H. W. Lake	4,065	Apr. 15	27	212
"Dietetic Ozone Water"	Chemical Ozone Manufacturing Company.	4,100	Apr. 29	27	418
"Dime" (for Cologne)	F. Hoyt & Co	4,129	May 27	27	822
"Doctor Williams' Humalico." (for a Medical Compound)	W. D. Vail & Co	4,076	Apr. 15	27	212
"Dr. Ailing's Triumph Inhaler and Inhalant"	C. F. Ailing	4,040	Apr. 8	27	104
"Dr. Arnold's Malaria Cure"	C. M. Arnold	4,139	June 10	27	1036
"Dr. C. F. Bull's Cough Drops"	Candy Bros	4,085	Apr. 22	27	304
"Dr. Douglas' Herb Tea"	R. Douglas	4,086	Apr. 22	27	304
"Dr. Empet's Oil" (for a Medical Compound)	L. B. Bassett	4,041	Apr. 8	27	104
"Dr. L. Burdick's Never-Failing Kidney Cure"	J. E. Jackson	4,029	Apr. 1	27	2
"Dr. Moore's Juniper Balsam"	T. E. Kirby	4,130	May 27	27	822
"Dr. Smith's Ague Powders"	A. G. Miller	4,094	Apr. 22	27	304
"Dr. Walter's Headache Cure"	E. Walter	4,097	Apr. 22	27	304
"Draper Oiler Co." (for Oil Cans)	D. K. Alden	4,092	Apr. 22	27	304
"Drew's Manilla Plain Paper Bags"	F. L. Hooper & Co	4,044	Apr. 8	27	104
"Elphin Hair Restorer"	L. Fuller	4,059	Apr. 15	27	212
"Ethioplan Pile Ointment"	J. A. and W. C. Campbell	4,084	Apr. 22	27	304
"Fabrice Paris" (for Gloves)	Langfeld, Lichten & Co	4,066	Apr. 15	27	212
"Fig Paste"	J. M. Love & Co	4,142	June 10	27	1036
"Fleming's Tea Berry Tooth Powder"	J. H. Winkelmann	4,081	Apr. 15	27	212
"Forbidden Fruit" (for Cigars)	T. R. Harris & Co	4,087	Apr. 22	27	304
"Foxhall Worsteds," (for Mixed Cotton and Woolen Fabrics)	Oberly & Newell	4,033	Apr. 1	27	2
"French Enamel or Perfect Beautifier"	Arnault & Co	4,099	Apr. 29	27	418
"Fresh Home Roasted Coffee"	E. Meizenaar	4,132	May 27	27	822
"Fumadora," (for Cigars)	Hamburger Bros. Co	4,105	Apr. 29	27	418
"Garwood's Standard Perfumes"	J. B. Weaver and H. Schandein	4,038	Apr. 1	27	2
"Gluco Pepsine," (for a Medicine)	M. Lappe	4,030	Apr. 1	27	2
"Golden Gate Bitters"	T. B. Madden & Co	4,092	Apr. 22	27	304
"Goyne's Great Blood Remedy"	G. T. Miller, C. E. Gilbert, E. J. McGehee, and L. Picard.	4,069	Apr. 15	27	212
"Higgins Autumn Leaf" (for a Dyspepsia Remedy)	C. A. Higgins	4,155	June 24	27	1242
"Hop Ointment"	G. R. Lyon	4,145	June 10	27	1036
"Imperial Vegetable Blood and Liver Pills"	R. Drake	4,055	Apr. 15	27	212
"Improved Imperial Linseed Oil"	P. W. Mead	4,093	Apr. 22	27	304
"Iodic Comp." (for a Medicine)	P. S. Redfield	4,108	Apr. 29	27	418
"Iron Tonic & Blood Perfiter"	C. C. F. Schroeder & Co	4,049	Apr. 8	27	104
"J. H. Taylor's Great Kidney and Liver Cure"	J. H. Taylor	4,137	June 3	27	920
"Johnson's Speykhiene, for the Hair"	T. Johnson	4,088	Apr. 22	27	304
"Jumbo" (for Tonic Bitters)	P. L. Bannen	4,021	Apr. 1	27	2
"L. Knittel's Indian Hair Tonic"	L. Knittel	4,106	Apr. 29	27	418
"Lake's Expectorant Cough Balsam"	H. W. Lake	4,091	Apr. 22	27	304
"Leon Gambetta" (for Manufactured Tobacco or Cigars)	W. Bradney	4,083	Apr. 22	27	304
"Liberty" (for Tip-Linings for Hats)	F. G. Hanson	4,062	Apr. 15	27	212
"Lyon's Cough Syrup"	G. R. Lyon	4,144	June 10	27	1036
"Lyon's Sarsaparilla"	G. R. Lyon	4,143	June 10	27	1036
"Maker's Compound Vegetable Cough Syrup"	W. A. Maker	4,146	June 10	27	1036
"May Blossom," (for Cigars)	M. Richardson & Son	4,070	Apr. 15	27	212
"May's Dyspepsia Cure"	J. M. Daniels	4,141	June 10	27	1036
"Mrs. Fleming's Hot Springs Bleacher" (for the Complexion)	S. A. Fleming	4,043	Apr. 8	27	104
"Napheys, Pratt & Co., Choice Family Lard"	W. D. Napheys and J. D. Pratt, Jr.	4,032	Apr. 1	27	2
"Nelson's Food Digester"	J. N. Solomons	4,136	June 3	27	920
"91,895 Ninety-one, eight ninety-five. Cough Mixture"	M. J. Breitenbach	4,052	Apr. 15	27	212

Alphabetical list of labels, April to June, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"Ominico." (for a Medical and Toilet Preparation)	S. W. Neuer	4,048	Apr. 8	27	104
"Oregon Indian Ague Cure and Malarial Specific"	W. C. Chattin	4,025	Apr. 1	27	2
"Ozone Powder"	Chemical Ozone Manufacturing Company.	4,102	Apr. 29	27	418
"Petroleum Soap"	G. C. Buntin and J. A. Draper	4,054	Apr. 15	27	212
"Platt's Chlorides"	H. B. Platt	4,107	Apr. 29	27	418
"Pleasant Wine of Iron"	J. Keeshan	4,089	Apr. 22	27	304
"Potter's Catarrh Cure, Prepared by N. Prentiss Potter, M. D. Bridgton, Me."	N. P. Potter	4,115	May 6	27	526
"Pratt's Specific-Direction Label"	G. W. Root	4,153	June 17	27	1140
"Price's Oil Preparation" (for Renovating the Outside of Houses.)	J. H. Price	4,034	Apr. 1	27	2
"Procter's Insect Powder"	J. H. Winkelmann	4,079	Apr. 15	27	212
"Procter's Liquid Glue"	J. H. Winkelmann	4,080	Apr. 15	27	212
"Rapé de Gambetta." (for Snuff)	S. Scharlins	4,036	Apr. 1	27	2
"Red Cross Tallow Compound"	I. B. S. Isted and W. D. Halsted	4,029	Apr. 1	27	2
"Robert Shoemaker & Co., Pure Ground Spices and Drugs, Philadelphia."	R. Shoemaker & Co	4,134	June 3	27	920
"Rochester's Excelsior," (for Cigars)	H. Wood	4,050	Apr. 8	27	104
"Rogers' Grapoline." (for a Medical Preparation)	J. H. Rogers	4,109	Apr. 29	27	418
"Schroder's Medicated Pad"	J. A. Schroder	4,071	Apr. 15	27	212
"Scott's Coca Beef and Iron with Phosphorus"	C. W. Scott	4,072	Apr. 15	27	212
"Seal Rock Spring Water"	S. Gurney	4,061	Apr. 15	27	212
"Silver Dust Polishing Powder"	J. T. White	4,078	Apr. 15	27	212
"Silver Lake," (for Canned Tomatoes)	T. C. Davenport	4,121	May 20	27	722
"Simple Ozone Water"	Chemical Ozone Manufacturing Company.	4,103	Apr. 29	27	418
"South American Lightning Eradicator"	H. H. Hull	4,027	Apr. 1	27	2
"Southern Cathartic Pills"	Southern Medicine Company	4,117	May 13	27	628
"Southern Chill Tonic"	Southern Medicine Company	4,118	May 13	27	628
"Spear Head" (for Cigars)	Mensing & Stecher	4,046	Apr. 8	27	104
"Sperry's Germea for Breakfast," (for Flour)	S. W. Sperry	4,074	Apr. 15	27	212
"St. Patrick's Oil"	P. L. Bannen	4,020	Apr. 1	27	2
"Star Butter" (for Crackers)	G. W. Heathman & Co	4,063	Apr. 15	27	212
"Stewart's A. Q. C." (for a Medical Compound)	J. A. and M. R. Stewart	4,075	Apr. 15	27	212
"Success," (for Flour)	J. B. A. Kern	4,045	Apr. 8	27	104
"Sure Heave Cure"	T. K. Smith	4,135	June 3	27	920
"Sweet Lullaby Bouquet"	P. L. Fisher	4,042	Apr. 8	27	104
"Syringe"	A. H. Essex	4,056	Apr. 15	27	212
"Tal-a-quit-sah Cordial" (for a Medicine)	W. C. Chattin	4,024	Apr. 1	27	2
"Tarrant's Fig Paste"	T. W. Tarrant	4,148	June 10	27	1036
"Telephone Soap"	J. S. Paige	4,096	Apr. 22	27	304
"Ten Cent or Dime Corn Cure"	J. E. Potter	4 125	May 20	27	722
"Tender Feet." (for Boots and Shoes)	L. Sleisinger	4,110	Apr. 29	27	418
"The Boston Java Coffee"	Swain, Earle & Co	4,156	June 24	27	1242
"The Double Concentrated Ozone Water"	Chemical Ozone Manufacturing Company.	4,101	Apr. 29	27	418
"The Forester" (for Axes)	New England Axe Co	4,095	Apr. 22	27	304
"The Great Skin Cure Suracura"	P. L. Bannen	4,019	Apr. 1	27	2
"The Hair Beautifier"	J. Bard	4,150	June 17	27	1140
"The Health Restorer" (for a Medicine)	J. Bard	4,127	May 27	27	822
"The Original Perfect Fitting Wankenphast." (for Boots and Shoes.)	H. Gardiner	4,060	Apr. 15	27	212
"The Pain Destroyer." (for a Medicine)	J. Bard	4,128	May 27	27	822
"The Sufferer's Relief"	J. Bard	4,149	June 17	27	1140
"Tinned Carpet-Tacks"	American Tack Company	4,113	May 6	27	526
"Tobacco Curer"	S. Ragendorf	4,126	May 20	27	722
"True and Original Triple Leaf Brand Bay Rum"	D. Brilles	4,053	Apr. 15	27	212
"Trull's Scotch Soap Powder"	B. R. Trull	4,037	Apr. 1	27	2
"Twenty-four O'clock" (for Cigars)	Mensing & Stecher	4,047	Apr. 8	27	104
"Tyree's Digestive Tablets"	J. S. Tyree	4,154	June 17	27	1140
"Union Made Loaf Bread"	C. J. Kraft and C. Bernhard	4,131	May 27	27	822
"Watertown Woolen Yarn"	G. A. Lance	4,133	June 3	27	920
"Weeks' Worm Powders"	J. E. Weeks	4,077	Apr. 15	27	212
"Wheat Baking Powder"	M. Kalbfleisch's Sons	4 124	May 20	27	722
"White Pine Balsam"	Horne & Abel	4,151	June 17	27	1140
"Wieczorek's Dialysed Ferrated or Iodo-Ferrated Cod-Liver Oil. 1:1000."	A. Wieczorek	4,098	Apr. 22	27	304
"Wilber's Celebrated Family Liniment"	R. R. Wilber	4,158	June 24	27	1242
"Wrinkle Eradicator"	B. Kirkpatrick	4,090	Apr. 22	27	304

DISCLAIMERS.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Vol.	Page.
Mitt-shaping machine	Warren P. Jennings	234,286	Nov. 9, 1880	May 21, 1884	27	822
Pavements. Laying	William McLean	289,295	Nov. 27, 1883	June 12, 1883	27	1140
Soldering device	Abel Barker and Edward M. Lang.	8,781	July 1, 1879	May 14, 1884	27	722

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